



WT-XFP-LR

10Gb/s 1310nm XFP 20Km

1.Feature

- Supports 9.95Gb/s to 11.3Gb/s bit rates
- Hot Pluggable XFP Footprint
- 1310nm DFB Laser and PIN photo detector
- Up to 20km transmission on SMF
- Power dissipation < 2W
- Single Power Supply: 3.3V
- No Reference Clock Required
- Compatible with RoHS
- Built-in Digital Diagnostic Functions



2.Application

- 10GBASE-LR/LW 10G Ethernet
- SONET OC-192 SR-1
- SDH STM I-64.1
- 1200-SM-LL-L 10G Fibre Channel
- 10GBASE-LR/LW with FEC
- 1200-SM-LL-L 10G Fibre Channel with FEC

3.Absolute Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Units
Storage Temperature	Tst	-40	+85	°C
Supply Voltage	Vcc	0	+3.6	V
Operating Relative Humidity	RH	0	85	%





4.Operation Environment

Parameter	Symbol	Min	Typical	Max	Units
Supply Voltage	Vcc	3.15		3.45	V
Operating Case Temperature	Tc	0		+70	°C
Power Dissipation				2	W
Data Rate		9.95		11.3	Gbps

5.Optical Characteristics

(Ambient Operating Temperature 0°C to +70°C, Vcc =3.3 V)

Parameter	Symbol	Min.	Typ.	Max.	Units
Transmitter Section					
Center Wavelength	λ_o	1290	1310	1330	nm
Side-Mode Suppression Ratio	SMSR	35	-	-	dB
Average Output Power	Po	-5	-	+0.5	dBm
Extinction Ratio	Er	4	-	-	dB
Jitter(p-p)				0.1	UI
Relative Intensity Noise	RIN ₁₂ OMA			-130	dB/Hz
Receiver Section					
Center Wavelength	λ_o		1310		nm
Receiver Sensitivity	Rsen			-14.5	dBm
Stressed Sensitivity	Rsen			-13.5	dBm
Receiver Overload	Rov	0			dBm
Return Loss		12			dB
LOS Assert	LOS _A	-28			dBm
LOS Dessert	LOS _D			-15	dBm
LOS Hysteresis		0.5		4	





6. Electrical Characteristics

(Ambient Operating Temperature 0°C to +70°C, Vcc =3.3 V)

Parameter	Symbol	Min.	Typ.	Max.	unit
Transmitter Section					
Input Differential Impedence	Zin	90	100	110	Ohm
Data Input Swing Differential	Vin	120		850	mV
TX Disable	Disable	2.0		Vcc	V
	Enable	0		0.8	V
TX Fault	Assert	2.0		Vcc	V
	Deassert	0		0.8	V
Receiver Section					
Output differential impedance	Zout		100		Ohm
Data output Swing Differential	Vout	340	650	850	mV
Rx_LOS	Assert	2.0		Vcc	V
	Deassert	0		0.8	V

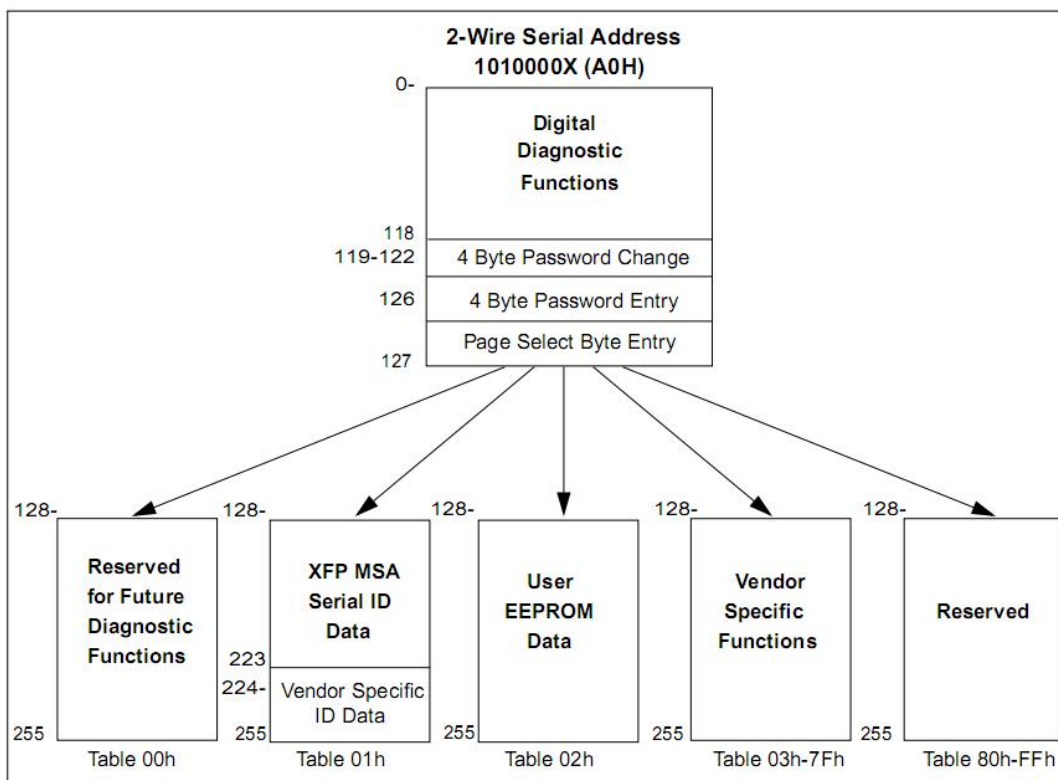
7. Diagnostics

Parameter	Range	Accuracy	Unit	Calibration
Temperature	-10 ~ 75	±3	°C	Internal
Bias Current	0 ~ 100	0.5	mA	Internal
Tx Power	-8 ~ 1	±1	dBm	Internal
Rx Power	-18 ~ 0	±1	dBm	Internal

For more detailed information including memory map, please see XFP MSA Specification



8.EEPROM INFORMATION (A0) :





9.Pin Description:

Pin	Logic	Symbol	Name/Description	Ref.
1		GND	Module Ground	1
2		VEE5	Optional -5.2 Power Supply – Not required	
3	LVTTL-I	Mod-Desel	Module De-select; When held low allows the module to respond to 2-wire serial interface commands	
4	LVTTL-O	Interrupt	Interrupt (bar); Indicates presence of an important condition which can be read over the serial 2-wire interface	2
5	LVTTL-I	TX_DIS	Transmitter Disable; Transmitter laser source turned off	
6		VCC5	+5 Power Supply– Not required	
7		GND	Module Ground	1
8		VCC3	+3.3V Power Supply	
9		VCC3	+3.3V Power Supply	
10	LVTTL-I	SCL	Serial 2-wire interface clock	2
11	LVTTL-I/O	SDA	Serial 2-wire interface data line	2
12	LVTTL-O	Mod_Abs	Module Absent; Indicates module is not present. Grounded in the module.	2
13	LVTTL-O	Mod_NR	Module Not Ready; Finisar defines it as a logical OR between RX_LOS and Loss of Lock in TX/RX.	2
14	LVTTL-O	RX_LOS	Receiver Loss of Signal indicator	2
15		GND	Module Ground	1
16		GND	Module Ground	1
17	CML-O	RD-	Receiver inverted data output	
18	CML-O	RD+	Receiver non-inverted data output	
19		GND	Module Ground	1
20		VCC2	+1.8V Power Supply – Not required	
21	LVTTL-I	P_Down/RST	Power Down; When high, places the module in the low power stand-by mode and on the falling edge of P_Down initiates a module reset Reset; The falling edge initiates a complete reset of the module including the 2-wire serial interface, equivalent to a power cycle.	
22		VCC2	+1.8V Power Supply – Not required	
23		GND	Module Ground	1
24	PECL-I	RefCLK+	Reference Clock non-inverted input, AC coupled on the host board – Not required	3
25	PECL-I	RefCLK-	Reference Clock inverted input, AC coupled on the host board – Not required	3
26		GND	Module Ground	1
27		GND	Module Ground	1
28	CML-I	TD-	Transmitter inverted data input	
29	CML-I	TD+	Transmitter non-inverted data input	
30		GND	Module Ground	1

Notes:

1. Module circuit ground is isolated from module chassis ground within the module.
2. Open collector; should be pulled up with 4.7k – 10kohms on host board to a voltage between 3.15V and 3.6V
3. A Reference Clock input is not required. If present, it will be ignored.



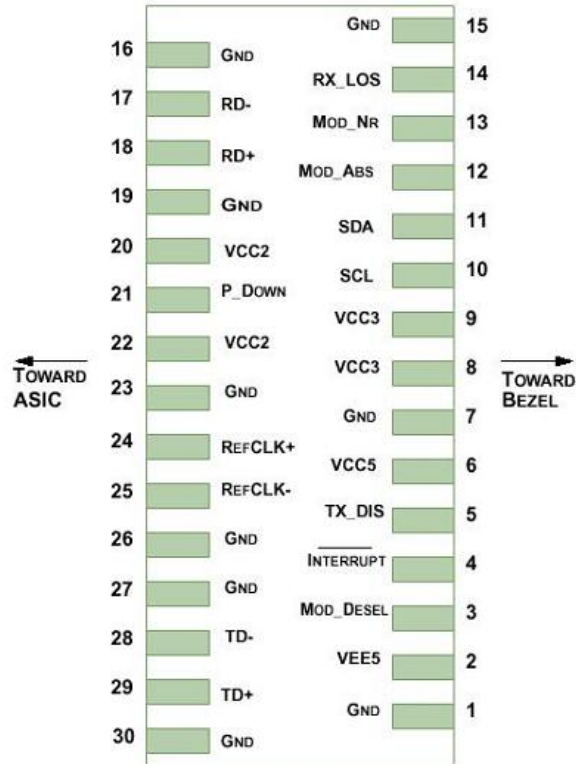


Diagram of Host Board Connector Block Pin Numbers and Name

10. Outline Dimensions (mm)

