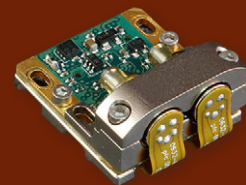


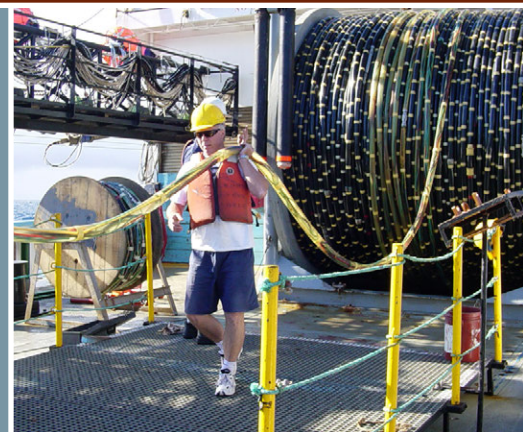
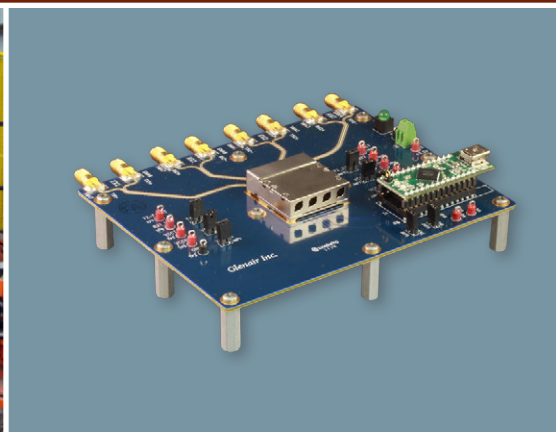
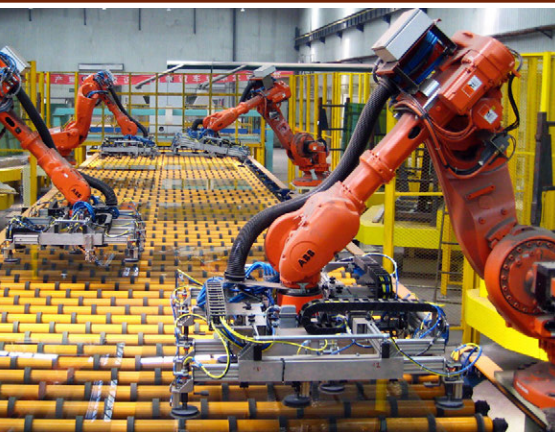
SMALL FORM-FACTOR

OPTO-ELECTRONIC INTERCONNECT SOLUTIONS



FOR HARSH-ENVIRONMENT ETHERNET, VIDEO, HIGH-SPEED DATA, AND SIGNAL AGGREGATION

MAY 2014

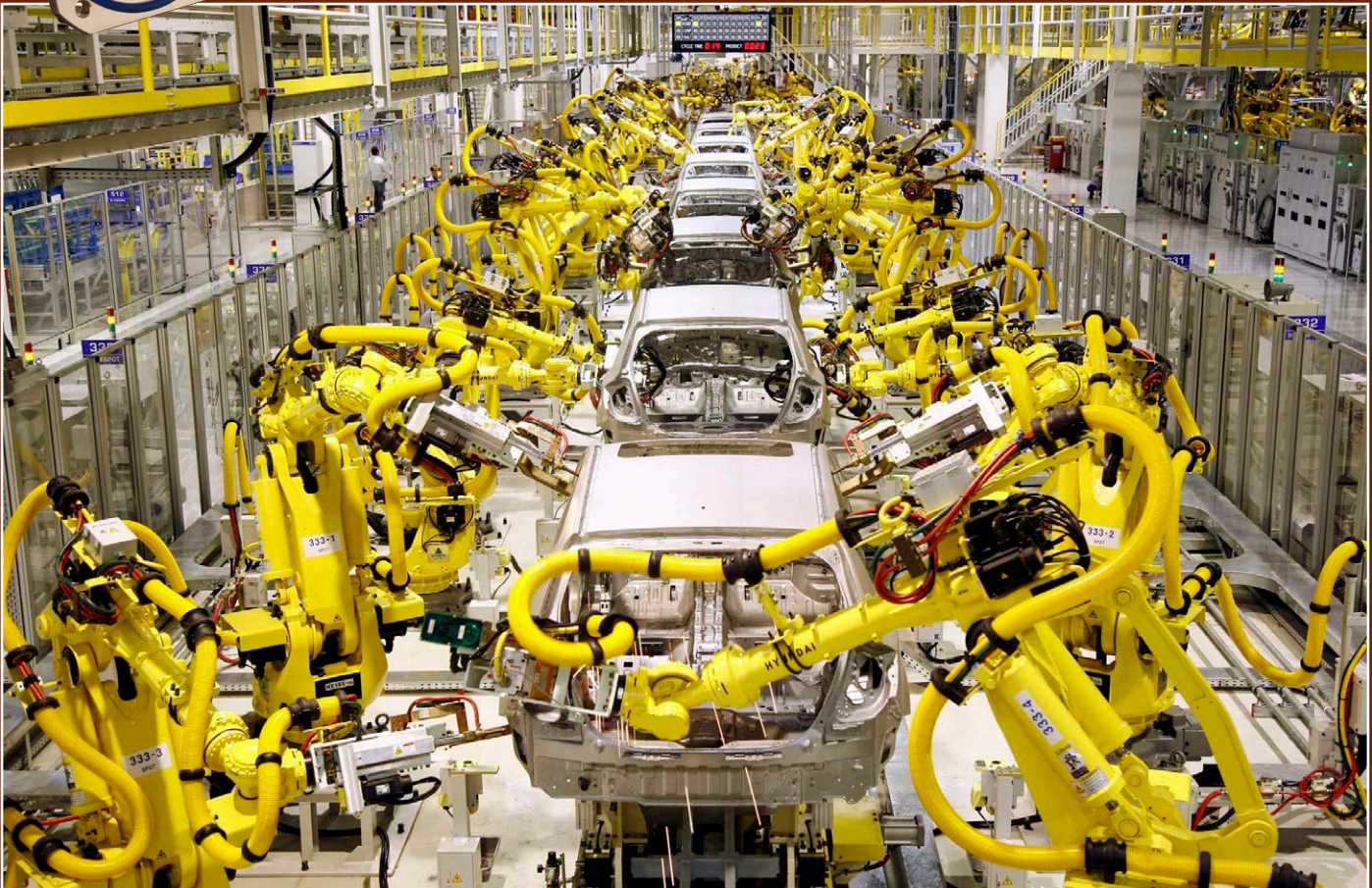


ETHERNET, VIDEO,
AND HIGH-SPEED
DATA NETWORKING

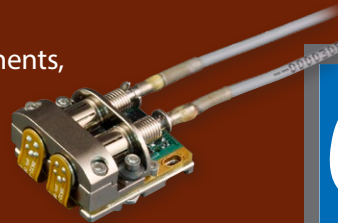
OPTO-ELECTRONIC INTERCONNECT SOLUTIONS



*For size and weight savings in avionics,
naval, ground tactical equipment, oil and gas,
industrial, mining, in-flight entertainment, and
other harsh application environments*



The need for reduced weight and small form-factor components, particularly in airframe and other high-performance environments, has led Glenair to develop a revolutionary new opto-electronic product series that incorporates transmitter and receiver functions, fiber-to-copper media conversion, and signal aggregation directly into interconnect wiring systems. These harsh-environment interconnect technologies reduce size and weight, and improve the performance of Ethernet, Video and High-Speed Digital applications—by leveraging the strengths of both electrical and optical media. Glenair offers both standard catalog solutions, as well as the integration of electronics or opto-electronics into rugged custom packages and cable assemblies per customer and application requirements.



Glenair®

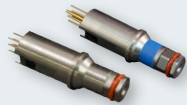
Glenair, Inc.
1211 Air Way
Glendale, CA
91201-2497
818-247-6000
sales@glenair.com
www.glenair.com

SMALL FORM-FACTOR • HARSH-ENVIRONMENT

Opto-Electronic Interconnect Solutions for Ethernet, Video, High-Speed Data, and Signal Aggregation



Digital Opto-Electronic Transceivers, Transmitters and Receivers



(patent pending)

Size #8 Cavity Opto-Electronic Transmitter and Receiver Contacts

1.25 mm ARINC 801, 2.5 mm ELIO®, and 1.25 mm LuxCis® integrated solutions



Board-Mount Transceivers, Transmitters and Receivers

Surface-mount opto-electronic interconnect/board assemblies for rugged vibration and shock applications

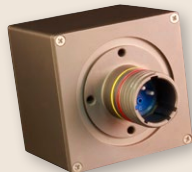


(patent pending)

Opto-Electronic Connectors and Modules

Series 80 Mighty Mouse and MIL-DTL-38999 type connectors and accessories with integrated transmitters and receivers

Copper-to-Fiber Media Converters



Ethernet Media Converters

Electrical/fiber optic Ethernet Media Converters



Video Media Converters

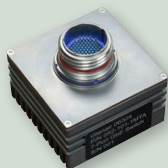
Electrical/fiber optic Video Media Converters



Signal Aggregator Systems

Multiple signal type aggregation to high datarate fiber optics

Ethernet Switches



Ethernet Switches

5- and 7-Port Unmanaged Ethernet Switches and breakout cables



HARSH-ENVIRONMENT

Opto-Electronic Interconnect Solutions



Technology can be integrated into mil-standard connectors or ruggedized packaging to suit any application

Unlock the huge bandwidth of optical fiber and dramatically reduce the size and weight of interconnect systems

Glenair leverages its extensive portfolio of military and aerospace interconnect products to bring you ruggedized opto-electronic solutions, converting signals between the electrical domain and the fiber domain. These opto-electronic products are designed for harsh military/aerospace system and subsystem environments and will operate reliably over very wide temperature ranges and high shock and vibration conditions; they have been optimized to minimize size, weight and power and offer electrical-to-fiber conversion for Ethernet, video, signal aggregation and high-speed digital signals.

Glenair also offers integration of electronics or opto-electronics into rugged connector packages and cable assemblies per specific customer requirements. We offer rapid response in-house electrical/PCB design, and mechanical connector/backshell engineering from our vertically integrated factory. Our product portfolio is constantly evolving. Please contact Glenair for the latest developments, or custom solutions.

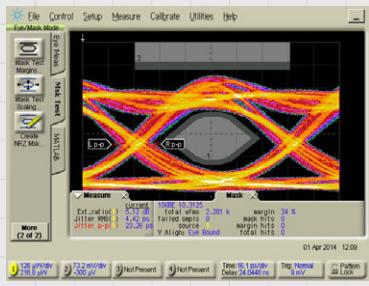
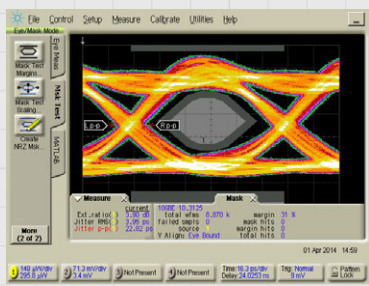
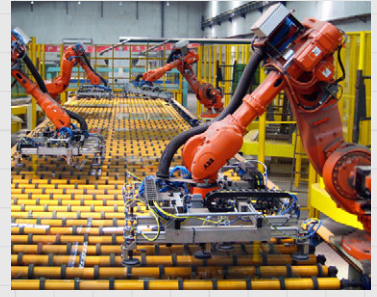


ADVANTAGES OF GLENAIR OPTO-ELECTRONICS

- Reduced size, weight, and power consumption
- Leverages the virtues of fiber optics: EMI immunity, network security, increased transmission distance
- Advanced management and control features
- High shock and vibration to support mil/aero applications
- Wide operating temperature range: -40°C to +85°C and beyond
- Designed IAW military and aviation requirements: MIL-STD-883, MIL-STD-461, DO-160 and others

SERIES 050 OVERVIEW

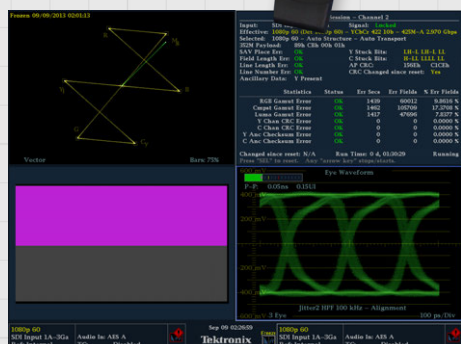
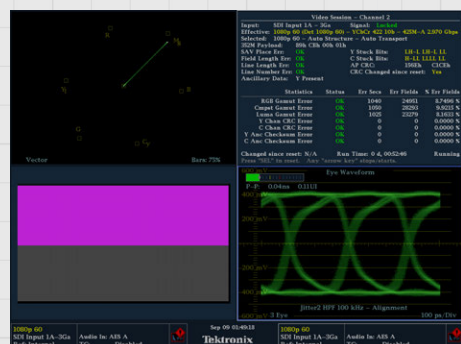
Harsh-Environment, Small Form-Factor Opto-Electronic Interconnect Solutions



PROVEN-PERFORMANCE OPTO-ELECTRONIC INTERCONNECT SOLUTIONS

- Military, industry-standard and custom connector integration
- Custom aggregation media converters
- Integration of active components into cable assemblies
- Link testing and qualification

Laboratory link test and qualification data for harsh-environment opto-electronic solutions are available—just contact the factory



For more information contact Glenair at **818-247-6000** or visit our website at www.glenair.com U.S. CAGE code 06324



SIZE 8 CAVITY

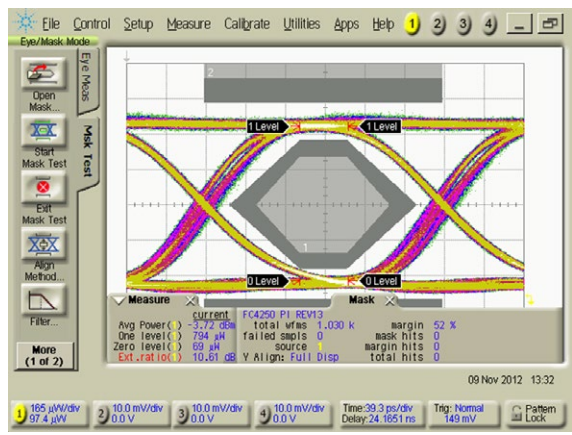
Opto-Electronic Contacts

Size 8 Cavity Opto-electronic contacts transmit and receive differential CML or LVPECL electrical signals over Multimode fiber optic cable. Transmitters consist of a laser driver or LED driver with a temperature compensation circuit to maintain optical power over the entire operating temperature range, and a 850nm VCSEL laser or a 1300nm LED. Receivers consist of a PIN Photo Detector, a Transimpedance Amplifier with automatic gain control circuit, and a Limiting Amplifier. Differential output data signals are LVPECL or CML compatible. The transmitter has a Tx Disable pin to turn off transmitter output.

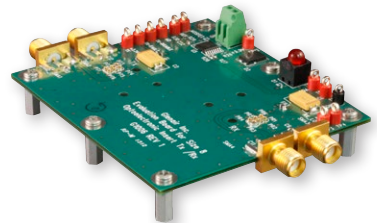
- **Fast and Gigabit Ethernet, DVI, HDMI video capable transmitter and receiver-equipped contacts**
- **ARINC 664, 801, 803, 804 and 818 standard compliant**
- **Link distances up to 550 meters, multimode**
- **Single, 3.3 V power supply**
- **Wave-solderable termination with RoHS-compliant solders**



- **Transmit (Tx) and Receive (Rx) Opto-electronic contacts for use in ARINC 600 and other size #8 cavity equipped connectors**
- **Current offerings include 1.25mm ARINC 801 and 2.5mm ELIO® solutions**



4.25 Gbps / +25°C



Evaluation Test Boards Available

Size 8 Cavity Opto-Electronic Transmitter and Receiver Contacts for Ethernet, Video and High-Speed Data



PRODUCT SELECTION GUIDE

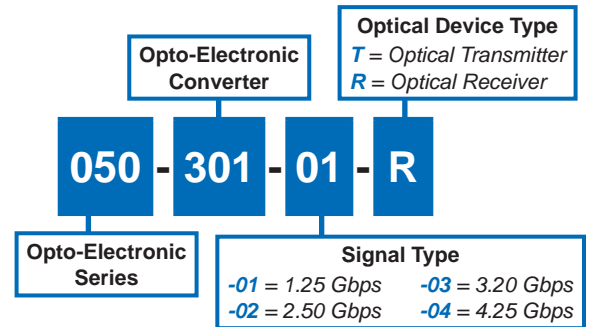
visit glenair.com for detailed product datasheets

TRANSMITTER AND RECEIVER CONTACTS, 850nm LASER, ARINC 801 1.25mm TERMINUS



050-301
(patent pending)

Size 8 Cavity Opto-electronic contacts transmit and receive differential CML electrical signals over Multimode fiber optic cable. Transmitters consist of a laser driver with a temperature compensation circuit to maintain optical power over the entire operating temperature range, and a 850nm VCSEL laser. Receivers consist of an 850nm PIN Photo Detector, a Transimpedance Amplifier with automatic gain control circuit, and a Limiting Amplifier. Differential output data signals are CML compatible. The transmitter has a Tx Disable pin to turn off transmitter output and a Tx Fault pin to signal a fault condition. Receiver includes a CMOS compatible Loss of Signal Indicator to prevent invalid data.

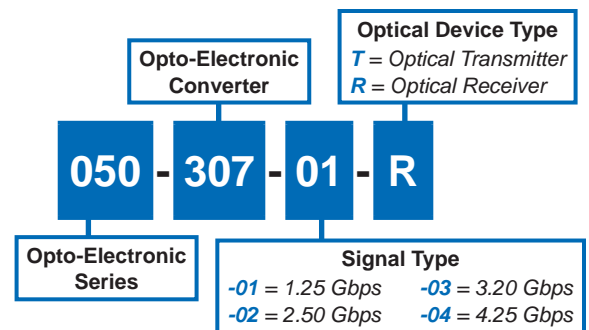


TRANSMITTER AND RECEIVER CONTACTS, 850nm LASER, ELIO® 2.5mm TERMINUS



050-307
(patent pending)

Size 8 Cavity Opto-electronic contacts transmit and receive differential CML electrical signals over Multimode fiber optic cable. Transmitters consist of a laser driver with a temperature compensation circuit to maintain optical power over the entire operating temperature range, and a 850nm VCSEL laser. Receivers consist of an 850nm PIN Photo Detector, a Transimpedance Amplifier with automatic gain control circuit, and a Limiting Amplifier. Differential output data signals are CML compatible. The transmitter has a Tx Disable pin to turn off transmitter output and a Tx Fault pin to signal a fault condition. Receiver includes a CMOS compatible Loss of Signal Indicator to prevent invalid data.

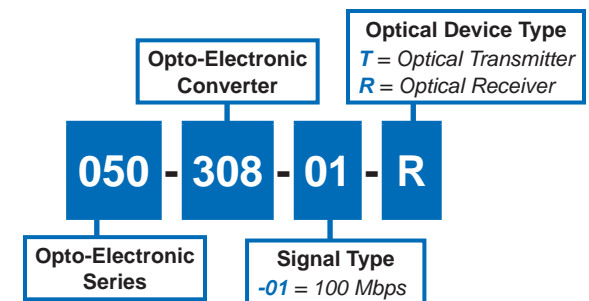


TRANSMITTER AND RECEIVER CONTACTS, 1300 nm LED, ARINC 801 1.25mm TERMINUS



050-308
(patent pending)

Size 8 Cavity Opto-electronic contacts transmit and receive differential LVPECL electrical signals over Multimode fiber optic cable. Transmitters consist of an LED driver with a temperature compensation circuit to maintain optical power over the entire operating temperature range, and a 1300nm LED. Receivers consist of a PIN Photo Detector, a Transimpedance Amplifier with automatic gain control circuit, and a Limiting Amplifier. Differential output data signals are LVPECL. The transmitter has a Tx Disable pin to turn off transmitter output.



OPTO-ELECTRONIC CONTACT EVALUATION BOARD



050-301

The evaluation board is designed as an interface to allow evaluation of the size 8 transmitters or receivers. Devices are powered through the 3.3V and GND connections. For the transmitter fault pin can be monitored and the transmitter disable can be controlled via an external voltage supply. For the receiver, loss of signal (LOS) state can be monitored.

Test configuration options:

- Transmitter only
- Receiver only, and
- Both transmitter and receiver either in a single link or two separate links.



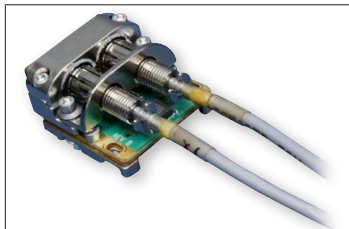
HIGH-SHOCK, HIGH-VIBRATION

PCB-Mount Opto-Electronics

Connectorized, high-density, board-mount transceivers built for rugged vibration and shock applications up to 10Gbps

Glenair PCB mount transceivers are ruggedized harsh-environment equivalents to SFP transceivers but with mechanical design suited to the harsh temperature and vibration environments found in Military and Aerospace applications. PCB mount optical transceivers support optional Digital Monitoring Interface (DMI) features in accordance with SFF 8472. The Transceiver is comprised of a transmitter section and a receiver section that reside on a common package and interface with a host board through a high-speed electrical connector.

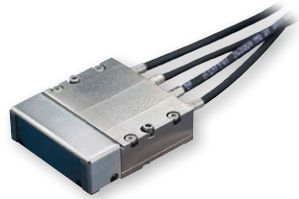
- Smallest footprint available
- Passed jet fighter and space launch shock and vibration testing
- No soldering required
- CML 100 Ohm differential input and output
- -40°C to +85°C operating temperature range—extended temperature ranges available



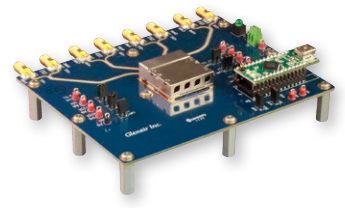
GC fiber optic connector retained with mounting screws to withstand high vibration and shock



PCB-mount opto-electronics feature Samtec high-speed surface-mount connectors



Dual-transceiver, Quad-Transmitter and Quad-Receiver form factor with ARINC 801 contacts



Evaluation boards for all PCB mount transceiver configurations are available

Harsh-Environment PCB-Mount Transceivers, Transmitters and Receivers



PRODUCT SELECTION GUIDE

visit glenair.com for detailed product datasheets

General Purpose Applications:

High-Speed Digital balanced signals (i.e. 4B/5B, 8B/10B, 62B/64B etc)

Fast Ethernet, Gigabit Ethernet, 10G Ethernet Fiber Channel (1X, 2X, 4X, 8X), ARINC 818, AFDX, SFPDP, Serial Rapid I/O (sRIO)

Video Applications

DVI, ARINC 818, SMPTE (SDI, HD-SDI, 3G-SDI)

Part Number	Description	Data Rate (Gbps)	Wavelength (nm)	Laser Type	Number of Transmitters	Number of Receivers	Number of Fibers	Fiber Type	General Purpose	Video (DVI, ARINC 818)	Video SMPTE (HD-SDI)	Video SMPTE 3G-SDI	Distance
050-315	PCB Mount OE Transceiver 5G, MMF	0.1-5	850	VCSEL	1	1	2	MMF	Y	Y	N	N	1m-500m
050-316	PCB Mount OE Dual-Transmitter 5G, MMF	0.1-5	850	VCSEL	2	0	2	MMF	Y	Y	N	N	1m-500m
050-317	PCB Mount OE Dual-Receiver 5G, MMF	0.1-5	850	N/A	0	2	2	MMF	Y	Y	N	N	1m-500m
050-318	PCB Mount OE Transceiver, 4G, SMF	0.1-4.25	1310	FP	1	1	2	SMF	Y	Y	N	N	1m-10km
050-319	PCB Mount OE Dual Transmitter, 1310nm FP, 4G, SMF	0.1-4.25	1310	FP	2	0	2	SMF	Y	Y	N	N	1m-10km
050-320	PCB Mount OE Dual Receiver, 1310nm, 4G, SMF	0.1-4.25	1310	N/A	0	2	2	SMF	Y	Y	N	N	1m-10km
050-321	PCB Mount OE Transceiver, 1300nm LED, 200M, MMF	0.05-2	1300	LED	1	1	2	MMF	Y	N	N	N	2km
050-322	PCB mount 10Gbps XVR, 1310nm FP, 2km, SMF	5-10.5	1310	FP	1	1	2	SMF	Y	Y	N	N	1m-2km
050-324	PCB Mount OE Transceiver, 1310nm DFB, 4G, SMF	0.1-4.25	1310	DFB	1	1	2	SMF	Y	Y	N	N	1m-40km
050-325	PCB Mount OE Dual Transmitter, 1310nm DFB, 4G, SMF	0.1-4.25	1310	DFB	2	0	2	SMF	Y	Y	N	N	1m-40km
050-326	PCB Mount OE Dual Receiver, 1310nm DFB, 4G, SMF	0.1-4.25	1310	N/A	0	2	2	SMF	Y	Y	N	N	1m-40km
050-327	PCB mount 10Gbps SR Serial XVR, 850nm, MMF	5-10.5	850	VCSEL	1	1	2	MMF	Y	Y	N	N	1m-400m
050-328	PCB mount 10Gbps XVR, 1310nm DFB, 10km	5-10.5	1310	DFB	1	1	2	SMF	Y	Y	N	N	1m-10km
050-331	PCB Mount OE Dual-Transmitter SMPTE 3G-SDI	2.97	850	VCSEL	2	0	2	MMF	N	N	Y	Y	1m-1km
050-332	PCB Mount OE Dual-Receiver SMPTE 3G-SDI	2.97	850	N/A	0	2	2	MMF	N	N	Y	Y	1m-1km
050-333	PCB Mount OE Dual-Transceiver 5G MMF, ARINC 801	0.1-5	850	VCSEL	2	2	4	MMF	Y	Y	N	N	1m-500m
050-336	PCB Mount OE Quad-Transmitter 5G MMF, ARINC 801	0.1-5	850	VCSEL	4	0	4	MMF	Y	Y	N	N	1m-500m
050-337	PCB Mount OE Quad-Receiver 5G MMF, ARINC 801	0.1-5	850	N/A	0	4	4	MMF	Y	Y	N	N	1m-500m
050-339	PCB Mount OE Dual-Transceiver, 10G MMF, ARINC 801	0.1-5	850	VCSEL	2	2	4	MMF	Y	Y	N	N	1m-400m
050-340	SINGLE FIBER Bidirectional Transceiver, 2.5G, SMF	0.1-2.5	1310/ 1550	FP/FP	1	1	1	SMF	Y	Y	N	N	1m-2km
050-341	SINGLE FIBER Bidirectional Transceiver, 10G, SMF	5-10.5	1310/ 1550	DFB/DFB	1	1	1	SMF	Y	Y	N	N	1m-10km
050-342	CWDM Transceiver, 2.5G, SMF	0.1-2.5	CWDM	DFB	1	1	2	SMF	Y	Y	N	N	1m-20km
050-343	CWDM Transceiver, 10G, SMF	5-10.5	CWDM	DFB	1	1	2	SMF	Y	Y	N	N	1m-10km

Evaluation Boards		
Part No.	Description	for testing Part Number(s)
050-329	EVALUATION BOARD supporting Board Mount Transceivers, 1-10Gbps	050-315, 050-318, 050-321, 050-324
050-330	EVALUATION BOARD supporting Board Mount Dual Transmitters and Board Mount dual Receivers	050-316, 050-317, 050-319, 050-320, 050-325, 050-326, 050-331, 050-332
050-334	EVALUATION BOARD supporting PCB Mount Dual-Transceiver 050-333+	050-333
050-338	EVALUATION BOARD	050-336, 050-337
050-344	FMC Connectivity Card	All Glenair PCB Mount Components

Accessories		
Part No.	Description	Details
FA02454	Fiber Optic jumper cable, GC	Singlemode or multimode connects transceiver to mil/aero connector
FA03286	Fiber Optic jumper cable, ARINC 801	Singlemode or multimode connects transceiver to mil/aero connector
059-0007	PCB Threaded Insert	Simplifies installation of PCB transceivers



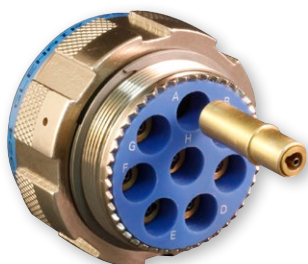
SMALL FORM-FACTOR • HARSH-ENVIRONMENT

Opto-Electronic Connectors

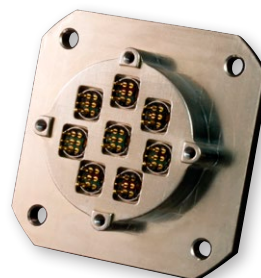
Environmentally sealed, triple-start connectors housing turnkey copper-to-fiber transceiver technology

Glenair is able to offer our Opto-Electronic solutions customers turnkey multichannel receptacle connectors housing integrated transceiver technology for fast/gigabit Ethernet, DVI and HDMI video, as well as various high-speed data transfer protocols. The two available connector designs incorporate Glenair small form-factor opto-electronic contacts (050-301) or an ELIO® equipped configuration that intermates with the standard ELIO® 2.5mm fiber optic terminus (050-307). Receptacles are populated with factory-tested size #8 contacts, and are ready for immediate use as fiber-optic-to-electrical circuit board I/O connectors. Special size #8 cavity adapters are also available to enable construction of compatible plug connectors on the cable side.

- **Catalog solutions include:**
 - 2.5mm ELIO® solution for multimode Ethernet, video, and high-speed data applications**
 - 1.25mm ARINC 801 multimode fiber optic termini solution for Ethernet, video, and high-speed data**
- **Made-to-order configurations with a wide range of connector packages including Glenair Series 80 Mighty Mouse**



Special size #8 cavity adapters facilitate construction of standard fiber optic plug connectors that intermate with the size #8 opto-electronic transceiver contacts



Opto-electronic receptacle connectors are populated with size #8 contacts, and ready for immediate assembly in I/O to circuit board applications

ELIO® is a registered trademark of SOURIAU

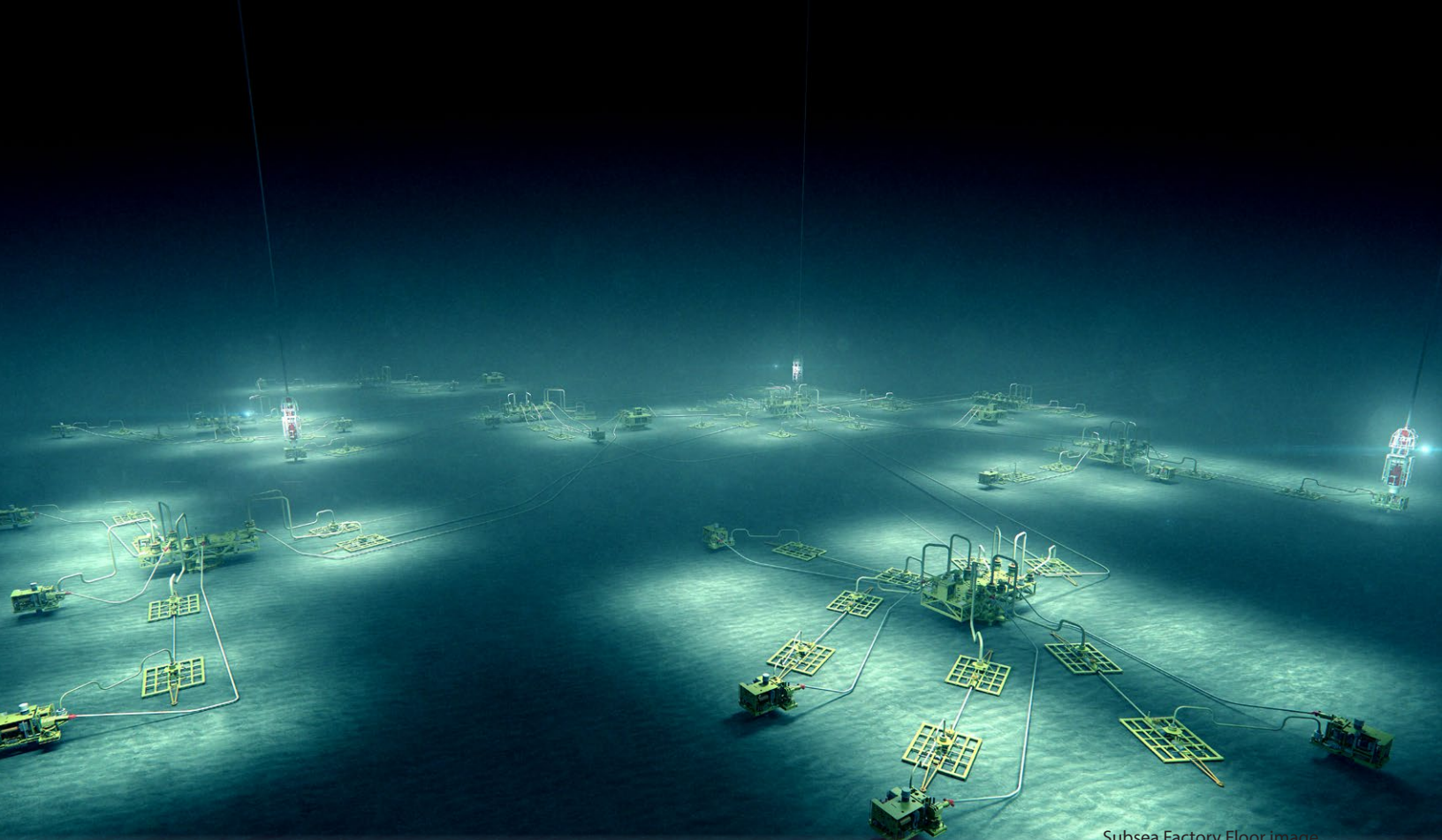
Opto-Electronic Connectors for Ethernet, Video, and High-Speed Data Applications



PRODUCT SELECTION GUIDE

visit glenair.com for detailed product datasheets

	Part No.	Description
	<p>050-304</p>	<p>050-304 MIL-DTL-38999 Series III Type Receptacle Connectors with Size 8 Opto-Electronic Contacts</p> <p>The 050-304 series of Active Opto-electronic sealed panel mount connectors offers customers the power to convert from electrical to fiber optic signals within a D38999 connector to support high speed fiber optic transmission in harsh environments. The 050-304 incorporates size 8 active contacts in one of three standard configurations to enable optical Transmitters, optical Receivers or Optical Transceivers, or custom configurations.</p>
	<p>059-0001</p>	<p>059-0001 Size 8 cavity adapter kit for 1.25mm ARINC 801 terminus</p> <p>Size 8 cavity adapter will convert D38999 size 8 cavities (Twinax, Coax, Quadrax or power) into ARINC 801 fiber optic cavities. Kit includes the adapter and an ARINC 801 terminus.</p>
	<p>059-0002</p>	<p>059-0002 Size 8 cavity adapter for ELIO® 2.5mm terminus</p> <p>Size 8 cavity adapter will convert D38999 size 8 cavities (Twinax, Coax, Quadrax or power) into ELIO® fiber optic cavities per EN4531.</p>
 <p><i>(patent pending)</i></p>	<p>050-313</p>	<p>050-313 Opto-Electronic Transceiver, MIL-DTL-38999 Type 2.5mm ELIO® Compatible, 100Mbps – 4.25Gbps</p> <p>Glenair 050-313 is a D38999 Type 11-02 receptacle connector incorporating an opto-electronic transceiver operating from 100Mbps to convert electrical signals to multimode fiber. The Glenair optical transceiver is ideal for harsh-environment, extreme shock, vibration and temperature avionics and military applications where copper cable link distance, bandwidth, weight or bulk make the use of twisted pair, Twinax or Quadrax copper conductors unacceptable.</p>
	<p>050-303</p>	<p>050-303 Opto-Electronic Receiver with Mighty Mouse connectors, 100Mbps – 2.5 Gbps</p> <p>Glenair 050-303 optical transceiver, connectorized with Series 805 Mighty Mouse connectors, employs state-of-the-art opto-electro-mechanical technology to provide effective harsh environment fiber-optic interconnect solutions for high-speed digital data.</p>



Subsea Factory Floor Image
© 2014 Aker Solutions

ETHERNET

Copper-to-Fiber Media Converters

Reduced form-factors for harsh- environment applications

Glenair offers turnkey harsh-environment media converters for in-line and select panel mount applications. The devices facilitate conversion of 10/100/1000BASE-SX/LX fiber optic gigabit Ethernet data streams to electrical signals servicing switches, routers, and other peripherals. Designed for use in ruggedized applications such as geophysical, naval, commercial and military aerospace, these reduced form-factor electrical-to-optical transceivers deliver proven performance with significant size and weight savings compared to conventional form-factor technologies. Available for a wide range of fiber optic formats, including 1.25mm, 1.57mm, 2.0mm, and 2.5mm ferrules, in both singlemode and multimode, Glenair's complete range of media converters meets virtually every fiber-optic-to-copper application requirement.



- Reduced form-factor devices for in-line conversion of electrical and optical signals
- Active cable versions that reduce the risk of damage to fiber optic interfaces
- Weight-saving technology that incorporates power and signal conversion functions
- Auto-negotiation 10/100/1000BASE-T to 100BASE-FX, 1000BASE-SX and 1000BASE-LX
- Advanced monitor & control functions via serial interface to facilitate network management and BIT

Copper-to-Fiber Media Converters for Ethernet Applications

PRODUCT SELECTION GUIDE



visit glenair.com for detailed product datasheets

EXAMPLE FUNCTIONAL BLOCK DIAGRAM FOR GLENAIR 050-105 ETHERNET MEDIA CONVERTER



050-105
10/100/1000BASE-T to
1000BASE-SX/LX Media
Converter

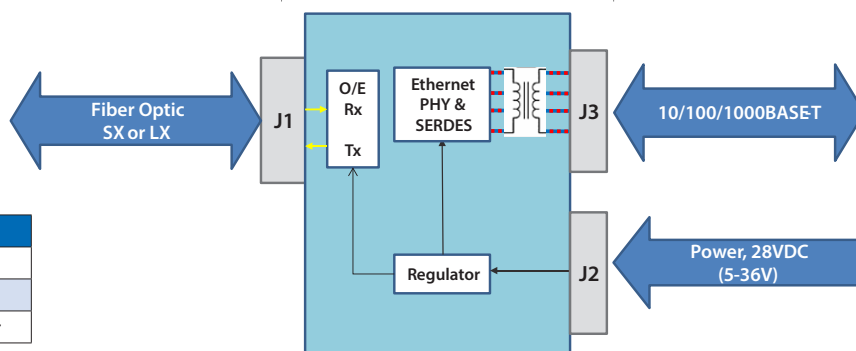
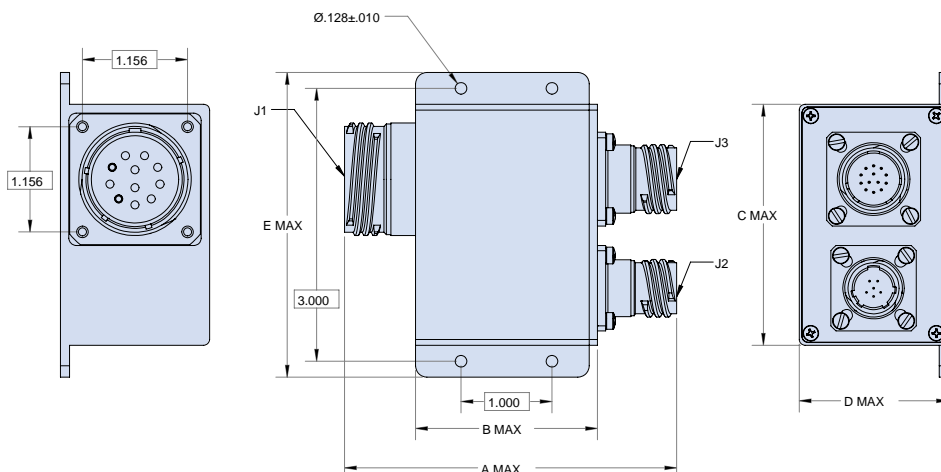


Table I: Signal Protocol

Code	Name	Medium
-SX	1000BASE-SX	Multimode Fiber
-LX10	1000BASE-LX10	Singlemode Fiber

	Part No.	Description		Part No.	Description
	050-101	1000BASE-T to 1000BASE-SX/LX Media Converter		050-112	10/100/1000BASE-T to SX, LX10, or FX Fiber Optic Ethernet, GFOCA Fiber Optic interface
	050-103	10/100/1000BASE-T to 1000BASE-SX/LX Media Converter with Mighty Mouse Connectors		050-113	10/100/1000BASE-T to SX, LX10, or FX Fiber Optic Ethernet, MIL-DTL-1560 interface
	050-104	10/100/1000BASE-T to 1000BASE-SX/LX Active Cable with Mighty Mouse Connectors		050-115	10/100/1000BASE-T to 1000BASE CWDM Media Converter
	050-110	10/100/1000BASE-T to 1000BASE-SX/LX, GFOCA, 38999 Quadrax (signal and BIT), 38999 (Power)		050-117	LRU Media Converter, Single or Dual Channel, 10/100/1000BASE-T to SX/LX Lightning Strike Protection DO160 level 3



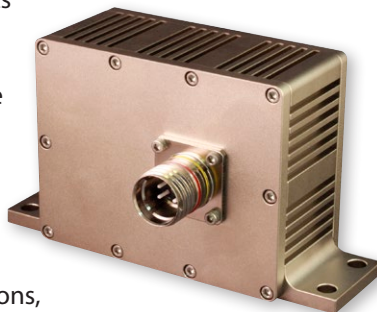
VIDEO

Copper-to-Fiber Media Converters

Reduced form factor media converters for harsh-environment video applications

Glenair Copper-to-Fiber-Optic Video Media Converters enable extended link distances, improved EMI and security in harsh environments and provide solutions for both MMF and SMF applications. These media converters support ruggedized military systems applications and are tailored to support a variety of Video protocols including DVI, HDMI, SMPTE (SDI, HD-SDI and 3G-SDI), ARINC 818 and more.

Many options for mil-spec and military-grade electrical and fiber optic connectors are available. Contact Glenair for custom configurations, application-specific designs and engineering services.



- Fiber Link 500m with MMF
- Fiber Link 10km with SMF
- 38999 with MIL-STD-1560 and custom contact arrangements—including quadrax and coaxial contact options
- Mighty Mouse electrical and fiber optic connectors
- Fiber Optic connectors including D38999, M28876, GHD, NGCON (M64266), HMA (M83526), and GFOCA
- Power supply functions with wide input-voltage ranges
- DVI, HDMI, SMPTE, ARINC 818
- Advanced monitor & control functions via serial interface to facilitate network management and BIT

Copper-to-Fiber Media Converters for Video Applications

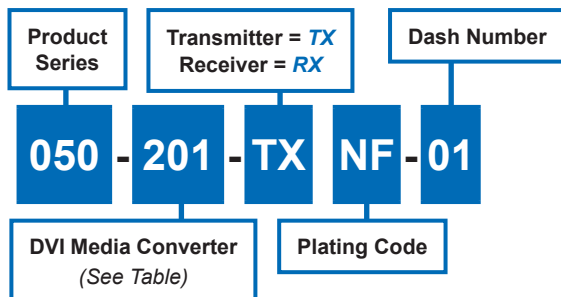
PRODUCT SELECTION GUIDE



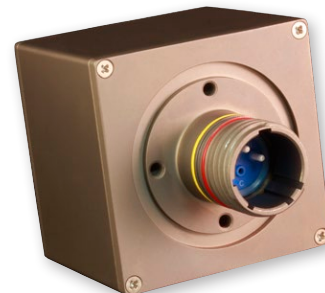
visit glenair.com for detailed product datasheets

MIL-DTL-38999 SERIES III TYPE DVI VIDEO MEDIA CONVERTER

How To Order



ENVIRONMENTAL PERFORMANCE

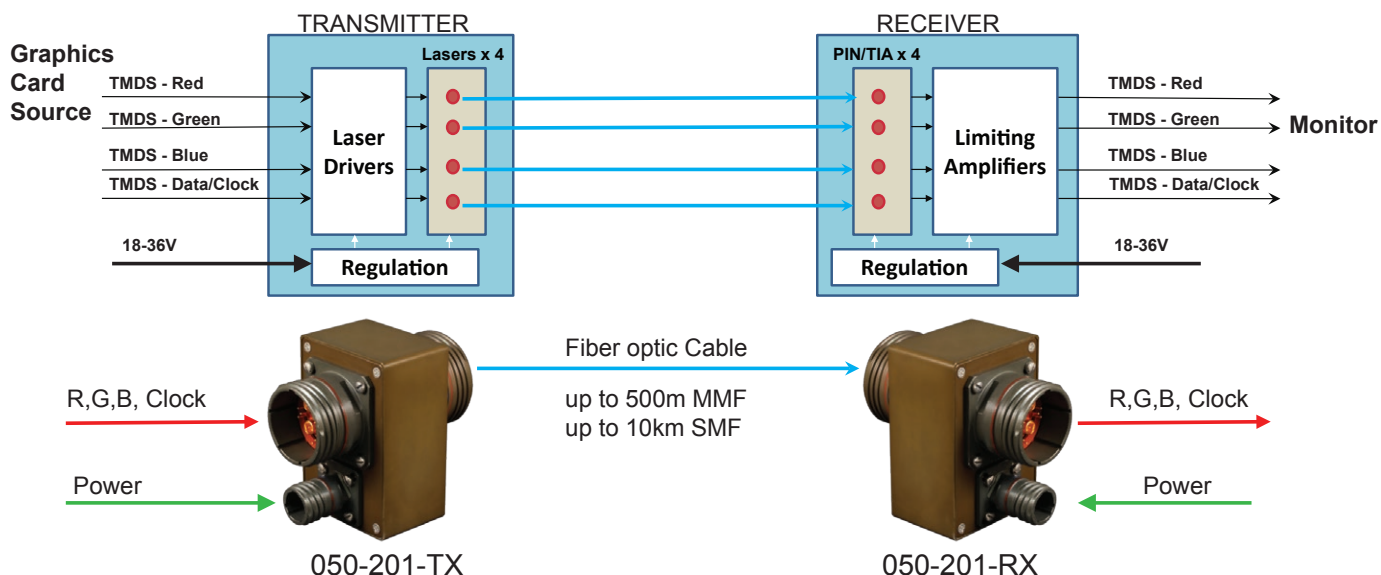


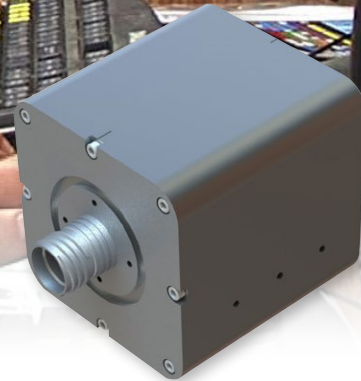
- -40°C to +85°C operating temperature range
- Meets MIL-STD-810 Mechanical Shock and Vibration
- Meets MIL-STD-1344 immersion resistance

Video Media Converter Selection Guide

	050-201	DVI Copper-to-Fiber Media Converter
	050-203	DVI Copper-to-4-Fiber, VCSEL, DO160 Lightning Strike level 3 and "dirty" 28V power
	050-206	DVI Copper-to-Fiber Media Converter
	050-207	4 Channel SMPTE HD-SDI & 3G-SDI Transmitter or Receiver
	050-204	4 Channel 3G-SDI MMF TX and 3G-SDI MMF RX, GHD Fiber, Mighty Mouse (Coax and Power).
	050-205	DVI Copper-to-Fiber Media Converter, Inline

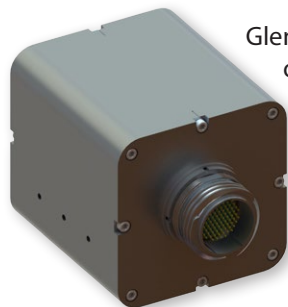
VIDEO MEDIA CONVERTER FUNCTIONAL BLOCK DIAGRAM





SIGNAL AGGREGATION Copper-to-Fiber Media Converters

Low data-rate signal multiplexing
copper-to-fiber media conversion



Glenair signal aggregation media converters integrate a set of compact opto-electronic modules to digitize and/or aggregate multiple common signal types, and combine them onto high-data-rate serial optical fiber channels. Silicon field-programmable gate array (FPGA) technology provides a flexible way to accommodate many signal I/O types.

- Dramatically reduce size, weight, wire count, and shielding of copper cables
- Leverage the high bandwidth of optical fiber by multiplexing many lower-data-rate signals onto a few fibers
- One high-speed opto-electronic interface can serve practically all signal types
- Ideal solution to enable optical rotary joints
- -40°C to +85°C operating temperature range
- Meets MIL-STD-810 Mechanical Shock and Vibration
- Meets MIL-STD-1344 immersion resistance
- Advanced monitor & control functions via serial interface to facilitate network management and BIT

Signal Aggregation Media Converter Selection Guide	
050-501	12-Channel RS422 Copper-to-Fiber Media Converter
050-502	6x RS-422 and 6x ARINC 429 Copper-to-Fiber Media Converter
050-503	DVI/HDMI (Dual fiber) + USB(HID) interface (KVM) Copper-to-Fiber Media Converter
050-504	CAN Bus "bridge"(ARINC 825), ARINC 429, ARINC 664 (AFDX ethernet) DO-160 compliant Copper-to-Fiber Media Converter
050-505	2x Ethernet, 2xRS-422 or 2xRS-232 (422 & 232 not simultaneously) Copper-to-Fiber Media Converter

Copper-to-Fiber Media Converters Multiplexing Signal Aggregator

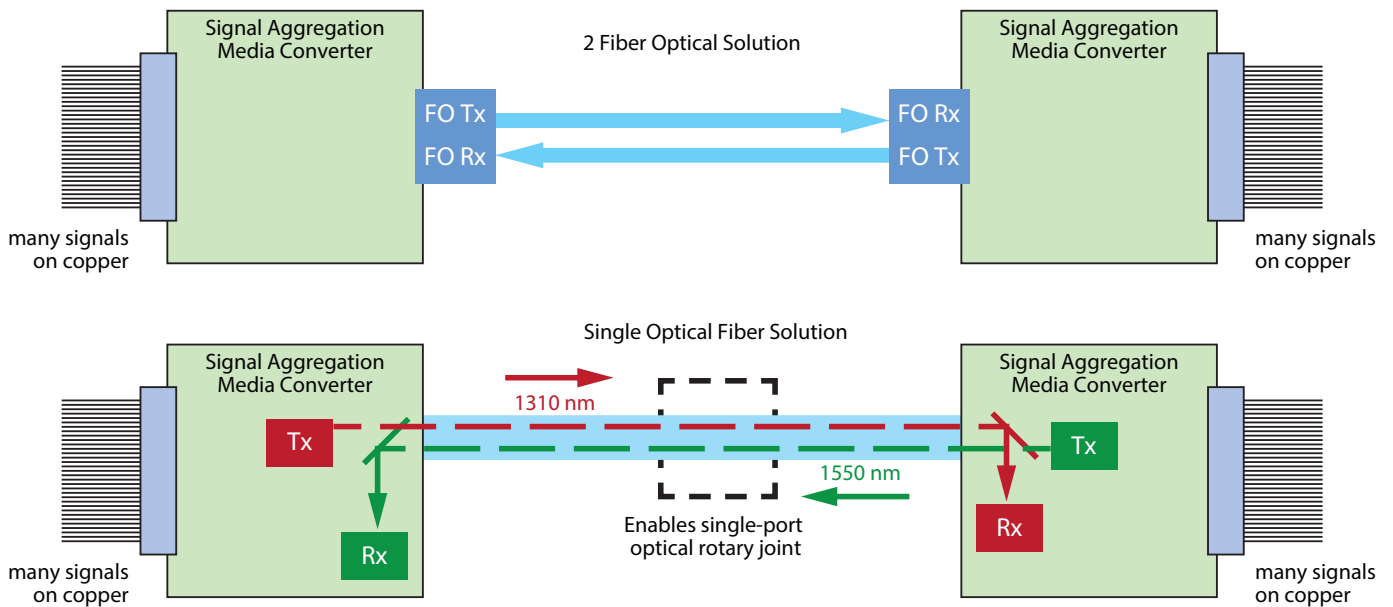
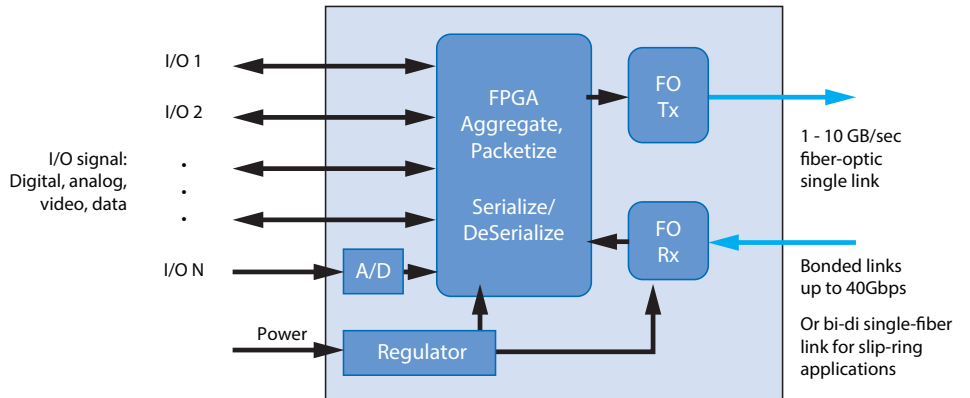
PRODUCT SELECTION GUIDE



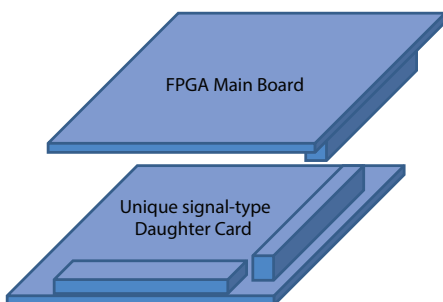
visit glenair.com for detailed product datasheets

SIGNAL AGGREGATOR FUNCTIONAL DIAGRAMS

- One compact LRU digitizes or aggregates multiple electrical signals on copper using an FPGA
- FPGA digitizes and serializes the signals onto a high-speed data stream
- Opto-electronic converters get the serialized signals on and off the optical fiber



FPGA MAIN BOARD AND DAUGHTER CARD ARCHITECTURE CAN HANDLE MANY SIGNAL TYPES



SERIAL

- RS422/RS485
- RS232
- USB
- MIL-STD-1553
- CAN Bus
- ARINC 429
- SMBus
- I2C
- SPI
- Ethernet 10/100/1000

VIDEO

- DVI
- HDMI
- SMPTE SDI
- SMPTE HD-SDI
- SMPTE 3G-SDI
- ARINC 818
- VGA

ANALOG

- RF/IF Sampling
- Analog Sensor Data

Contact the factory for other signal formats and custom configurations



SMALL FORM-FACTOR Ethernet Switches and Breakout Cables

Glenair unmanaged Ethernet switches are layer 2 switches with Auto negotiation and Auto MDI / MDIX circuitry that enables port expansion with IEEE-802.3U 10/100/1000Base-T Ethernet ports. Developed for use in harsh environment applications, the electronics are incorporated into a panel-mountable housing that is sealed against liquid and solid contaminants and designed for shock and vibration resistance. Standard connector interfaces include high-performance size- and weight-saving Glenair Series 805 Mighty Mouse jam nut receptacles and M28876 type fiber-optic connectors.



- Unmanaged—plug and play operation—no configuration required
- Jumbo frame support in all speeds (10/100/1000 Mbps)
- Operating temperature range: -40°C to +85°C
- Standard ultraminiature Mighty Mouse electrical and M28876 type fiber optic connector interfaces
- Experienced opto-electronic engineering services available for special connector and form-factor configurations
- Breakout cables with industry-standard connector interfaces available

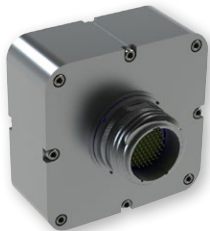
Small Form-Factor Ethernet Switches and Breakout Cables

PRODUCT SELECTION GUIDE



visit glenair.com for detailed product datasheets

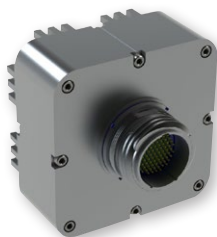
052-101 7-PORT UNMANAGED ETHERNET SWITCH



Form 1 (no flanges)



Form 2 (with flanges)



Form 3 (heat sink)

- 7 copper (10/100/1000 Mbps) Ethernet ports per IEEE 802.3:2005
- Non-Blocking switch fabric allows 1000 Mbps data rate on all 7 ports simultaneously
- Cable link distances up to 100 Meters (EIA/TIA Cat-5E)
- Full duplex flow control per IEEE Std 802.3X and half duplex back pressure, symmetric and asymmetric
- Shock, vibration and immersion resistant per MIL-STD-810F
- Auto sensing of half or full duplex operation
- Mighty Mouse Series 805 shell is water-tight to MIL-STD-810 when mated
- 3 form-factors available

050-118 5-PORT UNMANAGED ETHERNET SWITCH

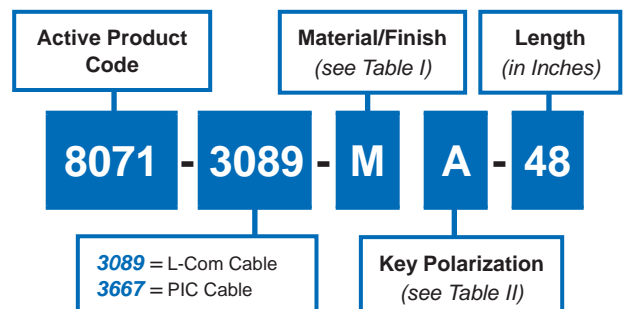


- 1 PORT : 10/100/1000 BASE-T consistent with IEEE 802.3
- 4 PORTS: 1000BASE-LX (IEEE 802.3)
- Non-blocking switch fabric allows 1000 Mbps on all ports
- Material/Plating: Aluminum with Cadmium Olive Drab over electroless Nickel (500 hours salt spray plating)
- 6 Status LEDs to Denote: (Power, Ethernet activity with one LED for each of the 5 ports)
- 4 M28876 type fiber-optic connectors
- Mighty Mouse ultraminiature electrical connector interface
- IP67 in mated condition

BREAKOUT CABLES FOR 7-PORT ETHERNET SWITCH



How To Order





Out of This World
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