

# MIO-BLADE-Z21

Virtualized MIO Module

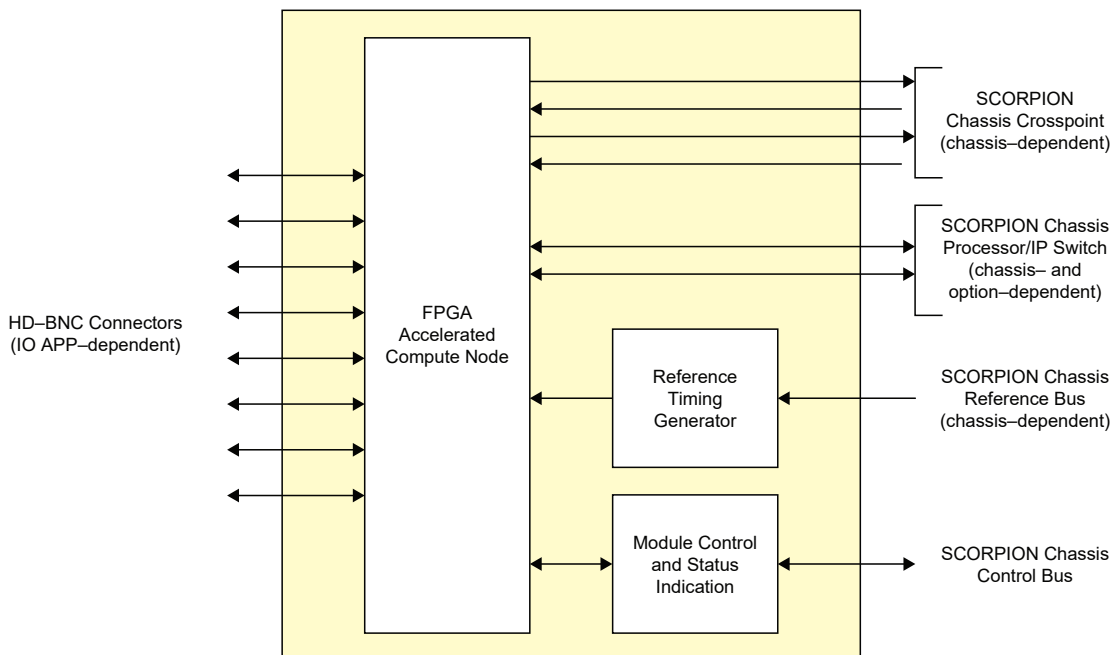


Media processing in a compact modular chassis has never been more flexible. The MIO-BLADE-Z21 is a generic FPGA based compute module capable of running a catalogue of software services as defined by the user. This adds a layer of agility and flexibility with the SCORPION solution, allowing any deployed functionality to dynamically change or be updated with changing infrastructure and workflow requirements.

The MIO-BLADE-Z21 has the capability to run unique software functions (APPs) and have each been scaled to process a specific family of functions enabled by the Evertz Virtualized Compression Stack, APPs that can be delivered to the modules and run through the application of a valid license or channel key. The ability to stop, deploy and run functionality in this manner provides the capability to enable the most agile network edge and also produces an opportunity for network costs to be moved more to an opex model if desired. Licenses can be temporal or perpetual depending on customer requirements.

## Features & Benefits

- Dual-slot microservice MIO module
- 8x HD-BNC 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/PS3/PS6 when used in SCORPION-X18
- Integrated control and monitoring using MAGNUM, VUE, VistaLINK® PRO, inSITE
- Device-hosted web GUI and web API
- NMOS compliant (IS-04 v1.3, IS-05 v1.1, BCP-002-01 v1.0)



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## Software Services

### MIO-APP-IPG-2110

- 8x configurable gateway paths
- SMPTE ST 2110–10/20/30/40 support
- SMPTE ST 2022–7 hitless merge
- UHD/3G/HD/SD rate support
- UHD 2SI quad/single link conversion
- 10/25G selectable link rate
- No licenses are required

### MIO-APP-IPG-2022

- 8x configurable gateway paths
- SMPTE ST 2022–2/6
- SMPTE ST 2022–7 hitless merge
- UHD/3G/HD/SD/ASI support
- UHD 2SI quad/single link conversion
- SMPTE ST 2022–1 FEC insertion
- 1/10/25G selectable link rate
- No licenses are required

### MIO-APP-XS-2E2D

- 2x encodes and 2x decodes of 12G/3G/HD–SDI to JPEG XS using TR–07
- LIC–JXS–I–3G or LIC–JXS–I–4K licenses applicable per path

### MIO-APP-XS-3E1D

- 3x encodes and 1x decode of 3G/HD–SDI to JPEG XS using TR–07
- LIC–JXS–I–3G license applicable per path

### MIO-APP-XS-1E3D

- 1x encode and 3x decodes of 3G/HD–SDI to JPEG XS using TR–07
- LIC–JXS–I–3G license applicable per path

### MIO-APP-J2K-2E

- 2x encodes of 3G/HD/SD–SDI to JPEG2000
- LIC–JXS–I–3G license applicable per path

### MIO-APP-J2K-2D

- 2x decodes of 3G/HD/SD–SDI to JPEG2000
- LIC–JXS–I–3G license applicable per path

### MIO-APP-J2K-1E1D

- 1x encode or 1x decode of 3G/HD/SD–SDI to JPEG2000
- LIC–JXS–I–3G license applicable per path

### MIO-APP-UDX-3G

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

### MIO-APP-UDX-4K

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

### MIO-APP-2QUAD

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

### MIO-APP-DLY2

- 2x A/V delay paths for 3G (5 sec) and HD (10 sec)
- evEDGE–DLY2–SDI license applicable per path

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## Specifications

Power Consumption:

20W

Physical Requirement:

Dual-slot MIO

Operating Temp.: 0–85°C

## Electrical Inputs:

Reclocked Standards:

SMPTE ST 2081  
(12G-SDI),  
ST 424M (3GB/s),  
ST 292M (1.5GB/s),  
ST 259M (270MB/s),  
DVB-ASI

Connector:

HD-BNC

Impedance:

75Ω (nominal)

Equalization:

Automatic to  
80m @ 3GB/s,  
100m @ 1.5GB/s,  
250m @ 270MB/s  
(with Belden 1694A or  
equivalent cable)

Return Loss:

>15dB up to 1.5GHz,  
>10dB up to 3GHz,  
>7dB up to 6GHz,  
>4dB up to 12GHz

## Electrical Outputs:

Connector:

HD-BNC

Impedance:

75Ω (nominal)

Signal Level:

800mV (nominal)

DC Offset:

0V ±0.5V

Rise and Fall Time:

12G: <45ps  
HD/3G: <135ps  
SD: <900ps  
Overshoot: <10% of amplitude  
Alignment Jitter: <0.2UI to 270MB/s (1kHz),  
<0.2UI to 1.485GB/s (100kHz),  
<0.3UI to 2.97GB/s (100kHz),  
<0.3UI to 12GB/s (100kHz)  
Timing Jitter: <0.2UI to 270MB/s (10Hz),  
<1UI to 1.485GB/s (10Hz),  
<2UI to 2.97GB/s (10Hz),  
<8UI to 12GB/s (10Hz)

## Ordering Information

### MIO-BLADE-Z21

Dual slot module capable of running FPGA applications to define functionality. Requires a MIO-APP to define the module function, and channel keys to enable paths. For use in any SCORPION chassis types.

### Software Service Options:

(one active per blade)

### MIO-APP-IPG-2110

ST2110 gateway application for MIO-BLADE-Z21 hardware. Supports up to 8 gateway paths with support for 4K/UHD/6G/3G/HD signals. Supports 4K/UHD as single-link or quad-link SDI.

### MIO-APP-IPG-2022

ST2022 gateway application for MIO-BLADE-Z21 hardware. Supports up to 8 gateway paths with support for 4K/UHD/6G/3G/HD with ST2022-6/7 and ASI with 2022-1/2/7. Supports 4K/UHD as single-link or quad-link SDI.

### MIO-APP-XS-2E2D

JPEG-XS compression application for MIO-BLADE-Z21 hardware. Dual encode and dual decode paths with support for 4K/UHD/6G/3G/HD signals. Supports 4K/UHD as single-link or quad-link SDI. Transport using TR07 with configurable 2022-1.

### MIO-APP-XS-3E1D

JPEG-XS compression application for MIO-BLADE-Z21 hardware. 3 encode and 1 decode paths with support for 3G/HD signals. Transport using TR07 with 2022-1

### MIO-APP-XS-1E3D

JPEG-XS compression application for MIO-BLADE-Z21 hardware. 1 encode and 3 decode paths with support for 3G/HD signals. Transport using TR07 with 2022-1

### MIO-APP-J2K-2E

JPEG-2000 compression application for MIO-BLADE-Z21 hardware. 2 encode paths with support for 3G/HD/SD signals. Transport using TR01 with 2022-1.

### MIO-APP-J2K-2D

JPEG-2000 compression application for MIO-BLADE-Z21 hardware. 2 decode paths with support for 3G/HD/SD signals. Transport using TR01 with 2022-1.

### MIO-APP-J2K-1E1D

JPEG-2000 compression application for MIO-BLADE-Z21 hardware. 1 encode and 1 decode paths with support for 3G/HD/SD signals. Transport using TR01 with 2022-1.

### MIO-APP-UDX-3G

Software application for dual paths of 3G/HD UDX with optional HDR on MIO-BLADE-Z21 hardware. evEDGE-UDX-3G-Z21 licenses not included.

### MIO-APP-UDX-4K

Software application for a single path of 12G/3G/HD UDX with optional HDR on MIO-BLADE-Z21 hardware. evEDGE-UDX-4K-Z10 licenses not included.

### MIO-APP-2QUAD

Dual slot MIO module for up to 2 configurable quad link 4K paths over 8xHD-BNC I/O

### MIO-APP-DLY2

Application to run a dual path of 3G/HD-SDI delay on a MIO-BLADE-Z21 module

### Channel License Options:

#### LIC-J2K-I-3G

J2K Encode/Decode license Type I. Up to 3G signals. Perpetual license. Includes 1st year of support for bug fixes and upgrades. Additional years of support for bug fixes and upgrades will be billed annually, refer to COMP-SW-U1.

#### LIC-JXS-I-3G

JPEG X-S Encode/Decode license Type I. Up to 3G signals. Perpetual license. Includes 1st year of support for bug fixes and upgrades. Additional years of support for bug fixes and upgrades will be billed annually, refer to COMP-SW-U1.

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## Ordering Information (continued)

<b>LIC-JXS-I-4K</b>	JPEG X-S Encode/Decode license Type I. Up to UHD signals. Perpetual license. Includes 1st year of support for bug fixes and upgrades. Additional years of support for bug fixes and upgrades will be billed annually, refer to COMP-SW-U1.
<b>evEDGE-UDX-3G-Z21</b>	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.
<b>evEDGE-HDR-3G</b>	License for a single path of 3DLUT HDR conversion on various evEdge hardware platforms. Up to 1080p signals supported. Check with each HW platform to determine maximum number of supported licenses.
<b>evEDGE-UDX-4K-Z29</b>	License to run a single path of an Equivalent 7814UDX-AES8-4K series product. Maximum 2x per Z29 compute node.
<b>evEDGE-HDR-4K-Z21</b>	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.