PRODUCT SPECIFICATION

Part No.:	AC-XPBL-45G10-80/AC-XPBL-54G10-80	
Description:	10G SFP+ Transceiver, BIDI TX1490nm/RX1550nm 80km 10G SFP+ Transceiver, BIDI TX1550nm/RX1490nm 80km	
Release Date	Rev.	Revision Change Description
2017/06/07	A0	New Release
2020/12/28	A1	Template Update
2023/08/23	A2	1550nm Tx/Rx update from 1540-1550-1560 to 1530-1550-1570

Features

- Supports 11.1Gb/s bit rates
- Hot-pluggable SFP+ footprint
- Up to 80km for SMF transmission
- 1490nm EML laser and APD receiver for AC-XPBL-45G10-80
- 1550nm EML laser and APD receiver for AC-XPBL-54G10-80
- Compliant with SFP+ MSA with single LC receptacle
- Compatible with RoHS
- Single +3.3V power supply
- Power dissipation<1.5W
- 2-wire interface with integrated Digital Diagnostic monitoring
- EEPROM with Serial ID Functionality
- Operating case temperature:
- Standard: 0 to +70°C
- Industrial: -40 to +85°C

Application

- 10GBASE-BX 10.3125Gb/s Ethernet

Standard

- Compliant with SFF-8472
- Compliant with SFF-8431
- Compliant with SFP+ MSA

Add: 2-4# Building, Tongfuyu Industrial Zone, Ai qun Road, Shiyan street, Baoan District, Shen zhen, China.
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Specification

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Supply Voltage	Vcc	-0.3	4	V
Storage Temperature	Ts	-40	+85	°C
Operating Humidity	-	5	95	%
Signal Input Voltage		Vcc-0.3	Vcc+0.3	V

Recommended Operating Conditions

Parameter		Symbol	Min	Typical	Max	Unit
Operating Case Temperature	Standard	Tc	0		+70	°C
	Industrial		-40		+85	°C
Power Supply Voltage		Vcc	3.135	3.30	3.465	V
Power Supply Current		Icc			550	mA
Data Rate			9.95	10.3	11.1	Gbps
Fiber Length 9/125μm core SMF			-		80	km

Optical and Electrical Characteristics

Parameter		Symbol	Min	Typical	Max	Unit	Notes
Transmitter							
Centre Wavelength		λc	1480	1490	1500	nm	AC-XFBL-45G10-80
			1530	1550	1570	nm	AC-XFBL-54G10-80
Spectral Width（-20dB）		Δλ			0.3	nm	
Side-Mode Suppression Ratio		SMSR	30	-		dB	
Average Output Power		P_{out}	0		4	dBm	AC-XFBL-45G10-80
			0		4	dBm	AC-XFBL-54G10-80
Average Launch power of OFF transmitter		P_{off}			-30	dBm	1
Extinction Ratio		ER	7.5			dB	
Data Input Swing Differential		V_{IN}	180		1200	mV	2
Input Differential Impedance		Z_{IN}	80	100	120	Ω	
Transmitter Fault Output-High		VFaultH	2.4		Vcc	V	
Transmitter Fault Output-Low		VFaultL	-0.3		0.8	V	
TX Disable	Disable	VDisH	2		Vcc+0.3	V	
	Enable	VDisL	-0.3		0.8	V	

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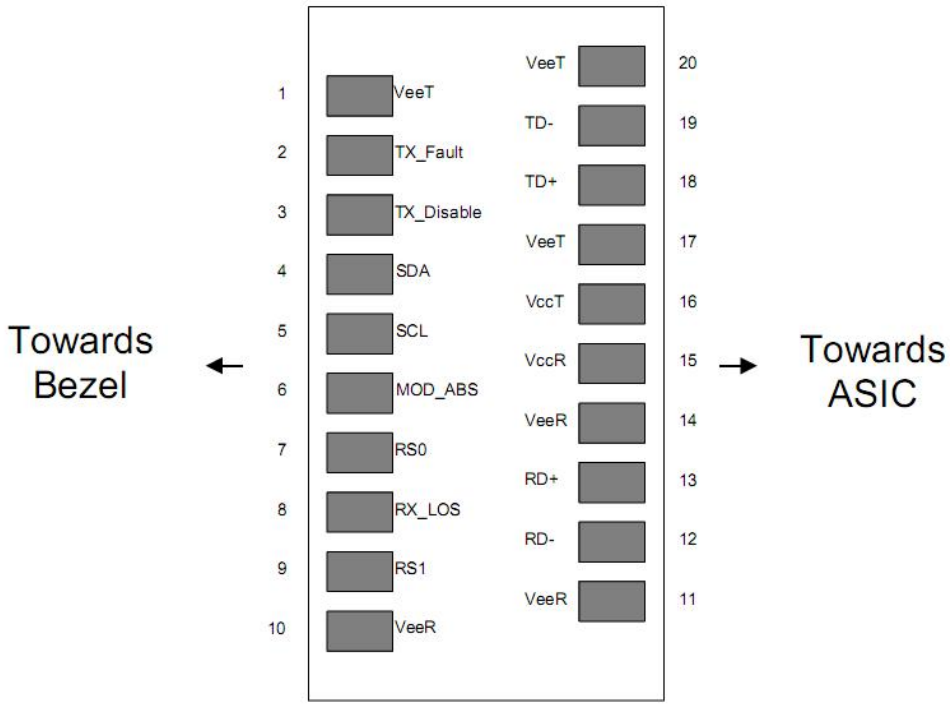
Receiver						
Centre Wavelength	λc	1530	1550	1570	nm	AC-XFBL-45G10-80
		1480	1490	1500	nm	AC-XFBL-54G10-80
Receiver Sensitivity				-23	dBm	3
Receiver Overload		-6			dBm	3
LOS De-Assert	LOS_D			-25	dBm	
LOS Assert	LOS_A	-38			dBm	
LOS Hysteresis		0.5		4	dB	
Differential Output Impedance	Rout	80	100	120	Ω	
Differential data output swing	Vout,pp	300		850	mV	
Data Output Rise/Fall time	tr/tf		24		ps	
LOS Output Voltage-High	VLOSH	Vcc –1.3		Vcc	V	
LOS Output Voltage-Low	VLOSL	Vee		Vee +0.8	V	

Notes:

1. The optical power is launched into SMF.
2. PECL input, internally AC-coupled and terminated.
3. Measured with a PRBS2^{31}-1 test pattern @10312Mbps, BER ≤1×10^{-12}.

Pin Descriptions



Pin	Signal Name	Description	Notes
1	V_{EET}	Transmitter Ground	1
2	TX FAULT	Transmitter Fault Indication	2
3	TX DISABLE	Transmitter Disable	3
4	SDA	2-wire Serial Interface Data Line	4
5	SCL	2-wire Serial Interface Clock Line	4
6	MOD_ABS	Module Absent. Grounded within the module	4
7	RS0	Rate Select 0	5
8	LOS	Loss of Signal	6
9	RS1	Not Connected	1
10	V_{EER}	Receiver ground	1
11	V_{EER}	Receiver ground	1
12	RD-	Inv. Received Data Out	
13	RD+	Received Data Out	
14	V_{EER}	Receiver ground	1
15	V_{CCR}	Receiver Power Supply	
16	V_{CCT}	Transmitter Power Supply	
17	V_{EET}	Transmitter Ground	1
18	TD+	Transmit Data In	
19	TD-	Inv. Transmit Data In	
20	V_{EET}	Transmitter Ground	1

Notes:

Plug Seq.: Pin engagement sequence during hot plugging.

1) Circuit ground is internally isolated from chassis ground.

2) TFAULT is an open collector/drain output, which should be pulled up with a 4.7k – 10k Ohms resistor on the host board if intended for use. Pull up voltage should be between 2.0V to Vcc + 0.3V.A high output indicates a transmitter fault caused by either the TX bias current or the TX output power exceeding the preset alarm thresholds. A low output indicates normal operation. In the low state, the output is pulled to <0.8V.

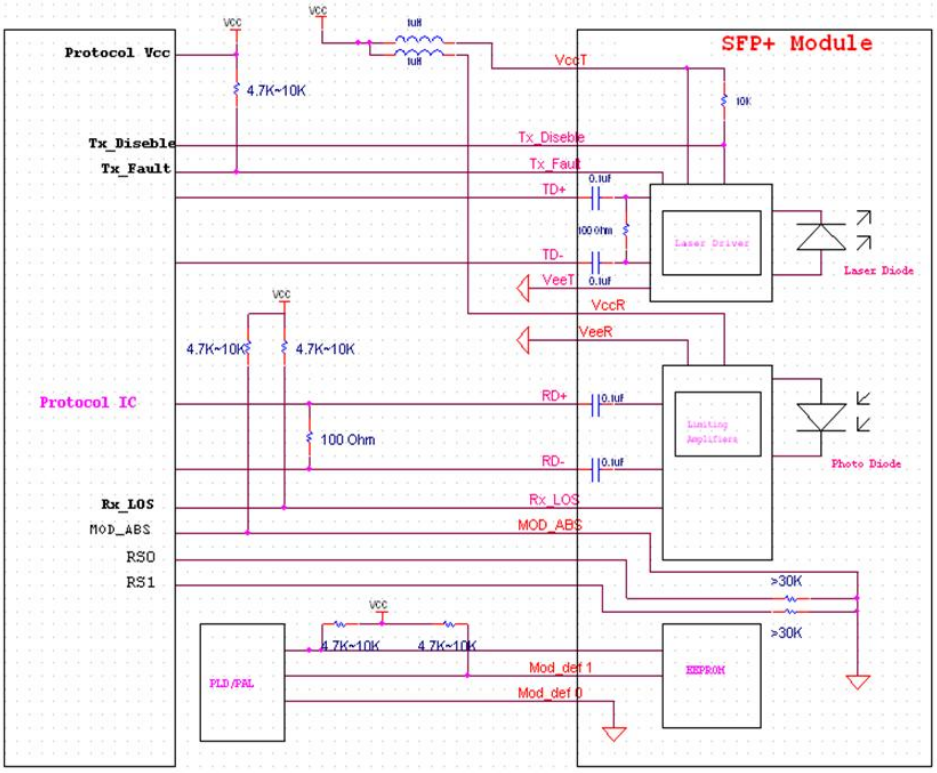
3) Laser output disabled on TDIS >2.0V or open, enabled on TDIS <0.8V.

4) Should be pulled up with 4.7kΩ- 10kΩ host board to a voltage between 2.0V and 3.6V. MOD_ABS pulls line low to indicate module is plugged in.

5) Internally pulled down per SFF-8431 Rev 4.1.

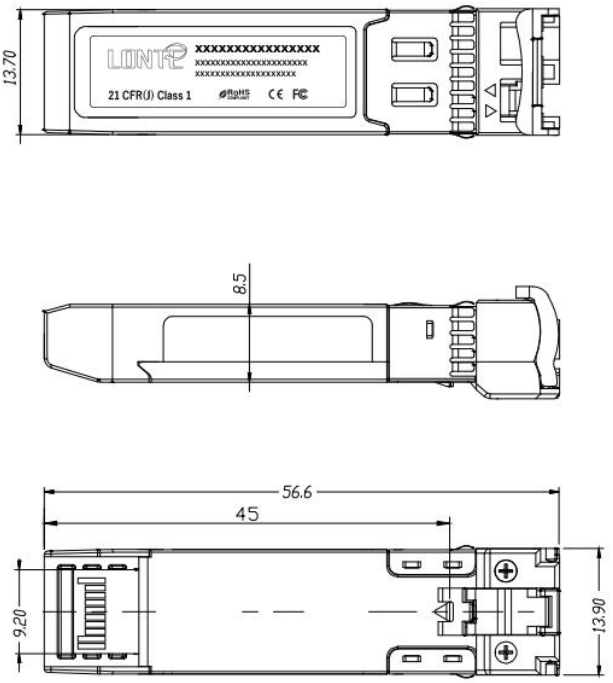
6) LOS is open collector output. It should be pulled up with 4.7kΩ – 10kΩ on host board to a voltage between 2.0V and 3.6V. Logic 0 indicates normal operation; logic 1 indicates loss of signal.

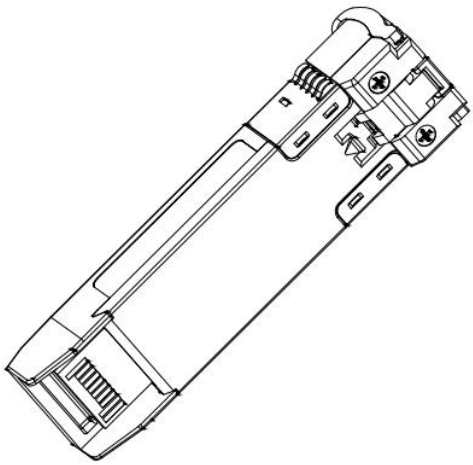
Recommended Interface Circuit



Package Outline

Dimensions are in millimeters. All dimensions are ± 0.2mm unless otherwise specified. (Unit: mm)





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Regulatory Compliance

Feature	Test	Method
Electrostatic Discharge (ESD) to the Electrical Pins	MIL-STD-883E Method 3015.7	Class 1 (>1.5kV) – Human Body Model
Electrostatic Discharge (ESD) Immunity	IEC61000-4-2	Class 2(>4.0kV)
Electromagnetic Interference (EMI)	CISPR22 ITE Class B FCC Class B CENELEC EN55022 VCCI Class 1	Comply with standard
Immunity	IEC61000-4-3	Comply with standard
Eye Safety	FDA 21CFR 1040.10 and 1040.11 EN (IEC) 60825-1,2	Compatible with Class I laser Product

Ordering information

Part. No	Specifications								
	Pack	Rate (Gbps)	Tx (nm)	Po (dBm)	RX	Sen (dBm)	Temp (℃)	Reach (km)	DDM
AC-XPBL-45G10-80	SFP+	10.3125	1490	0~4	APD	＜-23.0	0~70	80	Y
AC-XPBL-54G10-80	SFP+	10.3125	1550	0~4	APD	＜-23.0	0~70	80	Y
AC-XPBL-45G10-80F	SFP+	10.3125	1490	0~4	APD	＜-23.0	-40~85	80	Y
AC-XPBL-54G10-80F	SFP+	10.3125	1550	0~4	APD	＜-23.0	-40~85	80	Y