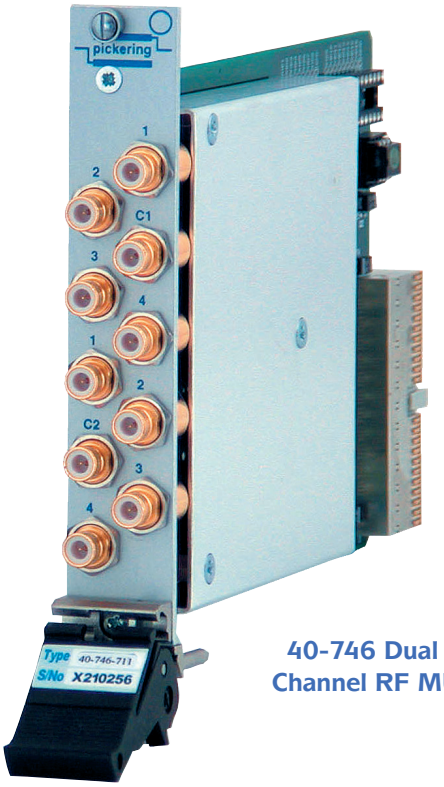
40-740/745/746
RF Multiplexer Module

- R.F. Multiplexer with 2GHz Bandwidth
- 50Ω and 75Ω Versions Available
- Available as 8 to 1 or Single/Dual 4 to 1
- Single 4 to 1 Version Available With Automatic Termination of Non-Selected Channels
- Choice of Front Panel Mounted Coaxial Connectors
- 75Ω Version Suitable for Telecoms and High Quality Video Switching
- VISA, IVI & Kernel Drivers Supplied for Windows XP/Vista/7/8
- Supported by PXI or LXI Chassis
- 3 Year Warranty



40-746 Dual 4 Channel RF MUX

40-740, 40-745 and 40-746 RF Multiplexers are a range of Bi-Directional Multiplexers with bandwidths to beyond 2000MHz.

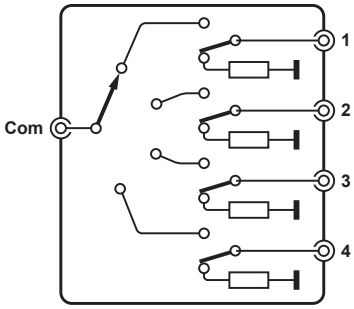
They are arranged as Single 8 to 1, Dual 4 to 1 or Single 4 to 1 configurations, all with excellent Insertion Loss, VSWR & Isolation, in 50Ω or 75Ω versions with a wide choice of connectors:

40-740 Single 4 to 1 RF Multiplexer with automatic termination of all non-selected signals.

40-745 Single 8 to 1 or 4 to 1 RF Multiplexer (no termination option).

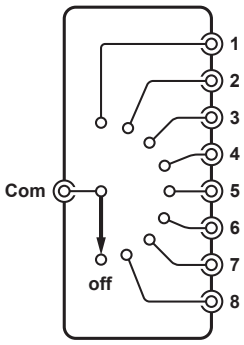
40-746 Dual 4 to 1 RF Multiplexer (no termination option).

Applications for the 40-740/75/46 include routing high frequency signals to and from oscilloscopes, analysers, signal generators and synthesizers, telecoms tributary switching (from 2MBit/s to 155MBit/S), video/audio switching and switching high frequency logic signals.

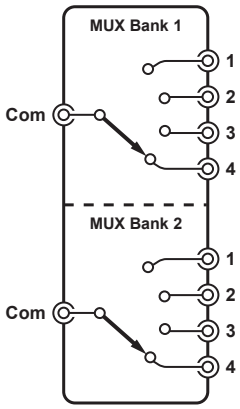


40-740 Single 4 Channel Multiplexer With Automatic Termination Of Non-Selected Channels

40-740 Single 4 Channel RF MUX, BNC Version



40-745 Single 8 Channel Multiplexer



40-746 Dual 4 Channel Multiplexer (dual channel mode has no off state)

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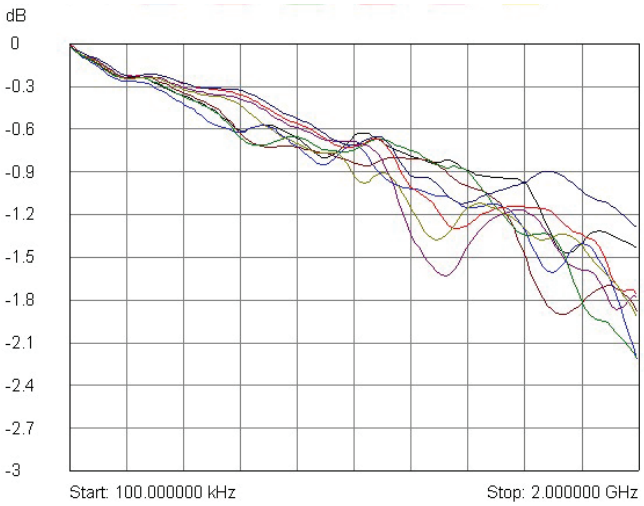
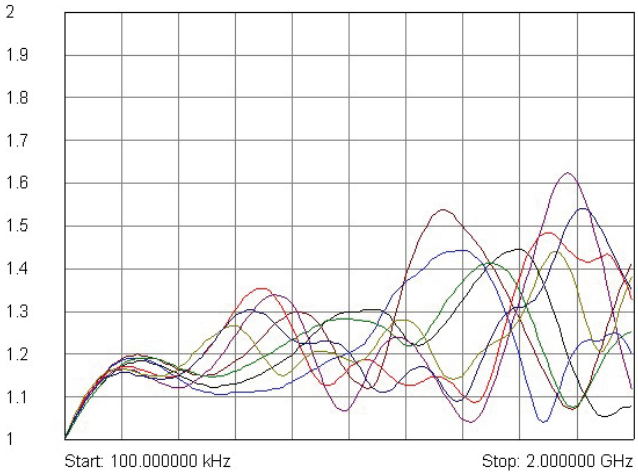
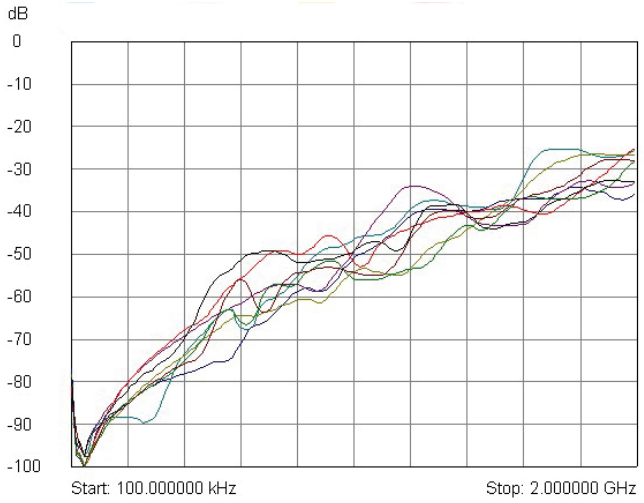
40-746-511 (50Ω SMB) Perfomance Plots (Plots taken from typical sample showing all connecting paths for parameter)



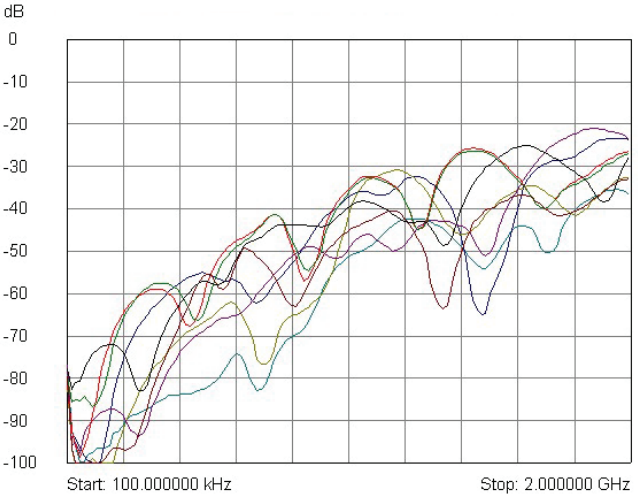
40-746-511 (50Ω SMB) typical insertion loss plots for each channel.



40-746-511 (50Ω SMB) typical VSWR plots for each channel.



40-746-511 (50Ω SMB) typical crosstalk plots between neighbouring multiplexer channels.



40-746-511 (50Ω SMB) typical isolation plots for each input channel.

General Specification (All Versions)

Maximum Voltage:	50VDC
Maximum Power:	10W
Maximum Carry Power (900MHz):	15W
Maximum Switch Current:	0.1A
Initial On Path Resistance:	<500mΩ
Off Path Resistance:	$>10^8$Ω
Thermal Offset:	<20µV
Expected Life, Mechanical:	$>1x10^6$ operations
Expected Life, Electrical (low power):	$>3x10^5$ operations
Expected Life, Electrical (max power):	$>3x10^5$ operations
Switching Time:	5ms

Isolation and Crosstalk Specification

Isolation (0 to 2000MHz):	>40dB
Crosstalk (0 to 2000MHz):	>50dB

50Ω Specification (except BNC versions)

Maximum Frequency:	2000MHz
Rise Time:	<0.2ns
Insertion Loss:	<3dB
VSWR (0 to 2000MHz):	<1:1.9

75Ω Specification (except BNC versions)

Maximum Frequency:	2000MHz
Rise Time:	<0.3ns
Insertion Loss:	<3dB
VSWR (0 to 1000MHz):	<1:1.8

75Ω Specification (50Ω & 75Ω BNC versions)

Maximum Frequency:	1000MHz

RF Relay Type

The 40-740/745/746 is fitted with high reliabillty RF Relays, these offer long life with good low level switching performance.

Spare RF Relays are built onto the circuit board to facilitate easy maintenance with minimum downtime.

Power Requirements

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

Mechanical Characteristics

Single slot 3U PXI (CompactPCI card).

Module weight: 220g (40-746-731)

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, type dependant upon product code.

Product Order Codes

4 to 1 RF Multiplexer With Automatic Termination	
50Ω, SMB Connector, 2GHz	**40-740-511**
50Ω, SMA Connector, 2GHz	**40-740-521**
75Ω, SMZ/Type 43 Connector, 2GHz	**40-740-711**
75Ω, Siemens 1.0/2.3 Connector, 2GHz	**40-740-731**
75Ω, SMB Connector, 2GHz	**40-740-751**
4 to 1 RF Multiplexer	
50Ω, BNC Connector, 1GHz	**40-745-501**
50Ω, SMB Connector, 2GHz	**40-745-591**
75Ω, BNC Connector, 1GHz	**40-745-701**
8 to 1 RF Multiplexer	
50Ω, SMB Connector, 2GHz	**40-745-511**
50Ω, SMA Connector, 2GHz	**40-745-521**
75Ω, SMZ/Type 43 Connector, 2GHz	**40-745-711**
75Ω, Siemens 1.0/2.3 Connector, 2GHz	**40-745-731**
75Ω, SMB Connector, 2GHz	**40-745-751**
Dual 4 to 1 RF Multiplexer	
50Ω, SMB Connector, 2GHz	**40-746-511**
50Ω, SMA Connector, 2GHz	**40-746-521**
75Ω, SMZ/Type 43 Connector, 2GHz	**40-746-711**
75Ω, Siemens 1.0/2.3 Connector, 2GHz	**40-746-731**
75Ω, SMB Connector, 2GHz	**40-746-751**

–C Alternative connectors may be available, please consult factory.

Support Products

Spare Relay Kits

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

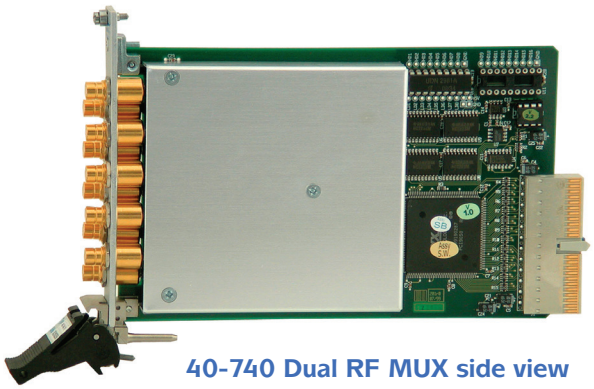
The relay kits for the 40-740 range are as follows:

91-100-096 kit for 40-740-501/521
91-100-029 kit for 40-740-711/731/751
91-100-096 kit for 40-745-501/511/521/591
91-100-029 kit for 40-745-701/711/731/751
91-100-096 kit for 40-746-511/521
91-100-029 kit for 40-746-711/731/751

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

Mating Connectors & Cabling

For connection accessories for the 40-740 series please refer to the **90-011D** RF Cable Assemblies data sheets where a complete list and documentation can be found for accessories, or refer to the Connection Solutions catalog.



40-740 Dual RF MUX side view

Programming

Pickering provide kernel, IVI and VISA (NI and Agilent) drivers which are compatible with 32/64-bit versions of Windows including XP, Vista, 7 and 8 operating systems. 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:

- **National Instruments** products (LabVIEW, LabWindows/CVI, Switch Executive, MAX, TestStand, etc.)
- **Microsoft Visual Studio** products (Visual Basic, Visual C+)
- **Agilent** VEE
- **Mathworks** Matlab
- **Geotest** ATE Easy
- **MTQ Testsolutions** Tecap

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 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

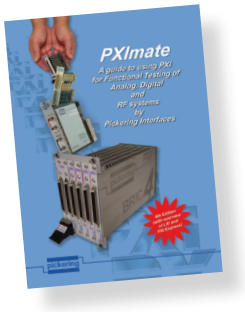
Compatible with all chassis conforming to the 3U PXI and 3U cPCI specification. Compatible with Legacy and Hybrid peripheral slots in a 3U PXI Express chassis.
Compatible with Pickering Interfaces LXI Modular Chassis. For information on driving your switching solution in an LXI environment refer to the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

Latest Details

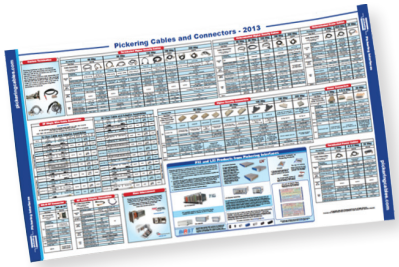
Please refer to our Web Site for Latest Product Details.
www.pickeringtest.com

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.

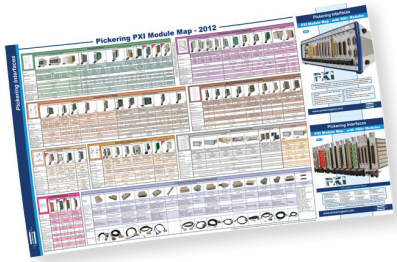
"**The Big PXI Catalog**" gives full details of Pickering's entire range of PXI switch modules, instrument modules and support products.
At over 500 pages, the Big PXI Catalog is available on request or can be downloaded from the Pickering website.



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 600+ PXI Modules.