

H.264 I & P Frame Encoder & Decoder

PRODUCT DESCRIPTION

The H.264 I & P Frame Encoder & Decoder IP core is a video compression/decompression engine based on H.264/MPEG-4 Part 10 Advanced Video Coding (AVC) standard. It is compliant with ISO/IEC 14496-10 standard and ITU-T H.264 standard.

The encoder takes in uncompressed video input and encodes as Elementary Stream (ES) or optionally as Transport Stream (TS). The decoder decodes the ES or optional TS stream and the decompressed images are stored for display. The codec requires external DDR memory for storing the input video data to the encoder and the decoded video output for display.

The codec solution is available in both FPGA netlist and source code licensing models. CoreEL can also customize the core according to end application/customer requirements.

Typical Application include:

- Broadcast video
- Wireless microwave transmitters and receivers
- Video surveillance & law Enforcement
- Medical
- Aerospace & defense

KEY FEATURES

Device	Max CABAC Bitrate	Max CAVLC Bitrate	HD [1080p] Frame-rate
Kintex-7 / Virtex-6	100 Mbps	600 Mbps	60 fps
Virtex-5	50 Mbps	300 Mbps	30 fps

Note: This IP core can be made available on other Xilinx-7 series family FPGA devices too.

- Supports High profile coding
- Bit depth upto 10 bits
- Monochrome, 4:2:0 and 4:2:2 chroma format support
- Supports resolutions/frame-rate up to 1920x1080p30/i60
- H.264 I & P frame codec has been validated in hardware using
 - Video Quality Experts Group (VQEG) sequences
 - European Broadcasting Union (EBU) sequences
 - Sequences from Blender Institute, Netherlands

- Supports progressive and interlaced formats
- Rate distortion optimization
- CBR and VBR rate control
- Very low latency solution
- CAVLC & CABAC entropy coding

PART NUMBER(S)

Following variants of this IP core are available

Part Numbers	Variants
CI1040	H.264 I & P Frame Encoder & Decoder
CI1011	Hi10 Intra Profile (Also compliant with SMPTE RP2027 standard for AVC-Intra Class 50)
CI1012	Hi422 Intra Profile (Also compliant with SMPTE RP2027 standard for AVC-Intra Class 100)
CI1032	Standalone Entropy Encoder and Decoder