

SFP-Cxx-120-GD

1000BASE, SFP CWDM, EZX, SMF TRANSCEIVER**1470-1610nm, 120km REACH, DUPLEX LC CONNECTOR**

Product Features

- Up to 1.25Gb/s data links
- Up to 120km on 9/125um SMF
- Operating Data Rate up to 1.25Gbps
- 18-Wavelength CWDM DFB LD Transmitter from 1270nm to 1610nm, with Step 20nm
- Single 3.3V Power Supply and TTL Control Logic Interface
- Hot-Pluggable SFP Footprint Duplex LC Connector Interface
- Class 1 FDA and IEC60825-1 Laser Safety Compliant
- Compliant with SFP MSA Specification
- Compliant with SFF-8472 Digital Diagnostic Monitor Interface
- Available operating temperature ranges:
 - Commercial: 0°C to 70°C
 - Industrial: -40°C to 85°C



Product Applications

- 1000BASE-EZX Ethernet
- OTN / FC
- Other optical links

I. Maximum Ratings

Exceeding the limits below may damage the transceiver module permanently.

Parameter	Symbol	Min.	Typ.	Max.	Units
Storage Temperature	TS	-40		+85	°C
Power Supply Voltage	Vcc	-0.5		3.6	V
Relative Humidity	RH			95	%

II. Operating / Environment Specifications

Parameter		Symbol	Min.	Typ.	Max.	Units
Case Operating Temperature	Commercial	TC	0		+70	°C
	Industrial		-40		+85	°C
Supply Voltage		VCC	3.135		3.465	V
Supply Current		ICC			300	mA
Data Rate			1.25			Gb/s
Link Distance (SMF)		D			120	km

III. Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Center Wavelength	λ_c	1270		1610	nm	
Spectral Width (-20dB)	$\Delta\lambda$			1	nm	
Average Optical Power	Pavg	0		5	dBm	1
Side Mode Suppression Ratio	SMSR	30			dB	
Extinction Ratio	ER	8.2			dB	2
Rise/Fall Time (20% ~ 80%)	Tr,Tf			0.26	ns	
Total Jitter	TJ			56.5	ps	
TX Disable Assert Time	Toff			10	us	
Pout @ TX Disable Asserted	Pout			-45	dBm	
Output Eye Mask	Compatible with IEEE 802.3ah-2004					2
Receiver						
Center Wavelength	λ_c	1270		1610	nm	
Receiver Sensitivity	Pmin			-28	dBm	4
Receiver Overload	Pmax	-3			dBm	
Return Loss		12				
Optical Path Penalty				1		5
RX_LOS Assert	LOS A	-42			dBm	
RX_LOS De-assert	LOS D			-29	dBm	
RX_LOS Hysteresis	LOS H	0.5			dB	

Notes:

1. Output is coupled into a 9/125μm single-mode fiber.
2. Filtered, measured with a PRBS 27-1 test pattern @1.25Gbps
3. LVPECL logic, internally AC coupled.
4. Minimum average optical power measured at BER less than 1E-12, with a 27-1 PRBS and ER=9dB.
5. Measured with a PRBS 27-1 test pattern @1.25Gbps, BER ≤1×10-12.

IV. Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
LVPECL Inputs(Differential)	V _{in}	400		2000	mVpp	1
Input Impedance (Differential)	Z _{in}	85	100	115	ohm	2
TX_DIS (Disable)		2		V _{cc} +0.3	V	
TX_DIS (Enable)		0		0.8	V	
TX_FAULT (Fault)		2		V _{cc} +0.3	V	
TX_FAULT (Normal)		0		0.8	V	
Receiver						
LVPECL Outputs (Differential)	V _{out}	400		2000	mVpp	
Outputs Impedance (Differential)	Z _{out}	85	100	115	ohm	
RX_LOS (LOS)		2		V _{cc} +0.3	V	
RX_LOS (Normal)		0		0.8	V	
MOS_DEF (0:2)	VoH	2.5			V	
	VoL	0		0.5	V	

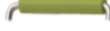
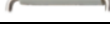
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v. Ordering Details

Pivotal Part Number	Description
SFP-Cxx-120-GD	SFP, CWDM, EZX SMF 120km, 1000Base DDM, C-Temp
SFP-Cxx-120-GDI	SFP, CWDM, EZX SMF 120km, 1000Base DDM, I-Temp

CWDM ITU Grid (18-Channel)							
Wavelength (nm)	CXX	Typical Bail Color		Wavelength (nm)	CXX	Typical Bail Color	
1270	C27	Light Purple		1450	C45	Yellow/Orange	
1290	C29	Sky Blue		1470	C47	Gray	
1310	C31	Yellow/Green		1490	C49	Violet	
1330	C33	Yellow/Ochre		1510	C51	Blue	
1350	C35	Pink		1530	C53	Green	
1370	C37	Beige		1550	C55	Yellow	
1390	C39	White		1570	C57	Orange	
1410	C41	Silver		1590	C59	Red	
1430	C43	Black		1610	C61	Brown	

Notes:

1. Please contact sales for specific OEM Platform part numbers to fit your network.
2. ITU-T G.694.2 defines 18 wavelengths for CWDM transport ranging from 1270 to 1610 nm, spaced at 20 nm apart.

Warranty

<https://pivotaloptics.com/warranty/>

Disclaimer

External physical characteristics are subject to variation. This may include, but is not limited to, external case designs, pull tab colors and/or shapes, removal latch styles or colors, and label sizes and placement. These variations do not affect the function or characteristics of the transceivers.