

Innovation for the next generation



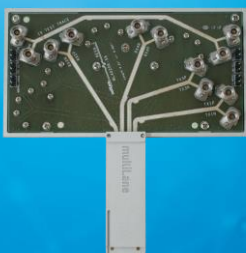
# 112G QSFP

Compliance Boards | 112/56 Gbps  
(4x56 GBd) Interconnects

ML4041-112: Module Compliance Board

ML4020-112: Host Compliance Board

ML4002-112: Passive Loopback Module



## Summary

Due to the ever-increasing bandwidth demand of hyperscale data centers, the transition to 112 Gbps SerDes is now in full swing. QSFP is one of the leading multi-source agreements to drive the development of next gen interconnectivity and MultiLane provides a QSFP development kit that includes a module compliance board, a host compliance board and a loopback module.

The 112G QSFP development kit is an essential tool that enables the testing of 400G QSFP 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.

## 400G QSFP MCB

### ML4041-112

#### Key Features

- Supports 4x112G interfaces
- Compliant with CEI-112G-VSR-PAM4 and CEI-56G-VSR-NRZ
- Matched differential trace length
- DUT voltage supply control (3.15V, 3.3V, 3.45V, or other user specified voltage levels)
- DUT Current Sense
- Superior Signal Integrity Performance Rogers 3003 based PCBs
- 2.4 or 1.85 mm connectors
- Low Insertion Loss
- Temperature Monitor
- Four corner test capability
- I2C master driven from both on board micro or external pin headers
- USB interface
- User friendly GUI for I2C R/W commands and loading custom MSA Memory Maps
- All 4 channels come with matching trace length 1779 mils
- On-board LEDs showing MSA output Alarm states

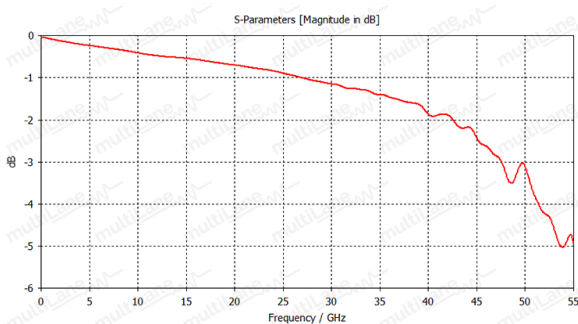


Figure 1: ML4041-112 Insertion Loss



Figure 2: ML4041-112

## 400G QSFP HCB

### ML4020-112

#### Key Features

- High performance signal integrity traces
- Compliant with CEI-112G-VSR-PAM4 and CEI-56G-VSR-NRZ
- QSFP56 MSA Form Factor
- Low Insertion Loss Rogers 3003 based material
- Production friendly form factor
- Supports 4x112G TX & 4x112G RX Lanes
- High speed signals accessible through 2.4 or 1.85 mm connectors
- All TX and RX channels comes with matching trace length
- Trace length 4203 mils

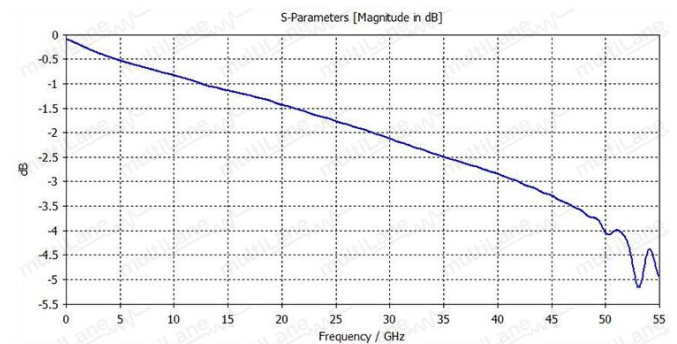


Figure 3: ML4020-112 Insertion Loss

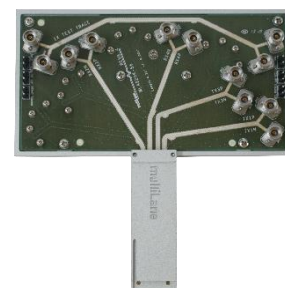


Figure 4: ML4020-112

## 400G QSFP Loopback

ML4002-112

### Key Features

- High performance signal integrity traces
- Compliant with CEI-112G-VSR-PAM4 and CEI-56G-VSR-NRZ
- Power Consumption of 7W
- Operation up to 112G per lane
- Dual LED indicator
- Custom Memory Maps
- 100% at rate AC testing, on each unit
- Temperature range from 0° to 80° C
- MSA Compliant Memory Map
- Temperature Monitoring
- Insertion Counter
- Hot pluggable module
- Micro controller based



Figure 5: ML4002-112

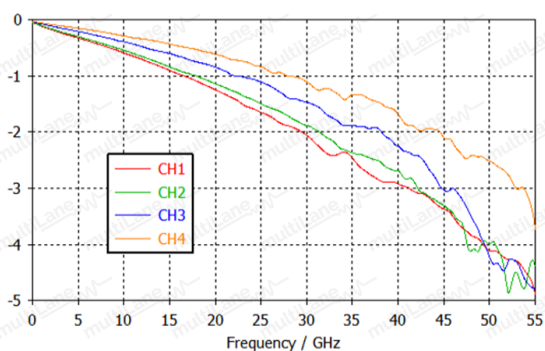


Figure 6: ML4002-112 Insertion Loss

## Ordering Information

Interconnects	Description
ML4041-112-24	400G QSFP MCB 2.4 mm connector
ML4041-112-18	400G QSFP MCB 1.85 mm connector
ML4020-112-24	400G QSFP HCB 2.4 mm connector
ML4020-112-18	400G QSFP HCB 1.85 mm connector
ML4002-112	400G QSFP Passive Loopback

## Recommended Accessories

Interconnects	Recommended <i>Phase matched cable pairs</i>	Alternative <i>Phase matched cable sets</i>	Comments
ML4041-112-24	8x MLCBPM-2.4-30/60	2x MLCBPM-2.4-30/60-8	2.4 mm connector 2x8 channel 30 or 60 cm
ML4041-112-18	8x MLCBPM-1.85-30/60	2x MLCBPM-1.85-30/60-8	1.85 mm connector 2x8 channel 30 or 60 cm
ML4020-112-24	8x MLCBPM-2.4-30/60	2x MLCBPM-2.4-30/60-8	2.4 mm connector 2x8 channel 30 or 60 cm
ML4020-112-18	8x MLCBPM-1.85-30/60	2x MLCBPM-1.85-30/60-8	1.85 mm connector 2x8 channel 30 or 60 cm

Please contact us at [sales@multilaneinc.com](mailto:sales@multilaneinc.com).