Quick Start

ADTRAN Pluggable Optics

SFP

OC-3/OC-12 Circuit Emulation

August 2018
61442318F1-13A

P/N: 1442318F1

Description

The Small Form-Factor Pluggable (SFP) OC-3/OC-12 Circuit Emulation, 15 km (OC3/OC12 CKT EM) provides SONET/SDH/OC-3/OC-12/STM-1 at the optical fiber interface and Gigabit Ethernet at the 20-pin electrical interface.

The SFP provides Virtual Container over Packet (VCoP), a method for transporting STS1/STS3c/STS12c channelized OC-3/OC-12 signal across an Ethernet network. This is performed by encapsulating the STS1/STS3c/STS12c signal into individual pseudo wires over a packet switching network.

NOTE

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

Installation

To install the OC3/OC12 CKT EM into an appropriate module, complete the following steps:

1. Inspect the OC3/OC12 CKT EM. If damaged, file a claim with the carrier and then contact ADTRAN Customer Support.
2. Do not remove the protective end cap from the SFP until the fiber optic cable is ready to be connected.
3. Insert the OC3/OC12 CKT EM into the SFP cage on the module. Ensure the manufacturer's label on the SFP is facing upward for correct installation.
4. Slide the OC3/OC12 CKT EM all the way into the receptacle until there is an audible "click."

NOTICE

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

CAUTION!

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

Operational Specifications

General

- Module Type: SFP
- Fiber/Copper: Fiber
  - SMF/MMF: SMF
  - Single/Dual-fiber: Dual Fiber
  - Direction: UNI
- Signal Data Rate:
  - Electrical Interface: Gigabit Ethernet
  - Optical Interface: OC-3/OC-12
- Optical Connector: LC
- Applications:
  - Migration and integration of SONET transport in packet switching network
  - Aggregation of low fill SONET links
  - Network frequency synchronization between Ethernet and SONET
- Distance: 15 km

Optical

- Transmitter
  - Laser Diode Type: FabryPerot (FP Laser)
  - Tx Wavelength: Typical 1310 nm (1270 nm- 1360 nm)
  - Tx Output Optical Power: –15.0 dBm to –7.0 dBm
  - Extinction Ratio: 8.2 dB
- Receiver
  - Rx Type: PIN-PD
  - Rx Wavelength: Typical 1310 nm (1260 nm - 1580 nm)
  - Receive Overload: –8.0 dBm
  - Receiver Sensitivity: –28.0 dBm

Environmental

- Controlled Protected Environment (Inside)
  - Operational temperature range: –5°C to +55°C
  - Storage temperature range: –40°C to +85°C
  - Relative humidity to 5 to 85%, noncondensing

SAFETY AND REGULATORY

ENGLISH

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 and 1040.11 and IEC 60825-1. This product is NRTL Listed and CB Certified to all applicable American and European safety standards. For continued compliance with the above standards, install only ADTRAN-approved Class 1 Laser Modules in ADTRAN products. For a list of ADTRAN-approved SFPs and XFPs, see http:/www.adtran.com/pluggableoptics. ADTRAN cannot certify system integrity with other laser modules.

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.
- The SFP meets or exceeds all the applicable requirements of NEBS, Telcordia GR-63-CORE, and GR-1089-CORE. The product is intended for deployment in Central Office type facilities, EEEs, EECs, and locations where the NEC applies (for example, Customer Premises.)
- Per GR-1089-CORE the ADTRAN system that the SFP is being deployed in is designed and intended for installation as part of a Common Bonding Network (CBN). The ADTRAN system that the SFP is being deployed in is not designed nor intended for installation as part of an Isolated Bonding Network (IBN).
- 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.
- The chassis frame ground terminal must be connected to an earth ground to ensure that the exposed metal (for example, front panels, SFP/XFP modules) on the product is properly grounded by way of 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 product is designed to be deployed in GR-3108-CORE environmental class 1, class 2, and class 3 as defined in GR-3108-CORE.
- 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 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 300 019-2-1 “Classification of environmental conditions; Storage Class” 2.1
  - ETSI EN 300 019-2-2 “Classification of environmental conditions, Transportation”, Class 2.2
  - ETSI EN 300 019-2-3 “Classification of environmental conditions, Stationary use at weather protected locations”, Class 3.1E
- This product is designed to function without degradation during exposure to all test severities per Class 3.3 of ETSI EN 300 019-1-3.
- This product meets EU RoHS Directive. Refer to www.adtran.com for further information on RoHS/WEEE.
- To ensure compatibility, refer to the ADTRAN Pluggable Optics Compatibility Matrix (online tool, go to: http://www.adtran.com/pluggableoptics).

FRANÇAIS

AVERTISSMENT!

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 est un module laser de classe 1 qui est conforme à la FDA 21 CFR 1040.10 et 1040.11 et IEC 60825-1. Ce produit est NRTL et Certifié CB à toutes les normes de sécurité applicables américains et européens. Pour maintenir la conformité avec les normes ci-dessus, installer des modules laser de classe 1 ne ADTRAN approuvés dans les produits d'ADTRAN. Pour une liste des SFP et XFP ADTRAN approuvés, voir http:/www.adtran.com/pluggableoptics. ADTRAN ne peut certifier l'intégrité du système avec d'autres modules laser.

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 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).
- Ce produit ne dispose pas d'une connexion c.c. interne entre le courant de retour de la batterie et la masse du châssis. Ce produit peut être installé en configuration c.c.-I (isolé) ou c.c.-C (commun).
- La borne de terre de châssis doit être connecté à une prise de terre pour assurer que le métal exposé (tels que les panneaux avant, des modules SFP / XFP) sur le produit est correctement mis à la terre via le connecteur de fond de panier.

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

VORSICHT!

Dieses Produkt ist ein Klasse 1 Laser -Modul, das mit der FDA 21 CFR 1040.10 und 1040.11 und IEC 60825-1 entspricht. Dieses Produkt wurde NRTL gelistet und CB Certified allen geltenden amerikanischen und europäischen Sicherheitsstandards. Für die ständige Einhaltung der oben genannten Normen, installieren Sie nur ADTRAN zugelassene Klasse 1 Lasermodule in ADTRAN Produkte. Eine Liste der ADTRAN zugelassene SFPs und XFPs finden Sie unter http:/www.adtran.com/pluggableoptics. ADTRAN kann nicht die Unversehrtheit des Netzes mit anderen Laser-Module zertifizieren.

VORSICHT!

- Elektrostatische Entladung (ESD) können elektronische Baugruppen beschädigt werden. Beim Umgang mit Modulen , tragen Sie eine Antistatikarmband, um Schäden an elektronischen Bauteilen zu verhindern. Ort -Module in antistatische Verpackung, beim Transport oder Lagerung. Bei Arbeiten an Modulen immer legen Sie sie auf einer zugelassenen antistatische Unterlage, die elektrisch geerdet ist.
- Das System wurde für den Einsatz als Teil eines gemeinsamen Potentialausgleichssystems (Common Bonding Network) entwickelt. Das System ist nicht für den Einsatz als Teil eines getrennten Potentialausgleichssystems (Isolated Bonding Network) vorgesehen.
- Dieses Produkt hat keinen internen Gleichstromanschluss zwischen Batterierücknahme und Gehäusemasse. Dieses Produkt kann in einer DC-I (isoliert) oder DC-C (emeinsam).
- Der Fahrgestellrahmen Erdanschluß muß zu einer Erde verbunden werden, um sicherzustellen, dass das freiliegende Metall (dh Frontplatten, SFP / XFP-Module) auf dem Produkt richtig über den Backplane-Anschluss 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: https://adtran.com/pluggableoptics)

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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