

H.264 8K Video Encoder IP Core

Product Description

SOC provides H.264 8K encoder IP cores for both Xilinx and Intel (Altera) FPGAs. The encoder supports up to 8K (7680x4320) at 30fps (60fps requires special order).

An API is provided with the encoder which allows the user to control the encoder according to the applications. Parameters, such as output bit rate and precision, are configurable at run-time.

SOC also offers a video scaler IP core, which provides the flexibility to convert the resolution up/down before encoding. The video scaler can also rescale the frame rate up or down, which is controllable through the API.

A network stack is also available to allow the encoder to be connected to an IP network directly via an Ethernet port.

Key Features

- All-hardware
- Low latency (1ms)
- Small Silicon Footprint
- Low Power
- High Reliability (due to hardware only architecture)
- High-Precision – 10bits available
- High-Video Quality
- Low Output Bandwidth
- High-Output Bandwidth Version Available
- User Controllable API
- Video Transmission Cores available
- Video Scaler available
- **All-in-one hardware module available**

Specifications

- Standard: H.264/AVC (ISO/IEC14496-10)
- Profiles: High Profile
- Output Bit Rates: 8-600Mbps
- Video Resolutions: 8K (7680x4320)
- Frame Rate: Up to 30fps
- Chroma Formats: 4:2:2 or 4:2:0
- Precision: 8 bits or 10 bits
- Output Format: H.264 Elementary, or Transport Stream
- Video Input Format: YUV or YCrCb
- Latency: 1ms
- Power Consumption: 4-16w (Core only)
- FPGA: Xilinx or Intel

FPGA Resources (For 8k@30)

Xilinx FPGAs

Logic Size: 440kLUTs
 B-RAMs: 40Mbits
 DSPs: 940 DSPs
 Example FPGAs:
 Kintex UltraScale KU085

Intel/Altera FPGAs

ALMs: 300kAMLs
 B-RAMs: 40Mbits
 DSPs: 940 DSPs
 Example FPGA:
 Arria-10 GX900 or 2xSX660

FPGA Resources (For 8k@60)

The 8k@60 H.264 encoder core requires twice of the logic resources of the 8k@30 H.264 encoder.

H.264 8k Video/Audio Encoder Module

8k Digital Video/Audio Data

H.264 Compressed 8k Video/Audio Stream

