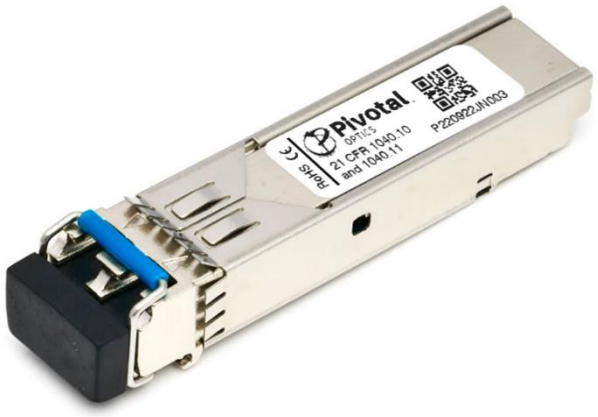
SFP-1G-CWDM-120

1000Base SFP CWDM EZX 1470-1610nm SMF 120km Transceiver

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	℃
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	℃
	Industrial		-40		+85	℃
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	λc	1270		1610	nm	
Spectral Width (-20dB)	Δλ			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	λc	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)	Vin	400		2000	mVpp	1
Input Impedance (Differential)	Zin	85	100	115	ohm	2
TX_DIS (Disable)		2		Vcc+0.3	V	
TX_DIS (Enable)		0		0.8	V	
TX_FAULT (Fault)		2		Vcc+0.3	V	
TX_FAULT (Normal)		0		0.8	V	
Receiver						
LVPECL Outputs (Differential)	Vout	400		2000	mVpp	
Outputs Impedance (Differential)	Zout	85	100	115	ohm	
RX_LOS (LOS)		2		Vcc+0.3	V	
RX_LOS (Normal)		0		0.8	V	
MOS_DEF (0:2)	VoH	2.5			V	
	VoL	0		0.5	V	

v. Ordering Details

Part Number	Data Rate	Applications	Case Temp.	xWDM λ Channel
SFP-C**XX**-120-GD	1.25Gbps	10GHz / peak ch:17-61 / 120km	0 ~ +70°C	**XX**
SFP-C**XX**-120-GDI			-40 ~ +85°C	

CWDM ITU Grid (18-Channel)							
Wavelength (nm)	C**XX**	**Typical Bail Color**		**Wavelength (nm)**	C**XX**	**Typical Bail Color**	
1270	C**27**	Light Purple		**1450**	C**45**	Yellow/Orange	
1290	C**29**	Sky Blue		**1470**	C**47**	Gray	
1310	C**31**	Yellow/Green		**1490**	C**49**	Violet	
1330	C**33**	Yellow/Ochre		**1510**	C**51**	Blue	
1350	C**35**	Pink		**1530**	C**53**	Green	
1370	C**37**	Beige		**1550**	C**55**	Yellow	
1390	C**39**	White		**1570**	C**57**	Orange	
1410	C**41**	Silver		**1590**	C**59**	Red	
1430	C**43**	Black		**1610**	C**61**	Brown	

Notes: ITU-T G.694.2 defines 18 wavelengths for CWDM transport ranging from 1270 to 1610 nm, spaced at 20 nm apart.

Warranty

All transceivers feature a limited lifetime 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.