

H.264 Hi422 High Performance Decoder

PRODUCT DESCRIPTION

The H.264 Hi422 High Performance Decoder IP Core is a highly optimized, pipelined video decompression engine supporting H.264 / MPEG-4 Part 10 standards. It is compliant with ISO/IEC 14496-10, 2005 standards and ITU-T H.264 standards.

The high performance solution is designed for scalability and modularity, targeting high end video contribution and professional video applications.

The decoder design is fully autonomous; does not require any external processor to aid the decode operation. The 10 interface comprises of an input FIFO and an output frame buffer. The decoder requires DDR2/3 SDRAM to store reference pictures. The decoder solution is available in both FPGA netlist and source code licensing models. CoreEL can also customize the core according to end application requirements.

Typical Application include

- Video contribution & distribution decoders
- Integrated Receivers Decoders (IRDs)
- Video servers/play-out servers
- Test & measurement equipment
- News gathering (SNG/ENG)
- 3D Video
- High-end consumer electronics
- Medical
- Aerospace & defence
- Automotive

KEY FEATURES

Decoder	Device	CABAC Decoder Bitrate	CAVLC Decoder Bitrate	SD [720 x 576] Frame-Rate	HD [1080p] Frame-rate
High Performance	Virtex-5 / 6	80 Mbps	160 Mbps	300 fps	60 fps
	Kintex-7	80 Mbps	160 Mbps	300 fps	60 fps
	Spartan-6	40 Mbps	80 Mbps	150 fps	30 fps
Regular Performance	Virtex-5 / 6	40 Mbps	80 Mbps	300 fps	60 fps
	Kintex-7	40 Mbps	80 Mbps	300 fps	60 fps
	Spartan-6	20 Mbps	40 Mbps	150 fps	30 fps

- Supports High profile decoding (4:2:2 10-bit support)
- Supports Main & Constrained Baseline Profile decoding (4:2:0 8-bit support only)
- Colour bit depth up to 10 bits
- 4:2:0 and 4:2:2 chroma format support
- Supports resolutions up to Full HD (1920x1080)
- Supports progressive and interlaced formats
- Field tested and proven in various customer applications
- H.264 decoder has been validated in hardware using
 - Conformance streams from ITU-T
 - Syntax, Stress and Pathological Test streams from Fraunhofer Institute
- Frame-rate up to 60 fps for progressive Full HD decode
- Single chip FPGA solution
- Scalable for higher bitrate support
- Simultaneous multi-channel decode
- Easy to integrate and hence faster time-to-market

PART NUMBER(S)

The following variants of this IP core are available:

Part Numbers	Variants
CI1010	H.264 Hi422 High Performance Decoder
CI1011	AVC Intra 50 (Hi10 Intra Profile)
CI1012	AVC Intra 100 (Hi422 Intra Profile)
CI1013	H.264 Entropy Decoder