AFBR-8420Z

CFP2, 850 nm, 100GBASE-SR10 Compliant Pluggable 100G Ethernet Optical Transceiver

Product Brief

Avago
T E C H N O L O G I E S

Description

Avago Technologies' AFBR-8420Z CFP2 SR10 is a ten channel pluggable, parallel, fiber optic transceiver for 100Gbps Ethernet Applications. The transceiver supports high speed serial links over multi-mode fiber at signaling rates up to 103.125Gb/s (a serial line rate of 10.3125Gb/s per channel) for link distances up to 100m with OM3 fiber or 150m with OM4 fiber. The product is compliant with the CFP2 industry agreement for mechanical and low speed electrical specifications. High speed electrical and optical specifications are compliant with IEEE 802.3ba Clause 86 for 100GBASE-SR10 media, Clause 86A for CPPI electrical interface, and Clause 45 for MDIO.

The transceiver electrical interface uses a 104 contact edge type connector, as specified in the CFP2 industry agreement. The optical interface uses a 24-fiber MTP® (MPO) fiber optic connector. This transceiver incorporates Avago Technologies proven integrated circuit and VCSEL technologies to provide reliable, high performance and consistent service.

Digital diagnostic monitoring information (DMI) is present in the AFBR-8420Z per the CFP2 industry agreement, providing real time monitoring information of transmitter, receiver and module operating conditions over the MDIO interface.

Applications

- 100 Gb/s Ethernet Interconnects (802.3ba Clause 86)
- 10×10 Gb/s Ethernet Interconnects (802.3ae Clause 52)
- Datacom/Telecom Switch and Router Connections
- Data Aggregation and Density Applications

Features

- Links up to 100m using OM3 fiber and 150m using OM4 fiber
- CFP2 Power Dissipation Class 2 with CDRs in bypass. CDRs are bypassed for lower power dissipation by default
- CFP2 Power Dissipation Class 3 with CDRs ON
- Proven High Reliability 850nm technology: Avago VCSEL array transmitter and Avago PIN array receiver.
- Compliant to 100GbE specifications 802.3ba (100GBase-SR10 and CPPI) up to 100m OM3 and 150m OM4 fiber.
- Compliant to 40GbE specifications 802.3ba (40GBase-SR4 and XLPPI) up to 100m OM3 and 150m OM4 fiber.
- Compatible with 10GE SR specifications per 802.3ae (10GBASE-SR) up to 100m OM3 fiber.
- CFP2 10x10Gbit/s Host Pin Map
- Class 1 eye safe per IEC60825-1 and CDRH
- Wide case temperature range (0°C to 70°C)
- Utilizes standard 24 lane optical fiber with MTP® (MPO) optical connector for high density and thin, light-weight cable management
- Diagnostic features per CFP2 using MDIO. Real time monitoring of:
  - Transmitter average optical power
  - Received average optical power
  - Laser bias current
  - Temperature
  - Supply Voltage
- Host Lane Loopback (eLoop) and Network Lane Loopback (oLoop) functionality
- Integrated CDRs on each transmit and receive lane
- CDRs can be bypassed for lower power dissipation
- CFP Management Interface Specification Version 2.2
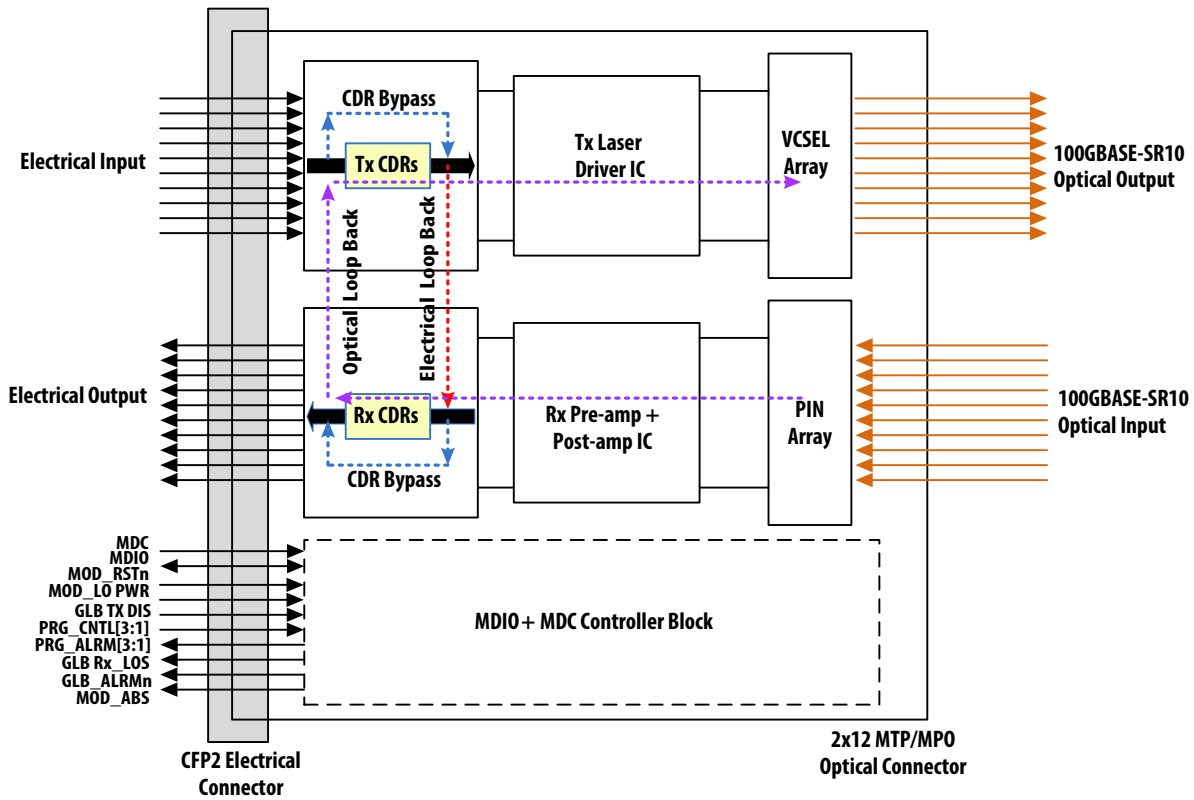- CFP2 Hardware Specification Revision 1.0
- Compliant to RoHS directives

Figure 1. CFP2 Block Diagram

Key Product Parameters

Parameter	Value	Units	Notes
Data rate per lane	10.3125	Gbps	Compliant to 802.3ba 100GbE CPPI Specifications (CDRs bypassed).
Number of operational lanes	10		Bi-directional
Link Length[1]	100	m	OM3
	150	m	OM4
Operating Temperature Range	0-70	°C	Case Temperature
Power Supply Voltage	3.3	V	Requires only 3.3 V Power rails
Management Interface			MDIO
Electrical Interface	104	contacts	As specified in the CFP2 industry agreement [2]
Optical Interface	24	Fibers	24-fiber MTP® (MPO) fiber optic connector
Laser Wavelength	850	nm	

Notes:
1. Connector loss of 1.5 dB (OM3) / 1dB (OM4) allocated
2. www.cfp-msa.org

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

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