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Find the *Pickering 40-784A-102* at our website: *Click HERE*

PXI Microwave Multiplexer 40-784A

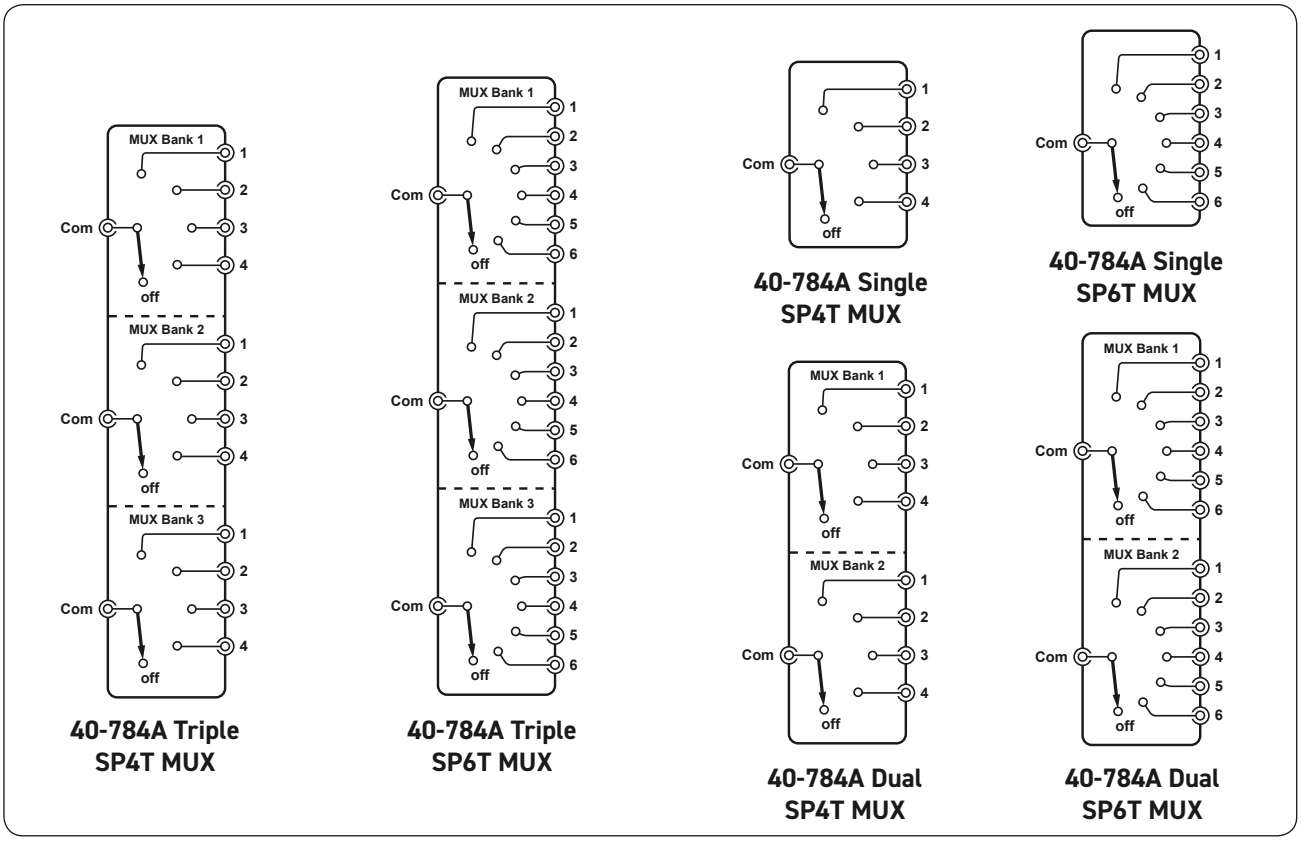
- Single, Dual or Triple Subminiature SP6T & SP4T MUXs
- 6GHz, 18GHz, 26.5GHz & 40GHz Bandwidths
- Custom Versions Available
- Excellent RF & Repeatability Characteristics
- Extended Life For 6GHz/18GHz/26.5GHz Models – 10M Operations Guaranteed & Typically >25M!
- Faster Operate Time than Conventional Microwave Relay Solutions (Typically <10.5ms)
- LED Indication
- VISA, IVI & Kernel Drivers Supplied for Windows
- Supported by PXI, PXIe Hybrid and Pickering LXI Modular Chassis
- 3 Year Warranty



The 40-784A PXI microwave multiplexer modules have a characteristic impedance of 50Ω and are capable of switching signals up to 40GHz. Available in single, dual or triple, SP6T or SP4T formats, they are suitable for constructing complex microwave switching. Connection is by high performance front panel mounted SMA or SMA-2.9 connectors.

These modules provide a high performance solution for RF and microwave switching, the performance at low frequencies providing superior isolation, insertion loss and VSWR to EMR or solid state designs.

For applications where space is critical, users should consider the remote relay versions of the 40-785A which support up to 3 remotely mounted multiplexers from a single PXI slot.



40-784A Triple SP4T MUX

40-784A Triple SP6T MUX

40-784A Single SP4T MUX

40-784A Single SP6T MUX

40-784A Dual SP4T MUX

40-784A Dual SP6T MUX

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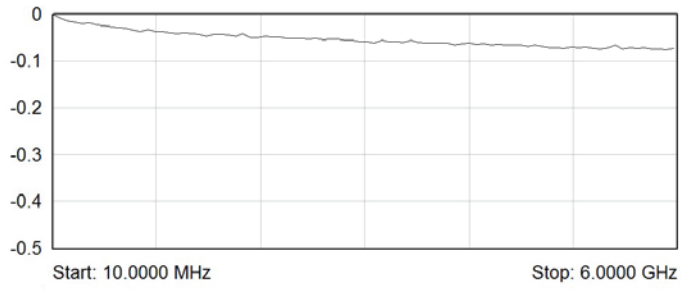
Switching Specification

Relay Manufacturer:	Radiall
Configuration:	SP6T or SP4T Microwave Multiplexer with 1, 2 or 3 independent banks.
LED Indicators:	Multiplexers have blue LEDs to indicate a closed RF path.
Operate Time:	Typically <10.5ms
Maximum Cold Switch Voltage:	100V*
Maximum Carry Current:	1A

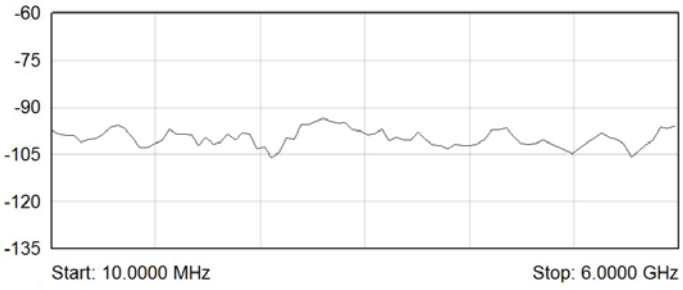
* For full voltage rating, signal sources to be switched must be fully isolated from mains supply and safety earth.

Multiplexer Specification - 6GHz Versions

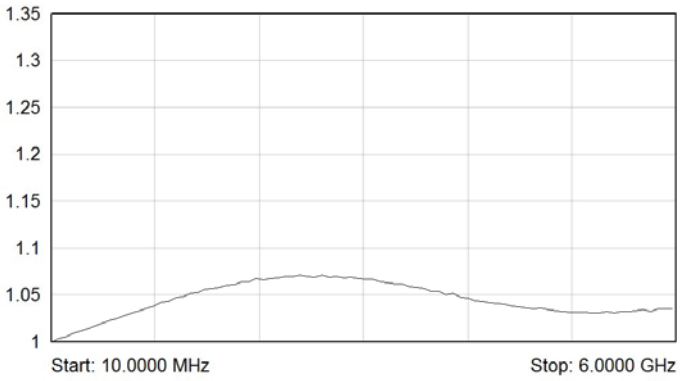
Characteristic Impedance:	50Ω
Connectors:	SMA
Bandwidth	DC to 6GHz
Maximum RF Carry Power:	220W (0-3GHz) 150W (3-6GHz)
Isolation:	>80dB (0-3GHz) >70dB (3-6GHz)
Insertion Loss:	<0.2dB (0-3GHz) <0.3dB (3-6GHz)
VSWR:	<1:1.2 (0-3GHz) <1:1.3 (3-6GHz)
Expected Life (low power):	>10 million operations per position guaranteed (typically >25 million)
Insertion Loss Repeatability:	Within 0.01dB



Typical Insertion Loss (dB) Plot for 6GHz Versions



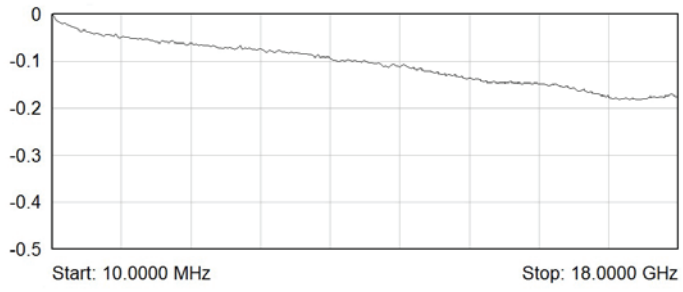
Typical Isolation (dB) Plot for 6GHz Versions



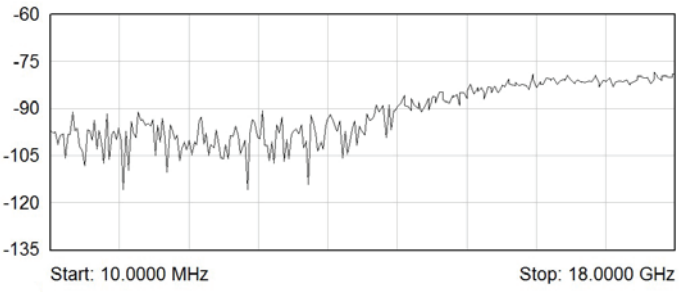
Typical VSWR Plot for 6GHz Versions

Multiplexer Specification - 18GHz Versions

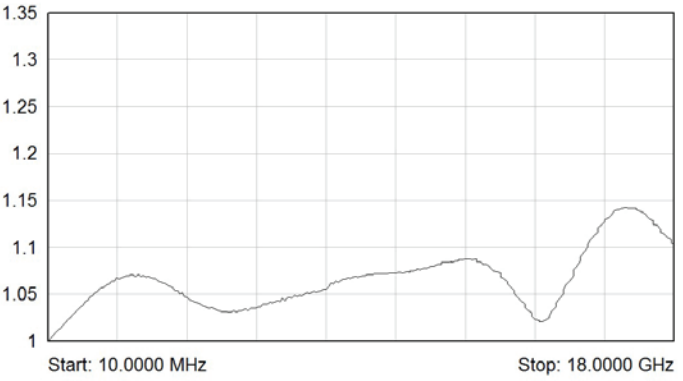
Characteristic Impedance:	50Ω
Connectors:	SMA
Bandwidth	DC to 18GHz
Maximum RF Carry Power:	220W (0-3GHz) 150W (3-8GHz) 120W (8-12.4GHz) 100W (12.4-18GHz)
Isolation:	>80dB (0-3GHz) >70dB (3-8GHz) >60dB (8-12.4GHz) >60dB (12.4-18GHz)
Insertion Loss:	<0.2dB (0-3GHz) <0.3dB (3-8GHz) <0.4dB (8-12.4GHz) <0.5dB (12.4-18GHz)
VSWR:	<1:1.2 (0-3GHz) <1:1.3 (3-8GHz) <1:1.4 (8-12.4GHz) <1:1.5 (12.4-18GHz)
Expected Life (low power):	>10 million operations per position guaranteed (typically >25 million)
Insertion Loss Repeatability:	Within 0.025dB
Propagation Delay Variation (between channels):	<1ps



Typical Insertion Loss (dB) Plot for 18GHz Versions



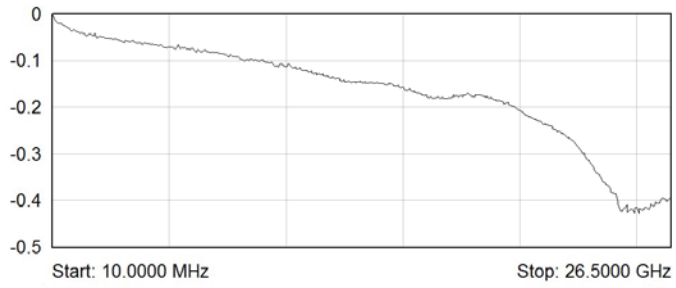
Typical Isolation (dB) Plot for 18GHz Versions



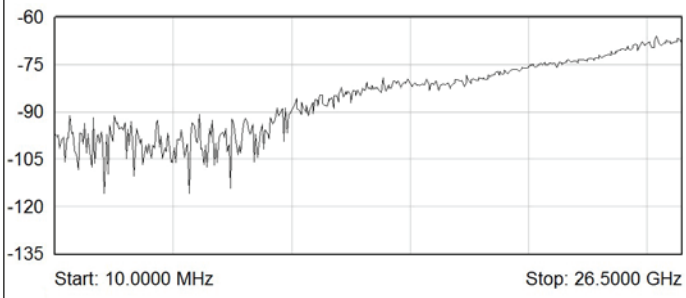
Typical VSWR Plot for 18GHz Versions

Multiplexer Specification - 26.5GHz Versions

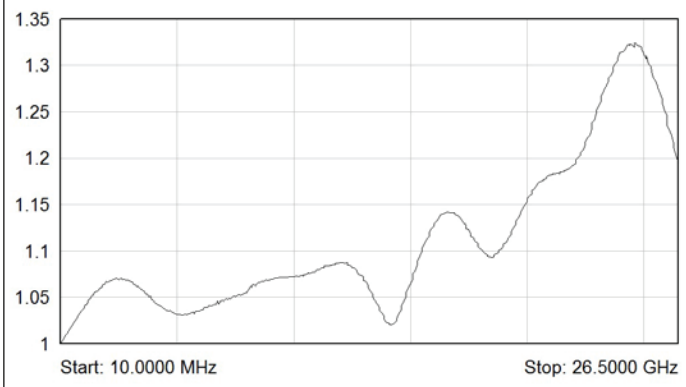
Characteristic Impedance:	50Ω
Connectors:	SMA
Bandwidth	DC to 26.5GHz
Maximum RF Carry Power:	220W (0-3GHz) 150W (3-8GHz) 120W (8-12.4GHz) 100W (12.4-18GHz) 40W (18-26.5GHz)
Isolation:	>80dB (0-3GHz) >70dB (3-8GHz) >60dB (8-12.4GHz) >60dB (12.4-18GHz) >55dB (18-26.5GHz)
Insertion Loss:	<0.2dB (0-3GHz) <0.3dB (3-8GHz) <0.4dB (8-12.4GHz) <0.5dB (12.4-18GHz) <0.6dB (18-26.5GHz)
VSWR:	<1:1.2 (0-3GHz) <1:1.3 (3-8GHz) <1:1.4 (8-12.4GHz) <1:1.5 (12.4-18GHz) <1:1.6 (18-26.5GHz)
Expected Life (low power):	>10 million operations per position guaranteed (typically >25 million)
Insertion Loss Repeatability:	Within 0.035dB



Typical Insertion Loss (dB) Plot for 26.5GHz Versions



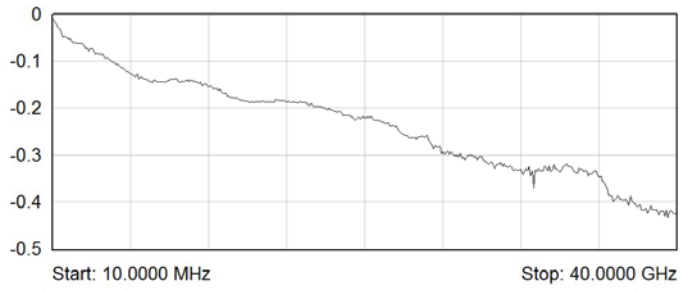
Typical Isolation (dB) Plot for 26.5GHz Versions



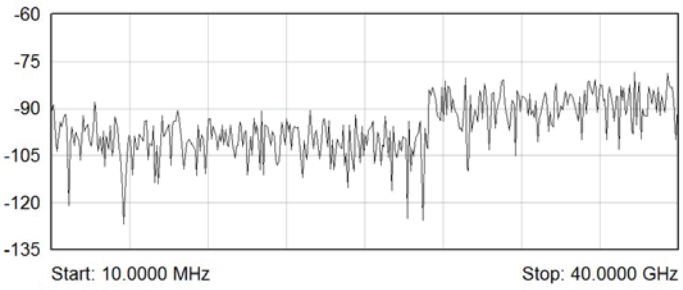
Typical VSWR Plot for 26.5GHz Versions

Multiplexer Specification - 40GHz Versions

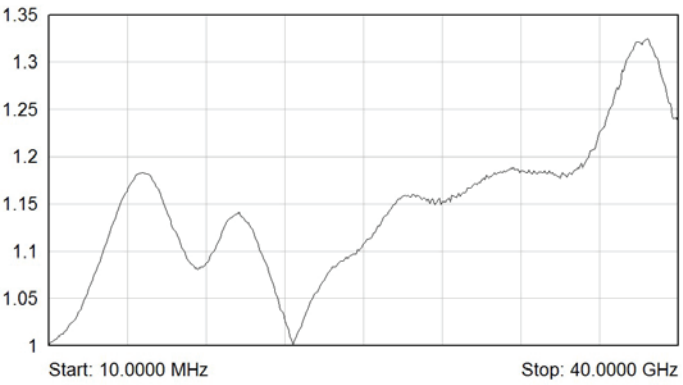
Characteristic Impedance:	50Ω
Connectors:	SMA-2.9
Bandwidth	DC to 40GHz
Maximum RF Carry Power:	60W (0-3GHz) 35W (3-8GHz) 30W (8-12.4GHz) 25W (12.4-18GHz) 15W (18-26.5GHz) 5W (26.5-40GHz)
Isolation:	>80dB (0-3GHz) >70dB (3-8GHz) >60dB (8-12.4GHz) >60dB (12.4-18GHz) >55dB (18-26.5GHz) >45dB (26.5-40GHz)
Insertion Loss:	<0.2dB (0-3GHz) <0.3dB (3-8GHz) <0.4dB (8-12.4GHz) <0.5dB (12.4-18GHz) <0.7dB (18-26.5GHz) <1.1dB (26.5-40GHz)
VSWR:	<1:1.2 (0-3GHz) <1:1.3 (3-8GHz) <1:1.4 (8-12.4GHz) <1:1.5 (12.4-18GHz) <1:1.7 (18-26.5GHz) <1:2.2 (26.5-40GHz)
Expected Life (low power):	>2 million operations per position guaranteed (typically >5 million)
Insertion Loss Repeatability:	Within 0.05dB



Typical Insertion Loss (dB) Plot for 40GHz Versions



Typical Isolation (dB) Plot for 40GHz Versions



Typical VSWR Plot for 40GHz Versions

Power Requirements

+3.3V	+5V	+12V	-12V
0	0.2A	0.75A	0

Mechanical Characteristics

2 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 mounted connectors:

- 6GHz versions - 50Ω SMA connectors
- 18GHz versions - 50Ω SMA connectors
- 26.5GHz versions - 50Ω SMA connectors
- 40GHz versions - 50Ω SMA-2.9.connectors.

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.



40-784A Single SP6T Microwave Multiplexer



40-784A Dual SP4T Microwave Multiplexer

Product Order Codes

		6GHz	18GHz	26.5GHz	40GHz
Single	SP4T Microwave MUX	40-784A-101	40-784A-121	40-784A-131	40-784A-141
	SP6T Microwave MUX	40-784A-001	40-784A-021	40-784A-031	40-784A-041
Dual	SP4T Microwave MUX	40-784A-102	40-784A-122	40-784A-132	40-784A-142
	SP6T Microwave MUX	40-784A-002	40-784A-022	40-784A-032	40-784A-042
Triple	SP4T Microwave MUX	40-784A-103	40-784A-123	40-784A-133	40-784A-143
	SP6T Microwave MUX	40-784A-003	40-784A-023	40-784A-033	40-784A-043

Custom Configurations

Pickering can also offer mixed configurations of SP4T and SP6T multiplexers with a mix of bandwidths as outlined in the table below. Please contact the sales office with your requirements.

	Frequency	Configuration
MUX Position 1	6GHZ, 18GHz, 26.5GHz or 40GHz	SP4T or SP6T
MUX Position 2	6GHZ, 18GHz, 26.5GHz or 40GHz	SP4T or SP6T
MUX Position 3	6GHZ, 18GHz, 26.5GHz or 40GHz	SP4T or SP6T

Mating Connectors & Cabling

For connection accessories for the 40-784A range please refer to the 90-011D RF Cable Assemblies data sheet where a complete list and documentation can be found for accessories, or refer to the Connection Solutions catalog.

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.

Customization can include:

- Alternative relay types
- Mixture of relay types
- Alternative number of relays
- Different performance specifications

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.

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

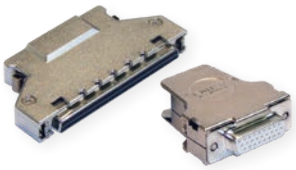
Pickering LXI or LXI/USB Modular Chassis—only accept our 1000+ PXI Switching & Simulation Modules:

- 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

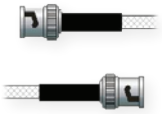
We provide a full range of supporting cable and connector solutions for all our switching products—20 connector families with 1200+ products. We offer everything from simple mating connectors to complex cables assemblies and terminal blocks. All assemblies are manufactured by Pickering and are guaranteed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



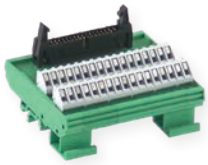
Connectors & Backshells



Multiway 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.



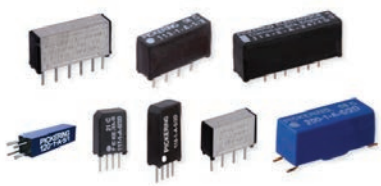
Mass Interconnect

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

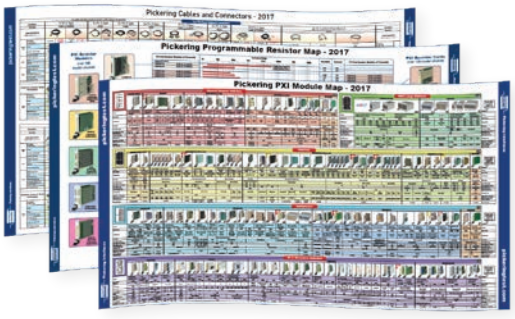
Three Year Warranty & Guaranteed Long-Term Support

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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Pickering Interfaces maintains a commitment to continuous product development, consequently we reserve the right to vary from the description given in this data sheet.

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

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We're here to make your life easier. How can we help you today?

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