

MainConcept HEVC SDK

Bandwidth-friendly Encoding and Decoding

MainConcept® HEVC SDK comes equipped with powerful new features you won't get from open source, including 8K/60fps live video encoding, Canon XF HEVC and Sony XAVC HS up to 4:2:2 10-bit decoder support, and advanced GPU acceleration to maximize video encoding performance on low-cost hardware— saving time and money! With 4K available on billions of devices and 8K hot on its heels, HEVC/H.265 has quickly become the next-generation video codec of choice (offering better compression than its predecessor, AVC). Widely deployed across streaming and broadcast use cases with plentiful features and powerful options, the MainConcept HEVC SDK offers unmatched reliability.

MAINCONCEPT EASY VIDEO API (EVA) FOR ENCODING AND DECODING

Our latest innovation combines MainConcept's industry-leading HEVC/H.265 software encoding and decoding technologies with the high performance of today's GPU hardware processing powered by AMD, Intel and NVIDIA. Using one API instead of four, MainConcept EVA can significantly reduce implementation time and costs by 75%. Make use of ultra-fast hardware processing when speed is key for your workflow and you don't want to rely on a single GPU vendor. And, if performance is not your focus, enjoy the unprecedented quality and unsupported GPU features with the MainConcept software encoder or decoder.

NEW HEIGHTS FOR HIGH-EFFICIENCY VIDEO ENCODING

MainConcept takes video encoding to new heights! With the MainConcept HEVC/H.265 SDK, compression is improved over AVC and you can operate using less bandwidth than with open source. In fact, the most recent codec performance comparison by MSU proved MainConcept's HEVC encoding superiority and showed 30% greater bitrate efficiency than open source for fixed resolution video encoding.

ACCELERATED HYBRID GPU HEVC ENCODING

The Hybrid HEVC Encoder combines MainConcept's market-leading algorithms for bitrate control and encoding with the unrivaled GPU performance of NVIDIA RTX technology, delivering up to 2.5x faster processing.¹ This allows for more live channels per server with less demand for CPU resources when encoding, reducing overall hardware investments.

SMARTER ENCODING WITH SABET TECHNOLOGY

Our patented Smart Adaptive Bitrate Encoding Technology (SABET™), an optional feature available from MainConcept with the HEVC SDK, gives you intelligent adaptive bitrate (ABR) encoding in a single instance by sharing processing data across up to 12 different profiles, reducing the total encoding time by over 30%.²

OPERATING SYSTEM

- Microsoft Windows 10, Windows 11 (64-bit)
- Apple macOS 10.15 and newer (64-bit x86); macOS 11.x and newer (Apple Silicon)
- Linux Ubuntu 20.04 LTS – 22.04 LTS, Rocky 8.9, CentOS 7.9 (64-bit, x86); Ubuntu 20.04 (64-bit, ARM)

THE MOST EFFICIENT OTT & BROADCAST FORMAT IN USE TODAY

SAVE TIME

- 30% better bitrate encoding efficiency than open source
- 2.5x encoding performance increase with Hybrid GPU acceleration¹
- 30% encoding time savings with MainConcept SABET™ technology²
- Fast integration

KEY FEATURES

- 8K live
- 4:2:2 10-bit chroma support for professional video encoding
- 8K60 Hybrid GPU accelerated 10-bit live video encoding
- HDR decoder with support for HLG/ PQ and SDR conversion
- Direct access to hardware-based encoding and decoding powered by AMD, NVIDIA, Intel Quick Sync Video and Intel ARC discrete GPUs via MainConcept EVA on Windows and Linux
- SONY XAVC 2.2 ingest in MP4 and MXF containers with HEVC payload
- Improved threading mechanisms of video encoders and decoders to work on the next generation of Intel® Core™ processors (Meteor Lake) with low-power efficiency cores

OPTIMIZE WITH MAINCONCEPT PROFESSIONAL SERVICES

¹ Compared to MainConcept HEVC encoder without hybrid GPU acceleration
² Compared to MainConcept HEVC encoder without SABET

MainConcept HEVC SDK

Bandwidth-friendly Encoding and Decoding

ENCODER FEATURES

- Main, Main10 and Main422 profiles
- AMD AMF, Intel Quick Sync Video, Intel ARC and NVIDIA NVENC hardware encoding via MainConcept EVA
- Hybrid GPU accelerated encoding
- SABET™ intelligent ABR for efficient encoding of adaptive formats
- 2-pass encoding
- Encoding to SMPTE 2084 based HDR-10 including SMPTE 2086 mastering display metadata and MaxFALL, MaxCLL
- HLG transfer characteristics signaling in accordance with ITU-R BT.2100-0
- Intelligent, real-time parameter adjustment to ensure live encoding at best quality
- Optimal retention of film-grain to preserve cinematic look-and-feel
- I-, P-, B-Frames, Pyramid B-Frames, and fixed or adaptive GOP structure with scene change detection, adaptive B-Frame count
- ConstantQ, CRF (Constant Rate Factor), RDOQ, ABR

DECODER FEATURES

- 4:2:0 8-bit (Main), 4:2:0 10-bit (Main 10), 4:2:0 12-bit (Main 12) and 4:2:2 8-bit (Main 4:2:2), 4:2:2 10-bit (Main 4:2:2 10) and 4:4:4 10-bit (Main 4:4:4 10), 4:4:4 12-bit (Main 4:4:4 12) profiles
- Progressive and interlaced support, including deinterlacing
- Hardware video decoding for Intel Quick Sync Video, Intel ARC discrete GPUs and on supported NVIDIA as well as AMD Radeon GPUs
- Real-time PQ/HDR-10 to HLG, HLG to PQ/HDR-10 and PQ/HDR-10 to SDR conversion
- Fast Preview Modes for enhanced decoding speed in video editing, surveillance and monitoring
- WebASM support for decoding on supported internet browsers

PACKAGES

- **HEVC/H.265 Encoder SDK**
HEVC encoder (including MainConcept EVA) with supported multiplexers and audio encoders
- **SABET for HEVC Encoder**
HEVC/H.265 Encoder SDK, plus SABET HEVC Encoder License
- **HYBRID GPU Accelerated Encoder**
HEVC/H.265 Encoder SDK, plus Hybrid HEVC GPU Encoder License
- **4:2:2 Encoding**
HEVC/H.265 Encoder SDK, plus 4:2:2 Encoder License
- **HEVC/H.265 Decoder SDK**
HEVC decoder (including MainConcept EVA) with supported demultiplexers and audio decoders
- **WEBASM for HEVC Decoder**
HEVC/H.265 Decoder SDK for WebASM

STREAM TYPES & FORMATS

Elementary Stream: Generic HEVC/H.265 ES up to 4:2:2 10-bit

Transport Streams: Ultra HD, UHD; Generic HEVC/H.265 TS up to 4:2:2 10-bit

MP4: DASH-265, Ultra HD, UHD; Generic HEVC/H.265 up to 4:2:2 10-bit; SONY XAVC HS (decode only)

MXF: Canon XF-HEVC, Sony XAVC HS (decode only)

CONTACT

info@mainconcept.com

MORE INFORMATION

www.mainconcept.com/hevc

MainConcept GmbH

Elisabethstr. 1
52062 Aachen, Germany

MainConcept LLC

16767 Bernardo Ctr. #27970
San Diego, CA 92198, USA

MainConcept Japan

Building 2, Nippo Shin-Osaka
1-8-33 Nishimiyahara, Yodogawa-ku, Osaka 532-0004, Japan