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. 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

Combine MainConcept's industry-leading HEVC/H.265 software encoding and decoding technologies with the high performance of GPU hardware processing powered by AMD, Intel and NVIDIA, as well as decoder output when doing hardware processing on NVIDIA devices. 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, and, if performance is not your focus, enjoy the unprecedented quality and unsupported GPU features with the MainConcept software encoder or decoder.

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.

CODEC ENHANCEMENTS TO DO EVEN MORE

Our patented Smart Adaptive Bitrate Encoding Technology (SABET™)[2] 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%.[3] Use AutoLive Encoding to get guaranteed stable frame rate and no dropped frames, or AutoMatch Encoding to process new video identical to your pre-recorded video library.

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 acceleration[1]
- 30% encoding time savings with SABET™ technology[2]
- AutoLive: Adjust performance level on each frame to ensure constant encoding time
- AutoMatch: Encode new video identical to your pre-recorded catalog

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 AMD, NVIDIA,and Intel GPU hardware-based encoding and decoding with MainConcept EVA on Windows and Linux
- Output frames directly from a HW surface when using HW decoding on NVIDIA devices
- Encode MV-HEVC and multiplex to MP4/MPV containers for 3D playback on the Apple Vision Pro

OPTIMIZE WITH MAINCONCEPT PROFESSIONAL SERVICES

1 Compared to MainConcept HEVC encoder without hybrid GPU acceleration
2. Optional feature available with the HEVC SDK
3 Compared to MainConcept HEVC encoder without SABET

SYSTEM REQUIREMENTS

	x86	Arm
Windows	Windows 10, Windows 11	Windows 11 Arm
Linux	Ubuntu 20.04 LTS – 22.04 LTS, Rocky Linux 8.9	Ubuntu 20.04 LTS – 22.04 LTS
macOS	macOS 10.15 – 12.x	macOS 11.x – 12.x

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ENCODER FEATURES

- Main, Main10 and Main422 profiles, incl. 2-pass encoding

- AMD AMF, Intel Quick Sync Video, Intel ARC and NVIDIA NVENC hw encoding via MainConcept EVA

- Hybrid GPU accelerated encoding (optional feature)

- SABET™ intelligent ABR for efficient encoding of adaptive formats (optional feature)

- Multiview HEVC (MV-HEVC) and multiplex to MP4/MPV containers for playing back stereoscopic content on the Apple Vision Pro (optional feature)

- Encoding to SMPTE 2084 based HDR-10: SMPTE 2086 mastering 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

- Use NVIDIA NVENC hardware encoding in a virtual or containerized environment

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

- API to retrieve decoded images directly from GPU memory when using NVIDIA hardware

- Color Conversion can now be performed on NVIDIA Hardware if required.

- 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 editing, surveillance and monitoring

- WebASM support for decoding on supported internet browsers

- Sony XAVC 2.2 ingest in MP4 and MXF containers with HEVC payload

PACKAGES

- **HEVC/H.265 Encoder SDK**
  HEVC encoder (with MainConcept EVA), 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

- **MV-HEVC for HEVC Encoder**
  HEVC/H.265 Encoder SDK, plus Multiview HEVC Encoder license.

- **HEVC/H.265 Decoder SDK**
  HEVC decoder (with MainConcept EVA), 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)