

## 11.3 Gbps, CWDM, 10Km, SFP+

Product P/N: 1442470FX

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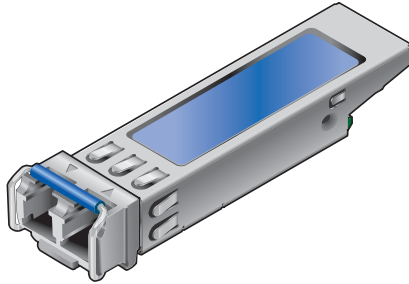
Go to: <https://supportforums.adtran.com/welcome>

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



## DESCRIPTION

The 11.3 Gbps, CWDM, 10Km, SFP+ plugs into ADTRAN equipment designed to accept Small Form-factor Pluggables (SFPs). Installed into an appropriate host unit, the SFP+ provides a Coarse Wavelength Division Multiplexing (CWDM) interface to the supporting system.

### NOTE

To ensure compatibility, refer to the documentation provided with the host module or splitter/combiner unit.

The following features are supported on the SFP+:

- 9.95 - 11.3 Gbps, CWDM, long reach, single-mode, 2-fiber operation
- 10 km maximum optical span

### NOTICE

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.

This Job Aid supports the following CWDM SFP+ Modules:

Part Number	Wavelength (nm)
1442470F1	1271
1442470F2	1291
1442470F3	1311
1442470F4	1331
1442470F5	1351
1442470F6	1371
1442470F7	1391
1442470F8	1411
1442470F9	1431
1442470F10	1451
1442470F11	1471
1442470F12	1491
1442470F13	1511
1442470F14	1531
1442470F15	1551
1442470F16	1571
1442470F17	1591
1442470F18	1611

## Operational Specifications

- Optical Specifications:
  - ◆ Optical transmit level: 0.0 dBm to +5.0 dBm
  - ◆ Optical receive level: -13.4dBm to +5.0 dBm (11.3Gbps)  
-14.4 dBm to +5.0 dBm (10.3Gbps)
  - ◆ Power penalty: 1.0 dB
  - ◆ Optical budget: 15.0 (±1) dB
  - ◆ Minimum span attenuation: 3.0 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

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 “Warranty”.

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

1. Insert the SFP+ into the SFP cage on the circuit board of the host module with the latch handle facing outward. Slide the SFP+ all the way into the cage until there is an audible click.
2. Do not remove the connector plug until the optical fiber connection is ready to be made.

### NOTE

The latch on the SFP+ is for removal only.

3. Continue the installation and turn-up of the host module using the instructions in the Job Aid provided with that module, or using the documentation, available online at [www.adtran.com](http://www.adtran.com).

### NOTICE

When removing an SFP+, remove the fibers first.

## MAINTENANCE

The SFP+ does not require routine hardware maintenance for normal operation. ADTRAN does not recommend that repairs be attempted in the field. Repair services may be obtained by returning the defective unit to ADTRAN. Refer to the warranty for further information.

## 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 and -2. For continued compliance with the above standards, only approved Class 1 laser modules from an ADTRAN approved vendor list (located on the ADTRAN website) should be installed in this product. 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.
- Per GR-1089-CORE, this system is designed and intended for installation as part of either a Common Bonding Network (CBN) or 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 configuration.
- 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 SFP port is 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, 2, and 3 as defined in GR-3108-CORE.

The SFP+ is NRTL Listed to the applicable UL standards. The SFP+ meets or exceeds all the applicable requirements of NEBS, Telcordia GR-63-CORE, and GR-1089-CORE. The SFP+ is intended for deployment in Central Office type facilities, EEs, EECs, and locations where the NEC applies (for example, Customer Premises). Install the SFP+ in an ADTRAN product located in a restricted access location.

Configuration Code	Input	Output
Power Code (PC)	F	C
Telecommunication Code (TC)	-	-
Installation Code (IC)	A	-

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.

The SFP+ 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+ meets EU RoHS Directive 2011/65/EN and/or applicable exemptions. Refer to [www.adtran.com](http://www.adtran.com) for further information on RoHS/WEEE.

## FRANÇAIS

### WARNING

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..

### CAUTION

- 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 2011/65/EN 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.

**⚠️ CAUTION**

- 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 Umweltkriterien 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 2011/65/EN 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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