

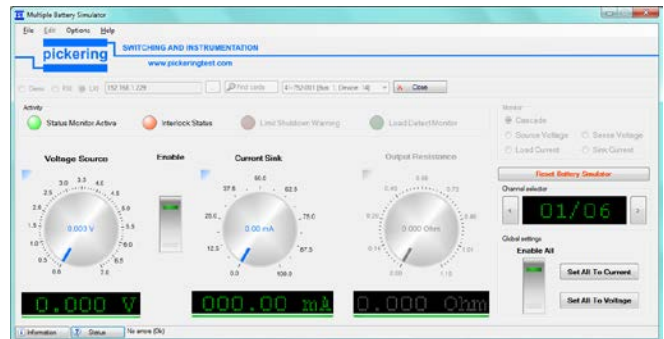
- 6 Power Supplies In A Single PXI Slot
- Independent Sense Connections
- Ideal For Battery Stack Emulation
- 750V Independent Isolation Barriers
- Up To 300mA Output Per Simulator
- Battery Charging Emulation To 100mA
- Uses Backplane Power Sources
- Hardware Shutdown Control
- VISA and Kernel Drivers Supplied For Windows Plus Soft Front Panel
- Use In Pickering 19-Slot PXI Chassis Or 18-Slot LXI Chassis



The 41-752 is a 6 channel battery simulator, capable of supplying up to 7V and 300mA per channel. Each channel is fully isolated from ground and from each other allowing series connection to simulate batteries in a stacked architecture. The 750V isolation barrier allows the module to be used as a lower power version of a battery stack representative of those used for vehicle propulsion.

Each channel provides independent power and sense connections, allowing the battery simulator to sense a remote load and correct for wiring losses. The battery simulator is designed to respond to dynamic loads, minimizing the need for local decoupling capacitors at the load.

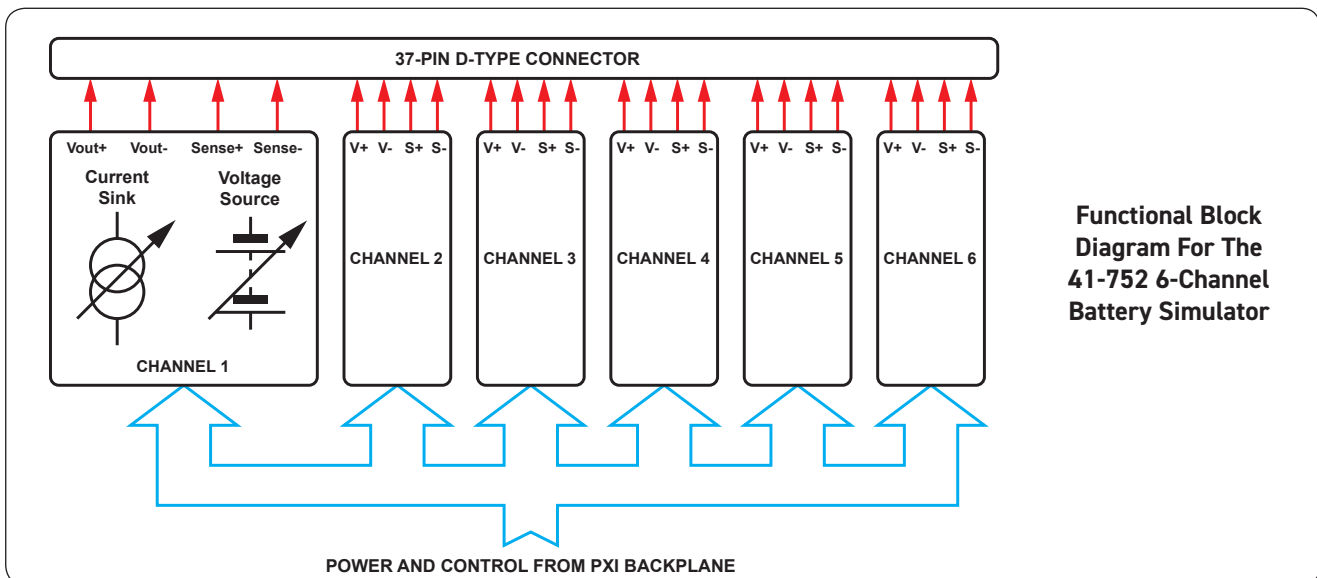
A control line on the user connector allows the user to shutdown all battery simulator channels with one signal. Multiple control lines may be linked together to provide an easy way of inhibiting the output when using many series connected modules. This also provides a means of automatic shutdown when connectors are removed.



Soft Front Panel for Battery Simulator Modules

The 41-752 can be used as a 6 channel fully isolated power supply with independent sense lines on each channel.

The user connector is a 37-pin high voltage D-type which is fully supported by the wide range of Pickering Interfaces connector accessories.



Functional Block Diagram For The 41-752 6-Channel Battery Simulator

Specification

Number of Channels:	6 independent isolated channels.
Output Voltage Range:	0 to 7V, settable with 14-bit resolution (approximately 0.43mV).
Output Voltage Accuracy:	±0.2% ±20mV from 1V to 7V output over ambient temperature range +11°C to +31°C.
Isolation Voltage:	±750V
Output Current:	Up to 300mA per channel for voltages from 2.5V to 7V Linearly de-rate to 200mA into a short circuit below 2.5V without thermal shutdown.
Current Sink:	Variable current sink permits the output to be loaded so the battery simulator can sink current from a charger. Current sink can be set from 0 to 100mA in 16 steps. Current sink setting reduces the current available at the user connector.
Output Connections:	Vout+, Vout- and two sense inputs for each simulator channel. Sense inputs detect output voltage at front panel connector if no remote sense lines are connected.
Load Response Time:	250µs
Power Source:	PXI backplane +12V, +5V, +3.3V and -12V.

Power Requirements

+3.3V	+5V	+12V	-12V
0.8A	2.0A	0.6A	0.3A

At maximum load for all channels,

Recommended chassis are 60-103 and 60-103A or 40-923 and 40-923A for applications requiring many modules (up to 18 off) in a single chassis to avoid chassis limitations.

Mechanical Characteristics

Single slot 3U PXI (CompactPCI card).
3D models for all versions in a variety of popular file formats are available on request.

Connectors

PXI bus via 32-bit P1/J1 backplane connector.
Signals via front panel 37-pin male high voltage D-type connector, for pin outs please refer to the operating manual.

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

PXI & CompactPCI Compliance

The module is compliant with the PXI Specification 2.2. Local Bus, Trigger Bus and Star Trigger are not implemented.

Uses a 33MHz 32-bit backplane interface.

Safety & CE Compliance

All modules 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.*

Product Order Codes

Battery Simulator, 6-Channel	41-752-001
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Product Customization

Pickering PXI modules are designed and manufactured on our own flexible manufacturing lines, giving complete product control and enabling simple customization to meet very specific requirements.

All customized products are given a unique part number, fully documented and may be ordered at any time in the future. Please contact your local sales office to discuss.

Mating Connectors & Cabling

For connection accessories for the 41-752 module please refer to the [90-007HVD](#) 37-pin High Voltage D-type Connector Accessories data sheet where a complete list and documentation can be found for accessories, or refer to the Connection Solutions catalog.

Chassis Compatibility

This PXI module must be used in a suitable chassis. It is compatible with the following chassis types:

- All chassis conforming to the 3U PXI and 3U Compact PCI (cPCI) specification
- Legacy and Hybrid Peripheral slots in a 3U PXI Express (PXIe) chassis
- Pickering Interfaces LXI or LXI/USB Modular Chassis

Chassis Selection Guide

Standard PXI or hybrid PXIe Chassis from any Vendor:

- Mix our 1000+ PXI switching & simulation modules with any vendor's PXI instrumentation
- Embedded or remote Windows PC control
- Real-time Operating System Support
- High data bandwidths, especially with PXI Express
- Integrated module timing and synchronization



Pickering LXI or LXI/USB Modular Chassis—only accept our 1000+ PXI Switching & Simulation Modules:

- Ethernet or USB control enables remote operation
- Low-cost control from practically any controller
- LXI provides manual control via Web browsers
- Driverless software support
- Power sequencing immunity
- Ethernet provides chassis/controller voltage isolation
- Independence from Windows operating system



Connectivity Solutions

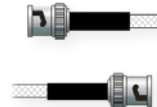
We provide a full range of supporting cable and connector solutions for all our switching products—20 connector families with 1200+ products. We offer everything from simple mating connectors to complex cables assemblies and terminal blocks. All assemblies are manufactured by Pickering and are guaranteed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



Connectors & Backshells



Multiwire Cable Assemblies



RF Cable Assemblies



Connector Blocks

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 sister company, Pickering Electronics. 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

Pickering provide kernel, IVI and VISA (NI & Keysight) drivers 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 VISA driver is also compatible with Real-Time Operating Systems such as LabVIEW 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+)
- **Keysight** VEE
- **Mathworks** Matlab
- **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, 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



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

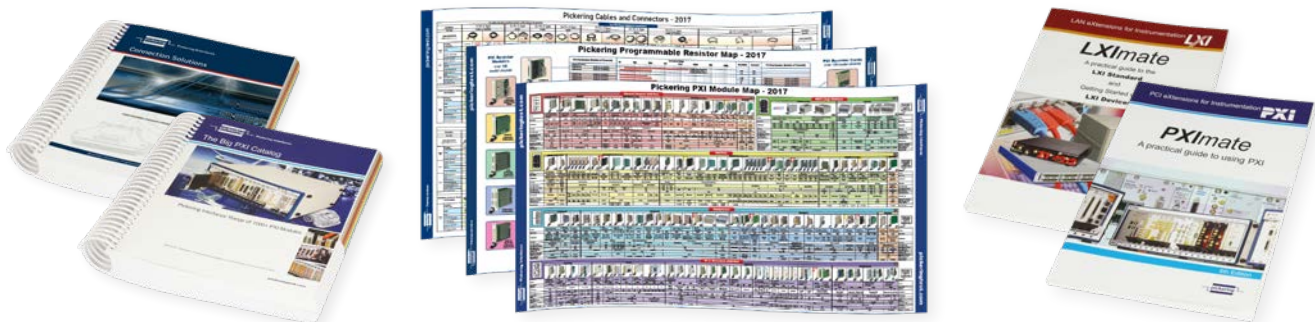


Three Year Warranty & Guaranteed Long-Term Support

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

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 for the PXI and LXI standards.



To view, download or request any of our product resources, please visit: pickeringtest.com/resources

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