

Keysight M9021A Gen 2, x8 PCIe Cable Interface Module Installation

Description

The M9021A provides a cabled PCIe link between the M9018A chassis and an external host computer. It provides a very high bandwidth serial link between the devices. This link is transparent to computer applications and allows direct control of PXI and PXIe modules.



Unpacking Instructions

Note: Keysight's PXI Modules are shipped in materials that prevent static electricity damage. The modules should only be removed from the packaging in an anti-static area ensuring that correct anti-static precautions are taken. Store all modules in anti-static envelopes when not in use.

1. After unpacking the module, verify that all items listed on the packing list are included.
2. Inspect the module for shipping damage.
3. Save all packing material for storage or return shipment to Keysight.

Switch Settings

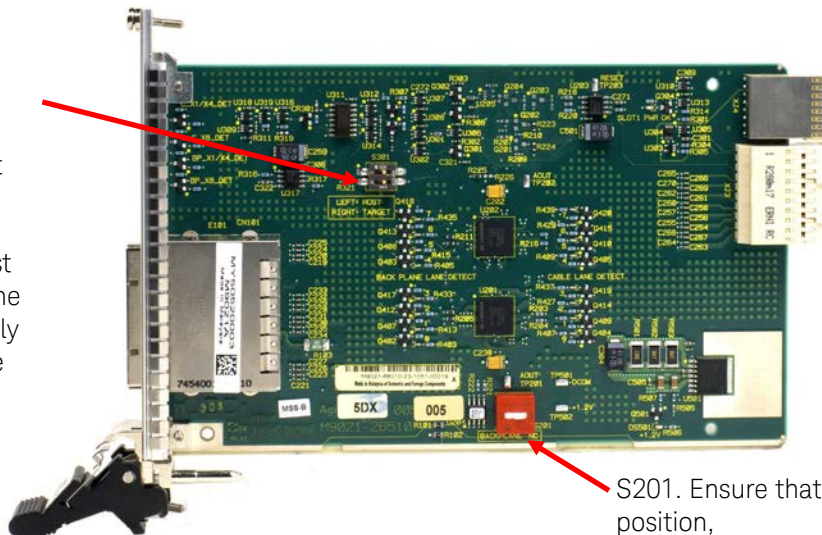
S201: Ensure that S201 is in the NC position.

S301: For applications, where the M9021A provides a cabled PCIe link between the M9018A chassis and an external host computer, install the M9021A in the system slot (slot 1) of the M9018A PXIe chassis. The two switches on S301 must be in the Target (right) position. This is the default setting.

For connecting to a downstream RAID solution, such as the JMR mass storage, the M9021A must be installed in a x8 hybrid slot (either slot 2, 6, 11, or 15) in the PXIe chassis. In this case, both switches on S301 should be in the Host (left) position.

S301. Switches shown in Target (default) position; used when the M9021A is installed in system slot (slot 1) of the M9018A chassis.

Move both switches to Host (left) position for use with the M9392A RAID array (but only in a data streaming/storage solution).



S201. Ensure that S201 is in the NC position,

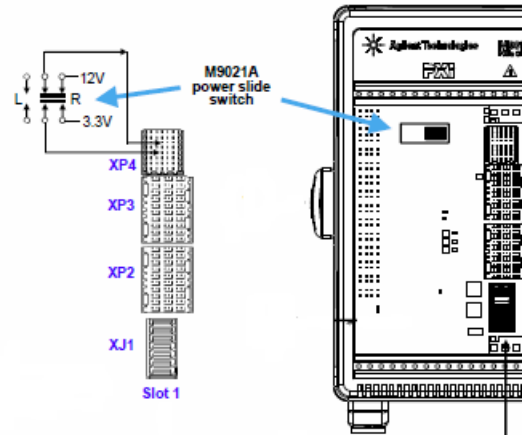
Installation in M9018A PXIe Chassis, Slot 1

When being used in the system slot (slot 1), the M9021A is only compatible with the Keysight M9018A PXIe chassis. The M9018A chassis backplane link configuration must be in 1x8 mode (default). The two switches on S301 must be in the Target (right) position. This is the default setting.

1. Turn off the host PC and the PXIe chassis.

Note on using the M9021A Cable Interface Module in Slot 1 of the M9018A PXIe Chassis:

The M9021A Cable Interface module does not derive power from the chassis connector used by PXI embedded controllers. Instead, the M9021A uses the top connector on the chassis backplane for its 3.3V and 12V power. However, a switch on the M9018A chassis backplane must be set to supply those voltages to the connector. The default position of the switch is to the left and does not supply the voltages to the connector. To use the M9021A in Slot 1 of the M9018A chassis, you must move the slide switch to the right before installing the module. Refer to the M9018A chassis documentation for more information.



2. For typical applications, where the M9021A provides a cabled PCIe link between the M9018A chassis and an external host computer, locate Slot 1 in the chassis. It has the icon (▲) above it.
3. Remove the M9021A module from its protective bag. Observe Electrostatic Discharge precautions.
4. Hold the module by the injector/ejector handle; guide the module into chassis slot number 1.
 - a. Install the module into the PXI slot of the chassis by placing the module card edges into the front module guides (top and bottom).
 - b. Slide the module to the rear of the chassis and assure that the injector/ejector handle is pushed down in the unlatched (downward) position.
 - c. Slide the module completely into the chassis. When you begin to feel resistance, push up on the injector/ejector handle to fully seat the module into the chassis.
 - d. Tighten the module retaining screws.
5. Attach the PCIe cable by first pulling back on the retractor ring. With the keyed slot aligned with the key ridge on the PCIe adapter, insert the cable connector into the cable port connector on the adapter until the cable locks in place.
6. Attach the other end of the cable to the PCIe adapter on your system computer.

Note: If you are using a remote controller, you must power up the chassis BEFORE you power up the PC. When you power down your system, shut down the PC BEFORE you power down the chassis.

Installation in PXIe x8 Hybrid Slot for Multiple Chassis or M9392A Connection RAID

1. Turn off the PXIe chassis.
2. Identify the M9018A x8 hybrid slot (slots 2, 6, 11, 15) where you will install the module.
3. Remove the M9021A module from its protective bag. Observe Electrostatic Discharge precautions.
4. Hold the module by the injector/ejector handle; guide the module into the desired chassis slot.
 - a. Install the module into the PXI slot of the chassis by placing the module card edges into the front module guides (top and bottom).
 - b. Slide the module to the rear of the chassis and assure that the injector/ejector handle is pushed down in the unlatched (downward) position.
 - c. Slide the module completely into the chassis. When you begin to feel resistance, push up on the injector/ejector handle to fully seat the module into the chassis.
 - d. Tighten the module retaining screws.
5. Attach the PCIe cable by first pulling back on the retractor ring. With the keyed slot aligned with the key ridge on the PCIe adapter, insert the cable connector into the cable port connector on the adapter until the cable locks in place.
6. Attach the other end of the cable to the JMR RAID array or to an M9021A installed in a cascaded M9018A chassis.

Module LEDs

The M9021A Cable Interface module contains LEDs (both front panel and side or PC board LEDs) that indicate how many PCIe lanes are actually being used to communicate between the PC and the chassis. If your chassis application is running slower than you expect, check the M9021A LEDs to see how wide your data path is to the chassis. Each lane is denoted by one yellow LED.

The M9021A front panel has four LEDs to indicate the communication speed to the host controller. The following table describes the LED indications:

Configuration to Host PC	M9021A Front Panel LEDs	PC Board (or side) LEDs
x1 PCIe Link	x4 Cable & x4 Chassis	Single pair yellow LEDs
x4 PCIe Lin	x4 Cable & x4 Chassis	4 pairs yellow LEDs
x8 PCIe Lin	x4 Cable & x4 Chassis & x8 Cable & x8 Chassis	All 8 pairs yellow LEDs

Related Products

The Keysight M9047A/B Gen 2, x8 PCIe Desktop PC Adapter and Y1202A x8, 2.0 meter PCIe cable should be used with the M9021A to connect the PXIe chassis to an external host PC. For Laptop PCs, use the Keysight M9045A/B Gen 1 Express Card Adapter, with the Y1200A x4 to x8, 2.0 meter PCIe cable.

Characteristics

Size	1 slot 3U
PXle system slot configuration	Single, x8 link to PXle backplane
Data bandwidth (max)	4 GB/s to PXle backplane 4 GB/s to computer
PC connection	PCIe x8 cable connector

For More Information

For operation of the M9021A PCIe Cable Interface card in the M9018A PXle chassis, refer to the M9018A PXle Chassis Startup Guide. This guide is included on the M9018A Product Reference CD. It is also available on the web. For web information, see: <http://www.keysight.com/find/pxi-chassis>

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