MAINCONCEPT

VVC/H.266

Improved compression and visual quality for broadcast and OTT

THE NEXT BIG CODEC: VERSATILE VIDEO CODEC (VVC/H.266)

As the delivery of digital video continues to evolve, so do its underlying technologies. VVC (Versatile Video Codec) is the next big codec to support this evolution. With maximized visual quality and the advent of higher resolution, the VVC standard produces a codec adapted to the changing ways video is and will be created and consumed, helping to future-proof your digital video infrastructure.

The MainConcept VVC/H.266 Encoder & Decoder SDKs allow industry professionals access to the cutting edge of video processing. With compression improvements up to 40%[1], VVC enables a wide variety of use cases and opens a path to cost-efficient and effective production workflows.

CLOUD-ENABLED VVC LIVE

From day 1 of implementation, MainConcept VVC supports real-time 8K60 streaming.[2] Cloud-enabled live streaming is just one of the many use cases made better with VVC. With it, you get greatly improved immersive visual quality in more live channels, enabling countless use cases for broadcasting and streaming.

READY FOR TODAY, BUILT FOR TOMORROW

The MainConcept VVC codec was engineered with 8K in mind but is flexible enough to efficiently handle 4K and lower resolutions. Although the move to full 8K may be a few years away, numerous applications for 8K have already been tested and are being implemented and others are quickly evolving. MainConcept VVC enables you to easily process across the resolution ladders.

USE CASES FOR VVC: VERSATILE BARELY BEGINS TO COVER IT!

There is a reason the name of this powerful codec standard starts with the word “versatile.” The advanced compression capability that results in smaller file sizes extends its functionality—taking it from typical media and entertainment use cases (broadcasting, OTT streaming and production) to a wide swath of traditional verticals (medical, digital signage) to the new and quickly evolving areas such as ad tech, gaming, virtual and extended reality. And in every use case, the MainConcept VVC/H.266 SDK is poised to bring you the quality, performance and reliability we have delivered for the past three decades.

SYSTEM REQUIREMENTS

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

THE NEXT BIG CODEC

UP TO 40% IMPROVEMENT IN COMPRESSION[1]

VVC brings you cost-efficient production workflows

IMMERSIVE VISUAL QUALITY

OTT, Broadcast, Internet or mobile—crisp images immerse your viewer in the experience

UP TO 8K STREAMING

Stream across resolutions without worry as VVC future-proofs your platform

GUARANTEED LIVE PERFORMANCE

Maintain stable encoding frame rate by dynamically adjusting the performance

KEY FEATURES

- Real-time 8K60 live streaming
- Cloud-enabled VVC live
- State-of-the-art compression capability

OPTIMIZE WITH MAINCONCEPT PROFESSIONAL SERVICES

1) Attribute of the VVC/H.266 standard in comparison to the HEVC/H.265 standard.
2) 8K60 streaming capability is also reliant on having appropriately performant hardware infrastructure.

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PACKAGES

- **VVC/H.266 Encoder SDK**
  VVC Encoder SDK with VVC Encoder, AAC Audio Encoder, Fraunhofer AAC Audio Encoder, MP4 Multiplexer, MPEG-2 TS Multiplexer, MPD Generator
- **VVC/H.266 Decoder SDK**
  VVC Decoder, AAC Audio Decoder, MP4 Demultiplexer, MPEG-2 TS Demultiplexer
- **VVC/H.266 Encoder Plugin for FFmpeg**
  MainConcept is bringing the power of VVC to FFmpeg. See our FFmpeg Plugin page for more information.

FEATURES

Encoder

- Live & VOD 4:2:0 8- or 10-bit in up to 8K
- HDR signaling
- New coding tools for up to 8K resolution
- MPEG-2 TS & MP4 multiplexing
- MPEG-DASH output & MPD generation
- Temporal filtering, adaptive quantization and RDOQ support
- Featuring CQT, CBR and VBR rate control modes
- Support for quarter pixel motion compensation, deblocking, Sample Adaptive Offset (SAO), MTS (Multiple Transform Selection), LFNST (Low Frequency Non-Separable Transform), etc.
- Additional features like deinterlacing, Scene Change Detection, Pyramid B-Frames, Bi-directional Optical Flow Prediction, Matrix Based Intra Prediction (MIP), Unsharp Marking (USM) filter, etc.
- SABET: Efficient multi-layer encoding for OTT streaming
- AutoLive: Maintain stable encoding frame rate by dynamically adjusting the performance
- Multi-layer coding for ad tech and sign-language*
- WPP (Wavefront Parallel Processing) encoding

Decoder

- 4:2:0 8-bit or 10-bit real-time playback up to 8K
- I, P, B picture type decoding
- Slices & tiles stream decoding
- Support for various In-loop filters, such as SAO (Sample Adaptive Offset), ALF (Adaptive Deblocking Filter), LADF (Loop Adaptive Deblocking Filter) and deblocking
- Intra prediction with multiple reference lines (MRL), subpartitions (ISP) or matrix-based.
- Wavefront Parallel Processing (WPP) decoding
- Cross-component linear model intra prediction (CCLM)
- Block-based delta pulse code modulation (BDPCM)
- Joint coding of chroma residuals (Joint Cb Cr)
- Multiple transform selection (MTS)
- Transform skip
- Dependent quantization
- Low frequency non-separable transform (LFNST)
- Temporal motion vector predictors (TMVP)
- Merge mode with motion vector difference (MMVD) and symmetric motion vector difference (SMVD)
- Adaptive motion vector difference resolution (AMVR)
- Subblock transform for inter-predicted (SBT)
- Delta QP (DQP)
- Luma Mapping with Chroma Scaling (LMCS) & Bi-Directional Optical Flow (BDOF)
- Weighted Prediction (WP)

* Optional features

More Information
www.mainconcept.com/vvc

MainConept 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