M.2 Adapter Cards
Allows Fast, Easy Testing of New Designs Using Standard PCI Express Slots

Key Features

- Allows M.2 devices to connect to PCI Express slots
  - Direct testing of PCIe® functions using standard PCIe host slot
- Two configurations, M-Key and B-Key:
  - M-Key (socket 3) supports up to x4 lane widths
  - B-Key (socket 2) supports up to x2 lane widths
  - Both configurations support B-M SSD modules
- Supports data rates up to 8 GT/s
- Supports M.2 SSD sizes of 42mm, 60mm, 80mm and 110mm

Teledyne LeCroy’s M.2-to-PCIe adapter cards provide developers with an extremely versatile tool to speed development of new M.2 designs and to trouble-shoot existing M.2 issues. Two configurations are offered to support either M-Key or B-Key (both support B-M devices). Simply by plugging the M.2 device into the adapter, the engineer can then install the device into a standard PCI Express card slot and exercise all PCIe functions on the device. This allows engineers to quickly focus on trouble spots without the need for additional test equipment.

If more detailed information is needed, the adapter can be used with a standard PCIe interposer and Teledyne LeCroy analyzer to capture all PCIe data traffic passing through the interface, allowing engineers visibility to virtually all types of protocol problems that may affect device performance or reliability. Rapid identification of problems leads to rapid solutions, allowing faster time-to-market for new devices and quicker solutions to problems showing up on existing devices.

In addition, if an M.2 host port is available, Teledyne LeCroy offers specialty interposers designed for M.2 devices that can be used as a direct traffic probe and analysis tool with any of our Summit™ product family of analyzers.

In combination, these products provide flexible and powerful tools for developers working on M.2 designs to streamline testing and reduce time-to-market for new M.2 products.

Specifications

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>138 x 142 mm (5.4” x 5.9”)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lane Width</td>
<td>M-Key: x1, x2 or x4</td>
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<tr>
<td></td>
<td>B-Key: x1 or x2</td>
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<tr>
<td>Data Rates</td>
<td>2.5 GT/s, 5 GT/s and 8 GT/s</td>
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<tr>
<td>Compatibility</td>
<td>M.2 Devices using PCIe data lanes Types M and B-M (M-Key version) Types B and B-M (B-Key version) 42, 60, 80 and 110mm SSD length</td>
</tr>
</tbody>
</table>
M.2 Adapter Interconnection Overview

**Device Under Test (DUT)**

M-Key version shown here supports Type M and B-M SSDs. B-Key version is identical except for SSD connector, and supports Type B and B-M SSDs.

**DUT Support Bracket**

The DUT support bracket allows mounting of M.2 devices of 42, 60, 80 and 110 mm through use of a moveable standoff and screw.

**12V DC Power Supply (included)**

**Sideband Signal Header**

This header provides access to sideband signals from the M.2 connector.

**Control Switches**

These control switches allow the user to specify the maximum lane width to be used (x1 or x4), and to specify the type and source of power supplied to the DUT (3.3V from the PCIe bus or 5V from the external DC supply; and 12V from the PCIe bus or 12V from the external DC supply).

**Ordering Information**

- Gen3 M.2 M-Key to x4 PCI Express Slot Socket Adapter, supports PCIe x1, x2 and x4 (socket 3) PE-M.2M-2-x4SLOT-X
- Gen3 M.2 B-Key to x4 PCI Express Slot Socket Adapter, supports PCIe x1 and x2 (socket 2) PE-M.2B-2-x2SLOT-X
- Gen3 M.2 M/B-M Type Interposer (supports Socket 3 memory devices up to x4 lanes) PE089UIA-X
- Gen3 M.2 B/B-M Type Interposer (supports Socket 2 memory devices up to x2 lanes) PE090UIA-X
- Gen3 x4 Interposer Kit (includes Interposer Card and one iPass Y-cable) PE041UIA-X
- Summit T3-8 Analyzer (licensed as a Gen3 x4 analyzer, no probes or cables) PE061AAA-X

Optional Interposer Connection Points

An appropriate interposer for an analyzer connection may be inserted at either location marked with this symbol. The interposer may be a specialty M.2 Interposer (e.g., PE089UIA-X) inserted between the DUT and the M.2 connector on the adapter, or may be a standard PCIe Interposer (e.g., PE041UIA-X) inserted between the PCIe slot connector on the adapter and the host PCIe slot. In either case, this will provide a means for the M.2 SSD DUT to be connected to a PCIe host slot while still providing a means for a Teledyne LeCroy analyzer to capture, decode and display the data traffic from host to device (see illustration below).

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