

SCORPION Mini I/O Modules

Video, Audio, Ethernet and Data Signal Interface Modules

The SCORPION series Mini I/O Modules provide signal interfaces of Video, Audio, Ethernet and Data to the SCORPION Media Processing Platform. Supporting a wide range of different signal types, the SCORPION-X18, -4 and -2 frames can be economically configured and customized for any application.

►Signal Interfaces

Video 12G/4K/3G/HD/SD-SDI DVB-ASI, HDMI	Audio Analog Audio, AES Audio, MADI, Intercom	Ethernet 10/100/1G/10G/40G Transport	Data USB, Serial Data, RS-232/422/485
---	---	--	---

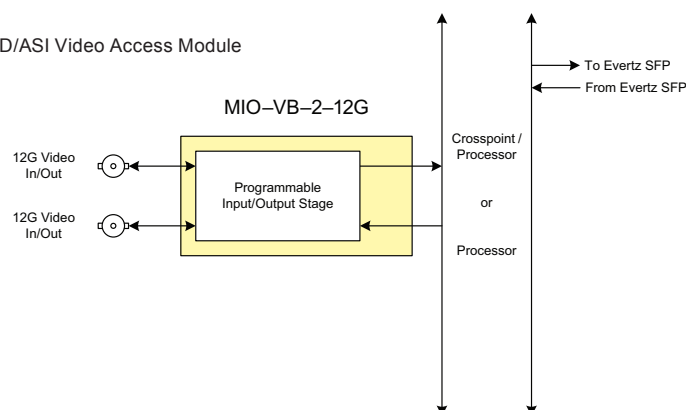
►Features & Benefits

- Supports up to 18x single-slot Mini I/O Modules per -X18/F18 frame
- Supports up to 4x single-slot Mini I/O Modules per -4 frame
- Supports up to 2x single-slot Mini I/O Modules per -2 frame
- Supports Video, Audio, Ethernet and Data signal types
- User configurable for maximum flexibility
- All hot-swappable

►Mini-I/O Modules

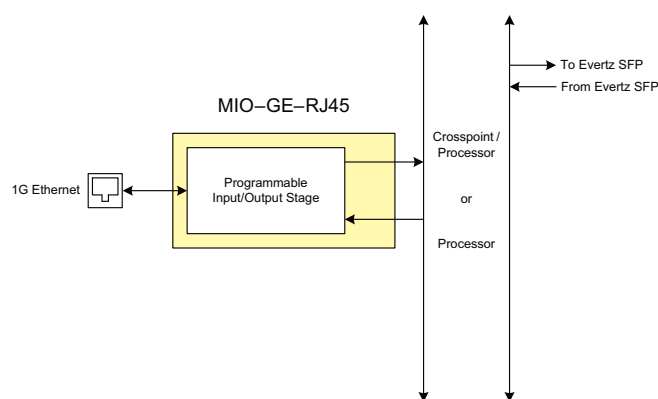
MIO-VB-2-12G

Dual BNC 12G/6G/3G/HD/SD/ASI Video Access Module



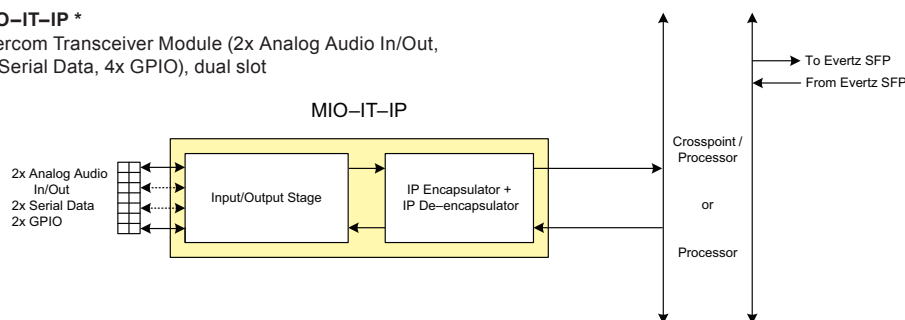
MIO-GE-RJ45

1 GbE Ethernet Access Module



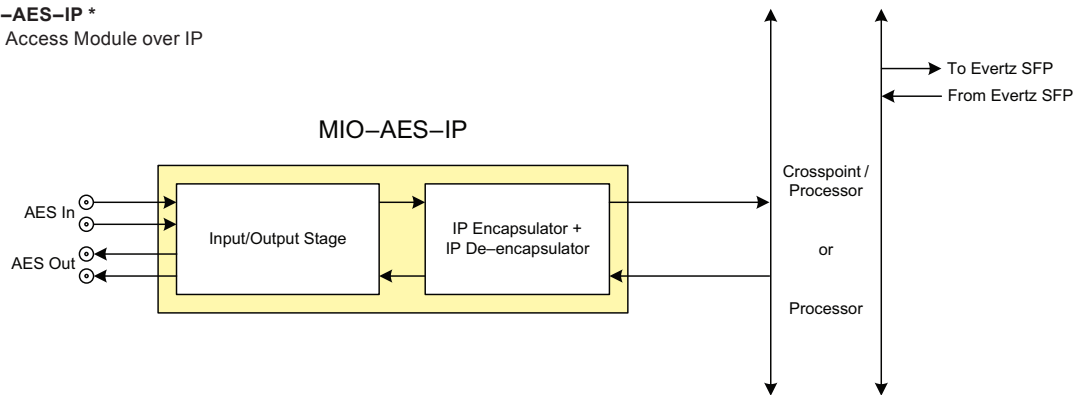
MIO-IT-IP *

Intercom Transceiver Module (2x Analog Audio In/Out, 2x Serial Data, 4x GPIO), dual slot



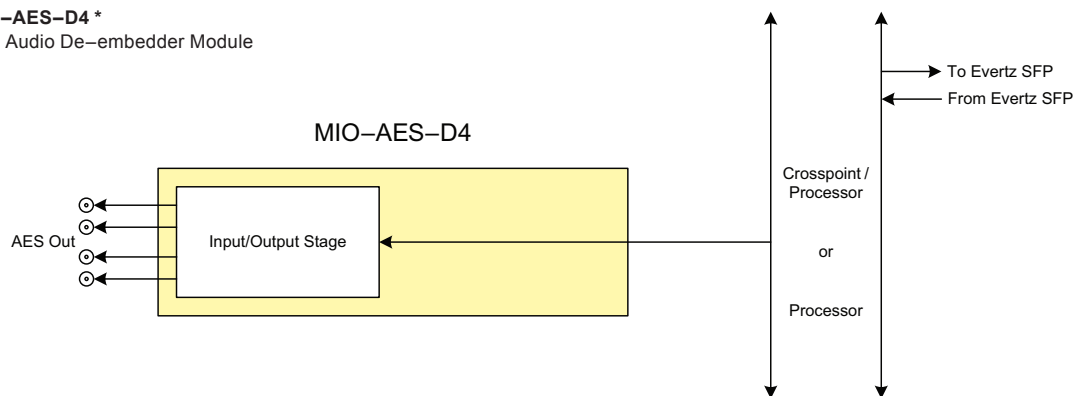
MIO-AES-IP *

AES Access Module over IP



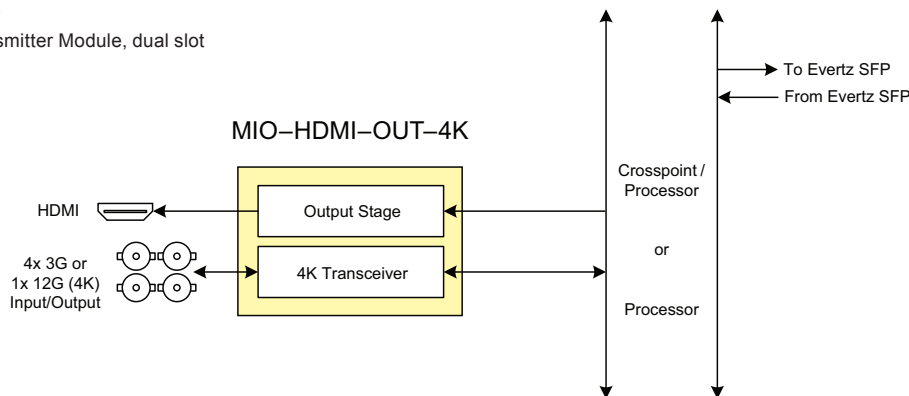
MIO-AES-D4 *

AES Audio De-embedder Module



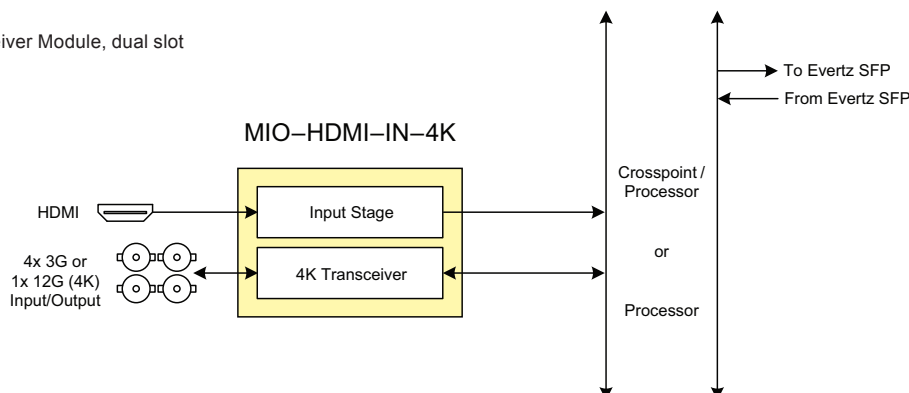
MIO-HDMI-OUT-4K *

4K SDI and HDMI Transmitter Module, dual slot



MIO-HDMI-IN-4K *

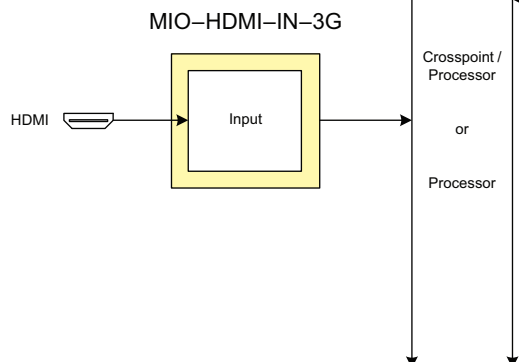
4K SDI and HDMI Receiver Module, dual slot



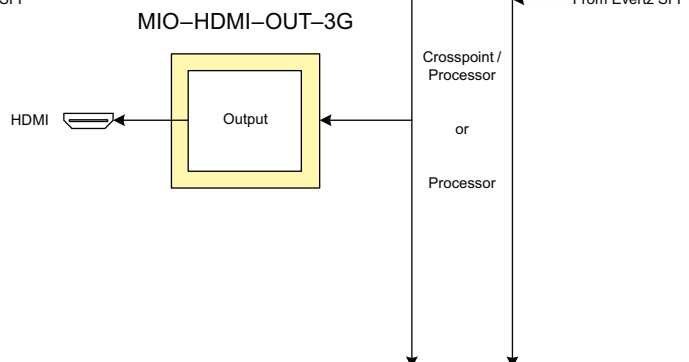
SCORPION Mini I/O Modules

Video, Audio, Ethernet and Data Signal Interface Modules

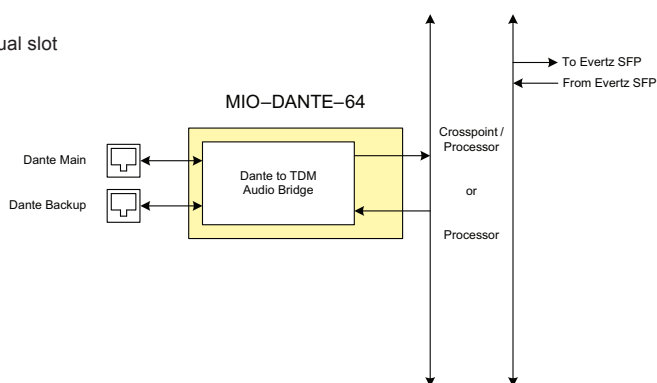
MIO-HDMI-IN-3G *
HDMI Input Access Module



MIO-HDMI-OUT-3G *
HDMI Output Access Module



MIO-DANTE-64 *
64x64 Dante Bridge I/O Module, dual slot



The Complete Solution Provider



SCORPION Mini I/O Modules

Video, Audio, Ethernet and Data Signal Interface Modules

Specifications

Electrical Inputs (MIO-VB-2-12G):

Reclocked Standards: SMPTE ST 2081 (12G-SDI),
SMPTE ST 424M (3Gb/s),
SMPTE ST 292M (1.5Gb/s),
SMPTE ST 259M (270Mb/s),
DVB-ASI
Connector: BNC per IEC 61169-8 Annex A
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 (MIO-VB-2-12G):

Connector: BNC per IEC 61169-8 Annex A
Impedance: 75Ω (nominal)
Signal Level: 800mV (nominal)
DC Offset: 0V ± 0.5V
Rise and Fall Time (Reclocked SFP's only):
12G: < 45ps
HD/3G: < 135ps
SD: < 900ps

Overshoot (Reclocked SFP's only):
< 10% of amplitude
Alignment Jitter (Reclocked SFP's only):
< 0.2UI to 1.485Gb/s
< 0.3UI to 2.97Gb/s
< 0.3UI to 12Gb/s

Ethernet Input/Output

(MIO-GE-RJ45, MIO-DANTE-64):

Standard: IEEE 802.3 (10 BaseT),
IEEE 802.3u (100 BaseTX),
IEEE 802.3ab (1000BaseTX)
Number of Ports: 1, 2 (Main/Backup MIO-DANTE-64)
Connector: RJ-45
Cable requirements:
10 BaseT: UTP category 3, 4, or 5 cable
up to 328ft/100m (2 pairs)
100 Base Tx: UTP category 5 cable up to
328ft/100m (2 pairs)
1000Base Tx: UTP category 5 cable up to
164/50m (4 pairs)

HDMI:

Connector Type: HDMI
Number of Connectors: 1
Resolution: 4K (4096x2160/60) max
(-4K HDMI version)
3G (1920x1080/60) max
(-3G version)
HDMI Audio: Yes

AES Inputs:

Standard: SMPTE ST 276 — unbalanced
AES, Dolby E compatible
Number of Inputs: 2 (3606AES-IP)
Connector: Mini DIN 1.0/2.3
Sampling Rate: 32-48kHz
Impedance: 75Ω
Return Loss: > 15dB
Amplitude (min to max):
320mV to 1.2V p-p

AES Outputs:

Standard: SMPTE ST 276 — Unbalanced
AES, Dolby E compatible
Number of Outputs: 2 (3606AES-IP)
4 (3606AES-D4)
Connector: Mini DIN 1.0/2.3
Sampling Rate: 32-48kHz
Impedance: 75Ω
Return Loss: > 15dB
Amplitude: 1V p-p ± 0.1V p-p
Rise/Fall time: 35ns ± 5ns

Intercom Module Analog Audio (MIO-IT-IP):

Number of Signals: 2 inputs, 2 outputs
Type: Balanced Analog Audio
Industry Standards: Clearcom, RTS-Telex
Connector: Multi-pin Removable terminal block
Input Impedance: > 10K Ω
Output Impedance: 66Ω
Signal Resolution: 24-bit
Sampling Rate: 48kHz
Gain Flatness: ± 2dB
Maximum Input Level: +20dBu
Maximum Output Level:
Into 10K Ω +20dBu
Into 600 Ω +19dBu
SNR: TBD
THD: TBD
Crosstalk: TBD
Controllable Gain: -10dB to +10dB

Intercom Module Unbalanced/Party-Line

Type Audio (MIO-IT-IP):

Number of Signals: 2
Type: Analog Audio, Full Duplex,
Unbalanced
Industry Standard: Clearcom, RTS-Telex
Connector: Multi-pin removable terminal block
Signal Coupling: AC coupled
(accommodates 30V "wet" inputs)
Bridging Impedance: > 10K Ω
Signal Resolution: 24-bit
Sampling Rate: 48kHz
Sidetone Null: > 25dB
Sidetone Null Range: 100-300Ω load

Frequency Response: 120-20kHz
Gain Flatness: ±2dB
Maximum Input Level: +5dBu
Maximum Output Level:
+5dBu (into 200Ω load)
SNR: TBD
THD: TBD
Crosstalk: TBD
Controllable Gain: -5dB to +5dB (into 200Ω load)
Receive Signaling: 4V DC min (ClearCom),
20kHz ±500Hz (RTS)
11V DC min (ClearCom),
20kHz ±100Hz (RTS)
Send Signaling:

Intercom Module RS-422/485 Serial Data (MIO-IT-IP):

Number of Signals: 2
Connector: Multi-pin removable terminal block
Type: RS-485 or RS-422 (selectable)
Input Termination: 120Ω or Open (selectable)
Input Failsafe Bias: 200mV (3.3mA into 60Ω)
or None (selectable)
Bit Rate:
RS-485: Compatible with all
Telex RS-485 rates
460kb/s
RS-422:

Intercom Module General Purpose

Inputs (MIO-IT-IP):

Type: Opto-isolated, Active low
Number of inputs: 2
Connector: Multi-pin removable terminal block
Voltage:
Safe Voltage Range:
-20V to +10V
Off Condition (min): > +3.5V
On Condition (max):
< +2.5V (active low)
Current:
Minimum: 1mA
Maximum: 10mA (internally limited)

Intercom Module General Purpose

Output (MIO-IT-IP):

Type: Dry contact relay closure,
normally open
Number of Outputs: 2
Connector: Multi-pin removable terminal block
Minimum Current: 100mA

Ordering Information

MIO-VB-2-12G	Dual BNC 12G/6G/3G/HD/SD/ASI Video Access Module
MIO-GE-RJ45	1 GbE Ethernet Access Module
MIO-AES-IP	AES Access Module over IP
MIO-AES-D4	AES Audio De-embedder Module
MIO-IT-IP	Intercom Transceiver Module (2x Analog Audio In/Out, 2x Serial Data, 4x GPIO), dual slot
MIO-HDMI-IN-3G	HDMI Input Access Module
MIO-HDMI-OUT-3G	HDMI Output Access Module
MIO-HDMI-IN-4K	4K SDI and HDMI Input Module, dual slot
MIO-HDMI-OUT-4K	4K SDI and HDMI Output Module, dual slot
MIO-DANTE-64	64x64 Dante Bridge I/O Module, dual slot

Ordering Options:

+SA Standalone frame option

* Note: Some Mini I/O modules must have this option when placed inside
SCORPION-2 and SCORPION-4 standalone frames
(see above diagrams to confirm if +SA is required)

Enclosures:

SCORPION-X18 Media Processing Platform Multi-Frame with onboard
80x80 crosspoint (holds 18 modules)

SCORPION-X18-48VDC

Media Processing Platform Multi-Frame with onboard
80x80 crosspoint (holds 18 modules)

SCORPION-4

Media Processing Platform — Standalone Frame (holds 4 modules)

SCORPION-2

Media Processing Platform — Miniature Frame (holds 2 modules)



Planet Communications Asia PLC.

157 Soi Ramindra 34, Ramindra Rd., Tarang, Bangkok, Bangkok 10230

Tel: +66 2 792 2400 | Fax: +66 2 792 2499, +66 2 943 5771 | E-mail: sales@planetcomm.com

Audinate®, the Audinate logo and Dante® are registered trademarks of Audinate Pty Ltd. All other trademarks are the property of their respective owners.



PlanetComm: