



AVC/H.264 Video Coding SDK

High Quality and High Performance Video Coding for Windows, MacOS and Linux

AVC/H.264 is a high performance video coding SDK available for Windows and MacOS. It may be licensed by Professional and OEM customers. An easy to use Software Developer Kit allows integration into custom applications.

Major Features

- ISO 14496 Part 10 (MPEG-AVC) / ITU H.264 compliance for many profiles and levels
- Highly optimized software coding with support for latest CPU generations
- Real-Time encoding and Multi-Core support
- Wide range of applications from Mobile Phones (3GP), Portable Devices (iPod etc.) up to HDTV

Architecture and Availability

The SDK is available for Windows and MacOS-X Intel platforms. For Windows, ready-to-use codecs are available as DirectShow filters.

- Low Level SDK based on frame buffers (DLLs for developers)
The Developer Kit is available for Windows, MacOS and Linux
- DirectShow based codec architecture
based on most recent Microsoft DirectX technology.

Components

- AVC/H.264 Video Encoder and Decoder
- MPEG audio, AMR and AAC codecs.
- MP4 file format writer
- 3GP file format writer
- AVI/Quicktime optional

Licensing model

We offer several licensing models, dependent on customer requirements.

- Developer License (SDK)
With the Developer License, you will get a documented SDK including shared library objects (DLLs), interface specifications, header files and source code samples to develop video coding applications.
- Redistribution License (Royalties)
For redistributing video coding modules with your application, a per-item additional royalty license is needed. You may also get flat fees for high sales volumes. Please contact us for further information.
- Customization and flat fees are possible



H.264 / AVC Video Encoder

The Video Encoder produces compatible streams according to ITU H.264 / ISO MPEG/AVC Reference Model JM9.2. The encoder accepts the following parameters:

- GOP Structure (I-frame distance / P-frame distance)
- Bit rate
- Profile/Level (baseline, main, extended, high)
- Field Structure (Interlaced/Progressive)
- Frame rate (15, 24, 25, 30, 50, 60)
- chroma_format / aux_format (monochrome, 4:2:0)
- misc. rate controls (fixed quantization, vbr, cbr)
- Motion Estimation method
- full pel, half pel and quarter pel motion vectors
- SVC chroma deblocking filter mode
- transform_8x8_mode
- Frame Size from Mobile to HDTV (64x64 to 4096x2048)

Input Formats:

The encoder assumes that input video data contains frames in 4:2:0 YUV formats
Interlaced field coding is fully supported (e.g. 1080i)

Output Formats:

The Video Encoder produces H.264 JM9.2 compatible streams

H.264/AVC Video Decoder

The decoder supports decoding of files created by JM9.2 compliant encoders or later. The decoder supports baseline, main, extended and high profiles features, including HD, e.g. 1080i.

3GP and MP4 File Formats

3GP for mobile devices as well as MP4 file format is supported.

Contact and further information

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AVC/H.264 Performance

The nanoPEG AVC codec is highly optimized for Intel or AMD based x86 platforms. It supports low level CPU acceleration functions and DualCore / MultiCore systems.

Reference Performance Results:

Test System: Apple Mac OS X 10.4.11, Intel Core Duo 1,66 GHz, 512 MB RAM

Test Environment: Codec core performance without file I/O and rendering

Video Decoder	720 x 576	213 Frames/second
	1920 x 1080	34 Frames/second

Video Encoder	720x576, 2.3 MBits/s, I-frame distance 20	17 Frames/second
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Reference Performance Results:

Test System: Windows XP, Intel Core 2 6400 2,13 GHz, 1 GB RAM

Test Environment: Codec core performance without file I/O and rendering

Video Decoder	720 x 576	287 Frames/second
	1920 x 1080	43 Frames/second

Video Encoder	720x576, 2.3 MBits/s, I-frame distance 20	23 Frames/second
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