

MCIO x8 PCIe Gen-6 Test Adapters

User Manual



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Introduction

This user's guide documents the MCIO x8 PCIe Gen-6 Test Adapters. The Test Adapters shown in Figure 1, tests MCIO x8 PCIe Gen-6 hosts and devices against PCIe Specification. The model numbers for the MCIO x8 PCIe Gen-6 Test Adapters are as follows:

Table 1. Available Models

MODEL NUMBERS	DESCRIPTION
PCIEG6-MCIOx8-TPA2.4-P	MCIO x8 PCIe Gen-6 Plug w/ 2.4 mm Female Cables
PCIEG6-MCIOx8-MMPX-R	MCIO x8 PCIe Gen-6 MMPX Receptacle (w/ Accessories)
PCIEG6-MCIOx8-TPA2.4-PR	MCIO x8 PCIe Gen-6 Plug w/ 2.4 mm Female Cables, PCIe Gen-6 MMPX Receptacle (w/ Accessories), and Mounting Kit

The plug and receptacle Test Adapter fixtures allow easy access, via high-speed MMPX connections (receptacle fixture) and 2.4 mm female cables (plug fixture), to measure or inject data signals.

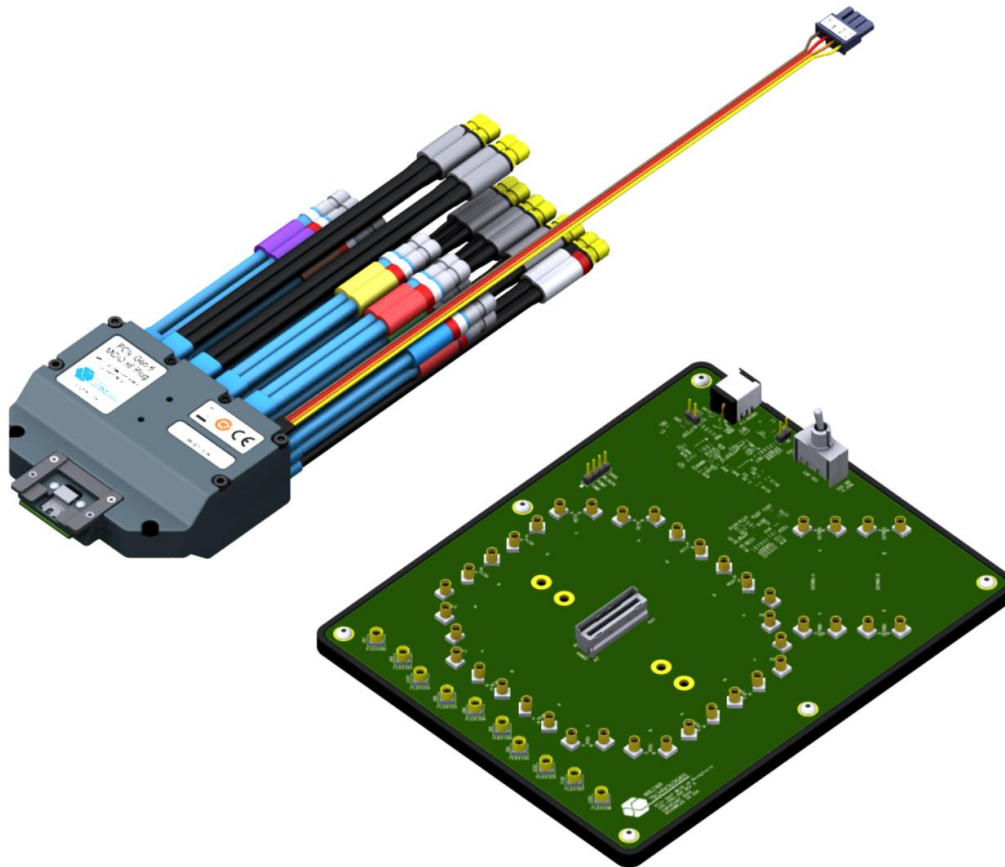


Figure 1. MCIO x8 PCIe Gen-6 Test Adapters

MCIO x8 PCIe Gen-6 Optional Accessories

There are numerous Huber+Suhner PCIe Gen-6 accessories, such as adapters or cable assemblies, available for purchase from Richardson RFPD. The table below indicates the Huber+Suhner part numbers for the optional accessories.

Table 2. Optional PCIe Gen-6 Accessories from Richardson RFPD

HUBER+SUHNER PART NUMBER	HUBER+SUHNER DESCRIPTION	DETAILS
84071648	33MMPX-SK-50-1E	RF Adapter – Between series MMPX Male to SK (2.92 mm) Female
84071696	33SK-MMPX-50-1E	RF Adapter – Between series SK Male to MMPX Female
80351638	024E573HTCR092HTCR2.5PM1PS-STD	RF Cable – SMP Female to SMA Female, 2.5" Long (63.5 mm)
85105115	PCI SF102E/11SK/11SK/914mm	RF Cable – SK Male to SK Male, 36" Long (914 mm)
85108590	PMA SF102E/11MMPX/11MMPX/305mm	RF Cable – MMPX Male to MMPX Male, 12" Long (305 mm)
85119609	024E430CR092KCR4PM1PS-STD	RF Cable – MMPX Male to SK Female, 4" Long (102 mm)
85152826	PCI SF102E/11MMPX/11SK/914mm	RF Cable – MMPX Male to SK Male, 36" Long (914 mm)
85174413	PCI 65_MMPX Kit	MMPX 50-Ohm Terminator Kit

NOTE: To avoid damaging attaching cables or the test adapters, use the handling techniques described in the Care and Handling section before making any connections or configuring a test setup.

Always use a static-safe workstation when performing tests, as explained in the “Electrostatic Discharge Information” section.

Product Inspection

Upon receiving the MCIO x8 PCIe Gen-6 Test Adapters from Wilder Technologies, perform the following product inspection:

- Inspect the outer shipping container, foam-lined instrument case, and product for damage. Retain the outer cardboard shipping container until the contents of the shipment have been inspected for completeness and the product has been checked mechanically and electrically. Use the foam-lined instrument-case for secure storage of the Wilder Technologies MCIO x8 PCIe Gen-6 Test Adapters when not in use.
- Locate the shipping list and verify that all items ordered were received.
- In the unlikely event that the product is defective or incomplete, the “Limited Warranty” (see the Wilder web site) discusses how to contact Wilder Technologies for technical assistance and/or how to package the product for return.

MCIO x8 PCIe Gen-6 Test Adapters and Handling Precautions

The MCIO x8 PCIe Gen-6 Test Adapters require careful handling to avoid damage. Improper handling techniques, or using too small of a cable bend radius, can damage the coaxial cable connections. This can occur at any point along the cable. To achieve optimum performance and to prolong the MCIO x8 PCIe Gen-6 Test Adapters' life, observe the following handling precautions:

- **CAUTION 1: Avoid Torque Forces (Twisting)**
While individual coaxial cables mating to the fixture may have some rotational freedom, twisting the fixture as a unit, with one end held stationary, may damage, or severely degrade performance. Adherence to Caution 5 (below) helps to avoid twisting.
- **CAUTION 2: Avoid Sharp Cable Bends**
Never bend coaxial cables into a radius of 26 mm (1-inch) or less. Never bend cables greater than 90°. Single or multiple cable bends must be kept within this limit. Bending mated cables to the fixture less than a 26mm (1-Inch) radius will permanently damage or severely degrade overall performance.
- **CAUTION 3: Avoid Cable Tension (Pull Forces)**
Never apply tension (pull forces) to an individual coaxial cable that is greater than 2.3 kg (5 lbs.). To avoid applying tension, always place accessories and equipment on a surface that allows adjustment to eliminate tension on the cables. Use adjustable elevation stands or apparatus to accurately place and support the fixture.

If the test set-up requires repositioning, first loosen, or disconnect the cable connections to avoid twisting, bending, or tension.

- **CAUTION 4: Independently Support Instrument Cables or Accessories**
Excessive weight from instrument cables and/or accessories connected to the test fixtures can cause damage or affect the test fixture's performance. Be sure to provide appropriate means to support and stabilize all test set-up components.

General Test Adapters, Cable, and Connector

Observing simple precautions can ensure accurate and reliable measurements.

Handling and Storage

Before each use of MCIO x8 PCIe Gen-6 Test Adapters, ensure that all connectors are clean. Handle all cables carefully and store the test fixtures in the foam-lined instrument case when not in use, if possible. Do not set connectors contact end down. Install the connector protective end caps when the test fixtures are not in use.

Visual Inspection

Be sure to inspect all cables and MMPX connectors carefully before making a connection. Inspect all cables for metal particles, scratches, deformed threads, dents, or bent, broken, or misaligned center conductors. Do not use damaged cables.

Cleaning

If necessary, clean the connectors using low-pressure (less than 60 PSI) compressed air or nitrogen with an effective oil-vapor filter and condensation trap. Clean the cable threads, if necessary, using a lint-free swab or cleaning cloth moistened with isopropyl alcohol. Always completely dry the connector before use. Do not use abrasives to clean the connectors. Re-inspect connectors, making sure no particles or residue remains.

Making Connections

Before making any connections, review the “Care and Handling Precautions” section. Follow these guidelines when making connections:

- Align cables carefully
- Make preliminary connection lightly
- To tighten, turn connector nut only
- Do not apply bending force to cable
- Do not over-tighten preliminary connections
- Do not twist or screw-in cables
- Use an appropriately sized torque wrench, and do not tighten past the “break” point of the torque wrench (normally set to 5-inch pounds)

Electrostatic Discharge Information

Protection against electrostatic discharge (ESD) is essential while connecting, inspecting, or cleaning the MCIO x8 PCIe Gen-6 Test Adapters and connectors attached to a static-sensitive circuit (such as those found in test set).

Electrostatic discharge can damage or destroy electronic components. Be sure to perform all work on electronic assemblies at a static-safe workstation, using two types of ESD protection:

- Conductive table-mat and wrist-strap combination
- Conductive floor-mat and heel-strap combination

When used together, both types provide a significant level of ESD protection. Used alone, the table-mat and wrist-strap combination provide adequate ESD protection. To ensure user safety, the static-safe accessories must provide at least 1 M Ω of isolation from ground. Acceptable ESD accessories may be purchased from a local supplier.

WARNING: These techniques for a static-safe workstation should not be used when working on circuitry with a voltage potential greater than 500 volts.

User Models

The MCIO x8 PCIe Gen-6 Test Adapters support electrical testing of the PCIe Specification. It can perform well beyond the scope of measurements required, limited only by the specifications, environmental, care and handling as stated in this document.

MCIO x8 PCIe Gen-6 Receptacle Test Adapter

- 12V DC Power Jack
 - The MCIO x8 Receptacle uses a 12V DC power jack and is powered by a 12V DC power brick.

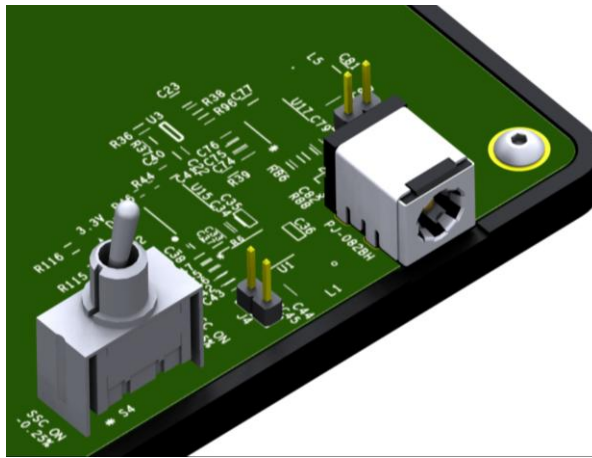


Figure 3. Receptacle 12V DC Power Connector (J1)

- Sideband Signal Header Pins
 - The MCIO x8 Receptacle has low speed header pins to connect to certain sideband signals from the device DUT.

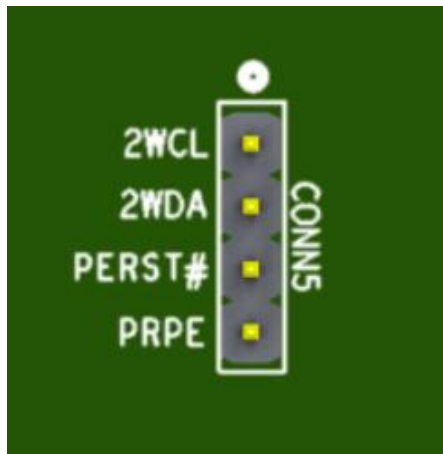


Figure 4. Receptacle Sideband Signal Header Pins (CONN5)

- REFCLK/SSC
 - The MCIO x8 Receptacle can provide a REFCLK with no SSC, or two SSC settings of 0.25% down spread or 0.5% down spread. This selection is made using the REFCLK SSC selection switch. With the switch placed in the middle position, the MCIO x8 Receptacle will provide a 100 MHz REFCLK with no SSC. Placing the switch in the “SSC ON -0.5%” position will enable 0.5% down spread SSC to the REFCLK and placing the switch in the “SSC ON -0.25%” position will enable 0.25% down spread to the REFCLK. These SSC settings do not apply to an externally provided REFCLK and only to the REFCLK provided by the MCIO x8 Receptacle fixture.



Figure 4. Receptacle REFCLK SSC Selection Switch (S4)

- Lane characterization
 - The 2x through channels can be used to characterize the specific traces on the MCIO x8 Receptacle. The de-embed channel is a replica of the “A” Signal Path and “B” Signal Path which corresponds to the silkscreen located near the via transitions of the signal. Therefore, by de-embedding half of the 2X through channel from the de-embed channel the TX and RX channels minus connector pads can be characterized.

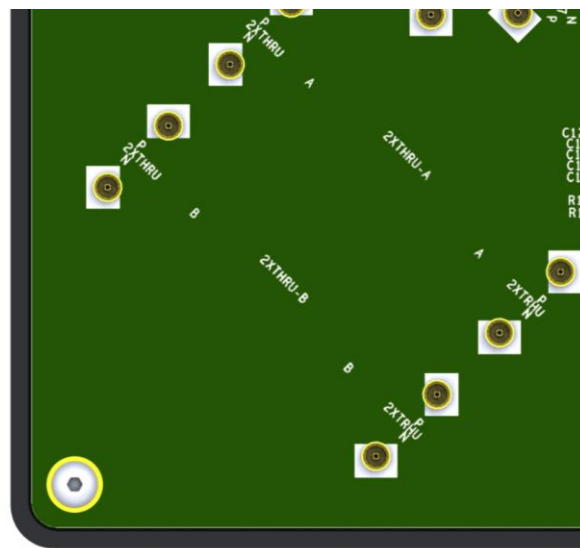


Figure 5. Receptacle 2X Thru Channels

MCIO x8 PCIe Gen-6 Plug Test Adapter

- Sideband Signal Cable Assembly
 - The MCIO x8 Plug has a low-speed cable assembly to connect to certain sideband signals from the host.
 - **Left side:** Microfit receptacle Connector (Molex PN 43645-0400) with contact pins (Molex PN 43030-0011)
 - **Right side:** Microfit plug connector (Molex PN 43031-0011) with contact pins (Molex PN 43640-0401)



Figure 6. Plug Sideband Signal Cable Assembly

Table 3. MCIO x8 PCIe Gen-6 Plug: 4-Position Cable Connector (Low-Speed).

The low-speed signals are passive connections to their respective connections on the MCIO x8 connector. Signal functions, logic signal voltage levels, etc. are defined in the CopprLink Internal Cable Specification for PCI Express 5.0 and 6.0, Version 1.0, March 7th, 2024.

LABEL	PIN NO.	COLOR ID FOR PLUG	DESCRIPTION
2WCL	B8	YELLOW	2WCL (2-Wire Interface Clock)
2WDA	B9	ORANGE	2WDA (2-Wire Interface Data)
PERST#	B11	RED	PERST (PCIe Reset)
PRPE	B12	BROWN	PRPE (P Resence/ P ESTI)

Mechanical and Environmental Specifications

NOTE: All specifications in this manual are subject to change.

Table 4. General Specifications

ITEM	DESCRIPTION
Usage Environment	Controlled indoor environment
MCIO x8 PCIe Gen-6 Plug (L x W x H)	8.5" x 3.1" x 1.1" (215.9 mm x 78.7 mm x 27.9 mm)
MCIO x8 PCIe Gen-6 Receptacle (L x W x H)	6.9" x 5.6" x 1.4" (175.3 mm x 142.2 mm x 35.6 mm)
Operating Temperature	0°C to +55°C (32°F to +131°F) (Characteristic)
Storage Temperature	-40°C to +70°C (-40°F to +158°F) (Characteristic)

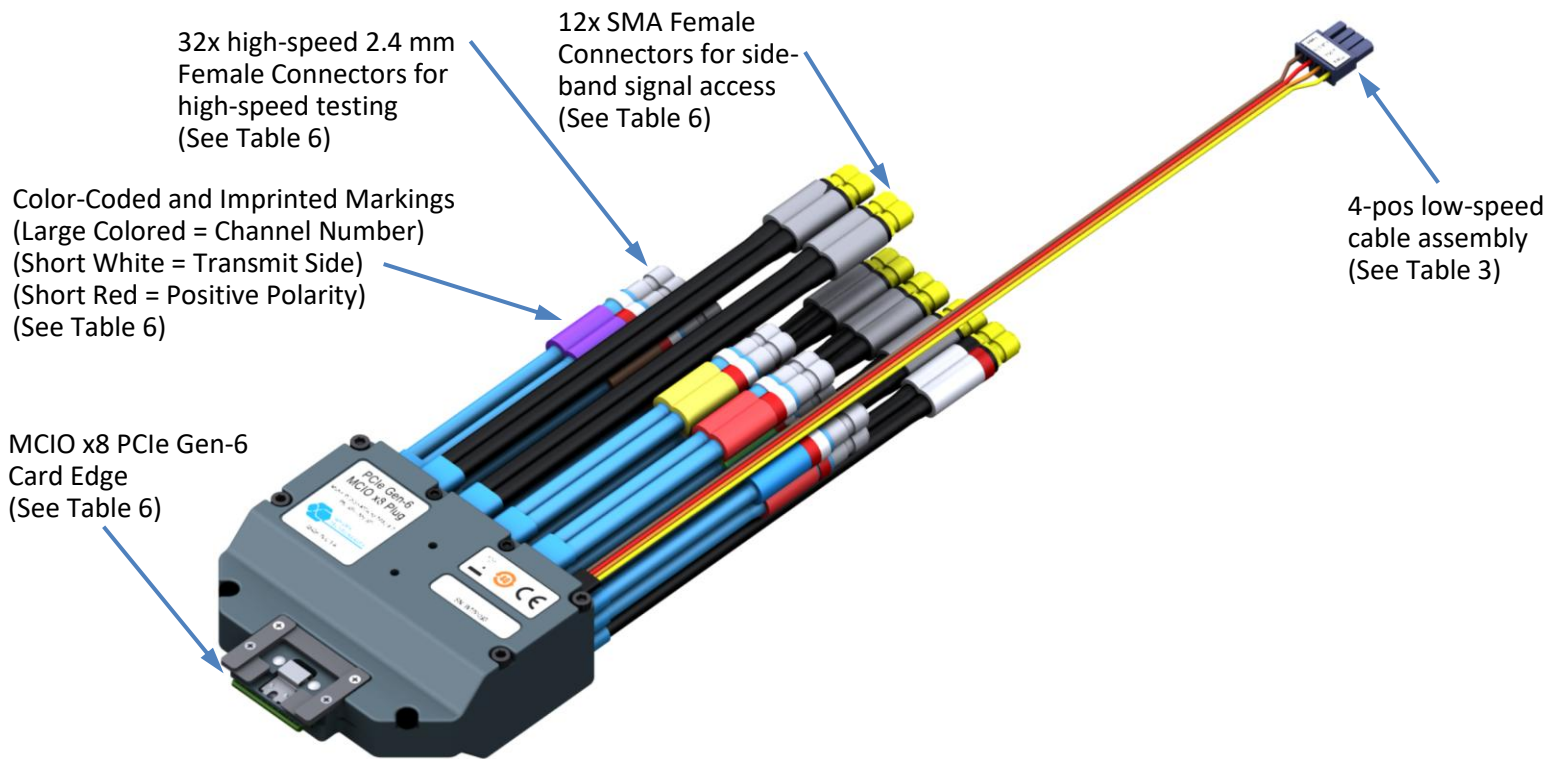


Figure 7. The MCIO x8 PCIe Gen-6 Plug

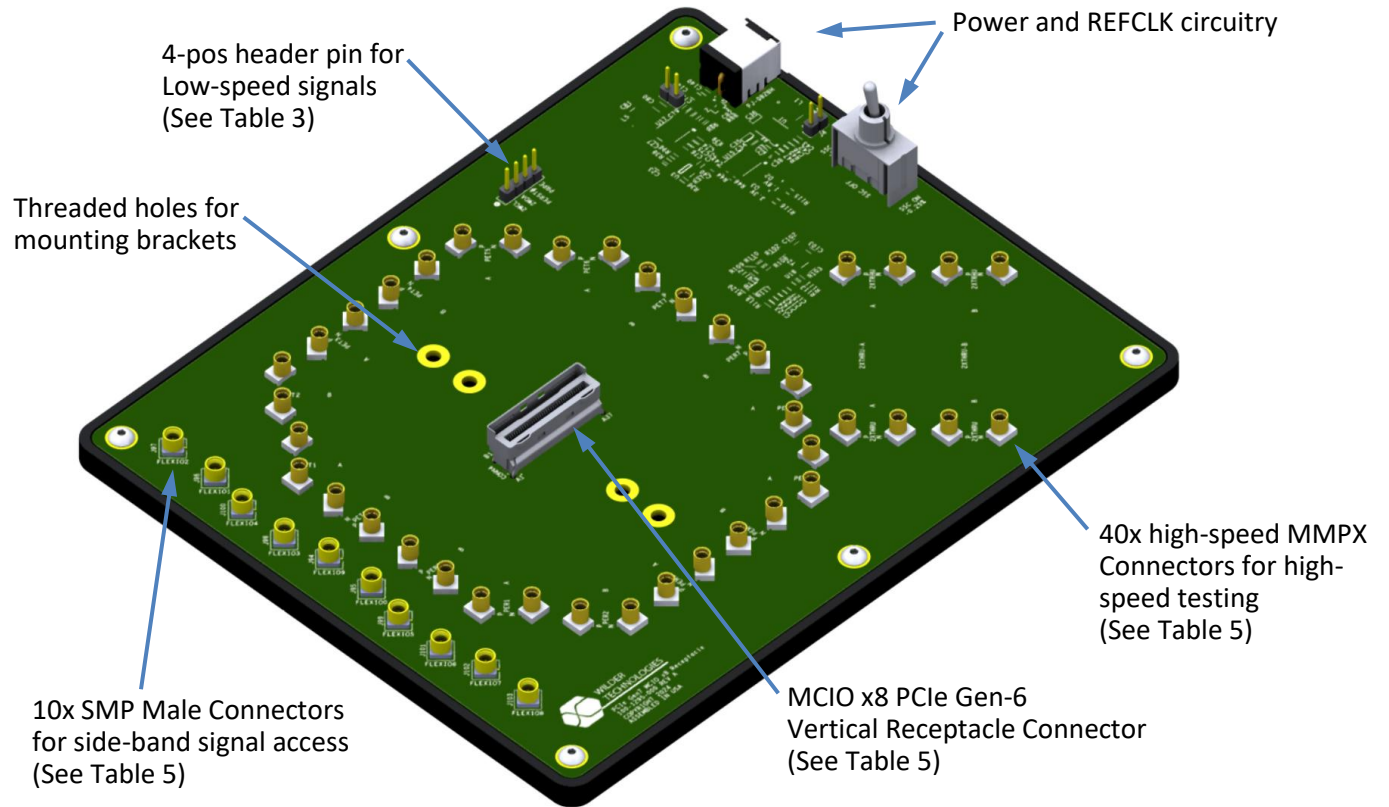


Figure 8. The MCIO x8 PCIe Gen-6 Receptacle

Table 5. MCIO x8 PCIe Gen-6 Receptacle Pin Assignments

Pin Description	Connector Pin Number	Device DUT Destination
Ground	A1, A4, A7, A10, A13, A16, A19, A22, A25, A28, A31, A34, A37, B1, B4, B7, B10, B13, B16, B19, B22, B25, B28, B31, B34, B37	GND
PERp0 (PCIe RX Lane 0 Positive)	A2	PERp0
PERn0 (PCIe RX Lane 0 Negative)	A3	PERn0
PERp1 (PCIe RX Lane 1 Negative)	A5	PERp1
PERn1 (PCIe RX Lane 1 Positive)	A6	PERn1
PERp2 (PCIe RX Lane 2 Positive)	A14	PERp2
PERn2 (PCIe RX Lane 2 Negative)	A15	PERn2
PERp3 (PCIe RX Lane 3 Negative)	A17	PERp3
PERn3 (PCIe RX Lane 3 Positive)	A18	PERn3
PERp4 (PCIe RX Lane 4 Positive)	A20	PERp4
PERn4 (PCIe RX Lane 4 Negative)	A21	PERn4
PERp5 (PCIe RX Lane 5 Negative)	A23	PERp5
PERn5 (PCIe RX Lane 5 Positive)	A24	PERn5
PERp6 (PCIe RX Lane 6 Positive)	A32	PERp6
PERn6 (PCIe RX Lane 6 Negative)	A33	PERn6
PERp7 (PCIe RX Lane 7 Negative)	A35	PERp7
PERn7 (PCIe RX Lane 7 Positive)	A36	PERn7
PETp0 (PCIe TX Lane 0 Positive)	B2	PETp0
PETn0 (PCIe TX Lane 0 Negative)	B3	PETn0
PETp1 (PCIe TX Lane 1 Negative)	B5	PETp1
PETn1 (PCIe TX Lane 1 Positive)	B6	PETn1
PETp2 (PCIe TX Lane 2 Positive)	B14	PETp2
PETn2 (PCIe TX Lane 2 Negative)	B15	PETn2
PETp3 (PCIe TX Lane 3 Negative)	B17	PETp3
PETn3 (PCIe TX Lane 3 Positive)	B18	PETn3
PETp4 (PCIe TX Lane 4 Positive)	B20	PETp4
PETn4 (PCIe TX Lane 4 Negative)	B21	PETn4
PETp5 (PCIe TX Lane 5 Negative)	B23	PETp5
PETn5 (PCIe TX Lane 5 Positive)	B24	PETn5
PETp6 (PCIe TX Lane 6 Positive)	B32	PETp6
PETn6 (PCIe TX Lane 6 Negative)	B33	PETn6
PETp7 (PCIe TX Lane 7 Negative)	B35	PETp7
PETn7 (PCIe TX Lane 7 Positive)	B36	PETn7
FLEXIO9_A (Flexible Sideband 9)	A8	FLEXIO9_A
FLEXIO0_A (Flexible Sideband 0)	A9	FLEXIO0_A
RCLK_Ap (Reference Clock Positive)	A11	REFCLK_Ap
RCLK_An (Reference Clock Negative)	A12	REFCLK_An
FLEXIO5_A (Flexible I/O Sideband 5)	A26	FLEXIO5_A
FLEXIO6_A (Flexible I/O Sideband 6)	A27	FLEXIO6_A
FLEXIO7_A (Flexible I/O Sideband 7)	A29	FLEXIO7_A

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FLEXIO8_A (Flexible I/O Sideband 8)	A30	FLEXIO8_A
2WCL_A (2-Wire Interface Clock)	B8	2WCL_A
2WDA_A (2-Wire Interface Data)	B9	2WDA_A
PERST#_A (PCIe Reset)	B11	PERST#_A
PRPE_A (PResence/PESTI)	B12	PRPE_A
FLEXIO3_A (Flexible I/O Sideband 3)	B26	FLEXIO3_A
FLEXIO4_A (Flexible I/O Sideband 4)	B27	FLEXIO4_A
FLEXIO1_A (Flexible I/O Sideband 1)	B29	FLEXIO1_A
FLEXIO2_A (Flexible I/O Sideband 2)	B30	FLEXIO2_A

Table 6. MCIO x8 PCIe Gen-6 Plug Pin Assignments

Pin Description	Connector Pin Number	Device DUT Destination	Color Identification
Ground	A1, A4, A7, A10, A13, A16, A19, A22, A25, A28, A31, A34, A37, B1, B4, B7, B10, B13, B16, B19, B22, B25, B28, B31, B34, B37	GND	N/A
PERp0 (PCIe RX Lane 0 Positive)	A2	PERp0	RED (Red polarity band)
PERn0 (PCIe RX Lane 0 Negative)	A3	PERn0	RED
PERp1 (PCIe RX Lane 1 Negative)	A5	PERp1	YELLOW (Red polarity band)
PERn1 (PCIe RX Lane 1 Positive)	A6	PERn1	YELLOW
PERp2 (PCIe RX Lane 2 Positive)	A14	PERp2	BLUE (Red polarity band)
PERn2 (PCIe RX Lane 2 Negative)	A15	PERn2	BLUE
PERp3 (PCIe RX Lane 3 Negative)	A17	PERp3	GREEN (Red polarity band)
PERn3 (PCIe RX Lane 3 Positive)	A18	PERn3	GREEN
PERp4 (PCIe RX Lane 4 Positive)	A20	PERp4	WHITE (Red polarity band)
PERn4 (PCIe RX Lane 4 Negative)	A21	PERn4	WHITE
PERp5 (PCIe RX Lane 5 Negative)	A23	PERp5	ORANGE (Red polarity band)
PERn5 (PCIe RX Lane 5 Positive)	A24	PERn5	ORANGE
PERp6 (PCIe RX Lane 6 Positive)	A32	PERp6	BROWN (Red polarity band)
PERn6 (PCIe RX Lane 6 Negative)	A33	PERn6	BROWN
PERp7 (PCIe RX Lane 7 Negative)	A35	PERp7	VIOLET (Red polarity band)
PERn7 (PCIe RX Lane 7 Positive)	A36	PERn7	VIOLET
PETp0 (PCIe TX Lane 0 Positive)	B2	PETp0	RED (Red polarity band, white TX band)
PETn0 (PCIe TX Lane 0 Negative)	B3	PETn0	RED (White TX band)
PETp1 (PCIe TX Lane 1 Negative)	B5	PETp1	YELLOW (Red polarity band, white TX band)
PETn1 (PCIe TX Lane 1 Positive)	B6	PETn1	YELLOW (white TX band)
PETp2 (PCIe TX Lane 2 Positive)	B14	PETp2	BLUE (Red polarity band, white TX band)
PETn2 (PCIe TX Lane 2 Negative)	B15	PETn2	BLUE (white TX band)
PETp3 (PCIe TX Lane 3 Negative)	B17	PETp3	GREEN (Red polarity band, white TX band)
PETn3 (PCIe TX Lane 3 Positive)	B18	PETn3	GREEN (White TX band)
PETp4 (PCIe TX Lane 4 Positive)	B20	PETp4	WHITE (Red polarity band, white TX band)
PETn4 (PCIe TX Lane 4 Negative)	B21	PETn4	WHITE (White TX band)
PETp5 (PCIe TX Lane 5 Negative)	B23	PETp5	ORANGE (Red polarity band, white TX band)
PETn5 (PCIe TX Lane 5 Positive)	B24	PETn5	ORANGE (White TX band)
PETp6 (PCIe TX Lane 6 Positive)	B32	PETp6	BROWN (Red polarity band, white TX band)
PETn6 (PCIe TX Lane 6 Negative)	B33	PETn6	BROWN (White TX band)

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PETp7 (PCIe TX Lane 7 Negative)	B35	PETp7	VIOLET (Red polarity band, white TX band)
PETn7 (PCIe TX Lane 7 Positive)	B36	PETn7	VIOLET (White TX band)
FLEXIO9_A (Flexible Sideband 9)	A8	FLEXIO9_A	GRAY
FLEXIO0_A (Flexible Sideband 0)	A9	FLEXIO0_A	GRAY
RCLK_Ap (Reference Clock Positive)	A11	REFCLK_Ap	GRAY
RCLK_An (Reference Clock Negative)	A12	REFCLK_An	GRAY
FLEXIO5_A (Flexible I/O Sideband 5)	A26	FLEXIO5_A	GRAY
FLEXIO6_A (Flexible I/O Sideband 6)	A27	FLEXIO6_A	GRAY
FLEXIO7_A (Flexible I/O Sideband 7)	A29	FLEXIO7_A	GRAY
FLEXIO8_A (Flexible I/O Sideband 8)	A30	FLEXIO8_A	GRAY
2WCL_A (2-Wire Interface Clock)	B8	2WCL_A	See Table 3
2WDA_A (2-Wire Interface Data)	B9	2WDA_A	See Table 3
PERST#_A (PCIe Reset)	B11	PERST#_A	See Table 3
PRPE_A (PResence/PESTI)	B12	PRPE_A	See Table 3
FLEXIO3_A (Flexible I/O Sideband 3)	B26	FLEXIO3_A	GRAY
FLEXIO4_A (Flexible I/O Sideband 4)	B27	FLEXIO4_A	GRAY
FLEXIO1_A (Flexible I/O Sideband 1)	B29	FLEXIO1_A	GRAY
FLEXIO2_A (Flexible I/O Sideband 2)	B30	FLEXIO2_A	GRAY

Electrical Specifications

NOTE: All specifications in this manual are subject to change.

Table 7. Electrical Specifications

SPECIFICATION	TYPICAL	NOTES
Differential Impedance (ohms), 100 ps Rise Time	85 ± 5%	All Differential Pairs, Receptacle and Plug, excluding PCIe MCIO x8 connector.
Differential Impedance (ohms), 100 ps Rise Time	100 ± 5%	REFCLK Differential Pairs, Receptacle and Plug, excluding PCIe MCIO x8 connector.
Impedance (ohms), 100 ps Rise Time	42.5 ± 5%	All Single-Ended High-Speed Signals, Receptacle and Plug, excluding PCIe MCIO x8 connector.
Impedance (ohms), 30 ps Rise Time	50 ± 7%	MMPX Connectors, 2.4mm/2.4mm Cables
NEXT (dB), at 16 GHz	-45	All Differential Pairs, single aggressor, with PCIe MCIO x8 connector and terminations
Current Carrying (A)	1.1	+3.3V Power

Typical High-Speed Serial Characteristics

The high-speed serial measurements of the MCIO x8 PCIe Gen-6 Test Adapters use a 4-port (50 Ω) VNA calibrated from 10 MHz to 56 GHz with 5600 points. The measurements are in the form of S-parameters.

The S-parameter measurements are renormalized to 42.5 Ω ports instead of 50 Ω ports. This was done so that the port impedance and adapter impedance match.

In addition, 2.92 mm to MMPX adapters and MMPX connectors are included in the S-parameter measurements, but they are then gated out of the return loss due to their 50 Ω impedance.

Ultimately, this post-processing makes the S-parameters accurately represent the performance of the high-speed channels of only the MCIO x8 adapters.

Characterization (Plug and Receptacle Independent Only)

To characterize the real high-speed channels of the adapters only (no connector), the 2x thru channels must be used. These 2x thru channels represent the signal path from the MMPX connector of each individual signal up to the pads of the MCIO x8 connector. To de-embed the measurement up to the connector pads, half of the 2x thru channel will be used to remove the receptacle signal path.

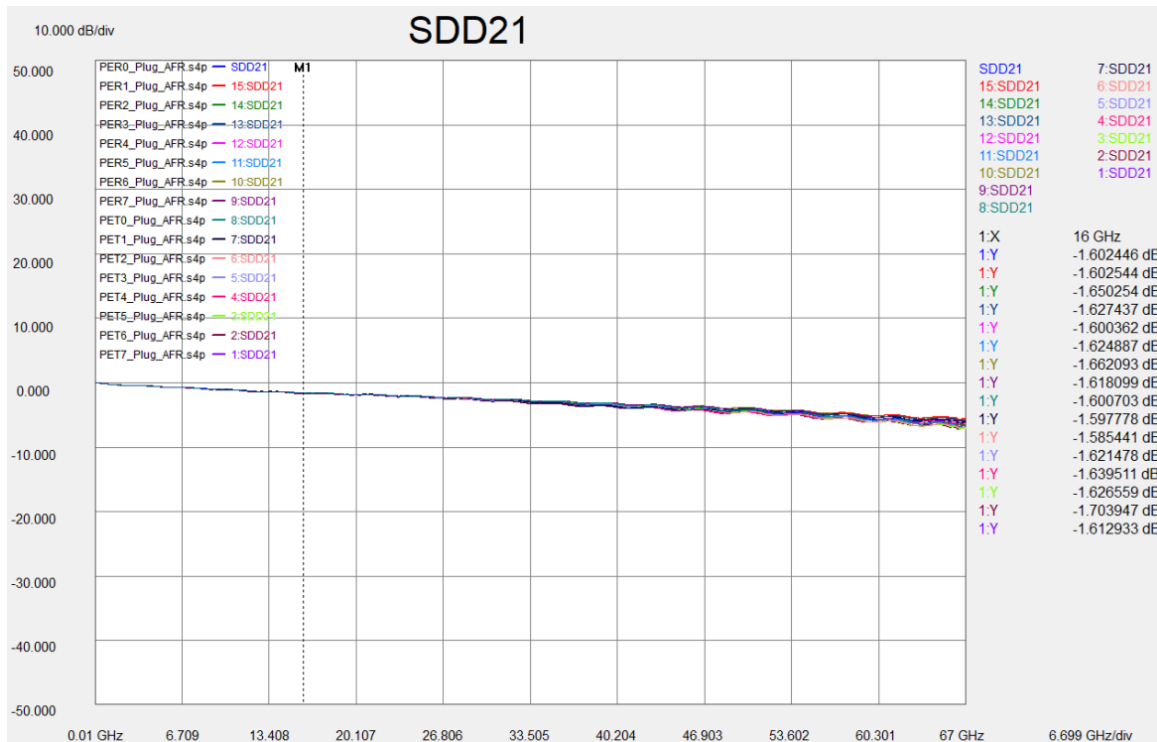


Figure 9. MCIO x8 Plug (PCIEG6-MCIOx8-TPA2.4-P) AFR Insertion Loss Measurement

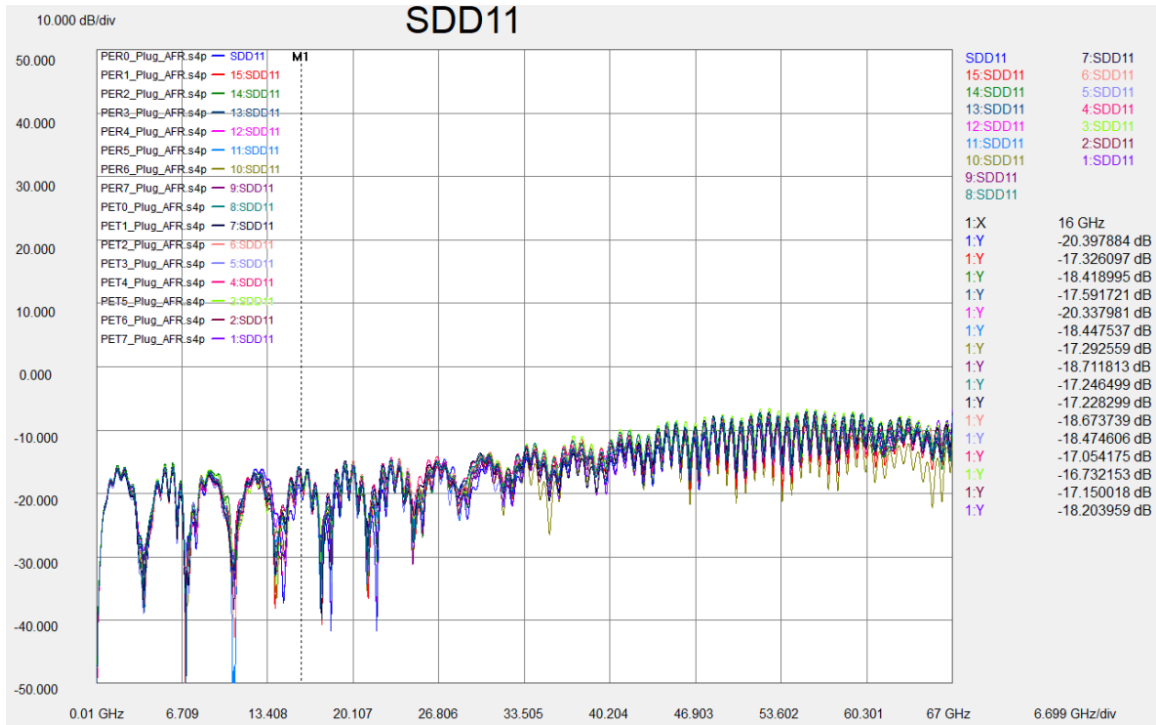


Figure 10. MCIO x8 Plug (PCIEG6-MCIOx8-TPA2.4-P) AFR Return Loss Measurement

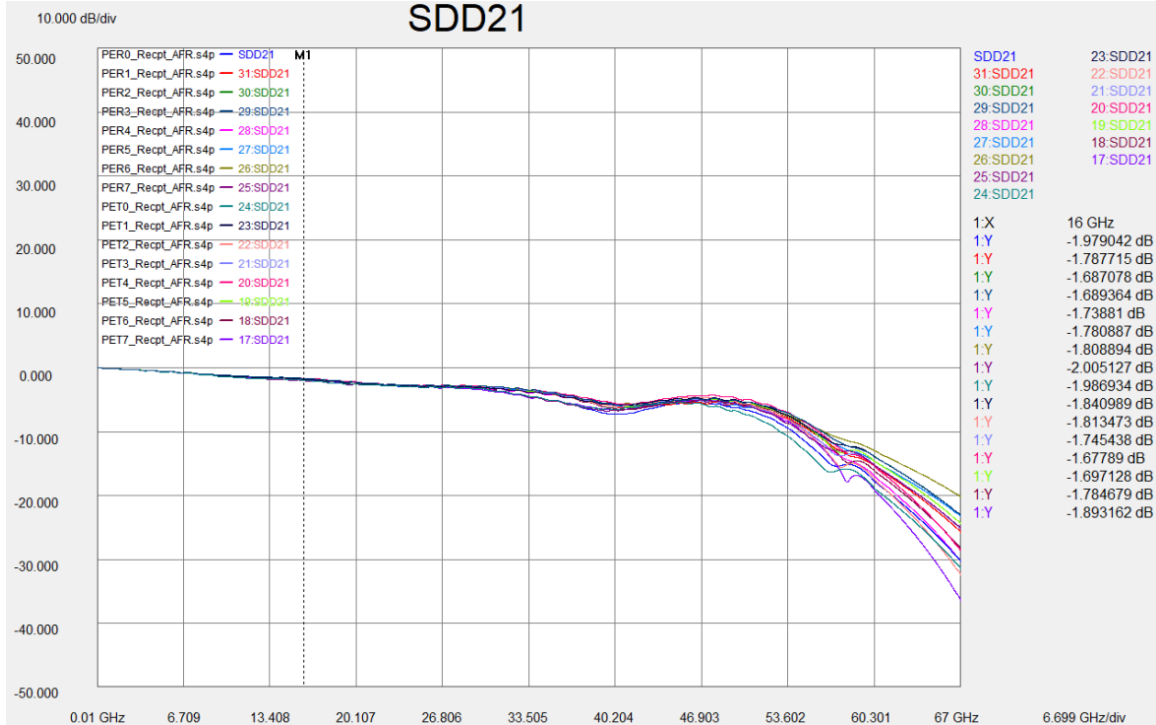


Figure 11. MCIO x8 Receptacle (PCIEG6-MCIOx8-MMPX-R) AFR Insertion Loss Measurement

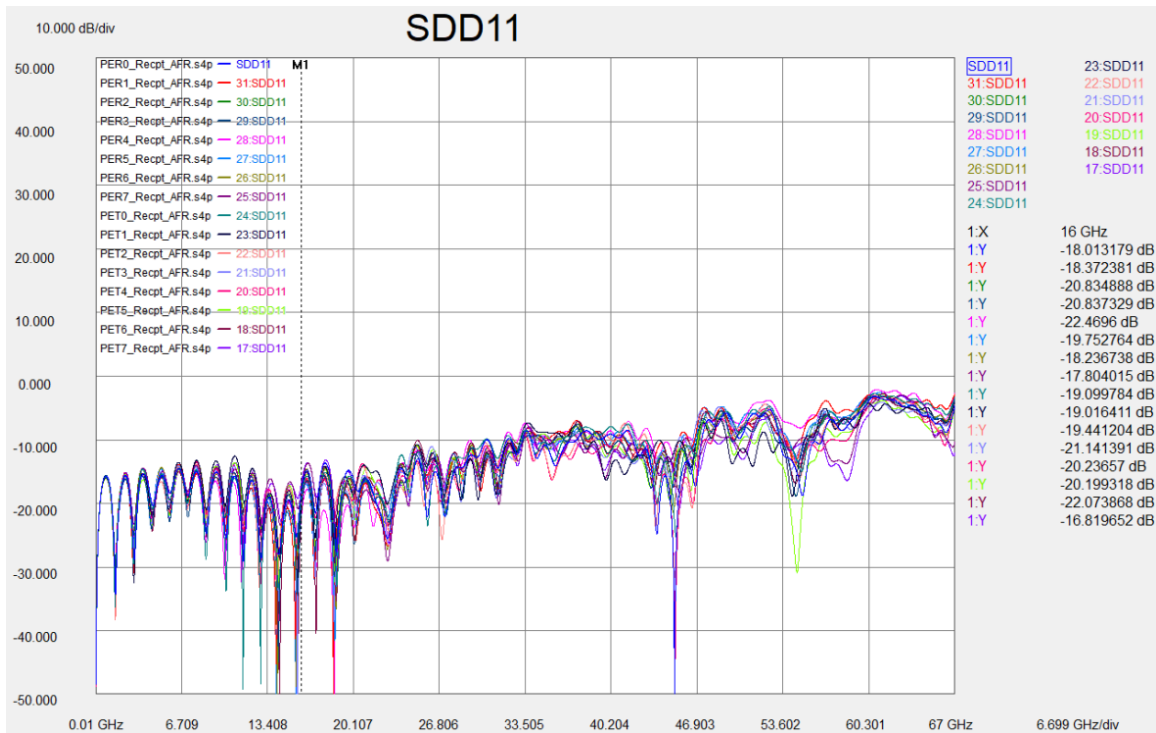


Figure 12. MCIO x8 Receptacle (PCIEG6-MCIOx8-MMPX-R) AFR Return Loss Measurement

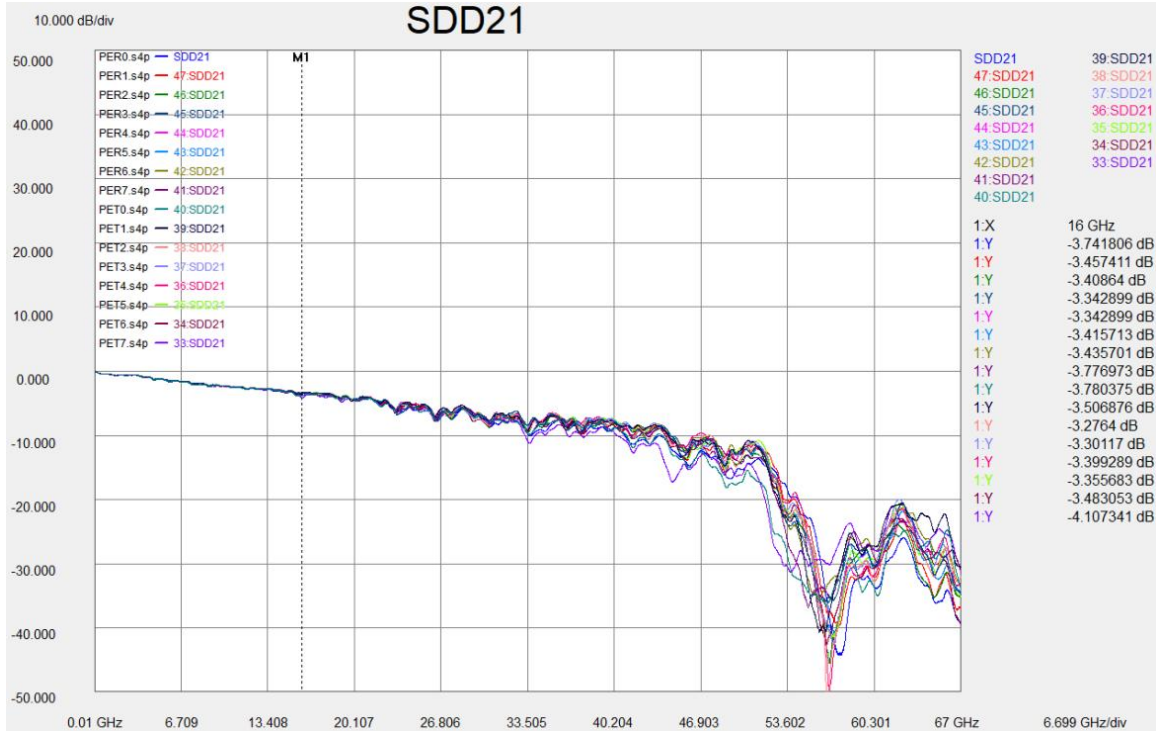


Figure 13. MCIO x8 Plug and Receptacle (PCIEG6-MCIOx8-TPA2.4-PR) Mated Insertion Loss

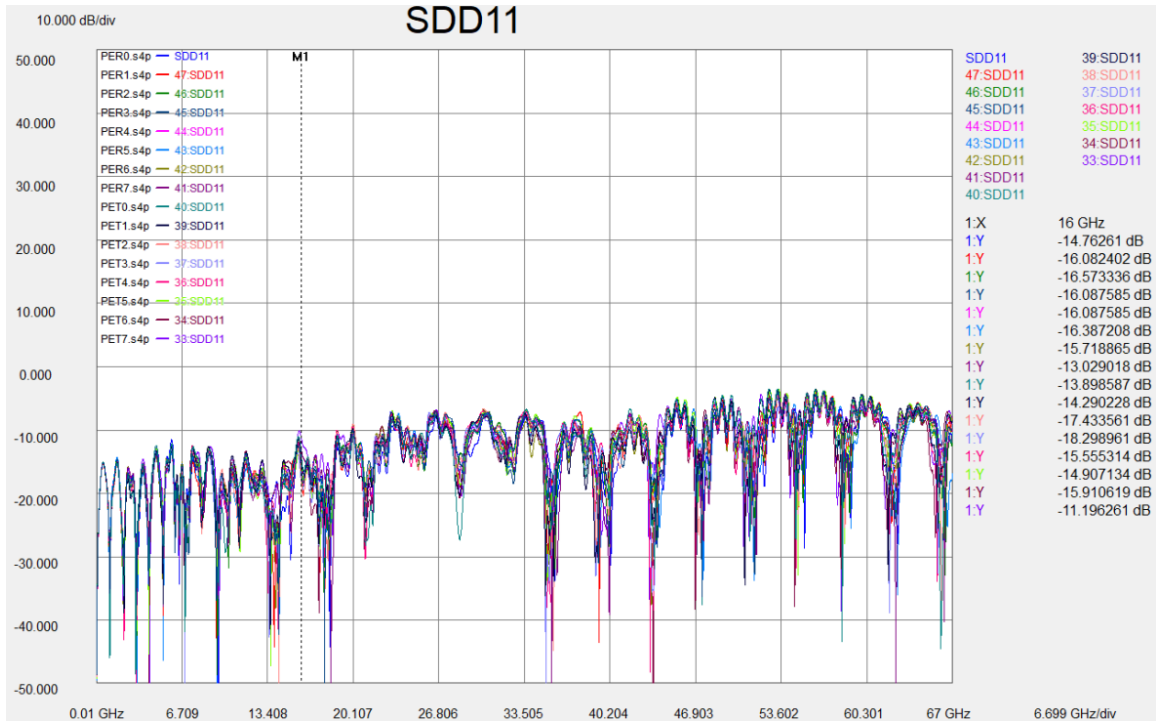


Figure 14. MCIO x8 Plug and Receptacle (PCIEG6-MCIOx8-TPA2.4-PR) Mated Return Loss

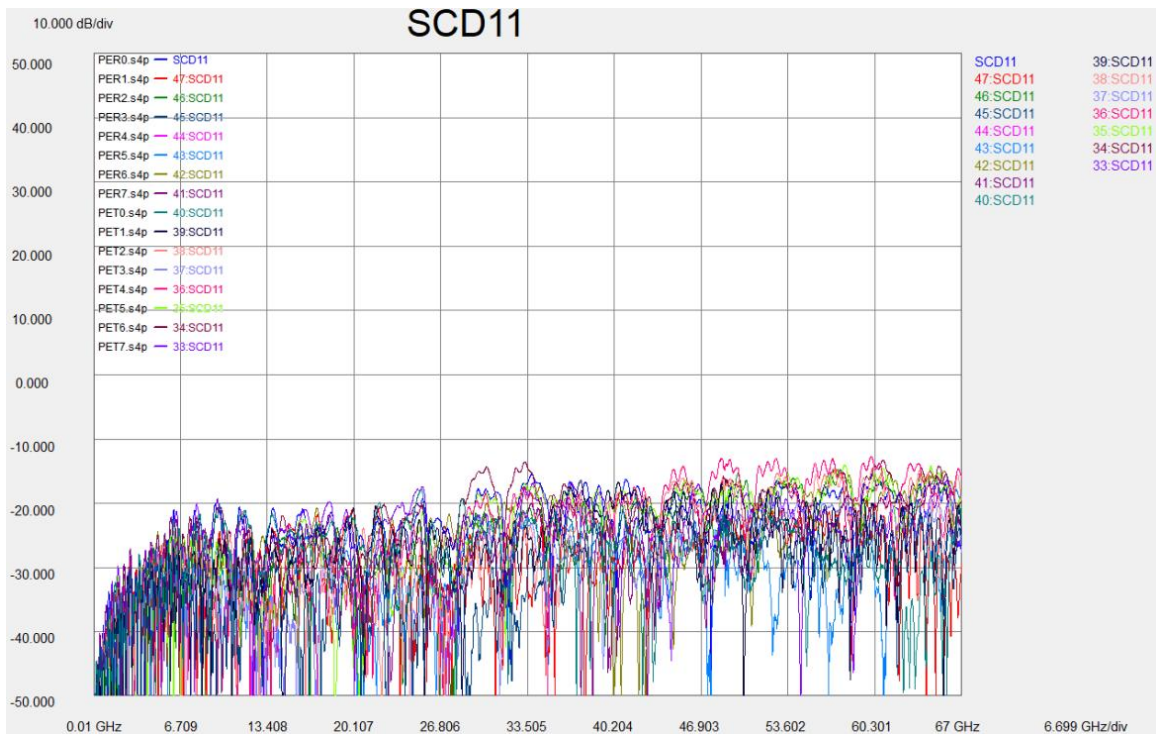


Figure 12. MCIO x8 Plug and Receptacle (PCIEG6-MCIOx8-TPA2.4-PR) Mated Conversion Loss

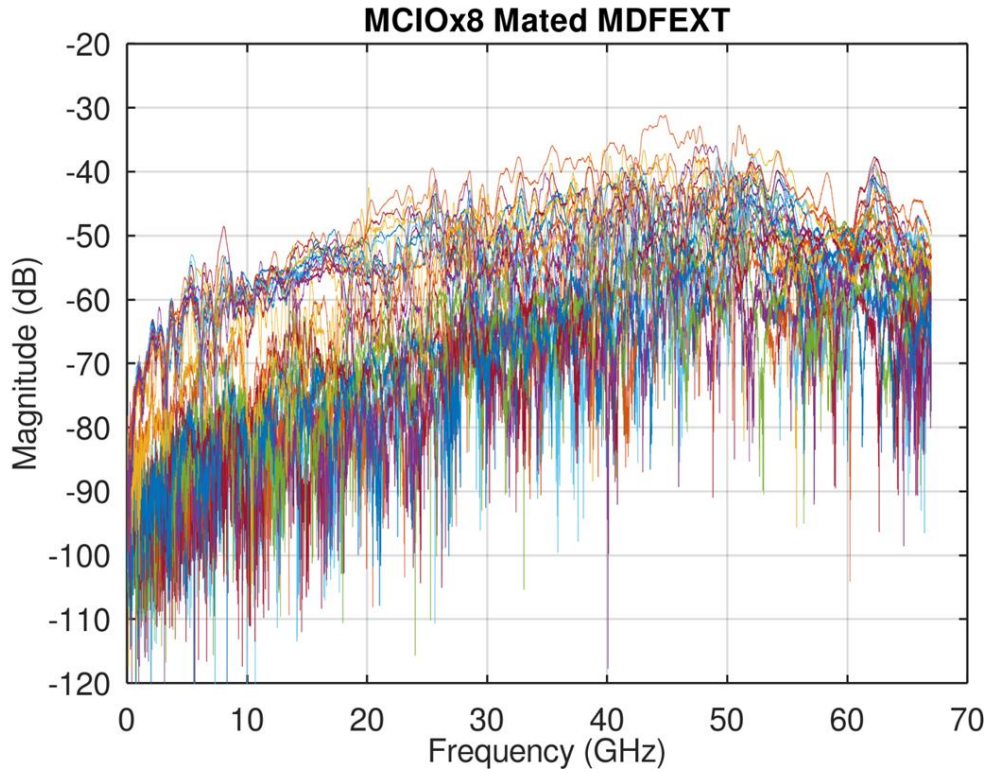


Figure 13. MCIO x8 Plug and Receptacle (PCIEG6-MCIOx8-TPA2.4-PR) Mated FEXT

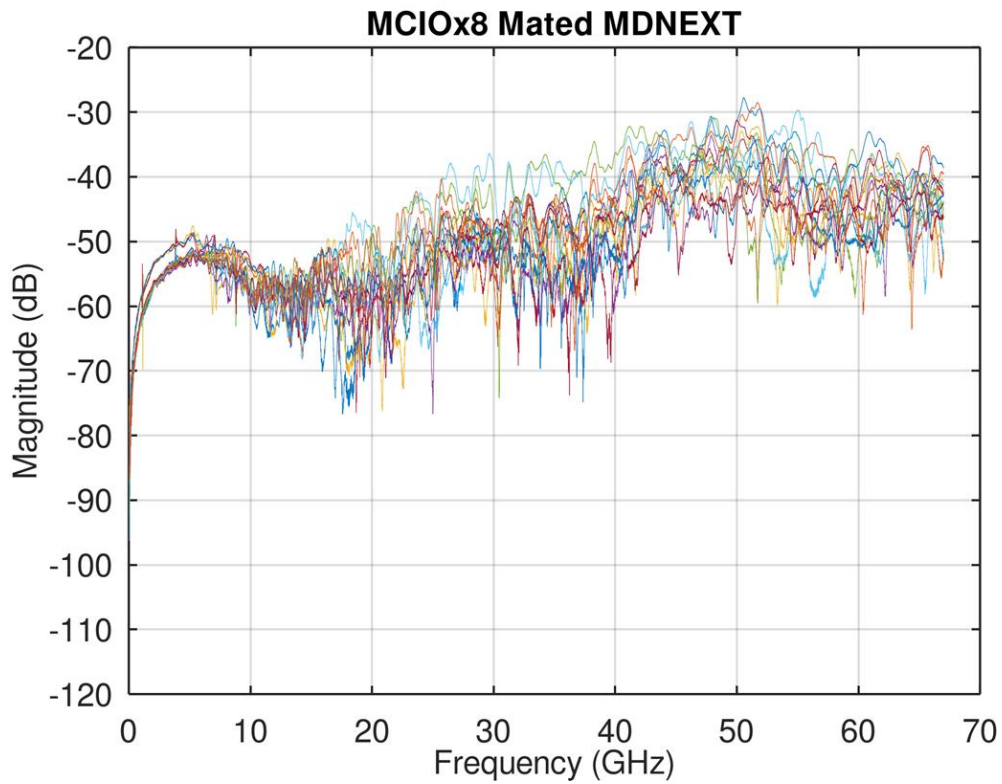


Figure 14. MCIO x8 Plug and Receptacle (PCIEG6-MCIOx8-TPA2.4-PR) Mated NEXT

Compliance with Environmental Legislation

Wilder Technologies, LLC, is dedicated to complying with the requirements of all applicable environmental legislation and regulations, including appropriate recycling and/or disposal of our products.



WEEE Compliance Statement

The European Union adopted Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE), with requirements that went into effect August 13, 2005. WEEE is intended to reduce the disposal of waste from electrical and electronic equipment by establishing guidelines for prevention, reuse, recycling and recovery.

Wilder Technologies has practices and processes in place to conform to the requirements in this important Directive.

In support of our environmental goals, effective January 1st, 2009 Wilder Technologies, LLC has partnered with EG Metals Inc. – Metal and Electronics Recycling of Hillsboro, Oregon, www.egmetalrecycling.com, to recycle our obsolete and electronic waste in accordance with the European Union Directive 2002/96/EC on waste electrical and electronic equipment ("WEEE Directive").

As a service to our customers, Wilder Technologies is also available for managing the proper recycling and/or disposal of all Wilder Technologies products that have reached the end of their useful life. For further information and return instructions, contact support@wilder-tech.com.



Compliance To RoHS 2 Substance Restrictions

Wilder Technologies, LLC certifies that the parts described in this document are compliant to the substance restrictions of Directive 2011/65/EU of the European Parliament, and of the Council of 8 June, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS 2 Directive), prohibiting the use in homogeneous materials in excess of the listed maximum concentration value, except in cases where use is allowed by applicable exemptions listed in Annex III and Annex IV of the Directive.

Compliance with RoHS 2 has been verified through internal controls at design and production sites, including establishment of processes for specifying and controlling materials and segregation of non-compliant parts, receipt of supplier declarations of compliance and/or analytical test.

Glossary of Terms

TERMINOLOGY	DEFINITION
Aggressor	A signal imposed on a system (i.e., cable assembly) to measure response on other signal carriers.
CEM	Card Electromechanical
Decibel (dB)	Ten times the common logarithm (i.e. log10) of the ratio of relative powers.
Informative	The designation of a test that is not required for compliance but is considered important from a characterization standpoint. It is provided for informational purposes only.
Insertion loss	The ratio, expressed in dB, of incident power to delivered power.
Far-end crosstalk (FEXT)	Crosstalk that is propagated in a disturbed channel in the same direction as the propagation of a signal in the aggressor channel. The terminals of the aggressor channel and the victim channel are usually close to each other.
MCIO	Formally called Mini Cool Edge IO (SFF-TA-1016) specification)
PCIe	Peripheral Component Interconnect Express
PCIEG6-MCIOx8-TPA	MCIO x8 PCIe Gen-6 Test Fixture. A specialized assembly that interfaces to an PCIe MCIO x8 (SFF-TA-1016) Receptacle or Plug and enables access of signals for measurement or stimulation.
Near-end crosstalk (NEXT)	Crosstalk that is propagated in a disturbed channel in the opposite direction as the propagation of a signal in the aggressor channel. The terminals of the aggressor channel and the victim channel are usually close to each other.
Normative	The designation of a test that is required for compliance.
Return Loss	The ratio, expressed in dB, of incident power to reflected power.
RoHS	Restriction of Hazardous Substances Directive
USB	Universal Serial Bus
Victim	A signal carrier on a system that has a response imposed on it by other signals in the system.

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