**DATA SHEET**

# SFP Fiber Optic Transceivers

## TUD4580-xx-PI

10 Gbps SFP+ DWDM Optical Transceiver Module

## FEATURES

- Interconnects CommScope DAA Solutions, including Remote PHY Device (RPD), Remote MACPHY Device (RMD), and Remote OLT (R-OLT)
- 10 Gbps data Transmit/Receive operation
- Provides long-haul 10G Ethernet optical transmission up to 80 km
- 45 wavelengths available ITU 17–61
- Hot Pluggable SFP+ MSA footprint
- Duplex LC connector
- Very low jitter
- Metal enclosure for low EMI and durability
- Low power dissipation
- Industrial operating temperature range -40˚ to +85˚C
- Cold start wavelength compliance (INF-8478i)

The CommScope TUD4580 DWDM transceiver modules provide the optical high-speed data communication functions required by CommScope's Distributed Access Architecture (DAA) products, such as the E6000n Remote PHY Device (RPD), Remote MACPHY Device (RMD), and the XE4202M Remote Optical Line Termination (R-OLT). These small and compact DWDM transceiver modules drive and receive 10G symmetrical Ethernet between the headend switch/routers and remote node/VHub platforms at distances up to 80 km, enabling gigabit data services to be available in rural and fast-growing residential and commercial developments, supporting modern day communication needs without the expense of investing in new plant facilities. The transmission distances can be extended with the addition of EDFA optical amplifiers and fiber dispersion compensation. Consult your local CommScope representative for details.

Conforming to the Small Form Factor Pluggable (SFP+) Multisource Agreement, these state-of-the-art components are designed expressly for high-speed bi-directional communication applications that require rates of 10 (10.3125) Gbps, with the laser transmission portion of the device operating at one of 45 available ITU-compliant (G.694.1) DWDM wavelengths (channels 17–61).

TUD4580 modules feature a very low jitter contribution, resulting in extremely clean, high-quality eye patterns. The module's metal enclosure ensures rugged durability and improves FCC EMI test margins. This emission and ESD control are particularly important in applications with sensitive multiport hubs and switches. The modules, which dissipate less than 2.0 W, are supplied with a duplex LC connector.

## SPECIFICATIONS

| Characteristics | Specification |
|---|---|
| **Physical** | |
| Dimensions | 2.2" L x 0.4" H x 0.5" W (5.6 cm x 1.0 cm x 1.3 cm) |
| Weight | 0.1 lbs (0.05 kg) |
| **Environmental** | |
| Operating Temperature Range | -40° to +85°C (-40° to 185°F) |
| Storage Temperature Range | -40° to +85°C (-40° to 185°F) |
| Humidity | 5% to 95% non-condensing |
| **Optical Interface** | |
| Optical Connectors | Duplex LC |
| **Power Requirement** | |
| Input Voltage | 3.3 $V_{DC}$ |
| Power Consumption | 2.0 W max |
| **General** | |
| Data Rate | 10.3125 Gb/s |
| | Hot plug-in/out |
| Supported Link Length | 80 km (on SMF-28 or equivalent) NOTE: This is strictly a dispersion limitation. Actual transmission distance is also dictated by the power budget of each transmission link. EDFAs and Dispersion Compensation Modules are suitable for use with the TUD4580-xx-PI. |
| **Optical (Transmitter)** | |
| Transmitter Type | Cooled DFB |
| DWDM Channels | 45 channels (17 through 61) (Center wavelengths per ITU-T G.694.1) |
| Wavelength Stability, EOL | ± 0.1 nm |
| Optical Output Power | 0 dBm min |
| Optical Extinction Ratio (ER) | 8.2 dB min (PRBS $2^{31}$-1 at 10.3125 Gbps, BER < $10^{-12}$, 80 km SMF-28 ) |
| Dispersion Penalty | 3 dB |
| **Optical (Receiver)** | |
| Receiver Sensitivity | -24 dBm max |
| Optical Center Wavelength | 1260–1620 nm |
| Maximum Input Power | -6 dBm |
| **Regulatory** | |
| | Class 1 device per FDA/CDRH and IEC-60825-1 laser safety regulations |

## ORDERING INFORMATION

| Model Name | Description |
|---|---|
| TUD4580-xx-PI | DWDM Optical SFP+ Transceiver Module, Duplex LC connector, 80 km, -40° to +85°C, supports 45 ITU G.694.1 DWDM channels, where xx = channel 17–61. Specify channel number when ordering. |

## RELATED PRODUCTS

| | |
|---|---|
| E6000n Remote PHY/MACPHY | XE4202 Remote PON OLT |
| NH4000/VH4000 VHub/UVHub | FA4521V-03-AS EDFA |
| Optical Patch Cords | DC4520-00-0-AS<br>VHub Fiber dispersion compensation |
| Installation Services | Fiber Service Cable |

Contact Customer Care for product information and sales:

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