

evBLADE-4Z10-10G-HW

Virtualized Media Processing FPGA Accelerated Compute Blade

Evertz' evEDGE Virtualized Media Processing platform revolutionizes broadcast infrastructure by separating the essential core broadcast services from the underlying processing engines. The paradigm shift from discrete, fixed-function hardware to compute pools of generic hardware with licensable software services provides a flexible, scalable, agile broadcast infrastructure to dynamically meet and adapt to changing facility requirements.

evEDGE virtualized broadcast infrastructure provides the necessary toolsets to easily manage, license, deploy and operate core video/audio/ancillary services as needed across the evEDGE supported compute platforms.

The evBLADE-4Z10-10G-HW is a multi-node FPGA accelerated compute blade for the evEDGE virtualized broadcast infrastructure platform. The evBLADE offers high density FPGA processing nodes that are reconfigurable to provide customized audio, video and ancillary data processing pipelines. The evBLADE provides agility and flexibility of a virtualized environment while also ensuring low latency, low power, deterministic and reliable FPGA processing pipelines.

The generic processing nature of evBLADE allows it to support different processing pipelines. This provides greater efficiency and utilization of compute with respect to fixed function devices or COTS hardware. The evBLADE allows you to accomplish precisely what you need, when you need it.

The evBLADE contains four compute nodes that provide unmatched processing capacity. One example of a deployable pipeline on a single node

is a 7814UDX-2 dual path 3G/HD/SD Up/Down/Cross conversion with frame synchronization, color correction and noise reduction along with a rich feature set of audio processing and ancillary data processing. This provides the equivalent of 4x 7814UDX-2 modules on a single evBLADE — double the density of a fixed function 7814UDX-2 installation.

The evBLADE supports a growing library of software licensable and deployable core video/audio/ancillary data processing services, making it a future-proof platform to meet not only the needs of today, but also the needs of tomorrow. The evBLADE supports technologies like SMPTE ST 2110 and High Dynamic Range (HDR) conversion. The library of FPGA services can be provisioned on both the evBLADE-4Z10-10G-HW and the evBLADE-Z10-AP-10G-HW. Please contact Evertz for an up-to-date list of available services.

evBLADE compute nodes are fully managed via a RESTful webAPI. Service control and configuration are also available over SNMP. These interfaces provide seamless integration with Evertz' VUE user interface, MAGNUM, VistaLINK PRO, Mediator and third-party systems.

The evBLADE compute nodes also supports Evertz' inSITE. This brings operational intelligence to the forefront with historical analysis of all operations over the compute pool including system health and utilization information.

The evEDGE platform facilitates management, licensing, monitoring, and deployment of services across the heterogeneous compute pool — including evBLADE, COTS servers and private/public cloud instances.

►Features & Benefits

System I/O

- 32x 3G/HD/SD SDI bi-directional configurable copper coax (8x per compute node)
- 8x 10GbE SFP+ modules (20GbE maximum bandwidth per compute node)
- Genlock reference (REF-IN)
- Redundant 1GbE control network ports (ETH-A, ETH-B)

SDI Transport

- SMPTE ST 424M (3G), SMPTE ST 292M (HD), SMPTE ST 259M (SD)
- Video: Broad standards support — 1080p level A/B (59.94/50Hz), 1080i (59.94/50Hz), 720p (59.94/50Hz), 525i (59.94 Hz), 625i (50Hz)
- Audio: four groups (16x channels) of audio over SDI
- Ancillary: Full support HANC/VANC payload processing

IP Transport

- Video: SMPTE RDD37 (ASPEN), SMPTE ST 2110-20 or SMPTE ST 2022-6

- Audio: SMPTE ST 302, SMPTE ST 2110-30 (AES67 profile) or SMPTE ST 2022-6
- VANC: SMPTE ST 2038, SMPTE ST 2110-40 or SMPTE ST 2022-6

Timing/Synchronization

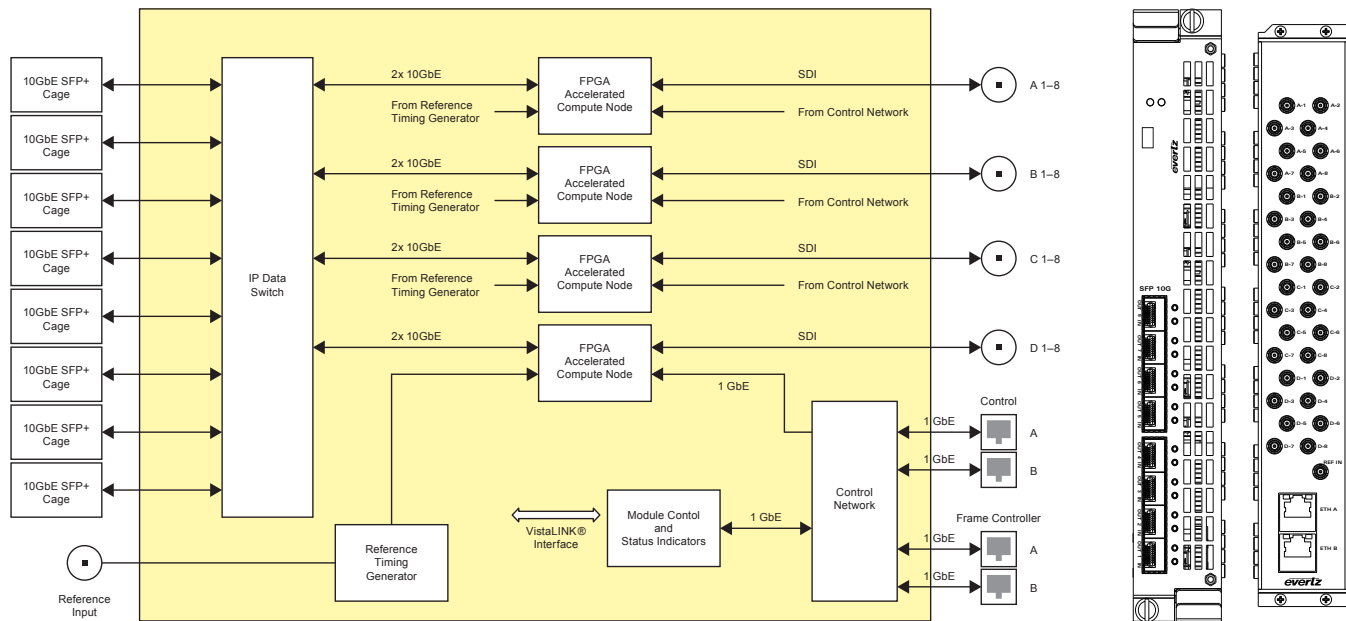
- evBLADE optionally accepts SMPTE ST 2059-2 or Master PCR via 10GbE network connections with ability of time-stamping all content output over Ethernet (UTC at time of reception)
- evBLADE also supports bi-level and tri-level reference via ev6-FR frame reference or external reference input

Control

- Modules support control over ev6-FC Ethernet or external 1GbE ports on rear plate
- SNMP and Restful webAPI control interfaces
- Support for VistaLINK PRO, MAGNUM Unified Control or CP panels

Licensable Services

- Growing library of core video/audio/ancillary data services



► **Licensed Services**

Video Services	Description
Frame Sync	Maintains synchronization of output audio/video/ancillary data to reference
Video Processor	Full-featured video processing/colour correction engine with YCbCr and RGB colour space adjustments
Up/Down/Cross Conversion	SD/HD/3G standard conversion with high quality motion adaptive deinterlacing and fully configurable broadcast video scaler with AFD triggering
* HDR/SDR Conversion	HDR/SDR conversion engine to convert between HDR formats (HLG, Slog3, SMPTE ST 2084) and between HDR and SDR
* Keyer	Keyer engine for performing Key+Fill blending operations, and file-based graphics insertion onto program content
* Logo Inserter	Keys static or dynamic logo/bug onto video signal
* Video Delay	Video delay adjustment at pixel, line and frame granularity

Audio Services	Description
Audio Delay	Global and per-channel (16x) audio delay adjustments with audio sample granularity
* Audio Processor	Audio processor with per-channel (16x) X&Y mixing/gain/inversion
IntelliGain	16-channel IntelliGain loudness audio processor
Upmix	Stereo-to-5.1 surround audio upmixer with input signal driven auto upmixing
Downmix	5.1 surround-to-stereo audio downmixer

Ancillary Services	Description
Closed Captions	Closed caption translation processor for CEA608 to CEA708 conversion
OP42/27 WST	Teletext translation processor with OP42 to/from OP47 conversion
Time Code	D-VITC, ANC-VITC, ANC-LTC time code processor and inserter
AFD	Active Format Description (AFD) monitor and inserter
* Name Dropper	Name Dropper encoder for downstream keyer control
ANC Mux	Combines multiple SMPTE ST 2110-40 streams

Gateway Services	Description
SDI to ASPEN +FS	SDI audio/video/ancillary encapsulation to multi-essence ASPEN streams with FS
* SDI to SMPTE ST 2110 +FS	SDI audio/video/ancillary encapsulation to multi-essence SMPTE ST 2110 streams with FS

* Consult with Evertz on availability of service. Available services are subject to change, please contact Evertz for up-to-date information.

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► Specifications

Serial Digital Video: Standards: SMPTE ST 424M (3Gb/s), SMPTE ST 292-1 (1.5Gb/s), SMPTE ST 259M (270Mb/s)	Audio Encapsulation: SMPTE ST 302 SMPTE ST 2110-30 SMPTE ST 2022-6	Data Format: Ethernet/IP/UDP
Serial Video Inputs/Outputs: Number of Inputs: 32 (8x per processing core) Connector: DIN 1.0/2.3	Ancillary Encapsulation: SMPTE ST 2038 SMPTE ST 2110-40 SMPTE ST 2022-6	Electrical: Power: Max 125W Voltage: 12VDC EMI/RFI: Complies with FCC Part 15, Class AEU EMC directive
Ethernet Interface: 8x 10GbE SFP+ 2x 1GbE	Video Encapsulation: SMPTE RDD37 SMPTE ST 2110-20 SMPTE ST 2022-6	Physical (number of slots): 2 slots
		Enclosures: ev6-FR: 15-slot 6RU chassis

► Ordering Information

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Accessories:
SFP10G-TR13-A SFP+ Optical Transceiver, 10Gbs, 1310nm, SMF, 10km
ev6-FC ev6 Frame Controller

Enclosure:
ev6-FR ev6 6RU multiframe with 15 slots

Rear Plate Suffix:
+6RU 6RU rear plate with SDI, reference and Ethernet I/O

Please contact Evertz for service license information.

The Complete Solution Provider

