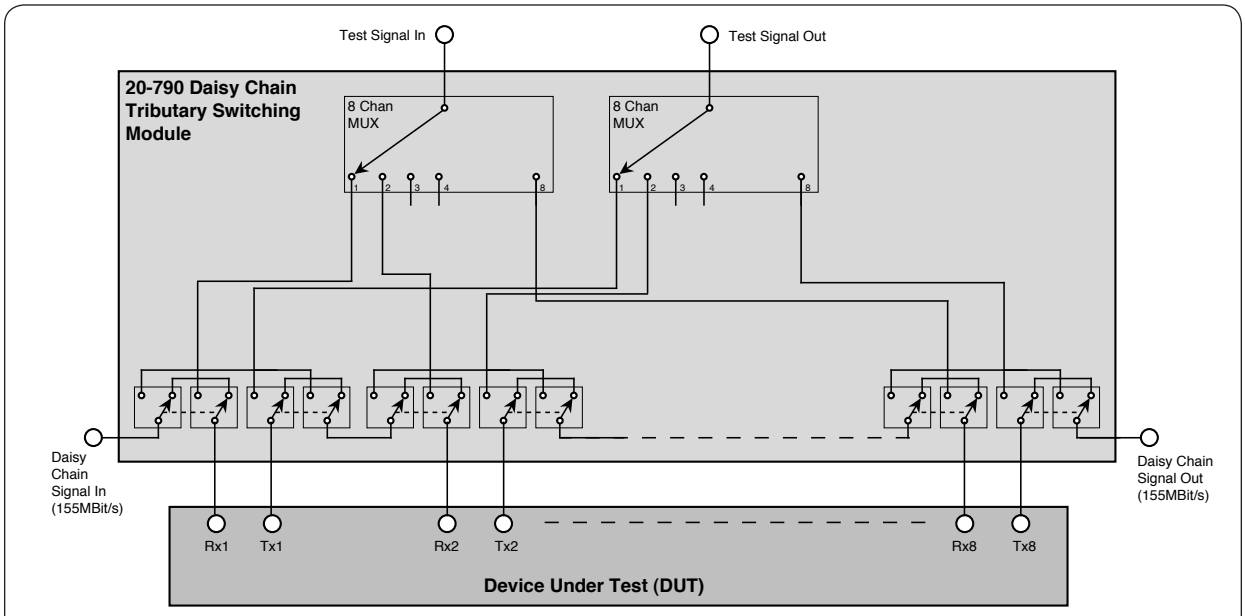
GPIB 155MBit/s Daisy-Chain Tributary Switch Module 20-790/791

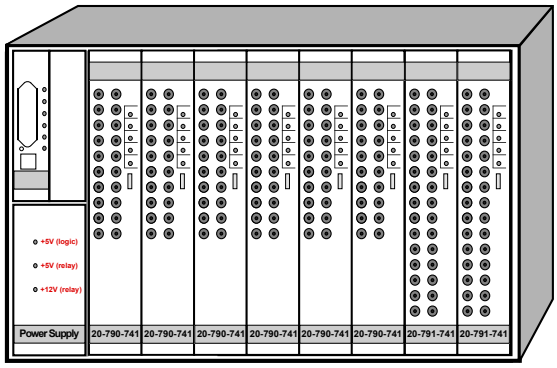
- Suitable For Testing SONET/SDH Transmission Multiplexers
- Suitable for 2MBit/s up to 155MBit/s
- 8 Tributaries Per Module
- Up To 64 Tributaries Per Mainframe
- Expandable To Any Size: 16, 32, 64, 128, 256...
- 75Ω Impedance With Choice of Connector Types SMZ/BT Type 43 or 1.0/2.3
- All Tributaries Can Be Daisy-Chained to One Signal
- Integrated Multiplexer Allows Selection of One Tributary For Analogue Testing
- 20-791 Version Has Additional Built In Multiplexers For System Expansion
- Built In RS-232 Port

***Please contact Pickering for alternative PXI/LXI/USB solutions**



Block Diagram of 20-790 8-Channel Daisy-Chain Switching Module

The 20-790/791 Daisy Chain Switching Module is designed for telecom test applications. It allows production or verification testing of SONET/SDH transmission multiplexers, suitable for rates up to 155MBit/s. Traffic is sequentially Daisy-Chained through all tributaries (or any selection of tributaries), modules can be cascaded to test any number of tributaries. A built in breakout multiplexer allows separate testing of individual ports. Refer to diagram.



One mainframe has capacity for 64 x 155MBit/s tributaries.

(multiple cases can support: 128, 192, 256, etc...)

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General Specification (All Versions)

Maximum Voltage:	100VDC/100VAC
Maximum Power:	10W
Maximum Switch Current:	0.5A
On Path Resistance:	<500mΩ
Off Path Resistance:	>1x10^{8}Ω
Total Switching Time:	10ms
Relay Mechanical Settling Time:	<3ms
Expected Life, Mechanical:	>1x10^{6} operations
Expected Life, Electrical (low power):	>3x10^{5} operations
Expected Life, Electrical (max power):	>3x10^{5} operations

RF Specification (Multiplexer)

Characteristic Impedance:	75Ω
Maximum Frequency:	2.5GHz
Rise Time:	<0.4ns
Isolation (at 2GHz):	>50dB

Programming Information

The 20-790 comprises 2 sections:

1. **Daisy-Chain switches**. These are used to feed 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 20-792 is programmed as a quad 8 channel multiplexer (see diagram):

- **1st multiplexer** is used to route the Daisy-Chain switches. The default setting is for all tributaries to be selected.
- **2nd multiplexer** Daisy-Chain Tributary Switch Multiplexer.
- **3rd multiplexer** is used to select the required instrument.
- **4th multiplexer** is used to select the multiplexer to a specific tributary.

For further information on operation please refer to the Operating Manual.

Mechanical Characteristics

All modules conform to the 6U height (128mm) Eurocard standard and are 160mm deep. Panel width for all versions is 1.8 Inches , with up to 8 modules per mainframe.

Operating/Storage Conditions

Operating Conditions

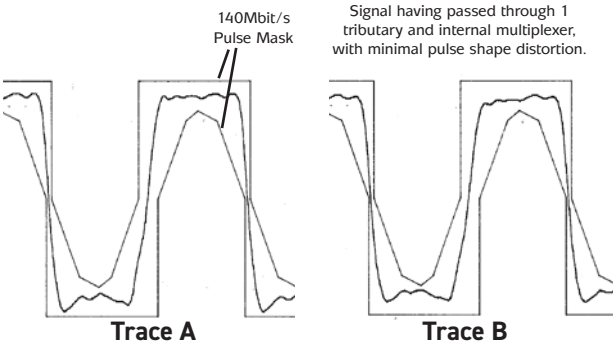
Operating Temperature:	0°C to +55°C
Humidity:	Up to 95% non-condensing
Altitude:	5000m

Storage and Transport Conditions

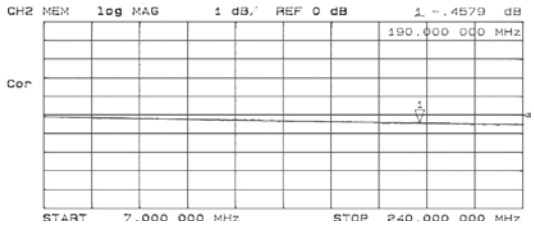
Storage Temperature:	-20°C to +75°C
Humidity:	Up to 95% non-condensing
Altitude:	15000m

Time Domain Performance

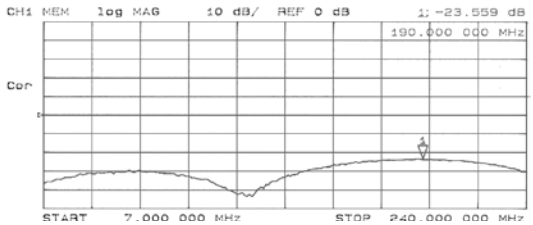
The 20-790/791 is suitable for measuring signals up to 155MBit/s. The most demanding tests are when measuring the return loss or pulse mask performance of a specific tributary. To succeed with these measurements exceptionally good bandwidth is required (this also applies to all system cabling!). Please contact Pickering if you require further assistance.



Typical Pulse Mask Measurement



Typical Insertion Loss For 1 Selected Tributary (< 0.5dB at 0-240MHz)



Typical Return Loss For 1 Selected Tributary (< 22dB at 0-240MHz)

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

8 Tributary Daisy-Chain Switch:	
SMZ/Type 43 Version, 75Ω	**20-790-711**
1.0/2.3 Version, 75Ω	**20-790-741**
8 Tributary Switch + 8 Channel Mux:	
SMZ/Type 43 Version, 75Ω	**20-791-711**
1.0/2.3 Version, 75Ω	**20-791-741**
8 Tributary Switch + 2 Channel Mux:	
SMZ/Type 43 Version, 75Ω	**20-791-711-S**
1.0/2.3 Version, 75Ω	**20-791-741-S**
Options:	
Alternative connectors are available on many modules, e.g. 75Ω mini SMB. Please consult the factory	**-C**

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

Product Customization

Pickering System 20 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.

Mating Connectors & Cabling

75Ω 1.0/2.3 to 1.0/2.3 Lead, 1m Length	**40-977-731**
75Ω SMZ to SMZ Lead, 1m Length	**10-988-705**

For other connection accessories for this series of modules please refer to the 90-011D RF Cable Assemblies data sheet where a complete list and documentation can be found for accessories, or refer to the Connection Solutions catalog.