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TECHNOLOGY GROUP

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Visit our website - *Click HERE*

- Ultra High Density Reed Relay Matrix With 256 Crosspoints
- Available as a Single 32x8 or Dual 16x8 Matrix
- 1-Pole, 2-Pole or Screened Versions
- Large Matrices Built Using Multiple Module
- Screened 50Ω Option with 50MHz Bandwidth
- Uses High Reliability Pickering Ruthenium Reed Relays For Maximum Performance
- Fast Operating Speed <1000µs
- Switch up to 150 Volts with 10W Max Power
- Max Switch Current 0.5A Cold or 0.5A Hot
- VISA, IVI & Kernel Drivers Supplied for Windows
- Supported by PXI or LXI Chassis
- Supported by *eBIRST* ™
- 3 Year Warranty



Supported by *eBIRST*

eBIRST switching system test tools simplify switching system fault-finding by quickly testing the system and graphically identifying the faulty relay.

For more information go to: pickeringtest.com/ebirst

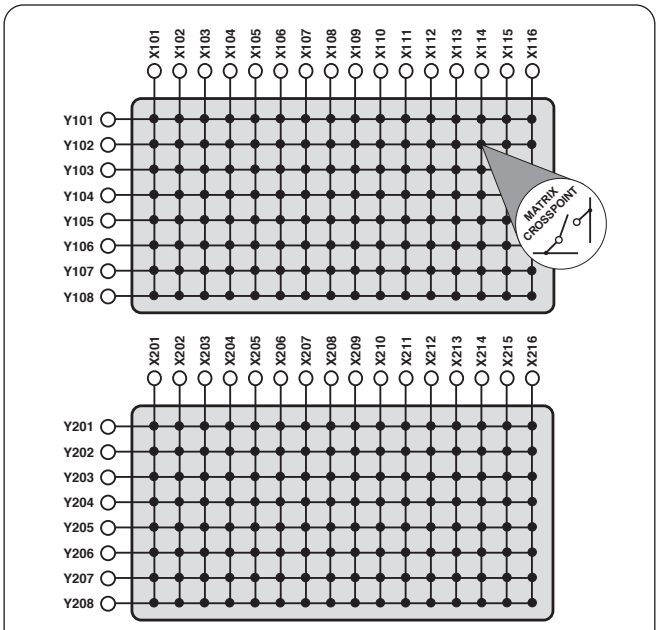
The 40-531/532 very high density matrix module is available in 1-pole, 2-pole and 1-pole screened configurations, the screened version is suitable for switching coaxial signals up to 50MHz. The range is as follows:

- 40-531 Single 32x8 matrix - 1-pole, 2-pole or 1-pole screened
- 40-532 Dual 16x8 matrix - 1-pole, 2-pole or 1-pole screened

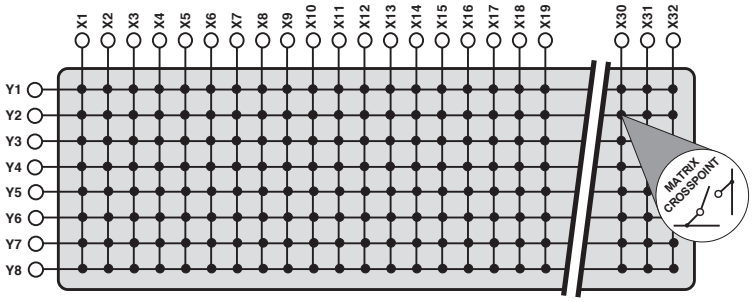
Typical applications include signal routing in Functional ATE and data acquisition systems. These matrix modules are constructed using high reliability reed relays, with 10^9 operations giving maximum switching confidence.

Larger matrices may be constructed by daisy chaining the common signals from multiple modules. However, for applications that require a very large matrix, Pickering's BRIC™ modules are best suited.

Note: For a lower cost alternative to the 40-531-021 Single 32x8 1-pole Matrix, the 40-530-021 should be considered. As well as being a more cost effective solution, it has a higher switching current capability and the same connector pin-out. See the 40-530 data sheet for details.



40-532 Dual 16x8 Matrix



40-531 Single 32x8 Matrix

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Relay Type

The 40-531/532 series modules are fitted with ruthenium sputtered reed relays, these offer very long life with good low level switching performance and excellent contact resistance stability. Spare reed relays are built onto the circuit board to allow easy maintenance with minimum downtime.

All reed relays are manufactured by our sister company Pickering Electronics: pickeringrelay.com

Switching Specification

Switch Type:	Ruthenium Reed
Max Switch Voltage:	150VDC/100VAC*
Max Power:	10W
Max Switch Current:	0.5A
Max Carry Current:	0.5A
Initial Path Resistance On (Single Module): Off (Single Module):	 <1200mΩ $>10^9$Ω
Thermal Offset:	<20µV
Operate Time:	<1ms, 0.5ms typical
Release Time:	<1ms, 0.5ms typical
Expected Life Low power load: Full power load:	 $1x10^9$ operations $>5x10^6$ operations

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

RF Specification 40-531-021-S - In a 50Ω System

Bandwidth (-3dB):	50MHz	(40-531-021-S)
Crosstalk (typical):	10kHz: 100kHz: 1MHz 10MHz: 25MHz 50MHz	-90dB -70dB -50dB -35dB -34dB -19dB
Isolation (typical):	10kHz: 100kHz: 1MHz 10MHz: 25MHz 50MHz	90dB 75dB 55dB 39dB 38dB 23dB

Power Requirements

+3.3V	+5V	+12V	-12V
0	1A (typ 280mA)	0	0

Mechanical Characteristics

Single slot 3U PXI (CompactPCI card).
Module weight: 400g (40-531-021).
460g (40-531-022-S).
380g (40-531-022).

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 96-pin male micro-D connector, for pin outs please refer to the operating manual.

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.



Insertion Loss Plot For 40-531-021-S (typical worst case)

Product Order Codes

Single 32x8 Matrix Module, 1-Pole	40-531-021
Single 32x8 Matrix Module, 2-Pole	40-531-022
Dual 16x8 Matrix Module, 1-Pole	40-532-021
Dual 16x8 Matrix Module, 2-Pole	40-532-022

Options

-S	1-pole versions are available with screened reed relays (e.g. 40-532-021-S)

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 reed relay types
- Mixture of reed 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.

Support Products

eBIRST Switching System Test Tool

This product is supported by the *eBIRST* test tools which simplify the identification of failed relays, the required *eBIRST* tools are below. For more information go to: pickeringtest.com/ebirst

Product	Test Tool	Adaptor	Termination
40-531/532	93-002-001	93-002-226	93-016-103

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
40-531-021	91-100-018
40-531-021-S	91-100-016
40-531-022	91-100-012
40-532-021	91-100-018
40-532-021-S	91-100-016
40-532-022	91-100-012

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

Mating Connectors & Cabling

For connection accessories for the 40-531/532 modules please refer to the 90-016D 96-pin micro-D Connector Accessories 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

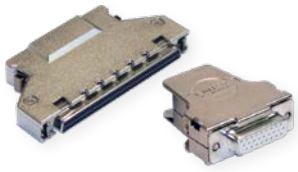


Pickering LXI or LXI/USB Modular Chassis—only accept our 1000+ PXI Switching & Simulation Modules:

- 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

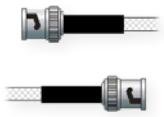
We provide a full range of supporting cable and connector solutions for all our switching products—20 connector families with 1200+ products. We offer everything from simple mating connectors to complex cables assemblies and terminal blocks. All assemblies are manufactured by Pickering and are guaranteed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



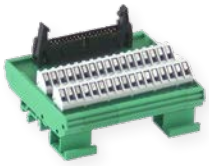
Connectors & Backshells



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.



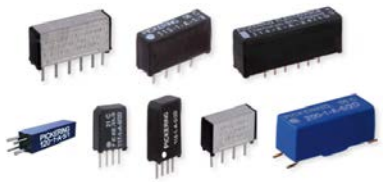
Mass Interconnect

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 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 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

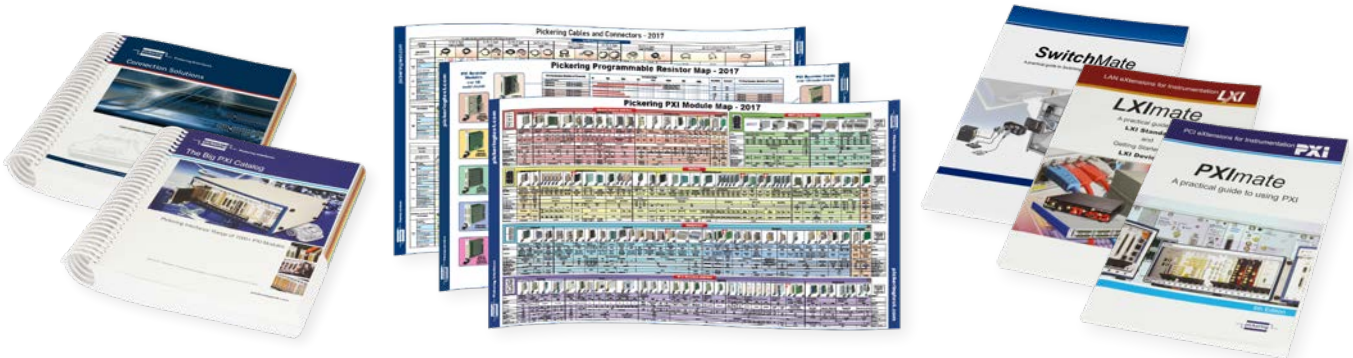


Three Year Warranty & Guaranteed Long-Term Support

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, 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 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

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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