

XFP-Cxx-40-D

10GBASE, XFP CWDM, ER, SMF TRANSCEIVER

1470-1610nm, 40km REACH, DUPLEX LC CONNECTOR

Product Features

- Supports 9.95Gb/s to 11.1Gb/s Bit Rates
- Hot Pluggable XFP Footprint
- Compliant with XFP MSA
- 8-Wavelengths CWDM EML Transmitter from 1470nm to 1610nm, with Step 20nm
- 14dB Power Budget
- Duplex LC Connector
- Power Dissipation <3.5W
- 2 Wire Interface for Integrated Digital Diagnostic Monitoring
- Available operating temperature ranges:
 - Commercial: 0°C to 70°C



Product Applications

- 10GBASE ER/EW 10G Ethernet
- 1200-SM-LL-L 10G Fiber Channel
- 10GE over G.709 at 11.09Gbps
- OC192 over FEC at 10.709Gbps
- SONET / SDH

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
Maximum Supply Voltage	Vcc	-0.5		4.0	V

II. Operating Specifications

Parameter	Symbol	Min.	Typ.	Max.	Units	Notes
Case Operating Temperature	TC	0		+70	°C	Commercial
Supply Voltage 1	Vcc3	3.13	3.3	3.45	V	
Supply Voltage 2	Vcc5	4.75	5	5.25	V	
Supply Current-Vcc3 supply	Icc3			300	mA	
Supply Current-Vcc5 supply	Icc5			750	mA	
Module Total Power	P			3.5	W	
Link Distance	D			40	km	

III. Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Optical Wavelength	λ_c	λ_c-6	λ_c	$\lambda_c+7.5$	nm	2
Optical Modulation Amplitude	P _{OMA}	-1		+4.4	dBm	1
Output Opt. Pwr: 9/125 SMF	P _{out}	-0.9		+4.0	dBm	
Optical Extinction Ratio	ER	8.2			dB	
-20dB Spectrum Width	$\Delta\lambda$			1	nm	
Side Mode Suppression Ratio	SMSR	30			dB	
Path Penalty	P _p			2.5	dB	
Average Launch Power of OFF Transmitter	P _{off}			-30	dBm	
TX Jitter	TX _j	Per 802.3ae requirements				
Relative Intensity Noise	RIN			-128	dB/Hz	
Receiver						
Center Wavelength	λ_c	1260		1600	nm	
Receiver Sensitivity @ 10.3125 Gb/s	P _{min}			-15	dBm	3
Maximum Input Power	P _{max}	+0.5			dBm	
Receiver Reflectance	R _{rf}			-12	dB	
LOS De-Assert	LOS _D			-17	dBm	
LOS Assert	LOS _A	-29			dBm	
LOS Hysteresis	LOS _H	1			dB	

Notes:

1. Output is coupled into a 9/125µm SMF.
2. ITU-T G.694.2 CWDM wavelength from 1470nm to 1610nm, each step 20nm.
3. Average received power; BER less than 1E-12 , PRBS 2³¹-1 test pattern

IV. Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Input Differential Impedance	R _{in}		100		Ω	1
Differential Data Input Swing	V _{in,pp}	180		820	mV	
Transmit Disable Voltage	V _{DIS}	2.0		V _{cc}	V	
Transmit Enable Voltage	V _{EN}	GND		GND+0.8	V	
Transmit Disable Assert Time				10	us	
Receiver						
Differential Data Output Swing	V _{out,pp}	340	650	850	mV	
Data Output Rise Time	t _r			38	Ps	2
Data Output Fall Time	t _f			38	Ps	2
LOS Fault	V _{LOS fault}	V _{cc} -0.5		V _{cc} HOST	V	3
LOS Normal	V _{LOS norm}	GND		GND+0.5	V	3
Power Supply Rejection	PSR					4

Notes:

1. After internal AC coupling.
2. 20-80 %
3. Loss of Signal is open collector to be pulled up with a 4.7k-10kohm resistor to 3.15-3.6V. Logic 0 indicates normal operation; logic 1 indicates no signal detected.
4. Reference the Section 2.7 of the XFP MSA Rev 4.5

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V. Ordering Details

Pivotal Part Number	Description
XFP-Cxx-40-D	XFP, CWDM, ER SMF 40km, 10G/OC-192 DDM, C-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.