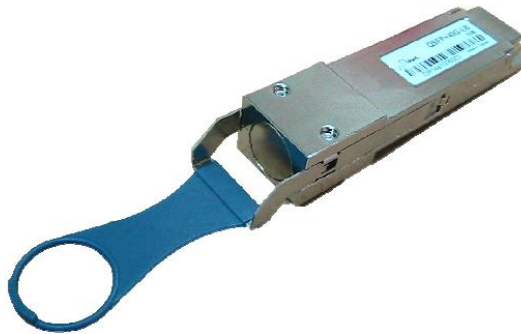


100G QSFP28 Loopback Module



Features

- Hot pluggable
- Bit rate support from 4x10G to 4x25Gbps
- Operating environment temperature 0 ~ 85°C
- **Zero power consumption**
- **QSFP28 housing with enhanced EMI shielding**
- Single 3.3V power supply
- Optional build-in loopback insertion loss
- Optional build-in power load
- Optional Programmable EEPROM for serial identification

Application

- 100G Ethernet
- 4x EDR Infiniband
- Applicable to 4x FDR / 4x QDR Infiniband
- High capacity IO with QSFP28 interface
- Data center and in-rack connection

Compliance

- QSFF-8661 QSFP+ 4X Pluggable Module
- RoHS complaint

Loopback

- Line-side loopback

QSFP28 Connector Pin

38	GND
37	TX1n
36	TX1p
35	GND
34	TX3n
33	TX3p
32	GND
31	LPMode
30	Vcc1
29	VccTx
28	IntL
27	ModPrsL
26	GND
25	RX4p
24	Rx4n
23	GND
22	RX2p
21	RX2n
20	GND

Top Side
Viewed From Top

	GND	1
	TX2n	2
	TX2p	3
	GND	4
	TX4n	5
	TX4p	6
	GND	7
	ModseL	8
	ResetL	9
	VccRx	10
	SCL	11
	SDA	12
	GND	13
	RX3p	14
	Rx3n	15
	GND	16
	RX1p	17
	RX1n	18
	GND	19

Bottom Side
Viewed From Bottom

Module Card Edge

〒108-0071

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Module Pin Definitions

Pin	Symbol	Logic	Description	Note
1	GND		Ground	1
2	Tx2n	CML-I	Transmitter Inverted Data Input, loopback to Rx2n	
3	Tx2p	CML-I	Transmitter Non-Inverted Data Input, loopback to Rx2p	
4	GND		Ground	1
5	Tx4n	CML-I	Transmitter Inverted Data Input, loopback to Rx4n	
6	Tx4p	CML-I	Transmitter Non-Inverted Data Input, loopback to Rx4p	
7	GND		Ground	1
8	ModSelL	LVTTIL-I	Module Select	
9	ResetL	LVTTIL-I	Module Reset	
10	Vcc Rx		+3.3V Power Supply Receiver	2
11	SCL	LVCNOS-I/O	2-wire serial interface clock	
12	SDA	LVCNOS-I/O	2-wire serial interface data	
13	GND		Ground	1
14	Rx3p	CML-I	Receiver Non-Inverted Data Output, loopback from Tx3p	
15	Rx3n	CML-I	Receiver Inverted Data Output, loopback from Tx3n	
16	GND		Ground	1
17	Rx1p	CML-I	Receiver Non-Inverted Data Output, loopback from Tx1p	
18	Rx1n	CML-I	Receiver Inverted Data Output, loopback from Tx1n	
19	GND		Ground	1
20	GND		Ground	1
21	Rx2n	CML-I	Receiver Non-Inverted Data Output, loopback from Tx2n	
22	Rx2p	CML-I	Receiver Inverted Data Output, loopback from Tx2p	
23	GND		Ground	1
24	Rx4n	CML-I	Receiver Non-Inverted Data Output, loopback from Tx4n	
25	Rx4p	CML-I	Receiver Inverted Data Output, loopback from Tx4p	
26	GND		Ground	1
27	ModPrsL	LVTTIL-O	Module Present	
28	IntL	LVTTIL-O	Interrupt	
29	Vcc Tx		+3.3V Power supply transmitter	2
30	Vcc1		+3.3V Power supply	2
31	LPMode	LVTTIL-I	Low Power Mode	
32	GND		Ground	1
33	Tx3p	CML-I	Transmitter Inverted Data Input, loopback to Rx3p	
34	Tx3n	CML-I	Transmitter Non-Inverted Data Input, loopback to Rx3n	
35	GND		Ground	1
36	Tx1p	CML-I	Transmitter Inverted Data Input, loopback to Rx1p	
37	Tx1n	CML-I	Transmitter Non-Inverted Data Input, loopback to Rx1n	
38	GND		Ground	1

Note:

1. GND is the symbol for signal and supply (power) common for the QSFP+ module. All are common within the QSFP+ module and all module voltages are referenced to this potential unless otherwise noted. Connect these directly to the host board signal-common ground plane.
2. Vcc Rx, Vcc1 and Vcc Tx are the receiver and transmitter power supplies and shall be applied concurrently.

Absolute Maximum Rating

Parameter	Symbol	Unit	min	Max
Storage Temperature	T _S	°C	-40	85
Operating Case Temperature	T _C	°C	-40	85
Relative Humidity	RH	%		85
Supply Voltage	V _{CC}	V	-0.5	3.6

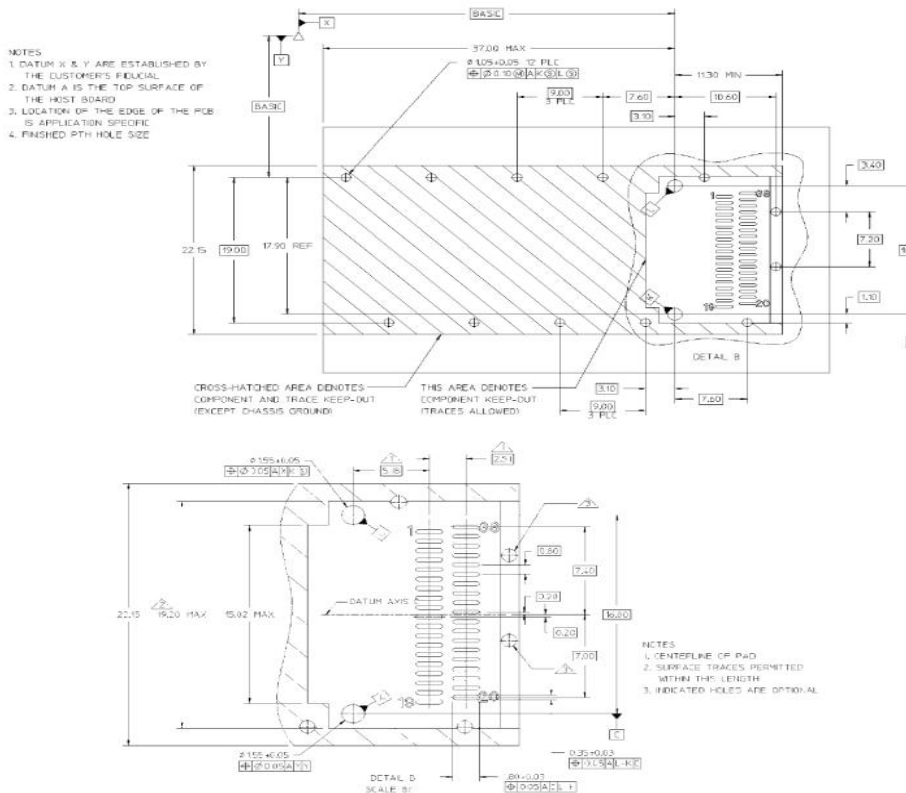
Note:

Damage may occur if the transceiver is subjected to conditions beyond the limits.

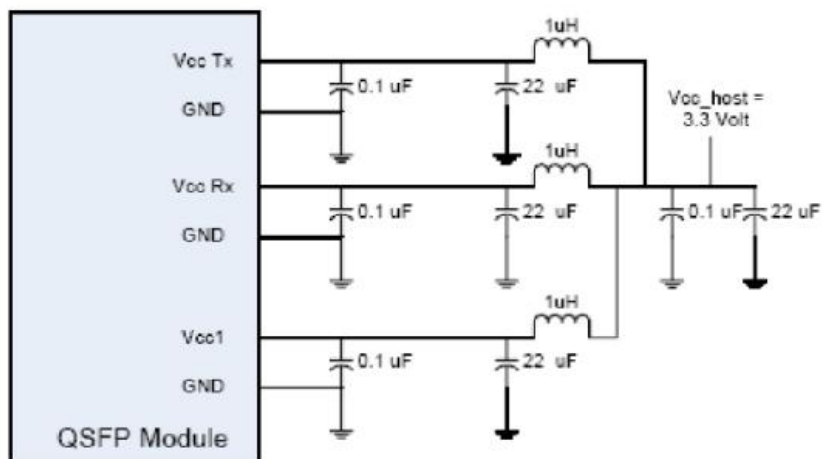
Recommended Operating Condition

Parameter	Symbol	Unit	min	Max
Operating Case Temperature	T _C	°C	0	85
Supply Voltage	V _{CC}	V	3.1	3.5
Bit Rate Per Lane	BR	GBd	1	25.78125

Host PCB Layout



Recommended Power Supply Filter



References

1. SFF-8436 "Specifications for QSFP+ 10 Gbs 4X PLUGGABLE TRANSCEIVER"

Mechanical Drawing

