JPEG 2000

Comprehensive A/C Codec Library

Largest video codec libraries on earth, supporting nearly every major format in use today in both consumer and professional markets.

The JPEG 2000 standard provides a set of features that are of importance to many high-end and emerging applications in the digital imaging market, everything from digital cameras, pre-press, remote sensing, medical imaging, e-commerce and other key sectors by taking advantage of new technologies.

It addresses areas where current standards fail to produce the best quality or performance, and provides capabilities to markets that currently do not use compression. Due to its advanced features, JPEG 2000 is interesting especially for the professional market, where superior image quality and editing features are of highest importance.

DCI (Digital Cinema Initiative) adopted JPEG 2000 for video encoding of motion pictures (http://www.dcimovies.com/). Current movie distribution and presentation from movie rolls is expected to be replaced by digital projectors that will play high-res mj2 streams with superior image and sound quality.

MAINCONCEPT JPEG 2000 SDK PACKAGES

JPEG 2000 ENCODER SDK

JPEG 2000 Encoder and related audio and multiplexing components for full DCI 2K / 4K compliance support.

JPEG 2000 DECODER SDK

JPEG 2000 Decoder and related audio and demultiplexing components for full DCI 2K / 4K compliance support.

FEATURES

ENCODER:

- Compliant to ISO/IEC 15444-1 (JPEG 2000 image coding system: Core coding system).

- Full DCI compliance to ISO/IEC 15444-1 Amd1, Profile 3 and Profile 4, for Digital Cinema.

- Encoder compliant with ISO/IEC 15444-3 (JPEG 2000 image coding system: Conformance testing).

- Support for D-Cinema MXF file formats (DCI 2K, DCI 4K) – Specialized Operational Pattern "Atom" SMPTE 390M.

- High compression efficiency.

- Multiple resolutions and image qualities can be embedded in a single stream.

- RGB and YUV color spaces, alpha channel.

- Encoder input color space: YV16, v210, RGB24, RGB32, RGBA, YUYV 4:2:2, UYVY 4:2:2, and SMPTE-268M-AnnexC-C.5 (for Digital Cinema).

- Resolution up to 4096x2160.

- Discrete wavelet transform 5/3 and 9/7, up to 6 levels.

- Code block dimensions: 32x32 or 64x64.

- Precinct size: 128x128, 256x256 or maximal.

- Quality layers: up to 6.

- Progression orders: LRPC and CPRL.

- Encoder output file format: JP2 or JPC.

- Special acceleration modes for faster encoding.

- Exact control over final bit rate in a single coding pass – no need to adjust quality factor and recompress.

- Support for multi-threaded processing, to leverage available parallel processing resources (multiple CPU's, multi-core CPU's or Hyper Threading CPU's) with negligible overhead.

- Save frame rate data for JPEG 2000 streams in MXF Muxer.

DECODER:

- Decoder input: JPC, 16-bit, 24-bit, 32-bit and 36-bit precision.

- Decoder output color space: XYZ; RGB24; RGB32; RGBA; YUYV 4:2:2; UYVY 4:2:2; SMPTE-268M-AnnexC-C.5 (for Digital Cinema).

- Additional decoder options for even faster decoding: sub sampling, quality layer skipping, code pass skipping.

- Special acceleration modes for faster decoding.

- Performance optimizations using SSE4.1 / SSE3 instruction set.

STREAM TYPES & FORMATS

Elementary Stream:
Generic JPEG 2000 Elementary Streams

MJ2:
Generic JPEG 2000 Lossy; Generic JPEG 2000 Lossless

MXF:
Digital Cinema 2K / 4K

MP4:
Generic JPEG 2000 MP4 Streams

COMPONENTS

JPEG 2000 ENCODER SDK	JPEG 2000 Video Encoder Fraunhofer AAC Encoder AAC Encoder MP4 Multiplexer MXF Multiplexer PCM Audio Encoder
JPEG 2000 DECODER SDK	JPEG 2000 Video Decoder AAC Decoder MP4 Demultiplexer MXF Demultiplexer

TECH SPECS

- **Microsoft® Windows® 7, Windows 8, Windows 10 (32-bit/64-bit)**

- **Apple Mac OS X 10.6 or higher (Mac/Intel), (32-bit/64-bit)**

- **Linux Ubuntu 10.04 LTS (32-bit/64-bit)**

For Windows, Mac OS X and Linux, the codec package consists of a Low Level API (in the C programming language). Under Windows, it additionally includes DirectShow® filters for decoding and encoding.

MORE INFORMATION:
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REQUEST YOUR DEMO SDK:
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