800G QSFP-DD ZR8 80km

800G Eth, DWDM, QSFP-DD, ZR+, Coherent, LC, SM

CDD-8S-ZR-CCH12

OVERVIEW

The CDD-8S-ZR-CCH12 is an 800G QSFP-DD coherent DWDM transceiver designed for 800Gbps Ethernet applications and compliant with the OIF 800ZR MSA, Class A. It also supports 400G and 600G operating modes based on OpenZR+ and OpenROADM specifications, providing flexibility for coherent optical transport applications.

The module uses coherent transmission with dual-polarization modulation, supporting DP-16QAM at 800G, PCS-118 at 600G, and DP-QPSK/DP-16QAM at 400G depending on the selected network mode. It operates over single-mode fiber using duplex LC connectivity and supports tunable DWDM operation from 191.25 to 196.1 THz on a 6.25 GHz frequency grid.

The transceiver supports CMIS 5.3 management and provides coherent DDM parameters including received power, coherent channel power, OSNR, eSNR, PDL, chromatic dispersion and DGD. It is designed for high-capacity coherent links where 8x100G/4x200G/2x400G host-side flows can be multiplexed into an 800G optical signal.

KEY SPECIFICATIONS

- Supports 800GAUI-8, 400GAUI, 200GAUI and 100GAUI host interfaces.
- Uses DP-16QAM, DP-QPSK and PCS-118 modulation.
- Supports single-channel tunable DWDM operation on a 6.25 GHz grid.
- Features a duplex LC interface over single-mode fiber.
- Maximum power consumption is 28 W.
- Supports CMIS 5.3, DDM, OIF 800ZR, OpenZR+ and OpenROADM.
- Operates from +15°C to +75°C

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TECHNICAL DATA

Parameter	Value	Parameter	Value
Form Factor	QSFP-DD	Tx Power	Min -2dBm[2)]
Transmission Media	SM (2x LC)	Tx In-band OSNR	-2.6 to 3.5dBm
Nominal Wavelength	850nm	Tx Out-Of-Band OSNR	1304.5 - 1317.5nm
Interface Standards	400-800G 800ZR/OpenZR+/OpenROADM	Receiver turn-up	Max 30ms from warm start
Operating Temperature	+15ºC to +75ºC[1)]		Max 125s from cold start
Power Consumption	*Refer Power Consumption Table*	Absolute max conditions	Rx signal input power: +1dBm
Storage Temperature	-40°C to 85°C		Rx total input power: +15dBm
DDM functions	Total received power Coherent channel power OSNR, eSNR, PDL, dispersion, DGD Case temperature		
MSA	OSFP800 MSA's, CMIS 5.3		
Misc	Sync-E support, LLDP, RMON		

[1)] The module will turn up from cold start at ambient temperature as low as -5C and will reach specifications after self-heating up to min temperature.
[2)] The module transmit power can be provisioned up to the maximum available TX power. If the TX power is not provisioned by the host, the module TX power will default to the maximum available power. The provisional Tx power range of the module is 10dB.

Safety/Regulatory Compliance

- Class 1 laser safe
- RoHS Compliance

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OPTICAL SPECIFICATION - NTWK/MEDIA CODES

The table below lists the primary optical parameters for each supported application code.

Media Code	Line rate	Network frame	Modulation	Tx power[1]	Rx sens @ OSNR[2]	Rx @ OSNR[2]	Rx OSNR @ ~1dB penalty[2]	Default CDC range [ps/nm]	Maximum CDC search range
0x6E	800G	800ZR	DP-16QAM	-2dBm	-18.5dBm	26.4dB@ -9dBm	27.4dB@ -13dBm	3000	58000
0x6A	600G	FlexO-6(e)	PCS-118	-2dBm	-23.5dBm	22.8dB@ -9dBm	23.8dB@ -14dBm	29000	58000
0xF2	600G	FlexO-6(e)	PCS-118	-2dBm	-23.5dBm	21.6dB@ -9dBm	22.6dB@ -14dBm	29000	58000
0x64	400G	FlexO-4(e)	DP-QPSK	-2dBm	-27.0dBm	17.9dB@ -12dBm	18.9dB@ -18dBm	58000	58000
0x36	400G	OpenZR400	DP-16QAM	-2dBm	-22.5dBm	23.1dB@ -12dBm	24.1dB@ -18dBm	23000	175000

[1] Minimum Tx power without attenuation. The module Tx power can be attenuated with 10dB from the maximum available Tx power. If the Tx power is not provisioned by the host, the module Tx power will default to the maximum available power.
[2] Specified as [Min OSNR Value @ Min Rx power for the OSNR value].
[3] Maximum provisionable CD search range. Increasing the search range will increase the power consumption of the transceiver.

ELECTRICAL CHARACTERISTICS

The table below lists the worst case power consumption for each media code. The power consumption will also increase based on the host interface.

Media Code	Line rate	Network frame	Modulation	Worst case power consumption
0x6E	800G	800ZR	DP-16QAM	28W
0x6A	600G	FlexO-6(e)	PCS-118	28W
0xF2	600G	FlexO-6(e)	PCS-118	28W
0x64	400G	FlexO-4(e)	DP-QPSK	25W
0x36	400G	OpenZR400	DP-16QAM	22.5W

ORDERING INFORMATION

Ordering Code	Description
CDD-8E-ZP-CCH02	800G QSFP-DD, DWDM, ZR8, 80km, LC, SM, 15C to 75C

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