

MAINCONCEPT MOBILE SDK



As mobile entertainment continues to grow and consumers demand faster, better experiences, content producers need to ensure optimal audiovisual performance across multiple platforms and devices. MainConcept® Mobile SDK enables real-time decoding on Android and iOS ARM-based devices in various profiles, at levels supported by the HEVC/H.265 and AVC/H.264 standards. The SDK includes powerful components for receiving streams over networks, and its software decoders offer broader format support than built-in hardware decoder chipsets. The supplied decoders can be updated easily and in shorter cycles to

maintain compliance with the current specification. Additionally, the Mobile HEVC Decoder can help you be one of the first to offer H.265 real-time software playback. More than 1 billion devices are can be made HEVC-playback ready through a software update. Its complete DLNA Stack Module allows compatibility with Sony Playstation 3, Microsoft Xbox 360, many TV sets, Blu-ray players and more. With integration support that can speed time to market, the feature-rich MainConcept Mobile SDK is ideal for developers looking to optimize software playback on ARM-based mobile platforms.

Benefits for Developers

- Leverage the same API as all other MainConcept codecs.
- Gain a flexible SDK solution for decoding HEVC in most mobile environments.
- Speed time to market with highly specialized integration support.
- Enjoy feature-rich, format-compliant open standard codec technology.

HEVC Decoder – Features & Specifications

- HEVC Main Profile Support**
 MainConcept Mobile SDK supports HEVC Main Profile (4:2:0 8-bit) and enables HM 11-compliant, real-time MP4 file format and elementary stream playback up to 720p 30 frames per second.
- Parallel Decoding**
 Increase efficiency with parallel decoding by Wavefront Parallel Processing.
- DASH-264 & DASH-265 Support**
 MainConcept Mobile SDK comes with a set of powerful network components, in order to receive streams over the network. It can receive and playback DASH-264 and DASH-265 content.
- I-, P- and B-Frames Support**
 MainConcept Mobile SDK offers I-, P- and B-frames support, including the ability to process streams with deblocking and SAO (Sample Adaptive Offset).
- Automatic NEON Detection**
 Increase performance with the use of the NEON extension, when available.
- Flexible Coding Units**
 Flexible coding units up to 64 x 64 replace fixed-size AVC/H.264 macroblocks, sub-partitioning the picture into rectangular regions.



The Mobile HEVC Decoder allows ARM-based devices to receive more content over existing network infrastructure while using less bandwidth.

Profiles	HEVC Main / Main 10 Profiles (4:2:0 8-bit/10-bit)
Compliance	Compliant with HM 11
Compression	Support for I-, P- and B-frames
Parallel decoding	Wavefront Parallel Processing
In-loop filter	Deblocking filter and SAO (Sample Adaptive Offset)
Quality control	All intra prediction modes
Motion prediction	Multi-reference and merge candidates
Coding unit support	8 x 8 up to 64 x 64
Transform unit support	4 x 4 up to 32 x 32
Interpolation	Full-, half- and quarter-pixel
Processor architectures	Optimized for NEON instructions
Tiles & Slices	Added support for Tiles and Slices for improved parallel processing of large-resolution images

Scaling List	Added support for HEVC streams that use Scaling Matrices / Lists
Supported platforms	ARM v7 platforms (iOS and Android)
Supported operating systems	Apple iOS (ver. 5 and higher) and Android (ver. 4.0 and higher)

AVC Decoder – Features & Specifications

- Updated AVC/H.264 Decoder for ARM**
 Optimized for mobile processors, MainConcept Mobile SDK offers real-time decoding for Android and iOS in various profiles, at levels supported by AVC/H.264. Included components allow H.264/AVC and AAC (i.e., AAC LC, HE AAC v1 and HE AAC v2) decoding in the MP4 file format or as elementary streams on mobile devices up to 720p.
- Automatic NEON Detection**
 Increase performance with the use of the NEON extension, when available.
- Multi-Core ARM CPU Compatibility**
 Video decoder components support multi-core ARM CPUs with ARM v7 instruction sets, including NVIDIA Tegra 3, Apple A5/A6X and various ARM Cortex CPUs that can be found in the Apple iPad 3 (and higher), Asus Nexus 7, Sony XPERIA tablets and other devices.

Profiles	Baseline, Main and High Profile (4:2:0 8-bit)
Levels	Up to 3.2
Compression	Support for I-, P- and B-slices
Maximum resolution	Up to 720p
In-loop filter	Deblocking filter
Quality control	Weighted prediction
Frame structure	Progressive, interlaced
Entropy coding	CABAC, CAVLC
Interpolation	Full-, half- and quarter-pixel
Miscellaneous	Low delay flag, field pictures, fields reordering, chroma upsampling
Color spaces	Native FOURCC YV12 (other color spaces supported via built-in universal color converter module)
Processor architectures	Optimized for NEON instructions
Supported platforms	ARM v7 platforms (iOS and Android)
Supported operating systems	Apple iOS (v5 and higher) and Android (v4 and higher)



With support for both the HEVC/H.265 and AVC/H.264 standards, MainConcept Mobile SDK is ideal for developers looking to optimize software playback on ARM-based mobile devices.

Technical Components

- HEVC/H.265 Video Decoder
- AVC/H.264 Video Decoder
- DLNA Stack Module, including:
 - DLNA Media Server
 - DLNA Control Point
 - DLNA Media Renderer
- Network Source
- SDP Parser
- Net Tools
- AAC Decoder
- MP4 Demuxer
- Color Converter (not optimized)