

USB Series

SPNT USB UP TO 40 GHz
SMA – SMA 2.9



Utilizing Radiall’s proven and patented RAMSES concept, our team of experts and engineers integrated a mini-USB terminal on SP6T and SP8T switches for simplified use especially in test & lab applications.

Featuring an easy-to-integrate design, USB Coaxial Switches are delivered with a 1 meter long USB cable for power supply and switch drive. A soft front panel is provided to control the switches but commonly used software programming platforms such as Visual Basic, C#, C++, LabVIEW and VEE are also compatible.

Example of P/N: R573F11601 is a non-terminated SP6T SMA up to 26.5 GHz, Normally Open, 5 Vdc, Indicators with a mini USB port.

PART NUMBER SELECTION

R57 1 1 0 1

SERIES PREFIX _____

MODEL _____

3: Without 50 Ω termination

4: With 50 Ω termination

RF CONNECTORS _____

F: SMA up to 26.5 GHz

8: SMA 2.9 up to 40 GHz ^[1 & 2]

TYPE _____

1: Normally open I. + C.

ACTUATOR VOLTAGE _____

1: 5 Vdc

NUMBER OF POSITIONS _____

6: 6 positions

8: 8 positions

OPTIONS _____

0: Without option

ACTUATOR TERMINALS _____

1: Mini USB socket

Notes

I.C.: Indicator contact

1. Available only with 6 positions.

2. Connector SMA 2.9 is equivalent to "K connector[®]", registered trademark of Anritsu.

USB Series

APPLICATION NOTE

USB coaxial switch as cascade

You can use as many USB switches in cascade as you want. Each product is recognized by its automatic affectation to the ComPort and in order to differentiate them, each product has its own serial number which can be read by the software.

In order to provide power supply (5V / 420mA) and drive as many switches as you want with your computer, you will need a hub USB which can provide same power as a classic USB port of the computer (500mA / 5V) or a PCI expansion card USB (if it is a desktop).

APPLICATION EXAMPLE

BEFORE



DC power from a power supply and wires to provide power to PF Paths



AFTER



USB Cable mini B to Type A



Control with computer

GRAPHICAL USER INTERFACE WITH MORE THAN ONE PRODUCT

- Every product has its own serial port. To control manually you can also open many soft front panel.
- Each product has its own serial number and different communication port.
- The user has also the possibility to manage the control automatically using LabView drivers provided or using Vb.net, C++ , C# with DLL provided also.

USB Series

GENERAL SPECIFICATIONS

OPERATING MODE		NORMALLY OPEN	
Nominal operating voltage	Vdc	5	
Coil resistance (+/-10%)	Ω	11.9	
Nominal operating current at 23 °C	mA	420	
Average Power		See Power Rating Chart page 1-13	
Indicator rating		Indicators status are returned by software	
Switching time (max)	ms	15 ms	
Life (min)	Non-terminated SP6T (R573 series)	SMA 5 million cycles	SMA 2.9 2 million cycles
	Terminated SP6T (R574 series)	2 million cycles	
	SP8T (all models)		
Connectors		SMA - SMA 2.9	
Actuator terminals		Mini USB socket	
Operating temperature range	SMA - SMA 2.9	-25 °C to +75 °C	
Storage temperature range	SMA - SMA 2.9	-55 °C to +85 °C	
Vibration (MIL STD 202, method 204D, cond.D)		10 - 2,000 Hz , 20 g operating - switch only	
Shock (MIL STD 202, method 213B, cond.C)		100 g / 6 ms, 1/2 sine operating - switch only	

RF PERFORMANCE - SP6T

CONNECTORS	FREQUENCY RANGE GHz		V.S.W.R. (MAX)	INSERTION LOSS (MAX) dB	ISOLATION (MIN) dB	IMPEDANCE Ω
SMA	DC - 26.5	DC - 6	1.20	0.3 + 0.015 x frequency (GHz)	80	50
		6 - 12.4	1.35		70	
		12.4 - 20	1.45		65	
		20 - 26.5	1.70		60	
SMA 2.9	DC - 40	DC - 6	1.20		80	
		6 - 12.4	1.35		70	
		12.4 - 18	1.45		65	
		18 - 26.5	1.70		60	
		26.5 - 40	1.90		55	

RF PERFORMANCE - SP8T

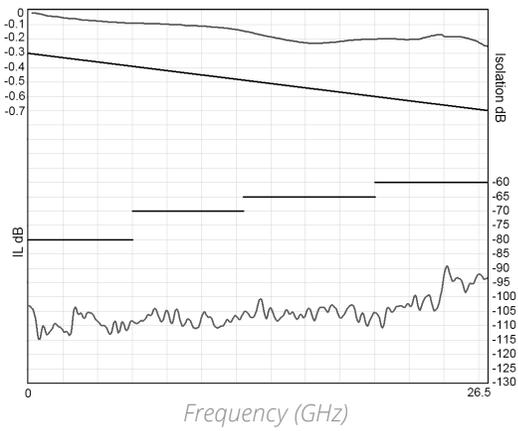
CONNECTORS	FREQUENCY RANGE GHz		V.S.W.R. (MAX)	INSERTION LOSS (MAX) dB	ISOLATION (MIN) dB	IMPEDANCE Ω
SMA	DC - 26.5	DC - 3	1.20	0.20	80	50
		3 - 8	1.30	0.30	70	
		8 - 12.4	1.40	0.40	60	
		12.4 - 16	1.50	0.55	60	
		16 - 18	1.60	0.60	60	
		18 - 22	1.70	0.70	60	
		22 - 26.5	2.00	1.10	55	

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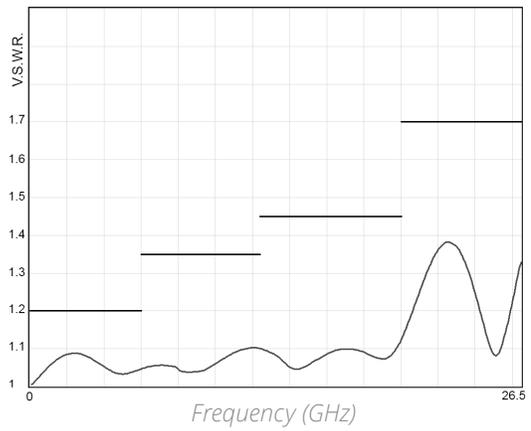
TYPICAL RF PERFORMANCE

Example: SP6T SMA up to 26.5 GHz

INSERTION LOSS & ISOLATION

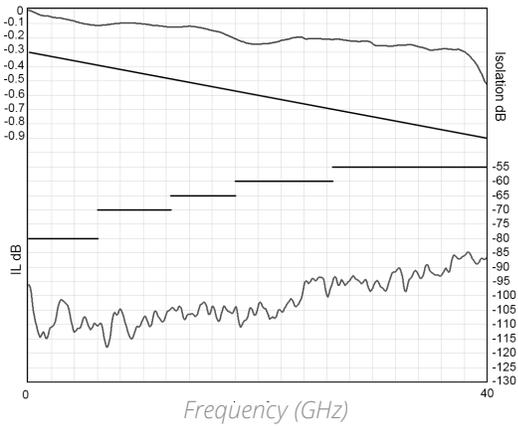


V.S.W.R

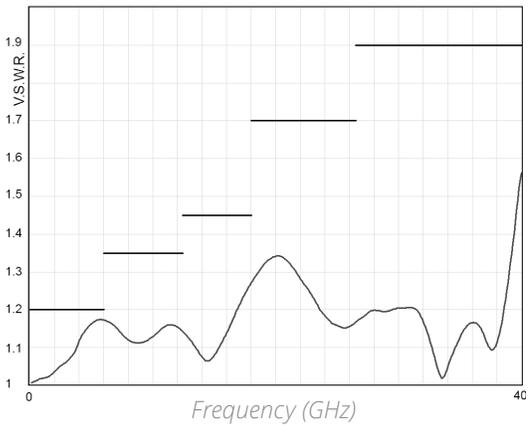


Example: SP6T SMA 2.9 up to 40 GHz

INSERTION LOSS & ISOLATION

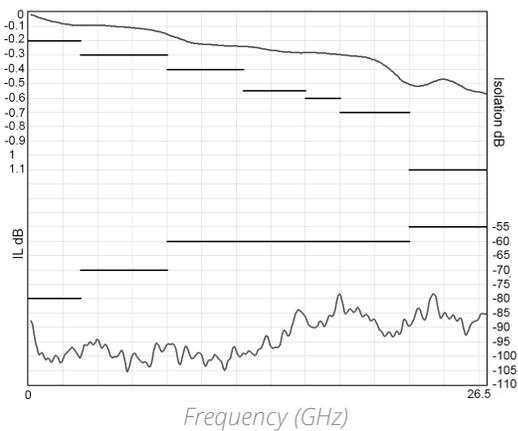


V.S.W.R

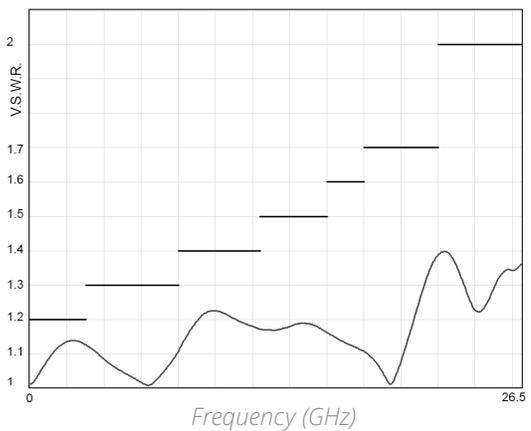


Example: SP8T SMA 2.9 up to 26.5 GHz

INSERTION LOSS & ISOLATION



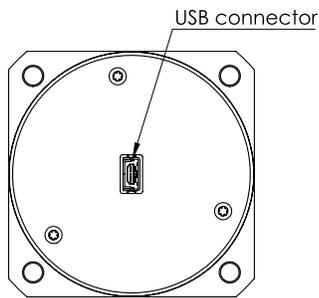
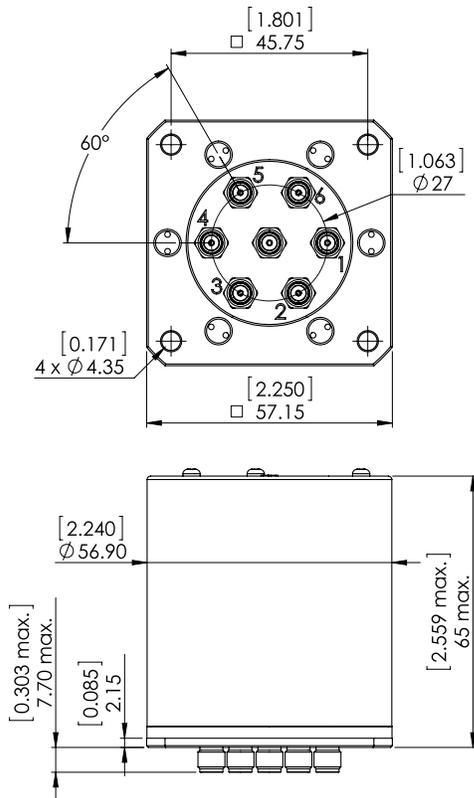
V.S.W.R



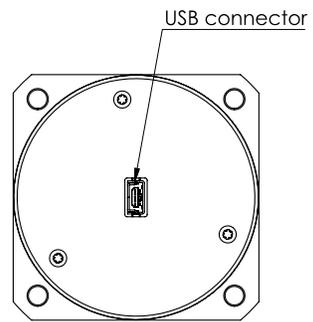
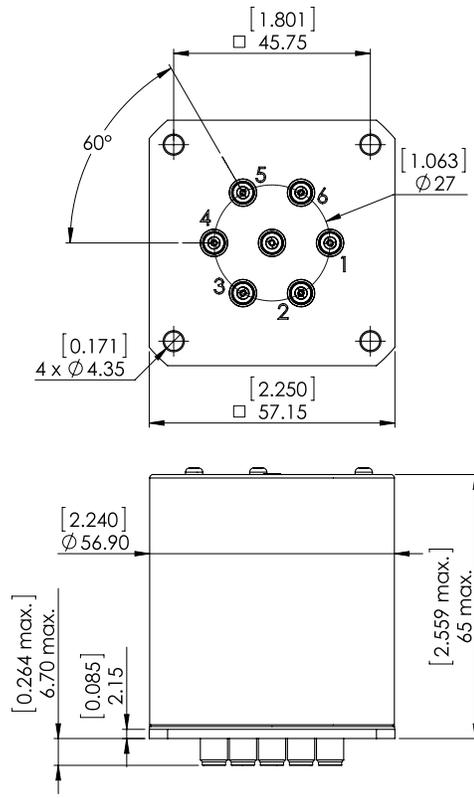
TYPICAL OUTLINE DRAWINGS

Non-terminated or terminated 6 positions

SMA MODEL



SMA 2.9 MODEL



Notes

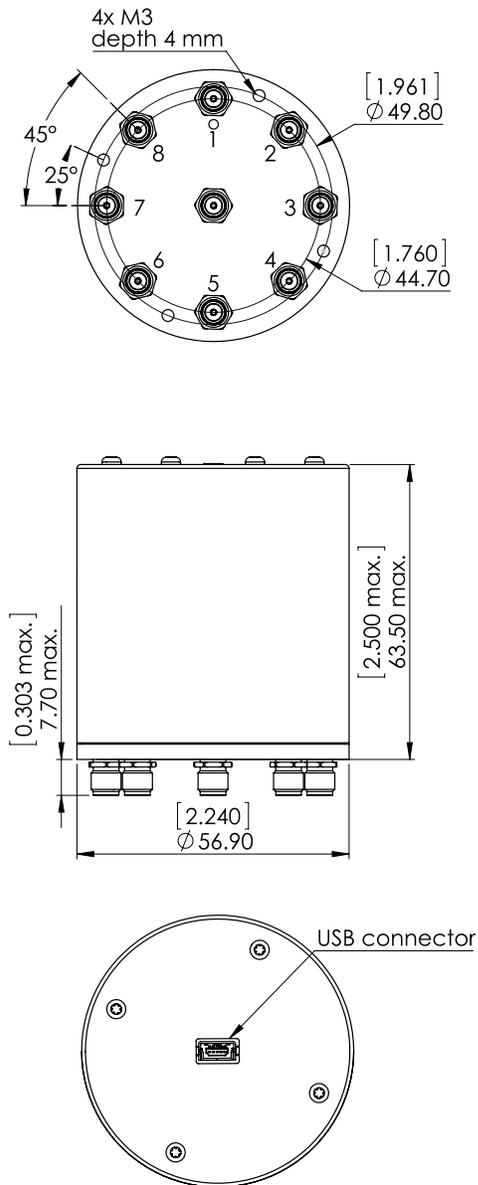
All dimensions are in millimeters [inches].

USB Series

TYPICAL OUTLINE DRAWINGS

Non-terminated or terminated 8 positions

SMA MODEL



Notes

All dimensions are in millimeters [inches].
 For electrical schematics see page 5-43.