

8ch Dual Fiber 1470-1610nm CWDM Mux Demux + Expansion and Monitor Port

FMU Plug-in Module, LC/UPC

Data Center & Cloud Computing Infrastructure Solutions



Overview

The CWDM Mux Demux support ITU-T G.694.2 wavelengths from 1470nm to 1610nm in 20nm increments. It is a flexible plug-and-play network solution that allows network operators to cost effectively implement point to point or ring based WDM optical networks.

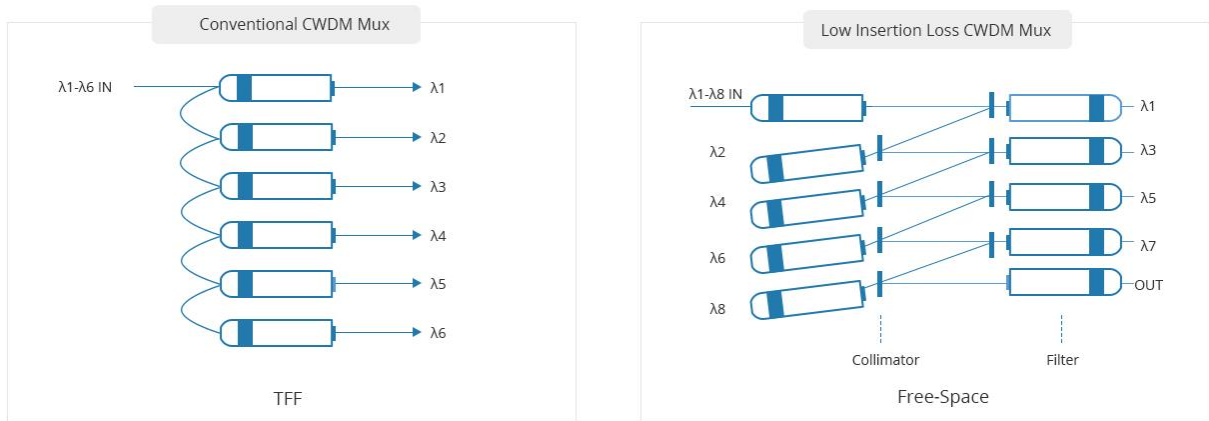
The main fields of applications are the use in SDH (STM-1, STM-4, STM-16, STM- 64), IP (Fast Ethernet, Gigabit Ethernet, 10 Gigabit) ATM and storage (1G, 2G, 4G, 8G, 10G Fiber Channel) networks.

Highlights

- Low insertion loss
- Based on free space technology
- Multiplexing of up to 8 channels on fiber pair
- Passive, no electric power required (MTBF ca. 500 years)
- Low-profile modular design, fits in FMU 2-slot 1U chassis
- Duplex LC/UPC, easily support duplex patch cables between transceiver and passive unit

Unique Free-Space Technology

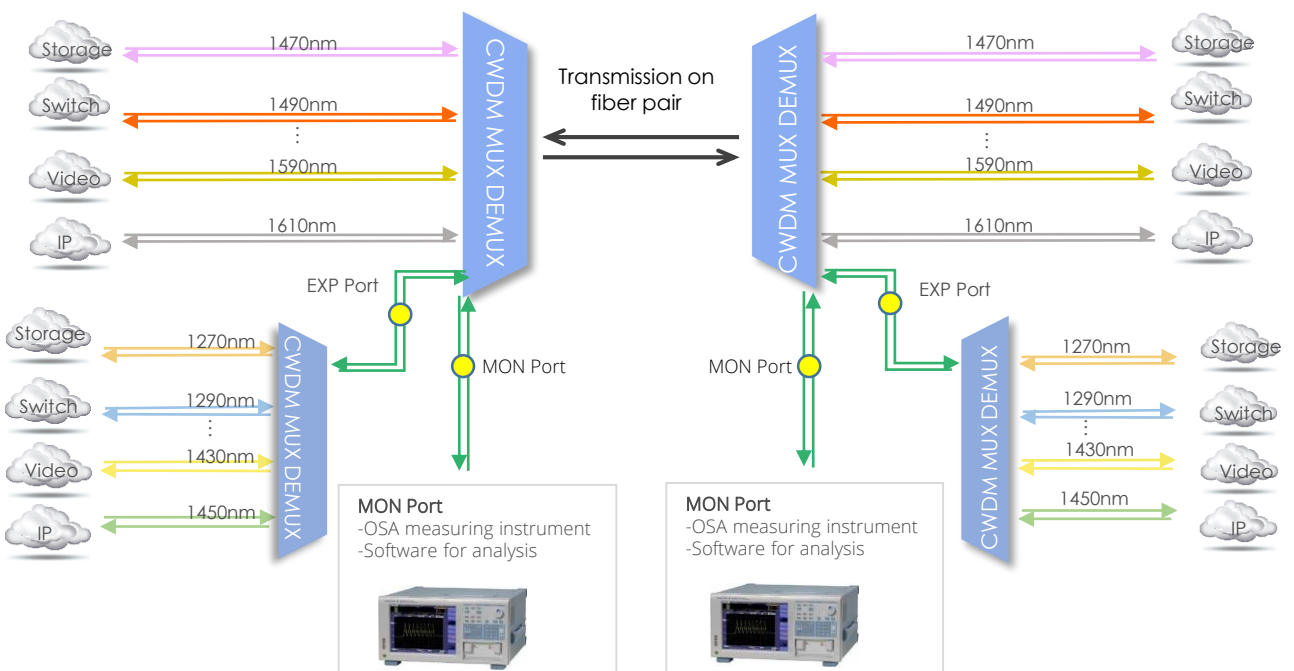
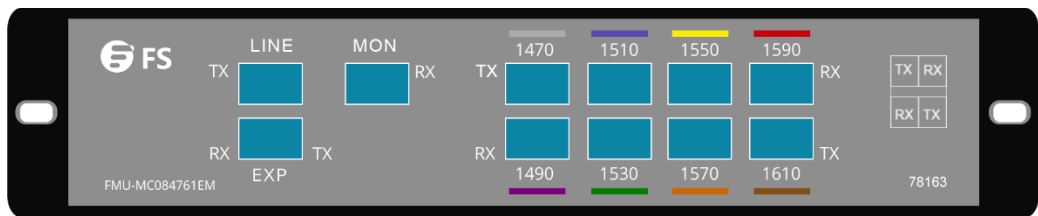
Different from the conventional CWDM Mux, the low insertion loss 8ch CWDM Mux adopts Free-Space technology, which uses light propagating in free space to wirelessly transmit data. This unique technology and great workmanship help it with low insertion loss.



General Specification

Front View	Function
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78163



Technical Data

Parameter	Value
Center Wavelength	1470nm, 1490nm, 1510nm, 1530nm, 1550nm, 1570nm, 1590nm, 1610nm
Channel Spacing	20nm
Channel Passband	± 6.5nm
Insertion Loss (Passband)	≤ 2.4dB
Insertion Loss (+EXP port)	≤ 2.4dB
Insertion Loss @ Mon	≤ 24.3dB
Exp Isolation	≥ 15dB
Adjacent Channel Isolation	≥ 30dB
Non-adjacent Channel Isolation	≥ 40dB
Technology	Free Space
Passband Ripple	≤ 0.5dB
Directivity	≥ 50dB
Return Loss	≥ 45dB
PDL	≤ 0.3dB
PMD	≤ 0.1ps
Power Handling	≤ 500mW
Operating Temperature	-40 ~ +85 ° C
Storage Temperature	-40 ~ +85 ° C
Fiber Type	G657 A1
Connector Type	LC/UPC Connector
Warranty	3 years warranty with free technical support
Dimensions (H x W x D)	1.73"x8.35"x10.04" (44x212x255mm)

Notes:

1.Specified with connectors and adapters.

CWDM Mux Demux Series

Application	ID#	Description
WHOLE BAND (1270-1610NM)		
Whole band (1270-1610nm)	#33489	18 Channels 1270-1610nm, with Monitor Port, LC/UPC, Dual Fiber CWDM Mux Demux, FMU 1U Rack Mount
HIGH BAND (1470-1610NM)		
High band (1470-1610nm)	#78163	8 Channels 1470-1610nm, with Monitor and Expansion Port, LC/UPC, Dual Fiber, Low Insertion Loss CWDM Mux Demux, FMU Plug-in Module
LOW BAND (1270-1450NM)		
Low band (1270-1450nm)	#42937	8 Channels 1270-1450nm (Skip 1390, 1410nm), LC/UPC, Dual Fiber CWDM Mux Demux, FMU Plug-in Module
Low band (1270-1450nm)	#42972	4 Channels 1270-1330nm, LC/UPC, Dual Fiber Low Insertion Loss CWDM Mux Demux, FMU Plug-in Module
SINGLE FIBER		
Single fiber	#43711	9 Channels 1270-1590nm, LC/UPC, Single Fiber CWDM Mux Demux, Side-A, Plug-in Module, used together with ID#43699
Single fiber	#43699	9 Channels 1290-1610nm, LC/UPC, Single Fiber CWDM Mux Demux, Side-B, Plug-in Module, used together with ID#43711

*Standard products are listed above. Customized specifications are available upon request.

Channel Wavelengths and Color Coding for CWDM

For CWDM systems an industry standard color coding scheme is used. The latches of the transceivers match the colored port indicators on the passive units therefore guaranteeing simple setup, following color codes and wavelength are valid for CWDM.

ITU channel no.	Wavelength	Color	Color Coding
27	1270nm	light purple	
29	1290nm	sky blue	
31	1310nm	yellow green	
33	1330nm	yellow ocher	
35	1350nm	pink	
37	1370nm	beige	
39	1390nm	white	
41	1410nm	silver	
43	1430nm	black	

ITU channel no.	Wavelength	Color	Color Coding
45	1450nm	yellow orange	
47	1470nm	gray	
49	1490nm	violet	
51	1510nm	blue	
53	1530nm	green	
55	1550nm	yellow	
57	1570nm	orange	
59	1590nm	red	
61	1610nm	brown	

High Quality CWDM Transceivers to Build a Passive CWDM System

FS.COM offers CWDM transceiver modules in SFP, SFP+, SFP28, 3G-SDI SFP and XFP formats. Every optics is tested in real switches and fully compatible with Cisco, Juniper, Arista, Brocade, Dell, Extreme, etc.

Transmission distances range from 10-80km, transmission data rate range from 1G-25G speeds, without the use of optical amplifiers.



CWDM-SFP

CWDM-10G SFP+

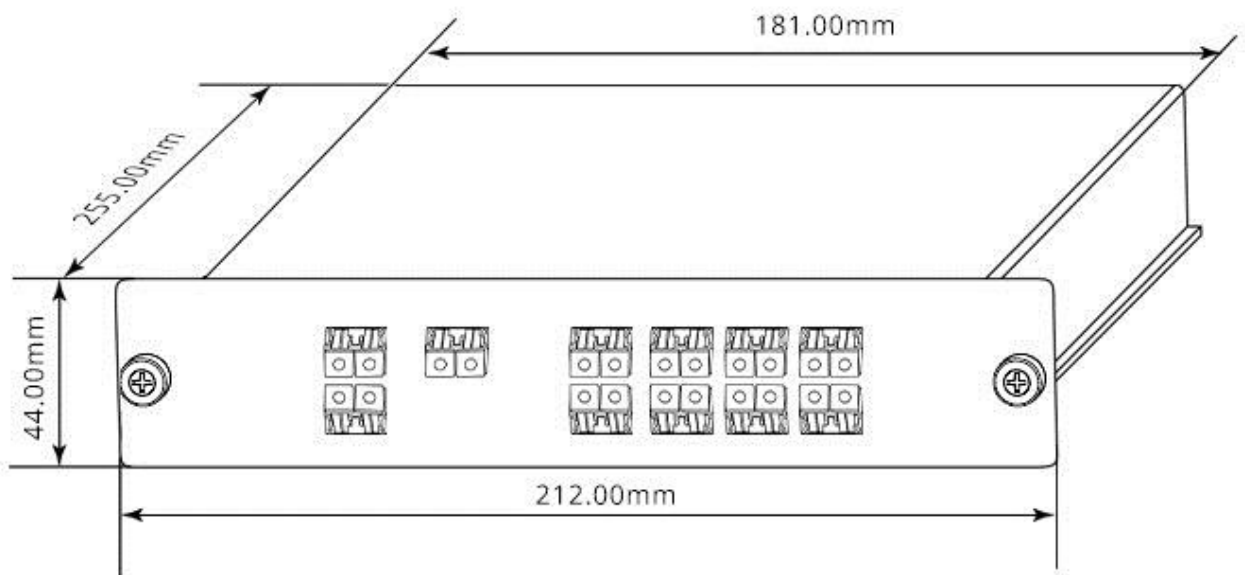
CWDM-25G SFP28

CWDM-3G-SDI-SFP

CWDM-XFP

Layout and Dimensions

- Width: 212.00mm (8.35")
- Height: 44.00mm (1.73")
- Depth: 255.00mm (10.04")
- The color of the module is black
- All fonts and labels are printed in black



Ordering Information

Mux Demux & OADM		
	FMU-D402160M3	40 Channels 100GHz C21-C60, with 1310nm and Monitor Port, 3.5dB Typical IL, LC/UPC, Dual Fiber DWDM Mux Demux, 1U Rack Mount #35887
DWDM MUX DEMUX	M6200-D2160M	40 Channels 100GHz C21-C60 Dual Fiber DWDM Mux and Demux with Monitor Port, Pluggable Module, LC/UPC, Integrated with M6200 Series Managed Chassis #120424
	FMU-D162136EM3	16 Channels 100GHz C21-C36, with Monitor, Expansion and 1310nm Port, LC/UPC, Dual Fiber DWDM Mux Demux, 1U Rack Mount #72430
	FMU-MD085360EM3	CWDM/DWDM Hybrid Solution, 8 Channels 100GHz C53-C60, with Monitor, Expansion and 1310nm Port, LC/UPC, Dual Fiber DWDM Mux Demux, FMU Plug-in Module #72433
CWDM MUX DEMUX	FMU-C182761M	18 Channels 1270-1610nm, with Monitor Port, LC/UPC, Dual Fiber CWDM Mux Demux, 1U Rack Mount #33489
	FMU-MC084761EM	8 Channels 1470-1610nm, with Monitor and Expansion Port, LC/UPC, Dual Fiber, Low Insertion Loss CWDM Mux Demux, FMU Plug-in Module #78163
LWDM MUX DEMUX	ABS-L042930A	4 Channels 1295.56-1309.14nm, Single Fiber LAN-WDM Mux Demux, Side-A, ABS Pigtailed Module, LC/UPC #97782
	ABS-C062737A	6 Channels 1271-1371nm, Single Fiber CWDM Mux Demux, Side-A, ABS Pigtailed Module, LC/UPC #97784
OADM	DOADM-DF	Customized Dual Fiber & Single Fiber DWDM OADM #70427
	COADM-DF	Customized Dual Fiber & Single Fiber CWDM OADM #70425
Chassis	FMU-1UFMX-N	FMU 2-Slot 1U 19" Rack Chassis Unloaded, holds up to 2 Units FMU Plug-in Module #30408
	FUD-1UFMX-N	FUD 4-Slot 1U 19" Rack Chassis Unloaded, holds up to 4 Units FUD Plug-in Module #106578
TRANSPONDERS & MUXPONDERS		
8x 200G	M6800-TSP16	16x 100G QSFP28 to 8x 200G CFP2 OTN Managed Transport Platform #111053
100G/200G	M6500-TMXP5	2x 100G QSFP28/4x 40G QSFP+ to 1x 200G CFP2 Transponder/Muxponder #111049
10G	M6200-OEO10G	5 Channels WDM Transponder (Converter), 10 SFP/SFP+ Slots #107365
	M6500-CH2U	2U Managed Chassis Unloaded Platform, Supports 2x 200G Transponder/Muxponder #96454
	M6500-CH5U	5U Managed Chassis Unloaded Platform, Supports 6x 200G Transponder/Muxponder #111050
	M6200-CH2U	2U Managed Chassis Unloaded Platform, Supports 7x Mux/DEMUX/EDFA/OEO/OLP/DCM Cards #107371
	M6200-CH5U	5U Managed Chassis Unloaded Platform, Supports 15x MUX/DEMUX/EDFA/OEO/OLP/DCM Cards #111052
Chassis		

OPEN LINE SYSTEM

Amplifiers	M6200-25PA	25dB Gain DWDM EDFA Pre-Amplifier, 16dBm Output#107367
	M6200-20BA	20dBm Output DWDM EDFA Booster Amplifier, 16dB Gain#107366
Dispersion Compensation	M6200-DCM40	40KM DCF-based Passive Dispersion Compensation Module#107370
	M6200-DCM80	80KM DCF-based Passive Dispersion Compensation Module#119071
Line Protection	M6200-OLP2	1+1 Optical Line Protection Switch (OLP)#107368
Red/Blue Filter	M6200-RB	1x2 Single Fiber DWDM Red/Blue Filter#107369
VOA Units	M6200-SFPVOA	SFP Variable Optical Attenuator Module#107373
	AT-M-LCU	Fixed Fiber Optic Attenuators #70009
Chassis	M6200-CH2U	2U Managed Chassis Unloaded Platform, Supports 7x Mux/DEMUX/EDFA/OEO/OLP/DCM Cards #107371
	M6200-CH5U	5U Managed Chassis Unloaded Platform, Supports 15x MUX/DEMUX/EDFA/OEO/OLP/DCM Cards #111052

WDM TRANSCEIVERS

100G/200G CFP2	M-CFP2-DCO	C14 1566.31nm 100G/200G Tunable CFP2-DCO Coherent Transceiver, up to 1000km #120128
	DWDM-SFP25G-10	25G DWDM SFP28 100GHz 1563.86nm 10km DOM LC SMF Optical Transceiver Module #87000
25G SFP28	CWDM-SFP25G-40S	25G 1270nm CWDM SFP28 40km DOM LC SMF Optical Transceiver Module #100112
	CWDM-SFP25G-10SP	25G 1270nm CWDM SFP28 10km DOM LC SMF Optical Transceiver Module #76003
	LWDM-SFP25G-40	25G LWDM SFP28 1286.66nm 40km DOM LC SMF Optical Transceiver Module #93786
16G/8G FC	DWDM-SFP16G-40	Customized 16G DWDM SFP+ C20-C61 100GHz 40km DDM LC SMF Transceiver Module#73084
	DWDM-SFP16GH-40	Customized 16G DWDM SFP+ 50GHz 40km DDM LC SMF Transceiver Module #73085
	CWDM-SFP16G-40	Customized 16G Fiber Channel CWDM SFP+ 1470-1610nm 40km DDM LC SMF Transceiver Module #80765

	DWDM-SFP10G-80	10G DWDM SFP+ 1559.79nm 80km DOM LC SMF Transceiver Module, Commercial Temperature#31237, Industrial Temperature#113562
	DWDM-SFP10G-40	10G DWDM SFP+ 1560.61nm 40km DOM LC SMF Transceiver Module, Commercial Temperature#38731, Industrial Temperature#113511
10G SFP+	DWDM-SFP10G-C	10G DWDM C-band Tunable SFP+ 50GHz 80km DOM LC SMF Transceiver Module #69267
	CWDM-SFP10G-80L	10G CWDM SFP+ 1470nm 80km DOM LC SMF Transceiver Module #19367
	CWDM-SFP10G-40S	10G CWDM SFP+ 1270nm 40km DOM LC SMF Transceiver Module, Commercial Temperature#22168, Industrial Temperature#112392
	DWDM-SFP1G-EZX	1000BASE-DWDM SFP 100GHz 1563.86nm 100km DOM LC SMF Transceiver Module #54150
	DWDM-SFP1G-ZX	1000BASE-DWDM SFP 1563.86nm 80km DOM LC SMF Transceiver Module #47697
1G SFP	CWDM-SFP1G-EZX	1000BASE-CWDM SFP 1270nm 120km DOM LC SMF Transceiver Module #102776
	CWDM-SFP1G-ZX	1000BASE-CWDM SFP 1270nm 80km DOM LC SMF Transceiver Module #33234

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