

AVC/H.264

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 MainConcept **AVC /H.264 Codec Packages** offers fast encoding and decoding speeds in all profiles and levels supported by the standard. It encodes and decodes AVC/H.264 video, making it easy to add support for this exciting new format to existing applications. The encoder also includes pre-configured templates for Blu-ray Disc, Sony PSP, Apple devices, AVCHD, Adobe Flash, Silverlight and other standards. The Broadcast version of the Codec Package even offers Panasonic P2 AVC-Intra Class 50, 100, AVC-Ultra (AVC-I 200), Sony XAVC compliant as well as 4:2:2 and 10-bit support.

The optional 4:2:2 and 10-bit support makes this MainConcept SDK package the ideal technology for all broadcast production, ingest and playout solutions. The MainConcept AVC/H.264 Decoder offers real-time decoding speeds in various profiles and levels supported by the standard, incl. professional camcorder formats from Sony and Panasonic.

For adaptive streaming formats support like DASH and HLS, MainConcept additionally licenses the **DASH Muxing & Packaging SDK** and **HLS Muxing & Packaging SDK** allowing users to create corresponding streams including MPD, manifest and playlist files. The **DASH / HLS Demuxing & Client SDK** provides the ability to playback live as well as VOD playback of DASH-264 and Apple HLS content.

Recent additions to the H.264 standard add **HDR capabilities**, as well as **extended resolution up to 8K**. With the optional add-on SVR360 it is possible to encode spheres with virtually unlimited resolutions for 360/VR applications

An optional Codec Package includes an encoder wrapper component that provides **AVC/H.264 Smart Rendering** functionality for editing, cutting and smart copy at any frame position. It only works in connection with any AVC/H.264 Encoder SDK and the AVC/H.264 Decoder SDK.

NEW FEATURES

- Resolution up to 8K (level 6.2), optionally allowing to go beyond the level limits of H.264 for virtually unlimited resolution (MainConcept SVR360)
- Sony Long GOP 10-bit 4:2:2 encoding and compliance with the latest XAVC specification
- Up to 8-times accelerated ingest of Panasonic LT material
- Configure the encoder based on existing streams for seamless playback

The MainConcept AVC/H.264 Decoder offers real-time decoding speeds in various profiles and levels supported by the standard. In addition, it features extraordinary quality over other similar solutions. The Decoder enables the user to decode every DVB-S2 channel which broadcasts AVC/H.264. Moreover, it supports various professional camcorder formats, such as Panasonic P2 AVC-Intra and XAVC compliant footage.

FEATURES

ENCODER:

- Fully compliant with ISO/IEC 14496-10 specification
- Baseline, Main & High Profile, all levels (up to 422 10-bit)
- Maximum resolution 8192x4320 @ 60 fps (Level 6.2)
- SVR360 add-on for encoding with virtually unlimited resolution (optional)
- AVC/H.264 Smart Rendering modes - Smart Copy (copy frames) and Re-Encode (for editing at any GOP position) (optional)
- Strict HRD compliance
- Advanced compression algorithms - high rate-distortion efficiency
- Parameter compatibility validation features
- SMP and multi-core optimizations
- Encoder featuring Level 1b for some specific mobile devices
- Interlaced (MBAFF), progressive coding
- Support for Pulldown 2:2 / 3:3
- Target Quality Mode (TQM) support
- CBR / VBR, single pass & 2-pass encoding
- Quarter pel motion estimation
- Weighted prediction
- Low Delay flag (no latency)
- Multiple reference pictures
- Pyramid GOP coding
- Adaptive picture type selection, Adaptive variable-sized transform (High profile only), Adaptive intra mode selection, Adaptive macroblock partitioning
- Loop filter
- Rate-distortion optimization

DECODER:

- Baseline, Main, High, High 422 / 444 Profile support
- Optimized for the most efficient CPU usage
- CABAC / CAVLC
- 8-bit / 10-bit / 12-bit support
- I, P and B slices
- Weighted prediction
- Low Delay flag (no latency)
- Field pictures
- Symmetric multi-processing (optimized for Hyper Threading processors and multi-CPU platforms)
- Color space conversion (UYUY, YUY2, YV12, RGB32, RGB24, RGB565, RGB555)
- Deinterlacing (two software modes and by means of VMR)
- Chroma upsampling
- Double rate (generating a progressive frame from every field)
- Fields reordering
- MMX, SSE, SSE2 and SS3 optimizations
- DXVA 1.0 and 2.0 GPU Hardware acceleration
- AVC/H.264 Stream-Analyzing API (VESA)

STREAM TYPES & FORMATS

Elementary Streams:

Generic AVC/H.264 ES up to 4:2:2 10-bit (up to 4:4:4 12-bit in decoder), Apple HLS, DASH-264

Program Streams:

Generic AVC/H.264 Program Streams

Transport Streams:

Blu-ray Disc, HD DVD, HDTV, Digital TV, AVCHD 1.0 / 2.0, Sony NXCAM, 1Seg

MP4:

Sony XAVC-S, Sony PS3 / PS4, Sony PSP, Apple iPod / iPhone / iPad / TV, Adobe Flash (F4V), HTML, Microsoft Silverlight

3GP:

Suitable for older generation cell phones and tablets.

MXF (Broadcast only):

Sony XAVC, Panasonic LongG, Panasonic P2 AVC-Ultra (AVC-I Class 200), P2 AVC-Intra Class 50 / 100 (Specialized Operational Pattern "Atom" SMPTE 390M), Panasonic AVC-Intra LT-4K and LT-2K, RP 2027 AVC-Intra 50, 100 and 200, AVC-Ultra (AVC-Intra 200) into OP-Atom (MXF)

MAINCONCEPT AVC/H.264 SDK PACKAGES

AVC/H.264 ENCODER SDK

AVC Video Encoder package to create AVC-based media up to 4:2:0 8-bit up to Level 5.2 (4K60) with related audio and multiplexing components to support formats including MPEG-2 TS based formats like Blu-ray or non-fragmented MP4-based formats and MOV.

AVC/H.264 ENCODER SDK BROADCAST

AVC Video Encoder package with support for up to 4:2:2 10-bit (plus 4:2:0 8-bit) up to Level 6.2 (8K) and related audio and multiplexing components for formats including MPEG-2 Transport Stream, MP4 / MOV based formats and MXF formats like P2 and XAVC.

AVC/H.264 DECODER SDK

AVC Video Decoder package with support for up to 4:2:0 8-bit up to Level 5.2 (4K60) video and related audio and demultiplexing components for formats that use MPEG-TS or MP4 / MOV.

AVC/H.264 DECODER SDK BROADCAST

AVC Video Decoder package with support for up to 4:4:4 12-bit video and unlimited resolution with related audio and demultiplexing components for formats that use MPEG-2 Transport Stream, MP4/MOV and MXF like XAVC, P2 and similar.

AVC/H.264 SMART RENDERING SDK FOR AVC/H.264 ENCODER

Add-on package for any AVC/H.264 Encoder SDK and the AVC/H.264 Decoder SDK providing functionality for frame-accurate editing, cutting and smart copy to speed up conversion of AVC/H.264 source content.

SVR360 FOR AVC/H.264 ENCODER BROADCAST

Add-on feature license to AVC/H.264 Encoder SDK Broadcast allowing encoding in virtually unlimited resolution, specifically designed to meet the needs of 360/VR applications.

COMPONENTS

**AVC/H.264
ENCODER SDK**

AVC/H.264 Video Encoder
AAC Encoder
Fraunhofer AAC Encoder
MP4 Multiplexer
MPEG Multiplexer

**AVC/H.264
ENCODER SDK BROADCAST**

AVC/H.264 Video Encoder Broadcast
AAC Encoder
Fraunhofer AAC Encoder
MP4 Multiplexer
MPEG Multiplexer
MXF Multiplexer

**AVC/H.264
DECODER SDK**

AVC/H.264 Video Decoder
Media File Importer (LL)
AAC Decoder
MP4 Demultiplexer
MPEG Demultiplexer

**AVC/H.264
DECODER SDK BROADCAST**

AVC/H.264 Video Decoder Broadcast
Media File Importer (LL)
AAC Decoder
MP4 Demultiplexer
MPEG Demultiplexer
MXF Demultiplexer

**AVC/H.264
SMART RENDERING SDK**

AVC/H.264 Smart Render Wrapper (optional package license; Only works in connection with any AVC/H.264 Encoder SDK and the AVC/H.264 Decoder SDK)

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:
WWW.MAINCONCEPT.COM/LICENSING-FORM.HTML