

10Gbps XFP Optical Transceiver RTX226-440

Specifications

(Tested under recommended operating conditions, unless otherwise noted)

Parameter	Symbol	Unit	Value		
			Min	Typ	Max
Optical Transmitter Characteristics					
Data Rate	-	Gbps	9.95	-	11.3
Optical Power	P ₀	dBm	-1	-	2
Center Wavelength Range	λ _c	nm	1530	1550	1565
Extinction Ratio	ER	dB	8.2	-	-
Spectral Width (-20dB)	Δλ	nm	-	-	0.3
SMSR	-	dB	30	-	-
Relative Intensity Noise	RIN	dB/H _z	-	-	-128
Eye Diagram	Compliant with ITU-T G.691				
Dispersion Penalty ¹	-	dB	-	-	2
Optical Receiver Characteristics					
Data Rate	-	Gbps	9.95	-	11.3

10Gbps XFP Optical Transceiver RTX226-440

Ordering Information

Absolute Maximum Ratings

Parameter	Symbol	Unit	Min	Max
Supply Voltage 1	V _{CC3}	V	-0.5	4.0
Supply Voltage 2	V _{CC5}	V	-0.5	6.0
Storage Temperature	T _s	°C	-40	85
Operating Case Temperature	T _c	°C	-5	70
Relative Humidity (Non condensation)	-	%	5	90

Recommended Operating Conditions

Parameter	Symbol	Unit	Min	Typ	Max
Operating Case Temperature	T _c	°C	-5	-	70
Supply Voltage 1	V _{CC3}	V	3.13	3.3	3.47
Supply Current 1	I _{CC3}	mA	-	-	750
Supply Voltage 2	V _{CC5}	V	4.75	5.0	5.25
Supply Current 2	I _{CC5}	mA	-	-	500
Power Dissipation	-	W	-	-	3.5

Electrical Characteristics

(Tested under recommended operating conditions, unless otherwise noted)

Parameter	Symbol	Unit	Min	Typ	Max	Note
Transmitter						
Input Differential Impedance	R _{in}	Ω	-	100	-	
Differential Data Input Swing	V _{in,pp}	mV	120	-	1000	
Transmit Disable Voltage	V _D	V	2.0	-	V _{CC3}	
Transmit Enable Voltage	V _{EN}	V	0	-	+0.8	
Transmit Disable Assert Time	-	μs	-	-	10	

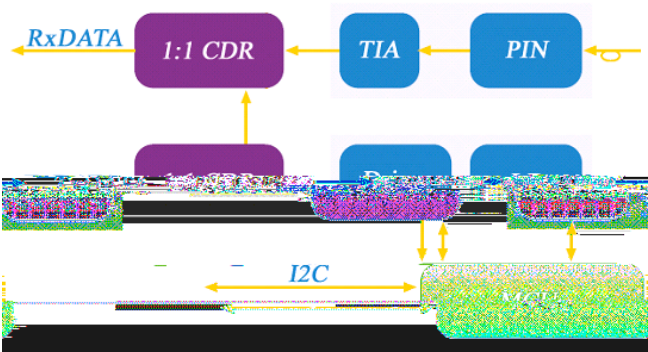
10Gbps XFP Optical Transceiver RTX226-440

Low Speed Electrical Interface

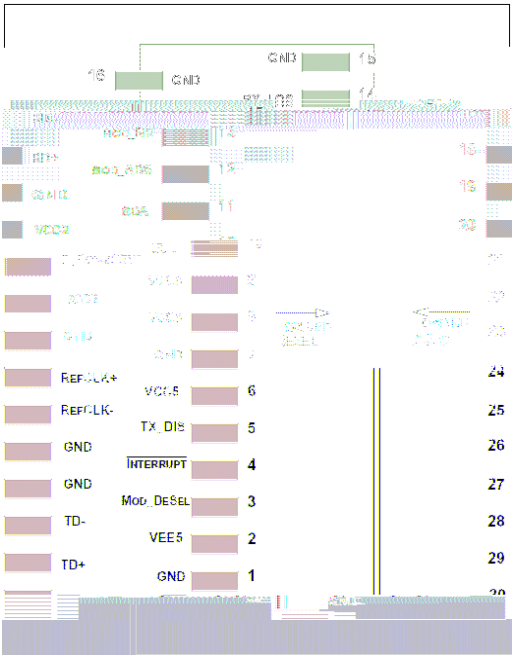
Parameter	Symbol	Unit	Min	Max	Note
XFP Tx_Dis,P_Down/RST	V _{IH}	V	2.0	V _{cc3} +0.3	
	V _{IL}	V	-0.3	0.8	
XFP Interrupt,Mod_NR,Rx_Los	V _{OH}	V	V _{dd3} -0.5	V _{dd3} +0.3	1
	V _{OL}	V	0.0	0.4	
XFP SCL and SDA Input	V _{IH}	V	V _{dd3} *0.7	V _{dd3} +0.5	1
	V _{IL}	V	-0.3	V _{dd3} *0.3	
XFP SCL and SDA Output	V _{OH}	V	V _{dd3} -0.5	V _{dd3} +0.3	
	V _{OL}	V	0.0	0.4	
Leakage Current	I _L	μA	-10	10	
I ² C Clock Rate		KHz		400	

Note1: V_{dd3} is host +3.3V power supply.

Block Diagram



Pin Description



10Gbps XFP Optical Transceiver RTX226-440

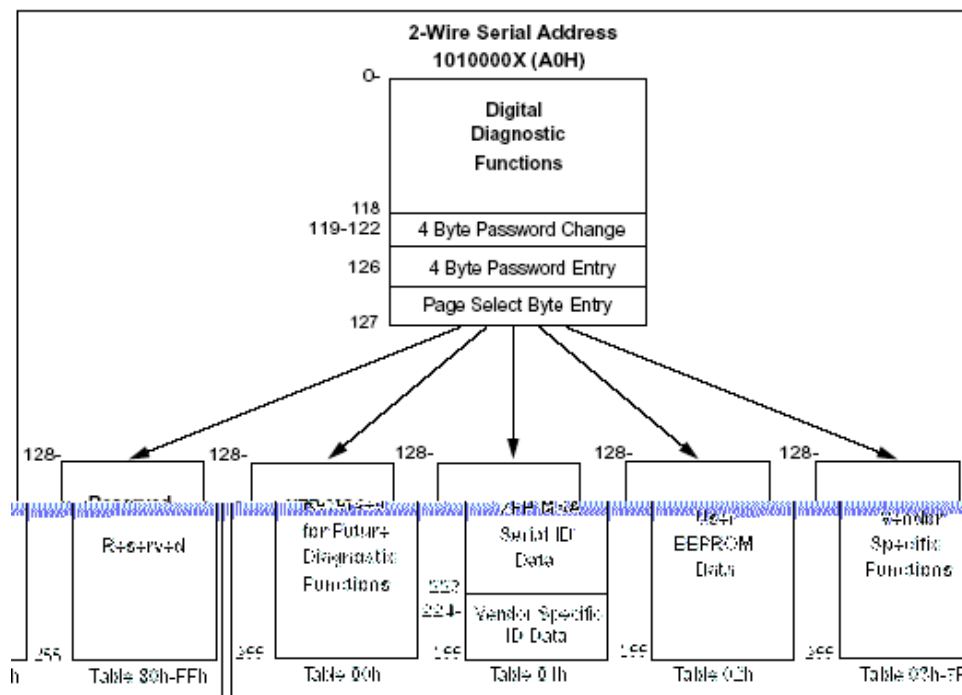
Pin	Logic	Symbol	Name/Description	Note
1		GND	Module Ground	1
2		VEE5	Optional -5.2V Power Supply (Not Required)	
3	LVTTL-I	Mod_DeSel	Module De-select; When held low allows module to respond to 2-wire serial interface	
4	LVTTL-O	----- Interrupt	----- Interrupt; Indicates presence of an important condition which can be read over the 2-wire serial interface	2
5	LVTTL-I	TX_DIS	Transmitter Disable; Turns off transmitter laser output	
6		VCC5	+5V Power Supply	
7		GND	Module Ground	1
8		VCC3	+3.3V Power Supply	
9		VCC3	+3.3V Power Supply	
10	I/O	SCL		

10Gbps XFP Optical Transceiver RTX226-440

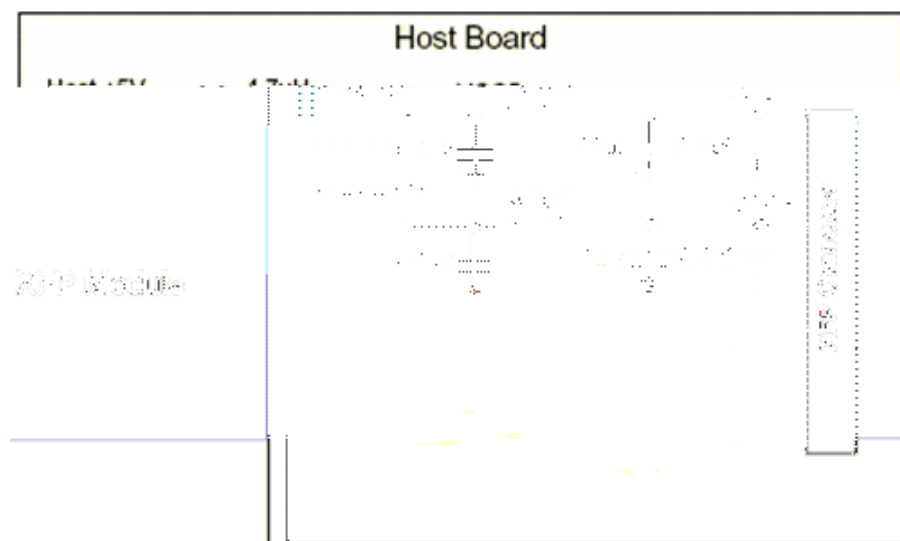
Digital Diagnostic Functions

As defined by the XFP MSA, digital diagnostic functions are provided via a 2-wire serial interface, which allows real-time access to the following operating parameters:

- Transceiver Temperature
- Tx Bias Current
- Tx Optical Power
- RX Received Optical Power
- Transceiver +3.3V Supply Voltage
- Laser Temperature

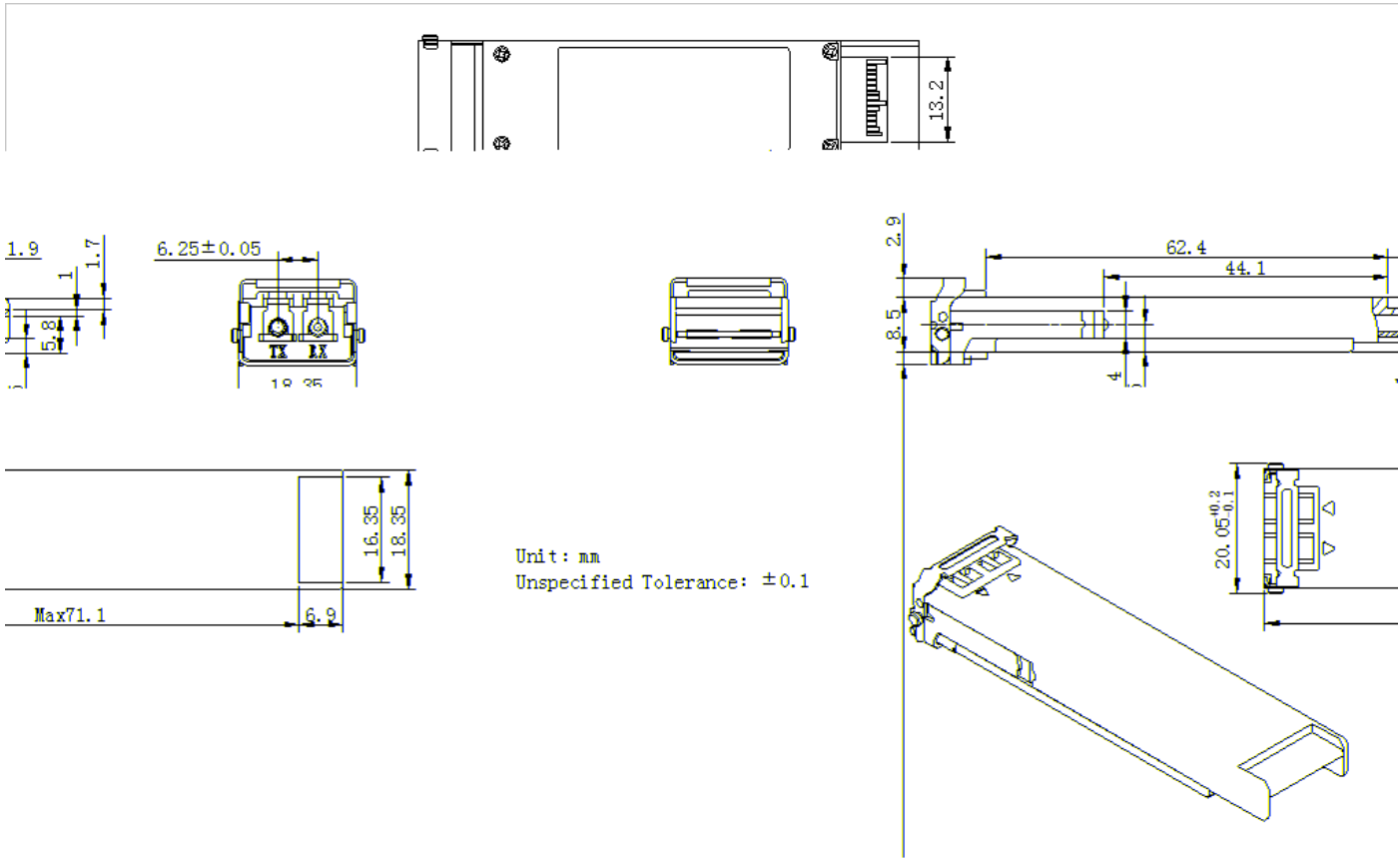


Typical Application Circuit for Power Supply



10Gbps XFP Optical Transceiver RTX226-440

Package Outline



Regulatory Compliance

Feature	Test Method	Performance
Laser Eye Safety	FDA 21 CFR 1040.10 and 1040.11 IEC 60825-1: 1994+ A11: 1996+ A2: 2001 IEC 60825-2: 2004 + A1: 2006 EN 60825-1:1994+A1:2002+A2:2001 EN 60825-2: 2004	Compliant with Class 1 laser product
Electrostatic Discharge (ESD) to the Electrical Pins	MIL-STD-883E Method 3015.7 Human Body Model	Class 1 (>1.5kV)
Electrostatic Discharge (ESD) Immunity	IEC 61000-4-2: 2001	Class 2 (>4.0kV)
Electromagnetic Interference (EMI)	FCC Part 15 Subpart J Class B CISPR22:1997+A1:2000+A2:2002, Class B EN55022:1998+A1:2000+A2:2003, Class B	Compliant with standards