

iConverter® CWDM Band-Splitter **User Manual**

DESCRIPTION

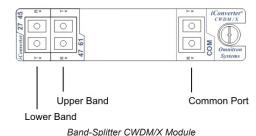
The iConverter CWDM/X Band Splitters combine and separate the lower CWDM wavelengths (1270nm to 1450nm) and the upper CWDM wavelengths (1470nm to 1610nm).

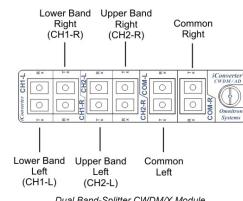
The iConverter CWDM/X Single Band Splitter provides a single lower and upper band channel ports. The iConverter CWDM/X Dual Band Splitter provides a left and right lower, upper and common ports.

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





Dual Band-Splitter CWDM/X Module

Lower and Upper Band Ports

The Lower Band (CH1) transmits and receives signals between 1270nm and 1450nm CWDM wavelengths. The Upper Band (CH2) transmits and receives signals between 1470nm and 1610nm CWDM wavelengths. The Lower and Upper Band Ports are multiplexed onto and demultiplexed from the Common Port.

The Low and High Band Ports are used to cascade two 8-Channel CWDM/X modules. Model 8862-0 Common Port is connected to the Low Band Port and model 8863-0 Common Port is connected to the High Band Port. This configuration provides a 16-Channel CWDM MUX solution

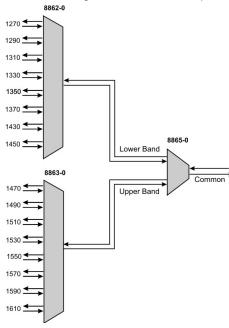
The Common Port (COM) transmits and receives the aggregated wavelengths connected to the Lower and Upper Band Ports (1270nm to 1610nm).

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16-Channel CWDM Multiplexer

The figure below illustrates how to use the Band-Splitter module to create a 16-Channel CWDM solution using two 8-Channel CWDM Multiplexers.

The 8-Channel Low Band CWDM (8862-0) Common Port is connected to the Low Band Port on the Band-Splitter and the 8-Channel CWDM (8863-0) Common Port is connected to the High Band Port on the Band-Splitter.



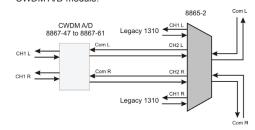
16-Channel CWDM using Band Splitter Module

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Dual Band-Splitter

The figure below illustrates how to the Dual Band-Splitter module can be used to add a wavelength to an existing ring or linear topology.

The Dual Band-Splitter module is inserted into the existing network by connecting the Common Ports from the CWDM A/D to the High Band Ports on the Dual Band-Splitter module. The Low Band Ports on the Dual Band-Splitter are connected to the legacy 1310 network. The Common Ports on the Dual Band-Splitter connects to the equipment that was originally connected to the Common Ports on the CWDM A/D module



Adding a wavelength to an existing 1310nm network

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. When using the CWDM/X Single Band Splitter to combine two 8-Channel CWDM/X modules connect the CWDM/X MUX with the wavelengths range of 1270nm to 1470nm to the Lower Band Port. Connect the CWDM/X MUX with the wavelengths range of 1470nm to 1610nm to the Upper Band Port.
- 3. When using the CWDM/X Single Band Splitter to combine two 4-Channel Single-fiber CWDM/X modules,

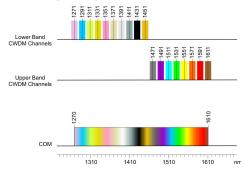
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be performed for each fiber optic link in the network to ensure the proper optical devices are specified with sufficient transmitter power.

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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. For more information, access the CWDM rce 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
Low Band	nm	1270 - 1470
High Band	nm	1470 - 1610
Band Splitter Insertion Loss	dB	< 0.8
Adjacent Channel Isolation	dB	> 30
Non-Adjacent Channel Isolation 4 and 8-Channel	dB	> 40
Non-Adjacent Channel Isolation Band Splitter	-	N/A
Return Loss (filtered channel)	dB	≥ 45

MODULE SPECIFICATIONS

Standards	Telecordia GR-1209, GR-1221		
Regulatory	Safety:	UL, CE, UKCA	
Regulatory	EMI:	FCC Class A	
Environmental	RoHS, WEEE, REACH		
	Fiber: Low Band: LC (UPC)		
Port Types	High Band: LC (UPC)		
	Common: LC (UPC)		
Cable Types	Fiber: Single-mode: 9/125µm		
	ane):		
DC Power	3.3VDC, 0.025A @ 3.3VDC		
Requirements	(when management is required, otherwise		
	passive operation)		
Dimensions	0.85" x 4.5" x 2.8"		
WxDxH	(21.6 mm x 114.3 mm x 71.1 mm)		
Weight	12.0 oz. (340.2 grams)		
Temperature	Commercial:	0 to 50°C	
		-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		

General and Copyright Notice

8-Channel Single-Fiber Multiplexer

Band RX Port on the Band-Splitter

COM-L

1470 - 1610

COM-L

8874-0 or 8875-0

8876-0 or 8877-0

λ3 L λ4 L **←**

λ5 L λ6 L ★

λ7 L ←

λ9 L λ10 L **←**

λ11 L λ12 L

λ13 L λ14 L

λ15 L λ16 L

The figure below illustrates how to use the Band-Splitter

to create a 8-Channel Single-Fiber CWDM solution using

The 4-Channel Single-Fiber CWDM (8874-0 or 8875-0)

Common Port is connected to the Low Band RX Port on

the Band-Splitter and the 4-Channel Single-Fiber CWDM

(8876-0 or 8877-0) Common Port is connected to the High

Refer to the Single-Fiber CWDM/X user manual for

8-Channel Single-fiber CWDM using Band Splitter

8865-0

Tx not used ←

Tx not used ◀

Upper Band

information on how to create an end-to-end solution.

two 4-Channel Single-Fiber CWDM Multiplexers.

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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

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The equipment is marked with the WEEE symbol shown to indicate that it must be collected separately from other types of waste. In case of small items the symbol may be printed only on the packaging or in the user manual If you have questions regarding the correct disposal of equipment go to www.omniton-systems.com/support or e-mail to Omnitron at intlinfo@omnitron-systems.com.

(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 NOTE: The iConverter CWDM/X modules can not be

connect the CWDM/X MUX with the wavelengths range

of 1270nm to 1470nm to the Rx side of the Lower Band

Port. Connect the CWDM/X MUX with the wavelengths

range of 1470nm to 1610nm to the Rx side of the Upper

Band Port. The Tx side of the Common Port is used as

4. When using the CWDM/X Dual Band Splitter to add

a wavelength to an existing 1310nm legacy ring or linear

topology, connect the CWDM A/D Common Ports to the

Channel 2 Ports on the CWDM/X Dual Band Splitter (CH1:

1270nm to 1450nm, CH2: 1470nm to 1610nm). Connect

the new wavelength application to the Channel Ports on the

CWDM A/D. Connect the existing 1310nm legacy device

to Channel 1 Ports on the CWDM/X Dual Band Splitter.

5. Connect a single-mode, dual fiber duplex LC cable

between the Common Ports on the CWDM/X modules

installed in slots 4, 8, 12 and 16 of a 19-Module Chassis or in the top slot of a 2-Module Chassis or in a 1-Module Redundant Power Chassis

SOFTWARE OPTIONS

the common fiber link

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

For more information on management, register for access to the NetOutlook Management Software user manual.

DESIGN CONSIDERATIONS

iConverter CWDM/X modules are passive devices that require no external power. Attenuation (signal loss) of less than 0.8dB will be realized through each port on the module (see the Optical Specifications for exact loss specification for each model). Detailed calculations should

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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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