

Features

- Hot-pluggable XFP footprint
- Supports 9.95Gb/s to 11.3Gb/s bit rates
- Supports Lineside and XFI loopback
- RoHS-6 Compliant (lead-free)
- Power dissipation <3.5W
- Case temperature range:0°C to 70°C
- Maximum link length of 80km
- DWDM EML and APD Receiver
- Full Duplex LC connector
- No Reference Clock required
- Built-in digital diagnostic functions
- Standard bail release mechanism



Applications

- DWDM 10GBASE-ZR/ZW 10G Ethernet
- DWDM 80KM 10G Fiber Channel
- DWDM SONET OC-192&SDH STM-64

Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Unit	NOTE
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	
Case Operating Temperature	Tcase	0		70	°C	

Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	NOTE
Main Supply Voltage	Vcc5	4.75		5.25	V	
Supply Voltage #2	Vcc3	3.13		3.45	V	
Supply Current - Vcc5 supply	Icc5			350	mA	
Supply Current - Vcc3 supply	Icc3			450	mA	
Module total power	P			3.5	W	1
Transmitter						
Input differential impedance	Rin		100		Ω	2
Differential data input swing	Vin,pp	120		820	mV	
Transmit Disable Voltage	VD	2.0		Vcc	V	3
Transmit Enable Voltage	VEN	GND		GND+ 0.8	V	
Transmit Disable Assert Time				10	us	
Receiver						
Differential data output swing	Vout,pp	340	650	850	mV	4
Data output rise time	tr			38	ps	5
Data output fall time	tf			38	ps	5
LOS Fault	VLOS fault	Vcc - 0.5		VccHOST	V	6
LOS Normal	VLOS norm	GND		GND+0.5	V	6
Power Supply Rejection	PSR		See Note 6 below			7

Notes:

1. Maximum total power value is specified across the full temperature and voltage range.

2. After internal AC coupling.
3. Or open circuit.
4. Into 100 ohms differential termination.
5. These are unfiltered 20-80% values
6. 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.
7. Per Section 2.7.1. in the XFP MSA Specification1

Optical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	NOTE
Transmitter						
Average Optical Power	Pf	0		5	dBm	
Optical Wavelength	λ_c	$\lambda_c - 0.1$		$\lambda_c + 0.1$	nm	
Center Wavelength Spacing			100		GHz	2
Side mode Suppression ratio	SMSR	30			dB	
Optical Extinction Ratio	ER	9			dB	
Transmitter and Dispersion Penalty	TDP			3	dB	
Average Launch power of OFF transmitter	POFF			-30	dBm	
Relative Intensity Noise	RIN			-130	dB/Hz	
Receiver						
Receiver Sensitivity	Psen			-24	dBm	1
Input Saturation Power (Overload)	Psat	-6			dBm	
Wavelength Range	λ_c	1260		1600	nm	
Receiver Reflectance	Rrx			-27	dB	
LOS De-Assert	LOSD			-27	dBm	
LOS Assert	LOSA	-37			dBm	
LOS Hysteresis		0.5			dB	

Notes:

1. Measured with worst ER; BER < 10^{-12} with 10.3Gbps, $2^{31} - 1$ PRBS.
2. Corresponds to approximately 0.8 nm.

General Specifications

Parameter	Symbol	Min	Typ	Max	Units	NOTE
Bit Rate	BR	9.95		11.3	Gb/s	1
Bit Error Ratio	BER			10^{-12}		2
Max. Supported Link Length	LMAX			80	km	1

Notes:

1. 10GBASE-ZR/ZW
2. Tested with $2^{31} - 1$ PRBS

DWDM Wavelength Guide

ITU Channel Product Code	Frequency (THz)	Center Wavelength(nm)	ITU Channel Product Code	Frequency (THz)	Center Wavelength(nm)
17	191.7	1563.86	40	194.0	1545.32
18	191.8	1563.05	41	194.1	1544.53
19	191.9	1562.23	42	194.2	1543.73

20	192.0	1561.42	43	194.3	1542.94
21	192.1	1560.61	44	194.4	1542.14
22	192.2	1559.79	45	194.5	1541.35
23	192.3	1558.98	46	194.6	1540.56
24	192.4	1558.17	47	194.7	1539.77
25	192.5	1557.36	48	194.8	1538.98
26	192.6	1556.55	49	194.9	1538.19
27	192.7	1555.75	50	195.0	1537.40
28	192.8	1554.94	51	195.1	1536.61
29	192.9	1554.13	52	195.2	1535.82
30	193.0	1553.33	53	195.3	1535.04
31	193.1	1552.52	54	195.4	1534.25
32	193.2	1551.72	55	195.5	1533.47
33	193.3	1550.92	56	195.6	1532.68
34	193.4	1550.12	57	195.7	1531.90
35	193.5	1549.32	58	195.8	1531.12
36	193.6	1548.51	59	195.9	1530.33
37	193.7	1547.72	60	196.0	1529.55
38	193.8	1546.92	61	196.1	1528.77
39	193.9	1546.12			

Ordering Information

Part number	Description	TX Power (dBm)	RX Sens. (dBm)	Fiber Budget (dB)	Distance (km)	DDM
SV-XFP-10GER8D##	Starview XFP module with Digital Diagnostic Monitoring (DDM), Data rate from 9.95Gbps to 11.1Gbps supporting OC-192/ STM-64/ 10G LAN/ 10G FC and OC192 with FEC DWDM, SM (LC) with 100GHz spacing, ####nm SM (LC), distance up to 80km, where ## denotes *[see DWDM Wavelength Guide]	0 to 5	-24 to -6	24	80	YES