AFBR-79EIPZ
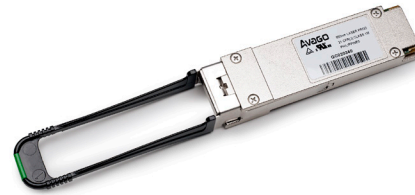
QSFP+ iSR4 Pluggable, Parallel Fiber-Optics Module for 40 Gb Ethernet, 4 x 10 Gb Ethernet and InfiniBand Applications

Avago TECHNOLOGIES

Product Brief

Description

The Avago Technologies AFBR-79EIPZ is a Four-Channel, Pluggable, Parallel, Fiber-Optic QSFP+ Transceiver with an integrated push-pull tab for 40 Gigabit Ethernet (40GbE) applications with added capability of inter-operating with IEEE 10GBASE-SR compliant products. It also supports 4 x 10G InfiniBand (IB) quadruple data rate (40G-IB-QDR) application and is backward compatible to the 4 x 5G IB dual data rate (20G-IB-DDR) and 4 x 2.5G IB single data rate (10G-IB-SDR) applications. This transceiver is a high performance module for short-range multi-lane data communication and interconnect applications. It integrates four data lanes in each direction with each lane operating at 10.3125 Gbps, giving an aggregated bandwidth of 40 Gbps. This transceiver can also be used for high density 10 Gigabit Ethernet application. It allows optical interoperability with any 10 Gigabit Ethernet transceiver, compliant to the IEEE 802.3ae 10GBASE-SR specifications, of form factors such as SFP+, XFP and X2, to provide an effective port count of over 100 within 1 RU rack. The push-pull tab facilitates the insertion and extraction of these transceivers in such high density environment. This transceiver is designated as a QSFP+ iSR4 solution, where the letter "i" represents interoperability between this QSFP+ transceiver with any IEEE 10GBASE-SR compliant modules.

This QSFP+ transceiver link length for either 40 Gigabit Ethernet or high density 10 Gigabit Ethernet application is up to 100 m using OM3 fiber or 150 m using OM4 fiber. These modules are designed to operate over multimode fiber systems using a nominal wavelength of 850nm. The electrical interface uses a 38 contact edge type connector. The optical interface uses an 8 or 12 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.

Part Number Ordering Information

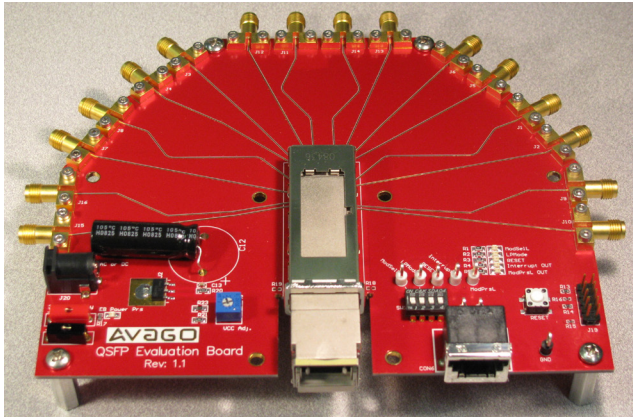AFBR-79EIPZ   QSFP+ iSR4 with DMI and push-pull tab

Features

- Compliant to 40GbE specifications per IEEE 802.3ba-2010 (40GBASE-SR4 and XLPPI)

- Support optical interoperability with IEEE 802.3ae 10GBASE-SR compliant modules of various form factors such as SFP+, XFP and X2

- Support 40G-IB-QDR / 20G-IB-DDR / 10G-IB-SDR applications

- Compliant to industry-standard QSFP+ SFF-8436 Specification

- Power Level 1: Max Power < 1.5W

- High port density: 21mm horizontal port pitch

- Push-pull tab: ease of transceiver insertion and extraction; tab front clip color coded "Green" for iSR4 identification

- Operates at 10.3125 Gbps per channel with 64b/66b encoded data for 40GbE / 10GbE applications and at 10 Gbps with 8b/10b compatible encoded data for 40G-IB-QDR application

- Links up to 100 m using OM3 fiber and 150m using OM4 fiber

- 0 to 70°C case temperature operating range

- Proven High Reliability 850 nm technology: Avago Technologies VCSEL array transmitter and Avago Technologies PIN array receiver

- Hot pluggable transceiver for servicing and ease of installation

- Two-Wire Serial (TWS) interface with Digital Monitoring and maskable interrupts for expanded functionality

- Utilizes a standard 12/8 lane optical fiber with MTP® (MPO) optical connector for high density and thin, light-weight cable management
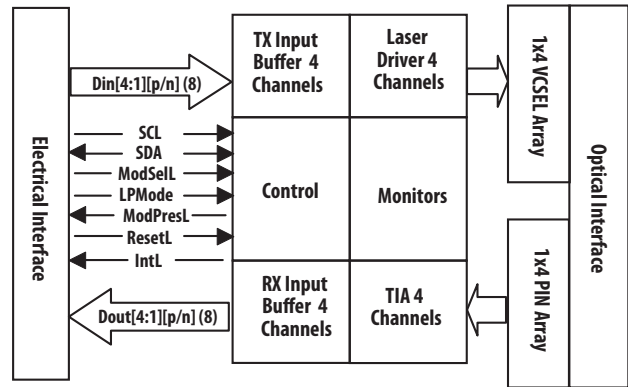
Applications

- 40GbE, high density 4 x 10GbE, and 40G-IB-QDR / 20G-IB-DDR / 10G-IB-SDR interconnects

- Datacom/Telecom switch & router connections

- Data Aggregation and Backplane Applications

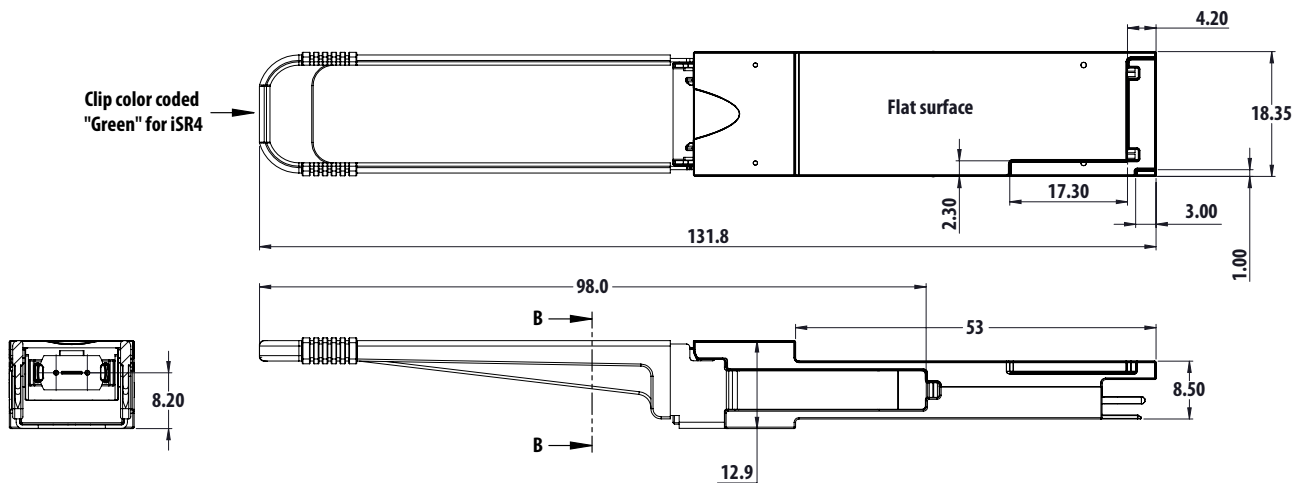- Proprietary Protocol and Density Applications

Evaluation Kit

Transceiver Block Diagram

Mechanical Dimensions:

Clip color coded "Green" for iSR4

Flat surface

4.20
18.35
17.30
3.00
2.30
131.8
1.00

98.0
B
53
8.50
B
12.9
8.20

All dimensions in millimeters

Key Product Parameters

Parameter	Value	Units	Notes
Data rate per lane	10.3125	Gbps	Per IEEE 802.3ba 40GBASE-SR4 standard
Link Length [1]	100	m	OM3
	150	m	OM4
Transceiver Case Operating Temperature	0-70	°C	
Power Supply Voltage	3.3	V	
Average Output Power, Max , each lane	-1	dBm	Per IEEE 802.3ae 10GBASE-SR standard
Management Interface	Two-Wire Serial		Per SFF-8436 QSFP+ specification
Digital Monitoring			Per SFF-8436 QSFP+ specification
Transceiver Eye Safety	Class 1		Per EN 60825-1:2007
Transceiver Power Consumption, Max	1.5W		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

Notes:
1. Connector loss of 1.5dB (OM3) / 1dB (OM4) allocated

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