Quick Start

ADTRAN Pluggable Optics

SFP+

10 Gig XGS-PON N2 OLT

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DESCRIPTION

The 10 Gig XGS-PON Optical Line Termination (OLT) Class N2 Small Form-factor Pluggable (SFP+) is a single-mode fiber SFP+. The SFP+ provides a single optical interface to a physical interface, and is intended for use with a 9.953 Gbps Passive Optical Network (PON) OLT module. The SFP+ provides a 9.953 Gbps XGS-PON interface to the supporting system.

The SFP+ is configured with an L-band 9.953 Gbps downstream transmitter and a C-band 9.953 Gbps upstream receiver, which work in a TDM configuration. The SFP+ is designed to support over distances up to 20 km in the Optical Distribution Network (ODN). It is FDA 21CFR1040.10 and IEC 60825-1 Class I laser safety compliant and meets the EU RoHS Directive.

This SFP+ supports the following features:

- ODN Class N2 Transceiver
- Data rate: 9.953 Gbps
- Optical Receive Wavelength: 1270 nm
- Optical Transmit Wavelength: 1577 nm
- Optical distance: 20 km maximum
- Hot Pluggable

Applications:

- XGS-PON Access networks
- Fiber to the Premises (FTTP)
- Fiber to the Building (FTTB)
- Fiber to the Curb (FTTC)

Due to compliance certification requirements, use only pluggable optics supplied by ADTRAN. ADTRAN cannot certify system integrity with other pluggable optics.

INSTALLATION

Before installing the equipment, inspect the SFP+. If damage has occurred during shipping, file a claim with the carrier, and then contact ADTRAN Customer Support. For more information, refer to the warranty.

Installation Steps

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

NOTE

Do not remove the protective dust cover from the SFP+ until the fiber optic cable is ready to be connected.

1. Insert the SFP+ into the SFP+ cage on the module. Ensuring that the latch on the SFP+ is facing upward, slide the SFP+ all the way into the SFP+ cage until there is an audible “click”.

NOTE

The latch on the SFP+ is for removal only. When removing the SFP+, rotate the latch away from the SFP+. It should easily slide out of the cage.

NOTICE

Do not remove the protective dust cover until the optical fiber connection is made. Ensure that you keep the protective dust cover on whenever the transceiver optical fiber connector is not inserted.

2. Continue the installation and turn-up of the host module using the instructions in the Job Aid or Quick Start provided with the module or other system-level documentation available online at www.adtran.com.

SPECIFICATIONS

General

- Module Type: SFP+
- Media Type: Fiber
  - Single-Mode
  - Single Fiber
- Signal Data Rate:
  - Maximum: 9.953 Gbps
- Distance: 20 km
- Not Compatible with SFP+ MSA
- Applications: XGS-PON, FTTP, FTTB, FTTC
- Optical Connector: SC

Optical

- Transmitter
  - Laser Diode Type: EML
  - Transmit Wavelength: 1577 nm
  - Tx Power: +4.0 dBm to +7.0 dBm
  - Spectral Width: 1 nm
  - SMSR: 30.0 dBm
  - Extinction Ratio: 8.2 dB
- Receiver
  - Type: APD
  - Central Wavelength: 1270 nm
  - Receiver Sensitivity: –28.0 dBm
  - Receiver Overload: –7.0 dBm

Environmental

- Protected Equipment Severe Environment (Outdoor)
  - System Ambient Operational Temperature Range: –40°C to +70°C
  - Storage Temperature Range: –40°C to +85°C
  - Relative Humidity 5% to 95%, non-condensing

SAFETY AND REGULATORY

ENGLISH

WARNING!

Read all warnings, cautions, notes, and installation instructions 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.

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 either a Common Bonding Network (CBN) or Isolated Bonding Network (IBN).
- This product's outer case is "electrically isolated" from other circuits, as a result, this product can be used in systems that are installed either in a DC-I (isolated) or DC-C (common) configuration. For Systems where other installed modules or the host system itself have internal connections between battery return and frame ground, the system can only be deployed in a DC-C configuration.
- If the host system has a protective earth (PE) terminal, the PE terminal of the host system must be connected to protective earth (PE) to ensure that the exposed metal (i.e., front panels, optical modules) on the product is properly grounded.

NOTE

- This product is designed to be deployed in GR-3108-CORE environmental Class 1, 2, or 3.
- This product is NRTL Listed to the applicable UL Standards. The product is designed to meet the applicable requirements of Telcordia GR-63-CORE, GR-1089-CORE and GR-3108-CORE. This product has also been evaluated to applicable international standards and meets the requirements for CE marking.
- This product is intended for deployment in locations such as Central Offices and outside plant cabinets. This product is to be installed and serviced by trained and qualified Service personnel only.
- 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 will void the warranty.
- This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful inference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at the user's own expense.
- CAN ICES-3(A)/NMB-3(A)
- This product is designed to meet the following environmental classes.
  - ETSI EN 300 019-1-1 "Classification of environmental conditions; Storage," Class 1.2
  - ETSI EN 300 019-1-2 "Classification of environmental conditions, Transportation," Class 2.3
  - ETSI EN 300 019-1-3 "Classification of environmental conditions, Stationary use at weather protected locations," Class 3.4
- This product is designed to function without degradation during exposure to all test severities per Class 3.4.
- This product meets EU RoHS Directive. Refer to www.adtran.com for further information on RoHS/WEEE.

FRANÇAIS

AVERTISSMENT!

Lisez toutes les mentions de danger et de prudence et les remarques, ainsi que la notice d'installation, avant d'effectuer l'installation ou l'entretien de cet équipement.

ATTENTION!

Ce produit est un laser de classe 1 conforme à la norme FDA 21 CFR 1040.10 et 1040.11 et IEC 60825-1.

ATTENTION!

- L'ESD (décharge électrostatique) peut endommager les modules électroniques. Lors de la manipulation des modules, portez un bracelet de décharge antistatique pour éviter d'endommager les composants électroniques. Placez les modules dans un emballage antistatique lors du transport ou du stockage. Lorsque vous travaillez sur les modules, placez-les toujours sur un tapis antistatique certifié muni d'un branchement de mise à la terre.
- Ce produit et système hôte sont conçus et destinés à être installés dans le cadre soit d'un réseau commun Bonding (CBN) ou isolé Réseau Bonding (IBN).
- Si le système hôte est doté d'une borne de mise à la terre de protection (PE), la borne PE du système hôte doit être connectée à la mise à terre de protection (PE), afin d'assurer que les parties métaliques à découvert (panneaux frontaux, modules optiques) du produit soient correctement mis à terre.

REMARQUE

Ce produit est conforme à la directive européenne RoHS. Reportez-vous à www.adtran.com pour de plus amples renseignements sur RoHS.

DEUTSCH

WARNUNG!

Lesen Sie alle Warnungen, Gefahrenhinweise, Anmerkungen und Installationsanweisungen bevor Sie dieses Gerät installieren oder warten.

VORSICHT!

Dieses Produkt ist ein Klasse 1 Laser, die mit FDA 21 CFR 1040.10 und 1040.11 und IEC 60825-1 entspricht.

VORSICHT!

- Elektrostatische Entladung können elektronische Module beschädigen. Tragen Sie beim Umgang mit Modulen ein Erdungsarmband, um Schäden an den elektronischen Komponenten zu vermeiden. Transportieren oder lagern Sie Module in antistatischem Verpackungsmaterial. Bei der Arbeit an den Modulen, achten Sie darauf, diese stets auf antistatische, elektrisch geerdete Matten zu legen.
- Dieses Produkt und Host-System sind so konzipiert und für die Installation als Teil entweder eine gemeinsame Bonding Network (CBN) oder isoliert Bonding Network (IBN) vorgesehen.
- Falls das Host-System über einen Schutzleiteranschluss (PE) verfügt, muss der PE-Anschluss des Host-Systems mit dem Schutzleiteranschluss (PE) verbunden werden, um sicherzustellen, dass das freiliegende Metall (d. h. Frontblenden, Optikmodule) am Produkt ordnungsgemäß geerdet ist.

HINWEIS

Dieses Produkt erfüllt die EU RoHS Richtlinie. Bitte besuchen Sie www.adtran.com für ausführlichere Informationen zu RoHS/WEEE.

Documentation for ADTRAN Network Solutions products is available for viewing and download directly from the ADTRAN Support Community website.

Go to: https://supportforums.adtran.com/welcome

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 online documents and resources provide additional information for this product:

ADTRAN Pluggable Optics Compatibility Matrix (online tool, go to: http://www.adtran.com/pluggableoptics)

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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CAUTION!

SUBJECT TO ELECTROSTATIC DAMAGE OR DECREASE IN RELIABILITY

HANDLING PRECAUTIONS REQUIRED

ADTRAN CUSTOMER CARE:

From within the U.S. 1.888.423.8726
From outside the U.S. +1 256.963.8716

PRICING AND AVAILABILITY 1.800.827.0807

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