NAME
       Image::ExifTool::TagNames - ExifTool tag name documentation

DESCRIPTION
       This document contains a complete list of ExifTool tag names, organized
       into tables based on information type. Tag names are used to reference
       specific meta information extracted from or written to a file.

TAG TABLES
       The tables listed below give the names of all tags recognized by
       ExifTool. They contain a total of 28408 tags, with 17642 unique tag
       names.

       Tag ID, Index# or Sequence is given in the first column of each table.
       A **Tag ID** is the computer-readable equivalent of a tag name, and is the
       identifier that is actually stored in the file. **Index#** refers to the
       offset of a value when found at a fixed position within a data block (#
       is the multiplier for calculating a byte offset: **1**, **2**, **4** or **8**). These
       offsets may have a decimal part which is used only to differentiate
       tags with values stored at the same position. (Note that writable tags
       within binary data blocks are not individually deletable, and the usual
       alternative is to set them to a value of zero.) **Sequence** gives the
       order of values for a serial data stream.

       A **Tag Name** is the handle by which the information is accessed in
       ExifTool. In some instances, more than one name may correspond to a
       single tag ID. In these cases, the actual name used depends on the
       context in which the information is found. Valid characters in a tag
       name are A-Z, a-z, 0-9, hyphen (-) and underline (_). Case is not
       significant. A question mark ("?") after a tag name indicates that the
       information is either not understood, not verified, or not very useful
       -- these tags are not extracted by ExifTool unless the Unknown (-u)
       option is enabled. Be aware that some tag names are different than the
       descriptions printed out by default when extracting information with
       exiftool. To see the tag names instead of the descriptions, use
       "exiftool -s".

       The **Writable** column indicates whether the tag is writable by ExifTool.
       Anything but a "no" in this column means the tag is writable. A "yes"
       indicates writable information that is either unformatted or written
       using the existing format. Other expressions give details about the
       format of the stored value, and vary depending on the general type of
       information. The format name may be followed by a number in square
       brackets to indicate the number of values written, or the number of
       characters in a fixed-length string (including a null terminator which
       is added if required).

       A plus sign ("+") after an entry in the **Writable** column indicates a
       List tag which supports multiple values and allows individual values to
       be added and deleted. A slash ("/") indicates a tag that ExifTool will
       Avoid when writing. These will be edited but not created if another
       same-named tag may be created instead. To create these tags, the group
       should be specified. A tilde ("~") indicates a tag this is writable
       only when the print conversion is disabled (by setting PrintConv to 0,
       using the -n option, or suffixing the tag name with a "#" character).
       An exclamation point ("!") indicates a tag that is considered Unsafe to
       write under normal circumstances. These tags are not written unless
       specified explicitly (ie. not when wildcards or "all" are used), and
       care should be taken when editing them manually since they may affect
       the way an image is rendered. An asterisk ("*") indicates a Protected
       tag which is not writable directly, but is written automatically by
       ExifTool (often when a corresponding Composite or Extra tag is
       written). A colon (":") indicates a Mandatory tag which may be added
       automatically when writing (use the API NoMandatory option to avoid
       creating mandatory EXIF tags). Normally MakerNotes tags may not be
       deleted individually, but a caret ("^") indicates a Deletable

MakerNotes tag.

The HTML version of these tables also lists possible **Values** for discrete-valued tags, as well as **Notes** for some tags. The **Values** are listed with the computer-readable values on the left of the equals sign ("="), and the human-readable values on the right. The human-readable values are used by default when reading and writing, but the computer-readable values may be accessed by disabling the value conversion with the -n option on the command line, by setting the PrintConv option to 0 in the API, or or on a per-tag basis by adding a hash ("#") after the tag name.

Note: If you are familiar with common meta-information tag names, you may find that some ExifTool tag names are different than expected. The usual reason for this is to make the tag names more consistent across different types of meta information. To determine a tag name, either consult this documentation or run "exiftool -s" on a file containing the information in question.

(This documentation is the result of decades of research, testing and reverse engineering, and is the most complete metadata tag list available anywhere on the internet. It is provided not only for ExifTool users, but more importantly as a public service to help augment the collective knowledge, and is often used as a primary source of information in the development of other metadata software. Please help keep this documentation as accurate and complete as possible, and feed any new discoveries back to ExifTool. A big thanks to everyone who has helped with this so far!)

JPEG Tags

This table lists information extracted by ExifTool from JPEG images. See <https://www.w3.org/Graphics/JPEG/jfif3.pdf> for the JPEG specification.

Tag ID	Tag Name	Writable
'APP0'	JFIF	JFIF
	JFXX	JFIF Extension
	CIFF	CanonRaw
	AVI1	JPEG AVI1
	Ocad	JPEG Ocad
'APP1'	EXIF	EXIF
	ExtendedXMP	XMP
	XMP	XMP
	QVCI	Casio QVCI
	FLIR	FLIR FFF
	RawThermalImage	no
'APP2'	ICC_Profile	ICC_Profile
	FPXR	FlashPix
	MPF	MPF
	InfiRayVersion	InfiRay Version
	UniformResourceName	no
	PreviewImage	no
'APP3'	Meta	Kodak Meta
	Stim	Stim
	JPS	JPEG JPS
	ThermalData	no
	ImagingData	no
	PreviewImage	no
'APP4'	Scalado	Scalado
	FPXR	FlashPix
	QualcommDualCamera	Qualcomm DualCamera
	InfiRayFactory	InfiRay Factory
	ThermalParams	DJI ThermalParams
	ThermalParams2	DJI ThermalParams2
	ThermalParams3	DJI ThermalParams3
	PreviewImage	no
'APP5'	RMETA	Ricoh RMETA
	SamsungUniqueID	Samsung APP5
	InfiRayPicture	InfiRay Picture

```
                  ThermalCalibration                   no
                  PreviewImage                         no
    'APP6'        EPPIM                                JPEG EPPIM
                  NITF                                 JPEG NITF
                  HP_TDHD                              HP TDHD
                  GoPro                                GoPro GPMF
                  InfiRayMixMode                       InfiRay MixMode
                  DJI_DTAT                             no
    'APP7'        Pentax                               Pentax
                  Huawei                               Unknown
                  Qualcomm                             Qualcomm
                  InfiRayOpMode                        InfiRay OpMode
                  DJI-DBG                              DJI Info
    'APP8'        SPIFF                                JPEG SPIFF
                  InfiRayIsothermal                    InfiRay Isothermal
                  SEAL                                 XMP SEAL
    'APP9'        MediaJukebox                         JPEG MediaJukebox
                  InfiRaySensor                        InfiRay Sensor
                  SEAL                                 XMP SEAL
    'APP10'       Comment                              no
                  HDRGainCurve                         no
    'APP11'       JPEG-HDR                             JPEG HDR
                  JUMBF                                Jpeg2000
    'APP12'       PictureInfo                          APP12 PictureInfo
                  Ducky                                APP12 Ducky
    'APP13'       Photoshop                            Photoshop
                  Adobe_CM                             JPEG AdobeCM
    'APP14'       Adobe                                JPEG Adobe
    'APP15'       GraphicConverter                     JPEG GraphConv
    'COM'         Comment                              yes
    'DQT'         DefineQuantizationTable              no
    'SOF'         StartOfFrame                         JPEG SOF
    'Trailer'     AFCP                                 AFCP
                  CanonVRD                             CanonVRD
                  FotoStation                          FotoStation
                  PhotoMechanic                        PhotoMechanic
                  MIE                                  MIE
                  Samsung                              Samsung Trailer
                  Vivo                                 Trailer Vivo
                  OnePlus                              Trailer OnePlus
                  Google                               Trailer Google
                  EmbeddedVideo                        no
                  Insta360                             no
                  NikonApp                             no
                  SonyHiddenData                       no
                  PreviewImage                         yes
```

JPEG AVI1 Tags

This information may be found in APP0 of JPEG image data from AVI
videos.

```
  Index1   Tag Name                             Writable
  ------   --------                             --------
      0    InterleavedField                     no
```

JPEG Ocad Tags

Tags extracted from the JPEG APP0 "Ocad" segment (found in Photobucket
images).

```
  Tag ID   Tag Name                             Writable
  ------   --------                             --------
  'Rev'    OcadRevision                         no
```

JPEG JPS Tags

Tags found in JPEG Stereo (JPS) images.

```
  Index1   Tag Name                             Writable
```

```
  ------   --------                           --------
    10     JPSSeparation                       no
    11     JPSFlags                            no
    12     JPSLayout                           no
    13     JPSType                             no
    16     JPSComment                          no
```

JPEG EPPIM Tags

APP6 is used in by the Toshiba PDR-M700 to store a TIFF structure
containing PrintIM information.

```
  Tag ID   Tag Name                           Writable
  ------   --------                           --------
  0xc4a5   PrintIM                            PrintIM
```

JPEG NITF Tags

Information in APP6 used by the National Imagery Transmission Format.
See
<http://www.gwg.nga.mil/ntb/baseline/docs/n010697/bwcguide25aug98.pdf>
for the official specification.

```
  Index1   Tag Name                           Writable
  ------   --------                           --------
      0    NITFVersion                         no
      2    ImageFormat                         no
      3    BlocksPerRow                        no
      5    BlocksPerColumn                     no
      7    ImageColor                          no
      8    BitDepth                            no
      9    ImageClass                          no
     10    JPEGProcess                         no
     11    Quality                             no
     12    StreamColor                         no
     13    StreamBitDepth                      no
     14    Flags                               no
```

JPEG SPIFF Tags

This information is found in APP8 of SPIFF-style JPEG images (the
"official" yet rarely used JPEG file format standard: Still Picture
Interchange File Format). See <http://www.jpeg.org/public/spiff.pdf>
for the official specification.

```
  Index1   Tag Name                           Writable
  ------   --------                           --------
      0    SPIFFVersion                        no
      2    ProfileID                           no
      3    ColorComponents                     no
      6    ImageHeight                         no
     10    ImageWidth                          no
     14    ColorSpace                          no
     15    BitsPerSample                       no
     16    Compression                         no
     17    ResolutionUnit                      no
     18    YResolution                         no
     22    XResolution                         no
```

JPEG MediaJukebox Tags

Tags found in the XML metadata of the APP9 "Media Jukebox" segment.

```
  Tag Name                                     Writable
  --------                                     --------
  Album                                        no
  Caption                                      no
  Date                                         no
  Keywords                                     no
  Name                                         no
```

```
    People                                   no
    Places                                   no
    Tool_Name                                no
    Tool_Version                             no
```

JPEG HDR Tags

Information extracted from APP11 of a JPEG-HDR image.

Tag ID	Tag Name	Writable
'RatioImage'	RatioImage	no
'alp'	Alpha	no
'bet'	Beta	no
'cor'	CorrectionMethod	no
'ln0'	Ln0	no
'ln1'	Ln1	no
's2n'	S2n	no
'ver'	JPEG-HDRVersion	no

JPEG AdobeCM Tags

The APP13 "Adobe_CM" segment presumably contains color management
information, but the meaning of the data is currently unknown. If
anyone has an idea about what this means, please let me know.

Index2	Tag Name	Writable
0	AdobeCMType	no

JPEG Adobe Tags

The APP14 "Adobe" segment stores image encoding information for DCT
filters. This segment may be copied or deleted as a block using the
Extra "Adobe" tag, but note that it is not deleted by default when
deleting all metadata because it may affect the appearance of the
image.

Index2	Tag Name	Writable
0	DCTEncodeVersion	no
1	APP14Flags0	no
2	APP14Flags1	no
3	ColorTransform	no

JPEG GraphConv Tags

APP15 is used by GraphicConverter to store JPEG quality.

Tag ID	Tag Name	Writable
'Q'	Quality	no

JPEG SOF Tags

This information is extracted from the JPEG Start Of Frame segment.

Tag Name	Writable
BitsPerSample	no
ColorComponents	no
EncodingProcess	no
ImageHeight	no
ImageWidth	no
YCbCrSubSampling	no

EXIF Tags
    EXIF stands for "Exchangeable Image File Format". This type of
    information is formatted according to the TIFF specification, and may
    be found in JPG, TIFF, PNG, JP2, PGF, MIFF, HDP, PSP and XCF images, as

well as many TIFF-based RAW images, and even some AVI and MOV videos.

The EXIF meta information is organized into different Image File
Directories (IFD's) within an image. The names of these IFD's
correspond to the ExifTool family 1 group names. When writing EXIF
information, the default **Group** listed below is used unless another
group is specified.

Mandatory tags (indicated by a colon after the **Writable** type) may be
added automatically with default values when creating a new IFD, and
the IFD is removed automatically when deleting tags if only default-
valued mandatory tags remain.

The table below lists all EXIF tags. Also listed are TIFF, DNG, HDP
and other tags which are not part of the EXIF specification, but may
co-exist with EXIF tags in some images. Tags which are part of the
EXIF 2.32 specification have an underlined **Tag Name** in the HTML version
of this documentation. See
<https://web.archive.org/web/20190624045241if_/http://www.cipa.jp:80/std/documents
/e/DC-008-Translation-2019-E.pdf>
for the official EXIF 2.32 specification.

Tag ID	Tag Name	Group	Writable
0x0001	InteropIndex	InteropIFD	string!
0x0002	InteropVersion	InteropIFD	undef!:
0x000b	ProcessingSoftware	IFD0	string
0x00fe	SubfileType	IFD0	int32u!
0x00ff	OldSubfileType	IFD0	int16u!
0x0100	ImageWidth	IFD0	int32u!
0x0101	ImageHeight	IFD0	int32u!
0x0102	BitsPerSample	IFD0	int16u[n]!
0x0103	Compression	IFD0	int16u!:
0x0106	PhotometricInterpretation	IFD0	int16u!
0x0107	Thresholding	IFD0	int16u!
0x0108	CellWidth	IFD0	int16u!
0x0109	CellLength	IFD0	int16u!
0x010a	FillOrder	IFD0	int16u!
0x010d	DocumentName	IFD0	string
0x010e	ImageDescription	IFD0	string
0x010f	Make	IFD0	string
0x0110	Model	IFD0	string
0x0111	StripOffsets	-	no
	OtherImageStart	-	no
	PreviewJXLStart	-	no
	StripOffsets	-	no
	PreviewImageStart	IFD0	int32u*
	PreviewImageStart	All	int32u*
	JpgFromRawStart	SubIFD2	int32u*
0x0112	Orientation	IFD0	int16u
0x0115	SamplesPerPixel	IFD0	int16u!
0x0116	RowsPerStrip	IFD0	int32u!
0x0117	StripByteCounts	-	no
	OtherImageLength	-	no
	PreviewJXLLength	-	no
	StripByteCounts	-	no
	PreviewImageLength	IFD0	int32u*
	PreviewImageLength	All	int32u*
	JpgFromRawLength	SubIFD2	int32u*
0x0118	MinSampleValue	IFD0	int16u
0x0119	MaxSampleValue	IFD0	int16u
0x011a	XResolution	IFD0	rational64u:
0x011b	YResolution	IFD0	rational64u:
0x011c	PlanarConfiguration	IFD0	int16u!
0x011d	PageName	IFD0	string
0x011e	XPosition	IFD0	rational64u
0x011f	YPosition	IFD0	rational64u
0x0120	FreeOffsets	-	no
0x0121	FreeByteCounts	-	no
0x0122	GrayResponseUnit	IFD0	int16u

0x0123	GrayResponseCurve	-	no
0x0124	T4Options	-	no
0x0125	T6Options	-	no
0x0128	ResolutionUnit	IFD0	int16u:
0x0129	PageNumber	IFD0	int16u[2]
0x012c	ColorResponseUnit	-	no
0x012d	TransferFunction	IFD0	int16u[768]!
0x0131	Software	IFD0	string
0x0132	ModifyDate	IFD0	string
0x013b	Artist	IFD0	string
0x013c	HostComputer	IFD0	string
0x013d	Predictor	IFD0	int16u!
0x013e	WhitePoint	IFD0	rational64u[2]
0x013f	PrimaryChromaticities	IFD0	rational64u[6]
0x0140	ColorMap	-	no
0x0141	HalftoneHints	IFD0	int16u[2]
0x0142	TileWidth	IFD0	int32u!
0x0143	TileLength	IFD0	int32u!
0x0144	TileOffsets	-	no
0x0145	TileByteCounts	-	no
0x0146	BadFaxLines	-	no
0x0147	CleanFaxData	-	no
0x0148	ConsecutiveBadFaxLines	-	no
0x014a	SubIFD	-	EXIF
	A100DataOffset	IFD0	no
0x014c	InkSet	IFD0	int16u
0x014d	InkNames	-	no
0x014e	NumberofInks	-	no
0x0150	DotRange	-	no
0x0151	TargetPrinter	IFD0	string
0x0152	ExtraSamples	-	no
0x0153	SampleFormat	SubIFD	no
0x0154	SMinSampleValue	-	no
0x0155	SMaxSampleValue	-	no
0x0156	TransferRange	-	no
0x0157	ClipPath	-	no
0x0158	XClipPathUnits	-	no
0x0159	YClipPathUnits	-	no
0x015a	Indexed	-	no
0x015b	JPEGTables	-	no
0x015f	OPIProxy	-	no
0x0190	GlobalParametersIFD	-	EXIF
0x0191	ProfileType	-	no
0x0192	FaxProfile	-	no
0x0193	CodingMethods	-	no
0x0194	VersionYear	-	no
0x0195	ModeNumber	-	no
0x01b1	Decode	-	no
0x01b2	DefaultImageColor	-	no
0x01b3	T82Options	-	no
0x01b5	JPEGTables	-	no
0x0200	JPEGProc	-	no
0x0201	ThumbnailOffset	IFD1	int32u*
	ThumbnailOffset	IFD0	int32u*
	ThumbnailOffset	SubIFD	int32u*
	PreviewImageStart	MakerNotes	int32u*
	PreviewImageStart	IFD0	int32u*
	JpgFromRawStart	SubIFD	int32u*
	JpgFromRawStart	IFD2	int32u*
	OtherImageStart	SubIFD1	int32u*
	OtherImageStart	SubIFD2	int32u*
	OtherImageStart	-	no
0x0202	ThumbnailLength	IFD1	int32u*
	ThumbnailLength	IFD0	int32u*
	ThumbnailLength	SubIFD	int32u*
	PreviewImageLength	MakerNotes	int32u*
	PreviewImageLength	IFD0	int32u*
	JpgFromRawLength	SubIFD	int32u*
	JpgFromRawLength	IFD2	int32u*
	OtherImageLength	SubIFD1	int32u*

	OtherImageLength	SubIFD2	int32u*
	OtherImageLength	–	no
0x0203	JPEGRestartInterval	–	no
0x0205	JPEGLosslessPredictors	–	no
0x0206	JPEGPointTransforms	–	no
0x0207	JPEGQTables	–	no
0x0208	JPEGDCTables	–	no
0x0209	JPEGACTables	–	no
0x0211	YCbCrCoefficients	IFD0	rational64u[3]!
0x0212	YCbCrSubSampling	IFD0	int16u[2]!
0x0213	YCbCrPositioning	IFD0	int16u!:
0x0214	ReferenceBlackWhite	IFD0	rational64u[6]
0x022f	StripRowCounts	–	no
0x02bc	ApplicationNotes	IFD0	XMP
0x0303	RenderingIntent	–	no
0x03e7	USPTOMiscellaneous	–	no
0x1000	RelatedImageFileFormat	InteropIFD	string!
0x1001	RelatedImageWidth	InteropIFD	int16u!
0x1002	RelatedImageHeight	InteropIFD	int16u!
0x4746	Rating	IFD0	int16u/
0x4747	XP_DIP_XML	–	no
0x4748	StitchInfo	–	Microsoft Stitch
0x4749	RatingPercent	IFD0	int16u/
0x5001	ResolutionXUnit	–	no
0x5002	ResolutionYUnit	–	no
0x5003	ResolutionXLengthUnit	–	no
0x5004	ResolutionYLengthUnit	–	no
0x5005	PrintFlags	–	no
0x5006	PrintFlagsVersion	–	no
0x5007	PrintFlagsCrop	–	no
0x5008	PrintFlagsBleedWidth	–	no
0x5009	PrintFlagsBleedWidthScale	–	no
0x500a	HalftoneLPI	–	no
0x500b	HalftoneLPIUnit	–	no
0x500c	HalftoneDegree	–	no
0x500d	HalftoneShape	–	no
0x500e	HalftoneMisc	–	no
0x500f	HalftoneScreen	–	no
0x5010	JPEGQuality	–	no
0x5011	GridSize	–	no
0x5012	ThumbnailFormat	–	no
0x5013	ThumbnailWidth	–	no
0x5014	ThumbnailHeight	–	no
0x5015	ThumbnailColorDepth	–	no
0x5016	ThumbnailPlanes	–	no
0x5017	ThumbnailRawBytes	–	no
0x5018	ThumbnailLength	–	no
0x5019	ThumbnailCompressedSize	–	no
0x501a	ColorTransferFunction	–	no
0x501b	ThumbnailData	–	no
0x5020	ThumbnailImageWidth	–	no
0x5021	ThumbnailImageHeight	–	no
0x5022	ThumbnailBitsPerSample	–	no
0x5023	ThumbnailCompression	–	no
0x5024	ThumbnailPhotometricInterp	–	no
0x5025	ThumbnailDescription	–	no
0x5026	ThumbnailEquipMake	–	no
0x5027	ThumbnailEquipModel	–	no
0x5028	ThumbnailStripOffsets	–	no
0x5029	ThumbnailOrientation	–	no
0x502a	ThumbnailSamplesPerPixel	–	no
0x502b	ThumbnailRowsPerStrip	–	no
0x502c	ThumbnailStripByteCounts	–	no
0x502d	ThumbnailResolutionX	–	no
0x502e	ThumbnailResolutionY	–	no
0x502f	ThumbnailPlanarConfig	–	no
0x5030	ThumbnailResolutionUnit	–	no
0x5031	ThumbnailTransferFunction	–	no
0x5032	ThumbnailSoftware	–	no
0x5033	ThumbnailDateTime	–	no

```
0x5034   ThumbnailArtist                   -              no
0x5035   ThumbnailWhitePoint               -              no
0x5036   ThumbnailPrimaryChromaticities -               no
0x5037   ThumbnailYCbCrCoefficients  -                  no
0x5038   ThumbnailYCbCrSubsampling   -                  no
0x5039   ThumbnailYCbCrPositioning   -                  no
0x503a   ThumbnailRefBlackWhite            -              no
0x503b   ThumbnailCopyright                -              no
0x5090   LuminanceTable                    -              no
0x5091   ChrominanceTable                  -              no
0x5100   FrameDelay                        -              no
0x5101   LoopCount                         -              no
0x5102   GlobalPalette                     -              no
0x5103   IndexBackground                   -              no
0x5104   IndexTransparent                  -              no
0x5110   PixelUnits                        -              no
0x5111   PixelsPerUnitX                    -              no
0x5112   PixelsPerUnitY                    -              no
0x5113   PaletteHistogram                  -              no
0x7000   SonyRawFileType                   -              no
0x7010   SonyToneCurve                     -              no
0x7031   VignettingCorrection              SubIFD         int16s!
0x7032   VignettingCorrParams              SubIFD         int16s[17]!
0x7034   ChromaticAberrationCorrection SubIFD int16s!
0x7035   ChromaticAberrationCorrParams SubIFD int16s[33]!
0x7036   DistortionCorrection              SubIFD         int16s!
0x7037   DistortionCorrParams              SubIFD         int16s[17]!
0x7038   SonyRawImageSize                  SubIFD         int32u[2]!
0x7310   BlackLevel                        SubIFD         int16u[4]!
0x7313   WB_RGGBLevels                     SubIFD         int16s[4]!
0x74c7   SonyCropTopLeft                   SubIFD         int32u[2]!
0x74c8   SonyCropSize                      SubIFD         int32u[2]!
0x800d   ImageID                           -              no
0x80a3   WangTag1                          -              no
0x80a4   WangAnnotation                    -              no
0x80a5   WangTag3                          -              no
0x80a6   WangTag4                          -              no
0x80b9   ImageReferencePoints              -              no
0x80ba   RegionXformTackPoint              -              no
0x80bb   WarpQuadrilateral                 -              no
0x80bc   AffineTransformMat                -              no
0x80e3   Matteing                          -              no
0x80e4   DataType                          -              no
0x80e5   ImageDepth                        -              no
0x80e6   TileDepth                         -              no
0x8214   ImageFullWidth                    -              no
0x8215   ImageFullHeight                   -              no
0x8216   TextureFormat                     -              no
0x8217   WrapModes                         -              no
0x8218   FovCot                            -              no
0x8219   MatrixWorldToScreen               -              no
0x821a   MatrixWorldToCamera               -              no
0x827d   Model2                            -              no
0x828d   CFARepeatPatternDim               SubIFD         int16u[2]!
0x828e   CFAPattern2                       SubIFD         int8u[n]!
0x828f   BatteryLevel                      -              no
0x8290   KodakIFD                          -              Kodak IFD
0x8298   Copyright                         IFD0           string
0x829a   ExposureTime                      ExifIFD        rational64u
0x829d   FNumber                           ExifIFD        rational64u
0x82a5   MDFileTag                         -              no
0x82a6   MDScalePixel                      -              no
0x82a7   MDColorTable                      -              no
0x82a8   MDLabName                         -              no
0x82a9   MDSampleInfo                      -              no
0x82aa   MDPrepDate                        -              no
0x82ab   MDPrepTime                        -              no
0x82ac   MDFileUnits                       -              no
0x830e   PixelScale                        IFD0           double[3]
0x8335   AdventScale                       -              no
```

0x8336	AdventRevision	–	no
0x835c	UIC1Tag	–	no
0x835d	UIC2Tag	–	no
0x835e	UIC3Tag	–	no
0x835f	UIC4Tag	–	no
0x83bb	IPTC-NAA	IFD0	IPTC
0x847e	IntergraphPacketData	–	no
0x847f	IntergraphFlagRegisters	–	no
0x8480	IntergraphMatrix	IFD0	double[n]
0x8481	INGRReserved	–	no
0x8482	ModelTiePoint	IFD0	double[n]
0x84e0	Site	–	no
0x84e1	ColorSequence	–	no
0x84e2	IT8Header	–	no
0x84e3	RasterPadding	–	no
0x84e4	BitsPerRunLength	–	no
0x84e5	BitsPerExtendedRunLength	–	no
0x84e6	ColorTable	–	no
0x84e7	ImageColorIndicator	–	no
0x84e8	BackgroundColorIndicator	–	no
0x84e9	ImageColorValue	–	no
0x84ea	BackgroundColorValue	–	no
0x84eb	PixelIntensityRange	–	no
0x84ec	TransparencyIndicator	–	no
0x84ed	ColorCharacterization	–	no
0x84ee	HCUsage	–	no
0x84ef	TrapIndicator	–	no
0x84f0	CMYKEquivalent	–	no
0x8546	SEMInfo	IFD0	string
0x8568	AFCP_IPTC	–	IPTC
0x85b8	PixelMagicJBIGOptions	–	no
0x85d7	JPLCartoIFD	–	no
0x85d8	ModelTransform	IFD0	double[16]
0x8602	WB_GRGBLevels	–	no
0x8606	LeafData	–	Leaf
0x8649	PhotoshopSettings	IFD0	Photoshop
0x8769	ExifOffset	IFD0	EXIF
0x8773	ICC_Profile	IFD0	ICC_Profile
0x877f	TIFF_FXExtensions	–	no
0x8780	MultiProfiles	–	no
0x8781	SharedData	–	no
0x8782	T88Options	–	no
0x87ac	ImageLayer	–	no
0x87af	GeoTiffDirectory	IFD0	int16u[0.5]
0x87b0	GeoTiffDoubleParams	IFD0	double[0.125]
0x87b1	GeoTiffAsciiParams	IFD0	string
0x87be	JBIGOptions	–	no
0x8822	ExposureProgram	ExifIFD	int16u
0x8824	SpectralSensitivity	ExifIFD	string
0x8825	GPSInfo	IFD0	GPS
0x8827	ISO	ExifIFD	int16u[n]
0x8828	Opto-ElectricConvFactor	–	no
0x8829	Interlace	–	no
0x882a	TimeZoneOffset	ExifIFD	int16s[n]
0x882b	SelfTimerMode	ExifIFD	int16u
0x8830	SensitivityType	ExifIFD	int16u
0x8831	StandardOutputSensitivity	ExifIFD	int32u
0x8832	RecommendedExposureIndex	ExifIFD	int32u
0x8833	ISOSpeed	ExifIFD	int32u
0x8834	ISOSpeedLatitudeyyy	ExifIFD	int32u
0x8835	ISOSpeedLatitudezzz	ExifIFD	int32u
0x885c	FaxRecvParams	–	no
0x885d	FaxSubAddress	–	no
0x885e	FaxRecvTime	–	no
0x8871	FedexEDR	–	no
0x888a	LeafSubIFD	–	Leaf SubIFD
0x9000	ExifVersion	ExifIFD	undef:
0x9003	DateTimeOriginal	ExifIFD	string
0x9004	CreateDate	ExifIFD	string
0x9009	GooglePlusUploadCode	ExifIFD	undef[n]

```
0x9010    OffsetTime                ExifIFD    string
0x9011    OffsetTimeOriginal        ExifIFD    string
0x9012    OffsetTimeDigitized       ExifIFD    string
0x9101    ComponentsConfiguration   ExifIFD    undef[4]!:
0x9102    CompressedBitsPerPixel    ExifIFD    rational64u!
0x9201    ShutterSpeedValue         ExifIFD    rational64s
0x9202    ApertureValue             ExifIFD    rational64u
0x9203    BrightnessValue           ExifIFD    rational64s
0x9204    ExposureCompensation      ExifIFD    rational64s
0x9205    MaxApertureValue          ExifIFD    rational64u
0x9206    SubjectDistance           ExifIFD    rational64u
0x9207    MeteringMode              ExifIFD    int16u
0x9208    LightSource               ExifIFD    int16u
0x9209    Flash                     ExifIFD    int16u
0x920a    FocalLength               ExifIFD    rational64u
0x920b    FlashEnergy               -          no
0x920c    SpatialFrequencyResponse  -          no
0x920d    Noise                     -          no
0x920e    FocalPlaneXResolution     -          no
0x920f    FocalPlaneYResolution     -          no
0x9210    FocalPlaneResolutionUnit  -          no
0x9211    ImageNumber               ExifIFD    int32u
0x9212    SecurityClassification    ExifIFD    string
0x9213    ImageHistory              ExifIFD    string
0x9214    SubjectArea               ExifIFD    int16u[n]
0x9215    ExposureIndex             -          no
0x9216    TIFF-EPStandardID         -          no
0x9217    SensingMethod             -          no
0x923a    CIP3DataFile              -          no
0x923b    CIP3Sheet                 -          no
0x923c    CIP3Side                  -          no
0x923f    StoNits                   -          no
0x927c    MakerNoteApple            ExifIFD    Apple
          MakerNoteNikon            ExifIFD    Nikon
          MakerNoteCanon            ExifIFD    Canon
          MakerNoteCasio            ExifIFD    Casio
          MakerNoteCasio2           ExifIFD    Casio Type2
          MakerNoteDJIInfo          ExifIFD    DJI Info
          MakerNoteDJI              ExifIFD    DJI
          MakerNoteFLIR             ExifIFD    FLIR
          MakerNoteFujiFilm         ExifIFD    FujiFilm
          MakerNoteGE               ExifIFD    GE
          MakerNoteGE2              ExifIFD    FujiFilm
          MakerNoteHasselblad       ExifIFD    Unknown
          MakerNoteHP               ExifIFD    HP
          MakerNoteHP2              ExifIFD    HP Type2
          MakerNoteHP4              ExifIFD    HP Type4
          MakerNoteHP6              ExifIFD    HP Type6
          MakerNoteISL              ExifIFD    Unknown
          MakerNoteJVC              ExifIFD    JVC
          MakerNoteJVCText          ExifIFD    JVC Text
          MakerNoteKodak1a          ExifIFD    Kodak
          MakerNoteKodak1b          ExifIFD    Kodak
          MakerNoteKodak2           ExifIFD    Kodak Type2
          MakerNoteKodak3           ExifIFD    Kodak Type3
          MakerNoteKodak4           ExifIFD    Kodak Type4
          MakerNoteKodak5           ExifIFD    Kodak Type5
          MakerNoteKodak6a          ExifIFD    Kodak Type6
          MakerNoteKodak6b          ExifIFD    Kodak Type6
          MakerNoteKodak7           ExifIFD    Kodak Type7
          MakerNoteKodak8a          ExifIFD    Kodak Type8
          MakerNoteKodak8b          ExifIFD    Kodak Type8
          MakerNoteKodak8c          ExifIFD    Kodak Type8
          MakerNoteKodak9           ExifIFD    Kodak Type9
          MakerNoteKodak10          ExifIFD    Kodak Type10
          MakerNoteKodak11          ExifIFD    Kodak Type11
          MakerNoteKodak12          ExifIFD    Kodak Type11
          MakerNoteKodakUnknown     ExifIFD    Kodak Unknown
          MakerNoteKyocera          ExifIFD    Unknown
          MakerNoteMinolta          ExifIFD    Minolta
```

```
             MakerNoteMinolta2           ExifIFD      Olympus
             MakerNoteMinolta3           ExifIFD      undef
             MakerNoteMotorola           ExifIFD      Motorola
             MakerNoteNikon2             ExifIFD      Nikon Type2
             MakerNoteNikon3             ExifIFD      Nikon
             MakerNoteNintendo           ExifIFD      Nintendo
             MakerNoteOlympus            ExifIFD      Olympus
             MakerNoteOlympus2           ExifIFD      Olympus
             MakerNoteOlympus3           ExifIFD      Olympus
             MakerNoteLeica              ExifIFD      Panasonic
             MakerNoteLeica2             ExifIFD      Panasonic Leica2
             MakerNoteLeica3             ExifIFD      Panasonic Leica3
             MakerNoteLeica4             ExifIFD      Panasonic Leica4
             MakerNoteLeica5             ExifIFD      Panasonic Leica5
             MakerNoteLeica6             ExifIFD      Panasonic Leica6
             MakerNoteLeica7             ExifIFD      Panasonic Leica6
             MakerNoteLeica8             ExifIFD      Panasonic Leica5
             MakerNoteLeica9             ExifIFD      Panasonic Leica9
             MakerNoteLeica10            ExifIFD      Panasonic
             MakerNotePanasonic          ExifIFD      Panasonic
             MakerNotePanasonic2         ExifIFD      Panasonic Type2
             MakerNotePanasonic3         ExifIFD      Panasonic
             MakerNotePentax             ExifIFD      Pentax
             MakerNotePentax2            ExifIFD      Pentax Type2
             MakerNotePentax3            ExifIFD      Casio Type2
             MakerNotePentax4            ExifIFD      Pentax Type4
             MakerNotePentax5            ExifIFD      Pentax
             MakerNotePentax6            ExifIFD      Pentax S1
             MakerNotePhaseOne           ExifIFD      PhaseOne
             MakerNoteReconyx            ExifIFD      Reconyx
             MakerNoteReconyx2           ExifIFD      Reconyx Type2
             MakerNoteReconyx3           ExifIFD      Reconyx Type3
             MakerNoteRicohPentax        ExifIFD      Pentax
             MakerNoteRicoh              ExifIFD      Ricoh
             MakerNoteRicoh2             ExifIFD      Ricoh Type2
             MakerNoteRicohText          ExifIFD      Ricoh Text
             MakerNoteSamsung1a          ExifIFD      undef
             MakerNoteSamsung1b          ExifIFD      Samsung
             MakerNoteSamsung2           ExifIFD      Samsung Type2
             MakerNoteSanyo              ExifIFD      Sanyo
             MakerNoteSanyoC4            ExifIFD      Sanyo
             MakerNoteSanyoPatch         ExifIFD      Sanyo
             MakerNoteSigma              ExifIFD      Sigma
             MakerNoteSony               ExifIFD      Sony
             MakerNoteSony2              ExifIFD      Olympus
             MakerNoteSony3              ExifIFD      Olympus
             MakerNoteSony4              ExifIFD      Sony PIC
             MakerNoteSony5              ExifIFD      Sony
             MakerNoteSonyEricsson       ExifIFD      Sony Ericsson
             MakerNoteSonySRF            ExifIFD      Sony SRF
             MakerNoteUnknownText        ExifIFD      undef
             MakerNoteUnknownBinary      ExifIFD      undef
             MakerNoteUnknown            ExifIFD      Unknown
    0x9286   UserComment                 ExifIFD      undef
    0x9290   SubSecTime                  ExifIFD      string
    0x9291   SubSecTimeOriginal          ExifIFD      string
    0x9292   SubSecTimeDigitized         ExifIFD      string
    0x932f   MSDocumentText              -            no
    0x9330   MSPropertySetStorage        -            no
    0x9331   MSDocumentTextPosition      -            no
    0x935c   ImageSourceData             IFD0         Photoshop DocumentData
    0x9400   AmbientTemperature          ExifIFD      rational64s
    0x9401   Humidity                    ExifIFD      rational64u
    0x9402   Pressure                    ExifIFD      rational64u
    0x9403   WaterDepth                  ExifIFD      rational64s
    0x9404   Acceleration                ExifIFD      rational64u
    0x9405   CameraElevationAngle        ExifIFD      rational64s
    0x9999   XiaomiSettings              ExifIFD      JSON
    0x9a00   XiaomiModel                 ExifIFD      string!
    0x9c9b   XPTitle                     IFD0         int8u
```

0x9c9c	XPComment	IFD0	int8u
0x9c9d	XPAuthor	IFD0	int8u
0x9c9e	XPKeywords	IFD0	int8u
0x9c9f	XPSubject	IFD0	int8u
0xa000	FlashpixVersion	ExifIFD	undef:
0xa001	ColorSpace	ExifIFD	int16u:
0xa002	ExifImageWidth	ExifIFD	int16u:
0xa003	ExifImageHeight	ExifIFD	int16u:
0xa004	RelatedSoundFile	ExifIFD	string
0xa005	InteropOffset	-	EXIF
0xa010	SamsungRawPointersOffset	-	no
0xa011	SamsungRawPointersLength	-	no
0xa101	SamsungRawByteOrder	-	no
0xa102	SamsungRawUnknown?	-	no
0xa20b	FlashEnergy	ExifIFD	rational64u
0xa20c	SpatialFrequencyResponse	-	no
0xa20d	Noise	-	no
0xa20e	FocalPlaneXResolution	ExifIFD	rational64u
0xa20f	FocalPlaneYResolution	ExifIFD	rational64u
0xa210	FocalPlaneResolutionUnit	ExifIFD	int16u
0xa211	ImageNumber	-	no
0xa212	SecurityClassification	-	no
0xa213	ImageHistory	-	no
0xa214	SubjectLocation	ExifIFD	int16u[2]
0xa215	ExposureIndex	ExifIFD	rational64u
0xa216	TIFF-EPStandardID	-	no
0xa217	SensingMethod	ExifIFD	int16u
0xa300	FileSource	ExifIFD	undef
0xa301	SceneType	ExifIFD	undef
0xa302	CFAPattern	ExifIFD	undef
0xa401	CustomRendered	ExifIFD	int16u
0xa402	ExposureMode	ExifIFD	int16u
0xa403	WhiteBalance	ExifIFD	int16u
0xa404	DigitalZoomRatio	ExifIFD	rational64u
0xa405	FocalLengthIn35mmFormat	ExifIFD	int16u
0xa406	SceneCaptureType	ExifIFD	int16u
0xa407	GainControl	ExifIFD	int16u
0xa408	Contrast	ExifIFD	int16u
0xa409	Saturation	ExifIFD	int16u
0xa40a	Sharpness	ExifIFD	int16u
0xa40b	DeviceSettingDescription	-	no
0xa40c	SubjectDistanceRange	ExifIFD	int16u
0xa420	ImageUniqueID	ExifIFD	string
0xa430	OwnerName	ExifIFD	string
0xa431	SerialNumber	ExifIFD	string
0xa432	LensInfo	ExifIFD	rational64u[4]
0xa433	LensMake	ExifIFD	string
0xa434	LensModel	ExifIFD	string
0xa435	LensSerialNumber	ExifIFD	string
0xa436	ImageTitle	ExifIFD	string
0xa437	Photographer	ExifIFD	string
0xa438	ImageEditor	ExifIFD	string
0xa439	CameraFirmware	ExifIFD	string
0xa43a	RAWDevelopingSoftware	ExifIFD	string
0xa43b	ImageEditingSoftware	ExifIFD	string
0xa43c	MetadataEditingSoftware	ExifIFD	string
0xa460	CompositeImage	ExifIFD	int16u
0xa461	CompositeImageCount	ExifIFD	int16u[2]
0xa462	CompositeImageExposureTimes	ExifIFD	undef
0xa480	GDALMetadata	IFD0	string
0xa481	GDALNoData	IFD0	string
0xa500	Gamma	ExifIFD	rational64u
0xafc0	ExpandSoftware	-	no
0xafc1	ExpandLens	-	no
0xafc2	ExpandFilm	-	no
0xafc3	ExpandFilterLens	-	no
0xafc4	ExpandScanner	-	no
0xafc5	ExpandFlashLamp	-	no
0xb4c3	HasselbladRawImage	-	no
0xbc01	PixelFormat	-	no

```
0xbc02    Transformation              -            no
0xbc03    Uncompressed                -            no
0xbc04    ImageType                   -            no
0xbc80    ImageWidth                  -            no
0xbc81    ImageHeight                 -            no
0xbc82    WidthResolution             -            no
0xbc83    HeightResolution            -            no
0xbcc0    ImageOffset                 -            no
0xbcc1    ImageByteCount              -            no
0xbcc2    AlphaOffset                 -            no
0xbcc3    AlphaByteCount              -            no
0xbcc4    ImageDataDiscard            -            no
0xbcc5    AlphaDataDiscard            -            no
0xc427    OceScanjobDesc              -            no
0xc428    OceApplicationSelector      -            no
0xc429    OceIDNumber                 -            no
0xc42a    OceImageLogic               -            no
0xc44f    Annotations                 -            no
0xc4a5    PrintIM                     IFD0         PrintIM
0xc519    HasselbladXML               -            PLIST
0xc51b    HasselbladExif              -            EXIF
0xc573    OriginalFileName            -            no
0xc580    USPTOOriginalContentType    -            no
0xc5e0    CR2CFAPattern               -            no
0xc612    DNGVersion                  IFD0         int8u[4]!
0xc613    DNGBackwardVersion          IFD0         int8u[4]!
0xc614    UniqueCameraModel           IFD0         string
0xc615    LocalizedCameraModel        IFD0         string
0xc616    CFAPlaneColor               SubIFD       no
0xc617    CFALayout                   SubIFD       no
0xc618    LinearizationTable          SubIFD       int16u[n]!
0xc619    BlackLevelRepeatDim         SubIFD       int16u[2]!
0xc61a    BlackLevel                  SubIFD       rational64u[n]!
0xc61b    BlackLevelDeltaH            SubIFD       rational64s[n]!
0xc61c    BlackLevelDeltaV            SubIFD       rational64s[n]!
0xc61d    WhiteLevel                  SubIFD       int32u[n]!
0xc61e    DefaultScale                SubIFD       rational64u[2]!
0xc61f    DefaultCropOrigin           SubIFD       int32u[2]!
0xc620    DefaultCropSize             SubIFD       int32u[2]!
0xc621    ColorMatrix1                IFD0         rational64s[n]!
0xc622    ColorMatrix2                IFD0         rational64s[n]!
0xc623    CameraCalibration1          IFD0         rational64s[n]!
0xc624    CameraCalibration2          IFD0         rational64s[n]!
0xc625    ReductionMatrix1            IFD0         rational64s[n]!
0xc626    ReductionMatrix2            IFD0         rational64s[n]!
0xc627    AnalogBalance               IFD0         rational64u[n]!
0xc628    AsShotNeutral               IFD0         rational64u[n]!
0xc629    AsShotWhiteXY               IFD0         rational64u[2]!
0xc62a    BaselineExposure            IFD0         rational64s!
0xc62b    BaselineNoise               IFD0         rational64u!
0xc62c    BaselineSharpness           IFD0         rational64u!
0xc62d    BayerGreenSplit             SubIFD       int32u!
0xc62e    LinearResponseLimit         IFD0         rational64u!
0xc62f    CameraSerialNumber          IFD0         string
0xc630    DNGLensInfo                 IFD0         rational64u[4]
0xc631    ChromaBlurRadius            SubIFD       rational64u!
0xc632    AntiAliasStrength           SubIFD       rational64u!
0xc633    ShadowScale                 IFD0         rational64u!
0xc634    SR2Private                  IFD0         Sony SR2Private
          DNGAdobeData                IFD0         DNG AdobeData
          MakerNotePentax             IFD0         Pentax
          MakerNotePentax5            IFD0         Pentax
          MakerNoteRicohPentax        IFD0         Pentax
          MakerNoteDJIInfo            IFD0         DJI Info
          DNGPrivateData              IFD0         int8u!
0xc635    MakerNoteSafety             IFD0         int16u
0xc640    RawImageSegmentation        -            no
0xc65a    CalibrationIlluminant1      IFD0         int16u!
0xc65b    CalibrationIlluminant2      IFD0         int16u!
0xc65c    BestQualityScale            SubIFD       rational64u!
```

```
0xc65d   RawDataUniqueID           IFD0      int8u[16]!
0xc660   AliasLayerMetadata        -         no
0xc68b   OriginalRawFileName       IFD0      string!
0xc68c   OriginalRawFileData       IFD0      DNG OriginalRaw
0xc68d   ActiveArea                SubIFD    int32u[4]!
0xc68e   MaskedAreas               SubIFD    int32u[n]!
0xc68f   AsShotICCProfile          IFD0      ICC_Profile
0xc690   AsShotPreProfileMatrix    IFD0      rational64s[n]!
0xc691   CurrentICCProfile         IFD0      ICC_Profile
0xc692   CurrentPreProfileMatrix   IFD0      rational64s[n]!
0xc6bf   ColorimetricReference     IFD0      int16u!
0xc6c5   SRawType                  IFD0      no
0xc6d2   PanasonicTitle            IFD0      undef
0xc6d3   PanasonicTitle2           IFD0      undef
0xc6f3   CameraCalibrationSig      IFD0      string!
0xc6f4   ProfileCalibrationSig     IFD0      string!
0xc6f5   ProfileIFD                IFD0      EXIF
0xc6f6   AsShotProfileName         IFD0      string!
0xc6f7   NoiseReductionApplied     SubIFD    rational64u!
0xc6f8   ProfileName               IFD0      string!
0xc6f9   ProfileHueSatMapDims      IFD0      int32u[3]!
0xc6fa   ProfileHueSatMapData1     IFD0      float[n]!
0xc6fb   ProfileHueSatMapData2     IFD0      float[n]!
0xc6fc   ProfileToneCurve          IFD0      float[n]!
0xc6fd   ProfileEmbedPolicy        IFD0      int32u!
0xc6fe   ProfileCopyright          IFD0      string!
0xc714   ForwardMatrix1            IFD0      rational64s[n]!
0xc715   ForwardMatrix2            IFD0      rational64s[n]!
0xc716   PreviewApplicationName    IFD0      string!
0xc717   PreviewApplicationVersion IFD0      string!
0xc718   PreviewSettingsName       IFD0      string!
0xc719   PreviewSettingsDigest     IFD0      int8u!
0xc71a   PreviewColorSpace         IFD0      int32u!
0xc71b   PreviewDateTime           IFD0      string!
0xc71c   RawImageDigest            IFD0      int8u[16]!
0xc71d   OriginalRawFileDigest     IFD0      int8u[16]!
0xc71e   SubTileBlockSize          -         no
0xc71f   RowInterleaveFactor       -         no
0xc725   ProfileLookTableDims      IFD0      int32u[3]!
0xc726   ProfileLookTableData      IFD0      float[n]!
0xc740   OpcodeList1               SubIFD    undef~!
0xc741   OpcodeList2               SubIFD    undef~!
0xc74e   OpcodeList3               SubIFD    undef~!
0xc761   NoiseProfile              SubIFD    double[n]!
0xc763   TimeCodes                 IFD0      int8u[n]
0xc764   FrameRate                 IFD0      rational64s
0xc772   TStop                     IFD0      rational64u[n]
0xc789   ReelName                  IFD0      string
0xc791   OriginalDefaultFinalSize  IFD0      int32u[2]!
0xc792   OriginalBestQualitySize   IFD0      int32u[2]!
0xc793   OriginalDefaultCropSize   IFD0      rational64u[2]!
0xc7a1   CameraLabel               IFD0      string
0xc7a3   ProfileHueSatMapEncoding  IFD0      int32u!
0xc7a4   ProfileLookTableEncoding  IFD0      int32u!
0xc7a5   BaselineExposureOffset    IFD0      rational64s!
0xc7a6   DefaultBlackRender        IFD0      int32u!
0xc7a7   NewRawImageDigest         IFD0      int8u[16]!
0xc7a8   RawToPreviewGain          IFD0      double!
0xc7aa   CacheVersion              SubIFD2   int32u!
0xc7b5   DefaultUserCrop           SubIFD    rational64u[4]!
0xc7d5   NikonNEFInfo              -         Nikon NEFInfo
0xc7e9   DepthFormat               IFD0      int16u!
0xc7ea   DepthNear                 IFD0      rational64u!
0xc7eb   DepthFar                  IFD0      rational64u!
0xc7ec   DepthUnits                IFD0      int16u!
0xc7ed   DepthMeasureType          IFD0      int16u!
0xc7ee   EnhanceParams             IFD0      string!
0xcd2d   ProfileGainTableMap       SubIFD    undef!
0xcd2e   SemanticName              SubIFD    no
0xcd30   SemanticInstanceID        SubIFD    no
```

```
0xcd31   CalibrationIlluminant3      IFD0        int16u!
0xcd32   CameraCalibration3          IFD0        rational64s[n]!
0xcd33   ColorMatrix3                IFD0        rational64s[n]!
0xcd34   ForwardMatrix3              IFD0        rational64s[n]!
0xcd35   IlluminantData1             IFD0        undef!
0xcd36   IlluminantData2             IFD0        undef!
0xcd37   IlluminantData3             IFD0        undef!
0xcd38   MaskSubArea                 SubIFD      no
0xcd39   ProfileHueSatMapData3       IFD0        float[n]!
0xcd3a   ReductionMatrix3            IFD0        rational64s[n]!
0xcd3f   RGBTables                   IFD0        undef!
0xcd40   ProfileGainTableMap2        IFD0        undef!
0xcd41   JUMBF                       -           Jpeg2000
0xcd43   ColumnInterleaveFactor      SubIFD      int32u!
0xcd44   ImageSequenceInfo           IFD0        DNG ImageSeq
0xcd46   ImageStats                  IFD0        undef!
0xcd47   ProfileDynamicRange         IFD0        DNG ProfileDynamicRange
0xcd48   ProfileGroupName            IFD0        string!
0xcd49   JXLDistance                 IFD0        float
0xcd4a   JXLEffort                   IFD0        int32u
0xcd4b   JXLDecodeSpeed              IFD0        int32u
0xcea1   SEAL                        IFD0        XMP SEAL
0xea1c   Padding                     ExifIFD     undef!
0xea1d   OffsetSchema                ExifIFD     int32s!
0xfde8   OwnerName                   ExifIFD     string/
0xfde9   SerialNumber                ExifIFD     string/
0xfdea   Lens                        ExifIFD     string/
0xfe00   KDC_IFD                     -           Kodak KDC_IFD
0xfe4c   RawFile                     ExifIFD     string/
0xfe4d   Converter                   ExifIFD     string/
0xfe4e   WhiteBalance                ExifIFD     string/
0xfe51   Exposure                    ExifIFD     string/
0xfe52   Shadows                     ExifIFD     string/
0xfe53   Brightness                  ExifIFD     string/
0xfe54   Contrast                    ExifIFD     string/
0xfe55   Saturation                  ExifIFD     string/
0xfe56   Sharpness                   ExifIFD     string/
0xfe57   Smoothness                  ExifIFD     string/
0xfe58   MoireFilter                 ExifIFD     string/
```

IPTC Tags

The tags listed below are part of the International Press
Telecommunications Council (IPTC) and the Newspaper Association of
America (NAA) Information Interchange Model (IIM). This is an older
meta information format, slowly being phased out in favor of XMP -- the
newer IPTCCore specification uses XMP format. IPTC information may be
found in JPG, TIFF, PNG, MIFF, PS, PDF, PSD, XCF and DNG images.

IPTC information is separated into different records, each of which has
its own set of tags. See
<http://www.iptc.org/std/IIM/4.1/specification/IIMV4.1.pdf> for the
official IPTC IIM specification.

This specification dictates a length for ASCII ("string" or "digits")
and binary ("undef") values. These lengths are given in square
brackets after the **Writable** format name. For tags where a range of
lengths is allowed, the minimum and maximum lengths are separated by a
comma within the brackets. When writing, ExifTool issues a minor
warning and truncates the value if it is longer than allowed by the
IPTC specification. Minor errors may be ignored with the
IgnoreMinorErrors (-m) option, allowing longer values to be written,
but beware that values like this may cause problems for some other IPTC
readers. ExifTool will happily read IPTC values of any length.

Separate IPTC date and time tags may be written with a combined
date/time value and ExifTool automagically takes the appropriate part
of the date/time string depending on whether a date or time tag is
being written. This is very useful when copying date/time values to
IPTC from other metadata formats.

IPTC time values include a timezone offset. If written with a value
which doesn't include a timezone then the current local timezone offset
is used (unless written with a combined date/time, in which case the
local timezone offset at the specified date/time is used, which may be
different due to changes in daylight savings time).

Note that it is not uncommon for IPTC to be found in non-standard
locations in JPEG and TIFF-based images. When reading, the family 1
group name has a number added for non-standard IPTC ("IPTC2", "IPTC3",
etc), but when writing only "IPTC" may be specified as the group. To
keep the IPTC consistent, ExifTool updates tags in all existing IPTC
locations, but will create a new IPTC group only in the standard
location.

Record	Tag Name	Writable
1	IPTCEnvelope	IPTC EnvelopeRecord
2	IPTCApplication	IPTC ApplicationRecord
3	IPTCNewsPhoto	IPTC NewsPhoto
7	IPTCPreObjectData	IPTC PreObjectData
8	IPTCObjectData	IPTC ObjectData
9	IPTCPostObjectData	IPTC PostObjectData
240	IPTCFotoStation	IPTC FotoStation

IPTC EnvelopeRecord Tags

Tag ID	Tag Name	Writable
0	EnvelopeRecordVersion	int16u:
5	Destination	string[0,1024]+
20	FileFormat	int16u
22	FileVersion	int16u
30	ServiceIdentifier	string[0,10]
40	EnvelopeNumber	digits[8]
50	ProductID	string[0,32]+
60	EnvelopePriority	digits[1]
70	DateSent	digits[8]
80	TimeSent	string[11]
90	CodedCharacterSet	string[0,32]!
100	UniqueObjectName	string[14,80]
120	ARMIdentifier	int16u
122	ARMVersion	int16u

IPTC ApplicationRecord Tags

Tag ID	Tag Name	Writable
0	ApplicationRecordVersion	int16u:
3	ObjectTypeReference	string[3,67]
4	ObjectAttributeReference	string[4,68]+
5	ObjectName	string[0,64]
7	EditStatus	string[0,64]
8	EditorialUpdate	digits[2]
10	Urgency	digits[1]
12	SubjectReference	string[13,236]+
15	Category	string[0,3]
20	SupplementalCategories	string[0,32]+
22	FixtureIdentifier	string[0,32]
25	Keywords	string[0,64]+
26	ContentLocationCode	string[3]+
27	ContentLocationName	string[0,64]+
30	ReleaseDate	digits[8]
35	ReleaseTime	string[11]
37	ExpirationDate	digits[8]
38	ExpirationTime	string[11]
40	SpecialInstructions	string[0,256]
42	ActionAdvised	digits[2]
45	ReferenceService	string[0,10]+
47	ReferenceDate	digits[8]+
50	ReferenceNumber	digits[8]+

```
  55    DateCreated                           digits[8]
  60    TimeCreated                           string[11]
  62    DigitalCreationDate                   digits[8]
  63    DigitalCreationTime                   string[11]
  65    OriginatingProgram                    string[0,32]
  70    ProgramVersion                        string[0,10]
  75    ObjectCycle                           string[1]
  80    By-line                               string[0,32]+
  85    By-lineTitle                          string[0,32]+
  90    City                                  string[0,32]
  92    Sub-location                          string[0,32]
  95    Province-State                        string[0,32]
 100    Country-PrimaryLocationCode           string[3]
 101    Country-PrimaryLocationName           string[0,64]
 103    OriginalTransmissionReference         string[0,32]
 105    Headline                              string[0,256]
 110    Credit                                string[0,32]
 115    Source                                string[0,32]
 116    CopyrightNotice                       string[0,128]
 118    Contact                               string[0,128]+
 120    Caption-Abstract                      string[0,2000]
 121    LocalCaption                          string[0,256]
 122    Writer-Editor                         string[0,32]+
 125    RasterizedCaption                     undef[7360]
 130    ImageType                             string[2]
 131    ImageOrientation                      string[1]
 135    LanguageIdentifier                    string[2,3]
 150    AudioType                             string[2]
 151    AudioSamplingRate                     digits[6]
 152    AudioSamplingResolution               digits[2]
 153    AudioDuration                         digits[6]
 154    AudioOutcue                           string[0,64]
 184    JobID                                 string[0,64]
 185    MasterDocumentID                      string[0,256]
 186    ShortDocumentID                       string[0,64]
 187    UniqueDocumentID                      string[0,128]
 188    OwnerID                               string[0,128]
 200    ObjectPreviewFileFormat               int16u
 201    ObjectPreviewFileVersion              int16u
 202    ObjectPreviewData                     undef[0,256000]
 221    Prefs                                 string[0,64]
 225    ClassifyState                         string[0,64]
 228    SimilarityIndex                       string[0,32]
 230    DocumentNotes                         string[0,1024]
 231    DocumentHistory                       string[0,256]
 232    ExifCameraInfo                        string[0,4096]
 255    CatalogSets                           string[0,256]+
```

IPTC NewsPhoto Tags

```
  Tag ID   Tag Name                           Writable
  ------   --------                           --------
     0     NewsPhotoVersion                   int16u:
    10     IPTCPictureNumber                  string[16]
    20     IPTCImageWidth                     int16u
    30     IPTCImageHeight                    int16u
    40     IPTCPixelWidth                     int16u
    50     IPTCPixelHeight                    int16u
    55     SupplementalType                   int8u
    60     ColorRepresentation                int16u
    64     InterchangeColorSpace              int8u
    65     ColorSequence                      int8u
    66     ICC_Profile                        no
    70     ColorCalibrationMatrix             no
    80     LookupTable                        no
    84     NumIndexEntries                    int16u
    85     ColorPalette                       no
    86     IPTCBitsPerSample                  int8u
    90     SampleStructure                    int8u
   100     ScanningDirection                  int8u
```

```
    102    IPTCImageRotation                  int8u
    110    DataCompressionMethod              int32u
    120    QuantizationMethod                 int8u
    125    EndPoints                          no
    130    ExcursionTolerance                 int8u
    135    BitsPerComponent                   int8u
    140    MaximumDensityRange                int16u
    145    GammaCompensatedValue              int16u
```

IPTC PreObjectData Tags

```
  Tag ID   Tag Name                         Writable
  ------   --------                         --------
    10     SizeMode                         no
    20     MaxSubfileSize                   no
    90     ObjectSizeAnnounced              no
    95     MaximumObjectSize                no
```

IPTC ObjectData Tags

```
  Tag ID   Tag Name                         Writable
  ------   --------                         --------
    10     SubFile                          no+
```

IPTC PostObjectData Tags

```
  Tag ID   Tag Name                         Writable
  ------   --------                         --------
    10     ConfirmedObjectSize              no
```

IPTC FotoStation Tags

```
  Tag ID   Tag Name                         Writable
  ------   --------                         --------
  [no tags known]
```

XMP Tags

XMP stands for "Extensible Metadata Platform", an XML/RDF-based
metadata format which is being pushed by Adobe. Information in this
format can be embedded in many different image file types including
JPG, JP2, TIFF, GIF, EPS, PDF, PSD, IND, INX, PNG, DJVU, SVG, PGF,
MIFF, XCF, CRW, DNG and a variety of proprietary TIFF-based RAW images,
as well as MOV, AVI, ASF, WMV, FLV, SWF and MP4 videos, and WMA and
audio formats supporting ID3v2 information.

The XMP Tag ID's aren't listed because in most cases they are identical
to the Tag Name (aside from differences in case). Tags with different
ID's are mentioned in the Notes column of the HTML version of this
document.

All XMP information is stored as character strings. The Writable
column specifies the information format: "string" is an unformatted
string, "integer" is a string of digits (possibly beginning with a '+'
or '-'), "real" is a floating point number, "rational" is entered as a
floating point number but stored as two "integer" strings separated by
a '/' character, "date" is a date/time string entered in the format
"YYYY:mm:dd HH:MM:SS[.ss][+/-HH:MM]" but some partial date/time formats
are also accepted (see <https://exiftool.org/faq.html#Q5>), "boolean"
is either "True" or "False" (but "true" and "false" may be written as a
ValueConv value for compatibility with non-conforming applications),
"struct" indicates a structured tag, and "lang-alt" is a tag that
supports alternate languages.

When reading, "struct" tags are extracted only if the Struct (-struct)
option is used. Otherwise the corresponding Flattened tags, indicated
by an underline ("_") after the Writable type, are extracted. When
copying, by default both structured and flattened tags are available,
but the flattened tags are considered "unsafe" so they aren't copied
unless specified explicitly. The Struct option may be disabled by
setting Struct to 0 via the API or with --struct on the command line to

copy only flattened tags, or enabled by setting Struct to 1 via the API
or with -struct on the command line to copy only as structures. When
writing, the Struct option has no effect, and both structured and
flattened tags may be written. See <https://exiftool.org/struct.html>
for more details.

Individual languages for "lang-alt" tags are accessed by suffixing the
tag name with a '-', followed by an RFC 3066 language code (eg.
"XMP:Title-fr", or "Rights-en-US"). (See
<http://www.ietf.org/rfc/rfc3066.txt> for the RFC 3066 specification.)
A "lang-alt" tag with no language code accesses the "x-default"
language, but causes other languages for this tag to be deleted when
writing. The "x-default" language code may be specified when writing
to preserve other existing languages (eg.
"XMP-dc:Description-x-default"). When reading, "x-default" is not
specified.

The XMP tags are organized according to schema **Namespace** in the
following tables. The ExifTool family 1 group names are derived from
the namespace prefixes by adding a leading "XMP-" (eg. "XMP-dc"). A
few of the longer prefixes have been shortened (as mentioned in the
documentation below) to avoid excessively long ExifTool group names.
The tags of any namespace may be deleted as a group by specifying the
family 1 group name (eg. "-XMP-dc:all=" on the command line). This
includes namespaces which are not pre-defined by ExifTool.

In cases where a tag name exists in more than one namespace, less
common namespaces are avoided when writing. However, a specific
namespace may be written by providing a family 1 group name for the tag
(eg. XMP-crs:Contrast or XMP-exif:Contrast). When deciding on which
tags to add to an image, using standard schemas such as dc, xmp,
iptcCore and iptcExt is recommended if possible.

For structures, the heading of the first column is **Field Name**. Field
names are very similar to tag names, except they are used to identify
fields inside structures instead of stand-alone tags. See
<https://exiftool.org/struct.html#Fields> for more details.

ExifTool will extract XMP information even if it is not listed in these
tables, but other tags are not writable unless added as user-defined
tags in the ExifTool config file. For example, the "pdfx" namespace
doesn't have a predefined set of tag names because it is used to store
application-defined PDF information, so although this information will
be extracted, it is only writable if the corresponding user-defined
tags have been created.

The tables below list tags from the official XMP specification (with an
underlined **Namespace** in the HTML version of this documentation), as
well as extensions from various other sources. See
<http://www.adobe.com/devnet/xmp/> for the official XMP specification.

Namespace	Writable
aas	XMP aas
acdsee	XMP acdsee
acdsee-rs	XMP ACDSeeRegions
album	XMP Album
apdi	XMP apdi
apple-fi	XMP apple_fi
ast	Nikon ast
aux	XMP aux
cc	XMP cc
cell	XMP cell
crd	XMP crd
creatorAtom	XMP creatorAtom
crs	XMP crs
dc	XMP dc
Device	XMP Device
dex	XMP dex
DICOM	XMP DICOM

digiKam	XMP digiKam
drone-dji	DJI XMP
dwc	DarwinCore
et	XMP ExifTool
exif	XMP exif
exifEX	XMP exifEX
expressionmedia	XMP ExpressionMedia
extensis	XMP extensis
fpv	XMP fpv
GAudio	XMP GAudio
GCamera	XMP GCamera
GContainer	XMP GContainer
GCreations	XMP GCreations
GDepth	XMP GDepth
getty	XMP GettyImages
GFocus	XMP GFocus
GImage	XMP GImage
GPano	XMP GPano
GSpherical	XMP GSpherical
hdr	XMP hdr
HDRGainMap	XMP HDRGainMap
hdrgm	XMP hdrgm
ics	XMP ics
iptcCore	XMP iptcCore
iptcExt	XMP iptcExt
LImage	XMP LImage
lr	XMP Lightroom
mediapro	XMP MediaPro
microsoft	Microsoft XMP
MP	Microsoft MP
MP1	Microsoft MP1
mwg-coll	MWG Collections
mwg-kw	MWG Keywords
mwg-rs	MWG Regions
nine	Nikon nine
panorama	XMP panorama
pdf	XMP pdf
pdfx	XMP pdfx
photomech	PhotoMechanic XMP
photoshop	XMP photoshop
PixelLive	XMP PixelLive
plus	PLUS XMP
pmi	XMP pmi
prism	XMP prism
prl	XMP prl
prm	XMP prm
pur	XMP pur
rdf	XMP rdf
sdc	Nikon sdc
seal	XMP seal
swf	XMP swf
tiff	XMP tiff
x	XMP x
xmp	XMP xmp
xmpBJ	XMP xmpBJ
xmpDM	XMP xmpDM
xmpDSA	Panasonic DSA
xmpMM	XMP xmpMM
xmpNote	XMP xmpNote
xmpPLUS	XMP xmpPLUS
xmpRights	XMP xmpRights
xmpTPg	XMP xmpTPg

XMP aas Tags

Apple Adjustment Settings used by iPhone/iPad.

These tags belong to the ExifTool XMP-aas family 1 group.

Tag Name	Writable

```
--------                                   --------
AffineA                                    real
AffineB                                    real
AffineC                                    real
AffineD                                    real
AffineX                                    real
AffineY                                    real
CropH                                      integer/
CropW                                      integer/
CropX                                      integer/
CropY                                      integer/
Curve0x                                    real
Curve0y                                    real
Curve1x                                    real
Curve1y                                    real
Curve2x                                    real
Curve2y                                    real
Curve3x                                    real
Curve3y                                    real
Curve4x                                    real
Curve4y                                    real
FaceBalanceOrigI                           real
FaceBalanceOrigQ                           real
FaceBalanceStrength                        real
FaceBalanceWarmth                          real
Highlights                                 real/
Shadows                                    real/
Vibrance                                   real/
```

XMP acdsee Tags

ACD Systems ACDSee namespace tags.

(A note to software developers: Re-inventing your own private tags
instead of using the equivalent tags in standard XMP namespaces defeats
one of the most valuable features of metadata: interoperability. Your
applications mumble to themselves instead of speaking out for the rest
of the world to hear.)

These tags belong to the ExifTool XMP-acdsee family 1 group.

```
  Tag Name                                 Writable
  --------                                 --------
  Author                                   string/
  Caption                                  string/
  Categories                               string/
  Collections                              string/
  DateTime                                 date/
  DPP                                      lang-alt/
  EditStatus                               string/
  FixtureIdentifier                        string/
  Keywords                                 string/+
  Notes                                    string/
  ObjectCycle                              string/
  OriginatingProgram                       string/
  Rating                                   real/
  Rawrppused                               boolean/
  ReleaseDate                              string/
  ReleaseTime                              string/
  RPP                                      lang-alt/
  Snapshots                                string/+
  Tagged                                   boolean/
```

XMP ACDSeeRegions Tags

These tags belong to the ExifTool XMP-acdsee-rs family 1 group.

```
  Tag Name                                 Writable
  --------                                 --------
  RegionInfoACDSee                         ACDSeeRegionInfo Struct
```

```
ACDSeeRegionAppliedToDimensions          ACDSeeDimensions Struct_
ACDSeeRegionAppliedToDimensionsH         real/_
ACDSeeRegionAppliedToDimensionsUnit      string/_
ACDSeeRegionAppliedToDimensionsW         real/_
ACDSeeRegion                             ACDSeeRegion Struct_+
ACDSeeRegionALGArea                      ACDSeeArea Struct_+
ACDSeeRegionALGAreaH                     real/_+
ACDSeeRegionALGAreaW                     real/_+
ACDSeeRegionALGAreaX                     real/_+
ACDSeeRegionALGAreaY                     real/_+
ACDSeeRegionDLYArea                      ACDSeeArea Struct_+
ACDSeeRegionDLYAreaH                     real/_+
ACDSeeRegionDLYAreaW                     real/_+
ACDSeeRegionDLYAreaX                     real/_+
ACDSeeRegionDLYAreaY                     real/_+
ACDSeeRegionName                         string/_+
ACDSeeRegionNameAssignType               string/_+
ACDSeeRegionType                         string/_+
```

XMP ACDSeeRegionInfo Struct

```
  Field Name                             Writable
  ----------                             --------
  AppliedToDimensions                    ACDSeeDimensions Struct
  RegionList                             ACDSeeRegion Struct+
```

XMP ACDSeeDimensions Struct

```
  Field Name                             Writable
  ----------                             --------
  H                                      real
  Unit                                   string
  W                                      real
```

XMP ACDSeeRegion Struct

```
  Field Name                             Writable
  ----------                             --------
  ALGArea                                ACDSeeArea Struct
  DLYArea                                ACDSeeArea Struct
  Name                                   string
  NameAssignType                         string
  Type                                   string
```

XMP ACDSeeArea Struct

```
  Field Name                             Writable
  ----------                             --------
  H                                      real
  W                                      real
  X                                      real
  Y                                      real
```

XMP Album Tags

Adobe Album namespace tags.

These tags belong to the ExifTool XMP-album family 1 group.

```
  Tag Name                               Writable
  --------                               --------
  Notes                                  string
```

XMP apdi Tags

Used in Apple HDR GainMap images.

These tags belong to the ExifTool XMP-apdi family 1 group.

```
  Tag Name                               Writable
```

```
   --------                                    --------
   AuxiliaryImageType                          string
   NativeFormat                                string
   StoredFormat                                string
```

XMP apple_fi Tags

Face information tags written by the Apple iPhone 5 inside the mwg-rs
RegionExtensions.

These tags belong to the ExifTool XMP-apple-fi family 1 group.

```
   Tag Name                                    Writable
   --------                                    --------
   AngleInfoRoll                               integer
   AngleInfoYaw                                integer
   ConfidenceLevel                             integer
   FaceID                                      integer
   TimeStamp                                   integer
```

XMP aux Tags

Adobe-defined auxiliary EXIF tags. This namespace existed in the XMP
specification until it was dropped in 2012, presumably due to the
introduction of the EXIF 2.3 for XMP specification and the exifEX
namespace at this time. For this reason, tags below with equivalents
in the exifEX namespace are avoided when writing.

These tags belong to the ExifTool XMP-aux family 1 group.

```
   Tag Name                                    Writable
   --------                                    --------
   ApproximateFocusDistance                    rational
   DistortionCorrectionAlreadyApplied          boolean
   EnhanceDenoiseAlreadyApplied                boolean
   EnhanceDenoiseLumaAmount                    string
   EnhanceDenoiseVersion                       string
   EnhanceDetailsAlreadyApplied                boolean
   EnhanceDetailsVersion                       string
   EnhanceSuperResolutionAlreadyApplied        boolean
   EnhanceSuperResolutionScale                 rational
   EnhanceSuperResolutionVersion               string
   Firmware                                    string
   FlashCompensation                           rational
   ImageNumber                                 string
   IsMergedHDR                                 boolean
   IsMergedPanorama                            boolean
   LateralChromaticAberrationCorrectionAlreadyApplied boolean
   Lens                                        string
   LensDistortInfo                             string
   LensID                                      string
   LensInfo                                    string/
   LensSerialNumber                            string/
   NeutralDensityFactor                        string
   OwnerName                                   string/
   SerialNumber                                string/
   VignetteCorrectionAlreadyApplied            boolean
```

XMP cc Tags

Creative Commons namespace tags. Note that the CC specification for
XMP is non-existent, so ExifTool must make some assumptions about the
format of the specific properties in XMP (see
<http://creativecommons.org/ns>).

These tags belong to the ExifTool XMP-cc family 1 group.

```
   Tag Name                                    Writable
   --------                                    --------
   AttributionName                             string
```

```
AttributionURL                          string
DeprecatedOn                            date
Jurisdiction                            string
LegalCode                               string
License                                 string
MorePermissions                         string
Permits                                 string+
Prohibits                               string+
Requires                                string+
UseGuidelines                           string
```

XMP cell Tags

Location tags written by some Sony Ericsson phones.

These tags belong to the ExifTool XMP-cell family 1 group.

```
  Tag Name                              Writable
  --------                              --------
  CellTowerID                           string
  CellGlobalID                          string
  LocationAreaCode                      string
  MobileCountryCode                     string
  MobileNetworkCode                     string
  CellR                                 string
```

XMP crd Tags

Adobe Camera Raw Defaults tags.

These tags belong to the ExifTool XMP-crd family 1 group.

```
  Tag Name                              Writable
  --------                              --------
  AlreadyApplied                        boolean/
  AutoBrightness                        boolean/
  AutoContrast                          boolean/
  AutoExposure                          boolean/
  AutoLateralCA                         integer/
  AutoShadows                           boolean/
  AutoTone                              boolean/
  AutoToneDigest                        string/
  AutoToneDigestNoSat                   string/
  AutoWhiteVersion                      integer/
  Blacks2012                            integer/
  BlueHue                               integer/
  BlueSaturation                        integer/
  Brightness                            integer/
  CameraModelRestriction                string/
  CameraProfile                         string/
  CameraProfileDigest                   string/
  ChromaticAberrationB                  integer/
  ChromaticAberrationR                  integer/
  CircularGradientBasedCorrections      Correction Struct+
  CircGradBasedCorrActive               boolean/_
  CircGradBasedCorrAmount               real/_
  CircGradBasedCorrMasks                CorrectionMask Struct_+
  CircGradBasedCorrMaskAlpha            real/_
  CircGradBasedCorrMaskAngle            real/_
  CircGradBasedCorrMaskBottom           real/_
  CircGradBasedCorrMaskCenterValue      real/_
  CircGradBasedCorrMaskCenterWeight     real/_
  CircGradBasedCorrMaskRange            CorrRangeMask Struct_+
  CircGradBasedCorrMaskRangeAreaModels  AreaModels Struct_+
  CircGradBasedCorrMaskRangeAreaModelsComponents string/_+
  CircGradBasedCorrMaskRangeAreaModelsColorSampleInfo string/_+
  CircGradBasedCorrMaskRangeColorAmount real/_+
  CircGradBasedCorrMaskRangeDepthFeather real/_+
  CircGradBasedCorrMaskRangeDepthMax    real/_+
  CircGradBasedCorrMaskRangeDepthMin    real/_+
```

```
CircGradBasedCorrMaskRangeInvert                boolean/_+
CircGradBasedCorrMaskRangeLumFeather            real/_+
CircGradBasedCorrMaskRangeLuminanceDepthSampleInfo string/_+
CircGradBasedCorrMaskRangeLumMax                real/_+
CircGradBasedCorrMaskRangeLumMin                real/_+
CircGradBasedCorrMaskRangeLumRange              string/_+
CircGradBasedCorrMaskRangeSampleType            integer/_+
CircGradBasedCorrMaskRangeType                  string/_+
CircGradBasedCorrMaskRangeVersion               string/_+
CircGradBasedCorrMaskDabs                       string/_
CircGradBasedCorrMaskFeather                    real/_
CircGradBasedCorrMaskFlipped                    boolean/_
CircGradBasedCorrMaskFlow                       real/_
CircGradBasedCorrMaskFullX                      real/_
CircGradBasedCorrMaskFullY                      real/_
CircGradBasedCorrMaskInputDigest                string/_
CircGradBasedCorrMaskLeft                       real/_
CircGradBasedCorrMaskMaskActive                 boolean/_
CircGradBasedCorrMaskMaskBlendMode              integer/_
CircGradBasedCorrMaskMaskDigest                 string/_
CircGradBasedCorrMaskMaskInverted               boolean/_
CircGradBasedCorrMaskMaskName                   string/_
CircGradBasedCorrMaskMasks                      CorrectionMask Struct_+
CircGradBasedCorrMaskMasksAlpha                 real/_
CircGradBasedCorrMaskMasksAngle                 real/_
CircGradBasedCorrMaskMasksBottom                real/_
CircGradBasedCorrMaskMasksCenterValue           real/_
CircGradBasedCorrMaskMasksCenterWeight          real/_
CircGradBasedCorrMaskMasksDabs                  string/_+
CircGradBasedCorrMaskMasksFeather               real/_
CircGradBasedCorrMaskMasksFlipped               boolean/_
CircGradBasedCorrMaskMasksFlow                  real/_
CircGradBasedCorrMaskMasksFullX                 real/_
CircGradBasedCorrMaskMasksFullY                 real/_
CircGradBasedCorrMaskMasksInputDigest           string/_
CircGradBasedCorrMaskMasksLeft                  real/_
CircGradBasedCorrMaskMasksMaskActive            boolean/_
CircGradBasedCorrMaskMasksMaskBlendMode         integer/_
CircGradBasedCorrMaskMasksMaskDigest            string/_
CircGradBasedCorrMaskMasksMaskInverted          boolean/_
CircGradBasedCorrMaskMasksMaskName              string/_
CircGradBasedCorrMaskMasksMaskSubType           string/_
CircGradBasedCorrMaskMasksMaskSyncID            string/_
CircGradBasedCorrMaskMasksValue                 real/_
CircGradBasedCorrMaskMasksMaskVersion           string/_
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MaskGroupBasedCorrHue                            real/_
MaskGroupBasedCorrLuminanceNoise                 real/_
MaskGroupBasedCorrMoire                          real/_
MaskGroupBasedCorrSaturation                     real/_
MaskGroupBasedCorrShadows2012                    real/_
MaskGroupBasedCorrSharpness                      real/_
MaskGroupBasedCorrTemperature                    real/_
MaskGroupBasedCorrTexture                        real/_
MaskGroupBasedCorrTint                           real/_
MaskGroupBasedCorrToningHue                      real/_
MaskGroupBasedCorrToningSaturation               real/_
MaskGroupBasedCorrWhites2012                     real/_
MaskGroupBasedCorrWhat                           string/_
MoireFilter                                      string/
Name                                             lang-alt/
NegativeCacheLargePreviewSize                    integer/
NegativeCacheMaximumSize                         real/
NegativeCachePath                                string/
OverrideLookVignette                             boolean/
PaintBasedCorrections                            Correction Struct+
PaintCorrectionActive                            boolean/_
PaintCorrectionAmount                            real/_
PaintBasedCorrectionMasks                        CorrectionMask Struct_+
PaintCorrectionMaskAlpha                         real/_
PaintCorrectionMaskAngle                         real/_
PaintCorrectionMaskBottom                        real/_
PaintCorrectionMaskCenterValue                   real/_
PaintCorrectionMaskCenterWeight                  real/_
PaintCorrectionMaskRange                         CorrRangeMask Struct_+
PaintCorrectionMaskRangeAreaModels               AreaModels Struct_+
PaintCorrectionMaskRangeAreaModelsComponents     string/_+
PaintCorrectionMaskRangeAreaModelsColorSampleInfo string/_+
PaintCorrectionMaskRangeColorAmount              real/_+
```

```
PaintCorrectionMaskRangeDepthFeather           real/_+
PaintCorrectionMaskRangeDepthMax               real/_+
PaintCorrectionMaskRangeDepthMin               real/_+
PaintCorrectionMaskRangeInvert                 boolean/_+
PaintCorrectionMaskRangeLumFeather             real/_+
PaintCorrectionMaskRangeLuminanceDepthSampleInfo string/_+
PaintCorrectionMaskRangeLumMax                 real/_+
PaintCorrectionMaskRangeLumMin                 real/_+
PaintCorrectionMaskRangeLumRange               string/_+
PaintCorrectionMaskRangeSampleType             integer/_+
PaintCorrectionMaskRangeType                   string/_+
PaintCorrectionMaskRangeVersion                string/_+
PaintCorrectionMaskDabs                        string/_
PaintCorrectionMaskFeather                     real/_
PaintCorrectionMaskFlipped                     boolean/_
PaintCorrectionMaskFlow                        real/_
PaintCorrectionMaskFullX                       real/_
PaintCorrectionMaskFullY                       real/_
PaintCorrectionMaskInputDigest                 string/_
PaintCorrectionMaskLeft                        real/_
PaintCorrectionMaskMaskActive                  boolean/_
PaintCorrectionMaskMaskBlendMode               integer/_
PaintCorrectionMaskMaskDigest                  string/_
PaintCorrectionMaskMaskInverted                boolean/_
PaintCorrectionMaskMaskName                    string/_
PaintCorrectionMaskMasks                       CorrectionMask Struct_+
PaintCorrectionMaskMasksAlpha                  real/_
PaintCorrectionMaskMasksAngle                  real/_
PaintCorrectionMaskMasksBottom                 real/_
PaintCorrectionMaskMasksCenterValue            real/_
PaintCorrectionMaskMasksCenterWeight           real/_
PaintCorrectionMaskMasksDabs                   string/_+
PaintCorrectionMaskMasksFeather                real/_
PaintCorrectionMaskMasksFlipped                boolean/_
PaintCorrectionMaskMasksFlow                   real/_
PaintCorrectionMaskMasksFullX                  real/_
PaintCorrectionMaskMasksFullY                  real/_
PaintCorrectionMaskMasksInputDigest            string/_
PaintCorrectionMaskMasksLeft                   real/_
PaintCorrectionMaskMasksMaskActive             boolean/_
PaintCorrectionMaskMasksMaskBlendMode          integer/_
PaintCorrectionMaskMasksMaskDigest             string/_
PaintCorrectionMaskMasksMaskInverted           boolean/_
PaintCorrectionMaskMasksMaskName               string/_
PaintCorrectionMaskMasksMaskSubType            string/_
PaintCorrectionMaskMasksMaskSyncID             string/_
PaintCorrectionMaskMasksValue                  real/_
PaintCorrectionMaskMasksMaskVersion            string/_
PaintCorrectionMaskMasksMidpoint               real/_
PaintCorrectionMaskMasksOrigin                 string/_
PaintCorrectionMaskMasksPerimeterValue         real/_
PaintCorrectionMaskMasksRadius                 real/_
PaintCorrectionMaskMasksReferencePoint         string/_
PaintCorrectionMaskMasksRight                  real/_
PaintCorrectionMaskMasksRoundness              real/_
PaintCorrectionMaskMasksSizeX                  real/_
PaintCorrectionMaskMasksSizeY                  real/_
PaintCorrectionMaskMasksTop                    real/_
PaintCorrectionMaskMaskSubType                 string/_
PaintCorrectionMaskMasksVersion                integer/_
PaintCorrectionMaskMasksWhat                   string/_
PaintCorrectionMaskMasksWholeImageArea         string/_
PaintCorrectionMaskMasksX                      real/_
PaintCorrectionMaskMasksY                      real/_
PaintCorrectionMaskMaskSyncID                  string/_
PaintCorrectionMaskMasksZeroX                  real/_
PaintCorrectionMaskMasksZeroY                  real/_
PaintCorrectionMaskValue                       real/_
PaintCorrectionMaskMaskVersion                 string/_
PaintCorrectionMaskMidpoint                    real/_
```

```
PaintCorrectionMaskOrigin                           string/_
PaintCorrectionMaskPerimeterValue                   real/_
PaintCorrectionMaskRadius                           real/_
PaintCorrectionMaskReferencePoint                   string/_
PaintCorrectionMaskRight                            real/_
PaintCorrectionMaskRoundness                        real/_
PaintCorrectionMaskSizeX                            real/_
PaintCorrectionMaskSizeY                            real/_
PaintCorrectionMaskTop                              real/_
PaintCorrectionMaskVersion                          integer/_
PaintCorrectionMaskWhat                             string/_
PaintCorrectionMaskWholeImageArea                   string/_
PaintCorrectionMaskX                                real/_
PaintCorrectionMaskY                                real/_
PaintCorrectionMaskZeroX                            real/_
PaintCorrectionMaskZeroY                            real/_
PaintCorrectionCorrectionName                       string/_+
PaintCorrectionRangeMask                            CorrRangeMask Struct_+
PaintCorrectionRangeMaskAreaModels                  AreaModels Struct_+
PaintCorrectionRangeMaskAreaModelsComponents  string/_+
PaintCorrectionRangeMaskAreaModelsColorSampleInfo string/_+
PaintCorrectionRangeMaskColorAmount                 real/_+
PaintCorrectionRangeMaskDepthFeather                real/_+
PaintCorrectionRangeMaskDepthMax                    real/_+
PaintCorrectionRangeMaskDepthMin                    real/_+
PaintCorrectionRangeMaskInvert                      boolean/_+
PaintCorrectionRangeMaskLumFeather                  real/_+
PaintCorrectionRangeMaskLuminanceDepthSampleInfo string/_+
PaintCorrectionRangeMaskLumMax                      real/_+
PaintCorrectionRangeMaskLumMin                      real/_+
PaintCorrectionRangeMaskLumRange                    string/_+
PaintCorrectionRangeMaskSampleType                  integer/_+
PaintCorrectionRangeMaskType                        string/_+
PaintCorrectionRangeMaskVersion                     string/_+
PaintCorrectionCorrectionSyncID                     string/_+
PaintCorrectionBlacks2012                           real/_
PaintCorrectionBrightness                           real/_
PaintCorrectionClarity                              real/_
PaintCorrectionClarity2012                          real/_
PaintCorrectionContrast                             real/_
PaintCorrectionContrast2012                         real/_
PaintCorrectionDefringe                             real/_
PaintCorrectionDehaze                               real/_
PaintCorrectionExposure                             real/_
PaintCorrectionExposure2012                         real/_
PaintCorrectionHighlights2012                       real/_
PaintCorrectionHue                                  real/_
PaintCorrectionLuminanceNoise                       real/_
PaintCorrectionMoire                                real/_
PaintCorrectionSaturation                           real/_
PaintCorrectionShadows2012                          real/_
PaintCorrectionSharpness                            real/_
PaintCorrectionTemperature                          real/_
PaintCorrectionTexture                              real/_
PaintCorrectionTint                                 real/_
PaintCorrectionToningHue                            real/_
PaintCorrectionToningSaturation                     real/_
PaintCorrectionWhites2012                           real/_
PaintCorrectionWhat                                 string/_
ParametricDarks                                     integer/
ParametricHighlights                                integer/
ParametricHighlightSplit                            integer/
ParametricLights                                    integer/
ParametricMidtoneSplit                              integer/
ParametricShadows                                   integer/
ParametricShadowSplit                               integer/
PerspectiveAspect                                   integer/
PerspectiveHorizontal                               integer/
PerspectiveRotate                                   real/
PerspectiveScale                                    integer/
```

```
PerspectiveUpright                                  integer/
PerspectiveVertical                                 integer/
PerspectiveX                                        real/
PerspectiveY                                        real/
PostCropVignetteAmount                              integer/
PostCropVignetteFeather                             integer/
PostCropVignetteHighlightContrast                   integer/
PostCropVignetteMidpoint                            integer/
PostCropVignetteRoundness                           integer/
PostCropVignetteStyle                               integer/
PresetType                                          string/
ProcessVersion                                      string/
RangeMask                                           RangeMask Struct
RangeMaskMapInfo                                    MapInfo Struct_
RangeMaskMapInfoLabMax                              string/_
RangeMaskMapInfoLabMin                              string/_
RangeMaskMapInfoLumEq                               string/_+
RangeMaskMapInfoRGBMax                              string/_
RangeMaskMapInfoRGBMin                              string/_
RawFileName                                         string/
RedEyeInfo                                          string/+
RedHue                                              integer/
RedSaturation                                       integer/
RetouchAreas                                        RetouchArea Struct+
RetouchAreaFeather                                  real/_
RetouchAreaMasks                                    CorrectionMask Struct_+
RetouchAreaMaskAlpha                                real/_
RetouchAreaMaskAngle                                real/_
RetouchAreaMaskBottom                               real/_
RetouchAreaMaskCenterValue                          real/_
RetouchAreaMaskCenterWeight                         real/_
RetouchAreaMaskRange                                CorrRangeMask Struct_+
RetouchAreaMaskRangeAreaModels                      AreaModels Struct_+
RetouchAreaMaskRangeAreaModelsComponents            string/_+
RetouchAreaMaskRangeAreaModelsColorSampleInfo       string/_+
RetouchAreaMaskRangeColorAmount                     real/_+
RetouchAreaMaskRangeDepthFeather                    real/_+
RetouchAreaMaskRangeDepthMax                        real/_+
RetouchAreaMaskRangeDepthMin                        real/_+
RetouchAreaMaskRangeInvert                          boolean/_+
RetouchAreaMaskRangeLumFeather                      real/_+
RetouchAreaMaskRangeLuminanceDepthSampleInfo        string/_+
RetouchAreaMaskRangeLumMax                          real/_+
RetouchAreaMaskRangeLumMin                          real/_+
RetouchAreaMaskRangeLumRange                        string/_+
RetouchAreaMaskRangeSampleType                      integer/_+
RetouchAreaMaskRangeType                            string/_+
RetouchAreaMaskRangeVersion                         string/_+
RetouchAreaMaskDabs                                 string/_
RetouchAreaMaskFeather                              real/_
RetouchAreaMaskFlipped                              boolean/_
RetouchAreaMaskFlow                                 real/_
RetouchAreaMaskFullX                                real/_
RetouchAreaMaskFullY                                real/_
RetouchAreaMaskInputDigest                          string/_
RetouchAreaMaskLeft                                 real/_
RetouchAreaMaskMaskActive                           boolean/_
RetouchAreaMaskMaskBlendMode                        integer/_
RetouchAreaMaskMaskDigest                           string/_
RetouchAreaMaskMaskInverted                         boolean/_
RetouchAreaMaskMaskName                             string/_
RetouchAreaMaskMasks                                CorrectionMask Struct_+
RetouchAreaMaskMasksAlpha                           real/_
RetouchAreaMaskMasksAngle                           real/_
RetouchAreaMaskMasksBottom                          real/_
RetouchAreaMaskMasksCenterValue                     real/_
RetouchAreaMaskMasksCenterWeight                    real/_
RetouchAreaMaskMasksDabs                            string/_+
RetouchAreaMaskMasksFeather                         real/_
RetouchAreaMaskMasksFlipped                         boolean/_
```

```
RetouchAreaMaskMasksFlow                        real/_
RetouchAreaMaskMasksFullX                       real/_
RetouchAreaMaskMasksFullY                       real/_
RetouchAreaMaskMasksInputDigest                 string/_
RetouchAreaMaskMasksLeft                        real/_
RetouchAreaMaskMasksMaskActive                  boolean/_
RetouchAreaMaskMasksMaskBlendMode               integer/_
RetouchAreaMaskMasksMaskDigest                  string/_
RetouchAreaMaskMasksMaskInverted                boolean/_
RetouchAreaMaskMasksMaskName                    string/_
RetouchAreaMaskMasksMaskSubType                 string/_
RetouchAreaMaskMasksMaskSyncID                  string/_
RetouchAreaMaskMasksValue                       real/_
RetouchAreaMaskMasksMaskVersion                 string/_
RetouchAreaMaskMasksMidpoint                    real/_
RetouchAreaMaskMasksOrigin                      string/_
RetouchAreaMaskMasksPerimeterValue              real/_
RetouchAreaMaskMasksRadius                      real/_
RetouchAreaMaskMasksReferencePoint              string/_
RetouchAreaMaskMasksRight                       real/_
RetouchAreaMaskMasksRoundness                   real/_
RetouchAreaMaskMasksSizeX                       real/_
RetouchAreaMaskMasksSizeY                       real/_
RetouchAreaMaskMasksTop                         real/_
RetouchAreaMaskMaskSubType                      string/_
RetouchAreaMaskMasksVersion                     integer/_
RetouchAreaMaskMasksWhat                        string/_
RetouchAreaMaskMasksWholeImageArea              string/_
RetouchAreaMaskMasksX                           real/_
RetouchAreaMaskMasksY                           real/_
RetouchAreaMaskMaskSyncID                       string/_
RetouchAreaMaskMasksZeroX                       real/_
RetouchAreaMaskMasksZeroY                       real/_
RetouchAreaMaskValue                            real/_
RetouchAreaMaskMaskVersion                      string/_
RetouchAreaMaskMidpoint                         real/_
RetouchAreaMaskOrigin                           string/_
RetouchAreaMaskPerimeterValue                   real/_
RetouchAreaMaskRadius                           real/_
RetouchAreaMaskReferencePoint                   string/_
RetouchAreaMaskRight                            real/_
RetouchAreaMaskRoundness                        real/_
RetouchAreaMaskSizeX                            real/_
RetouchAreaMaskSizeY                            real/_
RetouchAreaMaskTop                              real/_
RetouchAreaMaskVersion                          integer/_
RetouchAreaMaskWhat                             string/_
RetouchAreaMaskWholeImageArea                   string/_
RetouchAreaMaskX                                real/_
RetouchAreaMaskY                                real/_
RetouchAreaMaskZeroX                            real/_
RetouchAreaMaskZeroY                            real/_
RetouchAreaMethod                               string/_
RetouchAreaOffsetY                              real/_
RetouchAreaOpacity                              real/_
RetouchAreaSeed                                 integer/_
RetouchAreaSourceState                          string/_
RetouchAreaSourceX                              real/_
RetouchAreaSpotType                             string/_
RetouchInfo                                     string/+
Saturation                                      integer/
SaturationAdjustmentAqua                        integer/
SaturationAdjustmentBlue                        integer/
SaturationAdjustmentGreen                       integer/
SaturationAdjustmentMagenta                     integer/
SaturationAdjustmentOrange                      integer/
SaturationAdjustmentPurple                      integer/
SaturationAdjustmentRed                         integer/
SaturationAdjustmentYellow                      integer/
SDRBlend                                        real/
```

SDRBrightness	real/
SDRContrast	real/
SDRHighlights	real/
SDRShadows	real/
SDRWhites	real/
Shadows	integer/
Shadows2012	integer/
ShadowTint	integer/
SharpenDetail	integer/
SharpenEdgeMasking	integer/
SharpenRadius	real/
Sharpness	integer/
ShortName	lang-alt/
Smoothness	integer/
SortName	lang-alt/
SplitToningBalance	integer/
SplitToningHighlightHue	integer/
SplitToningHighlightSaturation	integer/
SplitToningShadowHue	integer/
SplitToningShadowSaturation	integer/
SupportsAmount	boolean/
SupportsColor	boolean/
SupportsHighDynamicRange	boolean/
SupportsMonochrome	boolean/
SupportsNormalDynamicRange	boolean/
SupportsOutputReferred	boolean/
SupportsSceneReferred	boolean/
ColorTemperature	integer/
Texture	integer/
TIFFHandling	string/
Tint	integer/
ToggleStyleAmount	integer/
ToggleStyleDigest	string/
ToneCurve	string/+
ToneCurveBlue	string/+
ToneCurveGreen	string/+
ToneCurveName	string/
ToneCurveName2012	string/
ToneCurvePV2012	string/+
ToneCurvePV2012Blue	string/+
ToneCurvePV2012Green	string/+
ToneCurvePV2012Red	string/+
ToneCurveRed	string/+
ToneMapStrength	real/
UprightCenterMode	integer/
UprightCenterNormX	real/
UprightCenterNormY	real/
UprightDependentDigest	string/
UprightFocalLength35mm	real/
UprightFocalMode	integer/
UprightFourSegments_0	string/
UprightFourSegments_1	string/
UprightFourSegments_2	string/
UprightFourSegments_3	string/
UprightFourSegmentsCount	integer/
UprightGuidedDependentDigest	string/
UprightPreview	boolean/
UprightTransform_0	string/
UprightTransform_1	string/
UprightTransform_2	string/
UprightTransform_3	string/
UprightTransform_4	string/
UprightTransform_5	string/
UprightTransformCount	integer/
UprightVersion	integer/
UUID	string/
Version	string/
Vibrance	integer/
VignetteAmount	integer/
VignetteMidpoint	integer/

```
  What                                        string/
  WhiteBalance                                string/
  Whites2012                                  integer/
```

XMP Correction Struct

```
  Field Name                                  Writable
  ----------                                  --------
  CorrectionActive                            boolean
  CorrectionAmount                            real
  CorrectionMasks                             CorrectionMask Struct+
  CorrectionName                              string
  CorrRangeMask                               CorrRangeMask Struct
                                              -
  CorrectionSyncID                            string
  LocalBlacks2012                             real
  LocalBrightness                             real
  LocalClarity                                real
  LocalClarity2012                            real
  LocalContrast                               real
  LocalContrast2012                           real
  LocalDefringe                               real
  LocalDehaze                                 real
  LocalExposure                               real
  LocalExposure2012                           real
  LocalHighlights2012                         real
  LocalHue                                    real
  LocalLuminanceNoise                         real
  LocalMoire                                  real
  LocalSaturation                             real
  LocalShadows2012                            real
  LocalSharpness                              real
  LocalTemperature                            real
  LocalTexture                                real
  LocalTint                                   real
  LocalToningHue                              real
  LocalToningSaturation                       real
  LocalWhites2012                             real
  What                                        string
```

XMP CorrectionMask Struct

```
  Field Name                                  Writable
  ----------                                  --------
  Alpha                                       real
  Angle                                       real
  Bottom                                      real
  CenterValue                                 real
  CenterWeight                                real
  CorrRangeMask                               CorrRangeMask Struct
                                              -
  Dabs                                        string+
  Feather                                     real
  Flipped                                     boolean
  Flow                                        real
  FullX                                       real
  FullY                                       real
  InputDigest                                 string
  Left                                        real
  MaskActive                                  boolean
  MaskBlendMode                               integer
  MaskDigest                                  string
  MaskInverted                                boolean
  MaskName                                    string
  MaskSubType                                 string
  MaskSyncID                                  string
  MaskValue                                   real
  MaskVersion                                 string
  Masks                                       CorrectionMask Struct
  Midpoint                                    real
```

```
Origin                                    string
PerimeterValue                            real
Radius                                    real
ReferencePoint                            string
Right                                     real
Roundness                                 real
SizeX                                     real
SizeY                                     real
Top                                       real
Version                                   integer
What                                      string
WholeImageArea                            string
X                                         real
Y                                         real
ZeroX                                     real
ZeroY                                     real
```

XMP CorrRangeMask Struct

Called CorrectionRangeMask by the spec.

Field Name	Writable
AreaModels	AreaModels Struct+
ColorAmount	real
DepthFeather	real
DepthMax	real
DepthMin	real
Invert	boolean
LumFeather	real
LumMax	real
LumMin	real
LumRange	string
LuminanceDepthSampleInfo	string
SampleType	integer
Type	string
Version	string

XMP AreaModels Struct

Field Name	Writable
AreaComponents	string+
ColorRangeMaskAreaSampleInfo	string

XMP DepthBasedCorr Struct

Field Name	Writable
CorrectionActive	boolean
CorrectionAmount	real
CorrectionMasks	CorrectionMask Struct+
CorrectionSyncID	string
LocalCorrectedDepth	real
LocalCurveRefineSaturation	real
What	string

XMP DepthMapInfo Struct

Field Name	Writable
BaseHighlightGuideInputDigest	string
BaseHighlightGuideTable	string
BaseHighlightGuideVersion	string
BaseLayeredDepthInputDigest	string
BaseLayeredDepthTable	string
BaseLayeredDepthVersion	string
BaseRawDepthInputDigest	string
BaseRawDepthTable	string
BaseRawDepthVersion	string

```
  DepthSource                            string
```

XMP <u>LensBlur</u> <u>Struct</u>

```
  Field Name                            Writable
  ----------                            --------
  Active                                boolean
  BlurAmount                            real
  BokehAspect                           real
  BokehRotation                         real
  BokehShape                            real
  BokehShapeDetail                      real
  CatEyeAmount                          real
  CatEyeScale                           real
  FocalRange                            string
  FocalRangeSource                      real
  HighlightsBoost                       real
  HighlightsThreshold                   real
  SampledArea                           string
  SampledRange                          string
  SphericalAberration                   real
  SubjectRange                          string
  Version                               string
```

XMP <u>Look</u> <u>Struct</u>

```
  Field Name                            Writable
  ----------                            --------
  Amount                                string
  Cluster                               string
  Copyright                             string
  Group                                 lang-alt
  Name                                  string
  Parameters                            LookParms Struct
  SupportsAmount                        string
  SupportsMonochrome                    string
  SupportsOutputReferred                string
  UUID                                  string
```

XMP <u>LookParms</u> <u>Struct</u>

```
  Field Name                            Writable
  ----------                            --------
  CameraProfile                         string
  Clarity2012                           string
  ConvertToGrayscale                    string
  Highlights2012                        string
  LookTable                             string
  ProcessVersion                        string
  Shadows2012                           string
  ToneCurvePV2012                       string+
  ToneCurvePV2012Blue                   string+
  ToneCurvePV2012Green                  string+
  ToneCurvePV2012Red                    string+
  Version                               string
```

XMP <u>RangeMask</u> <u>Struct</u>

This structure is actually called RangeMaskMapInfo, but it only
contains one element which is a RangeMaskMapInfo structure (Yes,
really!). So these are renamed to RangeMask and MapInfo respectively
to avoid confusion and redundancy in the tag names.

```
  Field Name                            Writable
  ----------                            --------
  RangeMaskMapInfo                      MapInfo Struct
```

XMP <u>MapInfo</u> <u>Struct</u>

Called RangeMaskMapInfo by the specification, the same as the

containing structure.

```
  Field Name                            Writable
  ----------                            --------
  LabMax                                string
  LabMin                                string
  LumEq                                 string+
  RGBMax                                string
  RGBMin                                string
```

XMP RetouchArea Struct

```
  Field Name                            Writable
  ----------                            --------
  Feather                               real
  Masks                                 CorrectionMask Struct+
  Method                                string
  OffsetY                               real
  Opacity                               real
  Seed                                  integer
  SourceState                           string
  SourceX                               real
  SpotType                              string
```

XMP creatorAtom Tags

Adobe creatorAtom tags, written by After Effects.

These tags belong to the ExifTool XMP-creatorAtom family 1 group.

```
  Tag Name                              Writable
  --------                              --------
  AeProjectLink                         AEProjectLink Struct
  AeProjectLinkCompositionID            string_
  AeProjectLinkFullPath                 string_
  AeProjectLinkRenderOutputModuleIndex  string_
  AeProjectLinkRenderQueueItemID        string_
  AeProjectLinkRenderTimeStamp          integer_
  MacAtom                               MacAtom Struct
  MacAtomApplicationCode                string_
  MacAtomInvocationAppleEvent           string_
  MacAtomPosixProjectPath               string_
  WindowsAtom                           WindowsAtom Struct
  WindowsAtomExtension                  string_
  WindowsAtomInvocationFlags            string_
  WindowsAtomUncProjectPath             string_
```

XMP AEProjectLink Struct

```
  Field Name                            Writable
  ----------                            --------
  CompositionID                         string
  FullPath                              string
  RenderOutputModuleIndex               string
  RenderQueueItemID                     string
  RenderTimeStamp                       integer
```

XMP MacAtom Struct

```
  Field Name                            Writable
  ----------                            --------
  ApplicationCode                       string
  InvocationAppleEvent                  string
  PosixProjectPath                      string
```

XMP WindowsAtom Struct

```
  Field Name                            Writable
  ----------                            --------
  Extension                             string
```

```
    InvocationFlags                                   string
    UncProjectPath                                    string
```

XMP crs Tags

Photoshop Camera Raw namespace tags. It is a shame that Adobe pollutes
the metadata space with these incredibly bulky image editing
parameters.

These tags belong to the ExifTool XMP-crs family 1 group.

Tag Name	Writable
AlreadyApplied	boolean
AutoBrightness	boolean
AutoContrast	boolean
AutoExposure	boolean
AutoLateralCA	integer
AutoShadows	boolean
AutoTone	boolean
AutoToneDigest	string
AutoToneDigestNoSat	string
AutoWhiteVersion	integer
Blacks2012	integer
BlueHue	integer
BlueSaturation	integer
Brightness	integer
CameraModelRestriction	string
CameraProfile	string
CameraProfileDigest	string
ChromaticAberrationB	integer
ChromaticAberrationR	integer
CircularGradientBasedCorrections	Correction Struct+
CircGradBasedCorrActive	boolean_
CircGradBasedCorrAmount	real_
CircGradBasedCorrMasks	CorrectionMask Struct_+
CircGradBasedCorrMaskAlpha	real_
CircGradBasedCorrMaskAngle	real_
CircGradBasedCorrMaskBottom	real_
CircGradBasedCorrMaskCenterValue	real_
CircGradBasedCorrMaskCenterWeight	real_
CircGradBasedCorrMaskRange	CorrRangeMask Struct_+
CircGradBasedCorrMaskRangeAreaModels	AreaModels Struct_+
CircGradBasedCorrMaskRangeAreaModelsComponents	string_+
CircGradBasedCorrMaskRangeAreaModelsColorSampleInfo	string_+
CircGradBasedCorrMaskRangeColorAmount	real_+
CircGradBasedCorrMaskRangeDepthFeather	real_+
CircGradBasedCorrMaskRangeDepthMax	real_+
CircGradBasedCorrMaskRangeDepthMin	real_+
CircGradBasedCorrMaskRangeInvert	boolean_+
CircGradBasedCorrMaskRangeLumFeather	real_+
CircGradBasedCorrMaskRangeLuminanceDepthSampleInfo	string_+
CircGradBasedCorrMaskRangeLumMax	real_+
CircGradBasedCorrMaskRangeLumMin	real_+
CircGradBasedCorrMaskRangeLumRange	string_+
CircGradBasedCorrMaskRangeSampleType	integer_+
CircGradBasedCorrMaskRangeType	string_+
CircGradBasedCorrMaskRangeVersion	string_+
CircGradBasedCorrMaskDabs	string_
CircGradBasedCorrMaskFeather	real_
CircGradBasedCorrMaskFlipped	boolean_
CircGradBasedCorrMaskFlow	real_
CircGradBasedCorrMaskFullX	real_
CircGradBasedCorrMaskFullY	real_
CircGradBasedCorrMaskInputDigest	string_
CircGradBasedCorrMaskLeft	real_
CircGradBasedCorrMaskMaskActive	boolean_
CircGradBasedCorrMaskMaskBlendMode	integer_
CircGradBasedCorrMaskMaskDigest	string_
CircGradBasedCorrMaskMaskInverted	boolean_

```
CircGradBasedCorrMaskMaskName                          string_
CircGradBasedCorrMaskMasks                             CorrectionMask Struct_+
CircGradBasedCorrMaskMasksAlpha                        real_
CircGradBasedCorrMaskMasksAngle                        real_
CircGradBasedCorrMaskMasksBottom                       real_
CircGradBasedCorrMaskMasksCenterValue                  real_
CircGradBasedCorrMaskMasksCenterWeight                 real_
CircGradBasedCorrMaskMasksDabs                         string_+
CircGradBasedCorrMaskMasksFeather                      real_
CircGradBasedCorrMaskMasksFlipped                      boolean_
CircGradBasedCorrMaskMasksFlow                         real_
CircGradBasedCorrMaskMasksFullX                        real_
CircGradBasedCorrMaskMasksFullY                        real_
CircGradBasedCorrMaskMasksInputDigest                  string_
CircGradBasedCorrMaskMasksLeft                         real_
CircGradBasedCorrMaskMasksMaskActive                   boolean_
CircGradBasedCorrMaskMasksMaskBlendMode                integer_
CircGradBasedCorrMaskMasksMaskDigest                   string_
CircGradBasedCorrMaskMasksMaskInverted                 boolean_
CircGradBasedCorrMaskMasksMaskName                     string_
CircGradBasedCorrMaskMasksMaskSubType                  string_
CircGradBasedCorrMaskMasksMaskSyncID                   string_
CircGradBasedCorrMaskMasksValue                        real_
CircGradBasedCorrMaskMasksMaskVersion                  string_
CircGradBasedCorrMaskMasksMidpoint                     real_
CircGradBasedCorrMaskMasksOrigin                       string_
CircGradBasedCorrMaskMasksPerimeterValue               real_
CircGradBasedCorrMaskMasksRadius                       real_
CircGradBasedCorrMaskMasksReferencePoint               string_
CircGradBasedCorrMaskMasksRight                        real_
CircGradBasedCorrMaskMasksRoundness                    real_
CircGradBasedCorrMaskMasksSizeX                        real_
CircGradBasedCorrMaskMasksSizeY                        real_
CircGradBasedCorrMaskMasksTop                          real_
CircGradBasedCorrMaskMaskSubType                       string_
CircGradBasedCorrMaskMasksVersion                      integer_
CircGradBasedCorrMaskMasksWhat                         string_
CircGradBasedCorrMaskMasksWholeImageArea               string_
CircGradBasedCorrMaskMasksX                            real_
CircGradBasedCorrMaskMasksY                            real_
CircGradBasedCorrMaskMaskSyncID                        string_
CircGradBasedCorrMaskMasksZeroX                        real_
CircGradBasedCorrMaskMasksZeroY                        real_
CircGradBasedCorrMaskValue                             real_
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CircGradBasedCorrRangeMaskDepthMax                     real_+
```

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CircGradBasedCorrContrast2012                      real_
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CircGradBasedCorrDehaze                            real_
CircGradBasedCorrExposure                          real_
CircGradBasedCorrExposure2012                      real_
CircGradBasedCorrHighlights2012                    real_
CircGradBasedCorrHue                               real_
CircGradBasedCorrLuminanceNoise                    real_
CircGradBasedCorrMoire                             real_
CircGradBasedCorrSaturation                        real_
CircGradBasedCorrShadows2012                       real_
CircGradBasedCorrSharpness                         real_
CircGradBasedCorrTemperature                       real_
CircGradBasedCorrTexture                           real_
CircGradBasedCorrTint                              real_
CircGradBasedCorrToningHue                         real_
CircGradBasedCorrToningSaturation                  real_
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Clarity2012                                        integer
ClipboardAspectRatio                               integer
ClipboardOrientation                               integer
Cluster                                            string
ColorGradeBlending                                 integer
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ColorGradeGlobalLum                                integer
ColorGradeGlobalSat                                integer
ColorGradeHighlightLum                             integer
ColorGradeMidtoneHue                               integer
ColorGradeMidtoneLum                               integer
ColorGradeMidtoneSat                               integer
ColorGradeShadowLum                                integer
ColorNoiseReduction                                integer
ColorNoiseReductionDetail                          integer
ColorNoiseReductionSmoothness                      integer
CompatibleVersion                                  string
ContactInfo                                        string
Contrast                                           integer/
Contrast2012                                       integer
Converter                                          string
ConvertToGrayscale                                 boolean
Copyright                                          string/
CropAngle                                          real
CropBottom                                         real
CropConstrainToWarp                                integer
CropHeight                                         real
CropLeft                                           real
CropRight                                          real
CropTop                                            real
CropUnit                                           integer
CropUnits                                          integer
CropWidth                                          real
DefaultAutoGray                                    boolean
```

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DefaultAutoTone                                  boolean
DefaultsSpecificToISO                            boolean
DefaultsSpecificToSerial                         boolean
Defringe                                         integer
DefringeGreenAmount                              integer
DefringeGreenHueHi                               integer
DefringeGreenHueLo                               integer
DefringePurpleAmount                             integer
DefringePurpleHueHi                              integer
DefringePurpleHueLo                              integer
Dehaze                                           real
DepthBasedCorrections                            DepthBasedCorr Struct+
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DepthBasedCorrMaskMasksCenterWeight               real_
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DepthBasedCorrMaskMasksFlow                       real_
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DepthBasedCorrMaskMasksFullY                      real_
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DepthBasedCorrMaskMasksMaskSubType                string_
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DepthBasedCorrMaskMasksSizeY                  real_
DepthBasedCorrMaskMasksTop                    real_
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DepthMapInfoBaseLayeredDepthTable             string_
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DepthMapInfoBaseRawDepthInputDigest           string_
DepthMapInfoBaseRawDepthTable                 string_
DepthMapInfoBaseRawDepthVersion               string_
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DNGIgnoreSidecars                             boolean
Exposure                                      real
Exposure2012                                  real
FillLight                                     integer
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GradientBasedCorrMasks                        CorrectionMask Struct_+
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GradientBasedCorrMaskCenterWeight             real_
```

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GradientBasedCorrMaskRangeLuminanceDepthSampleInfo string_+
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GradientBasedCorrMaskRangeLumMin                    real_+
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GradientBasedCorrMaskMaskActive                     boolean_
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GradientBasedCorrMaskMasks                          CorrectionMask Struct_+
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GradientBasedCorrMaskMasksFlipped                   boolean_
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GradientBasedCorrMaskMasksFullX                     real_
GradientBasedCorrMaskMasksFullY                     real_
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GradientBasedCorrMaskMasksLeft                      real_
GradientBasedCorrMaskMasksMaskActive                boolean_
GradientBasedCorrMaskMasksMaskBlendMode             integer_
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GradientBasedCorrMaskMasksMaskInverted              boolean_
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GradientBasedCorrMaskMasksMaskSyncID                string_
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GradientBasedCorrMaskMasksMidpoint                  real_
GradientBasedCorrMaskMasksOrigin                    string_
GradientBasedCorrMaskMasksPerimeterValue            real_
GradientBasedCorrMaskMasksRadius                    real_
GradientBasedCorrMaskMasksReferencePoint            string_
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GradientBasedCorrMaskMasksRoundness                 real_
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GradientBasedCorrMaskMaskSubType                    string_
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GradientBasedCorrMaskMasksY                         real_
GradientBasedCorrMaskMaskSyncID                     string_
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GradientBasedCorrBrightness                          real_
GradientBasedCorrClarity                             real_
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GradientBasedCorrContrast                            real_
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GradientBasedCorrExposure                            real_
GradientBasedCorrExposure2012                        real_
GradientBasedCorrHighlights2012                      real_
GradientBasedCorrHue                                 real_
GradientBasedCorrLuminanceNoise                      real_
GradientBasedCorrMoire                               real_
GradientBasedCorrSaturation                          real_
GradientBasedCorrShadows2012                         real_
GradientBasedCorrSharpness                           real_
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GradientBasedCorrTexture                             real_
GradientBasedCorrTint                                real_
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GrainSeed                                            integer
GrainSize                                            integer
GrayMixerAqua                                        integer
GrayMixerBlue                                        integer
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GrayMixerMagenta	integer
GrayMixerOrange	integer
GrayMixerPurple	integer
GrayMixerRed	integer
GrayMixerYellow	integer
GreenHue	integer
GreenSaturation	integer
Group	lang-alt/
HasCrop	boolean
HasSettings	boolean
HDREditMode	integer
Highlight2012	integer
HighlightRecovery	integer
Highlights2012	integer
HueAdjustmentAqua	integer
HueAdjustmentBlue	integer
HueAdjustmentGreen	integer
HueAdjustmentMagenta	integer
HueAdjustmentOrange	integer
HueAdjustmentPurple	integer
HueAdjustmentRed	integer
HueAdjustmentYellow	integer
IncrementalTemperature	integer
IncrementalTint	integer
JPEGHandling	string
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LensBlurBokehRotation	real_
LensBlurBokehShape	real_
LensBlurBokehShapeDetail	real_
LensBlurCatEyeAmount	real_
LensBlurCatEyeScale	real_
LensBlurFocalRange	string_
LensBlurFocalRangeSource	real_
LensBlurHighlightsBoost	real_
LensBlurHighlightsThreshold	real_
LensBlurSampledArea	string_
LensBlurSampledRange	string_
LensBlurSphericalAberration	real_
LensBlurSubjectRange	string_
LensBlurVersion	string_
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LensProfileChromaticAberrationScale	integer
LensProfileDigest	string
LensProfileDistortionScale	integer
LensProfileEnable	integer
LensProfileFilename	string
LensProfileIsEmbedded	boolean
LensProfileMatchKeyCameraModelName	string
LensProfileMatchKeyExifMake	string
LensProfileMatchKeyExifModel	string
LensProfileMatchKeyIsRaw	boolean
LensProfileMatchKeyLensID	string
LensProfileMatchKeyLensInfo	string
LensProfileMatchKeyLensName	string
LensProfileMatchKeySensorFormatFactor	real
LensProfileName	string
LensProfileSetup	string
LensProfileVignettingScale	integer
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LookAmount	string_
LookCluster	string_
LookCopyright	string_
LookGroup	lang-alt_
LookName	string
LookParameters	LookParms Struct_
LookParametersCameraProfile	string_

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LookParametersHighlights2012                        string_
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LookParametersProcessVersion                        string_
LookParametersShadows2012                           string_
LookParametersToneCurvePV2012                       string_+
LookParametersToneCurvePV2012Blue                   string_+
LookParametersToneCurvePV2012Green                  string_+
LookParametersToneCurvePV2012Red                    string_+
LookParametersVersion                               string_
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LookSupportsOutputReferred                          string_
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LuminanceAdjustmentBlue                             integer
LuminanceAdjustmentGreen                            integer
LuminanceAdjustmentMagenta                          integer
LuminanceAdjustmentOrange                           integer
LuminanceAdjustmentPurple                           integer
LuminanceAdjustmentRed                              integer
LuminanceAdjustmentYellow                           integer
LuminanceNoiseReductionContrast                     integer
LuminanceNoiseReductionDetail                       integer
LuminanceSmoothing                                  integer
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MaskGroupBasedCorrMaskFullY                         real_
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MaskGroupBasedCorrMaskMasksFullY                real_
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MaskGroupBasedCorrMaskMasksMaskInverted         boolean_
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MaskGroupBasedCorrMaskMasksReferencePoint       string_
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MaskGroupBasedCorrMaskMasksRoundness            real_
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MaskGroupBasedCorrMaskMasksSizeY                real_
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MaskGroupBasedCorrMaskRoundness                 real_
MaskGroupBasedCorrMaskSizeX                     real_
MaskGroupBasedCorrMaskSizeY                     real_
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MaskGroupBasedCorrMaskZeroY                     real_
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MaskGroupBasedCorrRangeMaskDepthMin             real_+
MaskGroupBasedCorrRangeMaskInvert               boolean_+
MaskGroupBasedCorrRangeMaskLumFeather           real_+
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MaskGroupBasedCorrRangeMaskLumMin               real_+
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MaskGroupBasedCorrRangeMaskLumRange             string_+
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MaskGroupBasedCorrClarity                       real_
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MaskGroupBasedCorrContrast                      real_
MaskGroupBasedCorrContrast2012                  real_
MaskGroupBasedCorrDefringe                      real_
MaskGroupBasedCorrDehaze                        real_
MaskGroupBasedCorrExposure                      real_
MaskGroupBasedCorrExposure2012                  real_
MaskGroupBasedCorrHighlights2012                real_
MaskGroupBasedCorrHue                           real_
MaskGroupBasedCorrLuminanceNoise                real_
MaskGroupBasedCorrMoire                         real_
MaskGroupBasedCorrSaturation                    real_
MaskGroupBasedCorrShadows2012                   real_
MaskGroupBasedCorrSharpness                     real_
MaskGroupBasedCorrTemperature                   real_
MaskGroupBasedCorrTexture                       real_
MaskGroupBasedCorrTint                          real_
MaskGroupBasedCorrToningHue                     real_
MaskGroupBasedCorrToningSaturation              real_
MaskGroupBasedCorrWhites2012                     real_
MaskGroupBasedCorrWhat                           string_
MoireFilter                                     string
Name                                            lang-alt/
NegativeCacheLargePreviewSize                   integer
NegativeCacheMaximumSize                        real
NegativeCachePath                               string
OverrideLookVignette                            boolean
PaintBasedCorrections                           Correction Struct+
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PaintCorrectionAmount                           real_
PaintBasedCorrectionMasks                       CorrectionMask Struct_+
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PaintCorrectionMaskBottom                       real_
PaintCorrectionMaskCenterValue                  real_
PaintCorrectionMaskCenterWeight                 real_
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PaintCorrectionMaskRangeAreaModels              AreaModels Struct_+
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PaintCorrectionMaskRangeAreaModelsColorSampleInfo string_+
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PaintCorrectionMaskRangeDepthMin                real_+
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PaintCorrectionMaskRangeLumMin                  real_+
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PaintCorrectionMaskFeather                      real_
PaintCorrectionMaskFlipped                      boolean_
PaintCorrectionMaskFlow                         real_
PaintCorrectionMaskFullX                        real_
PaintCorrectionMaskFullY                        real_
PaintCorrectionMaskInputDigest                  string_
PaintCorrectionMaskLeft                         real_
PaintCorrectionMaskMaskActive                   boolean_
```

```
PaintCorrectionMaskMaskBlendMode                integer_
PaintCorrectionMaskMaskDigest                   string_
PaintCorrectionMaskMaskInverted                 boolean_
PaintCorrectionMaskMaskName                     string_
PaintCorrectionMaskMasks                        CorrectionMask Struct_+
PaintCorrectionMaskMasksAlpha                   real_
PaintCorrectionMaskMasksAngle                   real_
PaintCorrectionMaskMasksBottom                  real_
PaintCorrectionMaskMasksCenterValue             real_
PaintCorrectionMaskMasksCenterWeight            real_
PaintCorrectionMaskMasksDabs                    string_+
PaintCorrectionMaskMasksFeather                 real_
PaintCorrectionMaskMasksFlipped                 boolean_
PaintCorrectionMaskMasksFlow                    real_
PaintCorrectionMaskMasksFullX                   real_
PaintCorrectionMaskMasksFullY                   real_
PaintCorrectionMaskMasksInputDigest             string_
PaintCorrectionMaskMasksLeft                    real_
PaintCorrectionMaskMasksMaskActive              boolean_
PaintCorrectionMaskMasksMaskBlendMode           integer_
PaintCorrectionMaskMasksMaskDigest              string_
PaintCorrectionMaskMasksMaskInverted            boolean_
PaintCorrectionMaskMasksMaskName                string_
PaintCorrectionMaskMasksMaskSubType             string_
PaintCorrectionMaskMasksMaskSyncID              string_
PaintCorrectionMaskMasksValue                   real_
PaintCorrectionMaskMasksMaskVersion             string_
PaintCorrectionMaskMasksMidpoint                real_
PaintCorrectionMaskMasksOrigin                  string_
PaintCorrectionMaskMasksPerimeterValue          real_
PaintCorrectionMaskMasksRadius                  real_
PaintCorrectionMaskMasksReferencePoint          string_
PaintCorrectionMaskMasksRight                   real_
PaintCorrectionMaskMasksRoundness               real_
PaintCorrectionMaskMasksSizeX                   real_
PaintCorrectionMaskMasksSizeY                   real_
PaintCorrectionMaskMasksTop                     real_
PaintCorrectionMaskMaskSubType                  string_
PaintCorrectionMaskMasksVersion                 integer_
PaintCorrectionMaskMasksWhat                    string_
PaintCorrectionMaskMasksWholeImageArea          string_
PaintCorrectionMaskMasksX                       real_
PaintCorrectionMaskMasksY                       real_
PaintCorrectionMaskMaskSyncID                   string_
PaintCorrectionMaskMasksZeroX                   real_
PaintCorrectionMaskMasksZeroY                   real_
PaintCorrectionMaskValue                        real_
PaintCorrectionMaskMaskVersion                  string_
PaintCorrectionMaskMidpoint                     real_
PaintCorrectionMaskOrigin                       string_
PaintCorrectionMaskPerimeterValue               real_
PaintCorrectionMaskRadius                       real_
PaintCorrectionMaskReferencePoint               string_
PaintCorrectionMaskRight                        real_
PaintCorrectionMaskRoundness                    real_
PaintCorrectionMaskSizeX                        real_
PaintCorrectionMaskSizeY                        real_
PaintCorrectionMaskTop                          real_
PaintCorrectionMaskVersion                      integer_
PaintCorrectionMaskWhat                         string_
PaintCorrectionMaskWholeImageArea               string_
PaintCorrectionMaskX                            real_
PaintCorrectionMaskY                            real_
PaintCorrectionMaskZeroX                        real_
PaintCorrectionMaskZeroY                        real_
PaintCorrectionCorrectionName                   string_+
PaintCorrectionRangeMask                        CorrRangeMask Struct_+
PaintCorrectionRangeMaskAreaModels              AreaModels Struct_+
PaintCorrectionRangeMaskAreaModelsComponents    string_+
PaintCorrectionRangeMaskAreaModelsColorSampleInfo string_+
```

```
PaintCorrectionRangeMaskColorAmount           real_+
PaintCorrectionRangeMaskDepthFeather          real_+
PaintCorrectionRangeMaskDepthMax              real_+
PaintCorrectionRangeMaskDepthMin              real_+
PaintCorrectionRangeMaskInvert                boolean_+
PaintCorrectionRangeMaskLumFeather            real_+
PaintCorrectionRangeMaskLuminanceDepthSampleInfo string_+
PaintCorrectionRangeMaskLumMax                real_+
PaintCorrectionRangeMaskLumMin                real_+
PaintCorrectionRangeMaskLumRange              string_+
PaintCorrectionRangeMaskSampleType            integer_+
PaintCorrectionRangeMaskType                  string_+
PaintCorrectionRangeMaskVersion               string_+
PaintCorrectionCorrectionSyncID               string_+
PaintCorrectionBlacks2012                     real_
PaintCorrectionBrightness                     real_
PaintCorrectionClarity                        real_
PaintCorrectionClarity2012                    real_
PaintCorrectionContrast                       real_
PaintCorrectionContrast2012                   real_
PaintCorrectionDefringe                       real_
PaintCorrectionDehaze                         real_
PaintCorrectionExposure                       real_
PaintCorrectionExposure2012                   real_
PaintCorrectionHighlights2012                 real_
PaintCorrectionHue                            real_
PaintCorrectionLuminanceNoise                 real_
PaintCorrectionMoire                          real_
PaintCorrectionSaturation                     real_
PaintCorrectionShadows2012                    real_
PaintCorrectionSharpness                      real_
PaintCorrectionTemperature                    real_
PaintCorrectionTexture                        real_
PaintCorrectionTint                           real_
PaintCorrectionToningHue                      real_
PaintCorrectionToningSaturation               real_
PaintCorrectionWhites2012                     real_
PaintCorrectionWhat                           string_
ParametricDarks                               integer
ParametricHighlights                          integer
ParametricHighlightSplit                      integer
ParametricLights                              integer
ParametricMidtoneSplit                        integer
ParametricShadows                             integer
ParametricShadowSplit                         integer
PerspectiveAspect                             integer
PerspectiveHorizontal                         integer
PerspectiveRotate                             real
PerspectiveScale                              integer
PerspectiveUpright                            integer
PerspectiveVertical                           integer
PerspectiveX                                  real
PerspectiveY                                  real
PostCropVignetteAmount                        integer
PostCropVignetteFeather                       integer
PostCropVignetteHighlightContrast             integer
PostCropVignetteMidpoint                      integer
PostCropVignetteRoundness                     integer
PostCropVignetteStyle                         integer
PresetType                                    string
ProcessVersion                                string
RangeMask                                     RangeMask Struct
RangeMaskMapInfo                              MapInfo Struct_
RangeMaskMapInfoLabMax                        string_
RangeMaskMapInfoLabMin                        string_
RangeMaskMapInfoLumEq                         string_+
RangeMaskMapInfoRGBMax                        string_
RangeMaskMapInfoRGBMin                        string_
RawFileName                                   string
RedEyeInfo                                    string+
```

```
RedHue                                            integer
RedSaturation                                     integer
RetouchAreas                                      RetouchArea Struct+
RetouchAreaFeather                                real_
RetouchAreaMasks                                  CorrectionMask Struct_+
RetouchAreaMaskAlpha                              real_
RetouchAreaMaskAngle                              real_
RetouchAreaMaskBottom                             real_
RetouchAreaMaskCenterValue                        real_
RetouchAreaMaskCenterWeight                       real_
RetouchAreaMaskRange                              CorrRangeMask Struct_+
RetouchAreaMaskRangeAreaModels                    AreaModels Struct_+
RetouchAreaMaskRangeAreaModelsComponents          string_+
RetouchAreaMaskRangeAreaModelsColorSampleInfo     string_+
RetouchAreaMaskRangeColorAmount                   real_+
RetouchAreaMaskRangeDepthFeather                  real_+
RetouchAreaMaskRangeDepthMax                      real_+
RetouchAreaMaskRangeDepthMin                      real_+
RetouchAreaMaskRangeInvert                        boolean_+
RetouchAreaMaskRangeLumFeather                    real_+
RetouchAreaMaskRangeLuminanceDepthSampleInfo      string_+
RetouchAreaMaskRangeLumMax                        real_+
RetouchAreaMaskRangeLumMin                        real_+
RetouchAreaMaskRangeLumRange                      string_+
RetouchAreaMaskRangeSampleType                    integer_+
RetouchAreaMaskRangeType                          string_+
RetouchAreaMaskRangeVersion                       string_+
RetouchAreaMaskDabs                               string_
RetouchAreaMaskFeather                            real_
RetouchAreaMaskFlipped                            boolean_
RetouchAreaMaskFlow                               real_
RetouchAreaMaskFullX                              real_
RetouchAreaMaskFullY                              real_
RetouchAreaMaskInputDigest                        string_
RetouchAreaMaskLeft                               real_
RetouchAreaMaskMaskActive                         boolean_
RetouchAreaMaskMaskBlendMode                      integer_
RetouchAreaMaskMaskDigest                         string_
RetouchAreaMaskMaskInverted                       boolean_
RetouchAreaMaskMaskName                           string_
RetouchAreaMaskMasks                              CorrectionMask Struct_+
RetouchAreaMaskMasksAlpha                         real_
RetouchAreaMaskMasksAngle                         real_
RetouchAreaMaskMasksBottom                        real_
RetouchAreaMaskMasksCenterValue                   real_
RetouchAreaMaskMasksCenterWeight                  real_
RetouchAreaMaskMasksDabs                          string_+
RetouchAreaMaskMasksFeather                       real_
RetouchAreaMaskMasksFlipped                       boolean_
RetouchAreaMaskMasksFlow                          real_
RetouchAreaMaskMasksFullX                         real_
RetouchAreaMaskMasksFullY                         real_
RetouchAreaMaskMasksInputDigest                   string_
RetouchAreaMaskMasksLeft                          real_
RetouchAreaMaskMasksMaskActive                    boolean_
RetouchAreaMaskMasksMaskBlendMode                 integer_
RetouchAreaMaskMasksMaskDigest                    string_
RetouchAreaMaskMasksMaskInverted                  boolean_
RetouchAreaMaskMasksMaskName                      string_
RetouchAreaMaskMasksMaskSubType                   string_
RetouchAreaMaskMasksMaskSyncID                    string_
RetouchAreaMaskMasksValue                         real_
RetouchAreaMaskMasksMaskVersion                   string_
RetouchAreaMaskMasksMidpoint                      real_
RetouchAreaMaskMasksOrigin                        string_
RetouchAreaMaskMasksPerimeterValue                real_
RetouchAreaMaskMasksRadius                        real_
RetouchAreaMaskMasksReferencePoint                string_
RetouchAreaMaskMasksRight                         real_
RetouchAreaMaskMasksRoundness                     real_
```

```
RetouchAreaMaskMasksSizeX                        real_
RetouchAreaMaskMasksSizeY                        real_
RetouchAreaMaskMasksTop                          real_
RetouchAreaMaskMaskSubType                       string_
RetouchAreaMaskMasksVersion                      integer_
RetouchAreaMaskMasksWhat                         string_
RetouchAreaMaskMasksWholeImageArea               string_
RetouchAreaMaskMasksX                            real_
RetouchAreaMaskMasksY                            real_
RetouchAreaMaskMaskSyncID                        string_
RetouchAreaMaskMasksZeroX                        real_
RetouchAreaMaskMasksZeroY                        real_
RetouchAreaMaskValue                             real_
RetouchAreaMaskMaskVersion                       string_
RetouchAreaMaskMidpoint                          real_
RetouchAreaMaskOrigin                            string_
RetouchAreaMaskPerimeterValue                    real_
RetouchAreaMaskRadius                            real_
RetouchAreaMaskReferencePoint                    string_
RetouchAreaMaskRight                             real_
RetouchAreaMaskRoundness                         real_
RetouchAreaMaskSizeX                             real_
RetouchAreaMaskSizeY                             real_
RetouchAreaMaskTop                               real_
RetouchAreaMaskVersion                           integer_
RetouchAreaMaskWhat                              string_
RetouchAreaMaskWholeImageArea                    string_
RetouchAreaMaskX                                 real_
RetouchAreaMaskY                                 real_
RetouchAreaMaskZeroX                             real_
RetouchAreaMaskZeroY                             real_
RetouchAreaMethod                                string_
RetouchAreaOffsetY                               real_
RetouchAreaOpacity                               real_
RetouchAreaSeed                                  integer_
RetouchAreaSourceState                           string_
RetouchAreaSourceX                               real_
RetouchAreaSpotType                              string_
RetouchInfo                                      string+
Saturation                                       integer/
SaturationAdjustmentAqua                         integer
SaturationAdjustmentBlue                         integer
SaturationAdjustmentGreen                        integer
SaturationAdjustmentMagenta                      integer
SaturationAdjustmentOrange                       integer
SaturationAdjustmentPurple                       integer
SaturationAdjustmentRed                          integer
SaturationAdjustmentYellow                       integer
SDRBlend                                         real
SDRBrightness                                    real
SDRContrast                                      real
SDRHighlights                                    real
SDRShadows                                       real
SDRWhites                                        real
Shadows                                          integer
Shadows2012                                      integer
ShadowTint                                       integer
SharpenDetail                                    integer
SharpenEdgeMasking                               integer
SharpenRadius                                    real
Sharpness                                        integer/
ShortName                                        lang-alt
Smoothness                                       integer
SortName                                         lang-alt
SplitToningBalance                               integer
SplitToningHighlightHue                          integer
SplitToningHighlightSaturation                   integer
SplitToningShadowHue                             integer
SplitToningShadowSaturation                      integer
SupportsAmount                                   boolean
```

```
SupportsColor                            boolean
SupportsHighDynamicRange                 boolean
SupportsMonochrome                       boolean
SupportsNormalDynamicRange               boolean
SupportsOutputReferred                   boolean
SupportsSceneReferred                    boolean
ColorTemperature                         integer
Texture                                  integer
TIFFHandling                             string
Tint                                     integer
ToggleStyleAmount                        integer
ToggleStyleDigest                        string
ToneCurve                                string+
ToneCurveBlue                            string+
ToneCurveGreen                           string+
ToneCurveName                            string
ToneCurveName2012                        string
ToneCurvePV2012                          string+
ToneCurvePV2012Blue                      string+
ToneCurvePV2012Green                     string+
ToneCurvePV2012Red                       string+
ToneCurveRed                             string+
ToneMapStrength                          real
UprightCenterMode                        integer
UprightCenterNormX                       real
UprightCenterNormY                       real
UprightDependentDigest                   string
UprightFocalLength35mm                   real
UprightFocalMode                         integer
UprightFourSegments_0                    string
UprightFourSegments_1                    string
UprightFourSegments_2                    string
UprightFourSegments_3                    string
UprightFourSegmentsCount                 integer
UprightGuidedDependentDigest             string
UprightPreview                           boolean
UprightTransform_0                       string
UprightTransform_1                       string
UprightTransform_2                       string
UprightTransform_3                       string
UprightTransform_4                       string
UprightTransform_5                       string
UprightTransformCount                    integer
UprightVersion                           integer
UUID                                     string/
Version                                  string
Vibrance                                 integer
VignetteAmount                           integer
VignetteMidpoint                         integer
What                                     string
WhiteBalance                             string/
Whites2012                               integer
```

XMP dc Tags

Dublin Core namespace tags.

These tags belong to the ExifTool XMP-dc family 1 group.

Tag Name	Writable
Contributor	string+
Coverage	string
Creator	string+
Date	date+
Description	lang-alt
Format	string
Identifier	string
Language	string+
Publisher	string+

```
Relation                                        string+
Rights                                          lang-alt
Source                                          string/
Subject                                         string+
Title                                           lang-alt
Type                                            string+
```

XMP <u>Device</u> <u>Tags</u>

Google depth-map Device tags. See
<https://developer.android.com/training/camera2/Dynamic-depth-v1.0.pdf>
for the specification.

These tags belong to the ExifTool XMP-Device family 1 group.

```
  Tag Name                                      Writable
  --------                                      --------
  AppInfo                                       AppInfo Struct
  AppInfoApplication                            string_
  AppInfoItemURI                                string_
  AppInfoVersion                                string_
  Cameras                                       DeviceCameras Struct+
  Camera                                        DeviceCamera Struct_+
  CameraAppInfo                                 AppInfo Struct_+
  CameraAppInfoApplication                      string_+
  CameraAppInfoItemURI                          string_+
  CameraAppInfoVersion                          string_+
  CameraDepthMap                                DeviceDepthMap Struct_+
  CameraDepthMapConfidenceURI                   string_+
  CameraDepthMapDepthURI                        string_+
  CameraDepthMapFar                             real_+
  CameraDepthMapFocalTable                      string_+
  CameraDepthMapFocalTableEntryCount            integer_+
  CameraDepthMapFormat                          string_+
  CameraDepthMapItemSemantic                    string_+
  CameraDepthMapMeasureType                     string_+
  CameraDepthMapNear                            real_+
  CameraDepthMapSoftware                        string_+
  CameraDepthMapUnits                           string_+
  CameraImage                                   DeviceImage Struct_+
  CameraImageItemSemantic                       string_+
  CameraImageItemURI                            string_+
  CameraImagingModel                            DeviceImagingModel Struct_+
  CameraImagingModelDistortion                  string_+
  CameraImagingModelDistortionCount             integer_+
  CameraImagingModelFocalLengthX                real_+
  CameraImagingModelFocalLengthY                real_+
  CameraImagingModelImageHeight                 integer_+
  CameraImagingModelImageWidth                  integer_+
  CameraImagingModelPixelAspectRatio            real_+
  CameraImagingModelPrincipalPointX             real_+
  CameraImagingModelPrincipalPointY             real_+
  CameraImagingModelSkew                        real_+
  CameraLightEstimate                           DeviceLightEstimate Struct_+
  CameraLightEstimateColorCorrectionB           real_+
  CameraLightEstimateColorCorrectionG           real_+
  CameraLightEstimateColorCorrectionR           real_+
  CameraLightEstimatePixelIntensity             real_+
  CameraPointCloud                              DevicePointCloud Struct_+
  CameraPointCloudMetric                        boolean_+
  CameraPointCloudPointCloud                    integer_+
  CameraPointCloudPoints                        string_+
  CameraPose                                    Pose Struct_+
  CameraPosePositionX                           real_+
  CameraPosePositionY                           real_+
  CameraPosePositionZ                           real_+
  CameraPoseRotationW                           real_+
  CameraPoseRotationX                           real_+
  CameraPoseRotationY                           real_+
  CameraPoseRotationZ                           real_+
```

```
CameraPoseTimestamp                               integer_+
CameraTrait                                       string_+
CameraVendorInfo                                  VendorInfo Struct_+
CameraVendorInfoManufacturer                      string_+
CameraVendorInfoModel                             string_+
CameraVendorInfoNotes                             string_+
Container                                         DeviceContainer Struct
ContainerDirectory                                DeviceDirectory Struct_+
ContainerDirectoryItem                            DeviceItem Struct_+
ContainerDirectoryItemDataURI                     string_+
ContainerDirectoryItemLength                      integer_+
ContainerDirectoryItemMime                        string_+
ContainerDirectoryItemPadding                     integer_+
EarthPos                                          EarthPose Struct
EarthPosAltitude                                  real_
EarthPosLatitude                                  real_
EarthPosLongitude                                 real_
EarthPosRotationW                                 real_
EarthPosRotationX                                 real_
EarthPosRotationY                                 real_
EarthPosRotationZ                                 real_
EarthPosTimestamp                                 integer_
Planes                                            DevicePlanes Struct+
Plane                                             DevicePlane Struct_+
PlaneBoundary                                     string_+
PlaneBoundaryVertexCount                          integer_+
PlaneExtentX                                      real_+
PlaneExtentZ                                      real_+
PlanePose                                         Pose Struct_+
PlanePosePositionX                                real_+
PlanePosePositionY                                real_+
PlanePosePositionZ                                real_+
PlanePoseRotationW                                real_+
PlanePoseRotationX                                real_+
PlanePoseRotationY                                real_+
PlanePoseRotationZ                                real_+
PlanePoseTimestamp                                integer_+
Pose                                              Pose Struct
PosePositionX                                     real_
PosePositionY                                     real_
PosePositionZ                                     real_
PoseRotationW                                     real_
PoseRotationX                                     real_
PoseRotationY                                     real_
PoseRotationZ                                     real_
PoseTimestamp                                     integer_
Profiles                                          DeviceProfiles Struct+
Profile                                           DeviceProfile Struct_+
ProfileCameraIndices                              integer_+
ProfileType                                       string_+
VendorInfo                                        VendorInfo Struct
VendorInfoManufacturer                            string_
VendorInfoModel                                   string_
VendorInfoNotes                                   string_
```

XMP AppInfo Struct

Field Name	Writable
Application	string
ItemURI	string
Version	string

XMP DeviceCameras Struct

Field Name	Writable
Camera	DeviceCamera Struct

XMP DeviceCamera Struct

Field Name	Writable
AppInfo	AppInfo Struct
DepthMap	DeviceDepthMap Struct
Image	DeviceImage Struct
ImagingModel	DeviceImagingModel Struct
LightEstimate	DeviceLightEstimate Struct
PointCloud	DevicePointCloud Struct
Pose	Pose Struct
Trait	string
VendorInfo	VendorInfo Struct

XMP <u>DeviceDepthMap</u> <u>Struct</u>

Field Name	Writable
ConfidenceURI	string
DepthURI	string
Far	real
FocalTable	string
FocalTableEntryCount	integer
Format	string
ItemSemantic	string
MeasureType	string
Near	real
Software	string
Units	string

XMP <u>DeviceImage</u> <u>Struct</u>

Field Name	Writable
ItemSemantic	string
ItemURI	string

XMP <u>DeviceImagingModel</u> <u>Struct</u>

Field Name	Writable
Distortion	string
DistortionCount	integer
FocalLengthX	real
FocalLengthY	real
ImageHeight	integer
ImageWidth	integer
PixelAspectRatio	real
PrincipalPointX	real
PrincipalPointY	real
Skew	real

XMP <u>DeviceLightEstimate</u> <u>Struct</u>

Field Name	Writable
ColorCorrectionB	real
ColorCorrectionG	real
ColorCorrectionR	real
PixelIntensity	real

XMP <u>DevicePointCloud</u> <u>Struct</u>

Field Name	Writable
Metric	boolean
PointCloud	integer
Points	string

XMP <u>Pose</u> <u>Struct</u>

Field Name	Writable
PositionX	real
PositionY	real
PositionZ	real
RotationW	real
RotationX	real
RotationY	real
RotationZ	real
Timestamp	integer

XMP VendorInfo Struct

Field Name	Writable
Manufacturer	string
Model	string
Notes	string

XMP DeviceContainer Struct

Field Name	Writable
Directory	DeviceDirectory Struct+

XMP DeviceDirectory Struct

Field Name	Writable
Item	DeviceItem Struct

XMP DeviceItem Struct

Field Name	Writable
DataURI	string
Length	integer
Mime	string
Padding	integer

XMP EarthPose Struct

Field Name	Writable
Altitude	real
Latitude	real
Longitude	real
RotationW	real
RotationX	real
RotationY	real
RotationZ	real
Timestamp	integer

XMP DevicePlanes Struct

Field Name	Writable
Plane	DevicePlane Struct

XMP DevicePlane Struct

Field Name	Writable
Boundary	string
BoundaryVertexCount	integer
ExtentX	real
ExtentZ	real
Pose	Pose Struct

XMP DeviceProfiles Struct

```
    Field Name                              Writable
    ----------                              --------
    Profile                                 DeviceProfile Struct
```

XMP DeviceProfile Struct

```
    Field Name                              Writable
    ----------                              --------
    CameraIndices                           integer+
    Type                                    string
```

XMP dex Tags

Description Explorer namespace tags. These tags are not very common.
The Source and Rating tags are avoided when writing due to name
conflicts with other XMP tags. (see
<http://www.optimasc.com/products/fileid/>)

These tags belong to the ExifTool XMP-dex family 1 group.

```
    Tag Name                                Writable
    --------                                --------
    CRC32                                   integer
    FFID                                    string
    LicenseType                             string
    OS                                      integer
    Rating                                  string/
    Revision                                string
    ShortDescription                        lang-alt
    Source                                  string/
```

XMP DICOM Tags

DICOM namespace tags. These XMP tags allow some DICOM information to
be stored in files of other than DICOM format. See the DICOM Tags
documentation for a list of tags available in DICOM-format files.

These tags belong to the ExifTool XMP-DICOM family 1 group.

```
    Tag Name                                Writable
    --------                                --------
    EquipmentInstitution                    string
    EquipmentManufacturer                   string
    PatientBirthDate                        date
    PatientID                               string
    PatientName                             string
    PatientSex                              string
    SeriesDateTime                          date
    SeriesDescription                       string
    SeriesModality                          string
    SeriesNumber                            string
    StudyDateTime                           date
    StudyDescription                        string
    StudyID                                 string
    StudyPhysician                          string
```

XMP digiKam Tags

DigiKam namespace tags.

These tags belong to the ExifTool XMP-digiKam family 1 group.

```
    Tag Name                                Writable
    --------                                --------
    CaptionsAuthorNames                     lang-alt
    CaptionsDateTimeStamps                  lang-alt
    ColorLabel                              string
    ImageHistory                            string/
    ImageUniqueID                           string/
```

```
    LensCorrectionSettings                        string
    PicasawebGPhotoId                             string
    PickLabel                                     string
    TagsList                                      string+
```

XMP ExifTool Tags

These tags belong to the ExifTool XMP-et family 1 group.

```
    Tag Name                                      Writable
    --------                                      --------
    OriginalImageHash                             string
    OriginalImageHashType                         string
    OriginalImageMD5                              string
```

XMP exif Tags

EXIF namespace for EXIF tags. See
<https://web.archive.org/web/20180921145139if_/http://www.cipa.jp:80/std/documents
/e/DC-010-2017_E.pdf>
for the specification.

These tags belong to the ExifTool XMP-exif family 1 group.

```
    Tag Name                                      Writable
    --------                                      --------
    ApertureValue                                 rational
    BrightnessValue                               rational
    CFAPattern                                    CFAPattern Struct
    CFAPatternColumns                             integer_
    CFAPatternRows                                integer_
    CFAPatternValues                              integer_+
    ColorSpace                                    integer
    ComponentsConfiguration                       integer+
    CompressedBitsPerPixel                        rational
    Contrast                                      integer
    CustomRendered                                integer
    DateTimeDigitized                             date
    DateTimeOriginal                              date
    DeviceSettingDescription                      DeviceSettings Struct
    DeviceSettingDescriptionColumns               integer_
    DeviceSettingDescriptionRows                  integer_
    DeviceSettingDescriptionSettings              string_+
    DigitalZoomRatio                              rational
    ExifVersion                                   string
    ExposureCompensation                          rational
    ExposureIndex                                 rational
    ExposureMode                                  integer
    ExposureProgram                               integer
    ExposureTime                                  rational
    FileSource                                    integer
    Flash                                         Flash Struct
    FlashEnergy                                   rational
    FlashFired                                    boolean_
    FlashFunction                                 boolean_
    FlashMode                                     integer_
    FlashpixVersion                               string
    FlashRedEyeMode                               boolean_
    FlashReturn                                   integer_
    FNumber                                       rational
    FocalLength                                   rational
    FocalLengthIn35mmFormat                       integer
    FocalPlaneResolutionUnit                      integer
    FocalPlaneXResolution                         rational
    FocalPlaneYResolution                         rational
    GainControl                                   integer
    GPSAltitude                                   rational
    GPSAltitudeRef                                integer
    GPSAreaInformation                            string
    GPSDestBearing                                rational
```

```
GPSDestBearingRef                            string
GPSDestDistance                              rational
GPSDestDistanceRef                           string
GPSDestLatitude                              string
GPSDestLongitude                             string
GPSDifferential                              integer
GPSDOP                                       rational
GPSHPositioningError                         rational
GPSImgDirection                              rational
GPSImgDirectionRef                           string
GPSLatitude                                  string
GPSLongitude                                 string
GPSMapDatum                                  string
GPSMeasureMode                               integer
GPSProcessingMethod                          string
GPSSatellites                                string
GPSSpeed                                     rational
GPSSpeedRef                                  string
GPSStatus                                    string
GPSDateTime                                  date
GPSTrack                                     rational
GPSTrackRef                                  string
GPSVersionID                                 string
ImageUniqueID                                string/
ISO                                          integer+
LightSource                                  string
MakerNote                                    string
MaxApertureValue                             rational
MeteringMode                                 integer
NativeDigest                                 string
Opto-ElectricConvFactor                      OECF Struct
OECFColumns                                  integer_
OECFNames                                    string_+
OECFRows                                     integer_
OECFValues                                   rational_+
ExifImageWidth                               integer
ExifImageHeight                              integer
RelatedSoundFile                             string
Saturation                                   integer
SceneCaptureType                             integer
SceneType                                    integer
SensingMethod                                integer
Sharpness                                    integer
ShutterSpeedValue                            rational
SpatialFrequencyResponse                     OECF Struct
SpatialFrequencyResponseColumns              integer_
SpatialFrequencyResponseNames                string_+
SpatialFrequencyResponseRows                 integer_
SpatialFrequencyResponseValues               rational_+
SpectralSensitivity                          string
SubjectArea                                  integer+
SubjectDistance                              rational
SubjectDistanceRange                         integer
SubjectLocation                              integer+
UserComment                                  lang-alt
WhiteBalance                                 integer
```

XMP <u>CFAPattern</u> <u>Struct</u>

```
Field Name                                   Writable
----------                                   --------
Columns                                      integer
Rows                                         integer
Values                                       integer+
```

XMP <u>DeviceSettings</u> <u>Struct</u>

```
Field Name                                   Writable
----------                                   --------
Columns                                      integer
```

```
  Rows                                integer
  Settings                            string+
```

XMP Flash Struct

```
  Field Name                          Writable
  ----------                          --------
  Fired                               boolean
  Function                            boolean
  Mode                                integer
  RedEyeMode                          boolean
  Return                              integer
```

XMP OECF Struct

```
  Field Name                          Writable
  ----------                          --------
  Columns                             integer
  Names                               string+
  Rows                                integer
  Values                              rational+
```

XMP exifEX Tags

EXIF tags added by the EXIF 2.32 for XMP specification (see
<https://cipa.jp/std/documents/download_e.html?DC-010-2020_E>).

These tags belong to the ExifTool XMP-exifEX family 1 group.

```
  Tag Name                            Writable
  --------                            --------
  Acceleration                        rational
  SerialNumber                        string
  CameraElevationAngle                rational
  CameraFirmware                      string
  OwnerName                           string
  CompositeImage                      integer
  CompositeImageCount                 integer+
  CompositeImageExposureTimes         CompImageExp Struct
  CompImageMaxExposureAll             rational_
  CompImageMaxExposureUsed            rational_
  CompImageMinExposureAll             rational_
  CompImageMinExposureUsed            rational_
  CompImageImagesPerSequence          integer_
  CompImageNumSequences               integer_
  CompImageSumExposureAll             rational_
  CompImageSumExposureUsed            rational_
  CompImageTotalExposurePeriod        rational_
  CompImageValues                     rational_+
  Gamma                               rational
  Humidity                            rational
  ImageEditingSoftware                string
  ImageEditor                         string
  ImageTitle                          string
  ImageUniqueID                       string
  InteropIndex                        string
  ISOSpeed                            integer
  ISOSpeedLatitudeyyy                 integer
  ISOSpeedLatitudezzz                 integer
  LensMake                            string
  LensModel                           string
  LensSerialNumber                    string
  LensInfo                            rational+
  MetadataEditingSoftware             string
  Photographer                        string
  PhotographicSensitivity             integer
  Pressure                            rational
  RAWDevelopingSoftware               string
  RecommendedExposureIndex            integer
  SensitivityType                     integer
```

```
  StandardOutputSensitivity                      integer
  AmbientTemperature                             rational
  WaterDepth                                     rational
```

XMP CompImageExp Struct

```
  Field Name                                     Writable
  ----------                                     --------
  MaxExposureTimesOfAll                          rational
  MaxExposureTimesOfUsed                         rational
  MinExposureTimesOfAll                          rational
  MinExposureTimesOfUsed                         rational
  NumberOfImagesInSequences                      integer
  NumberOfSequences                              integer
  SumOfExposureTimesOfAll                        rational
  SumOfExposureTimesOfUsed                       rational
  TotalExposurePeriod                            rational
  Values                                         rational+
```

XMP ExpressionMedia Tags

Microsoft Expression Media namespace tags. These tags are avoided when writing due to name conflicts with tags in other schemas.

These tags belong to the ExifTool XMP-expressionmedia family 1 group.

```
  Tag Name                                       Writable
  --------                                       --------
  CatalogSets                                    string/+
  Event                                          string/
  People                                         string/+
  Status                                         string/
```

XMP extensis Tags

Tags used by Extensis Portfolio.

These tags belong to the ExifTool XMP-extensis family 1 group.

```
  Tag Name                                       Writable
  --------                                       --------
  Approved                                       boolean
  ApprovedBy                                     string
  ClientName                                     string
  JobName                                        string
  JobStatus                                      string
  RoutedTo                                       string
  RoutingNotes                                   string
  WorkToDo                                       string
```

XMP fpv Tags

Fast Picture Viewer tags (see <http://www.fastpictureviewer.com/help/#rtfcomments>).

These tags belong to the ExifTool XMP-fpv family 1 group.

```
  Tag Name                                       Writable
  --------                                       --------
  RichTextComment                                string
```

XMP GAudio Tags

These tags belong to the ExifTool XMP-GAudio family 1 group.

```
  Tag Name                                       Writable
  --------                                       --------
  AudioData                                      string
  AudioMimeType                                  string
```

XMP GCamera Tags

Camera information found in Google panorama images.

These tags belong to the ExifTool XMP-GCamera family 1 group.

```
  Tag Name                                  Writable
  --------                                  --------
  BurstID                                   string
  BurstPrimary                              string
  DisableAutoCreation                       string+
  DisableSuggestedAction                    string+
  HDRPMakerNote                             string
  HdrPlusMakernote                          string
  MicroVideo                                integer
  MicroVideoOffset                          integer
  MicroVideoPresentationTimestampUs         integer
  MicroVideoVersion                         integer
  MotionPhoto                               integer
  MotionPhotoPresentationTimestampUs        integer
  MotionPhotoVersion                        integer
  PortraitNote                              string
  PortraitRequest                           string
  PortraitVersion                           string
  ShotLogData                               string
  SpecialTypeID                             string+
```

XMP GContainer Tags

Google Container namespace. ExifTool uses the prefix 'GContainer'
instead of 'Container' to avoid a conflict with the Google Device
Container namespace.

These tags belong to the ExifTool XMP-GContainer family 1 group.

```
  Tag Name                                  Writable
  --------                                  --------
  ContainerDirectory                        Directory Struct+
  DirectoryItem                             Item Struct_+
  DirectoryItemLabel                        string_+
  DirectoryItemLength                       integer_+
  DirectoryItemMime                         string_+
  DirectoryItemPadding                      integer_+
  DirectoryItemSemantic                     string_+
  DirectoryItemURI                          string_+
```

XMP Directory Struct

```
  Field Name                                Writable
  ----------                                --------
  Item                                      Item Struct
```

XMP Item Struct

```
  Field Name                                Writable
  ----------                                --------
  Label                                     string
  Length                                    integer
  Mime                                      string
  Padding                                   integer
  Semantic                                  string
  URI                                       string
```

XMP GCreations Tags

Google creations tags.

These tags belong to the ExifTool XMP-GCreations family 1 group.

```
  Tag Name                                  Writable
```

```
  --------                              --------
  CameraBurstID                         string
  Type                                  string/
```

XMP GDepth Tags

Google depthmap information. See
<https://developers.google.com/depthmap-metadata/> for the
specification.

These tags belong to the ExifTool XMP-GDepth family 1 group.

```
  Tag Name                              Writable
  --------                              --------
  Confidence                            string/
  ConfidenceMime                        string/
  DepthImage                            string/
  Far                                   real/
  Format                                string/
  ImageHeight                           real/
  ImageWidth                            real/
  Manufacturer                          string/
  MeasureType                           string/
  Mime                                  string/
  Model                                 string/
  Near                                  real/
  Software                              string/
  Units                                 string/
```

XMP GettyImages Tags

The actual Getty Images namespace prefix is "GettyImagesGIFT", which is
the prefix recorded in the file, but ExifTool shortens this for the
family 1 group name.

These tags belong to the ExifTool XMP-getty family 1 group.

```
  Tag Name                              Writable
  --------                              --------
  AssetID                               string
  CallForImage                          string
  CameraFilename                        string
  CameraMakeModel                       string/
  CameraSerialNumber                    string/
  Composition                           string
  ExclusiveCoverage                     string
  GIFTFtpPriority                       string
  ImageRank                             string
  MediaEventIdDate                      string
  OriginalCreateDateTime                date/
  OriginalFileName                      string
  ParentMediaEventID                    string
  ParentMEID                            string
  Personality                          string+
  PrimaryFTP                           string+
  RoutingDestinations                  string+
  RoutingExclusions                    string+
  SecondaryFTP                         string+
  TimeShot                              string
```

XMP GFocus Tags

Focus information found in Google depthmap images.

These tags belong to the ExifTool XMP-GFocus family 1 group.

```
  Tag Name                              Writable
  --------                              --------
  BlurAtInfinity                        real
  FocalDistance                         real
```

```
   FocalPointX                              real
   FocalPointY                              real
```

XMP GImage Tags

These tags belong to the ExifTool XMP-GImage family 1 group.

```
   Tag Name                                 Writable
   --------                                 --------
   ImageData                                string
   ImageMimeType                            string
```

XMP GPano Tags

Panorama tags written by Google Photosphere. See
<https://developers.google.com/panorama/metadata/> for the
specification.

These tags belong to the ExifTool XMP-GPano family 1 group.

```
   Tag Name                                 Writable
   --------                                 --------
   CaptureSoftware                          string
   CroppedAreaImageHeightPixels             real
   CroppedAreaImageWidthPixels              real
   CroppedAreaLeftPixels                    real
   CroppedAreaTopPixels                     real
   ExposureLockUsed                         boolean
   FirstPhotoDate                           date
   FullPanoHeightPixels                     real
   FullPanoWidthPixels                      real
   InitialCameraDolly                       real
   InitialHorizontalFOVDegrees              real
   InitialVerticalFOVDegrees                real
   InitialViewHeadingDegrees                real
   InitialViewPitchDegrees                  real
   InitialViewRollDegrees                   real
   LargestValidInteriorRectHeight           real
   LargestValidInteriorRectLeft             real
   LargestValidInteriorRectTop              real
   LargestValidInteriorRectWidth            real
   LastPhotoDate                            date
   PoseHeadingDegrees                       real
   PosePitchDegrees                         real
   PoseRollDegrees                          real
   ProjectionType                           string
   SourcePhotosCount                        integer
   StitchingSoftware                        string
   UsePanoramaViewer                        boolean
```

XMP GSpherical Tags

Not actually XMP. These RDF/XML tags are used in Google spherical MP4
videos. These tags are written into the video track of MOV/MP4 files,
and not at the top level like other XMP tags. See
<https://github.com/google/spatial-media/blob/master/docs/spherical-video-rfc.md>
for the specification.

These tags belong to the ExifTool XMP-GSpherical family 1 group.

```
   Tag Name                                 Writable
   --------                                 --------
   CroppedAreaImageHeightPixels             integer/
   CroppedAreaImageWidthPixels              integer/
   CroppedAreaLeftPixels                    integer/
   CroppedAreaTopPixels                     integer/
   FullPanoHeightPixels                     integer/
   FullPanoWidthPixels                      integer/
   InitialViewHeadingDegrees                real/
   InitialViewPitchDegrees                  real/
```

```
    InitialViewRollDegrees                        real/
    ProjectionType                                string/
    SourceCount                                   integer/
    Spherical                                     boolean/
    StereoMode                                    string/
    Stitched                                      boolean/
    StitchingSoftware                             string/
    TimeStamp                                     integer/
```

XMP hdr Tags

HDR metadata namespace tags written by ACR 15.1. The actual namespace
prefix is "hdr_metadata", which is the prefix recorded in the file, but
ExifTool shortens this for the family 1 group name.

These tags belong to the ExifTool XMP-hdr family 1 group.

```
    Tag Name                                      Writable
    --------                                      --------
    CCVAvgLuminanceNits                           real
    CCVMaxLuminanceNits                           real
    CCVMinLuminanceNits                           real
    CCVPrimariesXY                                string
    CCVWhiteXY                                    string
    SceneReferred                                 boolean
```

XMP HDRGainMap Tags

Used in Apple HDR GainMap images.

These tags belong to the ExifTool XMP-HDRGainMap family 1 group.

```
    Tag Name                                      Writable
    --------                                      --------
    HDRGainMapVersion                             string
```

XMP hdrgm Tags

Tags used in Adobe gain map images.

These tags belong to the ExifTool XMP-hdrgm family 1 group.

```
    Tag Name                                      Writable
    --------                                      --------
    BaseRenditionIsHDR                            boolean
    GainMapMax                                    real+
    GainMapMin                                    real+
    Gamma                                         real/+
    HDRCapacityMax                                real
    HDRCapacityMin                                real
    OffsetHDR                                     real+
    OffsetSDR                                     real+
    Version                                       string/
```

XMP ics Tags

Tags used by IDimager. Nested TagStructure structures are unrolled to
an arbitrary depth of 6 to avoid infinite recursion.

These tags belong to the ExifTool XMP-ics family 1 group.

```
    Tag Name                                      Writable
    --------                                      --------
    AppVersion                                    string/
    ImageRef                                      string
    SubVersions                                   SubVersion Struct+
    SubVersionFileName                            string_+
    SubVersionReference                           string_+
    TagStructure                                  TagStructure Struct+
    LabelName1                                    string_+
```

```
  ParentReference1                            string_+
  Reference1                                  string_+
  SubLabels1                                  TagStructure Struct_+
  LabelName2                                  string_+
  ParentReference2                            string_+
  Reference2                                  string_+
  SubLabels2                                  TagStructure Struct_+
  LabelName3                                  string_+
  ParentReference3                            string_+
  Reference3                                  string_+
  SubLabels3                                  TagStructure Struct_+
  LabelName4                                  string_+
  ParentReference4                            string_+
  Reference4                                  string_+
  SubLabels4                                  TagStructure Struct_+
  LabelName5                                  string_+
  ParentReference5                            string_+
  Reference5                                  string_+
  SubLabels5                                  TagStructure Struct_+
  LabelName6                                  string_+
  ParentReference6                            string_+
  Reference6                                  string_+
  TimeStamp                                   date/
```

XMP SubVersion Struct

```
  Field Name                                  Writable
  ----------                                  --------
  FileName                                    string
  VersRef                                     string
```

XMP TagStructure Struct

```
  Field Name                                  Writable
  ----------                                  --------
  LabelName                                   string
  ParentReference                             string
  Reference                                   string
  SubLabels                                   TagStructure Struct+
```

XMP iptcCore Tags

IPTC Core namespace tags. The actual IPTC Core namespace prefix is
"Iptc4xmpCore", which is the prefix recorded in the file, but ExifTool
shortens this for the family 1 group name. (see
<http://www.iptc.org/IPTC4XMP/>)

These tags belong to the ExifTool XMP-iptcCore family 1 group.

```
  Tag Name                                    Writable
  --------                                    --------
  AltTextAccessibility                        lang-alt
  CountryCode                                 string
  CreatorContactInfo                          ContactInfo Struct
  CreatorCity                                 string_
  CreatorCountry                              string_
  CreatorAddress                              string_
  CreatorPostalCode                           string_
  CreatorRegion                               string_
  CreatorWorkEmail                            string_
  CreatorWorkTelephone                        string_
  CreatorWorkURL                              string_
  ExtDescrAccessibility                       lang-alt
  IntellectualGenre                           string
  Location                                    string
  Scene                                       string+
  SubjectCode                                 string+
```

XMP ContactInfo Struct

```
    Field Name                              Writable
    ----------                              --------
    CiAdrCity                               string
    CiAdrCtry                               string
    CiAdrExtadr                             string
    CiAdrPcode                              string
    CiAdrRegion                             string
    CiEmailWork                             string
    CiTelWork                               string
    CiUrlWork                               string
```

XMP iptcExt Tags

This table contains tags defined by the IPTC Extension schema version
1.7 and IPTC Video Metadata version 1.3. The actual namespace prefix is
"Iptc4xmpExt", but ExifTool shortens this for the family 1 group name.
(See <http://www.iptc.org/standards/photo-metadata/iptc-standard/> and
<https://iptc.org/standards/video-metadata-hub/>.)

These tags belong to the ExifTool XMP-iptcExt family 1 group.

```
    Tag Name                                Writable
    --------                                --------
    AboutCvTerm                             CVTermDetails Struct+
    AboutCvTermCvId                         string_+
    AboutCvTermId                           string_+
    AboutCvTermName                         lang-alt_+
    AboutCvTermRefinedAbout                 string_+
    AdditionalModelInformation              string
    ArtworkOrObject                         ArtworkOrObjectDetails Struct+
    ArtworkCircaDateCreated                 string!_+
    ArtworkContentDescription               lang-alt_+
    ArtworkContributionDescription          lang-alt_+
    ArtworkCopyrightNotice                  string_+
    ArtworkCreator                          string_+
    ArtworkCreatorID                        string_+
    ArtworkCopyrightOwnerID                 string_+
    ArtworkCopyrightOwnerName               string_+
    ArtworkLicensorID                       string_+
    ArtworkLicensorName                     string_+
    ArtworkDateCreated                      date_+
    ArtworkPhysicalDescription              lang-alt_+
    ArtworkSource                           string_+
    ArtworkSourceInventoryNo                string_+
    ArtworkSourceInvURL                     string_+
    ArtworkStylePeriod                      string_+
    ArtworkTitle                            lang-alt_+
    AudioBitrate                            integer
    AudioBitrateMode                        string
    AudioBitsPerSample                      integer
    AudioChannelCount                       integer
    CircaDateCreated                        string
    ContainerFormat                         Entity Struct
    ContainerFormatIdentifier               string_+
    ContainerFormatName                     lang-alt_
    Contributor                             EntityWithRole Struct+
    ContributorIdentifier                   string_+
    ContributorName                         lang-alt_+
    ContributorRole                         string_+
    CopyrightYear                           integer
    Creator                                 EntityWithRole Struct+
    CreatorIdentifier                       string_+
    CreatorName                             lang-alt_+
    CreatorRole                             string_+
    ControlledVocabularyTerm                string+
    DataOnScreen                            TextRegion Struct+
    DataOnScreenRegion                      Area Struct_+
    DataOnScreenRegionD                     real_+
    DataOnScreenRegionH                     real_+
    DataOnScreenRegionText                  string_+
```

```
DataOnScreenRegionUnit                          string_+
DataOnScreenRegionW                             real_+
DataOnScreenRegionX                             real_+
DataOnScreenRegionY                             real_+
DigitalImageGUID                                string
DigitalSourceFileType                           string
DigitalSourceType                               string
Dopesheet                                       lang-alt
DopesheetLink                                   QualifiedLink Struct+
DopesheetLinkLink                               string_+
DopesheetLinkLinkQualifier                      string_+
EmbdEncRightsExpr                               EEREDetails Struct+
EmbeddedEncodedRightsExpr                        string_+
EmbeddedEncodedRightsExprType                    string_+
EmbeddedEncodedRightsExprLangID                  string_+
Episode                                         EpisodeOrSeason Struct
EpisodeIdentifier                               string_
EpisodeName                                     string_
EpisodeNumber                                   string_
Event                                           lang-alt
ShownEvent                                      Entity Struct+
ShownEventIdentifier                            string_+
ShownEventName                                  lang-alt_+
EventID                                         string+
ExternalMetadataLink                            string+
FeedIdentifier                                  string
Genre                                           CVTermDetails Struct+
GenreCvId                                       string_+
GenreCvTermId                                   string_+
GenreCvTermName                                 lang-alt_+
GenreCvTermRefinedAbout                         string_+
Headline                                        lang-alt/
ImageRegion                                     ImageRegion Struct+
ImageRegionName                                 lang-alt_+
ImageRegionCtype                                Entity Struct_+
ImageRegionCtypeIdentifier                      string_+
ImageRegionCtypeName                            lang-alt_+
ImageRegionBoundary                             RegionBoundary Struct_+
ImageRegionBoundaryH                            real_+
ImageRegionBoundaryRx                           real_+
ImageRegionBoundaryShape                        string_+
ImageRegionBoundaryUnit                         string_+
ImageRegionBoundaryVertices                     BoundaryPoint Struct_+
ImageRegionBoundaryVerticesX                    real_+
ImageRegionBoundaryVerticesY                    real_+
ImageRegionBoundaryW                            real_+
ImageRegionBoundaryX                            real_+
ImageRegionBoundaryY                            real_+
ImageRegionID                                   string_+
ImageRegionRole                                 Entity Struct_+
ImageRegionRoleIdentifier                       string_+
ImageRegionRoleName                             lang-alt_+
IPTCLastEdited                                  date
LinkedEncRightsExpr                             LEREDetails Struct+
LinkedEncodedRightsExpr                          string_+
LinkedEncodedRightsExprType                      string_+
LinkedEncodedRightsExprLangID                    string_+
LocationCreated                                 LocationDetails Struct+
LocationCreatedCity                             string_+
LocationCreatedCountryCode                      string_+
LocationCreatedCountryName                      string_+
LocationCreatedGPSAltitude                      rational_+
LocationCreatedGPSAltitudeRef                   integer_+
LocationCreatedGPSLatitude                      string_+
LocationCreatedGPSLongitude                     string_+
LocationCreatedIdentifier                       string_+
LocationCreatedLocationId                       string_+
LocationCreatedLocationName                     lang-alt_+
LocationCreatedProvinceState                    string_+
LocationCreatedSublocation                      string_+
```

```
LocationCreatedWorldRegion                    string_+
LocationShown                                 LocationDetails Struct+
LocationShownCity                             string_+
LocationShownCountryCode                       string_+
LocationShownCountryName                       string_+
LocationShownGPSAltitude                       rational_+
LocationShownGPSAltitudeRef                    integer_+
LocationShownGPSLatitude                       string_+
LocationShownGPSLongitude                      string_+
LocationShownIdentifier                        string_+
LocationShownLocationId                        string_+
LocationShownLocationName                       lang-alt_+
LocationShownProvinceState                     string_+
LocationShownSublocation                       string_+
LocationShownWorldRegion                       string_+
MaxAvailHeight                                 integer
MaxAvailWidth                                  integer
MetadataAuthority                              Entity Struct
MetadataAuthorityIdentifier                    string_+
MetadataAuthorityName                          lang-alt_
MetadataLastEdited                             date
MetadataLastEditor                             Entity Struct
MetadataLastEditorIdentifier                   string_+
MetadataLastEditorName                         lang-alt_
ModelAge                                       integer+
OrganisationInImageCode                        string+
OrganisationInImageName                        string+
ParentID                                       string
PersonHeard                                    Entity Struct+
PersonHeardIdentifier                          string_+
PersonHeardName                                lang-alt_+
PersonInImage                                  string+
PersonInImageWDetails                          PersonDetails Struct+
PersonInImageCharacteristic                    CVTermDetails Struct_+
PersonInImageCvTermCvId                        string_+
PersonInImageCvTermId                          string_+
PersonInImageCvTermName                        lang-alt_+
PersonInImageCvTermRefinedAbout                string_+
PersonInImageDescription                       lang-alt_+
PersonInImageId                                string_+
PersonInImageName                              lang-alt_+
PlanningRef                                     EntityWithRole Struct+
PlanningRefIdentifier                          string_+
PlanningRefName                                lang-alt_+
PlanningRefRole                                string_+
ProductInImage                                 ProductDetails Struct+
ProductInImageDescription                      lang-alt_+
ProductInImageGTIN                             string_+
ProductInImageProductId                        string_+
ProductInImageName                             lang-alt_+
PublicationEvent                               PublicationEvent Struct+
PublicationEventDate                           date_+
PublicationEventIdentifier                     string_+
PublicationEventName                           string_+
Rating                                         Rating Struct+
RatingRegion                                   LocationDetails Struct_+
RatingRegionCity                               string_+
RatingRegionCountryCode                        string_+
RatingRegionCountryName                        string_+
RatingRegionGPSAltitude                        rational_+
RatingRegionGPSAltitudeRef                     integer_+
RatingRegionGPSLatitude                        string_+
RatingRegionGPSLongitude                       string_+
RatingRegionIdentifier                         string_+
RatingRegionLocationId                         string_+
RatingRegionLocationName                        lang-alt_+
RatingRegionProvinceState                      string_+
RatingRegionSublocation                        string_+
RatingRegionWorldRegion                        string_+
RatingScaleMaxValue                            string_+
```

RatingScaleMinValue	string_+
RatingSourceLink	string_+
RatingValue	string_+
RatingValueLogoLink	string_+
RecDevice	Device Struct
RecDeviceAttLensDescription	string_
RecDeviceManufacturer	string_
RecDeviceModelName	string_
RecDeviceOwnersDeviceId	string_
RecDeviceSerialNumber	string_
RegistryID	RegistryEntryDetails Struct+
RegistryEntryRole	string_+
RegistryItemID	string_+
RegistryOrganisationID	string_+
ReleaseReady	boolean
Season	EpisodeOrSeason Struct
SeasonIdentifier	string_
SeasonName	string_
SeasonNumber	string_
Series	Series Struct
SeriesIdentifier	string_
SeriesName	string_
Snapshot	LinkedImage Struct+
SnapshotFormat	string_+
SnapshotHeightPixels	integer_+
SnapshotImageRole	string_+
SnapshotLink	string_+
SnapshotLinkQualifier	string_+
SnapshotUsedVideoFrame	Timecode Struct_+
SnapshotUsedVideoFrameTimeFormat	string_+
SnapshotUsedVideoFrameTimeValue	string_+
SnapshotUsedVideoFrameValue	integer_+
SnapshotWidthPixels	integer_+
StorylineIdentifier	string+
StreamReady	string
StylePeriod	string
SupplyChainSource	Entity Struct+
SupplyChainSourceIdentifier	string_+
SupplyChainSourceName	lang-alt_+
TemporalCoverage	TemporalCoverage Struct
TemporalCoverageFrom	date_
TemporalCoverageTo	date_
Transcript	lang-alt
TranscriptLink	QualifiedLink Struct+
TranscriptLinkLink	string_+
TranscriptLinkLinkQualifier	string_+
VideoBitrate	integer
VideoBitrateMode	string
VideoDisplayAspectRatio	rational
VideoEncodingProfile	string
VideoShotType	Entity Struct+
VideoShotTypeIdentifier	string_+
VideoShotTypeName	lang-alt_+
VideoStreamsCount	integer
VisualColor	string
WorkflowTag	CVTermDetails Struct
WorkflowTagCvId	string_
WorkflowTagCvTermId	string_
WorkflowTagCvTermName	lang-alt_
WorkflowTagCvTermRefinedAbout	string_

XMP CVTermDetails Struct

Field Name	Writable
CvId	string
CvTermId	string
CvTermName	lang-alt
CvTermRefinedAbout	string

XMP ArtworkOrObjectDetails Struct

```
  Field Name                               Writable
  ----------                               --------
  AOCircaDateCreated                       string
  AOContentDescription                     lang-alt
  AOContributionDescription                lang-alt
  AOCopyrightNotice                        string
  AOCreator                                string+
  AOCreatorId                              string+
  AOCurrentCopyrightOwnerId                string
  AOCurrentCopyrightOwnerName              string
  AOCurrentLicensorId                      string
  AOCurrentLicensorName                    string
  AODateCreated                            date
  AOPhysicalDescription                    lang-alt
  AOSource                                 string
  AOSourceInvNo                            string
  AOSourceInvURL                           string
  AOStylePeriod                            string+
  AOTitle                                  lang-alt
```

XMP Entity Struct

```
  Field Name                               Writable
  ----------                               --------
  Identifier                               string+
  Name                                     lang-alt
```

XMP EntityWithRole Struct

```
  Field Name                               Writable
  ----------                               --------
  Identifier                               string+
  Name                                     lang-alt
  Role                                     string+
```

XMP TextRegion Struct

```
  Field Name                               Writable
  ----------                               --------
  Region                                   Area Struct
  RegionText                               string
```

XMP Area Struct

```
  Field Name                               Writable
  ----------                               --------
  D                                        real
  H                                        real
  Unit                                     string
  W                                        real
  X                                        real
  Y                                        real
```

XMP QualifiedLink Struct

```
  Field Name                               Writable
  ----------                               --------
  Link                                     string
  LinkQualifier                            string
```

XMP EEREDetails Struct

```
  Field Name                               Writable
  ----------                               --------
  EncRightsExpr                            string
  RightsExprEncType                        string
  RightsExprLangId                         string
```

XMP <u>EpisodeOrSeason</u> <u>Struct</u>

```
  Field Name                          Writable
  ----------                          --------
  Identifier                          string
  Name                                string
  Number                              string
```

XMP <u>ImageRegion</u> <u>Struct</u>

This structure is new in the IPTC Extension version 1.5 specification.
As well as the fields defined below, this structure may contain any
top-level XMP tags, but since they aren't pre-defined the only way to
add these tags is to write ImageRegion as a structure with these tags
as new fields.

```
  Field Name                          Writable
  ----------                          --------
  Name                                lang-alt
  RegionBoundary                      RegionBoundary Struct
  RCtype                              Entity Struct+
  RId                                 string
  RRole                               Entity Struct+
```

XMP <u>RegionBoundary</u> <u>Struct</u>

```
  Field Name                          Writable
  ----------                          --------
  RbH                                 real
  RbRx                                real
  RbShape                             string
  RbUnit                              string
  RbVertices                          BoundaryPoint Struct+
  RbW                                 real
  RbX                                 real
  RbY                                 real
```

XMP <u>BoundaryPoint</u> <u>Struct</u>

```
  Field Name                          Writable
  ----------                          --------
  RbX                                 real
  RbY                                 real
```

XMP <u>LEREDetails</u> <u>Struct</u>

```
  Field Name                          Writable
  ----------                          --------
  LinkedRightsExpr                    string
  RightsExprEncType                   string
  RightsExprLangId                    string
```

XMP <u>LocationDetails</u> <u>Struct</u>

Note that the GPS elements of this structure are in the "exif"
namespace.

```
  Field Name                          Writable
  ----------                          --------
  City                                string
  CountryCode                         string
  CountryName                         string
  GPSAltitude                         rational
  GPSAltitudeRef                      integer
  GPSLatitude                         string
  GPSLongitude                        string
  Identifier                          string+
  LocationId                          string+
  LocationName                        lang-alt
  ProvinceState                       string
```

```
  Sublocation                              string
  WorldRegion                              string
```

XMP <u>PersonDetails</u> <u>Struct</u>

```
  Field Name                               Writable
  ----------                               --------
  PersonCharacteristic                     CVTermDetails Struct+
  PersonDescription                        lang-alt
  PersonId                                 string+
  PersonName                               lang-alt
```

XMP <u>ProductDetails</u> <u>Struct</u>

```
  Field Name                               Writable
  ----------                               --------
  ProductDescription                       lang-alt
  ProductGTIN                              string
  ProductId                                string
  ProductName                              lang-alt
```

XMP <u>PublicationEvent</u> <u>Struct</u>

```
  Field Name                               Writable
  ----------                               --------
  Date                                     date
  Identifier                               string
  Name                                     string
```

XMP <u>Rating</u> <u>Struct</u>

```
  Field Name                               Writable
  ----------                               --------
  RatingRegion                             LocationDetails Struct+
  RatingScaleMaxValue                      string
  RatingScaleMinValue                      string
  RatingSourceLink                         string
  RatingValue                              string
  RatingValueLogoLink                      string
```

XMP <u>Device</u> <u>Struct</u>

```
  Field Name                               Writable
  ----------                               --------
  AttLensDescription                       string
  Manufacturer                             string
  ModelName                                string
  OwnersDeviceId                           string
  SerialNumber                             string
```

XMP <u>RegistryEntryDetails</u> <u>Struct</u>

```
  Field Name                               Writable
  ----------                               --------
  RegEntryRole                             string
  RegItemId                                string
  RegOrgId                                 string
```

XMP <u>Series</u> <u>Struct</u>

```
  Field Name                               Writable
  ----------                               --------
  Identifier                               string
  Name                                     string
```

XMP <u>LinkedImage</u> <u>Struct</u>

```
  Field Name                               Writable
  ----------                               --------
  HeightPixels                             integer
```

```
ImageRole                                    string
Link                                         string
LinkQualifier                                string+
UsedVideoFrame                               Timecode Struct
WidthPixels                                  integer
Format                                       string
```

XMP Timecode Struct

Field Name	Writable
TimeFormat	string
TimeValue	string
Value	integer

XMP TemporalCoverage Struct

Field Name	Writable
TempCoverageFrom	date
TempCoverageTo	date

XMP LImage Tags

Tags written by RED smartphones.

These tags belong to the ExifTool XMP-LImage family 1 group.

Tag Name	Writable
MajorVersion	string
MinorVersion	string
RightAlbedo	string

XMP Lightroom Tags

Adobe Lightroom "lr" namespace tags.

These tags belong to the ExifTool XMP-lr family 1 group.

Tag Name	Writable
HierarchicalSubject	string+
PrivateRTKInfo	string
WeightedFlatSubject	string+

XMP MediaPro Tags

iView MediaPro namespace tags.

These tags belong to the ExifTool XMP-mediapro family 1 group.

Tag Name	Writable
CatalogSets	string+
Event	string/
Location	string/
People	string+
Status	string
UserFields	string+

XMP panorama Tags

Adobe Photoshop Panorama-profile tags.

These tags belong to the ExifTool XMP-panorama family 1 group.

Tag Name	Writable
Transformation	string

```
   VirtualFocalLength                          real
   VirtualImageXCenter                         real
   VirtualImageYCenter                         real
```

XMP pdf Tags

Adobe PDF namespace tags. The official XMP specification defines only
Keywords, PDFVersion, Producer and Trapped. The other tags are
included because they have been observed in PDF files, but some are
avoided when writing due to name conflicts with other XMP namespaces.

These tags belong to the ExifTool XMP-pdf family 1 group.

```
   Tag Name                                    Writable
   --------                                    --------
   Author                                      string
   Copyright                                   string/
   CreationDate                                date
   Creator                                     string/
   Keywords                                    string
   Marked                                      boolean/
   ModDate                                     date
   PDFVersion                                  string
   Producer                                    string
   Subject                                     string/
   Title                                       string/
   Trapped                                     string
```

XMP pdfx Tags

PDF extension tags. This namespace is used to store application-
defined PDF information, so there are few pre-defined tags. User-
defined tags must be created to enable writing of other XMP-pdfx
information.

These tags belong to the ExifTool XMP-pdfx family 1 group.

```
   Tag Name                                    Writable
   --------                                    --------
   SourceModified                              string
```

XMP photoshop Tags

Adobe Photoshop namespace tags.

These tags belong to the ExifTool XMP-photoshop family 1 group.

```
   Tag Name                                    Writable
   --------                                    --------
   AuthorsPosition                             string
   CameraProfiles                              Camera Struct+
   CameraProfilesApertureValue                 real_+
   CameraProfilesAuthor                        string_+
   CameraProfilesAutoScale                     boolean_+
   CameraProfilesCameraPrettyName              string_+
   CameraProfilesCameraRawProfile              boolean_+
   CameraProfilesFocalLength                   real_+
   CameraProfilesFocusDistance                 real_+
   CameraProfilesLens                          string_+
   CameraProfilesLensPrettyName                string_+
   CameraProfilesMake                          string_+
   CameraProfilesModel                         string_+
   CameraProfilesPerspectiveModel              PerspectiveModel Struct_+
   CameraProfilesPerspectiveModelImageXCenter  real_+
   CameraProfilesPerspectiveModelImageYCenter  real_+
   CameraProfilesPerspectiveModelRadialDistortParam1 real_+
   CameraProfilesPerspectiveModelRadialDistortParam2 real_+
   CameraProfilesPerspectiveModelRadialDistortParam3 real_+
   CameraProfilesPerspectiveModelScaleFactor   real_+
   CameraProfilesPerspectiveModelVersion       string_+
```

```
CameraProfilesProfileName                       string_+
CameraProfilesSensorFormatFactor                real_+
CameraProfilesUniqueCameraModel                 string_+
CaptionWriter                                   string
Category                                        string
City                                            string
ColorMode                                       integer
Country                                         string
Credit                                          string
DateCreated                                     date
DocumentAncestors                               string+
EmbeddedXMPDigest                               string
Headline                                        string
History                                         string
ICCProfileName                                  string
Instructions                                    string
LegacyIPTCDigest                                string
SidecarForExtension                             string
Source                                          string
State                                           string
SupplementalCategories                          string+
TextLayers                                       Layer Struct+
TextLayerName                                   string_+
TextLayerText                                   string_+
TransmissionReference                           string
Urgency                                         integer
```

XMP Camera Struct

```
Field Name                                      Writable
----------                                      --------
ApertureValue                                   real
Author                                          string
AutoScale                                       boolean
CameraPrettyName                                string
CameraRawProfile                                boolean
FocalLength                                     real
FocusDistance                                   real
Lens                                            string
LensPrettyName                                  string
Make                                            string
Model                                           string
PerspectiveModel                                PerspectiveModel Struct
ProfileName                                     string
SensorFormatFactor                              real
UniqueCameraModel                               string
```

XMP PerspectiveModel Struct

```
Field Name                                      Writable
----------                                      --------
ImageXCenter                                    real
ImageYCenter                                    real
RadialDistortParam1                             real
RadialDistortParam2                             real
RadialDistortParam3                             real
ScaleFactor                                     real
Version                                         string
```

XMP Layer Struct

```
Field Name                                      Writable
----------                                      --------
LayerName                                       string
LayerText                                       string
```

XMP PixelLive Tags

PixelLive namespace tags. These tags are not writable because they are
very uncommon and I haven't been able to locate a reference which gives

the namespace URI.

These tags belong to the ExifTool XMP-PixelLive family 1 group.

Tag Name	Writable
Author	no
Comments	no
Copyright	no
Date	no
Genre	no
Title	no

XMP pmi Tags

PRISM Metadata for Images 3.0 namespace tags. (see
<http://www.prismstandard.org/>)

These tags belong to the ExifTool XMP-pmi family 1 group.

Tag Name	Writable
Color	string/
ContactInfo	string/
DisplayName	string/
DistributorProductID	string/
EventAlias	string/
EventEnd	string/
EventStart	string/
EventSubtype	string/
EventType	string/
Field	string/
Framing	string/
Location	string/
Make	string/
Manufacturer	string/
Model	string/
ModelYear	string/
ObjectDescription	string/
ObjectSubtype	string/
ObjectType	string/
Orientation	string/
PositionDescriptor	string/
ProductID	string/
ProductIDType	string/
Season	string/
SequenceName	string/
SequenceNumber	string/
SequenceTotalNumber	string/
Setting	string/
ShootID	string/
SlideshowName	string/
SlideshowNumber	integer/
SlideshowTotalNumber	integer/
Viewpoint	string/
VisualTechnique	string/

XMP prism Tags

Publishing Requirements for Industry Standard Metadata 3.0 namespace
tags. (see
<https://www.w3.org/Submission/2020/SUBM-prism-20200910/prism-basic.html>)

These tags belong to the ExifTool XMP-prism family 1 group.

Tag Name	Writable
AcademicField	string/
AggregateIssueNumber	integer/
AggregationType	string/+

```
AlternateTitle                       prismAlternateTitle Struct+
AlternateTitleA-lang                 string/_+
AlternateTitleA-platform             string/_+
AlternateTitleText                   string/_+
BlogTitle                            string/
BlogURL                              string/
BookEdition                          string/
ByteCount                            integer/
Channel                              prismChannel Struct+
ChannelA-lang                        string/_+
ChannelChannel                       string/_+
ChannelSubchannel1                   string/_+
ChannelSubchannel2                   string/_+
ChannelSubchannel3                   string/_+
ChannelSubchannel4                   string/_+
ComplianceProfile                    string/
ContentType                          string/
CopyrightYear                        string/
CorporateEntity                      string/+
CoverDate                            date/
CoverDisplayDate                     string/
CreationDate                         date/
DateRecieved                         date/
Device                               string/
Distributor                          string/
DOI                                  string/
Edition                              string/
EIssn                                string/
EndingPage                           string/
Event                                string/+
Genre                                string/+
HasAlternative                       string/+
HasCorrection                        prismHasCorrection Struct
HasCorrectionA-lang                  string/_
HasCorrectionA-platform              string/_
HasCorrectionText                    string/_
HasTranslation                       string/+
Industry                             string/+
IsAlternativeOf                      string/+
ISBN                                 string/+
IsCorrectionOf                       string/+
ISSN                                 string/
IssueIdentifier                      string/
IssueName                            string/
IssueTeaser                          string/
IssueType                            string/
IsTranslationOf                      string/
Keyword                              string/+
KillDate                             prismKillDate Struct
KillDateA-platform                   string/_
KillDateDate                         date/_
Link                                 string/+
Location                             string/+
ModificationDate                     date/
NationalCatalogNumber                string/
Number                               string/
Object                               string/+
OffSaleDate                          prismOffSaleDate Struct+
OffSaleDateA-platform                string/_+
OffSaleDateDate                      date/_+
OnSaleDate                           prismOnSaleDate Struct+
OnSaleDateA-platform                 string/_+
OnSaleDateDate                       date/_+
OnSaleDay                            prismOnSaleDay Struct+
OnSaleDayA-platform                  string/_+
OnSaleDayDay                         string/_+
Organization                         string/+
OriginPlatform                       string/+
PageCount                            integer/
PageProgressionDirection             string/
```

```
  PageRange                                    string/+
  Person                                       string/
  Platform                                     string/
  ProductCode                                  string/
  Profession                                   string/
  PublicationDate                              prismPublicationDate Struct+
  PublicationDateA-platform                    string/_+
  PublicationDateDate                          date/_+
  PublicationDisplayDate                       prismPublicationDate Struct+
  PublicationDisplayDateA-platform             string/_+
  PublicationDisplayDateDate                   date/_+
  PublicationName                              string/
  PublishingFrequency                          string/
  Rating                                       string/
  SamplePageRange                              string/
  Section                                      string/
  SellingAgency                                string/
  SeriesNumber                                 integer/
  SeriesTitle                                  string/
  Sport                                        string/
  StartingPage                                 string/
  Subsection1                                  string/
  Subsection2                                  string/
  Subsection3                                  string/
  Subsection4                                  string/
  Subtitle                                     string/
  SupplementDisplayID                          string/
  SupplementStartingPage                       string/
  SupplementTitle                              string/
  Teaser                                       string/+
  Ticker                                       string/+
  TimePeriod                                   string/
  URL                                          prismUrl Struct+
  URLA-platform                                string/_+
  URLUrl                                       string/_+
  UspsNumber                                   string/
  VersionIdentifier                            string/
  Volume                                       string/
  WordCount                                    integer/
```

XMP prismAlternateTitle Struct

Field Name	Writable
A-lang	string
A-platform	string
Text	string

XMP prismChannel Struct

Field Name	Writable
A-lang	string
Channel	string
Subchannel1	string
Subchannel2	string
Subchannel3	string
Subchannel4	string

XMP prismHasCorrection Struct

Field Name	Writable
A-lang	string
A-platform	string
Text	string

XMP prismKillDate Struct

Field Name	Writable

```
  ----------                              --------
  A-platform                              string
  Date                                    date
```

XMP prismOffSaleDate Struct

```
  Field Name                              Writable
  ----------                              --------
  A-platform                              string
  Date                                    date
```

XMP prismOnSaleDate Struct

```
  Field Name                              Writable
  ----------                              --------
  A-platform                              string
  Date                                    date
```

XMP prismOnSaleDay Struct

```
  Field Name                              Writable
  ----------                              --------
  A-platform                              string
  Day                                     string
```

XMP prismPublicationDate Struct

```
  Field Name                              Writable
  ----------                              --------
  A-platform                              string
  Date                                    date
```

XMP prismUrl Struct

```
  Field Name                              Writable
  ----------                              --------
  A-platform                              string
  Url                                     string
```

XMP prl Tags

PRISM Rights Language 2.1 namespace tags. These tags have been
deprecated since the release of the PRISM Usage Rights 3.0. (see
<https://www.w3.org/submissions/2020/SUBM-prism-20200910/prism-image.html>)

These tags belong to the ExifTool XMP-prl family 1 group.

```
  Tag Name                                Writable
  --------                                --------
  Geography                               string/+
  Industry                                string/+
  Usage                                   string/+
```

XMP prm Tags

PRISM Recipe Metadata 3.0 namespace tags. (see
<http://www.prismstandard.org/>)

These tags belong to the ExifTool XMP-prm family 1 group.

```
  Tag Name                                Writable
  --------                                --------
  CookingEquipment                        string/
  CookingMethod                           string/
  Course                                  string/
  Cuisine                                 string/
  DietaryNeeds                            string/
  DishType                                string/
  Duration                                string/
  IngredientExclusion                     string/
```

```
  MainIngredient                              string/
  Meal                                        string/
  RecipeEndingPage                            string/
  RecipePageRange                             string/
  RecipeSource                                string/
  RecipeStartingPage                          string/
  RecipeTitle                                 string/
  ServingSize                                 string/
  SkillLevel                                  string/
  SpecialOccasion                             string/
  Yield                                       string/
```

XMP pur Tags

PRISM Usage Rights 3.0 namespace tags. (see
<http://www.prismstandard.org/>)

These tags belong to the ExifTool XMP-pur family 1 group.

Tag Name	Writable
AdultContentWarning	string/+
Agreement	string/+
Copyright	lang-alt/
CreditLine	string/+
EmbargoDate	date/+
ExclusivityEndDate	date/+
ExpirationDate	date/+
ImageSizeRestriction	string/
OptionEndDate	date/+
Permissions	string/+
Restrictions	string/+
ReuseProhibited	boolean/
RightsAgent	string/
RightsOwner	string/

XMP rdf Tags

Most RDF attributes are handled internally, but the "about" attribute
is treated specially to allow it to be set to a specific value if
required.

These tags belong to the ExifTool XMP-rdf family 1 group.

Tag Name	Writable
About	string!

XMP seal Tags

SEAL embedded in XMP.

These tags belong to the ExifTool XMP-seal family 1 group.

Tag Name	Writable
Seal	XMP SEAL

XMP SEAL Tags

These tags are used in SEAL (Secure Evidence Attribution Label) content
authentification, which is actually XML format, not XMP. ExifTool has
read/delete support for SEAL information in JPG, TIFF, XMP, PNG, WEBP,
HEIC, PPM, MOV and MP4 files, and read-only support in PDF, MKV and
WAV. Use "-seal:all=" on the command line to delete SEAL information
in supported formats. See <https://github.com/hackerfactor/SEAL> for
the specification.

Tag ID	Tag Name	Writable

```
    'b'                   ByteRange               no
    'copyright'           Copyright               no
    'd'                   Domain                  no
    'da'                  DigestAlgorithm         no
    'id'                  Identifier              no
    'info'                SEALComment             no
    'ka'                  KeyAlgorithm            no
    'kv'                  KeyVersion              no
    's'                   Signature               no
    'seal'                SEALVersion             no
    'sf'                  SignatureFormat         no
    'sl'                  SignatureLength         no
    'uid'                 UniqueIdentifier        no
```

XMP swf Tags

Adobe SWF namespace tags.

These tags belong to the ExifTool XMP-swf family 1 group.

Tag Name	Writable
BackgroundAlpha	integer
ForwardLock	boolean
MaxStorage	integer
Type	string/

XMP tiff Tags

EXIF namespace for TIFF tags. See
<https://web.archive.org/web/20180921145139if_/http://www.cipa.jp:80/std/documents/e/DC-010-2017_E.pdf>
for the specification.

These tags belong to the ExifTool XMP-tiff family 1 group.

Tag Name	Writable
Artist	string
BitsPerSample	integer+
Compression	integer
Copyright	lang-alt
DateTime	date
ImageDescription	lang-alt
ImageHeight	integer
ImageWidth	integer
Make	string
Model	string
NativeDigest	string/
Orientation	integer
PhotometricInterpretation	integer
PlanarConfiguration	integer
PrimaryChromaticities	rational+
ReferenceBlackWhite	rational+
ResolutionUnit	integer
SamplesPerPixel	integer
Software	string
TransferFunction	integer+
WhitePoint	rational+
XResolution	rational
YCbCrCoefficients	rational+
YCbCrPositioning	integer
YCbCrSubSampling	integer+
YResolution	rational

XMP x Tags

The "x" namespace is used for the "xmpmeta" wrapper, and may contain an
"xmptk" attribute that is extracted as the XMPToolkit tag. When
writing, the XMPToolkit tag is generated automatically by ExifTool

unless specifically set to another value.

These tags belong to the ExifTool XMP-x family 1 group.

```
  Tag Name                                 Writable
  --------                                 --------
  XMPToolkit                               string!
```

XMP <u>xmp</u> <u>Tags</u>

XMP namespace tags. If the older "xap", "xapBJ", "xapMM" or
"xapRights" namespace prefixes are found, they are translated to the
newer "xmp", "xmpBJ", "xmpMM" and "xmpRights" prefixes for use in
family 1 group names.

These tags belong to the ExifTool XMP-xmp family 1 group.

```
  Tag Name                                 Writable
  --------                                 --------
  Advisory                                 string+
  Author                                   string/
  BaseURL                                  string
  CreateDate                               date
  CreatorTool                              string
  Description                              lang-alt/
  Format                                   string/
  Identifier                               string/+
  Keywords                                 string/
  Label                                    string
  MetadataDate                             date
  ModifyDate                               date
  Nickname                                 string
  PageInfo                                 PageInfo Struct+
  PageImageFormat                          string_+
  PageImageHeight                          integer_+
  PageImage                                string_+
  PageImagePageNumber                      integer_+
  PageImageWidth                           integer_+
  Rating                                   real
  RatingPercent                            real/
  Thumbnails                               Thumbnail Struct+
  ThumbnailFormat                          string_+
  ThumbnailHeight                          integer_+
  ThumbnailImage                           string/_+
  ThumbnailWidth                           integer_+
  Title                                    lang-alt/
```

XMP <u>PageInfo</u> <u>Struct</u>

```
  Field Name                               Writable
  ----------                               --------
  PageNumber                               integer
  Format                                   string
  Height                                   integer
  Image                                    string
  Width                                    integer
```

XMP <u>Thumbnail</u> <u>Struct</u>

```
  Field Name                               Writable
  ----------                               --------
  Format                                   string
  Height                                   integer
  Image                                    string
  Width                                    integer
```

XMP <u>xmpBJ</u> <u>Tags</u>

XMP Basic Job Ticket namespace tags.

These tags belong to the ExifTool XMP-xmpBJ family 1 group.

```
  Tag Name                                 Writable
  --------                                 --------
  JobRef                                   JobRef Struct+
  JobRefId                                 string_+
  JobRefName                               string_+
  JobRefUrl                                string_+
```

XMP JobRef Struct

```
  Field Name                               Writable
  ----------                               --------
  Id                                       string
  Name                                     string
  Url                                      string
```

XMP xmpDM Tags

XMP Dynamic Media namespace tags.

These tags belong to the ExifTool XMP-xmpDM family 1 group.

```
  Tag Name                                 Writable
  --------                                 --------
  AbsPeakAudioFilePath                     string
  Album                                    string
  AltTapeName                              string
  AltTimecode                              Timecode Struct
  AltTimecodeTimeFormat                    string_
  AltTimecodeTimeValue                     string_
  AltTimecodeValue                         integer_
  Artist                                   string/
  AudioChannelType                         string
  AudioCompressor                          string
  AudioModDate                             date
  AudioSampleRate                          integer
  AudioSampleType                          string
  BeatSpliceParams                         BeatSpliceStretch Struct
  BeatSpliceParamsRiseInDecibel            real_
  BeatSpliceParamsRiseInTimeDuration       Time Struct_
  BeatSpliceParamsRiseInTimeDurationScale  rational_
  BeatSpliceParamsRiseInTimeDurationValue  integer_
  BeatSpliceParamsUseFileBeatsMarker       boolean_
  CameraAngle                              string
  CameraLabel                              string
  CameraModel                              string
  CameraMove                               string
  Client                                   string
  DMComment                                string
  Composer                                 string
  ContributedMedia                         Media Struct+
  ContributedMediaDuration                 Time Struct_+
  ContributedMediaDurationScale            rational_+
  ContributedMediaDurationValue            integer_+
  ContributedMediaManaged                  boolean_+
  ContributedMediaPath                     string_+
  ContributedMediaStartTime                Time Struct_+
  ContributedMediaStartTimeScale           rational_+
  ContributedMediaStartTimeValue           integer_+
  ContributedMediaTrack                    string_+
  ContributedMediaWebStatement             string_+
  Copyright                                string/
  Director                                 string
  DirectorPhotography                      string
  DiscNumber                               string
  Duration                                 Time Struct
  DurationScale                            rational_
  DurationValue                            integer_
  Engineer                                 string
```

FileDataRate	rational
Genre	string
Good	boolean
Instrument	string
IntroTime	Time Struct
IntroTimeScale	rational_
IntroTimeValue	integer_
Key	string
LogComment	string
Loop	boolean
Lyrics	string
Markers	Marker Struct+
MarkersComment	string_+
MarkersCuePointParams	CuePointParam Struct_+
MarkersCuePointParamsKey	string_+
MarkersCuePointParamsValue	string_+
MarkersCuePointType	string_+
MarkersDuration	string_+
MarkersLocation	string_+
MarkersName	string_+
MarkersProbability	real_+
MarkersSpeaker	string_+
MarkersStartTime	string_+
MarkersTarget	string_+
MarkersType	string_+
MetadataModDate	date
NumberOfBeats	real
OutCue	Time Struct
OutCueScale	rational_
OutCueValue	integer_
PartOfCompilation	boolean
Pick	integer
ProjectName	string
ProjectRef	ProjectLink Struct
ProjectRefPath	string_
ProjectRefType	string_
PullDown	string
RelativePeakAudioFilePath	string
RelativeTimestamp	Time Struct
RelativeTimestampScale	rational_
RelativeTimestampValue	integer_
ReleaseDate	date
ResampleParams	ResampleStretch Struct
ResampleParamsQuality	string_
ScaleType	string
Scene	string/
ShotDate	date
ShotDay	string
ShotLocation	string
ShotName	string
ShotNumber	string
ShotSize	string
SpeakerPlacement	string
StartTimecode	Timecode Struct
StartTimecodeTimeFormat	string_
StartTimecodeTimeValue	string_
StartTimecodeValue	integer_
StartTimeSampleSize	integer
StartTimeScale	string
StretchMode	string
TakeNumber	integer
TapeName	string
Tempo	real
TimeScaleParams	TimeScaleStretch Struct
TimeScaleParamsFrameOverlappingPercentage	real_
TimeScaleParamsFrameSize	real_
TimeScaleParamsQuality	string_
TimeSignature	string
TrackNumber	integer
Tracks	Track Struct+

TracksFrameRate	string_+
TracksMarkers	Marker Struct_+
TracksMarkersComment	string_+
TracksMarkersCuePointParams	CuePointParam Struct_+
TracksMarkersCuePointParamsKey	string_+
TracksMarkersCuePointParamsValue	string_+
TracksMarkersCuePointType	string_+
TracksMarkersDuration	string_+
TracksMarkersLocation	string_+
TracksMarkersName	string_+
TracksMarkersProbability	real_+
TracksMarkersSpeaker	string_+
TracksMarkersStartTime	string_+
TracksMarkersTarget	string_+
TracksMarkersType	string_+
TracksTrackName	string_+
TracksTrackType	string_+
VideoAlphaMode	string
VideoAlphaPremultipleColor	Colorant Struct
VideoAlphaPremultipleColorA	integer_
VideoAlphaPremultipleColorB	integer_
VideoAlphaPremultipleColorBlack	real_
VideoAlphaPremultipleColorBlue	integer_
VideoAlphaPremultipleColorCyan	real_
VideoAlphaPremultipleColorGray	integer_
VideoAlphaPremultipleColorGreen	integer_
VideoAlphaPremultipleColorL	real_
VideoAlphaPremultipleColorMagenta	real_
VideoAlphaPremultipleColorMode	string_
VideoAlphaPremultipleColorRed	integer_
VideoAlphaPremultipleColorSwatchName	string_
VideoAlphaPremultipleColorTint	integer_
VideoAlphaPremultipleColorType	string_
VideoAlphaPremultipleColorYellow	real_
VideoAlphaUnityIsTransparent	boolean
VideoColorSpace	string
VideoCompressor	string
VideoFieldOrder	string
VideoFrameRate	real
VideoFrameSize	Dimensions Struct
VideoFrameSizeH	real_
VideoFrameSizeUnit	string_
VideoFrameSizeW	real_
VideoModDate	date
VideoPixelAspectRatio	rational
VideoPixelDepth	string

XMP BeatSpliceStretch Struct

Field Name	Writable
RiseInDecibel	real
RiseInTimeDuration	Time Struct
UseFileBeatsMarker	boolean

XMP Time Struct

Field Name	Writable
Scale	rational
Value	integer

XMP Media Struct

Field Name	Writable
Duration	Time Struct
Managed	boolean
Path	string
StartTime	Time Struct

```
  Track                                      string
  WebStatement                               string
```

XMP Marker Struct

```
  Field Name                                 Writable
  ----------                                 --------
  Comment                                    string
  CuePointParams                             CuePointParam Struct+
  CuePointType                               string
  Duration                                   string
  Location                                   string
  Name                                       string
  Probability                                real
  Speaker                                    string
  StartTime                                  string
  Target                                     string
  Type                                       string
```

XMP CuePointParam Struct

```
  Field Name                                 Writable
  ----------                                 --------
  Key                                        string
  Value                                      string
```

XMP ProjectLink Struct

```
  Field Name                                 Writable
  ----------                                 --------
  Path                                       string
  Type                                       string
```

XMP ResampleStretch Struct

```
  Field Name                                 Writable
  ----------                                 --------
  Quality                                    string
```

XMP TimeScaleStretch Struct

```
  Field Name                                 Writable
  ----------                                 --------
  FrameOverlappingPercentage                 real
  FrameSize                                  real
  Quality                                    string
```

XMP Track Struct

```
  Field Name                                 Writable
  ----------                                 --------
  FrameRate                                  string
  Markers                                    Marker Struct+
  TrackName                                  string
  TrackType                                  string
```

XMP Colorant Struct

```
  Field Name                                 Writable
  ----------                                 --------
  A                                          integer
  B                                          integer
  L                                          real
  Black                                      real
  Blue                                       integer
  Cyan                                       real
  Gray                                       integer
  Green                                      integer
  Magenta                                    real
  Mode                                       string
```

```
   Red                                     integer
   SwatchName                              string
   Tint                                    integer
   Type                                    string
   Yellow                                  real
```

XMP Dimensions Struct

```
   Field Name                              Writable
   ----------                              --------
   H                                       real
   Unit                                    string
   W                                       real
```

XMP xmpMM Tags

XMP Media Management namespace tags.

These tags belong to the ExifTool XMP-xmpMM family 1 group.

```
   Tag Name                                Writable
   --------                                --------
   DerivedFrom                             ResourceRef Struct
   DerivedFromAlternatePaths               string_+
   DerivedFromDocumentID                   string_
   DerivedFromFilePath                     string_
   DerivedFromFromPart                     string_
   DerivedFromInstanceID                   string_
   DerivedFromLastModifyDate               date_
   DerivedFromLastURL                      string_
   DerivedFromLinkCategory                 string_
   DerivedFromLinkForm                     string_
   DerivedFromManager                      string_
   DerivedFromManagerVariant               string_
   DerivedFromManageTo                     string_
   DerivedFromManageUI                     string_
   DerivedFromMaskMarkers                  string_
   DerivedFromOriginalDocumentID           string_
   DerivedFromPartMapping                  string_
   DerivedFromPlacedResolutionUnit         string_
   DerivedFromPlacedXResolution            string_
   DerivedFromPlacedYResolution            string_
   DerivedFromRenditionClass               string_
   DerivedFromRenditionParams              string_
   DerivedFromToPart                       string_
   DerivedFromVersionID                    string_
   DocumentID                              string
   History                                 ResourceEvent Struct+
   HistoryAction                           string_+
   HistoryChanged                          string_+
   HistoryInstanceID                       string_+
   HistoryParameters                       string_+
   HistorySoftwareAgent                    string_+
   HistoryWhen                             date_+
   Ingredients                             ResourceRef Struct+
   IngredientsAlternatePaths               string_+
   IngredientsDocumentID                   string_+
   IngredientsFilePath                     string_+
   IngredientsFromPart                     string_+
   IngredientsInstanceID                   string_+
   IngredientsLastModifyDate               date_+
   IngredientsLastURL                      string_+
   IngredientsLinkCategory                 string_+
   IngredientsLinkForm                     string_+
   IngredientsManager                      string_+
   IngredientsManagerVariant               string_+
   IngredientsManageTo                     string_+
   IngredientsManageUI                     string_+
   IngredientsMaskMarkers                  string_+
   IngredientsOriginalDocumentID           string_+
```

```
IngredientsPartMapping                          string_+
IngredientsPlacedResolutionUnit                 string_+
IngredientsPlacedXResolution                    string_+
IngredientsPlacedYResolution                    string_+
IngredientsRenditionClass                       string_+
IngredientsRenditionParams                      string_+
IngredientsToPart                               string_+
IngredientsVersionID                            string_+
InstanceID                                      string
LastURL                                         string
ManagedFrom                                     ResourceRef Struct
ManagedFromAlternatePaths                       string_+
ManagedFromDocumentID                           string_
ManagedFromFilePath                             string_
ManagedFromFromPart                             string_
ManagedFromInstanceID                           string_
ManagedFromLastModifyDate                       date_
ManagedFromLastURL                              string_
ManagedFromLinkCategory                         string_
ManagedFromLinkForm                             string_
ManagedFromManager                              string_
ManagedFromManagerVariant                       string_
ManagedFromManageTo                             string_
ManagedFromManageUI                             string_
ManagedFromMaskMarkers                          string_
ManagedFromOriginalDocumentID                   string_
ManagedFromPartMapping                          string_
ManagedFromPlacedResolutionUnit                 string_
ManagedFromPlacedXResolution                    string_
ManagedFromPlacedYResolution                    string_
ManagedFromRenditionClass                       string_
ManagedFromRenditionParams                      string_
ManagedFromToPart                               string_
ManagedFromVersionID                            string_
Manager                                         string
ManagerVariant                                  string
ManageTo                                        string
ManageUI                                        string
Manifest                                        ManifestItem Struct+
ManifestLinkForm                                string_+
ManifestPlacedResolutionUnit                    string_+
ManifestPlacedXResolution                       real_+
ManifestPlacedYResolution                       real_+
ManifestReference                               ResourceRef Struct_+
ManifestReferenceAlternatePaths                 string_+
ManifestReferenceDocumentID                     string_+
ManifestReferenceFilePath                       string_+
ManifestReferenceFromPart                       string_+
ManifestReferenceInstanceID                     string_+
ManifestReferenceLastModifyDate                 date_+
ManifestReferenceLastURL                        string_+
ManifestReferenceLinkCategory                   string_+
ManifestReferenceLinkForm                        string_+
ManifestReferenceManager                        string_+
ManifestReferenceManagerVariant                 string_+
ManifestReferenceManageTo                       string_+
ManifestReferenceManageUI                       string_+
ManifestReferenceMaskMarkers                    string_+
ManifestReferenceOriginalDocumentID             string_+
ManifestReferencePartMapping                    string_+
ManifestReferencePlacedResolutionUnit           string_+
ManifestReferencePlacedXResolution              string_+
ManifestReferencePlacedYResolution              string_+
ManifestReferenceRenditionClass                 string_+
ManifestReferenceRenditionParams                string_+
ManifestReferenceToPart                         string_+
ManifestReferenceVersionID                      string_+
OriginalDocumentID                              string
Pantry                                          PantryItem Struct+
PantryInstanceID                                string_
```

```
PreservedFileName                               string
RenditionClass                                  string
RenditionOf                                     ResourceRef Struct
RenditionOfAlternatePaths                       string_+
RenditionOfDocumentID                           string_
RenditionOfFilePath                             string_
RenditionOfFromPart                             string_
RenditionOfInstanceID                           string_
RenditionOfLastModifyDate                       date_
RenditionOfLastURL                              string_
RenditionOfLinkCategory                         string_
RenditionOfLinkForm                             string_
RenditionOfManager                              string_
RenditionOfManagerVariant                       string_
RenditionOfManageTo                             string_
RenditionOfManageUI                             string_
RenditionOfMaskMarkers                          string_
RenditionOfOriginalDocumentID                   string_
RenditionOfPartMapping                          string_
RenditionOfPlacedResolutionUnit                 string_
RenditionOfPlacedXResolution                    string_
RenditionOfPlacedYResolution                    string_
RenditionOfRenditionClass                       string_
RenditionOfRenditionParams                      string_
RenditionOfToPart                               string_
RenditionOfVersionID                            string_
RenditionParams                                 string
SaveID                                          integer
Subject                                         string/+
VersionID                                       string
Versions                                        Version Struct+
VersionsComments                                string_+
VersionsEvent                                   ResourceEvent Struct_+
VersionsEventAction                             string_+
VersionsEventChanged                            string_+
VersionsEventInstanceID                         string_+
VersionsEventParameters                         string_+
VersionsEventSoftwareAgent                      string_+
VersionsEventWhen                               date_+
VersionsModifier                                string_+
VersionsModifyDate                              date_+
VersionsVersion                                 string_+
```

XMP ResourceRef Struct

```
Field Name                                      Writable
----------                                      --------
AlternatePaths                                  string+
DocumentID                                      string
FilePath                                        string
FromPart                                        string
InstanceID                                      string
LastModifyDate                                  date
LastURL                                         string
LinkCategory                                    string
LinkForm                                        string
ManageTo                                        string
ManageUI                                        string
Manager                                         string
ManagerVariant                                  string
MaskMarkers                                     string
OriginalDocumentID                              string
PartMapping                                     string
PlacedResolutionUnit                            string
PlacedXResolution                               string
PlacedYResolution                               string
RenditionClass                                  string
RenditionParams                                 string
ToPart                                          string
VersionID                                       string
```

XMP ResourceEvent Struct

```
  Field Name                                  Writable
  ----------                                  --------
  Action                                      string
  Changed                                     string
  InstanceID                                  string
  Parameters                                  string
  SoftwareAgent                               string
  When                                        date
```

XMP ManifestItem Struct

```
  Field Name                                  Writable
  ----------                                  --------
  LinkForm                                    string
  PlacedResolutionUnit                        string
  PlacedXResolution                           real
  PlacedYResolution                           real
  Reference                                   ResourceRef Struct
```

XMP PantryItem Struct

This structure must have an InstanceID field, but may also contain any
other XMP properties.

```
  Field Name                                  Writable
  ----------                                  --------
  InstanceID                                  string
```

XMP Version Struct

```
  Field Name                                  Writable
  ----------                                  --------
  Comments                                    string
  Event                                       ResourceEvent Struct
  Modifier                                    string
  ModifyDate                                  date
  Version                                     string
```

XMP xmpNote Tags

XMP Note namespace tags.

These tags belong to the ExifTool XMP-xmpNote family 1 group.

```
  Tag Name                                    Writable
  --------                                    --------
  HasExtendedXMP                              string*
```

XMP xmpPLUS Tags

XMP Picture Licensing Universal System (PLUS) tags as written by some
older Adobe applications. See PLUS XMP Tags for the current PLUS tags.

These tags belong to the ExifTool XMP-xmpPLUS family 1 group.

```
  Tag Name                                    Writable
  --------                                    --------
  CreditLineReq                               boolean/
  ReuseAllowed                                boolean/
```

XMP xmpRights Tags

XMP Rights Management namespace tags.

These tags belong to the ExifTool XMP-xmpRights family 1 group.

```
  Tag Name                                    Writable
```

```
   --------                                 --------
   Certificate                              string
   Marked                                   boolean
   Owner                                    string+
   UsageTerms                               lang-alt
   WebStatement                             string
```

XMP xmpTPg Tags

XMP Paged-Text namespace tags.

These tags belong to the ExifTool XMP-xmpTPg family 1 group.

```
   Tag Name                                 Writable
   --------                                 --------
   Colorants                                Colorant Struct+
   ColorantA                                integer_+
   ColorantB                                integer_+
   ColorantBlack                            real_+
   ColorantBlue                             integer_+
   ColorantCyan                             real_+
   ColorantGray                             integer_+
   ColorantGreen                            integer_+
   ColorantL                                real_+
   ColorantMagenta                          real_+
   ColorantMode                             string_+
   ColorantRed                              integer_+
   ColorantSwatchName                       string_+
   ColorantTint                             integer_+
   ColorantType                             string_+
   ColorantYellow                           real_+
   Fonts                                    Font Struct+
   ChildFontFiles                           string_+
   FontComposite                            boolean_+
   FontFace                                 string_+
   FontFamily                               string_+
   FontFileName                             string_+
   FontName                                 string_+
   FontType                                 string_+
   FontVersion                              string_+
   HasVisibleOverprint                      boolean
   HasVisibleTransparency                   boolean
   MaxPageSize                              Dimensions Struct
   MaxPageSizeH                             real_
   MaxPageSizeUnit                          string_
   MaxPageSizeW                             real_
   NPages                                   integer
   PlateNames                               string+
   SwatchGroups                             SwatchGroup Struct+
   SwatchGroupsColorants                    Colorant Struct_+
   SwatchColorantA                          integer_+
   SwatchColorantB                          integer_+
   SwatchColorantBlack                      real_+
   SwatchColorantBlue                       integer_+
   SwatchColorantCyan                       real_+
   SwatchColorantGray                       integer_+
   SwatchColorantGreen                      integer_+
   SwatchColorantL                          real_+
   SwatchColorantMagenta                    real_+
   SwatchColorantMode                       string_+
   SwatchColorantRed                        integer_+
   SwatchColorantSwatchName                 string_+
   SwatchColorantTint                       integer_+
   SwatchColorantType                       string_+
   SwatchColorantYellow                     real_+
   SwatchGroupName                          string_+
   SwatchGroupType                          integer_+
```

XMP Font Struct

```
    Field Name                              Writable
    ----------                              --------
    ChildFontFiles                          string+
    Composite                               boolean
    FontFace                                string
    FontFamily                              string
    FontFileName                            string
    FontName                                string
    FontType                                string
    VersionString                           string
```

XMP SwatchGroup Struct

```
    Field Name                              Writable
    ----------                              --------
    Colorants                               Colorant Struct+
    GroupName                               string
    GroupType                               integer
```

XMP XML Tags

```
    Tag ID                 Tag Name             Writable
    ------                 --------             --------
    'dc'                   dc                   XMP dc
    'lastUpdate'           LastUpdate           no
```

XMP SVG Tags

SVG (Scalable Vector Graphics) image tags. By default, only the top-
level SVG and Metadata tags are extracted from these images, but all
graphics tags may be extracted by setting the Unknown option to 2 (-U
on the command line). The SVG tags are not part of XMP as such, but
are included with the XMP module for convenience. (see
<http://www.w3.org/TR/SVG11/>)

These tags belong to the ExifTool XMP-svg family 1 group.

```
    Tag ID                 Tag Name             Writable
    ------                 --------             --------
    'height'               ImageHeight          no
    'id'                   ID                   no
    'metadataId'           MetadataID           no
    'version'              SVGVersion           no
    'width'                ImageWidth           no
```

GPS Tags
    These GPS tags are part of the EXIF standard, and are stored in a
    separate IFD within the EXIF information.

    ExifTool is very flexible about the input format when writing lat/long
    coordinates, and will accept from 1 to 3 floating point numbers (for
    decimal degrees, degrees and minutes, or degrees, minutes and seconds)
    separated by just about anything, and will format them properly
    according to the EXIF specification.

    Some GPS tags have values which are fixed-length strings. For these,
    the indicated string lengths include a null terminator which is added
    automatically by ExifTool. Remember that the descriptive values are
    used when writing (eg. 'Above Sea Level', not '0') unless the print
    conversion is disabled (with '-n' on the command line or the PrintConv
    option in the API, or by suffixing the tag name with a "#" character).

    When adding GPS information to an image, it is important to set all of
    the following tags: GPSLatitude, GPSLatitudeRef, GPSLongitude,
    GPSLongitudeRef, and GPSAltitude and GPSAltitudeRef if the altitude is
    known. ExifTool will write the required GPSVersionID tag automatically
    if new a GPS IFD is added to an image.

```
    Tag ID   Tag Name                        Writable
    ------   --------                        --------
```

```
0x0000   GPSVersionID                         int8u[4]:
0x0001   GPSLatitudeRef                       string[2]
0x0002   GPSLatitude                          rational64u[3]
0x0003   GPSLongitudeRef                      string[2]
0x0004   GPSLongitude                         rational64u[3]
0x0005   GPSAltitudeRef                       int8u
0x0006   GPSAltitude                          rational64u
0x0007   GPSTimeStamp                         rational64u[3]
0x0008   GPSSatellites                        string
0x0009   GPSStatus                            string[2]
0x000a   GPSMeasureMode                       string[2]
0x000b   GPSDOP                               rational64u
0x000c   GPSSpeedRef                          string[2]
0x000d   GPSSpeed                             rational64u
0x000e   GPSTrackRef                          string[2]
0x000f   GPSTrack                             rational64u
0x0010   GPSImgDirectionRef                   string[2]
0x0011   GPSImgDirection                      rational64u
0x0012   GPSMapDatum                          string
0x0013   GPSDestLatitudeRef                   string[2]
0x0014   GPSDestLatitude                      rational64u[3]
0x0015   GPSDestLongitudeRef                  string[2]
0x0016   GPSDestLongitude                     rational64u[3]
0x0017   GPSDestBearingRef                    string[2]
0x0018   GPSDestBearing                       rational64u
0x0019   GPSDestDistanceRef                   string[2]
0x001a   GPSDestDistance                      rational64u
0x001b   GPSProcessingMethod                  undef
0x001c   GPSAreaInformation                   undef
0x001d   GPSDateStamp                         string[11]
0x001e   GPSDifferential                      int16u
0x001f   GPSHPositioningError                 rational64u
```

   GeoTiff Tags
      ExifTool extracts the following tags from GeoTIFF images. See
      <https://web.archive.org/web/20070820121549/http://www.remotesensing.org/geotiff/s
pec/geotiffhome.html>
      for the complete GeoTIFF specification. Also included in the table
      below are ChartTIFF tags (see
      <https://web.archive.org/web/20020828193928/http://www.charttiff.com/whitepapers.s
html>).
      GeoTIFF tags are not writable individually, but they may be copied en
      mass via the block tags GeoTiffDirectory, GeoTiffDoubleParams and
      GeoTiffAsciiParams.

```
Tag ID   Tag Name                             Writable
------   --------                             --------
0x0001   GeoTiffVersion                       no
0x0400   GTModelType                          no
0x0401   GTRasterType                         no
0x0402   GTCitation                           no
0x0800   GeographicType                       no
0x0801   GeogCitation                         no
0x0802   GeogGeodeticDatum                    no
0x0803   GeogPrimeMeridian                    no
0x0804   GeogLinearUnits                      no
0x0805   GeogLinearUnitSize                   no
0x0806   GeogAngularUnits                     no
0x0807   GeogAngularUnitSize                  no
0x0808   GeogEllipsoid                        no
0x0809   GeogSemiMajorAxis                    no
0x080a   GeogSemiMinorAxis                    no
0x080b   GeogInvFlattening                    no
0x080c   GeogAzimuthUnits                     no
0x080d   GeogPrimeMeridianLong                no
0x080e   GeogToWGS84                          no
0x0c00   ProjectedCSType                      no
0x0c01   PCSCitation                          no
0x0c02   Projection                           no
0x0c03   ProjCoordTrans                       no
```

```
0x0c04    ProjLinearUnits                      no
0x0c05    ProjLinearUnitSize                   no
0x0c06    ProjStdParallel1                     no
0x0c07    ProjStdParallel2                     no
0x0c08    ProjNatOriginLong                    no
0x0c09    ProjNatOriginLat                     no
0x0c0a    ProjFalseEasting                     no
0x0c0b    ProjFalseNorthing                    no
0x0c0c    ProjFalseOriginLong                  no
0x0c0d    ProjFalseOriginLat                   no
0x0c0e    ProjFalseOriginEasting               no
0x0c0f    ProjFalseOriginNorthing              no
0x0c10    ProjCenterLong                       no
0x0c11    ProjCenterLat                        no
0x0c12    ProjCenterEasting                    no
0x0c13    ProjCenterNorthing                   no
0x0c14    ProjScaleAtNatOrigin                 no
0x0c15    ProjScaleAtCenter                    no
0x0c16    ProjAzimuthAngle                     no
0x0c17    ProjStraightVertPoleLong             no
0x0c18    ProjRectifiedGridAngle               no
0x1000    VerticalCSType                       no
0x1001    VerticalCitation                     no
0x1002    VerticalDatum                        no
0x1003    VerticalUnits                        no
0xb799    ChartFormat                          no
0xb79a    ChartSource                          no
0xb79b    ChartSourceEdition                   no
0xb79c    ChartSourceDate                      no
0xb79d    ChartCorrDate                        no
0xb79e    ChartCountryOrigin                   no
0xb79f    ChartRasterEdition                   no
0xb7a0    ChartSoundingDatum                   no
0xb7a1    ChartDepthUnits                      no
0xb7a2    ChartMagVar                          no
0xb7a3    ChartMagVarYear                      no
0xb7a4    ChartMagVarAnnChange                 no
0xb7a5    ChartWGSNSShift                      no
0xb7a7    InsetNWPixelX                        no
0xb7a8    InsetNWPixelY                        no
0xb7a9    ChartContourInterval                 no
```

PLUS Tags

PLUS XMP Tags

PLUS (Picture Licensing Universal System) License Data Format 2.0.1 XMP
tags. Note that all controlled-vocabulary tags in this table (ie. tags
with a fixed set of values) have raw values which begin with
"http://ns.useplus.org/ldf/vocab/", but to reduce clutter this prefix
has been removed from the values shown below, and from the values read
and written with the -n option. See <http://ns.useplus.org/> for the
complete specification.

These tags belong to the ExifTool XMP-plus family 1 group.

```
Tag Name                              Writable
--------                              --------
AdultContentWarning                   string
CopyrightOwner                        CopyrightOwner Struct+
CopyrightOwnerID                      string_+
CopyrightOwnerName                    string_+
CopyrightOwnerImageID                 string
CopyrightRegistrationNumber           string
CopyrightStatus                       string
CreditLineRequired                    string
Custom1                               lang-alt+
Custom10                              lang-alt+
Custom2                               lang-alt+
Custom3                               lang-alt+
Custom4                               lang-alt+
```

```
Custom5                                  lang-alt+
Custom6                                  lang-alt+
Custom7                                  lang-alt+
Custom8                                  lang-alt+
Custom9                                  lang-alt+
DataMining                               string
EndUser                                  EndUser Struct+
EndUserID                                string_+
EndUserName                              string_+
FileNameAsDelivered                      string
FirstPublicationDate                     date
ImageAlterationConstraints               string+
ImageCreator                             ImageCreator Struct+
ImageCreatorID                           string_+
ImageCreatorName                         string_+
ImageCreatorImageID                      string
ImageDuplicationConstraints              string
ImageFileConstraints                     string+
ImageFileFormatAsDelivered               string
ImageFileSizeAsDelivered                 string
ImageSupplier                            ImageSupplier Struct+
ImageSupplierImageID                     string
ImageSupplierID                          string_+
ImageSupplierName                        string_+
ImageType                                string
Licensee                                 Licensee Struct+
LicenseeImageID                          string
LicenseeImageNotes                       lang-alt
LicenseeID                               string_+
LicenseeName                             string_+
LicenseEndDate                           date
LicenseeProjectReference                 string+
LicenseeTransactionID                    string+
LicenseID                                string
LicenseStartDate                         date
LicenseTransactionDate                   date
Licensor                                 Licensor Struct+
LicensorImageID                          string
LicensorCity                             string_+
LicensorCountry                          string_+
LicensorEmail                            string_+
LicensorExtendedAddress                  string_+
LicensorID                               string_+
LicensorName                             string_+
LicensorPostalCode                       string_+
LicensorRegion                           string_+
LicensorStreetAddress                    string_+
LicensorTelephone1                       string_+
LicensorTelephone2                       string_+
LicensorTelephoneType1                   string_+
LicensorTelephoneType2                   string_+
LicensorURL                              string_+
LicensorNotes                            lang-alt
LicensorTransactionID                    string+
MediaConstraints                         lang-alt
MediaSummaryCode                         string
MinorModelAgeDisclosure                  string
ModelReleaseID                           string+
ModelReleaseStatus                       string
OtherConditions                          lang-alt
OtherConstraints                         lang-alt
OtherImageInfo                           lang-alt
OtherLicenseDocuments                    string+
OtherLicenseInfo                         lang-alt
OtherLicenseRequirements                 lang-alt
ProductOrServiceConstraints              lang-alt
PropertyReleaseID                        string+
PropertyReleaseStatus                    string
RegionConstraints                        lang-alt
Reuse                                    string
```

```
    TermsAndConditionsText                          lang-alt
    TermsAndConditionsURL                           string
    PLUSVersion                                     string
```

XMP <u>CopyrightOwner</u> <u>Struct</u>

```
    Field Name                                      Writable
    ----------                                      --------
    CopyrightOwnerID                                string
    CopyrightOwnerName                              string
```

XMP <u>EndUser</u> <u>Struct</u>

```
    Field Name                                      Writable
    ----------                                      --------
    EndUserID                                       string
    EndUserName                                     string
```

XMP <u>ImageCreator</u> <u>Struct</u>

```
    Field Name                                      Writable
    ----------                                      --------
    ImageCreatorID                                  string
    ImageCreatorName                                string
```

XMP <u>ImageSupplier</u> <u>Struct</u>

```
    Field Name                                      Writable
    ----------                                      --------
    ImageSupplierID                                 string
    ImageSupplierName                               string
```

XMP <u>Licensee</u> <u>Struct</u>

```
    Field Name                                      Writable
    ----------                                      --------
    LicenseeID                                      string
    LicenseeName                                    string
```

XMP <u>Licensor</u> <u>Struct</u>

```
    Field Name                                      Writable
    ----------                                      --------
    LicensorCity                                    string
    LicensorCountry                                 string
    LicensorEmail                                   string
    LicensorExtendedAddress                         string
    LicensorID                                      string
    LicensorName                                    string
    LicensorPostalCode                              string
    LicensorRegion                                  string
    LicensorStreetAddress                           string
    LicensorTelephone1                              string
    LicensorTelephone2                              string
    LicensorTelephoneType1                          string
    LicensorTelephoneType2                          string
    LicensorURL                                     string
```

ICC_Profile Tags
    ICC profile information is used in many different file types including
    JPEG, TIFF, PDF, PostScript, Photoshop, PNG, MIFF, PICT, QuickTime, XCF
    and some RAW formats. While the tags listed below are not individually
    writable, the entire profile itself can be accessed via the extra
    'ICC_Profile' tag, but this tag is neither extracted nor written unless
    specified explicitly. See <http://www.color.org/icc_specs2.xalter> for
    the official ICC specification.

```
    Tag ID    Tag Name                              Writable
    ------    --------                              --------
    'A2B0'    AToB0                                 no
```

```
'A2B1'   AToB1                                      no
'A2B2'   AToB2                                      no
'A2B3'   AToB3                                      no
'A2M0'   AToM0                                      no
'B2A0'   BToA0                                      no
'B2A1'   BToA1                                      no
'B2A2'   BToA2                                      no
'B2A3'   BToA3                                      no
'B2D0'   BToD0                                      no
'B2D1'   BToD1                                      no
'B2D2'   BToD2                                      no
'B2D3'   BToD3                                      no
'CxF '   CXF                                        no
'D2B0'   DToB0                                      no
'D2B1'   DToB1                                      no
'D2B2'   DToB2                                      no
'D2B3'   DToB3                                      no
'Header' ProfileHeader                              ICC_Profile Header
'M2A0'   MToA0                                      no
'M2B0'   MToB0                                      no
'M2B1'   MToB1                                      no
'M2B2'   MToB2                                      no
'M2B3'   MToB3                                      no
'M2S0'   MToS0                                      no
'M2S1'   MToS1                                      no
'M2S2'   MToS2                                      no
'M2S3'   MToS3                                      no
'MS00'   WCSProfiles                                no
'bAB0'   BRDFAToB0                                  no
'bAB1'   BRDFAToB1                                  no
'bAB2'   BRDFAToB2                                  no
'bAB3'   BRDFAToB3                                  no
'bBA0'   BRDFBToA0                                  no
'bBA1'   BRDFBToA1                                  no
'bBA2'   BRDFBToA2                                  no
'bBA3'   BRDFBToA3                                  no
'bBD0'   BRDFBToD0                                  no
'bBD1'   BRDFBToD1                                  no
'bBD2'   BRDFBToD2                                  no
'bBD3'   BRDFBToD3                                  no
'bDB0'   BRDFDToB0                                  no
'bDB1'   BRDFDToB1                                  no
'bDB2'   BRDFDToB2                                  no
'bDB3'   BRDFDToB3                                  no
'bMB0'   BRDFMToB0                                  no
'bMB1'   BRDFMToB1                                  no
'bMB2'   BRDFMToB2                                  no
'bMB3'   BRDFMToB3                                  no
'bMS0'   BRDFMToS0                                  no
'bMS1'   BRDFMToS1                                  no
'bMS2'   BRDFMToS2                                  no
'bMS3'   BRDFMToS3                                  no
'bTRC'   BlueTRC                                    no
'bXYZ'   BlueMatrixColumn                           no
'bcp0'   BRDFColorimetricParam0                     no
'bcp1'   BRDFColorimetricParam1                     no
'bcp2'   BRDFColorimetricParam2                     no
'bcp3'   BRDFColorimetricParam3                     no
'bfd '   UCRBG                                      no
'bkpt'   MediaBlackPoint                            no
'bsp0'   BRDFSpectralParam0                         no
'bsp1'   BRDFSpectralParam1                         no
'bsp2'   BRDFSpectralParam2                         no
'bsp3'   BRDFSpectralParam3                         no
'c2sp'   CustomToStandardPcc                        no
'calt'   CalibrationDateTime                        no
'cept'   ColorEncodingParams                        no
'chad'   ChromaticAdaptation                        no
'chrm'   Chromaticity                               ICC_Profile Chromaticity
'cicp'   ColorRepresentation                        ICC_Profile ColorRep
```

```
'ciis'   ColorimetricIntentImageState          no
'clio'   ColorantInfoOut                        no
'cloo'   ColorantOrderOut                       no
'clot'   ColorantTableOut                       no
'clro'   ColorantOrder                          no
'clrt'   ColorantTable                          ICC_Profile ColorantTable
'cprt'   ProfileCopyright                       no
'crdi'   CRDInfo                                no
'csnm'   ColorSpaceName                         no
'dAB0'   DirectionalAToB0                       no
'dAB1'   DirectionalAToB1                       no
'dAB2'   DirectionalAToB2                       no
'dAB3'   DirectionalAToB3                       no
'dBA0'   DirectionalBToA0                       no
'dBA1'   DirectionalBToA1                       no
'dBA2'   DirectionalBToA2                       no
'dBA3'   DirectionalBToA3                       no
'dBD0'   DirectionalBToD0                       no
'dBD1'   DirectionalBToD1                       no
'dBD2'   DirectionalBToD2                       no
'dBD3'   DirectionalBToD3                       no
'dDB0'   DirectionalDToB0                       no
'dDB1'   DirectionalDToB1                       no
'dDB2'   DirectionalDToB2                       no
'dDB3'   DirectionalDToB3                       no
'desc'   ProfileDescription                     no
'devs'   DeviceSettings                         no
'dmdd'   DeviceModelDesc                        no
'dmnd'   DeviceMfgDesc                          no
'dscm'   ProfileDescriptionML                   no
'fpce'   FocalPlaneColorimetryEstimates         no
'gTRC'   GreenTRC                               no
'gXYZ'   GreenMatrixColumn                      no
'gamt'   Gamut                                  no
'gdb0'   GamutBoundaryDescription0              no
'gdb1'   GamutBoundaryDescription1              no
'gdb2'   GamutBoundaryDescription2              no
'gdb3'   GamutBoundaryDescription3              no
'hdgm'   HDGainMapInfo                          no
'kTRC'   GrayTRC                                no
'lumi'   Luminance                              no
'mcta'   MultiplexTypeArray                     no
'mdv '   MultiplexDefaultValues                 no
'meas'   Measurement                            ICC_Profile Measurement
'meta'   Metadata                               ICC_Profile Metadata
'miin'   MeasurementInputInfo                   no
'minf'   MeasurementInfo                        no
'mmod'   MakeAndModel                           no
'ncl2'   NamedColor2                            no
'ncol'   NamedColor                             no
'ndin'   NativeDisplayInfo                      no
'nmcl'   NamedColor                             no
'pre0'   Preview0                               no
'pre1'   Preview1                               no
'pre2'   Preview2                               no
'ps2i'   PS2RenderingIntent                     no
'ps2s'   PostScript2CSA                         no
'psd0'   PostScript2CRD0                        no
'psd1'   PostScript2CRD1                        no
'psd2'   PostScript2CRD2                        no
'psd3'   PostScript2CRD3                        no
'pseq'   ProfileSequenceDesc                    no
'psid'   ProfileSequenceIdentifier              no
'psin'   ProfileSequenceInfo                    no
'psvm'   PS2CRDVMSize                           no
'rTRC'   RedTRC                                 no
'rXYZ'   RedMatrixColumn                        no
'resp'   OutputResponse                         no
'rfnm'   ReferenceName                          no
'rhoc'   ReflectionHardcopyOrigColorimetry      no
```

```
'rig0'   PerceptualRenderingIntentGamut        no
'rig2'   SaturationRenderingIntentGamut        no
'rpoc'   ReflectionPrintOutputColorimetry      no
's2cp'   StandardToCustomPcc                   no
'sape'   SceneAppearanceEstimates              no
'scoe'   SceneColorimetryEstimates             no
'scrd'   ScreeningDesc                         no
'scrn'   Screening                             no
'smap'   SurfaceMap                            no
'svcn'   SpectralViewingConditions             no
'swpt'   SpectralWhitePoint                    no
'targ'   CharTarget                            no
'tech'   Technology                            no
'vcgt'   VideoCardGamma                        no
'view'   ViewingConditions                     ICC_Profile ViewingConditions
'vued'   ViewingCondDesc                       no
'wtpt'   MediaWhitePoint                       no
```

ICC Profile Header Tags

Index1	Tag Name	Writable
4	ProfileCMMType	no
8	ProfileVersion	no
12	ProfileClass	no
16	ColorSpaceData	no
20	ProfileConnectionSpace	no
24	ProfileDateTime	no
36	ProfileFileSignature	no
40	PrimaryPlatform	no
44	CMMFlags	no
48	DeviceManufacturer	no
52	DeviceModel	no
56	DeviceAttributes	no
64	RenderingIntent	no
68	ConnectionSpaceIlluminant	no
80	ProfileCreator	no
84	ProfileID	no

ICC Profile Chromaticity Tags

Index1	Tag Name	Writable
8	ChromaticityChannels	no
10	ChromaticityColorant	no
12	ChromaticityChannel1	no
20	ChromaticityChannel2	no
28	ChromaticityChannel3	no
36	ChromaticityChannel4	no

ICC Profile ColorRep Tags

Index1	Tag Name	Writable
8	ColorPrimaries	no
9	TransferCharacteristics	no
10	MatrixCoefficients	no
11	VideoFullRangeFlag	no

ICC Profile ColorantTable Tags

Index1	Tag Name	Writable
8	ColorantCount	no
12	Colorant1Name	no
44	Colorant1Coordinates	no
50	Colorant2Name	no
82	Colorant2Coordinates	no
88	Colorant3Name	no
120	Colorant3Coordinates	no

ICC_Profile Measurement Tags

```
    Index1    Tag Name                          Writable
    ------    --------                          --------
        8     MeasurementObserver               no
       12     MeasurementBacking                no
       24     MeasurementGeometry               no
       28     MeasurementFlare                  no
       32     MeasurementIlluminant             no
```

ICC_Profile Metadata Tags

Only these few tags have been pre-defined, but ExifTool will extract
any Metadata tags that exist.

```
    Tag Name                                    Writable
    --------                                    --------
    CreatorApp                                  no
    ManufacturerName                            no
    MediaColor                                  no
    MediaWeight                                 no
```

ICC_Profile ViewingConditions Tags

```
    Index1    Tag Name                          Writable
    ------    --------                          --------
        8     ViewingCondIlluminant             no
       20     ViewingCondSurround               no
       32     ViewingCondIlluminantType         no
```

PrintIM Tags
    The format of the PrintIM information is known, however no PrintIM tags
    have been decoded. Use the Unknown (-u) option to extract PrintIM
    information.

```
    Tag ID              Tag Name                Writable
    ------              --------                --------
    'PrintIMVersion'    PrintIMVersion          no
```

Photoshop Tags
    Photoshop tags are found in PSD and PSB files, as well as inside
    embedded Photoshop information in many other file types (JPEG, TIFF,
    PDF, PNG to name a few).

    Many Photoshop tags are marked as Unknown (indicated by a question mark
    after the tag name) because the information they provide is not very
    useful under normal circumstances. These unknown tags are not
    extracted unless the Unknown (-u) option is used. See
    <http://www.adobe.com/devnet-apps/photoshop/fileformatashtml/> for the
    official specification

    Photoshop path tags (Tag ID's 0x7d0 to 0xbb5) are not defined by
    default, but a config file included in the full ExifTool distribution
    (config_files/photoshop_paths.config) contains the tag definitions to
    allow access to this information.

```
    Tag ID    Tag Name                          Writable
    ------    --------                          --------
    0x03e8    Photoshop2Info?                   no
    0x03e9    MacintoshPrintInfo?               no
    0x03ea    XMLData?                          no
    0x03eb    Photoshop2ColorTable?             no
    0x03ed    ResolutionInfo                    Photoshop Resolution
    0x03ee    AlphaChannelsNames                no
    0x03ef    DisplayInfo?                      no
    0x03f0    PStringCaption?                   no
    0x03f1    BorderInformation?                no
    0x03f2    BackgroundColor?                  no
    0x03f3    PrintFlags?                       no
```

0x03f4	BW_HalftoningInfo?	no
0x03f5	ColorHalftoningInfo?	no
0x03f6	DuotoneHalftoningInfo?	no
0x03f7	BW_TransferFunc?	no
0x03f8	ColorTransferFuncs?	no
0x03f9	DuotoneTransferFuncs?	no
0x03fa	DuotoneImageInfo?	no
0x03fb	EffectiveBW?	no
0x03fc	ObsoletePhotoshopTag1?	no
0x03fd	EPSOptions?	no
0x03fe	QuickMaskInfo?	no
0x03ff	ObsoletePhotoshopTag2?	no
0x0400	TargetLayerID?	no
0x0401	WorkingPath?	no
0x0402	LayersGroupInfo?	no
0x0403	ObsoletePhotoshopTag3?	no
0x0404	IPTCData	IPTC
0x0405	RawImageMode?	no
0x0406	JPEG_Quality	Photoshop JPEG_Quality
0x0408	GridGuidesInfo?	no
0x0409	PhotoshopBGRThumbnail	undef!
0x040a	CopyrightFlag	int8u
0x040b	URL	string
0x040c	PhotoshopThumbnail	undef!
0x040d	GlobalAngle	int32u
0x040e	ColorSamplersResource?	no
0x040f	ICC_Profile	ICC_Profile
0x0410	Watermark?	no
0x0411	ICC_Untagged?	no
0x0412	EffectsVisible?	no
0x0413	SpotHalftone?	no
0x0414	IDsBaseValue?	no
0x0415	UnicodeAlphaNames?	no
0x0416	IndexedColorTableCount?	no
0x0417	TransparentIndex?	no
0x0419	GlobalAltitude	int32u
0x041a	SliceInfo	Photoshop SliceInfo
0x041b	WorkflowURL	no
0x041c	JumpToXPEP?	no
0x041d	AlphaIdentifiers?	no
0x041e	URL_List	no+
0x0421	VersionInfo	Photoshop VersionInfo
0x0422	EXIFInfo	EXIF
0x0423	ExifInfo2?	no
0x0424	XMP	XMP
0x0425	IPTCDigest	string!
0x0426	PrintScaleInfo	Photoshop PrintScaleInfo
0x0428	PixelInfo	Photoshop PixelInfo
0x0429	LayerComps?	no
0x042a	AlternateDuotoneColors?	no
0x042b	AlternateSpotColors?	no
0x042d	LayerSelectionIDs?	no
0x042e	HDRToningInfo?	no
0x042f	PrintInfo?	no
0x0430	LayerGroupsEnabledID?	no
0x0431	ColorSamplersResource2?	no
0x0432	MeasurementScale?	no
0x0433	TimelineInfo?	no
0x0434	SheetDisclosure?	no
0x0435	ChannelOptions	Photoshop ChannelOptions
0x0436	OnionSkins?	no
0x0438	CountInfo?	no
0x043a	PrintInfo2?	no
0x043b	PrintStyle?	no
0x043c	MacintoshNSPrintInfo?	no
0x043d	WindowsDEVMODE?	no
0x043e	AutoSaveFilePath?	no
0x043f	AutoSaveFormat?	no
0x0440	PathSelectionState?	no
0x0bb7	ClippingPathName	no

```
    0x0bb8   OriginPathInfo?                          no
    0x1b58   ImageReadyVariables?                     no
    0x1b59   ImageReadyDataSets?                      no
    0x1f40   LightroomWorkflow?                       no
    0x2710   PrintFlagsInfo?                          no
```

Photoshop Resolution Tags

```
    Index2   Tag Name                                 Writable
    ------   --------                                 --------
         0   XResolution                              int32u
         2   DisplayedUnitsX                          int16u
         4   YResolution                              int32u
         6   DisplayedUnitsY                          int16u
```

Photoshop JPEG Quality Tags

```
    Index2   Tag Name                                 Writable
    ------   --------                                 --------
         0   PhotoshopQuality                         int16s
         1   PhotoshopFormat                          no
         2   ProgressiveScans                         no
```

Photoshop SliceInfo Tags

```
    Index1   Tag Name                                 Writable
    ------   --------                                 --------
        20   SlicesGroupName                          no
        24   NumSlices                                no
```

Photoshop VersionInfo Tags

```
    Index1   Tag Name                                 Writable
    ------   --------                                 --------
         4   HasRealMergedData                        no
         5   WriterName                               no
         9   ReaderName                               no
```

Photoshop PrintScaleInfo Tags

```
    Index1   Tag Name                                 Writable
    ------   --------                                 --------
         0   PrintStyle                               no
         2   PrintPosition                            no
        10   PrintScale                               no
```

Photoshop PixelInfo Tags

```
    Index1   Tag Name                                 Writable
    ------   --------                                 --------
         4   PixelAspectRatio                         no
```

Photoshop ChannelOptions Tags

These tags relate only to the appearance of a channel.

```
    Index1   Tag Name                                 Writable
    ------   --------                                 --------
         0   ChannelColorSpace                        no
         2   ChannelColorData                         no
        11   ChannelOpacity                           no
        12   ChannelColorIndicates                    no
```

Photoshop DocumentData Tags

```
    Tag ID   Tag Name                                 Writable
    ------   --------                                 --------
    'Layr'   Layers                                   Photoshop Layers
    'Lr16'   Layers                                   Photoshop Layers
```

Photoshop Layers Tags

Tags extracted from Photoshop layer information.

Tag ID	Tag Name	Writable
'_xbnd'	LayerBlendModes	no+
'_xcnt'	LayerCount	no
'_xnam'	LayerNames	no+
'_xopc'	LayerOpacities	no+
'_xrct'	LayerRectangles	no+
'_xvis'	LayerVisible	no+
'lclr'	LayerColors	no+
'lsct'	LayerSections	no+
'luni'	LayerUnicodeNames	no+
'lyid'	LayerIDs?	no+
'shmd'	LayerModifyDates	no+

Photoshop Header Tags

This information is found in the PSD file header.

Index2	Tag Name	Writable
6	NumChannels	no
7	ImageHeight	no
9	ImageWidth	no
11	BitDepth	no
12	ColorMode	no

Photoshop ImageData Tags

Index1	Tag Name	Writable
0	Compression	no

Apple Tags

Tags extracted from the maker notes of iPhone images.

Tag ID	Tag Name	Writable
0x0001	MakerNoteVersion	int32s
0x0002	AEMatrix?	no
0x0003	RunTime	Apple RunTime
0x0004	AEStable	int32s
0x0005	AETarget	int32s
0x0006	AEAverage	int32s
0x0007	AFStable	int32s
0x0008	AccelerationVector	rational64s[3]
0x000a	HDRImageType	int32s
0x000b	BurstUUID	string
0x000c	FocusDistanceRange	rational64s[2]
0x000f	OISMode	int32s
0x0011	ContentIdentifier	string
0x0014	ImageCaptureType	int32s
0x0015	ImageUniqueID	string
0x0017	LivePhotoVideoIndex	yes
0x0019	ImageProcessingFlags?	int32s
0x001a	QualityHint?	string
0x001d	LuminanceNoiseAmplitude	rational64s
0x001f	PhotosAppFeatureFlags	int32s
0x0020	ImageCaptureRequestID?	string
0x0021	HDRHeadroom	rational64s
0x0023	AFPerformance	int32s[2]
0x0025	SceneFlags?	int32s
0x0026	SignalToNoiseRatioType?	int32s
0x0027	SignalToNoiseRatio	rational64s
0x002b	PhotoIdentifier	string
0x002d	ColorTemperature	int32s
0x002e	CameraType	int32s

```
0x002f    FocusPosition                        int32s
0x0030    HDRGain                              rational64s
0x0038    AFMeasuredDepth                      int32s
0x003d    AFConfidence                         int32s
0x003e    ColorCorrectionMatrix?               no
0x003f    GreenGhostMitigationStatus?          int32s
0x0040    SemanticStyle                        no
0x0041    SemanticStyleRenderingVer            no
0x0042    SemanticStylePreset                  no
0x004e    Apple_0x004e?                        no
0x004f    Apple_0x004f?                        no
```

Apple RunTime Tags

This PLIST-format information contains the elements of a CMTime
structure representing the amount of time the phone has been running
since the last boot, not including standby time.

```
Tag ID              Tag Name                Writable
------              --------                --------
'epoch'             RunTimeEpoch            no
'flags'             RunTimeFlags            no
'timescale'         RunTimeScale            no
'value'             RunTimeValue            no
```

Canon Tags
```
Tag ID    Tag Name                           Writable
------    --------                           --------
0x0001    CanonCameraSettings                Canon CameraSettings
0x0002    CanonFocalLength                   Canon FocalLength
0x0003    CanonFlashInfo?                    no
0x0004    CanonShotInfo                      Canon ShotInfo
0x0005    CanonPanorama                      Canon Panorama
0x0006    CanonImageType                     string
0x0007    CanonFirmwareVersion               string
0x0008    FileNumber                         int32u
0x0009    OwnerName                          string
0x000a    UnknownD30                         Canon UnknownD30
0x000c    SerialNumber                       int32u
0x000d    CanonCameraInfo1D                  Canon CameraInfo1D
          CanonCameraInfo1DmkII              Canon CameraInfo1DmkII
          CanonCameraInfo1DmkIIN             Canon CameraInfo1DmkIIN
          CanonCameraInfo1DmkIII             Canon CameraInfo1DmkIII
          CanonCameraInfo1DmkIV              Canon CameraInfo1DmkIV
          CanonCameraInfo1DX                 Canon CameraInfo1DX
          CanonCameraInfo5D                  Canon CameraInfo5D
          CanonCameraInfo5DmkII              Canon CameraInfo5DmkII
          CanonCameraInfo5DmkIII             Canon CameraInfo5DmkIII
          CanonCameraInfo6D                  Canon CameraInfo6D
          CanonCameraInfo7D                  Canon CameraInfo7D
          CanonCameraInfo40D                 Canon CameraInfo40D
          CanonCameraInfo50D                 Canon CameraInfo50D
          CanonCameraInfo60D                 Canon CameraInfo60D
          CanonCameraInfo70D                 Canon CameraInfo70D
          CanonCameraInfo80D                 Canon CameraInfo80D
          CanonCameraInfo450D                Canon CameraInfo450D
          CanonCameraInfo500D                Canon CameraInfo500D
          CanonCameraInfo550D                Canon CameraInfo550D
          CanonCameraInfo600D                Canon CameraInfo600D
          CanonCameraInfo650D                Canon CameraInfo650D
          CanonCameraInfo700D                Canon CameraInfo650D
          CanonCameraInfo750D                Canon CameraInfo750D
          CanonCameraInfo760D                Canon CameraInfo750D
          CanonCameraInfo1000D               Canon CameraInfo1000D
          CanonCameraInfo1100D               Canon CameraInfo600D
          CanonCameraInfo1200D               Canon CameraInfo60D
          CanonCameraInfoR6                  Canon CameraInfoR6
          CanonCameraInfoR6m2                Canon CameraInfoR6m2
          CanonCameraInfoG5XII               Canon CameraInfoG5XII
          CanonCameraInfoPowerShot           Canon CameraInfoPowerShot
```

	CanonCameraInfoPowerShot2	Canon CameraInfoPowerShot2
	CanonCameraInfoUnknown32	Canon CameraInfoUnknown32
	CanonCameraInfoUnknown16	Canon CameraInfoUnknown16
	CanonCameraInfoUnknown	Canon CameraInfoUnknown
0x000e	CanonFileLength	int32u
0x000f	CustomFunctions1D	CanonCustom Functions1D
	CustomFunctions5D	CanonCustom Functions5D
	CustomFunctions10D	CanonCustom Functions10D
	CustomFunctions20D	CanonCustom Functions20D
	CustomFunctions30D	CanonCustom Functions30D
	CustomFunctions350D	CanonCustom Functions350D
	CustomFunctions400D	CanonCustom Functions400D
	CustomFunctionsD30	CanonCustom FunctionsD30
	CustomFunctionsD60	CanonCustom FunctionsD30
	CustomFunctionsUnknown	CanonCustom FuncsUnknown
0x0010	CanonModelID	int32u
0x0011	MovieInfo	Canon MovieInfo
0x0012	CanonAFInfo	Canon AFInfo
0x0013	ThumbnailImageValidArea	int16u[4]
0x0015	SerialNumberFormat	int32u
0x001a	SuperMacro	int16u
0x001c	DateStampMode	int16u
0x001d	MyColors	Canon MyColors
0x001e	FirmwareRevision	int32u
0x0023	Categories	int32u[2]
0x0024	FaceDetect1	Canon FaceDetect1
0x0025	FaceDetect2	Canon FaceDetect2
0x0026	CanonAFInfo2	Canon AFInfo2
0x0027	ContrastInfo	Canon ContrastInfo
0x0028	ImageUniqueID	int8u
0x0029	WBInfo	Canon WBInfo
0x002f	FaceDetect3	Canon FaceDetect3
0x0035	TimeInfo	Canon TimeInfo
0x0038	BatteryType	undef
0x003c	AFInfo3	Canon AFInfo2
0x0081	RawDataOffset	no
0x0082	RawDataLength	no
0x0083	OriginalDecisionDataOffset	int32u*
0x0090	CustomFunctions1D	CanonCustom Functions1D
0x0091	PersonalFunctions	CanonCustom PersonalFuncs
0x0092	PersonalFunctionValues	CanonCustom PersonalFuncValues
0x0093	CanonFileInfo	Canon FileInfo
0x0094	AFPointsInFocus1D	no
0x0095	LensModel	string
0x0096	SerialInfo	Canon SerialInfo
	InternalSerialNumber	string
0x0097	DustRemovalData	undef!
0x0098	CropInfo	Canon CropInfo
0x0099	CustomFunctions2	CanonCustom Functions2
0x009a	AspectInfo	Canon AspectInfo
0x00a0	ProcessingInfo	Canon Processing
0x00a1	ToneCurveTable	no
0x00a2	SharpnessTable	no
0x00a3	SharpnessFreqTable	no
0x00a4	WhiteBalanceTable	no
0x00a9	ColorBalance	Canon ColorBalance
0x00aa	MeasuredColor	Canon MeasuredColor
0x00ae	ColorTemperature	int16u
0x00b0	CanonFlags	Canon Flags
0x00b1	ModifiedInfo	Canon ModifiedInfo
0x00b2	ToneCurveMatching	no
0x00b3	WhiteBalanceMatching	no
0x00b4	ColorSpace	int16u
0x00b6	PreviewImageInfo	Canon PreviewImageInfo
0x00d0	VRDOffset	int32u*
0x00e0	SensorInfo	Canon SensorInfo
0x4001	ColorData1	Canon ColorData1
	ColorData2	Canon ColorData2
	ColorData3	Canon ColorData3
	ColorData4	Canon ColorData4

	ColorData5	Canon ColorData5
	ColorData6	Canon ColorData6
	ColorData7	Canon ColorData7
	ColorData8	Canon ColorData8
	ColorData9	Canon ColorData9
	ColorData10	Canon ColorData10
	ColorData11	Canon ColorData11
	ColorData12	Canon ColorData12
	ColorDataUnknown	Canon ColorDataUnknown
0x4002	CRWParam?	no
0x4003	ColorInfo	Canon ColorInfo
0x4005	Flavor?	no
0x4008	PictureStyleUserDef	[Values 0-2] Canon PictureStyle
0x4009	PictureStylePC	[Values 0-2] Canon PictureStyle
0x4010	CustomPictureStyleFileName	string
0x4013	AFMicroAdj	Canon AFMicroAdj
0x4015	VignettingCorr	Canon VignettingCorr
	VignettingCorrUnknown1	Canon VignettingCorrUnknown
	VignettingCorrUnknown2	Canon VignettingCorrUnknown
0x4016	VignettingCorr2	Canon VignettingCorr2
0x4018	LightingOpt	Canon LightingOpt
0x4019	LensInfo	Canon LensInfo
0x4020	AmbienceInfo	Canon Ambience
0x4021	MultiExp	Canon MultiExp
0x4024	FilterInfo	Canon FilterInfo
0x4025	HDRInfo	Canon HDRInfo
0x4026	LogInfo	Canon LogInfo
0x4028	AFConfig	Canon AFConfig
0x403f	RawBurstModeRoll	Canon RawBurstInfo
0x4059	LevelInfo	Canon LevelInfo

Canon CameraSettings Tags

Index2	Tag Name	Writable
1	MacroMode	int16s
2	SelfTimer	int16s
3	Quality	int16s
4	CanonFlashMode	int16s
5	ContinuousDrive	int16s
7	FocusMode	int16s
9	RecordMode	int16s
10	CanonImageSize	int16s
11	EasyMode	int16s
12	DigitalZoom	int16s
13	Contrast	int16s
14	Saturation	int16s
15	Sharpness	int16s
16	CameraISO	int16s
17	MeteringMode	int16s
18	FocusRange	int16s
19	AFPoint	int16s
20	CanonExposureMode	int16s
22	LensType	int16u
23	MaxFocalLength	int16u
24	MinFocalLength	int16u
25	FocalUnits	int16s
26	MaxAperture	int16s
27	MinAperture	int16s
28	FlashActivity	int16s
29	FlashBits	int16s
32	FocusContinuous	int16s
33	AESetting	int16s
34	ImageStabilization	int16s
35	DisplayAperture	int16s
36	ZoomSourceWidth	int16s
37	ZoomTargetWidth	int16s
39	SpotMeteringMode	int16s

```
      40    PhotoEffect                       int16s
      41    ManualFlashOutput                 int16s
      42    ColorTone                         int16s
      46    SRAWQuality                       int16s
      51    Clarity                           int16s
```

Canon FocalLength Tags

```
  Index2   Tag Name                          Writable
  ------   --------                          --------
       0   FocalType                         int16u
       1   FocalLength                       int16u
       2   FocalPlaneXSize                   int16u
           FocalPlaneXUnknown?               int16u
       3   FocalPlaneYSize                   int16u
           FocalPlaneYUnknown?               int16u
```

Canon ShotInfo Tags

```
  Index2   Tag Name                          Writable
  ------   --------                          --------
       1   AutoISO                           int16s
       2   BaseISO                           int16s
       3   MeasuredEV                        int16s
       4   TargetAperture                    int16s
       5   TargetExposureTime                int16s
       6   ExposureCompensation              int16s
       7   WhiteBalance                      int16s
       8   SlowShutter                       int16s
       9   SequenceNumber                    int16s
      10   OpticalZoomCode                   int16s
      12   CameraTemperature                 int16s
      13   FlashGuideNumber                  int16s
      14   AFPointsInFocus                   int16s
      15   FlashExposureComp                 int16s
      16   AutoExposureBracketing            int16s
      17   AEBBracketValue                   int16s
      18   ControlMode                       int16s
      19   FocusDistanceUpper                int16u
      20   FocusDistanceLower                int16u
      21   FNumber                           int16s
      22   ExposureTime                      int16s
      23   MeasuredEV2                       int16s
      24   BulbDuration                      int16s
      26   CameraType                        int16s
      27   AutoRotate                        int16s
      28   NDFilter                          int16s
      29   SelfTimer2                        int16s
      33   FlashOutput                       int16s
```

Canon Panorama Tags

```
  Index2   Tag Name                          Writable
  ------   --------                          --------
       2   PanoramaFrameNumber               int16s
       5   PanoramaDirection                 int16s
```

Canon UnknownD30 Tags

```
  Index2   Tag Name                          Writable
  ------   --------                          --------
  [no tags known]
```

Canon CameraInfo1D Tags

Information in the "CameraInfo" records is tricky to decode because the
encodings are very different than in other Canon records (even
sometimes switching endianness between values within a single camera),
plus there is considerable variation in format from model to model. The
first table below lists CameraInfo tags for the 1D and 1DS.

Index1	Tag Name	Writable
4	ExposureTime	int8u
10	FocalLength	int16u
13	LensType	int16uRev
14	MinFocalLength	int16u
16	MaxFocalLength	int16u
65	SharpnessFrequency	int8u
66	Sharpness	int8s
68	WhiteBalance	int8u
71	SharpnessFrequency	int8u
72	ColorTemperature	int16u
	Sharpness	int8s
74	WhiteBalance	int8u
75	PictureStyle	int8u
78	ColorTemperature	int16u
81	PictureStyle	int8u

Canon CameraInfo1DmkII Tags

CameraInfo tags for the 1DmkII and 1DSmkII.

Index1	Tag Name	Writable
4	ExposureTime	int8u
9	FocalLength	int16uRev
12	LensType	int16uRev
17	MinFocalLength	int16uRev
19	MaxFocalLength	int16uRev
45	FocalType	int8u
54	WhiteBalance	int8u
55	ColorTemperature	int16uRev
57	CanonImageSize	int16u
102	JPEGQuality	int8u
108	PictureStyle	int8u
110	Saturation	int8s
111	ColorTone	int8s
114	Sharpness	int8s
115	Contrast	int8s
117	ISO	string[5]

Canon CameraInfo1DmkIIN Tags

CameraInfo tags for the 1DmkIIN.

Index1	Tag Name	Writable
4	ExposureTime	int8u
9	FocalLength	int16uRev
12	LensType	int16uRev
17	MinFocalLength	int16uRev
19	MaxFocalLength	int16uRev
54	WhiteBalance	int8u
55	ColorTemperature	int16uRev
115	PictureStyle	int8u
116	Sharpness	int8s
117	Contrast	int8s
118	Saturation	int8s
119	ColorTone	int8s
121	ISO	string[5]

Canon CameraInfo1DmkIII Tags

CameraInfo tags for the 1DmkIII and 1DSmkIII.

Index1	Tag Name	Writable
3	FNumber	int8u
4	ExposureTime	int8u

```
    6    ISO                                int8u
   24    CameraTemperature                  int8u
   27    MacroMagnification                 int8u
   29    FocalLength                        int16uRev
   48    CameraOrientation                  int8u
   67    FocusDistanceUpper                 int16uRev
   69    FocusDistanceLower                 int16uRev
   94    WhiteBalance                       int16u
   98    ColorTemperature                   int16u
  134    PictureStyle                       int8u
  273    LensType                           int16uRev
  275    MinFocalLength                     int16uRev
  277    MaxFocalLength                     int16uRev
  310    FirmwareVersion                    string[6]
  370    FileIndex                          int32u
  374    ShutterCount                       int32u
  382    DirectoryIndex                     int32u
  682    PictureStyleInfo                   Canon PSInfo
 1114    TimeStamp1                         int32u
 1118    TimeStamp                          int32u
```

Canon PSInfo Tags

Custom picture style information for various models.

```
  Index1    Tag Name                        Writable
  ------    --------                        --------
      0     ContrastStandard                int32s
      4     SharpnessStandard               int32s
      8     SaturationStandard              int32s
     12     ColorToneStandard               int32s
     16     FilterEffectStandard?           int32s
     20     ToningEffectStandard?           int32s
     24     ContrastPortrait                int32s
     28     SharpnessPortrait               int32s
     32     SaturationPortrait              int32s
     36     ColorTonePortrait               int32s
     40     FilterEffectPortrait?           int32s
     44     ToningEffectPortrait?           int32s
     48     ContrastLandscape               int32s
     52     SharpnessLandscape              int32s
     56     SaturationLandscape             int32s
     60     ColorToneLandscape              int32s
     64     FilterEffectLandscape?          int32s
     68     ToningEffectLandscape?          int32s
     72     ContrastNeutral                 int32s
     76     SharpnessNeutral                int32s
     80     SaturationNeutral               int32s
     84     ColorToneNeutral                int32s
     88     FilterEffectNeutral?            int32s
     92     ToningEffectNeutral?            int32s
     96     ContrastFaithful                int32s
    100     SharpnessFaithful               int32s
    104     SaturationFaithful              int32s
    108     ColorToneFaithful               int32s
    112     FilterEffectFaithful?           int32s
    116     ToningEffectFaithful?           int32s
    120     ContrastMonochrome              int32s
    124     SharpnessMonochrome             int32s
    128     SaturationMonochrome?           int32s
    132     ColorToneMonochrome?            int32s
    136     FilterEffectMonochrome          int32s
    140     ToningEffectMonochrome          int32s
    144     ContrastUserDef1                int32s
    148     SharpnessUserDef1               int32s
    152     SaturationUserDef1              int32s
    156     ColorToneUserDef1               int32s
    160     FilterEffectUserDef1            int32s
    164     ToningEffectUserDef1            int32s
    168     ContrastUserDef2                int32s
```

```
    172    SharpnessUserDef2                    int32s
    176    SaturationUserDef2                   int32s
    180    ColorToneUserDef2                    int32s
    184    FilterEffectUserDef2                 int32s
    188    ToningEffectUserDef2                 int32s
    192    ContrastUserDef3                     int32s
    196    SharpnessUserDef3                    int32s
    200    SaturationUserDef3                   int32s
    204    ColorToneUserDef3                    int32s
    208    FilterEffectUserDef3                 int32s
    212    ToningEffectUserDef3                 int32s
    216    UserDef1PictureStyle                 int16u
    218    UserDef2PictureStyle                 int16u
    220    UserDef3PictureStyle                 int16u
```

Canon CameraInfo1DmkIV Tags

CameraInfo tags for the EOS 1D Mark IV. Indices shown are for firmware
versions 1.0.x, but they may be different for other firmware versions.

```
    Index1    Tag Name                          Writable
    ------    --------                          --------
        3    FNumber                           int8u
        4    ExposureTime                      int8u
        6    ISO                               int8u
        7    HighlightTonePriority             int8u
        8    MeasuredEV2                       int8u
        9    MeasuredEV3                       int8u
       21    FlashMeteringMode                 int8u
       25    CameraTemperature                 int8u
       30    FocalLength                       int16uRev
       53    CameraOrientation                 int8u
       84    FocusDistanceUpper                int16uRev
       86    FocusDistanceLower                int16uRev
      120    WhiteBalance                      int16u
      124    ColorTemperature                  int16u
      335    LensType                          int16uRev
      337    MinFocalLength                    int16uRev
      339    MaxFocalLength                    int16uRev
      493    FirmwareVersion                   no
      556    FileIndex                         int32u
      568    DirectoryIndex                    int32u
      872    PictureStyleInfo                  Canon PSInfo
```

Canon CameraInfo1DX Tags

CameraInfo tags for the EOS 1D X. Indices shown are for firmware
version 1.0.2, but they may be different for other firmware versions.

```
    Index1    Tag Name                          Writable
    ------    --------                          --------
        3    FNumber                           int8u
        4    ExposureTime                      int8u
        6    ISO                               int8u
       27    CameraTemperature                 int8u
       35    FocalLength                       int16uRev
      125    CameraOrientation                 int8u
      140    FocusDistanceUpper                int16uRev
      142    FocusDistanceLower                int16uRev
      188    WhiteBalance                      int16u
      192    ColorTemperature                  int16u
      244    PictureStyle                      int8u
      423    LensType                          int16uRev
      425    MinFocalLength                    int16uRev
      427    MaxFocalLength                    int16uRev
      640    FirmwareVersion                   no
      720    FileIndex                         int32u
      732    DirectoryIndex                    int32u
     1012    PictureStyleInfo                  Canon PSInfo2
```

Canon PSInfo2 Tags

Custom picture style information for the EOS 5DmkIII, 60D, 600D and
1100D.

```
  Index1    Tag Name                       Writable
  ------    --------                       --------
       0    ContrastStandard               int32s
       4    SharpnessStandard              int32s
       8    SaturationStandard             int32s
      12    ColorToneStandard              int32s
      16    FilterEffectStandard?          int32s
      20    ToningEffectStandard?          int32s
      24    ContrastPortrait               int32s
      28    SharpnessPortrait              int32s
      32    SaturationPortrait             int32s
      36    ColorTonePortrait              int32s
      40    FilterEffectPortrait?          int32s
      44    ToningEffectPortrait?          int32s
      48    ContrastLandscape              int32s
      52    SharpnessLandscape             int32s
      56    SaturationLandscape            int32s
      60    ColorToneLandscape             int32s
      64    FilterEffectLandscape?         int32s
      68    ToningEffectLandscape?         int32s
      72    ContrastNeutral                int32s
      76    SharpnessNeutral               int32s
      80    SaturationNeutral              int32s
      84    ColorToneNeutral               int32s
      88    FilterEffectNeutral?           int32s
      92    ToningEffectNeutral?           int32s
      96    ContrastFaithful               int32s
     100    SharpnessFaithful              int32s
     104    SaturationFaithful             int32s
     108    ColorToneFaithful              int32s
     112    FilterEffectFaithful?          int32s
     116    ToningEffectFaithful?          int32s
     120    ContrastMonochrome             int32s
     124    SharpnessMonochrome            int32s
     128    SaturationMonochrome?          int32s
     132    ColorToneMonochrome?           int32s
     136    FilterEffectMonochrome         int32s
     140    ToningEffectMonochrome         int32s
     144    ContrastAuto                   int32s
     148    SharpnessAuto                  int32s
     152    SaturationAuto                 int32s
     156    ColorToneAuto                  int32s
     160    FilterEffectAuto               int32s
     164    ToningEffectAuto               int32s
     168    ContrastUserDef1               int32s
     172    SharpnessUserDef1              int32s
     176    SaturationUserDef1             int32s
     180    ColorToneUserDef1              int32s
     184    FilterEffectUserDef1           int32s
     188    ToningEffectUserDef1           int32s
     192    ContrastUserDef2               int32s
     196    SharpnessUserDef2              int32s
     200    SaturationUserDef2             int32s
     204    ColorToneUserDef2              int32s
     208    FilterEffectUserDef2           int32s
     212    ToningEffectUserDef2           int32s
     216    ContrastUserDef3               int32s
     220    SharpnessUserDef3              int32s
     224    SaturationUserDef3             int32s
     228    ColorToneUserDef3              int32s
     232    FilterEffectUserDef3           int32s
     236    ToningEffectUserDef3           int32s
     240    UserDef1PictureStyle           int16u
     242    UserDef2PictureStyle           int16u
     244    UserDef3PictureStyle           int16u
```

Canon CameraInfo5D Tags

CameraInfo tags for the EOS 5D.

Index1	Tag Name	Writable
3	FNumber	int8u
4	ExposureTime	int8u
6	ISO	int8u
12	LensType	int16uRev
23	CameraTemperature	int8u
27	MacroMagnification	int8s
39	CameraOrientation	int8s
40	FocalLength	int16uRev
56	AFPointsInFocus5D	int16uRev
84	WhiteBalance	int16u
88	ColorTemperature	int16u
108	PictureStyle	int8u
147	MinFocalLength	int16uRev
149	MaxFocalLength	int16uRev
151	LensType	int16uRev
164	FirmwareRevision	string[8]
172	ShortOwnerName	string[16]
204	DirectoryIndex	int32u
208	FileIndex	int16u
232	ContrastStandard	int8s
233	ContrastPortrait	int8s
234	ContrastLandscape	int8s
235	ContrastNeutral	int8s
236	ContrastFaithful	int8s
237	ContrastMonochrome	int8s
238	ContrastUserDef1	int8s
239	ContrastUserDef2	int8s
240	ContrastUserDef3	int8s
241	SharpnessStandard	int8s
242	SharpnessPortrait	int8s
243	SharpnessLandscape	int8s
244	SharpnessNeutral	int8s
245	SharpnessFaithful	int8s
246	SharpnessMonochrome	int8s
247	SharpnessUserDef1	int8s
248	SharpnessUserDef2	int8s
249	SharpnessUserDef3	int8s
250	SaturationStandard	int8s
251	SaturationPortrait	int8s
252	SaturationLandscape	int8s
253	SaturationNeutral	int8s
254	SaturationFaithful	int8s
255	FilterEffectMonochrome	int8s
256	SaturationUserDef1	int8s
257	SaturationUserDef2	int8s
258	SaturationUserDef3	int8s
259	ColorToneStandard	int8s
260	ColorTonePortrait	int8s
261	ColorToneLandscape	int8s
262	ColorToneNeutral	int8s
263	ColorToneFaithful	int8s
264	ToningEffectMonochrome	int8s
265	ColorToneUserDef1	int8s
266	ColorToneUserDef2	int8s
267	ColorToneUserDef3	int8s
268	UserDef1PictureStyle	int16u
270	UserDef2PictureStyle	int16u
272	UserDef3PictureStyle	int16u
284	TimeStamp	int32u

Canon CameraInfo5DmkII Tags

CameraInfo tags for the EOS 5D Mark II. Indices shown are for firmware

version 1.0.6, but they may be different for other firmware versions.

Index1	Tag Name	Writable
3	FNumber	int8u
4	ExposureTime	int8u
6	ISO	int8u
7	HighlightTonePriority	int8u
21	FlashMeteringMode	int8u
25	CameraTemperature	int8u
27	MacroMagnification	int8u
30	FocalLength	int16uRev
49	CameraOrientation	int8u
80	FocusDistanceUpper	int16uRev
82	FocusDistanceLower	int16uRev
111	WhiteBalance	int16u
115	ColorTemperature	int16u
167	PictureStyle	int8u
189	HighISONoiseReduction	int8u
191	AutoLightingOptimizer	int8u
230	LensType	int16uRev
232	MinFocalLength	int16uRev
234	MaxFocalLength	int16uRev
382	FirmwareVersion	no
443	FileIndex	int32u
455	DirectoryIndex	int32u
759	PictureStyleInfo	Canon PSInfo

Canon CameraInfo5DmkIII Tags

CameraInfo tags for the EOS 5D Mark III. Indices shown are for
firmware versions 1.0.x, but they may be different for other firmware
versions.

Index1	Tag Name	Writable
3	FNumber	int8u
4	ExposureTime	int8u
6	ISO	int8u
27	CameraTemperature	int8u
35	FocalLength	int16uRev
125	CameraOrientation	int8u
140	FocusDistanceUpper	int16uRev
142	FocusDistanceLower	int16uRev
188	WhiteBalance	int16u
192	ColorTemperature	int16u
244	PictureStyle	int8u
339	LensType	int16uRev
341	MinFocalLength	int16uRev
343	MaxFocalLength	int16uRev
356	LensSerialNumber	undef[5]
572	FirmwareVersion	no
652	FileIndex	int32u
656	FileIndex2	int32u
664	DirectoryIndex	int32u
668	DirectoryIndex2	int32u
944	PictureStyleInfo	Canon PSInfo2

Canon CameraInfo6D Tags

CameraInfo tags for the EOS 6D.

Index1	Tag Name	Writable
3	FNumber	int8u
4	ExposureTime	int8u
6	ISO	int8u
27	CameraTemperature	int8u
35	FocalLength	int16uRev
131	CameraOrientation	int8u

```
  146    FocusDistanceUpper                      int16uRev
  148    FocusDistanceLower                      int16uRev
  194    WhiteBalance                            int16u
  198    ColorTemperature                        int16u
  250    PictureStyle                            int8u
  353    LensType                                int16uRev
  355    MinFocalLength                          int16uRev
  357    MaxFocalLength                          int16uRev
  598    FirmwareVersion                         no
  682    FileIndex                               int32u
  694    DirectoryIndex                          int32u
  966    PictureStyleInfo                        Canon PSInfo2
```

Canon CameraInfo7D Tags

CameraInfo tags for the EOS 7D. Indices shown are for firmware
versions 1.0.x, but they may be different for other firmware versions.

```
  Index1   Tag Name                             Writable
  ------   --------                             --------
       3   FNumber                              int8u
       4   ExposureTime                         int8u
       6   ISO                                  int8u
       7   HighlightTonePriority                int8u
       8   MeasuredEV2                          int8u
       9   MeasuredEV                           int8u
      21   FlashMeteringMode                    int8u
      25   CameraTemperature                    int8u
      30   FocalLength                          int16uRev
      53   CameraOrientation                    int8u
      84   FocusDistanceUpper                   int16uRev
      86   FocusDistanceLower                   int16uRev
     119   WhiteBalance                         int16u
     123   ColorTemperature                     int16u
     175   CameraPictureStyle                   int8u
     201   HighISONoiseReduction                int8u
     274   LensType                             int16uRev
     276   MinFocalLength                       int16uRev
     278   MaxFocalLength                       int16uRev
     428   FirmwareVersion                      no
     491   FileIndex                            int32u
     503   DirectoryIndex                       int32u
     807   PictureStyleInfo                     Canon PSInfo
```

Canon CameraInfo40D Tags

CameraInfo tags for the EOS 40D.

```
  Index1   Tag Name                             Writable
  ------   --------                             --------
       3   FNumber                              int8u
       4   ExposureTime                         int8u
       6   ISO                                  int8u
      21   FlashMeteringMode                    int8u
      24   CameraTemperature                    int8u
      27   MacroMagnification                   int8u
      29   FocalLength                          int16uRev
      48   CameraOrientation                    int8u
      67   FocusDistanceUpper                   int16uRev
      69   FocusDistanceLower                   int16uRev
     111   WhiteBalance                         int16u
     115   ColorTemperature                     int16u
     214   LensType                             int16uRev
     216   MinFocalLength                       int16uRev
     218   MaxFocalLength                       int16uRev
     255   FirmwareVersion                      string[6]
     307   FileIndex                            int32u
     319   DirectoryIndex                       int32u
     603   PictureStyleInfo                     Canon PSInfo
    2347   LensModel                            string[64]
```

Canon CameraInfo50D Tags

CameraInfo tags for the EOS 50D. Indices shown are for firmware
versions 1.0.x, but they may be different for other firmware versions.

Index1	Tag Name	Writable
3	FNumber	int8u
4	ExposureTime	int8u
6	ISO	int8u
7	HighlightTonePriority	int8u
21	FlashMeteringMode	int8u
25	CameraTemperature	int8u
30	FocalLength	int16uRev
49	CameraOrientation	int8u
80	FocusDistanceUpper	int16uRev
82	FocusDistanceLower	int16uRev
111	WhiteBalance	int16u
115	ColorTemperature	int16u
167	PictureStyle	int8u
189	HighISONoiseReduction	int8u
191	AutoLightingOptimizer	int8u
234	LensType	int16uRev
236	MinFocalLength	int16uRev
238	MaxFocalLength	int16uRev
350	FirmwareVersion	no
411	FileIndex	int32u
423	DirectoryIndex	int32u
727	PictureStyleInfo	Canon PSInfo

Canon CameraInfo60D Tags

CameraInfo tags for the EOS 60D and 1200D.

Index1	Tag Name	Writable
3	FNumber	int8u
4	ExposureTime	int8u
6	ISO	int8u
25	CameraTemperature	int8u
30	FocalLength	int16uRev
54	CameraOrientation	int8u
58	CameraOrientation	int8u
85	FocusDistanceUpper	int16uRev
87	FocusDistanceLower	int16uRev
125	ColorTemperature	int16u
232	LensType	int16uRev
234	MinFocalLength	int16uRev
236	MaxFocalLength	int16uRev
409	FirmwareVersion	no
473	FileIndex	int32u
485	DirectoryIndex	int32u
761	PictureStyleInfo	Canon PSInfo2
801	PictureStyleInfo	Canon PSInfo2

Canon CameraInfo70D Tags

CameraInfo tags for the EOS 70D.

Index1	Tag Name	Writable
3	FNumber	int8u
4	ExposureTime	int8u
6	ISO	int8u
27	CameraTemperature	int8u
35	FocalLength	int16uRev
132	CameraOrientation	int8u
147	FocusDistanceUpper	int16uRev
149	FocusDistanceLower	int16uRev

```
    199     ColorTemperature                int16u
    358     LensType                        int16uRev
    360     MinFocalLength                  int16uRev
    362     MaxFocalLength                  int16uRev
    606     FirmwareVersion                 no
    691     FileIndex                       int32u
    703     DirectoryIndex                  int32u
    975     PictureStyleInfo                Canon PSInfo2
```

Canon CameraInfo80D Tags

CameraInfo tags for the EOS 80D.

```
    Index1   Tag Name                       Writable
    ------   --------                       --------
        3    FNumber                        int8u
        4    ExposureTime                   int8u
        6    ISO                            int8u
       27    CameraTemperature              int8u
       35    FocalLength                    int16uRev
      150    CameraOrientation              int8u
      165    FocusDistanceUpper             int16uRev
      167    FocusDistanceLower             int16uRev
      314    ColorTemperature               int16u
      393    LensType                       int16uRev
      395    MinFocalLength                 int16uRev
      397    MaxFocalLength                 int16uRev
     1114    FirmwareVersion                no
     1198    FileIndex                      int32u
     1210    DirectoryIndex                 int32u
```

Canon CameraInfo450D Tags

CameraInfo tags for the EOS 450D.

```
    Index1   Tag Name                       Writable
    ------   --------                       --------
        3    FNumber                        int8u
        4    ExposureTime                   int8u
        6    ISO                            int8u
       21    FlashMeteringMode              int8u
       24    CameraTemperature              int8u
       27    MacroMagnification             int8u
       29    FocalLength                    int16uRev
       48    CameraOrientation              int8u
       67    FocusDistanceUpper             int16uRev
       69    FocusDistanceLower             int16uRev
      111    WhiteBalance                   int16u
      115    ColorTemperature               int16u
      222    LensType                       int16uRev
      263    FirmwareVersion                string[6]
      271    OwnerName                      string[32]
      307    DirectoryIndex                 int32u
      319    FileIndex                      int32u
      611    PictureStyleInfo               Canon PSInfo
     2355    LensModel                      string[64]
```

Canon CameraInfo500D Tags

CameraInfo tags for the EOS 500D.

```
    Index1   Tag Name                       Writable
    ------   --------                       --------
        3    FNumber                        int8u
        4    ExposureTime                   int8u
        6    ISO                            int8u
        7    HighlightTonePriority          int8u
       21    FlashMeteringMode              int8u
       25    CameraTemperature              int8u
       30    FocalLength                    int16uRev
```

49	CameraOrientation	int8u
80	FocusDistanceUpper	int16uRev
82	FocusDistanceLower	int16uRev
115	WhiteBalance	int16u
119	ColorTemperature	int16u
171	PictureStyle	int8u
188	HighISONoiseReduction	int8u
190	AutoLightingOptimizer	int8u
246	LensType	int16uRev
248	MinFocalLength	int16uRev
250	MaxFocalLength	int16uRev
400	FirmwareVersion	no
467	FileIndex	int32u
479	DirectoryIndex	int32u
779	PictureStyleInfo	Canon PSInfo

Canon CameraInfo550D Tags

CameraInfo tags for the EOS 550D.

Index1	Tag Name	Writable
3	FNumber	int8u
4	ExposureTime	int8u
6	ISO	int8u
7	HighlightTonePriority	int8u
21	FlashMeteringMode	int8u
25	CameraTemperature	int8u
30	FocalLength	int16uRev
53	CameraOrientation	int8u
84	FocusDistanceUpper	int16uRev
86	FocusDistanceLower	int16uRev
120	WhiteBalance	int16u
124	ColorTemperature	int16u
176	PictureStyle	int8u
255	LensType	int16uRev
257	MinFocalLength	int16uRev
259	MaxFocalLength	int16uRev
420	FirmwareVersion	no
484	FileIndex	int32u
496	DirectoryIndex	int32u
796	PictureStyleInfo	Canon PSInfo

Canon CameraInfo600D Tags

CameraInfo tags for the EOS 600D and 1100D.

Index1	Tag Name	Writable
3	FNumber	int8u
4	ExposureTime	int8u
6	ISO	int8u
7	HighlightTonePriority	int8u
21	FlashMeteringMode	int8u
25	CameraTemperature	int8u
30	FocalLength	int16uRev
56	CameraOrientation	int8u
87	FocusDistanceUpper	int16uRev
89	FocusDistanceLower	int16uRev
123	WhiteBalance	int16u
127	ColorTemperature	int16u
179	PictureStyle	int8u
234	LensType	int16uRev
236	MinFocalLength	int16uRev
238	MaxFocalLength	int16uRev
411	FirmwareVersion	no
475	FileIndex	int32u
487	DirectoryIndex	int32u
763	PictureStyleInfo	Canon PSInfo2

Canon CameraInfo650D Tags

CameraInfo tags for the EOS 650D and 700D.

Index1	Tag Name	Writable
3	FNumber	int8u
4	ExposureTime	int8u
6	ISO	int8u
27	CameraTemperature	int8u
35	FocalLength	int16uRev
125	CameraOrientation	int8u
140	FocusDistanceUpper	int16uRev
142	FocusDistanceLower	int16uRev
188	WhiteBalance	int16u
192	ColorTemperature	int16u
244	PictureStyle	int8u
295	LensType	int16uRev
297	MinFocalLength	int16uRev
299	MaxFocalLength	int16uRev
539	FirmwareVersion	no
544	FirmwareVersion	no
624	FileIndex	int32u
628	FileIndex	int32u
636	DirectoryIndex	int32u
640	DirectoryIndex	int32u
912	PictureStyleInfo	Canon PSInfo2

Canon CameraInfo750D Tags

CameraInfo tags for the EOS 750D and 760D.

Index1	Tag Name	Writable
3	FNumber	int8u
4	ExposureTime	int8u
6	ISO	int8u
27	CameraTemperature	int8u
35	FocalLength	int16uRev
150	CameraOrientation	int8u
165	FocusDistanceUpper	int16uRev
167	FocusDistanceLower	int16uRev
305	WhiteBalance	int16u
309	ColorTemperature	int16u
361	PictureStyle	int8u
388	LensType	int16uRev
390	MinFocalLength	int16uRev
392	MaxFocalLength	int16uRev
1085	FirmwareVersion	no
1097	FirmwareVersion	no

Canon CameraInfo1000D Tags

CameraInfo tags for the EOS 1000D.

Index1	Tag Name	Writable
3	FNumber	int8u
4	ExposureTime	int8u
6	ISO	int8u
21	FlashMeteringMode	int8u
24	CameraTemperature	int8u
27	MacroMagnification	int8u
29	FocalLength	int16uRev
48	CameraOrientation	int8u
67	FocusDistanceUpper	int16uRev
69	FocusDistanceLower	int16uRev
111	WhiteBalance	int16u
115	ColorTemperature	int16u
226	LensType	int16uRev

```
  228    MinFocalLength                        int16uRev
  230    MaxFocalLength                        int16uRev
  267    FirmwareVersion                       string[6]
  311    DirectoryIndex                        int32u
  323    FileIndex                             int32u
  615    PictureStyleInfo                      Canon PSInfo
 2359    LensModel                             string[64]
```

Canon CameraInfoR6 Tags

CameraInfo tags for the EOS R5 and R6.

```
  Index1   Tag Name                           Writable
  ------   --------                           --------
  2801     ShutterCount                       int32u
```

Canon CameraInfoR6m2 Tags

CameraInfo tags for the EOS R6 Mark II.

```
  Index1   Tag Name                           Writable
  ------   --------                           --------
  3369     ShutterCount                       int32u
```

Canon CameraInfoG5XII Tags

CameraInfo tags for the PowerShot G5 X Mark II.

```
  Index1   Tag Name                           Writable
  ------   --------                           --------
   659     ShutterCount                       int32u
  2709     ShutterCount                       int32u
  2849     DirectoryIndex                     int32u
  2861     FileIndex                          int32u
```

Canon CameraInfoPowerShot Tags

CameraInfo tags for PowerShot models such as the A450, A460, A550,
A560, A570, A630, A640, A650, A710, A720, G7, G9, S5, SD40, SD750,
SD800, SD850, SD870, SD900, SD950, SD1000, SX100 and TX1.

```
  Index4   Tag Name                           Writable
  ------   --------                           --------
     0     ISO                                int32s
     5     FNumber                            int32s
     6     ExposureTime                       int32s
    23     Rotation                           int32s
   135     CameraTemperature                  int32s
   145     CameraTemperature                  int32s
```

Canon CameraInfoPowerShot2 Tags

CameraInfo tags for PowerShot models such as the A470, A480, A490,
A495, A580, A590, A1000, A1100, A2000, A2100, A3000, A3100, D10, E1,
G10, G11, S90, S95, SD770, SD780, SD790, SD880, SD890, SD940, SD960,
SD970, SD980, SD990, SD1100, SD1200, SD1300, SD1400, SD3500, SD4000,
SD4500, SX1, SX10, SX20, SX110, SX120, SX130, SX200 and SX210.

```
  Index4   Tag Name                           Writable
  ------   --------                           --------
     1     ISO                                int32s
     6     FNumber                            int32s
     7     ExposureTime                       int32s
    24     Rotation                           int32s
   153     CameraTemperature                  int32s
   159     CameraTemperature                  int32s
   164     CameraTemperature                  int32s
   168     CameraTemperature                  int32s
   261     CameraTemperature                  int32s
```

Canon CameraInfoUnknown32 Tags

Unknown CameraInfo tags are divided into 3 tables based on format size.

Index4	Tag Name	Writable
71	CameraTemperature	int32s
83	CameraTemperature	int32s
91	CameraTemperature	int32s
92	CameraTemperature	int32s
100	CameraTemperature	int32s
-3	CameraTemperature	int32s

Canon CameraInfoUnknown16 Tags

Index2	Tag Name	Writable
[no tags known]		

Canon CameraInfoUnknown Tags

Index1	Tag Name	Writable
363	LensSerialNumber	undef[5]
1473	FirmwareVersion	no

Canon MovieInfo Tags

Tags written by some Canon cameras when recording video.

Index2	Tag Name	Writable
1	FrameRate	int16u
2	FrameCount	int16u
4	FrameCount	int32u
6	FrameRate	rational32u
106	Duration	int32u
108	AudioBitrate	int32u
110	AudioSampleRate	int32u
112	AudioChannels	int32u
116	VideoCodec	undef[4]

Canon AFInfo Tags

Auto-focus information used by many older Canon models. The values in
this record are sequential, and some have variable sizes based on the
value of NumAFPoints (which may be 1,5,7,9,15,45 or 53). The AFArea
coordinates are given in a system where the image has dimensions given
by AFImageWidth and AFImageHeight, and 0,0 is the image center. The
direction of the Y axis depends on the camera model, with positive Y
upwards for EOS models, but apparently downwards for PowerShot models.

Sequence	Tag Name	Writable
0	NumAFPoints	no
1	ValidAFPoints	no
2	CanonImageWidth	no
3	CanonImageHeight	no
4	AFImageWidth	no
5	AFImageHeight	no
6	AFAreaWidth	no
7	AFAreaHeight	no
8	AFAreaXPositions	no
9	AFAreaYPositions	no
10	AFPointsInFocus	no
11	PrimaryAFPoint	no
	Canon_AFInfo_0x000b?	no
12	PrimaryAFPoint	no

Canon MyColors Tags

Index2	Tag Name	Writable
2	MyColorMode	int16u

Canon FaceDetect1 Tags

Index2	Tag Name	Writable
2	FacesDetected	int16u
3	FaceDetectFrameSize	int16u[2]
8	Face1Position	int16s[2]
10	Face2Position	int16s[2]
12	Face3Position	int16s[2]
14	Face4Position	int16s[2]
16	Face5Position	int16s[2]
18	Face6Position	int16s[2]
20	Face7Position	int16s[2]
22	Face8Position	int16s[2]
24	Face9Position	int16s[2]

Canon FaceDetect2 Tags

Index1	Tag Name	Writable
1	FaceWidth	int8u
2	FacesDetected	int8u

Canon AFInfo2 Tags

Newer version of the AFInfo record containing much of the same information (and coordinate confusion) as the older version. In this record, NumAFPoints may be 7, 9, 11, 19, 31, 45 or 61, depending on the camera model.

Sequence	Tag Name	Writable
0	AFInfoSize?	no
1	AFAreaMode	no
2	NumAFPoints	no
3	ValidAFPoints	no
4	CanonImageWidth	no
5	CanonImageHeight	no
6	AFImageWidth	no
7	AFImageHeight	no
8	AFAreaWidths	no
9	AFAreaHeights	no
10	AFAreaXPositions	no
11	AFAreaYPositions	no
12	AFPointsInFocus	no
13	AFPointsSelected	no
	Canon_AFInfo2_0x000d?	no
14	PrimaryAFPoint	no

Canon ContrastInfo Tags

Index2	Tag Name	Writable
4	IntelligentContrast	int16u

Canon WBInfo Tags

WB tags for the Canon G9.

Index4	Tag Name	Writable
2	WB_GRBGLevelsAuto	int32s[4]
10	WB_GRBGLevelsDaylight	int32s[4]
18	WB_GRBGLevelsCloudy	int32s[4]
26	WB_GRBGLevelsTungsten	int32s[4]

```
    34    WB_GRBGLevelsFluorescent            int32s[4]
    42    WB_GRBGLevelsFluorHigh              int32s[4]
    50    WB_GRBGLevelsFlash                  int32s[4]
    58    WB_GRBGLevelsUnderwater             int32s[4]
    66    WB_GRBGLevelsCustom1                int32s[4]
    74    WB_GRBGLevelsCustom2                int32s[4]
```

Canon FaceDetect3 Tags

```
  Index2    Tag Name                        Writable
  ------    --------                        --------
     3    FacesDetected                     int16u
```

Canon TimeInfo Tags

```
  Index4    Tag Name                        Writable
  ------    --------                        --------
     1    TimeZone                          int32s
     2    TimeZoneCity                      int32s
     3    DaylightSavings                   int32s
```

Canon FileInfo Tags

```
  Index2    Tag Name                        Writable
  ------    --------                        --------
     1    FileNumber                        int32u
          ShutterCount                      int32u
     3    BracketMode                       int16s
     4    BracketValue                      int16s
     5    BracketShotNumber                 int16s
     6    RawJpgQuality                     int16s
     7    RawJpgSize                        int16s
     8    LongExposureNoiseReduction2       int16s
     9    WBBracketMode                     int16s
    12    WBBracketValueAB                  int16s
    13    WBBracketValueGM                  int16s
    14    FilterEffect                      int16s
    15    ToningEffect                      int16s
    16    MacroMagnification                int16s
    19    LiveViewShooting                  int16s
    20    FocusDistanceUpper                int16u
    21    FocusDistanceLower                int16u
    23    ShutterMode                       int16s
    25    FlashExposureLock                 int16s
    32    AntiFlicker                       int16s
    61    RFLensType                        int16u
```

Canon SerialInfo Tags

```
  Index1    Tag Name                        Writable
  ------    --------                        --------
     9    InternalSerialNumber              string
```

Canon CropInfo Tags

```
  Index2    Tag Name                        Writable
  ------    --------                        --------
     0    CropLeftMargin                    int16u
     1    CropRightMargin                   int16u
     2    CropTopMargin                     int16u
     3    CropBottomMargin                  int16u
```

Canon AspectInfo Tags

```
  Index4    Tag Name                        Writable
  ------    --------                        --------
     0    AspectRatio                       int32u
     1    CroppedImageWidth                 int32u
     2    CroppedImageHeight                int32u
     3    CroppedImageLeft                  int32u
```

```
     4     CroppedImageTop                     int32u
```

Canon Processing Tags

```
  Index2   Tag Name                            Writable
  ------   --------                            --------
     1     ToneCurve                           int16s
     2     Sharpness                           int16s
     3     SharpnessFrequency                  int16s
     4     SensorRedLevel                      int16s
     5     SensorBlueLevel                     int16s
     6     WhiteBalanceRed                     int16s
     7     WhiteBalanceBlue                    int16s
     8     WhiteBalance                        int16s
     9     ColorTemperature                    int16s
    10     PictureStyle                        int16s
    11     DigitalGain                         int16s
    12     WBShiftAB                           int16s
    13     WBShiftGM                           int16s
    14     UnsharpMaskFineness                 int16s
    15     UnsharpMaskThreshold                int16s
```

Canon ColorBalance Tags

These tags are used by the 10D and 300D.

```
  Index2   Tag Name                            Writable
  ------   --------                            --------
     1     WB_RGGBLevelsAuto                   int16s[4]
     5     WB_RGGBLevelsDaylight               int16s[4]
     9     WB_RGGBLevelsShade                  int16s[4]
    13     WB_RGGBLevelsCloudy                 int16s[4]
    17     WB_RGGBLevelsTungsten               int16s[4]
    21     WB_RGGBLevelsFluorescent            int16s[4]
    25     WB_RGGBLevelsFlash                  int16s[4]
    29     WB_RGGBLevelsCustom                 int16s[4]
           BlackLevels                         int16s[4]
    33     WB_RGGBLevelsKelvin                 int16s[4]
    37     WB_RGGBBlackLevels                  int16s[4]
```

Canon MeasuredColor Tags

```
  Index2   Tag Name                            Writable
  ------   --------                            --------
     1     MeasuredRGGB                        int16u[4]
```

Canon Flags Tags

```
  Index2   Tag Name                            Writable
  ------   --------                            --------
     1     ModifiedParamFlag                   int16s
```

Canon ModifiedInfo Tags

```
  Index2   Tag Name                            Writable
  ------   --------                            --------
     1     ModifiedToneCurve                   int16s
     2     ModifiedSharpness                   int16s
     3     ModifiedSharpnessFreq               int16s
     4     ModifiedSensorRedLevel              int16s
     5     ModifiedSensorBlueLevel             int16s
     6     ModifiedWhiteBalanceRed             int16s
     7     ModifiedWhiteBalanceBlue            int16s
     8     ModifiedWhiteBalance                int16s
     9     ModifiedColorTemp                   int16s
    10     ModifiedPictureStyle                int16s
    11     ModifiedDigitalGain                 int16s
```

Canon PreviewImageInfo Tags

Index4	Tag Name	Writable
1	PreviewQuality	int32u
2	PreviewImageLength	int32u*
3	PreviewImageWidth	int32u
4	PreviewImageHeight	int32u
5	PreviewImageStart	int32u*

Canon SensorInfo Tags

Index2	Tag Name	Writable
1	SensorWidth	no
2	SensorHeight	no
5	SensorLeftBorder	no
6	SensorTopBorder	no
7	SensorRightBorder	no
8	SensorBottomBorder	no
9	BlackMaskLeftBorder	no
10	BlackMaskTopBorder	no
11	BlackMaskRightBorder	no
12	BlackMaskBottomBorder	no

Canon ColorData1 Tags

These tags are used by the 20D and 350D.

Index2	Tag Name	Writable
25	WB_RGGBLevelsAsShot	int16s[4]
29	ColorTempAsShot	int16s
30	WB_RGGBLevelsAuto	int16s[4]
34	ColorTempAuto	int16s
35	WB_RGGBLevelsDaylight	int16s[4]
39	ColorTempDaylight	int16s
40	WB_RGGBLevelsShade	int16s[4]
44	ColorTempShade	int16s
45	WB_RGGBLevelsCloudy	int16s[4]
49	ColorTempCloudy	int16s
50	WB_RGGBLevelsTungsten	int16s[4]
54	ColorTempTungsten	int16s
55	WB_RGGBLevelsFluorescent	int16s[4]
59	ColorTempFluorescent	int16s
60	WB_RGGBLevelsFlash	int16s[4]
64	ColorTempFlash	int16s
65	WB_RGGBLevelsCustom1	int16s[4]
69	ColorTempCustom1	int16s
70	WB_RGGBLevelsCustom2	int16s[4]
74	ColorTempCustom2	int16s
75	ColorCalib?	Canon ColorCalib

Canon ColorCalib Tags

Camera color calibration data. For the 20D, 350D, 1DmkII and 1DSmkII
the order of the coefficients is A, B, C, Temperature, but for newer
models it is B, C, A, Temperature. These tags are extracted only when
the Unknown option is used.

Index2	Tag Name	Writable
0	CameraColorCalibration01?	int16s[4]
4	CameraColorCalibration02?	int16s[4]
8	CameraColorCalibration03?	int16s[4]
12	CameraColorCalibration04?	int16s[4]
16	CameraColorCalibration05?	int16s[4]
20	CameraColorCalibration06?	int16s[4]
24	CameraColorCalibration07?	int16s[4]
28	CameraColorCalibration08?	int16s[4]
32	CameraColorCalibration09?	int16s[4]
36	CameraColorCalibration10?	int16s[4]

```
    40    CameraColorCalibration11?              int16s[4]
    44    CameraColorCalibration12?              int16s[4]
    48    CameraColorCalibration13?              int16s[4]
    52    CameraColorCalibration14?              int16s[4]
    56    CameraColorCalibration15?              int16s[4]
```

Canon ColorData2 Tags

These tags are used by the 1DmkII and 1DSmkII.

```
    Index2    Tag Name                           Writable
    ------    --------                           --------
       24    WB_RGGBLevelsAuto                   int16s[4]
       28    ColorTempAuto                      int16s
       29    WB_RGGBLevelsUnknown?              int16s[4]
       33    ColorTempUnknown?                  int16s
       34    WB_RGGBLevelsAsShot               int16s[4]
       38    ColorTempAsShot                    int16s
       39    WB_RGGBLevelsDaylight             int16s[4]
       43    ColorTempDaylight                  int16s
       44    WB_RGGBLevelsShade                int16s[4]
       48    ColorTempShade                     int16s
       49    WB_RGGBLevelsCloudy               int16s[4]
       53    ColorTempCloudy                    int16s
       54    WB_RGGBLevelsTungsten             int16s[4]
       58    ColorTempTungsten                  int16s
       59    WB_RGGBLevelsFluorescent          int16s[4]
       63    ColorTempFluorescent               int16s
       64    WB_RGGBLevelsKelvin               int16s[4]
       68    ColorTempKelvin                    int16s
       69    WB_RGGBLevelsFlash                int16s[4]
       73    ColorTempFlash                     int16s
       74    WB_RGGBLevelsUnknown2?            int16s[4]
       78    ColorTempUnknown2?                int16s
       79    WB_RGGBLevelsUnknown3?            int16s[4]
       83    ColorTempUnknown3?                int16s
       84    WB_RGGBLevelsUnknown4?            int16s[4]
       88    ColorTempUnknown4?                int16s
       89    WB_RGGBLevelsUnknown5?            int16s[4]
       93    ColorTempUnknown5?                int16s
       94    WB_RGGBLevelsUnknown6?            int16s[4]
       98    ColorTempUnknown6?                int16s
       99    WB_RGGBLevelsUnknown7?            int16s[4]
      103    ColorTempUnknown7?                int16s
      104    WB_RGGBLevelsUnknown8?            int16s[4]
      108    ColorTempUnknown8?                int16s
      109    WB_RGGBLevelsUnknown9?            int16s[4]
      113    ColorTempUnknown9?                int16s
      114    WB_RGGBLevelsUnknown10?           int16s[4]
      118    ColorTempUnknown10?               int16s
      119    WB_RGGBLevelsUnknown11?           int16s[4]
      123    ColorTempUnknown11?               int16s
      124    WB_RGGBLevelsUnknown12?           int16s[4]
      128    ColorTempUnknown12?               int16s
      129    WB_RGGBLevelsUnknown13?           int16s[4]
      133    ColorTempUnknown13?               int16s
      134    WB_RGGBLevelsUnknown14?           int16s[4]
      138    ColorTempUnknown14?               int16s
      139    WB_RGGBLevelsUnknown15?           int16s[4]
      143    ColorTempUnknown15?               int16s
      144    WB_RGGBLevelsPC1                  int16s[4]
      148    ColorTempPC1                       int16s
      149    WB_RGGBLevelsPC2                  int16s[4]
      153    ColorTempPC2                       int16s
      154    WB_RGGBLevelsPC3                  int16s[4]
      158    ColorTempPC3                       int16s
      159    WB_RGGBLevelsUnknown16?           int16s[4]
      163    ColorTempUnknown16?               int16s
      164    ColorCalib?                        Canon ColorCalib
      618    RawMeasuredRGGB                    int32u[4]
```

Canon ColorData3 Tags

These tags are used by the 1DmkIIN, 5D, 30D and 400D.

```
  Index2    Tag Name                          Writable
  ------    --------                          --------
       0    ColorDataVersion                  int16s
      63    WB_RGGBLevelsAsShot               int16s[4]
      67    ColorTempAsShot                   int16s
      68    WB_RGGBLevelsAuto                 int16s[4]
      72    ColorTempAuto                     int16s
      73    WB_RGGBLevelsMeasured             int16s[4]
      77    ColorTempMeasured                 int16s
      78    WB_RGGBLevelsDaylight             int16s[4]
      82    ColorTempDaylight                 int16s
      83    WB_RGGBLevelsShade                int16s[4]
      87    ColorTempShade                    int16s
      88    WB_RGGBLevelsCloudy               int16s[4]
      92    ColorTempCloudy                   int16s
      93    WB_RGGBLevelsTungsten             int16s[4]
      97    ColorTempTungsten                 int16s
      98    WB_RGGBLevelsFluorescent          int16s[4]
     102    ColorTempFluorescent              int16s
     103    WB_RGGBLevelsKelvin               int16s[4]
     107    ColorTempKelvin                   int16s
     108    WB_RGGBLevelsFlash                int16s[4]
     112    ColorTempFlash                    int16s
     113    WB_RGGBLevelsPC1                  int16s[4]
     117    ColorTempPC1                      int16s
     118    WB_RGGBLevelsPC2                  int16s[4]
     122    ColorTempPC2                      int16s
     123    WB_RGGBLevelsPC3                  int16s[4]
     127    ColorTempPC3                      int16s
     128    WB_RGGBLevelsCustom               int16s[4]
     132    ColorTempCustom                   int16s
     133    ColorCalib?                       Canon ColorCalib
     196    PerChannelBlackLevel              int16u[4]
     584    FlashOutput                       int16s
     585    FlashBatteryLevel                 int16s
     586    ColorTempFlashData                int16s
     647    MeasuredRGGBData                  int32u[4]
```

Canon ColorData4 Tags

These tags are used by the 1DmkIII, 1DSmkIII, 1DmkIV, 5DmkII, 7D, 40D,
50D, 60D, 450D, 500D, 550D, 1000D and 1100D.

```
  Index2    Tag Name                          Writable
  ------    --------                          --------
       0    ColorDataVersion                  int16s
      63    ColorCoefs                        Canon ColorCoefs
     168    ColorCalib?                       Canon ColorCalib
     231    AverageBlackLevel                 int16u[4]
     640    RawMeasuredRGGB                   int32u[4]
     692    PerChannelBlackLevel              int16u[4]
     696    NormalWhiteLevel                  int16u
     697    SpecularWhiteLevel                int16u
     698    LinearityUpperMargin              int16u
     715    PerChannelBlackLevel              int16u[4]
     719    NormalWhiteLevel                  int16u
           PerChannelBlackLevel              int16u[4]
     720    SpecularWhiteLevel                int16u
     721    LinearityUpperMargin              int16u
     723    NormalWhiteLevel                  int16u
     724    SpecularWhiteLevel                int16u
     725    LinearityUpperMargin              int16u
```

Canon ColorCoefs Tags

```
    Index2    Tag Name                          Writable
    ------    --------                          --------
        0     WB_RGGBLevelsAsShot               int16s[4]
        4     ColorTempAsShot                   int16s
        5     WB_RGGBLevelsAuto                 int16s[4]
        9     ColorTempAuto                     int16s
       10     WB_RGGBLevelsMeasured             int16s[4]
       14     ColorTempMeasured                 int16s
       15     WB_RGGBLevelsUnknown?             int16s[4]
       19     ColorTempUnknown?                 int16s
       20     WB_RGGBLevelsDaylight             int16s[4]
       24     ColorTempDaylight                 int16s
       25     WB_RGGBLevelsShade                int16s[4]
       29     ColorTempShade                    int16s
       30     WB_RGGBLevelsCloudy               int16s[4]
       34     ColorTempCloudy                   int16s
       35     WB_RGGBLevelsTungsten             int16s[4]
       39     ColorTempTungsten                 int16s
       40     WB_RGGBLevelsFluorescent          int16s[4]
       44     ColorTempFluorescent              int16s
       45     WB_RGGBLevelsKelvin               int16s[4]
       49     ColorTempKelvin                   int16s
       50     WB_RGGBLevelsFlash                int16s[4]
       54     ColorTempFlash                    int16s
       55     WB_RGGBLevelsUnknown2?            int16s[4]
       59     ColorTempUnknown2?                int16s
       60     WB_RGGBLevelsUnknown3?            int16s[4]
       64     ColorTempUnknown3?                int16s
       65     WB_RGGBLevelsUnknown4?            int16s[4]
       69     ColorTempUnknown4?                int16s
       70     WB_RGGBLevelsUnknown5?            int16s[4]
       74     ColorTempUnknown5?                int16s
       75     WB_RGGBLevelsUnknown6?            int16s[4]
       79     ColorTempUnknown6?                int16s
       80     WB_RGGBLevelsUnknown7?            int16s[4]
       84     ColorTempUnknown7?                int16s
       85     WB_RGGBLevelsUnknown8?            int16s[4]
       89     ColorTempUnknown8?                int16s
       90     WB_RGGBLevelsUnknown9?            int16s[4]
       94     ColorTempUnknown9?                int16s
       95     WB_RGGBLevelsUnknown10?           int16s[4]
       99     ColorTempUnknown10?               int16s
      100     WB_RGGBLevelsUnknown11?           int16s[4]
      104     ColorTempUnknown11?               int16s
      105     WB_RGGBLevelsUnknown12?           int16s[4]
      109     ColorTempUnknown12?               int16s
      110     WB_RGGBLevelsUnknown13?           int16s[4]
      114     ColorTempUnknown13?               int16s
```

Canon ColorData5 Tags

These tags are used by many EOS M and PowerShot models.

```
    Index2    Tag Name                          Writable
    ------    --------                          --------
        0     ColorDataVersion                  int16s
       71     ColorCoefs                        Canon ColorCoefs
              ColorCoefs2                       Canon ColorCoefs2
      186     ColorCalib2?                      Canon ColorCalib2
      255     ColorCalib2?                      Canon ColorCalib2
      264     PerChannelBlackLevel              int16s[4]
      333     PerChannelBlackLevel              int16s[4]
      662     SpecularWhiteLevel                int16u
     1385     NormalWhiteLevel                  int16u
     1386     SpecularWhiteLevel                int16u
```

Canon ColorCoefs2 Tags

```
    Index2    Tag Name                          Writable
    ------    --------                          --------
```

```
     0     WB_RGGBLevelsAsShot                        int16s[4]
     7     ColorTempAsShot                            int16s
     8     WB_RGGBLevelsAuto                          int16s[4]
    15     ColorTempAuto                              int16s
    16     WB_RGGBLevelsMeasured                      int16s[4]
    23     ColorTempMeasured                          int16s
    24     WB_RGGBLevelsUnknown?                      int16s[4]
    31     ColorTempUnknown?                          int16s
    32     WB_RGGBLevelsDaylight                      int16s[4]
    39     ColorTempDaylight                          int16s
    40     WB_RGGBLevelsShade                         int16s[4]
    47     ColorTempShade                             int16s
    48     WB_RGGBLevelsCloudy                        int16s[4]
    55     ColorTempCloudy                            int16s
    56     WB_RGGBLevelsTungsten                      int16s[4]
    63     ColorTempTungsten                          int16s
    64     WB_RGGBLevelsFluorescent                   int16s[4]
    71     ColorTempFluorescent                       int16s
    72     WB_RGGBLevelsKelvin                        int16s[4]
    79     ColorTempKelvin                            int16s
    80     WB_RGGBLevelsFlash                         int16s[4]
    87     ColorTempFlash                             int16s
    88     WB_RGGBLevelsUnknown2?                     int16s[4]
    95     ColorTempUnknown2?                         int16s
    96     WB_RGGBLevelsUnknown3?                     int16s[4]
   103     ColorTempUnknown3?                         int16s
   104     WB_RGGBLevelsUnknown4?                     int16s[4]
   111     ColorTempUnknown4?                         int16s
   112     WB_RGGBLevelsUnknown5?                     int16s[4]
   119     ColorTempUnknown5?                         int16s
   120     WB_RGGBLevelsUnknown6?                     int16s[4]
   127     ColorTempUnknown6?                         int16s
   128     WB_RGGBLevelsUnknown7?                     int16s[4]
   135     ColorTempUnknown7?                         int16s
   136     WB_RGGBLevelsUnknown8?                     int16s[4]
   143     ColorTempUnknown8?                         int16s
   144     WB_RGGBLevelsUnknown9?                     int16s[4]
   151     ColorTempUnknown9?                         int16s
   152     WB_RGGBLevelsUnknown10?                    int16s[4]
   159     ColorTempUnknown10?                        int16s
   160     WB_RGGBLevelsUnknown11?                    int16s[4]
   167     ColorTempUnknown11?                        int16s
   168     WB_RGGBLevelsUnknown12?                    int16s[4]
   175     ColorTempUnknown12?                        int16s
   176     WB_RGGBLevelsUnknown13?                    int16s[4]
   183     ColorTempUnknown13?                        int16s
```

Canon ColorCalib2 Tags

B, C, A, D, Temperature.

```
  Index2     Tag Name                                 Writable
  ------     --------                                 --------
     0     CameraColorCalibration01?                  int16s[5]
     5     CameraColorCalibration02?                  int16s[5]
    10     CameraColorCalibration03?                  int16s[5]
    15     CameraColorCalibration04?                  int16s[5]
    20     CameraColorCalibration05?                  int16s[5]
    25     CameraColorCalibration06?                  int16s[5]
    30     CameraColorCalibration07?                  int16s[5]
    35     CameraColorCalibration08?                  int16s[5]
    40     CameraColorCalibration09?                  int16s[5]
    45     CameraColorCalibration10?                  int16s[5]
    50     CameraColorCalibration11?                  int16s[5]
    55     CameraColorCalibration12?                  int16s[5]
    60     CameraColorCalibration13?                  int16s[5]
    65     CameraColorCalibration14?                  int16s[5]
    70     CameraColorCalibration15?                  int16s[5]
```

Canon ColorData6 Tags

These tags are used by the EOS 600D and 1200D.

Index2	Tag Name	Writable
0	ColorDataVersion	int16s
63	WB_RGGBLevelsAsShot	int16s[4]
67	ColorTempAsShot	int16s
68	WB_RGGBLevelsAuto	int16s[4]
72	ColorTempAuto	int16s
73	WB_RGGBLevelsMeasured	int16s[4]
77	ColorTempMeasured	int16s
78	WB_RGGBLevelsUnknown?	int16s[4]
82	ColorTempUnknown?	int16s
83	WB_RGGBLevelsUnknown2?	int16s[4]
87	ColorTempUnknown2?	int16s
88	WB_RGGBLevelsUnknown3?	int16s[4]
92	ColorTempUnknown3?	int16s
93	WB_RGGBLevelsUnknown4?	int16s[4]
97	ColorTempUnknown4?	int16s
98	WB_RGGBLevelsUnknown5?	int16s[4]
102	ColorTempUnknown5?	int16s
103	WB_RGGBLevelsDaylight	int16s[4]
107	ColorTempDaylight	int16s
108	WB_RGGBLevelsShade	int16s[4]
112	ColorTempShade	int16s
113	WB_RGGBLevelsCloudy	int16s[4]
117	ColorTempCloudy	int16s
118	WB_RGGBLevelsTungsten	int16s[4]
122	ColorTempTungsten	int16s
123	WB_RGGBLevelsFluorescent	int16s[4]
127	ColorTempFluorescent	int16s
128	WB_RGGBLevelsKelvin	int16s[4]
132	ColorTempKelvin	int16s
133	WB_RGGBLevelsFlash	int16s[4]
137	ColorTempFlash	int16s
138	WB_RGGBLevelsUnknown6?	int16s[4]
142	ColorTempUnknown6?	int16s
143	WB_RGGBLevelsUnknown7?	int16s[4]
147	ColorTempUnknown7?	int16s
148	WB_RGGBLevelsUnknown8?	int16s[4]
152	ColorTempUnknown8?	int16s
153	WB_RGGBLevelsUnknown9?	int16s[4]
157	ColorTempUnknown9?	int16s
158	WB_RGGBLevelsUnknown10?	int16s[4]
162	ColorTempUnknown10?	int16s
163	WB_RGGBLevelsUnknown11?	int16s[4]
167	ColorTempUnknown11?	int16s
168	WB_RGGBLevelsUnknown12?	int16s[4]
172	ColorTempUnknown12?	int16s
173	WB_RGGBLevelsUnknown13?	int16s[4]
177	ColorTempUnknown13?	int16s
178	WB_RGGBLevelsUnknown14?	int16s[4]
182	ColorTempUnknown14?	int16s
183	WB_RGGBLevelsUnknown15?	int16s[4]
187	ColorTempUnknown15?	int16s
188	ColorCalib?	Canon ColorCalib
251	AverageBlackLevel	int16u[4]
404	RawMeasuredRGGB	int32u[4]
479	PerChannelBlackLevel	int16u[4]
483	NormalWhiteLevel	int16u
484	SpecularWhiteLevel	int16u
485	LinearityUpperMargin	int16u

Canon ColorData7 Tags

These tags are used by the EOS 1DX, 5DmkIII, 6D, 7DmkII, 100D, 650D, 700D, 8000D, M and M2.

| Index2 | Tag Name | Writable |

| ------ | -------- | -------- |
0	ColorDataVersion	int16s
63	WB_RGGBLevelsAsShot	int16s[4]
67	ColorTempAsShot	int16s
68	WB_RGGBLevelsAuto	int16s[4]
72	ColorTempAuto	int16s
73	WB_RGGBLevelsMeasured	int16s[4]
77	ColorTempMeasured	int16s
78	WB_RGGBLevelsUnknown?	int16s[4]
82	ColorTempUnknown?	int16s
83	WB_RGGBLevelsUnknown2?	int16s[4]
87	ColorTempUnknown2?	int16s
88	WB_RGGBLevelsUnknown3?	int16s[4]
92	ColorTempUnknown3?	int16s
93	WB_RGGBLevelsUnknown4?	int16s[4]
97	ColorTempUnknown4?	int16s
98	WB_RGGBLevelsUnknown5?	int16s[4]
102	ColorTempUnknown5?	int16s
103	WB_RGGBLevelsUnknown6?	int16s[4]
107	ColorTempUnknown6?	int16s
108	WB_RGGBLevelsUnknown7?	int16s[4]
112	ColorTempUnknown7?	int16s
113	WB_RGGBLevelsUnknown8?	int16s[4]
117	ColorTempUnknown8?	int16s
118	WB_RGGBLevelsUnknown9?	int16s[4]
122	ColorTempUnknown9?	int16s
123	WB_RGGBLevelsUnknown10?	int16s[4]
127	ColorTempUnknown10?	int16s
128	WB_RGGBLevelsDaylight	int16s[4]
132	ColorTempDaylight	int16s
133	WB_RGGBLevelsShade	int16s[4]
137	ColorTempShade	int16s
138	WB_RGGBLevelsCloudy	int16s[4]
142	ColorTempCloudy	int16s
143	WB_RGGBLevelsTungsten	int16s[4]
147	ColorTempTungsten	int16s
148	WB_RGGBLevelsFluorescent	int16s[4]
152	ColorTempFluorescent	int16s
153	WB_RGGBLevelsKelvin	int16s[4]
157	ColorTempKelvin	int16s
158	WB_RGGBLevelsFlash	int16s[4]
162	ColorTempFlash	int16s
163	WB_RGGBLevelsUnknown11?	int16s[4]
167	ColorTempUnknown11?	int16s
168	WB_RGGBLevelsUnknown12?	int16s[4]
172	ColorTempUnknown12?	int16s
173	WB_RGGBLevelsUnknown13?	int16s[4]
177	ColorTempUnknown13?	int16s
178	WB_RGGBLevelsUnknown14?	int16s[4]
182	ColorTempUnknown14?	int16s
183	WB_RGGBLevelsUnknown15?	int16s[4]
187	ColorTempUnknown15?	int16s
188	WB_RGGBLevelsUnknown16?	int16s[4]
192	ColorTempUnknown16?	int16s
193	WB_RGGBLevelsUnknown17?	int16s[4]
197	ColorTempUnknown17?	int16s
198	WB_RGGBLevelsUnknown18?	int16s[4]
202	ColorTempUnknown18?	int16s
203	WB_RGGBLevelsUnknown19?	int16s[4]
207	ColorTempUnknown19?	int16s
208	WB_RGGBLevelsUnknown20?	int16s[4]
212	ColorTempUnknown20?	int16s
213	ColorCalib?	Canon ColorCalib
276	AverageBlackLevel	int16u[4]
429	RawMeasuredRGGB	int32u[4]
504	PerChannelBlackLevel	int16u[4]
508	NormalWhiteLevel	int16u
509	SpecularWhiteLevel	int16u
510	LinearityUpperMargin	int16u
619	RawMeasuredRGGB	int32u[4]

```
   728    PerChannelBlackLevel                    int16u[4]
   732    NormalWhiteLevel                        int16u
   733    SpecularWhiteLevel                      int16u
   734    LinearityUpperMargin                    int16u
```

Canon ColorData8 Tags

These tags are used by the EOS 1DXmkII, 5DS, 5DSR, 5DmkIV, 6DmkII, 77D, 80D, 200D, 800D, 1300D, 2000D, 4000D and 9000D.

```
   Index2   Tag Name                             Writable
   ------   --------                             --------
        0    ColorDataVersion                    int16s
       63    WB_RGGBLevelsAsShot                 int16s[4]
       67    ColorTempAsShot                     int16s
       68    WB_RGGBLevelsAuto                   int16s[4]
       72    ColorTempAuto                       int16s
       73    WB_RGGBLevelsMeasured               int16s[4]
       77    ColorTempMeasured                   int16s
       78    WB_RGGBLevelsUnknown?               int16s[4]
       82    ColorTempUnknown?                   int16s
       83    WB_RGGBLevelsUnknown2?              int16s[4]
       87    ColorTempUnknown2?                  int16s
       88    WB_RGGBLevelsUnknown3?              int16s[4]
       92    ColorTempUnknown3?                  int16s
       93    WB_RGGBLevelsUnknown4?              int16s[4]
       97    ColorTempUnknown4?                  int16s
       98    WB_RGGBLevelsUnknown5?              int16s[4]
      102    ColorTempUnknown5?                  int16s
      103    WB_RGGBLevelsUnknown6?              int16s[4]
      107    ColorTempUnknown6?                  int16s
      108    WB_RGGBLevelsUnknown7?              int16s[4]
      112    ColorTempUnknown7?                  int16s
      113    WB_RGGBLevelsUnknown8?              int16s[4]
      117    ColorTempUnknown8?                  int16s
      118    WB_RGGBLevelsUnknown9?              int16s[4]
      122    ColorTempUnknown9?                  int16s
      123    WB_RGGBLevelsUnknown10?             int16s[4]
      127    ColorTempUnknown10?                 int16s
      128    WB_RGGBLevelsUnknown11?             int16s[4]
      132    ColorTempUnknown11?                 int16s
      133    WB_RGGBLevelsDaylight               int16s[4]
      137    ColorTempDaylight                   int16s
      138    WB_RGGBLevelsShade                  int16s[4]
      142    ColorTempShade                      int16s
      143    WB_RGGBLevelsCloudy                 int16s[4]
      147    ColorTempCloudy                     int16s
      148    WB_RGGBLevelsTungsten               int16s[4]
      152    ColorTempTungsten                   int16s
      153    WB_RGGBLevelsFluorescent            int16s[4]
      157    ColorTempFluorescent                int16s
      158    WB_RGGBLevelsKelvin                 int16s[4]
      162    ColorTempKelvin                     int16s
      163    WB_RGGBLevelsFlash                  int16s[4]
      167    ColorTempFlash                      int16s
      168    WB_RGGBLevelsUnknown12?             int16s[4]
      172    ColorTempUnknown12?                 int16s
      173    WB_RGGBLevelsUnknown13?             int16s[4]
      177    ColorTempUnknown13?                 int16s
      178    WB_RGGBLevelsUnknown14?             int16s[4]
      182    ColorTempUnknown14?                 int16s
      183    WB_RGGBLevelsUnknown15?             int16s[4]
      187    ColorTempUnknown15?                 int16s
      188    WB_RGGBLevelsUnknown16?             int16s[4]
      192    ColorTempUnknown16?                 int16s
      193    WB_RGGBLevelsUnknown17?             int16s[4]
      197    ColorTempUnknown17?                 int16s
      198    WB_RGGBLevelsUnknown18?             int16s[4]
      202    ColorTempUnknown18?                 int16s
      203    WB_RGGBLevelsUnknown19?             int16s[4]
```

```
  207    ColorTempUnknown19?                    int16s
  208    WB_RGGBLevelsUnknown20?                int16s[4]
  212    ColorTempUnknown20?                    int16s
  213    WB_RGGBLevelsUnknown21?                int16s[4]
  217    ColorTempUnknown21?                    int16s
  218    WB_RGGBLevelsUnknown22?                int16s[4]
  222    ColorTempUnknown22?                    int16s
  223    WB_RGGBLevelsUnknown23?                int16s[4]
  227    ColorTempUnknown23?                    int16s
  228    WB_RGGBLevelsUnknown24?                int16s[4]
  232    ColorTempUnknown24?                    int16s
  233    WB_RGGBLevelsUnknown25?                int16s[4]
  237    ColorTempUnknown25?                    int16s
  238    WB_RGGBLevelsUnknown26?                int16s[4]
  242    ColorTempUnknown26?                    int16s
  243    WB_RGGBLevelsUnknown27?                int16s[4]
  247    ColorTempUnknown27?                    int16s
  248    WB_RGGBLevelsUnknown28?                int16s[4]
  252    ColorTempUnknown28?                    int16s
  253    WB_RGGBLevelsUnknown29?                int16s[4]
  257    ColorTempUnknown29?                    int16s
  258    WB_RGGBLevelsUnknown30?                int16s[4]
  262    ColorTempUnknown30?                    int16s
  263    ColorCalib?                            Canon ColorCalib
  326    AverageBlackLevel                      int16u[4]
  556    PerChannelBlackLevel                   int16u[4]
  560    NormalWhiteLevel                       int16u
  561    SpecularWhiteLevel                     int16u
  562    LinearityUpperMargin                   int16u
  778    PerChannelBlackLevel                   int16u[4]
  782    NormalWhiteLevel                       int16u
  783    SpecularWhiteLevel                     int16u
  784    LinearityUpperMargin                   int16u
```

Canon ColorData9 Tags

These tags are used by the M6mkII, M50, M200, EOS R, RP, 90D, 250D and
850D

```
  Index2   Tag Name                            Writable
  ------   --------                            --------
       0   ColorDataVersion                    int16s
      71   WB_RGGBLevelsAsShot                 int16s[4]
      75   ColorTempAsShot                     int16s
      76   WB_RGGBLevelsAuto                   int16s[4]
      80   ColorTempAuto                       int16s
      81   WB_RGGBLevelsMeasured               int16s[4]
      85   ColorTempMeasured                   int16s
      86   WB_RGGBLevelsUnknown?               int16s[4]
      90   ColorTempUnknown?                   int16s
      91   WB_RGGBLevelsUnknown2?              int16s[4]
      95   ColorTempUnknown2?                  int16s
      96   WB_RGGBLevelsUnknown3?              int16s[4]
     100   ColorTempUnknown3?                  int16s
     101   WB_RGGBLevelsUnknown4?              int16s[4]
     105   ColorTempUnknown4?                  int16s
     106   WB_RGGBLevelsUnknown5?              int16s[4]
     110   ColorTempUnknown5?                  int16s
     111   WB_RGGBLevelsUnknown6?              int16s[4]
     115   ColorTempUnknown6?                  int16s
     116   WB_RGGBLevelsUnknown7?              int16s[4]
     120   ColorTempUnknown7?                  int16s
     121   WB_RGGBLevelsUnknown8?              int16s[4]
     125   ColorTempUnknown8?                  int16s
     126   WB_RGGBLevelsUnknown9?              int16s[4]
     130   ColorTempUnknown9?                  int16s
     131   WB_RGGBLevelsUnknown10?             int16s[4]
     135   ColorTempUnknown10?                 int16s
     136   WB_RGGBLevelsDaylight               int16s[4]
     140   ColorTempDaylight                   int16s
```

```
141   WB_RGGBLevelsShade                  int16s[4]
145   ColorTempShade                      int16s
146   WB_RGGBLevelsCloudy                 int16s[4]
150   ColorTempCloudy                     int16s
151   WB_RGGBLevelsTungsten               int16s[4]
155   ColorTempTungsten                   int16s
156   WB_RGGBLevelsFluorescent            int16s[4]
160   ColorTempFluorescent                int16s
161   WB_RGGBLevelsKelvin                 int16s[4]
165   ColorTempKelvin                     int16s
166   WB_RGGBLevelsFlash                  int16s[4]
170   ColorTempFlash                      int16s
171   WB_RGGBLevelsUnknown11?             int16s[4]
175   ColorTempUnknown11?                 int16s
176   WB_RGGBLevelsUnknown12?             int16s[4]
180   ColorTempUnknown12?                 int16s
181   WB_RGGBLevelsUnknown13?             int16s[4]
185   ColorTempUnknown13?                 int16s
186   WB_RGGBLevelsUnknown14?             int16s[4]
190   ColorTempUnknown14?                 int16s
191   WB_RGGBLevelsUnknown15?             int16s[4]
195   ColorTempUnknown15?                 int16s
196   WB_RGGBLevelsUnknown16?             int16s[4]
200   ColorTempUnknown16?                 int16s
201   WB_RGGBLevelsUnknown17?             int16s[4]
205   ColorTempUnknown17?                 int16s
206   WB_RGGBLevelsUnknown18?             int16s[4]
210   ColorTempUnknown18?                 int16s
211   WB_RGGBLevelsUnknown19?             int16s[4]
215   ColorTempUnknown19?                 int16s
216   WB_RGGBLevelsUnknown20?             int16s[4]
220   ColorTempUnknown20?                 int16s
221   WB_RGGBLevelsUnknown21?             int16s[4]
225   ColorTempUnknown21?                 int16s
226   WB_RGGBLevelsUnknown22?             int16s[4]
230   ColorTempUnknown22?                 int16s
231   WB_RGGBLevelsUnknown23?             int16s[4]
235   ColorTempUnknown23?                 int16s
236   WB_RGGBLevelsUnknown24?             int16s[4]
240   ColorTempUnknown24?                 int16s
241   WB_RGGBLevelsUnknown25?             int16s[4]
245   ColorTempUnknown25?                 int16s
246   WB_RGGBLevelsUnknown26?             int16s[4]
250   ColorTempUnknown26?                 int16s
251   WB_RGGBLevelsUnknown27?             int16s[4]
255   ColorTempUnknown27?                 int16s
256   WB_RGGBLevelsUnknown28?             int16s[4]
260   ColorTempUnknown28?                 int16s
261   WB_RGGBLevelsUnknown29?             int16s[4]
265   ColorTempUnknown29?                 int16s
266   ColorCalib?                         Canon ColorCalib
329   PerChannelBlackLevel                int16u[4]
796   NormalWhiteLevel                    int16u
797   SpecularWhiteLevel                  int16u
798   LinearityUpperMargin                int16u
```

Canon ColorData10 Tags

These tags are used by the R5, R5 and EOS 1DXmkIII.

```
Index2   Tag Name                        Writable
------   --------                        --------
     0   ColorDataVersion                int16s
    85   WB_RGGBLevelsAsShot             int16s[4]
    89   ColorTempAsShot                 int16s
    90   WB_RGGBLevelsAuto               int16s[4]
    94   ColorTempAuto                   int16s
    95   WB_RGGBLevelsMeasured           int16s[4]
    99   ColorTempMeasured               int16s
   100   WB_RGGBLevelsUnknown?           int16s[4]
```

```
104    ColorTempUnknown?                    int16s
105    WB_RGGBLevelsUnknown2?               int16s[4]
109    ColorTempUnknown2?                   int16s
110    WB_RGGBLevelsUnknown3?               int16s[4]
114    ColorTempUnknown3?                   int16s
115    WB_RGGBLevelsUnknown4?               int16s[4]
119    ColorTempUnknown4?                   int16s
120    WB_RGGBLevelsUnknown5?               int16s[4]
124    ColorTempUnknown5?                   int16s
125    WB_RGGBLevelsUnknown6?               int16s[4]
129    ColorTempUnknown6?                   int16s
130    WB_RGGBLevelsUnknown7?               int16s[4]
134    ColorTempUnknown7?                   int16s
135    WB_RGGBLevelsUnknown8?               int16s[4]
139    ColorTempUnknown8?                   int16s
140    WB_RGGBLevelsUnknown9?               int16s[4]
144    ColorTempUnknown9?                   int16s
145    WB_RGGBLevelsUnknown10?              int16s[4]
149    ColorTempUnknown10?                  int16s
150    WB_RGGBLevelsDaylight                int16s[4]
154    ColorTempDaylight                    int16s
155    WB_RGGBLevelsShade                   int16s[4]
159    ColorTempShade                       int16s
160    WB_RGGBLevelsCloudy                  int16s[4]
164    ColorTempCloudy                      int16s
165    WB_RGGBLevelsTungsten                int16s[4]
169    ColorTempTungsten                    int16s
170    WB_RGGBLevelsFluorescent             int16s[4]
174    ColorTempFluorescent                 int16s
175    WB_RGGBLevelsKelvin                  int16s[4]
179    ColorTempKelvin                      int16s
180    WB_RGGBLevelsFlash                   int16s[4]
184    ColorTempFlash                       int16s
185    WB_RGGBLevelsUnknown11?              int16s[4]
189    ColorTempUnknown11?                  int16s
190    WB_RGGBLevelsUnknown12?              int16s[4]
194    ColorTempUnknown12?                  int16s
195    WB_RGGBLevelsUnknown13?              int16s[4]
199    ColorTempUnknown13?                  int16s
200    WB_RGGBLevelsUnknown14?              int16s[4]
204    ColorTempUnknown14?                  int16s
205    WB_RGGBLevelsUnknown15?              int16s[4]
209    ColorTempUnknown15?                  int16s
210    WB_RGGBLevelsUnknown16?              int16s[4]
214    ColorTempUnknown16?                  int16s
215    WB_RGGBLevelsUnknown17?              int16s[4]
219    ColorTempUnknown17?                  int16s
220    WB_RGGBLevelsUnknown18?              int16s[4]
224    ColorTempUnknown18?                  int16s
225    WB_RGGBLevelsUnknown19?              int16s[4]
229    ColorTempUnknown19?                  int16s
230    WB_RGGBLevelsUnknown20?              int16s[4]
234    ColorTempUnknown20?                  int16s
235    WB_RGGBLevelsUnknown21?              int16s[4]
239    ColorTempUnknown21?                  int16s
240    WB_RGGBLevelsUnknown22?              int16s[4]
244    ColorTempUnknown22?                  int16s
245    WB_RGGBLevelsUnknown23?              int16s[4]
249    ColorTempUnknown23?                  int16s
250    WB_RGGBLevelsUnknown24?              int16s[4]
254    ColorTempUnknown24?                  int16s
255    WB_RGGBLevelsUnknown25?              int16s[4]
259    ColorTempUnknown25?                  int16s
260    WB_RGGBLevelsUnknown26?              int16s[4]
264    ColorTempUnknown26?                  int16s
265    WB_RGGBLevelsUnknown27?              int16s[4]
269    ColorTempUnknown27?                  int16s
270    WB_RGGBLevelsUnknown28?              int16s[4]
274    ColorTempUnknown28?                  int16s
275    WB_RGGBLevelsUnknown29?              int16s[4]
```

```
    279    ColorTempUnknown29?                    int16s
    280    ColorCalib?                            Canon ColorCalib
    343    PerChannelBlackLevel                   int16u[4]
    810    NormalWhiteLevel                       int16u
    811    SpecularWhiteLevel                     int16u
    812    LinearityUpperMargin                   int16u
```

Canon ColorData11 Tags

These tags are used by the EOS R3, R7 and R6mkII

```
   Index2    Tag Name                            Writable
   ------    --------                            --------
        0    ColorDataVersion                    int16s
      105    WB_RGGBLevelsAsShot                 int16s[4]
      109    ColorTempAsShot                     int16s
      110    WB_RGGBLevelsAuto                   int16s[4]
      114    ColorTempAuto                       int16s
      115    WB_RGGBLevelsMeasured               int16s[4]
      119    ColorTempMeasured                   int16s
      120    WB_RGGBLevelsUnknown?               int16s[4]
      124    ColorTempUnknown?                   int16s
      125    WB_RGGBLevelsUnknown2?              int16s[4]
      129    ColorTempUnknown2?                  int16s
      130    WB_RGGBLevelsUnknown3?              int16s[4]
      134    ColorTempUnknown3?                  int16s
      135    WB_RGGBLevelsUnknown4?              int16s[4]
      139    ColorTempUnknown4?                  int16s
      140    WB_RGGBLevelsUnknown5?              int16s[4]
      144    ColorTempUnknown5?                  int16s
      145    WB_RGGBLevelsUnknown6?              int16s[4]
      149    ColorTempUnknown6?                  int16s
      150    WB_RGGBLevelsUnknown7?              int16s[4]
      154    ColorTempUnknown7?                  int16s
      155    WB_RGGBLevelsUnknown8?              int16s[4]
      159    ColorTempUnknown8?                  int16s
      160    WB_RGGBLevelsUnknown9?              int16s[4]
      164    ColorTempUnknown9?                  int16s
      165    WB_RGGBLevelsUnknown10?             int16s[4]
      169    ColorTempUnknown10?                 int16s
      170    WB_RGGBLevelsUnknown11?             int16s[4]
      174    ColorTempUnknown11?                 int16s
      175    WB_RGGBLevelsUnknown11?             int16s[4]
      179    ColorTempUnknown11?                 int16s
      180    WB_RGGBLevelsUnknown12?             int16s[4]
      184    ColorTempUnknown12?                 int16s
      185    WB_RGGBLevelsUnknown13?             int16s[4]
      189    ColorTempUnknown13?                 int16s
      190    WB_RGGBLevelsUnknown14?             int16s[4]
      194    ColorTempUnknown14?                 int16s
      195    WB_RGGBLevelsUnknown15?             int16s[4]
      199    ColorTempUnknown15?                 int16s
      200    WB_RGGBLevelsUnknown16?             int16s[4]
      204    ColorTempUnknown16?                 int16s
      205    WB_RGGBLevelsDaylight               int16s[4]
      209    ColorTempDaylight                   int16s
      210    WB_RGGBLevelsShade                  int16s[4]
      214    ColorTempShade                      int16s
      215    WB_RGGBLevelsCloudy                 int16s[4]
      219    ColorTempCloudy                     int16s
      220    WB_RGGBLevelsTungsten               int16s[4]
      224    ColorTempTungsten                   int16s
      225    WB_RGGBLevelsFluorescent            int16s[4]
      229    ColorTempFluorescent                int16s
      230    WB_RGGBLevelsKelvin                 int16s[4]
      234    ColorTempKelvin                     int16s
      235    WB_RGGBLevelsFlash                  int16s[4]
      239    ColorTempFlash                      int16s
      240    WB_RGGBLevelsUnknown17?             int16s[4]
      244    ColorTempUnknown17?                 int16s
```

```
245      WB_RGGBLevelsUnknown18?              int16s[4]
249      ColorTempUnknown18?                  int16s
250      WB_RGGBLevelsUnknown19?              int16s[4]
254      ColorTempUnknown19?                  int16s
255      WB_RGGBLevelsUnknown20?              int16s[4]
259      ColorTempUnknown20?                  int16s
260      WB_RGGBLevelsUnknown21?              int16s[4]
264      ColorTempUnknown21?                  int16s
265      WB_RGGBLevelsUnknown22?              int16s[4]
269      ColorTempUnknown22?                  int16s
270      WB_RGGBLevelsUnknown23?              int16s[4]
274      ColorTempUnknown23?                  int16s
275      WB_RGGBLevelsUnknown24?              int16s[4]
279      ColorTempUnknown24?                  int16s
280      WB_RGGBLevelsUnknown25?              int16s[4]
284      ColorTempUnknown25?                  int16s
285      WB_RGGBLevelsUnknown26?              int16s[4]
289      ColorTempUnknown26?                  int16s
290      WB_RGGBLevelsUnknown27?              int16s[4]
294      ColorTempUnknown27?                  int16s
300      ColorCalib?                          Canon ColorCalib
363      PerChannelBlackLevel                 int16u[4]
640      NormalWhiteLevel                     int16u
641      SpecularWhiteLevel                   int16u
642      LinearityUpperMargin                 int16u
```

Canon ColorData12 Tags

These tags are used by the EOS R1 and R5mkII

```
    Index2   Tag Name                           Writable
    ------   --------                           --------
         0   ColorDataVersion                   int16s
       105   WB_RGGBLevelsAsShot                int16s[4]
       109   ColorTempAsShot                    int16s
       110   WB_RGGBLevelsDaylight              int16s[4]
       114   ColorTempDaylight                  int16s
       115   WB_RGGBLevelsShade                 int16s[4]
       119   ColorTempShade                     int16s
       120   WB_RGGBLevelsCloudy                int16s[4]
       124   ColorTempCloudy                    int16s
       125   WB_RGGBLevelsTungsten              int16s[4]
       129   ColorTempTungsten                  int16s
       130   WB_RGGBLevelsFluorescent           int16s[4]
       134   ColorTempFluorescent               int16s
       135   WB_RGGBLevelsFlash                 int16s[4]
       139   ColorTempFlash                     int16s
       140   WB_RGGBLevelsUnknown2?             int16s[4]
       144   ColorTempUnknown2?                 int16s
       145   WB_RGGBLevelsUnknown3?             int16s[4]
       149   ColorTempUnknown3?                 int16s
       150   WB_RGGBLevelsUnknown4?             int16s[4]
       154   ColorTempUnknown4?                 int16s
       155   WB_RGGBLevelsUnknown5?             int16s[4]
       159   ColorTempUnknown5?                 int16s
       160   WB_RGGBLevelsUnknown6?             int16s[4]
       164   ColorTempUnknown6?                 int16s
       165   WB_RGGBLevelsUnknown7?             int16s[4]
       169   ColorTempUnknown7?                 int16s
       170   WB_RGGBLevelsUnknown8?             int16s[4]
       174   ColorTempUnknown8?                 int16s
       175   WB_RGGBLevelsUnknown9?             int16s[4]
       179   ColorTempUnknown9?                 int16s
       180   WB_RGGBLevelsUnknown10?            int16s[4]
       184   ColorTempUnknown10?                int16s
       185   WB_RGGBLevelsUnknown11?            int16s[4]
       189   ColorTempUnknown11?                int16s
       190   WB_RGGBLevelsUnknown12?            int16s[4]
       194   ColorTempUnknown12?                int16s
       195   WB_RGGBLevelsUnknown13?            int16s[4]
```

```
   199    ColorTempUnknown13?                      int16s
   200    WB_RGGBLevelsUnknown14?                  int16s[4]
   204    ColorTempUnknown14?                      int16s
   205    WB_RGGBLevelsUnknown15?                  int16s[4]
   209    ColorTempUnknown15?                      int16s
   210    WB_RGGBLevelsUnknown16?                  int16s[4]
   214    ColorTempUnknown16?                      int16s
   215    WB_RGGBLevelsUnknown17?                  int16s[4]
   219    ColorTempUnknown17?                      int16s
   220    WB_RGGBLevelsUnknown18?                  int16s[4]
   224    ColorTempUnknown18?                      int16s
   225    WB_RGGBLevelsUnknown19?                  int16s[4]
   229    ColorTempUnknown19?                      int16s
   230    WB_RGGBLevelsUnknown20?                  int16s[4]
   234    ColorTempUnknown20?                      int16s
   235    WB_RGGBLevelsUnknown21?                  int16s[4]
   239    ColorTempUnknown21?                      int16s
   240    WB_RGGBLevelsUnknown22?                  int16s[4]
   244    ColorTempUnknown22?                      int16s
   245    WB_RGGBLevelsUnknown23?                  int16s[4]
   249    ColorTempUnknown23?                      int16s
   250    WB_RGGBLevelsUnknown24?                  int16s[4]
   254    ColorTempUnknown24?                      int16s
   255    WB_RGGBLevelsUnknown25?                  int16s[4]
   259    ColorTempUnknown25?                      int16s
   260    WB_RGGBLevelsUnknown26?                  int16s[4]
   264    ColorTempUnknown26?                      int16s
   265    WB_RGGBLevelsUnknown27?                  int16s[4]
   269    ColorTempUnknown27?                      int16s
   270    WB_RGGBLevelsUnknown28?                  int16s[4]
   274    ColorTempUnknown28?                      int16s
   275    WB_RGGBLevelsUnknown29?                  int16s[4]
   279    ColorTempUnknown29?                      int16s
   280    WB_RGGBLevelsUnknown30?                  int16s[4]
   284    ColorTempUnknown30?                      int16s
   285    WB_RGGBLevelsUnknown31?                  int16s[4]
   289    ColorTempUnknown31?                      int16s
   290    WB_RGGBLevelsUnknown32?                  int16s[4]
   294    ColorTempUnknown32?                      int16s
   295    WB_RGGBLevelsUnknown33?                  int16s[4]
   299    ColorTempUnknown33?                      int16s
   320    ColorCalib?                              Canon ColorCalib
   383    PerChannelBlackLevel                     int16u[4]
   660    NormalWhiteLevel                         int16u
   661    SpecularWhiteLevel                       int16u
   662    LinearityUpperMargin                     int16u
```

Canon ColorDataUnknown Tags

```
   Index2   Tag Name                              Writable
   ------   --------                              --------
      0    ColorDataVersion                       no
```

Canon ColorInfo Tags

```
   Index2   Tag Name                              Writable
   ------   --------                              --------
      1    Saturation                             int16s
      2    ColorTone                              int16s
      3    ColorSpace                             int16s
```

Canon AFMicroAdj Tags

```
   Index4   Tag Name                              Writable
   ------   --------                              --------
      1    AFMicroAdjMode                         int32s
      2    AFMicroAdjValue                        rational64s
```

Canon VignettingCorr Tags

This information is found in images from newer EOS models.

```
   Index2   Tag Name                            Writable
   ------   --------                            --------
       0    VignettingCorrVersion               no
       2    PeripheralLighting                  int16s
       3    DistortionCorrection                int16s
       4    ChromaticAberrationCorr             int16s
       5    ChromaticAberrationCorr             int16s
       6    PeripheralLightingValue             int16s
       9    DistortionCorrectionValue           int16s
      11    OriginalImageWidth                  int16s
      12    OriginalImageHeight                 int16s
```

Canon VignettingCorrUnknown Tags

Vignetting correction from PowerShot models.

```
   Index2   Tag Name                            Writable
   ------   --------                            --------
       0    VignettingCorrVersion               no
```

Canon VignettingCorr2 Tags

```
   Index4   Tag Name                            Writable
   ------   --------                            --------
       5    PeripheralLightingSetting           int32s
       6    ChromaticAberrationSetting          int32s
       7    DistortionCorrectionSetting         int32s
       9    DigitalLensOptimizerSetting         int32s
```

Canon LightingOpt Tags

This information is new in images from the EOS 7D.

```
   Index4   Tag Name                            Writable
   ------   --------                            --------
       1    PeripheralIlluminationCorr          int32s
       2    AutoLightingOptimizer               int32s
       3    HighlightTonePriority               int32s
       4    LongExposureNoiseReduction          int32s
       5    HighISONoiseReduction               int32s
      10    DigitalLensOptimizer                int32s
      11    DualPixelRaw                        int32s
```

Canon LensInfo Tags

```
   Index1   Tag Name                            Writable
   ------   --------                            --------
       0    LensSerialNumber                    undef[5]
```

Canon Ambience Tags

```
   Index4   Tag Name                            Writable
   ------   --------                            --------
       1    AmbienceSelection                   int32s
```

Canon MultiExp Tags

```
   Index4   Tag Name                            Writable
   ------   --------                            --------
       1    MultiExposure                       int32s
       2    MultiExposureControl                int32s
       3    MultiExposureShots                  int32s
```

Canon FilterInfo Tags

Information about creative filter settings.

```
   Tag ID   Tag Name                            Writable
```

0x0101	GrainyBWFilter	no
0x0201	SoftFocusFilter	no
0x0301	ToyCameraFilter	no
0x0401	MiniatureFilter	no
0x0402	MiniatureFilterOrientation	no
0x0403	MiniatureFilterPosition	no
0x0404	MiniatureFilterParameter	no
0x0501	FisheyeFilter	no
0x0601	PaintingFilter	no
0x0701	WatercolorFilter	no

Canon HDRInfo Tags

Index4	Tag Name	Writable
1	HDR	int32s
2	HDREffect	int32s

Canon LogInfo Tags

Index4	Tag Name	Writable
4	CompressionFormat	int32s
6	Sharpness	int32s
7	Saturation	int32s
8	ColorTone	int32s
9	ColorSpace2	int32s
10	ColorMatrix	int32s
11	CanonLogVersion	int32s

Canon AFConfig Tags

Index4	Tag Name	Writable
1	AFConfigTool	int32s
2	AFTrackingSensitivity	int32s
3	AFAccelDecelTracking	int32s
4	AFPointSwitching	int32s
5	AIServoFirstImage	int32s
6	AIServoSecondImage	int32s
7	USMLensElectronicMF	int32s
8	AFAssistBeam	int32s
9	OneShotAFRelease	int32s
10	AutoAFPointSelEOSiTRAF	int32s
11	LensDriveWhenAFImpossible	int32s
12	SelectAFAreaSelectionMode	int32s
13	AFAreaSelectionMethod	int32s
14	OrientationLinkedAF	int32s
15	ManualAFPointSelPattern	int32s
16	AFPointDisplayDuringFocus	int32s
17	VFDisplayIllumination	int32s
18	AFStatusViewfinder	int32s
19	InitialAFPointInServo	int32s
20	SubjectToDetect	int32s
24	EyeDetection	int32s

Canon RawBurstInfo Tags

Index4	Tag Name	Writable
1	RawBurstImageNum	int32u
2	RawBurstImageCount	int32u

Canon LevelInfo Tags

Index4	Tag Name	Writable
4	RollAngle	int32s
5	PitchAngle	int32s

7	FocalLength	int32s
8	MinFocalLength2	int32s
9	MaxFocalLength2	int32s

Canon CTMD Tags

Canon Timed MetaData tags found in CR3 images. The ExtractEmbedded
option is automatically applied when reading CR3 files to be able to
extract this information.

Tag ID	Tag Name	Writable
0x0001	TimeStamp	no
0x0004	FocalInfo	Canon FocalInfo
0x0005	ExposureInfo	Canon ExposureInfo
0x0007	ExifInfo7	Canon ExifInfo
0x0008	ExifInfo8	Canon ExifInfo
0x0009	ExifInfo9	Canon ExifInfo

Canon FocalInfo Tags

Index4	Tag Name	Writable
0	FocalLength	no

Canon ExposureInfo Tags

Index4	Tag Name	Writable
0	FNumber	no
1	ExposureTime	no
2	ISO	no

Canon ExifInfo Tags

Tag ID	Tag Name	Writable
0x8769	ExifIFD	EXIF
0x927c	MakerNoteCanon	Canon

Canon CDI1 Tags

Tag ID	Tag Name	Writable
'IAD1'	IAD1	Canon IAD1

Canon IAD1 Tags

Index2	Tag Name	Writable
[no tags known]		

Canon CMP1 Tags

Index2	Tag Name	Writable
8	ImageWidth	no
10	ImageHeight	no

Canon CNOP Tags

Tag ID	Tag Name	Writable
[no tags known]		

Canon CNTH Tags

Canon-specific QuickTime tags found in the CNTH atom of MOV/MP4 videos
from some cameras.

```
   Tag ID   Tag Name                            Writable
   ------   --------                            --------
   'CNDA'   ThumbnailImage                      undef
```

Canon uuid Tags

Tags extracted from the uuid atom of MP4 videos from cameras such as
the SX280, and CR3 images from cameras such as the EOS M50.

```
   Tag ID   Tag Name                            Writable
   ------   --------                            --------
   'CCTP'   CanonCCTP                           Canon CCTP
   'CMT1'   IFD0                                EXIF
   'CMT2'   ExifIFD                             EXIF
   'CMT3'   MakerNoteCanon                      Canon
   'CMT4'   GPSInfo                             GPS
   'CNCV'   CompressorVersion                   no
   'CNOP'   CanonCNOP                           Canon CNOP
   'CNTH'   CanonCNTH                           Canon CNTH
   'THMB'   ThumbnailImage                      no
```

Canon CCTP Tags

```
   Tag ID   Tag Name                            Writable
   ------   --------                            --------
   [no tags known]
```

Canon Skip Tags

Information found in the "skip" atom of Canon MOV videos.

```
   Tag ID   Tag Name                            Writable
   ------   --------                            --------
   'CNDB'   Unknown_CNDB?                       no
```

Canon uuid2 Tags

```
   Tag ID   Tag Name                            Writable
   ------   --------                            --------
   'CNOP'   CanonVRD                            CanonVRD
```

CanonCustom Tags
CanonCustom Functions1D Tags

These custom functions are used by all 1D models up to but not
including the Mark III.

```
   Tag ID   Tag Name                            Writable
   ------   --------                            --------
        0   FocusingScreen                      int8u
        1   FinderDisplayDuringExposure         int8u
        2   ShutterReleaseNoCFCard              int8u
        3   ISOSpeedExpansion                   int8u
        4   ShutterAELButton                    int8u
        5   ManualTv                            int8u
        6   ExposureLevelIncrements             int8u
        7   USMLensElectronicMF                 int8u
        8   LCDPanels                           int8u
        9   AEBSequenceAutoCancel               int8u
       10   AFPointIllumination                 int8u
       11   AFPointSelection                    int8u
       12   MirrorLockup                        int8u
       13   AFPointSpotMetering                 int8u
       14   FillFlashAutoReduction              int8u
       15   ShutterCurtainSync                  int8u
       16   SafetyShiftInAvOrTv                 int8u
       17   AFPointActivationArea               int8u
       18   SwitchToRegisteredAFPoint           int8u
       19   LensAFStopButton                    int8u
       20   AIServoTrackingSensitivity          int8u
```

```
     21    AIServoContinuousShooting          int8u
```

CanonCustom Functions5D Tags

```
  Tag ID    Tag Name                           Writable
  ------    --------                           --------
       0    FocusingScreen                     int8u
       1    SetFunctionWhenShooting            int8u
       2    LongExposureNoiseReduction         int8u
       3    FlashSyncSpeedAv                   int8u
       4    Shutter-AELock                     int8u
       5    AFAssistBeam                       int8u
       6    ExposureLevelIncrements            int8u
       7    FlashFiring                        int8u
       8    ISOExpansion                       int8u
       9    AEBSequenceAutoCancel              int8u
      10    SuperimposedDisplay                int8u
      11    MenuButtonDisplayPosition          int8u
      12    MirrorLockup                       int8u
      13    AFPointSelectionMethod             int8u
      14    ETTLII                             int8u
      15    ShutterCurtainSync                 int8u
      16    SafetyShiftInAvOrTv                int8u
      17    AFPointActivationArea              int8u
      18    LCDDisplayReturnToShoot            int8u
      19    LensAFStopButton                   int8u
      20    AddOriginalDecisionData            int8u
```

CanonCustom Functions10D Tags

```
  Tag ID    Tag Name                           Writable
  ------    --------                           --------
       1    SetButtonWhenShooting              int8u
       2    ShutterReleaseNoCFCard             int8u
       3    FlashSyncSpeedAv                   int8u
       4    Shutter-AELock                     int8u
       5    AFAssist                           int8u
       6    ExposureLevelIncrements            int8u
       7    AFPointRegistration                int8u
       8    RawAndJpgRecording                 int8u
       9    AEBSequenceAutoCancel              int8u
      10    SuperimposedDisplay                int8u
      11    MenuButtonDisplayPosition          int8u
      12    MirrorLockup                       int8u
      13    AssistButtonFunction               int8u
      14    FillFlashAutoReduction             int8u
      15    ShutterCurtainSync                 int8u
      16    SafetyShiftInAvOrTv                int8u
      17    LensAFStopButton                   int8u
```

CanonCustom Functions20D Tags

```
  Tag ID    Tag Name                           Writable
  ------    --------                           --------
       0    SetFunctionWhenShooting            int8u
       1    LongExposureNoiseReduction         int8u
       2    FlashSyncSpeedAv                   int8u
       3    Shutter-AELock                     int8u
       4    AFAssistBeam                       int8u
       5    ExposureLevelIncrements            int8u
       6    FlashFiring                        int8u
       7    ISOExpansion                       int8u
       8    AEBSequenceAutoCancel              int8u
       9    SuperimposedDisplay                int8u
      10    MenuButtonDisplayPosition          int8u
      11    MirrorLockup                       int8u
      12    AFPointSelectionMethod             int8u
      13    ETTLII                             int8u
      14    ShutterCurtainSync                 int8u
      15    SafetyShiftInAvOrTv                int8u
```

```
       16    LensAFStopButton                   int8u
       17    AddOriginalDecisionData            int8u
```

CanonCustom Functions30D Tags

```
   Tag ID    Tag Name                           Writable
   ------    --------                           --------
        1    SetFunctionWhenShooting            int8u
        2    LongExposureNoiseReduction         int8u
        3    FlashSyncSpeedAv                   int8u
        4    Shutter-AELock                     int8u
        5    AFAssistBeam                       int8u
        6    ExposureLevelIncrements            int8u
        7    FlashFiring                        int8u
        8    ISOExpansion                       int8u
        9    AEBSequenceAutoCancel              int8u
       10    SuperimposedDisplay                int8u
       11    MenuButtonDisplayPosition          int8u
       12    MirrorLockup                       int8u
       13    AFPointSelectionMethod             int8u
       14    ETTLII                             int8u
       15    ShutterCurtainSync                 int8u
       16    SafetyShiftInAvOrTv                int8u
       17    MagnifiedView                      int8u
       18    LensAFStopButton                   int8u
       19    AddOriginalDecisionData            int8u
```

CanonCustom Functions350D Tags

```
   Tag ID    Tag Name                           Writable
   ------    --------                           --------
        0    SetButtonCrossKeysFunc             int8u
        1    LongExposureNoiseReduction         int8u
        2    FlashSyncSpeedAv                   int8u
        3    Shutter-AELock                     int8u
        4    AFAssistBeam                       int8u
        5    ExposureLevelIncrements            int8u
        6    MirrorLockup                       int8u
        7    ETTLII                             int8u
        8    ShutterCurtainSync                 int8u
```

CanonCustom Functions400D Tags

```
   Tag ID    Tag Name                           Writable
   ------    --------                           --------
        0    SetButtonCrossKeysFunc             int8u
        1    LongExposureNoiseReduction         int8u
        2    FlashSyncSpeedAv                   int8u
        3    Shutter-AELock                     int8u
        4    AFAssistBeam                       int8u
        5    ExposureLevelIncrements            int8u
        6    MirrorLockup                       int8u
        7    ETTLII                             int8u
        8    ShutterCurtainSync                 int8u
        9    MagnifiedView                      int8u
       10    LCDDisplayAtPowerOn                int8u
```

CanonCustom FunctionsD30 Tags

Custom functions for the EOS D30 and D60.

```
   Tag ID    Tag Name                           Writable
   ------    --------                           --------
        1    LongExposureNoiseReduction         int8u
        2    Shutter-AELock                     int8u
        3    MirrorLockup                       int8u
        4    ExposureLevelIncrements            int8u
        5    AFAssist                           int8u
        6    FlashSyncSpeedAv                   int8u
        7    AEBSequenceAutoCancel              int8u
```

```
    8    ShutterCurtainSync                    int8u
    9    LensAFStopButton                      int8u
   10    FillFlashAutoReduction                int8u
   11    MenuButtonReturn                      int8u
   12    SetButtonWhenShooting                 int8u
   13    SensorCleaning                        int8u
   14    SuperimposedDisplay                   int8u
   15    ShutterReleaseNoCFCard                int8u
```

CanonCustom FuncsUnknown Tags

```
  Tag ID   Tag Name                           Writable
  ------   --------                           --------
  [no tags known]
```

CanonCustom PersonalFuncs Tags

Personal function settings for the EOS-1D.

```
  Index2   Tag Name                           Writable
  ------   --------                           --------
      1    PF0CustomFuncRegistration          int16u
      2    PF1DisableShootingModes            int16u
      3    PF2DisableMeteringModes            int16u
      4    PF3ManualExposureMetering          int16u
      5    PF4ExposureTimeLimits              int16u
      6    PF5ApertureLimits                  int16u
      7    PF6PresetShootingModes             int16u
      8    PF7BracketContinuousShoot          int16u
      9    PF8SetBracketShots                 int16u
     10    PF9ChangeBracketSequence           int16u
     11    PF10RetainProgramShift             int16u
     14    PF13DrivePriority                  int16u
     15    PF14DisableFocusSearch             int16u
     16    PF15DisableAFAssistBeam            int16u
     17    PF16AutoFocusPointShoot            int16u
     18    PF17DisableAFPointSel              int16u
     19    PF18EnableAutoAFPointSel           int16u
     20    PF19ContinuousShootSpeed           int16u
     21    PF20LimitContinousShots            int16u
     22    PF21EnableQuietOperation           int16u
     24    PF23SetTimerLengths                int16u
     25    PF24LightLCDDuringBulb             int16u
     26    PF25DefaultClearSettings           int16u
     27    PF26ShortenReleaseLag              int16u
     28    PF27ReverseDialRotation            int16u
     29    PF28NoQuickDialExpComp             int16u
     30    PF29QuickDialSwitchOff             int16u
     31    PF30EnlargementMode                int16u
     32    PF31OriginalDecisionData           int16u
```

CanonCustom PersonalFuncValues Tags

```
  Index2   Tag Name                           Writable
  ------   --------                           --------
      1    PF1Value                           int16u
      2    PF2Value                           int16u
      3    PF3Value                           int16u
      4    PF4ExposureTimeMin                 int16u
      5    PF4ExposureTimeMax                 int16u
      6    PF5ApertureMin                     int16u
      7    PF5ApertureMax                     int16u
      8    PF8BracketShots                    int16u
      9    PF19ShootingSpeedLow               int16u
     10    PF19ShootingSpeedHigh              int16u
     11    PF20MaxContinousShots              int16u
     12    PF23ShutterButtonTime              int16u
     13    PF23FELockTime                     int16u
     14    PF23PostReleaseTime                int16u
     15    PF25AEMode                         int16u
```

```
  16      PF25MeteringMode                        int16u
  17      PF25DriveMode                           int16u
  18      PF25AFMode                              int16u
  19      PF25AFPointSel                          int16u
  20      PF25ImageSize                           int16u
  21      PF25WBMode                              int16u
  22      PF25Parameters                          int16u
  23      PF25ColorMatrix                         int16u
  24      PF27Value                               int16u
```

CanonCustom Functions2 Tags

Beginning with the EOS 1D Mark III, Canon finally created a set of
custom function tags which are (reasonably) consistent across models.
The EOS 1D Mark III has 57 custom function tags divided into four main
groups: 1. Exposure (0x0101-0x010f), 2. Image (0x0201-0x0203), Flash
Exposure (0x0304-0x0306) and Display (0x0407-0x0409), 3. Auto Focus
(0x0501-0x050e) and Drive (0x060f-0x0611), and 4. Operation
(0x0701-0x070a) and Others (0x080b-0x0810). The table below lists tags
used by the EOS 1D Mark III, as well as newer tags and values added by
later models.

```
  Tag ID   Tag Name                              Writable
  ------   --------                              --------
  0x0101   ExposureLevelIncrements               int32s
  0x0102   ISOSpeedIncrements                    int32s
  0x0103   ISOSpeedRange                         int32s[3]
           ISOExpansion                          int32s
  0x0104   AEBAutoCancel                         int32s
  0x0105   AEBSequence                           int32s
  0x0106   AEBShotCount                          int32s
           AEBShotCount                          int32s[2]
  0x0107   SpotMeterLinkToAFPoint                int32s
  0x0108   SafetyShift                           int32s
  0x0109   UsableShootingModes                   int32s
           UsableShootingModes                   int32s[2]
  0x010a   UsableMeteringModes                   int32s
           UsableMeteringModes                   int32s[2]
  0x010b   ExposureModeInManual                  int32s
  0x010c   ShutterSpeedRange                     int32s[3]
           ShutterSpeedRange                     int32s[4]
  0x010d   ApertureRange                         int32s[3]
           ApertureRange                         int32s[4]
  0x010e   ApplyShootingMeteringMode             int32s[8]
  0x010f   FlashSyncSpeedAv                      int32s
  0x0110   AEMicroadjustment                     int32s[3]
  0x0111   FEMicroadjustment                     int32s[3]
  0x0112   SameExposureForNewAperture            int32s
  0x0113   ExposureCompAutoCancel                int32s
  0x0114   AELockMeterModeAfterFocus             int32s
  0x0201   LongExposureNoiseReduction            int32s
  0x0202   HighISONoiseReduction                 int32s
  0x0203   HighlightTonePriority                 int32s
  0x0204   AutoLightingOptimizer                 int32s
  0x0304   ETTLII                                int32s
  0x0305   ShutterCurtainSync                    int32s
  0x0306   FlashFiring                           int32s
  0x0407   ViewInfoDuringExposure                int32s
  0x0408   LCDIlluminationDuringBulb             int32s
  0x0409   InfoButtonWhenShooting                int32s
  0x040a   ViewfinderWarnings                    int32s
  0x040b   LVShootingAreaDisplay                 int32s
  0x040c   LVShootingAreaDisplay                 int32s
  0x0501   USMLensElectronicMF                   int32s
  0x0502   AIServoTrackingSensitivity            int32s
  0x0503   AIServoImagePriority                  int32s
  0x0504   AIServoTrackingMethod                 int32s
  0x0505   LensDriveNoAF                         int32s
  0x0506   LensAFStopButton                      int32s
  0x0507   AFMicroadjustment                     int32s[5]
```

```
0x0508   AFPointAreaExpansion                 int32s
0x0509   SelectableAFPoint                    int32s
0x050a   SwitchToRegisteredAFPoint            int32s
0x050b   AFPointAutoSelection                 int32s
0x050c   AFPointDisplayDuringFocus            int32s
0x050d   AFPointBrightness                    int32s
0x050e   AFAssistBeam                         int32s
0x050f   AFPointSelectionMethod               int32s
0x0510   VFDisplayIllumination                int32s
         SuperimposedDisplay                  int32s
0x0511   AFDuringLiveView                     int32s
0x0512   SelectAFAreaSelectMode               int32s
0x0513   ManualAFPointSelectPattern           int32s
0x0514   DisplayAllAFPoints                   int32s
0x0515   FocusDisplayAIServoAndMF             int32s
0x0516   OrientationLinkedAFPoint             int32s
0x0517   MultiControllerWhileMetering         int32s
0x0518   AccelerationTracking                 int32s
0x0519   AIServoFirstImagePriority            int32s
0x051a   AIServoSecondImagePriority           int32s
0x051b   AFAreaSelectMethod                   int32s
0x051c   AutoAFPointColorTracking             int32s
0x051d   VFDisplayIllumination                int32s
0x051e   InitialAFPointAIServoAF              int32s
0x060f   MirrorLockup                         int32s
0x0610   ContinuousShootingSpeed              int32s[6]
         ContinuousShootingSpeed              int32s[5]
         ContinuousShootingSpeed              int32s[3]
0x0611   ContinuousShotLimit                  int32s[2]
0x0612   RestrictDriveModes                   int32s
         RestrictDriveModes                   int32s[2]
0x0701   Shutter-AELock                       int32s
         AFAndMeteringButtons                 int32s
         ShutterButtonAFOnButton              int32s
0x0702   AFOnAELockButtonSwitch               int32s
0x0703   QuickControlDialInMeter              int32s
0x0704   SetButtonWhenShooting                int32s
0x0705   ManualTv                             int32s
0x0706   DialDirectionTvAv                    int32s
0x0707   AvSettingWithoutLens                 int32s
0x0708   WBMediaImageSizeSetting              int32s
0x0709   LockMicrophoneButton                 int32s
0x070a   ButtonFunctionControlOff             int32s
0x070b   AssignFuncButton                     int32s
0x070c   CustomControls                       int32s
0x070d   StartMovieShooting                   int32s
0x070e   FlashButtonFunction                  int32s
0x070f   MultiFunctionLock                    int32s
0x0710   TrashButtonFunction                  int32s
0x0711   ShutterReleaseWithoutLens            int32s
0x0712   ControlRingRotation                  int32s
0x0713   FocusRingRotation                    int32s
0x0714   RFLensMFFocusRingSensitivity         int32s
0x0715   CustomizeDials                       int32s
0x080b   FocusingScreen                       int32s
0x080c   TimerLength                          int32s[3]
         TimerLength                          int32s[4]
0x080d   ShortReleaseTimeLag                  int32s
0x080e   AddAspectRatioInfo                   int32s
0x080f   AddOriginalDecisionData              int32s
0x0810   LiveViewExposureSimulation           int32s
0x0811   LCDDisplayAtPowerOn                  int32s
0x0812   MemoAudioQuality                     int32s
0x0813   DefaultEraseOption                   int32s
0x0814   RetractLensOnPowerOff                int32s
0x0815   AddIPTCInformation                   int32s
0x0816   AudioCompression                     int32s
```

CanonVRD Tags

Canon Digital Photo Professional writes VRD (Recipe Data) information

as a trailer record to JPEG, TIFF, CRW and CR2 images, or as stand-
alone VRD or DR4 files. The tags listed below represent information
found in these records. The complete VRD/DR4 data record may be
accessed as a block using the Extra 'CanonVRD' or 'CanonDR4' tag, but
this tag is not extracted or copied unless specified explicitly.

Tag ID	Tag Name	Writable
0xffff00f4	EditData	CanonVRD Edit
0xffff00f5	IHLData	CanonVRD IHL
0xffff00f6	XMP	XMP
0xffff00f7	Edit4Data	CanonVRD Edit4

CanonVRD Edit Tags

Canon VRD edit information.

Index	Tag Name	Writable
0	VRD1	CanonVRD Ver1
1	VRDStampTool	CanonVRD StampTool
2	VRD2	CanonVRD Ver2

CanonVRD Ver1 Tags

Index1	Tag Name	Writable
2	VRDVersion	no
6	WBAdjRGGBLevels	int16u[4]
24	WhiteBalanceAdj	int16u
26	WBAdjColorTemp	int16u
36	WBFineTuneActive	int16u
40	WBFineTuneSaturation	int16u
44	WBFineTuneTone	int16u
46	RawColorAdj	int16u
48	RawCustomSaturation	int32s
52	RawCustomTone	int32s
56	RawBrightnessAdj	int32s
60	ToneCurveProperty	int16u
122	DynamicRangeMin	int16u
124	DynamicRangeMax	int16u
272	ToneCurveActive	int16u
275	ToneCurveMode	int8u
276	BrightnessAdj	int8s
277	ContrastAdj	int8s
278	SaturationAdj	int16s
286	ColorToneAdj	int32s
294	LuminanceCurvePoints	int16u[21]
336	LuminanceCurveLimits	int16u[4]
345	ToneCurveInterpolation	int8u
352	RedCurvePoints	int16u[21]
394	RedCurveLimits	int16u[4]
410	GreenCurvePoints	int16u[21]
452	GreenCurveLimits	int16u[4]
468	BlueCurvePoints	int16u[21]
510	BlueCurveLimits	int16u[4]
526	RGBCurvePoints	int16u[21]
568	RGBCurveLimits	int16u[4]
580	CropActive	int16u
582	CropLeft	int16u
584	CropTop	int16u
586	CropWidth	int16u
588	CropHeight	int16u
602	SharpnessAdj	int16u
608	CropAspectRatio	int16u
610	ConstrainedCropWidth	float
614	ConstrainedCropHeight	float
618	CheckMark	int16u
622	Rotation	int16u
624	WorkColorSpace	int16u

CanonVRD StampTool Tags

```
  Index1    Tag Name                        Writable
  ------    --------                        --------
      0     StampToolCount                  no
```

CanonVRD Ver2 Tags

Tags added in DPP version 2.0 and later.

```
  Index2    Tag Name                        Writable
  ------    --------                        --------
      2     PictureStyle                    int16s
      3     IsCustomPictureStyle            int16s
     13     StandardRawColorTone            int16s
     14     StandardRawSaturation           int16s
     15     StandardRawContrast             int16s
     16     StandardRawLinear               int16s
     17     StandardRawSharpness            int16s
     18     StandardRawHighlightPoint       int16s
     19     StandardRawShadowPoint          int16s
     20     StandardOutputHighlightPoint    int16s
     21     StandardOutputShadowPoint       int16s
     22     PortraitRawColorTone            int16s
     23     PortraitRawSaturation           int16s
     24     PortraitRawContrast             int16s
     25     PortraitRawLinear               int16s
     26     PortraitRawSharpness            int16s
     27     PortraitRawHighlightPoint       int16s
     28     PortraitRawShadowPoint          int16s
     29     PortraitOutputHighlightPoint    int16s
     30     PortraitOutputShadowPoint       int16s
     31     LandscapeRawColorTone           int16s
     32     LandscapeRawSaturation          int16s
     33     LandscapeRawContrast            int16s
     34     LandscapeRawLinear              int16s
     35     LandscapeRawSharpness           int16s
     36     LandscapeRawHighlightPoint      int16s
     37     LandscapeRawShadowPoint         int16s
     38     LandscapeOutputHighlightPoint   int16s
     39     LandscapeOutputShadowPoint      int16s
     40     NeutralRawColorTone             int16s
     41     NeutralRawSaturation            int16s
     42     NeutralRawContrast              int16s
     43     NeutralRawLinear                int16s
     44     NeutralRawSharpness             int16s
     45     NeutralRawHighlightPoint        int16s
     46     NeutralRawShadowPoint           int16s
     47     NeutralOutputHighlightPoint     int16s
     48     NeutralOutputShadowPoint        int16s
     49     FaithfulRawColorTone            int16s
     50     FaithfulRawSaturation           int16s
     51     FaithfulRawContrast             int16s
     52     FaithfulRawLinear               int16s
     53     FaithfulRawSharpness            int16s
     54     FaithfulRawHighlightPoint       int16s
     55     FaithfulRawShadowPoint          int16s
     56     FaithfulOutputHighlightPoint    int16s
     57     FaithfulOutputShadowPoint       int16s
     58     MonochromeFilterEffect          int16s
     59     MonochromeToningEffect          int16s
     60     MonochromeContrast              int16s
     61     MonochromeLinear                int16s
     62     MonochromeSharpness             int16s
     63     MonochromeRawHighlightPoint     int16s
     64     MonochromeRawShadowPoint        int16s
     65     MonochromeOutputHighlightPoint  int16s
     66     MonochromeOutputShadowPoint     int16s
     69     UnknownContrast?                int16s
```

70	UnknownLinear?	int16s
71	UnknownSharpness?	int16s
72	UnknownRawHighlightPoint?	int16s
73	UnknownRawShadowPoint?	int16s
74	UnknownOutputHighlightPoint?	int16s
75	UnknownOutputShadowPoint?	int16s
76	CustomColorTone	int16s
77	CustomSaturation	int16s
78	CustomContrast	int16s
79	CustomLinear	int16s
80	CustomSharpness	int16s
81	CustomRawHighlightPoint	int16s
82	CustomRawShadowPoint	int16s
83	CustomOutputHighlightPoint	int16s
84	CustomOutputShadowPoint	int16s
88	CustomPictureStyleData	no
94	ChrominanceNoiseReduction	int16s
95	LuminanceNoiseReduction	int16s
96	ChrominanceNR_TIFF_JPEG	int16s
98	ChromaticAberrationOn	int16s
99	DistortionCorrectionOn	int16s
100	PeripheralIlluminationOn	int16s
101	ColorBlur	int16s
102	ChromaticAberration	int16s
103	DistortionCorrection	int16s
104	PeripheralIllumination	int16s
105	AberrationCorrectionDistance	int16s
106	ChromaticAberrationRed	int16s
107	ChromaticAberrationBlue	int16s
109	LuminanceNR_TIFF_JPEG	int16s
110	AutoLightingOptimizerOn	int16s
111	AutoLightingOptimizer	int16s
117	StandardRawHighlight	int16s
118	PortraitRawHighlight	int16s
119	LandscapeRawHighlight	int16s
120	NeutralRawHighlight	int16s
121	FaithfulRawHighlight	int16s
122	MonochromeRawHighlight	int16s
123	UnknownRawHighlight?	int16s
124	CustomRawHighlight	int16s
126	StandardRawShadow	int16s
127	PortraitRawShadow	int16s
128	LandscapeRawShadow	int16s
129	NeutralRawShadow	int16s
130	FaithfulRawShadow	int16s
131	MonochromeRawShadow	int16s
132	UnknownRawShadow?	int16s
133	CustomRawShadow	int16s
139	AngleAdj	int32s
142	CheckMark2	int16u
144	UnsharpMask	int16s
146	StandardUnsharpMaskStrength	int16s
148	StandardUnsharpMaskFineness	int16s
150	StandardUnsharpMaskThreshold	int16s
152	PortraitUnsharpMaskStrength	int16s
154	PortraitUnsharpMaskFineness	int16s
156	PortraitUnsharpMaskThreshold	int16s
158	LandscapeUnsharpMaskStrength	int16s
160	LandscapeUnsharpMaskFineness	int16s
162	LandscapeUnsharpMaskThreshold	int16s
164	NeutraUnsharpMaskStrength	int16s
166	NeutralUnsharpMaskFineness	int16s
168	NeutralUnsharpMaskThreshold	int16s
170	FaithfulUnsharpMaskStrength	int16s
172	FaithfulUnsharpMaskFineness	int16s
174	FaithfulUnsharpMaskThreshold	int16s
176	MonochromeUnsharpMaskStrength	int16s
178	MonochromeUnsharpMaskFineness	int16s
180	MonochromeUnsharpMaskThreshold	int16s
182	CustomUnsharpMaskStrength	int16s

```
      184   CustomUnsharpMaskFineness            int16s
      186   CustomUnsharpMaskThreshold           int16s
      188   CustomDefaultUnsharpStrength         int16s
      190   CustomDefaultUnsharpFineness         int16s
      192   CustomDefaultUnsharpThreshold        int16s
      214   CropCircleActive                     int16s
      215   CropCircleX                          int16s
      216   CropCircleY                          int16s
      217   CropCircleRadius                     int16s
      220   DLOOn                                int16s
      221   DLOSetting                           int16s
      222   DLOShootingDistance                  int16s
      223   DLODataLength                        no
      224   DLOInfo                              CanonVRD DLOInfo
      225   CameraRawColorTone                   int16s
      226   CameraRawSaturation                  int16s
      227   CameraRawContrast                    int16s
      228   CameraRawLinear                      int16s
      229   CameraRawSharpness                   int16s
      230   CameraRawHighlightPoint              int16s
      231   CameraRawShadowPoint                 int16s
      232   CameraRawOutputHighlightPoint        int16s
      233   CameraRawOutputShadowPoint           int16s
```

CanonVRD DLOInfo Tags

Tags added when DLO (Digital Lens Optimizer) is on.

```
   Index2   Tag Name                            Writable
   ------   --------                            --------
        4   DLOSettingApplied                   int16s
        5   DLOVersion                          string[10]
       10   DLOData                             no
```

CanonVRD IHL Tags

```
   Tag ID   Tag Name                            Writable
   ------   --------                            --------
   0x0001   IHL_EXIF                            EXIF
            IHL_EXIF?                           no
   0x0003   ThumbnailImage                      no
   0x0004   PreviewImage                        no
   0x0005   RawCodecVersion                     no
   0x0006   CRCDevelParams?                     no
```

CanonVRD Edit4 Tags

Canon DPP version 4 edit information.

```
   Index    Tag Name                            Writable
   -----    --------                            --------
       0     DR4                                CanonVRD DR4
```

CanonVRD DR4 Tags

Tags written by Canon DPP version 4 in CanonVRD trailers and DR4 files.
Each tag has three associated flag words which are stored with the
directory entry, some of which are extracted as a separate tag,
indicated in the table below by a decimal appended to the tag ID (.0,
.1 or .2).

```
   Tag ID      Tag Name                         Writable
   ------      --------                         --------
   'header'    DR4Header                        CanonVRD DR4Header
   0x10002     Rotation                         yes
   0x10003     AngleAdj                         yes
   0x10021     CustomPictureStyle               yes
   0x10100     Rating                           yes
   0x10101     CheckMark                        yes
   0x10200     WorkColorSpace                   yes
```

0x20001	RawBrightnessAdj	yes
0x20101	WhiteBalanceAdj	yes
0x20102	WBAdjColorTemp	yes
0x20105	WBAdjMagentaGreen	yes
0x20106	WBAdjBlueAmber	yes
0x20125	WBAdjRGGBLevels	yes
0x20200	GammaLinear	yes
0x20301	PictureStyle	yes
0x20303	ContrastAdj	yes
0x20304	ColorToneAdj	yes
0x20305	ColorSaturationAdj	yes
0x20306	MonochromeToningEffect	yes
0x20307	MonochromeFilterEffect	yes
0x20308	UnsharpMaskStrength	yes
0x20309	UnsharpMaskFineness	yes
0x2030a	UnsharpMaskThreshold	yes
0x2030b	ShadowAdj	yes
0x2030c	HighlightAdj	yes
0x20310	SharpnessAdj	yes
0x20310.0	SharpnessAdjOn	yes
0x20311	SharpnessStrength	yes
0x20400	ToneCurve	CanonVRD ToneCurve
0x20400.1	ToneCurveOriginal	yes
0x20410	ToneCurveBrightness	yes
0x20411	ToneCurveContrast	yes
0x20500	AutoLightingOptimizer	yes
0x20500.0	AutoLightingOptimizerOn	yes
0x20600	LuminanceNoiseReduction	yes
0x20601	ChrominanceNoiseReduction	yes
0x20670	ColorMoireReduction	yes
0x20670.0	ColorMoireReductionOn	yes
0x20701	ShootingDistance	yes
0x20702	PeripheralIllumination	yes
0x20702.0	PeripheralIlluminationOn	yes
0x20703	ChromaticAberration	yes
0x20703.0	ChromaticAberrationOn	yes
0x20704	ColorBlurOn	yes
0x20705	DistortionCorrection	yes
0x20705.0	DistortionCorrectionOn	yes
0x20706	DLOSetting	yes
0x20706.0	DLOOn	yes
0x20707	ChromaticAberrationRed	yes
0x20708	ChromaticAberrationBlue	yes
0x20709	DistortionEffect	yes
0x2070b	DiffractionCorrectionOn	yes
0x20900	ColorHue	yes
0x20901	SaturationAdj	yes
0x20910	RedHSL	yes
0x20911	OrangeHSL	yes
0x20912	YellowHSL	yes
0x20913	GreenHSL	yes
0x20914	AquaHSL	yes
0x20915	BlueHSL	yes
0x20916	PurpleHSL	yes
0x20917	MagentaHSL	yes
0x20a00	GammaInfo	CanonVRD GammaInfo
0x20b10	DPRAWMicroadjustBackFront	yes
0x20b12	DPRAWMicroadjustStrength	yes
0x20b20	DPRAWBokehShift	yes
0x20b21	DPRAWBokehShiftArea	yes
0x20b30	DPRAWGhostingReductionArea	yes
0x30101	CropAspectRatio	yes
0x30102	CropAspectRatioCustom	yes
0xf0100	CropInfo	CanonVRD CropInfo
0xf0500	CustomPictureStyleData	yes
0xf0510	StampInfo	CanonVRD StampInfo
0xf0511	DustInfo	CanonVRD DustInfo
0xf0512	LensFocalLength	yes

CanonVRD DR4Header Tags

Index4	Tag Name	Writable
3	DR4CameraModel	int32u

CanonVRD ToneCurve Tags

Index4	Tag Name	Writable
0	ToneCurveColorSpace	int32u
1	ToneCurveShape	int32u
3	ToneCurveInputRange	int32u[2]
5	ToneCurveOutputRange	int32u[2]
7	RGBCurvePoints	int32u[21]
10	ToneCurveX	int32u
11	ToneCurveY	int32u
45	RedCurvePoints	int32u[21]
83	GreenCurvePoints	int32u[21]
121	BlueCurvePoints	int32u[21]

CanonVRD GammaInfo Tags

Index8	Tag Name	Writable
2	GammaContrast	double
3	GammaColorTone	double
4	GammaSaturation	double
5	GammaUnsharpMaskStrength	double
6	GammaUnsharpMaskFineness	double
7	GammaUnsharpMaskThreshold	double
8	GammaSharpnessStrength	double
9	GammaShadow	double
10	GammaHighlight	double
12	GammaBlackPoint	double
13	GammaWhitePoint	double
14	GammaMidPoint	double
15	GammaCurveOutputRange	double[2]

CanonVRD CropInfo Tags

Index4	Tag Name	Writable
0	CropActive	int32s
1	CropRotatedOriginalWidth	int32s
2	CropRotatedOriginalHeight	int32s
3	CropX	int32s
4	CropY	int32s
5	CropWidth	int32s
6	CropHeight	int32s
7	CropRotation	int32s
8	CropAngle	double
10	CropOriginalWidth	int32s
11	CropOriginalHeight	int32s

CanonVRD StampInfo Tags

Index4	Tag Name	Writable
2	StampToolCount	no

CanonVRD DustInfo Tags

Index4	Tag Name	Writable
2	DustDeleteApplied	no

Casio Tags

Tag ID	Tag Name	Writable
0x0001	RecordingMode	int16u

```
0x0002    Quality                           int16u
0x0003    FocusMode                         int16u
0x0004    FlashMode                         int16u
0x0005    FlashIntensity                    int16u
0x0006    ObjectDistance                    int32u
0x0007    WhiteBalance                      int16u
0x000a    DigitalZoom                       int32u
0x000b    Sharpness                         int16u
0x000c    Contrast                          int16u
0x000d    Saturation                        int16u
0x0014    ISO                               int16u
0x0015    FirmwareDate                      string[18]
0x0016    Enhancement                       int16u
0x0017    ColorFilter                       int16u
0x0018    AFPoint                           int16u
0x0019    FlashIntensity                    int16u
0x0e00    PrintIM                           PrintIM
```

Casio Type2 Tags

```
Tag ID    Tag Name                          Writable
------    --------                          --------
0x0002    PreviewImageSize                  int16u[2]
0x0003    PreviewImageLength                int32u*
0x0004    PreviewImageStart                 int32u*
0x0008    QualityMode                       int16u
0x0009    CasioImageSize                    int16u
0x000d    FocusMode                         int16u
0x0014    ISO                               int16u
0x0019    WhiteBalance                      int16u
0x001d    FocalLength                       rational64u
0x001f    Saturation                        int16u
0x0020    Contrast                          int16u
0x0021    Sharpness                         int16u
0x0e00    PrintIM                           PrintIM
0x2000    PreviewImage                      undef
0x2001    FirmwareDate                      string[18]
0x2011    WhiteBalanceBias                  int16u[2]
0x2012    WhiteBalance                      int16u
0x2021    AFPointPosition                   int16u[4]~
0x2022    ObjectDistance                    int32u
0x2034    FlashDistance                     int16u
0x2076    SpecialEffectMode                 int8u[3]
0x2089    FaceInfo1                         Casio FaceInfo1
          FaceInfo2                         Casio FaceInfo2
          FaceInfoUnknown?                  yes
0x211c    FacesDetected                     int8u
0x3000    RecordMode                        int16u
0x3001    ReleaseMode                       int16u
0x3002    Quality                           int16u
0x3003    FocusMode                         int16u
0x3006    HometownCity                      string
0x3007    BestShotMode                      int16u
0x3008    AutoISO                           int16u
0x3009    AFMode                            int16u
0x3011    Sharpness                         undef[2]
0x3012    Contrast                          undef[2]
0x3013    Saturation                        undef[2]
0x3014    ISO                               int16u
0x3015    ColorMode                         int16u
0x3016    Enhancement                       int16u
0x3017    ColorFilter                       int16u
0x301b    ArtMode                           int16u
0x301c    SequenceNumber                    int16u
0x301d    BracketSequence                   int16u[2]
0x3020    ImageStabilization                int16u
0x302a    LightingMode                      int16u
0x302b    PortraitRefiner                   int16u
0x3030    SpecialEffectLevel                int16u
0x3031    SpecialEffectSetting              int16u
```

```
0x3103    DriveMode                             int16u
0x310b    ArtModeParameters                     int8u[3]
0x4001    CaptureFrameRate                      int16u[n]
0x4003    VideoQuality                          int16u
```

Casio FaceInfo1 Tags

Face-detect tags extracted from models such as the EX-H5.

Index1	Tag Name	Writable
0	FacesDetected	int8u
1	FaceDetectFrameSize	int16u[2]
13	Face1Position	int16u[4]
124	Face2Position	int16u[4]
235	Face3Position	int16u[4]
346	Face4Position	int16u[4]
457	Face5Position	int16u[4]
568	Face6Position	int16u[4]
679	Face7Position	int16u[4]
790	Face8Position	int16u[4]
901	Face9Position	int16u[4]
1012	Face10Position	int16u[4]

Casio FaceInfo2 Tags

Face-detect tags extracted from models such as the EX-H20G and
EX-ZR100.

Index1	Tag Name	Writable
2	FacesDetected	int8u
4	FaceDetectFrameSize	int16u[2]
8	FaceOrientation	int8u
24	Face1Position	int16u[4]
76	Face2Position	int16u[4]
128	Face3Position	int16u[4]
180	Face4Position	int16u[4]
232	Face5Position	int16u[4]
284	Face6Position	int16u[4]
336	Face7Position	int16u[4]
388	Face8Position	int16u[4]
440	Face9Position	int16u[4]
492	Face10Position	int16u[4]

Casio QVCI Tags

This information is found in the APP1 QVCI segment of JPEG images from
the Casio QV-7000SX.

Index1	Tag Name	Writable
44	CasioQuality	no
55	FocalRange?	no
77	DateTimeOriginal	no
98	ModelType	no
114	ManufactureIndex	no
124	ManufactureCode	no

Casio AVI Tags

This information is found in Casio GV-10 AVI videos.

Index1	Tag Name	Writable
0	Software	no

DJI Tags
    This table lists tags found in the maker notes of images from some DJI
    Phantom drones.

```
Tag ID     Tag Name                       Writable
------     --------                       --------
0x0001     Make                           string
0x0003     SpeedX                         float
0x0004     SpeedY                         float
0x0005     SpeedZ                         float
0x0006     Pitch                          float
0x0007     Yaw                            float
0x0008     Roll                           float
0x0009     CameraPitch                    float
0x000a     CameraYaw                      float
0x000b     CameraRoll                     float
```

DJI XMP Tags

XMP tags used by DJI for images from drones.

These tags belong to the ExifTool XMP-drone-dji family 1 group.

```
Tag Name                       Writable
--------                       --------
AbsoluteAltitude               real
CalibratedFocalLength          real
CalibratedOpticalCenterX       real
CalibratedOpticalCenterY       real
CamReverse                     string
DewarpData                     string
DewarpFlag                     string
FlightPitchDegree              real
FlightRollDegree               real
FlightXSpeed                   real
FlightYSpeed                   real
FlightYawDegree                real
FlightZSpeed                   real
GPSLatitude                    real/
GPSLongitude                   real/
GPSLongtitude                  real/
GimbalPitchDegree              real
GimbalReverse                  string
GimbalRollDegree               real
GimbalYawDegree                real
Latitude                       real
Longitude                      real
RelativeAltitude               real
RtkFlag                        string
RtkStdHgt                      real
RtkStdLat                      real
RtkStdLon                      real
SelfData                       string
```

DJI Info Tags

Tags written by some DJI drones.

```
Tag ID                 Tag Name                       Writable
------                 --------                       --------
'FlightDegree(Y,P,R)'  FlightDegree                   no
'FlightSpeed(X,Y,Z)'   FlightSpeed                    no
'GimbalDegree(Y,P,R)'  GimbalDegree                   no
'adj_dbg_info'         ADJDebugInfo                   no
'ae_dbg_info'          AEDebugInfo                    no
'ae_histogram_info'    AEHistogramInfo                no
'ae_liveview_histogram_info'
                       AELiveViewHistogramInfo        no
'ae_liveview_local_histogram'
                       AELiveViewLocalHistogram       no
'ae_local_histogram'   AELocalHistogram               no
'af_dbg_info'          AFDebugInfo                    no
'awb_dbg_info'         AWBDebugInfo                   no
```

```
'hiso'              Histogram              no
'hyperlapse_dbg_info' HyperlapsDebugInfo   no
'sensor_id'         SensorID               no
'xidiri'            Xidiri                 no
```

DJI ThermalParams Tags

Thermal parameters extracted from APP4 of DJI RJPEG files from the
ZH20T.

Index1	Tag Name	Writable
36	K1	no
40	K2	no
44	K3	no
48	K4	no
52	KF	no
56	B1	no
60	B2	no
68	ObjectDistance	no
70	RelativeHumidity	no
72	Emissivity	no
74	Reflection	no
76	AmbientTemperature	no
80	D2	no
84	KJ	no
86	DB	no
88	KK	no

DJI ThermalParams2 Tags

Thermal parameters extracted from APP4 of DJI M3T RJPEG files.

Index1	Tag Name	Writable
0	AmbientTemperature	no
4	ObjectDistance	no
8	Emissivity	no
12	RelativeHumidity	no
16	ReflectedTemperature	no
101	IDString	no

DJI ThermalParams3 Tags

Thermal parameters extracted from APP4 of some DJI RJPEG files.

Index1	Tag Name	Writable
4	RelativeHumidity	no
6	ObjectDistance	no
8	Emissivity	no
10	ReflectedTemperature	no

DJI Protobuf Tags

Tags found in protobuf-format DJI djmd and dbgi timed metadata. The
known tags listed below are extracted by default, but unknown djmd tags
may be extracted as well by setting the Unknown option to 1, or 2 to
also extract unknown dbgi debug tags. Tag ID's are composed of the
corresponding .proto file name combined with the hierarchical protobuf
field numbers.

ExifTool currently extracts timed GPS plus a few other tags from DJI
devices which use the following protocols: dvtm_AVATA2.proto (Avata
2), dvtm_ac203.proto (Osmo Action 4), dvtm_ac204.proto (Osmo Action 5),
dvtm_wm265e.proto (Mavic 3), dvtm_pm320.proto (Matrice 30) and
dvtm_pm320.proto (Mini 4 Pro).

Note that with the protobuf format, numerical tags missing from the
output for a given protocol should be considered to have the default

value of 0.

Tag ID	Tag Name	Writable
'Protocol'	Protocol	no
'dvtm_AVATA2_1-1-5'	SerialNumber	no
'dvtm_AVATA2_1-1-10'	Model	no
'dvtm_AVATA2_2-2-3-1'	SerialNumber2	no
'dvtm_AVATA2_2-3'	FrameInfo	DJI FrameInfo
'dvtm_AVATA2_3-1-2'	TimeStamp	no
'dvtm_AVATA2_3-2-2-1'	ISO	no
'dvtm_AVATA2_3-2-4-1'	ShutterSpeed	no
'dvtm_AVATA2_3-2-6-1'	ColorTemperature	no
'dvtm_AVATA2_3-2-10-1'	FNumber	no
'dvtm_AVATA2_3-4-3'	DroneInfo	DJI DroneInfo
'dvtm_AVATA2_3-4-4-1'	GPSInfo	DJI GPSInfo
'dvtm_AVATA2_3-4-4-2'	AbsoluteAltitude	no
'dvtm_AVATA2_3-4-5-1'	RelativeAltitude	no
'dvtm_Mini4_Pro_1-1-5'	SerialNumber	no
'dvtm_Mini4_Pro_1-1-10'	Model	no
'dvtm_Mini4_Pro_2-3'	FrameInfo	DJI FrameInfo
'dvtm_Mini4_Pro_3-2-7-1'	ISO	no
'dvtm_Mini4_Pro_3-3-3'	DroneInfo	DJI DroneInfo
'dvtm_Mini4_Pro_3-3-4-1'	GPSInfo	DJI GPSInfo
'dvtm_Mini4_Pro_3-3-4-2'	AbsoluteAltitude	no
'dvtm_Mini4_Pro_3-3-5-1'	RelativeAltitude	no
'dvtm_Mini4_Pro_3-4-3'	GimbalInfo	DJI GimbalInfo
'dvtm_Mini4_Pro_3-2-10-1'	ShutterSpeed	no
'dvtm_Mini4_Pro_3-2-11-1'	FNumber	no
'dvtm_Mini4_Pro_3-2-32-1'	ColorTemperature	no
'dvtm_ac203_1-1-5'	SerialNumber	no
'dvtm_ac203_1-1-10'	Model	no
'dvtm_ac203_2-3'	FrameInfo	DJI FrameInfo
'dvtm_ac203_3-2-2-1'	ISO	no
'dvtm_ac203_3-2-4-1'	ShutterSpeed	no
'dvtm_ac203_3-2-6-1'	ColorTemperature	no
'dvtm_ac203_3-2-10-2'	AccelerometerX	no
'dvtm_ac203_3-2-10-3'	AccelerometerY	no
'dvtm_ac203_3-2-10-4'	AccelerometerZ	no
'dvtm_ac203_3-4-2-1'	GPSInfo	DJI GPSInfo
'dvtm_ac203_3-4-2-2'	GPSAltitude	no
'dvtm_ac203_3-4-2-6-1'	GPSDateTime	no
'dvtm_ac204_1-1-5'	SerialNumber	no
'dvtm_ac204_1-1-10'	Model	no
'dvtm_ac204_2-3'	FrameInfo	DJI FrameInfo
'dvtm_ac204_3-2-4-1'	ShutterSpeed	no
'dvtm_ac204_3-2-6-1'	ColorTemperature	no
'dvtm_ac204_3-2-10-2'	AccelerometerX	no
'dvtm_ac204_3-2-10-3'	AccelerometerY	no
'dvtm_ac204_3-2-10-4'	AccelerometerZ	no
'dvtm_ac204_3-4-2-1'	GPSInfo	DJI GPSInfo
'dvtm_ac204_3-4-2-2'	GPSAltitude	no
'dvtm_ac204_3-4-2-6-1'	GPSDateTime	no
'dvtm_pm320_1-1-5'	SerialNumber	no
'dvtm_pm320_1-1-10'	Model	no
'dvtm_pm320_2-2'	FrameInfo	DJI FrameInfo
'dvtm_pm320_3-2-2-1'	ISO	no
'dvtm_pm320_3-2-3-1'	ShutterSpeed	no
'dvtm_pm320_3-2-4-1'	FNumber	no
'dvtm_pm320_3-2-6-1'	DigitalZoom	no
'dvtm_pm320_3-3-3'	DroneInfo	DJI DroneInfo
'dvtm_pm320_3-3-4-1'	GPSInfo	DJI GPSInfo
'dvtm_pm320_3-3-4-2'	AbsoluteAltitude	no
'dvtm_pm320_3-3-5-1'	RelativeAltitude	no
'dvtm_pm320_3-4-3'	GimbalInfo	DJI GimbalInfo
'dvtm_wm265e_1-1-5'	SerialNumber	no
'dvtm_wm265e_1-1-10'	Model	no
'dvtm_wm265e_2-2'	FrameInfo	DJI FrameInfo
'dvtm_wm265e_3-2-2-1'	ISO	no
'dvtm_wm265e_3-2-3-1'	ShutterSpeed	no

```
      'dvtm_wm265e_3-2-6-1'    DigitalZoom           no
      'dvtm_wm265e_3-3-3'      DroneInfo             DJI DroneInfo
      'dvtm_wm265e_3-3-4-1'    GPSInfo               DJI GPSInfo
      'dvtm_wm265e_3-3-4-2'    AbsoluteAltitude      no
      'dvtm_wm265e_3-3-5-1'    RelativeAltitude      no
      'dvtm_wm265e_3-4-3'      GimbalInfo            DJI GimbalInfo
```

DJI FrameInfo Tags

```
    Field #   Tag Name                            Writable
    -------   --------                            --------
         1    FrameWidth                          no
         2    FrameHeight                         no
         3    FrameRate                           no
```

DJI DroneInfo Tags

```
    Field #   Tag Name                            Writable
    -------   --------                            --------
         1    DroneRoll                           no
         2    DronePitch                          no
         3    DroneYaw                            no
```

DJI GPSInfo Tags

```
    Field #   Tag Name                            Writable
    -------   --------                            --------
         1    CoordinateUnits                     no
         2    GPSLatitude                         no
         3    GPSLongitude                        no
```

DJI GimbalInfo Tags

```
    Field #   Tag Name                            Writable
    -------   --------                            --------
         1    GimbalPitch                         no
         2    GimbalRoll                          no
         3    GimbalYaw                           no
```

DJI Glamour Tags

Glamour settings used by some DJI models.

```
    Tag ID              Tag Name          Writable
    ------              --------          --------
    'acne_spot_removal' AcneSpotRemoval   no
    'beauty_enable'     BeautyEnable      no
    'blush'             Blush             no
    'dark_circle'       DarkCircle        no
    'eye_enlarge'       EyeEnlarge        no
    'eyebrows'          Eyebrows          no
    'face_slimming'     FaceSlimming      no
    'head_shrinking'    HeadShrinking     no
    'leg_longer'        LegLonger         no
    'lipstick'          Lipstick          no
    'mouth_beautify'    MouthModify       no
    'nose_slimming'     NoseSlimming      no
    'smoother'          Smoother          no
    'teeth_whitening'   TeethWhitening    no
    'whitening'         Whitening         no
```

FLIR Tags
Information extracted from the maker notes of JPEG images from thermal
imaging cameras by FLIR Systems Inc.

```
    Tag ID   Tag Name                            Writable
    ------   --------                            --------
    0x0001   ImageTemperatureMax                 rational64u
    0x0002   ImageTemperatureMin                 rational64u
    0x0003   Emissivity                          rational64u
```

```
   0x0004    UnknownTemperature?                     rational64u
   0x0005    CameraTemperatureRangeMax?              rational64u
   0x0006    CameraTemperatureRangeMin?              rational64u
```

FLIR FFF Tags

Information extracted from FLIR FFF images and the APP1 FLIR segment of
JPEG images. These tags may also be extracted from the first frame of
an FLIR SEQ file, or all frames if the ExtractEmbedded option is used.
Setting ExtractEmbedded to 2 also the raw thermal data from all frames.

```
   Tag ID         Tag Name                     Writable
   ------         --------                     --------
   '_header'      FFFHeader                    FLIR Header
   0x0001         RawData                      FLIR RawData
   0x0005         GainDeadData                 FLIR GainDeadData
   0x0006         CoarseData                   FLIR CoarseData
   0x000e         EmbeddedImage                FLIR EmbeddedImage
   0x0020         CameraInfo                   FLIR CameraInfo
   0x0021         MeasurementInfo              FLIR MeasInfo
   0x0022         PaletteInfo                  FLIR PaletteInfo
   0x0023         TextInfo                     FLIR TextInfo
   0x0024         EmbeddedAudioFile            no
   0x0028         PaintData                    FLIR PaintData
   0x002a         PiP                          FLIR PiP
   0x002b         GPSInfo                      FLIR GPSInfo
   0x002c         MeterLink                    FLIR MeterLink
   0x002e         ParameterInfo                FLIR ParamInfo
```

FLIR Header Tags

Tags extracted from the FLIR FFF/AFF header.

```
   Index1    Tag Name                     Writable
   ------    --------                     --------
      4      CreatorSoftware              no
```

FLIR RawData Tags

The thermal image data may be stored either as raw data, or in PNG
format. If stored as raw data, ExifTool adds a TIFF header to allow
the data to be viewed as a TIFF image. If stored in PNG format, the
PNG image is extracted as-is. Note that most FLIR cameras using the
PNG format seem to write the 16-bit raw image data in the wrong byte
order.

```
   Index2    Tag Name                     Writable
   ------    --------                     --------
       1     RawThermalImageWidth         no
       2     RawThermalImageHeight        no
      16     RawThermalImageType          no
    16.1     RawThermalImage              no
```

FLIR GainDeadData Tags

Information found in FFF-format .GAN calibration image files.

```
   Index2    Tag Name                     Writable
   ------    --------                     --------
       1     GainDeadMapImageWidth        no
       2     GainDeadMapImageHeight       no
      16     GainDeadMapImageType         no
    16.1     GainDeadMapImage             no
```

FLIR CoarseData Tags

Information found in FFF-format .CRS correction image files.

```
   Index2    Tag Name                     Writable
   ------    --------                     --------
```

```
    1    CoarseMapImageWidth                     no
    2    CoarseMapImageHeight                    no
   16    CoarseMapImageType                      no
 16.1    CoarseMapImage                          no
```

FLIR EmbeddedImage Tags

```
  Index2   Tag Name                            Writable
  ------   --------                            --------
    1    EmbeddedImageWidth                      no
    2    EmbeddedImageHeight                     no
   16    EmbeddedImageType                       no
 16.1    EmbeddedImage                           no
```

FLIR CameraInfo Tags

FLIR camera information. The Planck tags are variables used in the
temperature calculation. See
<https://exiftool.org/forum/index.php?topic=4898.msg23972#msg23972> for
details.

```
  Index1   Tag Name                            Writable
  ------   --------                            --------
   32    Emissivity                             no
   36    ObjectDistance                         no
   40    ReflectedApparentTemperature           no
   44    AtmosphericTemperature                 no
   48    IRWindowTemperature                    no
   52    IRWindowTransmission                   no
   60    RelativeHumidity                       no
   88    PlanckR1                               no
   92    PlanckB                                no
   96    PlanckF                                no
  112    AtmosphericTransAlpha1                 no
  116    AtmosphericTransAlpha2                 no
  120    AtmosphericTransBeta1                  no
  124    AtmosphericTransBeta2                  no
  128    AtmosphericTransX                      no
  144    CameraTemperatureRangeMax              no
  148    CameraTemperatureRangeMin              no
  152    CameraTemperatureMaxClip               no
  156    CameraTemperatureMinClip               no
  160    CameraTemperatureMaxWarn               no
  164    CameraTemperatureMinWarn               no
  168    CameraTemperatureMaxSaturated          no
  172    CameraTemperatureMinSaturated          no
  212    CameraModel                            no
  244    CameraPartNumber                       no
  260    CameraSerialNumber                     no
  276    CameraSoftware                         no
  368    LensModel                              no
  400    LensPartNumber                         no
  416    LensSerialNumber                       no
  436    FieldOfView                            no
  492    FilterModel                            no
  508    FilterPartNumber                       no
  540    FilterSerialNumber                     no
  776    PlanckO                                no
  780    PlanckR2                               no
  784    RawValueRangeMin                       no
  786    RawValueRangeMax                       no
  824    RawValueMedian                         no
  828    RawValueRange                          no
  900    DateTimeOriginal                       no
  912    FocusStepCount                         no
 1116    FocusDistance                          no
 1124    FrameRate                              no
```

FLIR MeasInfo Tags

Tags listed below are only for the first measurement tool, however
multiple measurements may be added, and information is extracted for
all of them. Tags for subsequent measurements are generated as
required with the prefixes "Meas2", "Meas3", etc.

```
  Tag Name                            Writable
  --------                            --------
  Meas1Label                          no
  Meas1Params                         no
  Meas1Type                           no
```

FLIR PaletteInfo Tags

```
  Index1   Tag Name                   Writable
  ------   --------                   --------
       0   PaletteColors              no
       6   AboveColor                 no
       9   BelowColor                 no
      12   OverflowColor              no
      15   UnderflowColor             no
      18   Isotherm1Color             no
      21   Isotherm2Color             no
      26   PaletteMethod              no
      27   PaletteStretch             no
      48   PaletteFileName            no
      80   PaletteName                no
     112   Palette                    no
```

FLIR TextInfo Tags

```
  Tag Name                            Writable
  --------                            --------
  Label0                              no
  Label1                              no
  Label2                              no
  Label3                              no
  Value0                              no
  Value1                              no
  Value2                              no
  Value3                              no
```

FLIR PaintData Tags

Information generated by FLIR Tools "Paint colors" tool.

```
  Index2   Tag Name                   Writable
  ------   --------                   --------
       5   PaintImageWidth            no
       6   PaintImageHeight           no
      20   PaintImageType             no
    20.1   PaintImage                 no
```

FLIR PiP Tags

FLIR Picture in Picture tags.

```
  Index2   Tag Name                   Writable
  ------   --------                   --------
       0   Real2IR                    no
       2   OffsetX                    no
       3   OffsetY                    no
       4   PiPX1                      no
       5   PiPX2                      no
       6   PiPY1                      no
       7   PiPY2                      no
```

FLIR GPSInfo Tags

```
  Index1   Tag Name                            Writable
  ------   --------                            --------
```

```
    0    GPSValid                              no
    4    GPSVersionID                          no
    8    GPSLatitudeRef                        no
   10    GPSLongitudeRef                       no
   16    GPSLatitude                           no
   24    GPSLongitude                          no
   32    GPSAltitude                           no
   64    GPSDOP                                no
   68    GPSSpeedRef                           no
   70    GPSTrackRef                           no
   72    GPSImgDirectionRef                    no
   76    GPSSpeed                              no
   80    GPSTrack                              no
   84    GPSImgDirection                       no
   88    GPSMapDatum                           no
```

FLIR MeterLink Tags

Tags containing Meterlink humidity meter information.

Index1	Tag Name	Writable
26	Reading1Units	no
28	Reading1Description	no
32	Reading1Device	no
96	Reading1Value	no
126	Reading2Units	no
128	Reading2Description	no
132	Reading2Device	no
196	Reading2Value	no
226	Reading3Units	no
228	Reading3Description	no
232	Reading3Device	no
296	Reading3Value	no
326	Reading4Units	no
328	Reading4Description	no
332	Reading4Device	no
396	Reading4Value	no

FLIR ParamInfo Tags

Tag Name	Writable
DateTimeGenerated	no
Param0	no
Param1	no
Param2	no
Param3	no

FLIR UserData Tags

Tags written by some FLIR cameras in a top-level (!) "udta" atom of MP4
videos.

Tag ID	Tag Name	Writable
'uuid'	FLIR_Parts	FLIR Parts
	FLIR_Serial	FLIR SerialNums
	FLIR_Params	FLIR Params
	FLIR_UnknownUUID	FLIR UnknownUUID
	FLIR_GPS	FLIR GPS_UUID
	FLIR_MoreInfo	FLIR MoreInfo
	SoftwareComponents?	no
	FLIR_Unknown?	no
	Units	no+
	ThumbnailImage	no

FLIR Parts Tags

Tags extracted from the "uuid" box with ID

43c3993b0f94424b82056b66513f485d in FLIR MP4 videos.

Index1	Tag Name	Writable
4	BAHPVer	no
	BALPVer	no
	Battery	no
	BAVPVer	no
	CamCore	no
	DetectorBoard	no
	Detector	no
	GIDCVer	no
	GIDPVer	no
	GIPC_CPLD	no
	GIPCVer	no
	GIXIVer	no
	MainBoard	no
	Optics	no
	PartNumber	no

FLIR SerialNums Tags

Tags extracted from the "uuid" box with ID
57f5b93e51e448afa0d9c3ef1b37f712 in FLIR MP4 videos.

Index1	Tag Name	Writable
12	UnknownSerial1?	no
45	UnknownSerial2?	no
78	UnknownSerial3?	no
111	UnknownSerial4?	no
123	UnknownNumber?	no
126	CameraSerialNumber	no

FLIR Params Tags

Tags extracted from the "uuid" box with ID
41e5dcf9e80a41ceadfe7f0c58082c19 in FLIR MP4 videos.

Index4	Tag Name	Writable
1	ReflectedApparentTemperature	no
2	AtmosphericTemperature	no
3	Emissivity	no
4	ObjectDistance	no
5	RelativeHumidity	no
6	EstimatedAtmosphericTrans	no
7	IRWindowTemperature	no
8	IRWindowTransmission	no

FLIR UnknownUUID Tags

Tags extracted from the "uuid" box with ID
574520502cbb44adae5415e9b839d903 in FLIR MP4 videos.

Index4	Tag Name	Writable
[no tags known]		

FLIR GPS_UUID Tags

Tags extracted from the "uuid" box with ID
7f2e21008b464918afb1de709a74f6f5 in FLIR MP4 videos.

Index4	Tag Name	Writable
1	GPSLatitude	no
2	GPSLongitude	no
3	GPSAltitude	no

<u>FLIR</u> <u>MoreInfo</u> <u>Tags</u>

Tags extracted from the "uuid" box with ID
2b452fdc74354094baee22a6b23a7cf8 in FLIR MP4 videos.

```
  Index1   Tag Name                        Writable
  ------   --------                        --------
      5    LensModel                       no
     11    UnknownTemperature1?            no
     15    UnknownTemperature2?            no
```

<u>FLIR</u> <u>AFF</u> <u>Tags</u>

Tags extracted from FLIR "AFF" SEQ images.

```
  Tag ID      Tag Name                     Writable
  ------      --------                     --------
  '_header'   AFFHeader                    FLIR Header
  0x0001      AFF1                         FLIR AFF1
  0x0005      AFF5                         FLIR AFF5
```

<u>FLIR</u> <u>AFF1</u> <u>Tags</u>

```
  Index2   Tag Name                        Writable
  ------   --------                        --------
      1    SensorWidth                     no
      2    SensorHeight                    no
```

<u>FLIR</u> <u>AFF5</u> <u>Tags</u>

```
  Index2   Tag Name                        Writable
  ------   --------                        --------
     19    SensorWidth                     no
     20    SensorHeight                    no
```

<u>FLIR</u> <u>FPF</u> <u>Tags</u>

Tags extracted from FLIR Public image Format (FPF) files.

```
  Index1   Tag Name                        Writable
  ------   --------                        --------
     32    FPFVersion                      no
     36    ImageDataOffset                 no
     40    ImageType                       no
     42    ImagePixelFormat                no
     44    ImageWidth                      no
     46    ImageHeight                     no
     48    ExternalTriggerCount            no
     52    SequenceFrameNumber             no
    120    CameraModel                     no
    152    CameraPartNumber                no
    184    CameraSerialNumber              no
    216    CameraTemperatureRangeMin       no
    220    CameraTemperatureRangeMax       no
    224    LensModel                       no
    256    LensPartNumber                  no
    288    LensSerialNumber                no
    320    FilterModel                     no
    336    FilterPartNumber                no
    384    FilterSerialNumber              no
    480    Emissivity                      no
    484    ObjectDistance                  no
    488    ReflectedApparentTemperature    no
    492    AtmosphericTemperature          no
    496    RelativeHumidity                no
    500    ComputedAtmosphericTrans        no
    504    EstimatedAtmosphericTrans       no
    508    ReferenceTemperature            no
    512    IRWindowTemperature             no
    516    IRWindowTransmission            no
```

```
        584     DateTimeOriginal                        no
        676     CameraScaleMin                          no
        680     CameraScaleMax                          no
        684     CalculatedScaleMin                      no
        688     CalculatedScaleMax                      no
        692     ActualScaleMin                          no
        696     ActualScaleMax                          no
```

FujiFilm Tags
```
        Tag ID  Tag Name                                Writable
        ------  --------                                --------
        0x0000  Version                                 undef
        0x0010  InternalSerialNumber                    string
        0x1000  Quality                                 string
        0x1001  Sharpness                               int16u
        0x1002  WhiteBalance                            int16u
        0x1003  Saturation                              int16u
        0x1004  Contrast                                int16u
        0x1005  ColorTemperature                        int16u
        0x1006  Contrast                                int16u
        0x100a  WhiteBalanceFineTune                    int32s[2]
        0x100b  NoiseReduction                          int16u
        0x100e  NoiseReduction                          int16u
        0x100f  Clarity                                 int32s
        0x1010  FujiFlashMode                           int16u
        0x1011  FlashExposureComp                       rational64s
        0x1020  Macro                                   int16u
        0x1021  FocusMode                               int16u
        0x1022  AFMode                                  int16u
        0x1023  FocusPixel                              int16u[2]
        0x102b  PrioritySettings                        FujiFilm PrioritySettings
        0x102d  FocusSettings                           FujiFilm FocusSettings
        0x102e  AFCSettings                             FujiFilm AFCSettings
        0x1030  SlowSync                                int16u
        0x1031  PictureMode                             int16u
        0x1032  ExposureCount                           int16u
        0x1033  EXRAuto                                 int16u
        0x1034  EXRMode                                 int16u
        0x1040  ShadowTone                              int32s
        0x1041  HighlightTone                           int32s
        0x1044  DigitalZoom                             int32u
        0x1045  LensModulationOptimizer                 int32u
        0x1047  GrainEffectRoughness                    int32s
        0x1048  ColorChromeEffect                       int32s
        0x1049  BWAdjustment                            int8s
        0x104b  BWMagentaGreen                          int8s
        0x104c  GrainEffectSize                         int16u
        0x104d  CropMode                                int16u
        0x104e  ColorChromeFXBlue                       int32s
        0x1050  ShutterType                             int16u
        0x1051  CropFlag                                int8u
        0x1052  CropTopLeft                             int32u
        0x1053  CropSize                                int32u
        0x1100  AutoBracketing                          int16u
        0x1101  SequenceNumber                          int16u
        0x1103  DriveSettings                           FujiFilm DriveSettings
        0x1105  PixelShiftShots                         int16u
        0x1106  PixelShiftOffset                        rational64s[2]
        0x1153  PanoramaAngle                           int16u
        0x1154  PanoramaDirection                       int16u
        0x1201  AdvancedFilter                          int32u
        0x1210  ColorMode                               int16u
        0x1300  BlurWarning                             int16u
        0x1301  FocusWarning                            int16u
        0x1302  ExposureWarning                         int16u
        0x1304  GEImageSize                             string
        0x1400  DynamicRange                            int16u
        0x1401  FilmMode                                int16u
        0x1402  DynamicRangeSetting                     int16u
        0x1403  DevelopmentDynamicRange                 int16u
```

```
0x1404   MinFocalLength                     rational64s
0x1405   MaxFocalLength                     rational64s
0x1406   MaxApertureAtMinFocal              rational64s
0x1407   MaxApertureAtMaxFocal              rational64s
0x140b   AutoDynamicRange                   int16u
0x1422   ImageStabilization                 int16u[3]
0x1425   SceneRecognition                   int16u
0x1431   Rating                             int32u
0x1436   ImageGeneration                    int16u
0x1438   ImageCount                         int16u
0x1443   DRangePriority                     int16u
0x1444   DRangePriorityAuto                 int16u
0x1445   DRangePriorityFixed                int16u
0x1446   FlickerReduction                   int32u
0x1447   FujiModel                          string
0x1448   FujiModel2                         string
0x144d   RollAngle                          rational64s
0x3803   VideoRecordingMode                 int32u
0x3804   PeripheralLighting                 int16u
0x3806   VideoCompression                   int16u
0x3820   FrameRate                          int16u
0x3821   FrameWidth                         int16u
0x3822   FrameHeight                        int16u
0x3824   FullHDHighSpeedRec                 int32u
0x4005   FaceElementSelected                int16u[4]
0x4100   FacesDetected                      int16u
0x4103   FacePositions                      int16u[n]
0x4200   NumFaceElements                    int16u
0x4201   FaceElementTypes                   int8u[n]
0x4203   FaceElementPositions               int16u[n]
0x4282   FaceRecInfo                        FujiFilm FaceRecInfo
0x8000   FileSource                         string
0x8002   OrderNumber                        int32u
0x8003   FrameNumber                        int16u
0xb211   Parallax                           rational64s
```

FujiFilm PrioritySettings Tags

```
Index2   Tag Name                           Writable
------   --------                           --------
  0.1    AF-SPriority                       int16u & 0x0f
  0.2    AF-CPriority                       int16u & 0xf0
```

FujiFilm FocusSettings Tags

```
Index4   Tag Name                           Writable
------   --------                           --------
  0.1    FocusMode2                         int32u & 0x0f
  0.2    PreAF                              int32u & 0xf0
  0.3    AFAreaMode                         int32u & 0xf00
  0.4    AFAreaPointSize                    int32u & 0xf000
  0.5    AFAreaZoneSize                     int32u & 0xff0000
```

FujiFilm AFCSettings Tags

```
Index4   Tag Name                           Writable
------   --------                           --------
    0    AF-CSetting                        int32u
  0.1    AF-CTrackingSensitivity            int32u & 0x0f
  0.2    AF-CSpeedTrackingSensitivity       int32u & 0xf0
  0.3    AF-CZoneAreaSwitching              int32u & 0xf00
```

FujiFilm DriveSettings Tags

```
Index4   Tag Name                           Writable
------   --------                           --------
  0.1    DriveMode                          int32u & 0xff
  0.2    DriveSpeed                         int32u & 0xff000000
```

FujiFilm FaceRecInfo Tags

Face recognition information.

Tag Name	Writable
Face1Birthday	no
Face1Category	no
Face1Name	no
Face2Birthday	no
Face2Category	no
Face2Name	no
Face3Birthday	no
Face3Category	no
Face3Name	no
Face4Birthday	no
Face4Category	no
Face4Name	no
Face5Birthday	no
Face5Category	no
Face5Name	no
Face6Birthday	no
Face6Category	no
Face6Name	no
Face7Birthday	no
Face7Category	no
Face7Name	no
Face8Birthday	no
Face8Category	no
Face8Name	no

FujiFilm RAFHeader Tags

Tags extracted from the header of RAF images.

Index1	Tag Name	Writable
60	RAFVersion	no
108	RAFCompression	no

FujiFilm RAF Tags

FujiFilm RAF images contain meta information stored in a proprietary
FujiFilm RAF format, as well as EXIF information stored inside an
embedded JPEG preview image. The table below lists tags currently
decoded from the RAF-format information.

Tag ID	Tag Name	Writable
0x0100	RawImageFullSize	no
0x0110	RawImageCropTopLeft	no
0x0111	RawImageCroppedSize	no
0x0115	RawImageAspectRatio	no
0x0117	RawZoomActive	no
0x0118	RawZoomTopLeft	no
0x0119	RawZoomSize	no
0x0121	RawImageSize	no
0x0130	FujiLayout	no
0x0131	XTransLayout	no
0x2000	WB_GRGBLevelsAuto	no
0x2100	WB_GRGBLevelsDaylight	no
0x2200	WB_GRGBLevelsCloudy	no
0x2300	WB_GRGBLevelsDaylightFluor	no
0x2301	WB_GRGBLevelsDayWhiteFluor	no
0x2302	WB_GRGBLevelsWhiteFluorescent	no
0x2310	WB_GRGBLevelsWarmWhiteFluor	no
0x2311	WB_GRGBLevelsLivingRoomWarmWhiteFluor	no
0x2400	WB_GRGBLevelsTungsten	no
0x2ff0	WB_GRGBLevels	no
0x9200	RelativeExposure	no
0x9650	RawExposureBias	no

```
    0xc000  RAFData                              FujiFilm RAFData
```

FujiFilm RAFData Tags

Index1	Tag Name	Writable
0	RawImageWidth	no
4	RawImageWidth	no
	RawImageHeight	no
8	RawImageWidth	no
	RawImageHeight	no
12	RawImageHeight	no

FujiFilm IFD Tags

Tags found in the FujiIFD information of RAF images from some models.

Tag ID	Tag Name	Writable
0xf000	FujiIFD	FujiFilm IFD
0xf001	RawImageFullWidth	no
0xf002	RawImageFullHeight	no
0xf003	BitsPerSample	no
0xf007	StripOffsets	no
0xf008	StripByteCounts	no
0xf00a	BlackLevel	no
0xf00b	GeometricDistortionParams	no
0xf00c	WB_GRBLevelsStandard	no
0xf00d	WB_GRBLevelsAuto	no
0xf00e	WB_GRBLevels	no
0xf00f	ChromaticAberrationParams	no
0xf010	VignettingParams	no

FujiFilm MRAW Tags

Tags extracted from the M-RAW header of multi-image RAF files. The
family 1 group name for these tags is "M-RAW".

Tag ID	Tag Name	Writable
0x0001	RawImageNumber	no
0x0005	ExposureTime	no
0x0006	FNumber	no
0x0007	ISO	no

FujiFilm FFMV Tags

Information found in the FFMV atom of MOV videos.

Index1	Tag Name	Writable
0	MovieStreamName	no

FujiFilm MOV Tags

This information is found in MOV videos from some FujiFilm cameras.

Index1	Tag Name	Writable
0	Make	no
24	Model	no
46	ExposureTime	no
50	FNumber	no
58	ExposureCompensation	no

GE Tags
    This table lists tags found in the maker notes of some General Imaging
    camera models.

Tag ID	Tag Name	Writable

```
  ------   --------                              --------
  0x0202   Macro                                 int16u
  0x0207   GEModel                               string
  0x0300   GEMake                                string
```

GoPro Tags

    GoPro GPMF Tags

Tags extracted from the GPMF box of GoPro MP4 videos, the APP6 "GoPro"
segment of JPEG files, and from the "gpmd" timed metadata if the
ExtractEmbedded (-ee) option is enabled. Many more tags exist, but are
currently unknown and extracted only with the Unknown (-u) option.
Please let me know if you discover the meaning of any of these unknown
tags. See <https://github.com/gopro/gpmf-parser> for details about this
format.

```
  Tag ID   Tag Name                              Writable
  ------   --------                              --------
  'AALP'   AudioLevel                            no
  'ABSC'   AutoBoostScore                        no
  'ACCL'   Accelerometer                         no
  'ALLD'   AutoLowLightDuration                  no
  'APTO'   AudioProtuneOption                    no
  'ARUW'   AspectRatioUnwarped                   no
  'ARWA'   AspectRatioWarped                     no
  'ATTD'   Attitude                              no
  'ATTR'   AttitudeTarget                        no
  'AUBT'   AudioBlueTooth                        no
  'AUDO'   AudioSetting                          no
  'AUPT'   AutoProtune                           no
  'BITR'   BitrateSetting                        no
  'BPOS'   Controller?                           no
  'CASN'   CameraSerialNumber                    no
  'CDAT'   CreationDate                          no
  'CDTM'   CaptureDelayTimer                     no
  'CLDP'   ClassificationDataPresent             no
  'CORI'   CameraOrientation                     no
  'CPIN'   ChapterNumber                         no
  'CSEN'   CoyoteSense                           no
  'CTRL'   ControlLevel                          no
  'CYTS'   CoyoteStatus                          no
  'DEVC'   DeviceContainer                       GoPro GPMF
  'DUST'   DurationSetting                       no
  'DVID'   DeviceID?                             no
  'DVNM'   DeviceName                            no
  'DZMX'   DigitalZoomAmount                     no
  'DZOM'   DigitalZoomOn                         no
  'DZST'   DigitalZoom                           no
  'EISA'   ElectronicImageStabilization         no
  'EISE'   ElectronicStabilizationOn            no
  'EMPT'   Empty?                                no
  'ESCS'   EscapeStatus?                         no
  'EXPT'   ExposureType                          no
  'FACE'   FaceDetected                          no
  'FCNM'   FaceNumbers                           no
  'FMWR'   FirmwareVersion                       no
  'FWVS'   OtherFirmware                         no
  'GLPI'   GPSPos                                GoPro GLPI
  'GPRI'   GPSRaw?                               GoPro GPRI
  'GPS5'   GPSInfo                               GoPro GPS5
  'GPS9'   GPSInfo9                              GoPro GPS9
  'GPSA'   GPSAltitudeSystem                     no
  'GPSF'   GPSMeasureMode                        no
  'GPSP'   GPSHPositioningError                  no
  'GPSU'   GPSDateTime                           no
  'GRAV'   GravityVector                         no
  'GYRO'   Gyroscope                             no
  'HCLT'   HorizonControl                        no
  'HDRV'   HDRVideo                              no
  'HSGT'   HindsightSettings                     no
```

```
'HUES'   PrediminantHue                           no
'IORI'   ImageOrientation                         no
'ISOE'   ISOSpeeds                                no
'ISOG'   ImageSensorGain                          no
'KBAT'   BatteryStatus                            GoPro KBAT
'LNED'   LocalPositionNED                         no
'MAGN'   Magnetometer                             no
'MAPX'   MappingXCoefficients                     no
'MAPY'   MappingYCoefficients                     no
'MINF'   Model                                    no
'MMOD'   MediaMode                                no
'MTRX'   AccelerometerMatrix                      no
'MUID'   MediaUniqueID                            no
'MWET'   MicrophoneWet                            no
'MXCF'   MappingXMode                             no
'MYCF'   MappingYMode                             no
'ORDP'   OrientationDataPresent                   no
'OREN'   AutoRotation                             no
'ORIN'   InputOrientation                         no
'ORIO'   OutputOrientation                        no
'PHDR'   HDRSetting                               no
'PIMD'   ProtuneISOMode                           no
'PIMN'   AutoISOMin                               no
'PIMX'   AutoISOMax                               no
'POLY'   PolynomialCoefficients                   no
'PRES'   PhotoResolution                          no
'PRJT'   LensProjection                           no
'PRTN'   Protune                                  no
'PTCL'   ColorMode                                no
'PTEV'   ExposureCompensation                     no
'PTSH'   Sharpness                                no
'PTWB'   WhiteBalance                             no
'PWPR'   PowerProfile                             no
'PYCF'   PolynomialPower                          no
'RAMP'   SpeedRampSetting                         no
'RATE'   Rate                                     no
'RMRK'   Comments                                 no
'SCAL'   ScaleFactor?                             no
'SCAP'   ScheduleCapture                          no
'SCEN'   SceneClassification                      no
'SCPR'   ScaledPressure                           no
'SCTM'   ScheduleCaptureTime                      no
'SHUT'   ExposureTimes                            no
'SIMU'   ScaledIMU                                no
'SIUN'   SIUnits?                                 no
'SMTR'   SpotMeter                                no
'SROT'   SensorReadoutTime                        no
'STMP'   TimeStamp                                no
'STNM'   StreamName?                              no
'STRM'   NestedSignalStream                       GoPro GPMF
'SYST'   SystemTime                               no
'TMPC'   CameraTemperature                        no
'TSMP'   TotalSamples?                            no
'TYPE'   StructureType?                           no
'TZON'   TimeZone                                 no
'UNIF'   InputUniformity                          no
'UNIT'   Units?                                   no
'VERS'   MetadataVersion                          no
'VFOV'   FieldOfView                              no
'VFPS'   VideoFrameRate                           no
'VFRH'   VisualFlightRulesHUD                     no
'VRES'   VideoFrameSize                           no
'WBAL'   ColorTemperatures                        no
'WNDM'   WindProcessing                           no
'WRGB'   WhiteBalanceRGB                          no
'YAVG'   LumaAverage                              no
'ZFOV'   DiagonalFieldOfView                      no
'ZMPL'   ZoomScaleNormalization                   no
```

GoPro GLPI Tags

Index	Tag Name	Writable
0	GPSDateTime	no
1	GPSLatitude	no
2	GPSLongitude	no
3	GPSAltitude	no
5	GPSSpeedX	no
6	GPSSpeedY	no
7	GPSSpeedZ	no
8	GPSTrack	no

GoPro GPRI Tags

Index	Tag Name	Writable
0	GPSDateTimeRaw	no
1	GPSLatitudeRaw	no
2	GPSLongitudeRaw	no
3	GPSAltitudeRaw	no
6	GPSSpeedRaw	no
7	GPSTrackRaw	no

GoPro GPS5 Tags

Index	Tag Name	Writable
0	GPSLatitude	no
1	GPSLongitude	no
2	GPSAltitude	no
3	GPSSpeed	no
4	GPSSpeed3D	no

GoPro GPS9 Tags

Index	Tag Name	Writable
0	GPSLatitude	no
1	GPSLongitude	no
2	GPSAltitude	no
3	GPSSpeed	no
4	GPSSpeed3D	no
6	GPSDateTime	no
7	GPSDOP	no
8	GPSMeasureMode	no

GoPro KBAT Tags

Battery status information found in GoPro Karma videos.

Index	Tag Name	Writable
0	BatteryCurrent	no
1	BatteryCapacity	no
3	BatteryTemperature	no
4	BatteryVoltage1	no
5	BatteryVoltage2	no
6	BatteryVoltage3	no
7	BatteryVoltage4	no
8	BatteryTime	no
14	BatteryLevel	no

GoPro fdsc Tags

Tags extracted from the MP4 "fdsc" timed metadata when the
ExtractEmbedded (-ee) option is used.

Index1	Tag Name	Writable
8	FirmwareVersion	no

```
      23    SerialNumber                          no
      87    OtherSerialNumber                     no
     102    Model                                 no
```

HP Tags

These tables list tags found in the maker notes of some Hewlett-Packard
camera models.

The first table lists tags found in the EXIF-format maker notes of the
PhotoSmart 720 (also used by the Vivitar ViviCam 3705, 3705B and 3715).

```
   Tag ID   Tag Name                           Writable
   ------   --------                           --------
   0x0e00   PrintIM                            PrintIM
```

HP Type2 Tags

These tags are used by the PhotoSmart E427.

```
   Tag ID              Tag Name          Writable
   ------              --------          --------
   'Lens Shading'      LensShading       no
   'PreviewImage'      PreviewImage      no
   'Serial Number'     SerialNumber      no
```

HP Type4 Tags

These tags are used by the PhotoSmart M627.

```
   Index1   Tag Name                           Writable
   ------   --------                           --------
      12    MaxAperture                        no
      16    ExposureTime                       no
      20    CameraDateTime                     no
      52    ISO                                no
      92    SerialNumber                       no
```

HP Type6 Tags

These tags are used by the PhotoSmart M425, M525 and M527.

```
   Index1   Tag Name                           Writable
   ------   --------                           --------
      12    FNumber                            no
      16    ExposureTime                       no
      20    CameraDateTime                     no
      52    ISO                                no
      88    SerialNumber                       no
```

HP TDHD Tags

These tags are extracted from the APP6 "TDHD" segment of Photosmart
R837 JPEG images. Many other unknown tags exist in is data, and can be
seen with the Unknown (-u) option.

```
   Tag ID   Tag Name                           Writable
   ------   --------                           --------
   'CMSN'   SerialNumber                       no
   'FWRV'   FirmwareVersion                    no
   'LSLV'   LSLV                               HP TDHD
   'TDHD'   TDHD                               HP TDHD
```

JVC Tags

JVC EXIF maker note tags.

```
   Tag ID   Tag Name                           Writable
   ------   --------                           --------
   0x0002   CPUVersions                        no
   0x0003   Quality                            no
```

JVC Text Tags

JVC/Victor text-based maker note tags.

Tag ID	Tag Name	Writable
'QTY'	Quality	no
'VER'	MakerNoteVersion	no

Kodak Tags

Many Kodak models don't store the maker notes in standard IFD format,
and these formats vary with different models. Some information has
been decoded, but much of the Kodak information remains unknown.

The table below contains the most common set of Kodak tags. The
following Kodak camera models have been tested and found to use these
tags: C360, C663, C875, CX6330, CX6445, CX7330, CX7430, CX7525, CX7530,
DC4800, DC4900, DX3500, DX3600, DX3900, DX4330, DX4530, DX4900, DX6340,
DX6440, DX6490, DX7440, DX7590, DX7630, EasyShare-One, LS420, LS443,
LS633, LS743, LS753, V530, V550, V570, V603, V610, V705, Z650, Z700,
Z710, Z730, Z740, Z760 and Z7590.

Index1	Tag Name	Writable
0	KodakModel	string[8]
9	Quality	int8u
10	BurstMode	int8u
12	KodakImageWidth	int16u
14	KodakImageHeight	int16u
16	YearCreated	int16u
18	MonthDayCreated	int8u[2]
20	TimeCreated	int8u[4]
24	BurstMode2?	int16u
27	ShutterMode	int8u
28	MeteringMode	int8u
29	SequenceNumber	int8u
30	FNumber	int16u
32	ExposureTime	int32u
36	ExposureCompensation	int16s
38	VariousModes?	int16u
40	Distance1?	int32u
44	Distance2?	int32u
48	Distance3?	int32u
52	Distance4?	int32u
56	FocusMode	int8u
58	VariousModes2?	int16u
60	PanoramaMode?	int16u
62	SubjectDistance?	int16u
64	WhiteBalance	int8u
92	FlashMode	int8u
93	FlashFired	int8u
94	ISOSetting	int16u
96	ISO	int16u
98	TotalZoom	int16u
100	DateTimeStamp	int16u
102	ColorMode	int16u
104	DigitalZoom	int16u
107	Sharpness	int8s

Kodak IFD Tags

These tags are found in a separate IFD of JPEG, TIFF, DCR and KDC
images from some older Kodak models such as the DC50, DC120, DCS760C,
DCS Pro 14N, 14nx, SLR/n, Pro Back and Canon EOS D2000.

Tag ID	Tag Name	Writable
0x0000	KodakVersion	int8u[4]
0x0001	UnknownEV?	rational64u
0x0003	ExposureValue	rational64u

0x03e9	OriginalFileName	string
0x03ea	KodakTag	int32u
0x03eb	SensorLeftBorder	int16u
0x03ec	SensorTopBorder	int16u
0x03ed	SensorImageWidth	int16u
0x03ee	SensorImageHeight	int16u
0x03ef	BlackLevelTop	int16u
0x03f0	BlackLevelBottom	int16u
0x03f1	TextualInfo	Kodak TextualInfo
0x03f2	FlashMode?	int16u
0x03f3	FlashCompensation	rational64s
0x03f4	WindMode?	int16u
0x03f5	FocusMode?	int16u
0x03f8	MinAperture	rational64u
0x03f9	MaxAperture	rational64u
0x03fa	WhiteBalanceMode?	int16u
0x03fb	WhiteBalanceDetected?	int16u
0x03fc	WhiteBalance	int16u
0x03fd	Processing	Kodak Processing
	ProcessingParameters	no
0x03fe	ImageAbsoluteX	int16s
0x03ff	ImageAbsoluteY	int16s
0x0400	ApplicationKeyString	string
0x0401	Time	string
0x0402	GPSString	string
0x0403	EventLogCapture?	no
0x0404	ComponentTable?	no
0x0405	CustomIlluminant?	int16u
0x0406	CameraTemperature	rational64s
	CameraTemperature	no
0x0407	AdapterVoltage	rational64u
0x0408	BatteryVoltage	rational64u
0x0409	DacVoltages	no
0x040a	IlluminantDetectorData?	no
0x040b	PixelClockFrequency	int32u
0x040c	CenterPixel	int16u[3]
0x040d	BurstCount	int16u
0x040e	BlackLevelRough	int16u
0x040f	OffsetMapHorizontal?	no
0x0410	OffsetMapVertical?	no
0x0411	Histogram?	no
0x0412	VerticalClockOverlaps	int16u[2]
0x0413	SensorTemperature	no
0x0414	XilinxVersion	string
0x0415	FirmwareVersion	int32u
0x0416	BlackLevelRoughAfter	int16u
0x0417	BrightRowsTop	no
0x0418	EventLogProcess	no
0x0419	DacVoltagesFlush	no
0x041a	FlashUsed	no
0x041b	FlashType	no
0x041c	SelfTimer	no
0x041d	AFMode	no
0x041e	LensType	no
0x041f	ImageCropX	int16s
0x0420	ImageCropY	int16s
0x0421	AdjustedTbnImageWidth	no
0x0422	AdjustedTbnImageHeight	no
0x0423	IntegrationTime	int32u
0x0424	BracketingMode	no
0x0425	BracketingStep	no
0x0426	BracketingCounter	no
0x042e	HuffmanTableLength	no
0x042f	HuffmanTableValue	no
0x0438	MainBoardVersion	int32u
0x0439	ImagerBoardVersion	int32u
0x044c	FocusEdgeMap	no
0x05e6	IdleTiming	no
0x05e7	FlushTiming	no
0x05e8	IntegrateTiming	no

0x05e9	RegisterReadTiming	no
0x05ea	FirstLineTransferTiming	no
0x05eb	ShiftTiming	no
0x05ec	NormalLineTransferTiming	no
0x05ed	TestTransferTiming	no
0x05fa	MinimumFlushRows	no
0x05fd	ImagerPowerOnDelayMsec	int32u
0x05fe	ImagerInitialTimingCode	no
0x05ff	ImagerLogicProgram	no
0x0600	ImagerBiasSettlingDelayMsec	int32u
0x0604	IdleSequence	no
0x0605	FirstFlushSequence	no
0x0606	FinalFlushSequence	no
0x0607	SampleBlackSequence	no
0x0608	TransferSequence	no
0x060e	DacCountsPerVolt	no
0x060f	BlackDacChannel	no
0x0610	BlackAdCountsPerDacVolt	no
0x0611	BlackTarget	no
0x0612	BlackDacSettlingMsec	no
0x07d0	StandardMatrixDaylight	rational64s[9]
0x07d1	StandardMatrixTungsten	rational64s[9]
0x07d2	StandardMatrixFluorescent	rational64s[9]
0x07d3	StandardMatrixFlash	rational64s[9]
0x07d4	StandardMatrixCustom	rational64s[9]
0x07da	DeviantMatrixDaylight	rational64s[9]
0x07db	DeviantMatrixTungsten	rational64s[9]
0x07dc	DeviantMatrixFluorescent	rational64s[9]
0x07dd	DeviantMatrixFlash	rational64s[9]
0x07de	DeviantMatrixCustom	rational64s[9]
0x07e4	UniqueMatrixDaylight	rational64s[9]
0x07e5	UniqueMatrixTungsten	rational64s[9]
0x07e6	UniqueMatrixFluorescent	rational64s[9]
0x07e7	UniqueMatrixFlash	rational64s[9]
0x07e8	UniqueMatrixCustom	rational64s[9]
0x07e9	UniqueMatrixAuto	rational64s[9]
0x0834	StandardWhiteDaylight	rational64s[3]
0x0835	StandardWhiteTungsten	rational64s[3]
0x0836	StandardWhiteFluorescent	rational64s[3]
0x0837	StandardWhiteFlash	rational64s[3]
0x0838	StandardWhiteCustom	rational64s[3]
0x083e	DeviantWhiteDaylight	rational64s[3]
0x083f	DeviantWhiteTungsten	rational64s[3]
0x0840	DeviantWhiteFluorescent	rational64s[3]
0x0841	DeviantWhiteFlash	rational64s[3]
0x0842	DeviantWhiteCustom	rational64s[3]
0x0846	ColorTemperature	int16u
0x0847	WB_RGBLevelsAsShot	no
0x0848	WB_RGBLevelsDaylight	no
0x0849	WB_RGBLevelsTungsten	no
0x084a	WB_RGBLevelsFluorescent	no
0x084b	WB_RGBLevelsFlash	no
0x084c	WB_RGBLevelsCustom	no
0x084d	WB_RGBLevelsAuto	no
0x0852	WB_RGBMulDaylight	rational64u[3]
0x0853	WB_RGBMulTungsten	rational64u[3]
0x0854	WB_RGBMulFluorescent	rational64u[3]
0x0855	WB_RGBMulFlash	rational64u[3]
0x085c	WB_RGBCoeffsDaylight	no
0x085d	WB_RGBCoeffsTungsten	no
0x085e	WB_RGBCoeffsFluorescent	no
0x085f	WB_RGBCoeffsFlash	no
0x0898	ExposureGainDaylight	rational64s
0x0899	ExposureGainTungsten	rational64s
0x089a	ExposureGainFluorescent	rational64s
0x089b	ExposureGainFlash	rational64s
0x089c	ExposureGainCustom	rational64s
0x089d	AnalogISOTable	rational64u[3]
0x089e	AnalogCaptureISO	int32u
0x089f	ISOCalibrationGain	rational64u

0x08a0	ISOCalibrationGainTable	no
0x08a1	ExposureHeadroomFactor	no
0x08ab	LinearitySplineTags	no
0x08fc	MonitorMatrix	rational64s[9]
0x08fd	TonScaleTable	no
0x08fe	Gamma	rational64u
0x08ff	LogLinTable	no
0x0900	LinLogTable	no
0x0901	GammaTable	no
0x0902	LogScale	rational64u
0x0903	BaseISO	rational64u
0x0904	LinLogCoring	int16u
0x0905	PatternGainConversionTable	no
0x0906	DefectCount	no
0x0907	DefectList	no
0x0908	DefectListPacked	no
0x0909	ImageSpace	int16u
0x090a	ThumbnailCompressionTable	no
0x090b	ThumbnailExpansionTable	no
0x090c	ImageCompressionTable	no
0x090d	ImageExpansionTable	no
0x090e	EighteenPercentPoint	no
0x090f	DefectIsoCode	int16u
0x0910	BaseISODaylight	rational64u
0x0911	BaseISOTungsten	rational64u
0x0912	BaseISOFluorescent	rational64u
0x0913	BaseISOFlash	rational64u
0x091a	MatrixSelectThreshold	int16s
0x091b	MatrixSelectK	rational64u
0x091c	IlluminantDetectTable	no
0x091d	RGTable	no
0x091e	MatrixSelectThreshold1	int16s
0x091f	MatrixSelectThreshold2	int16s
0x0924	PortraitMatrix	no
0x0925	PortraitToneScaleTable	no
0x092e	EnableSharpening	int16u
0x092f	SharpeningKernel	int16s[25]
0x0930	EdgeMapSlope	int16u
0x0931	EdgeMapX1	int16u
0x0932	EdgeMapX2	int16u
0x0933	KernelDenominators	int16u[3]
0x0934	EdgeMapX3	int16u
0x0935	EdgeMapX4	int16u
0x0936	SharpenForThumbnail	no
0x0937	EdgeSpline	no
0x0938	DownSampleBy2Hor	no
0x0939	DownSampleBy2Ver	no
0x093a	DownSampleBy4Hor	no
0x093b	DownSampleBy4Ver	no
0x093c	DownSampleBy3Hor	no
0x093d	DownSampleBy3Ver	no
0x093e	DownSampleBy6Hor	no
0x093f	DownSampleBy6Ver	no
0x0940	DownSampleBy2Hor3MPdcr	no
0x0941	DownSampleBy2Ver3MPdcr	no
0x0942	ThumbnailResizeRatio	no
0x0943	AtCaptureUserCrop	int32u[4]
0x0944	ImageResolution	int32u
0x0945	ImageResolutionJpg	int32u
0x094c	USMParametersLow	no
0x094d	USMParametersMed	no
0x094e	USMParametersHigh	no
0x094f	USMParametersHost	no
0x0950	EdgeSplineLow	no
0x0951	EdgeSplineMed	no
0x0952	EdgeSplineHigh	no
0x0953	USMParametersHost6MP	no
0x0954	USMParametersHost3MP	no
0x0960	PatternImagerWidth	int16u
0x0961	PatternImagerHeight	int16u

0x0962	PatternAreaWidth	int16u
0x0963	PatternAreaHeight	int16u
0x0964	PatternCorrectionGains	no
0x0965	PatternCorrectionOffsets	no
0x0966	PatternX	int16u
0x0967	PatternY	int16u
0x0968	PatternCorrectionFactors	no
0x0969	PatternCorrectionFactorScale	int16u
0x096a	PatternCropRows1	int16u
0x096b	PatternCropRows2	int16u
0x096c	PatternCropCols1	int16u
0x096d	PatternCropCols2	int16u
0x096e	PixelCorrectionGains	no
0x096f	StitchRows	no
0x0970	StitchColumns	no
0x0971	PixelCorrectionScale	int16u
0x0972	PixelCorrectionOffset	int16u
0x0988	LensTableIndex	no
0x0992	DiffTileGains602832	no
0x0993	DiffTileGains24t852822	no
0x099c	TileGainDeterminationTable	no
0x099d	NemoBlurKernel	no
0x099e	NemoTileSize	no
0x099f	NemoGainFactors	no
0x09a0	NemoDarkLimit	no
0x09a1	NemoHighlight12Limit	no
0x09c4	ImagerFileProductionLevel	int16u
0x09c5	ImagerFileDateCreated	int32u
0x09c6	CalibrationVersion	string
0x09c7	ImagerFileTagsVersionStandard	int16u
0x09c8	IFCameraModel	string
0x09c9	CalibrationHistory	string
0x09ca	CalibrationLog	no
0x09ce	SensorSerialNumber	string
0x09f6	DefectConcealArtCorrectThres	no
0x09f7	SglColDCACThres1	no
0x09f8	SglColDCACThres2	no
0x09f9	SglColDCACTHres3	no
0x0a01	DblColDCACThres1	no
0x0a02	DblColDCACThres2	no
0x0a0a	DefectConcealThresTable	no
0x0a28	MonoUniqueMatrix	no
0x0a29	MonoMonitorMatrix	no
0x0a2a	MonoToneScaleTable	no
0x0a5a	OmenInitialScaling	no
0x0a5b	OmenInitialRows	no
0x0a5c	OmenInitialColumns	no
0x0a5d	OmenInitialIPFStrength	int32s[4]
0x0a5e	OmenEarlyStrength	int32s[4]
0x0a5f	OmenAutoStrength	int32s[4]
0x0a60	OmenAtCaptureStrength	int32s[4]
0x0a61	OmenAtCaptureMode	no
0x0a62	OmenFocalLengthLimit	int16s
0x0a64	OmenSurfaceIndex	int16s
0x0a65	OmenPercentToRationalLimitsRed	no
0x0a66	OmenPercentToRationalLimitsGoR	no
0x0a67	OmenPercentToRationalLimitsBlue	no
0x0a68	OmenPercentToRationalLimitsGoB	no
0x0a6e	OmenEarlyGoBSurface	no
0x0a6f	OmenEarlyGoBRows	no
0x0a70	OmenEarlyGoBColumns	no
0x0a73	OmenSmoothingKernel	no
0x0a74	OmenGradientOffset	no
0x0a75	OmenGradientKernel	no
0x0a76	OmenGradientKernelTaps	no
0x0a77	OmenRatioClipFactors	no
0x0a78	OmenRatioExclusionFactors	no
0x0a79	OmenGradientExclusionLimits	no
0x0a7a	OmenROICoordinates	no
0x0a7b	OmenROICoefficients	no

0x0a7c	OmenRangeWeighting	no
0x0a7d	OmenMeanToStrength	no
0x0bb8	FactoryWhiteGainsDaylight	no
0x0bb9	FactoryWhiteOffsetsDaylight	no
0x0bba	DacGainsCoarse	no
0x0bbb	DacGainsFine	no
0x0bbc	DigitalExposureGains	no
0x0bbd	DigitalExposureBiases	no
0x0bbe	BlackClamp	no
0x0bbf	ChannelCoarseGainAdjust	no
0x0bc0	BlackClampOffset	no
0x0bf4	DMPixelThresholdFactor	no
0x0bf5	DMWindowThresholdFactor	no
0x0bf6	DMTrimFraction	no
0x0bf7	DMSmoothRejThresh	no
0x0bf8	DMFillRejThresh	no
0x0bf9	VMWsize	no
0x0bfa	DMErodeRadius	no
0x0bfb	DMNumPatches	no
0x0bfc	DMNoiseScale	no
0x0bfe	BrightDefectThreshold	no
0x0bff	BrightDefectIntegrationMS	no
0x0c00	BrightDefectIsoCode	no
0x0c03	TopDarkRow1	no
0x0c04	TopDarkRow2	no
0x0c05	BottomDarkRow1	no
0x0c06	BottomDarkRow2	no
0x0c07	LeftDarkCol1	no
0x0c08	LeftDarkCol2	no
0x0c09	RightDarkCol1	no
0x0c0a	RightDarkCol2	no
0x0c0b	HMPixThresh	no
0x0c0c	HMColThresh	no
0x0c0d	HMWsize	no
0x0c0e	HMColRejThresh	no
0x0c0f	VMPixThresh	no
0x0c10	VMColThresh	no
0x0c11	VMNbands	no
0x0c12	VMColDropThresh	no
0x0c13	VMPatchResLimit	no
0x0c14	MapScale	no
0x0c1c	Klut	no
0x0c1d	RimNonlinearity	no
0x0c1e	InverseRimNonlinearity	no
0x0c1f	RembrandtToneScale	no
0x0c20	RimToNifColorTransform	no
0x0c21	RimToNifScaleFactor	no
0x0c22	NifNonlinearity	no
0x0c23	SBALogTransform	no
0x0c24	InverseSBALogTransform	no
0x0c25	SBABlack	int16u
0x0c26	SBAGray	int16u
0x0c27	SBAWhite	int16u
0x0c28	GaussianWeights	no
0x0c29	SfsBoundary	no
0x0c2a	CoringTableBest	no
0x0c2b	CoringTableBetter	no
0x0c2c	CoringTableGood	no
0x0c2d	ExposureReferenceGain	no
0x0c2e	ExposureReferenceOffset	no
0x0c2f	SBARedBalanceLut	no
0x0c30	SBAGreenBalanceLut	no
0x0c31	SBABlueBalanceLut	no
0x0c32	SBANeutralBAL	int32s
0x0c33	SBAGreenMagentaBAL	int32s
0x0c34	SBAIlluminantBAL	int32s
0x0c35	SBAAnalysisComplete	int8u
0x0c36	JPEGQTableBest	no
0x0c37	JPEGQTableBetter	no
0x0c38	JPEGQTableGood	no

0x0c39	RembrandtPortraitToneScale	no
0x0c3a	RembrandtConsumerToneScale	no
0x0c3b	CFAGreenThreshold1	no
0x0c3c	CFAGreenThreshold2	no
0x0c3d	QTableLarge50Pct	no
0x0c3e	QTableLarge67Pct	no
0x0c3f	QTableLarge100Pct	no
0x0c40	QTableMedium50Pct	no
0x0c41	QTableMedium67Pct	no
0x0c42	QTableMedium100Pct	no
0x0c43	QTableSmall50Pct	no
0x0c44	QTableSmall67Pct	no
0x0c45	QTableSmall100Pct	no
0x0c46	SBAHighGray	int16u
0x0c47	SBALowGray	int16u
0x0c48	CaptureLook	int16u
0x0c49	SBAIllOffset	int16s
0x0c4a	SBAGmOffset	int16s
0x0c4b	NifNonlinearity12Bit	no
0x0c4c	SharpeningOn	no
0x0c4d	NifNonlinearity16Bit	no
0x0c4e	RawHistogram	no
0x0c4f	RawCFAComponentAverages	no
0x0c50	DisableFlagsPresent	no
0x0c51	DelayCols	no
0x0c52	DummyColsLeft	no
0x0c53	TrashColsRight	no
0x0c54	BlackColsRight	no
0x0c55	DummyColsRight	no
0x0c56	OverClockColsRight	no
0x0c57	UnusedBlackRowsTopOut	no
0x0c58	TrashRowsBottom	no
0x0c59	BlackRowsBottom	no
0x0c5a	OverClockRowsBottom	no
0x0c5b	BlackColsLeft	no
0x0c5c	BlackRowsTop	no
0x0c5d	PartialActiveColsLeft	no
0x0c5e	PartialActiveColsRight	no
0x0c5f	PartialActiveRowsTop	no
0x0c60	PartialActiveRowsBottom	no
0x0c61	ProcessBorderColsLeft	int16u
0x0c62	ProcessBorderColsRight	int16u
0x0c63	ProcessBorderRowsTop	int16u
0x0c64	ProcessBorderRowsBottom	int16u
0x0c65	ActiveCols	no
0x0c66	ActiveRows	no
0x0c67	FirstLines	no
0x0c68	UnusedBlackRowsTopIn	no
0x0c69	UnusedBlackRowsBottomIn	no
0x0c6a	UnusedBlackRowsBottomOut	no
0x0c6b	UnusedBlackColsLeftOut	no
0x0c6c	UnusedBlackColsLeftIn	no
0x0c6d	UnusedBlackColsRightIn	no
0x0c6e	UnusedBlackColsRightOut	no
0x0c6f	CFAOffsetRows	int32u
0x0c70	ShiftCols	int16s
0x0c71	CFAOffsetCols	int32u
0x0c76	DarkMapScale	no
0x0c77	HMapHandling	no
0x0c78	VMapHandling	no
0x0c79	DarkThreshold	no
0x0c7a	DMDitherMatrix	int16u
0x0c7b	DMDitherMatrixWidth	int16u
0x0c7c	DMDitherMatrixHeight	int16u
0x0c7d	MaxPixelValueThreshold	int16u
0x0c7e	HoleFillDeltaThreshold	int16u
0x0c7f	DarkPedestal	int16u
0x0c80	ImageProcessingFileTagsVersionNumber	int16u
0x0c81	ImageProcessingFileDateCreated	string
0x0c82	DoublingMicrovolts	int32s

0x0c83	DarkFrameShortExposure	int32u
0x0c84	DarkFrameLongExposure	int32u
0x0c85	DarkFrameCountFactor	rational64u
0x0c88	HoleFillDarkDeltaThreshold	int16u
0x0c89	FarkleWhiteThreshold	no
0x0c8a	ColumnResetOffsets	no
0x0c8b	ColumnGainFactors	no
0x0c8c	Channel0LagKernel	no
0x0c8d	Channel1LagKernel	no
0x0c8e	Channel2LagKernel	no
0x0c8f	Channel3LagKernel	no
0x0c90	BluegrassTable	no
0x0c91	BluegrassScale1	no
0x0c92	BluegrassScale2	no
0x0ce4	FinishedFileProcessingRequest	no
0x0ce5	FirmwareVersion	string
0x0ce6	HostSoftwareExportVersion	no
0x0ce7	HostSoftwareRendering	int32u
0x0dac	DCS3XXProcessingInfoIFD	no
0x0dad	DCS3XXProcessingInfo	no
0x0dae	IPAVersion	int32u
0x0db6	FinishIPAVersion	no
0x0db7	FinishIPFVersion	no
0x0db8	FinishFileType	int32u
0x0db9	FinishResolution	int32u
0x0dba	FinishNoise	int32u
0x0dbb	FinishSharpening	int32u
0x0dbc	FinishLook	int32u
0x0dbd	FinishExposure	int32u
0x0e0b	SigmaScalingFactorLowRes	rational64u
0x0e0c	SigmaScalingFactorCamera	rational64u
0x0e0d	SigmaImpulseParameters	int16u[n]
0x0e0e	SigmaNoiseThreshTableV2	no
0x0e0f	SigmaSizeTable	int16u[n]
0x0e10	DacGainsCoarseAdjPreIF41	no
0x0e11	SigmaNoiseFilterCalTableV1	no
0x0e12	SigmaNoiseFilterTableV1	no
0x0e13	Lin12ToKlut8	no
0x0e14	SigmaNoiseFilterTableV1Version	no
0x0e15	Lin12ToKlut12	no
0x0e16	Klut12ToLin12	no
0x0e17	NifNonlinearity12To16	no
0x0e18	SBALog12Transform	no
0x0e19	InverseSBALog12Transform	no
0x0e1a	ToneScale0	no
0x0e1b	ToneScale1	no
0x0e1c	ToneScale2	no
0x0e1d	ToneScale3	no
0x0e1e	ToneScale4	no
0x0e1f	ToneScale5	no
0x0e20	ToneScale6	no
0x0e21	ToneScale7	no
0x0e22	ToneScale8	no
0x0e23	ToneScale9	no
0x0e24	DayMat0	no
0x0e25	DayMat1	no
0x0e26	DayMat2	no
0x0e27	DayMat3	no
0x0e28	DayMat4	no
0x0e29	DayMat5	no
0x0e2a	DayMat6	no
0x0e2b	DayMat7	no
0x0e2c	DayMat8	no
0x0e2d	DayMat9	no
0x0e2e	TungMat0	no
0x0e2f	TungMat1	no
0x0e30	TungMat2	no
0x0e31	TungMat3	no
0x0e32	TungMat4	no
0x0e33	TungMat5	no

0x0e34	TungMat6	no
0x0e35	TungMat7	no
0x0e36	TungMat8	no
0x0e37	TungMat9	no
0x0e38	FluorMat0	no
0x0e39	FluorMat1	no
0x0e3a	FluorMat2	no
0x0e3b	FluorMat3	no
0x0e3c	FluorMat4	no
0x0e3d	FluorMat5	no
0x0e3e	FluorMat6	no
0x0e3f	FluorMat7	no
0x0e40	FluorMat8	no
0x0e41	FluorMat9	no
0x0e42	FlashMat0	no
0x0e43	FlashMat1	no
0x0e44	FlashMat2	no
0x0e45	FlashMat3	no
0x0e46	FlashMat4	no
0x0e47	FlashMat5	no
0x0e48	FlashMat6	no
0x0e49	FlashMat7	no
0x0e4a	FlashMat8	no
0x0e4b	FlashMat9	no
0x0e4c	KodakLook	string
0x0e4d	IPFCameraModel	string
0x0e4e	AH2GreenInterpolationThreshold	int16u
0x0e4f	ResamplingKernelDenominators067	int16u[3]
0x0e50	ResamplingKernelDenominators050	int16u[3]
0x0e51	ResamplingKernelDenominators100	int16u[3]
0x0e56	LookMat0	no
0x0e57	LookMat1	no
0x0e58	LookMat2	no
0x0e59	LookMat3	no
0x0e5a	LookMat4	no
0x0e5b	LookMat5	no
0x0e5c	LookMat6	no
0x0e5d	LookMat7	no
0x0e5e	LookMat8	no
0x0e5f	LookMat9	no
0x0e60	CFAInterpolationAlgorithm	int16u
0x0e61	CFAInterpolationMetric	int16u
0x0e62	CFAZipperFixThreshold	int16u
0x0e63	NoiseReductionParametersKhufuRGB	int16u[9]
0x0e64	NoiseReductionParametersKhufu6MP	int16u[9]
0x0e65	NoiseReductionParametersKhufu3MP	int16u[9]
0x0e6a	ChromaNoiseHighFThresh	int32u[2]
0x0e6b	ChromaNoiseLowFThresh	int32u[2]
0x0e6c	ChromaNoiseEdgeMapThresh	int32u
0x0e6d	ChromaNoiseColorSpace	int32u
0x0e6e	EnableChromaNoiseReduction	int16u
0x0e6f	NoiseReductionParametersHostRGB	int16u[9]
0x0e70	NoiseReductionParametersHost6MP	int16u[9]
0x0e71	NoiseReductionParametersHost3MP	int16u[9]
0x0e72	NoiseReductionParametersCamera	int16u[6]
0x0e73	NoiseReductionParametersAtCapture	int16u[6]
0x0e74	LCDMatrix	rational64s[9]
0x0e75	LCDMatrixChickFix	rational64s[9]
0x0e76	LCDMatrixMarvin	rational64s[9]
0x0e7c	LCDGammaTableChickFix	no
0x0e7d	LCDGammaTableMarvin	no
0x0e7e	LCDGammaTable	no
0x0e7f	LCDSharpeningF1	no
0x0e80	LCDSharpeningF2	no
0x0e81	LCDSharpeningF3	no
0x0e82	LCDSharpeningF4	no
0x0e83	LCDEdgeMapX1	no
0x0e84	LCDEdgeMapX2	no
0x0e85	LCDEdgeMapX3	no
0x0e86	LCDEdgeMapX4	no

0x0e87	LCDEdgeMapSlope	no
0x0e88	YCrCbMatrix	no
0x0e89	LCDEdgeSpline	no
0x0e92	Fac18Per	int16u
0x0e93	Fac170Per	int16u
0x0e94	Fac100Per	int16u
0x0e9b	ExtraTickLocations	no
0x0e9c	RGBtoeV0	no
0x0e9d	RGBtoeV1	no
0x0e9e	RGBtoeV2	no
0x0e9f	RGBtoeV3	no
0x0ea0	RGBtoeV4	no
0x0ea1	RGBtoeV5	no
0x0ea2	RGBtoeV6	no
0x0ea3	RGBtoeV7	no
0x0ea4	RGBtoeV8	no
0x0ea5	RGBtoeV9	no
0x0ea6	LCDHistLUT0	no
0x0ea7	LCDHistLUT1	no
0x0ea8	LCDHistLUT2	no
0x0ea9	LCDHistLUT3	no
0x0eaa	LCDHistLUT4	no
0x0eab	LCDHistLUT5	no
0x0eac	LCDHistLUT6	no
0x0ead	LCDHistLUT7	no
0x0eae	LCDHistLUT8	no
0x0eaf	LCDHistLUT9	no
0x0eb0	LCDLinearClipValue	no
0x0ece	LCDStepYvalues	no
0x0ecf	LCDStepYvaluesChickFix	no
0x0ed0	LCDStepYvaluesMarvin	no
0x0ed8	InterpolationCoefficients	no
0x0ed9	InterpolationCoefficients6MP	no
0x0eda	InterpolationCoefficients3MP	no
0x0f00	NoiseReductionParametersHostNormal	no
0x0f01	NoiseReductionParametersHostStrong	no
0x0f02	NoiseReductionParametersHostLow	no
0x0f0a	MariahTextureThreshold	int16u
0x0f0b	MariahMapLoThreshold	int16u
0x0f0c	MariahMapHiThreshold	int16u
0x0f0d	MariahChromaBlurSize	int16u
0x0f0e	MariahSigmaThreshold	int16u
0x0f0f	MariahThresholds	no
0x0f10	MariahThresholdsNormal	no
0x0f11	MariahThresholdsStrong	no
0x0f12	MariahThresholdsLow	no
0x0f14	KhufuLinearRedMixingCoefficient	no
0x0f15	KhufuLinearGreenMixingCoefficient	no
0x0f16	KhufuLinearBlueMixingCoefficient	no
0x0f17	KhufuUSpaceC2MixingCoefficient	no
0x0f18	KhufuSigmaGaussianWeights	no
0x0f19	KhufuSigmaScalingFactors6MP	no
0x0f1a	KhufuSigmaScalingFactors3MP	no
0x0f1b	KhufuSigmaScalingFactors14MP	no
0x0f32	KhufuI0Thresholds	no
0x0f33	KhufuI1Thresholds	no
0x0f34	KhufuI2Thresholds	no
0x0f35	KhufuI3Thresholds	no
0x0f36	KhufuI4Thresholds	no
0x0f37	KhufuI5Thresholds	no
0x0f3c	CondadoDayBVThresh	int16u
0x0f3d	CondadoNeuRange	int16u
0x0f3e	CondadoBVFactor	int16s
0x0f3f	CondadoIllFactor	int16s
0x0f40	CondadoTunThresh	int16s
0x0f41	CondadoFluThresh	int16s
0x0f42	CondadoDayOffsets	int16s[2]
0x0f43	CondadoTunOffsets	int16s[2]
0x0f44	CondadoFluOffsets	int16s[2]
0x0f5a	ERIMMToCRGB0Spline	no

0x0f5b	ERIMMToCRGB1Spline	no
0x0f5c	ERIMMToCRGB2Spline	no
0x0f5d	ERIMMToCRGB3Spline	no
0x0f5e	ERIMMToCRGB4Spline	no
0x0f5f	ERIMMToCRGB5Spline	no
0x0f60	ERIMMToCRGB6Spline	no
0x0f61	ERIMMToCRGB7Spline	no
0x0f62	ERIMMToCRGB8Spline	no
0x0f63	ERIMMToCRGB9Spline	no
0x0f64	CRGBToERIMM0Spline	no
0x0f65	CRGBToERIMM1Spline	no
0x0f66	CRGBToERIMM2Spline	no
0x0f67	CRGBToERIMM3Spline	no
0x0f68	CRGBToERIMM4Spline	no
0x0f69	CRGBToERIMM5Spline	no
0x0f6a	CRGBToERIMM6Spline	no
0x0f6b	CRGBToERIMM7Spline	no
0x0f6c	CRGBToERIMM8Spline	no
0x0f6d	CRGBToERIMM9Spline	no
0x0f6e	ERIMMNonLinearitySpline	no
0x0f6f	Delta12To8Spline	no
0x0f70	Delta8To12Spline	no
0x0f71	InverseMonitorMatrix	no
0x0f72	NifNonlinearityExt	no
0x0f73	InvNifNonLinearity	no
0x0f74	RIMM13ToERIMM12Spline	no
0x0f78	ToneScale0Spline	no
0x0f79	ToneScale1Spline	no
0x0f7a	ToneScale2Spline	no
0x0f7b	ToneScale3Spline	no
0x0f7c	ToneScale4Spline	no
0x0f7d	ToneScale5Spline	no
0x0f7e	ToneScale6Spline	no
0x0f7f	ToneScale7Spline	no
0x0f80	ToneScale8Spline	no
0x0f81	ToneScale9Spline	no
0x0f82	ERIMMToneScale0Spline	no
0x0f83	ERIMMToneScale1Spline	no
0x0f84	ERIMMToneScale2Spline	no
0x0f85	ERIMMToneScale3Spline	no
0x0f86	ERIMMToneScale4Spline	no
0x0f87	ERIMMToneScale5Spline	no
0x0f88	ERIMMToneScale6Spline	no
0x0f89	ERIMMToneScale7Spline	no
0x0f8a	ERIMMToneScale8Spline	no
0x0f8b	ERIMMToneScale9Spline	no
0x0f8c	RIMMToCRGB0Spline	no
0x0f8d	RIMMToCRGB1Spline	no
0x0f8e	RIMMToCRGB2Spline	no
0x0f8f	RIMMToCRGB3Spline	no
0x0f90	RIMMToCRGB4Spline	no
0x0f91	RIMMToCRGB5Spline	no
0x0f92	RIMMToCRGB6Spline	no
0x0f93	RIMMToCRGB7Spline	no
0x0f94	RIMMToCRGB8Spline	no
0x0f95	RIMMToCRGB9Spline	no
0x0fa0	QTableLarge25Pct	no
0x0fa1	QTableMedium25Pct	no
0x0fa2	QTableSmall25Pct	no
0x1130	NoiseReductionKernel	no
0x1388	UserMetaData	no
0x1389	InputProfile	undef
0x138a	KodakLookProfile	undef
0x138b	OutputProfile	undef
0x1390	SourceProfilePrefix	string
0x1391	ToneCurveProfileName	string
0x1392	InputProfile	ICC_Profile
0x1393	ProcessParametersV2	no
0x1394	ReservedBlob2	no
0x1395	ReservedBlob3	no

0x1396	ReservedBlob4	no
0x1397	ReservedBlob5	no
0x1398	ReservedBlob6	no
0x1399	ReservedBlob7	no
0x139a	ReservedBlob8	no
0x139b	ReservedBlob9	no
0x1770	ScriptVersion	int32u
0x177a	ImagerTimingData	no
0x1784	ISO	int32u
0x17a2	Scav11Cols	no
0x17a3	Scav12Cols	no
0x17a4	Scav21Cols	no
0x17a5	Scav22Cols	no
0x17a6	ActiveCTEMonitor1Cols	no
0x17a7	ActiveCTEMonitor2Cols	no
0x17a8	ActiveCTEMonitorRows	no
0x17a9	ActiveBuf1Cols	no
0x17aa	ActiveBuf2Cols	no
0x17ab	ActiveBuf1Rows	no
0x17ac	ActiveBuf2Rows	no
0x17c0	HRNoiseLines	no
0x17c1	RNoiseLines	no
0x17c2	ANoiseLines	no
0x17d4	ImagerCols	int16u
0x17de	ImagerRows	int16u
0x17e8	PartialActiveCols1	int32u
0x17f2	PartialActiveCols2	int32u
0x17fc	PartialActiveRows1	int32u
0x1806	PartialActiveRows2	int32u
0x1810	ElectricalBlackColumns	int32u
0x181a	ResetBlackSegRows	int32u
0x1838	CaptureWidthNormal	int32u
0x1839	CaptureHeightNormal	int32u
0x183a	CaptureWidthResetBlackSegNormal	no
0x183b	CaptureHeightResetBlackSegNormal	no
0x183c	DarkRefOffsetNormal	no
0x1842	CaptureWidthTest	int32u
0x1843	CaptureHeightTest	no
0x1844	CaptureWidthResetBlackSegTest	no
0x1845	CaptureHeightResetBlackSegTest	no
0x1846	DarkRefOffsetTest	no
0x184c	ImageSegmentStartLine	int32u
0x184d	ImageSegmentLines	int32u
0x184e	SkipLineTime	int32u
0x1860	FastResetLineTime	int32u
0x186a	NormalLineTime	int32u
0x1874	MinIntegrationRows	int32u
0x187e	PreReadFastResetCount	int32u
0x1888	TransferTimeNormal	int32u
0x1889	TransferTimeTest	int32u
0x188a	QuietTime	int32u
0x189c	OverClockCols	int16u
0x18a6	H2ResetBlackPixels	int32u
0x18b0	H3ResetBlackPixels	int32u
0x18ba	BlackAcquireRows	int32u
0x18c4	OverClockRows	int16u
0x18ce	H3ResetBlackColumns	int32u
0x18d8	DarkBlackSegRows	int32u
0x1900	CrossbarEnable	no
0x1901	FifoenOnePixelDelay	int32u
0x1902	ReadoutTypeRequested	int32u
0x1903	ReadoutTypeActual	int32u
0x190a	OffsetDacValue	int32u
0x1914	TempAmpGainX100	int32u
0x191e	VarrayDacNominalValues	int32u[3]
0x1928	VddimDacNominalValues	no
0x1964	C14Configuration	int32u
0x196e	TDA1Offset	int32u[3]
0x196f	TDA1Bandwidth	int32u
0x1970	TDA1Gain	int32u[3]

```
  0x1971   TDA1EdgePolarity                        int32u
  0x1978   TDA2Offset                              int32u[3]
  0x1979   TDA2Bandwidth                           int32u
  0x197a   TDA2Gain                                int32u[3]
  0x197b   TDA2EdgePolarity                        int32u
  0x1982   TDA3Offset                              int32u[3]
  0x1983   TDA3Bandwidth                           int32u
  0x1984   TDA3Gain                                int32u[3]
  0x1985   TDA3EdgePolarity                        int32u
  0x198c   TDA4Offset                              int32u[3]
  0x198d   TDA4Bandwidth                           int32u
  0x198e   TDA4Gain                                int32u[3]
  0x198f   TDA4EdgePolarity                        int32u
  0xfde8   ComLenBlkSize                           int16u
```

Kodak TextualInfo Tags

Below is a list of tags which have been observed in the Kodak
TextualInfo data, however ExifTool will extract information from any
tags found here.

```
  Tag ID                 Tag Name                 Writable
  ------                 --------                 --------
  'AF Function'          AFMode                   no
  'Actual Compensation'  ActualCompensation       no
  'Aperture'             Aperture                 no
  'Auto Bracket'         AutoBracket              no
  'Brightness Value'     BrightnessValue          no
  'Camera'               CameraModel              no
  'Camera body'          CameraBody               no
  'Compensation'         ExposureCompensation     no
  'Date'                 Date                     no
  'Exposure Bias'        ExposureBias             no
  'Exposure Mode'        ExposureMode             no
  'Firmware Version'     FirmwareVersion          no
  'Flash Compensation'   FlashExposureComp        no
  'Flash Fired'          FlashFired               no
  'Flash Sync Mode'      FlashSyncMode            no
  'Focal Length'         FocalLength              no
  'Height'               KodakImageHeight         no
  'ISO'                  ISO                      no
  'ISO Speed'            ISO                      no
  'Image Number'         ImageNumber              no
  'Lens'                 Lens                     no
  'Max Aperture'         MaxAperture              no
  'Meter Mode'           MeterMode                no
  'Min Aperture'         MinAperture              no
  'Popup Flash'          PopupFlash               no
  'Serial Number'        SerialNumber             no
  'Shooting Mode'        ShootingMode             no
  'Shutter'              ShutterSpeed             no
  'Temperature'          Temperature              no
  'Time'                 Time                     no
  'White balance'        WhiteBalance             no
  'Width'                KodakImageWidth          no
  '_other_info'          OtherInfo                no
```

Kodak Processing Tags

```
  Index2   Tag Name                               Writable
  ------   --------                               --------
     20    WB_RGBLevels                           no
```

Kodak Type2 Tags

These tags are used by the Kodak DC220, DC260, DC265 and DC290,
Hewlett-Packard PhotoSmart 618, C500 and C912, Pentax EI-200 and
EI-2000, and Minolta EX1500Z.

```
  Index1   Tag Name                               Writable
```

```
   ------   --------                              --------
      8     KodakMaker                            string[32]
     40     KodakModel                            string[32]
    108     KodakImageWidth                       int32u
    112     KodakImageHeight                      int32u
```

Kodak Type3 Tags

These tags are used by the DC240, DC280, DC3400 and DC5000.

```
   Index1   Tag Name                              Writable
   ------   --------                              --------
     12     YearCreated                           int16u
     14     MonthDayCreated                       int8u[2]
     16     TimeCreated                           int8u[4]
     30     OpticalZoom                           int16u
     55     Sharpness                             int8s
     56     ExposureTime                          int32u
     60     FNumber                               int16u
     78     ISO                                   int16u
```

Kodak Type4 Tags

These tags are used by the DC200 and DC215.

```
   Index1   Tag Name                              Writable
   ------   --------                              --------
     32     OriginalFileName                      string[12]
```

Kodak Type5 Tags

These tags are used by the CX4200, CX4210, CX4230, CX4300, CX4310,
CX6200 and CX6230.

```
   Index1   Tag Name                              Writable
   ------   --------                              --------
     20     ExposureTime                          int32u
     26     WhiteBalance                          int8u
     28     FNumber                               int16u
     30     ISO                                   int16u
     32     OpticalZoom                           int16u
     34     DigitalZoom                           int16u
     39     FlashMode                             int8u
     42     ImageRotated                          int8u
     43     Macro                                 int8u
```

Kodak Type6 Tags

These tags are used by the DX3215 and DX3700.

```
   Index1   Tag Name                              Writable
   ------   --------                              --------
     16     ExposureTime                          int32u
     20     ISOSetting?                           int32u
     24     FNumber                               int16u
     26     ISO                                   int16u
     28     OpticalZoom                           int16u
     30     DigitalZoom                           int16u
     34     Flash                                 int16u
```

Kodak Type7 Tags

The maker notes of models such as the C340, C433, CC533, LS755, V803
and V1003 seem to start with the camera serial number. The C310, C315,
C330, C643, C743, CD33, CD43, CX7220 and CX7300 maker notes are also
decoded using this table, although the strings for these cameras don't
conform to the usual Kodak serial number format, and instead have the
model name followed by 8 digits.

```
   Index1   Tag Name                              Writable
```

```
  ------   --------                              --------
    0      SerialNumber                          string[16]
```

Kodak Type8 Tags

Kodak models such as the ZD710, P712, P850, P880, V1233, V1253, V1275,
V1285, Z612, Z712, Z812, Z885 use standard TIFF IFD format for the
maker notes. In keeping with Kodak's strategy of inconsistent
makernotes, models such as the M380, M1033, M1093, V1073, V1273, Z1012,
Z1085 and Z8612 also use these tags, but these makernotes begin with a
TIFF header instead of an IFD entry count and use relative instead of
absolute offsets. There is a large amount of information stored in
these maker notes (apparently with much duplication), but relatively
few tags have so far been decoded.

```
  Tag ID   Tag Name                              Writable
  ------   --------                              --------
  0xfc00   SubIFD0                               Kodak SubIFD0
                                                 Kodak SubIFD0
  0xfc01   SubIFD1                               Kodak SubIFD1
                                                 Kodak SubIFD1
  0xfc02   SubIFD2                               Kodak SubIFD2
                                                 Kodak SubIFD2
  0xfc03   SubIFD3                               Kodak SubIFD3
                                                 Kodak SubIFD3
  0xfc04   SubIFD4                               Kodak SubIFD4
                                                 Kodak SubIFD4
  0xfc05   SubIFD5                               Kodak SubIFD5
                                                 Kodak SubIFD5
  0xfc06   SubIFD6                               Kodak SubIFD6
                                                 Kodak SubIFD6
  0xfcff   SubIFD255                             Kodak SubIFD0
  0xff00   CameraInfo                            Kodak CameraInfo
```

Kodak SubIFD0 Tags

SubIFD0 through SubIFD5 tags are written a number of newer Kodak
models.

```
  Tag ID   Tag Name                              Writable
  ------   --------                              --------
  0xfa02   SceneMode                             int16u
  0xfa19   SerialNumber                          string
  0xfa1d   KodakImageWidth                       int16u
  0xfa1e   KodakImageHeight                      int16u
  0xfa20   SensorWidth                           int16u
  0xfa21   SensorHeight                          int16u
  0xfa23   FNumber                               int16u
  0xfa24   ExposureTime                          int32u
  0xfa2e   ISO                                   int16u
  0xfa3d   OpticalZoom                           int16u
  0xfa46   ISO                                   int16u
  0xfa51   KodakImageWidth                       int16u
  0xfa52   KodakImageHeight                      int16u
  0xfa54   ThumbnailWidth                        int16u
  0xfa55   ThumbnailHeight                       int16u
  0xfa57   PreviewImageWidth                     int16u
  0xfa58   PreviewImageHeight                    int16u
```

Kodak SubIFD1 Tags

```
  Tag ID   Tag Name                              Writable
  ------   --------                              --------
  0x0027   ISO                                   int16u
  0x0028   ISO                                   int16u
```

Kodak SubIFD2 Tags

```
  Tag ID   Tag Name                              Writable
  ------   --------                              --------
```

```
0x6002    SceneModeUsed                        int32u
0x6006    OpticalZoom                          int32u
0x6103    MaxAperture                          int32u
0xf002    SceneModeUsed                        int32u
0xf006    OpticalZoom                          int32u
0xf103    FNumber                              int32u
0xf104    ExposureTime                         int32u
0xf105    ISO                                  int32u
```

Kodak SubIFD3 Tags

```
Tag ID    Tag Name                             Writable
------    --------                             --------
0x1000    OpticalZoom                          int16u
```

Kodak SubIFD4 Tags

```
Tag ID    Tag Name                             Writable
------    --------                             --------
[no tags known]
```

Kodak SubIFD5 Tags

```
Tag ID    Tag Name                             Writable
------    --------                             --------
0x000f    OpticalZoom                          int16u
```

Kodak SubIFD6 Tags

SubIFD6 is written by the M580.

```
Tag ID    Tag Name                             Writable
------    --------                             --------
[no tags known]
```

Kodak CameraInfo Tags

These tags are used by the P712, P850 and P880.

```
Tag ID    Tag Name                             Writable
------    --------                             --------
0xf900    SensorWidth                          int16u
0xf901    SensorHeight                         int16u
0xf902    BayerPattern                         string
0xf903    SensorFullWidth                      int16u
0xf904    SensorFullHeight                     int16u
0xf907    KodakImageWidth                      int16u
0xf908    KodakImageHeight                     int16u
0xfa00    KodakInfoType                        string
0xfa04    SerialNumber                         string
0xfd04    FNumber                              int16u
0xfd05    ExposureTime                         int32u
0xfd06    ISO                                  int16u
```

Kodak Type9 Tags

These tags are used by the Kodak C140, C180, C913, C1013, M320, M340
and M550, as well as various cameras marketed by other manufacturers.

```
Index1    Tag Name                             Writable
------    --------                             --------
   12     FNumber                              int16u
   16     ExposureTime                         int32u
   20     DateTimeOriginal                     string[20]
   52     ISO                                  int16u
   87     FirmwareVersion                      string[16]
  168     UnknownNumber                        no
  196     UnknownNumber                        no
```

Kodak Type10 Tags

Another variation of the IFD-format type, this time with just a byte
order indicator instead of a full TIFF header. These tags are used by
the Z980.

```
  Tag ID   Tag Name                       Writable
  ------   --------                       --------
  0x0002   PreviewImageSize               int16u[2]
  0x0012   ExposureTime                   int32u
  0x0013   FNumber                        int16u
  0x0014   ISO                            int16u
  0x001d   FocalLength                    int32u
```

Kodak Type11 Tags

These tags are found in models such as the PixPro S-1. They are not
writable because the inconsistency of Kodak maker notes is beginning to
get on my nerves.

```
  Tag ID   Tag Name                       Writable
  ------   --------                       --------
  0x0104   FirmwareVersion                no
  0x0203   PictureEffect                  no
  0x0207   KodakModel                     no
  0x0300   KodakMake                      no
  0x0308   LensSerialNumber               no
  0x0309   LensModel                      no
  0x030d   LevelMeter?                    no
  0x0311   Pitch                          no
  0x0312   Yaw                            no
  0x0313   Roll                           no
  0x0314   CX?                            no
  0x0315   CY?                            no
  0x0316   Rads?                          no
```

Kodak Unknown Tags

```
  Index1   Tag Name                       Writable
  ------   --------                       --------
  [no tags known]
```

Kodak Meta Tags

These tags are found in the APP3 "Meta" segment of JPEG images from
Kodak cameras such as the DC280, DC3400, DC5000, MC3, M580, Z950 and
Z981. The structure of this segment is similar to the APP1 "Exif"
segment, but a different set of tags is used.

```
  Tag ID   Tag Name                       Writable
  ------   --------                       --------
  0xc350   FilmProductCode                no
  0xc351   ImageSourceEK                  no
  0xc352   CaptureConditionsPAR           no
  0xc353   CameraOwner                    undef
  0xc354   SerialNumber                   undef
  0xc355   UserSelectGroupTitle           no
  0xc356   DealerIDNumber                 no
  0xc357   CaptureDeviceFID               no
  0xc358   EnvelopeNumber                 no
  0xc359   FrameNumber                    no
  0xc35a   FilmCategory                   no
  0xc35b   FilmGencode                    no
  0xc35c   ModelAndVersion                no
  0xc35d   FilmSize                       no
  0xc35e   SBA_RGBShifts                  no
  0xc35f   SBAInputImageColorspace        no
  0xc360   SBAInputImageBitDepth          no
  0xc361   SBAExposureRecord              no
  0xc362   UserAdjSBA_RGBShifts           no
  0xc363   ImageRotationStatus            no
```

```
0xc364   RollGuidElements                       no
0xc365   MetadataNumber                         no
0xc366   EditTagArray                           no
0xc367   Magnification                          no
0xc36c   NativeXResolution                      no
0xc36d   NativeYResolution                      no
0xc36e   KodakEffectsIFD                        Kodak SpecialEffects
0xc36f   KodakBordersIFD                        Kodak Borders
0xc37a   NativeResolutionUnit                   no
0xc418   SourceImageDirectory                   no
0xc419   SourceImageFileName                    no
0xc41a   SourceImageVolumeName                  no
0xc46c   PrintQuality                           no
0xc46e   ImagePrintStatus                       no
```

Kodak SpecialEffects Tags

The Kodak SpecialEffects and Borders tags are found in sub-IFD's within
the Kodak JPEG APP3 "Meta" segment.

```
Tag ID   Tag Name                               Writable
------   --------                               --------
0x0000   DigitalEffectsVersion                  no
0x0001   DigitalEffectsName                     no
0x0002   DigitalEffectsType                     no
```

Kodak Borders Tags

```
Tag ID   Tag Name                               Writable
------   --------                               --------
0x0000   BordersVersion                         no
0x0001   BorderName                             no
0x0002   BorderID                               no
0x0003   BorderLocation                         no
0x0004   BorderType                             no
0x0008   WatermarkType                          no
```

Kodak KDC_IFD Tags

These tags are found in a separate IFD of KDC images from some newer
Kodak models such as the P880 and Z1015IS.

```
Tag ID   Tag Name                               Writable
------   --------                               --------
0xfa00   SerialNumber                           string
0xfa0d   WhiteBalance                           int8u
0xfa25   WB_RGBLevelsAuto                       no
0xfa27   WB_RGBLevelsTungsten                   no
0xfa28   WB_RGBLevelsFluorescent                no
0xfa29   WB_RGBLevelsDaylight                   no
0xfa2a   WB_RGBLevelsShade                      no
```

Kodak frea Tags

Information stored in the "frea" atom of Kodak PixPro SP360 MP4 videos.

```
Tag ID   Tag Name                               Writable
------   --------                               --------
'scra'   PreviewImage                           no
'thma'   ThumbnailImage                         no
'tima'   Duration                               no
'ver '   KodakVersion                           no
```

Kodak Free Tags

Information stored in the "free" atom of Kodak MP4 videos. (VERY bad
form for Kodak to store useful information in an atom intended for
unused space!)

```
Tag ID   Tag Name                               Writable
------   --------                               --------
```

```
  ------   --------                                    --------
  'AprV'   ApertureValue                               no
  'BrtV'   BrightnessValue                             no
  'Expc'   ExposureCompensation                        no
  'Expo'   ExposureTime                                no
  'FL35'   FocalLengthIn35mmFormat                     no
  'FNum'   FNumber                                     no
  'FoLn'   FocalLength                                 no
  'ISOS'   ISO                                         no
  'SVer'   FirmwareVersion                             no
  'Scrn'   PreviewInfo                                 Kodak Scrn
  'Seri'   SerialNumber                                no
  'StSV'   ShutterSpeedValue                           no
```

Kodak Scrn Tags

```
  Index2   Tag Name                                    Writable
  ------   --------                                    --------
       0   PreviewImageWidth                           no
       1   PreviewImageHeight                          no
       2   PreviewImageLength                          no
       4   PreviewImage                                no
```

Kodak DcMD Tags

Metadata directory found in MOV and MP4 videos from some Kodak cameras.

```
  Tag ID   Tag Name                                    Writable
  ------   --------                                    --------
  'CMbo'   CameraByteOrder                             no
  'Cmbo'   CameraByteOrder                             no
  'DcEM'   DcEM                                        Kodak DcEM
  'DcME'   DcME                                        Kodak DcME
```

Kodak DcEM Tags

```
  Tag ID   Tag Name                                    Writable
  ------   --------                                    --------
  [no tags known]
```

Kodak DcME Tags

```
  Tag ID   Tag Name                                    Writable
  ------   --------                                    --------
  [no tags known]
```

Kodak MOV Tags

This information is found in the TAGS atom of MOV videos from Kodak
models such as the P880.

```
  Index1   Tag Name                                    Writable
  ------   --------                                    --------
       0   Make                                        no
      22   Model                                       no
      64   ModelType                                   no
      78   ExposureTime                                no
      82   FNumber                                     no
      90   ExposureCompensation                        no
     112   FocalLength                                 no
```

Kodak pose Tags

Streamed orientation information from the PixPro 4KVR360, extracted as
sub-documents when the Duplicates option is used.

```
  Tag ID             Tag Name                          Writable
  ------             --------                          --------
  'Accelerometer'    Accelerometer                     no
  'AngularVelocity'  AngularVelocity                   no
```

Leaf Tags

    These tags are found in .MOS images from Leaf digital camera backs as
    written by Creo Leaf Capture. They exist within the Leaf-specific
    directory structure of EXIF tag 0x8606. The tables below list observed
    Leaf tags, however ExifTool will extract any tags found in the Leaf
    directories even if they don't appear in these tables.

Tag ID	Tag Name	Writable
'JPEG_preview_data'	PreviewImage	no
'JPEG_preview_info'	PreviewInfo	no
'PDA_histogram_data'	PDAHistogram	no
'back_serial_number'	BackSerial	no
'camera_profile'	CameraProfile	Leaf CameraProfile
'icc_camera_profile'	ICC_Profile	ICC_Profile
'icc_camera_to_tone_matrix'	ToneMatrix	no
'icc_camera_to_tone_space_flow'	ToneSpaceFlow	no
'icc_rgb_ws_profile'	RGB_Profile	ICC_Profile
'image_offset'	ImageOffset	no
'pattern_ratation_angle'	PatternAngle	no

Leaf CameraProfile Tags

All **Tag ID**'s in the following table have a leading 'CamProf_' which has
been removed.

Tag ID	Tag Name	Writable
'back_type'	CameraBackType	no
'capture_profile'	CaptureProfile	Leaf CaptureProfile
'image_profile'	ImageProfile	Leaf ImageProfile
'name'	CameraName	no
'type'	CameraType	no
'version'	CameraProfileVersion	no

Leaf CaptureProfile Tags

All **Tag ID**'s in the following table have a leading 'CaptProf_' which
has been removed.

Tag ID	Tag Name	Writable
'CCD_rect'	CCDRect	no
'CCD_valid_rect'	CCDValidRect	no
'CCD_video_rect'	CCDVideoRect	no
'back_type'	CaptProfBackType	no
'center_dark_rect'	CenterDarkRect	no
'color_averages'	ColorAverages	no
'color_matrix'	ColorMatrix	no
'dark_correction_type'	DarkCorrectionType	no
'image_bounds'	ImageBounds	no
'image_fields'	ImageFields	no
'image_offset'	ImageOffset	no
'left_dark_rect'	LeftDarkRect	no
'luminance_consts'	LuminanceConsts	no
'mosaic_pattern'	MosaicPattern	no
'name'	CaptProfName	no
'number_of_planes'	NumberOfPlanes	no
'raw_data_rotation'	RawDataRotation	no
'reconstruction_type'	ReconstructionType	no
'right_dark_rect'	RightDarkRect	no
'serial_number'	CaptureSerial	no
'type'	CaptProfType	no
'version'	CaptProfVersion	no
'xy_offset_info'	XYOffsetInfo	no

Leaf ImageProfile Tags

All **Tag ID**'s in the following table have a leading 'ImgProf_' which has

been removed.

```
  Tag ID              Tag Name              Writable
  ------              --------              --------
  'back_type'         ImgProfBackType       no
  'image_status'      ImageStatus           no
  'name'              ImgProfName           no
  'rotation_angle'    RotationAngle         no
  'shoot_setup'       ShootSetup            Leaf ShootSetup
  'type'              ImgProfType           no
  'version'           ImgProfVersion        no
```

Leaf ShootSetup Tags

All **Tag ID**'s in the following table have a leading 'ShootObj_' which
has been removed.

```
  Tag ID              Tag Name              Writable
  ------              --------              --------
  'back_type'         ShootObjBackType      no
  'camera_setup'      CameraSetup           Leaf CameraSetup
  'capture_setup'     CaptureSetup          Leaf CaptureSetup
  'color_setup'       ColorSetup            Leaf ColorSetup
  'look_header'       LookHeader            Leaf LookHeader
  'name'              ShootObjName          no
  'save_setup'        SaveSetup             Leaf SaveSetup
  'type'              ShootObjType          no
  'version'           ShootObjVersion       no
```

Leaf CameraSetup Tags

All **Tag ID**'s in the following table have a leading 'CameraObj_' which
has been removed.

```
  Tag ID              Tag Name              Writable
  ------              --------              --------
  'ISO_speed'         ISOSpeed              no
  'back_type'         CameraObjBackType     no
  'camera_type'       CameraType            no
  'lens_ID'           LensID                no
  'lens_type'         LensType              no
  'name'              CameraObjName         no
  'strobe'            Strobe                no
  'type'              CameraObjType         no
  'version'           CameraObjVersion      no
```

Leaf CaptureSetup Tags

All **Tag ID**'s in the following table have a leading 'CaptureObj_' which
has been removed.

```
  Tag ID              Tag Name              Writable
  ------              --------              --------
  'Multi_quality'     MultiQuality          no
  'back_type'         CaptureObjBackType    no
  'name'              CaptureObjName        no
  'neutals'           Neutals               Leaf Neutrals
  'selection'         Selection             Leaf Selection
  'sharpness'         Sharpness             Leaf Sharpness
  'single_quality'    SingleQuality         no
  'tone_curve'        ToneCurve             Leaf ToneCurve
  'type'              CaptureObjType        no
  'version'           CaptureObjVersion     no
```

Leaf Neutrals Tags

All **Tag ID**'s in the following table have a leading 'NeutObj_' which has
been removed.

```
  Tag ID                Tag Name              Writable
```

'back_type'	NeutObjBackType	no
'color_casts'	ColorCasts	no
'highlight_end_points'	HighlightEndPoints	no
'name'	NeutObjName	no
'neutrals'	Neutrals	no
'shadow_end_points'	ShadowEndPoints	no
'type'	NeutObjType	no
'version'	NeutObjVersion	no

Leaf Selection Tags

All **Tag ID**'s in the following table have a leading 'SelObj_' which has been removed.

Tag ID	Tag Name	Writable
'back_type'	SelObjBackType	no
'locks'	Locks	no
'name'	SelObjName	no
'orientation'	Orientation	no
'rect'	Rect	no
'resolution'	Resolution	no
'scale'	Scale	no
'type'	SelObjType	no
'version'	SelObjVersion	no

Leaf Sharpness Tags

All **Tag ID**'s in the following table have a leading 'SharpObj_' which has been removed.

Tag ID	Tag Name	Writable
'back_type'	SharpObjBackType	no
'data_len'	DataLen	no
'name'	SharpObjName	no
'sharp_info'	SharpInfo	no
'sharp_method'	SharpMethod	no
'type'	SharpObjType	no
'version'	SharpObjVersion	no

Leaf ToneCurve Tags

All **Tag ID**'s in the following table have a leading 'ToneObj_' which has been removed.

Tag ID	Tag Name	Writable
'back_type'	ToneObjBackType	no
'gamma'	Gamma	no
'name'	ToneObjName	no
'npts'	Npts	no
'tones'	Tones	no
'type'	ToneObjType	no
'version'	ToneObjVersion	no

Leaf ColorSetup Tags

All **Tag ID**'s in the following table have a leading 'ColorObj_' which has been removed.

Tag ID	Tag Name	Writable
'back_type'	ColorObjBackType	no
'color_mode'	ColorMode	no
'color_type'	ColorType	no
'has_ICC'	HasICC	no
'input_profile'	InputProfile	no
'name'	ColorObjName	no

```
    'output_profile'      OutputProfile            no
    'type'                ColorObjType             no
    'version'             ColorObjVersion          no
```

Leaf LookHeader Tags

All **Tag ID**'s in the following table have a leading 'LookHead_' which
has been removed.

```
    Tag ID                  Tag Name               Writable
    ------                  --------               --------
    'back_type'             LookHeadBackType        no
    'name'                  LookHeadName            no
    'type'                  LookHeadType            no
    'version'               LookHeadVersion         no
```

Leaf SaveSetup Tags

All **Tag ID**'s in the following table have a leading 'SaveObj_' which has
been removed.

```
    Tag ID                     Tag Name            Writable
    ------                     --------            --------
    'back_type'                SaveObjBackType      no
    'leaf_auto_active'         LeafAutoActive       no
    'leaf_auto_base_name'      LeafAutoBaseName     no
    'leaf_hot_folder'          LeafHotFolder        no
    'leaf_open_proc_HDR'       LeafOpenProcHDR      no
    'leaf_output_file_type'    LeafOutputFileType   no
    'leaf_save_selection'      LeafSaveSelection    no
    'name'                     SaveObjName          no
    'std_auto_active'          StdAutoActive        no
    'std_base_name'            StdBaseName          no
    'std_hot_folder'           StdHotFolder         no
    'std_open_in_photoshop'    StdOpenInPhotoshop   no
    'std_output_bit_depth'     StdOutputBitDepth    no
    'std_output_color_mode'    StdOutputColorMode   no
    'std_output_file_type'     StdOutputFileType    no
    'std_oxygen'               StdOxygen            no
    'std_save_selection'       StdSaveSelection     no
    'std_scaled_output'        StdScaledOutput      no
    'std_sharpen_output'       StdSharpenOutput     no
    'type'                     SaveObjType          no
    'version'                  SaveObjVersion       no
```

Leaf SubIFD Tags

Leaf writes a TIFF-format sub-IFD inside IFD0 of a MOS image. No tags
in this sub-IFD are currently known, except for tags 0x8602 and 0x8606
which really shouldn't be here anyway (so they don't appear in the
table below) because they duplicate references to the same data from
tags with the same ID in IFD0.

```
    Tag ID    Tag Name                            Writable
    ------    --------                            --------
    [no tags known]
```

Lytro Tags
    Tag definitions for Lytro Light Field Picture (LFP) files. ExifTool
    extracts the full JSON metadata blocks, as well as breaking them down
    into individual tags. All available tags are extracted from the JSON
    metadata, even if they don't appear in the table below.

```
    Tag Name                                      Writable
    --------                                      --------
    AccelerometerTime                              no
    AccelerometerX                                 no
    AccelerometerY                                 no
    AccelerometerZ                                 no
    CameraType                                     no
```

```
    DateTimeOriginal                               no
    EmbeddedImage                                  no
    ExposureTime                                   no
    FNumber                                        no
    FirmwareVersion                                no
    FocalLength                                    no
    FocalPlaneXResolution                          no
    FrameExposureTime                              no
    ISO                                            no
    ImageLimitExposureBias                         no
    ImageModulationExposureBias                    no
    JSONMetadata                                   no+
    LensTemperature                                no
    Make                                           no
    Model                                          no
    Orientation                                    no
    SensorSerialNumber                             no
    SerialNumber                                   no
    SocTemperature                                 no
```

Minolta Tags

These tags are used by Minolta, Konica/Minolta as well as some Sony
cameras. Minolta doesn't make things easy for decoders because the
meaning of some tags and the location where some information is stored
is different for different camera models. (Take MinoltaQuality for
example, which may be located in 5 different places.)

Tag ID	Tag Name	Writable
0x0000	MakerNoteVersion	undef[4]
0x0001	MinoltaCameraSettingsOld	Minolta CameraSettings
0x0003	MinoltaCameraSettings	Minolta CameraSettings
0x0004	MinoltaCameraSettings7D	Minolta CameraSettings7D
0x0010	CameraInfoA100	Minolta CameraInfoA100
0x0018	ISInfoA100	Minolta ISInfoA100
	ImageStabilization	no
0x0020	WBInfoA100	Minolta WBInfoA100
0x0040	CompressedImageSize	int32u
0x0081	PreviewImage	undef
0x0088	PreviewImageStart	int32u*
0x0089	PreviewImageLength	int32u*
0x0100	SceneMode	int32u
0x0101	ColorMode	int32u
0x0102	MinoltaQuality	int32u
0x0103	MinoltaQuality	int32u
	MinoltaImageSize	int32u
0x0104	FlashExposureComp	rational64s
0x0105	Teleconverter	int32u
0x0107	ImageStabilization	int32u
0x0109	RawAndJpgRecording	int32u
0x010a	ZoneMatching	int32u
0x010b	ColorTemperature	int32u
0x010c	LensType	int32u
0x0111	ColorCompensationFilter	int32s
0x0112	WhiteBalanceFineTune	int32u
0x0113	ImageStabilization	int32u
0x0114	MinoltaCameraSettings5D	Minolta CameraSettings5D
	CameraSettingsA100	Minolta CameraSettingsA100
0x0115	WhiteBalance	int32u
0x0e00	PrintIM	PrintIM
0x0f00	MinoltaCameraSettings2	no

Minolta CameraSettings Tags

There is some variability in CameraSettings information between
different models (and sometimes even between different firmware
versions), so this information may not be as reliable as it should be.
Because of this, tags in the following tables are set to lower priority
to prevent them from superseding the values of same-named tags in other
locations when duplicate tags are disabled.

Index4	Tag Name	Writable
1	ExposureMode	int32u
2	FlashMode	int32u
3	WhiteBalance	int32u~
4	MinoltaImageSize	int32u
5	MinoltaQuality	int32u
6	DriveMode	int32u
7	MeteringMode	int32u
8	ISO	int32u
9	ExposureTime	int32u
10	FNumber	int32u
11	MacroMode	int32u
12	DigitalZoom	int32u
13	ExposureCompensation	int32u
14	BracketStep	int32u
16	IntervalLength	int32u
17	IntervalNumber	int32u
18	FocalLength	int32u
19	FocusDistance	int32u
20	FlashFired	int32u
21	MinoltaDate	int32u
22	MinoltaTime	int32u
23	MaxAperture	int32u
26	FileNumberMemory	int32u
27	LastFileNumber	int32u
28	ColorBalanceRed	int32u
29	ColorBalanceGreen	int32u
30	ColorBalanceBlue	int32u
31	Saturation	int32u
32	Contrast	int32u
33	Sharpness	int32u
34	SubjectProgram	int32u
35	FlashExposureComp	int32u
36	ISOSetting	int32u
37	MinoltaModelID	int32u
38	IntervalMode	int32u
39	FolderName	int32u
40	ColorMode	int32u
41	ColorFilter	int32u
42	BWFilter	int32u
43	InternalFlash	int32u
44	Brightness	int32u
45	SpotFocusPointX	int32u
46	SpotFocusPointY	int32u
47	WideFocusZone	int32u
48	FocusMode	int32u
49	FocusArea	int32u
50	DECPosition	int32u
51	ColorProfile	int32u
52	DataImprint	int32u
63	FlashMetering	int32u

Minolta CameraSettings7D Tags

Index2	Tag Name	Writable
0	ExposureMode	int16u
2	MinoltaImageSize	int16u
3	MinoltaQuality	int16u
4	WhiteBalance	int16u
14	FocusMode	int16u
16	AFPoints	int16u
21	Flash	int16u
22	FlashMode	int16u
28	ISOSetting	int16u
30	ExposureCompensation	int16s
37	ColorSpace	int16u~
38	Sharpness	int16u

```
   39   Contrast                            int16u
   40   Saturation                          int16u
   45   FreeMemoryCardImages                int16u
   63   ColorTemperature                    int16s
   64   HueAdjustment                       int16u
   70   Rotation                            int16u
   71   FNumber                             int16u
   72   ExposureTime                        int16u
   74   FreeMemoryCardImages                int16u
   94   ImageNumber                         int16u
   96   NoiseReduction                      int16u
   98   ImageNumber2                        int16u
  113   ImageStabilization                  int16u
  117   ZoneMatchingOn                      int16u
```

Minolta CameraInfoA100 Tags

Camera information for the Sony DSLR-A100.

```
  Index1   Tag Name                        Writable
  ------   --------                        --------
       1   AFSensorActive                  int8u
       2   AFStatusActiveSensor            int16s
       4   AFStatusTop-right               int16s
       6   AFStatusBottom-right            int16s
       8   AFStatusBottom                  int16s
      10   AFStatusMiddleHorizontal        int16s
      12   AFStatusCenterVertical          int16s
      14   AFStatusTop                     int16s
      16   AFStatusTop-left                int16s
      18   AFStatusBottom-left             int16s
      20   FocusLocked                     int8u
      21   AFPoint                         int8u
      22   AFMode                          int8u
      45   AFStatusLeft                    int16s
      47   AFStatusCenterHorizontal        int16s
      49   AFStatusRight                   int16s
      51   AFAreaMode                      int8u
```

Minolta ISInfoA100 Tags

Image stabilization information for the Sony DSLR-A100.

```
  Index1   Tag Name                        Writable
  ------   --------                        --------
       0   ImageStabilization              int16u
```

Minolta WBInfoA100 Tags

White balance information for the Sony DSLR-A100.

```
  Index1   Tag Name                        Writable
  ------   --------                        --------
      14   DriveMode                       int8u
      16   Rotation                        int8u
      20   ImageStabilizationSetting       int8u
      21   DynamicRangeOptimizerMode       int8u
      42   ExposureCompensationMode        int8u
      43   WBBracketShotNumber             int8u
      44   WhiteBalanceBracketing          int8u
      45   ExposureBracketShotNumber       int8u
      49   FlashFunction                   int16u
      52   ExposureMode                    int16u
      54   ColorMode                       int16u
      56   AverageLV                       int16u
      60   FrameNumber                     int8u
     150   WB_RGBLevels                    int16u[3]
     174   WB_GBRGLevels                   int16u[4]
     192   WB_RedLevelsTungsten            int16u[7]
     206   WB_BlueLevelsTungsten           int16u[7]
```

```
   220    WB_RedLevelsDaylight                 int16u[7]
   234    WB_BlueLevelsDaylight                int16u[7]
   248    WB_RedLevelsCloudy                   int16u[7]
   262    WB_BlueLevelsCloudy                  int16u[7]
   276    WB_RedLevelsFlash                    int16u[7]
   290    WB_BlueLevelsFlash                   int16u[7]
   332    WB_RedLevelsFluorescent              int16u[7]
   346    WB_BlueLevelsFluorescent             int16u[7]
   360    WB_RedLevelsShade                    int16u[7]
   374    WB_BlueLevelsShade                   int16u[7]
   392    WB_RedLevel6500K                     int16u
   394    WB_BlueLevel6500K                    int16u
   396    WB_RedLevelCustom                    int16u
   398    WB_BlueLevelCustom                   int16u
   408    WB_RedLevel3500K                     int16u
   410    WB_BlueLevel3500K                    int16u
   446    WB_RedLevelsKelvin                   int16u[75]
   596    WB_BlueLevelsKelvin                  int16u[75]
   772    WB_RBLevelsFlash                     int16u[2]
   776    WB_RBLevelsCoolWhiteF                int16u[2]
  1000    WB_RBLevelsTungsten                  int16u[2]
  1004    WB_RBLevelsDaylight                  int16u[2]
  1008    WB_RBLevelsCloudy                    int16u[2]
  1012    WB_RBLevelsFlash                     int16u[2]
  1020    WB_RedLevelsFluorescent              int16u[7]
  1034    WB_BlueLevelsFluorescent             int16u[7]
  1048    WB_RBLevelsShade                     int16u[2]
  1056    WB_RBLevels6500K                     int16u[2]
  1060    WB_RBLevelsCustom                    int16u[2]
  1072    WB_RBLevels3500K                     int16u[2]
  1320    WB_RBLevelsDaylight                  int16u[2]
  1350    WB_RGBLevels                         int16u[3]
  1576    AEMeteringSegments                   int8u[40]
  1680    MeasuredLV                           int8u
  1681    BrightnessValue                      int8u
  4172    TiffMeteringImage                    no
 18872    ExposureTime                         int8u
 18874    ISO                                  int8u
 18875    FocusDistance                        int8u
 18877    LensType                             int16uRev
 18880    ExposureCompensation                 int8s
 18881    FlashExposureComp                    int8s
 18882    ImageStabilization                   int8u
 18883    BrightnessValue                      int8u
 18885    MaxAperture                          int8u
 18887    FNumber                              int8u
 18908    InternalSerialNumber                 string[12]
```

Minolta CameraSettings5D Tags

```
   Index2   Tag Name                            Writable
   ------   --------                            --------
       10    ExposureMode                        int16u
       12    MinoltaImageSize                    int16u
       13    MinoltaQuality                      int16u
       14    WhiteBalance                        int16u
       31    Flash                               int16u
       32    FlashMode                           int16u
       37    MeteringMode                        int16u
       38    ISOSetting                          int16u
       47    ColorSpace                          int16u
       48    Sharpness                           int16u
       49    Contrast                            int16u
       50    Saturation                          int16u
       53    ExposureTime                        int16u
       54    FNumber                             int16u
       55    FreeMemoryCardImages                int16u
       73    ColorTemperature                    int16s
       74    HueAdjustment                       int16u
       80    Rotation                            int16u
```

```
   83    ExposureCompensation                     int16u
   84    FreeMemoryCardImages                     int16u
  101    Rotation                                 int16u
  110    ColorTemperature                         int16s
  113    PictureFinish                            int16u
  174    ImageNumber                              int16u
  176    NoiseReduction                           int16u
  189    ImageStabilization                       int16u
```

Minolta CameraSettingsA100 Tags

Camera settings information for the Sony DSLR-A100.

```
  Index2   Tag Name                              Writable
  ------   --------                              --------
       0   ExposureMode                          int16u
       1   ExposureCompensationSetting           int16u
       5   HighSpeedSync                         int16u
       6   ShutterSpeedSetting                   int16u
       7   ApertureSetting                       int16u
       8   ExposureTime                          int16u
       9   FNumber                               int16u
      10   DriveMode2                            int16u
      11   WhiteBalance                          int16u
      12   FocusMode                             int16u
      13   AFPointSelected                       int16u
      14   AFAreaMode                            int16u
      15   FlashMode                             int16u
      16   FlashExposureCompSet                  int16u
      18   MeteringMode                          int16u
      19   ISOSetting                            int16u
      20   ZoneMatchingMode                      int16u
      21   DynamicRangeOptimizer                 int16u
      22   ColorMode                             int16u
      23   ColorSpace                            int16u
      24   Sharpness                             int16u
      25   Contrast                              int16u
      26   Saturation                            int16u
      28   FlashMetering                         int16u
      29   PrioritySetupShutterRelease           int16u
      30   DriveMode                             int16u
      31   SelfTimerTime                         int16u
      32   ContinuousBracketing                  int16u
      33   SingleFrameBracketing                 int16u
      34   WhiteBalanceBracketing                int16u
      35   WhiteBalanceSetting                   int16u
      36   PresetWhiteBalance                    int16u
      37   ColorTemperatureSetting               int16u
      38   CustomWBSetting                       int16u
      39   DynamicRangeOptimizerSetting          int16u
      50   FreeMemoryCardImages                  int16u
      52   CustomWBRedLevel                      int16u
      53   CustomWBGreenLevel                    int16u
      54   CustomWBBlueLevel                     int16u
      55   CustomWBError                         int16u
      56   WhiteBalanceFineTune                  int16s
      57   ColorTemperature                      int16u
      58   ColorCompensationFilter               int16s
      59   SonyImageSize                         int16u
      60   SonyQuality                           int16u
      61   InstantPlaybackTime                   int16u
      62   InstantPlaybackSetup                  int16u
      63   NoiseReduction                        int16u
      64   EyeStartAF                            int16u
      65   RedEyeReduction                       int16u
      66   FlashDefault                          int16u
      67   AutoBracketOrder                      int16u
      68   FocusHoldButton                       int16u
      69   AELButton                             int16u
      70   ControlDialSet                        int16u
```

```
        71      ExposureCompensationMode          int16u
        72      AFAssist                          int16u
        73      CardShutterLock                   int16u
        74      LensShutterLock                   int16u
        75      AFAreaIllumination                int16u
        76      MonitorDisplayOff                 int16u
        77      RecordDisplay                     int16u
        78      PlayDisplay                       int16u
        80      ExposureIndicator                 int16u
        81      AELExposureIndicator              int16u
        82      ExposureBracketingIndicatorLast   int16u
        83      MeteringOffScaleIndicator         int16u
        84      FlashExposureIndicator            int16u
        85      FlashExposureIndicatorNext        int16u
        86      FlashExposureIndicatorLast        int16u
        87      ImageStabilization                int16u
        88      FocusModeSwitch                   int16u
        89      FlashType                         int16u
        90      Rotation                          int16u
        91      AELock                            int16u
        94      ColorTemperature                  int16u
        95      ColorCompensationFilter           int16s
        96      BatteryState                      int16u
```

Minolta MMA Tags

This information is found in MOV videos from Minolta models such as the
DiMAGE A2, S414 and 7Hi.

```
    Index1   Tag Name                          Writable
    ------   --------                          --------
        0    Make                              no
       20    SoftwareVersion                   no
```

Minolta MOV1 Tags

This information is found in MOV videos from some Konica Minolta models
such as the DiMage Z10 and X50.

```
    Index1   Tag Name                          Writable
    ------   --------                          --------
        0    Make                              no
       32    ModelType                         no
       46    ExposureTime                      no
       50    FNumber                           no
       58    ExposureCompensation              no
       80    FocalLength                       no
```

Minolta MOV2 Tags

This information is found in MOV videos from some Minolta models such
as the DiMAGE X and Xt.

```
    Index1   Tag Name                          Writable
    ------   --------                          --------
        0    Make                              no
       24    ModelType                         no
       38    ExposureTime                      no
       42    FNumber                           no
       50    ExposureCompensation              no
       72    FocalLength                       no
```

Motorola Tags
```
    Tag ID   Tag Name                          Writable
    ------   --------                          --------
    0x5500   BuildNumber                       string
    0x5501   SerialNumber                      string
    0x6420   CustomRendered                    string
    0x64d0   DriveMode                         string
    0x665e   Sensor                            string
```

```
     0x6705   ManufactureDate                       string
```

Nikon Tags

```
     Tag ID   Tag Name                              Writable
     ------   --------                              --------
     0x0001   MakerNoteVersion                      undef[4]
     0x0002   ISO                                   int16u[2]
     0x0003   ColorMode                             string
     0x0004   Quality                               string
     0x0005   WhiteBalance                          string
     0x0006   Sharpness                             string
     0x0007   FocusMode                             string
     0x0008   FlashSetting                          string
     0x0009   FlashType                             string
     0x000b   WhiteBalanceFineTune                  int16s[n]
     0x000c   WB_RBLevels                           rational64u[4]
     0x000d   ProgramShift                          undef[4]
     0x000e   ExposureDifference                    undef[4]
     0x000f   ISOSelection                          string
     0x0010   DataDump                              no
     0x0011   PreviewIFD                            Nikon PreviewIFD
     0x0012   FlashExposureComp                     undef[4]
     0x0013   ISOSetting                            int16u[2]
     0x0014   ColorBalanceA                         Nikon ColorBalanceA
              NRWData                               Nikon ColorBalanceB
                                                    Nikon ColorBalanceC
     0x0016   ImageBoundary                         int16u[4]
     0x0017   ExternalFlashExposureComp             undef[4]
     0x0018   FlashExposureBracketValue             undef[4]
     0x0019   ExposureBracketValue                  rational64s
     0x001a   ImageProcessing                       string
     0x001b   CropHiSpeed                           int16u[7]
     0x001c   ExposureTuning                        undef[3]
     0x001d   SerialNumber                          string!
     0x001e   ColorSpace                            int16u
     0x001f   VRInfo                                Nikon VRInfo
     0x0020   ImageAuthentication                   int8u
     0x0021   FaceDetect                            Nikon FaceDetect
     0x0022   ActiveD-Lighting                      int16u
     0x0023   PictureControlData                    Nikon PictureControl
                                                    Nikon PictureControl2
                                                    Nikon PictureControl3
                                                    Nikon PictureControlUnknown
     0x0024   WorldTime                             Nikon WorldTime
     0x0025   ISOInfo                               Nikon ISOInfo
     0x002a   VignetteControl                       int16u
     0x002b   DistortInfo                           Nikon DistortInfo
     0x002c   UnknownInfo                           Nikon UnknownInfo
     0x0032   UnknownInfo2                          Nikon UnknownInfo2
     0x0034   ShutterMode                           int16u
     0x0035   HDRInfo                               Nikon HDRInfo
              HDRInfo2                              Nikon HDRInfo2
     0x0037   MechanicalShutterCount                int32u
     0x0039   LocationInfo                          Nikon LocationInfo
     0x003d   BlackLevel                            int16u[4]
     0x003e   ImageSizeRAW                          yes
     0x003f   WhiteBalanceFineTune                  rational64s[2]
     0x0044   JPGCompression                        yes
     0x0045   CropArea                              int16u[4]
     0x004e   NikonSettings                         NikonSettings
     0x004f   ColorTemperatureAuto                  int16u
     0x0080   ImageAdjustment                       string
     0x0081   ToneComp                              string
     0x0082   AuxiliaryLens                         string
     0x0083   LensType                              int8u
     0x0084   Lens                                  rational64u[4]
     0x0085   ManualFocusDistance                   rational64u
     0x0086   DigitalZoom                           rational64u
     0x0087   FlashMode                             int8u
     0x0088   AFInfo                                Nikon AFInfo
```

```
                                         Nikon AFInfo
0x0089   ShootingMode                    int16u~
0x008b   LensFStops                      undef[4]
0x008c   ContrastCurve                   undef!
0x008d   ColorHue                        string
0x008f   SceneMode                       string
0x0090   LightSource                     string
0x0091   ShotInfoD40                     Nikon ShotInfoD40
         ShotInfoD80                     Nikon ShotInfoD80
         ShotInfoD90                     Nikon ShotInfoD90
         ShotInfoD3a                     Nikon ShotInfoD3a
         ShotInfoD3b                     Nikon ShotInfoD3b
         ShotInfoD3X                     Nikon ShotInfoD3X
         ShotInfoD3S                     Nikon ShotInfoD3S
         ShotInfoD300a                   Nikon ShotInfoD300a
         ShotInfoD300b                   Nikon ShotInfoD300b
         ShotInfoD300S                   Nikon ShotInfoD300S
         ShotInfoD700                    Nikon ShotInfoD700
         ShotInfoD780                    Nikon ShotInfoD780
         ShotInfoD7500                   Nikon ShotInfoD7500
         ShotInfoD800                    Nikon ShotInfoD800
         ShotInfoD810                    Nikon ShotInfoD810
         ShotInfoD850                    Nikon ShotInfoD850
         ShotInfoD5000                   Nikon ShotInfoD5000
         ShotInfoD5100                   Nikon ShotInfoD5100
         ShotInfoD5200                   Nikon ShotInfoD5200
         ShotInfoD7000                   Nikon ShotInfoD7000
         ShotInfoD4                      Nikon ShotInfoD4
         ShotInfoD4S                     Nikon ShotInfoD4S
         ShotInfoD500                    Nikon ShotInfoD500
         ShotInfoD6                      Nikon ShotInfoD6
         ShotInfoD610                    Nikon ShotInfoD610
         ShotInfoZ6III                   Nikon ShotInfoZ6III
         ShotInfoZ7II                    Nikon ShotInfoZ7II
         ShotInfoZ8                      Nikon ShotInfoZ8
         ShotInfoZ9                      Nikon ShotInfoZ9
         ShotInfo02xx                    Nikon ShotInfo
         ShotInfoUnknown                 Nikon ShotInfo
0x0092   HueAdjustment                   int16s
0x0093   NEFCompression                  int16u
0x0094   SaturationAdj                   int16s
0x0095   NoiseReduction                  string
0x0096   NEFLinearizationTable           undef!
0x0097   ColorBalance0100                Nikon ColorBalance1
         ColorBalance0102                Nikon ColorBalance2
         ColorBalance0103                Nikon ColorBalance3
         ColorBalance0205                Nikon ColorBalance2
         ColorBalance0209                Nikon ColorBalance4
         ColorBalance02                  Nikon ColorBalance2
         ColorBalance0211                Nikon ColorBalance4
         ColorBalance0213                Nikon ColorBalance2
         ColorBalance0215                Nikon ColorBalance4
         ColorBalance0219                Nikon ColorBalance2
         ColorBalanceUnknown1            Nikon ColorBalanceUnknown
         ColorBalanceUnknown2            Nikon ColorBalanceUnknown2
         ColorBalanceUnknown             Nikon ColorBalanceUnknown
0x0098   LensData0100                    Nikon LensData00
         LensData0101                    Nikon LensData01
         LensData0201                    Nikon LensData01
         LensData0204                    Nikon LensData0204
         LensData0400                    Nikon LensData0400
         LensData0402                    Nikon LensData0402
         LensData0403                    Nikon LensData0403
         LensData0800                    Nikon LensData0800
         LensDataUnknown                 Nikon LensDataUnknown
0x0099   RawImageCenter                  int16u[2]
0x009a   SensorPixelSize                 rational64u[2]
0x009c   SceneAssist                     string
0x009d   DateStampMode                   int16u
0x009e   RetouchHistory                  int16u[10]
```

```
0x00a0   SerialNumber                          string
0x00a2   ImageDataSize                         int32u
0x00a5   ImageCount                            int32u
0x00a6   DeletedImageCount                     int32u
0x00a7   ShutterCount                          int32u!
0x00a8   FlashInfo0100                         Nikon FlashInfo0100
         FlashInfo0102                         Nikon FlashInfo0102
         FlashInfo0103                         Nikon FlashInfo0103
         FlashInfo0106                         Nikon FlashInfo0106
         FlashInfo0107                         Nikon FlashInfo0107
         FlashInfo0300                         Nikon FlashInfo0300
         FlashInfoUnknown                      Nikon FlashInfoUnknown
0x00a9   ImageOptimization                     string
0x00aa   Saturation                            string
0x00ab   VariProgram                           string
0x00ac   ImageStabilization                    string
0x00ad   AFResponse                            string
0x00b0   MultiExposure                         Nikon MultiExposure
         MultiExposure2                        Nikon MultiExposure
                                               Nikon MultiExposure2
0x00b1   HighISONoiseReduction                 int16u
0x00b3   ToningEffect                          string
0x00b6   PowerUpTime                           undef
0x00b7   AFInfo2                               Nikon AFInfo2V0100
                                               Nikon AFInfo2V0101
                                               Nikon AFInfo2V0200
                                               Nikon AFInfo2V0300
                                               Nikon AFInfo2V0400
0x00b8   FileInfo                              Nikon FileInfo
                                               Nikon FileInfo
0x00b9   AFTune                                Nikon AFTune
0x00bb   RetouchInfo                           Nikon RetouchInfo
0x00bd   PictureControlData                    Nikon PictureControl
0x00bf   SilentPhotography                     yes
0x00c3   BarometerInfo                         Nikon BarometerInfo
0x0e00   PrintIM                               PrintIM
0x0e01   NikonCaptureData                      NikonCapture
0x0e09   NikonCaptureVersion                   string^
0x0e0e   NikonCaptureOffsets                   Nikon CaptureOffsets
0x0e10   NikonScanIFD                          Nikon Scan
0x0e13   NikonCaptureEditVersions              NikonCapture
         NikonCaptureEditVersions              undef!^
0x0e1d   NikonICCProfile                       ICC_Profile
0x0e1e   NikonCaptureOutput                    Nikon CaptureOutput
0x0e22   NEFBitDepth                           int16u[4]!
```

Nikon ast Tags

Tags used by Nikon NX Studio in Nikon NKSC sidecar files and trailers.

These tags belong to the ExifTool XMP-ast family 1 group.

```
   Tag Name                                 Writable
   --------                                 --------
   About                                    no
   GPSAltitude                              no
   GPSAltitudeRef                           no
   GPSImgDirection                          no
   GPSImgDirectionRef                       no
   GPSLatitude                              no
   GPSLatitudeRef                           no
   GPSLongitude                             no
   GPSLongitudeRef                          no
   GPSMapDatum                              no
   GPSVersionID                             no
   IPTC                                     IPTC
   Version                                  no
   XMLPackets                               XMP
```

Nikon nine Tags

These tags belong to the ExifTool XMP-nine family 1 group.

Tag Name	Writable
About	no
Label	no
NineEdits	Nikon NineEdits
Rating	no
Trim	no
Version	no

Nikon NineEdits Tags

XML-based tags used to store editing information.

Tag Name	Writable
FilterParametersBinary	no
FilterParametersCustomCustomData	no
FilterParametersExportExportData	no

Nikon sdc Tags

These tags belong to the ExifTool XMP-sdc family 1 group.

Tag Name	Writable
About	no
AppName	no
AppVersion	no
Version	no

Nikon PreviewIFD Tags

Tag ID	Tag Name	Writable
0x00fe	SubfileType	no
0x0103	Compression	no
0x011a	XResolution	no
0x011b	YResolution	no
0x0128	ResolutionUnit	no
0x0201	PreviewImageStart	int32u*
0x0202	PreviewImageLength	int32u*
0x0213	YCbCrPositioning	no

Nikon ColorBalanceA Tags

Index2	Tag Name	Writable
624	WB_RBLevels	int16u[2]!
626	WB_RBLevelsAuto	int16u[2]!
628	WB_RBLevelsDaylight	int16u[14]!
642	WB_RBLevelsIncandescent	int16u[14]!
656	WB_RBLevelsFluorescent	int16u[6]!
662	WB_RBLevelsCloudy	int16u[14]!
676	WB_RBLevelsFlash	int16u[14]!
690	WB_RBLevelsShade	int16u[14]!

Nikon ColorBalanceB Tags

Color balance tags used by the P6000.

Index1	Tag Name	Writable
4	ColorBalanceVersion	undef[4]
5096	WB_RGGBLevels	int32u[4]!
5112	WB_RGGBLevelsDaylight	int32u[4]!
5128	WB_RGGBLevelsCloudy	int32u[4]!
5160	WB_RGGBLevelsTungsten	int32u[4]!

```
      5176    WB_RGGBLevelsFluorescentW            int32u[4]!
      5192    WB_RGGBLevelsFlash                   int32u[4]!
      5224    WB_RGGBLevelsCustom                  int32u[4]!
      5240    WB_RGGBLevelsAuto                    int32u[4]!
```

Nikon ColorBalanceC Tags

Color balance tags used by the P1000, P7000, P7100 and B700.

```
   Index1    Tag Name                            Writable
   ------    --------                            --------
        4    ColorBalanceVersion                 undef[4]
       32    BlackLevel                          int16u
       56    WB_RGGBLevels                       int32u[4]!
       76    WB_RGGBLevelsDaylight               int32u[4]!
       96    WB_RGGBLevelsCloudy                 int32u[4]!
      116    WB_RGGBLevelsShade                  int32u[4]!
      136    WB_RGGBLevelsTungsten               int32u[4]!
      156    WB_RGGBLevelsFluorescentW           int32u[4]!
      176    WB_RGGBLevelsFluorescentN           int32u[4]!
      196    WB_RGGBLevelsFluorescentD           int32u[4]!
      216    WB_RGGBLevelsHTMercury              int32u[4]!
      256    WB_RGGBLevelsCustom                 int32u[4]!
      276    WB_RGGBLevelsAuto                   int32u[4]!
```

Nikon VRInfo Tags

```
   Index1    Tag Name                            Writable
   ------    --------                            --------
        0    VRInfoVersion                       no
        4    VibrationReduction                  int8u
        6    VRMode                              int8u
        8    VRType                              int8u
```

Nikon FaceDetect Tags

```
   Index2    Tag Name                            Writable
   ------    --------                            --------
        1    FaceDetectFrameSize                 int16u[2]
        3    FacesDetected                       int16u
        4    Face1Position                       int16u[4]
        8    Face2Position                       int16u[4]
       12    Face3Position                       int16u[4]
       16    Face4Position                       int16u[4]
       20    Face5Position                       int16u[4]
       24    Face6Position                       int16u[4]
       28    Face7Position                       int16u[4]
       32    Face8Position                       int16u[4]
       36    Face9Position                       int16u[4]
       40    Face10Position                      int16u[4]
       44    Face11Position                      int16u[4]
       48    Face12Position                      int16u[4]
```

Nikon PictureControl Tags

```
   Index1    Tag Name                            Writable
   ------    --------                            --------
        0    PictureControlVersion               no
        4    PictureControlName                  string[20]
       24    PictureControlBase                  string[20]
       48    PictureControlAdjust                int8u
       49    PictureControlQuickAdjust           int8u
       50    Sharpness                           int8u
       51    Contrast                            int8u
       52    Brightness                          int8u
       53    Saturation                          int8u
       54    HueAdjustment                       int8u
       55    FilterEffect                        int8u
       56    ToningEffect                        int8u
       57    ToningSaturation                    int8u
```

Nikon PictureControl2 Tags

Index1	Tag Name	Writable
0	PictureControlVersion	no
4	PictureControlName	string[20]
24	PictureControlBase	string[20]
48	PictureControlAdjust	int8u
49	PictureControlQuickAdjust	int8u
51	Sharpness	int8u
53	Clarity	int8u
55	Contrast	int8u
57	Brightness	int8u
59	Saturation	int8u
61	Hue	int8u
63	FilterEffect	int8u
64	ToningEffect	int8u
65	ToningSaturation	int8u

Nikon PictureControl3 Tags

Index1	Tag Name	Writable
0	PictureControlVersion	no
8	PictureControlName	string[20]
28	PictureControlBase	string[20]
54	PictureControlAdjust	int8u
55	PictureControlQuickAdjust	int8u
57	Sharpness	int8u
59	MidRangeSharpness	int8u
61	Clarity	int8u
63	Contrast	int8u
65	Brightness	int8u
67	Saturation	int8u
69	Hue	int8u
71	FilterEffect	int8u
72	ToningEffect	int8u
73	ToningSaturation	int8u

Nikon PictureControlUnknown Tags

Index1	Tag Name	Writable
0	PictureControlVersion	no

Nikon WorldTime Tags

Index1	Tag Name	Writable
0	TimeZone	int16s
2	DaylightSavings	int8u
3	DateDisplayFormat	int8u

Nikon ISOInfo Tags

Index1	Tag Name	Writable
0	ISO	int8u
4	ISOExpansion	int16u
6	ISO2	int8u
10	ISOExpansion2	int16u

Nikon DistortInfo Tags

Index1	Tag Name	Writable
0	DistortionVersion?	no
4	AutoDistortionControl	int8u

Nikon UnknownInfo Tags

```
  Index4   Tag Name                        Writable
  ------   --------                        --------
     0     UnknownInfoVersion?             no
```

Nikon UnknownInfo2 Tags

```
  Index4   Tag Name                        Writable
  ------   --------                        --------
     0     UnknownInfo2Version?            no
```

Nikon HDRInfo Tags

```
  Index1   Tag Name                        Writable
  ------   --------                        --------
     0     HDRInfoVersion                  no
     4     HDR                             int8u
     5     HDRLevel                        int8u
     6     HDRSmoothing                    int8u
     7     HDRLevel2                       int8u
```

Nikon HDRInfo2 Tags

```
  Index1   Tag Name                        Writable
  ------   --------                        --------
     0     HDRInfoVersion                  no
     4     HDR                             int8u
     5     HDRLevel                        int8u
```

Nikon LocationInfo Tags

Tags written by some Nikon GPS-equipped cameras like the AW100.

```
  Index1   Tag Name                        Writable
  ------   --------                        --------
     0     LocationInfoVersion             undef[4]
     4     TextEncoding                    int8u
     5     CountryCode                     undef[3]
     8     POILevel                        int8u
     9     Location                        undef[70]
```

Nikon MakerNotes0x51 Tags

```
  Index1   Tag Name                        Writable
  ------   --------                        --------
     0     FirmwareVersion51               no
    10     NEFCompression                  int16u
```

Nikon MakerNotes0x56 Tags

```
  Index1   Tag Name                        Writable
  ------   --------                        --------
     0     FirmwareVersion56               no
     4     BurstGroupID                    int16u
```

Nikon AFInfo Tags

```
  Index1   Tag Name                        Writable
  ------   --------                        --------
     0     AFAreaMode                      int8u
     1     AFPoint                         int8u
     2     AFPointsInFocus                 int16u
```

Nikon ShotInfoD40 Tags

These tags are extracted from encrypted data in D40 and D40X images.

```
  Index    Tag Name                        Writable
  -----    --------                        --------
```

```
    0   ShotInfoVersion                     no
  582   ShutterCount                        int32u
  586.1 VibrationReduction                  int8u & 0x08
  729   CustomSettingsD40                   NikonCustom SettingsD40
```

Nikon ShotInfoD80 Tags

These tags are extracted from encrypted data in D80 images.

```
  Index   Tag Name                          Writable
  -----   --------                          --------
    0   ShotInfoVersion                     no
  586   ShutterCount                        int32u
  590.1 Rotation                            int8u & 0x07
  590.2 VibrationReduction                  int8u & 0x18
  590.3 FlashFired                          int8u & 0xe0
  708   NikonImageSize                      int8u & 0xf0
  708.1 ImageQuality                        int8u & 0x0f
  748   CustomSettingsD80                   NikonCustom SettingsD80
```

Nikon ShotInfoD90 Tags

These tags are extracted from encrypted data in images from the D90
with firmware 1.00.

```
  Index   Tag Name                          Writable
  -----   --------                          --------
    0   ShotInfoVersion                     no
    4   FirmwareVersion                     no
  693   ISO2                                int8u
  725   ShutterCount                        int32u
  884   CustomSettingsD90                   NikonCustom SettingsD90
```

Nikon ShotInfoD3a Tags

These tags are extracted from encrypted data in images from the D3 with
firmware 1.00 and earlier.

```
  Index   Tag Name                          Writable
  -----   --------                          --------
    0   ShotInfoVersion                     no
  598   ISO2                                int8u
  630   ShutterCount                        int32u
  723.1 NikonImageSize                      int8u & 0x18
  723.2 ImageQuality                        int8u & 0x07
  769   CustomSettingsD3                    NikonCustom SettingsD3
```

Nikon ShotInfoD3b Tags

These tags are extracted from encrypted data in images from the D3 with
firmware 1.10, 2.00, 2.01 and 2.02.

```
  Index   Tag Name                          Writable
  -----   --------                          --------
    0   ShotInfoVersion                     no
    4   FirmwareVersion                     no
   16   ImageArea                           int8u
  605   ISO2                                int8u
  637   ShutterCount                        int32u
  639   ShutterCount                        int32u
  650   PreFlashReturnStrength              int8u
  732.1 NikonImageSize                      int8u & 0x18
  732.2 ImageQuality                        int8u & 0x07
  778   CustomSettingsD3                    NikonCustom SettingsD3
```

Nikon ShotInfoD3X Tags

These tags are extracted from encrypted data in images from the D3X
with firmware 1.00.

```
   Index   Tag Name                          Writable
   -----   --------                          --------
       0   ShotInfoVersion                   no
       4   FirmwareVersion                   no
     605   ISO2                              int8u
     640   ShutterCount                      int32u
     779   CustomSettingsD3X                 NikonCustom SettingsD3
```

Nikon ShotInfoD3S Tags

These tags are extracted from encrypted data in images from the D3S
with firmware 1.00 and earlier.

```
   Index   Tag Name                          Writable
   -----   --------                          --------
       0   ShotInfoVersion                   no
       4   FirmwareVersion                   no
      16   ImageArea                         int8u
     545   ISO2                              int8u
     578   ShutterCount                      int32u
   671.1   JPGCompression                    int8u & 0x40
     718   CustomSettingsD3S                 NikonCustom SettingsD3
```

Nikon ShotInfoD300a Tags

These tags are extracted from encrypted data in images from the D300
with firmware 1.00 and earlier.

```
   Index   Tag Name                          Writable
   -----   --------                          --------
       0   ShotInfoVersion                   no
     604   ISO2                              int8u
     633   ShutterCount                      int32u
     721   AFFineTuneAdj                     int16u
     790   CustomSettingsD300                NikonCustom SettingsD3
```

Nikon ShotInfoD300b Tags

These tags are extracted from encrypted data in images from the D300
with firmware 1.10.

```
   Index   Tag Name                          Writable
   -----   --------                          --------
       0   ShotInfoVersion                   no
       4   FirmwareVersion                   no
     613   ISO2                              int8u
     644   ShutterCount                      int32u
     732   AFFineTuneAdj                     int16u
     802   CustomSettingsD300                NikonCustom SettingsD3
```

Nikon ShotInfoD300S Tags

These tags are extracted from encrypted data in images from the D300S
with firmware 1.00.

```
   Index   Tag Name                          Writable
   -----   --------                          --------
       0   ShotInfoVersion                   no
       4   FirmwareVersion                   no
     613   ISO2                              int8u
     646   ShutterCount                      int32u
     804   CustomSettingsD300S               NikonCustom SettingsD3
```

Nikon ShotInfoD700 Tags

These tags are extracted from encrypted data in images from the D700
with firmware 1.02f.

```
   Index   Tag Name                          Writable
   -----   --------                          --------
```

```
    0    ShotInfoVersion                        no
    4    FirmwareVersion                        no
  613    ISO2                                   int8u
  647    ShutterCount                           int32u
  804    CustomSettingsD700                     NikonCustom SettingsD700
```

Nikon ShotInfoD780 Tags

These tags are extracted from encrypted data in images from the D780.

```
  Index   Tag Name                            Writable
  -----   --------                            --------
    0    ShotInfoVersion                        no
    4    FirmwareVersion                        no
  156    OrientOffset                           Nikon OrientationInfo
```

Nikon OrientationInfo Tags

```
  Index1  Tag Name                            Writable
  ------  --------                            --------
    0    RollAngle                              fixed32u
    4    PitchAngle                             fixed32u
    8    YawAngle                               fixed32u
```

Nikon ShotInfoD7500 Tags

These tags are extracted from encrypted data in images from the D7500.

```
  Index   Tag Name                            Writable
  -----   --------                            --------
    0    ShotInfoVersion                        no
    4    FirmwareVersion                        no
  160    OrientOffset                           Nikon OrientationInfo
```

Nikon ShotInfoD800 Tags

These tags are extracted from encrypted data in images from the D800.

```
  Index   Tag Name                            Writable
  -----   --------                            --------
    0    ShotInfoVersion                        no
    4    FirmwareVersion                        no
 1216    RepeatingFlashOutputExternal           int8u
 1218    RepeatingFlashRateExternal             int8u
 1219    RepeatingFlashCountExternal            int8u
 1234    FlashExposureComp2                     int8s
 1242    RepeatingFlashRateBuilt-in             int8u
 1243    RepeatingFlashCountBuilt-in            int8u
 1308    SequenceNumber                         int8u
 1531    ShutterCount                           int32u
 1772    CustomSettingsD800                     NikonCustom SettingsD800
```

Nikon ShotInfoD810 Tags

These tags are extracted from encrypted data in images from the D810.

```
  Index   Tag Name                            Writable
  -----   --------                            --------
    0    ShotInfoVersion                        no
    4    FirmwareVersion                        no
   16    SettingsOffset                         Nikon SettingsInfoD810
   36    BracketingOffset                       Nikon BracketingInfoD810
   56    ISOAutoOffset                          Nikon ISOAutoInfoD810
   64    CustomSettingsOffset                   NikonCustom SettingsD810
  132    OrientationOffset                      Nikon OrientationInfo
```

Nikon SettingsInfoD810 Tags

```
  Index1  Tag Name                            Writable
  ------  --------                            --------
```

```
   316    SecondarySlotFunction                int8u & 0x03
```

Nikon BracketingInfoD810 Tags

```
  Index1   Tag Name                          Writable
  ------   --------                          --------
     15    AEBracketingSteps                 int8u & 0xff
     16    WBBracketingSteps                 int8u & 0xff
     23    NikonMeteringMode                 int8u & 0x03
```

Nikon ISOAutoInfoD810 Tags

```
  Index1   Tag Name                          Writable
  ------   --------                          --------
      4    ISOAutoShutterTime                int8u & 0x3f
      5    ISOAutoHiLimit                    int8u & 0xff
```

Nikon ShotInfoD850 Tags

These tags are extracted from encrypted data in images from the D850.

```
  Index    Tag Name                          Writable
  -----    --------                          --------
      0    ShotInfoVersion                   no
      4    FirmwareVersion                   no
     16    MenuSettingsOffset                Nikon MenuSettingsD850
     76    MoreSettingsOffset                Nikon MoreSettingsD850
     88    CustomSettingsOffset              NikonCustom SettingsD850
    160    OrientationOffset                 Nikon OrientationInfo
```

Nikon MenuSettingsD850 Tags

```
  Index1   Tag Name                          Writable
  ------   --------                          --------
   1757    PhotoShootingMenuBankImageArea    int8u & 0x07
```

Nikon MoreSettingsD850 Tags

```
  Index1   Tag Name                          Writable
  ------   --------                          --------
     36    PhotoShootingMenuBank             int8u & 0x03
     37    PrimarySlot                       int8u & 0x80
```

Nikon ShotInfoD5000 Tags

These tags are extracted from encrypted data in images from the D5000
with firmware 1.00.

```
  Index    Tag Name                          Writable
  -----    --------                          --------
      0    ShotInfoVersion                   no
      4    FirmwareVersion                   no
    693    ISO2                              int8u
    726    ShutterCount                      int32u
    888    CustomSettingsD5000               NikonCustom SettingsD5000
```

Nikon ShotInfoD5100 Tags

```
  Index    Tag Name                          Writable
  -----    --------                          --------
      0    ShotInfoVersion                   no
      4    FirmwareVersion                   no
    801    ShutterCount                      int32u
   1031    CustomSettingsD5100               NikonCustom SettingsD5100
```

Nikon ShotInfoD5200 Tags

```
  Index    Tag Name                          Writable
  -----    --------                          --------
      0    ShotInfoVersion                   no
```

```
    4    FirmwareVersion                        no
 3032    ShutterCount                           int32u
 3285    CustomSettingsD5200                    NikonCustom SettingsD5200
```

Nikon ShotInfoD7000 Tags

These tags are extracted from encrypted data in images from the D7000
with firmware 1.01b.

```
   Index    Tag Name                           Writable
   -----    --------                           --------
       0    ShotInfoVersion                    no
       4    FirmwareVersion                    no
     800    ShutterCount                       int32u
    1028    CustomSettingsD7000                NikonCustom SettingsD7000
```

Nikon ShotInfoD4 Tags

These tags are extracted from encrypted data in images from the D4.

```
   Index    Tag Name                           Writable
   -----    --------                           --------
       0    ShotInfoVersion                    no
       4    FirmwareVersion                    no
    1873    CustomSettingsD4                   NikonCustom SettingsD4
```

Nikon ShotInfoD4S Tags

These tags are extracted from encrypted data in images from the D4S.

```
   Index    Tag Name                           Writable
   -----    --------                           --------
       0    ShotInfoVersion                    no
       4    FirmwareVersion                    no
     464    SecondarySlotFunction              int8u & 0x03
    5964    AEBracketingSteps                  int8u & 0xff
    5965    WBBracketingSteps                  int8u & 0xff
    6221    ReleaseMode                        int8u & 0xff
    6301    CustomSettingsD4S                  NikonCustom SettingsD4
    6338    MultiSelectorLiveViewMode          int8u & 0xc0
    6378    ISOAutoShutterTime                 int8u & 0x3f
    6379    ISOAutoHiLimit                     int8u & 0xff
    6461    CustomSettingsD4S                  NikonCustom SettingsD4
   13579    OrientationInfo                    Nikon OrientationInfo
   13971    Rotation                           int8u & 0x30
```

Nikon ShotInfoD500 Tags

These tags are extracted from encrypted data in images from the D5 and
D500.

```
   Index    Tag Name                           Writable
   -----    --------                           --------
       0    ShotInfoVersion                    no
       4    FirmwareVersion                    no
      16    RotationInfoOffset                 Nikon RotationInfoD500
      20    JPGInfoOffset                      Nikon JPGInfoD500
      44    BracketingOffset                   Nikon BracketingInfoD500
      80    ShootingMenuOffset                 Nikon ShootingMenuD500
      88    CustomSettingsOffset               Nikon CustomSettingsD500
     160    OrientationOffset                  Nikon OrientationInfo
     168    OtherOffset                        Nikon OtherInfoD500
```

Nikon RotationInfoD500 Tags

```
   Index1   Tag Name                           Writable
   ------   --------                           --------
      26    Rotation                           int8u & 0x03
      32    Interval                           int8u~
      36    IntervalFrame                      int8u~
```

```
 1330    FlickerReductionIndicator               int8u & 0x01
```

Nikon JPGInfoD500 Tags

```
  Index1   Tag Name                              Writable
  ------   --------                              --------
    36     JPGCompression                        int8u & 0x01
```

Nikon BracketingInfoD500 Tags

```
  Index1   Tag Name                              Writable
  ------   --------                              --------
    15     AEBracketingSteps                     int8u & 0xff
    16     WBBracketingSteps                     int8u & 0xff
    23     ADLBracketingStep                     int8u & 0xf0
    24     ADLBracketingType                     int8u & 0x0f
```

Nikon ShootingMenuD500 Tags

```
  Index1   Tag Name                              Writable
  ------   --------                              --------
     0     PhotoShootingMenuBank                 int8u & 0x03
     2     PrimarySlot                           int8u & 0x80
     4     ISOAutoShutterTime                    int8u & 0x3f
     5     ISOAutoHiLimit                        int8u & 0xff
     7     FlickerReduction                      int8u & 0x20
    7.1    PhotoShootingMenuBankImageArea        int8u & 0x07
```

Nikon CustomSettingsD500 Tags

```
  Index1   Tag Name                              Writable
  ------   --------                              --------
     0     CustomSettingsD5                      NikonCustom SettingsD5
           CustomSettingsD500                    NikonCustom SettingsD500
```

Nikon OtherInfoD500 Tags

```
  Index1   Tag Name                              Writable
  ------   --------                              --------
   532     NikonMeteringMode                     int8u & 0x03
```

Nikon ShotInfoD6 Tags

These tags are extracted from encrypted data in images from the D6.

```
  Index   Tag Name                              Writable
  -----   --------                              --------
     0    ShotInfoVersion                       no
     4    FirmwareVersion                       no
    48    SequenceOffset                        Nikon SeqInfoD6
   156    OrientationOffset                     Nikon OrientationInfo
   164    IntervalOffset                        Nikon IntervalInfoD6
```

Nikon SeqInfoD6 Tags

```
  Index1   Tag Name                              Writable
  ------   --------                              --------
    36     IntervalShooting                      int16u~
    43     ImageArea                             int8u
```

Nikon IntervalInfoD6 Tags

```
  Index1   Tag Name                              Writable
  ------   --------                              --------
   380     Intervals                             int32u
   384     ShotsPerInterval                      int32u
   388     IntervalExposureSmoothing             int8u
   390     IntervalPriority                      int8u
   424     FocusShiftNumberShots                 int8u
   428     FocusShiftStepWidth                   int8u
```

```
    432    FocusShiftInterval                    int8u~
    436    FocusShiftExposureLock                int8u
    526    DiffractionCompensation               int8u
    532    FlashControlMode                      int8u
    538    FlashGNDistance?                      no
    542    FlashOutput?                          int8u
    552    FlashRemoteControl?                   int8u
    556    FlashMasterControlMode                int8u
    558    FlashMasterCompensation?              int8s
    562    FlashMasterOutput?                    int8u
    564    FlashWirelessOption?                  int8u
    714    MovieType?                            int8u
```

Nikon ShotInfoD610 Tags

These tags are extracted from encrypted data in images from the D610.

```
   Index   Tag Name                            Writable
   -----   --------                            --------
       0   ShotInfoVersion                     no
       4   FirmwareVersion                     no
    1999   CustomSettingsD610                  NikonCustom SettingsD610
```

Nikon ShotInfoZ6III Tags

These tags are extracted from encrypted data in images from the Z6III.

```
   Index   Tag Name                            Writable
   -----   --------                            --------
       0   ShotInfoVersion                     no
       4   FirmwareVersion                     no
     136   OrientationOffset                   Nikon OrientationInfo
     144   MenuOffset                          Nikon MenuSettingsZ6III
```

Nikon MenuSettingsZ6III Tags

These tags are used by the Z6III.

```
   Index1  Tag Name                            Writable
   ------  --------                            --------
     364   HighFrameRate                       int8u
     444   MultipleExposureMode                int8u
     446   MultiExposureShots                  int8u
     476   IntervalDurationHours               int32u
     480   IntervalDurationMinutes             int32u
     484   IntervalDurationSeconds             int32u
     492   Intervals                           int32u
     496   ShotsPerInterval                    int32u
     500   IntervalExposureSmoothing           int8u
     502   IntervalPriority                    int8u
     536   FocusShiftNumberShots               int8u
     540   FocusShiftStepWidth                 int8u
     544   FocusShiftInterval                  int8u~
     548   FocusShiftExposureLock              int8u
     648   AutoISO                             int8u
     650   ISOAutoHiLimit?                     int16u
     718   DiffractionCompensation             int8u
     719   AutoDistortionControl               int8u
     720   FlickerReductionShooting            int8u
     722   NikonMeteringMode                   int8u
     724   FlashControlMode                    int8u
     730   FlashGNDistance?                    no
     734   FlashOutput?                        int8u
     742   FlashWirelessOption?                int8u
     744   FlashRemoteControl?                 int8u
     748   FlashMasterControlMode              int8u
     750   FlashMasterCompensation?            int8s
     754   FlashMasterOutput?                  int8u
     832   AFAreaMode                          int8u
     834   VRMode                              int8u
```

```
    838       BracketSet                              int8u
    840       BracketProgram                          int8u
    842       BracketIncrement                        int8u
    852       HDR                                     int8u
    858       SecondarySlotFunction                   int8u
    864       HDRLevel                                int8u
    868       Slot2JpgSize?                           int8u
    878       SubjectDetection                        int8u
    880       DynamicAFAreaSize                       int8u
    884       ToneMap?                                int8u
    888       PortraitImpressionBalance               int8u
    902       HighFrequencyFlickerReduction?          int8u
    904       PixelShiftShooting                      int8u
    906       PixelShiftNumberShots                   int8u
    908       PixelShiftDelay                         int8u~
    910       PixelShiftInterval                      int8u~
   1002      SubjectDetectionAreaMF                   int8u
   1004      LinkVRToFocusPoint?                      int8u
   1046      MovieSlowMotion?                         int8u
   1050      MovieType                                int8u
   1162      MovieFrameSize?                          int8u
   1164      MovieFrameRate?                          int8u
   1255      CustomSettingsZ6III              NikonCustom SettingsZ6III
   2300      Language?                                int8u
   2302      TimeZone                                 int8u
   2308      MonitorBrightness?                       int8u
   2444      EmptySlotRelease?                        int8u
   2450      EnergySavingMode?                        int8u
   2476      USBPowerDelivery?                        int8u
   2480      SaveFocusPosition?                       int8u
   2487      SilentPhotography?                       int8u
   2496      AirplaneMode?                            int8u
```

Nikon ShotInfoZ7II Tags

These tags are extracted from encrypted data in images from the Z7II.

```
   Index    Tag Name                          Writable
   -----    --------                          --------
       0      ShotInfoVersion                 no
       4      FirmwareVersion                 no
      48      IntervalOffset                  Nikon IntervalInfoZ7II
      56      PortraitOffset                  Nikon PortraitInfoZ7II
     136      OrientationOffset               Nikon OrientationInfo
     152      OrientationOffset               Nikon OrientationInfo
     160      MenuOffset                      Nikon MenuInfoZ7II
```

Nikon IntervalInfoZ7II Tags

```
   Index1   Tag Name                          Writable
   ------   --------                          --------
      36      IntervalShooting                int16u~
      43      ImageArea                       int8u
```

Nikon PortraitInfoZ7II Tags

```
   Index1   Tag Name                          Writable
   ------   --------                          --------
     160      PortraitImpressionBalance       int8u[2]~
```

Nikon MenuInfoZ7II Tags

```
   Index1   Tag Name                          Writable
   ------   --------                          --------
      16      MenuSettingsOffsetZ7II          Nikon MenuSettingsZ7II
```

Nikon MenuSettingsZ7II Tags

These tags are used by the Z5, Z6, Z7, Z6II, Z7II, Z50, Zfc and Zf.

Index1	Tag Name	Writable
92	ReleaseMode	no
160	IntervalDurationHours	int32u
164	IntervalDurationMinutes	int32u
168	IntervalDurationSeconds	int32u
176	Intervals	int32u
180	ShotsPerInterval	int32u
184	IntervalExposureSmoothing	int8u
186	IntervalPriority	int8u
220	FocusShiftNumberShots	int8u
224	FocusShiftStepWidth	int8u
228	FocusShiftInterval	int8u~
232	FocusShiftExposureLock	int8u
322	DiffractionCompensation	int8u
323	AutoDistortionControl	int8u
326	NikonMeteringMode	int8u
328	FlashControlMode	int8u
334	FlashGNDistance?	no
338	FlashOutput?	int8u
346	FlashWirelessOption?	int8u
348	FlashRemoteControl?	int8u
352	FlashMasterControlMode	int8u
354	FlashMasterCompensation?	int8s
358	FlashMasterOutput?	int8u
502	MovieFrameSize?	int8u
504	MovieFrameRate?	int8u
506	MovieSlowMotion?	int8u
510	MovieType?	int8u
516	MovieISOAutoManualMode?	int16u
568	MovieActiveD-Lighting?	int8u
572	MovieHighISONoiseReduction?	int8u
574	MovieVignetteControl?	int8u
576	MovieVignetteControlSameAsPhoto?	int8u
577	MovieDiffractionCompensation?	int8u
578	MovieAutoDistortionControl?	int8u
584	MovieFocusMode?	int8u
590	MovieVibrationReduction?	int8u
591	MovieVibrationReductionSameAsPhoto?	int8u
858	HDMIOutputN-Log?	int8u

Nikon ShotInfoZ8 Tags

These tags are extracted from encrypted data in images from the Z8.

Index	Tag Name	Writable
0	ShotInfoVersion	no
4	FirmwareVersion	no
48	SequenceOffset	Nikon SeqInfoZ9
128	AutoCaptureOffset	Nikon AutoCaptureInfo
132	OrientOffset	Nikon OrientationInfo
140	MenuOffset	Nikon MenuInfoZ8

Nikon SeqInfoZ9 Tags

Index1	Tag Name	Writable
32	FocusShiftShooting	int8u~
40	IntervalShooting	int16u~

Nikon AutoCaptureInfo Tags

Index1	Tag Name	Writable
0	AutoCapturedFrame	int8u
1	AutoCaptureCriteria	int8u~
55	AutoCaptureRecordingTime	int8u
56	AutoCaptureWaitTime	int8u
74	AutoCaptureDistanceFar	int8u~

```
   78    AutoCaptureDistanceNear                  int8u~
   95    AutoCaptureCriteriaMotionDirection       int8u~
   99    AutoCaptureCriteriaMotionSpeed           int8u
  100    AutoCaptureCriteriaMotionSize            int8u
  105    AutoCaptureCriteriaSubjectSize           int8u
  106    AutoCaptureCriteriaSubjectType           int8u
```

Nikon MenuInfoZ8 Tags

```
  Index1    Tag Name                             Writable
  ------    --------                             --------
      16    MenuSettingsOffsetZ8v1               Nikon MenuSettingsZ8v1
            MenuSettingsOffsetZ8v2               -
                                                 Nikon MenuSettingsZ8v2
```

Nikon MenuSettingsZ8v1 Tags

These tags are used by the Z8 firmware 1.00 and 1.10.

```
  Index1    Tag Name                             Writable
  ------    --------                             --------
       0    MenuSettingsZ8                       Nikon MenuSettingsZ8
     943    CustomSettingsZ8                     NikonCustom SettingsZ8
    1684    TimeZone                             int8u
    1690    MonitorBrightness?                   int8u
    1698    Language?                            int8u
    1712    AFFineTune?                          int8u
    1716    NonCPULens1FocalLength?              int16u~
    1718    NonCPULens2FocalLength?              int16u~
    1720    NonCPULens3FocalLength?              int16u~
    1722    NonCPULens4FocalLength?              int16u~
    1724    NonCPULens5FocalLength?              int16u~
    1726    NonCPULens6FocalLength?              int16u~
    1728    NonCPULens7FocalLength?              int16u~
    1730    NonCPULens8FocalLength?              int16u~
    1732    NonCPULens9FocalLength?              int16u~
    1734    NonCPULens10FocalLength?             int16u~
    1736    NonCPULens11FocalLength?             int16u~
    1738    NonCPULens12FocalLength?             int16u~
    1740    NonCPULens13FocalLength?             int16u~
    1742    NonCPULens14FocalLength?             int16u~
    1744    NonCPULens15FocalLength?             int16u~
    1746    NonCPULens16FocalLength?             int16u~
    1748    NonCPULens17FocalLength?             int16u~
    1750    NonCPULens18FocalLength?             int16u~
    1752    NonCPULens19FocalLength?             int16u~
    1754    NonCPULens20FocalLength?             int16u~
    1756    NonCPULens1MaxAperture?              int16u
    1758    NonCPULens2MaxAperture?              int16u
    1760    NonCPULens3MaxAperture?              int16u
    1762    NonCPULens4MaxAperture?              int16u
    1764    NonCPULens5MaxAperture?              int16u
    1766    NonCPULens6MaxAperture?              int16u
    1768    NonCPULens7MaxAperture?              int16u
    1770    NonCPULens8MaxAperture?              int16u
    1772    NonCPULens9MaxAperture?              int16u
    1774    NonCPULens10MaxAperture?             int16u
    1776    NonCPULens11MaxAperture?             int16u
    1778    NonCPULens12MaxAperture?             int16u
    1780    NonCPULens13MaxAperture?             int16u
    1782    NonCPULens14MaxAperture?             int16u
    1784    NonCPULens15MaxAperture?             int16u
    1786    NonCPULens16MaxAperture?             int16u
    1788    NonCPULens17MaxAperture?             int16u
    1790    NonCPULens18MaxAperture?             int16u
    1792    NonCPULens19MaxAperture?             int16u
    1794    NonCPULens20MaxAperture?             int16u
    1808    HDMIOutputResolution                 int8u
    1826    AirplaneMode?                        int8u
    1827    EmptySlotRelease?                    int8u
```

```
 1862    EnergySavingMode?                      int8u
 1890    USBPowerDelivery?                      int8u
 1899    SensorShield?                          int8u
```

Nikon MenuSettingsZ8 Tags

These tags are common to all Z8 firmware versions.

```
  Index1    Tag Name                           Writable
  ------    --------                           --------
      72    HighFrameRate                      int8u
     152    MultipleExposureMode               int8u
     154    MultiExposureShots                 int8u
     184    IntervalDurationHours              int32u
     188    IntervalDurationMinutes            int32u
     192    IntervalDurationSeconds            int32u
     200    Intervals                          int32u
     204    ShotsPerInterval                   int32u
     208    IntervalExposureSmoothing          int8u
     210    IntervalPriority                   int8u
     244    FocusShiftNumberShots              int8u
     248    FocusShiftStepWidth                int8u
     252    FocusShiftInterval                 int8u~
     256    FocusShiftExposureLock?            int8u
     286    PhotoShootingMenuBank              int8u
     288    ExtendedMenuBanks                  int8u
     324    PhotoShootingMenuBankImageArea     int8u
     338    AutoISO                            int8u
     340    ISOAutoHiLimit?                    int16u
     342    ISOAutoFlashLimit?                 int16u
     350    ISOAutoShutterTime                 no
     432    MovieVignetteControl?              int8u
     434    DiffractionCompensation            int8u
     436    FlickerReductionShooting           int8u
     440    FlashControlMode                   int8u
     548    AFAreaMode                         int8u
     550    VRMode                             int8u
     554    BracketSet                         int8u
     556    BracketProgram                     int8u
     558    BracketIncrement                   int8u
     570    HDR                                int8u
     576    SecondarySlotFunction              int8u
     582    HDRLevel                           int8u
     586    Slot2JpgSize?                      int8u
     592    DXCropAlert                        int8u
     594    SubjectDetection                   int8u
     596    DynamicAFAreaSize                  int8u
     618    ToneMap?                           int8u
     622    PortraitImpressionBalance          int8u
     636    HighFrequencyFlickerReduction?     int8u
     730    MovieImageArea?                    int8u & 0x01
     740    MovieType?                         int8u
     742    MovieISOAutoHiLimit?               int16u
     744    MovieISOAutoControlManualMode?     int8u
     746    MovieISOAutoManualMode?            int16u
     820    MovieActiveD-Lighting?             int8u
     822    MovieHighISONoiseReduction?        int8u
     828    MovieFlickerReduction              int8u
     830    MovieMeteringMode?                 int8u
     832    MovieFocusMode?                    int8u
     834    MovieAFAreaMode                    int8u
     836    MovieVRMode?                       int8u
     840    MovieElectronicVR?                 int8u
     842    MovieSoundRecording?               int8u
     844    MicrophoneSensitivity?             int8u
     846    MicrophoneAttenuator?              int8u
     848    MicrophoneFrequencyResponse?       int8u
     850    WindNoiseReduction?                int8u
     882    MovieFrameSize?                    int8u
     884    MovieFrameRate?                    int8u
```

```
    886    MicrophoneJackPower?                 int8u
    887    MovieDXCropAlert?                    int8u
    888    MovieSubjectDetection?               int8u
    896    MovieHighResZoom?                    int8u
```

Nikon MenuSettingsZ8v2 Tags

These tags are used by the Z8 firmware 2.00 and 2.10.

```
   Index1   Tag Name                            Writable
   ------   --------                            --------
        0   MenuSettingsZ8                      Nikon MenuSettingsZ8
      943   CustomSettingsZ8                    NikonCustom SettingsZ8
     1698   Language?                           int8u
     1700   TimeZone                            int8u
     1706   MonitorBrightness?                  int8u
     1728   AFFineTune?                         int8u
     1732   NonCPULens1FocalLength?             int16u~
     1734   NonCPULens2FocalLength?             int16u~
     1736   NonCPULens3FocalLength?             int16u~
     1738   NonCPULens4FocalLength?             int16u~
     1740   NonCPULens5FocalLength?             int16u~
     1742   NonCPULens6FocalLength?             int16u~
     1744   NonCPULens7FocalLength?             int16u~
     1746   NonCPULens8FocalLength?             int16u~
     1748   NonCPULens9FocalLength?             int16u~
     1750   NonCPULens10FocalLength?            int16u~
     1752   NonCPULens11FocalLength?            int16u~
     1754   NonCPULens12FocalLength?            int16u~
     1756   NonCPULens13FocalLength?            int16u~
     1758   NonCPULens14FocalLength?            int16u~
     1760   NonCPULens15FocalLength?            int16u~
     1762   NonCPULens16FocalLength?            int16u~
     1764   NonCPULens17FocalLength?            int16u~
     1766   NonCPULens18FocalLength?            int16u~
     1768   NonCPULens19FocalLength?            int16u~
     1770   NonCPULens20FocalLength?            int16u~
     1812   NonCPULens1MaxAperture?             int32u~
     1816   NonCPULens2MaxAperture?             int32u~
     1820   NonCPULens3MaxAperture?             int32u~
     1824   HDMIOutputResolution                int8u
     1828   NonCPULens5MaxAperture?             int32u~
     1832   NonCPULens6MaxAperture?             int32u~
     1836   NonCPULens7MaxAperture?             int32u~
     1840   NonCPULens8MaxAperture?             int32u~
     1842   AirplaneMode?                       int8u
     1843   EmptySlotRelease?                   int8u
     1844   NonCPULens9MaxAperture?             int32u~
     1848   NonCPULens10MaxAperture?            int32u~
     1852   NonCPULens11MaxAperture?            int32u~
     1856   NonCPULens12MaxAperture?            int32u~
     1860   NonCPULens13MaxAperture?            int32u~
     1864   NonCPULens14MaxAperture?            int32u~
     1868   NonCPULens15MaxAperture?            int32u~
     1872   NonCPULens16MaxAperture?            int32u~
     1876   NonCPULens17MaxAperture?            int32u~
     1878   EnergySavingMode?                   int8u
     1880   NonCPULens18MaxAperture?            int32u~
     1884   NonCPULens19MaxAperture?            int32u~
     1888   NonCPULens20MaxAperture?            int32u~
     1906   USBPowerDelivery?                   int8u
     1915   SensorShield?                       int8u
     2046   PixelShiftShooting                  int8u
     2048   PixelShiftNumberShots               int8u
     2050   PixelShiftDelay                     int8u
     2052   PlaybackButton                      int8u
     2054   WBButton                            int8u
     2056   BracketButton                       int8u
     2058   LensFunc1ButtonPlaybackMode         int8u
     2060   LensFunc2ButtonPlaybackMode         int8u
```

```
     2062    PlaybackButtonPlaybackMode              int8u
     2064    BracketButtonPlaybackMode               int8u
```

Nikon ShotInfoZ9 Tags

These tags are extracted from encrypted data in images from the Z9.

```
   Index    Tag Name                        Writable
   -----    --------                        --------
       0    ShotInfoVersion                 no
       4    FirmwareVersion                 no
      48    SequenceOffset                  Nikon SeqInfoZ9
      88    Offset13                        Nikon Offset13InfoZ9
     128    AutoCaptureOffset               Nikon AutoCaptureInfo
     132    OrientOffset                    Nikon OrientationInfo
     140    MenuOffset                      Nikon MenuInfoZ9
```

Nikon Offset13InfoZ9 Tags

```
   Index1   Tag Name                        Writable
   ------   --------                        --------
    3048    AFAreaInitialXPosition          int8s~
    3049    AFAreaInitialYPosition          int8s~
    3050    AFAreaInitialWidth              int8u
    3051    AFAreaInitialHeight             int8u
```

Nikon MenuInfoZ9 Tags

```
   Index1   Tag Name                        Writable
   ------   --------                        --------
      16    MenuSettingsOffsetZ9            Nikon MenuSettingsZ9
           MenuSettingsOffsetZ9v3          -
           MenuSettingsOffsetZ9v4          Nikon MenuSettingsZ9v3
                                           -
                                           Nikon MenuSettingsZ9v4
```

Nikon MenuSettingsZ9 Tags

These tags are used by the Z9.

```
   Index1   Tag Name                        Writable
   ------   --------                        --------
     140    MultipleExposureMode            int8u
     142    MultiExposureShots              int8u
     188    Intervals                       int32u
     192    ShotsPerInterval                int32u
     232    FocusShiftNumberShots           int8u
     236    FocusShiftStepWidth             int8u
     240    FocusShiftInterval              int8u~
     244    FocusShiftExposureLock?         int8u
     274    PhotoShootingMenuBank           int8u
     276    ExtendedMenuBanks               int8u
     308    PhotoShootingMenuBankImageArea  int8u
     322    AutoISO                         int8u
     324    ISOAutoHiLimit?                 int16u
     326    ISOAutoFlashLimit?              int16u
     334    ISOAutoShutterTime              no
     416    MovieVignetteControl?           int8u
     418    DiffractionCompensation         int8u
     420    FlickerReductionShooting        int8u
     424    FlashControlMode                int8u
     426    FlashMasterCompensation?        int8s
     430    FlashGNDistance?                no
     434    FlashOutput?                    int8u
     444    FlashRemoteControl?             int8u
     456    FlashWirelessOption?            int8u
     528    AFAreaMode                      int8u
     530    VRMode                          int8u
     534    BracketSet                      int8u
     536    BracketProgram                  int8u
```

```
  538    BracketIncrement                      int8u
  556    SecondarySlotFunction                 int8u
  572    DXCropAlert                           int8u
  574    SubjectDetection                      int8u
  576    DynamicAFAreaSize                     int8u
  604    MovieImageArea?                       int8u & 0x01
  614    MovieType?                            int8u
  616    MovieISOAutoHiLimit?                  int16u
  618    MovieISOAutoControlManualMode?        int8u
  620    MovieISOAutoManualMode?               int16u
  696    MovieActiveD-Lighting?                int8u
  698    MovieHighISONoiseReduction?           int8u
  704    MovieFlickerReduction                 int8u
  706    MovieMeteringMode?                    int8u
  708    MovieFocusMode?                       int8u
  710    MovieAFAreaMode                       int8u
  712    MovieVRMode?                          int8u
  716    MovieElectronicVR?                    int8u
  718    MovieSoundRecording?                  int8u
  720    MicrophoneSensitivity?                int8u
  722    MicrophoneAttenuator?                 int8u
  724    MicrophoneFrequencyResponse?          int8u
  726    WindNoiseReduction?                   int8u
  748    MovieToneMap?                         int8u
  754    MovieFrameSize?                       int8u
  756    MovieFrameRate?                       int8u
  762    MicrophoneJackPower?                  int8u
  763    MovieDXCropAlert?                     int8u
  764    MovieSubjectDetection?                int8u
  799    CustomSettingsZ9                      NikonCustom SettingsZ9
 1426    Language?                             int8u
 1428    TimeZone                              int8u
 1434    MonitorBrightness?                    no
 1456    AFFineTune?                           int8u
 1552    HDMIOutputResolution                  int8u
 1565    SetClockFromLocationData?             int8u
 1572    AirplaneMode?                         int8u
 1573    EmptySlotRelease?                     int8u
 1608    EnergySavingMode?                     int8u
 1632    RecordLocationData?                   int8u
 1636    USBPowerDelivery?                     int8u
 1645    SensorShield?                         int8u
```

Nikon MenuSettingsZ9v3 Tags

These tags are used by the Z9 firmware 3.00.

```
  Index1   Tag Name                            Writable
  ------   --------                            --------
     72    HighFrameRate                       int8u
    154    MultipleExposureMode                int8u
    156    MultiExposureShots                  int8u
    204    Intervals                           int32u
    208    ShotsPerInterval                    int32u
    248    FocusShiftNumberShots               int8u
    252    FocusShiftStepWidth                 int8u
    256    FocusShiftInterval                  int8u~
    260    FocusShiftExposureLock?             int8u
    290    PhotoShootingMenuBank               int8u
    292    ExtendedMenuBanks                   int8u
    328    PhotoShootingMenuBankImageArea      int8u
    342    AutoISO                             int8u
    344    ISOAutoHiLimit?                     int16u
    346    ISOAutoFlashLimit?                  int16u
    354    ISOAutoShutterTime                  no
    436    MovieVignetteControl?               int8u
    438    DiffractionCompensation             int8u
    440    FlickerReductionShooting            int8u
    444    FlashControlMode                    int8u
    446    FlashMasterCompensation?            int8s
```

```
    450    FlashGNDistance?                         no
    454    FlashOutput?                             int8u
    548    AFAreaMode                               int8u
    550    VRMode                                   int8u
    554    BracketSet                               int8u
    556    BracketProgram                           int8u
    558    BracketIncrement                         int8u
    576    SecondarySlotFunction                    int8u
    592    DXCropAlert                              int8u
    594    SubjectDetection                         int8u
    596    DynamicAFAreaSize                        int8u
    636    HighFrequencyFlickerReduction?           int8u
    646    MovieImageArea?                          int8u & 0x01
    656    MovieType?                               int8u
    658    MovieISOAutoHiLimit?                     int16u
    660    MovieISOAutoControlManualMode?           int8u
    662    MovieISOAutoManualMode?                  int16u
    736    MovieActiveD-Lighting?                   int8u
    738    MovieHighISONoiseReduction?              int8u
    744    MovieFlickerReduction                    int8u
    746    MovieMeteringMode?                       int8u
    748    MovieFocusMode?                          int8u
    750    MovieAFAreaMode                          int8u
    752    MovieVRMode?                             int8u
    756    MovieElectronicVR?                       int8u
    758    MovieSoundRecording?                     int8u
    760    MicrophoneSensitivity?                   int8u
    762    MicrophoneAttenuator?                    int8u
    764    MicrophoneFrequencyResponse?             int8u
    766    WindNoiseReduction?                      int8u
    788    MovieToneMap?                            int8u
    794    MovieFrameSize?                          int8u
    796    MovieFrameRate?                          int8u
    802    MicrophoneJackPower?                     int8u
    803    MovieDXCropAlert?                        int8u
    804    MovieSubjectDetection?                   int8u
    812    MovieHighResZoom?                        int8u
    847    CustomSettingsZ9                         NikonCustom SettingsZ9
   1474    Language?                                int8u
   1476    TimeZone                                 int8u
   1482    MonitorBrightness?                       int8u
   1504    AFFineTune?                              int8u
   1600    HDMIOutputResolution                     int8u
   1613    SetClockFromLocationData?                int8u
   1620    AirplaneMode?                            int8u
   1621    EmptySlotRelease?                        int8u
   1656    EnergySavingMode?                        int8u
   1680    RecordLocationData?                      int8u
   1684    USBPowerDelivery?                        int8u
   1693    SensorShield?                            int8u
   1754    FocusShiftAutoReset?                     int8u
   1810    PreReleaseBurstLength                    int8u
   1812    PostReleaseBurstLength                   int8u
```

Nikon MenuSettingsZ9v4 Tags

These tags are used by the Z9 firmware 4.00, 4.10, 5.00 and 5.10.

```
  Index1    Tag Name                               Writable
  ------    --------                               --------
      72    HighFrameRate                          int8u
     154    MultipleExposureMode                   int8u
     156    MultiExposureShots                     int8u
     204    Intervals                              int32u
     208    ShotsPerInterval                       int32u
     248    FocusShiftNumberShots                  int8u
     252    FocusShiftStepWidth                    int8u
     256    FocusShiftInterval                     int8u~
     260    FocusShiftExposureLock?                int8u
     290    PhotoShootingMenuBank                  int8u
```

```
 292   ExtendedMenuBanks                    int8u
 328   PhotoShootingMenuBankImageArea       int8u
 342   AutoISO                              int8u
 344   ISOAutoHiLimit?                      int16u
 346   ISOAutoFlashLimit?                   int16u
 354   ISOAutoShutterTime                   no
 436   MovieVignetteControl?                int8u
 438   DiffractionCompensation              int8u
 440   FlickerReductionShooting             int8u
 444   FlashControlMode                     int8u
 446   FlashMasterCompensation?             int8s
 450   FlashGNDistance?                     no
 454   FlashOutput?                         int8u
 548   AFAreaMode                           int8u
 550   VRMode                               int8u
 554   BracketSet                           int8u
 556   BracketProgram                       int8u
 558   BracketIncrement                     int8u
 570   HDR                                  int8u
 576   SecondarySlotFunction                int8u
 582   HDRLevel                             int8u
 586   Slot2JpgSize?                        int8u
 592   DXCropAlert                          int8u
 594   SubjectDetection                     int8u
 596   DynamicAFAreaSize                    int8u
 636   HighFrequencyFlickerReduction?       int8u
 646   MovieImageArea?                      int8u & 0x01
 656   MovieType?                           int8u
 658   MovieISOAutoHiLimit?                 int16u
 660   MovieISOAutoControlManualMode?       int8u
 662   MovieISOAutoManualMode?              int16u
 736   MovieActiveD-Lighting?               int8u
 738   MovieHighISONoiseReduction?          int8u
 744   MovieFlickerReduction                int8u
 746   MovieMeteringMode?                   int8u
 748   MovieFocusMode?                      int8u
 750   MovieAFAreaMode                      int8u
 752   MovieVRMode?                         int8u
 756   MovieElectronicVR?                   int8u
 758   MovieSoundRecording?                 int8u
 760   MicrophoneSensitivity?               int8u
 762   MicrophoneAttenuator?                int8u
 764   MicrophoneFrequencyResponse?         int8u
 766   WindNoiseReduction?                  int8u
 788   MovieToneMap?                        int8u
 794   MovieFrameSize?                      int8u
 796   MovieFrameRate?                      int8u
 802   MicrophoneJackPower?                 int8u
 803   MovieDXCropAlert?                    int8u
 804   MovieSubjectDetection?               int8u
 812   MovieHighResZoom?                    int8u
 847   CustomSettingsZ9v4                   NikonCustom SettingsZ9v4
1498   Language?                            int8u
1500   TimeZone                             int8u
1506   MonitorBrightness?                   int8u
1528   AFFineTune?                          int8u
1532   NonCPULens1FocalLength?              int16s~
1536   NonCPULens2FocalLength?              int16s~
1540   NonCPULens3FocalLength?              int16s~
1544   NonCPULens4FocalLength?              int16s~
1548   NonCPULens5FocalLength?              int16s~
1552   NonCPULens6FocalLength?              int16s~
1556   NonCPULens7FocalLength?              int16s~
1560   NonCPULens8FocalLength?              int16s~
1564   NonCPULens9FocalLength?              int16s~
1568   NonCPULens10FocalLength?             int16s~
1572   NonCPULens11FocalLength?             int16s~
1576   NonCPULens12FocalLength?             int16s~
1580   NonCPULens13FocalLength?             int16s~
1584   NonCPULens14FocalLength?             int16s~
```

```
1588    NonCPULens15FocalLength?              int16s~
1592    NonCPULens16FocalLength?              int16s~
1596    NonCPULens17FocalLength?              int16s~
1600    NonCPULens18FocalLength?              int16s~
1604    NonCPULens19FocalLength?              int16s~
1608    NonCPULens20FocalLength?              int16s~
1612    NonCPULens1MaxAperture?               int16s~
1616    NonCPULens2MaxAperture?               int16s~
1620    NonCPULens3MaxAperture?               int16s~
1624    NonCPULens4MaxAperture?               int16s~
1628    NonCPULens5MaxAperture?               int16s~
1632    NonCPULens6MaxAperture?               int16s~
1636    NonCPULens7MaxAperture?               int16s~
1640    NonCPULens8MaxAperture?               int16s~
1644    NonCPULens9MaxAperture?               int16s~
1648    NonCPULens10MaxAperture?              int16s~
1652    NonCPULens11MaxAperture?              int16s~
1656    NonCPULens12MaxAperture?              int16s~
1660    NonCPULens13MaxAperture?              int16s~
1664    NonCPULens14MaxAperture?              int16s~
1668    NonCPULens15MaxAperture?              int16s~
1672    NonCPULens16MaxAperture?              int16s~
1676    NonCPULens17MaxAperture?              int16s~
1680    NonCPULens18MaxAperture?              int16s~
1684    NonCPULens19MaxAperture?              int16s~
1688    NonCPULens20MaxAperture?              int16s~
1704    HDMIOutputResolution                  int8u
1717    SetClockFromLocationData?             int8u
1724    AirplaneMode?                         int8u
1725    EmptySlotRelease?                     int8u
1760    EnergySavingMode?                     int8u
1784    RecordLocationData?                   int8u
1788    USBPowerDelivery?                     int8u
1797    SensorShield?                         int8u
1862    AutoCapturePreset                     int8u
1864    FocusShiftAutoReset?                  int8u
1922    PreReleaseBurstLength                 int8u
1924    PostReleaseBurstLength                int8u
1938    VerticalISOButton                     int8u
1940    ExposureCompensationButton            int8u
1942    ISOButton                             int8u
2002    ViewModeShowEffectsOfSettings?        int8u
2004    DispButton                            int8u
2048    ExposureDelay                         fixed32u~
2052    CommandDialFrameAdvanceZoom?          int8u
2054    SubCommandDialFrameAdvanceZoom?       int8u
2056    PlaybackButton                        int8u
2058    WBButton                              int8u
2060    BracketButton                         int8u
2062    FlashModeButton                       int8u
2064    LensFunc1ButtonPlaybackMode           int8u
2066    LensFunc2ButtonPlaybackMode           int8u
2068    PlaybackButtonPlaybackMode            int8u
2070    BracketButtonPlaybackMode             int8u
2072    FlashModeButtonPlaybackMode           int8u
```

Nikon ShotInfo Tags

This information is encrypted for ShotInfoVersion 02xx, and some tags
are only valid for specific models.

Index1	Tag Name	Writable
0	ShotInfoVersion	no
4	FirmwareVersion	no
16	DistortionControl	int8u
102	VR_0x66?	int8u
106	ShutterCount	int32u
110	DeletedImageCount	int32u
117	VibrationReduction	int8u

```
   130    VibrationReduction                    int8u
   343    ShutterCount                          undef[2]
   430    VibrationReduction                    int8u
   589    ShutterCount                          int32u
```

Nikon ColorBalance1 Tags

```
   Index2   Tag Name                           Writable
   ------   --------                           --------
      0     WB_RBGGLevels                      int16u[4]!
```

Nikon ColorBalance2 Tags

This information is encrypted for most camera models.

```
   Index2   Tag Name                           Writable
   ------   --------                           --------
      0     WB_RGGBLevels                      int16u[4]!
```

Nikon ColorBalance3 Tags

```
   Index2   Tag Name                           Writable
   ------   --------                           --------
      0     WB_RGBGLevels                      int16u[4]!
```

Nikon ColorBalance4 Tags

```
   Index2   Tag Name                           Writable
   ------   --------                           --------
      0     WB_GRBGLevels                      int16u[4]!
```

Nikon ColorBalanceUnknown Tags

```
   Index1   Tag Name                           Writable
   ------   --------                           --------
      0     ColorBalanceVersion               undef[4]
```

Nikon ColorBalanceUnknown2 Tags

```
   Index2   Tag Name                           Writable
   ------   --------                           --------
      0     ColorBalanceVersion               undef[4]
```

Nikon LensData00 Tags

This structure is used by the D100, and D1X with firmware version 1.1.

```
   Index1   Tag Name                           Writable
   ------   --------                           --------
      0     LensDataVersion                   no
      6     LensIDNumber                      int8u
      7     LensFStops                        int8u
      8     MinFocalLength                    int8u
      9     MaxFocalLength                    int8u
     10     MaxApertureAtMinFocal             int8u
     11     MaxApertureAtMaxFocal             int8u
     12     MCUVersion                        int8u
```

Nikon LensData01 Tags

Nikon encrypts the LensData information below if LensDataVersion is
0201 or higher, but the decryption algorithm is known so the
information can be extracted.

```
   Index1   Tag Name                           Writable
   ------   --------                           --------
      0     LensDataVersion                   no
      4     ExitPupilPosition                 int8u
      5     AFAperture                        int8u
      8     FocusPosition                     int8u
```

```
   9    FocusDistance                       int8u
  10    FocalLength                         int8u
  11    LensIDNumber                        int8u
  12    LensFStops                          int8u
  13    MinFocalLength                      int8u
  14    MaxFocalLength                      int8u
  15    MaxApertureAtMinFocal               int8u
  16    MaxApertureAtMaxFocal               int8u
  17    MCUVersion                          int8u
  18    EffectiveMaxAperture                int8u
```

Nikon LensData0204 Tags

Nikon encrypts the LensData information below if LensDataVersion is
0201 or higher, but the decryption algorithm is known so the
information can be extracted.

```
  Index1   Tag Name                        Writable
  ------   --------                        --------
     0    LensDataVersion                  no
     4    ExitPupilPosition                int8u
     5    AFAperture                       int8u
     8    FocusPosition                    int8u
    10    FocusDistance                    int8u
    11    FocalLength                      int8u
    12    LensIDNumber                     int8u
    13    LensFStops                       int8u
    14    MinFocalLength                   int8u
    15    MaxFocalLength                   int8u
    16    MaxApertureAtMinFocal            int8u
    17    MaxApertureAtMaxFocal            int8u
    18    MCUVersion                       int8u
    19    EffectiveMaxAperture             int8u
```

Nikon LensData0400 Tags

Tags extracted from the encrypted lens data of the Nikon 1J1/1V1/1J2.

```
  Index1   Tag Name                        Writable
  ------   --------                        --------
     0    LensDataVersion                  no
   394    LensModel                        string[64]
```

Nikon LensData0402 Tags

Tags extracted from the encrypted lens data of the Nikon 1J3/1S1/1V2.

```
  Index1   Tag Name                        Writable
  ------   --------                        --------
     0    LensDataVersion                  no
   395    LensModel                        string[64]
```

Nikon LensData0403 Tags

Tags extracted from the encrypted lens data of the Nikon 1J4/1J5.

```
  Index1   Tag Name                        Writable
  ------   --------                        --------
     0    LensDataVersion                  no
   684    LensModel                        string[64]
```

Nikon LensData0800 Tags

Tags found in the encrypted LensData from cameras such as the Z6 and
Z7.

```
  Index1   Tag Name                        Writable
  ------   --------                        --------
     0    LensDataVersion                  no
     4    ExitPupilPosition                int8u
```

```
        5    AFAperture                            int8u
       11    FocusDistance                         int8u
       12    FocalLength                           int8u
       13    LensIDNumber                          int8u
       14    LensFStops                            int8u
       15    MinFocalLength                        int8u
       16    MaxFocalLength                        int8u
       17    MaxApertureAtMinFocal                 int8u
       18    MaxApertureAtMaxFocal                 int8u
       19    MCUVersion                            int8u
       20    EffectiveMaxAperture                  int8u
       47    NewLensData                           undef[17]
       48    LensID                                int16u
       52    LensFirmwareVersion                   int16u~
       54    MaxAperture                           int16u
       56    FNumber                               int16u
       60    FocalLength                           int16u
       76    FocusDistanceRangeWidth?              int8u
       78    FocusDistance                         int16u~
       86    LensDriveEnd?                         int8u
       88    FocusStepsFromInfinity?               int8u
       90    LensPositionAbsolute                  int32s
       95    LensMountType                         int8u & 0x01
```

Nikon LensDataUnknown Tags

```
   Index1   Tag Name                              Writable
   ------   --------                              --------
        0    LensDataVersion                       no
```

Nikon FlashInfo0100 Tags

These tags are used by the D2H, D2Hs, D2X, D2Xs, D50, D70, D70s, D80
and D200.

```
   Index1   Tag Name                              Writable
   ------   --------                              --------
        0    FlashInfoVersion                      no
        4    FlashSource                           int8u
        6    ExternalFlashFirmware                 int8u[2]
        8    ExternalFlashFlags                    int8u
      9.1    FlashCommanderMode                    int8u & 0x80
      9.2    FlashControlMode                      int8u & 0x7f
       10    FlashOutput                           int8u
            FlashCompensation                     int8s
       11    FlashFocalLength                      int8u
       12    RepeatingFlashRate                    int8u
       13    RepeatingFlashCount                   int8u
       14    FlashGNDistance                       int8u
       15    FlashGroupAControlMode                int8u & 0x0f
       16    FlashGroupBControlMode                int8u & 0x0f
       17    FlashGroupAOutput                     int8u
            FlashGroupACompensation               int8s
       18    FlashGroupBOutput                     int8u
            FlashGroupBCompensation               int8s
```

Nikon FlashInfo0102 Tags

These tags are used by the D3 (firmware 1.x), D40, D40X, D60 and D300
(firmware 1.00).

```
   Index1   Tag Name                              Writable
   ------   --------                              --------
        0    FlashInfoVersion                      no
        4    FlashSource                           int8u
        6    ExternalFlashFirmware                 int8u[2]
        8    ExternalFlashFlags                    int8u
      9.1    FlashCommanderMode                    int8u & 0x80
      9.2    FlashControlMode                      int8u & 0x7f
       10    FlashOutput                           int8u
```

```
        FlashCompensation                    int8s
  12    FlashFocalLength                     int8u
  13    RepeatingFlashRate                   int8u
  14    RepeatingFlashCount                  int8u
  15    FlashGNDistance                      int8u
  16.1  FlashGroupAControlMode               int8u & 0x0f
  17.1  FlashGroupBControlMode               int8u & 0xf0
  17.2  FlashGroupCControlMode               int8u & 0x0f
  18    FlashGroupAOutput                    int8u
        FlashGroupACompensation              int8s
  19    FlashGroupBOutput                    int8u
        FlashGroupBCompensation              int8s
  20    FlashGroupCOutput                    int8u
        FlashGroupCCompensation              int8s
```

Nikon FlashInfo0103 Tags

These tags are used by the D3 (firmware 2.x), D3X, D3S, D4, D90, D300
(firmware 1.10), D300S, D600, D700, D800, D3000, D3100, D3200, D5000,
D5100, D5200, D7000.

```
  Index1   Tag Name                          Writable
  ------   --------                          --------
     0     FlashInfoVersion                  no
     4     FlashSource                       int8u
     6     ExternalFlashFirmware             int8u[2]
     8     ExternalFlashFlags                int8u
    9.1    FlashCommanderMode                int8u & 0x80
    9.2    FlashControlMode                  int8u & 0x7f
    10     FlashOutput                       int8u
           FlashCompensation                 int8s
    12     FlashFocalLength                  int8u
    13     RepeatingFlashRate                int8u
    14     RepeatingFlashCount               int8u
    15     FlashGNDistance                   int8u
    16     FlashColorFilter                  int8u
    17.1   FlashGroupAControlMode            int8u & 0x0f
    18.1   FlashGroupBControlMode            int8u & 0xf0
    18.2   FlashGroupCControlMode            int8u & 0x0f
    19     FlashGroupAOutput                 int8u
           FlashGroupACompensation           int8s
    20     FlashGroupBOutput                 int8u
           FlashGroupBCompensation           int8s
    21     FlashGroupCOutput                 int8u
           FlashGroupCCompensation           int8s
    27     ExternalFlashCompensation         int8s
    29     FlashExposureComp3                int8s
    39     FlashExposureComp4                int8s
```

Nikon FlashInfo0106 Tags

These tags are used by the Df, D610, D3300, D5300, D7100 and Coolpix A.

```
  Index1   Tag Name                          Writable
  ------   --------                          --------
     0     FlashInfoVersion                  no
     4     FlashSource                       int8u
     6     ExternalFlashFirmware             int8u[2]
     8     ExternalFlashFlags                int8u
    9.1    FlashCommanderMode                int8u & 0x80
    9.2    FlashControlMode                  int8u & 0x7f
    12     FlashFocalLength                  int8u
    13     RepeatingFlashRate                int8u
    14     RepeatingFlashCount               int8u
    15     FlashGNDistance                   int8u
    16     FlashColorFilter                  int8u
    17.1   FlashGroupAControlMode            int8u & 0x0f
    18.1   FlashGroupBControlMode            int8u & 0xf0
    18.2   FlashGroupCControlMode            int8u & 0x0f
    39     FlashOutput                       int8u
```

```
            FlashCompensation                        int8s
    40      FlashGroupAOutput                        int8u
            FlashGroupACompensation                  int8s
    41      FlashGroupBOutput                        int8u
            FlashGroupBCompensation                  int8s
    42      FlashGroupCOutput                        int8u
            FlashGroupCCompensation                  int8s
```

Nikon FlashInfo0107 Tags

These tags are used by the D4S, D750, D810, D5500, D7200
(FlashInfoVersion 0107) and the D5, D500, D850 and D3400
(FlashInfoVersion 0108).

```
  Index1   Tag Name                                 Writable
  ------   --------                                 --------
      0    FlashInfoVersion                         no
      4    FlashSource                              int8u
      6    ExternalFlashFirmware                    int8u[2]
    8.1    ExternalFlashZoomOverride                int8u & 0x80
    8.2    ExternalFlashStatus                      int8u & 0x01
    9.1    ExternalFlashReadyState                  int8u & 0x07
    10     FlashCompensation                        int8s
    12     FlashFocalLength                         int8u
    13     RepeatingFlashRate                       int8u
    14     RepeatingFlashCount                      int8u
    15     FlashGNDistance                          int8u
   17.1    FlashGroupAControlMode                   int8u & 0x0f
   18.1    FlashGroupBControlMode                   int8u & 0xf0
   18.2    FlashGroupCControlMode                   int8u & 0x0f
    40     FlashGroupAOutput                        int8u
            FlashGroupACompensation                 int8s
    41     FlashGroupBOutput                        int8u
            FlashGroupBCompensation                 int8s
    42     FlashGroupCOutput                        int8u
            FlashGroupCCompensation                 int8s
```

Nikon FlashInfo0300 Tags

```
  Index1   Tag Name                                 Writable
  ------   --------                                 --------
      0    FlashInfoVersion                         no
      4    FlashSource                              int8u
      6    ExternalFlashFirmware                    int8u[2]
      8    ExternalFlashFlags                       int8u
    9.1    FlashCommanderMode                       int8u & 0x80
    9.2    FlashControlMode                         int8u & 0x7f
    10     FlashCompensation                        int8s
    13     RepeatingFlashRate                       int8u
    14     RepeatingFlashCount                      int8u
    15     FlashGNDistance                          int8u
    16     FlashColorFilter                         int8u
   17.1    FlashGroupAControlMode                   int8u & 0x0f
   18.1    FlashGroupBControlMode                   int8u & 0xf0
   18.2    FlashGroupCControlMode                   int8u & 0x0f
    33     FlashOutput                              int8u
    37     FlashIlluminationPattern                 int8u
    38     FlashFocalLength                         int8u
    40     FlashGroupAOutput                        int8u
            FlashGroupACompensation                 int8s
    41     FlashGroupBOutput                        int8u
            FlashGroupBCompensation                 int8s
    42     FlashGroupCOutput                        int8u
            FlashGroupCCompensation                 int8s
```

Nikon FlashInfoUnknown Tags

```
  Index1   Tag Name                                 Writable
  ------   --------                                 --------
      0    FlashInfoVersion                         no
```

Nikon MultiExposure Tags

```
  Index4    Tag Name                         Writable
  ------    --------                         --------
     0      MultiExposureVersion             no
     1      MultiExposureMode                int32u
     2      MultiExposureShots               int32u
     3      MultiExposureAutoGain            int32u
```

Nikon MultiExposure2 Tags

```
  Index4    Tag Name                         Writable
  ------    --------                         --------
     0      MultiExposureVersion             no
     1      MultiExposureMode                int32u
     2      MultiExposureShots               int32u
     3      MultiExposureOverlayMode         int32u
```

Nikon AFInfo2V0100 Tags

AF information for Nikon cameras with LiveView that were introduced
2007 thru 2015 (and the D5600 in 2016), including D3, D4, D3000,
D3100-D3300, D5000-D5600, D6x0, D700, D7000, D7100, D810

```
  Index1    Tag Name                         Writable
  ------    --------                         --------
     0      AFInfo2Version                   no
     4      AFDetectionMethod                int8u
     5      AFAreaMode                       int8u
     7      PrimaryAFPoint                   int8u
     8      AFPointsUsed                     undef[7]
            AFPointsUsed                     undef[2]
            AFPointsUsed                     undef[5]
            AFPointsUsed                     int8u
    16      AFImageWidth                     int16u
    18      AFImageHeight                    int16u
    20      AFAreaXPosition                  int16u
    22      AFAreaYPosition                  int16u
    24      AFAreaWidth                      int16u
    26      AFAreaHeight                     int16u
    28      ContrastDetectAFInFocus          int8u
            AFPointsSelected                 undef[20]
```

Nikon AFInfo2V0101 Tags

AF information for Nikon cameras D5, D500, D850, D3400, D3500 and D7500

```
  Index1    Tag Name                         Writable
  ------    --------                         --------
     0      AFInfo2Version                   no
     4      AFDetectionMethod                int8u
     5      AFAreaMode                       int8u
     8      AFPointsUsed                     undef[7]
            AFPointsUsed                     undef[2]
            AFPointsUsed                     undef[20]
            AFPointsUsed                     int8u
    28      ContrastDetectAFInFocus          int8u
            AFPointsUsed                     undef[7]
            AFPointsSelected                 undef[20]
    48      AFPointsInFocus                  undef[7]
            AFPointsInFocus                  undef[20]
    68      PrimaryAFPoint                   int8u
    70      AFImageWidth                     int16u
    72      AFImageHeight                    int16u
    74      AFAreaXPosition                  int16u
    76      AFAreaYPosition                  int16u
    78      AFAreaWidth                      int16u
    80      AFAreaHeight                     int16u
    82      ContrastDetectAFInFocus          int8u
```

Nikon AFInfo2V0200 Tags

AF information for Nikon 1 series cameras: Nikon 1 V1, V2, V3, J1, J2, J3, S1, S2 AW1.

Index1	Tag Name	Writable
0	AFInfo2Version	no
5	AFAreaMode	int8u
6	PhaseDetectAF	int8u
7	PrimaryAFPoint	int8u
8	AFPointsUsed	undef[17]
	AFPointsUsed	undef[21]
	AFPointsUsed	undef[29]

Nikon AFInfo2V0300 Tags

AF information for Nikon cameras with the Expeed 6 processor: D6, D780, Z5, Z6, Z6ii, Z7, Z7ii, Z50 and Zfc.

Index1	Tag Name	Writable
0	AFInfo2Version	no
4	AFDetectionMethod	int8u
5	AFAreaMode	int8u
7	AFCoordinatesAvailable	int8u
10	AFPointsUsed	undef[7]
	AFPointsUsed	undef[11]
	AFPointsUsed	undef[14]
42	AFImageWidth	int16u
44	AFImageHeight	int16u
46	AFAreaXPosition	int16u
47	FocusPositionHorizontal	no
48	AFAreaYPosition	int16u
49	FocusPositionVertical	no
50	AFAreaWidth	int16u
52	AFAreaHeight	int16u
56	PrimaryAFPoint	int8u

Nikon AFInfo2V0400 Tags

AF information for Nikon cameras with the Expeed 7 processor: The Zf, Z6_3, Z8, Z9 and Z50_3.

Index1	Tag Name	Writable
0	AFInfo2Version	no
4	AFDetectionMethod	int8u
5	AFAreaMode	int8u
7	AFCoordinatesAvailable	int8u
10	AFPointsUsed	undef[51]
	AFPointsUsed	undef[38]
	AFPointsUsed	undef[29]
62	AFImageWidth	int16u
64	AFImageHeight	int16u
66	AFAreaXPosition	int16u
67	FocusPositionHorizontal	no
68	AFAreaYPosition	int16u
69	FocusPositionVertical	no
70	AFAreaWidth	int16u
72	AFAreaHeight	int16u
74	FocusResult	int8u

Nikon FileInfo Tags

Index2	Tag Name	Writable
0	FileInfoVersion	no
2	MemoryCardNumber	int16u

```
      3    DirectoryNumber                          int16u
      4    FileNumber                               int16u
```

Nikon AFTune Tags

```
  Index1   Tag Name                                 Writable
  ------   --------                                 --------
      0    AFFineTune                               int8u
      1    AFFineTuneIndex                          int8u
      2    AFFineTuneAdj                            int8s
      3    AFFineTuneAdjTele                        int8s
```

Nikon RetouchInfo Tags

```
  Index1   Tag Name                                 Writable
  ------   --------                                 --------
      0    RetouchInfoVersion                       no
      5    RetouchNEFProcessing                     int8s
```

Nikon BarometerInfo Tags

```
  Index1   Tag Name                                 Writable
  ------   --------                                 --------
      0    BarometerInfoVersion                     no
      6    Altitude                                 int32s
```

Nikon CaptureOffsets Tags

```
  Tag ID   Tag Name                                 Writable
  ------   --------                                 --------
  0x0001   IFD0_Offset                              no
  0x0002   PreviewIFD_Offset                        no
  0x0003   SubIFD_Offset                            no
```

Nikon Scan Tags

This information is written by the Nikon Scan software.

```
  Tag ID   Tag Name                                 Writable
  ------   --------                                 --------
  0x0002   FilmType                                 string
  0x0040   MultiSample                              string
  0x0041   BitDepth                                 int16u
  0x0050   MasterGain                               rational64s
  0x0051   ColorGain                                rational64s[3]
  0x0060   ScanImageEnhancer                        int32u
  0x0100   DigitalICE                               string
  0x0110   ROCInfo                                  Nikon ROC
  0x0120   GEMInfo                                  Nikon GEM
  0x0200   DigitalDEEShadowAdj                      int32u
  0x0201   DigitalDEEThreshold                      int32u
  0x0202   DigitalDEEHighlightAdj                   int32u
```

Nikon ROC Tags

```
  Index4   Tag Name                                 Writable
  ------   --------                                 --------
      0    DigitalROC                               int32u
```

Nikon GEM Tags

```
  Index4   Tag Name                                 Writable
  ------   --------                                 --------
      0    DigitalGEM                               int32u
```

Nikon CaptureOutput Tags

```
  Index4   Tag Name                                 Writable
  ------   --------                                 --------
      2    OutputImageWidth                         int32u
```

```
     3     OutputImageHeight                        int32u
     4     OutputResolution                         int32u
```

Nikon Type2 Tags

```
  Tag ID   Tag Name                               Writable
  ------   --------                               --------
  0x0003   Quality                                yes
  0x0004   ColorMode                              yes
  0x0005   ImageAdjustment                        yes
  0x0006   CCDSensitivity                         yes
  0x0007   WhiteBalance                           yes
  0x0008   Focus                                  yes
  0x000a   DigitalZoom                            yes
  0x000b   Converter                              yes
```

Nikon NEFInfo Tags

As-yet unknown information found in SubIFD1 tag 0xc7d5 of NEF images
from cameras such as the Z6 and Z7, and NRW images from some Coolpix
cameras.

```
  Tag ID   Tag Name                               Writable
  ------   --------                               --------
  0x0005   DistortionInfo                         Nikon DistortionInfo
  0x0006   VignetteInfo                           Nikon VignetteInfo
```

Nikon DistortionInfo Tags

```
  Index1   Tag Name                               Writable
  ------   --------                               --------
     0     DistortionCorrectionVersion            string[4]
     4     DistortionCorrection                   int8u
    20     RadialDistortionCoefficient1           rational64s~
    28     RadialDistortionCoefficient2           rational64s~
    36     RadialDistortionCoefficient3           rational64s~
```

Nikon VignetteInfo Tags

```
  Index1   Tag Name                               Writable
  ------   --------                               --------
     0     VignetteCorrectionVersion              string[4]
    36     VignetteCoefficient1                   rational64s~
    52     VignetteCoefficient2                   rational64s~
    68     VignetteCoefficient3                   rational64s~
```

Nikon AVI Tags

Nikon-specific RIFF tags found in AVI videos.

```
  Tag ID   Tag Name                               Writable
  ------   --------                               --------
  'nctg'   NikonTags                              Nikon AVITags
  'ncth'   ThumbnailImage                         no
  'ncvr'   NikonVers                              Nikon AVIVers
  'ncvw'   PreviewImage                           no
```

Nikon AVITags Tags

These tags and the AVIVer tags below are found in proprietary-format
records of Nikon AVI videos.

```
  Tag ID   Tag Name                               Writable
  ------   --------                               --------
  0x0003   Make                                   no
  0x0004   Model                                  no
  0x0005   Software                               no
  0x0006   Equipment                              no
  0x0007   Orientation                            no
  0x0008   ExposureTime                           no
```

```
0x0009   FNumber                          no
0x000a   ExposureCompensation             no
0x000b   MaxApertureValue                 no
0x000c   MeteringMode                     no
0x000f   FocalLength                      no
0x0010   XResolution                      no
0x0011   YResolution                      no
0x0012   ResolutionUnit                   no
0x0013   DateTimeOriginal                 no
0x0014   CreateDate                       no
0x0016   Duration                         no
0x0018   FocusMode                        no
0x001b   DigitalZoom                      no
0x001d   ColorMode                        no
0x001e   Sharpness                        no
0x001f   WhiteBalance                     no
0x0020   NoiseReduction                   no
```

Nikon AVIVers Tags

```
Tag ID   Tag Name                         Writable
------   --------                         --------
0x0001   MakerNoteType                    no
0x0002   MakerNoteVersion                 no
```

Nikon NCDT Tags

Nikon-specific QuickTime tags found in the NCDT atom of MOV videos from
various Nikon models.

```
Tag ID   Tag Name                         Writable
------   --------                         --------
'NCDB'   NikonNCDB                        Nikon NCDB
'NCHD'   MakerNoteVersion                 no
'NCM1'   PreviewImage1                    no
'NCM2'   PreviewImage2                    no
'NCTG'   NikonTags                        Nikon NCTG
'NCTH'   ThumbnailImage                   no
'NCVW'   PreviewImage                     no
```

Nikon NCDB Tags

```
Tag ID   Tag Name                         Writable
------   --------                         --------
[no tags known]
```

Nikon NCTG Tags

These tags are found in proprietary-format records of the NCTG atom in
MOV videos from some Nikon cameras.

```
Tag ID       Tag Name             Writable
------       --------             --------
0x0001       Make                 no
0x0002       Model                no
0x0003       Software             no
0x0011       CreateDate           no
0x0012       DateTimeOriginal     no
0x0013       FrameCount           no
0x0016       FrameRate            no
0x0019       TimeZone             no
0x0022       FrameWidth           no
0x0023       FrameHeight          no
0x0032       AudioChannels        no
0x0033       AudioBitsPerSample   no
0x0034       AudioSampleRate      no
0x1002       NikonDateTime        no
0x1013       ElectronicVR         no
0x110829a    ExposureTime         no
0x110829d    FNumber              no
```

0x1108822	ExposureProgram	no
0x1109204	ExposureCompensation	no
0x1109207	MeteringMode	no
0x110920a	FocalLength	no
0x110a431	SerialNumber	no
0x110a432	LensInfo	no
0x110a433	LensMake	no
0x110a434	LensModel	no
0x110a435	LensSerialNumber	no
0x1200000	GPSVersionID	no
0x1200001	GPSLatitudeRef	no
0x1200002	GPSLatitude	no
0x1200003	GPSLongitudeRef	no
0x1200004	GPSLongitude	no
0x1200005	GPSAltitudeRef	no
0x1200006	GPSAltitude	no
0x1200007	GPSTimeStamp	no
0x1200008	GPSSatellites	no
0x1200010	GPSImgDirectionRef	no
0x1200011	GPSImgDirection	no
0x1200012	GPSMapDatum	no
0x120001d	GPSDateStamp	no
0x2000001	MakerNoteVersion	no
0x2000005	WhiteBalance	no
0x2000007	FocusMode	no
0x200000b	WhiteBalanceFineTune	no
0x200001b	CropHiSpeed	no
0x200001e	ColorSpace	no
0x200001f	VRInfo	Nikon VRInfo
0x2000022	ActiveD-Lighting	no
0x2000023	PictureControlData	Nikon PictureControl
		Nikon PictureControl2
		Nikon PictureControl3
		Nikon PictureControlUnknown
0x2000024	WorldTime	Nikon WorldTime
0x2000025	ISOInfo	Nikon ISOInfo
0x200002a	VignetteControl	no
0x200002c	UnknownInfo	Nikon UnknownInfo
0x2000032	UnknownInfo2	Nikon UnknownInfo2
0x2000039	LocationInfo	Nikon LocationInfo
0x200003f	WhiteBalanceFineTune	no
0x200004e	NikonSettings	NikonSettings
0x2000083	LensType	no
0x2000084	Lens	no
0x2000087	FlashMode	no
0x2000098	LensData0100	Nikon LensData00
	LensData0101	Nikon LensData01
	LensData0201	Nikon LensData01
	LensData0204	Nikon LensData0204
	LensData0400	Nikon LensData0400
	LensData0402	Nikon LensData0402
	LensData0403	Nikon LensData0403
	LensData0800	Nikon LensData0800
	LensDataUnknown	Nikon LensDataUnknown
0x20000a7	ShutterCount	no
0x20000a8	FlashInfo0100	Nikon FlashInfo0100
	FlashInfo0102	Nikon FlashInfo0102
	FlashInfo0103	Nikon FlashInfo0103
	FlashInfo0106	Nikon FlashInfo0106
	FlashInfo0107	Nikon FlashInfo0107
	FlashInfoUnknown	Nikon FlashInfoUnknown
0x20000ab	VariProgram	no
0x20000b1	HighISONoiseReduction	no
0x20000b7	AFInfo2	Nikon AFInfo2V0100
		Nikon AFInfo2V0101
		Nikon AFInfo2V0200
		Nikon AFInfo2V0300
		Nikon AFInfo2V0400
0x20000c3	BarometerInfo	Nikon BarometerInfo

Nikon MOV Tags

This information is found in MOV and QT videos from some Nikon cameras.

Index1	Tag Name	Writable
0	Make	no
24	Model	no
38	ExposureTime	no
42	FNumber	no
50	ExposureCompensation	no
68	WhiteBalance	no
72	FocalLength	no
175	Software	no
223	ISO	no

NikonCapture Tags

This information is written by the Nikon Capture software in tag 0x0e01 of the maker notes of NEF images.

Tag ID	Tag Name	Writable
0x8ae85e	LCHEditor	int8u
0x83a1a25	HistogramXML	undef
0xc89224b	ColorAberrationControl	int8u
0x116fea21	HighlightData	NikonCapture HighlightData
0x2175eb78	D-LightingHQ	int8u
0x2fc08431	StraightenAngle	double
0x374233e0	CropData	NikonCapture CropData
0x39c456ac	PictureCtrl	NikonCapture PictureCtrl
0x3cfc73c6	RedEyeData	NikonCapture RedEyeData
0x3d136244	EditVersionName	string
0x416391c6	QuickFix	int8u
0x56a54260	Exposure	NikonCapture Exposure
0x5f0e7d23	ColorBooster	int8u
0x6a6e36b6	D-LightingHQSelected	int8u
0x753dcbc0	NoiseReduction	int8u
0x76a43200	UnsharpMask	int8u
0x76a43201	Curves	int8u
0x76a43202	ColorBalanceAdj	int8u
0x76a43203	AdvancedRaw	int8u
0x76a43204	WhiteBalanceAdj	int8u
0x76a43205	VignetteControl	int8u
0x76a43206	FlipHorizontal	int8u
0x76a43207	Rotation	int16u
0x84589434	BrightnessData	NikonCapture Brightness
0x890ff591	D-LightingHQData	NikonCapture DLightingHQ
0x926f13e0	NoiseReductionData	NikonCapture NoiseReduction
0x9ef5f6e0	IPTCData	IPTC
0xab5eca5e	PhotoEffects	int8u
0xac6bd5c0	VignetteControlIntensity	int16s
0xb0384e1e	PhotoEffectsData	NikonCapture PhotoEffects
0xb999a36f	ColorBoostData	NikonCapture ColorBoost
0xbf3c6c20	WBAdjData	NikonCapture WBAdjData
0xce5554aa	D-LightingHS	int8u
0xe2173c47	PictureControl	int8u
0xe37b4337	D-LightingHSData	NikonCapture DLightingHS
0xe42b5161	UnsharpData	NikonCapture UnsharpData
0xe9651831	PhotoEffectHistoryXML	undef
0xfe28a44f	AutoRedEye	int8u
0xfe443a45	ImageDustOff	int8u

NikonCapture HighlightData Tags

Index1	Tag Name	Writable
0	ShadowProtection	int8s
1	SaturationAdj	int8s
6	HighlightProtection	int8s

NikonCapture CropData Tags

```
  Index1    Tag Name                         Writable
  ------    --------                         --------
      30    CropLeft                         double
      38    CropTop                          double
      46    CropRight                        double
      54    CropBottom                       double
     142    CropOutputWidthInches            double
     150    CropOutputHeightInches           double
     158    CropScaledResolution             double
     174    CropSourceResolution             double
     182    CropOutputResolution             double
     190    CropOutputScale                  double
     198    CropOutputWidth                  double
     206    CropOutputHeight                 double
     214    CropOutputPixels                 double
```

NikonCapture PictureCtrl Tags

```
  Index1    Tag Name                         Writable
  ------    --------                         --------
       0    PictureControlActive             int8u
      19    PictureControlMode               string[16]
      42    QuickAdjust                      int8u
      43    SharpeningAdj                    int8u
      44    ContrastAdj                      int8u
      45    BrightnessAdj                    int8u
      46    SaturationAdj                    int8u
      47    HueAdj                           int8u
```

NikonCapture RedEyeData Tags

```
  Index1    Tag Name                         Writable
  ------    --------                         --------
       0    RedEyeCorrection                 int8u
```

NikonCapture Exposure Tags

```
  Index1    Tag Name                         Writable
  ------    --------                         --------
       0    ExposureAdj                      int16s
      18    ExposureAdj2                     double
      36    ActiveD-Lighting                 int8u
      37    ActiveD-LightingMode             int8u
```

NikonCapture Brightness Tags

```
  Index1    Tag Name                         Writable
  ------    --------                         --------
       0    BrightnessAdj                    double
       8    EnhanceDarkTones                 int8u
```

NikonCapture DLightingHQ Tags

```
  Index4    Tag Name                         Writable
  ------    --------                         --------
       0    D-LightingHQShadow               int32u
       1    D-LightingHQHighlight            int32u
       2    D-LightingHQColorBoost           int32u
```

NikonCapture NoiseReduction Tags

```
  Index1    Tag Name                         Writable
  ------    --------                         --------
       4    EdgeNoiseReduction               int8u
       5    ColorMoireReductionMode          int8u
       9    NoiseReductionIntensity          int32u
      13    NoiseReductionSharpness          int32u
      17    NoiseReductionMethod             int16u
```

```
      21    ColorMoireReduction                   int8u
      23    NoiseReduction                        int8u
      24    ColorNoiseReductionIntensity          int32u
      28    ColorNoiseReductionSharpness          int32u
```

NikonCapture PhotoEffects Tags

```
    Index1    Tag Name                            Writable
    ------    --------                            --------
         0    PhotoEffectsType                    int8u
         4    PhotoEffectsRed                     int16s
         6    PhotoEffectsGreen                   int16s
         8    PhotoEffectsBlue                    int16s
```

NikonCapture ColorBoost Tags

```
    Index1    Tag Name                            Writable
    ------    --------                            --------
         0    ColorBoostType                      int8u
         1    ColorBoostLevel                     int32u
```

NikonCapture WBAdjData Tags

```
    Index1    Tag Name                            Writable
    ------    --------                            --------
         0    WBAdjRedBalance                     double
         8    WBAdjBlueBalance                    double
        16    WBAdjMode                           int8u
        20    WBAdjLighting                       int16u
        24    WBAdjTemperature                    int16u
        37    WBAdjTint                           int32s
```

NikonCapture DLightingHS Tags

```
    Index4    Tag Name                            Writable
    ------    --------                            --------
         0    D-LightingHSAdjustment              int32u
         1    D-LightingHSColorBoost              int32u
```

NikonCapture UnsharpData Tags

```
    Index1    Tag Name                            Writable
    ------    --------                            --------
         0    UnsharpCount                        int8u
        19    Unsharp1Color                       int16u
        23    Unsharp1Intensity                   int16u
        25    Unsharp1HaloWidth                   int16u
        27    Unsharp1Threshold                   int8u
        46    Unsharp2Color                       int16u
        50    Unsharp2Intensity                   int16u
        52    Unsharp2HaloWidth                   int16u
        54    Unsharp2Threshold                   int8u
        73    Unsharp3Color                       int16u
        77    Unsharp3Intensity                   int16u
        79    Unsharp3HaloWidth                   int16u
        81    Unsharp3Threshold                   int8u
       100    Unsharp4Color                       int16u
       104    Unsharp4Intensity                   int16u
       106    Unsharp4HaloWidth                   int16u
       108    Unsharp4Threshold                   int8u
```

NikonCustom Tags
    Unfortunately, the NikonCustom settings are stored in a binary data
    block which changes from model to model. This means that significant
    effort must be spent in decoding these for each model, usually
    requiring hundreds of test images from a dedicated Nikon owner. For
    this reason, the NikonCustom settings have not been decoded for all
    models. The tables below list the custom settings for the currently
    supported models.

NikonCustom SettingsD40 Tags

Custom settings for the Nikon D40.

```
  Index1    Tag Name                            Writable
  ------    --------                            --------
    0.1    Beep                                int8u & 0x80
    0.2    AFAssist                            int8u & 0x40
    0.3    NoMemoryCard                        int8u & 0x20
    0.4    ImageReview                         int8u & 0x10
    1.1    AutoISO                             int8u & 0x80
    1.2    AutoISOMax                          int8u & 0x30
    1.3    AutoISOMinShutterSpeed              int8u & 0x07
    2.1    ImageReviewTime                     int8u & 0x07
    3.1    MonitorOffTime                      int8u & 0xe0
    3.2    MeteringTime                        int8u & 0x1c
    3.3    SelfTimerTime                       int8u & 0x03
    3.4    RemoteOnDuration                    int8u & 0xc0
    4.1    AELockButton                        int8u & 0x0e
    4.2    AELock                              int8u & 0x01
    5.1    ShootingModeSetting                 int8u & 0x70
    5.2    TimerFunctionButton                 int8u & 0x07
    6.1    Metering                            int8u & 0x03
    8.1    InternalFlash                       int8u & 0x10
    8.2    ManualFlashOutput                   int8u & 0x07
      9    FlashLevel                          int8s
   10.1    FocusModeSetting                    int8u & 0xc0
   11.1    AFAreaModeSetting                   int8u & 0x30
```

NikonCustom SettingsD80 Tags

Custom settings for the Nikon D80.

```
  Index1    Tag Name                            Writable
  ------    --------                            --------
    0.1    Beep                                int8u & 0x80
    0.2    AFAssist                            int8u & 0x40
    0.3    NoMemoryCard                        int8u & 0x20
    0.4    ImageReview                         int8u & 0x10
    0.5    Illumination                        int8u & 0x08
    0.6    MainDialExposureComp                int8u & 0x04
    0.7    EVStepSize                          int8u & 0x01
    1.1    AutoISO                             int8u & 0x40
    1.2    AutoISOMax                          int8u & 0x30
    1.3    AutoISOMinShutterSpeed              int8u & 0x0f
    2.1    AutoBracketSet                      int8u & 0xc0
    2.2    AutoBracketOrder                    int8u & 0x20
    3.1    MonitorOffTime                      int8u & 0xe0
    3.2    MeteringTime                        int8u & 0x1c
    3.3    SelfTimerTime                       int8u & 0x03
    4.1    AELockButton                        int8u & 0x1e
    4.2    AELock                              int8u & 0x01
    4.3    RemoteOnDuration                    int8u & 0xc0
    5.1    CommandDials                        int8u & 0x80
    5.2    FunctionButton                      int8u & 0x78
    6.1    GridDisplay                         int8u & 0x80
    6.2    ViewfinderWarning                   int8u & 0x40
    6.3    CenterWeightedAreaSize              int8u & 0x0c
    6.4    ExposureDelayMode                   int8u & 0x20
    6.5    MB-D80Batteries                     int8u & 0x03
    7.1    FlashWarning                        int8u & 0x80
    7.2    FlashShutterSpeed                   int8u & 0x78
    7.3    AutoFP                              int8u & 0x04
    7.4    ModelingFlash                       int8u & 0x02
    8.1    InternalFlash                       int8u & 0xc0
    8.2    ManualFlashOutput                   int8u & 0x07
    9.1    RepeatingFlashOutput                int8u & 0x70
    9.2    RepeatingFlashCount                 int8u & 0x0f
   10.1    RepeatingFlashRate                  int8u & 0xf0
   10.2    CommanderChannel                    int8u & 0x03
```

```
  11.1    CommanderInternalFlash              int8u & 0xc0
  11.2    CommanderGroupAMode                 int8u & 0x30
  11.3    CommanderGroupBMode                 int8u & 0x0c
  12.1    CommanderInternalTTLComp            int8u & 0x1f
  12.2    CommanderInternalManualOutput       int8u & 0xe0
  13.1    CommanderGroupA_TTL-AAComp          int8u & 0x1f
  13.2    CommanderGroupAManualOutput         int8u & 0xe0
  14.1    CommanderGroupB_TTL-AAComp          int8u & 0x1f
  14.2    CommanderGroupBManualOutput         int8u & 0xe0
  15.1    CenterAFArea                        int8u & 0x80
  15.2    FocusAreaSelection                  int8u & 0x04
  15.3    AFAreaIllumination                  int8u & 0x03
  16.1    AFAreaModeSetting                   int8u & 0xc0
```

NikonCustom SettingsD90 Tags

Custom settings for the D90.

```
  Index1   Tag Name                           Writable
  ------   --------                           --------
    0.1    LightSwitch                        int8u & 0x08
    2.1    AFAreaModeSetting                  int8u & 0x60
    2.2    CenterFocusPoint                   int8u & 0x10
    2.3    AFAssist                           int8u & 0x01
    2.4    AFPointIllumination                int8u & 0x06
    2.5    FocusPointWrap                     int8u & 0x08
    3.1    AELockForMB-D80                    int8u & 0x1c
    3.2    MB-D80BatteryType                  int8u & 0x03
    4.1    Beep                               int8u & 0x40
    4.2    GridDisplay                        int8u & 0x02
    4.3    ISODisplay                         int8u & 0x0c
    4.4    ViewfinderWarning                  int8u & 0x01
    4.5    NoMemoryCard                       int8u & 0x20
    5.1    ScreenTips                         int8u & 0x04
    5.2    FileNumberSequence                 int8u & 0x08
    5.3    ShootingInfoDisplay                int8u & 0xc0
    5.4    LCDIllumination                    int8u & 0x20
    6.1    EasyExposureComp                   int8u & 0x01
    6.2    ReverseIndicators                  int8u & 0x80
    7.1    ExposureControlStepSize            int8u & 0x40
    8.1    CenterWeightedAreaSize             int8u & 0x60
    8.2    FineTuneOptMatrixMetering          int8u & 0x0f
    9.1    FineTuneOptCenterWeighted          int8u & 0xf0
    9.2    FineTuneOptSpotMetering            int8u & 0x0f
   11.1    CLModeShootingSpeed                int8u & 0x07
   11.2    ExposureDelayMode                  int8u & 0x40
   13.1    AutoBracketSet                     int8u & 0xe0
   13.2    AutoBracketOrder                   int8u & 0x10
   14.1    FuncButton                         int8u & 0x78
   16.1    OKButton                           int8u & 0x18
   17.1    AELockButton                       int8u & 0x38
   18.1    CommandDialsReverseRotation        int8u & 0x80
   18.2    ShutterReleaseButtonAE-L           int8u & 0x02
   19.1    MeteringTime                       int8u & 0xf0
   19.2    RemoteOnDuration                   int8u & 0x03
   20.1    SelfTimerTime                      int8u & 0xc0
   20.2    SelfTimerShotCount                 int8u & 0x1e
   21.1    PlaybackMonitorOffTime             int8u & 0x1c
   21.2    ImageReviewTime                    int8u & 0xe0
   22.1    MenuMonitorOffTime                 int8u & 0xe0
   22.2    ShootingInfoMonitorOffTime         int8u & 0x1c
   23.1    FlashShutterSpeed                  int8u & 0x0f
   24.1    InternalFlash                      int8u & 0xc0
   24.2    ManualFlashOutput                  int8u & 0x1f
   25.1    RepeatingFlashOutput               int8u & 0x70
   25.2    RepeatingFlashCount                int8u & 0x0f
   26.1    RepeatingFlashRate                 int8u & 0xf0
   31.1    FlashWarning                       int8u & 0x80
   31.2    CommanderInternalTTLComp           int8u & 0x1f
   31.3    ModelingFlash                      int8u & 0x20
```

```
    31.4    AutoFP                                int8u & 0x40
    32.1    CommanderGroupA_TTLComp               int8u & 0x1f
    33.1    CommanderGroupB_TTLComp               int8u & 0x1f
    34.1    LiveViewAF                            int8u & 0xc0
```

NikonCustom SettingsD3 Tags

Custom settings for the D3, D3S, D3X, D300 and D300S.

Index1	Tag Name	Writable
0.1	CustomSettingsBank	int8u & 0x03
0.2	CustomSettingsAllDefault	int8u & 0x80
1.1	AF-CPrioritySelection	int8u & 0xc0
1.2	AF-SPrioritySelection	int8u & 0x20
1.3	AFPointSelection	int8u & 0x10
1.4	DynamicAFArea	int8u & 0x0c
1.5	FocusTrackingLockOn	int8u & 0x03
2.1	AFActivation	int8u & 0x80
2.2	FocusPointWrap	int8u & 0x08
2.3	AFPointIllumination	int8u & 0x60
	AFPointIllumination	int8u & 0x06
2.4	AFPointBrightness	int8u & 0x06
2.5	AFAssist	int8u & 0x01
3.1	AFOnButton	int8u & 0x07
3.2	VerticalAFOnButton	int8u & 0x70
3.3	AF-OnForMB-D10	int8u & 0x70
4.1	FocusTrackingLockOn	int8u & 0x07
4.2	AssignBktButton	int8u & 0x08
4.3	MultiSelectorLiveView	int8u & 0xc0
4.4	InitialZoomLiveView	int8u & 0x30
6.1	ISOStepSize	int8u & 0xc0
6.2	ExposureControlStepSize	int8u & 0x30
6.3	ExposureCompStepSize	int8u & 0x0c
6.4	EasyExposureCompensation	int8u & 0x03
7.1	CenterWeightedAreaSize	int8u & 0xe0
7.2	FineTuneOptCenterWeighted	int8u & 0x0f
8.1	FineTuneOptMatrixMetering	int8u & 0xf0
8.2	FineTuneOptSpotMetering	int8u & 0x0f
9.1	MultiSelectorShootMode	int8u & 0xc0
9.2	MultiSelectorPlaybackMode	int8u & 0x30
9.3	InitialZoomSetting	int8u & 0x0c
9.4	MultiSelector	int8u & 0x01
10.1	ExposureDelayMode	int8u & 0x40
10.2	CLModeShootingSpeed	int8u & 0x07
10.3	CHModeShootingSpeed	int8u & 0x30
11	MaxContinuousRelease	int8u
12.1	ReverseIndicators	int8u & 0x20
12.2	FileNumberSequence	int8u & 0x02
	FileNumberSequence	int8u & 0x08
12.3	RearDisplay	int8u & 0x80
12.4	ViewfinderDisplay	int8u & 0x40
12.5	BatteryOrder	int8u & 0x04
12.6	MB-D10Batteries	int8u & 0x03
12.7	ScreenTips	int8u & 0x10
13.1	Beep	int8u & 0xc0
13.2	ShootingInfoDisplay	int8u & 0x30
13.3	GridDisplay	int8u & 0x02
13.4	ViewfinderWarning	int8u & 0x01
13.5	MultiSelectorPlaybackMode	int8u & 0x03
14.1	PreviewButton	int8u & 0xf8
	FuncButton	int8u & 0xf8
14.2	PreviewButtonPlusDials	int8u & 0x07
	FuncButtonPlusDials	int8u & 0x07
15.1	FuncButton	int8u & 0xf8
	PreviewButton	int8u & 0xf8
15.2	FuncButtonPlusDials	int8u & 0x07
	PreviewButtonPlusDials	int8u & 0x07
16.1	AELockButton	int8u & 0xf8
16.2	AELockButtonPlusDials	int8u & 0x07

```
17.1    CommandDialsReverseRotation           int8u & 0x80
17.2    CommandDialsChangeMainSub             int8u & 0x40
17.3    CommandDialsApertureSetting           int8u & 0x20
17.4    CommandDialsMenuAndPlayback           int8u & 0x10
17.5    LCDIllumination                       int8u & 0x08
17.6    PhotoInfoPlayback                     int8u & 0x04
17.7    ShutterReleaseButtonAE-L              int8u & 0x02
17.8    ReleaseButtonToUseDial                int8u & 0x01
18.1    SelfTimerTime                         int8u & 0x18
18.2    MonitorOffTime                        int8u & 0x07
20.1    FlashSyncSpeed                        int8u & 0xe0
        FlashSyncSpeed                        int8u & 0xf0
20.2    FlashShutterSpeed                     int8u & 0x0f
21.1    AutoBracketSet                        int8u & 0xc0
        AutoBracketSet                        int8u & 0xe0
21.2    AutoBracketModeM                      int8u & 0x30
        AutoBracketModeM                      int8u & 0x18
21.3    AutoBracketOrder                      int8u & 0x08
        AutoBracketOrder                      int8u & 0x04
21.4    ModelingFlash                         int8u & 0x01
22.1    NoMemoryCard                          int8u & 0x80
22.2    MeteringTime                          int8u & 0x0f
23.1    InternalFlash                         int8u & 0xc0
25.1    ImageReviewTime                       int8u & 0xe0
25.2    PlaybackMonitorOffTime                int8u & 0x1c
26.1    MenuMonitorOffTime                    int8u & 0xe0
26.2    ShootingInfoMonitorOffTime            int8u & 0x1c
```

NikonCustom SettingsD700 Tags

Custom settings for the D700.

```
  Index1   Tag Name                            Writable
  ------   --------                            --------
   0.1    CustomSettingsBank                    int8u & 0x03
   0.2    CustomSettingsAllDefault              int8u & 0x80
   1.1    AF-CPrioritySelection                 int8u & 0xc0
   1.2    AF-SPrioritySelection                 int8u & 0x20
   1.3    AFPointSelection                      int8u & 0x10
   1.4    DynamicAFArea                         int8u & 0x0c
   2.1    AFActivation                          int8u & 0x80
   2.2    FocusPointWrap                        int8u & 0x08
   2.3    AFPointIllumination                   int8u & 0x06
   2.4    AFAssist                              int8u & 0x01
   3.1    FocusTrackingLockOn                   int8u & 0x07
   3.2    AF-OnForMB-D10                        int8u & 0x70
   4.1    ISOStepSize                           int8u & 0xc0
   4.2    ExposureControlStepSize               int8u & 0x30
   4.3    ExposureCompStepSize                  int8u & 0x0c
   4.4    EasyExposureCompensation              int8u & 0x03
   5.1    CenterWeightedAreaSize                int8u & 0x70
   6.1    FineTuneOptMatrixMetering             int8u & 0xf0
   6.2    FineTuneOptSpotMetering               int8u & 0x0f
   7.1    ShutterReleaseButtonAE-L              int8u & 0x80
   7.2    SelfTimerTime                         int8u & 0x30
   7.3    MeteringTime                          int8u & 0x0f
   8.1    PlaybackMonitorOffTime                int8u & 0x38
   8.2    MenuMonitorOffTime                    int8u & 0x07
   9.1    ShootingInfoMonitorOffTime            int8u & 0x38
   9.2    ImageReviewTime                       int8u & 0x07
  10.1    Beep                                  int8u & 0xc0
  10.2    ShootingInfoDisplay                   int8u & 0x30
  10.3    LCDIllumination                       int8u & 0x08
  10.4    ExposureDelayMode                     int8u & 0x04
  10.5    GridDisplay                           int8u & 0x02
  11.1    FileNumberSequence                    int8u & 0x40
  11.2    CLModeShootingSpeed                   int8u & 0x07
  12      MaxContinuousRelease                  int8u
  13.1    ScreenTips                            int8u & 0x08
  13.2    BatteryOrder                          int8u & 0x04
```

```
    13.3    MB-D10BatteryType                   int8u & 0x03
    15.1    FlashSyncSpeed                      int8u & 0xf0
    15.2    FlashShutterSpeed                   int8u & 0x0f
    16.1    FlashControlBuilt-in                int8u & 0xc0
    16.2    ManualFlashOutput                   int8u & 0x1f
    17.1    RepeatingFlashOutput                int8u & 0x70
    17.2    RepeatingFlashCount                 int8u & 0x0f
    18.1    RepeatingFlashRate                  int8u & 0xf0
    18.2    CommanderInternalTTLChannel         int8u & 0x03
    20.1    CommanderInternalTTLCompBuiltin     int8u & 0x1f
    21.1    CommanderInternalTTLCompGroupA      int8u & 0x1f
    22.1    CommanderInternalTTLCompGroupB      int8u & 0x1f
    26.1    AutoBracketSet                      int8u & 0xc0
    26.2    AutoBracketModeM                    int8u & 0x30
    26.3    AutoBracketOrder                    int8u & 0x08
    26.4    ModelingFlash                       int8u & 0x01
    27.1    MultiSelectorShootMode              int8u & 0xc0
    27.2    MultiSelectorPlaybackMode           int8u & 0x30
    27.3    InitialZoomSetting                  int8u & 0x0c
    27.4    MultiSelector                       int8u & 0x01
    28.1    FuncButton                          int8u & 0xf8
    29.1    PreviewButton                       int8u & 0xf8
    30.1    AELockButton                        int8u & 0xf8
    31.1    FuncButtonPlusDials                 int8u & 0x70
    31.2    PreviewButtonPlusDials              int8u & 0x07
    32.1    AELockButtonPlusDials               int8u & 0x70
    33.1    CommandDialsReverseRotation         int8u & 0x80
    33.2    CommandDialsChangeMainSub           int8u & 0x40
    33.3    CommandDialsApertureSetting         int8u & 0x20
    33.4    CommandDialsMenuAndPlayback         int8u & 0x10
    33.5    ReverseIndicators                   int8u & 0x08
    33.6    PhotoInfoPlayback                   int8u & 0x04
    33.7    NoMemoryCard                        int8u & 0x02
    33.8    ReleaseButtonToUseDial              int8u & 0x01
```

NikonCustom SettingsD800 Tags

Custom settings for the D800 and D800E.

```
  Index1    Tag Name                           Writable
  ------    --------                           --------
   12.1    AutoBracketingSet                   int8u & 0xe0
   12.2    AutoBracketOrder                    int8u & 0x10
   12.3    AutoBracketingMode                  int8u & 0x0c
   22.1    FlashSyncSpeed                      int8u & 0xf0
   22.2    FlashShutterSpeed                   int8u & 0x0f
   23.1    FlashControlBuilt-in                int8u & 0xc0
   23.2    ManualFlashOutput                   int8u & 0x1f
   24.1    RepeatingFlashOutput                int8u & 0x70
   24.2    RepeatingFlashCount                 int8u & 0x0f
   25.1    RepeatingFlashRate                  int8u & 0xf0
   25.2    CommanderChannel                    int8u & 0x03
   27.1    CommanderInternalFlash              int8u & 0xc0
   27.2    CommanderInternalManualOutput       int8u & 0x1f
   28.1    CommanderGroupAMode                 int8u & 0xc0
   28.2    CommanderGroupAManualOutput         int8u & 0x1f
   29.1    CommanderGroupBMode                 int8u & 0xc0
   29.2    CommanderGroupBManualOutput         int8u & 0x1f
   30.1    ModelingFlash                       int8u & 0x20
   30.2    CommanderInternalTTLComp            int8u & 0x1f
   31.1    CommanderGroupA_TTL-AAComp          int8u & 0x1f
   32.1    CommanderGroupB_TTL-AAComp          int8u & 0x1f
```

NikonCustom SettingsD810 Tags

Custom settings for the D810.

```
  Index1    Tag Name                           Writable
  ------    --------                           --------
    0.1    LightSwitch                         int8u & 0x08
```

```
 0.2    CustomSettingsBank                      int8u & 0x03
 1.1    AF-CPrioritySelection                   int8u & 0xc0
 1.2    AF-SPrioritySelection                   int8u & 0x20
 1.3    AFPointSelection                        int8u & 0x10
 1.4    FocusTrackingLockOn                     int8u & 0x07
 2.1    AFActivation                            int8u & 0x80
 2.2    FocusPointWrap                          int8u & 0x08
 2.3    AFPointBrightness                       int8u & 0x06
 2.4    AFAssist                                int8u & 0x01
 3.1    BatteryOrder                            int8u & 0x40
 3.2    MB-D12BatteryType                       int8u & 0x03
 4.1    Pitch                                   int8u & 0x40
 4.2    NoMemoryCard                            int8u & 0x20
 4.3    ISODisplay                              int8u & 0x0c
 4.4    GridDisplay                             int8u & 0x02
 5.1    ShootingInfoDisplay                     int8u & 0xc0
 5.2    LCDIllumination                         int8u & 0x20
 5.3    ElectronicFront-CurtainShutter          int8u & 0x08
 5.4    ScreenTips                              int8u & 0x04
 5.5    Beep                                    int8u & 0x03
 6.1    ReverseIndicators                       int8u & 0x80
 6.2    CommandDialsReverseRotation             int8u & 0x18
 6.3    EasyExposureCompensation                int8u & 0x03
 7.1    ExposureControlStepSize                 int8u & 0xc0
 7.2    ISOStepSize                             int8u & 0x30
 7.3    ExposureCompStepSize                    int8u & 0x0c
 8.1    CenterWeightedAreaSize                  int8u & 0xe0
 8.2    FineTuneOptMatrixMetering               int8u & 0x0f
 9.1    FineTuneOptCenterWeighted               int8u & 0xf0
 9.2    FineTuneOptSpotMetering                 int8u & 0x0f
10.1    MultiSelectorShootMode                  int8u & 0xc0
10.2    MultiSelectorPlaybackMode               int8u & 0x30
10.3    MultiSelector                           int8u & 0x01
11.1    ExposureDelayMode                       int8u & 0xc0
11.2    CLModeShootingSpeed                     int8u & 0x0f
12.1    MaxContinuousRelease                    int8u
13.1    AutoBracketSet                          int8u & 0xe0
13.2    AutoBracketOrder                        int8u & 0x10
13.3    AutoBracketModeM                        int8u & 0x0c
14.1    FuncButton                              int8u & 0x1f
15.1    PreviewButton                           int8u & 0x1f
16.1    AssignBktButton                         int8u & 0x07
17.1    AELockButton                            int8u & 0x1f
18.1    CommandDialsChangeMainSub               int8u & 0xe0
18.2    CommandDialsMenuAndPlayback             int8u & 0x18
18.3    CommandDialsApertureSetting             int8u & 0x04
18.4    ShutterReleaseButtonAE-L                int8u & 0x02
18.5    ReleaseButtonToUseDial                  int8u & 0x01
19.1    StandbyTimer                            int8u & 0xf0
20.1    SelfTimerTime                           int8u & 0xc0
20.2    SelfTimerShotInterval                   int8u & 0x30
20.3    SelfTimerShotCount                      int8u & 0x0f
21.1    ImageReviewMonitorOffTime               int8u & 0xe0
21.2    LiveViewMonitorOffTime                  int8u & 0x1c
22.1    MenuMonitorOffTime                      int8u & 0xe0
22.2    ShootingInfoMonitorOffTime              int8u & 0x1c
23.1    FlashSyncSpeed                          int8u & 0xf0
23.2    FlashShutterSpeed                       int8u & 0x0f
24.1    FlashControlBuilt-in                    int8u & 0xc0
31.1    ModelingFlash                           int8u & 0x20
36.1    PlaybackMonitorOffTime                  int8u & 0xe0
37.1    MultiSelectorLiveView                   int8u & 0xc0
38.1    ShutterSpeedLock                        int8u & 0x80
38.2    ApertureLock                            int8u & 0x40
38.3    MovieShutterButton                      int8u & 0x20
38.4    FlashExposureCompArea                   int8u & 0x04
40.1    MovieAELockButtonAssignment             int8u & 0x0f
41.1    MovieFunctionButton                     int8u & 0x70
41.2    MoviePreviewButton                      int8u & 0x07
42.1    FuncButtonPlusDials                     int8u & 0x0f
```

```
 43.1   PreviewButtonPlusDials              int8u & 0x0f
 44.1   AELockButtonPlusDials               int8u & 0x0f
 45.1   AssignMovieRecordButton             int8u & 0x0f
 46.1   FineTuneOptHighlightWeighted        int8u & 0x0f
 47.1   DynamicAreaAFDisplay                int8u & 0x80
 47.2   AFPointIllumination                 int8u & 0x40
 47.3   StoreByOrientation                  int8u & 0x18
 47.4   GroupAreaAFIllumination             int8u & 0x04
 48.1   MatrixMetering                      int8u & 0x80
 48.2   LiveViewButtonOptions               int8u & 0x30
 48.3   AFModeRestrictions                  int8u & 0x03
 49.1   LimitAFAreaModeSelection            int8u & 0x7e
 50.1   AF-OnForMB-D12                       int8u & 0x07
 51.1   AssignRemoteFnButton                int8u & 0x1f
 52.1   LensFocusFunctionButtons            int8u & 0x3f
```

NikonCustom SettingsD850 Tags

Custom settings for the D850.

```
 Index1   Tag Name                           Writable
 ------   --------                           --------
   0.2   CustomSettingsBank                  int8u & 0x03
   1.1   AF-CPrioritySelection               int8u & 0xc0
   1.2   AF-SPrioritySelection               int8u & 0x20
   1.3   AFPointSelection                    int8u & 0x10
   1.4   Three-DTrackingFaceDetection        int8u & 0x08
   1.5   BlockShotAFResponse                 int8u & 0x07
   2.1   FocusPointWrap                      int8u & 0x08
   2.2   AFPointBrightness                   int8u & 0x06
   4.1   ISODisplay                          int8u & 0x08
   4.2   GridDisplay                         int8u & 0x02
   5.1   LCDIllumination                     int8u & 0x20
   5.2   ElectronicFront-CurtainShutter      int8u & 0x08
   6.1   ReverseIndicators                   int8u & 0x80
   6.2   CommandDialsReverseRotation         int8u & 0x18
   6.3   EasyExposureCompensation            int8u & 0x03
   7.1   ExposureControlStepSize             int8u & 0xc0
   7.2   ISOStepSize                         int8u & 0x30
   7.3   ExposureCompStepSize                int8u & 0x0c
   8.1   CenterWeightedAreaSize              int8u & 0xe0
   8.2   FineTuneOptMatrixMetering           int8u & 0x0f
   9.1   FineTuneOptCenterWeighted           int8u & 0xf0
   9.2   FineTuneOptSpotMetering             int8u & 0x0f
  10.1   MultiSelectorShootMode              int8u & 0xe0
  10.2   MultiSelectorPlaybackMode           int8u & 0x0c
  10.3   MultiSelector                       int8u & 0x01
  11.1   ExposureDelayMode                   int8u & 0xe0
  11.2   CLModeShootingSpeed                 int8u & 0x0f
  12.1   MaxContinuousRelease                int8u
  13.1   AutoBracketOrder                    int8u & 0x10
  13.2   AutoBracketModeM                    int8u & 0x0c
  14.1   Func1Button                         int8u & 0x3f
  15.1   PreviewButton                       int8u & 0x3f
  16.1   AssignBktButton                     int8u & 0x07
  18.1   CommandDialsChangeMainSub           int8u & 0xe0
  18.2   CommandDialsMenuAndPlayback         int8u & 0x18
  18.3   CommandDialsApertureSetting         int8u & 0x04
  18.4   ReleaseButtonToUseDial              int8u & 0x01
  19.1   StandbyTimer                        int8u & 0xf0
  20.1   SelfTimerTime                       int8u & 0xc0
  20.2   SelfTimerShotInterval               int8u & 0x30
  20.3   SelfTimerShotCount                  int8u & 0x0f
  21.1   ImageReviewMonitorOffTime           int8u & 0xe0
  21.2   LiveViewMonitorOffTime              int8u & 0x1c
  22.1   MenuMonitorOffTime                  int8u & 0xe0
  22.2   ShootingInfoMonitorOffTime          int8u & 0x1c
  23.1   FlashSyncSpeed                      int8u & 0xf0
  23.2   FlashShutterSpeed                   int8u & 0x0f
  31.1   ModelingFlash                       int8u & 0x20
```

```
  36.1    PlaybackMonitorOffTime                      int8u & 0xe0
  37.1    MultiSelectorLiveView                       int8u & 0xc0
  38.1    ShutterSpeedLock                            int8u & 0x80
  38.2    ApertureLock                                int8u & 0x40
  38.3    MovieShutterButton                          int8u & 0x10
  38.4    FlashExposureCompArea                       int8u & 0x04
  38.5    AutoFlashISOSensitivity                     int8u & 0x02
  41.1    MovieFunc1Button                            int8u & 0xf0
  41.2    MoviePreviewButton                          int8u & 0x0f
  42.1    Func1ButtonPlusDials                        int8u & 0x0f
  43.1    PreviewButtonPlusDials                      int8u & 0x0f
  45.1    AssignMovieRecordButtonPlusDials            int8u & 0x0f
  46.1    FineTuneOptHighlightWeighted                int8u & 0x0f
  47.1    DynamicAreaAFDisplay                        int8u & 0x80
  47.2    AFPointIllumination                         int8u & 0x40
  47.3    StoreByOrientation                          int8u & 0x18
  48.1    MatrixMetering                              int8u & 0x80
  48.2    LiveViewButtonOptions                       int8u & 0x30
  48.3    AFModeRestrictions                          int8u & 0x03
  49.1    LimitAFAreaModeSelection                    int8u & 0x7e
  52.1    LensFocusFunctionButtons                    int8u & 0x3f
  66.1    VerticalMultiSelector                       int8u & 0xff
  67.1    AssignMB-D18FuncButton                      int8u & 0x3f
  68.1    AssignMB-D18FuncButtonPlusDials             int8u & 0x0f
  70.1    AF-OnButton                                 int8u & 0x3f
  71.1    SubSelector                                 int8u & 0x80
  72.1    SubSelectorCenter                           int8u & 0x3f
  73.1    SubSelectorPlusDials                        int8u & 0x0f
  74.1    AssignMovieSubselector                      int8u & 0xf0
  75.1    AssignMovieFunc1ButtonPlusDials             int8u & 0x10
  75.2    AssignMoviePreviewButtonPlusDials           int8u & 0x01
  76.1    AssignMovieSubselectorPlusDials             int8u & 0x10
  77.1    SyncReleaseMode                             int8u & 0x80
  77.2    ContinuousModeLiveView                      int8u & 0x40
  78.1    Three-DTrackingWatchArea                    int8u & 0x80
  78.2    SubjectMotion                               int8u & 0x60
  78.3    AFActivation                                int8u & 0x08
  78.4    ShutterReleaseButtonAE-L                    int8u & 0x03
  79.1    AssignMB-D18AF-OnButton                     int8u & 0x7f
  80.1    Func2Button                                 int8u & 0x3f
  82.1    AssignMovieFunc2Button                      int8u & 0x70
```

NikonCustom SettingsD5000 Tags

Custom settings for the D5000.

```
  Index1   Tag Name                                  Writable
  ------   --------                                  --------
    0.1    AFAreaModeSetting                         int8u & 0x60
    0.2    AFAssist                                  int8u & 0x01
    2.1    Beep                                      int8u & 0xc0
    2.2    GridDisplay                               int8u & 0x02
    2.3    ISODisplay                                int8u & 0x08
    2.4    NoMemoryCard                              int8u & 0x20
    3.1    FileNumberSequence                        int8u & 0x08
    4.1    RangeFinder                               int8u & 0x10
    4.2    DateImprint                               int8u & 0x08
    4.3    ReverseIndicators                         int8u & 0x80
    5.1    EVStepSize                                int8u & 0x40
    9.1    ExposureDelayMode                         int8u & 0x40
   11.1    AutoBracketSet                            int8u & 0xc0
   12.1    TimerFunctionButton                       int8u & 0x38
   15.1    AELockButton                              int8u & 0x38
   16.1    ShutterReleaseButtonAE-L                  int8u & 0x02
   16.2    CommandDialsReverseRotation               int8u & 0x80
   17.1    MeteringTime                              int8u & 0x70
   17.2    RemoteOnDuration                          int8u & 0x03
   18.1    SelfTimerTime                             int8u & 0xc0
   18.2    SelfTimerShotCount                        int8u & 0x1e
   19.1    ImageReviewTime                           int8u & 0xe0
```

```
  20.1    PlaybackMenusTime                    int8u & 0xe0
  22.1    InternalFlash                        int8u & 0xc0
  22.2    ManualFlashOutput                    int8u & 0x1f
  32.1    LiveViewAF                           int8u & 0x60
```

NikonCustom SettingsD5100 Tags

Custom settings for the D5100.

```
  Index1    Tag Name                           Writable
  ------    --------                           --------
   0.1    AF-CPrioritySelection                int8u & 0x80
   1.1    AFAssist                             int8u & 0x01
   3.1    Beep                                 int8u & 0xc0
   3.2    NoMemoryCard                         int8u & 0x20
   3.3    ISODisplay                           int8u & 0x08
   4.1    FileNumberSequence                   int8u & 0x08
   5.1    RangeFinder                          int8u & 0x10
   5.2    ReverseIndicators                    int8u & 0x80
   6.1    EVStepSize                           int8u & 0x40
  10.1    ExposureDelayMode                    int8u & 0x40
  12.1    AutoBracketSet                       int8u & 0xc0
  13.1    TimerFunctionButton                  int8u & 0x38
  16.1    AELockButton                         int8u & 0x38
  17.1    ShutterReleaseButtonAE-L             int8u & 0x02
  17.2    CommandDialsReverseRotation          int8u & 0x80
  18.1    MeteringTime                         int8u & 0x70
  18.2    RemoteOnDuration                     int8u & 0x03
  19.1    SelfTimerTime                        int8u & 0xc0
  19.2    SelfTimerShotCount                   int8u & 0x0f
  20.1    ImageReviewTime                      int8u & 0xe0
  20.2    LiveViewMonitorOffTime               int8u & 0x1c
  21.1    PlaybackMenusTime                    int8u & 0xe0
  23.1    ManualFlashOutput                    int8u & 0x1f
```

NikonCustom SettingsD5200 Tags

Custom settings for the D5200.

```
  Index1    Tag Name                           Writable
  ------    --------                           --------
   0.1    AF-CPrioritySelection                int8u & 0x80
   0.2    NumberOfFocusPoints                  int8u & 0x10
   1.1    AFAssist                             int8u & 0x01
   3.1    Beep                                 int8u & 0xc0
   3.2    NoMemoryCard                         int8u & 0x20
   3.3    ISODisplay                           int8u & 0x08
   4.1    FileNumberSequence                   int8u & 0x08
   5.1    RangeFinder                          int8u & 0x04
   5.2    ReverseExposureCompDial              int8u & 0x10
   5.3    ReverseShutterSpeedAperture          int8u & 0x08
   5.4    ReverseIndicators                    int8u & 0x80
   6.1    EVStepSize                           int8u & 0x40
  10.1    ExposureDelayMode                    int8u & 0x40
  12.1    AutoBracketSet                       int8u & 0xc0
  13.1    FunctionButton                       int8u & 0x1f
  16.1    AELockButton                         int8u & 0x0f
  17.1    ShutterReleaseButtonAE-L             int8u & 0x02
  18.1    StandbyTimer                         int8u & 0xe0
  18.2    RemoteOnDuration                     int8u & 0x03
  19.1    SelfTimerTime                        int8u & 0xc0
  19.2    SelfTimerShotCount                   int8u & 0x0f
  20.1    ImageReviewTime                      int8u & 0xe0
  20.2    LiveViewMonitorOffTime               int8u & 0x1c
  21.1    PlaybackMenusTime                    int8u & 0xe0
  23.1    InternalFlash                        int8u & 0xc0
  23.2    ManualFlashOutput                    int8u & 0x1f
```

NikonCustom SettingsD7000 Tags

Custom settings for the D7000.

```
   Index1    Tag Name                            Writable
   ------    --------                            --------
     0.1     AF-CPrioritySelection               int8u & 0x80
     0.2     AF-SPrioritySelection               int8u & 0x20
     0.3     NumberOfFocusPoints                 int8u & 0x10
     0.4     FocusTrackingLockOn                 int8u & 0x07
     1.1     FocusPointWrap                      int8u & 0x08
     1.2     AFPointIllumination                 int8u & 0x06
     1.3     AFAssist                            int8u & 0x01
     2.1     BatteryOrder                        int8u & 0x40
     2.2     AF-OnForMB-D11                      int8u & 0x1c
     2.3     MB-D11BatteryType                   int8u & 0x03
     3.1     BeepPitch                           int8u & 0xc0
     3.2     NoMemoryCard                        int8u & 0x20
     3.3     ISODisplay                          int8u & 0x0c
     3.4     GridDisplay                         int8u & 0x02
     3.5     ViewfinderWarning                   int8u & 0x01
     4.1     ShootingInfoDisplay                 int8u & 0xc0
     4.2     LCDIllumination                     int8u & 0x20
     4.3     FileNumberSequence                  int8u & 0x08
     4.4     ScreenTips                          int8u & 0x04
     4.5     BeepVolume                          int8u & 0x03
     5.1     ReverseIndicators                   int8u & 0x80
     5.2     EasyExposureCompensation            int8u & 0x03
     6.1     ExposureControlStep                 int8u & 0x40
     6.2     ISOSensitivityStep                  int8u & 0x10
     7.1     CenterWeightedAreaSize              int8u & 0xe0
    10.1     ExposureDelayMode                   int8u & 0x40
    10.2     CLModeShootingSpeed                 int8u & 0x07
    11       MaxContinuousRelease                int8u
    12.1     AutoBracketSet                      int8u & 0xe0
    12.2     AutoBracketOrder                    int8u & 0x10
    13.1     FuncButton                          int8u & 0xf8
    14.1     PreviewButton                       int8u & 0xf8
    15.1     OKButton                            int8u & 0x18
    16.1     AELockButton                        int8u & 0x38
    17.1     CommandDialsReverseRotation         int8u & 0x80
    17.2     CommandDialsChangeMainSub           int8u & 0x60
    17.3     CommandDialsApertureSetting         int8u & 0x04
    17.4     CommandDialsMenuAndPlayback         int8u & 0x18
    17.5     ShutterReleaseButtonAE-L            int8u & 0x02
    17.6     ReleaseButtonToUseDial              int8u & 0x01
    18.1     MeteringTime                        int8u & 0xf0
    18.2     RemoteOnDuration                    int8u & 0x03
    19.1     SelfTimerTime                       int8u & 0xc0
    19.2     SelfTimerInterval                   int8u & 0x30
    19.3     SelfTimerShotCount                  int8u & 0x0f
    20.1     ImageReviewTime                     int8u & 0xe0
    20.2     LiveViewMonitorOffTime              int8u & 0x1c
    21.1     MenuMonitorOffTime                  int8u & 0xe0
    21.2     ShootingInfoMonitorOffTime          int8u & 0x1c
    22.1     FlashSyncSpeed                      int8u & 0xf0
    22.2     FlashShutterSpeed                   int8u & 0x0f
    23.1     FlashControlBuilt-in                int8u & 0xc0
    23.2     ManualFlashOutput                   int8u & 0x1f
    24.1     RepeatingFlashOutput                int8u & 0x70
    24.2     RepeatingFlashCount                 int8u & 0x0f
    25.1     RepeatingFlashRate                  int8u & 0xf0
    26.1     CommanderInternalTTLCompBuiltin     int8u & 0x1f
    27.1     CommanderInternalTTLCompGroupA      int8u & 0x1f
    28.1     CommanderInternalTTLCompGroupB      int8u & 0x1f
    30.1     FlashWarning                        int8u & 0x80
    30.2     ModelingFlash                       int8u & 0x20
    34.1     LiveViewAFAreaMode                  int8u & 0x60
    34.2     LiveViewAFMode                      int8u & 0x02
    35.1     PlaybackMonitorOffTime              int8u & 0xe0
```

NikonCustom SettingsD4 Tags

Custom settings for the D4 and D4S.

```
   Index1    Tag Name                          Writable
   ------    --------                          --------
     0.1     CustomSettingsBank                int8u & 0x03
     1.1     AF-CPrioritySelection             int8u & 0xc0
     1.2     AF-SPrioritySelection             int8u & 0x20
     1.3     AFPointSelection                  int8u & 0x10
     1.4     FocusTrackingLockOn               int8u & 0x07
     2.1     AFActivation                      int8u & 0x80
     2.2     FocusPointWrap                    int8u & 0x08
     4.1     Pitch                             int8u & 0x40
     4.2     NoMemoryCard                      int8u & 0x20
     4.3     GridDisplay                       int8u & 0x02
     5.1     ShootingInfoDisplay               int8u & 0xc0
     5.2     LCDIllumination                   int8u & 0x20
     5.3     ScreenTips                        int8u & 0x04
     5.4     Beep                              int8u & 0x03
     6.1     ReverseIndicators                 int8u & 0x80
     6.2     RearDisplay                       int8u & 0x40
     6.3     ViewfinderDisplay                 int8u & 0x20
     6.4     CommandDialsReverseRotation       int8u & 0x18
     6.5     EasyExposureCompensation          int8u & 0x03
     7.1     ExposureControlStepSize           int8u & 0xc0
     7.2     ISOStepSize                       int8u & 0x30
     7.3     ExposureCompStepSize              int8u & 0x0c
     8.1     CenterWeightedAreaSize            int8u & 0xe0
     8.2     FineTuneOptMatrixMetering         int8u & 0x0f
     9.1     FineTuneOptCenterWeighted         int8u & 0xf0
     9.2     FineTuneOptSpotMetering           int8u & 0x0f
    10.1     MultiSelectorShootMode            int8u & 0xc0
    10.2     MultiSelectorPlaybackMode         int8u & 0x30
    10.3     MultiSelector                     int8u & 0x01
    11.1     ExposureDelayMode                 int8u & 0xc0
    11.2     CHModeShootingSpeed               int8u & 0x10
    11.3     CLModeShootingSpeed               int8u & 0x0f
    12       MaxContinuousRelease              int8u
    13.1     AutoBracketSet                    int8u & 0xe0
    13.2     AutoBracketOrder                  int8u & 0x10
    13.3     AutoBracketModeM                  int8u & 0x0c
    14.1     FuncButton                        int8u & 0xf8
    14.2     FuncButtonPlusDials               int8u & 0x07
    15.1     PreviewButton                     int8u & 0xf8
    15.2     PreviewButtonPlusDials            int8u & 0x07
    16.1     AssignBktButton                   int8u & 0x07
    18.1     CommandDialsChangeMainSub         int8u & 0xe0
    18.2     CommandDialsMenuAndPlayback       int8u & 0x18
    18.3     CommandDialsApertureSetting       int8u & 0x04
    18.4     ShutterReleaseButtonAE-L          int8u & 0x02
    18.5     ReleaseButtonToUseDial            int8u & 0x01
    19.1     StandbyTimer                      int8u & 0xf0
    20.1     SelfTimerTime                     int8u & 0xc0
    20.2     SelfTimerShotCount                int8u & 0x0f
    20.3     SelfTimerShotInterval             int8u & 0x30
    21.1     ImageReviewMonitorOffTime         int8u & 0xe0
    21.2     LiveViewMonitorOffTime            int8u & 0x1c
    22.1     MenuMonitorOffTime                int8u & 0xe0
    22.2     ShootingInfoMonitorOffTime        int8u & 0x1c
    23.1     FlashSyncSpeed                    int8u & 0xf0
    23.2     FlashShutterSpeed                 int8u & 0x0f
    31.1     ModelingFlash                     int8u & 0x20
    36.1     PlaybackMonitorOffTime            int8u & 0xe0
    37.1     PlaybackZoom                      int8u & 0x01
    38.1     ShutterSpeedLock                  int8u & 0x80
    38.2     ApertureLock                      int8u & 0x40
    38.3     MovieShutterButton                int8u & 0x30
    38.4     FlashExposureCompArea             int8u & 0x04
    41.1     MovieFunctionButton               int8u & 0x70
    41.2     MoviePreviewButton                int8u & 0x07
```

```
 42.1    VerticalMultiSelector                  int8u & 0x60
 42.2    VerticalFuncButton                     int8u & 0x1f
 43.1    VerticalFuncButtonPlusDials            int8u & 0xf0
 43.2    AssignMovieRecordButton                int8u & 0x07
 46.1    DynamicAreaAFDisplay                   int8u & 0x80
 46.2    AFPointIllumination                    int8u & 0x60
 46.3    StoreByOrientation                     int8u & 0x18
 46.4    GroupAreaAFIllumination                int8u & 0x04
 46.5    AFPointBrightness                      int8u & 0x03
 47.1    AFOnButton                             int8u & 0x70
 47.2    VerticalAFOnButton                     int8u & 0x07
 48.1    SubSelectorAssignment                  int8u & 0x80
 48.2    MovieSubSelectorAssignment             int8u & 0x07
 49.1    SubSelector                            int8u & 0xf8
 49.2    SubSelectorPlusDials                   int8u & 0x07
 50.1    MatrixMetering                         int8u & 0x80
 50.2    LiveViewButtonOptions                  int8u & 0x30
 50.3    AFModeRestrictions                     int8u & 0x03
 51.1    LimitAFAreaModeSelection               int8u & 0x7e
 52.1    MovieFunctionButtonPlusDials           int8u & 0x10
 52.2    MoviePreviewButtonPlusDials            int8u & 0x01
 53.1    MovieSubSelectorAssignmentPlusDials    int8u & 0x10
 54.1    AssignRemoteFnButton                   int8u & 0x1f
 55.1    LensFocusFunctionButtons               int8u & 0x3f
```

NikonCustom SettingsD5 Tags

Custom settings for the D5.

```
    Index1    Tag Name                          Writable
    ------    --------                          --------
      0.1    CustomSettingsBank                 int8u & 0x03
      1.1    AF-CPrioritySelection              int8u & 0xc0
      1.2    AF-SPrioritySelection              int8u & 0x20
      1.3    NumberOfFocusPoints                int8u & 0x10
      1.4    Three-DTrackingFaceDetection       int8u & 0x08
      1.5    BlockShotAFResponse                int8u & 0x07
      2.1    FocusPointWrap                     int8u & 0x08
      2.2    AFPointBrightness                  int8u & 0x06
      4.1    ISODisplay                         int8u & 0x08
      4.2    GridDisplay                        int8u & 0x02
      5.1    LCDIllumination                    int8u & 0x20
      5.2    ElectronicFront-CurtainShutter     int8u & 0x08
      6.1    ReverseIndicators                  int8u & 0x80
      6.2    CommandDialsReverseRotation        int8u & 0x18
      6.3    EasyExposureCompensation           int8u & 0x03
      7.1    ExposureControlStepSize            int8u & 0xc0
      7.2    ISOStepSize                        int8u & 0x30
      7.3    ExposureCompStepSize               int8u & 0x0c
      8.1    CenterWeightedAreaSize             int8u & 0xe0
      8.2    FineTuneOptMatrixMetering          int8u & 0x0f
      9.1    FineTuneOptCenterWeighted          int8u & 0xf0
      9.2    FineTuneOptSpotMetering            int8u & 0x0f
     10.1    MultiSelectorShootMode             int8u & 0xe0
     10.3    MultiSelector                      int8u & 0x01
     11.1    ExposureDelayMode                  int8u & 0xc0
     11.2    CLModeShootingSpeed                int8u & 0x0f
     12.1    MaxContinuousRelease               int8u
     13.1    AutoBracketOrder                   int8u & 0x10
     13.2    AutoBracketModeM                   int8u & 0x0c
     14.1    Func1Button                        int8u & 0x3f
     15.1    PreviewButton                      int8u & 0x3f
     16.1    AssignBktButton                    int8u & 0x07
     18.1    CommandDialsChangeMainSub          int8u & 0xe0
     18.2    CommandDialsMenuAndPlayback        int8u & 0x18
     18.3    CommandDialsApertureSetting        int8u & 0x04
     18.4    ReleaseButtonToUseDial             int8u & 0x01
     19.1    StandbyTimer                       int8u & 0xf0
     20.1    SelfTimerTime                      int8u & 0xc0
     20.2    SelfTimerShotInterval              int8u & 0x30
```

```
   20.3    SelfTimerShotCount                    int8u & 0x0f
   21.1    ImageReviewMonitorOffTime             int8u & 0xe0
   21.2    LiveViewMonitorOffTime                int8u & 0x1c
   22.1    MenuMonitorOffTime                    int8u & 0xe0
   22.2    ShootingInfoMonitorOffTime            int8u & 0x1c
   23.1    FlashSyncSpeed                        int8u & 0xf0
   23.2    FlashShutterSpeed                     int8u & 0x0f
   31.1    ModelingFlash                         int8u & 0x20
   36.1    PlaybackMonitorOffTime                int8u & 0xe0
   37.1    MultiSelectorLiveView                 int8u & 0xc0
   38.1    ShutterSpeedLock                      int8u & 0x80
   38.2    ApertureLock                          int8u & 0x40
   38.3    MovieShutterButton                    int8u & 0x10
   38.4    FlashExposureCompArea                 int8u & 0x04
   38.5    AutoFlashISOSensitivity               int8u & 0x02
   41.1    MovieFunc1Button                      int8u & 0xf0
   41.2    MoviePreviewButton                    int8u & 0x0f
   42.1    Func1ButtonPlusDials                  int8u & 0x0f
   43.1    PreviewButtonPlusDials                int8u & 0x0f
   45.1    AssignMovieRecordButtonPlusDials      int8u & 0x0f
   46.1    FineTuneOptHighlightWeighted          int8u & 0x0f
   47.1    DynamicAreaAFDisplay                  int8u & 0x80
   47.2    AFPointIllumination                   int8u & 0x40
   47.3    StoreByOrientation                    int8u & 0x18
   48.1    MatrixMetering                        int8u & 0x80
   48.2    LiveViewButtonOptions                 int8u & 0x30
   48.3    AFModeRestrictions                    int8u & 0x03
   49.1    LimitAFAreaModeSelection              int8u & 0x7e
   52.1    LensFocusFunctionButtons              int8u & 0x3f
   66.1    VerticalMultiSelector                 int8u & 0xff
   67.1    VerticalFuncButton                    int8u & 0x3f
   68.1    VerticalFuncPlusDials                 int8u & 0x0f
   70.1    AF-OnButton                           int8u & 0x3f
   71.1    SubSelector                           int8u & 0x80
   72.1    SubSelectorCenter                     int8u & 0x3f
   73.1    SubSelectorPlusDials                  int8u & 0x0f
   74.1    AssignMovieSubselector                int8u & 0xf0
   75.1    AssignMovieFunc1ButtonPlusDials       int8u & 0x10
   75.2    AssignMoviePreviewButtonPlusDials     int8u & 0x01
   76.1    AssignMovieSubselectorPlusDials       int8u & 0x10
   77.1    SyncReleaseMode                       int8u & 0x80
   78.1    Three-DTrackingWatchArea              int8u & 0x80
   78.2    SubjectMotion                         int8u & 0x60
   78.3    AFActivation                          int8u & 0x08
   78.4    ShutterReleaseButtonAE-L              int8u & 0x03
   79.1    VerticalAFOnButton                    int8u & 0x7f
   80.1    Func2Button                           int8u & 0x3f
   81.1    Func2ButtonPlusDials                  int8u & 0x0f
   82.1    AssignMovieFunc2Button                int8u & 0x70
   83.1    Func3Button                           int8u & 0x03
```

NikonCustom SettingsD500 Tags

Custom settings for the D500.

```
   Index1   Tag Name                             Writable
   ------   --------                             --------
     0.1    CustomSettingsBank                   int8u & 0x03
     1.1    AF-CPrioritySelection                int8u & 0xc0
     1.2    AF-SPrioritySelection                int8u & 0x20
     1.3    NumberOfFocusPoints                  int8u & 0x10
     1.4    Three-DTrackingFaceDetection         int8u & 0x08
     1.5    BlockShotAFResponse                  int8u & 0x07
     2.1    FocusPointWrap                       int8u & 0x08
     2.2    AFPointBrightness                    int8u & 0x06
     4.1    ISODisplay                           int8u & 0x08
     4.2    GridDisplay                          int8u & 0x02
     5.1    LCDIllumination                      int8u & 0x20
     5.2    ElectronicFront-CurtainShutter       int8u & 0x08
     6.1    ReverseIndicators                    int8u & 0x80
```

6.2	CommandDialsReverseRotation	int8u & 0x18
6.3	EasyExposureCompensation	int8u & 0x03
7.1	ExposureControlStepSize	int8u & 0xc0
7.2	ISOStepSize	int8u & 0x30
7.3	ExposureCompStepSize	int8u & 0x0c
8.1	CenterWeightedAreaSize	int8u & 0xe0
8.2	FineTuneOptMatrixMetering	int8u & 0x0f
9.1	FineTuneOptCenterWeighted	int8u & 0xf0
9.2	FineTuneOptSpotMetering	int8u & 0x0f
10.1	MultiSelectorShootMode	int8u & 0xe0
10.2	MultiSelectorPlaybackMode	int8u & 0x0c
10.3	MultiSelector	int8u & 0x01
11.1	ExposureDelayMode	int8u & 0xc0
11.2	CLModeShootingSpeed	int8u & 0x0f
12.1	MaxContinuousRelease	int8u
13.1	AutoBracketOrder	int8u & 0x10
13.2	AutoBracketModeM	int8u & 0x0c
14.1	Func1Button	int8u & 0x3f
15.1	PreviewButton	int8u & 0x3f
16.1	AssignBktButton	int8u & 0x07
18.1	CommandDialsChangeMainSub	int8u & 0xe0
18.2	CommandDialsMenuAndPlayback	int8u & 0x18
18.3	CommandDialsApertureSetting	int8u & 0x04
18.4	ReleaseButtonToUseDial	int8u & 0x01
19.1	StandbyTimer	int8u & 0xf0
20.1	SelfTimerTime	int8u & 0xc0
20.2	SelfTimerShotInterval	int8u & 0x30
20.3	SelfTimerShotCount	int8u & 0x0f
21.1	ImageReviewMonitorOffTime	int8u & 0xe0
21.2	LiveViewMonitorOffTime	int8u & 0x1c
22.1	MenuMonitorOffTime	int8u & 0xe0
22.2	ShootingInfoMonitorOffTime	int8u & 0x1c
23.1	FlashSyncSpeed	int8u & 0xf0
23.2	FlashShutterSpeed	int8u & 0x0f
31.1	ModelingFlash	int8u & 0x20
36.1	PlaybackMonitorOffTime	int8u & 0xe0
37.1	MultiSelectorLiveView	int8u & 0xc0
38.1	ShutterSpeedLock	int8u & 0x80
38.2	ApertureLock	int8u & 0x40
38.3	MovieShutterButton	int8u & 0x10
38.4	FlashExposureCompArea	int8u & 0x04
38.5	AutoFlashISOSensitivity	int8u & 0x02
41.1	MovieFunc1Button	int8u & 0xf0
41.2	MoviePreviewButton	int8u & 0x0f
42.1	Func1ButtonPlusDials	int8u & 0x0f
43.1	PreviewButtonPlusDials	int8u & 0x0f
45.1	AssignMovieRecordButtonPlusDials	int8u & 0x0f
46.1	FineTuneOptHighlightWeighted	int8u & 0x0f
47.1	DynamicAreaAFDisplay	int8u & 0x80
47.2	AFPointIllumination	int8u & 0x40
47.3	StoreByOrientation	int8u & 0x18
47.4	GroupAreaAFIllumination	int8u & 0x04
48.1	MatrixMetering	int8u & 0x80
48.2	LiveViewButtonOptions	int8u & 0x30
48.3	AFModeRestrictions	int8u & 0x03
49.1	LimitAFAreaModeSelection	int8u & 0x7e
52.1	LensFocusFunctionButtons	int8u & 0x3f
66.1	VerticalMultiSelector	int8u & 0xff
67.1	AssignMB-D17FuncButton	int8u & 0x3f
68.1	AssignMB-D17FuncButtonPlusDials	int8u & 0x0f
70.1	AF-OnButton	int8u & 0x3f
71.1	SubSelector	int8u & 0x80
72.1	SubSelectorCenter	int8u & 0x3f
73.1	SubSelectorPlusDials	int8u & 0x0f
74.1	AssignMovieSubselector	int8u & 0xf0
75.1	AssignMovieFunc1ButtonPlusDials	int8u & 0x10
75.2	AssignMoviePreviewButtonPlusDials	int8u & 0x01
76.1	AssignMovieSubselectorPlusDials	int8u & 0x10
77.1	SyncReleaseMode	int8u & 0x80
78.1	Three-DTrackingWatchArea	int8u & 0x80

```
 78.2    SubjectMotion                        int8u & 0x60
 78.3    AFActivation                         int8u & 0x08
 78.4    ShutterReleaseButtonAE-L             int8u & 0x03
 79.1    AssignMB-D17AF-OnButton              int8u & 0x7f
 80.1    Func2Button                          int8u & 0x3f
 82.1    AssignMovieFunc2Button               int8u & 0x70
```

NikonCustom SettingsD610 Tags

Custom settings for the D610.

```
 Index1   Tag Name                            Writable
 ------   --------                            --------
   0.1    AF-CPrioritySelection               int8u & 0x80
   0.2    AF-SPrioritySelection               int8u & 0x20
   0.3    NumberOfFocusPoints                 int8u & 0x10
   0.4    FocusTrackingLockOn                 int8u & 0x07
   1.1    FocusPointWrap                      int8u & 0x08
   1.2    AFPointIllumination                 int8u & 0x06
   1.3    AFAssist                            int8u & 0x01
   5.1    EasyExposureCompensation            int8u & 0x03
   6.1    ExposureControlStep                 int8u & 0x40
   6.2    ISOSensitivityStep                  int8u & 0x10
   7.1    CenterWeightedAreaSize              int8u & 0xe0
   7.2    FineTuneOptMatrixMetering           int8u & 0x0f
   8.1    FineTuneOptCenterWeighted           int8u & 0xf0
   8.2    FineTuneOptSpotMetering             int8u & 0x0f
  17.1    ShutterReleaseButtonAE-L            int8u & 0x02
  18.1    StandbyTimer                        int8u & 0xf0
  18.2    RemoteOnDuration                    int8u & 0x03
  19.1    SelfTimerTime                       int8u & 0xc0
  19.2    SelfTimerShotInterval               int8u & 0x30
  19.3    SelfTimerShotCount                  int8u & 0x0f
  20.1    ImageReviewMonitorOffTime           int8u & 0xe0
  20.2    LiveViewMonitorOffTime              int8u & 0x1c
  21.1    MenuMonitorOffTime                  int8u & 0xe0
  21.2    ShootingInfoMonitorOffTime          int8u & 0x1c
  35.1    PlaybackMonitorOffTime              int8u & 0xe0
```

NikonCustom SettingsZ6III Tags

Custom settings for the Z6III.

```
 Index1   Tag Name                            Writable
 ------   --------                            --------
     3    AF-CPrioritySelection               int8u
     5    AF-SPrioritySelection               int8u
     7    BlockShotAFResponse                 int8u
    11    AFPointSel                          int8u
    13    StoreByOrientation                  int8u
    15    AFActivation                        int8u
    16    AF-OnOutOfFocusRelease?             int8u
    17    LimitAF-AreaModeSelPinpoint?        int8u
    19    LimitAF-AreaModeSelWideAF_S?        int8u
    20    LimitAF-AreaModeSelWideAF_L?        int8u
    21    LimitAFAreaModeSelAuto?             int8u
    22    FocusPointWrap?                     int8u
    23    ManualFocusPointIllumination?       int8u
    24    DynamicAreaAFAssist?                int8u
    26    AF-AssistIlluminator                int8u
    27    ManualFocusRingInAFMode             int8u
    29    ExposureControlStepSize             int8u
    31    EasyExposureCompensation            int8u
    33    CenterWeightedAreaSize              int8u
    35    FineTuneOptMatrixMetering           int8s
    37    FineTuneOptCenterWeighted           int8s
    39    FineTuneOptSpotMetering             int8s
    41    FineTuneOptHighlightWeighted        int8s
    43    ShutterReleaseButtonAE-L            int8u
    45    SelfTimerTime                       int8u
```

```
 49    SelfTimerShotCount                  int8u
 53    SelfTimerShotInterval               int8u
 55    PlaybackMonitorOffTime              int8u
 57    MenuMonitorOffTime                  int8u
 59    ImageReviewMonitorOffTime           int8u
 61    ShootingInfoMonitorOffTime          int8u
 63    CLModeShootingSpeed                 int8u
 65    MaxContinuousRelease                no
 69    SyncReleaseMode?                    int8u
 75    LimitSelectableImageAreaDX?         int8u
 76    LimitSelectableImageArea1To1?       int8u
 77    LimitSelectableImageArea16To9?      int8u
 78    FileNumberSequence                  int8u
 81    FocusPeakingLevel?                  int8u
 83    FocusPeakingHighlightColor?         int8u
 85    ContinuousModeDisplay               int8u
 87    FlashSyncSpeed                      no
 89    HighSpeedSync                       int8u
 91    FlashShutterSpeed                   no
 93    FlashExposureCompArea               int8u
 95    AutoFlashISOSensitivity             int8u
 97    ModelingFlash                       int8u
 99    AutoBracketModeM                    int8u
101    AutoBracketOrder                    int8u
103    Func1Button                         int8u
119    Func2Button                         int8u
135    AFOnButton                          int8u
147    SubSelector?                        int8u
159    AssignMovieRecordButton?            int8u
163    LensFunc1Button                     int8u
171    LensFunc2Button                     int8u
177    LensControlRing                     int8u
179    MultiSelectorShootMode              int8u
183    MultiSelectorPlaybackMode           int8u
187    ShutterSpeedLock                    int8u
188    ApertureLock                        int8u
190    CmdDialsReverseRotation             int8u
195    UseDialWithoutHold?                 int8u
197    ReverseIndicators?                  int8u
199    MovieFunc1Button                    int8u
205    MovieFunc2Button                    int8u
211    MovieAF-OnButton                    int8u
223    MovieLensControlRing                int8u
225    MovieMultiSelector?                 int8u
229    MovieAFSpeed                        int8u
231    MovieAFSpeedApply                   int8u
233    MovieAFTrackingSensitivity          int8u
241    LCDIllumination?                    int8u
242    ExtendedShutterSpeeds               int8u
245    FocusPointPersistence               int8u
257    FlashBurstPriority?                 int8u
319    LimitAF-AreaModeSelDynamic_S?       int8u
320    LimitAF-AreaModeSelDynamic_M?       int8u
321    LimitAF-AreaModeSelDynamic_L?       int8u
323    LimitAF-AreaModeSel3DTracking?      int8u
325    PlaybackFlickUp?                    int8u
329    PlaybackFlickDown?                  int8u
333    ISOStepSize                         int8u
340    TouchFn?                            int8u
341    TouchFnRole?                        int8u
345    TouchFnAreaWide?                    int8u
347    TouchFnAreaTall?                    int8u
350    EVFImageFrame?                      int8u
351    EVFGrid?                            int8u
353    VirtualHorizonStyle?                int8u
415    Func1ButtonPlaybackMode?            int8u
417    Func2ButtonPlaybackMode?            int8u
431    MovieRecordButtonPlaybackMode?      int8u
463    ControlRingResponse                 int8u
559    FocusPeakingDisplay?                int8u
```

NikonCustom SettingsZ8 Tags

Custom settings for the Z8.

Index1	Tag Name	Writable
1	CustomSettingsBank	int8u
3	AF-CPrioritySelection	int8u
5	AF-SPrioritySelection	int8u
7	BlockShotAFResponse	int8u
11	AFPointSel	int8u
13	StoreByOrientation	int8u
15	AFActivation	int8u
16	AF-OnOutOfFocusRelease?	int8u
17	LimitAF-AreaModeSelPinpoint?	int8u
19	LimitAF-AreaModeSelWideAF_S?	int8u
20	LimitAF-AreaModeSelWideAF_L?	int8u
21	LimitAFAreaModeSelAuto?	int8u
22	FocusPointWrap?	int8u
23	ManualFocusPointIllumination?	int8u
24	DynamicAreaAFAssist?	int8u
25	AF-AssistIlluminator	int8u
26	ManualFocusRingInAFMode	int8u
27	ExposureControlStepSize	int8u
29	EasyExposureCompensation	int8u
31	CenterWeightedAreaSize	int8u
33	FineTuneOptMatrixMetering	int8s
35	FineTuneOptCenterWeighted	int8s
37	FineTuneOptSpotMetering	int8s
39	FineTuneOptHighlightWeighted	int8s
41	ShutterReleaseButtonAE-L	int8u
43	SelfTimerTime	int8u
45	SelfTimerShotCount	int8u
49	SelfTimerShotInterval	int8u
51	PlaybackMonitorOffTime	int8u
53	MenuMonitorOffTime	int8u
55	ShootingInfoMonitorOffTime	int8u
57	ImageReviewMonitorOffTime	int8u
59	CLModeShootingSpeed	int8u
61	MaxContinuousRelease	no
65	SyncReleaseMode?	int8u
69	LimitSelectableImageAreaDX?	int8u
70	LimitSelectableImageArea1To1?	int8u
71	LimitSelectableImageArea16To9?	int8u
72	FileNumberSequence	int8u
73	FocusPeakingLevel?	int8u
75	FocusPeakingHighlightColor?	int8u
81	ContinuousModeDisplay	int8u
83	FlashSyncSpeed	no
85	HighSpeedSync	int8u
87	FlashShutterSpeed	no
89	FlashExposureCompArea	int8u
91	AutoFlashISOSensitivity	int8u
93	ModelingFlash	int8u
95	AutoBracketModeM	int8u
97	AutoBracketOrder	int8u
99	Func1Button	int8u
115	Func2Button	int8u
131	AFOnButton	int8u
143	SubSelector?	int8u
155	AssignMovieRecordButton?	int8u
159	LensFunc1Button	int8u
167	LensFunc2Button	int8u
173	LensControlRing	int8u
175	MultiSelectorShootMode	int8u
179	MultiSelectorPlaybackMode	int8u
183	ShutterSpeedLock	int8u
184	ApertureLock	int8u
186	CmdDialsReverseRotation	int8u

191	UseDialWithoutHold?	int8u
193	ReverseIndicators?	int8u
195	MovieFunc1Button	int8u
199	MovieFunc2Button	int8u
203	MovieAF-OnButton	int8u
215	MovieLensControlRing	int8u
217	MovieMultiSelector?	int8u
221	MovieAFSpeed	int8u
223	MovieAFSpeedApply	int8u
225	MovieAFTrackingSensitivity	int8u
257	LCDIllumination?	int8u
258	ExtendedShutterSpeeds	int8u
259	SubjectMotion	int8u
261	FocusPointPersistence	int8u
263	AutoFocusModeRestrictions?	int8u
267	CHModeShootingSpeed	int8u
273	FlashBurstPriority?	int8u
335	LimitAF-AreaModeSelDynamic_S?	int8u
336	LimitAF-AreaModeSelDynamic_M?	int8u
337	LimitAF-AreaModeSelDynamic_L?	int8u
339	LimitAF-AreaModeSel3DTracking?	int8u
341	PlaybackFlickUp?	int8u
345	PlaybackFlickDown?	int8u
349	ISOStepSize	int8u
355	ReverseFocusRing	int8u
356	EVFImageFrame?	int8u
357	EVFGrid?	int8u
359	VirtualHorizonStyle?	int8u
421	Func1ButtonPlaybackMode?	int8u
423	Func2ButtonPlaybackMode?	int8u
437	MovieRecordButtonPlaybackMode?	int8u
453	WBButtonPlaybackMode	int8u
459	CommandDialPlaybackMode?	int8u
461	CommandDialVideoPlaybackMode?	int8u
463	SubCommandDialPlaybackMode?	int8u
465	SubCommandDialVideoPlaybackMode?	int8u
467	FocusPointLock?	int8u
469	ControlRingResponse	int8u
515	MovieAFAreaMode?	int8u
529	ZebraPatternToneRange?	int8u
531	MovieZebraPattern?	int8u
533	MovieHighlightDisplayThreshold?	int8u
535	MovieMidtoneDisplayValue?	int8u
537	MovieMidtoneDisplayRange?	int8u~
541	MovieEVFGrid?	int8u
549	MovieShutterSpeedLock?	int8u
550	MovieFocusPointLock?	int8u
563	MatrixMetering?	int8u
564	AF-CFocusDisplay	int8u
565	FocusPeakingDisplay?	int8u
567	KeepExposure	int8u
585	StarlightView?	int8u
587	EVFWarmDisplayMode?	int8u
589	EVFWarmDisplayBrightness?	int8s
591	EVFReleaseIndicator?	int8u
601	MovieApertureLock?	int8u
607	FlickAdvanceDirection?	int8u
647	PreReleaseBurstLength	int8u
649	PostReleaseBurstLength	int8u
681	ViewModeShowEffectsOfSettings?	int8u
683	DispButton	int8u
753	ExposureDelay	int16u~

NikonCustom SettingsZ9 Tags

Custom settings for the Z9.

Index1	Tag Name	Writable
1	CustomSettingsBank	int8u

3	AF-CPrioritySelection	int8u
5	AF-SPrioritySelection	int8u
7	BlockShotAFResponse	int8u
11	AFPointSel	int8u
13	StoreByOrientation	int8u
15	AFActivation	int8u
16	AF-OnOutOfFocusRelease?	int8u
17	LimitAF-AreaModeSelPinpoint?	int8u
19	LimitAF-AreaModeSelWideAF_S?	int8u
20	LimitAF-AreaModeSelWideAF_L?	int8u
21	LimitAFAreaModeSelAuto?	int8u
22	FocusPointWrap?	int8u
23	ManualFocusPointIllumination?	int8u
24	DynamicAreaAFAssist?	int8u
25	AF-AssistIlluminator	int8u
26	ManualFocusRingInAFMode	int8u
27	ExposureControlStepSize	int8u
29	EasyExposureCompensation	int8u
31	CenterWeightedAreaSize	int8u
33	FineTuneOptMatrixMetering	int8s
35	FineTuneOptCenterWeighted	int8s
37	FineTuneOptSpotMetering	int8s
39	FineTuneOptHighlightWeighted	int8s
41	ShutterReleaseButtonAE-L	int8u
43	SelfTimerTime	int8u
45	SelfTimerShotCount	int8u
49	SelfTimerShotInterval	int8u
51	PlaybackMonitorOffTime	int8u
53	MenuMonitorOffTime	int8u
55	ShootingInfoMonitorOffTime	int8u
57	ImageReviewMonitorOffTime	int8u
59	CLModeShootingSpeed	int8u
61	MaxContinuousRelease	no
65	SyncReleaseMode?	int8u
69	LimitSelectableImageAreaDX?	int8u
70	LimitSelectableImageArea1To1?	int8u
71	LimitSelectableImageArea16To9?	int8u
72	FileNumberSequence	int8u
73	FocusPeakingLevel?	int8u
75	FocusPeakingHighlightColor?	int8u
81	ContinuousModeDisplay	int8u
83	FlashSyncSpeed	no
85	HighSpeedSync	int8u
87	FlashShutterSpeed	no
89	FlashExposureCompArea	int8u
91	AutoFlashISOSensitivity	int8u
93	ModelingFlash	int8u
95	AutoBracketModeM	int8u
97	AutoBracketOrder	int8u
99	Func1Button	int8u
115	Func2Button	int8u
131	AFOnButton	int8u
143	SubSelector?	int8u
155	AssignMovieRecordButton?	int8u
159	LensFunc1Button	int8u
167	LensFunc2Button	int8u
173	LensControlRing	int8u
175	MultiSelectorShootMode	int8u
179	MultiSelectorPlaybackMode	int8u
183	ShutterSpeedLock	int8u
184	ApertureLock	int8u
186	CmdDialsReverseRotation	int8u
191	UseDialWithoutHold?	int8u
193	ReverseIndicators?	int8u
195	MovieFunc1Button	int8u
199	MovieFunc2Button	int8u
203	MovieAF-OnButton	int8u
207	MovieMultiSelector?	int8u
215	MovieLensControlRing	int8u
221	MovieAFSpeed	int8u

```
  223    MovieAFSpeedApply                      int8u
  225    MovieAFTrackingSensitivity             int8u
  257    LCDIllumination?                       int8u
  258    ExtendedShutterSpeeds                  int8u
  259    SubjectMotion                          int8u
  261    FocusPointPersistence                  int8u
  263    AutoFocusModeRestrictions?             int8u
  267    CHModeShootingSpeed                    int8u
269.1    LimitReleaseModeSelCL?                 int8u & 0x02
269.2    LimitReleaseModeSelCH?                 int8u & 0x04
269.3    LimitReleaseModeSelC30?                int8u & 0x10
269.4    LimitReleaseModeSelC120?               int8u & 0x40
269.5    LimitReleaseModeSelSelf?               int8u & 0x80
  273    FlashBurstPriority?                    int8u
  277    VerticalFuncButton                     int8u
  281    Func3Button                            int8u
  285    VerticalAFOnButton                     int8u
  293    VerticalMultiSelectorPlaybackMode?     int8u
  295    MovieFunc3Button                       int8u
  335    LimitAF-AreaModeSelDynamic_S?          int8u
  336    LimitAF-AreaModeSelDynamic_M?          int8u
  337    LimitAF-AreaModeSelDynamic_L?          int8u
  339    LimitAF-AreaModeSel3DTracking?         int8u
  341    PlaybackFlickUp?                       int8u
  345    PlaybackFlickDown?                     int8u
  349    ISOStepSize                            int8u
  355    ReverseFocusRing                       int8u
  356    EVFImageFrame?                         int8u
  357    EVFGrid?                               int8u
  359    VirtualHorizonStyle?                   int8u
  373    Func4Button?                           int8u
  379    AudioButton?                           int8u
  381    QualityButton?                         int8u
  399    VerticalMultiSelector?                 int8u
  421    Func1ButtonPlaybackMode?               int8u
  423    Func2ButtonPlaybackMode?               int8u
  425    Func3ButtonPlaybackMode?               int8u
  431    Func4ButtonPlaybackMode?               int8u
  437    MovieRecordButtonPlaybackMode?         int8u
  439    VerticalFuncButtonPlaybackMode?        int8u
  441    AudioButtonPlaybackMode?               int8u
  447    QualityButtonPlaybackMode?             int8u
  453    WhiteBalanceButtonPlaybackMode?        int8u
  459    CommandDialPlaybackMode?               int8u
  463    SubCommandDialPlaybackMode?            int8u
  467    FocusPointLock?                        int8u
  469    ControlRingResponse                    int8u
  481    VerticalMovieFuncButton?               int8u
  505    VerticalMovieAFOnButton?               int8u
  515    MovieAFAreaMode?                       int8u
  527    HDMIViewAssist?                        int8u
  529    ZebraPatternToneRange?                 int8u
  531    MovieZebraPattern?                     int8u
  533    MovieHighlightDisplayThreshold?        int8u
  535    MovieMidtoneDisplayValue?              int8u
  537    MovieMidtoneDisplayRange?              int8u~
  541    MovieEVFGrid?                          int8u
  549    MovieShutterSpeedLock?                 int8u
  550    MovieFocusPointLock?                   int8u
  563    MatrixMetering?                        int8u
  564    AF-CFocusDisplay                       int8u
  565    FocusPeakingDisplay?                   int8u
  567    KeepExposure                           int8u
  585    StarlightView?                         int8u
  587    EVFWarmDisplayMode?                    int8u
  589    EVFWarmDisplayBrightness?              int8s
  591    EVFReleaseIndicator?                   int8u
  601    MovieApertureLock?                     int8u
  607    FlickAdvanceDirection?                 int8u
```

NikonCustom SettingsZ9v4 Tags

Custom settings for the Z9.

Index1	Tag Name	Writable
1	CustomSettingsBank	int8u
3	AF-CPrioritySelection	int8u
5	AF-SPrioritySelection	int8u
7	BlockShotAFResponse	int8u
11	AFPointSel	int8u
13	StoreByOrientation	int8u
15	AFActivation	int8u
16	AF-OnOutOfFocusRelease?	int8u
17	LimitAF-AreaModeSelPinpoint?	int8u
19	LimitAF-AreaModeSelWideAF_S?	int8u
20	LimitAF-AreaModeSelWideAF_L?	int8u
21	LimitAFAreaModeSelAuto?	int8u
22	FocusPointWrap?	int8u
23	ManualFocusPointIllumination?	int8u
24	DynamicAreaAFAssist?	int8u
25	AF-AssistIlluminator	int8u
26	ManualFocusRingInAFMode	int8u
27	ExposureControlStepSize	int8u
29	EasyExposureCompensation	int8u
31	CenterWeightedAreaSize	int8u
33	FineTuneOptMatrixMetering	int8s
35	FineTuneOptCenterWeighted	int8s
37	FineTuneOptSpotMetering	int8s
39	FineTuneOptHighlightWeighted	int8s
41	ShutterReleaseButtonAE-L	int8u
43	SelfTimerTime	int8u
45	SelfTimerShotCount	int8u
49	SelfTimerShotInterval	int8u
51	PlaybackMonitorOffTime	int8u
53	MenuMonitorOffTime	int8u
55	ShootingInfoMonitorOffTime	int8u
57	ImageReviewMonitorOffTime	int8u
59	CLModeShootingSpeed	int8u
61	MaxContinuousRelease	no
65	SyncReleaseMode?	int8u
69	LimitSelectableImageAreaDX?	int8u
70	LimitSelectableImageArea1To1?	int8u
71	LimitSelectableImageArea16To9?	int8u
72	FileNumberSequence	int8u
73	FocusPeakingLevel?	int8u
75	FocusPeakingHighlightColor?	int8u
81	ContinuousModeDisplay	int8u
83	FlashSyncSpeed	no
85	HighSpeedSync	int8u
87	FlashShutterSpeed	no
89	FlashExposureCompArea	int8u
91	AutoFlashISOSensitivity	int8u
93	ModelingFlash	int8u
95	AutoBracketModeM	int8u
97	AutoBracketOrder	int8u
99	Func1Button	int8u
115	Func2Button	int8u
131	AFOnButton	int8u
143	SubSelector?	int8u
155	AssignMovieRecordButton?	int8u
159	LensFunc1Button	int8u
167	LensFunc2Button	int8u
173	LensControlRing	int8u
175	MultiSelectorShootMode	int8u
179	MultiSelectorPlaybackMode	int8u
183	ShutterSpeedLock	int8u
184	ApertureLock	int8u
186	CmdDialsReverseRotation	int8u
191	UseDialWithoutHold?	int8u

```
193    ReverseIndicators?                    int8u
195    MovieFunc1Button                      int8u
199    MovieFunc2Button                      int8u
203    MovieAF-OnButton                      int8u
207    MovieMultiSelector?                   int8u
215    MovieLensControlRing                  int8u
221    MovieAFSpeed                          int8u
223    MovieAFSpeedApply                     int8u
225    MovieAFTrackingSensitivity            int8u
279    LCDIllumination?                      int8u
280    ExtendedShutterSpeeds                 int8u
281    SubjectMotion                         int8u
283    FocusPointPersistence                 int8u
285    AutoFocusModeRestrictions?            int8u
289    CHModeShootingSpeed                   int8u
293.1  LimitReleaseModeSelCL?                int8u & 0x02
293.2  LimitReleaseModeSelCH?                int8u & 0x04
293.3  LimitReleaseModeSelC30?               int8u & 0x10
293.4  LimitReleaseModeSelC120?              int8u & 0x40
293.5  LimitReleaseModeSelSelf?              int8u & 0x80
297    FlashBurstPriority?                   int8u
301    VerticalFuncButton                    int8u
305    Func3Button                           int8u
309    VerticalAFOnButton                    int8u
317    VerticalMultiSelectorPlaybackMode?    int8u
319    MovieFunc3Button                      int8u
359    LimitAF-AreaModeSelDynamic_S?         int8u
360    LimitAF-AreaModeSelDynamic_M?         int8u
361    LimitAF-AreaModeSelDynamic_L?         int8u
363    LimitAF-AreaModeSel3DTracking?        int8u
365    PlaybackFlickUp?                      int8u
369    PlaybackFlickDown?                    int8u
373    ISOStepSize                           int8u
379    ReverseFocusRing                      int8u
380    EVFImageFrame?                        int8u
381    EVFGrid?                              int8u
383    VirtualHorizonStyle?                  int8u
397    Func4Button?                          int8u
403    AudioButton?                          int8u
405    QualityButton?                        int8u
423    VerticalMultiSelector?                int8u
445    Func1ButtonPlaybackMode?              int8u
447    Func2ButtonPlaybackMode?              int8u
449    Func3ButtonPlaybackMode?              int8u
455    Func4ButtonPlaybackMode?              int8u
461    MovieRecordButtonPlaybackMode?        int8u
463    VerticalFuncButtonPlaybackMode?       int8u
465    AudioButtonPlaybackMode?              int8u
471    QualityButtonPlaybackMode?            int8u
477    WhiteBalanceButtonPlaybackMode?       int8u
483    CommandDialPlaybackMode?              int8u
485    CommandDialVideoPlaybackMode?         int8u
487    SubCommandDialPlaybackMode?           int8u
489    SubCommandDialVideoPlaybackMode?      int8u
491    FocusPointLock?                       int8u
493    ControlRingResponse                   int8u
505    VerticalMovieFuncButton?              int8u
529    VerticalMovieAFOnButton?              int8u
539    MovieAFAreaMode?                      int8u
551    HDMIViewAssist?                       int8u
553    ZebraPatternToneRange?                int8u
555    MovieZebraPattern?                    int8u
557    MovieHighlightDisplayThreshold?       int8u
559    MovieMidtoneDisplayValue?             int8u
561    MovieMidtoneDisplayRange?             int8u~
565    MovieEVFGrid?                         int8u
573    MovieShutterSpeedLock?                int8u
574    MovieFocusPointLock?                  int8u
587    MatrixMetering?                       int8u
588    AF-CFocusDisplay                      int8u
```

```
589    FocusPeakingDisplay?                        int8u
591    KeepExposure                                int8u
609    StarlightView?                              int8u
611    EVFWarmDisplayMode?                         int8u
613    EVFWarmDisplayBrightness?                   int8s
615    EVFReleaseIndicator?                        int8u
625    MovieApertureLock?                          int8u
631    FlickAdvanceDirection?                      int8u
```

NikonSettings Tags

User settings for newer Nikon models. A number of the tags are marked
as Unknown only to reduce the volume of the normal output.

Tag ID	Tag Name	Writable
0x0001	ISOAutoHiLimit	no
0x0002	ISOAutoFlashLimit	no
0x0003	ISOAutoShutterTime	no
0x000b	FlickerReductionShooting	no
0x000c	FlickerReductionIndicator	no
0x000d	MovieISOAutoHiLimit	no
0x000e	MovieISOAutoControlManualMode	no
0x000f	MovieWhiteBalanceSameAsPhoto	no
0x001d	AF-CPrioritySel	no
0x001e	AF-SPrioritySel	no
0x0020	AFPointSel	no
0x0022	AFActivation	no
0x0023	FocusPointWrap	no
0x0025	ManualFocusPointIllumination	no
0x0026	AF-AssistIlluminator	no
0x0027	ManualFocusRingInAFMode	no
0x0029	ISOStepSize	no
0x002a	ExposureControlStepSize	no
0x002b	EasyExposureCompensation	no
0x002c	MatrixMetering	no
0x002d	CenterWeightedAreaSize	no
0x002f	FineTuneOptMatrixMetering	no
0x0030	FineTuneOptCenterWeighted	no
0x0031	FineTuneOptSpotMetering	no
0x0032	FineTuneOptHighlightWeighted	no
0x0033	ShutterReleaseButtonAE-L	no
0x0034	StandbyMonitorOffTime	no
0x0035	SelfTimerTime	no
0x0036	SelfTimerShotCount	no
0x0037	SelfTimerShotInterval	no
0x0038	PlaybackMonitorOffTime	no
0x0039	MenuMonitorOffTime	no
0x003a	ShootingInfoMonitorOffTime	no
0x003b	ImageReviewMonitorOffTime	no
0x003c	LiveViewMonitorOffTime	no
0x003e	CLModeShootingSpeed	no
0x003f	MaxContinuousRelease	no
0x0040	ExposureDelayMode	no
0x0041	ElectronicFront-CurtainShutter	no
0x0042	FileNumberSequence	no
0x0043	FramingGridDisplay	no
0x0045	LCDIllumination	no
0x0046	OpticalVR	no
0x0047	FlashSyncSpeed	no
0x0048	FlashShutterSpeed	no
0x0049	FlashExposureCompArea	no
0x004a	AutoFlashISOSensitivity	no
0x0051	AssignBktButton	no
0x0052	AssignMovieRecordButton	no
0x0053	MultiSelectorShootMode	no
0x0054	MultiSelectorPlaybackMode	no
0x0056	MultiSelectorLiveView	no
0x0058	CmdDialsReverseRotExposureComp?	no
0x0059	CmdDialsChangeMainSubExposure?	no
0x005a	CmdDialsChangeMainSub	no

0x005b	CmdDialsMenuAndPlayback	no
0x005c	SubDialFrameAdvance	no
0x005d	ReleaseButtonToUseDial	no
0x005e	ReverseIndicators	no
0x0062	MovieShutterButton	no
0x0063	Language	no
0x006c	ShootingInfoDisplay	no
0x0074	FlickAdvanceDirection	no
0x0075	HDMIOutputResolution	no
0x0077	HDMIOutputRange	no
0x0080	RemoteFuncButton	no
0x008b	CmdDialsReverseRotation	no
0x008d	FocusPeakingHighlightColor	no
0x008e	ContinuousModeDisplay	no
0x008f	ShutterSpeedLock	no
0x0090	ApertureLock	no
0x0091	MovieHighlightDisplayThreshold	no
0x0092	HDMIExternalRecorder	no
0x0093	BlockShotAFResponse	no
0x0094	SubjectMotion	no
0x0095	Three-DTrackingFaceDetection	no
0x0097	StoreByOrientation	no
0x0099	DynamicAreaAFAssist	no
0x009a	ExposureCompStepSize	no
0x009b	SyncReleaseMode	no
0x009c	ModelingFlash	no
0x009d	AutoBracketModeM	no
0x009e	PreviewButton	no
0x00a0	Func1Button	no
0x00a2	Func2Button	no
0x00a3	AF-OnButton	no
0x00a4	SubSelector	no
0x00a5	SubSelectorCenter	no
0x00a7	LensFunc1Button	no
0x00a8	CmdDialsApertureSetting	no
0x00a9	MultiSelector	no
0x00aa	LiveViewButtonOptions	no
0x00ab	LightSwitch	no
0x00b1	MoviePreviewButton	no
	MovieFunc1Button	no
0x00b3	MovieFunc1Button	no
	MovieFunc2Button	no
0x00b5	MovieFunc2Button	no
0x00b6	AssignMovieSubselector	no
0x00b8	LimitAFAreaModeSelD9?	no
0x00b9	LimitAFAreaModeSelD25?	no
0x00bc	LimitAFAreaModeSel3D?	no
0x00bd	LimitAFAreaModeSelGroup?	no
0x00be	LimitAFAreaModeSelAuto?	no
0x00c1	LimitSelectableImageArea5To4?	no
0x00c2	LimitSelectableImageArea1To1?	no
0x00d4	PhotoShootingMenuBank	no
0x00d5	CustomSettingsBank	no
0x00d6	LimitAF-AreaModeSelPinpoint?	no
0x00d7	LimitAF-AreaModeSelDynamic?	no
0x00d8	LimitAF-AreaModeSelWideAF_S?	no
0x00d9	LimitAF-AreaModeSelWideAF_L?	no
0x00da	LowLightAF	no
0x00db	LimitSelectableImageAreaDX?	no
0x00dc	LimitSelectableImageArea5To4?	no
0x00dd	LimitSelectableImageArea1To1?	no
0x00de	LimitSelectableImageArea16To9?	no
0x00df	ApplySettingsToLiveView	no
0x00e0	FocusPeakingLevel	no
0x00ea	LensControlRing	no
0x00ed	MovieMultiSelector	no
0x00ee	MovieAFSpeed	no
0x00ef	MovieAFSpeedApply	no
0x00f0	MovieAFTrackingSensitivity	no
0x00f1	MovieHighlightDisplayPattern	no

0x00f2	SubDialFrameAdvanceRating5?	no
0x00f3	SubDialFrameAdvanceRating4?	no
0x00f4	SubDialFrameAdvanceRating3?	no
0x00f5	SubDialFrameAdvanceRating2?	no
0x00f6	SubDialFrameAdvanceRating1?	no
0x00f7	SubDialFrameAdvanceRating0?	no
0x00f9	MovieAF-OnButton	no
0x00fb	SecondarySlotFunction	no
0x00fc	SilentPhotography	no
0x00fd	ExtendedShutterSpeeds	no
0x0102	HDMIBitDepth	no
0x0103	HDMIOutputHDR	no
0x0104	HDMIViewAssist	no
0x0109	BracketSet	no
0x010a	BracketProgram	no
0x010b	BracketIncrement	no
0x010c	BracketIncrement	no
0x010e	MonitorBrightness	no
0x0116	GroupAreaC1	no
0x0117	AutoAreaAFStartingPoint	no
0x0118	FocusPointPersistence	no
0x0119	LimitAFAreaModeSelD49?	no
0x011a	LimitAFAreaModeSelD105?	no
0x011b	LimitAFAreaModeSelGroupC1?	no
0x011c	LimitAFAreaModeSelGroupC2?	no
0x011d	AutoFocusModeRestrictions	no
0x011e	FocusPointBrightness	no
0x011f	CHModeShootingSpeed	no
0x0120	CLModeShootingSpeed	no
0x0121	QuietShutterShootingSpeed	no
0x0122	LimitReleaseModeSelCL?	no
0x0123	LimitReleaseModeSelCH?	no
0x0124	LimitReleaseModeSelQ?	no
0x0125	LimitReleaseModeSelTimer?	no
0x0126	LimitReleaseModeSelMirror-Up?	no
0x0127	LimitSelectableImageArea16To9?	no
0x0128	RearControPanelDisplay	no
0x0129	FlashBurstPriority	no
0x012a	RecallShootFuncExposureMode	no
0x012b	RecallShootFuncShutterSpeed	no
0x012c	RecallShootFuncAperture	no
0x012d	RecallShootFuncExposureComp	no
0x012e	RecallShootFuncISO	no
0x012f	RecallShootFuncMeteringMode	no
0x0130	RecallShootFuncWhiteBalance	no
0x0131	RecallShootFuncAFAreaMode	no
0x0132	RecallShootFuncFocusTracking	no
0x0133	RecallShootFuncAF-On	no
0x0134	VerticalFuncButton	no
0x0135	Func3Button	no
0x0136	VerticalAF-OnButton	no
0x0137	VerticalMultiSelector	no
0x0138	MeteringButton	no
0x0139	PlaybackFlickUp	no
0x013a	PlaybackFlickUpRating	no
0x013b	PlaybackFlickDown	no
0x013c	PlaybackFlickDownRating	no
0x013d	MovieFunc3Button	no
0x0150	ShutterType	no
0x0151	LensFunc2Button	no
0x0158	USBPowerDelivery	no
0x0159	EnergySavingMode	no
0x015c	BracketingBurstOptions	no
0x015e	PrimarySlot	no
0x015f	ReverseFocusRing	no
0x0160	VerticalFuncButton	no
0x0161	VerticalAFOnButton	no
0x0162	VerticalMultiSelector	no
0x0164	VerticalMovieFuncButton	no
0x0165	VerticalMovieAFOnButton	no

```
    0x0169   LimitAF-AreaModeSelAutoPeople?          no
    0x016a   LimitAF-AreaModeSelAutoAnimals?         no
    0x016b   LimitAF-AreaModeSelWideLPeople?         no
    0x016c   LimitAF-AreaModeSelWideLAnimals?        no
    0x016d   SaveFocus                               no
    0x016e   AFAreaMode                              no
    0x016f   MovieAFAreaMode                         no
    0x0170   PreferSubSelectorCenter                 no
    0x0171   KeepExposureWithTeleconverter           no
    0x0174   FocusPointSelectionSpeed                no
```

Nintendo Tags

```
    Tag ID   Tag Name                         Writable
    ------   --------                         --------
    0x1101   CameraInfo                       Nintendo CameraInfo
```

Nintendo CameraInfo Tags

```
    Index1   Tag Name                         Writable
    ------   --------                         --------
         0   ModelID                          undef[4]
         8   TimeStamp                        int32u
        24   InternalSerialNumber             undef[4]
        40   Parallax                         float
        48   Category                         int16u
```

Olympus Tags

Tags 0x0000 through 0x0103 are used by some older Olympus cameras, and
are the same as Konica/Minolta tags. These tags are also used for some
models from other brands such as Acer, BenQ, Epson, Hitachi, HP,
Maginon, Minolta, Pentax, Ricoh, Samsung, Sanyo, SeaLife, Sony, Supra
and Vivitar.

```
    Tag ID   Tag Name                         Writable
    ------   --------                         --------
    0x0000   MakerNoteVersion                 undef
    0x0001   MinoltaCameraSettingsOld         Minolta CameraSettings
    0x0003   MinoltaCameraSettings            Minolta CameraSettings
    0x0040   CompressedImageSize              int32u
    0x0081   PreviewImageData                 no
    0x0088   PreviewImageStart                no
    0x0089   PreviewImageLength               no
    0x0100   ThumbnailImage                   undef
    0x0104   BodyFirmwareVersion              string
    0x0200   SpecialMode                      int32u[3]~
    0x0201   Quality                          int16u~
    0x0202   Macro                            int16u
    0x0203   BWMode                           int16u
    0x0204   DigitalZoom                      rational64u
    0x0205   FocalPlaneDiagonal               rational64u
    0x0206   LensDistortionParams             int16s[6]
    0x0207   CameraType                       string
    0x0208   TextInfo                         Olympus TextInfo
    0x0209   CameraID                         string
    0x020b   EpsonImageWidth                  int32u
    0x020c   EpsonImageHeight                 int32u
    0x020d   EpsonSoftware                    string
    0x0280   PreviewImage                     int8u
    0x0300   PreCaptureFrames                 int16u
    0x0301   WhiteBoard                       int16u
    0x0302   OneTouchWB                       int16u
    0x0303   WhiteBalanceBracket              int16u
    0x0304   WhiteBalanceBias                 int16u
    0x0400   SensorArea                       undef[8]
    0x0401   BlackLevel                       int32u[4]
    0x0403   SceneMode                        int16u
    0x0404   SerialNumber                     string
    0x0405   Firmware                         string
    0x0e00   PrintIM                          PrintIM
    0x0f00   DataDump                         no
```

0x0f01	DataDump2	no
0x0f04	ZoomedPreviewStart	int32u*
0x0f05	ZoomedPreviewLength	int32u*
0x0f06	ZoomedPreviewSize	int16u[2]
0x1000	ShutterSpeedValue	rational64s
0x1001	ISOValue	rational64s
0x1002	ApertureValue	rational64s
0x1003	BrightnessValue	rational64s
0x1004	FlashMode	int16u
0x1005	FlashDevice	int16u
0x1006	ExposureCompensation	rational64s
0x1007	SensorTemperature	int16s
0x1008	LensTemperature	int16s
0x1009	LightCondition	int16u
0x100a	FocusRange	int16u
0x100b	FocusMode	int16u
0x100c	ManualFocusDistance	rational64u
0x100d	ZoomStepCount	int16u
0x100e	FocusStepCount	int16u
0x100f	Sharpness	int16u
0x1010	FlashChargeLevel	int16u
0x1011	ColorMatrix	int16u[9]
0x1012	BlackLevel	int16u[4]
0x1013	ColorTemperatureBG?	int16u
0x1014	ColorTemperatureRG?	int16u
0x1015	WBMode	int16u[2]
0x1017	RedBalance	int16u[2]
0x1018	BlueBalance	int16u[2]
0x1019	ColorMatrixNumber	int16u
0x101a	SerialNumber	string
0x101b	ExternalFlashAE1_0?	int32u
0x101c	ExternalFlashAE2_0?	int32u
0x101d	InternalFlashAE1_0?	int32u
0x101e	InternalFlashAE2_0?	int32u
0x101f	ExternalFlashAE1?	int32u
0x1020	ExternalFlashAE2?	int32u
0x1021	InternalFlashAE1?	int32u
0x1022	InternalFlashAE2?	int32u
0x1023	FlashExposureComp	rational64s
0x1024	InternalFlashTable	int16u
0x1025	ExternalFlashGValue	rational64s
0x1026	ExternalFlashBounce	int16u
0x1027	ExternalFlashZoom	int16u
0x1028	ExternalFlashMode	int16u
0x1029	Contrast	int16u
0x102a	SharpnessFactor	int16u
0x102b	ColorControl	int16u[6]
0x102c	ValidBits	int16u[2]
0x102d	CoringFilter	int16u
0x102e	OlympusImageWidth	int32u
0x102f	OlympusImageHeight	int32u
0x1030	SceneDetect	int16u
0x1031	SceneArea?	int32u[8]
0x1033	SceneDetectData?	int32u[720]
0x1034	CompressionRatio	rational64u
0x1035	PreviewImageValid	int32u
0x1036	PreviewImageStart	int32u*
0x1037	PreviewImageLength	int32u*
0x1038	AFResult	int16u
0x1039	CCDScanMode	int16u
0x103a	NoiseReduction	int16u
0x103b	FocusStepInfinity	int16u
0x103c	FocusStepNear	int16u
0x103d	LightValueCenter	rational64s
0x103e	LightValuePeriphery	rational64s
0x103f	FieldCount?	int16u
0x2010	Equipment	Olympus Equipment
	EquipmentIFD	Olympus Equipment
0x2020	CameraSettings	Olympus CameraSettings
	CameraSettingsIFD	Olympus CameraSettings

```
0x2030    RawDevelopment                      Olympus RawDevelopment
          RawDevelopmentIFD                   Olympus RawDevelopment
0x2031    RawDev2                             Olympus RawDevelopment2
          RawDev2IFD                          Olympus RawDevelopment2
0x2040    ImageProcessing                     Olympus ImageProcessing
          ImageProcessingIFD                  Olympus ImageProcessing
0x2050    FocusInfo                           Olympus FocusInfo
          FocusInfoIFD                        Olympus FocusInfo
          CameraParameters                    undef
0x2100    Olympus2100                         Olympus FE
          Olympus2100IFD                      Olympus FE
0x2200    Olympus2200                         Olympus FE
          Olympus2200IFD                      Olympus FE
0x2300    Olympus2300                         Olympus FE
          Olympus2300IFD                      Olympus FE
0x2400    Olympus2400                         Olympus FE
          Olympus2400IFD                      Olympus FE
0x2500    Olympus2500                         Olympus FE
          Olympus2500IFD                      Olympus FE
0x2600    Olympus2600                         Olympus FE
          Olympus2600IFD                      Olympus FE
0x2700    Olympus2700                         Olympus FE
          Olympus2700IFD                      Olympus FE
0x2800    Olympus2800                         Olympus FE
          Olympus2800IFD                      Olympus FE
0x2900    Olympus2900                         Olympus FE
          Olympus2900IFD                      Olympus FE
0x3000    RawInfo                             Olympus RawInfo
          RawInfoIFD                          Olympus RawInfo
0x4000    MainInfo                            Olympus
          MainInfoIFD                         Olympus
0x5000    UnknownInfo                         Olympus UnknownInfo
          UnknownInfoIFD                      Olympus UnknownInfo
```

Olympus TextInfo Tags

This information is in text format (similar to APP12 information, but
with spaces instead of linefeeds). Below are tags which have been
observed, but any information found here will be extracted, even if the
tag is not listed.

Tag ID	Tag Name	Writable
'Resolution'	Resolution	no
'Type'	CameraType	no

Olympus Equipment Tags

Tag ID	Tag Name	Writable
0x0000	EquipmentVersion	undef[4]
0x0100	CameraType2	string[6]
0x0101	SerialNumber	string[32]
0x0102	InternalSerialNumber	string[32]
0x0103	FocalPlaneDiagonal	rational64u
0x0104	BodyFirmwareVersion	int32u
0x0201	LensType	int8u[6]
0x0202	LensSerialNumber	string[32]
0x0203	LensModel	string
0x0204	LensFirmwareVersion	int32u
0x0205	MaxApertureAtMinFocal	int16u
0x0206	MaxApertureAtMaxFocal	int16u
0x0207	MinFocalLength	int16u
0x0208	MaxFocalLength	int16u
0x020a	MaxAperture	int16u
0x020b	LensProperties	int16u
0x0301	Extender	int8u[6]
0x0302	ExtenderSerialNumber	string[32]
0x0303	ExtenderModel	string
0x0304	ExtenderFirmwareVersion	int32u

```
   0x0403   ConversionLens                            string
   0x1000   FlashType                                 int16u
   0x1001   FlashModel                                int16u
   0x1002   FlashFirmwareVersion                      int32u
   0x1003   FlashSerialNumber                         string[32]
```

Olympus CameraSettings Tags

```
   Tag ID   Tag Name                                  Writable
   ------   --------                                  --------
   0x0000   CameraSettingsVersion                     undef[4]
   0x0100   PreviewImageValid                         int32u
   0x0101   PreviewImageStart                         int32u*
   0x0102   PreviewImageLength                        int32u*
   0x0200   ExposureMode                              int16u
   0x0201   AELock                                    int16u
   0x0202   MeteringMode                              int16u
   0x0203   ExposureShift                             rational64s
   0x0204   NDFilter                                  yes
   0x0300   MacroMode                                 int16u
   0x0301   FocusMode                                 int16u[n]
   0x0302   FocusProcess                              int16u[n]
   0x0303   AFSearch                                  int16u
   0x0304   AFAreas                                   int32u[64]~
   0x0305   AFPointSelected                           rational64s[5]
   0x0306   AFFineTune                                int8u
   0x0307   AFFineTuneAdj                             int16s[3]
   0x0308   FocusBracketStepSize                      int8u
   0x0309   AISubjectTrackingMode                     int16u
   0x0400   FlashMode                                 int16u
   0x0401   FlashExposureComp                         rational64s
   0x0403   FlashRemoteControl                        int16u
   0x0404   FlashControlMode                          int16u[n]
   0x0405   FlashIntensity                            rational64s[n]
   0x0406   ManualFlashStrength                       rational64s[n]
   0x0500   WhiteBalance2                             int16u
   0x0501   WhiteBalanceTemperature                   int16u
   0x0502   WhiteBalanceBracket                       int16s
   0x0503   CustomSaturation                          int16s[3]~
   0x0504   ModifiedSaturation                        int16u
   0x0505   ContrastSetting                           int16s[3]
   0x0506   SharpnessSetting                          int16s[3]
   0x0507   ColorSpace                                int16u
   0x0509   SceneMode                                 int16u
   0x050a   NoiseReduction                            int16u
   0x050b   DistortionCorrection                      int16u
   0x050c   ShadingCompensation                       int16u
   0x050d   CompressionFactor                         rational64u
   0x050f   Gradation                                 int16s[n]
   0x0520   PictureMode                               int16u[n]
   0x0521   PictureModeSaturation                     int16s[3]
   0x0522   PictureModeHue?                           int16s
   0x0523   PictureModeContrast                       int16s[3]
   0x0524   PictureModeSharpness                      int16s[3]
   0x0525   PictureModeBWFilter                       int16s
   0x0526   PictureModeTone                           int16s
   0x0527   NoiseFilter                               int16s[3]
   0x0529   ArtFilter                                 int16u[4]
   0x052c   MagicFilter                               int16u[4]
   0x052d   PictureModeEffect                         int16s[3]
   0x052e   ToneLevel                                 yes
   0x052f   ArtFilterEffect                           int16u[20]
   0x0532   ColorCreatorEffect                        int16s[6]
   0x0537   MonochromeProfileSettings                 int16s[6]
   0x0538   FilmGrainEffect                           int16s
   0x0539   ColorProfileSettings                      int16s[14]
   0x053a   MonochromeVignetting                      int16s
   0x053b   MonochromeColor                           int16s
   0x0600   DriveMode                                 int16u[n]~
   0x0601   PanoramaMode                              int16u~
```

```
0x0603    ImageQuality2                        int16u
0x0604    ImageStabilization                   int32u
0x0804    StackedImage                         int32u[2]
0x0900    ManometerPressure                    int16u
0x0901    ManometerReading                     int32s[2]
0x0902    ExtendedWBDetect                     int16u
0x0903    RollAngle                            int16s[2]
0x0904    PitchAngle                           int16s[2]
0x0908    DateTimeUTC                          string
```

Olympus RawDevelopment Tags

```
Tag ID    Tag Name                             Writable
------    --------                             --------
0x0000    RawDevVersion                        undef[4]
0x0100    RawDevExposureBiasValue              rational64s
0x0101    RawDevWhiteBalanceValue              int16u
0x0102    RawDevWBFineAdjustment               int16s
0x0103    RawDevGrayPoint                      int16u[3]
0x0104    RawDevSaturationEmphasis             int16s[3]
0x0105    RawDevMemoryColorEmphasis            int16u
0x0106    RawDevContrastValue                  int16s[3]
0x0107    RawDevSharpnessValue                 int16s[3]
0x0108    RawDevColorSpace                     int16u
0x0109    RawDevEngine                         int16u
0x010a    RawDevNoiseReduction                 int16u
0x010b    RawDevEditStatus                     int16u
0x010c    RawDevSettings                       int16u
```

Olympus RawDevelopment2 Tags

```
Tag ID    Tag Name                             Writable
------    --------                             --------
0x0000    RawDevVersion                        undef[4]
0x0100    RawDevExposureBiasValue              rational64s
0x0101    RawDevWhiteBalance                   int16u
0x0102    RawDevWhiteBalanceValue              int16u
0x0103    RawDevWBFineAdjustment               int16s
0x0104    RawDevGrayPoint                      int16u[3]
0x0105    RawDevContrastValue                  int16s[3]
0x0106    RawDevSharpnessValue                 int16s[3]
0x0107    RawDevSaturationEmphasis             int16s[3]
0x0108    RawDevMemoryColorEmphasis            int16u
0x0109    RawDevColorSpace                     int16u
0x010a    RawDevNoiseReduction                 int16u
0x010b    RawDevEngine                         int16u
0x010c    RawDevPictureMode                    int16u
0x010d    RawDevPMSaturation                   int16s[3]
0x010e    RawDevPMContrast                     int16s[3]
0x010f    RawDevPMSharpness                    int16s[3]
0x0110    RawDevPM_BWFilter                    int16u
0x0111    RawDevPMPictureTone                  int16u
0x0112    RawDevGradation                      int16s[3]
0x0113    RawDevSaturation3                    int16s[3]
0x0119    RawDevAutoGradation                  int16u
0x0120    RawDevPMNoiseFilter                  int16u
0x0121    RawDevArtFilter                      int16u[4]
```

Olympus ImageProcessing Tags

```
Tag ID    Tag Name                             Writable
------    --------                             --------
0x0000    ImageProcessingVersion               undef[4]
0x0100    WB_RBLevels                          int16u[n]
0x0102    WB_RBLevels3000K                     int16u[n]
0x0103    WB_RBLevels3300K                     int16u[n]
0x0104    WB_RBLevels3600K                     int16u[n]
0x0105    WB_RBLevels3900K                     int16u[n]
0x0106    WB_RBLevels4000K                     int16u[n]
0x0107    WB_RBLevels4300K                     int16u[n]
```

0x0108	WB_RBLevels4500K	int16u[n]
0x0109	WB_RBLevels4800K	int16u[n]
0x010a	WB_RBLevels5300K	int16u[n]
0x010b	WB_RBLevels6000K	int16u[n]
0x010c	WB_RBLevels6600K	int16u[n]
0x010d	WB_RBLevels7500K	int16u[n]
0x010e	WB_RBLevelsCWB1	int16u[n]
0x010f	WB_RBLevelsCWB2	int16u[n]
0x0110	WB_RBLevelsCWB3	int16u[n]
0x0111	WB_RBLevelsCWB4	int16u[n]
0x0113	WB_GLevel3000K	int16u
0x0114	WB_GLevel3300K	int16u
0x0115	WB_GLevel3600K	int16u
0x0116	WB_GLevel3900K	int16u
0x0117	WB_GLevel4000K	int16u
0x0118	WB_GLevel4300K	int16u
0x0119	WB_GLevel4500K	int16u
0x011a	WB_GLevel4800K	int16u
0x011b	WB_GLevel5300K	int16u
0x011c	WB_GLevel6000K	int16u
0x011d	WB_GLevel6600K	int16u
0x011e	WB_GLevel7500K	int16u
0x011f	WB_GLevel	int16u
0x0200	ColorMatrix	int16u[9]
0x0300	Enhancer	int16u
0x0301	EnhancerValues	int16u[7]
0x0310	CoringFilter	int16u
0x0311	CoringValues	int16u[7]
0x0600	BlackLevel2	int16u[4]
0x0610	GainBase	int16u
0x0611	ValidBits	int16u[2]
0x0612	CropLeft	int16u[2]
0x0613	CropTop	int16u[2]
0x0614	CropWidth	int32u
0x0615	CropHeight	int32u
0x0635	UnknownBlock1?	undef
0x0636	UnknownBlock2?	undef
0x0805	SensorCalibration	int16s[2]
0x1010	NoiseReduction2	int16u
0x1011	DistortionCorrection2	int16u
0x1012	ShadingCompensation2	int16u
0x101c	MultipleExposureMode	int16u[2]
0x1103	UnknownBlock3?	undef
0x1104	UnknownBlock4?	undef
0x1112	AspectRatio	int8u[2]
0x1113	AspectFrame	int16u[4]
0x1200	FacesDetected	int32u[n]
0x1201	FaceDetectArea	int16s[n]
0x1202	MaxFaces	int32u[3]
0x1203	FaceDetectFrameSize	int16u[6]
0x1207	FaceDetectFrameCrop	int16s[12]
0x1306	CameraTemperature	no
0x1900	KeystoneCompensation	int8u[2]
0x1901	KeystoneDirection	int8u[2]
0x1906	KeystoneValue	int16s[3]

Olympus FocusInfo Tags

Tag ID	Tag Name	Writable
0x0000	FocusInfoVersion	undef[4]
0x0209	AutoFocus?	int16u
0x0210	SceneDetect	int16u
0x0211	SceneArea?	int32u[8]
0x0212	SceneDetectData?	int32u[720]
0x0300	ZoomStepCount	int16u
0x0301	FocusStepCount	int16u
0x0303	FocusStepInfinity	int16u
0x0304	FocusStepNear	int16u
0x0305	FocusDistance	rational64u

```
0x0308    AFPoint                            int16u
0x031b    AFPointDetails                     no
          AFPointDetails                     int16u
0x0328    AFInfo                             Olympus AFInfo
0x1201    ExternalFlash                      int16u[2]
0x1203    ExternalFlashGuideNumber?          rational64s
0x1204    ExternalFlashBounce                int16u
0x1205    ExternalFlashZoom                  rational64u
0x1208    InternalFlash                      int16u[n]
0x1209    ManualFlash                        int16u[2]~
0x120a    MacroLED                           int16u
0x1500    SensorTemperature                  int16s
0x1600    ImageStabilization                 undef~
```

Olympus AFInfo Tags

```
Index1    Tag Name                           Writable
------    --------                           --------
[no tags known]
```

Olympus FE Tags

Some FE models write a large number of tags here, but most of this
information remains unknown.

```
Tag ID    Tag Name                           Writable
------    --------                           --------
0x0100    BodyFirmwareVersion                string
```

Olympus RawInfo Tags

These tags are found only in ORF images of some models (eg. C8080WZ).

```
Tag ID    Tag Name                           Writable
------    --------                           --------
0x0000    RawInfoVersion                     undef[4]
0x0100    WB_RBLevelsUsed                    int16u[2]
0x0110    WB_RBLevelsAuto                    int16u[2]
0x0120    WB_RBLevelsShade                   int16u[2]
0x0121    WB_RBLevelsCloudy                  int16u[2]
0x0122    WB_RBLevelsFineWeather             int16u[2]
0x0123    WB_RBLevelsTungsten                int16u[2]
0x0124    WB_RBLevelsEveningSunlight         int16u[2]
0x0130    WB_RBLevelsDaylightFluor           int16u[2]
0x0131    WB_RBLevelsDayWhiteFluor           int16u[2]
0x0132    WB_RBLevelsCoolWhiteFluor          int16u[2]
0x0133    WB_RBLevelsWhiteFluorescent        int16u[2]
0x0200    ColorMatrix2                       int16u[9]
0x0310    CoringFilter                       int16u
0x0311    CoringValues                       int16u[11]
0x0600    BlackLevel2                        int16u[4]
0x0601    YCbCrCoefficients                  no
0x0611    ValidPixelDepth                    int16u[2]
0x0612    CropLeft                           int16u
0x0613    CropTop                            int16u
0x0614    CropWidth                          int32u
0x0615    CropHeight                         int32u
0x1000    LightSource                        int16u
0x1001    WhiteBalanceComp                   int16s[3]
0x1010    SaturationSetting                  int16s[3]
0x1011    HueSetting                         int16s[3]
0x1012    ContrastSetting                    int16s[3]
0x1013    SharpnessSetting                   int16s[3]
0x2000    CMExposureCompensation             rational64s
0x2001    CMWhiteBalance                     int16u
0x2002    CMWhiteBalanceComp                 int16s
0x2010    CMWhiteBalanceGrayPoint            int16u[3]
0x2020    CMSaturation                       int16s[3]
0x2021    CMHue                              int16s[3]
0x2022    CMContrast                         int16s[3]
```

```
  0x2023   CMSharpness                          int16s[3]
```

Olympus UnknownInfo Tags

```
  Tag ID   Tag Name                             Writable
  ------   --------                             --------
  [no tags known]
```

Olympus DSS Tags

Information extracted from DSS/DS2 files and the ID3 XOLY frame of MP3
files written by some Olympus voice recorders.

```
  Index1   Tag Name                             Writable
  ------   --------                             --------
     12    Model                                no
     38    StartTime                            no
     50    EndTime                              no
     62    Duration                             no
    798    Comment                              no
```

Olympus AVI Tags

This information is found in Olympus AVI videos.

```
  Index1   Tag Name                             Writable
  ------   --------                             --------
     18    Make                                 no
     44    Model                                no
     94    FNumber                              no
    131    DateTime1                            no
    157    DateTime2                            no
    297    ThumbInfo                            Olympus thmb2
```

Olympus thmb2 Tags

```
  Index1   Tag Name                             Writable
  ------   --------                             --------
      0    ThumbnailWidth                       no
      2    ThumbnailHeight                      no
      4    ThumbnailLength                      no
      8    ThumbnailImage                       no
```

Olympus WAV Tags

This information is found in WAV files from Olympus PCM linear
recorders like the LS-5, LS-10, LS-11.

```
  Index1   Tag Name                             Writable
  ------   --------                             --------
     12    Model                                no
     28    FileNumber                           no
     38    DateTimeOriginal                     no
     50    DateTimeEnd                          no
     62    RecordingTime                        no
    512    Duration                             no
    522    Index01                              no
    532    Index02                              no
    542    Index03                              no
    552    Index04                              no
    562    Index05                              no
    572    Index06                              no
    582    Index07                              no
    592    Index08                              no
    602    Index09                              no
    612    Index10                              no
    622    Index11                              no
    632    Index12                              no
    642    Index13                              no
    652    Index14                              no
```

```
    662    Index15                                no
    672    Index16                                no
```

Olympus MOV1 Tags

This information is found in MOV videos from Olympus models such as the
D540Z, D595Z, FE100, FE110, FE115, FE170 and FE200.

```
   Index1   Tag Name                          Writable
   ------   --------                          --------
      0     Make                              no
     24     Model                             no
     38     ExposureUnknown?                  no
     42     FNumber                           no
     50     ExposureCompensation              no
     72     FocalLength                       no
```

Olympus MOV2 Tags

This information is found in MOV videos from Olympus models such as the
FE120, FE140 and FE190.

```
   Index1   Tag Name                          Writable
   ------   --------                          --------
      0     Make                              no
     24     Model                             no
     54     ExposureTime                      no
     58     FNumber                           no
     66     ExposureCompensation              no
     88     FocalLength                       no
    193     ISO                               no
```

Olympus MP4 Tags

This information is found in MP4 videos from Olympus models such as the
u7040 and u9010.

```
   Index1   Tag Name                          Writable
   ------   --------                          --------
      0     Make                              no
     24     Model                             no
     40     FNumber                           no
     48     ExposureCompensation              no
    104     MovableInfo                       Olympus MovableInfo
    114     MovableInfo                       Olympus MovableInfo
```

Olympus MovableInfo Tags

```
   Index1   Tag Name                          Writable
   ------   --------                          --------
      4     ISO                               no
     44     EncoderVersion                    no
     60     DecoderVersion                    no
    131     Thumbnail                         Olympus Thumbnail
```

Olympus Thumbnail Tags

```
   Index4   Tag Name                          Writable
   ------   --------                          --------
      1     ThumbnailWidth                    no
      2     ThumbnailHeight                   no
      3     ThumbnailLength                   no
      4     ThumbnailOffset                   no
```

Olympus MOV3 Tags

QuickTime information found in the TAGS atom of MOV videos from the
E-M5.

```
   Tag ID   Tag Name                          Writable
```

```
   ------   --------                                      --------
   'OLYM'   OlympusAtom                                    Olympus OLYM2
```

Olympus OLYM2 Tags

```
   Tag ID   Tag Name                                      Writable
   ------   --------                                      --------
   'prms'   MakerNotes                                    Olympus prms
   'scrn'   PreviewInfo                                   Olympus scrn2
   'thmb'   ThumbInfo                                     Olympus thmb2
```

Olympus prms Tags

Information extracted from the "prms" atom in MOV videos from Olympus
models such as the OM E-M5.

```
   Index1   Tag Name                                      Writable
   ------   --------                                      --------
      18    Make                                          no
      44    Model                                         no
     131    DateTime1                                     no
     157    DateTime2                                     no
     383    LensModel                                     no
```

Olympus scrn2 Tags

```
   Index1   Tag Name                                      Writable
   ------   --------                                      --------
       2    OlympusPreview                                Olympus scrn
```

Olympus scrn Tags

Information extracted from the "scrn" atom of Olympus MP4 videos.

```
   Index1   Tag Name                                      Writable
   ------   --------                                      --------
       0    PreviewImageLength                            no
       4    PreviewImage                                  no
```

Olympus thmb Tags

Information extracted from the "thmb" atom of Olympus MP4 videos.

```
   Index1   Tag Name                                      Writable
   ------   --------                                      --------
       0    ThumbnailLength                               no
       4    ThumbnailImage                                no
```

Olympus OLYM Tags

Tags found in the OLYM atom of MP4 videos from the TG-810.

```
   Index1   Tag Name                                      Writable
   ------   --------                                      --------
      14    Make                                          no
      40    Model                                         no
      90    FNumber                                       no
     127    DateTimeOriginal                              no
     153    DateTime2                                     no
     265    ThumbnailWidth                                no
     267    ThumbnailHeight                               no
```

Panasonic Tags
    These tags are used in Panasonic/Leica cameras.

```
   Tag ID   Tag Name                                      Writable
   ------   --------                                      --------
   0x0001   ImageQuality                                  int16u
   0x0002   FirmwareVersion                               undef
   0x0003   WhiteBalance                                  int16u
```

0x0007	FocusMode	int16u
0x000f	AFAreaMode	int8u[2]
0x001a	ImageStabilization	int16u
0x001c	MacroMode	int16u
0x001f	ShootingMode	int16u
0x0020	Audio	int16u
0x0021	DataDump	no
0x0023	WhiteBalanceBias	int16s
0x0024	FlashBias	int16s
0x0025	InternalSerialNumber	undef[16]
0x0026	PanasonicExifVersion	undef
0x0027	VideoFrameRate	int16u
0x0028	ColorEffect	int16u
0x0029	TimeSincePowerOn	int32u
0x002a	BurstMode	int16u
0x002b	SequenceNumber	int32u
0x002c	ContrastMode	int16u
0x002d	NoiseReduction	int16u
0x002e	SelfTimer	int16u
0x0030	Rotation	int16u
0x0031	AFAssistLamp	int16u
0x0032	ColorMode	int16u
0x0033	BabyAge	string
0x0034	OpticalZoomMode	int16u
0x0035	ConversionLens	int16u
0x0036	TravelDay	int16u
0x0038	BatteryLevel	int16u
0x0039	Contrast	int16u
0x003a	WorldTimeLocation	int16u
0x003b	TextStamp	int16u
0x003c	ProgramISO	int16u
0x003d	AdvancedSceneType	int16u
0x003e	TextStamp	int16u
0x003f	FacesDetected	int16u
0x0040	Saturation	int16u
0x0041	Sharpness	int16u
0x0042	FilmMode	int16u
0x0043	JPEGQuality	int16u
0x0044	ColorTempKelvin	int16u
0x0045	BracketSettings	int16u
0x0046	WBShiftAB	int16u
0x0047	WBShiftGM	int16u
0x0048	FlashCurtain	int16u
0x0049	LongExposureNoiseReduction	int16u
0x004b	PanasonicImageWidth	int32u
0x004c	PanasonicImageHeight	int32u
0x004d	AFPointPosition	rational64u[2]
0x004e	FaceDetInfo	Panasonic FaceDetInfo
0x0051	LensType	string
0x0052	LensSerialNumber	string
0x0053	AccessoryType	string
0x0054	AccessorySerialNumber	string
0x0059	Transform	undef[4]
0x005d	IntelligentExposure	int16u
0x0060	LensFirmwareVersion	undef[4]
0x0061	FaceRecInfo	Panasonic FaceRecInfo
0x0062	FlashWarning	int16u
0x0063	RecognizedFaceFlags?	undef[4]
0x0065	Title	undef
0x0066	BabyName	undef
0x0067	Location	undef
0x0069	Country	undef
0x006b	State	undef
0x006d	City	undef
0x006f	Landmark	undef
0x0070	IntelligentResolution	int8u
0x0076	MergedImages	int16u
0x0077	BurstSpeed	int16u
0x0079	IntelligentD-Range	int16u
0x007c	ClearRetouch	int16u

```
0x0080   City2                               undef
0x0086   ManometerPressure                   int16u
0x0089   PhotoStyle                          int16u
0x008a   ShadingCompensation                 int16u
0x008b   WBShiftIntelligentAuto              int16u
0x008c   AccelerometerZ                      int16u
0x008d   AccelerometerX                      int16u
0x008e   AccelerometerY                      int16u
0x008f   CameraOrientation                   int8u
0x0090   RollAngle                           int16u
0x0091   PitchAngle                          int16u
0x0092   WBShiftCreativeControl              int8u
0x0093   SweepPanoramaDirection              int8u
0x0094   SweepPanoramaFieldOfView            int16u
0x0096   TimerRecording                      int8u
0x009d   InternalNDFilter                    rational64u
0x009e   HDR                                 int16u
0x009f   ShutterType                         int16u
0x00a1   FilterEffect                        rational64u[0.5]
0x00a3   ClearRetouchValue                   rational64u
0x00a7   OutputLUT                           yes
0x00ab   TouchAE                             int16u
0x00ac   MonochromeFilterEffect              int16u
0x00ad   HighlightShadow                     int16u[2]
0x00af   TimeStamp                           string
0x00b3   VideoBurstResolution                int16u
0x00b4   MultiExposure                       int16u
0x00b9   RedEyeRemoval                       int16u
0x00bb   VideoBurstMode                      int32u
0x00bc   DiffractionCorrection               int16u
0x00bd   FocusBracket                        int16u
0x00be   LongExposureNRUsed                  int16u
0x00bf   PostFocusMerging                    int32u[2]
0x00c1   VideoPreburst                       int16u
0x00c4   LensTypeMake                        int16u
0x00c5   LensTypeModel                       int16u
0x00ca   SensorType                          int16u
0x00d1   ISO                                 int32u
0x00d2   MonochromeGrainEffect               int16u
0x00d6   NoiseReductionStrength              rational64s
0x00e4   LensTypeModel                       int16u
0x00e8   MinimumISO                          int32u
0x00e9   AFSubjectDetection                  int16u
0x00ee   DynamicRangeBoost                   int16u
0x0e00   PrintIM                             PrintIM
0x2003   TimeInfo                            Panasonic TimeInfo
0x8000   MakerNoteVersion                    undef
0x8001   SceneMode                           int16u
0x8002   HighlightWarning                    int16u
0x8003   DarkFocusEnvironment                int16u
0x8004   WBRedLevel                          int16u
0x8005   WBGreenLevel                        int16u
0x8006   WBBlueLevel                         int16u
0x8008   TextStamp                           int16u
0x8009   TextStamp                           int16u
0x8010   BabyAge                             string
0x8012   Transform                           undef[4]
```

Panasonic DSA Tags

XMP Digital Shift Assistant tags written by some Leica cameras.

These tags belong to the ExifTool XMP-xmpDSA family 1 group.

```
Tag Name                                Writable
--------                                --------
ApplyAutomatically                      boolean/
CorrectionAlreadyApplied                boolean/
FocalLength35mm                         real/
NormalizedCropCorners                   real/+
```

```
    PitchAngle                                      real/
    RollAngle                                       real/
    ScalingFactorHeight                             real/
    TargetAspectRatio                               real/
    ValidCropCorners                                boolean/
    Version                                         string/
```

Panasonic FaceDetInfo Tags

Face detection position information.

```
    Index2   Tag Name                           Writable
    ------   --------                           --------
        0    NumFacePositions                   int16u
        1    Face1Position                      int16u[4]
        5    Face2Position                      int16u[4]
        9    Face3Position                      int16u[4]
       13    Face4Position                      int16u[4]
       17    Face5Position                      int16u[4]
```

Panasonic FaceRecInfo Tags

Tags written by cameras with facial recognition. These cameras not
only detect faces in an image, but also recognize specific people based
a user-supplied set of known faces.

```
    Index1   Tag Name                           Writable
    ------   --------                           --------
        0    FacesRecognized                    int16u
        4    RecognizedFace1Name                string[20]
       24    RecognizedFace1Position            int16u[4]
       32    RecognizedFace1Age                 string[20]
       52    RecognizedFace2Name                string[20]
       72    RecognizedFace2Position            int16u[4]
       80    RecognizedFace2Age                 string[20]
      100    RecognizedFace3Name                string[20]
      120    RecognizedFace3Position            int16u[4]
      128    RecognizedFace3Age                 string[20]
```

Panasonic TimeInfo Tags

```
    Index1   Tag Name                           Writable
    ------   --------                           --------
        0    PanasonicDateTime                  undef[8]
       16    TimeLapseShotNumber                int32u
```

Panasonic Leica2 Tags

These tags are used by the Leica M8.

```
    Tag ID   Tag Name                           Writable
    ------   --------                           --------
    0x0300   Quality                            int16u
    0x0302   UserProfile                        int32u
    0x0303   SerialNumber                       int32u
    0x0304   WhiteBalance                       int16u
    0x0310   LensType                           int32u
    0x0311   ExternalSensorBrightnessValue      rational64s
    0x0312   MeasuredLV                         rational64s
    0x0313   ApproximateFNumber                 rational64u
    0x0320   CameraTemperature                  int32s
    0x0321   ColorTemperature                   int32u
    0x0322   WBRedLevel                         rational64u
    0x0323   WBGreenLevel                       rational64u
    0x0324   WBBlueLevel                        rational64u
    0x0325   UV-IRFilterCorrection              int32u
    0x0330   CCDVersion                         int32u
    0x0331   CCDBoardVersion                    int32u
    0x0332   ControllerBoardVersion             int32u
    0x0333   M16CVersion                        int32u
```

```
  0x0340   ImageIDNumber                          int32u
```

Panasonic Leica3 Tags

These tags are used by the Leica R8 and R9 digital backs.

```
  Tag ID   Tag Name                               Writable
  ------   --------                               --------
  0x000b   SerialInfo                             Panasonic SerialInfo
  0x000d   WB_RGBLevels                           int16u[3]
```

Panasonic SerialInfo Tags

```
  Index1   Tag Name                               Writable
  ------   --------                               --------
       4   SerialNumber                           no
```

Panasonic Leica4 Tags

This information is written by the M9.

```
  Tag ID   Tag Name                               Writable
  ------   --------                               --------
  0x3000   Subdir3000                             Panasonic Subdir
  0x3100   Subdir3100                             Panasonic Subdir
  0x3400   Subdir3400                             Panasonic Subdir
  0x3900   Subdir3900                             Panasonic Subdir
```

Panasonic Subdir Tags

```
  Tag ID   Tag Name                               Writable
  ------   --------                               --------
  0x300a   Contrast                               int32u
  0x300b   Sharpening                             int32u
  0x300d   Saturation                             int32u
  0x3033   WhiteBalance                           int32u
  0x3034   JPEGQuality                            int32u
  0x3036   WB_RGBLevels                           rational64u[3]
  0x3038   UserProfile                            string
  0x303a   JPEGSize                               int32u
  0x3103   SerialNumber                           string
  0x3109   FirmwareVersion                        string
  0x312a   BaseISO                                int32u
  0x312b   SensorWidth                            int32u
  0x312c   SensorHeight                           int32u
  0x312d   SensorBitDepth                         int32u
  0x3402   CameraTemperature                      int32s
  0x3405   LensType                               int32u
  0x3406   ApproximateFNumber                     rational64u
  0x3407   MeasuredLV                             int32s
  0x3408   ExternalSensorBrightnessValue          int32s
  0x3901   Data1                                  Panasonic Data1
  0x3902   Data2                                  Panasonic Data2
```

Panasonic Data1 Tags

```
  Index1   Tag Name                               Writable
  ------   --------                               --------
      22   LensType                               int32u
```

Panasonic Data2 Tags

```
  Index1   Tag Name                               Writable
  ------   --------                               --------
  [no tags known]
```

Panasonic Leica5 Tags

This information is written by the X1, X2, X VARIO and T.

```
Tag ID   Tag Name                       Writable
------   --------                       --------
0x0303   LensType                       string
0x0305   SerialNumber                   int32u
0x0407   OriginalFileName               string
0x0408   OriginalDirectory              string
0x040a   FocusInfo                      Panasonic FocusInfo
0x040d   ExposureMode                   int8u[4]
0x0410   ShotInfo                       Panasonic ShotInfo
0x0412   FilmMode                       string
0x0413   WB_RGBLevels                   rational64u[3]
0x0500   InternalSerialNumber           undef
0x05ff   CameraIFD                      PanasonicRaw CameraIFD
```

Panasonic FocusInfo Tags

```
Index2   Tag Name                       Writable
------   --------                       --------
     0   FocusDistance                  int16u
     1   FocalLength                    int16u
```

Panasonic ShotInfo Tags

```
Index1   Tag Name                       Writable
------   --------                       --------
     0   FileIndex                      int16u
```

Panasonic Leica6 Tags

This information is written by the S2 and M (Typ 240), as a trailer in
JPEG images.

```
Tag ID   Tag Name                       Writable
------   --------                       --------
0x0300   PreviewImage                   undef
0x0301   UnknownBlock?                  no
0x0303   LensType                       string
0x0304   FocusDistance                  int32u
0x0311   ExternalSensorBrightnessValue  rational64s
0x0312   MeasuredLV                     rational64s
0x0320   FirmwareVersion                int8u[4]
0x0321   LensSerialNumber               int32u
```

Panasonic Leica9 Tags

This information is written by the Leica S (Typ 007) and M10 models.

```
Tag ID   Tag Name                       Writable
------   --------                       --------
0x0304   FocusDistance                  int32u
0x0311   ExternalSensorBrightnessValue  rational64s
0x0312   MeasuredLV                     rational64s
0x034c   UserProfile                    string
0x0359   ISOSelected                    int32s
0x035a   FNumber                        int32s
0x035b   CorrelatedColorTemp            int16u
0x035c   ColorTint                      int16s
0x035d   WhitePoint                     rational64u[2]
0x0370   LensProfileName                string
```

Panasonic Type2 Tags

This type of maker notes is used by models such as the NV-DS65,
PV-D2002, PV-DC3000, PV-DV203, PV-DV401, PV-DV702, PV-L2001, PV-SD4090,
PV-SD5000 and iPalm.

```
Index2   Tag Name                       Writable
------   --------                       --------
     0   MakerNoteType                  no
     3   Gain                           no
```

Panasonic PANA Tags

Tags extracted from the PANA and LEIC user data found in MP4 videos
from various Panasonic and Leica models.

Index1	Tag Name	Writable
0	Make	no
4	Model	no
12	Model	no
16	JPEG-likeData	EXIF
22	Model	no
52	Version1	no
62	Version2	no
80	MakerNoteLeica5	Panasonic Leica5
88	ThumbnailWidth	no
90	ThumbnailHeight	no
92	ThumbnailImage	no
1334	ThumbnailWidth	no
1338	ThumbnailHeight	no
1342	ThumbnailLength	no
1350	ThumbnailImage	no
1358	ThumbnailWidth	no
1362	ThumbnailHeight	no
1366	ThumbnailLength	no
1374	ThumbnailImage	no
16488	ExifData	EXIF
16512	ExifData	EXIF
0x00200080	ExifData	EXIF

Pentax Tags

These tags are used in Pentax/Asahi cameras.

Tag ID	Tag Name	Writable
0x0000	PentaxVersion	int8u[4]
0x0001	PentaxModelType	int16u
0x0002	PreviewImageSize	int16u[2]
0x0003	PreviewImageLength	int32u*
0x0004	PreviewImageStart	int32u*
0x0005	PentaxModelID	int32u
0x0006	Date	undef[4]
0x0007	Time	undef[3]
0x0008	Quality	int16u
0x0009	PentaxImageSize	int16u
0x000b	PictureMode	int16u[n]
0x000c	FlashMode	int16u[n]
0x000d	FocusMode	int16u
0x000e	AFPointSelected	int16u
0x000f	AFPointsInFocus	int32u
	AFPointsInFocus	int16u
0x0010	FocusPosition	int16u
0x0012	ExposureTime	int32u
0x0013	FNumber	int16u
0x0014	ISO	int16u
0x0015	LightReading	int16u
0x0016	ExposureCompensation	int16u
	ExposureCompensation	int16u[2]
0x0017	MeteringMode	int16u
0x0018	AutoBracketing	int16u[n]
0x0019	WhiteBalance	int16u
0x001a	WhiteBalanceMode	int16u
0x001b	BlueBalance	int16u
0x001c	RedBalance	int16u
0x001d	FocalLength	int32u
0x001e	DigitalZoom	int16u
0x001f	Saturation	int16u[n]
0x0020	Contrast	int16u[n]
0x0021	Sharpness	int16u[n]

0x0022	WorldTimeLocation	int16u
0x0023	HometownCity	int16u
0x0024	DestinationCity	int16u
0x0025	HometownDST	int16u
0x0026	DestinationDST	int16u
0x0027	DSPFirmwareVersion	undef
0x0028	CPUFirmwareVersion	undef
0x0029	FrameNumber	int32u
0x002d	EffectiveLV	int16u
	EffectiveLV	int32u
0x0032	ImageEditing	undef[4]
0x0033	PictureMode	int8u[3]
0x0034	DriveMode	int8u[4]
0x0035	SensorSize	int16u[2]
0x0037	ColorSpace	int16u
0x0038	ImageAreaOffset	int16u[2]
0x0039	RawImageSize	int16u[2]~
0x003c	AFPointsInFocus	no
0x003d	DataScaling	int16u
0x003e	PreviewImageBorders	int8u[4]
0x003f	LensRec	Pentax LensRec
0x0040	SensitivityAdjust	int16u
0x0041	ImageEditCount	int16u
0x0047	CameraTemperature	int8s
0x0048	AELock	int16u
0x0049	NoiseReduction	int16u
0x004d	FlashExposureComp	int32s
	FlashExposureComp	int8s[2]
0x004f	ImageTone	int16u
0x0050	ColorTemperature	int16u
0x0053	ColorTempDaylight	undef[4]
0x0054	ColorTempShade	undef[4]
0x0055	ColorTempCloudy	undef[4]
0x0056	ColorTempTungsten	undef[4]
0x0057	ColorTempFluorescentD	undef[4]
0x0058	ColorTempFluorescentN	undef[4]
0x0059	ColorTempFluorescentW	undef[4]
0x005a	ColorTempFlash	undef[4]
0x005c	ShakeReductionInfo	Pentax SRInfo
		Pentax SRInfo2
0x005d	ShutterCount	undef[4]
0x0060	FaceInfo	Pentax FaceInfo
0x0062	RawDevelopmentProcess	int16u
0x0067	Hue	int16u
0x0068	AWBInfo	Pentax AWBInfo
0x0069	DynamicRangeExpansion	undef[4]
0x006b	TimeInfo	Pentax TimeInfo
0x006c	HighLowKeyAdj	int16s[2]
0x006d	ContrastHighlight	int16s[2]
0x006e	ContrastShadow	int16s[2]
0x006f	ContrastHighlightShadowAdj	int8u
0x0070	FineSharpness	int8u[n]
0x0071	HighISONoiseReduction	int8u
0x0072	AFAdjustment	int16s
0x0073	MonochromeFilterEffect	int16u
0x0074	MonochromeToning	int16u
0x0076	FaceDetect	int8u[2]
0x0077	FaceDetectFrameSize	int16u[2]
0x0079	ShadowCorrection	int8u[n]
0x007a	ISOAutoMinSpeed	int8u[2]
0x007b	CrossProcess	int8u
0x007d	LensCorr	Pentax LensCorr
0x007e	WhiteLevel	int32u
0x007f	BleachBypassToning	int16u
0x0080	AspectRatio	yes
0x0082	BlurControl	int8u[4]
0x0085	HDR	int8u[4]
0x0087	ShutterType	int8u
0x0088	NeutralDensityFilter	int8u[n]
0x008b	ISO	int32u

```
0x0092   IntervalShooting             int16u[2]
0x0095   SkinToneCorrection           int8s[2]
         SkinToneCorrection           int8s[3]
0x0096   ClarityControl               int8s[2]
0x0200   BlackPoint                   int16u[4]
0x0201   WhitePoint                   int16u[4]
0x0203   ColorMatrixA                 int16s[9]
0x0204   ColorMatrixB                 int16s[9]
0x0205   CameraSettings               Pentax CameraSettings
         CameraSettingsUnknown        Pentax CameraSettingsUnknown
0x0206   AEInfo                       Pentax AEInfo
         AEInfo2                      Pentax AEInfo2
         AEInfo3                      Pentax AEInfo3
         AEInfoUnknown                Pentax AEInfoUnknown
0x0207   LensInfo                     Pentax LensInfo
                                      Pentax LensInfo2
                                      Pentax LensInfo3
                                      Pentax LensInfo4
                                      Pentax LensInfo5
0x0208   FlashInfo                    Pentax FlashInfo
         FlashInfoUnknown             Pentax FlashInfoUnknown
0x0209   AEMeteringSegments           int8u[n]
0x020a   FlashMeteringSegments        int8u[n]
0x020b   SlaveFlashMeteringSegments   int8u[n]
0x020d   WB_RGGBLevelsDaylight        int16u[4]
0x020e   WB_RGGBLevelsShade           int16u[4]
0x020f   WB_RGGBLevelsCloudy          int16u[4]
0x0210   WB_RGGBLevelsTungsten        int16u[4]
0x0211   WB_RGGBLevelsFluorescentD    int16u[4]
0x0212   WB_RGGBLevelsFluorescentN    int16u[4]
0x0213   WB_RGGBLevelsFluorescentW    int16u[4]
0x0214   WB_RGGBLevelsFlash           int16u[4]
0x0215   CameraInfo                   Pentax CameraInfo
0x0216   BatteryInfo                  Pentax BatteryInfo
0x021b   SaturationInfo?              no
0x021c   ColorMatrixA2                undef[18]
0x021d   ColorMatrixB2                undef[18]
0x021f   AFInfo                       Pentax AFInfo
0x0220   HuffmanTable?                no
0x0221   KelvinWB                     Pentax KelvinWB
0x0222   ColorInfo                    Pentax ColorInfo
0x0224   EVStepInfo                   Pentax EVStepInfo
0x0226   ShotInfo                     Pentax ShotInfo
0x0227   FacePos                      Pentax FacePos
0x0228   FaceSize                     Pentax FaceSize
0x0229   SerialNumber                 string
0x022a   FilterInfo                   Pentax FilterInfo
                                      Pentax FilterInfo
0x022b   LevelInfoK3III               Pentax LevelInfoK3III
         LevelInfo                    Pentax LevelInfo
0x022d   WBLevels                     Pentax WBLevels
0x022e   Artist                       string
0x022f   Copyright                    string
0x0230   FirmwareVersion              string
0x0231   ContrastDetectAFArea         int16u[4]
0x0235   CrossProcessParams           undef[10]
0x0239   LensInfoQ                    Pentax LensInfoQ
0x023f   Model                        string
0x0243   PixelShiftInfo               Pentax PixelShiftInfo
0x0245   AFPointInfo                  Pentax AFPointInfo
0x03fe   DataDump                     no
0x03ff   TempInfo                     Pentax TempInfo
         UnknownInfo                  Pentax UnknownInfo
0x0402   ToneCurve                    yes~
0x0403   ToneCurves                   yes~
0x0405   UnknownBlock?                undef
0x0e00   PrintIM                      PrintIM
```

Pentax LensRec Tags

This record stores the LensType, plus one or two unknown bytes for some models.

Index1	Tag Name	Writable
0	LensType	int8u[2]
3	ExtenderStatus	int8u

Pentax SRInfo Tags

Shake reduction information.

Index1	Tag Name	Writable
0	SRResult	int8u
1	ShakeReduction	int8u
2	SRHalfPressTime	int8u
3	SRFocalLength	int8u

Pentax SRInfo2 Tags

Shake reduction information for the K-3.

Index1	Tag Name	Writable
0	SRResult?	int8u
1	ShakeReduction	int8u

Pentax FaceInfo Tags

Index1	Tag Name	Writable
0	FacesDetected	int8u
2	FacePosition	int8u[2]

Pentax AWBInfo Tags

Index1	Tag Name	Writable
0	WhiteBalanceAutoAdjustment	int8u
1	TungstenAWB	int8u

Pentax TimeInfo Tags

Index1	Tag Name	Writable
0.1	WorldTimeLocation	int8u & 0x01
0.2	HometownDST	int8u & 0x02
0.3	DestinationDST	int8u & 0x04
2	HometownCity	int8u
3	DestinationCity	int8u

Pentax LensCorr Tags

Index1	Tag Name	Writable
0	DistortionCorrection	int8u
1	ChromaticAberrationCorrection	int8u
2	PeripheralIlluminationCorr	int8u
3	DiffractionCorrection	int8u

Pentax CameraSettings Tags

Camera settings information written by Pentax DSLR cameras.

Index1	Tag Name	Writable
0	PictureMode2	int8u
1.1	ProgramLine	int8u & 0x03
1.2	EVSteps	int8u & 0x20

```
     1.3    E-DialInProgram                        int8u & 0x40
     1.4    ApertureRingUse                        int8u & 0x80
       2    FlashOptions                           int8u & 0xf0
     2.1    MeteringMode2                          int8u & 0x0f
       3    AFPointMode                            int8u & 0xf0
     3.1    FocusMode2                             int8u & 0x0f
       4    AFPointSelected2                       int16u
       6    ISOFloor                               int8u
       7    DriveMode2                             int8u
       8    ExposureBracketStepSize                int8u
       9    BracketShotNumber                      int8u
      10    WhiteBalanceSet                        int8u & 0xf0
    10.1    MultipleExposureSet                    int8u & 0x0f
      13    RawAndJpgRecording                     int8u
    14.1    JpgRecordedPixels                      int8u & 0x03
    14.2    LinkAEToAFPoint                        int8u & 0x01
    14.3    SensitivitySteps                       int8u & 0x02
    14.4    ISOAuto                                int8u & 0x04
      16    FlashOptions2                          int8u & 0xf0
    16.1    MeteringMode3                          int8u & 0x0f
    17.1    SRActive                               int8u & 0x80
    17.2    Rotation                               int8u & 0x60
    17.3    ISOSetting                             int8u & 0x04
    17.4    SensitivitySteps                       int8u & 0x02
      18    TvExposureTimeSetting                  int8u
      19    AvApertureSetting                      int8u
      20    SvISOSetting                           int8u
      21    BaseExposureCompensation               int8u
```

Pentax CameraSettingsUnknown Tags

This information has not yet been decoded for models such as the K-01.

```
    Index1   Tag Name                             Writable
    ------   --------                             --------
    [no tags known]
```

Pentax AEInfo Tags

Auto-exposure information for most Pentax models.

```
    Index1   Tag Name                             Writable
    ------   --------                             --------
       0    AEExposureTime                        int8u
       1    AEAperture                            int8u
       2    AE_ISO                                int8u
       3    AEXv                                  int8u
       4    AEBXv                                 int8s
       5    AEMinExposureTime                     int8u
       6    AEProgramMode                         int8u
       7    AEFlags                               no
       8    AEApertureSteps                       int8u
       9    AEMaxAperture                         int8u
      10    AEMaxAperture2                        int8u
      11    AEMinAperture                         int8u
      12    AEMeteringMode                        int8u
      13    AEWhiteBalance                        int8u & 0xf0
    13.1    AEMeteringMode2                       int8u & 0x0f
      14    FlashExposureCompSet                  int8s
      21    LevelIndicator                        int8u
```

Pentax AEInfo2 Tags

Auto-exposure information for the K-01.

```
    Index1   Tag Name                             Writable
    ------   --------                             --------
       2    AEExposureTime                        int8u
       3    AEAperture                            int8u
       4    AE_ISO                                int8u
```

```
    5    AEXv                                 int8u
    6    AEBXv                                int8s
    8    AEError                              int8s
   11    AEApertureSteps                      int8u
   15    SceneMode                            int8u
   16    AEMaxAperture                        int8u
   17    AEMaxAperture2                       int8u
   18    AEMinAperture                        int8u
   19    AEMinExposureTime                    int8u
```

Pentax AEInfo3 Tags

Auto-exposure information for the K-1mkII, K-3, K-30, K-50, K-70, K-500
and KP.

```
  Index1    Tag Name                         Writable
  ------    --------                         --------
     16    AEExposureTime                    int8u
     17    AEAperture                        int8u
     18    AE_ISO                            int8u
     28    AEMaxAperture                     int8u
     29    AEMaxAperture2                    int8u
     30    AEMinAperture                     int8u
     31    AEMinExposureTime                 int8u
```

Pentax AEInfoUnknown Tags

```
  Index1    Tag Name                         Writable
  ------    --------                         --------
  [no tags known]
```

Pentax LensInfo Tags

Pentax lens information structure for models such as the *istD.

```
  Index1    Tag Name                         Writable
  ------    --------                         --------
     0    LensType                           int8u[2]
     3    LensData                           Pentax LensData
```

Pentax LensData Tags

Pentax lens data information. Some of these tags require interesting
binary gymnastics to decode them into useful values.

```
  Index1    Tag Name                         Writable
  ------    --------                         --------
    0.1   AutoAperture                       int8u & 0x01
    0.2   MinAperture                        int8u & 0x06
    0.3   LensFStops                         int8u & 0x70
    1     LensKind?                          int8u
    2     LC1?                               int8u
    3     MinFocusDistance                   int8u & 0xf8
    3.1   FocusRangeIndex                    int8u & 0x07
    4     LC3?                               int8u
    5     LC4?                               int8u
    6     LC5?                               int8u
    7     LC6?                               int8u
    8     LC7?                               int8u
    9     LensFocalLength                    int8u
          LC8?                               int8u
   10     NominalMaxAperture                 int8u & 0xf0
   10.1   NominalMinAperture                 int8u & 0x0f
   11     LC10?                              int8u
   12     LC11?                              int8u
   13     LC12?                              int8u
   14.1   MaxAperture                        int8u & 0x7f
   15     LC14?                              int8u
   16     LC15?                              int8u
```

Pentax LensInfo2 Tags

Pentax lens information structure for models such as the K10D and K20D.

Index1	Tag Name	Writable
0	LensType	int8u[4]
4	LensData	Pentax LensData

Pentax LensInfo3 Tags

Pentax lens information structure for 645D.

Index1	Tag Name	Writable
1	LensType	int8u[4]
13	LensData	Pentax LensData

Pentax LensInfo4 Tags

Pentax lens information structure for models such as the K-5 and K-r.

Index1	Tag Name	Writable
1	LensType	int8u[4]
12	LensData	Pentax LensData

Pentax LensInfo5 Tags

Pentax lens information structure for the K-01 and newer models.

Index1	Tag Name	Writable
1	LensType	int8u[5]
15	LensData	Pentax LensData

Pentax FlashInfo Tags

Flash information tags for the K10D, K20D and K200D.

Index1	Tag Name	Writable
0	FlashStatus	int8u
1	InternalFlashMode	int8u
2	ExternalFlashMode	int8u
3	InternalFlashStrength	int8u
4	TTL_DA_AUp	int8u
5	TTL_DA_ADown	int8u
6	TTL_DA_BUp	int8u
7	TTL_DA_BDown	int8u
24.1	ExternalFlashGuideNumber	int8u & 0x1f
25	ExternalFlashExposureComp	int8u
26	ExternalFlashBounce	int8u

Pentax FlashInfoUnknown Tags

Index1	Tag Name	Writable
[no tags known]		

Pentax CameraInfo Tags

Index4	Tag Name	Writable
0	PentaxModelID	int32u
1	ManufactureDate	int32u
2	ProductionCode	int32u[2]
4	InternalSerialNumber	int32u

Pentax BatteryInfo Tags

Index1	Tag Name	Writable
0.1	PowerSource	int8u & 0x0f
0.2	PowerAvailable	int8u & 0xf0
1.1	BodyBatteryState	int8u & 0xf0
1.2	GripBatteryState	int8u & 0x0f
2	BodyBatteryADNoLoad	int8u
	BodyBatteryVoltage1	int16u
	BodyBatteryState	int8u
3	BodyBatteryADLoad	int8u
	BodyBatteryPercent	int8u
4	GripBatteryADNoLoad	int8u
	BodyBatteryVoltage2	int16u
	BodyBatteryVoltage	int32u
5	GripBatteryADLoad	int8u
6	BodyBatteryVoltage3	int16u
8	BodyBatteryVoltage4	int16u
16	GripBatteryState	int8u
17	GripBatteryPercent	int8u
18	GripBatteryVoltage	int32u

Pentax AFInfo Tags

Index1	Tag Name	Writable
0	AFPointsUnknown1?	int16u
2	AFPointsUnknown2?	int16u
4	AFPredictor	int16s
6	AFDefocus	int8u
7	AFIntegrationTime	int8u
11	AFPointsInFocus	int8u
506	LiveView	int8u
509	AFHold	int8u

Pentax KelvinWB Tags

White balance Blue/Red gains as a function of color temperature.

Index2	Tag Name	Writable
1	KelvinWB_Daylight	int16u[4]
5	KelvinWB_01	int16u[4]
9	KelvinWB_02	int16u[4]
13	KelvinWB_03	int16u[4]
17	KelvinWB_04	int16u[4]
21	KelvinWB_05	int16u[4]
25	KelvinWB_06	int16u[4]
29	KelvinWB_07	int16u[4]
33	KelvinWB_08	int16u[4]
37	KelvinWB_09	int16u[4]
41	KelvinWB_10	int16u[4]
45	KelvinWB_11	int16u[4]
49	KelvinWB_12	int16u[4]
53	KelvinWB_13	int16u[4]
57	KelvinWB_14	int16u[4]
61	KelvinWB_15	int16u[4]
65	KelvinWB_16	int16u[4]

Pentax ColorInfo Tags

Index1	Tag Name	Writable
16	WBShiftAB	int8s
17	WBShiftGM	int8s

Pentax EVStepInfo Tags

Index1	Tag Name	Writable

```
       0    EVSteps                                  int8u
       1    SensitivitySteps                         int8u
       3    LiveView                                 int8u
```

Pentax ShotInfo Tags

```
   Index1   Tag Name                                 Writable
   ------   --------                                 --------
       1    CameraOrientation                        int8u
```

Pentax FacePos Tags

```
   Index2   Tag Name                                 Writable
   ------   --------                                 --------
       0    Face1Position                            int16u[2]
       2    Face2Position                            int16u[2]
       4    Face3Position                            int16u[2]
       6    Face4Position                            int16u[2]
       8    Face5Position                            int16u[2]
      10    Face6Position                            int16u[2]
      12    Face7Position                            int16u[2]
      14    Face8Position                            int16u[2]
      16    Face9Position                            int16u[2]
      18    Face10Position                           int16u[2]
      20    Face11Position                           int16u[2]
      22    Face12Position                           int16u[2]
      24    Face13Position                           int16u[2]
      26    Face14Position                           int16u[2]
      28    Face15Position                           int16u[2]
      30    Face16Position                           int16u[2]
      32    Face17Position                           int16u[2]
      34    Face18Position                           int16u[2]
      36    Face19Position                           int16u[2]
      38    Face20Position                           int16u[2]
      40    Face21Position                           int16u[2]
      42    Face22Position                           int16u[2]
      44    Face23Position                           int16u[2]
      46    Face24Position                           int16u[2]
      48    Face25Position                           int16u[2]
      50    Face26Position                           int16u[2]
      52    Face27Position                           int16u[2]
      54    Face28Position                           int16u[2]
      56    Face29Position                           int16u[2]
      58    Face30Position                           int16u[2]
      60    Face31Position                           int16u[2]
      62    Face32Position                           int16u[2]
```

Pentax FaceSize Tags

```
   Index2   Tag Name                                 Writable
   ------   --------                                 --------
       0    Face1Size                                int16u[2]
       2    Face2Size                                int16u[2]
       4    Face3Size                                int16u[2]
       6    Face4Size                                int16u[2]
       8    Face5Size                                int16u[2]
      10    Face6Size                                int16u[2]
      12    Face7Size                                int16u[2]
      14    Face8Size                                int16u[2]
      16    Face9Size                                int16u[2]
      18    Face10Size                               int16u[2]
      20    Face11Size                               int16u[2]
      22    Face12Size                               int16u[2]
      24    Face13Size                               int16u[2]
      26    Face14Size                               int16u[2]
      28    Face15Size                               int16u[2]
      30    Face16Size                               int16u[2]
      32    Face17Size                               int16u[2]
      34    Face18Size                               int16u[2]
      36    Face19Size                               int16u[2]
```

```
    38    Face20Size                              int16u[2]
    40    Face21Size                              int16u[2]
    42    Face22Size                              int16u[2]
    44    Face23Size                              int16u[2]
    46    Face24Size                              int16u[2]
    48    Face25Size                              int16u[2]
    50    Face26Size                              int16u[2]
    52    Face27Size                              int16u[2]
    54    Face28Size                              int16u[2]
    56    Face29Size                              int16u[2]
    58    Face30Size                              int16u[2]
    60    Face31Size                              int16u[2]
    62    Face32Size                              int16u[2]
```

Pentax FilterInfo Tags

The parameters associated with each type of digital filter are unique,
and these settings are also extracted with the DigitalFilter tag.
Information is not extracted for filters that are "Off" unless the
Unknown option is used.

```
    Index1    Tag Name                            Writable
    ------    --------                            --------
        0     SourceDirectoryIndex                int16u
        2     SourceFileIndex                     int16u
        5     DigitalFilter01                     undef[17]
       22     DigitalFilter02                     undef[17]
       39     DigitalFilter03                     undef[17]
       56     DigitalFilter04                     undef[17]
       73     DigitalFilter05                     undef[17]
       90     DigitalFilter06                     undef[17]
      107     DigitalFilter07                     undef[17]
      124     DigitalFilter08                     undef[17]
      141     DigitalFilter09                     undef[17]
      158     DigitalFilter10                     undef[17]
      175     DigitalFilter11                     undef[17]
      192     DigitalFilter12                     undef[17]
      209     DigitalFilter13                     undef[17]
      226     DigitalFilter14                     undef[17]
      243     DigitalFilter15                     undef[17]
      260     DigitalFilter16                     undef[17]
      277     DigitalFilter17                     undef[17]
      294     DigitalFilter18                     undef[17]
      311     DigitalFilter19                     undef[17]
      328     DigitalFilter20                     undef[17]
```

Pentax LevelInfoK3III Tags

Tags decoded from the electronic level information for the K-3 III.

```
    Index1    Tag Name                            Writable
    ------    --------                            --------
        1     CameraOrientation                   int8s
        3     RollAngle                           int16s
        5     PitchAngle                          int16s
```

Pentax LevelInfo Tags

Tags decoded from the electronic level information for the K-5. May
not be valid for other models.

```
    Index1    Tag Name                            Writable
    ------    --------                            --------
        0     LevelOrientation                    int8s & 0x0f
      0.1     CompositionAdjust                   int8s & 0xf0
        1     RollAngle                           int8s
        2     PitchAngle                          int8s
        5     CompositionAdjustX                  int8s
        6     CompositionAdjustY                  int8s
        7     CompositionAdjustRotation           int8s
```

Pentax WBLevels Tags

```
    Index1    Tag Name                         Writable
    ------    --------                         --------
        2     WB_RGGBLevelsDaylight            int16u[4]
       11     WB_RGGBLevelsShade               int16u[4]
       20     WB_RGGBLevelsCloudy              int16u[4]
       29     WB_RGGBLevelsTungsten            int16u[4]
       38     WB_RGGBLevelsFluorescentD        int16u[4]
       47     WB_RGGBLevelsFluorescentN        int16u[4]
       56     WB_RGGBLevelsFluorescentW        int16u[4]
       65     WB_RGGBLevelsFlash               int16u[4]
       74     WB_RGGBLevelsFluorescentL        int16u[4]
       83     WB_RGGBLevelsUnknown?            int16u[4]
       92     WB_RGGBLevelsUserSelected        int16u[4]
```

Pentax LensInfoQ Tags

More lens information stored by the Pentax Q.

```
    Index1    Tag Name                         Writable
    ------    --------                         --------
       12     LensModel                        string[30]
       42     LensInfo                         string[20]
```

Pentax PixelShiftInfo Tags

Pixel shift information stored by the K-3 II.

```
    Index1    Tag Name                         Writable
    ------    --------                         --------
        0     PixelShiftResolution             int8u
```

Pentax AFPointInfo Tags

AF point information written by the K-1.

```
    Index1    Tag Name                         Writable
    ------    --------                         --------
        2     NumAFPoints                      int16u
        4     AFPointsInFocus                  int8u[9]~
      4.1     AFPointsSelected                 int8u[9]~
      4.2     AFPointsSpecial                  int8u[9]~
```

Pentax TempInfo Tags

A number of additional temperature readings are extracted from this
256-byte binary-data block in images from models such as the K-01, K-3,
K-5, K-50 and K-500. It is currently not known where the corresponding
temperature sensors are located in the camera.

```
    Index1    Tag Name                         Writable
    ------    --------                         --------
       12     SensorTemperature                int16s
       14     SensorTemperature2               int16s
       20     CameraTemperature4               int16s
       22     CameraTemperature5               int16s
```

Pentax UnknownInfo Tags

```
    Index1    Tag Name                         Writable
    ------    --------                         --------
    [no tags known]
```

Pentax Type2 Tags

These tags are used by the Pentax Optio 330 and 430, and are similar to
the tags used by Casio.

Tag ID	Tag Name	Writable
0x0001	RecordingMode	int16u
0x0002	Quality	int16u
0x0003	FocusMode	int16u
0x0004	FlashMode	int16u
0x0007	WhiteBalance	int16u
0x000a	DigitalZoom	int32u
0x000b	Sharpness	int16u
0x000c	Contrast	int16u
0x000d	Saturation	int16u
0x0014	ISO	int16u
0x0017	ColorFilter	int16u
0x0e00	PrintIM	PrintIM
0x1000	HometownCityCode	undef[4]
0x1001	DestinationCityCode	undef[4]

Pentax Type4 Tags

The following few tags are extracted from the wealth of information
available in maker notes of the Optio E20 and E25. These maker notes
are stored as ASCII text in a format very similar to some HP models.

Tag ID	Tag Name	Writable
'F/W Version'	FirmwareVersion	no

Pentax S1 Tags

Tags extracted from the maker notes of AVI videos from the Optio S1.

Tag ID	Tag Name	Writable
0x0000	MakerNoteVersion	no

Pentax Junk Tags

Tags found in the JUNK chunk of AVI videos from the RS1000.

Index1	Tag Name	Writable
12	Model	no

Pentax Junk2 Tags

This information is found in AVI videos from the Optio RZ18.

Index1	Tag Name	Writable
18	Make	no
44	Model	no
94	FNumber	no
131	DateTime1	no
157	DateTime2	no
299	ThumbnailWidth	no
301	ThumbnailHeight	no
303	ThumbnailLength	no
307	ThumbnailImage	no

Pentax AVI Tags

Pentax-specific RIFF tags found in AVI videos.

Tag ID	Tag Name	Writable
'hymn'	MakerNotes	Pentax
'mknt'	MakerNotes	Pentax

Pentax PENT Tags

Tags found in the PENT atom of MOV videos from the Optio WG-2 GPS.

Index1	Tag Name	Writable
0	Make	no
26	Model	no
56	ExposureTime	no
60	FNumber	no
68	ExposureCompensation	no
84	FocalLength	no
113	DateTime1	no
139	DateTime2	no
167	ISO	no
199	GPSVersionID	no
207	GPSLatitudeRef	no
209	GPSLatitude	no
233	GPSLongitudeRef	no
235	GPSLongitude	no
259	GPSAltitudeRef	no
260	GPSAltitude	no
284	GPSTimeStamp	no
308	GPSSatellites	no
311	GPSStatus	no
313	GPSMeasureMode	no
315	GPSMapDatum	no
322	GPSDateStamp	no
371	AudioCodecID	no
2003	PreviewImage	no

Pentax PXTH Tags

Tags found in the PXTH atom of MOV videos from the K-01.

Index1	Tag Name	Writable
0	PreviewImageLength	no
4	PreviewImage	no

Pentax MOV Tags

This information is found in MOV videos from cameras such as the Optio WP.

Index1	Tag Name	Writable
0	Make	no
38	ExposureTime	no
42	FNumber	no
50	ExposureCompensation	no
68	WhiteBalance	no
72	FocalLength	no
175	ISO	no

PhaseOne Tags

These tags are extracted from the maker notes of Phase One images.

Tag ID	Tag Name	Writable
0x0100	CameraOrientation	no
0x0102	SerialNumber	string
0x0105	ISO	int32s
0x0106	ColorMatrix1	float[9]
0x0107	WB_RGBLevels	float[3]
0x0108	SensorWidth	int32s
0x0109	SensorHeight	int32s
0x010a	SensorLeftMargin	int32s
0x010b	SensorTopMargin	int32s
0x010c	ImageWidth	int32s
0x010d	ImageHeight	int32s
0x010e	RawFormat	int32s

```
    0x010f   RawData                             no
    0x0110   SensorCalibration                   PhaseOne SensorCalibration
    0x0112   DateTimeOriginal                    no
    0x0113   ImageNumber                         int32s
    0x0203   Software                            string
    0x0204   System                              string
    0x0210   SensorTemperature                   float
    0x0211   SensorTemperature2                  float
    0x0212   UnknownDate?                        int32u
    0x021c   StripOffsets                        no
    0x021d   BlackLevel                          int32s
    0x0222   SplitColumn                         int32s
    0x0223   BlackLevelData                      int16u[n]
    0x0226   ColorMatrix2                        float[9]
    0x0267   AFAdjustment                        float
    0x0301   FirmwareVersions                    string
    0x0400   ShutterSpeedValue                   float
    0x0401   ApertureValue                       float
    0x0402   ExposureCompensation                float
    0x0403   FocalLength                         float
    0x0410   CameraModel                         string
    0x0412   LensModel                           string
    0x0414   MaxApertureValue                    float
    0x0415   MinApertureValue                    float
    0x0455   Viewfinder                          string
```

PhaseOne SensorCalibration Tags

```
    Tag ID   Tag Name                            Writable
    ------   --------                            --------
    0x0400   SensorDefects                       no
    0x0401   AllColorFlatField1?                 no
    0x0407   SerialNumber                        string
    0x040b   RedBlueFlatField?                   no
    0x0410   AllColorFlatField2?                 no
    0x0416   AllColorFlatField3?                 no
    0x0419   LinearizationCoefficients1          no
    0x041a   LinearizationCoefficients2          no
```

Reconyx Tags
     The following tags are extracted from the maker notes of Reconyx
     Hyperfire cameras such as the HC500, HC600 and PC900.

```
    Index2   Tag Name                            Writable
    ------   --------                            --------
        0    MakerNoteVersion                    no
        1    FirmwareVersion                     no
        4    FirmwareDate                        int16u[2]
        6    TriggerMode                         string[2]
        7    Sequence                            int16u[2]
        9    EventNumber                         int16u[2]
       11    DateTimeOriginal                    int16u[6]
       18    MoonPhase                           int16u
       19    AmbientTemperatureFahrenheit        int16s
       20    AmbientTemperature                  int16s
       21    SerialNumber                        undef[30]
       36    Contrast                            int16u
       37    Brightness                          int16u
       38    Sharpness                           int16u
       39    Saturation                          int16u
       40    InfraredIlluminator                 int16u
       41    MotionSensitivity                   int16u
       42    BatteryVoltage                      int16u
       43    UserLabel                           string[22]
```

Reconyx Type2 Tags

Tags extracted from models such as the UltraFire.

```
    Index1   Tag Name                            Writable
```

```
   ------    --------                            --------
       24    FirmwareVersion                     undef[7]
       31    Micro1Version                       undef[7]
       38    BootLoaderVersion                   undef[7]
       45    Micro2Version                       undef[7]
       52    TriggerMode                         undef[1]
       53    Sequence                            int8u[2]
       55    EventNumber                         int32u
       59    DateTimeOriginal                    int8u[7]
       66    DayOfWeek                           int8u
       67    MoonPhase                           int8u
       68    AmbientTemperatureFahrenheit        int16s
       70    AmbientTemperature                  int16s
       72    Illumination                        int8u
       73    BatteryVoltage                      int16u
       75    SerialNumber                        string[15]
       90    UserLabel                           string[21]
```

Reconyx Type3 Tags

Tags extracted from models such as the HF2 PRO.

```
   Index1    Tag Name                            Writable
   ------    --------                            --------
       16    FileNumber                          int16u
       18    DirectoryNumber                     int16u
       42    FirmwareVersion                     int16u[3]
       48    FirmwareDate                        int16u[2]
       52    TriggerMode                         string[2]
       54    Sequence                            int16u[2]
       58    EventNumber                         int16u[2]
       62    DateTimeOriginal                    int16u[6]
       74    DayOfWeek                           int16u
       76    MoonPhase                           int16u
       78    AmbientTemperatureFahrenheit        int16s
       80    AmbientTemperature                  int16s
       82    Contrast                            int16u
       84    Brightness                          int16u
       86    Sharpness                           int16u
       88    Saturation                          int16u
       90    Flash                               int16u
       92    AmbientInfrared                     int16u
       94    AmbientLight                        int16u
       96    MotionSensitivity                   int16u
       98    BatteryVoltage                      int16u
      100    BatteryVoltageAvg                   int16u
      102    BatteryType                         int16u
      104    UserLabel                           string[22]
      126    SerialNumber                        unicode[15]
```

Ricoh Tags
```
   Tag ID    Tag Name                            Writable
   ------    --------                            --------
   0x0001    MakerNoteType                       string
   0x0002    FirmwareVersion                     string
   0x0005    SerialNumber                        undef[16]
             InternalSerialNumber                undef[16]
   0x0e00    PrintIM                             PrintIM
   0x1000    RecordingFormat                     int16u
   0x1001    ImageInfo                           Ricoh ImageInfo
             ExposureProgram                     int16u
   0x1002    DriveMode                           int16u
   0x1003    Sharpness                           int32u
             WhiteBalance                        int16u
   0x1004    WhiteBalanceFineTune                int16u
   0x1006    FocusMode                           int16u
   0x1007    AutoBracketing                      int16u
   0x1009    MacroMode                           int16u
   0x100a    FlashMode                           int16u
   0x100b    FlashExposureComp                   rational64s
```

```
0x100c   ManualFlashOutput              rational64s
0x100d   FullPressSnap                  int16u
0x100e   DynamicRangeExpansion          int16u
0x100f   NoiseReduction                 int16u
0x1010   ImageEffects                   int16u
0x1011   Vignetting                     int16u
0x1012   Contrast                       int32u
0x1013   Saturation                     int32u
0x1014   Sharpness                      int32u
0x1015   ToningEffect                   int16u
0x1016   HueAdjust                      int16u
0x1017   WideAdapter                    int16u
0x1018   CropMode                       int16u
0x1019   NDFilter                       int16u
0x101a   WBBracketShotNumber            int16u
0x1200   AFStatus                       int16u
0x1201   AFAreaXPosition1               int32u
0x1202   AFAreaYPosition1               int32u
0x1203   AFAreaXPosition                int32u
0x1204   AFAreaYPosition                int32u
0x1205   AFAreaMode                     int16u
0x1307   ColorTempKelvin                int32u
0x1308   ColorTemperature               int32u
0x1500   FocalLength                    rational64u
0x1601   SensorWidth                    int32u
0x1602   SensorHeight                   int32u
0x1603   CroppedImageWidth              int32u
0x1604   CroppedImageHeight             int32u
0x2001   RicohSubdir                    Ricoh Subdir
         RicohSubdirIFD                 Ricoh Subdir
         RicohRR1Subdir                 Ricoh Subdir
0x4001   ThetaSubdir                    Ricoh ThetaSubdir
```

Ricoh ImageInfo Tags

```
Index1   Tag Name                       Writable
------   --------                       --------
     0   RicohImageWidth                int16u
     2   RicohImageHeight               int16u
     6   RicohDate                      int8u[7]
    28   PreviewImageStart              int16u*
    30   PreviewImageLength             int16u*
    32   FlashMode                      int8u
    33   Macro                          int8u
    34   Sharpness                      int8u
    38   WhiteBalance                   int8u
    39   ISOSetting                     int8u
    40   Saturation                     int8u
```

Ricoh Subdir Tags

```
Tag ID   Tag Name                       Writable
------   --------                       --------
0x0004   ManufactureDate1               string[20]
0x0005   ManufactureDate2               string[20]
0x001a   FaceInfo                       Ricoh FaceInfo
0x0029   FirmwareInfo                   Ricoh FirmwareInfo
0x002a   NoiseReduction                 int32u
0x002c   SerialInfo                     Ricoh SerialInfo
```

Ricoh FaceInfo Tags

```
Index1   Tag Name                       Writable
------   --------                       --------
   181   FacesDetected                  int8u
   182   FaceDetectFrameSize            int16u[2]
   188   Face1Position                  int16u[4]
   200   Face2Position                  int16u[4]
   212   Face3Position                  int16u[4]
   224   Face4Position                  int16u[4]
```

```
      236    Face5Position                             int16u[4]
      248    Face6Position                             int16u[4]
      260    Face7Position                             int16u[4]
      272    Face8Position                             int16u[4]
```

Ricoh FirmwareInfo Tags

```
    Index1   Tag Name                                  Writable
    ------   --------                                  --------
         0   FirmwareRevision                          string[12]
        12   FirmwareRevision2                         string[12]
```

Ricoh SerialInfo Tags

This information is found in images from the GXR.

```
    Index1   Tag Name                                  Writable
    ------   --------                                  --------
         0   BodyFirmware                              string[16]
        16   BodySerialNumber                          string[16]
        32   LensFirmware                              string[16]
        48   LensSerialNumber                          string[16]
```

Ricoh ThetaSubdir Tags

```
    Tag ID   Tag Name                                  Writable
    ------   --------                                  --------
    0x0003   Accelerometer                             rational64s[2]
    0x0004   Compass                                   rational64u
    0x000a   TimeZone                                  string
```

Ricoh Type2 Tags

Tags written by models such as the Ricoh HZ15 and the Pentax XG-1.
These are not writable due to numerous formatting errors as written by
these cameras.

```
    Tag ID   Tag Name                                  Writable
    ------   --------                                  --------
    0x0207   RicohModel                                no
    0x0300   RicohMake                                 no
```

Ricoh Text Tags

Some Ricoh DC and RDC models use a text-based format for their maker
notes instead of the IFD format used by the Caplio models. Below is a
list of known tags in this information.

```
    Tag ID   Tag Name                                  Writable
    ------   --------                                  --------
    'Bg'     BlueGain                                  no
    'Gg'     GreenGain                                 no
    'Rev'    FirmwareVersion                           no
    'Rg'     RedGain                                   no
    'Rv'     FirmwareVersion                           no
```

Ricoh RMETA Tags

The Ricoh Caplio Pro G3 has the ability to add custom fields to the
APP5 "RMETA" segment of JPEG images. While only a few observed tags
have been defined below, ExifTool will extract any information found
here.

```
    Tag ID          Tag Name                           Writable
    ------          --------                           --------
    'Azimuth'       Azimuth                            no
    'Condition'     Condition                          no
    'Lit'           Lit                                no
    'Location'      Location                           no
    'Sign type'     SignType                           no
```

```
     '_audio'           SoundFile                 no
     '_barcode'         Barcodes                  no+
```

Ricoh AVI Tags

```
  Tag ID    Tag Name                           Writable
  ------    --------                           --------
  'mnrt'    MakerNoteRicoh                     Ricoh
  'rdc2'    RicohRDC2?                         no
  'thum'    ThumbnailImage                     no
  'ucmt'    Comment                            no
```

Ricoh RDTA Tags

```
  Tag ID    Tag Name                           Writable
  ------    --------                           --------
  0x0000    Accelerometer                      no
  0x0010    TimeStamp                          no
```

Ricoh RDTB Tags

```
  Tag ID    Tag Name                           Writable
  ------    --------                           --------
  0x0000    Gyroscope                          no
  0x0010    TimeStamp                          no
```

Ricoh RDTC Tags

```
  Tag ID    Tag Name                           Writable
  ------    --------                           --------
  0x0000    MagneticField                      no
  0x0010    TimeStamp                          no
```

Ricoh RDTG Tags

```
  Tag ID    Tag Name                           Writable
  ------    --------                           --------
  0x0000    TimeStamp                          no
  0x0064    FrameNumber                        no
```

Ricoh RDTL Tags

```
  Tag ID    Tag Name                           Writable
  ------    --------                           --------
  0x0000    GPSDateTime                        no
  0x0008    GPSLatitude                        no
  0x0010    GPSLongitude                       no
  0x0018    GPSAltitude                        no
```

Samsung Tags

Tags found in the binary "STMN" format maker notes written by a number
of Samsung models.

```
  Index4    Tag Name                           Writable
  ------    --------                           --------
       0    MakerNoteVersion                   undef[8]
       2    PreviewImageStart                  int32u*
       3    PreviewImageLength                 int32u*
      11    SamsungIFD                         Samsung IFD
```

Samsung IFD Tags

This is a standard-format IFD found in the maker notes of some Samsung
models, except that the entry count is a 4-byte integer and the offsets
are relative to the end of the IFD. Currently, no tags in this IFD are
known, so the Unknown (-u) or Verbose (-v) option must be used to see
this information.

```
  Tag ID    Tag Name                           Writable
  ------    --------                           --------
```

   [no tags known]

Samsung Type2 Tags

Tags found in the EXIF-format maker notes of newer Samsung models.

```
  Tag ID    Tag Name                           Writable
  ------    --------                           --------
  0x0001    MakerNoteVersion                   undef[4]
  0x0002    DeviceType                         int32u
  0x0003    SamsungModelID                     int32u
  0x0011    OrientationInfo                    Samsung OrientationInfo
  0x0020    SmartAlbumColor                    int16u[2]
  0x0021    PictureWizard                      Samsung PictureWizard
  0x0030    LocalLocationName                  string
  0x0031    LocationName                       string
  0x0035    PreviewIFD                         Nikon PreviewIFD
                                               Nikon PreviewIFD
  0x0040    RawDataByteOrder                   yes
  0x0041    WhiteBalanceSetup                  int32u
  0x0043    CameraTemperature                  rational64s
  0x0050    RawDataCFAPattern                  yes
  0x0100    FaceDetect                         int16u
  0x0120    FaceRecognition                    int32u
  0x0123    FaceName                           string
  0xa001    FirmwareName                       string
  0xa002    SerialNumber                       string
  0xa003    LensType                           int16u[n]
  0xa004    LensFirmware                       string
  0xa005    InternalLensSerialNumber           string
  0xa010    SensorAreas                        int32u[8]
  0xa011    ColorSpace                         int16u
  0xa012    SmartRange                         int16u
  0xa013    ExposureCompensation               rational64s
  0xa014    ISO                                int32u
  0xa018    ExposureTime                       rational64u
  0xa019    FNumber                            rational64u
  0xa01a    FocalLengthIn35mmFormat            int32u
  0xa020    EncryptionKey                      int32u[11]!
  0xa021    WB_RGGBLevelsUncorrected           int32u[4]
  0xa022    WB_RGGBLevelsAuto                  int32u[4]
  0xa023    WB_RGGBLevelsIlluminator1          int32u[4]
  0xa024    WB_RGGBLevelsIlluminator2          int32u[4]
  0xa025    HighlightLinearityLimit            int32u
  0xa028    WB_RGGBLevelsBlack                 int32s[4]
  0xa030    ColorMatrix                        int32s[9]
  0xa031    ColorMatrixSRGB                    int32s[9]
  0xa032    ColorMatrixAdobeRGB                int32s[9]
  0xa033    CbCrMatrixDefault                  int32s[4]
  0xa034    CbCrMatrix                         int32s[4]
  0xa035    CbCrGainDefault                    int32u[2]
  0xa036    CbCrGain                           int32u[2]
  0xa040    ToneCurveSRGBDefault               int32u[23]
  0xa041    ToneCurveAdobeRGBDefault           int32u[23]
  0xa042    ToneCurveSRGB                      int32u[23]
  0xa043    ToneCurveAdobeRGB                  int32u[23]
  0xa048    RawData?                           int32s[12]
  0xa050    Distortion?                        int32s[8]
  0xa051    ChromaticAberration?               int16u[22]
  0xa052    Vignetting?                        int16u[15]
  0xa053    VignettingCorrection?              int16u[15]
  0xa054    VignettingSetting?                 int16u[15]
```

Samsung OrientationInfo Tags

Camera orientation information written by the Gear 360 (SM-C200).

```
  Index8    Tag Name                           Writable
  ------    --------                           --------
     0      YawAngle?                          rational64s
```

```
       1    PitchAngle                            rational64s
       2    RollAngle                             rational64s
```

Samsung PictureWizard Tags

```
  Index2    Tag Name                              Writable
  ------    --------                              --------
       0    PictureWizardMode                     int16u
       1    PictureWizardColor                    int16u
       2    PictureWizardSaturation               int16u
       3    PictureWizardSharpness                int16u
       4    PictureWizardContrast                 int16u
```

Samsung APP5 Tags

```
  Tag ID             Tag Name              Writable
  ------             --------              --------
  'ssuniqueid'       UniqueID              no
```

Samsung Trailer Tags

Tags extracted from the SEFT trailer of JPEG and PNG images written
when using certain features (such as "Sound & Shot" or "Shot & More")
from Samsung models such as the Galaxy S4 and Tab S, and from the
'sefd' atom in HEIC images from models such as the S10+.

```
  Tag Name                              Writable
  --------                              --------
  DepthMapData                          no
  DepthMapData2                         no
  DepthMapName                          no
  DualCameraImage                       no
  DualCameraImageName                   no
  DualShotExtra                         Samsung DualShotExtra
  EmbeddedAudioFile                     no
  EmbeddedAudioFileName                 no
  EmbeddedImage                         no
  EmbeddedImage2                        no
  EmbeddedImageName                     no
  EmbeddedVideoFile                     no
  EmbeddedVideoType                     no
  MCCData                               no
  PEg_Info                              JSON
  RemasterInfo                          no
  SamsungCaptureInfo                    no
  SingleShotDepthMap                    no
  SingleShotMeta                        Samsung SingleShotMeta
  SurroundShotVideo                     no
  SurroundShotVideoName                 no
  TimeStamp                             no
```

Samsung DualShotExtra Tags

```
  Index4    Tag Name                              Writable
  ------    --------                              --------
      16    DepthMapWidth                         no
      17    DepthMapHeight                        no
```

Samsung SingleShotMeta Tags

```
  Tag ID             Tag Name              Writable
  ------             --------              --------
  'beautyColorLevel'   BeautyColorLevel    no
  'beautyRetouchLevel' BeautyRetouchLevel  no
  'blurStrength'       BlurStrength        no
  'bokehShape'         BokehShape          no
  'colorpopStrength'   ColorpopStrength    no
  'depthHWHeight'      DepthHWHeight       no
  'depthHWWidth'       DepthHWWidth        no
  'depthSWHeight'      DepthSWHeight       no
```

```
'depthSWWidth'       DepthSWWidth              no
'deviceOrientation'  DeviceOrientation         no
'effectStrength'     EffectStrength            no
'effectType'         EffectType                no
'flipStatus'         FlipStatus                no
'inputHeight'        InputHeight               no
'inputWidth'         InputWidth                no
'isArtBokeh'         IsArtBokeh                no
'lensFacing'         LensFacing                no
'monoStrength'       MonoStrength              no
'objectOrientation'  ObjectOrientation         no
'outputHeight'       OutputHeight              no
'outputWidth'        OutputWidth               no
'perfMode'           PerfMode                  no
'segHeight'          SegHeight                 no
'segWidth'           SegWidth                  no
'sidelightStrength'  SidelightStrength         no
'spinStrength'       SpinStrength              no
'vintageStrength'    VintageStrength           no
'zoomStrength'       ZoomStrength              no
```

Samsung sec Tags

This information is found in the @sec atom of Samsung MP4 videos from
models such as the WB30F.

Index1	Tag Name	Writable
0	Make	no
32	Model	no
512	ThumbnailWidth	no
516	ThumbnailHeight	no
520	ThumbnailLength	no
524	ThumbnailImage	no

Samsung INFO Tags

This information is found in MP4 videos from Samsung models such as the
SMX-C20N.

Tag ID	Tag Name	Writable
'EFCT'	Effect	no
'QLTY'	Quality	no

Samsung MP4 Tags

This information is found in Samsung MP4 videos from models such as the
WP10.

Index1	Tag Name	Writable
0	Make	no
24	Model	no
46	ExposureTime	no
50	FNumber	no
58	ExposureCompensation	no
106	ISO	no
125	Software	no
244	Thumbnail	Samsung Thumbnail

Samsung Thumbnail Tags

Index4	Tag Name	Writable
1	ThumbnailWidth	no
2	ThumbnailHeight	no
3	ThumbnailLength	no
4	ThumbnailOffset	no

Samsung smta Tags

This information is found in the smta atom of Samsung MP4 videos from
models such as the Galaxy S4.

Tag ID	Tag Name	Writable
'mdln'	SamsungModel	no
'svss'	SamsungSvss	Samsung svss

Samsung svss Tags

This information is found in the svss atom of Samsung MP4 videos from
models such as the Galaxy S4.

Tag ID	Tag Name	Writable
[no tags known]		

Sanyo Tags

Tag ID	Tag Name	Writable
0x00ff	MakerNoteOffset	int32u
0x0100	SanyoThumbnail	undef
0x0200	SpecialMode	int32u[3]
0x0201	SanyoQuality	int16u
0x0202	Macro	int16u
0x0204	DigitalZoom	rational64u
0x0207	SoftwareVersion	yes
0x0208	PictInfo	yes
0x0209	CameraID	yes
0x020e	SequentialShot	int16u
0x020f	WideRange	int16u
0x0210	ColorAdjustmentMode	int16u
0x0213	QuickShot	int16u
0x0214	SelfTimer	int16u
0x0216	VoiceMemo	int16u
0x0217	RecordShutterRelease	int16u
0x0218	FlickerReduce	int16u
0x0219	OpticalZoomOn	int16u
0x021b	DigitalZoomOn	int16u
0x021d	LightSourceSpecial	int16u
0x021e	Resaved	int16u
0x021f	SceneSelect	int16u
0x0223	ManualFocusDistance	rational64u
	FaceInfo	-
0x0224	SequenceShotInterval	int16u
0x0225	FlashMode	int16u
0x0e00	PrintIM	PrintIM
0x0f00	DataDump	no

Sanyo FaceInfo Tags

Index4	Tag Name	Writable
0	FacesDetected	int32u
4	FacePosition	int32u[4]

Sanyo MOV Tags

This information is found in Sanyo MOV videos.

Index1	Tag Name	Writable
0	Make	no
24	Model	no
38	ExposureTime	no
42	FNumber	no
50	ExposureCompensation	no
68	WhiteBalance	no

```
     72    FocalLength                          no
```

Sanyo MP4 Tags

This information is found in Sanyo MP4 videos.

```
  Index1    Tag Name                          Writable
  ------    --------                          --------
      0    Make                              no
     24    Model                             no
     50    FNumber                           no
     58    ExposureCompensation              no
    106    ISO                               no
    209    Software                          no
    210    Software                          no
    241    Thumbnail                         Sanyo Thumbnail
    242    Thumbnail                         Sanyo Thumbnail
```

Sanyo Thumbnail Tags

```
  Index4    Tag Name                          Writable
  ------    --------                          --------
      1    ThumbnailWidth                    no
      2    ThumbnailHeight                   no
      3    ThumbnailLength                   no
      4    ThumbnailOffset                   no
```

Sigma Tags
    These tags are written by Sigma/Foveon cameras. In the early days
    Sigma was a class leader by releasing their maker note specification to
    the public, but since then they have deviated from this standard and
    newer camera models are less than consistent about their metadata
    formats.

```
  Tag ID    Tag Name                          Writable
  ------    --------                          --------
  0x0002    SerialNumber                      string
  0x0003    DriveMode                         string
  0x0004    ResolutionMode                    string
  0x0005    AFMode                            string
  0x0006    FocusSetting                      string
  0x0007    WhiteBalance                      string
  0x0008    ExposureMode                      string
  0x0009    MeteringMode                      string
  0x000a    LensFocalRange                    string
  0x000b    ColorSpace                        string
  0x000c    ExposureCompensation              string
            ExposureAdjust?                   rational64s
  0x000d    Contrast                          string
            Contrast                          rational64s
  0x000e    Shadow                            string
            Shadow                            rational64s
  0x000f    Highlight                         string
            Highlight                         rational64s
  0x0010    Saturation                        string
            Saturation                        rational64s
  0x0011    Sharpness                         string
            Sharpness                         rational64s
  0x0012    X3FillLight                       string
            X3FillLight                       rational64s
  0x0014    ColorAdjustment                   string
            ColorAdjustment                   rational64s[3]
  0x0015    AdjustmentMode                    string
  0x0016    Quality                           string
  0x0017    Firmware                          string
  0x0018    Software                          string
  0x0019    AutoBracket                       string
  0x001a    PreviewImageStart                 int32u*
            ChrominanceNoiseReduction         string
  0x001b    PreviewImageLength                int32u*
```

```
         LuminanceNoiseReduction              string
0x001c   PreviewImageSize                     int16u[2]
         PreviewImageStart                    int32u*
0x001d   MakerNoteVersion                     undef
         PreviewImageLength                   int32u*
0x001e   PreviewImageSize                     int16u[2]
0x001f   AFPoint                              string
         MakerNoteVersion                     undef
0x0022   FileFormat                           string
0x0024   Calibration                          string
0x0026   FileFormat                           string
0x0027   LensType                             string
         LensType                             -
                                              Sigma LensType
0x002a   LensFocalRange                       rational64u[2]
0x002b   LensMaxApertureRange                 rational64u[2]
0x002c   ColorMode                            int32u
0x0030   LensApertureRange                    string
         Calibration                          string
0x0031   FNumber                              rational64u
0x0032   ExposureTime                         rational64u
0x0033   ExposureTime2                        string
0x0034   BurstShot                            int32u
0x0035   ExposureCompensation                 rational64s
0x0039   SensorTemperature                    string
0x003a   FlashExposureComp                    rational64s
0x003b   Firmware                             string
0x003c   WhiteBalance                         string
0x003d   PictureMode                          string
0x0048   LensApertureRange                    string
0x0049   FNumber                              rational64u
0x004a   ExposureTime                         rational64u
0x004b   ExposureTime2                        string
0x004d   ExposureCompensation                 rational64s
0x0055   SensorTemperature                    string
0x0056   FlashExposureComp                    rational64s
0x0057   Firmware2                            string
0x0058   WhiteBalance                         string
0x0059   DigitalFilter                        string
0x0084   Model                                string
0x0086   ISO                                  int16u
0x0087   ResolutionMode                       string
0x0088   WhiteBalance                         string
0x008c   Firmware                             string
0x011f   CameraCalibration                    float[9]
0x0120   WBSettings                           Sigma WBSettings
0x0121   WBSettings2                          Sigma WBSettings2
```

Sigma WBSettings Tags

```
Index4   Tag Name                             Writable
------   --------                             --------
    0    WB_RGBLevelsAuto                     float[3]
    3    WB_RGBLevelsDaylight                 float[3]
    6    WB_RGBLevelsShade                    float[3]
    9    WB_RGBLevelsOvercast                 float[3]
   12    WB_RGBLevelsIncandescent             float[3]
   15    WB_RGBLevelsFluorescent              float[3]
   18    WB_RGBLevelsFlash                    float[3]
   21    WB_RGBLevelsCustom1                  float[3]
   24    WB_RGBLevelsCustom2                  float[3]
   27    WB_RGBLevelsCustom3                  float[3]
```

Sigma WBSettings2 Tags

```
Index4   Tag Name                             Writable
------   --------                             --------
    0    WB_RGBLevelsUnknown0?                float[3]
    3    WB_RGBLevelsUnknown1?                float[3]
    6    WB_RGBLevelsUnknown2?                float[3]
```

```
      9     WB_RGBLevelsUnknown3?                    float[3]
     12     WB_RGBLevelsUnknown4?                    float[3]
     15     WB_RGBLevelsUnknown5?                    float[3]
     18     WB_RGBLevelsUnknown6?                    float[3]
     21     WB_RGBLevelsUnknown7?                    float[3]
     24     WB_RGBLevelsUnknown8?                    float[3]
     27     WB_RGBLevelsUnknown9?                    float[3]
```

Sony Tags

The following information has been decoded from the MakerNotes of Sony
cameras. Some of these tags have been inherited from the Minolta
MakerNotes.

Tag ID	Tag Name	Writable
0x0010	CameraInfo	Sony CameraInfo
	CameraInfo2	Sony CameraInfo2
	CameraInfo3	Sony CameraInfo3
	CameraInfoUnknown	Sony CameraInfoUnknown
0x0020	FocusInfo	Sony FocusInfo
	MoreInfo	Sony MoreInfo
0x0102	Quality	int32u
0x0104	FlashExposureComp	rational64s
0x0105	Teleconverter	int32u
0x0112	WhiteBalanceFineTune	int32u
0x0114	CameraSettings	Sony CameraSettings
	CameraSettings2	Sony CameraSettings2
	CameraSettings3	Sony CameraSettings3
	CameraSettingsUnknown	Sony CameraSettingsUnknown
0x0115	WhiteBalance	int32u
0x0116	ExtraInfo	Sony ExtraInfo
	ExtraInfo2	Sony ExtraInfo2
	ExtraInfo3	Sony ExtraInfo3
0x0e00	PrintIM	PrintIM
0x1000	MultiBurstMode	undef
0x1001	MultiBurstImageWidth	int16u
0x1002	MultiBurstImageHeight	int16u
0x1003	Panorama	Sony Panorama
0x2001	PreviewImage	undef
0x2002	Rating	int32u
0x2004	Contrast	int32s
0x2005	Saturation	int32s
0x2006	Sharpness	int32s
0x2007	Brightness	int32s
0x2008	LongExposureNoiseReduction	int32u
0x2009	HighISONoiseReduction	int16u
0x200a	HDR	int32u
0x200b	MultiFrameNoiseReduction	int32u
0x200e	PictureEffect	int16u
0x200f	SoftSkinEffect	int32u
0x2010	Tag2010a	Sony Tag2010a
	Tag2010b	Sony Tag2010b
	Tag2010c	Sony Tag2010c
	Tag2010d	Sony Tag2010d
	Tag2010e	Sony Tag2010e
	Tag2010f	Sony Tag2010f
	Tag2010g	Sony Tag2010g
	Tag2010h	Sony Tag2010h
	Tag2010i	Sony Tag2010i
0x2011	VignettingCorrection	int32u
0x2012	LateralChromaticAberration	int32u
0x2013	DistortionCorrectionSetting	int32u
0x2014	WBShiftAB_GM	int32s[2]
0x2016	AutoPortraitFramed	int16u
0x2017	FlashAction	int32u
0x201a	ElectronicFrontCurtainShutter	int32u
0x201b	FocusMode	int8u
0x201c	AFAreaModeSetting	int8u
0x201d	FlexibleSpotPosition	int16u[2]
0x201e	AFPointSelected	int8u

```
0x2020   AFPointsUsed                      no
0x2021   AFTracking                        int8u
0x2022   FocalPlaneAFPointsUsed            no
0x2023   MultiFrameNREffect                int32u
0x2026   WBShiftAB_GM_Precise              int32s[2]~
0x2027   FocusLocation                     int16u[4]
0x2028   VariableLowPassFilter             int16u[2]
0x2029   RAWFileType                       int16u
0x202a   Tag202a                           Sony Tag202a
0x202b   PrioritySetInAWB                  int8u
0x202c   MeteringMode2                     int16u
0x202d   ExposureStandardAdjustment        rational64s
0x202e   Quality                           int16u[2]
0x202f   PixelShiftInfo                    undef
0x2031   SerialNumber                      string
0x2032   Shadows                           int32s
0x2033   Highlights                        int32s
0x2034   Fade                              int32s
0x2035   SharpnessRange                    int32s
0x2036   Clarity                           int32s
0x2037   FocusFrameSize                    no
0x2039   JPEG-HEIFSwitch                   int16u
0x2044   HiddenInfo                        Sony HiddenInfo
0x204a   FocusLocation2                    int16u[4]
0x3000   ShotInfo                          Sony ShotInfo
0x900b   Tag900b                           Sony Tag900b
0x9050   Tag9050a                          Sony Tag9050a
         Tag9050b                          Sony Tag9050b
         Tag9050c                          Sony Tag9050c
         Tag9050d                          Sony Tag9050d
0x9400   Tag9400a                          Sony Tag9400a
         Tag9400b                          Sony Tag9400b
         Tag9400c                          Sony Tag9400c
0x9401   Tag9401                           Sony Tag9401
0x9402   Tag9402                           Sony Tag9402
0x9403   Tag9403                           Sony Tag9403
0x9404   Tag9404a                          Sony Tag9404a
         Tag9404b                          Sony Tag9404b
         Tag9404c                          Sony Tag9404c
0x9405   Tag9405a                          Sony Tag9405a
         Tag9405b                          Sony Tag9405b
0x9406   Tag9406                           Sony Tag9406
         Tag9406b                          Sony Tag9406b
0x940a   Tag940a                           Sony Tag940a
0x940c   Tag940c                           Sony Tag940c
0x940e   AFInfo                            Sony AFInfo
         Tag940e                           Sony Tag940e
0x9416   Sony_0x9416                       Sony Tag9416
0xb000   FileFormat                        int8u[4]
0xb001   SonyModelID                       int16u
0xb020   CreativeStyle                     string
0xb021   ColorTemperature                  int32u
0xb022   ColorCompensationFilter           int32u
0xb023   SceneMode                         int32u
0xb024   ZoneMatching                      int32u
0xb025   DynamicRangeOptimizer             int32u
0xb026   ImageStabilization                int32u
0xb027   LensType                          int32u
0xb028   MinoltaMakerNote                  Minolta
0xb029   ColorMode                         int32u
0xb02a   LensSpec                          int8u[8]
0xb02b   FullImageSize                     int32u[2]
0xb02c   PreviewImageSize                  int32u[2]
0xb040   Macro                             int16u
0xb041   ExposureMode                      int16u
0xb042   FocusMode                         int16u
0xb043   AFAreaMode                        int16u
0xb044   AFIlluminator                     int16u
0xb047   JPEGQuality                       int16u
0xb048   FlashLevel                        int16s
```

```
0xb049    ReleaseMode                         int16u
0xb04a    SequenceNumber                      int16u
0xb04b    Anti-Blur                           int16u
0xb04e    FocusMode                           int16u
0xb04f    DynamicRangeOptimizer               int16u
0xb050    HighISONoiseReduction2              int16u
0xb052    IntelligentAuto                     int16u
0xb054    WhiteBalance                        int16u
```

Sony CameraInfo Tags

Camera information for the A700, A850 and A900.

Index1	Tag Name	Writable
0	LensSpec	undef[8]
20	FocusModeSetting	int8u
21	AFPointSelected	int8u
25	AFPoint	int8u
30	AFStatusActiveSensor	int16s
32	AFStatusUpper-left	int16s
34	AFStatusLeft	int16s
36	AFStatusLower-left	int16s
38	AFStatusFarLeft	int16s
40	AFStatusBottomAssist-left	int16s
42	AFStatusBottom	int16s
44	AFStatusBottomAssist-right	int16s
46	AFStatusCenter-7	int16s
48	AFStatusCenter-horizontal	int16s
50	AFStatusCenter-9	int16s
52	AFStatusCenter-10	int16s
54	AFStatusCenter-11	int16s
56	AFStatusCenter-12	int16s
58	AFStatusCenter-vertical	int16s
60	AFStatusCenter-14	int16s
62	AFStatusTopAssist-left	int16s
64	AFStatusTop	int16s
66	AFStatusTopAssist-right	int16s
68	AFStatusFarRight	int16s
70	AFStatusUpper-right	int16s
72	AFStatusRight	int16s
74	AFStatusLower-right	int16s
76	AFStatusCenterF2-8	int16s
304	AFMicroAdjValue	int8u
305	AFMicroAdjMode	int8u & 0x80
305.1	AFMicroAdjRegisteredLenses	int8u & 0x7f

Sony CameraInfo2 Tags

Camera information for the DSLR-A200, A230, A290, A300, A330, A350, A380 and A390.

Index1	Tag Name	Writable
0	LensSpec	undef[8]
20	AFPointSelected	int8u
21	FocusModeSetting	int8u
24	AFPoint	int8u
27	AFStatusActiveSensor	int16s
29	AFStatusTop-right	int16s
31	AFStatusBottom-right	int16s
33	AFStatusBottom	int16s
35	AFStatusMiddleHorizontal	int16s
37	AFStatusCenterVertical	int16s
39	AFStatusTop	int16s
41	AFStatusTop-left	int16s
43	AFStatusBottom-left	int16s
45	AFStatusLeft	int16s
47	AFStatusCenterHorizontal	int16s
49	AFStatusRight	int16s

Sony CameraInfo3 Tags

Camera information stored by the A33, A35, A55, A450, A500, A550, A560,
A580, NEX-3/5/5C/C3 and VG10E. Some tags are valid only for some of
these models.

```
  Index1    Tag Name                            Writable
  ------    --------                            --------
       0    LensSpec                            undef[8]
      14    FocalLength                         int16u
      16    FocalLengthTeleZoom                 int16u
      20    AFPointSelected                     int8u
      21    FocusMode                           int8u
      24    AFPoint                             int8u
      25    FocusStatus                         int8u
      27    AFStatusActiveSensor                int16s
      28    AFPointSelected                     int8u
      29    FocusMode                           int8u
            AFStatusTop-right                   int16s
      31    AFStatusBottom-right                int16s
      32    AFPoint                             int8u
      33    AFStatusActiveSensor                int16s
            AFStatusBottom                      int16s
      35    AFStatus15                          Sony AFStatus15
            AFStatusMiddleHorizontal            int16s
      37    AFStatusCenterVertical              int16s
      39    AFStatusTop                         int16s
      41    AFStatusTop-left                    int16s
      43    AFStatusBottom-left                 int16s
      45    AFStatusLeft                        int16s
      47    AFStatusCenterHorizontal            int16s
      49    AFStatusRight                       int16s
```

Sony AFStatus15 Tags

AF Status information for models with 15-point AF.

```
  Index1    Tag Name                            Writable
  ------    --------                            --------
       0    AFStatusUpper-left                  int16s
       2    AFStatusLeft                        int16s
       4    AFStatusLower-left                  int16s
       6    AFStatusFarLeft                     int16s
       8    AFStatusTopHorizontal               int16s
      10    AFStatusNearRight                   int16s
      12    AFStatusCenterHorizontal            int16s
      14    AFStatusNearLeft                    int16s
      16    AFStatusBottomHorizontal            int16s
      18    AFStatusTopVertical                 int16s
      20    AFStatusCenterVertical              int16s
      22    AFStatusBottomVertical              int16s
      24    AFStatusFarRight                    int16s
      26    AFStatusUpper-right                 int16s
      28    AFStatusRight                       int16s
      30    AFStatusLower-right                 int16s
      32    AFStatusUpper-middle                int16s
      34    AFStatusLower-middle                int16s
```

Sony CameraInfoUnknown Tags

```
  Index1    Tag Name                            Writable
  ------    --------                            --------
  [no tags known]
```

Sony FocusInfo Tags

More camera settings and focus information decoded for models such as
the A200, A230, A290, A300, A330, A350, A380, A390, A700, A850 and
A900.

Index1	Tag Name	Writable
14	DriveMode2	int8u
16	Rotation	int8u
20	ImageStabilizationSetting	int8u
21	DynamicRangeOptimizerMode	int8u
43	BracketShotNumber	int8u
44	WhiteBalanceBracketing	int8u
45	BracketShotNumber2	int8u
46	DynamicRangeOptimizerBracket	int8u
47	ExposureBracketShotNumber	int8u
63	ExposureProgram	int8u
65	CreativeStyle	int8u
109	ISOSetting	int8u
111	ISO	int8u
119	DynamicRangeOptimizerMode	int8u
121	DynamicRangeOptimizerLevel	int8u
2118	ShutterCount	int32u
2491	FocusPosition	int8u
4368	TiffMeteringImage	no

Sony MoreInfo Tags

More camera settings information decoded for the A450, A500, A550, A560, A580, A33, A35, A55, NEX-3/5/C3 and VG10E.

Tag ID	Tag Name	Writable
0x0001	MoreSettings	Sony MoreSettings
0x0002	FaceInfo	Sony FaceInfo
	FaceInfoA	Sony FaceInfoA
0x0107	TiffMeteringImage	no
0x0201	MoreInfo0201	Sony MoreInfo0201
0x0401	MoreInfo0401	Sony MoreInfo0401

Sony MoreSettings Tags

Index1	Tag Name	Writable
1	DriveMode2	int8u
2	ExposureProgram	int8u
3	MeteringMode	int8u
4	DynamicRangeOptimizerSetting	int8u
5	DynamicRangeOptimizerLevel	int8u
6	ColorSpace	int8u
7	CreativeStyleSetting	int8u
8	ContrastSetting	int8s
9	SaturationSetting	int8s
10	SharpnessSetting	int8s
13	WhiteBalanceSetting	int8u
14	ColorTemperatureSetting	int8u
15	ColorCompensationFilterSet	int8s
16	FlashMode	int8u
17	LongExposureNoiseReduction	int8u
18	HighISONoiseReduction	int8u
19	FocusMode	int8u
21	MultiFrameNoiseReduction	int8u
22	HDRSetting	int8u
23	HDRLevel	int8u
24	ViewingMode	int8u
25	FaceDetection	int8u
26	CustomWB_RBLevels	int16uRev[2]
30	BrightnessValue	int8u
	ExposureCompensationSet	int8u
31	ISO	int8u
	FlashExposureCompSet	int8u
32	FNumber	int8u
	LiveViewAFMethod	int8u
33	ExposureTime	int8u

```
            ISO                                    int8u
    34      FNumber                                int8u
    35      FocalLength2                           int8u
            ExposureTime                           int8u
    36      ExposureCompensation2                  int16s
    37      FocalLength2                           int8u
            ISO                                    int8u
    38      FlashExposureCompSet2                  int16s
            ExposureCompensation2                  int16s
            FNumber                                int8u
    39      ExposureTime                           int8u
    40      Orientation2                           int8u
    41      FocusPosition2                         int8u
            FocalLength2                           int8u
    42      FlashAction                            int8u
            ExposureCompensation2                  int16s
    43      FocusPosition2                         int8u
    44      FocusMode2                             int8u
            FlashAction                            int8u
            FlashExposureCompSet2                  int16s
    46      FocusMode2                             int8u
            Orientation2                           int8u
    47      FocusPosition2                         int8u
    48      FlashAction                            int8u
    50      FocusMode2                             int8u
   119      FlashAction2                           int8u
   120      FlashActionExternal                    int8u
   124      FlashActionExternal                    int8u
   130      FlashStatus                            int8u
   134      FlashStatus                            int8u
```

Sony FaceInfo Tags

```
  Index2   Tag Name                               Writable
  ------   --------                               --------
     0     FacesDetected                          int16s
     1     Face1Position                          int16u[4]
     6     Face2Position                          int16u[4]
    11     Face3Position                          int16u[4]
    16     Face4Position                          int16u[4]
    21     Face5Position                          int16u[4]
    26     Face6Position                          int16u[4]
    31     Face7Position                          int16u[4]
    36     Face8Position                          int16u[4]
```

Sony FaceInfoA Tags

```
  Index2   Tag Name                               Writable
  ------   --------                               --------
     3     FacesDetected                          no
    11     PotentialFace1Position                 int16u[4]
    21     PotentialFace2Position                 int16u[4]
    31     PotentialFace3Position                 int16u[4]
    41     PotentialFace4Position                 int16u[4]
    51     PotentialFace5Position                 int16u[4]
    61     PotentialFace6Position                 int16u[4]
    71     PotentialFace7Position                 int16u[4]
    81     PotentialFace8Position                 int16u[4]
    91     Face1Position                          int16u[4]
   101     Face2Position                          int16u[4]
   111     Face3Position                          int16u[4]
   121     Face4Position                          int16u[4]
```

Sony MoreInfo0201 Tags

```
  Index1   Tag Name                               Writable
  ------   --------                               --------
   283     ImageCount                             int32u
   293     ShutterCount                           int32u
   330     ShutterCount                           int32u
```

Sony MoreInfo0401 Tags

Index1	Tag Name	Writable
1102	ShotNumberSincePowerUp	int32u

Sony CameraSettings Tags

Camera settings for the A200, A300, A350, A700, A850 and A900.

Index2	Tag Name	Writable
0	ExposureTime	int16u
1	FNumber	int16u
2	HighSpeedSync	int16u
3	ExposureCompensationSet	int16u
4	DriveMode	int16u & 0xff
5	WhiteBalanceSetting	int16u
6	WhiteBalanceFineTune	int16u
7	ColorTemperatureSet	int16u
8	ColorCompensationFilterSet	int16u
12	ColorTemperatureCustom	int16u
13	ColorCompensationFilterCustom	int16u
15	WhiteBalance	int16u
16	FocusModeSetting	int16u
17	AFAreaMode	int16u
18	AFPointSetting	int16u
19	FlashMode	int16u
20	FlashExposureCompSet	int16u
21	MeteringMode	int16u
22	ISOSetting	int16u
24	DynamicRangeOptimizerMode	int16u
25	DynamicRangeOptimizerLevel	int16u
26	CreativeStyle	int16u
27	ColorSpace	int16u
28	Sharpness	int16u
29	Contrast	int16u
30	Saturation	int16u
31	ZoneMatchingValue	int16u
34	Brightness	int16u
35	FlashControl	int16u
40	PrioritySetupShutterRelease	int16u
41	AFIlluminator	int16u
42	AFWithShutter	int16u
43	LongExposureNoiseReduction	int16u
44	HighISONoiseReduction	int16u
45	ImageStyle	int16u
46	FocusModeSwitch	int16u
47	ShutterSpeedSetting	int16u
48	ApertureSetting	int16u
60	ExposureProgram	int16u
61	ImageStabilizationSetting	int16u
62	FlashAction	int16u
63	Rotation	int16u
64	AELock	int16u
76	FlashAction2	int16u
77	FocusMode	int16u
80	BatteryState	int16u
81	BatteryLevel	int16u
83	FocusStatus	int16u
84	SonyImageSize	int16u
85	AspectRatio	int16u
86	Quality	int16u
88	ExposureLevelIncrements	int16u
106	RedEyeReduction	int16u
154	FolderNumber	int16u & 0x3ff
155	ImageNumber	int16u & 0x3fff

Sony CameraSettings2 Tags

Camera settings for the A230, A290, A330, A380 and A390.

```
  Index2    Tag Name                          Writable
  ------    --------                          --------
      0     ExposureTime                      int16u
      1     FNumber                           int16u
      2     HighSpeedSync                     int16u
      3     ExposureCompensationSet           int16u
      4     WhiteBalanceSetting               int16u
      5     WhiteBalanceFineTune              int16u
      6     ColorTemperatureSet               int16u
      7     ColorCompensationFilterSet        int16u
      8     CustomWB_RGBLevels                int16u[3]
     11     ColorTemperatureCustom            int16u
     12     ColorCompensationFilterCustom     int16u
     14     WhiteBalance                      int16u
     15     FocusModeSetting                  int16u
     16     AFAreaMode                        int16u
     17     AFPointSetting                    int16u
     18     FlashExposureCompSet              int16u
     19     MeteringMode                      int16u
     20     ISOSetting                        int16u
     22     DynamicRangeOptimizerMode         int16u
     23     DynamicRangeOptimizerLevel        int16u
     24     CreativeStyle                     int16u
     25     Sharpness                         int16u
     26     Contrast                          int16u
     27     Saturation                        int16u
     31     FlashControl                      int16u
     37     LongExposureNoiseReduction        int16u
     38     HighISONoiseReduction             int16u
     39     ImageStyle                        int16u
     40     ShutterSpeedSetting               int16u
     41     ApertureSetting                   int16u
     60     ExposureProgram                   int16u
     61     ImageStabilizationSetting         int16u
     62     FlashAction                       int16u
     63     Rotation                          int16u
     64     AELock                            int16u
     76     FlashAction2                      int16u
     77     FocusMode                         int16u
     83     FocusStatus                       int16u
     84     SonyImageSize                     int16u
     85     AspectRatio                       int16u
     86     Quality                           int16u
     88     ExposureLevelIncrements           int16u
    126     DriveMode                         int16u & 0xff
    127     FlashMode                         int16u
    131     ColorSpace                        int16u
```

Sony CameraSettings3 Tags

Camera settings for models such as the A33, A35, A55, A450, A500, A550, A560, A580, NEX-3, NEX-5, NEX-C3 and NEX-VG10E.

```
  Index1    Tag Name                          Writable
  ------    --------                          --------
      0     ShutterSpeedSetting               int8u
      1     ApertureSetting                   int8u
      2     ISOSetting                        int8u
      3     ExposureCompensationSet           int8u
      4     DriveModeSetting                  int8u
      5     ExposureProgram                   int8u
      6     FocusModeSetting                  int8u
      7     MeteringMode                      int8u
      9     SonyImageSize                     int8u
     10     AspectRatio                       int8u
     11     Quality                           int8u
     12     DynamicRangeOptimizerSetting      int8u
```

```
    13    DynamicRangeOptimizerLevel          int8u
    14    ColorSpace                          int8u
    15    CreativeStyleSetting                int8u
    16    ContrastSetting                     int8s
    17    SaturationSetting                   int8s
    18    SharpnessSetting                    int8s
    22    WhiteBalanceSetting                 int8u
    23    ColorTemperatureSetting             int8u
    24    ColorCompensationFilterSet          int8s
    25    CustomWB_RGBLevels                  int16uRev[3]
    32    FlashMode                           int8u
    33    FlashControl                        int8u
    35    FlashExposureCompSet                int8u
    36    AFAreaMode                          int8u
    37    LongExposureNoiseReduction          int8u
    38    HighISONoiseReduction               int8u
    39    SmileShutterMode                    int8u
    40    RedEyeReduction                     int8u
    45    HDRSetting                          int8u
    46    HDRLevel                            int8u
    47    ViewingMode                         int8u
    48    FaceDetection                       int8u
    49    SmileShutter                        int8u
    50    SweepPanoramaSize                   int8u
    51    SweepPanoramaDirection              int8u
    52    DriveMode                           int8u
    53    MultiFrameNoiseReduction            int8u
    54    LiveViewAFSetting                   int8u
    56    PanoramaSize3D                      int8u
   131    AFButtonPressed                     int8u
   132    LiveViewMetering                    int8u
   133    ViewingMode2                        int8u
   134    AELock                              int8u
   135    FlashStatusBuilt-in                 int8u
   136    FlashStatusExternal                 int8u
   139    LiveViewFocusMode                   int8u
   153    LensMount                           int8u
   268    SequenceNumber                      int8u
   276    FolderNumber                        int32u & 0xffc000
 276.1    ImageNumber                         int32u & 0x3fff
   512    ShotNumberSincePowerUp2             int32u
   643    AFButtonPressed                     int8u
   644    LiveViewMetering                    int8u
   645    ViewingMode2                        int8u
   646    AELock                              int8u
   647    FlashStatusBuilt-in                 int8u
   648    FlashStatusExternal                 int8u
   651    LiveViewFocusMode                   int8u
   780    SequenceNumber                      int8u
   788    ImageNumber                         int16u & 0x3fff
   790    FolderNumber                        int16u & 0x3ff
  1008    LensE-mountVersion                  int16u
  1011    LensFirmwareVersion                 int16u~
  1015    LensType2                           int16u
  1024    ImageNumber                         int16u & 0x3fff
  1026    FolderNumber                        int16u & 0x3ff
```

Sony CameraSettingsUnknown Tags

```
  Index2   Tag Name                          Writable
  ------   --------                          --------
  [no tags known]
```

Sony ExtraInfo Tags

Extra hardware information for the A850 and A900.

```
  Index1   Tag Name                          Writable
  ------   --------                          --------
     1     BatteryTemperature                int8u
```

```
      2    BatteryUnknown?                       no
      8    BatteryVoltage?                       no
     10    ImageStabilization2?                  int8u
     12    BatteryLevel                          int8u
     26    ExtraInfoVersion                      int8u[4]
```

Sony ExtraInfo2 Tags

Extra hardware information for the A230/290/330/380/390.

Index1	Tag Name	Writable
4	BatteryLevel	int8u
18	ImageStabilization	int8u

Sony ExtraInfo3 Tags

Extra hardware information for the A33, A35, A55, A450, A500, A550,
A560, A580 and NEX-3/5/C3/VG10.

Index1	Tag Name	Writable
0	BatteryUnknown?	int16u
2	BatteryTemperature	int8u
4	BatteryLevel	int8u
6	BatteryVoltage1	int16u
8	BatteryVoltage2	int16u
17	ImageStabilization	int8u
20	BatteryState	int8u
	ExposureProgram	int8u
	ModeDialPosition	int8u
22	MemoryCardConfiguration	int8u & 0xc0
	CameraOrientation	int8u
24	CameraOrientation	int8u & 0x30

Sony Panorama Tags

Tags found in panorama images from various Sony DSC, NEX, SLT and DSLR
cameras. The width/height values of these tags are not affected by
camera rotation -- the width is always the longer dimension.

Index4	Tag Name	Writable
1	PanoramaFullWidth	int32u
2	PanoramaFullHeight	int32u
3	PanoramaDirection	int32u
4	PanoramaCropLeft	int32u
5	PanoramaCropTop	int32u
6	PanoramaCropRight	int32u
7	PanoramaCropBottom	int32u
8	PanoramaFrameWidth	int32u
9	PanoramaFrameHeight	int32u
10	PanoramaSourceWidth	int32u
11	PanoramaSourceHeight	int32u

Sony Tag2010a Tags

Valid for NEX-5N.

Index1	Tag Name	Writable
1200	MeterInfo?	Sony MeterInfo
4392	ReleaseMode3	int8u
4396	ReleaseMode2	int8u
4404	SelfTimer	int8u
4408	FlashMode	int8u
4414	StopsAboveBaseISO	int16u
4416	BrightnessValue	int16u
4420	DynamicRangeOptimizer	int8u
4424	HDRSetting	int8u

```
    4428    ExposureCompensation                    int16s
    4446    PictureProfile                          int8u
    4447    PictureProfile                          int8u
    4451    PictureEffect2                          int8u
    4464    Quality2                                int8u
    4468    MeteringMode                            int8u
    4469    ExposureProgram                         int8u
    4476    WB_RGBLevels                            int16u[3]
```

Sony MeterInfo Tags

Information possibly related to metering. Extracted only if the
Unknown option is used.

```
    Index1   Tag Name                              Writable
    ------   --------                              --------
        0    MeterInfo1Row1                        int32u[27]
      108    MeterInfo1Row2                        int32u[27]
      216    MeterInfo1Row3                        int32u[27]
      324    MeterInfo1Row4                        int32u[27]
      432    MeterInfo1Row5                        int32u[27]
      540    MeterInfo1Row6                        int32u[27]
      648    MeterInfo1Row7                        int32u[27]
      756    MeterInfo2Row1                        int32u[33]
      888    MeterInfo2Row2                        int32u[33]
     1020    MeterInfo2Row3                        int32u[33]
     1152    MeterInfo2Row4                        int32u[33]
     1284    MeterInfo2Row5                        int32u[33]
     1416    MeterInfo2Row6                        int32u[33]
     1548    MeterInfo2Row7                        int32u[33]
     1680    MeterInfo2Row8                        int32u[33]
     1812    MeterInfo2Row9                        int32u[33]
```

Sony Tag2010b Tags

Valid for SLT-A65/A77, NEX-7/VG20E.

```
    Index1   Tag Name                              Writable
    ------   --------                              --------
        0    SequenceImageNumber                   int32u
        4    SequenceFileNumber                    int32u
        8    ReleaseMode2                          int32u
      438    SonyDateTime                          undef[7]
      804    DynamicRangeOptimizer                 int8u
     1204    MeterInfo?                            Sony MeterInfo
     4392    ReleaseMode3                          int8u
     4396    ReleaseMode2                          int8u
     4404    SelfTimer                             int8u
     4408    FlashMode                             int8u
     4414    StopsAboveBaseISO                     int16u
     4416    BrightnessValue                       int16u
     4420    DynamicRangeOptimizer                 int8u
     4424    HDRSetting                            int8u
     4428    ExposureCompensation                  int16s
     4450    PictureProfile                        int8u
     4451    PictureProfile                        int8u
     4455    PictureEffect2                        int8u
     4468    Quality2                              int8u
     4472    MeteringMode                          int8u
     4473    ExposureProgram                       int8u
     4480    WB_RGBLevels                          int16u[3]
     4632    SonyISO                               int16u
     6691    DistortionCorrParams                  int16s[16]
```

Sony Tag2010c Tags

Valid for SLT-A37/A57 and NEX-F3.

```
    Index1   Tag Name                              Writable
    ------   --------                              --------
```

```
    0    SequenceImageNumber                int32u
    4    SequenceFileNumber                 int32u
    8    ReleaseMode2                       int32u
  512    DigitalZoomRatio                   int8u
  528    SonyDateTime                       undef[7]
  768    DynamicRangeOptimizer              int8u
 1168    MeterInfo?                         Sony MeterInfo
 4356    ReleaseMode3                       int8u
 4360    ReleaseMode2                       int8u
 4368    SelfTimer                          int8u
 4372    FlashMode                          int8u
 4378    StopsAboveBaseISO                  int16u
 4380    BrightnessValue                    int16u
 4384    DynamicRangeOptimizer              int8u
 4388    HDRSetting                         int8u
 4392    ExposureCompensation               int16s
 4414    PictureProfile                     int8u
 4415    PictureProfile                     int8u
 4419    PictureEffect2                     int8u
 4432    Quality2                           int8u
 4436    MeteringMode                       int8u
 4437    ExposureProgram                    int8u
 4444    WB_RGBLevels                       int16u[3]
 4596    SonyISO                            int16u
```

Sony Tag2010d Tags

Valid for DSC-HX10V/HX20V/HX200V/TX66/TX200V/TX300V/WX50/WX100/WX150,
but not valid for panorama images.

```
  Index1   Tag Name                          Writable
  ------   --------                          --------
    0    SequenceImageNumber                int32u
    4    SequenceFileNumber                 int32u
    8    ReleaseMode2                       int32u
  510    SonyDateTime                       undef[7]
  892    DynamicRangeOptimizer              int8u
 1292    MeterInfo?                         Sony MeterInfo
 4480    ReleaseMode3                       int8u
 4484    ReleaseMode2                       int8u
 4492    SelfTimer                          int8u
 4496    FlashMode                          int8u
 4502    StopsAboveBaseISO                  int16u
 4504    BrightnessValue                    int16u
 4508    DynamicRangeOptimizer              int8u
 4512    HDRSetting                         int8u
 4538    PictureProfile                     int8u
 4539    PictureProfile                     int8u
 4543    PictureEffect2                     int8u
 4560    MeteringMode                       int8u
 4561    ExposureProgram                    int8u
 4568    WB_RGBLevels                       int16u[3]
 4720    SonyISO                            int16u
```

Sony Tag2010e Tags

Valid for SLT-A58/A99, ILCE-3000/3500, NEX-3N/5R/5T/6/VG30E/VG900,
DSC-RX100, DSC-RX1/RX1R. Also valid for
DSC-HX300/HX50V/TX30/WX60/WX200/ WX300, but not for panorama images.

```
  Index1   Tag Name                          Writable
  ------   --------                          --------
    0    SequenceImageNumber                int32u
    4    SequenceFileNumber                 int32u
    8    ReleaseMode2                       int32u
  540    DigitalZoomRatio                   int8u
  556    SonyDateTime                       undef[7]
  808    DynamicRangeOptimizer              int8u
 1208    MeterInfo?                         Sony MeterInfo
 4444    ReleaseMode3                       int8u
```

```
    4448    ReleaseMode2                            int8u
    4456    SelfTimer                               int8u
    4460    FlashMode                               int8u
    4466    StopsAboveBaseISO                       int16u
    4468    BrightnessValue                         int16u
    4472    DynamicRangeOptimizer                   int8u
    4476    HDRSetting                              int8u
    4480    ExposureCompensation                    int16s
    4502    PictureProfile                          int8u
    4503    PictureProfile                          int8u
    4507    PictureEffect2                          int8u
    4520    Quality2                                int8u
    4524    MeteringMode                            int8u
    4525    ExposureProgram                         int8u
    4532    WB_RGBLevels                            int16u[3]
    4692    SonyISO                                 int16u
    4696    SonyISO                                 int16u
    4728    FocalLength                             int16u
    4730    MinFocalLength                          int16u
    4732    MaxFocalLength                          int16u
    4736    SonyISO                                 int16u
    6256    DistortionCorrParams                    int16s[16]
    6289    LensFormat                              int8u
    6290    LensMount                               int8u
    6291    LensType2                               int16u
    6294    LensType                                int16u
    6296    DistortionCorrParamsPresent             int8u
    6297    DistortionCorrParamsNumber              int8u
    6444    AspectRatio                             int8u
    6792    AspectRatio                             int8u
```

Sony Tag2010f Tags

Valid for DSC-RX100M2, DSC-QX10/QX100.

```
    Index1  Tag Name                                Writable
    ------  --------                                --------
         4  ReleaseMode2                            int32u
        80  DynamicRangeOptimizer                   int8u
       480  MeterInfo?                              Sony MeterInfo
      4116  ReleaseMode3                            int8u
      4120  ReleaseMode2                            int8u
      4128  SelfTimer                               int8u
      4132  FlashMode                               int8u
      4138  StopsAboveBaseISO                       int16u
      4140  BrightnessValue                         int16u
      4144  DynamicRangeOptimizer                   int8u
      4148  HDRSetting                              int8u
      4152  ExposureCompensation                    int16s
      4174  PictureProfile                          int8u
      4175  PictureProfile                          int8u
      4179  PictureEffect2                          int8u
      4192  Quality2                                int8u
      4196  MeteringMode                            int8u
      4197  ExposureProgram                         int8u
      4204  WB_RGBLevels                            int16u[3]
      4404  FocalLength                             int16u
      4406  MinFocalLength                          int16u
      4408  MaxFocalLength                          int16u
      4412  SonyISO                                 int16u
      6444  AspectRatio                             int8u
```

Sony Tag2010g Tags

Valid for DSC-HX60V/HX350/HX400V/QX30/RX10/RX100M3/WX220/WX350,
ILCE-7/7R/7S/7M2/5000/5100/6000/QX1, ILCA-68/77M2.

```
    Index1  Tag Name                                Writable
    ------  --------                                --------
         4  ReleaseMode2                            int32u
```

```
    80   DynamicRangeOptimizer                   int8u
   524   ReleaseMode3                            int8u
   528   ReleaseMode2                            int8u
   536   SelfTimer                               int8u
   540   FlashMode                               int8u
   546   StopsAboveBaseISO                       int16u
   548   BrightnessValue                         int16u
   552   DynamicRangeOptimizer                   int8u
   556   HDRSetting                              int8u
   560   ExposureCompensation                    int16s
   582   PictureProfile                          int8u
   583   PictureProfile                          int8u
   587   PictureEffect2                          int8u
   600   Quality2                                int8u
   604   MeteringMode                            int8u
   605   ExposureProgram                         int8u
   612   WB_RGBLevels                            int16u[3]
   812   FocalLength                             int16u
   814   MinFocalLength                          int16u
   816   MaxFocalLength                          int16u
   836   SonyISO                                 int16u
   904   MeterInfo?                              Sony MeterInfo
  6300   DistortionCorrParams                    int16s[16]
  6333   LensFormat                              int8u
  6334   LensMount                               int8u
  6335   LensType2                               int16u
  6338   LensType                                int16u
  6340   DistortionCorrParamsPresent             int8u
  6341   DistortionCorrParamsNumber              int8u
  6488   AspectRatio                             int8u
```

Sony Tag2010h Tags

Valid for
DSC-HX80/HX90V/RX0/RX1RM2/RX10M2/RX10M3/RX100M4/RX100M5/WX500,
ILCE-6300/6500/7RM2/7SM2, ILCA-99M2.

```
  Index1   Tag Name                             Writable
  ------   --------                             --------
       4   ReleaseMode2                         int32u
      80   DynamicRangeOptimizer                int8u
     524   ReleaseMode3                         int8u
     528   ReleaseMode2                         int8u
     536   SelfTimer                            int8u
     540   FlashMode                            int8u
     546   StopsAboveBaseISO                    int16u
     548   BrightnessValue                      int16u
     552   DynamicRangeOptimizer                int8u
     556   HDRSetting                           int8u
     560   ExposureCompensation                 int16s
     582   PictureProfile                       int8u
     583   PictureProfile                       int8u
     587   PictureEffect2                       int8u
     600   Quality2                             int8u
     604   MeteringMode                         int8u
     605   ExposureProgram                      int8u
     612   WB_RGBLevels                         int16u[3]
     812   FocalLength                          int16u
     814   MinFocalLength                       int16u
     816   MaxFocalLength                       int16u
     838   SonyISO                              int16u
     904   MeterInfo?                           Sony MeterInfo
     920   MeterInfo?                           Sony MeterInfo
    6348   DistortionCorrParams                 int16s[16]
    6381   LensFormat                           int8u
    6382   LensMount                            int8u
    6383   LensType2                            int16u
    6386   LensType                             int16u
    6388   DistortionCorrParamsPresent          int8u
    6389   DistortionCorrParamsNumber           int8u
```

```
  6444    AspectRatio                             int8u
```

Sony Tag2010i Tags

Valid for ILCE-6100/6400/6600/7C/7M3/7RM3/7RM4/9/9M2,
DSC-RX0M2/RX10M4/RX100M6/ RX100M5A/RX100M7/HX99.

```
  Index1   Tag Name                              Writable
  ------   --------                              --------
       4   ReleaseMode2                          int32u
      78   DynamicRangeOptimizer                 int8u
     516   ReleaseMode3                          int8u
     520   ReleaseMode2                          int8u
     528   SelfTimer                             int8u
     529   FlashMode                             int8u
     535   StopsAboveBaseISO                     int16u
     537   BrightnessValue                       int16u
     539   DynamicRangeOptimizer                 int8u
     543   HDRSetting                            int8u
     547   ExposureCompensation                  int16s
     567   PictureProfile                        int8u
     568   PictureProfile                        int8u
     572   PictureEffect2                        int8u
     583   Quality2                              int8u
     587   MeteringMode                          int8u
     588   ExposureProgram                       int8u
     594   WB_RGBLevels                          int16u[3]
     778   FocalLength                           int16u
     780   MinFocalLength                        int16u
     782   MaxFocalLength                        int16u
     800   SonyISO                               int16u
     877   MeterInfo?                            Sony MeterInfo9
    6096   DistortionCorrParams                  int16s[16]
    6129   LensFormat                            int8u
    6130   LensMount                             int8u
    6131   LensType2                             int16u
    6134   LensType                              int16u
    6136   DistortionCorrParamsPresent           int8u
    6137   DistortionCorrParamsNumber            int8u
    6284   AspectRatio                           int8u
```

Sony MeterInfo9 Tags

Information possibly related to metering. Extracted only if the
Unknown option is used.

```
  Index1   Tag Name                              Writable
  ------   --------                              --------
       0   MeterInfo1Row1                        no
      90   MeterInfo1Row2                        no
     180   MeterInfo1Row3                        no
     270   MeterInfo1Row4                        no
     360   MeterInfo1Row5                        no
     450   MeterInfo1Row6                        no
     540   MeterInfo1Row7                        no
     630   MeterInfo2Row1                        no
     740   MeterInfo2Row2                        no
     850   MeterInfo2Row3                        no
     960   MeterInfo2Row4                        no
    1070   MeterInfo2Row5                        no
    1180   MeterInfo2Row6                        no
    1290   MeterInfo2Row7                        no
    1400   MeterInfo2Row8                        no
    1510   MeterInfo2Row9                        no
```

Sony Tag202a Tags

```
  Index1   Tag Name                              Writable
  ------   --------                              --------
       1   FocalPlaneAFPointsUsed                int8u
```

```
     2   FocalPlaneAFPointArea                int16u[2]
     6   FocalPlaneAFPointLocation1           int16u[2]
    10   FocalPlaneAFPointLocation2           int16u[2]
    14   FocalPlaneAFPointLocation3           int16u[2]
    18   FocalPlaneAFPointLocation4           int16u[2]
    22   FocalPlaneAFPointLocation5           int16u[2]
    26   FocalPlaneAFPointLocation6           int16u[2]
    30   FocalPlaneAFPointLocation7           int16u[2]
    34   FocalPlaneAFPointLocation8           int16u[2]
    38   FocalPlaneAFPointLocation9           int16u[2]
    42   FocalPlaneAFPointLocation10          int16u[2]
    46   FocalPlaneAFPointLocation11          int16u[2]
    50   FocalPlaneAFPointLocation12          int16u[2]
    54   FocalPlaneAFPointLocation13          int16u[2]
    58   FocalPlaneAFPointLocation14          int16u[2]
    62   FocalPlaneAFPointLocation15          int16u[2]
```

Sony HiddenInfo Tags

```
  Index4   Tag Name                           Writable
  ------   --------                           --------
     0   HiddenDataOffset                     int32u
     1   HiddenDataLength                     int32u
```

Sony ShotInfo Tags

```
  Index1   Tag Name                           Writable
  ------   --------                           --------
     2   FaceInfoOffset                       no
     6   SonyDateTime                         string[20]
    26   SonyImageHeight                      int16u
    28   SonyImageWidth                       int16u
    48   FacesDetected                        int16u
    50   FaceInfoLength                       no
    52   MetaVersion                          string[16]
    72   FaceInfo1                            Sony FaceInfo1
    94   FaceInfo2                            Sony FaceInfo2
```

Sony FaceInfo1 Tags

```
  Index1   Tag Name                           Writable
  ------   --------                           --------
     0   Face1Position                        int16u[4]
    32   Face2Position                        int16u[4]
    64   Face3Position                        int16u[4]
    96   Face4Position                        int16u[4]
   128   Face5Position                        int16u[4]
   160   Face6Position                        int16u[4]
   192   Face7Position                        int16u[4]
   224   Face8Position                        int16u[4]
```

Sony FaceInfo2 Tags

```
  Index1   Tag Name                           Writable
  ------   --------                           --------
     0   Face1Position                        int16u[4]
    37   Face2Position                        int16u[4]
    74   Face3Position                        int16u[4]
   111   Face4Position                        int16u[4]
   148   Face5Position                        int16u[4]
   185   Face6Position                        int16u[4]
   222   Face7Position                        int16u[4]
   259   Face8Position                        int16u[4]
```

Sony Tag900b Tags

```
  Index1   Tag Name                           Writable
  ------   --------                           --------
     2   FacesDetected                        no
   189   FaceDetection                        no
```

Sony Tag9050a Tags

Data for tags 0x9050, 0x94xx and 0x2010 is encrypted by a simple
substitution cipher, but the deciphered values are listed below.

Index1	Tag Name	Writable
0	SonyMaxAperture	int8u
1	SonyMinAperture	int8u
32	Shutter	int16u[3]
49	FlashStatus	int8u
50	ShutterCount	int32u
58	SonyExposureTime	int16u
60	SonyFNumber	int16u
63	ReleaseMode2	int8u
76	ShutterCount2	int32u
81	SonyDateTime2	undef[6]
103	ReleaseMode2	int8u
124	InternalSerialNumber	int8u[4]~
240	InternalSerialNumber	int8u[5]
261	LensMount	int8u
262	LensFormat	int8u
263	LensType2	int16u
265	LensType	int16u
267	DistortionCorrParamsPresent	int8u
276	APS-CSizeCapture	int8u
277	LensSpecFeatures	undef[2]
278	LensSpecFeatures	undef[2]
416	ShutterCount3	int32u
426	ShutterCount3	int32u
445	ShutterCount3	int32u

Sony Tag9050b Tags

Valid from July 2015 for
ILCE-6100/6300/6400/6500/6600/7C/7M3/7RM2/7RM3/7RM4/ 7SM2/9/9M2,
ILCA-99M2.

Index1	Tag Name	Writable
0	SonyMaxAperture	int8u
1	SonyMinAperture	int8u
38	Shutter	int16u[3]
57	FlashStatus	int8u
58	ShutterCount	int32u
70	SonyExposureTime	int16u
72	SonyFNumber	int16u
75	ReleaseMode2	int8u
80	ShutterCount2	int32u
82	ShutterCount2	int32u
88	ShutterCount2	int32u
97	SonyTimeMinSec	no
107	ReleaseMode2	int8u
109	ReleaseMode2	int8u
115	ReleaseMode2	int8u
136	InternalSerialNumber	int8u[6]~
261	LensMount	int8u
262	LensFormat	int8u
263	LensType2	int16u
265	LensType	int16u
267	DistortionCorrParamsPresent	int8u
276	APS-CSizeCapture	int8u
278	LensSpecFeatures	undef[2]
415	ShutterCount3	int32u
459	ShutterCount3	int32u
461	ShutterCount3	int32u
491	APS-CSizeCapture	int8u
493	LensSpecFeatures	undef[2]
494	APS-CSizeCapture	int8u

```
   496    LensSpecFeatures                      undef[2]
   538    APS-CSizeCapture                      int8u
   540    LensSpecFeatures                      undef[2]
          APS-CSizeCapture                      int8u
   542    LensSpecFeatures                      undef[2]
```

Sony Tag9050c Tags

Valid from July 2020 for ILCE-1/7SM3, ILME-FX3.

Index1	Tag Name	Writable
38	Shutter	int16u[3]
57	FlashStatus	int8u
58	ShutterCount	int32u~
70	SonyExposureTime	int16u
72	SonyFNumber	int16u
75	ReleaseMode2	int8u
80	ShutterCount2	int32u
102	SonyExposureTime	int16u
104	SonyFNumber	int16u
107	ReleaseMode2	int8u
136	InternalSerialNumber	int8u[6]~
138	InternalSerialNumber	int8u[6]~

Sony Tag9050d Tags

Valid for ILCE-6700/7CM2/7CR/ZV-E1. Also for ILCE-1M2 when using
mechanical shutter.

Index1	Tag Name	Writable
10	ShutterCount	int32u
26	SonyExposureTime	int16u
28	SonyFNumber	int16u
31	ReleaseMode2	int8u
56	InternalSerialNumber	int8u[6]~

Sony Tag9400a Tags

Valid for many DSC, NEX and SLT models

Index1	Tag Name	Writable
8	SequenceImageNumber	int32u
12	SequenceFileNumber	int32u
16	ReleaseMode2	int8u
18	DigitalZoom	int8u
26	ShotNumberSincePowerUp	int32u
34	SequenceLength	int8u
40	CameraOrientation	int8u
41	Quality2	int8u
68	SonyImageHeight	int16u~
82	ModelReleaseYear	int8u~

Sony Tag9400b Tags

Valid for NEX-3N, ILCE-3000/3500, SLT-A58, DSC-WX60, DSC-WX300,
DSC-RX100M2, DSC-HX50V, DSC-QX10/QX100.

Index1	Tag Name	Writable
8	SequenceImageNumber	int32u
12	SequenceFileNumber	int32u
16	ReleaseMode2	int8u
18	DigitalZoom	int8u
22	ShotNumberSincePowerUp	int32u
30	SequenceLength	int8u
36	CameraOrientation	int8u
37	Quality2	int8u

```
   63    SonyImageHeight                       int16u~
   70    ModelReleaseYear                      int8u~
```

Sony Tag9400c Tags

Valid for DSC-HX60V/HX80/HX90V/HX99/HX350/HX400V/QX30/RX0/RX1RM2/RX10/
RX10M2/RX10M3/RX10M4/RX100M3/RX100M4/RX100M5/RX100M5A/RX100M6/RX100M7/WX220/
WX350/WX500,
ILCE-1/7/7C/7R/7S/7M2/7M3/7RM2/7RM3/7RM4/7SM2/7SM3/9/9M2/5000/
5100/6000/6100/6300/6400/6500/6600/QX1, ILCA-68/77M2/99M2.

```
  Index1   Tag Name                           Writable
  ------   --------                           --------
      9    ReleaseMode2                        int8u
     10    ShotNumberSincePowerUp              int32u
     18    SequenceImageNumber                 int32u
     22    SequenceLength                      int8u
     26    SequenceFileNumber                  int32u
     30    SequenceLength                      int8u
     41    CameraOrientation                   int8u
     42    Quality2                            int8u
     83    ModelReleaseYear                    int8u~
    307    ShutterType                         int8u
    313    ShutterType                         int8u
    319    ShutterType                         int8u
```

Sony Tag9401 Tags

```
  Index1   Tag Name                           Writable
  ------   --------                           --------
    994    ISOInfo                             Sony ISOInfo
   1012    ISOInfo                             Sony ISOInfo
   1102    ISOInfo                             Sony ISOInfo
   1176    ISOInfo                             Sony ISOInfo
   1181    ISOInfo                             Sony ISOInfo
   1182    ISOInfo                             Sony ISOInfo
   1185    ISOInfo                             Sony ISOInfo
   1186    ISOInfo                             Sony ISOInfo
   1210    ISOInfo                             Sony ISOInfo
   1437    ISOInfo                             Sony ISOInfo
   1588    ISOInfo                             Sony ISOInfo
   1590    ISOInfo                             Sony ISOInfo
   1612    ISOInfo                             Sony ISOInfo
   1619    ISOInfo                             Sony ISOInfo
   1656    ISOInfo                             Sony ISOInfo
   1720    ISOInfo                             Sony ISOInfo
   1758    ISOInfo                             Sony ISOInfo
   1767    ISOInfo                             Sony ISOInfo
```

Sony ISOInfo Tags

```
  Index1   Tag Name                           Writable
  ------   --------                           --------
      0    ISOSetting                          int8u
      2    ISOAutoMin                          int8u
      4    ISOAutoMax                          int8u
```

Sony Tag9402 Tags

```
  Index1   Tag Name                           Writable
  ------   --------                           --------
      4    AmbientTemperature                  int8s
     22    FocusMode                           int8u & 0x7f
     23    AFAreaMode                          int8u
     45    FocusPosition2                      int8u
```

Sony Tag9403 Tags

```
  Index1   Tag Name                           Writable
  ------   --------                           --------
```

```
    5    CameraTemperature                       int8s
```

Sony Tag9404a Tags

```
  Index1   Tag Name                             Writable
  ------   --------                             --------
    11    ExposureProgram                        int8u
    13    IntelligentAuto                        int8u
    25    LensZoomPosition                       int16u
```

Sony Tag9404b Tags

```
  Index1   Tag Name                             Writable
  ------   --------                             --------
    12    ExposureProgram                        int8u
    14    IntelligentAuto                        int8u
    30    LensZoomPosition                       int16u
    32    FocusPosition2                         int8u
```

Sony Tag9404c Tags

```
  Index1   Tag Name                             Writable
  ------   --------                             --------
    11    ExposureProgram                        int8u
    13    IntelligentAuto                        int8u
```

Sony Tag9405a Tags

Valid for SLT, NEX, ILCE-3000/3500 and several DSC models.

```
  Index1   Tag Name                             Writable
  ------   --------                             --------
  1536    DistortionCorrParamsPresent            int8u
  1537    DistortionCorrection                   int8u
  1539    LensFormat                             int8u
  1540    LensMount                              int8u
  1541    LensType2                              int16u
  1544    LensType                               int16u
  1610    VignettingCorrParams                   int16s[16]
  1642    ChromaticAberrationCorrParams          int16s[32]
  1738    DistortionCorrParams                   int16s[16]
```

Sony Tag9405b Tags

Valid for DSC-HX60V/HX80/HX90V/HX99/HX350/HX400V/QX30/RX0/RX10/RX10M2/
RX10M3/RX10M4/RX100M3/RX100M4/RX100M5/RX100M5A/RX100M6/RX100M7/WX220/WX350,
ILCE-7/7M2/7M3/7R/7RM2/7RM3/7RM4/7S/7SM2/9/9M2/5000/5100/6000/6100/6300/
6400/6500/6600/QX1, ILCA-68/77M2/99M2.

```
  Index1   Tag Name                             Writable
  ------   --------                             --------
     4    SonyISO                                int16u
     6    BaseISO                                int16u
    10    StopsAboveBaseISO                      int16u
    14    SonyExposureTime2                      int16u
    16    ExposureTime                           rational32u
    20    SonyFNumber                            int16u
    22    SonyMaxApertureValue                   int16u
    36    SequenceImageNumber                    int32u
    52    ReleaseMode2                           int8u
    62    SonyImageWidthMax                      int16u
    64    SonyImageHeightMax                     int16u
    66    HighISONoiseReduction                  int8u
    68    LongExposureNoiseReduction             int8u
    70    PictureEffect2                         int8u
    72    ExposureProgram                        int8u
    74    CreativeStyle                          int8u
    82    Sharpness                              int8s
    90    DistortionCorrParamsPresent            int8u
    91    DistortionCorrection                   int8u
```

```
   93    LensFormat                          int8u
   94    LensMount                           int8u
   96    LensType2                           int16u
   98    LensType                            int16u
  100    DistortionCorrParams                int16s[16]
  834    LensZoomPosition                    int16u
  842    VignettingCorrParams                int16s[16]
  846    LensZoomPosition                    int16u
  848    VignettingCorrParams                int16s[16]
  858    LensZoomPosition                    int16u
  860    VignettingCorrParams                int16s[16]
  872    VignettingCorrParams                int16s[16]
  892    ChromaticAberrationCorrParams       int16s[32]
  900    ChromaticAberrationCorrParams       int16s[32]
  924    ChromaticAberrationCorrParams       int16s[32]
  944    ChromaticAberrationCorrParams       int16s[32]
  952    ChromaticAberrationCorrParams       int16s[32]
```

Sony Tag9406 Tags

```
  Index1   Tag Name                          Writable
  ------   --------                          --------
      5    BatteryTemperature                int8u
      6    BatteryLevelGrip1                 int8u
      7    BatteryLevel                      int8u
      8    BatteryLevelGrip2                 int8u
```

Sony Tag9406b Tags

```
  Index1   Tag Name                          Writable
  ------   --------                          --------
      5    BatteryLevel                      int8u
      7    BatteryLevel2                     int8u
```

Sony Tag940a Tags

These tags are currently extracted for SLT models only.

```
  Index1   Tag Name                          Writable
  ------   --------                          --------
      4    AFPointsSelected                  int32u
```

Sony Tag940c Tags

E-mount cameras only.

```
  Index1   Tag Name                          Writable
  ------   --------                          --------
      8    LensMount2                        int8u
      9    LensType3                         int16u
     11    CameraE-mountVersion              int16u
     13    LensE-mountVersion                int16u
     20    LensFirmwareVersion               int16u~
```

Sony AFInfo Tags

These tags are currently extracted for SLT models only.

```
  Index1   Tag Name                          Writable
  ------   --------                          --------
      2    AFType                            int8u
      4    AFStatusActiveSensor              int16s
      5    FocusMode                         int8u
      7    AFPoint                           int8u
      8    AFPointInFocus                    int8u
      9    AFPointAtShutterRelease           int8u
     10    AFAreaMode                        int8u
     11    FocusMode                         int8u
     16    AFPointsUsed                      int8u[10]
     17    AFStatus15                        Sony AFStatus15
```

```
         AFStatus19                             Sony AFStatus19
    55   AFPoint                                int8u
    56   AFPointInFocus                         int8u
    57   AFPointAtShutterRelease                int8u
    58   AFAreaMode                             int8u
    59   AFStatusActiveSensor                   int16s
    67   ExposureProgram                        int8u
    80   AFMicroAdj                             int8s
   125   AFStatus79                             Sony AFStatus79
   366   AFPointsUsed                           int32u
   381   AFMicroAdj                             int8s
   382   ExposureProgram                        int8u
```

Sony AFStatus19 Tags

AF Status information for models with 19-point AF.

Index1	Tag Name	Writable
0	AFStatusUpperFarLeft	int16s
2	AFStatusUpper-leftHorizontal	int16s
4	AFStatusFarLeftHorizontal	int16s
6	AFStatusLeftHorizontal	int16s
8	AFStatusLowerFarLeft	int16s
10	AFStatusLower-leftHorizontal	int16s
12	AFStatusUpper-leftVertical	int16s
14	AFStatusLeftVertical	int16s
16	AFStatusLower-leftVertical	int16s
18	AFStatusFarLeftVertical	int16s
20	AFStatusTopHorizontal	int16s
22	AFStatusNearRight	int16s
24	AFStatusCenterHorizontal	int16s
26	AFStatusNearLeft	int16s
28	AFStatusBottomHorizontal	int16s
30	AFStatusTopVertical	int16s
32	AFStatusUpper-middle	int16s
34	AFStatusCenterVertical	int16s
36	AFStatusLower-middle	int16s
38	AFStatusBottomVertical	int16s
40	AFStatusUpperFarRight	int16s
42	AFStatusUpper-rightHorizontal	int16s
44	AFStatusFarRightHorizontal	int16s
46	AFStatusRightHorizontal	int16s
48	AFStatusLowerFarRight	int16s
50	AFStatusLower-rightHorizontal	int16s
52	AFStatusFarRightVertical	int16s
54	AFStatusUpper-rightVertical	int16s
56	AFStatusRightVertical	int16s
58	AFStatusLower-rightVertical	int16s

Sony AFStatus79 Tags

AF Status information for models with 79-point AF.

Index1	Tag Name	Writable
0	AFStatus_00_B4	int16s
2	AFStatus_01_C4	int16s
4	AFStatus_02_D4	int16s
6	AFStatus_03_E4	int16s
8	AFStatus_04_F4	int16s
10	AFStatus_05_G4	int16s
12	AFStatus_06_H4	int16s
14	AFStatus_07_B3	int16s
16	AFStatus_08_C3	int16s
18	AFStatus_09_D3	int16s
20	AFStatus_10_E3	int16s
22	AFStatus_11_F3	int16s
24	AFStatus_12_G3	int16s
26	AFStatus_13_H3	int16s

```
 28    AFStatus_14_B2                              int16s
 30    AFStatus_15_C2                              int16s
 32    AFStatus_16_D2                              int16s
 34    AFStatus_17_E2                              int16s
 36    AFStatus_18_F2                              int16s
 38    AFStatus_19_G2                              int16s
 40    AFStatus_20_H2                              int16s
 42    AFStatus_21_C1                              int16s
 44    AFStatus_22_D1                              int16s
 46    AFStatus_23_E1                              int16s
 48    AFStatus_24_F1                              int16s
 50    AFStatus_25_G1                              int16s
 52    AFStatus_26_A7_Vertical                     int16s
 54    AFStatus_27_A6_Vertical                     int16s
 56    AFStatus_28_A5_Vertical                     int16s
 58    AFStatus_29_C7_Vertical                     int16s
 60    AFStatus_30_C6_Vertical                     int16s
 62    AFStatus_31_C5_Vertical                     int16s
 64    AFStatus_32_E7_Vertical                     int16s
 66    AFStatus_33_E6_Center_Vertical              int16s
 68    AFStatus_34_E5_Vertical                     int16s
 70    AFStatus_35_G7_Vertical                     int16s
 72    AFStatus_36_G6_Vertical                     int16s
 74    AFStatus_37_G5_Vertical                     int16s
 76    AFStatus_38_I7_Vertical                     int16s
 78    AFStatus_39_I6_Vertical                     int16s
 80    AFStatus_40_I5_Vertical                     int16s
 82    AFStatus_41_A7                              int16s
 84    AFStatus_42_B7                              int16s
 86    AFStatus_43_C7                              int16s
 88    AFStatus_44_D7                              int16s
 90    AFStatus_45_E7                              int16s
 92    AFStatus_46_F7                              int16s
 94    AFStatus_47_G7                              int16s
 96    AFStatus_48_H7                              int16s
 98    AFStatus_49_I7                              int16s
100    AFStatus_50_A6                              int16s
102    AFStatus_51_B6                              int16s
104    AFStatus_52_C6                              int16s
106    AFStatus_53_D6                              int16s
108    AFStatus_54_E6_Center                       int16s
110    AFStatus_55_F6                              int16s
112    AFStatus_56_G6                              int16s
114    AFStatus_57_H6                              int16s
116    AFStatus_58_I6                              int16s
118    AFStatus_59_A5                              int16s
120    AFStatus_60_B5                              int16s
122    AFStatus_61_C5                              int16s
124    AFStatus_62_D5                              int16s
126    AFStatus_63_E5                              int16s
128    AFStatus_64_F5                              int16s
130    AFStatus_65_G5                              int16s
132    AFStatus_66_H5                              int16s
134    AFStatus_67_I5                              int16s
136    AFStatus_68_C11                             int16s
138    AFStatus_69_D11                             int16s
140    AFStatus_70_E11                             int16s
142    AFStatus_71_F11                             int16s
144    AFStatus_72_G11                             int16s
146    AFStatus_73_B10                             int16s
148    AFStatus_74_C10                             int16s
150    AFStatus_75_D10                             int16s
152    AFStatus_76_E10                             int16s
154    AFStatus_77_F10                             int16s
156    AFStatus_78_G10                             int16s
158    AFStatus_79_H10                             int16s
160    AFStatus_80_B9                              int16s
162    AFStatus_81_C9                              int16s
164    AFStatus_82_D9                              int16s
166    AFStatus_83_E9                              int16s
```

```
      168     AFStatus_84_F9                        int16s
      170     AFStatus_85_G9                        int16s
      172     AFStatus_86_H9                        int16s
      174     AFStatus_87_B8                        int16s
      176     AFStatus_88_C8                        int16s
      178     AFStatus_89_D8                        int16s
      180     AFStatus_90_E8                        int16s
      182     AFStatus_91_F8                        int16s
      184     AFStatus_92_G8                        int16s
      186     AFStatus_93_H8                        int16s
      188     AFStatus_94_E6_Center_F2-8            int16s
```

Sony Tag940e Tags

E-mount models.

```
  Index1    Tag Name                          Writable
  ------    --------                          --------
    6662    TiffMeteringImageWidth            no
    6663    TiffMeteringImageHeight           no
    6664    TiffMeteringImage                 no
```

Sony Tag9416 Tags

Valid for the ILCE-1/6700/7CM2/7CR/7M4/7RM5/7SM3/9M3, ILME-FX3/FX30, ZV-E1/E10M2.

```
  Index1    Tag Name                          Writable
  ------    --------                          --------
       0    Tag9416_0000                      no
       4    SonyISO                           no
       6    StopsAboveBaseISO                 no
      10    SonyExposureTime2                 no
      12    ExposureTime                      no
      16    SonyFNumber2                      no
      18    SonyMaxApertureValue              no
      29    SequenceImageNumber               no
      43    ReleaseMode2                      no
      53    ExposureProgram                   no
      55    CreativeStyle                     no
      72    LensMount                         no
      73    LensFormat                        no
      74    LensMount                         no
      75    LensType2                         no
      77    LensType                          no
      79    DistortionCorrParams              no
     112    PictureProfile                    no
     113    FocalLength                       no
     115    MinFocalLength                    no
     117    MaxFocalLength                    no
    2191    VignettingCorrParams              no
    2193    VignettingCorrParams              no
    2205    VignettingCorrParams              no
    2229    APS-CSizeCapture                  no
    2231    APS-CSizeCapture                  no
    2277    APS-CSizeCapture                  no
    2324    ChromaticAberrationCorrParams     no
    2326    ChromaticAberrationCorrParams     no
    2373    ChromaticAberrationCorrParams     no
```

Sony PIC Tags

The TextInfo data is extracted as a block to preserve the formatting, and some of the more interesting information is extracted as separate tags.

```
  Tag ID              Tag Name            Writable
  ------              --------            --------
  'BC:'               Barcode             no
  'BarCode:'          Barcode             no
```

```
  'Capt:'              SensorTemperature         no
  'FWVer:'             FirmwareVersion           no
  'IFD'                PIC_IFD                   Sony
  'Temp:'              CameraTemperature         no
  'Temp:Clbt:'         BoardTemperature          no
  'TextInfo1'          TextInfo1                 no
  'TextInfo2'          TextInfo2                 no
  'VR Enable C:'       VibrationReduction        no
  'barcode:'           Barcode                   no
```

Sony Ericsson Tags

Maker notes found in images from some Sony Ericsson phones.

```
  Tag ID    Tag Name                    Writable
  ------    --------                    --------
  0x0201    PreviewImageStart           int32u*
  0x0202    PreviewImageLength          int32u*
  0x2000    MakerNoteVersion            undef[4]
```

Sony SRF Tags

The maker notes in SRF (Sony Raw Format) images contain 7 IFD's with
family 1 group names SRF0 through SRF6. SRF0 and SRF1 use the tags in
this table, while SRF2 through SRF5 use the tags in the next table, and
SRF6 uses standard EXIF tags. All information other than SRF0 is
encrypted, but thanks to Dave Coffin the decryption algorithm is known.
SRF images are written by the Sony DSC-F828 and DSC-V3.

```
  Tag ID    Tag Name                    Writable
  ------    --------                    --------
  0x0000    SRF2Key                     no
  0x0001    DataKey                     no
```

Sony SR2Private Tags

The SR2 format uses the DNGPrivateData tag to reference a private IFD
containing these tags. SR2 images are written by the Sony DSC-R1, but
this information is also written to ARW images by other models.

```
  Tag ID    Tag Name                    Writable
  ------    --------                    --------
  0x7200    SR2SubIFDOffset             no
  0x7201    SR2SubIFDLength             no
  0x7221    SR2SubIFDKey                no
  0x7240    IDC_IFD                     SonyIDC
  0x7241    IDC2_IFD                    SonyIDC
  0x7250    MRWInfo                     MinoltaRaw
```

Sony SRF2 Tags

These tags are found in the SRF2 through SRF5 IFD's.

```
  Tag ID    Tag Name                    Writable
  ------    --------                    --------
  0x0002    SRF6Offset                  no
  0x0003    SRFDataOffset?              no
  0x0004    RawDataOffset               no
  0x0005    RawDataLength               no
  0x0043    MaxApertureAtMaxFocal       no
  0x0044    MaxApertureAtMinFocal       no
  0x0045    MinFocalLength              no
  0x0046    MaxFocalLength              no
  0x00c0    WBRedDaylight               no
  0x00c1    WBGreenDaylight             no
  0x00c2    WBBlueDaylight              no
  0x00c3    WBRedCloudy                 no
  0x00c4    WBGreenCloudy               no
  0x00c5    WBBlueCloudy                no
  0x00c6    WBRedFluorescent            no
```

```
0x00c7    WBGreenFluorescent                      no
0x00c8    WBBlueFluorescent                       no
0x00c9    WBRedTungsten                           no
0x00ca    WBGreenTungsten                         no
0x00cb    WBBlueTungsten                          no
0x00cc    WBRedFlash                              no
0x00cd    WBGreenFlash                            no
0x00ce    WBBlueFlash                             no
0x00d0    WBRedAsShot                             no
0x00d1    WBGreenAsShot                           no
0x00d2    WBBlueAsShot                            no
```

Sony SR2SubIFD Tags

Tags in the encrypted SR2SubIFD

```
Tag ID    Tag Name                                Writable
------    --------                                --------
0x7300    BlackLevel                              int16u[4]!
0x7302    WB_GRBGLevelsAuto                       int16s[4]!
0x7303    WB_GRBGLevels                           int16s[4]!
0x7310    BlackLevel                              int16u[4]!
0x7312    WB_RGGBLevelsAuto                       int16s[4]!
0x7313    WB_RGGBLevels                           int16s[4]!
0x7480    WB_RGBLevelsDaylight                    int16s[4]!
0x7481    WB_RGBLevelsCloudy                      int16s[4]!
0x7482    WB_RGBLevelsTungsten                    int16s[4]!
0x7483    WB_RGBLevelsFlash                       int16s[4]!
0x7484    WB_RGBLevels4500K                       int16s[4]!
0x7486    WB_RGBLevelsFluorescent                 int16s[4]!
0x74a0    MaxApertureAtMaxFocal                   no
0x74a1    MaxApertureAtMinFocal                   no
0x74a2    MaxFocalLength                          no
0x74a3    MinFocalLength                          no
0x74c0    SR2DataIFD                              Sony SR2DataIFD
0x7800    ColorMatrix                             no
0x7820    WB_RGBLevelsDaylight                    int16s[3]!
0x7821    WB_RGBLevelsCloudy                      int16s[3]!
0x7822    WB_RGBLevelsTungsten                    int16s[3]!
0x7823    WB_RGBLevelsFlash                       int16s[3]!
0x7824    WB_RGBLevels4500K                       int16s[3]!
0x7825    WB_RGBLevelsShade                       int16s[3]!
0x7826    WB_RGBLevelsFluorescent                 int16s[3]!
0x7827    WB_RGBLevelsFluorescentP1               int16s[3]!
0x7828    WB_RGBLevelsFluorescentP2               int16s[3]!
0x7829    WB_RGBLevelsFluorescentM1               int16s[3]!
0x782a    WB_RGBLevels8500K                       int16s[3]!
0x782b    WB_RGBLevels6000K                       int16s[3]!
0x782c    WB_RGBLevels3200K                       int16s[3]!
0x782d    WB_RGBLevels2500K                       int16s[3]!
0x787f    WhiteLevel                              int16u[3]!
0x797d    VignettingCorrParams                    no
0x7980    ChromaticAberrationCorrParams           no
0x7982    DistortionCorrParams                    no
```

Sony SR2DataIFD Tags

```
Tag ID    Tag Name                                Writable
------    --------                                --------
0x7770    ColorMode                               no
```

Sony PMP Tags

These tags are written in the proprietary-format header of PMP images
from the DSC-F1.

```
Index1    Tag Name                                Writable
------    --------                                --------
     8    JpgFromRawStart                         no
    12    JpgFromRawLength                        no
```

```
   22    SonyImageWidth                       no
   24    SonyImageHeight                      no
   27    Orientation                          no
   29    ImageQuality                         no
   52    Comment                              no
   76    DateTimeOriginal                     no
   84    ModifyDate                           no
  102    ExposureTime                         no
  106    FNumber                              no
  108    ExposureCompensation                 no
  112    FocalLength                          no
  118    Flash                                no
```

Sony rtmd Tags

These tags are extracted from the 'rtmd' timed metadata of MP4 videos
from some models when the ExtractEmbedded option is used.

```
  Tag ID   Tag Name                           Writable
  ------   --------                           --------
  0x8000   FNumber                            no
  0x8109   ExposureTime                       no
  0x810a   MasterGainAdjustment               no
  0x810b   ISO                                no
  0x810c   ElectricalExtenderMagnification    no
  0x8500   GPSVersionID                       no
  0x8501   GPSLatitudeRef                     no
  0x8502   GPSLatitude                        no
  0x8503   GPSLongitudeRef                    no
  0x8504   GPSLongitude                       no
  0x8507   GPSTimeStamp                       no
  0x8509   GPSStatus                          no
  0x850a   GPSMeasureMode                     no
  0x8512   GPSMapDatum                        no
  0x851d   GPSDateStamp                       no
  0xe303   WhiteBalance                       no
  0xe304   DateTime                           no
  0xe43b   PitchRollYaw                       no
  0xe44b   Accelerometer                      no
```

SonyIDC Tags
    Tags written by the Sony Image Data Converter utility in ARW images.

```
  Tag ID   Tag Name                           Writable
  ------   --------                           --------
  0x0201   IDCPreviewStart                    int32u*
  0x0202   IDCPreviewLength                   int32u*
  0x8000   IDCCreativeStyle                   int32u
  0x8001   CreativeStyleWasChanged            int32u
  0x8002   PresetWhiteBalance                 int32u
  0x8013   ColorTemperatureAdj                int16u
  0x8014   PresetWhiteBalanceAdj              int32s
  0x8015   ColorCorrection                    int32s
  0x8016   SaturationAdj                      int32s
  0x8017   ContrastAdj                        int32s
  0x8018   BrightnessAdj                      int32s
  0x8019   HueAdj                             int32s
  0x801a   SharpnessAdj                       int32s
  0x801b   SharpnessOvershoot                 int32s
  0x801c   SharpnessUndershoot                int32s
  0x801d   SharpnessThreshold                 int32s
  0x801e   NoiseReductionMode                 int16u
  0x8021   GrayPoint                          int16u[4]
  0x8022   D-RangeOptimizerMode               int16u
  0x8023   D-RangeOptimizerValue              int32s
  0x8024   D-RangeOptimizerHighlight          int32s
  0x8026   HighlightColorDistortReduct        int16u
  0x8027   NoiseReductionValue                int32s
  0x8028   EdgeNoiseReduction                 int32s
  0x8029   ColorNoiseReduction                int32s
```

```
0x802d   D-RangeOptimizerShadow              int32s
0x8030   PeripheralIllumCentralRadius        int32s
0x8031   PeripheralIllumCentralValue         int32s
0x8032   PeripheralIllumPeriphValue          int32s
0x8040   DistortionCompensation              int32s
0x9000   ToneCurveBrightnessX                int16u[n]
0x9001   ToneCurveRedX                       int16u[n]
0x9002   ToneCurveGreenX                     int16u[n]
0x9003   ToneCurveBlueX                      int16u[n]
0x9004   ToneCurveBrightnessY                int16u[n]
0x9005   ToneCurveRedY                       int16u[n]
0x9006   ToneCurveGreenY                     int16u[n]
0x9007   ToneCurveBlueY                      int16u[n]
0x900d   ChromaticAberrationCorrection       int32s
0x900e   InclinationCorrection               int32u
0x900f   InclinationAngle                    int32s
0x9010   Cropping                            int32u
0x9011   CropArea                            int32u[4]
0x9012   PreviewImageSize                    int32u[2]
0x9013   PxShiftPeriphEdgeNR                 int32s
0x9014   PxShiftPeriphEdgeNRValue            int32s
0x9017   WhitesAdj                           int32s
0x9018   BlacksAdj                           int32s
0x9019   HighlightsAdj                       int32s
0x901a   ShadowsAdj                          int32s
0xd000   CurrentVersion                      int32u
0xd001   VersionIFD                          SonyIDC
0xd100   VersionCreateDate                   string
0xd101   VersionModifyDate                   string
```

Unknown Tags

The following tags are decoded in unsupported maker notes. Use the
Unknown (-u) option to display other unknown tags.

```
Tag ID   Tag Name                           Writable
------   --------                           --------
0x0e00   PrintIM                            PrintIM
```

DNG Tags

The main DNG tags are found in the EXIF table. The tables below define
only information found within structures of these main DNG tag values.
See <https://helpx.adobe.com/camera-raw/digital-negative.html> for the
official DNG specification.

DNG AdobeData Tags

This information is found in the "Adobe" DNGPrivateData.

The maker notes ('MakN') are processed by ExifTool, but some
information may have been lost by the Adobe DNG Converter. This is
because the Adobe DNG Converter (as of version 6.3) doesn't properly
handle information referenced from inside the maker notes that lies
outside the original maker notes block. This information is lost when
only the maker note block is copied to the DNG image.   While this
doesn't effect all makes of cameras, it is a problem for some major
brands such as Olympus and Sony.

Other entries in this table represent proprietary information that is
extracted from the original RAW image and restructured to a different
(but still proprietary) Adobe format.

```
Tag ID   Tag Name                           Writable
------   --------                           --------
'CRW '   AdobeCRW                           CanonRaw
'Koda'   AdobeKoda                          Kodak IFD
'Leaf'   AdobeLeaf                          Leaf SubIFD
'MRW '   AdobeMRW                           MinoltaRaw
'MakN'   MakerNoteApple                     Apple
         MakerNoteNikon                     Nikon
         MakerNoteCanon                     Canon
```

```
MakerNoteCasio                          Casio
MakerNoteCasio2                         Casio Type2
MakerNoteDJIInfo                        DJI Info
MakerNoteDJI                            DJI
MakerNoteFLIR                           FLIR
MakerNoteFujiFilm                       FujiFilm
MakerNoteGE                             GE
MakerNoteGE2                            FujiFilm
MakerNoteHasselblad                     Unknown
MakerNoteHP                             HP
MakerNoteHP2                            HP Type2
MakerNoteHP4                            HP Type4
MakerNoteHP6                            HP Type6
MakerNoteISL                            Unknown
MakerNoteJVC                            JVC
MakerNoteJVCText                        JVC Text
MakerNoteKodak1a                        Kodak
MakerNoteKodak1b                        Kodak
MakerNoteKodak2                         Kodak Type2
MakerNoteKodak3                         Kodak Type3
MakerNoteKodak4                         Kodak Type4
MakerNoteKodak5                         Kodak Type5
MakerNoteKodak6a                        Kodak Type6
MakerNoteKodak6b                        Kodak Type6
MakerNoteKodak7                         Kodak Type7
MakerNoteKodak8a                        Kodak Type8
MakerNoteKodak8b                        Kodak Type8
MakerNoteKodak8c                        Kodak Type8
MakerNoteKodak9                         Kodak Type9
MakerNoteKodak10                        Kodak Type10
MakerNoteKodak11                        Kodak Type11
MakerNoteKodak12                        Kodak Type11
MakerNoteKodakUnknown                   Kodak Unknown
MakerNoteKyocera                        Unknown
MakerNoteMinolta                        Minolta
MakerNoteMinolta2                       Olympus
MakerNoteMinolta3                       undef
MakerNoteMotorola                       Motorola
MakerNoteNikon2                         Nikon Type2
MakerNoteNikon3                         Nikon
MakerNoteNintendo                       Nintendo
MakerNoteOlympus                        Olympus
MakerNoteOlympus2                       Olympus
MakerNoteOlympus3                       Olympus
MakerNoteLeica                          Panasonic
MakerNoteLeica2                         Panasonic Leica2
MakerNoteLeica3                         Panasonic Leica3
MakerNoteLeica4                         Panasonic Leica4
MakerNoteLeica5                         Panasonic Leica5
MakerNoteLeica6                         Panasonic Leica6
MakerNoteLeica7                         Panasonic Leica6
MakerNoteLeica8                         Panasonic Leica5
MakerNoteLeica9                         Panasonic Leica9
MakerNoteLeica10                        Panasonic
MakerNotePanasonic                      Panasonic
MakerNotePanasonic2                     Panasonic Type2
MakerNotePanasonic3                     Panasonic
MakerNotePentax                         Pentax
MakerNotePentax2                        Pentax Type2
MakerNotePentax3                        Casio Type2
MakerNotePentax4                        Pentax Type4
MakerNotePentax5                        Pentax
MakerNotePentax6                        Pentax S1
MakerNotePhaseOne                       PhaseOne
MakerNoteReconyx                        Reconyx
MakerNoteReconyx2                       Reconyx Type2
MakerNoteReconyx3                       Reconyx Type3
MakerNoteRicohPentax                    Pentax
MakerNoteRicoh                          Ricoh
MakerNoteRicoh2                         Ricoh Type2
```

```
              MakerNoteRicohText                    Ricoh Text
              MakerNoteSamsung1a                    undef
              MakerNoteSamsung1b                    Samsung
              MakerNoteSamsung2                     Samsung Type2
              MakerNoteSanyo                        Sanyo
              MakerNoteSanyoC4                      Sanyo
              MakerNoteSanyoPatch                   Sanyo
              MakerNoteSigma                        Sigma
              MakerNoteSony                         Sony
              MakerNoteSony2                        Olympus
              MakerNoteSony3                        Olympus
              MakerNoteSony4                        Sony PIC
              MakerNoteSony5                        Sony
              MakerNoteSonyEricsson                 Sony Ericsson
              MakerNoteSonySRF                      Sony SRF
              MakerNoteUnknownText                  undef
              MakerNoteUnknownBinary                undef
              MakerNoteUnknown                      Unknown
    'Pano'    AdobePano                             PanasonicRaw
    'RAF '    AdobeRAF                              FujiFilm RAF
    'SR2 '    AdobeSR2                              Sony SR2Private
```

DNG OriginalRaw Tags

This table defines tags extracted from the DNG OriginalRawFileData information.

Tag ID	Tag Name	Writable
0x0000	OriginalRawImage	no
0x0001	OriginalRawResource	no
0x0002	OriginalRawFileType	no
0x0003	OriginalRawCreator	no
0x0004	OriginalTHMImage	no
0x0005	OriginalTHMResource	no
0x0006	OriginalTHMFileType	no
0x0007	OriginalTHMCreator	no

DNG ImageSeq Tags

Index1	Tag Name	Writable
0	SeqID	no
1	SeqType	no
2	SeqFrameInfo	no
3	SeqIndex	no
7	SeqCount	no
11	SeqFinal	no

DNG ProfileDynamicRange Tags

Index1	Tag Name	Writable
0	PDRVersion	no
2	DynamicRange	no
4	HintMaxOutputValue	no

JSON Tags

Other than a few tags in the table below, JSON tags have not been pre-defined. However, ExifTool will read any existing tags from basic JSON-formatted files.

Tag Name	Writable
AdjustmentsSettingsStatisticsLightMap	no
ON1_SettingsData	PLIST
ON1_SettingsMetadataCreated	no
ON1_SettingsMetadataModified	no
ON1_SettingsMetadataName	no
ON1_SettingsMetadataPluginID	no

```
    ON1_SettingsMetadataTimestamp                  no
    ON1_SettingsMetadataUsage                      no
    ON1_SettingsMetadataVisibleToUser              no
```

CBOR Tags

The tags below are extracted from CBOR (Concise Binary Object Representation) metadata. The C2PA specification uses this format for some metadata. As well as these tags, ExifTool will read any existing tags.

```
    Tag Name                                 Writable
    --------                                 --------
    AuthorIdentifier                         no
    AuthorName                               no
    DocumentID                               no
    Format                                   no
    InstanceID                               no
    Relationship                             no
    ThumbnailHash                            no+
    ThumbnailURL                             no
    Title                                    no
```

PLIST Tags

Apple Property List tags. ExifTool reads both XML and binary-format PLIST files, and will extract any existing tags even if they aren't listed below. These tags belong to the family 0 "PLIST" group, but family 1 group may be either "XML" or "PLIST" depending on whether the format is XML or binary.

```
    Tag ID      Tag Name                     Writable
    ------      --------                     --------
    'MetaDataList//DateTimeOriginal'
            DateTimeOriginal                 no
    'MetaDataList//Duration' Duration        no
    'MetaDataList//Geolocation/Latitude'
            GPSLatitude                      no
    'MetaDataList//Geolocation/Longitude'
            GPSLongitude                     no
    'MetaDataList//Geolocation/MapDatum'
            GPSMapDatum                      no
    'XMLFileType' XMLFileType                no
    'adjustmentData' AdjustmentData          PLIST
    'cast//name' Cast                        no+
    'codirectors//name' Codirectors         no+
    'directors//name' Directors              no+
    'producers//name' Producers              no+
    'screenwriters//name' Screenwriters     no+
    'slowMotion/rate' SlowMotionRate         no
    'slowMotion/regions' SlowMotionRegions   no
    'slowMotion/regions/timeRange/duration/epoch'
            SlowMotionRegionsDurationEpoch   no
    'slowMotion/regions/timeRange/duration/flags'
            SlowMotionRegionsDurationFlags   no
    'slowMotion/regions/timeRange/duration/timescale'
            SlowMotionRegionsDurationTimeScale no
    'slowMotion/regions/timeRange/duration/value'
            SlowMotionRegionsDurationValue   no
    'slowMotion/regions/timeRange/start/epoch'
            SlowMotionRegionsStartTimeEpoch  no
    'slowMotion/regions/timeRange/start/flags'
            SlowMotionRegionsStartTimeFlags  no
    'slowMotion/regions/timeRange/start/timescale'
            SlowMotionRegionsStartTimeScale  no
    'slowMotion/regions/timeRange/start/value'
            SlowMotionRegionsStartTimeValue  no
    'studio//name' Studio                    no+
```

CanonRaw Tags

These tags apply to CRW-format Canon RAW files and information in the APP0 "CIFF" segment of JPEG images. When writing CanonRaw/CIFF

information, the length of the information is preserved (and the new information is truncated or padded as required) unless **Writable** is "resize". Currently, only JpgFromRaw and ThumbnailImage are allowed to change size. See <https://exiftool.org/canon_raw.html> for a description of the Canon CRW format.

CRW images also support the addition of a CanonVRD trailer, which in turn supports XMP. This trailer is created automatically if necessary when ExifTool is used to write XMP to a CRW image.

Tag ID	Tag Name	Writable
0x0000	NullRecord	undef
0x0001	FreeBytes	undef
0x0032	CanonColorInfo1	no
0x0805	CanonFileDescription	string[32]
	UserComment	string[256]
0x080a	CanonRawMakeModel	CanonRaw MakeModel
0x080b	CanonFirmwareVersion	string[32]
0x080c	ComponentVersion	string
0x080d	ROMOperationMode	string[8]
0x0810	OwnerName	string[32]
0x0815	CanonImageType	string[32]
0x0816	OriginalFileName	string[32]
0x0817	ThumbnailFileName	string[32]
0x100a	TargetImageType	int16u
0x1010	ShutterReleaseMethod	int16u
0x1011	ShutterReleaseTiming	int16u
0x1016	ReleaseSetting	int16u
0x101c	BaseISO	int16u
0x1028	CanonFlashInfo?	int16u[4]
0x1029	CanonFocalLength	Canon FocalLength
0x102a	CanonShotInfo	Canon ShotInfo
0x102c	CanonColorInfo2	no
0x102d	CanonCameraSettings	Canon CameraSettings
0x1030	WhiteSample	CanonRaw WhiteSample
0x1031	SensorInfo	Canon SensorInfo
0x1033	CustomFunctions10D	CanonCustom Functions10D
	CustomFunctionsD30	CanonCustom FunctionsD30
	CustomFunctionsD60	CanonCustom FunctionsD30
	CustomFunctionsUnknown	CanonCustom FuncsUnknown
0x1038	CanonAFInfo	Canon AFInfo
0x1093	CanonFileInfo	Canon FileInfo
0x10a9	ColorBalance	Canon ColorBalance
0x10ae	ColorTemperature	int16u
0x10b4	ColorSpace	int16u
0x10b5	RawJpgInfo	CanonRaw RawJpgInfo
0x1803	ImageFormat	CanonRaw ImageFormat
0x1804	RecordID	int32u
0x1806	SelfTimerTime	int32u
0x1807	TargetDistanceSetting	float
0x180b	SerialNumber	int32u
	UnknownNumber?	yes
0x180e	TimeStamp	CanonRaw TimeStamp
0x1810	ImageInfo	CanonRaw ImageInfo
0x1813	FlashInfo	CanonRaw FlashInfo
0x1814	MeasuredEV	float
0x1817	FileNumber	int32u
0x1818	ExposureInfo	CanonRaw ExposureInfo
0x1834	CanonModelID	int32u
0x1835	DecoderTable	CanonRaw DecoderTable
0x183b	SerialNumberFormat	int32u
0x2005	RawData	no
0x2007	JpgFromRaw	resize^
0x2008	ThumbnailImage	resize^
0x2804	ImageDescription	CanonRaw
0x2807	CameraObject	CanonRaw
0x3002	ShootingRecord	CanonRaw
0x3003	MeasuredInfo	CanonRaw
0x3004	CameraSpecification	CanonRaw

```
   0x300a   ImageProps                         CanonRaw
   0x300b   ExifInformation                    CanonRaw
```

CanonRaw MakeModel Tags

Index1	Tag Name	Writable
0	Make	string[6]
6	Model	string

CanonRaw WhiteSample Tags

Index2	Tag Name	Writable
1	WhiteSampleWidth	no
2	WhiteSampleHeight	no
3	WhiteSampleLeftBorder	no
4	WhiteSampleTopBorder	no
5	WhiteSampleBits	no

CanonRaw RawJpgInfo Tags

Index2	Tag Name	Writable
1	RawJpgQuality	int16u
2	RawJpgSize	int16u
3	RawJpgWidth	int16u
4	RawJpgHeight	int16u

CanonRaw ImageFormat Tags

Index4	Tag Name	Writable
0	FileFormat	int32u
1	TargetCompressionRatio	float

CanonRaw TimeStamp Tags

Index4	Tag Name	Writable
0	DateTimeOriginal	int32u
1	TimeZoneCode	int32s
2	TimeZoneInfo	int32u

CanonRaw ImageInfo Tags

Index4	Tag Name	Writable
0	ImageWidth	no
1	ImageHeight	no
2	PixelAspectRatio	no
3	Rotation	int32s
4	ComponentBitDepth	no
5	ColorBitDepth	no
6	ColorBW	no

CanonRaw FlashInfo Tags

Index4	Tag Name	Writable
0	FlashGuideNumber	float
1	FlashThreshold	float

CanonRaw ExposureInfo Tags

Index4	Tag Name	Writable
0	ExposureCompensation	float
1	ShutterSpeedValue	float
2	ApertureValue	float

CanonRaw DecoderTable Tags

Index4	Tag Name	Writable
0	DecoderTableNumber	no
2	CompressedDataOffset	no
3	CompressedDataLength	no

KyoceraRaw Tags
Tags for Kyocera Contax N Digital RAW images.

Index1	Tag Name	Writable
1	FirmwareVersion	no
12	Model	no
25	Make	no
33	DateTimeOriginal	no
52	ISO	no
56	ExposureTime	no
60	WB_RGGBLevels	no
88	FNumber	no
104	MaxAperture	no
112	FocalLength	no
124	Lens	no

MinoltaRaw Tags
These tags are used in Minolta RAW format (MRW) images.

Tag ID	Tag Name	Writable
"\0PRD"	MinoltaPRD	MinoltaRaw PRD
"\0RIF"	MinoltaRIF	MinoltaRaw RIF
"\0TTW"	MinoltaTTW	EXIF
"\0WBG"	MinoltaWBG	MinoltaRaw WBG

MinoltaRaw PRD Tags

Index1	Tag Name	Writable
0	FirmwareID	string[8]
8	SensorHeight	int16u
10	SensorWidth	int16u
12	ImageHeight	int16u
14	ImageWidth	int16u
16	RawDepth	int8u
17	BitDepth	int8u
18	StorageMethod	int8u
23	BayerPattern	int8u

MinoltaRaw RIF Tags

Index1	Tag Name	Writable
1	Saturation	int8s
2	Contrast	int8s
3	Sharpness	int8s
4	WBMode	int8u~
5	ProgramMode	int8u
6	ISOSetting	int8u
7	ColorMode	int8u
8	WB_RBLevelsTungsten	int16u[2]
12	WB_RBLevelsDaylight	int16u[2]
16	WB_RBLevelsCloudy	int16u[2]
20	WB_RBLevelsCoolWhiteF	int16u[2]
24	WB_RBLevelsFlash	int16u[2]
28	WB_RBLevelsCustom	int16u[2]
32	WB_RBLevelsShade	int16u[2]
36	WB_RBLevelsDaylightF	int16u[2]
40	WB_RBLevelsDayWhiteF	int16u[2]

```
         44    WB_RBLevelsWhiteF                   int16u[2]
         56    ColorFilter                         int8s
         57    BWFilter                            int8u
         58    ZoneMatching                        int8u
         59    Hue                                 int8s
         60    ColorTemperature                    int8u
         74    ZoneMatching                        int8u
         76    ColorTemperature                    int8u
         77    ColorFilter                         int8u
         78    ColorTemperature                    int8u
         79    ColorFilter                         int8u
         80    RawDataLength                       no
```

MinoltaRaw WBG Tags

```
    Index1    Tag Name                            Writable
    ------    --------                            --------
         0    WBScale                             int8u[4]
         4    WB_GBRGLevels                       int16u[4]
               WB_RGGBLevels                       int16u[4]
```

PanasonicRaw Tags
    These tags are found in IFD0 of Panasonic/Leica RAW, RW2 and RWL
    images.

```
    Tag ID    Tag Name                            Writable
    ------    --------                            --------
    0x0001    PanasonicRawVersion                 undef
    0x0002    SensorWidth                         no
    0x0003    SensorHeight                        no
    0x0004    SensorTopBorder                     no
    0x0005    SensorLeftBorder                    no
    0x0006    SensorBottomBorder                  no
    0x0007    SensorRightBorder                   no
    0x0008    SamplesPerPixel                     int16u!
    0x0009    CFAPattern                          int16u!
    0x000a    BitsPerSample                       int16u!
    0x000b    Compression                         int16u!
    0x000e    LinearityLimitRed                   int16u
    0x000f    LinearityLimitGreen                 int16u
    0x0010    LinearityLimitBlue                  int16u
    0x0011    RedBalance                          int16u
    0x0012    BlueBalance                         int16u
    0x0013    WBInfo                              PanasonicRaw WBInfo
    0x0017    ISO                                 int16u
    0x0018    HighISOMultiplierRed                int16u
    0x0019    HighISOMultiplierGreen              int16u
    0x001a    HighISOMultiplierBlue               int16u
    0x001b    NoiseReductionParams                undef[n]!
    0x001c    BlackLevelRed                       int16u
    0x001d    BlackLevelGreen                     int16u
    0x001e    BlackLevelBlue                      int16u
    0x0024    WBRedLevel                          int16u
    0x0025    WBGreenLevel                        int16u
    0x0026    WBBlueLevel                         int16u
    0x0027    WBInfo2                             PanasonicRaw WBInfo2
    0x002d    RawFormat                           int16u!
    0x002e    JpgFromRaw                          JPEG
    0x002f    CropTop                             int16u
    0x0030    CropLeft                            int16u
    0x0031    CropBottom                          int16u
    0x0032    CropRight                           int16u
    0x0037    ISO                                 int32u
    0x010f    Make                                string
    0x0110    Model                               string
    0x0111    StripOffsets                        no
    0x0112    Orientation                         int16u
    0x0116    RowsPerStrip                        no
    0x0117    StripByteCounts                     no
    0x0118    RawDataOffset                       no
```

0x0119	DistortionInfo	PanasonicRaw DistortionInfo
0x011c	Gamma	int16u
0x0120	CameraIFD	PanasonicRaw CameraIFD
0x0121	Multishot	int32u
0x0127	JpgFromRaw2	no
0x013b	Artist	string
0x02bc	ApplicationNotes	XMP
0x8298	Copyright	string
0x83bb	IPTC-NAA	IPTC
0x8769	ExifOffset	EXIF
0x8825	GPSInfo	GPS

PanasonicRaw CameraIFD Tags

Tag ID	Tag Name	Writable
0x1001	MultishotOn	no
0x1100	FocusStepNear	no
0x1101	FocusStepCount	no
0x1102	FlashFired	no
0x1105	ZoomPosition	no
0x1200	LensAttached	no
0x1201	LensTypeMake	no
0x1202	LensTypeModel	no
0x1203	FocalLengthIn35mmFormat	no
0x1301	ApertureValue	no
0x1302	ShutterSpeedValue	no
0x1303	SensitivityValue	no
0x1305	HighISOMode	no
0x1412	FacesDetected	no
0x3200	WB_CFA0_LevelDaylight	no
0x3201	WB_CFA1_LevelDaylight	no
0x3202	WB_CFA2_LevelDaylight	no
0x3203	WB_CFA3_LevelDaylight	no
0x3300	WhiteBalanceSet	no
0x3420	WB_RedLevelAuto	no
0x3421	WB_BlueLevelAuto	no
0x3501	Orientation	no
0x3600	WhiteBalanceDetected	no

PanasonicRaw WBInfo Tags

Index2	Tag Name	Writable
0	NumWBEntries	int16u
1	WBType1	int16u
2	WB_RBLevels1	int16u[2]
4	WBType2	int16u
5	WB_RBLevels2	int16u[2]
7	WBType3	int16u
8	WB_RBLevels3	int16u[2]
10	WBType4	int16u
11	WB_RBLevels4	int16u[2]
13	WBType5	int16u
14	WB_RBLevels5	int16u[2]
16	WBType6	int16u
17	WB_RBLevels6	int16u[2]
19	WBType7	int16u
20	WB_RBLevels7	int16u[2]

PanasonicRaw WBInfo2 Tags

Index2	Tag Name	Writable
0	NumWBEntries	int16u
1	WBType1	int16u
2	WB_RGBLevels1	int16u[3]
5	WBType2	int16u
6	WB_RGBLevels2	int16u[3]
9	WBType3	int16u

```
   10    WB_RGBLevels3                      int16u[3]
   13    WBType4                            int16u
   14    WB_RGBLevels4                      int16u[3]
   17    WBType5                            int16u
   18    WB_RGBLevels5                      int16u[3]
   21    WBType6                            int16u
   22    WB_RGBLevels6                      int16u[3]
   25    WBType7                            int16u
   26    WB_RGBLevels7                      int16u[3]
```

PanasonicRaw DistortionInfo Tags

Lens distortion correction information.

```
   Tag ID    Tag Name                       Writable
   ------    --------                       --------
   0x0002    DistortionParam02              int16s
   0x0004    DistortionParam04              int16s
   0x0005    DistortionScale                int16s
     7.1     DistortionCorrection           int16s & 0x0f
   0x0008    DistortionParam08              int16s
   0x0009    DistortionParam09              int16s
   0x000b    DistortionParam11              int16s
   0x000c    DistortionN?                   int16s
```

SigmaRaw Tags
    These tags are used in Sigma and Foveon RAW (.X3F) images. Metadata is
    also extracted from the JpgFromRaw image if it exists (all models but
    the SD9 and SD10). Currently, metadata may only be written to the
    embedded JpgFromRaw.

```
   Tag ID             Tag Name              Writable
   ------             --------              --------
   'Header'           Header                SigmaRaw Header
   'Header4'          Header4               SigmaRaw Header4
   'HeaderExt'        HeaderExt             SigmaRaw HeaderExt
   'IMA2'             PreviewImage          no
                      JpgFromRaw            no
   'IMAG'             PreviewImage          no
   'PROP'             Properties            SigmaRaw Properties
```

SigmaRaw Header Tags

Information extracted from the header of an X3F file.

```
   Tag ID    Tag Name                       Writable
   ------    --------                       --------
   0x0001    FileVersion                    no
   0x0002    ImageUniqueID                  no
   0x0006    MarkBits                       no
   0x0007    ImageWidth                     no
   0x0008    ImageHeight                    no
   0x0009    Rotation                       no
   0x000a    WhiteBalance                   no
   0x0012    SceneCaptureType               no
```

SigmaRaw Header4 Tags

Header information for version 4.0 or greater X3F.

```
   Index4    Tag Name                       Writable
   ------    --------                       --------
      1      FileVersion                    no
     10      ImageWidth                     no
     11      ImageHeight                    no
     12      Rotation                       no
```

SigmaRaw HeaderExt Tags

Extended header data found in version 2.1 and 2.2 files

Tag ID	Tag Name	Writable
0x0000	Unused	no
0x0001	ExposureAdjust	no
0x0002	Contrast	no
0x0003	Shadow	no
0x0004	Highlight	no
0x0005	Saturation	no
0x0006	Sharpness	no
0x0007	RedAdjust	no
0x0008	GreenAdjust	no
0x0009	BlueAdjust	no
0x000a	X3FillLight	no

SigmaRaw Properties Tags

Tag ID	Tag Name	Writable
'AEMODE'	MeteringMode	no
'AFAREA'	AFArea	no
'AFINFOCUS'	AFInFocus	no
'AFMODE'	FocusMode	no
'APERTURE'	FNumber	no
'AP_DESC'	ApertureDisplayed	no
'BRACKET'	BracketShot	no
'BURST'	BurstShot	no
'CAMMANUF'	Make	no
'CAMMODEL'	Model	no
'CAMNAME'	CameraName	no
'CAMSERIAL'	SerialNumber	no
'CM_DESC'	SceneCaptureType	no
'COLORSPACE'	ColorSpace	no
'DRIVE'	DriveMode	no
'EVAL_STATE'	EvalState	no
'EXPCOMP'	ExposureCompensation	no
'EXPNET'	NetExposureCompensation	no
'EXPTIME'	IntegrationTime	no
'FIRMVERS'	FirmwareVersion	no
'FLASH'	FlashMode	no
'FLASHEXPCOMP'	FlashExpComp	no
'FLASHPOWER'	FlashPower	no
'FLASHTTLMODE'	FlashTTLMode	no
'FLASHTYPE'	FlashType	no
'FLENGTH'	FocalLength	no
'FLEQ35MM'	FocalLengthIn35mmFormat	no
'FOCUS'	Focus	no
'IMAGEBOARDID'	ImageBoardID	no
'IMAGERBOARDID'	ImagerBoardID	no
'IMAGERTEMP'	SensorTemperature	no
'ISO'	ISO	no
'LENSARANGE'	LensApertureRange	no
'LENSFRANGE'	LensFocalRange	no
'LENSMODEL'	LensType	no
'PMODE'	ExposureProgram	no
'RESOLUTION'	Quality	no
'SENSORID'	SensorID	no
'SHUTTER'	ExposureTime	no
'SH_DESC'	ShutterSpeedDisplayed	no
'TIME'	DateTimeOriginal	no
'VERSION_BF'	VersionBF	no
'WB_DESC'	WhiteBalance	no

JFIF Tags

The following information is extracted from the JPEG JFIF header. See
<https://www.w3.org/Graphics/JPEG/jfif3.pdf> for the JFIF 1.02
specification.

Index1	Tag Name	Writable

```
0       JFIFVersion                          no:
2       ResolutionUnit                       int8u:
3       XResolution                          int16u:
5       YResolution                          int16u:
7       ThumbnailWidth                       no
8       ThumbnailHeight                      no
9       ThumbnailTIFF                        no
```

JFIF Extension Tags

Thumbnail images extracted from the JFXX segment.

```
Tag ID   Tag Name                     Writable
------   --------                     --------
0x0010   ThumbnailImage               no
0x0011   ThumbnailTIFF                no
0x0013   ThumbnailTIFF                no
```

FlashPix Tags

The FlashPix file format, introduced in 1996, was developed by Kodak,
Hewlett-Packard and Microsoft. Internally the FPX file structure
mimics that of an old DOS disk with fixed-sized "sectors" (usually 512
bytes) and a "file allocation table" (FAT). No wonder this image
format never became popular. However, some of the structures used in
FlashPix streams are part of the EXIF specification, and are still
being used in the APP2 FPXR segment of JPEG images by some digital
cameras from manufacturers such as FujiFilm, Hewlett-Packard, Kodak and
Sanyo.

ExifTool extracts FlashPix information from both FPX images and the
APP2 FPXR segment of JPEG images. As well, FlashPix information is
extracted from DOC, PPT, XLS (Microsoft Word, PowerPoint and Excel)
documents, VSD (Microsoft Visio) drawings, and FLA (Macromedia/Adobe
Flash project) files since these are based on the same file format as
FlashPix (the Windows Compound Binary File format). Note that ExifTool
identifies any unrecognized Windows Compound Binary file as a FlashPix
(FPX) file. See <http://graphcomp.com/info/specs/livepicture/fpx.pdf>
for the FlashPix specification.

Note that Microsoft is not consistent with the time zone used for some
date/time tags, and it may be either UTC or local time depending on the
software used to create the file.

```
Tag ID                  Tag Name          Writable
------                  --------          --------
"\x01CompObj"           CompObj           FlashPix CompObj
"\x05Audio Info"        AudioInfo         FlashPix AudioInfo
"\x05Data Object"       DataObject        FlashPix DataObject
"\x05DocumentSummaryInformation" DocumentInfo FlashPix DocumentInfo
"\x05Extension List"    Extensions        FlashPix Extensions
"\x05Global Info"       GlobalInfo        FlashPix GlobalInfo
"\x05Image Contents"    Image             FlashPix Image
"\x05Image Info"        ImageInfo         FlashPix ImageInfo
"\x05Operation"         Operation         FlashPix Operation
"\x05Screen Nail"       ScreenNail        no
"\x05SummaryInformation" SummaryInfo      FlashPix SummaryInfo
"\x05Transform"         Transform         FlashPix Transform
'Audio Stream'          AudioStream       no
'BasicFileInfo'         BasicFileInfo     no
'Contents'              Contents          XMP
'Current User'          CurrentUser       no
'ICC Profile 0001'      ICC_Profile       ICC_Profile
'IeImg'                 EmbeddedImage     no
'IeImg_class'           EmbeddedImageClass no
'IeImg_rect'            EmbeddedImageRectangle no
'Preview'               PreviewImage      no
'Property'              PreviewInfo       FlashPix PreviewInfo
'Subimage 0000 Header'  SubimageHdr       FlashPix SubimageHdr
'WordDocument'          WordDocument      FlashPix WordDocument
'_eeJPG'                EmbeddedImage     no
```

```
   '_eeLink'              LinkedFileName          no
   '_eePNG'               EmbeddedPNG             no
```

FlashPix CompObj Tags

```
   Index4    Tag Name                      Writable
   ------    --------                      --------
       0    CompObjUserTypeLen             no
       1    CompObjUserType                no
```

FlashPix AudioInfo Tags

```
   Tag ID    Tag Name                      Writable
   ------    --------                      --------
   [no tags known]
```

FlashPix DataObject Tags

```
   Tag ID         Tag Name                 Writable
   ------         --------                 --------
   0x10000        DataObjectID             no
   0x10002        LockedPropertyList       no
   0x10003        DataObjectTitle          no
   0x10004        LastModifier             no
   0x10005        RevisionNumber           no
   0x10006        DataCreateDate           no
   0x10007        DataModifyDate           no
   0x10008        CreatingApplication      no
   0x10100        DataObjectStatus         no
   0x10101        CreatingTransform        no
   0x10102        UsingTransforms          no
   0x10000000     CachedImageHeight        no
   0x10000001     CachedImageWidth         no
```

FlashPix DocumentInfo Tags

The DocumentSummaryInformation property set includes a UserDefined
property set for which only the Hyperlinks and HyperlinkBase tags are
pre-defined. However, ExifTool will also extract any other information
found in the UserDefined properties.

```
   Tag ID              Tag Name             Writable
   ------              --------             --------
   0x0002              Category             no
   0x0003              PresentationTarget   no
   0x0004              Bytes                no
   0x0005              Lines                no
   0x0006              Paragraphs           no
   0x0007              Slides               no
   0x0008              Notes                no
   0x0009              HiddenSlides         no
   0x000a              MMClips              no
   0x000b              ScaleCrop            no
   0x000c              HeadingPairs         no
   0x000d              TitleOfParts         no
   0x000e              Manager              no
   0x000f              Company              no
   0x0010              LinksUpToDate        no
   0x0011              CharCountWithSpaces  no
   0x0013              SharedDoc            no
   0x0016              HyperlinksChanged    no
   0x0017              AppVersion           no
   0x001a              ContentType          no
   0x001b              ContentStatus        no
   0x001c              Language             no
   0x001d              DocVersion           no
   '_PID_HLINKS'       Hyperlinks           no
   '_PID_LINKBASE'     HyperlinkBase        no
```

FlashPix Extensions Tags

```
Tag ID          Tag Name                    Writable
------          --------                    --------
0x0001          ExtensionName               no
0x0002          ExtensionClassID            no
0x0003          ExtensionPersistence        no
0x0004          ExtensionCreateDate         no
0x0005          ExtensionModifyDate         no
0x0006          CreatingApplication         no
0x0007          ExtensionDescription        no
0x1000          Storage-StreamPathname      no
0x2000          FlashPixStreamPathname      no
0x2001          FlashPixStreamFieldOffset   no
0x3000          PropertySetPathname         no
0x3001          PropertySetIDCodes          no
0x3002          PropertyVectorElements      no
0x4000          SubimageResolutions         no
0x10000000      UsedExtensionNumbers        no
```

FlashPix GlobalInfo Tags

```
Tag ID    Tag Name                 Writable
------    --------                 --------
0x10002   LockedPropertyList       no
0x10003   TransformedImageTitle    no
0x10004   LastModifier             no
0x10100   VisibleOutputs           no
0x10101   MaximumImageIndex        no
0x10102   MaximumTransformIndex    no
0x10103   MaximumOperationIndex    no
```

FlashPix Image Tags

```
Tag ID        Tag Name                   Writable
------        --------                   --------
0x1000000     NumberOfResolutions        no
0x1000002     ImageWidth                 no
0x1000003     ImageHeight                no
0x1000004     DefaultDisplayHeight       no
0x1000005     DefaultDisplayWidth        no
0x1000006     DisplayUnits               no
0x2000000     SubimageWidth              no
0x2000001     SubimageHeight             no
0x2000002     SubimageColor              no
0x2000003     SubimageNumericalFormat     no
0x2000004     DecimationMethod           no
0x2000005     DecimationPrefilterWidth   no
0x2000007     SubimageICC_Profile        no
0x3000001     JPEGTables                 no
0x3000002     MaxJPEGTableIndex          no
```

FlashPix ImageInfo Tags

```
Tag ID        Tag Name                   Writable
------        --------                   --------
0x21000000    FileSource                 no
0x21000001    SceneType                  no
0x21000002    CreationPathVector         no
0x21000003    SoftwareRelease            no
0x21000004    UserDefinedID              no
0x21000005    SharpnessApproximation     no
0x22000000    Copyright                  no
0x22000001    OriginalImageBroker        no
0x22000002    DigitalImageBroker         no
0x22000003    Authorship                 no
0x22000004    IntellectualPropertyNotes  no
0x23000000    TestTarget                 no
0x23000002    GroupCaption               no
0x23000003    CaptionText                no
0x23000004    People                     no
```

```
0x23000007  Things                          no
0x2300000a  DateTimeOriginal                no
0x2300000b  Events                          no
0x2300000c  Places                          no
0x2300000f  ContentDescriptionNotes         no
0x24000000  Make                            no
0x24000001  Model                           no
0x24000002  SerialNumber                    no
0x25000000  CreateDate                      no
0x25000001  ExposureTime                    no
0x25000002  FNumber                         no
0x25000003  ExposureProgram                 no
0x25000004  BrightnessValue                 no
0x25000005  ExposureCompensation            no
0x25000006  SubjectDistance                 no
0x25000007  MeteringMode                    no
0x25000008  LightSource                     no
0x25000009  FocalLength                     no
0x2500000a  MaxApertureValue                no
0x2500000b  Flash                           no
0x2500000c  FlashEnergy                     no
0x2500000d  FlashReturn                     no
0x2500000e  BackLight                       no
0x2500000f  SubjectLocation                 no
0x25000010  ExposureIndex                   no
0x25000011  SpecialEffectsOpticalFilter     no
0x25000012  PerPictureNotes                 no
0x26000000  SensingMethod                   no
0x26000001  FocalPlaneXResolution           no
0x26000002  FocalPlaneYResolution           no
0x26000003  FocalPlaneResolutionUnit        no
0x26000004  SpatialFrequencyResponse        no
0x26000005  CFAPattern                      no
0x26000007  ISO                             no
0x26000008  Opto-ElectricConvFactor         no
0x27000000  FilmBrand                       no
0x27000001  FilmCategory                    no
0x27000002  FilmSize                        no
0x27000003  FilmRollNumber                  no
0x27000004  FilmFrameNumber                 no
0x28000000  ScannerMake                     no
0x28000001  ScannerModel                    no
0x28000002  ScannerSerialNumber             no
0x28000003  ScanSoftware                    no
0x28000004  ScanSoftwareRevisionDate        no
0x28000005  ServiceOrganizationName         no
0x28000006  ScanOperatorID                  no
0x28000008  ScanDate                        no
0x28000009  ModifyDate                      no
0x2800000a  ScannerPixelSize                no
0x29000000  OriginalScannedImageSize        no
0x29000001  OriginalDocumentSize            no
0x29000002  OriginalMedium                  no
0x29000003  TypeOfOriginal                  no
```

FlashPix Operation Tags

Tag ID	Tag Name	Writable
0x10000	OperationID	no

FlashPix SummaryInfo Tags

The Dictionary, CodePage and LocalIndicator tags are common to all
FlashPix property tables, even though they are only listed in the
SummaryInfo table.

Tag ID	Tag Name	Writable
0x0000	Dictionary	no

```
0x0001         CodePage                       no
0x0002         Title                          no
0x0003         Subject                        no
0x0004         Author                         no
0x0005         Keywords                       no
0x0006         Comments                       no
0x0007         Template                       no
0x0008         LastModifiedBy                 no
0x0009         RevisionNumber                 no
0x000a         TotalEditTime                  no
0x000b         LastPrinted                    no
0x000c         CreateDate                     no
0x000d         ModifyDate                     no
0x000e         Pages                          no
0x000f         Words                          no
0x0010         Characters                     no
0x0011         ThumbnailClip                  no
0x0012         Software                       no
0x0013         Security                       no
0x0022         CreatedBy                      no
0x0023         DocumentID                     no
0x80000000     LocaleIndicator                no
```

FlashPix Transform Tags

```
Tag ID         Tag Name                       Writable
------         --------                       --------
0x10000        TransformNodeID                no
0x10001        OperationClassID               no
0x10002        LockedPropertyList             no
0x10003        TransformTitle                 no
0x10004        LastModifier                   no
0x10005        RevisionNumber                 no
0x10006        TransformCreateDate            no
0x10007        TransformModifyDate            no
0x10008        CreatingApplication            no
0x10100        InputDataObjectList            no
0x10101        OutputDataObjectList           no
0x10102        OperationNumber                no
0x10000000     ResultAspectRatio              no
0x10000001     RectangleOfInterest            no
0x10000002     Filtering                      no
0x10000003     SpatialOrientation             no
0x10000004     ColorTwistMatrix               no
0x10000005     ContrastAdjustment             no
```

FlashPix PreviewInfo Tags

Preview information written by some FujiFilm models.

```
Index1   Tag Name                      Writable
------   --------                      --------
   13    PreviewImageWidth             no
   23    PreviewImageHeight            no
```

FlashPix SubimageHdr Tags

```
Index4   Tag Name                      Writable
------   --------                      --------
    1    SubimageWidth                 no
    2    SubimageHeight                no
    3    SubimageTileCount             no
    4    SubimageTileWidth             no
    5    SubimageTileHeight            no
    6    NumChannels                   no
```

FlashPix WordDocument Tags

Tags extracted from the Microsoft Word document stream.

```
Tag ID    Tag Name                        Writable
------    --------                        --------
0x0000    Identification                  no
0x0003    LanguageCode                    no
0x0005    DocFlags                        no
   9.1    System                          no
   9.2    Word97                          no
```

FlashPix DocTable Tags

Tags extracted from the Microsoft Word document table.

```
Tag Name                              Writable
--------                              --------
CommentBy                             no
DOP                                   FlashPix DOP
LastSavedBy                           no
ModifyDate                            no
```

FlashPix DOP Tags

Microsoft office document properties.

```
Index1    Tag Name                      Writable
------    --------                      --------
   20    CreateDate                    no
   24    ModifyDate                    no
   28    LastPrinted                   no
   32    RevisionNumber                no
   34    TotalEditTime                 no
   38    Words                         no
   42    Characters                    no
   46    Pages                         no
   48    Paragraphs                    no
   56    Lines                         no
```

MPF Tags
    These tags are part of the CIPA Multi-Picture Format specification, and
    are found in the APP2 "MPF" segment of JPEG images. MPImage data
    referenced from this segment is stored as a JPEG trailer. The MPF tags
    are not writable, however the MPF segment may be deleted as a group
    (with "MPF:All") but then the JPEG trailer should also be deleted (with
    "Trailer:All"). See
    <https://web.archive.org/web/20190713230858/http://www.cipa.jp/std/documents/e/DC-
007_E.pdf>
    for the official specification.

```
Tag ID    Tag Name                        Writable
------    --------                        --------
0xb000    MPFVersion                      no
0xb001    NumberOfImages                  no
0xb002    MPImageList                     MPF MPImage
0xb003    ImageUIDList                    no
0xb004    TotalFrames                     no
0xb101    MPIndividualNum                 no
0xb201    PanOrientation                  no
0xb202    PanOverlapH                     no
0xb203    PanOverlapV                     no
0xb204    BaseViewpointNum                no
0xb205    ConvergenceAngle                no
0xb206    BaselineLength                  no
0xb207    VerticalDivergence              no
0xb208    AxisDistanceX                   no
0xb209    AxisDistanceY                   no
0xb20a    AxisDistanceZ                   no
0xb20b    YawAngle                        no
0xb20c    PitchAngle                      no
0xb20d    RollAngle                       no
```

MPF MPImage Tags

The first MPF "Large Thumbnail" image is extracted as PreviewImage, and
the rest of the embedded MPF images are extracted as MPImage#. The
ExtractEmbedded (-ee) option may be used to extract information from
these embedded images.

Index1	Tag Name	Writable
0.1	MPImageFlags	no
0.2	MPImageFormat	no
0.3	MPImageType	no
4	MPImageLength	no
8	MPImageStart	no
12	DependentImage1EntryNumber	no
14	DependentImage2EntryNumber	no

InfiRay Tags
InfiRay Version Tags

This table lists tags found in the InfiRay APP2 IJPEG version header,
found in JPEGs taken with the P2 Pro camera app.

Index1	Tag Name	Writable
0	IJPEGVersion	no
12	IJPEGOrgType	no
13	IJPEGDispType	no
14	IJPEGRotate	no
15	IJPEGMirrorFlip	no
16	ImageColorSwitchable	no
17	ThermalColorPalette	no
32	IRDataSize	no
40	IRDataFormat	no
42	IRImageWidth	no
44	IRImageHeight	no
46	IRImageBpp	no
48	TempDataSize	no
56	TempDataFormat	no
58	TempImageWidth	no
60	TempImageHeight	no
62	TempImageBpp	no
64	VisibleDataSize	no
72	VisibleDataFormat	no
74	VisibleImageWidth	no
76	VisibleImageHeight	no
78	VisibleImageBpp	no

InfiRay Factory Tags

This table lists tags found in the InfiRay APP4 IJPEG camera factory
defaults and calibration data.

Index1	Tag Name	Writable
0	IJPEGTempVersion	no
4	FactDefEmissivity	no
5	FactDefTau	no
6	FactDefTa	no
8	FactDefTu	no
10	FactDefDist	no
12	FactDefA0	no
16	FactDefB0	no
20	FactDefA1	no
24	FactDefB1	no
28	FactDefP0	no
32	FactDefP1	no
36	FactDefP2	no
68	FactRelSensorTemp	no
70	FactRelShutterTemp	no
72	FactRelLensTemp	no

```
 100    FactStatusGain                          no
 101    FactStatusEnvOK                         no
 102    FactStatusDistOK                        no
 103    FactStatusTempMap                       no
```

InfiRay Picture Tags

This table lists tags found in the InfiRay APP5 IJPEG picture
temperature information.

```
  Index1   Tag Name                          Writable
  ------   --------                          --------
      0    EnvironmentTemp                     no
      4    Distance                            no
      8    Emissivity                          no
     12    Humidity                            no
     16    ReferenceTemp                       no
     32    TempUnit                            no
     33    ShowCenterTemp                      no
     34    ShowMaxTemp                         no
     35    ShowMinTemp                         no
     36    TempMeasureCount                    no
```

InfiRay MixMode Tags

This table lists tags found in the InfiRay APP6 IJPEG visual-infrared
mixing mode section.

```
  Index1   Tag Name                          Writable
  ------   --------                          --------
      0    MixMode                             no
      1    FusionIntensity                     no
      5    OffsetAdjustment                    no
      9    CorrectionAsix                      no
```

InfiRay OpMode Tags

This table lists tags found in the InfiRay APP7 IJPEG camera operation
mode section.

```
  Index1   Tag Name                          Writable
  ------   --------                          --------
      0    WorkingMode                         no
      1    IntegralTime                        no
      5    IntegratTimeHdr                     no
      9    GainStable                          no
     10    TempControlEnable                   no
     11    DeviceTemp                          no
```

InfiRay Isothermal Tags

This table lists tags found in the InfiRay APP8 IJPEG picture
isothermal information.

```
  Index1   Tag Name                          Writable
  ------   --------                          --------
      0    IsothermalMax                       no
      4    IsothermalMin                       no
      8    ChromaBarMax                        no
     12    ChromaBarMin                        no
```

InfiRay Sensor Tags

This table lists tags found in the InfiRay APP9 IJPEG sensor
information chunk.

```
  Index1   Tag Name                          Writable
  ------   --------                          --------
      0    IRSensorManufacturer                no
     64    IRSensorName                        no
```

```
        128   IRSensorPartNumber                      no
        192   IRSensorSerialNumber                    no
        256   IRSensorFirmware                        no
        320   IRSensorAperture                        no
        324   IRFocalLength                           no
        384   VisibleSensorManufacturer               no
        448   VisibleSensorName                       no
        512   VisibleSensorPartNumber                 no
        576   VisibleSensorSerialNumber               no
        640   VisibleSensorFirmware                   no
        704   VisibleSensorAperture                   no
        708   VisibleFocalLength                      no
```

Stim Tags

These tags are part of the CIPA Stereo Still Image specification, and
are found in the APP3 "Stim" segment of JPEG images. See
<https://web.archive.org/web/20190718152459/http://www.cipa.jp/std/documents/e/DC-006_E.pdf>
for the official specification.

```
    Tag ID    Tag Name                        Writable
    ------    --------                        --------
    0x0000    StimVersion                     no
    0x0001    ApplicationData                 no
    0x0002    ImageArrangement                no
    0x0003    ImageRotation                   no
    0x0004    ScalingFactor                   no
    0x0005    CropXSize                       no
    0x0006    CropYSize                       no
    0x0007    CropX                           Stim CropX
    0x0008    CropY                           Stim CropY
    0x0009    ViewType                        no
    0x000a    RepresentativeImage             no
    0x000b    ConvergenceBaseImage            no
    0x000c    AssumedDisplaySize              no
    0x000d    AssumedDistanceView             no
    0x000e    RepresentativeDisparityNear     no
    0x000f    RepresentativeDisparityFar      no
    0x0010    InitialDisplayEffect            no
    0x0011    ConvergenceDistance             no
    0x0012    CameraArrangementInterval       no
    0x0013    ShootingCount                   no
```

Stim CropX Tags

```
    Index1    Tag Name                        Writable
    ------    --------                        --------
         0    CropXCommonOffset               no
         2    CropXViewpointNumber            no
         3    CropXOffset                     no
         7    CropXViewpointNumber2           no
         8    CropXOffset2                    no
```

Stim CropY Tags

```
    Index1    Tag Name                        Writable
    ------    --------                        --------
         0    CropYCommonOffset               no
         2    CropYViewpointNumber            no
         3    CropYOffset                     no
         7    CropYViewpointNumber2           no
         8    CropYOffset2                    no
```

Scalado Tags

Tags extracted from the JPEG APP4 "SCALADO" segment found in images
from HTC, LG and Samsung phones. (Presumably written by Scalado mobile
software, <http://www.scalado.com/>.)

```
    Tag ID    Tag Name                        Writable
    ------    --------                        --------
```

```
'HGHT'    PreviewImageHeight                        no
'QUAL'    PreviewQuality                            no
'SPMO'    DataLength?                               no
'WDTH'    PreviewImageWidth                         no
```

Qualcomm Tags

The tags below have been observed in the JPEG APP7 "Qualcomm Camera Attributes" segment written by some cameras such as the HP iPAQ Voice Messenger. ExifTool will extract any information found from this segment, even if it is not listed in this table.

Tag Name	Writable
AECAggressiveness	no
AECCurrentExpIndex	no
AECCurrentSensorLuma	no
AECEnable	no
AECExposureIndexAdjStep	no
AECHighLumaRegionCount	no
AECHighLumaRegionThreshold	no
AECIndoorIdx	no
AECLumaTarget	no
AECLumaTolerance	no
AECMode	no
AECOdoorIdx	no
AECOutdoorBrightDiscarded	no
AECOutdoorBrightEnable	no
AECOutdoorBrightReduction	no
AECOutdoorBrightThresholdHI	no
AECOutdoorBrightThresholdLO	no
AECOutdoorGammaIndex	no
AECSnapshotDigitalGain	no
AECSnapshotExposureTimeMs	no
AECSnapshotLineCount	no
AECSnapshotSensorGain	no
AECVfeLuma	no
AFBoundary	no
AFCollectEndStat	no
AFEnable	no
AFFarEnd	no
AFFineSrchPoints	no
AFFineStep	no
AFFocusTime	no
AFGrossStep	no
AFMode	no
AFNearEnd	no
AFPosDefMacro	no
AFPosDefNorm	no
AFPosition	no
AFProcess	no
AFREnable	no
AFRFaster0ExpMod	no
AFRFaster0Trigger	no
AFRFaster1ExpMod	no
AFRFaster1Trigger	no
AFRFaster2ExpMod	no
AFRFaster2Trigger	no
AFRFaster3ExpMod	no
AFRFaster3Trigger	no
AFRFaster4ExpMod	no
AFRFaster4Trigger	no
AFRPossibleFrameCnt	no
AFRSlower0ExpMod	no
AFRSlower0Trigger	no
AFRSlower1ExpMod	no
AFRSlower1Trigger	no
AFRSlower2ExpMod	no
AFRSlower2Trigger	no
AFRSlower3ExpMod	no
AFRSlower3Trigger	no

AFRSlower4ExpMod	no
AFRSlower4Trigger	no
AFResetLensAfterSnap	no
AFStepsNearFar	no
AFStepsNearInfinity	no
AFTestMode	no
AFTracePositions00	no
AFTracePositions01	no
AFTracePositions02	no
AFTracePositions03	no
AFTracePositions04	no
AFTracePositions05	no
AFTracePositions06	no
AFTracePositions07	no
AFTracePositions08	no
AFTracePositions09	no
AFTracePositions10	no
AFTracePositions11	no
AFTracePositions12	no
AFTracePositions13	no
AFTracePositions14	no
AFTracePositions15	no
AFTracePositions16	no
AFTracePositions17	no
AFTracePositions18	no
AFTracePositions19	no
AFTracePositions20	no
AFTracePositions21	no
AFTracePositions22	no
AFTracePositions23	no
AFTracePositions24	no
AFTracePositions25	no
AFTracePositions26	no
AFTracePositions27	no
AFTracePositions28	no
AFTracePositions29	no
AFTracePositions30	no
AFTracePositions31	no
AFTracePositions32	no
AFTracePositions33	no
AFTracePositions34	no
AFTracePositions35	no
AFTracePositions36	no
AFTracePositions37	no
AFTracePositions38	no
AFTracePositions39	no
AFTracePositions40	no
AFTracePositions41	no
AFTracePositions42	no
AFTracePositions43	no
AFTracePositions44	no
AFTracePositions45	no
AFTracePositions46	no
AFTracePositions47	no
AFTracePositions48	no
AFTracePositions49	no
AFTraceStats00	no
AFTraceStats01	no
AFTraceStats02	no
AFTraceStats03	no
AFTraceStats04	no
AFTraceStats05	no
AFTraceStats06	no
AFTraceStats07	no
AFTraceStats08	no
AFTraceStats09	no
AFTraceStats10	no
AFTraceStats11	no
AFTraceStats12	no
AFTraceStats13	no

AFTraceStats14	no
AFTraceStats15	no
AFTraceStats16	no
AFTraceStats17	no
AFTraceStats18	no
AFTraceStats19	no
AFTraceStats20	no
AFTraceStats21	no
AFTraceStats22	no
AFTraceStats23	no
AFTraceStats24	no
AFTraceStats25	no
AFTraceStats26	no
AFTraceStats27	no
AFTraceStats28	no
AFTraceStats29	no
AFTraceStats30	no
AFTraceStats31	no
AFTraceStats32	no
AFTraceStats33	no
AFTraceStats34	no
AFTraceStats35	no
AFTraceStats36	no
AFTraceStats37	no
AFTraceStats38	no
AFTraceStats39	no
AFTraceStats40	no
AFTraceStats41	no
AFTraceStats42	no
AFTraceStats43	no
AFTraceStats44	no
AFTraceStats45	no
AFTraceStats46	no
AFTraceStats47	no
AFTraceStats48	no
AFTraceStats49	no
AFUndershootProtect	no
AFVfeHorzOffset	no
AFVfeHorzWidth	no
AFVfeMetricMax	no
AFVfeVertHeight	no
AFVfeVertOffset	no
ASF3EdgeDetect	no
ASF3EdgeFilterA11	no
ASF3EdgeFilterA12	no
ASF3EdgeFilterA13	no
ASF3EdgeFilterA21	no
ASF3EdgeFilterA22	no
ASF3EdgeFilterA23	no
ASF3EdgeFilterA31	no
ASF3EdgeFilterA32	no
ASF3EdgeFilterA33	no
ASF3Enable	no
ASF3LowerThreshold	no
ASF3NoiseFilterA11	no
ASF3NoiseFilterA12	no
ASF3NoiseFilterA13	no
ASF3NoiseFilterA21	no
ASF3NoiseFilterA22	no
ASF3NoiseFilterA23	no
ASF3NoiseFilterA31	no
ASF3NoiseFilterA32	no
ASF3NoiseFilterA33	no
ASF3UpperThreshold	no
ASF5BrtLoThres	no
ASF5BrtShrpDegF1	no
ASF5BrtShrpDegF2	no
ASF5BrtSmthPercent	no
ASF5BrtUpThres	no
ASF5Enable	no

ASF5ExposureIndex1	no
ASF5ExposureIndex2	no
ASF5Filter1A11	no
ASF5Filter1A12	no
ASF5Filter1A13	no
ASF5Filter1A14	no
ASF5Filter1A15	no
ASF5Filter1A21	no
ASF5Filter1A22	no
ASF5Filter1A23	no
ASF5Filter1A24	no
ASF5Filter1A25	no
ASF5Filter1A31	no
ASF5Filter1A32	no
ASF5Filter1A33	no
ASF5Filter1A34	no
ASF5Filter1A35	no
ASF5Filter1A41	no
ASF5Filter1A42	no
ASF5Filter1A43	no
ASF5Filter1A44	no
ASF5Filter1A45	no
ASF5Filter1A51	no
ASF5Filter1A52	no
ASF5Filter1A53	no
ASF5Filter1A54	no
ASF5Filter1A55	no
ASF5Filter2A11	no
ASF5Filter2A12	no
ASF5Filter2A13	no
ASF5Filter2A14	no
ASF5Filter2A15	no
ASF5Filter2A21	no
ASF5Filter2A22	no
ASF5Filter2A23	no
ASF5Filter2A24	no
ASF5Filter2A25	no
ASF5Filter2A31	no
ASF5Filter2A32	no
ASF5Filter2A33	no
ASF5Filter2A34	no
ASF5Filter2A35	no
ASF5Filter2A41	no
ASF5Filter2A42	no
ASF5Filter2A43	no
ASF5Filter2A44	no
ASF5Filter2A45	no
ASF5Filter2A51	no
ASF5Filter2A52	no
ASF5Filter2A53	no
ASF5Filter2A54	no
ASF5Filter2A55	no
ASF5FilterMode	no
ASF5LowLoThres	no
ASF5LowShrpDegF1	no
ASF5LowShrpDegF2	no
ASF5LowSmthPrcnt	no
ASF5LowUpThres	no
ASF5LumaFilter00	no
ASF5LumaFilter01	no
ASF5LumaFilter02	no
ASF5LumaFilter03	no
ASF5LumaFilter04	no
ASF5LumaFilter05	no
ASF5LumaFilter06	no
ASF5LumaFilter07	no
ASF5LumaFilter08	no
ASF5MaxExposureIndex	no
ASF5NrmLoThres	no
ASF5NrmShrpDegF1	no

ASF5NrmShrpDegF2	no
ASF5NrmSmthPrcnt	no
ASF5NrmUpThres	no
ASF5NrmizeFactor1	no
ASF5NrmizeFactor2	no
AWBAggressiveness	no
AWBAgwGridDist2Thresh	no
AWBAlgorithm	no
AWBAveBgRatio	no
AWBAveRgRatio	no
AWBBlueGainAdjRef1	no
AWBBlueGainAdjRef2	no
AWBBlueGainAdjRef3	no
AWBBlueGainAdjRef4	no
AWBBlueGainAdjRef5	no
AWBBlueGainAdjRef6	no
AWBBlueGainAdjRef7	no
AWBBlueGainAdjRef8	no
AWBBlueGainRef1	no
AWBBlueGainRef2	no
AWBBlueGainRef3	no
AWBBlueGainRef4	no
AWBBlueGainRef5	no
AWBBlueGainRef6	no
AWBBlueGainRef7	no
AWBBlueGainRef8	no
AWBCcBias	no
AWBCompactClusterR2	no
AWBEnable	no
AWBGreenOffsetBg	no
AWBGreenOffsetRg	no
AWBIndoorSampleInfluence	no
AWBLoVfeC1	no
AWBLoVfeC2	no
AWBLoVfeC3	no
AWBLoVfeC4	no
AWBLoVfeM1	no
AWBLoVfeM2	no
AWBLoVfeM3	no
AWBLoVfeM4	no
AWBLoVfeMaxY	no
AWBLoVfeMinY	no
AWBLowLigColCorEna	no
AWBMaxBGain	no
AWBMaxGGain	no
AWBMaxRGain	no
AWBMinBGain	no
AWBMinGGain	no
AWBMinRGain	no
AWBNormVfeC1	no
AWBNormVfeC2	no
AWBNormVfeC3	no
AWBNormVfeC4	no
AWBNormVfeM1	no
AWBNormVfeM2	no
AWBNormVfeM3	no
AWBNormVfeM4	no
AWBNormVfeMaxY	no
AWBNormVfeMinY	no
AWBOudorVfeC1	no
AWBOudorVfeC2	no
AWBOudorVfeC3	no
AWBOudorVfeC4	no
AWBOudorVfeM1	no
AWBOudorVfeM2	no
AWBOudorVfeM3	no
AWBOudorVfeM4	no
AWBOudorVfeMaxY	no
AWBOudorVfeMinY	no
AWBOutdoorSampleInfluence	no

AWBPrevWbBgain	no
AWBPrevWbGgain	no
AWBPrevWbRgain	no
AWBRedGainAdjRef1	no
AWBRedGainAdjRef2	no
AWBRedGainAdjRef3	no
AWBRedGainAdjRef4	no
AWBRedGainAdjRef5	no
AWBRedGainAdjRef6	no
AWBRedGainAdjRef7	no
AWBRedGainAdjRef8	no
AWBRedGainRef1	no
AWBRedGainRef2	no
AWBRedGainRef3	no
AWBRedGainRef4	no
AWBRedGainRef5	no
AWBRedGainRef6	no
AWBRedGainRef7	no
AWBRedGainRef8	no
AWBSampleDecision	no
AWBSnapshotBGain	no
AWBSnapshotRGain	no
AntiBadingPixelClk	no
AntiBadingPixelClkPerLine	no
AntibandingEnable	no
BlckLvlEvenCols	no
BlckLvlOddCols	no
CamMclkHz	no
ChroSupChroThres1	no
ChroSupChroThres2	no
ChroSupLumaThres1	no
ChroSupLumaThres2	no
ChroSupLumaThres3	no
ChroSupLumaThres4	no
ChromSupress	no
ClipToAfRato	no
CurrResol	no
DayltConvChrmA_M	no
DayltConvChrmA_P	no
DayltConvChrmB_M	no
DayltConvChrmB_P	no
DayltConvChrmC_M	no
DayltConvChrmC_P	no
DayltConvChrmD_M	no
DayltConvChrmD_P	no
DayltConvChrmKCb	no
DayltConvChrmKCr	no
DayltConvLumaK	no
DayltConvLumaV0	no
DayltConvLumaV1	no
DayltConvLumaV2	no
DefConvChrmA_M	no
DefConvChrmA_P	no
DefConvChrmB_M	no
DefConvChrmB_P	no
DefConvChrmC_M	no
DefConvChrmC_P	no
DefConvChrmD_M	no
DefConvChrmD_P	no
DefConvChrmKCb	no
DefConvChrmKCr	no
DefConvLumaK	no
DefConvLumaV0	no
DefConvLumaV1	no
DefConvLumaV2	no
DefCorC0	no
DefCorC1	no
DefCorC2	no
DefCorC3	no
DefCorC4	no

DefCorC5	no
DefCorC6	no
DefCorC7	no
DefCorC8	no
DefCorK0	no
DefCorK1	no
DefCorK2	no
DefLumaGammaMode	no
DefRgbGammaMode	no
DefectPixCorEnable	no
DefectPixMaxThresh	no
DefectPixMinThresh	no
DiscardFrstFrm	no
FrmSkipPttrn	no
GammaEnable	no
HJREnable	no
HJRMaxNumFrames	no
HJROneToTwoOffset	no
HJRTextureThreshold	no
HJR_NReductionFlat	no
HJR_NReductionTexture	no
IncandConvChrmA_M	no
IncandConvChrmA_P	no
IncandConvChrmB_M	no
IncandConvChrmB_P	no
IncandConvChrmC_M	no
IncandConvChrmC_P	no
IncandConvChrmD_M	no
IncandConvChrmD_P	no
IncandConvChrmKCb	no
IncandConvChrmKCr	no
IncandConvLumaK	no
IncandConvLumaV0	no
IncandConvLumaV1	no
IncandConvLumaV2	no
LADetect	no
LAEnable	no
MaxPrviewFps	no
MaxVideoFps	no
NghtshtFps	no
NightshotMode	no
OutlierDistance	no
PclkInvert	no
PrviewFps	no
PrviewResol	no
R2ABlueCtbl00	no
R2ABlueCtbl01	no
R2ABlueCtbl02	no
R2ABlueCtbl03	no
R2ABlueCtbl04	no
R2ABlueCtbl05	no
R2ABlueCtbl06	no
R2ABlueCtbl07	no
R2ABlueCtbl08	no
R2ABlueCtbl09	no
R2ABlueCtbl10	no
R2ABlueCtbl11	no
R2ABlueCtbl12	no
R2ABlueCtbl13	no
R2ABlueCtbl14	no
R2ABlueCtbl15	no
R2ABlueCtbl16	no
R2ABlueCtbl17	no
R2ABlueCtbl18	no
R2ABlueCtbl19	no
R2ABlueCtbl20	no
R2ABlueCtbl21	no
R2ABlueCtbl22	no
R2ABlueCtbl23	no
R2ABlueCtbl24	no

R2ABlueCtbl25	no
R2ABlueCtbl26	no
R2ABlueCtbl27	no
R2ABlueCtbl28	no
R2ABlueCtbl29	no
R2ABlueCtbl30	no
R2ABlueCtbl31	no
R2ABlueStbl00	no
R2ABlueStbl01	no
R2ABlueStbl02	no
R2ABlueStbl03	no
R2ABlueStbl04	no
R2ABlueStbl05	no
R2ABlueStbl06	no
R2ABlueStbl07	no
R2ABlueStbl08	no
R2ABlueStbl09	no
R2ABlueStbl10	no
R2ABlueStbl11	no
R2ABlueStbl12	no
R2ABlueStbl13	no
R2ABlueStbl14	no
R2ABlueStbl15	no
R2ABlueStbl16	no
R2ABlueStbl17	no
R2ABlueStbl18	no
R2ABlueStbl19	no
R2ABlueStbl20	no
R2ABlueStbl21	no
R2ABlueStbl22	no
R2ABlueStbl23	no
R2ABlueStbl24	no
R2ABlueStbl25	no
R2ABlueStbl26	no
R2ABlueStbl27	no
R2ABlueStbl28	no
R2ABlueStbl29	no
R2ABlueStbl30	no
R2ABlueStbl31	no
R2ACx	no
R2ACy	no
R2AGreenCtbl00	no
R2AGreenCtbl01	no
R2AGreenCtbl02	no
R2AGreenCtbl03	no
R2AGreenCtbl04	no
R2AGreenCtbl05	no
R2AGreenCtbl06	no
R2AGreenCtbl07	no
R2AGreenCtbl08	no
R2AGreenCtbl09	no
R2AGreenCtbl10	no
R2AGreenCtbl11	no
R2AGreenCtbl12	no
R2AGreenCtbl13	no
R2AGreenCtbl14	no
R2AGreenCtbl15	no
R2AGreenCtbl16	no
R2AGreenCtbl17	no
R2AGreenCtbl18	no
R2AGreenCtbl19	no
R2AGreenCtbl20	no
R2AGreenCtbl21	no
R2AGreenCtbl22	no
R2AGreenCtbl23	no
R2AGreenCtbl24	no
R2AGreenCtbl25	no
R2AGreenCtbl26	no
R2AGreenCtbl27	no
R2AGreenCtbl28	no

R2AGreenCtbl29	no
R2AGreenCtbl30	no
R2AGreenCtbl31	no
R2AGreenStbl00	no
R2AGreenStbl01	no
R2AGreenStbl02	no
R2AGreenStbl03	no
R2AGreenStbl04	no
R2AGreenStbl05	no
R2AGreenStbl06	no
R2AGreenStbl07	no
R2AGreenStbl08	no
R2AGreenStbl09	no
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RolloffEnable	no
SensorFmt	no
SensorType	no
SensrFulHght	no
SensrFulWdth	no
SensrQtrHght	no
SensrQtrWdth	no
SnapshotResol	no
TL84ConvChrmA_M	no
TL84ConvChrmA_P	no
TL84ConvChrmB_M	no
TL84ConvChrmB_P	no
TL84ConvChrmC_M	no
TL84ConvChrmC_P	no
TL84ConvChrmD_M	no
TL84ConvChrmD_P	no
TL84ConvChrmKCb	no
TL84ConvChrmKCr	no
TL84ConvLumaK	no
TL84ConvLumaV0	no
TL84ConvLumaV1	no
TL84ConvLumaV2	no
VideoFps	no
YhiYloConvChrmA_M	no
YhiYloConvChrmA_P	no
YhiYloConvChrmB_M	no
YhiYloConvChrmB_P	no
YhiYloConvChrmC_M	no
YhiYloConvChrmC_P	no
YhiYloConvChrmD_M	no
YhiYloConvChrmD_P	no
YhiYloConvChrmKCb	no
YhiYloConvChrmKCr	no
YhiYloConvLumaK	no
YhiYloConvLumaV0	no
YhiYloConvLumaV1	no
YhiYloConvLumaV2	no
YhiYloCorC0	no

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    YhiYloCorC1                                    no
    YhiYloCorC2                                    no
    YhiYloCorC3                                    no
    YhiYloCorC4                                    no
    YhiYloCorC5                                    no
    YhiYloCorC6                                    no
    YhiYloCorC7                                    no
    YhiYloCorC8                                    no
    YhiYloCorK0                                    no
    YhiYloCorK1                                    no
    YhiYloCorK2                                    no
```

Qualcomm DualCamera Tags

Found in JPEG APP4 "Qualcomm Dual Camera Attributes" written by some
Nokia phones.

```
    Tag Name                                  Writable
    --------                                  --------
    AF_ROIHeight                                   no
    AF_ROILeft                                     no
    AF_ROITop                                      no
    AF_ROIWidth                                    no
    CAMIFCropHeight                                no
    CAMIFCropLeft                                  no
    CAMIFCropTop                                   no
    CAMIFCropWidth                                 no
    CAMIF_ROIMapHeight                             no
    CAMIF_ROIMapLeft                               no
    CAMIF_ROIMapTop                                no
    CAMIF_ROIMapWidth                              no
    CPPCropHeight                                  no
    CPPCropLeft                                    no
    CPPCropTop                                     no
    CPPCropWidth                                   no
    CPP_ROIMapHeight                               no
    CPP_ROIMapLeft                                 no
    CPP_ROIMapTop                                  no
    CPP_ROIMapWidth                                no
    CurrentPipelineMirrorFlipSetting               no
    CurrentPipelineRotationSetting                 no
    DDMCropHeight                                  no
    DDMCropLeft                                     no
    DDMCropTop                                      no
    DDMCropWidth                                    no
    FocalLengthRatio                               no
    ISPCropHeight                                  no
    ISPCropLeft                                     no
    ISPCropTop                                      no
    ISPCropWidth                                    no
    ISP_ROIMapHeight                               no
    ISP_ROIMapLeft                                 no
    ISP_ROIMapTop                                  no
    ISP_ROIMapWidth                                no
    SensorCropHeight                               no
    SensorCropLeft                                 no
    SensorCropTop                                  no
    SensorCropWidth                                no
    SensorROIMapHeight                             no
    SensorROIMapLeft                               no
    SensorROIMapTop                                no
    SensorROIMapWidth                              no
```

Jpeg2000 Tags
    The tags below are found in JPEG 2000 images and the C2PA CAI JUMBF
    metadata in various file types (see below). Note that ExifTool
    currently writes only EXIF, IPTC and XMP tags in Jpeg2000 images, and
    EXIF and XMP in JXL images. ExifTool will read/write Brotli-compressed
    EXIF and XMP in JXL images, but the API Compress option must be set to
    create new EXIF and XMP in compressed format.

C2PA (Coalition for Content Provenance and Authenticity) CAI (Content
Authenticity Initiative) JUMBF (JPEG Universal Metadata Box Format)
metdata is currently extracted from JPEG, PNG, TIFF-based (eg. TIFF,
DNG), QuickTime-based (eg. MP4, MOV, HEIF, AVIF), RIFF-based (eg. WAV,
AVI, WebP), PDF, SVG and GIF files, and ID3v2 metadata. The suggested
ExifTool command-line arguments for reading C2PA metadata are
"-jumbf:all -G3 -b -j -u -struct". This metadata may be deleted from
writable JPEG, PNG, WebP, TIFF-based, and QuickTime-based files by
deleting the JUMBF group with "-jumbf:all=". The C2PA JUMBF metadata
may be extracted as a block via the JUMBF tag. See
<https://c2pa.org/specifications/> for the C2PA specification.

```
  Tag ID   Tag Name                          Writable
  ------   --------                          --------
  'Exif'   EXIF                              EXIF
  'asoc'   Association                       Jpeg2000
  'bfdb'   BinaryDataType                    no
  'bfil'   BinaryFilter                      no
  'bidb'   BinaryData                        no
  'bpcc'   BitsPerComponent                  no
  'brob'   BrotliXMP                         XMP
           BrotliEXIF                        EXIF
           BrotliJUMB                        Jpeg2000
  'c2sh'   C2PASaltHash                      no
  'cbor'   CBORData                          CBOR
  'cdef'   ComponentDefinition               no
  'cgrp'   ColorGroup                        no
  'chck'   DigitalSignature                  no
  'cmap'   ComponentMapping                  no
  'colr'   ColorSpecification                Jpeg2000 ColorSpec
  'comp'   Composition                       no
  'copt'   CompositionOptions                no
  'cref'   Cross-Reference                   no
  'creg'   CodestreamRegistration            no
  'drep'   DesiredReproductions              no
  'dtbl'   DataReference                     no
  'flst'   FragmentList                      no
  'free'   Free                              no
  'ftbl'   FragmentTable                     no
  'ftyp'   FileType                          Jpeg2000 FileType
  'gtso'   GraphicsTechnologyStandardOutput  no
  'hrgm'   GainMapImage                      no
  'ihdr'   ImageHeader                       Jpeg2000 ImageHeader
  'inst'   InstructionSet                    no
  'jP  '   JP2Signature                      no
  'jp2c'   ContiguousCodestream              no
           PreviewImage                      no
  'jp2h'   JP2Header                         Jpeg2000
  'jp2i'   IntellectualProperty              XMP
  'jpch'   CodestreamHeader                  Jpeg2000
  'jplh'   CompositingLayerHeader            Jpeg2000
  'json'   JSONData                          JSON
  'jumb'   JUMBFBox                          Jpeg2000
  'jumd'   JUMBFDescr                        Jpeg2000 JUMD
  'jxlc'   JXLCodestream                     no
  'jxlp'   PartialJXLCodestream              no
  'lbl '   Label                             no
  'mdat'   MediaData                         no
  'mp7b'   MPEG7Binary                       no
  'nlst'   NumberList                        no
  'opct'   Opacity                           no
  'pclr'   Palette                           no
  'prfl'   Profile                           no
  'res '   Resolution                        Jpeg2000
  'resc'   CaptureResolution                 Jpeg2000 CaptureResolution
  'resd'   DisplayResolution                 Jpeg2000 DisplayResolution
  'roid'   ROIDescription                    no
  'rreq'   ReaderRequirements                no
  'uinf'   UUIDInfo                          Jpeg2000
```

```
'ulst'    UUIDList                              no
'url '    URL                                   no
'uuid'    UUID-EXIF                             EXIF
          UUID-EXIF2                            EXIF
          UUID-EXIF_bad                         EXIF
          UUID-IPTC                             IPTC
          UUID-IPTC2                            IPTC
          UUID-XMP                              XMP
          UUID-GeoJP2                           EXIF
          UUID-Photoshop                        Photoshop
          UUID-C2PAClaimSignature               CBOR
          UUID-Signature                        no
          UUID-Unknown                          no
'xml '    XML                                   XMP XML
          XMP                                   -
                                                XMP
```

Jpeg2000 ColorSpec Tags

The table below contains tags in the color specification (colr) box.
This box may be rewritten by writing either ICC_Profile, ColorSpace or
ColorSpecData. When writing, any existing colr boxes are replaced with
the newly created colr box.

NOTE: Care must be taken when writing this color specification because
writing a specification that is incompatible with the image data may
make the image undisplayable.

Index1	Tag Name	Writable
0	ColorSpecMethod	int8s!
1	ColorSpecPrecedence	int8s!
2	ColorSpecApproximation	int8s!
3	ICC_Profile	ICC_Profile
	ColorSpace	int32u!
	ColorSpecData	undef[$size-3]!

Jpeg2000 FileType Tags

Index4	Tag Name	Writable
0	MajorBrand	no
1	MinorVersion	no
2	CompatibleBrands	no+

Jpeg2000 ImageHeader Tags

Index1	Tag Name	Writable
0	ImageHeight	no
4	ImageWidth	no
8	NumberOfComponents	no
10	BitsPerComponent	no
11	Compression	no

Jpeg2000 JUMD Tags

Information extracted from the JUMBF description box.

Tag ID	Tag Name	Writable
'id'	JUMDID	no
'label'	JUMDLabel	no
'sig'	JUMDSignature	no
'toggles'	JUMDToggles?	no
'type'	JUMDType	no

Jpeg2000 CaptureResolution Tags

| Index1 | Tag Name | Writable |

```
    ------    --------                         --------
        0     CaptureYResolution               no
        4     CaptureXResolution               no
        8     CaptureYResolutionUnit           no
        9     CaptureXResolutionUnit           no
```

Jpeg2000 DisplayResolution Tags

```
    Index1    Tag Name                         Writable
    ------    --------                         --------
        0     DisplayYResolution               no
        4     DisplayXResolution               no
        8     DisplayYResolutionUnit           no
        9     DisplayXResolutionUnit           no
```

APP12 Tags
APP12 PictureInfo Tags

The JPEG APP12 "Picture Info" segment was used by some older cameras,
and contains ASCII-based meta information. Below are some tags which
have been observed Agfa and Polaroid images, however ExifTool will
extract information from any tags found in this segment.

```
    Tag ID                Tag Name              Writable
    ------                --------              --------
    'Aperture'            Aperture              no
    'ColorMode'           ColorMode             no
    'ContTake'            ContTake              no
    'ExpBias'             ExposureCompensation  no
    'FNumber'             FNumber               no
    'FWare'               FirmwareVersion       no
    'Flash'               Flash                 no
    'FocusMode'           FocusMode             no
    'FocusPos'            FocusPos              no
    'ID'                  ID                    no
    'ImageSize'           ImageSize             no
    'LightS'              LightS                no
    'Macro'               Macro                 no
    'Protect'             Protect               no
    'Quality'             Quality               no
    'Resolution'          Resolution            no
    'Serial#'             SerialNumber          no
    'Shutter'             ExposureTime          no
    'StrobeTime'          StrobeTime            no
    'TimeDate'            DateTimeOriginal      no
    'Type'                CameraType            no
    'Version'             Version               no
    'Ytarget'             YTarget               no
    'Zoom'                Zoom                  no
    'ZoomPos'             ZoomPos               no
    'shtr'                ExposureTime          no
    'ylevel'              YLevel                no
```

APP12 Ducky Tags

Photoshop uses the JPEG APP12 "Ducky" segment to store some information
in "Save for Web" images.

```
    Tag ID    Tag Name                         Writable
    ------    --------                         --------
    0x0001    Quality                          int32u/
    0x0002    Comment                          string/
    0x0003    Copyright                        string/
```

AFCP Tags
AFCP stands for AXS File Concatenation Protocol, and is a poorly
designed protocol for appending information to the end of files. This
can be used as an auxiliary technique to store IPTC information in
images, but is incompatible with some file formats.

        ExifTool will read and write (but not create) AFCP IPTC information in
        JPEG and TIFF images.

        See
        <http://web.archive.org/web/20080828211305/http://www.tocarte.com/media/axs_afcp_s
pec.pdf>
        for the AFCP specification.

           Tag ID   Tag Name   Writable
           ------   --------   --------
           'IPTC'   IPTC   IPTC
           'Nail'   ThumbnailImage   no
           'PrVw'   PreviewImage   no
           'TEXT'   Text   no

    DarwinCore Tags
        Tags defined in the Darwin Core (dwc) XMP namespace. See
        <http://rs.tdwg.org/dwc/index.htm> for the official specification.

        These tags belong to the ExifTool XMP-dwc family 1 group.

           Tag Name   Writable
           --------   --------
           DCTermsLocation   DarwinCore DCTermsLocation Struct
           DCContinent   string_
           DCCoordinatePrecision   string_
           DCCoordinateUncertaintyInMeters   string_
           DCCountry   string_
           DCCountryCode   string_
           DCCounty   string_
           DCDecimalLatitude   string_
           DCDecimalLongitude   string_
           DCFootprintSpatialFit   string_
           DCFootprintSRS   string_
           DCFootprintWKT   string_
           DCGeodeticDatum   string_
           DCGeoreferencedBy   string_
           DCGeoreferencedDate   string_
           DCGeoreferenceProtocol   string_
           DCGeoreferenceRemarks   string_
           DCGeoreferenceSources   string_
           DCGeoreferenceVerificationStatus   string_
           DCHigherGeography   string_
           DCHigherGeographyID   string_
           DCIsland   string_
           DCIslandGroup   string_
           DCLocality   string_
           DCLocationAccordingTo   string_
           DCLocationID   string_
           DCLocationRemarks   string_
           DCMaximumDepthInMeters   string_
           DCMaximumDistanceAboveSurfaceInMeters   string_
           DCMaximumElevationInMeters   string_
           DCMinimumDepthInMeters   string_
           DCMinimumDistanceAboveSurfaceInMeters   string_
           DCMinimumElevationInMeters   string_
           DCMunicipality   string_
           DCPointRadiusSpatialFit   string_
           DCStateProvince   string_
           DCVerbatimCoordinates   string_
           DCVerbatimCoordinateSystem   string_
           DCVerbatimDepth   string_
           DCVerbatimElevation   string_
           DCVerbatimLatitude   string_
           DCVerbatimLocality   string_
           DCVerbatimLongitude   string_
           DCVerbatimSRS   string_
           DCVerticalDatum   string_
           DCWaterBody   string_
           DCEvent   DarwinCore Event Struct

```
EventDay                                 integer_
EventEarliestDate                        date_
EventEndDayOfYear                        integer_
EventDate                                date_
EventID                                  string/_
EventRemarks                             lang-alt_
EventTime                                string_
EventFieldNotes                          string_
EventFieldNumber                         string_
EventHabitat                             string_
EventLatestDate                          date_
EventMonth                               integer_
EventParentEventID                       string_
EventSampleSizeUnit                      string_
EventSampleSizeValue                     string_
EventSamplingEffort                      string_
EventSamplingProtocol                    string_
EventStartDayOfYear                      integer_
EventVerbatimEventDate                   string_
EventYear                                integer_
FossilSpecimen                           DarwinCore MaterialSample Struct
FossilSpecimenMaterialSampleID           string_
GeologicalContext                        DarwinCore GeologicalContext Struct
GeologicalContextBed                     string_
EarliestAgeOrLowestStage                 string_
EarliestEonOrLowestEonothem              string_
EarliestEpochOrLowestSeries              string_
EarliestEraOrLowestErathem               string_
EarliestPeriodOrLowestSystem             string_
GeologicalContextFormation               string_
GeologicalContextID                      string_
GeologicalContextGroup                   string_
HighestBiostratigraphicZone              string_
LatestAgeOrHighestStage                  string_
LatestEonOrHighestEonothem               string_
LatestEpochOrHighestSeries               string_
LatestEraOrHighestErathem                string_
LatestPeriodOrHighestSystem              string_
LithostratigraphicTerms                  string_
LowestBiostratigraphicZone               string_
GeologicalContextMember                  string_
HumanObservation                         DarwinCore Event Struct
HumanObservationDay                      integer_
HumanObservationEarliestDate             date_
HumanObservationEndDayOfYear             integer_
HumanObservationEventDate                date_
HumanObservationEventID                  string/_
HumanObservationEventRemarks             lang-alt_
HumanObservationEventTime                string_
HumanObservationFieldNotes               string_
HumanObservationFieldNumber              string_
HumanObservationHabitat                  string_
HumanObservationLatestDate               date_
HumanObservationMonth                    integer_
HumanObservationParentEventID            string_
HumanObservationSampleSizeUnit           string_
HumanObservationSampleSizeValue          string_
HumanObservationSamplingEffort           string_
HumanObservationSamplingProtocol         string_
HumanObservationStartDayOfYear           integer_
HumanObservationVerbatimEventDate        string_
HumanObservationYear                     integer_
Identification                           DarwinCore Identification Struct
DateIdentified                           date_
IdentificationID                         string_
IdentificationQualifier                  string_
IdentificationReferences                 string_
IdentificationRemarks                    string_
IdentificationVerificationStatus         string_
IdentifiedBy                             string_
```

```
IdentifiedByID                              string_
TypeStatus                                  string_
VerbatimIdentification                      string_
LivingSpecimen                              DarwinCore MaterialSample Struct
LivingSpecimenMaterialSampleID              string_
MachineObservation                          DarwinCore Event Struct
MachineObservationDay                       integer_
MachineObservationEarliestDate              date_
MachineObservationEndDayOfYear              integer_
MachineObservationEventDate                 date_
MachineObservationEventID                   string/_
MachineObservationEventRemarks              lang-alt_
MachineObservationEventTime                 string_
MachineObservationFieldNotes                string_
MachineObservationFieldNumber               string_
MachineObservationHabitat                   string_
MachineObservationLatestDate                date_
MachineObservationMonth                     integer_
MachineObservationParentEventID             string_
MachineObservationSampleSizeUnit            string_
MachineObservationSampleSizeValue           string_
MachineObservationSamplingEffort            string_
MachineObservationSamplingProtocol          string_
MachineObservationStartDayOfYear            integer_
MachineObservationVerbatimEventDate         string_
MachineObservationYear                      integer_
MaterialSample                              DarwinCore MaterialSample Struct
MaterialSampleID                            string_
MeasurementOrFact                           DarwinCore MeasurementOrFact Struct
MeasurementAccuracy                         string_
MeasurementDeterminedBy                     string_
MeasurementDeterminedDate                   date_
MeasurementID                               string_
MeasurementMethod                           string_
MeasurementRemarks                          string_
MeasurementType                             string_
MeasurementUnit                             string_
MeasurementValue                            string_
Occurrence                                  DarwinCore Occurrence Struct
OccurrenceAssociatedMedia                   string_
OccurrenceAssociatedOccurrences             string_
OccurrenceAssociatedReferences              string_
OccurrenceAssociatedSequences               string_
OccurrenceAssociatedTaxa                    string_
OccurrenceBehavior                          string_
OccurrenceCatalogNumber                     string_
OccurrenceDegreeOfEstablishment             string_
OccurrenceDisposition                       string_
OccurrenceEstablishmentMeans                string_
OccurrenceGeoreferenceVerificationStatus    string_
OccurrenceIndividualCount                   string_
OccurrenceIndividualID                      string_
OccurrenceLifeStage                         string_
OccurrenceDetails                           string_
OccurrenceID                                string_
OccurrenceRemarks                           string_
OccurrenceStatus                            string_
OccurrenceOrganismQuantity                  string_
OccurrenceOrganismQuantityType              string_
OccurrenceOtherCatalogNumbers               string_
OccurrencePathway                           string_
OccurrencePreparations                      string_
OccurrencePreviousIdentifications           string_
OccurrenceRecordedBy                        string_
OccurrenceRecordedByID                      string_
OccurrenceRecordNumber                      string_
OccurrenceReproductiveCondition             string_
OccurrenceSex                               string_
Organism                                    DarwinCore Organism Struct
OrganismAssociatedOccurrences               string_
```

```
OrganismAssociatedOrganisms                    string_
OrganismID                                     string_
OrganismName                                   string_
OrganismRemarks                                string_
OrganismScope                                  string_
OrganismPreviousIdentifications                string_
PreservedSpecimen                              DarwinCore MaterialSample Struct
PreservedSpecimenMaterialSampleID              string_
Record                                         DarwinCore Record Struct
RecordBasisOfRecord                            string_
RecordCollectionCode                           string_
RecordCollectionID                             string_
RecordDataGeneralizations                      string_
RecordDatasetID                                string_
RecordDatasetName                              string_
RecordDynamicProperties                        string_
RecordInformationWithheld                      string_
RecordInstitutionCode                          string_
RecordInstitutionID                            string_
RecordOwnerInstitutionCode                     string_
ResourceRelationship                           DarwinCore ResourceRelationship Struct
RelatedResourceID                              string_
RelationshipAccordingTo                        string_
RelationshipEstablishedDate                    date_
RelationshipOfResource                         string_
RelationshipOfResourceID                       string_
RelationshipRemarks                            string_
ResourceID                                     string_
ResourceRelationshipID                         string_
Taxon                                          DarwinCore Taxon Struct
TaxonAcceptedNameUsage                         string_
TaxonAcceptedNameUsageID                       string_
TaxonClass                                     string_
TaxonCultivarEpithet                           string_
TaxonFamily                                    string_
TaxonGenus                                     string_
TaxonHigherClassification                      string_
TaxonInfraspecificEpithet                      string_
TaxonKingdom                                   string_
TaxonNameAccordingTo                           string_
TaxonNameAccordingToID                         string_
TaxonNamePublishedIn                           string_
TaxonNamePublishedInID                         string_
TaxonNamePublishedInYear                       string_
TaxonNomenclaturalCode                         string_
TaxonNomenclaturalStatus                       string_
TaxonOrder                                     string_
TaxonOriginalNameUsage                         string_
TaxonOriginalNameUsageID                       string_
TaxonParentNameUsage                           string_
TaxonParentNameUsageID                         string_
TaxonPhylum                                    string_
TaxonScientificName                            string_
TaxonScientificNameAuthorship                  string_
TaxonScientificNameID                          string_
TaxonSpecificEpithet                           string_
TaxonSubgenus                                  string_
TaxonConceptID                                 string_
TaxonID                                        string_
TaxonTaxonomicStatus                           string_
TaxonRank                                      string_
TaxonRemarks                                   string_
TaxonVerbatimTaxonRank                         string_
TaxonVernacularName                            lang-alt_
```

DarwinCore DCTermsLocation Struct

```
Field Name                                     Writable
----------                                     --------
Continent                                      string
```

CoordinatePrecision	string
CoordinateUncertaintyInMeters	string
Country	string
CountryCode	string
County	string
DecimalLatitude	string
DecimalLongitude	string
FootprintSRS	string
FootprintSpatialFit	string
FootprintWKT	string
GeodeticDatum	string
GeoreferenceProtocol	string
GeoreferenceRemarks	string
GeoreferenceSources	string
GeoreferenceVerificationStatus	string
GeoreferencedBy	string
GeoreferencedDate	string
HigherGeography	string
HigherGeographyID	string
Island	string
IslandGroup	string
Locality	string
LocationAccordingTo	string
LocationID	string
LocationRemarks	string
MaximumDepthInMeters	string
MaximumDistanceAboveSurfaceInMeters	string
MaximumElevationInMeters	string
MinimumDepthInMeters	string
MinimumDistanceAboveSurfaceInMeters	string
MinimumElevationInMeters	string
Municipality	string
PointRadiusSpatialFit	string
StateProvince	string
VerbatimCoordinateSystem	string
VerbatimCoordinates	string
VerbatimDepth	string
VerbatimElevation	string
VerbatimLatitude	string
VerbatimLocality	string
VerbatimLongitude	string
VerbatimSRS	string
VerticalDatum	string
WaterBody	string

DarwinCore Event Struct

Field Name	Writable
Day	integer
EarliestDate	date
EndDayOfYear	integer
EventDate	date
EventID	string
EventRemarks	lang-alt
EventTime	string
FieldNotes	string
FieldNumber	string
Habitat	string
LatestDate	date
Month	integer
ParentEventID	string
SampleSizeUnit	string
SampleSizeValue	string
SamplingEffort	string
SamplingProtocol	string
StartDayOfYear	integer
VerbatimEventDate	string
Year	integer

DarwinCore MaterialSample Struct

```
  Field Name                            Writable
  ----------                            --------
  MaterialSampleID                      string
```

DarwinCore GeologicalContext Struct

```
  Field Name                            Writable
  ----------                            --------
  Bed                                   string
  EarliestAgeOrLowestStage              string
  EarliestEonOrLowestEonothem           string
  EarliestEpochOrLowestSeries           string
  EarliestEraOrLowestErathem            string
  EarliestPeriodOrLowestSystem          string
  Formation                             string
  GeologicalContextID                   string
  Group                                 string
  HighestBiostratigraphicZone           string
  LatestAgeOrHighestStage               string
  LatestEonOrHighestEonothem            string
  LatestEpochOrHighestSeries            string
  LatestEraOrHighestErathem             string
  LatestPeriodOrHighestSystem           string
  LithostratigraphicTerms               string
  LowestBiostratigraphicZone            string
  Member                                string
```

DarwinCore Identification Struct

```
  Field Name                            Writable
  ----------                            --------
  DateIdentified                        date
  IdentificationID                      string
  IdentificationQualifier               string
  IdentificationReferences              string
  IdentificationRemarks                 string
  IdentificationVerificationStatus      string
  IdentifiedBy                          string
  IdentifiedByID                        string
  TypeStatus                            string
  VerbatimIdentification                string
```

DarwinCore MeasurementOrFact Struct

```
  Field Name                            Writable
  ----------                            --------
  MeasurementAccuracy                   string
  MeasurementDeterminedBy               string
  MeasurementDeterminedDate             date
  MeasurementID                         string
  MeasurementMethod                     string
  MeasurementRemarks                    string
  MeasurementType                       string
  MeasurementUnit                       string
  MeasurementValue                      string
```

DarwinCore Occurrence Struct

```
  Field Name                            Writable
  ----------                            --------
  AssociatedMedia                       string
  AssociatedOccurrences                 string
  AssociatedReferences                  string
  AssociatedSequences                   string
  AssociatedTaxa                        string
  Behavior                              string
  CatalogNumber                         string
  DegreeOfEstablishment                 string
```

```
Disposition                              string
EstablishmentMeans                       string
GeoreferenceVerificationStatus           string
IndividualCount                          string
IndividualID                             string
LifeStage                                string
OccurrenceDetails                        string
OccurrenceID                             string
OccurrenceRemarks                        string
OccurrenceStatus                         string
OrganismQuantity                         string
OrganismQuantityType                     string
OtherCatalogNumbers                      string
Pathway                                  string
Preparations                             string
PreviousIdentifications                  string
RecordNumber                             string
RecordedBy                               string
RecordedByID                             string
ReproductiveCondition                    string
Sex                                      string
```

DarwinCore Organism Struct

Field Name	Writable
AssociatedOccurrences	string
AssociatedOrganisms	string
OrganismID	string
OrganismName	string
OrganismRemarks	string
OrganismScope	string
PreviousIdentifications	string

DarwinCore Record Struct

Field Name	Writable
BasisOfRecord	string
CollectionCode	string
CollectionID	string
DataGeneralizations	string
DatasetID	string
DatasetName	string
DynamicProperties	string
InformationWithheld	string
InstitutionCode	string
InstitutionID	string
OwnerInstitutionCode	string

DarwinCore ResourceRelationship Struct

Field Name	Writable
RelatedResourceID	string
RelationshipAccordingTo	string
RelationshipEstablishedDate	date
RelationshipOfResource	string
RelationshipOfResourceID	string
RelationshipRemarks	string
ResourceID	string
ResourceRelationshipID	string

DarwinCore Taxon Struct

Field Name	Writable
AcceptedNameUsage	string
AcceptedNameUsageID	string
Class	string

```
        CultivarEpithet                              string
        Family                                       string
        Genus                                        string
        HigherClassification                         string
        InfraspecificEpithet                         string
        Kingdom                                      string
        NameAccordingTo                              string
        NameAccordingToID                            string
        NamePublishedIn                              string
        NamePublishedInID                            string
        NamePublishedInYear                          string
        NomenclaturalCode                            string
        NomenclaturalStatus                          string
        Order                                        string
        OriginalNameUsage                            string
        OriginalNameUsageID                          string
        ParentNameUsage                              string
        ParentNameUsageID                            string
        Phylum                                       string
        ScientificName                               string
        ScientificNameAuthorship                     string
        ScientificNameID                             string
        SpecificEpithet                              string
        Subgenus                                     string
        TaxonConceptID                               string
        TaxonID                                      string
        TaxonRank                                    string
        TaxonRemarks                                 string
        TaxonomicStatus                              string
        VerbatimTaxonRank                            string
        VernacularName                               lang-alt
```

FotoStation Tags
    The following tables define information found in the FotoWare
    FotoStation trailer.

```
    Tag ID   Tag Name                         Writable
    ------   --------                         --------
    0x0001   IPTC                             IPTC
    0x0002   SoftEdit                         FotoStation SoftEdit
    0x0003   ThumbnailImage                   yes
    0x0004   PreviewImage                     yes
```

    FotoStation SoftEdit Tags

```
    Index4   Tag Name                         Writable
    ------   --------                         --------
        0    OriginalImageWidth               int32s
        1    OriginalImageHeight              int32s
        2    ColorPlanes                      int32s
        3    XYResolution                     int32s
        4    Rotation                         int32s
        6    CropLeft                         int32s
        7    CropTop                          int32s
        8    CropRight                        int32s
        9    CropBottom                       int32s
       11    CropRotation                     int32s
```

PhotoMechanic Tags
    The Photo Mechanic trailer contains data in an IPTC-format structure,
    with soft edit information stored under record number 2.

```
    Record   Tag Name                         Writable
    ------   --------                         --------
        2    SoftEdit                         PhotoMechanic SoftEdit
```

    PhotoMechanic SoftEdit Tags

```
    Tag ID   Tag Name                         Writable
    ------   --------                         --------
```

```
209     RawCropLeft                           int32s
210     RawCropTop                            int32s
211     RawCropRight                          int32s
212     RawCropBottom                         int32s
213     ConstrainedCropWidth                  int32s
214     ConstrainedCropHeight                 int32s
215     FrameNum                              int32s
216     Rotation                              int32s
217     CropLeft                              int32s
218     CropTop                               int32s
219     CropRight                             int32s
220     CropBottom                            int32s
221     Tagged                                int32s
222     ColorClass                            int32s
223     Rating                                int32s
236     PreviewCropLeft                       int32s
237     PreviewCropTop                        int32s
238     PreviewCropRight                      int32s
239     PreviewCropBottom                     int32s
```

<u>PhotoMechanic</u> <u>XMP</u> <u>Tags</u>

Below is a list of the observed PhotoMechanic XMP tags. The actual
namespace prefix is "photomechanic" but ExifTool shortens this in the
family 1 group name.

These tags belong to the ExifTool XMP-photomech family 1 group.

```
  Tag Name                                Writable
  --------                                --------
  ColorClass                              integer
  CountryCode                             string/
  CreatorIdentity                         string+
  EditStatus                              string
  PMVersion                               string
  Prefs                                   string
  Tagged                                  boolean
  TimeCreated                             string/
```

Microsoft Tags
    <u>Microsoft</u> <u>XMP</u> <u>Tags</u>

    Microsoft Photo 1.0 schema XMP tags. This is likely not a complete
    list, but represents tags which have been observed in sample images.
    The actual namespace prefix is "MicrosoftPhoto", but ExifTool shortens
    this in the family 1 group name.

    These tags belong to the ExifTool XMP-microsoft family 1 group.

```
  Tag Name                                Writable
  --------                                --------
  CameraSerialNumber                      string
  CreatorAppID                            string
  CreatorOpenWithUIOptions                string
  DateAcquired                            date
  FlashManufacturer                       string
  FlashModel                              string
  ItemSubType                             string
  LastKeywordIPTC                         string+
  LastKeywordXMP                          string+
  LensManufacturer                        string
  LensModel                               string/
  RatingPercent                           string
```

    <u>Microsoft</u> <u>MP</u> <u>Tags</u>

    Microsoft Photo 1.2 schema XMP tags which have been observed.

    These tags belong to the ExifTool XMP-MP family 1 group.

Tag Name	Writable
RegionInfoDateRegionsValid	date_
RegionInfoMP	Microsoft RegionInfo Struct
RegionInfoRegions	Microsoft Regions Struct_+
RegionPersonDisplayName	string_+
RegionPersonEmailDigest	string_+
RegionPersonLiveIdCID	string_+
RegionPersonSourceID	string_+
RegionRectangle	string_+

Microsoft RegionInfo Struct

Field Name	Writable
DateRegionsValid	date
Regions	Microsoft Regions Struct+

Microsoft Regions Struct

Note that PersonLiveIdCID element is called PersonLiveCID according to
the Microsoft specification, but in practice their software actually
writes PersonLiveIdCID, so ExifTool uses this too.

Field Name	Writable
PersonDisplayName	string
PersonEmailDigest	string
PersonLiveIdCID	string
PersonSourceID	string
Rectangle	string

Microsoft MP1 Tags

Microsoft Photo 1.1 schema XMP tags which have been observed.

These tags belong to the ExifTool XMP-MP1 family 1 group.

Tag Name	Writable
Brightness	string/
CameraModelID	string/
Contrast	string/
ExposureCompensation	string/
PanoramicStitchCameraMotion	string
PanoramicStitchMapType	string
PanoramicStitchPhi0	real
PanoramicStitchPhi1	real
PanoramicStitchTheta0	real
PanoramicStitchTheta1	real
PipelineVersion	string
StreamType	string
WhiteBalance0	real
WhiteBalance1	real
WhiteBalance2	real

Microsoft Stitch Tags

Information found in the Microsoft custom EXIF tag 0x4748, as written
by Windows Live Photo Gallery.

Index4	Tag Name	Writable
0	PanoramicStitchVersion	int32u
1	PanoramicStitchCameraMotion	int32u
2	PanoramicStitchMapType	int32u
3	PanoramicStitchTheta0	float
4	PanoramicStitchTheta1	float
5	PanoramicStitchPhi0	float
6	PanoramicStitchPhi1	float

Microsoft Xtra Tags

Tags found in the Microsoft "Xtra" atom of QuickTime videos. Tag ID's
are not shown because some are unruly GUID's. Currently most of these
tags are not writable because the Microsoft documentation is poor and
samples were not available, but more tags may be made writable in the
future if samples are provided. Note that writable tags in this table
are are flagged to "Avoid", which means that other more common tags
will be written instead if possible unless the Microsoft group is
specified explicitly.

Tag Name	Writable
Abstract	no
AccountName	no
AcquisitionTime	no
AcquisitionTimeDay	no
AcquisitionTimeMonth	no
AcquisitionTimeYear	no
AcquisitionTimeYearMonth	no
AcquisitionTimeYearMonthDay	no
AlbumArtist	Unicode/
AlbumArtist	no
AlbumArtistSortOrder	no
AlbumCoverURL	Unicode/
AlbumID	no
AlbumIDAlbumArtist	no
AlbumTitle	Unicode/
AlbumTitle	no
AlbumTitleSortOrder	no
AlternateSourceURL	no
Anniversary	no
Artist	no
AssistantsName	no
AssistantsPhone	no
Attachments	no
Attributes	no
AudioBitrate	no
AudioFormat	no
AudioSampleRate	no
AudioSampleSize	no
Author	no
Author	no
AuthorSortOrder	no
AuthorURL	Unicode/
AutoSummary	no
AverageLevel	no
BccAddresses	no
BccNames	no
Beats-per-minute	no
BeatsPerMinute	no
BillingInformation	no
Birthday	no
BitDepth	no
Bitrate	no
Bitrate	no
BroadcastDate	no
BusinessAddress	no
BusinessCity	no
BusinessCountry-Region	no
BusinessFax	no
BusinessHomePage	no
BusinessPOBox	no
BusinessPhone	no
BusinessPostalCode	no
BusinessStateOrProvince	no
BusinessStreet	no
BuyNow	no
BuyTickets	no

```
CDTrackEnabled                          no
CallLetters                             no
CallbackNumber                          no
CameraMaker                             no
CameraManufacturer                      no
CameraModel                             no
CameraModel                             no
CarPhone                                no
Category                                Unicode/+
Category                                no
CcAddresses                             no
CcNames                                 no
CellPhone                               no
ChannelNumber                           no
Channels                                no
Channels                                no
ChapterNum                              no
Children                                no
City                                    no
ClientID                                no
ClosedCaptioning                        no
Color                                   no
Comment                                 no
Comments                                no
Company                                 no
CompanyMainPhone                        no
Complete                                no
Composer                                Unicode/
Composers                               no
Computer                                no
Conductor                               Unicode/+
Conductors                              no
ContactNames                            no
ContentDistributor                      Unicode/
ContentDistributorDuration              no
ContentDistributorType                  no
ContentGroupDescription                 no
ContentType                             no
Contributors                            no
ConversationID                          no
Copyright                               no
Copyright                               no
Count                                   no
Country-Region                          no
Creator                                 no
CurrentBitrate                          no
DLNAServerUDN                           no
DLNASourceURI                           no
DRMIndividualizedVersion                no
DRMKeyID                                no
DTCPIPHost                              no
DTCPIPPort                              no
DVDID                                   no
DataRate                                no
Date                                    no
DateAccessed                            no
DateAcquired                            vt_filetime/
DateArchived                            no
DateCompleted                           no
DateCreated                             no
DateImported                            no
DateLastSaved                           no
DateModified                            no
DatePictureTaken                        no
DateReceived                            no
DateReleased                            no
DateSent                                no
DateVisited                             no
Department                              no
Description                             Unicode/
```

```
Description                             no
Description                             no
Dimensions                              no
Director                                Unicode/+
Directors                               no
DisplayArtist                           no
Division                                no
DocumentID                              no
DueDate                                 no
Duration                                no
Duration                                no
Duration                                no
E-mail2                                 no
E-mail3                                 no
E-mailAddress                           no
E-mailDisplayName                       no
E-mailList                              no
EncodedBy                               Unicode/
EncodedBy                               no
EncodingTime                            date/
EndDate                                 no
EntryType                               no
EpisodeName                             no
Event                                   no
Event                                   no
ExifVersion                             no
ExposureBias                            no
ExposureProgram                         no
ExposureTime                            no
F-stop                                  no
FileAs                                  no
FileCount                               no
FileSize                                no
FileType                                no
FileVersion                             no
FirstName                               no
FlagColor                               no
FlagStatus                              no
FlashMode                               no
FocalLength                             no
FocalLength35mm                         no
Folder                                  no
FolderName                              no
FolderPath                              no
FormatTag                               no
FourCC                                  no
FrameHeight                             no
FrameRate                               no
FrameRate                               no
FrameWidth                              no
Free-busyStatus                         no
Frequency                               no
FromAddresses                           no
FromNames                               no
FullName                                no
Gender                                  no
Genre                                   no
Genre                                   no
GenreID                                 no
GivenName                               no
HasAttachments                          no
HasFlag                                 no
Hobbies                                 no
HomeAddress                             no
HomeCity                                no
HomeCountry-Region                      no
HomeFax                                 no
HomePOBox                               no
HomePhone                               no
HomePostalCode                          no
```

```
HomeStateOrProvince                      no
HomeStreet                               no
HorizontalResolution                     no
IMAddresses                              no
ISOSpeed                                 no
Importance                               no
Incomplete                               no
InitialKey                               Unicode/
InitialKey                               no
Initials                                 no
IsAttachment                             no
IsCompleted                              no
IsDeleted                                no
IsNetworkFeed                            no
IsOnline                                 no
IsProtected                              no
IsRecurring                              no
IsVBR                                    no
JobTitle                                 no
Keywords                                 no
Kinds                                    no
Label                                    no
Language                                 no
Language                                 no
LastName                                 no
LastPrinted                              no
LeadPerformer                            no
LegalTrademarks                          no
LensMaker                                no
LensModel                                no
LibraryID                                no
LibraryName                              no
LightSource                              no
LinkStatus                               no
LinkTarget                               no
Location                                 no
Location                                 no
Lyrics                                   no
MCDI                                     no
MailingAddress                           no
MaxAperture                              no
MediaClassPrimaryID                      GUID/
MediaClassSecondaryID                    GUID/
MediaContentTypes                        no
MediaCreated                             no
MediaOriginalBroadcastDateTime           no
MediaOriginalChannel                     no
MediaStationName                         no
MediaType                                no
MeteringMode                             no
MiddleName                               no
Mileage                                  no
ModifiedBy                               no
Mood                                     Unicode/
Mood                                     no
MoreInfo                                 no
Name                                     no
Nickname                                 no
OfficeLocation                           no
OfflineAvailability                      no
OfflineStatus                            no
OptionalAttendeeAddresses                no
OptionalAttendees                        no
OrganizerAddress                         no
OrganizerName                            no
Orientation                              no
OriginalAlbumTitle                       Unicode/
OriginalArtist                           Unicode/
OriginalLyricist                         Unicode/
OtherAddress                             no
```

```
OtherCity                               no
OtherCountry-Region                     no
OtherPOBox                              no
OtherPostalCode                         no
OtherStateOrProvince                    no
OtherStreet                             no
Owner                                   no
POBox                                   no
Pager                                   no
Pages                                   no
ParentalRating                          Unicode/
ParentalRating                          no
ParentalRatingReason                    no
PartOfSet                               no
PartOfSet                               no
PartOfSet                               no
Participants                            no
Path                                    no
PeakValue                               no
PerceivedType                           no
Period                                  Unicode/
Period                                  no
PersonalTitle                           no
PixelAspectRatioX                       no
PixelAspectRatioY                       no
PlaylistIndex                           no
PostalCode                              no
PrimaryE-mail                           no
PrimaryPhone                            no
Priority                                no
Producer                                Unicode/+
Producers                               no
ProductName                             no
ProductVersion                          no
Profession                              no
ProgramDescription                      no
ProgramMode                             no
ProgramName                             no
Project                                 no
PromotionURL                            Unicode/
Protected                               no
ProtectionType                          no
Provider                                no
Provider                                Unicode/
ProviderLogoURL                         no
ProviderRating                          no
ProviderStyle                           no
ProviderURL                             no
Publisher                               Unicode/
Publisher                               no
RadioBand                               no
RadioFormat                             no
Rating                                  no
RatingOrg                               no
ReadStatus                              no
RecordingTime                           no
RecordingTime                           no
RecordingTimeDay                        no
RecordingTimeMonth                      no
RecordingTimeYear                       no
RecordingTimeYearMonth                  no
RecordingTimeYearMonthDay               no
ReleaseDate                             no
ReleaseDateDay                          no
ReleaseDateMonth                        no
ReleaseDateYear                         no
ReleaseDateYearMonth                    no
ReleaseDateYearMonthDay                 no
ReminderTime                            no
RequestState                            no
```

```
RequiredAttendeeAddresses                    no
RequiredAttendees                            no
Rerun                                        no
Resources                                    no
SAP                                          no
Saturation                                   no
SearchRanking                                no
SenderAddress                                no
SenderName                                   no
Sensitivity                                  no
ShadowFilePath                               no
Shared                                       no
SharedUserRating                             int64u/
SharedWith                                   no
Size                                         no
Slides                                       no
Source                                       no
SourceURL                                    no
SpaceFree                                    no
SpaceUsed                                    no
Spouse                                       no
StartDate                                    no
StateOrProvince                              no
StationCallSign                              no
StationName                                  no
Status                                       no
Status                                       no
Store                                        no
Street                                       no
Subject                                      no
Subject                                      no
SubjectDistance                              no
SubscriptionContentID                        no
Subtitle                                     Unicode/
Subtitle                                     no
SubtitleDescription                          no
Suffix                                       no
Summary                                      no
Sync01                                       no
Sync02                                       no
Sync03                                       no
Sync04                                       no
Sync05                                       no
Sync06                                       no
Sync07                                       no
Sync08                                       no
Sync09                                       no
Sync10                                       no
Sync11                                       no
Sync12                                       no
Sync13                                       no
Sync14                                       no
Sync15                                       no
Sync16                                       no
SyncOnly                                     no
SyncState                                    no
TTY-TTDPhone                                 no
TaskOwner                                    no
Telex                                        no
Temporary                                    no
Title                                        no
Title                                        no
TitleNum                                     no
TitleSortOrder                               no
ToAddresses                                  no
ToDoTitle                                    no
ToNames                                      no
TotalBitrate                                 no
TotalDuration                                no
TotalEditingTime                             no
```

```
     TotalFileSize                              no
     TotalSize                                  no
     TrackNumber                                no
     TrackNumber                                no
     TrackingID                                 no
     Type                                       no
     Type                                       no
     URL                                        no
     UniqueFileIdentifier                       no
     Untitled0                                  no
     Untitled1                                  no
     Untitled2                                  no
     UserCustom1                                no
     UserCustom2                                no
     UserEffectiveRating                        no
     UserLastPlayedTime                         no
     UserPlayCount                              no
     UserPlaycountAfternoon                     no
     UserPlaycountEvening                       no
     UserPlaycountMorning                       no
     UserPlaycountNight                         no
     UserPlaycountWeekday                       no
     UserPlaycountWeekend                       no
     UserRating                                 no
     UserServiceRating                          no
     UserWebURL                                 no
     VerticalResolution                         no
     VideoBitrate                               no
     VideoCompression                           no
     VideoFormat                                no
     VideoFrameRate                             no
     VideoHeight                                no
     VideoWidth                                 no
     WMCollectionGroupID                        no
     WMCollectionID                             no
     WMContentID                                no
     WMShadowFileSourceDRMType                  no
     WMShadowFileSourceFileType                 no
     Webpage                                    no
     WhiteBalance                               no
     WindowsFileName                            no
     WordCount                                  no
     Writer                                     Unicode/
     Writers                                    no
     Year                                       no
     Year                                       no
```

GIMP Tags

     The GNU Image Manipulation Program (GIMP) writes these tags in its
     native XCF (eXperimental Computing Facilty) images.

```
     Tag ID   Tag Name                     Writable
     ------   --------                     --------
     'header' Header                       GIMP Header
     0x0011   Compression                  no
     0x0013   Resolution                   GIMP Resolution
     0x0014   Tattoo                       no
     0x0015   Parasites                    GIMP Parasite
     0x0016   Units                        no
```

GIMP Header Tags

```
     Index1   Tag Name                     Writable
     ------   --------                     --------
         9    XCFVersion                   no
        14    ImageWidth                   no
        18    ImageHeight                  no
        22    ColorMode                    no
```

GIMP Resolution Tags

Index4	Tag Name	Writable
0	XResolution	no
1	YResolution	no

GIMP Parasite Tags

Tag ID	Tag Name	Writable
'exif-data'	ExifData	EXIF
'gimp-comment'	Comment	no
'gimp-image-metadata'	XML	XMP XML
'gimp-metadata'	XMP	XMP
'icc-profile'	ICC_Profile	ICC_Profile
'icc-profile-name'	ICCProfileName	no
'iptc-data'	IPTCData	IPTC
'jpeg-exif-data'	JPEGExifData	EXIF

MIE Tags

MIE is a flexible format which may be used as a stand-alone meta information format, for encapsulation of other files and information, or as a trailer appended to other file formats. The tables below represent currently defined MIE tags, however ExifTool will also extract any other information present in a MIE file.

When writing MIE information, some special features are supported:

1) String values may be written as ASCII (ISO 8859-1) or UTF-8. ExifTool automatically detects the presence of wide characters and treats the string appropriately. Internally, UTF-8 text may be converted to UTF-16 or UTF-32 and stored in this format in the file if it is more compact.

2) All MIE string-value tags support localized text. Localized values are written by adding a language/country code to the tag name in the form "TAG-xx_YY", where "TAG" is the tag name, "xx" is a 2-character lower case ISO 639-1 language code, and "YY" is a 2-character upper case ISO 3166-1 alpha 2 country code (eg. "Title-en_US"). But as usual, the user interface is case-insensitive, and ExifTool will write the correct case to the file.

3) Some numerical MIE tags allow units of measurement to be specified. For these tags, units may be added in brackets immediately following the value (eg. "55(mi/h)"). If no units are specified, the default units are written.

4) ExifTool writes compressed metadata to MIE files if the Compress (-z) option is used and Compress::Zlib is available.

See <https://exiftool.org/MIE1.1-20070121.pdf> for the official MIE specification.

Tag ID	Tag Name	Writable
'0Type'	SubfileType	string
'0Vers'	MIEVersion	string
'1Directory'	SubfileDirectory	string
'1Name'	SubfileName	string
'2MIME'	SubfileMIMEType	string
'Meta'	Meta	MIE Meta
'data'	SubfileData	undef
'rsrc'	SubfileResource	undef
'zmd5'	MD5Digest	string
'zmie'	TrailerSignature	undef

MIE Meta Tags

Tag ID	Tag Name	Writable

```
'Audio'                Audio                  MIE Audio
'Camera'               Camera                 MIE Camera
'Document'             Document               MIE Doc
'EXIF'                 EXIF                   EXIF
'Geo'                  Geo                    MIE Geo
'ICCProfile'           ICC_Profile            ICC_Profile
'ID3'                  ID3                    ID3
'IPTC'                 IPTC                   IPTC
'Image'                Image                  MIE Image
'MakerNotes'           MakerNotes             MIE MakerNotes
'Preview'              Preview                MIE Preview
'Thumbnail'            Thumbnail              MIE Thumbnail
'Video'                Video                  MIE Video
'XMP'                  XMP                    XMP
```

MIE Audio Tags

For the Audio group (and any other group containing a 'data' element),
tags refer to the contained data if present, otherwise they refer to
the main SubfileData. The "0Type" and "1Name" elements should exist
only if "data" is present.

```
  Tag ID               Tag Name               Writable
  ------               --------               --------
  '0Type'              RelatedAudioFileType   string
  '1Name'              RelatedAudioFileName   string
  'Channels'           Channels               int8u
  'Compression'        AudioCompression       string
  'Duration'           Duration               rational64u~
  'SampleBits'         SampleBits             int16u
  'SampleRate'         SampleRate             int32u
  'data'               RelatedAudioFile       undef
```

MIE Camera Tags

```
  Tag ID               Tag Name               Writable
  ------               --------               --------
  'Brightness'         Brightness             int8s
  'ColorBalance'       ColorBalance           rational64u[3]
  'ColorTemperature'   ColorTemperature       int32u
  'Contrast'           Contrast               int8s
  'DigitalZoom'        DigitalZoom            rational64u
  'ExposureComp'       ExposureCompensation   rational64s
  'ExposureMode'       ExposureMode           string
  'ExposureTime'       ExposureTime           rational64u
  'FirmwareVersion'    FirmwareVersion        string
  'Flash'              Flash                  MIE Flash
  'FocusMode'          FocusMode              string
  'ISO'                ISO                    int16u
  'ISOSetting'         ISOSetting             int16u
  'ImageNumber'        ImageNumber            int32u
  'ImageQuality'       ImageQuality           string
  'ImageStabilization' ImageStabilization     int8u
  'Lens'               Lens                   MIE Lens
  'Make'               Make                   string
  'MeasuredEV'         MeasuredEV             rational64s
  'Model'              Model                  string
  'Orientation'        Orientation            MIE Orient
  'OwnerName'          OwnerName              string
  'Saturation'         Saturation             int8s
  'SensorSize'         SensorSize             rational64u[2]
  'SerialNumber'       SerialNumber           string
  'Sharpness'          Sharpness              int8s
  'ShootingMode'       ShootingMode           string
```

MIE Flash Tags

```
  Tag ID               Tag Name               Writable
  ------               --------               --------
  'ExposureComp'       FlashExposureComp      rational64s
```

```
'Fired'                FlashFired           int8u
'GuideNumber'          FlashGuideNumber     string
'Make'                 FlashMake            string
'Mode'                 FlashMode            string
'Model'                FlashModel           string
'SerialNumber'         FlashSerialNumber    string
'Type'                 FlashType            string
```

MIE Lens Tags

All recorded lens parameters (focal length, aperture, etc) include the effects of the extender if present.

Tag ID	Tag Name	Writable
'Extender'	Extender	MIE Extender
'FNumber'	FNumber	rational64u
'FocalLength'	FocalLength	rational64u
'FocusDistance'	FocusDistance	rational64u
'Make'	LensMake	string
'MaxAperture'	MaxAperture	rational64u
'MaxApertureAtMaxFocal'	MaxApertureAtMaxFocal	rational64u
'MaxFocalLength'	MaxFocalLength	rational64u
'MinAperture'	MinAperture	rational64u
'MinFocalLength'	MinFocalLength	rational64u
'Model'	LensModel	string
'OpticalZoom'	OpticalZoom	rational64u
'SerialNumber'	LensSerialNumber	string

MIE Extender Tags

Tag ID	Tag Name	Writable
'Magnification'	ExtenderMagnification	rational64s
'Make'	ExtenderMake	string
'Model'	ExtenderModel	string
'SerialNumber'	ExtenderSerialNumber	string

MIE Orient Tags

These tags describe the camera orientation.

Tag ID	Tag Name	Writable
'Azimuth'	Azimuth	rational64s
'Declination'	Declination	rational64s
'Elevation'	Elevation	rational64s
'RightAscension'	RightAscension	rational64s
'Rotation'	Rotation	rational64s

MIE Doc Tags

Information describing the main document, image or file.

Tag ID	Tag Name	Writable
'Author'	Author	string
'Comment'	Comment	string
'Contributors'	Contributors	string+
'Copyright'	Copyright	string
'CreateDate'	CreateDate	string
'EMail'	Email	string
'Keywords'	Keywords	string+
'ModifyDate'	ModifyDate	string
'OriginalDate'	DateTimeOriginal	string
'Phone'	PhoneNumber	string
'References'	References	string+
'Software'	Software	string
'Title'	Title	string
'URL'	URL	string

MIE Geo Tags

Information related to geographic location.

Tag ID	Tag Name	Writable
'Address'	Address	string
'City'	City	string
'Country'	Country	string
'GPS'	GPS	MIE GPS
'PostalCode'	PostalCode	string
'State'	State	string
'UTM'	UTM	MIE UTM

MIE GPS Tags

Tag ID	Tag Name	Writable
'Altitude'	GPSAltitude	rational64s
'Bearing'	GPSDestBearing	rational64s
'DateTime'	GPSDateTime	string
'Datum'	GPSMapDatum	string
'Differential'	GPSDifferential	int8u
'Distance'	GPSDestDistance	rational64s
'Heading'	GPSTrack	rational64s
'Latitude'	GPSLatitude	rational64s[n]
'Longitude'	GPSLongitude	rational64s[n]
'MeasureMode'	GPSMeasureMode	int8u
'Satellites'	GPSSatellites	string
'Speed'	GPSSpeed	rational64s

MIE UTM Tags

Tag ID	Tag Name	Writable
'Datum'	UTMMapDatum	string
'Easting'	UTMEasting	string
'Northing'	UTMNorthing	string
'Zone'	UTMZone	int8s

MIE Image Tags

Tag ID	Tag Name	Writable
'0Type'	FullSizeImageType	string
'1Name'	FullSizeImageName	string
'BitDepth'	BitDepth	int16u
'ColorSpace'	ColorSpace	string
'Components'	ComponentsConfiguration	string
'Compression'	CompressionRatio	rational32u
'ImageSize'	ImageSize	int16u[n]
'OriginalImageSize'	OriginalImageSize	int16u[n]
'Resolution'	Resolution	rational64u[n]
'data'	FullSizeImage	undef

MIE MakerNotes Tags

MIE maker notes are contained within separate groups for each
manufacturer to avoid name conflicts.

Tag ID	Tag Name	Writable
'Canon'	Canon	MIE Canon
'Casio'	Casio	MIE Unknown
'FujiFilm'	FujiFilm	MIE Unknown
'Kodak'	Kodak	MIE Unknown
'KonicaMinolta'	KonicaMinolta	MIE Unknown
'Nikon'	Nikon	MIE Unknown
'Olympus'	Olympus	MIE Unknown

```
    'Panasonic'             Panasonic               MIE Unknown
    'Pentax'                Pentax                  MIE Unknown
    'Ricoh'                 Ricoh                   MIE Unknown
    'Sigma'                 Sigma                   MIE Unknown
    'Sony'                  Sony                    MIE Unknown
```

MIE Canon Tags

Tag ID	Tag Name	Writable
'VRD'	CanonVRD	CanonVRD

MIE Unknown Tags

Tag ID	Tag Name	Writable
[no tags known]		

MIE Preview Tags

Tag ID	Tag Name	Writable
'0Type'	PreviewImageType	string
'1Name'	PreviewImageName	string
'ImageSize'	PreviewImageSize	int16u[n]
'data'	PreviewImage	undef

MIE Thumbnail Tags

Tag ID	Tag Name	Writable
'0Type'	ThumbnailImageType	string
'1Name'	ThumbnailImageName	string
'ImageSize'	ThumbnailImageSize	int16u[n]
'data'	ThumbnailImage	undef

MIE Video Tags

Tag ID	Tag Name	Writable
'0Type'	RelatedVideoFileType	string
'1Name'	RelatedVideoFileName	string
'Codec'	Codec	string
'Duration'	Duration	rational64u~
'data'	RelatedVideoFile	undef

Trailer Tags

Trailer Vivo Tags

Information written in JPEG trailer by some Vivo phones.

Tag Name	Writable
HDRImage	no
HiddenData	no
JSONInfo	no

Trailer OnePlus Tags

Information written in JPEG trailer by some OnePlus phones.

Tag ID	Tag Name	Writable
'JSONInfo'	JSONInfo	no
'private.emptyspace'	OnePlusTrailerLen?	no
'watermark.device'	Device	no

Trailer Google Tags

Google-defined information written in the trailer of JPEG images by

some phones. This information is referenced by DirectoryItem entries
in the XMP. Note that some of this information may also be referenced
from other metadata formats, and hence may be extracted twice. For
example, MotionPhotoVideo may also exist within a Samsung trailer as
EmbbededVideoFile, or GainMapImage may also exist in an MPF trailer as
MPImage2.

Tag ID	Tag Name	Writable
'Confidence'	ConfidenceMapImage	no
'Depth'	DepthMapImage	no
'GainMap'	GainMapImage	no
'MotionPhoto'	MotionPhotoVideo	no
'android/confidencemap'	ConfidenceMapImage	no
'android/depthmap'	DepthMapImage	no

GIF Tags

This table lists information extracted from GIF images. See
<http://www.w3.org/Graphics/GIF/spec-gif89a.txt> for the official
GIF89a specification.

Tag Name	Writable
Comment	yes
Duration	no
Extensions	GIF Extensions
FrameCount	no
GIFVersion	no
ScreenDescriptor	GIF Screen
Text	no
TransparentColor	no

GIF Extensions Tags

Tags extracted from GIF89a application extensions.

Tag ID	Tag Name	Writable
'C2PA_GIF/'	JUMBF	Jpeg2000
'ICCRGBG1/012'	ICC_Profile	ICC_Profile
'MIDICTRL/Jon'	MIDIControl	GIF MIDIControl
'MIDISONG/Dm7'	MIDISong	no
'NETSCAPE/2.0'	Animation	GIF Animation
'XMP Data/XMP'	XMP	XMP

GIF MIDIControl Tags

Information extracted from the MIDI control block extension.

Index1	Tag Name	Writable
0	MIDIControlVersion	no
1	SequenceNumber	no
2	MelodicPolyphony	no
3	PercussivePolyphony	no
4	ChannelUsage	no
6	DelayTime	no

GIF Animation Tags

Information extracted from the "NETSCAPE2.0" animation extension.

Index1	Tag Name	Writable
1	AnimationIterations	no

GIF Screen Tags

Information extracted from the GIF logical screen descriptor.

```
   Index1   Tag Name                         Writable
   ------   --------                         --------
      0     ImageWidth                       no
      2     ImageHeight                      no
    4.1     HasColorMap                      no
    4.2     ColorResolutionDepth             no
    4.3     BitsPerPixel                     no
      5     BackgroundColor                  no
      6     PixelAspectRatio                 no
```

BMP Tags
    There really isn't much meta information in a BMP file as such, just a
    bit of image related information.

```
   Index1   Tag Name                         Writable
   ------   --------                         --------
      0     BMPVersion                       no
      4     ImageWidth                       no
      8     ImageHeight                      no
     12     Planes                           no
     14     BitDepth                         no
     16     Compression                      no
     20     ImageLength                      no
     24     PixelsPerMeterX                  no
     28     PixelsPerMeterY                  no
     32     NumColors                        no
     36     NumImportantColors               no
     40     RedMask                          no
     44     GreenMask                        no
     48     BlueMask                         no
     52     AlphaMask                        no
     56     ColorSpace                       no
     60     RedEndpoint                      no
     72     GreenEndpoint                    no
     84     BlueEndpoint                     no
     96     GammaRed                         no
    100     GammaGreen                       no
    104     GammaBlue                        no
    108     RenderingIntent                  no
    112     ProfileDataOffset                no
    116     ProfileSize                      no
```

BMP OS2 Tags

    Information extracted from OS/2-format BMP images.

```
   Index1   Tag Name                         Writable
   ------   --------                         --------
      0     BMPVersion                       no
      4     ImageWidth                       no
      6     ImageHeight                      no
      8     Planes                           no
     10     BitDepth                         no
```

BMP Extra Tags

    Extra information extracted from some BMP images.

```
   Tag Name                                  Writable
   --------                                  --------
   EmbeddedJPG                               no
   EmbeddedPNG                               no
   ICC_Profile                               ICC_Profile
   LinkedProfileName                         no
```

BPG Tags
    The information listed below is extracted from BPG (Better Portable
    Graphics) images. See <http://bellard.org/bpg/> for the specification.

```
   Index1   Tag Name                         Writable
```

4	PixelFormat	no
4.1	Alpha	no
4.2	BitDepth	no
4.3	ColorSpace	no
4.4	Flags	no
6	ImageWidth	no
7	ImageHeight	no
8	ImageLength	no

BPG Extensions Tags

Tag ID	Tag Name	Writable
0x0001	EXIF	EXIF
0x0002	ICC_Profile	ICC_Profile
0x0003	XMP	XMP
0x0004	ThumbnailBPG	no
0x0005	AnimationControl?	no

WPG Tags

Tags extracted from WordPerfect Graphics (WPG) images.

Tag Name	Writable
ImageHeightInches	no
ImageWidthInches	no
Records	no+
RecordsV2	no+
WPGVersion	no

ICO Tags

Information extracted from Windows ICO (icon) and CUR (cursor) files.

Index1	Tag Name	Writable
2	ImageType	no
4	ImageCount	no
6	IconDir	ICO IconDir

ICO IconDir Tags

Index1	Tag Name	Writable
0	ImageWidth	no
1	ImageHeight	no
2	NumColors	no
4	ColorPlanes	no
	HotspotX	no
6	BitsPerPixel	no
	HotspotY	no
8	ImageLength	no

PICT Tags

The PICT format contains no true meta information, except for the
possible exception of the LongComment opcode. By default, only
ImageWidth, ImageHeight and X/YResolution are extracted from a PICT
image. Tags in the following table represent image opcodes.
Extraction of these tags is experimental, and is only enabled with the
Verbose or Unknown options.

Tag ID	Tag Name	Writable
0x0000	Nop	no
0x0001	ClipRgn	no
0x0002	BkPat	no
0x0003	TxFont	no
0x0004	TxFace	no
0x0005	TxMode	no
0x0006	SpExtra	no

0x0007	PnSize	no
0x0008	PnMode	no
0x0009	PnPat	no
0x000a	FillPat	no
0x000b	OvSize	no
0x000c	Origin	no
0x000d	TxSize	no
0x000e	FgColor	no
0x000f	BkColor	no
0x0010	TxRatio	no
0x0011	VersionOp	no
0x0012	BkPixPat	no
0x0013	PnPixPat	no
0x0014	FillPixPat	no
0x0015	PnLocHFrac	no
0x0016	ChExtra	no
0x0017	Reserved	no
0x001a	RGBFgCol	no
0x001b	RGBBkCol	no
0x001c	HiliteMode	no
0x001d	HiliteColor	no
0x001e	DefHilite	no
0x001f	OpColor	no
0x0020	Line	no
0x0021	LineFrom	no
0x0022	ShortLine	no
0x0023	ShortLineFrom	no
0x0024	Reserved	no
0x0028	LongText	no
0x0029	DHText	no
0x002a	DVText	no
0x002b	DHDVText	no
0x002c	FontName	no
0x002d	LineJustify	no
0x002e	GlyphState	no
0x002f	Reserved	no
0x0030	FrameRect	no
0x0031	PaintRect	no
0x0032	EraseRect	no
0x0033	InvertRect	no
0x0034	FillRect	no
0x0035	Reserved	no
0x0038	FrameSameRect	no
0x0039	PaintSameRect	no
0x003a	EraseSameRect	no
0x003b	InvertSameRect	no
0x003c	FillSameRect	no
0x003d	Reserved	no
0x0040	FrameRRect	no
0x0041	PaintRRect	no
0x0042	EraseRRect	no
0x0043	InvertRRect	no
0x0044	FillRRect	no
0x0045	Reserved	no
0x0048	FrameSameRRect	no
0x0049	PaintSameRRect	no
0x004a	EraseSameRRect	no
0x004b	InvertSameRRect	no
0x004c	FillSameRRect	no
0x004d	Reserved	no
0x0050	FrameOval	no
0x0051	PaintOval	no
0x0052	EraseOval	no
0x0053	InvertOval	no
0x0054	FillOval	no
0x0055	Reserved	no
0x0058	FrameSameOval	no
0x0059	PaintSameOval	no
0x005a	EraseSameOval	no
0x005b	InvertSameOval	no

0x005c	FillSameOval	no
0x005d	Reserved	no
0x0060	FrameArc	no
0x0061	PaintArc	no
0x0062	EraseArc	no
0x0063	InvertArc	no
0x0064	FillArc	no
0x0065	Reserved	no
0x0068	FrameSameArc	no
0x0069	PaintSameArc	no
0x006a	EraseSameArc	no
0x006b	InvertSameArc	no
0x006c	FillSameArc	no
0x006d	Reserved	no
0x0070	FramePoly	no
0x0071	PaintPoly	no
0x0072	ErasePoly	no
0x0073	InvertPoly	no
0x0074	FillPoly	no
0x0075	Reserved	no
0x0078	FrameSamePoly	no
0x0079	PaintSamePoly	no
0x007a	EraseSamePoly	no
0x007b	InvertSamePoly	no
0x007c	FillSamePoly	no
0x007d	Reserved	no
0x0080	FrameRgn	no
0x0081	PaintRgn	no
0x0082	EraseRgn	no
0x0083	InvertRgn	no
0x0084	FillRgn	no
0x0085	Reserved	no
0x0088	FrameSameRgn	no
0x0089	PaintSameRgn	no
0x008a	EraseSameRgn	no
0x008b	InvertSameRgn	no
0x008c	FillSameRgn	no
0x008d	Reserved	no
0x0090	BitsRect	no
0x0091	BitsRgn	no
0x0092	Reserved	no
0x0098	PackBitsRect	no
0x0099	PackBitsRgn	no
0x009a	DirectBitsRect	no
0x009b	DirectBitsRgn	no
0x009c	Reserved	no
0x009d	Reserved	no
0x009e	Reserved	no
0x009f	Reserved	no
0x00a0	ShortComment	no
0x00a1	LongComment	Photoshop
		ICC_Profile
0x00a2	Reserved	no
0x00b0	Reserved	no
0x00d0	Reserved	no
0x00ff	OpEndPic	no
0x0100	Reserved	no
0x0200	Reserved	no
0x02ff	Version	no
0x0300	Reserved	no
0x0bff	Reserved	no
0x0c00	HeaderOp	no
0x0c01	Reserved	no
0x7f00	Reserved	no
0x8000	Reserved	no
0x8100	Reserved	no
0x8200	CompressedQuickTime	no
0x8201	UncompressedQuickTime	no
0xffff	Reserved	no

PNG Tags

    Tags extracted from PNG images. See
    <http://www.libpng.org/pub/png/spec/1.2/> for the official PNG 1.2
    specification.

    According to the specification, a PNG file should end at the IEND
    chunk, however ExifTool will preserve any data found after this when
    writing unless it is specifically deleted with "-Trailer:All=". When
    reading, a minor warning is issued if this trailer exists, and ExifTool
    will attempt to parse this data as additional PNG chunks.

    Also according to the PNG specification, there is no restriction on the
    location of text-type chunks (tEXt, zTXt and iTXt). However, certain
    utilities (including some Apple and Adobe utilities) won't read the XMP
    iTXt chunk if it comes after the IDAT chunk, and at least one utility
    won't read other text chunks here. For this reason, when writing,
    ExifTool 11.63 and later create new text chunks (including XMP) before
    IDAT, and move existing text chunks to before IDAT.

    The PNG format contains CRC checksums that are validated when reading
    with either the Verbose or Validate option. When writing, these
    checksums are validated by default, but the FastScan option may be used
    to bypass this check if speed is more of a concern.

Tag ID	Tag Name	Writable
'IHDR'	ImageHeader	PNG ImageHeader
'PLTE'	Palette	no
'acTL'	AnimationControl	PNG AnimationControl
'bKGD'	BackgroundColor	no
'cHRM'	PrimaryChromaticities	PNG PrimaryChromaticities
'cICP'	CICodePoints	PNG CICodePoints
'caBX'	JUMBF	Jpeg2000
'cpIp'	OLEInfo	FlashPix
'dSIG'	DigitalSignature	no
'eXIf'	eXIf	EXIF
'fRAc'	FractalParameters	no
'gAMA'	Gamma	yes!
'gIFg'	GIFGraphicControlExtension	no
'gIFt'	GIFPlainTextExtension	no
'gIFx'	GIFApplicationExtension	no
'gdAT'	GainMapImage	no
'hIST'	PaletteHistogram	no
'iCCP'	ICC_Profile	ICC_Profile
'iCCP-name'	ProfileName	yes
'iDOT'	AppleDataOffsets	no
'iTXt'	InternationalText	PNG TextualData
'meTa'	MeTa	XMP XML
'oFFs'	ImageOffset	no
'pCAL'	PixelCalibration	no
'pHYs'	PhysicalPixel	PNG PhysicalPixel
'sBIT'	SignificantBits	no
'sCAL'	SubjectScale	PNG SubjectScale
'sPLT'	SuggestedPalette	no
'sRGB'	SRGBRendering	yes!
'sTER'	StereoImage	PNG StereoImage
'seAl'	SEAL	XMP SEAL
'tEXt'	TextualData	PNG TextualData
'tIME'	ModifyDate	yes
'tRNS'	Transparency	no
'tXMP'	XMP	XMP
'vpAg'	VirtualPage	PNG VirtualPage
'zTXt'	CompressedText	PNG TextualData
'zxIf'	zxIf	EXIF

    PNG ImageHeader Tags

Index1	Tag Name	Writable
0	ImageWidth	no

```
    4    ImageHeight                          no
    8    BitDepth                             no
    9    ColorType                            no
   10    Compression                          no
   11    Filter                               no
   12    Interlace                            no
```

PNG AnimationControl Tags

Tags found in the Animation Control chunk. See
<https://wiki.mozilla.org/APNG_Specification> for details.

```
   Index4   Tag Name                          Writable
   ------   --------                          --------
      0     AnimationFrames                   no
      1     AnimationPlays                    no
```

PNG PrimaryChromaticities Tags

```
   Index4   Tag Name                          Writable
   ------   --------                          --------
      0     WhitePointX                       no
      1     WhitePointY                       no
      2     RedX                              no
      3     RedY                              no
      4     GreenX                            no
      5     GreenY                            no
      6     BlueX                             no
      7     BlueY                             no
```

PNG CICodePoints Tags

These tags are found in the PNG cICP chunk and belong to the PNG-cICP
family 1 group.

```
   Index1   Tag Name                          Writable
   ------   --------                          --------
      0     ColorPrimaries                    no
      1     TransferCharacteristics           no
      2     MatrixCoefficients                no
      3     VideoFullRangeFlag                no
```

PNG TextualData Tags

The PNG TextualData format allows arbitrary tag names to be used. The
tags listed below are the only ones that can be written (unless new
user-defined tags are added via the configuration file), however
ExifTool will extract any other TextualData tags that are found. All
TextualData tags (including tags not listed below) are removed when
deleting all PNG tags.

These tags may be stored as tEXt, zTXt or iTXt chunks in the PNG image.
By default ExifTool writes new string-value tags as as uncompressed
tEXt, or compressed zTXt if the Compress (-z) option is used and
Compress::Zlib is available. Alternate language tags and values
containing special characters (unless the Latin character set is used)
are written as iTXt, and compressed if the Compress option is used and
Compress::Zlib is available. Raw profile information is always created
as compressed zTXt if Compress::Zlib is available, or tEXt otherwise.
Standard XMP is written as uncompressed iTXt. User-defined tags may
set an 'iTXt' flag in the tag definition to be written only as iTXt.

Alternate languages are accessed by suffixing the tag name with a '-',
followed by an RFC 3066 language code (eg. "PNG:Comment-fr", or "Title-
en-US"). See <http://www.ietf.org/rfc/rfc3066.txt> for the RFC 3066
specification.

Some of the tags below are not registered as part of the PNG
specification, but are included here because they are generated by
other software such as ImageMagick.

Tag ID	Tag Name	Writable
'Artist'	Artist	string
'Author'	Author	string
'Collection'	Collection	string
'Comment'	Comment	string
'Copyright'	Copyright	string
'Creation Time'	CreationTime	string
'Description'	Description	string
'Disclaimer'	Disclaimer	string
'Document'	Document	string
'Label'	Label	string
'Make'	Make	string
'Model'	Model	string
'Raw profile type 8bim'	Photoshop_Profile	Photoshop
'Raw profile type APP1'	APP1_Profile	EXIF
		XMP
'Raw profile type exif'	EXIF_Profile	EXIF
'Raw profile type icc'	ICC_Profile	ICC_Profile
'Raw profile type icm'	ICC_Profile	ICC_Profile
'Raw profile type iptc'	IPTC_Profile	Photoshop
'Raw profile type xmp'	XMP_Profile	XMP
'Software'	Software	string
'Source'	Source	string
'TimeStamp'	TimeStamp	string
'Title'	Title	string
'URL'	URL	string
'Warning'	PNGWarning	string
'XML:com.adobe.xmp'	XMP	XMP
'aesthetic_score'	AestheticScore	string
'create-date'	CreateDate	string
'modify-date'	ModDate	string
'parameters'	Parameters	string

PNG PhysicalPixel Tags

These tags are found in the PNG pHYs chunk and belong to the PNG-pHYs family 1 group. They are all created together with default values if necessary when any of these tags is written, and may only be deleted as a group.

Index1	Tag Name	Writable
0	PixelsPerUnitX	int32u
4	PixelsPerUnitY	int32u
8	PixelUnits	int8u

PNG SubjectScale Tags

Index1	Tag Name	Writable
0	SubjectUnits	no
1	SubjectPixelWidth	no
2	SubjectPixelHeight	no

PNG StereoImage Tags

Index1	Tag Name	Writable
0	StereoMode	no

PNG VirtualPage Tags

Index4	Tag Name	Writable
0	VirtualImageWidth	no
1	VirtualImageHeight	no
2	VirtualPageUnits	no

MNG Tags

    This table contains definitions for tags found in MNG and JNG images.
MNG is a superset of PNG and JNG, so a MNG image may contain any of
these tags as well as any PNG tags. Conversely, only some of these
tags are valid for JNG images.

Tag ID	Tag Name	Writable
'BACK'	Background	MNG Background
'BASI'	BasisObject	MNG BasisObject
'CLIP'	ClipObjects	MNG ClipObjects
'CLON'	CloneObject	MNG CloneObject
'DBYK'	DropByKeyword	no
'DEFI'	DefineObject	MNG DefineObject
'DHDR'	DeltaPNGHeader	MNG DeltaPNGHeader
'DISC'	DiscardObjects	no
'DROP'	DropChunks	no
'FRAM'	Frame	no
'JHDR'	JNGHeader	MNG JNGHeader
'LOOP'	Loop	MNG Loop
'MAGN'	MagnifyObject	MNG MagnifyObject
'MHDR'	MNGHeader	MNG MNGHeader
'MOVE'	MoveObjects	MNG MoveObjects
'ORDR'	OrderingRestrictions	no
'PAST'	PasteImage	MNG PasteImage
'PPLT'	PartialPalette	no
'PROM'	PromoteParent	MNG PromoteParent
'SAVE'	SaveObjects	no
'SEEK'	SeekPoint	no
'SHOW'	ShowObjects	MNG ShowObjects
'TERM'	TerminationAction	MNG TerminationAction
'eXPi'	ExportImage	MNG ExportImage
'fPRI'	FramePriority	MNG FramePriority
'nEED'	ResourcesNeeded	no
'pHYg'	GlobalPixelSize	PNG PhysicalPixel

MNG Background Tags

Index1	Tag Name	Writable
0	BackgroundColor	no
6	MandatoryBackground	no
7	BackgroundImageID	no
9	BackgroundTiling	no

MNG BasisObject Tags

Index1	Tag Name	Writable
0	ImageWidth	no
4	ImageHeight	no
8	BitDepth	no
9	ColorType	no
10	Compression	no
11	Filter	no
12	Interlace	no
13	RedSample	no
17	GreenSample	no
21	BlueSample	no
25	AlphaSample	no
26	Viewable	no

MNG ClipObjects Tags

Index1	Tag Name	Writable
0	FirstObject	no
2	LastObject	no
4	DeltaType	no
5	ClipBoundary	no

MNG CloneObject Tags

Index1	Tag Name	Writable
0	SourceID	no
2	CloneID	no
4	CloneType	no
5	DoNotShow	no
6	ConcreteFlag	no
7	LocalDeltaType	no
8	DeltaXY	no

MNG DefineObject Tags

Index1	Tag Name	Writable
0	ObjectID	no
2	DoNotShow	no
3	ConcreteFlag	no
4	XYLocation	no
12	ClippingBoundary	no

MNG DeltaPNGHeader Tags

Index1	Tag Name	Writable
0	ObjectID	no
2	ImageType	no
3	DeltaType	no
4	BlockSize	no
12	BlockLocation	no

MNG JNGHeader Tags

Index1	Tag Name	Writable
0	ImageWidth	no
4	ImageHeight	no
8	ColorType	no
9	BitDepth	no
10	Compression	no
11	Interlace	no
12	AlphaBitDepth	no
13	AlphaCompression	no
14	AlphaFilter	no
15	AlphaInterlace	no

MNG Loop Tags

Index1	Tag Name	Writable
0	NestLevel	no
1	IterationCount	no
5	TerminationCondition	no
6	IterationMinMax	no
14	SignalNumber	no

MNG MagnifyObject Tags

Index1	Tag Name	Writable
0	FirstObjectID	no
2	LastObjectID	no
4	XMethod	no
5	XMag	no
7	YMag	no
9	LeftMag	no
11	RightMag	no
13	TopMag	no

```
    15    BottomMag                              no
    17    YMethod                                no
```

MNG MNGHeader Tags

```
  Index4    Tag Name                           Writable
  ------    --------                           --------
     0    ImageWidth                           no
     1    ImageHeight                          no
     2    TicksPerSecond                       no
     3    NominalLayerCount                    no
     4    NominalFrameCount                    no
     5    NominalPlayTime                      no
     6    SimplicityProfile                    no
```

MNG MoveObjects Tags

```
  Index1    Tag Name                           Writable
  ------    --------                           --------
     0    FirstObject                          no
     2    LastObject                           no
     4    DeltaType                            no
     5    DeltaXY                              no
```

MNG PasteImage Tags

```
  Index1    Tag Name                           Writable
  ------    --------                           --------
     0    DestinationID                        no
     2    TargetDeltaType                      no
     3    TargetXY                             no
    11    SourceID                             no
    13    CompositionMode                      no
    14    Orientation                          no
    15    OffsetOrigin                         no
    16    OffsetXY                             no
    24    BoundaryOrigin                       no
    25    PastClippingBoundary                 no
```

MNG PromoteParent Tags

```
  Index1    Tag Name                           Writable
  ------    --------                           --------
     0    NewColorType                         no
     1    NewBitDepth                          no
     2    FillMethod                           no
```

MNG ShowObjects Tags

```
  Index1    Tag Name                           Writable
  ------    --------                           --------
     0    FirstObject                          no
     2    LastObject                           no
     4    ShowMode                             no
```

MNG TerminationAction Tags

```
  Index1    Tag Name                           Writable
  ------    --------                           --------
     0    TerminationAction                    no
     1    IterationEndAction                   no
     2    Delay                                no
     6    IterationMax                         no
```

MNG ExportImage Tags

```
  Index1    Tag Name                           Writable
  ------    --------                           --------
     0    SnapshotID                           no
     2    SnapshotName                         no
```

MNG FramePriority Tags

```
    Index1   Tag Name                           Writable
    ------   --------                           --------
        0    DeltaType                          no
        2    Priority                           no
```

FLIF Tags
    Information extracted from Free Lossless Image Format files. See
    <http://flif.info/> for more information.

```
    Tag ID   Tag Name                           Writable
    ------   --------                           --------
        0    ImageType                          no
        1    BitDepth                           no
        2    ImageWidth                         no
        3    ImageHeight                        no
        4    AnimationFrames                    no
        5    Encoding                           no
    'eXif'   EXIF                               EXIF
    'eXmp'   XMP                                XMP
    'iCCP'   ICC_Profile                        ICC_Profile
```

DjVu Tags
    Information is extracted from the following chunks in DjVu images. See
    <http://www.djvu.org/> for the DjVu specification.

```
    Tag ID   Tag Name                           Writable
    ------   --------                           --------
    'ANTa'   ANTa                               DjVu Ant
    'ANTz'   CompressedAnnotation               DjVu Ant
    'FORM'   FORM                               DjVu Form
    'INCL'   IncludedFileID                     no
    'INFO'   INFO                               DjVu Info
```

DjVu Ant Tags

    Information extracted from annotation chunks.

```
    Tag ID      Tag Name                        Writable
    ------      --------                        --------
    'metadata'  Metadata                        DjVu Meta
    'xmp'       XMP                             XMP
```

DjVu Meta Tags

    This table lists the standard DjVu metadata tags, but ExifTool will
    extract any tags that exist even if they don't appear here. The DjVu
    v3 documentation endorses tags borrowed from two standards: 1) BibTeX
    bibliography system tags (all lowercase Tag ID's in the table below),
    and 2) PDF DocInfo tags (capitalized Tag ID's).

```
    Tag ID            Tag Name                  Writable
    ------            --------                  --------
    'Author'          Author                    no
    'CreationDate'    CreateDate                no
    'Creator'         Creator                   no
    'Keywords'        Keywords                  no
    'ModDate'         ModifyDate                no
    'Producer'        Producer                  no
    'Subject'         Subject                   no
    'Title'           Title                     no
    'Trapped'         Trapped                   no
    'address'         Address                   no
    'annote'          Annotation                no
    'author'          Author                    no
    'booktitle'       BookTitle                 no
    'chapter'         Chapter                   no
    'crossref'        CrossRef                  no
```

```
         'edition'          Edition                    no
         'eprint'           EPrint                     no
         'howpublished'     HowPublished               no
         'institution'      Institution                no
         'journal'          Journal                    no
         'key'              Key                        no
         'month'            Month                      no
         'note'             Note                       no
         'number'           Number                     no
         'organization'     Organization               no
         'pages'            Pages                      no
         'publisher'        Publisher                  no
         'school'           School                     no
         'series'           Series                     no
         'title'            Title                      no
         'type'             Type                       no
         'url'              URL                        no
         'volume'           Volume                     no
         'year'             Year                       no
```

DjVu Form Tags

```
    Index1   Tag Name                        Writable
    ------   --------                        --------
        0    SubfileType                     no
```

DjVu Info Tags

```
    Index1   Tag Name                        Writable
    ------   --------                        --------
        0    ImageWidth                      no
        2    ImageHeight                     no
        4    DjVuVersion                     no
        6    SpatialResolution               no
        8    Gamma                           no
        9    Orientation                     no
```

DPX Tags
    Tags extracted from DPX (Digital Picture Exchange) images.

```
    Index1   Tag Name                        Writable
    ------   --------                        --------
        0    ByteOrder                       no
        8    HeaderVersion                   no
       16    DPXFileSize                     no
       20    DittoKey                        no
       36    ImageFileName                   no
      136    CreateDate                      no
      160    Creator                         no
      260    Project                         no
      460    Copyright                       no
      660    EncryptionKey                   no
      768    Orientation                     no
      770    ImageElements                   no
      772    ImageWidth                      no
      776    ImageHeight                     no
      780    DataSign                        no
      800    ComponentsConfiguration         no
      801    TransferCharacteristic          no
      802    ColorimetricSpecification       no
      803    BitDepth                        no
      820    ImageDescription                no
      892    Image2Description               no
      964    Image3Description               no
     1036    Image4Description               no
     1108    Image5Description               no
     1180    Image6Description               no
     1252    Image7Description               no
     1324    Image8Description               no
     1432    SourceFileName                  no
```

```
     1532    SourceCreateDate                        no
     1556    InputDeviceName                         no
     1588    InputDeviceSerialNumber                 no
     1628    AspectRatio                             no
     1724    OriginalFrameRate                       no
     1728    ShutterAngle                            no
     1732    FrameID                                 no
     1764    SlateInformation                        no
     1920    TimeCode                                no
     1940    FrameRate                               no
     1972    Reserved5?                              no
     2048    UserID                                  no
```

OpenEXR Tags
    Information extracted from EXR images. Use the ExtractEmbedded option
    to extract information from all frames of a multipart image. See
    <http://www.openexr.com/> for the official specification.

```
    Tag ID                  Tag Name            Writable
    ------                  --------            --------
    '_flags'                Flags               no
    '_ver'                  EXRVersion          no
    'adoptedNeutral'        AdoptedNeutral      no
    'altitude'              GPSAltitude         no
    'aperture'              Aperture            no
    'capDate'               DateTimeOriginal    no
    'channels'              Channels            no
    'chromaticities'        Chromaticities      no
    'chunkCount'            ChunkCount          no
    'comments'              Comments            no
    'compression'           Compression         no
    'dataWindow'            DataWindow          no
    'displayWindow'         DisplayWindow       no
    'envmap'                EnvironmentMap      no
    'exif'                  EXIF                EXIF
    'expTime'               ExposureTime        no
    'focus'                 FocusDistance       no
    'framesPerSecond'       FramesPerSecond     no
    'isoSpeed'              ISO                 no
    'keyCode'               KeyCode             no
    'latitude'              GPSLatitude         no
    'lineOrder'             LineOrder           no
    'longitude'             GPSLongitude        no
    'lookModTransform'      LookModTransform    no
    'multiView'             MultiView           no
    'name'                  Name                no
    'owner'                 Owner               no
    'pixelAspectRatio'      PixelAspectRatio    no
    'preview'               Preview             no
    'renderingTransform'    RenderingTransform  no
    'screenWindowCenter'    ScreenWindowCenter  no
    'screenWindowWidth'     ScreenWindowWidth   no
    'tiles'                 Tiles               no
    'timeCode'              TimeCode            no
    'type'                  Type                no
    'utcOffset'             TimeZone            no
    'version'               Version             no
    'whiteLuminance'        WhiteLuminance      no
    'worldToCamera'         WorldToCamera       no
    'worldToNDC'            WorldToNDC          no
    'wrapmodes'             WrapModes           no
    'xDensity'              XResolution         no
    'xmp'                   XMP                 XMP
```

ZISRAW Tags
    As well as the header information listed below, ExifTool also extracts
    the top-level XML-based metadata from Zeiss Integrated Software RAW
    (ZISRAW) CZI files.

```
    Index1   Tag Name                            Writable
```

```
   ------    --------                        --------
       32    ZISRAWVersion                   no
       48    PrimaryFileGUID                 no
       64    FileGUID                        no
```

MRC Tags

    Tags extracted from Medical Research Council (MRC) format imaging
    files. See <https://www.ccpem.ac.uk/mrc_format/mrc2014.php> for the
    specification.

```
   Index4    Tag Name                        Writable
   ------    --------                        --------
        0    ImageWidth                      no
        1    ImageHeight                     no
        2    ImageDepth                      no
        3    ImageMode                       no
        4    StartPoint                      no
        7    GridSize                        no
       10    CellWidth                       no
       11    CellHeight                      no
       12    CellDepth                       no
       13    CellAlpha                       no
       14    CellBeta                        no
       15    CellGamma                       no
       16    ImageWidthAxis                  no
       17    ImageHeightAxis                 no
       18    ImageDepthAxis                  no
       19    DensityMin                      no
       20    DensityMax                      no
       21    DensityMean                     no
       22    SpaceGroupNumber                no
       23    ExtendedHeaderSize              no
       26    ExtendedHeaderType              no
       27    MRCVersion                      no
       49    Origin                          no
       53    MachineStamp                    no
       54    RMSDeviation                    no
       55    NumberOfLabels                  no
       56    Label0                          no
       76    Label1                          no
       96    Label2                          no
      116    Label3                          no
      136    Label4                          no
      156    Label5                          no
      176    Label6                          no
      196    Label7                          no
      216    Label8                          no
      236    Label9                          no
```

    MRC FEI12 Tags

    Tags extracted from FEI1 and FEI2 extended headers.

```
   Index1    Tag Name                        Writable
   ------    --------                        --------
        0    MetadataSize                    no
        4    MetadataVersion                 no
        8    Bitmask1                        no
       12    TimeStamp                       no
       20    MicroscopeType                  no
       36    MicroscopeID                    no
       52    Application                     no
       68    AppVersion                      no
       84    HighTension                     no
       92    Dose                            no
      100    AlphaTilt                       no
      108    BetaTilt                        no
      116    XStage                          no
      124    YStage                          no
      132    ZStage                          no
```

140	TiltAxisAngle	no
148	DualAxisRot	no
156	PixelSizeX	no
164	PixelSizeY	no
220	Defocus	no
228	STEMDefocus	no
236	AppliedDefocus	no
244	InstrumentMode	no
248	ProjectionMode	no
252	ObjectiveLens	no
268	HighMagnificationMode	no
284	ProbeMode	no
288	EFTEMOn	no
289	Magnification	no
297	Bitmask2	no
301	CameraLength	no
309	SpotIndex	no
313	IlluminationArea	no
321	Intensity	no
329	ConvergenceAngle	no
337	IlluminationMode	no
353	WideConvergenceAngleRange	no
354	SlitInserted	no
355	SlitWidth	no
363	AccelVoltOffset	no
371	DriftTubeVolt	no
379	EnergyShift	no
387	ShiftOffsetX	no
395	ShiftOffsetY	no
403	ShiftX	no
411	ShiftY	no
419	IntegrationTime	no
427	BinningWidth	no
431	BinningHeight	no
435	CameraName	no
451	ReadoutAreaLeft	no
455	ReadoutAreaTop	no
459	ReadoutAreaRight	no
463	ReadoutAreaBottom	no
467	CetaNoiseReduct	no
468	CetaFramesSummed	no
472	DirectDetElectronCounting	no
473	DirectDetAlignFrames	no
490	Bitmask3	no
518	PhasePlate	no
519	STEMDetectorName	no
535	Gain	no
543	Offset	no
571	DwellTime	no
579	FrameTime	no
587	ScanSizeLeft	no
591	ScanSizeTop	no
595	ScanSizeRight	no
599	ScanSizeBottom	no
603	FullScanFOV_X	no
611	FullScanFOV_Y	no
619	Element	no
635	EnergyIntervalLower	no
643	EnergyIntervalHigher	no
651	Method	no
655	IsDoseFraction	no
656	FractionNumber	no
660	StartFrame	no
664	EndFrame	no
668	InputStackFilename	no
748	Bitmask4	no
752	AlphaTiltMin	no
760	AlphaTiltMax	no
768	ScanRotation	no
776	DiffractionPatternRotation	no

```
784     ImageRotation                       no
792     ScanModeEnumeration                 no
796     AcquisitionTimeStamp                no
804     DetectorCommercialName              no
820     StartTiltAngle                      no
828     EndTiltAngle                        no
836     TiltPerImage                        no
844     TitlSpeed                           no
852     BeamCenterX                         no
856     BeamCenterY                         no
860     CFEGFlashTimeStamp                  no
868     PhasePlatePosition                  no
872     ObjectiveAperture                   no
```

LIF Tags

Tags extracted from Leica Image Format (LIF) imaging files. As well as
the tags listed below, all available information is extracted from the
XML-format metadata in the LIF header.

```
Tag Name                            Writable
--------                            --------
TimeStampList                       no
```

MIFF Tags

The MIFF (Magick Image File Format) format allows aribrary tag names to
be used. Only the standard tag names are listed below, however
ExifTool will decode any tags found in the image.

```
Tag ID                  Tag Name            Writable
------                  --------            --------
'background-color'      BackgroundColor     no
'blue-primary'          BluePrimary         no
'border-color'          BorderColor         no
'class'                 Class               no
'colors'                Colors              no
'colorspace'            ColorSpace          no
'columns'               ImageWidth          no
'compression'           Compression         no
'delay'                 Delay               no
'depth'                 Depth               no
'dispose'               Dispose             no
'gamma'                 Gamma               no
'green-primary'         GreenPrimary        no
'id'                    ID                  no
'iterations'            Iterations          no
'label'                 Label               no
'matt-color'            MattColor           no
'matte'                 Matte               no
'montage'               Montage             no
'packets'               Packets             no
'page'                  Page                no
'profile-APP1'          APP1_Profile        EXIF
                                            XMP
'profile-exif'          EXIF_Profile        EXIF
'profile-icc'           ICC_Profile         ICC_Profile
'profile-iptc'          IPTC_Profile        Photoshop
'profile-xmp'           XMP_Profile         XMP
'red-primary'           RedPrimary          no
'rendering-intent'      RenderingIntent     no
'resolution'            Resolution          no
'rows'                  ImageHeight         no
'scene'                 Scene               no
'signature'             Signature           no
'units'                 Units               no
'white-point'           WhitePoint          no
```

PCX Tags

Tags extracted from PC Paintbrush images.

```
Index1  Tag Name                            Writable
```

------	--------	--------
0	Manufacturer	no
1	Software	no
2	Encoding	no
3	BitsPerPixel	no
4	LeftMargin	no
6	TopMargin	no
8	ImageWidth	no
10	ImageHeight	no
12	XResolution	no
14	YResolution	no
65	ColorPlanes	no
66	BytesPerLine	no
68	ColorMode	no
70	ScreenWidth	no
72	ScreenHeight	no

PGF Tags

The following table lists information extracted from the header of
Progressive Graphics File (PGF) images. As well, information is
extracted from the embedded PNG metadata image if it exists. See
<http://www.libpgf.org/> for the PGF specification.

Index1	Tag Name	Writable
3	PGFVersion	no
8	ImageWidth	no
12	ImageHeight	no
16	PyramidLevels	no
17	Quality	no
18	BitsPerPixel	no
19	ColorComponents	no
20	ColorMode	no
21	BackgroundColor	no

PSP Tags

Tags extracted from Paint Shop Pro images (PSP, PSPIMAGE, PSPFRAME,
PSPSHAPE, PSPTUBE and TUB extensions).

Tag ID	Tag Name	Writable
'FileVersion'	FileVersion	no
0x0000	ImageInfo	PSP Image
		PSP Image
0x0001	CreatorInfo	PSP Creator
0x000a	ExtendedInfo	PSP Ext

PSP Image Tags

Index1	Tag Name	Writable
0	ImageWidth	no
4	ImageHeight	no
8	ImageResolution	no
16	ResolutionUnit	no
17	Compression	no
19	BitsPerSample	no
21	Planes	no
23	NumColors	no

PSP Creator Tags

Tag ID	Tag Name	Writable
0x0000	Title	no
0x0001	CreateDate	no
0x0002	ModifyDate	no
0x0003	Artist	no
0x0004	Copyright	no
0x0005	Description	no

```
    0x0006    CreatorAppID                               no
    0x0007    CreatorAppVersion                          no
```

PSP Ext Tags

```
    Tag ID    Tag Name                          Writable
    ------    --------                          --------
    0x0003    EXIFInfo                          EXIF
```

PhotoCD Tags
    Tags extracted from Kodak Photo CD Image Pac (PCD) files.

```
    Index1    Tag Name                          Writable
    ------    --------                          --------
         7    SpecificationVersion              no
         9    AuthoringSoftwareRelease          no
        11    ImageMagnificationDescriptor      no
        13    CreateDate                        no
        17    ModifyDate                        no
        21    ImageMedium                       no
        22    ProductType                       no
        42    ScannerVendorID                   no
        62    ScannerProductID                  no
        78    ScannerFirmwareVersion            no
        82    ScannerFirmwareDate               no
        90    ScannerSerialNumber               no
       110    ScannerPixelSize                  no
       112    ImageWorkstationMake              no
       132    CharacterSet                      no
       133    CharacterEscapeSequence?          no
       165    PhotoFinisherName                 no
       228    SceneBalanceAlgorithmRevision     no
       230    SceneBalanceAlgorithmCommand      no
       325    SceneBalanceAlgorithmFilmID       no
       331    CopyrightStatus                   no
       332    CopyrightFileName                 no
      1538    Orientation                       no
      1538.1  ImageWidth                        no
      1538.2  ImageHeight                       no
      1538.3  CompressionClass                  no
```

Radiance Tags
    Information extracted from Radiance RGBE HDR images. Tag ID's are all
    uppercase as stored in the file, but converted to lowercase by when
    extracting to avoid conflicts with internal ExifTool variables. See
    <http://radsite.lbl.gov/radiance/refer/filefmts.pdf> and
    <http://www.graphics.cornell.edu/online/formats/rgbe/> for the
    specification.

```
    Tag ID              Tag Name            Writable
    ------              --------            --------
    '_command'          Command             no
    '_comment'          Comment             no
    '_orient'           Orientation         no
    'colorcorr'         ColorCorrection     no
    'exposure'          Exposure            no
    'format'            Format              no
    'gamma'             Gamma               no
    'pixaspect'         PixelAspectRatio    no
    'primaries'         ColorPrimaries      no
    'software'          Software            no
    'view'              View                no
```

Other PFM Tags

    Tags extracted from Portable FloatMap images. See
    <http://www.pauldebevec.com/Research/HDR/PFM/> for the specification.

```
    Tag Name                              Writable
    --------                              --------
```

```
      ByteOrder                               no
      ColorSpace                              no
      ImageHeight                             no
      ImageWidth                              no
```

PDF Tags

The tags listed in the PDF tables below are those which are used by
ExifTool to extract meta information, but they are only a small
fraction of the total number of available PDF tags. See
<http://www.adobe.com/devnet/pdf/pdf_reference.html> for the official
PDF specification.

ExifTool supports reading and writing PDF documents up to version 2.0,
including support for RC4, AES-128 and AES-256 encryption. A Password
option is provided to allow processing of password-protected PDF files.

ExifTool may be used to write native PDF and XMP metadata to PDF files.
It uses an incremental update technique that has the advantages of
being both fast and reversible. If ExifTool was used to modify a PDF
file, the original may be recovered by deleting the "PDF-update"
pseudo-group (with "-PDF-update:all=" on the command line). However,
there are two main disadvantages to this technique:

1) A linearized PDF file is no longer linearized after the update, so
it must be subsequently re-linearized if this is required.

2) All metadata edits are reversible. While this would normally be
considered an advantage, it is a potential security problem because old
information is never actually deleted from the file. (However, after
running ExifTool the old information may be removed permanently using
the "qpdf" utility with this command: "qpdf --linearize in.pdf
out.pdf".)

```
      Tag ID                  Tag Name                Writable
      ------                  --------                --------
      'Encrypt'               Encrypt                 PDF Encrypt
      'Info'                  Info                    PDF Info
      'Root'                  Root                    PDF Root
      '_linearized'           Linearized              no
```

PDF Encrypt Tags

Tags extracted from the document Encrypt dictionary.

```
      Tag ID   Tag Name                       Writable
      ------   --------                       --------
      'Filter' Encryption                     no
      'P'      UserAccess                     no
```

PDF Info Tags

As well as the tags listed below, the PDF specification allows for
user-defined tags to exist in the Info dictionary. These tags, which
should have corresponding XMP-pdfx entries in the XMP of the PDF XML
Metadata object, are also extracted by ExifTool.

Writable specifies the value format, and may be "string", "date",
"integer", "real", "boolean" or "name" for PDF tags.

```
      Tag ID                  Tag Name                Writable
      ------                  --------                --------
      'AAPL:Keywords'         AppleKeywords           string+
      'Author'                Author                  string
      'CreationDate'          CreateDate              date
      'Creator'               Creator                 string
      'Keywords'              Keywords                string+
      'ModDate'               ModifyDate              date
      'Producer'              Producer                string
      'SourceModified'        SourceModified          date
      'Subject'               Subject                 string
```

```
   'Title'              Title               string
   'Trapped'            Trapped             string!
```

PDF Root Tags

This is the PDF document catalog.

```
   Tag ID               Tag Name            Writable
   ------               --------            --------
   'AF'                 AF                  PDF AF
   'AcroForm'           AcroForm            PDF AcroForm
   'Lang'               Language            no
   'MarkInfo'           MarkInfo            PDF MarkInfo
   'Metadata'           Metadata            PDF Metadata
   'PageLayout'         PageLayout          no
   'PageMode'           PageMode            no
   'Pages'              Pages               PDF Pages
   'Perms'              Perms               PDF Perms
   'Version'            PDFVersion          no
```

PDF AF Tags

Processed only for C2PA information if AFRelationship is
"/C2PA_Manifest".

```
   Tag ID    Tag Name                       Writable
   ------    --------                       --------
   'EF'      EF                             PDF EF
```

PDF EF Tags

```
   Tag ID    Tag Name                       Writable
   ------    --------                       --------
   'F'       F_                             PDF F
```

PDF F Tags

C2PA JUMBF metadata extracted from "/C2PA_Manifest" file.

```
   Tag ID        Tag Name                   Writable
   ------        --------                   --------
   '_stream'     JUMBF                      Jpeg2000
```

PDF AcroForm Tags

```
   Tag ID        Tag Name                   Writable
   ------        --------                   --------
   '_has_xfa'    HasXFA                     no
```

PDF MarkInfo Tags

```
   Tag ID    Tag Name                       Writable
   ------    --------                       --------
   'Marked'  TaggedPDF                      no
```

PDF Metadata Tags

```
   Tag ID        Tag Name                   Writable
   ------        --------                   --------
   'XML_stream'  XMP                        XMP
```

PDF Pages Tags

```
   Tag ID    Tag Name                       Writable
   ------    --------                       --------
   'Count'   PageCount                      no
   'Kids'    Kids                           PDF Kids
```

PDF Kids Tags

Tag ID	Tag Name	Writable
'Kids'	Kids	PDF Kids
'Metadata'	Metadata	PDF Metadata
'PieceInfo'	PieceInfo	PDF PieceInfo
'Resources'	Resources	PDF Resources

PDF PieceInfo Tags

Tag ID	Tag Name	Writable
'AdobePhotoshop'	AdobePhotoshop	PDF AdobePhotoshop
'Illustrator'	Illustrator	PDF Illustrator

PDF AdobePhotoshop Tags

Tag ID	Tag Name	Writable
'Private'	Private	PDF Private

PDF Private Tags

Tag ID	Tag Name	Writable
'ImageResources'	ImageResources	PDF ImageResources

PDF ImageResources Tags

Tag ID	Tag Name	Writable
'_stream'	PhotoshopStream	Photoshop

PDF Illustrator Tags

Tag ID	Tag Name	Writable
'Private'	Private	PDF AIPrivate

PDF AIPrivate Tags

Tag ID	Tag Name	Writable
'AIMetaData'	AIMetaData	PDF AIMetaData
'AIPDFPrivateData'	AIPDFPrivateData	PostScript
'AIPrivateData'	AIPrivateData	PostScript
'ContainerVersion'	ContainerVersion	no
'CreatorVersion'	CreatorVersion	no
'RoundTripVersion'	RoundTripVersion	no

PDF AIMetaData Tags

Tag ID	Tag Name	Writable
'_stream'	AIStream	PostScript

PDF Resources Tags

Tag ID	Tag Name	Writable
'ColorSpace'	ColorSpace	PDF ColorSpace
'Properties'	Properties	PDF Properties
'XObject'	XObject	PDF XObject

PDF ColorSpace Tags

Tag ID	Tag Name	Writable
'CS0'	CS0	PDF DefaultRGB
'Cs1'	Cs1	PDF DefaultRGB
'DefaultCMYK'	DefaultCMYK	PDF DefaultRGB

```
    'DefaultRGB'          DefaultRGB                  PDF DefaultRGB
```

PDF DefaultRGB Tags

```
  Tag ID         Tag Name                    Writable
  ------         --------                    --------
  'ICCBased'     ICCBased                    PDF ICCBased
```

PDF ICCBased Tags

```
  Tag ID         Tag Name                    Writable
  ------         --------                    --------
  '_stream'      ICC_Profile                 ICC_Profile
```

PDF Properties Tags

```
  Tag ID    Tag Name                         Writable
  ------    --------                         --------
  'MC'      MC                               PDF MC
```

PDF MC Tags

```
  Tag ID         Tag Name                    Writable
  ------         --------                    --------
  'Metadata'     Metadata                    PDF Metadata
```

PDF XObject Tags

```
  Tag ID    Tag Name                         Writable
  ------    --------                         --------
  'Im'      Im                               PDF Im
```

PDF Im Tags

Information extracted from embedded images with the ExtractEmbedded
option. The EmbeddedImage and its metadata are extracted only for JPEG
and Jpeg2000 image formats.

```
  Tag ID            Tag Name                 Writable
  ------            --------                 --------
  'ColorSpace'      EmbeddedImageColorSpace  no+
  'Filter'          EmbeddedImageFilter      no+
  'Height'          EmbeddedImageHeight      no
  'Image_stream'    EmbeddedImage            no
  'Width'           EmbeddedImageWidth       no
```

PDF Perms Tags

Additional document permissions imposed by digital signatures.

```
  Tag ID         Tag Name                    Writable
  ------         --------                    --------
  'DocMDP'       DocMDP                      PDF Signature
  'FieldMDP'     FieldMDP                    PDF Signature
  'UR3'          UR3                         PDF Signature
```

PDF Signature Tags

```
  Tag ID            Tag Name                 Writable
  ------            --------                 --------
  'ContactInfo'     SignerContactInfo        no
  'Location'        SigningLocation          no
  'M'               SigningDate              no
  'Name'            SigningAuthority         no
  'Prop_AuthTime'   AuthenticationTime       no
  'Prop_AuthType'   AuthenticationType       no
  'Reason'          SigningReason            no
  'Reference'       Reference                PDF Reference
```

PDF Reference Tags

```
    Tag ID               Tag Name              Writable
    ------               --------              --------
    'TransformParams'    TransformParams       PDF TransformParams
```

PDF TransformParams Tags

```
    Tag ID               Tag Name              Writable
    ------               --------              --------
    'Action'             FieldPermissions      no
    'Annots'             AnnotationUsageRights no+
    'Document'           DocumentUsageRights   no+
    'EF'                 EmbeddedFileUsageRights no+
    'Fields'             FormFields            no+
    'Form'               FormUsageRights       no+
    'FormEX'             FormExtraUsageRights  no+
    'Msg'                UsageRightsMessage    no
    'P'                  ModificationPermissions no
    'Signature'          SignatureUsageRights  no+
```

PostScript Tags
```
    Tag ID               Tag Name              Writable
    ------               --------              --------
    'AI12_BuildNumber'   AIBuildNumber         no
    'AI3_ColorUsage'     AIColorUsage          no
    'AI5_FileFormat'     AIFileFormat          no
    'AI5_NumLayers'      AINumLayers           no
    'AI5_RulerUnits'     AIRulerUnits          no
    'AI5_TargetResolution' AITargetResolution  no
    'AI8_CreatorVersion' AICreatorVersion      no
    'AI9_ColorModel'     AIColorModel          no
    'Author'             Author                string
    'BeginDocument'      EmbeddedFile          PostScript
    'BeginICCProfile'    ICC_Profile           ICC_Profile
    'BeginPhotoshop'     PhotoshopData         Photoshop
    'BoundingBox'        BoundingBox           no
    'Copyright'          Copyright             string
    'CreationDate'       CreateDate            string
    'Creator'            Creator               string
    'EmbeddedFileName'   EmbeddedFileName      no
    'For'                For                   string
    'ImageData'          ImageData             no
    'Keywords'           Keywords              string
    'ModDate'            ModifyDate            string
    'Pages'              Pages                 no
    'Routing'            Routing               string
    'Subject'            Subject               string
    'TIFFPreview'        TIFFPreview           no
    'Title'              Title                 string
    'Version'            Version               string
    'begin_xml_packet'   XMP                   XMP
```

ID3 Tags
    ExifTool extracts ID3 and Lyrics3 information from MP3, MPEG, WAV,
    AIFF, OGG, FLAC, APE, MPC and RealAudio files. ID3v2 tags which
    support multiple languages (eg. Comment and Lyrics) are extracted by
    specifying the tag name, followed by a dash ('-'), then a 3-character
    ISO 639-2 language code (eg. "Comment-spa"). See <https://id3.org/>
    for the official ID3 specification and
    <http://www.loc.gov/standards/iso639-2/php/code_list.php> for a list of
    ISO 639-2 language codes.

```
    Tag Name                             Writable
    --------                             --------
    ID3v1                                ID3 v1
    ID3v1_Enh                            ID3 v1_Enh
    ID3v2_2                              ID3 v2_2
    ID3v2_3                              ID3 v2_3
    ID3v2_4                              ID3 v2_4
```

ID3 v1 Tags

```
  Index1    Tag Name                         Writable
  ------    --------                         --------
      3     Title                            no
     33     Artist                           no
     63     Album                            no
     93     Year                             no
     97     Comment                          no
    125     Track                            no
    127     Genre                            no
```

ID3 v1 Enh Tags

ID3 version 1 "Enhanced TAG" information (not part of the official spec).

```
  Index1    Tag Name                         Writable
  ------    --------                         --------
      4     Title2                           no
     64     Artist2                          no
    124     Album2                           no
    184     Speed                            no
    185     Genre                            no
    215     StartTime                        no
    221     EndTime                          no
```

ID3 v2 2 Tags

ExifTool extracts mainly text-based tags from ID3v2 information. The tags in the tables below are those extracted by ExifTool, and don't represent a complete list of available ID3v2 tags.

ID3 version 2.2 tags. (These are the tags written by iTunes 5.0.)

```
  Tag ID    Tag Name                         Writable
  ------    --------                         --------
  'CNT'     PlayCounter                      no
  'COM'     Comment                          no
  'GP1'     Grouping                         no
  'IPL'     InvolvedPeople                   no
  'ITU'     iTunesU?                         no
  'MVI'     MovementNumber                   no
  'MVN'     MovementName                     no
  'PCS'     Podcast?                         no
  'PIC'     Picture                          no
  'PIC-1'   PictureFormat                    no
  'PIC-2'   PictureType                      no
  'PIC-3'   PictureDescription               no
  'POP'     Popularimeter                    no
  'RVA'     RelativeVolumeAdjustment         no
  'SLT'     SynLyrics                        ID3 SynLyrics
  'TAL'     Album                            no
  'TBP'     BeatsPerMinute                   no
  'TCM'     Composer                         no
  'TCO'     Genre                            no
  'TCP'     Compilation                      no
  'TCR'     Copyright                        no
  'TDA'     Date                             no
  'TDY'     PlaylistDelay                    no
  'TEN'     EncodedBy                        no
  'TFT'     FileType                         no
  'TIM'     Time                             no
  'TKE'     InitialKey                       no
  'TLA'     Language                         no
  'TLE'     Length                           no
  'TMT'     Media                            no
  'TOA'     OriginalArtist                   no
  'TOF'     OriginalFileName                 no
  'TOL'     OriginalLyricist                 no
```

```
'TOR'   OriginalReleaseYear                   no
'TOT'   OriginalAlbum                         no
'TP1'   Artist                                no
'TP2'   Band                                  no
'TP3'   Conductor                             no
'TP4'   InterpretedBy                         no
'TPA'   PartOfSet                             no
'TPB'   Publisher                             no
'TRC'   ISRC                                  no
'TRD'   RecordingDates                        no
'TRK'   Track                                 no
'TS2'   AlbumArtistSortOrder                  no
'TSA'   AlbumSortOrder                        no
'TSC'   ComposerSortOrder                     no
'TSI'   Size                                  no
'TSP'   PerformerSortOrder                    no
'TSS'   EncoderSettings                       no
'TST'   TitleSortOrder                        no
'TT1'   Grouping                              no
'TT2'   Title                                 no
'TT3'   Subtitle                              no
'TXT'   Lyricist                              no
'TXX'   UserDefinedText                       no
'TYE'   Year                                  no
'ULT'   Lyrics                                no
'WAF'   FileURL                               no
'WAR'   ArtistURL                             no
'WAS'   SourceURL                             no
'WCM'   CommercialURL                         no
'WCP'   CopyrightURL                          no
'WPB'   PublisherURL                          no
'WXX'   UserDefinedURL                        no
```

ID3 SynLyrics Tags

The following tags are extracted from synchronized lyrics/text frames.

```
  Tag Name                                  Writable
  --------                                  --------
  SynchronizedLyricsDescription             no
  SynchronizedLyricsText                    no+
  SynchronizedLyricsType                    no
```

ID3 v2 3 Tags

ID3 version 2.3 tags. Includes some non-standard tags written by other
software.

```
  Tag ID   Tag Name                         Writable
  ------   --------                         --------
  'APIC'   Picture                          no
  'APIC-1' PictureMIMEType                  no
  'APIC-2' PictureType                      no
  'APIC-3' PictureDescription               no
  'COMM'   Comment                          no
  'GEOB'   GeneralEncapsulatedObject        ID3 GEOB
  'GRP1'   Grouping                         no
  'IPLS'   InvolvedPeople                   no
  'ITNU'   iTunesU?                         no
  'MCDI'   MusicCDIdentifier                no
  'MVIN'   MovementNumber                   no
  'MVNM'   MovementName                     no
  'OWNE'   Ownership                        no
  'PCNT'   PlayCounter                      no
  'PCST'   Podcast?                         no
  'POPM'   Popularimeter                    no
  'PRIV'   Private                          ID3 Private
  'SYLT'   SynLyrics                        ID3 SynLyrics
  'TALB'   Album                            no
  'TBPM'   BeatsPerMinute                   no
```

```
'TCAT'    PodcastCategory                        no
'TCMP'    Compilation                            no
'TCOM'    Composer                               no
'TCON'    Genre                                  no
'TCOP'    Copyright                              no
'TDAT'    Date                                   no
'TDES'    PodcastDescription                     no
'TDLY'    PlaylistDelay                          no
'TENC'    EncodedBy                              no
'TEXT'    Lyricist                               no
'TFLT'    FileType                               no
'TGID'    PodcastID                              no
'TIME'    Time                                   no
'TIT1'    Grouping                               no
'TIT2'    Title                                  no
'TIT3'    Subtitle                               no
'TKEY'    InitialKey                             no
'TKWD'    PodcastKeywords                        no
'TLAN'    Language                               no
'TLEN'    Length                                 no
'TMED'    Media                                  no
'TOAL'    OriginalAlbum                          no
'TOFN'    OriginalFileName                       no
'TOLY'    OriginalLyricist                       no
'TOPE'    OriginalArtist                         no
'TORY'    OriginalReleaseYear                    no
'TOWN'    FileOwner                              no
'TPE1'    Artist                                 no
'TPE2'    Band                                   no
'TPE3'    Conductor                              no
'TPE4'    InterpretedBy                          no
'TPOS'    PartOfSet                              no
'TPUB'    Publisher                              no
'TRCK'    Track                                  no
'TRDA'    RecordingDates                         no
'TRSN'    InternetRadioStationName               no
'TRSO'    InternetRadioStationOwner              no
'TSIZ'    Size                                   no
'TSO2'    AlbumArtistSortOrder                   no
'TSOC'    ComposerSortOrder                      no
'TSRC'    ISRC                                   no
'TSSE'    EncoderSettings                        no
'TXXX'    UserDefinedText                        no
'TYER'    Year                                   no
'USER'    TermsOfUse                             no
'USLT'    Lyrics                                 no
'WCOM'    CommercialURL                          no
'WCOP'    CopyrightURL                           no
'WFED'    PodcastURL                             no
'WOAF'    FileURL                                no
'WOAR'    ArtistURL                              no
'WOAS'    SourceURL                              no
'WORS'    InternetRadioStationURL                no
'WPAY'    PaymentURL                             no
'WPUB'    PublisherURL                           no
'WXXX'    UserDefinedURL                         no
'XDOR'    OriginalReleaseTime                    no
'XOLY'    OlympusDSS                             Olympus DSS
'XSOA'    AlbumSortOrder                         no
'XSOP'    PerformerSortOrder                     no
'XSOT'    TitleSortOrder                         no
```

ID3 GEOB Tags

```
  Tag ID                             Tag Name  Writable
  ------                             --------  --------
  'GEOB-Data'                        GEOB-Data no
  'GEOB-Desc'                        GEOB-Desc no
  'GEOB-File'                        GEOB-File no
  'GEOB-Mime'                        GEOB-Mime no
```

```
            'application/x-c2pa-manifest-store' JUMBF      Jpeg2000
```

ID3 Private Tags

ID3 private (PRIV) tags. ExifTool will decode any private tags found,
even if they do not appear in this table.

```
  Tag Name                                  Writable
  --------                                  --------
  AverageLevel                              no
  PeakValue                                 no
  WM_CollectionGroupID                      no
  WM_CollectionID                           no
  WM_ContentID                              no
  WM_MediaClassPrimaryID                    no
  WM_MediaClassSecondaryID                  no
  WM_Provider                               no
  XMP                                       XMP
```

ID3 v2_4 Tags

ID3 version 2.4 tags. Includes some non-standard tags written by other
software.

```
  Tag ID    Tag Name                        Writable
  ------    --------                        --------
  'APIC'    Picture                         no
  'APIC-1'  PictureMIMEType                 no
  'APIC-2'  PictureType                     no
  'APIC-3'  PictureDescription              no
  'COMM'    Comment                         no
  'GEOB'    GeneralEncapsulatedObject       ID3 GEOB
  'GRP1'    Grouping                        no
  'ITNU'    iTunesU?                        no
  'MCDI'    MusicCDIdentifier               no
  'MVIN'    MovementNumber                  no
  'MVNM'    MovementName                    no
  'OWNE'    Ownership                       no
  'PCNT'    PlayCounter                     no
  'PCST'    Podcast?                        no
  'POPM'    Popularimeter                   no
  'PRIV'    Private                         ID3 Private
  'RVA2'    RelativeVolumeAdjustment        no
  'SYLT'    SynLyrics                       ID3 SynLyrics
  'TALB'    Album                           no
  'TBPM'    BeatsPerMinute                  no
  'TCAT'    PodcastCategory                 no
  'TCMP'    Compilation                     no
  'TCOM'    Composer                        no
  'TCON'    Genre                           no
  'TCOP'    Copyright                       no
  'TDEN'    EncodingTime                    no
  'TDES'    PodcastDescription              no
  'TDLY'    PlaylistDelay                   no
  'TDOR'    OriginalReleaseTime             no
  'TDRC'    RecordingTime                   no
  'TDRL'    ReleaseTime                     no
  'TDTG'    TaggingTime                     no
  'TENC'    EncodedBy                       no
  'TEXT'    Lyricist                        no
  'TFLT'    FileType                        no
  'TGID'    PodcastID                       no
  'TIPL'    InvolvedPeople                  no
  'TIT1'    Grouping                        no
  'TIT2'    Title                           no
  'TIT3'    Subtitle                        no
  'TKEY'    InitialKey                      no
  'TKWD'    PodcastKeywords                 no
  'TLAN'    Language                        no
  'TLEN'    Length                          no
```

```
'TMCL'    MusicianCredits                       no
'TMED'    Media                                 no
'TMOO'    Mood                                  no
'TOAL'    OriginalAlbum                         no
'TOFN'    OriginalFileName                      no
'TOLY'    OriginalLyricist                      no
'TOPE'    OriginalArtist                        no
'TOWN'    FileOwner                             no
'TPE1'    Artist                                no
'TPE2'    Band                                  no
'TPE3'    Conductor                             no
'TPE4'    InterpretedBy                         no
'TPOS'    PartOfSet                             no
'TPRO'    ProducedNotice                        no
'TPUB'    Publisher                             no
'TRCK'    Track                                 no
'TRSN'    InternetRadioStationName              no
'TRSO'    InternetRadioStationOwner             no
'TSO2'    AlbumArtistSortOrder                  no
'TSOA'    AlbumSortOrder                        no
'TSOC'    ComposerSortOrder                     no
'TSOP'    PerformerSortOrder                    no
'TSOT'    TitleSortOrder                        no
'TSRC'    ISRC                                  no
'TSSE'    EncoderSettings                       no
'TSST'    SetSubtitle                           no
'TXXX'    UserDefinedText                       no
'USER'    TermsOfUse                            no
'USLT'    Lyrics                                no
'WCOM'    CommercialURL                         no
'WCOP'    CopyrightURL                          no
'WFED'    PodcastURL                            no
'WOAF'    FileURL                               no
'WOAR'    ArtistURL                             no
'WOAS'    SourceURL                             no
'WORS'    InternetRadioStationURL               no
'WPAY'    PaymentURL                            no
'WPUB'    PublisherURL                          no
'WXXX'    UserDefinedURL                        no
'XDOR'    OriginalReleaseTime                   no
'XOLY'    OlympusDSS                            Olympus DSS
'XSOA'    AlbumSortOrder                        no
'XSOP'    PerformerSortOrder                    no
'XSOT'    TitleSortOrder                        no
```

ID3 Lyrics3 Tags

ExifTool extracts Lyrics3 version 1.00 and 2.00 tags from any file that
supports ID3. See <https://id3.org/Lyrics3> for the specification.

```
    Tag ID    Tag Name                          Writable
    ------    --------                          --------
    'AUT'     Author                            no
    'CRC'     CRC                               no
    'EAL'     ExtendedAlbumName                 no
    'EAR'     ExtendedArtistName                no
    'ETT'     ExtendedTrackTitle                no
    'IMG'     AssociatedImageFile               no
    'IND'     Indications                       no
    'INF'     AdditionalInfo                    no
    'LYR'     Lyrics                            no
```

ITC Tags
This information is found in iTunes Cover Flow data files.

```
    Tag ID    Tag Name                          Writable
    ------    --------                          --------
    'data'    ImageData                         no
    'itch'    Itch                              ITC Header
    'item'    Item                              ITC Item
```

ITC Header Tags

Index1	Tag Name	Writable
16	DataType	no

ITC Item Tags

Index4	Tag Name	Writable
0	LibraryID	no
2	TrackID	no
4	DataLocation	no
5	ImageType	no
7	ImageWidth	no
8	ImageHeight	no

QuickTime Tags

The QuickTime format is used for many different types of audio, video and image files (most notably, MOV/MP4 videos and HEIC/CR3 images). ExifTool extracts standard meta information and a variety of audio, video and image parameters, as well as proprietary information written by many camera models. Tags with a question mark after their name are not extracted unless the Unknown option is set.

When writing video files, ExifTool creates both QuickTime and XMP tags by default, but the group may be specified to write one or the other separately. If no location is specified, newly created QuickTime tags are added in the ItemList location if possible, otherwise in UserData, and finally in Keys, but this order may be changed by setting the PREFERRED level of the appropriate table in the config file (see example.config in the full distribution for an example). Note that some tags with the same name but different ID's may exist in the same location, but the family 7 group names may be used to differentiate these.

ExifTool currently writes ItemList and UserData only as top-level metadata, but select Keys tags are may be written to the audio or video track. See the AudioKeys and VideoKeys tags for more information.

Alternate language tags may be accessed for ItemList and Keys tags by adding a 3-character ISO 639-2 language code and an optional ISO 3166-1 alpha 2 country code to the tag name (eg. "ItemList:Artist-deu" or "ItemList::Artist-deu-DE"). Most UserData tags support a language code, but without a country code. If no language code is specified when writing, the default language is written and alternate languages for the tag are deleted. Use the "und" language code to write the default language without deleting alternate languages. Note that when reading, "eng" is also treated as the default language if there is no country code.

According to the specification, integer-format QuickTime date/time tags should be stored as UTC. Unfortunately, digital cameras often store local time values instead (presumably because they don't know the time zone). For this reason, by default ExifTool does not assume a time zone for these values. However, if the API QuickTimeUTC option is set, then ExifTool will assume these values are properly stored as UTC, and will convert them to local time when extracting.

When writing string-based date/time tags, the system time zone is added if the PrintConv option is enabled and no time zone is specified. This is because Apple software may display crazy values if the time zone is missing for some tags.

By default ExifTool will remove null padding from some QuickTime containers in Canon CR3 files when writing, but the QuickTimePad option may be used to preserve the original size by padding with nulls if necessary.

See
<https://developer.apple.com/library/archive/documentation/QuickTime/QTFF/>
for the official QuickTime specification.

```
  Tag ID                   Tag Name                 Writable
  ------                   --------                 --------
  'GPS '                   GPSDataList2?            no
  'IDIT'                   DateTimeOriginal         string
  'PICT'                   PreviewPICT              no
  'SEAL'                   SEAL                     XMP SEAL
  '_htc'                   HTCInfo                  QuickTime HTCInfo
  'ardt'                   ARDroneFile              no
  'cust'                   CustomInfo               no
  'frea'                   Kodak_frea               Kodak frea
  'free'                   KodakFree                Kodak Free
                           Pittasoft                QuickTime Pittasoft
                           ThumbnailImage           no
                           Free?                    no
  'ftyp'                   FileType                 QuickTime FileType
  'gdat'                   GPSData                  QuickTime Stream
  'gps0'                   GPSTrack                 QuickTime Stream
  'gsen'                   GSensor                  QuickTime Stream
  'junk'                   Junk?                    no
  'mdat'                   MediaData?               no
  'mdat-offset'            MediaDataOffset          no
  'mdat-size'              MediaDataSize            no
  'meco'                   OtherMeta                QuickTime OtherMeta
  'meta'                   Meta                     QuickTime Meta
  'moof'                   MovieFragment            QuickTime MovieFragment
  'moov'                   Movie                    QuickTime Movie
  'mpvd'                   MotionPhotoVideo         yes
  'nbmt'                   NextbaseMeta             QuickTime Stream
  'pict'                   PreviewPICT              no
  'pnot'                   Preview                  QuickTime Preview
  'prrt'                   ARDroneTelemetry         no
  'sefd'                   SamsungTrailer           Samsung Trailer
  'skip'                   CanonSkip                Canon Skip
                           PreviewImage             no
                           SkipInfo                 QuickTime Stream
                           LigoGPSInfo              -
                           Skip?                    no
  'thm '                   ThumbnailImage           no
  'thum'                   ThumbnailImage           no
  'udat'                   GPSLog                   no
  'udta'                   KenwoodData              QuickTime Stream
                           LigoJSON                 QuickTime Stream
                           FLIRData                 FLIR UserData
  'uuid'                   XMP                      XMP
                           UUID-PROF                QuickTime Profile
                           UUID-Flip                QuickTime Flip
                           UUID-Canon2              Canon uuid2
                           SensorData               QuickTime Tags360Fly
                           SensorData               no
                           JUMBF                    Jpeg2000
                           CBOR                     CBOR
                           PreviewImage             no
                           ThumbnailImage           no
                           UUID-Unknown?            no
  'wide'                   Wide?                    no
```

QuickTime Stream Tags

The tags below are extracted from timed metadata in QuickTime and other
formats of video files when the ExtractEmbedded option is used.
Although most of these tags are combined into the single table below,
ExifTool currently reads 103 different types of timed GPS metadata from
video files.

```
  Tag Name                                          Writable
  --------                                          --------
```

Accelerometer	no
AccelerometerData	no
AngularVelocity	no
CTMD	Canon CTMD
CameraDateTime	no
CameraModel	no
Car	no
DJIDebug?	DJI Protobuf
DJIMetadata	DJI Protobuf
DateTimeOriginal	no
DateTimeStamp	no
Distance	no
ExposureCompensation	no
ExposureTime	no
FNumber	no
FrameNumber	no
GPSAltitude	no
GPSDOP	no
GPSDateTime	no
GPSLatitude	no
GPSLatitude2	no
GPSLongitude	no
GPSLongitude2	no
GPSSatellites	no
GPSSpeed	no
GPSSpeedRef	no
GPSTimeStamp	no
GPSTrack	no
GPSTrackRef	no
GSensor	no
INSV	QuickTime INSV_MakerNotes
ISO	no
JpgFromRaw	no
KiloCalories	no
MagneticVariation	no
PreviewImage	no
PreviewInfo	QuickTime PreviewInfo
RVMI_gReV	QuickTime RVMI_gReV
RVMI_sReV	QuickTime RVMI_sReV
RawGSensor	no
SampleDateTime	no
SampleDuration	no
SampleTime	no
Text	no
TimeCode	no
Unknown00?	no
Unknown01?	no
Unknown02?	no
Unknown03?	no
UserLabel	no
VerticalSpeed	no
VideoTimeStamp	no
camm0	QuickTime camm0
camm1	QuickTime camm1
camm2	QuickTime camm2
camm3	QuickTime camm3
camm4	QuickTime camm4
camm5	QuickTime camm5
camm6	QuickTime camm6
camm7	QuickTime camm7
fdsc	GoPro fdsc
gpmd_Kingslim	QuickTime Stream
gpmd_Rove	QuickTime Stream
gpmd_FMAS	QuickTime Stream
gpmd_Wolfbox	QuickTime Stream
gpmd_GoPro	GoPro GPMF
marl	GM marl
mebx	QuickTime Keys
mett	Parrot mett
rtmd	Sony rtmd

```
   tx3g                                              QuickTime tx3g
```

QuickTime INSV_MakerNotes Tags

```
  Tag ID    Tag Name                        Writable
  ------    --------                        --------
  0x000a    SerialNumber                    no
  0x0012    Model                           no
  0x001a    Firmware                        no
  0x002a    Parameters                      no
```

QuickTime PreviewInfo Tags

Preview stored by TomTom Bandit ActionCam.

```
  Index1    Tag Name                        Writable
  ------    --------                        --------
       8    PreviewImage                    no
```

QuickTime RVMI_gReV Tags

GPS information extracted from the RVMI box of MOV videos.

```
  Index1    Tag Name                        Writable
  ------    --------                        --------
       4    GPSLatitude                     no
       8    GPSLongitude                    no
      16    GPSSpeed                        no
      18    GPSTrack                        no
```

QuickTime RVMI_sReV Tags

G-sensor information extracted from the RVMI box of MOV videos.

```
  Index1    Tag Name                        Writable
  ------    --------                        --------
       4    GSensor                         no
```

QuickTime camm0 Tags

The camm0 through camm7 tables define tags extracted from the Google
Street View Camera Motion Metadata of MP4 videos. See
<https://developers.google.com/streetview/publish/camm-spec> for the
specification.

```
  Tag ID    Tag Name                        Writable
  ------    --------                        --------
  0x0004    AngleAxis                       no
```

QuickTime camm1 Tags

```
  Tag ID    Tag Name                        Writable
  ------    --------                        --------
  0x0004    PixelExposureTime               no
  0x0008    RollingShutterSkewTime          no
```

QuickTime camm2 Tags

```
  Tag ID    Tag Name                        Writable
  ------    --------                        --------
  0x0004    AngularVelocity                 no
```

QuickTime camm3 Tags

```
  Tag ID    Tag Name                        Writable
  ------    --------                        --------
  0x0004    Acceleration                    no
```

QuickTime camm4 Tags

```
  Tag ID   Tag Name                       Writable
  ------   --------                       --------
  0x0004   Position                       no
```

QuickTime camm5 Tags

```
  Tag ID   Tag Name                       Writable
  ------   --------                       --------
  0x0004   GPSLatitude                    no
  0x000c   GPSLongitude                   no
  0x0014   GPSAltitude                    no
```

QuickTime camm6 Tags

```
  Tag ID   Tag Name                       Writable
  ------   --------                       --------
  0x0004   GPSDateTime                    no
  0x000c   GPSMeasureMode                 no
  0x0010   GPSLatitude                    no
  0x0018   GPSLongitude                   no
  0x0020   GPSAltitude                    no
  0x0024   GPSHorizontalAccuracy          no
  0x0028   GPSVerticalAccuracy            no
  0x002c   GPSVelocityEast                no
  0x0030   GPSVelocityNorth               no
  0x0034   GPSVelocityUp                  no
  0x0038   GPSSpeedAccuracy               no
```

QuickTime camm7 Tags

```
  Tag ID   Tag Name                       Writable
  ------   --------                       --------
  0x0004   MagneticField                  no
```

QuickTime Keys Tags

This directory contains a list of key names which are used to decode
tags written by the "mdta" handler. Also in this table are a few tags
found in timed metadata that are not yet writable by ExifTool. The
prefix of "com.apple.quicktime." has been removed from the TagID's
below. These tags support alternate languages in the same way as the
ItemList tags. Note that by default, ItemList and UserData tags are
preferred when writing, so to create a tag when a same-named tag exists
in either of these tables, either the "Keys" location must be specified
(eg. "-Keys:Author=Phil" on the command line), or the PREFERRED level
must be changed via the config file.

```
  Tag ID           Tag Name                       Writable
  ------           --------                       --------
  'Encoded_With'   EncodedWith                    yes
  'album'          Album                          yes
  'apple.photos.variation-identifier'
                   ApplePhotosVariationIdentifier int64s
  'artist'         Artist                         yes
  'artwork'        Artwork                        yes
  'author'         Author                         yes
  'collection.user' UserCollection                yes
  'com.android.capture.fps' AndroidCaptureFPS     float
  'com.android.manufacturer' AndroidMake          yes
  'com.android.model' AndroidModel                yes
  'com.android.version' AndroidVersion            yes
  'com.xiaomi.hdr10' XiaomiHDR10                  int32s
  'com.xiaomi.preview_video_cover'
                   XiaomiPreviewVideoCover        int32s
  'comment'        Comment                        yes
  'compatible_brands' CompatibleBrands            yes/
  'content.identifier' ContentIdentifier          yes
  'copyright'      Copyright                      yes
  'creation_time'  CreationTime                   yes/
  'creationdate'   CreationDate                   yes
```

```
'description' Description                     yes
'detected-face' FaceInfo                      QuickTime FaceInfo
'detected-face.bounds' DetectedFaceBounds     no
'detected-face.face-id' DetectedFaceID        no
'detected-face.roll-angle'
            DetectedFaceRollAngle             no
'detected-face.yaw-angle'
            DetectedFaceYawAngle              no
'direction.facing' CameraDirection            yes
'direction.motion' CameraMotion               yes
'director'    Director                        yes
'displayname' DisplayName                     yes
'encoder'     Encoder                         yes
'full-frame-rate-playback-intent'
            FullFrameRatePlaybackIntent       yes
'genre'       Genre                           yes
'information' Information                     yes
'keywords'    Keywords                        yes
'live-photo-info' LivePhotoInfo               no
'live-photo.auto' LivePhotoAuto               int8u
'live-photo.vitality-score'
            LivePhotoVitalityScore            float
'live-photo.vitality-scoring-version'
            LivePhotoVitalityScoringVersion int64s
'location.ISO6709' GPSCoordinates             yes
'location.accuracy.horizontal'
            LocationAccuracyHorizontal        yes
'location.body' LocationBody                  yes
'location.date' LocationDate                  yes
'location.name' LocationName                  yes
'location.note' LocationNote                  yes
'location.role' LocationRole                  yes
'major_brand' MajorBrand                      yes/
'make'        Make                            yes
'minor_version' MinorVersion                  yes/
'model'       Model                           yes
'player.movie.audio.balance' Balance          yes
'player.movie.audio.bass' Bass                yes
'player.movie.audio.gain' AudioGain           yes
'player.movie.audio.mute' Mute                int8u
'player.movie.audio.pitchshift' PitchShift    yes
'player.movie.audio.treble' Treble            yes
'player.movie.visual.brightness' Brightness   yes
'player.movie.visual.color' Color             yes
'player.movie.visual.contrast' Contrast       yes
'player.movie.visual.tint' Tint               yes
'player.version' PlayerVersion                yes
'producer'    Producer                        yes
'publisher'   Publisher                       yes
'rating.user' UserRating                      yes
'scene-illuminance' SceneIlluminance          no
'software'    Software                        yes
'still-image-time' StillImageTime             no
'title'       Title                           yes
'version'     Version                         yes
'video-orientation' VideoOrientation          no
'xiaomi.exifInfo.videoinfo' XiaomiExifInfo    yes
'year'        Year                            yes
```

QuickTime AudioKeys Tags

Keys tags written in the audio track by some Apple devices. These tags
belong to the ExifTool AudioKeys family 1 gorup.

Tag ID	Tag Name	Writable
'player.movie.audio.balance'	Balance	yes
'player.movie.audio.bass'	Bass	yes
'player.movie.audio.gain'	AudioGain	yes
'player.movie.audio.mute'	Mute	int8u

```
'player.movie.audio.pitchshift' PitchShift    yes
'player.movie.audio.treble'     Treble        yes
```

QuickTime VideoKeys Tags

Keys tags written in the video track. These tags belong to the
ExifTool VideoKeys family 1 gorup.

```
  Tag ID                  Tag Name              Writable
  ------                  --------              --------
  'camera.focal_length.35mm_equivalent'
                          FocalLengthIn35mmFormat yes
  'camera.framereadouttimeinmicroseconds'
                          FrameReadoutTime      yes
  'camera.identifier'     CameraIdentifier      yes
  'camera.lens_model'     LensModel             yes
  'com.apple.photos.captureMode' CaptureMode    yes
```

QuickTime FaceInfo Tags

```
  Tag ID   Tag Name                            Writable
  ------   --------                            --------
  'crec'   FaceRec                             QuickTime FaceRec
```

QuickTime FaceRec Tags

```
  Tag ID   Tag Name                            Writable
  ------   --------                            --------
  'cits'   FaceItem                            QuickTime Keys
```

QuickTime tx3g Tags

Tags extracted from the tx3g sbtl timed metadata of Yuneec and Autel
drones, and subtitle text in some other videos.

```
  Tag ID                  Tag Name              Writable
  ------                  --------              --------
  'Alt'                   GPSAltitude           no
  'DateTime'              DateTime              no
  'EV'                    ExposureCompensation  no
  'F-NUM'                 FNumber               no
  'GPSDateTime'           GPSDateTime           no
  'GimPitch'              GimbalPitch           no
  'GimRoll'               GimbalRoll            no
  'GimYaw'                GimbalYaw             no
  'HomeLat'               GPSHomeLatitude       no
  'HomeLon'               GPSHomeLongitude      no
  'ISO'                   ISO                   no
  'Lat'                   GPSLatitude           no
  'Lon'                   GPSLongitude          no
  'Pitch'                 Pitch                 no
  'Roll'                  Roll                  no
  'SHUTTER'               ExposureTime          no
  'Text'                  Text                  no
  'Yaw'                   Yaw                   no
```

QuickTime HTCInfo Tags

Tags written by some HTC camera phones.

```
  Tag ID   Tag Name                            Writable
  ------   --------                            --------
  'slmt'   Unknown_slmt?                       no
```

QuickTime Pittasoft Tags

Tags found in Pittasoft Blackvue dashcam "free" data.

```
  Tag ID   Tag Name                            Writable
  ------   --------                            --------
```

```
    '3gf '   AccelData                            QuickTime Stream
    'cprt'   Copyright                            no
    'gps '   GPSLog                               no
    'ptnm'   OriginalFileName                     no
    'ptrh'   Ptrh                                 QuickTime Pittasoft
    'sttm'   StartTime                            no
    'thum'   PreviewImage                         no
```

QuickTime FileType Tags

```
    Index4   Tag Name                             Writable
    ------   --------                             --------
        0    MajorBrand                           no
        1    MinorVersion                         no
        2    CompatibleBrands                     no+
```

QuickTime OtherMeta Tags

```
    Tag ID   Tag Name                             Writable
    ------   --------                             --------
    'mere'   MetaRelation                         QuickTime MetaRelation
    'meta'   Meta                                 QuickTime Meta
```

QuickTime MetaRelation Tags

```
    Index4   Tag Name                             Writable
    ------   --------                             --------
    [no tags known]
```

QuickTime Meta Tags

```
    Tag ID   Tag Name                             Writable
    ------   --------                             --------
    'bxml'   BinaryXML?                           no
    'dinf'   DataInfo                             QuickTime DataInfo
    'free'   Free?                                no
    'grpl'   Unknown_grpl                         QuickTime grpl
    'hdlr'   Handler                              QuickTime Handler
    'idat'   MetaImageSize                        no
    'iinf'   ItemInformation                      QuickTime ItemInfo
                                                  QuickTime ItemInfo
    'iloc'   ItemLocation                         no
    'ilst'   ItemList                             QuickTime ItemList
    'ipmc'   IPMPControl?                         no
    'ipro'   ItemProtection?                      no
    'iprp'   ItemProperties                       QuickTime ItemProp
    'iref'   ItemReference                        QuickTime ItemRef
    'keys'   AudioKeys                            QuickTime AudioKeys
             VideoKeys                            QuickTime VideoKeys
             Keys                                 QuickTime Keys
    'pitm'   PrimaryItemReference                 no
    'uuid'   MetaVersion                          no
             UUID-Unknown?                        no
    'xml '   XML                                  XMP XML
```

QuickTime DataInfo Tags

MP4 data information box.

```
    Tag ID   Tag Name                             Writable
    ------   --------                             --------
    'dref'   DataRef                              QuickTime DataRef
```

QuickTime DataRef Tags

MP4 data reference box.

```
    Tag ID   Tag Name                             Writable
    ------   --------                             --------
    "url\0"  URL                                  no
```

```
'url '   URL                                      no
'urn '   URN                                      no
```

QuickTime grpl Tags

```
  Tag ID   Tag Name                              Writable
  ------   --------                              --------
  [no tags known]
```

QuickTime Handler Tags

```
  Index1   Tag Name                              Writable
  ------   --------                              --------
      4    HandlerClass                          no
      8    HandlerType                           no
     12    HandlerVendorID                       no
     24    HandlerDescription                    no
```

QuickTime ItemInfo Tags

```
  Tag ID   Tag Name                              Writable
  ------   --------                              --------
  'infe'   ItemInfoEntry                         no
```

QuickTime ItemList Tags

This is the preferred location for creating new QuickTime tags. Tags
in this table support alternate languages which are accessed by adding
a 3-character ISO 639-2 language code and an optional ISO 3166-1 alpha
2 country code to the tag name (eg. "ItemList:Title-fra" or
"ItemList::Title-fra-FR"). When creating a new Meta box to contain the
ItemList directory, by default ExifTool adds an 'mdir' (Metadata)
Handler box because Apple software may ignore ItemList tags otherwise,
but the API QuickTimeHandler option may be set to 0 to avoid this.

```
  Tag ID        Tag Name                        Writable
  ------        --------                        --------
  '----'        iTunesInfo                      QuickTime iTunesInfo
  '@PST'        ParentShortTitle                string
  '@ppi'        ParentProductID                 string
  '@pti'        ParentTitle                     string
  '@sti'        ShortTitle                      string
  'AACR'        Unknown_AACR?                   string
  'CDEK'        Unknown_CDEK?                   string
  'CDET'        Unknown_CDET?                   string
  'GUID'        GUID                            string
  'VERS'        ProductVersion                  string
  'aART'        AlbumArtist                     string
  'akID'        AppleStoreAccountType           int8s
  'albm'        Album                           string/
  'apID'        AppleStoreAccount               string
  'atID'        ArtistID                        int32s
  'auth'        Author                          string
  'catg'        Category                        string
  'cmID'        ComposerID                      string
  'cnID'        AppleStoreCatalogID             int32s
  'covr'        CoverArt                        string
  'cpil'        Compilation                     int8s
  'cprt'        Copyright                       string
  'desc'        Description                     string/
  'disk'        DiskNumber                      undef
  'dscp'        Description                     string/
  'egid'        EpisodeGlobalUniqueID           string
  'geID'        GenreID                         int32s
  'gnre'        Genre                           undef/
  'grup'        Grouping                        string/
  'gshh'        GoogleHostHeader                string
  'gspm'        GooglePingMessage               string
  'gspu'        GooglePingURL                   string
  'gssd'        GoogleSourceData                string
```

```
'gsst'        GoogleStartTime                 string
'gstd'        GoogleTrackDuration             string
'hdvd'        HDVideo                         int8s
'itnu'        iTunesU                         int8s
'keyw'        Keyword                         string
'ldes'        LongDescription                 string
'ownr'        Owner                           string
'pcst'        Podcast                         int8s
'perf'        Performer                       string
'pgap'        PlayGap                         int8s
'plID'        AlbumID                         int32s[2]
'prID'        ProductID                       string
'purd'        PurchaseDate                    string
'purl'        PodcastURL                      string
'rate'        RatingPercent                   string
'rldt'        ReleaseDate                     string
'rtng'        Rating                          int8s
'sdes'        StoreDescription                string
'sfID'        AppleStoreCountry               int32s
'shwm'        ShowMovement                    int8s
'snal'        PreviewImage                    string
'soaa'        SortAlbumArtist                 string
'soal'        SortAlbum                       string
'soar'        SortArtist                      string
'soco'        SortComposer                    string
'sonm'        SortName                        string
'sosn'        SortShow                        string
'stik'        MediaType                       int8s
'titl'        Title                           string/
'tmpo'        BeatsPerMinute                  int16s
'tnal'        ThumbnailImage                  string
'trkn'        TrackNumber                     undef
'tven'        TVEpisodeID                     string
'tves'        TVEpisode                       int32s
'tvnn'        TVNetworkName                   string
'tvsh'        TVShow                          string
'tvsn'        TVSeason                        int32u
'xid '        ISRC                            string
'yrrc'        Year                            string
"\xa9ART"     Artist                          string
"\xa9alb"     Album                           string
"\xa9ard"     ArtDirector                     string
"\xa9arg"     Arranger                        string
"\xa9aut"     Author                          string/
"\xa9cmt"     Comment                         string
"\xa9com"     Composer                        string/
"\xa9con"     Conductor                       string
"\xa9cpy"     Copyright                       string/
"\xa9day"     ContentCreateDate               string
"\xa9des"     Description                     string
"\xa9dir"     Director                        string
"\xa9enc"     EncodedBy                       string
"\xa9gen"     Genre                           string
"\xa9grp"     Grouping                        string
"\xa9lyr"     Lyrics                          string
"\xa9mvc"     MovementCount                   int16s
"\xa9mvi"     MovementNumber                  int16s
"\xa9mvn"     MovementName                    string
"\xa9nam"     Title                           string
"\xa9nrt"     Narrator                        string
"\xa9ope"     OriginalArtist                  string
"\xa9prd"     Producer                        string
"\xa9pub"     Publisher                       string
"\xa9sne"     SoundEngineer                   string
"\xa9sol"     Soloist                         string
"\xa9st3"     Subtitle                        string
"\xa9too"     Encoder                         string
"\xa9trk"     Track                           string
"\xa9wrk"     Work                            string
"\xa9wrt"     Composer                        string
```

```
"\xa9xpd"    ExecutiveProducer                string
"\xa9xyz"    GPSCoordinates                   string
```

QuickTime iTunesInfo Tags

ExifTool will extract any iTunesInfo tags that exist, even if they are
not defined in this table. These tags belong to the family 1 "iTunes"
group, and are not currently writable.

Tag ID	Tag Name	Writable
'ARTISTS'	Artists	no
'Actors'	Actors	no
'BARCODE'	Barcode	no
'CATALOGNUMBER'	CatalogNumber	no
'COSTUME_DESIGNER'	CostumeDesigner	no
'DIRECTOR'	Director	no
'DIRECTOR_OF_PHOTOGRAPHY'	DirectorOfPhotography	no
'DISCNUMBER'	DiscNumber	no
'Dynamic Range (DR)'	DynamicRange	no
'Dynamic Range (R128)'	DynamicRangeR128	no
'EDITED_BY'	EditedBy	no
'Encoding Params'	EncodingParams	QuickTime EncodingParams
'IMDB_ID'	IMDB_ID	no
'LABEL'	Label	no
'MEDIA'	Media	no
'MOOD'	Mood	no
'PRODUCER'	Producer	no
'PRODUCTION_DESIGNER'	ProductionDesigner	no
'Peak Level (R128)'	PeakLevelR128	no
'Peak Level (Sample)'	PeakLevelSample	no
'RATING'	Rating	no
'SCREENPLAY_BY'	ScreenplayBy	no
'SCRIPT'	Script	no
'TIPL'	TIPL	no
'TMDB_ID'	TMDB_ID	no
'TRACKNUMBER'	TrackNumber	no
'Volume Level (R128)'	VolumeLevelR128	no
'Volume Level (ReplayGain)'	ReplayVolumeLevel	no
'iTunEXTC'	ContentRating	no
'iTunMOVI'	iTunMOVI	PLIST
'iTunNORM'	VolumeNormalization	no
'iTunSMPB'	iTunSMPB	no
'iTunes_CDDB_1'	CDDB1Info	no
'iTunes_CDDB_TrackNumber'	CDDBTrackNumber	no
'initialkey'	InitialKey	no
'originaldate'	OriginalDate	no
'originalyear'	OriginalYear	no
'popularimeter'	Popularimeter	no
'replaygain_track_gain'	ReplayTrackGain	no
'replaygain_track_peak'	ReplayTrackPeak	no
'tool'	iTunTool	no
'~length'	Length	no

QuickTime EncodingParams Tags

Tag ID	Tag Name	Writable
'abrt'	AudioAvailableBitRateRange	no
'acbf'	AudioBitRateControlMode	no
'acef'	AudioExtendFrequencies	no
'brat'	AudioCurrentTargetBitRate	no
'cdcv'	AudioComponentVersion	no
'cmnc'	AudioAvailableNumberChannels	no
'init'	AudioIsInitialized	no
'lmrc'	AudioDoesSampleRateConversion	no
'mdel'	AudioMinimumDelayMode	no
'mnip'	AudioMinimumNumberInputPackets	no
'mnop'	AudioMinimumNumberOutputPackets	no

```
  'oppr'   AudioOutputPrecedence               no
  'pad0'   AudioZeroFramesPadded               no
  'pakb'   AudioMaximumPacketByteSize          no
  'pakd'   AudioRequiresPacketDescription      no
  'pakf'   AudioPacketFrameSize                no
  'prmm'   AudioCodecPrimeMethod               no
  'srcq'   AudioQualitySetting                 no
  'tbuf'   AudioInputBufferSize                no
  'ubuf'   AudioUsedInputBufferSize            no
  'ursr'   AudioUseRecommendedSampleRate       no
  'vbrq'   AudioVBRQuality                     no
  'vers'   AudioEncodingParamsVersion          no
  'vpk?'   AudioHasVariablePacketByteSizes     no
```

QuickTime ItemProp Tags

```
  Tag ID   Tag Name                           Writable
  ------   --------                           --------
  'ipco'   ItemPropertyContainer              QuickTime ItemPropCont
  'ipma'   ItemPropertyAssociation            no
```

QuickTime ItemPropCont Tags

```
  Tag ID   Tag Name                           Writable
  ------   --------                           --------
  'auxC'   AuxiliaryImageType                 no
  'av1C'   AV1Configuration                   QuickTime AV1Config
  'clap'   CleanAperture                      no
  'clli'   ContentLightLevel                  QuickTime ContentLightLevel
  'colr'   ICC_Profile                        ICC_Profile
           ColorRepresentation                QuickTime ColorRep
  'hvcC'   HEVCConfiguration                  QuickTime HEVCConfig
  'irot'   Rotation                           int8u!
  'ispe'   ImageSpatialExtent                 no
  'pasp'   PixelAspectRatio                   int32u!
  'pixi'   ImagePixelDepth                    no
  'rloc'   RelativeLocation                   no
```

QuickTime AV1Config Tags

```
  Index1   Tag Name                           Writable
  ------   --------                           --------
       0   AV1ConfigurationVersion            no
       1   SeqProfile?                        no
     1.1   SeqLevelIdx0?                      no
       2   SeqTier0?                          no
     2.1   HighBitDepth?                      no
     2.2   TwelveBit?                         no
     2.3   ChromaFormat                       no
     2.4   ChromaSamplePosition               no
       3   InitialDelaySamples?               no
```

QuickTime ContentLightLevel Tags

```
  Index2   Tag Name                           Writable
  ------   --------                           --------
       0   MaxContentLightLevel               no
       1   MaxPicAverageLightLevel            no
```

QuickTime ColorRep Tags

```
  Index1   Tag Name                           Writable
  ------   --------                           --------
       0   ColorProfiles                      no
       4   ColorPrimaries                     no
       6   TransferCharacteristics            no
       8   MatrixCoefficients                 no
      10   VideoFullRangeFlag                 no
```

QuickTime HEVCConfig Tags

```
Index1   Tag Name                              Writable
------   --------                              --------
     0   HEVCConfigurationVersion              no
     1   GeneralProfileSpace                   no
   1.1   GeneralTierFlag                       no
   1.2   GeneralProfileIDC                     no
     2   GenProfileCompatibilityFlags          no
     6   ConstraintIndicatorFlags              no
    12   GeneralLevelIDC                       no
    13   MinSpatialSegmentationIDC             no
    15   ParallelismType                       no
    16   ChromaFormat                          no
    17   BitDepthLuma                          no
    18   BitDepthChroma                        no
    19   AverageFrameRate                      no
    21   ConstantFrameRate                     no
  21.1   NumTemporalLayers                     no
  21.2   TemporalIDNested                      no
```

QuickTime ItemRef Tags

The Item reference entries listed in the table below contain
information about the associations between items in the file. This
information is used by ExifTool, but these entries are not extracted as
tags.

```
  Tag ID   Tag Name                            Writable
  ------   --------                            --------
  'auxl'   AuxiliaryImageRef                   no
  'cdsc'   ContentDescribes                    no
  'dimg'   DerivedImageRef                     no
  'thmb'   ThumbnailRef                        no
```

QuickTime MovieFragment Tags

```
  Tag ID   Tag Name                            Writable
  ------   --------                            --------
  'meta'   Meta                                QuickTime Meta
  'mfhd'   MovieFragmentHeader                 QuickTime MovieFragHdr
  'traf'   TrackFragment                       QuickTime TrackFragment
```

QuickTime MovieFragHdr Tags

```
  Index4   Tag Name                            Writable
  ------   --------                            --------
     1     MovieFragmentSequence               no
```

QuickTime TrackFragment Tags

```
  Tag ID   Tag Name                            Writable
  ------   --------                            --------
  'meta'   Meta                                QuickTime Meta
```

QuickTime Movie Tags

```
  Tag ID   Tag Name                            Writable
  ------   --------                            --------
  'cmov'   CompressedMovie                     QuickTime CMovie
  'gps '   GPSDataList?                        no
  'htka'   HTCTrack                            QuickTime Track
  'iods'   InitialObjectDescriptor?            no
  'meco'   OtherMeta                           QuickTime OtherMeta
  'meta'   Meta                                QuickTime Meta
  'mvhd'   MovieHeader                         QuickTime MovieHeader
  'trak'   Track                               QuickTime Track
  'udta'   UserData                            QuickTime UserData
  'uuid'   UUID-USMT                           QuickTime UserMedia
           UUID-Canon                          Canon uuid
           GarminGPS                           QuickTime Stream
```

```
          GarminGPS                               no
          UUID-Unknown?                           no
```

QuickTime CMovie Tags

```
  Tag ID   Tag Name                           Writable
  ------   --------                           --------
  'dcom'   Compression                        no
```

QuickTime Track Tags

```
  Tag ID   Tag Name                           Writable
  ------   --------                           --------
  'mdia'   Media                              QuickTime Media
  'meco'   OtherMeta                          QuickTime OtherMeta
  'meta'   Meta                               QuickTime Meta
  'tapt'   TrackAperture                      QuickTime TrackAperture
  'tkhd'   TrackHeader                        QuickTime TrackHeader
  'tref'   TrackRef                           QuickTime TrackRef
  'udta'   UserData                           QuickTime UserData
  'uuid'   UUID-USMT                          QuickTime UserMedia
           SphericalVideoXML                  XMP
           UUID-Unknown?                      no
```

QuickTime Media Tags

MP4 media box.

```
  Tag ID   Tag Name                           Writable
  ------   --------                           --------
  'hdlr'   Handler                            QuickTime Handler
  'mdhd'   MediaHeader                        QuickTime MediaHeader
  'minf'   MediaInfo                          QuickTime MediaInfo
```

QuickTime MediaHeader Tags

```
  Index4   Tag Name                           Writable
  ------   --------                           --------
     0     MediaHeaderVersion                 no
     1     MediaCreateDate                    int32u
     2     MediaModifyDate                    int32u
     3     MediaTimeScale                     no
     4     MediaDuration                      no
     5     MediaLanguageCode                  no
```

QuickTime MediaInfo Tags

MP4 media info box.

```
  Tag ID   Tag Name                           Writable
  ------   --------                           --------
  'dinf'   DataInfo                           QuickTime DataInfo
  'gmhd'   GenMediaHeader                     QuickTime GenMediaHeader
  'hdlr'   Handler                            QuickTime Handler
  'hmhd'   HintHeader                         QuickTime HintHeader
  'nmhd'   NullMediaHeader?                   no
  'smhd'   AudioHeader                        QuickTime AudioHeader
  'stbl'   SampleTable                        QuickTime SampleTable
  'vmhd'   VideoHeader                        QuickTime VideoHeader
```

QuickTime GenMediaHeader Tags

```
  Tag ID   Tag Name                           Writable
  ------   --------                           --------
  'gmin'   GenMediaInfo                       QuickTime GenMediaInfo
  'text'   Text?                              no
  'tmcd'   TimeCode                           QuickTime TimeCode
```

QuickTime GenMediaInfo Tags

Index1	Tag Name	Writable
0	GenMediaVersion	no
1	GenFlags	no
4	GenGraphicsMode	no
6	GenOpColor	no
12	GenBalance	no

QuickTime TimeCode Tags

Tag ID	Tag Name	Writable
'tcmi'	TCMediaInfo	QuickTime TCMediaInfo

QuickTime TCMediaInfo Tags

Index1	Tag Name	Writable
4	TextFont	no
6	TextFace	no
8	TextSize	no
12	TextColor	no
18	BackgroundColor	no
24	FontName	no

QuickTime HintHeader Tags

MP4 hint media header.

Index2	Tag Name	Writable
2	MaxPDUSize	no
3	AvgPDUSize	no
4	MaxBitrate	no
6	AvgBitrate	no

QuickTime AudioHeader Tags

MP4 audio media header.

Index2	Tag Name	Writable
2	Balance	no

QuickTime SampleTable Tags

MP4 sample table box.

Tag ID	Tag Name	Writable
'co64'	ChunkOffset64?	no
'cslg'	CompositionToDecodeTimelineMapping?	no
'ctts'	CompositionTimeToSample?	no
'padb'	SamplePaddingBits?	no
'sbgp'	SampleToGroup?	no
'sdtp'	IdependentAndDisposableSamples?	no
'sgpd'	SampleGroupDescription?	no
'stco'	ChunkOffset?	no
'stdp'	SampleDegradationPriority?	no
'stps'	PartialSyncSamples	no
'stsc'	SampleToChunk?	no
'stsd'	AudioSampleDesc	QuickTime AudioSampleDesc
	VisualSampleDesc	QuickTime VisualSampleDesc
	HintSampleDesc	QuickTime HintSampleDesc
	MetaSampleDesc	QuickTime MetaSampleDesc
	OtherSampleDesc	QuickTime OtherSampleDesc
'stsh'	ShadowSyncSampleTable?	no
'stss'	SyncSampleTable?	no
'stsz'	SampleSizes?	no
'stts'	VideoFrameRate	no

```
           TimeToSampleTable?                   no
  'stz2'   CompactSampleSizes?                  no
  'subs'   Sub-sampleInformation?               no
```

QuickTime AudioSampleDesc Tags

MP4 audio sample description. This hybrid atom contains both data and
child atoms.

ID/Index	Tag Name	Writable
4	AudioFormat	no
20	AudioVendorID	no
24	AudioChannels	no
26	AudioBitsPerSample	no
32	AudioSampleRate	no
'SA3D'	SpatialAudio	QuickTime SpatialAudio
'btrt'	BitrateInfo	QuickTime Bitrate
'chan'	AudioChannelLayout	QuickTime ChannelLayout
'damr'	DecodeConfig	QuickTime DecodeConfig
'pinf'	PurchaseInfo	QuickTime ProtectionInfo
'sinf'	ProtectionInfo	QuickTime ProtectionInfo
'wave'	Wave	QuickTime Wave

QuickTime SpatialAudio Tags

Spatial Audio tags.

Index1	Tag Name	Writable
0	SpatialAudioVersion	no
1	AmbisonicType	no
2	AmbisonicOrder	no
6	AmbisonicChannelOrdering	no
7	AmbisonicNormalization	no
8	AmbisonicChannels	no
12	AmbisonicChannelMap	no

QuickTime Bitrate Tags

Index4	Tag Name	Writable
0	BufferSize	no
1	MaxBitrate	no
2	AverageBitrate	no

QuickTime ChannelLayout Tags

Audio channel layout.

Index1	Tag Name	Writable
4	LayoutFlags	no
6	AudioChannels	no
8	AudioChannelTypes	no
12	NumChannelDescriptions	no
16	Channel1Label	no
20	Channel1Flags	no
24	Channel1Coordinates	no
36	Channel2Label	no
40	Channel2Flags	no
44	Channel2Coordinates	no
56	Channel3Label	no
60	Channel3Flags	no
64	Channel3Coordinates	no
76	Channel4Label	no
80	Channel4Flags	no
84	Channel4Coordinates	no
96	Channel5Label	no
100	Channel5Flags	no

```
   104    Channel5Coordinates                     no
   116    Channel6Label                           no
   120    Channel6Flags                           no
   124    Channel6Coordinates                     no
   136    Channel7Label                           no
   140    Channel7Flags                           no
   144    Channel7Coordinates                     no
   156    Channel8Label                           no
   160    Channel8Flags                           no
   164    Channel8Coordinates                     no
```

QuickTime DecodeConfig Tags

Index1	Tag Name	Writable
0	EncoderVendor	no
4	EncoderVersion	no

QuickTime ProtectionInfo Tags

Child atoms found in "sinf" and/or "pinf" atoms.

Tag ID	Tag Name	Writable
'enda'	Endianness	no
'frma'	OriginalFormat	no
'schi'	SchemeInfo	QuickTime SchemeInfo
'schm'	SchemeType	QuickTime SchemeType

QuickTime SchemeInfo Tags

Tag ID	Tag Name	Writable
'cert'	Certificate	no
'iviv'	InitializationVector	no
'key '	KeyID	no
'name'	UserName	no
'righ'	Rights	QuickTime Rights
'user'	UserID	no

QuickTime Rights Tags

Tag ID	Tag Name	Writable
'aver'	VersionRestrictions	no
'medi'	MediaFlags	no
'mode'	ModeFlags	no
'plat'	Platform	no
'song'	ItemID	no
'tool'	ItemTool	no
'tran'	TransactionID	no
'veID'	ItemVendorID	no

QuickTime SchemeType Tags

Index1	Tag Name	Writable
4	SchemeType	no
8	SchemeVersion	no
10	SchemeURL	no

QuickTime Wave Tags

Tag ID	Tag Name	Writable
'enda'	Endianness	no
'frma'	PurchaseFileFormat	no

QuickTime VisualSampleDesc Tags

```
   ID/Index Tag Name                          Writable
   -------- --------                          --------
        2   CompressorID                      no
       10   VendorID                          no
       16   SourceImageWidth                  no
       17   SourceImageHeight                 no
       18   XResolution                       no
       20   YResolution                       no
       25   CompressorName                    no
       41   BitDepth                          no
   'CDI1'   CDI1                              Canon CDI1
   'CMP1'   CMP1                              Canon CMP1
   'JPEG'   JPEGInfo?                         no
   'avcC'   AVCConfiguration?                 no
   'btrt'   BitrateInfo                       QuickTime Bitrate
   'clap'   CleanAperture                     QuickTime CleanAperture
   'colr'   ColorRepresentation               QuickTime ColorRep
   'fiel'   VideoFieldOrder                   no
   'gama'   Gamma                             no
   'pasp'   PixelAspectRatio                  no
   'st3d'   Stereoscopic3D                    no
   'sv3d'   SphericalVideo                    QuickTime sv3d
```

QuickTime CleanAperture Tags

```
   Index8   Tag Name                          Writable
   ------   --------                          --------
        0   CleanApertureWidth                no
        1   CleanApertureHeight               no
        2   CleanApertureOffsetX              no
        3   CleanApertureOffsetY              no
```

QuickTime sv3d Tags

Tags defined by the Spherical Video V2 specification. See
<https://github.com/google/spatial-media/blob/master/docs/spherical-video-v2-rfc.m
d>
for the specification.

```
   Tag ID   Tag Name                          Writable
   ------   --------                          --------
   'proj'   Projection                        QuickTime proj
   'svhd'   MetadataSource                    no
```

QuickTime proj Tags

```
   Tag ID   Tag Name                          Writable
   ------   --------                          --------
   'cbmp'   CubemapProj                       QuickTime cbmp
   'equi'   EquirectangularProj               QuickTime equi
   'prhd'   ProjectionHeader                  QuickTime prhd
```

QuickTime cbmp Tags

```
   Index4   Tag Name                          Writable
   ------   --------                          --------
        1   Layout                            no
        2   Padding                           no
```

QuickTime equi Tags

```
   Index4   Tag Name                          Writable
   ------   --------                          --------
        1   ProjectionBoundsTop               no
        2   ProjectionBoundsBottom            no
        3   ProjectionBoundsLeft              no
        4   ProjectionBoundsRight             no
```

QuickTime prhd Tags

Index4	Tag Name	Writable
1	PoseYawDegrees	no
2	PosePitchDegrees	no
3	PoseRollDegrees	no

QuickTime HintSampleDesc Tags

MP4 hint sample description.

ID/Index	Tag Name	Writable
4	HintFormat	no
16	HintTrackVersion	no
20	MaxPacketSize	no
'snro'	SequenceNumberRandomOffset	no
'tims'	RTPTimeScale	no
'tsro'	TimestampRandomOffset	no

QuickTime MetaSampleDesc Tags

MP4 metadata sample description.

Tag ID	Tag Name	Writable
0x0004	MetaFormat	no
0x0008	MetaType	no
'btrt'	BitrateInfo	QuickTime Bitrate
'keys'	Keys	QuickTime Keys

QuickTime OtherSampleDesc Tags

Tag ID	Tag Name	Writable
0x0004	OtherFormat	no
0x0018	PlaybackFrameRate	no
'ftab'	FontTable	no
'mrld'	MarlinDictionary	GM mrld
'mrlh'	MarlinHeader	GM mrlh
'mrlv'	MarlinValues	GM mrlv
'name'	OtherName	no

QuickTime VideoHeader Tags

MP4 video media header.

Index2	Tag Name	Writable
2	GraphicsMode	no
3	OpColor	no

QuickTime TrackAperture Tags

Tag ID	Tag Name	Writable
'clef'	CleanApertureDimensions	no
'enof'	EncodedPixelsDimensions	no
'prof'	ProductionApertureDimensions	no

QuickTime TrackHeader Tags

Index4	Tag Name	Writable
0	TrackHeaderVersion	no
1	TrackCreateDate	int32u
2	TrackModifyDate	int32u
3	TrackID	no
5	TrackDuration	no
8	TrackLayer	no
9	TrackVolume	no

```
    10      MatrixStructure                       fixed32s[9]!
    19      ImageWidth                            no
    20      ImageHeight                           no
```

QuickTime TrackRef Tags

```
  Tag ID   Tag Name                           Writable
  ------   --------                           --------
  'cdsc'   ContentDescribes                   no
  'chap'   ChapterListTrackID                 no
  'mpod'   ElementaryStreamTrack              no
  'tmcd'   TimeCode                           no
```

QuickTime UserData Tags

Tag ID's beginning with the copyright symbol (hex 0xa9) are multi-
language text. Alternate language tags are accessed by adding a dash
followed by a 3-character ISO 639-2 language code to the tag name.
ExifTool will extract any multi-language user data tags found, even if
they aren't in this table. Note when creating new tags, ItemList tags
are preferred over these, so to create the tag when a same-named
ItemList tag exists, either "UserData" must be specified (eg.
"-UserData:Artist=Monet" on the command line), or the PREFERRED level
must be changed via the config file.

```
  Tag ID         Tag Name                      Writable
  ------         --------                      --------
  '@day'         ContentCreateDate             string/
  '@mak'         Make                          string/
  '@mod'         Model                         string/
  '@sec'         SamsungSec                    Samsung sec
  '@swr'         SoftwareVersion               string/
  '@xyz'         GPSCoordinates                string/
  'AllF'         PlayAllFrames                 int8u
  'CAME'         SerialNumberHash              string
  'CNCV'         CompressorVersion             string
  'CNFV'         FirmwareVersion               string
  'CNMN'         Model                         string/
  'CNOP'         CanonCNOP                     Canon CNOP
  'CNTH'         CanonCNTH                     Canon CNTH
  'DcMD'         KodakDcMD                     Kodak DcMD
  'FFMV'         FujiFilmFFMV                  FujiFilm FFMV
  'FIRM'         FirmwareVersion               string/
  "FOV\0"        FieldOfView                   string
  'GPMF'         GoProGPMF                     GoPro GPMF
  'GoPr'         GoProType                     string
  'INFO'         SamsungINFO                   Samsung INFO
  'LEIC'         LeicaLEIC                     Panasonic PANA
  'LENS'         LensSerialNumber              string
  'LOOP'         LoopStyle                     int32u
  'Lvlm'         LevelMeter?                   rational64s
  'MMA0'         MinoltaMMA0                   Minolta MMA
  'MMA1'         MinoltaMMA1                   Minolta MMA
  'MUID'         MediaUID                      no
  'MVTG'         FujiFilmMVTG                  EXIF
  'NCDT'         NikonNCDT                     Nikon NCDT
  'PANA'         PanasonicPANA                 Panasonic PANA
  'PENT'         PentaxPENT                    Pentax PENT
  'PXMN'         MakerNotePentax5b             Pentax
                 MakerNotePentax5c             Pentax
                 MakerNotePentaxUnknown        string
  'PXTH'         PentaxPreview                 Pentax PXTH
  'QVMI'         CasioQVMI                     EXIF
  'RDTA'         RicohRDTA                     Ricoh RDTA
  'RDTB'         RicohRDTB                     Ricoh RDTB
  'RDTC'         RicohRDTC                     Ricoh RDTC
  'RDTG'         RicohRDTG                     Ricoh RDTG
  'RDTL'         RicohRDTL                     Ricoh RDTL
  'RICO'         RicohInfo                     JPEG
  'RMKN'         RicohRMKN                     EXIF
```

```
'RTHU'         PreviewImage                        no
'SDLN'         PlayMode                            string
'SNum'         SerialNumber                        string/
'SelO'         PlaySelection                       int8u
'TAGS'         FujiFilmTags                        FujiFilm MOV
               KodakTags                           Kodak MOV
               KonicaMinoltaTags                   Minolta MOV1
               MinoltaTags                         Minolta MOV2
               NikonTags                           Nikon MOV
               OlympusTags1                        Olympus MOV1
               OlympusTags2                        Olympus MOV2
               OlympusTags3                        Olympus MP4
               OlympusTags4                        Olympus MOV3
               PentaxTags                          Pentax MOV
               SamsungTags                         Samsung MP4
               SanyoMOV                            Sanyo MOV
               SanyoMP4                            Sanyo MP4
               UnknownTags?                        string
'TTMD'         TomTomMetaData                      QuickTime TomTom
'WLOC'         WindowLocation                      int16u
'XMP_'         XMP                                 XMP
'Xtra'         MicrosoftXtra                       Microsoft Xtra
'_cx_'         CX?                                 rational64s
'_cy_'         CY?                                 rational64s
'_yaw'         Yaw                                 rational64s/
'albm'         Album                               string/
'albr'         AlbumArtist                         string
'angl'         CameraAngle                         string
'apmd'         ApertureMode                        undef
'auth'         Author                              string/
'btec'         GlamourSettings                     DJI Glamour
'ccid'         ContentID                           string
'cdis'         ContentDistributorID                string
'chpl'         ChapterList                         no
'clfn'         ClipFileName                        string
'clid'         ClipID                              string
'clsf'         Classification                      undef/
'cmid'         CameraID                            string
'cmnm'         Model                               string/
'coll'         CollectionName                      string/
'cprt'         Copyright                           string/
'cver'         CodeVersion                         string
'cvru'         CoverURI                            string
'date'         DateTimeOriginal                    string
'dscp'         Description                         string/
'finm'         OriginalFileName                    no
'fsid'         OriginalFilePath                    string
'gnre'         Genre                               string/
'hinf'         HintTrackInfo                       QuickTime HintTrackInfo
'hinv'         HintVersion                         string
'hnti'         HintInfo                            QuickTime HintInfo
'htcb'         HTCBinary                           QuickTime HTCBinary
'icnu'         IconURI                             string
'infi'         CameraInfo                          QuickTime Nextbase
'info'         FirmwareVersion                     string
'infu'         InfoURL                             string
'kgtt'         TrackType                           string
'kywd'         Keywords                            no
'loci'         LocationInformation                 undef/
'lrcu'         LyricsURI                           string
'lvlm'         LevelMeter?                         rational64s
'manu'         Make                                no
'mcvr'         PreviewImage                        string
'meta'         Meta                                QuickTime Meta
'modl'         Model                               no
'name'         Name                                string
'perf'         Performer                           string/
'pmcc'         GarminSettings                      string
'pose'         pose                                Kodak pose
'ptch'         Pitch                               rational64s/
```

```
'ptv '      PrintToVideo                    QuickTime Video
'rads'      Rads?                           rational64s
'reel'      ReelName                        string
'roll'      Roll                            rational64s/
'rtng'      Rating                          undef/
'scen'      Scene                           string
'scrn'      OlympusPreview                  Olympus scrn
'shot'      ShotName                        string
'slno'      SerialNumber                    string
'smta'      SamsungSmta                     Samsung smta
'tags'      Audible_tags                    Audible tags
'thmb'      MakerNotePentax5a               Pentax
            OlympusThumbnail                Olympus thmb
            ThumbnailImage                  string
            ThumbnailPNG                    string
            UnknownThumbnail                string
'time'      TimeStamp                       no
'titl'      Title                           string/
'urat'      UserRating                      undef/
'uuid'      GarminSoftware                  string
            GarminModel                     no
            UUID-Unknown?                   no
'vndr'      Vendor                          string
'vrot'      AccelerometerData               no
'yrrc'      Year                            undef/
"\xa9ART"   Artist                          string
"\xa9TIM"   StartTimecode                   string
"\xa9TSC"   StartTimeScale                  string
"\xa9TSZ"   StartTimeSampleSize             string
"\xa9alb"   Album                           string
"\xa9arg"   Arranger                        string
"\xa9ark"   ArrangerKeywords                string
"\xa9cmt"   Comment                         string
"\xa9cok"   ComposerKeywords                string
"\xa9com"   Composer                        string
"\xa9cpy"   Copyright                       string
"\xa9day"   ContentCreateDate               string
"\xa9dir"   Director                        string
"\xa9ed1"   Edit1                           string
"\xa9ed2"   Edit2                           string
"\xa9ed3"   Edit3                           string
"\xa9ed4"   Edit4                           string
"\xa9ed5"   Edit5                           string
"\xa9ed6"   Edit6                           string
"\xa9ed7"   Edit7                           string
"\xa9ed8"   Edit8                           string
"\xa9ed9"   Edit9                           string
"\xa9enc"   EncoderID                       string
"\xa9fmt"   Format                          string
"\xa9fpt"   Pitch                           string
"\xa9frl"   Roll                            string
"\xa9fyw"   Yaw                             string
"\xa9gen"   Genre                           string
"\xa9gpt"   CameraPitch                     string
"\xa9grl"   CameraRoll                      string
"\xa9grp"   Grouping                        string
"\xa9gyw"   CameraYaw                       string
"\xa9inf"   Information                     string
"\xa9isr"   ISRCCode                        string
"\xa9lab"   RecordLabelName                 string
"\xa9lal"   RecordLabelURL                  string
"\xa9lyr"   Lyrics                          string
"\xa9mak"   Make                            string
"\xa9mal"   MakerURL                        string
"\xa9mdl"   Model                           string/
"\xa9mod"   Model                           string
"\xa9nam"   Title                           string
"\xa9pdk"   ProducerKeywords                string
"\xa9phg"   RecordingCopyright              string
"\xa9prd"   Producer                        string
```

```
"\xa9prf"    Performers                        string
"\xa9prk"    PerformerKeywords                 string
"\xa9prl"    PerformerURL                      string
"\xa9req"    Requirements                      string
"\xa9snk"    SubtitleKeywords                  string
"\xa9snm"    Subtitle                          string
"\xa9src"    SourceCredits                     string
"\xa9swf"    SongWriter                        string
"\xa9swk"    SongWriterKeywords                string
"\xa9swr"    SoftwareVersion                   string
"\xa9too"    Encoder                           string
"\xa9trk"    Track                             string
"\xa9wrt"    Composer                          string/
"\xa9xsp"    SpeedX                            string
"\xa9xyz"    GPSCoordinates                    string
"\xa9ysp"    SpeedY                            string
"\xa9zsp"    SpeedZ                            string
```

QuickTime TomTom Tags

Tags found in TomTom Bandit Action Cam MP4 videos.

Tag ID	Tag Name	Writable
'TTAD'	TomTomAD	QuickTime Stream
'TTHL'	TomTomHL?	no
'TTID'	TomTomID	no
'TTVD'	TomTomVD	no+
'TTVI'	TomTomVI?	no

QuickTime HintTrackInfo Tags

Tag ID	Tag Name	Writable
'dimm'	ImmediateDataBytes	no
'dmax'	LargestPacketDuration	no
'dmed'	MediaTrackBytes	no
'drep'	RepeatedDataBytes	no
'maxr'	MaxDataRate	no
'npck'	NumPackets	no
'nump'	NumPackets	no
'payt'	PayloadType	no
'pmax'	LargestPacketSize	no
'tmax'	MaxTransmissionTime	no
'tmin'	MinTransmissionTime	no
'totl'	TotalBytes	no
'tpaY'	TotalBytesNoRTPHeaders	no
'tpay'	TotalBytesNoRTPHeaders	no
'tpyl'	TotalBytesNoRTPHeaders	no
'trpY'	TotalBytes	no
'trpy'	TotalBytes	no

QuickTime HintInfo Tags

Tag ID	Tag Name	Writable
'rtp '	RealtimeStreamingProtocol	no
'sdp '	StreamingDataProtocol	no

QuickTime HTCBinary Tags

Index4	Tag Name	Writable
[no tags known]		

QuickTime Nextbase Tags

Tags found in 'infi' atom from some Nextbase videos. As well as these
tags, other existing tags are also extracted. These tags are not
currently writable but they may all be removed by deleting the Nextbase

group.

```
Tag ID              Tag Name              Writable
------              --------              --------
'2nd Cam'           SecondCam             no
'Alerts'            Alerts                no
'Alexa'             Alexa                 no
'Alexa - Paired Device Name'
                    Alexa-PairedDeviceName no
'Alexa - Pairing' Alexa-Pairing          no
'Alexa - Privacy Mode' Alexa-PrivacyMode  no
'Alexa - Wake Word Language'
                    Alexa-WakeWordLanguage no
'Audio'             Audio                 no
'Auto Power Off'    AutoPowerOff          no
'Battery Status'    BatteryStatus         no
'Bluetooth MAC Address' BluetoothMACAddress no
'Bluetooth Name'    BluetoothName         no
'Country'           Country               no
'Default Settings'  DefaultSettings       no
'Device Sounds'     DeviceSounds          no
'Dual Files'        DualFiles             no
'Emergency SOS'     EmergencySOS          no
'Exposure'          Exposure              no
'Extreme Weather Mode' ExtremeWeatherMode no
'FCC-ID'            FCC-ID                no
'Firmware'          Firmware              no
'Firmware Version'  FirmwareVersion       no
'Format SD Card'    FormatSDCard          no
'G Sensor'          GSensor               no
'GPS Stamp'         GPSStamp              no
'Image Stabilisation' ImageStabilisation  no
'Keep User Settings' KeepUserSettings     no
'Language'          Language              no
'Linux'             Linux                 no
'Model'             Model                 no
'Model Stamp'       ModelStamp            no
'MyNextbase - Paired Device Name'
                    MyNextbase-PairedDeviceName no
'MyNextbase - Pairing' MyNextbase-Pairing no
'NBCD'              NBCD                  no
'Number / License Plate' NumberLicensePlate no
'Parking Mode'      ParkingMode           no
'RTOS'              RTOS                  no
'Recording History' RecordingHistory      no
'Resolution'        Resolution            no
'Reversing Camera'  ReversingCamera       no
'SD Card Class'     SDCardClass           no
'SD Card Format'    SDCardFormat          no
'SD Card Manf Date' SDCardManfDate        no
'SD Card Manf ID'   SDCardManfID          no
'SD Card Model No'  SDCardModelNo         no
'SD Card OEM ID'    SDCardOEMID           no
'SD Card Serial No' SDCardSerialNo        no
'SD Card Size'      SDCardSize            no
'SD Card Type'      SDCardType            no
'SD Card Used Space' SDCardUsedSpace      no
'Screen Dimming'    ScreenDimming         no
'Screen Saver'      ScreenSaver           no
'Serial No'         SerialNumber          no
'Speed Stamp'       SpeedStamp            no
'Speed Units'       SpeedUnits            no
'System Info'       SystemInfo            no
'Time & Date'       TimeAndDate           no
'Time Lapse'        TimeLapse             no
'Time Stamp'        VideoTimeStamp        no
'Time Zone / DST'   TimeZoneDST           no
'Video Length'      VideoLength           no
'Wi-Fi MAC Address' Wi-FiMACAddress       no
'Wi-Fi Password'    Wi-FiPassword         no
```

```
  'Wi-Fi SSID'    Wi-FiSSID                        no
  'what3words'    What3Words                       no
```

QuickTime Video Tags

```
  Index1   Tag Name                         Writable
  ------   --------                         --------
      0    DisplaySize                      no
      6    SlideShow                        no
```

QuickTime UserMedia Tags

```
  Tag ID   Tag Name                         Writable
  ------   --------                         --------
  'MTDT'   MetaData                         QuickTime MetaData
```

QuickTime MetaData Tags

```
  Tag ID   Tag Name                         Writable
  ------   --------                         --------
  0x0001   Title                            no
  0x0003   ProductionDate                   no
  0x0004   Software                         no
  0x0005   Product                          no
  0x000a   TrackProperty                    no
  0x000b   TimeZone                         no
  0x000c   ModifyDate                       no
```

QuickTime MovieHeader Tags

```
  Index4   Tag Name                         Writable
  ------   --------                         --------
      0    MovieHeaderVersion               no
      1    CreateDate                       int32u
      2    ModifyDate                       int32u
      3    TimeScale                        no
      4    Duration                         no
      5    PreferredRate                    no
      6    PreferredVolume                  no
      9    MatrixStructure                  no
     18    PreviewTime                      no
     19    PreviewDuration                  no
     20    PosterTime                       no
     21    SelectionTime                    no
     22    SelectionDuration                no
     23    CurrentTime                      no
     24    NextTrackID                      no
```

QuickTime Preview Tags

```
  Index2   Tag Name                         Writable
  ------   --------                         --------
      0    PreviewDate                      int32u
      2    PreviewVersion                   no
      3    PreviewAtomType                  no
      5    PreviewAtomIndex                 no
```

QuickTime SkipInfo Tags

```
  Tag ID   Tag Name                         Writable
  ------   --------                         --------
  'thma'   ThumbnailImage                   no
  'ver '   Version                          no
```

QuickTime Profile Tags

```
  Tag ID   Tag Name                         Writable
  ------   --------                         --------
  'APRF'   AudioProfile                     QuickTime AudioProf
  'FPRF'   FileGlobalProfile                QuickTime FileProf
```

```
    'OLYM'  OlympusOLYM                      Olympus OLYM
    'VPRF'  VideoProfile                     QuickTime VideoProf
```

QuickTime AudioProf Tags

```
    Index4   Tag Name                        Writable
    ------   --------                        --------
        0    AudioProfileVersion?            no
        1    AudioTrackID                    no
        2    AudioCodec                      no
        3    AudioCodecInfo?                 no
        4    AudioAttributes                 no
        5    AudioAvgBitrate                 no
        6    AudioMaxBitrate                 no
        7    AudioSampleRate                 no
        8    AudioChannels                   no
```

QuickTime FileProf Tags

```
    Index4   Tag Name                        Writable
    ------   --------                        --------
        0    FileProfileVersion?             no
        1    FileFunctionFlags               no
```

QuickTime VideoProf Tags

```
    Index4   Tag Name                        Writable
    ------   --------                        --------
        0    VideoProfileVersion?            no
        1    VideoTrackID                    no
        2    VideoCodec                      no
        3    VideoCodecInfo?                 no
        4    VideoAttributes                 no
        5    VideoAvgBitrate                 no
        6    VideoMaxBitrate                 no
        7    VideoAvgFrameRate               no
        8    VideoMaxFrameRate               no
        9    VideoSize                       no
       10    PixelAspectRatio                no
```

QuickTime Flip Tags

Found in MP4 files from Flip Video cameras.

```
    Index4   Tag Name                        Writable
    ------   --------                        --------
        1    PreviewImageWidth               no
        2    PreviewImageHeight              no
       13    PreviewImageLength              no
       14    SerialNumber                    no
       28    PreviewImage                    no
```

QuickTime Tags360Fly Tags

Timed metadata found in MP4 videos from the 360Fly.

```
    Tag ID   Tag Name                        Writable
    ------   --------                        --------
    0x0001   Accel360Fly                     QuickTime Accel360Fly
    0x0002   Gyro360Fly                      QuickTime Gyro360Fly
    0x0003   Mag360Fly                       QuickTime Mag360Fly
    0x0005   GPS360Fly                       QuickTime GPS360Fly
    0x0006   Rot360Fly                       QuickTime Rot360Fly
    0x00fa   Fusion360Fly                    QuickTime Fusion360Fly
```

QuickTime Accel360Fly Tags

```
    Index1   Tag Name                        Writable
    ------   --------                        --------
        1    AccelMode?                      no
```

```
        2     SampleTime                              no
       10     AccelYPR                                no
```

QuickTime Gyro360Fly Tags

```
   Index1   Tag Name                              Writable
   ------   --------                              --------
        1     GyroMode?                             no
        2     SampleTime                            no
       10     GyroYPR                               no
```

QuickTime Mag360Fly Tags

```
   Index1   Tag Name                              Writable
   ------   --------                              --------
        1     MagMode?                              no
        2     SampleTime                            no
       10     MagnetometerXYZ                       no
```

QuickTime GPS360Fly Tags

```
   Index1   Tag Name                              Writable
   ------   --------                              --------
        1     GPSMode?                              no
        2     SampleTime                            no
       10     GPSLatitude                           no
       14     GPSLongitude                          no
       18     GPSAltitude                           no
       22     GPSSpeed                              no
       24     GPSTrack                              no
       26     Acceleration                          no
```

QuickTime Rot360Fly Tags

```
   Index1   Tag Name                              Writable
   ------   --------                              --------
        1     RotMode?                              no
        2     SampleTime                            no
       10     RotationXYZ                           no
```

QuickTime Fusion360Fly Tags

```
   Index1   Tag Name                              Writable
   ------   --------                              --------
        1     FusionMode?                           no
        2     SampleTime                            no
       10     FusionYPR                             no
```

QuickTime ImageFile Tags

Tags used in QTIF QuickTime Image Files.

```
   Tag ID   Tag Name                              Writable
   ------   --------                              --------
   'idat'   ImageData                             no
   'idsc'   ImageDescription                      QuickTime VisualSampleDesc
   'iicc'   ICC_Profile                           ICC_Profile
```

RIFF Tags
    The RIFF container format is used various types of fines including AVI,
    WAV, WEBP, LA, OFR, PAC and WV. According to the EXIF specification,
    Meta information is embedded in two types of RIFF "LIST" chunks: "INFO"
    and "exif", and information about the audio content is stored in the
    "fmt " chunk. As well as this information, some video information and
    proprietary manufacturer-specific information is also extracted.

    Large AVI videos may be a concatenation of two or more RIFF chunks.
    For these files, information is extracted from subsequent RIFF chunks
    as sub-documents, but the Duration is calculated for the full video.

ExifTool currently has the ability to write EXIF, XMP and ICC_Profile
metadata to WEBP images, but can't yet write to other RIFF-based
formats.

```
  Tag ID                   Tag Name                 Writable
  ------                   --------                 --------
  'ALPH'                   ALPH                     RIFF ALPH
  'ANIM'                   ANIM                     RIFF ANIM
  'ANMF'                   ANMF                     RIFF ANMF
  'C2PA'                   JUMBF                    Jpeg2000
  'CSET'                   CharacterSet             RIFF CSET
  'EXIF'                   EXIF                     EXIF
                           UnknownEXIF              no
  'ICCP'                   ICC_Profile              ICC_Profile
  'IDIT'                   DateTimeOriginal         no
  'JUNK'                   OlympusJunk              Olympus AVI
                           CasioJunk                EXIF
                           RicohJunk                Ricoh AVI
                           PentaxJunk               Pentax Junk
                           PentaxJunk2              Pentax Junk2
                           LucasJunk                QuickTime Stream
                           TextJunk                 no
  'JUNQ'                   OldXMP                   no
  'LIST_INF0'              Info                     RIFF Info
  'LIST_INFO'              Info                     RIFF Info
  'LIST_Tdat'              Tdat                     RIFF Tdat
  'LIST_adtl'              AssociatedDataList       RIFF
  'LIST_exif'              Exif                     RIFF Exif
  'LIST_hdrl'              Hdrl                     RIFF Hdrl
  'LIST_hydt'              PentaxData               Pentax AVI
  'LIST_ncdt'              NikonData                Nikon AVI
  'LIST_pntx'              PentaxData2              Pentax AVI
  'SEAL'                   SEAL                     XMP SEAL
  'SGLT'                   BikeBroAccel             QuickTime Stream
  'SLLT'                   BikeBroGPS               QuickTime Stream
  'VP8 '                   VP8Bitstream             RIFF VP8
  'VP8L'                   VP8L                     RIFF VP8L
  'VP8X'                   VP8X                     RIFF VP8X
  "XMP\0"                  XMP                      XMP
  'XMP '                   XMP                      XMP
  '_PMX'                   XMP                      XMP
  'aXML'                   AXML                     XMP XML
  'acid'                   Acidizer                 RIFF Acidizer
  'afsp'                   Afsp                     no
  'bext'                   BroadcastExtension       RIFF BroadcastExt
  'cue '                   CuePoints                no
  'ds64'                   DataSize64               RIFF DS64
  'fact'                   NumberOfSamples          no
  'fmt '                   AudioFormat              RIFF AudioFormat
  'gps0'                   GPSTrack                 QuickTime Stream
  'gsen'                   GSensor                  QuickTime Stream
  'guan'                   Guano                    no
  'iXML'                   IXML                     XMP XML
  'id3 '                   ID3                      ID3
  'inst'                   Instrument               RIFF Instrument
  'labl'                   CuePointLabel            no
  'list'                   ListType                 no
  'ltxt'                   LabeledText              no
  'note'                   CuePointNote             no
  'olym'                   Olym                     Olympus WAV
  'plst'                   Playlist                 no
  'smpl'                   Sampler                  RIFF Sampler
  'tx_USER'                UserText                 RIFF UserText
  'tx_Unknown'             Text                     no
```

RIFF ALPH Tags

WebP alpha chunk.

```
  Index1   Tag Name                                 Writable
```

```
   ------   --------                        --------
       0    AlphaPreprocessing              no
     0.1    AlphaFiltering                  no
     0.2    AlphaCompression                no
```

RIFF ANIM Tags

WebP animation chunk.

```
   Index1   Tag Name                        Writable
   ------   --------                        --------
       0    BackgroundColor                 no
       4    AnimationLoopCount              no
```

RIFF ANMF Tags

WebP animation frame chunk.

```
   Index1   Tag Name                        Writable
   ------   --------                        --------
      12    Duration                        no
```

RIFF CSET Tags

```
   Index2   Tag Name                        Writable
   ------   --------                        --------
       0    CodePage                        no
       1    CountryCode                     no
       2    LanguageCode                    no
       3    Dialect                         no
```

RIFF Info Tags

RIFF INFO tags found in AVI video and WAV audio files. Tags which are
part of the EXIF 2.3 specification have an underlined Tag Name in the
HTML version of this documentation. Other tags are found in AVI files
generated by some software.

```
   Tag ID   Tag Name                        Writable
   ------   --------                        --------
   'AGES'   Rated                           no
   'CMNT'   Comment                         no
   'CODE'   EncodedBy                       no
   'COMM'   Comments                        no
   'DIRC'   Directory                       no
   'DISP'   SoundSchemeTitle                no
   'DTIM'   DateTimeOriginal                no
   'GENR'   Genre                           no
   'IARL'   ArchivalLocation                no
   'IART'   Artist                          no
   'IAS1'   FirstLanguage                   no
   'IAS2'   SecondLanguage                  no
   'IAS3'   ThirdLanguage                   no
   'IAS4'   FourthLanguage                  no
   'IAS5'   FifthLanguage                   no
   'IAS6'   SixthLanguage                   no
   'IAS7'   SeventhLanguage                 no
   'IAS8'   EighthLanguage                  no
   'IAS9'   NinthLanguage                   no
   'IBSU'   BaseURL                         no
   'ICAS'   DefaultAudioStream              no
   'ICDS'   CostumeDesigner                 no
   'ICMS'   Commissioned                    no
   'ICMT'   Comment                         no
   'ICNM'   Cinematographer                 no
   'ICNT'   Country                         no
   'ICOP'   Copyright                       no
   'ICRD'   DateCreated                     no
   'ICRP'   Cropped                         no
   'IDIM'   Dimensions                      no
```

```
'IDIT'   DateTimeOriginal                          no
'IDPI'   DotsPerInch                               no
'IDST'   DistributedBy                             no
'IEDT'   EditedBy                                  no
'IENC'   EncodedBy                                 no
'IENG'   Engineer                                  no
'IGNR'   Genre                                     no
'IKEY'   Keywords                                  no
'ILGT'   Lightness                                 no
'ILGU'   LogoURL                                   no
'ILIU'   LogoIconURL                               no
'ILNG'   Language                                  no
'IMBI'   MoreInfoBannerImage                       no
'IMBU'   MoreInfoBannerURL                         no
'IMED'   Medium                                    no
'IMIT'   MoreInfoText                              no
'IMIU'   MoreInfoURL                               no
'IMUS'   MusicBy                                   no
'INAM'   Title                                     no
'IPDS'   ProductionDesigner                        no
'IPLT'   NumColors                                 no
'IPRD'   Product                                   no
'IPRO'   ProducedBy                                no
'IRIP'   RippedBy                                  no
'IRTD'   Rating                                    no
'ISBJ'   Subject                                   no
'ISFT'   Software                                  no
'ISGN'   SecondaryGenre                            no
'ISHP'   Sharpness                                 no
'ISMP'   TimeCode                                  no
'ISRC'   Source                                    no
'ISRF'   SourceForm                                no
'ISTD'   ProductionStudio                          no
'ISTR'   Starring                                  no
'ITCH'   Technician                                no
'ITRK'   TrackNumber                               no
'IWMU'   WatermarkURL                              no
'IWRI'   WrittenBy                                 no
'LANG'   Language                                  no
'LOCA'   Location                                  no
'PRT1'   Part                                      no
'PRT2'   NumberOfParts                             no
'RATE'   Rate                                      no
'STAR'   Starring                                  no
'STAT'   Statistics                                no
'TAPE'   TapeName                                  no
'TCDO'   EndTimecode                               no
'TCOD'   StartTimecode                             no
'TITL'   Title                                     no
'TLEN'   Length                                    no
'TORG'   Organization                              no
'TRCK'   TrackNumber                               no
'TURL'   URL                                       no
'TVER'   Version                                   no
'VMAJ'   VegasVersionMajor                         no
'VMIN'   VegasVersionMinor                         no
'YEAR'   Year                                      no
```

RIFF Tdat Tags

```
  Tag ID   Tag Name                           Writable
  ------   --------                           --------
  [no tags known]
```

RIFF Exif Tags

These tags are part of the EXIF 2.3 specification for WAV audio files.

```
  Tag ID   Tag Name                           Writable
  ------   --------                           --------
```

```
'ecor'   Make                              no
'emdl'   Model                             no
'emnt'   MakerNotes                        no
'erel'   RelatedImageFile                  no
'etim'   TimeCreated                       no
'eucm'   UserComment                       no
'ever'   ExifVersion                       no
```

RIFF Hdrl Tags

Tag ID	Tag Name	Writable
'IDIT'	DateTimeOriginal	no
'ISMP'	TimeCode	no
'LIST_odml'	OpenDML	RIFF OpenDML
'LIST_strl'	Stream	RIFF Stream
'avih'	AVIHeader	RIFF AVIHeader

RIFF OpenDML Tags

Tag ID	Tag Name	Writable
'dmlh'	ExtendedAVIHeader	RIFF ExtAVIHdr

RIFF ExtAVIHdr Tags

Index4	Tag Name	Writable
0	TotalFrameCount	no

RIFF Stream Tags

Tag ID	Tag Name	Writable
'strd'	StreamData	RIFF StreamData
'strf'	AudioFormat	RIFF AudioFormat
	VideoFormat	BMP
'strh'	StreamHeader	RIFF StreamHeader
'strn'	StreamName	no

RIFF StreamData Tags

This chunk is used to store proprietary information in AVI videos from
some cameras. The first 4 characters of the data are used as the Tag
ID below.

Tag ID	Tag Name	Writable
'AVIF'	AVIF	EXIF
'CASI'	CasioData	Casio AVI
'Zora'	VendorName	no
'unknown'	UnknownData	no

RIFF AudioFormat Tags

Index2	Tag Name	Writable
0	Encoding	no
1	NumChannels	no
2	SampleRate	no
4	AvgBytesPerSec	no
7	BitsPerSample	no

RIFF StreamHeader Tags

Index4	Tag Name	Writable
0	StreamType	no
1	AudioCodec	no
	VideoCodec	no

```
            Codec                                 no
      5     AudioSampleRate                       no
            VideoFrameRate                        no
            StreamSampleRate                      no
      8     AudioSampleCount                      no
            VideoFrameCount                       no
            StreamSampleCount                     no
     10     Quality                               no
     11     SampleSize                            no
```

RIFF AVIHeader Tags

```
   Index4    Tag Name                        Writable
   ------    --------                        --------
      0     FrameRate                             no
      1     MaxDataRate                           no
      4     FrameCount                            no
      6     StreamCount                           no
      8     ImageWidth                            no
      9     ImageHeight                           no
```

RIFF VP8 Tags

This chunk is found in simple-format (lossy) WebP files. See
<https://developers.google.com/speed/webp/docs/riff_container> for the
WebP container specification.

```
   Index1    Tag Name                        Writable
   ------    --------                        --------
      0     VP8Version                            no
      6     ImageWidth                            no
    6.1     HorizontalScale                       no
      8     ImageHeight                           no
    8.1     VerticalScale                         no
```

RIFF VP8L Tags

This chunk is found in lossless WebP files.

```
   Index1    Tag Name                        Writable
   ------    --------                        --------
      1     ImageWidth                            no
      2     ImageHeight                           no
      4     AlphaIsUsed                           no
```

RIFF VP8X Tags

This chunk is found in extended WebP files.

```
   Index1    Tag Name                        Writable
   ------    --------                        --------
      0     WebP_Flags                            no
      4     ImageWidth                            no
      6     ImageHeight                           no
```

RIFF Acidizer Tags

```
   Index1    Tag Name                        Writable
   ------    --------                        --------
      0     AcidizerFlags                         no
      4     RootNote                              no
     12     Beats                                 no
     16     Meter                                 no
     20     Tempo                                 no
```

RIFF BroadcastExt Tags

Information found in the Broadcast Audio Extension chunk (see
<http://tech.ebu.ch/docs/tech/tech3285.pdf>).

Index1	Tag Name	Writable
0	Description	no
256	Originator	no
288	OriginatorReference	no
320	DateTimeOriginal	no
338	TimeReference	no
346	BWFVersion	no
348	BWF_UMID	no
602	CodingHistory	no

RIFF DS64 Tags

64-bit data sizes for MBWF/RF64 files. See
<https://tech.ebu.ch/docs/tech/tech3306-2009.pdf> for the
specification.

Index8	Tag Name	Writable
0	RIFFSize64	no
1	DataSize64	no
2	NumberOfSamples64	no

RIFF Instrument Tags

Index1	Tag Name	Writable
0	UnshiftedNote	no
1	FineTune	no
2	Gain	no
3	LowNote	no
4	HighNote	no
5	LowVelocity	no
6	HighVelocity	no

RIFF Sampler Tags

Index4	Tag Name	Writable
0	Manufacturer	no
1	Product	no
2	SamplePeriod	no
3	MIDIUnityNote	no
4	MIDIPitchFraction	no
5	SMPTEFormat	no
6	SMPTEOffset	no
7	NumSampleLoops	no
8	SamplerDataLen	no
9	SamplerData	no

RIFF UserText Tags

Tags decoded from the USER-format txts stream written by Momento M6
dashcam. Extracted only if the ExtractEmbedded option is used.

Index1	Tag Name	Writable
28	GPSAltitude	no
40	Accelerometer	no
56	GPSSpeed	no
60	GPSLatitude	no
64	GPSLongitude	no
68	GPSDateTime	no

FLAC Tags
    Free Lossless Audio Codec (FLAC) meta information. ExifTool also
    extracts ID3 information from these files.

Tag ID	Tag Name	Writable

```
0x0000   StreamInfo                        FLAC StreamInfo
0x0001   Padding?                          no
0x0002   Application_riff                  RIFF
         ApplicationUnknown?               no
0x0003   SeekTable?                        no
0x0004   VorbisComment                     Vorbis Comments
0x0005   CueSheet?                         no
0x0006   Picture                           FLAC Picture
```

FLAC StreamInfo Tags

FLAC is big-endian, so bit 0 is the high-order bit in this table.

Tag ID	Tag Name	Writable
'Bit000-015'	BlockSizeMin	no
'Bit016-031'	BlockSizeMax	no
'Bit032-055'	FrameSizeMin	no
'Bit056-079'	FrameSizeMax	no
'Bit080-099'	SampleRate	no
'Bit100-102'	Channels	no
'Bit103-107'	BitsPerSample	no
'Bit108-143'	TotalSamples	no
'Bit144-271'	MD5Signature	no

FLAC Picture Tags

Index4	Tag Name	Writable
0	PictureType	no
1	PictureMIMEType	no
2	PictureDescription	no
3	PictureWidth	no
4	PictureHeight	no
5	PictureBitsPerPixel	no
6	PictureIndexedColors	no
7	PictureLength	no
8	Picture	no

GM Tags

These tags are extracted from GM/Cosworth PDR (Performance Data Recorder) information found in videos from General Motors cars such as Corvette and Camero.

Use the API PrintCSV option to output all timed PDR data in CSV format at greatly increased speed and with much lower memory usage. This option prints the numerical values for each channel in CSV format, suitable for import into RaceRender. In this output, the gear numbers for Neutral and Reverse are changed to -1 and -100 respectively for compatibility with RaceRender.

GM marl Tags

Tags extracted from the 'ctbx' 'marl' (Marlin) box of timed PDR metadata from GM cars. Use the -ee (API ExtractEmbedded) option to extract this information, or the API PrintCSV option to output in CSV format.

Tag Name	Writable
ABSActive	no
AccelPos	no
BatteryVoltage	no
Beacon	no
BoostPressureInd	no
BrakePos	no
CPUFree	no
CPUIO	no
CPUIRQ	no
CPUSystem	no

```
CPUUser                                      no
ClutchPos                                    no
CoolantTemp                                  no
CornerExitSetting                            no
DiskReadOperations                           no
DiskReadRate                                 no
DiskReadTime                                 no
DiskWriteOperations                          no
DiskWriteRate                                no
DiskWriteTime                                no
Distance                                     no
DriverPerformanceMode                        no
EngineSpeedRequest                           no
EngineTorqureReq                             no
FuelCapacity                                 no
FuelLevel                                    no
GPSAltitude                                  no
GPSDateTime                                  no
GPSFix                                       no
GPSLatitude                                  no
GPSLongitude                                 no
GPSTrack                                     no
Gear                                         no
InfotainOpMode                               no
IntakeAirTemperature                         no
IntakeBoostPressure                          no
LFTyrePressure                               no
LFTyreTemp                                   no
LRTyrePressure                               no
LRTyreTemp                                   no
LateralAcceleration                          no
LongitudinalAcceleration                     no
OilPressure                                  no
OilTemp                                      no
OutsideAirTemperature                        no
RFTyrePressure                               no
RFTyreTemp                                   no
RPM                                          no
RRTyrePressure                               no
RRTyreTemp                                   no
RecordingEventOdometer                       no
Speed                                        no
SpeedControlResponse                         no
SpeedRequestIntervention                     no
Steering1Switch                              no
Steering2Switch                              no
SteeringAngle                                no
SuspensionDisplacementLeftFront              no
SuspensionDisplacementLeftRear               no
SuspensionDisplacementRightFront             no
SuspensionDisplacementRightRear              no
SystemBackupPowerEnabled                     no
SystemBackupPowerMode                        no
SystemPowerMode                              no
TimeStamp                                    no
TractionControlActive                        no
TransOilTemp                                 no
TransportStorageMode                         no
ValetMode                                    no
VehicleStabilityActive                       no
VerticalAcceleration                         no
WheelspeedLeftDriven                         no
WheelspeedLeftNon-Driven                     no
WheelspeedRightDriven                        no
WheelspeedRightNon-Driven                    no
YawRate                                      no
```

GM mrld Tags

The Marlin dictionary. Only one channel is listed but all available

channels are extracted. Use the -struct (API Struct) option to extract
the channel information as structures.

```
    Tag Name                               Writable
    --------                               --------
    Channel01                              GM Channel Struct
    Channel01Description                   no_
    Channel01DispMax                       no_
    Channel01DispMin                       no_
    Channel01Flags                         no_
    Channel01ID                            no_
    Channel01Interval                      no_
    Channel01Max                           no_
    Channel01Min                           no_
    Channel01Multiplier                    no_
    Channel01Name                          no_
    Channel01Num                           no_
    Channel01Offset                        no_
    Channel01Type                          no_
    Channel01Units                         no_
```

GM Channel Struct

Information stored for each channel in the Marlin dictionary.

```
    Field Name                             Writable
    ----------                             --------
    ID                                     no
    Type                                   no
    Num                                    no
    Units                                  no
    Flags                                  no
    Interval                               no
    Min                                    no
    Max                                    no
    DispMin                                no
    DispMax                                no
    Multiplier                             no
    Offset                                 no
    Name                                   no
    Description                            no
```

GM mrlh Tags

The Marlin PDR header.

```
    Index1   Tag Name                      Writable
    ------   --------                      --------
       0     MarlinDataVersion             no
```

GM mrlv Tags

Tags found in the 'mrlv' (Marlin values) box.

```
    Tag ID   Tag Name                      Writable
    ------   --------                      --------
    'date'   Date1                         no
    'lang'   Language                      no
    'ldat'   Date2                         no
    'ltim'   Time2                         no
    'swvs'   SoftwareVersion               no
    'time'   Time1                         no
    'tstm'   StartTime                     no
    'unit'   Units                         no
    'zone'   TimeZone                      no
```

Parrot Tags
    Parrot mett Tags

    Streaming metadata found in Parrot drone videos. See

<https://developer.parrot.com/docs/pdraw/metadata.html> for the
specification.

```
  Tag ID                      Tag Name           Writable
  ------                      --------           --------
  'P1'                        ParrotV1           Parrot V1
  'P2'                        ParrotV2           Parrot V2
  'P3'                        ParrotV3           Parrot V3
  'E1'                        ParrotTimeStamp    Parrot TimeStamp
  'E2'                        ParrotFollowMe     Parrot FollowMe
  'E3'                        ParrotAutomation   Parrot Automation
  'application/arcore-accel'  ARCoreAccel        Parrot ARCoreAccel
  'application/arcore-custom-event'
                              ARCoreCustom       Parrot ARCoreCustom
  'application/arcore-gyro'   ARCoreGyro         Parrot ARCoreGyro
  'application/arcore-video-0' ARCoreVideo       Parrot ARCoreVideo
```

Parrot V1 Tags

Parrot version 1 streaming metadata.

```
  Index1   Tag Name                            Writable
  ------   --------                            --------
      4    DroneYaw                            no
      6    DronePitch                          no
      8    DroneRoll                           no
     10    CameraPan                           no
     12    CameraTilt                          no
     14    FrameView                           no
     22    ExposureTime                        no
     24    ISO                                 no
     26    WifiRSSI                            no
     27    Battery                             no
     28    GPSLatitude                         no
     32    GPSLongitude                        no
     36    GPSAltitude                         no
   36.1    GPSSatellites                       no
     40    AltitudeFromTakeOff                 no
     44    DistanceFromHome                    no
     48    SpeedX                              no
     50    SpeedY                              no
     52    SpeedZ                              no
     54    Binning                             no
   54.1    FlyingState                         no
     55    Animation                           no
   55.1    PilotingMode                        no
```

Parrot V2 Tags

Parrot version 2 basic streaming metadata.

```
  Index1   Tag Name                            Writable
  ------   --------                            --------
      4    Elevation                           no
      8    GPSLatitude                         no
     12    GPSLongitude                        no
     16    GPSAltitude                         no
   16.1    GPSSatellites                       no
     20    GPSVelocityNorth                    no
     22    GPSVelocityEast                     no
     24    GPSVelocityDown                     no
     26    AirSpeed                            no
     28    DroneQuaternion                     no
     36    FrameView                           no
     44    CameraPan                           no
     46    CameraTilt                          no
     48    ExposureTime                        no
     50    ISO                                 no
     52    Binning                             no
   52.1    FlyingState                         no
```

```
      53    Animation                         no
    53.1    PilotingMode                      no
      54    WifiRSSI                          no
      55    Battery                           no
 'Groups'   Groups                            no
```

Parrot <u>V3</u> <u>Tags</u>

Parrot version 3 basic streaming metadata.

```
   Index1   Tag Name                          Writable
   ------   --------                          --------
        4   Elevation                         no
        8   GPSLatitude                       no
       12   GPSLongitude                      no
       16   GPSAltitude                       no
     16.1   GPSSatellites                     no
       20   GPSVelocityNorth                  no
       22   GPSVelocityEast                   no
       24   GPSVelocityDown                   no
       26   AirSpeed                          no
       28   DroneQuaternion                   no
       36   FrameBaseView                     no
       44   FrameView                         no
       52   ExposureTime                      no
       54   ISO                               no
       56   RedBalance                        no
       58   BlueBalance                       no
       60   FOV                               no
       64   LinkGoodput                       no
     64.1   LinkQuality                       no
       68   WifiRSSI                          no
       69   Battery                           no
       70   Binning                           no
     70.1   FlyingState                       no
       71   Animation                         no
     71.1   PilotingMode                      no
```

Parrot <u>TimeStamp</u> <u>Tags</u>

Parrot streaming metadata timestamp extension.

```
   Index1   Tag Name                          Writable
   ------   --------                          --------
        4   TimeStamp                         no
```

Parrot <u>FollowMe</u> <u>Tags</u>

Parrot streaming metadata follow-me extension.

```
   Index1   Tag Name                          Writable
   ------   --------                          --------
        4   GPSTargetLatitude                 no
        8   GPSTargetLongitude                no
       12   GPSTargetAltitude                 no
       16   Follow-meMode                     no
       17   Follow-meAnimation                no
```

Parrot <u>Automation</u> <u>Tags</u>

Parrot streaming metadata automation extension.

```
   Index1   Tag Name                          Writable
   ------   --------                          --------
        4   GPSFramingLatitude                no
        8   GPSFramingLongitude               no
       12   GPSFramingAltitude                no
       16   GPSDestLatitude                   no
       20   GPSDestLongitude                  no
       24   GPSDestAltitude                   no
```

```
       28    AutomationAnimation                    no
       29    AutomationFlags                        no
```

Parrot ARCoreAccel Tags

ARCore accelerometer data.

```
    Index1   Tag Name                           Writable
    ------   --------                           --------
        4    AccelerometerUnknown?              no
        5    Accelerometer                      no
```

Parrot ARCoreCustom Tags

```
    Index1   Tag Name                           Writable
    ------   --------                           --------
    [no tags known]
```

Parrot ARCoreGyro Tags

ARCore accelerometer data.

```
    Index1   Tag Name                           Writable
    ------   --------                           --------
        4    GyroscopeUnknown?                  no
        5    Gyroscope                          no
```

Parrot ARCoreVideo Tags

```
    Index1   Tag Name                           Writable
    ------   --------                           --------
    [no tags known]
```

AAC Tags
Tags extracted from Advanced Audio Coding (AAC) files.

```
    Tag ID               Tag Name             Writable
    ------               --------             --------
    'Bit016-017'         ProfileType          no
    'Bit018-021'         SampleRate           no
    'Bit023-025'         Channels             no
    'Encoder'            Encoder              no
```

Ogg Tags
ExifTool extracts the following types of information from Ogg files.
See <http://www.xiph.org/vorbis/doc/> for the Ogg specification.

```
    Tag ID   Tag Name                           Writable
    ------   --------                           --------
    'FLAC'   FLAC                               FLAC
    'ID3'    ID3                                ID3
    'Opus'   Opus                               Opus
    'theora' Theora                             Theora
    'vorbis' Vorbis                             Vorbis
```

Vorbis Tags
Information extracted from Ogg Vorbis files. See
<http://www.xiph.org/vorbis/doc/> for the Vorbis specification.

```
    Tag ID   Tag Name                           Writable
    ------   --------                           --------
    0x0001   Identification                     Vorbis Identification
    0x0003   Comments                           Vorbis Comments
```

Vorbis Comments Tags

The tags below are only some common tags found in the Vorbis comments
of Ogg Vorbis and Ogg FLAC audio files, however ExifTool will extract
values from any tag found, even if not listed here.

Tag ID	Tag Name	Writable
'ACTOR'	Actor	no
'ALBUM'	Album	no
'ARTIST'	Artist	no+
'COMMENT'	Comment	no
'COMPOSER'	Composer	no
'CONTACT'	Contact	no+
'COPYRIGHT'	Copyright	no
'COVERART'	CoverArt	no
'COVERARTMIME'	CoverArtMIMEType	no
'DATE'	Date	no
'DESCRIPTION'	Description	no
'DIRECTOR'	Director	no
'ENCODED_BY'	EncodedBy	no
'ENCODED_USING'	EncodedUsing	no
'ENCODER'	Encoder	no
'ENCODER_OPTIONS'	EncoderOptions	no
'GENRE'	Genre	no
'ISRC'	ISRCNumber	no
'LICENSE'	License	no
'LOCATION'	Location	no
'METADATA_BLOCK_PICTURE'	Picture	FLAC Picture
'ORGANIZATION'	Organization	no
'PERFORMER'	Performer	no+
'PRODUCER'	Producer	no
'REPLAYGAIN_ALBUM_GAIN'	ReplayGainAlbumGain	no
'REPLAYGAIN_ALBUM_PEAK'	ReplayGainAlbumPeak	no
'REPLAYGAIN_TRACK_GAIN'	ReplayGainTrackGain	no
'REPLAYGAIN_TRACK_PEAK'	ReplayGainTrackPeak	no
'TITLE'	Title	no
'TRACKNUMBER'	TrackNumber	no
'VERSION'	Version	no
'vendor'	Vendor	no

Vorbis Identification Tags

Index1	Tag Name	Writable
0	VorbisVersion	no
4	AudioChannels	no
5	SampleRate	no
9	MaximumBitrate	no
13	NominalBitrate	no
17	MinimumBitrate	no

Opus Tags
Information extracted from Ogg Opus files. See
<https://www.opus-codec.org/docs/> for the specification.

Tag ID	Tag Name	Writable
'OpusHead'	Header	Opus Header
'OpusTags'	Comments	Vorbis Comments

Opus Header Tags

Index1	Tag Name	Writable
0	OpusVersion	no
1	AudioChannels	no
4	SampleRate	no
8	OutputGain	no

Theora Tags
Information extracted from Ogg Theora video files. See
<http://www.theora.org/doc/Theora.pdf> for the Theora specification.

Tag ID	Tag Name	Writable

```
    0x0080   Identification                    Theora Identification
    0x0081   Comments                          Vorbis Comments
```

Theora Identification Tags

Tags extracted from the Theora identification header.

```
    Index1   Tag Name                          Writable
    ------   --------                          --------
        0    TheoraVersion                     no
        7    ImageWidth                        no
       10    ImageHeight                       no
       13    XOffset                           no
       14    YOffset                           no
       15    FrameRate                         no
       23    PixelAspectRatio                  no
       29    ColorSpace                        no
       30    NominalVideoBitrate               no
       33    Quality                           no
       34    PixelFormat                       no
```

APE Tags

Tags found in Monkey's Audio (APE) information. Only a few common tags
are listed below, but ExifTool will extract any tag found. ExifTool
supports APEv1 and APEv2 tags, as well as ID3 information in APE files,
and will also read APE metadata from MP3 and MPC files.

```
    Tag ID                  Tag Name          Writable
    ------                  --------          --------
    'Album'                 Album             no
    'Artist'                Artist            no
    'DURATION'              Duration          no
    'Genre'                 Genre             no
    'Title'                 Title             no
    'Tool Name'             ToolName          no
    'Tool Version'          ToolVersion       no
    'Track'                 Track             no
    'Year'                  Year              no
```

APE NewHeader Tags

APE MAC audio header for version 3.98 or later.

```
    Index2   Tag Name                          Writable
    ------   --------                          --------
        0    CompressionLevel                  no
        2    BlocksPerFrame                    no
        4    FinalFrameBlocks                  no
        6    TotalFrames                       no
        8    BitsPerSample                     no
        9    Channels                          no
       10    SampleRate                        no
```

APE OldHeader Tags

APE MAC audio header for version 3.97 or earlier.

```
    Index2   Tag Name                          Writable
    ------   --------                          --------
        0    APEVersion                        no
        1    CompressionLevel                  no
        3    Channels                          no
        4    SampleRate                        no
       10    TotalFrames                       no
       12    FinalFrameBlocks                  no
```

Audible Tags

ExifTool will extract any information found in the metadata dictionary
of Audible .AA files, even if not listed in the table below.

Tag ID	Tag Name	Writable
'_chapter_count'	ChapterCount	no
'_cover_art'	CoverArt	no
'author'	Author	no
'copyright'	Copyright	no
'pub_date_start'	PublishDateStart	no
'pubdate'	PublishDate	no

Audible tags Tags

Information found in "tags" atom of Audible M4B audio books.

Tag ID	Tag Name	Writable
'cvrx'	Audible_cvrx	Audible cvrx
'meta'	Audible_meta	Audible meta
'tseg'	Audible_tseg	Audible tseg

Audible cvrx Tags

Audible cover art information in M4B audio books.

Tag Name	Writable
CoverArt	no
CoverArtType	no

Audible meta Tags

Information found in Audible M4B "meta" atom.

Tag ID	Tag Name	Writable
'ALBUMARTIST'	AlbumArtist	no
'Album'	Album	no
'Artist'	Artist	no
'Comment'	Comment	no
'Genre'	Genre	no
'SUBTITLE'	Subtitle	no
'TOOL'	CreatorTool	no
'Title'	Title	no
'Year'	Year	no
'itunesmediatype'	iTunesMediaType	no
'track'	ChapterName	no

Audible tseg Tags

Tag ID	Tag Name	Writable
'meta'	Audible_meta2	Audible meta
'tshd'	ChapterNumber	no

MPC Tags
Tags used in Musepack (MPC) audio files. ExifTool also extracts ID3
and APE information from these files.

Tag ID	Tag Name	Writable
'Bit032-063'	TotalFrames	no
'Bit080-081'	SampleRate	no
'Bit084-087'	Quality	no
'Bit088-093'	MaxBand	no
'Bit096-111'	ReplayGainTrackPeak	no
'Bit112-127'	ReplayGainTrackGain	no
'Bit128-143'	ReplayGainAlbumPeak	no
'Bit144-159'	ReplayGainAlbumGain	no
'Bit179'	FastSeek	no
'Bit191'	Gapless	no
'Bit216-223'	EncoderVersion	no

MPEG Tags
    The MPEG format doesn't specify any file-level meta information. In
    lieu of this, information is extracted from the first audio and video
    frame headers in the file.

    MPEG Audio Tags

      Tag ID   Tag Name   Writable
      ------   --------   --------
      'Bit11-12'   MPEGAudioVersion   no
      'Bit13-14'   AudioLayer   no
      'Bit16-19'   AudioBitrate   no
      'Bit20-21'   SampleRate   no
      'Bit24-25'   ChannelMode   no
      'Bit26'   MSStereo   no
      'Bit26-27'   ModeExtension   no
      'Bit27'   IntensityStereo   no
      'Bit28'   CopyrightFlag   no
      'Bit29'   OriginalMedia   no
      'Bit30-31'   Emphasis   no

    MPEG Video Tags

      Tag ID   Tag Name   Writable
      ------   --------   --------
      'Bit00-11'   ImageWidth   no
      'Bit12-23'   ImageHeight   no
      'Bit24-27'   AspectRatio   no
      'Bit28-31'   FrameRate   no
      'Bit32-49'   VideoBitrate   no

    MPEG Xing Tags

    These tags are extracted from the Xing/Info frame.

      Tag Name   Writable
      --------   --------
      Encoder   no
      LameHeader   MPEG Lame
      LameQuality   no
      LameVBRQuality   no
      VBRBytes   no
      VBRFrames   no
      VBRScale   no

    MPEG Lame Tags

    Tags extracted from Lame 3.90 or later header.

      Index1 Tag Name   Writable
      ------ --------   --------
           9 LameMethod   no
          10 LameLowPassFilter   no
          20 LameBitrate   no
          24 LameStereoMode   no

M2TS Tags
    The MPEG-2 transport stream is used as a container for many different
    audio/video formats (including AVCHD). This table lists information
    extracted from M2TS files.

      Tag Name   Writable
      --------   --------
      AudioStreamType   no
      Duration   no
      VideoStreamType   no
      _AC3   M2TS AC3
      _H264   H264
      _MISB   MISB

M2TS AC3 Tags

Tags extracted from AC-3 audio streams.

Tag Name	Writable
AudioBitrate	no
AudioChannels	no
AudioSampleRate	no
SurroundMode	no

H264 Tags

Tags extracted from H.264 video streams. The metadata for AVCHD videos
is stored in this stream.

Tag Name	Writable
ImageHeight	no
ImageWidth	no
MDPM	H264 MDPM

H264 MDPM Tags

The following tags are decoded from the Modified Digital Video Pack
Metadata (MDPM) of the unregistered user data with UUID
17ee8c60f84d11d98cd60800200c9a66 in the H.264 Supplemental Enhancement
Information (SEI). [Yes, this description is confusing, but nothing
compared to the challenge of actually decoding the data!] This
information may exist at regular intervals through the entire video,
but only the first occurrence is extracted unless the ExtractEmbedded
(-ee) option is used (in which case subsequent occurrences are
extracted as sub-documents).

Tag ID	Tag Name	Writable
0x0013	TimeCode	no
0x0018	DateTimeOriginal	no
0x0070	Camera1	H264 Camera1
0x0071	Camera2	H264 Camera2
0x007f	Shutter	H264 Shutter
0x00a0	ExposureTime	no
0x00a1	FNumber	no
0x00a2	ExposureProgram	no
0x00a3	BrightnessValue	no
0x00a4	ExposureCompensation	no
0x00a5	MaxApertureValue	no
0x00a6	Flash	no
0x00a7	CustomRendered	no
0x00a8	WhiteBalance	no
0x00a9	FocalLengthIn35mmFormat	no
0x00aa	SceneCaptureType	no
0x00b0	GPSVersionID	no
0x00b1	GPSLatitudeRef	no
0x00b2	GPSLatitude	no
0x00b5	GPSLongitudeRef	no
0x00b6	GPSLongitude	no
0x00b9	GPSAltitudeRef	no
0x00ba	GPSAltitude	no
0x00bb	GPSTimeStamp	no
0x00be	GPSStatus	no
0x00bf	GPSMeasureMode	no
0x00c0	GPSDOP	no
0x00c1	GPSSpeedRef	no
0x00c2	GPSSpeed	no
0x00c3	GPSTrackRef	no
0x00c4	GPSTrack	no
0x00c5	GPSImgDirectionRef	no
0x00c6	GPSImgDirection	no
0x00c7	GPSMapDatum	no

```
  0x00ca  GPSDateStamp                           no
  0x00e0  MakeModel                              H264 MakeModel
  0x00e1  RecInfo                                H264 RecInfo
  0x00e4  Model                                  no
  0x00ee  FrameInfo                              H264 FrameInfo
```

H264 Camera1 Tags

```
  Index1  Tag Name                           Writable
  ------  --------                           --------
       0  ApertureSetting                        no
       1  Gain                                   no
     1.1  ExposureProgram                        no
     2.1  WhiteBalance                           no
       3  Focus                                  no
```

H264 Camera2 Tags

```
  Index1  Tag Name                           Writable
  ------  --------                           --------
       1  ImageStabilization                     no
```

H264 Shutter Tags

```
  Index2  Tag Name                           Writable
  ------  --------                           --------
     1.1  ExposureTime                           no
```

H264 MakeModel Tags

```
  Index2  Tag Name                           Writable
  ------  --------                           --------
       0  Make                                   no
```

H264 RecInfo Tags

Recording information stored by some Canon video cameras.

```
  Index1  Tag Name                           Writable
  ------  --------                           --------
       0  RecordingMode                          no
```

H264 FrameInfo Tags

Frame rate information stored by some Canon video cameras.

```
  Index1  Tag Name                           Writable
  ------  --------                           --------
       0  CaptureFrameRate                       no
       1  VideoFrameRate                         no
```

MISB Tags

These tags are extracted from STANAG-4609 MISB (Motion Industry
Standards Board) KLV-format metadata in M2TS videos.

```
  Tag ID                          Tag Name      Writable
  ------                          --------      --------
  '060E2B34030101010E01030302000000' Security   MISB Security
  '060e2b3402030101434e415644494147'
                                  ChurchillNav  MISB ChurchillNav
  '060e2b34020b01010e01030101000000'
                                  UASDataLink   MISB UASDatalink
  '<other>'                       Unknown       MISB Unknown
```

MISB Security Tags

Tags extracted from the MISB ST 0102.11 Security Metadata local set.

```
  Tag ID  Tag Name                           Writable
  ------  --------                           --------
```

```
0x0001  SecurityClassification               no
0x0002  ClassifyingCountryCodeMethod         no
0x0003  ClassifyingCountry                   no
0x0004  SecuritySCI-SHIInformation           no
0x0005  Caveats                              no
0x0006  ReleasingInstructions                no
0x0007  ClassifiedBy                         no
0x0008  DerivedFrom                          no
0x0009  ClassificationReason                 no
0x000a  DeclassificationDate                 no
0x000b  ClassificationAndMarkingSystem       no
0x000c  ObjectCountryCodingMethod            no
0x000d  ObjectCountryCodes                   no
0x000e  ClassificationComments               no
0x000f  UMID                                 no
0x0010  StreamID                             no
0x0011  TransportStreamID                    no
0x0015  ItemDesignatorID                     no
0x0016  SecurityVersion                      no
0x0017  ClassifyingCountryCodingMethodDate   no
0x0018  ObjectCountryCodingMethodDate        no
```

MISB ChurchillNav Tags

Proprietary tags used by Churchill Navigation units. These tags are
all currently unknown, but extracted with the Unknown option.

```
  Tag ID   Tag Name                          Writable
  ------   --------                          --------
  [no tags known]
```

MISB UASDatalink Tags

Tags extracted from the MISB ST 0601.11 UAS Datalink local set.

```
  Tag ID   Tag Name                          Writable
  ------   --------                          --------
  0x0001  Checksum                             no
  0x0002  GPSDateTime                          no
  0x0003  MissionID                            no
  0x0004  TailNumber                           no
  0x0005  GPSTrack                             no
  0x0006  PitchAngle                           no
  0x0007  RollAngle                            no
  0x0008  TrueAirspeed                         no
  0x0009  IndicatedAirspeed                    no
  0x000a  ProjectIDCode                        no
  0x000b  SensorName                           no
  0x000c  ImageCoordinateSystem                no
  0x000d  GPSLatitude                          no
  0x000e  GPSLongitude                         no
  0x000f  GPSAltitude                          no
  0x0010  HorizontalFieldOfView                no
  0x0011  VerticalFieldOfView                  no
  0x0012  SensorRelativeAzimuthAngle           no
  0x0013  SensorRelativeElevationAngle         no
  0x0014  SensorRelativeRollAngle              no
  0x0015  SlantRange                           no
  0x0016  TargetWidth                          no
  0x0017  FrameCenterLatitude                  no
  0x0018  FrameCenterLongitude                 no
  0x0019  FrameCenterElevation                 no
  0x001a  OffsetCornerLatitude1                no
  0x001b  OffsetCornerLongitude1               no
  0x001c  OffsetCornerLatitude2                no
  0x001d  OffsetCornerLongitude2               no
  0x001e  OffsetCornerLatitude3                no
  0x001f  OffsetCornerLongitude3               no
  0x0020  OffsetCornerLatitude4                no
  0x0021  OffsetCornerLongitude4               no
```

```
0x0022    IcingDetected                          no
0x0023    WindDirection                          no
0x0024    WindSpeed                              no
0x0025    StaticPressure                         no
0x0026    DensityAltitude                        no
0x0027    AirTemperature                         no
0x0028    TargetLocationLatitude                 no
0x0029    TargetLocationLongitude                no
0x002a    TargetLocationElevation                no
0x002b    TargetTrackGateWidth                   no
0x002c    TargetTrackGateHeight                  no
0x002d    TargetErrorEstimateCE90                no
0x002e    TargetErrorEstimateLE90                no
0x002f    GenericFlagData01                      no
0x0030    SecurityLocalMetadataSet               MISB Security
0x0031    DifferentialPressure                   no
0x0032    AngleOfAttack                          no
0x0033    VerticalSpeed                          no
0x0034    SideslipAngle                          no
0x0035    AirfieldBarometricPressure             no
0x0036    AirfieldElevation                      no
0x0037    RelativeHumidity                       no
0x0038    GPSSpeed                               no
0x0039    GroundRange                            no
0x003a    FuelRemaining                          no
0x003b    CallSign                               no
0x003c    WeaponLoad                             no
0x003d    WeaponFired                            no
0x003e    LaserPRFCode                           no
0x003f    SensorFieldOfViewName                  no
0x0040    MagneticHeading                        no
0x0041    UAS_LSVersionNumber                    no
0x0042    TargetLocationCovarianceMatrix         no
0x0043    AlternateLatitude                      no
0x0044    AlternateLongitude                     no
0x0045    AlternateAltitude                      no
0x0046    AlternateName                          no
0x0047    AlternateHeading                       no
0x0048    EventStartTime                         no
0x0049    RVTLocalSet                            MISB Unknown
0x004a    VMTIDataSet                            MISB Unknown
0x004b    SensorEllipsoidHeight                  no
0x004c    AlternateEllipsoidHeight               no
0x004d    OperationalMode                        no
0x004e    FrameCenterHeightAboveEllipsoid        no
0x004f    SensorVelocityNorth                    no
0x0050    SensorVelocityEast                     no
0x0051    ImageHorizonPixelPack                  no
0x0052    CornerLatitude1                        no
0x0053    CornerLongitude1                       no
0x0054    CornerLatitude2                        no
0x0055    CornerLongitude2                       no
0x0056    CornerLatitude3                        no
0x0057    CornerLongitude3                       no
0x0058    CornerLatitude4                        no
0x0059    CornerLongitude4                       no
0x005a    FullPitchAngle                         no
0x005b    FullRollAngle                          no
0x005c    FullAngleOfAttack                      no
0x005d    FullSideslipAngle                      no
0x005e    MIISCoreIdentifier                     no
0x005f    SARMotionImageryData                   MISB Unknown
0x0060    TargetWidthExtended                    no
0x0061    RangeImageLocalSet                     MISB Unknown
0x0062    GeoregistrationLocalSet                MISB Unknown
0x0063    CompositeImagingLocalSet               MISB Unknown
0x0064    SegmentLocalSet                        MISB Unknown
0x0065    AmendLocalSet                          MISB Unknown
0x0066    SDCC-FLP                               no
0x0067    DensityAltitudeExtended                no
```

```
   0x0068   SensorEllipsoidHeightExtended          no
   0x0069   AlternateEllipsoidHeightExtended       no
```

MISB Unknown Tags

Other tags are extracted with the Unknown option.

```
   Tag ID   Tag Name                           Writable
   ------   --------                           --------
   [no tags known]
```

Matroska Tags
 The following tags are extracted from Matroska multimedia container
 files. This container format is used by file types such as MKA, MKV,
 MKS and WEBM. For speed, by default ExifTool extracts tags only up to
 the first Cluster unless a Seek element specifies the position of a
 Tags element after this. However, the Verbose (-v) and Unknown = 2
 (-U) options force processing of Cluster data, and the ExtractEmbedded
 (-ee) option skips over Clusters to read subsequent tags. See
 <http://www.matroska.org/technical/specs/index.html> for the official
 Matroska specification.

   Tag ID   Tag Name   Writable
   ------   --------   --------
   0x0000   ChapterDisplay   Matroska
   0x0003   TrackType   no
   0x0005   ChapterString   no
   0x0006   VideoCodecID   no
                 AudioCodecID   no
                 CodecID   no
   0x0008   TrackDefault   no
   0x0009   ChapterTrackNumber?   no
   0x000e   Slices   Matroska
   0x000f   ChapterTrack   Matroska
   0x0011   ChapterTimeStart   no
   0x0012   ChapterTimeEnd   no
   0x0016   CueRefTime?   no
   0x0017   CueRefCluster?   no
   0x0018   ChapterFlagHidden?   no
   0x001a   VideoScanType   no
   0x001b   BlockDuration?   no
   0x001c   TrackLacing?   no
   0x001f   AudioChannels   no
   0x0020   BlockGroup   Matroska
   0x0021   Block?   no
   0x0022   BlockVirtual?   no
   0x0023   SimpleBlock?   no
   0x0024   CodecState?   no
   0x0025   BlockAdditional?   no
   0x0026   BlockMore   Matroska
   0x0027   Position   no
   0x002a   CodecDecodeAll   no
   0x002b   PrevSize   no
   0x002e   TrackEntry   Matroska
   0x002f   EncryptedBlock?   no
   0x0030   ImageWidth   no
   0x0033   CueTime?   no
   0x0035   AudioSampleRate   no
   0x0036   ChapterAtom   Matroska
   0x0037   CueTrackPositions   Matroska
   0x0039   TrackUsed   no
   0x003a   ImageHeight   no
   0x003b   CuePoint   Matroska
   0x003f   CRC-32?   no
   0x004b   BlockAdditionalID?   no
   0x004c   LaceNumber?   no
   0x004d   FrameNumber?   no
   0x004e   Delay?   no
   0x004f   ClusterDuration?   no
   0x0057   TrackNumber   no
```

| 0x005b | CueReference | Matroska |
|---|---|---|
| 0x0060 | Video | Matroska |
| 0x0061 | Audio | Matroska |
| 0x0067 | TimeCode? | no |
| 0x0068 | TimeSlice | Matroska |
| 0x006a | CueCodecState? | no |
| 0x006b | CueRefCodecState? | no |
| 0x006c | Void? | no |
| 0x006e | BlockAddID? | no |
| 0x0071 | CueClusterPosition? | no |
| 0x0077 | CueTrack? | no |
| 0x007a | ReferencePriority? | no |
| 0x007b | ReferenceBlock? | no |
| 0x007d | ReferenceVirtual? | no |
| 0x0254 | ContentCompressionAlgorithm | no |
| 0x0255 | ContentCompressionSettings? | no |
| 0x0282 | DocType | no |
| 0x0285 | DocTypeReadVersion | no |
| 0x0286 | EBMLVersion | no |
| 0x0287 | DocTypeVersion | no |
| 0x02f2 | EBMLMaxIDLength? | no |
| 0x02f3 | EBMLMaxSizeLength? | no |
| 0x02f7 | EBMLReadVersion | no |
| 0x037c | ChapterLanguage | no |
| 0x037e | ChapterCountry | no |
| 0x0444 | SegmentFamily? | no |
| 0x0461 | DateTimeOriginal | no |
| 0x047a | TagLanguageBCP47 | no |
| 0x0484 | TagDefault | no |
| 0x0485 | TagBinary | no |
| 0x0487 | TagString | no |
| 0x0489 | Duration | no |
| 0x050d | ChapterProcessPrivate? | no |
| 0x0598 | ChapterFlagEnabled? | no |
| 0x05a3 | TagName | no |
| 0x05b9 | EditionEntry | Matroska |
| 0x05bc | EditionUID? | no |
| 0x05bd | EditionFlagHidden? | no |
| 0x05db | EditionFlagDefault? | no |
| 0x05dd | EditionFlagOrdered? | no |
| 0x065c | AttachedFileData | no |
| 0x0660 | AttachedFileMIMEType | no |
| 0x066e | AttachedFileName | no |
| 0x0675 | AttachedFileReferral? | no |
| 0x067e | AttachedFileDescription | no |
| 0x06ae | AttachedFileUID | no |
| 0x07e1 | ContentEncryptionAlgorithm | no |
| 0x07e2 | ContentEncryptionKeyID? | no |
| 0x07e3 | ContentSignature? | no |
| 0x07e4 | ContentSignatureKeyID? | no |
| 0x07e5 | ContentSignatureAlgorithm | no |
| 0x07e6 | ContentSignatureHashAlgorithm | no |
| 0x0d80 | MuxingApp | no |
| 0x0dbb | Seek | Matroska |
| 0x1031 | ContentEncodingOrder? | no |
| 0x1032 | ContentEncodingScope? | no |
| 0x1033 | ContentEncodingType | no |
| 0x1034 | ContentCompression | Matroska |
| 0x1035 | ContentEncryption | Matroska |
| 0x135f | CueRefNumber? | no |
| 0x136e | TrackName | no |
| 0x1378 | CueBlockNumber? | no |
| 0x137f | TrackOffset? | no |
| 0x13ab | SeekID? | no |
| 0x13ac | SeekPosition? | no |
| 0x13b8 | Stereo3DMode | no |
| 0x14aa | CropBottom | no |
| 0x14b0 | DisplayWidth | no |
| 0x14b2 | DisplayUnit | no |
| 0x14b3 | AspectRatioType | no |

| | | |
|---|---|---|
| 0x14ba | DisplayHeight | no |
| 0x14bb | CropTop | no |
| 0x14cc | CropLeft | no |
| 0x14dd | CropRight | no |
| 0x15aa | TrackForced | no |
| 0x15ee | MaxBlockAdditionID? | no |
| 0x1741 | WritingApp | no |
| 0x1854 | SilentTracks | Matroska |
| 0x18d7 | SilentTrackNumber | no |
| 0x21a7 | AttachedFile | Matroska |
| 0x2240 | ContentEncoding | Matroska |
| 0x2264 | AudioBitsPerSample | no |
| 0x23a2 | CodecPrivate? | no |
| 0x23c0 | Targets | Matroska |
| 0x23c3 | ChapterPhysicalEquivalent | no |
| 0x23c4 | TagChapterUID | no |
| 0x23c5 | TagTrackUID | no |
| 0x23c6 | TagAttachmentUID | no |
| 0x23c9 | TagEditionUID | no |
| 0x23ca | TargetType | no |
| 0x2532 | SignedElement? | no |
| 0x2624 | TrackTranslate | Matroska |
| 0x26a5 | TrackTranslateTrackID? | no |
| 0x26bf | TrackTranslateCodec | no |
| 0x26fc | TrackTranslateEditionUID? | no |
| 0x27c8 | SimpleTag | Matroska |
| 0x28ca | TargetTypeValue | no |
| 0x2911 | ChapterProcessCommand | Matroska |
| 0x2922 | ChapterProcessTime? | no |
| 0x2924 | ChapterTranslate | Matroska |
| 0x2933 | ChapterProcessData? | no |
| 0x2944 | ChapterProcess | Matroska |
| 0x2955 | ChapterProcessCodecID? | no |
| 0x29a5 | ChapterTranslateID? | no |
| 0x29bf | ChapterTranslateCodec | no |
| 0x29fc | ChapterTranslateEditionUID? | no |
| 0x2d80 | ContentEncodings | Matroska |
| 0x2de7 | MinCache? | no |
| 0x2df8 | MaxCache? | no |
| 0x2e67 | ChapterSegmentUID? | no |
| 0x2ebc | ChapterSegmentEditionUID? | no |
| 0x2fab | TrackOverlay? | no |
| 0x3373 | Tag | Matroska |
| 0x3384 | SegmentFileName | no |
| 0x33a4 | SegmentUID? | no |
| 0x33c4 | ChapterUID? | no |
| 0x33c5 | TrackUID | no |
| 0x3446 | TrackAttachmentUID | no |
| 0x35a1 | BlockAdditions | Matroska |
| 0x38b5 | OutputAudioSampleRate | no |
| 0x3ba9 | Title | no |
| 0x3d7b | ChannelPositions? | no |
| 0x3e5b | SignatureElements | Matroska |
| 0x3e7b | SignatureElementList | Matroska |
| 0x3e8a | SignatureAlgo | no |
| 0x3e9a | SignatureHash | no |
| 0x3ea5 | SignaturePublicKey? | no |
| 0x3eb5 | Signature? | no |
| 0x7670 | Projection | Matroska Projection |
| 0x2b59c | TrackLanguage | no |
| 0x2b59d | TrackLanguageIETF | no |
| 0x3314f | TrackTimecodeScale | no |
| 0x383e3 | FrameRate | no |
| 0x3e383 | VideoFrameRate | no |
| | DefaultDuration | no |
| 0x58688 | VideoCodecName | no |
| | AudioCodecName | no |
| | CodecName | no |
| 0x6b240 | CodecDownloadURL | no |
| 0xad7b1 | TimecodeScale | no |

```
0xeb524      ColorSpace?                      no
0xfb523      Gamma                            no
0x1a9697     CodecSettings                    no
0x1b4040     CodecInfoURL                     no
0x1c83ab     PrevFileName                     no
0x1cb923     PrevUID?                         no
0x1e83bb     NextFileName                     no
0x1eb923     NextUID?                         no
0x43a770     Chapters                         Matroska
0x14d9b74    SeekHead                         Matroska
0x254c367    Tags                             Matroska
0x549a966    Info                             Matroska
0x654ae6b    Tracks                           Matroska
0x8538067    SegmentHeader                    Matroska
0x941a469    Attachments                      Matroska
0xa45dfa3    EBMLHeader                       Matroska
0xb538667    SignatureSlot                    Matroska
0xc53bb6b    Cues                             Matroska
0xf43b675    Cluster                          Matroska
0x5345414c   SEAL                             XMP SEAL
```

Matroska Projection Tags

Projection tags defined by the Spherical Video V2 specification. See
<https://github.com/google/spatial-media/blob/master/docs/spherical-video-v2-rfc.m

d>

for the specification.

```
Tag ID     Tag Name                         Writable
------     --------                         --------
0x7671     ProjectionType                   no
0x7672     EquirectangularProj              QuickTime equi
           CubemapProj                      QuickTime cbmp
           ProjectionPrivate                no
0x7673     ProjectionPoseYaw                no
0x7674     ProjectionPosePitch              no
0x7675     ProjectionPoseRoll               no
```

Matroska StdTag Tags

Standardized Matroska tags, stored in a SimpleTag structure (see
<https://www.matroska.org/technical/tagging.html>).

```
Tag ID                    Tag Name           Writable
------                    --------           --------
'ACCOMPANIMENT'           Accompaniment      no
'ACTOR'                   Actor              no
'ADDRESS'                 Address            no
'ARRANGER'                Arranger           no
'ARTIST'                  Artist             no
'ART_DIRECTOR'            ArtDirector        no
'ASSISTANT_DIRECTOR'      AssistantDirector  no
'BARCODE'                 Barcode            no
'BPM'                     BPM                no
'BPS'                     BPS                no
'CATALOG_NUMBER'          CatalogNumber      no
'CHARACTER'               Character          no
'CHOREGRAPHER'            Choregrapher       no
'COMMENT'                 Comment            no
'COMPOSER'                Composer           no
'COMPOSER_NATIONALITY'    ComposerNationality no
'COMPOSITION_LOCATION'    CompositionLocation no
'CONDUCTOR'               Conductor          no
'CONTENT_TYPE'            ContentType        no
'COPRODUCER'              Coproducer         no
'COPYRIGHT'               Copyright          no
'COSTUME_DESIGNER'        CostumeDesigner    no
'COUNTRY'                 Country            no
'DATE_DIGITIZED'          CreateDate         no
'DATE_ENCODED'            DateEncoded        no
```

```
'DATE_PURCHASED'        DatePurchased          no
'DATE_RECORDED'         DateTimeOriginal       no
'DATE_RELEASED'         DateReleased           no
'DATE_TAGGED'           DateTagged             no
'DATE_WRITTEN'          DateWritten            no
'DESCRIPTION'           Description            no
'DIRECTOR'              Director               no
'DIRECTOR_OF_PHOTOGRAPHY'
                        DirectorOfPhotography  no
'DISTRIBUTED_BY'        DistributedBy          no
'EDITED_BY'             EditedBy               no
'EMAIL'                 Email                  no
'ENCODED_BY'            EncodedBy              no
'ENCODER'               Encoder                no
'ENCODER_SETTINGS'      EncoderSettings        no
'EXECUTIVE_PRODUCER'    ExecutiveProducer      no
'FAX'                   FAX                    no
'FPS'                   FPS                    no
'GENRE'                 Genre                  no
'IMDB'                  IMDB                   no
'INITIAL_KEY'           InitialKey             no
'INSTRUMENTS'           Instruments            no+
'ISBN'                  ISBN                   no
'ISRC'                  ISRC                   no
'KEYWORDS'              Keywords               no+
'LABEL'                 Label                  no
'LABEL_CODE'            LabelCode              no
'LAW_RATING'            LawRating              no
'LCCN'                  Lccn                   no
'LEAD_PERFORMER'        LeadPerformer          no
'LICENSE'               License                no
'LYRICIST'              Lyricist               no
'LYRICS'                Lyrics                 no
'MASTERED_BY'           MasteredBy             no
'MCDI'                  MCDI                   no
'MEASURE'               Measure                no
'MIXED_BY'              MixedBy                no
'MOOD'                  Mood                   no
'ORIGINAL'              Original               no
'ORIGINAL_MEDIA_TYPE'   OriginalMediaType      no
'PART_NUMBER'           PartNumber             no
'PART_OFFSET'           PartOffset             no
'PERIOD'                Period                 no
'PHONE'                 Phone                  no
'PLAY_COUNTER'          PlayCounter            no
'PRODUCER'              Producer               no
'PRODUCTION_COPYRIGHT'  ProductionCopyright    no
'PRODUCTION_DESIGNER'   ProductionDesigner     no
'PRODUCTION_STUDIO'     ProductionStudio       no
'PUBLISHER'             Publisher              no
'PURCHASE_CURRENCY'     PurchaseCurrency       no
'PURCHASE_INFO'         PurchaseInfo           no
'PURCHASE_ITEM'         PurchaseItem           no
'PURCHASE_OWNER'        PurchaseOwner          no
'PURCHASE_PRICE'        PurchasePrice          no
'RATING'                Rating                 no
'RECORDING_LOCATION'    RecordingLocation      no
'REMIXED_BY'            RemixedBy              no
'REPLAYGAIN_GAIN'       ReplaygainGain         no
'REPLAYGAIN_PEAK'       ReplaygainPeak         no
'SAMPLE'                Sample                 no
'SCREENPLAY_BY'         ScreenplayBy           no
'SORT_WITH'             SortWith               no
'SOUND_ENGINEER'        SoundEngineer          no
'SPHERICAL-VIDEO'       SphericalVideoXML      XMP
'SUBJECT'               Subject                no
'SUBTITLE'              Subtitle               no
'SUMMARY'               Summary                no
'SYNOPSIS'              Synopsis               no
'TERMS_OF_USE'          TermsOfUse             no
```

```
'THANKS_TO'              ThanksTo                 no
'TITLE'                  Title                    no
'TMDB'                   TMDB                     no
'TOTAL_PARTS'            TotalParts               no
'TUNING'                 Tuning                   no
'TVDB'                   TVDB                     no
'URL'                    URL                      no
'WRITTEN_BY'             WrittenBy                no
'spherical-video'        SphericalVideoXML        XMP
```

MOI Tags

MOI files store information about associated MOD or TOD files, and are
written by some JVC, Canon and Panasonic camcorders.

```
Index1   Tag Name                      Writable
------   --------                      --------
     0   MOIVersion                    no
     6   DateTimeOriginal              no
    14   Duration                      no
   128   AspectRatio                   no
   132   AudioCodec                    no
   134   AudioBitrate                  no
   218   VideoBitrate                  no
```

MXF Tags

Tags extracted from Material Exchange Format files. Tag ID's are not
listed because they are bulky 16-byte binary values.

```
Tag Name                              Writable
--------                              --------
AAFManufacturerID?                    no
AES3PCMDescriptor                     MXF
AFDAndBarData?                        no
AGICOAID?                             no
AICI?                                 no
AIFCSummary?                          no
ANCPacketCount                        no
ANCPayloadByteArray                   no
ANCPayloadSampleCoding                no
ANCPayloadSampleCount                 no
ANCWrappingType                       no
Abstract                              no
Abstract                              no
AccountingReferenceNumber             no
ActiveFormatDescriptor                no
ActiveLinesperFrame                   no
ActiveSamplesperLine                  no
ActiveState                           no
Ad-ID?                                no
Address                               MXF
AddressLine                           no
AddressLine                           no
AddressNameValueSets?                 no
AddressSets?                          no
AdvertisingMaterialReference          no
AestheticValue                        no
AlphaMaximumRef                       no
AlphaMinimumRef                       no
AlphaSampleDepth                      no
AlphaTransparency                     no
AlternateName                         no
AlternateName                         no
Alternates?                           no
AnalogDataCodingKind                  no
AnalogMetadataCarrier                 no
AnalogMonitoringAndControlCodingKind  no
AnalogSystem                          no
AnalogVideoSystemName                 no
AnalogVideoSystemName?                no
AnamorphicLensCharacteristic          no
```

```
AnchorOffset                                 no
AncillaryResourceID?                         no
AngleToNorth                                 no
AngularUnitKind                              no
Annotation?                                  no
Annotation                                   MXF
AnnotationCueWordsSet?                       no
AnnotationDescription                        no
AnnotationDescription                        no
AnnotationKind                               no
AnnotationKind                               no
AnnotationParticipantSets?                   no
AnnotationSets?                              no
AnnotationSynopsis                           no
AnnotationSynopsis                           no
ApplicationEnvironmentID                     no
ApplicationInformationArray?                 no
ApplicationName                              no
ApplicationName                              no
ApplicationPlatform                          no
ApplicationPlatform                          no
ApplicationPlug-InBatch?                     no
ApplicationPlug-InInstanceID?                no
ApplicationProductID?                        no
ApplicationScheme?                           no
ApplicationSchemeBatch?                      no
ApplicationSupplierName                      no
ApplicationSupplierName                      no
ApplicationVersionNumber                     no
ApplicationVersionString                     no
ApplicationVersionString                     no
ApproximateImageContainerSize                no
ArchiveID                                    no
AssetValue                                   no
AssignedCategoryName                         no
AssignedCategoryName                         no
AssignedCategoryValue                        no
AssignedCategoryValue                        no
AssociatedMetadataDefinition?                no
AstronomicalBodyName                         no
AstronomicalBodyName                         no
AudienceAppreciation                         no
AudienceRating                               no
AudienceReach                                no
AudienceShare                                no
AudioAverageBitrate                          no
AudioCodingSchemeCode                        no
AudioCodingSchemeID?                         no
AudioCodingSchemeName                        no
AudioCompressionAlgorithm                    no
AudioDeviceKind                              no
AudioDeviceParameter                         no
AudioDeviceParameterSetting                  no
AudioEnhancementOrModificationDescription    no
AudioFirstMix-DownProcess                    no
AudioFixedBitrateFlag                        no
AudioMonoChannelCount                        no
AudioNoiseReductionAlgorithm                 no
AudioReferenceLevel                          no
AudioReferenceLevel                          no
AudioSampleRate                              no
AudioSampleRate                              no
AudioStereoChannelCount                      no
AudioWatermarkKind                           no
AuthenticationFlag                           no
AuxiliaryBitsMode                            no
AvailableRepresentations?                    no
AverageBytesPerSecond                        no
Award                                        MXF
AwardCategory                                no
```

```
AwardCategory                             no
AwardName                                 no
AwardName                                 no
AwardParticipantSets?                     no
AwardSets?                                no
BICI?                                     no
BackgroundMusicFlag                       no
BankDetailsSet?                           no
BeginAnchor                               no
BeginAnchor                               no
BextCodingHistory                         no
BextCodingHistory                         no
Bitrate                                   no
BitsPerAudioSample                        no
BitsPerPixel                              no
BitsPerPixel                              no
BitsPerSample                             no
BlackReferenceLevel                       no
BlockAlign                                no
BlockContinuityCount                      no
BlockStartOffset                          no
BoundingRectangle?                        no
BrandMainTitle                            no
BrandMainTitle                            no
BrandOriginalTitle                        no
BrandOriginalTitle                        no
Branding                                  MXF
BrandingSets?                             no
BroadcastChannel                          no
BroadcastDate                             no
BroadcastMediumCode                       no
BroadcastMediumKind                       no
BroadcastOrganizationName                 no
BroadcastOrganizationName                 no
BroadcastRegion                           no
BroadcastRegion                           no
BroadcastServiceName                      no
BroadcastTime                             no
BroadcasterRightsToCopy                   no
BufferDelay?                              no
BuildingName                              no
BuildingName                              no
Bypass                                    no
BypassOverride                            no
ByteOffset                                no
ByteOrder                                 no
CBEStartOffset                            no
CDCIEssenceDescriptor                     MXF
CISACLegalEntityID?                       no
CaptionDescription                        MXF
CaptionDescriptionSets?                   no
CaptionKind                               no
CaptionKind                               no
CaptionTitles                             no
CaptionsDescriptionParticipantSets?       no
CaptionsViaTeletext                       no
CaptureAspectRatio                        no
CaptureFilmFrameRate                      no
CaptureGammaEquation                      no
CaptureGammaEquation                      no
CaptureGammaEquation?                     no
CatalogDataStatus                         no
CatalogDataStatus                         no
CatalogPrefixNumber                       no
CatalogingSystemName                      no
CentralTelephoneNumber                    no
ChannelAssignment?                        no
ChannelCount                              no
ChannelHandle                             no
ChannelID                                 no
```

```
ChannelIDs                                   no
ChannelStatusMode                            no
CipherAlgorithm?                             no
CipherAlgorithmAES128CBC?                     no
Citizenship                                  no
Citizenship                                  no
CityName                                     no
CityName                                     no
ClassDefinitions?                            no
Classification                               MXF
ClassificationAndMarkingSystem               no
ClassificationComment                        no
ClassificationComment                        no
ClassificationNameValueSets?                  no
ClassificationReason                         no
ClassificationSets?                          no
ClassifiedBy                                 no
ClassifyingCountryCode                       no
ClipCreationDateTime                         no
ClipFramework                                MXF
ClipID                                       no
ClipIDArray?                                 no
ClipKind                                     no
ClipNumber                                   no
ClipNumber                                   no
ClipShotSets?                                no
CloneCount                                   no
ClosedBodyPartition?                         no
ClosedCaptionSubtitlesFlag                   no
ClosedCompleteBodyPartition?                  no
ClosedCompleteHeader                         MXF Header
ClosedGOPIndicator                           no
ClosedHeader                                 MXF Header
CodecDefinition?                             no
CodecDefinition?                             no
CodecDefinitions?                            no
CodecEssenceDescriptor?                       no
CodecEssenceKinds?                           no
CodedContentScanningKind                     no
CodingLawKind                                no
CodingLawName                                no
CodingStyleDefault?                          no
CollectionName                               no
CollectionName                               no
ColorDescriptor                              no
ColorDescriptor                              no
ColorFieldCode                               no
ColorPrimaries                               no
ColorPrimaries?                              no
ColorRangeLevels                             no
ColorSiting                                  no
ColorimetryCode                              no
ColorimetryCode?                             no
CommunicationSets?                           no
Communications                               MXF
CompleteFooter?                              no
ComponentAttributes?                         no
ComponentDataDefinition                      no
ComponentDepth                               no
ComponentKLVData?                            no
ComponentMaximumRef                          no
ComponentMinimumRef                          no
ComponentUserComments?                        no
ComponentsInSequence?                         no
CompositionRendering?                         no
ComputedKeyData                              no
ComputedKeyFrames                            no
ComputedKeySounds                            no
ComputedKeywords                             no
ComputedKeywords                             no
```

ComputedObjectKind	no
ComputedObjectKind	no
ComputedStratumKind	no
ConstantBPictureFlag	no
ConsumerRightsToCopy	no
ContactDepartmentName	no
ContactDepartmentName	no
ContactID?	no
ContactKind	no
ContactKind	no
ContactNameValueSets?	no
ContactsList	MXF
ContactsListSet?	no
ContainerDefinitions?	no
ContainerLastModifyDate	no
ContainerVersion	no
ContentClassification	no
ContentClassification	no
ContentCodingSystem	no
ContentMaturityDescription	no
ContentMaturityGraphic	no
ContentMaturityRating	no
ContentPackageIndexArray?	no
ContentPackageMetadataLink	no
ContentStorage?	no
ContentStorageSet	MXF
ContentValue	no
ContextDescription	no
ContiguousDataFlag	no
Contract	MXF
ContractClauseDescription	no
ContractClauseDescription	no
ContractDateTime	no
ContractEntity	no
ContractInstallmentPercentage	no
ContractLineCode	no
ContractLineName	no
ContractLineName	no
ContractParticipantSets?	no
ContractSets?	no
ContractTermsOfBusiness	no
ContractTermsOfBusiness	no
ContractType	no
ContractType	no
ContractTypeCode	no
ContractTypeLink	no
ContributionStatus	no
ContributionStatus	no
ControlPointList?	no
ControlPointTime	no
CopyCount	no
CopyrightLicenseCountryCode	no
CopyrightLicenseRegionCode	no
CopyrightLicenseRegionName	no
CopyrightOwnerName	no
CopyrightOwnerName	no
CopyrightStatus	no
CopyrightStatus	no
CornerLatitudePoint1	no
CornerLatitudePoint1	no
CornerLatitudePoint2	no
CornerLatitudePoint2	no
CornerLatitudePoint3	no
CornerLatitudePoint3	no
CornerLatitudePoint4	no
CornerLatitudePoint4	no
CornerLongitudePoint1	no
CornerLongitudePoint1	no
CornerLongitudePoint2	no
CornerLongitudePoint2	no

```
CornerLongitudePoint3                    no
CornerLongitudePoint3                    no
CornerLongitudePoint4                    no
CornerLongitudePoint4                    no
CountryCodeMethod                        no
CountryCodeMethod                        no
CountryName                              no
CountryName                              no
CountryName                              no
CountryName                              no
CreateDate                               no
CryptographicContext                     MXF
CryptographicContextID?                  no
CryptographicContextLink?                no
CryptographicContextObject?              no
CryptographicFramework                   MXF
CryptographicFrameworkLabel?             no
CryptographicKeyID?                      no
Csiz                                     no
Cue-InWords                              no
Cue-InWords                              no
Cue-OutWords                             no
Cue-OutWords                             no
CueWords                                 MXF
CulturalValue                            no
CurrencyCode                             no
CurrencyName                             no
CurrentNumberInSequence                  no
CurrentNumberInSequence                  no
CurrentRepeatNumber                      no
CutPoint                                 no
DMFramework                              MXF
DMSegment                                MXF
DMSet                                    MXF
DMSourceClip                             MXF
DOI?                                     no
DVBParentalRating                        no
DataDefinition?                          no
DataDefinitions?                         no
DataDeviceKind                           no
DataDeviceParameterName                  no
DataDeviceParameterSetting               no
DataEnhancementOrModificationDescription no
DataEssenceCoding                        no
DataEssenceCodingID?                     no
DateTimeDropFrameFlag                    no
DateTimeEmbeddedFlag                     no
DateTimeKind?                            no
DateTimeRate                             no
DeclassificationDate                     no
DefaultDataValue?                        no
DefaultFadeDuration                      no
DefaultFadeEditRate                      no
DefaultFadeType?                         no
DefaultNamespaceURI                      no
DefaultNamespaceURI                      no
DefaultObject?                           no
DefinedName                              no
DefinedName                              no
DefinitionObjectID?                      no
DefinitionObjectName                     no
DefinitionObjectName                     no
DegradedEffects?                         no
DeltaEntryArray?                         no
DerivedFrom                              no
Description                              no
Description                              no
DescriptionKind                          no
DescriptionKind                          no
DescriptiveComment                       no
```

```
DescriptiveComment                                    no
DescriptiveMetadataApplicationEnvironmentID           no
DescriptiveMetadataFramework?                         no
DescriptiveMetadataPlug-InID?                         no
DescriptiveMetadataScheme?                            no
DescriptiveMetadataSchemes?                           no
DescriptiveMetadataSetReferences?                     no
DescriptiveMetadataSets?                              no
DescriptiveMetadataTrackIDs                           no
DeviceAbsoluteHeading                                 no
DeviceAbsolutePositionalAccuracy                      no
DeviceAbsoluteSpeed                                   no
DeviceAltitude                                        no
DeviceAltitude                                        no
DeviceAssetNumber                                     no
DeviceDesignation                                     no
DeviceIDKind                                          no
DeviceKind                                            no
DeviceKind                                            no
DeviceKindCode                                        no
DeviceLatitude                                        no
DeviceLatitude                                        no
DeviceLatitude                                        no
DeviceLongitude                                       no
DeviceLongitude                                       no
DeviceLongitude                                       no
DeviceManufacturerName                                no
DeviceManufacturerName                                no
DeviceModel                                           no
DeviceParameterNameValueSets?                         no
DeviceParameters                                      MXF
DeviceParametersSets?                                 no
DeviceRelativeHeading                                 no
DeviceRelativePositionX                               no
DeviceRelativePositionY                               no
DeviceRelativePositionZ                               no
DeviceRelativePositionalAccuracy                      no
DeviceRelativeSpeed                                   no
DeviceSerialNumber                                    no
DeviceUsageDescription                                no
DeviceUsageDescription                                no
DeviceXDimension                                      no
DeviceYDimension                                      no
DialNorm                                              no
Dictionary?                                           no
DictionaryDescription                                 no
DictionaryDescription                                 no
DictionaryIdentifier?                                 no
DigitalEncodingBitrate                                no
DigitalMetadataCarrier                                no
DigitalOrAnalogOrigination                            no
DigitalVideoFileFormat                                no
DirectorName                                          no
DiscPartitionCapacity                                 no
DisplayF2Offset                                       no
DisplayHeight                                         no
DisplayUnits                                          no
DisplayUnits                                          no
DisplayWidth                                          no
DisplayXOffset                                        no
DisplayYOffset                                        no
Dither                                                no
DropFrame                                             no
Duration                                              no
DynamicSourcePackageID?                               no
DynamicSourceTrackIDs                                 no
E-mailAddress                                         no
E-mailAddress                                         no
EPGProgramSynopsis                                    no
EdgeCode                                              no
```

EdgeCodeFilmGauge?	no
EdgeCodeFormat?	no
EdgeCodeHeader?	no
EdgeCodeStart	no
EditHint?	no
EditRate	no
EditUnitFlags	no
EditUnitLength	no
EditingEventComment	no
EditingEventComment	no
EffectRendering?	no
ElectrospatialFormulation	no
ElementCount	no
ElementDelta	no
ElementLength	no
ElementNameList	no
Emphasis	no
EncryptedContainerLabel?	no
EncryptedSourceValue?	no
EncryptedTrackFileID?	no
EndAnchor	no
EndAnchor	no
EnhancementOrModificationDescription	no
EnumerationUnderlyingIntegerType?	no
EpisodeEndNumber	no
EpisodeNumber	no
EpisodeNumber	no
EpisodeStartNumber	no
EpisodicItemSets?	no
EssenceContainerArray?	no
EssenceContainerDataSet	MXF
EssenceContainerFormat?	no
EssenceContainerFormat?	no
EssenceContainers?	no
EssenceData?	no
EssenceDescription?	no
EssenceIsIdentified	no
EssenceLength	no
EssenceLocators?	no
EssenceStreamID	no
Event	MXF
EventAbsoluteDuration	no
EventAbsoluteDuration?	no
EventAbsoluteDurationFrameCount	no
EventAnnotationSets?	no
EventElapsedTimeToEnd	no
EventElapsedTimeToStart	no
EventEndTimeOffset	no
EventEndTimecodeOffset?	no
EventIndication	no
EventIndication	no
EventOrigin	no
EventSets?	no
EventStart	no
EventStartTimeOffset	no
EventStartTimecodeOffset?	no
EventTrack	MXF
EventTrackEditRate	no
ExCCIData?	no
ExposedAspectRatio	no
ExtendedCaptionsLanguageCode	no
ExtendedClipID	no
ExtendedClipIDArray?	no
ExtendedTextLanguageCode	no
ExtendibleElementNameList	no
FNumber	no
Fade-InDuration	no
Fade-InType?	no
Fade-OutDuration	no
Fade-OutType?	no

FamilyName	no
FamilyName	no
FaxNumber	no
FaxNumber	no
FemaleLeadActressName	no
FestivalName	no
FestivalName	no
FieldDominance	no
FieldFrameTypeCode	no
FieldOfViewHorizontal	no
FieldOfViewHorizontal	no
FieldOfViewVertical	no
FieldOfViewVerticalFP	no
FieldRate	no
FileDescriptor	MXF
FileDescriptors?	no
FileSecurityReport	no
FileSecurityWave	no
FillerData?	no
FilmBatchNumber	no
FilmBatchNumber	no
FilmCaptureAperture	no
FilmColorProcess	no
FilmFormatName	no
FilmFormatName	no
FilmFormatName?	no
FilmGauge?	no
FilmStockKind	no
FilmStockKind	no
FilmStockManufacturerName	no
FilmStockManufacturerName	no
FilmTestParameter	no
FilmTestResult	no
FilmTestResult?	no
FilmToVideoTransferDirection?	no
FilmToVideoTransferKind?	no
FilmToVideoTransferPhase?	no
FilteringApplied	no
FilteringCode	no
FirstBroadcastFlag	no
FirstGivenName	no
FirstGivenName	no
FirstNumberInSequence	no
FirstNumberInSequence	no
FirstTransmissionInfo	no
FixedArrayElementType?	no
FixedChannelStatusData?	no
FixedUserData?	no
FocalLength	no
FocalLength	no
Footer?	no
FormatDescriptor	no
FormatDescriptor	no
FormerFamilyName	no
FormerFamilyName	no
FrameCenterElevation	no
FrameCenterLatitude	no
FrameCenterLatitude	no
FrameCenterLatitude	no
FrameCenterLatitudeLongitude	no
FrameCenterLongitude	no
FrameCenterLongitude	no
FrameCenterLongitude	no
FrameCode	no
FrameCount	no
FrameCountOffset	no
FrameLayout	no
FramePositionalAccuracy	no
FrameRate	no
FrameworkExtendedTextLanguageCode	no

```
FrameworkTextLanguageCode                       no
FrameworkThesaurusName                          no
FrameworkThesaurusName                          no
FrameworkTitle                                  no
FrameworkTitle                                  no
GenerationCloneNumber                           no
GenerationCopyNumber                            no
GenerationID?                                   no
GenericDataEssenceDescriptor                    MXF
GenericPackage                                  MXF
GenericPayloads?                                no
GenericPictureEssenceDescriptor                 MXF
GenericSoundEssenceDescriptor                   MXF
GenericTrack                                    MXF
Genre                                           no
Genre                                           no
GeographicAreaNorthwest?                        no
GeographicAreaSourceDatum                       no
GeographicAreaSoutheast?                        no
GeographicLocation?                             no
GeographicPolygonCoordinates?                   no
GeographicPolygonSourceDatum                    no
GeographicalCoordinates?                        no
GlobalNumber                                    no
GraphicKind                                     no
GraphicUsageKind                                no
GraphicUsageKind                                no
GroupRelationship                               MXF
GroupSet?                                       no
GroupSets?                                      no
GroupSynopsis                                   no
GroupSynopsis                                   no
HMACAlgorithmSHA1128?                           no
HTMLDOCTYPE                                     no
HTMLDOCTYPE                                     no
HTMLMetaDescription                             no
HTMLMetaDescription                             no
HardwareAcceleratorFlag                         no
HasAudioWatermark                               no
HasVideoWatermark                               no
HeaderByteCount                                 no
HistoricalValue                                 no
HonorsAndQualifications                         no
HonorsAndQualifications                         no
HorizontalActionSafePercentage                  no
HorizontalDatum                                 no
HorizontalGraphicsSafePercentage                no
HorizontalSubsampling                           no
IBTN?                                           no
IEEEDeviceID                                    no
IEEEManufacturerID                              no
ISAN?                                           no
ISBD?                                           no
ISBN?                                           no
ISCI?                                           no
ISMN?                                           no
ISO3166CountryCode                              no
ISO639-1LanguageCode                            no
ISO639-1LanguageCode                            no
ISO639CaptionsLanguageCode                      no
ISO639TextLanguageCode                          no
ISRC?                                           no
ISRN?                                           no
ISSN?                                           no
ISTC?                                           no
ISWC?                                           no
IdenticalGOPIndicator                           no
Identification                                  MXF
Identification                                  MXF
IdentificationList?                             no
```

```
IdentificationSets?                          no
IdentificationUL?                            no
IdentifierIssuingAuthority                   no
IdentifierIssuingAuthority                   no
IdentifierKind                               no
IdentifierValue                              no
ImageAlignmentOffset                         no
ImageCategory                                no
ImageCoordinateSystem                        no
ImageEndOffset                               no
ImageFormatSet?                              no
ImageHeight                                  no
ImageSourceDeviceKind                        no
ImageSourceDeviceKind                        no
ImageStartOffset                             no
ImageWidth                                   no
IncludeSync                                  no
IndexByteCount                               no
IndexDuration                                no
IndexEditRate                                no
IndexEntryArray?                             no
IndexStreamID                                no
IndexTableSegment?                           no
IndexingStartPosition                        no
IndividualAwardName                          no
InkNumber                                    no
InputSegment?                                no
InputSegmentCount                            no
InputSegments?                               no
InsertMusicFlag                              no
InstallmentNumber                            no
InstanceUID?                                 no
IntegrationIndication                        no
IntegrationIndication                        no
IntellectualPropertyDescription              no
IntellectualPropertyDescription              no
IntellectualPropertyLicenseCountryCode       no
IntellectualPropertyLicenseRegionCode        no
IntellectualPropertyLicenseRegionName        no
IntellectualPropertyRights                   no
IntellectualPropertyRights                   no
IntendedAFD                                  no
IntentDescriptor                             no
IntentDescriptor                             no
InterestedPartyName                          no
Interpolation?                               no
InterpolationDefinitions?                    no
IsConcrete                                   no
IsDubbed                                     no
IsLiveProduction                             no
IsLiveTransmission                           no
IsOptional                                   no
IsRecording                                  no
IsRepeat                                     no
IsSearchable                                 no
IsSigned                                     no
IsUniqueIdentifier                           no
IsVoiceover                                  no
ItemDesignatorID?                            no
ItemID                                       no
ItemName                                     no
ItemName                                     no
ItemValue                                    no
ItemValue                                    no
JFIFMarkerDescription                        no
JFIFMarkerDescription                        no
JPEG2000PictureSubDescriptor                 MXF
JPEGTableID?                                 no
JobFunctionCode                              no
JobFunctionName                              no
```

```
JobFunctionName                          no
JobTitle                                 no
JobTitle                                 no
Jurisdiction                             no
Jurisdiction                             no
KAGSize                                  no
KLVDataDefinitions?                      no
KLVDataParentProperties?                 no
KLVDataType?                             no
KLVDataValue?                            no
KLVMetadataSequence?                     no
KeyCode?                                 no
KeyData                                  no
KeyDataOrProgram                         no
KeyFrame                                 no
KeyFrameSampleCount                      no
KeyFrames                                no
KeyPoint                                 MXF
KeyPointSets?                            no
KeySound                                 no
KeySounds                                no
KeyText                                  no
KeyTimePoint                             no
KeypointKind                             no
KeypointKind                             no
KeypointValue                            no
KeypointValue                            no
Keywords                                 no
Keywords                                 no
LUID                                     no
LanguageName                             no
LanguageName                             no
LastNumberInSequence                     no
LastNumberInSequence                     no
LayerNumber                              no
LeadingLines                             no
LengthSystemName                         no
LengthUnitKind                           no
LicenseOptionsDescription                no
LineNumber                               no
LinkedApplicationPlug-InInstanceID?      no
LinkedDescriptiveFrameworkPlug-InID?     no
LinkedDescriptiveObjectPlug-InID?        no
LinkedGenerationID?                      no
LinkedPackageID?                         no
LinkedTimecodeTrackID?                   no
LinkedTrackID                            no
LinkingName                              no
LinkingName                              no
LocalCreationDateTime                    no
LocalDatumAbsolutePositionAccuracy       no
LocalDatumRelativePositionAccuracy       no
LocalEndDateTime                         no
LocalEventEndDateTime                    no
LocalEventEndDateTime                    no
LocalEventStartDateTime                  no
LocalEventStartDateTime                  no
LocalFestivalDateTime                    no
LocalFilePath                            no
LocalFilePath                            no
LocalID                                  no
LocalLastModifyDate                      no
LocalModifyDate                          no
LocalStartDateTime                       no
LocalTagEntries?                         no
LocalTagUniqueID?                        no
LocalTagValue                            no
LocalTapeNumber                          no
LocalTargetID                            no
LocalTargetID                            no
```

LocalUserDateTime	no
Location	MXF
LocationDescription	no
LocationDescription	no
LocationKind	no
LocationKind	no
LocationSets?	no
LockedIndicator	no
LogoFlag	no
LowDelayIndicator	no
LumaEquation	no
LuminanceSampleRate	no
MIC?	no
MICAlgorithm?	no
MIMECharSet	no
MIMECharSet	no
MIMEEncoding	no
MIMEEncoding	no
MIMEMediaType	no
MIMEMediaType	no
MPEG2VideoDescriptor	MXF
MPEG7BiMAccessUnitFrame1?	no
MPEG7BiMAccessUnitFrame2?	no
MPEG7BiMAccessUnitFrame3?	no
MPEG7BiMAccessUnitFrame4?	no
MPEG7BiMAccessUnitFrame5?	no
MPEG7BiMAccessUnitFrame6?	no
MPEG7BiMAccessUnitFrame7?	no
MPEG7BiMAccessUnitFrame8?	no
MPEG7BiMDecoderInitFrame1?	no
MPEG7BiMDecoderInitFrame2?	no
MPEG7BiMDecoderInitFrame3?	no
MPEG7BiMDecoderInitFrame4?	no
MPEG7BiMDecoderInitFrame5?	no
MPEG7BiMDecoderInitFrame6?	no
MPEG7BiMDecoderInitFrame7?	no
MPEG7BiMDecoderInitFrame8?	no
MPEGAudioBitrate	no
MPEGAudioRecodingDataset?	no
MPEGVideoRecodingDataset?	no
MagneticDiskNumber	no
MagneticTrack	no
MainCatalogNumber	no
MainName	no
MainName	no
MainSponsorName	no
MainTitle	no
MainTitle	no
MajorVersion	no
MaleLeadActorName	no
ManufacturerID?	no
ManufacturerInformationObject?	no
MapDatumUsed	no
MarkIn	no
MarkOut	no
MaterialAbsoluteDuration	no
MaterialAbsoluteDuration?	no
MaterialEndTimeOffset	no
MaterialEndTimecodeOffset?	no
MaterialPackage	MXF
MaximumAPIVersion	no
MaximumBPictureCount	no
MaximumGOPSize	no
MaximumSupportedEngineVersion	no
MaximumSupportedPlatformVersion	no
MaximumUseCount	no
MediaLocation	no
MemberNameList	no
MemberTypes?	no
MetadataEncodingSchemeCode	no

```
MetadataItemName                          no
MetadataItemName                          no
MetadataServerLocators?                   no
MicrophonePlacementTechniques             no
MinimumAPIVersion                         no
MinimumSupportedEngineVersion             no
MinimumSupportedPlatformVersion           no
MinorVersion                              no
MissionID                                 no
MissionID                                 no
MobileTelephoneNumber                     no
ModifyDate                                no
MonoSourceTrackIDs                        no
MultipleDescriptor                        MXF
NITFLayerTargetID                         no
NITFLayerTargetID                         no
NMEADocumentText                          no
NOLACode                                  no
NameSuffix                                no
NameSuffix                                no
NameValue                                 MXF
NamespacePrefix                           no
NamespacePrefix                           no
NamespacePrefixes                         no
NamespacePrefixes                         no
NamespaceURI                              no
NamespaceURI                              no
NamespaceURIs                             no
NamespaceURIs                             no
Nationality                               no
Nationality                               no
NatureOfPersonality                       no
NatureOfPersonality                       no
NetworkLocator                            MXF
NextNumberInSequence                      no
NextNumberInSequence                      no
NielsenStreamIdentifier                   no
NominationCategory                        no
NominationCategory                        no
Non-USClassifyingCountryCode              no
ObjectAreaDimension                       no
ObjectClass?                              no
ObjectClassDefinition?                    no
ObjectCountryCode                         no
ObjectCountryCode                         no
ObjectCountryCodeMethod                   no
ObjectDescription                         no
ObjectDescription                         no
ObjectDescriptionCode                     no
ObjectHorizontalAverageDimension          no
ObjectIdentificationConfidence            no
ObjectKind                                no
ObjectKind                                no
ObjectModelVersion                        no
ObjectName                                no
ObjectRegionCode                          no
ObjectRegionName                          no
ObjectVerticalAverageDimension            no
ObliquityAngle                            no
OffsetToIndexTable                        no
OffsetToIndexTable                        no
OffsetToMetadata                          no
OffsetToMetadata                          no
OpenBodyPartition?                        no
OpenCompleteBodyPartition?                no
OpenCompleteHeader                        MXF Header
OpenHeader                                MXF Header
OperatingSystemInterpretations            no
OperationCategory?                        no
OperationDataDefinition?                  no
```

```
OperationDefinitionID?                      no
OperationDefinitions?                       no
OperationParameters?                        no
OperationalPatternUL?                       no
OpticalDiscNumber                           no
OpticalTestParameterName                    no
OpticalTestResult                           no
OpticalTestResult                           no
OpticalTrack                                no
Organisation                                MXF
OrganizationCode                            no
OrganizationCode                            no
OrganizationID                              no
OrganizationID                              no
OrganizationIDKind                          no
OrganizationIDKind                          no
OrganizationKind                            no
OrganizationKind                            no
OrganizationMainName                        no
OrganizationMainName                        no
OrganizationSets?                           no
OrganizationalProgramNumber                 no
OrganizationalProgramNumber                 no
Origin                                      no
OriginCode                                  no
OriginalExtendedSpokenPrimaryLanguageCode   no
OriginalProducerName                        no
OriginalProducerName                        no
OriginalTitle                               no
OriginalTitle                               no
OtherGivenNames                             no
OtherGivenNames                             no
OtherValues                                 no
PII?                                        no
POSIXMicroseconds                           no
PURL                                        no
PackLength                                  no
PackageAttributes?                          no
PackageID?                                  no
PackageKLVData?                             no
PackageLastModifyDate                       no
PackageMarkInPosition                       no
PackageMarkOutPosition                      no
PackageMarker?                              no
PackageName                                 no
PackageName                                 no
PackageTimelineMarkerRef?                   no
PackageTracks?                              no
PackageUsageKind?                           no
PackageUserComments?                        no
Packages?                                   no
PaddingBits                                 no
Palette?                                    no
PaletteLayout?                              no
PanScanInformation?                         no
ParameterDataType?                          no
ParameterDefinition?                        no
ParameterDefinitions?                       no
Parameters?                                 no
ParentClass?                                no
Participant                                 MXF
ParticipantID?                              no
ParticipantOrganizationSets?                no
PartitionMetadata?                          no
Password                                    no
Password                                    no
PayeeAccountName                            no
PayeeAccountNumber                          no
PayeeAccountSortCode                        no
PayerAccountName                            no
```

PayerAccountNumber	no
PayerAccountSortCode	no
PaymentDueDateTime	no
PaymentsSets?	no
PeakChannelCount	no
PeakEnvelope	no
PeakEnvelopeBlockSize	no
PeakEnvelopeData?	no
PeakEnvelopeData?	no
PeakEnvelopeFormat	no
PeakEnvelopeTimestamp	no
PeakEnvelopeVersion	no
PeakFrameCount	no
PeakOfPeaksPosition	no
PerceivedDisplayFormatCode	no
PerceivedDisplayFormatName	no
PerforationsPerFrame	no
PerforationsPerFrame	no
Person	MXF
PersonDescription	no
PersonDescription	no
PersonOrganizationSets?	no
PersonSets?	no
PhysicalInstanceKind	no
PhysicalMediaLength?	no
PhysicalMediaLocation	no
PictureComponentSizing?	no
PictureDisplayRate	no
PictureFormat	MXF
PixelLayout?	no
PlaceKeyword	no
PlaceKeyword	no
PlaceName	no
PlaceName	no
PlaintextOffset	no
PlatformDesignation	no
PlatformDesignation	no
PlatformHeadingAngle	no
PlatformModel	no
PlatformPitchAngle	no
PlatformRollAngle	no
PlatformSerialNumber	no
Plug-InAPIID?	no
Plug-InCategoryID?	no
Plug-InDefinitions?	no
Plug-InEngineID?	no
Plug-InLocatorSet?	no
Plug-InPlatformID?	no
PointsPerPeakValue	no
PolarCharacteristic	no
PosTableArray?	no
PositionInSequence	no
PositionTable?	no
PositionTableCount	no
PositionTableIndexing	no
PositionWithinViewportImageXCoordinate	no
PositionWithinViewportImageYCoordinate	no
PostCodeForPostbox	no
PostalCode	no
PostalCode	no
PostalTown	no
PostalTown	no
PostboxNumber	no
Preface	MXF
PresentationAspectRatio	no
PresentationGammaEquation	no
PresentationGammaEquation?	no
PresenterName	no
PreviousNumberInSequence	no
PreviousNumberInSequence	no

```
PreviousRepeatNumber                          no
PrimaryExtendedSpokenLanguageCode             no
PrimaryOriginalLanguageCode                   no
PrimaryPackage?                               no
PrimarySpokenLanguageCode                     no
Primer                                        MXF
Processing                                    MXF
ProcessingSet?                                no
ProducerName                                  no
ProductFormat                                 no
ProductFormat                                 no
ProductionFramework                           MXF
ProductionOrganizationRole                    no
ProductionOrganizationRole                    no
ProductionScriptReference                     no
ProductionScriptReference                     no
ProductionSettingPeriodSets?                  no
ProfileAndLevel                               no
ProgramAwardName                              no
ProgramCommercialMaterialReference            no
ProgramIdentifier                             no
ProgramIdentifierString                       no
ProgramKind                                   no
ProgramMaterialClassificationCode             no
ProgramNumber                                 no
ProgramSupportMaterialReference               no
ProgrammingGroupKind                          no
ProgrammingGroupKind                          no
ProgrammingGroupTitle                         no
ProgrammingGroupTitle                         no
ProjectName                                   no
ProjectName                                   no
ProjectNumber                                 no
ProjectSet?                                   no
Projects                                      MXF
Properties?                                   no
PropertyType?                                 no
Publication                                   MXF
PublicationSets?                              no
PublishingMediumName                          no
PublishingMediumName                          no
PublishingOrganizationName                    no
PublishingOrganizationName                    no
PublishingRegionName                          no
PublishingRegionName                          no
PublishingServiceName                         no
PublishingServiceName                         no
PulldownFieldDominance                        no
PulldownSequence?                             no
PurchaserAccountName                          no
PurchaserAccountName                          no
PurchaserAccountNumber                        no
PurchaserIdentificationKind                   no
PurchaserIdentificationValue                  no
PurchasingDepartment                          no
PurchasingOrganizationName                    no
Purpose                                       no
Purpose                                       no
QltyBasicData                                 no
QltyBasicData                                 no
QltyCueSheet                                  no
QltyCueSheet                                  no
QltyEndOfModulation                           no
QltyEndOfModulation                           no
QltyOperatorComment                           no
QltyOperatorComment                           no
QltyQualityEvent                              no
QltyQualityEvent                              no
QltyQualityParameter                          no
QltyQualityParameter                          no
```

```
QltyStartOfModulation                           no
QltyStartOfModulation                           no
QualityFlag                                     no
QuantizationDefault?                            no
RGBAEssenceDescriptor                           MXF
RIFFChunkData?                                  no
RIFFChunkID                                     no
RIFFChunkLength                                 no
RP217DataStreamPID                              no
RP217VideoStreamPID                             no
RandomIndexMetadata?                            no
RandomIndexMetadataV10?                         no
Rating                                          no
RecordedFormat                                  no
RecordedFormat                                  no
RecordedTrackNumber                             no
RecordingLabelName                              no
RecordingLabelName                              no
ReelOrRollNumber                                no
RegionCode                                      no
RegionName                                      no
RegionName                                      no
RegisterAction                                  no
RegisterAdministrationArray?                    no
RegisterAdministrationNotes                     no
RegisterAdministrationObject?                   no
RegisterApproverName                            no
RegisterChildEntryArray?                        no
RegisterCreationTime                            no
RegisterEditorName                              no
RegisterEntryAdministrationObject?              no
RegisterEntryArray?                             no
RegisterEntryStatus?                            no
RegisterItemDefiningDocumentName                no
RegisterItemDefinition                          no
RegisterItemHierarchyLevel                      no
RegisterItemIntroductionVersion                 no
RegisterItemName                                no
RegisterItemNotes                               no
RegisterItemOriginatorName                      no
RegisterItemStatusChangeDateTime                no
RegisterItemSymbol?                             no
RegisterItemUL?                                 no
RegisterKind?                                   no
RegisterReleaseDateTime                         no
RegisterStatusKind?                             no
RegisterUserName                                no
RegisterUserTime                                no
RegisterVersion                                 no
RegistrantName                                  no
RelatedMaterialDescription                      no
RelatedMaterialDescription                      no
RelatedMaterialLocators?                        no
RelativePositionInSequenceName                  no
RelativePositionInSequenceOffset                no
RelativeScope                                   no
RelativeTrack                                   no
ReleasableCountryCode                           no
ReleasableCountryCode                           no
RenamedType?                                    no
ResourceID?                                     no
RestrictionsonUse                               no
ReversePlay                                     no
ReversedByteOrder                               no
Rights                                          MXF
RightsComment                                   no
RightsComment                                   no
RightsConditionDescription                      no
RightsConditionDescription                      no
RightsManagementAuthority                       no
```

```
RightsManagementAuthority                               no
RightsSets?                                             no
RightsStartDateTime                                     no
RightsStopDateTime                                      no
Rightsholder                                            no
Rightsholder                                            no
RoleName                                                no
RoleName                                                no
RoomNumber                                              no
RoomNumber                                              no
RoomOrSuiteName                                         no
RoomOrSuiteName                                         no
RootFormatVersion                                       no
RootMetaDictionary?                                     no
RootObjectDirectory?                                    no
RootPreface?                                            no
RoundedCaptureFilmFrameRate                             no
RoundedTimecodeTimebase                                 no
RoundingLaw                                             no
RoundingMethodCode                                      no
RoyaltyIncomeInformation                                no
RoyaltyPaymentInformation                               no
Rsiz                                                    no
SDKVersion                                              no
SICI?                                                   no
SMPTE12MUserDateTime?                                   no
SMPTE309MUserDateTime?                                  no
SMPTE337MDataStreamNumber                               no
SMPTEUL?                                                no
SalesContractNumber                                     no
Salutation                                              no
Salutation                                              no
SampleIndex?                                            no
SampleRate                                              no
SampledHeight                                           no
SampledWidth                                            no
SampledXOffset                                          no
SampledYOffset                                          no
SamplingHierarchyCode                                   no
SamplingStructureCode                                   no
ScanningDirection                                       no
SceneFramework                                          MXF
SceneNumber                                             no
SceneNumber                                             no
SceneSettingPeriodSets?                                 no
SceneShotSets?                                          no
ScramblingKeyKind                                       no
ScramblingKeyValue                                      no
Scripting                                               MXF
ScriptingKind                                           no
ScriptingKind                                           no
ScriptingLocators?                                      no
ScriptingSets?                                          no
ScriptingText                                           no
ScriptingText                                           no
SeasonEpisodeNumber                                     no
SeasonEpisodeTitle                                      no
SecondGivenName                                         no
SecondGivenName                                         no
SecondaryExtendedSpokenLanguageCode                     no
SecondaryOriginalExtendedSpokenLanguageCode             no
SecondaryOriginalLanguageCode                           no
SecondarySpokenLanguageCode                             no
SecondaryTitle                                          no
SecondaryTitle                                          no
SectorSize                                              no
SecurityClassification                                  no
SecurityClassification                                  no
SecurityClassificationCaveats                           no
SecurityClassificationCaveats                           no
```

Selected?	no
SensorMode	no
SensorRollAngle	no
SensorSize	no
SensorType	no
SensorTypeCode	no
Sequence?	no
SequenceOffset	no
SequenceSet	MXF
SeriesNumber	no
SeriesNumber	no
SeriesinaSeriesGroupCount	no
SetElementType?	no
SettingCityName	no
SettingCityName	no
SettingCountryCode	no
SettingCountryName	no
SettingCountryName	no
SettingDateTime	no
SettingDescription	no
SettingDescription	no
SettingPeriod	MXF
SettingPeriodDescription	no
SettingPeriodDescription	no
SettingPostalCode	no
SettingPostalCode	no
SettingRegionCode	no
SettingRegionName	no
SettingRoomNumber	no
SettingRoomNumber	no
SettingStateOrProvinceOrCountyName	no
SettingStateOrProvinceOrCountyName	no
SettingStreetName	no
SettingStreetName	no
SettingStreetNumberOrBuildingName	no
SettingStreetNumberOrBuildingName	no
SettingTownName	no
SettingTownName	no
ShimName	no
ShootingCountryCode	no
ShootingRegionCode	no
ShootingRegionName	no
Shot	MXF
ShotComment	no
ShotComment	no
ShotCommentKind	no
ShotCommentKind	no
ShotCueWordsSet?	no
ShotDescription	no
ShotDescription	no
ShotDuration	no
ShotList	no
ShotLocationSets?	no
ShotParticipantRoleSets?	no
ShotPersonSets?	no
ShotStartPosition	no
ShotTrackIDs	no
SideNumber	no
Signal-to-NoiseRatio	no
SignalFormCode	no
SignalStandard	no
SignalStandard	no
SignatureTuneFlag	no
SimpleFlaggingCount	no
SingleSequenceFlag	no
Size	no
SlantRange	no
SlateInformation	no
SlateTitle	no
SliceCount	no

```
SliceNumber                             no
SliceOffsetList?                        no
Software-OnlySupportFlag                no
SourceClip?                             no
SourceContainerFormat?                  no
SourceImageCenterXCoordinate            no
SourceImageCenterYCoordinate            no
SourceIndex?                            no
SourceKey?                              no
SourceLength                            no
SourceOrganization                      no
SourceOrganization                      no
SourcePackage                           MXF
SourcePackageID?                        no
SourceSpecies?                          no
SourceTrackID                           no
SourceTrackIDs                          no
SourceValue?                            no
SpeedChangeEffectFlag                   no
SplicingMetadata?                       no
StartTimeRelativeToReference            no
StartTimeRelativeToReference            no
StartTimecode                           no
StartTimecodeRelativeToReference?       no
StateOrProvinceOrCountyName             no
StateOrProvinceOrCountyName             no
StaticTrack                             MXF
StillFrame?                             no
StorageDeviceKind                       no
StorageKind                             no
StorageKind                             no
StorageKindCode                         no
StorageMediaID                          no
StorageMediaKind                        no
StoredANCLineNumber                     no
StoredF2Offset                          no
StoredVBILineNumber                     no
StratumKind                             no
StreamData?                             no
StreamElementType?                      no
StreamID                                no
StreamOffset                            no
StreamPositionIndicator                 no
StreamPositionIndicator                 no
StreamPositionIndicator                 no
StreamPositionIndicator                 no
StreetName                              no
StreetName                              no
StreetNumber                            no
StreetNumber                            no
StringElementType?                      no
StructuralComponent                     MXF
Sub-descriptors?                        no
SubDescriptor?                          no
SubDescriptors?                         no
SubjectAbsoluteHeading                  no
SubjectAbsoluteSpeed                    no
SubjectDistance                         no
SubjectName                             no
SubjectName                             no
SubjectRelativeHeading                  no
SubjectRelativePositionalAccuracy       no
SubjectRelativeSpeed                    no
SubtitleDatafileFlag                    no
SubtitlesPresent                        no
SupplementaryName                       no
SupplementaryName                       no
SupplementaryOrganizationName           no
SupplementaryOrganizationName           no
SupplierAccountName                     no
```

```
SupplierAccountName                         no
SupplierAccountNumber                       no
SupplierIdentificationKind                  no
SupplierIdentificationValue                 no
SupplyContractNumber                        no
SupplyingDepartmentName                     no
SupportOrAdministrationStatus               no
SupportOrAdministrationStatus               no
SupportOrganizationRole                     no
SupportOrganizationRole                     no
SystemNameOrNumber                          no
TIFFSummary?                                no
TaggedValueDefinitions?                     no
TaggedValueParentProperties?                no
TakeNumber                                  no
TapeBatchNumber                             no
TapeBatchNumber                             no
TapeCapacity                                no
TapeFormat?                                 no
TapeFormulation                             no
TapeFormulation                             no
TapeManufacturer                            no
TapeManufacturer                            no
TapePartitionCapacity                       no
TapeShellKind                               no
TapeShellKind                               no
TapeStock                                   no
TapeStock                                   no
TargetAudience                              no
TargetAudience                              no
TargetClassOfStrongReference?               no
TargetClassOfWeakReference?                 no
TargetSet?                                  no
TargetWidth                                 no
TechnicalValue                              no
TelephoneNumber                             no
TelephoneNumber                             no
TeletextSubtitlesAvailable                  no
TeletextSubtitlesFlag                       no
TemporalOffset                              no
TerminatingFillerData                       no
TextLocator                                 MXF
TextlessBlackDuration                       no
TextlessMaterial                            no
TextualDescriptionKind                      no
TextualDescriptionKind                      no
Theme                                       no
Theme                                       no
ThemeMusicFlag                              no
ThesaurusName                               no
ThesaurusName                               no
ThirdGivenName                              no
ThirdGivenName                              no
TimePeriodName                              no
TimePeriodName                              no
TimeSystemOffset                            no
TimeUnitKind                                no
TimebaseReferenceTrackID                    no
TimecodeArray?                              no
TimecodeComponent                           MXF
TimecodeCreationDateTime?                   no
TimecodeEndDateTime?                        no
TimecodeEventEndDateTime?                   no
TimecodeEventStartDateTime?                 no
TimecodeKind                                no
TimecodeLastModifyDate?                     no
TimecodeModifyDate?                         no
TimecodeSourceKind                          no
TimecodeStartDateTime?                      no
TimecodeStreamData?                         no
```

TimecodeTimebase	no
TimecodeTimebase	no
TimecodeUserBitsFlag	no
TimepointValue?	no
TimingBiasCorrection	no
TimingBiasCorrectionDescription	no
TitleKind	no
TitleKind	no
Titles	MXF
TitlesSets?	no
ToleranceInterpolationMethod?	no
ToleranceMode?	no
ToleranceWindow?	no
ToolkitVersion	no
TotalCurrencyAmount	no
TotalEpisodeCount	no
TotalIncome	no
TotalLinesperFrame	no
TotalNumberInSequence	no
TotalPayment	no
TotalSamplesperLine	no
Track	MXF
TrackID	no
TrackName	no
TrackName	no
TrackNumber	no
TrackNumberBatch	no
Tracks?	no
TrafficID	no
TrailingLines	no
TranscriptReference	no
TranscriptReference	no
TransferFilmFrameRate	no
TransitionEffect?	no
TransmissionID	no
TransportStreamID	no
TripletSequenceNumber	no
TypeDefinitionElementValueList	no
TypeDefinitionExtendibleElementValues?	no
TypeDefinitions?	no
UCSEncoding	no
UPID?	no
UPN?	no
URL	no
URL	no
URL	no
URL	no
URN	no
UTCEndDateTime	no
UTCEventEndDateTime	no
UTCEventEndDateTime	no
UTCEventStartDateTime	no
UTCEventStartDateTime	no
UTCInstantDateTime	no
UTCInstantDateTime	no
UTCLastModifyDate	no
UTCLastModifyDate	no
UTCStartDateTime	no
UTCStartDateTime	no
UTCUserDateTime	no
UniformDataFlag	no
UnknownBWFChunks?	no
UpstreamAudioCompressionAlgorithm	no
UseDefaultValue	no
UserDataMode?	no
UserName	no
UserName	no
UserPosition	no
V10IndexTableSegment?	no
VBEEndOffset	no

VBIDataDescriptor	MXF
VBILineCount	no
VBIPayloadByteArray	no
VBIPayloadSampleCoding	no
VBIPayloadSampleCount	no
VBIWrappingType	no
VC-1AverageBitrate	no
VC-1BPictureCount	no
VC-1CodedContentType	no
VC-1IdenticalGOP	no
VC-1InitializationMetadata?	no
VC-1Level	no
VC-1MaximumBitrate	no
VC-1MaximumGOP	no
VC-1Profile	no
VC-1SingleSequence	no
Value?	no
VariableArrayElementType?	no
VersionNumber	no
VersionNumberString	no
VersionNumberString	no
VersionTitle	no
VersionTitle	no
VerticalActionSafePercentage	no
VerticalDatum	no
VerticalGraphicsSafePercentage	no
VerticalSub-sampling	no
VideoAndFilmFrameRelationship	no
VideoAverageBitrate	no
VideoClipDuration	no
VideoCodingSchemeID	no
VideoColorKind	no
VideoCompressionAlgorithm	no
VideoDeviceKind	no
VideoDeviceParameterName	no
VideoDeviceParameterSetting	no
VideoFixedBitrate	no
VideoIndexArray?	no
VideoLineMap	no
VideoNoiseReductionAlgorithm	no
VideoOrImageCompressionAlgorithm	no
VideoPayloadIdentifier	no
VideoPayloadIdentifier2002	no
VideoTestParameter	no
VideoTestResult	no
VideoTestResult	no
VideoWatermarkKind	no
ViewportAspectRatio	no
ViewportHeight	no
ViewportImageCenterCCoordinate	no
ViewportImageCenterYCoordinate	no
ViewportWidth	no
VoiceTalentName	no
WAVESummary?	no
WaveAudioDescriptor	MXF
Weighting	no
WhiteReferenceLevel	no
Work-in-ProgressFlag	no
WorkingTitle	no
WorkingTitle	no
XMLDocumentText?	no
XMLDocumentText	no
XMLDocumentText	no
XMLDocumentText?	no
XOsiz	no
XTOsiz	no
XTsiz	no
Xsiz	no
YOsiz	no
YTOsiz	no

```
    YTsiz                                          no
    Ysiz                                           no
```

MXF Header Tags

```
  Index1    Tag Name                       Writable
  ------    --------                       --------
      0     MXFVersion                     no
     24     FooterPosition                 no
     32     HeaderSize                     no
```

DV Tags

The following tags are extracted from DV videos.

```
    Tag Name                       Writable
    --------                       --------
    AspectRatio                    no
    AudioBitsPerSample             no
    AudioChannels                  no
    AudioSampleRate                no
    Colorimetry                    no
    DateTimeOriginal               no
    Duration                       no
    FrameRate                      no
    ImageHeight                    no
    ImageWidth                     no
    TotalBitrate                   no
    VideoFormat                    no
    VideoScanType                  no
```

Flash Tags

The information below is extracted from SWF (Shockwave Flash) files.
Tags with string ID's represent information extracted from the file
header.

```
    Tag ID               Tag Name          Writable
    ------               --------          --------
    'Compressed'         Compressed        no
    'Duration'           Duration          no
    'FlashVersion'       FlashVersion      no
    'FrameCount'         FrameCount        no
    'FrameRate'          FrameRate         no
    'ImageHeight'        ImageHeight       no
    'ImageWidth'         ImageWidth        no
    0x0045               FlashAttributes   no
    0x004d               XMP               XMP
```

Flash FLV Tags

Information is extracted from the following packets in FLV (Flash
Video) files.

```
    Tag ID    Tag Name                     Writable
    ------    --------                     --------
    0x0008    Audio                        Flash Audio
    0x0009    Video                        Flash Video
    0x0012    Meta                         Flash Meta
```

Flash Audio Tags

Information extracted from the Flash Audio header.

```
    Tag ID    Tag Name                     Writable
    ------    --------                     --------
    'Bit0-3'  AudioEncoding                no
    'Bit4-5'  AudioSampleRate              no
    'Bit6'    AudioBitsPerSample           no
    'Bit7'    AudioChannels                no
```

Flash Video Tags

Information extracted from the Flash Video header.

```
  Tag ID    Tag Name                            Writable
  ------    --------                            --------
  'Bit4-7'  VideoEncoding                       no
```

Flash Meta Tags

Below are a few observed FLV Meta tags, but ExifTool will attempt to
extract information from any tag found.

```
  Tag ID                    Tag Name         Writable
  ------                    --------         --------
  'audiocodecid'            AudioCodecID     no
  'audiodatarate'           AudioBitrate     no
  'audiodelay'              AudioDelay       no
  'audiosamplerate'         AudioSampleRate  no
  'audiosamplesize'         AudioSampleSize  no
  'audiosize'               AudioSize        no
  'bytelength'              ByteLength       no
  'canSeekToEnd'            CanSeekToEnd     no
  'canseekontime'           CanSeekOnTime    no
  'createdby'               CreatedBy        no
  'creationdate'            CreateDate       no
  'cuePoints'               CuePoint         Flash CuePoint
  'datasize'                DataSize         no
  'duration'                Duration         no
  'filesize'                FileSizeBytes    no
  'framerate'               FrameRate        no
  'hasAudio'                HasAudio         no
  'hasCuePoints'            HasCuePoints     no
  'hasKeyframes'            HasKeyFrames     no
  'hasMetadata'             HasMetadata      no
  'hasVideo'                HasVideo         no
  'height'                  ImageHeight      no
  'httphostheader'          HTTPHostHeader   no
  'keyframesFilepositions'  KeyFramePositions no
  'keyframesTimes'          KeyFramesTimes   no
  'lastkeyframetimestamp'   LastKeyFrameTime no
  'lasttimestamp'           LastTimeStamp    no
  'liveXML'                 XMP              XMP
  'metadatacreator'         MetadataCreator  no
  'metadatadate'            MetadataDate     no
  'pmsg'                    Message          no
  'purl'                    URL              no
  'sourcedata'              SourceData       no
  'starttime'               StartTime        no
  'stereo'                  Stereo           no
  'totaldatarate'           TotalDataRate    no
  'totalduration'           TotalDuration    no
  'videocodecid'            VideoCodecID     no
  'videodatarate'           VideoBitrate     no
  'videosize'               VideoSize        no
  'width'                   ImageWidth       no
```

Flash CuePoint Tags

These tag names are added to the CuePoint name to generate complete tag
names like "CuePoint0Name".

```
  Tag ID          Tag Name         Writable
  ------          --------         --------
  'name'          Name             no
  'parameters'    Parameter        Flash Parameter
  'time'          Time             no
  'type'          Type             no
```

Flash Parameter Tags

There are no pre-defined parameter tags, but ExifTool will extract any
existing parameters, with tag names like "CuePoint0ParameterXxx".

```
Tag ID    Tag Name                        Writable
------    --------                        --------
[no tags known]
```

Real Tags

ExifTool recognizes three basic types of Real audio/video files: 1)
RealMedia (RM, RV and RMVB), 2) RealAudio (RA), and 3) Real Metafile
(RAM and RPM).

Real Media Tags

These Tag ID's are Chunk ID's used in RealMedia and RealVideo (RM, RV
and RMVB) files.

```
Tag ID    Tag Name                        Writable
------    --------                        --------
'CONT'    CONT                            Real ContentDescr
'MDPR'    MDPR                            Real MediaProps
'PROP'    PROP                            Real Properties
'RJMD'    RJMD                            Real Metadata
```

Real ContentDescr Tags

```
Sequence Tag Name                         Writable
-------- --------                         --------
       0 TitleLen?                        no
       1 Title                            no
       2 AuthorLen?                       no
       3 Author                           no
       4 CopyrightLen?                    no
       5 Copyright                        no
       6 CommentLen?                      no
       7 Comment                          no
```

Real MediaProps Tags

```
Sequence Tag Name                         Writable
-------- --------                         --------
       0 StreamNumber                     no
       1 StreamMaxBitrate                 no
       2 StreamAvgBitrate                 no
       3 StreamMaxPacketSize              no
       4 StreamAvgPacketSize              no
       5 StreamStartTime                  no
       6 StreamPreroll                    no
       7 StreamDuration                   no
       8 StreamNameLen?                   no
       9 StreamName                       no
      10 StreamMimeLen?                   no
      11 StreamMimeType                   no
      12 FileInfoLen?                     no
      13 FileInfoLen2?                    no
      14 FileInfoVersion                  no
      15 PhysicalStreams?                 no
      16 PhysicalStreamNumbers?           no
      17 DataOffsets?                     no
      18 NumRules?                        no
      19 PhysicalStreamNumberMap?         no
      20 NumProperties?                   no
      21 FileInfoProperties               Real FileInfo
```

Real FileInfo Tags

The following tags have been observed in the FileInfo properties, but
any other existing information will also be extracted.

```
Tag ID                   Tag Name                Writable
```

------	--------	--------
'Audiences'	Audiences	no
'Audio Format'	AudioFormat	no
'Content Rating'	ContentRating	no
'Creation Date'	CreateDate	no
'Description'	Description	no
'File ID'	FileID	no
'Generated By'	Software	no
'Indexable'	Indexable	no
'Keywords'	Keywords	no
'Modification Date'	ModifyDate	no
'Target Audiences'	TargetAudiences	no
'Video Quality'	VideoQuality	no
'audioMode'	AudioMode	no
'videoMode'	VideoMode	no

Real Properties Tags

Sequence	Tag Name	Writable
--------	--------	--------
0	MaxBitrate	no
1	AvgBitrate	no
2	MaxPacketSize	no
3	AvgPacketSize	no
4	NumPackets	no
5	Duration	no
6	Preroll	no
7	IndexOffset?	no
8	DataOffset?	no
9	NumStreams	no
10	Flags	no

Real Metadata Tags

The tags below represent information which has been observed in the
Real Metadata format, but ExifTool will extract any information it
finds in this format. (As far as I can tell from the referenced
documentation, string values should be plain text, but this is not the
case for the only sample file I have been able to obtain containing
this information. These tags could also be split into separate sub-
directories, but this will wait until I have better documentation or a
more complete set of samples.)

Tag ID	Tag Name	Writable
------	--------	--------
'Album/Name'	AlbumName	no
'Track/Category'	TrackCategory	no
'Track/Comments'	TrackComments	no
'Track/Lyrics'	TrackLyrics	no

Real Audio Tags

Tags in the following table reference information extracted from
various versions of RealAudio (RA) files.

Tag ID	Tag Name	Writable	
------	--------	--------	
'.ra3'	RA3	Real	AudioV3
'.ra4'	RA4	Real	AudioV4
'.ra5'	RA5	Real	AudioV5

Real AudioV3 Tags

Sequence	Tag Name	Writable
--------	--------	--------
0	Channels	no
1	Unknown?	no
2	BytesPerMinute	no
3	AudioBytes	no
4	TitleLen?	no

```
    5    Title                              no
    6    ArtistLen?                         no
    7    Artist                             no
    8    CopyrightLen?                      no
    9    Copyright                          no
   10    CommentLen?                        no
   11    Comment                            no
```

Real AudioV4 Tags

```
 Sequence Tag Name                      Writable
 -------- --------                      --------
    0    FourCC1?                           no
    1    AudioFileSize?                     no
    2    Version2?                          no
    3    HeaderSize?                        no
    4    CodecFlavorID?                     no
    5    CodedFrameSize?                    no
    6    AudioBytes                         no
    7    BytesPerMinute                     no
    8    Unknown?                           no
    9    SubPacketH?                        no
   10    AudioFrameSize                     no
   11    SubPacketSize?                     no
   12    Unknown?                           no
   13    SampleRate                         no
   14    Unknown?                           no
   15    BitsPerSample                      no
   16    Channels                           no
   17    FourCC2Len?                        no
   18    FourCC2?                           no
   19    FourCC3Len?                        no
   20    FourCC3?                           no
   21    Unknown?                           no
   22    Unknown?                           no
   23    TitleLen?                          no
   24    Title                              no
   25    ArtistLen?                         no
   26    Artist                             no
   27    CopyrightLen?                      no
   28    Copyright                          no
   29    CommentLen?                        no
   30    Comment                            no
```

Real AudioV5 Tags

```
 Sequence Tag Name                      Writable
 -------- --------                      --------
    0    FourCC1?                           no
    1    AudioFileSize?                     no
    2    Version2?                          no
    3    HeaderSize?                        no
    4    CodecFlavorID?                     no
    5    CodedFrameSize?                    no
    6    AudioBytes                         no
    7    BytesPerMinute                     no
    8    Unknown?                           no
    9    SubPacketH?                        no
   10    FrameSize?                         no
   11    SubPacketSize?                     no
   12    SampleRate                         no
   13    SampleRate2?                       no
   14    BitsPerSample                      no
   15    Channels                           no
   16    Genr?                              no
   17    FourCC3?                           no
```

Real Metafile Tags

Tags representing information extracted from Real Audio Metafile and

RealMedia Plug-in Metafile (RAM and RPM) files.

```
 Tag ID    Tag Name                         Writable
 ------    --------                         --------
 'txt'     Text                             no
 'url'     URL                              no
```

Red Tags
Tags extracted from Redcode R3D video files.

```
 Tag ID    Tag Name                         Writable
 ------    --------                         --------
 'RED1'    Red1Header                       Red RED1
 'RED2'    Red2Header                       Red RED2
 0x1000    StartEdgeCode                    no
 0x1001    StartTimecode                    no
 0x1002    OtherDate1                       no
 0x1003    OtherDate2                       no
 0x1004    OtherDate3                       no
 0x1005    DateTimeOriginal                 no
 0x1006    SerialNumber                     no
 0x1019    CameraType                       no
 0x101a    ReelNumber                       no
 0x101b    Take                             no
 0x1023    DateCreated                      no
 0x1024    TimeCreated                      no
 0x1025    FirmwareVersion                  no
 0x1029    ReelTimecode                     no
 0x102a    StorageType                      no
 0x1030    StorageFormatDate                no
 0x1031    StorageFormatTime                no
 0x1032    StorageSerialNumber              no
 0x1033    StorageModel                     no
 0x1036    AspectRatio                      no
 0x1042    Revision                         no
 0x1056    OriginalFileName                 no
 0x106e    LensMake                         no
 0x106f    LensNumber                       no
 0x1070    LensModel                        no
 0x1071    Model                            no
 0x107c    CameraOperator                   no
 0x1086    VideoFormat                      no
 0x1096    Filter                           no
 0x10a0    Brain                            no
 0x10a1    Sensor                           no
 0x200d    ColorTemperature                 no
 0x204b    RGBCurves                        no
 0x2066    OriginalFrameRate                no
 0x4037    CropArea                         no
 0x403b    ISO                              no
 0x406a    FNumber                          no
 0x406b    FocalLength                      no
 0x606c    FocusDistance                    no
```

Red RED1 Tags

Redcode version 1 header.

```
 Index1    Tag Name                         Writable
 ------    --------                         --------
      7    RedcodeVersion                   no
     54    ImageWidth                       no
     58    ImageHeight                      no
     62    FrameRate                        no
     67    OriginalFileName                 no
```

Red RED2 Tags

Redcode version 2 header.

Index1	Tag Name	Writable
7	RedcodeVersion	no
76	ImageWidth	no
80	ImageHeight	no
86	FrameRate	no

AIFF Tags

Tags extracted from Audio Interchange File Format (AIFF) files. See
<http://www-mmsp.ece.mcgill.ca/Documents/AudioFormats/AIFF/AIFF.html>
for the AIFF specification.

Tag ID	Tag Name	Writable
'(c) '	Copyright	no
'ANNO'	Annotation	no
'APPL'	ApplicationData	no
'AUTH'	Author	no
'COMM'	Common	AIFF Common
'COMT'	Comment	AIFF Comment
'FVER'	FormatVersion	AIFF FormatVers
'ID3 '	ID3	ID3
'NAME'	Name	no

AIFF Common Tags

Index2	Tag Name	Writable
0	NumChannels	no
1	NumSampleFrames	no
3	SampleSize	no
4	SampleRate	no
9	CompressionType	no
11	CompressorName	no

AIFF Comment Tags

Tag ID	Tag Name	Writable
0x0000	CommentTime	no
0x0001	MarkerID	no
0x0002	Comment	no

AIFF FormatVers Tags

Index4	Tag Name	Writable
0	FormatVersionTime	no

ASF Tags

The ASF format is used by Windows WMA and WMV files, and DIVX videos.
Tag ID's aren't listed because they are huge 128-bit GUID's that would
ruin the formatting of this table.

Tag Name	Writable
SimpleIndex	no
TimecodeIndex	no
Header	ASF Header
Data	no
XMP	XMP
Index	no
MediaIndex	no

ASF Header Tags

Tag Name	Writable
Padding	no
ScriptCommand	no

```
   ContentBranding                          ASF ContentBranding
   ContentEncryption                        no
   DigitalSignature                         no
   ExtendedContentEncryption                no
   HeaderExtension                          ASF HeaderExtension
   ContentDescription                       ASF ContentDescr
   ErrorCorrection                          no
   StreamBitrateProps                       no
   CodecList                                ASF CodecList
   FileProperties                           ASF FileProperties
   StreamProperties                         ASF StreamProperties
   ExtendedContentDescr                     ASF ExtendedDescr
   BitrateMutualExclusion                   no
   Marker                                   no
```

ASF ContentBranding Tags

```
   Tag Name                                 Writable
   --------                                 --------
   BannerImageType                          no
   BannerImage                              no
   BannerImageURL                           no
   CopyrightURL                             no
```

ASF HeaderExtension Tags

```
   Tag Name                                 Writable
   --------                                 --------
   ExtendedStreamProps                      no
   AdvancedContentEncryption                no
   MetadataLibrary                          ASF ExtendedDescr
   TimecodeIndexParms                       no
   Compatibility                            no
   LanguageList                             no
   AdvancedMutualExcl                       no
   BandwidthSharing                         no
   Reserved1                                no
   Metadata                                 ASF ExtendedDescr
   GroupMutualExclusion                     no
   StreamPrioritization                     no
   IndexParameters                          no
```

ASF ExtendedDescr Tags

```
   Tag Name                                 Writable
   --------                                 --------
   ASFLeakyBucketPairs                      no
   ASFPacketCount                           no
   ASFSecurityObjectsSize                   no
   AlbumArtist                              no
   AlbumCoverURL                            no
   AlbumTitle                               no
   AspectRatioX                             no
   AspectRatioY                             no
   AudioFileURL                             no
   AudioSourceURL                           no
   Author                                   no
   AuthorURL                                no
   AverageLevel                             no
   BannerImageData                          no
   BannerImageType                          no
   BannerImageURL                           no
   BeatsPerMinute                           no
   Bitrate                                  no
   Broadcast                                no
   BufferAverage                            no
   Can_Skip_Backward                        no
   Can_Skip_Forward                         no
   Category                                 no
   Codec                                    no
```

Composer	no
Conductor	no
ContainerFormat	no
ContentDistributor	no
ContentGroupDescription	no
Copyright	no
CopyrightURL	no
CurrentBitrate	no
DRM	no
DRM_ContentID	no
DRM_DRMHeader	no
DRM_DRMHeader_ContentDistributor	no
DRM_DRMHeader_ContentID	no
DRM_DRMHeader_IndividualizedVersion	no
DRM_DRMHeader_KeyID	no
DRM_DRMHeader_LicenseAcqURL	no
DRM_DRMHeader_SubscriptionContentID	no
DRM_IndividualizedVersion	no
DRM_KeyID	no
DRM_LASignatureCert	no
DRM_LASignatureLicSrvCert	no
DRM_LASignaturePrivKey	no
DRM_LASignatureRootCert	no
DRM_LicenseAcqURL	no
DRM_V1LicenseAcqURL	no
DVDID	no
Description	no
Director	no
Duration	no
EncodedBy	no
EncodingSettings	no
EncodingTime	no
FileSize	no
Genre	no
GenreID	no
HasArbitraryDataStream	no
HasAttachedImages	no
HasAudio	no
HasFileTransferStream	no
HasImage	no
HasScript	no
HasVideo	no
ISRC	no
InitialKey	no
IsVBR	no
Is_Protected	no
Is_Trusted	no
Language	no
Lyrics	no
Lyrics_Synchronised	no
MCDI	no
MediaClassPrimaryID	no
MediaClassSecondaryID	no
MediaCredits	no
MediaIsDelay	no
MediaIsFinale	no
MediaIsLive	no
MediaIsPremiere	no
MediaIsRepeat	no
MediaIsSAP	no
MediaIsStereo	no
MediaIsSubtitled	no
MediaIsTape	no
MediaNetworkAffiliation	no
MediaOriginalBroadcastDateTime	no
MediaOriginalChannel	no
MediaStationCallSign	no
MediaStationName	no
ModifiedBy	no
Mood	no

```
NSC_Address                                     no
NSC_Description                                 no
NSC_Email                                       no
NSC_Name                                        no
NSC_Phone                                       no
NumberOfFrames                                  no
OptimalBitrate                                  no
OriginalAlbumTitle                              no
OriginalArtist                                  no
OriginalFileName                                no
OriginalLyricist                                no
OriginalReleaseTime                             no
OriginalReleaseYear                             no
ParentalRating                                  no
ParentalRatingReason                            no
PartOfSet                                       no
PeakBitrate                                     no
PeakValue                                       no
Period                                          no
Picture                                         ASF Picture
PlaylistDelay                                   no
Producer                                        no
PromotionURL                                    no
ProtectionType                                  no
Provider                                        no
ProviderCopyright                               no
ProviderRating                                  no
ProviderStyle                                   no
Publisher                                       no
RadioStationName                                no
RadioStationOwner                               no
Rating                                          no
Seekable                                        no
SharedUserRating                                no
Signature_Name                                  no
StreamTypeInfo                                  no
Stridable                                       no
Subtitle                                        no
SubtitleDescription                             no
SubscriptionContentID                           no
Text                                            no
Title                                           no
ToolName                                        no
ToolVersion                                     no
Track                                           no
TrackNumber                                     no
UniqueFileIdentifier                            no
UserWebURL                                      no
VBRPeak                                         no
VideoClosedCaptioning                           no
VideoFrameRate                                  no
VideoHeight                                     no
VideoWidth                                      no
WMADRCAverageReference                          no
WMADRCAverageTarget                             no
WMADRCPeakReference                             no
WMADRCPeakTarget                                no
WMCollectionGroupID                             no
WMCollectionID                                  no
WMContentID                                     no
Writer                                          no
Year                                            no
```

ASF Picture Tags

```
Tag Name                                        Writable
--------                                        --------
PictureType                                     no
PictureMIMEType                                 no
PictureDescription                              no
```

```
   Picture                                      no
```

ASF ContentDescr Tags

```
   Tag Name                                     Writable
   --------                                     --------
   Title                                        no
   Author                                       no
   Copyright                                    no
   Description                                  no
   Rating                                       no
```

ASF CodecList Tags

```
   Tag Name                                     Writable
   --------                                     --------
   AudioCodecDescription                        no
   AudioCodecName                               no
   OtherCodecDescription                        no
   OtherCodecName                               no
   VideoCodecDescription                        no
   VideoCodecName                               no
```

ASF FileProperties Tags

```
   Index1   Tag Name                            Writable
   ------   --------                            --------
       0    FileID                              no
      16    FileLength                          no
      24    CreationDate                        no
      32    DataPackets                         no
      40    Duration                            no
      48    SendDuration                        no
      56    Preroll                             no
      64    Flags                               no
      68    MinPacketSize                       no
      72    MaxPacketSize                       no
      76    MaxBitrate                          no
```

ASF StreamProperties Tags

Tags with index 54 and greater are conditional based on the StreamType.

```
   Index1   Tag Name                            Writable
   ------   --------                            --------
       0    StreamType                          no
      16    ErrorCorrectionType                 no
      32    TimeOffset                          no
      48    StreamNumber                        no
      54    AudioCodecID                        no
            ImageWidth                          no
      56    AudioChannels                       no
      58    AudioSampleRate                     no
            ImageHeight                         no
```

WTV Tags
Tags found in Windows recorded TV (WTV) videos.

```
   Tag ID                        Tag Name       Writable
   ------                        --------       --------
   'table.0.entries.legacy_attrib' Metdata      WTV Metadata
```

WTV Metadata Tags

ExifTool will extract any tag found, even if not in this table.

```
   Tag Name                                     Writable
   --------                                     --------
   ATSCContent                                  no
   ActualSoftPostPadding                        no
```

ActualSoftPrePadding	no
Bitrate?	no
BrandingImageID	no
BrandingName	no
ContentProtected	no
ContentProtectedPercent	no
DTVContent	no
Duration	no
EncodeTime	no
EndTime	no
ExpirationDate?	no
ExpirationSpan?	no
Genre	no
HDContent	no
HardPostPadding	no
HardPrePadding	no
InBandRatingAttributes	no
InBandRatingLevel	no
InBandRatingSystem	no
KeepUntil	no
Language	no
MediaClassPrimaryID	no
MediaClassSecondaryID	no
MediaCredits	no
MediaIsDelay	no
MediaIsFinale	no
MediaIsLive	no
MediaIsMovie	no
MediaIsPremiere	no
MediaIsRepeat	no
MediaIsSAP	no
MediaIsSport	no
MediaIsStereo	no
MediaIsSubtitled	no
MediaIsTape	no
MediaNetworkAffiliation	no
MediaOriginalBroadcastDateTime	no
MediaOriginalChannel	no
MediaOriginalChannelSubNumber	no
MediaOriginalRunTime	no
MediaStationCallSign	no
MediaStationName	no
MediaThumbAspectRatioX	no
MediaThumbAspectRatioY	no
MediaThumbHeight	no
MediaThumbRatingAttributes	no
MediaThumbRatingLevel	no
MediaThumbRatingSystem	no
MediaThumbRet	no
MediaThumbStride	no
MediaThumbTimeStamp?	no
MediaThumbWidth	no
OriginalReleaseTime	no
OriginalSoftPostPadding	no
OriginalSoftPrePadding	no
ParentalRating	no
ParentalRatingReason	no
ProgramID	no
Provider	no
ProviderCopyright	no
ProviderRating	no
Quality	no
RequestID	no
ScheduleItemID	no
SeriesUID	no
ServiceID	no
Subtitle	no
SubtitleDescription	no
Title	no
VideoClosedCaptioning	no

       Watched   no

DICOM Tags
     The DICOM format is based on the ACR-NEMA specification, but adds a
     file header and a number of new tags. ExifTool will extract
     information from either type of file. The Tag ID's in the following
     table are the tag group and element numbers in hexadecimal, as given in
     the DICOM specification (see <http://medical.nema.org/>). The table
     below contains tags from the DICOM 2009 and earlier specifications plus
     some vendor-specific private tags.

     Note that DICOM information may be saved in other file formats using
     the XMP DICOM Tags.

Tag ID	Tag Name	Writable
0002,0000	FileMetaInfoGroupLength	no
0002,0001	FileMetaInfoVersion	no
0002,0002	MediaStorageSOPClassUID	no
0002,0003	MediaStorageSOPInstanceUID	no
0002,0010	TransferSyntaxUID	no
0002,0012	ImplementationClassUID	no
0002,0013	ImplementationVersionName	no
0002,0016	SourceApplicationEntityTitle	no
0002,0100	PrivateInformationCreatorUID	no
0002,0102	PrivateInformation	no
0004,1130	FileSetID	no
0004,1141	FileSetDescriptorFileID	no
0004,1142	SpecificCharacterSetOfFile	no
0004,1200	FirstDirectoryRecordOffset	no
0004,1202	LastDirectoryRecordOffset	no
0004,1212	FileSetConsistencyFlag	no
0004,1220	DirectoryRecordSequence	no
0004,1400	OffsetOfNextDirectoryRecord	no
0004,1410	RecordInUseFlag	no
0004,1420	LowerLevelDirectoryEntityOffset	no
0004,1430	DirectoryRecordType	no
0004,1432	PrivateRecordUID	no
0004,1500	ReferencedFileID	no
0004,1504	MRDRDirectoryRecordOffset	no
0004,1510	ReferencedSOPClassUIDInFile	no
0004,1511	ReferencedSOPInstanceUIDInFile	no
0004,1512	ReferencedTransferSyntaxUIDInFile	no
0004,151A	ReferencedRelatedSOPClassUIDInFile	no
0004,1600	NumberOfReferences	no
0008,0000	IdentifyingGroupLength	no
0008,0001	LengthToEnd	no
0008,0005	SpecificCharacterSet	no
0008,0006	LanguageCodeSequence	no
0008,0008	ImageType	no
0008,0010	RecognitionCode	no
0008,0012	InstanceCreationDate	no
0008,0013	InstanceCreationTime	no
0008,0014	InstanceCreatorUID	no
0008,0016	SOPClassUID	no
0008,0018	SOPInstanceUID	no
0008,001A	RelatedGeneralSOPClassUID	no
0008,001B	OriginalSpecializedSOPClassUID	no
0008,0020	StudyDate	no
0008,0021	SeriesDate	no
0008,0022	AcquisitionDate	no
0008,0023	ContentDate	no
0008,0024	OverlayDate	no
0008,0025	CurveDate	no
0008,002A	AcquisitionDateTime	no
0008,0030	StudyTime	no
0008,0031	SeriesTime	no
0008,0032	AcquisitionTime	no
0008,0033	ContentTime	no
0008,0034	OverlayTime	no

```
0008,0035   CurveTime                              no
0008,0040   DataSetType                            no
0008,0041   DataSetSubtype                         no
0008,0042   NuclearMedicineSeriesType              no
0008,0050   AccessionNumber                        no
0008,0052   QueryRetrieveLevel                     no
0008,0054   RetrieveAETitle                        no
0008,0056   InstanceAvailability                   no
0008,0058   FailedSOPInstanceUIDList               no
0008,0060   Modality                               no
0008,0061   ModalitiesInStudy                      no
0008,0062   SOPClassesInStudy                      no
0008,0064   ConversionType                         no
0008,0068   PresentationIntentType                 no
0008,0070   Manufacturer                           no
0008,0080   InstitutionName                        no
0008,0081   InstitutionAddress                     no
0008,0082   InstitutionCodeSequence                no
0008,0090   ReferringPhysicianName                 no
0008,0092   ReferringPhysicianAddress              no
0008,0094   ReferringPhysicianTelephoneNumber      no
0008,0096   ReferringPhysicianIDSequence           no
0008,0100   CodeValue                              no
0008,0102   CodingSchemeDesignator                 no
0008,0103   CodingSchemeVersion                    no
0008,0104   CodeMeaning                            no
0008,0105   MappingResource                        no
0008,0106   ContextGroupVersion                    no
0008,0107   ContextGroupLocalVersion               no
0008,010B   ContextGroupExtensionFlag              no
0008,010C   CodingSchemeUID                        no
0008,010D   ContextGroupExtensionCreatorUID        no
0008,010F   ContextIdentifier                      no
0008,0110   CodingSchemeIDSequence                 no
0008,0112   CodingSchemeRegistry                   no
0008,0114   CodingSchemeExternalID                 no
0008,0115   CodingSchemeName                       no
0008,0116   ResponsibleOrganization                no
0008,0117   ContextUID                             no
0008,0201   TimezoneOffsetFromUTC                  no
0008,1000   NetworkID                              no
0008,1010   StationName                            no
0008,1030   StudyDescription                       no
0008,1032   ProcedureCodeSequence                  no
0008,103E   SeriesDescription                      no
0008,1040   InstitutionalDepartmentName            no
0008,1048   PhysiciansOfRecord                     no
0008,1049   PhysiciansOfRecordIDSequence           no
0008,1050   PerformingPhysicianName                no
0008,1052   PerformingPhysicianIDSequence          no
0008,1060   NameOfPhysicianReadingStudy            no
0008,1062   PhysicianReadingStudyIDSequence        no
0008,1070   OperatorsName                          no
0008,1072   OperatorIDSequence                     no
0008,1080   AdmittingDiagnosesDescription          no
0008,1084   AdmittingDiagnosesCodeSequence         no
0008,1090   ManufacturersModelName                 no
0008,1100   ReferencedResultsSequence              no
0008,1110   ReferencedStudySequence                no
0008,1111   ReferencedProcedureStepSequence        no
0008,1115   ReferencedSeriesSequence               no
0008,1120   ReferencedPatientSequence              no
0008,1125   ReferencedVisitSequence                no
0008,1130   ReferencedOverlaySequence              no
0008,113A   ReferencedWaveformSequence             no
0008,1140   ReferencedImageSequence                no
0008,1145   ReferencedCurveSequence                no
0008,114A   ReferencedInstanceSequence             no
0008,1150   ReferencedSOPClassUID                  no
0008,1155   ReferencedSOPInstanceUID               no
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0008,115A  SOPClassesSupported                   no
0008,1160  ReferencedFrameNumber                 no
0008,1161  SimpleFrameList                       no
0008,1162  CalculatedFrameList                   no
0008,1163  TimeRange                             no
0008,1164  FrameExtractionSequence               no
0008,1195  TransactionUID                        no
0008,1197  FailureReason                         no
0008,1198  FailedSOPSequence                     no
0008,1199  ReferencedSOPSequence                 no
0008,1200  OtherReferencedStudiesSequence        no
0008,1250  RelatedSeriesSequence                 no
0008,2110  LossyImageCompression                 no
0008,2111  DerivationDescription                 no
0008,2112  SourceImageSequence                   no
0008,2120  StageName                             no
0008,2122  StageNumber                           no
0008,2124  NumberOfStages                        no
0008,2127  ViewName                              no
0008,2128  ViewNumber                            no
0008,2129  NumberOfEventTimers                   no
0008,212A  NumberOfViewsInStage                  no
0008,2130  EventElapsedTimes                     no
0008,2132  EventTimerNames                       no
0008,2133  EventTimerSequence                    no
0008,2134  EventTimeOffset                       no
0008,2135  EventCodeSequence                     no
0008,2142  StartTrim                             no
0008,2143  StopTrim                              no
0008,2144  RecommendedDisplayFrameRate           no
0008,2200  TransducerPosition                    no
0008,2204  TransducerOrientation                 no
0008,2208  AnatomicStructure                     no
0008,2218  AnatomicRegionSequence                no
0008,2220  AnatomicRegionModifierSequence        no
0008,2228  PrimaryAnatomicStructureSequence      no
0008,2229  AnatomicStructureOrRegionSequence     no
0008,2230  AnatomicStructureModifierSequence     no
0008,2240  TransducerPositionSequence            no
0008,2242  TransducerPositionModifierSequence    no
0008,2244  TransducerOrientationSequence         no
0008,2246  TransducerOrientationModifierSeq      no
0008,2253  AnatomicEntrancePortalCodeSeqTrial    no
0008,2255  AnatomicApproachDirCodeSeqTrial       no
0008,2256  AnatomicPerspectiveDescrTrial         no
0008,2257  AnatomicPerspectiveCodeSeqTrial       no
0008,3001  AlternateRepresentationSequence       no
0008,3010  IrradiationEventUID                   no
0008,4000  IdentifyingComments                   no
0008,9007  FrameType                             no
0008,9092  ReferencedImageEvidenceSequence       no
0008,9121  ReferencedRawDataSequence             no
0008,9123  CreatorVersionUID                     no
0008,9124  DerivationImageSequence               no
0008,9154  SourceImageEvidenceSequence           no
0008,9205  PixelPresentation                     no
0008,9206  VolumetricProperties                  no
0008,9207  VolumeBasedCalculationTechnique       no
0008,9208  ComplexImageComponent                 no
0008,9209  AcquisitionContrast                   no
0008,9215  DerivationCodeSequence                no
0008,9237  GrayscalePresentationStateSequence    no
0008,9410  ReferencedOtherPlaneSequence          no
0008,9458  FrameDisplaySequence                  no
0008,9459  RecommendedDisplayFrameRateInFloat    no
0008,9460  SkipFrameRangeFlag                    no
0009,1001  FullFidelity                          no
0009,1002  SuiteID                               no
0009,1004  ProductID                             no
0009,1027  ImageActualDate                       no
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0009,1030   ServiceID                               no
0009,1031   MobileLocationNumber                    no
0009,10E3   EquipmentUID                            no
0009,10E6   GenesisVersionNow                       no
0009,10E7   ExamRecordChecksum                      no
0009,10E9   ActualSeriesDataTimeStamp               no
0010,0000   PatientGroupLength                      no
0010,0010   PatientName                             no
0010,0020   PatientID                               no
0010,0021   IssuerOfPatientID                       no
0010,0022   TypeOfPatientID                         no
0010,0030   PatientBirthDate                        no
0010,0032   PatientBirthTime                        no
0010,0040   PatientSex                              no
0010,0050   PatientInsurancePlanCodeSequence        no
0010,0101   PatientPrimaryLanguageCodeSeq           no
0010,0102   PatientPrimaryLanguageCodeModSeq        no
0010,1000   OtherPatientIDs                         no
0010,1001   OtherPatientNames                       no
0010,1002   OtherPatientIDsSequence                 no
0010,1005   PatientBirthName                        no
0010,1010   PatientAge                              no
0010,1020   PatientSize                             no
0010,1030   PatientWeight                           no
0010,1040   PatientAddress                          no
0010,1050   InsurancePlanIdentification             no
0010,1060   PatientMotherBirthName                  no
0010,1080   MilitaryRank                            no
0010,1081   BranchOfService                         no
0010,1090   MedicalRecordLocator                    no
0010,2000   MedicalAlerts                           no
0010,2110   Allergies                               no
0010,2150   CountryOfResidence                      no
0010,2152   RegionOfResidence                       no
0010,2154   PatientTelephoneNumbers                 no
0010,2160   EthnicGroup                             no
0010,2180   Occupation                              no
0010,21A0   SmokingStatus                           no
0010,21B0   AdditionalPatientHistory                no
0010,21C0   PregnancyStatus                         no
0010,21D0   LastMenstrualDate                       no
0010,21F0   PatientReligiousPreference              no
0010,2201   PatientSpeciesDescription               no
0010,2202   PatientSpeciesCodeSequence              no
0010,2203   PatientSexNeutered                      no
0010,2210   AnatomicalOrientationType               no
0010,2292   PatientBreedDescription                 no
0010,2293   PatientBreedCodeSequence                no
0010,2294   BreedRegistrationSequence               no
0010,2295   BreedRegistrationNumber                 no
0010,2296   BreedRegistryCodeSequence               no
0010,2297   ResponsiblePerson                       no
0010,2298   ResponsiblePersonRole                   no
0010,2299   ResponsibleOrganization                 no
0010,4000   PatientComments                         no
0010,9431   ExaminedBodyThickness                   no
0011,1010   PatientStatus                           no
0012,0010   ClinicalTrialSponsorName                no
0012,0020   ClinicalTrialProtocolID                 no
0012,0021   ClinicalTrialProtocolName               no
0012,0030   ClinicalTrialSiteID                     no
0012,0031   ClinicalTrialSiteName                   no
0012,0040   ClinicalTrialSubjectID                  no
0012,0042   ClinicalTrialSubjectReadingID           no
0012,0050   ClinicalTrialTimePointID                no
0012,0051   ClinicalTrialTimePointDescription       no
0012,0060   ClinicalTrialCoordinatingCenter         no
0012,0062   PatientIdentityRemoved                  no
0012,0063   DeidentificationMethod                  no
0012,0064   DeidentificationMethodCodeSequence      no
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0012,0071   ClinicalTrialSeriesID                no
0012,0072   ClinicalTrialSeriesDescription       no
0012,0084   DistributionType                     no
0012,0085   ConsentForDistributionFlag           no
0018,0000   AcquisitionGroupLength               no
0018,0010   ContrastBolusAgent                   no
0018,0012   ContrastBolusAgentSequence           no
0018,0014   ContrastBolusAdministrationRoute     no
0018,0015   BodyPartExamined                     no
0018,0020   ScanningSequence                     no
0018,0021   SequenceVariant                      no
0018,0022   ScanOptions                          no
0018,0023   MRAcquisitionType                    no
0018,0024   SequenceName                         no
0018,0025   AngioFlag                            no
0018,0026   InterventionDrugInformationSeq       no
0018,0027   InterventionDrugStopTime             no
0018,0028   InterventionDrugDose                 no
0018,0029   InterventionDrugSequence             no
0018,002A   AdditionalDrugSequence               no
0018,0030   Radionuclide                         no
0018,0031   Radiopharmaceutical                  no
0018,0032   EnergyWindowCenterline               no
0018,0033   EnergyWindowTotalWidth               no
0018,0034   InterventionDrugName                 no
0018,0035   InterventionDrugStartTime            no
0018,0036   InterventionSequence                 no
0018,0037   TherapyType                          no
0018,0038   InterventionStatus                   no
0018,0039   TherapyDescription                   no
0018,003A   InterventionDescription              no
0018,0040   CineRate                             no
0018,0042   InitialCineRunState                  no
0018,0050   SliceThickness                       no
0018,0060   KVP                                  no
0018,0070   CountsAccumulated                    no
0018,0071   AcquisitionTerminationCondition      no
0018,0072   EffectiveDuration                    no
0018,0073   AcquisitionStartCondition            no
0018,0074   AcquisitionStartConditionData        no
0018,0075   AcquisitionEndConditionData          no
0018,0080   RepetitionTime                       no
0018,0081   EchoTime                             no
0018,0082   InversionTime                        no
0018,0083   NumberOfAverages                     no
0018,0084   ImagingFrequency                     no
0018,0085   ImagedNucleus                        no
0018,0086   EchoNumber                           no
0018,0087   MagneticFieldStrength                no
0018,0088   SpacingBetweenSlices                 no
0018,0089   NumberOfPhaseEncodingSteps           no
0018,0090   DataCollectionDiameter               no
0018,0091   EchoTrainLength                      no
0018,0093   PercentSampling                      no
0018,0094   PercentPhaseFieldOfView              no
0018,0095   PixelBandwidth                       no
0018,1000   DeviceSerialNumber                   no
0018,1002   DeviceUID                            no
0018,1003   DeviceID                             no
0018,1004   PlateID                              no
0018,1005   GeneratorID                          no
0018,1006   GridID                               no
0018,1007   CassetteID                           no
0018,1008   GantryID                             no
0018,1010   SecondaryCaptureDeviceID             no
0018,1011   HardcopyCreationDeviceID             no
0018,1012   DateOfSecondaryCapture               no
0018,1014   TimeOfSecondaryCapture               no
0018,1016   SecondaryCaptureDeviceManufacturer   no
0018,1017   HardcopyDeviceManufacturer           no
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0018,1018   SecondaryCaptureDeviceModelName      no
0018,1019   SecondaryCaptureDeviceSoftwareVers   no
0018,101A   HardcopyDeviceSoftwareVersion        no
0018,101B   HardcopyDeviceModelName              no
0018,1020   SoftwareVersion                      no
0018,1022   VideoImageFormatAcquired             no
0018,1023   DigitalImageFormatAcquired           no
0018,1030   ProtocolName                         no
0018,1040   ContrastBolusRoute                   no
0018,1041   ContrastBolusVolume                  no
0018,1042   ContrastBolusStartTime               no
0018,1043   ContrastBolusStopTime                no
0018,1044   ContrastBolusTotalDose               no
0018,1045   SyringeCounts                        no
0018,1046   ContrastFlowRate                     no
0018,1047   ContrastFlowDuration                 no
0018,1048   ContrastBolusIngredient              no
0018,1049   ContrastBolusConcentration           no
0018,1050   SpatialResolution                    no
0018,1060   TriggerTime                          no
0018,1061   TriggerSourceOrType                  no
0018,1062   NominalInterval                      no
0018,1063   FrameTime                            no
0018,1064   CardiacFramingType                   no
0018,1065   FrameTimeVector                      no
0018,1066   FrameDelay                           no
0018,1067   ImageTriggerDelay                    no
0018,1068   MultiplexGroupTimeOffset             no
0018,1069   TriggerTimeOffset                    no
0018,106A   SynchronizationTrigger               no
0018,106C   SynchronizationChannel               no
0018,106E   TriggerSamplePosition                no
0018,1070   RadiopharmaceuticalRoute             no
0018,1071   RadiopharmaceuticalVolume            no
0018,1072   RadiopharmaceuticalStartTime         no
0018,1073   RadiopharmaceuticalStopTime          no
0018,1074   RadionuclideTotalDose                no
0018,1075   RadionuclideHalfLife                 no
0018,1076   RadionuclidePositronFraction         no
0018,1077   RadiopharmaceuticalSpecActivity      no
0018,1078   RadiopharmaceuticalStartDateTime     no
0018,1079   RadiopharmaceuticalStopDateTime      no
0018,1080   BeatRejectionFlag                    no
0018,1081   LowRRValue                           no
0018,1082   HighRRValue                          no
0018,1083   IntervalsAcquired                    no
0018,1084   IntervalsRejected                    no
0018,1085   PVCRejection                         no
0018,1086   SkipBeats                            no
0018,1088   HeartRate                            no
0018,1090   CardiacNumberOfImages                no
0018,1094   TriggerWindow                        no
0018,1100   ReconstructionDiameter               no
0018,1110   DistanceSourceToDetector             no
0018,1111   DistanceSourceToPatient              no
0018,1114   EstimatedRadiographicMagnification   no
0018,1120   GantryDetectorTilt                   no
0018,1121   GantryDetectorSlew                   no
0018,1130   TableHeight                          no
0018,1131   TableTraverse                        no
0018,1134   TableMotion                          no
0018,1135   TableVerticalIncrement               no
0018,1136   TableLateralIncrement                no
0018,1137   TableLongitudinalIncrement           no
0018,1138   TableAngle                           no
0018,113A   TableType                            no
0018,1140   RotationDirection                    no
0018,1141   AngularPosition                      no
0018,1142   RadialPosition                       no
0018,1143   ScanArc                              no
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0018,1144   AngularStep                             no
0018,1145   CenterOfRotationOffset                  no
0018,1146   RotationOffset                          no
0018,1147   FieldOfViewShape                        no
0018,1149   FieldOfViewDimensions                   no
0018,1150   ExposureTime                            no
0018,1151   XRayTubeCurrent                         no
0018,1152   Exposure                                no
0018,1153   ExposureInMicroAmpSec                   no
0018,1154   AveragePulseWidth                       no
0018,1155   RadiationSetting                        no
0018,1156   RectificationType                       no
0018,115A   RadiationMode                           no
0018,115E   ImageAreaDoseProduct                    no
0018,1160   FilterType                              no
0018,1161   TypeOfFilters                           no
0018,1162   IntensifierSize                         no
0018,1164   ImagerPixelSpacing                      no
0018,1166   Grid                                    no
0018,1170   GeneratorPower                          no
0018,1180   CollimatorGridName                      no
0018,1181   CollimatorType                          no
0018,1182   FocalDistance                           no
0018,1183   XFocusCenter                            no
0018,1184   YFocusCenter                            no
0018,1190   FocalSpots                              no
0018,1191   AnodeTargetMaterial                     no
0018,11A0   BodyPartThickness                       no
0018,11A2   CompressionForce                        no
0018,1200   DateOfLastCalibration                   no
0018,1201   TimeOfLastCalibration                   no
0018,1210   ConvolutionKernel                       no
0018,1240   UpperLowerPixelValues                   no
0018,1242   ActualFrameDuration                     no
0018,1243   CountRate                               no
0018,1244   PreferredPlaybackSequencing             no
0018,1250   ReceiveCoilName                         no
0018,1251   TransmitCoilName                        no
0018,1260   PlateType                               no
0018,1261   PhosphorType                            no
0018,1300   ScanVelocity                            no
0018,1301   WholeBodyTechnique                      no
0018,1302   ScanLength                              no
0018,1310   AcquisitionMatrix                       no
0018,1312   InPlanePhaseEncodingDirection           no
0018,1314   FlipAngle                               no
0018,1315   VariableFlipAngleFlag                   no
0018,1316   SAR                                     no
0018,1318   DB-Dt                                   no
0018,1400   AcquisitionDeviceProcessingDescr        no
0018,1401   AcquisitionDeviceProcessingCode         no
0018,1402   CassetteOrientation                     no
0018,1403   CassetteSize                            no
0018,1404   ExposuresOnPlate                        no
0018,1405   RelativeXRayExposure                    no
0018,1450   ColumnAngulation                        no
0018,1460   TomoLayerHeight                         no
0018,1470   TomoAngle                               no
0018,1480   TomoTime                                no
0018,1490   TomoType                                no
0018,1491   TomoClass                               no
0018,1495   NumberOfTomosynthesisSourceImages       no
0018,1500   PositionerMotion                        no
0018,1508   PositionerType                          no
0018,1510   PositionerPrimaryAngle                  no
0018,1511   PositionerSecondaryAngle                no
0018,1520   PositionerPrimaryAngleIncrement         no
0018,1521   PositionerSecondaryAngleIncrement       no
0018,1530   DetectorPrimaryAngle                    no
0018,1531   DetectorSecondaryAngle                  no
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0018,1600   ShutterShape                        no
0018,1602   ShutterLeftVerticalEdge             no
0018,1604   ShutterRightVerticalEdge            no
0018,1606   ShutterUpperHorizontalEdge          no
0018,1608   ShutterLowerHorizontalEdge          no
0018,1610   CenterOfCircularShutter             no
0018,1612   RadiusOfCircularShutter             no
0018,1620   VerticesOfPolygonalShutter          no
0018,1622   ShutterPresentationValue            no
0018,1623   ShutterOverlayGroup                 no
0018,1624   ShutterPresentationColorCIELabVal   no
0018,1700   CollimatorShape                     no
0018,1702   CollimatorLeftVerticalEdge          no
0018,1704   CollimatorRightVerticalEdge         no
0018,1706   CollimatorUpperHorizontalEdge       no
0018,1708   CollimatorLowerHorizontalEdge       no
0018,1710   CenterOfCircularCollimator          no
0018,1712   RadiusOfCircularCollimator          no
0018,1720   VerticesOfPolygonalCollimator       no
0018,1800   AcquisitionTimeSynchronized         no
0018,1801   TimeSource                          no
0018,1802   TimeDistributionProtocol            no
0018,1803   NTPSourceAddress                    no
0018,2001   PageNumberVector                    no
0018,2002   FrameLabelVector                    no
0018,2003   FramePrimaryAngleVector             no
0018,2004   FrameSecondaryAngleVector           no
0018,2005   SliceLocationVector                 no
0018,2006   DisplayWindowLabelVector            no
0018,2010   NominalScannedPixelSpacing          no
0018,2020   DigitizingDeviceTransportDirection  no
0018,2030   RotationOfScannedFilm               no
0018,3100   IVUSAcquisition                     no
0018,3101   IVUSPullbackRate                    no
0018,3102   IVUSGatedRate                       no
0018,3103   IVUSPullbackStartFrameNumber        no
0018,3104   IVUSPullbackStopFrameNumber         no
0018,3105   LesionNumber                        no
0018,4000   AcquisitionComments                 no
0018,5000   OutputPower                         no
0018,5010   TransducerData                      no
0018,5012   FocusDepth                          no
0018,5020   ProcessingFunction                  no
0018,5021   PostprocessingFunction              no
0018,5022   MechanicalIndex                     no
0018,5024   BoneThermalIndex                    no
0018,5026   CranialThermalIndex                 no
0018,5027   SoftTissueThermalIndex              no
0018,5028   SoftTissueFocusThermalIndex         no
0018,5029   SoftTissueSurfaceThermalIndex       no
0018,5030   DynamicRange                        no
0018,5040   TotalGain                           no
0018,5050   DepthOfScanField                    no
0018,5100   PatientPosition                     no
0018,5101   ViewPosition                        no
0018,5104   ProjectionEponymousNameCodeSeq      no
0018,5210   ImageTransformationMatrix           no
0018,5212   ImageTranslationVector              no
0018,6000   Sensitivity                         no
0018,6011   SequenceOfUltrasoundRegions         no
0018,6012   RegionSpatialFormat                 no
0018,6014   RegionDataType                      no
0018,6016   RegionFlags                         no
0018,6018   RegionLocationMinX0                 no
0018,601A   RegionLocationMinY0                 no
0018,601C   RegionLocationMaxX1                 no
0018,601E   RegionLocationMaxY1                 no
0018,6020   ReferencePixelX0                    no
0018,6022   ReferencePixelY0                    no
0018,6024   PhysicalUnitsXDirection             no
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0018,6026   PhysicalUnitsYDirection            no
0018,6028   ReferencePixelPhysicalValueX       no
0018,602A   ReferencePixelPhysicalValueY       no
0018,602C   PhysicalDeltaX                     no
0018,602E   PhysicalDeltaY                     no
0018,6030   TransducerFrequency                no
0018,6031   TransducerType                     no
0018,6032   PulseRepetitionFrequency           no
0018,6034   DopplerCorrectionAngle             no
0018,6036   SteeringAngle                      no
0018,6038   DopplerSampleVolumeXPosRetired     no
0018,6039   DopplerSampleVolumeXPosition       no
0018,603A   DopplerSampleVolumeYPosRetired     no
0018,603B   DopplerSampleVolumeYPosition       no
0018,603C   TMLinePositionX0Retired            no
0018,603D   TMLinePositionX0                   no
0018,603E   TMLinePositionY0Retired            no
0018,603F   TMLinePositionY0                   no
0018,6040   TMLinePositionX1Retired            no
0018,6041   TMLinePositionX1                   no
0018,6042   TMLinePositionY1Retired            no
0018,6043   TMLinePositionY1                   no
0018,6044   PixelComponentOrganization         no
0018,6046   PixelComponentMask                 no
0018,6048   PixelComponentRangeStart           no
0018,604A   PixelComponentRangeStop            no
0018,604C   PixelComponentPhysicalUnits        no
0018,604E   PixelComponentDataType             no
0018,6050   NumberOfTableBreakPoints           no
0018,6052   TableOfXBreakPoints                no
0018,6054   TableOfYBreakPoints                no
0018,6056   NumberOfTableEntries               no
0018,6058   TableOfPixelValues                 no
0018,605A   TableOfParameterValues             no
0018,6060   RWaveTimeVector                    no
0018,7000   DetectorConditionsNominalFlag      no
0018,7001   DetectorTemperature                no
0018,7004   DetectorType                       no
0018,7005   DetectorConfiguration              no
0018,7006   DetectorDescription                no
0018,7008   DetectorMode                       no
0018,700A   DetectorID                         no
0018,700C   DateOfLastDetectorCalibration      no
0018,700E   TimeOfLastDetectorCalibration      no
0018,7010   DetectorExposuresSinceCalibration  no
0018,7011   DetectorExposuresSinceManufactured no
0018,7012   DetectorTimeSinceLastExposure      no
0018,7014   DetectorActiveTime                 no
0018,7016   DetectorActiveOffsetFromExposure   no
0018,701A   DetectorBinning                    no
0018,7020   DetectorElementPhysicalSize        no
0018,7022   DetectorElementSpacing             no
0018,7024   DetectorActiveShape                no
0018,7026   DetectorActiveDimensions           no
0018,7028   DetectorActiveOrigin               no
0018,702A   DetectorManufacturerName           no
0018,702B   DetectorManufacturersModelName     no
0018,7030   FieldOfViewOrigin                  no
0018,7032   FieldOfViewRotation                no
0018,7034   FieldOfViewHorizontalFlip          no
0018,7040   GridAbsorbingMaterial              no
0018,7041   GridSpacingMaterial                no
0018,7042   GridThickness                      no
0018,7044   GridPitch                          no
0018,7046   GridAspectRatio                    no
0018,7048   GridPeriod                         no
0018,704C   GridFocalDistance                  no
0018,7050   FilterMaterial                     no
0018,7052   FilterThicknessMinimum             no
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0018,7060   ExposureControlMode                   no
0018,7062   ExposureControlModeDescription        no
0018,7064   ExposureStatus                        no
0018,7065   PhototimerSetting                     no
0018,8150   ExposureTimeInMicroSec                no
0018,8151   XRayTubeCurrentInMicroAmps            no
0018,9004   ContentQualification                  no
0018,9005   PulseSequenceName                     no
0018,9006   MRImagingModifierSequence             no
0018,9008   EchoPulseSequence                     no
0018,9009   InversionRecovery                     no
0018,9010   FlowCompensation                      no
0018,9011   MultipleSpinEcho                      no
0018,9012   MultiPlanarExcitation                 no
0018,9014   PhaseContrast                         no
0018,9015   TimeOfFlightContrast                  no
0018,9016   Spoiling                              no
0018,9017   SteadyStatePulseSequence              no
0018,9018   EchoPlanarPulseSequence               no
0018,9019   TagAngleFirstAxis                     no
0018,9020   MagnetizationTransfer                 no
0018,9021   T2Preparation                         no
0018,9022   BloodSignalNulling                    no
0018,9024   SaturationRecovery                    no
0018,9025   SpectrallySelectedSuppression         no
0018,9026   SpectrallySelectedExcitation          no
0018,9027   SpatialPresaturation                  no
0018,9028   Tagging                               no
0018,9029   OversamplingPhase                     no
0018,9030   TagSpacingFirstDimension              no
0018,9032   GeometryOfKSpaceTraversal             no
0018,9033   SegmentedKSpaceTraversal              no
0018,9034   RectilinearPhaseEncodeReordering      no
0018,9035   TagThickness                          no
0018,9036   PartialFourierDirection               no
0018,9037   CardiacSynchronizationTechnique       no
0018,9041   ReceiveCoilManufacturerName           no
0018,9042   MRReceiveCoilSequence                 no
0018,9043   ReceiveCoilType                       no
0018,9044   QuadratureReceiveCoil                 no
0018,9045   MultiCoilDefinitionSequence           no
0018,9046   MultiCoilConfiguration                no
0018,9047   MultiCoilElementName                  no
0018,9048   MultiCoilElementUsed                  no
0018,9049   MRTransmitCoilSequence                no
0018,9050   TransmitCoilManufacturerName          no
0018,9051   TransmitCoilType                       no
0018,9052   SpectralWidth                         no
0018,9053   ChemicalShiftReference                no
0018,9054   VolumeLocalizationTechnique           no
0018,9058   MRAcquisitionFrequencyEncodeSteps     no
0018,9059   Decoupling                            no
0018,9060   DecoupledNucleus                      no
0018,9061   DecouplingFrequency                   no
0018,9062   DecouplingMethod                      no
0018,9063   DecouplingChemicalShiftReference      no
0018,9064   KSpaceFiltering                       no
0018,9065   TimeDomainFiltering                   no
0018,9066   NumberOfZeroFills                     no
0018,9067   BaselineCorrection                    no
0018,9069   ParallelReductionFactorInPlane        no
0018,9070   CardiacRRIntervalSpecified            no
0018,9073   AcquisitionDuration                   no
0018,9074   FrameAcquisitionDateTime              no
0018,9075   DiffusionDirectionality               no
0018,9076   DiffusionGradientDirectionSequence    no
0018,9077   ParallelAcquisition                   no
0018,9078   ParallelAcquisitionTechnique          no
0018,9079   InversionTimes                        no
0018,9080   MetaboliteMapDescription              no
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0018,9081   PartialFourier                         no
0018,9082   EffectiveEchoTime                      no
0018,9083   MetaboliteMapCodeSequence              no
0018,9084   ChemicalShiftSequence                  no
0018,9085   CardiacSignalSource                    no
0018,9087   DiffusionBValue                        no
0018,9089   DiffusionGradientOrientation           no
0018,9090   VelocityEncodingDirection              no
0018,9091   VelocityEncodingMinimumValue           no
0018,9093   NumberOfKSpaceTrajectories             no
0018,9094   CoverageOfKSpace                       no
0018,9095   SpectroscopyAcquisitionPhaseRows       no
0018,9096   ParallelReductFactorInPlaneRetired     no
0018,9098   TransmitterFrequency                   no
0018,9100   ResonantNucleus                        no
0018,9101   FrequencyCorrection                    no
0018,9103   MRSpectroscopyFOV-GeometrySequence     no
0018,9104   SlabThickness                          no
0018,9105   SlabOrientation                        no
0018,9106   MidSlabPosition                        no
0018,9107   MRSpatialSaturationSequence            no
0018,9112   MRTimingAndRelatedParametersSeq        no
0018,9114   MREchoSequence                         no
0018,9115   MRModifierSequence                     no
0018,9117   MRDiffusionSequence                    no
0018,9118   CardiacTriggerSequence                 no
0018,9119   MRAveragesSequence                     no
0018,9125   MRFOV-GeometrySequence                 no
0018,9126   VolumeLocalizationSequence             no
0018,9127   SpectroscopyAcquisitionDataColumns     no
0018,9147   DiffusionAnisotropyType                no
0018,9151   FrameReferenceDateTime                 no
0018,9152   MRMetaboliteMapSequence                no
0018,9155   ParallelReductionFactorOutOfPlane      no
0018,9159   SpectroscopyOutOfPlanePhaseSteps       no
0018,9166   BulkMotionStatus                       no
0018,9168   ParallelReductionFactSecondInPlane     no
0018,9169   CardiacBeatRejectionTechnique          no
0018,9170   RespiratoryMotionCompTechnique         no
0018,9171   RespiratorySignalSource                no
0018,9172   BulkMotionCompensationTechnique        no
0018,9173   BulkMotionSignalSource                 no
0018,9174   ApplicableSafetyStandardAgency         no
0018,9175   ApplicableSafetyStandardDescr          no
0018,9176   OperatingModeSequence                  no
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0018,9179   SpecificAbsorptionRateDefinition       no
0018,9180   GradientOutputType                     no
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0018,9182   GradientOutput                         no
0018,9183   FlowCompensationDirection              no
0018,9184   TaggingDelay                           no
0018,9185   RespiratoryMotionCompTechDescr         no
0018,9186   RespiratorySignalSourceID              no
0018,9195   ChemicalShiftsMinIntegrateLimitHz      no
0018,9196   ChemicalShiftsMaxIntegrateLimitHz      no
0018,9197   MRVelocityEncodingSequence             no
0018,9198   FirstOrderPhaseCorrection              no
0018,9199   WaterReferencedPhaseCorrection         no
0018,9200   MRSpectroscopyAcquisitionType          no
0018,9214   RespiratoryCyclePosition               no
0018,9217   VelocityEncodingMaximumValue           no
0018,9218   TagSpacingSecondDimension              no
0018,9219   TagAngleSecondAxis                     no
0018,9220   FrameAcquisitionDuration               no
0018,9226   MRImageFrameTypeSequence               no
0018,9227   MRSpectroscopyFrameTypeSequence        no
0018,9231   MRAcqPhaseEncodingStepsInPlane         no
0018,9232   MRAcqPhaseEncodingStepsOutOfPlane      no
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0018,9234   SpectroscopyAcqPhaseColumns        no
0018,9236   CardiacCyclePosition               no
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0018,9241   GradientEchoTrainLength            no
0018,9295   ChemicalShiftsMinIntegrateLimitPPM no
0018,9296   ChemicalShiftsMaxIntegrateLimitPPM no
0018,9301   CTAcquisitionTypeSequence          no
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0018,9303   TubeAngle                          no
0018,9304   CTAcquisitionDetailsSequence       no
0018,9305   RevolutionTime                     no
0018,9306   SingleCollimationWidth             no
0018,9307   TotalCollimationWidth              no
0018,9308   CTTableDynamicsSequence            no
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0018,9311   SpiralPitchFactor                  no
0018,9312   CTGeometrySequence                 no
0018,9313   DataCollectionCenterPatient        no
0018,9314   CTReconstructionSequence           no
0018,9315   ReconstructionAlgorithm            no
0018,9316   ConvolutionKernelGroup             no
0018,9317   ReconstructionFieldOfView          no
0018,9318   ReconstructionTargetCenterPatient  no
0018,9319   ReconstructionAngle                no
0018,9320   ImageFilter                        no
0018,9321   CTExposureSequence                 no
0018,9322   ReconstructionPixelSpacing         no
0018,9323   ExposureModulationType             no
0018,9324   EstimatedDoseSaving                no
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0018,9326   CTPositionSequence                 no
0018,9327   TablePosition                      no
0018,9328   ExposureTimeInMilliSec             no
0018,9329   CTImageFrameTypeSequence           no
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0018,9332   ExposureInMilliAmpSec              no
0018,9333   ConstantVolumeFlag                 no
0018,9334   FluoroscopyFlag                    no
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0018,9337   ContrastBolusAgentNumber           no
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0018,9340   ContrastAdministrationProfileSeq   no
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0018,9346   CTDIPhantomTypeCodeSequence        no
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0018,9352   CalciumScoringMassFactorDevice     no
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0018,9403   DistanceObjectToTableTop           no
0018,9404   ObjectPixelSpacingInCenterOfBeam   no
0018,9405   PositionerPositionSequence         no
0018,9406   TablePositionSequence              no
0018,9407   CollimatorShapeSequence            no
0018,9412   XA-XRFFrameCharacteristicsSequence no
0018,9417   FrameAcquisitionSequence           no
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0018,9424   AcquisitionProtocolDescription     no
0018,9425   ContrastBolusIngredientOpaque      no
0018,9426   DistanceReceptorPlaneToDetHousing  no
0018,9427   IntensifierActiveShape             no
0018,9428   IntensifierActiveDimensions        no
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0018,9429   PhysicalDetectorSize                 no
0018,9430   PositionOfIsocenterProjection        no
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0018,9433   FieldOfViewDescription               no
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0018,9435   ExposureControlSensingRegionShape     no
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0018,9437   ExposureControlSensRegionRightEdge    no
0018,9440   CenterOfCircExposControlSensRegion    no
0018,9441   RadiusOfCircExposControlSensRegion    no
0018,9447   ColumnAngulationPatient               no
0018,9449   BeamAngle                             no
0018,9451   FrameDetectorParametersSequence       no
0018,9452   CalculatedAnatomyThickness            no
0018,9455   CalibrationSequence                   no
0018,9456   ObjectThicknessSequence               no
0018,9457   PlaneIdentification                   no
0018,9461   FieldOfViewDimensionsInFloat          no
0018,9462   IsocenterReferenceSystemSequence      no
0018,9463   PositionerIsocenterPrimaryAngle       no
0018,9464   PositionerIsocenterSecondaryAngle     no
0018,9465   PositionerIsocenterDetRotAngle        no
0018,9466   TableXPositionToIsocenter             no
0018,9467   TableYPositionToIsocenter             no
0018,9468   TableZPositionToIsocenter             no
0018,9469   TableHorizontalRotationAngle          no
0018,9470   TableHeadTiltAngle                    no
0018,9471   TableCradleTiltAngle                  no
0018,9472   FrameDisplayShutterSequence           no
0018,9473   AcquiredImageAreaDoseProduct          no
0018,9474   CArmPositionerTabletopRelationship    no
0018,9476   XRayGeometrySequence                  no
0018,9477   IrradiationEventIDSequence            no
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0018,9506   ContributingSourcesSequence           no
0018,9507   XRay3DAcquisitionSequence             no
0018,9508   PrimaryPositionerScanArc              no
0018,9509   SecondaryPositionerScanArc            no
0018,9510   PrimaryPositionerScanStartAngle       no
0018,9511   SecondaryPositionerScanStartAngle     no
0018,9514   PrimaryPositionerIncrement            no
0018,9515   SecondaryPositionerIncrement          no
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0018,9604   DiffusionBValueXZ                     no
0018,9605   DiffusionBValueYY                     no
0018,9606   DiffusionBValueYZ                     no
0018,9607   DiffusionBValueZZ                     no
0018,9701   DecayCorrectionDateTime               no
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0018,9722   TerminationTimeThreshold              no
0018,9725   DetectorGeometry                      no
0018,9727   AxialDetectorDimension                no
0018,9735   PETPositionSequence                   no
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0018,9759  AttenuationCorrected             no
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0018,9765  RandomsCorrected                 no
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0018,9801  DepthsOfFocus                    no
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0018,9805  ExclusionDuration                no
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0018,9808  DataType                         no
0018,980B  AliasedDataType                  no
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0019,1012  LastPseq                         no
0019,1013  StartNumberForBaseline           no
0019,1014  EndNumberForBaseline             no
0019,1015  StartNumberForEnhancedScans      no
0019,1016  EndNumberForEnhancedScans        no
0019,1017  SeriesPlane                      no
0019,1018  FirstScanRas                     no
0019,1019  FirstScanLocation                no
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0019,101B  LastScanLoc                      no
0019,101E  DisplayFieldOfView               no
0019,1023  TableSpeed                       no
0019,1024  MidScanTime                      no
0019,1025  MidScanFlag                      no
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0019,1027  GantryPeriod                     no
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0019,102B  XRayOffPosition                  no
0019,102C  NumberOfTriggers                 no
0019,102E  AngleOfFirstView                 no
0019,102F  TriggerFrequency                 no
0019,1039  ScanFOVType                      no
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0019,1041  ComputeType                      no
0019,1042  SegmentNumber                    no
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0019,1044  InterscanDelay                   no
0019,1047  ViewCompressionFactor            no
0019,104A  TotalNoOfRefChannels             no
0019,104B  DataSizeForScanData              no
0019,1052  ReconPostProcflag                no
0019,1057  CTWaterNumber                    no
0019,1058  CTBoneNumber                     no
0019,105A  AcquisitionDuration              no
0019,105E  NumberOfChannels                 no
0019,105F  IncrementBetweenChannels         no
0019,1060  StartingView                     no
0019,1061  NumberOfViews                    no
0019,1062  IncrementBetweenViews            no
0019,106A  DependantOnNoViewsProcessed      no
0019,106B  FieldOfViewInDetectorCells       no
0019,1070  ValueOfBackProjectionButton      no
0019,1071  SetIfFatqEstimatesWereUsed       no
0019,1072  ZChanAvgOverViews                no
0019,1073  AvgOfLeftRefChansOverViews       no
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0019,1075  AvgOfRightRefChansOverViews      no
0019,1076  MaxRightChanOverViews            no
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0019,107E  NumberOfEchoes                       no
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0019,1087  CardiacRepetitionTime                no
0019,1088  ImagesPerCardiacCycle                no
0019,108A  ActualReceiveGainAnalog              no
0019,108B  ActualReceiveGainDigital             no
0019,108D  DelayAfterTrigger                    no
0019,108F  Swappf                               no
0019,1090  PauseInterval                        no
0019,1091  PulseTime                            no
0019,1092  SliceOffsetOnFreqAxis                no
0019,1093  CenterFrequency                      no
0019,1094  TransmitGain                         no
0019,1095  AnalogReceiverGain                   no
0019,1096  DigitalReceiverGain                  no
0019,1097  BitmapDefiningCVs                    no
0019,1098  CenterFreqMethod                     no
0019,109B  PulseSeqMode                         no
0019,109C  PulseSeqName                         no
0019,109D  PulseSeqDate                         no
0019,109E  InternalPulseSeqName                 no
0019,109F  TransmittingCoil                     no
0019,10A0  SurfaceCoilType                      no
0019,10A1  ExtremityCoilFlag                    no
0019,10A2  RawDataRunNumber                     no
0019,10A3  CalibratedFieldStrength              no
0019,10A4  SATFatWaterBone                      no
0019,10A5  ReceiveBandwidth                     no
0019,10A7  UserData01                           no
0019,10A8  UserData02                           no
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0019,10AA  UserData04                           no
0019,10AB  UserData05                           no
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0019,10AD  UserData07                           no
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0019,10BC  UserData22                           no
0019,10BD  UserData23                           no
0019,10BE  ProjectionAngle                      no
0019,10C0  SaturationPlanes                     no
0019,10C1  SurfaceCoilIntensity                 no
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0019,10C3  SATLocationL                         no
0019,10C4  SATLocationA                         no
0019,10C5  SATLocationP                         no
0019,10C6  SATLocationH                         no
0019,10C7  SATLocationF                         no
0019,10C8  SATThicknessR-L                      no
0019,10C9  SATThicknessA-P                      no
0019,10CA  SATThicknessH-F                      no
0019,10CB  PrescribedFlowAxis                   no
0019,10CC  VelocityEncoding                     no
0019,10CD  ThicknessDisclaimer                  no
0019,10CE  PrescanType                          no
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0019,10CF  PrescanStatus                         no
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0019,10D3  ProjectionAlgorithm                   no
0019,10D5  FractionalEcho                        no
0019,10D6  PrepPulse                             no
0019,10D7  CardiacPhases                         no
0019,10D8  VariableEchoflag                      no
0019,10D9  ConcatenatedSAT                       no
0019,10DA  ReferenceChannelUsed                  no
0019,10DB  BackProjectorCoefficient              no
0019,10DC  PrimarySpeedCorrectionUsed            no
0019,10DD  OverrangeCorrectionUsed               no
0019,10DE  DynamicZAlphaValue                    no
0019,10DF  UserData                              no
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0019,10E2  VelocityEncodeScale                   no
0019,10F2  FastPhases                            no
0019,10F9  TransmissionGain                      no
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0020,1002  ImagesInAcquisition                   no
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0020,1204  NumberOfPatientRelatedInstances       no
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0021,1007   SeriesRecordChecksum                no
0021,1018   GenesisVersionNow                   no
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0021,1035   SeriesFromWhichPrescribed           no
0021,1036   ImageFromWhichPrescribed            no
0021,1037   ScreenFormat                        no
0021,104A   AnatomicalReferenceForScout         no
0021,104F   LocationsInAcquisition              no
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0021,1092  BiopsyTLocation                      no
0021,1093  BiopsyRefLocation                    no
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0022,0006  PatientEyeMovementCommandCodeSeq     no
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0022,0008  CylinderLensPower                    no
0022,0009  CylinderAxis                         no
0022,000A  EmmetropicMagnification              no
0022,000B  IntraOcularPressure                  no
0022,000C  HorizontalFieldOfView                no
0022,000D  PupilDilated                         no
0022,000E  DegreeOfDilation                     no
0022,0010  StereoBaselineAngle                  no
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0022,0013  StereoVerticalPixelOffset            no
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0022,001C  MydriaticAgentCodeSequence           no
0022,001D  RelativeImagePositionCodeSequence    no
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0022,0022  RightImageSequence                   no
0022,0030  AxialLengthOfTheEye                  no
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0022,0037  AlongScanSpatialResolution           no
0022,0038  MaximumAlongScanDistortion           no
0022,0039  OphthalmicImageOrientation           no
0022,0041  DepthOfTransverseImage               no
0022,0042  MydriaticAgentConcUnitsSeq           no
0022,0048  AcrossScanSpatialResolution          no
0022,0049  MaximumAcrossScanDistortion          no
0022,004E  MydriaticAgentConcentration          no
0022,0055  IlluminationWaveLength               no
0022,0056  IlluminationPower                    no
0022,0057  IlluminationBandwidth                no
0022,0058  MydriaticAgentSequence               no
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0023,1050  SummaryImage                         no
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0023,1074  NoofUpdatesToHeader                     no
0023,107D  IndicatesIfTheStudyHasCompleteInfo      no
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0025,1011  NumberOfAcquisitions                    no
0025,1014  IndicatesNoofUpdatesToHeader            no
0025,1017  SeriesCompleteFlag                      no
0025,1018  NumberOfImagesArchived                  no
0025,1019  LastImageNumberUsed                     no
0025,101A  PrimaryReceiverSuiteAndHost             no
0027,1006  ImageArchiveFlag                        no
0027,1010  ScoutType                               no
0027,101C  VmaMamp                                 no
0027,101D  VmaPhase                                no
0027,101E  VmaMod                                  no
0027,101F  VmaClip                                 no
0027,1020  SmartScanOnOffFlag                      no
0027,1030  ForeignImageRevision                    no
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0027,1033  ImagingOptions                          no
0027,1035  PlaneType                               no
0027,1036  ObliquePlane                            no
0027,1040  RASLetterOfImageLocation                no
0027,1041  ImageLocation                           no
0027,1042  CenterRCoordOfPlaneImage                no
0027,1043  CenterACoordOfPlaneImage                no
0027,1044  CenterSCoordOfPlaneImage                no
0027,1045  NormalRCoord                            no
0027,1046  NormalACoord                            no
0027,1047  NormalSCoord                            no
0027,1048  RCoordOfTopRightCorner                  no
0027,1049  ACoordOfTopRightCorner                  no
0027,104A  SCoordOfTopRightCorner                  no
0027,104B  RCoordOfBottomRightCorner               no
0027,104C  ACoordOfBottomRightCorner               no
0027,104D  SCoordOfBottomRightCorner               no
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0027,1051  TableEndLocation                        no
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0027,1053  RASLetterForAnteriorPosterior           no
0027,1054  RASLetterForScoutStartLoc               no
0027,1055  RASLetterForScoutEndLoc                 no
0027,1060  ImageDimensionX                         no
0027,1061  ImageDimensionY                         no
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0028,0002  SamplesPerPixel                         no
0028,0003  SamplesPerPixelUsed                     no
0028,0004  PhotometricInterpretation               no
0028,0005  ImageDimensions                         no
0028,0006  PlanarConfiguration                     no
0028,0008  NumberOfFrames                          no
0028,0009  FrameIncrementPointer                   no
0028,000A  FrameDimensionPointer                   no
0028,0010  Rows                                    no
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0028,0012  Planes                                  no
0028,0014  UltrasoundColorDataPresent              no
0028,0030  PixelSpacing                            no
0028,0031  ZoomFactor                              no
0028,0032  ZoomCenter                              no
0028,0034  PixelAspectRatio                        no
0028,0040  ImageFormat                             no
0028,0050  ManipulatedImage                        no
0028,0051  CorrectedImage                          no
0028,005F  CompressionRecognitionCode              no
0028,0060  CompressionCode                         no
0028,0061  CompressionOriginator                   no
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0028,0062	CompressionLabel	no
0028,0063	CompressionDescription	no
0028,0065	CompressionSequence	no
0028,0066	CompressionStepPointers	no
0028,0068	RepeatInterval	no
0028,0069	BitsGrouped	no
0028,0070	PerimeterTable	no
0028,0071	PerimeterValue	no
0028,0080	PredictorRows	no
0028,0081	PredictorColumns	no
0028,0082	PredictorConstants	no
0028,0090	BlockedPixels	no
0028,0091	BlockRows	no
0028,0092	BlockColumns	no
0028,0093	RowOverlap	no
0028,0094	ColumnOverlap	no
0028,0100	BitsAllocated	no
0028,0101	BitsStored	no
0028,0102	HighBit	no
0028,0103	PixelRepresentation	no
0028,0104	SmallestValidPixelValue	no
0028,0105	LargestValidPixelValue	no
0028,0106	SmallestImagePixelValue	no
0028,0107	LargestImagePixelValue	no
0028,0108	SmallestPixelValueInSeries	no
0028,0109	LargestPixelValueInSeries	no
0028,0110	SmallestImagePixelValueInPlane	no
0028,0111	LargestImagePixelValueInPlane	no
0028,0120	PixelPaddingValue	no
0028,0121	PixelPaddingRangeLimit	no
0028,0200	ImageLocation	no
0028,0300	QualityControlImage	no
0028,0301	BurnedInAnnotation	no
0028,0400	TransformLabel	no
0028,0401	TransformVersionNumber	no
0028,0402	NumberOfTransformSteps	no
0028,0403	SequenceOfCompressedData	no
0028,0404	DetailsOfCoefficients	no
0028,04x2	CoefficientCoding	no
0028,04x3	CoefficientCodingPointers	no
0028,0700	DCTLabel	no
0028,0701	DataBlockDescription	no
0028,0702	DataBlock	no
0028,0710	NormalizationFactorFormat	no
0028,0720	ZonalMapNumberFormat	no
0028,0721	ZonalMapLocation	no
0028,0722	ZonalMapFormat	no
0028,0730	AdaptiveMapFormat	no
0028,0740	CodeNumberFormat	no
0028,08x0	CodeLabel	no
0028,08x2	NumberOfTables	no
0028,08x3	CodeTableLocation	no
0028,08x4	BitsForCodeWord	no
0028,08x8	ImageDataLocation	no
0028,0A02	PixelSpacingCalibrationType	no
0028,0A04	PixelSpacingCalibrationDescription	no
0028,1040	PixelIntensityRelationship	no
0028,1041	PixelIntensityRelationshipSign	no
0028,1050	WindowCenter	no
0028,1051	WindowWidth	no
0028,1052	RescaleIntercept	no
0028,1053	RescaleSlope	no
0028,1054	RescaleType	no
0028,1055	WindowCenterAndWidthExplanation	no
0028,1056	VOI_LUTFunction	no
0028,1080	GrayScale	no
0028,1090	RecommendedViewingMode	no
0028,1100	GrayLookupTableDescriptor	no
0028,1101	RedPaletteColorTableDescriptor	no
0028,1102	GreenPaletteColorTableDescriptor	

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0028,1103   BluePaletteColorTableDescriptor      no
0028,1111   LargeRedPaletteColorTableDescr       no
0028,1112   LargeGreenPaletteColorTableDescr     no
0028,1113   LargeBluePaletteColorTableDescr      no
0028,1199   PaletteColorTableUID                 no
0028,1200   GrayLookupTableData                  no
0028,1201   RedPaletteColorTableData             no
0028,1202   GreenPaletteColorTableData           no
0028,1203   BluePaletteColorTableData            no
0028,1211   LargeRedPaletteColorTableData        no
0028,1212   LargeGreenPaletteColorTableData      no
0028,1213   LargeBluePaletteColorTableData       no
0028,1214   LargePaletteColorLookupTableUID      no
0028,1221   SegmentedRedColorTableData           no
0028,1222   SegmentedGreenColorTableData         no
0028,1223   SegmentedBlueColorTableData          no
0028,1300   BreastImplantPresent                 no
0028,1350   PartialView                          no
0028,1351   PartialViewDescription               no
0028,1352   PartialViewCodeSequence              no
0028,135A   SpatialLocationsPreserved            no
0028,1402   DataPathAssignment                   no
0028,1404   BlendingLUT1Sequence                 no
0028,1406   BlendingWeightConstant               no
0028,1408   BlendingLookupTableData              no
0028,140C   BlendingLUT2Sequence                 no
0028,140E   DataPathID                           no
0028,140F   RGBLUTTransferFunction               no
0028,1410   AlphaLUTTransferFunction             no
0028,2000   ICCProfile                           no
0028,2110   LossyImageCompression                no
0028,2112   LossyImageCompressionRatio           no
0028,2114   LossyImageCompressionMethod          no
0028,3000   ModalityLUTSequence                  no
0028,3002   LUTDescriptor                        no
0028,3003   LUTExplanation                       no
0028,3004   ModalityLUTType                      no
0028,3006   LUTData                              no
0028,3010   VOILUTSequence                       no
0028,3110   SoftcopyVOILUTSequence               no
0028,4000   ImagePresentationComments            no
0028,5000   BiPlaneAcquisitionSequence           no
0028,6010   RepresentativeFrameNumber            no
0028,6020   FrameNumbersOfInterest               no
0028,6022   FrameOfInterestDescription           no
0028,6023   FrameOfInterestType                  no
0028,6030   MaskPointers                         no
0028,6040   RWavePointer                         no
0028,6100   MaskSubtractionSequence              no
0028,6101   MaskOperation                        no
0028,6102   ApplicableFrameRange                 no
0028,6110   MaskFrameNumbers                     no
0028,6112   ContrastFrameAveraging               no
0028,6114   MaskSubPixelShift                    no
0028,6120   TIDOffset                            no
0028,6190   MaskOperationExplanation             no
0028,7FE0   PixelDataProviderURL                 no
0028,9001   DataPointRows                        no
0028,9002   DataPointColumns                     no
0028,9003   SignalDomainColumns                  no
0028,9099   LargestMonochromePixelValue          no
0028,9108   DataRepresentation                   no
0028,9110   PixelMeasuresSequence                no
0028,9132   FrameVOILUTSequence                  no
0028,9145   PixelValueTransformationSequence     no
0028,9235   SignalDomainRows                     no
0028,9411   DisplayFilterPercentage              no
0028,9415   FramePixelShiftSequence              no
0028,9416   SubtractionItemID                    no
0028,9422   PixelIntensityRelationshipLUTSeq     no
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0028,9443	FramePixelDataPropertiesSequence	no
0028,9444	GeometricalProperties	no
0028,9445	GeometricMaximumDistortion	no
0028,9446	ImageProcessingApplied	no
0028,9454	MaskSelectionMode	no
0028,9474	LUTFunction	no
0028,9478	MaskVisibilityPercentage	no
0028,9501	PixelShiftSequence	no
0028,9502	RegionPixelShiftSequence	no
0028,9503	VerticesOfTheRegion	no
0028,9506	PixelShiftFrameRange	no
0028,9507	LUTFrameRange	no
0028,9520	ImageToEquipmentMappingMatrix	no
0028,9537	EquipmentCoordinateSystemID	no
0029,1004	LowerRangeOfPixels1a	no
0029,1005	LowerRangeOfPixels1b	no
0029,1006	LowerRangeOfPixels1c	no
0029,1007	LowerRangeOfPixels1d	no
0029,1008	LowerRangeOfPixels1e	no
0029,1009	LowerRangeOfPixels1f	no
0029,100A	LowerRangeOfPixels1g	no
0029,1015	LowerRangeOfPixels1h	no
0029,1016	LowerRangeOfPixels1i	no
0029,1017	LowerRangeOfPixels2	no
0029,1018	UpperRangeOfPixels2	no
0029,101A	LenOfTotHdrInBytes	no
0029,1026	VersionOfTheHdrStruct	no
0029,1034	AdvantageCompOverflow	no
0029,1035	AdvantageCompUnderflow	no
0032,0000	StudyGroupLength	no
0032,000A	StudyStatusID	no
0032,000C	StudyPriorityID	no
0032,0012	StudyIDIssuer	no
0032,0032	StudyVerifiedDate	no
0032,0033	StudyVerifiedTime	no
0032,0034	StudyReadDate	no
0032,0035	StudyReadTime	no
0032,1000	ScheduledStudyStartDate	no
0032,1001	ScheduledStudyStartTime	no
0032,1010	ScheduledStudyStopDate	no
0032,1011	ScheduledStudyStopTime	no
0032,1020	ScheduledStudyLocation	no
0032,1021	ScheduledStudyLocationAETitle	no
0032,1030	ReasonForStudy	no
0032,1031	RequestingPhysicianIDSequence	no
0032,1032	RequestingPhysician	no
0032,1033	RequestingService	no
0032,1040	StudyArrivalDate	no
0032,1041	StudyArrivalTime	no
0032,1050	StudyCompletionDate	no
0032,1051	StudyCompletionTime	no
0032,1055	StudyComponentStatusID	no
0032,1060	RequestedProcedureDescription	no
0032,1064	RequestedProcedureCodeSequence	no
0032,1070	RequestedContrastAgent	no
0032,4000	StudyComments	no
0038,0004	ReferencedPatientAliasSequence	no
0038,0008	VisitStatusID	no
0038,0010	AdmissionID	no
0038,0011	IssuerOfAdmissionID	no
0038,0016	RouteOfAdmissions	no
0038,001A	ScheduledAdmissionDate	no
0038,001B	ScheduledAdmissionTime	no
0038,001C	ScheduledDischargeDate	no
0038,001D	ScheduledDischargeTime	no
0038,001E	ScheduledPatientInstitResidence	no
0038,0020	AdmittingDate	no
0038,0021	AdmittingTime	no
0038,0030	DischargeDate	no
0038,0032	DischargeTime	no

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0038,0040   DischargeDiagnosisDescription       no
0038,0044   DischargeDiagnosisCodeSequence      no
0038,0050   SpecialNeeds                        no
0038,0060   ServiceEpisodeID                    no
0038,0061   IssuerOfServiceEpisodeID            no
0038,0062   ServiceEpisodeDescription           no
0038,0100   PertinentDocumentsSequence          no
0038,0300   CurrentPatientLocation              no
0038,0400   PatientInstitutionResidence         no
0038,0500   PatientState                        no
0038,0502   PatientClinicalTrialParticipSeq     no
0038,4000   VisitComments                       no
003A,0004   WaveformOriginality                 no
003A,0005   NumberOfWaveformChannels            no
003A,0010   NumberOfWaveformSamples             no
003A,001A   SamplingFrequency                   no
003A,0020   MultiplexGroupLabel                 no
003A,0200   ChannelDefinitionSequence           no
003A,0202   WaveformChannelNumber               no
003A,0203   ChannelLabel                        no
003A,0205   ChannelStatus                       no
003A,0208   ChannelSourceSequence               no
003A,0209   ChannelSourceModifiersSequence      no
003A,020A   SourceWaveformSequence              no
003A,020C   ChannelDerivationDescription        no
003A,0210   ChannelSensitivity                  no
003A,0211   ChannelSensitivityUnitsSequence     no
003A,0212   ChannelSensitivityCorrectionFactor  no
003A,0213   ChannelBaseline                     no
003A,0214   ChannelTimeSkew                     no
003A,0215   ChannelSampleSkew                   no
003A,0218   ChannelOffset                       no
003A,021A   WaveformBitsStored                  no
003A,0220   FilterLowFrequency                  no
003A,0221   FilterHighFrequency                 no
003A,0222   NotchFilterFrequency                no
003A,0223   NotchFilterBandwidth                no
003A,0230   WaveformDataDisplayScale            no
003A,0231   WaveformDisplayBkgCIELabValue       no
003A,0240   WaveformPresentationGroupSequence   no
003A,0241   PresentationGroupNumber             no
003A,0242   ChannelDisplaySequence              no
003A,0244   ChannelRecommendDisplayCIELabValue  no
003A,0245   ChannelPosition                     no
003A,0246   DisplayShadingFlag                  no
003A,0247   FractionalChannelDisplayScale       no
003A,0248   AbsoluteChannelDisplayScale         no
003A,0300   MultiplexAudioChannelsDescrCodeSeq  no
003A,0301   ChannelIdentificationCode           no
003A,0302   ChannelMode                         no
0040,0001   ScheduledStationAETitle             no
0040,0002   ScheduledProcedureStepStartDate     no
0040,0003   ScheduledProcedureStepStartTime     no
0040,0004   ScheduledProcedureStepEndDate       no
0040,0005   ScheduledProcedureStepEndTime       no
0040,0006   ScheduledPerformingPhysiciansName   no
0040,0007   ScheduledProcedureStepDescription   no
0040,0008   ScheduledProtocolCodeSequence       no
0040,0009   ScheduledProcedureStepID            no
0040,000A   StageCodeSequence                   no
0040,000B   ScheduledPerformingPhysicianIDSeq   no
0040,0010   ScheduledStationName                no
0040,0011   ScheduledProcedureStepLocation      no
0040,0012   PreMedication                       no
0040,0020   ScheduledProcedureStepStatus        no
0040,0031   LocalNamespaceEntityID              no
0040,0032   UniversalEntityID                   no
0040,0033   UniversalEntityIDType               no
0040,0035   IdentifierTypeCode                  no
0040,0036   AssigningFacilitySequence           no
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0040,0100    ScheduledProcedureStepSequence        no
0040,0220    ReferencedNonImageCompositeSOPSeq      no
0040,0241    PerformedStationAETitle                no
0040,0242    PerformedStationName                   no
0040,0243    PerformedLocation                      no
0040,0244    PerformedProcedureStepStartDate        no
0040,0245    PerformedProcedureStepStartTime        no
0040,0250    PerformedProcedureStepEndDate          no
0040,0251    PerformedProcedureStepEndTime          no
0040,0252    PerformedProcedureStepStatus           no
0040,0253    PerformedProcedureStepID               no
0040,0254    PerformedProcedureStepDescription      no
0040,0255    PerformedProcedureTypeDescription      no
0040,0260    PerformedProtocolCodeSequence          no
0040,0261    PerformedProtocolType                  no
0040,0270    ScheduledStepAttributesSequence        no
0040,0275    RequestAttributesSequence              no
0040,0280    CommentsOnPerformedProcedureStep       no
0040,0281    ProcStepDiscontinueReasonCodeSeq       no
0040,0293    QuantitySequence                       no
0040,0294    Quantity                               no
0040,0295    MeasuringUnitsSequence                 no
0040,0296    BillingItemSequence                    no
0040,0300    TotalTimeOfFluoroscopy                 no
0040,0301    TotalNumberOfExposures                 no
0040,0302    EntranceDose                           no
0040,0303    ExposedArea                            no
0040,0306    DistanceSourceToEntrance               no
0040,0307    DistanceSourceToSupport                no
0040,030E    ExposureDoseSequence                   no
0040,0310    CommentsOnRadiationDose                no
0040,0312    XRayOutput                             no
0040,0314    HalfValueLayer                         no
0040,0316    OrganDose                              no
0040,0318    OrganExposed                           no
0040,0320    BillingProcedureStepSequence           no
0040,0321    FilmConsumptionSequence                no
0040,0324    BillingSuppliesAndDevicesSequence      no
0040,0330    ReferencedProcedureStepSequence        no
0040,0340    PerformedSeriesSequence                no
0040,0400    CommentsOnScheduledProcedureStep       no
0040,0440    ProtocolContextSequence                no
0040,0441    ContentItemModifierSequence            no
0040,050A    SpecimenAccessionNumber                no
0040,0512    ContainerIdentifier                    no
0040,051A    ContainerDescription                   no
0040,0550    SpecimenSequence                       no
0040,0551    SpecimenIdentifier                     no
0040,0552    SpecimenDescriptionSequenceTrial       no
0040,0553    SpecimenDescriptionTrial               no
0040,0554    SpecimenUID                            no
0040,0555    AcquisitionContextSequence             no
0040,0556    AcquisitionContextDescription          no
0040,059A    SpecimenTypeCodeSequence               no
0040,0600    SpecimenShortDescription               no
0040,06FA    SlideIdentifier                        no
0040,071A    ImageCenterPointCoordinatesSeq         no
0040,072A    XOffsetInSlideCoordinateSystem         no
0040,073A    YOffsetInSlideCoordinateSystem         no
0040,074A    ZOffsetInSlideCoordinateSystem         no
0040,08D8    PixelSpacingSequence                   no
0040,08DA    CoordinateSystemAxisCodeSequence       no
0040,08EA    MeasurementUnitsCodeSequence           no
0040,09F8    VitalStainCodeSequenceTrial            no
0040,1001    RequestedProcedureID                   no
0040,1002    ReasonForRequestedProcedure            no
0040,1003    RequestedProcedurePriority             no
0040,1004    PatientTransportArrangements           no
0040,1005    RequestedProcedureLocation             no
0040,1006    PlacerOrderNumber-Procedure            no
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0040,1007  FillerOrderNumber-Procedure       no
0040,1008  ConfidentialityCode               no
0040,1009  ReportingPriority                 no
0040,100A  ReasonForRequestedProcedureCodeSeq no
0040,1010  NamesOfIntendedRecipientsOfResults no
0040,1011  IntendedRecipientsOfResultsIDSeq  no
0040,1101  PersonIdentificationCodeSequence  no
0040,1102  PersonAddress                     no
0040,1103  PersonTelephoneNumbers            no
0040,1400  RequestedProcedureComments        no
0040,2001  ReasonForImagingServiceRequest    no
0040,2004  IssueDateOfImagingServiceRequest  no
0040,2005  IssueTimeOfImagingServiceRequest  no
0040,2006  PlacerOrderNum-ImagingServiceReq  no
0040,2007  FillerOrderNum-ImagingServiceReq  no
0040,2008  OrderEnteredBy                    no
0040,2009  OrderEntererLocation              no
0040,2010  OrderCallbackPhoneNumber          no
0040,2016  PlacerOrderNum-ImagingServiceReq  no
0040,2017  FillerOrderNum-ImagingServiceReq  no
0040,2400  ImagingServiceRequestComments     no
0040,3001  ConfidentialityOnPatientDataDescr no
0040,4001  GenPurposeScheduledProcStepStatus no
0040,4002  GenPurposePerformedProcStepStatus no
0040,4003  GenPurposeSchedProcStepPriority   no
0040,4004  SchedProcessingApplicationsCodeSeq no
0040,4005  SchedProcedureStepStartDateAndTime no
0040,4006  MultipleCopiesFlag                no
0040,4007  PerformedProcessingAppsCodeSeq    no
0040,4009  HumanPerformerCodeSequence        no
0040,4010  SchedProcStepModificationDateTime no
0040,4011  ExpectedCompletionDateAndTime     no
0040,4015  ResultingGenPurposePerfProcStepSeq no
0040,4016  RefGenPurposeSchedProcStepSeq     no
0040,4018  ScheduledWorkitemCodeSequence     no
0040,4019  PerformedWorkitemCodeSequence     no
0040,4020  InputAvailabilityFlag             no
0040,4021  InputInformationSequence          no
0040,4022  RelevantInformationSequence       no
0040,4023  RefGenPurSchedProcStepTransUID    no
0040,4025  ScheduledStationNameCodeSequence  no
0040,4026  ScheduledStationClassCodeSequence no
0040,4027  SchedStationGeographicLocCodeSeq  no
0040,4028  PerformedStationNameCodeSequence  no
0040,4029  PerformedStationClassCodeSequence no
0040,4030  PerformedStationGeogLocCodeSeq    no
0040,4031  RequestedSubsequentWorkItemCodeSeq no
0040,4032  NonDICOMOutputCodeSequence        no
0040,4033  OutputInformationSequence         no
0040,4034  ScheduledHumanPerformersSequence  no
0040,4035  ActualHumanPerformersSequence     no
0040,4036  HumanPerformersOrganization       no
0040,4037  HumanPerformerName                no
0040,4040  RawDataHandling                   no
0040,8302  EntranceDoseInMilliGy             no
0040,9094  RefImageRealWorldValueMappingSeq  no
0040,9096  RealWorldValueMappingSequence     no
0040,9098  PixelValueMappingCodeSequence     no
0040,9210  LUTLabel                          no
0040,9211  RealWorldValueLastValueMapped     no
0040,9212  RealWorldValueLUTData             no
0040,9216  RealWorldValueFirstValueMapped    no
0040,9224  RealWorldValueIntercept           no
0040,9225  RealWorldValueSlope               no
0040,A010  RelationshipType                  no
0040,A027  VerifyingOrganization             no
0040,A030  VerificationDateTime              no
0040,A032  ObservationDateTime               no
0040,A040  ValueType                         no
0040,A043  ConceptNameCodeSequence           no
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0040,A050  ContinuityOfContent                    no
0040,A073  VerifyingObserverSequence              no
0040,A075  VerifyingObserverName                  no
0040,A078  AuthorObserverSequence                 no
0040,A07A  ParticipantSequence                    no
0040,A07C  CustodialOrganizationSequence          no
0040,A080  ParticipationType                      no
0040,A082  ParticipationDateTime                  no
0040,A084  ObserverType                           no
0040,A088  VerifyingObserverIdentCodeSequence     no
0040,A090  EquivalentCDADocumentSequence          no
0040,A0B0  ReferencedWaveformChannels             no
0040,A120  DateTime                               no
0040,A121  Date                                   no
0040,A122  Time                                   no
0040,A123  PersonName                             no
0040,A124  UID                                    no
0040,A130  TemporalRangeType                      no
0040,A132  ReferencedSamplePositions              no
0040,A136  ReferencedFrameNumbers                 no
0040,A138  ReferencedTimeOffsets                  no
0040,A13A  ReferencedDateTime                     no
0040,A160  TextValue                              no
0040,A168  ConceptCodeSequence                    no
0040,A170  PurposeOfReferenceCodeSequence         no
0040,A180  AnnotationGroupNumber                  no
0040,A195  ModifierCodeSequence                   no
0040,A300  MeasuredValueSequence                  no
0040,A301  NumericValueQualifierCodeSequence      no
0040,A30A  NumericValue                           no
0040,A353  AddressTrial                           no
0040,A354  TelephoneNumberTrial                   no
0040,A360  PredecessorDocumentsSequence           no
0040,A370  ReferencedRequestSequence              no
0040,A372  PerformedProcedureCodeSequence         no
0040,A375  CurrentRequestedProcEvidenceSeq        no
0040,A385  PertinentOtherEvidenceSequence         no
0040,A390  HL7StructuredDocumentRefSeq            no
0040,A491  CompletionFlag                         no
0040,A492  CompletionFlagDescription              no
0040,A493  VerificationFlag                       no
0040,A494  ArchiveRequested                       no
0040,A496  PreliminaryFlag                        no
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0040,A525  IdenticalDocumentsSequence             no
0040,A730  ContentSequence                        no
0040,B020  AnnotationSequence                     no
0040,DB00  TemplateIdentifier                     no
0040,DB06  TemplateVersion                        no
0040,DB07  TemplateLocalVersion                   no
0040,DB0B  TemplateExtensionFlag                  no
0040,DB0C  TemplateExtensionOrganizationUID       no
0040,DB0D  TemplateExtensionCreatorUID            no
0040,DB73  ReferencedContentItemIdentifier        no
0040,E001  HL7InstanceIdentifier                  no
0040,E004  HL7DocumentEffectiveTime               no
0040,E006  HL7DocumentTypeCodeSequence            no
0040,E010  RetrieveURI                            no
0040,E011  RetrieveLocationUID                    no
0042,0010  DocumentTitle                          no
0042,0011  EncapsulatedDocument                   no
0042,0012  MIMETypeOfEncapsulatedDocument         no
0042,0013  SourceInstanceSequence                 no
0042,0014  ListOfMIMETypes                        no
0043,1001  BitmapOfPrescanOptions                 no
0043,1002  GradientOffsetInX                      no
0043,1003  GradientOffsetInY                      no
0043,1004  GradientOffsetInZ                      no
0043,1005  ImgIsOriginalOrUnoriginal              no
0043,1006  NumberOfEPIShots                       no
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0043,1007   ViewsPerSegment                       no
0043,1008   RespiratoryRateBpm                    no
0043,1009   RespiratoryTriggerPoint               no
0043,100A   TypeOfReceiverUsed                    no
0043,100B   PeakRateOfChangeOfGradientField       no
0043,100C   LimitsInUnitsOfPercent                no
0043,100D   PSDEstimatedLimit                     no
0043,100E   PSDEstimatedLimitInTeslaPerSecond     no
0043,100F   Saravghead                            no
0043,1010   WindowValue                           no
0043,1011   TotalInputViews                       no
0043,1012   X-RayChain                            no
0043,1013   DeconKernelParameters                 no
0043,1014   CalibrationParameters                 no
0043,1015   TotalOutputViews                      no
0043,1016   NumberOfOverranges                    no
0043,1017   IBHImageScaleFactors                  no
0043,1018   BBHCoefficients                       no
0043,1019   NumberOfBBHChainsToBlend              no
0043,101A   StartingChannelNumber                 no
0043,101B   PpscanParameters                      no
0043,101C   GEImageIntegrity                      no
0043,101D   LevelValue                            no
0043,101E   DeltaStartTime                        no
0043,101F   MaxOverrangesInAView                  no
0043,1020   AvgOverrangesAllViews                 no
0043,1021   CorrectedAfterGlowTerms               no
0043,1025   ReferenceChannels                     no
0043,1026   NoViewsRefChansBlocked                no
0043,1027   ScanPitchRatio                        no
0043,1028   UniqueImageIden                       no
0043,1029   HistogramTables                       no
0043,102A   UserDefinedData                       no
0043,102B   PrivateScanOptions                    no
0043,102C   EffectiveEchoSpacing                  no
0043,102D   StringSlopField1                      no
0043,102E   StringSlopField2                      no
0043,102F   RawDataType                           no
0043,1030   RawDataType                           no
0043,1031   RACordOfTargetReconCenter             no
0043,1032   RawDataType                           no
0043,1033   NegScanspacing                        no
0043,1034   OffsetFrequency                       no
0043,1035   UserUsageTag                          no
0043,1036   UserFillMapMSW                        no
0043,1037   UserFillMapLSW                        no
0043,1038   User25-48                             no
0043,1039   SlopInt6-9                            no
0043,1040   TriggerOnPosition                     no
0043,1041   DegreeOfRotation                      no
0043,1042   DASTriggerSource                      no
0043,1043   DASFpaGain                            no
0043,1044   DASOutputSource                       no
0043,1045   DASAdInput                            no
0043,1046   DASCalMode                            no
0043,1047   DASCalFrequency                       no
0043,1048   DASRegXm                              no
0043,1049   DASAutoZero                           no
0043,104A   StartingChannelOfView                 no
0043,104B   DASXmPattern                          no
0043,104C   TGGCTriggerMode                       no
0043,104D   StartScanToXrayOnDelay                no
0043,104E   DurationOfXrayOn                      no
0043,1060   SlopInt10-17                          no
0043,1061   ScannerStudyEntityUID                 no
0043,1062   ScannerStudyID                        no
0043,106f   ScannerTableEntry                     no
0044,0001   ProductPackageIdentifier              no
0044,0002   SubstanceAdministrationApproval       no
0044,0003   ApprovalStatusFurtherDescription      no
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0044,0004	ApprovalStatusDateTime	no
0044,0007	ProductTypeCodeSequence	no
0044,0008	ProductName	no
0044,0009	ProductDescription	no
0044,000A	ProductLotIdentifier	no
0044,000B	ProductExpirationDateTime	no
0044,0010	SubstanceAdministrationDateTime	no
0044,0011	SubstanceAdministrationNotes	no
0044,0012	SubstanceAdministrationDeviceID	no
0044,0013	ProductParameterSequence	no
0044,0019	SubstanceAdminParameterSeq	no
0045,1001	NumberOfMacroRowsInDetector	no
0045,1002	MacroWidthAtISOCenter	no
0045,1003	DASType	no
0045,1004	DASGain	no
0045,1005	DASTemperature	no
0045,1006	TableDirectionInOrOut	no
0045,1007	ZSmoothingFactor	no
0045,1008	ViewWeightingMode	no
0045,1009	SigmaRowNumberWhichRowsWereUsed	no
0045,100A	MinimumDasValueFoundInTheScanData	no
0045,100B	MaximumOffsetShiftValueUsed	no
0045,100C	NumberOfViewsShifted	no
0045,100D	ZTrackingFlag	no
0045,100E	MeanZError	no
0045,100F	ZTrackingMaximumError	no
0045,1010	StartingViewForRow2a	no
0045,1011	NumberOfViewsInRow2a	no
0045,1012	StartingViewForRow1a	no
0045,1013	SigmaMode	no
0045,1014	NumberOfViewsInRow1a	no
0045,1015	StartingViewForRow2b	no
0045,1016	NumberOfViewsInRow2b	no
0045,1017	StartingViewForRow1b	no
0045,1018	NumberOfViewsInRow1b	no
0045,1019	AirFilterCalibrationDate	no
0045,101A	AirFilterCalibrationTime	no
0045,101B	PhantomCalibrationDate	no
0045,101C	PhantomCalibrationTime	no
0045,101D	ZSlopeCalibrationDate	no
0045,101E	ZSlopeCalibrationTime	no
0045,101F	CrosstalkCalibrationDate	no
0045,1020	CrosstalkCalibrationTime	no
0045,1021	IterboneOptionFlag	no
0045,1022	PeristalticFlagOption	no
0046,0012	LensDescription	no
0046,0014	RightLensSequence	no
0046,0015	LeftLensSequence	no
0046,0018	CylinderSequence	no
0046,0028	PrismSequence	no
0046,0030	HorizontalPrismPower	no
0046,0032	HorizontalPrismBase	no
0046,0034	VerticalPrismPower	no
0046,0036	VerticalPrismBase	no
0046,0038	LensSegmentType	no
0046,0040	OpticalTransmittance	no
0046,0042	ChannelWidth	no
0046,0044	PupilSize	no
0046,0046	CornealSize	no
0046,0060	DistancePupillaryDistance	no
0046,0062	NearPupillaryDistance	no
0046,0064	OtherPupillaryDistance	no
0046,0075	RadiusOfCurvature	no
0046,0076	KeratometricPower	no
0046,0077	KeratometricAxis	no
0046,0092	BackgroundColor	no
0046,0094	Optotype	no
0046,0095	OptotypePresentation	no
0046,0100	AddNearSequence	no
0046,0101	AddIntermediateSequence	no

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0046,0102   AddOtherSequence                      no
0046,0104   AddPower                              no
0046,0106   ViewingDistance                       no
0046,0125   ViewingDistanceType                   no
0046,0135   VisualAcuityModifiers                 no
0046,0137   DecimalVisualAcuity                   no
0046,0139   OptotypeDetailedDefinition            no
0046,0146   SpherePower                           no
0046,0147   CylinderPower                         no
0050,0004   CalibrationImage                      no
0050,0010   DeviceSequence                        no
0050,0014   DeviceLength                          no
0050,0015   ContainerComponentWidth               no
0050,0016   DeviceDiameter                        no
0050,0017   DeviceDiameterUnits                   no
0050,0018   DeviceVolume                          no
0050,0019   InterMarkerDistance                   no
0050,001B   ContainerComponentID                  no
0050,0020   DeviceDescription                     no
0054,0010   EnergyWindowVector                    no
0054,0011   NumberOfEnergyWindows                 no
0054,0012   EnergyWindowInformationSequence       no
0054,0013   EnergyWindowRangeSequence             no
0054,0014   EnergyWindowLowerLimit                no
0054,0015   EnergyWindowUpperLimit                no
0054,0016   RadiopharmaceuticalInformationSeq     no
0054,0017   ResidualSyringeCounts                 no
0054,0018   EnergyWindowName                      no
0054,0020   DetectorVector                        no
0054,0021   NumberOfDetectors                     no
0054,0022   DetectorInformationSequence           no
0054,0030   PhaseVector                           no
0054,0031   NumberOfPhases                        no
0054,0032   PhaseInformationSequence              no
0054,0033   NumberOfFramesInPhase                 no
0054,0036   PhaseDelay                            no
0054,0038   PauseBetweenFrames                    no
0054,0039   PhaseDescription                      no
0054,0050   RotationVector                        no
0054,0051   NumberOfRotations                     no
0054,0052   RotationInformationSequence           no
0054,0053   NumberOfFramesInRotation              no
0054,0060   RRIntervalVector                      no
0054,0061   NumberOfRRIntervals                   no
0054,0062   GatedInformationSequence              no
0054,0063   DataInformationSequence               no
0054,0070   TimeSlotVector                        no
0054,0071   NumberOfTimeSlots                     no
0054,0072   TimeSlotInformationSequence           no
0054,0073   TimeSlotTime                          no
0054,0080   SliceVector                           no
0054,0081   NumberOfSlices                        no
0054,0090   AngularViewVector                     no
0054,0100   TimeSliceVector                       no
0054,0101   NumberOfTimeSlices                    no
0054,0200   StartAngle                            no
0054,0202   TypeOfDetectorMotion                  no
0054,0210   TriggerVector                         no
0054,0211   NumberOfTriggersInPhase               no
0054,0220   ViewCodeSequence                      no
0054,0222   ViewModifierCodeSequence              no
0054,0300   RadionuclideCodeSequence              no
0054,0302   AdministrationRouteCodeSequence       no
0054,0304   RadiopharmaceuticalCodeSequence       no
0054,0306   CalibrationDataSequence               no
0054,0308   EnergyWindowNumber                    no
0054,0400   ImageID                               no
0054,0410   PatientOrientationCodeSequence        no
0054,0412   PatientOrientationModifierCodeSeq     no
0054,0414   PatientGantryRelationshipCodeSeq      no
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0054,0500   SliceProgressionDirection           no
0054,1000   SeriesType                          no
0054,1001   Units                               no
0054,1002   CountsSource                        no
0054,1004   ReprojectionMethod                  no
0054,1100   RandomsCorrectionMethod             no
0054,1101   AttenuationCorrectionMethod         no
0054,1102   DecayCorrection                     no
0054,1103   ReconstructionMethod                no
0054,1104   DetectorLinesOfResponseUsed         no
0054,1105   ScatterCorrectionMethod             no
0054,1200   AxialAcceptance                     no
0054,1201   AxialMash                           no
0054,1202   TransverseMash                      no
0054,1203   DetectorElementSize                 no
0054,1210   CoincidenceWindowWidth              no
0054,1220   SecondaryCountsType                 no
0054,1300   FrameReferenceTime                  no
0054,1310   PrimaryCountsAccumulated            no
0054,1311   SecondaryCountsAccumulated          no
0054,1320   SliceSensitivityFactor              no
0054,1321   DecayFactor                         no
0054,1322   DoseCalibrationFactor               no
0054,1323   ScatterFractionFactor               no
0054,1324   DeadTimeFactor                      no
0054,1330   ImageIndex                          no
0054,1400   CountsIncluded                      no
0054,1401   DeadTimeCorrectionFlag              no
0060,3000   HistogramSequence                   no
0060,3002   HistogramNumberOfBins               no
0060,3004   HistogramFirstBinValue              no
0060,3006   HistogramLastBinValue               no
0060,3008   HistogramBinWidth                   no
0060,3010   HistogramExplanation                no
0060,3020   HistogramData                       no
0062,0001   SegmentationType                    no
0062,0002   SegmentSequence                     no
0062,0003   SegmentedPropertyCategoryCodeSeq    no
0062,0004   SegmentNumber                       no
0062,0005   SegmentLabel                        no
0062,0006   SegmentDescription                  no
0062,0008   SegmentAlgorithmType                no
0062,0009   SegmentAlgorithmName                no
0062,000A   SegmentIdentificationSequence       no
0062,000B   ReferencedSegmentNumber             no
0062,000C   RecommendedDisplayGrayscaleValue    no
0062,000D   RecommendedDisplayCIELabValue       no
0062,000E   MaximumFractionalValue              no
0062,000F   SegmentedPropertyTypeCodeSequence   no
0062,0010   SegmentationFractionalType          no
0064,0002   DeformableRegistrationSequence      no
0064,0003   SourceFrameOfReferenceUID           no
0064,0005   DeformableRegistrationGridSequence  no
0064,0007   GridDimensions                      no
0064,0008   GridResolution                      no
0064,0009   VectorGridData                      no
0064,000F   PreDeformationMatrixRegistSeq       no
0064,0010   PostDeformationMatrixRegistSeq      no
0066,0001   NumberOfSurfaces                    no
0066,0002   SurfaceSequence                     no
0066,0003   SurfaceNumber                       no
0066,0004   SurfaceComments                     no
0066,0009   SurfaceProcessing                   no
0066,000A   SurfaceProcessingRatio              no
0066,000E   FiniteVolume                        no
0066,0010   Manifold                            no
0066,0011   SurfacePointsSequence               no
0066,0015   NumberOfSurfacePoints               no
0066,0016   PointCoordinatesData                no
0066,0017   PointPositionAccuracy               no
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0066,0018  MeanPointDistance                       no
0066,0019  MaximumPointDistance                    no
0066,001B  AxisOfRotation                          no
0066,001C  CenterOfRotation                        no
0066,001E  NumberOfVectors                         no
0066,001F  VectorDimensionality                    no
0066,0020  VectorAccuracy                          no
0066,0021  VectorCoordinateData                    no
0066,0023  TrianglePointIndexList                  no
0066,0024  EdgePointIndexList                      no
0066,0025  VertexPointIndexList                    no
0066,0026  TriangleStripSequence                   no
0066,0027  TriangleFanSequence                     no
0066,0028  LineSequence                            no
0066,0029  PrimitivePointIndexList                 no
0066,002A  SurfaceCount                            no
0066,002F  AlgorithmFamilyCodeSequ                 no
0066,0031  AlgorithmVersion                        no
0066,0032  AlgorithmParameters                     no
0066,0034  FacetSequence                           no
0066,0036  AlgorithmName                           no
0070,0001  GraphicAnnotationSequence               no
0070,0002  GraphicLayer                            no
0070,0003  BoundingBoxAnnotationUnits              no
0070,0004  AnchorPointAnnotationUnits              no
0070,0005  GraphicAnnotationUnits                  no
0070,0006  UnformattedTextValue                    no
0070,0008  TextObjectSequence                      no
0070,0009  GraphicObjectSequence                   no
0070,0010  BoundingBoxTopLeftHandCorner            no
0070,0011  BoundingBoxBottomRightHandCorner        no
0070,0012  BoundingBoxTextHorizJustification       no
0070,0014  AnchorPoint                             no
0070,0015  AnchorPointVisibility                   no
0070,0020  GraphicDimensions                       no
0070,0021  NumberOfGraphicPoints                   no
0070,0022  GraphicData                             no
0070,0023  GraphicType                             no
0070,0024  GraphicFilled                           no
0070,0040  ImageRotationRetired                    no
0070,0041  ImageHorizontalFlip                     no
0070,0042  ImageRotation                           no
0070,0050  DisplayedAreaTopLeftTrial               no
0070,0051  DisplayedAreaBottomRightTrial           no
0070,0052  DisplayedAreaTopLeft                     no
0070,0053  DisplayedAreaBottomRight                no
0070,005A  DisplayedAreaSelectionSequence          no
0070,0060  GraphicLayerSequence                    no
0070,0062  GraphicLayerOrder                       no
0070,0066  GraphicLayerRecDisplayGraysclValue      no
0070,0067  GraphicLayerRecDisplayRGBValue          no
0070,0068  GraphicLayerDescription                 no
0070,0080  ContentLabel                            no
0070,0081  ContentDescription                      no
0070,0082  PresentationCreationDate                no
0070,0083  PresentationCreationTime                no
0070,0084  ContentCreatorName                      no
0070,0086  ContentCreatorIDCodeSequence            no
0070,0100  PresentationSizeMode                    no
0070,0101  PresentationPixelSpacing                no
0070,0102  PresentationPixelAspectRatio            no
0070,0103  PresentationPixelMagRatio               no
0070,0306  ShapeType                               no
0070,0308  RegistrationSequence                    no
0070,0309  MatrixRegistrationSequence              no
0070,030A  MatrixSequence                          no
0070,030C  FrameOfRefTransformationMatrixType      no
0070,030D  RegistrationTypeCodeSequence            no
0070,030F  FiducialDescription                     no
0070,0310  FiducialIdentifier                      no
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0070,0311	FiducialIdentifierCodeSequence	no
0070,0312	ContourUncertaintyRadius	no
0070,0314	UsedFiducialsSequence	no
0070,0318	GraphicCoordinatesDataSequence	no
0070,031A	FiducialUID	no
0070,031C	FiducialSetSequence	no
0070,031E	FiducialSequence	no
0070,0401	GraphicLayerRecomDisplayCIELabVal	no
0070,0402	BlendingSequence	no
0070,0403	RelativeOpacity	no
0070,0404	ReferencedSpatialRegistrationSeq	no
0070,0405	BlendingPosition	no
0072,0002	HangingProtocolName	no
0072,0004	HangingProtocolDescription	no
0072,0006	HangingProtocolLevel	no
0072,0008	HangingProtocolCreator	no
0072,000A	HangingProtocolCreationDateTime	no
0072,000C	HangingProtocolDefinitionSequence	no
0072,000E	HangingProtocolUserIDCodeSequence	no
0072,0010	HangingProtocolUserGroupName	no
0072,0012	SourceHangingProtocolSequence	no
0072,0014	NumberOfPriorsReferenced	no
0072,0020	ImageSetsSequence	no
0072,0022	ImageSetSelectorSequence	no
0072,0024	ImageSetSelectorUsageFlag	no
0072,0026	SelectorAttribute	no
0072,0028	SelectorValueNumber	no
0072,0030	TimeBasedImageSetsSequence	no
0072,0032	ImageSetNumber	no
0072,0034	ImageSetSelectorCategory	no
0072,0038	RelativeTime	no
0072,003A	RelativeTimeUnits	no
0072,003C	AbstractPriorValue	no
0072,003E	AbstractPriorCodeSequence	no
0072,0040	ImageSetLabel	no
0072,0050	SelectorAttributeVR	no
0072,0052	SelectorSequencePointer	no
0072,0054	SelectorSeqPointerPrivateCreator	no
0072,0056	SelectorAttributePrivateCreator	no
0072,0060	SelectorATValue	no
0072,0062	SelectorCSValue	no
0072,0064	SelectorISValue	no
0072,0066	SelectorLOValue	no
0072,0068	SelectorLTValue	no
0072,006A	SelectorPNValue	no
0072,006C	SelectorSHValue	no
0072,006E	SelectorSTValue	no
0072,0070	SelectorUTValue	no
0072,0072	SelectorDSValue	no
0072,0074	SelectorFDValue	no
0072,0076	SelectorFLValue	no
0072,0078	SelectorULValue	no
0072,007A	SelectorUSValue	no
0072,007C	SelectorSLValue	no
0072,007E	SelectorSSValue	no
0072,0080	SelectorCodeSequenceValue	no
0072,0100	NumberOfScreens	no
0072,0102	NominalScreenDefinitionSequence	no
0072,0104	NumberOfVerticalPixels	no
0072,0106	NumberOfHorizontalPixels	no
0072,0108	DisplayEnvironmentSpatialPosition	no
0072,010A	ScreenMinimumGrayscaleBitDepth	no
0072,010C	ScreenMinimumColorBitDepth	no
0072,010E	ApplicationMaximumRepaintTime	no
0072,0200	DisplaySetsSequence	no
0072,0202	DisplaySetNumber	no
0072,0203	DisplaySetLabel	no
0072,0204	DisplaySetPresentationGroup	no
0072,0206	DisplaySetPresentationGroupDescr	no
0072,0208	PartialDataDisplayHandling	no

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0072,0210   SynchronizedScrollingSequence       no
0072,0212   DisplaySetScrollingGroup            no
0072,0214   NavigationIndicatorSequence         no
0072,0216   NavigationDisplaySet                no
0072,0218   ReferenceDisplaySets                no
0072,0300   ImageBoxesSequence                  no
0072,0302   ImageBoxNumber                      no
0072,0304   ImageBoxLayoutType                  no
0072,0306   ImageBoxTileHorizontalDimension     no
0072,0308   ImageBoxTileVerticalDimension       no
0072,0310   ImageBoxScrollDirection             no
0072,0312   ImageBoxSmallScrollType             no
0072,0314   ImageBoxSmallScrollAmount           no
0072,0316   ImageBoxLargeScrollType             no
0072,0318   ImageBoxLargeScrollAmount           no
0072,0320   ImageBoxOverlapPriority             no
0072,0330   CineRelativeToRealTime              no
0072,0400   FilterOperationsSequence            no
0072,0402   FilterByCategory                    no
0072,0404   FilterByAttributePresence           no
0072,0406   FilterByOperator                    no
0072,0432   SynchronizedImageBoxList            no
0072,0434   TypeOfSynchronization               no
0072,0500   BlendingOperationType               no
0072,0510   ReformattingOperationType           no
0072,0512   ReformattingThickness               no
0072,0514   ReformattingInterval                no
0072,0516   ReformattingOpInitialViewDir        no
0072,0520   RenderingType3D                     no
0072,0600   SortingOperationsSequence           no
0072,0602   SortByCategory                      no
0072,0604   SortingDirection                    no
0072,0700   DisplaySetPatientOrientation        no
0072,0702   VOIType                             no
0072,0704   PseudoColorType                     no
0072,0706   ShowGrayscaleInverted               no
0072,0710   ShowImageTrueSizeFlag               no
0072,0712   ShowGraphicAnnotationFlag           no
0072,0714   ShowPatientDemographicsFlag         no
0072,0716   ShowAcquisitionTechniquesFlag       no
0072,0717   DisplaySetHorizontalJustification   no
0072,0718   DisplaySetVerticalJustification     no
0074,1000   UnifiedProcedureStepState           no
0074,1002   UPSProgressInformationSequence      no
0074,1004   UnifiedProcedureStepProgress        no
0074,1006   UnifiedProcedureStepProgressDescr   no
0074,1008   UnifiedProcedureStepComURISeq       no
0074,100a   ContactURI                          no
0074,100c   ContactDisplayName                  no
0074,1020   BeamTaskSequence                    no
0074,1022   BeamTaskType                        no
0074,1024   BeamOrderIndex                      no
0074,1030   DeliveryVerificationImageSequence   no
0074,1032   VerificationImageTiming             no
0074,1034   DoubleExposureFlag                  no
0074,1036   DoubleExposureOrdering              no
0074,1038   DoubleExposureMeterset              no
0074,103A   DoubleExposureFieldDelta            no
0074,1040   RelatedReferenceRTImageSequence     no
0074,1042   GeneralMachineVerificationSequence  no
0074,1044   ConventionalMachineVerificationSeq  no
0074,1046   IonMachineVerificationSequence      no
0074,1048   FailedAttributesSequence            no
0074,104A   OverriddenAttributesSequence        no
0074,104C   ConventionalControlPointVerifySeq   no
0074,104E   IonControlPointVerificationSeq      no
0074,1050   AttributeOccurrenceSequence         no
0074,1052   AttributeOccurrencePointer          no
0074,1054   AttributeItemSelector               no
0074,1056   AttributeOccurrencePrivateCreator   no
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0074,1200	ScheduledProcedureStepPriority	no
0074,1202	WorklistLabel	no
0074,1204	ProcedureStepLabel	no
0074,1210	ScheduledProcessingParametersSeq	no
0074,1212	PerformedProcessingParametersSeq	no
0074,1216	UPSPerformedProcedureSequence	no
0074,1220	RelatedProcedureStepSequence	no
0074,1222	ProcedureStepRelationshipType	no
0074,1230	DeletionLock	no
0074,1234	ReceivingAE	no
0074,1236	RequestingAE	no
0074,1238	ReasonForCancellation	no
0074,1242	SCPStatus	no
0074,1244	SubscriptionListStatus	no
0074,1246	UPSListStatus	no
0088,0130	StorageMediaFileSetID	no
0088,0140	StorageMediaFileSetUID	no
0088,0200	IconImageSequence	no
0088,0904	TopicTitle	no
0088,0906	TopicSubject	no
0088,0910	TopicAuthor	no
0088,0912	TopicKeywords	no
0100,0410	SOPInstanceStatus	no
0100,0420	SOPAuthorizationDateAndTime	no
0100,0424	SOPAuthorizationComment	no
0100,0426	AuthorizationEquipmentCertNumber	no
0400,0005	MACIDNumber	no
0400,0010	MACCalculationTransferSyntaxUID	no
0400,0015	MACAlgorithm	no
0400,0020	DataElementsSigned	no
0400,0100	DigitalSignatureUID	no
0400,0105	DigitalSignatureDateTime	no
0400,0110	CertificateType	no
0400,0115	CertificateOfSigner	no
0400,0120	Signature	no
0400,0305	CertifiedTimestampType	no
0400,0310	CertifiedTimestamp	no
0400,0401	DigitalSignaturePurposeCodeSeq	no
0400,0402	ReferencedDigitalSignatureSeq	no
0400,0403	ReferencedSOPInstanceMACSeq	no
0400,0404	MAC	no
0400,0500	EncryptedAttributesSequence	no
0400,0510	EncryptedContentTransferSyntaxUID	no
0400,0520	EncryptedContent	no
0400,0550	ModifiedAttributesSequence	no
0400,0561	OriginalAttributesSequence	no
0400,0562	AttributeModificationDateTime	no
0400,0563	ModifyingSystem	no
0400,0564	SourceOfPreviousValues	no
0400,0565	ReasonForTheAttributeModification	no
1000,xxx0	EscapeTriplet	no
1000,xxx1	RunLengthTriplet	no
1000,xxx2	HuffmanTableSize	no
1000,xxx3	HuffmanTableTriplet	no
1000,xxx4	ShiftTableSize	no
1000,xxx5	ShiftTableTriplet	no
1010,xxxx	ZonalMap	no
2000,0010	NumberOfCopies	no
2000,001E	PrinterConfigurationSequence	no
2000,0020	PrintPriority	no
2000,0030	MediumType	no
2000,0040	FilmDestination	no
2000,0050	FilmSessionLabel	no
2000,0060	MemoryAllocation	no
2000,0061	MaximumMemoryAllocation	no
2000,0062	ColorImagePrintingFlag	no
2000,0063	CollationFlag	no
2000,0065	AnnotationFlag	no
2000,0067	ImageOverlayFlag	no
2000,0069	PresentationLUTFlag	no

2000,006A	ImageBoxPresentationLUTFlag	no
2000,00A0	MemoryBitDepth	no
2000,00A1	PrintingBitDepth	no
2000,00A2	MediaInstalledSequence	no
2000,00A4	OtherMediaAvailableSequence	no
2000,00A8	SupportedImageDisplayFormatSeq	no
2000,0500	ReferencedFilmBoxSequence	no
2000,0510	ReferencedStoredPrintSequence	no
2010,0010	ImageDisplayFormat	no
2010,0030	AnnotationDisplayFormatID	no
2010,0040	FilmOrientation	no
2010,0050	FilmSizeID	no
2010,0052	PrinterResolutionID	no
2010,0054	DefaultPrinterResolutionID	no
2010,0060	MagnificationType	no
2010,0080	SmoothingType	no
2010,00A6	DefaultMagnificationType	no
2010,00A7	OtherMagnificationTypesAvailable	no
2010,00A8	DefaultSmoothingType	no
2010,00A9	OtherSmoothingTypesAvailable	no
2010,0100	BorderDensity	no
2010,0110	EmptyImageDensity	no
2010,0120	MinDensity	no
2010,0130	MaxDensity	no
2010,0140	Trim	no
2010,0150	ConfigurationInformation	no
2010,0152	ConfigurationInformationDescr	no
2010,0154	MaximumCollatedFilms	no
2010,015E	Illumination	no
2010,0160	ReflectedAmbientLight	no
2010,0376	PrinterPixelSpacing	no
2010,0500	ReferencedFilmSessionSequence	no
2010,0510	ReferencedImageBoxSequence	no
2010,0520	ReferencedBasicAnnotationBoxSeq	no
2020,0010	ImageBoxPosition	no
2020,0020	Polarity	no
2020,0030	RequestedImageSize	no
2020,0040	RequestedDecimate-CropBehavior	no
2020,0050	RequestedResolutionID	no
2020,00A0	RequestedImageSizeFlag	no
2020,00A2	DecimateCropResult	no
2020,0110	BasicGrayscaleImageSequence	no
2020,0111	BasicColorImageSequence	no
2020,0130	ReferencedImageOverlayBoxSequence	no
2020,0140	ReferencedVOILUTBoxSequence	no
2030,0010	AnnotationPosition	no
2030,0020	TextString	no
2040,0010	ReferencedOverlayPlaneSequence	no
2040,0011	ReferencedOverlayPlaneGroups	no
2040,0020	OverlayPixelDataSequence	no
2040,0060	OverlayMagnificationType	no
2040,0070	OverlaySmoothingType	no
2040,0072	OverlayOrImageMagnification	no
2040,0074	MagnifyToNumberOfColumns	no
2040,0080	OverlayForegroundDensity	no
2040,0082	OverlayBackgroundDensity	no
2040,0090	OverlayMode	no
2040,0100	ThresholdDensity	no
2040,0500	ReferencedImageBoxSequence	no
2050,0010	PresentationLUTSequence	no
2050,0020	PresentationLUTShape	no
2050,0500	ReferencedPresentationLUTSequence	no
2100,0010	PrintJobID	no
2100,0020	ExecutionStatus	no
2100,0030	ExecutionStatusInfo	no
2100,0040	CreationDate	no
2100,0050	CreationTime	no
2100,0070	Originator	no
2100,0140	DestinationAE	no
2100,0160	OwnerID	no

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2100,0170   NumberOfFilms                            no
2100,0500   ReferencedPrintJobSequence               no
2110,0010   PrinterStatus                            no
2110,0020   PrinterStatusInfo                        no
2110,0030   PrinterName                              no
2110,0099   PrintQueueID                             no
2120,0010   QueueStatus                              no
2120,0050   PrintJobDescriptionSequence              no
2120,0070   ReferencedPrintJobSequence               no
2130,0010   PrintManagementCapabilitiesSeq           no
2130,0015   PrinterCharacteristicsSequence           no
2130,0030   FilmBoxContentSequence                   no
2130,0040   ImageBoxContentSequence                  no
2130,0050   AnnotationContentSequence                no
2130,0060   ImageOverlayBoxContentSequence           no
2130,0080   PresentationLUTContentSequence           no
2130,00A0   ProposedStudySequence                    no
2130,00C0   OriginalImageSequence                    no
2200,0001   LabelFromInfoExtractedFromInstance no
2200,0002   LabelText                                no
2200,0003   LabelStyleSelection                      no
2200,0004   MediaDisposition                         no
2200,0005   BarcodeValue                             no
2200,0006   BarcodeSymbology                         no
2200,0007   AllowMediaSplitting                      no
2200,0008   IncludeNonDICOMObjects                   no
2200,0009   IncludeDisplayApplication                no
2200,000A   SaveCompInstancesAfterMediaCreate  no
2200,000B   TotalNumberMediaPiecesCreated            no
2200,000C   RequestedMediaApplicationProfile   no
2200,000D   ReferencedStorageMediaSequence           no
2200,000E   FailureAttributes                        no
2200,000F   AllowLossyCompression                    no
2200,0020   RequestPriority                          no
3002,0002   RTImageLabel                             no
3002,0003   RTImageName                              no
3002,0004   RTImageDescription                       no
3002,000A   ReportedValuesOrigin                     no
3002,000C   RTImagePlane                             no
3002,000D   XRayImageReceptorTranslation             no
3002,000E   XRayImageReceptorAngle                   no
3002,0010   RTImageOrientation                       no
3002,0011   ImagePlanePixelSpacing                   no
3002,0012   RTImagePosition                          no
3002,0020   RadiationMachineName                     no
3002,0022   RadiationMachineSAD                      no
3002,0024   RadiationMachineSSD                      no
3002,0026   RTImageSID                               no
3002,0028   SourceToReferenceObjectDistance          no
3002,0029   FractionNumber                           no
3002,0030   ExposureSequence                         no
3002,0032   MetersetExposure                         no
3002,0034   DiaphragmPosition                        no
3002,0040   FluenceMapSequence                       no
3002,0041   FluenceDataSource                        no
3002,0042   FluenceDataScale                         no
3002,0051   FluenceMode                              no
3002,0052   FluenceModeID                            no
3004,0001   DVHType                                  no
3004,0002   DoseUnits                                no
3004,0004   DoseType                                 no
3004,0006   DoseComment                              no
3004,0008   NormalizationPoint                       no
3004,000A   DoseSummationType                        no
3004,000C   GridFrameOffsetVector                    no
3004,000E   DoseGridScaling                          no
3004,0010   RTDoseROISequence                        no
3004,0012   DoseValue                                no
3004,0014   TissueHeterogeneityCorrection            no
3004,0040   DVHNormalizationPoint                    no
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3004,0042   DVHNormalizationDoseValue              no
3004,0050   DVHSequence                            no
3004,0052   DVHDoseScaling                         no
3004,0054   DVHVolumeUnits                         no
3004,0056   DVHNumberOfBins                        no
3004,0058   DVHData                                no
3004,0060   DVHReferencedROISequence               no
3004,0062   DVHROIContributionType                 no
3004,0070   DVHMinimumDose                         no
3004,0072   DVHMaximumDose                         no
3004,0074   DVHMeanDose                            no
3006,0002   StructureSetLabel                      no
3006,0004   StructureSetName                       no
3006,0006   StructureSetDescription                no
3006,0008   StructureSetDate                       no
3006,0009   StructureSetTime                       no
3006,0010   ReferencedFrameOfReferenceSequence     no
3006,0012   RTReferencedStudySequence              no
3006,0014   RTReferencedSeriesSequence             no
3006,0016   ContourImageSequence                   no
3006,0020   StructureSetROISequence                no
3006,0022   ROINumber                              no
3006,0024   ReferencedFrameOfReferenceUID          no
3006,0026   ROIName                                no
3006,0028   ROIDescription                         no
3006,002A   ROIDisplayColor                        no
3006,002C   ROIVolume                              no
3006,0030   RTRelatedROISequence                   no
3006,0033   RTROIRelationship                      no
3006,0036   ROIGenerationAlgorithm                 no
3006,0038   ROIGenerationDescription               no
3006,0039   ROIContourSequence                     no
3006,0040   ContourSequence                        no
3006,0042   ContourGeometricType                   no
3006,0044   ContourSlabThickness                   no
3006,0045   ContourOffsetVector                    no
3006,0046   NumberOfContourPoints                  no
3006,0048   ContourNumber                          no
3006,0049   AttachedContours                       no
3006,0050   ContourData                            no
3006,0080   RTROIObservationsSequence              no
3006,0082   ObservationNumber                      no
3006,0084   ReferencedROINumber                    no
3006,0085   ROIObservationLabel                    no
3006,0086   RTROIIdentificationCodeSequence        no
3006,0088   ROIObservationDescription              no
3006,00A0   RelatedRTROIObservationsSequence       no
3006,00A4   RTROIInterpretedType                   no
3006,00A6   ROIInterpreter                         no
3006,00B0   ROIPhysicalPropertiesSequence          no
3006,00B2   ROIPhysicalProperty                    no
3006,00B4   ROIPhysicalPropertyValue               no
3006,00B6   ROIElementalCompositionSequence        no
3006,00B7   ROIElementalCompAtomicNumber           no
3006,00B8   ROIElementalCompAtomicMassFraction     no
3006,00C0   FrameOfReferenceRelationshipSeq        no
3006,00C2   RelatedFrameOfReferenceUID             no
3006,00C4   FrameOfReferenceTransformType          no
3006,00C6   FrameOfReferenceTransformMatrix        no
3006,00C8   FrameOfReferenceTransformComment       no
3008,0010   MeasuredDoseReferenceSequence          no
3008,0012   MeasuredDoseDescription                no
3008,0014   MeasuredDoseType                       no
3008,0016   MeasuredDoseValue                      no
3008,0020   TreatmentSessionBeamSequence           no
3008,0021   TreatmentSessionIonBeamSequence        no
3008,0022   CurrentFractionNumber                  no
3008,0024   TreatmentControlPointDate              no
3008,0025   TreatmentControlPointTime              no
3008,002A   TreatmentTerminationStatus             no
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3008,002B   TreatmentTerminationCode            no
3008,002C   TreatmentVerificationStatus         no
3008,0030   ReferencedTreatmentRecordSequence   no
3008,0032   SpecifiedPrimaryMeterset            no
3008,0033   SpecifiedSecondaryMeterset          no
3008,0036   DeliveredPrimaryMeterset            no
3008,0037   DeliveredSecondaryMeterset          no
3008,003A   SpecifiedTreatmentTime              no
3008,003B   DeliveredTreatmentTime              no
3008,0040   ControlPointDeliverySequence        no
3008,0041   IonControlPointDeliverySequence     no
3008,0042   SpecifiedMeterset                   no
3008,0044   DeliveredMeterset                   no
3008,0045   MetersetRateSet                     no
3008,0046   MetersetRateDelivered               no
3008,0047   ScanSpotMetersetsDelivered          no
3008,0048   DoseRateDelivered                   no
3008,0050   TreatmentSummaryCalcDoseRefSeq       no
3008,0052   CumulativeDoseToDoseReference        no
3008,0054   FirstTreatmentDate                  no
3008,0056   MostRecentTreatmentDate             no
3008,005A   NumberOfFractionsDelivered          no
3008,0060   OverrideSequence                    no
3008,0061   ParameterSequencePointer            no
3008,0062   OverrideParameterPointer            no
3008,0063   ParameterItemIndex                  no
3008,0064   MeasuredDoseReferenceNumber          no
3008,0065   ParameterPointer                    no
3008,0066   OverrideReason                      no
3008,0068   CorrectedParameterSequence          no
3008,006A   CorrectionValue                     no
3008,0070   CalculatedDoseReferenceSequence      no
3008,0072   CalculatedDoseReferenceNumber        no
3008,0074   CalculatedDoseReferenceDescription  no
3008,0076   CalculatedDoseReferenceDoseValue     no
3008,0078   StartMeterset                       no
3008,007A   EndMeterset                         no
3008,0080   ReferencedMeasuredDoseReferenceSeq  no
3008,0082   ReferencedMeasuredDoseReferenceNum  no
3008,0090   ReferencedCalculatedDoseRefSeq       no
3008,0092   ReferencedCalculatedDoseRefNumber    no
3008,00A0   BeamLimitingDeviceLeafPairsSeq       no
3008,00B0   RecordedWedgeSequence               no
3008,00C0   RecordedCompensatorSequence         no
3008,00D0   RecordedBlockSequence               no
3008,00E0   TreatmentSummaryMeasuredDoseRefSeq  no
3008,00F0   RecordedSnoutSequence               no
3008,00F2   RecordedRangeShifterSequence        no
3008,00F4   RecordedLateralSpreadingDeviceSeq    no
3008,00F6   RecordedRangeModulatorSequence       no
3008,0100   RecordedSourceSequence              no
3008,0105   SourceSerialNumber                  no
3008,0110   TreatmentSessionAppSetupSeq          no
3008,0116   ApplicationSetupCheck               no
3008,0120   RecordedBrachyAccessoryDeviceSeq     no
3008,0122   ReferencedBrachyAccessoryDeviceNum  no
3008,0130   RecordedChannelSequence             no
3008,0132   SpecifiedChannelTotalTime           no
3008,0134   DeliveredChannelTotalTime           no
3008,0136   SpecifiedNumberOfPulses             no
3008,0138   DeliveredNumberOfPulses             no
3008,013A   SpecifiedPulseRepetitionInterval     no
3008,013C   DeliveredPulseRepetitionInterval     no
3008,0140   RecordedSourceApplicatorSequence     no
3008,0142   ReferencedSourceApplicatorNumber     no
3008,0150   RecordedChannelShieldSequence        no
3008,0152   ReferencedChannelShieldNumber        no
3008,0160   BrachyControlPointDeliveredSeq       no
3008,0162   SafePositionExitDate                no
3008,0164   SafePositionExitTime                no
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3008,0166   SafePositionReturnDate                    no
3008,0168   SafePositionReturnTime                    no
3008,0200   CurrentTreatmentStatus                    no
3008,0202   TreatmentStatusComment                    no
3008,0220   FractionGroupSummarySequence              no
3008,0223   ReferencedFractionNumber                  no
3008,0224   FractionGroupType                         no
3008,0230   BeamStopperPosition                       no
3008,0240   FractionStatusSummarySequence             no
3008,0250   TreatmentDate                             no
3008,0251   TreatmentTime                             no
300A,0002   RTPlanLabel                               no
300A,0003   RTPlanName                                no
300A,0004   RTPlanDescription                         no
300A,0006   RTPlanDate                                no
300A,0007   RTPlanTime                                no
300A,0009   TreatmentProtocols                        no
300A,000A   PlanIntent                                no
300A,000B   TreatmentSites                            no
300A,000C   RTPlanGeometry                            no
300A,000E   PrescriptionDescription                   no
300A,0010   DoseReferenceSequence                     no
300A,0012   DoseReferenceNumber                       no
300A,0013   DoseReferenceUID                          no
300A,0014   DoseReferenceStructureType                no
300A,0015   NominalBeamEnergyUnit                     no
300A,0016   DoseReferenceDescription                  no
300A,0018   DoseReferencePointCoordinates             no
300A,001A   NominalPriorDose                          no
300A,0020   DoseReferenceType                         no
300A,0021   ConstraintWeight                          no
300A,0022   DeliveryWarningDose                       no
300A,0023   DeliveryMaximumDose                       no
300A,0025   TargetMinimumDose                         no
300A,0026   TargetPrescriptionDose                    no
300A,0027   TargetMaximumDose                         no
300A,0028   TargetUnderdoseVolumeFraction             no
300A,002A   OrganAtRiskFullVolumeDose                 no
300A,002B   OrganAtRiskLimitDose                      no
300A,002C   OrganAtRiskMaximumDose                    no
300A,002D   OrganAtRiskOverdoseVolumeFraction         no
300A,0040   ToleranceTableSequence                    no
300A,0042   ToleranceTableNumber                      no
300A,0043   ToleranceTableLabel                       no
300A,0044   GantryAngleTolerance                      no
300A,0046   BeamLimitingDeviceAngleTolerance          no
300A,0048   BeamLimitingDeviceToleranceSeq            no
300A,004A   BeamLimitingDevicePositionTol             no
300A,004B   SnoutPositionTolerance                    no
300A,004C   PatientSupportAngleTolerance              no
300A,004E   TableTopEccentricAngleTolerance           no
300A,004F   TableTopPitchAngleTolerance               no
300A,0050   TableTopRollAngleTolerance                no
300A,0051   TableTopVerticalPositionTolerance         no
300A,0052   TableTopLongitudinalPositionTol           no
300A,0053   TableTopLateralPositionTolerance          no
300A,0055   RTPlanRelationship                        no
300A,0070   FractionGroupSequence                     no
300A,0071   FractionGroupNumber                       no
300A,0072   FractionGroupDescription                  no
300A,0078   NumberOfFractionsPlanned                  no
300A,0079   NumberFractionPatternDigitsPerDay         no
300A,007A   RepeatFractionCycleLength                 no
300A,007B   FractionPattern                           no
300A,0080   NumberOfBeams                             no
300A,0082   BeamDoseSpecificationPoint                no
300A,0084   BeamDose                                  no
300A,0086   BeamMeterset                              no
300A,0088   BeamDosePointDepth                        no
300A,0089   BeamDosePointEquivalentDepth              no
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300A,008A  BeamDosePointSSD                        no
300A,00A0  NumberOfBrachyApplicationSetups         no
300A,00A2  BrachyAppSetupDoseSpecPoint             no
300A,00A4  BrachyApplicationSetupDose              no
300A,00B0  BeamSequence                            no
300A,00B2  TreatmentMachineName                    no
300A,00B3  PrimaryDosimeterUnit                    no
300A,00B4  SourceAxisDistance                      no
300A,00B6  BeamLimitingDeviceSequence              no
300A,00B8  RTBeamLimitingDeviceType                no
300A,00BA  SourceToBeamLimitingDeviceDistance      no
300A,00BB  IsocenterToBeamLimitingDeviceDist       no
300A,00BC  NumberOfLeafJawPairs                    no
300A,00BE  LeafPositionBoundaries                  no
300A,00C0  BeamNumber                              no
300A,00C2  BeamName                                no
300A,00C3  BeamDescription                         no
300A,00C4  BeamType                                no
300A,00C6  RadiationType                           no
300A,00C7  HighDoseTechniqueType                   no
300A,00C8  ReferenceImageNumber                    no
300A,00CA  PlannedVerificationImageSequence        no
300A,00CC  ImagingDeviceSpecificAcqParams          no
300A,00CE  TreatmentDeliveryType                   no
300A,00D0  NumberOfWedges                          no
300A,00D1  WedgeSequence                           no
300A,00D2  WedgeNumber                             no
300A,00D3  WedgeType                               no
300A,00D4  WedgeID                                 no
300A,00D5  WedgeAngle                              no
300A,00D6  WedgeFactor                             no
300A,00D7  TotalWedgeTrayWaterEquivThickness       no
300A,00D8  WedgeOrientation                        no
300A,00D9  IsocenterToWedgeTrayDistance            no
300A,00DA  SourceToWedgeTrayDistance               no
300A,00DB  WedgeThinEdgePosition                   no
300A,00DC  BolusID                                 no
300A,00DD  BolusDescription                        no
300A,00E0  NumberOfCompensators                    no
300A,00E1  MaterialID                              no
300A,00E2  TotalCompensatorTrayFactor              no
300A,00E3  CompensatorSequence                     no
300A,00E4  CompensatorNumber                       no
300A,00E5  CompensatorID                           no
300A,00E6  SourceToCompensatorTrayDistance         no
300A,00E7  CompensatorRows                         no
300A,00E8  CompensatorColumns                      no
300A,00E9  CompensatorPixelSpacing                 no
300A,00EA  CompensatorPosition                     no
300A,00EB  CompensatorTransmissionData             no
300A,00EC  CompensatorThicknessData                no
300A,00ED  NumberOfBoli                            no
300A,00EE  CompensatorType                         no
300A,00F0  NumberOfBlocks                          no
300A,00F2  TotalBlockTrayFactor                    no
300A,00F3  TotalBlockTrayWaterEquivThickness       no
300A,00F4  BlockSequence                           no
300A,00F5  BlockTrayID                             no
300A,00F6  SourceToBlockTrayDistance               no
300A,00F7  IsocenterToBlockTrayDistance            no
300A,00F8  BlockType                               no
300A,00F9  AccessoryCode                           no
300A,00FA  BlockDivergence                         no
300A,00FB  BlockMountingPosition                   no
300A,00FC  BlockNumber                             no
300A,00FE  BlockName                               no
300A,0100  BlockThickness                          no
300A,0102  BlockTransmission                       no
300A,0104  BlockNumberOfPoints                     no
300A,0106  BlockData                               no
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300A,0107  ApplicatorSequence                       no
300A,0108  ApplicatorID                             no
300A,0109  ApplicatorType                           no
300A,010A  ApplicatorDescription                    no
300A,010C  CumulativeDoseReferenceCoefficient       no
300A,010E  FinalCumulativeMetersetWeight            no
300A,0110  NumberOfControlPoints                    no
300A,0111  ControlPointSequence                     no
300A,0112  ControlPointIndex                        no
300A,0114  NominalBeamEnergy                        no
300A,0115  DoseRateSet                              no
300A,0116  WedgePositionSequence                    no
300A,0118  WedgePosition                            no
300A,011A  BeamLimitingDevicePositionSequence       no
300A,011C  LeafJawPositions                         no
300A,011E  GantryAngle                              no
300A,011F  GantryRotationDirection                  no
300A,0120  BeamLimitingDeviceAngle                  no
300A,0121  BeamLimitingDeviceRotateDirection        no
300A,0122  PatientSupportAngle                      no
300A,0123  PatientSupportRotationDirection          no
300A,0124  TableTopEccentricAxisDistance            no
300A,0125  TableTopEccentricAngle                   no
300A,0126  TableTopEccentricRotateDirection         no
300A,0128  TableTopVerticalPosition                 no
300A,0129  TableTopLongitudinalPosition             no
300A,012A  TableTopLateralPosition                  no
300A,012C  IsocenterPosition                        no
300A,012E  SurfaceEntryPoint                        no
300A,0130  SourceToSurfaceDistance                  no
300A,0134  CumulativeMetersetWeight                 no
300A,0140  TableTopPitchAngle                       no
300A,0142  TableTopPitchRotationDirection           no
300A,0144  TableTopRollAngle                        no
300A,0146  TableTopRollRotationDirection            no
300A,0148  HeadFixationAngle                        no
300A,014A  GantryPitchAngle                         no
300A,014C  GantryPitchRotationDirection             no
300A,014E  GantryPitchAngleTolerance                no
300A,0180  PatientSetupSequence                     no
300A,0182  PatientSetupNumber                       no
300A,0183  PatientSetupLabel                        no
300A,0184  PatientAdditionalPosition                no
300A,0190  FixationDeviceSequence                   no
300A,0192  FixationDeviceType                       no
300A,0194  FixationDeviceLabel                      no
300A,0196  FixationDeviceDescription                no
300A,0198  FixationDevicePosition                   no
300A,0199  FixationDevicePitchAngle                 no
300A,019A  FixationDeviceRollAngle                  no
300A,01A0  ShieldingDeviceSequence                  no
300A,01A2  ShieldingDeviceType                      no
300A,01A4  ShieldingDeviceLabel                     no
300A,01A6  ShieldingDeviceDescription               no
300A,01A8  ShieldingDevicePosition                  no
300A,01B0  SetupTechnique                           no
300A,01B2  SetupTechniqueDescription                no
300A,01B4  SetupDeviceSequence                      no
300A,01B6  SetupDeviceType                          no
300A,01B8  SetupDeviceLabel                         no
300A,01BA  SetupDeviceDescription                   no
300A,01BC  SetupDeviceParameter                     no
300A,01D0  SetupReferenceDescription                no
300A,01D2  TableTopVerticalSetupDisplacement        no
300A,01D4  TableTopLongitudinalSetupDisplace        no
300A,01D6  TableTopLateralSetupDisplacement         no
300A,0200  BrachyTreatmentTechnique                 no
300A,0202  BrachyTreatmentType                      no
300A,0206  TreatmentMachineSequence                 no
300A,0210  SourceSequence                           no
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300A,0212  SourceNumber                         no
300A,0214  SourceType                           no
300A,0216  SourceManufacturer                   no
300A,0218  ActiveSourceDiameter                 no
300A,021A  ActiveSourceLength                   no
300A,0222  SourceEncapsulationNomThickness      no
300A,0224  SourceEncapsulationNomTransmission   no
300A,0226  SourceIsotopeName                    no
300A,0228  SourceIsotopeHalfLife                no
300A,0229  SourceStrengthUnits                  no
300A,022A  ReferenceAirKermaRate                no
300A,022B  SourceStrength                       no
300A,022C  SourceStrengthReferenceDate          no
300A,022E  SourceStrengthReferenceTime          no
300A,0230  ApplicationSetupSequence             no
300A,0232  ApplicationSetupType                 no
300A,0234  ApplicationSetupNumber               no
300A,0236  ApplicationSetupName                 no
300A,0238  ApplicationSetupManufacturer         no
300A,0240  TemplateNumber                       no
300A,0242  TemplateType                         no
300A,0244  TemplateName                         no
300A,0250  TotalReferenceAirKerma               no
300A,0260  BrachyAccessoryDeviceSequence        no
300A,0262  BrachyAccessoryDeviceNumber          no
300A,0263  BrachyAccessoryDeviceID              no
300A,0264  BrachyAccessoryDeviceType            no
300A,0266  BrachyAccessoryDeviceName            no
300A,026A  BrachyAccessoryDeviceNomThickness    no
300A,026C  BrachyAccessoryDevNomTransmission    no
300A,0280  ChannelSequence                      no
300A,0282  ChannelNumber                        no
300A,0284  ChannelLength                        no
300A,0286  ChannelTotalTime                     no
300A,0288  SourceMovementType                   no
300A,028A  NumberOfPulses                       no
300A,028C  PulseRepetitionInterval              no
300A,0290  SourceApplicatorNumber               no
300A,0291  SourceApplicatorID                   no
300A,0292  SourceApplicatorType                 no
300A,0294  SourceApplicatorName                 no
300A,0296  SourceApplicatorLength               no
300A,0298  SourceApplicatorManufacturer         no
300A,029C  SourceApplicatorWallNomThickness     no
300A,029E  SourceApplicatorWallNomTrans         no
300A,02A0  SourceApplicatorStepSize             no
300A,02A2  TransferTubeNumber                   no
300A,02A4  TransferTubeLength                   no
300A,02B0  ChannelShieldSequence                no
300A,02B2  ChannelShieldNumber                  no
300A,02B3  ChannelShieldID                      no
300A,02B4  ChannelShieldName                    no
300A,02B8  ChannelShieldNominalThickness        no
300A,02BA  ChannelShieldNominalTransmission     no
300A,02C8  FinalCumulativeTimeWeight            no
300A,02D0  BrachyControlPointSequence           no
300A,02D2  ControlPointRelativePosition         no
300A,02D4  ControlPoint3DPosition               no
300A,02D6  CumulativeTimeWeight                 no
300A,02E0  CompensatorDivergence                no
300A,02E1  CompensatorMountingPosition          no
300A,02E2  SourceToCompensatorDistance          no
300A,02E3  TotalCompTrayWaterEquivThickness     no
300A,02E4  IsocenterToCompensatorTrayDistance   no
300A,02E5  CompensatorColumnOffset              no
300A,02E6  IsocenterToCompensatorDistances      no
300A,02E7  CompensatorRelStoppingPowerRatio     no
300A,02E8  CompensatorMillingToolDiameter       no
300A,02EA  IonRangeCompensatorSequence          no
300A,02EB  CompensatorDescription               no
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300A,0302	RadiationMassNumber	no
300A,0304	RadiationAtomicNumber	no
300A,0306	RadiationChargeState	no
300A,0308	ScanMode	no
300A,030A	VirtualSourceAxisDistances	no
300A,030C	SnoutSequence	no
300A,030D	SnoutPosition	no
300A,030F	SnoutID	no
300A,0312	NumberOfRangeShifters	no
300A,0314	RangeShifterSequence	no
300A,0316	RangeShifterNumber	no
300A,0318	RangeShifterID	no
300A,0320	RangeShifterType	no
300A,0322	RangeShifterDescription	no
300A,0330	NumberOfLateralSpreadingDevices	no
300A,0332	LateralSpreadingDeviceSequence	no
300A,0334	LateralSpreadingDeviceNumber	no
300A,0336	LateralSpreadingDeviceID	no
300A,0338	LateralSpreadingDeviceType	no
300A,033A	LateralSpreadingDeviceDescription	no
300A,033C	LateralSpreadingDevWaterEquivThick	no
300A,0340	NumberOfRangeModulators	no
300A,0342	RangeModulatorSequence	no
300A,0344	RangeModulatorNumber	no
300A,0346	RangeModulatorID	no
300A,0348	RangeModulatorType	no
300A,034A	RangeModulatorDescription	no
300A,034C	BeamCurrentModulationID	no
300A,0350	PatientSupportType	no
300A,0352	PatientSupportID	no
300A,0354	PatientSupportAccessoryCode	no
300A,0356	FixationLightAzimuthalAngle	no
300A,0358	FixationLightPolarAngle	no
300A,035A	MetersetRate	no
300A,0360	RangeShifterSettingsSequence	no
300A,0362	RangeShifterSetting	no
300A,0364	IsocenterToRangeShifterDistance	no
300A,0366	RangeShifterWaterEquivThickness	no
300A,0370	LateralSpreadingDeviceSettingsSeq	no
300A,0372	LateralSpreadingDeviceSetting	no
300A,0374	IsocenterToLateralSpreadingDevDist	no
300A,0380	RangeModulatorSettingsSequence	no
300A,0382	RangeModulatorGatingStartValue	no
300A,0384	RangeModulatorGatingStopValue	no
300A,038A	IsocenterToRangeModulatorDistance	no
300A,0390	ScanSpotTuneID	no
300A,0392	NumberOfScanSpotPositions	no
300A,0394	ScanSpotPositionMap	no
300A,0396	ScanSpotMetersetWeights	no
300A,0398	ScanningSpotSize	no
300A,039A	NumberOfPaintings	no
300A,03A0	IonToleranceTableSequence	no
300A,03A2	IonBeamSequence	no
300A,03A4	IonBeamLimitingDeviceSequence	no
300A,03A6	IonBlockSequence	no
300A,03A8	IonControlPointSequence	no
300A,03AA	IonWedgeSequence	no
300A,03AC	IonWedgePositionSequence	no
300A,0401	ReferencedSetupImageSequence	no
300A,0402	SetupImageComment	no
300A,0410	MotionSynchronizationSequence	no
300A,0412	ControlPointOrientation	no
300A,0420	GeneralAccessorySequence	no
300A,0421	GeneralAccessoryID	no
300A,0422	GeneralAccessoryDescription	no
300A,0423	GeneralAccessoryType	no
300A,0424	GeneralAccessoryNumber	no
300C,0002	ReferencedRTPlanSequence	no
300C,0004	ReferencedBeamSequence	no
300C,0006	ReferencedBeamNumber	no

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300C,0007  ReferencedReferenceImageNumber       no
300C,0008  StartCumulativeMetersetWeight        no
300C,0009  EndCumulativeMetersetWeight          no
300C,000A  ReferencedBrachyAppSetupSeq          no
300C,000C  ReferencedBrachyAppSetupNumber       no
300C,000E  ReferencedSourceNumber               no
300C,0020  ReferencedFractionGroupSequence      no
300C,0022  ReferencedFractionGroupNumber        no
300C,0040  ReferencedVerificationImageSeq       no
300C,0042  ReferencedReferenceImageSequence     no
300C,0050  ReferencedDoseReferenceSequence      no
300C,0051  ReferencedDoseReferenceNumber        no
300C,0055  BrachyReferencedDoseReferenceSeq     no
300C,0060  ReferencedStructureSetSequence       no
300C,006A  ReferencedPatientSetupNumber         no
300C,0080  ReferencedDoseSequence               no
300C,00A0  ReferencedToleranceTableNumber       no
300C,00B0  ReferencedBolusSequence              no
300C,00C0  ReferencedWedgeNumber                no
300C,00D0  ReferencedCompensatorNumber          no
300C,00E0  ReferencedBlockNumber                no
300C,00F0  ReferencedControlPointIndex          no
300C,00F2  ReferencedControlPointSequence       no
300C,00F4  ReferencedStartControlPointIndex     no
300C,00F6  ReferencedStopControlPointIndex      no
300C,0100  ReferencedRangeShifterNumber         no
300C,0102  ReferencedLateralSpreadingDevNum     no
300C,0104  ReferencedRangeModulatorNumber       no
300E,0002  ApprovalStatus                       no
300E,0004  ReviewDate                           no
300E,0005  ReviewTime                           no
300E,0008  ReviewerName                         no
4000,0000  TextGroupLength                      no
4000,0010  Arbitrary                            no
4000,4000  TextComments                         no
4008,0040  ResultsID                            no
4008,0042  ResultsIDIssuer                      no
4008,0050  ReferencedInterpretationSequence     no
4008,0100  InterpretationRecordedDate           no
4008,0101  InterpretationRecordedTime           no
4008,0102  InterpretationRecorder               no
4008,0103  ReferenceToRecordedSound             no
4008,0108  InterpretationTranscriptionDate      no
4008,0109  InterpretationTranscriptionTime      no
4008,010A  InterpretationTranscriber            no
4008,010B  InterpretationText                   no
4008,010C  InterpretationAuthor                 no
4008,0111  InterpretationApproverSequence       no
4008,0112  InterpretationApprovalDate           no
4008,0113  InterpretationApprovalTime           no
4008,0114  PhysicianApprovingInterpretation     no
4008,0115  InterpretationDiagnosisDescription   no
4008,0117  InterpretationDiagnosisCodeSeq       no
4008,0118  ResultsDistributionListSequence      no
4008,0119  DistributionName                     no
4008,011A  DistributionAddress                  no
4008,0200  InterpretationID                     no
4008,0202  InterpretationIDIssuer               no
4008,0210  InterpretationTypeID                 no
4008,0212  InterpretationStatusID               no
4008,0300  Impressions                          no
4008,4000  ResultsComments                      no
4FFE,0001  MACParametersSequence                no
50xx,0005  CurveDimensions                      no
50xx,0010  NumberOfPoints                       no
50xx,0020  TypeOfData                           no
50xx,0022  CurveDescription                     no
50xx,0030  AxisUnits                            no
50xx,0040  AxisLabels                           no
50xx,0103  DataValueRepresentation              no
```

50xx,0104	MinimumCoordinateValue	no
50xx,0105	MaximumCoordinateValue	no
50xx,0106	CurveRange	no
50xx,0110	CurveDataDescriptor	no
50xx,0112	CoordinateStartValue	no
50xx,0114	CoordinateStepValue	no
50xx,1001	CurveActivationLayer	no
50xx,2000	AudioType	no
50xx,2002	AudioSampleFormat	no
50xx,2004	NumberOfChannels	no
50xx,2006	NumberOfSamples	no
50xx,2008	SampleRate	no
50xx,200A	TotalTime	no
50xx,200C	AudioSampleData	no
50xx,200E	AudioComments	no
50xx,2500	CurveLabel	no
50xx,2600	ReferencedOverlaySequence	no
50xx,2610	ReferencedOverlayGroup	no
50xx,3000	CurveData	no
5200,9229	SharedFunctionalGroupsSequence	no
5200,9230	PerFrameFunctionalGroupsSequence	no
5400,0100	WaveformSequence	no
5400,0110	ChannelMinimumValue	no
5400,0112	ChannelMaximumValue	no
5400,1004	WaveformBitsAllocated	no
5400,1006	WaveformSampleInterpretation	no
5400,100A	WaveformPaddingValue	no
5400,1010	WaveformData	no
5600,0010	FirstOrderPhaseCorrectionAngle	no
5600,0020	SpectroscopyData	no
6000,0000	OverlayGroupLength	no
60xx,0010	OverlayRows	no
60xx,0011	OverlayColumns	no
60xx,0012	OverlayPlanes	no
60xx,0015	NumberOfFramesInOverlay	no
60xx,0022	OverlayDescription	no
60xx,0040	OverlayType	no
60xx,0045	OverlaySubtype	no
60xx,0050	OverlayOrigin	no
60xx,0051	ImageFrameOrigin	no
60xx,0052	OverlayPlaneOrigin	no
60xx,0060	OverlayCompressionCode	no
60xx,0061	OverlayCompressionOriginator	no
60xx,0062	OverlayCompressionLabel	no
60xx,0063	OverlayCompressionDescription	no
60xx,0066	OverlayCompressionStepPointers	no
60xx,0068	OverlayRepeatInterval	no
60xx,0069	OverlayBitsGrouped	no
60xx,0100	OverlayBitsAllocated	no
60xx,0102	OverlayBitPosition	no
60xx,0110	OverlayFormat	no
60xx,0200	OverlayLocation	no
60xx,0800	OverlayCodeLabel	no
60xx,0802	OverlayNumberOfTables	no
60xx,0803	OverlayCodeTableLocation	no
60xx,0804	OverlayBitsForCodeWord	no
60xx,1001	OverlayActivationLayer	no
60xx,1100	OverlayDescriptorGray	no
60xx,1101	OverlayDescriptorRed	no
60xx,1102	OverlayDescriptorGreen	no
60xx,1103	OverlayDescriptorBlue	no
60xx,1200	OverlaysGray	no
60xx,1201	OverlaysRed	no
60xx,1202	OverlaysGreen	no
60xx,1203	OverlaysBlue	no
60xx,1301	ROIArea	no
60xx,1302	ROIMean	no
60xx,1303	ROIStandardDeviation	no
60xx,1500	OverlayLabel	no
60xx,3000	OverlayData	no

```
    60xx,4000  OverlayComments                       no
    7Fxx,0000  PixelDataGroupLength                  no
    7Fxx,0010  PixelData                             no
    7Fxx,0011  VariableNextDataGroup                 no
    7Fxx,0020  VariableCoefficientsSDVN              no
    7Fxx,0030  VariableCoefficientsSDHN              no
    7Fxx,0040  VariableCoefficientsSDDN              no
    FFFA,FFFA  DigitalSignaturesSequence             no
    FFFC,FFFC  DataSetTrailingPadding                no
    FFFE,E000  StartOfItem                           no
    FFFE,E00D  EndOfItems                            no
    FFFE,E0DD  EndOfSequence                         no
```

FITS Tags

    This table lists some standard Flexible Image Transport System (FITS)
    tags, but ExifTool will extract any other tags found. See
    <https://fits.gsfc.nasa.gov/fits_standard.html> for the specification.

```
    Tag ID         Tag Name                Writable
    ------         --------                --------
    'AUTHOR'       Author                  no
    'BACKGRND'     Background              no
    'COMMENT'      Comment                 no
    'DATE'         CreateDate              no
    'DATE-END'     ObservationDateEnd      no
    'DATE-OBS'     ObservationDate         no
    'HISTORY'      History                 no
    'INSTRUME'     Instrument              no
    'OBJECT'       Object                  no
    'OBSERVER'     Observer                no
    'REFERENC'     Reference               no
    'TELESCOP'     Telescope               no
    'TIME-END'     ObservationTimeEnd      no
    'TIME-OBS'     ObservationTime         no
```

XISF Tags

    This table lists some standard Extensible Image Serialization Format
    (XISF) tags, but ExifTool will extract any other tags found. See
    <https://pixinsight.com/xisf/> for the specification.

```
    Tag ID                     Tag Name            Writable
    ------                     --------            --------
    'Abstract'                 Abstract            no
    'AccessRights'             AccessRights        no
    'Authors'                  Authors             no
    'BibliographicReferences'
                               BibliographicReferences no
    'BriefDescription'         BriefDescription    no
    'CompressionCodecs'        CompressionCodecs   no
    'CompressionLevel'         CompressionLevel    no
    'Contributors'             Contributors        no
    'Copyright'                Copyright           no
    'CreationTime'             CreateDate          no
    'CreatorApplication'       CreatorApplication  no
    'CreatorModule'            CreatorModule       no
    'CreatorOS'                CreatorOS           no
    'Description'              Description         no
    'ImageBounds'              ImageBounds         no
    'ImageColorSpace'          ColorSpace          no
    'ImageData'                ImageData           no
    'ImageGeometry'            ImageGeometry       no
    'ImageICCProfile'          ICC_Profile         no
    'ImageICCProfileLocation'  ICCProfileLocation  no
    'ImageId'                  ImageID             no
    'ImageImageType'           ImageType           no
    'ImageLocation'            ImageLocation       no
    'ImageOffset'              ImagePixelOffset    no
    'ImageOrientation'         Orientation         no
    'ImagePixelStorage'        ImagePixelStorage   no
    'ImageResolutionHorizontal' XResolution        no
```

```
      'ImageResolutionUnit' ResolutionUnit           no
      'ImageResolutionVertical' YResolution          no
      'ImageSampleFormat'    ImageSampleFormat        no
      'ImageUuid'            UUID                     no
      'Keywords'             Keywords                 no
      'Languages'            Languages                no
      'License'              License                  no
      'OriginalCreationTime' DateTimeOriginal         no
      'RelatedResources'     RelatedResources         no
      'Title'                Title                    no
```

HTML Tags
      Meta information extracted from the header of HTML and XHTML files.
      This is a mix of information found in the "META" elements, "XML"
      element, and the "TITLE" element.

Tag ID	Tag Name	Writable
'abstract'	Abstract	no
'author'	Author	no
'classification'	Classification	no
'content-language'	ContentLanguage	no
'copyright'	Copyright	no
'dc'	DC	HTML dc
'description'	Description	no
'distribution'	Distribution	no
'doc-class'	DocClass	no
'doc-rights'	DocRights	no
'doc-type'	DocType	no
'formatter'	Formatter	no
'generator'	Generator	no
'generatorversion'	GeneratorVersion	no
'googlebot'	GoogleBot	no
'http-equiv'	HTTP-equiv	HTML equiv
'keywords'	Keywords	no+
'mssmarttagspreventparsing'	NoMSSmartTags	no
'ncc'	NCC	HTML ncc
'o'	Office	HTML Office
'originator'	Originator	no
'owner'	Owner	no
'prod'	Prod	HTML prod
'progid'	ProgID	no
'rating'	Rating	no
'refresh'	Refresh	no
'resource-type'	ResourceType	no
'revisit-after'	RevisitAfter	no
'robots'	Robots	no+
'title'	Title	no
'vw96'	VW96	HTML vw96

HTML dc Tags

Dublin Core schema tags (also used in XMP).

Tag ID	Tag Name	Writable
'contributor'	Contributor	no+
'coverage'	Coverage	no
'creator'	Creator	no+
'date'	Date	no+
'description'	Description	no
'format'	Format	no
'identifier'	Identifier	no
'language'	Language	no+
'publisher'	Publisher	no+
'relation'	Relation	no+
'rights'	Rights	no
'source'	Source	no
'subject'	Subject	no+
'title'	Title	no

```
'type'                 Type                    no+
```

HTML equiv Tags

These tags have a family 1 group name of "HTTP-equiv".

```
  Tag ID                 Tag Name                Writable
  ------                 --------                --------
  'cache-control'        CacheControl            no
  'content-disposition'  ContentDisposition      no
  'content-language'     ContentLanguage         no
  'content-script-type'  ContentScriptType       no
  'content-style-type'   ContentStyleType        no
  'content-type'         ContentType             no
  'default-style'        DefaultStyle            no
  'expires'              Expires                 no
  'ext-cache'            ExtCache                no
  'imagetoolbar'         ImageToolbar            no
  'lotus'                Lotus                   no
  'page-enter'           PageEnter               no
  'page-exit'            PageExit                no
  'pics-label'           PicsLabel               no
  'pragma'               Pragma                  no
  'refresh'              Refresh                 no
  'reply-to'             ReplyTo                 no
  'set-cookie'           SetCookie               no
  'site-enter'           SiteEnter               no
  'site-exit'            SiteExit                no
  'vary'                 Vary                    no
  'window-target'        WindowTarget            no
```

HTML ncc Tags

```
  Tag ID                 Tag Name                Writable
  ------                 --------                --------
  'charset'              CharacterSet            no
  'depth'                Depth                   no
  'files'                Files                   no
  'footnotes'            Footnotes               no
  'generator'            Generator               no
  'kbytesize'            KByteSize               no
  'maxpagenormal'        MaxPageNormal           no
  'multimediatype'       MultimediaType          no
  'narrator'             Narrator                no
  'pagefront'            PageFront               no
  'pagenormal'           PageNormal              no
  'pagespecial'          PageSpecial             no
  'prodnotes'            ProdNotes               no
  'produceddate'         ProducedDate            no
  'producer'             Producer                no
  'revision'             Revision                no
  'revisiondate'         RevisionDate            no
  'setinfo'              SetInfo                 no
  'sidebars'             Sidebars                no
  'sourcedate'           SourceDate              no
  'sourceedition'        SourceEdition           no
  'sourcepublisher'      SourcePublisher         no
  'sourcerights'         SourceRights            no
  'sourcetitle'          SourceTitle             no
  'tocitems'             TOCItems                no
  'totaltime'            Duration                no
```

HTML Office Tags

Tags written by Microsoft Office applications.

```
  Tag ID                 Tag Name                Writable
  ------                 --------                --------
  'Author'               Author                  no
  'Category'             Category                no
```

```
       'Characters'          Characters               no
       'CharactersWithSpaces' CharactersWithSpaces    no
       'Company'             Company                  no
       'Created'             CreateDate               no
       'Description'         Description              no
       'Keywords'            Keywords                 no
       'LastAuthor'          LastAuthor               no
       'LastPrinted'         LastPrinted              no
       'LastSaved'           ModifyDate               no
       'Lines'               Lines                    no
       'Manager'             Manager                  no
       'Pages'               Pages                    no
       'Paragraphs'          Paragraphs               no
       'Revision'            RevisionNumber           no
       'Subject'             Subject                  no
       'Template'            Template                 no
       'TotalTime'           TotalEditTime            no
       'Version'             RevisionNumber           no
       'Words'               Words                    no
```

HTML prod Tags

```
       Tag ID                Tag Name                 Writable
       ------                --------                 --------
       'recengineer'         RecEngineer              no
       'reclocation'         RecLocation              no
```

HTML vw96 Tags

```
       Tag ID                Tag Name                 Writable
       ------                --------                 --------
       'objecttype'          ObjectType               no
```

Palm Tags

Information extracted from Palm database files (PDB and PRC
extensions), Mobipocket electronic books (MOBI), and Amazon Kindle KF7
and KF8 books (AZW and AZW3).

```
       Index4   Tag Name                 Writable
       ------   --------                 --------
          0     DatabaseName             no
          9     CreateDate               no
         10     ModifyDate               no
         11     LastBackupDate           no
         12     ModificationNumber       no
         15     PalmFileType             no
```

Palm MOBI Tags

Information extracted from the MOBI header of Mobipocket and Amazon
Kindle KF7 and KF8 files.

```
       Index4   Tag Name                 Writable
       ------   --------                 --------
          0     Compression              no
          1     UncompressedTextLength   no
          3     Encryption               no
          6     MobiType                 no
          7     CodePage                 no
          9     MobiVersion              no
         21     BookName                 no
         26     MinimumVersion           no
```

Palm EXTH Tags

Information extracted from the MOBI extended header.

```
       Tag ID   Tag Name                 Writable
       ------   --------                 --------
       0x0001   DRMServerID              no
```

```
0x0002   DRMCommerceID                          no
0x0003   DRM_E-BookBaseID                       no
0x0064   Author                                 no
0x0065   Publisher                              no
0x0066   Imprint                                no
0x0067   Description                            no
0x0068   ISBN                                   no
0x0069   Subject                                no+
0x006a   PublishDate                            no
0x006b   Review                                 no
0x006c   Contributor                            no
0x006d   Rights                                 no
0x006e   SubjectCode                            no
0x006f   BookType                               no
0x0070   Source                                 no
0x0071   ASIN                                   no
0x0072   BookVersion                            no
0x0073   SampleFlag                             no
0x0074   StartReading                           no
0x0075   Adult                                  no
0x0076   RetailPrice                            no
0x0077   RetailPriceCurrency                    no
0x007d   ResourceCount                          no
0x0081   KF8CoverURI                            no
0x00c8   DictionaryShortName                    no
0x00cc   CreatorSoftware                        no
0x00cd   CreatorMajorVersion                    no
0x00ce   CreatorMinorVersion                    no
0x00cf   CreatorBuildNumber                     no
0x00d0   Watermark                              no
0x00d1   Tamper-proofKeys                       no
0x0191   ClippingLimit                          no
0x0192   PublisherLimit                         no
0x0194   TextToSpeech                           no
0x0195   RentalFlag                             no
0x0196   RentalExpirationDate                   no
0x01f5   CDEType                                no
0x01f6   LastUpdateTime                         no
0x01f7   UpdatedTitle                           no
0x01f8   ASIN2                                  no
0x020c   Language                               no
0x020d   Alignment                              no
0x0217   CreatorBuildNumber2                    no
```

Torrent Tags

Below are tags commonly found in BitTorrent files. As well as these
tags, any other existing tags will be extracted. For convenience, list
items are expanded into individual tags with an index in the tag name,
but only the tags with index "1" are listed in the tables below. See
<https://wiki.theory.org/BitTorrentSpecification> for the BitTorrent
specification.

Tag ID	Tag Name	Writable
'announce'	Announce	no
'announce-list'	AnnounceList1	no
'comment'	Comment	no
'created by'	Creator	no
'creation date'	CreateDate	no
'encoding'	Encoding	no
'info'	Info	Torrent Info
'url-list'	URLList1	no

Torrent Info Tags

Tag ID	Tag Name	Writable
'file-duration'	File1Duration	no
'file-media'	File1Media	no
'files'	Files	Torrent Files

```
'length'              Length                   no
'md5sum'              MD5Sum                   no
'name'                Name                     no
'name.utf-8'          NameUTF-8                no
'piece length'        PieceLength              no
'pieces'              Pieces                   no
'private'             Private                  no
'profiles'            Profiles                 Torrent Profiles
```

Torrent Files Tags

```
   Tag ID                 Tag Name                 Writable
   ------                 --------                 --------
   'length'              File1Length              no
   'md5sum'              File1MD5Sum              no
   'path'                File1Path                no
   'path.utf-8'          File1PathUTF-8           no
```

Torrent Profiles Tags

```
   Tag ID    Tag Name                 Writable
   ------    --------                 --------
   'acodec'  Profile1AudioCodec       no
   'height'  Profile1Height           no
   'vcodec'  Profile1VideoCodec       no
   'width'   Profile1Width            no
```

EXE Tags

This module extracts information from various types of Windows, MacOS
and Unix executable and library files. The first table below lists
information extracted from the header of Windows PE (Portable
Executable) EXE files and DLL libraries.

```
   Index2    Tag Name                 Writable
   ------    --------                 --------
        0    MachineType              no
        2    TimeStamp                no
        9    ImageFileCharacteristics no
       10    PEType                   no
       11    LinkerVersion            no
       12    CodeSize                 no
       14    InitializedDataSize      no
       16    UninitializedDataSize    no
       18    EntryPoint               no
       30    OSVersion                no
       32    ImageVersion             no
       34    SubsystemVersion         no
       44    Subsystem                no
```

EXE PEVersion Tags

Information extracted from the VS_VERSION_INFO structure of Windows PE
files.

```
   Index4    Tag Name                 Writable
   ------    --------                 --------
        2    FileVersionNumber        no
        4    ProductVersionNumber     no
        6    FileFlagsMask            no
        7    FileFlags                no
        8    FileOS                   no
        9    ObjectFileType           no
       10    FileSubtype              no
```

EXE PEString Tags

Resource strings found in Windows PE files. The **TagID**'s are not shown
because they are the same as the **Tag Name**. ExifTool will extract any
existing StringFileInfo tags even if not listed in this table.

```
Tag Name                                   Writable
--------                                   --------
BuildDate                                  no
BuildVersion                               no
CharacterSet                               no
Comments                                   no
CompanyName                                no
Copyright                                  no
FileDescription                            no
FileVersion                                no
InternalName                               no
LanguageCode                               no
LegalCopyright                             no
LegalTrademarks                            no
OriginalFileName                           no
PrivateBuild                               no
ProductName                                no
ProductVersion                             no
SpecialBuild                               no
```

EXE DebugRSDS Tags

CodeView RSDS debug information found in some Windows EXE files.

```
Index1    Tag Name                         Writable
------    --------                         --------
    0     PDBModifyDate                    no
   20     PDBAge                           no
   24     PDBFileName                      no
```

EXE DebugNB10 Tags

CodeView NB10 debug information found in some Windows EXE files.

```
Index1    Tag Name                         Writable
------    --------                         --------
    0     PDBModifyDate                    no
    8     PDBCreateDate                    no
   12     PDBAge                           no
   16     PDBFileName                      no
```

EXE Misc Tags

Miscellaneous CodeView debug information in Windows EXE files.

```
Index1    Tag Name                         Writable
------    --------                         --------
   12     EXEFileName                      no
```

EXE MachO Tags

Information extracted from Mach-O (Mac OS X) executable files and DYLIB
libraries.

```
Index    Tag Name                          Writable
-----    --------                          --------
    0    CPUArchitecture                   no
    1    CPUByteOrder                      no
    2    CPUCount                          no
    3    CPUType                           no+
    4    CPUSubtype                        no+
    5    ObjectFileType                    no
    6    ObjectFlags                       no
```

EXE PEF Tags

Information extracted from PEF (Classic MacOS) executable files and
libraries.

```
Index4    Tag Name                         Writable
```

```
    ------    --------                        --------
      2    CPUArchitecture                    no
      3    PEFVersion                         no
      4    TimeStamp                          no
```

EXE ELF Tags

Information extracted from ELF (Unix) executable files and SO
libraries.

```
    Index1    Tag Name                        Writable
    ------    --------                        --------
      4    CPUArchitecture                    no
      5    CPUByteOrder                       no
     16    ObjectFileType                     no
     18    CPUType                            no
```

EXE AR Tags

Information extracted from static libraries.

```
    Index1    Tag Name                        Writable
    ------    --------                        --------
     16    CreateDate                         no
```

EXE CHM Tags

Tags extracted from Microsoft Compiled HTML files.

```
    Index4    Tag Name                        Writable
    ------    --------                        --------
      1    CHMVersion                         no
      5    LanguageCode                       no
```

LNK Tags
Information extracted from MS Shell Link (Windows shortcut) files.

```
    Index1         Tag Name                   Writable
    ------         --------                   --------
    0x0014         Flags                      no
    0x0018         FileAttributes             no
    0x001c         CreateDate                 no
    0x0024         AccessDate                 no
    0x002c         ModifyDate                 no
    0x0034         TargetFileSize             no
    0x0038         IconIndex                  no
    0x003c         RunWindow                  no
    0x0040         HotKey                     no
    0x10000        ItemID                     LNK ItemID
    0x20000        LinkInfo                   LNK LinkInfo
    0x30004        Description                no
    0x30008        RelativePath               no
    0x30010        WorkingDirectory           no
    0x30020        CommandLineArguments        no
    0x30040        IconFileName               no
    0xa0000000     UnknownData                LNK UnknownData
    0xa0000001     EnvVarData                 LNK UnknownData
    0xa0000002     ConsoleData                LNK ConsoleData
    0xa0000003     TrackerData                LNK TrackerData
    0xa0000004     ConsoleFEData              LNK ConsoleFEData
    0xa0000005     SpecialFolderData          LNK UnknownData
    0xa0000006     DarwinData                 LNK UnknownData
    0xa0000007     IconEnvData                LNK UnknownData
    0xa0000008     ShimData                   LNK UnknownData
    0xa0000009     PropertyStoreData          LNK UnknownData
    0xa000000b     KnownFolderData            LNK UnknownData
    0xa000000c     VistaIDListData            LNK UnknownData
```

LNK ItemID Tags

Tag ID	Tag Name	Writable
0x0032	Item0032	LNK Item0032

LNK Item0032 Tags

Index1	Tag Name	Writable
14	TargetFileDOSName	no

LNK LinkInfo Tags

Tag Name	Writable
CommonNetworkRelLink	no
CommonPathSuffix	no
DeviceName	no
DriveSerialNumber	no
DriveType	no
LocalBasePath	no
NetName	no
NetProviderType	no
VolumeID	no
VolumeLabel	no

LNK UnknownData Tags

Index1	Tag Name	Writable
[no tags known]		

LNK ConsoleData Tags

Index1	Tag Name	Writable
8	FillAttributes	no
10	PopupFillAttributes	no
12	ScreenBufferSize	no
16	WindowSize	no
20	WindowOrigin	no
32	FontSize	no
36	FontFamily	no
40	FontWeight	no
44	FontName	no
108	CursorSize	no
112	FullScreen	no
116	QuickEdit	no
120	InsertMode	no
124	WindowOriginAuto	no
128	HistoryBufferSize	no
132	NumHistoryBuffers	no
136	RemoveHistoryDuplicates	no

LNK TrackerData Tags

Index1	Tag Name	Writable
16	MachineID	no

LNK ConsoleFEData Tags

Index1	Tag Name	Writable
8	CodePage	no

PCAP Tags

Tags extracted from CAP, PCAP and PCAPNG Packet Capture files.

Tag ID	Tag Name	Writable

```
      0x0001              Comment                 no
      0x0bac              CustomOption1           no
      0x0bad              CustomOption2           no
      0x4bac              CustomOption3           no
      0x4bad              CustomOption3           no
      'ByteOrder'         ByteOrder               no
      'IDB-2'             DeviceName              no
      'IDB-3'             Description             no
      'IDB-4'             IPv4Addr                no
      'IDB-5'             IPv6Addr                no
      'IDB-6'             MACAddr                 no
      'IDB-7'             EUIAddr                 no
      'IDB-8'             Speed                   no
      'IDB-9'             TimeStampResolution     no
      'IDB-10'            TimeZone                no
      'IDB-11'            Filter                  no
      'IDB-12'            OperatingSytem          no
      'IDB-13'            FCSLen                  no
      'IDB-14'            TimeStampOffset         no
      'IDB-15'            Hardware                no
      'IDB-16'            TXSpeed                 no
      'IDB-17'            RXSpeed                 no
      'IDB-18'            TimezoneName            no
      'LinkType'          LinkType                no
      'PCAPVersion'       PCAPVersion             no
      'SHB-2'             Hardware                no
      'SHB-3'             OperatingSytem          no
      'SHB-4'             UserApplication         no
      'TimeStamp'         TimeStamp               no
```

Font Tags

This table contains a collection of tags found in font files of various
formats. ExifTool current recognizes OTF, TTF, TTC, DFONT, PFA, PFB,
PFM, AFM, ACFM and AMFM font files.

```
      Tag ID          Tag Name                    Writable
      ------          --------                    --------
      'AFM'           AFM                         Font AFM
      'C2PA'          C2PA                        Jpeg2000
      'PFM'           PFMHeader                   Font PFM
      'PSInfo'        PSFontInfo                  Font PSInfo
      'fontname'      FontName                    no
      'name'          Name                        Font Name
      'numfonts'      NumFonts                    no
      'postfont'      PostScriptFontName          no
```

Font AFM Tags

Tags extracted from Adobe Font Metrics files (AFM, ACFM and AMFM).

```
      Tag ID              Tag Name                Writable
      ------              --------                --------
      'Ascender'          Ascender                no
      'CapHeight'         CapHeight               no
      'CharacterSet'      CharacterSet            no
      'Characters'        Characters              no
      'Creation Date'     CreateDate              no
      'Descender'         Descender               no
      'EncodingScheme'    EncodingScheme          no
      'EscChar'           EscChar                 no
      'FamilyName'        FontFamily              no
      'FontName'          FontName                no
      'FullName'          FullName                no
      'IsBaseFont'        IsBaseFont              no
      'IsFixedV'          IsFixedV                no
      'MappingScheme'     MappingScheme           no
      'Notice'            Notice                  no
      'Version'           Version                 no
      'Weight'            Weight                  no
      'XHeight'           XHeight                 no
```

Font PFM Tags

Tags extracted from the PFM file header.

Index1	Tag Name	Writable
0	PFMVersion	no
6	Copyright	no
66	FontType	no
68	PointSize	no
70	YResolution	no
72	XResolution	no
74	Ascent	no
76	InternalLeading	no
78	ExternalLeading	no
80	Italic	no
81	Underline	no
82	Strikeout	no
83	Weight	no
85	CharacterSet	no
86	PixWidth	no
88	PixHeight	no
90	PitchAndFamily	no
91	AvgWidth	no
93	MaxWidth	no
95	FirstChar	no
96	LastChar	no
97	DefaultChar	no
98	BreakChar	no
99	WidthBytes	no

Font PSInfo Tags

Tags extracted from PostScript font files (PFA and PFB).

Tag ID	Tag Name	Writable
'Copyright'	Copyright	no
'FSType'	FSType	no
'FamilyName'	FontFamily	no
'FontName'	FontName	no
'FontType'	FontType	no
'FullName'	FullName	no
'ItalicAngle'	ItalicAngle	no
'Notice'	Notice	no
'UnderlinePosition'	UnderlinePosition	no
'UnderlineThickness'	UnderlineThickness	no
'Weight'	Weight	no
'isFixedPitch'	IsFixedPitch	no
'version'	Version	no

Font Name Tags

The following tags are extracted from the TrueType font "name" table
found in OTF, TTF, TTC and DFONT files. These tags support localized
languages by adding a hyphen followed by a language code to the end of
the tag name (eg. "Copyright-fr" or "License-en-US"). Tags with no
language code use the default language of "en".

Tag ID	Tag Name	Writable
0x0000	Copyright	no
0x0001	FontFamily	no
0x0002	FontSubfamily	no
0x0003	FontSubfamilyID	no
0x0004	FontName	no
0x0005	NameTableVersion	no
0x0006	PostScriptFontName	no
0x0007	Trademark	no

```
    0x0008   Manufacturer                       no
    0x0009   Designer                           no
    0x000a   Description                        no
    0x000b   VendorURL                          no
    0x000c   DesignerURL                        no
    0x000d   License                            no
    0x000e   LicenseInfoURL                     no
    0x0010   PreferredFamily                    no
    0x0011   PreferredSubfamily                 no
    0x0012   CompatibleFontName                 no
    0x0013   SampleText                         no
    0x0014   PostScriptFontName                 no
    0x0015   WWSFamilyName                      no
    0x0016   WWSSubfamilyName                   no
```

VCard Tags

This table lists common vCard tags, but ExifTool will also extract any
other vCard tags found. Tag names may have "Pref" added to indicate
the preferred instance of a vCard property, and other "TYPE" parameters
may also added to the tag name. VCF files may contain multiple vCard
entries which are distinguished by the ExifTool family 3 group name
(document number). See <http://tools.ietf.org/html/rfc6350> for the
vCard 4.0 specification.

Tag ID	Tag Name	Writable
'Adr'	Address	no
'Anniversary'	Anniversary	no
'Bday'	Birthday	no
'Email'	Email	no
'Fn'	FormattedName	no
'Gender'	Gender	no
'Geo'	Geolocation	no
'Impp'	IMPP	no
'Lang'	Language	no
'Logo'	Logo	no
'N'	Name	no
'Nickname'	Nickname	no
'Note'	Note	no
'Org'	Organization	no
'Photo'	Photo	no
'Prodid'	Software	no
'Rev'	Revision	no
'Sound'	Sound	no
'Tel'	Telephone	no
'Title'	JobTitle	no
'Tz'	TimeZone	no
'Uid'	UID	no
'Url'	URL	no
'Version'	VCardVersion	no
'X-abdate'	ABDate	no
'X-ablabel'	ABLabel	no
'X-abrelatednames'	ABRelatedNames	no
'X-abuid'	AB_UID	no
'X-aim'	AIM	no
'X-icq'	ICQ	no
'X-socialprofile'	SocialProfile	no

VCard VCalendar Tags

The VCard module is also used to process iCalendar ICS files since they
use a format similar to vCard. The following table lists standard
iCalendar tags, but any existing tags will be extracted. Top-level
iCalendar components (eg. Event, Todo, Timezone, etc.) are used for the
family 1 group names, and embedded components (eg. Alarm) are added as
a prefix to the tag name. See <http://tools.ietf.org/html/rfc5545> for
the official iCalendar 2.0 specification.

Tag ID	Tag Name	Writable

'Acknowledged'	Acknowledged	no
'Action'	Action	no
'Attach'	Attachment	no
'Attendee'	Attendee	no
'Calscale'	CalendarScale	no
'Categories'	Categories	no
'Class'	Classification	no
'Comment'	Comment	no
'Completed'	DateTimeCompleted	no
'Contact'	Contact	no
'Created'	DateCreated	no
'Description'	Description	no
'Dtend'	DateTimeEnd	no
'Dtstamp'	DateTimeStamp	no
'Dtstart'	DateTimeStart	no
'Due'	DateTimeDue	no
'Duration'	Duration	no
'Exdate'	ExceptionDateTimes	no
'Freebusy'	FreeBusyTime	no
'Geo'	Geolocation	no
'Last-modified'	ModifyDate	no
'Location'	Location	no
'Method'	Method	no
'Organizer'	Organizer	no
'Percent-complete'	PercentComplete	no
'Priority'	Priority	no
'Prodid'	Software	no
'Rdate'	RecurrenceDateTimes	no
'Recurrence-id'	RecurrenceID	no
'Related-to'	RelatedTo	no
'Repeat'	Repeat	no
'Request-status'	RequestStatus	no
'Resources'	Resources	no
'Rrule'	RecurrenceRule	no
'Sequence'	SequenceNumber	no
'Status'	Status	no
'Summary'	Summary	no
'Transp'	TimeTransparency	no
'Trigger'	Trigger	no
'Tzid'	TimezoneID	no
'Tzname'	TimezoneName	no
'Tzoffsetfrom'	TimezoneOffsetFrom	no
'Tzoffsetto'	TimezoneOffsetTo	no
'Tzurl'	TimeZoneURL	no
'Uid'	UID	no
'Url'	URL	no
'Version'	VCalendarVersion	no
'X-apple-calendar-color'	CalendarColor	no
'X-apple-default-alarm'	DefaultAlarm	no
'X-apple-local-default-alarm'		
	LocalDefaultAlarm	no
'X-microsoft-cdo-alldayevent'	AllDayEvent	no
'X-microsoft-cdo-appt-sequence'		
	AppointmentSequence	no
'X-microsoft-cdo-busystatus'	BusyStatus	no
'X-microsoft-cdo-importance'	Importance	no
'X-microsoft-cdo-insttype'	InstanceType	no
'X-microsoft-cdo-intendedstatus'		
	IntendedBusyStatus	no
'X-microsoft-cdo-ownerapptid'		
	OwnerAppointmentID	no
'X-microsoft-disallow-counter'		
	DisallowCounterProposal	no
'X-microsoft-donotforwardmeeting'		
	DoNotForwardMeeting	no
'X-microsoft-locations'	MeetingLocations	no
'X-wr-alarmuid'	AlarmUID	no
'X-wr-caldesc'	CalendarDescription	no
'X-wr-calname'	CalendarName	no
'X-wr-relcalid'	CalendarID	no

```
    'X-wr-timezone'        TimeZone2              no
```

VCard VNote Tags

Tags extracted from V-Note VNT files.

```
    Tag ID                 Tag Name               Writable
    ------                 --------               --------
    'Body'                 Body                   no
    'Dcreated'             CreateDate             no
    'Last-modified'        ModifyDate             no
    'Version'              Version                no
```

Text Tags

Although basic text files contain no metadata, the following tags are determined from a simple analysis of the data in TXT and CSV files. Statistics are generated only for 8-bit encodings, but the FastScan (-fast) option may be used to limit processing to the first 64 KiB in which case some tags are not produced. To avoid long processing delays, ExifTool will issue a minor warning and process only the first 64 KiB of any file larger than 20 MiB unless the IgnoreMinorErrors (-m) option is used.

```
    Tag Name                               Writable
    --------                               --------
    ByteOrderMark                          no
    ColumnCount                            no
    Delimiter                              no
    LineCount                              no
    MIMEEncoding                           no
    Newlines                               no
    Quoting                                no
    RowCount                               no
    WordCount                              no
```

RSRC Tags

Tags extracted from Mac OS resource files, DFONT files and "._" sidecar files. These tags may also be extracted from the resource fork of any file in OS X, either by adding "/..namedfork/rsrc" to the filename to process the resource fork alone, or by using the ExtractEmbedded (-ee) option to process the resource fork as a sub-document of the main file. When writing, ExifTool preserves the Mac OS resource fork by default, but it may deleted with "-rsrc:all=" on the command line.

```
    Tag ID                 Tag Name               Writable
    ------                 --------               --------
    '8BIM'                 PhotoshopInfo          Photoshop
    'POST_0x01f5'          PostscriptFont         PostScript
    'STR _0xbff3'          ApplicationMissingMsg  no
    'STR _0xbff4'          CreatorApplication     no
    'STR#_0x0080'          Keywords               no
    'TEXT_0x0080'          Description            no
    'sfnt'                 Font                   Font Name
    'usro_0x0000'          OpenWithApplication    no
    'vers_0x0001'          ApplicationVersion     no
```

Rawzor Tags

Rawzor files store compressed images of other formats. As well as the information listed below, exiftool uncompresses and extracts the meta information from the original image.

```
    Tag Name                               Writable
    --------                               --------
    CompressionFactor                      no
    OriginalFileSize                       no
    OriginalFileType                       no
    RawzorCreatorVersion                   no
    RawzorRequiredVersion                  no
```

ZIP Tags

The following tags are extracted from ZIP archives. ExifTool also
extracts additional meta information from compressed documents inside
some ZIP-based files such Office Open XML (DOCX, PPTX and XLSX), Open
Document (ODB, ODC, ODF, ODG, ODI, ODP, ODS and ODT), iWork (KEY,
PAGES, NUMBERS), Capture One Enhanced Image Package (EIP), Adobe
InDesign Markup Language (IDML), Electronic Publication (EPUB), and
Sketch design files (SKETCH). The ExifTool family 3 groups may be used
to organize ZIP tags by embedded document number (ie. the exiftool
"-g3" option).

Index2	Tag Name	Writable
2	ZipRequiredVersion	no
3	ZipBitFlag	no
4	ZipCompression	no
5	ZipModifyDate	no
7	ZipCRC	no
9	ZipCompressedSize	no
11	ZipUncompressedSize	no
15	ZipFileName	no
'_com'	ZipFileComment	no

ZIP GZIP Tags

These tags are extracted from GZIP (GNU ZIP) archives, but currently
only for the first file in the archive.

Index1	Tag Name	Writable
2	Compression	no
3	Flags	no
4	ModifyDate	no
8	ExtraFlags	no
9	OperatingSystem	no
10	ArchivedFileName	no
11	Comment	no

ZIP RAR Tags

These tags are extracted from RAR archive files.

Index1	Tag Name	Writable
0	CompressedSize	no
4	UncompressedSize	no
8	OperatingSystem	no
13	ModifyDate	no
18	PackingMethod	no
25	ArchivedFileName	no

ZIP RAR5 Tags

These tags are extracted from RAR v5 and 7z archive files.

Tag Name	Writable
ArchivedFileName	no
CompressedSize	no
FileVersion	no
ModifyDate	no
OperatingSystem	no
UncompressedSize	no

RTF Tags
This table lists standard tags of the RTF information group, but
ExifTool will also extract any non-standard tags found in this group.
As well, ExifTool will extract any custom properties that are found.
See <http://www.microsoft.com/en-ca/download/details.aspx?id=10725> for
the specification.

Tag ID	Tag Name	Writable
'author'	Author	no
'buptim'	BackupTime	no
'category'	Category	no
'comment'	Comment	no
'company'	Company	no
'copyright'	Copyright	no
'creatim'	CreateDate	no
'doccomm'	Comments	no
'edmins'	TotalEditTime	no
'hlinkbase'	HyperlinkBase	no
'id'	InternalIDNumber	no
'keywords'	Keywords	no
'manager'	Manager	no
'nofchars'	Characters	no
'nofcharsws'	CharactersWithSpaces	no
'nofpages'	Pages	no
'nofwords'	Words	no
'operator'	LastModifiedBy	no
'printim'	LastPrinted	no
'revtim'	ModifyDate	no
'subject'	Subject	no
'title'	Title	no
'vern'	InternalVersionNumber	no
'version'	RevisionNumber	no

OOXML Tags

The Office Open XML (OOXML) format was introduced with Microsoft Office 2007 and is used by file types such as DOCX, PPTX and XLSX. These are essentially ZIP archives containing XML files. The table below lists some tags which have been observed in OOXML documents, but ExifTool will extract any tags found from XML files of the OOXML document properties ("docProps") directory.

Tips:

1) Structural ZIP tags may be ignored (if desired) with "--ZIP:all" on the command line.

2) Tags may be grouped by their document number in the ZIP archive with the "-g3" or "-G3" option.

Tag Name	Writable
AppVersion	no
Application	no
Category	no
Characters	no
CharactersWithSpaces	no
CheckedBy	no
Client	no
Company	no
CreateDate	no
DateCompleted	no
Department	no
Destination	no
Disposition	no
Division	no
DocSecurity	no
DocumentNumber	no
Editor	no
ForwardTo	no
Group	no
HeadingPairs	no
HiddenSlides	no
HyperlinkBase	no
HyperlinksChanged	no
Keywords	no
Language	no

```
LastModifiedBy                              no
LastPrinted                                 no
Lines                                       no
LinksUpToDate                               no
MMClips                                     no
Mailstop                                    no
Manager                                     no
Matter                                      no
ModifyDate                                  no
Notes                                       no
Office                                      no
Owner                                       no
Pages                                       no
Paragraphs                                  no
PresentationFormat                          no
Project                                     no
Publisher                                   no
Purpose                                     no
ReceivedFrom                                no
RecordedBy                                  no
RecordedDate                                no
Reference                                   no
RevisionNumber                              no
ScaleCrop                                   no
SharedDoc                                   no
Slides                                      no
Source                                      no
Status                                      no
TelephoneNumber                             no
Template                                    no
TitlesOfParts                               no
TotalEditTime                               no
Typist                                      no
Words                                       no
```

iWork Tags

The Apple iWork '09 file format is a ZIP archive containing XML files
similar to the Office Open XML (OOXML) format. Metadata tags in iWork
files are extracted even if they don't appear below.

```
Tag Name                                Writable
--------                                --------
Author                                      no
Comment                                     no
Copyright                                   no
Keywords                                    no
Projects                                    no+
Title                                       no
```

ISO Tags

Tags extracted from ISO 9660 disk images.

```
Tag ID    Tag Name                      Writable
------    --------                      --------
0x0000    BootRecord                    ISO BootRecord
0x0001    PrimaryVolume                 ISO PrimaryVolume
```

ISO BootRecord Tags

```
Index1    Tag Name                      Writable
------    --------                      --------
    7     BootSystem                    no
   39     BootIdentifier                no
```

ISO PrimaryVolume Tags

```
Index1    Tag Name                      Writable
------    --------                      --------
    8     System                        no
   40     VolumeName                    no
```

```
    80      VolumeBlockCount                        no
   120      VolumeSetDiskCount?                     no
   124      VolumeSetDiskNumber?                    no
   128      VolumeBlockSize                         no
   132      PathTableSize?                          no
   140      PathTableLocation?                      no
   174      RootDirectoryCreateDate                 no
   190      VolumeSetName                           no
   318      Publisher                               no
   446      DataPreparer                            no
   574      Software                                no
   702      CopyrightFileName                       no
   740      AbstractFileName                        no
   776      BibligraphicFileName                    no
   813      VolumeCreateDate                        no
   830      VolumeModifyDate                        no
   847      VolumeExpirationDate                    no
   864      VolumeEffectiveDate                     no
```

MacOS Tags

On MacOS systems, the there are additional MDItem and XAttr Finder tags
that may be extracted. These tags are not extracted by default -- they
must be specifically requested or enabled via an API option. (Except
when reading MacOS "._" files directly, see below.)

The tables below list some of the tags that may be extracted, but
ExifTool will extract all available information even for tags not
listed.

Tags in these tables are referred to as "pseudo" tags because their
information is not stored in the file itself. As such, **Writable** tags
in these tables may be changed without having to rewrite the file.

Note that on some filesystems, MacOS creates sidecar files with names
that begin with "._". ExifTool will read these files if specified, and
extract the information listed in the following table without the need
for extra options, but these files are not writable directly.

```
  Tag ID   Tag Name                        Writable
  ------   --------                        --------
  0x0002   RSRC                            RSRC
  0x0009   ATTR                            MacOS XAttr
```

MacOS XAttr Tags

XAttr tags are extracted using the "xattr" utility. They are extracted
if any "XAttr*" tag or the MacOS group is specifically requested, or by
setting the API XAttrTags option to 1 or the API RequestAll option to 2
or higher. And they are extracted by default from MacOS "._" files
when reading these files directly.

```
  Tag Name                                Writable
  --------                                --------
  XAttrAppleMailDateReceived              no
  XAttrAppleMailDateSent                  no
  XAttrAppleMailIsRemoteAttachment        no
  XAttrFinderInfo                         no
  XAttrLastUsedDate                       no
  XAttrMDItemDownloadedDate               no
  XAttrMDItemFinderComment                no
  XAttrMDItemWhereFroms                   yes!
  XAttrMDLabel                            no
  XAttrQuarantine                         yes!
  XAttrResourceFork                       no
```

MacOS MDItem Tags

MDItem tags are extracted using the "mdls" utility. They are extracted
if any "MDItem*" tag or the MacOS group is specifically requested, or
by setting the API MDItemTags option to 1 or the API RequestAll option

to 2 or higher. Note that these tags do not necessarily reflect the
current metadata of a file -- it may take some time for the MacOS
mdworker daemon to index the file after a metadata change.

Tag Name	Writable
AppleMailDateReceived	no
AppleMailDateSent	no
AppleMailFlagged	no
AppleMailIsRemoteAttachment	no
AppleMailMessageID	no
AppleMailPriority	no
AppleMailRead	no
AppleMailRepliedTo	no
MDItemAccountHandles	no
MDItemAccountIdentifier	no
MDItemAcquisitionMake	no
MDItemAcquisitionModel	no
MDItemAltitude	no
MDItemAperture	no
MDItemAudioBitRate	no
MDItemAudioChannelCount	no
MDItemAuthorEmailAddresses	no
MDItemAuthors	no
MDItemBitsPerSample	no
MDItemBundleIdentifier	no
MDItemCity	no
MDItemCodecs	no
MDItemColorSpace	no
MDItemComment	no
MDItemContentCreationDate	no
MDItemContentCreationDateRanking	no
MDItemContentCreationDate_Ranking	no
MDItemContentModificationDate	no
MDItemContentType	no
MDItemContentTypeTree	no
MDItemContributors	no
MDItemCopyright	no
MDItemCountry	no
MDItemCreator	no
MDItemDateAdded	no
MDItemDateAdded_Ranking	no
MDItemDescription	no
MDItemDisplayName	no
MDItemDownloadedDate	no
MDItemDurationSeconds	no
MDItemEXIFGPSVersion	no
MDItemEXIFVersion	no
MDItemEmailConversationID	no
MDItemEncodingApplications	no
MDItemExposureMode	no
MDItemExposureProgram	no
MDItemExposureTimeSeconds	no
MDItemFNumber	no
MDItemFSContentChangeDate	no
MDItemFSCreationDate	yes!
MDItemFSCreatorCode	no
MDItemFSFinderFlags	no
MDItemFSHasCustomIcon	no
MDItemFSInvisible	no
MDItemFSIsExtensionHidden	no
MDItemFSIsStationery	no
MDItemFSLabel	yes!
MDItemFSName	no
MDItemFSNodeCount	no
MDItemFSOwnerGroupID	no
MDItemFSOwnerUserID	no
MDItemFSSize	no
MDItemFSTypeCode	no
MDItemFinderComment	yes!

```
MDItemFlashOnOff                                 no
MDItemFocalLength                                no
MDItemGPSDateStamp                               no
MDItemGPSStatus                                  no
MDItemGPSTrack                                   no
MDItemHasAlphaChannel                            no
MDItemISOSpeed                                   no
MDItemIdentifier                                 no
MDItemImageDirection                             no
MDItemInterestingDateRanking                     no
MDItemInterestingDate_Ranking                    no
MDItemIsApplicationManaged                       no
MDItemIsExistingThread                           no
MDItemIsLikelyJunk                               no
MDItemKeywords                                   no
MDItemKind                                       no
MDItemLastUsedDate                               no
MDItemLastUsedDate_Ranking                       no
MDItemLatitude                                   no
MDItemLensModel                                  no
MDItemLogicalSize                                no
MDItemLongitude                                  no
MDItemMailDateReceived_Ranking                   no
MDItemMailboxes                                  no
MDItemMediaTypes                                 no
MDItemNumberOfPages                              no
MDItemOrientation                                no
MDItemOriginApplicationIdentifier                no
MDItemOriginMessageID                            no
MDItemOriginSenderDisplayName                    no
MDItemOriginSenderHandle                         no
MDItemOriginSubject                              no
MDItemPageHeight                                 no
MDItemPageWidth                                  no
MDItemPhysicalSize                               no
MDItemPixelCount                                 no
MDItemPixelHeight                                no
MDItemPixelWidth                                 no
MDItemPrimaryRecipientEmailAddresses             no
MDItemProfileName                                no
MDItemRecipients                                 no
MDItemRedEyeOnOff                                no
MDItemResolutionHeightDPI                        no
MDItemResolutionWidthDPI                         no
MDItemSecurityMethod                             no
MDItemSpeed                                      no
MDItemStateOrProvince                            no
MDItemStreamable                                 no
MDItemSubject                                    no
MDItemTimestamp                                  no
MDItemTitle                                      no
MDItemTotalBitRate                               no
MDItemUseCount                                   no
MDItemUsedDates                                  no
MDItemUserDownloadedDate                         no
MDItemUserDownloadedUserHandle                   no
MDItemUserSharedReceivedDate                     no
MDItemUserSharedReceivedRecipient                no
MDItemUserSharedReceivedRecipientHandle          no
MDItemUserSharedReceivedSender                   no
MDItemUserSharedReceivedSenderHandle             no
MDItemUserSharedReceivedTransport                no
MDItemUserTags                                   yes!+
MDItemVersion                                    no
MDItemVideoBitRate                               no
MDItemWhereFroms                                 no
MDItemWhiteBalance                               no
```

Extra Tags
     The extra tags provide extra features or extra information extracted or

generated by ExifTool that is not directly associated with another tag
group. The **Group** column lists the family 1 group name when reading.
Tags with a "-" in this column are write-only.

Tags in the family 1 "System" group are referred to as "pseudo" tags
because they don't represent real metadata in the file. Instead, this
information is stored in the directory structure of the filesystem.
The **Writable** System "pseudo" tags in this table may be written without
modifying the file itself. The TestName tag is used for dry-run
testing before writing FileName.

Tag Name	Group	Writable
Adobe	Adobe	yes!
BaseName	System	no
CanonDR4	CanonVRD	yes!^
CanonVRD	CanonVRD	yes!^
Comment	File	yes
CurrentIPTCDigest	File	no
Directory	System	yes!
EXIF	EXIF	yes!
EmbeddedVideo	File	no
Error	ExifTool	no
ExifByteOrder	File	yes
ExifToolVersion	ExifTool	no
ExifUnicodeByteOrder	-	yes
FileAccessDate	System	no
FileAttributes	System	no
FileBlockCount	System	no
FileBlockSize	System	no
FileCreateDate	System	yes!
FileDeviceID	System	no
FileDeviceNumber	System	no
FileGroupID	System	yes!
FileHardLinks	System	no
FileInodeChangeDate	System	no
FileInodeNumber	System	no
FileModifyDate	System	yes!
FileName	System	yes!
FilePath	System	no
FilePermissions	System	yes!
FileSequence	ExifTool	no
FileSize	System	no
FileType	File	no
FileTypeExtension	File	no
FileUserID	System	yes!
ForceWrite	-	yes
Geolocate	-	yes
GeolocationBearing	ExifTool	no
GeolocationCity	ExifTool	no
GeolocationCountry	ExifTool	no
GeolocationCountryCode	ExifTool	no
GeolocationDistance	ExifTool	no
GeolocationFeatureCode	ExifTool	no
GeolocationFeatureType	ExifTool	no
GeolocationPopulation	ExifTool	no
GeolocationPosition	ExifTool	no
GeolocationRegion	ExifTool	no
GeolocationSubregion	ExifTool	no
GeolocationTimeZone	ExifTool	no
GeolocationWarning	ExifTool	no
Geosync	-	yes
Geotag	-	yes
Geotime	-	yes
HardLink	-	yes!
ICC_Profile	ICC_Profile	yes!
ID3Size	File	no
IPTC	IPTC	yes!
ImageDataHash	File	no
ImageHeight	File	no

```
    ImageWidth              File            no
    JPEGDigest              File            no
    JPEGImageLength         File            no
    JPEGQualityEstimate     File            no
    JUMBF                   JUMBF           no
    MIMEType                File            no
    MaxVal                  File            no
    NewGUID                 ExifTool        no
    Now                     ExifTool        no
    NumPlanes               File            no
    OtherImage              File            no
    PageCount               File            no
    PreviewImage            File            yes
    PreviewJXL              File            no
    PreviewPDF              File            no
    PreviewPNG              File            no
    PreviewTIFF             File            no
    PreviewWMF              File            no
    ProcessingTime          ExifTool        no
    RAFCompression          File            no
    RAFVersion              File            no
    ResourceForkSize        System          no
    SphericalVideoXML       GSpherical      yes!
    SymLink                 -               yes!
    TestName                -               yes!
    ThumbnailImage          File            no
    Trailer                 File            yes!
    Validate                ExifTool        no
    Warning                 ExifTool        no
    XML                     XML             no
    XMP                     XMP             yes!
    XResolution             File            no
    YResolution             File            no
    ZoneIdentifier          System          yes!
```

Composite Tags

The values of the composite tags are **Derived From** the values of other tags. These are convenience tags which are calculated after all other information is extracted. Only a few of these tags are writable directly, the others are changed by writing the corresponding **Derived From** tags. User-defined Composite tags, also useful for custom-formatting of tag values, may created via the ExifTool configuration file.

Tag Name	Derived From	Writable
AdvancedSceneMode	Model	no
	SceneMode	
	AdvancedSceneType	
Aperture	FNumber	no
	ApertureValue	
AudioBitrate	MPEG:MPEGAudioVersion	no
	MPEG:SampleRate	
	MPEG:VBRBytes	
	MPEG:VBRFrames	
AutoFocus	Nikon:FocusMode	no
AvgBitrate	QuickTime::MediaDataSize	no
	QuickTime::Duration	
BlueBalance	WB_RGGBLevels	no
	WB_RGBGLevels	
	WB_RBGGLevels	
	WB_GRBGLevels	
	WB_GRGBLevels	
	WB_GBRGLevels	
	WB_RGBLevels	
	WB_GRBLevels	
	WB_RBLevels	
	WBBlueLevel	
	WBGreenLevel	
CDDBDiscPlayTime	CDDB1Info	no

```
CDDBDiscTracks          CDDB1Info                no
CFAPattern              CFARepeatPatternDim      no
                        CFAPattern2
CircleOfConfusion       ScaleFactor35efl         no
ConditionalFEC          FlashExposureComp        no
                        FlashBits
ContrastDetectAF        Nikon:FocusMode          no
                        Nikon:AFDetectionMethod
DOF                     FocalLength              no
                        Aperture
                        CircleOfConfusion
                        FocusDistance
                        SubjectDistance
                        ObjectDistance
                        ApproximateFocusDistance
                        FocusDistanceLower
                        FocusDistanceUpper
DateCreated             Kodak:YearCreated        no
                        Kodak:MonthDayCreated
DateTimeCreated         IPTC:DateCreated         no
                        IPTC:TimeCreated
DateTimeOriginal        DateTimeCreated          no
                        DateCreated
                        TimeCreated
DateTimeOriginal        ID3:RecordingTime        no
                        ID3:Year
                        ID3:Date
                        ID3:Time
DepthMapTiff            DepthMapData             no
                        DepthMapWidth
                        DepthMapHeight
DigitalCreationDateTime IPTC:DigitalCreationDate no
                        IPTC:DigitalCreationTime
DigitalZoom             Canon:ZoomSourceWidth    no
                        Canon:ZoomTargetWidth
                        Canon:DigitalZoom
DriveMode               ContinuousDrive          no
                        SelfTimer
Duration                AIFF:SampleRate          no
                        AIFF:NumSampleFrames
Duration                APE:SampleRate           no
                        APE:TotalFrames
                        APE:BlocksPerFrame
                        APE:FinalFrameBlocks
Duration                FLAC:SampleRate          no
                        FLAC:TotalSamples
Duration                FileSize                 no
                        ID3Size
                        MPEG:AudioBitrate
                        MPEG:VideoBitrate
                        MPEG:VBRFrames
                        MPEG:SampleRate
                        MPEG:MPEGAudioVersion
Duration                RIFF:FrameRate           no
                        RIFF:FrameCount
                        VideoFrameRate
                        VideoFrameCount
Duration                RIFF:AvgBytesPerSec      no
                        FileSize
                        FrameCount
                        VideoFrameCount
Duration                Vorbis:NominalBitrate    no
                        FileSize
ExtenderStatus          Olympus:Extender         no
                        Olympus:LensType
                        MaxApertureValue
FOV                     FocalLength              no
                        ScaleFactor35efl
                        FocusDistance
FileNumber              DirectoryIndex           yes
```

```
                        FileIndex
Flash                   XMP:FlashFired          yes
                        XMP:FlashReturn
                        XMP:FlashMode
                        XMP:FlashFunction
                        XMP:FlashRedEyeMode
                        XMP:Flash
FlashType               FlashBits               no
FocalLength35efl        FocalLength             no
                        ScaleFactor35efl
FocusDistance           Sony:FocusPosition      no
                        FocalLength
FocusDistance2          Sony:FocusPosition2     no
                        FocalLengthIn35mmFormat
GPSAltitude             GPS:GPSAltitude         no
                        GPS:GPSAltitudeRef
                        XMP:GPSAltitude
                        XMP:GPSAltitudeRef
GPSAltitude             QuickTime:GPSCoordinates no
GPSAltitude             QuickTime:LocationInformation no
GPSAltitudeRef          QuickTime:GPSCoordinates no
GPSAltitudeRef          QuickTime:LocationInformation no
GPSDateTime             GPS:GPSDateStamp        no
                        GPS:GPSTimeStamp
GPSDateTime             Parrot:GPSLatitude      no
                        Main:CreateDate
                        SampleTime
GPSDateTime             Sony:GPSDateStamp       no
                        Sony:GPSTimeStamp
GPSDestLatitude         GPS:GPSDestLatitude     no
                        GPS:GPSDestLatitudeRef
GPSDestLatitudeRef      XMP-exif:GPSDestLatitude no
GPSDestLongitude        GPS:GPSDestLongitude    no
                        GPS:GPSDestLongitudeRef
GPSDestLongitudeRef     XMP-exif:GPSDestLongitude no
GPSLatitude             GPS:GPSLatitude         yes/
                        GPS:GPSLatitudeRef
GPSLatitude             QuickTime:GPSCoordinates no
GPSLatitude             QuickTime:LocationInformation no
GPSLatitude             Sony:GPSLatitude        no
                        Sony:GPSLatitudeRef
GPSLatitudeRef          XMP-exif:GPSLatitude    no
GPSLongitude            GPS:GPSLongitude        yes/
                        GPS:GPSLongitudeRef
GPSLongitude            QuickTime:GPSCoordinates no
GPSLongitude            QuickTime:LocationInformation no
GPSLongitude            Sony:GPSLongitude       no
                        Sony:GPSLongitudeRef
GPSLongitudeRef         XMP-exif:GPSLongitude   no
GPSPosition             GPSLatitude             yes!
                        GPSLongitude
HiddenData              Sony:HiddenDataOffset   no
                        Sony:HiddenDataLength
HyperfocalDistance      FocalLength             no
                        Aperture
                        CircleOfConfusion
IDCPreviewImage         IDCPreviewStart         no
                        IDCPreviewLength
ISO                     Canon:CameraISO         no
                        Canon:BaseISO
                        Canon:AutoISO
ImageHeight             IFD0:SensorTopBorder    no
                        IFD0:SensorBottomBorder
ImageHeight             Main:PostScript:ImageData no
                        PostScript:BoundingBox
ImageSize               ImageWidth              no
                        ImageHeight
                        ExifImageWidth
                        ExifImageHeight
                        RawImageCroppedSize
```

```
ImageWidth              IFD0:SensorLeftBorder      no
                        IFD0:SensorRightBorder
ImageWidth              Main:PostScript:ImageData  no
                        PostScript:BoundingBox
JpgFromRaw              JpgFromRawStart            yes
                        JpgFromRawLength
Lens                    Canon:MinFocalLength       no
                        Canon:MaxFocalLength
Lens35efl               Canon:MinFocalLength       no
                        Canon:MaxFocalLength
                        Lens
                        ScaleFactor35efl
LensID                  LensType                   no
                        FocalLength
                        MaxAperture
                        MaxApertureValue
                        MinFocalLength
                        MaxFocalLength
                        LensModel
                        LensFocalRange
                        LensSpec
                        LensType2
                        LensType3
                        LensFocalLength
                        RFLensType
LensID                  LensModel                  no
                        Lens
                        XMP-aux:LensID
                        Make
LensID                  Nikon:LensIDNumber         no
                        LensFStops
                        MinFocalLength
                        MaxFocalLength
                        MaxApertureAtMinFocal
                        MaxApertureAtMaxFocal
                        MCUVersion
                        Nikon:LensType
LensID                  Ricoh:LensFirmware         no
LensID                  XMP-aux:LensID             no
                        Make
                        LensInfo
                        FocalLength
                        LensModel
                        MaxApertureValue
LensSpec                Nikon:Lens                 no
                        Nikon:LensType
LensType                LensTypeMake               no
                        LensTypeModel
LightValue              Aperture                   no
                        ShutterSpeed
                        ISO
MPImage                 MPImageStart               no
                        MPImageLength
                        MPImageType
Megapixels              ImageSize                  no
OriginalDecisionData    OriginalDecisionDataOffset yes!
OtherImage              OtherImageStart            yes
                        OtherImageLength
                        OtherImageStart (1)
                        OtherImageLength (1)
PeakSpectralSensitivity FLIR:PlanckB               no
PhaseDetectAF           Nikon:FocusPointSchema     no
                        Nikon:AFDetectionMethod
PreviewImage            PreviewImageStart          yes
                        PreviewImageLength
                        PreviewImageValid
                        PreviewImageStart (1)
                        PreviewImageLength (1)
PreviewImage            ScreenNail                 no
PreviewImageSize        PreviewImageWidth          no
```

```
                         PreviewImageHeight
PreviewJXL               PreviewJXLStart          no
                         PreviewJXLLength
                         PreviewJXLStart (1)
                         PreviewJXLLength (1)
RedBalance               WB_RGGBLevels            no
                         WB_RGBGLevels
                         WB_RBGGLevels
                         WB_GRBGLevels
                         WB_GRGBLevels
                         WB_GBRGLevels
                         WB_RGBLevels
                         WB_GRBLevels
                         WB_RBLevels
                         WBRedLevel
                         WBGreenLevel
RedEyeReduction          CanonFlashMode           no
                         FlashBits
RicohPitch               Ricoh:Accelerometer      no
RicohRoll                Ricoh:Accelerometer      no
Rotation                 QuickTime:MatrixStructure yes!
                         QuickTime:HandlerType
RunTimeSincePowerUp      Apple:RunTimeValue       no
                         Apple:RunTimeScale
ScaleFactor35efl         FocalLength              no
                         FocalLengthIn35mmFormat
                         Composite:DigitalZoom
                         FocalPlaneDiagonal
                         SensorSize
                         FocalPlaneXSize
                         FocalPlaneYSize
                         FocalPlaneResolutionUnit
                         FocalPlaneXResolution
                         FocalPlaneYResolution
                         ExifImageWidth
                         ExifImageHeight
                         CanonImageWidth
                         CanonImageHeight
                         ImageWidth
                         ImageHeight
ShootingMode             CanonExposureMode        no
                         EasyMode
                         BulbDuration
ShutterCurtainHack       FlashBits                no
                         ShutterCurtainSync
ShutterSpeed             ExposureTime             no
                         ShutterSpeedValue
                         BulbDuration
SingleShotDepthMapTiff   SingleShotDepthMap       no
                         SegWidth
                         SegHeight
SubSecCreateDate         EXIF:CreateDate          yes
                         SubSecTimeDigitized
                         OffsetTimeDigitized
SubSecDateTimeOriginal   EXIF:DateTimeOriginal    yes
                         SubSecTimeOriginal
                         OffsetTimeOriginal
SubSecModifyDate         EXIF:ModifyDate          yes
                         SubSecTime
                         OffsetTime
ThumbnailImage           ThumbnailOffset          yes
                         ThumbnailLength
ThumbnailTIFF            SubfileType              no
                         Compression
                         ImageWidth
                         ImageHeight
                         BitsPerSample
                         PhotometricInterpretation
                         StripOffsets
                         SamplesPerPixel
```

```
                          RowsPerStrip
                          StripByteCounts
                          PlanarConfiguration
                          Orientation
      VolumeSize          ISO:VolumeBlockCount      no
                          ISO:VolumeBlockSize
      WB_RGBLevels        KDC_IFD:WhiteBalance      no
                          WB_RGBLevelsAuto
                          WB_RGBLevelsFluorescent
                          WB_RGBLevelsTungsten
                          WB_RGBLevelsDaylight
                          WB_RGBLevels4
                          WB_RGBLevels5
                          WB_RGBLevelsShade
      WB_RGBLevels        KodakIFD:WhiteBalance     no
                          WB_RGBMul0
                          WB_RGBMul1
                          WB_RGBMul2
                          WB_RGBMul3
                          WB_RGBCoeffs0
                          WB_RGBCoeffs1
                          WB_RGBCoeffs2
                          WB_RGBCoeffs3
                          KodakIFD:ColorTemperature
                          Kodak:WB_RGBLevels
      WB_RGGBLevels       Canon:WhiteBalance        no
                          WB_RGGBLevelsAsShot
                          WB_RGGBLevelsAuto
                          WB_RGGBLevelsDaylight
                          WB_RGGBLevelsCloudy
                          WB_RGGBLevelsTungsten
                          WB_RGGBLevelsFluorescent
                          WB_RGGBLevelsFlash
                          WB_RGGBLevelsCustom
                          WB_RGGBLevelsShade
                          WB_RGGBLevelsKelvin
      WB_RGGBLevels       WB_RGGBLevelsUncorrected no
                          WB_RGGBLevelsBlack
      ZoomedPreviewImage  ZoomedPreviewStart        no
                          ZoomedPreviewLength
```

Shortcuts Tags

Shortcut tags are convenience tags that represent one or more other tag names. They are used like regular tags to read and write the information for a specified set of tags.

The shortcut tags below have been pre-defined, but user-defined shortcuts may be added via the %Image::ExifTool::UserDefined::Shortcuts lookup in the =/.ExifTool_config file. See the Image::ExifTool::Shortcuts documentation for more details.

```
      Tag Name            Refers To                 Writable
      --------            ---------                 --------
      AllDates            DateTimeOriginal          yes
                          CreateDate
                          ModifyDate
      Canon               FileName                  yes
                          Model
                          DateTimeOriginal
                          ShootingMode
                          ShutterSpeed
                          Aperture
                          MeteringMode
                          ExposureCompensation
                          ISO
                          Lens
                          FocalLength
                          ImageSize
                          Quality
                          Flash
```

```
                        FlashType
                        ConditionalFEC
                        RedEyeReduction
                        ShutterCurtainHack
                        WhiteBalance
                        FocusMode
                        Contrast
                        Sharpness
                        Saturation
                        ColorTone
                        ColorSpace
                        LongExposureNoiseReduction
                        FileSize
                        FileNumber
                        DriveMode
                        OwnerName
                        SerialNumber
ColorSpaceTags          ExifIFD:ColorSpace          yes
                        ExifIFD:Gamma
                        InteropIFD:InteropIndex
                        ICC_Profile
Common                  FileName                    yes
                        FileSize
                        Model
                        DateTimeOriginal
                        ImageSize
                        Quality
                        FocalLength
                        ShutterSpeed
                        Aperture
                        ISO
                        WhiteBalance
                        Flash
CommonIFD0              IFD0:ImageDescription       yes
                        IFD0:Make
                        IFD0:Model
                        IFD0:Software
                        IFD0:ModifyDate
                        IFD0:Artist
                        IFD0:Copyright
                        IFD0:Rating
                        IFD0:RatingPercent
                        IFD0:DNGLensInfo
                        IFD0:PanasonicTitle
                        IFD0:PanasonicTitle2
                        IFD0:XPTitle
                        IFD0:XPComment
                        IFD0:XPAuthor
                        IFD0:XPKeywords
                        IFD0:XPSubject
ImageDataMD5            ImageDataHash               yes
LargeTags               CanonVRD                    yes
                        DLOData
                        EXIF
                        ICC_Profile
                        IDCPreviewImage
                        ImageData
                        IPTC
                        JpgFromRaw
                        OriginalRawImage
                        OtherImage
                        PreviewImage
                        ThumbnailImage
                        TIFFPreview
                        XML
                        XMP
                        ZoomedPreviewImage
MakerNotes              MakerNotes                  yes
                        MakerNoteApple
                        MakerNoteCanon
```

```
MakerNoteCasio
MakerNoteCasio2
MakerNoteDJI
MakerNoteDJIInfo
MakerNoteFLIR
MakerNoteFujiFilm
MakerNoteGE
MakerNoteGE2
MakerNoteHasselblad
MakerNoteHP
MakerNoteHP2
MakerNoteHP4
MakerNoteHP6
MakerNoteISL
MakerNoteJVC
MakerNoteJVCText
MakerNoteKodak1a
MakerNoteKodak1b
MakerNoteKodak2
MakerNoteKodak3
MakerNoteKodak4
MakerNoteKodak5
MakerNoteKodak6a
MakerNoteKodak6b
MakerNoteKodak7
MakerNoteKodak8a
MakerNoteKodak8b
MakerNoteKodak8c
MakerNoteKodak9
MakerNoteKodak10
MakerNoteKodak11
MakerNoteKodak12
MakerNoteKodakUnknown
MakerNoteKyocera
MakerNoteMinolta
MakerNoteMinolta2
MakerNoteMinolta3
MakerNoteMotorola
MakerNoteNikon
MakerNoteNikon2
MakerNoteNikon3
MakerNoteNintendo
MakerNoteOlympus
MakerNoteOlympus2
MakerNoteOlympus3
MakerNoteLeica
MakerNoteLeica2
MakerNoteLeica3
MakerNoteLeica4
MakerNoteLeica5
MakerNoteLeica6
MakerNoteLeica7
MakerNoteLeica8
MakerNoteLeica9
MakerNoteLeica10
MakerNotePanasonic
MakerNotePanasonic2
MakerNotePanasonic3
MakerNotePentax
MakerNotePentax2
MakerNotePentax3
MakerNotePentax4
MakerNotePentax5
MakerNotePentax6
MakerNotePhaseOne
MakerNoteReconyx
MakerNoteReconyx2
MakerNoteReconyx3
MakerNoteRicoh
MakerNoteRicoh2
```

```
                               MakerNoteRicohPentax
                               MakerNoteRicohText
                               MakerNoteSamsung1a
                               MakerNoteSamsung1b
                               MakerNoteSamsung2
                               MakerNoteSanyo
                               MakerNoteSanyoC4
                               MakerNoteSanyoPatch
                               MakerNoteSigma
                               MakerNoteSony
                               MakerNoteSony2
                               MakerNoteSony3
                               MakerNoteSony4
                               MakerNoteSony5
                               MakerNoteSonyEricsson
                               MakerNoteSonySRF
                               MakerNoteUnknownText
                               MakerNoteUnknownBinary
                               MakerNoteUnknown
   Nikon                       Model                   yes
                               SubSecDateTimeOriginal
                               ShutterCount
                               LensSpec
                               FocalLength
                               ImageSize
                               ShutterSpeed
                               Aperture
                               ISO
                               NoiseReduction
                               ExposureProgram
                               ExposureCompensation
                               WhiteBalance
                               WhiteBalanceFineTune
                               ShootingMode
                               Quality
                               MeteringMode
                               FocusMode
                               ImageOptimization
                               ToneComp
                               ColorHue
                               ColorSpace
                               HueAdjustment
                               Saturation
                               Sharpness
                               Flash
                               FlashMode
                               FlashExposureComp
   Unsafe                      IFD0:YCbCrPositioning     yes
                               IFD0:YCbCrCoefficients
                               IFD0:TransferFunction
                               ExifIFD:ComponentsConfiguration
                               ExifIFD:CompressedBitsPerPixel
                               InteropIFD:InteropIndex
                               InteropIFD:InteropVersion
                               InteropIFD:RelatedImageWidth
                               InteropIFD:RelatedImageHeight
   ls-l                        FilePermissions         yes
                               FileHardLinks
                               FileUserID
                               FileGroupID
                               FileSize#
                               FileModifyDate
                               FileName
```

MWG Tags
    The Metadata Working Group (MWG) recommends techniques to allow certain
    overlapping EXIF, IPTC and XMP tags to be reconciled when reading, and
    synchronized when writing. The MWG Composite tags below are designed
    to aid in the implementation of these recommendations. As well, the
    MWG defines new XMP tags which are listed in the subsequent tables

below. See
<https://web.archive.org/web/20180919181934/http://www.metadataworkinggroup.org/pd
f/mwg_guidance.pdf>
for the official MWG specification.

MWG Composite Tags

The table below lists special Composite tags which are used to access
other tags based on the MWG 2.0 recommendations. These tags are only
accessible when explicitly loaded, but this is done automatically by
the exiftool application if MWG is specified as a group for any tag on
the command line, or manually with the "-use MWG" option. Via the API,
the MWG Composite tags are loaded by calling
""Image::ExifTool::MWG::Load()"".

When reading, the value of each MWG tag is **Derived From** the specified
tags based on the MWG guidelines. When writing, the appropriate
associated tags are written. The value of the IPTCDigest tag is
updated automatically when the IPTC is changed if either the IPTCDigest
tag didn't exist beforehand or its value agreed with the original IPTC
digest (indicating that the XMP is synchronized with the IPTC). IPTC
information is written only if the original file contained IPTC.

Loading the MWG module activates "strict MWG conformance mode", which
has the effect of causing EXIF, IPTC and XMP in non-standard locations
to be ignored when reading, as per the MWG recommendations. Instead, a
"Warning" tag is generated when non-standard metadata is encountered.
This feature may be disabled by setting "$Image::ExifTool::MWG::strict
= 0" in the ExifTool config file (or from your Perl script when using
the API). Note that the behaviour when writing is not changed:
ExifTool always creates new records only in the standard location, but
writes new tags to any EXIF/IPTC/XMP records that exist.

Contrary to the EXIF specification, the MWG recommends that EXIF
"ASCII" string values be stored as UTF-8. To honour this, the exiftool
application sets the default internal EXIF string encoding to "UTF8"
when the MWG module is loaded, but via the API this must be done
manually by setting the CharsetEXIF option.

A complication of the MWG specification is that although the
MWG:Creator property may consist of multiple values, the associated
EXIF tag (EXIF:Artist) is only a simple string. To resolve this
discrepancy the MWG recommends a technique which allows a list of
values to be stored in a string by using a semicolon-space separator
(with quotes around values if necessary). When the MWG module is
loaded, ExifTool automatically implements this policy and changes
EXIF:Artist to a list-type tag.

Tag Name	Derived From	Writable
City	IPTC:City XMP-photoshop:City XMP-iptcExt:LocationShownCity CurrentIPTCDigest IPTCDigest	yes
Copyright	EXIF:Copyright IPTC:CopyrightNotice XMP-dc:Rights CurrentIPTCDigest IPTCDigest	yes
Country	IPTC:Country-PrimaryLocationName XMP-photoshop:Country XMP-iptcExt:LocationShownCountryName CurrentIPTCDigest IPTCDigest	yes
CreateDate	Composite:SubSecCreateDate EXIF:CreateDate IPTC:DigitalCreationDate IPTC:DigitalCreationTime XMP-xmp:CreateDate	yes

```
                            CurrentIPTCDigest
                            IPTCDigest
    Creator                 EXIF:Artist                yes+
                            IPTC:By-line
                            XMP-dc:Creator
                            CurrentIPTCDigest
                            IPTCDigest
    DateTimeOriginal        Composite:SubSecDateTimeOriginal yes
                            EXIF:DateTimeOriginal
                            IPTC:DateCreated
                            IPTC:TimeCreated
                            XMP-photoshop:DateCreated
                            CurrentIPTCDigest
                            IPTCDigest
    Description             EXIF:ImageDescription      yes
                            IPTC:Caption-Abstract
                            XMP-dc:Description
                            CurrentIPTCDigest
                            IPTCDigest
    Keywords                IPTC:Keywords              yes+
                            XMP-dc:Subject
                            CurrentIPTCDigest
                            IPTCDigest
    Location                IPTC:Sub-location          yes
                            XMP-iptcCore:Location
                            XMP-iptcExt:LocationShownSublocation
                            CurrentIPTCDigest
                            IPTCDigest
    ModifyDate              Composite:SubSecModifyDate yes
                            EXIF:ModifyDate
                            XMP-xmp:ModifyDate
                            CurrentIPTCDigest
                            IPTCDigest
    Orientation             EXIF:Orientation           yes
    Rating                  XMP-xmp:Rating             yes
    State                   IPTC:Province-State        yes
                            XMP-photoshop:State
                            XMP-iptcExt:LocationShownProvinceState
                            CurrentIPTCDigest
                            IPTCDigest
```

MWG Collections Tags

Collections metadata defined by the MWG 2.0 specification. See
<https://web.archive.org/web/20180919181934/http://www.metadataworkinggroup.org/pd
f/mwg_guidance.pdf>
for the official specification.

These tags belong to the ExifTool XMP-mwg-coll family 1 group.

```
  Tag Name                              Writable
  --------                              --------
  Collections                           MWG CollectionInfo Struct+
  CollectionName                        string_+
  CollectionURI                         string_+
```

MWG CollectionInfo Struct

```
  Field Name                            Writable
  ----------                            --------
  CollectionName                        string
  CollectionURI                         string
```

MWG Keywords Tags

Hierarchical keywords metadata defined by the MWG 2.0 specification.
ExifTool unrolls keyword structures to an arbitrary depth of 6 to allow
individual levels to be accessed with different tag names, and to avoid
infinite recursion. See
<https://web.archive.org/web/20180919181934/http://www.metadataworkinggroup.org/pd

f/mwg_guidance.pdf>
        for the official specification.

    These tags belong to the ExifTool XMP-mwg-kw family 1 group.

      Tag Name   Writable
      --------   --------
      KeywordInfo   MWG KeywordInfo Struct
      HierarchicalKeywords   MWG KeywordStruct Struct_+
      HierarchicalKeywords1Applied   boolean_+
      HierarchicalKeywords1Children   MWG KeywordStruct Struct_+
      HierarchicalKeywords2Applied   boolean_+
      HierarchicalKeywords2Children   MWG KeywordStruct Struct_+
      HierarchicalKeywords3Applied   boolean_+
      HierarchicalKeywords3Children   MWG KeywordStruct Struct_+
      HierarchicalKeywords4Applied   boolean_+
      HierarchicalKeywords4Children   MWG KeywordStruct Struct_+
      HierarchicalKeywords5Applied   boolean_+
      HierarchicalKeywords5Children   MWG KeywordStruct Struct_+
      HierarchicalKeywords6Applied   boolean_+
      HierarchicalKeywords6   string_+
      HierarchicalKeywords5   string_+
      HierarchicalKeywords4   string_+
      HierarchicalKeywords3   string_+
      HierarchicalKeywords2   string_+
      HierarchicalKeywords1   string_+

    MWG KeywordInfo Struct

      Field Name   Writable
      ----------   --------
      Hierarchy   MWG KeywordStruct Struct+

    MWG KeywordStruct Struct

      Field Name   Writable
      ----------   --------
      Applied   boolean
      Children   MWG KeywordStruct Struct+
      Keyword   string

    MWG Regions Tags

    Image region metadata defined by the MWG 2.0 specification. These tags
    may be accessed without the need to load the MWG Composite tags above.
    See
    <https://web.archive.org/web/20180919181934/http://www.metadataworkinggroup.org/pd
f/mwg_guidance.pdf>
        for the official specification.

    These tags belong to the ExifTool XMP-mwg-rs family 1 group.

      Tag Name   Writable
      --------   --------
      RegionInfo   MWG RegionInfo Struct
      RegionAppliedToDimensions   Dimensions Struct_
      RegionAppliedToDimensionsH   real_
      RegionAppliedToDimensionsUnit   string_
      RegionAppliedToDimensionsW   real_
      RegionList   MWG RegionStruct Struct_+
      RegionArea   Area Struct_+
      RegionAreaD   real_+
      RegionAreaH   real_+
      RegionAreaUnit   string_+
      RegionAreaW   real_+
      RegionAreaX   real_+
      RegionAreaY   real_+
      RegionBarCodeValue   string_+
      RegionDescription   string_+
      RegionExtensions   MWG Extensions Struct_+

```
     RegionFocusUsage                                  string_+
     RegionName                                        string_+
     RegionRotation                                    real_+
     RegionSeeAlso                                     string_+
     RegionType                                        string_+
```

MWG RegionInfo Struct

```
     Field Name                                        Writable
     ----------                                        --------
     AppliedToDimensions                               Dimensions Struct
     RegionList                                        MWG RegionStruct Struct+
```

MWG RegionStruct Struct

```
     Field Name                                        Writable
     ----------                                        --------
     Area                                              Area Struct
     BarCodeValue                                      string
     Description                                       string
     Extensions                                        MWG Extensions Struct
     FocusUsage                                        string
     Name                                              string
     Rotation                                          real
     Type                                              string
     SeeAlso                                           string
```

MWG Extensions Struct

This structure may contain any top-level XMP tags, but none have been
pre-defined in ExifTool. Since no flattened tags have been pre-
defined, RegionExtensions is writable only as a structure (eg.
"{xmp-dc:creator=me,rating=5}"). Fields for this structure are
identified using the standard ExifTool tag name (with optional leading
group name, and/or trailing language code, and/or trailing "#" symbol
to disable print conversion).

```
     Field Name                                        Writable
     ----------                                        --------
     [no tags known]
```

NOTES
       This document generated automatically by
       Image::ExifTool::BuildTagLookup.

AUTHOR
       Copyright 2003-2025, Phil Harvey (philharvey66 at gmail.com)

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SEE ALSO
       Image::ExifTool(3pm)