



050-207

PRODUCT BRIEF

Copper to Fiber Media Converter

4-Channel SMPTE HD/3G-SDI

REV	DESCRIPTION	DATE	APPROVED
4	Preliminary	2/14/2016	MF
5	Updated Mechanical Drawing, Corrected J1 Channel names	03/31/16	TC/MF/RAS
6	Add ECCN and BID File information	5/25/2016	RAS
7	Add New Pictures of LRU	8/11/2016	GC

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4-Channel SMPTE HD/3G-SDI
Media Converter



4-Channel SMPTE HD/3G-SDI Media Converter



The Glenair 050-207 is a 4-Channel SMPTE Copper to Fiber Optic Media Converter, which extends the reach between a video source and sink. This media converter is configured either as an optical transmitter, converting electrical SMPTE signals to fiber or as an optical receiver converting fiber optic signals into the electrical SMPTE signals.

The 050-207 is designed for harsh environments and incorporates electronics in an environmentally sealed enclosure that incorporates two (2) D38999 connectors to support Electrical connections and Glenair High Density (GHD) connector for the fiber optic interconnect. Signal I/O and BIT functionality connect through one D38999 connector and power is provide through a separate D38999 connector. The Fiber Optics passes through Glenair GHD connector.

KEY FEATURES/BENEFITS

- 850nm Multimode Fiber for links up to 500m
- SMPTE EG 34:2004
 - Compliant to Pathological Conditions CASE 1, CASE 2 and CASE 3
- SMPTE ST 297:2006 (3G-SDI & HD-SDI)
- SMPTE 292/424 Compliant (HD-SDI / 3G-SDI)
- Wide Input Voltage Range
- IP67 in mated condition
- D38999 with 75 Ohm Coax and #22 Pin contacts
- GHD Fiber Optic connector

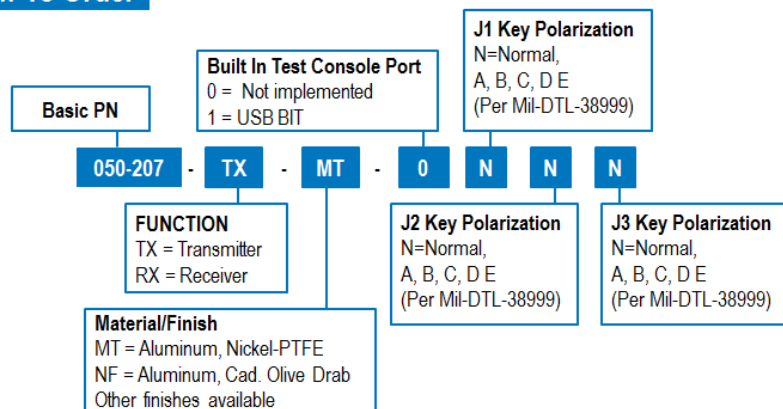
OPTIONAL FEATURES

- Built In Test Console Port accessible via USB2.0

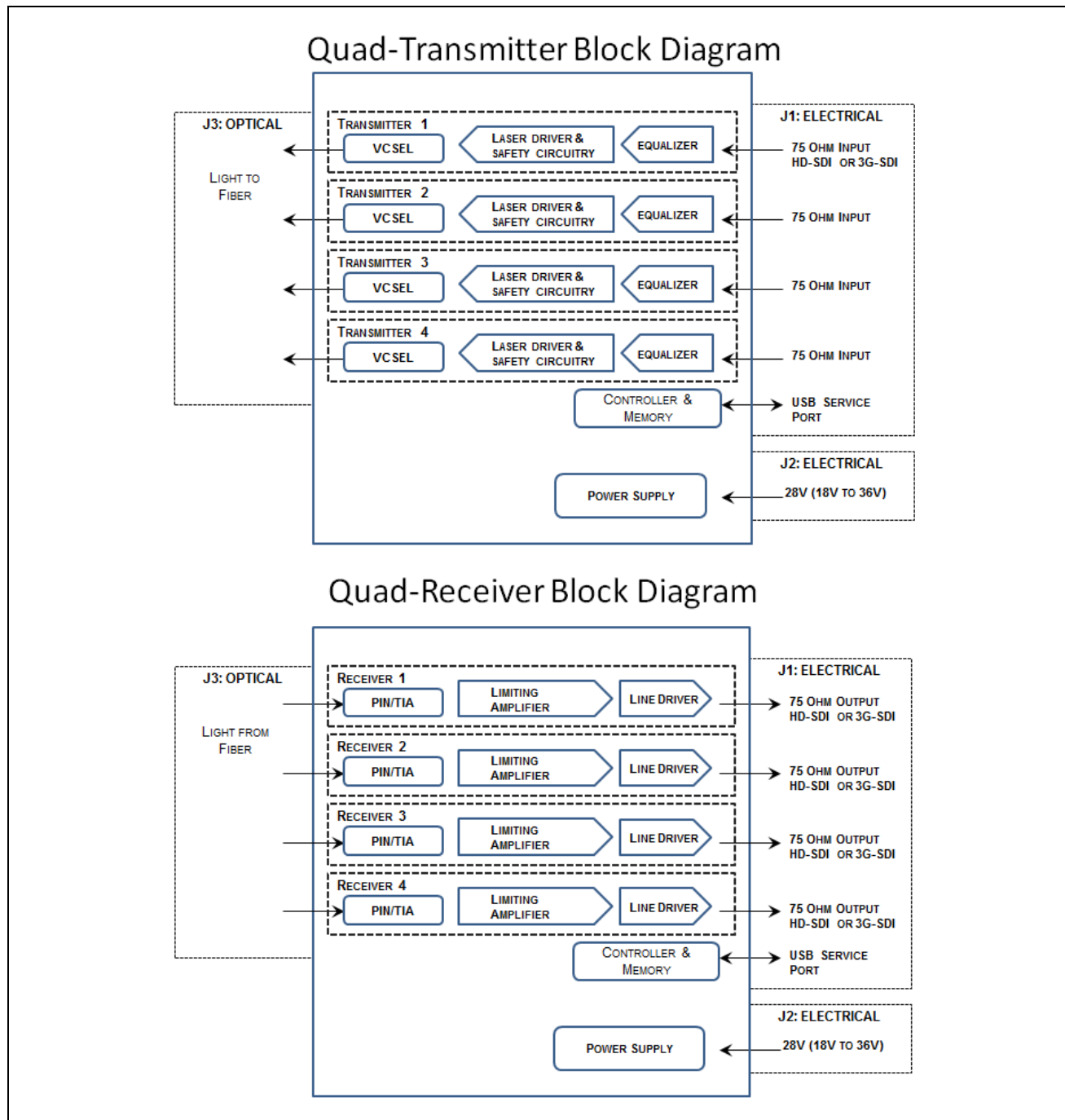
APPLICATIONS

Harsh Environment such as: Airborne, Tactical, Railway, Industrial, Oil and Gas and Shipboard applications

How To Order



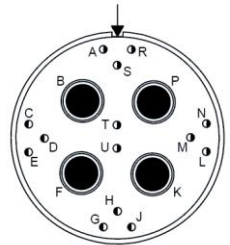
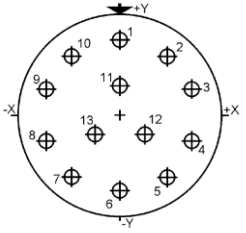
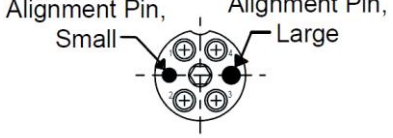
Functional Block Diagram



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4-Channel SMPTE HD/3G-SDI
Media Converter



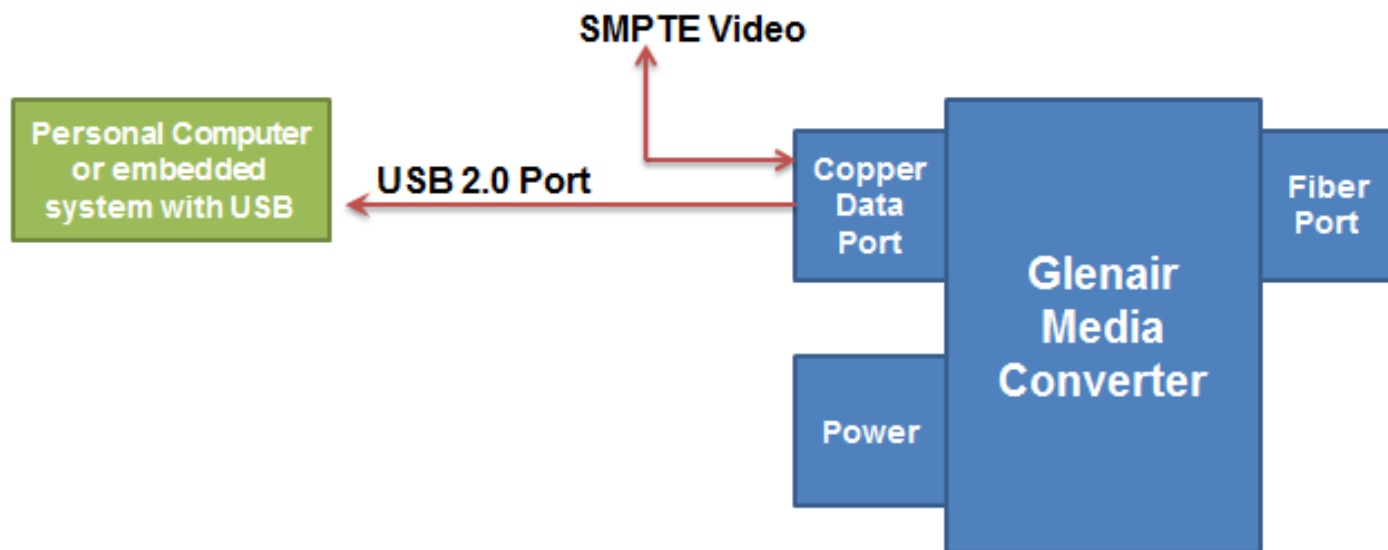
Connectors

NAME	Insert Arrangement	Function	Media Converter	Mating PLUG Connector
J1	 ARRANGEMENT 19-18 14X SIZE 22D 4X SIZE 8 COAX	Electrical Signal, Power, and Built In Test (BIT)	D38999 Series III type, 19C-18 14X SIZE 22D Pins 4X SIZE 8 Pins (AS39029/119)	Generic PN D38999/26#F18SN type Glenair PN 257-606-G6##19-18SN Coax Socket Contacts 852-083-01 Socket Contacts M39029/56-348
J2	 ARRANGEMENT 13-35	Power	D38999 Series III type, 11-35 13X SIZE 22D Pins	Generic PN D38999/26#B35SN Glenair PN 233-105-G6##11-35SN Socket Contacts M39029/56-348
J3	 Shell Size 11 Arrangement 4	Fiber Optic Signal	GHD Shell Size 11 Arrangement 4 <u>CONTACTS</u> 181-056	Glenair PN 180-122-#06-11-4N <u>CONTACTS:</u> 181-056-1260C

Note: # = Environmental Class (Material/Finish)

Built In Test (BIT) Functionality – USB 2.0

This media converter can be configured with built in test and monitoring functionality accessible through a console port via Universal Serial Bus 2.0 (USB 2.0).



Universal Serial Bus (2.0) BIT

- Presents itself as a "Virtual" Communications Port
- Compatible with Microsoft Windows, Mac, and Linux OS's.
- On the computer side, open any terminal application (PuTTY, HyperTERM, TeraTERM, etc.) to communicate with the media converter hardware.
- Simple "Human Readable" status messages.

Alarm State Messages

Unit Identification Information

- Unit Serial Number
- Unit Product Code

Fiber Side Alarm/Status

- Temperature
- Transmitter TX Fault
- Transmitter Disable Status
 - Receiver loss of signal (LOS) or signal Detect (SD) Status

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TYPICAL CONSOLE PORT WINDOW

```
COM1 - PuTTY
*****
Glenair                                     *
Media Converter Service Port              *
*****
Unit Identification Information
*****
Product Code: 050-207
Unit Serial Number: 1234
Firmware Revision: 1.2.0
Product Description: SMPTE Copper to Fiber Media Converter -
Transmitter

*****
Unit Status
*****
Temperature: 45 degrees C
Power Supply Status: Good
Transmitter FO Fault, TX_Channel 1: False
Transmitter FO Fault, TX_Channel 2: False
Transmitter FO Fault, TX_Channel 3: False
Transmitter FO Fault, TX_Channel 4: False
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4-Channel SMPTE HD/3G-SDI
Media Converter



Ratings and Specifications

ABSOLUTE MAXIMUM RATINGS

Parameter	Min	Typ	Max	Units	Notes
Storage Temperature	-55		+100	°C	
Supply Voltage	-40		40	V	

OPERATING CONDITIONS

Parameter	Min	Typ	Max	Units	Notes
Operating Temperature	-40		+85	°C	
Supply Voltage	18	28	36	V	
Supply Current		100	150	mA	

OPERATING CONDITIONS

Parameter	Min	Typ	Max	Units	Notes
Operating Temperature	-40		+85	°C	
Supply Voltage	18	28	36	V	
Supply Current		100	150	mA	Measured at 28V

ELECTRO-OPTICAL CHARACTERISTICS – TRANSMITTER

Parameter	Min	Typ	Max	Units	Notes
Data Rate	125		2970	Mbps	
Optical Output Power	-8	-5	-3	dBm	
Optical Wavelength	830	850	860	nm	
Spectral Width			0.85	nm	
Relative Intensity Noise			-117	dB/Hz	
Timing Jitter			1	UI	
SMPTE 292, 1.5 Gbps, Color bar			2	UI	
SMPTE 424, 2.97Gbps, Color bar			3	UI	
Alignment Jitter			0.2	UI	
SMPTE 292, 1.5 Gbps, Color bar			0.35	UI	
SMPTE 424, 2.97Gbps, Color bar					
Input Impedance		75		Ohms	AC coupled Internally
Input Voltage Swing	720	800	950	mV _{p-p}	75 Ohm Single Ended
Input Return Loss					
5 MHz - 1.5 GHz		15		dB	
1.5 GHz - 3 GHz		10		dB	

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4-Channel SMPTE HD/3G-SDI
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Ratings and Specifications - (continued)

ELECTRO-OPTICAL CHARACTERISTICS - RECEIVER

Parameter	Min	Typ	Max	Units	Notes
Data Rate	125		2970	Mbps	
RX Sensitivity					
1.485 Gbps, BER 10 ⁻¹² , PRBS 2 ⁻⁷ -1, Er 10 dB		-22	-20	dBm	
2.970 Gbps, BER 10 ⁻¹² , PRBS 2 ⁻⁷ -1, Er 10 dB		-19	-17	dBm	
RX Overload					
2.970 Gbps, BER 10 ⁻¹² , PRBS 2 ⁻⁷ -1	-1			dBm	
1.485 Gbps, BER 10 ⁻¹² , PRBS 2 ⁻⁷ -1	-1			dBm	
Optical Wavelength	830		860	nm	
LOS Assert Level		-23	-21	dBm	
LOS Hysteresis	1.5	2.3		dB	
Additive Jitter:					
2.97 Gbps		20		PSp-p	
1.485 Gbps		18		PSp-p	
270 Mbps		15		PSp-p	
Output Impedance		75		Ohms	AC coupled Internally
Output Voltage Swing	720	800	880	mV _{p-p}	75 Ohm Single Ended
Output Return Loss					
5 MHz - 1.5 GHz		15		dB	
1.5 GHz - 3 GHz		10		dB	



Ratings and Specifications - (continued)

COMPLIANCE SPECIFICATIONS

Characteristics	Standard	Condition	Notes
Mechanical Shock	MIL-STD-810G	Method 516.6	40g, 6-9 ms
Mechanical Vibration	MIL-STD-810G	Method 514.6	30 Grms
ESD	MIL-STD-883	Class II	2200V HBM
Conducted Emissions -- 30 Hz to 10 kHz	MIL-STD-461F	CE101	Power Leads
Conducted Emissions -- 10 kHz to 10 MHz	MIL-STD-461F	CE102	Power Leads
Conducted Susceptibility -- 30 Hz to 150KHz	MIL-STD-461F	CS101	Power Leads
Conducted Susceptibility -- Transients	MIL-STD-461F	CS106	Power Leads
Conducted Susceptibility, Structure Current, 60 Hz to 100 kHz	MIL-STD-461F	CS109	
Conducted Susceptibility, Bulk Cable Injection, 10 kHz to 200 MHz	MIL-STD-461F	CS114	
Radiated Susceptibility, Magnetic Field, 30 Hz to 100 kHz	MIL-STD-461F	RS101	
Radiated Susceptibility, Electric Field, 2 MHz to 18 GHz	MIL-STD-461F	RS103	
Radiated Emissions, Magnetic Field, 30 Hz to 100 kHz	MIL-STD-461F	RE101	
Radiated Emissions, Electric Field, 10 kHz to 18 GHz	MIL-STD-461F	RE102	
Mating Durability	MIL-DTL-38999/20	500 Cycles	
Flame Resistance	EIA364-104		30 seconds
Humidity	MIL-STD-810G	Method 507.5	Procedure I
Aircraft Electrical Power Characteristics	MIL-STD-704F		28V DC Systems
Military Vehicle Electrical Power Characteristics	MIL-STD-1275		28V DC Systems
Eye Safety	CDRH and IEC-825	Class 1 Laser	

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4-Channel SMPTE HD/3G-SDI
Media Converter



Ratings and Specifications - (continued)

MATERIAL/FINISH

Item	Material/Finish
Housing & Connector Shell	Aluminum
Plating Finish: M	Nickel
Plating Finish: MT	Nickel PTFE
Plating Finish: NF	Olive Drab Cadmium
Contacts	Copper alloy, 50 µInch gold plated
D38999 Inserts	Thermoplastics
Interfacial Seals, 38999 only	Elastomer, Fluorosilicone
Optical Ferrules & Sleeves	Zirconia, Ceramic
Insulators	Liquid crystal polymer (LCP)
Contact retention clip	Beryllium copper alloy
Seal, O-rings	Fluorosilicone rubber
Seal	Silicone elastomer
Spring	Nickel-plated beryllium copper
PC tail contacts	Copper alloy/gold plated
PCB flex	FR4 & Polyimide
Encapsulant	HYSOL EE4215
Solder type	RoHS compliant Sn95/Sb5 (232°C melting temp) & RoHS compliant Sn96.5/Ag3.0/Cu0.5 (217° melting)

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Glenair:

[050-207-TX-M-0NNN](#) [050-207-RX-M-0NNN](#)