Product Features

- Up to 16 Outputs Switch Matrix

- 50 – 6000MHz Frequency Range

  (Up to 8GHz Usable)

- High Isolations: +90 dBc

- High speed switch transition, 150 ns typ

- USB Powered and Controlled

- Robust Compacted Aluminum Enclosure

WavesLine's USW602A switch series are high isolation, absorptive SPDT, SP4T, SP8T, and SP16T solid state RF switches with fast switching transition and high linearity (typical +55dB IIP3) from 50 MHz to 6 GHz (Up to 8GHz Usable). Host control software with user-friendly GUI interface as well as device driver for Windows is also fully supported.

The USW602A is housed in a rugged aluminum case with SMA/Female connectors, and a USB Type-B port.

Order Information

Module Number	SPxT Option*	Control Interface**
USW602A-2	SP2T	USB Type B
USW602A-4	SP4T	USB Type B
USW602A-8	SP8T	USB Type B
USW602A-16	SP16T	USB Type B

*Customer design is available on these specifications
** Other Control Interface such as Ethernet, SPI, RS232 and etc. are available on Customer Requirements.

Typical Applications

- ATE & Lab Testing

- Cellular Handset/BTS Testing

- Design Verification Testing

- Automated Test Equipment (ATE)

- Integrated/Customized Test Setups

- RF Routing/Switch Matrices

Absolute Maximum Ratings

Parameter	Rating	Conditions
Supply Voltage (via USB)+	6V	
Max RF Input Power	+37dBm	COM/Non-Terminated
	+29dBm	COM/Terminated
	+35dBm	Port (1-16)/Non-Terminated
	+30dBm	Port (1-16)/Terminated
	+29dBm	Hot Switching

Specifications

Parameter	Specification				Condition
	Min.	Typ.	Max.	Unit	
RF Specifications					
Frequency	50		6000	MHz	Standard Frequency Range
	6000		8000		Still Usable
Insertion Loss (USW602A-16 SP16T)		2.5		dB	50MHz
		3.0-3.5			1.0 GHz
		3.5-4.2			2.0 GHz
		4.5-5.5			4.0 GHz
		6.7-8.0			6.0 GHz
		10-12			7.8 GHz
Isolation (USW602A-16 SP16T)		100		dBc	1.0 GHz
		80			2.0 GHz
		80			4.0 GHz
		70			6.0 GHz
		70			7.8 GHz
Return Loss (Com Port) (USW602A-16 SP16T)		20		dB	1.0 GHz
		15			2.0 GHz
		20			4.0 GHz
		15			6.0 GHz
Return Loss (Selected Port) (USW602A-16 SP16T)		20		dB	1.0 GHz
		18			2.0 GHz
		20			4.0 GHz
		9			6.0 GHz

Return Loss (Isolated Port) (USW602A-16 SP16T)		20		dB	1.0 GHz
		18			2.0 GHz
		14			4.0 GHz
		14			6.0 GHz
DC Supply		5	5.5	V	Via USB
		25		mA	Via USB
IIP3		55		dBm	+14dB Tone Power/1MHz Interval
Control Interface	USB Type B (USB Device)				
Outline	277x82x22mm				
RF Output Connector	SMA Female				

Block Diagram (USW602A-16)
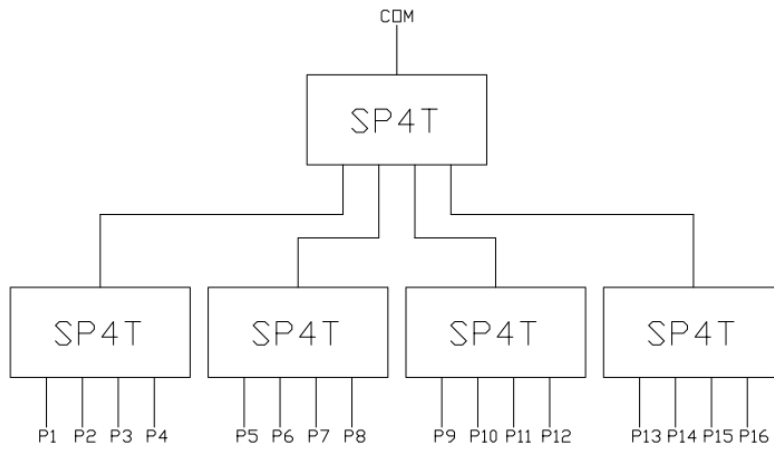
Outline

Unit: mm

Typical Insertion Loss (dB) (USW602A-16)

F (MHz)	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16
50	7.8	7.7	8.0	8.1	6.8	7.1	7.0	7.1	6.9	6.6	6.5	6.7	8.2	8.1	7.9	8.0
1000	5.3	4.9	5.0	5.3	4.7	4.6	4.5	4.6	4.6	4.4	4.4	4.8	5.4	5.3	5.3	5.4
2000	3.9	3.8	3.8	3.9	3.6	3.5	3.5	3.6	3.5	3.6	3.6	3.6	4.0	4.0	4.0	4.1
4000	3.2	3.2	3.2	3.2	3.0	3.0	2.9	3.0	3.0	3.0	3.0	3.1	3.4	3.3	3.3	3.4
6000	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.6	2.6	2.6
7800	11.6	10.6	11.2	11.7	10.6	10.1	9.9	10.1	10.8	10.3	9.8	10.9	12.4	11.7	11.8	12.2

Device Driver

Device driver is required on Windows 7, but not necessary on Windows 10. The device is enumerated as a USB CDC device, which is a virtual COM port. User may control the device as a regular COM port device in any software develop development environments such as C++, C#, Python, LabVIEW, and so on.

Control Command

Commands written to device must be in string formats, and all return values are in string format as well. The USG device control command are listed below.

Note: A '\n' is needed to been applied to the tail of all the commands.

*IDN?

Query device information, it returns device information in string format.

PATH[space]*value*

Set Active Port Number.

Set *value* = 1 ~ 16 to specify Active Path from COM to Desired Port.

Set *value* = 0 to disable all RF Paths.

This Command returns port number, which is set in string format.