*Solid state*

# USB / TTL RF SP16T Switch

# USB-1SP16T-83H

50Ω 1 to 8000 MHz

## The Big Deal

- Very high isolation, 90 dB typ
- High speed switching, 5.5 µs typ
- High power handling, +30 dBm max
- USB & TTL power & control




**Software Package**

Case Style: RB2574

| Model No. | Description | Qty. |
|---|---|---|
| **USB-1SP16T-83H** | **Switch Matrix** | **1** |
| | **Included Accessories** | |
| MUSB-CBL-3+ | 2.6 ft USB cable | 1 |

## Typical Applications

- Cellular handset / BTS testing
- High volume production testing / ATE
- Design verification testing
- RF signal routing / switch matrices

***RoHS Compliant***

*See our web site for RoHS Compliance methodologies and qualifications*

## Product Overview

Mini-Circuits' USB-1SP16T-83H is a high isolation (90 dB typical), absorptive SP16T switch with USB and TTL control. The fast switching, solid state switch operates from 1 MHz to 8000 MHz with 5.5 µs typical switching speed and high linearity (+50 dBm typ IP3) which allow the model to be used for a wide variety of RF applications.

Full software support is provided for USB control, including our user-friendly GUI application for Windows and a full API with programming instructions for Windows and Linux environments (both 32-bit and 64-bit systems). The latest version of the full software package can be downloaded from **https://www.minicircuits.com/softwaredownload/solidstate.html** at any time.

The USB-1SP16T-83H is housed in a low profile, rugged metal case (10.98" x 2.50" x 0.6") with 17 SMA (F) connectors (COM, and J1 to J16), a USB Mini-B port and a D-Sub 9 pin port for power and TTL control.

## Key Features

| Feature | Advantages |
|---|---|
| RF SP16T absorptive switch | Wideband (1 to 8000 MHz) with high isolation (90 dB typ.), and high power rating (+30 dBm through path) makes this switch suitable for a wide range of applications. |
| High Linearity (IP3 +50 dBm typ.) | Results in little or negligible inter-modulation generation, meeting requirements for digital communications signals |
| Internal DC Blocking capacitors at RF ports | No need for external DC blocking circuitry |
| Full software support included | Mini-Circuits' full software package, programming and user manual are available for down load from **https://www.minicircuits.com/softwaredownload/solidstate.html** at no extra cost. |

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## Electrical Specifications @ 0 to 50°C

| Parameter | Port | Conditions | Min. | Typ. | Max. | Units |
|---|---|---|---|---|---|---|
| Operating Frequency | | | 1 | | 8000 | MHz |
| Insertion Loss | COM to any active port | 1 to 3000 MHz | – | 5.5 | 7.5 | dB |
| | | 3000 to 7000 MHz | – | 7.5 | 11.0 | |
| | | 7000 to 8000 MHz | – | 9.5 | 13.0 | |
| Isolation | Between any ports J1 to J16 | 1 to 3000 MHz | 63 | 90 | – | dB |
| | | 3000 to 7000 MHz | 67 | 88 | – | |
| | | 7000 to 8000 MHz | 60 | 78 | – | |
| | COM to any terminated port @ disconnected state | 1 to 3000 MHz | 80 | 100 | – | |
| | | 3000 to 7000 MHz | 83 | 100 | – | |
| | | 7000 to 8000 MHz | 75 | 100 | – | |
| | COM to any terminated port @ active states | 1 to 3000 MHz | 67 | 85 | – | |
| | | 3000 to 7000 MHz | 67 | 85 | – | |
| | | 7000 to 8000 MHz | 62 | 78 | – | |
| VSWR | COM port @active states | 1 to 3000 MHz | – | 1.25 | – | :1 |
| | | 3000 to 7000 MHz | – | 1.45 | – | |
| | | 7000 to 8000 MHz | – | 1.50 | – | |
| | Any port connected to COM @ active states | 1 to 3000 MHz | – | 1.25 | – | |
| | | 3000 to 7000 MHz | – | 1.40 | – | |
| | | 7000 to 8000 MHz | – | 1.35 | – | |
| | Any terminated port (includes COM in disconnected state) | 1 to 3000 MHz | – | 1.25 | – | |
| | | 3000 to 7000 MHz | – | 1.20 | – | |
| | | 7000 to 8000 MHz | – | 1.30 | – | |
| Power Input @1 dB Compression [1] | COM to any active port | 10 to 8000 MHz | – | +31.5 | – | dBm |
| IP3 [1,2] | COM to any active port | 10 to 5000 MHz | – | +50 | – | dBm |
| | | 5000 to 8000 MHz | – | +45 | – | |
| Switching Time [3] | – | – | – | 5.5 | – | µsec |
| Rated voltage | USB or D-Sub port | – | 4.75 | 5 | 5.25 | V |
| Rated Current | | – | – | 60 | 90 | mA |
| Operating RF Input Power | Through path | Hot Switching | – | – | +20 | dBm |
| | | Cold switching: 1 - 10 MHz | Derate Linearly from +30 dBm @10 MHz to +25 dBm @ 1 MHz | | | |
| | | Cold switching: 10 - 8000 MHz | – | – | +30 | |
| | Any terminated port | – | – | – | +25 | |

[1] Compression and IP3 may degrade below 10 MHz.
[2] IP3 Tested with 1 MHz span between signals, +5 dBm per tone.
[3] Switching time spec represents the time that the RF signal paths are interrupted during switching and thus is specified without communication delays.

## Absolute Maximum Ratings

| | | |
|---|---|---|
| Operating Temperature | | 0°C to 50°C |
| Storage Temperature | | -20°C to 60°C |
| DC supply voltage max. | | 6V |
| RF power into termination | | +26 dBm |
| RF power @ Through path | 1 to 10 MHz | Derate linearly from +31 dBm @ 10 MHz to +30 dBm @1 MHz |
| | 10 to 8000 MHz | +31 dBm |
| DC voltage @ RF Ports | | 16V |

Permanent damage may occur if any of these limits are exceeded. Operating in the range between operating power limits and absolute maximum ratings for extended periods of time may result in reduced life and reliability.

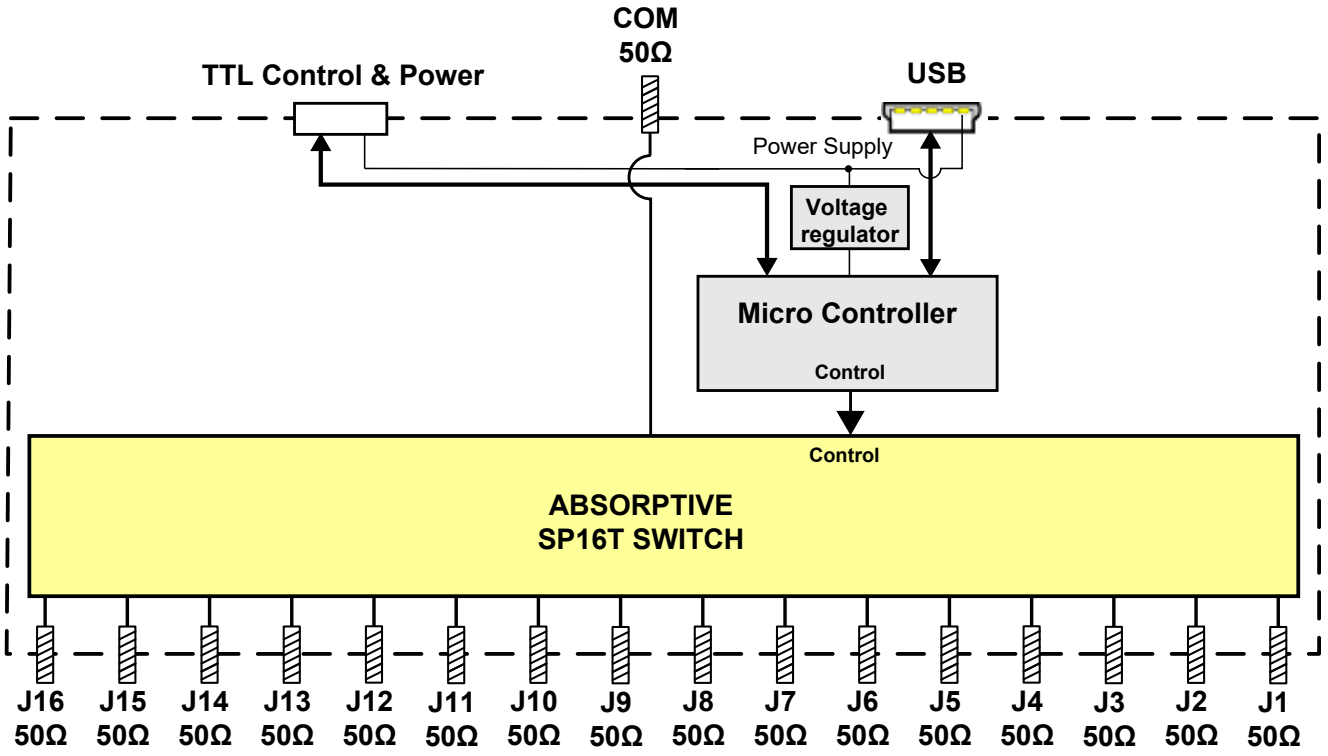
## Connections

| | |
|---|---|
| RF SP16T Switch (J1 to J16, COM) | (SMA female) |
| USB | (USB type Mini-B receptacle) |
| TTL control & power | (9 pin D-sub - Female)* |

### *9 Pin D-Sub Pin Connections

| PIN Number | Function |
|---|---|
| 1 | Vcc |
| 2 | GND |
| 3 | D0 |
| 4 | D1 |
| 5 | D2 |
| 6 | D3 |
| 7 | D4 |
| 8 | Not Connected |
| 9 | Not Connected |

## Simplified Diagram



### TTL communication parameters

| Parameter | Conditions | | Min. | Typ. | Max. | Units |
|---|---|---|---|---|---|---|
| Voltage levels | Logic High Voltage | Input | 2.0 | – | 3.3 | V |
| | Logic Low Voltage | Input | 0 | – | 0.8 | |

The USB-1SP16T-83H TTL control interface consists of 5 unlatched parallel control bits that select the desired switch state, as shown in the truth table below. The parallel control does not have any latch and thus will respond immediately to any change.

Connecting the switch to USB control and establishing USB communication will disable the TTL control until the switch is reset by disconnecting and then reconnecting power.

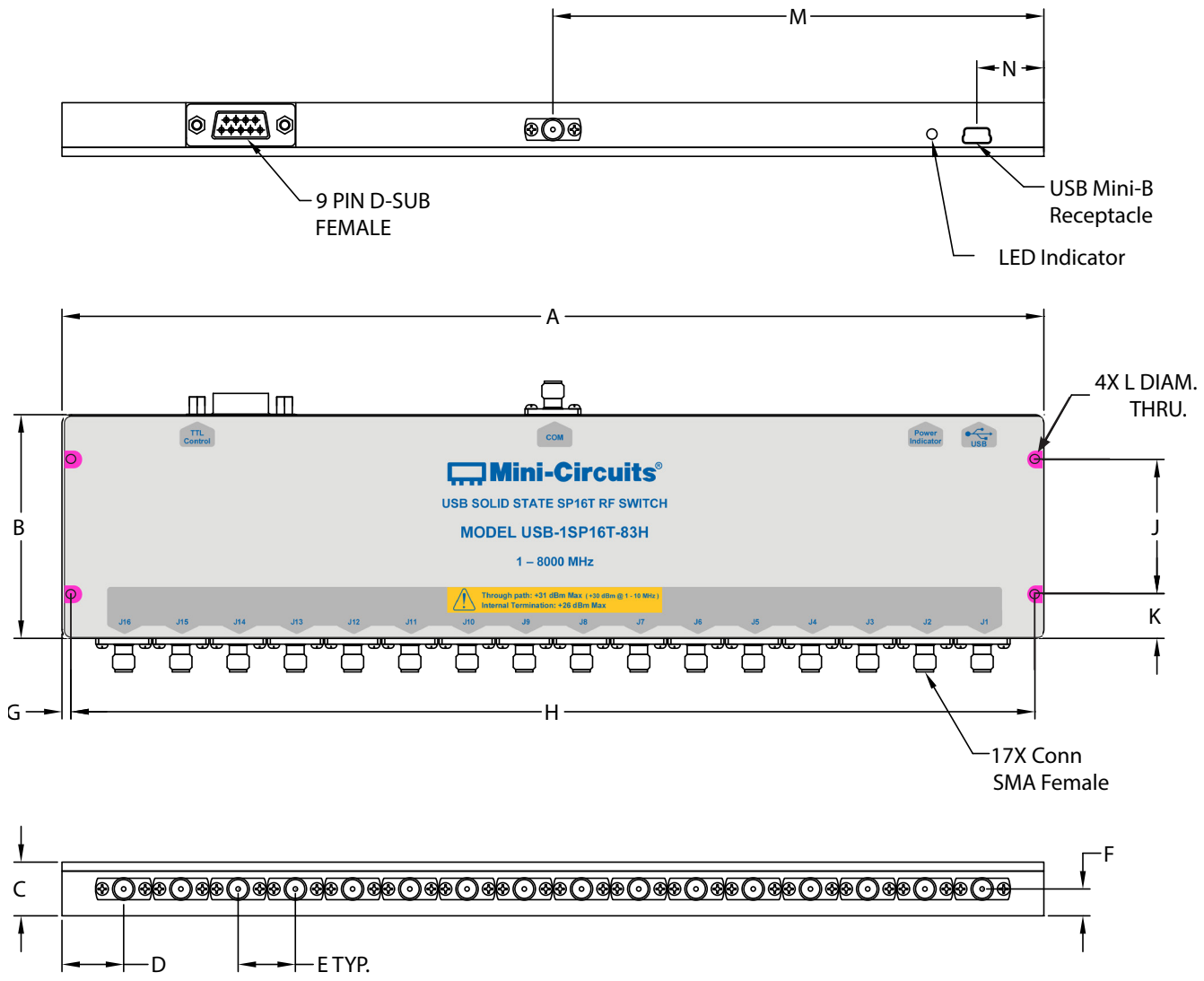
All TTL controls are connected with internal pull-down resistors so the default state of the switch is disconnected state.

Power can be provided via either the D-Sub port or USB port, regardless of the control method used.

| Switch state | Control Bits | | | | |
|---|---|---|---|---|---|
| | D0 | D1 | D2 | D3 | D4 |
| Disconnected | Logic Low | Logic Low | Logic Low | Logic Low | Logic Low |
| COM -> 1 | **Logic High** | Logic Low | Logic Low | Logic Low | Logic Low |
| COM -> 2 | Logic Low | **Logic High** | Logic Low | Logic Low | Logic Low |
| COM -> 3 | **Logic High** | **Logic High** | Logic Low | Logic Low | Logic Low |
| COM -> 4 | Logic Low | Logic Low | **Logic High** | Logic Low | Logic Low |
| COM -> 5 | **Logic High** | Logic Low | **Logic High** | Logic Low | Logic Low |
| COM -> 6 | Logic Low | **Logic High** | **Logic High** | Logic Low | Logic Low |
| COM -> 7 | **Logic High** | **Logic High** | **Logic High** | Logic Low | Logic Low |
| COM -> 8 | Logic Low | Logic Low | Logic Low | **Logic High** | Logic Low |
| COM -> 9 | **Logic High** | Logic Low | Logic Low | **Logic High** | Logic Low |
| COM -> 10 | Logic Low | **Logic High** | Logic Low | **Logic High** | Logic Low |
| COM -> 11 | **Logic High** | **Logic High** | Logic Low | **Logic High** | Logic Low |
| COM -> 12 | Logic Low | Logic Low | **Logic High** | **Logic High** | Logic Low |
| COM -> 13 | **Logic High** | Logic Low | **Logic High** | **Logic High** | Logic Low |
| COM -> 14 | Logic Low | **Logic High** | **Logic High** | **Logic High** | Logic Low |
| COM -> 15 | **Logic High** | **Logic High** | **Logic High** | **Logic High** | Logic Low |
| COM -> 16 | Logic Low | Logic Low | Logic Low | Logic Low | **Logic High** |

All inactive ports will be internally terminated to 50 Ω.
In disconnected state, all ports including COM port will be terminated internally.
Note maximum input power to internal termination listed on page 2 & 3.

## Outline Drawing (RB2574)

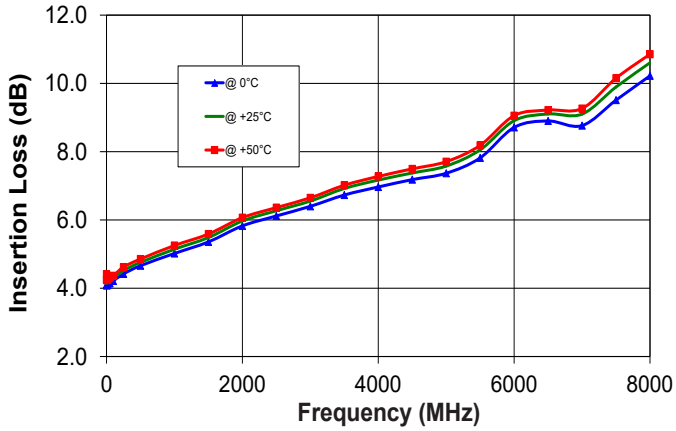



## Outline Dimensions ( inch / mm )

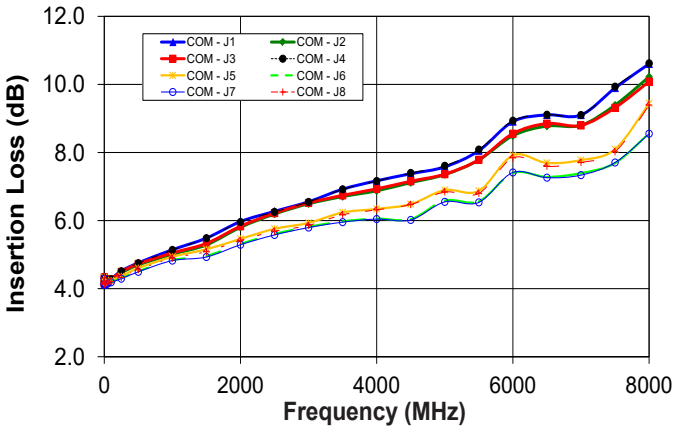
| A | B | C | D | E | F | G | H | J | K | L | M | WT. GRAMS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **10.98** | **2.50** | **0.60** | **0.69** | **0.640** | **0.300** | **0.10** | **10.780** | **1.500** | **0.50** | **0.106** | **5.49** | **650** |
| 278.9 | 63.5 | 15.24 | 17.53 | 16.26 | 7.62 | 2.54 | 273.81 | 38.10 | 12.7 | 2.69 | 139.45 | |

## Typical Performance Curves

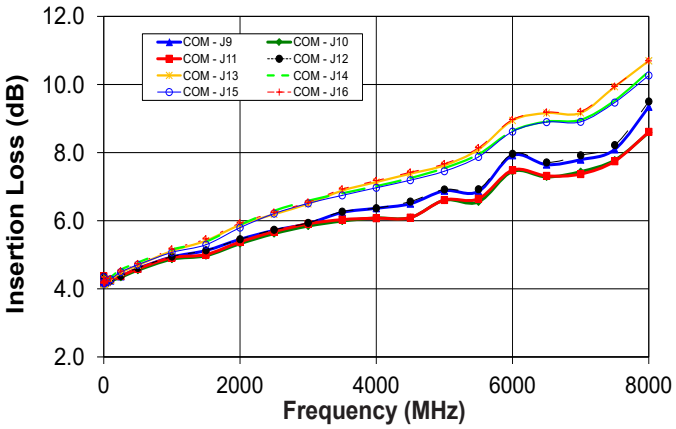
### Insertion Loss over Temp.



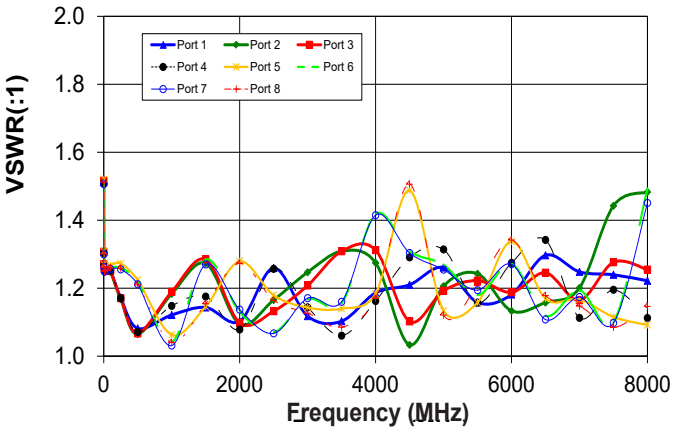

### Insertion Loss of outputs J1-J8 in switch



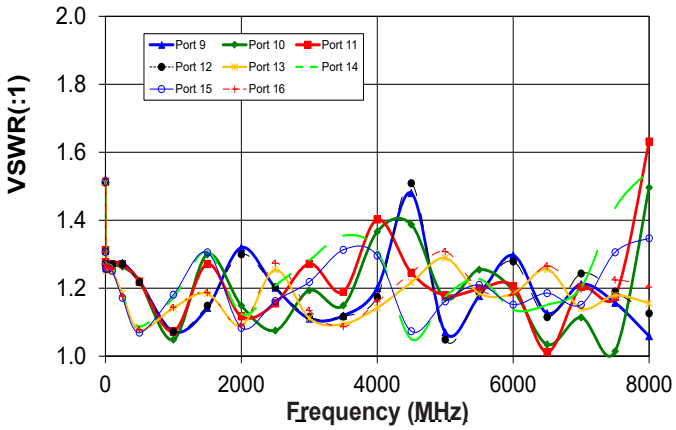

### Insertion Loss of outputs J9-J16 in switch




### VSWR of active ports J1- J8

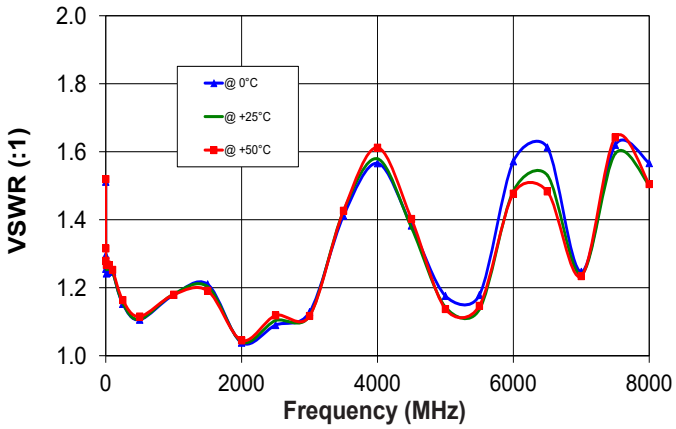



### VSWR of active ports J9- J16

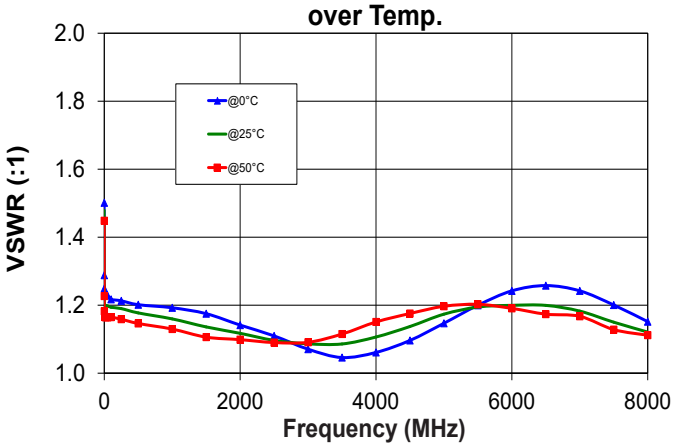


## Typical Performance Curves

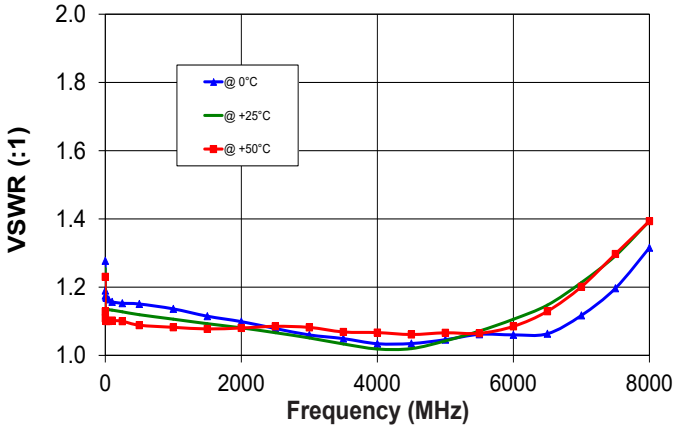
### VSWR Common Port (Active) over Temp.



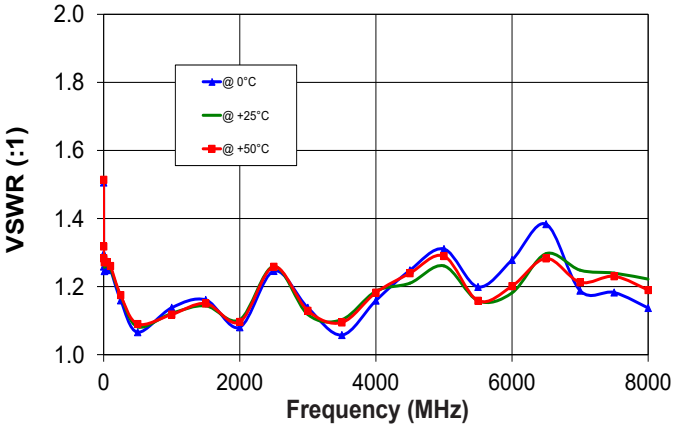

### VSWR Common Port (Terminated) over Temp.



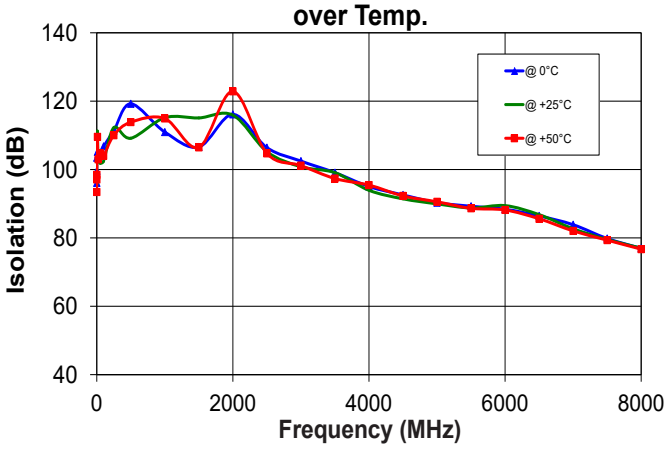

### VSWR Output (Terminated) over Temp.



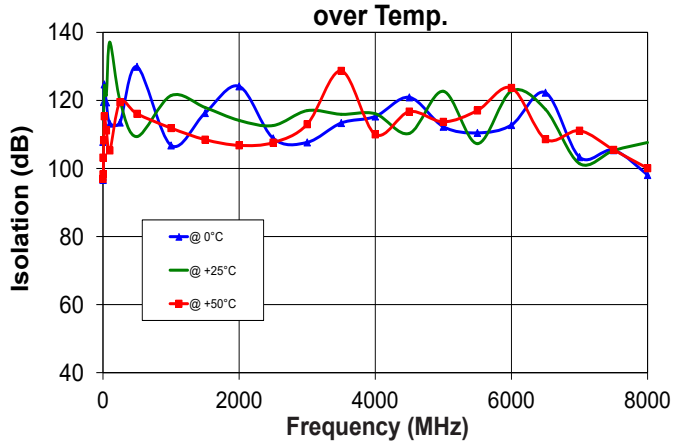

### VSWR Output (Active) over Temp.



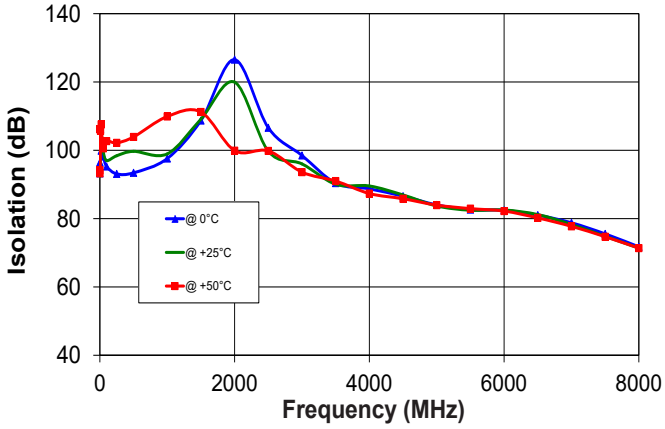

### Isolation COM to J2 with J1 active over Temp.



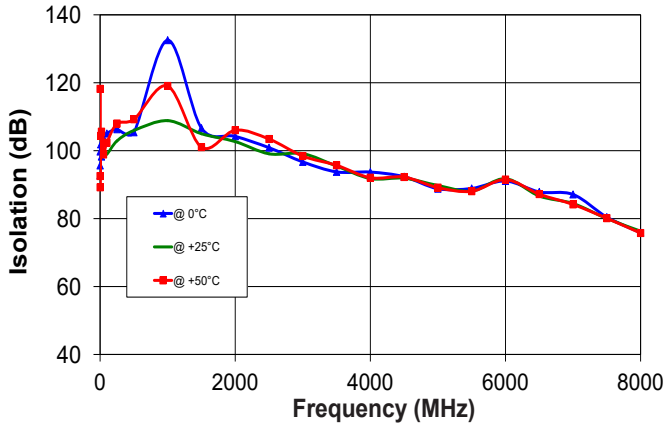

### Isolation COM to J1 with J16 active over Temp.



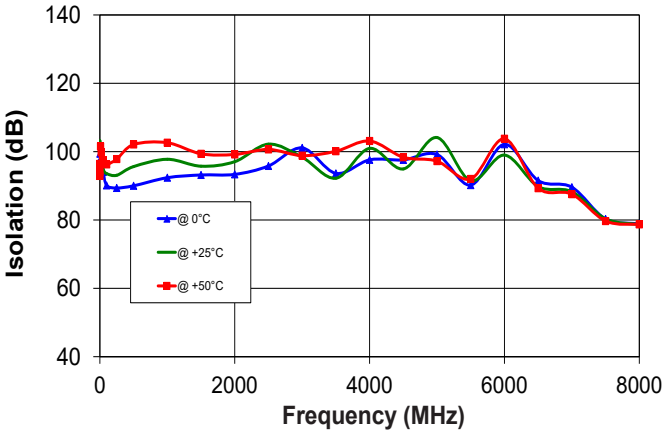
**Isolation COM to J8 with J7 active over Temp**



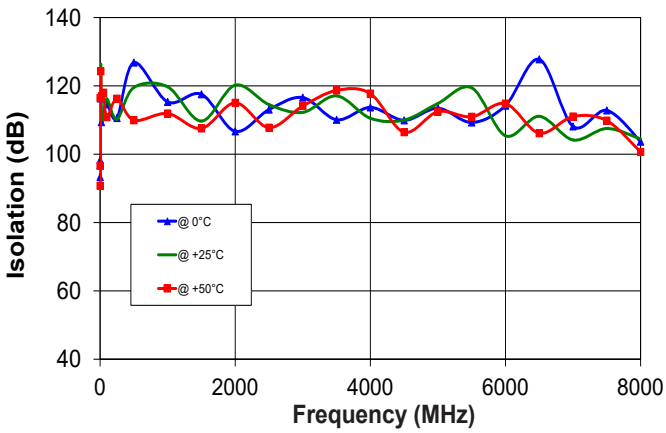

**Isolation J1 to J2 with J1 active over Temp**



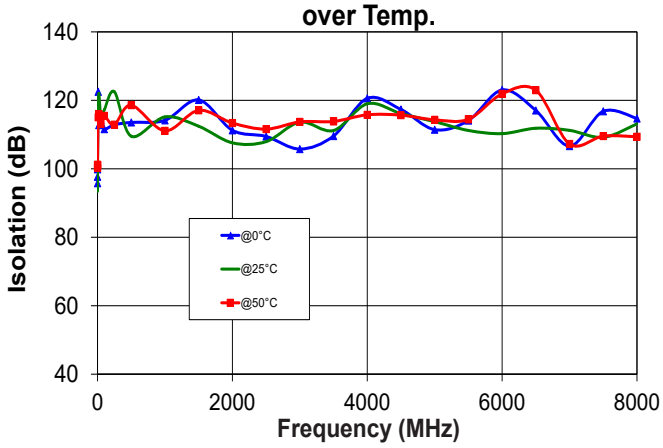

**Isolation J7 to J8 with J7 active over Temp.**




**Isolation J1 to J16 with J1 active over Temp**




**Isolation COM to J1 @ Disconnected State over Temp.**



### Software & Documentation Download:

- Mini-Circuits' full software and support package including user guide, Windows GUI, DLL files, programming manual and examples can be downloaded free of charge from https://www.minicircuits.com/softwaredownload/solidstate.html
- Please contact **testsolutions@minicircuits.com** for support

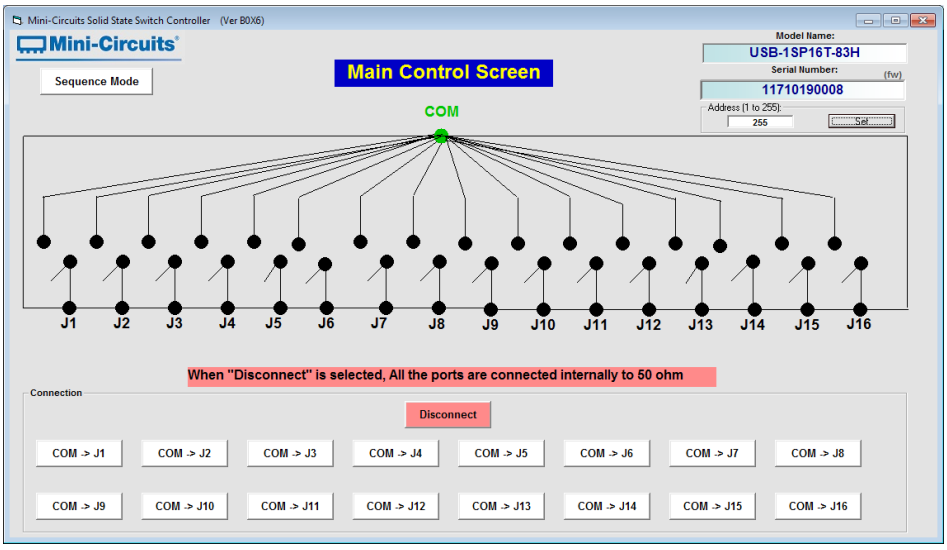
### Minimum System Requirements

| Parameter | Requirements | |
|---|---|---|
| Interface | USB HID or TTL | |
| System requirements | GUI: | Windows 32 & 64 bit systems from Windows 98 up to Windows 10 |
| | USB API (ActiveX & .Net) | Windows 32 & 64 bit systems with ActiveX or .Net support from Windows 98 up to Windows 10 |
| | TTL control | Any computer with a suitable I/O port |
| | USB direct programming support | Linux, Windows systems from Windows 98 up to Windows 10 |
| Hardware | Pentium® II or higher, RAM 256 MB | |

### Graphical User Interface (GUI) for Windows

### Key Features:

- Set each switch manually
- Set timed sequence of switching states
- Configure switch address and upgrade Firmware




### Application Programming Interface (API)

**Programming Manual:** https://www.minicircuits.com/softwaredownload/Prog_Manual-H_Series_Switches.pdf

### Windows Support:

- API DLL files exposing the full switch functionality
  - ActiveX COM DLL file for creation of 32-bit programs
  - .Net library DLL file for creation of 32 / 64-bit programs
- Supported by most common programming environments (refer to application note AN-49-001 for summary of tested environments)

### Linux Support:

- Full switch control in a Linux environment is achieved by way of USB interrupt commands.

## Ordering, Pricing & Availability Information see our web site

| Model | Description |
|---|---|
| USB-1SP16T-83H | USB / TTL RF SP16T Switch |

| Included Accessories | Part No. | Description |
|---|---|---|
|  | MUSB-CBL-3+ | 2.6 ft (0.8 m) USB Cable: USB type A(Male) to USB type Mini-B(Male) |

| Optional Accessories | Description |
|---|---|
| MUSB-CBL-3+ (Spare) | 2.6 ft (0.8 m) USB Cable: USB type A(Male) to USB type Mini-B(Male) |
| MUSB-CBL-7+ | 6.6 ft (2.0 m) USB Cable: USB type A(Male) to USB type Mini-B(Male) |
| D-SUB9-MF-6+ | 6 ft TTL Cable: 9 pin D-sub(Male) to 9 pin D-sub(Female) |
| USB-AC/DC-5+ | AC/DC +5V power adaptor with USB connector [4,5] |

[4] The USB-AC/DC-5 may be used to provide power via USB port when control is via TTL.
[5] Includes power plugs for US, UK, EU, IL, AU & China. Plugs for other countries are also available, if you need a power plug for a country not listed please contact testsolutions@minicircuits.com

### Additional Notes

A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.

B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.

C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

# Solid State
# USB RF SP16T Switch USB-1SP16T-83H

## *Typical Performance Data*

TEST CONDITIONS: @Temperature = 0°C, Pin=8dBm

| FREQUENCY (MHz) | INSERTION LOSS (dB) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | COM-J1 | COM-J2 | COM-J3 | COM-J4 | COM-J5 | COM-J6 | COM-J7 | COM-J8 |
| 0.1 | 4.77 | 4.75 | 4.78 | 4.77 | 4.80 | 4.74 | 4.74 | 4.77 |
| 0.5 | 4.10 | 4.08 | 4.10 | 4.10 | 4.10 | 4.07 | 4.07 | 4.09 |
| 1 | 4.08 | 4.05 | 4.08 | 4.08 | 4.07 | 4.04 | 4.05 | 4.06 |
| 5 | 4.08 | 4.05 | 4.08 | 4.08 | 4.07 | 4.04 | 4.05 | 4.06 |
| 10 | 4.09 | 4.06 | 4.08 | 4.08 | 4.08 | 4.04 | 4.05 | 4.06 |
| 20 | 4.10 | 4.07 | 4.10 | 4.10 | 4.09 | 4.05 | 4.06 | 4.07 |
| 50 | 4.14 | 4.11 | 4.13 | 4.14 | 4.12 | 4.07 | 4.08 | 4.10 |
| 100 | 4.21 | 4.18 | 4.20 | 4.21 | 4.16 | 4.12 | 4.13 | 4.15 |
| 200 | 4.35 | 4.31 | 4.33 | 4.35 | 4.23 | 4.18 | 4.19 | 4.21 |
| 400 | 4.61 | 4.55 | 4.58 | 4.60 | 4.39 | 4.32 | 4.32 | 4.36 |
| 600 | 4.66 | 4.61 | 4.63 | 4.65 | 4.57 | 4.47 | 4.48 | 4.54 |
| 800 | 4.74 | 4.64 | 4.67 | 4.74 | 4.72 | 4.62 | 4.63 | 4.70 |
| 1000 | 5.02 | 4.89 | 4.92 | 5.02 | 4.81 | 4.71 | 4.72 | 4.79 |
| 1200 | 5.19 | 5.09 | 5.11 | 5.18 | 4.88 | 4.76 | 4.77 | 4.84 |
| 1400 | 5.27 | 5.11 | 5.14 | 5.27 | 4.96 | 4.80 | 4.79 | 4.91 |
| 1600 | 5.47 | 5.28 | 5.32 | 5.47 | 5.07 | 4.87 | 4.87 | 5.04 |
| 1800 | 5.69 | 5.56 | 5.59 | 5.68 | 5.20 | 5.00 | 5.00 | 5.17 |
| 2000 | 5.83 | 5.67 | 5.69 | 5.82 | 5.31 | 5.16 | 5.17 | 5.29 |
| 2200 | 5.92 | 5.73 | 5.77 | 5.92 | 5.42 | 5.30 | 5.31 | 5.40 |
| 2400 | 6.03 | 5.95 | 5.97 | 6.02 | 5.54 | 5.40 | 5.41 | 5.51 |
| 2600 | 6.21 | 6.10 | 6.12 | 6.20 | 5.63 | 5.48 | 5.49 | 5.59 |
| 2800 | 6.30 | 6.20 | 6.23 | 6.29 | 5.69 | 5.56 | 5.57 | 5.64 |
| 3000 | 6.40 | 6.35 | 6.37 | 6.39 | 5.76 | 5.65 | 5.66 | 5.72 |
| 3200 | 6.57 | 6.43 | 6.45 | 6.57 | 5.90 | 5.72 | 5.73 | 5.87 |
| 3400 | 6.64 | 6.52 | 6.54 | 6.64 | 6.03 | 5.77 | 5.78 | 6.00 |
| 3600 | 6.85 | 6.56 | 6.59 | 6.85 | 6.05 | 5.83 | 5.84 | 6.01 |
| 3800 | 6.95 | 6.61 | 6.64 | 6.95 | 6.04 | 5.89 | 5.90 | 6.01 |
| 4000 | 6.97 | 6.71 | 6.75 | 6.97 | 6.16 | 5.89 | 5.90 | 6.15 |
| 4200 | 7.17 | 6.62 | 6.68 | 7.17 | 6.31 | 5.81 | 5.82 | 6.31 |
| 4400 | 7.17 | 6.75 | 6.79 | 7.18 | 6.33 | 5.79 | 5.80 | 6.33 |
| 4600 | 7.25 | 7.00 | 7.03 | 7.26 | 6.30 | 5.97 | 5.97 | 6.29 |
| 4800 | 7.28 | 6.84 | 6.91 | 7.29 | 6.46 | 6.25 | 6.26 | 6.41 |
| 5000 | 7.37 | 7.13 | 7.13 | 7.38 | 6.69 | 6.39 | 6.39 | 6.65 |
| 5200 | 7.91 | 7.62 | 7.62 | 7.94 | 6.67 | 6.30 | 6.30 | 6.66 |
| 5400 | 7.85 | 7.50 | 7.53 | 7.88 | 6.55 | 6.23 | 6.24 | 6.54 |
| 5600 | 8.07 | 7.80 | 7.78 | 8.11 | 6.84 | 6.50 | 6.52 | 6.77 |
| 5800 | 8.82 | 8.36 | 8.40 | 8.88 | 7.42 | 6.94 | 6.99 | 7.33 |
| 6000 | 8.71 | 8.28 | 8.33 | 8.72 | 7.71 | 7.19 | 7.24 | 7.66 |
| 6200 | 8.68 | 8.30 | 8.33 | 8.71 | 7.60 | 7.16 | 7.18 | 7.58 |
| 6400 | 8.93 | 8.55 | 8.63 | 8.93 | 7.45 | 7.02 | 7.06 | 7.40 |
| 6600 | 8.82 | 8.49 | 8.53 | 8.79 | 7.41 | 7.03 | 7.07 | 7.37 |
| 6800 | 8.71 | 8.44 | 8.44 | 8.72 | 7.36 | 7.09 | 7.10 | 7.36 |
| 7000 | 8.76 | 8.50 | 8.48 | 8.77 | 7.44 | 7.09 | 7.08 | 7.42 |
| 7200 | 8.91 | 8.61 | 8.58 | 8.92 | 7.67 | 7.14 | 7.16 | 7.63 |
| 7400 | 9.14 | 8.84 | 8.78 | 9.16 | 7.74 | 7.28 | 7.33 | 7.70 |
| 7600 | 9.91 | 9.33 | 9.17 | 9.97 | 7.83 | 7.45 | 7.49 | 7.78 |
| 7800 | 10.12 | 9.67 | 9.58 | 10.12 | 8.41 | 7.74 | 7.77 | 8.34 |
| 8000 | 10.22 | 9.90 | 9.73 | 10.26 | 9.16 | 8.25 | 8.30 | 9.11 |
| 8200 | 11.09 | 10.52 | 10.33 | 11.08 | 9.60 | 8.74 | 8.82 | 9.56 |
| 8400 | 11.50 | 10.93 | 10.86 | 11.35 | 9.75 | 9.00 | 9.11 | 9.65 |
| 8500 | 11.42 | 10.95 | 10.86 | 11.28 | 9.75 | 9.03 | 9.15 | 9.64 |

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# Solid State
# USB RF SP16T Switch USB-1SP16T-83H

## *Typical Performance Data*

TEST CONDITIONS: @Temperature = 0°C, Pin=8dBm

| FREQUENCY (MHz) | INSERTION LOSS (dB) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | COM-J9 | COM-J10 | COM-J11 | COM-J12 | COM-J13 | COM-J14 | COM-J15 | COM-J16 |
| 0.1 | 4.80 | 4.79 | 4.82 | 4.80 | 4.76 | 4.83 | 4.78 | 4.77 |
| 0.5 | 4.12 | 4.11 | 4.16 | 4.14 | 4.08 | 4.17 | 4.10 | 4.11 |
| 1 | 4.09 | 4.08 | 4.13 | 4.11 | 4.06 | 4.14 | 4.07 | 4.09 |
| 5 | 4.09 | 4.08 | 4.13 | 4.11 | 4.06 | 4.15 | 4.07 | 4.09 |
| 10 | 4.10 | 4.09 | 4.14 | 4.11 | 4.06 | 4.15 | 4.08 | 4.09 |
| 20 | 4.11 | 4.10 | 4.14 | 4.12 | 4.08 | 4.16 | 4.09 | 4.10 |
| 50 | 4.13 | 4.12 | 4.17 | 4.15 | 4.11 | 4.20 | 4.13 | 4.14 |
| 100 | 4.18 | 4.17 | 4.21 | 4.20 | 4.19 | 4.28 | 4.19 | 4.21 |
| 200 | 4.25 | 4.23 | 4.28 | 4.28 | 4.32 | 4.41 | 4.32 | 4.35 |
| 400 | 4.41 | 4.37 | 4.42 | 4.43 | 4.56 | 4.64 | 4.55 | 4.59 |
| 600 | 4.58 | 4.52 | 4.58 | 4.61 | 4.60 | 4.68 | 4.59 | 4.63 |
| 800 | 4.73 | 4.67 | 4.73 | 4.76 | 4.70 | 4.75 | 4.65 | 4.73 |
| 1000 | 4.83 | 4.76 | 4.82 | 4.85 | 4.99 | 5.03 | 4.93 | 5.04 |
| 1200 | 4.89 | 4.81 | 4.86 | 4.91 | 5.17 | 5.23 | 5.14 | 5.21 |
| 1400 | 4.96 | 4.84 | 4.88 | 4.98 | 5.22 | 5.23 | 5.13 | 5.26 |
| 1600 | 5.07 | 4.90 | 4.95 | 5.08 | 5.40 | 5.36 | 5.26 | 5.44 |
| 1800 | 5.21 | 5.03 | 5.08 | 5.22 | 5.61 | 5.63 | 5.54 | 5.65 |
| 2000 | 5.33 | 5.19 | 5.26 | 5.35 | 5.75 | 5.75 | 5.65 | 5.79 |
| 2200 | 5.43 | 5.34 | 5.42 | 5.46 | 5.86 | 5.83 | 5.73 | 5.90 |
| 2400 | 5.54 | 5.45 | 5.52 | 5.57 | 5.96 | 6.06 | 5.96 | 6.01 |
| 2600 | 5.62 | 5.52 | 5.59 | 5.65 | 6.14 | 6.21 | 6.11 | 6.19 |
| 2800 | 5.68 | 5.61 | 5.68 | 5.71 | 6.24 | 6.31 | 6.22 | 6.29 |
| 3000 | 5.78 | 5.71 | 5.77 | 5.81 | 6.35 | 6.45 | 6.35 | 6.39 |
| 3200 | 5.95 | 5.78 | 5.83 | 5.98 | 6.53 | 6.55 | 6.45 | 6.57 |
| 3400 | 6.08 | 5.82 | 5.87 | 6.12 | 6.62 | 6.63 | 6.54 | 6.66 |
| 3600 | 6.09 | 5.87 | 5.93 | 6.13 | 6.86 | 6.68 | 6.60 | 6.90 |
| 3800 | 6.08 | 5.92 | 5.98 | 6.12 | 6.97 | 6.78 | 6.69 | 7.02 |
| 4000 | 6.20 | 5.93 | 5.95 | 6.23 | 6.98 | 6.88 | 6.80 | 7.01 |
| 4200 | 6.35 | 5.87 | 5.87 | 6.38 | 7.18 | 6.77 | 6.72 | 7.22 |
| 4400 | 6.37 | 5.86 | 5.87 | 6.42 | 7.21 | 6.91 | 6.84 | 7.25 |
| 4600 | 6.36 | 6.02 | 6.08 | 6.42 | 7.29 | 7.15 | 7.09 | 7.32 |
| 4800 | 6.51 | 6.28 | 6.37 | 6.56 | 7.33 | 6.99 | 6.96 | 7.36 |
| 5000 | 6.70 | 6.42 | 6.46 | 6.75 | 7.43 | 7.34 | 7.23 | 7.48 |
| 5200 | 6.67 | 6.34 | 6.34 | 6.73 | 8.01 | 7.86 | 7.77 | 8.07 |
| 5400 | 6.57 | 6.27 | 6.31 | 6.64 | 7.96 | 7.71 | 7.66 | 8.01 |
| 5600 | 6.87 | 6.51 | 6.65 | 6.95 | 8.11 | 7.99 | 7.87 | 8.15 |
| 5800 | 7.46 | 6.96 | 7.13 | 7.50 | 8.86 | 8.52 | 8.45 | 8.87 |
| 6000 | 7.75 | 7.26 | 7.34 | 7.79 | 8.77 | 8.44 | 8.41 | 8.79 |
| 6200 | 7.65 | 7.25 | 7.26 | 7.71 | 8.78 | 8.51 | 8.45 | 8.77 |
| 6400 | 7.49 | 7.09 | 7.14 | 7.55 | 9.00 | 8.71 | 8.71 | 9.01 |
| 6600 | 7.43 | 7.09 | 7.14 | 7.50 | 8.90 | 8.65 | 8.63 | 8.94 |
| 6800 | 7.39 | 7.16 | 7.13 | 7.51 | 8.83 | 8.63 | 8.59 | 8.88 |
| 7000 | 7.51 | 7.19 | 7.13 | 7.65 | 8.89 | 8.69 | 8.63 | 8.94 |
| 7200 | 7.76 | 7.25 | 7.25 | 7.87 | 9.04 | 8.81 | 8.75 | 9.07 |
| 7400 | 7.80 | 7.39 | 7.40 | 7.92 | 9.25 | 9.01 | 8.92 | 9.27 |
| 7600 | 7.85 | 7.55 | 7.50 | 7.99 | 9.96 | 9.44 | 9.30 | 9.97 |
| 7800 | 8.39 | 7.81 | 7.73 | 8.49 | 10.14 | 9.78 | 9.70 | 10.17 |
| 8000 | 9.08 | 8.26 | 8.23 | 9.17 | 10.33 | 10.03 | 9.88 | 10.36 |
| 8200 | 9.50 | 8.76 | 8.78 | 9.65 | 11.17 | 10.63 | 10.46 | 11.17 |
| 8400 | 9.67 | 9.05 | 9.08 | 9.84 | 11.54 | 11.03 | 10.93 | 11.49 |
| 8500 | 9.69 | 9.10 | 9.13 | 9.87 | 11.49 | 11.06 | 10.95 | 11.44 |

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# Solid State
# USB RF SP16T Switch USB-1SP16T-83H

## *Typical Performance Data*

TEST CONDITIONS: @Temperature = 0°C, Pin=8dBm

| FREQUENCY (MHz) | VSWR, Active Ports (:1) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | COM | J1 | J2 | J3 | J4 | J5 | J6 | J7 | J8 |
| 0.1 | 2.03 | 2.01 | 2.00 | 2.02 | 2.01 | 2.04 | 2.01 | 2.01 | 2.02 |
| 0.5 | 1.30 | 1.30 | 1.29 | 1.30 | 1.29 | 1.30 | 1.29 | 1.29 | 1.29 |
| 1 | 1.26 | 1.26 | 1.25 | 1.26 | 1.26 | 1.26 | 1.25 | 1.25 | 1.25 |
| 5 | 1.24 | 1.24 | 1.24 | 1.24 | 1.24 | 1.24 | 1.24 | 1.24 | 1.24 |
| 10 | 1.24 | 1.25 | 1.24 | 1.24 | 1.24 | 1.24 | 1.24 | 1.24 | 1.24 |
| 20 | 1.24 | 1.25 | 1.24 | 1.25 | 1.25 | 1.25 | 1.24 | 1.24 | 1.24 |
| 50 | 1.25 | 1.25 | 1.24 | 1.25 | 1.25 | 1.25 | 1.24 | 1.25 | 1.25 |
| 100 | 1.25 | 1.25 | 1.24 | 1.25 | 1.25 | 1.26 | 1.26 | 1.25 | 1.26 |
| 200 | 1.19 | 1.20 | 1.20 | 1.20 | 1.20 | 1.26 | 1.25 | 1.25 | 1.25 |
| 400 | 1.02 | 1.03 | 1.04 | 1.04 | 1.04 | 1.25 | 1.23 | 1.23 | 1.23 |
| 600 | 1.20 | 1.17 | 1.16 | 1.16 | 1.16 | 1.18 | 1.18 | 1.18 | 1.17 |
| 800 | 1.29 | 1.28 | 1.29 | 1.30 | 1.28 | 1.07 | 1.10 | 1.09 | 1.08 |
| 1000 | 1.18 | 1.14 | 1.19 | 1.20 | 1.16 | 1.05 | 1.02 | 1.02 | 1.03 |
| 1200 | 1.10 | 1.06 | 1.05 | 1.06 | 1.04 | 1.15 | 1.15 | 1.14 | 1.12 |
| 1400 | 1.21 | 1.14 | 1.25 | 1.26 | 1.16 | 1.17 | 1.26 | 1.24 | 1.16 |
| 1600 | 1.17 | 1.20 | 1.23 | 1.24 | 1.20 | 1.15 | 1.29 | 1.27 | 1.17 |
| 1800 | 1.05 | 1.23 | 1.08 | 1.07 | 1.21 | 1.20 | 1.24 | 1.23 | 1.21 |
| 2000 | 1.04 | 1.08 | 1.09 | 1.09 | 1.08 | 1.27 | 1.14 | 1.14 | 1.26 |
| 2200 | 1.07 | 1.22 | 1.09 | 1.11 | 1.22 | 1.26 | 1.06 | 1.08 | 1.25 |
| 2400 | 1.01 | 1.31 | 1.15 | 1.12 | 1.31 | 1.19 | 1.06 | 1.06 | 1.19 |
| 2600 | 1.18 | 1.18 | 1.14 | 1.11 | 1.19 | 1.17 | 1.05 | 1.04 | 1.15 |
| 2800 | 1.28 | 1.18 | 1.13 | 1.10 | 1.19 | 1.18 | 1.08 | 1.08 | 1.17 |
| 3000 | 1.13 | 1.14 | 1.23 | 1.20 | 1.15 | 1.14 | 1.16 | 1.15 | 1.13 |
| 3200 | 1.41 | 1.03 | 1.22 | 1.20 | 1.04 | 1.03 | 1.21 | 1.20 | 1.03 |
| 3400 | 1.55 | 1.01 | 1.26 | 1.24 | 1.01 | 1.10 | 1.18 | 1.18 | 1.07 |
| 3600 | 1.27 | 1.14 | 1.31 | 1.32 | 1.13 | 1.14 | 1.14 | 1.14 | 1.10 |
| 3800 | 1.48 | 1.21 | 1.19 | 1.22 | 1.22 | 1.07 | 1.25 | 1.25 | 1.03 |
| 4000 | 1.57 | 1.16 | 1.28 | 1.30 | 1.16 | 1.18 | 1.41 | 1.41 | 1.17 |
| 4200 | 1.35 | 1.40 | 1.36 | 1.44 | 1.41 | 1.39 | 1.49 | 1.50 | 1.38 |
| 4400 | 1.41 | 1.39 | 1.15 | 1.21 | 1.43 | 1.50 | 1.41 | 1.42 | 1.50 |
| 4600 | 1.32 | 1.14 | 1.12 | 1.17 | 1.18 | 1.39 | 1.19 | 1.19 | 1.42 |
| 4800 | 1.33 | 1.37 | 1.28 | 1.37 | 1.41 | 1.14 | 1.04 | 1.04 | 1.17 |
| 5000 | 1.18 | 1.31 | 1.22 | 1.21 | 1.32 | 1.10 | 1.24 | 1.25 | 1.10 |
| 5200 | 1.19 | 1.04 | 1.07 | 1.11 | 1.05 | 1.28 | 1.35 | 1.35 | 1.28 |
| 5400 | 1.31 | 1.23 | 1.20 | 1.28 | 1.26 | 1.27 | 1.30 | 1.30 | 1.31 |
| 5600 | 1.12 | 1.10 | 1.24 | 1.14 | 1.06 | 1.10 | 1.14 | 1.12 | 1.14 |
| 5800 | 1.56 | 1.25 | 1.15 | 1.18 | 1.34 | 1.19 | 1.16 | 1.17 | 1.18 |
| 6000 | 1.57 | 1.28 | 1.15 | 1.22 | 1.31 | 1.36 | 1.29 | 1.31 | 1.35 |
| 6200 | 1.40 | 1.13 | 1.09 | 1.02 | 1.19 | 1.34 | 1.29 | 1.28 | 1.35 |
| 6400 | 1.60 | 1.38 | 1.14 | 1.26 | 1.42 | 1.21 | 1.16 | 1.15 | 1.21 |
| 6600 | 1.55 | 1.30 | 1.17 | 1.24 | 1.28 | 1.21 | 1.15 | 1.17 | 1.21 |
| 6800 | 1.42 | 1.20 | 1.12 | 1.16 | 1.17 | 1.24 | 1.24 | 1.24 | 1.26 |
| 7000 | 1.25 | 1.19 | 1.19 | 1.18 | 1.13 | 1.17 | 1.23 | 1.19 | 1.18 |
| 7200 | 1.20 | 1.12 | 1.19 | 1.12 | 1.06 | 1.07 | 1.13 | 1.07 | 1.06 |
| 7400 | 1.48 | 1.20 | 1.35 | 1.23 | 1.16 | 1.03 | 1.05 | 1.03 | 1.03 |
| 7600 | 1.63 | 1.13 | 1.49 | 1.27 | 1.17 | 1.16 | 1.20 | 1.14 | 1.14 |
| 7800 | 1.40 | 1.09 | 1.28 | 1.11 | 1.06 | 1.22 | 1.39 | 1.33 | 1.21 |
| 8000 | 1.57 | 1.14 | 1.48 | 1.26 | 1.10 | 1.11 | 1.49 | 1.50 | 1.16 |
| 8200 | 1.75 | 1.16 | 1.62 | 1.43 | 1.12 | 1.20 | 1.42 | 1.47 | 1.17 |
| 8400 | 1.44 | 1.54 | 1.32 | 1.22 | 1.41 | 1.46 | 1.25 | 1.31 | 1.34 |
| 8500 | 1.24 | 1.60 | 1.31 | 1.16 | 1.47 | 1.55 | 1.19 | 1.24 | 1.42 |

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## *Typical Performance Data*

TEST CONDITIONS: @Temperature = 0°C, Pin=8dBm

| FREQUENCY (MHz) | VSWR, Active Ports (:1) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | J9 | J10 | J11 | J12 | J13 | J14 | J15 | J16 |
| 0.1 | 2.03 | 2.02 | 2.01 | 2.01 | 2.01 | 2.00 | 2.02 | 2.00 |
| 0.5 | 1.30 | 1.30 | 1.30 | 1.30 | 1.29 | 1.30 | 1.30 | 1.29 |
| 1 | 1.26 | 1.26 | 1.27 | 1.26 | 1.25 | 1.27 | 1.26 | 1.26 |
| 5 | 1.25 | 1.24 | 1.25 | 1.25 | 1.24 | 1.25 | 1.24 | 1.24 |
| 10 | 1.25 | 1.24 | 1.25 | 1.25 | 1.24 | 1.25 | 1.24 | 1.24 |
| 20 | 1.25 | 1.24 | 1.26 | 1.25 | 1.24 | 1.26 | 1.24 | 1.25 |
| 50 | 1.26 | 1.25 | 1.26 | 1.26 | 1.25 | 1.26 | 1.25 | 1.25 |
| 100 | 1.27 | 1.26 | 1.27 | 1.27 | 1.25 | 1.26 | 1.25 | 1.25 |
| 200 | 1.27 | 1.26 | 1.27 | 1.27 | 1.21 | 1.21 | 1.20 | 1.20 |
| 400 | 1.25 | 1.24 | 1.24 | 1.25 | 1.05 | 1.04 | 1.04 | 1.05 |
| 600 | 1.18 | 1.18 | 1.17 | 1.17 | 1.18 | 1.18 | 1.16 | 1.17 |
| 800 | 1.06 | 1.09 | 1.07 | 1.06 | 1.30 | 1.32 | 1.30 | 1.30 |
| 1000 | 1.06 | 1.03 | 1.05 | 1.06 | 1.15 | 1.18 | 1.19 | 1.16 |
| 1200 | 1.15 | 1.16 | 1.18 | 1.16 | 1.09 | 1.10 | 1.06 | 1.08 |
| 1400 | 1.16 | 1.27 | 1.26 | 1.17 | 1.18 | 1.31 | 1.28 | 1.19 |
| 1600 | 1.16 | 1.31 | 1.26 | 1.14 | 1.21 | 1.24 | 1.26 | 1.20 |
| 1800 | 1.23 | 1.25 | 1.19 | 1.21 | 1.23 | 1.05 | 1.08 | 1.22 |
| 2000 | 1.30 | 1.16 | 1.13 | 1.29 | 1.08 | 1.12 | 1.08 | 1.09 |
| 2200 | 1.29 | 1.09 | 1.13 | 1.29 | 1.23 | 1.04 | 1.10 | 1.23 |
| 2400 | 1.21 | 1.07 | 1.13 | 1.22 | 1.29 | 1.16 | 1.14 | 1.32 |
| 2600 | 1.17 | 1.07 | 1.12 | 1.18 | 1.16 | 1.19 | 1.13 | 1.19 |
| 2800 | 1.17 | 1.11 | 1.16 | 1.18 | 1.15 | 1.18 | 1.11 | 1.18 |
| 3000 | 1.12 | 1.18 | 1.22 | 1.12 | 1.11 | 1.27 | 1.20 | 1.13 |
| 3200 | 1.03 | 1.22 | 1.24 | 1.02 | 1.03 | 1.26 | 1.20 | 1.05 |
| 3400 | 1.08 | 1.19 | 1.20 | 1.10 | 1.02 | 1.31 | 1.25 | 1.02 |
| 3600 | 1.11 | 1.13 | 1.16 | 1.12 | 1.14 | 1.32 | 1.30 | 1.16 |
| 3800 | 1.05 | 1.21 | 1.26 | 1.06 | 1.19 | 1.19 | 1.19 | 1.23 |
| 4000 | 1.18 | 1.36 | 1.41 | 1.18 | 1.12 | 1.30 | 1.29 | 1.15 |
| 4200 | 1.38 | 1.47 | 1.49 | 1.38 | 1.36 | 1.36 | 1.40 | 1.38 |
| 4400 | 1.50 | 1.45 | 1.40 | 1.50 | 1.37 | 1.13 | 1.19 | 1.38 |
| 4600 | 1.43 | 1.27 | 1.19 | 1.43 | 1.15 | 1.15 | 1.18 | 1.15 |
| 4800 | 1.18 | 1.05 | 1.03 | 1.20 | 1.38 | 1.28 | 1.35 | 1.36 |
| 5000 | 1.06 | 1.14 | 1.21 | 1.03 | 1.31 | 1.18 | 1.18 | 1.31 |
| 5200 | 1.23 | 1.29 | 1.30 | 1.19 | 1.05 | 1.10 | 1.12 | 1.04 |
| 5400 | 1.26 | 1.33 | 1.25 | 1.24 | 1.25 | 1.21 | 1.29 | 1.22 |
| 5600 | 1.11 | 1.22 | 1.12 | 1.17 | 1.09 | 1.21 | 1.14 | 1.14 |
| 5800 | 1.19 | 1.14 | 1.19 | 1.18 | 1.24 | 1.14 | 1.17 | 1.20 |
| 6000 | 1.34 | 1.19 | 1.29 | 1.28 | 1.23 | 1.15 | 1.20 | 1.21 |
| 6200 | 1.32 | 1.20 | 1.25 | 1.28 | 1.13 | 1.08 | 1.02 | 1.08 |
| 6400 | 1.19 | 1.11 | 1.12 | 1.17 | 1.32 | 1.12 | 1.25 | 1.29 |
| 6600 | 1.18 | 1.06 | 1.14 | 1.15 | 1.20 | 1.16 | 1.21 | 1.24 |
| 6800 | 1.22 | 1.14 | 1.20 | 1.23 | 1.13 | 1.11 | 1.15 | 1.17 |
| 7000 | 1.18 | 1.15 | 1.18 | 1.26 | 1.12 | 1.19 | 1.18 | 1.19 |
| 7200 | 1.11 | 1.11 | 1.11 | 1.18 | 1.08 | 1.20 | 1.13 | 1.15 |
| 7400 | 1.03 | 1.05 | 1.03 | 1.11 | 1.18 | 1.36 | 1.23 | 1.24 |
| 7600 | 1.18 | 1.08 | 1.18 | 1.25 | 1.14 | 1.46 | 1.23 | 1.15 |
| 7800 | 1.24 | 1.29 | 1.41 | 1.29 | 1.08 | 1.28 | 1.07 | 1.11 |
| 8000 | 1.11 | 1.49 | 1.53 | 1.11 | 1.18 | 1.57 | 1.31 | 1.21 |
| 8200 | 1.17 | 1.51 | 1.42 | 1.15 | 1.10 | 1.62 | 1.40 | 1.10 |
| 8400 | 1.43 | 1.39 | 1.24 | 1.42 | 1.45 | 1.34 | 1.18 | 1.45 |
| 8500 | 1.52 | 1.32 | 1.21 | 1.52 | 1.50 | 1.40 | 1.18 | 1.53 |

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# Solid State
# USB RF SP16T Switch USB-1SP16T-83H

## *Typical Performance Data*

TEST CONDITIONS: @Temperature = 0°C, Pin=8dBm

| FREQUENCY (MHz) | VSWR, Terminated Ports (:1) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | COM | J1 | J2 | J3 | J4 | J5 | J6 | J7 | J8 |
| 0.1 | 2.02 | 1.49 | 1.58 | 1.57 | 1.54 | 1.59 | 1.56 | 1.55 | 1.60 |
| 0.5 | 1.29 | 1.19 | 1.31 | 1.27 | 1.25 | 1.29 | 1.28 | 1.27 | 1.31 |
| 1 | 1.25 | 1.18 | 1.30 | 1.26 | 1.23 | 1.27 | 1.27 | 1.26 | 1.30 |
| 5 | 1.24 | 1.17 | 1.29 | 1.25 | 1.23 | 1.27 | 1.26 | 1.25 | 1.30 |
| 10 | 1.23 | 1.17 | 1.29 | 1.25 | 1.23 | 1.27 | 1.26 | 1.25 | 1.29 |
| 20 | 1.23 | 1.17 | 1.29 | 1.25 | 1.23 | 1.27 | 1.26 | 1.25 | 1.29 |
| 50 | 1.23 | 1.16 | 1.28 | 1.24 | 1.22 | 1.26 | 1.26 | 1.25 | 1.29 |
| 100 | 1.22 | 1.16 | 1.27 | 1.24 | 1.21 | 1.25 | 1.25 | 1.24 | 1.27 |
| 200 | 1.21 | 1.15 | 1.27 | 1.23 | 1.20 | 1.24 | 1.24 | 1.23 | 1.27 |
| 400 | 1.21 | 1.15 | 1.27 | 1.23 | 1.21 | 1.25 | 1.24 | 1.23 | 1.27 |
| 600 | 1.20 | 1.15 | 1.26 | 1.23 | 1.21 | 1.24 | 1.24 | 1.23 | 1.27 |
| 800 | 1.20 | 1.14 | 1.25 | 1.22 | 1.20 | 1.23 | 1.24 | 1.23 | 1.27 |
| 1000 | 1.19 | 1.14 | 1.24 | 1.21 | 1.20 | 1.23 | 1.23 | 1.22 | 1.26 |
| 1200 | 1.18 | 1.13 | 1.23 | 1.20 | 1.19 | 1.21 | 1.23 | 1.21 | 1.25 |
| 1400 | 1.18 | 1.12 | 1.21 | 1.19 | 1.18 | 1.20 | 1.22 | 1.21 | 1.24 |
| 1600 | 1.17 | 1.11 | 1.20 | 1.18 | 1.17 | 1.19 | 1.21 | 1.20 | 1.23 |
| 1800 | 1.15 | 1.11 | 1.18 | 1.16 | 1.16 | 1.17 | 1.20 | 1.19 | 1.22 |
| 2000 | 1.14 | 1.10 | 1.17 | 1.15 | 1.15 | 1.16 | 1.19 | 1.18 | 1.20 |
| 2200 | 1.13 | 1.09 | 1.15 | 1.14 | 1.13 | 1.15 | 1.18 | 1.17 | 1.19 |
| 2400 | 1.12 | 1.08 | 1.14 | 1.13 | 1.12 | 1.13 | 1.16 | 1.16 | 1.17 |
| 2600 | 1.11 | 1.08 | 1.14 | 1.12 | 1.11 | 1.12 | 1.15 | 1.15 | 1.16 |
| 2800 | 1.09 | 1.07 | 1.13 | 1.11 | 1.10 | 1.11 | 1.14 | 1.15 | 1.15 |
| 3000 | 1.07 | 1.06 | 1.12 | 1.10 | 1.08 | 1.10 | 1.13 | 1.14 | 1.14 |
| 3200 | 1.06 | 1.05 | 1.12 | 1.09 | 1.07 | 1.09 | 1.12 | 1.13 | 1.13 |
| 3400 | 1.05 | 1.05 | 1.12 | 1.09 | 1.07 | 1.08 | 1.11 | 1.12 | 1.12 |
| 3600 | 1.05 | 1.05 | 1.12 | 1.08 | 1.06 | 1.07 | 1.10 | 1.11 | 1.12 |
| 3800 | 1.05 | 1.04 | 1.13 | 1.07 | 1.05 | 1.06 | 1.09 | 1.10 | 1.11 |
| 4000 | 1.06 | 1.03 | 1.14 | 1.07 | 1.04 | 1.05 | 1.09 | 1.09 | 1.11 |
| 4200 | 1.08 | 1.03 | 1.14 | 1.07 | 1.04 | 1.05 | 1.09 | 1.08 | 1.10 |
| 4400 | 1.08 | 1.03 | 1.15 | 1.07 | 1.03 | 1.06 | 1.08 | 1.07 | 1.10 |
| 4600 | 1.11 | 1.04 | 1.16 | 1.07 | 1.02 | 1.06 | 1.07 | 1.06 | 1.09 |
| 4800 | 1.13 | 1.04 | 1.17 | 1.07 | 1.02 | 1.06 | 1.07 | 1.06 | 1.09 |
| 5000 | 1.15 | 1.05 | 1.17 | 1.06 | 1.01 | 1.06 | 1.07 | 1.05 | 1.08 |
| 5200 | 1.17 | 1.04 | 1.18 | 1.06 | 1.01 | 1.06 | 1.07 | 1.04 | 1.08 |
| 5400 | 1.19 | 1.06 | 1.16 | 1.06 | 1.01 | 1.05 | 1.05 | 1.04 | 1.07 |
| 5600 | 1.20 | 1.05 | 1.18 | 1.05 | 1.01 | 1.06 | 1.07 | 1.04 | 1.08 |
| 5800 | 1.23 | 1.07 | 1.16 | 1.06 | 1.02 | 1.05 | 1.05 | 1.04 | 1.07 |
| 6000 | 1.24 | 1.06 | 1.16 | 1.05 | 1.03 | 1.06 | 1.06 | 1.04 | 1.08 |
| 6200 | 1.27 | 1.06 | 1.17 | 1.06 | 1.04 | 1.07 | 1.07 | 1.06 | 1.09 |
| 6400 | 1.26 | 1.07 | 1.17 | 1.06 | 1.06 | 1.08 | 1.08 | 1.07 | 1.10 |
| 6600 | 1.26 | 1.07 | 1.18 | 1.08 | 1.08 | 1.09 | 1.10 | 1.10 | 1.12 |
| 6800 | 1.23 | 1.09 | 1.20 | 1.10 | 1.10 | 1.12 | 1.12 | 1.13 | 1.14 |
| 7000 | 1.24 | 1.12 | 1.21 | 1.12 | 1.12 | 1.13 | 1.14 | 1.16 | 1.15 |
| 7200 | 1.23 | 1.15 | 1.23 | 1.14 | 1.14 | 1.15 | 1.17 | 1.19 | 1.16 |
| 7400 | 1.22 | 1.18 | 1.25 | 1.17 | 1.17 | 1.18 | 1.19 | 1.23 | 1.18 |
| 7600 | 1.19 | 1.22 | 1.26 | 1.19 | 1.20 | 1.20 | 1.22 | 1.26 | 1.20 |
| 7800 | 1.17 | 1.27 | 1.29 | 1.23 | 1.23 | 1.23 | 1.24 | 1.30 | 1.22 |
| 8000 | 1.15 | 1.32 | 1.31 | 1.26 | 1.27 | 1.26 | 1.27 | 1.34 | 1.24 |
| 8200 | 1.15 | 1.36 | 1.33 | 1.28 | 1.30 | 1.29 | 1.29 | 1.37 | 1.26 |
| 8400 | 1.16 | 1.41 | 1.35 | 1.31 | 1.34 | 1.32 | 1.31 | 1.40 | 1.28 |
| 8500 | 1.16 | 1.42 | 1.36 | 1.32 | 1.35 | 1.33 | 1.32 | 1.41 | 1.29 |

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# Solid State
# USB RF SP16T Switch USB-1SP16T-83H

## *Typical Performance Data*

TEST CONDITIONS: @Temperature = 0°C, Pin=8dBm

| FREQUENCY (MHz) | VSWR, Terminated Ports (:1) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | J9 | J10 | J11 | J12 | J13 | J14 | J15 | J16 |
| 0.1 | 1.56 | 1.58 | 1.53 | 1.50 | 1.57 | 1.49 | 1.55 | 1.53 |
| 0.5 | 1.25 | 1.28 | 1.24 | 1.20 | 1.29 | 1.19 | 1.26 | 1.25 |
| 1 | 1.24 | 1.26 | 1.23 | 1.18 | 1.27 | 1.18 | 1.25 | 1.24 |
| 5 | 1.23 | 1.26 | 1.22 | 1.18 | 1.27 | 1.17 | 1.25 | 1.24 |
| 10 | 1.23 | 1.26 | 1.22 | 1.18 | 1.27 | 1.17 | 1.25 | 1.24 |
| 20 | 1.23 | 1.26 | 1.22 | 1.17 | 1.27 | 1.17 | 1.25 | 1.24 |
| 50 | 1.23 | 1.25 | 1.22 | 1.17 | 1.27 | 1.17 | 1.24 | 1.23 |
| 100 | 1.22 | 1.24 | 1.21 | 1.16 | 1.25 | 1.16 | 1.23 | 1.22 |
| 200 | 1.21 | 1.23 | 1.20 | 1.15 | 1.24 | 1.15 | 1.22 | 1.21 |
| 400 | 1.21 | 1.24 | 1.20 | 1.16 | 1.25 | 1.15 | 1.23 | 1.22 |
| 600 | 1.21 | 1.23 | 1.19 | 1.15 | 1.24 | 1.15 | 1.22 | 1.21 |
| 800 | 1.20 | 1.23 | 1.19 | 1.15 | 1.23 | 1.14 | 1.22 | 1.21 |
| 1000 | 1.19 | 1.22 | 1.18 | 1.14 | 1.22 | 1.13 | 1.21 | 1.20 |
| 1200 | 1.18 | 1.21 | 1.17 | 1.14 | 1.21 | 1.13 | 1.20 | 1.20 |
| 1400 | 1.17 | 1.20 | 1.16 | 1.13 | 1.20 | 1.11 | 1.19 | 1.19 |
| 1600 | 1.15 | 1.19 | 1.14 | 1.12 | 1.18 | 1.11 | 1.17 | 1.17 |
| 1800 | 1.14 | 1.18 | 1.13 | 1.11 | 1.16 | 1.09 | 1.16 | 1.16 |
| 2000 | 1.13 | 1.17 | 1.12 | 1.10 | 1.15 | 1.08 | 1.15 | 1.15 |
| 2200 | 1.12 | 1.15 | 1.11 | 1.09 | 1.14 | 1.07 | 1.14 | 1.13 |
| 2400 | 1.11 | 1.14 | 1.10 | 1.09 | 1.13 | 1.06 | 1.13 | 1.12 |
| 2600 | 1.10 | 1.13 | 1.10 | 1.07 | 1.13 | 1.04 | 1.12 | 1.10 |
| 2800 | 1.09 | 1.12 | 1.10 | 1.07 | 1.12 | 1.03 | 1.11 | 1.09 |
| 3000 | 1.09 | 1.11 | 1.10 | 1.06 | 1.12 | 1.02 | 1.10 | 1.08 |
| 3200 | 1.09 | 1.11 | 1.10 | 1.05 | 1.11 | 1.01 | 1.10 | 1.07 |
| 3400 | 1.08 | 1.10 | 1.09 | 1.05 | 1.11 | 1.01 | 1.09 | 1.06 |
| 3600 | 1.07 | 1.10 | 1.08 | 1.04 | 1.10 | 1.02 | 1.08 | 1.06 |
| 3800 | 1.06 | 1.09 | 1.07 | 1.04 | 1.09 | 1.02 | 1.07 | 1.05 |
| 4000 | 1.06 | 1.09 | 1.07 | 1.04 | 1.08 | 1.03 | 1.07 | 1.05 |
| 4200 | 1.06 | 1.09 | 1.07 | 1.04 | 1.08 | 1.04 | 1.08 | 1.05 |
| 4400 | 1.05 | 1.09 | 1.06 | 1.04 | 1.08 | 1.05 | 1.08 | 1.06 |
| 4600 | 1.05 | 1.08 | 1.05 | 1.04 | 1.07 | 1.06 | 1.08 | 1.07 |
| 4800 | 1.05 | 1.09 | 1.05 | 1.05 | 1.07 | 1.08 | 1.08 | 1.07 |
| 5000 | 1.04 | 1.08 | 1.05 | 1.05 | 1.06 | 1.09 | 1.08 | 1.08 |
| 5200 | 1.04 | 1.08 | 1.04 | 1.06 | 1.07 | 1.11 | 1.08 | 1.09 |
| 5400 | 1.04 | 1.07 | 1.04 | 1.05 | 1.06 | 1.11 | 1.08 | 1.08 |
| 5600 | 1.04 | 1.08 | 1.04 | 1.06 | 1.07 | 1.13 | 1.08 | 1.09 |
| 5800 | 1.04 | 1.07 | 1.05 | 1.06 | 1.07 | 1.13 | 1.07 | 1.08 |
| 6000 | 1.04 | 1.08 | 1.05 | 1.07 | 1.08 | 1.15 | 1.07 | 1.09 |
| 6200 | 1.06 | 1.09 | 1.07 | 1.09 | 1.10 | 1.17 | 1.07 | 1.10 |
| 6400 | 1.07 | 1.10 | 1.09 | 1.10 | 1.11 | 1.19 | 1.06 | 1.10 |
| 6600 | 1.09 | 1.12 | 1.10 | 1.12 | 1.13 | 1.21 | 1.08 | 1.12 |
| 6800 | 1.11 | 1.15 | 1.13 | 1.14 | 1.15 | 1.23 | 1.10 | 1.13 |
| 7000 | 1.13 | 1.17 | 1.16 | 1.17 | 1.17 | 1.26 | 1.12 | 1.15 |
| 7200 | 1.16 | 1.19 | 1.19 | 1.20 | 1.20 | 1.29 | 1.14 | 1.18 |
| 7400 | 1.19 | 1.22 | 1.22 | 1.23 | 1.22 | 1.32 | 1.16 | 1.20 |
| 7600 | 1.21 | 1.25 | 1.25 | 1.27 | 1.25 | 1.35 | 1.18 | 1.23 |
| 7800 | 1.25 | 1.28 | 1.29 | 1.30 | 1.28 | 1.39 | 1.22 | 1.26 |
| 8000 | 1.28 | 1.31 | 1.33 | 1.34 | 1.32 | 1.42 | 1.25 | 1.29 |
| 8200 | 1.31 | 1.34 | 1.35 | 1.37 | 1.33 | 1.45 | 1.27 | 1.33 |
| 8400 | 1.34 | 1.37 | 1.38 | 1.40 | 1.35 | 1.47 | 1.30 | 1.36 |
| 8500 | 1.34 | 1.38 | 1.38 | 1.41 | 1.35 | 1.48 | 1.31 | 1.37 |

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# Solid State
# USB RF SP16T Switch USB-1SP16T-83H

## *Typical Performance Data*

TEST CONDITIONS: @Temperature = 0°C, Pin=8dBm

| FREQUENCY (MHz) | ISOLATION COM to terminated port (dB) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | COM-J1 @J16 Active | COM-J2 @J1 Active | COM-J4 @J3 Active | COM-J5 @J6 Active | COM-J7 @J6 Active | COM-J8 @J7 Active | COM-J10 @J9 Active | COM-J13 @J12 Active | COM-J15 @J14 Active |
| 0.1 | 104.83 | 95.37 | 95.76 | 103.09 | 103.09 | 97.51 | 96.60 | 94.48 | 97.87 |
| 0.5 | 97.59 | 96.10 | 94.36 | 99.98 | 99.98 | 93.23 | 97.03 | 94.26 | 110.62 |
| 1 | 96.63 | 103.45 | 107.04 | 98.61 | 98.61 | 96.46 | 96.81 | 99.91 | 101.40 |
| 5 | 94.48 | 104.63 | 93.99 | 103.55 | 103.55 | 93.52 | 98.77 | 93.11 | 97.30 |
| 10 | 119.55 | 105.16 | 101.04 | 103.87 | 103.87 | 106.23 | 107.36 | 100.58 | 100.02 |
| 20 | 124.71 | 104.47 | 95.69 | 101.88 | 101.88 | 99.89 | 100.20 | 105.46 | 96.81 |
| 50 | 119.45 | 104.28 | 93.55 | 95.40 | 95.40 | 98.18 | 98.60 | 99.02 | 95.56 |
| 100 | 113.20 | 106.78 | 90.06 | 95.03 | 95.03 | 95.26 | 94.32 | 99.43 | 98.33 |
| 200 | 110.74 | 105.97 | 88.93 | 92.98 | 92.98 | 94.74 | 94.62 | 98.72 | 95.42 |
| 400 | 112.10 | 116.98 | 89.41 | 94.05 | 94.05 | 94.36 | 92.84 | 94.91 | 93.27 |
| 600 | 119.67 | 117.17 | 89.86 | 93.72 | 93.72 | 94.58 | 90.90 | 94.98 | 92.35 |
| 800 | 111.45 | 123.27 | 89.61 | 95.34 | 95.34 | 96.13 | 89.69 | 94.00 | 92.84 |
| 1000 | 106.78 | 110.96 | 90.15 | 95.52 | 95.52 | 97.60 | 90.21 | 95.07 | 91.89 |
| 1200 | 115.99 | 130.35 | 90.95 | 96.73 | 96.73 | 104.33 | 90.07 | 95.74 | 92.03 |
| 1400 | 114.24 | 113.69 | 90.77 | 97.62 | 97.62 | 104.23 | 89.75 | 93.48 | 92.68 |
| 1600 | 109.29 | 102.43 | 91.24 | 98.11 | 98.11 | 107.08 | 90.14 | 95.89 | 92.11 |
| 1800 | 116.97 | 110.55 | 91.89 | 99.90 | 99.90 | 118.60 | 89.78 | 94.90 | 91.69 |
| 2000 | 124.15 | 116.13 | 93.87 | 101.63 | 101.63 | 126.55 | 89.79 | 97.09 | 91.13 |
| 2200 | 105.27 | 112.93 | 92.35 | 102.14 | 102.14 | 126.83 | 88.36 | 96.56 | 91.03 |
| 2400 | 109.09 | 109.55 | 92.11 | 98.51 | 98.51 | 107.98 | 88.54 | 96.33 | 90.93 |
| 2600 | 111.61 | 100.38 | 93.13 | 113.05 | 113.05 | 106.00 | 88.33 | 98.55 | 90.75 |
| 2800 | 115.51 | 100.49 | 92.05 | 100.47 | 100.47 | 97.49 | 86.20 | 97.25 | 90.07 |
| 3000 | 107.67 | 102.48 | 92.47 | 103.09 | 103.09 | 98.49 | 86.41 | 97.71 | 89.58 |
| 3200 | 113.65 | 97.79 | 89.90 | 100.89 | 100.89 | 92.44 | 86.86 | 94.23 | 89.33 |
| 3400 | 116.97 | 98.46 | 89.97 | 113.17 | 113.17 | 91.25 | 87.02 | 96.06 | 90.13 |
| 3600 | 118.25 | 98.94 | 87.94 | 105.01 | 105.01 | 89.95 | 86.11 | 94.15 | 88.41 |
| 3800 | 118.51 | 97.02 | 87.02 | 106.64 | 106.64 | 88.78 | 85.15 | 95.23 | 89.15 |
| 4000 | 115.29 | 95.03 | 86.74 | 110.38 | 110.38 | 88.72 | 84.49 | 95.00 | 89.62 |
| 4200 | 109.93 | 95.56 | 87.06 | 106.33 | 106.33 | 88.49 | 83.82 | 94.11 | 88.67 |
| 4400 | 110.48 | 92.46 | 85.73 | 101.86 | 101.86 | 87.18 | 83.54 | 94.14 | 88.47 |
| 4600 | 110.48 | 91.95 | 85.49 | 102.32 | 102.32 | 86.11 | 83.81 | 96.57 | 88.64 |
| 4800 | 109.64 | 90.79 | 84.80 | 97.50 | 97.50 | 84.85 | 83.21 | 95.42 | 88.77 |
| 5000 | 112.27 | 90.30 | 84.28 | 97.57 | 97.57 | 84.02 | 83.63 | 99.51 | 87.23 |
| 5200 | 112.74 | 89.66 | 84.89 | 97.43 | 97.43 | 83.36 | 84.85 | 96.57 | 87.55 |
| 5400 | 105.64 | 89.72 | 84.83 | 98.01 | 98.01 | 83.10 | 86.84 | 94.96 | 86.12 |
| 5600 | 117.77 | 89.34 | 84.35 | 97.93 | 97.93 | 82.77 | 88.96 | 96.03 | 85.54 |
| 5800 | 112.84 | 89.58 | 84.82 | 94.67 | 94.67 | 82.37 | 92.77 | 100.10 | 85.45 |
| 6000 | 112.77 | 88.39 | 83.87 | 98.12 | 98.12 | 82.42 | 95.22 | 101.92 | 84.21 |
| 6200 | 106.07 | 87.71 | 83.80 | 94.64 | 94.64 | 82.19 | 96.02 | 99.99 | 83.89 |
| 6400 | 108.43 | 87.07 | 82.69 | 95.34 | 95.34 | 81.41 | 91.79 | 98.30 | 83.27 |
| 6600 | 117.09 | 85.68 | 81.92 | 92.11 | 92.11 | 80.50 | 87.40 | 98.67 | 82.39 |
| 6800 | 107.54 | 84.37 | 81.43 | 91.30 | 91.30 | 79.79 | 83.19 | 94.56 | 81.67 |
| 7000 | 103.33 | 83.86 | 80.59 | 89.45 | 89.45 | 78.78 | 80.90 | 94.27 | 80.58 |
| 7200 | 105.41 | 81.40 | 79.19 | 87.12 | 87.12 | 77.60 | 78.60 | 93.40 | 80.15 |
| 7400 | 102.11 | 80.10 | 77.77 | 84.28 | 84.28 | 76.25 | 76.54 | 91.97 | 79.87 |
| 7600 | 99.04 | 79.45 | 76.39 | 82.39 | 82.39 | 74.68 | 75.36 | 94.16 | 80.50 |
| 7800 | 98.23 | 78.40 | 74.50 | 81.46 | 81.46 | 73.18 | 74.15 | 91.30 | 80.09 |
| 8000 | 98.08 | 76.93 | 72.65 | 79.93 | 79.93 | 71.74 | 74.06 | 91.42 | 80.65 |
| 8200 | 96.88 | 77.03 | 71.05 | 78.57 | 78.57 | 70.34 | 73.52 | 89.17 | 81.30 |
| 8400 | 93.44 | 75.48 | 69.70 | 78.50 | 78.50 | 69.05 | 72.54 | 89.42 | 82.16 |
| 8500 | 96.44 | 74.29 | 68.90 | 77.49 | 77.49 | 68.25 | 72.23 | 88.94 | 82.07 |

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# Solid State
# USB RF SP16T Switch USB-1SP16T-83H

## *Typical Performance Data*

TEST CONDITIONS: @Temperature = 0°C, Pin=8dBm

| FREQUENCY (MHz) | ISOLATION between adjacent ports (dB) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | J1-J2 @J1 Active | J3-J4 @J3 Active | J5-J6 @J5 Active | J6-J7 @J6 Active | J8-J9 @J8 Active | J10-J11 @J10 Active | J12-J13 @J12 Active | J14-J15 @J14 Active | J15-J16 @J15 Active |
| 0.1 | 94.45 | 95.05 | 106.40 | 101.09 | 96.07 | 98.05 | 101.50 | 91.04 | 97.50 |
| 0.5 | 92.72 | 97.79 | 94.25 | 98.05 | 99.08 | 97.90 | 101.20 | 97.29 | 95.77 |
| 1 | 99.75 | 100.38 | 100.24 | 94.18 | 104.09 | 93.25 | 101.78 | 94.11 | 100.24 |
| 5 | 93.38 | 94.07 | 96.38 | 95.36 | 109.12 | 90.44 | 91.93 | 98.35 | 96.91 |
| 10 | 101.85 | 96.96 | 96.62 | 98.61 | 98.03 | 98.18 | 102.00 | 97.88 | 93.95 |
| 20 | 98.27 | 93.92 | 93.44 | 95.54 | 95.47 | 96.14 | 97.57 | 97.28 | 93.23 |
| 50 | 103.78 | 89.64 | 90.36 | 91.54 | 92.11 | 95.82 | 96.17 | 94.73 | 93.33 |
| 100 | 105.06 | 87.22 | 88.84 | 90.18 | 89.84 | 94.15 | 94.61 | 92.48 | 92.16 |
| 200 | 102.16 | 85.69 | 88.09 | 88.97 | 87.94 | 91.67 | 93.88 | 92.23 | 91.96 |
| 400 | 109.90 | 85.07 | 87.61 | 88.31 | 86.12 | 90.82 | 90.62 | 90.06 | 91.58 |
| 600 | 110.02 | 85.92 | 88.09 | 89.08 | 85.53 | 89.66 | 89.96 | 89.47 | 91.02 |
| 800 | 113.15 | 84.20 | 88.58 | 90.91 | 86.50 | 90.36 | 89.99 | 87.66 | 89.22 |
| 1000 | 132.54 | 84.43 | 91.05 | 92.09 | 87.02 | 90.12 | 89.94 | 87.00 | 88.14 |
| 1200 | 108.42 | 84.07 | 89.55 | 93.13 | 86.24 | 89.99 | 89.16 | 87.94 | 88.74 |
| 1400 | 105.16 | 84.04 | 90.56 | 93.02 | 86.47 | 89.81 | 89.74 | 86.67 | 87.11 |
| 1600 | 101.94 | 83.97 | 90.07 | 92.91 | 87.43 | 88.99 | 90.24 | 86.35 | 87.98 |
| 1800 | 104.91 | 85.88 | 91.33 | 93.31 | 87.39 | 89.72 | 91.48 | 86.39 | 88.80 |
| 2000 | 104.24 | 87.16 | 90.79 | 94.42 | 86.55 | 89.92 | 91.05 | 85.59 | 88.92 |
| 2200 | 102.48 | 88.82 | 91.52 | 93.66 | 86.00 | 89.46 | 89.33 | 85.57 | 89.94 |
| 2400 | 97.70 | 89.56 | 92.99 | 93.15 | 86.02 | 89.64 | 89.29 | 85.63 | 89.22 |
| 2600 | 98.02 | 88.05 | 95.18 | 92.69 | 86.62 | 88.36 | 90.02 | 85.00 | 86.68 |
| 2800 | 97.44 | 86.34 | 98.65 | 92.50 | 86.08 | 88.95 | 89.60 | 84.68 | 85.61 |
| 3000 | 96.70 | 84.73 | 107.03 | 92.69 | 86.38 | 88.08 | 90.22 | 84.19 | 83.30 |
| 3200 | 95.67 | 84.30 | 106.41 | 93.63 | 87.06 | 88.25 | 90.33 | 84.22 | 82.70 |
| 3400 | 93.71 | 83.13 | 97.75 | 96.31 | 86.46 | 88.67 | 89.16 | 84.24 | 81.47 |
| 3600 | 94.03 | 82.80 | 94.57 | 100.64 | 85.55 | 90.28 | 88.76 | 83.54 | 81.23 |
| 3800 | 94.54 | 83.55 | 91.75 | 103.02 | 85.94 | 92.26 | 89.72 | 83.19 | 81.81 |
| 4000 | 93.71 | 84.16 | 91.22 | 100.21 | 84.97 | 93.25 | 89.07 | 81.49 | 81.58 |
| 4200 | 92.92 | 84.31 | 88.09 | 97.26 | 85.59 | 97.42 | 88.35 | 80.63 | 81.22 |
| 4400 | 92.53 | 85.34 | 87.82 | 95.13 | 85.65 | 105.26 | 87.17 | 79.70 | 83.39 |
| 4600 | 94.16 | 85.12 | 87.07 | 90.98 | 86.39 | 95.89 | 89.17 | 78.28 | 82.77 |
| 4800 | 90.09 | 83.81 | 88.54 | 88.79 | 86.64 | 92.23 | 89.12 | 78.05 | 81.97 |
| 5000 | 88.81 | 85.74 | 89.77 | 87.79 | 86.29 | 90.02 | 89.23 | 77.23 | 82.88 |
| 5200 | 90.49 | 83.01 | 89.49 | 86.21 | 85.09 | 87.82 | 90.12 | 76.13 | 80.53 |
| 5400 | 89.23 | 83.59 | 88.14 | 85.62 | 85.51 | 86.91 | 91.59 | 76.77 | 80.22 |
| 5600 | 87.17 | 86.72 | 89.53 | 84.73 | 87.26 | 85.00 | 91.00 | 75.79 | 81.51 |
| 5800 | 88.09 | 84.17 | 91.49 | 84.41 | 86.97 | 83.33 | 89.33 | 75.85 | 80.24 |
| 6000 | 91.09 | 85.29 | 90.80 | 84.49 | 87.21 | 83.18 | 92.07 | 76.76 | 81.22 |
| 6200 | 87.47 | 89.99 | 91.22 | 84.95 | 88.34 | 82.46 | 92.45 | 76.19 | 83.02 |
| 6400 | 86.89 | 85.26 | 89.07 | 84.13 | 89.01 | 82.10 | 91.90 | 77.20 | 82.31 |
| 6600 | 86.51 | 85.85 | 86.11 | 83.56 | 88.93 | 81.47 | 89.51 | 78.60 | 82.62 |
| 6800 | 87.47 | 83.20 | 84.64 | 82.73 | 90.04 | 81.19 | 89.86 | 78.66 | 81.65 |
| 7000 | 87.12 | 81.03 | 82.93 | 81.59 | 88.26 | 80.67 | 88.06 | 79.48 | 79.76 |
| 7200 | 84.41 | 79.04 | 83.96 | 80.96 | 87.11 | 80.23 | 87.79 | 79.01 | 77.80 |
| 7400 | 82.19 | 77.13 | 83.51 | 79.32 | 88.08 | 79.28 | 86.77 | 77.72 | 76.05 |
| 7600 | 82.23 | 77.76 | 81.14 | 77.13 | 87.32 | 77.41 | 86.68 | 74.75 | 75.83 |
| 7800 | 79.61 | 74.83 | 79.94 | 74.64 | 85.76 | 75.72 | 85.51 | 73.91 | 73.77 |
| 8000 | 75.87 | 73.61 | 79.73 | 72.83 | 90.26 | 74.14 | 85.05 | 71.23 | 72.52 |
| 8200 | 74.12 | 77.97 | 80.81 | 71.40 | 88.00 | 72.99 | 84.85 | 68.98 | 74.82 |
| 8400 | 73.72 | 77.89 | 82.42 | 70.35 | 84.66 | 71.70 | 83.71 | 67.59 | 74.72 |
| 8500 | 74.76 | 75.39 | 81.85 | 69.77 | 83.68 | 71.09 | 83.16 | 66.85 | 73.86 |

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# Solid State
# USB RF SP16T Switch USB-1SP16T-83H

## *Typical Performance Data*

TEST CONDITIONS: @Temperature = +25°C, Pin=8dBm

| FREQUENCY (MHz) | INSERTION LOSS (dB) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | COM-J1 | COM-J2 | COM-J3 | COM-J4 | COM-J5 | COM-J6 | COM-J7 | COM-J8 |
| 0.1 | 4.83 | 4.80 | 4.84 | 4.82 | 4.85 | 4.80 | 4.79 | 4.82 |
| 0.5 | 4.17 | 4.14 | 4.17 | 4.17 | 4.18 | 4.14 | 4.13 | 4.15 |
| 1 | 4.15 | 4.12 | 4.15 | 4.15 | 4.16 | 4.12 | 4.11 | 4.13 |
| 5 | 4.16 | 4.12 | 4.15 | 4.15 | 4.16 | 4.12 | 4.11 | 4.13 |
| 10 | 4.16 | 4.13 | 4.16 | 4.16 | 4.16 | 4.12 | 4.12 | 4.13 |
| 20 | 4.17 | 4.14 | 4.17 | 4.17 | 4.17 | 4.13 | 4.12 | 4.14 |
| 50 | 4.21 | 4.17 | 4.21 | 4.20 | 4.20 | 4.15 | 4.15 | 4.17 |
| 100 | 4.28 | 4.24 | 4.27 | 4.28 | 4.24 | 4.19 | 4.19 | 4.21 |
| 200 | 4.44 | 4.39 | 4.42 | 4.44 | 4.32 | 4.27 | 4.26 | 4.29 |
| 400 | 4.71 | 4.65 | 4.68 | 4.70 | 4.51 | 4.43 | 4.41 | 4.46 |
| 600 | 4.76 | 4.70 | 4.73 | 4.75 | 4.70 | 4.59 | 4.58 | 4.65 |
| 800 | 4.86 | 4.75 | 4.78 | 4.86 | 4.84 | 4.74 | 4.73 | 4.80 |
| 1000 | 5.14 | 5.01 | 5.05 | 5.14 | 4.94 | 4.84 | 4.82 | 4.89 |
| 1200 | 5.32 | 5.21 | 5.24 | 5.30 | 5.01 | 4.89 | 4.87 | 4.95 |
| 1400 | 5.40 | 5.23 | 5.27 | 5.39 | 5.10 | 4.93 | 4.90 | 5.03 |
| 1600 | 5.61 | 5.41 | 5.45 | 5.60 | 5.22 | 5.01 | 4.98 | 5.15 |
| 1800 | 5.83 | 5.70 | 5.74 | 5.81 | 5.34 | 5.15 | 5.12 | 5.29 |
| 2000 | 5.97 | 5.80 | 5.83 | 5.96 | 5.46 | 5.31 | 5.29 | 5.42 |
| 2200 | 6.07 | 5.87 | 5.92 | 6.05 | 5.58 | 5.46 | 5.44 | 5.53 |
| 2400 | 6.18 | 6.10 | 6.13 | 6.17 | 5.70 | 5.57 | 5.54 | 5.64 |
| 2600 | 6.36 | 6.25 | 6.28 | 6.34 | 5.80 | 5.64 | 5.62 | 5.72 |
| 2800 | 6.45 | 6.35 | 6.39 | 6.44 | 5.86 | 5.73 | 5.71 | 5.78 |
| 3000 | 6.55 | 6.49 | 6.52 | 6.55 | 5.93 | 5.82 | 5.79 | 5.86 |
| 3200 | 6.73 | 6.58 | 6.61 | 6.72 | 6.08 | 5.89 | 5.87 | 6.02 |
| 3400 | 6.82 | 6.68 | 6.71 | 6.82 | 6.21 | 5.95 | 5.92 | 6.15 |
| 3600 | 7.05 | 6.71 | 6.76 | 7.04 | 6.23 | 6.01 | 5.99 | 6.17 |
| 3800 | 7.14 | 6.78 | 6.84 | 7.13 | 6.23 | 6.07 | 6.06 | 6.19 |
| 4000 | 7.17 | 6.87 | 6.93 | 7.16 | 6.34 | 6.06 | 6.04 | 6.32 |
| 4200 | 7.37 | 6.80 | 6.87 | 7.36 | 6.49 | 5.98 | 5.97 | 6.48 |
| 4400 | 7.36 | 6.95 | 7.00 | 7.38 | 6.51 | 5.97 | 5.95 | 6.50 |
| 4600 | 7.45 | 7.19 | 7.24 | 7.47 | 6.49 | 6.17 | 6.14 | 6.47 |
| 4800 | 7.46 | 7.03 | 7.11 | 7.49 | 6.68 | 6.46 | 6.43 | 6.61 |
| 5000 | 7.58 | 7.35 | 7.36 | 7.61 | 6.90 | 6.59 | 6.55 | 6.84 |
| 5200 | 8.15 | 7.84 | 7.86 | 8.19 | 6.86 | 6.49 | 6.45 | 6.84 |
| 5400 | 8.05 | 7.72 | 7.75 | 8.11 | 6.77 | 6.46 | 6.41 | 6.73 |
| 5600 | 8.37 | 8.06 | 8.06 | 8.39 | 7.10 | 6.75 | 6.74 | 7.00 |
| 5800 | 9.07 | 8.60 | 8.67 | 9.14 | 7.68 | 7.19 | 7.21 | 7.58 |
| 6000 | 8.91 | 8.49 | 8.55 | 8.94 | 7.92 | 7.40 | 7.41 | 7.85 |
| 6200 | 8.93 | 8.54 | 8.60 | 8.96 | 7.82 | 7.35 | 7.35 | 7.73 |
| 6400 | 9.12 | 8.77 | 8.86 | 9.16 | 7.70 | 7.27 | 7.26 | 7.60 |
| 6600 | 9.06 | 8.73 | 8.78 | 9.05 | 7.69 | 7.31 | 7.28 | 7.60 |
| 6800 | 9.00 | 8.72 | 8.74 | 9.01 | 7.67 | 7.38 | 7.32 | 7.61 |
| 7000 | 9.10 | 8.80 | 8.79 | 9.10 | 7.78 | 7.40 | 7.34 | 7.71 |
| 7200 | 9.25 | 8.92 | 8.94 | 9.25 | 8.01 | 7.48 | 7.46 | 7.93 |
| 7400 | 9.53 | 9.17 | 9.15 | 9.54 | 8.09 | 7.62 | 7.63 | 8.00 |
| 7600 | 10.25 | 9.64 | 9.54 | 10.31 | 8.18 | 7.77 | 7.79 | 8.11 |
| 7800 | 10.44 | 9.97 | 9.92 | 10.44 | 8.70 | 8.06 | 8.06 | 8.66 |
| 8000 | 10.60 | 10.22 | 10.08 | 10.62 | 9.45 | 8.57 | 8.55 | 9.39 |
| 8200 | 11.48 | 10.85 | 10.70 | 11.43 | 9.97 | 9.11 | 9.10 | 9.87 |
| 8400 | 11.95 | 11.26 | 11.25 | 11.74 | 10.15 | 9.40 | 9.44 | 10.02 |
| 8500 | 11.88 | 11.30 | 11.26 | 11.70 | 10.15 | 9.45 | 9.50 | 10.04 |

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## *Typical Performance Data*

TEST CONDITIONS: @Temperature = +25°C, Pin=8dBm

| FREQUENCY (MHz) | INSERTION LOSS (dB) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | COM-J9 | COM-J10 | COM-J11 | COM-J12 | COM-J13 | COM-J14 | COM-J15 | COM-J16 |
| 0.1 | 4.85 | 4.85 | 4.86 | 4.84 | 4.81 | 4.88 | 4.84 | 4.83 |
| 0.5 | 4.18 | 4.18 | 4.21 | 4.19 | 4.15 | 4.24 | 4.18 | 4.19 |
| 1 | 4.16 | 4.15 | 4.19 | 4.17 | 4.12 | 4.21 | 4.16 | 4.17 |
| 5 | 4.16 | 4.15 | 4.19 | 4.17 | 4.13 | 4.22 | 4.16 | 4.17 |
| 10 | 4.16 | 4.16 | 4.19 | 4.18 | 4.13 | 4.22 | 4.17 | 4.18 |
| 20 | 4.17 | 4.17 | 4.20 | 4.19 | 4.15 | 4.23 | 4.18 | 4.19 |
| 50 | 4.20 | 4.19 | 4.23 | 4.21 | 4.18 | 4.27 | 4.21 | 4.22 |
| 100 | 4.24 | 4.23 | 4.27 | 4.26 | 4.25 | 4.34 | 4.28 | 4.30 |
| 200 | 4.32 | 4.31 | 4.34 | 4.34 | 4.41 | 4.49 | 4.42 | 4.45 |
| 400 | 4.50 | 4.46 | 4.50 | 4.52 | 4.65 | 4.74 | 4.67 | 4.70 |
| 600 | 4.69 | 4.63 | 4.67 | 4.70 | 4.70 | 4.77 | 4.70 | 4.74 |
| 800 | 4.84 | 4.77 | 4.82 | 4.85 | 4.81 | 4.86 | 4.77 | 4.86 |
| 1000 | 4.93 | 4.87 | 4.92 | 4.95 | 5.11 | 5.15 | 5.07 | 5.17 |
| 1200 | 5.00 | 4.92 | 4.96 | 5.01 | 5.29 | 5.34 | 5.27 | 5.34 |
| 1400 | 5.07 | 4.95 | 4.99 | 5.08 | 5.34 | 5.35 | 5.26 | 5.39 |
| 1600 | 5.19 | 5.02 | 5.05 | 5.19 | 5.52 | 5.49 | 5.41 | 5.57 |
| 1800 | 5.33 | 5.15 | 5.19 | 5.32 | 5.74 | 5.76 | 5.69 | 5.79 |
| 2000 | 5.45 | 5.33 | 5.38 | 5.46 | 5.88 | 5.88 | 5.80 | 5.93 |
| 2200 | 5.56 | 5.48 | 5.54 | 5.58 | 5.98 | 5.96 | 5.88 | 6.03 |
| 2400 | 5.67 | 5.59 | 5.64 | 5.69 | 6.10 | 6.19 | 6.11 | 6.16 |
| 2600 | 5.76 | 5.66 | 5.72 | 5.77 | 6.28 | 6.35 | 6.27 | 6.34 |
| 2800 | 5.82 | 5.75 | 5.81 | 5.84 | 6.38 | 6.45 | 6.38 | 6.44 |
| 3000 | 5.92 | 5.84 | 5.91 | 5.94 | 6.50 | 6.58 | 6.51 | 6.54 |
| 3200 | 6.09 | 5.92 | 5.96 | 6.11 | 6.67 | 6.68 | 6.61 | 6.71 |
| 3400 | 6.22 | 5.97 | 6.00 | 6.25 | 6.77 | 6.78 | 6.71 | 6.82 |
| 3600 | 6.24 | 6.02 | 6.07 | 6.26 | 7.02 | 6.82 | 6.77 | 7.07 |
| 3800 | 6.25 | 6.08 | 6.12 | 6.26 | 7.12 | 6.92 | 6.87 | 7.18 |
| 4000 | 6.37 | 6.08 | 6.07 | 6.37 | 7.14 | 7.01 | 6.97 | 7.18 |
| 4200 | 6.51 | 6.03 | 5.97 | 6.52 | 7.34 | 6.90 | 6.88 | 7.39 |
| 4400 | 6.52 | 6.03 | 5.99 | 6.57 | 7.36 | 7.08 | 7.03 | 7.41 |
| 4600 | 6.51 | 6.20 | 6.24 | 6.58 | 7.46 | 7.31 | 7.27 | 7.49 |
| 4800 | 6.68 | 6.47 | 6.54 | 6.73 | 7.48 | 7.15 | 7.13 | 7.52 |
| 5000 | 6.88 | 6.60 | 6.61 | 6.92 | 7.63 | 7.54 | 7.45 | 7.67 |
| 5200 | 6.82 | 6.52 | 6.46 | 6.89 | 8.22 | 8.05 | 7.98 | 8.28 |
| 5400 | 6.74 | 6.46 | 6.48 | 6.81 | 8.13 | 7.89 | 7.85 | 8.20 |
| 5600 | 7.11 | 6.74 | 6.88 | 7.16 | 8.35 | 8.22 | 8.13 | 8.39 |
| 5800 | 7.70 | 7.20 | 7.34 | 7.73 | 9.05 | 8.72 | 8.69 | 9.09 |
| 6000 | 7.92 | 7.45 | 7.49 | 7.97 | 8.94 | 8.63 | 8.62 | 8.97 |
| 6200 | 7.80 | 7.40 | 7.39 | 7.86 | 9.00 | 8.72 | 8.69 | 8.99 |
| 6400 | 7.67 | 7.29 | 7.32 | 7.73 | 9.19 | 8.91 | 8.91 | 9.20 |
| 6600 | 7.63 | 7.32 | 7.32 | 7.71 | 9.12 | 8.88 | 8.85 | 9.14 |
| 6800 | 7.63 | 7.40 | 7.32 | 7.74 | 9.08 | 8.88 | 8.83 | 9.11 |
| 7000 | 7.79 | 7.44 | 7.37 | 7.92 | 9.17 | 8.96 | 8.90 | 9.21 |
| 7200 | 8.04 | 7.54 | 7.53 | 8.14 | 9.33 | 9.10 | 9.07 | 9.35 |
| 7400 | 8.09 | 7.70 | 7.69 | 8.20 | 9.58 | 9.32 | 9.29 | 9.60 |
| 7600 | 8.18 | 7.86 | 7.82 | 8.32 | 10.29 | 9.77 | 9.70 | 10.29 |
| 7800 | 8.68 | 8.12 | 8.10 | 8.84 | 10.48 | 10.12 | 10.06 | 10.48 |
| 8000 | 9.35 | 8.59 | 8.61 | 9.50 | 10.70 | 10.38 | 10.26 | 10.69 |
| 8200 | 9.81 | 9.10 | 9.12 | 9.97 | 11.54 | 10.98 | 10.87 | 11.52 |
| 8400 | 10.01 | 9.40 | 9.42 | 10.18 | 11.89 | 11.38 | 11.35 | 11.86 |
| 8500 | 10.04 | 9.47 | 9.48 | 10.22 | 11.86 | 11.43 | 11.39 | 11.83 |

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# Solid State
# USB RF SP16T Switch USB-1SP16T-83H

## *Typical Performance Data*

TEST CONDITIONS: @Temperature = +25°C, Pin=8dBm

| FREQUENCY (MHz) | VSWR, Active Ports (:1) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | COM | J1 | J2 | J3 | J4 | J5 | J6 | J7 | J8 |
| 0.1 | 2.04 | 2.02 | 2.01 | 2.03 | 2.01 | 2.04 | 2.01 | 2.01 | 2.03 |
| 0.5 | 1.31 | 1.31 | 1.30 | 1.31 | 1.30 | 1.31 | 1.30 | 1.30 | 1.30 |
| 1 | 1.27 | 1.27 | 1.26 | 1.27 | 1.27 | 1.27 | 1.26 | 1.26 | 1.26 |
| 5 | 1.25 | 1.26 | 1.25 | 1.26 | 1.25 | 1.26 | 1.25 | 1.25 | 1.25 |
| 10 | 1.25 | 1.26 | 1.25 | 1.26 | 1.25 | 1.26 | 1.25 | 1.25 | 1.25 |
| 20 | 1.25 | 1.26 | 1.25 | 1.26 | 1.26 | 1.26 | 1.25 | 1.25 | 1.25 |
| 50 | 1.25 | 1.26 | 1.25 | 1.26 | 1.26 | 1.26 | 1.25 | 1.25 | 1.25 |
| 100 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.27 | 1.26 | 1.26 | 1.26 |
| 200 | 1.19 | 1.21 | 1.20 | 1.21 | 1.21 | 1.27 | 1.26 | 1.26 | 1.26 |
| 400 | 1.02 | 1.03 | 1.04 | 1.04 | 1.03 | 1.25 | 1.24 | 1.24 | 1.24 |
| 600 | 1.21 | 1.19 | 1.17 | 1.17 | 1.18 | 1.18 | 1.18 | 1.18 | 1.17 |
| 800 | 1.31 | 1.28 | 1.30 | 1.31 | 1.28 | 1.06 | 1.08 | 1.08 | 1.06 |
| 1000 | 1.18 | 1.12 | 1.18 | 1.19 | 1.15 | 1.06 | 1.04 | 1.03 | 1.04 |
| 1200 | 1.11 | 1.08 | 1.06 | 1.06 | 1.05 | 1.15 | 1.16 | 1.15 | 1.12 |
| 1400 | 1.21 | 1.12 | 1.25 | 1.26 | 1.15 | 1.16 | 1.26 | 1.24 | 1.15 |
| 1600 | 1.16 | 1.20 | 1.23 | 1.24 | 1.21 | 1.14 | 1.29 | 1.27 | 1.16 |
| 1800 | 1.04 | 1.26 | 1.07 | 1.07 | 1.22 | 1.21 | 1.23 | 1.22 | 1.22 |
| 2000 | 1.04 | 1.10 | 1.09 | 1.10 | 1.08 | 1.28 | 1.13 | 1.14 | 1.27 |
| 2200 | 1.06 | 1.26 | 1.08 | 1.10 | 1.23 | 1.27 | 1.06 | 1.08 | 1.26 |
| 2400 | 1.02 | 1.33 | 1.14 | 1.12 | 1.32 | 1.20 | 1.07 | 1.07 | 1.19 |
| 2600 | 1.20 | 1.19 | 1.15 | 1.12 | 1.19 | 1.18 | 1.06 | 1.06 | 1.16 |
| 2800 | 1.28 | 1.19 | 1.15 | 1.11 | 1.19 | 1.19 | 1.09 | 1.09 | 1.17 |
| 3000 | 1.12 | 1.12 | 1.25 | 1.21 | 1.14 | 1.14 | 1.17 | 1.17 | 1.13 |
| 3200 | 1.42 | 1.04 | 1.24 | 1.22 | 1.04 | 1.04 | 1.21 | 1.21 | 1.03 |
| 3400 | 1.57 | 1.04 | 1.28 | 1.26 | 1.01 | 1.11 | 1.18 | 1.19 | 1.06 |
| 3600 | 1.29 | 1.18 | 1.30 | 1.32 | 1.14 | 1.14 | 1.15 | 1.16 | 1.09 |
| 3800 | 1.52 | 1.23 | 1.18 | 1.22 | 1.21 | 1.07 | 1.25 | 1.26 | 1.04 |
| 4000 | 1.58 | 1.19 | 1.27 | 1.31 | 1.16 | 1.18 | 1.42 | 1.41 | 1.17 |
| 4200 | 1.37 | 1.41 | 1.36 | 1.44 | 1.41 | 1.41 | 1.51 | 1.50 | 1.38 |
| 4400 | 1.43 | 1.36 | 1.15 | 1.22 | 1.44 | 1.52 | 1.42 | 1.40 | 1.51 |
| 4600 | 1.31 | 1.12 | 1.13 | 1.19 | 1.19 | 1.39 | 1.18 | 1.18 | 1.44 |
| 4800 | 1.35 | 1.35 | 1.30 | 1.39 | 1.44 | 1.12 | 1.07 | 1.06 | 1.18 |
| 5000 | 1.14 | 1.26 | 1.21 | 1.19 | 1.31 | 1.13 | 1.27 | 1.25 | 1.12 |
| 5200 | 1.23 | 1.06 | 1.08 | 1.12 | 1.08 | 1.29 | 1.36 | 1.36 | 1.31 |
| 5400 | 1.30 | 1.18 | 1.21 | 1.27 | 1.26 | 1.24 | 1.28 | 1.27 | 1.31 |
| 5600 | 1.17 | 1.14 | 1.23 | 1.12 | 1.06 | 1.08 | 1.10 | 1.12 | 1.10 |
| 5800 | 1.56 | 1.23 | 1.15 | 1.19 | 1.35 | 1.21 | 1.18 | 1.18 | 1.20 |
| 6000 | 1.48 | 1.18 | 1.13 | 1.19 | 1.27 | 1.34 | 1.27 | 1.27 | 1.34 |
| 6200 | 1.36 | 1.08 | 1.08 | 1.05 | 1.21 | 1.29 | 1.25 | 1.22 | 1.32 |
| 6400 | 1.52 | 1.27 | 1.12 | 1.23 | 1.39 | 1.17 | 1.14 | 1.11 | 1.19 |
| 6600 | 1.49 | 1.26 | 1.16 | 1.20 | 1.25 | 1.19 | 1.15 | 1.15 | 1.21 |
| 6800 | 1.41 | 1.22 | 1.13 | 1.15 | 1.17 | 1.22 | 1.22 | 1.21 | 1.23 |
| 7000 | 1.24 | 1.25 | 1.20 | 1.16 | 1.11 | 1.17 | 1.19 | 1.17 | 1.15 |
| 7200 | 1.24 | 1.21 | 1.19 | 1.12 | 1.07 | 1.08 | 1.10 | 1.07 | 1.06 |
| 7400 | 1.51 | 1.29 | 1.34 | 1.23 | 1.17 | 1.05 | 1.05 | 1.04 | 1.02 |
| 7600 | 1.56 | 1.12 | 1.45 | 1.26 | 1.16 | 1.17 | 1.18 | 1.16 | 1.15 |
| 7800 | 1.34 | 1.18 | 1.27 | 1.09 | 1.04 | 1.19 | 1.37 | 1.33 | 1.23 |
| 8000 | 1.50 | 1.22 | 1.48 | 1.25 | 1.11 | 1.09 | 1.49 | 1.45 | 1.15 |
| 8200 | 1.63 | 1.27 | 1.59 | 1.38 | 1.11 | 1.20 | 1.43 | 1.42 | 1.13 |
| 8400 | 1.35 | 1.67 | 1.32 | 1.18 | 1.42 | 1.43 | 1.25 | 1.27 | 1.34 |
| 8500 | 1.18 | 1.71 | 1.33 | 1.13 | 1.47 | 1.51 | 1.19 | 1.21 | 1.43 |

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## *Typical Performance Data*

TEST CONDITIONS: @Temperature = +25°C, Pin=8dBm

| FREQUENCY (MHz) | VSWR, Active Ports (:1) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | J9 | J10 | J11 | J12 | J13 | J14 | J15 | J16 |
| 0.1 | 2.04 | 2.03 | 2.01 | 2.01 | 2.02 | 2.01 | 2.02 | 2.00 |
| 0.5 | 1.31 | 1.31 | 1.31 | 1.31 | 1.30 | 1.32 | 1.31 | 1.31 |
| 1 | 1.27 | 1.27 | 1.28 | 1.27 | 1.26 | 1.28 | 1.27 | 1.27 |
| 5 | 1.26 | 1.25 | 1.26 | 1.26 | 1.25 | 1.27 | 1.26 | 1.26 |
| 10 | 1.26 | 1.25 | 1.26 | 1.26 | 1.25 | 1.27 | 1.26 | 1.26 |
| 20 | 1.26 | 1.26 | 1.27 | 1.26 | 1.25 | 1.27 | 1.26 | 1.26 |
| 50 | 1.26 | 1.26 | 1.27 | 1.26 | 1.25 | 1.27 | 1.26 | 1.26 |
| 100 | 1.27 | 1.26 | 1.27 | 1.27 | 1.25 | 1.26 | 1.25 | 1.26 |
| 200 | 1.28 | 1.27 | 1.27 | 1.27 | 1.22 | 1.22 | 1.21 | 1.21 |
| 400 | 1.26 | 1.25 | 1.25 | 1.25 | 1.05 | 1.04 | 1.04 | 1.04 |
| 600 | 1.17 | 1.18 | 1.18 | 1.17 | 1.19 | 1.20 | 1.18 | 1.19 |
| 800 | 1.05 | 1.08 | 1.07 | 1.04 | 1.30 | 1.33 | 1.31 | 1.29 |
| 1000 | 1.07 | 1.05 | 1.07 | 1.07 | 1.14 | 1.17 | 1.18 | 1.14 |
| 1200 | 1.15 | 1.17 | 1.19 | 1.15 | 1.09 | 1.10 | 1.07 | 1.08 |
| 1400 | 1.15 | 1.27 | 1.27 | 1.16 | 1.18 | 1.31 | 1.28 | 1.18 |
| 1600 | 1.15 | 1.30 | 1.25 | 1.14 | 1.21 | 1.23 | 1.26 | 1.20 |
| 1800 | 1.24 | 1.25 | 1.17 | 1.21 | 1.24 | 1.05 | 1.08 | 1.23 |
| 2000 | 1.32 | 1.15 | 1.12 | 1.30 | 1.09 | 1.12 | 1.08 | 1.09 |
| 2200 | 1.30 | 1.09 | 1.14 | 1.30 | 1.25 | 1.04 | 1.09 | 1.24 |
| 2400 | 1.23 | 1.08 | 1.16 | 1.23 | 1.32 | 1.16 | 1.14 | 1.34 |
| 2600 | 1.19 | 1.08 | 1.15 | 1.19 | 1.18 | 1.20 | 1.15 | 1.20 |
| 2800 | 1.18 | 1.12 | 1.20 | 1.18 | 1.17 | 1.19 | 1.13 | 1.19 |
| 3000 | 1.11 | 1.19 | 1.27 | 1.12 | 1.11 | 1.28 | 1.22 | 1.13 |
| 3200 | 1.02 | 1.22 | 1.28 | 1.01 | 1.02 | 1.28 | 1.22 | 1.06 |
| 3400 | 1.10 | 1.18 | 1.22 | 1.09 | 1.03 | 1.33 | 1.28 | 1.03 |
| 3600 | 1.12 | 1.13 | 1.19 | 1.12 | 1.17 | 1.33 | 1.31 | 1.17 |
| 3800 | 1.07 | 1.22 | 1.28 | 1.06 | 1.20 | 1.20 | 1.19 | 1.23 |
| 4000 | 1.20 | 1.37 | 1.40 | 1.17 | 1.14 | 1.31 | 1.30 | 1.16 |
| 4200 | 1.40 | 1.48 | 1.44 | 1.38 | 1.37 | 1.36 | 1.39 | 1.39 |
| 4400 | 1.50 | 1.46 | 1.33 | 1.51 | 1.35 | 1.12 | 1.16 | 1.39 |
| 4600 | 1.40 | 1.28 | 1.15 | 1.45 | 1.13 | 1.16 | 1.17 | 1.15 |
| 4800 | 1.16 | 1.05 | 1.07 | 1.21 | 1.38 | 1.28 | 1.34 | 1.38 |
| 5000 | 1.07 | 1.17 | 1.18 | 1.05 | 1.29 | 1.18 | 1.16 | 1.31 |
| 5200 | 1.23 | 1.32 | 1.24 | 1.22 | 1.06 | 1.10 | 1.13 | 1.04 |
| 5400 | 1.23 | 1.32 | 1.21 | 1.24 | 1.22 | 1.21 | 1.25 | 1.22 |
| 5600 | 1.13 | 1.18 | 1.19 | 1.14 | 1.10 | 1.20 | 1.14 | 1.13 |
| 5800 | 1.21 | 1.14 | 1.21 | 1.20 | 1.22 | 1.12 | 1.16 | 1.20 |
| 6000 | 1.30 | 1.19 | 1.21 | 1.28 | 1.18 | 1.14 | 1.15 | 1.18 |
| 6200 | 1.25 | 1.18 | 1.13 | 1.25 | 1.12 | 1.08 | 1.06 | 1.08 |
| 6400 | 1.14 | 1.06 | 1.05 | 1.13 | 1.28 | 1.11 | 1.18 | 1.26 |
| 6600 | 1.16 | 1.08 | 1.05 | 1.14 | 1.19 | 1.15 | 1.15 | 1.22 |
| 6800 | 1.22 | 1.13 | 1.12 | 1.21 | 1.14 | 1.13 | 1.11 | 1.18 |
| 7000 | 1.21 | 1.11 | 1.20 | 1.24 | 1.14 | 1.20 | 1.15 | 1.20 |
| 7200 | 1.12 | 1.10 | 1.19 | 1.18 | 1.11 | 1.19 | 1.12 | 1.16 |
| 7400 | 1.09 | 1.06 | 1.12 | 1.12 | 1.19 | 1.36 | 1.26 | 1.25 |
| 7600 | 1.22 | 1.06 | 1.28 | 1.27 | 1.11 | 1.42 | 1.27 | 1.13 |
| 7800 | 1.22 | 1.29 | 1.54 | 1.31 | 1.10 | 1.27 | 1.13 | 1.12 |
| 8000 | 1.06 | 1.50 | 1.63 | 1.13 | 1.16 | 1.55 | 1.35 | 1.20 |
| 8200 | 1.20 | 1.53 | 1.48 | 1.15 | 1.11 | 1.58 | 1.39 | 1.10 |
| 8400 | 1.44 | 1.40 | 1.31 | 1.43 | 1.42 | 1.34 | 1.16 | 1.43 |
| 8500 | 1.52 | 1.33 | 1.31 | 1.52 | 1.46 | 1.41 | 1.19 | 1.50 |

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# Solid State
# USB RF SP16T Switch USB-1SP16T-83H

## *Typical Performance Data*

TEST CONDITIONS: @Temperature = +25°C, Pin=8dBm

| FREQUENCY (MHz) | VSWR, Terminated Ports (:1) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | COM | J1 | J2 | J3 | J4 | J5 | J6 | J7 | J8 |
| 0.1 | 2.01 | 1.48 | 1.56 | 1.55 | 1.52 | 1.57 | 1.53 | 1.53 | 1.58 |
| 0.5 | 1.26 | 1.16 | 1.27 | 1.23 | 1.21 | 1.25 | 1.24 | 1.24 | 1.28 |
| 1 | 1.22 | 1.14 | 1.26 | 1.22 | 1.20 | 1.23 | 1.23 | 1.22 | 1.26 |
| 5 | 1.20 | 1.14 | 1.25 | 1.22 | 1.20 | 1.23 | 1.23 | 1.22 | 1.26 |
| 10 | 1.20 | 1.14 | 1.25 | 1.22 | 1.20 | 1.23 | 1.22 | 1.22 | 1.26 |
| 20 | 1.20 | 1.14 | 1.25 | 1.22 | 1.20 | 1.23 | 1.22 | 1.22 | 1.26 |
| 50 | 1.20 | 1.13 | 1.25 | 1.21 | 1.19 | 1.23 | 1.22 | 1.22 | 1.26 |
| 100 | 1.19 | 1.13 | 1.25 | 1.21 | 1.19 | 1.23 | 1.22 | 1.22 | 1.25 |
| 200 | 1.19 | 1.13 | 1.24 | 1.21 | 1.19 | 1.22 | 1.22 | 1.21 | 1.25 |
| 400 | 1.18 | 1.12 | 1.24 | 1.20 | 1.18 | 1.21 | 1.21 | 1.21 | 1.24 |
| 600 | 1.17 | 1.12 | 1.22 | 1.19 | 1.17 | 1.21 | 1.20 | 1.20 | 1.23 |
| 800 | 1.17 | 1.11 | 1.21 | 1.18 | 1.17 | 1.20 | 1.20 | 1.19 | 1.23 |
| 1000 | 1.16 | 1.11 | 1.21 | 1.18 | 1.16 | 1.19 | 1.19 | 1.19 | 1.22 |
| 1200 | 1.15 | 1.10 | 1.20 | 1.17 | 1.16 | 1.18 | 1.19 | 1.18 | 1.21 |
| 1400 | 1.14 | 1.10 | 1.18 | 1.16 | 1.15 | 1.17 | 1.18 | 1.18 | 1.20 |
| 1600 | 1.13 | 1.09 | 1.17 | 1.15 | 1.14 | 1.16 | 1.18 | 1.17 | 1.19 |
| 1800 | 1.12 | 1.09 | 1.16 | 1.14 | 1.13 | 1.15 | 1.17 | 1.16 | 1.19 |
| 2000 | 1.12 | 1.08 | 1.14 | 1.13 | 1.12 | 1.13 | 1.16 | 1.15 | 1.17 |
| 2200 | 1.11 | 1.07 | 1.12 | 1.12 | 1.11 | 1.12 | 1.15 | 1.14 | 1.16 |
| 2400 | 1.10 | 1.07 | 1.11 | 1.10 | 1.10 | 1.11 | 1.14 | 1.13 | 1.14 |
| 2600 | 1.09 | 1.06 | 1.10 | 1.09 | 1.09 | 1.10 | 1.13 | 1.13 | 1.13 |
| 2800 | 1.09 | 1.06 | 1.09 | 1.08 | 1.08 | 1.08 | 1.12 | 1.12 | 1.12 |
| 3000 | 1.09 | 1.05 | 1.08 | 1.08 | 1.07 | 1.07 | 1.11 | 1.11 | 1.11 |
| 3200 | 1.08 | 1.04 | 1.09 | 1.07 | 1.06 | 1.06 | 1.10 | 1.10 | 1.11 |
| 3400 | 1.08 | 1.04 | 1.09 | 1.06 | 1.06 | 1.05 | 1.10 | 1.09 | 1.11 |
| 3600 | 1.09 | 1.03 | 1.10 | 1.06 | 1.05 | 1.04 | 1.09 | 1.08 | 1.10 |
| 3800 | 1.10 | 1.02 | 1.11 | 1.05 | 1.05 | 1.04 | 1.08 | 1.08 | 1.09 |
| 4000 | 1.11 | 1.02 | 1.11 | 1.05 | 1.05 | 1.03 | 1.08 | 1.07 | 1.08 |
| 4200 | 1.12 | 1.02 | 1.12 | 1.05 | 1.04 | 1.03 | 1.08 | 1.07 | 1.08 |
| 4400 | 1.13 | 1.02 | 1.13 | 1.05 | 1.04 | 1.03 | 1.07 | 1.06 | 1.07 |
| 4600 | 1.14 | 1.03 | 1.13 | 1.05 | 1.04 | 1.03 | 1.06 | 1.06 | 1.06 |
| 4800 | 1.15 | 1.03 | 1.13 | 1.04 | 1.03 | 1.02 | 1.06 | 1.05 | 1.05 |
| 5000 | 1.17 | 1.04 | 1.14 | 1.04 | 1.02 | 1.02 | 1.05 | 1.05 | 1.05 |
| 5200 | 1.18 | 1.05 | 1.15 | 1.04 | 1.02 | 1.02 | 1.04 | 1.04 | 1.05 |
| 5400 | 1.20 | 1.06 | 1.15 | 1.04 | 1.02 | 1.03 | 1.04 | 1.04 | 1.04 |
| 5600 | 1.20 | 1.07 | 1.16 | 1.04 | 1.01 | 1.03 | 1.04 | 1.03 | 1.05 |
| 5800 | 1.21 | 1.10 | 1.15 | 1.05 | 1.02 | 1.04 | 1.03 | 1.05 | 1.06 |
| 6000 | 1.20 | 1.11 | 1.17 | 1.05 | 1.01 | 1.05 | 1.05 | 1.05 | 1.06 |
| 6200 | 1.20 | 1.12 | 1.17 | 1.06 | 1.03 | 1.07 | 1.06 | 1.07 | 1.08 |
| 6400 | 1.20 | 1.15 | 1.18 | 1.07 | 1.05 | 1.08 | 1.08 | 1.09 | 1.10 |
| 6600 | 1.20 | 1.16 | 1.18 | 1.08 | 1.06 | 1.09 | 1.10 | 1.10 | 1.12 |
| 6800 | 1.19 | 1.19 | 1.19 | 1.10 | 1.09 | 1.11 | 1.12 | 1.12 | 1.13 |
| 7000 | 1.18 | 1.21 | 1.21 | 1.11 | 1.11 | 1.13 | 1.14 | 1.14 | 1.15 |
| 7200 | 1.17 | 1.25 | 1.23 | 1.14 | 1.14 | 1.15 | 1.17 | 1.17 | 1.17 |
| 7400 | 1.16 | 1.28 | 1.25 | 1.16 | 1.18 | 1.17 | 1.20 | 1.20 | 1.19 |
| 7600 | 1.14 | 1.32 | 1.28 | 1.18 | 1.21 | 1.19 | 1.23 | 1.23 | 1.22 |
| 7800 | 1.13 | 1.35 | 1.30 | 1.21 | 1.25 | 1.22 | 1.26 | 1.27 | 1.24 |
| 8000 | 1.12 | 1.39 | 1.34 | 1.24 | 1.30 | 1.26 | 1.30 | 1.31 | 1.27 |
| 8200 | 1.12 | 1.43 | 1.36 | 1.27 | 1.33 | 1.28 | 1.32 | 1.34 | 1.29 |
| 8400 | 1.12 | 1.47 | 1.38 | 1.29 | 1.36 | 1.31 | 1.34 | 1.38 | 1.30 |
| 8500 | 1.13 | 1.49 | 1.39 | 1.30 | 1.38 | 1.31 | 1.34 | 1.39 | 1.31 |

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# Solid State
# USB RF SP16T Switch USB-1SP16T-83H

## *Typical Performance Data*

TEST CONDITIONS: @Temperature = +25°C, Pin=8dBm

| FREQUENCY (MHz) | VSWR, Terminated Ports (:1) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | J9 | J10 | J11 | J12 | J13 | J14 | J15 | J16 |
| 0.1 | 1.54 | 1.56 | 1.51 | 1.48 | 1.55 | 1.47 | 1.53 | 1.50 |
| 0.5 | 1.22 | 1.24 | 1.21 | 1.17 | 1.25 | 1.16 | 1.22 | 1.22 |
| 1 | 1.21 | 1.23 | 1.19 | 1.15 | 1.24 | 1.14 | 1.21 | 1.20 |
| 5 | 1.20 | 1.23 | 1.19 | 1.15 | 1.23 | 1.14 | 1.21 | 1.20 |
| 10 | 1.20 | 1.23 | 1.19 | 1.15 | 1.23 | 1.14 | 1.21 | 1.20 |
| 20 | 1.20 | 1.23 | 1.19 | 1.15 | 1.23 | 1.14 | 1.21 | 1.20 |
| 50 | 1.20 | 1.22 | 1.19 | 1.15 | 1.23 | 1.14 | 1.21 | 1.20 |
| 100 | 1.20 | 1.22 | 1.19 | 1.14 | 1.23 | 1.13 | 1.20 | 1.19 |
| 200 | 1.19 | 1.22 | 1.18 | 1.14 | 1.22 | 1.13 | 1.20 | 1.19 |
| 400 | 1.19 | 1.21 | 1.17 | 1.14 | 1.22 | 1.12 | 1.19 | 1.19 |
| 600 | 1.18 | 1.20 | 1.17 | 1.13 | 1.21 | 1.12 | 1.18 | 1.18 |
| 800 | 1.17 | 1.19 | 1.15 | 1.12 | 1.20 | 1.11 | 1.18 | 1.17 |
| 1000 | 1.16 | 1.19 | 1.15 | 1.12 | 1.19 | 1.11 | 1.17 | 1.17 |
| 1200 | 1.15 | 1.18 | 1.13 | 1.11 | 1.18 | 1.10 | 1.16 | 1.16 |
| 1400 | 1.14 | 1.17 | 1.12 | 1.11 | 1.17 | 1.10 | 1.15 | 1.15 |
| 1600 | 1.12 | 1.16 | 1.11 | 1.10 | 1.15 | 1.10 | 1.14 | 1.14 |
| 1800 | 1.11 | 1.15 | 1.10 | 1.10 | 1.14 | 1.09 | 1.13 | 1.13 |
| 2000 | 1.10 | 1.14 | 1.08 | 1.09 | 1.13 | 1.09 | 1.12 | 1.12 |
| 2200 | 1.09 | 1.13 | 1.07 | 1.09 | 1.11 | 1.08 | 1.10 | 1.11 |
| 2400 | 1.08 | 1.12 | 1.06 | 1.08 | 1.10 | 1.07 | 1.09 | 1.10 |
| 2600 | 1.07 | 1.11 | 1.05 | 1.07 | 1.09 | 1.07 | 1.08 | 1.09 |
| 2800 | 1.06 | 1.10 | 1.04 | 1.06 | 1.08 | 1.06 | 1.07 | 1.07 |
| 3000 | 1.05 | 1.09 | 1.04 | 1.06 | 1.07 | 1.05 | 1.07 | 1.06 |
| 3200 | 1.05 | 1.09 | 1.04 | 1.05 | 1.07 | 1.04 | 1.06 | 1.05 |
| 3400 | 1.04 | 1.09 | 1.04 | 1.05 | 1.06 | 1.03 | 1.05 | 1.04 |
| 3600 | 1.04 | 1.09 | 1.04 | 1.04 | 1.06 | 1.02 | 1.05 | 1.03 |
| 3800 | 1.04 | 1.08 | 1.05 | 1.05 | 1.06 | 1.01 | 1.05 | 1.02 |
| 4000 | 1.04 | 1.08 | 1.05 | 1.05 | 1.06 | 1.01 | 1.05 | 1.02 |
| 4200 | 1.04 | 1.08 | 1.05 | 1.05 | 1.06 | 1.02 | 1.06 | 1.03 |
| 4400 | 1.04 | 1.08 | 1.06 | 1.06 | 1.06 | 1.03 | 1.06 | 1.04 |
| 4600 | 1.04 | 1.07 | 1.06 | 1.06 | 1.06 | 1.05 | 1.06 | 1.04 |
| 4800 | 1.03 | 1.07 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 | 1.05 |
| 5000 | 1.04 | 1.06 | 1.07 | 1.05 | 1.06 | 1.08 | 1.07 | 1.05 |
| 5200 | 1.04 | 1.05 | 1.07 | 1.05 | 1.06 | 1.10 | 1.07 | 1.06 |
| 5400 | 1.04 | 1.04 | 1.08 | 1.05 | 1.07 | 1.11 | 1.08 | 1.06 |
| 5600 | 1.05 | 1.05 | 1.10 | 1.05 | 1.06 | 1.13 | 1.07 | 1.07 |
| 5800 | 1.06 | 1.05 | 1.12 | 1.05 | 1.08 | 1.14 | 1.09 | 1.07 |
| 6000 | 1.06 | 1.06 | 1.12 | 1.07 | 1.08 | 1.17 | 1.09 | 1.09 |
| 6200 | 1.09 | 1.08 | 1.15 | 1.08 | 1.10 | 1.18 | 1.10 | 1.10 |
| 6400 | 1.10 | 1.11 | 1.17 | 1.10 | 1.11 | 1.20 | 1.12 | 1.11 |
| 6600 | 1.11 | 1.13 | 1.18 | 1.13 | 1.12 | 1.22 | 1.12 | 1.13 |
| 6800 | 1.13 | 1.16 | 1.21 | 1.15 | 1.14 | 1.24 | 1.14 | 1.14 |
| 7000 | 1.14 | 1.18 | 1.23 | 1.18 | 1.15 | 1.26 | 1.15 | 1.15 |
| 7200 | 1.17 | 1.22 | 1.26 | 1.22 | 1.18 | 1.29 | 1.17 | 1.17 |
| 7400 | 1.19 | 1.25 | 1.29 | 1.26 | 1.20 | 1.32 | 1.19 | 1.20 |
| 7600 | 1.21 | 1.28 | 1.32 | 1.30 | 1.23 | 1.35 | 1.21 | 1.23 |
| 7800 | 1.25 | 1.32 | 1.35 | 1.34 | 1.26 | 1.39 | 1.23 | 1.27 |
| 8000 | 1.28 | 1.36 | 1.39 | 1.39 | 1.30 | 1.43 | 1.26 | 1.31 |
| 8200 | 1.31 | 1.38 | 1.42 | 1.42 | 1.32 | 1.46 | 1.27 | 1.34 |
| 8400 | 1.33 | 1.40 | 1.45 | 1.44 | 1.35 | 1.50 | 1.29 | 1.37 |
| 8500 | 1.34 | 1.41 | 1.46 | 1.45 | 1.36 | 1.51 | 1.29 | 1.38 |

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# Solid State
# USB RF SP16T Switch USB-1SP16T-83H

## *Typical Performance Data*

TEST CONDITIONS: @Temperature = +25°C, Pin=8dBm

| FREQUENCY (MHz) | ISOLATION COM to terminated port (dB) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | COM-J1 @J16 Active | COM-J2 @J1 Active | COM-J4 @J3 Active | COM-J5 @J6 Active | COM-J7 @J6 Active | COM-J8 @J7 Active | COM-J10 @J9 Active | COM-J13 @J12 Active | COM-J15 @J14 Active |
| 0.1 | 95.55 | 95.25 | 97.00 | 105.90 | 105.90 | 110.23 | 109.91 | 98.47 | 103.68 |
| 0.5 | 97.04 | 95.42 | 108.17 | 96.94 | 96.94 | 100.28 | 98.84 | 99.41 | 96.84 |
| 1 | 105.57 | 104.30 | 105.42 | 96.88 | 96.88 | 92.32 | 95.85 | 94.22 | 97.49 |
| 5 | 115.48 | 94.81 | 99.45 | 97.30 | 97.30 | 97.06 | 96.41 | 104.52 | 91.22 |
| 10 | 115.11 | 111.26 | 104.12 | 103.03 | 103.03 | 107.81 | 106.63 | 103.22 | 100.03 |
| 20 | 124.43 | 102.85 | 97.40 | 98.15 | 98.15 | 103.42 | 103.54 | 100.91 | 99.94 |
| 50 | 121.65 | 101.82 | 94.58 | 97.53 | 97.53 | 99.65 | 99.12 | 100.05 | 99.38 |
| 100 | 137.11 | 102.43 | 92.82 | 94.79 | 94.79 | 96.98 | 100.45 | 99.73 | 97.96 |
| 200 | 127.40 | 110.59 | 92.83 | 94.87 | 94.87 | 96.77 | 96.43 | 99.33 | 97.41 |
| 400 | 110.21 | 109.99 | 92.39 | 95.20 | 95.20 | 97.97 | 98.44 | 95.89 | 96.38 |
| 600 | 115.07 | 111.44 | 93.05 | 95.13 | 95.13 | 98.11 | 95.71 | 95.44 | 94.40 |
| 800 | 122.92 | 114.31 | 93.65 | 95.52 | 95.52 | 99.21 | 95.97 | 96.92 | 93.27 |
| 1000 | 121.43 | 115.16 | 92.51 | 93.79 | 93.79 | 98.94 | 95.78 | 94.72 | 93.17 |
| 1200 | 114.32 | 113.55 | 92.41 | 95.27 | 95.27 | 101.19 | 99.52 | 95.15 | 92.68 |
| 1400 | 114.48 | 110.32 | 94.36 | 95.68 | 95.68 | 116.66 | 100.43 | 96.39 | 92.77 |
| 1600 | 114.96 | 109.31 | 93.16 | 97.26 | 97.26 | 134.00 | 97.25 | 94.96 | 92.08 |
| 1800 | 112.39 | 112.39 | 94.22 | 98.29 | 98.29 | 115.30 | 97.74 | 94.83 | 91.55 |
| 2000 | 114.13 | 115.91 | 93.98 | 98.48 | 98.48 | 119.93 | 101.75 | 94.62 | 91.97 |
| 2200 | 110.52 | 109.60 | 92.27 | 97.22 | 97.22 | 112.64 | 96.75 | 95.60 | 90.82 |
| 2400 | 117.81 | 100.96 | 92.75 | 97.66 | 97.66 | 104.03 | 95.19 | 93.84 | 91.19 |
| 2600 | 112.90 | 103.39 | 92.09 | 100.22 | 100.22 | 98.61 | 94.40 | 94.31 | 89.44 |
| 2800 | 107.64 | 102.48 | 90.32 | 98.80 | 98.80 | 96.72 | 96.24 | 94.08 | 91.24 |
| 3000 | 117.01 | 100.80 | 90.78 | 98.90 | 98.90 | 96.00 | 94.46 | 94.51 | 89.73 |
| 3200 | 119.59 | 103.72 | 89.20 | 101.91 | 101.91 | 92.13 | 95.65 | 92.62 | 89.30 |
| 3400 | 108.34 | 96.99 | 88.75 | 101.36 | 101.36 | 90.66 | 92.75 | 91.55 | 89.41 |
| 3600 | 105.04 | 98.07 | 87.37 | 105.71 | 105.71 | 90.87 | 92.05 | 91.47 | 88.48 |
| 3800 | 109.38 | 96.59 | 86.29 | 101.79 | 101.79 | 90.27 | 91.26 | 92.03 | 89.14 |
| 4000 | 116.08 | 93.92 | 87.30 | 106.90 | 106.90 | 89.55 | 89.74 | 92.39 | 89.11 |
| 4200 | 110.68 | 93.26 | 85.98 | 102.44 | 102.44 | 88.22 | 89.15 | 91.05 | 89.24 |
| 4400 | 105.82 | 93.38 | 85.23 | 99.60 | 99.60 | 86.86 | 87.75 | 90.85 | 88.95 |
| 4600 | 114.57 | 93.20 | 85.25 | 97.84 | 97.84 | 85.94 | 88.13 | 92.49 | 89.14 |
| 4800 | 106.86 | 90.21 | 85.13 | 96.14 | 96.14 | 84.79 | 87.48 | 92.63 | 87.29 |
| 5000 | 122.69 | 89.96 | 84.91 | 100.03 | 100.03 | 83.71 | 88.32 | 94.33 | 87.37 |
| 5200 | 108.74 | 90.24 | 84.81 | 95.21 | 95.21 | 83.33 | 87.03 | 93.82 | 89.07 |
| 5400 | 109.70 | 89.70 | 85.02 | 94.84 | 94.84 | 82.17 | 88.49 | 94.04 | 88.09 |
| 5600 | 113.79 | 89.11 | 85.24 | 95.82 | 95.82 | 82.65 | 90.77 | 94.82 | 86.86 |
| 5800 | 106.22 | 89.46 | 85.16 | 93.43 | 93.43 | 82.40 | 91.11 | 94.70 | 86.44 |
| 6000 | 122.78 | 89.45 | 84.12 | 94.10 | 94.10 | 82.52 | 93.62 | 95.11 | 85.35 |
| 6200 | 110.82 | 87.89 | 83.85 | 92.61 | 92.61 | 82.18 | 94.26 | 97.08 | 85.02 |
| 6400 | 115.24 | 87.59 | 83.11 | 91.51 | 91.51 | 81.52 | 90.49 | 96.42 | 83.99 |
| 6600 | 106.79 | 85.81 | 82.28 | 90.61 | 90.61 | 80.58 | 89.27 | 95.78 | 82.83 |
| 6800 | 109.19 | 84.32 | 81.31 | 89.41 | 89.41 | 79.68 | 84.84 | 94.19 | 82.71 |
| 7000 | 101.43 | 82.69 | 79.91 | 88.34 | 88.34 | 78.27 | 82.12 | 93.95 | 81.68 |
| 7200 | 102.78 | 81.34 | 78.86 | 85.66 | 85.66 | 76.97 | 80.39 | 93.13 | 80.95 |
| 7400 | 105.13 | 79.88 | 77.42 | 83.59 | 83.59 | 75.73 | 78.24 | 91.46 | 81.00 |
| 7600 | 105.01 | 79.44 | 75.88 | 81.57 | 81.57 | 74.05 | 76.71 | 90.72 | 81.79 |
| 7800 | 99.55 | 78.10 | 74.50 | 80.94 | 80.94 | 72.76 | 75.73 | 89.52 | 80.98 |
| 8000 | 107.64 | 77.01 | 72.45 | 79.73 | 79.73 | 71.37 | 75.16 | 89.35 | 82.14 |
| 8200 | 97.40 | 76.50 | 70.99 | 79.01 | 79.01 | 70.21 | 74.30 | 88.21 | 83.67 |
| 8400 | 95.47 | 75.40 | 69.82 | 77.86 | 77.86 | 68.93 | 73.53 | 86.90 | 84.11 |
| 8500 | 95.32 | 74.28 | 68.99 | 76.90 | 76.90 | 68.35 | 72.99 | 87.03 | 83.65 |

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# Solid State
# USB RF SP16T Switch USB-1SP16T-83H

## *Typical Performance Data*

TEST CONDITIONS: @Temperature = +25°C, Pin=8dBm

| FREQUENCY (MHz) | ISOLATION between adjacent ports (dB) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | J1-J2 @J1 Active | J3-J4 @J3 Active | J5-J6 @J5 Active | J6-J7 @J6 Active | J8-J9 @J8 Active | J10-J11 @J10 Active | J12-J13 @J12 Active | J14-J15 @J14 Active | J15-J16 @J15 Active |
| 0.1 | 114.95 | 99.41 | 109.29 | 105.32 | 100.21 | 92.71 | 93.52 | 96.58 | 94.54 |
| 0.5 | 98.54 | 101.37 | 93.16 | 95.87 | 103.60 | 98.52 | 98.38 | 94.80 | 102.35 |
| 1 | 96.87 | 107.96 | 95.83 | 97.58 | 95.60 | 98.79 | 93.94 | 96.18 | 97.42 |
| 5 | 99.40 | 96.34 | 96.22 | 100.94 | 101.96 | 93.02 | 101.98 | 98.13 | 97.89 |
| 10 | 102.42 | 96.72 | 99.52 | 98.51 | 100.07 | 105.59 | 99.93 | 95.96 | 99.04 |
| 20 | 98.11 | 93.63 | 94.39 | 96.13 | 96.65 | 98.84 | 98.15 | 97.07 | 95.40 |
| 50 | 99.86 | 91.12 | 92.10 | 92.64 | 94.95 | 96.44 | 99.16 | 94.26 | 97.08 |
| 100 | 99.00 | 89.22 | 90.43 | 90.71 | 93.46 | 96.76 | 96.13 | 94.07 | 96.24 |
| 200 | 104.63 | 87.90 | 89.88 | 90.89 | 92.47 | 96.11 | 95.34 | 94.41 | 95.37 |
| 400 | 110.80 | 87.96 | 88.66 | 89.04 | 90.79 | 93.75 | 92.02 | 90.68 | 94.01 |
| 600 | 104.00 | 88.10 | 90.25 | 90.74 | 89.88 | 94.22 | 90.59 | 90.16 | 94.92 |
| 800 | 106.00 | 87.21 | 91.72 | 90.37 | 91.64 | 95.50 | 91.47 | 88.42 | 92.95 |
| 1000 | 108.84 | 86.28 | 91.61 | 92.27 | 90.98 | 96.09 | 90.47 | 88.20 | 92.60 |
| 1200 | 105.23 | 86.02 | 90.92 | 91.46 | 89.51 | 96.42 | 89.61 | 88.09 | 92.31 |
| 1400 | 105.66 | 85.65 | 91.52 | 91.06 | 90.48 | 95.62 | 89.64 | 86.14 | 91.74 |
| 1600 | 102.91 | 86.39 | 91.59 | 91.76 | 91.55 | 94.84 | 90.50 | 86.32 | 94.00 |
| 1800 | 103.13 | 87.84 | 92.40 | 93.23 | 91.22 | 94.31 | 89.94 | 86.46 | 94.90 |
| 2000 | 102.68 | 88.45 | 91.84 | 92.14 | 89.32 | 98.05 | 88.74 | 85.14 | 98.56 |
| 2200 | 99.44 | 88.63 | 92.11 | 91.48 | 88.54 | 94.42 | 87.85 | 84.95 | 103.22 |
| 2400 | 101.36 | 90.07 | 93.89 | 90.83 | 87.74 | 93.92 | 87.91 | 84.89 | 101.54 |
| 2600 | 100.01 | 88.00 | 94.76 | 91.42 | 89.52 | 93.05 | 86.87 | 83.80 | 93.88 |
| 2800 | 101.56 | 86.10 | 97.00 | 90.64 | 88.73 | 91.36 | 87.27 | 84.06 | 92.46 |
| 3000 | 99.13 | 84.38 | 104.86 | 90.66 | 88.14 | 92.94 | 87.08 | 83.69 | 89.39 |
| 3200 | 95.38 | 82.90 | 104.37 | 91.30 | 88.84 | 93.59 | 87.54 | 82.99 | 87.91 |
| 3400 | 95.91 | 82.40 | 96.52 | 93.07 | 88.31 | 93.35 | 86.53 | 82.77 | 86.75 |
| 3600 | 93.78 | 81.96 | 94.39 | 97.51 | 87.00 | 96.22 | 86.36 | 82.44 | 86.94 |
| 3800 | 93.82 | 82.67 | 91.02 | 101.85 | 86.74 | 96.55 | 85.91 | 82.66 | 88.63 |
| 4000 | 91.81 | 82.48 | 89.03 | 110.65 | 86.29 | 98.45 | 85.58 | 81.39 | 89.61 |
| 4200 | 91.90 | 82.59 | 87.70 | 100.40 | 84.71 | 98.84 | 83.86 | 80.89 | 89.27 |
| 4400 | 92.51 | 84.07 | 86.64 | 93.20 | 85.23 | 95.24 | 85.28 | 80.42 | 93.95 |
| 4600 | 92.18 | 83.81 | 87.08 | 90.46 | 86.63 | 93.08 | 86.29 | 79.03 | 92.34 |
| 4800 | 90.54 | 82.42 | 88.14 | 88.19 | 86.86 | 91.43 | 86.67 | 78.77 | 89.20 |
| 5000 | 89.76 | 84.04 | 88.99 | 87.24 | 85.89 | 90.01 | 85.61 | 77.46 | 94.87 |
| 5200 | 90.68 | 81.94 | 89.58 | 85.40 | 85.49 | 88.35 | 86.19 | 76.59 | 86.96 |
| 5400 | 90.88 | 82.38 | 88.59 | 84.30 | 86.83 | 86.89 | 88.04 | 77.10 | 87.73 |
| 5600 | 87.76 | 84.71 | 90.30 | 83.31 | 87.04 | 85.33 | 87.36 | 76.15 | 93.81 |
| 5800 | 88.85 | 82.99 | 91.20 | 82.98 | 85.19 | 84.25 | 86.67 | 76.14 | 88.42 |
| 6000 | 91.75 | 84.88 | 91.36 | 83.14 | 85.73 | 84.26 | 87.74 | 76.97 | 92.95 |
| 6200 | 88.19 | 89.27 | 92.57 | 83.71 | 85.80 | 83.95 | 89.33 | 76.49 | 92.73 |
| 6400 | 86.60 | 86.27 | 89.50 | 83.11 | 86.23 | 83.31 | 89.57 | 77.40 | 88.79 |
| 6600 | 87.75 | 86.46 | 86.82 | 82.62 | 85.51 | 82.42 | 88.20 | 78.52 | 89.42 |
| 6800 | 85.47 | 84.19 | 84.58 | 82.19 | 86.10 | 81.58 | 88.05 | 79.33 | 84.31 |
| 7000 | 84.45 | 81.91 | 83.67 | 81.58 | 84.67 | 80.69 | 86.61 | 80.05 | 82.45 |
| 7200 | 83.10 | 78.92 | 83.58 | 81.22 | 83.27 | 79.94 | 84.70 | 80.64 | 80.04 |
| 7400 | 80.75 | 77.23 | 82.74 | 79.34 | 83.73 | 78.46 | 85.11 | 80.48 | 79.04 |
| 7600 | 80.84 | 77.74 | 80.49 | 77.04 | 82.85 | 76.87 | 83.31 | 76.89 | 79.49 |
| 7800 | 79.87 | 74.60 | 79.24 | 74.63 | 82.62 | 74.86 | 82.51 | 75.67 | 76.31 |
| 8000 | 76.31 | 73.84 | 79.26 | 72.69 | 83.79 | 73.33 | 82.98 | 72.39 | 76.27 |
| 8200 | 75.73 | 78.46 | 81.42 | 71.51 | 83.56 | 72.13 | 82.80 | 70.11 | 80.66 |
| 8400 | 76.98 | 78.14 | 81.71 | 70.14 | 81.26 | 70.92 | 81.29 | 68.51 | 79.80 |
| 8500 | 76.53 | 75.23 | 81.24 | 69.50 | 80.49 | 70.32 | 81.78 | 67.70 | 77.24 |

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# Solid State
# USB RF SP16T Switch USB-1SP16T-83H

## *Typical Performance Data*

TEST CONDITIONS: @Temperature = +50°C, Pin=8dBm

| FREQUENCY (MHz) | INSERTION LOSS (dB) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | COM-J1 | COM-J2 | COM-J3 | COM-J4 | COM-J5 | COM-J6 | COM-J7 | COM-J8 |
| 0.1 | 4.89 | 4.86 | 4.90 | 4.89 | 4.92 | 4.86 | 4.85 | 4.89 |
| 0.5 | 4.26 | 4.23 | 4.26 | 4.25 | 4.26 | 4.22 | 4.21 | 4.23 |
| 1 | 4.24 | 4.20 | 4.23 | 4.23 | 4.24 | 4.20 | 4.19 | 4.21 |
| 5 | 4.24 | 4.21 | 4.24 | 4.24 | 4.24 | 4.20 | 4.19 | 4.21 |
| 10 | 4.25 | 4.21 | 4.24 | 4.24 | 4.25 | 4.20 | 4.19 | 4.22 |
| 20 | 4.26 | 4.23 | 4.26 | 4.26 | 4.26 | 4.21 | 4.20 | 4.23 |
| 50 | 4.29 | 4.26 | 4.29 | 4.29 | 4.28 | 4.23 | 4.23 | 4.25 |
| 100 | 4.37 | 4.33 | 4.36 | 4.36 | 4.32 | 4.27 | 4.26 | 4.29 |
| 200 | 4.54 | 4.49 | 4.52 | 4.53 | 4.41 | 4.35 | 4.34 | 4.37 |
| 400 | 4.82 | 4.75 | 4.79 | 4.81 | 4.61 | 4.52 | 4.51 | 4.56 |
| 600 | 4.86 | 4.80 | 4.82 | 4.85 | 4.80 | 4.69 | 4.68 | 4.75 |
| 800 | 4.97 | 4.86 | 4.88 | 4.97 | 4.95 | 4.85 | 4.83 | 4.91 |
| 1000 | 5.25 | 5.12 | 5.16 | 5.25 | 5.04 | 4.94 | 4.92 | 5.00 |
| 1200 | 5.42 | 5.32 | 5.34 | 5.42 | 5.11 | 4.99 | 4.97 | 5.06 |
| 1400 | 5.50 | 5.34 | 5.37 | 5.50 | 5.20 | 5.02 | 5.00 | 5.14 |
| 1600 | 5.71 | 5.51 | 5.56 | 5.71 | 5.32 | 5.10 | 5.07 | 5.26 |
| 1800 | 5.93 | 5.81 | 5.84 | 5.92 | 5.44 | 5.25 | 5.22 | 5.40 |
| 2000 | 6.07 | 5.91 | 5.93 | 6.06 | 5.56 | 5.41 | 5.39 | 5.51 |
| 2200 | 6.16 | 5.98 | 6.02 | 6.15 | 5.68 | 5.55 | 5.54 | 5.62 |
| 2400 | 6.27 | 6.20 | 6.23 | 6.26 | 5.80 | 5.65 | 5.64 | 5.74 |
| 2600 | 6.45 | 6.35 | 6.37 | 6.44 | 5.88 | 5.73 | 5.71 | 5.82 |
| 2800 | 6.54 | 6.46 | 6.48 | 6.53 | 5.94 | 5.82 | 5.80 | 5.88 |
| 3000 | 6.65 | 6.59 | 6.61 | 6.65 | 6.02 | 5.90 | 5.88 | 5.96 |
| 3200 | 6.81 | 6.67 | 6.70 | 6.81 | 6.17 | 5.97 | 5.95 | 6.12 |
| 3400 | 6.91 | 6.76 | 6.79 | 6.91 | 6.29 | 6.03 | 6.00 | 6.24 |
| 3600 | 7.14 | 6.81 | 6.84 | 7.14 | 6.31 | 6.10 | 6.07 | 6.26 |
| 3800 | 7.24 | 6.90 | 6.94 | 7.24 | 6.33 | 6.16 | 6.14 | 6.29 |
| 4000 | 7.27 | 6.98 | 7.02 | 7.28 | 6.46 | 6.14 | 6.12 | 6.43 |
| 4200 | 7.47 | 6.90 | 6.97 | 7.47 | 6.60 | 6.07 | 6.06 | 6.58 |
| 4400 | 7.48 | 7.08 | 7.12 | 7.50 | 6.62 | 6.09 | 6.06 | 6.60 |
| 4600 | 7.57 | 7.30 | 7.34 | 7.59 | 6.62 | 6.30 | 6.26 | 6.58 |
| 4800 | 7.58 | 7.16 | 7.22 | 7.60 | 6.81 | 6.58 | 6.54 | 6.74 |
| 5000 | 7.71 | 7.49 | 7.49 | 7.76 | 7.02 | 6.70 | 6.66 | 6.95 |
| 5200 | 8.29 | 7.97 | 8.00 | 8.33 | 6.98 | 6.60 | 6.56 | 6.94 |
| 5400 | 8.18 | 7.84 | 7.88 | 8.23 | 6.88 | 6.56 | 6.52 | 6.84 |
| 5600 | 8.51 | 8.22 | 8.22 | 8.55 | 7.24 | 6.88 | 6.87 | 7.14 |
| 5800 | 9.24 | 8.78 | 8.83 | 9.33 | 7.85 | 7.37 | 7.35 | 7.75 |
| 6000 | 9.06 | 8.66 | 8.70 | 9.11 | 8.08 | 7.58 | 7.55 | 8.03 |
| 6200 | 9.08 | 8.72 | 8.75 | 9.16 | 7.94 | 7.50 | 7.47 | 7.90 |
| 6400 | 9.25 | 8.93 | 8.99 | 9.32 | 7.81 | 7.40 | 7.38 | 7.76 |
| 6600 | 9.18 | 8.86 | 8.91 | 9.19 | 7.79 | 7.42 | 7.42 | 7.74 |
| 6800 | 9.14 | 8.85 | 8.89 | 9.14 | 7.79 | 7.46 | 7.46 | 7.73 |
| 7000 | 9.26 | 8.95 | 8.96 | 9.27 | 7.94 | 7.50 | 7.49 | 7.87 |
| 7200 | 9.44 | 9.13 | 9.13 | 9.45 | 8.19 | 7.64 | 7.64 | 8.13 |
| 7400 | 9.78 | 9.44 | 9.37 | 9.80 | 8.28 | 7.82 | 7.83 | 8.22 |
| 7600 | 10.51 | 9.95 | 9.81 | 10.59 | 8.44 | 8.01 | 8.02 | 8.39 |
| 7800 | 10.68 | 10.24 | 10.17 | 10.70 | 9.01 | 8.34 | 8.34 | 8.95 |
| 8000 | 10.85 | 10.48 | 10.35 | 10.90 | 9.75 | 8.86 | 8.85 | 9.69 |
| 8200 | 11.75 | 11.16 | 10.99 | 11.76 | 10.26 | 9.40 | 9.40 | 10.21 |
| 8400 | 12.20 | 11.62 | 11.54 | 12.14 | 10.44 | 9.73 | 9.73 | 10.41 |
| 8500 | 12.15 | 11.66 | 11.57 | 12.10 | 10.45 | 9.79 | 9.80 | 10.42 |

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# Solid State
# USB RF SP16T Switch USB-1SP16T-83H

## *Typical Performance Data*

TEST CONDITIONS: @Temperature = +50°C, Pin=8dBm

| FREQUENCY (MHz) | INSERTION LOSS (dB) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | COM-J9 | COM-J10 | COM-J11 | COM-J12 | COM-J13 | COM-J14 | COM-J15 | COM-J16 |
| 0.1 | 4.92 | 4.91 | 4.92 | 4.91 | 4.85 | 4.94 | 4.89 | 4.89 |
| 0.5 | 4.26 | 4.25 | 4.29 | 4.27 | 4.21 | 4.31 | 4.25 | 4.26 |
| 1 | 4.24 | 4.23 | 4.27 | 4.24 | 4.19 | 4.29 | 4.22 | 4.24 |
| 5 | 4.24 | 4.23 | 4.27 | 4.25 | 4.20 | 4.29 | 4.23 | 4.24 |
| 10 | 4.24 | 4.23 | 4.27 | 4.25 | 4.20 | 4.30 | 4.23 | 4.25 |
| 20 | 4.25 | 4.24 | 4.28 | 4.26 | 4.21 | 4.31 | 4.25 | 4.26 |
| 50 | 4.28 | 4.26 | 4.30 | 4.28 | 4.25 | 4.34 | 4.28 | 4.30 |
| 100 | 4.32 | 4.30 | 4.34 | 4.33 | 4.32 | 4.41 | 4.34 | 4.37 |
| 200 | 4.40 | 4.38 | 4.41 | 4.41 | 4.48 | 4.58 | 4.50 | 4.54 |
| 400 | 4.60 | 4.55 | 4.59 | 4.61 | 4.74 | 4.83 | 4.75 | 4.80 |
| 600 | 4.79 | 4.73 | 4.76 | 4.80 | 4.78 | 4.86 | 4.78 | 4.83 |
| 800 | 4.94 | 4.88 | 4.91 | 4.95 | 4.90 | 4.96 | 4.86 | 4.96 |
| 1000 | 5.03 | 4.97 | 5.01 | 5.04 | 5.20 | 5.26 | 5.16 | 5.27 |
| 1200 | 5.10 | 5.02 | 5.05 | 5.11 | 5.38 | 5.44 | 5.36 | 5.44 |
| 1400 | 5.17 | 5.04 | 5.07 | 5.18 | 5.43 | 5.45 | 5.35 | 5.49 |
| 1600 | 5.29 | 5.11 | 5.14 | 5.28 | 5.61 | 5.60 | 5.49 | 5.67 |
| 1800 | 5.42 | 5.25 | 5.28 | 5.41 | 5.83 | 5.87 | 5.78 | 5.89 |
| 2000 | 5.54 | 5.43 | 5.47 | 5.54 | 5.97 | 5.98 | 5.88 | 6.03 |
| 2200 | 5.65 | 5.58 | 5.63 | 5.66 | 6.06 | 6.07 | 5.97 | 6.13 |
| 2400 | 5.76 | 5.68 | 5.72 | 5.77 | 6.18 | 6.30 | 6.20 | 6.25 |
| 2600 | 5.84 | 5.76 | 5.80 | 5.85 | 6.36 | 6.45 | 6.35 | 6.43 |
| 2800 | 5.90 | 5.85 | 5.89 | 5.92 | 6.46 | 6.55 | 6.46 | 6.53 |
| 3000 | 6.01 | 5.94 | 5.98 | 6.02 | 6.58 | 6.69 | 6.59 | 6.65 |
| 3200 | 6.18 | 6.01 | 6.03 | 6.20 | 6.75 | 6.79 | 6.69 | 6.81 |
| 3400 | 6.30 | 6.05 | 6.08 | 6.33 | 6.86 | 6.88 | 6.78 | 6.92 |
| 3600 | 6.31 | 6.11 | 6.14 | 6.34 | 7.10 | 6.92 | 6.84 | 7.17 |
| 3800 | 6.34 | 6.17 | 6.19 | 6.36 | 7.20 | 7.03 | 6.95 | 7.27 |
| 4000 | 6.45 | 6.17 | 6.15 | 6.47 | 7.22 | 7.11 | 7.04 | 7.28 |
| 4200 | 6.59 | 6.12 | 6.07 | 6.61 | 7.42 | 7.00 | 6.96 | 7.48 |
| 4400 | 6.62 | 6.14 | 6.10 | 6.65 | 7.45 | 7.21 | 7.13 | 7.53 |
| 4600 | 6.63 | 6.33 | 6.34 | 6.68 | 7.56 | 7.43 | 7.36 | 7.61 |
| 4800 | 6.81 | 6.59 | 6.63 | 6.84 | 7.58 | 7.26 | 7.22 | 7.63 |
| 5000 | 6.99 | 6.72 | 6.70 | 7.01 | 7.75 | 7.69 | 7.57 | 7.81 |
| 5200 | 6.94 | 6.62 | 6.56 | 6.98 | 8.34 | 8.18 | 8.09 | 8.41 |
| 5400 | 6.85 | 6.57 | 6.56 | 6.91 | 8.24 | 8.02 | 7.95 | 8.32 |
| 5600 | 7.23 | 6.86 | 6.98 | 7.28 | 8.48 | 8.37 | 8.25 | 8.53 |
| 5800 | 7.84 | 7.37 | 7.46 | 7.89 | 9.19 | 8.86 | 8.81 | 9.23 |
| 6000 | 8.07 | 7.63 | 7.61 | 8.14 | 9.06 | 8.78 | 8.74 | 9.11 |
| 6200 | 7.92 | 7.55 | 7.50 | 8.00 | 9.13 | 8.89 | 8.82 | 9.15 |
| 6400 | 7.78 | 7.43 | 7.41 | 7.85 | 9.32 | 9.07 | 9.04 | 9.36 |
| 6600 | 7.74 | 7.45 | 7.42 | 7.81 | 9.26 | 9.04 | 8.99 | 9.31 |
| 6800 | 7.75 | 7.52 | 7.42 | 7.84 | 9.23 | 9.06 | 8.99 | 9.29 |
| 7000 | 7.94 | 7.57 | 7.47 | 8.05 | 9.34 | 9.15 | 9.07 | 9.41 |
| 7200 | 8.20 | 7.72 | 7.66 | 8.31 | 9.51 | 9.31 | 9.24 | 9.56 |
| 7400 | 8.26 | 7.91 | 7.82 | 8.39 | 9.80 | 9.55 | 9.49 | 9.84 |
| 7600 | 8.39 | 8.09 | 7.96 | 8.56 | 10.51 | 10.02 | 9.93 | 10.55 |
| 7800 | 8.91 | 8.37 | 8.24 | 9.07 | 10.71 | 10.38 | 10.31 | 10.75 |
| 8000 | 9.57 | 8.84 | 8.74 | 9.70 | 10.96 | 10.67 | 10.55 | 11.00 |
| 8200 | 10.05 | 9.40 | 9.29 | 10.25 | 11.81 | 11.28 | 11.16 | 11.84 |
| 8400 | 10.26 | 9.75 | 9.61 | 10.54 | 12.18 | 11.69 | 11.65 | 12.20 |
| 8500 | 10.29 | 9.82 | 9.68 | 10.58 | 12.14 | 11.74 | 11.68 | 12.17 |

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# Solid State
# USB RF SP16T Switch USB-1SP16T-83H

## *Typical Performance Data*

TEST CONDITIONS: @Temperature = +50°C, Pin=8dBm

| FREQUENCY (MHz) | VSWR, Active Ports (:1) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | COM | J1 | J2 | J3 | J4 | J5 | J6 | J7 | J8 |
| 0.1 | 2.03 | 2.01 | 2.00 | 2.02 | 2.01 | 2.04 | 2.00 | 2.01 | 2.02 |
| 0.5 | 1.32 | 1.32 | 1.31 | 1.32 | 1.32 | 1.32 | 1.31 | 1.31 | 1.31 |
| 1 | 1.28 | 1.28 | 1.28 | 1.28 | 1.28 | 1.28 | 1.28 | 1.28 | 1.28 |
| 5 | 1.27 | 1.27 | 1.26 | 1.27 | 1.27 | 1.27 | 1.26 | 1.26 | 1.26 |
| 10 | 1.27 | 1.27 | 1.26 | 1.27 | 1.27 | 1.27 | 1.26 | 1.26 | 1.27 |
| 20 | 1.27 | 1.27 | 1.27 | 1.27 | 1.27 | 1.27 | 1.27 | 1.26 | 1.27 |
| 50 | 1.27 | 1.27 | 1.26 | 1.27 | 1.27 | 1.27 | 1.27 | 1.27 | 1.27 |
| 100 | 1.25 | 1.26 | 1.26 | 1.26 | 1.26 | 1.28 | 1.27 | 1.27 | 1.27 |
| 200 | 1.20 | 1.21 | 1.21 | 1.21 | 1.21 | 1.28 | 1.27 | 1.27 | 1.27 |
| 400 | 1.03 | 1.03 | 1.04 | 1.03 | 1.03 | 1.26 | 1.25 | 1.25 | 1.24 |
| 600 | 1.22 | 1.20 | 1.18 | 1.19 | 1.19 | 1.17 | 1.19 | 1.18 | 1.17 |
| 800 | 1.31 | 1.27 | 1.31 | 1.31 | 1.28 | 1.05 | 1.08 | 1.08 | 1.06 |
| 1000 | 1.18 | 1.12 | 1.18 | 1.19 | 1.14 | 1.07 | 1.05 | 1.04 | 1.05 |
| 1200 | 1.12 | 1.08 | 1.07 | 1.07 | 1.05 | 1.15 | 1.17 | 1.16 | 1.12 |
| 1400 | 1.20 | 1.12 | 1.25 | 1.26 | 1.14 | 1.15 | 1.26 | 1.24 | 1.14 |
| 1600 | 1.15 | 1.21 | 1.22 | 1.23 | 1.21 | 1.15 | 1.29 | 1.27 | 1.16 |
| 1800 | 1.03 | 1.25 | 1.08 | 1.07 | 1.23 | 1.22 | 1.23 | 1.22 | 1.23 |
| 2000 | 1.04 | 1.10 | 1.09 | 1.10 | 1.08 | 1.29 | 1.12 | 1.13 | 1.28 |
| 2200 | 1.06 | 1.25 | 1.08 | 1.10 | 1.24 | 1.27 | 1.06 | 1.08 | 1.26 |
| 2400 | 1.03 | 1.33 | 1.14 | 1.12 | 1.32 | 1.21 | 1.07 | 1.07 | 1.19 |
| 2600 | 1.21 | 1.19 | 1.14 | 1.12 | 1.20 | 1.19 | 1.06 | 1.06 | 1.18 |
| 2800 | 1.27 | 1.20 | 1.15 | 1.12 | 1.21 | 1.20 | 1.10 | 1.10 | 1.18 |
| 3000 | 1.12 | 1.13 | 1.24 | 1.21 | 1.15 | 1.14 | 1.18 | 1.17 | 1.13 |
| 3200 | 1.41 | 1.04 | 1.24 | 1.22 | 1.05 | 1.05 | 1.22 | 1.21 | 1.02 |
| 3400 | 1.56 | 1.03 | 1.29 | 1.28 | 1.01 | 1.12 | 1.19 | 1.18 | 1.07 |
| 3600 | 1.30 | 1.17 | 1.29 | 1.32 | 1.15 | 1.13 | 1.16 | 1.16 | 1.09 |
| 3800 | 1.53 | 1.21 | 1.18 | 1.22 | 1.21 | 1.07 | 1.27 | 1.27 | 1.04 |
| 4000 | 1.61 | 1.18 | 1.28 | 1.32 | 1.17 | 1.19 | 1.41 | 1.42 | 1.18 |
| 4200 | 1.40 | 1.41 | 1.35 | 1.44 | 1.41 | 1.40 | 1.49 | 1.50 | 1.37 |
| 4400 | 1.45 | 1.38 | 1.16 | 1.22 | 1.43 | 1.51 | 1.41 | 1.41 | 1.49 |
| 4600 | 1.34 | 1.15 | 1.12 | 1.20 | 1.19 | 1.40 | 1.20 | 1.19 | 1.43 |
| 4800 | 1.37 | 1.39 | 1.32 | 1.40 | 1.44 | 1.14 | 1.06 | 1.07 | 1.19 |
| 5000 | 1.14 | 1.29 | 1.21 | 1.19 | 1.34 | 1.14 | 1.28 | 1.27 | 1.13 |
| 5200 | 1.25 | 1.06 | 1.07 | 1.14 | 1.09 | 1.31 | 1.39 | 1.37 | 1.33 |
| 5400 | 1.30 | 1.21 | 1.22 | 1.27 | 1.27 | 1.25 | 1.28 | 1.27 | 1.32 |
| 5600 | 1.19 | 1.10 | 1.20 | 1.12 | 1.04 | 1.08 | 1.09 | 1.11 | 1.09 |
| 5800 | 1.58 | 1.26 | 1.16 | 1.20 | 1.37 | 1.23 | 1.21 | 1.20 | 1.22 |
| 6000 | 1.48 | 1.20 | 1.13 | 1.18 | 1.28 | 1.35 | 1.30 | 1.29 | 1.36 |
| 6200 | 1.35 | 1.12 | 1.08 | 1.07 | 1.23 | 1.28 | 1.25 | 1.22 | 1.31 |
| 6400 | 1.49 | 1.29 | 1.12 | 1.22 | 1.37 | 1.15 | 1.12 | 1.09 | 1.17 |
| 6600 | 1.45 | 1.24 | 1.12 | 1.18 | 1.21 | 1.19 | 1.15 | 1.15 | 1.19 |
| 6800 | 1.38 | 1.20 | 1.10 | 1.13 | 1.14 | 1.21 | 1.20 | 1.19 | 1.20 |
| 7000 | 1.23 | 1.21 | 1.18 | 1.15 | 1.10 | 1.17 | 1.17 | 1.15 | 1.15 |
| 7200 | 1.26 | 1.19 | 1.18 | 1.11 | 1.09 | 1.08 | 1.10 | 1.07 | 1.08 |
| 7400 | 1.57 | 1.28 | 1.36 | 1.24 | 1.21 | 1.07 | 1.05 | 1.02 | 1.05 |
| 7600 | 1.59 | 1.12 | 1.47 | 1.27 | 1.16 | 1.19 | 1.20 | 1.16 | 1.19 |
| 7800 | 1.34 | 1.15 | 1.30 | 1.11 | 1.05 | 1.20 | 1.40 | 1.34 | 1.24 |
| 8000 | 1.50 | 1.19 | 1.50 | 1.27 | 1.13 | 1.08 | 1.51 | 1.46 | 1.13 |
| 8200 | 1.58 | 1.23 | 1.59 | 1.39 | 1.11 | 1.20 | 1.44 | 1.43 | 1.13 |
| 8400 | 1.27 | 1.59 | 1.31 | 1.18 | 1.42 | 1.42 | 1.26 | 1.28 | 1.33 |
| 8500 | 1.11 | 1.63 | 1.31 | 1.14 | 1.46 | 1.49 | 1.19 | 1.21 | 1.41 |

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## *Typical Performance Data*

TEST CONDITIONS: @Temperature = +50°C, Pin=8dBm

| FREQUENCY (MHz) | VSWR, Active Ports (:1) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | J9 | J10 | J11 | J12 | J13 | J14 | J15 | J16 |
| 0.1 | 2.03 | 2.03 | 2.01 | 2.01 | 2.01 | 2.00 | 2.01 | 1.99 |
| 0.5 | 1.32 | 1.32 | 1.32 | 1.32 | 1.31 | 1.33 | 1.32 | 1.32 |
| 1 | 1.29 | 1.28 | 1.29 | 1.29 | 1.28 | 1.29 | 1.28 | 1.28 |
| 5 | 1.27 | 1.27 | 1.28 | 1.27 | 1.26 | 1.28 | 1.27 | 1.27 |
| 10 | 1.27 | 1.27 | 1.28 | 1.27 | 1.27 | 1.28 | 1.27 | 1.27 |
| 20 | 1.27 | 1.27 | 1.28 | 1.27 | 1.27 | 1.28 | 1.27 | 1.27 |
| 50 | 1.28 | 1.27 | 1.28 | 1.28 | 1.27 | 1.28 | 1.27 | 1.27 |
| 100 | 1.28 | 1.27 | 1.28 | 1.28 | 1.26 | 1.27 | 1.26 | 1.26 |
| 200 | 1.29 | 1.28 | 1.28 | 1.28 | 1.22 | 1.22 | 1.21 | 1.22 |
| 400 | 1.26 | 1.25 | 1.25 | 1.25 | 1.05 | 1.05 | 1.04 | 1.04 |
| 600 | 1.17 | 1.18 | 1.17 | 1.17 | 1.21 | 1.21 | 1.19 | 1.20 |
| 800 | 1.04 | 1.08 | 1.06 | 1.04 | 1.30 | 1.34 | 1.31 | 1.29 |
| 1000 | 1.08 | 1.06 | 1.08 | 1.08 | 1.13 | 1.17 | 1.18 | 1.14 |
| 1200 | 1.15 | 1.18 | 1.20 | 1.16 | 1.10 | 1.12 | 1.08 | 1.09 |
| 1400 | 1.14 | 1.28 | 1.26 | 1.15 | 1.17 | 1.31 | 1.28 | 1.17 |
| 1600 | 1.15 | 1.30 | 1.25 | 1.14 | 1.21 | 1.22 | 1.25 | 1.21 |
| 1800 | 1.25 | 1.24 | 1.17 | 1.22 | 1.24 | 1.05 | 1.07 | 1.23 |
| 2000 | 1.32 | 1.14 | 1.12 | 1.30 | 1.09 | 1.12 | 1.08 | 1.09 |
| 2200 | 1.30 | 1.09 | 1.14 | 1.30 | 1.25 | 1.03 | 1.08 | 1.24 |
| 2400 | 1.23 | 1.08 | 1.14 | 1.23 | 1.32 | 1.16 | 1.14 | 1.33 |
| 2600 | 1.20 | 1.07 | 1.14 | 1.20 | 1.18 | 1.20 | 1.15 | 1.20 |
| 2800 | 1.19 | 1.12 | 1.19 | 1.19 | 1.17 | 1.19 | 1.14 | 1.20 |
| 3000 | 1.12 | 1.20 | 1.25 | 1.12 | 1.11 | 1.28 | 1.22 | 1.14 |
| 3200 | 1.01 | 1.23 | 1.27 | 1.01 | 1.03 | 1.28 | 1.23 | 1.06 |
| 3400 | 1.09 | 1.19 | 1.21 | 1.10 | 1.03 | 1.34 | 1.28 | 1.03 |
| 3600 | 1.10 | 1.14 | 1.18 | 1.11 | 1.17 | 1.34 | 1.31 | 1.17 |
| 3800 | 1.06 | 1.23 | 1.28 | 1.07 | 1.20 | 1.21 | 1.19 | 1.23 |
| 4000 | 1.19 | 1.37 | 1.41 | 1.19 | 1.14 | 1.32 | 1.30 | 1.16 |
| 4200 | 1.39 | 1.47 | 1.47 | 1.37 | 1.38 | 1.36 | 1.40 | 1.39 |
| 4400 | 1.52 | 1.45 | 1.37 | 1.49 | 1.36 | 1.12 | 1.17 | 1.39 |
| 4600 | 1.44 | 1.29 | 1.17 | 1.45 | 1.15 | 1.17 | 1.19 | 1.16 |
| 4800 | 1.18 | 1.07 | 1.04 | 1.23 | 1.39 | 1.28 | 1.34 | 1.39 |
| 5000 | 1.09 | 1.18 | 1.21 | 1.06 | 1.29 | 1.16 | 1.15 | 1.31 |
| 5200 | 1.27 | 1.34 | 1.29 | 1.24 | 1.07 | 1.10 | 1.14 | 1.04 |
| 5400 | 1.24 | 1.33 | 1.21 | 1.25 | 1.23 | 1.21 | 1.24 | 1.23 |
| 5600 | 1.09 | 1.17 | 1.14 | 1.12 | 1.10 | 1.20 | 1.13 | 1.13 |
| 5800 | 1.22 | 1.15 | 1.22 | 1.22 | 1.23 | 1.12 | 1.16 | 1.20 |
| 6000 | 1.33 | 1.21 | 1.25 | 1.30 | 1.18 | 1.13 | 1.14 | 1.17 |
| 6200 | 1.26 | 1.18 | 1.17 | 1.25 | 1.13 | 1.08 | 1.06 | 1.08 |
| 6400 | 1.13 | 1.05 | 1.04 | 1.11 | 1.27 | 1.11 | 1.17 | 1.26 |
| 6600 | 1.15 | 1.09 | 1.08 | 1.11 | 1.18 | 1.15 | 1.14 | 1.21 |
| 6800 | 1.19 | 1.12 | 1.13 | 1.18 | 1.14 | 1.13 | 1.10 | 1.18 |
| 7000 | 1.20 | 1.10 | 1.18 | 1.25 | 1.14 | 1.20 | 1.15 | 1.20 |
| 7200 | 1.12 | 1.11 | 1.16 | 1.20 | 1.11 | 1.20 | 1.12 | 1.17 |
| 7400 | 1.09 | 1.08 | 1.10 | 1.16 | 1.21 | 1.36 | 1.26 | 1.27 |
| 7600 | 1.22 | 1.08 | 1.26 | 1.30 | 1.12 | 1.43 | 1.28 | 1.15 |
| 7800 | 1.23 | 1.31 | 1.50 | 1.33 | 1.10 | 1.28 | 1.13 | 1.14 |
| 8000 | 1.07 | 1.51 | 1.58 | 1.14 | 1.16 | 1.56 | 1.35 | 1.21 |
| 8200 | 1.18 | 1.54 | 1.44 | 1.15 | 1.11 | 1.59 | 1.39 | 1.11 |
| 8400 | 1.43 | 1.40 | 1.26 | 1.42 | 1.41 | 1.35 | 1.17 | 1.44 |
| 8500 | 1.50 | 1.33 | 1.25 | 1.52 | 1.45 | 1.42 | 1.19 | 1.50 |

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# Solid State
# USB RF SP16T Switch USB-1SP16T-83H

## *Typical Performance Data*

TEST CONDITIONS: @Temperature = +50°C, Pin=8dBm

| FREQUENCY (MHz) | VSWR, Terminated Ports (:1) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | COM | J1 | J2 | J3 | J4 | J5 | J6 | J7 | J8 |
| 0.1 | 1.96 | 1.46 | 1.53 | 1.52 | 1.49 | 1.54 | 1.50 | 1.50 | 1.55 |
| 0.5 | 1.23 | 1.13 | 1.23 | 1.20 | 1.18 | 1.21 | 1.20 | 1.20 | 1.24 |
| 1 | 1.18 | 1.11 | 1.22 | 1.18 | 1.17 | 1.20 | 1.19 | 1.19 | 1.22 |
| 5 | 1.17 | 1.10 | 1.22 | 1.18 | 1.16 | 1.19 | 1.19 | 1.18 | 1.22 |
| 10 | 1.17 | 1.10 | 1.22 | 1.18 | 1.16 | 1.19 | 1.19 | 1.18 | 1.22 |
| 20 | 1.16 | 1.10 | 1.22 | 1.18 | 1.16 | 1.19 | 1.18 | 1.18 | 1.22 |
| 50 | 1.16 | 1.10 | 1.22 | 1.18 | 1.16 | 1.19 | 1.19 | 1.18 | 1.22 |
| 100 | 1.16 | 1.10 | 1.22 | 1.18 | 1.16 | 1.19 | 1.18 | 1.18 | 1.22 |
| 200 | 1.16 | 1.10 | 1.22 | 1.18 | 1.16 | 1.19 | 1.18 | 1.18 | 1.22 |
| 400 | 1.15 | 1.09 | 1.20 | 1.17 | 1.15 | 1.18 | 1.18 | 1.17 | 1.21 |
| 600 | 1.14 | 1.09 | 1.19 | 1.16 | 1.14 | 1.17 | 1.17 | 1.16 | 1.20 |
| 800 | 1.14 | 1.08 | 1.18 | 1.15 | 1.14 | 1.16 | 1.16 | 1.16 | 1.19 |
| 1000 | 1.13 | 1.08 | 1.17 | 1.14 | 1.13 | 1.15 | 1.16 | 1.15 | 1.19 |
| 1200 | 1.12 | 1.08 | 1.16 | 1.13 | 1.12 | 1.14 | 1.15 | 1.15 | 1.18 |
| 1400 | 1.11 | 1.08 | 1.15 | 1.13 | 1.12 | 1.14 | 1.15 | 1.14 | 1.17 |
| 1600 | 1.10 | 1.08 | 1.14 | 1.12 | 1.11 | 1.13 | 1.14 | 1.14 | 1.16 |
| 1800 | 1.10 | 1.08 | 1.13 | 1.11 | 1.11 | 1.12 | 1.14 | 1.13 | 1.15 |
| 2000 | 1.10 | 1.08 | 1.11 | 1.10 | 1.10 | 1.11 | 1.14 | 1.13 | 1.14 |
| 2200 | 1.09 | 1.08 | 1.10 | 1.10 | 1.10 | 1.10 | 1.13 | 1.12 | 1.13 |
| 2400 | 1.09 | 1.08 | 1.09 | 1.09 | 1.09 | 1.09 | 1.12 | 1.12 | 1.12 |
| 2600 | 1.09 | 1.08 | 1.08 | 1.08 | 1.08 | 1.08 | 1.12 | 1.11 | 1.11 |
| 2800 | 1.09 | 1.08 | 1.07 | 1.07 | 1.08 | 1.07 | 1.11 | 1.11 | 1.10 |
| 3000 | 1.09 | 1.08 | 1.06 | 1.07 | 1.07 | 1.07 | 1.10 | 1.10 | 1.09 |
| 3200 | 1.10 | 1.08 | 1.06 | 1.06 | 1.06 | 1.05 | 1.09 | 1.09 | 1.08 |
| 3400 | 1.11 | 1.07 | 1.07 | 1.05 | 1.05 | 1.04 | 1.08 | 1.09 | 1.07 |
| 3600 | 1.12 | 1.07 | 1.08 | 1.05 | 1.05 | 1.04 | 1.08 | 1.08 | 1.07 |
| 3800 | 1.14 | 1.07 | 1.08 | 1.05 | 1.05 | 1.03 | 1.07 | 1.08 | 1.07 |
| 4000 | 1.15 | 1.06 | 1.09 | 1.05 | 1.05 | 1.03 | 1.08 | 1.08 | 1.06 |
| 4200 | 1.16 | 1.06 | 1.10 | 1.05 | 1.06 | 1.03 | 1.08 | 1.08 | 1.07 |
| 4400 | 1.17 | 1.06 | 1.10 | 1.04 | 1.06 | 1.02 | 1.09 | 1.07 | 1.06 |
| 4600 | 1.18 | 1.06 | 1.11 | 1.04 | 1.06 | 1.02 | 1.08 | 1.07 | 1.06 |
| 4800 | 1.19 | 1.06 | 1.11 | 1.04 | 1.07 | 1.02 | 1.09 | 1.06 | 1.05 |
| 5000 | 1.20 | 1.06 | 1.10 | 1.04 | 1.07 | 1.02 | 1.08 | 1.06 | 1.03 |
| 5200 | 1.20 | 1.06 | 1.11 | 1.03 | 1.06 | 1.01 | 1.06 | 1.04 | 1.02 |
| 5400 | 1.20 | 1.06 | 1.11 | 1.04 | 1.05 | 1.01 | 1.05 | 1.04 | 1.01 |
| 5600 | 1.20 | 1.06 | 1.11 | 1.02 | 1.05 | 1.01 | 1.04 | 1.02 | 1.01 |
| 5800 | 1.20 | 1.08 | 1.12 | 1.05 | 1.04 | 1.03 | 1.02 | 1.04 | 1.04 |
| 6000 | 1.19 | 1.08 | 1.14 | 1.04 | 1.02 | 1.03 | 1.03 | 1.03 | 1.05 |
| 6200 | 1.18 | 1.09 | 1.15 | 1.05 | 1.03 | 1.06 | 1.04 | 1.06 | 1.07 |
| 6400 | 1.18 | 1.12 | 1.18 | 1.08 | 1.05 | 1.08 | 1.08 | 1.09 | 1.10 |
| 6600 | 1.17 | 1.14 | 1.20 | 1.08 | 1.08 | 1.09 | 1.11 | 1.10 | 1.13 |
| 6800 | 1.17 | 1.17 | 1.22 | 1.11 | 1.11 | 1.12 | 1.14 | 1.14 | 1.14 |
| 7000 | 1.17 | 1.20 | 1.24 | 1.13 | 1.13 | 1.13 | 1.16 | 1.16 | 1.16 |
| 7200 | 1.14 | 1.24 | 1.26 | 1.15 | 1.17 | 1.16 | 1.19 | 1.19 | 1.18 |
| 7400 | 1.13 | 1.27 | 1.29 | 1.18 | 1.21 | 1.19 | 1.23 | 1.22 | 1.21 |
| 7600 | 1.12 | 1.31 | 1.32 | 1.20 | 1.25 | 1.21 | 1.25 | 1.26 | 1.23 |
| 7800 | 1.11 | 1.35 | 1.35 | 1.23 | 1.29 | 1.24 | 1.29 | 1.29 | 1.26 |
| 8000 | 1.11 | 1.39 | 1.37 | 1.26 | 1.33 | 1.27 | 1.31 | 1.33 | 1.28 |
| 8200 | 1.11 | 1.43 | 1.39 | 1.29 | 1.37 | 1.30 | 1.34 | 1.36 | 1.31 |
| 8400 | 1.12 | 1.47 | 1.40 | 1.31 | 1.39 | 1.32 | 1.35 | 1.39 | 1.32 |
| 8500 | 1.12 | 1.49 | 1.40 | 1.32 | 1.40 | 1.33 | 1.36 | 1.40 | 1.32 |

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# Solid State
# USB RF SP16T Switch USB-1SP16T-83H

## *Typical Performance Data*

TEST CONDITIONS: @Temperature = +50°C, Pin=8dBm

| FREQUENCY (MHz) | VSWR, Terminated Ports (:1) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | J9 | J10 | J11 | J12 | J13 | J14 | J15 | J16 |
| 0.1 | 1.52 | 1.53 | 1.49 | 1.46 | 1.52 | 1.45 | 1.50 | 1.48 |
| 0.5 | 1.19 | 1.21 | 1.18 | 1.14 | 1.22 | 1.13 | 1.19 | 1.19 |
| 1 | 1.17 | 1.20 | 1.16 | 1.12 | 1.20 | 1.11 | 1.18 | 1.17 |
| 5 | 1.16 | 1.19 | 1.16 | 1.12 | 1.20 | 1.11 | 1.17 | 1.17 |
| 10 | 1.16 | 1.19 | 1.16 | 1.12 | 1.20 | 1.11 | 1.17 | 1.17 |
| 20 | 1.16 | 1.19 | 1.16 | 1.12 | 1.20 | 1.11 | 1.17 | 1.17 |
| 50 | 1.16 | 1.19 | 1.16 | 1.12 | 1.20 | 1.10 | 1.17 | 1.17 |
| 100 | 1.17 | 1.19 | 1.16 | 1.12 | 1.20 | 1.11 | 1.17 | 1.17 |
| 200 | 1.16 | 1.19 | 1.16 | 1.12 | 1.20 | 1.11 | 1.17 | 1.17 |
| 400 | 1.15 | 1.18 | 1.15 | 1.11 | 1.18 | 1.10 | 1.16 | 1.15 |
| 600 | 1.14 | 1.17 | 1.14 | 1.10 | 1.18 | 1.09 | 1.15 | 1.15 |
| 800 | 1.13 | 1.16 | 1.13 | 1.10 | 1.17 | 1.09 | 1.15 | 1.14 |
| 1000 | 1.13 | 1.16 | 1.12 | 1.10 | 1.16 | 1.09 | 1.14 | 1.14 |
| 1200 | 1.12 | 1.15 | 1.11 | 1.09 | 1.15 | 1.09 | 1.13 | 1.13 |
| 1400 | 1.11 | 1.14 | 1.10 | 1.09 | 1.14 | 1.09 | 1.12 | 1.12 |
| 1600 | 1.10 | 1.13 | 1.09 | 1.09 | 1.13 | 1.09 | 1.11 | 1.12 |
| 1800 | 1.09 | 1.12 | 1.08 | 1.09 | 1.12 | 1.09 | 1.11 | 1.11 |
| 2000 | 1.08 | 1.12 | 1.07 | 1.08 | 1.10 | 1.09 | 1.10 | 1.11 |
| 2200 | 1.08 | 1.11 | 1.07 | 1.08 | 1.10 | 1.09 | 1.09 | 1.10 |
| 2400 | 1.07 | 1.10 | 1.06 | 1.08 | 1.08 | 1.09 | 1.08 | 1.09 |
| 2600 | 1.07 | 1.09 | 1.05 | 1.08 | 1.07 | 1.09 | 1.07 | 1.08 |
| 2800 | 1.06 | 1.09 | 1.05 | 1.08 | 1.06 | 1.08 | 1.06 | 1.07 |
| 3000 | 1.05 | 1.08 | 1.05 | 1.07 | 1.05 | 1.08 | 1.05 | 1.06 |
| 3200 | 1.05 | 1.07 | 1.04 | 1.07 | 1.05 | 1.07 | 1.05 | 1.05 |
| 3400 | 1.04 | 1.07 | 1.04 | 1.06 | 1.04 | 1.06 | 1.04 | 1.04 |
| 3600 | 1.04 | 1.07 | 1.04 | 1.05 | 1.04 | 1.05 | 1.04 | 1.03 |
| 3800 | 1.04 | 1.07 | 1.04 | 1.05 | 1.04 | 1.04 | 1.04 | 1.03 |
| 4000 | 1.04 | 1.07 | 1.04 | 1.06 | 1.04 | 1.02 | 1.04 | 1.02 |
| 4200 | 1.05 | 1.08 | 1.05 | 1.07 | 1.04 | 1.02 | 1.05 | 1.03 |
| 4400 | 1.04 | 1.08 | 1.04 | 1.08 | 1.04 | 1.02 | 1.04 | 1.03 |
| 4600 | 1.04 | 1.08 | 1.04 | 1.08 | 1.04 | 1.03 | 1.05 | 1.03 |
| 4800 | 1.04 | 1.09 | 1.03 | 1.10 | 1.04 | 1.05 | 1.05 | 1.03 |
| 5000 | 1.04 | 1.07 | 1.04 | 1.09 | 1.04 | 1.06 | 1.05 | 1.03 |
| 5200 | 1.03 | 1.06 | 1.03 | 1.08 | 1.03 | 1.09 | 1.05 | 1.05 |
| 5400 | 1.02 | 1.04 | 1.04 | 1.07 | 1.05 | 1.10 | 1.06 | 1.04 |
| 5600 | 1.01 | 1.03 | 1.03 | 1.06 | 1.05 | 1.13 | 1.06 | 1.06 |
| 5800 | 1.03 | 1.02 | 1.07 | 1.04 | 1.07 | 1.14 | 1.09 | 1.07 |
| 6000 | 1.03 | 1.04 | 1.07 | 1.05 | 1.07 | 1.17 | 1.09 | 1.08 |
| 6200 | 1.06 | 1.07 | 1.10 | 1.06 | 1.09 | 1.19 | 1.10 | 1.10 |
| 6400 | 1.09 | 1.11 | 1.13 | 1.10 | 1.10 | 1.21 | 1.12 | 1.11 |
| 6600 | 1.10 | 1.14 | 1.15 | 1.14 | 1.12 | 1.24 | 1.13 | 1.13 |
| 6800 | 1.13 | 1.17 | 1.19 | 1.17 | 1.15 | 1.26 | 1.15 | 1.15 |
| 7000 | 1.15 | 1.20 | 1.21 | 1.21 | 1.17 | 1.29 | 1.17 | 1.18 |
| 7200 | 1.18 | 1.23 | 1.24 | 1.25 | 1.20 | 1.32 | 1.19 | 1.20 |
| 7400 | 1.21 | 1.27 | 1.28 | 1.30 | 1.23 | 1.35 | 1.21 | 1.23 |
| 7600 | 1.24 | 1.30 | 1.31 | 1.34 | 1.25 | 1.39 | 1.23 | 1.26 |
| 7800 | 1.27 | 1.34 | 1.35 | 1.39 | 1.29 | 1.43 | 1.25 | 1.30 |
| 8000 | 1.31 | 1.38 | 1.38 | 1.42 | 1.32 | 1.46 | 1.27 | 1.33 |
| 8200 | 1.33 | 1.41 | 1.41 | 1.46 | 1.35 | 1.50 | 1.29 | 1.36 |
| 8400 | 1.36 | 1.42 | 1.42 | 1.46 | 1.37 | 1.53 | 1.31 | 1.39 |
| 8500 | 1.37 | 1.42 | 1.43 | 1.47 | 1.38 | 1.54 | 1.31 | 1.40 |

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## *Typical Performance Data*

TEST CONDITIONS: @Temperature = +50°C, Pin=8dBm

| FREQUENCY (MHz) | ISOLATION COM to terminated port (dB) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | COM-J1 @J16 Active | COM-J2 @J1 Active | COM-J4 @J3 Active | COM-J5 @J6 Active | COM-J7 @J6 Active | COM-J8 @J7 Active | COM-J10 @J9 Active | COM-J13 @J12 Active | COM-J15 @J14 Active |
| 0.1 | 102.34 | 100.44 | 96.93 | 93.25 | 93.25 | 94.84 | 107.28 | 98.64 | 94.80 |
| 0.5 | 103.20 | 97.10 | 94.72 | 101.72 | 101.72 | 106.14 | 93.76 | 101.81 | 100.85 |
| 1 | 98.27 | 98.46 | 91.39 | 95.36 | 95.36 | 93.25 | 97.93 | 91.35 | 97.97 |
| 5 | 95.56 | 105.26 | 95.87 | 99.55 | 99.55 | 102.91 | 98.22 | 116.91 | 102.31 |
| 10 | 108.28 | 109.56 | 102.85 | 112.07 | 112.07 | 105.68 | 101.80 | 105.94 | 103.06 |
| 20 | 115.34 | 102.98 | 100.21 | 102.66 | 102.66 | 107.56 | 100.96 | 101.78 | 99.39 |
| 50 | 111.18 | 104.81 | 96.97 | 102.89 | 102.89 | 100.57 | 97.31 | 101.54 | 100.19 |
| 100 | 105.31 | 104.03 | 94.32 | 100.91 | 100.91 | 102.69 | 100.40 | 100.93 | 101.33 |
| 200 | 132.22 | 111.49 | 97.47 | 101.55 | 101.55 | 102.16 | 95.75 | 99.54 | 98.17 |
| 400 | 112.38 | 110.41 | 97.97 | 104.42 | 104.42 | 108.62 | 97.40 | 98.61 | 98.99 |
| 600 | 119.97 | 113.18 | 100.31 | 109.62 | 109.62 | 108.75 | 95.59 | 96.67 | 102.17 |
| 800 | 109.29 | 111.36 | 102.63 | 104.61 | 104.61 | 108.37 | 95.36 | 96.73 | 102.36 |
| 1000 | 111.87 | 114.94 | 102.24 | 113.68 | 113.68 | 109.90 | 95.81 | 97.86 | 100.69 |
| 1200 | 111.37 | 117.78 | 103.14 | 114.07 | 114.07 | 112.24 | 97.25 | 99.16 | 100.37 |
| 1400 | 116.57 | 114.66 | 110.64 | 109.97 | 109.97 | 113.22 | 99.31 | 98.62 | 98.37 |
| 1600 | 119.52 | 107.68 | 106.07 | 106.83 | 106.83 | 105.98 | 97.32 | 97.26 | 97.40 |
| 1800 | 109.89 | 110.96 | 105.62 | 110.44 | 110.44 | 106.82 | 100.39 | 98.93 | 102.30 |
| 2000 | 106.80 | 122.87 | 103.84 | 112.13 | 112.13 | 99.90 | 98.67 | 97.93 | 100.38 |
| 2200 | 116.49 | 108.72 | 100.88 | 105.87 | 105.87 | 100.91 | 98.93 | 98.72 | 102.16 |
| 2400 | 110.59 | 106.71 | 99.59 | 104.54 | 104.54 | 101.45 | 98.75 | 96.70 | 100.64 |
| 2600 | 126.85 | 100.80 | 95.68 | 109.15 | 109.15 | 97.12 | 99.87 | 96.80 | 101.30 |
| 2800 | 108.89 | 99.93 | 94.63 | 105.93 | 105.93 | 95.21 | 97.42 | 97.65 | 101.57 |
| 3000 | 113.00 | 101.16 | 94.41 | 112.88 | 112.88 | 93.61 | 95.92 | 97.50 | 105.31 |
| 3200 | 117.58 | 97.46 | 93.74 | 111.75 | 111.75 | 92.47 | 93.64 | 97.63 | 103.63 |
| 3400 | 104.93 | 98.74 | 91.20 | 106.97 | 106.97 | 91.71 | 92.82 | 95.63 | 106.36 |
| 3600 | 107.28 | 96.80 | 90.24 | 123.61 | 123.61 | 89.95 | 92.03 | 96.39 | 102.91 |
| 3800 | 114.25 | 100.04 | 89.04 | 114.37 | 114.37 | 89.01 | 90.90 | 94.43 | 106.87 |
| 4000 | 110.02 | 95.46 | 89.00 | 108.94 | 108.94 | 87.34 | 90.59 | 96.32 | 107.44 |
| 4200 | 110.66 | 95.18 | 88.40 | 102.85 | 102.85 | 86.93 | 89.80 | 97.82 | 103.31 |
| 4400 | 105.90 | 93.61 | 86.88 | 101.91 | 101.91 | 85.77 | 89.86 | 96.21 | 109.22 |
| 4600 | 113.45 | 90.50 | 86.08 | 106.69 | 106.69 | 85.13 | 89.43 | 95.25 | 104.42 |
| 4800 | 109.06 | 89.13 | 85.42 | 101.66 | 101.66 | 84.57 | 88.54 | 98.21 | 103.71 |
| 5000 | 113.72 | 90.57 | 85.67 | 99.86 | 99.86 | 83.95 | 89.21 | 95.52 | 99.68 |
| 5200 | 119.89 | 89.64 | 85.37 | 98.39 | 98.39 | 83.80 | 88.68 | 99.14 | 99.39 |
| 5400 | 108.83 | 89.46 | 84.12 | 101.08 | 101.08 | 82.93 | 90.26 | 96.55 | 97.20 |
| 5600 | 129.88 | 88.31 | 83.86 | 97.47 | 97.47 | 83.09 | 90.64 | 97.20 | 96.66 |
| 5800 | 107.30 | 88.76 | 83.54 | 95.70 | 95.70 | 82.46 | 91.38 | 100.56 | 97.12 |
| 6000 | 123.69 | 88.18 | 82.78 | 99.80 | 99.80 | 82.21 | 92.87 | 98.50 | 95.39 |
| 6200 | 110.38 | 87.46 | 81.93 | 97.36 | 97.36 | 81.33 | 90.48 | 99.20 | 92.34 |
| 6400 | 113.06 | 86.28 | 81.27 | 96.15 | 96.15 | 80.46 | 88.87 | 96.55 | 93.15 |
| 6600 | 117.95 | 84.93 | 79.89 | 92.00 | 92.00 | 79.42 | 86.06 | 99.06 | 91.85 |
| 6800 | 106.34 | 83.84 | 79.15 | 90.00 | 90.00 | 78.85 | 83.11 | 96.11 | 90.92 |
| 7000 | 111.13 | 82.05 | 77.97 | 87.76 | 87.76 | 77.74 | 81.14 | 95.61 | 89.34 |
| 7200 | 104.15 | 80.47 | 77.13 | 86.16 | 86.16 | 76.53 | 79.46 | 93.66 | 88.58 |
| 7400 | 104.90 | 80.12 | 75.81 | 84.50 | 84.50 | 75.27 | 77.77 | 91.81 | 87.48 |
| 7600 | 101.05 | 78.67 | 74.50 | 82.27 | 82.27 | 73.95 | 76.55 | 90.59 | 85.99 |
| 7800 | 101.32 | 78.32 | 73.09 | 80.91 | 80.91 | 72.85 | 76.05 | 90.05 | 85.19 |
| 8000 | 100.08 | 76.70 | 71.74 | 80.23 | 80.23 | 71.37 | 75.55 | 90.99 | 84.23 |
| 8200 | 94.00 | 76.20 | 70.43 | 78.57 | 78.57 | 70.26 | 74.69 | 90.07 | 83.05 |
| 8400 | 96.16 | 75.10 | 69.40 | 77.97 | 77.97 | 68.80 | 74.06 | 89.21 | 81.71 |
| 8500 | 93.83 | 74.49 | 68.54 | 77.49 | 77.49 | 68.24 | 73.17 | 87.69 | 81.09 |

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# Solid State
# USB RF SP16T Switch USB-1SP16T-83H

## *Typical Performance Data*

TEST CONDITIONS: @Temperature = +50°C, Pin=8dBm

| FREQUENCY (MHz) | ISOLATION between adjacent ports (dB) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | J1-J2 @J1 Active | J3-J4 @J3 Active | J5-J6 @J5 Active | J6-J7 @J6 Active | J8-J9 @J8 Active | J10-J11 @J10 Active | J12-J13 @J12 Active | J14-J15 @J14 Active | J15-J16 @J15 Active |
| 0.1 | 127.16 | 98.88 | 117.95 | 108.32 | 97.72 | 101.79 | 98.22 | 103.70 | 98.35 |
| 0.5 | 118.20 | 108.83 | 94.15 | 97.19 | 107.76 | 97.11 | 95.90 | 90.79 | 91.91 |
| 1 | 89.21 | 97.26 | 99.21 | 96.83 | 102.95 | 101.00 | 98.85 | 106.38 | 99.90 |
| 5 | 96.32 | 101.88 | 103.02 | 95.51 | 93.01 | 98.71 | 97.02 | 95.76 | 92.95 |
| 10 | 104.36 | 100.44 | 101.14 | 99.09 | 102.90 | 97.08 | 101.04 | 100.48 | 96.91 |
| 20 | 105.60 | 96.01 | 98.02 | 100.04 | 98.26 | 99.07 | 99.05 | 95.51 | 97.02 |
| 50 | 98.89 | 94.60 | 96.88 | 97.96 | 94.09 | 95.85 | 96.18 | 95.90 | 96.10 |
| 100 | 102.36 | 92.64 | 97.09 | 96.92 | 93.99 | 96.99 | 95.96 | 97.36 | 97.65 |
| 200 | 104.22 | 92.42 | 96.90 | 97.92 | 92.65 | 94.72 | 97.25 | 95.27 | 97.45 |
| 400 | 111.59 | 94.29 | 97.15 | 101.22 | 91.45 | 94.43 | 92.40 | 96.13 | 97.72 |
| 600 | 108.23 | 95.34 | 96.65 | 100.90 | 91.20 | 93.88 | 91.52 | 98.29 | 101.20 |
| 800 | 109.53 | 94.13 | 101.84 | 102.95 | 92.45 | 96.02 | 92.40 | 95.18 | 99.22 |
| 1000 | 119.06 | 95.01 | 102.83 | 104.84 | 92.92 | 96.62 | 91.79 | 95.76 | 97.93 |
| 1200 | 114.76 | 94.41 | 100.40 | 118.42 | 93.35 | 94.98 | 90.98 | 95.20 | 96.34 |
| 1400 | 108.11 | 93.98 | 100.88 | 104.64 | 92.05 | 95.45 | 91.95 | 96.47 | 95.19 |
| 1600 | 104.14 | 94.32 | 100.90 | 111.11 | 93.94 | 95.19 | 91.96 | 95.17 | 95.74 |
| 1800 | 102.89 | 97.09 | 98.82 | 106.39 | 93.99 | 98.14 | 93.30 | 94.07 | 97.35 |
| 2000 | 106.04 | 98.34 | 100.18 | 108.69 | 93.73 | 95.24 | 90.81 | 95.84 | 101.82 |
| 2200 | 101.50 | 102.16 | 97.22 | 101.77 | 94.26 | 95.19 | 90.65 | 94.14 | 111.42 |
| 2400 | 100.76 | 107.30 | 100.83 | 100.27 | 92.31 | 94.35 | 89.75 | 92.86 | 106.44 |
| 2600 | 99.60 | 100.41 | 100.90 | 102.06 | 93.51 | 93.20 | 91.26 | 92.70 | 99.01 |
| 2800 | 102.26 | 97.43 | 101.14 | 100.44 | 92.48 | 93.27 | 91.99 | 93.42 | 95.50 |
| 3000 | 98.42 | 93.13 | 101.45 | 97.32 | 94.95 | 91.98 | 92.51 | 92.91 | 91.49 |
| 3200 | 94.43 | 93.05 | 103.58 | 97.08 | 92.31 | 90.98 | 90.40 | 94.04 | 90.49 |
| 3400 | 93.49 | 93.66 | 96.35 | 97.38 | 90.81 | 92.97 | 91.33 | 97.12 | 90.20 |
| 3600 | 94.55 | 92.36 | 95.54 | 98.10 | 92.67 | 93.86 | 90.19 | 100.31 | 89.04 |
| 3800 | 94.38 | 94.70 | 95.05 | 96.59 | 92.46 | 93.91 | 90.25 | 116.03 | 90.91 |
| 4000 | 92.05 | 96.12 | 92.48 | 95.45 | 91.90 | 96.94 | 89.14 | 100.86 | 92.11 |
| 4200 | 91.95 | 95.19 | 91.17 | 93.08 | 91.26 | 98.83 | 88.93 | 93.84 | 92.31 |
| 4400 | 91.97 | 102.31 | 89.65 | 92.70 | 90.93 | 95.17 | 88.71 | 90.82 | 99.24 |
| 4600 | 93.84 | 98.95 | 90.08 | 91.05 | 93.73 | 93.24 | 90.87 | 88.55 | 97.15 |
| 4800 | 90.78 | 95.75 | 90.04 | 89.62 | 93.11 | 91.50 | 91.76 | 87.99 | 92.60 |
| 5000 | 89.13 | 107.50 | 92.45 | 89.70 | 92.13 | 90.94 | 90.80 | 85.10 | 101.33 |
| 5200 | 91.04 | 95.12 | 90.34 | 87.88 | 91.10 | 88.11 | 91.12 | 85.28 | 91.86 |
| 5400 | 89.65 | 92.74 | 88.22 | 86.28 | 92.06 | 86.15 | 92.03 | 84.96 | 90.37 |
| 5600 | 88.06 | 100.66 | 87.18 | 86.38 | 92.91 | 84.74 | 89.37 | 84.13 | 101.61 |
| 5800 | 87.51 | 99.87 | 86.96 | 85.35 | 93.27 | 84.01 | 89.51 | 83.69 | 93.57 |
| 6000 | 91.51 | 99.71 | 87.63 | 85.37 | 92.55 | 83.64 | 90.66 | 84.22 | 96.54 |
| 6200 | 86.39 | 91.06 | 88.49 | 84.57 | 93.31 | 83.55 | 90.63 | 84.08 | 99.99 |
| 6400 | 85.97 | 89.50 | 86.38 | 83.98 | 92.94 | 81.87 | 89.88 | 84.25 | 92.92 |
| 6600 | 86.12 | 89.07 | 85.54 | 82.11 | 91.20 | 81.36 | 89.76 | 84.86 | 94.32 |
| 6800 | 85.18 | 85.27 | 84.20 | 81.05 | 91.79 | 80.63 | 88.99 | 85.23 | 87.64 |
| 7000 | 84.18 | 83.69 | 84.36 | 79.73 | 93.39 | 80.07 | 86.95 | 84.08 | 84.78 |
| 7200 | 82.52 | 81.23 | 84.02 | 78.51 | 89.44 | 79.31 | 86.26 | 83.59 | 81.81 |
| 7400 | 80.36 | 80.84 | 83.22 | 77.39 | 90.39 | 78.35 | 86.04 | 81.43 | 80.63 |
| 7600 | 80.31 | 83.19 | 81.38 | 75.65 | 88.37 | 76.66 | 85.08 | 79.02 | 81.65 |
| 7800 | 78.79 | 78.09 | 80.00 | 73.64 | 89.37 | 74.70 | 85.35 | 78.00 | 77.84 |
| 8000 | 75.76 | 75.72 | 80.21 | 71.99 | 90.32 | 73.08 | 84.21 | 74.86 | 76.01 |
| 8200 | 75.72 | 78.64 | 81.02 | 71.13 | 91.93 | 72.21 | 84.71 | 72.81 | 79.45 |
| 8400 | 76.86 | 78.11 | 81.23 | 70.24 | 87.78 | 70.72 | 82.80 | 71.29 | 78.47 |
| 8500 | 75.29 | 74.72 | 81.65 | 69.46 | 86.80 | 70.23 | 83.01 | 70.93 | 76.44 |

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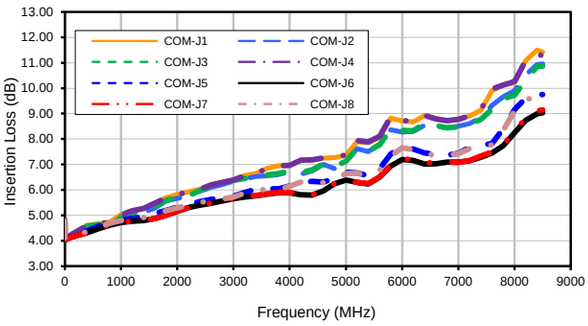
# Solid State
# USB RF SP16T Switch USB-1SP16T-83H

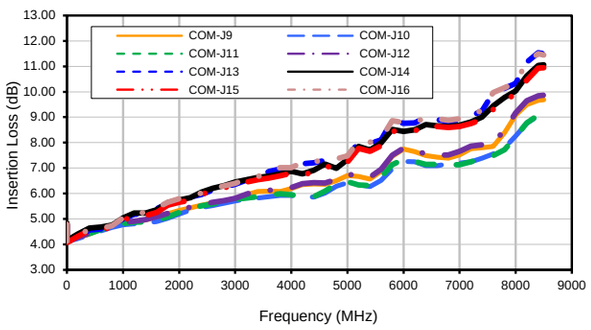
## *Typical Performance Curves*

TEST CONDITIONS: @Temperature = 0°C, Pin=8dBm

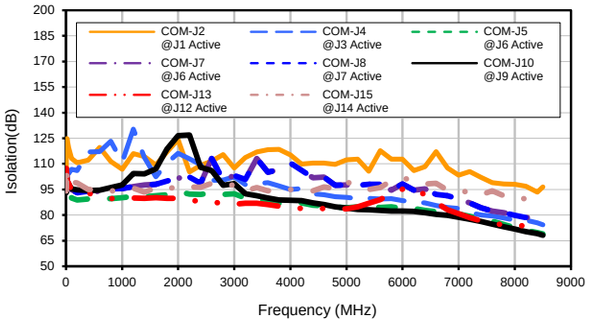
**Insertion Loss (ports J1-J8)**



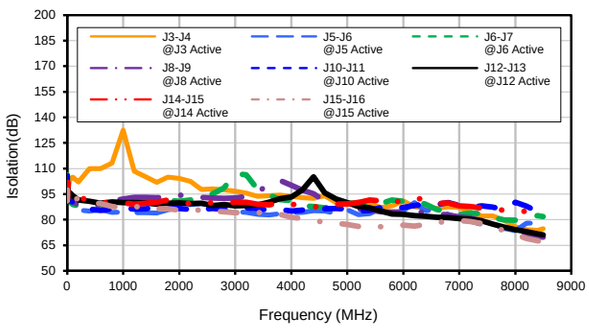

**Insertion Loss (ports J9-J16)**




**Isolation COM to Terminated port**




**Isolation**





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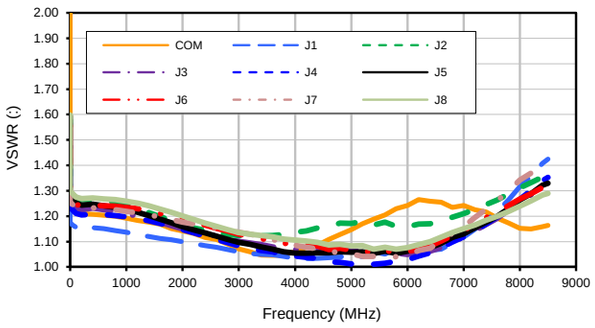
# Solid State
# USB RF SP16T Switch USB-1SP16T-83H

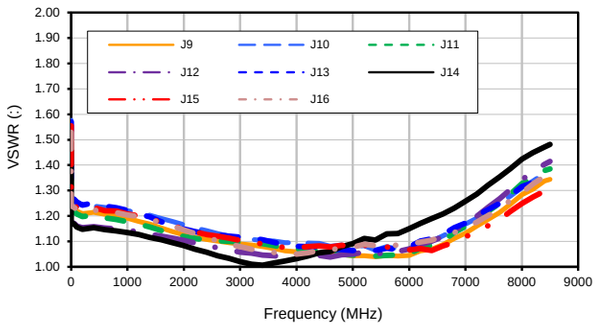
## *Typical Performance Curves*

TEST CONDITIONS: @Temperature = 0°C, Pin=8dBm

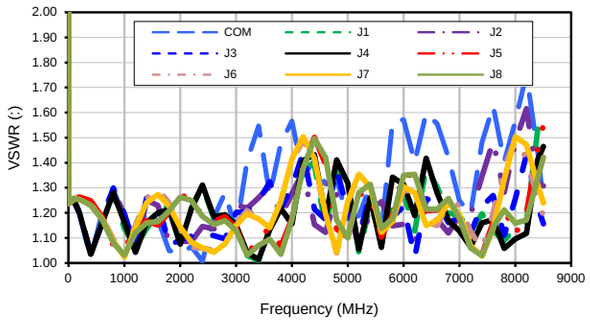
**VSWR, Internally Terminated Ports**



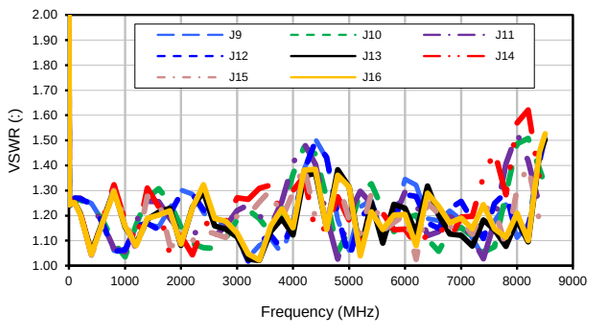

**VSWR, Internally Terminated Ports**




**VSWR, Active Ports**




**VSWR, Active Ports**





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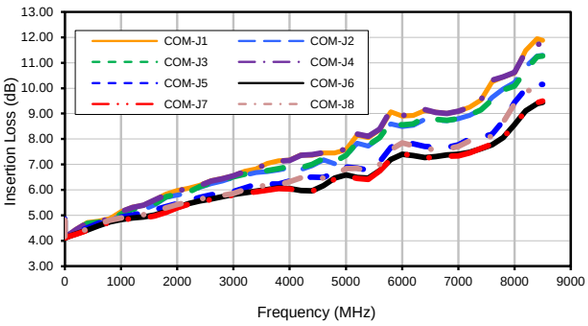
# Solid State
# USB RF SP16T Switch USB-1SP16T-83H

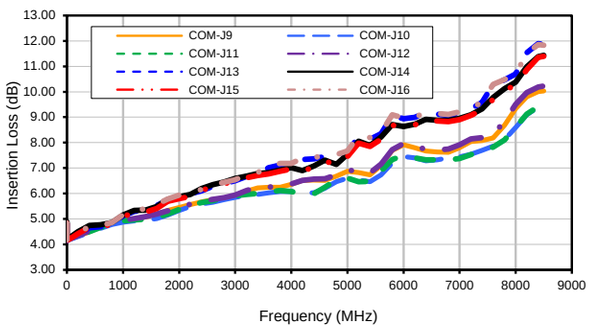
## *Typical Performance Curves*

TEST CONDITIONS: @Temperature = +25°C, Pin=8dBm

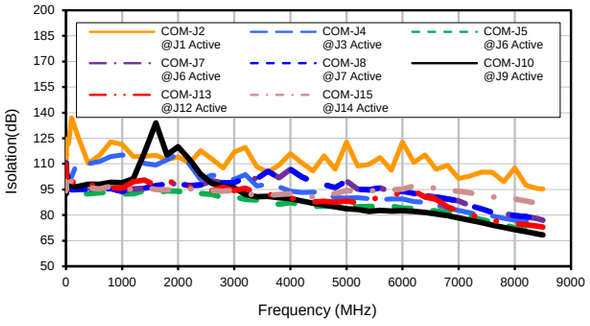
**Insertion Loss (ports J1-J8)**



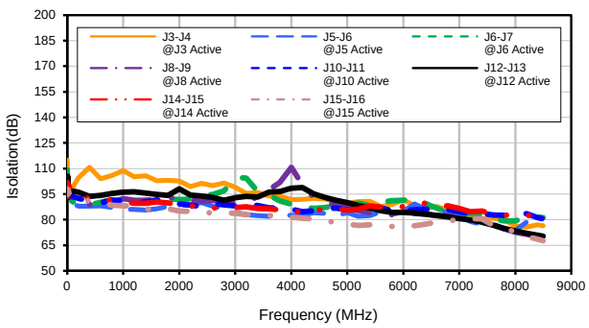

**Insertion Loss (ports J9-J16)**




**Isolation COM to Terminated port**




**Isolation**

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## *Typical Performance Curves*

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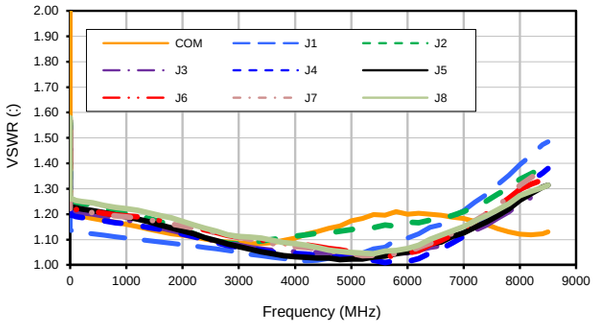
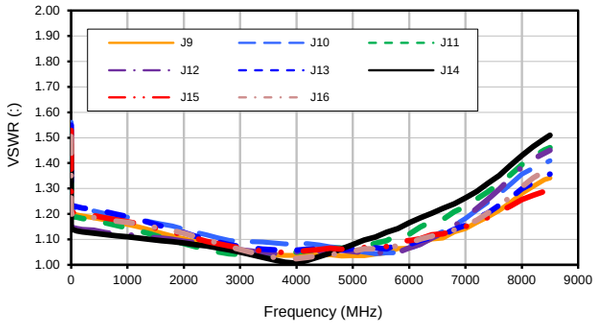
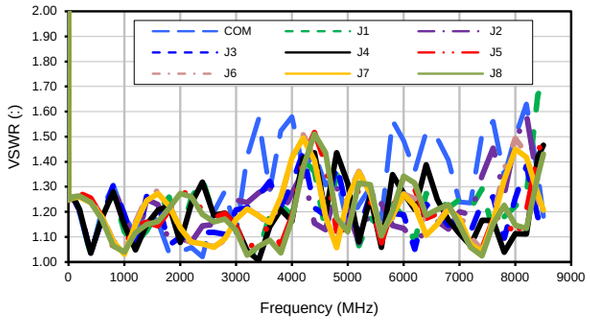
**VSWR, Internally Terminated Ports**



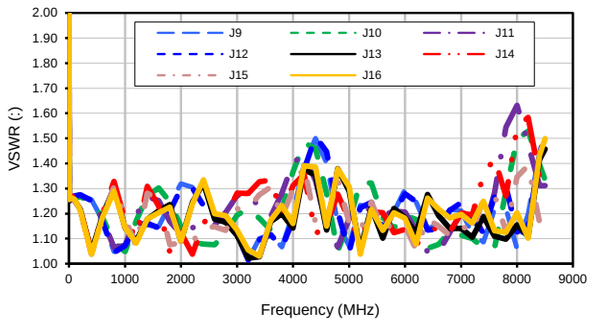

**VSWR, Internally Terminated Ports**




**VSWR, Active Ports**




**VSWR, Active Ports**

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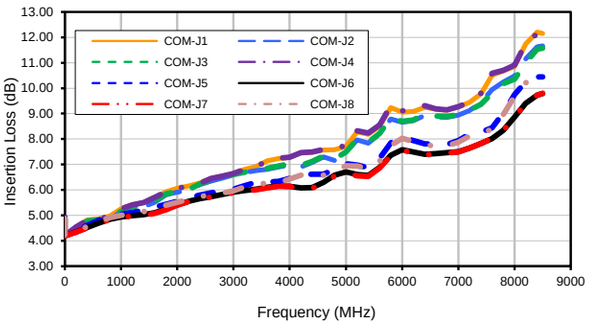
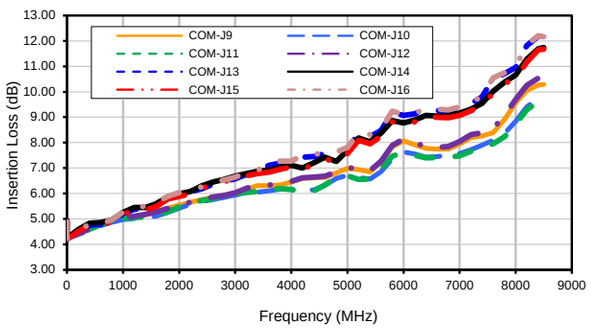
## *Typical Performance Curves*

TEST CONDITIONS: @Temperature = +50°C, Pin=8dBm

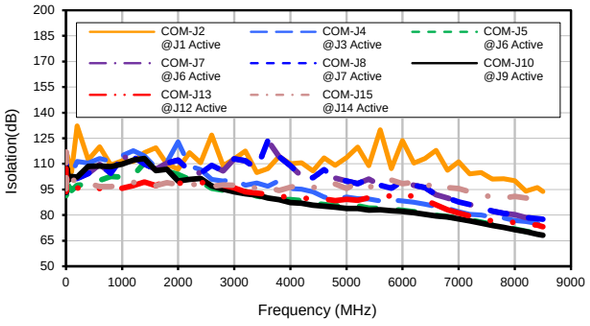
**Insertion Loss (ports J1-J8)**



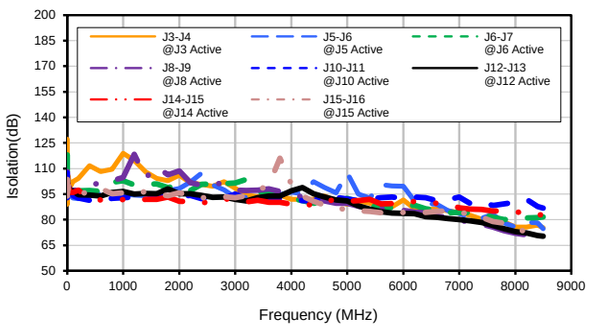

**Insertion Loss (ports J9-J16)**




**Isolation COM to Terminated port**




**Isolation**

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# Solid State
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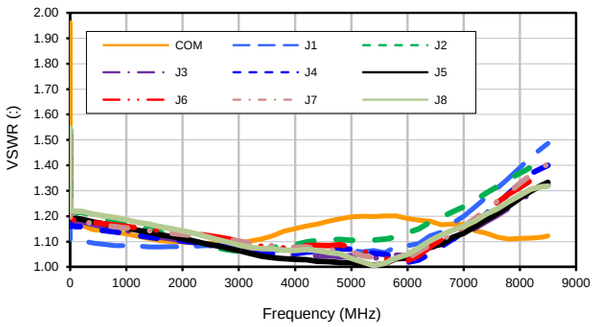
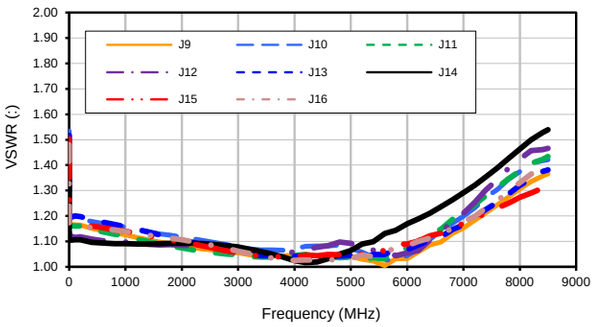
## *Typical Performance Curves*

TEST CONDITIONS: @Temperature = +50°C, Pin=8dBm

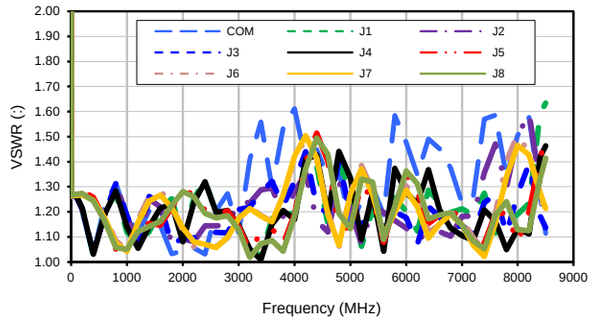
**VSWR, Internally Terminated Ports**



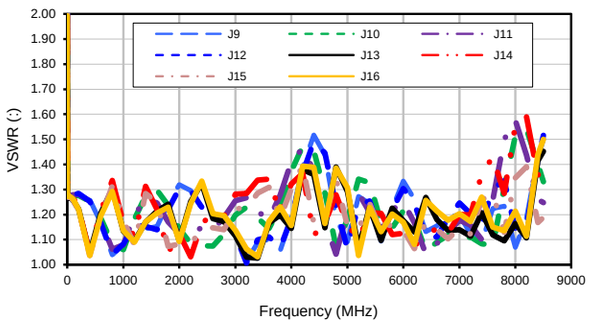

**VSWR, Internally Terminated Ports**




**VSWR, Active Ports**




**VSWR, Active Ports**





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# Environmental Specifications ENV55

All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

| Specification | Test/Inspection Condition | Reference/Spec |
|---|---|---|
| Operating Temperature | -0° to 50° C<br>Ambient Environment | Individual Model Data Sheet |
| Storage Temperature | -20° to 60° C<br>Ambient Environment | Individual Model Data Sheet |


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