

- Suitable For Switching USB or RS-232 Data Lines
- Configurable To Dual 18-Channel or Single 36-Channel
- Maintains USB Data Line Impedance
- Can be Used As General Purpose Two Pole MUX
- VISA, IVI & Kernel Drivers Supplied for Windows
- Supported by PXI or LXI Chassis
- 3 Year Warranty

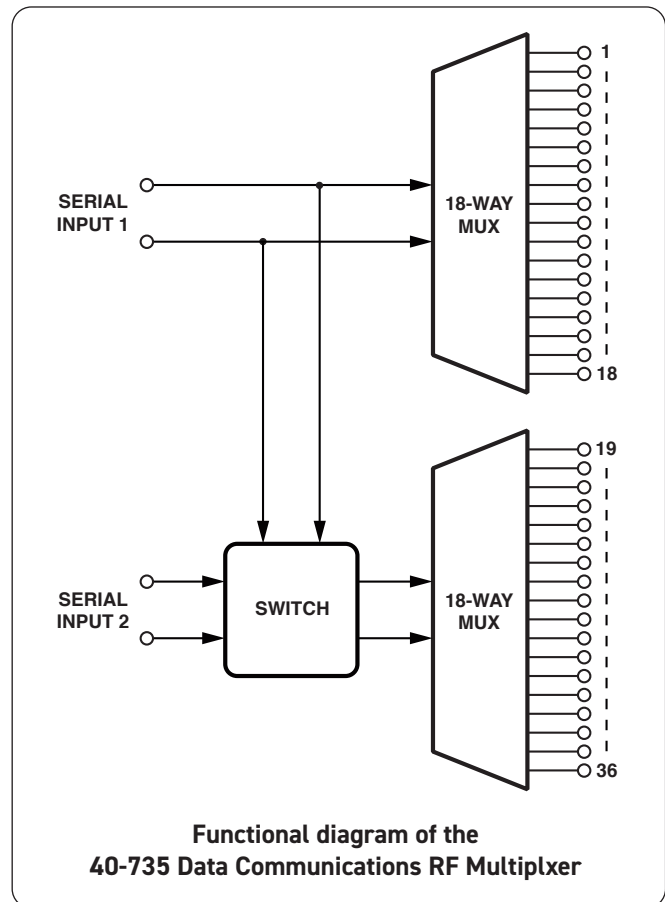


The 40-735 MUX is designed for switching the data lines of serial interfaces such as RS232 and USB. Careful attention to the design of the module ensures that the switching system minimizes its impact on the transmission distance of USB1.1 interfaces.

The MUX is available in 36:1 or 18:1 formats and enables a single serial data source to be switched to one of 36 or 18 devices under test. The 36:1 version can be software configured into two independent 18 way MUXs enabling two separate serial data sources to be connected to separate banks of 18 devices.

The module is ideal for performing bulk testing of devices that use a serial data communications port to load software or control device operation. The 40-735 can also be used for a variety of other applications where a 2-pole low power MUX is required.

Pickering's Range of Data Comms Multiplexers		
Model No.	Configuration	Application
40-735	Single 36 channel or Dual 18 channel, differential pair	USB, RS232
40-736	Single 32, Dual 16, Quad 8 channel, differential pair	1 Gb Ethernet, AFDX, BroadR-Reach, LVDS, USB, RS232
40-737	Single 8:1 or 16:1 differential pair & power	USB1, USB2



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Relay Type

The 40-735 is fitted with a mix of ruthenium sputtered reed relays and electro-mechanical relays. Spare 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

Max Switching Voltage:	150 VDC/100 VAC*
Max Power:	10 W
Max Switch Current:	0.5 A
Initial On Path Resistance:	<1200 mΩ
Off Path Resistance:	>1x10 ⁹ Ω
Thermal Offset:	<10 μV
Bandwidth:	>200 MHz (differential, 90 Ω)
Operate Time:	<4 ms
Release Time:	<4 ms
Expected Life	
Low power load:	>1x10 ⁸ operations
Full power load:	>2x10 ⁵ operations

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

Power Requirements

+3.3V	+5V	+12V	-12V
0	150 mA	0	0

Mechanical Characteristics

Single slot 3U PXI (CompactPCI card). For the slot occupancy of special build modules, see the Connectors section.

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.

Special builds are available with the following connectors:
Dual 18 Channel MUX with 96-pin micro-D connector (1 slot)

Single 10 Channel MUX with XLR connectors (6 slot)
Single 18 Channel MUX with BNC connectors (2 slot)
Single 36 Channel MUX with SMB connectors (2 Slot)



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

36 Chan Comms MUX, 96-pin micro-D	40-735-912
18 Chan Comms MUX, 96-pin micro-D	40-735-902

Special Builds:

Dual 18 Chan MUX, 96-pin micro-D	40-735-912-S1
Single 10 Chan MUX, XLR connectors	40-735-902-S2
Single 18 Chan MUX, BNC connectors	40-735-902-S3
Single 36 Chan MUX, SMB connectors	40-735-902-S4

Product Customization

Pickering modules are designed and manufactured on our own flexible manufacturing lines, giving complete product control and enabling simple customization to meet very specific requirements.

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

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
40-735-912	91-100-005 & 91-100-040
40-735-902	91-100-005 & 91-100-040

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

Mating Connectors & Cabling

For connection accessories for the 40-735-912/902 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.

Note: 96-pin micro-D connector blocks can be used for prototype verification, however can significantly restrict bandwidth performance when used in RF applications in comparison with standard connection solutions.

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

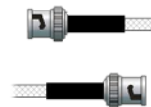
We provide a full range of supporting cable and connector solutions for all our switching products—20 connector families with 1200+ products. We offer everything from simple mating connectors to complex cables assemblies and terminal blocks. All assemblies are manufactured by Pickering and are guaranteed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



Connectors & Backshells



Multiwire 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:

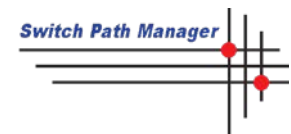
- **Pickering Interfaces Switch Path Manager**
- **National Instruments** products (LabVIEW, LabWindows/CVI, Switch Executive, MAX, TestStand, VeriStand, etc.)
- **Microsoft Visual Studio** products (Visual Basic, Visual C+)
- **Keysight** VEE and OpenTAP
- **Mathworks** Matlab
- **Marvin** ATEasy
- **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