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TECHNOLOGY GROUP

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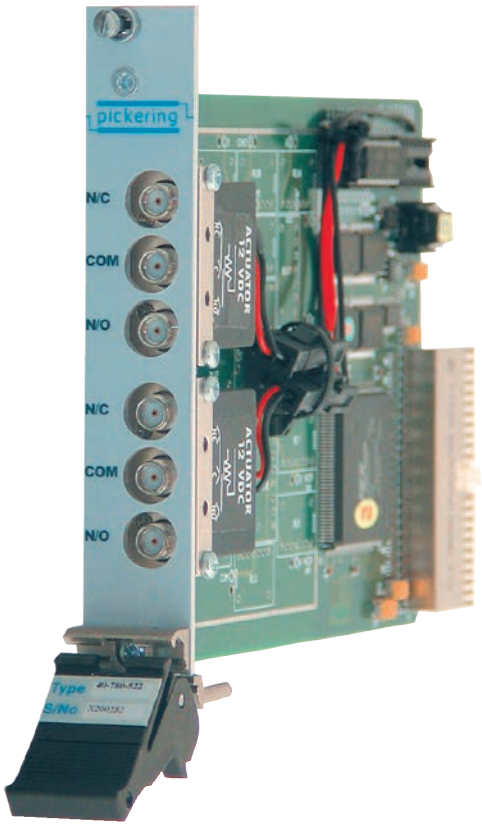
Expert team | Trust guarantee | 100% satisfaction

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Find the *Pickering 40-782-522* at our website: ***Click HERE***

PXI Microwave Relay & Transfer Switch 40-780/782

- 40-780: 1, 2, 3 or 4 Changeover Relays Per Module
- 40-782: 1 or 2 Transfer Switches Per Module
- 18GHz Bandwidth in 50Ω with Switch Options to 67GHz
- 2.5GHz Bandwidth in 75Ω
- High Power N-Type Options for 40-780
- Tree Networks may be Constructed by Inter-Linking Individual Modules
- VISA, IVI & Kernel Drivers Supplied for Windows
- Supported by PXI or LXI Chassis
- 3 Year Warranty



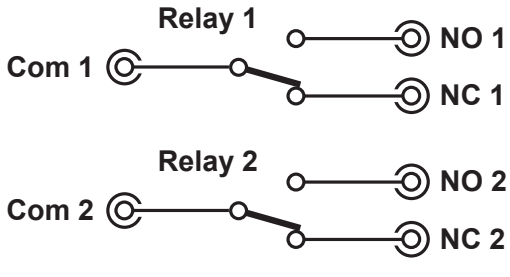
The 40-780 Microwave switching module consists of one, two, three or four changeover switches capable of switching frequencies to 18GHz (optionally to 67GHz) in 50Ω or 2.5GHz in 75Ω. The 40-782 module consists of one or two microwave transfer switches. It has a characteristic impedance of 50Ω and is available in versions with maximum operating frequencies of 18GHz, 26.5GHz or 40GHz.

Connections are made via front panel mounted high quality RF coaxial connectors, SMA/N-Type for 50Ω and 1.6/5.6 in 75Ω versions.

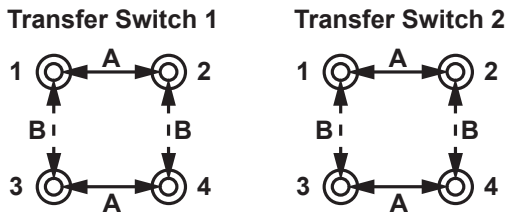
These modules give you the highest RF and microwave switching performance available within a Pickering switching system. Although designed for microwave applications, they have many uses in the RF spectrum where extremely low insertion loss and ultra high isolation are critical. They may also be used for lower frequency RF applications where power handling to 100W is required (700W for N-Type options).



40-782 Dual Microwave Transfer Switch



Schematic of 40-780 Dual Microwave Relay Module



Position A: 1 to 2, 3 to 4
Position B: 1 to 3, 2 to 4

Schematic of 40-782 Dual Microwave Transfer Switch

ISSUE 10.0 MAY 2019

Specification (18GHz Version)

Characteristic Impedance:	50Ω
Maximum Frequency: Rise Time: Insertion Loss (<18GHz): V.S.W.R. (<18GHz): Isolation (<18GHz):	18GHz <3ps <0.5dB <1:1.5 >60dB
Maximum Power (<3GHz): Maximum Power (3 - 12GHz): Maximum Power (12 - 18GHz):	100W 60W 30W
Maximum Voltage: Maximum Switch Current:	100VDC* 1A
Initial On Path Resistance: Off Path Resistance:	<200mΩ $>10^{10}$Ω
Vibration:	Sine 1mm, 5 - 60Hz Sine 10g 60 - 2000Hz
Expected Life (SPDT Switch): Expected Life (Transfer Switch):	$>1x10^7$ operations $>2.5x10^6$ operations
Switching Time:	15ms

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

Additional Specification (12.4GHz N-Type Versions)

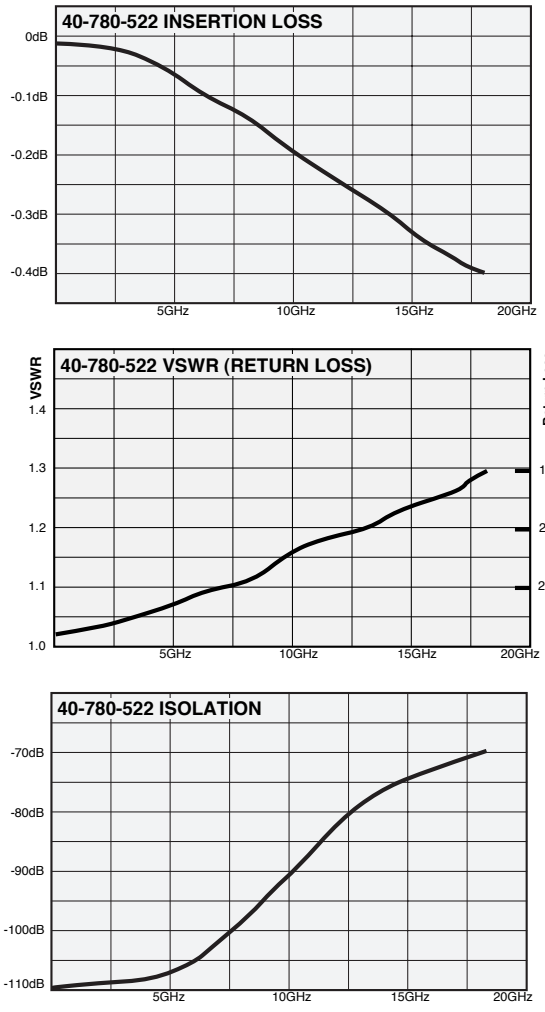
Characteristic Impedance:	50Ω
Bandwidth:	12.4GHz
Maximum Power:	700W (0-1GHz) 500W (1-2GHz) 400W (2-3GHz) 250W (3-8GHz) 200W (8-12.4GHz)
Isolation:	>85dB (0-1GHz) >80dB (1-2GHz) >75dB (2-3GHz) >70dB (3-8GHz) >60dB (8-12.4GHz)
Insertion Loss:	<0.15dB (0-1GHz) <0.20dB (1-2GHz) <0.25dB (2-3GHz) <0.35dB (3-8GHz) <0.50dB (8-12.4GHz)
VSWR:	<1.15:1 (0-1GHz) <1.20:1 (1-2GHz) <1.25:1 (2-3GHz) <1.35:1 (3-8GHz) <1.50:1 (8-12.4GHz)
Expected Life:	$>1x10^6$ operations

Additional Specification (26.5GHz & 40GHz Versions)

Insertion Loss (<26.5GHz): V.S.W.R. (<26.5GHz): Isolation (<26.5GHz):	<0.7dB <1:1.7 >55dB
Expected Life (26.5GHz versions):	$>1x10^7$ operations
Insertion Loss (<40GHz): V.S.W.R. (<40GHz): Isolation (<40GHz):	<0.8dB <1:1.9 >50dB
Expected Life (40GHz versions):	$>2x10^6$ operations

Additional Specification (50GHz & 67GHz Versions)

Insertion Loss (<50GHz): V.S.W.R. (<50GHz): Isolation (<50GHz):	<1.1dB <1:1.9 >50dB
Expected Life (50GHz versions):	$>2x10^6$ operations
Insertion Loss (<67GHz): V.S.W.R. (<67GHz): Isolation (<67GHz):	<1.1dB <1:1.9 >50dB
Expected Life (67GHz versions):	$>2x10^6$ operations



Performance Plots for 40-780-522 Microwave Changeover Relay Module (50Ω)

Power Requirements

+3.3V	+5V	+12V	-12V
0	0.5A (typ 0.34A)	0	0

Mechanical Characteristics

- 40-780 single & dual
  (except -511 & -512) - single slot 3U PXI (CompactPCI card).
- 40-780-511 - Double slot 3U PXI (CompactPCI card).
- 40-780-512 - Triple slot 3U PXI (CompactPCI card).
- 40-780 triple & quad - Double slot 3U PXI (CompactPCI card).
- 40-782 single & dual - Double slot 3U PXI (CompactPCI card).

Module weight: 200g (40-780-522).
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 coaxial 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.



40-780-524 Quad Microwave Changeover Switch

Product Order Codes

12.4GHz Microwave Relays, 50Ω N-Type	
1 x Changeover (SPDT)	40-780-511
2 x Changeover (SPDT)	40-780-512
18GHz Microwave Relays, 50Ω SMA	
1 x Changeover (SPDT)	40-780-521
2 x Changeover (SPDT)	40-780-522
3 x Changeover (SPDT)	40-780-523
4 x Changeover (SPDT)	40-780-524
26.5GHz Microwave Relays, 50Ω SMA	
1 x Changeover (SPDT)	40-780-531
2 x Changeover (SPDT)	40-780-532
3 x Changeover (SPDT)	40-780-533
4 x Changeover (SPDT)	40-780-534
40GHz Microwave Relays, 50Ω SMA-2.9	
1 x Changeover (SPDT)	40-780-541
2 x Changeover (SPDT)	40-780-542
3 x Changeover (SPDT)	40-780-543
4 x Changeover (SPDT)	40-780-544
50GHz Microwave Relays, 50Ω SMA-2.4	
1 x Changeover (SPDT)	40-780-551
2 x Changeover (SPDT)	40-780-552
3 x Changeover (SPDT)	40-780-553
4 x Changeover (SPDT)	40-780-554
67GHz Microwave Relays, 50Ω SMA-1.85	
1 x Changeover (SPDT)	40-780-571
2 x Changeover (SPDT)	40-780-572
3 x Changeover (SPDT)	40-780-573
4 x Changeover (SPDT)	40-780-574
2.5GHz Microwave Relays, 75Ω 1.6/5.6	
1 x Changeover (SPDT)	40-780-751
2 x Changeover (SPDT)	40-780-752
3 x Changeover (SPDT)	40-780-753
4 x Changeover (SPDT)	40-780-754
18GHz Microwave Transfer Switch, 50Ω SMA:	
1 x Transfer Switch	40-782-521
2 x Transfer Switch	40-782-522
26.5GHz Microwave Transfer Switch, 50Ω SMA:	
1 x Transfer Switch	40-782-531
2 x Transfer Switch	40-782-532
40GHz Microwave Transfer Switch, 50Ω SMA-2.9:	
1 x Transfer Switch	40-782-541
2 x Transfer Switch	40-782-542

Mating Connectors & Cabling

For connection accessories for the 40-780 series 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.

Warranty

This module carries a 3 year warranty. The warranty specifically applies to only the cold switching operations of the relay within the stated lifetime.

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

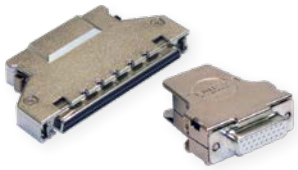
Pickering LXI or LXI/USB Modular Chassis—only accept our 1000+ PXI Switching & Simulation Modules:

- 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

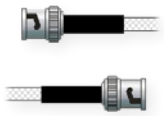
We provide a full range of supporting cable and connector solutions for all our switching products—20 connector families with 1200+ products. We offer everything from simple mating connectors to complex cables assemblies and terminal blocks. All assemblies are manufactured by Pickering and are guaranteed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



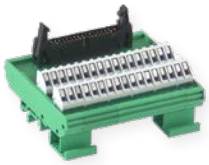
Connectors & Backshells



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

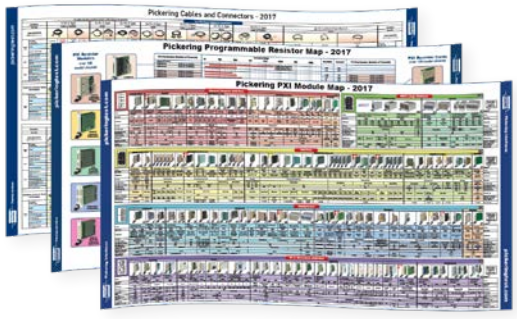
Three Year Warranty & Guaranteed Long-Term Support

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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