



## DESCRIPTION

The Small Form-Factor Pluggable OC-12 80 km Long Reach-2 (SFP LR-2) plugs into ADTRAN equipment designed to accept Small Form-factor Pluggables (SFPs). Installed into an appropriate host unit, the SFP LR-2 provides an OC-12 interface to the supporting system.

### NOTE

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

The following features are supported on the SFP LR-2:

- ◆ SONET OC-12 compatible (622 Mb/s), 1550 nm long reach, single mode, 2-fiber operation
- ◆ 80 km maximum optical span

### ⚠ CAUTION

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.

## SPECIFICATIONS

- ◆ Optical Specifications:
  - ◇ Transmit power: -3 dBm to +2 dBm
  - ◇ Receive power: -28 dBm to -8 dBm
  - ◇ Transmit Wavelength: 1550 nm
  - ◇ Optical budget: 24 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

To install the SFP LR-2 into an appropriate module, complete the following steps:

1. Inspect the SFP LR-2. 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 LR-2 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 LR-2 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

### ⚠ 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, GR-1089-CORE, and ETSI EN 300368. The SFP LR-2 is intended for deployment in Central Office type facilities, EEEs, EECs, and locations where the NEC applies (for example, Customer Premises).

The SFP 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.

## CAUTION

- ◆ 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).
- ◆ Per GR-1089-CORE Section 9, the SFP LR-2 does not have an internal DC connection between battery return and frame ground. The SFP LR-2 can be installed in a DC-I (isolated) or DC-C (common) installation. 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 ADTRAN system chassis frame ground terminal must be connected to a reliable earth ground to ensure that the metal enclosure of the SFP LR-2 is properly grounded via the backplane connector.

## CAUTION

The Small Form-Factor Pluggable OC-12 80 km Long Reach-2 is a Class 1 Laser Product and complies with the Laser Safety requirements of FDA 21 CFR 1040.11, EN60825-1, and EN60825-2. The SFP LR-2 is NRTL Listed and CB Certified to all applicable American and European safety standards.

## 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 Issue 5.

The SFP LR-2 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.

The Small Form-Factor Pluggable OC-12 80 km Long Reach-2 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.

## NOTE

- ◆ This SFP LR-2 is compliant with SFF-8472 "Digital Diagnostics Monitoring Interface for Optical Transceivers," Revision 9.3.
- ◆ This SFP LR-2 is compliant with the Small Form-Factor Pluggable (SFP) Multi-Source Agreement (MSA).
- ◆ This SFP LR-2 is designed to be deployed in GR-3108-CORE environmental class 1 or 2 as defined in GR-3108-CORE Issue 2.

**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).



### ADTRAN CUSTOMER CARE:

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