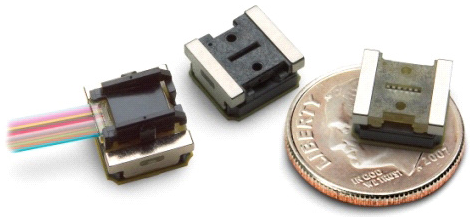
MicroPOD™
AFBR-77D4SZ, AFBR-78D4SZ
14 Gbps/Channel
Twelve Channel Parallel Fiber Optics Modules



Product Brief

Description

The AFBR-77D4SZ Twelve Channel, Pluggable, Parallel Fiber Optics Transmitter and AFBR-78D4SZ Twelve Channel, Pluggable, Parallel Fiber Optics Receiver are high performance fiber optics modules for short-range parallel multilane data communication and interconnect applications. The high density optical modules are designed to operate over multimode fiber systems using a nominal wavelength of 850 nm.

The optical interface requires the user to provide a custom designed optical turn 1×12 ribbon cable PRIZM® LightTurn® connector.

Applications

- 100 GbE and IB-FDR / IB-QDR / IB-DDR / IB-SDR interconnects
- Data Aggregation, Backplane and Proprietary Protocol and Density Applications
- High Performance and High Productivity computer interconnects
- Switch Fabric interconnects

Part Number Ordering Options

		Base Part Number	
Modules for use with Flat Ribbon Jumper Cable	**Transmitter**	AFBR-77D4SZ AFBR-77D4Z	0-70 °C 20-55 °C
	Receiver	AFBR-78D4SZ AFBR-78D4Z	0-70 °C 20-55 °C
MicroPOD Evaluation Board (Tx)		AFBR-77EVB	
MicroPOD Evaluation Board (Rx)		AFBR-78EVB	

Where: Tx = Transmitter (77), Rx = Receiver (78)

Patent - www.avagotech.com/patents

Features

- Compatible with 12×FDR InfiniBand
- Compliant to IEEE 802.3ba 100GbE (100GBASE-SR10 and nPPI) per lane
- Operates at 10 Gbps with 8b/10b encoded data, for IB-QDR application, 10.3125 Gbps for 100GbE, and up to 14.0625 Gbps for IB-FDR with 64b/66b encoded data
- High Aggregate bandwidth: 168 Gbps per module
- High density footprint: 7.8 mm × 8.2 mm × 3.9 mm size
- Separate transmitter and receiver modules;
- 850 nm VCSEL array in transmitter; PIN array in receiver
- Using OM4 4700 MHz·km fiber: links up to 150 m, from 10.3125 Gbps to 11.5 Gbps, 100 m @ 12.5 Gbps, and 50 m @ 14.0625 Gbps
- Optical Interface: PRIZM® LightTurn® optical turn 1×12 ribbon fiber connector
- Electrical interface: 9×9 micro-LGA with 0.7424 mm pitch
- Low Power consumption: 3.7 W Max per Transmitter / Receiver pair (0 °C to 70 °C operating range)
- Dedicated signals for module address, module reset and host interrupt
- Two Wire Serial (TWS) interface with maskable interrupt for expanded functionality including:
  - Individual channel functions: disable, squelch disable, lane polarity inversion, TX eye margin enable
  - A/D read back: module temperature and supply voltages, per channel laser current and laser power, or received power
  - Status: per channel Tx fault, electrical (transmitter) or optical (receiver) LOS, and alarm flags
  - Programmable equalization integrated with DC blocking caps at transmitter data input
  - Programmable receiver output swing and de-emphasis level
  - Field-upgradable firmware capability
- 0 °C to 70 °C case temperature continuous operating range. 85 °C supported for short durations up to 12 Gbps

Package Dimensions

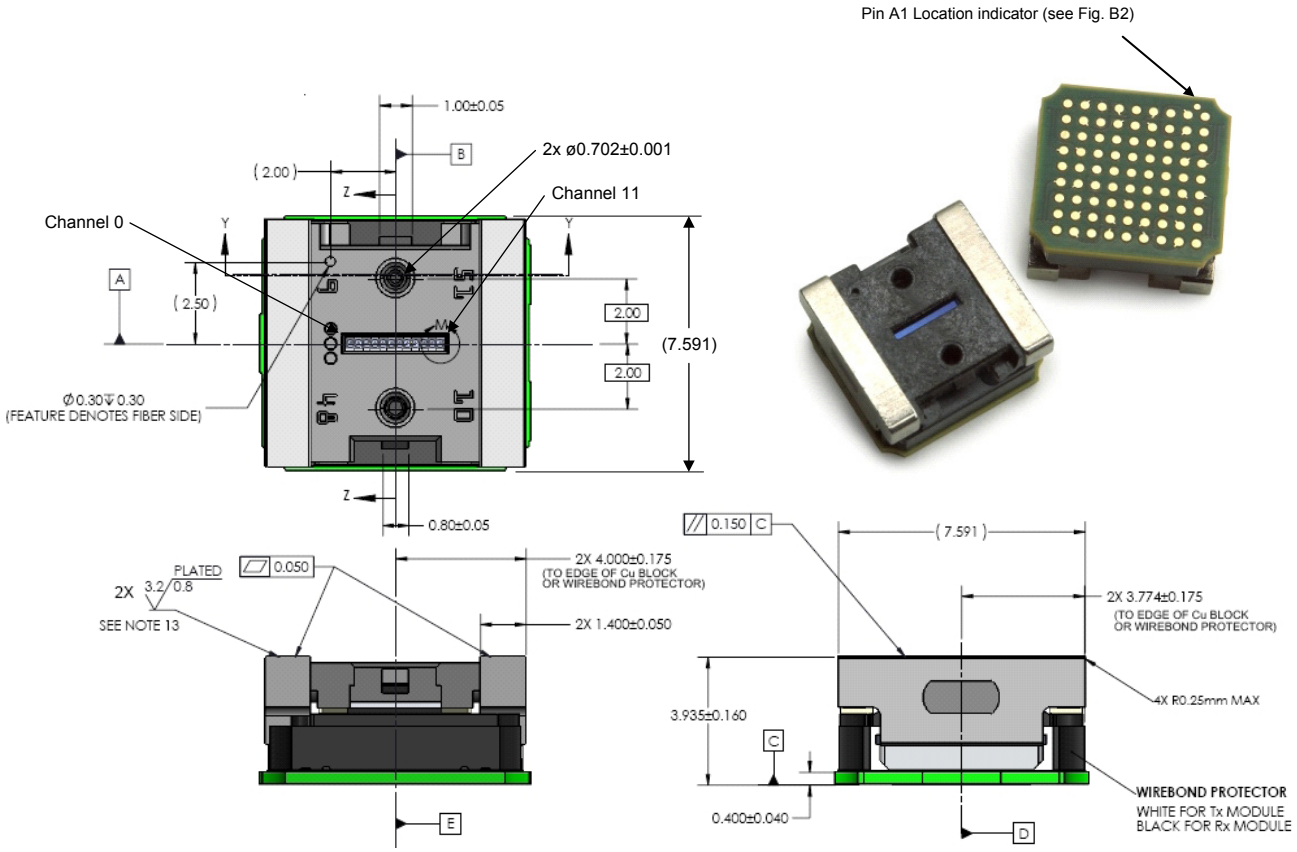


Figure 1. Module Top and Side View

AV02-4042EN - March 8, 2013