

# 20-795 Daisy-Chain Tributary Switching Module

- Suitable For Testing SONET/SDH Transmission Multiplexers
- Suitable For Switching 100Ω/120Ω Balanced Lines
- Suitable For Data Rates up to 2Mbits/s
- 16 Tributaries Per Module
- Up To 112 Tributaries Per Mainframe
- Expandable To Any Size: 32, 64, 96, 128, 256,..
- All Tributaries Can be Daisy-Chained to One Signal
- Integrated Multiplexer Allows Selection of One Tributary For Analogue Testing
- Front Panel Status Indicators
- Built-in Self-Test



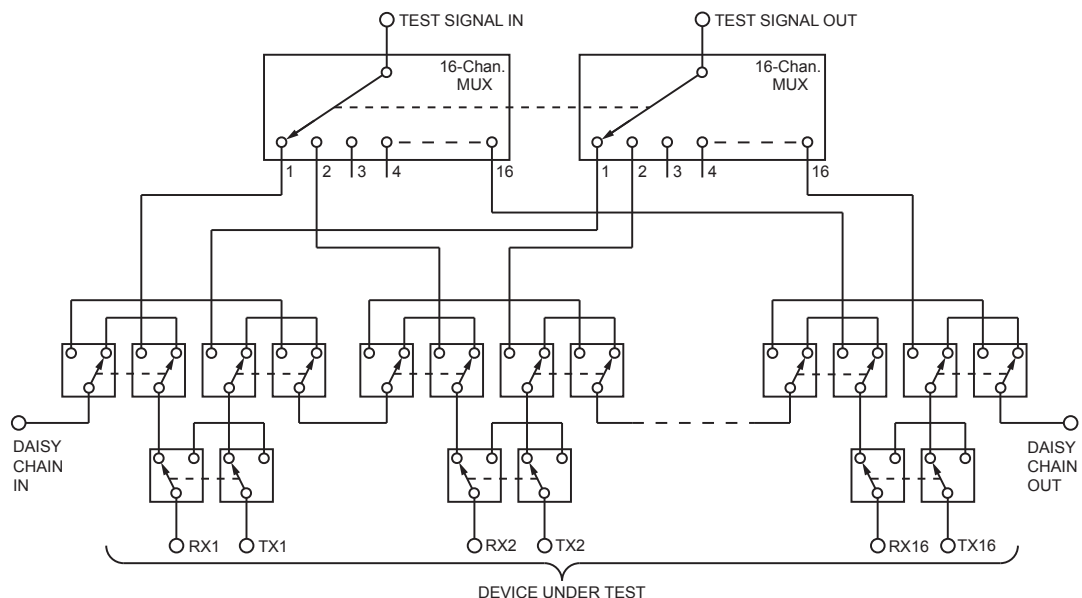
The 20-795 Daisy-Chain Switching Module is designed for telecom test applications. It allows production or verification testing of SONET/SDH transmission multiplexers switching 2Mbit/s or 1.5Mbit/s data over 100Ω or 120Ω balanced lines. Multiple modules can be cascaded to form very large systems, for example a 7-slot Chassis can contain a 112 tributary switching system.

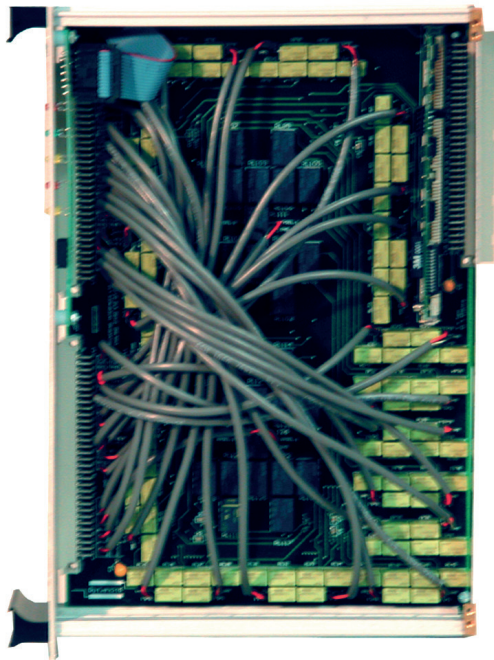
The Switching Module allows traffic to be sequentially Daisy-Chained through all tributaries (or any selection of tributaries), and Switching Modules can be cascaded to test any number of tributaries.

Loop-Back relays allow any selected tributary to have its transmit port fed back directly to its receive port. Multiplexers are provided to allow instrumentation to be connected to any tributary. This enables specific testing of a port, for example for the measurement of pulse shape distortion or return loss.

## Simplified Block Diagram for the Daisy-Chain Tributary Switching Module (20-795).

Note that each path and switch shown represents a two-pole balanced connection.





**PCB Layout for the Daisy-Chain Tributary Switch  
(20-795-922)**

### General Specification

Maximum Voltage:	100V DC/ 100V AC
Maximum Power:	30W
Maximum Switch Current:	1A
On Path Resistance:	<500mΩ
Off: Path Resistance:	>10 <sup>8</sup> Ω
Relay Mechanical	
Setting Time:	<3ms.
Total Switching Time:	10ms
Expected Life	
Low power:	>1x10 <sup>8</sup> operations
Maximum power:	>2x10 <sup>5</sup> operations

### RF Specification

Characteristic Impedance:	100Ω/120Ω
Maximum Frequency:	100MHz
Rise Time:	<1ns
Insertion Loss (<10MHz):	<0.3dB
Return Loss (<10MHz):	>21dB
VSWR (<10MHz):	<1:1.2
Isolation (<10MHz):	>50dB

### 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

### Programming

The module uses a standard IEEE-488.2/RS-232 message based interface and is programmed via the System 20 backplane.

### Self Test

The module has a built in self-test that is executed at power on or invoked by a software command. The test checks internal logic, checks power supply levels and tests the resistance of the relay coils. The result of the test is indicated on the front panel LEDs.

### Width and Dimensions

The 20-795 module conforms to the 6U height (262mm) Eurocard standard and is 160mm deep. The front panel width is 1.8 Inches, allowing up to 8 modules per mainframe.

### Connectors

System 20 bus:	64-way DIN 41612 plug
Signal in/out:	2 x 64-way DIN 41612 plugs on front panel

### Product Order Codes

Daisy-Chain Tributary Switching Module	
16-Channel 120Ω Differential	<b>20-795-922</b>

### Mating Connectors

DIN 41612 Connector Crimp Pin	<b>10-967-001</b>
DIN 41612 Connector IDC Socket	<b>10-967-101</b>
DIN 41612 IDC Cable, 1m length	<b>10-967-201</b>
Other leads are available, please contact sales office	

### Latest Details

Please refer to our Web Site for Latest Product Details.  
[www.pickeringtest.com](http://www.pickeringtest.com)

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 has other SDH/SONET switching solutions in the system 20 (IEEE-488) product range as well as in our System 30 (VXI) and System 40 (PXI/cPCI) switching systems.