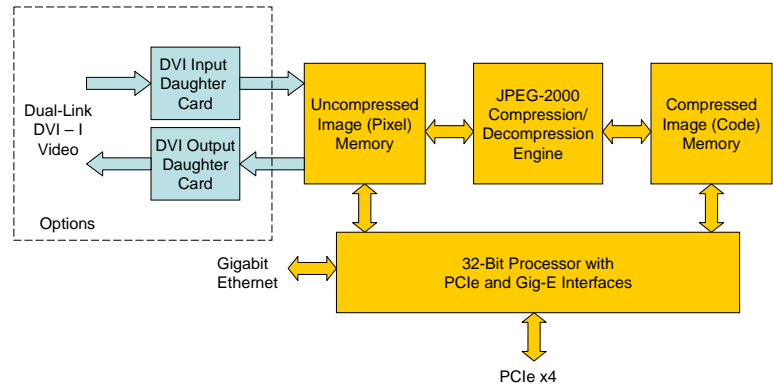


HRED-J2000 High-Resolution JPEG-2000 Encoder Decoder Card

- JPEG-2000 Compression / Decompression
- Processes up to 6 simultaneous streams
- Up to two Dual-link DVI-I video interfaces
- Video resolutions up to 2560x1600, 1-4 component
- Compressed images transferred over PCIe or Gig-E
- Operates stand-alone or in a PC



Westar's HRED-J2000 is a high-performance JPEG-2000 compression / decompression card. The card operates as a PCI Express plug-in to a host PC or as a stand-alone card outside of a PC (future option) to provide simultaneous encoding and decoding of up to six simultaneous video streams. The card can process 1 to 4 component video images at multiple resolutions up to 2560x1600.

Video Input and Output Daughter Cards: The HRED-J2000 can accept up to two optional video input or output daughter cards. The HRED-J2000 supports any combination of two inputs or outputs. Each daughter card provides a dual-link DVI-I (digital or analog) video interface capable of the following video formats.

Video Formats:

RGB analog and Digital Dual-link DVI:	Digital DVI only:
1920x1080, 60Hz*	2560x1600, 60Hz*
1600x1200, 60Hz	1920x1200, 60Hz*
1440x1050, 60Hz	1280x720, 60Hz
1280x1024, 60Hz	
1024x768, 60Hz	

*Updated at 30Hz max

With two daughter cards the HRED-J2000 occupies two PC card slots.

PCI Express Operation: As a PCI Express card, the HRED-J2000 functions as a plug-in compression/ decompression coprocessor card. The 4-lane PCIe interface supports fast transfers of image data between the host PC and the card via two scatter-gather DMA engines. The card transfers compressed JPEG-2000 images to or from the host PC over the PCIe interface. Uncompressed images can be transferred over the PCIe interface or as DVI-I video via one of the optional DVI daughter cards. The PCIe interface supports transfers of 1-4 component uncompressed images.

Stand-Alone Operation (future): In stand-alone mode the card is operated outside of a PC by simply supplying power to the card. The on-board 32-bit MCU and Gigabit Ethernet interface control the stand-alone operation. Compressed video is transferred to or from the card via the Gigabit Ethernet interface while uncompressed video is transferred over the DVI-I interfaces via the daughter cards. The card can be remotely controlled and configured via the Gigabit Ethernet interface.

Performance: The HRED-J2000 card achieves enhanced system performance through the following:

- Twelve ADV212 JPEG compression chips are used to provide up to 780Mpixels/sec throughput
- System throughput is increased by providing image tiling and component separation/merging support in hardware.
- Color space conversion from RGB to YCrCb 4:2:2 is available to increase throughput and compression ratios.

Key Specifications

Size:	Full-length PCIe card (single width with one DVI daughter card, double width with two)
Power:	35W (approx)
Video I/O:	Dual-link DVI, up to 2560x1600, 60Hz Analog RGB, up to 1920x1080, 60Hz
Bus interface:	4-lane PCIe
Network:	Gigabit Ethernet (for future growth)
Compression:	JPEG2000
Peak throughput:	780Msps

Software: The HRED-J2000 card is provided with drivers for Linux kernel version 2.6. The drivers support stream creation and management and the creation of multiple endpoints. Each endpoint can be configured as a source or destination and as a compressed or uncompressed video endpoint.

Windows drivers will be available in the future.