

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 40 or 80 km
- 42 wavelengths available ITU 20–61
- Hot Pluggable SFP+ MSA footprint
- Duplex LC connector
- Very low jitter
- Metal enclosure for low EMI and durability
- Low power dissipation
- Extended industrial operating temperature range -40° to +95°C

The TTD4540 and TTD4580 family of DWDM transceiver modules provide the optical high-speed data communication functions required by CommScope's DT4600 digital return transmitter and 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 40 or 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 10 (10.3125) Gbps, with the laser transmission portion of the device operating at one of 42 available ITU-compliant (G.694.1) DWDM wavelengths (channels 20–61).



The TTD4540/TTD4580 family of modules features 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 2.8 W, are supplied with a duplex LC connector.

SPECIFICATIONS

Characteristics	Specification
Physical	
Dimensions	2.2" L x 0.45" H x 0.54" W (5.65 cm x 1.145 cm x 1.37 cm)
Weight	0.1 lbs (0.05 kg)
Environmental	
Operating Temperature Range	-40° to +95°C (-40° to +203°F)
Storage Temperature Range	-40° to +95°C (-40° to +203°F)
Humidity (Operating)	5% to 95% non-condensing
Optical Interface	
Optical Connectors	Duplex LC
Power requirements	
Input Voltage	3.3 V _{DC} (Supplied by associated master module)
Power Consumption (max)	2.3 W (TTD4540); 2.8 W (TTD4580)
General	
Data Rate	10.3125 Gbps
	Hot plug-in/out
Supported Link Length TTD4580	80 km on SMF-28 or equivalent ¹
Supported Link Length TTD4540	40 km on SMF-28 or equivalent ¹
Optical Interface: TTD4580	
Transmitter	
Type	Cooled DWDM DFB
DWDM Channels	42 channels (20 through 61) (Center wavelengths per ITU-T G.694.1)
Wavelength Stability, EOL	± 0.1 nm
Output Power	0 to 4 dBm, -40° to 85°C, -1 dBm min over 85° to 95°C
Extinction Ratio (ER)	8.2 dB min
Dispersion Penalty	3.0 dB (Measured with PRBS 2 ³¹ -1 at 10.3125 Gbps, 80 km SMF, and 1x 10 ⁻¹² BER)
Receiver	
Receiver Sensitivity	-24 dBm, max over 1260–1620 nm
Wavelength Range	1260–1620 nm
Input Power	-6 dBm, max
Loss of Signal Assert Level	-35 dBm, min
Optical Interface: TTD4540	
Transmitter	
Type	Cooled DWDM DFB
DWDM Channels	42 channels (20 through 61) (Center wavelengths per ITU-T G.694.1)
Wavelength Stability, EOL	± 0.1 nm
Output Power	-2 dBm min over -40° to 95°C
Extinction Ratio (ER)	8.2 dB min
Dispersion Penalty	3.0 dB (Measured with PRBS 2 ³¹ -1 at 10.3125 Gbps, 40 km SMF, and 1x 10 ⁻¹² BER)
Receiver	
Receiver Sensitivity	-17 dBm, max over 1260–1620 nm
Wavelength Range	1260–1620 nm
Input Power	-1 dBm, max
Loss of Signal Assert Level	-30 dBm, min
Regulatory	
	Class 1 devices per FDA/CDRH and IEC-60825-1 laser safety regulations

NOTE:

1. 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 these transceivers.

ORDERING INFORMATION

Model Name	Description
TTD4540-xx-PI	DWDM Optical SFP+ Transceiver Module, Duplex LC connector, 40 km, -40° to +95°C, supports 42 ITU G.694.1 DWDM channels, where xx = channel 20–61. Specify channel number when ordering.
TTD4580-xx-PI	DWDM Optical SFP+ Transceiver Module, Duplex LC connector, 80 km, -40° to +95°C, supports 42 ITU G.694.1 DWDM channels, where xx = channel 20–61. Specify channel number when ordering.

RELATED PRODUCTS

E6000n Remote PHY/MACPHY	XE4202M Remote PON OLT
DT4600N	NC2000, NC4000® Node
NH4000/VH4000 VHub/UVHub	FA4521V-03-AS EDFA
Optical Patch Cords	DC4520-00-0-AS VHub Fiber dispersion compensation
Installation Services	Fiber Service Cable

Contact Customer Care for product information and sales:

- United States: 866-36-ARRIS
- International: +1-678-473-5656

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Note: Specifications are subject to change without notice.

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