AFBR-7QERxxZ

40 Gigabit Ethernet & InfiniBand QDR
QSFP+ Pluggable, Parallel Active Optical Cable

Product Brief

Avago TECHNOLOGIES

Description

The Avago Technologies AFBR-7QERxxZ is a Four-Channel, Pluggable, Parallel, Fiber-Optic QSFP+ Active Optical Cable (AOC) solution for 40 Gigabit Ethernet Applications. This AOC is a high performance cable for short-range multi-lane data communication and inter-connect applications. It integrates four data lanes in each direction with 40 Gbps aggregate bandwidth. Each lane can operate at 10.3125 Gbps. These cables also support 4 x 10 G InfiniBand QDR applications and are backwards compatible to the 4 x 5 G IB DDR and 4 x 2.5 G IB single IB SDR applications.

These Active Optical Cables operate over multimode fiber systems using a nominal wavelength of 850 nm. The electrical interface uses a 38 contact edge type connector. This AOC incorporates Avago Technologies proven integrated circuit and VCSEL technology to provide reliable long life, high performance, and consistent service.

Part Number

40 Gigabit Ethernet & InfiniBand QDR	AFBR-7QERxxZ
40GbE QSFP+ to 4x 10GbE SFP+ Breakout AOC	AFBR-7IERxxZ

Where xx = cable length in meters

For specifications pertaining to the SFP+ Active Cable-end see AV02-2948EN AFBR-7CERxxZ SFP+ Active Optical Cable (AOC) Datasheet

Evaluation Board	AFBR-79Q4EKZ*
Evaluation Kit	AFBR-79Q2EKZ**

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

Note: Two evaluation boards are needed in order to run the bi-directional QSFP+ Active Cable Assembly
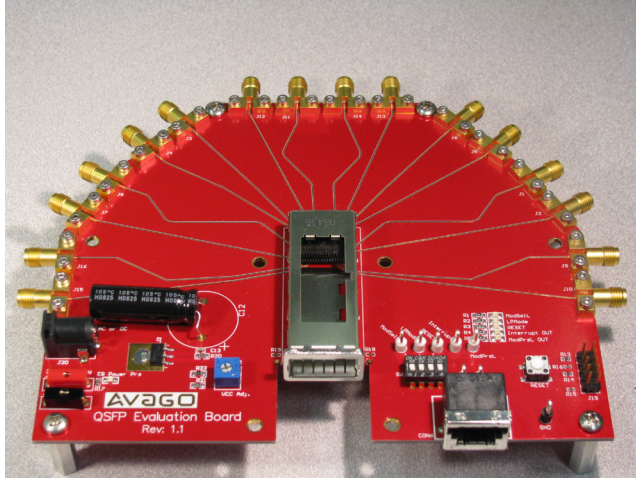
Features

- Compliant to the 40GBASE-SR4 and XLPPI Specification per IEEE 802.3ba-2010 and supporting 40G-IB-QDR/20G-IB-DDR/10G-IB-SDR applications
- Compliant to the industry standard SFF-8436 QSFP+ Specification
- Power Level 1: Max Power < 1.5 W
- High port density: 21 mm horizontal port pitch
- Operate at 10.3125 Gbps per channel with 64b/66b encoded data for 40GbE application and at 10 Gbps with 8b/10b compatible encoded data for 40G-IB-QDR application
- 0 to 70° C case temperature operating range
- Proven High Reliability 850 nm technology: Avago VCSEL transmitter and Avago PIN receiver
- Hot pluggable for ease of servicing and installation
- Two Wire Serial (TWS) interface
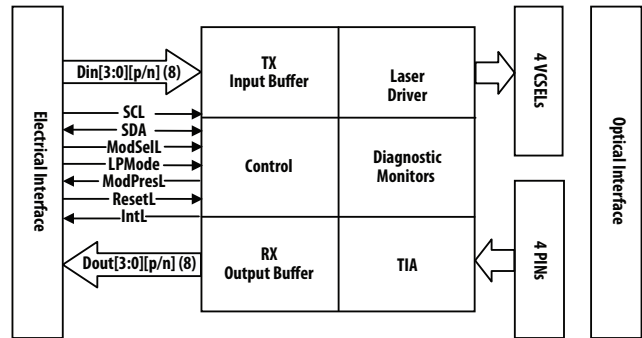- Utilizes optical fiber for high density and thin, lightweight cable management

Applications

- 40GbE and 40G-IB-QDR / 20G-IB-DDR / 10G-IB-SDR inter-connects
- Datacom/Telecom switch & router connections
- Data aggregation and backplane applications
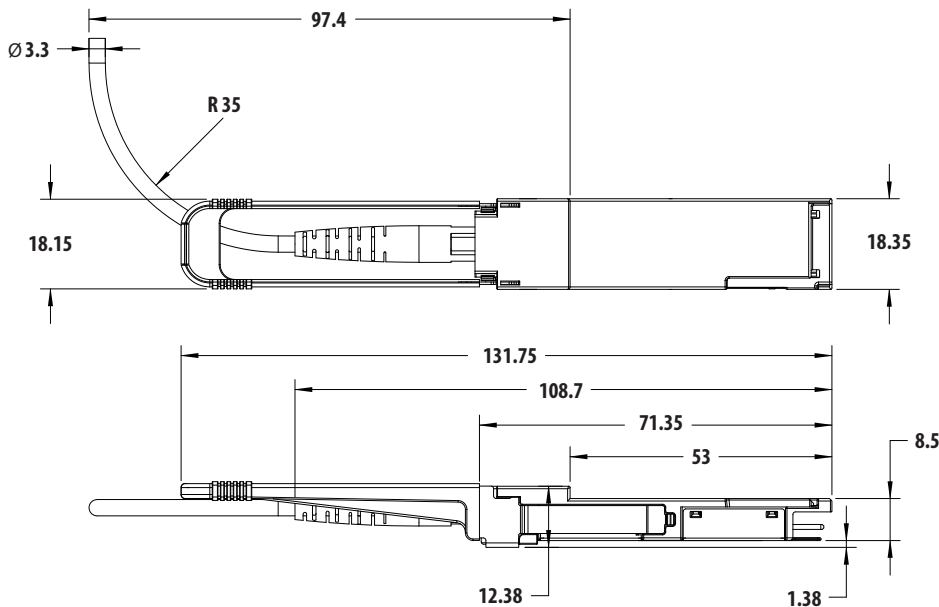- Proprietary protocol and density applications

Evaluation Kit

QSFP Evaluation Board
Rev: 1.1

Active Optical Cable Block Diagram – Active Components

Electrical Interface

Din[3:0][p/n] (8)
SCL
SDA
ModSelL
LPMode
ModPresL
ResetL
IntL
Dout[3:0][p/n] (8)

TX Input Buffer
Laser Driver
Control
Diagnostic Monitors
RX Output Buffer
TIA

4 VCSELs
4 PINs

Optical Interface

Mechanical Dimensions

Ø 3.3
97.4
R 35
18.15
18.35

131.75
108.7
71.35
53
8.5
12.38
1.38

Key Product Parameters

Parameter	Value	Units	Notes
Data rate per lane	10.3125 10.0	Gbps Gbps	Per IEEE 802.3ba 40GBASE-SR4 standard InfiniBand QDR rate
Transceiver Case Operating Temperature	0-70	°C	
Power Supply Voltage	3.3	V	
Management Interface	Two-Wire Serial		Per SFF-8436 QSFP+ specification
Eye Safety	Class 1M		Per EN 60825-1:2007
Transceiver Power Consumption	<1.5	W	Power Level Class 1
Electrical Connector	38 contact connector		Per SFF-8436 QSFP+ specification
Electrical Interface	XLPPI High Speed Electrical		Per IEEE 802.3ba standard

For product information and a complete list of distributors, please go to our web site: **www.avagotech.com**

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