



Telecom



FTTx



DWDM



Data Center

100G QSFP28 Single Lambda BiDi 20km CL100GBDLR1-20-B

Product Features

- Supports 100GBASE-LR1-20 BIDI
- Lane signaling rate 106.25Gb/s with PAM4
- Up to 20km transmission on SMF
- EML Laser and PIN receiver
- 4x25.78Gb/s with NRZ electrical interface (CAUI-4)
- High speed I/O electrical interface
- I2C interface with integrated Digital Diagnostic monitoring
- QSFP28 MSA package with simplex LC connector
- Single +3.3V power supply
- Maximum power consumption 4.5 W
- Operating case temperature: 0 to +70 °C
- Compliant to IEEE 802.3bm, 100G Lambda MSA
- Compliant to SFF-8636 & SFF-8679 standard
- Complies with EU Directive 2015/863/EU

Functional Characteristics (Optical)

The following tables list the performance specifications for the optical transceiver module. CL100GBDLR1-20-B is one half of a bidirectional pair: it transmits on the 1311 nm wavelength and receives on the 1291 nm wavelength, so it links directly with the complementary part number.

Table 1 – Transmitter Optical Specifications

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Center Wavelength	CW	1304.5	1311	1317.5	nm	
Average Launch Power	PTX	-0.2	-	6.6	dBm	1
Outer Optical Modulation Amplitude	OMA	2.8	-	6.8	dBm	TDECQ < 1.4
Outer Optical Modulation Amplitude	OMA	1.4 + TDECQ	-	6.8	dBm	1.4 ≤ TDECQ
Transmitter and dispersion eye closure for PAM4 (TDECQ) (max)	TDECQ	-	-	3.6	dBm	
Transmitter eye closure for PAM4 (TECQ) (max)	TECQ	-	-	3.4	dBm	
TDECQ - TECQ (max)	-	-	-	2.7	dB	
Average Output Power (Laser Turn off)	PoUT-OFF	-	-	-15	dBm	
Side Mode Suppression Ratio	SMSR	30	-	-	dB	
Extinction Ratio	ER	3.5	-	-	dB	

Note 1: The optical power is launched into SMF. The transmitter wavelength range supports a broad range of transmitter types which may have different chirp characteristics. Compliance to the TDECQ and TECQ specifications may require a tighter wavelength range depending on the chirp characteristics of the transmitter

Table 2 – Receiver Optical Specifications

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Center Wavelength	CW	1284.5	1291	1297.5	nm	
Damage threshold	Pdamage	7.6	-	-	dBm	2



Average Rx Power	PRx	-10	-	6.6	dBm	3
Receive power_OMAouter	POMA	-	-	6.8	dBm	
Receiver sensitivity_OMAouter	SEN_O MA	-	-	-7.6	dBm	TECQ≤1.4 4
Receiver sensitivity_OMAouter	SEN_O MA	-	-	-9+TECQ	dBm	1.4≤TECQ ≤3.6 4
Los Assert	LosA	-26	-	-	dBm	
Los De-Assert	LosDA	-	-	-11	dBm	
Los Hysteresis	LosH	0.5	-	-	dB	

Note 2: The receiver shall be able to tolerate, without damage, continuous exposure to an optical input signal having this average power level. The receiver does not have to operate correctly at this input power.

Note 3: Average receive power, each lane (min) is informative and not the principal indicator of signal strength.

Note 4: Measured with conformance test signal at TP3 using the test pattern PRBS31Q or scrambled idle for stressed receiver sensitivity for the BER= 2.4x10⁻⁴.

Ordering Information

Table 3 - Ordering Information

Part No.	Application	Data Rate	Laser Source	Fiber Type
CL100GBDLR1-20-B	100GBASE-LR1-20 BIDI (Tx1311/Rx1291)	106.25Gbps	EML	Single Mode Fiber

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