

## H.264 4K Video Encoder IP Core

### Product Description

SOC provides H.264 4K encoder IP cores for both Xilinx and Altera FPGAs. The encoder supports up to 4K (3840x2160) at 60fps.

An API is provided with the encoder which allows the user to configure 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
- High Speed (Low latency)
- 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: 20-400Mbps
- Video Resolutions: Up to 4K (3840X2160)
- Frame Rate: Up to 120fps
- 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: RGB or YUV or YCrCb
- Latency: 0.25ms
- Power Consumption: 1.5w (Core only)
- FPGA: Xilinx or Altera

### FPGA Resources

#### • Xilinx FPGAs

- Logic Resources: 100,000 LUTs
- Block RAMs: 9,000kb
- DSPs: 340
- Example FPGA: Kintex-7

#### • Altera FPGAs

- ALMs: 60,000
- Block RAMs: 7,000kb
- DSPs: 310
- Example FPGA: Stratix-V