WESTAR
QinetiQ North America

HRED-J2000 Hardware Video Codec

High performance hardware video codec that encodes video, decodes video, and captures raw video at ultra-high rates and resolutions.

HRED-J2000 Hardware Video Codec

The HRED-J2000™ is a hardware implementation of the JPEG2000 video codec. The PCIe card is a versatile video processing component that encodes video, decodes video, and captures raw video from DVI inputs.

Stream Types	Stream Inputs
Encode	PCIe x4 lane and Dual link DVI-I (up to 2 inputs)
Decode	PCIe x4 lane
Raw Capture	Dual link DVI-I (up to 2 inputs)

High Bandwidth, Multiple Stream Processing

Mix and match different video stream types for concurrent operation. The HRED-J2000 uses 12 ADV212 JPEG2000 video codec chips to encode and decode up to (6) simultaneous video streams.

For example, the HRED-J2000 can be configured to process 2 JPEG2000 video streams of WQXGA (2560×1600) at 30Hz simultaneously, or 6 streams of VGA (640x480) simultaneously.

With twelve ADV212 chips, up to 2 dual-link DVI-I connectors, and a x4 lane PCIe connection, the HRED-J2000 provides ample processing power.

Highly Configurable

Besides varying the number of ADV212 chips per stream, each stream is configurable to unique and independent settings (encode / decode, different resolutions, compression ratios, etc).

Integrate Quickly With Example Apps and SDK

All HRED-J2000 customers receive example applications and an SDK (full source code provided) to decrease the system integration time and costs. The applications and SDK are written in C++ and work in both Windows and Linux operating systems.

Specs and Features

Video Streams

- Up to 6 streams can be processed simultaneously
- Types: JPEG2000 encode, JPEG2000 decode, raw capture

Video Resolutions

- Up to 4096 x 4096 (*max 1 megasample tile size*)
- Supports numerous smaller standard and non-standard resolutions, including 2560x1600 (WQXGA) and 1080P

Video Inputs

- PCIe x4 lanes
- Up to 2 Dual-Link DVI-I (analog and digital) daughter cards, each with programmable EDID

Pixel Formats

- 8 bits / color channel
- RGB, RGBA, BGR, BGRA, YCrCb 4:2:2, YCrCb 4:2:2 + A, YA
- Onboard color conversion: RGB to YCrCb 4:2:2, etc.

DVI Performance

- Digital: Up to WQXGA(2560×1600) at 60Hz (encoded / captured at 30Hz)
- Analog: Up to HD 1080p at 60Hz

Software Drivers

- 32 and 64 bit
- Linux Redhat, Ubuntu, and others
- Windows XP, Vista, and 7

PCIe Specs

- Full length PCIe
- Single width (0 or 1 DVI inputs), double width (2 DVI inputs)
- Peak power: 30 W

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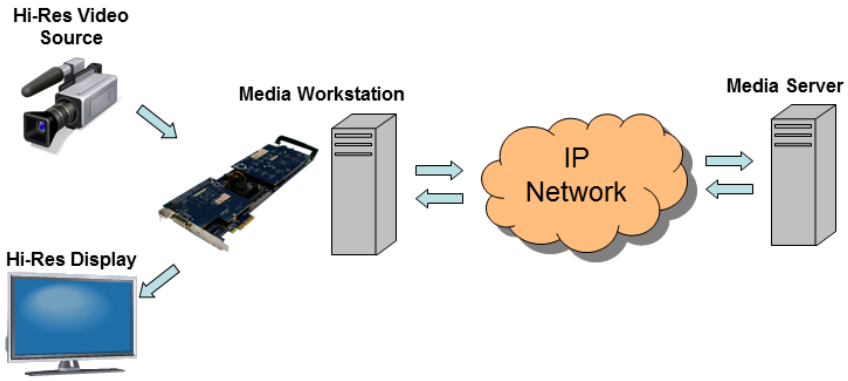
Example Applications

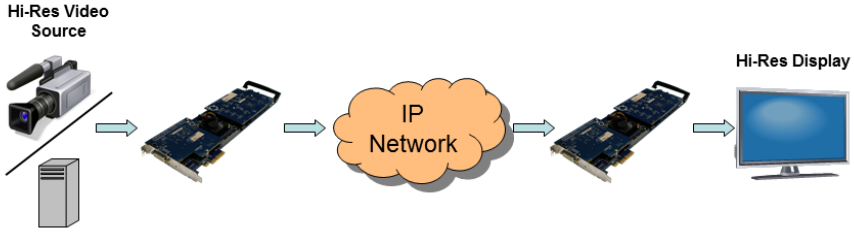
#1: Multi channel hi-res record and playback

A single HRED-J2000 simultaneously encodes a hi-res video source and decodes a previously recorded video for local viewing. In addition to encoding video via the PCIe connector, the HRED-J2000 can encode directly from a DVI (digital or analog) source. The HRED-J2000 has ample hardware resources for simultaneously processing multiple streams, like shown in this setup, where hi-resolution video is both encoded and decoded.



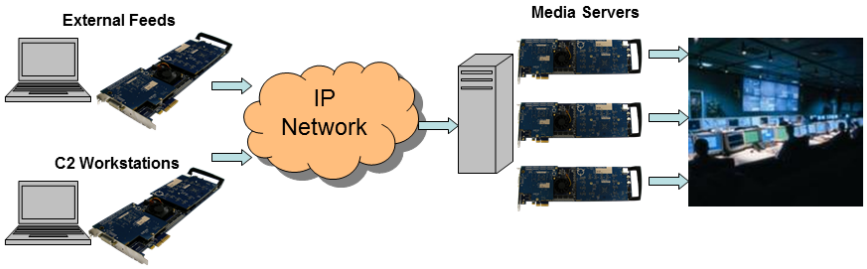
#2: Hi-res video conferencing

Perform hi-resolution video conferencing with the HRED-J2000 as the core video processing component. Video compression rates can be changed on-the-fly to meet changing bandwidth and quality of service requirements.



#3: Military command and control

The HRED-J2000 is ideal for command and control scenarios where large amounts of video needs to be distributed over a network. Multiple cards can be installed in a workstation multiplying the video processing power.



Processing Bandwidth (typical)

- (2) 2560x1600 compressions (via DVI) and (1) 2560x1600 decompression (via PCIe), all at 30Hz.
- Numerous other combinations are possible.
- PCIe supports over 600 Mbytes/sec bandwidth in and out
- Please contact Westar to discuss your specific application.

Additional Resources

To view our full line of products, visit us at:
www.westardisplaytechnologies.com

Contact Us to Get Started

Call or email us for additional product info and pricing.

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