Key Features

- **Wideband 25Mhz-6GHz**
- **Up to 2 Watts RFP**
- **Convenient USB Power Supply**
- **50 Ohm Matched**
- **Programmable via USB port**
- **Solid State Reliability and Switching Speed**
- **Low Insertion Loss**
- **Extremely Affordable and Compact**
- **20GHz Version Available**

DS Instruments

SW6000
General Purpose Solid-State RF Switch Family

SP4T Absorptive RF Switch

Designed for general purpose low power, high-speed switching, the SP4T SW6000 is useful in many RF projects and test settings.

The active port can be set both manually with front control button or via USB serial commands. Micro-USB conveniently powers the device so no additional lab supply or wiring are needed. All ports are DC-blocking for user convenience.

Remote Operation

Industry standard SCPI commands allow the SW6000 to be controlled by any host system with a USB interface.

The USB port is configured as a virtual COM port allowing user software to access change settings on the switch and monitor status easily and without additional drivers.
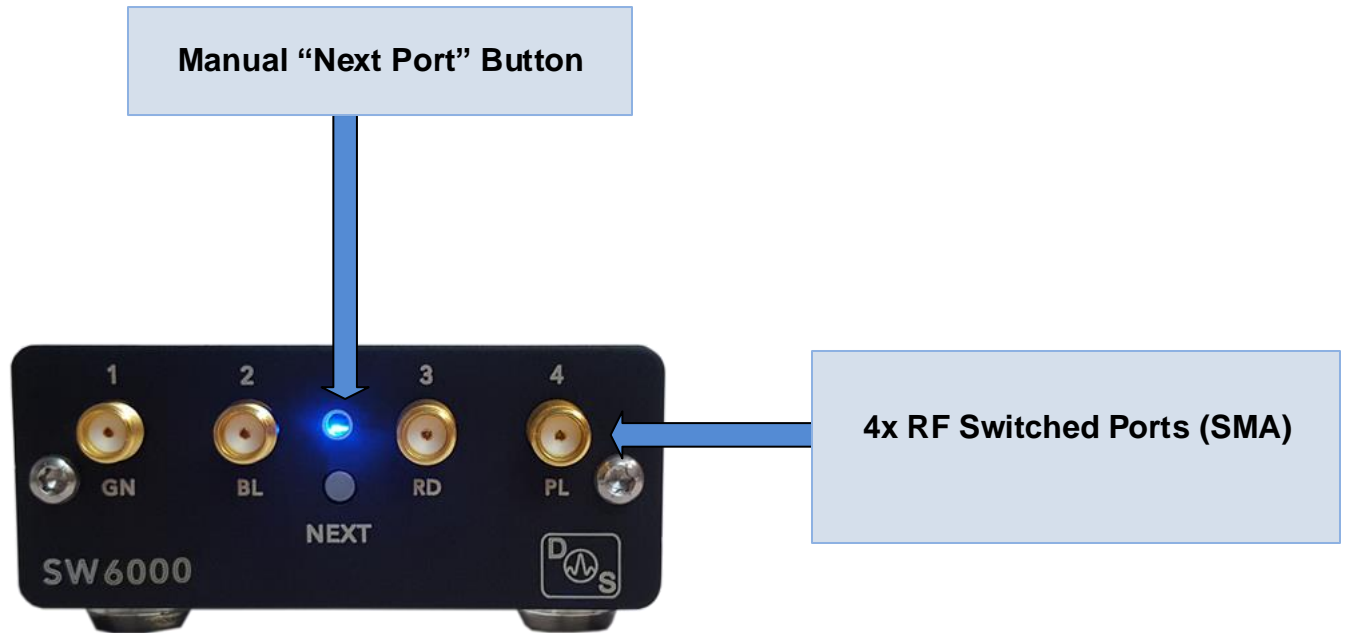
Switch Matrix Applications

- Automated testing environments
- General RF lab use
- Production verification
- Educational / university lab use
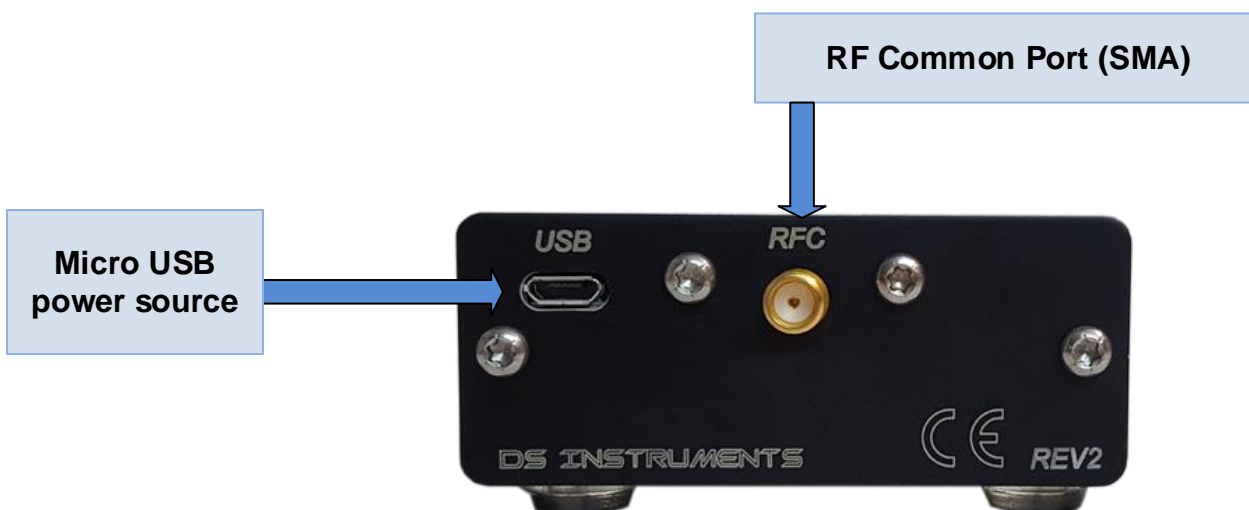- Aerospace / defense research
- Antenna research

SW6000
Usage Notes

Manual "Next Port" Button

4x RF Switched Ports (SMA)

Notes

- Do not apply a signal over the maximum input power
- USB drivers are pre-installed in all modern operating systems
- Serial Settings: 115200bps, 8 bits, 1 Stop, no parity

RF Common Port (SMA)

Micro USB power source

SW6000 – SP4T Switch

TECHNICAL SPECIFICATIONS

*Measurements taken at 25C unless otherwise noted

| Parameter	Min	Max	Typ.	Units
Operating Frequency	25	6000		MHz
Insertion Loss				
1GHz			**1.0**	dB
2GHz			**1.5**	dB
3GHz			**1.7**	dB
4GHz			**2.4**	dB
5GHz			**3.0**	dB
6GHz		4.0	**3.5**	dB
Isolation				
1GHz			**59**	dB
2GHz			**52**	dB
4GHz			**42**	dB
6GHz			**32**	dB
Input Power (through RFC)		**+33**		dBm
Input Power (Into any terminated port)		**+23**		dBm
Switching Time			**25**	uS
Linearity (IP3)			**+56**	dBm
1dB Compression Point			**+35**	dBm
Temperature Range	-20	50	**25**	C
Return Loss (Active Port)			**12**	dB
Return Loss (Terminated Port)			**16**	dB
DC Voltage Allowed on RF ports		+20		V
SMA Port Impedance			**50**	Ohms
DC Current Requirement			**100**	mA
DC Voltage Range (USB)	4.75	5.25	**5.0**	V

Preliminary

Notes:

SW6000

Typical Performance Plots
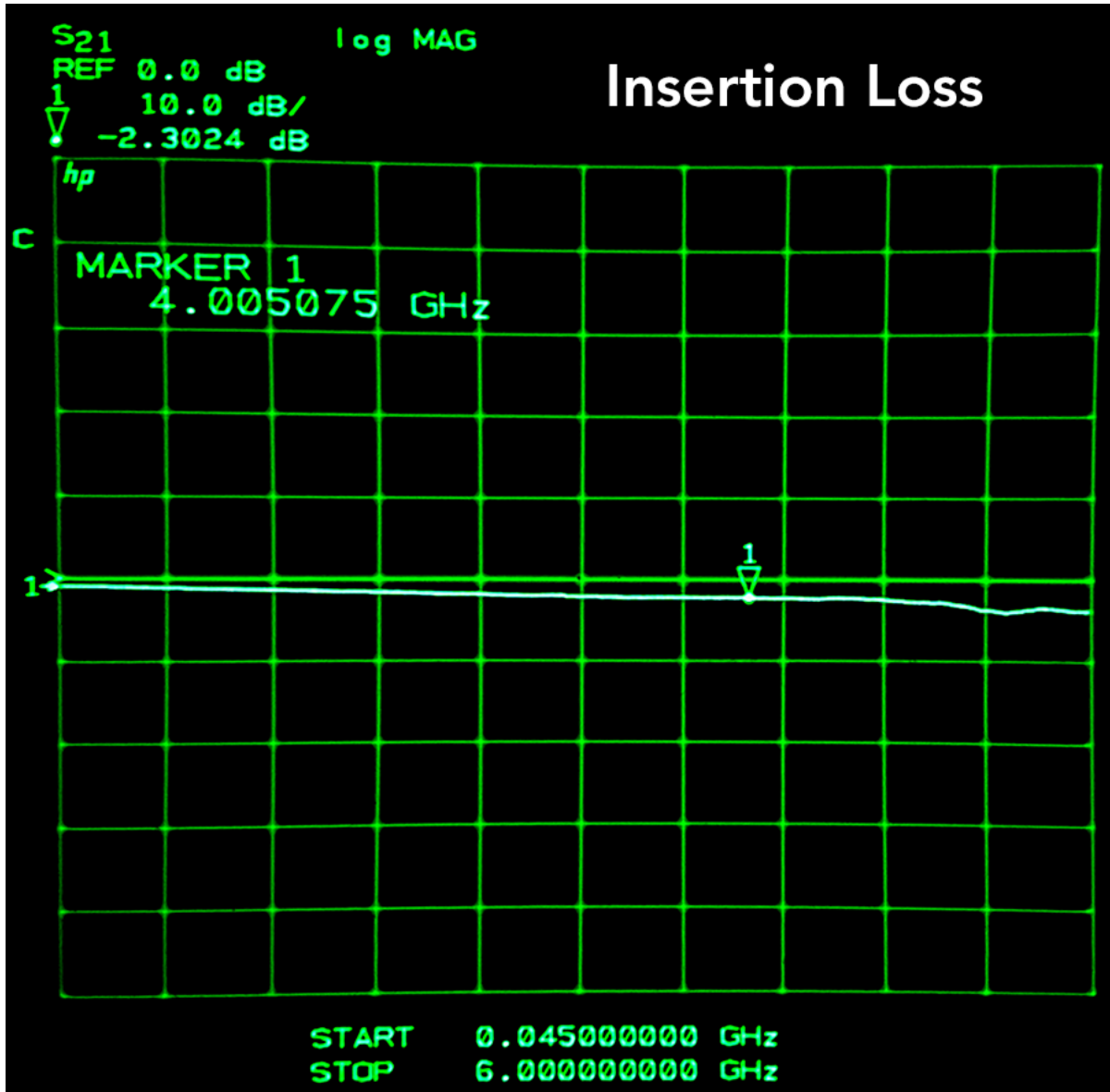
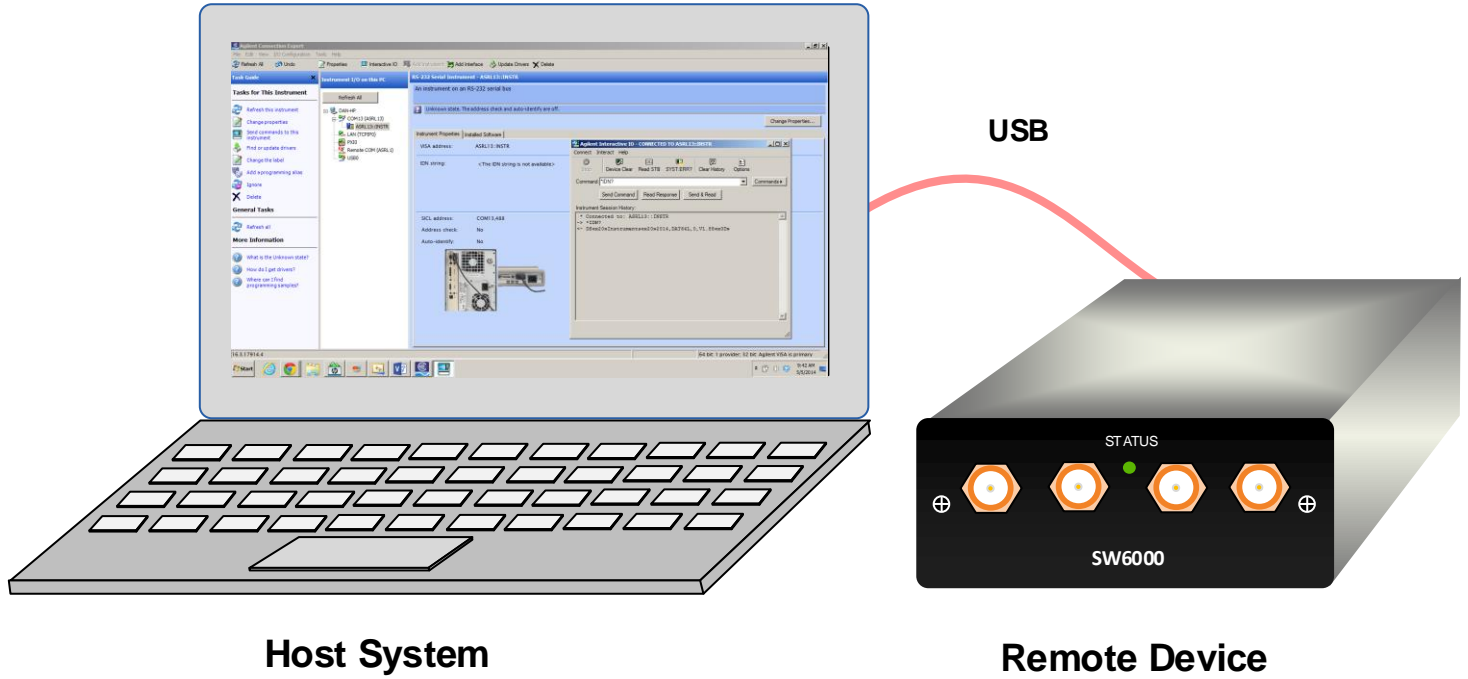Typical insertion loss from RFC to any RF port.
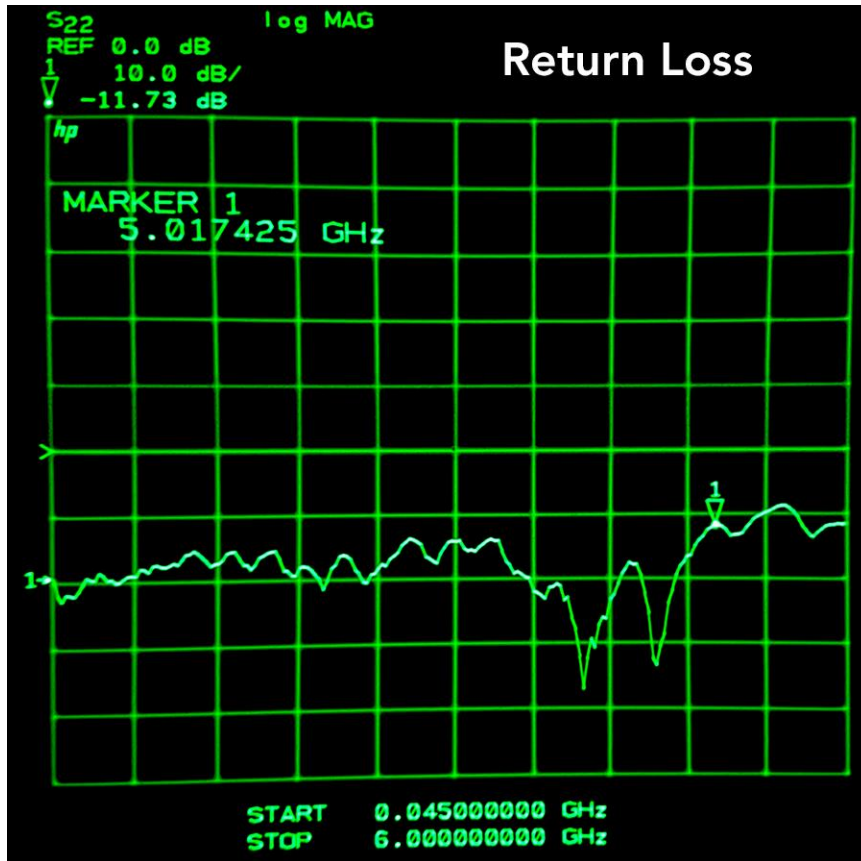
SW6000

Typical return loss on any RF port
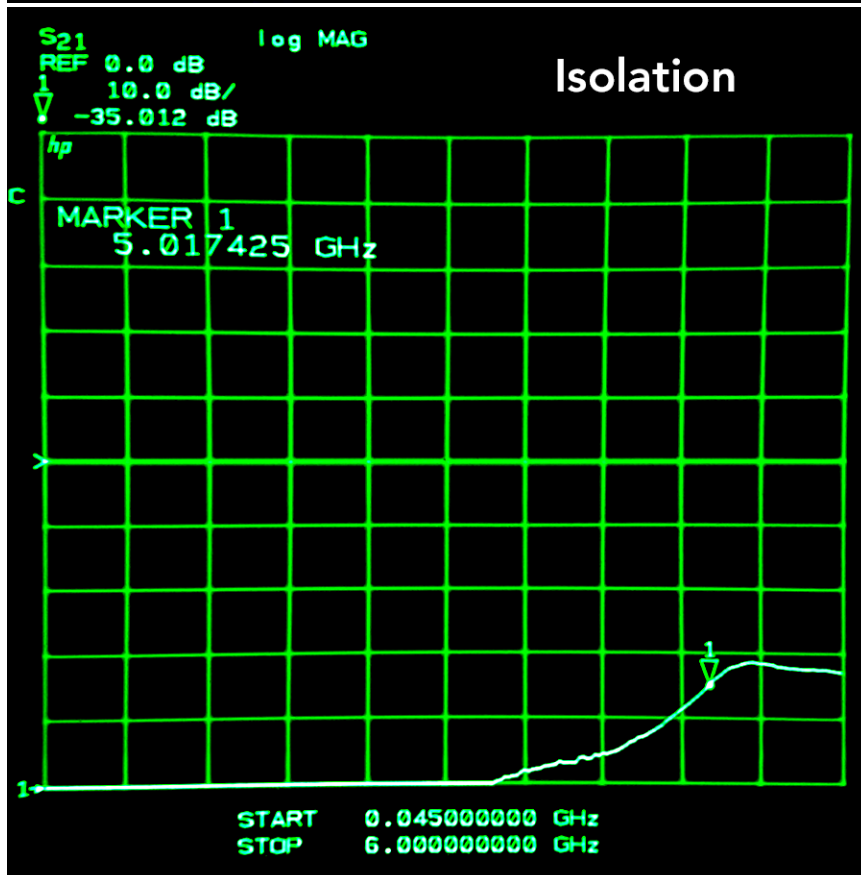
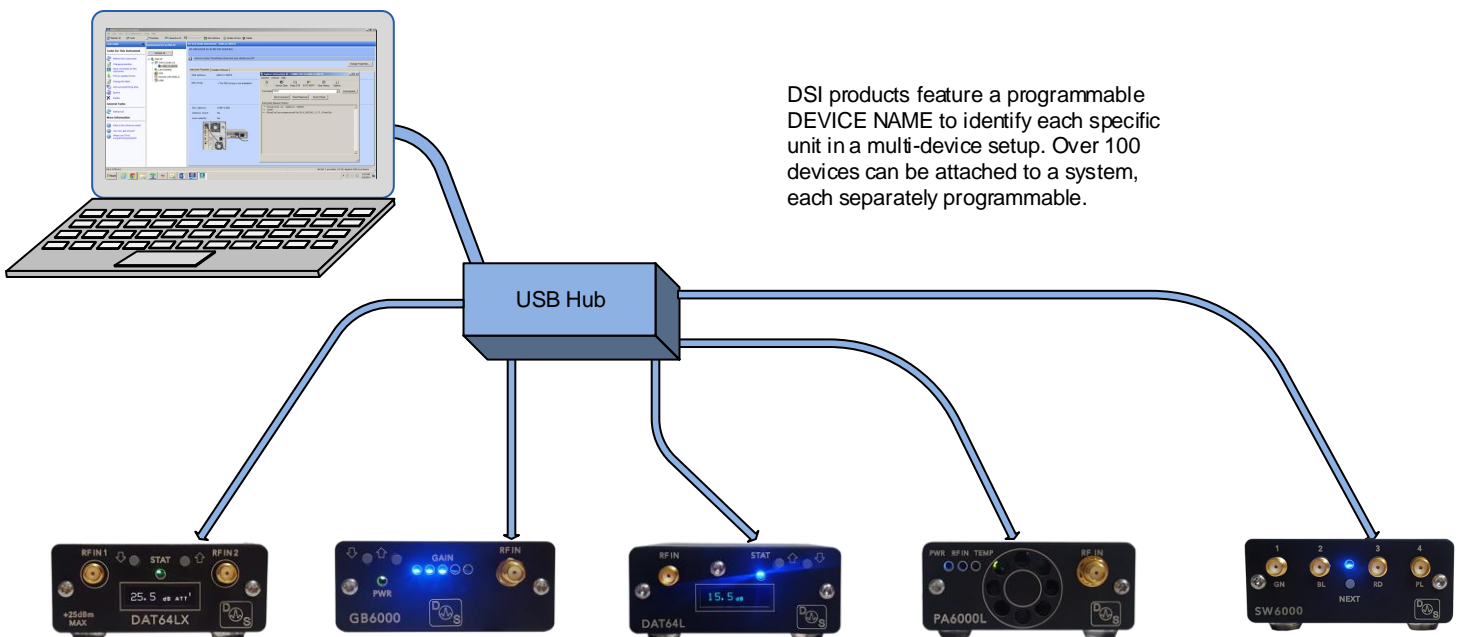Typical leakage between RFC and non-active switch path

SW6000

Typical User connections for Remote Features

USB

Host System

Remote Device

STATUS

SW6000

Multiple Equipment Setup

DSI products feature a programmable DEVICE NAME to identify each specific unit in a multi-device setup. Over 100 devices can be attached to a system, each separately programmable.

USB Hub

RF IN 1   STAT   RF IN 2   GAIN   RF IN   RF IN   STAT   PWR RF IN TEMP   RF IN   1   2   3   4

25.5 dB ATT   15.5 dB   GN   BL   RD   PL

PWR   NEXT

+25dBm MAX   DAT64LX   GB6000   DAT64L   PA6000L   SW6000

SW6000
USB COM Port SCPI Commands

```
RFO 2                   - Set port 2 as the active port
RFO?                    - Return the active port number
*UNITNAME TomJ          - Set a custom nickname for this unit
*UNITNAME ?             - Return user set device nickname
*IDN?                   - Return standard identification string
*RST                    - Reset device

                    (115200 Baud)
```
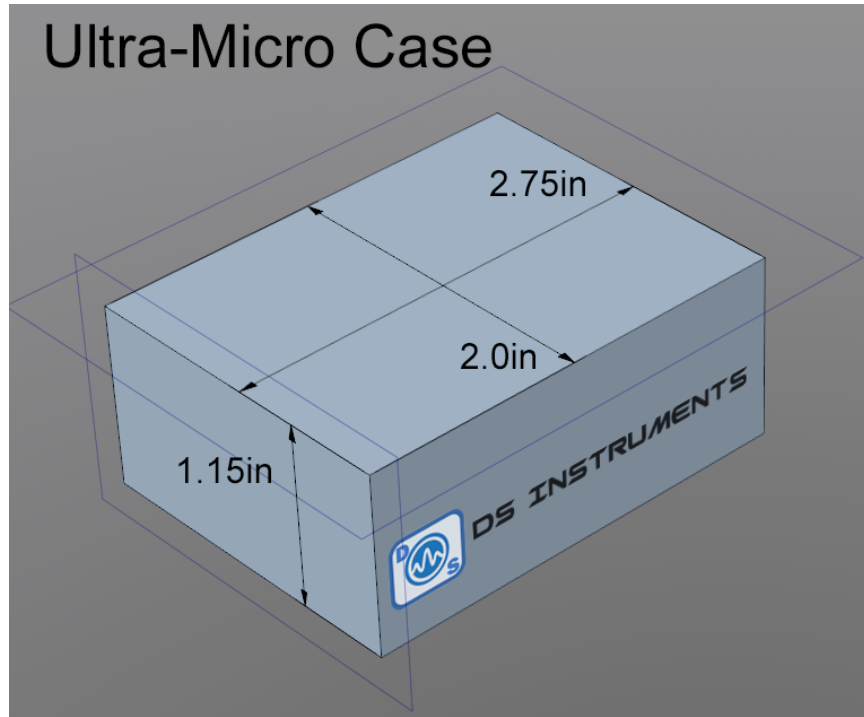
Included Windows GUI

Ultra-Micro Case

2.75in

2.0in

1.15in

DS INSTRUMENTS

SW6000 – SP4T RF Switch

Ordering Information

SW6000, 25MHz - 6GHz, SP4T RF Switch Matrix	**$409.00**
SW204KU, 1 - 20GHz, SP4T RF Switch Matrix	**$849.00**

Contact Information

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