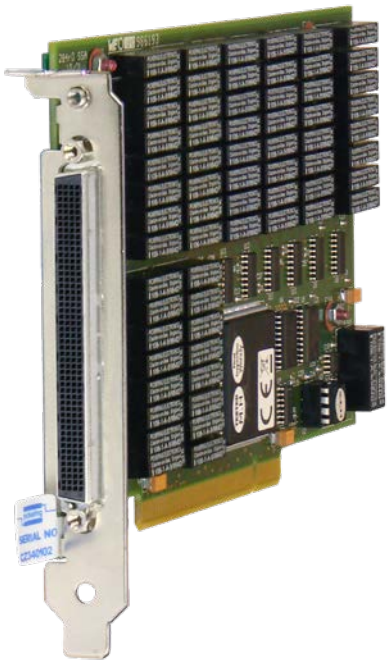
PCI Reed Relay Card

50-110A/115A

- 25, 32, 50 or 64 Reed Relays Per Card
- SPST, DPST and SPDT Configurations
- Ruthenium Reed Relays Suitable For Low Level Signals
- Uses High Reliability Pickering Reed Relays For Maximum Performance
- Fast Operating Speed 500 µs Typical
- Switch up to 150 VDC/100 VAC, 1 A with 10 W Max Power
- VISA, IVI & Kernel Drivers Supplied for Windows
- Supported by *eBIRST* ™
- 3 Year Warranty



The 50-110A/115A range of switching cards is available in both Changeover (SPDT) and Normally Open (SPST & DPST) configurations. Connections are made via a front panel 200-pin female connector.

General purpose reed relays are suitable for the construction of small switching networks, for switching larger relays or for operating external devices (e.g. lamps, solenoids etc.).

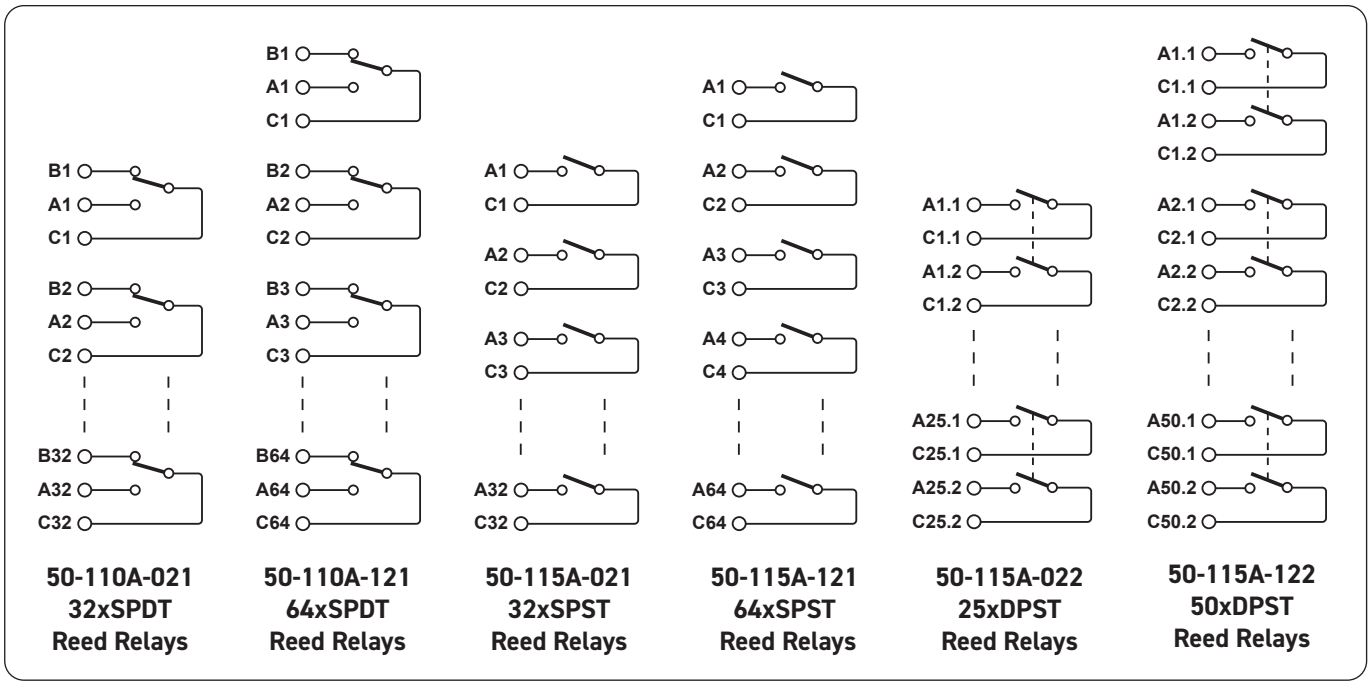
All of the reed relays used in our PCI cards are manufactured by our Relay Division. Pickering reed relays offer very high reliability (over 10^8 operations) with maximum switching performance, especially for low level signals.

Range Description:

- 50-110A-x21 32 or 64 SPDT Reed Relays.
- 50-115A-x21 32 or 64 SPST Reed Relays.
- 50-115A-x22 25 or 50 DPST Reed Relays.

Supported by *eBIRST*

eBIRST test tools simplify switching fault-finding by quickly testing the system and graphically identifying the faulty relay. For more information go to: pickeringtest.com/ebirst



50-110A-021 32xSPDT Reed Relays | **50-110A-121 64xSPDT Reed Relays** | **50-115A-021 32xSPST Reed Relays** | **50-115A-121 64xSPST Reed Relays** | **50-115A-022 25xDPST Reed Relays** | **50-115A-122 50xDPST Reed Relays**

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Relay Type

The 50-110A & 50-115A are fitted with high quality ruthenium 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 Relay Division, for more information visit: pickeringrelay.com

Switching Specification

Switch Type:	Ruthenium Reed
Max Switching Voltage:	150 VDC/100 VAC (50-110A)* 100 VDC/70 VAC (50-115A)*
Max Power:	3 W (50-110A) 10 W (50-115A)
Max Switch Current:	0.25 A (50-110A) 1 A (50-115A)
Max Carry Current:	1 A
On Path Resistance:	<800 mΩ (400 mΩ typical)
Off Path Resistance:	$>10^9$ Ω
Thermal Offset:	<20 µV (50-110A) <30 µV (50-115A)
Typical Operate Time:	0.5 ms
Expected Life, low power:	$>1x10^8$ operations
Expected Life, full power:	$>1x10^6$ operations

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

Power Requirements

+3.3 V	+5 V	+12 V	-12 V
200 mA	400 mA Max	0	0

Mechanical Characteristics

Single slot short PCI format.
3D models for all versions in a variety of popular file formats are available on request.

Connectors

Signals via a 200-pin female LFH 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

PCI Compliance

The 50-110A/115A range complies with the PCI Specification 2.0 (issued Feb 2004).

Signalling Environment:	33 MHz, 32-bit Universal (+3.3 V or +5 V).

Safety & CE Compliance

All cards 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

32 x SPDT, Ruthenium Reed Relays	**50-110A-021**
64 x SPDT, Ruthenium Reed Relays	**50-110A-121**
32 x SPST, Ruthenium Reed Relays	**50-115A-021**
64 x SPST, Ruthenium Reed Relays	**50-115A-121**
25 x DPST, Ruthenium Reed Relays	**50-115A-022**
50 x DPST, Ruthenium Reed Relays	**50-115A-122**

Product Customization

Pickering PCI cards 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
50-110A/115A	**93-002-001**	**Not Required**

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
50-110A-021/121	**91-100-026**
50-115A-021/121	**91-100-048**
50-115A-022/122	**91-100-062**

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

Mating Connectors & Cabling

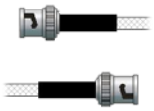
For connection accessories for the 50-110A/115A range please refer to the 90-002D 200-pin LFH Connector Accessories data sheet where a complete list and documentation can be found for accessories, or refer to the Connection Solutions catalog.

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