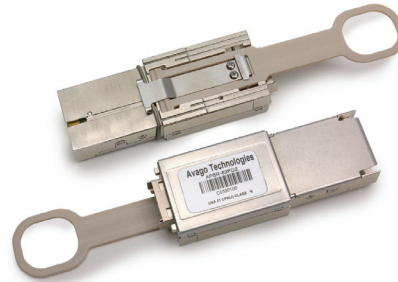


# AFBR-83PDZ

12Channel x 10.3125Gbps Transceiver  
CXP Pluggable, Parallel Fiber-Optics Module



## Product Brief



### Description

The Avago Technologies AFBR-83PDZ is a Twelve-Channel, Pluggable, Parallel, Fiber-Optic CXP Transceiver for 100 Gigabit Ethernet (100GbE) and 12 x 10G Infini-Band (IB) quadruple data rate (IB-QDR) applications. This transceiver is a high performance module for short-range multi-lane data communication and interconnect applications. It integrates twelve data lanes in each direction with greater than 120 Gbps aggregate bandwidth. Each lane can operate at 10.3125 Gbps up to 100 m using OM3 fiber and 150m using OM4 fiber. These modules are backward compatible to the 12 x 5G IB dual data rate (IB-DDR) and 12 x 2.5G IB single data rate (IB-SDR) applications.

These modules are designed to operate over multimode fiber systems using a nominal wavelength of 850nm. The electrical interface uses an 84-contact edge type connector. The optical interface uses a 24-fiber MTP® (MPO) connector. This module incorporates Avago Technologies proven integrated circuit and VCSEL technology to provide reliable long life, high performance, and consistent service.

### Applications

- 100 GbE and IB-QDR / IB-DDR / IB-SDR interconnects
- Data Aggregation, Backplane and Proprietary Protocol and Density Applications
- Datacom/Telecom switch & router connections

### Part Number Ordering Options

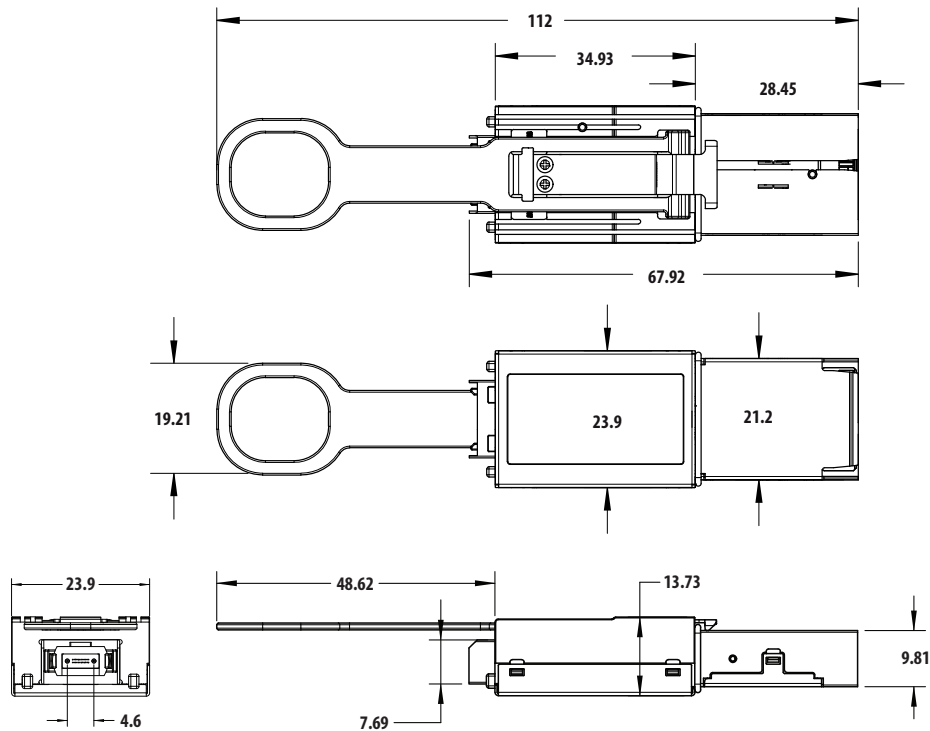
AFBR-83PDZ	12x 10.3125Gbps (Ethernet) and IB-QDR/IB-DDR/IB-SDR with Full Diagnostic Monitoring
AFBR-83EVB	CXP Evaluation Board
AFBR-83EVK*	CXP Evaluation Kit

\* Includes GUI, User Guide, i-Port and Power Supply

### Features

- Compliant to SFF-8642: Mini Multilane Series: Shielded Integrated Connector, and IBTA Annex A6 CXP Interface Specification
- Each of the twelve channels is compliant on a per lane electrical and optical specification basis with the IEEE 802.3ba 100GbE (100GBASE-SR10 and CPPI) specifications, and supporting InfiniBand QDR/DDR/SDR application
- Multi-rate capable from 1 Gbps to 10.5 Gbps
- High Channel Capacity: >120Gbps per module, bi-directional, with twelve independent Transmitters and Receivers each
- Operates at 10.3125 Gbps per channel with 64b/66b encoded data for 100GbE application and at 10 Gbps with 8b/10b encoded data for IB-QDR application
- Hot Pluggable
- Links up to 100 m using OM3 fiber and 150 m using OM4 fiber
- 0 to 70° C case temperature operating range
- 3.3V power supply only
- Low power dissipation of < 3 W
- Proven High Reliability 850 nm technology: Avago VCSEL array transmitter and Avago PIN array receiver
- Two Wire Serial (TWS) interface with maskable interrupt for expanded functionality including:
  - Individual channel functions: channel/output disable, squelch disable, and lane polarity inversion
  - Diagnostic Monitoring functions: module temperature and supply voltages, per channel laser current and laser power, and input receiver power
  - Status per channel: Tx fault, electrical (transmitter) and optical (receiver) LOS, and alarm flags
- Utilizes a standard 24 lane optical fiber with MTP® (MPO) optical connector for high density and thin, light-weight cable management

## Mechanical Dimensions, Package Outline



All dimensions in millimeters:

\* Mechanical dimensions depicted are nominal dimensions and are subject to change

## Key Product Parameters

The Avago Technologies CXP Transceiver operates at 850 nm and is compliant on a per lane basis to the 100GBASE-SR10 optical specs in clause 86 and CPPI electrical specs in annex 86A of the IEEE 802.3ba specifications.

Parameter	Value	Units	Notes
Data rate per lane <sup>[1]</sup>	10.3125	Gbps	As per 802.3ba: 100GBASE-SR10 and CPPI specifications
Number of operational lanes	12		100GbE operation utilizes the middle ten lanes (Rx and Tx) of the 12 physically defined CXP lanes
Link Length <sup>[2]</sup>	100	m	OM3
	150	m	OM4
Operating Temperature Range	0-70	°C	Case Temperature
Power Supply Voltage	3.3	V	The Avago Technologies CXP Module requires only 3.3V Power rails
Management Interface	Two-Wire Serial		Specifications are compliant with InfiniBand Architecture 1.2.1 Annex A6: CXP
Digital Monitoring			Per InfiniBand Architecture 1.2.1 Annex A6: CXP
Transceiver Eye Safety	Class 1M <sup>[3]</sup>		per EN 60825-1:2007
Transceiver Power Consumption	3 W (Max)		Power Level Class 4 per InfiniBand Architecture 1.2.1 Annex A6: CXP
Electrical Interface	84 contacts		Compliant to SFF-8642: MINI MULTILANE SERIES: SHIELDED INTEGRATED CONNECTOR

Notes:

1. For applications beyond 10.3 Gbps per channel, please contact Avago Sales.
2. Connector loss of 1.5dB (OM3) / 1dB (OM4) allocated
3. WARNING: INVISIBLE LASER RADIATION, DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS

For product information and a complete list of distributors, please go to our web site: [www.avagotech.com](http://www.avagotech.com)

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