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TECHNOLOGY GROUP

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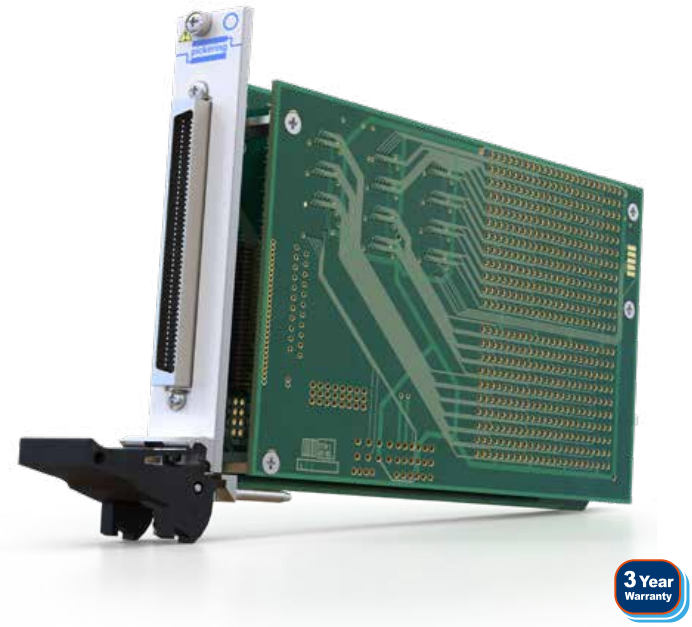
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Visit our website - *Click HERE*

PXI High Density Matrix

40-523/524

- High Density Reed Relay Matrix Module
- 44x4 Matrix
- 1-Pole, 2-Pole or Screened Versions
- 46x4 Matrix Option For 1-Pole Switching
- Large Matrices Built Using Multiple Modules
- Screened 50 Ω Option with 50 MHz Bandwidth
- Uses High Reliability Pickering Ruthenium Reed Relays For Maximum Performance
- Fast Operating Speed <500 µs
- Switch up to 150 V, 1.25 A with 20 W Max Power
- Drivers Supplied for Windows & Linux, Plus Support for Real-time Systems
- Supported by PXI or LXI Chassis
- Supported by *eBIRST* ™
- 3 Year Warranty



The 40-523 and 40-524 high density matrix modules are part of our range PXI switching solutions. The configurations are as follows:

- 40-523-021 44x4 1-Pole Matrix
- 40-523-021-S 44x4 1-Pole Screened Matrix
- 40-523-022 44x4 2-Pole Matrix
- 40-524-021 46x4 1-Pole Matrix

The screened version is suitable for switching coaxial signals up to 50 MHz.

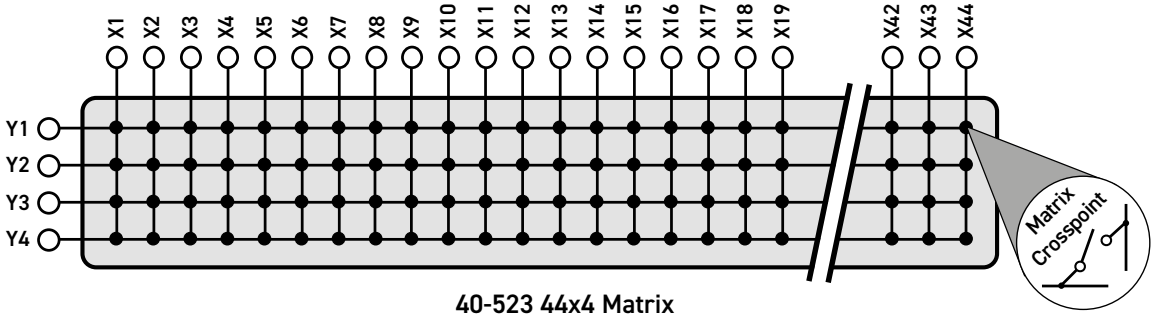
Typical applications include signal routing in Functional ATE and data acquisition systems. These modules are constructed using high reliability sputtered ruthenium reed relays, offering 10^9 operations to give maximum switching confidence with long life and stable contact resistance.

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.

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



40-523 44x4 Matrix

Relay Type

The 40-523/524 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:	150 VDC/100 VAC*
Max Power:	20 W
Max Switch Current:	1.0 A
Max Carry Current:	1.25 A
Initial Path Resistance On (Single Module):	<1200 mΩ (40-523) <1000 mΩ (40-524)
Off (Single Module):	$>10^9$ Ω
Thermal Offset:	<5 µV
Operate Time:	<0.5 ms, 0.25 ms typical
Release Time:	<0.5 ms, 0.25 ms typical
Expected Life, low power load:	$1x10^9$ operations
Expected Life, full power load:	$>5x10^6$ operations

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

Power Requirements

+3.3 V	+5 V	+12 V	-12 V
0	400 mA (280 mA typical)	0	0

Mechanical Characteristics

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 96-pin male 1.27 mm pitch 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:	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 and 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

44x4 Matrix Module, 1-Pole	40-523-021
44x4 Matrix Module, 1-Pole Screened	40-523-021-S
44x4 Matrix Module, 2-Pole	40-523-022
46x4 Matrix Module, 1-Pole	40-524-021

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
40-523/524	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
40-523-021	91-100-003
40-523-021-S	91-100-011
40-523-022	91-100-008
40-524-021	91-100-030

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

Mating Connectors & Cabling

For connection accessories for the 40-523/524 modules please refer to the 90-016D 96-pin 1.27 mm pitch Connector Accessories data sheet where a complete list and documentation can be found for accessories, or refer to the website.

The 40-523/524 is part of a range modules suitable for switching applications that require a mid-range matrix.

Pickering's Range of PXI/PXIe Medium Density Matrix Modules			
Matrix Configuration	Max Switch Voltage	Max Switch/ Carry Current	Model No.
42x4, 32x6, 25x8, 18x12 or 14x16, 1-pole	300 VDC/250 VAC	2 A/2 A	40-505A/506A/ 507/508/509
16x8, 2-pole	300 VDC/250 VAC	2 A/2 A	40-518A
32x4, 2-pole	300 VDC/250 VAC	2 A/2 A	40-519B
16x16 to 32x2, 1-pole	150 VDC/100 VAC	1 A/1.2 A	40-520
24x8, 1-pole or 2-pole	150 VDC/100 VAC	0.5 A/1 A	40-521
Dual 12x8, 1-pole or 2-pole	150 VDC/100 VAC	1 A/1.25 A	40-522
44x4, 1-pole or 2-pole,	150 VDC/100 VAC	1 A/1.25 A	40-523
46x4, 1-pole	150 VDC/100 VAC	1 A/1.25 A	40-524
34x4 or 16x4, 1-pole	200 VDC/150 VAC	2 A/2 A	40-525A
64x2, 1-pole	300 VDC/220 VAC	2 A/2 A	40/42-527A
32x4, 1-pole	300 VDC/220 VAC	2 A/2 A	40/42-528B
16x8, 1-pole	300 VDC/220 VAC	2 A/2 A	40/42-529B





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 PXI Switching & Simulation Modules:

- Choose from 1000+ Pickering PXI 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. These accessories are detailed in Connector Accessories data sheets, where a complete list and documentation can be found for each accessory.



Connectors & Backshells



Multi-way Cable Assemblies



RF Cable Assemblies



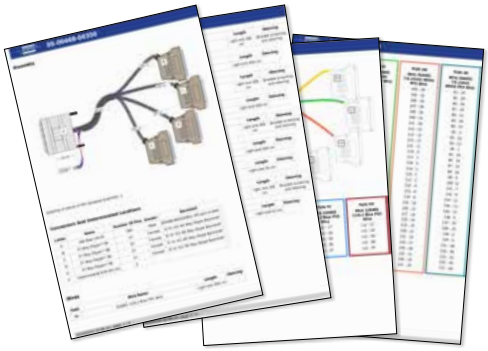
Breakouts



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.

- Fully supported on modern browsers and tablet operating systems.
- Built-in tutorials and videos allow you to get quickly up to speed.
- Store cable assemblies in the Cloud and develop over time.
- Each cable design has a downloadable PDF documentation file detailing all specifications



Start designing your custom cabling, go to pickeringtest.com/cdt

Mass Interconnect

We recommend the use of a mass interconnect solution when an Interchangeable Test Adapter (ITA) is required for PXI/LXI based test systems. Our modules are fully supported by 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 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 more information go to pickeringtest.com/os

The VISA driver support is provided for LabVIEW Real Time Operating Systems (Pharlap and Linux-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++)
- **Programming Languages** C, C++, C#, Python
- **Keysight** VEE and OpenTAP
- **Mathworks MATLAB, Simulink**
- **Marvin** ATEasy
- **MTQ Testsolutions** Tecap Test & Measurement Suite

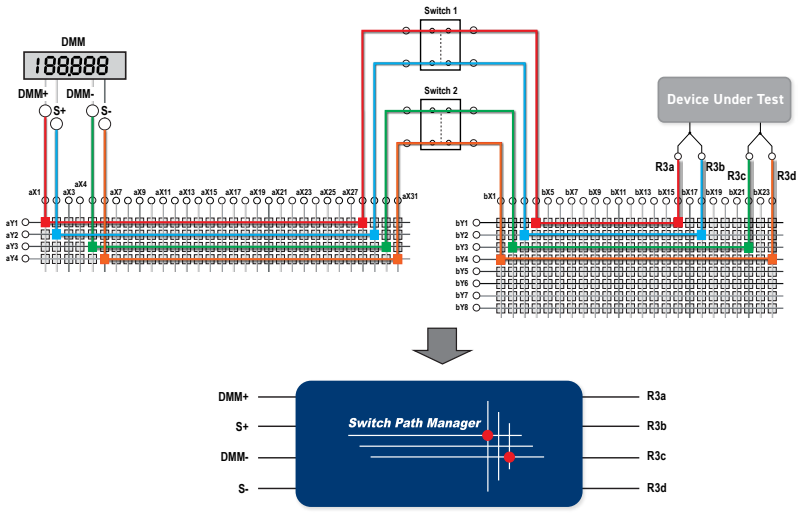
Drivers for popular Linux distributions are available, other environments are also supported, please contact Pickering with specific enquiries. We provide Soft Front Panels (SFPs) for our products for familiarity and manual control, as well as comprehensive documentation and example programs to help you develop test routines with ease.

To learn more about software drivers and development environments 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 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 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 three years from the date of delivery to the original purchaser. Extended warranty and service agreements are available with various levels for 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 go to pickeringtest.com/support

Available Product Resources

We have a library of resources including success stories, product and support videos, articles and white papers as well as application-specific brochures to assist you. We have also published reference books on switching technology and the PXI and LXI standards.

To view, download or request any of our product resources go to 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

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We buy equipment

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