FS

Optical Transport Network (OTN) Product Portfolio

The OTN solution is designed for highly effective mapping of different protocols and rates into the same uplink, providing simpler, transparent, high bandwidth capabilities at a comparatively low cost.

With MUX/DEMUX in FMU Series, EDFA/DCM/OEO in FMT Series, a cost-effectively and flexible OTN solution can be designed to meet multiple demands.

1. FMU Passive Multiplexer Series

FMU Passive Multiplexer Series includes CWDM/DWDM Mux Demux and OADM (Optical Add Drop Multiplexer) for building the WDM network, which can save fiber resources by allowing different data streams at different frequencies to be sent over a single optical fiber.

1. 1 DWDM Mux Demux

FMU DWDM Mux Demux supports up to 96 DWDM channels to be multiplexed simultaneously over a dark fiber network.

Description	Fiber Type	ITU Channel	Housing	Special Service	Part Number
40ch DWDM Mux Demux	Dual Fiber	C21-C40	1U Rack Mount	Monitor/1310nm Port	FMU-D402160M3
16ch DWDM Mux Demux	Dual Fiber	C21-C36	1U Rack Mount	Monitor/Expansion /1310nm Port	FMU-D162136EM3
8ch DWDM Mux Demux	Dual Fiber	C53-C60	Plug-in Module	Monitor/Expansion /1310nm Port	FMU-MD085360EM3
16ch DWDM Mux Demux, Side-A	Single Fiber	C21-C36	1U Rack Mount	None	FMU-D162136A
16ch DWDM Mux Demux, Side-B	Single Fiber	C45-C60	1U Rack Mount	None	FMU-D164560B
8ch DWDM Mux Demux, Side-A	Single Fiber	C21-C35	Plug-in Module	Expansion Port	FMU-MD08EA
8ch DWDM Mux Demux, Side-B	Single Fiber	C22-C36	Plug-in Module	Expansion Port	FMU-MD08EB

1.2 DWDM Add & Drop

DWDM OADM is used in DWDM systems for selectively adding and dropping up to 16 channels from a DWDM stream, and it gives you more flexibility in terms of the volume of traffic and type of data you want to transmit.

Description	Transmission Direction	Number of Channel	Special Service	Part Number
Dual Fiber DWDM OADM	East and West	1/2/4/8/16	Monitor/1310nm Port	DOADM-DF
Dual Fiber DWDM OADM	East or West	1/2/4	Monitor/1310nm Port	DOADM-DF
Single Fiber DWDM OADM	East and West	1/2/4/8	Monitor/1310nm Port	DOADM-SF
Single Fiber DWDM OADM	East or West	1/2/4/8	Monitor/1310nm Port	DOADM-SF-EOW

1. 3 CWDM Mux Demux

FMU CWDM Mux Demux supports up to 18 CWDM channels to be multiplexed simultaneously over a dark fiber network.

Description	Fiber Type	Wavelength	Housing	Special Service	Part Number
18ch CWDM Mux Demux	Dual Fiber	1270-1610nm	1U Rack Mount	Monitor Port	FMU-C182761M
8ch CWDM Mux Demux	Dual Fiber	1270-1450nm	Plug-in Module	None	FMU-MC082745
8ch CWDM Mux Demux	Dual Fiber	1470-1610nm	Plug-in Module	Monitor/Expansion Port	FMU-MC084761EM
4ch CWDM Mux Demux	Dual Fiber	1270-1330nm	Plug-in Module	None	FMU-MC042733
9ch DWDM Mux Demux, Side-A	Single Fiber	1270-1590nm	Plug-in Module	None	FMU-MC09A
9ch DWDM Mux Demux, Side-B	Single Fiber	1290-1610nm	Plug-in Module	None	FMU-MC09B

1.4 CWDM Add & Drop

CWDM OADM is used in CWDM systems for selectively adding and dropping up to 4 channels from a CWDM stream, and it gives you more flexibility in terms of the volume of traffic and type of data you want to transmit.

Description	Transmission Direction	Number of Channel	Special Service	Part Number
Dual Fiber CWDM OADM	East and West	1/2/4	Monitor/1310nm /1550nm Port	COADM-DF
Dual Fiber CWDM OADM	East or West	1/2/4	Monitor/1310nm /1550nm Port	COADM-DF
Single Fiber CWDM OADM	East and West	1/2/4	Monitor/1310nm /1550nm Port	COADM-SF
Single Fiber CWDM OADM	East or West	1/2/4	Monitor/1310nm /1550nm Port	COADM-SF-EOW

Note:

If 1310nm port is added, the following CWDM wavelengths can't be added: 1270nm, 1290nm, 1310nm, 1330nm, 1350nm and 1370nm;

If 1550nm port is added, the following CWDM wavelengths can't be added: 1510nm, 1530nm, 1550nm, 1570nm, 1590nm and 1610nm.

1. 5 FMU Mounting Chassis

FMU Mounting Chassis is the 1U 19" rack chassis that can be mounted in a standard 19-inch cabinet or rack. It provides easy-to-manage environment for CWDM/DWDM/OADM plug-in modules.

Description	Slot Count	Enclosure Type	Material	Part Number
FMU 1U 19" Rack Chassis Unloaded	2-slot	Rack Mountable	Cold Rolled Steel	FMU-1UFMX-N
FUD 1U 19" Rack Chassis Unloaded	4-slot	Rack Mountable	Cold Rolled Steel	FUD-1UFMX-N

2. FMT Infrastructure Modules

FMT Infrastructure Modules cover FMT OEO/EDFA/DCM/OLP, DWDM Red/Blue Filter, Fiber Monitoring Modules and Managed Chassis.

They can be used together with FMU Mux/Demux to build a multifunctional WDM system with longer transmission distance.

2.1 Amplifier Modules

FMT Amplifier Modules can be added to the WDM system to extend transmission distance by increasing the power budget.

Description	Wavelength	Optical Gain	Output Power	Input Power	Part Number
Pre-Amplifier DWDM EDFA	C21-C60	26dB	≤16dBm	-30dBm~-5dBm	FMT26PA-EDFA
Pre-Amplifier DWDM EDFA	C21-C60	20dB	≤13dBm	-30dBm~+5dBm	FMT20PA-EDFA
Booster DWDM EDFA	C21-C60	20dB	≤20dBm	-23dBm~+12dBm	FMT20BA-EDFA
Booster DWDM EDFA	C21-C60	17dB	≤17dBm	-23dBm~+12dBm	FMT17BA-EDFA
Booster DWDM EDFA	C21-C60	24dB	≤22dBm	-25dBm~0dBm	FMT22BA-EDFA
Semiconductor Optical Amplifier	1310nm	10dB	≤8dBm	-20dBm~+6dBm	FMT10dB-SOA

2.2 WDM Converter (Transponder)

FMT WDM Converter (Transponder) can convert Ethernet signals into a corresponding wavelength in CWDM and DWDM network infrastructures. It enables network operators to implement a wide range of media conversions in a compact and flexible design.

Description	Transmission Speed	Interface Type	Slot Number	Part Number
4ch 10G Transponder (OEO)	1Gbps to 11.3Gbps	SFP/SFP+	8	FMT4DL-OEO10GSFP
4ch 25G Transponder (OEO)	8Gbps to 28.1Gbps	SFP28/SFP+	8	FMT4DL-OEO25GSFP28

2.3 Dispersion Compensation Module

FMT Dispersion Compensation Module (DCM) can properly correct or reverse the dispersion that is realized as the signal traversed the optical fiber, so as to keep the original shape of the signal pulse in long-haul transmission.

Description	Technology	Wavelength	Dispersion	Insertion Loss	Part Number
40KM DCM	DCF	1528nm-1568nm	-680±3%ps/nm	≤4.2dB	FMT40-DCM
80km DCM	DCF	1528nm-1568nm	-1360±3%ps/nm	≤5.8dB	FMT80-DCM

2.4 Line Protection

FMT Line Protection Switch (OLP) is the device used in pairs to protect network transmission line. It can realize optical power monitoring and automatic switching.

Description	Wavelength	Application	Insertion Loss	Part Number
1+1 Optical Line Protection Switch	1310/1550±50nm	Dual Fiber Transmission	Tx<3.8dB, Rx<1.2dB	FMT-OLP2
BIDI Optical Line Protection Switch	1270nm~1610nm	Single Fiber Transmission	<1.2dB	FMT-BDOLP
Optical Splitter	1270nm~1610nm	Single Fiber Transmission	<3.8dB	FMT-BDSplitter

2.5 DWDM Red/Blue Filter

FMT DWDM Red/Blue Band Filter is mainly used to separate or combine Red band wavelength signals and Blue band wavelength signals in single fiber Bi-directional DWDM system.

Description	Pass Band Wavelength	Reflect Band Wavelength	Housing	Part Number
1x2 DWDM Red/Blue Filter	1529.35 - 1541.55nm (CH45-CH60)	1548.31 – 1560.81nm (CH21-CH36)	Steel Tube	FSBR-1x2
1x2 DWDM Red/Blue Filter	1529.35 - 1541.55nm (CH45-CH60)	1548.31 – 1560.81nm (CH21-CH36)	Pluggable Module	FSBR-1x2
1x2 DWDM Red/Blue Filter	1529.35 - 1541.55nm (CH45-CH60)	1548.31 – 1560.81nm (CH21-CH36)	ABS Box	FSBR-1x2

2.6 Fiber Monitoring

FMT Fiber Monitoring modules are optical power monitoring devices, they can be used to monitor the link power or optic fiber conditions in real-time with different functions.
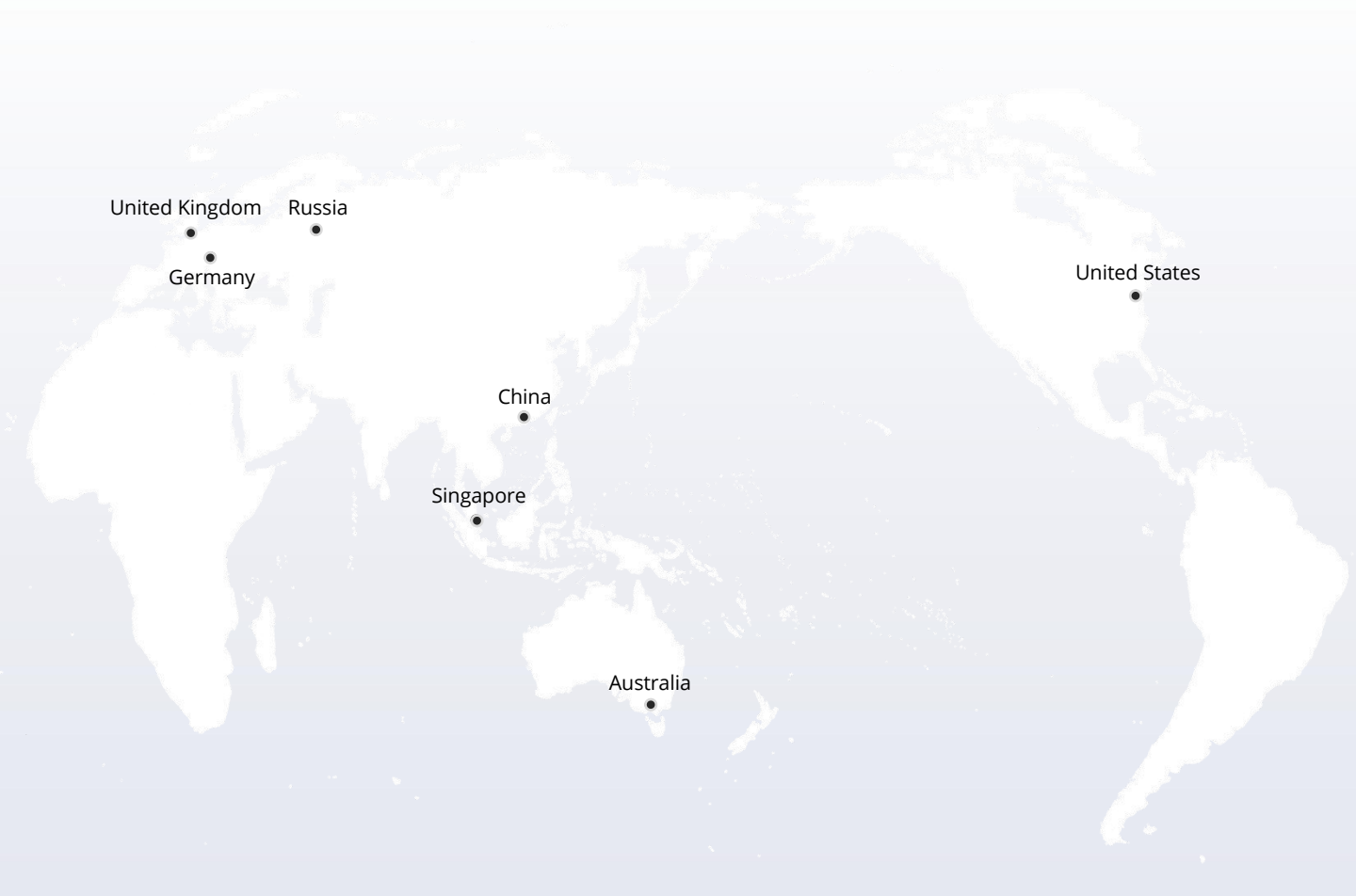

Description	Wavelength	Function	Application	Part Number
4ch Optical Power Detection (OPD)	1550±20nm	Monitor Total Power from All Channels	CWDM/DWDM System	FMT-4OPD
Optical Performance Monitoring (OPM)	1528nm-1568nm	Monitor Each Channel	DWDM System	FMT-OPM
Optical Time Domain Reflectometer (OTDR)	1550/1625±20nm	Fault Detection and Isolation, Fiber Measurement	Monitoring and Maintaining System	FMT-OTDR

2.7 FMT Managed Chassis

FMT Managed Chassis comes with NMU (Network Management Unit) main control card, cooling fan and single/dual power supply. It can hold up to 4x FMT pluggable modules which allows you to optimize a solution for your specific network needs.

Description	Slot Count	Power Supply	Dimensions (HxWxD)	Part Number
1U Managed Chassis Unloaded	4 Slots	Dual Power	1.75"x19"x11.81" (44.5x482.6x300mm)	FMT04-CH1U
2U Managed Chassis Unloaded	8 Slots	Single/Dual Power	3.39"x19"x11.81" (86x482.6x300mm)	FMT-CH
4U Managed Chassis Unloaded	16 Slots	Single/Dual Power	7.01"x19"x11.81" (178x482.6x300mm)	FMT-CH

United Kingdom   Russia

Germany

United States

China

Singapore

Australia

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