Adtran Pluggable Optics

QSFP28

100GBASE-ZR4 80KM CTEMP

Quick Start

July 2023
61445580F1C-13A

P/N: 1445580F1C

DESCRIPTION

The 100GBASE-ZR4 80KM CTEMP QSFP28 is a long range QSFP28 optical device supporting 100G Ethernet applications at transmission distances up to 80 km.

This QSFP28 supports the following features:

- Hot pluggable QSFP28 MSA form factor
- Up to 80km reach for G.652 SMF with FEC
- Single +3.3V power supply
- Temperature Range 0°C to 70°C
- Transmitter: Cooled LANWDM EML TOSA
- Receiver: SOA+PIN
- Maximum power consumption < 6w
- High speed I/O electrical interface (CAUI-4)
- Duplex LC receptacle
- RoHS Compliant

Applications:

- 100 G Ethernet

⚠ **CAUTION!**

Due to compliance certification requirements, use only pluggable optics supplied by Adtran. Adtran cannot certify system integrity with other pluggable optics.

INSTALLATION

Before installing the equipment, inspect the QSFP28. If damage has occurred during shipping, file a claim with the carrier, and then contact Adtran Customer Support. For more information, refer to the warranty.

ℹ **NOTE**

A 1 m direct interconnect cable designed for use with QSFP28 optical devices is available from Adtran (P/N 1445011F1).

Installation Steps

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

ℹ **NOTE**

- Do not remove the protective dust cover from the QSFP28 until the fiber optic cable is ready to be connected.
- Orientation of the QSFP28 will vary depending on the module.

1. Insert the QSFP28 into the QSFP28 cage on the module.
2. Slide the QSFP28 all the way into the QSFP28 cage until there is an audible "click".
3. Remove the protective dust cover from the QSFP28 and the fiber optic cable.
4. Insert the fiber optic cable into the QSFP28.
5. Continue the installation and turn-up of the host module using the instructions in the Job Aid or Quick Start provided with the module or other system-level documentation available online at www.adtran.com.

ℹ **NOTE**

The latch on the QSFP28 is for removal only. When removing the QSFP28, rotate the latch away from the QSFP28. It should easily slide out of the cage.

⚠ **WARNING!**
WARNING indicates a hazard which, if not avoided, could result in death, injury or serious property damage.

⚠ **CAUTION!**
CAUTION indicates a hazard which, if not avoided, could result in service interruption, damage to the equipment, or minor property damage.

ℹ **NOTE**
NOTES inform the user of additional, but important, information or features.

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SPECIFICATIONS

General

- Module Type: QSFP28
- Media Type: Fiber
  - ♦ Single-Mode
  - ♦ Dual Fiber
- LC Connector
- Signal Data Rate, Each Lane: 25.78 Gbps
- Distance: 80 km

Optical

- Transmitter
  - ♦ Laser Diode Type: DFB
  - ♦ Transmit Wavelength: 1295 nm to 1310 nm
  - ♦ Tx Power: +2.0 dBm to +6.5 dBm
  - ♦ Spectral Width: 1.0 nm
  - ♦ Extinction Ratio: 6 dB
- Receiver
  - ♦ Type: SOA+PIN
  - ♦ Central Wavelength: 1295 nm to 1310 nm
  - ♦ Receiver Sensitivity: –26.5 dBm
  - ♦ Receiver Overload: –5.0 dBm

Environmental

- Protected Equipment Severe Environment (Outdoor)
  - ♦ System Ambient Operational Temperature Range: –5°C to +55°C
  - ♦ Storage Temperature Range: –40°C to +85°C
  - ♦ Relative Humidity: 5% to 95%, non-condensing

SAFETY AND REGULATORY

ENGLISH

⚠ **WARNING!**

Read all warnings, cautions, notes, and installation instructions before installing or servicing this equipment.

☀ **CAUTION!**

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

⚠ **CAUTION!**

- Electrostatic Discharge (ESD) can damage electronic devices. When handling devices, wear an antistatic discharge wrist strap to prevent damage to electronic components. Place devices in antistatic packing material when transporting or storing. When working on devices, always place them on an approved antistatic mat that is electrically grounded.
- This product and the host system are designed and intended for installation as part of either a Common Bonding Network (CBN) or Isolated Bonding Network (IBN).
- This product's outer case is "electrically isolated" from other circuits, as a result, this product can be used in systems that are installed either in a DC-I (isolated) or DC-C (common) configuration. For Systems where other installed modules or the host system itself have internal connections between battery return and frame ground, the system can only be deployed in a DC-C configuration.
- If the host system has a protective earth (PE) terminal, the PE terminal of the host system must be connected to protective earth (PE) to ensure that the exposed metal (i.e., front panels, optical modules) on the product is properly grounded.
- This product is intended for deployment in locations such as telecommunications facilities (e.g. Central Offices) and at locations where the NEC applies (such as customer premises). This equipment is intended to be installed and used only by instructed or skilled persons.

![i] **NOTE**

- This product is designed to be deployed in GR-3108-CORE environmental Class 1.

- This product is NRTL Listed to the applicable UL Standards. The product is designed to meet the applicable requirements of Telcordia GR-63-CORE, GR-1089-CORE and GR-3108-CORE. This product has also been evaluated to applicable international standards and meets the requirements for CE marking.

- 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 will void the warranty.

- CAN ICES-3(A)/NMB-3(A)

- 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 3.2

- This product meets EU RoHS Directive. Refer to www.adtran.com for further information on RoHS/WEEE.

FRANÇAIS

⚠ **AVERTISSMENT!**
Lisez toutes les mentions de danger et de prudence et les remarques, ainsi que la notice d'installation, avant d'effectuer l'installation ou l'entretien de cet équipement.

DEUTSCH

⚠ **WARNUNG!**
Lesen Sie alle Warnungen, Gefahrenhinweise, Anmerkungen und Installationsanweisungen bevor Sie dieses Gerät installieren oder warten.

Documentation for Adtran Network Solutions products is available for viewing and download directly from the Adtran Support Community website.

Go to: https://adtran.com/support

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)

C A U T I O N !
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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