

XFP-ER

10GBASE, XFP, ER, SMF TRANSCEIVER

1550nm, 40km REACH, DUPLEX LC CONNECTOR

Product Features

- Supports 9.95Gb/s to 11.3Gb/s data rates
- Hot-pluggable XFP Footprint
- Maximum Link Length up to 40km
- Temperature-Stabilized EML transmitter
- Duplex LC Connector
- XFP-MSA, IEEE 802.3ae compliant
- Power Dissipation <3.5W
- Built-in Digital Diagnostic Functions
- Available operating temperature ranges:
 - Commercial: 0°C to 70°C
 - Industrial: -40°C to 85°C



Product Applications

- 10GBASE-ER/EW & 10G Ethernet
- OTN / FC / CPRI

I. Maximum Ratings

Exceeding the limits below may damage the transceiver module permanently.

Parameter	Symbol	Min.	Typ.	Max.	Units
Maximum Supply Voltage 1	Vcc3	-0.5		4.0	V
Maximum Supply Voltage 2	Vcc5	-0.5		6.0	V
Storage Temperature	TS	-40		85	°C

II. Operating/Electrical Specifications

Parameter	Symbol	Min.	Typ.	Max.	Units	Notes
Case Operating Temperature	TC	0		+70	°C	Commercial
		-40		+85	°C	Industrial
Supply Voltage 1	Vcc3	3.13	3.3	3.45	V	
Supply Voltage 2	Vcc5	4.75	5	5.25	V	

III. Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Date Rate	BR	9.95	10.3	11.3	Gbps	
Transmitter						
Optical Modulation Amplitude	P		-2.1		dBm	
Output Opt. Pwr: 9/125 SMF	P _{out}	0		+4	dBm	
Optical Wavelength	λ_c	1530		1565	nm	
Optical Extinction Ratio@10.3Gb/s	ER	8.2			dB	
Transmitter and Dispersion Penalty	TDP			2	dB	
Average Launch Power OFF Transmitter	P _{OFF}			-30	dBm	
TX Jitter Generation (Peak-to-Peak)	TX _j			0.1	UI	
TX Jitter Generation (RMS)	TX _{jRMS}			0.01	UI	
Receiver						
Receiver Sensitivity@10.3Gb/s	P _{min}			-16	dBm	
Maximum Input Power	P _{max}	0			dBm	
Optical Center Wavelength	λ_c	1270	1550	1600	nm	
Receiver Reflectance	R _{rx}			-27	dB	
LOS De-Assert	LOSD			-18	dBm	
LOS Assert	LOSA	-30			dBm	
LOS Hysteresis		1			dB	

IV. Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Main Supply Voltage	Vcc5	4.75		5.25	V	
Supply Voltage #2	Vcc3	3.13		3.45	V	
Supply Current – Vcc5 supply	Icc5			370	mA	
Supply Current – Vcc3 supply	Icc3			500	mA	
Module Total Power	P			3.5	W	
Transmitter						
Input differential impedance	RIN		100		Ω	1
Differential Data Input Swing	V _{in,pp}	120		820	mV	
Transmit Disable Voltage	V _D	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}	300		850	mV	
Rise Time (20– 80%)	t _r	28				2
Fall Time (20– 80%)	t _f	28				2
LOS Fault	V _{losfault}	V _{cc} -1.3		V _{CC_host}	V	3
LOS Normal	V _{losnorm}	V _{ee}		V _{ee} +0.8	V	3
Differential Data Output Swing	PSR	100			mVpp	

Notes:

1. After internal AC coupling
2. Loss Of Signal is open collector to be pulled up with a 4.7k – 10k ohm resistor to 3.15 – 3.6V. Logic 0 indicates normal operation; logic 1 indicates no signal detected.
3. Per Section 2.7.1. in the XFP MSA Specification.

XFP-ER

10GBASE, XFP, ER, SMF TRANSCEIVER

1550nm, 40km REACH, DUPLEX LC CONNECTOR



v. Ordering Information

Pivotal Part Number	Description
XFP-ER	XFP, 1550nm, ER SMF 40km, 10G/OC-192 DDM, C-Temp
XFP-ERI	XFP, 1550nm, ER SMF 40km, 10G/OC-192 DDM, I-Temp

Notes:

1. Please contact sales for specific OEM Platform part numbers to fit your network.

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.