

**DESCRIPTION**

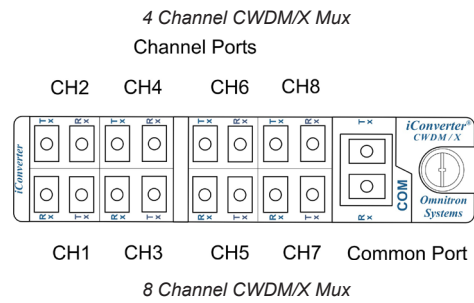
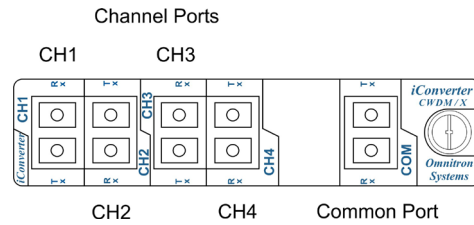
The iConverter 4 and 8 Channel Multimode Coarse Wave Division Multiplexing (CWDM) Multiplexer and Demultiplexer plug-in modules facilitate significant increase in the capacity of existing multimode fiber networks.

CWDM/X multimode multiplexers are protocol and rate transparent, allowing Ethernet, Fibre Channel and SDH/SONET and other services up to 10Gbps each to be transported across the same fiber link. The modules support ITU-T G.694.2 wavelengths between 1270nm to 1610nm in 20nm increments.

The CWDM modules can be used in an unmanaged or managed applications. To be managed, an Network Management Module (NMM2) or a module with integrated management must be installed in the same chassis.

[See data sheet for available models.](#)

**PORT DEFINITIONS**

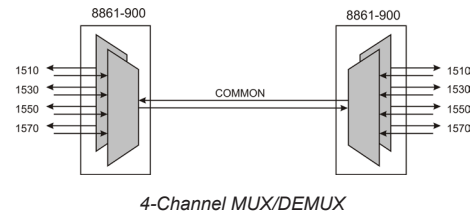


**Channel Port**

The Channel Ports transmit and receive signals on specific CWDM wavelengths. The Channel Ports are multiplexed onto and demultiplexed from the Common Port.

**Common Port**

The Common Port (COM) transmits and receives the aggregated wavelengths connected to the Channel Ports.



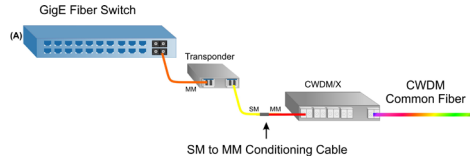
**MOUNTING AND CABLE ATTACHMENT**

1. Carefully slide the module into an open slot in an iConverter chassis. Align the module with the installation guides and ensure that the module is firmly seated against the backplane. Secure the module by fastening the front panel thumbscrew(s) (push in and turn clockwise to tighten) to the chassis front.

2. Connect a mode conditioning cable between the Channel Port of the CWDM/X module (multimode) and the attached device. It is important to ensure that the wavelength of the CWDM/X matches the wavelength of the attached device. Connect all Channel Ports in this manner. Ensure that the transmit (Tx) is attached to the receive side of the device at the other end, and the receive (Rx) is attached to the transmit side.

Mode conditioning cables are used to adapt the single mode transceivers to a multimode cable network.

In example (A), the Gigabit Ethernet switch has fixed fiber multimode optics and can not be upgraded to single-mode. A transponder is used to convert the multimode optics to single-mode CWDM optics. A mode conditioning cable is used to connect to the transponder to the channel port on the CWDM/X Multimode MUX.



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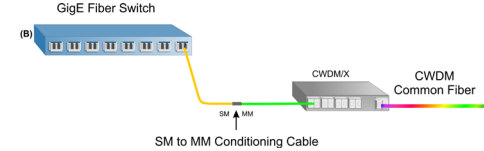
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**Warranty**

This product is warranted to the original purchaser (Buyer) against defects in material and workmanship for a period of one (1) years from the date of shipment. During the warranty period, Omnitron will, at its option, repair or replace a product which is proven to be defective with the same product or with a product with at least the same functionality.

For warranty service, the product must be sent to an Omnitron designated facility, at Buyer's expense. Omnitron will pay the shipping charge to return the product to Buyer's designated US address using Omnitron's standard shipping method.

In example (B), the Gigabit Ethernet switch supports SFP transceivers, so a CWDM SFP single-mode transceiver is installed. A mode conditioning cable is used to connect to the CWDM transceiver to the channel port on the CWDM/X Multimode MUX.



3. Connect a multimode, dual fiber duplex LC cable between the Common Ports on the CWDM/X modules (this connection may be made through fiber patch panels since the modules may not be co-located). Ensure that the transmit (Tx) is attached to the receive side of the device at the other end, and the receive (Rx) is attached to the transmit side.

**SOFTWARE OPTIONS**

The CWDM modules do not have any configurable settings. If used in a managed application, the modules can be viewed and model and serial numbers are displayed.

For more information on management, register for access to the [NetOutlook Management Software user manual](#).

**Limitation of Warranty**

The foregoing warranty shall not apply to product malfunctions resulting from improper or inadequate use and/or maintenance of the equipment by Buyer, Buyer-supplied equipment, Buyer-supplied interfacing, unauthorized modifications or tampering with equipment (including removal of equipment cover by personnel not specifically authorized and certified by Omnitron), or misuse, or operating outside the environmental specification of the product (including but not limited to voltage, ambient temperature, radiation, unusual dust, etc.), or improper site preparation or maintenance.

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The remedies provided herein are the Buyer's sole and exclusive remedies. Omnitron shall not be liable for any direct, indirect, special, incidental, or consequential damages, whether based on contract, tort, or any legal theory.

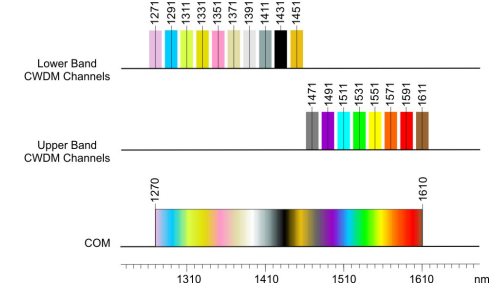
**DESIGN CONSIDERATIONS**

iConverter CWDM/X modules are passive devices that require no external power. Attenuation (signal loss) of less than 2.3dB for the 8-Channel and 1.8dB for the 4-Channel will be realized through each port on the module (see the CWDM/X Multimode Data Sheet for each model). Detailed calculations should be performed for each fiber optic link in the network to ensure the proper optical devices are specified with sufficient transmitter power.

When calculating optical loss, ensure that the total loss, plus a safety factor (typically 3dB) does not exceed the optical power budget. The optical power budget is the difference between the transmitter optical output power and the receiver's optical sensitivity. The transmitter optical output power and receiver optical sensitivity values can be obtained from the manufacturers of the respective equipment. Please consult the iConverter data sheets for CWDM/X signal loss specifications.

For more information, access the [CWDM Resource Center](#) to view all relevant documents.

**WAVELENGTH DIAGRAM**



**OPTICAL SPECIFICATIONS**

Optical Characteristics		
Parameter	Units	Values
Common Port Operating Wavelength	nm	1270 - 1610
CWDM Center Channel	nm	1271, 1291, 1311, 1331, 1351, 1371, 1431, 1451, 1431, 1451, 1471, 1491, 1511, 1531, 1551, 1571, 1591, 1611
CWDM Channel Spacing	nm	20
4-Channel Insertion Loss	dB	< 1.8
8-Channel Insertion Loss	dB	< 2.3
Adjacent Channel Isolation	dB	> 30
Non-Adjacent Channel Isolation	dB	> 40
Return Loss (filtered channel)	dB	> 20

**MODULE SPECIFICATIONS**

Standards	Telecordia GR-1209, GR-1221	
Regulatory	Safety:	UL, CE, UKCA
	EMI:	FCC Class A
Environmental	RoHS, WEEE, REACH	
Port Types	Fiber: 4 Channels: LC/UPC 8 Channels: LC/UPC	
Cable Types	Fiber: Multimode: 62.5/125µm (OM1) Channel Ports: Dual Fiber Common Port: Dual Fiber	
DC Power Requirements	DC Input (Backplane): 3.3VDC, 0.025A @ 3.3VDC (when management is required, otherwise passive operation)	
Dimensions W x D x H	0.85" x 4.5" x 2.8" (21.6 mm x 114.3 mm x 71.1 mm)	
Weight	12.0 oz. (340.2 grams)	
Temperature	Commercial:	0 to 50°C
	Wide:	-40 to 60°C
	Storage:	-40 to 80°C
Humidity	5 to 95% (non-condensing)	
Altitude	-100m to 4,000m	
MTBF (hrs)	> 1,000,000	
Warranty	One (1) year warranty with 24/7/365 free Technical Support	

**Safety Warnings and Cautions**

- ATTENTION: Observe precautions for handling electrostatic discharge sensitive devices.
- WARNING: Potential damage to equipment and personal injury.
- WARNING: Risk of electrical shock.

**Customer Support Information**

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