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.
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
• 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

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
• Matched trace length 5972.48 mils

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

<table>
<thead>
<tr>
<th>CH5</th>
<th>CH6</th>
<th>CH7</th>
<th>CH8</th>
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<tbody>
<tr>
<td>TX5</td>
<td>RX5</td>
<td>TX6</td>
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<tr>
<td>TX7</td>
<td>RX7</td>
<td>TX8</td>
<td>RX8</td>
</tr>
</tbody>
</table>

Figure 5: ML4062-HCB2-112 Insertion Loss

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**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

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Figure 6: ML4062-HCB2-112

Figure 8: ML4062-LB-112
Ordering Information

<table>
<thead>
<tr>
<th>Interconnects</th>
<th>Description</th>
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<tbody>
<tr>
<td>ML4062-MCB-112-24</td>
<td>QSFP-DD800 MCB 2.4 mm connector</td>
</tr>
<tr>
<td>ML4062-MCB-112-18</td>
<td>QSFP-DD800 MCB 1.85 mm connector</td>
</tr>
<tr>
<td>ML4062-HCB-112-24</td>
<td>QSFP-DD800 HCB 2.4 mm connector, set of HCB1 and HCB2</td>
</tr>
<tr>
<td>ML4062-HCB-112-18</td>
<td>QSFP-DD800 HCB 1.85 mm connector, set of HCB1 and HCB2</td>
</tr>
<tr>
<td>ML4062-LB-112</td>
<td>QSFP-DD800 Loopback</td>
</tr>
</tbody>
</table>

Recommended Accessories

<table>
<thead>
<tr>
<th>Interconnects</th>
<th>Recommended Phase matched cable pairs</th>
<th>Alternative Phase matched cable sets</th>
<th>Comments</th>
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</thead>
<tbody>
<tr>
<td>ML4062-MCB-112-24</td>
<td>16x MLCBPM-2.4-30/60</td>
<td>2x MLCBPM-2.4-30/60-16</td>
<td>2.4 mm connector 2x16 channel 30 or 60 cm</td>
</tr>
<tr>
<td>ML4062-MCB-112-18</td>
<td>16x MLCBPM-1.85-30/60</td>
<td>2x MLCBPM-1.85-30/60-16</td>
<td>1.85 mm connector 2x16 channel 30 or 60 cm</td>
</tr>
<tr>
<td>ML4062-HCB-112-24</td>
<td>8x MLCBPM-2.4-30/60</td>
<td>2x MLCBPM-2.4-30/60-8</td>
<td>2.4 mm connector 2x8 channel 30 or 60 cm</td>
</tr>
<tr>
<td>ML4062-HCB-112-18</td>
<td>8x MLCBPM-1.85-30/60</td>
<td>2x MLCBPM-1.85-30/60-8</td>
<td>1.85 mm connector 2x8 channel 30 or 60 cm</td>
</tr>
</tbody>
</table>

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