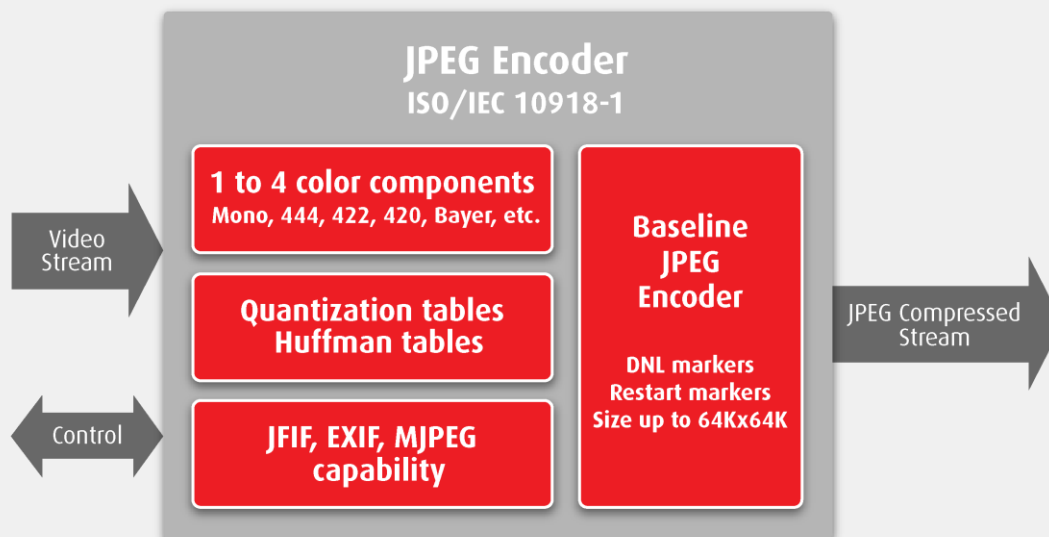


JPEG Encoder IP core

BA116 Product sheet



The Silex Insight JPEG encoder core is intended for high-speed encoding of images according to ISO/IEC 10918-1 baseline coding standard.



General Description

The IP core can be used with all Xilinx and Altera (Intel) FPGA families and ASIC technologies. Our JPEG encoder is very compact and can fit in smallest FPGA devices.

The JPEG encoding doesn't require external DDR memory. It is the ideal IP core for many applications with a good compromise between the quality, latency, complexity and compression ratio.

The encoding quality is fully configurable during run-time, including custom entropy and quantization tables.

The simple FIFO-like interfaces and 100% synchronous structure of the JPEG encoder IP core makes the integration very easy. The encoding of the image or video is handled autonomously by the IP core, without any CPU intervention.

APPLICATIONS

Our JPEG Encoder IP core is used in many applications including:

- industrial imaging
- high speed camera
- datacenter
- multimedia conferencing

Features

- Compliant with baseline JPEG (ISO/IEC 10918-1)
- Unrestricted image resolutions up to 64K by 64K.
- Chroma subsampling (4:4:4, 4:2:2, 4:2:0), grayscale and bayer support.
- No external DDR memory required.
- Full header building and parsing capability:
 - user-definable comments
 - application markers
 - quantization tables
 - Huffman tables
- Support for full-format and abbreviated-format
- One-pass encoding scheme with bit rate regulation if enabled
- Support all features of the baseline standard including restart markers, restart interval and DNL.

Interfaces

- Simple FIFO interfaces for compressed data and pixel data interfaces
- 8×8 block-format pixel input with classical scan order
- Simple CPU interface for encoder and headers programming
- Easy-to-use status and control interface
- Programmable external interrupt for event follow-up

Other video compression IP cores

- JPEG2000 encoder and decoder for many types of applications in broadcast, digital cinema, surveillance,...
- VC-2 HQ encoder and decoder for ultra-low latency lightweight image/video compression.
- MPEG-2 decoder for high performance multichannel systems.

About Silex Insight

Silex Insight is an electronic design house (ASICs, FPGAs, DSP, boards, embedded SW) specialized in video compression, security and memory controllers. Silex Insight offers the best guarantee for continuous support throughout the complete lifecycle of products.

For more information, please contact us.

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