

MIO-BLADE-Z21

Microservice MIO Module

The MIO-BLADE-Z21 is a single-node FPGA accelerated compute blade for the evEDGE™ virtualized broadcast infrastructure platform. When used in conjunction with the SCORPION platform, the MIO-BLADE offers high-density FPGA processing nodes that are reconfigurable to provide customized audio, video and ancillary data processing pipelines. MIO-BLADE provides the agility and flexibility of a virtualized environment while also ensuring low latency, low power, deterministic and reliable FPGA processing pipelines.

MIO-BLADE contains a single compute node that provides 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 converter with frame synchronization, color correction and noise reduction, along with a rich feature set of audio processing and ancillary data processing. Leveraging SCORPION with MIO-BLADE provides the equivalent of 8x 7814UDX-2



modules, or 16 paths of UDX in a single SCORPION-X18 chassis (1RU). Aside from UDX, the MIO-BLADE supports a growing list of microservices in the evEDGE™ catalogue, with future capability for HDR conversion, VPROC, IP delays and more.

Features & Benefits

- Dual slot microservice MIO module
- 8x HDBNC connectors
- 12G/3G/HD/SD/ASI support
- Can be deployed across all SCORPION chassis
- Reconfigurable with different applications to define functionality
- Requires SCORPION-18-PSX-HP/PS3/PS6 when used in SCORPION-X18
- Integrated control and monitoring using MAGNUM, VistaLINK® PRO, inSITE, VUE
- Device-hosted web GUI and web API

Software Services

MIO-APP-IPG

- 8x configurable gateway paths
- SMPTE ST 2022-2/6 and ST 2110 support
- SMPTE ST 2022-7 hitless merge
- UHD/3G/HD/SD/ASI support
- UHD 2SI quad/single link conversion
- SMPTE ST 2022-1 FEC insertion

MIO-APP-XS-4K

- 2x encodes and 2x decodes of 12G/3G/HD-SDI to XS
- MIO-CK-XSP60 licenses applicable per path

MIO-APP-J2K-3G

- 2x encodes or 2x decodes of 3G-SDI to JPEG2000
- MIO-CK-J2KP60 licenses applicable per path

MIO-APP-UDX-3G

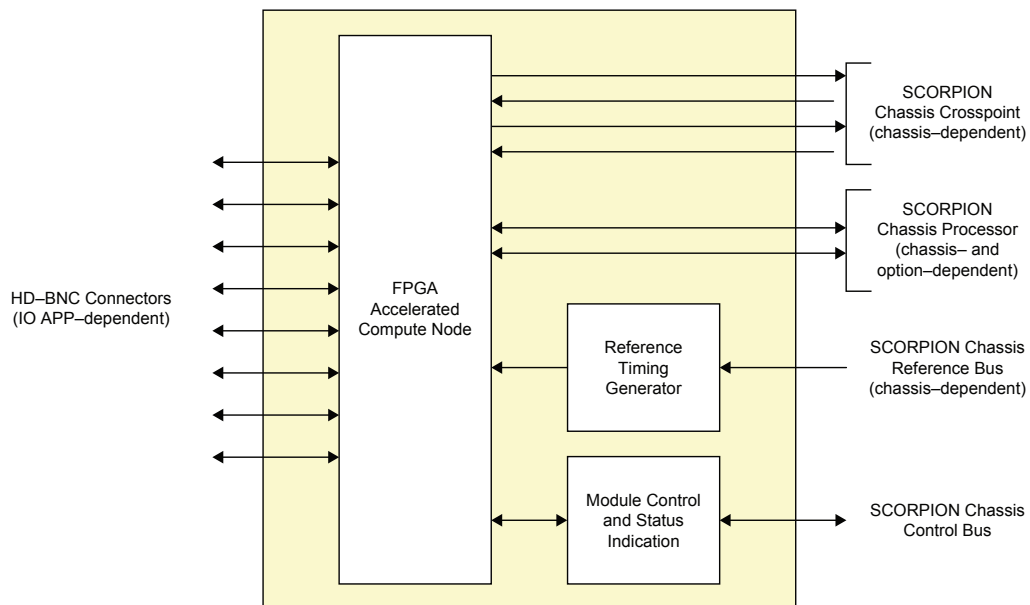
- 2-channel UDX for 3G/HD/SD conversion
- HDR conversion using 3D LUTs
- evEDGE-UDX-3G-Z21 licenses applicable per path
- evEDGE-HDR-3G licenses applicable per path

MIO-APP-UDX-4K

- Single-channel UDX for UHD/3G/HD conversion
- HDR conversion using 3D LUTs
- evEDGE-UDX-4K-Z21 licenses applicable per path
- evEDGE-HDR-4K-Z21 licenses applicable per path

MIO-APP-2QUAD

- Bi-directional UHD quad to single link conversion
- Supports 2SI and SQD formats



Specifications

Power Consumption: 20W	Equalization: Automatic to 80m @3GB/s, 100m @1.5GB/s, 250m @270MB/s (with Belden 1694A or equivalent cable)	Signal Level: 800mV (nominal)
Physical Requirement: Dual-slot MIO		DC Offset: 0V ±0.5V
Operating Temp.: 0–70 °C		Rise and Fall Time: Reclocked SFPs only 12G: <45ps HD/3G: <135ps SD: <900ps
Electrical Inputs:	Return Loss: >15dB up to 1.5GHz, >10dB up to 3GHz, >7dB up to 6GHz, >4dB up to 12GHz	Overshoot: <10% of amplitude (reclocked SFPs only)
Reclocked Standards: SMPTE ST 2081 (12G-SDI), SMPTE ST 424M (3GB/s), SMPTE ST 292M (1.5GB/s), SMPTE ST 259M (270MB/s),	Electrical Outputs:	Alignment Jitter: Reclocked SFPs only <0.2UI to 1.485GB/s <0.3UI to 2.97GB/s <0.3UI to 12GB/s
Connector: DVB-ASI	Connector: HD-BNC	
Impedance: HD-BNC 75Ω (nominal)	Impedance: 75Ω (nominal)	

Ordering Information

MIO-BLADE-Z21 Microservice MIO module. Dual slot module with 8x HDBNC IO for use in any Scorpion chassis. Requires a software APP (and associated licenses) to define functionality.

Software Services:

MIO-APP-IPG	Application for gateway functionality on MIO-BLADE-Z21 hardware. Configurable encapsulation standard (per module) to ST2022-1/2/6 or ST2110. Supports up to 8 configurable paths of 3G/HD-SDI or up to 2 bi-directional 4K/UHD paths (bandwidth permitting). No licenses required.
MIO-APP-XS-4K	Application for 2 encodes of 12G/3G/HD-SDI and 2 decodes of 12G/3G/HD-SDI on MIO-BLADE-Z21 hardware. XS licenses not included
MIO-APP-J2K-3G	Application for 2 encodes of 3G/HD/SD-SDI or 2 decodes of 3G/HD/SD-SDI over 10Gb/s trunk ports on MIO-BLADE-Z21 hardware. JPEG2000 licenses not included
MIO-CK-J2KP60	3G/HD/SD JPEG 2000 Encoder or Decoder License for MIO-BLADE-Z21. Hardware sold separately.
MIO-APP-UDX-3G	Application for dual paths of 3G/HD/SD UDX on MIO-BLADE-Z21 hardware. evEDGE-UDX-3G-Z21 licenses not included.
evEDGE-UDX-3G-Z21	License for a single path of 7814UDX-AES8-3G functionality (3G/HD/SD support) for Z21-based evEDGE hardware (Incl. MIO-BLADE-Z21). Up to 2 paths per Z21 compute node. Includes Audio processing and Upmix.
evEDGE-HDR-3G	License for a single path of FS / VPROC and HDR conversion on evBLADE hardware. Up to 1080p signals supported. 2x paths per Z10 Compute node.
MIO-APP-UDX-4K	Application for a single path of UHD/12G UDX on MIO-BLADE-Z21 hardware. evEDGE-UDX-12G-Z21 licenses not included.
evEDGE-UDX-4K-Z21	License to run a single path of an equivalent 7814UDX-AES8-4K series product. 1x per Z10 compute node.
evEDGE-HDR-4K-Z21	License for a single path of HDR conversion on MIO-Blade hardware using 3D LUTs. Up to 4K signals supported. 1x path per Z21 Compute node. Specific 3D LUT required separately.
MIO-APP-2QUAD	Dual slot MIO module for up to 2 configurable quad link 4K paths over 8xHD-BNC I/O