

914-X SERIES HD VIDEO, ETHERNET AND SERIAL DATA MULTIPLEXER

Model 914-HDE



Moog Focal has been the leading manufacturer of reliable, high-performance, and high-quality multiplexers and media converters since 1983, specializing in standard and custom products for harsh environment applications. Our experience positions us perfectly to help you choose the best solution for your application.

Moog Focal's 914-HDE is an extremely compact, single card multiplexer for high definition video (3G/HD-SDI), Gigabit Ethernet, and serial data. The 4 or 6 Gbaud optical interface provides extra capacity for replacing multiple media converters and multiplexers, thus reducing size, weight, power, and cost. A suite of 914-X Series expansion cards offers more Ethernet and serial data channels, plus NTSC/PAL video, sonars, CAN Bus, responders, and hydrophones.

The 914-X Series supports many applications for Remotely Operated Vehicles (ROVs), HD video platforms, and electro-optical (EO) sensor pods. With its condensed size and modular expansion, via stacking connectors or harnesses, the 914-X Series system enables flexible installations in highly constrained spaces, as well as distributed node-based topologies for larger systems, typically using optical multiplexing, such as CWDM.

Moog Focal's advanced FPGA-based design includes real-time diagnostics, field-upgradable firmware, and software configuration. User-configurable optical bandwidth provides system integrators with optimized, cost-effective solutions now that can be easily reconfigured or extended in the future.

Features:

- Supports SD-SDI, HD-SDI and 3G-SDI video, Fast Ethernet and Gigabit Ethernet
- Supports two configurable isolated serial channels for camera controls and sensors
- 4 Gbps (standard) or 6 Gbps optical transceivers
- Expansion interfaces for:
 - Multiple Gigabit Ethernet
 - Multiple NTSC / PAL video
 - Multiple isolated serial channels (RS-232 / RS-485 / RS-422 / TTL)
 - CAN bus, hydrophone, TTL, sonar
- Real-time diagnostics and Graphical User Interface (GUI)
- Sub-millisecond latency
- Reclocked video
- Software configuration
- Rugged design for harsh environment, including 6000 psi pressure tolerant version

ADVANTAGES

- Reduces cost and size of systems requiring HD video, SD video, Ethernet and serial interfaces
- Supports a wide range of optical options, including CWDM wavelengths and multi-mode configurations
- Simplifies troubleshooting with advanced diagnostics

APPLICATIONS

- Remotely Operated Vehicles (ROVs)
- Pipe inspection robots
- Bomb disposal robots
- Camera / sonar add-ons for ROVs
- Remote video security platforms
- Remote video broadcast platforms
- EO pods

SPECIFICATIONS

TECHNICAL DATA

HD Video	
No. of Channels	1
Format	3G-SDI SMPTE-424M-A (optional) HD-SDI SMPTE-292M SD-SDI SMPTE-259M-C
Data Rates	3G-SDI: 2.970 Gbps (optional) HD-SDI: 1.485 Gbps SD-SDI: 270 Mbps
Impedance	75 Ω
Latency	< 20 μ s (not including fiber)
Ethernet	
No. of Channels	1
Format	10BASE-T, 100BASE-TX 1000BASE-T (optional)
Serial Data	
No. of Channels	2
Format	RS-232, RS-485, RS-422, TTL, configurable, isolated
Data Rate	RS-232 / TTL: 230 kbps NRZ max. RS-422 / 485: 2.5 Mbps NRZ max.
Optical	
Optical Fiber	1 or 2 singlemode (9 / 125 μ m)
Baud Rate	4.0 Gbaud standard 6.0 Gbaud optional
Wavelength	1310 / 1550 nm or CWDM
Optical Budget	> 20 dB
Options	Bidirectional transceivers, higher or lower optical budgets, multimode, higher optical data rates for 3G and GbE
Electrical	
Voltage	+4.5 to +13.5 VDC
Consumption	5 W typ., 7.5 W max. Expansion cards add additional power consumption
Protection	Overvoltage, reverse voltage, undervoltage, time delay fuse

Diagnostics	
LEDs	Power status, video status, optical status, serial activity, Ethernet status and activity
LED Header	Power status, video status, optical status, serial activity, Ethernet status and activity
RS-232 to PC	Diagnostics from remote and console through GUI for system status and configuration
Mechanical	
Weight	< 80 g (0.18 lb)
Dimensions	40.6 mm x 88.9 mm
Connectors	
Video	SMB, 75 Ω
Ethernet	RJ-45
Serial Data	Molex MicroFit, 8-pin
Power	Molex, 0.156 in spacing, 2-pin
Diagnostics	Molex 1.0 mm Pico-Clasp connector, 3-pin
LED Header	FCI Minitex 127, 10-pin
Environmental	
Temperature	-10 $^{\circ}$ C to +60 $^{\circ}$ C, operational -40 $^{\circ}$ C to +85 $^{\circ}$ C, storage
Humidity	85% RH, non-condensing
Shock	30 g, 11 ms half sine, 3 axis
Vibration	5 g, 25 - 1000 Hz, 3 axis
ESD	\pm 15 kV air / HBM, \pm 8 kV contact
Options	Extended temperature
Expansion Cards	
914-VDX	2 analog video channels and 4 isolated serial channels (RS-232 / 422 / 485 / TTL)
914-EX	2 Gigabit Ethernet channels (non-switched)
914-AX	Focal AIB plugin module support: Hydrophone, CANbus, Isolated TTL, analog sonar interfaces, Tritech® ARCNET, isolated RS-232, isolated RS-485, isolated RS-422
914-DX	6 isolated serial channels (RS-232 / 485 / 422 / TTL)

For product information, visit www.moog.com

For more information or the office nearest you, contact us online, focal@moog.com

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