

- R.F. Multiplexer with up to 2GHz Bandwidth
- Configurable as 32 to 1, Dual 16 to 1 or Quad 8 to 1 Multiplexer
- Wide Choice of Connectors: SMB, BNC, BT Type 43/SMZ, SMA or 1.0/2.3
- Built-In Self Test
- Front Panel LED Indicators
- Suitable for Building Larger Switching Networks
- 75Ω Version Suitable for Telecoms and High Quality Video Switching

The 20-745 series are a range high density 2000MHz Multiplexers arranged as a Quad 8 to 1, Dual 16 to 1 or Single 32 to 1 configuration, all with excellent Insertion Loss, VSWR & Isolation, available in a choice of 50Ω or 75Ω versions with SMA, SMB, Type 43/SMZ, BNC or 1.0/2.3 Connectors.

This module may also be easily configured as a Single 32 to 1, Dual 16 to 1 or Quad 8 to 1 multiplexer, to ease the construction of large RF switching systems.

This module is a higher density version of type 20-740 with the automatic termination function removed, the RF performance specification.

Applications for the 20-745 include routing high frequency signals to and from oscilloscopes, analyzers, signal generators and synthesizers, telecoms tributary switching, video/audio switching and switching high frequency logic signals.

Programming

The Multiplexer module is simple to program:-

ARESET a	Open all channels on device a
DELAY t	Force a minimum delay of t milliseconds between two instructions
DIAGNOSTIC?	Report any Self Test errors
RESET	Open all switches on all modules
VIEW? a	View status of device a
CHAN a,b,c	Select channel c on multiplexer a , bank b

Self Test

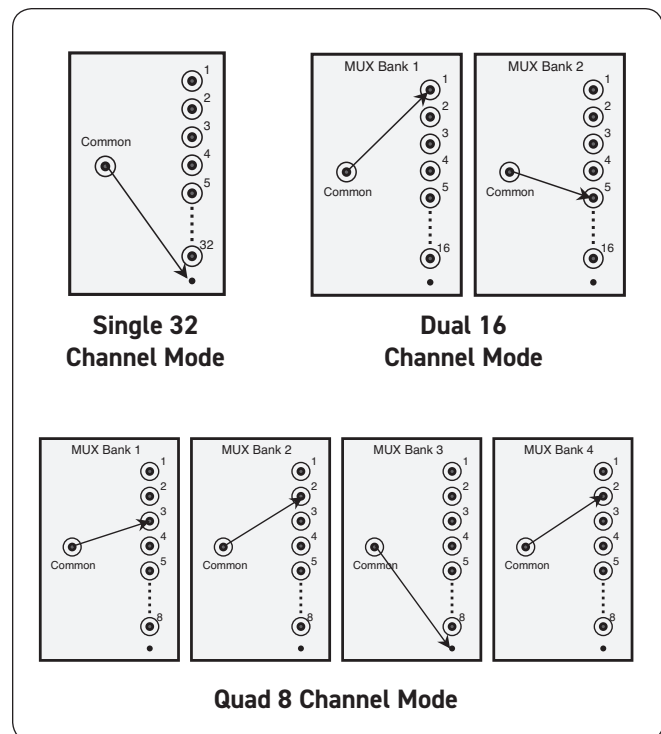
Self-Test is invoked at power on and may also be operated under software (***TST?**) or via a recessed push button. Self-Test pass is indicated on a front panel LED with a full pass/fail description available using the **DIAGNOSTIC?** command. Self-Test comprises 2 levels:

- Logic Test
- Relay Coil Test

These two levels of testing will find the majority of failures, however please note that the relay contacts themselves are not tested.



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



Specification (16 to 1 Mode)

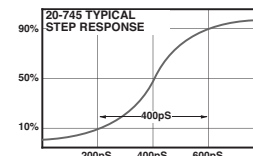
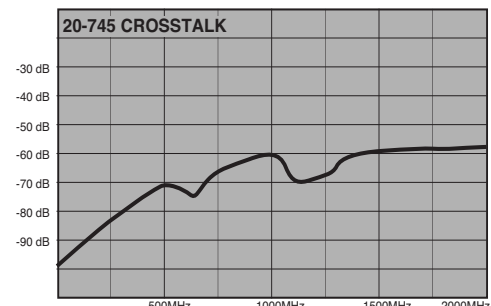
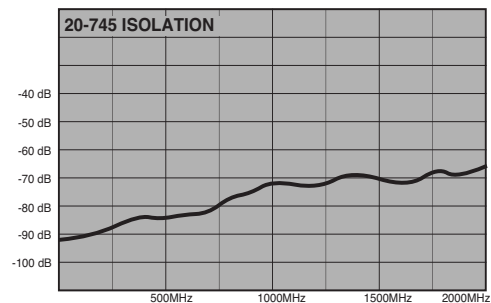
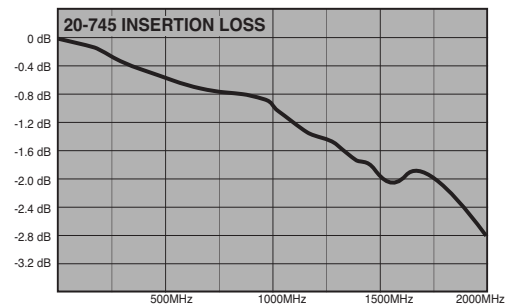
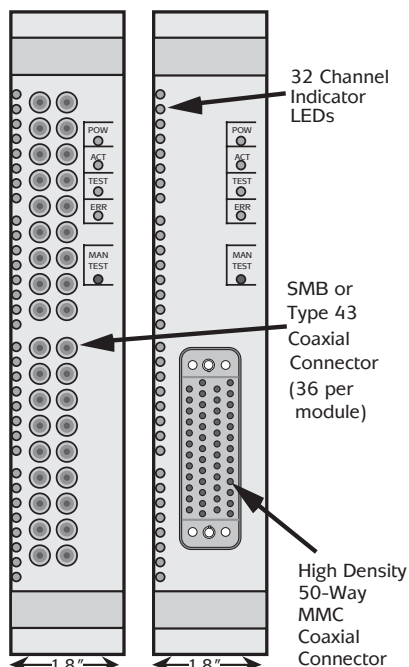
Characteristic Impedance:	50Ω or 75Ω
Maximum Frequency:	1500MHz
Rise Time:	<0.5ns
Maximum Insertion Loss:	<2dB
V.S.W.R. (at 1300MHz):	<1:1.6
Isolation (at 2000MHz):	>75dB
Crosstalk (at 2000MHz):	>55dB
Maximum Hot Switch Voltage:	30V DC
Maximum Power:	10W
Termination Resistor Max Power:	0.25W
Maximum Switch Current:	0.5A
Nominal Switching Capacity:	0.01A, 24Vdc, 10W@1.2GHz
On Path Resistance:	<250mΩ
Off Path Resistance:	>10 ⁸ Ω
Differential Thermal Offset:	<20μV
Switching Time:	10ms
Expected Life, Mechanical:	>1x10 ⁶ operations
Expected Life, Electrical (low power):	>3x10 ⁵ operations
Expected Life, Electrical (max power):	>3x10 ⁵ operations

Additional Specification (8 to 1 Mode)

Maximum Frequency:	2000MHz
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Additional Specification (32 to 1 Mode)

Maximum Frequency:	1000MHz
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Typical RF Performance Plots for 20-745 in Dual 16 to 1 Mode (SMB/Type 43 connector)

Mechanical Characteristics

All modules conform to the 6U height (262mm) Eurocard standard and are 160mm deep, panel width is 1.8 Inches (45.7mm).

Connectors

The 20-745 RF Multiplexer Module is available with BNC, SMA, SMB, Type 43/SMZ or 1.0/2.3 connectors. Other connector types are available to order, please contact the sales office for details.

Product Order Codes

RF Multiplexer, 50Ω:	
2000MHz, SMB	20-745-501
2000MHz, SMA	20-745-521
1300MHz, BNC	20-745-531

RF Multiplexer, 75Ω:	
1500MHz, Type 43/SMZ	20-745-701
1000MHz, BNC	20-745-731
1500MHz, 1.0/2.3	20-745-741

The default configuration should be specified when ordering
(Quad 1 to 8, Dual 16 to 1 or Single 32 to 1)

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

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.

Mating Connectors & Cabling

50Ω SMB to SMB Lead, 1m Length	10-987-510
50Ω SMA to SMA Lead, 1m Length	10-981-510
50Ω BNC to BNC Lead, 1m Length	10-980-510
75Ω BNC to BNC Lead, 1m Length	10-980-710
75Ω 1.0/2.3 to 1.0/2.3 Lead, 1m Length	40-977-731
75Ω SMZ to SMZ Lead, 0.5m Length	10-988-705

50Ω MMC Co-ax Crimp Pins	10-986-005
75Ω MMC Co-ax Crimp Pins	10-986-007

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.

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.