

- Suitable For Testing SONET/SDH Transmission Multiplexers
- 8 or 16 Tributaries Per 1-Slot Module
- Up To 272 Tributaries Per 18-Slot PXI Chassis
- Expandable To Any Size: 8, 16, 24,....
- 75Ω Impedance
- All Tributaries Can Be Daisy-Chained to One Signal
- Pickering Interfaces Can Construct and Test Custom Switching Networks
- VISA, IVI & Kernel Drivers Supplied for Windows
- Supported by PXI or LXI Chassis
- 3 Year Warranty



The 40-792/793 Daisy Chain Switching Module is designed for telecom test applications. It allows production or verification testing of SONET/SDH transmission multiplexers switching 2MBit/s or 1.5MBit/s data with a characteristic impedance of 75Ω.

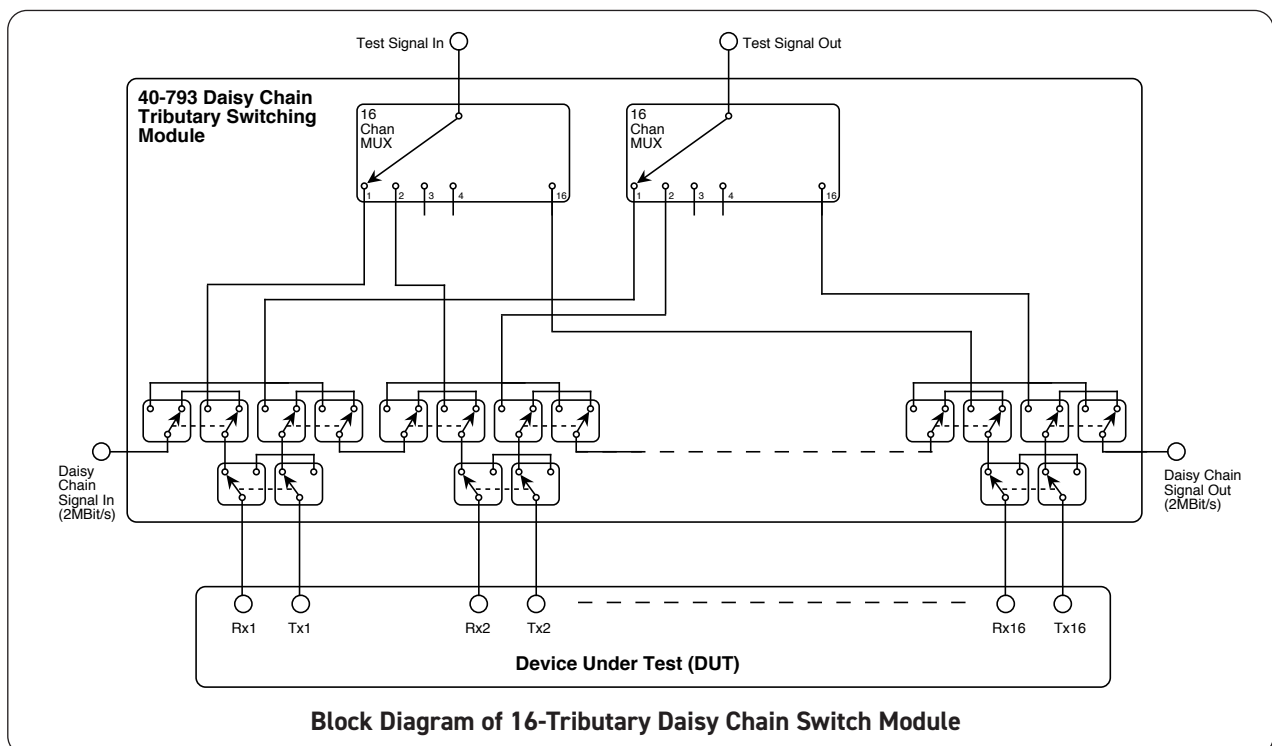
Range Description:

- 40-792 8 Tributary Daisy Chain Switch
- 40-793 16 Tributary Daisy Chain Switch

Multiple modules can be cascaded together to form very large systems, for example a 7 slot PXI chassis can contain a 112 tributary switching system and an 18 slot PXI chassis can contain up to 272 Tributaries.

Traffic is sequentially daisy-chained through all tributaries (or any selection of tributaries), modules can be cascaded to test any number of tributaries. Two additional multiplexers have been built in to allow Transmit or receive instrumentation to connect to any individual tributary this allows specific testing of that port, for example to measure pulse shape distortion or return loss. Refer to graphic below.

For further information please refer to user manual or contact the sales office to discuss your application in detail.



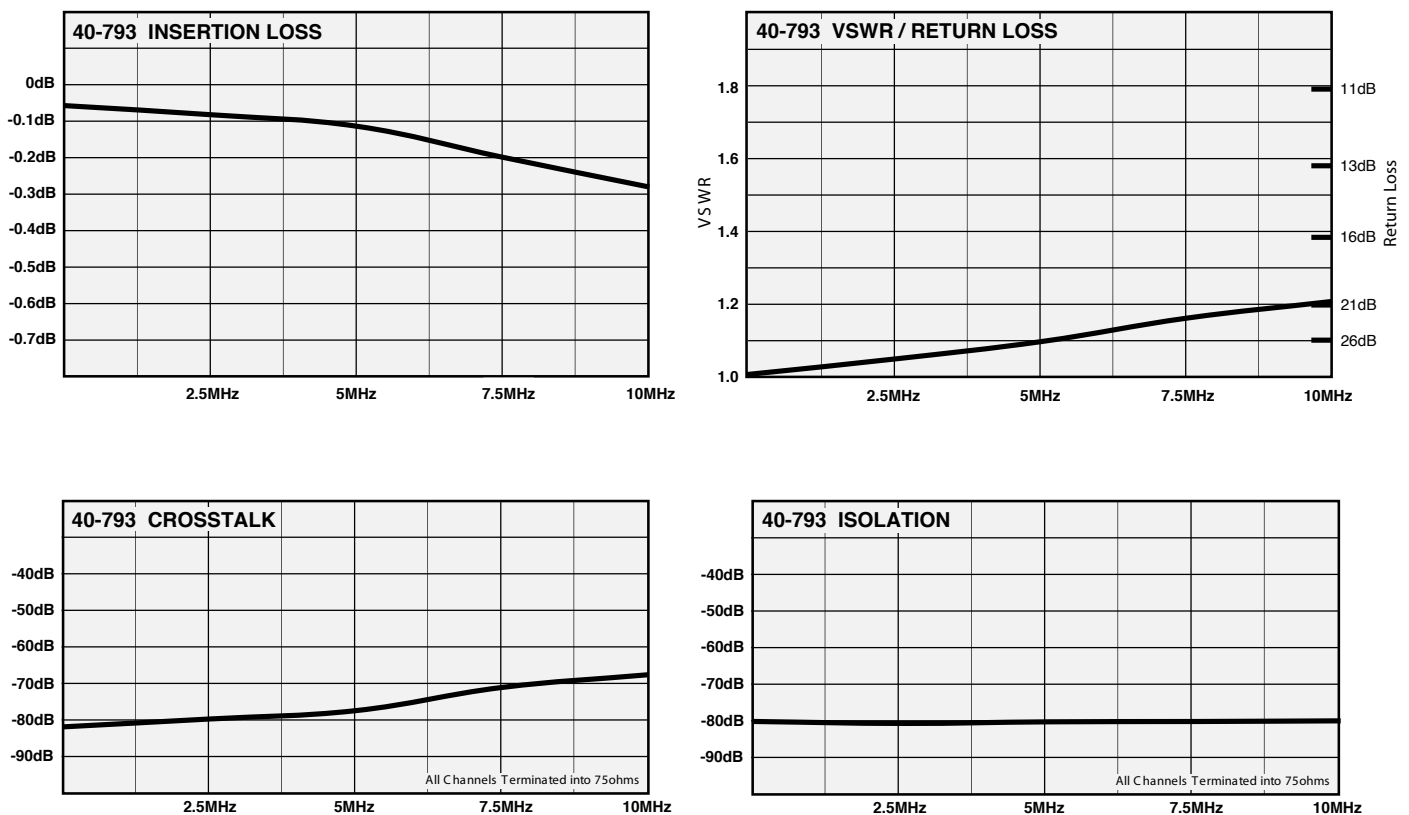
General Specification

Maximum Voltage:	100VDC/100VAC*
Maximum Power:	30W
Maximum Switch Current:	1.0A
On Path Resistance:	<500mΩ
Off Path Resistance:	>1x10 ⁸ Ω
Expected Life - Low Power:	>1x10 ⁸ operations
Expected Life - Max Power:	>2x10 ⁵ operations
Total Switching Time:	10ms
Relay Mechanical Setting Time:	<3ms

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

RF Specification (Multiplexer)

Characteristic Impedance:	75Ω
Maximum Frequency:	100MHz
Rise Time:	<1ns
Insertion Loss (<10MHz):	<0.3dB
Return Loss (<10MHz):	>21dB
VSWR (<10MHz):	<1:1.15
Isolation (<10MHz):	>50dB



Typical RF Performance Plots for 40-793-701
(1 Tributary Switched To The Test Multiplexer)

SDH/SONET Tributary Testing is a very specialised area, please contact Pickering Interfaces for additional application information and to discuss your exact requirements.

Pickering Interfaces also have SDH/SONET switching solutions in our System 30 (VXI) and System 20 (IEEE-488) switching systems.

Using The Tributary Daisy Chain Switch

The 40-792/793 comprises 2 sections (see graphic on page 1).

1. Daisy-Chain switches. These are used to feed 2Mbit signals into and out of the DUT (device under test), any selection of tributaries may be routed (e.g. all even, all odd, etc).

2. Breakout multiplexer. This is used to test a specific tributary.

The 40-792/793 is programmed as a 4x16 matrix:

- 1st row - used to route the Daisy-Chain switches. The default setting is for all tributaries to be selected.
- 2nd row - used to switch polarity.
- 3rd row - used to select the receive multiplexer to a specific tributary.
- 4th row - used to select the transmit multiplexer to a specific tributary.

Power Requirements

+3.3V	+5V	+12V	-12V
0	500mA (typ 340mA)	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 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

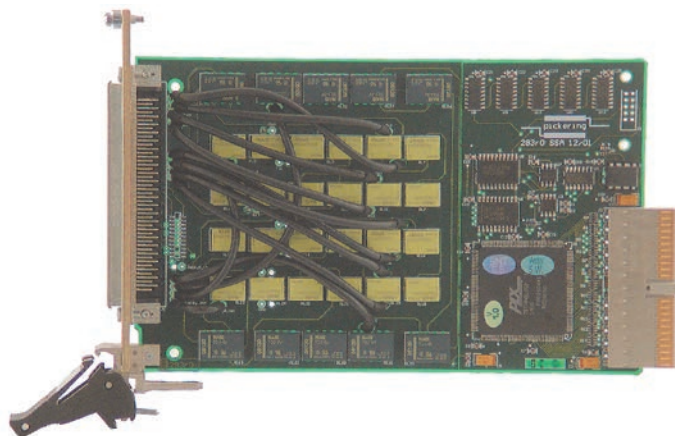
PXI & CompactPCI Compliance

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.



40-792-701 8 Tributary Daisy Chain Switch Module

Product Order Codes

8 Tributary Daisy Chain Switch, 75Ω	40-792-701
16 Tributary Daisy Chain Switch, 75Ω	40-793-701

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 relay types
- Mixture of 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

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
40-792-701	91-100-040 & 90-100-023
40-793-701	91-100-040 & 90-100-023

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

Mating Connectors & Cabling

For connection accessories for the 40-792/793 module 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.



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

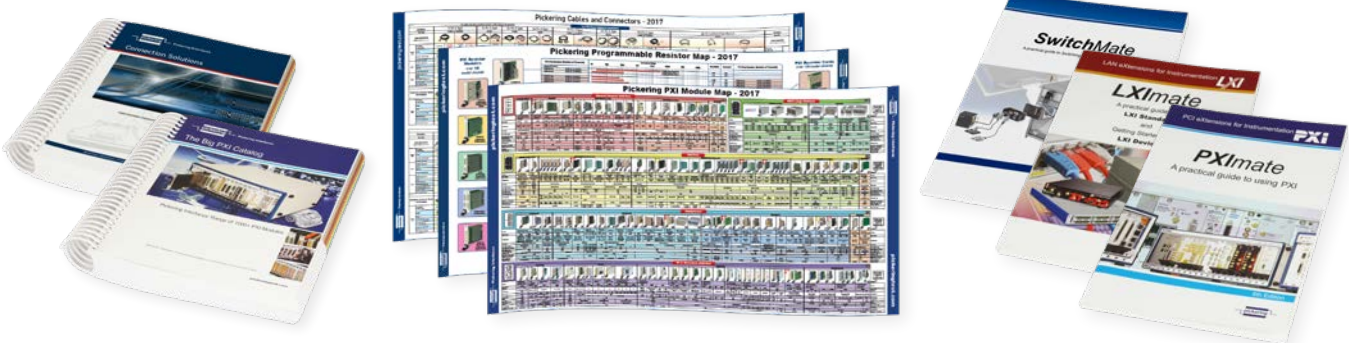


Three Year Warranty & Guaranteed Long-Term Support

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