

## Quick Start



## DESCRIPTION

The following products are supported in this document:

Part Number	Description
1445010F1C	QSFP28 100G 1M
1445010F2C	QSFP28 100G 2M
1445010F3C	QSFP28 100G 3M
1445010F5C	QSFP28 100G 5M

QSFP28 direct attach cable transceivers have been built into 8 pair twin axial, copper cable assemblies suitable for short reach applications. The design allows for a serial data transmission up to 100 Gbps. These are available in different lengths. The modules comply with QSFP28 Multi-Sourcing Agreement (MSA) SFF-8436.

## INSTALLATION

To install the QSFP28 cable into an appropriate module, complete the following steps:

1. Inspect the QSFP28 cable. If damaged, file a claim with the carrier and then contact ADTRAN Customer Service.
2. Do not remove the protective end cap from the QSFP until the cable is ready to be connected.
3. Insert the QSFP28 cable into the QSFP cage on the module. Ensure the manufacturer's label on the QSFP is facing upward for correct installation.
4. Slide the QSFP28 cable all the way into the receptacle until there is an audible "click."

**CAUTION!**

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

**NOTICE**

The loop on the QSFP is used to remove the QSFP from the cage on the circuit card.

## OPERATIONAL SPECIFICATIONS

**General**

- Module type: QSFP28
- Fiber/Copper: Copper
- Applications: Switch to switch interface, Data center interconnect
- Distance: Different lengths from 1,2,3 and 5 meters
- Digital Diagnostic Monitoring: SFF8636 Compliant

**Environmental**

- Controlled Environment (Commercial Grade)
- Operational temperature range: -5°C to + 50°C
- Storage temperature range: -40 C to +85 °C
- Relative humidity to 80%, noncondensing

## SAFETY AND REGULATORY

### ENGLISH



#### WARNING!

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



#### 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 cable 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).
- This product and the host system are designed and intended for installation as part of a Common Bonding Network (CBN). This product and the host system are 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 (i.e., front panels, SFP/XFP modules) on the product is properly grounded.



#### NOTE

- This product is designed to be deployed in GR-3108-CORE environmental class 1.
- The product is designed to meet the applicable requirements of Telcordia GR-63-CORE and GR-1089-CORE.
- 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" 1.2
  - ◆ ETSI EN 300 019-2-2 "Classification of environmental conditions, Transportation", Class 2.3
  - ◆ 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](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!**

- 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 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 conçu pour répondre aux classes environnementales suivantes:
  - ◆ ETSI EN 300 019-2-1: "Classification des conditions d'environnement; Entreposage," classe 1.2
  - ◆ ETSI EN 300 019-2-2: "Classification des conditions d'environnements; Transport," classe 2.3
  - ◆ ETSI EN 300 019-2-3: "Classification des conditions d'environnements; l'utilisation à poste fixe dans des endroits protégés contre les intempéries," classe 3.1E
- 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.
- Ce produit est conforme à la directive. 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!**

- 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.
- 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 wurde entsprechend der folgenden Umweltklassen entwickelt:
  - ◆ ETSI EN 300 019-2-1 "Klassifizierung von Umweltbedingungen"; Storage Class 1,2
  - ◆ ETSI EN 300 019-2-2", Klassifizierung von Umweltbedingungen,Transportation", der Klasse 2.3
  - ◆ ETSI EN 300 019-2-3 "Klassifizierung von Umweltbedingungen, Ortsfester Einsatz, wettergeschützten Standorten" Klasse 3.1E
- Dieses Gerät funktioniert ohne Leistungsabfall während aller für Klasse 3.3 von ETSI EN 300 019-1-3 vorgeschriebenen Belastungstests.
- Dieses Produkt erfüllt die EU RoHS Richtlinie. Bitte besuchen Sie [www.adtran.com](http://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](http://www.adtran.com/warranty).

**Trademarks:** Brand names and product names included in this document are trademarks, registered trademarks, or trade names of their respective holders.

©2017 ADTRAN, Inc. All Rights Reserved.



**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**

