TECHNICAL OVERVIEW

Tested PC and PXI/AXIe Chassis Configurations

M9005A PXIe Chassis
M9010A PXIe Chassis
M9018B PXIe Chassis
M9019A PXIe Chassis
M9502A AXIe Chassis
M9505A AXIe Chassis
M9514A AXIe Chassis

Overview

This personal computer and controller technical note provides the test system designer with a list of tested computers that are compatible with Keysight Technologies, Inc. PXI and AXIe chassis. The computers are compatible with both PXI and AXIe chassis, unless otherwise noted. The testing in this guide covers the PCIe link and enumeration of the chassis. Compatibility can be impacted by many factors including computer BIOS and signal path within the computer and cable.

Figure 1. M9048B and M9049A Gen3 host adapters.

Figure 2. M9502A AXIe 2 slot chassis.

Keysight Technologies modular chassis tested:

- M9005A PXIe Chassis
- M9010A PXIe Chassis
- M9018B PXIe Chassis
- M9019B PXIe Chassis
- M9502A AXIe Chassis
- M9505A AXIe Chassis
- M9514A AXIe Chassis

Figure 3. M9019A PXIe Gen3 18-slot chassis.

Personal computing devices tested:

- Desktop PCs
- Rack mount PCs
- PXI/AXIe embedded PC controllers

KEYSIGHT TECHNOLOGIES

Tested Configurations

Desktop/rackmounted PCs utilized an appropriate system module:

- M9005A PXIe chassis was tested with the integrated system module.
- M9010A, M9018B and M9019A PXIe chassis were tested utilizing a mixture of M9021A, M9022A, M9023A, and M9024A PXIe system modules except where noted [1].
- M9502A and M9505A AXIe chassis were tested with the embedded system module.
- M9514A AXIe 14-slot chassis was tested with the M9521A AXIe system module.

Testing utilized Keysight-recommended PCIe host cable card installed in the PC:

- M9005A PXIe chassis was tested with option 002 PCIe Desktop Adapter.
- All other chassis utilized a mixture of M9048A, M9048B, and M9049A PCIe host adapters and Y1202A PCIe cables to M9021A, M9022A, M9023A, and M9024A system modules.

Desktop testing was performed with only a graphics card in its standard slot [2].
Both star and daisy-chain configurations were used for multi-chassis testing [3].
Tested with 64-bit Microsoft Windows 7 or Windows 10 (computers were tested with Win 7/64 Professional unless otherwise documented in computer comments).

[1] Only the M9018B testing utilized the M9021A PCIe cable interface. The M9019A and M9010A do not support the M9021A.
[2] Applies to desktop and rackmounted personal computers only. In some cases, the graphics card must also be removed (see computer comments).
[3] Keysight does not recommend a mixed configuration utilizing both star and daisy-chain.

Figure 4. M9505A AXIe chassis with M9537A embedded controller.

Desktop Personal Computers					
Manufacturer	**Model**	**BIOS**	**PCIe slots [1]**	**Number of chassis [2]**	**Comments**
Hewlett Packard	Z2 G4 Workstation Tower	HP Q50 Ver. 01.01.08 10/3/2018	One x16 Gen3	3	Tested with Win10 Pro 64-bit. x16 (x4) and x4 (x1) slots are not supported.
Hewlett Packard	Z4	Rev 1.72	Two x16 Gen3 One x8 Gen3	3	M9018A SN>TW55090100 (shipped after 3/4/15).
Hewlett Packard	Z8	Rev 1.72	Two x16 Gen3 One x8 Gen3	6	M9018A SN>TW55090100 (shipped after 3/4/15). Second CPU required for 4th & 5th x16 and x8. Tested with two CPUs.
Hewlett Packard	Z240	01.24 Rev A 5/31/2016	One x16 Gen3	3	Tested with Win7 and Win10 Pro 64-bit. x16 (x4) slot is not supported.
Hewlett Packard	Z440	2.47	Two x16 Gen3 One x8 Gen3	6	M9018A SN>TW55090100 (shipped after 3/4/15).
Hewlett Packard	Z640	2.1 Rev A	Two x16 Gen3 One x8 Gen3	4	M9018A SN>TW55090100 (shipped after 3/4/15).
Hewlett Packard	Z840	2.47	Three x16 Gen3 Two x8 Gen3	6	M9018A SN>TW55090100 (shipped after 3/4/15). Second CPU required for 4th & 5th x16 and x8.
Hewlett Packard	HP 280 G3 Microtower	AMI 02.01 4/20/2017	One x16 Gen3	4	Tested with Win10 Pro 64-bit.
Hewlett Packard	ProDesk 400 G4 Microtower	N02 Ver. 02.17 11/1/2016	One x16 Gen3	1	Tested with Win10 Pro 64-bit. x16 (x4) slot is not supported. M9514A/M9521A is not supported.
Hewlett Packard	ProDesk 600 G3 Microtower	P02 Ver. 02.06 9/6/2017	One x16 Gen3	1	Tested with Win10 Pro 64-bit. x16 (x4) slot is not supported. M9514A/M9521A is not supported.
Hewlett Packard	EliteDesk 800 G3 Full-size Tower	N01 Ver. 02.15 6/2/2016	One x16 Gen3	1	Tested with Win10 Pro 64-bit. x16 (x4) slot is not supported. M9514A/M9521A is not supported.
Hewlett Packard	EliteDesk 800 G4 Workstation Edition Tower	HP Q01 Ver. 02.04.01 10/5/2018	One x16 Gen3	3	Tested with Win10 Pro 64-bit. x16 (x4) slot is not supported.

[1] Tested PCIe slots in the PC. There may be additional slots in the PC which are not tested/supported. First number is mechanical connection, number in parenthesis is electrical connection. For example, x8 (x4) is a x8 slot wired as a x4. PCIe slots without a second number are the same mechanical/electrical.
[2] Number of chassis which are supported when connected to the computer. Available slots may depend on graphics used. More than two chassis require a 64-bit OS. For more information see: ***www.keysight.com/find/pxie-multichassis***.

Desktop Personal Computers Continued					
Manufacturer	**Model**	**BIOS**	**PCIe slots [1]**	**Number of chassis [2]**	**Comments**
Dell	Precision 3630 Tower	1.1.5 11/23/2018	One x16 Gen3	3	Tested with Win10 Pro for Workstations.
Dell	T5810	A29	Two x16 Gen3 One x16 (x8) Gen3	6	May need to move GPU. Tested with Win10 Pro 64-bit.
Dell	T7810	A24	Two x16 Gen3 One x16 (x8) Gen3	5 Cascade 4 Star	May need to move GPU. Tested with Win10 Pro 64-bit. Tested with two CPUs.
Dell	T7910	A29	Two/four x16 Gen3	4 Cascade 6 Star	May need to move GPU. Second CPU required for more than two x16 PCIe slots. Tested with Win7 Pro. Tested with two CPUs.
Dell	T7920	1.9.2	Two/four x16 Gen3	5 Star	May need to move GPU. Second CPU required for more than two x16 PCIe slots. Tested with Win10 Pro 64-bit. Tested with two CPUs.
Dell	Optiplex 3050 Tower	1.7.9 1/30/2018	Two x16 Gen3	1	Tested with Win10 Pro 64-bit. Only supported in Gen2 system configuration.
Dell	Optiplex 5050 Tower	1.7.9 1/30/2018	Two x16 Gen3	1	Tested with Win10 Pro 64-bit. Only supported in Gen2 system configuration. x16 (x4) slot is not supported.
Dell	Optiplex 7060 Mini-size Tower	Dell Inc. 1.2.17 10/28/2018	One x16 Gen3	1	Tested with Win10 Pro 64-bit. x16 (x4) slot is not supported.
Dell	XPS 8920 Tower (T)	1.0.12 12/13/2017	One x16 Gen3	4	Tested with Win10 Pro 64-bit.
Acer	Aspire TC-780	R02-A3 5/26/2017	One x16 Gen3	1	Tested with Win10 Home Basic 64-bit.

[1] Tested PCIe slots in the PC. There may be additional slots in the PC which are not tested/supported. First number is mechanical connection, number in parenthesis is electrical connection. For example, x8 (x4) is a x8 slot wired as a x4. PCIe slots without a second number are the same mechanical/electrical.
[2] Number of chassis which are supported when connected to the computer. Available slots may depend on graphics used. More than two chassis require a 64-bit OS. For more information see: ***www.keysight.com/find/pxie-multichassis***.

Discontinued Desktop Personal Computers but Supported (may still be available through distribution channels)					
Manufacturer	**Model**	**BIOS**	**PCIe slots [1]**	**Number of chassis [2]**	**Comments**
Dell	T3610	A.06	Two x16 Gen3 One x16 (x8) Gen3	2	May need to move GPU. For multiple chassis, set "Bus Number" field in BIOS to 256.
Dell	T5610	A.03	Two x16 Gen3 One x16 (x8) Gen3	2	May need to move GPU. For multiple chassis, set "Bus Number" field in BIOS to 256.
Dell	T7610	A.03	Two/four x16 Gen3	2	May need to move GPU. For multiple chassis, set "Bus Number" field in BIOS to 256. Second CPU required for fourth PCIe slot.
Dell	Optiplex 3020	A03	One x16 Gen2	1	M9048A and M9048B only in small form factor models (M9049A will not mechanically fit).
Dell	Optiplex 7050 Full-size Tower	1.5.2 6/19/2017	One x16 Gen3	1	Tested with Win10 Pro 64-bit. Only supported in Gen2 system configuration. x16 (x4) slot is not supported.
Dell	Optiplex 9020	A07	One x16 Gen2	1	x16 (x4) slot is not tested.
Hewlett Packard	Z420	3.65 Rev A	Two x16 Gen3 One x8 Gen3	2	Only two slots supported the third can be used for graphics.
Hewlett Packard	Z620	3.65 Rev A	Two x16 Gen3 One x8 Gen3	2	Only two slots supported the third can be used for graphics.
Hewlett Packard	Z820	3.65 Rev A	Two/three x16 Gen3 One x16 (x8) Gen3	3	Second CPU required for third x16 and x16 (x8) slots.
Hewlett Packard	Z840	2.46	Two/three x16 Gen3 One/two x8 Gen3	4 Cascade 6 Star	Second CPU required for third x16 and second x8. M9018A SN>TW55090100 (shipped after 3/4/15). Tested with two CPUs.
Hewlett Packard	ProDesk 400 G3	N03 Ver. 02.09 11/1/2016	One x16 Gen3	1	Tested with Win10 Pro 64-bit.
Hewlett Packard	ProDesk 600 G2	N02 Ver. 02.17 11/1/2016	One x16 Gen3	1	Tested with Win10 Pro 64-bit.
Hewlett Packard	EliteDesk 705 G3	P06 Ver. 02.02 9/26/2016	One x16 Gen3	1	Tested with Win10 Pro 64-bit.
Hewlett Packard	EliteDesk 800 G2	N01 Ver. 02.15 6/2/2016	One x16 Gen3	1	Tested with Win10 Pro 64-bit. x16 (x4) slot is not supported.
Acer	Aspire ATC-605	P21-A4	One x16 (x4) Gen2	2	Use GPU slot (remove video card and use on board VGA).

[1] Tested PCIe slots in the PC. There may be additional slots in the PC which are not tested/supported. First number is mechanical connection, number in parenthesis is electrical connection. For example, x8 (x4) is a x8 slot wired as a x4. PCIe slots without a second number are the same mechanical/electrical.
[2] Number of chassis which are supported when connected to the computer. Available slots may depend on graphics used. More than two chassis require a 64-bit OS. For more information see: ***www.keysight.com/find/pxie-multichassis***.

Rackmounted Computers					
Manufacturer	**Model**	**BIOS**	**PCIe slots [1]**	**Number of chassis [2]**	**Comments**
Dell	R230	24.3 9/31/2018	Two x16 Gen3 Two x8 Gen3	5	PCIe slot width depends on riser option ordered (x16 recommended).
Dell	R7910	2.8.0	Up to seven Gen3 slots	3 Cascade 4 Star	Max 3 chassis with cascade, 4 with star. May need to move GPU. Number of slots depends on CPU/riser option.
Dell	R7920	1.5.6	Up to seven Gen3 slots	4 Star	May need to move GPU. Number of slots depends on CPU/riser option.
Hewlett Packard Enterprise	Edgeline EL1000	H07 1.72	Two x8 Gen3	6	PCIe slot model tested.
Hewlett Packard Enterprise	Edgeline EL4000	H07 1.72	One/four x16 Gen3	6	Each slot is dedicated to a CPU for up to 4 slots and 4 CPUs. Tested configuration had one slot for a M9049A with 2 ports. The Star configuration consisted of 3 cascaded chassis to each port. PCIe slot model tested.
Hewlett Packard Enterprise	DL380 Gen10	U30 1.99 5318	One/two x16 Gen3 Two/six x8 Gen3	4 Cascade	May need to move GPU. Number of slots depends on CPU/riser options.
Advantech	HPC-7442	American Megatrends 5.6.5, 5/6/2015	Four x16 Gen3 Two x16 (x8) Gen3	3	Customized PC with ASMB-9231 EATX server motherboard.
SuperLogics	SL-4U-WS-PD-C236SAE-HA	AMI 02.2 12/13/2017	One x8 Gen3 One x16 Gen3	4	Tested with Win10 Pro 64-bit. Multi-chassis only supported with slots 4 and 6.

Discontinued Rackmounted Computers but Supported (may still be available through distribution channels)					
Manufacturer	**Model**	**BIOS**	**PCIe slots [1]**	**Number of chassis [2]**	**Comments**
Advantech	PN: C-AGI1-PCE7127-V1	Custom BIOS supplied with computer	Two x8 Gen3	4	1U Chassis, Win7 64-Bit 3.5 GHz Xeon quad core, 16 GB, RAM, 256 GB SSD.
Advantech	PN: C-AGI1-PCE7127-V2	Custom BIOS supplied with computer	Two x8 Gen3	4	4U Chassis, Win7 64-Bit 3.5 GHz Xeon quad core, 16 GB, RAM, 256 GB SSD.
Advantech	PN: C-AGI1-AIMB781-V1	Custom BIOS supplied with computer	One x16 Gen3	2	4U Chassis, Win7 64-Bit 3.4 GHz i7 quad core, 16 GB, RAM, 256 GB SSD.
Kontron	KISS IPC 760	08.00.15	One x16 Gen2	1	Only M9048A tested.
SuperLogics	SL-4U-MCX-C602-WA	American Megatrends 3.2, 5/9/2015	Thee x16 Gen3 Two x8 Gen3	3	Multi-chassis only supported with slots 1, 3, and 5.
SuperLogics	SL-4U-Q67SW-WB	SWQ6710H.86A.00 60. 2011.1220.1805	One x16 Gen2	1	Only M9048A tested.

[1] Tested PCIe slots in the PC. There may be additional slots in the PC which are not tested/supported. First number is mechanical connection, number in parenthesis is electrical connection. For example, x8 (x4) is a x8 slot wired as a x4. PCIe slots without a second number are the same mechanical/electrical.
[2] Number of chassis which are supported when connected to the computer. Available slots may depend on graphics used. More than two chassis require a 64-bit OS. For more information see: ***www.keysight.com/find/pxie-multichassis***.

PXIe Embedded Personal Computers					
Manufacturer	**Model**	**BIOS**	**System slot PCIe links**	**Number of chassis [1]**	**Comments**
Keysight	M9037A	AG11	4x4 or 2x8 Gen2 x8 Gen2 (front panel)	7 Cascade	Tested with Win10 64-bit Embedded Standard.
Keysight	M9036A	AG23	4x4 Gen2 and 2x8 Gen2	2	Tested with Win7 Embedded Standard (32/64-bit) and Win10 IoT Enterprise (64-bit).
National Instruments	PXIe-8135	1.0.0f4	4x4 or 2x8 Gen2	1	
National Instruments	PXIe-8880	1.1.1f0	x8, x16, Gen3	1	
National Instruments	RMC-8354	American Megatrends 1.0b, 9/2/2010	One x16 Gen2	4	M9048A and M9048B only (M9049A will not mechanically fit).

Discontinued PXIe Embedded Personal Computers but Supported (may still be available through distribution channels)					
Manufacturer	**Model**	**BIOS**	**System slot PCIe links**	**Number of chassis [1]**	**Comments**
National Instruments	PXIe-8101	4.6.3	4x1 Gen1	1	
National Instruments	PXIe-8105	1.3.3	Four link: 1x1 and 3x4 Gen1	1	
National Instruments	PXIe-8108	4.6.3	4x1 Gen1	1	
National Instruments	PXIe-8133	4.6.3	4x4 Gen1	1	

[1] Number of chassis which are supported when connected to the computer. More than two chassis require a 64-bit OS. For more information see: ***www.keysight.com/find/pxie-multichassis***.

Figure 5. M9037A PXIe Embedded Controller.

AXIe Embedded Personal Computers					
Manufacturer	**Model**	**BIOS**	**System slot PCIe links**	**Number of chassis [1]**	**Comments**
Keysight	M9537A	SL04.0	AXIe PCIe link up to x16 Gen3	2 with AXIe 4 with AXIe and PXIe	AXIe slot one only. Tested with Win7 Embedded Standard (32/64-bit) and Win10 IoT Enterprise (64-bit).

[1] Number of chassis which are supported when connected to the computer. More than two chassis require a 64-bit OS. For more information see: ***www.keysight.com/find/pxie-multichassis***.

Figure 6. M9537A AXIe Embedded Controller.

For the most current version of this document, please refer to
www.keysight.com/find/PXIAXIeTestedPC

Learn more at: www.keysight.com

For more information on Keysight Technologies' products, applications or services, please contact your local Keysight office. The complete list is available at:
www.keysight.com/find/contactus

KEYSIGHT TECHNOLOGIES