GB-SFP+C-XX-80S

10Gb/s CWDM SFP+ 80km Transceiver

PRODUCT FEATURES

- Up to 11.1Gbps Data Links
- Up to 80km transmission on SMF
- Power dissipation < 1.5W
- CWDM EML Laser and APD receiver
- Metal enclosure, for lower EMI
- 2-wire interface with integrated Digital Diagnostic monitoring
- Hot-pluggable SFP+ footprint
- Specifications compliant with SFF 8472
- Compliant with SFP+ MSA with LC connector
- Single 3.3V power supply
- Case operating temperature range:0°C to 70°C

APPLICATIONS

- 10GBASE-ZR/ZW & 10G Ethernet

STANDARD

- Compliant to 802.3ae 10GBASE-ZR/ZW
- Compliant to SFF-8431

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- RoHS Compliant.

Product selection

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Wavelength	xx	Wavelength	xx
1470 nm	47	1550 nm	55
1490 nm	49	1570 nm	57
1510 nm	51	1590 nm	59
1530 nm	53	1610 nm	61

Ⅰ. Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Storage Temperature	Ts	-40	-	85	℃	
Storage Ambient Humidity	HA	5	-	95	%	
Operating Relative Humidity	RH	-	-	85	%	
Power Supply Voltage	VCC	-0.3	-	4	V	
Signal Input Voltage		Vcc-0.3	-	Vcc+0.3	V	

Ⅱ Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Case Operating Temperature	Tcase	0	-	70	℃	Without air flow
Power Supply Voltage	VCC	3.14	3.3	3.47	V	
Power Supply Current	ICC	-		450	mA	
Data Rate	BR		10.3125		Gbps	
Transmission Distance	TD		-	80	km	
Coupled fiber	Single mode fiber					9/125um SMF

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Ⅲ. Optical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	NOTE
Transmitter						
Output Opt. Pwr	POUT	0		4	dBm	1
Optical Wavelength	λ	λ -6.5		λ +6.5	nm	2
Spectral Width (-20dB)	σ			1	nm	
Optical Extinction Ratio	ER	6			dB	
Transmitter and Dispersion Peanlty	TDP			3	dB	
Side mode Supression ratio	SMSR	30			dB	
RIN	RIN			-128	dB/Hz	
Output Eye Mask		Compliant with IEEE 802.3ae				
Receiver						
Receiver Sensitivity	Psen			-23	dBm	3
Input Saturation Power (Overload)	PSAT	-7			dBm	
Input Optical Wavelength	λIN	1270		1610	nm	
LOS -Assert Power	PA			-26	dBm	
LOS -Deassert Power	PD	-35			dBm	
LOS -Hysteresis	PHys	0.5			dB	

Notes:

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1. Class 1 Laser Safety per FDA/CDRH and IEC-825-1 regulations.
2. λ" is:1470,1490,1510,1530,1550,1570,1590,1610, please the "product selection" .
3. Measured with a PRBS 2^{31} -1 test pattern, @10.325Gb/s, BER<10^{-12} .

IV. Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	NOTE
Supply Voltage	Vcc	3.14	3.3	3.46	V	
Supply Current	Icc			450	mA	
Transmitter						
Input differential impedance	Rin		100		Ω	1
Differential data input swing	Vin,pp	180		1200	mV	
Transmit Disable Voltage	VD	Vcc–1.3		Vcc	V	
Transmit Enable Voltage	VEN	Vee		Vee+ 0.8	V	2
Transmit Disable Assert Time				10	us	
Receiver						
Differential data output swing	Vout,pp	300		850	mV	3
Data output rise time	tr	30			ps	4
Data output fall time	tf	30			ps	4
LOS Fault	VLOS fault	Vcc–1.3		V_{CCHOST}	V	5
LOS Normal	VLOS norm	Vee		Vee+0.8	V	5
Power Supply Rejection	PSR	100			mVpp	6

Notes:

1. Connected directly to TX data input pins. AC coupled thereafter.
2. Or open circuit.
3. Input 100 ohms differential termination.

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4. These are unfiltered 20-80% values
5. Loss Of Signal is LVTTL. Logic 0 indicates normal operation; logic 1 indicates no signal detected.
6. Receiver sensitivity is compliant with power supply sinusoidal modulation of 20 Hz to 1.5 MHz up to specified value applied through the recommended power supply filtering network.

V. Pin Descriptions

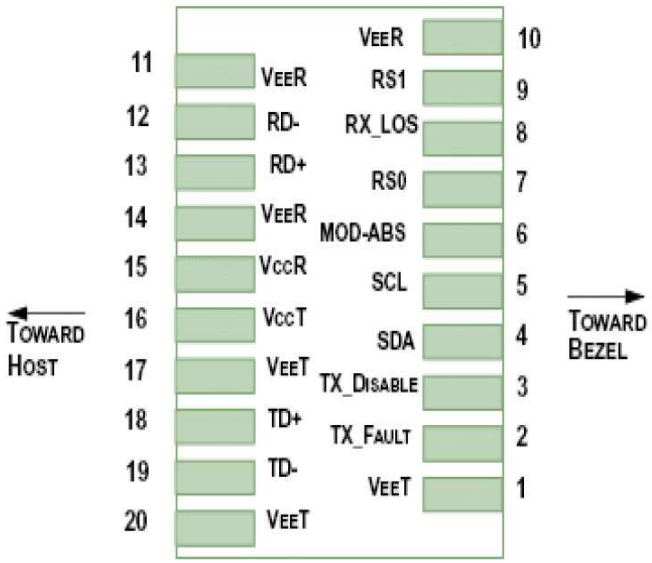

Diagram of Host Board Connector Block Pin Numbers and Name

Pin	Symbol	Name/Description	NOTE
1	V_{EET}	Transmitter Ground (Common with Receiver Ground)	1
2	T_{FAULT}	Transmitter Fault.	2

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3	T_{DIS}	Transmitter Disable. Laser output disabled on high or open.	3
4	SDA	2-wire Serial Interface Data Line	4
5	SCL	2-wire Serial Interface Clock Line	4
6	MOD_ABS	Module Absent. Grounded within the module	4
7	RS0	Rate Select 0	5
8	LOS	Loss of Signal indication. Logic 0 indicates normal operation.	6
9	RS1	No connection required	1
10	V_{EER}	Receiver Ground (Common with Transmitter Ground)	1
11	V_{EER}	Receiver Ground (Common with Transmitter Ground)	1
12	RD-	Receiver Inverted DATA out. AC Coupled	
13	RD+	Receiver Non-inverted DATA out. AC Coupled	
14	V_{EER}	Receiver Ground (Common with Transmitter Ground)	1
15	V_{CCR}	Receiver Power Supply	
16	V_{CCT}	Transmitter Power Supply	
17	V_{EET}	Transmitter Ground (Common with Receiver Ground)	1
18	TD+	Transmitter Non-Inverted DATA in. AC Coupled.	
19	TD-	Transmitter Inverted DATA in. AC Coupled.	
20	V_{EET}	Transmitter Ground (Common with Receiver Ground)	1

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