ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

**Artisan Technology Group**
(217) 352-9330 | sales@artisantg.com | artisantg.com

**Full-service, independent repair center**
with experienced engineers and technicians on staff.

**We buy your excess, underutilized, and idle equipment**
along with credit for buybacks and trade-ins.

**Custom engineering**
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

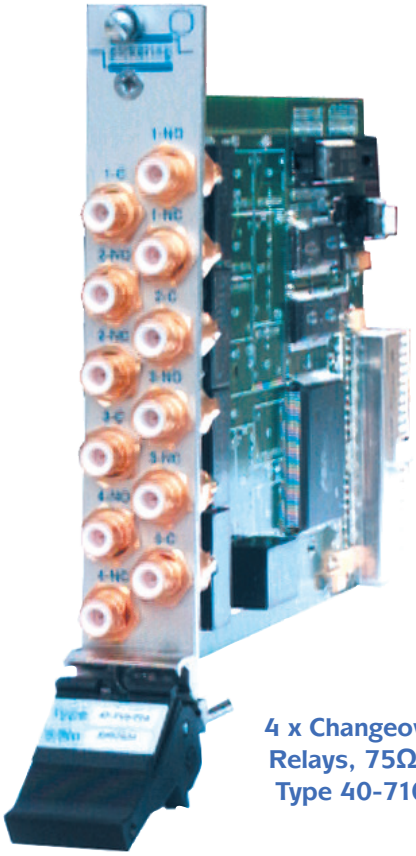
**Expert team | Trust guarantee | 100% satisfaction**

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *Pickering 40-710-524* at our website: ***Click HERE***

# 40-710
# RF Relay Module

- 4 Changeover RF Relays Per Module
- Up To 2.5GHz Bandwidth in 50Ω
- Up To 1GHz Bandwidth in 75Ω Suitable For Telecoms or Video Applications
- 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



4 x Changeover RF Relays, 75Ω SMZ, Type 40-710-714

Model 40-710 RF switching module has a bank of 4 individual high performance R.F. changeover switches (50Ω or 75Ω, Bi-directional) with very low insertion loss, suitable for handling signals up to 2.5GHz. Applications include aerial switching, routing high frequency signals into oscilloscopes and analysers.

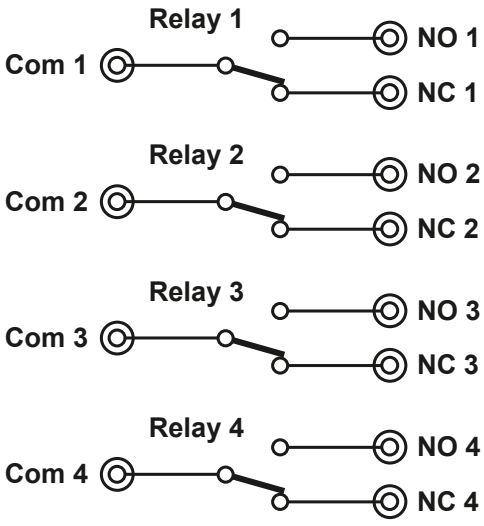
Available with a choice of connectors: SMA, SMB and Siemens 1.0/2.3 versions. In addition BNC connectors are offered with reduced bandwidth performance which requires a 2 slot width module.

The 75Ω versions are suitable for high frequency video and telecommunication signals up to 1GHz.

## Relay Type

The 40-710 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.



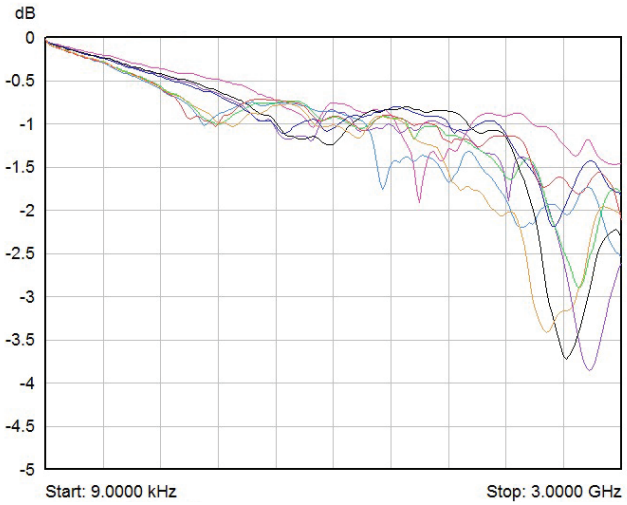

Switching Diagram for 40-710, 4 x SPDT RF Relays



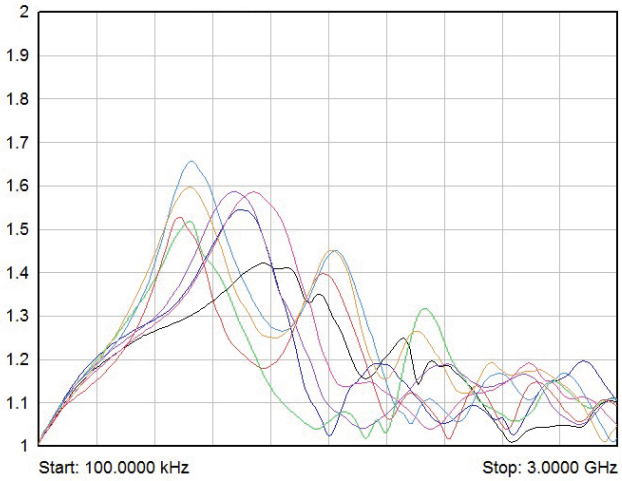
4 x Changeover RF Relays, 50Ω SMB, Type 40-710-514

ISSUE 9.1 MAY 2017

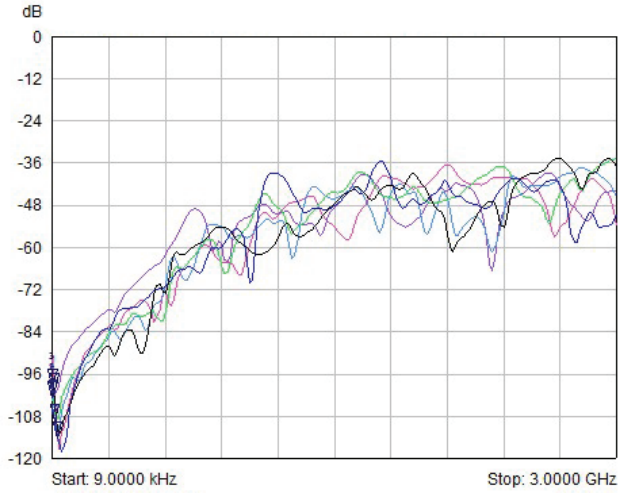
## 40-710-514 (50Ω SMB) Perfomance Plots (Plots taken from typical sample showing all connecting paths for parameter)



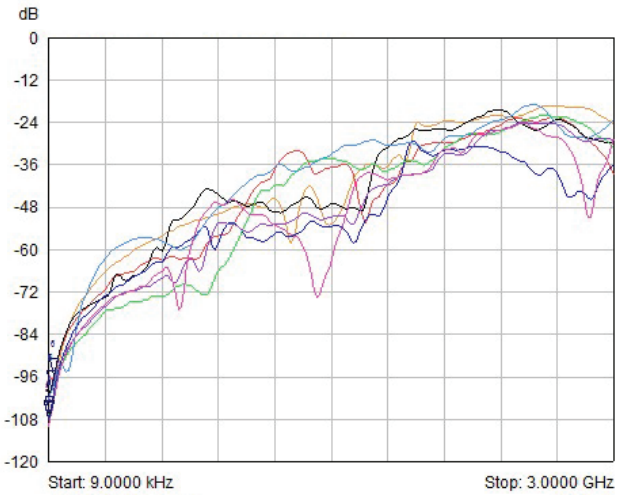

40-710-514 (50Ω SMB) typical insertion loss plots for all NO and NC inputs.




40-710-514 (50Ω SMB) typical VSWR plots for all NO and NC inputs.

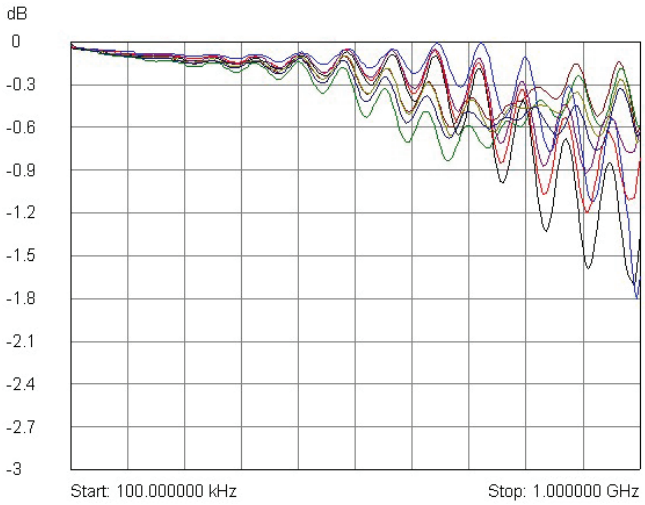



40-710-514 (50Ω SMB) typical crosstalk plots between neighbouring channels.

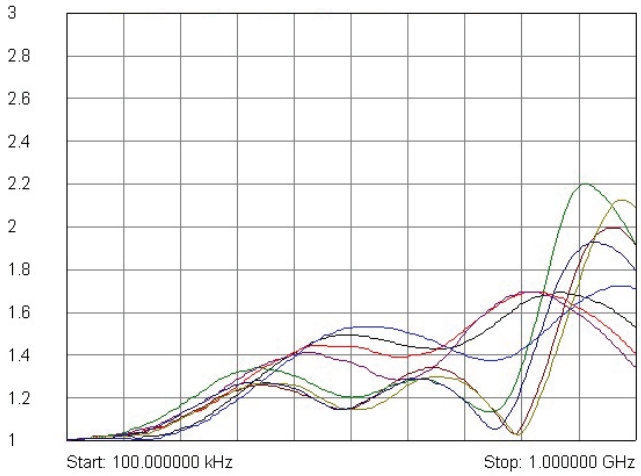



40-710-514 (50Ω SMB) typical isolation plots for all NO and NC inputs.

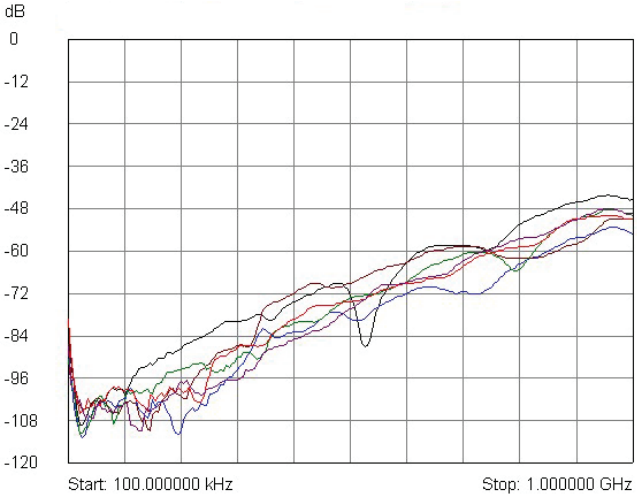
## 40-710-704 (75Ω BNC) Perfomance Plots (Plots taken from typical sample showing all connecting paths for parameter)



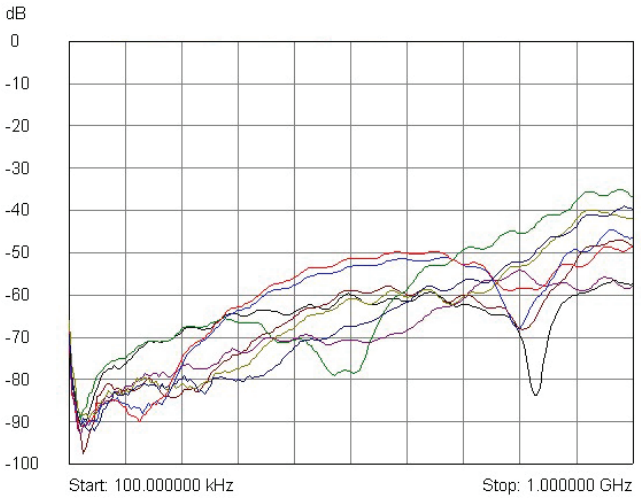

**40-710-704 (75Ω BNC) typical insertion loss plots for all NO and NC inputs.**




**40-710-704 (75Ω BNC) typical VSWR plots for all NO and NC inputs.**




**40-710-704 (75Ω BNC) typical crosstalk plots between neighbouring channels.**




**40-710-704 (75Ω BNC) typical isolation plots for all NO and NC inputs.**

## General Specification - All Versions

| | |
|---|---|
| Max Switching Power: | 10W |
| Max Switching Voltage: | 30VDC |
| Max Switching Current: | 0.5A |
| Nominal Switching Capacity: | 0.01A, 24VDC, 10W@1.2GHz |
| Initial On Path Resistance: | <200mΩ |
| Off Path Resistance: | >$1x10^8$Ω |
| Thermal Offset: | <20µV |
| Expected Life, Mechanical: | >$1x10^6$ ops |
| Expected Life, Electrical: | >$3x10^5$ ops (10mA@24VDC)<br>>$3x10^5$ ops (1W@2.6GHz) |
| Switching Time: | 10ms |
| Rise Time: | <0.2ns (50Ω)<br><0.3ns (75Ω) |

## 50Ω Specification - SMB and SMA Versions

| | |
|---|---|
| Bandwidth: | 2.5GHz |
| Maximum Switching Power: | 10W |
| Isolation: | Typically >27dB (0-1GHz)<br>Typically >17dB (1GHz-2.5GHz) |
| Crosstalk: | Typically <-46dB (0-1GHz)<br>Typically <-32dB (1GHz-2.5GHz) |
| Insertion Loss: | Typically <1.5dB (0-1GHz)<br>Typically <3dB (1GHz-2.5GHz) |
| VSWR: | <1.7:1 |

## 50Ω Specification - BNC Version

| | |
|---|---|
| Bandwidth: | 1GHz |
| Maximum Switching Power: | 10W |
| Isolation: | Typically >27dB (0-1GHz) |
| Crosstalk: | Typically <-46dB (0-1GHz) |
| Insertion Loss: | Typically <3dB (0-1GHz) |
| VSWR: | <1.7:1 |

## 75Ω Specification - All Versions

| | |
|---|---|
| Bandwidth: | 1GHz |
| Maximum Switching Power: | 10W |
| Isolation: | Typically >30dB (0-1GHz) |
| Crosstalk: | Typically <-40dB (0-1GHz) |
| Insertion Loss: | Typically <3dB (0-1GHz) |
| VSWR: | <2.4:1 |

## Power Requirements

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

## Mechanical Characteristics

Single slot 3U PXI (CompactPCI card). Except BNC version which is 2-slot width.

Module weight: 240g (40-710-734)

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

| | |
|---|---|
| 4x Changeover Switch, 1GHz, 50Ω, BNC | **40-710-504** |
| 4x Changeover Switch, 2.5GHz, 50Ω, SMB | **40-710-514** |
| 4x Changeover Switch, 2.5GHz, 50Ω, SMA | **40-710-524** |
| 4x Changeover Switch, 1GHz, 75Ω, BNC | **40-710-704** |
| 4x Changeover Switch, 1GHz, 75Ω, SMZ/Type43 | **40-710-714** |
| 4x Changeover Switch, 1GHz, 75Ω, 1.0/2.3 | **40-710-734** |
| 4x Changeover Switch, 1GHz, 75Ω, SMB | **40-710-754** |

## 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 40-710 range is as follows:

| | |
|---|---|
| All 50Ω versions: | 91-100-096 Relay Kit 96 |
| All 75Ω versions: | 91-100-029 Relay Kit 29 |

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

## Mating Connectors & Cabling

For connection accessories for the 40-710 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.



Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.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: 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

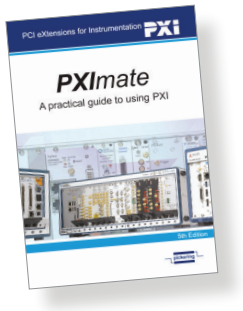
Please refer to our Web Site for Latest Product Details.
www.pickeringtest.com



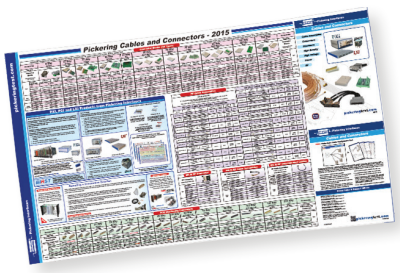

Please refer to the 200 page Pickering Interfaces "**Connection Solutions**" catalog for the full list of connector/cabling options, including drawings, photos and specifications. Available in either print or as a download.
Alternatively our web site has dynamically linked connector/cabling options,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



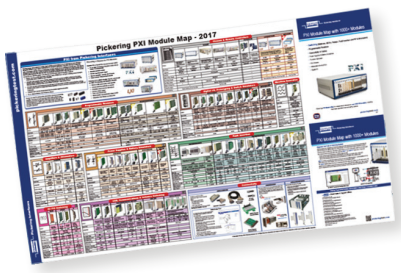

"**The Big PXI Catalog**" gives full details of Pickering's entire range of PXI switch modules, instrument modules and support products.
At over 500 pages, the Big PXI Catalog is available on request or can be downloaded from the Pickering website.




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.

pickering

**pickeringtest.com**

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

© Copyright (2017) Pickering Interfaces. All Rights Reserved
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 - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

**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.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

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

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP