2-Slot LXI/USB Modular Chassis

- 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

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 1104 crosspoints (one 40-560 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.

### Pickering’s Range of PXI/LXI/USB Chassis

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Control Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>60-104-001</td>
<td>2-Slot LXI/USB Modular Chassis</td>
<td>LXI/USB</td>
</tr>
<tr>
<td>60-105-001</td>
<td>4-Slot LXI/USB Modular Chassis</td>
<td>LXI/USB</td>
</tr>
<tr>
<td>60-106-001</td>
<td>6-Slot LXI/USB Modular Chassis</td>
<td>LXI/USB</td>
</tr>
<tr>
<td>60-102B-001</td>
<td>7-Slot LXI Modular Switching Chassis</td>
<td>LXI</td>
</tr>
<tr>
<td>60-103B-001</td>
<td>18-Slot LXI Modular Switching Chassis</td>
<td>LXI</td>
</tr>
<tr>
<td>40-922A-001</td>
<td>8-Slot PXI Chassis</td>
<td>Remote interface / Embedded controller</td>
</tr>
<tr>
<td>40-923A-001</td>
<td>19-Slot PXI Chassis</td>
<td>Remote interface / Embedded controller</td>
</tr>
</tbody>
</table>

The 60-104 Modular Chassis Block Diagram
Specifications & Ordering Information

Specifications

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chassis Backplane</td>
<td>32-bit cPCI backplane, compatible with PXI.</td>
</tr>
<tr>
<td>Chassis Capacity</td>
<td>2 off 3U user slots available.</td>
</tr>
</tbody>
</table>

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         | 19V (DC)                                                               |
| Input Current Rating        | 5.2A (DC)                                                             |

Cooling

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

Acoustic Noise Emissions

With fans on maximum: 53dBA typical

LAN Interface

Designed to comply with the LXI Standard Version 1.5

Connector: RJ45 Connector.

Connection Speed: 1000BaseT interface.

USB Interface

Designed to be compatible with USB3 (backwardly compatible with USB/USB2)

Connector: USB3 type B

Connection Speed: 400MBps

Mechanical Specification

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>With Rubber Bumpers</td>
<td>Width: 165mm (6.50&quot;)</td>
</tr>
<tr>
<td></td>
<td>Height: 58mm (2.28&quot;)</td>
</tr>
<tr>
<td></td>
<td>Depth: 308mm (12.13&quot;)</td>
</tr>
<tr>
<td>Weight</td>
<td>1.3kg without PXI modules</td>
</tr>
</tbody>
</table>

Slot Capacity (Per Slot)

<table>
<thead>
<tr>
<th>+3.3V</th>
<th>+5V</th>
<th>+12V</th>
<th>-12V</th>
</tr>
</thead>
<tbody>
<tr>
<td>6A</td>
<td>6A</td>
<td>1A</td>
<td>1A</td>
</tr>
</tbody>
</table>

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

Operating/Storage Conditions

Operating Conditions

| Operating Temperature       | 0°C to +55°C                                                            |
| Humidity                   | Up to 90% non-condensing                                               |
| Altitude                   | 5000m                                                                   |

Storage and Transport Conditions

| Storage Temperature        | -20°C to +75°C                                                          |
| Humidity                   | Up to 90% non-condensing                                               |
| Altitude                   | 15000m                                                                  |

Safety, CE & RoHS Compliance


The 60-105 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 19V DC Power Supply | 63-104-001               |
| 400Hz 19V 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           |

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

The 60-104 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
Connectivity Solutions

We provide a full range of supporting cable and connector solutions for all our switching products—20 connector families with 1200+ products. We offer everything from simple mating connectors to complex cables assemblies and terminal blocks. All assemblies are manufactured by Pickering and are guaranteed to mechanically and electrically mate to our modules.

We also offer customized cabling and have a free online Cable Design Tool that can be used to create custom cable solutions for many applications. Visit pickeringtest.com/cdt to start your design.

Mass Interconnect

We recommend the use of a mass interconnect solution when an Interchangeable Test Adapter (ITA) is required for a PXI or LXI based test system. Our modules are fully supported by both Virginia Panel and MacPanel.

Pickering Reed Relays

We are the only switch provider with in-house reed relay manufacturing capability via our Relay Division. These instrument grade reed relays feature SoftCenter™ technology, ensuring long service life and repeatable contact performance.

To learn more, please go to pickeringrelay.com

Programming

All LXI devices are supplied with built-in software drivers, web pages for configuration and soft front panels as required by the LXI specification. A variety of drivers are provided (C, .NET, IVI, SOAP) which are compatible with all Microsoft supported versions of Windows and popular older versions. For a list of all supporting operating systems, please see pickeringtest.com/os

The drivers may be used in many commonly used 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++, Visual C#)
- **Keysight** VEE and OpenTAP
- **Mathworks** Matlab
- **Marvin** ATEasy
- **MTQ Testsolutions** Tecap Test & Measurement Suite

As well as various open source environments such as:

- **Sharp Develop**
- **Dev-C++**

To learn more about software drivers and development environments, please 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, please go to: [pickeringtest.com/spm](http://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, please go to: [pickeringtest.com/ebirst](http://pickeringtest.com/ebirst)

**Three Year Warranty**

All standard products manufactured by Pickering Interfaces are warranted against defective materials and workmanship for a period of three years from the date of delivery to the original purchaser. Extended warranty and service agreements are available for all our modules and systems with various levels to suit 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, please go to: [pickeringtest.com/support](http://pickeringtest.com/support)

**Available Product Resources**

We have a large library of product resources including success stories, product and support videos, articles, as well as complete product catalogs and product reference maps to assist when looking for the switching, simulation and cable and connector solutions you need.

We have also published handy reference books on Switching Technology and for the PXI and LXI standards.

To view, download or request any of our product resources, please visit: [pickeringtest.com/resources](http://pickeringtest.com/resources)