

26dB Gain Pre-Amplifier DWDM EDFA Extended C-band 20dBm Output

Plug-in Card Type for FMT Multi-Service Transport System



Description

The FMT series pre-amplifier is a low-noise, gain-flattened extended C-band optical erbium-doped fiber amplifier (EDFA) designed to cost-effectively extend the optical link power budget for building long-distance DWDM solutions. It is designed for maximum configuration flexibility, with pluggable modules that plug directly into the 1U FMT managed chassis, each module occupying one slot. In addition, the amplifiers can be configured and monitored through MonitorOnline, which can help you manage your network more conveniently and efficiently.

The module can facilitate an integrated cost-effective and flexible optical layer solution by incorporating a variety of optical layer boards, such as DCM/MUX/OSW/OLP/R/B. FMT EDFA can be used different types of point-to-point applications, OADM applications, active/passive ring applications, DWDM dual-fiber/single-fiber and optical cable monitoring systems. And it can amplify the optical signal more than 120km long distance transmission scenarios. The module can facilitate an integrated cost-effective and flexible optical layer solution by incorporating a variety of optical layer boards, such as DCM/MUX/OSW/OLP/R/B. It can be applied to DWDM dual-fiber/DWDM single-fiber/optical cable monitoring systems, to meet the diverse needs of scenarios.

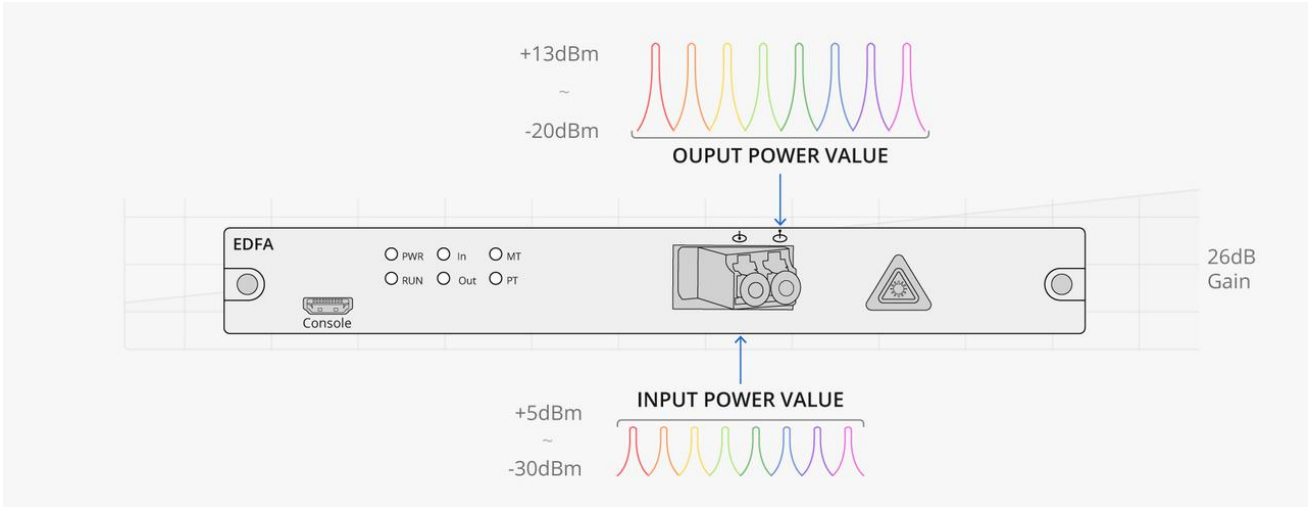
Features

- Support 1528nm-1568nm for Broader Amplification Bandwidth and 50GHZ 96CH/100GHZ 48CH
- 4.5dB Low Noise Figure Ensures High OSNR, improving Transmission Quality
- Achieve Optical Power Attenuation used with [FS-VOA-C](#)
- Support AGC Operation Mode
- One Unit Used Per Direction
- Enable to Cascade Several EDFAs to form an Amplified OTN Link over Long Distances
- Facilitate an Integrated Optical Layer Solution by Incorporating DCM/MUX/OSW/OLP/R/B
- Fit Into One Slot of the [FMT Managed Chassis](#)

Flexible and Versatile EDFA

EDFA utilizes erbium ion-doped optical fibers to amplify the passing optical signals, and it supports the AGC (Automatic Gain Control) operation mode, the AGC function will be automatically activated when the input optical power changes, so that the output optical power of the amplifier varies with the input optical power, and the gain of the channel is always kept constant. Ports In&Out are paired, the data signal enters from port In and is retransmitted out from port Out.

Note: The Work Gain is the current gain of EDFA card, which is the same as the default gain when output power is lower than or equal to saturated output power.



EDFA has three ports, including Communication Port and Fiber Port. Fiber ports include In Port and Out Port.

Communication Port

Port Name	Note	Port Type
Console	Debugging & upgrading port	Micro USB

Fiber Port

Port Name	Note	Port Type
In	Optical signal input port	LC/UPC
Out	Optical signal output port	LC/UPC

EDFA has six indicators, including PWR, RUN, In, Out, MT and PT indicator.

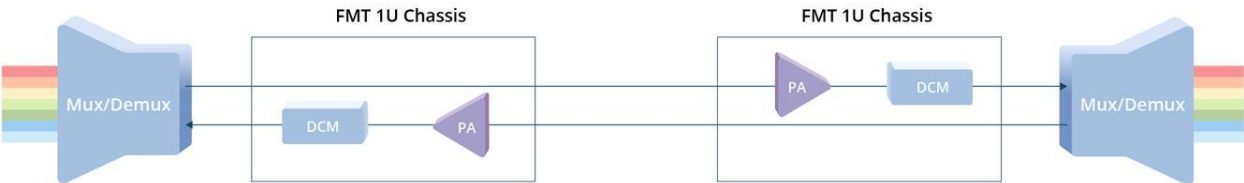
Indicator	Note	Normal State	Alarm State
PWR	Board Power	Green light	Light off
RUN	Board Run	Green light flashes every second	Light off or flashes irregularly
In	Input Optical Power Alarm	Green light flashes every second	Red light (lower input power)
Out	Output Optical Power Alarm	Green light flashes every second	Red light (lower output power)
MT	Module Temperature Alarm	Green light flashes every second	Red light (higher temperature)
PT	PUMP Temperature Alarm	Green light flashes every second	Red light (higher temperature)

Note: Please do not set input power alarm threshold, output power alarm threshold, default gain, lest the device come to error alarm and affect normal work.

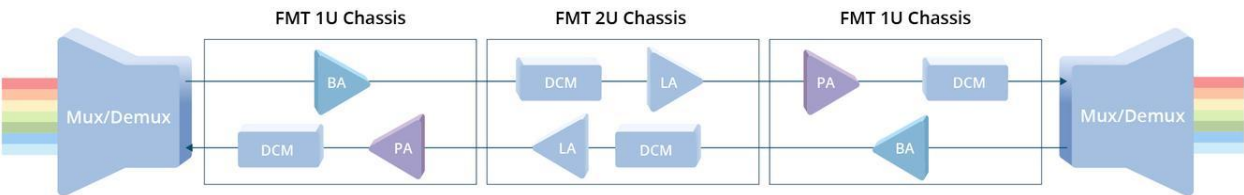
Applications

The FMT series pre-amplifier is a low-noise, gain-flattened extended C-band optical erbium-doped fiber amplifier (EDFA). It can facilitate an integrated cost-effective and flexible optical layer solution by incorporating a variety of optical layer boards, such as DCM/MUX/OSW/OLP/R/B. FMT EDFA can be used in different types of point-to-point applications, OADM applications, active/passive ring applications, DWDM dual-fiber and optical cable monitoring systems. And it can amplify the optical signal more than 120km long distance transmission scenarios.

1. Dual-fiber Bidirectional 10G DWDM 80km Transmission



2. Dual-fiber Bidirectional 10G DWDM 240km Transmission



Product Specifications

Amplifier Type	Pre-Amplifier	Operation Wavelength	1528nm-1564nm (Extended C-band)
Total Number of Channels Supported	48CH(100GHz) 96CH(50GHz)	Channel Spacing	100GHz/50GHz
Optical Gain	26dB	Gain Flatness	≤1.5dB (1dB typical)
Input Power	-30dBm~5dBm	Saturated Output Power	20dBm
Polarization Mode Dispersion (PMD)	≤0.3ps	Polarization Dependent Gain (PDG)	≤0.3dB
Noise Figure	≤6dB (4.5dB typical)	Power Consumption	≤10W
Optical Connector	LC/UPC	Management	SNMP, Monitor Online, Simple Management Tool
Operation Mode	AGC	For Use With	FMT managed chassis
Cooling	Left to right	Operating Humidity	10%~92%(Non-condensing)
Operation Temperature	-10 to 60°C (14 to 140°F)	Storage Temperature	-20 to 75°C (-4 to 171°F)
Visual Indicators	Status LED Power & Alarm status Line LED: Line In/Out	Laser Class	Class IIIB

Managed Chassis Introduction

4 - slot 1 U managed chassis, supports multiple FMT series business modules with accessories.



NMU Module

NMU (Network Management Unit) module provides a strong ability in data processing, supporting the function module rapid configuration and intelligent management.

Blank Plate

Used for FMT series business modules, which are designed as 1 - slot or 2 - slot type to match the managed chassis:

slot module: OEO, DWDM EDFA, OLP, VOA, DWDM Red/ Blue Filter, OPD, etc;

slot module: DCM, EYDFA, SOA, OTDR, OPM, etc.

Cooling Fan

Intelligent temperature control system and optimized design of ventilation, ensuring high stability and reliability.

Power Supply

Pluggable 1+1 redundant power, providing stable power supply for the equipment. Dual AC/DC power is optional.

Grounding Screw

The grounding screw is used to connect with the ground wire to avoid electric shock.

Order Information

Chassis		
1U	FMT04-CH1U	FMT04-CH1U, 1U Managed Chassis Unloaded Platform, Supports up to 4x EDFA/OEO/OLP Card #39214
1U/2U/4U	FMT-CH	Customized 1U/2U/4U Managed Chassis Unloaded, Supports up to 16x Multiplexer/EDFA/OEO/OLP Module with Accessories #70413

Transponder		
10G	FMT4DL-OEO10GSFP	FMT4DL-OEO10GSFP, 4 Channels WDM Transponder (Converter), 8 SFP/SFP+ Slots #30515
25G	FMT4DL-OEO25GSFP28	FMT4DL-OEO25GSFP28, 4 Channels 25G WDM Transponder (Converter), 8 SFP28/SFP+ Slots #92056
Optical Amplifiers		
Pre-amplifier	FMT20PA-EDFA	FMT20PA-EDFA, 20dB Gain DWDM EDFA Pre-Amplifier, 13dBm Output #72284
	FMT26PA-EDFA	FMT26PA-EDFA, 26dB Gain DWDM EDFA Pre-Amplifier, 16dBm Output #36524
	FMT26PA-51EDFA	FMT26PA-51EDFA, 26dB Gain Extended C-Band DWDM EDFA Pre-amplifier, 20dBm Output #248135
Booster Amplifier	EDFA-PA	Customized Pre-Amplifier EDFA for DWDM Solution #35925
	FMT17BA-EDFA	FMT17BA-EDFA, 17dBm Output DWDM EDFA Booster Amplifier, 17dB Gain #72283
	FMT17BA-51EDFA	FMT17BA-51EDFA, 17dB Gain Extended C-Band DWDM EDFA Booster Amplifier, 20dBm Output #248133
In-line Amplifier	EDFA-LA	Customized In-Line EDFA for DWDM Solution #35924
High Power Amplifier	EDFA-BA	Customized Booster EDFA for DWDM Solution #35926
SOA	HPA	Customized FTTx PON High Power 1550nm EYDFA #65789
Array EDFA	FS-SOA	Customized 1310nm Semiconductor Optical Amplifier (SOA) #69350
	FMTPA-Array	Customized Multiports DWDM Array EDFA Pre-amplifier #248139
	FMTBA-Array	Customized Multiports DWDM Array EDFA Booster Amplifier #248137
DCMs		
40KM	FMT40-DCM	FMT40-DCM, 40KM DCF-based Passive Dispersion Compensation Module #65781
80KM	FMT80-DCM	FMT80-DCM, 80KM DCF-based Passive Dispersion Compensation Module #65779
10-140KM	FS-DCM	Customized DCF-based Dispersion Compensation Module #65783
-20--+20KM -40--+40KM	FS-TDCM	Customized C-band Tunable Dispersion Compensation Module (TDCM) #72427
Line Protection		
OLP	FMT-BDOLP	Customized BIDI Optical Line Protection Switch (OLP) #72700
	FMT-BDOLP	Customized BIDI Optical Line Protection Switch (OLP) #72700
BIDI Splitter	FMT-BDSplitter	FMT-BDSplitter, Optical Splitter #73324

Fiber Monitoring		
OPD	FMT-4OPD	FMT-4OPD, 4 Channels 1550nm Optical Power Detection OPD (AIU) #78568
	FMT-OPD	Customized Optical Power Detection OPD (AIU) #70941
LSU	FMT-LSU	Customized LSU Light Source Unit, Pluggable Module for FMT Multi-Service Transport Platform #78469
OSW	FMTOSW-1x16	Customized 1x16 Multi-Channel Opto-Mechanical Optical Switches with Adjustable Channels Control #73287
OPM	FMT-OPM	FMT-OPM, Optical Performance Monitoring (OPM) #71586
OTDR	FMT-OTDR	Customized Optical Time Domain Reflectometer (OTDR) #73281
Accessories		
Power Supply	FMT124U-PS	Customized Power Supply Module Tailored for FMT 1U/2U/4U Managed Chassis #66922
Cooling Fan	FMT1U-FAN	Cooling Fan Card Tailored for FMT 1U Managed Chassis #66916
	FMT-FAN	Customized Cooling Fan Module Tailored for FMT 1U/2U/4U Managed Chassis #70414
Red/Blue Filter	FSBR-1x2	Customized 1x2 Single Fiber DWDM Splitter Red/Blue C Band Filter #65981
VOA Units	FS-VOA-C	Customized Variable Optical Attenuator, 0~15dB, LC/UPC #65271
NMU	FMT-MING-S	FMT-MNG-S, Network Management Unit for FMT 1U, 2U and 4U Managed Chassis, , 2x 100Base-X SFP Ports, 2x 10/100Base-T RJ45 Ports #66915

Subject to change without notice. For more information visit [FS.com](#).)