

FMT Infrastructure Modules Frequently Asked Questions (FAQs)

Optical Transport Networking for Metro/Regional and Long Haul



Overview

FMT Infrastructure Modules cover FMT series pluggable modules and managed chassis, they are designed to extend the power budget, convert the optical signal, compensate fiber dispersion, protect or monitor the network transmission and so on for a WDM system.

FMT means "FS Multiservice Transport", the FMT series pluggable modules are the most important part, which can be highly integrated with the managed chassis. This modular design offers pay-as-you-grow flexibility, and it also enables easy installation and rapid usage deployment.

Components

- FMT Pluggable Modules: DWDM EDFA, DCM, OEO, OLP/OBP, DWDM Red/Blue filter, Optical Power Detection (OPD) and so on.
- Managed chassis: 1U/2U/4U FMT managed chassis

Features

- Compact building practice
- Hot-swappable pluggable cards
- Self-developed management system
- EDFA module for extending the transmission distance
- DCM module for compensating fiber dispersion
- OLP module for line protection
- OEO module for wavelength/fiber type conversion
- Highly integrated in one FMT managed chassis
- Redundant hot pluggable power supply units

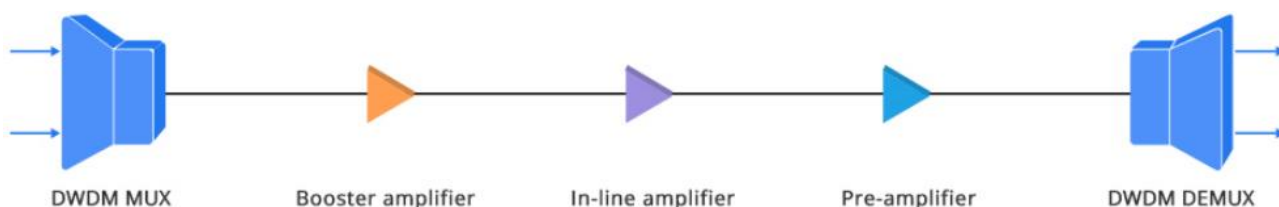
Frequently Asked Questions

1. What is the role of EDFA in the link? How to deploy it?

Due to losses incurred in the light signal when passing through fiber patch panels, splices and the fiber itself, EDFA is needed to amplify the signal in long-haul transmission. DWDM EDFA (Erbium Doped Fibre Amplifier) is used to extend the distance of a DWDM network by delivering additional power budget to the system.

2. How to deploy the EDFA?

Within a DWDM system, EDFA can be placed in three different places for power compensation: used as booster optical amplifiers on the transmitter side to provide high input power to the fiber span, as in-line amplifiers to compensate for fiber loss in the transmission, and as preamplifiers at the receiver end to boost signals to the necessary receiver levels.



3. Is it possible to add EDFA to the single fiber solution?

Yes, EDFA modules can be added to the single fiber solution, but they should be used with Red/Blue C Band Filter. Since the EDFA can only amplify signals from one direction, in single fiber application, the Red/Blue C Band Filter should be used together to amplify the signals of both directions by splitting the wavelengths into two spectral bands.

4. Why do I need DCM in the link?

Dispersion is a fiber based physical effect that spreads the optical pulse while it travels down the optical fiber. This effect worsens the signal quality and thus limits the maximum distance you can achieve with your optical system. In order to counter this effect, DCM (Dispersion Compensation Modules) is typically used for compensating the chromatic dispersion of transmission fiber.



5. Is it possible to add EDFA and DCM modules in CWDM system?

No, EDFA and DCM modules can not be used in CWDM system. Since the EDFA and DCM modules' operating wavelength range is C-Band (1528~1564nm) which can not cover all the CWDM operating wavelength. Generally, the amplifier is used for DWDM systems.

6. How to know the compensation length for the link? How to calculate that if I use the 80km DWDM SFP+?

You can use the following method to calculate the compensation length, as a reference to select the DCM you need. The link distance minus the transmission distance of the optical module is the minimum compensation distance, on this basis need to add 20km to ensure enough compensation. For example, if the transmission span is 135km, the compensation length is 75km (135km - 80km + 20km = 75km), which means you can choose a DCM whose compensating length is 80km.

7. What is the main function of the WDM Transponder (OEO)?

The WDM Transponder (OEO) is widely used in many networks, and the most classical function is wavelength conversion. When adding a CWDM/DWDM Mux to the WDM network, there is a requirement to convert the optical wavelengths like 850nm, 1310nm and 1550nm to corresponding CWDM/DWDM wavelengths. Then the WDM Transponder comes to assist, it can convert incoming optical signals into precise ITU-standard wavelengths that can be multiplexed.

8. Is the OEO able to convert a fiber SFP to a Copper SFP?

No, OEO does not support converting from a fiber SFP to a Copper SFP because the underlying protocols are not compatible. But if you still need OEO to transpond the 10/100/1000M Copper RJ-45 transceiver, you can add Ethernet Media Converter [#35333](#) to convert copper to fiber at first.

9. Can the OPD module monitor each channel within a DWDM system or just monitor total power from all channels?

No, the OPD (Optical Power Detection) module can only monitors total power from all channels. And if you need monitor each channel within a DWDM system, our OPM (Optical Performance Monitoring) module [#71586](#) can meet your demand.

10. How to manage the FMT infrastructure modules?

There are three software management methods to manage the FMT infrastructure modules, including Monitor Online, Simple Management Tools and SNMPV1.0. Monitor Online is the main tool, because it has a powerful database to facilitate your data storage and online monitoring. Of course, if customers are accustomed to using SNMP for management, the MIB files also can be provided. And it should be noted that at present, these management methods only support windows system.

11. What is the warranty policy for the FMT infrastructure modules after sale?

FMT infrastructure modules enjoy 1 year or 2 years limited warranty against defect in materials or workmanship. For more details about warranty, please check at the [product warranty](#).