

907 Multiplexer

Card Options



A guide to motherboards, expansion cards, media converters and adaptable plug-in modules used with the 907 Video / Data Multiplexer system in:

- Remotely Operated Vehicles
- Explosive Ordnance Disposal Robots
- Industrial Automation Equipment
- Wind Energy Turbines
- Subsea Controls
- Video Security Networks
- Defense and Other High Reliability Systems

Multiplexer Card Options

907 Multiplexer Card Options

The rugged 907 Video / Data Multiplexer system provides transmission of multiple video and data channels through a single optical fiber. These low-power multiplexers are available in a compact PC / 104 form factor. Standalone motherboards feature three high quality video channels and six serial data channels. For more advanced requirements, expansion cards and media converters may be stacked on the motherboards to provide modular systems that can be easily configured for many applications. The following charts show only the most common card types available. Please contact us for the current range of products and options, including extended operating temperatures, environmental stress screening for high reliability applications and custom configurations.

Motherboards

Motherboards are supplied in diverse optical configurations from high power versions for demanding optical systems to low cost options using bidirectional (Bidi) transceivers. Each motherboard can operate as a standalone multiplexer (mux) with three unidirectional video channels (remote to console) and six bidirectional serial data channels (4 x RS-232 and 2 x high-speed RS-485 / 422). Video channels support NTSC and PAL composite signals as well as S-video (Y / C) and RGB formats. Data channels support NRZ data rates up to 2.5 Mbaud, or 120 kbaud when configured for RS-232. Alternative motherboards include the 907V with six video channels and the 907Plus with four video channels and six data channels. Expansion cards and media converters are compatible with all motherboards.

Cards are supplied with a singlemode or multimode Wavelength Division Multiplexer (WDM) for operation over a single fiber or without a WDM for two fiber operation. Cards may also be configured with Coarse Wavelength Division Multiplexer (CWDM) transceivers, which allow data from multiple 907s, media converters, and other products to be combined on the same optical fiber.



Singlemode 907



907V Video Mux



Multimode 907 (Bidi Version)

Card Description	Part Number	Transmitter	Fiber Type	WDM	Min. Optical Budget ³	Max. Fiber Distance
907 Remote Mux, SMF WDM, ST Conn	907-0001-02	1310 nm DFB	SMF	SMF	20 dB	10 km
907 Remote Mux, MMF WDM, ST Conn	907-0001-06	1310 nm DFB	MMF	MMF	16 dB	2-4 km ¹
907 Remote Mux, CWDM Tx, ST Conn	907-0001-09	1470 nm DFB	SMF	None ²	24 dB ²	10 km
907 Remote Mux, SMF Bidi Tx, ST Conn	907-0001-11	1310 nm FP	SMF	Built-In	16 dB	4 km
907 Remote Mux, MMF Bidi Tx, ST Conn	907-0001-12	1310 nm FP	MMF	Built-In	16 dB	2 km
907V Remote Mux, SMF WDM, ST Conn	907-0023-01	1310 nm DFB	SMF	SMF	20 dB	10 km
907 Console Mux, SMF WDM, ST Conn	907-0002-02	1550 nm DFB	SMF	SMF	20 dB	10 km
907 Console Mux, MMF WDM, ST Conn	907-0002-06	1550 nm DFB	MMF	MMF	16 dB	2-4 km ¹
907 Console Mux, CWDM Tx, ST Conn	907-0002-09	1490 nm DFB	SMF	None ²	24 dB ²	10 km
907 Console Mux, SMF Bidi Tx, ST Conn	907-0002-11	1550 nm FP	SMF	Built-In	16 dB	4 km
907 Console Mux, MMF Bidi Tx, ST Conn	907-0002-12	1550 nm FP	MMF	Built-In	16 dB	2 km
907V Console Mux, SMF WDM, ST Conn	907-0024-01	1550 nm DFB	SMF	SMF	20 dB	10 km

Options: FC Connectors, Dual Fiber, CWDM Wavelengths, Extended Reach (up to 100 km), Extended Temperature (-40 to +85°C) and Serial Diagnostics.

1. Maximum distance on MMF depends on fiber bandwidth.
2. CWDM mux cards require external SMF or MMF CWDMs (e.g. 907-0015-00 card), which reduce optical power budget.
3. Typical optical power budgets are 2-3 dB better than minimums shown.
4. The 903-0001-XX 907 remotes are used with the corresponding 903-0002-XX 907 consoles. Optical uplink and downlink both operate at 600 Mbaud.
5. The 903-0023-XX 907V remotes are used with the corresponding 903-0024-XX 907V consoles. Optical uplink and downlink both operate at 1200 Mbaud.

Multiplexer Card Options

Expansion Cards

Four to six expansion cards may be stacked on a motherboard using the PC / 104 connectors for power and signals. Each expansion card provides additional analog or digital formats or an increased number of serial data channels. The 907-AIB expansion card allows standard AIB (Adaptable Interface Board) plug-in modules from the 903 system to be employed in 907 solutions as well. Expansion cards may also be stacked on 907V or 907Plus motherboards.



	907-EIBS	907-232	907-485	907-AIB	907-ADC	907-AUDIO	907-CIB
Description	10 Mbps Ethernet Switch Card	8-Channel RS-232 Card	8-Channel RS-485 / 422	Dual Socket AIB Adapter	8-Channel, 8-bit Analog Inputs ³	4-Channel, 24-Bit Audio Card	4-Channel Control Interface ⁴
Part Number	907-0222-00	907-0212-00	907-0217-00	907-0204-00	907-0218-00	907-0228-00	907-0231-00
907-R / C Data Channels Used	1	1	1, 2, 4	1, 2	1	1	1
Channel Direction	Bidirectional	Bidirectional	Bidirectional	Matches Plug-Ins	Unidirectional	Bidirectional	Bidirectional
Data Rate	10 Mbps	120 kbps	Up to 625 kbps ¹	Up to 2.5 Mbps ²	50 kHz Bandwidth	20 kHz Bandwidth	50 Hz Updates
I / O Connectors	3 x RJ-45	4 x 8-Pin Molex	4 x 8-Pin Molex	2 x 4-Pin WAGO	2 x 8-Pin Molex	4 x 2-Pin WAGO 4 x 3-Pin WAGO	4 x 2-Pin WAGO 4 x 3-Pin WAGO

1. Maximum NRZ data rate increases with number of channels used on the 907 motherboard.
2. Maximum NRZ data rate or analog bandwidth depends on the AIB plug-in modules installed.
3. 12-bit digitization optional. Use with complementary 907-DAC Analog Output card, P / N 907-0219-00.
4. CIB inputs are individually configurable as switch or voltage controlled; CIB outputs are all solid state relays, max. current 250 mA.

Media Converter Cards

Media Converter Cards provide optical transmission of high speed data signals (20-1500 Mbps), such as Fast Ethernet, ECL / PECL for multi-beam sonar uplinks, IEEE-1394 for digital cameras, and digital high definition video (SMPTE-292). Media Converters may be deployed as standalone cards running on their own fiber or as CWDM versions that are optically multiplexed on the same fiber as the 907 motherboard. Two CWDM wavelengths may be added to the standard 1310 / 1550 nm 907 link without changing the motherboard, thus providing an easy upgrade path. With CWDM transceivers on all cards, up to sixteen wavelengths may be combined on a single fiber. USB and Gigabit Ethernet switch solutions are also available.

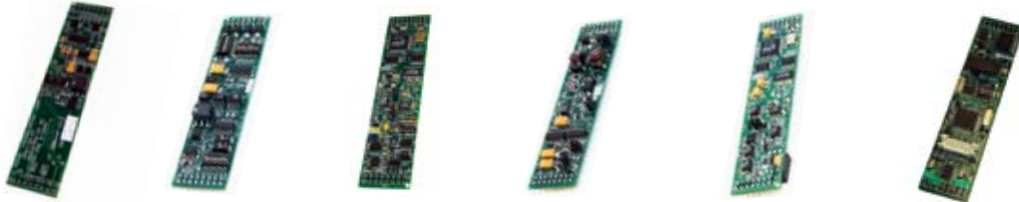


	907-MC	907-1394	907-ECL	907-HDV	907-GBE
Description	10 / 100 Mbps Ethernet	IEEE-1394 (Firewire)	ECL Media Converter	HD-SDI, SDI	Gigabit Ethernet
Part Number	907-0014-XX	907-0018-XX	907-0019-XX	907-0022-XX	907-0021-XX
Channel Direction	Bidirectional	Bidirectional	Unidirectional	Unidirectional	Bidirectional
NRZ Data Rate	100 Mbps	400 Mbps (S400B)	30 - 150 Mbps	143 - 1485 Mbps	10 / 100 / 1000 Mbps
I / O Connectors	1 x RJ-45 Jack	2 x 1394 6-Pin Jacks	2 x SMB In, 2 x SMB Out	1 x SMB In, 1 x SMB Out	1 x RJ-45 Jack
Options	1 or 2 Fibers, SMF or MMF, CWDM	Port Isolation / Power, 1 or 2 Fibers, SMF or MMF, CWDM	Bidirectional ECL, 1 or 2 Fibers, SMF or MMF, CWDM	CWDM	MMF, CWDM

Multiplexer Card Options

AIB Plug-In Modules

Adaptable Interface Board (AIB) plug-in modules are used with the 907-AIB adapter expansion card to convert one of the motherboard data channels to a different data format. Each adapter card provides two independent AIB sockets. AIB plug-ins support standard serial data interfaces (RS-232 / 485 / 422), hydrophone and other audio signals, various digital and analog sonar telemetry, and control networks, such as CAN and Profibus.



	AIB-232	AIB-485	AIB-HYDRO	AIB-ARCNET	AIB-MS900	AIB-CANBUS
Description	RS-232	RS-485 / 422	Hydrophone	Tritech ARCNET	MS-900 Analog Sonar	CANBus Bridge
Part Number	903-0251-00	903-0252-00	903-0244-00	903-0261-00	903-0250-00	903-0297-00
Channel Direction	Bidirectional	Bidirectional	Unidirectional	Bidirectional	Bidirectional	Bidirectional
Bandwidth or NRZ Data Rate	120 kbps	2.5 Mbps	30 Hz - 30 kHz BW	156 kbps / 78 kbps	5 - 30 kHz, 380 - 580 kHz	62.5 kbps - 1 Mbps
I / O Connectors	4-pin WAGO headers on 907-AIB adapter card					
Options	Responder Trigger	AC-Coupled 485, TTL	IRIG-B, Audio	Terminations	Low Speed Telemetry (LF)	Repeater Mode

Other Cards and Accessories

Part ID	Part Name	Standard Part Number	Description
907-EURO4	4 HP Eurocard Adapter	907-0005-00	Allows use of expansion cards in 3U racks with Model 903 systems
907-EURO8	8 HP Eurocard Adapter	907-0006-01	Allows 907 installation in a 3U rack with connectorized front panel
907-PC / 104	Adapter Card for 907 to Standard PC / 104	907-0205-00	Allows 907 stack attachment to a standard PC / 104 stack or bus
907-DC-24	Isolated DC-DC Power Card	907-0233-00	Converts 18 - 30 VDC input to +5 VDC isolated outputs for 907 stacks
907-ENC	907 Enclosure	907-0004-XX	Various ruggedized aluminum housing for remote or console card
907-CWDM-4	CWDM Optics Card, 1470 - 1530 nm	907-0015-03	Provides four singlemode CWDM channels for system expansion
907-CWDM-8	CWDM Optics Card, 1470 - 1610 nm	907-0015-20	Provides eight singlemode CWDM channels for system expansion
907-SWITCH	1 x 2 Fiber Switch Card, Singlemode	907-0015-06	Provides fiber optic switch with manual or remote digital control
907-SPLIT	1 x 2 Fiber Splitter Card, Singlemode	907-0015-05	Provides redundant fiber operation
907-ACC	907 Standard Accessories Kit	907-0013-00	Spare fuses, connectors, hardware, and test cables for motherboards
907-JKS	Test Jumper Kit (Optical), Singlemode	907-0010-00	Two singlemode ST jumpers
907-JKM	Test Jumper Kit (Optical), Multimode	907-0011-00	Two multimode ST jumpers

Related Products: 903 3U Eurocard Mux, 914 Ultra-compact Mux and Fiber Optic Rotary Joints.

Specifications and information are subject to change without prior notice. *Photo credit to Steve Kaiser 2007.*
© 2008 Moog Inc. MS2001, rev. 2 5/08



77 Frazee Avenue • Dartmouth, Nova Scotia • Canada B3B 1Z4
888-302-2263 • 902-468-2263 (Canada) • 800-336-2112 • 540-552-3011 (USA)
www.moog.com/components • email: mcg@moog.com