GPIB Microwave Switch Module 20-780/780A

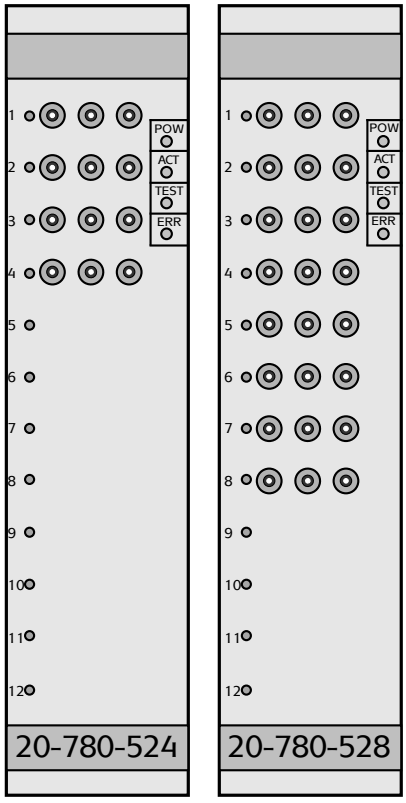
- 4 or 8 x SPDT 50Ω SMA Microwave Relays with 18 or 26.5GHz Bandwidth
- Microwave Relays Are Quickly Replaceable For Minimum Downtime
- Pickering Interfaces Can Construct and Test Custom Microwave Switching Networks

System 20 Microwave switching modules are suitable for switching 50Ω signals up to 26.5GHz. Available in formats of 4 or 8 relays per module using SMA connectors, they are suitable for constructing complex microwave switching networks.

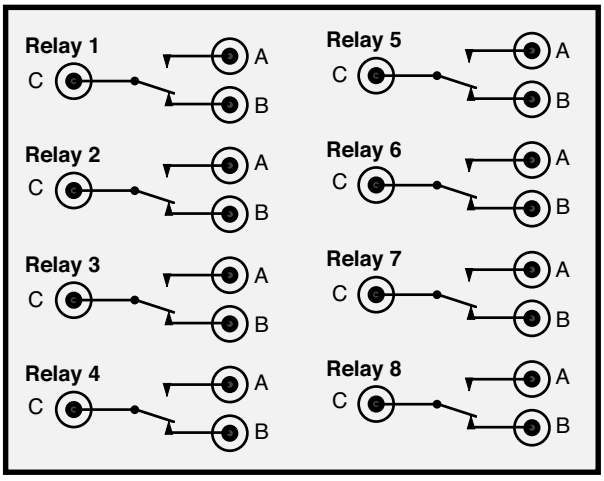
The 20-780 microwave modules provide a range of switching configurations to suit most applications.

These modules give you the highest RF & Microwave switching performance available within a Pickering Switching System. Applications are mainly in the Microwave region, however there are many uses in the RF spectrum where extremely low insertion loss and ultra high isolation are critical.

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



Front Panel Layouts For Different Options



Model 20-780A-528 Features 8 Microwave Relays
(A version with 4 relays is also available)

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Specification (18GHz Versions)

Characteristic Impedance:	50Ω
Maximum Frequency:	18GHz
Rise Time:	<3ps
Insertion Loss (<18GHz):	<0.5dB
V.S.W.R. (<18GHz):	<1:1.5
Isolation (<18GHz):	>60dB
Maximum Power (<3GHz):	100W
Maximum Power (3-12GHz):	60W
Maximum Power (12-18GHz):	30W
Maximum Voltage:	100Vdc
Maximum Switch Current:	1A
On Path Resistance:	<200mΩ
Off Path Resistance:	>1x10^{10}Ω
Vibration:	Sine 1mm, 5-60Hz
	Sine 10g, 60-2000Hz
Switching Time:	15ms
Expected Life:	>1x10^{6} operations

Additional Specification (26.5GHz Versions)

Insertion Loss (<26.5GHz):	<0.7dB
V.S.W.R. (<26.5GHz):	<1:1.7
Isolation (<26.5GHz):	>55dB
Expected Life (26.5GHz version):	>1x10^{7} operations

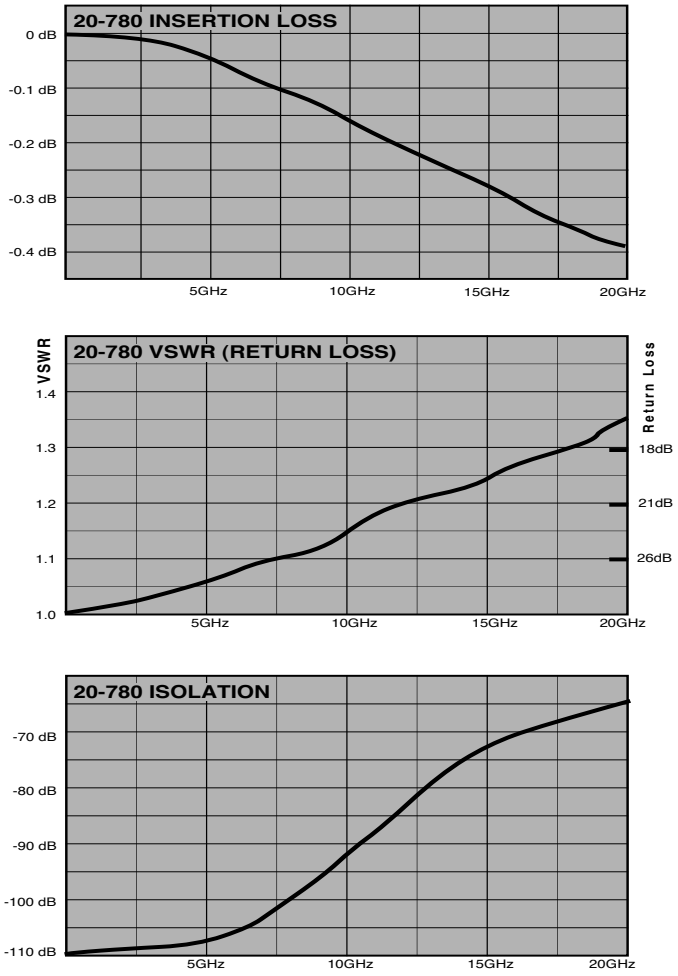
Mechanical Characteristics

All modules conform to the 6U height (262mm) Eurocard standard and are 160mm deep, panel width is 2.4 Inches (60.9mm). Note however that the panel width for the 20-780-534 Module is 91.0mm.

20-780 (SPDT Relay) Programming

The R.F. Module is simple to program either by single relay or by pattern (4, 8, 12 or 16 relays simultaneously)

ARESET a	Open all switches on module **a**
CLOSE a,b	Close switch number **b** on module **a**
DELAY t	Force a minimum delay of **t** milliseconds between two instructions
OPEN a,b	Open switch number **b** on module **a**
RESET	Open all switches on all modules
VIEW? a[,b]	View status of module **a**, can be viewed at any time either as a byte or by switch as a logical value (1 or 0)
WRITE a,w	Send byte **w** to module **a**



Typical RF Performance Plots for 20-780

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.

Product Order Codes - Relay Modules

4xSPDT, 18GHz, 50Ω, SMA	**20-780A-524**
8xSPDT, 18GHz, 50Ω, SMA	**20-780A-528**
4xSPDT, 26.5GHz, 50Ω, SMA	**20-780-534**
8xSPDT, 26.5GHz, 50Ω, SMA	**20-780-538**

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

For 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.