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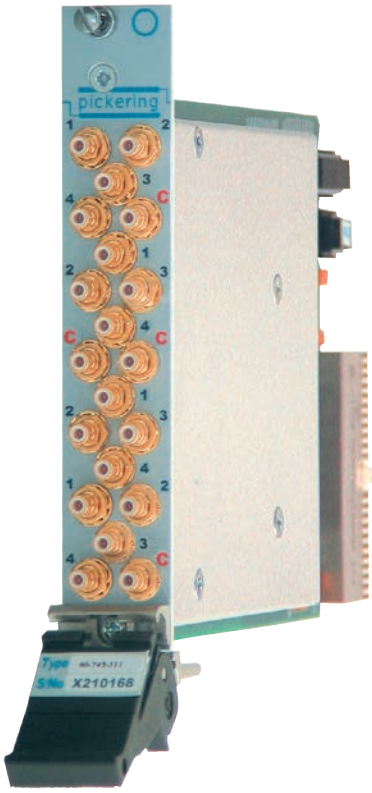
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- Quad 4:1 RF Multiplexer
- 1GHz Bandwidth
- SMA or SMB Coaxial Connectors
- VISA, IVI & Kernel Drivers Supplied for Windows
- Supported by PXI or LXI Chassis
- 3 Year Warranty

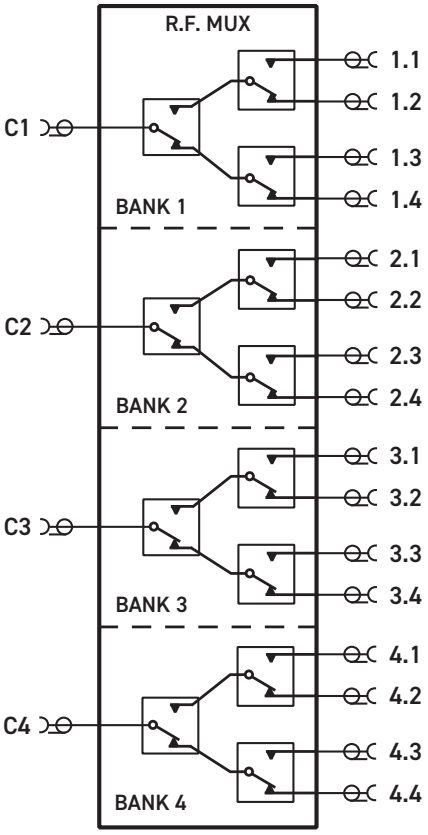


The 40-749 is a quad 4 to 1 RF multiplexer available in 50 Ω or 75 Ω versions occupying a single PXI slot (2 slots for SMA connectors versions).

The module is available with SMB or SMA connectors for 50 Ω versions or, SMB connectors for 75 Ω versions. This allows users to simplify cabling issues by matching them to other connectors in their system.

Applications for the 40-749 include routing high frequency signals to and from oscilloscopes, analyzers, signal generators and synthesizers, telecoms tributary switching, video/audio switching and switching high frequency logic signals.

The 40-749 is supplied with drivers that allow it to be supported in all popular PXI software environments. The module can also be supported in Pickering Interfaces' LXI/PXI Modular Chassis, allowing users to choose an LXI or PXI switching platform with the same high performance characteristics and driver environment.



40-749 Quad 4 to 1 RF MUX Switching Diagram (Default Switch Paths Shown)

For applications that require SMB or MCX connectors, Pickering offer newer designs with significantly improved performance at lower cost.

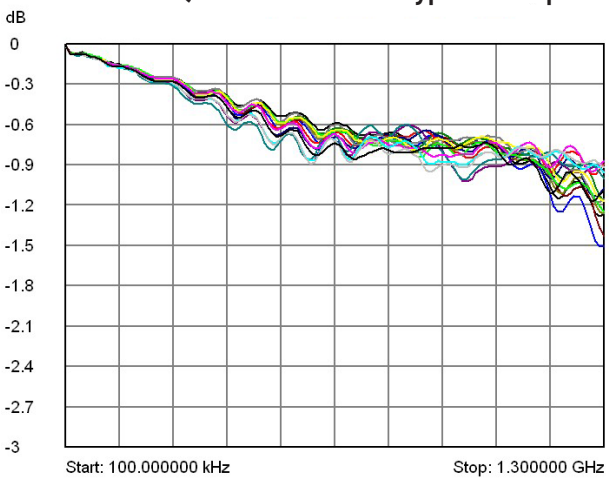
The 40-872 (50 Ω) and 40-832 (75 Ω) are 4-channel multiplexers with bandwidths to 3 GHz.



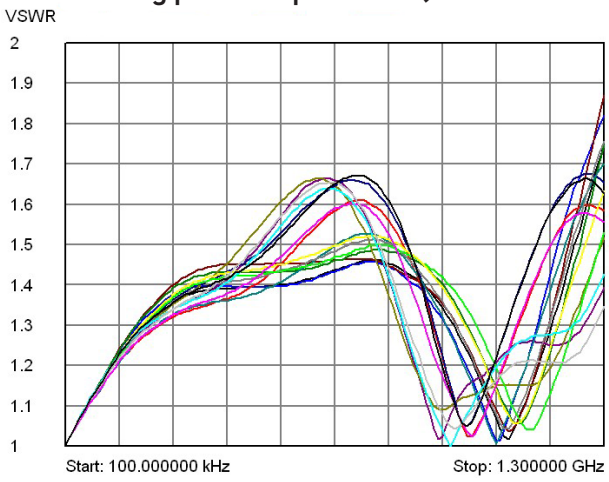
ISSUE 5.1 JUN 2021

40-749-511/521 Perfomance Plots

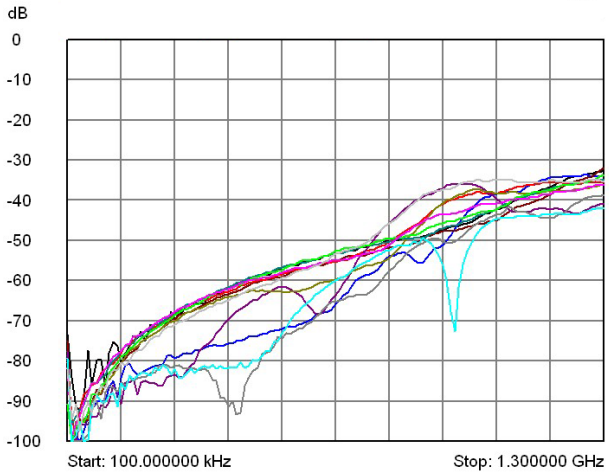
(Plots taken from typical sample showing all connecting paths for parameter)



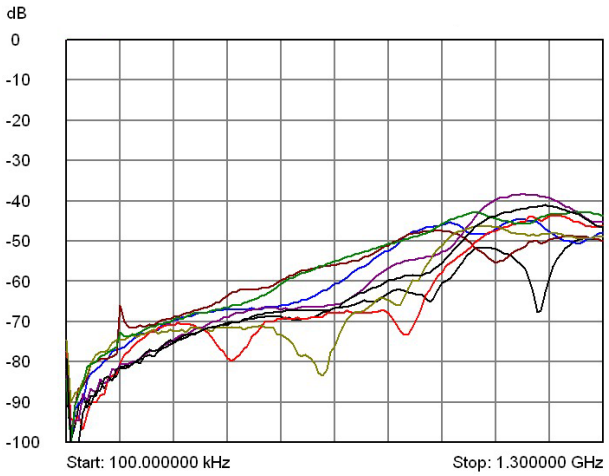
40-749-511/521 (50 Ω) Typical insertion loss plots for each channel.



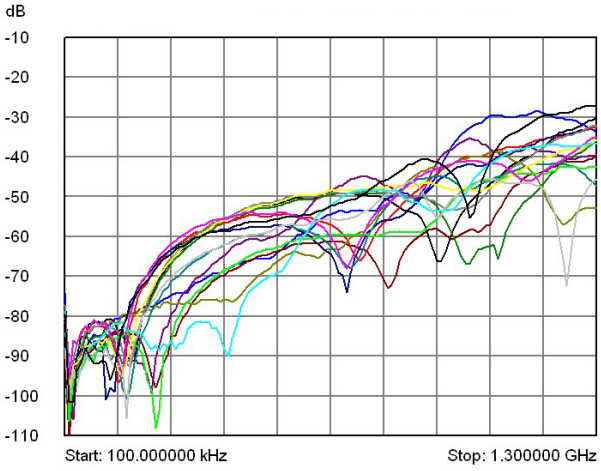
40-749-511/521 (50 Ω) Typical VSWR plots for each channel.



40-749-511/521 (50 Ω) Typical crosstalk between channels (these are measurements of crosstalk within each multiplexer for neighboring channels).



40-749-511/521 (50 Ω) Typical crosstalk between MUX banks (these are measurements of crosstalk between the same paths through neighboring multiplexers).



40-749-511/521 (50 Ω) Typical Isolation Plots for each input channel.

RF Specification - 50 Ω Versions

RF Frequency Range:	DC to 1 GHz
Insertion Loss:	Typically <0.9 dB to 500 MHz Typically <1.5 dB to 1 GHz
VSWR:	Typically <1.70:1 to 500 MHz Typically <1.85:1 to 1 GHz
Note: VSWR measurements were carried out for each selected input with the 50 Ω load fitted to the MUX common terminal.	
Isolation:	Typically >45 dB to 500 MHz Typically >27 dB to 1 GHz
Channel Crosstalk:	Typically <-52 dB to 500 MHz Typically <-32 dB to 1 GHz
Bank Crosstalk:	Typically <-55 dB to 500 MHz Typically <-38 dB to 1 GHz

RF Specification - 75 Ω Version

RF Frequency Range:	DC to 1 GHz
Insertion Loss:	Typically <1.0 dB to 500 MHz Typically <1.25 dB to 1 GHz
VSWR:	Typically <1.8:1 to 500 MHz Typically <2.0:1 to 1 GHz
Note: VSWR measurements were carried out for each selected input with the 75 Ω load fitted to the MUX common terminal.	
Isolation:	Typically >50 dB to 500 MHz Typically >30 dB to 1 GHz
Channel Crosstalk:	Typically <-50 dB to 500 MHz Typically <-30 dB to 1 GHz
Bank Crosstalk:	Typically <-55 dB to 500 MHz Typically <-35 dB to 1 GHz

Other Switching Specifications

Maximum RF Power:	10 W
Maximum DC Voltage:	30 V
Maximum DC Current:	0.5 A
Operating Time:	5 ms typical
Expected Life, Mechanical: Expected Life, Electrical (low power): Expected Life, Electrical (max power):	>1x10^6 operations >3x10^5 operations >3x10^5 operations

Power Requirements

+3.3 V	+5 V	+12 V	-12 V
0	320 mA (typ 240 mA)	0	0

Mechanical Characteristics

SMA connector version: Dual slot 3U PXI (CompactPCI card).
All other versions: 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 coaxial connectors:

- 40-749-511 - 20 x SMB 50 Ω
- 40-749-521 - 20 x SMA 50 Ω
- 40-749-751 - 20 x SMB 75 Ω

Operating/Storage Conditions

Operating Conditions

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

Storage and Transport Conditions

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

PXI & CompactPCI Compliance

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

Uses a 33 MHz 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

Quad 4:1 RF MUX SMB 50 Ω 1 GHz	**40-749-511**
Quad 4:1 RF MUX SMA 50 Ω 1 GHz	**40-749-521**
Quad 4:1 RF MUX SMB 75 Ω 1 GHz	**40-749-751**

Product Customization

Pickering 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.

Support Products

Spare Relay Kits

Kits of replacement relays are available for the majority of Pickering's PXI switching products, simplifying servicing and reducing down-time.

Product	Relay Kit
40-749-511	**91-100-096**
40-749-521	**91-100-096**
40-749-751	**91-100-029**

For further assistance, please contact your local Pickering sales office.

Mating Connectors & Cabling

For connection accessories for the 40-749 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.

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

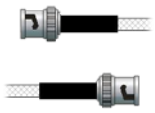
We provide a full range of supporting cable and connector solutions for all our switching products—20 connector families with 1200+ products. We offer everything from simple mating connectors to complex cables assemblies and terminal blocks. All assemblies are manufactured by Pickering and are guaranteed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

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 and OpenTAP
- **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



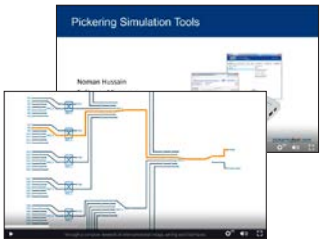
eBIRST Switching System Test Tools are designed specifically for our PXI, PCI or LXI products, these tools simplify switching system fault-finding by quickly testing the system and graphically identifying the faulty relay.
To learn more, please go to: pickeringtest.com/ebirst

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 and white papers as well as application specific product brochures to assist when looking for the switching, simulation and connection 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

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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

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We buy equipment

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

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

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