

H.264 4K@120 Video Encoder IP Core

Product Description

SOC provides an H.264 4K@120 encoder IP core (a special version of the 4k encoder IP core) for both Xilinx and Intel (Altera) FPGAs. The encoder supports up to 4K (3840x2160) at 120fps.

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
- “Zero” latency (0.5ms)
- 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
- 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: 5-6w (Core only)
- FPGAs: Xilinx or Altera

FPGA Resources (For 4k@120)

Xilinx FPGAs

Logic Size: 440kLUTs
B-RAMs: 40Mbits
DSPs: 940 DSPs

Example FPGAs:

Kintex UltraScale KU085

Intel/Altera FPGAs

ALMs: 295kAMLS
B-RAMs 40Mbits
DSPs: 956 DSPs

Example FPGA:

Arria-10 GX900

H.264 4k@120 Video/Audio Encoder Module

4k@120 Digital
Video/Audio Data



H.264@120 TS
Video/Audio Stream

