



40G QSFP+ Electrical Passive Loopback Hot Pluggable, 0~5dB Internal Attenuation, 0~3.5W Power Consumption

Part Number: FQFP-IX-XLB-xx-xx



Overview

FQFP-IX-XLB QSFP+ Loopback modules are compliant with the current QSFP+ Multi-Source Agreement (MSA) specification. The Loopback modules provide an effective way of testing the QSFP+ port in the host system by looping back the electrical signal (optics are excluded). It provides an economical way to mimic 40G Ethernet in simulation testing environments.

Applications

- Board and System Level Testing
- System Test and Measurement
- Switch / Router Chamber Test
- Power Consumption Validation

Features

- Compliant with SFF-8436 QSFP28 MSA
- Compliant with IEEE 802.3bm CAUI-4 Interface
- Electrical Data Rate up to 10.5Gbps per Lane
- Hot Pluggable QSFP+ footprint
- 2-wire interface for management
- Single 3.3V power supply
- Different Option for Internal Attenuation and Power Consumption
- RoHS compliant

Absolute Maximum Ratings

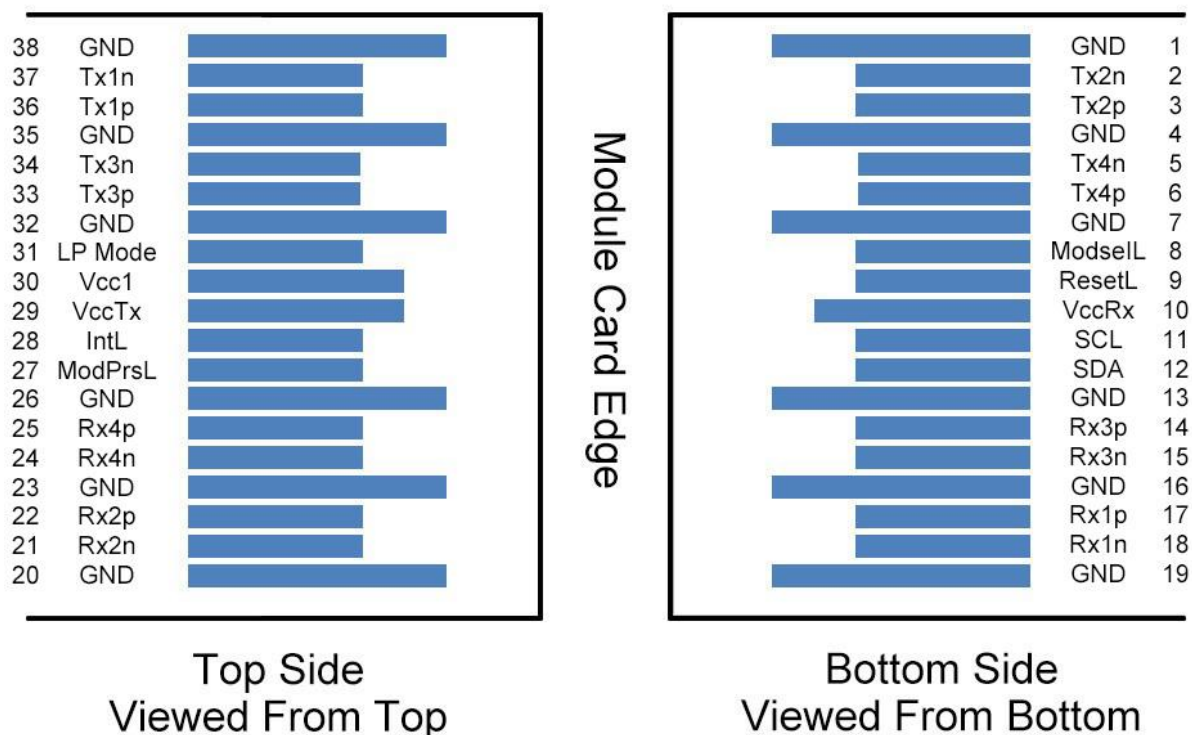
Parameters	Symbol	Min.	Max.	Unit
Storage Temperature	T _{ST}	-40	+85	°C
Storage Relative Humidity	RH	0	85	%
Supply Voltage	V _{CC3}	-0.5	+3.6	V



Recommended Operating Conditions

Parameters	Symbol	Min.	Typ.	Max.	Unit
Case Operating Temperature	T _{OP}	-20	-	+85	°C
Supply Voltage	V _{CC}	+3.13	+3.3	+3.47	V
Data Rate, per Lane	DR	0.1	-	10.5	Gb/s
Differential Impedance	Z	90	100	110	Ohm
Durability Cycles			100	200	Times

Pin Assignment





Pin Description

Pin	Logic	Name	Function / Description
1		GND	Module Ground
2	CML-I	Tx2n	Transmitter Inverted Data Input
3	CML-I	Tx2p	Transmitter Non-Inverted Data Input
4		GND	Module Ground
5	CML-I	Tx4n	Transmitter Inverted Data Input
6	CML-I	Tx4p	Transmitter Non-Inverted Data Input
7		GND	Module Ground
8	LVTLL-I	ModSelL	Module Select
9	LVTLL-I	ResetL	Module Reset
10		VccRx	+3.3V Power Supply Receiver
11	LVC MOS-I/O	SCL	2-Wire Serial Interface Clock
12	LVC MOS-I/O	SDA	2-Wire Serial Interface Data
13		GND	Module Ground
14	CML-O	Rx3p	Receiver Non-Inverted Data Output
15	CML-O	Rx3n	Receiver Inverted Data Output
16		GND	Module Ground
17	CML-O	Rx1p	Receiver Non-Inverted Data Output
18	CML-O	Rx1n	Receiver Inverted Data Output
19		GND	Module Ground
20		GND	Module Ground
21	CML-O	Rx2n	Receiver Inverted Data Output
22	CML-O	Rx2p	Receiver Non-Inverted Data Output
23		GND	Module Ground
24	CML-O	Rx4n	Receiver Inverted Data Output
25	CML-O	Rx4p	Receiver Non-Inverted Data Output
26		GND	Module Ground
27	LVTLL-O	ModPrsL	Module Present
28	LVTLL-O	IntL	Interrupt
29		VccTx	+3.3V Power Supply Transmitter
30		Vcc1	+3.3V Power Supply
31	LVTLL-I	LPMODE	Low Power Mode
32		GND	Module Ground

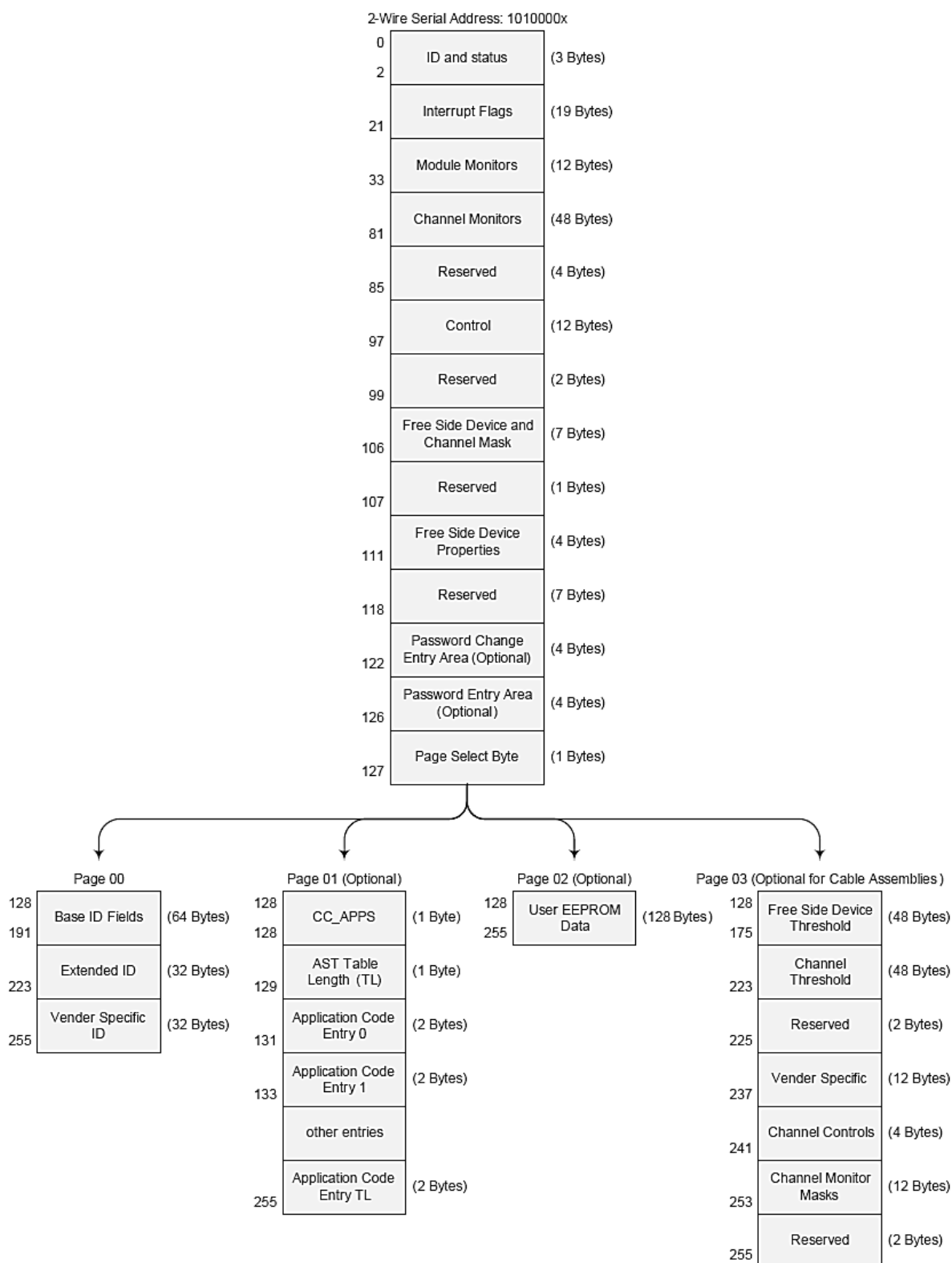


33	CML-I	Tx3p	Transmitter Non-Inverted Data Input
34	CML-I	Tx3n	Transmitter Inverted Data Input
35		GND	Module Ground
36	CML-I	Tx1p	Transmitter Non-Inverted Data Input
37	CML-I	Tx1n	Transmitter Inverted Data Input
38		GND	Module Ground

Note1: GND is the symbol for signal and supply (power) common for QSFP28 modules. All are common within the QSFP28 module and all module voltages are referenced to this potential unless otherwise noted. Connect these directly to the host board signal common ground lane.

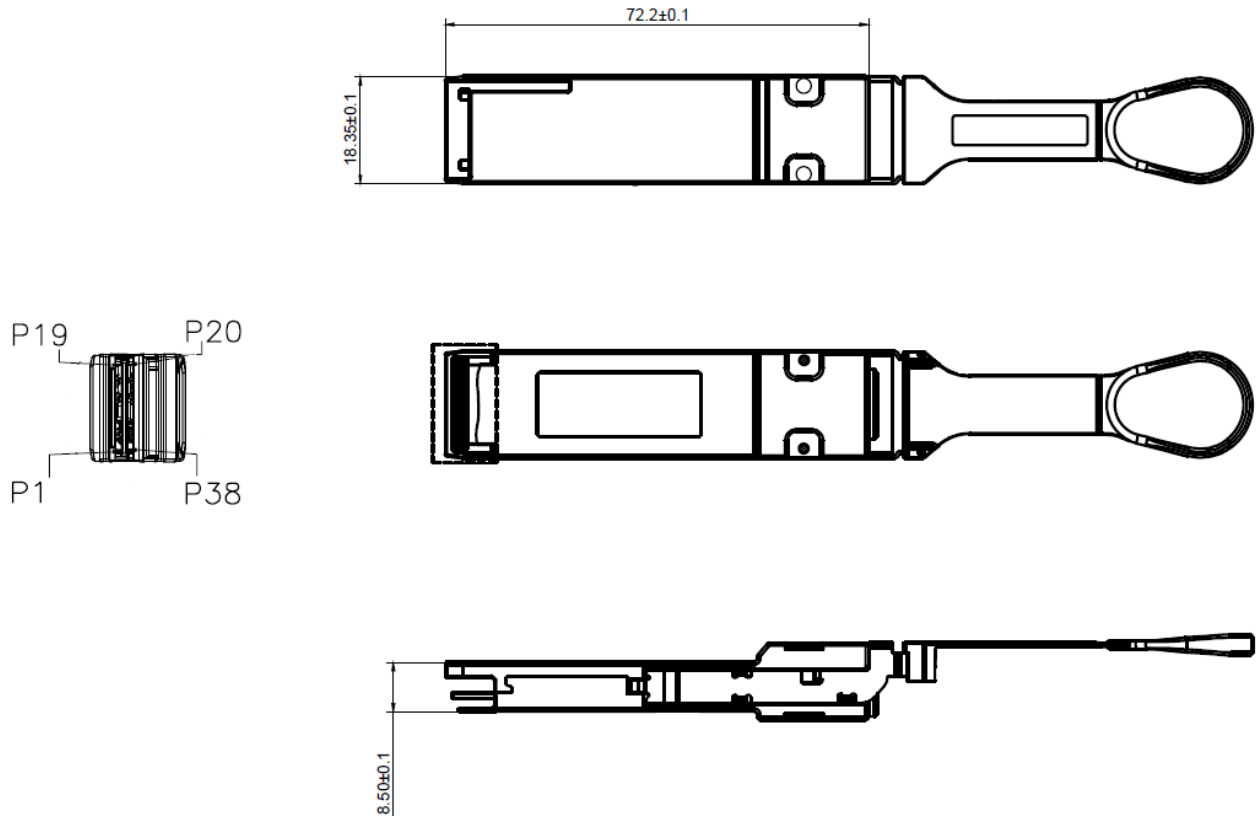
Note2: VccRx, Vcc1 and VccTx are the receiver and transmitter power suppliers and shall be applied concurrently. Vcc Rx, Vcc1 and Vcc Tx may be internally connected within the QSFP28 transceiver module in any combination. The connector pins are each rated for a maximum current of 1000mA.

Memory Map





Mechanical Dimensions



(All Dimensions are $\pm 0.20\text{mm}$ Unless Otherwise Specified, Unit: mm)

Ordering Information

FQFP-IX-XLB-□□-□□

Internal Attenuation

00: 0dB 35: 3.5dB
50: 5dB xx: Customized Value

Power Consumption

00: 0W 10: 1W
15: 1.5W 20: 2W
25: 2.5W 30: 3W
35: 3.5W xx: Customized Value