

The **PXI/PXIe** icon denotes that modules are available in both **PXI** and **PXIe** formats. Pickering is committed to making many more of its **PXI** products available as **PXIe**.

# Pickering - PXI Simulation

## HARDWARE-IN-THE-LOOP & FAULT INSERTION

### Hardware-in-the-Loop

Hardware-in-the-Loop Simulation (HILS) connects real signals from a controller to a test platform that simulates the final system's operation. Electronic simulators simulate the ECU's sensor inputs, and measurement instrumentation is used to capture and verify the ECU control outputs. The goal is to make sure that the ECU operates correctly in a known good circumstance and confirm it will operate safely when something goes wrong. An example could be an anti-lock braking system; if the driver steps on the brake pedal and a wheel sensor has failed due to a broken wire, the braking system still needs to stop the vehicle as quickly as possible.

Design and verification iterations follow precisely as if the actual product were being implemented. All the possible scenarios that can be imagined involving countless combinations of different faults can be reproduced, enabling the ECU or controller to be comprehensively exercised without incurring the cost and time necessary to create the actual set of circumstances and perform the real physical tests.

**HILS Model Showing the Simulation of an Operating Environment**

### Fault Insertion

Safety-critical ECUs will usually go through a certification process where a series of faults are introduced. The ECU response is checked to see that it operates in a safe and predictable manner. A manual patch panel is often employed to inject the faults. Cables are used to connect the ECU's I/O lines to stimulus and measurement instrumentation. The I/O lines may be disconnected to simulate open-circuits or tied together to simulate short-circuits to ground, voltage sources, or other I/O lines. An engineer moves the patch cables to simulate a desired fault and then measures the results. However, this arrangement has many inherent disadvantages.

One obvious issue is size, as patch panels tend to be large. The operation is also slow and prone to error, leading to a lack of repeatability. Maintenance and labor costs are high, and operation requires the accumulation and documentation of a skilled knowledge base. A traditional fault insertion system still in use is shown.

**Traditional Fault Insertion System using a Patch Panel to inject Faults manually**

Quickly and precisely reproducing a failed test condition is a major advantage. Automating this type of test secures the best way of producing a traceable report, free from human error. The ability to gain software control of both instrument routing and the insertion of real-time electrical faults greatly enhances the testing process. Fault insertion switching automates the fault insertion process. The principal is simple: switching modules sit between the simulator (test system) and the DUT (ECU/controller) and either pass the signals through unchanged or add a range of fault conditions.

Most applications require the following faults to be modelled as a minimum:

- Open Circuit Connections to DUT
- Short Circuits between DUT pins
- Short Circuits to Ground or Power
- Resistive Faults

## PROGRAMMABLE RESISTORS/RESISTIVE SENSOR SIMULATORS

Features	Medium Power Resistor Modules			Resistor Modules								Precision Resistor Modules														
	40-251	40-252	40-253	40-254	40-292	40-280	40-281	40-282	40-290	40-291	40-293	40-294	40-295	40-296	40-260	40-261	40-262	40-263	40-265	40-297A	40-298					
Model Family	Programmable Resistor			15W Programmable Resistor	Programmable Load Resistor	Fixed Value Selectable Resistors	Dual Selectable Resistors	Fixed Value Potential Divider	Programmable Resistor	Programmable Resistor	Programmable Resistor	Programmable Resistor	Programmable Potentiometer	Precision Programmable Resistor	PT100 RTD Simulator	PT1000 RTD Simulator	PT100 RTD Simulator	PT500 RTD Simulator	PT1000 RTD Simulator	Strain Gauge Simulator	Precision Programmable Resistor					
Number of Channels	1, 2, 4 or 8	1, 2 or 4	1 or 2	1 or 2	1	24 or 48	12 or 24	12 or 24	2	4	2 or 4	3, 5, 6, 10 or 18	1, 2, 3, 4, 5 or 9	3	2	6, 12 or 18	4, 8, 12, 16, 20 or 24	2, 4 or 6	3, 4, 6, 9 or 18							
Resolution	0.125, 0.25, 0.5, 1 or 2 Ω	Up to 0.125 Ω			8-Bit	User Specified			16-Bit	8-Bit	0.25 Ω, 0.5 Ω, 1 Ω or 2 Ω	8, 12, 16 or 24-Bit		<10 mΩ	<2 mΩ	<15 mΩ	<8 mΩ	<90 mΩ	<10 mΩ	<50 mΩ	<100 mΩ	<2 mΩ	<10, 12.5, 20 or 25 mΩ	0.125, 0.25, 0.5, 1, 2, 4 or 8 Ω	0.125, 0.25, 0.5, 1 or 2 Ω	
Accuracy	Module Accuracy ±0.3% +Resolution			Module Accuracy ±0.3% +Resolution	Resistor Accuracy 5% ±0.5 Ω	User Specified			Resistor Accuracy 0.5%		Resistor Accuracy 1% +Resolution		Resistor Accuracy ±0.5% (±1% >1 MΩ)		Module Accuracy 0.1%	Module Accuracy ±0.08% ±70 mΩ			Module Accuracy 0.1%			Module Accuracy 0.03%	Module Accuracy 0.06%	Module Accuracy ±0.2% +Resolution		
Range	Up to 22.3 MΩ	Up to 102 kΩ	1 Ω to 395 kΩ	40 Ω to 295 Ω, 10 Ω to 2.56 kΩ	User Specified			0.5 Ω to 32 kΩ	0.5 Ω to 128 Ω	Up to 131 kΩ			Up to 16 MΩ		90 Ω to 8 kΩ	1.5 Ω to 2.9 kΩ	10 Ω to 36 kΩ	90 Ω to 250 Ω	900 Ω to 2.5 kΩ	40 Ω to 900 Ω	200 Ω to 4.5 kΩ	400 Ω to 9 kΩ	350 Ω Bridge	1 kΩ, 1.5 kΩ, 2 kΩ or 3 kΩ Bridge	Up to 85.3 MΩ	Up to 22.3 MΩ
Max Resistor Power	2.5W	5W	10W	15W per Channel	15W	0.5W			1W		0.5W				100mW						0.5W					
Typical Operate Time	3ms			3ms	1ms	0.5ms					3ms	0.5ms				3ms						0.3ms				
Connector Type	37-pin D-type			9-pin D-type	9-pin D-type	96-pin			68-pin		37-pin D-type				15-pin D-type and 9-pin D-type			26-pin D-type & 9-pin D-type			37-pin D-type					
Width (PXI-1, PXI-hybrid)						1-Slot			1-Slot						1-Slot			1 or 2-Slot			1-Slot					

## BATTERY SIMULATORS

Features	Battery Simulators	
	41/43-752A	41-753
Model Family	41/43-752A	41-753
Configurations	Variable voltage source with current source and current sink	
Number of Channels	2, 4 or 6	1
Input Voltage	+3.3V, +5V & +12V from PXI backplane	+5V from PXI backplane
Output Voltage	Adjustable 0 to 7V Stackable to 1000V	Adjustable 0 to 6V
Max Current	300mA Source 100mA Sink	2.8A Source 0.5A Sink
Connector Type	37-pin D-type	25-pin D-type
Width (PXI-1, PXI-hybrid)	1-Slot	

## SWITCH SIMULATORS

Features	Switch Simulators	
	40-480	40-485
Model Family	40-480	40-485
Configurations	Automotive Switch Simulator	
Number of I/P Channels	-	
Input Channel Type	-	
Number of O/P Channels	8, 16 or 32	Single or Dual, 8 or 16
Output Channel Type	Leaky or Dirty Switch Simulation	
Connector Type	37-pin D-type	
Width (PXI-1, PXI-hybrid)	1-Slot	

## SENSOR/TRANSDUCER SIMULATORS

Features	Thermocouple Simulators		LVDT/RVDT/Resolver Simulator		Analog Output/Current Loop Simulator	
	41-760	41-761	41-670 & 43-670		41-765 & 43-765	
Model Family	41-760	41-761	41-670 & 43-670		41-765 & 43-765	
Configurations	Millivolt Source Suitable for Thermocouple Simulation		Simulation of Linear & Rotary Differential Transformers & Resolvers		4-20 mA, 0-24 mA, +/-24 mA Current Loop Simulation at 0-5V, +/-12V & +/-5V	
Number of Channels	8, 16, 24 or 32		Up to 4 or 8		4, 8, 12 or 16	
Resolution	0.7 μV, 1.7 μV & 3.3 μV resolution		16-Bit (Output)		16-Bit (Output within 1 μA)	
Accuracy	0.1% ±5 μV (±20 mV range), 0.1% ±10 μV (±50 mV range), 0.1% ±15 μV (±100 mV range)		-		Module Accuracy ±0.1% ±Resolution	
Range	±20 mV, ±50 mV & ±100 mV		300 Hz to 20 kHz		As Above	
Connector Type	78-pin D-type		50-pin D-type		78-pin D-type	
Width (PXI-1, PXI-hybrid)	1-Slot		1-Slot		1-Slot	

## FAULT INSERTION SWITCHING

Features	Fault Insertion Matrices					Fault Insertion Switches														Modular Breakout System																																							
	40-592A					40-595A					40-190C	40-191B	40-192A	40-193A	40-194A	40-195	40-196	40-197A	40-198	40-199	40-200	40-201	40-202	40-203	40-204	Breakout Box & Fault Insertion Unit																																	
Model Family	40-592A					40-595A					40-190C	40-191B	40-192A	40-193A	40-194A	40-195	40-196	40-197A	40-198	40-199	40-200	40-201	40-202	40-203	40-204	Breakout Box & Fault Insertion Unit																																	
Configurations	Dual 31x4 to Dual 124x4 Fault Matrix, 2 Pin Breakout	Dual 31x4 to Dual 248x4 Fault Matrix, 2 Pin Breakout	Dual 20x4 to Dual 80x4 Fault Matrix, 3 Pin Breakout	Dual 20x4 to Dual 160x4 Fault Matrix, 3 Pin Breakout	Dual 6x2 to Dual 30x2 or Dual 6x4 to Dual 30x4 Fault Matrix, 3-Pin Breakout	32, 64 or 74 Channels, 2 Fault Buses (8 Fault Inputs)	6 Signal Channels, 2 Fault Buses (2 Fault Inputs) Optional Hardware Interlock	7 Signal Channels, 1 or 2 Fault Buses (1 or 2 Fault Inputs) Optional Hardware Interlock	22 or 11 Signal Channel Pairs, 8 or 4 Fault Inputs	10 or 5 Signal Channel Pairs, 10 or 5 Fault Inputs	34 or 16 Signal Channels, 4 Fault Buses (8 Fault Inputs)	20 Signal Channels, 1 or 2 Fault Buses (3 or 6 Fault Input)	10 Signal Channels, 1 or 2 Fault Input	4 or 8 Pair Differential, 4 Fault Buses (8 Fault Inputs)	4 or 8 Pair Differential, 2 Fault Buses (4 Fault Inputs)	22 or 11 Signal Channel Pairs, 22 or 11 Fault Inputs	3 or 6 pairs of two wire connections designed for use on differential serial interfaces	1 or 2 pairs of two wire connections designed for use on differential serial interfaces inc MUX																																									
Relay Type	Pickering Instrumentation Reed					Electro-mechanical					Electro-mechanical					Electro-mechanical					Reed Relay		Electro-mechanical																																				
Max Switch Voltage	150 VDC/100 VAC					125 VDC/250 VAC					300 VDC/250 VAC					110 VDC/100 VAC					100V					150 VDC/100 VAC		200V																															
Max Switch/Carry Current	1A/1.2A					10A(matrix) 8A(breakout)					2A					40A					10A					0.3A (2A Fault Bus)					2A		0.5A (Hot Switch), 0.8A (Carry)																										
Max Switch Power	20W					300W/2500 VA					60W					1600W					2000W					280W					60W					150W/1250 VA					300W/2500 VA					30W (60W Fault Bus)		60W		-		-							
Typical Operate Time	0.5ms					10ms					3ms					250 μs					70 μs					10ms					25ms					3ms					10ms					3ms					4ms					-		0.5ms	
Connector Type	78-pin D-type					37-pin D-type					160-pin DIN 41612					8-pin Power D-type					96-pin					50-pin D-type					78-pin D-type					50-pin D-type					20-pin GMCT & 3-pin Power D-type					78-pin D-type					160-pin DIN 41612					MMCX			
Width (PXI-1, PXI-hybrid)	4-Slot		8-Slot		4-Slot		8-Slot		8-Slot		1-Slot		2-Slot		1-Slot		2-Slot		1-Slot		1-Slot		1-Slot		1-Slot		1-Slot		1-Slot		1-Slot		1-Slot		1-Slot																								

**PXI PXIe** The **PXI/PXIe** icon denotes that modules are available in both **PXI** and **PXIe** formats. Pickering is committed to making many more of its **PXI** products available as **PXIe**.

# Pickering - PXI Instrumentation

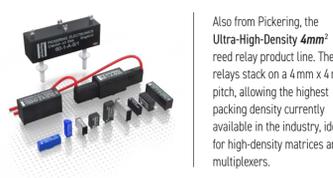
## PXI FROM PICKERING INTERFACES

At Pickering, we understand that to design, deploy and sustain your test system can be challenging, and we believe in offering you the products and services to help your engineering team get the job done on time and on budget. Switching and simulation are our core competencies, and we continually expand our range of **PXI, PXIe, LXI, USB & PCI** switching and simulation products. Features include:

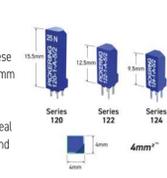
- All module and cable manufacturing processes take place on flexible manufacturing lines, allowing complete product control and product longevity (typically 15-20 years)
- All products manufactured by us come with a **standard 3-year warranty** and include guaranteed long-term support
- When our product range doesn't fit your application, we have the agility and expertise to develop a system to your specifications
- Full range of supporting cable and connector solutions
- Software drivers and application software packages:
  - We provide driver packages for LXI and PXI products offering seamless installation and support of all popular Programming languages such as C/C++, LabVIEW™, LabVIEW RT, .NET, VB, LabWindows/CVI, MATLAB®, Python, ATEasy, TestStand™, VeriStand™ and Switch Executive™ (via the IVI driver). Our drivers use a common General Soft Front Panel with dedicated views for all of our products. Our software application packages include Diagnostic Test Tools, Switch Path Manager™ signal routing software, Sequence Manager, Cable Design Tool and PXI & LXI simulation tools. Learn more at [pickeringtest.com/software](http://pickeringtest.com/software).
- We are a Sponsor Member of the PXI Systems Alliance

Pickering is the only PXI switch provider with in-house reed relay manufacturing capability. These instrument grade reed relays feature **SoftCenter™** technology, ensuring long service life and repeatable contact performance (for further information visit [pickeringrelay.com](http://pickeringrelay.com)).

In addition, most of our switch modules use through-hole technology relays (as opposed to surface mount) allowing easy replacement without the need for special tools.



Also from Pickering, the **Ultra-High-Density 4mm<sup>2</sup>** reed relay product line. These relays stack on a 4 mm x 4 mm pitch, allowing the highest packing density currently available in the industry, ideal for high-density matrices and multiplexers.



## CHASSIS & REMOTE CONTROLLERS

	PXI Chassis			PXI Controllers	PXI/PXIe Hybrid Chassis			PXIe Controllers	LXI Ethernet/USB Chassis					
Chassis Slots	8-Slot	19-Slot	14-Slot	-	8-Slot	18-Slot	21-Slot	-	-	2-Slot	4-Slot	6-Slot	7-Slot	18-Slot
Features	• High Performance Chassis • Remote Management System	• High Performance Chassis • Remote Management System	• High Performance Chassis • Hot Swappable PSUs	• PCIe to PXI Control Interface Kit • Provides a PCI Express Interface	• Gen3 High Performance Chassis • Remote Management System	• Gen2 & Gen3 High Performance Chassis • Remote Management System	• Gen2 High Performance Chassis • 20 PXIe Hybrid Peripheral Slots • Very High Power and Cooling Capacity	• PXIe Embedded Controller • Max Throughput 28 GB/s • Compact for Versatility	• PCIe to PXIe Control Interface Kit • Daisy Chain Option	• Compact chassis for hosting Pickering's 3U PXI and 3U Compact PCI (cPCI) modules in an LXI environment, allowing remote control over an Ethernet or USB connection				
Model Family	40-924	40-923A	40-914	41-924/51-924	42-924	42-925/42-926	42-927	43-920	43-921-001/002 and Kits	60-104	60-105	60-106	60-102D	60-103D
Choosing a Chassis for Pickering PXI Modules	<b>Chassis Selection Guide:</b> <b>PXI and PXIe (with PXI and/or Hybrid Slots)</b> <ul style="list-style-type: none"> <li>Mix our 1000+ PXI Switching &amp; Simulation modules with any vendors' PXI/PXIe instrumentation</li> <li>Embedded or remote Windows PC control</li> <li>Real-time operating system support</li> <li>High data bandwidths, especially with PXI Express</li> <li>Integrated module timing and synchronization</li> </ul>			<b>Pickering LXI or LXI/USB Modular Chassis (Only accept our PXI Switching &amp; Simulation Modules):</b> <ul style="list-style-type: none"> <li>Choose from 1000+ Pickering PXI modules</li> <li>Ethernet or USB control enables remote operation</li> <li>Low-cost control from practically any controller</li> <li>LXI provides manual control via Web browsers</li> <li>Driverless software support</li> </ul>			<b>3U PXI modules</b> are compatible with the following chassis types: <ul style="list-style-type: none"> <li>All chassis conforming to the 3U PXI and 3U Compact PCI (cPCI) specification</li> <li>Legacy and hybrid peripheral slots in a 3U PXI Express (PXIe) chassis</li> </ul>			<b>3U PXIe versions</b> of the modules are compatible with the following chassis types: <ul style="list-style-type: none"> <li>All chassis conforming to the 3U PXIe specification</li> <li>PXIe and hybrid peripheral slots in a 3U PXI Express (PXIe) chassis</li> </ul>				

## AMPLIFIERS & ATTENUATORS

	Attenuators			Amplifiers
Features	• Long Service Life & Fast Operation	• High Linearity & True DC Coupling	• 600V input rating	• Up to 60V peak-to-peak output
Model Family	41-182B	41-180	41-660	41-661
Configurations	Solid State Programmable RF Attenuator	Programmable RF Attenuator	High Voltage Attenuator	High Voltage Amplifier
Number of Channels	3 or 6	1 or 2	10 (single ended)	5 (differential)
Frequency Range	10 MHz to 6 GHz	DC to 3 GHz	DC to 20 kHz	DC to 120 kHz
Maximum Attenuation	31.75 dB per channel	63 dB per channel	160 times per channel	-
Maximum Gain	-	-	-	20 times
Connector Type	SMA		50-pin D-type	25-pin D-type or SMB
Width (PXI-1, PXI-hybrid)	1 or 2-Slot	1-Slot	1-Slot	1-Slot

## DIGITAL I/O

	Relay Driver	Digital Output	Digital Input	Digital I/O Modules					
Features	• 64ch Driver • Internal or External Relay Supply	• 64 channel I/O	• 128 channel Input • Up to 300V Input • Use with Multiple Voltage Thresholds	• 32 channel I/O • Suitable for Driving Logic or Relay Coils	• 32 channel I/O • Programmable Threshold	• 32 channel I/O • 2 A Output Drivers • Programmable Threshold	• 64 channel I/O • Semi-Dynamic 8-bit Pattern Acquisition/Generation	• Opto Isolation • Suitable for Industrial Automation Applications	
Model Family	40-411A	40-412A	40-414	40-410	40-412	40-413	40-419	40-490	40-491
Configurations	Relay Driver Module	Digital Output Module	Digital Input Module	Digital Input/Output Module	Digital Input/Output Module	Digital Input/Output Module	Digital I/O Module with 16, 32, 48 or 64 channels in ports of 8	Digital I/O Module With or Without On Board DC-DC Converter	Digital I/O Module With or Without On Board DC-DC Converter
Number of I/P Channels	-	-	128	32	32	32	64	16	16
Input Channel Type	-	-	0 to 50V, 100V, 200V or 300V Thresholds	TTL	0.3V to 50V Threshold	0.3V to 50V Threshold	VIH min: 2.0V VIL max: 1.5V	6V Threshold	TTL
Number of O/P Channels	16, 32, 48 or 64	64	-	32	32	32	64	32	32
Output Channel Type	60V Drive Capability, Up to 1 A per Channel	High or Low-Side Drivers (0.5A source, 0.5A sink)	-	TTL or OpenCollector	High or Low-Side Drivers (0.4A source, 0.5A sink)	High or Low-Side Drivers (2A source, 2A sink)	Open-Drain Outputs (Low side Driver)	High Side FET Switch +40V Maximum Voltage up to 400 mA per Channel	-
Connector Type	78-pin D-type	78-pin D-type	160-pin DIN 41612	96-pin	78-pin D-type	78-pin D-type	160-pin DIN 41612	68-pin	-
Width (PXI-1, PXI-hybrid)	1-Slot	1-Slot	1-Slot	1-Slot					1-Slot

## PROTOTYPING

	Prototyping Modules		
Features	• 65 cm <sup>2</sup> (10 in <sup>2</sup> ) of 0.1" Grid Prototyping Area • With or Without Digital I/O	• Breadboard With Digital I/O & Power Distribution	
Model Family	40-220A	40-225A	40-228
Configurations	Breadboard With Digital I/O	Breadboard Without Digital I/O	With or Without On Board DC-DC Converter
Number of I/P Channels	32	-	32
Input Channel Type	TTL	-	TTL
Number of O/P Channels	32	-	32
Output Channel Type	TTL	-	TTL, Low Voltage TTL or Open Collector
Connector Type	9, 15, 25, 37, 50, 78-pin D-type, 96-pin, 20-pin GMCT	-	50-pin D-type
Width (PXI-1, PXI-hybrid)	1 or 2-Slot	1-Slot	1-Slot

## USB

	USB Hub
Features	• 8-Port USB Hub • Stream Data From Backplane
Model Family	40-738 / 42-738A
Configurations	USB 2.0 Hub with Programmable Connect/Disconnect for USB Power and Data
Relay Type	Solid State
Max Switch Voltage	-
Max Switch/Carry Current	0.5A
Max Switch Power	2.5W
Typical Operate Time	-
Connector Type	USB Type A
Width (PXI-1, PXI-hybrid)	1-Slot

## POWER SUPPLIES

	Power Supplies		
Features	• Dual Positive Outputs • Non-Isolated	• Dual Negative Outputs • Non-Isolated	• Dual 0-48V Outputs • Fully Isolated
Model Family	41-735	41-736	41-743
Configurations	Programmable Voltage Power Supply	Isolated Programmable Power Supply	
Number of Channels	2	1	
Input Voltage	+12V from backplane or external supply	-12V from backplane or external supply	+56VDC
Output Voltage	Adjustable 0 to +10V	Adjustable 0 to -10V	Adjustable 0 to 48V
Max Current	1 A per Channel	2A per Channel	2A (up to 20V)
Connector Type	25-pin D-type	Screw Terminal Block	
Width (PXI-1, PXI-hybrid)	1-Slot	1-Slot	2-Slot

## VOLTAGE/CURRENT SOURCES (DAC)

	Voltage Source	Current/Voltage Source	
Features	• Thermocouple Simulator • Independently Isolated Channels	• Current Loop Simulation • Multiple Modes of Operation • Full Isolation in 4 Channel Banks	• Isolated Differential Outputs
Model Family	41-761	41-765 & 43-765	41-770
Number of Channels	8, 16, 24 or 32	4, 8, 12 or 16	4
Voltage Ranges	±20 mV, ±50 mV, ±100 mV, Output	0-5V, ±5V, ±12V	±1V, ±2V, ±5V, ±10V, ±20V, 0-40V (max ±80V series per module)
Current Ranges	-	4-20 mA, 0-24 mA, ±24 mA	±5 mA, ±10 mA, ±20 mA (max ±80 mA parallel per module)
Resolution	0.7 µV, 1.7 µV & 3.3 µV	16-Bit (Output within 1 µA)	16-bit
Accuracy	0.1% ±5 µV (+20 mV range), 0.1% ±10 µV (+50 mV range), 0.1% ±15 µV (+100 mV range)	Module Accuracy ±0.1% ±Resolution	-
Connector Type	78-pin D-type	78-pin D-type	37-pin D-type
Width (PXI-1, PXI-hybrid)	1-Slot	1-Slot	1-Slot

## SIGNAL GENERATION

	Function Generator
Features	• Simple Generation of Repetitive Arbitrary Waveforms
Model Family	41-620A
Capability	Amplitude Modulation, Edge or Level Triggering, Settable DC Offset, Frequency Sweep
Number of Channels	3
Frequency Range	DC to 10 MHz
Frequency Resolution	48-Bit
Clock Source	10 MHz PXI clock or external clock
Connector Type	SMB
Width (PXI-1, PXI-hybrid)	1-Slot

## CONNECTIVITY

**Cables & Connectors**

To support our products we offer a comprehensive range of cable & connector solutions:

- 20+ connector product families
- Over 1000 individual products
- Customized cabling

For more information visit: [pickeringtest.com/cables-connectors](http://pickeringtest.com/cables-connectors)

**Mass Interconnect**

We recommend the use of a mass interconnect solution when an Interchangeable Test Adapter (ITA) is required to be used with a PXI based test system. The complete range of our PXI modules are fully supported by both VPC and MacPanel mass interconnect solutions.

See **Mass Interconnect**.

**Connectors & Backshells**

**Multway Cable Assemblies**

**RF Cable Assemblies**

**Cable Design Tool**

Our Cable Design Tool is a free online tool that allows you to define a cable assembly to exactly meet your requirements.

- Graphical design of customized cable assemblies
- Built-in library of standard cable sets can be used as the basis for customization, or cables can be defined from scratch
- The ability to store cable assemblies in the Cloud and develop them over time
- Each cable design has a PDF documentation file detailing all the specifications
- Allows detailed design including; connector types, wire type, pin definitions, pin & cable labelling, cable bundling, length setting, sleeving, comments, etc.
- Add your own connectors and wires
- Fully supported on major tablet operating systems

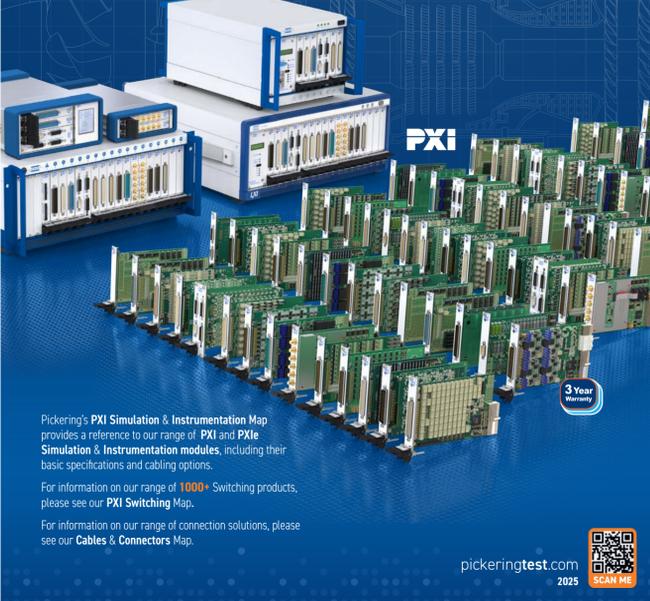
For more information visit: [pickeringtest.com/cdt](http://pickeringtest.com/cdt)

**DIN Rail Mounted Connector Blocks**

**Module Mounted Connector Blocks**

## PXI Simulation & Instrumentation Modules

- Programmable Resistors
- Resistive Sensor Simulators
- Battery Simulators
- Switch Simulators
- Sensor/Transducer Simulators
- Fault Insertion Switching
- Chassis & Remote Controllers
- Amplifiers & Attenuators
- Signal Generation
- Digital I/O & Prototyping
- USB
- Power Supplies
- Low Voltage/Current Sources
- Connectivity



Pickering's **PXI Simulation & Instrumentation Map** provides a reference to our range of **PXI and PXIe Simulation & Instrumentation modules**, including their basic specifications and cabling options.

For information on our range of 1000+ Switching products, please see our **PXI Switching Map**.

For information on our range of connection solutions, please see our **Cables & Connectors Map**.

[pickeringtest.com](http://pickeringtest.com) 2025

## About Pickering Interfaces

Pickering Interfaces was formed in 1988 and is headquartered in Clacton-on-Sea, United Kingdom. We have two manufacturing facilities—in the UK and the Czech Republic. We also have direct sales and support offices throughout Asia, Europe and North America. Our employees share a customer-centric approach and are dedicated to quickly getting our products functioning at their peak and into our customers' hands.



Today, we offer modular signal switching, simulation, software and services to streamline the development and deployment of high-performance electronic test and verification systems. We provide the most extensive range of switching and simulation solutions in the industry for PXI, LXI, USB and PCI applications. To support our switching and simulation solutions, we also offer application software and software drivers along with a full range of supporting connectivity and cabling solutions.

Pickering is committed to supporting both the **PXI** and **PXIe** (PXIe) standards and will supply all new modules in both formats, wherever possible. We also have an active program to replicate existing PXI modules in PXIe and already have several hundred PXIe modules available. Modules that are available in both formats are identified on this map by the **PXI/PXIe** icon.

## Switching | Simulation | Programmable Resistors | Custom Design | Software | Reed Relays | Connectivity & Cables

**Pickering Direct Sales & Support Offices**

Pickering Interfaces Inc., USA  
Tel: +1 949 497 1103 | Email: [usa@pickeringtest.com](mailto:usa@pickeringtest.com)

Pickering Interfaces Ltd., UK  
Tel: +44 (0)1255 487700 | Email: [uk@pickeringtest.com](mailto:uk@pickeringtest.com)

Pickering Interfaces Sdn Bhd, Singapore  
Tel: +65 633 9533 | Email: [singapore@pickeringtest.com](mailto:singapore@pickeringtest.com)

Pickering Interfaces GmbH, Germany  
Tel: +49 39 125 9533 | Email: [germany@pickeringtest.com](mailto:germany@pickeringtest.com)

Pickering Interfaces AB, Sweden  
Tel: +46 30 66 491 | Email: [sweden@pickeringtest.com](mailto:sweden@pickeringtest.com)

Pickering Interfaces s.r.l., Czech Republic  
Tel: +420 558 987 413 | Email: [czech@pickeringtest.com](mailto:czech@pickeringtest.com)

Pickering Interfaces, China  
Tel: +86 428-799-745 | Email: [china@pickeringtest.com](mailto:china@pickeringtest.com)

Pickering Interfaces, Malaysia  
Tel: +60 3 708 1111 | Email: [malaysia@pickeringtest.com](mailto:malaysia@pickeringtest.com)

Local Sales Agents in Australia, Belgium, Canada, China, India, Indonesia, Israel, Italy, Japan, Malaysia, Netherlands, New Zealand, Philippines, Singapore, South Africa, South Korea, Spain, Taiwan, Thailand, Turkey and Vietnam.

Pickering, the Pickering logo, BNC, BNCST, eBNCST and SoftCenter are trademarks of Pickering. All other brand and product names are trademarks or registered trademarks of their respective owners. Information contained in this document is summary in nature and subject to change without notice.

© Pickering 2025. All rights reserved.  
LXI-100, Mar 2025

