

- Dual 8 to 1 R.F. Multiplexer with up to 2GHz Bandwidth
- Configurable as 16 to 1 Multiplexer
- Wide Choice of Connectors: SMB, BNC, BT Type 43/SMZ, SMA or 1.0/2.3
- Built-In Self Test
- Suitable for Building Larger Switching Networks
- All Unselected Inputs Terminated into 50Ω or 75Ω Loads
- 75Ω Version Suitable for Telecoms and High Quality Video Switching
- Front Panel LED Status Indicators

The 20-740 series are a range of high performance 2000MHz Multiplexers arranged as either a Dual 8 to 1 or Single 16 to 1 configuration, both with excellent Insertion Loss, VSWR & Isolation, available in 50Ω or 75Ω versions. All non-selected input lines are terminated into matched loads.

This module may also be configured (via DIP switches) as a 16 to 1 multiplexer but with reduced R.F. performance.

Applications include routing high frequency signals to and from oscilloscopes, analyzers, signal generators and synthesizers, video/audio switching, switching high frequency logic and many other situations involving coaxial or guarded switching.

If you require higher density or no automatic termination then please look at model, 20-745.

Termination Resistors

All inputs are terminated into matched loads (50Ω or 75Ω), any unselected connector will automatically be terminated.

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

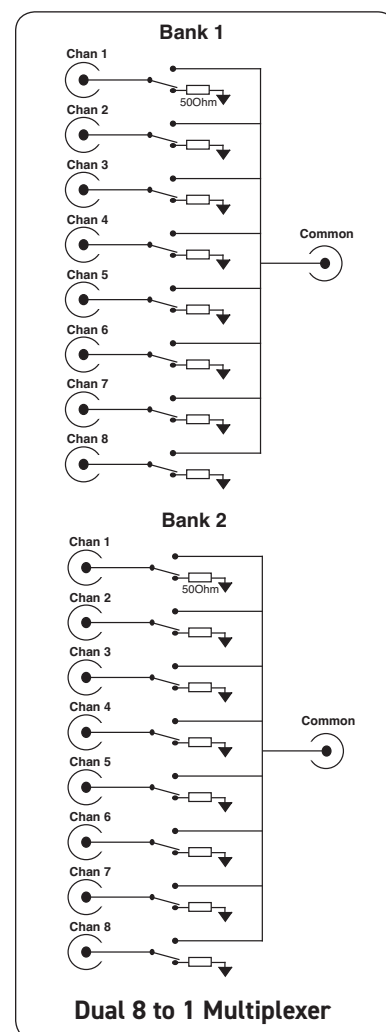
Self-Test is invoked at power on and may also be operated under software (*TST?) or via a recessed push button. Self-Test pass is indicated on a front panel LED with a full pass/fail description available using the **DIAGNOSTIC?** command. Self-Test comprises 2 levels:

- 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 (8 to 1 Mode, SMA Versions)

Characteristic Impedance:	50Ω or 75Ω
Maximum Frequency:	2000MHz
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 Switched Voltage:	30V DC
Maximum Power:	10W
Maximum Carry Power (900MHz):	15W
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:	20ms
Expected Life, Mechanical:	>1x10 ⁶ operations
Expected Life, Electrical (low power):	>3x10 ⁵ operations
Expected Life, Electrical (max power):	>3x10 ⁵ operations

Additional Specification (16 to 1 Mode)

Maximum Frequency:	1000MHz
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Additional Specification (BNC Connectors)

Maximum Insertion Loss:	<3.5dB
V.S.W.R. (0 to 2000MHz):	1:1.8

Mechanical Characteristics

All modules conform to the 6U height (262mm) Eurocard standard and are 160mm deep. Panel width is either 1.8 or 2.4 inches depending on the version.

Connectors

The 20-740 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.

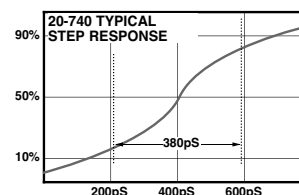
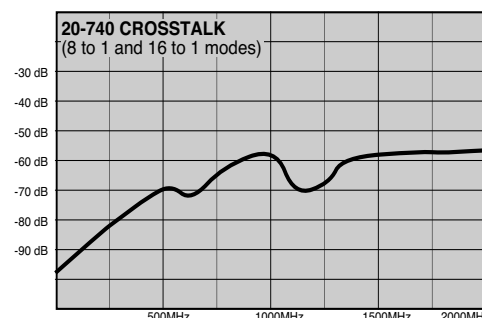
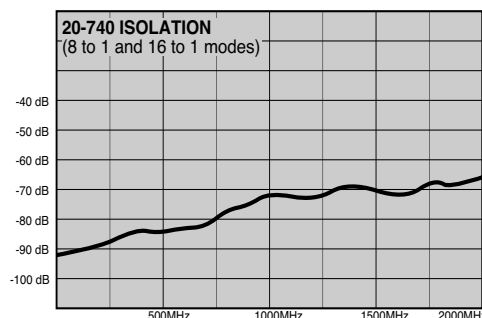
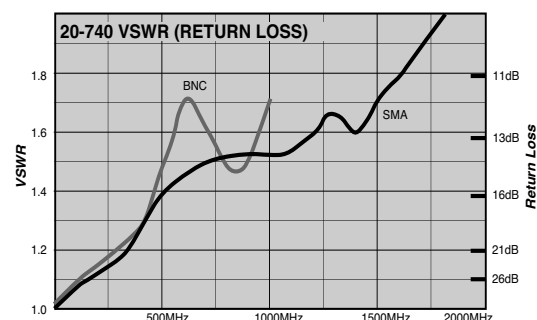
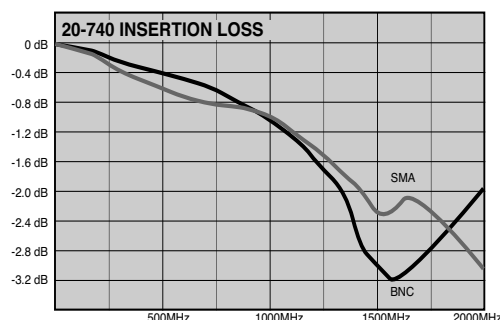
Operating/Storage Conditions

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



Typical RF Performance Plots for 20-740 in Dual 8 to 1 Mode

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

RF Multiplexer, 50Ω:	
1300MHz, BNC	20-740-501
2000MHz, SMA	20-740-511
2000MHz, SMB	20-740-521

RF Multiplexer, 75Ω:	
1000MHz, BNC	20-740-701
1000MHz, Type 43/SMZ	20-740-711
1000MHz, 1.0/2.3	20-740-741

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

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

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.