Accusoft delivers optimized, standards-based image compression technologies

faster more effective compression and decompression for medical images and DICOM files

COMPRESSION

PICVideo

The fastest video codec

M-JPEG Codec

- The only M-JPEG codec optimized for both 32-bit and 64-bit Windows
- Used in video editing applications because it describes each individual frame completely
- Includes Microsoft Video for Windows interface
- Includes Microsoft DirectShow Transform Filter interface

Windows | Codec

PICTools Medical

advanced medical imaging technology

Considered the best supported and most advanced in the industry, PICTools Medical image compression libraries are relied upon within leading PACS, teleradiology, ultrasound, and cardiology applications to provide the fastest compression and decompression engines available, while retaining image quality and integrity.

Windows | LINUX | Solaris | x86 | IBM | AIX | 32-bit/64-bit | Mac OS X

Accusoft provides a simple solution to help you streamline the way you process your medical images.

Visit accusoft.com to download your free PICTools demo.

JPEG 2000

Accusoft offers commercially supported JPEG 2000 libraries to augment medical imaging application development.

File Format and Codestream - Part 1

- Continuous tone compression (1-bit to 24-bit)
- Provides lossy and lossless compression

3D Volumetric Encoding - Part 2

- Compress and decompress in accordance with the DICOM standard
- Supports lossy and lossless modes, JPEG 2000 raw codestream, and JPX format
- Supports 24-bit RGB, 8 to 16-bit grayscale

Multithreading

- User-configurable number of threads to optimize performance on multicore CPUs

accusoft®

download free trials at accusoft.com

+1 800.875.7009 info@accusoft.com

JPIP - Part 9

- Design and build a JPEG 2000 JPIP implementation
- Speed up network viewing of user selectable resolutions and areas of interest
- Provides JPIP APIs for client and server, JPEG 2000 compliant compression and decompression, and JPIP request and receive

Transcoder

- Allows many operations without decompressing and recompressing images, eliminating generational loss
- Change the number of layers, file size, compression rate, overall quality, convert lossless to lossy, re-encode for JPIP transmission, and extract encoded thumbnails

LOSSLESS JPEG

- Addresses the medical industry need for compression that is non-destructive
- Provides fast compression for video performance and is ideal for cardiology and ultrasound applications
- Supports 64-bit RGB, 8 to 16-bit grayscale data

LOSSY JPEG

- Complete control over luminance, chrominance, and sub-sampling compression parameters
- High-speed 1/4, 1/16, 1/64 thumbnail decompression support
- Enhanced decompression minimizes JPEG block artifacts
- CMYK, YUV, RGB, 8-bit and 12-bit grayscale support

JPEG-LS

- Provides excellent lossless or constrained-loss compression performance
- Decompression support for non-standard, improperly compressed JLS images
- Supports single component 2 to 16-bit grayscale images
- Supports multiple component 24-bit (RGB) images

JPEG XR

- Provides support for fully standards based JPEG XR
- Features lossy and lossless compression, multiple colorspaces, a wide dynamic range, and extensive metadata support
- A still image compression algorithm for continuous tone photographic images
- Supports multiple subsampling settings, including familiar medical settings of 4:2:2 and 4:2:0 with cosited and centered options.

PICTools Medical compression file size and speed comparison chart

Parameters	Lossy JPEG	Lossy J2K*	Lossy JPEG XR	JPEG Lossless	J2K Lossless	JPEG-LS Lossless	Lossless JPEG XR
512 x 512 8-bit gray 256 KB							
Compress Time (ms)	1	11	7	3	18	15	11
Size (KB)	20	20	20	119	97	91	104
Compression Ratio	13.1:1	13.2:1	13.2:1	2.2:1	2.7:1	2.9:1	2.5:1
Decompress Time (ms)	1	5	5	1	14	14	8
PSNR	44.4	45.8	45.3	N/A	N/A	N/A	N/A
2048 x 2048 8-bit gray 4,974 KB							
Compress Time (ms)	27	138	101	46	253	238	176
Size (KB)	263	263	260	1,809	1,425	1,365	1,550
Compression Ratio	16:1	15.9:1	16.2:1	2.3:1	2.9:1	3.1:1	2.7:1
Decompress Time (ms)	11	52	66	30	196	226	120
PSNR	45.3	46.2	46.2	N/A	N/A	N/A	N/A
512 x 512 12-bit gray 512 KB							
Compress Time (ms)	13	30	N/A	5	34	20	N/A
Size (KB)	106	106	N/A	244	214	214	N/A
Compression Ratio	4.9:1	4.9:1	N/A	2.1:1	2.5:1	2.5:1	N/A
Decompress Time (ms)	2	16	N/A	3	27	18	N/A
PSNR	57.7	63.3	N/A	N/A	N/A	N/A	N/A
2048 x 2048 12-bit gray 9,948 KB							
Compress Time (ms)	35	469	N/A	70	535	304	N/A
Size (KB)	1,707	1,707	N/A	3,778	3,424	3,354	N/A
Compression Ratio	4.9:1	4.9:1	N/A	2.2:1	2.4:1	2.5:1	N/A
Decompress Time (ms)	35	241	N/A	34	405	279	N/A
PSNR	57.4	62.4	N/A	N/A	N/A	N/A	N/A
2048 x 2048 16-bit gray 9,948 KB							
Compress Time (ms)	N/A	577	198	92	821	365	206
Size (KB)	N/A	2,274	2,274	5,788	5,535	5,385	5,517
Compression Ratio	N/A	3.7:1	3.7:1	1.4:1	1.5:1	1.6:1	1.5:1
Decompress Time (ms)	N/A	294	139	62	591	310	143
PSNR	N/A	68.9	68.7	N/A	N/A	N/A	N/A

*For ease of comparison, the lossy J2K images were compressed to Lossy JPEG compression ratio.
All times measured using 32-bit Intel.