

# AFBR-810BxxxZ/ AFBR-820BxxxZ

## Twelve-Channel Transmitter and Receiver

### Pluggable, Parallel-Fiber-Optics Modules



## Product Brief

### Description

The AFBR-810B Twelve-Channel, Pluggable, Parallel-Fiber-Optics Transmitter and AFBR-820B Twelve-Channel, Pluggable, Parallel-Fiber-Optics Receiver are high performance fiber optics modules for short-range parallel multi-lane data communication and interconnect applications. These 12-channel devices are capable of 10.0 Gbps per channel, 120 Gbps raw aggregate operation. The modules are designed to operate over multimode fiber systems using a nominal wavelength of 850 nm. The electrical interface uses a 10x10 MEG-Array® low-profile mezzanine connector. The optical interface uses a MTP® (MPO) 1x12 ribbon cable connector. The thermal interface can be a factory installed heatsink for air-cooled systems or thermal seating plane for user flexibility. The modules incorporate high performance, highly reliable, short wavelength optical devices coupled with proven circuit technology to provide long life and consistent service.

### Applications

- High Performance and High Productivity computer interconnects
- InfiniBand QDR SX interconnects
- Datacom switch and router backplane connections
- Telecom switch and router backplane connections

### Part Number Ordering Options

#### Transmitter Part Numbers

AFBR-810BZ	With Fin heat sink / no EMI nose clip
AFBR-810BEZ	With Fin heat sink / EMI nose clip
AFBR-810BPZ	With Pin heat sink / no EMI nose clip
AFBR-810BEPZ	With Pin heat sink / EMI nose clip
AFBR-810BHZ	With no heat sink / no EMI nose clip
AFBR-810BEHZ	With no heat sink/ EMI nose clip

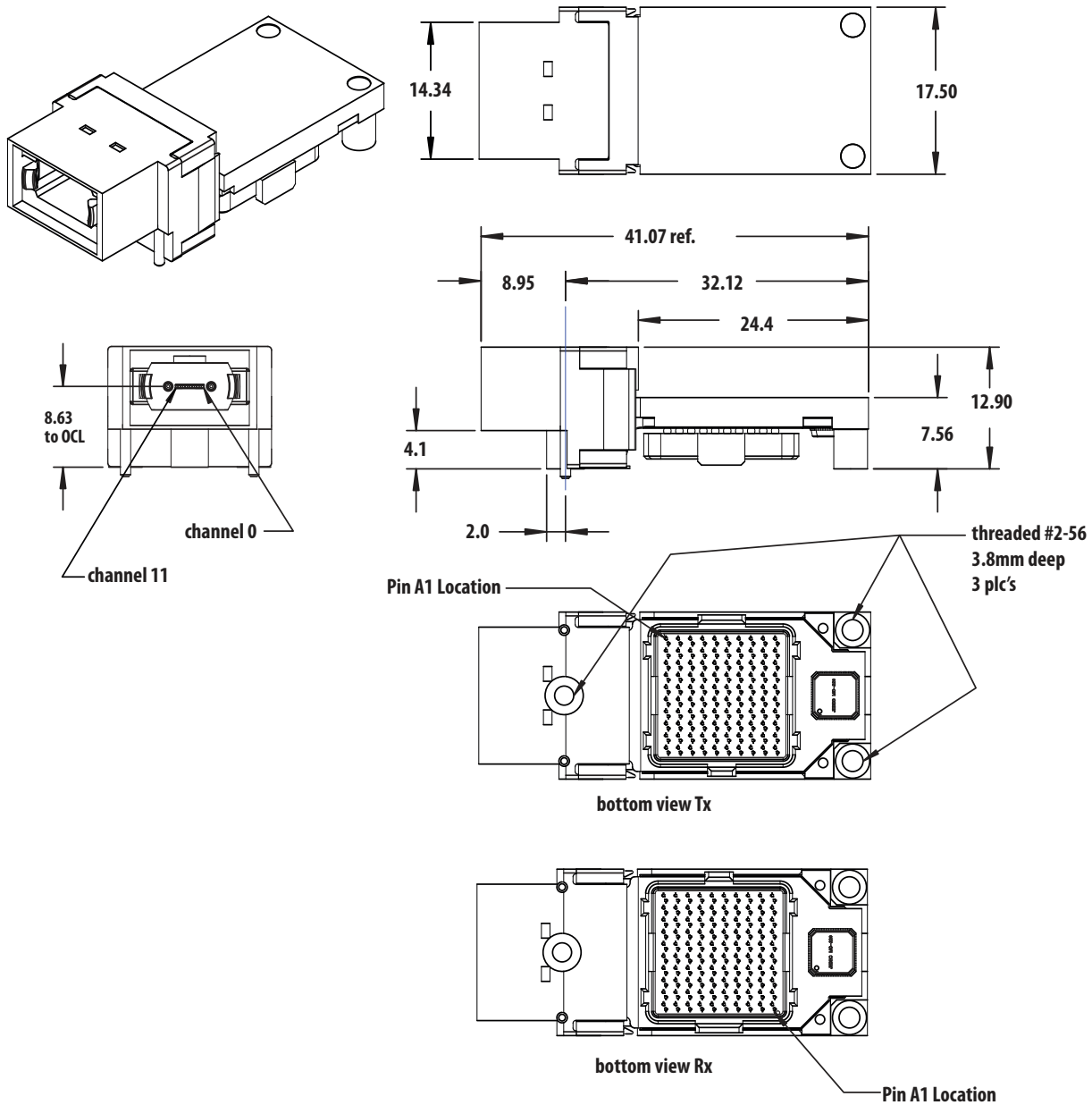
#### Receiver Part Numbers

AFBR-820BZ	With Fin heat sink / no EMI nose clip
AFBR-820BEZ	With Fin heat sink / EMI nose clip
AFBR-820BPZ	With Pin heat sink / no EMI nose clip
AFBR-820BEPZ	With Pin heat sink / EMI nose clip
AFBR-820BHZ	With no heat sink / no EMI nose clip
AFBR-820BEHZ	With no heat sink/ EMI nose clip

### Features

- High Channel Capacity: 120 Gbps per module
- High port density: 19 mm lateral port pitch; < 0.51 mm/ Gbps for Tx–Rx pair
- Low power consumption per Gbps: < 42 mW/Gb/s for Tx–Rx pair
- Based on industry-standard, pluggable, SNAP12 form factor with upgraded pinout for improved signal integrity and keyed to prevent mis-plugging with first generation SNAP12 devices
- Twelve independent channels per module
- Separate transmitter and receiver modules
- 850 nm VCSEL array in transmitter; PIN array in receiver
- Operates up to 10 Gbps with 8b/10b compatible coded data
- Links up to 50 m at 10 Gbps with 2000 MHz-km 50 um MMF
- Two power supplies, 2.5 V and 3.3 V, for low power consumption
- 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, margin
  - Programmable equalization integrated with DC blocking caps at transmitter data input
  - Programmable receiver output swing and de-emphasis level
  - A/D readback: 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
- 0 to 70 C case temperature operating range

### Package Outline, Host PCB Footprint and Panel Cutout



**Figure 1. Package Outline AFBR-810BHZ and AFBR-820BHZ**

Package outline dimensions are nominal expressed in mm unless otherwise stated. The mating host PCB mounted electrical connector is a 100 position FCI MEG-Array® Plug (FCI PN: 84512-102) or equivalent.

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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