

- 2 or 4 Changeover Relays per Module
- 50Ω with 18GHz Bandwidth + Option for 26.5GHz
- High Performance Microwave Relays
- Front Panel Mounted SMA Connectors With Indicator LEDs
- Tree Networks May Be Constructed By Inter-Linking Individual Modules

Microwave switching modules offer a choice of 2 or 4 changeover switches (SPDT) per module with bandwidths to 18GHz (usable to 20GHz, optional to 26.5GHz) with 50Ω impedance. Connections are made via high performance front panel mounted connectors.

As these switches are electromechanical they cover the complete frequency range from d.c. to GHz. 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.

They may also be used for applications requiring power switching to 100W.

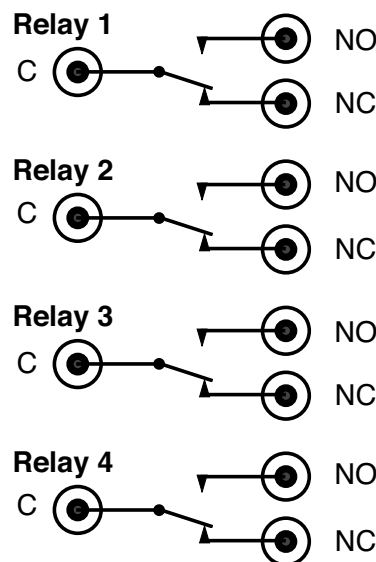
Programming

The Microwave Switching Module is simple to program either by single relay or by pattern (4 relays simultaneously)

ARESET a	Open all switches on module a
CLOSE a,b	Close switch number b on module a
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



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



Switching Diagram for the 10-780A Microwave Switch Module with 4 Relays

General Specification (All Versions)

Maximum Voltage:	100Vdc
Max Switch Current:	1A
On Path Resistance:	<200mΩ
Off Path Resistance:	>10 ¹⁰ Ω
Differential Thermal Offset:	<20μV
Switching Time:	>20ms
Expected Life:	>1x10 ⁶ operations

Microwave Specification (50Ω SMA Version)

Frequency/GHz:	<2	<6	<12	<18	<26.5
Loss:	<0.2	<0.2	<0.4	<0.5	<0.7
VSWR:	<1.2	1.25	1.4	1.5	1.7
Isolation/dB:	>80	>70	>60	>60	>50
Switching Power	100W at <3GHz				
(average):	60W at <12GHz				
	30W at <18GHz				
	15W at <26.5GHz				
NB. Peak power switching can be well in excess of the above values but this will affect the switch life.					

Mechanical Characteristics

All models conform to the 3U height (128mm) Eurocard standard and are 160mm deep. Panel width is 2.4 Inches.

Connectors

The 10-780A Microwave Switch Module is available with 50Ω front panel mounted SMA connectors.

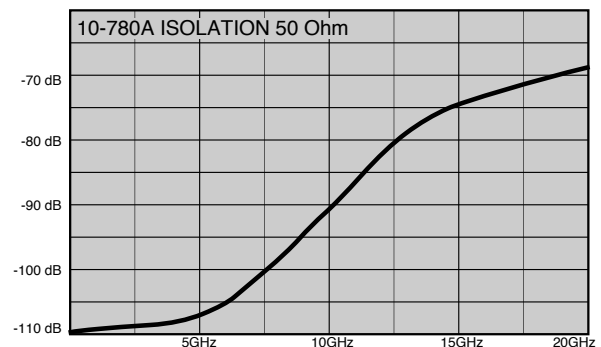
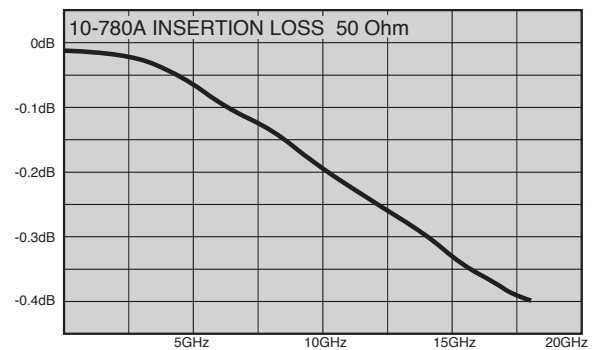
Operating/Storage Conditions

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



Microwave Performance Plots for the 10-780A-524 Changeover Relay Module (50Ω)

Product Order Codes - Microwave Switches

2xSPDT, 18GHz,50Ω, SMA	10-780A-522
4xSPDT, 18GHz,50Ω, SMA	10-780A-524
Replacement 18GHz, 50Ω Relay	10-780A-922
2xSPDT, 26.5GHz,50Ω, SMA	10-780A-532
4xSPDT, 26.5GHz,50Ω, SMA	10-780A-534
Replacement 26.5GHz, 50Ω Relay	10-780A-932

Product Customization

Pickering System 10 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 the 10-780A module 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.

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.