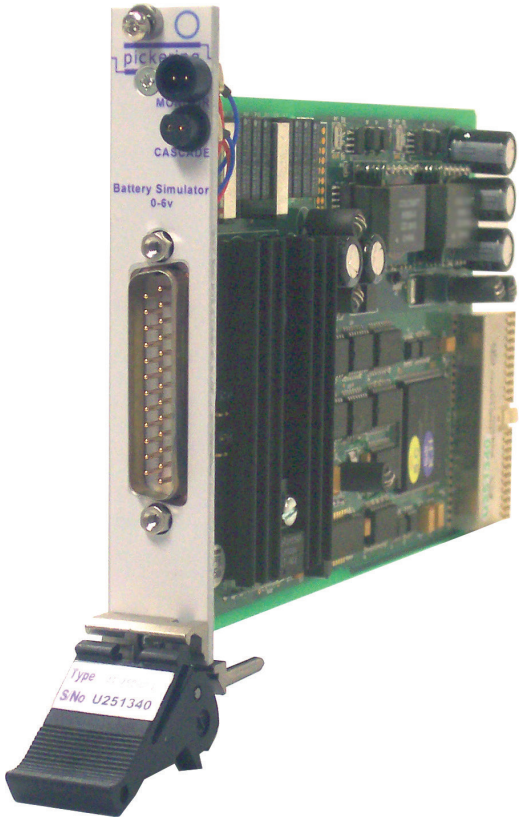
OBSOLETE PRODUCT

41-750
Battery Simulator Module

- Single Slot Battery Simulator
- Remote Voltage Sense
- Isolated Outputs
- Output Voltage Up To 6V
- Power Supplied From PXI Backplane
- Pickering Interfaces Monitor System For Current and Voltage
- Programmable Current Sink Capability To 0.5A For Charger Load Simulation
- VISA and Kernel Drivers
- Supported by PXI or LXI Chassis
- 2 Year Warranty



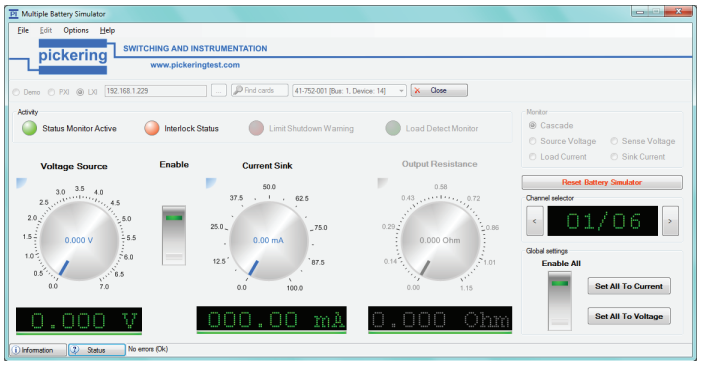
The 41-750 is a battery simulator module that can be used to simulate the power supplies of cellular phones and other portable battery devices. It features fully floating output terminals that can deliver voltages up to 6 Volts. The fast responding remote sense connections allow the module to regulate the supply voltage at the device under test. The output terminals can float ±50V relative to the front panel ground to ensure the accurate simulation of battery operation.

A module can source or sink current to provide simulation of a battery supply or a battery under charge. The use of two modules allows the simulation of both the charger voltage source and the battery. The programmable current sink can be set to divert up to 0.5A of the load current, permitting the battery simulator to act as a net current sink when connected to a charger circuit. The 41-750 is capable of delivering up to 2.8 Amps into the load.

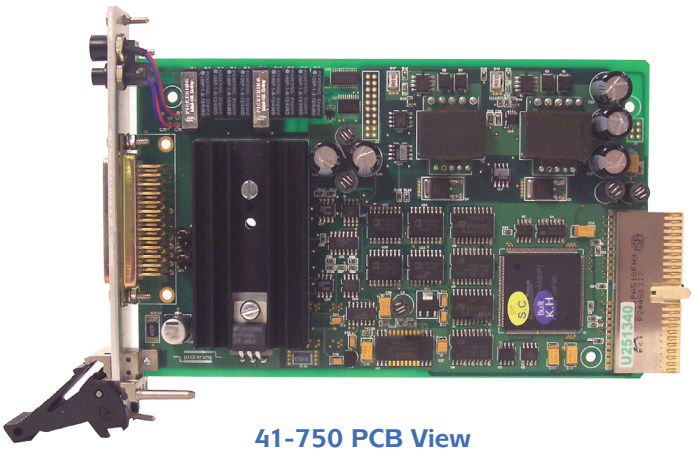
The module derives its power from the PXI backplane and requires no external power source.

The battery simulator can be configured to prevent misleading operation. If the remote sense lines are not connected to the device under test, the power supply is automatically closed down. The alternative configuration regulates the front panel voltage if the sense lines are not connected to the load.

Monitoring of the output voltage and current is provided through the simple to connect Pickering Interfaces Monitor facility. A single DMM can be used to report voltages and currents on multiple modules, through an easily implemented daisy chain connection. This facility can also be used to monitor other types of modules in the Pickering range. The wide bandwidth of the monitor facility allows the use of external data acquisition devices to capture voltage and current variations with time.



Soft Front Panel for Battery Simulator Modules



41-750 PCB View

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Specification

Number of Channels:	1 (isolated)
Output Voltage Range:	0 to 6 Volts (at front panel), isolated ±50V maximum common mode voltage.
Voltage Resolution:	Set with 16 bit resolution.
Voltage Sense:	Remote sensing of load voltage, mechanically configurable to either regulate front panel voltage or close down if not connected.
Output Current:	Up to 2.8 Amps (includes set sink current).
Current Sink:	Programmable current sink from 0 to 0.5 Amps available for output voltages above 0.5V. Current sink setting reduces the available maximum output current delivered to the load if an external current source is not applied.
Load Response Time:	15µs (1A to 2A, 1m connection wire, using all connection pins).
Power Source:	PXI backplane +5V.
Monitor:	Provided through monitor port to measure output voltages and currents. Can be used to measure load voltage, front panel voltage, load current and sink current. Currents are measured by voltage sensing across a resistor.
Monitor Accuracy:	Voltage DMM ±30µV Current 1% ±1mA (after zero correction).
Protection:	Short circuit protection. Thermal protection. Operation of protection is reported. Prolonged operation of protection is not recommended to avoid chassis connector damage.
Output Connector:	25-pin male D-type. Each connection is supported by two pins to permit doubling up of connections.

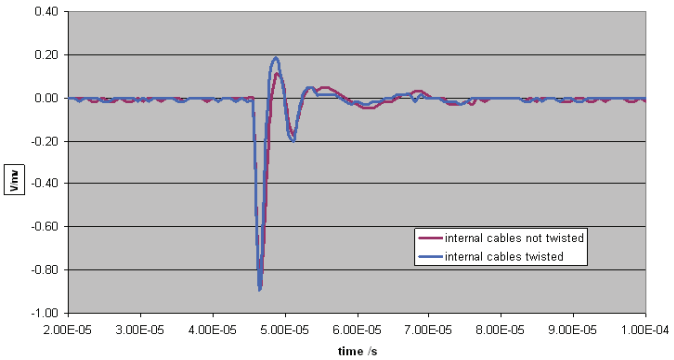
PXI Characteristics

Backplane connection:	33MHz, 32 bit.
Mechanical:	3U, 1 slot.

Power Requirements from PXI Power Supply

+3.3V	+5V	+12V	-12V
0.1A	6A Maximum	0.1A	0.1A

41-750 Transient Response (2 m cable, 22 AWG, resistive load)



Typical load transient response of 41-750 for 6V output when load is changed abruptly from 1A to 2A in <<1µs

Product Order Codes

Battery Simulator 2.8 Amps	**41-750-001**

Mating Connectors & Cabling

For connection accessories for the 41-750 module please refer to the **90-008D** 25-pin D-type Connector Accessories data sheet where a complete list and documentation can be found for accessories.

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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: www.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**
- **MTQ Testsolutions** Tecap Test & Measurement Suite
- **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

Drivers for popular Linux distributions are available, other environments are also supported, please contact Pickering with specific enquiries.

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 EN61010-1:2001, EMC Immunity EN61000-6-1:2001, Emissions EN55011:1998.

PXI & LXI Chassis Compatibility

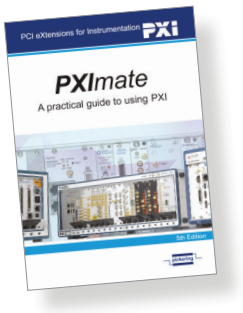
Compatible with all chassis conforming to the 3U PXI and 3U cPCI specification. Compatible with Legacy and Hybrid peripheral slots in a 3U PXI Express chassis.
Compatible with Pickering Interfaces LXI Modular Chassis. For information on driving your switching solution in an LXI environment refer to the LXI Product Guide.

Latest Details

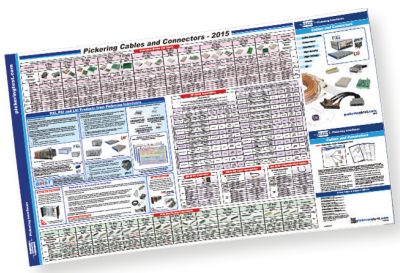
Please refer to our Web Site for Latest Product Details.
www.pickeringtest.com

Please refer to the 200 page Pickering Interfaces "**Connection Solutions**" catalog for the full list of connector/cabling options, including drawings, photos and specifications. Available in either print or as a download.
Alternatively our web site has dynamically linked connector/cabling options, including pricing, for all Pickering PXI modules.

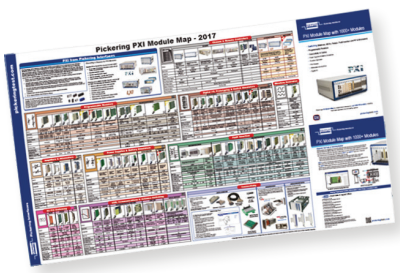
"**The Big PXI Catalog**" gives full details of Pickering's entire range of PXI switch modules, instrument modules and support products.
At over 500 pages, the Big PXI Catalog is available on request or can be downloaded from the Pickering website.



Ever wondered what PXI is all about?
Pickering Interfaces' "**PXImate**" explains the basics of PXI and provides useful data for engineers working on switch based test systems.
The PXImate is available free on request from the Pickering website.



The "**Cables & Connectors Map**" - outlines the cable and connector options available for all PXI Modules.



The "**PXI Module Map**" - a simple fold-out selection guide to all Pickering's 1000+ PXI Modules.

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