

- Fully Compliant LXI Interface (1.5)
- Ethernet 1000baseT Interface
- USB 3 Compatible
- Supports 1000+ Pickering PXI 3U Modules Including:
 - Programmable Resistors
 - Matrices
 - Multiplexers
 - General Purpose Relays
 - RF Switches
 - Fault Insertion
- Supports Two User Slots
- Compact 1/2 Rack Width 1U Form Factor
- 3 Year Warranty



**60-104 Chassis
With Two Pickering
PXI Modules Fitted**

Pickering Interfaces' 60-104 modular chassis offers a small lightweight form factor, making it ideal for portable, benchtop, and space restrictive applications.

The 60-104 supports one or two 3U PXI modules and accepts Pickering's PXI products, it is the perfect platform to construct small scale applications.

Possible systems include switching matrices up to 1536 crosspoints (one 40-558 BRIC2 occupying both slots) or up to 36 channels of programmable resistor/sensor emulation (two 40-295 or 40-297 18-channel resistor modules - one in each slot).

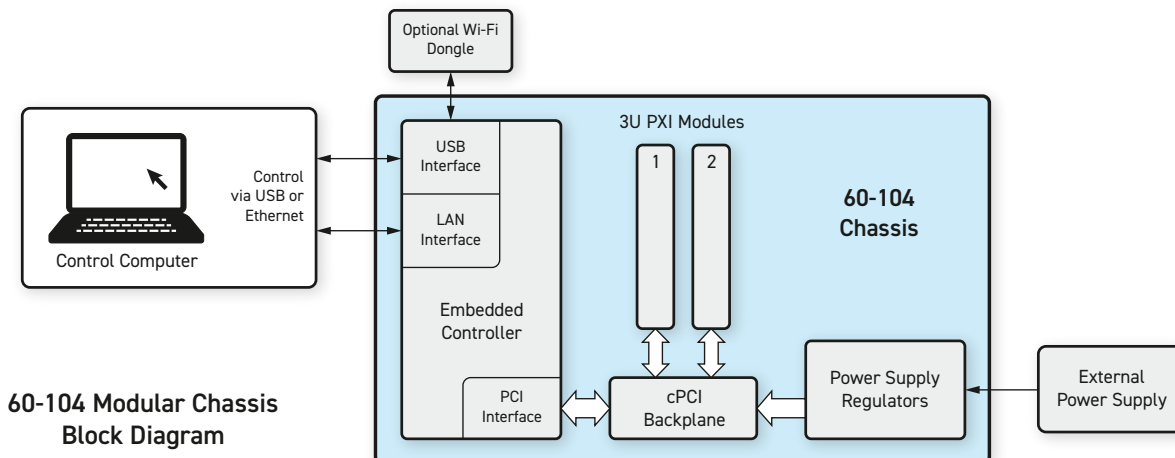
For a list of compatible PXI modules, please refer to the 60-104 user manual.

The USB compatible and LXI compliant interfaces enable the chassis to be controlled directly through standard interfaces found on most personal computers, allowing for a very cost effective route into the modular test and measurement market.

The option of a Wi-Fi dongle is useful for control from mobile devices via HTML5 SFP.

The chassis can be controlled through built in software drivers. Chassis configuration and module control is possible through the W3C web page interface.

The 60-104 is powered from an external DC supply, making it lightweight, versatile and extremely portable.



**60-104 Modular Chassis
Block Diagram**

Specifications

Chassis Backplane:	32-bit cPCI backplane, compatible with PXI.
Chassis Capacity:	2 off 3U user slots available.

PXI Module compatibility

The chassis is supplied with drivers for Pickering PXI modules.	
Switching Support:	Most of 3U Pickering Interface's PXI switching modules. Includes (but not limited to): All 2 slot 3U BRIC matrices, featuring up to 1104 crosspoints.
Simulation support:	All programmable resistor and potentiometer modules offering up to 36 channels, RF attenuators, digital I/O and other simulation modules.

Power Supply

Input Voltage Range:	19 V (DC)
Input Current Rating:	5.2 A (DC)

Cooling

Airflow:	
Per-slot Cooling	Crossflow
Capacity:	25 W at 40 °C ambient
Fans:	2 off 7.7 cfm fans

Acoustic Noise Emissions

With fans on maximum:	53 dBA typical
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LAN Interface

Designed to comply with the LXI Standard Version 1.5	
Connector:	RJ45 Connector.
Connection Speed:	1000BaseT interface.

USB Interface

Compatible with USB3 (backwardly compatible with USB/USB2)	
Connector:	USB3 type B
Connection Speed:	400 MBps

Mechanical Specification

Dimensions:	
With Rubber Bumpers:	Width: 165 mm (6.50") Height: 58 mm (2.28") Depth: 308 mm (12.13")
Weight:	1.3 kg without PXI modules
External PSU Dimensions:	W: 58 mm, H: 37 mm, D: 142 mm
Lead Length:	1200 mm

Slot Capacity (Per Slot)

+3.3 V	+5 V	+12 V	-12 V
6 A	6 A	1 A	1 A

NOTE: Maximum power is 60 W for all slots or 30 W per slot.

Operating/Storage Conditions

Operating Temperature:	0 °C to +55 °C
Humidity:	Up to 90% non-condensing
Altitude:	5000 m
Storage/Transport Temperature:	-20 °C to +75 °C
Humidity:	Up to 90% non-condensing
Altitude:	15000 m

Safety, CE & RoHS Compliance

All products are fully CE compliant and meet applicable EU directives:

Low-voltage safety EN61010-1:2010,
EMC Immunity EN61326-1:2013,
Emissions EN55011:2009+A1:2010.

The 60-104 Chassis also complies with the European Restriction of Hazardous Substances directive (RoHS).

Product Order Codes

Chassis

LXI/USB Modular Switching Chassis, 2-Slot 60-104-001

Accessories

Replacement 19 V DC Power Supply 63-104-001
400 Hz 19 V DC power supply 63-104-001-400
Optional Wi-Fi Dongle 63-104-002
Optional Chassis Strap Mounting Kit* 63-104A-003
Optional Chassis Plate Mounting Kit* 63-104A-004
Optional Chassis Low Profile Mounting Kit* 63-104-005
Optional Chassis Rack Mounting Kit 63-104-006

* Please refer to the 60-104 User Manual for information on these optional chassis mounting kits.



The 60-104 LXI/USB Modular Chassis Front Panel



The 60-104 2-Slot LXI/USB Modular Chassis is Shipped With Everything You Need to Get Started.

The Package Includes:

- 60-104 Chassis
- Power Supply
- USB3 Cable
- Ethernet Cable
- Driver DVD
- Optional Wi-Fi Dongle

The 60-104 is part of a range of PXI and PXIe Hybrid chassis which includes PXI chassis with an LXI or USB control interface.

Pickering's Range of PXI & PXIe Chassis			
Chassis Type	Number of Slots	Chassis Size	Model No.
PXI	8	4U Full Rack	40-908
PXI	14	4U Full Rack	40-914
PXI	19	4U Full Rack	40-923A
PXI	8	4U Half Rack	40-924
PXIe Hybrid (Gen 3)	8	4U Half Rack	42-924
PXIe Hybrid (Gen 3)	18	4U Full Rack	42-925
PXIe Hybrid (Gen 2)	18	4U Full Rack	42-926
PXIe Hybrid (Gen 2)	21	4U Full Rack	42-927
PXI with LXI/USB Control	7	4U Half Rack	60-102D
PXI with LXI/USB Control	18	4U Full Rack	60-103D
PXI with LXI/USB Control	2	1U Half Rack	60-104
PXI with LXI/USB Control	4	2U Half Rack	60-105
PXI with LXI/USB Control	6	1U Full Rack	60-106



PXI Switching and Sensor Simulation

Pickering is a leading manufacturer of PXI switching and sensor simulation modules, available in PXI and PXIe formats. With our deep portfolio of over 1,000 modules, we provide the assurance that you can optimize your test system switching and simulation to exactly fit your needs. These modules range from the highest density switching matrices, RF/Microwave and optical switching, to sensor simulation, including programmable resistors, strain gauge, battery and thermocouple simulators.

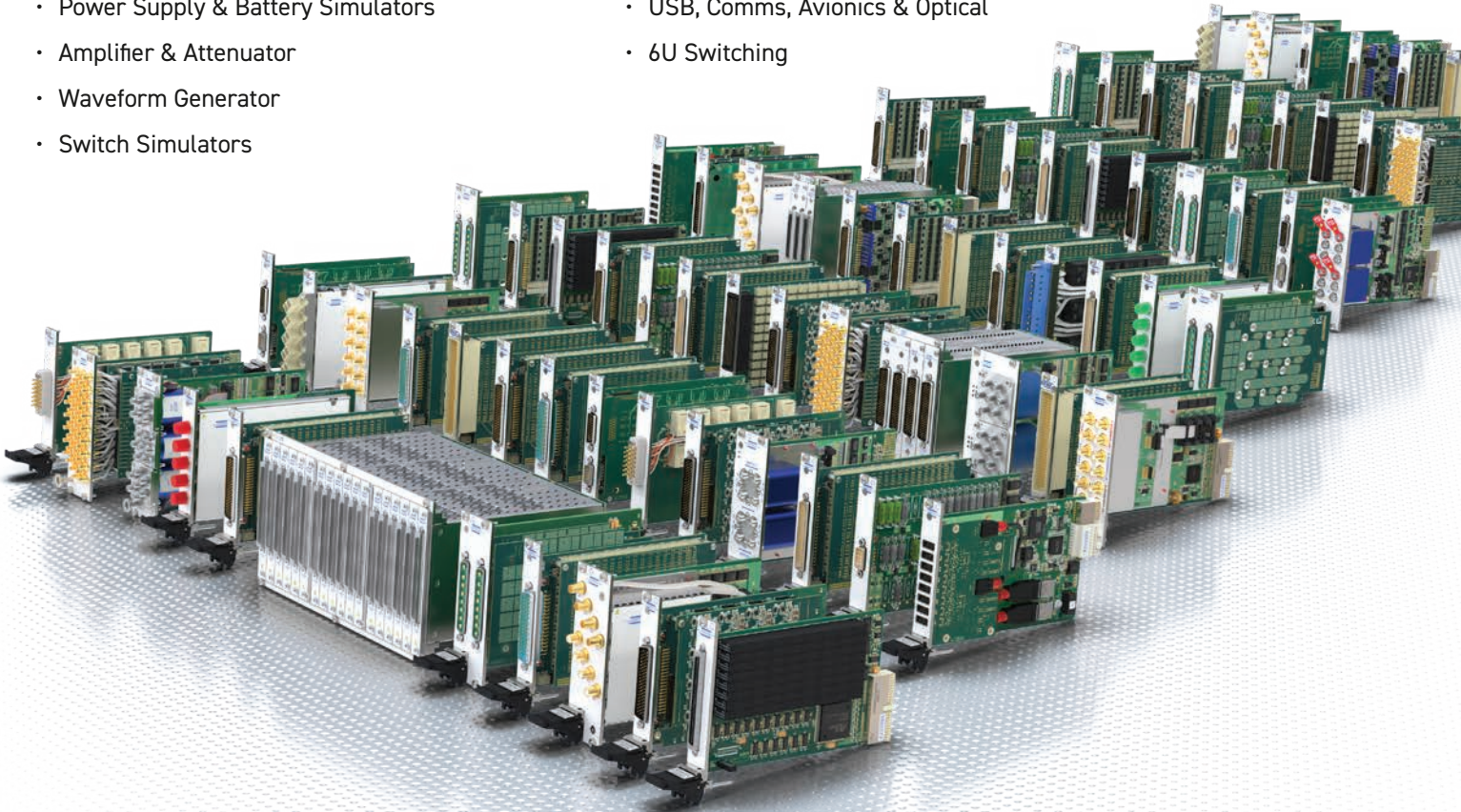
Please refer to the categories below and visit pickeringtest.com/pxi to find the products you need:

Sensor Simulation

- Programmable Resistors
- Thermocouple Simulators
- LVDT/RVDT/Resolver Simulators
- Analog Output/Current Loop Simulators
- Strain Gauge Simulators
- Digital I/O and Prototype
- Power Supply & Battery Simulators
- Amplifier & Attenuator
- Waveform Generator
- Switch Simulators

Switching

- General Purpose Relay
- BRIC™ Large Matrices
- Matrices
- Multiplexers
- RF & Microwave
- Fault Insertion
- USB, Comms, Avionics & Optical
- 6U Switching



All of our PXI modules will plug into any PXI compliant chassis or a Hybrid Slot in a PXIe chassis and may also be used in our Ethernet controlled modular LXI switching chassis. Our PXIe modules will plug into any compliant PXIe slot or Hybrid Slot in a PXIe chassis.

Programming

Pickering provide kernel, IVI and VISA (NI & Keysight) drivers which are compatible with all Microsoft supported versions of Windows and popular older versions.

For more information go to pickeringtest.com/os

The VISA driver support is provided for LabVIEW Real Time Operating Systems (Pharlap and Linux-RT). For other RTOS support contact Pickering. These drivers may be used with a variety of programming environments and applications including:

- **Pickering Interfaces Switch Path Manager**
- **National Instruments products** (LabVIEW, LabWindows/CVI, Switch Executive, MAX, TestStand, VeriStand, etc.)
- **Microsoft Visual Studio products** (Visual Basic, Visual C++)
- **Programming Languages C, C++, C#, Python**
- **Keysight VEE and OpenTAP**
- **Mathworks MATLAB, Simulink**
- **Marvin ATEasy**
- **MTQ Testsolutions Tecap Test & Measurement Suite**

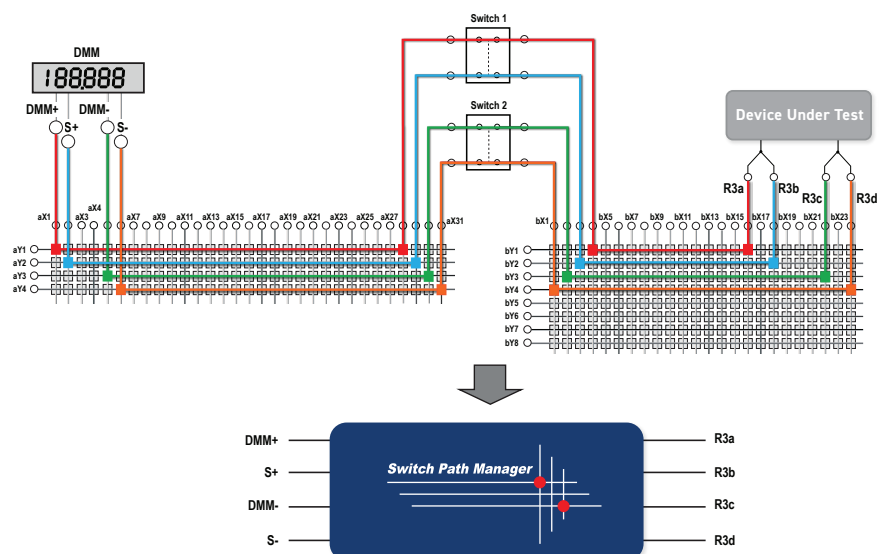
Drivers for popular Linux distributions are available, other environments are also supported, please contact Pickering with specific enquiries. We provide Soft Front Panels (SFPs) for our products for familiarity and manual control, as well as comprehensive documentation and example programs to help you develop test routines with ease.

To learn more about software drivers and development environments go to pickeringtest.com/software

Signal Routing Software

Our signal routing software, Switch Path Manager, automatically selects and energizes switch paths through Pickering switching systems. Signal routing is performed by simply defining test system endpoints to be connected together, greatly accelerating Test System software development.

To learn more go to pickeringtest.com/spm



Diagnostic Relay Test Tools

eBIRST Switching System Test Tools are designed specifically for our PXI, PCI or LXI products, these tools simplify switching system fault-finding by quickly testing the system and graphically identifying the faulty relay.

To learn more go to pickeringtest.com/ebirst



Three Year Warranty & Guaranteed Long-Term Support

All standard products manufactured by Pickering Interfaces are warranted against defective materials and workmanship for three years from the date of delivery to the original purchaser. Extended warranty and service agreements are available with various levels for your requirements. Although we offer a 3-year warranty as standard, we also include guaranteed long-term support—with a history of supporting our products for typically 15-20 years.

To learn more go to pickeringtest.com/support

Available Product Resources

We have a library of resources including success stories, product and support videos, articles and white papers as well as application-specific brochures to assist you. We have also published reference books on switching technology and the PXI and LXI standards.

To view, download or request any of our product resources go to pickeringtest.com/resources

