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The following document provides additional information for this product:
Broadband SFP/XFP Matrix Application Guide



DESCRIPTION

The Small Form-Factor Pluggable OC-48 40 km Bidirectional 1550/1310 nm (Bidirectional SFP) plugs into ADTRAN equipment designed to accept Small Form-factor Pluggables (SFPs). Installed into an appropriate host unit, the Bidirectional SFP provides an OC-48 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 Bidirectional SFP:

- SONET OC-48 compatible (2.488 Gb/s), single-fiber operation
- 40 km maximum optical span

CAUTION

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

SPECIFICATIONS

- Power: 300 mA max
- Optical Specifications:
 - ◆ Optical transmit level: -2 dBm to 3 dBm
 - ◆ Optical receive level: -8 dBm to -28 dBm
 - ◆ Spectral Width: 1 nm maximum (20 dB Spectral Width)
 - ◆ Extinction Ratio: 8.2 dB minimum
 - ◆ SMSR: 30 dB
 - ◆ Transmit Wavelength: 1500-1580 nm (1550 nm nominal)
 - ◆ Receive Wavelength: 1260-1360 (1310 nm nominal)
 - ◆ Power Penalty: 1 dB

- ◆ Optical budget: 25 (±1) dB
- ◆ Minimum Span Attenuation: 11 dB
- ◆ Optical connectors: LC
- Extended Environmental Support:
 - ◆ Operational temperature range: -40°C to +65°C
 - ◆ Storage temperature range: -40°C to +85°C
 - ◆ Relative humidity to 95%, noncondensing

INSTALLATION

WARNING

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

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

1. Inspect the Bidirectional SFP. If damaged, file a claim with the carrier and then contact ADTRAN Customer Support.

CAUTION

Do not remove the protective end cap from the SFP until the fiber optic cable is ready to be connected.

2. Insert the Bidirectional SFP into the SFP cage on the module. Ensure that the manufacturer's label on the SFP is facing upward for correct installation.
3. Slide the Bidirectional SFP all the way into the receptacle until there is an audible "click".

NOTE

The latch on the SFP is used to remove the SFP from the cage on the circuit card.

SAFETY AND REGULATORY COMPLIANCE

⚠ CAUTION

This product uses a Class 1 Laser module that complies with 21 CFR 1040.10 and 1040.11 and IEC 60825-1, IEC 60825-2, EN 60825-1 and EN 60825-2.

⚠ 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.
- Per GR-1089-CORE the system is designed and intended for installation as part of a Common Bonding Network (CBN). The system is not designed nor intended for installation as part of an Isolated Bonding Network (IBN).
- Per GR-1089-CORE Section 9, this product does not have an internal DC connection between battery return and frame ground. This product can be installed in a DC-I (isolated) or DC-C (common) configuration. For installations where other cards or the host system have internal connections between battery return and frame ground, the system would be intended for deployment only in a DC-C installation.
- The chassis frame ground terminal must be connected to an earth ground to ensure that the metal enclosure of the SFP is properly grounded via the backplane connector.

NOTE

- The Gigabit Ethernet port(s) are optical and therefore are not classified as any type of port as defined in Appendix B of GR-1089-CORE.
- This Bidirectional SFP is compliant with SFF-8472 *Digital Diagnostics Monitoring Interface for Optical Transceivers*, Revision 9.3
- This product is compliant with the SFP Multi-Source Agreement (MSA).
- This product is designed to be deployed in GR-3108-CORE environmental class 1 or 2 as defined in GR-3108-CORE.

This product meets or exceeds all the applicable requirements of NEBS, Telcordia GR-63-CORE, GR-1089-CORE, and ETSI EN 300368. This product is intended for deployment in Central Office type facilities, EEEs, EECs, and locations where the NEC applies (for example, Customer Premises).

This product is to be installed in ADTRAN products in Restricted Access Locations only, and installed by trained service personnel.

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 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 3.3

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

This product meets EU RoHS Directive 2002/95/EC and/or applicable exemptions. Refer to www.adtran.com for further information on RoHS/WEEE.

FRANÇAIS

⚠ AVERTISSEMENT

Lisez tous les avertissements et mises en garde avant l'installation de cet équipement ou la réalisation de toute opération de maintenance.

⚠ ATTENTION

Ce produit utilise un module laser de classe 1 qui conforme aux normes 21 CFR 1040.10, 1040.11 et IEC 60825-1 et -2.

⚠ 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.
- Selon le document GR-1089-CORE, ce système est conçu et prévu pour une installation intégrée à un réseau de masse maillé. Ce système n'est pas conçu ni prévu pour une installation intégrée à un réseau de masse isolé (IBN).
- Selon le document GR-1089-CORE section 9, ce produit n'est pas équipé d'une connexion DC interne entre le retour de la batterie et la masse du châssis. Ce produit peut être installé dans une configuration DC-I (isolé) ou DC-C (commun). Pour les installations où les autres cartes ou le système hôte possèdent des connexions internes entre le retour de l'accumulateur et la mise à la terre de l'armature, le système est prévu pour le déploiement de configuration DC-M unique.
- La borne de mise à la terre du châssis doit être branchée à une prise de terre afin d'assurer que le boîtier métallique de la SFP est correctement mis à la terre grâce au connecteur de face arrière.

Ce produit est conçu pour répondre aux classes environnementales suivantes :

- ETSI EN 300 019-1-1 *Classification des conditions d'environnement; Entreposage*, classe 1.2
- ETSI EN 300 019-1-2 *Classification des conditions d'environnements; Transport*, classe 2.3
- ETSI EN 300 019-1-3 *Classification des conditions d'environnements; l'utilisation à poste fixe dans des endroits protégés contre les intempéries*, classe 3.3

Ce produit est conforme à la directive européenne RoHS 2002/95/CE et/ou aux exonérations applicables. Reportez-vous à www.adtran.com pour de plus amples renseignements sur RoHS/WEEE.

DEUTSCH

⚠ WARNUNG

Lesen Sie sich alle Warn- und Sicherheitshinweise durch, bevor Sie dieses Gerät installieren oder warten.

⚠ VORSICHT

Dieses Produkt nutzt ein mit den Richtlinien 21 CFR 1040.10 und 1040.11 und IEC 60825-1 und -2 konformes Class 1 Lasermodul.

⚠ 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.
- Laut GR-1089-CORE dient dieses System zur Installation in einer gemeinsamen Potentialausgleichsanlage. Dieses System dient nicht zur Installation in einer isolierten Potentialausgleichsanlage.
- Laut GR-1089-CORE Abschnitt 9 verfügt dieses Produkt nicht über eine interne DC-Verbindung zwischen den Batterien und der Gehäusemasse. Dieses Produkt kann entweder in einer DC-I (isolierten) oder DC-C (gemeinsamen) Anlage installiert werden. Installationen, in denen für andere Karten oder das Host-System interne Verbindungen zwischen den Batterien und der Gehäusemasse bestehen, dienen ausschließlich für den Einsatz in DC-C-Anlagen.
- Die Erdungsschiene des Rahmens muss an eine Bodenstation angeschlossen werden, um sicherzustellen, dass das Metallgehäuse des SFP vorschriftsmäßig über den Rückwandanschluss geerdet ist.

Dieses Produkt wurde entsprechend der folgenden Umweltklassen entwickelt:

- ETSI EN 300 019-1-1 *Klassifikation von Umweltbedingungen, Lagerung*, Klasse 1.2
- ETSI EN 300 019-1-2 *Klassifikation von Umweltbedingungen, Transport*, Klasse 2.3
- ETSI EN 300 019-1-3 *Klassifikation von Umweltbedingungen, Stationärer Einsatz ohne Witterungseinflüsse*, Klasse 3.3

Dieses Produkt erfüllt die EU RoHS Richtlinie 2002/95/EC und/oder gültige Ausnahmen. Bitte besuchen Sie www.adtran.com für ausführlichere Informationen zu 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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