

- May be Specified With a Mix of High Performance Microwave Relays up to 67GHz Bandwidth With 50Ω or 75Ω Impedance & a Range of Connector Types
- Available Relays Include Transfer, SPDT, SP4T, SP6T, SP8T, SP10T & SP12T in Unterminated & Terminated Versions
- Non-switching Components Available
- Flexibility in Front-panel Relay Positioning Helps Minimise External Interconnecting Cable Lengths
- Industry-standard LXI Ethernet Control Interface
- LED Indication of Energised Switch Paths
- Compact 1U to 4U Form Factors
- Excellent RF & Repeatability Characteristics
- 3 Year Warranty



These relays have an extremely high level of performance, offering low VSWR, very high isolation, low loss and high power handling. They are ideal for switching coaxial systems that require high performance from the HF band to microwave frequencies. The 60-890/891 platform is available in form factors from 1U to 4U, providing space saving microwave switching solutions. The relays can be used individually or externally interconnected to create a complex switching system.

### Ethernet Control

These units are controlled through an LXI interface based on Ethernet 1000Base-T. The interface provides a quick and easy method of installing the unit in a system and a simple way of controlling the unit at a remote location through its API or built in soft front panel. The ability to control the unit at a distance aids the testing of systems without the need for a physical presence.

Pickering Interfaces' 60-890/891 Flexible Microwave Switch Platform may be specified with any mix of relays from the table below. Simply send your list of required relays (and optionally, a sketch of their preferred positioning) to your local Pickering sales contact, and our Engineering team will model these onto a suitably sized front panel and send back a draft design for your approval. Once you are happy with the front panel layout, Pickering will quote you for the complete switch unit with a unique P/N.

Switch Type	Termination	Bandwidth & Connector Type										
		2.5 GHz DIN 1.6/5.6 (75 Ω)	3 GHz SMA (50 Ω)	6 GHz SMA (50 Ω)	8 GHz N-Type (50 Ω)	12.4 GHz N-Type (50 Ω)	18 GHz SMA (50 Ω)	22 GHz SMA (50 Ω)	26.5 GHz SMA (50 Ω)	40 GHz SMA 2.9 (50 Ω)	50 GHz SMA 2.4 (50 Ω)	67 GHz SMA 1.85 (50 Ω)
Transfer (DPDT)	Unterminated	✓	✓				✓		✓	✓	✓	
SPDT		✓				✓	✓		✓	✓	✓	✓
SP4T		✓		✓		✓	✓		✓	✓	✓	✓
SP6T		✓		✓		✓	✓		✓	✓	✓	✓
SP8T					✓		✓		✓			
SP10T					✓		✓	✓				
SP12T					✓		✓					
SPDT	Terminated						✓		✓	✓	✓	
SP4T						✓	✓		✓	✓	✓	✓
SP6T						✓	✓		✓	✓	✓	✓
SP8T							✓		✓			
SP10T							✓	✓				
SP12T							✓					

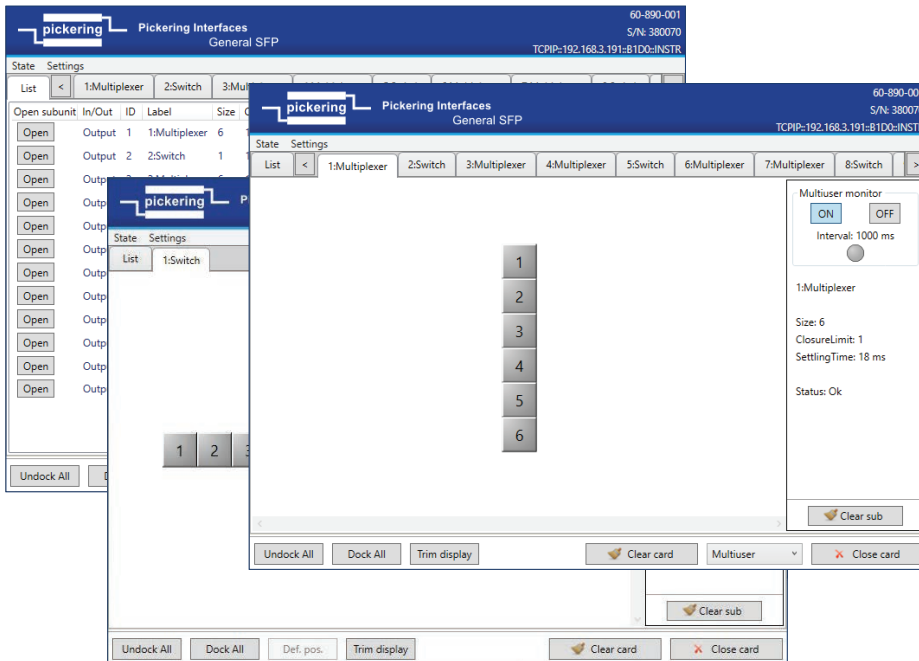
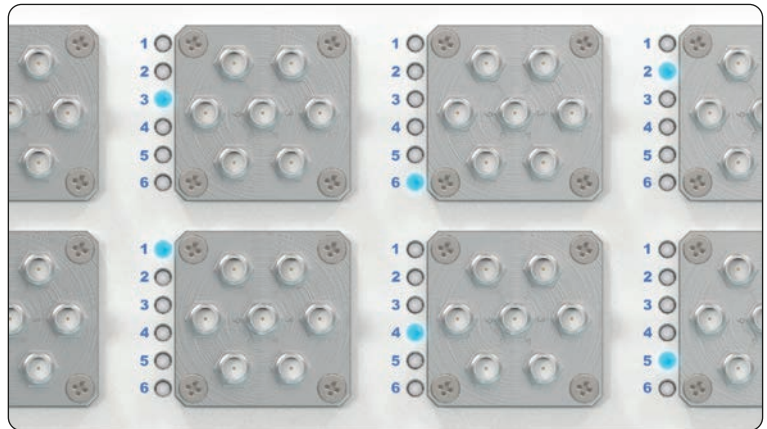
### Non-switching Components

To provide functionality in addition to switching, the following components are also available. To maximise system flexibility other component types / specifications can be requested.

Component	Option	Bandwidth & Connector Type
Power Dividers	4, 8, 12 & 16-way	Up to 40 GHz
Attenuators	From 0 db	Power handling from 0.5 W, Up to 40 GHz
Couplers		
Terminations		Power handling from 0.5 W, Up to 67 GHz

## LED Energised Path Indicators

Each microwave relay fitted to the 60-890/891 has associated frontpanel LED indicators to show the current energised path through the relay, as illustrated in the figure opposite. This signal path indication greatly simplifies the debug of test application software.



## Manual Control

The 60-890/891 is supplied with built-in soft front panels for each of the fitted relays, as shown here. These enable graphical manual control of the switches to simplify application software development and debug.

## Easy Repair

To facilitate fast in-field repair, wherever possible we fit relay types that may be quickly replaced by simply withdrawing them through the front panel.



## 3U, 2U & 1U Example Configurations



3U Example - 10xSP6T Terminated, 2xSP6T Unterminated & 2xSPDT Terminated



2U Example - 3xSP6T Terminated, 3xSPDT Terminated & 1xTransfer Switch

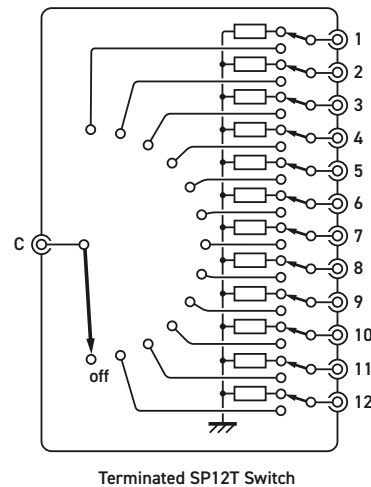
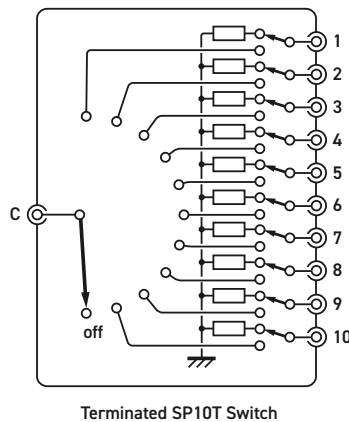
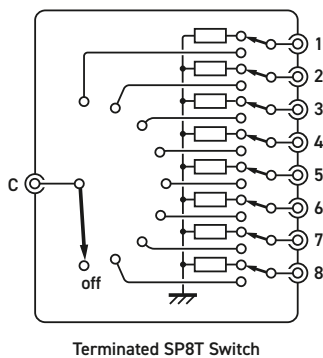
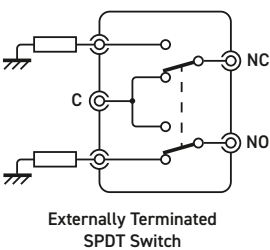
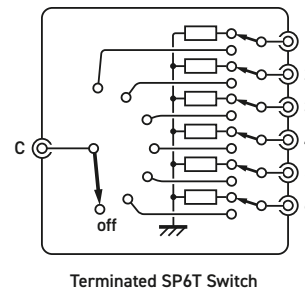
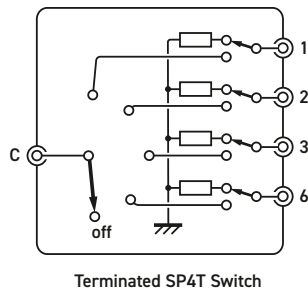
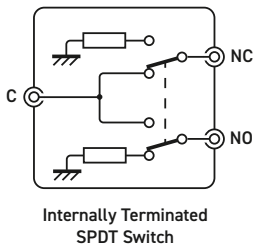
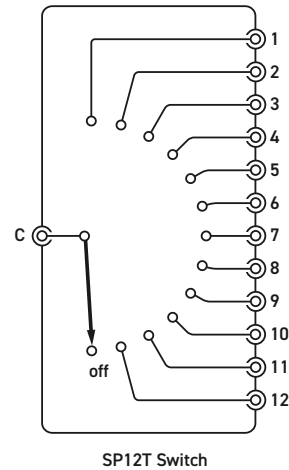
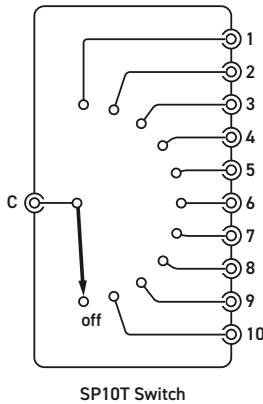
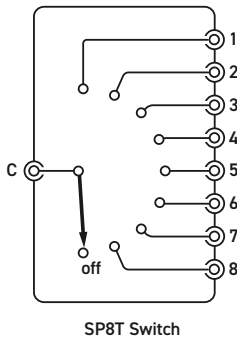
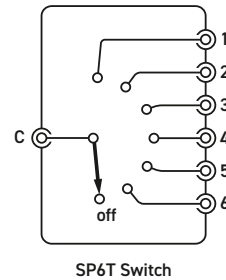
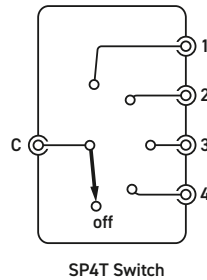
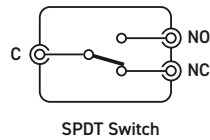
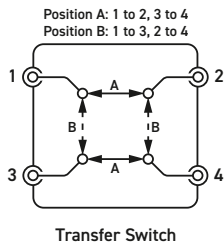


2U Example - 12xSP6T Unterminated & 12xSPDT Unterminated



1U Example - & 12xSPDT Unterminated

## Available Switch Types

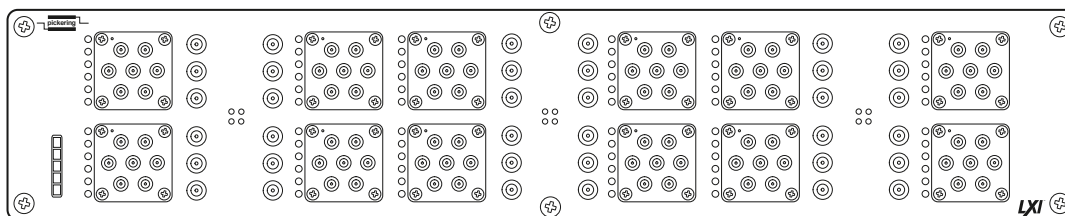


## Signal Routing Software

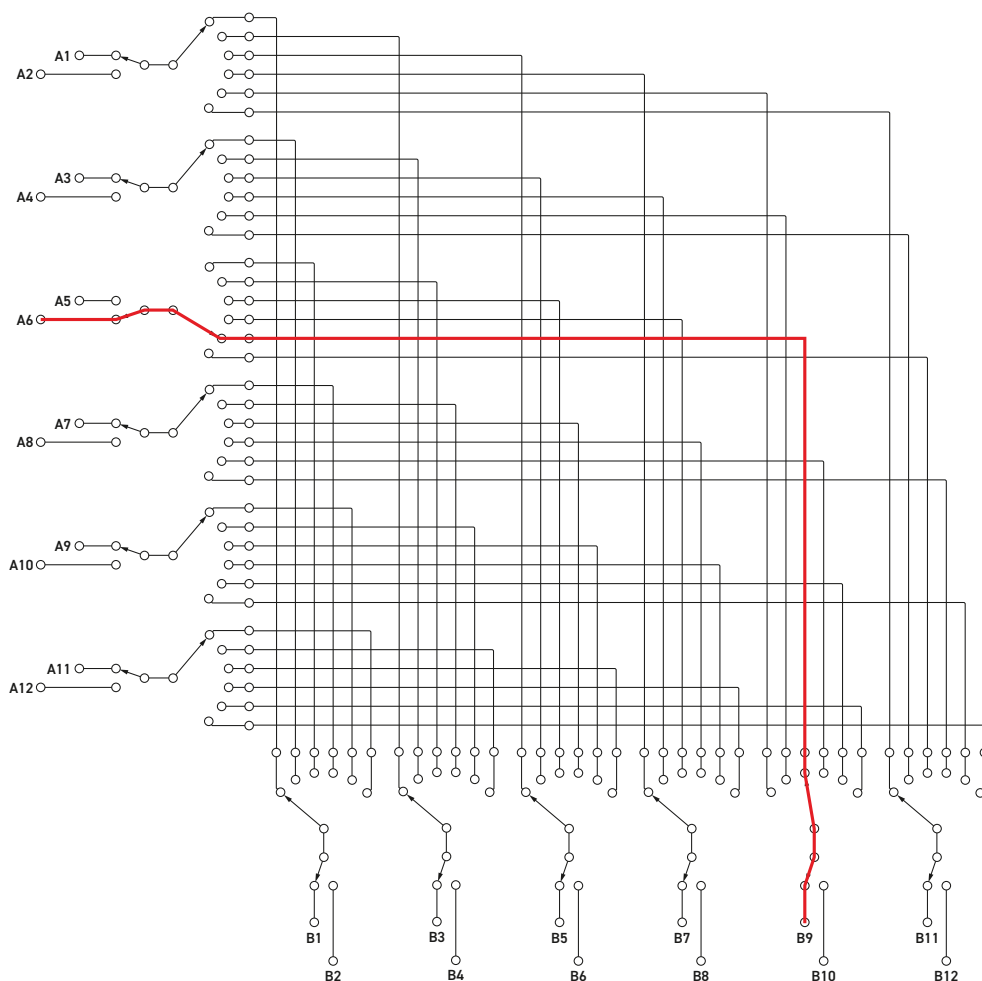
The relays fitted to these units may be externally interconnected to create a complex switching system. In this case, Pickering's Signal Routing Software, Switch Path Manager (SPM), can be employed to significantly accelerate Test System software development by automatically selecting and energizing the required switch paths through the relay system. The relay interconnections are specified in an SPM configuration file and then signal routing is performed by

simply defining the Test System endpoints to be connected together via the switching system.

For example, the 12off SPDT and 12off SP6T relays in the 60-890 configuration shown below can be externally cabled together to create a 12x12 blocking matrix as illustrated. Connections through the matrix may then be easily made using SPM via simple commands such as SWITCH CONNECT ENDPOINTS (A6, B9) or, even more intuitively, (Source 1, Antenna 5).



Example Configuration - 12xSPDT Unterminated & 12xSP6T Unterminated

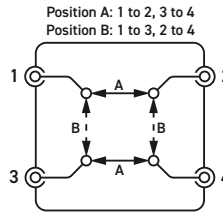


Configuration  
as a 12x12  
Blocking Matrix

## Specifications - Non-switching Components

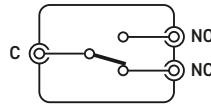
Due to the high number of possible non-switching component options that can be fitted to these units, specifications for these components are not detailed here. Specifications for non-switching components will be detailed in the dedicated data sheet for the unit into which they are fitted.

### Specifications - Transfer Switches



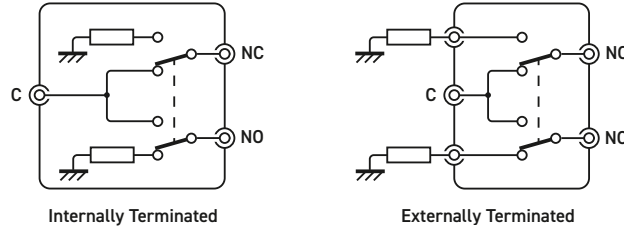
	2.5 GHz	3 GHz	18 GHz	26.5 GHz	40 GHz	50 GHz
<b>Bandwidth</b>	2.5 GHz	3 GHz	18 GHz	26.5 GHz	40 GHz	50 GHz
<b>Characteristic Impedance</b>	75 Ω	50 Ω	50 Ω	50 Ω	50 Ω	50 Ω
<b>Connector Type</b>	1.6/5.6	SMA	SMA	SMA	SMA-2.9	SMA-2.4
<b>Operate Time</b>	15 ms	15 ms	15 ms	15 ms	15 ms	15 ms
<b>Insertion Loss</b>	0.2 dB - 1GHz 0.3 dB - 2.5 GHz	0.2 dB - 3 GHz	0.2 dB - 3 GHz 0.3 dB - 8 GHz 0.4 dB - 12.4 GHz 0.5 dB - 18 GHz	0.2 dB - 3 GHz 0.3 dB - 8 GHz 0.4 dB - 12.4 GHz 0.5 dB - 18 GHz 0.7 dB - 26.5 GHz	0.3 dB - 6 GHz 0.4 dB - 12.4 GHz 0.5 dB - 18 GHz 0.7 dB - 26.5 GHz 0.8 dB - 40 GHz	0.3 dB - 6 GHz 0.4 dB - 12.4 GHz 0.5 dB - 18 GHz 0.7 dB - 26.5 GHz 0.8 dB - 40 GHz 1.1 dB - 50 GHz
<b>Isolation</b>	80 dB - 1GHz 70 dB - 2.5 GHz	80 dB - 3 GHz	80 dB - 3 GHz 70 dB - 8 GHz 65 dB - 12.4 GHz 60 dB - 18 GHz	80 dB - 3 GHz 70 dB - 8 GHz 65 dB - 12.4 GHz 60 dB - 18 GHz 50 dB - 26.5 GHz	70 dB - 6 GHz 60 dB - 12.4 GHz 60 dB - 18 GHz 55 dB - 26.5 GHz 50 dB - 40 GHz	70 dB - 6 GHz 60 dB - 12.4 GHz 60 dB - 18 GHz 55 dB - 26.5 GHz 50 dB - 40 GHz 50 dB - 50 GHz
<b>VSWR</b>	1.2:1 - 1GHz 1.3:1 - 2.5 GHz	1.2:1 - 3 GHz	1.2:1 - 3 GHz 1.3:1 - 8 GHz 1.4:1 - 12.4 GHz 1.5:1 - 18 GHz	1.2:1 - 3 GHz 1.3:1 - 8 GHz 1.4:1 - 12.4 GHz 1.5:1 - 18 GHz 1.7:1 - 26.5 GHz	1.3:1 - 6 GHz 1.4:1 - 12.4 GHz 1.5:1 - 18 GHz 1.7:1 - 26.5 GHz 1.9:1 - 40 GHz	1.3:1 - 6 GHz 1.4:1 - 12.4 GHz 1.5:1 - 18 GHz 1.7:1 - 26.5 GHz 1.9:1 - 40 GHz 2.0:1 - 50 GHz
<b>RF Average Carry Power at 25 °C</b>	400 W - 1GHz 240 W - 2.5 GHz	240 W - 3 GHz	240 W - 3 GHz 150 W - 8 GHz 120 W - 12.4 GHz 100 W - 18 GHz	240 W - 3 GHz 150 W - 8 GHz 120 W - 12.4 GHz 100 W - 18 GHz 40 W - 26.5 GHz	80 W - 6 GHz 60 W - 12.4 GHz 50 W - 18 GHz 20 W - 26.5 GHz 10 W - 40 GHz	40 W - 6 GHz 30 W - 12.4 GHz 25 W - 18 GHz 15 W - 26.5 GHz 5 W - 40 GHz 3 W - 50 GHz
<b>Expected Life (operations)</b>	2.5 million	2.5 million	2.5 million	2.5 million	2.5 million	2.5 million

## Specifications - Unterminated SPDT Switches



	2.5 GHz	12.4 GHz	18 GHz	26.5 GHz	40 GHz	50 GHz	67 GHz
<b>Bandwidth</b>	2.5 GHz	12.4 GHz	18 GHz	26.5 GHz	40 GHz	50 GHz	67 GHz
<b>Characteristic Impedance</b>	75 Ω	50 Ω	50 Ω	50 Ω	50 Ω	50 Ω	50 Ω
<b>Connector Type</b>	1.6/5.6	N-type	SMA	SMA	SMA-2.9	SMA-2.4	SMA-1.85
<b>Operate Time</b>	10 ms	10 ms	10 ms	10 ms	10 ms	10 ms	15 ms
<b>Insertion Loss</b>	0.2 dB - 1GHz 0.3 dB - 2.5 GHz	0.15 dB - 1 GHz 0.2 dB - 2 GHz 0.25 dB - 3 GHz 0.35 dB - 8 GHz 0.5 dB - 12.4 GHz	0.15 dB - 3 GHz 0.2 dB - 8 GHz 0.25 dB - 12.4 GHz 0.35 dB - 18 GHz	0.15 dB - 3 GHz 0.2 dB - 8 GHz 0.25 dB - 12.4 GHz 0.35 dB - 18 GHz 0.5 dB - 26.5 GHz	0.3 dB - 6 GHz 0.4 dB - 12.4 GHz 0.5 dB - 18 GHz 0.7 dB - 26.5 GHz 0.8 dB - 40 GHz	0.3 dB - 6 GHz 0.4 dB - 12.4 GHz 0.5 dB - 18 GHz 0.7 dB - 26.5 GHz 0.8 dB - 40 GHz 1.1 dB - 50 GHz	0.3 dB - 6 GHz 0.4 dB - 12.4 GHz 0.5 dB - 18 GHz 0.7 dB - 26.5 GHz 0.8 dB - 40 GHz 1.1 dB - 50 GHz 1.1 dB - 67 GHz
<b>Isolation</b>	80 dB - 1 GHz 70 dB - 2.5 GHz	85 dB - 1 GHz 80 dB - 2 GHz 75 dB - 3 GHz 70 dB - 8 GHz 60 dB - 12.4 GHz	80 dB - 3 GHz 75 dB - 8 GHz 65 dB - 12.4 GHz 60 dB - 18 GHz	80 dB - 3 GHz 75 dB - 8 GHz 65 dB - 12.5 GHz 60 dB - 18 GHz 55 dB - 26.5 GHz	70 dB - 6 GHz 60 dB - 12.4 GHz 60 dB - 18 GHz 55 dB - 26.5 GHz 50 dB - 40 GHz	70 dB - 6 GHz 60 dB - 12.4 GHz 60 dB - 18 GHz 55 dB - 26.5 GHz 50 dB - 40 GHz 50 dB - 50 GHz	70 dB - 6 GHz 60 dB - 12.4 GHz 60 dB - 18 GHz 55 dB - 26.5 GHz 50 dB - 40 GHz 50 dB - 50 GHz 50 dB - 67 GHz
<b>VSWR</b>	1.2:1 - 1GHz 1.3:1 - 2.5 GHz	1.15:1 - 1 GHz 1.2:1 - 2 GHz 1.25:1 - 3 GHz 1.35:1 - 8 GHz 1.5:1 - 12.4 GHz	1.1:1 - 3 GHz 1.2:1 - 8 GHz 1.2:1 - 12.4 GHz 1.4:1 - 18 GHz	1.1:1 - 3 GHz 1.2:1 - 8 GHz 1.2:1 - 12.4 GHz 1.4:1 - 18 GHz 1.5:1 - 26.5 GHz	1.3:1 - 6 GHz 1.4:1 - 12.4 GHz 1.5:1 - 18 GHz 1.7:1 - 26.5 GHz 1.9:1 - 40 GHz	1.3:1 - 6 GHz 1.4:1 - 12.4 GHz 1.5:1 - 18 GHz 1.7:1 - 26.5 GHz 1.9:1 - 40 GHz 1.9:1 - 50 GHz	1.3:1 - 6 GHz 1.4:1 - 12.4 GHz 1.5:1 - 18 GHz 1.7:1 - 26.5 GHz 1.9:1 - 40 GHz 1.9:1 - 50 GHz 1.9:1 - 67 GHz
<b>RF Average Carry Power at 25 °C</b>	400 W - 1 GHz 240 W - 2.5 GHz	700 W - 1 GHz 500 W - 2 GHz 400 W - 3 GHz 250 W - 8 GHz 200 W - 12.4 GHz	240 W - 3 GHz 150 W - 8 GHz 120 W - 12.4 GHz 100 W - 18 GHz	240 W - 3 GHz 150 W - 8 GHz 120 W - 12.4 GHz 100 W - 18 GHz 40 W - 26.5 GHz	80 W - 6 GHz 60 W - 12.4 GHz 50 W - 18 GHz 20 W - 26.5 GHz 10 W - 40 GHz	80 W - 6 GHz 60 W - 12.4 GHz 50 W - 18 GHz 20 W - 26.5 GHz 10 W - 40 GHz 5 W - 50 GHz	80 W - 6 GHz 60 W - 12.4 GHz 50 W - 18 GHz 20 W - 26.5 GHz 10 W - 40 GHz 5 W - 50 GHz 3 W - 67 GHz
<b>Expected Life (operations)</b>	5 million	1 million	10 million	10 million	10 million	10 million	1 million

## Specifications - Terminated SPDT Switches

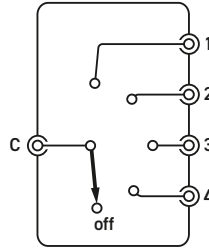


	18 GHz	26.5 GHz	40 GHz	50 GHz (Externally Terminated Only)
<b>Bandwidth</b>	18 GHz	26.5 GHz	40 GHz	50 GHz (Externally Terminated Only)
<b>Characteristic Impedance</b>	50 Ω	50 Ω	50 Ω	50 Ω
<b>Connector Type</b>	SMA	SMA	SMA-2.9	SMA-2.4
<b>Operate Time</b>	10 ms	10 ms	10 ms	10 ms
<b>Insertion Loss</b>	0.2 dB - 3 GHz 0.3 dB - 8 GHz 0.4 dB - 12.4 GHz 0.5 dB - 18 GHz	0.2 dB - 3 GHz 0.3 dB - 8 GHz 0.4 dB - 12.4 GHz 0.5 dB - 18 GHz 0.7 dB - 26.5 GHz	0.3 dB - 6 GHz 0.4 dB - 12.4 GHz 0.5 dB - 18 GHz 0.7 dB - 26.5 GHz 0.8 dB - 40 GHz	0.3 dB - 6 GHz 0.4 dB - 12.4 GHz 0.5 dB - 18 GHz 0.7 dB - 26.5 GHz 0.8 dB - 40 GHz 1.1 dB - 50 GHz
<b>Isolation</b>	80 dB - 3 GHz 70 dB - 8 GHz 60 dB - 12.4 GHz 60 dB - 18 GHz	80 dB - 3 GHz 70 dB - 8 GHz 60 dB - 12.4 GHz 60 dB - 18 GHz 55 dB - 26.5 GHz	70 dB - 6 GHz 60 dB - 12.4 GHz 60 dB - 18 GHz 55 dB - 26.5 GHz 50 dB - 40 GHz	70 dB - 6 GHz 60 dB - 12.4 GHz 60 dB - 18 GHz 55 dB - 26.5 GHz 50 dB - 40 GHz 50 dB - 50 GHz
<b>VSWR</b>	1.2:1 - 3 GHz 1.3:1 - 8 GHz 1.4:1 - 12.4 GHz 1.5:1 - 18 GHz	1.2:1 - 3 GHz 1.3:1 - 8 GHz 1.4:1 - 12.4 GHz 1.5:1 - 18 GHz 1.7:1 - 26.5 GHz	1.3:1 - 6 GHz 1.4:1 - 12.4 GHz 1.5:1 - 18 GHz 1.7:1 - 26.5 GHz 1.9:1 - 40 GHz	1.3:1 - 6 GHz 1.4:1 - 12.4 GHz 1.5:1 - 18 GHz 1.7:1 - 26.5 GHz 1.9:1 - 40 GHz 1.9:1 - 50 GHz
<b>Terminator Power Handling*</b>	1W			
<b>RF Average Carry Power at 25 °C</b>	240 W - 3 GHz 150 W - 8 GHz 120 W - 12.4 GHz 100 W - 18 GHz	240 W - 3 GHz 150 W - 8 GHz 120 W - 12.4 GHz 100 W - 18 GHz 40 W - 26.5 GHz	80 W - 6 GHz 60 W - 12.4 GHz 50 W - 18 GHz 20 W - 26.5 GHz 10 W - 40 GHz	80 W - 6 GHz 60 W - 12.4 GHz 50 W - 18 GHz 20 W - 26.5 GHz 10 W - 40 GHz 5 W - 50 GHz
<b>Expected Life (operations)</b>	2 million	2 million	2 million	2 million

\* For versions with external terminations, the terminators can be removed and replaced with higher power loads.

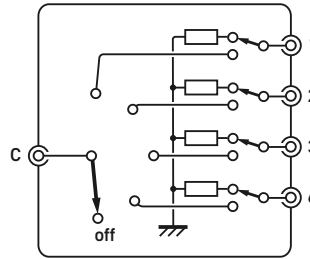


## Specifications - Unterminated SP4T Switches



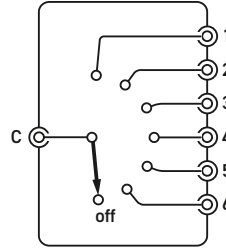
Bandwidth	2.5 GHz	6 GHz	12.4 GHz	18 GHz	26.5 GHz	40 GHz	50 GHz	67 GHz
Characteristic Impedance	75 Ω	50 Ω	50 Ω	50 Ω	50 Ω	50 Ω	50 Ω	50 Ω
Connector Type	1.6/5.6	SMA	N-type	SMA	SMA	SMA-2.9	SMA-2.4	SMA-1.85
Operate Time	15 ms	10 ms	15 ms	10 ms	10 ms	10 ms	10 ms	10 ms
Insertion Loss	0.2 dB - 1GHz 0.3 dB - 2.5 GHz	0.2 dB - 3 GHz 0.3 dB - 6 GHz	0.2 dB - 3 GHz 0.35 dB - 8 GHz 0.5 dB - 12.4 GHz	0.2 dB - 3 GHz 0.3 dB - 8 GHz 0.4 dB - 12.4 GHz 0.5 dB - 18 GHz	0.2 dB - 3 GHz 0.3 dB - 8 GHz 0.4 dB - 12.4 GHz 0.5 dB - 18 GHz 0.6 dB - 26.5 GHz	0.2 dB - 3 GHz 0.3 dB - 8 GHz 0.4 dB - 12.4 GHz 0.5 dB - 18 GHz 0.7 dB - 26.5 GHz 1.1 dB - 40 GHz	0.2 dB - 6 GHz 0.4 dB - 12.4 GHz 0.5 dB - 18 GHz 0.7 dB - 26.5 GHz 0.9 dB - 40 GHz 1.2 dB - 50 GHz	0.3 dB - 6 GHz 0.4 dB - 12.4 GHz 0.5 dB - 18 GHz 0.7 dB - 26.5 GHz 0.9 dB - 40 GHz 1.2 dB - 65 GHz 1.7 dB - 67 GHz
Isolation	80 dB - 1 GHz 70 dB - 2.5 GHz	80 dB - 3 GHz 70 dB - 6 GHz	80 dB - 3 GHz 70 dB - 8 GHz 60 dB - 12.4 GHz	80 dB - 3 GHz 70 dB - 8 GHz 60 dB - 12.4 GHz 60 dB - 18 GHz	80 dB - 3 GHz 70 dB - 8 GHz 60 dB - 12.4 GHz 60 dB - 18 GHz 55 dB - 26.5 GHz	80 dB - 3 GHz 70 dB - 8 GHz 60 dB - 12.4 GHz 60 dB - 18 GHz 55 dB - 26.5 GHz 45 dB - 40 GHz	70 dB - 6 GHz 60 dB - 12.4 GHz 60 dB - 18 GHz 55 dB - 26.5 GHz 50 dB - 40 GHz 50 dB - 50 GHz	70 dB - 6 GHz 60 dB - 12.4 GHz 60 dB - 18 GHz 55 dB - 26.5 GHz 50 dB - 40 GHz 50 dB - 50 GHz 50 dB - 67 GHz
VSWR	1.2:1 - 1 GHz 1.3:1 - 2.5 GHz	1.2:1 - 3 GHz 1.3:1 - 6 GHz	1.2:1 - 3 GHz 1.35:1 - 8 GHz 1.5:1 - 12.4 GHz	1.2:1 - 3 GHz 1.3:1 - 8 GHz 1.4:1 - 12.4 GHz 1.5:1 - 18 GHz	1.2:1 - 3 GHz 1.3:1 - 8 GHz 1.4:1 - 12.4 GHz 1.5:1 - 18 GHz 1.6:1 - 26.5 GHz	1.2:1 - 3 GHz 1.3:1 - 8 GHz 1.4:1 - 12.4 GHz 1.5:1 - 18 GHz 1.7:1 - 26.5 GHz 2.2:1 - 40 GHz	1.3:1 - 6 GHz 1.4:1 - 12.4 GHz 1.5:1 - 18 GHz 1.7:1 - 26.5 GHz 1.9:1 - 40 GHz 2.2:1 - 50 GHz	1.3:1 - 6 GHz 1.4:1 - 12.4 GHz 1.5:1 - 18 GHz 1.7:1 - 26.5 GHz 1.9:1 - 40 GHz 2.2:1 - 50 GHz 2.2:1 - 67 GHz
RF Average Carry Power at 25 °C	400 W - 1 GHz 240 W - 2.5 GHz	250 W - 3 GHz 170 W - 6 GHz	400 W - 3 GHz 250 W - 8 GHz 200 W - 12.4 GHz	250 W - 3 GHz 150 W - 8 GHz 120 W - 12.4 GHz 100 W - 18 GHz	250 W - 3 GHz 150 W - 8 GHz 120 W - 12.4 GHz 100 W - 18 GHz 40 W - 26.5 GHz	60 W - 3 GHz 35 W - 8 GHz 30 W - 12.4 GHz 25 W - 18 GHz 15 W - 26.5 GHz 5 W - 40 GHz	40 W - 6 GHz 30 W - 12.4 GHz 25 W - 18 GHz 15 W - 26.5 GHz 5 W - 40 GHz 3 W - 50 GHz	40 W - 6 GHz 30 W - 12.4 GHz 25 W - 18 GHz 15 W - 26.5 GHz 5 W - 40 GHz 3 W - 50 GHz 1 W - 67 GHz
Expected Life (operations)	2 million	10 million	2 million	10 million	10 million	2million	2 million	2 million

## Specifications - Terminated SP4T Switches



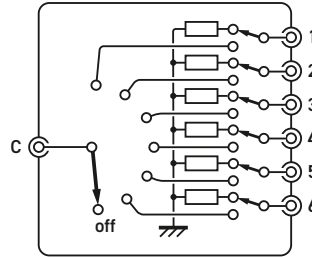
Bandwidth	12.4 GHz	18 GHz	26.5 GHz	40 GHz	50 GHz	67 GHz
Characteristic Impedance	50 Ω	50 Ω	50 Ω	50 Ω	50 Ω	50 Ω
Connector Type	N-type	SMA	SMA	SMA-2.9	SMA-2.4	SMA-1.85
Operate Time	15 ms	15 ms	15 ms	15 ms	15 ms	10 ms
Insertion Loss	0.2 dB - 3 GHz 0.35 dB - 8 GHz 0.5 dB - 12.4 GHz	0.2 dB - 3 GHz 0.3 dB - 8 GHz 0.4 dB - 12.4 GHz 0.5 dB - 18 GHz	0.2 dB - 3 GHz 0.3 dB - 8 GHz 0.4 dB - 12.4 GHz 0.5 dB - 18 GHz 0.7 dB - 26.5 GHz	0.2 dB - 6 GHz 0.4 dB - 12.4 GHz 0.5 dB - 18 GHz 0.7 dB - 26.5 GHz 1.1 dB - 40 GHz	0.2 dB - 6 GHz 0.4 dB - 12.4 GHz 0.5 dB - 18 GHz 0.7 dB - 26.5 GHz 0.9 dB - 40 GHz 1.2 dB - 50 GHz	0.3 dB - 6 GHz 0.4 dB - 12.4 GHz 0.5 dB - 18 GHz 0.7 dB - 26.5 GHz 0.9 dB - 40 GHz 1.4 dB - 65 GHz 1.7 dB - 67 GHz
Isolation	80 dB - 3 GHz 70 dB - 8 GHz 60 dB - 12.4 GHz	80 dB - 3 GHz 70 dB - 8 GHz 60 dB - 12.4 GHz 60 dB - 18 GHz	80 dB - 3 GHz 70 dB - 8 GHz 60 dB - 12.4 GHz 60 dB - 18 GHz 55 dB - 26.5 GHz	70 dB - 6 GHz 60 dB - 12.4 GHz 60 dB - 18 GHz 55 dB - 26.5 GHz 50 dB - 40 GHz	70 dB - 6 GHz 60 dB - 12.4 GHz 60 dB - 18 GHz 55 dB - 26.5 GHz 50 dB - 40 GHz 50 dB - 50 GHz	70 dB - 6 GHz 60 dB - 12.4 GHz 60 dB - 18 GHz 55 dB - 26.5 GHz 50 dB - 40 GHz 50 dB - 50 GHz 50 dB - 67 GHz
VSWR	1.2:1 - 3 GHz 1.35:1 - 8 GHz 1.5:1 - 12.4 GHz	1.2:1 - 3 GHz 1.3:1 - 8 GHz 1.4:1 - 12.4 GHz 1.5:1 - 18 GHz	1.2:1 - 3 GHz 1.3:1 - 8 GHz 1.4:1 - 12.4 GHz 1.5:1 - 18 GHz 1.7:1 - 26.5 GHz	1.3:1 - 6 GHz 1.4:1 - 12.4 GHz 1.5:1 - 18 GHz 1.7:1 - 26.5 GHz 2.2:1 - 40 GHz	1.3:1 - 6 GHz 1.4:1 - 12.4 GHz 1.5:1 - 18 GHz 1.7:1 - 26.5 GHz 1.9:1 - 40 GHz 2.2:1 - 50 GHz	1.3:1 - 6 GHz 1.4:1 - 12.4 GHz 1.5:1 - 18 GHz 1.7:1 - 26.5 GHz 1.9:1 - 40 GHz 2.2:1 - 50 GHz 2.2:1 - 67 GHz
Terminator Power Handling	1W each, 3W total					
RF Average Carry Power at 25 °C	400 W - 3 GHz 250 W - 8 GHz 200 W - 12.4 GHz	240 W - 3 GHz 150 W - 8 GHz 120 W - 12.4 GHz 100 W - 18 GHz	240 W - 3 GHz 150 W - 8 GHz 120 W - 12.4 GHz 100 W - 18 GHz 40 W - 26.5 GHz	40 W - 6 GHz 30 W - 12.4 GHz 25 W - 18 GHz 15 W - 26.5 GHz 5 W - 40 GHz	40 W - 6 GHz 30 W - 12.4 GHz 25 W - 18 GHz 15 W - 26.5 GHz 5 W - 40 GHz 3 W - 50 GHz	40 W - 6 GHz 30 W - 12.4 GHz 25 W - 18 GHz 15 W - 26.5 GHz 5 W - 40 GHz 3 W - 50 GHz 1 W - 67 GHz
Expected Life (operations)	2 million	2 million	10 million	2million	2 million	2 million

## Specifications - Unterminated SP6T Switches



Bandwidth	2.5 GHz	6 GHz	12.4 GHz	18 GHz	26.5 GHz	40 GHz	50 GHz	67 GHz
Characteristic Impedance	75 Ω	50 Ω	50 Ω	50 Ω	50 Ω	50 Ω	50 Ω	50 Ω
Connector Type	1.6/5.6	SMA	N-type	SMA	SMA	SMA-2.9	SMA-2.4	SMA-1.85
Operate Time	15 ms	10 ms	15 ms	10 ms	10 ms	10 ms	10 ms	10 ms
Insertion Loss	0.2 dB - 1 GHz 0.3 dB - 2.5 GHz	0.2 dB - 3 GHz 0.3 dB - 6 GHz	0.2 dB - 3 GHz 0.35 dB - 8 GHz 0.5 dB - 12.4 GHz	0.2 dB - 3 GHz 0.3 dB - 8 GHz 0.4 dB - 12.4 GHz 0.5 dB - 18 GHz	0.2 dB - 3 GHz 0.3 dB - 8 GHz 0.4 dB - 12.4 GHz 0.5 dB - 18 GHz 0.6 dB - 26.5 GHz	0.2 dB - 3 GHz 0.3 dB - 8 GHz 0.4 dB - 12.4 GHz 0.5 dB - 18 GHz 0.7 dB - 26.5 GHz 1.1 dB - 40 GHz	0.2 dB - 6 GHz 0.4 dB - 12.4 GHz 0.5 dB - 18 GHz 0.7 dB - 26.5 GHz 0.9 dB - 40 GHz 1.2 dB - 50 GHz	0.3 dB - 6 GHz 0.4 dB - 12.4 GHz 0.5 dB - 18 GHz 0.7 dB - 26.5 GHz 0.9 dB - 40 GHz 1.2 dB - 65 GHz 1.7 dB - 67 GHz
Isolation	80 dB - 1 GHz 70 dB - 2.5 GHz	80 dB - 3 GHz 70 dB - 6 GHz	80 dB - 3 GHz 70 dB - 8 GHz 60 dB - 12.4 GHz	80 dB - 3 GHz 70 dB - 8 GHz 60 dB - 12.4 GHz 60 dB - 18 GHz	80 dB - 3 GHz 70 dB - 8 GHz 60 dB - 12.4 GHz 60 dB - 18 GHz 55 dB - 26.5 GHz	80 dB - 3 GHz 70 dB - 8 GHz 60 dB - 12.4 GHz 60 dB - 18 GHz 55 dB - 26.5 GHz 45 dB - 40 GHz	70 dB - 6 GHz 60 dB - 12.4 GHz 60 dB - 18 GHz 55 dB - 26.5 GHz 50 dB - 40 GHz 50 dB - 50 GHz	70 dB - 6 GHz 60 dB - 12.4 GHz 60 dB - 18 GHz 55 dB - 26.5 GHz 50 dB - 40 GHz 50 dB - 50 GHz 50 dB - 67 GHz
VSWR	1.2:1 - 1 GHz 1.3:1 - 2.5 GHz	1.2:1 - 3 GHz 1.3:1 - 6 GHz	1.2:1 - 3 GHz 1.35:1 - 8 GHz 1.5:1 - 12.4 GHz	1.2:1 - 3 GHz 1.3:1 - 8 GHz 1.4:1 - 12.4 GHz 1.5:1 - 18 GHz	1.2:1 - 3 GHz 1.3:1 - 8 GHz 1.4:1 - 12.4 GHz 1.5:1 - 18 GHz 1.6:1 - 26.5 GHz	1.2:1 - 3 GHz 1.3:1 - 8 GHz 1.4:1 - 12.4 GHz 1.5:1 - 18 GHz 1.7:1 - 26.5 GHz 2.2:1 - 40 GHz	1.3:1 - 6 GHz 1.4:1 - 12.4 GHz 1.5:1 - 18 GHz 1.7:1 - 26.5 GHz 1.9:1 - 40 GHz 2.2:1 - 50 GHz	1.3:1 - 6 GHz 1.4:1 - 12.4 GHz 1.5:1 - 18 GHz 1.7:1 - 26.5 GHz 1.9:1 - 40 GHz 2.2:1 - 50 GHz 2.2:1 - 67 GHz
RF Average Carry Power at 25°C	400 W - 1 GHz 240 W - 2.5 GHz	250 W - 3 GHz 170 W - 6 GHz	400 W - 3 GHz 250 W - 8 GHz 200 W - 12.4 GHz	250 W - 3 GHz 150 W - 8 GHz 120 W - 12.4 GHz 100 W - 18 GHz	250 W - 3 GHz 150 W - 8 GHz 120 W - 12.4 GHz 100 W - 18 GHz 40 W - 26.5 GHz	60 W - 3 GHz 35 W - 8 GHz 30 W - 12.4 GHz 25 W - 18 GHz 15 W - 26.5 GHz 5 W - 40 GHz 5 W - 40 GHz	40 W - 6 GHz 30 W - 12.4 GHz 25 W - 18 GHz 15 W - 26.5 GHz 5 W - 40 GHz 3 W - 50 GHz	40 W - 6 GHz 30 W - 12.4 GHz 25 W - 18 GHz 15 W - 26.5 GHz 5 W - 40 GHz 3 W - 50 GHz 1 W - 67 GHz
Expected Life (operations)	2 million	10 million	2 million	10 million	10 million	2million	2 million	2 million

## Specifications - Terminated SP6T Switches

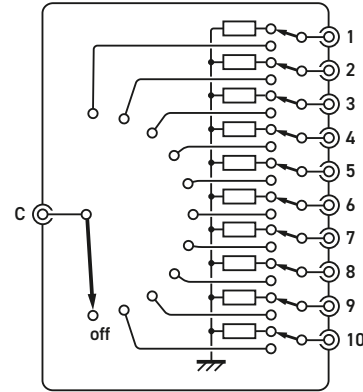
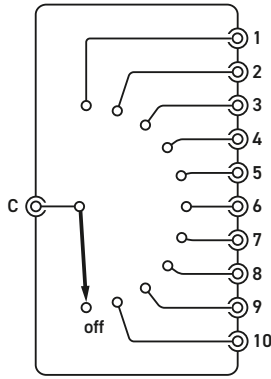


Bandwidth	12.4 GHz	18 GHz	26.5 GHz	40 GHz	50 GHz	67 GHz
Characteristic Impedance	50 Ω	50 Ω	50 Ω	50 Ω	50 Ω	50 Ω
Connector Type	N-type	SMA	SMA	SMA-2.9	SMA-2.4	SMA-1.85
Operate Time	15 ms	15 ms	15 ms	15 ms	15 ms	10 ms
Insertion Loss	0.2 dB - 3 GHz 0.35 dB - 8 GHz 0.5 dB - 12.4 GHz	0.2 dB - 3 GHz 0.3 dB - 8 GHz 0.4 dB - 12.4 GHz 0.5 dB - 18 GHz	0.2 dB - 3 GHz 0.3 dB - 8 GHz 0.4 dB - 12.4 GHz 0.5 dB - 18 GHz 0.7 dB - 26.5 GHz	0.2 dB - 6 GHz 0.4 dB - 12.4 GHz 0.5 dB - 18 GHz 0.7 dB - 26.5 GHz 1.1 dB - 40 GHz	0.2 dB - 6 GHz 0.4 dB - 12.4 GHz 0.5 dB - 18 GHz 0.7 dB - 26.5 GHz 0.9 dB - 40 GHz 1.2 dB - 50 GHz	0.3 dB - 6 GHz 0.4 dB - 12.4 GHz 0.5 dB - 18 GHz 0.7 dB - 26.5 GHz 0.9 dB - 40 GHz 1.4 dB - 65 GHz 1.7 dB - 67 GHz
Isolation	80 dB - 3 GHz 70 dB - 8 GHz 60 dB - 12.4 GHz	80 dB - 3 GHz 70 dB - 8 GHz 60 dB - 12.4 GHz 60 dB - 18 GHz	80 dB - 3 GHz 70 dB - 8 GHz 60 dB - 12.4 GHz 60 dB - 18 GHz 55 dB - 26.5 GHz	70 dB - 6 GHz 60 dB - 12.4 GHz 60 dB - 18 GHz 55 dB - 26.5 GHz 50 dB - 40 GHz	70 dB - 6 GHz 60 dB - 12.4 GHz 60 dB - 18 GHz 55 dB - 26.5 GHz 50 dB - 40 GHz 50 dB - 50 GHz	70 dB - 6 GHz 60 dB - 12.4 GHz 60 dB - 18 GHz 55 dB - 26.5 GHz 50 dB - 40 GHz 50 dB - 50 GHz 50 dB - 67 GHz
VSWR	1.2:1 - 3 GHz 1.35:1 - 8 GHz 1.5:1 - 12.4 GHz	1.2:1 - 3 GHz 1.3:1 - 8 GHz 1.4:1 - 12.4 GHz 1.5:1 - 18 GHz	1.2:1 - 3 GHz 1.3:1 - 8 GHz 1.4:1 - 12.4 GHz 1.5:1 - 18 GHz 1.7:1 - 26.5 GHz	1.3:1 - 6 GHz 1.4:1 - 12.4 GHz 1.5:1 - 18 GHz 1.7:1 - 26.5 GHz 2.2:1 - 40 GHz	1.3:1 - 6 GHz 1.4:1 - 12.4 GHz 1.5:1 - 18 GHz 1.7:1 - 26.5 GHz 1.9:1 - 40 GHz 2.2:1 - 50 GHz	1.3:1 - 6 GHz 1.4:1 - 12.4 GHz 1.5:1 - 18 GHz 1.7:1 - 26.5 GHz 1.9:1 - 40 GHz 2.2:1 - 50 GHz 2.2:1 - 67 GHz
Terminator Power Handling	1W each, 3W total					
RF Average Carry Power at 25 °C	400 W - 3 GHz 250 W - 8 GHz 200 W - 12.4 GHz	240 W - 3 GHz 150 W - 8 GHz 120 W - 12.4 GHz 100 W - 18 GHz	240 W - 3 GHz 150 W - 8 GHz 120 W - 12.4 GHz 100 W - 18 GHz 40 W - 26.5 GHz	40 W - 6 GHz 30 W - 12.4 GHz 25 W - 18 GHz 15 W - 26.5 GHz 5 W - 40 GHz	40 W - 6 GHz 30 W - 12.4 GHz 25 W - 18 GHz 15 W - 26.5 GHz 5 W - 40 GHz 3 W - 50 GHz	40 W - 6 GHz 30 W - 12.4 GHz 25 W - 18 GHz 15 W - 26.5 GHz 5 W - 40 GHz 3 W - 50 GHz 1 W - 67 GHz
Expected Life (operations)	2 million	2 million	10 million	2million	2 million	2 million

	Specifications - Unterminated SP8T Switches			Specifications - Terminated SP8T Switches	
<b>Bandwidth</b>	8 GHz	18 GHz	26.5 GHz	18 GHz	26.5 GHz
<b>Characteristic Impedance</b>	50 Ω	50 Ω	50 Ω	50 Ω	50 Ω
<b>Connector Type</b>	N-type	SMA	SMA	SMA	SMA
<b>Operate Time</b>	15 ms	15 ms	15 ms	15 ms	15 ms
<b>Insertion Loss</b>	0.3 dB - 3 GHz 0.5 dB - 8 GHz	0.2 dB - 3 GHz 0.3 dB - 8 GHz 0.4 dB - 12.4 GHz 0.55 dB - 16 GHz 0.6 dB - 18 GHz	0.2 dB - 3 GHz 0.3 dB - 8 GHz 0.4 dB - 12.4 GHz 0.55 dB - 16 GHz 0.6 dB - 18 GHz 0.7 dB - 22 GHz 1.1 dB - 26.5 GHz	0.2 dB - 3 GHz 0.3 dB - 8 GHz 0.4 dB - 12.4 GHz 0.55 dB - 16 GHz 0.6 dB - 18 GHz	0.2 dB - 3 GHz 0.3 dB - 8 GHz 0.4 dB - 12.4 GHz 0.55 dB - 16 GHz 0.6 dB - 18 GHz 0.7 dB - 22 GHz 1.1 dB - 26.5 GHz
<b>Isolation</b>	80 dB - 3 GHz 70 dB - 8 GHz	80 dB - 3 GHz 70 dB - 8 GHz 60 dB - 12.4 GHz 60 dB - 16 GHz 60 dB - 18 GHz	80 dB - 3 GHz 70 dB - 8 GHz 60 dB - 12.4 GHz 60 dB - 16 GHz 60 dB - 18 GHz 60 dB - 22 GHz 55 dB - 26.5 GHz	80 dB - 3 GHz 70 dB - 8 GHz 60 dB - 12.4 GHz 60 dB - 16 GHz 60 dB - 18 GHz	80 dB - 3 GHz 70 dB - 8 GHz 60 dB - 12.4 GHz 60 dB - 16 GHz 60 dB - 18 GHz 60 dB - 22 GHz 55 dB - 26.5 GHz
<b>VSWR</b>	1.3:1 - 3 GHz 1.5:1 - 8 GHz	1.2:1 - 3 GHz 1.3:1 - 8 GHz 1.4:1 - 12.4 GHz 1.5:1 - 16 GHz 1.6:1 - 18 GHz	1.2:1 - 3 GHz 1.3:1 - 8 GHz 1.4:1 - 12.4 GHz 1.5:1 - 16 GHz 1.6:1 - 18 GHz 1.7:1 - 22 GHz 2.0:1 - 26.5 GHz	1.2:1 - 3 GHz 1.3:1 - 8 GHz 1.4:1 - 12.4 GHz 1.5:1 - 16 GHz 1.6:1 - 18 GHz	1.2:1 - 3 GHz 1.3:1 - 8 GHz 1.4:1 - 12.4 GHz 1.5:1 - 16 GHz 1.6:1 - 18 GHz 1.7:1 - 22 GHz 2.0:1 - 26.5 GHz
<b>Terminator Power Handling</b>	-			1W each, 3W total	
<b>RF Average Carry Power at 25 °C</b>	400 W - 3 GHz 250 W - 8 GHz	240 W - 3 GHz 150 W - 8 GHz 120 W - 12.4 GHz 110 W - 16 GHz 100 W - 18 GHz	240 W - 3 GHz 150 W - 8 GHz 120 W - 12.4 GHz 110 W - 16 GHz 100 W - 18 GHz 90 W - 22 GHz 40 W - 26.5 GHz	240 W - 3 GHz 150 W - 8 GHz 120 W - 12.4 GHz 110 W - 16 GHz 100 W - 18 GHz	240 W - 3 GHz 150 W - 8 GHz 120 W - 12.4 GHz 110 W - 16 GHz 100 W - 18 GHz 90 W - 22 GHz 40 W - 26.5 GHz
<b>Expected Life (operations)</b>	2 million	2 million	2 million	2 million	2 million

## Specifications - Unterminated SP10T Switches

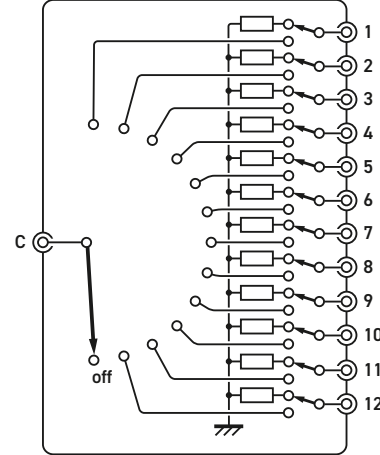
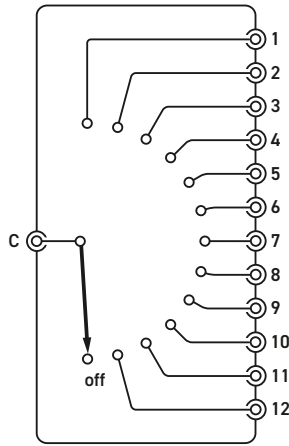
## Specifications - Terminated SP10T Switches



	Specifications - Unterminated SP10T Switches			Specifications - Terminated SP10T Switches	
<b>Bandwidth</b>	8 GHz	18 GHz	22 GHz	18 GHz	22 GHz
<b>Characteristic Impedance</b>	50 Ω	50 Ω	50 Ω	50 Ω	50 Ω
<b>Connector Type</b>	N-type	SMA	SMA	SMA	SMA
<b>Operate Time</b>	15 ms	15 ms	15 ms	15 ms	15 ms
<b>Insertion Loss</b>	0.3 dB - 3 GHz 0.5 dB - 8 GHz	0.2 dB - 3 GHz 0.3 dB - 8 GHz 0.4 dB - 12.4 GHz 0.5 dB - 15.5 GHz 0.7 dB - 18 GHz	0.2 dB - 3 GHz 0.3 dB - 8 GHz 0.4 dB - 12.4 GHz 0.5 dB - 15.5 GHz 0.7 dB - 18 GHz 0.8 dB - 22 GHz	0.2 dB - 3 GHz 0.3 dB - 8 GHz 0.4 dB - 12.4 GHz 0.5 dB - 15.5 GHz 0.7 dB - 18 GHz	0.2 dB - 3 GHz 0.3 dB - 8 GHz 0.4 dB - 12.4 GHz 0.5 dB - 15.5 GHz 0.7 dB - 18 GHz 0.8 dB - 22 GHz
<b>Isolation</b>	80 dB - 3 GHz 70 dB - 8 GHz	80 dB - 3 GHz 70 dB - 8 GHz 60 dB - 12.4 GHz 60 dB - 15.5 GHz 55 dB - 18 GHz	80 dB - 3 GHz 70 dB - 8 GHz 60 dB - 12.4 GHz 60 dB - 15.5 GHz 55 dB - 18 GHz 55 dB - 22 GHz	80 dB - 3 GHz 70 dB - 8 GHz 60 dB - 12.4 GHz 60 dB - 15.5 GHz 55 dB - 18 GHz	80 dB - 3 GHz 70 dB - 8 GHz 60 dB - 12.4 GHz 60 dB - 15.5 GHz 55 dB - 18 GHz 55 dB - 22 GHz
<b>VSWR</b>	1.3:1 - 3 GHz 1.5:1 - 8 GHz	1.2:1 - 3 GHz 1.3:1 - 8 GHz 1.4:1 - 12.4 GHz 1.5:1 - 15.5 GHz 1.7:1 - 18 GHz	1.2:1 - 3 GHz 1.3:1 - 8 GHz 1.4:1 - 12.4 GHz 1.5:1 - 15.5 GHz 1.7:1 - 18 GHz 1.8:1 - 22 GHz	1.2:1 - 3 GHz 1.3:1 - 8 GHz 1.4:1 - 12.4 GHz 1.5:1 - 15.5 GHz 1.7:1 - 18 GHz	1.2:1 - 3 GHz 1.3:1 - 8 GHz 1.4:1 - 12.4 GHz 1.5:1 - 15.5 GHz 1.7:1 - 18 GHz 1.8:1 - 22 GHz
<b>Terminator Power Handling</b>		—		1W each, 3W total	
<b>RF Average Carry Power at 25°C</b>	400 W - 3 GHz 250 W - 8 GHz	240 W - 3 GHz 150 W - 8 GHz 120 W - 12.4 GHz 110 W - 15.5 GHz 100 W - 18 GHz	240 W - 3 GHz 150 W - 8 GHz 120 W - 12.4 GHz 110 W - 15.5 GHz 100 W - 18 GHz 60 W - 22 GHz	240 W - 3 GHz 150 W - 8 GHz 120 W - 12.4 GHz 110 W - 15.5 GHz 100 W - 18 GHz	240 W - 3 GHz 150 W - 8 GHz 120 W - 12.4 GHz 110 W - 15.5 GHz 100 W - 18 GHz 60 W - 22 GHz
<b>Expected Life (operations)</b>	2 million	2 million	2 million	2 million	2 million

## Specifications - Unterminated SP12T Switches

## Specifications - Terminated SP12T Switches



<b>Bandwidth</b>	8 GHz	18 GHz	18 GHz
<b>Characteristic Impedance</b>	50 Ω	50 Ω	50 Ω
<b>Connector Type</b>	N-type	SMA	SMA
<b>Operate Time</b>	15 ms	15 ms	15 ms
<b>Insertion Loss</b>	0.5 dB - 3 GHz 1.0 dB - 8 GHz	0.2 dB - 3 GHz 0.4 dB - 8 GHz 0.6 dB - 12.4 GHz 0.7 dB - 15.5 GHz 0.8 dB - 18 GHz	0.2 dB - 3 GHz 0.4 dB - 8 GHz 0.6 dB - 12.4 GHz 0.7 dB - 15.5 GHz 0.8 dB - 18 GHz
<b>Isolation</b>	70 dB - 3 GHz 60 dB - 8 GHz	80 dB - 3 GHz 70 dB - 8 GHz 60 dB - 12.4 GHz 60 dB - 15.5 GHz 55 dB - 18 GHz	80 dB - 3 GHz 70 dB - 8 GHz 60 dB - 12.4 GHz 60 dB - 15.5 GHz 55 dB - 18 GHz
<b>VSWR</b>	1.35:1 - 3 GHz 1.7:1 - 8 GHz	1.2:1 - 3 GHz 1.4:1 - 8 GHz 1.6:1 - 12.4 GHz 1.7:1 - 15.5 GHz 1.8:1 - 18 GHz	1.2:1 - 3 GHz 1.4:1 - 8 GHz 1.6:1 - 12.4 GHz 1.7:1 - 15.5 GHz 1.8:1 - 18 GHz
<b>Terminator Power Handling</b>	—	—	1W each, 3W total
<b>RF Average Carry Power at 25°C</b>	400 W - 3 GHz 250 W - 8 GHz	240 W - 3 GHz 150 W - 8 GHz 120 W - 12.4 GHz 110 W - 15.5 GHz 100 W - 18 GHz	240 W - 3 GHz 150 W - 8 GHz 120 W - 12.4 GHz 110 W - 15.5 GHz 100 W - 18 GHz
<b>Expected Life (operations)</b>	2 million	2 million	2 million

## Power Source

Universal AC mains supply, 90-120/200-240 V 50-60 Hz	
Power Inlet:	Male IEC connector
Power Rating:	100 VA maximum
Fuse Rating:	5 A, 250 V

## LAN Interface

Compliant to LXI Standard 1.4, the 60-890/891 has a 1000Base-T Ethernet Interface via a standard RJ-45 connector mounted on the rear panel with an LCD display showing the unit's IP address.

## LXI Status Indicators

Front panel mounted LEDs:

- Power
- Ready
- Error
- LAN
- Active

## Mechanical Characteristics

Supplied with front panel ears to enable rack mounting on a shelf or other rear support mechanism.

Dimensions: Full 19" rack width, 500 mm depth, 1U to 4U high.

3D models for all versions in a variety of popular file formats are available on request.

## Connectors

Signals via front panel connectors as detailed in table on page 1.

## Cooling

Fan assisted cooling, side air intakes and rear exhaust.

## 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

LXI Microwave Switching Unit (Panel Mounted Switch Components)	60-890-XXX*
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LXI Microwave Switching Unit (Internally Wired Switch Components and/or Non-switching RF Components)	60-891-XXX*
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\*XXX corresponds to a unique three digit suffix that will be assigned to a particular microwave switching unit configuration.

## Product Customization

Pickering LXI units 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 switch types
- Mixture of switch types
- Alternative number of switches
- 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.

## Support Products

### Mating Connectors & Cabling

For connection accessories for the 60-890/891 units, 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.

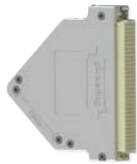
## Operating/Storage Conditions

Operating Temperature:	0 °C to +55 °C
Humidity:	Up to 90% non-condensing
Altitude:	5000 m
Storage/Transport Temperature:	-20 °C to +75 °C
Humidity:	Up to 90% non-condensing
Altitude:	15000 m



## Connectivity Solutions

We provide a full range of supporting cable and connector solutions for all our switching products—20 connector families with 1200+ products. We offer everything from simple mating connectors to complex cables assemblies and terminal blocks. All assemblies are manufactured by Pickering and are guaranteed to mechanically and electrically mate to our modules. These accessories are detailed in Connector Accessories data sheets, where a complete list and documentation can be found for each accessory.



Connectors & Backshells



Multi-way Cable Assemblies



RF Cable Assemblies



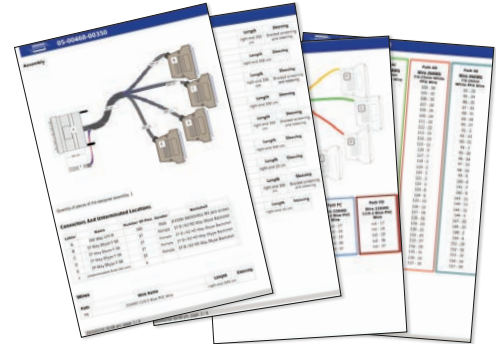
Breakouts



Connector Blocks

We also offer customized cabling and have a free online **Cable Design Tool** that can be used to create custom cable solutions for many applications.

- Fully supported on modern browsers and tablet operating systems.
- Built-in tutorials and videos allow you to get quickly up to speed.
- Store cable assemblies in the Cloud and develop over time.
- Each cable design has a downloadable PDF documentation file detailing all specifications



Start designing your custom cabling, go to [pickeringtest.com/cdt](http://pickeringtest.com/cdt)

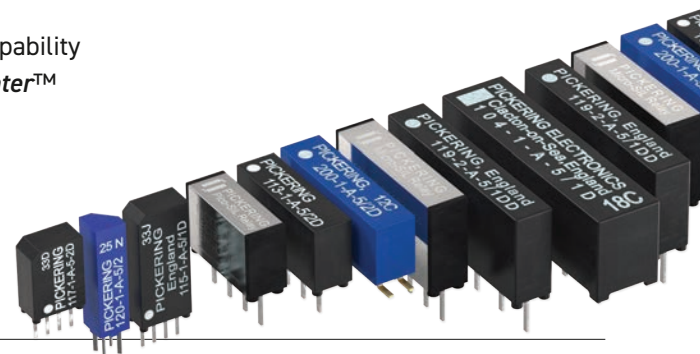
## Mass Interconnect

We recommend the use of a mass interconnect solution when an Interchangeable Test Adapter (ITA) is required for PXI/LXI based test systems. Our modules are fully supported by Virginia Panel and MacPanel.

## Pickering Reed Relays

We are the only switch provider with in-house reed relay manufacturing capability via our Relay Division. These instrument grade reed relays feature **SoftCenter™** technology, ensuring long service life and repeatable contact performance.

To learn more go to [pickeringrelay.com](http://pickeringrelay.com)



## Programming

Pickering provide kernel, IVI and VISA (NI & Keysight) drivers which are compatible with all Microsoft supported versions of Windows and popular older versions.

For more information go to [pickeringtest.com/os](http://pickeringtest.com/os)

The VISA driver support is provided for LabVIEW Real Time Operating Systems (Pharlap and Linux-RT). For other RTOS support contact Pickering. These drivers may be used with a variety of programming environments and applications including:

- **Pickering Interfaces Switch Path Manager**
- **National Instruments products** (LabVIEW, LabWindows/CVI, Switch Executive, MAX, TestStand, VeriStand, etc.)
- **Microsoft Visual Studio products** (Visual Basic, Visual C++)
- **Programming Languages** C, C++, C#, Python
- **Keysight VEE and OpenTAP**
- **Mathworks MATLAB, Simulink**
- **Marvin ATEasy**
- **MTQ Testsolutions Tecap Test & Measurement Suite**

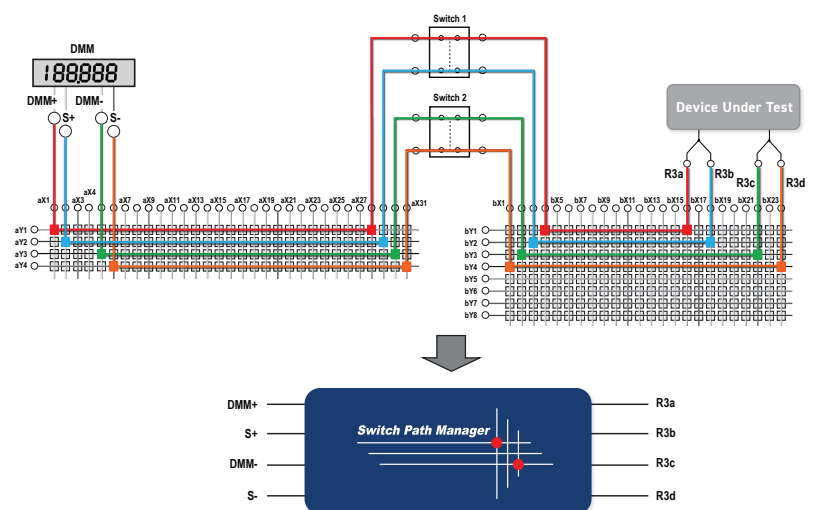
Drivers for popular Linux distributions are available, other environments are also supported, please contact Pickering with specific enquiries. We provide Soft Front Panels (SFPs) for our products for familiarity and manual control, as well as comprehensive documentation and example programs to help you develop test routines with ease.

To learn more about software drivers and development environments go to [pickeringtest.com/software](http://pickeringtest.com/software)

## Signal Routing Software

Our signal routing software, Switch Path Manager, automatically selects and energizes switch paths through Pickering switching systems. Signal routing is performed by simply defining test system endpoints to be connected together, greatly accelerating Test System software development.

To learn more go to [pickeringtest.com/spm](http://pickeringtest.com/spm)



## Diagnostic Relay Test Tools

**eBIRST** Switching System Test Tools are designed specifically for our PXI, PCI or LXI products, these tools simplify switching system fault-finding by quickly testing the system and graphically identifying the faulty relay.

To learn more go to [pickeringtest.com/ebirst](http://pickeringtest.com/ebirst)



## Three Year Warranty & Guaranteed Long-Term Support

All standard products manufactured by Pickering Interfaces are warranted against defective materials and workmanship for three years from the date of delivery to the original purchaser. Extended warranty and service agreements are available with various levels for your requirements. Although we offer a 3-year warranty as standard, we also include guaranteed long-term support—with a history of supporting our products for typically 15-20 years.

To learn more go to [pickeringtest.com/support](http://pickeringtest.com/support)

## Available Product Resources

We have a library of resources including success stories, product and support videos, articles and white papers as well as application-specific brochures to assist you. We have also published reference books on switching technology and the PXI and LXI standards.

To view, download or request any of our product resources go to [pickeringtest.com/resources](http://pickeringtest.com/resources)

