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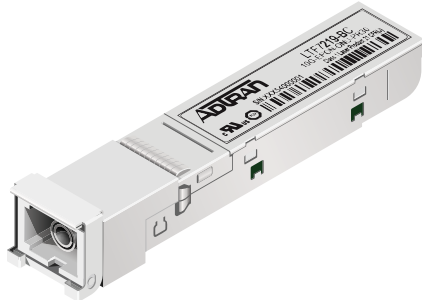
Registration is required.

ADTRAN offers training courses on our products, including customized training and courses taught at our facilities or at customer sites.

For inquiries, go to: <http://adtran.com/training>

The following related online documents and resources provide additional information for this product:

SFP/XFP/SFP+ Compatibility Matrix (online tool, go to: <http://www.adtran.com/sfp>)



DESCRIPTION

The Enhanced Small Form-factor Pluggable (SFP+) is a single-mode fiber SFP+ that plugs into an ADTRAN optical interface designed to accept SFPs. The SFP+ provides a single optical interface to a physical interface, and is intended for use with a 10 Gigabit Passive Optical Network (10G PON) Optical Network Terminal (ONT) unit. Installed into an appropriate ONT, the SFP+ provides a 10G PON interface to the supporting system.

NOTE

To ensure compatibility, refer to the documentation provided with the host module.

The following features are supported on the SFP+:

- 10 Gbps: 1270/1577 nm, single-mode, single fiber operation
- Dual Wavelength BiDi Transceiver
- Optical distances: 20 km, using 125 μ m single-mode fiber

CAUTION

Due to compliance certification requirements, only SFPs supplied by ADTRAN are to be used with ADTRAN modules. ADTRAN cannot certify system integrity with other SFPs.

Specifications

General

- Module type: SFP+
- Fiber/Copper: Fiber
 - ◆ SM/MM: Single Mode Fiber
 - ◆ Single/Dual-fiber: Single-fiber
- Signal Data Rate: 10.3125 Gbps
- Optical Connector: SC
- Applications: XGS-PON, 10G EPON
- Distance: 20 km
- Digital Diagnostic Monitoring: SFF8472 Compliant
- Power: 1.6 W

Optical

- Transmitter
 - ◆ Laser Diode Type: DFB
 - ◆ Tx Central Wavelength: 1270 nm
 - ◆ Tx Output optical power: +4 dBm to +9 dBm
 - ◆ Tx Spectral width: 1 nm
 - ◆ SMSR: 30 dB
 - ◆ Extinction Ratio: 6 dB
 - ◆ Optical Rise time (t_r) 10--90%: 512 ns
 - ◆ Optical Fall time (t_f) 10--90%: 512 ns
- Receiver
 - ◆ Rx Type: APD/TIA
 - ◆ Rx Central wavelength: 1577 nm
 - ◆ Output Eye: G.985.4
 - ◆ Input optical power: -8 dBm to -28.5 dBm
 - ◆ Maximum Rx Power: -3 dBm
 - ◆ Receiver Overload: -8 dBm
 - ◆ Receiver Sensitivity: -28.5 dBm

Environmental

- Controlled Environment
 - ◆ Operational temperature range: -5°C to +50°C
 - ◆ Storage temperature range: -40°C to +85°C
 - ◆ Relative humidity: 5 to 85%

INSTALLATION

To install the SFP+ into an appropriate module, complete the following steps:

1. Inspect the SFP+. If damaged, file a claim with the carrier and then contact ADTRAN Customer Support.
2. Remove the safety cap from the optical connectors of the SFP+.
3. Insert the SFP+ into the receptacle on the circuit board of the host module, with the manufacturer's label facing outward. Slide the SFP+ all the way into the receptacle.
4. Use thumb and forefinger to squeeze the receptacle and SFP+ together, to ensure a proper connection.

NOTE

The latch on the SFP is for removal only.

5. Continue the installation and turn-up of the host module using the instructions in the Job Aid provided with that module, or other System-Level Documentation, available online at www.adtran.com.

SAFETY AND REGULATORY COMPLIANCE

WARNING

Read all warnings and cautions before installing or servicing this equipment.

CAUTION

This product is a Class 1 Laser module that complies with FDA 21 CFR 1040.10, 1040.11 and IEC 60825-1. The product is NRTL Listed and CB Certified to all applicable American and European safety standards.

CAUTION

- Electrostatic Discharge (ESD) can damage electronic modules. When handling modules, wear an antistatic discharge wrist strap to prevent damage to electronic components. Place modules in antistatic packing material when transporting or storing. When working on modules, always place them on an approved antistatic mat that is electrically grounded.
- This product and the host system are designed and intended for installation as part of a Common Bonding Network (CBN). This product and the host system are not designed nor intended for installation as part of an Isolated Bonding Network (IBN).
- This product is designed and intended only for deployment in a DC-C (common) bonding and grounding configuration. This product is not intended or designed for deployment in a DC-I (isolated) bonding and grounding system.
- The chassis frame ground terminal must be connected to an earth ground to ensure that the exposed metal on the product is properly grounded via the backplane connector.

NOTE

- The Gigabit Ethernet port is optical and therefore is not classified as any type of port as defined in Appendix B of GR-1089-CORE Issue 4.
- This product is NRTL Listed to the applicable UL Standards. The product is designed to meet the applicable requirements of Telcordia GR-63-CORE and GR-1089-CORE.
- This product has also been evaluated to international safety standards EN 60950-1, AS/NZS 60950.1, and IEC 60950-1. This product meets the requirements for CE marking under the EMC Directive and Low Voltage Directive. Standards used to demonstrate Compliance are EN 300 386 and EN 60950.

This SFP is intended for deployment in Central Office type facilities, EEEs, EECs, and locations where the NEC applies (for example, Customer Premises). Install this product in an ADTRAN product located in a restricted access location.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference
2. This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by ADTRAN could void the user's authority to operate this equipment.

This SFP+ is designed to meet the following environmental classes:

- ETSI EN 300 019-2-1 "Classification of environmental conditions; Storage," Class 1.2
- ETSI EN 300 019-2-2 "Classification of environmental conditions; Transportation," Class 2.3
- ETSI EN 300 019-2-3 "Classification of environmental conditions; Stationary use at weather-protected locations," Class 3.3

This equipment is designed to function without degradation during exposure to all test severities per Class 3.3.

This product is designed to be deployed in GR-3108-CORE environmental Class 1.

The SFP+ meets the EU's RoHS Directive 2011/65/EU and/or applicable exemptions. See www.adtran.com for further information on RoHS/WEEE.

Warranty: ADTRAN will replace or repair this product within the warranty period if it does not meet its published specifications or fails while in service. Warranty information can be found online at www.adtran.com/warranty.

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