

## H.264 4K Video Encoder IP Core

### Product Description

SOC provides H.264 4K encoder IP cores for both Xilinx and Intel (Altera) FPGAs. The encoder supports up to 4K (3840x2160) at 30fps, 60fps, and 120fps.

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
- 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: 4-600Mbps
- 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: YUV or RGB
- Latency: 0.5ms
- Power Consumption: 1-4w (Core only)
- FPGA: Xilinx or Altera

### FPGA Resources For 4k@30

	Xilinx FPGAs	Altera FPGAs
Logic Resources:	110,000 LUTs	73,000 ALMs
Block RAMs:	10Mbits	6Mbits
DSPs:	235 DSPs	239 DSPs

### FPGA Resources For 4k@60

The logic resources for 4k@60 equal to twice of the resources of the 4k@30, as two 4k@30 engines are used to achieve the 4k@60 resolution.

### H.264 4k Video/Audio Encoder Module

