



Mini-Circuits

USB

Solid State SP8T Switch

USB-1SP8T-34

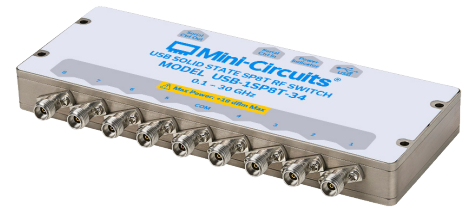
50Ω 0.1 to 30 GHz

THE BIG DEAL

- Super wide bandwidth, solid-state design
- High isolation, 50 dB @ 30 GHz
- USB control and automation
- Daisy-chain control of up to 25 switches

APPLICATIONS

- RF signal routing / switch matrices
- Satellite communications up to Ka band
- Military radio, radar & electronic warfare
- Microwave radio / cellular infrastructure
- Test & measurement systems



Generic photo used for illustration purposes only

Model No.	USB-1SP8T-34
Case Style	NR3245
Connectors	2.92 mm (female) (Compatible with SMA and 3.5 mm)

DOWNLOAD

SOFTWARE PACKAGE

Refer to our website for compliance methodologies and qualifications



PRODUCT OVERVIEW

Mini-Circuits' USB-1SP8T-34 is a fast switching solid-state SP8T covering an ultra-wide bandwidth, from 0.1 to 30 GHz. The solid-state design features an impressive combination of high isolation, low insertion loss and good linearity across the entire band. The switch is supplied in a low profile package with precision 2.92 mm RF connectors.

The daisy-chain control interface with "dynamic addressing" simplifies control integration, allowing multiple switches to be combined into a Master / Slave chain. Simply connect, then power on and the whole chain of up to 25 compatible switches can be controlled independently through a single USB and software interface.

Full software support is provided, 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).

KEY FEATURES

Feature	Advantages
Fast switching sequences	Program automated switching sequences to run with extremely fast transitions and no external control.
High performance	Solid-state design combining high isolation with low insertion loss from 0.1 to 30 GHz
Dynamic daisy-chain control	Control up to 25 switches through a single USB interface.
USB control	USB HID interface provides easy compatibility with a wide range of software setups and programming environments
Full software support	User friendly Windows GUI (graphical user interface) allows manual control straight out of the box, while the comprehensive API (application programming interface) with examples and instructions allows easy automation in most programming environments

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Rev. B
ECO-016633
EDR-11888
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USB

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ELECTRICAL SPECIFICATIONS AT 0 TO 50°C

Parameter	Ports	Condition (GHz)	Min.	Typ.	Max.	Unit
Frequency Range	-	-	0.1		30	GHz
Insertion Loss	COM to any active port	0.1 - 10	-	2.80	5.50	dB
		10 - 18	-	4.90	7.00	
		18 - 26	-	6.10	8.50	
		26 - 30	-	7.30	9.50	
Isolation	Between any of ports J1 to J8	0.1 - 10	50	85	-	dB
		10 - 18	50	75	-	
		18 - 26	45	70	-	
		26 - 30	45	65	-	
	COM to any terminated port (including disconnected state)	0.1 - 10	50	90	-	
		10 - 18	45	90	-	
		18 - 26	43	85	-	
		26 - 30	45	85	-	
Return Loss	COM port (in all active states)	0.1 - 10	-	12.5	-	dB
		10 - 18	-	12	-	
		18 - 26	-	12	-	
		26 - 30	-	13.5	-	
	Any port connected to COM	0.1 - 10	-	12	-	
		10 - 18	-	12.5	-	
		18 - 26	-	12.5	-	
		26 - 30	-	12.5	-	
	Any terminated port	0.1 - 10	-	14.5	-	
		10 - 18	-	14.5	-	
		18 - 26	-	12.5	-	
		26 - 30	-	12	-	
Power Input @1 dB Compression ¹	COM to any active port	0.1 - 30	-	27	-	dBm
IP3 ^{2,3}	COM to any active port	0.5 - 30	-	50	-	dBm
Transition Time ⁴	-	-	-	25	100	ns
Minimum Dwell Time ⁵	High speed mode	-	-	10	-	μs
Switching Time (USB) ⁶	-	-	-	2	-	ms
Supply Voltage (Vcc)	USB port	-	4.75	5	5.25	V _{DC}
Supply Current (Icc) ⁷		-	-	75	100	mA
Current Pass-through ⁸	-	-	-	-	500	mA
Operating RF Input Power ¹	Between COM & active port	Hot switching	-	-	+18	dBm
	Between COM & active port	Cold switching	-	-	+24	
	Into any termination	-	-	-	+24	

1. Max power at hot switching derates linearly from +18 dBm @ 600 MHz to +17 dBm @100 MHz, at all other conditions it derates linearly from +24 dBm @ 600 MHz to +17 dBm @100 MHz.

2. IP3 may degrade below 500 MHz to about +45 dBm.

3. IP3 tested with 1 MHz span between signals, +8 dBm per tone.

4. Transition time spec represents the time that the RF signal paths are interrupted during switching and thus is specified without communication delays.

5. Minimum dwell time is the shortest time that can be achieved between 2 switch transitions when programming an automated switch sequence.

6. Switching time (USB) is the time from issuing a single software command via USB to the switch state changing. The most significant factor is the host PC, influenced by CPU load and USB protocol. The time shown is an estimate for a medium CPU load and USB 2.0 connection.

7. USB current draw for a single unit with no slave units.

8. Pass through current is the maximum supply current handling of a unit with slave modules attached. If controlling a large number of slave modules additional power supplies should be included to ensure this limit is not exceeded. See page 5 for details.





USB

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ABSOLUTE MAXIMUM RATINGS

Operating Temperature	0°C to 50°C
Storage Temperature	-20°C to 60°C
DC supply voltage max.	6V
DC voltage @ RF Ports	20 V

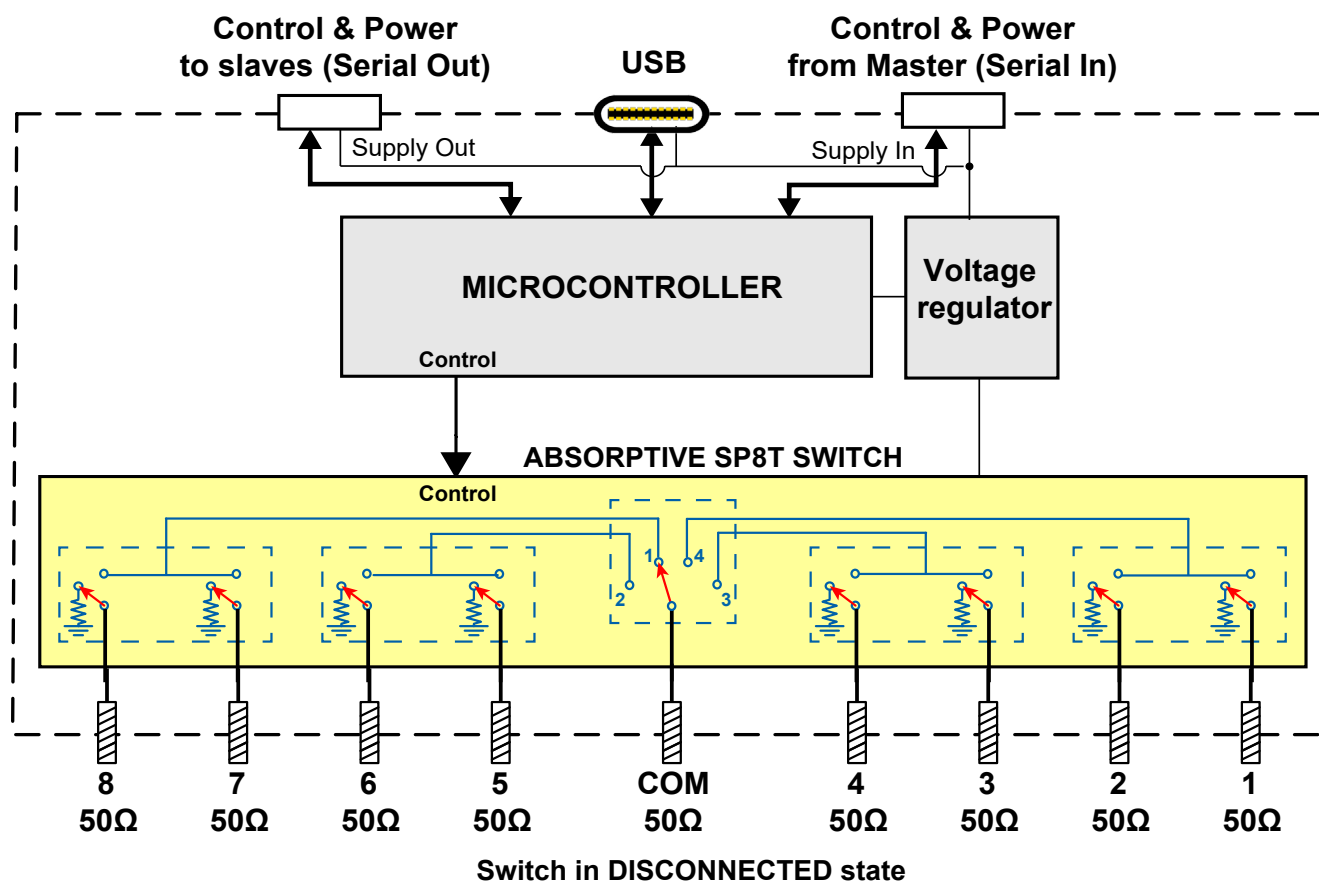
Permanent damage may occur if any of these limits are exceeded. Operating in the range between operating power limits and absolute maximum ratings for extended periods of time may result in reduced life and reliability.

CONNECTIONS

Port Name	Connector Type
RF SP8T (COM & 1 to 8)	2.92 mm female
USB	USB type-C receptacle
Serial In (Digital Control 2 port)	Digital Snap Fit Connector ⁹
Serial Out (Digital Control 1 port)	Digital Snap Fit Connector ⁹

9. Mating connector is Hirose ST40X-10S-CV(30).

BLOCK DIAGRAM



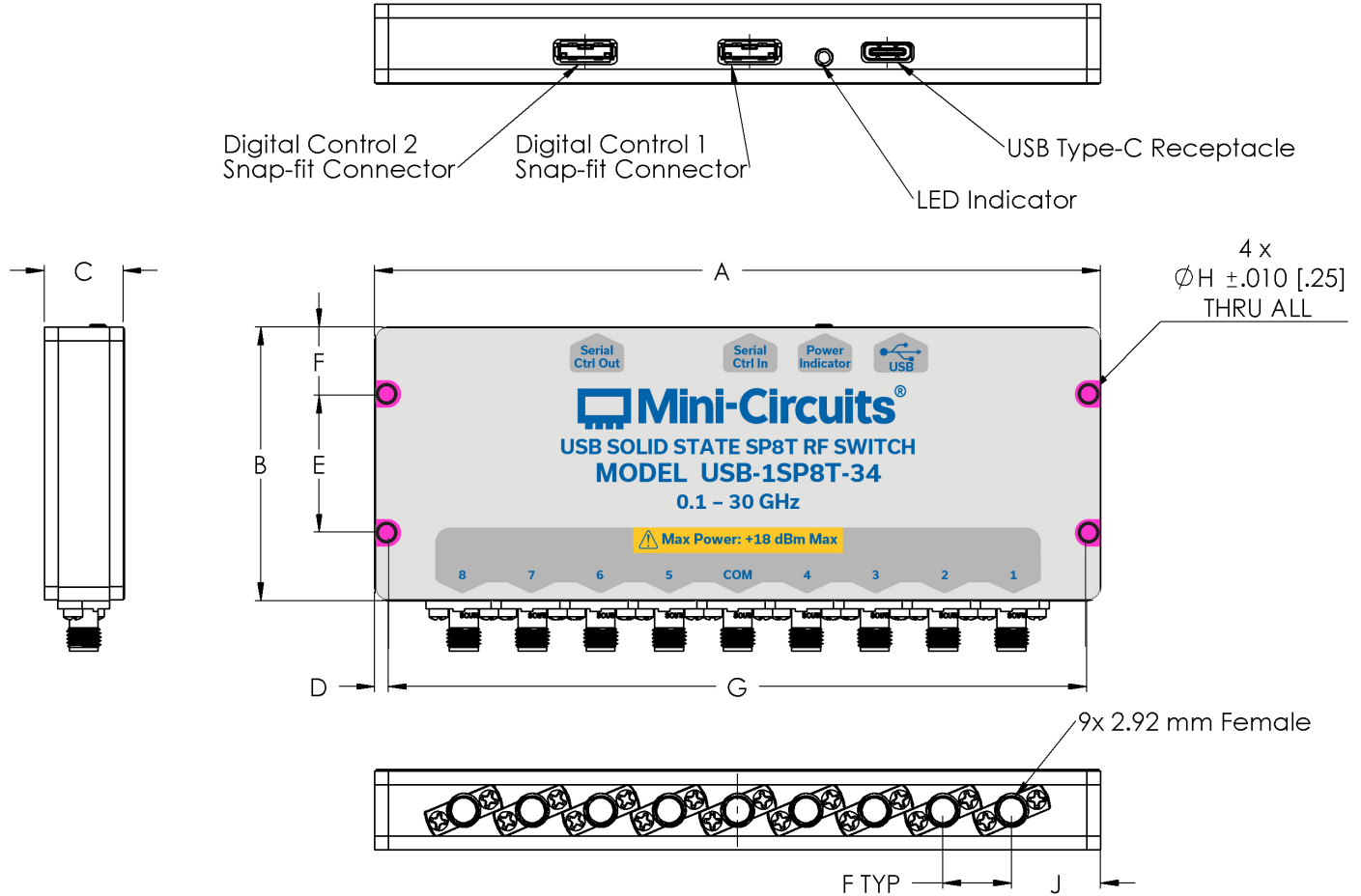


USB

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OUTLINE DRAWING (NR3245)



OUTLINE DIMENSIONS (INCH)

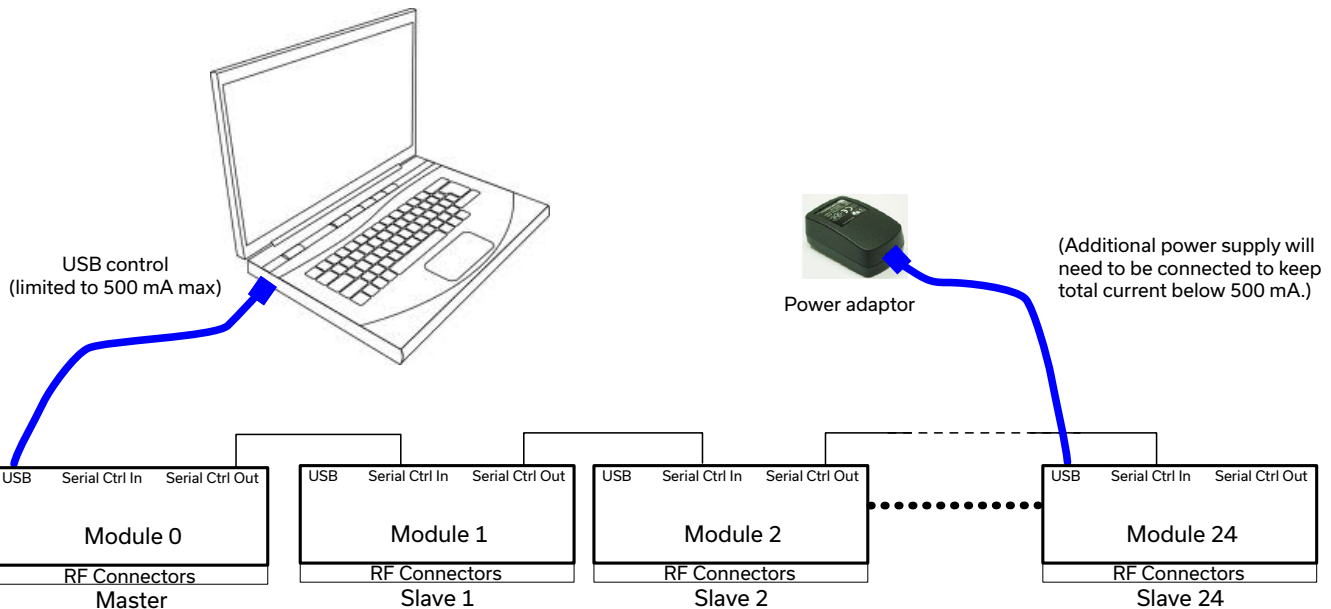
A	B	C	D	E	F	G	H	J	weight
5.30	2.00	0.575	0.10	1.00	0.50	5.10	0.106	0.65	grams
134.62	50.80	14.610	2.54	25.40	12.70	129.54	2.690	16.51	185





CONNECTING MULTIPLE MODULES (DAISY CHAIN)

The USB-1SP8T-34 model is designed to connect up to 25 modules in series (daisy chain) using dynamic addressing, meaning there is no need to specifically set the address of the modules. The addresses will be set automatically as part of establishing the communications with the computer. The module connected to the computer's USB port will be assigned address 0 (master), the first module connected to it will get address 1 (slave) and subsequent modules incrementing up to address 24 (slave).



Connections between modules will be made using the serial in/out ports with the module connected to the PC act as a master and all other as slave modules. All control will be through the master module (address 0) which is the only one communicating with the PC. Serial control out port of each module should be connected to the serial control in port of the next module.

Power will be supplied from the PC via the master module up to a maximum of 500 mA. Generally, additional power supply will be needed to keep total current below 500 mA. All power supplies should be connected to the module via the module's USB port. Connecting an additional power supply will automatically cut off power draw from the serial control in port for that module.

The serial master/slave bus allows connecting modules of different types to the same daisy chain as long as all support Mini-Circuits Dynamic addressing setup. To add a new module to the setup, simply connect the module and refresh the address listing, no need to reset any of the existing modules or assign addresses manually.

Note: Different module types may have different current consumption which will change the number of units which can be connected before an additional power supply is needed.



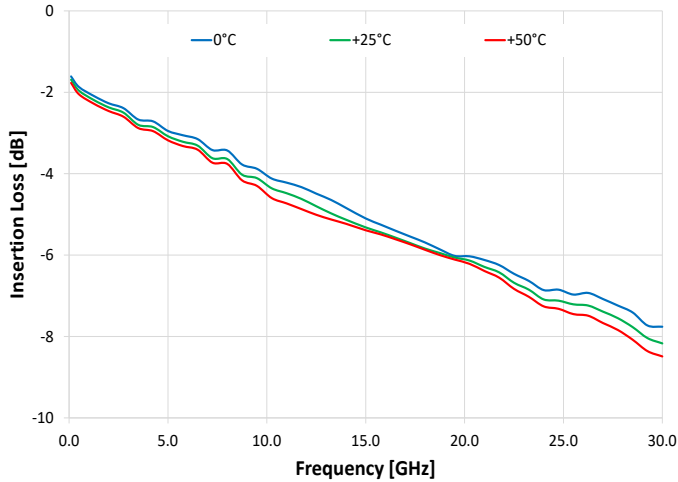
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Solid State SP8T Switch

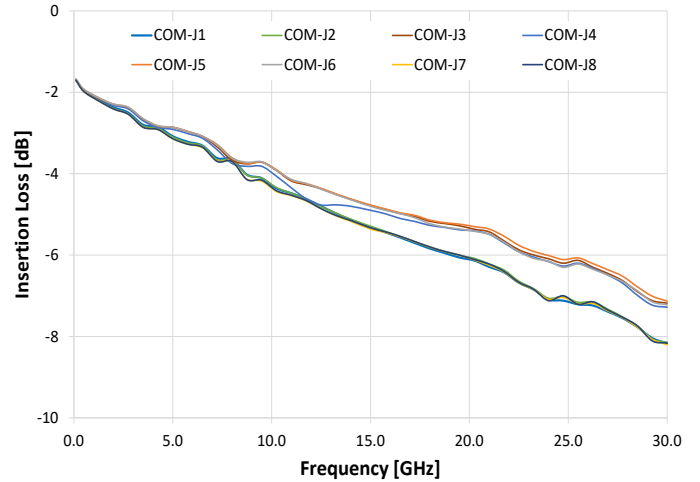
USB-1SP8T-34

TYPICAL PERFORMANCE CURVES

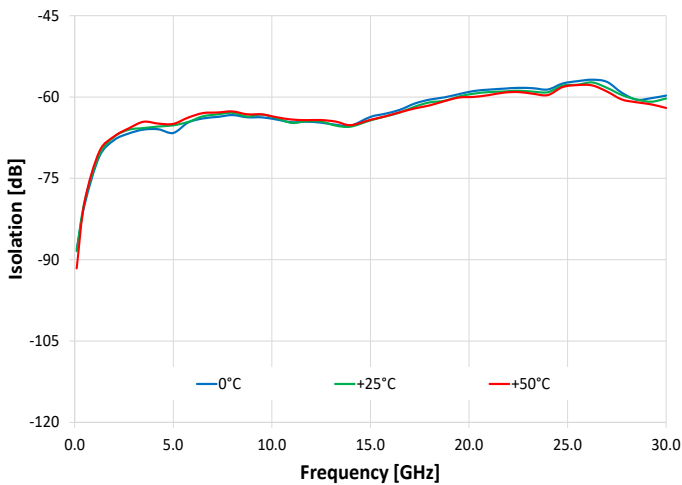
Insertion Loss over Temperature (J1 Active)



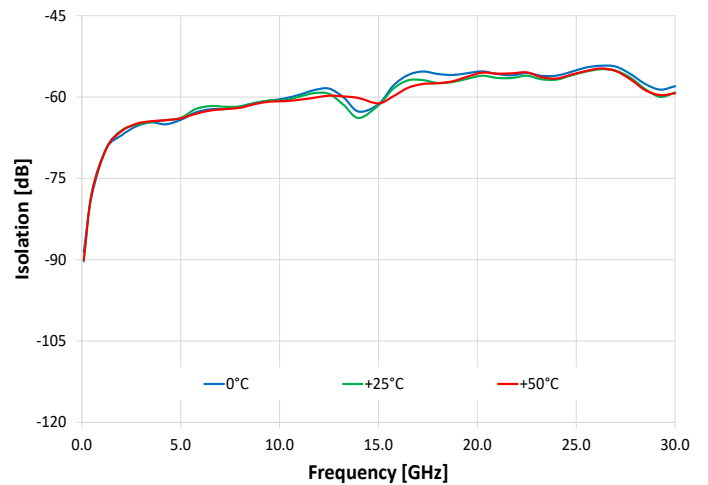
Insertion Loss J1 - J8 Active



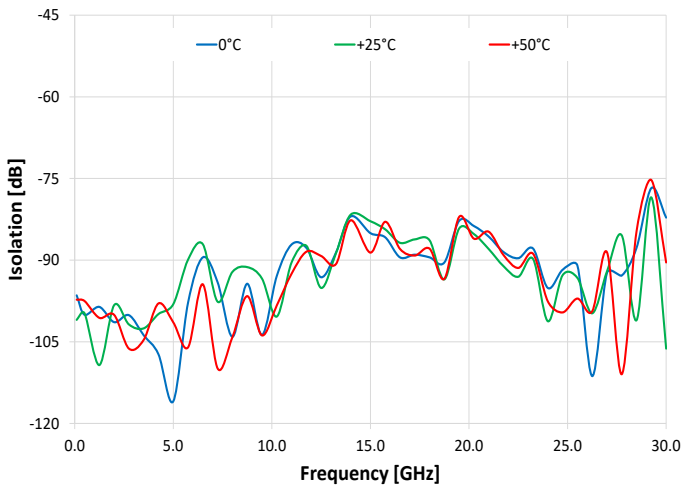
Isolation Com to J1 (J2 Active)



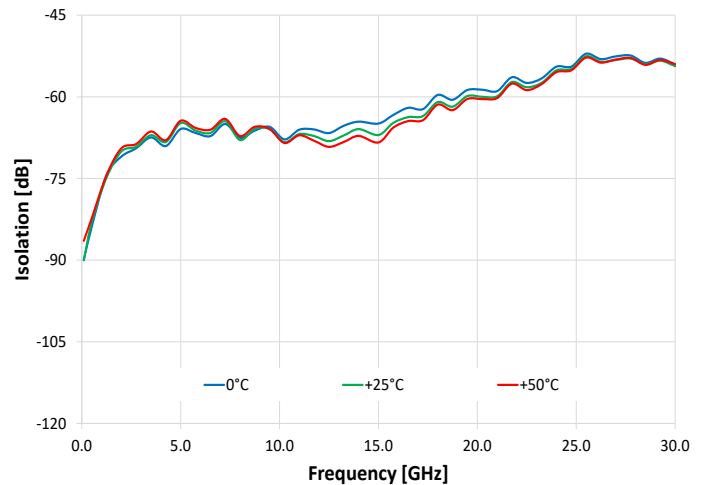
Isolation Com to J3 (J4 Active)



Isolation J2 to J3 (J2 Active)



Isolation J7 to J8 (J7 Active)





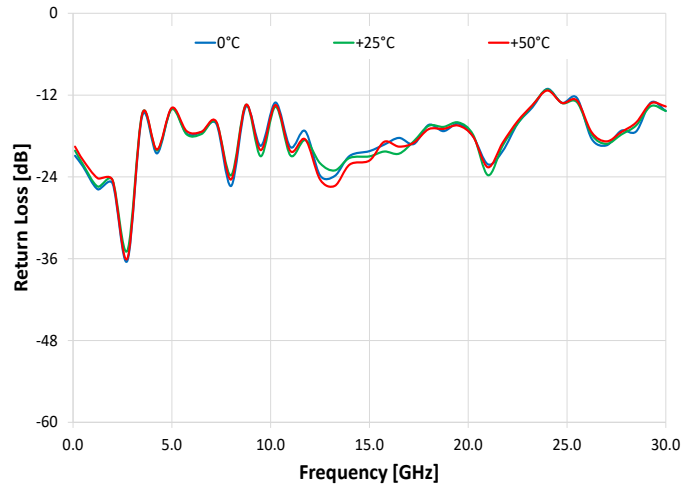
USB

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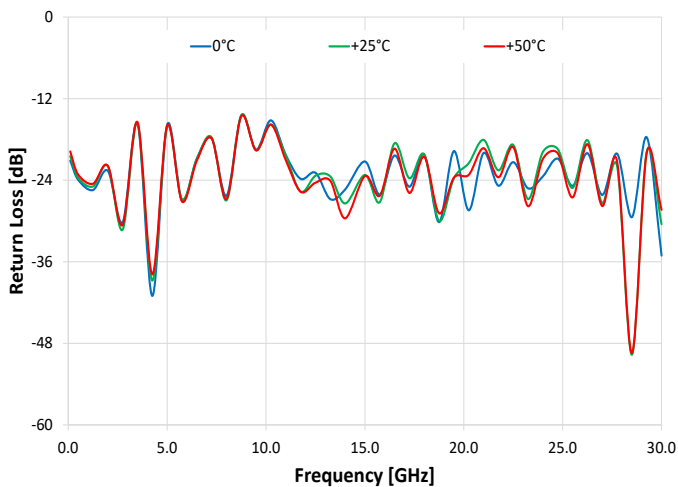
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TYPICAL PERFORMANCE CURVES (CONTINUED)

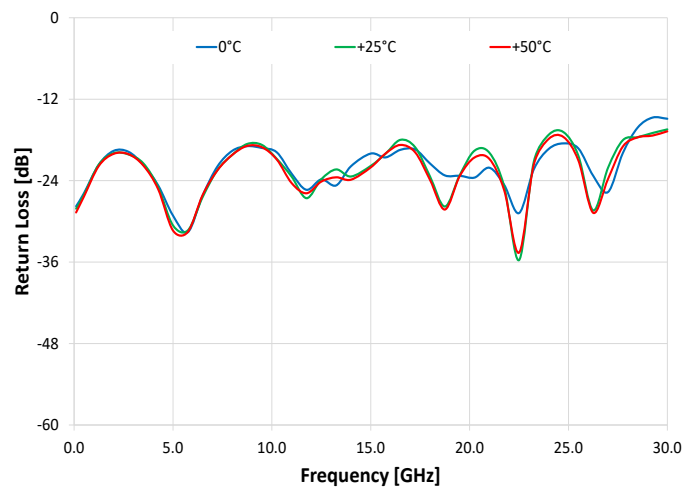
Return Loss @ COM over Temperature (J1 Active)



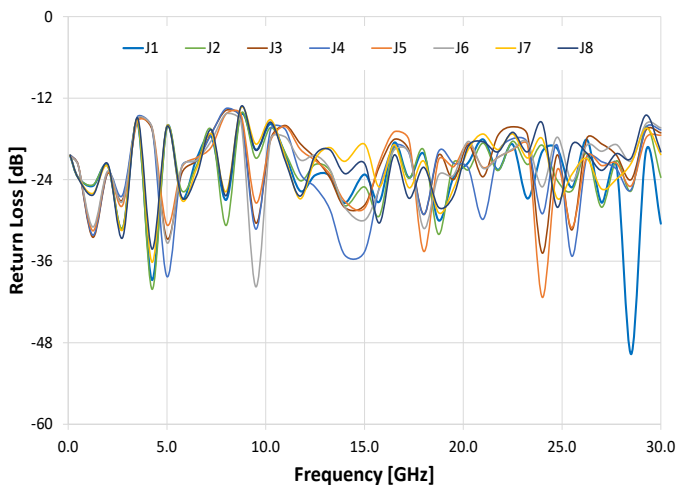
Return Loss @ J1 over Temperature (J1 Active)



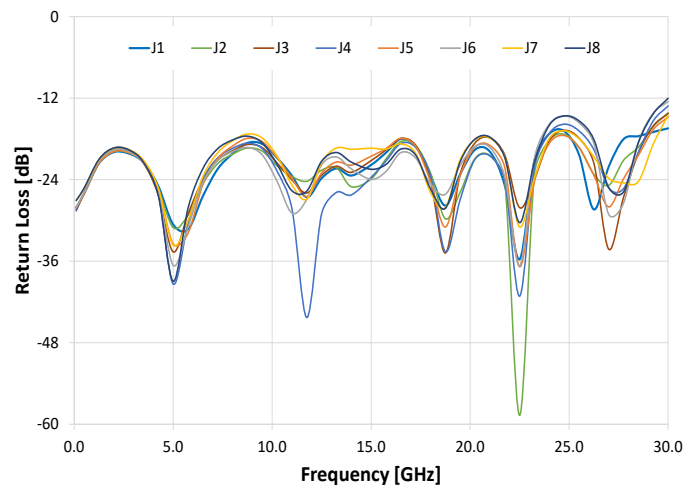
Return Loss @ J1 over Temperature (J1 Terminated)



Return Loss @ Active ports (J1 - J8 Active)



Return Loss @ Terminated ports (J1 - J8 Terminated)



**SOFTWARE SPECIFICATIONS****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 Daisy Chain dynamic addressing	
System Requirements	GUI	Windows 7 or later
	USB API DLL	Windows 7 or later and programming environment with ActiveX or .NET support
	USB Direct Programming	Linux, Windows 7 or later
	Daisy Chain dynamic addressing	An additional Mini-Circuits model supporting dynamic addressing
Hardware	Intel i3 (or equivalent) or later	

APPLICATION PROGRAMMING INTERFACE (API)**USB SUPPORT (WINDOWS):**

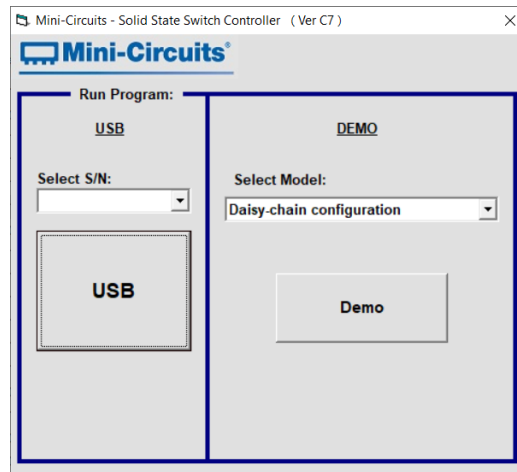
- ActiveX COM DLL file for creation of 32-bit programs
- .NET library DLL file for creation of 32 / 64-bit programs
- Supported by most common programming environments

USB SUPPORT (LINUX):

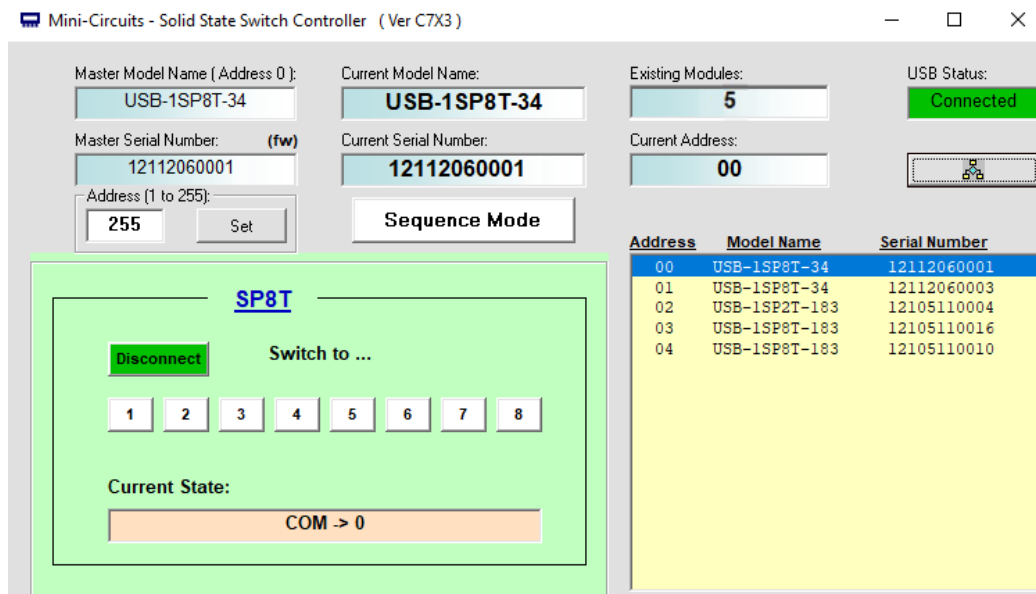
- Direct USB programming using a series of USB interrupt codes
- Full programming instructions and examples available for a wide range of programming environments / languages.

**GRAPHICAL USER INTERFACE (GUI) FOR WINDOWS - KEY FEATURES**

- Connect via USB
- Run GUI in "demo mode" to evaluate software without a hardware connection



- View and set switch states at the click of a button
- Control up to 25 units from a single USB control
- Configure and run timed switching sequences
- Set start-up switch state



**ORDERING INFORMATION**

Please contact Mini-Circuits' Test Solutions department for price and availability: testsolutions@minicircuits.com

Model	Description
USB-1SP8T-34	USB RF SP8T switch

Included Accessories	Part No.	Description
	USB-CBL-AC-3+	3.3 ft (1.0 m) USB cable: USB type A (Male) to USB type C (Male)

OPTIONAL ACCESSORIES

USB-CBL-AC-3+	3.3 ft (1.0 m) USB Cable: USB type A (Male) to USB type C (Male)
CBL-1.5FT-MMD+	1.5 ft (0.45 m) cable assembly for serial control Daisy Chain with snap fit connectors
USB-AC/DC-5	AC/DC +5V power adaptor with USB connector ^{10, 11}

10. The power adaptor may be used to provide additional power via USB port when connecting several units in daisy chain.

11. Includes power plugs for US, UK, EU, IL, AU & China. Plugs for other countries are also available. If you need a power cord for a country not listed please contact testsolutions@minicircuits.com

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.
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Solid State USB SP8T Switch

USB-1SP8T-34

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
100	1.61	1.63	1.62	1.62	1.62	1.62	1.63	1.62
500	1.87	1.90	1.87	1.87	1.89	1.88	1.91	1.89
1000	2.04	2.08	2.00	2.02	2.06	2.03	2.08	2.06
1500	2.13	2.17	2.13	2.14	2.20	2.16	2.18	2.15
2000	2.27	2.31	2.22	2.23	2.29	2.25	2.32	2.30
2500	2.39	2.44	2.25	2.26	2.30	2.28	2.45	2.42
3000	2.43	2.48	2.37	2.39	2.41	2.40	2.50	2.47
3500	2.67	2.72	2.56	2.60	2.62	2.59	2.75	2.73
4000	2.73	2.78	2.68	2.72	2.75	2.72	2.80	2.77
4500	2.75	2.81	2.72	2.75	2.80	2.76	2.83	2.81
5000	2.95	3.00	2.74	2.79	2.83	2.79	3.02	2.99
5500	3.05	3.11	2.81	2.87	2.89	2.86	3.13	3.09
6000	3.06	3.13	2.87	2.92	2.95	2.92	3.15	3.12
6500	3.15	3.21	2.96	3.01	3.02	3.00	3.22	3.18
7000	3.32	3.40	3.08	3.14	3.11	3.10	3.39	3.36
7500	3.48	3.56	3.29	3.38	3.32	3.31	3.58	3.55
8000	3.43	3.50	3.48	3.57	3.51	3.51	3.52	3.48
8500	3.59	3.68	3.58	3.64	3.62	3.60	3.72	3.69
9000	3.92	3.99	3.57	3.62	3.62	3.59	4.06	4.02
9750	3.86	3.94	3.58	3.69	3.63	3.64	3.97	3.92
10500	4.24	4.29	3.86	3.97	3.90	3.90	4.36	4.29
11250	4.23	4.32	4.04	4.20	4.07	4.05	4.34	4.29
12000	4.40	4.50	4.10	4.40	4.13	4.14	4.52	4.47
12750	4.54	4.65	4.18	4.50	4.23	4.25	4.68	4.63
13500	4.71	4.81	4.34	4.57	4.38	4.41	4.85	4.79
14250	4.91	4.99	4.51	4.66	4.55	4.57	5.07	4.99
15000	5.10	5.17	4.67	4.78	4.70	4.73	5.27	5.18
15750	5.25	5.31	4.81	4.93	4.84	4.87	5.37	5.30
16500	5.40	5.45	4.91	5.07	4.93	4.94	5.50	5.43
17250	5.55	5.60	4.98	5.24	4.99	5.04	5.63	5.57
18000	5.69	5.73	5.12	5.37	5.13	5.22	5.74	5.69
18750	5.86	5.86	5.20	5.39	5.19	5.29	5.87	5.82
19500	6.02	5.98	5.31	5.44	5.23	5.34	5.95	5.90
20250	6.03	6.12	5.43	5.45	5.29	5.39	6.07	6.03
21000	6.12	6.18	5.42	5.57	5.38	5.47	6.16	6.11
21500	6.24	6.27	5.52	5.74	5.51	5.60	6.34	6.29
22000	6.29	6.32	5.64	5.89	5.64	5.70	6.38	6.33
22500	6.46	6.49	5.76	5.98	5.82	5.85	6.56	6.52
23000	6.62	6.66	5.89	6.06	5.97	6.01	6.73	6.69
23500	6.73	6.74	5.87	6.02	5.92	5.99	6.79	6.74
24000	6.86	6.88	5.96	6.10	5.97	6.08	6.96	6.95
24500	6.79	6.81	6.09	6.21	6.06	6.23	6.87	6.82
25000	6.95	6.93	6.03	6.17	6.02	6.20	7.00	6.95
25500	6.97	6.99	5.98	6.11	5.99	6.17	7.10	7.07
26000	6.89	6.90	6.06	6.17	6.05	6.24	6.99	6.91
26500	6.96	6.99	6.17	6.27	6.14	6.36	7.12	7.03
27000	7.08	7.12	6.29	6.38	6.26	6.49	7.30	7.18
27500	7.21	7.25	6.40	6.50	6.38	6.62	7.43	7.30
28000	7.27	7.35	6.52	6.63	6.49	6.72	7.53	7.45
28500	7.41	7.49	6.68	6.82	6.65	6.84	7.62	7.58
29000	7.70	7.79	6.86	7.03	6.83	7.02	7.84	7.94
29500	7.68	7.83	6.96	7.14	6.93	7.13	7.90	8.03
30000	7.76	7.83	6.92	7.09	6.94	7.10	7.94	8.03

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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
100	1.20	1.19	1.20	1.20	1.20	1.20	1.20	1.20	1.20
500	1.16	1.14	1.14	1.17	1.17	1.17	1.17	1.14	1.14
1000	1.08	1.05	1.05	1.07	1.07	1.07	1.07	1.04	1.04
1500	1.10	1.12	1.12	1.09	1.10	1.08	1.10	1.10	1.10
2000	1.12	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.17
2500	1.14	1.19	1.19	1.03	1.03	1.06	1.04	1.20	1.20
3000	1.16	1.11	1.11	1.21	1.23	1.20	1.21	1.12	1.14
3500	1.43	1.39	1.40	1.42	1.44	1.41	1.43	1.43	1.44
4000	1.29	1.21	1.21	1.42	1.44	1.41	1.43	1.21	1.20
4500	1.29	1.17	1.17	1.24	1.24	1.27	1.25	1.19	1.21
5000	1.50	1.38	1.37	1.06	1.04	1.08	1.06	1.39	1.38
5500	1.40	1.21	1.21	1.12	1.14	1.14	1.14	1.19	1.17
6000	1.26	1.09	1.09	1.19	1.21	1.22	1.22	1.12	1.14
6500	1.31	1.20	1.17	1.19	1.19	1.19	1.19	1.15	1.14
7000	1.38	1.25	1.29	1.25	1.23	1.18	1.20	1.24	1.25
7500	1.31	1.30	1.32	1.39	1.40	1.33	1.35	1.35	1.36
8000	1.11	1.10	1.07	1.52	1.54	1.48	1.49	1.12	1.12
8500	1.37	1.29	1.32	1.52	1.52	1.52	1.48	1.34	1.37
9000	1.54	1.53	1.51	1.33	1.30	1.36	1.28	1.58	1.58
9750	1.19	1.08	1.06	1.06	1.12	1.04	1.10	1.10	1.10
10500	1.58	1.47	1.43	1.39	1.42	1.38	1.36	1.47	1.45
11250	1.19	1.10	1.11	1.36	1.29	1.34	1.26	1.10	1.09
12000	1.29	1.16	1.20	1.25	1.15	1.23	1.20	1.17	1.18
12750	1.10	1.13	1.17	1.16	1.10	1.15	1.17	1.19	1.20
13500	1.15	1.09	1.10	1.08	1.06	1.10	1.11	1.19	1.17
14250	1.21	1.13	1.10	1.10	1.08	1.11	1.10	1.24	1.19
15000	1.22	1.19	1.15	1.16	1.13	1.16	1.13	1.31	1.23
15750	1.24	1.10	1.08	1.18	1.13	1.20	1.13	1.15	1.08
16500	1.28	1.21	1.21	1.25	1.18	1.29	1.18	1.24	1.18
17250	1.25	1.12	1.12	1.23	1.19	1.29	1.23	1.10	1.09
18000	1.36	1.22	1.23	1.05	1.05	1.06	1.11	1.19	1.17
18750	1.32	1.06	1.03	1.18	1.21	1.16	1.09	1.07	1.08
19500	1.37	1.23	1.24	1.20	1.21	1.22	1.21	1.16	1.14
20250	1.29	1.08	1.06	1.17	1.09	1.19	1.21	1.17	1.18
21000	1.17	1.22	1.21	1.10	1.11	1.16	1.13	1.24	1.20
21500	1.19	1.22	1.21	1.15	1.06	1.12	1.09	1.32	1.31
22000	1.24	1.04	1.06	1.31	1.22	1.21	1.17	1.15	1.15
22500	1.37	1.19	1.22	1.34	1.26	1.23	1.19	1.28	1.29
23000	1.50	1.19	1.26	1.32	1.28	1.26	1.22	1.31	1.33
23500	1.58	1.08	1.04	1.22	1.21	1.22	1.15	1.04	1.08
24000	1.77	1.14	1.19	1.03	1.03	1.05	1.04	1.22	1.31
24500	1.59	1.12	1.16	1.15	1.18	1.11	1.20	1.14	1.17
25000	1.64	1.25	1.16	1.17	1.23	1.14	1.21	1.15	1.20
25500	1.63	1.12	1.15	1.03	1.09	1.03	1.12	1.18	1.29
26000	1.34	1.16	1.09	1.20	1.13	1.15	1.18	1.04	1.06
26500	1.25	1.22	1.21	1.30	1.24	1.21	1.24	1.21	1.27
27000	1.24	1.10	1.14	1.31	1.25	1.22	1.24	1.17	1.23
27500	1.30	1.16	1.16	1.32	1.26	1.28	1.30	1.10	1.16
28000	1.28	1.23	1.30	1.24	1.19	1.24	1.28	1.26	1.36
28500	1.31	1.07	1.16	1.18	1.16	1.19	1.23	1.20	1.27
29000	1.58	1.26	1.32	1.32	1.33	1.29	1.35	1.23	1.40
29500	1.47	1.23	1.40	1.40	1.42	1.35	1.44	1.41	1.51
30000	1.48	1.04	1.10	1.29	1.32	1.26	1.34	1.16	1.25

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Solid State

USB SP8T Switch

USB-1SP8T-34

Typical Performance Data

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

Frequency (MHz)	VSWR, Internally Terminated Ports (:1)							
	J1	J2	J3	J4	J5	J6	J7	J8
100	1.09	1.08	1.08	1.08	1.08	1.08	1.10	1.10
500	1.11	1.11	1.11	1.11	1.11	1.11	1.12	1.12
1000	1.16	1.16	1.17	1.17	1.16	1.16	1.17	1.17
1500	1.20	1.20	1.21	1.22	1.20	1.21	1.22	1.22
2000	1.23	1.23	1.25	1.25	1.23	1.24	1.25	1.25
2500	1.24	1.24	1.25	1.25	1.24	1.25	1.26	1.26
3000	1.22	1.22	1.22	1.23	1.22	1.22	1.23	1.23
3500	1.18	1.18	1.18	1.18	1.18	1.18	1.19	1.18
4000	1.14	1.14	1.13	1.13	1.14	1.13	1.14	1.13
4500	1.10	1.10	1.08	1.08	1.09	1.08	1.09	1.07
5000	1.07	1.07	1.05	1.03	1.05	1.04	1.05	1.03
5500	1.05	1.06	1.05	1.04	1.03	1.03	1.04	1.05
6000	1.06	1.09	1.09	1.08	1.07	1.08	1.09	1.11
6500	1.10	1.13	1.14	1.14	1.13	1.13	1.15	1.17
7000	1.15	1.17	1.18	1.19	1.18	1.18	1.21	1.23
7500	1.20	1.20	1.22	1.23	1.23	1.22	1.26	1.27
8000	1.23	1.23	1.24	1.25	1.26	1.24	1.29	1.29
8500	1.25	1.24	1.25	1.26	1.28	1.25	1.30	1.30
9000	1.25	1.23	1.25	1.24	1.27	1.23	1.29	1.28
9750	1.24	1.21	1.22	1.21	1.25	1.18	1.26	1.23
10500	1.21	1.19	1.19	1.15	1.20	1.13	1.20	1.18
11250	1.13	1.14	1.13	1.06	1.13	1.07	1.12	1.11
12000	1.12	1.16	1.13	1.07	1.13	1.13	1.14	1.15
12750	1.13	1.16	1.14	1.09	1.14	1.17	1.17	1.17
13500	1.13	1.12	1.14	1.11	1.15	1.18	1.21	1.18
14250	1.20	1.15	1.20	1.17	1.23	1.20	1.28	1.22
15000	1.22	1.18	1.24	1.19	1.26	1.19	1.30	1.23
15750	1.21	1.18	1.23	1.16	1.23	1.13	1.25	1.18
16500	1.24	1.23	1.25	1.19	1.25	1.17	1.23	1.20
17250	1.24	1.24	1.24	1.19	1.24	1.20	1.21	1.20
18000	1.18	1.18	1.15	1.12	1.16	1.17	1.13	1.14
18750	1.15	1.12	1.09	1.05	1.10	1.15	1.12	1.12
19500	1.15	1.09	1.12	1.07	1.12	1.16	1.18	1.18
20250	1.14	1.10	1.18	1.15	1.17	1.17	1.22	1.22
21000	1.17	1.16	1.25	1.24	1.25	1.21	1.26	1.27
21500	1.15	1.15	1.23	1.22	1.23	1.17	1.23	1.24
22000	1.10	1.10	1.17	1.16	1.17	1.11	1.17	1.17
22500	1.08	1.04	1.08	1.06	1.07	1.01	1.06	1.06
23000	1.13	1.07	1.04	1.04	1.02	1.11	1.05	1.08
23500	1.20	1.15	1.13	1.13	1.11	1.21	1.14	1.20
24000	1.24	1.21	1.21	1.22	1.19	1.29	1.21	1.29
24500	1.27	1.26	1.28	1.32	1.27	1.37	1.28	1.38
25000	1.27	1.29	1.33	1.38	1.31	1.40	1.31	1.43
25500	1.24	1.29	1.33	1.39	1.31	1.40	1.32	1.44
26000	1.17	1.24	1.28	1.35	1.26	1.35	1.30	1.40
26500	1.12	1.18	1.20	1.27	1.19	1.28	1.27	1.32
27000	1.11	1.10	1.09	1.14	1.07	1.15	1.19	1.19
27500	1.18	1.10	1.02	1.04	1.05	1.02	1.11	1.05
28000	1.28	1.20	1.15	1.14	1.18	1.12	1.07	1.12
28500	1.37	1.32	1.28	1.29	1.30	1.29	1.15	1.30
29000	1.43	1.42	1.40	1.43	1.41	1.44	1.27	1.49
29500	1.45	1.51	1.49	1.54	1.47	1.57	1.38	1.64
30000	1.44	1.56	1.55	1.62	1.51	1.67	1.50	1.76

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Solid State USB SP8T Switch

USB-1SP8T-34

Typical Performance Data

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

Frequency (MHz)	Isolation @ Active states (dB)							
	COM-1	COM-3	COM-5	COM-7	J2-J3	J4-J5	J6-J7	J7-J8
100	88.08	88.55	85.96	90.04	96.47	107.63	98.89	89.95
500	79.91	78.21	76.17	79.07	100.03	98.85	101.79	83.94
1000	73.02	71.83	69.97	72.85	99.20	97.34	99.52	76.97
1500	69.62	68.46	67.11	69.42	100.90	102.64	101.91	72.44
2000	67.94	67.09	65.33	68.03	101.39	92.03	95.07	70.98
2500	66.89	66.06	64.39	67.12	97.41	96.52	99.11	70.66
3000	66.31	65.08	63.80	66.49	96.17	98.78	94.78	68.97
3500	66.00	64.67	63.46	66.02	103.80	97.79	113.68	67.46
4000	65.73	64.64	63.25	66.05	98.93	97.74	97.76	67.96
4500	66.14	65.35	63.03	66.19	96.60	102.39	96.98	68.37
5000	66.63	64.22	63.20	67.05	115.93	90.03	103.53	65.91
5500	64.86	63.26	63.20	66.21	96.85	87.18	101.90	66.14
6000	64.22	62.61	63.42	64.69	89.61	81.55	98.31	67.14
6500	63.95	62.27	63.38	63.87	89.49	82.71	109.17	67.22
7000	63.57	62.37	63.45	63.49	91.91	82.80	100.41	65.30
7500	63.66	62.05	63.19	63.10	93.18	82.00	94.66	65.19
8000	63.33	61.75	62.58	62.49	104.07	84.07	122.24	67.52
8500	63.56	61.23	62.07	62.40	96.54	87.18	97.84	67.61
9000	63.67	60.93	61.57	62.44	99.92	88.60	107.26	65.25
9750	64.07	60.52	60.94	62.20	100.79	87.34	103.75	66.69
10500	64.48	60.03	60.33	62.48	92.04	87.99	92.22	67.18
11250	64.75	59.36	58.92	62.41	87.93	86.05	100.43	65.89
12000	64.57	58.56	57.86	62.17	87.56	87.84	97.64	66.26
12750	64.67	58.80	57.21	61.87	93.33	93.65	89.15	65.96
13500	65.51	61.08	56.53	61.08	83.63	86.65	83.63	65.19
14250	64.89	63.19	56.05	60.82	80.28	85.85	80.64	64.04
15000	63.67	61.34	55.78	61.35	85.04	82.73	78.05	64.91
15750	63.08	57.90	55.42	60.80	85.81	77.67	79.16	63.33
16500	62.35	55.94	54.53	60.29	89.49	78.46	81.97	62.02
17250	61.20	55.30	53.47	59.76	89.00	80.61	88.26	62.26
18000	60.48	55.75	53.28	59.28	89.49	85.32	85.72	59.65
18750	60.07	55.94	53.31	58.71	90.43	84.71	87.06	60.54
19500	59.46	55.60	53.11	58.45	82.78	83.22	83.65	58.74
20250	58.89	55.28	52.56	58.31	83.74	82.33	83.93	58.70
21000	58.64	55.75	52.39	58.30	85.67	80.73	91.62	58.95
21500	58.73	56.02	52.34	58.20	86.43	80.73	83.97	56.86
22000	58.23	55.84	52.29	57.53	88.05	81.12	83.88	56.49
22500	58.31	55.56	52.13	57.54	89.64	85.33	82.79	57.45
23000	58.35	55.74	52.22	57.78	86.74	91.27	90.99	57.11
23500	58.38	56.50	52.17	57.91	92.66	91.86	88.33	55.55
24000	58.61	56.06	52.58	58.11	95.11	94.92	92.68	54.46
24500	58.01	55.79	53.36	57.82	99.66	105.04	92.69	55.04
25000	57.31	55.08	53.61	57.64	89.74	93.93	97.04	53.22
25500	57.08	54.56	53.35	57.15	91.01	100.61	101.81	52.08
26000	56.90	54.29	52.85	56.46	92.80	96.34	92.14	52.80
26500	56.89	54.22	52.77	56.53	96.71	92.76	95.37	52.98
27000	57.21	54.39	52.93	56.90	92.34	93.30	90.69	52.57
27500	58.62	55.07	53.63	57.49	86.70	82.61	85.95	52.33
28000	59.58	56.46	54.44	58.24	90.71	82.69	81.22	52.63
28500	60.49	57.62	55.01	59.01	87.73	77.75	86.64	53.76
29000	60.33	58.29	55.33	59.34	72.30	78.20	88.92	53.32
29500	60.21	58.25	55.50	58.90	85.51	77.04	85.54	52.99
30000	59.74	58.01	54.79	59.27	82.18	78.67	81.59	54.02

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Solid State USB SP8T Switch

USB-1SP8T-34

Typical Performance Data

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

Frequency (MHz)	Isolation @ Disconnected state (dB)							
	COM-1	COM-2	COM-3	COM-4	COM-5	COM-6	COM-7	COM-8
100	103.20	102.71	101.49	96.23	83.08	83.90	97.51	93.55
500	104.31	106.19	103.94	93.50	77.06	76.15	100.61	106.84
1000	103.35	97.24	101.25	87.84	70.43	69.62	96.65	103.92
1500	105.80	98.11	99.45	89.15	67.78	66.97	97.02	98.17
2000	101.42	98.56	96.69	90.57	66.51	65.31	101.28	104.31
2500	96.18	98.76	105.80	100.23	65.02	63.67	97.43	99.63
3000	96.36	100.88	92.48	87.07	64.05	62.34	92.32	96.59
3500	99.54	99.54	96.74	82.16	64.49	61.97	100.65	93.74
4000	104.75	104.08	97.89	83.54	65.62	62.92	104.86	98.47
4500	97.29	101.11	111.67	88.67	66.46	63.32	99.03	108.53
5000	98.46	94.63	98.14	84.19	67.36	63.83	116.18	94.06
5500	100.03	92.58	104.03	74.35	67.39	63.63	99.80	99.96
6000	95.52	106.30	93.23	73.10	66.58	63.05	100.82	108.09
6500	97.14	101.14	98.15	78.49	65.03	62.61	94.11	96.86
7000	102.16	108.32	100.35	91.00	64.42	63.02	105.44	101.05
7500	101.11	101.29	98.05	84.69	64.00	64.15	104.16	103.82
8000	101.31	96.32	99.54	79.40	63.87	65.61	100.42	109.95
8500	102.57	98.79	105.31	84.09	63.46	67.31	96.79	101.16
9000	102.90	95.32	102.80	86.51	62.52	68.47	108.91	104.31
9750	101.79	106.07	110.86	97.70	60.01	68.78	101.42	101.32
10500	93.54	97.81	102.16	80.46	57.19	68.32	95.29	103.75
11250	101.21	108.55	98.85	77.83	56.12	68.67	101.76	104.46
12000	104.06	94.83	97.76	78.46	55.54	67.94	100.36	95.52
12750	94.68	112.23	109.64	66.05	54.81	66.11	100.51	101.35
13500	99.51	105.77	106.23	64.59	53.91	64.02	99.13	98.16
14250	103.78	101.82	99.08	71.09	53.07	61.97	98.47	95.88
15000	99.93	100.78	100.03	61.09	52.45	60.13	98.46	94.92
15750	108.82	103.52	95.76	60.77	51.52	58.06	90.44	93.76
16500	98.01	99.46	101.29	71.53	50.54	56.80	106.48	94.92
17250	99.14	97.05	101.63	65.92	50.25	55.97	96.90	99.29
18000	104.09	105.35	95.57	64.52	50.56	55.65	99.15	108.25
18750	104.78	108.65	92.49	71.71	50.50	54.82	104.22	94.74
19500	94.08	93.92	92.92	66.09	49.29	52.90	87.56	90.58
20250	100.56	99.03	88.49	62.05	48.28	51.36	95.56	102.62
21000	112.37	95.44	95.07	67.64	48.77	51.55	97.09	108.22
21500	105.97	99.90	89.16	70.12	48.84	51.36	101.63	98.68
22000	103.30	98.45	90.99	65.96	48.74	51.02	108.04	97.27
22500	104.59	102.13	87.79	65.71	48.89	50.77	94.51	100.62
23000	103.26	98.04	91.18	69.47	49.14	50.80	93.18	97.29
23500	95.89	115.40	100.31	77.19	48.66	50.28	92.68	95.11
24000	93.72	98.97	92.47	82.35	47.84	49.22	97.24	93.28
24500	94.85	97.65	104.23	78.42	47.86	48.92	88.80	89.09
25000	99.16	112.00	98.70	80.58	48.34	49.10	104.82	106.48
25500	99.85	103.45	113.55	84.59	48.86	49.54	104.01	99.51
26000	101.83	97.14	94.22	89.44	48.93	49.52	114.05	97.09
26500	104.47	92.89	92.40	80.59	48.89	49.42	95.89	93.57
27000	87.75	91.60	94.73	75.89	49.46	49.91	86.89	87.30
27500	92.71	87.60	97.86	75.68	50.13	50.88	84.85	89.72
28000	97.19	86.03	88.47	76.85	50.51	51.42	108.94	92.88
28500	91.84	90.01	88.36	75.33	51.19	52.39	100.83	88.55
29000	92.75	93.97	84.30	70.33	51.97	53.87	91.27	87.82
29500	109.47	89.70	95.90	68.02	53.65	55.62	101.23	86.36
30000	94.11	93.59	97.36	71.70	55.39	57.17	88.38	85.71

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Solid State

USB SP8T Switch

USB-1SP8T-34

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
100	1.69	1.70	1.70	1.70	1.68	1.68	1.70	1.70
500	1.96	1.98	1.95	1.95	1.93	1.92	1.98	1.98
1000	2.13	2.15	2.09	2.09	2.07	2.07	2.16	2.15
1500	2.22	2.24	2.22	2.23	2.21	2.20	2.25	2.24
2000	2.37	2.40	2.31	2.32	2.29	2.29	2.41	2.41
2500	2.50	2.53	2.35	2.36	2.33	2.32	2.54	2.54
3000	2.55	2.57	2.47	2.49	2.45	2.45	2.59	2.59
3500	2.80	2.83	2.67	2.70	2.65	2.65	2.86	2.86
4000	2.87	2.89	2.80	2.84	2.79	2.79	2.92	2.91
4500	2.90	2.92	2.84	2.87	2.84	2.83	2.96	2.97
5000	3.08	3.10	2.86	2.91	2.86	2.86	3.14	3.14
5500	3.20	3.22	2.93	2.98	2.92	2.93	3.26	3.24
6000	3.22	3.24	2.99	3.04	2.99	2.99	3.29	3.29
6500	3.31	3.32	3.09	3.13	3.08	3.08	3.36	3.35
7000	3.51	3.55	3.23	3.29	3.19	3.21	3.56	3.56
7500	3.69	3.71	3.46	3.54	3.40	3.43	3.76	3.77
8000	3.64	3.65	3.67	3.75	3.61	3.62	3.70	3.70
8500	3.82	3.85	3.76	3.83	3.74	3.72	3.92	3.93
9000	4.17	4.16	3.74	3.80	3.74	3.71	4.27	4.26
9750	4.11	4.11	3.77	3.89	3.75	3.77	4.18	4.17
10500	4.46	4.45	4.03	4.17	4.01	4.01	4.54	4.52
11250	4.51	4.52	4.23	4.46	4.21	4.20	4.57	4.56
12000	4.70	4.70	4.31	4.71	4.29	4.30	4.75	4.75
12750	4.87	4.87	4.43	4.78	4.41	4.44	4.93	4.93
13500	5.03	5.03	4.56	4.78	4.55	4.57	5.09	5.08
14250	5.18	5.17	4.68	4.82	4.67	4.69	5.22	5.21
15000	5.32	5.29	4.78	4.90	4.77	4.80	5.36	5.33
15750	5.44	5.42	4.88	4.99	4.87	4.90	5.45	5.43
16500	5.57	5.54	4.98	5.10	4.96	4.98	5.55	5.54
17250	5.71	5.68	5.06	5.18	5.03	5.09	5.68	5.67
18000	5.84	5.81	5.17	5.27	5.14	5.23	5.80	5.80
18750	5.95	5.92	5.23	5.32	5.21	5.31	5.91	5.91
19500	6.06	6.01	5.28	5.38	5.24	5.36	6.00	6.00
20250	6.14	6.08	5.37	5.41	5.30	5.42	6.12	6.11
21000	6.29	6.22	5.43	5.49	5.36	5.49	6.25	6.22
21500	6.42	6.36	5.58	5.65	5.49	5.63	6.41	6.39
22000	6.49	6.43	5.74	5.78	5.61	5.76	6.47	6.46
22500	6.68	6.64	5.87	5.92	5.76	5.92	6.68	6.67
23000	6.84	6.82	6.01	6.06	5.92	6.09	6.85	6.85
23500	6.94	6.88	5.99	6.05	5.91	6.06	6.91	6.89
24000	7.09	7.06	6.09	6.16	6.01	6.15	7.09	7.12
24500	7.03	6.98	6.22	6.29	6.12	6.29	6.99	6.98
25000	7.22	7.12	6.16	6.23	6.07	6.27	7.15	7.13
25500	7.21	7.16	6.13	6.20	6.07	6.22	7.20	7.21
26000	7.19	7.11	6.23	6.27	6.15	6.29	7.13	7.10
26500	7.27	7.20	6.35	6.38	6.25	6.39	7.25	7.22
27000	7.39	7.33	6.45	6.49	6.36	6.49	7.37	7.35
27500	7.52	7.47	6.57	6.62	6.47	6.60	7.50	7.48
28000	7.57	7.55	6.71	6.77	6.60	6.71	7.58	7.58
28500	7.77	7.74	6.90	6.99	6.78	6.88	7.77	7.74
29000	8.03	8.03	7.07	7.18	6.96	7.08	8.00	8.04
29500	8.04	8.06	7.16	7.28	7.06	7.20	8.10	8.10
30000	8.17	8.14	7.18	7.28	7.13	7.22	8.20	8.16

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Solid State

USB SP8T Switch

USB-1SP8T-34

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
100	1.22	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21
500	1.17	1.14	1.14	1.18	1.18	1.18	1.18	1.14	1.14
1000	1.08	1.06	1.06	1.08	1.07	1.08	1.08	1.05	1.05
1500	1.11	1.12	1.12	1.10	1.11	1.10	1.11	1.10	1.10
2000	1.13	1.17	1.17	1.15	1.15	1.15	1.16	1.17	1.18
2500	1.13	1.18	1.19	1.03	1.02	1.05	1.04	1.19	1.19
3000	1.17	1.11	1.11	1.22	1.23	1.20	1.21	1.13	1.14
3500	1.45	1.40	1.40	1.42	1.45	1.41	1.43	1.43	1.44
4000	1.29	1.21	1.20	1.43	1.44	1.43	1.44	1.21	1.20
4500	1.30	1.18	1.18	1.24	1.24	1.26	1.25	1.20	1.22
5000	1.49	1.37	1.35	1.05	1.02	1.06	1.04	1.37	1.37
5500	1.39	1.21	1.20	1.11	1.13	1.12	1.13	1.19	1.16
6000	1.24	1.07	1.09	1.17	1.19	1.20	1.20	1.11	1.13
6500	1.30	1.20	1.17	1.19	1.19	1.20	1.19	1.16	1.15
7000	1.38	1.27	1.30	1.26	1.25	1.20	1.22	1.24	1.26
7500	1.32	1.30	1.32	1.40	1.40	1.32	1.36	1.34	1.36
8000	1.14	1.09	1.06	1.52	1.54	1.48	1.48	1.11	1.10
8500	1.40	1.28	1.32	1.51	1.51	1.52	1.47	1.34	1.37
9000	1.54	1.53	1.51	1.33	1.30	1.36	1.29	1.60	1.58
9750	1.20	1.11	1.09	1.09	1.15	1.07	1.11	1.14	1.13
10500	1.50	1.41	1.38	1.35	1.39	1.34	1.32	1.43	1.40
11250	1.16	1.11	1.12	1.34	1.28	1.33	1.25	1.09	1.09
12000	1.25	1.13	1.17	1.23	1.12	1.21	1.19	1.12	1.14
12750	1.14	1.14	1.17	1.18	1.11	1.18	1.20	1.21	1.22
13500	1.17	1.14	1.15	1.12	1.06	1.13	1.14	1.25	1.23
14250	1.20	1.09	1.08	1.07	1.02	1.08	1.06	1.19	1.15
15000	1.20	1.15	1.12	1.09	1.04	1.08	1.07	1.26	1.18
15750	1.21	1.09	1.07	1.17	1.12	1.19	1.11	1.12	1.06
16500	1.21	1.27	1.24	1.29	1.25	1.33	1.23	1.26	1.21
17250	1.26	1.14	1.14	1.23	1.22	1.28	1.22	1.12	1.10
18000	1.35	1.22	1.23	1.07	1.07	1.04	1.06	1.19	1.17
18750	1.34	1.07	1.05	1.21	1.23	1.19	1.15	1.07	1.08
19500	1.38	1.14	1.18	1.13	1.18	1.17	1.15	1.11	1.10
20250	1.29	1.18	1.16	1.26	1.17	1.26	1.27	1.23	1.25
21000	1.14	1.29	1.27	1.14	1.07	1.17	1.17	1.32	1.27
21500	1.20	1.27	1.26	1.22	1.15	1.15	1.15	1.34	1.33
22000	1.26	1.11	1.12	1.36	1.27	1.22	1.22	1.19	1.17
22500	1.37	1.26	1.28	1.37	1.29	1.23	1.24	1.32	1.33
23000	1.53	1.24	1.31	1.36	1.31	1.28	1.29	1.33	1.36
23500	1.58	1.07	1.03	1.21	1.18	1.18	1.19	1.06	1.12
24000	1.76	1.23	1.26	1.04	1.07	1.02	1.12	1.29	1.39
24500	1.57	1.07	1.11	1.20	1.24	1.15	1.27	1.09	1.15
25000	1.64	1.32	1.22	1.16	1.22	1.12	1.26	1.22	1.28
25500	1.57	1.12	1.11	1.06	1.04	1.06	1.13	1.15	1.26
26000	1.34	1.22	1.15	1.23	1.14	1.17	1.22	1.11	1.10
26500	1.26	1.24	1.22	1.31	1.23	1.21	1.27	1.23	1.28
27000	1.25	1.09	1.08	1.26	1.19	1.17	1.23	1.11	1.16
27500	1.30	1.16	1.14	1.26	1.20	1.21	1.28	1.09	1.15
28000	1.25	1.14	1.21	1.18	1.14	1.16	1.23	1.21	1.28
28500	1.35	1.01	1.11	1.14	1.11	1.12	1.19	1.18	1.20
29000	1.56	1.18	1.25	1.27	1.28	1.22	1.31	1.19	1.33
29500	1.45	1.22	1.38	1.37	1.39	1.33	1.42	1.41	1.44
30000	1.48	1.06	1.14	1.32	1.34	1.31	1.36	1.21	1.23

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Solid State

USB SP8T Switch

USB-1SP8T-34

Typical Performance Data

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

Frequency (MHz)	VSWR, Internally Terminated Ports (:1)							
	J1	J2	J3	J4	J5	J6	J7	J8
100	1.08	1.08	1.08	1.08	1.08	1.08	1.09	1.09
500	1.10	1.11	1.11	1.11	1.10	1.11	1.11	1.12
1000	1.16	1.16	1.16	1.17	1.16	1.16	1.17	1.17
1500	1.20	1.20	1.21	1.22	1.20	1.21	1.22	1.22
2000	1.22	1.23	1.24	1.24	1.23	1.23	1.24	1.24
2500	1.22	1.23	1.24	1.24	1.23	1.23	1.24	1.24
3000	1.21	1.21	1.22	1.22	1.21	1.22	1.23	1.22
3500	1.18	1.18	1.18	1.19	1.19	1.18	1.19	1.19
4000	1.14	1.14	1.13	1.13	1.14	1.14	1.14	1.13
4500	1.10	1.09	1.08	1.07	1.09	1.08	1.09	1.07
5000	1.06	1.06	1.04	1.02	1.04	1.03	1.04	1.02
5500	1.05	1.06	1.06	1.04	1.04	1.04	1.05	1.05
6000	1.07	1.09	1.09	1.09	1.07	1.08	1.09	1.11
6500	1.10	1.12	1.14	1.14	1.12	1.13	1.14	1.16
7000	1.14	1.16	1.18	1.18	1.17	1.17	1.20	1.22
7500	1.18	1.19	1.21	1.22	1.22	1.20	1.24	1.26
8000	1.22	1.22	1.23	1.24	1.25	1.23	1.28	1.28
8500	1.25	1.24	1.25	1.26	1.28	1.24	1.31	1.30
9000	1.27	1.24	1.26	1.26	1.29	1.24	1.32	1.30
9750	1.24	1.21	1.22	1.21	1.25	1.19	1.26	1.24
10500	1.18	1.16	1.16	1.13	1.18	1.11	1.18	1.15
11250	1.13	1.14	1.12	1.05	1.12	1.07	1.10	1.10
12000	1.10	1.14	1.11	1.03	1.11	1.12	1.12	1.13
12750	1.15	1.17	1.16	1.09	1.17	1.19	1.21	1.20
13500	1.16	1.16	1.17	1.11	1.19	1.20	1.25	1.22
14250	1.14	1.11	1.15	1.10	1.18	1.15	1.23	1.17
15000	1.18	1.14	1.19	1.14	1.21	1.14	1.24	1.16
15750	1.22	1.20	1.23	1.19	1.24	1.16	1.24	1.18
16500	1.29	1.27	1.29	1.26	1.29	1.22	1.26	1.24
17250	1.25	1.25	1.25	1.24	1.25	1.20	1.22	1.21
18000	1.15	1.15	1.13	1.14	1.13	1.12	1.11	1.11
18750	1.08	1.07	1.04	1.04	1.06	1.10	1.08	1.08
19500	1.15	1.11	1.15	1.09	1.15	1.18	1.19	1.19
20250	1.23	1.20	1.27	1.20	1.25	1.25	1.28	1.29
21000	1.23	1.21	1.29	1.21	1.25	1.24	1.29	1.30
21500	1.15	1.15	1.23	1.15	1.19	1.17	1.23	1.23
22000	1.07	1.08	1.16	1.08	1.12	1.09	1.15	1.15
22500	1.03	1.00	1.08	1.02	1.03	1.03	1.06	1.06
23000	1.14	1.10	1.09	1.12	1.08	1.14	1.09	1.12
23500	1.24	1.20	1.19	1.22	1.18	1.27	1.19	1.25
24000	1.32	1.28	1.28	1.32	1.26	1.38	1.29	1.38
24500	1.34	1.31	1.33	1.37	1.30	1.44	1.33	1.45
25000	1.30	1.30	1.34	1.39	1.30	1.45	1.34	1.47
25500	1.21	1.24	1.29	1.34	1.24	1.40	1.29	1.41
26000	1.12	1.18	1.23	1.28	1.19	1.32	1.25	1.35
26500	1.07	1.12	1.14	1.19	1.11	1.21	1.18	1.23
27000	1.17	1.12	1.04	1.12	1.08	1.07	1.14	1.12
27500	1.24	1.15	1.05	1.08	1.10	1.03	1.11	1.06
28000	1.30	1.20	1.13	1.13	1.15	1.14	1.11	1.15
28500	1.30	1.25	1.22	1.22	1.21	1.27	1.13	1.27
29000	1.34	1.33	1.33	1.36	1.31	1.42	1.21	1.41
29500	1.35	1.41	1.42	1.47	1.39	1.54	1.32	1.54
30000	1.35	1.49	1.48	1.56	1.45	1.62	1.46	1.67

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Solid State USB SP8T Switch

USB-1SP8T-34

Typical Performance Data

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

Frequency (MHz)	Isolation @ Active states (dB)							
	COM-1	COM-3	COM-5	COM-7	J2-J3	J4-J5	J6-J7	J7-J8
100	88.44	90.31	87.57	87.64	100.97	103.07	101.18	90.03
500	79.25	77.63	76.28	79.70	99.77	101.93	96.37	83.06
1000	73.05	71.23	69.34	72.20	99.38	100.31	105.63	77.52
1500	69.20	68.04	66.87	69.17	94.06	101.24	101.84	72.05
2000	67.37	66.17	64.90	67.20	98.27	96.84	100.28	70.04
2500	66.54	65.39	64.06	66.70	110.25	97.37	93.88	70.19
3000	65.88	64.68	63.38	66.11	98.69	100.49	94.59	68.30
3500	65.73	64.61	63.16	65.71	102.53	99.18	108.37	67.05
4000	65.59	64.33	63.03	65.48	99.87	93.35	103.10	67.36
4500	65.53	64.25	62.96	65.61	104.94	94.17	106.21	68.36
5000	65.22	63.87	62.78	66.70	98.09	87.47	101.65	64.81
5500	65.03	62.76	62.98	65.91	97.93	87.04	98.68	65.88
6000	64.28	61.94	62.85	64.06	85.05	83.42	98.45	66.53
6500	63.56	61.67	63.06	63.36	87.08	83.13	95.34	66.63
7000	62.97	61.67	63.18	63.25	90.49	83.79	95.37	64.79
7500	63.16	61.89	63.19	62.97	89.35	83.37	102.41	64.76
8000	62.91	61.75	62.85	62.29	92.16	83.23	102.40	67.93
8500	63.30	61.49	62.31	62.33	89.44	89.48	94.93	67.25
9000	63.50	60.87	61.71	62.52	96.52	88.17	108.31	64.92
9750	63.50	60.58	61.16	62.10	94.86	87.85	97.47	67.24
10500	64.09	60.28	60.59	62.31	88.38	84.96	101.41	67.68
11250	64.58	59.69	59.38	62.36	85.84	89.17	103.60	66.78
12000	64.68	59.17	58.31	62.36	86.53	89.99	95.50	67.89
12750	64.61	59.79	57.65	62.20	97.39	89.47	88.82	67.45
13500	65.44	62.52	56.85	61.48	86.12	89.86	83.64	67.29
14250	65.26	63.90	56.13	61.09	78.80	90.52	78.79	65.50
15000	64.31	61.52	55.71	61.71	82.85	86.67	76.87	67.01
15750	63.60	58.48	55.19	61.35	84.34	83.35	79.35	64.79
16500	62.85	56.92	54.34	60.67	86.82	82.08	83.78	63.73
17250	61.78	56.89	53.42	60.20	86.19	83.03	89.12	63.54
18000	60.99	57.42	53.19	59.69	86.35	89.53	84.40	60.96
18750	60.70	57.23	53.26	59.24	93.53	89.36	88.17	61.81
19500	59.90	56.63	52.96	58.85	84.19	88.32	85.53	59.85
20250	59.38	56.08	52.26	58.84	85.22	85.01	84.76	60.00
21000	59.09	56.48	52.05	58.66	87.96	82.96	92.03	59.90
21500	59.23	56.52	52.10	58.55	88.69	81.91	85.23	57.78
22000	58.83	56.33	52.03	57.96	90.49	83.16	83.00	57.57
22500	58.84	56.07	51.95	57.88	93.05	88.72	84.19	58.24
23000	59.12	56.46	51.93	58.13	88.17	95.02	90.63	58.09
23500	59.05	57.14	51.88	58.34	89.16	96.01	88.32	56.32
24000	59.11	56.79	52.44	58.52	101.22	95.45	90.32	55.13
24500	58.37	56.46	53.23	58.20	89.81	94.97	91.28	55.62
25000	57.75	55.69	53.68	58.10	98.61	94.15	96.89	53.67
25500	57.74	55.31	53.49	57.35	93.27	91.88	95.29	52.55
26000	57.38	55.05	53.23	56.81	95.57	91.72	92.56	53.28
26500	57.40	54.87	53.12	57.01	92.46	93.97	92.67	53.43
27000	58.31	55.14	53.74	57.37	92.05	100.44	90.71	53.24
27500	59.26	55.80	54.61	58.00	89.43	90.05	90.59	52.80
28000	60.42	57.32	55.57	58.89	101.03	77.54	90.18	53.45
28500	60.46	58.55	56.45	59.24	101.03	82.20	86.33	53.98
29000	61.12	59.31	56.41	59.47	72.01	81.64	90.30	53.62
29500	60.95	59.97	56.46	59.80	85.52	76.33	83.52	53.51
30000	60.27	59.17	55.89	59.46	106.25	80.31	93.71	54.36

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Solid State

USB SP8T Switch

USB-1SP8T-34

Typical Performance Data

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

Frequency (MHz)	Isolation @ Disconnected state (dB)							
	COM-1	COM-2	COM-3	COM-4	COM-5	COM-6	COM-7	COM-8
100	105.36	103.80	97.55	95.96	85.10	83.34	101.59	96.90
500	105.25	97.10	107.99	92.21	76.21	75.86	98.30	106.59
1000	101.74	110.52	102.93	85.75	69.81	69.74	107.96	101.06
1500	106.05	102.40	105.98	83.45	67.01	66.59	105.02	108.82
2000	113.74	111.18	102.11	89.57	65.58	64.85	97.57	99.64
2500	100.50	92.48	112.29	97.77	64.59	63.18	108.64	98.65
3000	99.81	93.68	106.40	79.60	63.43	61.59	102.49	100.37
3500	112.62	97.38	99.40	76.24	63.48	61.29	104.55	99.26
4000	98.75	104.30	105.38	76.90	64.40	61.84	102.69	118.50
4500	104.76	101.73	97.19	83.44	65.83	62.48	94.81	104.89
5000	100.39	98.85	106.68	77.55	66.61	62.78	99.59	96.79
5500	111.06	102.45	93.32	67.13	67.06	62.44	103.84	99.32
6000	94.14	105.89	90.26	64.63	65.96	62.15	98.17	98.11
6500	99.64	96.97	90.40	69.43	65.41	61.45	100.12	102.01
7000	99.50	100.81	104.50	83.04	65.21	61.58	99.10	94.98
7500	103.02	101.35	92.91	75.11	64.81	62.63	105.53	98.22
8000	94.35	106.08	96.44	73.33	64.91	64.30	96.62	95.22
8500	99.45	96.77	97.33	78.30	64.55	65.67	102.84	104.15
9000	99.02	97.70	98.83	83.77	63.63	66.81	97.80	100.26
9750	102.31	97.92	101.34	91.30	60.91	67.58	105.28	109.83
10500	92.21	101.98	104.88	82.38	58.10	67.56	99.49	100.44
11250	105.96	105.51	96.10	80.99	56.86	69.26	99.04	105.36
12000	97.89	105.92	94.68	84.76	56.25	69.17	94.01	95.25
12750	102.02	101.52	97.61	72.67	55.43	67.81	104.90	103.55
13500	104.04	101.61	110.33	72.26	54.41	65.72	95.18	96.63
14250	112.02	106.26	96.11	78.80	53.41	63.28	101.89	102.60
15000	100.70	102.84	95.58	67.15	52.35	61.16	97.23	100.65
15750	109.24	100.32	98.84	64.32	51.24	58.82	91.21	90.98
16500	106.73	114.12	100.95	74.46	50.57	57.51	98.63	108.57
17250	106.03	99.20	96.34	69.09	50.29	56.73	101.37	102.19
18000	96.36	97.53	97.04	68.75	50.44	56.20	102.10	103.43
18750	101.93	101.95	92.78	77.69	50.40	55.28	93.02	92.93
19500	107.66	95.04	91.20	70.55	49.08	53.19	90.88	95.46
20250	100.56	94.84	87.33	67.31	47.99	51.64	94.99	100.64
21000	101.49	94.91	94.48	72.80	48.57	51.98	93.78	103.95
21500	99.03	103.84	91.48	74.49	48.65	51.75	97.78	97.95
22000	100.00	97.34	87.24	70.61	48.49	51.40	97.59	100.23
22500	98.88	93.42	85.40	70.66	48.71	51.23	94.70	97.35
23000	98.96	109.03	89.56	73.85	48.94	51.35	97.74	101.83
23500	103.16	108.51	100.45	82.55	48.45	50.69	101.61	104.95
24000	96.27	95.73	94.14	85.41	47.73	49.64	95.77	91.65
24500	99.10	92.94	99.87	81.22	47.77	49.30	88.68	92.99
25000	95.74	96.36	102.17	82.38	48.37	49.57	101.33	100.32
25500	94.83	101.84	99.54	89.89	48.96	50.02	96.26	106.70
26000	106.13	97.91	98.86	90.76	49.06	49.94	113.84	109.79
26500	100.63	102.33	93.17	81.17	49.14	49.90	104.35	93.18
27000	122.11	89.82	97.51	80.04	49.77	50.48	97.84	96.48
27500	90.92	89.68	95.99	77.13	50.56	51.40	91.68	98.89
28000	94.75	89.18	96.80	76.79	51.24	52.29	93.14	85.47
28500	86.14	92.66	90.48	75.07	51.68	53.20	94.64	86.33
29000	87.41	85.91	87.70	71.63	52.86	54.69	92.31	90.54
29500	88.17	106.80	101.42	69.94	54.86	56.80	89.34	93.80
30000	93.11	95.12	88.66	70.57	56.57	58.54	95.57	96.40

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Solid State

USB SP8T Switch

USB-1SP8T-34

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
100	1.77	1.77	1.76	1.75	1.74	1.74	1.74	1.74
500	2.05	2.05	2.01	2.00	1.99	1.99	2.02	2.02
1000	2.23	2.23	2.15	2.15	2.13	2.14	2.20	2.20
1500	2.31	2.32	2.28	2.28	2.27	2.27	2.29	2.28
2000	2.46	2.47	2.37	2.37	2.35	2.36	2.44	2.44
2500	2.59	2.60	2.40	2.40	2.38	2.39	2.57	2.57
3000	2.63	2.64	2.52	2.53	2.49	2.50	2.61	2.61
3500	2.88	2.89	2.72	2.74	2.69	2.71	2.87	2.88
4000	2.96	2.97	2.86	2.88	2.84	2.85	2.94	2.93
4500	2.99	2.99	2.90	2.92	2.89	2.90	2.97	2.97
5000	3.18	3.17	2.93	2.96	2.91	2.92	3.15	3.15
5500	3.30	3.31	2.99	3.03	2.97	2.99	3.27	3.26
6000	3.32	3.33	3.05	3.08	3.03	3.05	3.30	3.30
6500	3.41	3.40	3.14	3.18	3.11	3.13	3.37	3.35
7000	3.62	3.63	3.29	3.35	3.23	3.26	3.57	3.56
7500	3.80	3.80	3.52	3.60	3.44	3.48	3.77	3.77
8000	3.76	3.75	3.73	3.80	3.66	3.69	3.72	3.71
8500	3.95	3.97	3.86	3.90	3.82	3.82	3.94	3.94
9000	4.33	4.31	3.87	3.90	3.84	3.83	4.33	4.31
9750	4.31	4.30	3.92	3.99	3.89	3.92	4.27	4.24
10500	4.71	4.68	4.23	4.27	4.19	4.20	4.66	4.63
11250	4.77	4.76	4.43	4.48	4.38	4.37	4.70	4.68
12000	4.94	4.93	4.50	4.58	4.45	4.47	4.87	4.86
12750	5.06	5.06	4.58	4.66	4.54	4.57	5.01	5.01
13500	5.17	5.16	4.68	4.73	4.64	4.68	5.14	5.12
14250	5.27	5.26	4.76	4.82	4.73	4.78	5.26	5.24
15000	5.39	5.36	4.84	4.88	4.80	4.87	5.38	5.35
15750	5.49	5.47	4.93	4.96	4.90	4.95	5.46	5.44
16500	5.61	5.58	5.01	5.05	4.97	5.02	5.56	5.54
17250	5.74	5.71	5.07	5.13	5.03	5.11	5.68	5.67
18000	5.87	5.83	5.18	5.25	5.14	5.26	5.79	5.79
18750	6.00	5.95	5.25	5.31	5.21	5.33	5.92	5.92
19500	6.11	6.07	5.32	5.39	5.26	5.40	6.02	6.02
20250	6.22	6.16	5.44	5.46	5.36	5.49	6.17	6.15
21000	6.39	6.33	5.52	5.57	5.44	5.58	6.31	6.28
21500	6.54	6.49	5.68	5.73	5.58	5.72	6.50	6.47
22000	6.62	6.56	5.83	5.87	5.70	5.85	6.56	6.53
22500	6.83	6.79	5.98	6.01	5.86	6.02	6.76	6.75
23000	7.00	6.96	6.12	6.15	6.02	6.18	6.94	6.93
23500	7.12	7.05	6.11	6.15	6.02	6.17	7.00	6.98
24000	7.26	7.21	6.23	6.28	6.13	6.27	7.18	7.19
24500	7.23	7.17	6.36	6.42	6.26	6.43	7.11	7.09
25000	7.43	7.34	6.32	6.38	6.23	6.41	7.28	7.26
25500	7.45	7.39	6.33	6.38	6.25	6.40	7.36	7.36
26000	7.44	7.38	6.45	6.47	6.35	6.49	7.30	7.27
26500	7.53	7.49	6.57	6.59	6.46	6.60	7.43	7.40
27000	7.67	7.64	6.70	6.72	6.58	6.71	7.57	7.54
27500	7.81	7.79	6.84	6.86	6.71	6.83	7.69	7.68
28000	7.87	7.88	7.00	7.03	6.84	6.96	7.79	7.80
28500	8.08	8.08	7.19	7.24	7.03	7.14	7.97	7.96
29000	8.35	8.38	7.37	7.45	7.20	7.34	8.21	8.28
29500	8.36	8.42	7.48	7.56	7.31	7.46	8.32	8.35
30000	8.49	8.51	7.50	7.55	7.36	7.48	8.41	8.41

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Solid State USB SP8T Switch

USB-1SP8T-34

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
100	1.24	1.23	1.23	1.23	1.23	1.22	1.22	1.22	1.22
500	1.18	1.15	1.15	1.19	1.19	1.19	1.19	1.15	1.15
1000	1.10	1.06	1.06	1.08	1.08	1.09	1.08	1.05	1.05
1500	1.13	1.14	1.14	1.10	1.10	1.10	1.11	1.11	1.11
2000	1.13	1.17	1.17	1.15	1.15	1.15	1.16	1.17	1.18
2500	1.13	1.19	1.19	1.03	1.02	1.05	1.04	1.19	1.19
3000	1.17	1.11	1.11	1.21	1.23	1.19	1.21	1.12	1.14
3500	1.45	1.41	1.41	1.43	1.45	1.41	1.43	1.43	1.44
4000	1.29	1.22	1.21	1.43	1.45	1.44	1.45	1.22	1.21
4500	1.30	1.18	1.18	1.25	1.25	1.27	1.26	1.20	1.22
5000	1.51	1.38	1.36	1.05	1.03	1.06	1.05	1.38	1.38
5500	1.41	1.20	1.20	1.12	1.13	1.13	1.14	1.18	1.16
6000	1.26	1.08	1.08	1.17	1.19	1.20	1.20	1.11	1.13
6500	1.31	1.19	1.17	1.18	1.19	1.19	1.18	1.15	1.13
7000	1.40	1.26	1.29	1.25	1.24	1.20	1.22	1.24	1.25
7500	1.31	1.29	1.31	1.39	1.38	1.32	1.35	1.33	1.35
8000	1.13	1.10	1.07	1.51	1.50	1.47	1.47	1.11	1.11
8500	1.40	1.28	1.32	1.51	1.50	1.52	1.47	1.33	1.35
9000	1.55	1.52	1.51	1.33	1.31	1.37	1.29	1.59	1.58
9750	1.22	1.10	1.08	1.07	1.10	1.06	1.10	1.12	1.12
10500	1.52	1.40	1.37	1.35	1.37	1.34	1.33	1.43	1.40
11250	1.18	1.10	1.11	1.31	1.29	1.31	1.23	1.09	1.09
12000	1.24	1.13	1.16	1.22	1.20	1.20	1.18	1.13	1.14
12750	1.11	1.13	1.17	1.18	1.16	1.17	1.20	1.20	1.21
13500	1.13	1.11	1.11	1.13	1.10	1.14	1.15	1.22	1.20
14250	1.19	1.09	1.08	1.05	1.02	1.06	1.04	1.20	1.16
15000	1.18	1.15	1.10	1.08	1.04	1.08	1.07	1.24	1.16
15750	1.26	1.10	1.08	1.18	1.10	1.19	1.11	1.13	1.07
16500	1.24	1.24	1.23	1.27	1.20	1.31	1.21	1.25	1.19
17250	1.25	1.11	1.11	1.21	1.18	1.26	1.21	1.10	1.08
18000	1.33	1.21	1.23	1.06	1.03	1.02	1.06	1.19	1.17
18750	1.33	1.07	1.07	1.21	1.20	1.20	1.14	1.09	1.09
19500	1.35	1.14	1.17	1.12	1.15	1.16	1.15	1.10	1.09
20250	1.28	1.15	1.13	1.23	1.15	1.24	1.24	1.22	1.23
21000	1.16	1.24	1.24	1.13	1.06	1.16	1.15	1.28	1.24
21500	1.22	1.25	1.25	1.19	1.13	1.13	1.12	1.34	1.32
22000	1.28	1.08	1.10	1.34	1.27	1.21	1.20	1.17	1.16
22500	1.39	1.25	1.29	1.38	1.31	1.25	1.24	1.33	1.34
23000	1.54	1.21	1.28	1.34	1.30	1.27	1.26	1.33	1.35
23500	1.59	1.07	1.04	1.19	1.16	1.17	1.16	1.06	1.12
24000	1.74	1.20	1.24	1.04	1.09	1.02	1.11	1.28	1.37
24500	1.57	1.08	1.10	1.19	1.25	1.14	1.25	1.10	1.15
25000	1.64	1.29	1.21	1.15	1.22	1.11	1.23	1.21	1.26
25500	1.60	1.10	1.09	1.06	1.05	1.06	1.13	1.16	1.26
26000	1.36	1.20	1.15	1.22	1.14	1.17	1.20	1.09	1.08
26500	1.27	1.23	1.21	1.30	1.23	1.22	1.26	1.24	1.27
27000	1.26	1.08	1.09	1.28	1.22	1.20	1.24	1.14	1.16
27500	1.32	1.17	1.16	1.26	1.21	1.23	1.28	1.11	1.16
28000	1.27	1.17	1.23	1.19	1.15	1.18	1.23	1.23	1.30
28500	1.38	1.01	1.10	1.13	1.12	1.12	1.18	1.18	1.19
29000	1.58	1.17	1.23	1.26	1.28	1.21	1.29	1.19	1.32
29500	1.49	1.23	1.38	1.38	1.40	1.32	1.41	1.42	1.44
30000	1.52	1.08	1.16	1.34	1.36	1.31	1.35	1.21	1.21

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Solid State

USB SP8T Switch

USB-1SP8T-34

Typical Performance Data

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

Frequency (MHz)	VSWR, Internally Terminated Ports (:1)							
	J1	J2	J3	J4	J5	J6	J7	J8
100	1.08	1.08	1.07	1.07	1.08	1.08	1.09	1.09
500	1.10	1.10	1.10	1.10	1.10	1.10	1.11	1.11
1000	1.15	1.16	1.16	1.16	1.15	1.16	1.17	1.17
1500	1.20	1.20	1.21	1.21	1.20	1.20	1.21	1.21
2000	1.22	1.22	1.23	1.24	1.22	1.23	1.24	1.24
2500	1.22	1.23	1.23	1.24	1.23	1.23	1.24	1.24
3000	1.21	1.21	1.21	1.22	1.21	1.22	1.22	1.22
3500	1.18	1.17	1.17	1.18	1.18	1.18	1.18	1.18
4000	1.14	1.13	1.13	1.13	1.14	1.13	1.14	1.13
4500	1.09	1.09	1.07	1.07	1.08	1.08	1.08	1.07
5000	1.06	1.05	1.03	1.02	1.04	1.03	1.04	1.02
5500	1.05	1.06	1.06	1.04	1.04	1.04	1.05	1.06
6000	1.07	1.09	1.10	1.08	1.08	1.08	1.09	1.11
6500	1.10	1.13	1.14	1.13	1.13	1.13	1.15	1.17
7000	1.14	1.16	1.17	1.17	1.17	1.17	1.19	1.21
7500	1.18	1.19	1.20	1.20	1.21	1.20	1.24	1.25
8000	1.22	1.21	1.23	1.23	1.25	1.22	1.27	1.28
8500	1.25	1.23	1.25	1.24	1.27	1.24	1.30	1.29
9000	1.26	1.23	1.25	1.24	1.28	1.23	1.30	1.29
9750	1.24	1.20	1.22	1.21	1.25	1.18	1.26	1.23
10500	1.18	1.15	1.16	1.14	1.18	1.10	1.18	1.15
11250	1.11	1.13	1.11	1.08	1.11	1.06	1.10	1.09
12000	1.11	1.15	1.12	1.10	1.11	1.13	1.12	1.14
12750	1.14	1.16	1.15	1.13	1.15	1.18	1.19	1.19
13500	1.14	1.13	1.15	1.14	1.17	1.19	1.23	1.20
14250	1.14	1.09	1.15	1.11	1.18	1.15	1.23	1.16
15000	1.17	1.13	1.18	1.12	1.20	1.13	1.23	1.15
15750	1.22	1.19	1.23	1.17	1.24	1.15	1.24	1.17
16500	1.26	1.25	1.27	1.22	1.26	1.20	1.25	1.21
17250	1.23	1.23	1.23	1.20	1.22	1.19	1.20	1.19
18000	1.14	1.14	1.12	1.12	1.12	1.13	1.10	1.11
18750	1.08	1.06	1.04	1.04	1.05	1.10	1.07	1.08
19500	1.15	1.11	1.15	1.11	1.15	1.17	1.19	1.18
20250	1.21	1.18	1.24	1.18	1.22	1.22	1.27	1.27
21000	1.20	1.18	1.27	1.19	1.24	1.22	1.29	1.28
21500	1.14	1.14	1.22	1.14	1.19	1.16	1.23	1.22
22000	1.07	1.08	1.16	1.08	1.12	1.08	1.16	1.15
22500	1.04	1.02	1.08	1.04	1.03	1.03	1.07	1.07
23000	1.14	1.11	1.09	1.13	1.07	1.14	1.09	1.13
23500	1.23	1.20	1.18	1.23	1.16	1.25	1.18	1.25
24000	1.29	1.26	1.26	1.32	1.24	1.35	1.27	1.35
24500	1.32	1.30	1.32	1.38	1.29	1.41	1.33	1.43
25000	1.28	1.28	1.32	1.39	1.29	1.43	1.34	1.44
25500	1.19	1.21	1.27	1.34	1.25	1.38	1.30	1.40
26000	1.12	1.16	1.21	1.28	1.19	1.30	1.25	1.33
26500	1.07	1.10	1.13	1.19	1.11	1.20	1.19	1.22
27000	1.14	1.11	1.03	1.10	1.05	1.08	1.13	1.10
27500	1.21	1.15	1.06	1.07	1.09	1.04	1.09	1.06
28000	1.28	1.20	1.15	1.14	1.16	1.15	1.10	1.16
28500	1.30	1.25	1.23	1.24	1.23	1.27	1.13	1.27
29000	1.31	1.30	1.30	1.35	1.29	1.38	1.20	1.39
29500	1.32	1.37	1.39	1.46	1.36	1.50	1.31	1.52
30000	1.34	1.46	1.46	1.56	1.43	1.58	1.44	1.62

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Solid State USB SP8T Switch

USB-1SP8T-34

Typical Performance Data

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

Frequency (MHz)	Isolation @ Active states (dB)							
	COM-1	COM-3	COM-5	COM-7	J2-J3	J4-J5	J6-J7	J7-J8
100	91.60	90.06	86.71	87.81	97.26	96.87	100.79	86.46
500	79.33	77.86	75.73	79.04	97.51	101.68	106.87	82.31
1000	72.12	71.27	69.09	71.95	95.49	99.01	97.42	76.02
1500	68.79	68.24	66.57	68.43	100.18	102.49	104.15	71.64
2000	67.27	66.34	64.75	66.96	100.05	101.89	105.93	69.46
2500	66.05	65.40	63.84	65.83	94.60	92.54	103.47	69.82
3000	65.11	64.62	63.00	65.72	96.92	97.47	93.44	67.45
3500	64.56	64.46	62.79	65.11	104.64	97.57	94.32	66.37
4000	64.97	64.37	62.47	64.66	99.98	100.47	98.53	66.69
4500	64.94	64.09	62.42	66.01	112.09	98.99	97.00	67.12
5000	64.96	63.93	62.46	65.52	101.43	101.43	96.38	64.39
5500	64.33	63.38	62.89	64.64	97.93	85.72	98.92	65.26
6000	63.67	62.76	62.98	64.29	89.92	85.07	103.31	66.17
6500	62.97	62.49	63.04	63.31	94.44	83.65	103.58	66.04
7000	62.83	62.19	63.11	62.77	100.00	83.68	110.74	64.27
7500	62.87	62.22	63.37	62.52	100.79	85.37	92.82	64.63
8000	62.66	61.99	62.94	62.24	104.14	88.81	106.75	67.20
8500	63.00	61.58	62.45	62.18	100.24	90.51	98.65	66.78
9000	63.32	61.12	61.99	62.06	98.88	93.30	99.03	64.83
9750	63.34	60.81	61.34	61.93	99.85	89.30	101.44	67.71
10500	63.88	60.82	60.78	62.34	92.09	91.38	105.84	67.91
11250	64.22	60.42	59.67	62.31	91.98	90.71	100.42	67.32
12000	64.37	60.05	58.64	62.36	86.96	90.34	90.82	68.52
12750	64.36	59.86	57.89	62.00	90.77	92.97	90.53	68.60
13500	64.94	59.99	57.15	61.44	84.98	92.81	83.41	68.10
14250	65.17	60.63	56.57	60.99	80.23	97.51	79.42	66.84
15000	64.21	61.18	56.25	61.70	88.61	87.88	78.43	68.38
15750	63.57	59.87	55.57	61.19	82.96	80.76	79.70	65.66
16500	62.81	58.29	54.60	60.74	87.94	81.02	82.64	64.46
17250	62.10	57.60	53.57	60.17	89.15	83.89	89.23	64.29
18000	61.55	57.46	53.32	59.86	87.89	91.10	91.36	61.43
18750	60.77	57.10	53.39	59.22	93.43	89.25	86.63	62.45
19500	60.09	56.24	53.23	58.92	82.06	88.28	87.01	60.39
20250	59.98	55.51	52.57	58.95	86.06	85.60	83.95	60.41
21000	59.65	55.69	52.33	58.71	84.78	82.03	91.43	60.23
21500	59.58	55.73	52.36	58.63	86.22	84.49	85.43	58.16
22000	59.05	55.52	52.22	58.10	88.33	85.19	85.84	57.86
22500	59.08	55.46	52.18	58.09	91.43	89.95	84.12	58.77
23000	59.31	55.96	52.19	58.31	90.90	93.35	93.11	58.22
23500	59.58	56.74	52.25	58.35	94.42	91.59	97.89	56.58
24000	59.64	56.60	52.81	58.43	97.58	92.50	94.93	55.46
24500	58.72	56.14	53.54	58.22	98.97	89.01	93.46	56.00
25000	58.06	55.66	53.98	58.10	95.47	95.71	98.26	53.90
25500	57.80	55.20	53.80	57.48	97.06	92.54	96.32	52.79
26000	57.65	54.82	53.62	56.92	105.31	94.90	90.64	53.47
26500	58.09	54.75	53.68	57.07	96.08	89.49	92.24	53.65
27000	58.99	55.21	54.25	57.58	88.55	98.05	88.17	53.15
27500	60.13	56.13	55.21	58.22	104.66	88.49	93.55	52.89
28000	60.65	57.40	56.21	58.90	95.01	81.43	95.29	53.28
28500	60.97	58.76	56.63	59.37	84.68	78.03	83.99	54.13
29000	61.34	59.23	56.67	59.72	72.11	76.16	92.48	53.59
29500	61.74	59.80	56.85	59.92	82.53	77.91	90.36	53.25
30000	62.02	59.32	56.71	60.02	90.42	78.17	83.91	54.01

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Solid State

USB SP8T Switch

USB-1SP8T-34

Typical Performance Data

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

Frequency (MHz)	Isolation @ Disconnected state (dB)							
	COM-1	COM-2	COM-3	COM-4	COM-5	COM-6	COM-7	COM-8
100	106.55	97.74	111.16	107.01	82.00	82.06	104.34	98.68
500	105.08	107.70	106.55	94.09	76.50	75.65	99.09	110.25
1000	106.77	96.98	96.37	91.94	68.88	68.46	95.11	102.46
1500	96.49	99.53	95.09	97.69	66.62	66.14	98.83	104.49
2000	95.90	96.94	102.16	98.69	65.10	64.17	95.47	110.86
2500	101.09	106.81	101.13	93.48	63.36	62.31	99.74	97.08
3000	115.28	100.15	99.21	89.77	62.42	61.04	100.32	105.27
3500	95.29	102.21	106.89	89.72	62.33	60.54	104.03	99.16
4000	99.29	98.03	107.42	87.30	63.54	61.16	96.31	99.89
4500	109.56	95.65	97.81	89.81	64.84	61.73	97.98	103.17
5000	101.13	103.31	101.26	87.04	65.89	62.06	102.27	98.82
5500	104.64	100.61	104.95	79.88	66.04	61.87	102.11	102.65
6000	101.96	104.29	100.54	76.19	66.00	61.41	102.40	103.23
6500	102.10	102.18	95.78	81.46	65.39	60.83	97.83	98.81
7000	98.27	102.85	98.68	91.88	65.09	60.93	117.10	103.96
7500	100.12	100.34	97.38	84.77	65.41	62.17	107.49	100.85
8000	105.37	110.17	95.23	84.58	65.61	63.66	102.75	104.48
8500	99.05	99.54	101.67	86.26	65.32	65.06	93.54	100.26
9000	100.19	95.64	96.77	92.00	64.31	66.21	104.73	103.23
9750	105.48	109.39	97.11	96.77	61.75	66.62	105.51	103.19
10500	96.43	94.63	98.43	83.06	58.69	66.94	106.03	101.03
11250	100.29	100.95	99.43	85.97	57.46	68.63	101.33	102.87
12000	103.25	102.31	104.64	86.38	56.78	70.10	103.07	101.10
12750	109.25	100.43	101.00	75.13	55.80	69.32	107.02	96.98
13500	107.02	100.96	100.20	73.05	55.02	67.21	95.62	103.14
14250	99.56	100.82	106.06	77.19	53.92	64.81	100.28	100.89
15000	104.84	102.19	85.54	65.90	52.88	62.28	99.16	96.42
15750	107.31	100.27	83.64	64.86	51.82	59.71	92.68	92.56
16500	108.92	110.66	99.53	75.37	50.96	58.44	102.54	100.98
17250	111.51	104.38	92.30	71.23	50.63	57.65	102.54	102.34
18000	98.25	99.71	98.42	70.53	50.74	57.24	100.39	108.10
18750	107.32	98.28	93.97	80.74	50.62	56.12	93.69	104.43
19500	100.38	99.41	93.73	73.32	49.32	54.00	91.92	91.64
20250	106.19	98.74	87.68	69.59	48.46	52.50	92.79	94.44
21000	109.42	93.76	90.87	74.82	48.93	52.64	98.68	110.26
21500	106.22	105.58	87.93	75.60	48.97	52.57	94.55	109.76
22000	99.94	94.25	86.22	71.88	48.91	52.17	101.51	119.70
22500	100.58	97.60	88.31	70.82	49.08	52.06	99.36	95.69
23000	98.17	93.53	87.68	73.49	49.26	51.94	94.81	95.81
23500	111.99	97.30	103.95	81.40	48.74	51.36	99.23	98.81
24000	107.32	95.13	98.88	81.93	48.18	50.36	103.45	99.20
24500	110.05	96.68	97.42	78.56	48.28	50.00	96.00	101.58
25000	100.42	99.02	100.02	80.28	48.91	50.26	104.57	107.81
25500	99.03	96.01	95.56	84.78	49.46	50.60	97.40	95.95
26000	101.34	101.93	107.10	87.23	49.67	50.55	99.23	100.27
26500	108.86	101.20	89.38	78.79	49.76	50.57	95.59	103.21
27000	89.32	94.45	98.60	77.20	50.39	51.18	90.71	90.69
27500	87.65	103.89	86.56	74.41	51.27	51.93	91.39	94.78
28000	84.36	88.29	86.89	77.95	51.77	53.00	90.24	89.81
28500	88.11	91.49	106.12	75.03	52.51	53.64	93.87	90.38
29000	87.32	91.43	83.57	69.43	53.52	55.55	89.10	96.65
29500	98.79	92.94	88.31	68.39	55.60	57.37	107.18	88.93
30000	91.61	92.66	87.23	69.98	57.60	59.75	95.54	92.89

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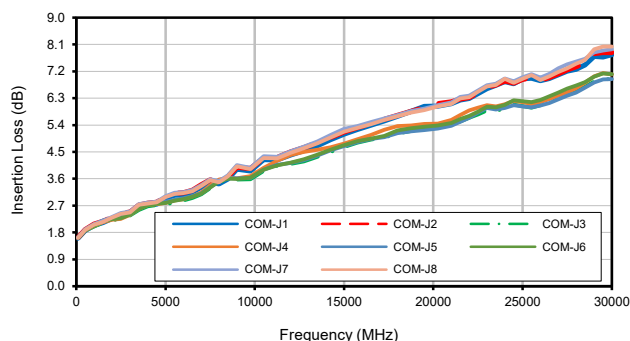
Solid State USB SP8T Switch

USB-1SP8T-34

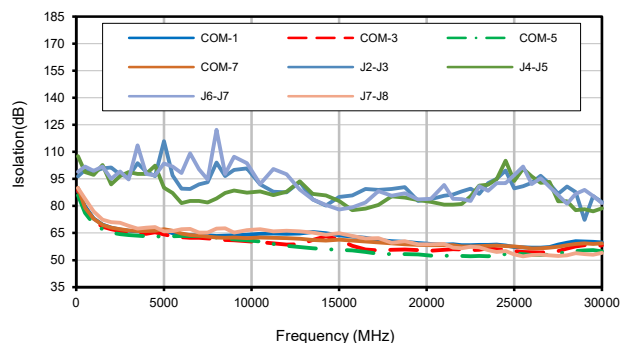
Typical Performance Curves

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

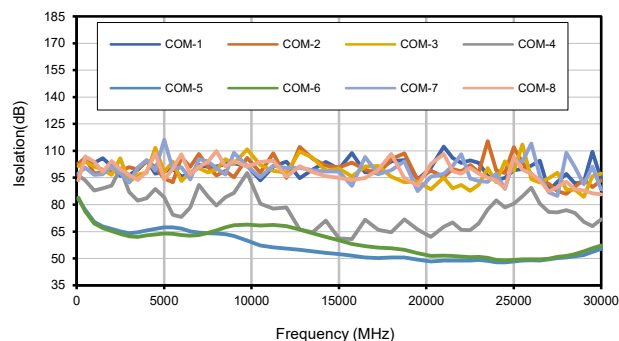
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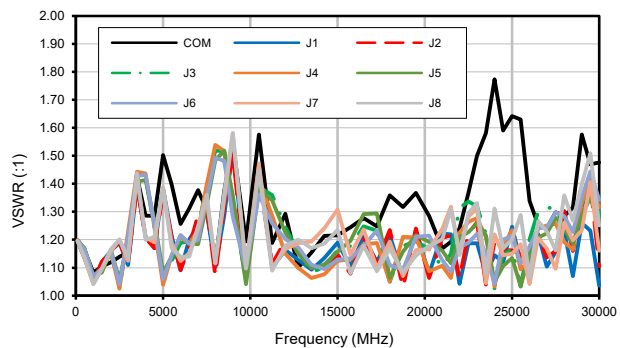
Isolation @ Active states



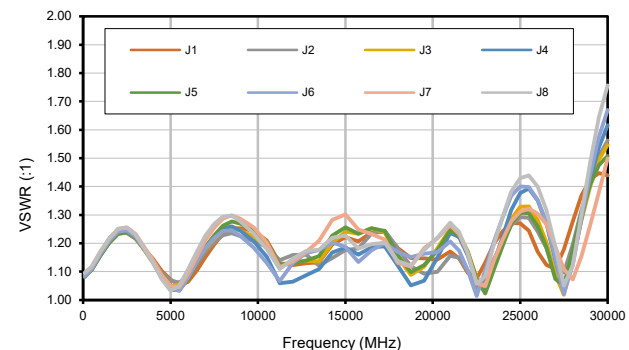
Isolation @ Disconnected state



VSWR, Active Ports



VSWR, Terminated Ports



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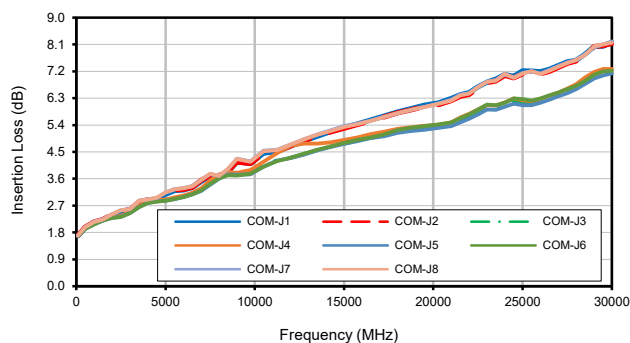
Solid State USB SP8T Switch

USB-1SP8T-34

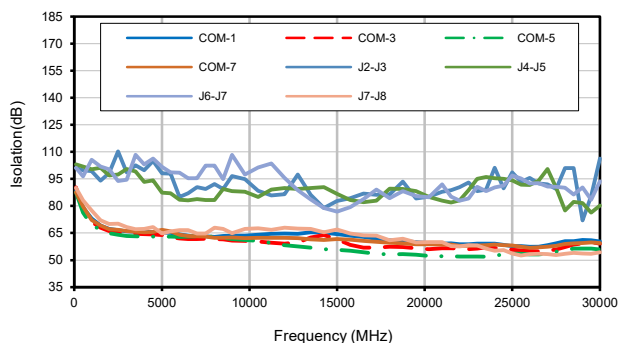
Typical Performance Curves

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

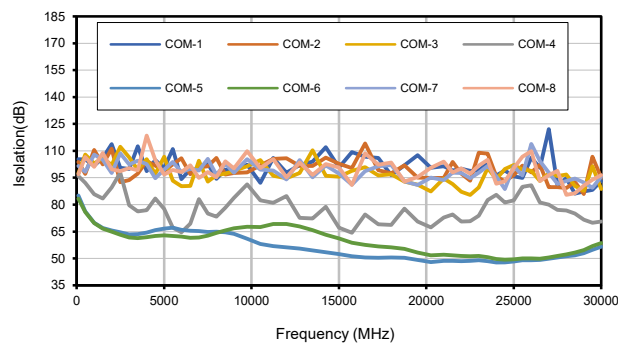
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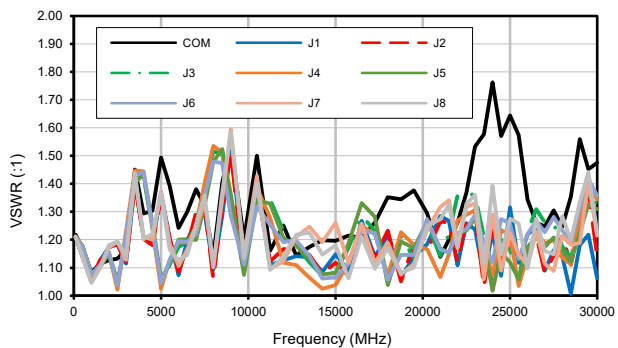
Isolation @ Active states



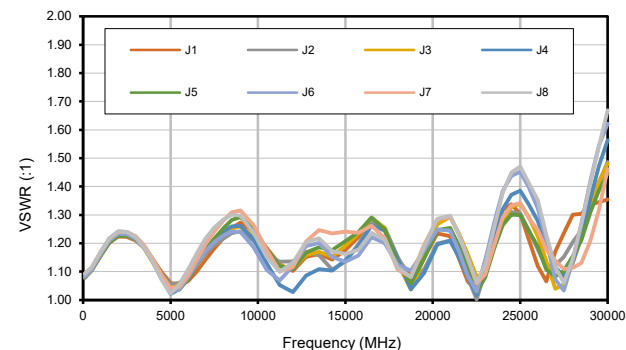
Isolation @ Disconnected state



VSWR, Active Ports



VSWR, Terminated Ports



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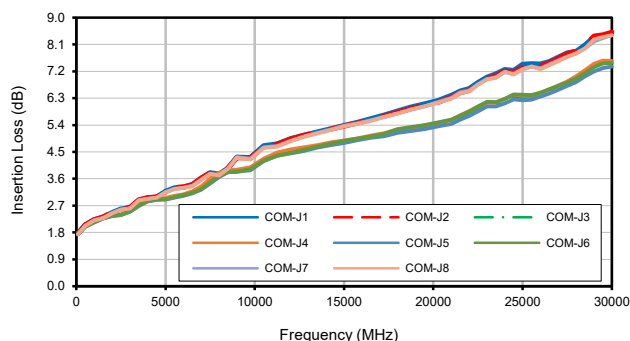
Solid State USB SP8T Switch

USB-1SP8T-34

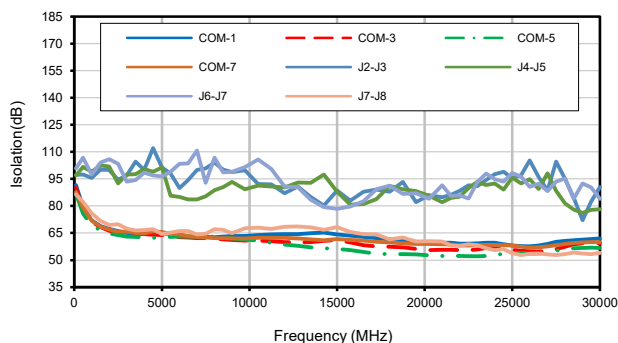
Typical Performance Curves

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

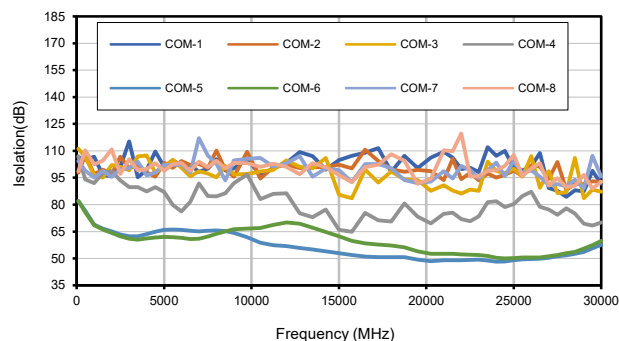
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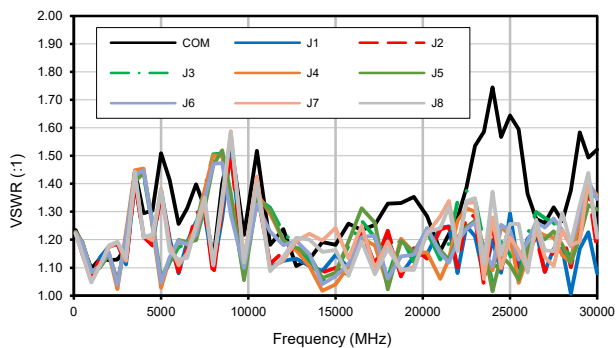
Isolation @ Active states



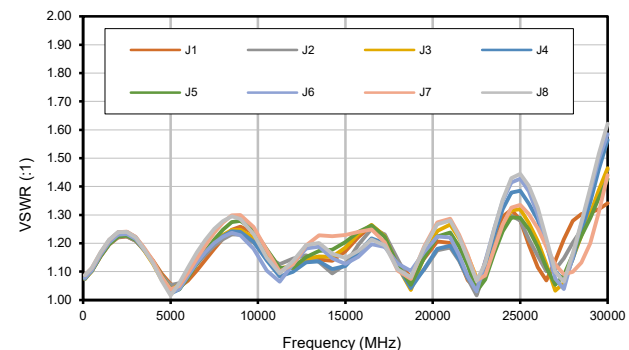
Isolation @ Disconnected state



VSWR, Active Ports



VSWR, Terminated Ports



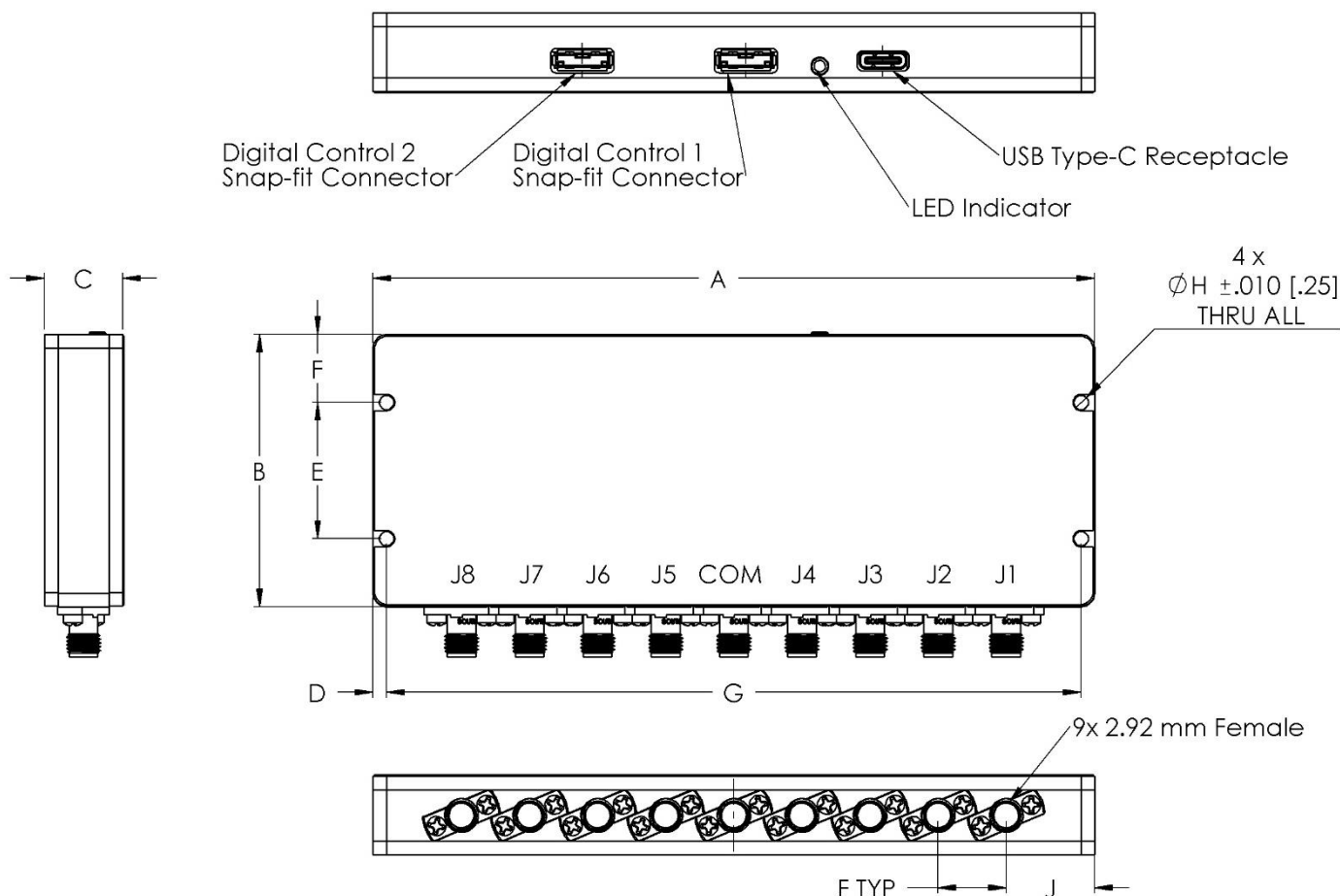
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Outline Dimensions

NR3245



CASE#	A	B	C	D	E	F	G	H	J	WT. GRAMS
NR3245	5.30 (134.62)	2.00 (50.80)	.575 (14.61)	.100 (2.54)	1.000 (25.40)	.500 (12.70)	5.100 (129.54)	.106 (2.69)	.650 (16.51)	185

Dimensions are in inches (mm). Tolerances: 2PL. +/- .03; 3PL. +/- .015

Notes:

- Case material: Nickel Plated Aluminum.



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Mini-Circuits ISO 9001 & ISO 14001 Certified



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 Ambient Environment	Individual Model Data Sheet
Storage Temperature	-20° to 60° C Ambient Environment	Individual Model Data Sheet
Operating and Storage Humidity	5% to 85% RH (non-condensing)	Ambient
Bench Handling Test	Bench Top Tip 45° & Drop	MIL-PRF-28800F
Transit Drop Test	Free Fall Drop, 20 cm (7.9 inches)	MIL-PRF-28800F Class 3