multiLane

Innovation for the next generation

112G QSFP-DD

Compliance Boards | 112/56 Gbps (8x56 GBd) Interconnects

ML4062-MCB-112 | ML4062-HCB1-112 | ML4062-HCB2-112 | ML4062-LB-112

Summary

Due to the ever-increasing bandwidth demand of hyperscale data centers, the transition to 400G Ethernet is now in full swing and the industry is already planning for the next phase of 800G. QSFP-DD800 is one of the leading multi-source agreements to drive the development of 800G interconnectivity and MultiLane provides a QSFP-DD800 development kit that includes a module compliance board, host compliance board and loopback module.

The QSFP-DD800 development kit is an essential tool that enables the testing of 800G QSFP-DD products. The module compliance board (MCB) is used to test transceivers, AOCs, and DACs. The host compliance board (HCB) enables the testing of system host ports, and the loopback modules (LB) provide an economical way to exercise system ports during R&D validation, production testing, and field testing.

![multiLane logo]

800G QSFP-DD MCB

ML4062-MCB-112

Key Features

- Supports 8x112G interfaces
- Compliant with CEI-112G-VSR-PAM4 and CEI-56G-VSR-NRZ
- I2C master driven from both on board microcontroller or external pin headers
- 2.4 or 1.85 mm connectors
- Current Sense
- Matched differential trace length
- All 8 channels come with matching trace length
- High performance signal integrity traces from 2.4 or 1.85 mm connectors to QSFP-DD host connector.
- On-board LEDs display MSA output alarm states
- Built with high performance PCB material
- On-board buttons/jumpers for MSA input control signals
- User friendly GUI for I2C R/W commands and loading custom MSA memory maps
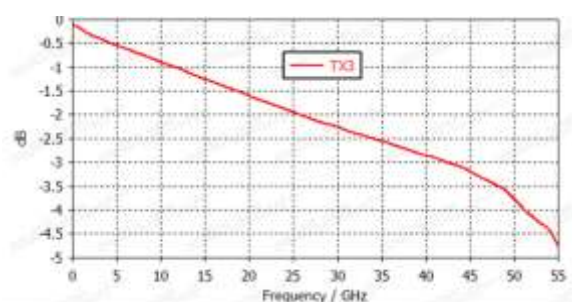- Four corner testing capability

Figure 1: ML4062-MCB-112 Insertion Loss

Figure 2: ML4062-MCB-112

800G QSFP-DD HCB

ML4062-HCB1-112

Key Features

- High performance signal integrity traces
- Compliant with CEI-112G-VSR-PAM4 and CEI-56G-VSR-NRZ
- QSFP-DD MSA Form Factor
- Same low Insertion Loss for all traces
- Supports 4x112G
- Built with high performance PCB Material
- High speed signals accessible through 2.4 or 1.85 mm connectors
- 4 channels: 4 TX and the corresponding 4 RX
- Matched trace length 5972.48 mils

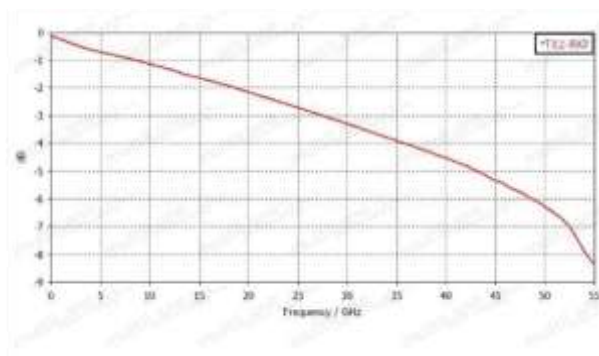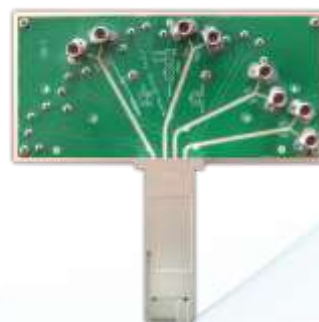| CH1		CH2		CH3		CH4	
TX1	RX1	TX2	RX2	TX3	RX3	TX4	RX4

Figure 3: ML4062-HCB1-112 Insertion Loss

Figure 4: ML4062-HCB1-112

800G QSFP-DD HCB

ML4062-HCB2-112

Key Features

- High performance signal integrity traces
- Compliant with CEI-112G-VSR-PAM4 and CEI-56G-VSR-NRZ
- QSFP-DD MSA Form Factor
- Same low Insertion Loss for all traces
- Supports 4x112G
- Built with high performance PCB Material
- High speed signals accessible through 2.4 or 1.85 mm connectors
- 4 channels: 4 TX and the corresponding 4 RX
- Matched trace length 5972.48 mils

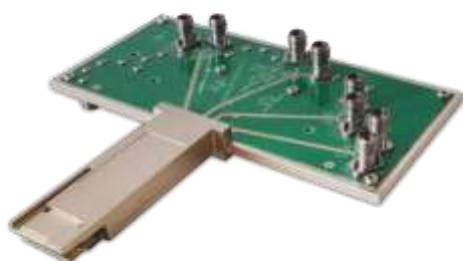| CH5		CH6		CH7		CH8	
TX5	RX5	TX6	RX6	TX7	RX7	TX8	RX8

Figure 5: ML4062-HCB2-112 Insertion Loss

Figure 6: ML4062-HCB2-112

800G QSFP-DD Loopback

ML4062-LB-112

Key Features

- Loops back TX & RX with good performance SI Traces
- Built with advanced PCB Material
- MSA Compliant Shell with latching mechanism
- Four thermal spots
- Can emulate all QSFP-DD power classes
- Can dissipate up to 16 W via the thermal loads
- Temp sense
- I2C Terminated by microcontroller, I2C slave compliant with MSA
- Implements MSA Memory Map with programmable new pages
- Ability to control/monitor all low speed signals
- Insertion Counter
- Front LED Indicator
- Hot Pluggable
- Cut-off temperature preventing module overheating
- AC-coupled High-Speed Interface
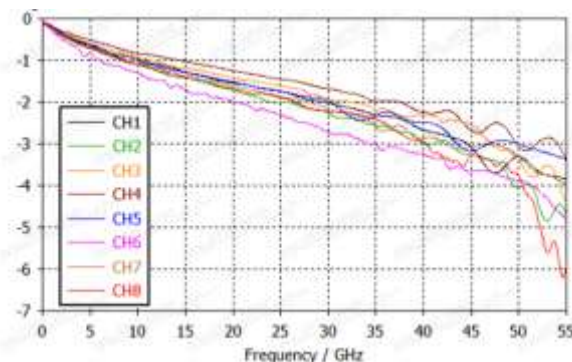

Figure 7: ML4062-LB-112

Figure 8: ML4062-LB-112 Insertion Loss

Ordering Information

Interconnects	Description
ML4062-MCB-112-24	QSFP-DD800 MCB 2.4 mm connector
ML4062-MCB-112-18	QSFP-DD800 MCB 1.85 mm connector
ML4062-HCB-112-24	QSFP-DD800 HCB 2.4 mm connector, set of HCB1 and HCB2
ML4062-HCB-112-18	QSFP-DD800 HCB 1.85 mm connector, set of HCB1 and HCB2
ML4062-LB-112	QSFP-DD800 Loopback

Recommended Accessories

Interconnects	Recommended *Phase matched cable pairs*	Alternative *Phase matched cable sets*	Comments
ML4062-MCB-112-24	16x MLCBPM-2.4-30/60	2x MLCBPM-2.4-30/60-16	2.4 mm connector 2x16 channel 30 or 60 cm
ML4062-MCB-112-18	16x MLCBPM-1.85-30/60	2x MLCBPM-1.85-30/60-16	1.85 mm connector 2x16 channel 30 or 60 cm
ML4062-HCB-112-24	8x MLCBPM-2.4-30/60	2x MLCBPM-2.4-30/60-8	2.4 mm connector 2x8 channel 30 or 60 cm
ML4062-HCB-112-18	8x MLCBPM-1.85-30/60	2x MLCBPM-1.85-30/60-8	1.85 mm connector 2x8 channel 30 or 60 cm