

Entner Electronics

JPEG-CODEC

Compression & Decompression IP-Cores for FPGAs

Features of Compressor

- Performs JPEG compression in 4:2:2 or 4:2:0 format from YUV 4:2:2-image (DCT, quantization, run-length encoding, huffman encoding)
- High speed (e.g. 150 MHz in ALTERA Cyclone IV, slowest speed-grade, which equals up to 100 Megapixels per second compression-speed)
- Very low resource usage (e.g. ALTERA Cyclone IV):
 - about 2250 LEs
 - 5 M4K memory blocks
 - 7 18x18 multipliers
- Either encrypted (ALTERA only) or VHDL-code included, vendor-independent

Features of Decompressor

- Performs JPEG decompression of baseline JPEG images (huffman decoding, run-length decoding, dequantization, IDCT, color-space conversion)
- High speed (e.g. 150 MHz in ALTERA Cyclone IV, effective decompression speed depends on image)
- Low resource-usage (e.g. ALTERA Cyclone IV):
 - about 2850 LEs
 - typ. 9 M4K memory blocks
 - 12 18x18 multipliers (including color-space conversion)
- The decompressor is set up by a CPU depending on the contents of the JPEG-header information, sample-source-code (in C) for ERIC5 is provided
- Either encrypted (ALTERA only) or VHDL-code included, vendor-independent

Preliminary information – specification and availability subject to change without notice.

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Entner Electronics KG, Sigmund-Nachbauer-Str. 10,
6830 Rankweil, AUSTRIA, Tel: +43 5522 75717-0
Internet: www.entner-electronics.com
e-mail: info@entner-electronics.com

