10-785B/C
Microwave Multiplexer Module

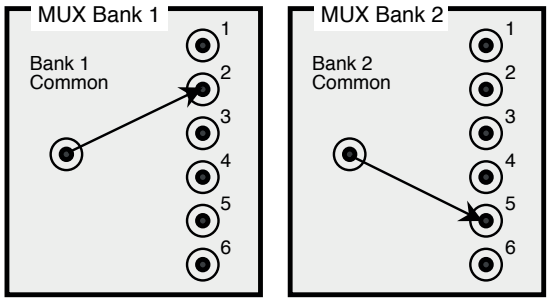
- Single or Dual 6 Channel Multiplexer
- 18GHz, 26.5GHz & 40GHz Versions
- 50Ω Terminating Version Available
- 75Ω Version With 4GHz Bandwidth
- Microwave Relays Are Quickly Replaceable For Minimum Downtime

System 10 Microwave multiplexer modules are suitable for switching 50Ω signals up to 40GHz. Available in a choice of formats as single or dual 6-channel Multiplexer, they are suitable for constructing complex microwave switching networks and provide a range of switching configurations to suit most applications. Optional 50Ω Terminating versions may be ordered, specify **-T**.

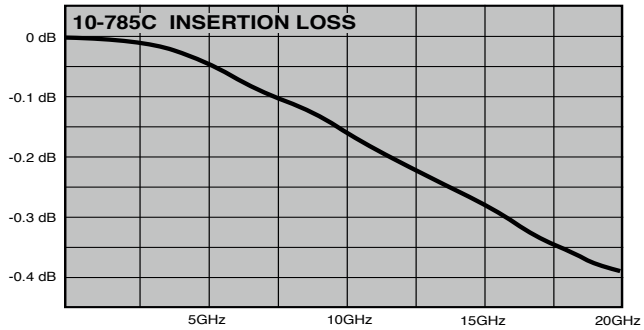
A 75Ω version is available with a bandwidth of 4GHz, this uses the Siemens 1.6/5.6 style 75Ω connector.

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.

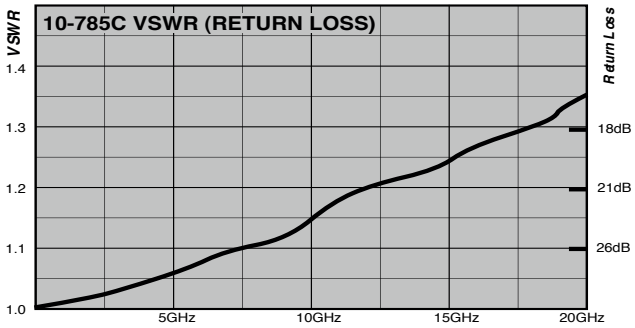
Model 10-785C has either 1 or 2 six channel multiplexers, this model is particularly suitable for constructing large switching networks.



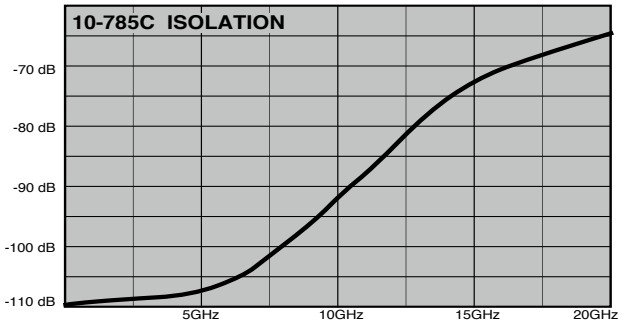
Switching Diagram for 10-785C Microwave Multiplexer Model 10-785C-522 Features 2 Separate 6 Channel RF Multiplexers, Model 10-785C-521 has 1 Multiplexer Bank



Typical Insertion Loss Plot for 10-785C (50Ω version)



Typical Return Loss Plot for 10-785C (50Ω version)



Typical Isolation Plot for 10-785C (50Ω version)

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10-785C (6 Channel Multiplexer) Programming

Microwave Multiplexer modules are straightforward to program. Each multiplexer has 6 contacts, they are programmed as shown in the table below.

Channel Number	To Close Channel	To Open Channel
MUX 1 Channel 1	`CLOSE a,1`	`OPEN a,1`
MUX 1 Channel 2	`CLOSE a,2`	`OPEN a,2`
MUX 1 Channel 3	`CLOSE a,3`	`OPEN a,3`
MUX 1 Channel 4	`CLOSE a,4`	`OPEN a,4`
MUX 1 Channel 5	`CLOSE a,5`	`OPEN a,5`
MUX 1 Channel 6	`CLOSE a,6`	`OPEN a,6`
MUX 2 Channel 1	`CLOSE a,11`	`OPEN a,11`
MUX 2 Channel 2	`CLOSE a,12`	`OPEN a,12`
MUX 2 Channel 3	`CLOSE a,13`	`OPEN a,13`
MUX 2 Channel 4	`CLOSE a,14`	`OPEN a,14`
MUX 2 Channel 5	`CLOSE a,15`	`OPEN a,15`
MUX 2 Channel 6	`CLOSE a,16`	`OPEN a,16`

Where **a** is the module address. The following commands may also be used:

`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**

Specification - 18GHz version

Characteristic Impedance:	50Ω
Maximum Frequency:	18GHz
Rise Time:	<3ps
Insertion Loss (<20GHz):	<0.5dB
VSWR:	1:1.5
Isolation:	>60dB
Maximum Power (<3GHz):	100W
Maximum Power (3-12GHz):	60W
Maximum Power (12-18GHz):	30W
Maximum Voltage:	100V DC
Maximum Switch Current:	1A
On Path Resistance:	<200mΩ
Off Path Resistance:	$>10^{10}$Ω
Vibration:	Sine 1mm, 5-60Hz Sine 10g, 60-2000Hz
Switching Time:	15ms
Expected Life (Low power):	$>2x10^7$ operations
Expected Life (Max power):	$>3x10^5$ operations

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

Specification - 26.5GHz version

Maximum Frequency:	26.5GHz
Insertion Loss (<26.5GHz):	<0.7dB
VSWR (<26.5GHz):	<1:1.7
Isolation (<26.5GHz):	>50dB
Maximum Power (<26.5GHz):	15W
Expected Life:	$2x10^6$ ops. per position

Specification - 40GHz version

Characteristic Impedance:	50Ω
Maximum Frequency:	40GHz
Insertion Loss:	<0.2dB (0-6GHz) <0.4dB (6-12.4GHz) <0.5dB (12.4-18GHz) <0.7dB (18-26.5GHz) <1.1dB (26.5-40GHz)
VSWR:	<1:1.3 (0-6GHz) <1:1.4 (6-12.4GHz) <1:1.5 (12.4-18GHz) <1:1.7 (18-26.5GHz) <1:2.2 (26.5-40GHz)
Isolation:	>70dB (0-6GHz) >60dB (6-12.4GHz) >60dB (12.4-18GHz) >55dB (18-26.5GHz) >50dB (26.5-40GHz)
Maximum Power Rating:	40W (0-6GHz) 30W (6-12.4GHz) 25W (12.4-18GHz) 15W (18-26.5GHz) 5W (26.5-40GHz)
Expected Life:	$2x10^6$ ops. per position

Width and Dimensions

All modules conform to the 3U height (128mm) Eurocard standard and are 160mm deep, panel width is 2.4 Inches (60.9mm), except -T terminating versions which have a panel width of 4.2 Inches (106.7mm).

Product Order Codes

Single 6-Chan µWave MUX 18GHz, 50Ω SMA	**10-785C-521**
Dual 6-Chan µWave MUX 18GHz, 50Ω SMA	**10-785C-522**
Replacement µWave MUX Relay, 18GHz	**10-785C-902**
Single 6-Chan µWave MUX 26.5GHz, 50Ω SMA	**10-785B-531**
Dual 6-Chan µWave MUX 26.5GHz, 50Ω SMA	**10-785B-532**
Replacement µWave MUX Relay, 26.5GHz	**10-785B-932**
Single 6-Chan µWave MUX 40GHz, 50Ω SMA-2.9	**10-785B-541**
Dual 6-Chan µWave MUX 40GHz, 50Ω SMA-2.9	**10-785B-542**
Replacement µWave MUX Relay, 40GHz	**10-785B-942**
Optional 50Ω Terminating Version	**–T**
Single 6-Chan µWave MUX 4GHz, 75Ω 1.6/5.6	**10-785B-751**
Dual 6-Chan µWave MUX 4GHz, 75Ω 1.6/5.6	**10-785B-752**
Replacement µWave Multiplexer Relay	**10-785B-952**

Mating Connectors & Cabling

Examples of cabling available for the 10-785C are:

SMA to SMA Lead 1 metre, 50Ω	**10-981-510**
SMA to SMA Lead, 0.5 metre, 50Ω	**10-981-505**

Latest Details

Please refer to our Web Site for Latest Product Details.

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