

# *FiberPlex™ TD-OADM Series* **Optical Add/Drop Multiplexer**

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## *User Manual*





CAUTION

Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.



IMPORTANT

- Clean device with a dry cloth only.
- Read these instructions.
- Follow all instructions.
- Keep these instructions.

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## 1.0 Introduction

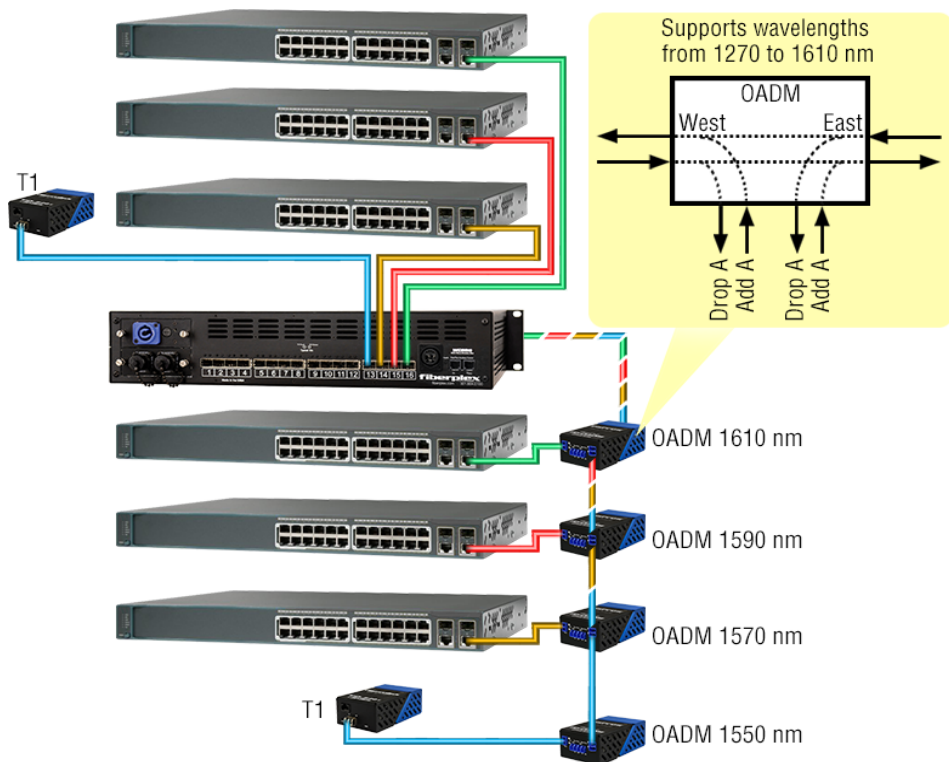
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**Figure 1.** FiberPlex TD-OADM (Dust Covers Removed)

The FiberPlex TD-OADM (see **figure 1**) is a coarse wave division multiplexing (CWDM) optical add/drop multiplexer (OADM) used in wavelength division multiplexing (WDM) systems for multiplexing and routing different channels of light into or out of a single mode fiber (SMF). A dedicated wavelength is assigned to any kind of voice, video or network traffic. The TD-OADM adds (multiplexes) and drops (demultiplexes) selected channels, or wavelengths, on West and East directions of a CWDM fiber link.

These channels are completely transparent to traffic type, protocols, and compression schemes. TD-OADMs are often used in point-to-point, linear, ring, star, and mesh topologies for a large variety of applications (see **figure 2** on page 3).



**Figure 2.** Typical application

## 1.1 Key features

Primary applications:

- Metro area networks
- Mobile fronthaul/backhaul
- AV distribution
- Large enterprise
- Intra-SCIF (sensitive compartmented information facility) distribution

Wavelength: Full ITU-T G.694.2 spectrum grid support (1270 to 1610 nm)

Isolation: East/West operation with 2 x TX/RX connections for center wavelength

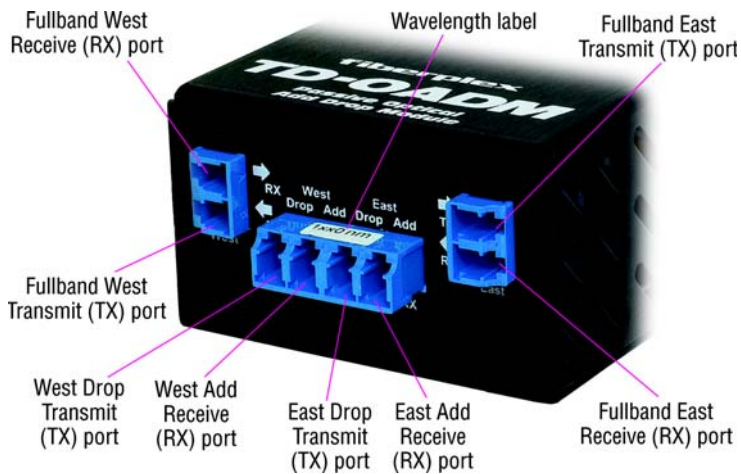
Power: Completely passive operation that requires no external power

Extended Temperature: 23 to 149°F (-5 to 65°C)

## 1.2 Drop Ports (West and East)

The Drop ports (see **figure 3**) transmit (TX) signals on a specific CWDM wavelength. Drop ports are demultiplexed from the fullband (West/East) ports. As shown in

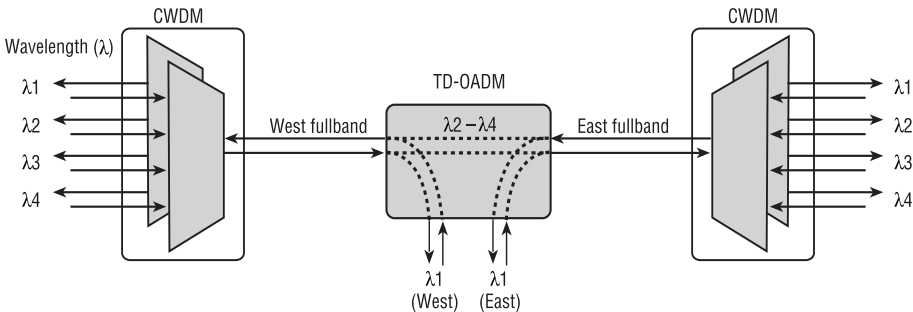
**figure 4**, a 1-channel TD-OADM supports a single channel in West and East directions. Each Drop port has a West and East port. Data transmitted by the West Drop port is split from the West fullband port, and data transmitted by East Drop port is split from the East fullband port. Data on the designated wavelength is blocked from passing through the fullband ports.



**Figure 3.** TD-OADM Ports and Wavelength Label

### 1.3 Add Ports (West and East)

The Add ports (see **figure 3**) receive (RX) signals on a specific CWDM wavelength. Add ports are multiplexed on the fullband (West/East) ports. As shown in **figure 4**, a 1-channel TD-OADM supports a single channel in West and East directions. Each Add port has a West and East port. Data received by the West Add port is aggregated on the West fullband port, and data received by East Add port is aggregated on the East fullband port. The Add data at the designated wavelength overwrites the data on that wavelength in the fullband ports.



**Figure 4.** 1-Channel Add/Drop Multiplex/Demultiplex

## 1.4 Fullband Ports (West and East)

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Fullband ports (see **figure 3** on page 4) transmit (TX) and receive (RX) the aggregated wavelengths connected to the Drop/Add ports. As shown in **figure 4** on page 4, there are West and East fullband ports on the TD-OADM. The West fullband port and the East fullband port are internally connected so as to pass all wavelengths that are not in the TD-OADM's specific wavelength. Only the TD-OADM's specific wavelength will be dropped from the appropriate Drop port or added to the appropriate Add port. The West fullband Drop and Add ports drop and add wavelength traffic from the West Drop and Add ports, and the East fullband Drop and Add ports drop and add wavelength traffic from the East Drop and Add ports.

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## 2.0 Installation

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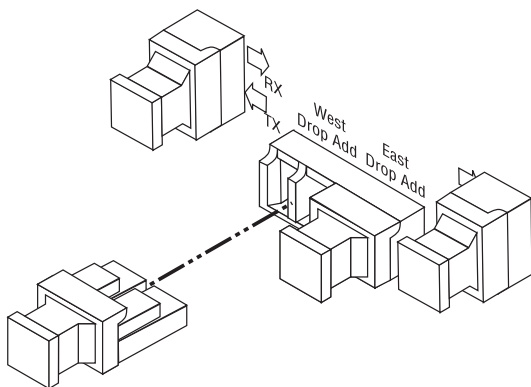
**Note** Verify that the wavelength label on the TD-OADM (see **figure 3** on page 4) matches the wavelength of the attached device.

**Note** For proper installation, a network diagram indicating port designations is recommended.

**Note** The TD-OADM is a passive device that requires no external power.

Do the following:

1. Remove the dust covers from the appropriate TD-OADM ports as shown in **figure 5**.
2. Connect a single-mode, dual-fiber duplex LC cable between the Drop port of the TD-OADM and the attached device. When connecting the Drop port, make sure the West/East designation is followed. This will ensure the data from the Drop port is aggregated onto the corresponding fullband port. Ensure that the transmit (TX) is attached to the receive side of the device at the other end, and the receive (RX) is attached to the transmit side.



**Figure 5.** Removing port dust cover

3. Connect a single-mode, dual-fiber duplex LC cable between the fullband ports on the TD-OADM (this connection may be made through fiber patch panels since the devices may not be co-located) or CWDM/X devices. When connecting between the fullband ports on the TD-OADM, it is recommended to connect the East fullband port to the West fullband port on the other TD-OADM. Ensure that the transmit (TX) is attached to the receive side of the device at the other end, and the receive (RX) is attached to the transmit side.

Congratulations! The TD-OADM is installed.

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## A.0 Customer and Technical Support

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Online support: [www.patton.com](http://www.patton.com)

E-mail support: [support@patton.com](mailto:support@patton.com)—answered within 1 business day

Telephone support:

- Standard: +1 (301) 975-1007 (USA), Monday–Friday: 8:00 am to 5:00 pm EST (1300 to 2200 UTC/GMT)
- Alternate: +41 (0)31 985 25 55 (Switzerland), Monday–Friday: 9:00 am to 5:30 pm CET (08:00 to 16:30 UTC/GMT)

Fax: +1 (301) 869-9293 (USA) or +41 (0)31 985 25 26 (Switzerland)

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## B.0 Specifications

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### B.1 Add/drop wavelength options

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1271, 1291, 1311, 1351, 1371, 1391, 1411, 1431, 1451, 1471, 1491, 1511, 1531, 1551, 1571, 1591, 1611 nm

## B.2 Fiber

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**Type:** SMF-28e bare fiber

**Connector:** LC/UPC

## B.3 Channel Passband

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$\pm 6.5$  nm

## B.4 Polarization dependent loss

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$\leq 0.2$  dB

## B.5 Ripple in Passband

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$\leq 0.5$

## B.6 Isolation

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**West to east on signal:**  $\geq 30$  dB

**Adjacent channel:**  $\geq 30$  dB

**Non-adjacent channel:**  $\geq 40$  dB

## B.7 Insertion Loss

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**Add/drop (max):**  $\leq 1.3$  dB

**Through (max):**  $\leq 1.1$  dB

## B.8 Optical return loss

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$\geq 45$  dB

## B.9 Directivity

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$\geq 50$  dB

## B.10 Optical power range

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300 mW

## B.11 Environment

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**Operating Temp.:** 23 to 149°F (-5 to 65°C)

**Operating Humidity:** 5 to 85%

**Storage Temp.:** -40 to 185°F (-40 to 85°C)

## B.12 Package

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**Unit:** 4.5 L x 2.75 W x 1.66 H inches (114 L x 70 W x 42 H mm)

**Unit Weight:** 0.4 lbs (0.2 kg)

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## C.0 Compliance Information

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### C.1 Compliance

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2011/65/EU & 2015/863/EU RoHS Directives

### C.2 CE Declaration of Conformity

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"We certify that the apparatus identified above conforms to the requirements of Council Directive 2011/65/EU as modified by Council Directive 2015/863/EU on the approximation of the laws of the member states relating to RoHS and REACH compliance.

The Declaration of Conformity may be obtained from Patton Electronics, Inc at [www.patton.com/certifications](http://www.patton.com/certifications).

The safety advice in the documentation accompanying this device shall be obeyed. The conformity to the above directive is indicated by CE mark on the device.

### C.3 Authorized European Representative

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Martin Green  
**European Compliance Services Limited**  
Milestone house  
Longcot Road  
Shrivenham  
SN6 8AL, UK

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