MAINCONCEPT

JPEG XS
Video over IP in production quality and ultra-low latency

The rising demands for higher resolutions and frame rates in video content have spurred the need for light and efficient video compression technologies. Professional video networks, broadcast studios as well as other multimedia segments are always striving for a contribution format targeting visual lossless quality paired with low latency and minimal computational complexity. The answer to these requirements is JPEG XS, formally standardized by the Joint Photographic Experts Group as a series of specifications in ISO/IEC 21122. Prioritizing the three critical features above, positions JPEG XS as a preferred codec for a large number of solutions ranging from applications and plugins up to hosted services and platforms.

THE BASE FOR NEXT-GEN IP TRANSMISSION WORKFLOWS

The MainConcept JPEG XS Encoder and Decoder SDKs – powered by Fraunhofer IIS – provide the codecs of choice for IP transmission workflows based on SMPTE ST 2110 which is a suite of standards defining professional media of managed IP networks. Both Encoder and Decoder libraries are running on CPU featuring SIMD optimizations (AVX2). The libraries support 4:2:0, 4:2:2 and 4:4:4 chroma formats up to 8K60.

ONE PACKAGE TO CREATE YOUR OWN JPEG XS WORKFLOWS

To offer a complete solution for integration, the MainConcept JPEG XS SDKs also include audio encoders or decoders as well as multiplexers and demultiplexers. The packages provide JPEG XS support for MPEG-2 Transport Stream (ISO/IEC 13818-1:2022) and MXF (SMPTE ST 2124) allowing seamless live transmission and easy integration into file-based solutions. Both the MainConcept MPEG Multiplexer and Demultiplexer support the incorporation of JPEG XS essence into MPTS, with optimized performance for managing high-bitrate streams into low-latency live transmission workflows. Moreover, the MainConcept MXF Multiplexer and Demultiplexer handle encapsulated JPEG XS essence into MXF files, empowering file-based solutions in video-editing and post-production to capitalize on the benefits of JPEG XS compression.

SUITABLE FOR MISSION-CRITICAL SOLUTIONS & SERVIES

Intended for almost all use-cases where high resolutions, high quality as well as low latency and low computing complexity is key, such as professional broadcast and remote video production, digital cinema, virtual reality, gaming, medical imaging, automative industry, surveillance & security, etc.

IMAGE CODING FOR BROADCAST STUDIOS & VIDEO NETWORKS

BENEFITS

- Supporting the switch to IP-based workflows in broadcast and cinema
- Visually lossless and lightweight compression format
- End-to-end latency below one frame
- Fast integration using the popular MainConcept API

KEY FEATURES

- Intra-frame codec for professional streaming workflows
- CPU with SIMD optimizations for accelerated encoding and decoding
- RGB/YCbCr (4:4:4, 4:2:2, 4:2:0) up to 16-bit
- MPEG-2 TS and MXF multiplexing and demultiplexing
- Compliant with ST 2110 IP workflows
- Suitable for both live and VOD use-cases
- Real-time playback

OPTIMIZE WITH MAINCONCEPT PROFESSIONAL SERVICES

SYSTEM REQUIREMENTS

	x86
Windows	Windows 10, Windows 11
Linux	Ubuntu 20.04 LTS – 22.04 LTS, Rocky Linux 8.9

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PACKAGES

- **JPEG XS SDK**
  JPEG XS Encoder and Decoder with corresponding multiplexers, demultiplexers and audio encoders.

FEATURES

- CPU encoding and decoding with SIMD optimizations
- Visually lossless and lightweight compression format
- Low latency processing
- Intra-frame codec for professional streaming workflows
- RGB/YCbCr (4:4:4, 4:2:2, 4:2:0) up to 16-bit
- MPEG-2 TS & MXF multiplexing & demultiplexing
- Compliant with ST 2110 IP workflows
- Suitable for both live and VOD use-cases
- Real-time playback
- Uses the same API as other MainConcept codec libraries
- Available for Windows and Linux (x86)

STREAM TYPES & FORMATS

- Elementary Stream
- Transport Streams
- MXF