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| Till Tönshoff  9/1/2008 |



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| RetroFID™  Documentation  Version 0.02 (GPL) |
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# Copyright

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Please see [Appendix B](#_Appendix_A:_GPL) of this document for a complete copy of the GNU General Public License Version 3.

Alternative licensing including fully licensed CODEC packages and customized versions are being offered by the author directly. Please consult the author [Till Tönshoff](mailto:me@mmsguru.com) at [me@mmsguru.com](mailto:me@mmsguru.com)

# Description

RetroFID™ reads mobile content files and identifies their content returning xml-encoded information.

One of the biggest challenges within the mobile content market relies in limited compatibility. Handheld devices do tend to have strong limitations when it comes to compatible mobile multimedia content. Because of these limitations, producing, syndicating and managing such content can be a real challenge.

The idea behind RetroFID™ is to develop a core component for content management and validation applications. RetroFID™ is able to determine the exact file type, format- and meta-data. All information gathered by RetroFID™ is then rendered to the console as an XML-data stream. That XML-data can then freely be reused for identification, compatibility and/or validation purposes.

A complete (annotated) XML Schema is available at <http://www.mmsguru.com/dtd/RetroFID_XML_Schema_V100.xsd>

# Features

Files are fully parsed, faulty files are detected.

# Project History

foobar

# Supported Platforms

Microsoft Windows (NT, 2000, XP, Vista)  
Linux

# Compatibility

#### Monophonic Ringtone and B/W Logos

Nokia SmartMessaging - all versions  
Motorola Ringertone - all versions  
Sagem Sonnerie 1.0  
Alcatel mSEQ - all versions

#### Polyphonic and Hybride

MIDI SP-MIDI, GM-MIDI, Streaming (format 0) / Non-Streaming (format 1)  
Yamaha SMAF MA1, MA2, MA3, MA5, MA7  
Beatnik RMF - all versions  
Qualcomm CMX - all versions

#### Sample Based Tones and Templates

AMR NB/WB  
Panasonic MFM - all versions  
Qualcomm CMX - all versions  
Qualcomm PureVoice  
Wave - all versions / registered codecs  
AIFF - PCM only  
AAC ADIF and ADTS - Main, LC, SSR, LTP, HE  
MP4 - with limitations  
3GP - with limitations  
3GP2 - with limitations  
RealAudio - all versions  
Microsoft WMA - with limitations  
MP2  
MP3  
MacroMedia SWF – all versions

#### Graphics and Animations

GIF 87, 89, 89a, Netscape Extensions  
PNG  
JPEG  
BMP  
MBM

#### Themes

Motorola MTF  
Nokia NTH - all versions  
Sony-Ericsson THM - all versions  
Sony-Ericsson UTZ - all versions  
Samsung THM – all versions  
Siemens SDF – all versions  
Symbian SIS - all versions

#### Movies

3GP  
MP4  
AVI

#### Applications

Symbian SIS - all versions  
Sun Java JAR / JAD - all versions

# Downloading

Please see RetroCode\_Documentation.

# Compilation

RetroFID™ and the RetroLibraries are currently compiling fine on Microsoft Visual Studio C++ 2008 (.net) and Linux GNU C++.

Windows: Open fid.sln from within Visual Studio as found in the fid directory. Select Release and build the package.

Unix / Linux / MacOSX: Please see RetroCode\_Documentation – compiling RetroCode covers the RetroFID application as well as all codec plugins. For the validator plugins, see below.

Note: Before being able to compile RetroFID™ and the RetroLibraries, you will need to compile and install all libraries it is depending on. Detailed instructions on this will be added to this document at some point in the future.

### Compiling libminizip

Download the libminizip Makefile from sourceforge.net: <http://sourceforge.net/project/downloading.php?group_id=209634&use_mirror=osdn&filename=Makefile&74885920>

For creating libminizip, overwrite the Makefile in zlib-1.2.3/contrib/minizip with this one. Then run

make mzip

install -c libminizip.a /usr/local/lib

mkdir /usr/local/include/unzip

install -c unzip.h /usr/local/include/unzip

install -c ioapi.h /usr/local/include/unzip

### Compiling libpng

./configure

make

make install

### Compiling libgif

./configure

make

make install

### Compiling libjpeg

./configure

make

make install

## Dependency

This project depends on some superbe open source libraries as well as some ISO reference implementations. At this point, the author would like to express his respect to the developers of open source libraries; “You are heroes”.

The libraries and the places where you may obtain them are listed below.

**id3lib Version 3.8.3** <http://id3lib.sourceforge.net/>

**faac  
faad2** <http://sourceforge.net/projects/faac/>

**mp4ff** part of faad2, patched for 3GPP compatibility  
<http://downloads.sourceforge.net/retrocode/mp4ff_patch_by_me_at_mmsguru_dot_com.patch?use_mirror=osdn>

**zlib** <http://www.zlib.net>

**amrnb** <http://www.3gpp.org/ftp/Specs/archive/26_series/26.104/>

**amrwb** <http://www.3gpp.org/ftp/Specs/archive/26_series/26.204/>

**mp3lame** <http://lame.sourceforge.net/index.php>

**mad** <http://sourceforge.net/projects/mad/>

**avformat   
avcodec   
avutil** <http://ffmpeg.mplayerhq.hu>

**qscl** <http://www.cdmatech.com/products/purevoice_download.jsp>

**mpeg4ip** <http://mpeg4ip.sourceforge.net/>

**libpng** <http://libpng.sourceforge.net/>

**giflib** <http://sourceforge.net/projects/giflib/>

**jpeg-6b** <http://www.ijg.org/>

# Installing

Windows: Simply copy the RetroFID™ executable, all RetroLibrary DLLs and the third party libraries into one folder and run fid from within the commandline interface.

Full list of files needed for RetroFID™ to run on windows:

avcodec.dll ***Third Party Libraries***  
avformat.dll  
avutil.dll  
libfaac.dll  
libfaad2.dll

libmp3lame.dll

libogg.dll

libvorbis.dll  
qscl.dll

retroBase.dll ***Retro Core Component***

retroBeatnik.dll ***Retro Codec Plugins***  
retroMpeg.dll  
retroPanasonic.dll  
retroQualcomm.dll  
retroWave.dll  
retroYamaha.dll

retroGraphics.dll ***Retro Validator Plugins***

retroMidi.dll

retroMono.dll

retroTheme.dll

fid.exe ***RetroFID***

Linux / Unix / MacOSX: Install the RetroBase Shared-Objects into e.g. /usr/local/lib. Copy the RetroFID™ executable fid into e.g. /usr/local/bin. Install the validator plugins to /usr/local/libexec/Retro/validators and the codec plugins to /usr/local/libexec/Retro/codecs. Run fid from within your console

For validating the installation, simply run the RetroFID™ executable with the parameter –v. This should display a version information of the application and all linked libraries looking like this:

------------------------------------------------------------------------------

RetroFID(tm) 1.50.0

------------------------------------------------------------------------------

$Id: fid.cpp,v 1.5 2007/01/24 02:34:15 cvsuser Exp $

------------------------------------------------------------------------------

--Components--

RetroBase 1.3

RetroYamaha 1.3.1

RetroBeatnik 1.2.2

RetroMpeg 1.0

LAME 3.96.1

libMAD 0.15.1 (beta)

libFAAC 1.24

libFAAD2 2.6 (Floating point version)

mpeg4ip 1.3

libAVcodec 51.7.0

libAVformat 50.3.0

RetroWave 1.2

RetroPanasonic 1.0

RetroQualcomm 1.2

QSCL 2

zlib 1.2.3

libJPEG 6b

libPNG 1.2.18

gifLib Version 4.1,

# Usage

RetroFID™ is a commandline tool. For detailed instructions on all of its parameters please see the chapters on [Syntax](#_Syntax).

## Input

Always supply a content filename when running RetroFID™. For most common usage, run

fid –d content\_file.ext

## Output

After parsing content files, all gained information is then output to the console as an XML formatted data stream snipped.

<ContentInfo>

...

<Format id="2">Yamaha Synthetic Music Application Format (SMAF/MMF)</Format>

<SubFormat id="4">MA5 compatible</SubFormat>

...

</ContentInfo>

The most important details from the RetroFID™ output can be found within Format and Subformat.

### Format

The Format string contains a readable description of the basic file format. All format specific attributes are described in [Appendix A](#_Appendix_A:_Format).

<Format id="2">Yamaha Synthetic Music Application Format (SMAF/MMF)</Format>

For our example, the specified Format id is 2.

| Format id | Format |
| --- | --- |
| 1 | MIDI |
| 2 | Yamaha Synthetic Music Application Format |
| 3 | Beatnik Rich Music Format |
| 4 | Adaptive Multi-Rate |
| 5 | Panasonic MFM |
| 6 | MPEG |
| 7 | Wave |
| 10 | Qualcomm PureVoice |
| 11 | Nokia SmartMessaging |
| 12 | Motorola Ringertone |
| 13 | Sagem Ringertone |
| 14 | Enhanced Messaging Service |
| 16 | Audio Interchange File Format |
| 17 | Multimedia Sequential Event Quantification Format |
| 19 | Advanced Audio Coding |
| 20 | MP4 |
| 21 | 3GPP File Format |
| 23 | Graphics Interchange Format |
| 24 | Portable Networks Graphic |
| 25 | Joint Photographic Experts Group File |
| 26 | Bitmap |
| 27 | Windows Media Audio |
| 28 | Real Audio |
| 29 | OGG |
| 30 | Nokia Series40 Theme |
| 31 | Sony-Ericsson THM Theme |
| 32 | Sony-Ericsson UTZ Theme |
| 33 | EPOC Installer |
| 34 | Java Archive Resource |
| 35 | Java Archive Descriptor |
| 36 | MacroMedia Flash |
| 37 | VOX |
| 38 | uLaw |
| 39 | aLaw |
| 40 | AVI |
| 41 | Samsung THM Theme |
| 42 | Motorola MTF Theme |
| 43 | EPOC Multi-Bitmap |
| 44 | Siemens SDF Theme |

### Subformat

Subformat provides further information on file format and data encoding. When looking at [Appendix A](#_Appendix_A:_Format), you now have to make sure you find the format-specific attributes for the given Format id.

<SubFormat id="4">MA5 compatible</SubFormat>

For our example, the specified Subformat id is 4.

| Subformat id | Subformat |
| --- | --- |
| 0 | Invalid |
| 1 | MA1 |
| 2 | MA2 |
| 3 | MA3 |
| 4 | MA5 |
| 5 | MA7 |

Please see [Appendix A](#_Appendix_A:_Format) for a complete list of format specific attributes.

### Extended Binary Parameter encoding

The Subformat id for some formats is encoding several attributes into one numerical parameter with up to 32bit (integer). As an example let us look at the EPOC Installer format for a second (Format id = 33).

The Extended Subformat id in this case is described as an eight bit parameter that is generated by two attributes.

EXTSUBFORMAT\_ID

S = Subformat id  
E = Theme Version (Extended id)

Bit 7 6 5 4 3 2 1 0  
Subformat handler E E S S S S S S

Bit six and seven contain the Extended id, bit zero to four contain the plain Subformat id.

Example code for getting a Theme Version

nExtendedId = (EXTSUBFORMAT\_ID & 0xC0) >> 6;

Example code for getting the decoded Subformat id

nSubFormatId = EXTSUBFORMAT\_ID & 0x3F;

These two values can now be used for looking up the actual subformat information.

| Format id | Format | Subformat Handler Description | Subformat id | Subformat | Extendet id | Extended |
| --- | --- | --- | --- | --- | --- | --- |
| 33 | EPOC Installer | Subformat id = S | 0 | Undefined | 0 | not a theme |
|  |  | Theme Version id=E | 1 | Series 60 Platform 0.9 | 1 | Theme 2.6 |
|  |  | 8 bit: EESSSSSS | 2 | Series 60 Platform 1.0 | 2 | Theme 2.8 |
|  |  |  | 3 | Series 60 Platform 1.1 | 3 | Theme 3.0 |
|  |  |  | 4 | Series 60 Platform 1.2 |  |  |
|  |  |  | 5 | Series 60 Platform, 2nd Edition |  |  |
|  |  |  | 6 | Series 60 Platform, 2nd Edition, Feature Pack 1 | |  |

Taken from [Appendix A](#_Appendix_A:_Format)

## Examples

The first three examples use the detailed output which will in most situations be the right choice. The fourth example is showing the results from a quick file recognition without further parsing or decoding. The last example shows the results from the wave picture rendering unit.

### Example Detailed Output for a SMAF-file

fid -d AccidentCafe-Q-UTF8EN.mmf

This will parse the SMAF file and extract all details about its metadata.

<ContentInfo>

<FilePath>AccidentCafe-Q-UTF8EN.mmf</FilePath>

<Format id="2">Yamaha Synthetic Music Application Format (SMAF/MMF)</Format>

<SubFormat id="4">MA5 compatible</SubFormat>

<StatusBitSave>0</StatusBitSave>

<StatusBitCopy>1</StatusBitCopy>

<StatusBitEdit>1</StatusBitEdit>

<UsesSamples>0</UsesSamples>

<UsesGraphix>1</UsesGraphix>

<EncodingScheme id="1">Western European (Latin1)</EncodingScheme>

<UsesHumanVoice>0</UsesHumanVoice>

<PlayTime>24016</PlayTime>

<MetaTitle>Accident Cafe</MetaTitle>

<MetaCopyright>Copyright(c) 2004 YAMAHA CORPORATION</MetaCopyright>

</ContentInfo>

### Example Detailed Output for a MIDI-file

fid -d ExampleSong.mid

<ContentInfo>

<FilePath>ExampleSong.mid</FilePath>

<Format id="1">MIDI</Format>

<SubFormat id="1">Format 0 (single track/streaming)</SubFormat>

<ContainsMIP>1</ContainsMIP>

<UsesVibra>1</UsesVibra>

<UsesExtraPerc>0</UsesExtraPerc>

<DP2Vibra>0</DP2Vibra>

<SequencePolyphony>4</SequencePolyphon>

<PlayTime>4658</PlayTime>

<BankMemUsage>9486</BankMemUsage>

<TotalMemUsage>9829</TotalMemUsage>

<PatchReference channel="1" bank="0" id="0" mid="0">Acoustic Grand

<PatchSample id="18"/>

<PatchSample id="19"/>

<PatchSample id="20"/>

<PatchSample id="21"/>

<PatchSample id="22"/>

</PatchReference>

<PatchReference channel="2" bank="15494" id="125" mid="125">Helicopter</PatchReference>

<Sample id="18" size="910" name="piano low"/>

<Sample id="19" size="830" name="piano mid"/>

<Sample id="20" size="506" name="piano high"/>

<Sample id="21" size="406" name="piano xhigh"/>

<Sample id="22" size="294" name="piano xxhigh"/>

</ContentInfo>

### Example Detailed Output for a GIF-file

fid -d cover.gif

<ContentInfo>

<FilePath>cover.gif</FilePath>

<Format id="23">Graphics Interchange Format</Format>

<SubFormat id="1">GIF87</SubFormat>

<Width>144</Width>

<Height>135</Height>

<BitsPerPixel>8</BitsPerPixel>

<Colors>256</Colors>

<AvgIFrameDelay>0</AvgIFrameDelay>

<Frames>1</Frames>

<Interlaced>0</Interlaced>

<Transparent>0</Transparent>

<LoopCount>0</LoopCount>

</ContentInfo>

### Example (non-detailed) Output for a WAV-file

fid ..\fid\Example\Beat2.wav

<ContentInfo>

<FilePath>..\fid\Example\Beat2.wav</FilePath>

<Format id="7">Wave</Format>

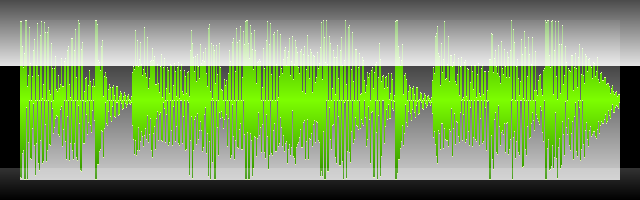
<FileSize>681380</FileSize>

</ContentInfo>

### Example Sample Rendering Output

fid –d ..\fid\Example\Beat2.wav –p 640 200 example\_output.png

example\_output.png:

****

# Syntax

fid PATH [--details|--version|-d|-v] [--picture|-p WIDTH HEIGHT PNG\_PATH]

GENERAL PARAMETERS

--LONG (-SHORT)

--version (-v)  
 This switch will prevent any file processing and trigger only the display the version information of this tool.

--help (-h)   
This switch will prevent any file processing and trigger only the display of a short parameter overview of this tool.

--details (-d)  
 Enable full file parsing and metadata-extraction

--picture(-p) WIDTH HEIGHT PNG\_PATH  
Render a picture from the biggest sample found in the content file.

# CREDITS

**Be aware that some of the used codecs are based on fragmential specifications, released by their original IP holders. Namely Retro's RMF codec is not licensed or in any way approved by Beatnik Software. Please make sure that you read all mentioned documents below to find out if you have to pay additional licensing fees when rendering files using this software.**

Retro's SMAF codec is based on: "Specification: Synthetic music Mobile Application Format" Ver.3.06, Copyright (c) 1999-2002 by YAMAHA CORPORATION.

Retro's CMF codec is based on: "Internet-Draft: draft-atarius-cmf-00.txt", Copyright (c) 2004 by The Internet Society; "3GPP2 C.S0050-0 Version 1.0 - 3GPP2 File Formats for Multimedia Services", Copyright (c) 2003 by 3GGP2.

Retro's MFM codec is based on: "Dialogic ADPCM Algorithm", Copyright (c) 1988 by Dialogic Corporation.

The Qcelp codec is entirely based on: "RFC 3625 - The QCP File Format and Media Types for Speech Data", Copyright (c) 2003 by The Internet Society; "Qualcomm Speech Codec Library", Copyright (c) 2003 by QUALCOMM, Inc.

The AAC codec is entirely based on: "FAAC", Copyright (c) 2001 by M. Bakker; "FAAD2", Copyright (c) 2003 by M. Bakker.

The MP3 codec is entirely based on: "LAME", Copyright (c) 1999 by A.L. Faber; "MPG123", Copyright (c) 1995-1997 by Michael Hipp, "libmad", Copyright (c) 2000-2004 by Underbit Technologies, Inc.

The AMR-NB codec is entirely based on: "3GPP specification TS 26.101: Mandatory speech processing functions; AMR speech codec frame structure", Copyright (c) 2003 by 3GPP; "TS 26.104: 3GPP AMR Floating-point Speech Codec V5.1.0"), Copyright (c) 2003 by 3GPP.

The AMR-WB codec is entirely based on: "3GPP specification TS 26.201: Speech Codec speech processing functions; AMR Wideband Speech Codec; Frame Structure", Copyright (c) 2003 by 3GPP; "TS 26.204: 3GPP AMR Wideband Floating-point Speech Codec"), Copyright (c) 2003 by 3GPP.

The SWF codec is entirely based on: "Macromedia Flash (SWF) and Flash Video (FLV) File Format Specification Version 8", Copyright (c) 2006 by Adobe Inc.

The ID3 parser is entirely based on: "id3lib", Copyright (c) 1999, 2000 by Scott Thomas Haug, 2002 by Thijmen Klok.

The MP4 encoder is entirely based on: "mpeg4ip", Copyright (c) 2001 by Cisco Systems Inc.

The Butterworth filter is entirely based on: "Sound Processing Kit - A C++ Class Library for Audio Signal Processing", Copyright (c) 1995-1998 Kai Lassfolk.

The JFIF/JPEG decoder is entirely based on: “The Independent JPEG Group's JPEG software”, Copyright (c) 1994-1998, Thomas G. Lane

The GIF decoder is entirely based on „giflib”, Copyright(c) 1989, Gershon Elber

The PNG codec is entirely based on “libpng”, Copyright (c) 1995-1996, Guy Eric Schalnat

The zip decompression is entirely based on “zlib”, Copyright (c) 1995-2004 Jean-loup Gailly and Mark Adler

RetroFID(tm) and all its components were originally assembled in 2005 by Till Toenshoff for inhouse usage at Retro Ringtones LLC.

| Format id Appendix A: Format Specific XML Attributes | Format | Subformat Handler Description | Subformat id | Subformat | Extendet id | Extended | Legal Attribute | Type | Attribute Description | Default Extension |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | MIDI |  | 0 | invalid |  |  | ContainsMIP | boolean | file is a SP-MIDI if MIP is present | Mid |
|  |  |  | 1 | Format 0 (single track/streaming) |  |  | UsesVibra | boolean | vibration trigger used |  |
|  |  |  | 2 | Format 1 (multi track) |  |  | UsesExtraPerc | boolean | extra SP-MIDI percussions used |  |
|  |  |  |  |  |  |  | DP2Vibra | boolean | Series40 DP2 has a slightly different way of triggering the vibration |  |
|  |  |  |  |  |  |  | SequencePolyphony | integer | estimated sequence polyphony |  |
|  |  |  |  |  |  |  | PlayTime | integer | time for playback of the entire file |  |
|  |  |  |  |  |  |  | BankMemUsage | integer | Series40 memory usage for instruments |  |
|  |  |  |  |  |  |  | TotalMemUsage | integer | Series40 total memory usage for playback |  |
|  |  |  |  |  |  |  | PatchReference | string | patch name |  |
|  |  |  |  |  |  |  | PatchReference channel | integer | midi channel |  |
|  |  |  |  |  |  |  | PatchReference bank | integer | bank number |  |
|  |  |  |  |  |  |  | PatchReference id | integer | internal identifier used for reference |  |
|  |  |  |  |  |  |  | PatchReference mid | integer |  |  |
|  |  |  |  |  |  |  | PatchSample id | integer | bank instrument sample identifier |  |
|  |  |  |  |  |  |  | Sample id | integer |  |  |
|  |  |  |  |  |  |  | Sample size | integer |  |  |
|  |  |  |  |  |  |  | Sample name | string | internal sample name |  |
|  |  |  |  |  |  |  | MetaTitle | string |  |  |
|  |  |  |  |  |  |  | MetaCopyright | string |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 2 | Yamaha Synthetic Music Application Format | | 0 | invalid |  |  | StatusBitSave | boolean | save protected | Mmf |
|  |  |  | 1 | MA1 |  |  | StatusBitCopy | boolean | copy protected |  |
|  |  |  | 2 | MA2 |  |  | StatusBitEdit | boolean | edit protected |  |
|  |  |  | 3 | MA3 |  |  | UsesSamples | boolean | file contains sample data |  |
|  |  |  | 4 | MA5 |  |  | UsesGraphix | boolean | file contains graphic data |  |
|  |  |  | 5 | MA7 |  |  | UsesSynthesizer | boolean | file uses synthesizer voices |  |
|  |  |  |  |  |  |  | EncodingScheme | string | text/metadata encoding |  |
|  |  |  |  |  |  |  | EncodingScheme id | integer | 0=Japanese (Shift-JIS), 1=Western European (Latin1), 2=Korean (EUC-KR), 3=Chinese Simplified (HZ-GB-2312), 4=Chinese Traditional (Big5), 5=Cyrillic (KOI8-R), 6=Vietnamese (TCVN-5773-1993), 7=Unicode (UTF-8) |  |
|  |  |  |  |  |  |  | UsesHumanVoice | boolean | file uses human voices syntherziser |  |
|  |  |  |  |  |  |  | PlayTime | integer | time for playback of the entire file |  |
|  |  |  |  |  |  |  | MaxSamplePlaytime | integer | largest sample playtime |  |
|  |  |  |  |  |  |  | SamplesPerSecond | integer | sample rate |  |
|  |  |  |  |  |  |  | Channels | integer | number of channels (1=mono,2=stereo) |  |
|  |  |  |  |  |  |  | MetaCopyright | string |  |  |
|  |  |  |  |  |  |  | MetaManagedBy | string |  |  |
|  |  |  |  |  |  |  | MetaManagementInfo | string |  |  |
|  |  |  |  |  |  |  | MetaDateCreated | string |  |  |
|  |  |  |  |  |  |  | MetaDateRevised | string |  |  |
|  |  |  |  |  |  |  | MetaCarrier | string |  |  |
|  |  |  |  |  |  |  | MetaComposer | string |  |  |
|  |  |  |  |  |  |  | MetaCategory | string |  |  |
|  |  |  |  |  |  |  | MetaWords | string |  |  |
|  |  |  |  |  |  |  | MetaArranger | string |  |  |
|  |  |  |  |  |  |  | MetaArtist | string |  |  |
|  |  |  |  |  |  |  | MetaVendor | string |  |  |
|  |  |  |  |  |  |  | MetaTitle | string |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 3 | Beatnik Rich Music Format | | 0 | Sequence only |  |  | UsesSamples | boolean | file contains sample data | rmf |
|  |  |  | 1 | Uncompressed |  |  | SamplesPerSecond | integer | sample rate |  |
|  |  |  | 2 | IMA ADPCM |  |  | Channels | integer | number of channels (1=mono,2=stereo) |  |
|  |  |  | 3 | uLaw |  |  | BitsPerSample | integer | sample width |  |
|  |  |  | 4 | aLaw |  |  | PlayTime | integer | time for playback of the entire file |  |
|  |  |  | 5 | MPEG |  |  | BitsPerSecond | integer | bit rate |  |
|  |  |  | 6 | Multiple Codecs used |  |  | MaxSamplePlaytime | integer |  |  |
|  |  |  |  |  |  |  | MetaTitle | string |  |  |
|  |  |  |  |  |  |  | MetaComposer | string |  |  |
|  |  |  |  |  |  |  | MetaCopyright | string |  |  |
|  |  |  |  |  |  |  | MetaPublisher | string |  |  |
|  |  |  |  |  |  |  | MetaLicenseUrl | string |  |  |
|  |  |  |  |  |  |  | MetaLicenseTerm | string |  |  |
|  |  |  |  |  |  |  | MetaExpireDate | string |  |  |
|  |  |  |  |  |  |  | MetaComposerNote | string |  |  |
|  |  |  |  |  |  |  | MetaProduct | string |  |  |
|  |  |  |  |  |  |  | MetaTempoDescription | string |  |  |
|  |  |  |  |  |  |  | MetaArtist | string |  |  |
|  |  |  |  |  |  |  | MetaCategory | string |  |  |
|  |  |  |  |  |  |  | MetaLicenseUse | string |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 4 | Adaptive Multi-Rate | | 1 | Adaptive Multi-Rate Narrow Band |  |  | BitsPerSecond | integer | bit rate | amr / awb |
|  |  |  | 2 | Adaptive Multi-Rate Wide Band |  |  | Channels | integer | number of channels (1=mono,2=stereo) |  |
|  |  |  | 3 | Adaptive Multi-Rate Narrow Band Multi Channel | |  | PlayTime | integer | time for playback of the entire file |  |
|  |  |  | 4 | Adaptive Multi-Rate Wide Band Multi Channel | |  | SamplesPerSecond | integer | sample rate |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 5 | Panasonic MFM |  | 1 | OKI ADPCM |  |  | SamplesPerSecond | integer | sample rate | mfm |
|  |  |  |  |  |  |  | BitsPerSample | integer | sample width |  |
|  |  |  |  |  |  |  | PlayTime | integer | time for playback of the entire file |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 6 | MPEG |  | 5 | Version 1 - Layer 3 |  |  | Channels | integer | number of channels (1=mono,2=stereo) | mp3 |
|  |  |  | 6 | Version 1 - Layer 2 |  |  | SamplesPerSecond | integer | sample rate |  |
|  |  |  | 7 | Version 1 - Layer 1 |  |  | BitsPerSecond | integer | bit rate |  |
|  |  |  | 9 | Version 2 - Layer 3 |  |  | PlayTime | integer | time for playback of the entire file |  |
|  |  |  | 10 | Version 2 - Layer 2 |  |  | VariableBitRate | boolean | bit rate varies throughout the playtime |  |
|  |  |  | 11 | Version 2 - Layer 1 |  |  | JointStereo | boolean | uses optimized encoding for stereo |  |
|  |  |  | 13 | Version 2.5 - Layer 3 |  |  | UsesCRC | boolean | contains checksums |  |
|  |  |  | 14 | Version 2.5 - Layer 2 |  |  | Copyrighted | boolean | copyright flag |  |
|  |  |  | 15 | Version 2.5 - Layer 1 |  |  | OriginalRecording | boolean | original recording flag |  |
|  |  |  |  |  |  |  | Private | boolean | private flag |  |
|  |  |  |  |  |  |  | MinBitsPerSecond | integer | smallest bit rate used |  |
|  |  |  |  |  |  |  | MaxBitsPerSecond | integer | biggest bit rate used |  |
|  |  |  |  |  |  |  | MetaTitle | string |  |  |
|  |  |  |  |  |  |  | MetaComposer | string |  |  |
|  |  |  |  |  |  |  | MetaCopyright | string |  |  |
|  |  |  |  |  |  |  | MetaComment | string |  |  |
|  |  |  |  |  |  |  | MetaDate | string |  |  |
|  |  |  |  |  |  |  | MetaEncodedBy | string |  |  |
|  |  |  |  |  |  |  | MetaWriter | string |  |  |
|  |  |  |  |  |  |  | MetaAlbum | string |  |  |
|  |  |  |  |  |  |  | MetaSubTitle | string |  |  |
|  |  |  |  |  |  |  | MetaYear | string |  |  |
|  |  |  |  |  |  |  | MetaGenre | string |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 7 | Wave |  | 0 | Microsoft Corporation : Unknown |  |  | Channels | integer | number of channels (1=mono,2=stereo) | wav |
|  |  |  | 1 | Microsoft Corporation : PCM |  |  | SamplesPerSecond | integer | sample rate |  |
|  |  |  | 2 | Microsoft Corporation : ADPCM |  |  | BitsPerSample | integer | sample width |  |
|  |  |  | 3 | Microsoft Corporation : IEEE\_Float |  |  | PlayTime | integer | time for playback of the entire file |  |
|  |  |  | 4 | Compaq Computer Corp. : Vselp |  |  | MetaTitle | string |  |  |
|  |  |  | 5 | IBM Corporation : IBM\_Cvsd |  |  | MetaArtist | string |  |  |
|  |  |  | 6 | Microsoft Corporation : aLAW |  |  | MetaArchiveLocation | string |  |  |
|  |  |  | 7 | Microsoft Corporation : uLAW |  |  | MetaCommissioned | string |  |  |
|  |  |  | 8 | Microsoft Corporation : DTS |  |  | MetaComment | string |  |  |
|  |  |  | 9 | Microsoft Corporation : DRM |  |  | MetaCopyright | string |  |  |
|  |  |  | 16 | OKI : OKI\_ADPCM |  |  | MetaDateCreated | string |  |  |
|  |  |  | 17 | Intel Corporation : DVI\_ADPCM / IMA\_ADPCM | |  | MetaCropped | string |  |  |
|  |  |  | 18 | Videologic : Mediaspace\_ADPCM |  |  | MetaDimensions | string |  |  |
|  |  |  | 19 | Sierra Semiconductor Corp : Sierra\_ADPCM | |  | MetaDotsPerInch | string |  |  |
|  |  |  | 20 | Antex Electronics Corporation : G723\_ADPCM | |  | MetaEngineer | string |  |  |
|  |  |  | 21 | DSP Solutions, Inc. : Digistd |  |  | MetaCategory | string |  |  |
|  |  |  | 22 | DSP Solutions, Inc. : Digifix |  |  | MetaKeywords | string |  |  |
|  |  |  | 23 | Dialogic Corporation : Dialogic\_OKI\_ADPCM | |  | MetaLightness | string |  |  |
|  |  |  | 24 | Media Vision, Inc. : Mediavision\_ADPCM | |  | MetaMedium | string |  |  |
|  |  |  | 25 | Hewlett-Packard Company : Cu\_CoDec | |  | MetaPalette | string |  |  |
|  |  |  | 32 | Yamaha Corporation of America : Yamaha\_ADPCM | | | MetaProduct | string |  |  |
|  |  |  | 33 | Speech Compression : Sonarc |  |  | MetaSubject | string |  |  |
|  |  |  | 34 | DSP Group, Inc : DSPgroup\_Truespeech | |  | MetaSoftware | string |  |  |
|  |  |  | 35 | Echo Speech Corporation : Echosc1 | |  | MetaSharpness | string |  |  |
|  |  |  | 36 | Virtual Music, Inc. : Audiofile\_AF36 | |  | MetaSource | string |  |  |
|  |  |  | 37 | Audio Processing Technology : Aptx | |  | MetaSourceForm | string |  |  |
|  |  |  | 38 | Virtual Music, Inc. : Audiofile\_AF10 | |  | MetaTechnician | string |  |  |
|  |  |  | 39 | Aculab plc : Prosody\_1612 |  |  | MetaSoundScheme | string |  |  |
|  |  |  | 40 | Merging Technologies S.A. : Lrc |  |  |  |  |  |  |
|  |  |  | 48 | Dolby Laboratories : Dolby\_AC2 |  |  |  |  |  |  |
|  |  |  | 49 | Microsoft Corporation : Gsm610 |  |  |  |  |  |  |
|  |  |  | 50 | Microsoft Corporation : Msnaudio |  |  |  |  |  |  |
|  |  |  | 51 | Antex Electronics Corporation : Antex\_ADPCMe | |  |  |  |  |  |
|  |  |  | 52 | Control Resources Limited : Control\_Res\_Vqlpc | |  |  |  |  |  |
|  |  |  | 53 | DSP Solutions, Inc. : Digireal |  |  |  |  |  |  |
|  |  |  | 54 | DSP Solutions, Inc. : DigiADPCM |  |  |  |  |  |  |
|  |  |  | 55 | Control Resources Limited : Control\_Res\_Cr10 | |  |  |  |  |  |
|  |  |  | 56 | Natural MicroSystems : Nms\_VbxADPCM | |  |  |  |  |  |
|  |  |  | 57 | Crystal Semiconductor IMA ADPCM : Cs\_ImaADPCM | | |  |  |  |  |
|  |  |  | 58 | Echo Speech Corporation : Echosc3 | |  |  |  |  |  |
|  |  |  | 59 | Rockwell International : Rockwell\_ADPCM | |  |  |  |  |  |
|  |  |  | 60 | Rockwell International : Rockwell\_Digitalk | |  |  |  |  |  |
|  |  |  | 61 | Xebec Multimedia Solutions Limited : Xebec | |  |  |  |  |  |
|  |  |  | 64 | Antex Electronics Corporation : G721\_ADPCM | |  |  |  |  |  |
|  |  |  | 65 | Antex Electronics Corporation : G728\_CELP | |  |  |  |  |  |
|  |  |  | 66 | Microsoft Corporation : Msg723 |  |  |  |  |  |  |
|  |  |  | 80 | Microsoft Corporation : MPEG |  |  |  |  |  |  |
|  |  |  | 82 | InSoft, Inc. : RT24 |  |  |  |  |  |  |
|  |  |  | 83 | InSoft, Inc. : PAC |  |  |  |  |  |  |
|  |  |  | 85 | ISO/MPEG Layer3 Format Tag : MPEGlayer3 | |  |  |  |  |  |
|  |  |  | 89 | Lucent Technologies : Lucent\_G723 | |  |  |  |  |  |
|  |  |  | 96 | Cirrus Logic : Cirrus |  |  |  |  |  |  |
|  |  |  | 97 | ESS Technology : ESPCM |  |  |  |  |  |  |
|  |  |  | 98 | Voxware Inc : Voxware |  |  |  |  |  |  |
|  |  |  | 99 | Canopus, co., Ltd. : Canopus\_Atrac | |  |  |  |  |  |
|  |  |  | 100 | APICOM : G726\_ADPCM |  |  |  |  |  |  |
|  |  |  | 101 | APICOM : G722\_ADPCM |  |  |  |  |  |  |
|  |  |  | 103 | Microsoft Corporation : DSAT\_Display | |  |  |  |  |  |
|  |  |  | 105 | Voxware Inc : Voxware\_Byte\_Aligned | |  |  |  |  |  |
|  |  |  | 112 | Voxware Inc : Voxware\_AC8 |  |  |  |  |  |  |
|  |  |  | 113 | Voxware Inc : Voxware\_AC10 |  |  |  |  |  |  |
|  |  |  | 114 | Voxware Inc : Voxware\_AC16 |  |  |  |  |  |  |
|  |  |  | 115 | Voxware Inc : Voxware\_AC20 |  |  |  |  |  |  |
|  |  |  | 116 | Voxware Inc : Voxware\_RT24 |  |  |  |  |  |  |
|  |  |  | 117 | Voxware Inc : Voxware\_RT29 |  |  |  |  |  |  |
|  |  |  | 118 | Voxware Inc : Voxware\_RT29HW | |  |  |  |  |  |
|  |  |  | 119 | Voxware Inc : Voxware\_VR12 |  |  |  |  |  |  |
|  |  |  | 120 | Voxware Inc : Voxware\_VR18 |  |  |  |  |  |  |
|  |  |  | 121 | Voxware Inc : Voxware\_TQ40 |  |  |  |  |  |  |
|  |  |  | 128 | Softsound, Ltd. : Softsound |  |  |  |  |  |  |
|  |  |  | 129 | Voxware Inc : Voxware\_TQ60 |  |  |  |  |  |  |
|  |  |  | 130 | Microsoft Corporation : Msrt24 |  |  |  |  |  |  |
|  |  |  | 131 | AT&T Labs, Inc. : G729A |  |  |  |  |  |  |
|  |  |  | 132 | Motion Pixels : Mvi\_Mvi2 |  |  |  |  |  |  |
|  |  |  | 133 | DataFusion Systems (Pty) (Ltd) : Df\_G726 | |  |  |  |  |  |
|  |  |  | 134 | DataFusion Systems (Pty) (Ltd) : Df\_Gsm610 | |  |  |  |  |  |
|  |  |  | 136 | Iterated Systems, Inc. : ISIaudio |  |  |  |  |  |  |
|  |  |  | 137 | OnLive! Technologies, Inc. : OnLive | |  |  |  |  |  |
|  |  |  | 145 | Siemens Business Communications Sys : SBC24 | | |  |  |  |  |
|  |  |  | 146 | Sonic Foundry : Dolby\_AC3\_SpDif | |  |  |  |  |  |
|  |  |  | 147 | MediaSonic : Mediasonic\_G723 |  |  |  |  |  |  |
|  |  |  | 148 | Aculab plc : Prosody\_8Kbps |  |  |  |  |  |  |
|  |  |  | 151 | ZyXEL Communications, Inc. : Zyxel\_ADPCM | |  |  |  |  |  |
|  |  |  | 152 | Philips Speech Processing : Philips\_Lpcbb | |  |  |  |  |  |
|  |  |  | 153 | Studer Professional Audio AG : Packed | |  |  |  |  |  |
|  |  |  | 160 | Malden Electronics Ltd. : Malden\_Phonytalk | |  |  |  |  |  |
|  |  |  | 256 | Rhetorex Inc. : Rhetorex\_ADPCM |  |  |  |  |  |  |
|  |  |  | 257 | BeCubed Software Inc. : Irat |  |  |  |  |  |  |
|  |  |  | 273 | Vivo Software : Vivo\_G723 |  |  |  |  |  |  |
|  |  |  | 274 | Vivo Software : Vivo\_Siren |  |  |  |  |  |  |
|  |  |  | 291 | Digital Equipment Corporation : Digital\_G723 | |  |  |  |  |  |
|  |  |  | 293 | Sanyo Electric Co., Ltd. : Sanyo\_Ld\_ADPCM | |  |  |  |  |  |
|  |  |  | 304 | Sipro Lab Telecom Inc. : Siprolab\_Aceplnet | |  |  |  |  |  |
|  |  |  | 305 | Sipro Lab Telecom Inc. : Siprolab\_Acelp4800 | |  |  |  |  |  |
|  |  |  | 306 | Sipro Lab Telecom Inc. : Siprolab\_Acelp8V3 | |  |  |  |  |  |
|  |  |  | 307 | Sipro Lab Telecom Inc. : Siprolab\_G729 | |  |  |  |  |  |
|  |  |  | 308 | Sipro Lab Telecom Inc. : Siprolab\_G729A | |  |  |  |  |  |
|  |  |  | 309 | Sipro Lab Telecom Inc. : Siprolab\_Kelvin | |  |  |  |  |  |
|  |  |  | 320 | Dictaphone Corporation : G726ADPCM | |  |  |  |  |  |
|  |  |  | 336 | Qualcomm, Inc. : Qualcomm\_Purevoice | |  |  |  |  |  |
|  |  |  | 337 | Qualcomm, Inc. : Qualcomm\_Halfrate | |  |  |  |  |  |
|  |  |  | 341 | Ring Zero Systems, Inc. : Tubgsm |  |  |  |  |  |  |
|  |  |  | 352 | Microsoft Corporation : WMA 1 |  |  |  |  |  |  |
|  |  |  | 353 | Microsoft Corporation : WMA 2 |  |  |  |  |  |  |
|  |  |  | 368 | Unisys Corp. : Unisys\_Nap\_ADPCM | |  |  |  |  |  |
|  |  |  | 369 | Unisys Corp. : Unisys\_Nap\_Ulaw |  |  |  |  |  |  |
|  |  |  | 370 | Unisys Corp. : Unisys\_Nap\_Alaw |  |  |  |  |  |  |
|  |  |  | 371 | Unisys Corp. : Unisys\_Nap\_16K |  |  |  |  |  |  |
|  |  |  | 512 | Creative Labs, Inc : Creative\_ADPCM | |  |  |  |  |  |
|  |  |  | 514 | Creative Labs, Inc : Creative\_FastSpeech8 | |  |  |  |  |  |
|  |  |  | 515 | Creative Labs, Inc : Creative\_FastSpeech10 | |  |  |  |  |  |
|  |  |  | 528 | UHER informatic GmbH : Uher\_ADPCM | |  |  |  |  |  |
|  |  |  | 544 | Quarterdeck Corporation : Quarterdeck | |  |  |  |  |  |
|  |  |  | 560 | I-link Worldwide : Ilink\_VC |  |  |  |  |  |  |
|  |  |  | 576 | Aureal Semiconductor : Raw\_Sport | |  |  |  |  |  |
|  |  |  | 577 | ESS Technology, Inc. : ESST\_AC3 | |  |  |  |  |  |
|  |  |  | 592 | Interactive Products, Inc. : IPI\_HSX | |  |  |  |  |  |
|  |  |  | 593 | Interactive Products, Inc. : IPI\_RQELP | |  |  |  |  |  |
|  |  |  | 608 | Consistent Software : CS2 |  |  |  |  |  |  |
|  |  |  | 624 | Sony Corp. : Sony\_SCX |  |  |  |  |  |  |
|  |  |  | 768 | Fujitsu Corp. : FM\_Towns\_Snd |  |  |  |  |  |  |
|  |  |  | 1024 | Brooktree Corporation : Btv\_Digital | |  |  |  |  |  |
|  |  |  | 1104 | QDesign Corporation : Qdesign\_Music | |  |  |  |  |  |
|  |  |  | 1664 | AT&T Labs, Inc. : Vme\_VmPCM |  |  |  |  |  |  |
|  |  |  | 1665 | AT&T Labs, Inc. : Tpc |  |  |  |  |  |  |
|  |  |  | 4096 | Ing C. Olivetti & C., S.p.A. : OliGSM | |  |  |  |  |  |
|  |  |  | 4097 | Ing C. Olivetti & C., S.p.A. : OliADPCM | |  |  |  |  |  |
|  |  |  | 4098 | Ing C. Olivetti & C., S.p.A. : OliCELP | |  |  |  |  |  |
|  |  |  | 4099 | Ing C. Olivetti & C., S.p.A. : OliSBC |  |  |  |  |  |  |
|  |  |  | 4100 | Ing C. Olivetti & C., S.p.A. : OliOPR |  |  |  |  |  |  |
|  |  |  | 4352 | Lernout & Hauspie : LH\_CoDec |  |  |  |  |  |  |
|  |  |  | 5120 | Norris Communications, Inc. : Norris | |  |  |  |  |  |
|  |  |  | 5376 | AT&T Labs, Inc. : Soundspace\_Musicompress | |  |  |  |  |  |
|  |  |  | 8192 | FAST Multimedia AG : DVM |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 9 | Qualcomm Compact Multimedia Format | | 0 | invalid |  |  | UsesSamples | boolean | file contains sample data | pmd |
|  |  |  | 1 | CMX 2.1 |  |  | UsesGraphix | boolean | file contains graphic data |  |
|  |  |  | 2 | CMX 2.x |  |  | Channels | integer | number of channels (1=mono,2=stereo) |  |
|  |  |  | 3 | CMX 3.0 |  |  | SamplesPerSecond | integer | sample rate |  |
|  |  |  | 4 | CMX 4.0 |  |  | BitsPerSample | integer | sample width |  |
|  |  |  | 5 | CMX 4.1 |  |  | PlayTime | integer | time for playback of the entire file |  |
|  |  |  |  |  |  |  | MetaTitle | string |  |  |
|  |  |  |  |  |  |  | MetaCopyright | string |  |  |
|  |  |  |  |  |  |  | MetaPublisher | string |  |  |
|  |  |  |  |  |  |  | MetaDateCreated | string |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 10 | Qualcomm PureVoice | | 0 | Pulse Code Modulation |  |  | SamplesPerSecond | integer | sample rate |  |
|  |  |  | 1 | IS-733 Qualcomm PureVoice 13K |  |  | Channels | integer | number of channels (1=mono,2=stereo) |  |
|  |  |  | 2 | IS-733 Qualcomm PureVoice 13K (SmartRate) | |  | BitsPerSample | integer | sample width |  |
|  |  |  | 3 | G.711 muLaw |  |  | PlayTime | integer | time for playback of the entire file |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 11 | Nokia SmartMessaging | |  |  |  |  | Encoding id | integer | 0=binary, 1=hex, 2=text | nok |
|  |  |  |  |  |  |  | Encoding | string |  |  |
|  |  |  |  |  |  |  | EventCount | integer | number of data units used |  |
|  |  |  |  |  |  |  | LoopCount | integer | number of repetitions |  |
|  |  |  |  |  |  |  | PlayTime | integer | time for playback of the entire file |  |
|  |  |  |  |  |  |  | SmsCount | integer | number of short messages needed for transmission |  |
|  |  |  |  |  |  |  | MetaTitle | string |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 12 | Motorola Ringertone | |  |  |  |  | Encoding id | integer | 0=binary, 1=hex, 2=text | mot |
|  |  |  |  |  |  |  | Encoding | string |  |  |
|  |  |  |  |  |  |  | EventCount | integer | number of data units used |  |
|  |  |  |  |  |  |  | PlayTime | integer | time for playback of the entire file |  |
|  |  |  |  |  |  |  | SmsCount | integer | number of short messages needed for transmission |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 13 | Sagem Ringertone | |  |  |  |  | Encoding id | integer | 0=binary, 1=hex, 2=text | sag |
|  |  |  |  |  |  |  | Encoding | string |  |  |
|  |  |  |  |  |  |  | EventCount | integer | number of data units used |  |
|  |  |  |  |  |  |  | LoopCount | integer | number of repetitions |  |
|  |  |  |  |  |  |  | PlayTime | integer | time for playback of the entire file |  |
|  |  |  |  |  |  |  | SmsCount | integer | number of short messages needed for transmission |  |
|  |  |  |  |  |  |  | MetaTitle | string |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 14 | Enhanced Messaging Service | |  |  |  |  | Encoding id | integer | 0=binary, 1=hex, 2=text | ems |
|  |  |  |  |  |  |  | Encoding | string |  |  |
|  |  |  |  |  |  |  | EventCount | integer | number of data units used |  |
|  |  |  |  |  |  |  | SmsCount | integer | number of short messages needed for transmission |  |
|  |  |  |  |  |  |  | ContainsIMelodyHead | boolean | file contains a full-featured iMelody header |  |
|  |  |  |  |  |  |  | ContainsTempo | boolean | file contains a tempo specifier |  |
|  |  |  |  |  |  |  | ContainsName | boolean | file contains a name specifier |  |
|  |  |  |  |  |  |  | PlayTime | integer | time for playback of the entire file |  |
|  |  |  |  |  |  |  | MetaTitle | string |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 16 | Audio Interchange File Format | |  |  |  |  | BitsPerSample | integer | sample width | aif |
|  |  |  |  |  |  |  | Channels | integer | number of channels (1=mono,2=stereo) |  |
|  |  |  |  |  |  |  | SamplesPerSecond | integer | sample rate |  |
|  |  |  |  |  |  |  | SampleSize | integer |  |  |
|  |  |  |  |  |  |  | PlayTime | integer | time for playback of the entire file |  |
|  |  |  |  |  |  |  | MetaCopyright | string |  |  |
|  |  |  |  |  |  |  | MetaArranger | string |  |  |
|  |  |  |  |  |  |  | MetaTitle | string |  |  |
|  |  |  |  |  |  |  | MetaComposer | string |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 17 | Multimedia Sequential Event Quantification Format | |  |  |  |  | LoopCount | integer | number of repetitions | seq |
|  |  |  |  |  |  |  |  |  |  |  |
| 19 | Advanced Audio Coding | | 0 | invalid |  |  | PlayTime | integer | time for playback of the entire file | aac |
|  |  |  | 1 | unknown |  |  | Channels | integer | number of channels (1=mono,2=stereo) |  |
|  |  |  | 2 | AAC Main |  |  | BitsPerSecond | integer | bit rate |  |
|  |  |  | 3 | AAC Low Complexity (LC) |  |  | SamplesPerSecond | integer | sample rate |  |
|  |  |  | 4 | AAC Scalable Sample Rate (SSR) |  |  | VariableBitRate | boolean | bit rate varies throughout the playtime |  |
|  |  |  | 5 | AAC Long Term Prediction (LTP) |  |  | MPEGVersion | integer | 2=MPEG2, 4=MPEG4 |  |
|  |  |  | 6 | AAC High Efficiency (HE) |  |  | HeaderType id | integer | 0=raw, 1=ADTS, 2=ADIF |  |
|  |  |  |  |  |  |  | HeaderType | string |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 20 | MP4 | Subformat id = S | 0 | no audio | 0 | no video | Channels | integer | number of channels (1=mono,2=stereo) | mp4 |
|  |  | Videoformat id = E | 1 | unknown | 1 | unknown | SamplesPerSecond | integer | sample rate |  |
|  |  | 8 bit: EEEESSSS | 2 | AAC Main | 2 | H.263 | BitsPerSecond | integer | bit rate |  |
|  |  |  | 3 | AAC Low Complexity (LC) | 3 | H.264 | PlayTime | integer | time for playback of the entire file |  |
|  |  |  | 4 | AAC Scalable Sample Rate (SSR) | 4 | MPEG4 | FrameRate | integer | display rate |  |
|  |  |  | 5 | AAC Long Term Prediction (LTP) |  |  | FrameWidth | integer | display width |  |
|  |  |  | 6 | AAC High Efficiency (HE) |  |  | FrameHeight | integer | display height |  |
|  |  |  |  |  |  |  | MetaTitle | string |  |  |
|  |  |  |  |  |  |  | MetaArtist | string |  |  |
|  |  |  |  |  |  |  | MetaWords | string |  |  |
|  |  |  |  |  |  |  | MetaKeywords | string |  |  |
|  |  |  |  |  |  |  | MetaSoftware | string |  |  |
|  |  |  |  |  |  |  | MetaComment | string |  |  |
|  |  |  |  |  |  |  | MetaCategory | string |  |  |
|  |  |  |  |  |  |  | MetaDateCreated | string |  |  |
|  |  |  |  |  |  |  | MetaTempoDescription | string |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 21 | 3GPP File Format | Subformat id = S | 0 | no audio | 0 | no video | Channels | integer | number of channels (1=mono,2=stereo) | 3gp |
|  |  | Videoformat id = E | 1 | unknown | 1 | unknown | SamplesPerSecond | integer | sample rate |  |
|  |  | 8 bit: EEEESSSS | 2 | AAC Main | 2 | H.263 | BitsPerSecond | integer | bit rate |  |
|  |  |  | 3 | AAC Low Complexity (LC) | 3 | H.264 | PlayTime | integer | time for playback of the entire file |  |
|  |  |  | 4 | AAC Scalable Sample Rate (SSR) | 4 | MPEG4 | FrameRate | integer | display rate |  |
|  |  |  | 5 | AAC Long Term Prediction (LTP) |  |  | FrameWidth | integer | display width |  |
|  |  |  | 6 | AAC High Efficiency (HE) |  |  | FrameHeight | integer | display height |  |
|  |  |  | 7 | Adaptive Multi-Rate Narrow Band (AMR-NB) | |  | MetaTitle | string |  |  |
|  |  |  | 8 | Adaptive Multi-Rate Wide Band (AMR-WB) | |  | MetaArtist | string |  |  |
|  |  |  |  |  |  |  | MetaWords | string |  |  |
|  |  |  |  |  |  |  | MetaKeywords | string |  |  |
|  |  |  |  |  |  |  | MetaSoftware | string |  |  |
|  |  |  |  |  |  |  | MetaComment | string |  |  |
|  |  |  |  |  |  |  | MetaCategory | string |  |  |
|  |  |  |  |  |  |  | MetaDateCreated | string |  |  |
|  |  |  |  |  |  |  | MetaTempoDescription | string |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 23 | Graphics Interchange Format | | 0 | invalid |  |  | Width | integer | image width | gif |
|  |  |  | 1 | GIF87 |  |  | Height | integer | image height |  |
|  |  |  | 2 | GIF89 |  |  | PlayTime | integer | time for playback of the entire file (valid for animations only) |  |
|  |  |  |  |  |  |  | BitsPerPixel | integer | color depth |  |
|  |  |  |  |  |  |  | Colors | integer | number of colors |  |
|  |  |  |  |  |  |  | AvgIFrameDelay | integer | average frame delay |  |
|  |  |  |  |  |  |  | Frames | integer | number of frames |  |
|  |  |  |  |  |  |  | Interlaced | boolean | interlaced encoding |  |
|  |  |  |  |  |  |  | Transparent | boolean | image uses transparency |  |
|  |  |  |  |  |  |  | LoopCount | integer | number of repetitions |  |
|  |  |  |  |  |  |  | MetaComment | string |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 24 | Portable Networks Graphic | | 1 | Grayscale |  |  | Width | integer | image width | png |
|  |  |  | 3 | Colored |  |  | Height | integer | image height |  |
|  |  |  | 4 | Paletted |  |  | BitsPerPixel | integer | color depth |  |
|  |  |  | 5 | Grayscale+Alpha |  |  | Colors | integer | number of colors |  |
|  |  |  | 7 | Colored+Alpha |  |  | Interlaced | boolean | interlaced encoding |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 25 | Joint Photographic Experts Group File | | 256 | JFIF 1.00 |  |  | Width | integer | image width | jpg |
|  |  |  | 257 | JFIF 1.01 |  |  | Height | integer | image height |  |
|  |  |  | 258 | JFIF 1.02 |  |  | Progressive | boolean | progressive encoding |  |
|  |  |  | 259 | JFIF 1.03 |  |  | ResolutionX | integer | horizontal image resolution |  |
|  |  |  | 260 | JFIF 1.04 |  |  | ResolutionY | integer | vertical image resolution |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 26 | Bitmap | Subformat id = S | 0 | invalid | 0 | unknown | Width | integer | image width | bmp |
|  |  | Compression id = E | 1 | OS/2 1.x | 1 | uncompressed | Height | integer | image height |  |
|  |  | 8 bit: SSSSEEEE | 2 | Windows 3.x BMP | 2 | RLE8 | BitsPerPixel | integer | color depth |  |
|  |  |  | 3 | OS/2 2.0 | 3 | RLE4 | Colors | integer | number of colors |  |
|  |  |  |  |  | 4 | bitfields | ResolutionX | integer | horizontal image resolution |  |
|  |  |  |  |  | 5 | JPEG | ResolutionY | integer | vertical image resolution |  |
|  |  |  |  |  | 6 | PNG |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 27 | Windows Media Audio | | 86016 | MP2 |  |  | SamplesPerSecond | integer | sample rate | wma |
|  |  |  | 86017 | MP3 |  |  | Channels | integer | number of channels (1=mono,2=stereo) |  |
|  |  |  |  |  |  |  | BitsPerSample | integer | sample width |  |
|  |  |  |  |  |  |  | BitsPerSecond | integer | sample rate |  |
|  |  |  |  |  |  |  | PlayTime | integer | time for playback of the entire file |  |
|  |  |  |  |  |  |  | MetaTitle | string |  |  |
|  |  |  |  |  |  |  | MetaArtist | string |  |  |
|  |  |  |  |  |  |  | MetaComment | string |  |  |
|  |  |  |  |  |  |  | MetaCopyright | string |  |  |
|  |  |  |  |  |  |  | MetaAlbum | string |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 28 | Real Audio |  | 77824 | RA 14.4 |  |  | SamplesPerSecond | integer | sample rate | ra |
|  |  |  | 77825 | RA 28.8 |  |  | Channels | integer | number of channels (1=mono,2=stereo) |  |
|  |  |  | 86039 | COOK |  |  | BitsPerSample | integer | sample width |  |
|  |  |  | 86020 | AC3 |  |  | BitsPerSecond | integer | sample rate |  |
|  |  |  |  |  |  |  | PlayTime | integer | time for playback of the entire file |  |
|  |  |  |  |  |  |  | MetaTitle | string |  |  |
|  |  |  |  |  |  |  | MetaArtist | string |  |  |
|  |  |  |  |  |  |  | MetaComment | string |  |  |
|  |  |  |  |  |  |  | MetaCopyright | string |  |  |
|  |  |  |  |  |  |  | MetaAlbum | string |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 29 | OGG |  | 86022 | Vorbis |  |  | SamplesPerSecond | integer | sample rate | ogg |
|  |  |  |  |  |  |  | Channels | integer | number of channels (1=mono,2=stereo) |  |
|  |  |  |  |  |  |  | BitsPerSample | integer | sample width |  |
|  |  |  |  |  |  |  | BitsPerSecond | integer | sample rate |  |
|  |  |  |  |  |  |  | PlayTime | integer | time for playback of the entire file |  |
|  |  |  |  |  |  |  | MetaTitle | string |  |  |
|  |  |  |  |  |  |  | MetaArtist | string |  |  |
|  |  |  |  |  |  |  | MetaComment | string |  |  |
|  |  |  |  |  |  |  | MetaCopyright | string |  |  |
|  |  |  |  |  |  |  | MetaAlbum | string |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 30 | Nokia Series40 Theme | | 0 | invalid |  |  | ContainsBackground | boolean | file contains a background image | nth |
|  |  |  | 1 | Version 1.0 |  |  | ContainsRingtone | boolean | file contains a ringtone |  |
|  |  |  | 2 | Version 1.1 |  |  | ContainsWallpaper | boolean | file contains a wallpaper image |  |
|  |  |  | 3 | Version 2.0 |  |  | ContainsScreensaver | boolean | file contains a screensaver |  |
|  |  |  |  |  |  |  | MetaTitle | string |  |  |
|  |  |  |  |  |  |  | Width | integer | largest image width |  |
|  |  |  |  |  |  |  | Height | integer | largest image height |  |
|  |  |  |  |  |  |  | Colors | integer | largest number of colors |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 31 | Sony-Ericsson THM Theme | | 1 | Version 1.0 : T68i |  |  | ContainsWallpaper | boolean | file contains a wallpaper image | thm |
|  |  |  | 2 | Version 1.0 : T300 |  |  | ContainsBackground | boolean | file contains a background image |  |
|  |  |  | 3 | Version 1.0 : T310 |  |  | ContainsScreensaver | boolean | file contains a screensaver |  |
|  |  |  | 4 | Version 1.0 : T230 |  |  | ContainsRingtone | boolean | file contains a ringtone |  |
|  |  |  | 5 | Version 1.0 : T290 |  |  | MetaTitle | string |  |  |
|  |  |  | 6 | Version 2.0 : T610 |  |  | MetaArranger | string |  |  |
|  |  |  | 7 | Version 2.0 : T630 |  |  | MetaTechnician | string |  |  |
|  |  |  | 8 | Version 2.0 : Z600 |  |  | MetaCopyright | string |  |  |
|  |  |  | 9 | Version 2.0 : J210 |  |  | Width | integer | largest image width |  |
|  |  |  | 10 | Version 2.0 : Z300 |  |  | Height | integer | largest image height |  |
|  |  |  | 11 | Version 2.0 : J220 |  |  | Colors | integer | largest number of colors |  |
|  |  |  | 12 | Version 2.0 : J230 |  |  |  |  |  |  |
|  |  |  | 13 | Version 3.0 : Z1010 |  |  |  |  |  |  |
|  |  |  | 14 | Version 3.0 : K700 |  |  |  |  |  |  |
|  |  |  | 15 | Version 3.0 : S700 |  |  |  |  |  |  |
|  |  |  | 16 | Version 3.0 : K500 |  |  |  |  |  |  |
|  |  |  | 17 | Version 3.0 : Z500 |  |  |  |  |  |  |
|  |  |  | 18 | Version 3.0 : K300 |  |  |  |  |  |  |
|  |  |  | 19 | Version 3.0 : J300 |  |  |  |  |  |  |
|  |  |  | 20 | Version 3.1 : V800+ACA-Standard | |  |  |  |  |  |
|  |  |  | 21 | Version 3.1 : Z800+ACA-Standard | |  |  |  |  |  |
|  |  |  | 22 | Version 3.2 : V800+ACA-Organic |  |  |  |  |  |  |
|  |  |  | 23 | Version 3.2 : Z800+ACA-Organic |  |  |  |  |  |  |
|  |  |  | 24 | Version 4.0 : K750 |  |  |  |  |  |  |
|  |  |  | 25 | Version 4.0 : W800 |  |  |  |  |  |  |
|  |  |  | 26 | Version 4.0 : W700 |  |  |  |  |  |  |
|  |  |  | 27 | Version 4.0 : K600 |  |  |  |  |  |  |
|  |  |  | 28 | Version 4.0 : Z520 |  |  |  |  |  |  |
|  |  |  | 29 | Version 4.0 : Z525 |  |  |  |  |  |  |
|  |  |  | 30 | Version 4.5 : K610 |  |  |  |  |  |  |
|  |  |  | 31 | Version 4.5 : K800 |  |  |  |  |  |  |
|  |  |  | 32 | Version 4.5 : K790 |  |  |  |  |  |  |
|  |  |  | 33 | Version 4.5 : W850 |  |  |  |  |  |  |
|  |  |  | 34 | Version 4.5 : Z710 |  |  |  |  |  |  |
|  |  |  | 35 | Version 4.5 : W710 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 32 | Sony-Ericsson UTZ Theme | | 1 | P900 |  |  | ContainsScreensaver | boolean | file contains a screensaver | utz |
|  |  |  | 2 | P910 |  |  | ContainsRingtone | boolean | file contains a ringtone |  |
|  |  |  | 3 | M600 |  |  | ContainsBackground | boolean | file contains a background image |  |
|  |  |  | 4 | W950 |  |  | MetaTitle | string |  |  |
|  |  |  | 5 | P990 |  |  | MetaArranger | string |  |  |
|  |  |  | 6 | M600 |  |  | MetaCopyright | string |  |  |
|  |  |  |  | W950 |  |  | Width | integer | largest image width |  |
|  |  |  | 7 |  |  |  | Height | integer | largest image height |  |
|  |  |  |  |  |  |  | Colors | integer | largest number of colors |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 33 | EPOC Installer | Subformat id = S | 0 | Undefined | 0 | not a theme | ContainsWallpaper | boolean | file contains a wallpaper image | sis |
|  |  | Theme Version id=E | 1 | Series 60 Platform 0.9 | 1 | Theme 2.6 | ContainsBackground | boolean | file contains a background image |  |
|  |  | 8 bit: EESSSSSS | 2 | Series 60 Platform 1.0 | 2 | Theme 2.8 | ContainsScreensaver | boolean | file contains a screensaver |  |
|  |  |  | 3 | Series 60 Platform 1.1 | 3 | Theme 3.0 | ContainsRingtone | boolean | file contains a ringtone |  |
|  |  |  | 4 | Series 60 Platform 1.2 |  |  | ContainsApplication | boolean | file contains executable data |  |
|  |  |  | 5 | Series 60 Platform, 2nd Edition |  |  | MetaTitle | string |  |  |
|  |  |  | 6 | Series 60 Platform, 2nd Edition, Feature Pack 1 | |  | MetaComment | string |  |  |
|  |  |  | 7 | Series 60 Platform, 2nd Edition, Feature Pack 2 | |  | Width | integer | largest image width |  |
|  |  |  | 8 | Series 60 Platform, 2nd Edition, Feature Pack 3 | |  | Height | integer | largest image height |  |
|  |  |  | 9 | Series 60 Platform, 3rd Edition |  |  | Colors | integer | largest number of colors |  |
|  |  |  | 10 | Series 60 Platform, 3rd Edition, Feature Pack 1 | |  |  |  |  |  |
|  |  |  | 11 | Nokia 3650 |  |  |  |  |  |  |
|  |  |  | 12 | Nokia 6600 |  |  |  |  |  |  |
|  |  |  | 13 | Nokia 6620 |  |  |  |  |  |  |
|  |  |  | 14 | Nokia 6630 |  |  |  |  |  |  |
|  |  |  | 15 | Nokia 6680 |  |  |  |  |  |  |
|  |  |  | 16 | Nokia 7610 |  |  |  |  |  |  |
|  |  |  | 17 | Nokia 7650 |  |  |  |  |  |  |
|  |  |  | 18 | Nokia N-Gage |  |  |  |  |  |  |
|  |  |  | 19 | Siemens SX1 |  |  |  |  |  |  |
|  |  |  | 20 | Nokia 3230 |  |  |  |  |  |  |
|  |  |  | 21 | Nokia 6260 |  |  |  |  |  |  |
|  |  |  | 22 | Nokia 6670 |  |  |  |  |  |  |
|  |  |  | 23 | Nokia 6681 |  |  |  |  |  |  |
|  |  |  | 24 | Nokia 6682 |  |  |  |  |  |  |
|  |  |  | 25 | Nokia N70 |  |  |  |  |  |  |
|  |  |  | 26 | Nokia N90 |  |  |  |  |  |  |
|  |  |  | 27 | Nokia 3250 |  |  |  |  |  |  |
|  |  |  | 28 | Nokia E60 |  |  |  |  |  |  |
|  |  |  | 29 | Nokia E61 |  |  |  |  |  |  |
|  |  |  | 30 | Nokia E70 |  |  |  |  |  |  |
|  |  |  | 31 | Nokia N71 |  |  |  |  |  |  |
|  |  |  | 32 | Nokia N73 |  |  |  |  |  |  |
|  |  |  | 33 | Nokia N80 |  |  |  |  |  |  |
|  |  |  | 34 | Nokia N91 |  |  |  |  |  |  |
|  |  |  | 35 | Nokia N92 |  |  |  |  |  |  |
|  |  |  | 36 | Series 80 v2.0 |  |  |  |  |  |  |
|  |  |  | 37 | Nokia 9300 |  |  |  |  |  |  |
|  |  |  | 38 | Nokia 9500 |  |  |  |  |  |  |
|  |  |  | 39 | Nokia 7710 |  |  |  |  |  |  |
|  |  |  | 40 | UIQ v2.0 |  |  |  |  |  |  |
|  |  |  | 41 | UIQ v2.1 |  |  |  |  |  |  |
|  |  |  | 42 | SonyEricsson P80x |  |  |  |  |  |  |
|  |  |  | 43 | SonyEricsson P90x |  |  |  |  |  |  |
|  |  |  | 44 | UIQ v3 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 34 | Java Archive Resource | Subformat id = S | 0 | Java | 1 | CLDC-1.0 | MetaComment | string |  | jar |
|  |  | Connected Limited Device Configuration = E | 1 | Java 2 Micro Edition: MIDP 1.0 | 2 | CLDC-1.1 | MetaCopyright | string |  |  |
|  |  | 4 bit: EESS | 2 | Java 2 Micro Edition: MIDP 2.0 |  |  |  |  |  |  |
|  |  |  | 3 | Java 2 Micro Edition |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 35 | Java Archive Descriptor | Subformat id = S | 0 | Java | 1 | CLDC-1.0 | MetaComment | string |  | jad |
|  |  | Connected Limited Device Configuration = E | 1 | Java 2 Micro Edition: MIDP 1.0 | 2 | CLDC-1.1 | MetaCopyright | string |  |  |
|  |  | 4 bit: EESS | 2 | Java 2 Micro Edition: MIDP 2.0 |  |  |  |  |  |  |
|  |  |  | 3 | Java 2 Micro Edition |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 36 | MacroMedia Flash | Subformat id = S | 0 | invalid | 0 | Uncompressed | Zipped | boolean | uses Z-compression | swf |
|  |  | Codec id = E | 1 | Version 1.0 | 1 | ADPCM | Streaming | boolean | file is streamable |  |
|  |  | Zipped = Z | 2 | Version 2.0 | 2 | MP3 | SamplesPerSecond | integer | sample rate |  |
|  |  | Streaming = T | 3 | Version 3.0 | 3 | ASAO | Channels | integer | number of channels (1=mono,2=stereo) |  |
|  |  | 9 bit: TEEEZSSSS | 4 | Version 4.0 |  |  | BitsPerSample | integer | sample width |  |
|  |  |  | 5 | Version 5.0 |  |  | BitsPerSecond | integer | bit rate |  |
|  |  |  | 6 | Version 6.0 |  |  | PlayTime | integer | time for playback of the entire file |  |
|  |  |  | 7 | Version 7.0 |  |  | ContainsLoop | boolean | loop flag |  |
|  |  |  |  |  |  |  | FrameWidth | integer | display width |  |
|  |  |  |  |  |  |  | FrameHeight | integer | display height |  |
|  |  |  |  |  |  |  | VariableBitRate | boolean | bit rate varies throughout the playtime |  |
|  |  |  |  |  |  |  | JointStereo | boolean | uses optimized encoding for stereo |  |
|  |  |  |  |  |  |  | UsesCRC | boolean | contains checksums |  |
|  |  |  |  |  |  |  | Copyrighted | boolean | copyright flag |  |
|  |  |  |  |  |  |  | OriginalRecording | boolean | original recording flag |  |
|  |  |  |  |  |  |  | Private | boolean | private flag |  |
|  |  |  |  |  |  |  | MinBitsPerSecond | integer | smallest bit rate used |  |
|  |  |  |  |  |  |  | MaxBitsPerSecond | integer | biggest bit rate used |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 37 | VOX |  | 1 | Dialogic/OKI ADPCM |  |  | SamplesPerSecond | integer | sample rate | vox |
|  |  |  |  |  |  |  | Channels | integer | number of channels (1=mono,2=stereo) |  |
|  |  |  |  |  |  |  | BitsPerSample | integer | sample width |  |
|  |  |  |  |  |  |  | PlayTime | integer | time for playback of the entire file |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 38 | uLaw |  |  |  |  |  |  |  |  | ulaw |
|  |  |  |  |  |  |  |  |  |  |  |
| 39 | aLaw |  |  |  |  |  |  |  |  | alaw |
|  |  |  |  |  |  |  |  |  |  |  |
| 40 | AVI |  |  |  |  |  |  |  |  | avi |
|  |  |  |  |  |  |  |  |  |  |  |
| 41 | Samsung THM Theme | |  |  |  |  | Width | integer | largest image width | thm |
|  |  |  |  |  |  |  | Height | integer | largest image height |  |
|  |  |  |  |  |  |  | Colors | integer | largest number of colors |  |
|  |  |  |  |  |  |  | ContainsWallpaper | boolean | file contains a wallpaper image |  |
|  |  |  |  |  |  |  | ContainsBackground | boolean | file contains a background image |  |
|  |  |  |  |  |  |  | ContainsScreensaver | boolean | file contains a screensaver |  |
|  |  |  |  |  |  |  | ContainsRingtone | boolean | file contains a ringtone |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 42 | Motorola MTF Theme | |  |  |  |  | Width | integer | largest image width | mtf |
|  |  |  |  |  |  |  | Height | integer | largest image height |  |
|  |  |  |  |  |  |  | Colors | integer | largest number of colors |  |
|  |  |  |  |  |  |  | ContainsWallpaper | boolean | file contains a wallpaper image |  |
|  |  |  |  |  |  |  | ContainsScreensaver | boolean | file contains a screensaver |  |
|  |  |  |  |  |  |  | ContainsRingtone | boolean | file contains a ringtone |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 43 | EPOC Multi-Bitmap | |  |  |  |  |  |  |  | mbm |
|  |  |  |  |  |  |  |  |  |  |  |
| 44 | Siemens SDF Theme | |  |  |  |  | Width | integer | largest image width | sdf |
|  |  |  |  |  |  |  | Height | integer | largest image height |  |
|  |  |  |  |  |  |  | Colors | integer | largest number of colors |  |
|  |  |  |  |  |  |  | ContainsWallpaper | boolean | file contains a wallpaper image |  |
|  |  |  |  |  |  |  | ContainsBackground | boolean | file contains a background image |  |
|  |  |  |  |  |  |  | ContainsScreensaver | boolean | file contains a screensaver |  |
|  |  |  |  |  |  |  |  |  |  |  |

# Appendix B: GPL License Version 3

GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

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Preamble

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The licenses for most software and other practical works are designed

to take away your freedom to share and change the works. By contrast,

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When we speak of free software, we are referring to freedom, not

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have the freedom to distribute copies of free software (and charge for

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To protect your rights, we need to prevent others from denying you

these rights or asking you to surrender the rights. Therefore, you have

certain responsibilities if you distribute copies of the software, or if

you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether

gratis or for a fee, you must pass on to the recipients the same

freedoms that you received. You must make sure that they, too, receive

or can get the source code. And you must show them these terms so they

know their rights.

Developers that use the GNU GPL protect your rights with two steps:

(1) assert copyright on the software, and (2) offer you this License

giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains

that there is no warranty for this free software. For both users' and

authors' sake, the GPL requires that modified versions be marked as

changed, so that their problems will not be attributed erroneously to

authors of previous versions.

Some devices are designed to deny users access to install or run

modified versions of the software inside them, although the manufacturer

can do so. This is fundamentally incompatible with the aim of

protecting users' freedom to change the software. The systematic

pattern of such abuse occurs in the area of products for individuals to

use, which is precisely where it is most unacceptable. Therefore, we

have designed this version of the GPL to prohibit the practice for those

products. If such problems arise substantially in other domains, we

stand ready to extend this provision to those domains in future versions

of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents.

States should not allow patents to restrict development and use of

software on general-purpose computers, but in those that do, we wish to

avoid the special danger that patents applied to a free program could

make it effectively proprietary. To prevent this, the GPL assures that

patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and

modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of

works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this

License. Each licensee is addressed as "you". "Licensees" and

"recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work

in a fashion requiring copyright permission, other than the making of an

exact copy. The resulting work is called a "modified version" of the

earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based

on the Program.

To "propagate" a work means to do anything with it that, without

permission, would make you directly or secondarily liable for

infringement under applicable copyright law, except executing it on a

computer or modifying a private copy. Propagation includes copying,

distribution (with or without modification), making available to the

public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other

parties to make or receive copies. Mere interaction with a user through

a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices"

to the extent that it includes a convenient and prominently visible

feature that (1) displays an appropriate copyright notice, and (2)

tells the user that there is no warranty for the work (except to the

extent that warranties are provided), that licensees may convey the

work under this License, and how to view a copy of this License. If

the interface presents a list of user commands or options, such as a

menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work

for making modifications to it. "Object code" means any non-source

form of a work.

A "Standard Interface" means an interface that either is an official

standard defined by a recognized standards body, or, in the case of

interfaces specified for a particular programming language, one that

is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other

than the work as a whole, that (a) is included in the normal form of

packaging a Major Component, but which is not part of that Major

Component, and (b) serves only to enable use of the work with that

Major Component, or to implement a Standard Interface for which an

implementation is available to the public in source code form. A

"Major Component", in this context, means a major essential component

(kernel, window system, and so on) of the specific operating system

(if any) on which the executable work runs, or a compiler used to

produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all

the source code needed to generate, install, and (for an executable

work) run the object code and to modify the work, including scripts to

control those activities. However, it does not include the work's

System Libraries, or general-purpose tools or generally available free

programs which are used unmodified in performing those activities but

which are not part of the work. For example, Corresponding Source

includes interface definition files associated with source files for

the work, and the source code for shared libraries and dynamically

linked subprograms that the work is specifically designed to require,

such as by intimate data communication or control flow between those

subprograms and other parts of the work.

The Corresponding Source need not include anything that users

can regenerate automatically from other parts of the Corresponding

Source.

The Corresponding Source for a work in source code form is that

same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of

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covered work is covered by this License only if the output, given its

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for you must do so exclusively on your behalf, under your direction

and control, on terms that prohibit them from making any copies of

your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under

the conditions stated below. Sublicensing is not allowed; section 10

makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological

measure under any applicable law fulfilling obligations under article

11 of the WIPO copyright treaty adopted on 20 December 1996, or

similar laws prohibiting or restricting circumvention of such

measures.

When you convey a covered work, you waive any legal power to forbid

circumvention of technological measures to the extent such circumvention

is effected by exercising rights under this License with respect to

the covered work, and you disclaim any intention to limit operation or

modification of the work as a means of enforcing, against the work's

users, your or third parties' legal rights to forbid circumvention of

technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you

receive it, in any medium, provided that you conspicuously and

appropriately publish on each copy an appropriate copyright notice;

keep intact all notices stating that this License and any

non-permissive terms added in accord with section 7 apply to the code;

keep intact all notices of the absence of any warranty; and give all

recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey,

and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to

produce it from the Program, in the form of source code under the

terms of section 4, provided that you also meet all of these conditions:

a) The work must carry prominent notices stating that you modified

it, and giving a relevant date.

b) The work must carry prominent notices stating that it is

released under this License and any conditions added under section

7. This requirement modifies the requirement in section 4 to

"keep intact all notices".

c) You must license the entire work, as a whole, under this

License to anyone who comes into possession of a copy. This

License will therefore apply, along with any applicable section 7

additional terms, to the whole of the work, and all its parts,

regardless of how they are packaged. This License gives no

permission to license the work in any other way, but it does not

invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display

Appropriate Legal Notices; however, if the Program has interactive

interfaces that do not display Appropriate Legal Notices, your

work need not make them do so.

A compilation of a covered work with other separate and independent

works, which are not by their nature extensions of the covered work,

and which are not combined with it such as to form a larger program,

in or on a volume of a storage or distribution medium, is called an

"aggregate" if the compilation and its resulting copyright are not

used to limit the access or legal rights of the compilation's users

beyond what the individual works permit. Inclusion of a covered work

in an aggregate does not cause this License to apply to the other

parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms

of sections 4 and 5, provided that you also convey the

machine-readable Corresponding Source under the terms of this License,

in one of these ways:

a) Convey the object code in, or embodied in, a physical product

(including a physical distribution medium), accompanied by the

Corresponding Source fixed on a durable physical medium

customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product

(including a physical distribution medium), accompanied by a

written offer, valid for at least three years and valid for as

long as you offer spare parts or customer support for that product

model, to give anyone who possesses the object code either (1) a

copy of the Corresponding Source for all the software in the

product that is covered by this License, on a durable physical

medium customarily used for software interchange, for a price no

more than your reasonable cost of physically performing this

conveying of source, or (2) access to copy the

Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the

written offer to provide the Corresponding Source. This

alternative is allowed only occasionally and noncommercially, and

only if you received the object code with such an offer, in accord

with subsection 6b.

d) Convey the object code by offering access from a designated

place (gratis or for a charge), and offer equivalent access to the

Corresponding Source in the same way through the same place at no

further charge. You need not require recipients to copy the

Corresponding Source along with the object code. If the place to

copy the object code is a network server, the Corresponding Source

may be on a different server (operated by you or a third party)

that supports equivalent copying facilities, provided you maintain

clear directions next to the object code saying where to find the

Corresponding Source. Regardless of what server hosts the

Corresponding Source, you remain obligated to ensure that it is

available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided

you inform other peers where the object code and Corresponding

Source of the work are being offered to the general public at no

charge under subsection 6d.

A separable portion of the object code, whose source code is excluded

from the Corresponding Source as a System Library, need not be

included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any

tangible personal property which is normally used for personal, family,

or household purposes, or (2) anything designed or sold for incorporation

into a dwelling. In determining whether a product is a consumer product,

doubtful cases shall be resolved in favor of coverage. For a particular

product received by a particular user, "normally used" refers to a

typical or common use of that class of product, regardless of the status

of the particular user or of the way in which the particular user

actually uses, or expects or is expected to use, the product. A product

is a consumer product regardless of whether the product has substantial

commercial, industrial or non-consumer uses, unless such uses represent

the only significant mode of use of the product.

"Installation Information" for a User Product means any methods,

procedures, authorization keys, or other information required to install

and execute modified versions of a covered work in that User Product from

a modified version of its Corresponding Source. The information must

suffice to ensure that the continued functioning of the modified object

code is in no case prevented or interfered with solely because

modification has been made.

If you convey an object code work under this section in, or with, or

specifically for use in, a User Product, and the conveying occurs as

part of a transaction in which the right of possession and use of the

User Product is transferred to the recipient in perpetuity or for a

fixed term (regardless of how the transaction is characterized), the

Corresponding Source conveyed under this section must be accompanied

by the Installation Information. But this requirement does not apply

if neither you nor any third party retains the ability to install

modified object code on the User Product (for example, the work has

been installed in ROM).

The requirement to provide Installation Information does not include a

requirement to continue to provide support service, warranty, or updates

for a work that has been modified or installed by the recipient, or for

the User Product in which it has been modified or installed. Access to a

network may be denied when the modification itself materially and

adversely affects the operation of the network or violates the rules and

protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided,

in accord with this section must be in a format that is publicly

documented (and with an implementation available to the public in

source code form), and must require no special password or key for

unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this

License by making exceptions from one or more of its conditions.

Additional permissions that are applicable to the entire Program shall

be treated as though they were included in this License, to the extent

that they are valid under applicable law. If additional permissions

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under those permissions, but the entire Program remains governed by

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When you convey a copy of a covered work, you may at your option

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All other non-permissive additional terms are considered "further

restrictions" within the meaning of section 10. If the Program as you

received it, or any part of it, contains a notice stating that it is

governed by this License along with a term that is a further

restriction, you may remove that term. If a license document contains

a further restriction but permits relicensing or conveying under this

License, you may add to a covered work material governed by the terms

of that license document, provided that the further restriction does

not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you

must place, in the relevant source files, a statement of the

additional terms that apply to those files, or a notice indicating

where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the

form of a separately written license, or stated as exceptions;

the above requirements apply either way.

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Termination of your rights under this section does not terminate the

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9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or

run a copy of the Program. Ancillary propagation of a covered work

occurring solely as a consequence of using peer-to-peer transmission

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but the special requirements of the GNU Affero General Public License,

section 13, concerning interaction through a network will apply to the

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EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF

SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided

above cannot be given local legal effect according to their terms,

reviewing courts shall apply local law that most closely approximates

an absolute waiver of all civil liability in connection with the

Program, unless a warranty or assumption of liability accompanies a

copy of the Program in return for a fee.

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How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest

possible use to the public, the best way to achieve this is to make it

free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest

to attach them to the start of each source file to most effectively

state the exclusion of warranty; and each file should have at least

the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>

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Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short

notice like this when it starts in an interactive mode:

<program> Copyright (C) <year> <name of author>

This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.

This is free software, and you are welcome to redistribute it

under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate

parts of the General Public License. Of course, your program's commands

might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school,

if any, to sign a "copyright disclaimer" for the program, if necessary.

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