Transceiver 100G QSFP28 CWDM4 (2km)

Description

The 100Gbps CWDM4 transceiver is designed for use in 100G Ethernet links for up to 2km reach over duplex single mode fiber. The transceiver is compliant to the QSFP28 MSA, CWDM4 MSA and IEEE 802.3bm. Transceiver monitor, control and digital diagnostics is provided via I2C interface as defined in QSFP28 MSA.

Note: 100G F/W,M-LD

Applications

- 100GbE Data Center Switching and Routing interconnect
- Client interface connectivity for Routing and Transport Networks
- 100GBASE Ethernet Links
- Local Area Network (LAN) and Wide Area Network (WAN)

Key Features

- Hot pluggable QSFP28 form factor
- Two-wire common management interface (SFF-8636 MSA)
- CAUI-4 compliant Electrical interface (4 x 25.78125 Gbps)
- Transmission distance up to 2km
- Low power consumption: <3.5W
- Commercial temperature operating up to 70°C
- Duplex LC receptacle for Optical connectivity
- Pull tab based latching mechanism (MSA Compliant Green color)
- Remote firmware upgrade capability using I2C interface
- Provides capability to place CDRs in bypass mode for 40G operation
- Programmable output de-emphasis and input CTLE

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Absolute Maximum Ratings

	Min.	Max.
Storage Temperature	-40°C	+85°C
Operating Case Temperature	0°C	+70°C
Relative Humidity (Non-condensing)	0%	85%
Supply Voltage	-0.5V	+3.6V
Receiver Damage Threshold, Per Lane	+3.5dBm	

Electrical Characteristics

	Min.	Typ.	Max.
Supply Voltage	3.135V		3.465V
Supply Current (@3.3V)			1.09A
Module Total Power			3.5W
Programmable Differential Data Output Per Lane (mVppd)[1]	300mV	800mV	930mV
Programmable Output De-emphasis[2]	0dB		7.5dB
Data Output Rise/ Fall Time (20/80%)			20psec
Differential Data Input Per Lane (mVppd)	200mV		1000mV
Programmable CTLE Peaking[3]	1dB		10dB

Note 1: Default factory setting is 800 mV
Note 2: Default factory setting is 0 dB
Note 3: Default factory setting is 1 dB

Optical Transmit & Receive Characteristics

	Value
Signaling speed, each lane	25.78125 ± 100 ppm GBd
Center wavelength range, each Lane	1264.5 to 1277.5/ 1284.5 to 1297.5/ 1304.5 to 1317.5/ 1324.5 to 1337.5 nm
Side-mode suppression ration (SMSR), min	30.0 dB
Total average launch power (max)	8.5 dBm
Average launch power, each lane (max)	2.5 dBm
Average launch power, each lane (min)	-6.5 dBm
Optical Modulation Amplitude (OMA), each lane (max)	2.5 dBm
Optical Modulation Amplitude (OMA), each lane (min)	-4.0 dBm
Transmitter and dispersion penalty (TDP), each lane (max)	3.0 dB
Launch power in OMA – TDP (min)	-5.0 dBm
Average launch power in OFF transmitter, each lane (max)	-30.0 dBm
Extinction ratio (min)	3.5 dB
Transmitter and Dispersion Eye Closure (TDEC, max)	3 dB
Vertical Eye Closure Penalty (VECP, max)	3.5 dB
Tx Power Monitor Accuracy	±1.5 dB
Transmitter reflectance (max)	-12.0 dB
Optical return loss tolerance (max)	20.0 dB
Receiver damage threshold, each lane (min)	3.5 dBm
Average receive power, each lane (max)	2.5 dBm
Average receive power, each lane (min)	-11.5 dBm
Receive power, each lane (OMA) (max)	2.5 dBm
Receiver sensitivity (OMA), each lane (max) at 2.1 x 10-5 BER	-10.0 dBm
Stressed receiver sensitivity (OMA), each lane (max)	-7.3 dBm
Rx Power Monitor Accuracy	±1.5 dB
Receiver reflectance (max)	-26.0 dB

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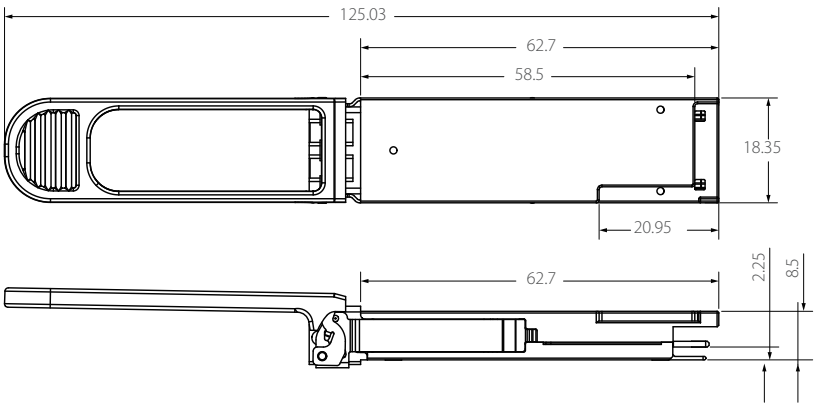
FEC Requirements

The 100Gbps CWDM4 Optical link is specified to operate at a bit error ratio (BER) of 2.1 x 10^{-5}. The host system is required to enable RS FEC in accordance with Clause 91 of IEEE 802.3bj.

Dimensions



Unit: mm

References

- SFF–8665, Specification for QSFP+ 28 Gb/s 4X Pluggable Transceiver Solution (QSFP28), Rev 1.9, June 29 2015
- SFF–8636, Specification for Management Interface for Cabled Environments, Rev2.7, January 26 2016
- SFF–8661, Specification for QSFP+ 4X Pluggable Module, Rev 2.3, September 2014
- SFF–8679, Specification for QSFP+ 4X Base Electrical Specification, Rev 1.7, August 2014
- IEEE 802.3ba Clause 87, Physical Medium Dependent (PMD) sublayer and medium, type 40GBASE–LR4
- 100G CWDM4 MSA Technical Specifications, 2km optical specifications, Rev1.1, November 23 2015