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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: <http://www.adtran.com/sfp>)



The following features are supported on the SFP+ BIDI:

- 9.95 - 11.3 Gbps, single-fiber operation
- 20 km maximum optical span

**NOTICE**

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

**DESCRIPTION**

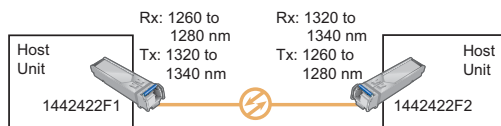
The SFP+ 11.3 G BIDI 20KM modules plug into ADTRAN equipment designed to accept Small Form-factor Pluggables (SFPs). Installed into an appropriate host unit, the SFP+ BIDI provides a 10G optical interface to the supporting system.

This Job Aid supports the following SFP+ Modules:

Part Number	TX Wavelength	RX Wavelength	CLEI
1442422F1	1320-1340nm	1260-1280nm	BVL3AYHD_ _
1442422F2	1260-1280nm	1320-1340nm	BVL3AYGD_ _

**NOTE**

- The 1442422F1 and 1442422F2 must be deployed as pairs at each end of the network. The 1442422F1 must be connected to the 1442422F2 at the other end of the fiber.



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

**SPECIFICATIONS**

- Power: Less than 1.5W
- Optical Specifications:
  - ◆ Data Rate: 9.95 to 11.3 Gbps
  - ◆ Optical Transmit Level: -4.2 dBm to +3.0 dBm
  - ◆ Optical Receive Level: -14.4 dBm to +0.5 dBm
  - ◆ Spectral Width: 1 nm maximum (20.0 dB Spectral Width)
  - ◆ Extinction Ratio: 3.5 dB minimum
  - ◆ SMSR: 30 dB minimum
  - ◆ Power Penalty: 1.0 dB
  - ◆ Optical Budget: 9.2 dB
  - ◆ Minimum Span Attenuation: 2.5 dB
  - ◆ Optical Span: 20 km
  - ◆ Optical connectors: LC
- Environmental:
  - ◆ Operational temperature range: -40°C to +85°C
  - ◆ Storage temperature range: -40°C to +85°C
  - ◆ Relative humidity to 95%, noncondensing

## INSTALLATION

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

1. Inspect the SFP+ BIDI. 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 SFP+ BIDI 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 SFP+ BIDI 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

### WARNING

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

### 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 SFP+ BIDI 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, 2, and 3 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 of ETSI EN 300 019-1-3.

This product complies with ETSI EN 300 386 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Telecommunication network equipment; Electromagnetic Compatibility (EMC) requirements."

The SFP+ BIDI meets EU RoHS Directive 2002/95/EC and/or applicable exemptions. Refer to [www.adtran.com](http://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. Pour assurer la conformité aux normes mentionnées plus haut, seuls des modules laser de classe 1 approuvés provenant d'une liste de fournisseurs certifiés par ADTRAN (disponible sur le site d'ADTRAN) doivent être installés sur ce produit. ADTRAN ne peut certifier l'intégrité d'un système doté d'autres modules laser..

### ⚠ ATTENTION

- Une 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.
- 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

L'équipement est conçu pour fonctionner sans dégradation lors des tests à tous les niveaux de sévérité, suivant les spécifications de la classe 3.3 de l'ETSI EN 300 019-1-3.

Cet appareil est conforme à la norme ETSI EN 300 386 " Compatibilité électromagnétique et spectre radioélectrique (ERM); équipement des réseaux de télécommunications; exigences en matière de compatibilité électromagnétique (CEM).

Ce produit est conforme à la directive européenne RoHS 2002/95/CE et/ou aux exonérations applicables. Reportez-vous à [www.adtran.com](http://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. Damit die obigen Richtlinien auch in Zukunft eingehalten werden können, dürfen ausschließlich Class 1 Lasermodule von einem von ADTRAN zugelassenen Anbieter in dem Produkt installiert werden (erhältlich auf der Website von ADTRAN). ADTRAN garantiert nicht für die Systemintegrität bei anderen Lasermodulen.

**⚠️ 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.
- 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 Umweltkassen 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 Gerät funktioniert ohne Leistungsabfall während aller für Klasse 3.3 von ETSI EN 300 019-1-3 vorgeschriebenen Belastungstests.

Dieses Produkt erfüllt die ETSI EN 300 386 Norm "Elektromagnetische Verträglichkeit und Funkspektrumangelegenheiten (ERM); Einrichtungen des Telekommunikationsnetzes; Anforderungen zur elektromagnetischen Verträglichkeit."

Dieses Produkt erfüllt die EU RoHS Richtlinie 2002/95/EC und/oder gültige Ausnahmen. Bitte besuchen Sie [www.adtran.com](http://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](http://www.adtran.com/warranty).



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