

# Customized BIDI Optical Line Protection Switch

Plug-in Card Type

OTN Solutions for Metro, Regional & Long Haul



## Description

Optical Line Protection Switch(OLP) is a product that is used in the protection of network transmission line. By real-time monitoring the power status in working fiber, it can automatically switch from working fiber to backup fiber when the power value of working fiber is lower than a user defined threshold, achieving line protection of optical transmission system.

BIDI OLP needs to be used together with splitter to provide line protection for single fiber bidirectional transmission. The working mode of BIDI is dual transmitting and selective receiving. Optical line protection is realized by ways of bidirectional transmission over single optical fiber. It is mainly applicable to scenarios when there are limited amount of optical fiber resources.

## Features

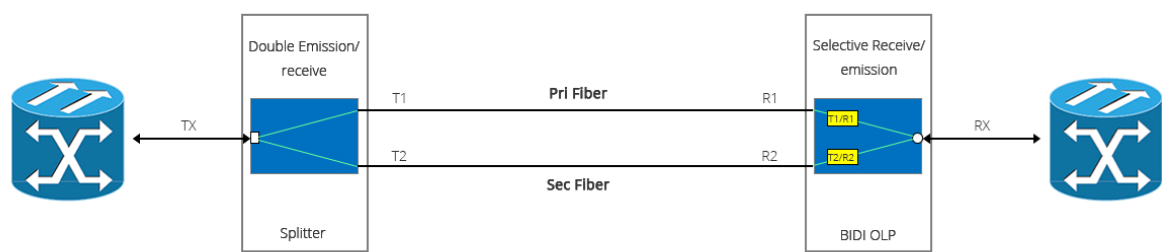
- Independent of data rate, format and wavelength
- Highly configurable to fit network applications
- Real-time monitoring of standby optical power
- Transparent transmission characteristic
- Reduce the loss caused by line fault
- Increase the reliability of the transmission network, improve network quality
- High level of integration by plug-in design, to save the space of cabinet
- Remote configuration through SNMP management

Product Specifications

|                             |                                              |                            |                     |
|-----------------------------|----------------------------------------------|----------------------------|---------------------|
| Operating Wavelengths       | C21-C60/1270nm~1610nm                        | Return Loss                | ≥55dB               |
| Insertion Loss              | BIDI OLP<1.2dB, Splitter<3.8dB               | Monitoring Power Range     | +23~ -50dBm         |
| Monitoring Power Resolution | 0.01dB                                       | Monitoring Power Accuracy  | ± 0.25dB            |
| PDL                         | ≤0.05dB                                      | WDL                        | ≤0.1 dB             |
| Crosstalk                   | ≥55dB                                        | Switching Speed            | <15ms               |
| Management                  | SNMP, Monitor Online, Simple Management Tool | Maximum Optical Power Load | 300mW               |
| Connectors                  | LC/UPC                                       | For Use With               | FMT managed chassis |
| Operation Temperature       | -10° C~+50° C                                | Storage Temperature        | -40° C~+80° C       |

Application

Splitter & BIDI OLP only requires two optical fibers to implement the optical path protection for the single fiber bidirectional transmission. When the main fiber fails, the receiving end automatically switches to the standby fiber to ensure that the communication does not be blocked, improving the stability and reliability and saving fiber resources. While for Rx, the optical signal with better quality will be selected.



Dimensions

4-slot 1U managed chassis, supports up to 4x multiplexer/EDFA/OEO/OLP card with accessories;

- Width: 482.6mm (19")
- Height: 44.5mm (1.75")
- Depth: 300mm (11.81")

OLP plug-in card occupies one slot.



Ordering Information

| Mux Demux & OADM |                                 |                                                                                                                                                             |
|------------------|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DWDM MUX DEMUX   | <a href="#">FMU-D402160M3</a>   | 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                         |
|                  | <a href="#">M6200-D2160M</a>    | 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  |
|                  | <a href="#">FMU-D162136EM3</a>  | 16 Channels 100GHz C21-C36, with Monitor, Expansion and 1310nm Port, LC/UPC, Dual Fiber DWDM Mux Demux, 1U Rack Mount #72430                                |
|                  | <a href="#">FMU-MD085360EM3</a> | 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   | <a href="#">FMU-C182761M</a>    | 18 Channels 1270-1610nm, with Monitor Port, LC/UPC, Dual Fiber CWDM Mux Demux, 1U Rack Mount #33489                                                         |
|                  | <a href="#">FMU-MC084761EM</a>  | 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   | <a href="#">ABS-L042930A</a>    | 4 Channels 1295.56-1309.14nm, Single Fiber LAN-WDM Mux Demux, Side-A, ABS Pigtailed Module, LC/UPC #97782                                                   |
|                  | <a href="#">ABS-C062737A</a>    | 6 Channels 1271-1371nm, Single Fiber CWDM Mux Demux, Side-A, ABS Pigtailed Module, LC/UPC #97784                                                            |
| OADM             | <a href="#">DOADM-DE</a>        | Customized Dual Fiber & Single Fiber DWDM OADM #70427                                                                                                       |
|                  | <a href="#">COADM-DE</a>        | Customized Dual Fiber & Single Fiber CWDM OADM #70425                                                                                                       |
| Chassis          | <a href="#">FMU-1UFMX-N</a>     | FMU 2-Slot 1U 19" Rack Chassis Unloaded, holds up to 2 Units FMU Plug-in Module #30408                                                                      |
|                  | <a href="#">FUD-1UFMX-N</a>     | FUD 4-Slot 1U 19" Rack Chassis Unloaded, holds up to 4 Units FUD Plug-in Module #106578                                                                     |

TRANSPONDERS & MUXPONDERS

|         |                                    |                                                                                                                          |
|---------|------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| 25G     | <a href="#">FMT4DL-OEO25GSFP28</a> | 4 Channels 25G WDM Transponder (Converter), 8 SFP28/SFP+ Slots#92056                                                     |
| 10G     | <a href="#">FMT4DL-OEO10GSFP</a>   | 4 Channels WDM Transponder (Converter), 8 SFP/SFP+ Slots#30515                                                           |
| Chassis | <a href="#">FMT04-CH1U</a>         | 1U Managed Chassis Unloaded Platform, Supports up to 4x EDFA/OEO/OLP Card with Accessories #39214                        |
|         | <a href="#">FMT-CH</a>             | Customized 1U/2U/4U Managed Chassis Unloaded, Supports up to 16x Multiplexer/EDFA/OEO/OLP Module with Accessories #70413 |

OPEN LINE SYSTEM

|                         |                                |                                                                                        |
|-------------------------|--------------------------------|----------------------------------------------------------------------------------------|
| Amplifiers              | <a href="#">FMT26PA-EDFA</a>   | 26dB Gain DWDM EDFA Pre-Amplifier, 16dBm Output#36524                                  |
|                         | <a href="#">FMT20PA-EDFA</a>   | 20dB Gain DWDM EDFA Pre-Amplifier, 13dBm Output#72284                                  |
|                         | <a href="#">FMT17BA-EDFA</a>   | 17dBm Output DWDM EDFA Booster Amplifier, 17dB Gain #72283                             |
|                         | <a href="#">FMT-LA</a>         | In-Line EDFA for DWDM Solution#35924                                                   |
| Dispersion Compensation | <a href="#">FMT40-DCM</a>      | 40KM DCF-based Passive Dispersion Compensation Module#65781                            |
|                         | <a href="#">FMT80-DCM</a>      | 80KM DCF-based Passive Dispersion Compensation Module#65779                            |
|                         | <a href="#">FS-TDCM</a>        | C-band Tunable Dispersion Compensation Module (TDCM)#72427                             |
| Line Protection         | <a href="#">FMT-OLP2</a>       | 1+1 Optical Line Protection Switch (OLP)#66010                                         |
|                         | <a href="#">FMT-BDOLP</a>      | FMT-BDOLP, Optical Line Protection Switch (OLP)#72700                                  |
|                         | <a href="#">FMT-BDSplitter</a> | FMT-BDSplitter, Optical Splitter#73324                                                 |
| Red/Blue Filter         | <a href="#">FMT-RB</a>         | 1x2 Single Fiber DWDM Splitter Red/Blue C Band Filter#65981                            |
|                         | <a href="#">FMT-OPD</a>        | 4 Channels 1550nm Optical Power Detection OPD (AIU)#78568                              |
|                         | <a href="#">FMT-OPM</a>        | Optical Performance Monitoring (OPM)#71586                                             |
| Fiber Monitoring        | <a href="#">FMT-OSW</a>        | 1x16 Multi-Channel MEMS Optical Switches with Adjustable Channels Control#73287        |
|                         | <a href="#">FMT-OTDR</a>       | Optical Time Domain Reflectometer (OTDR)#73281                                         |
|                         | <a href="#">FMT-LSU</a>        | LSU Light Source Unit, Pluggable Module for FMT Multi-Service Transport Platform#78469 |
| VOA Units               | <a href="#">FS-VOA-C</a>       | Variable Optical Attenuator, Pluggable Module, LC/UPC#65271                            |
|                         | <a href="#">AT-M-LCU</a>       | Fixed Fiber Optic Attenuators #70009                                                   |

|                  |                                  |                                                                                                                          |
|------------------|----------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Chassis          | <a href="#">FMT04-CH1U</a>       | 1U Managed Chassis Unloaded Platform, Supports up to 4x EDFA/OEO/OLP Card with Accessories #39214                        |
|                  | <a href="#">FMT-CH</a>           | Customized 1U/2U/4U Managed Chassis Unloaded, Supports up to 16x Multiplexer/EDFA/OEO/OLP Module with Accessories #70413 |
| WDM TRANSCEIVERS |                                  |                                                                                                                          |
| 25G SFP28        | <a href="#">DWDM-SFP25G-10</a>   | 25G DWDM SFP28 100GHz 1563.86nm 10km DOM LC SMF Optical Transceiver Module #87000                                        |
|                  | <a href="#">CWDM-SFP25G-40S</a>  | 25G 1270nm CWDM SFP28 40km DOM LC SMF Optical Transceiver Module #100112                                                 |
|                  | <a href="#">CWDM-SFP25G-10SP</a> | 25G 1270nm CWDM SFP28 10km DOM LC SMF Optical Transceiver Module #76003                                                  |
|                  | <a href="#">LWDM-SFP25G-40</a>   | 25G LWDM SFP28 1286.66nm 40km DOM LC SMF Optical Transceiver Module #93786                                               |
| 16G/8G FC        | <a href="#">DWDM-SFP16G-40</a>   | Customized 16G DWDM SFP+ C20-C61 100GHz 40km DDM LC SMF Transceiver Module#73084                                         |
|                  | <a href="#">DWDM-SFP16GH-40</a>  | Customized 16G DWDM SFP+ 50GHz 40km DDM LC SMF Transceiver Module #73085                                                 |
|                  | <a href="#">CWDM-SFP16G-40</a>   | Customized 16G Fiber Channel CWDM SFP+ 1470-1610nm 40km DDM LC SMF Transceiver Module #80765                             |
|                  | <a href="#">DWDM-SFP10G-80</a>   | 10G DWDM SFP+ 1559.79nm 80km DOM LC SMF Transceiver Module, Commercial Temperature#31237, Industrial Temperature#113562  |
| 10G SFP+         | <a href="#">DWDM-SFP10G-40</a>   | 10G DWDM SFP+ 1560.61nm 40km DOM LC SMF Transceiver Module, Commercial Temperature#38731, Industrial Temperature#113511  |
|                  | <a href="#">DWDM-SFP10G-C</a>    | 10G DWDM C-band Tunable SFP+ 50GHz 80km DOM LC SMF Transceiver Module #69267                                             |
|                  | <a href="#">CWDM-SFP10G-80L</a>  | 10G CWDM SFP+ 1470nm 80km DOM LC SMF Transceiver Module #19367                                                           |
|                  | <a href="#">CWDM-SFP10G-40S</a>  | 10G CWDM SFP+ 1270nm 40km DOM LC SMF Transceiver Module, Commercial Temperature#22168, Industrial Temperature#112392     |
| 1G SFP           | <a href="#">DWDM-SFP1G-EZX</a>   | 1000BASE-DWDM SFP 100GHz 1563.86nm 100km DOM LC SMF Transceiver Module #54150                                            |
|                  | <a href="#">DWDM-SFP1G-ZX</a>    | 1000BASE-DWDM SFP 1563.86nm 80km DOM LC SMF Transceiver Module #47697                                                    |
|                  | <a href="#">CWDM-SFP1G-EZX</a>   | 1000BASE-CWDM SFP 1270nm 120km DOM LC SMF Transceiver Module #102776                                                     |
|                  | <a href="#">CWDM-SFP1G-ZX</a>    | 1000BASE-CWDM SFP 1270nm 80km DOM LC SMF Transceiver Module #33234                                                       |