

## USB RF SP8T Switch

USB-1SP8T-183SP

## Typical Performance Data

Test Conditions: @ Temperature = 0°C, Pin = 8 dBm.

Freq. (GHz)	Insertion Loss (dB)							
	COM-J1	COM-J2	COM-J3	COM-J4	COM-J5	COM-J6	COM-J7	COM-J8
0.05	-1.51	-1.50	-1.50	-1.50	-1.51	-1.51	-1.51	-1.50
0.25	-1.64	-1.63	-1.61	-1.61	-1.62	-1.62	-1.63	-1.63
0.50	-1.73	-1.72	-1.69	-1.69	-1.70	-1.70	-1.72	-1.72
1.00	-1.87	-1.87	-1.81	-1.81	-1.82	-1.81	-1.87	-1.87
1.50	-1.99	-1.99	-1.91	-1.91	-1.92	-1.92	-2.00	-1.99
2.00	-2.09	-2.08	-2.01	-2.00	-2.03	-2.02	-2.09	-2.09
2.50	-2.15	-2.15	-2.09	-2.09	-2.11	-2.10	-2.16	-2.15
3.00	-2.18	-2.17	-2.13	-2.13	-2.16	-2.14	-2.18	-2.18
3.50	-2.24	-2.23	-2.18	-2.18	-2.20	-2.19	-2.24	-2.24
4.00	-2.31	-2.30	-2.22	-2.22	-2.25	-2.23	-2.31	-2.31
4.50	-2.37	-2.36	-2.26	-2.26	-2.28	-2.27	-2.38	-2.38
5.00	-2.44	-2.44	-2.32	-2.32	-2.34	-2.33	-2.46	-2.46
5.50	-2.54	-2.53	-2.39	-2.40	-2.42	-2.40	-2.55	-2.55
6.00	-2.61	-2.61	-2.45	-2.45	-2.48	-2.46	-2.63	-2.64
6.50	-2.65	-2.66	-2.48	-2.48	-2.52	-2.49	-2.67	-2.67
7.00	-2.74	-2.75	-2.52	-2.52	-2.55	-2.52	-2.75	-2.75
7.50	-2.86	-2.86	-2.61	-2.61	-2.62	-2.61	-2.86	-2.87
8.00	-2.88	-2.89	-2.71	-2.72	-2.73	-2.72	-2.91	-2.89
8.50	-2.98	-2.99	-2.80	-2.81	-2.84	-2.80	-2.99	-2.99
9.00	-3.13	-3.14	-2.87	-2.87	-2.90	-2.87	-3.16	-3.17
9.50	-3.22	-3.23	-2.95	-2.95	-2.96	-2.97	-3.25	-3.22
10.00	-3.36	-3.36	-3.08	-3.09	-3.09	-3.08	-3.34	-3.35
10.50	-3.51	-3.51	-3.20	-3.22	-3.25	-3.19	-3.54	-3.56
11.00	-3.60	-3.62	-3.27	-3.29	-3.33	-3.28	-3.63	-3.62
11.50	-3.70	-3.68	-3.36	-3.37	-3.41	-3.40	-3.69	-3.73
12.00	-3.70	-3.71	-3.44	-3.46	-3.47	-3.46	-3.73	-3.73
12.50	-3.80	-3.79	-3.43	-3.45	-3.46	-3.43	-3.80	-3.81
13.00	-3.79	-3.79	-3.43	-3.44	-3.45	-3.44	-3.81	-3.80
13.50	-3.92	-3.91	-3.52	-3.52	-3.54	-3.52	-3.91	-3.93
14.00	-4.04	-4.04	-3.57	-3.57	-3.61	-3.60	-4.04	-4.06
14.50	-4.14	-4.15	-3.77	-3.82	-3.81	-3.75	-4.18	-4.15
15.00	-4.48	-4.51	-3.94	-4.01	-4.02	-3.91	-4.50	-4.50
15.50	-4.76	-4.79	-4.23	-4.31	-4.36	-4.22	-4.78	-4.77
16.00	-4.92	-4.96	-4.35	-4.47	-4.41	-4.30	-4.99	-4.96
16.50	-5.00	-5.02	-4.58	-4.67	-4.51	-4.40	-5.31	-5.10
17.00	-5.20	-5.21	-5.14	-4.91	-4.71	-4.57	-5.70	-5.44
17.50	-5.36	-5.42	-5.65	-5.15	-4.84	-4.88	-5.49	-5.91
18.00	-5.37	-5.49	-5.03	-4.83	-4.64	-4.51	-5.41	-6.24
18.50	-5.28	-5.34	-4.92	-4.84	-4.73	-4.69	-5.33	-5.61
18.75	-5.42	-5.48	-4.92	-4.87	-4.79	-4.70	-5.47	-5.62
19.00	-5.62	-5.53	-4.82	-4.83	-4.82	-4.63	-5.62	-5.54

## USB RF SP8T Switch

USB-1SP8T-183SP

## Typical Performance Data

Test Conditions: @ Temperature = 0°C, Pin = 8 dBm.

Freq. (GHz)	Return Loss, Active ports (dB)								
	COM	J1	J2	J3	J4	J5	J6	J7	J8
0.05	-16.49	-16.53	-16.51	-16.56	-16.55	-16.50	-16.55	-16.48	-16.50
0.25	-20.38	-20.30	-20.30	-20.42	-20.37	-20.35	-20.47	-20.28	-20.27
0.50	-21.84	-21.38	-21.57	-21.31	-21.30	-21.30	-21.28	-21.55	-21.49
1.00	-24.96	-23.36	-23.53	-22.07	-22.12	-22.23	-22.00	-23.37	-23.40
1.50	-30.39	-25.74	-26.04	-22.84	-22.56	-22.58	-22.52	-25.84	-25.28
2.00	-54.09	-29.58	-28.85	-23.42	-23.53	-23.24	-23.35	-28.21	-29.08
2.50	-29.99	-30.10	-29.18	-24.93	-25.00	-24.19	-24.66	-28.59	-29.12
3.00	-25.29	-26.10	-26.49	-26.51	-27.22	-25.36	-26.71	-26.11	-26.08
3.50	-23.06	-23.53	-24.16	-30.42	-30.92	-28.40	-30.47	-24.07	-22.71
4.00	-22.56	-22.96	-23.73	-38.43	-38.94	-33.94	-36.46	-22.88	-21.93
4.50	-23.46	-24.08	-25.14	-39.82	-39.13	-49.42	-38.65	-23.56	-22.74
5.00	-24.21	-27.84	-28.41	-30.40	-31.09	-31.22	-32.33	-26.62	-26.21
5.50	-23.05	-32.48	-33.67	-29.02	-29.73	-28.13	-29.85	-33.66	-31.76
6.00	-20.99	-28.00	-30.01	-25.62	-26.13	-23.98	-25.40	-27.96	-23.95
6.50	-21.86	-25.66	-25.72	-24.52	-24.26	-21.36	-23.76	-23.10	-23.78
7.00	-35.41	-26.80	-25.69	-24.60	-24.50	-22.22	-24.20	-28.11	-29.65
7.50	-25.25	-23.72	-24.75	-21.78	-22.33	-24.24	-21.56	-25.15	-22.43
8.00	-37.37	-23.22	-22.67	-22.48	-21.67	-24.25	-21.95	-21.04	-24.25
8.50	-20.90	-20.72	-20.56	-24.21	-23.39	-21.92	-24.99	-22.47	-21.67
9.00	-17.89	-23.09	-24.95	-23.81	-23.36	-21.90	-22.86	-22.61	-20.59
9.50	-17.78	-22.35	-21.36	-19.16	-18.94	-21.29	-18.40	-21.55	-24.97
10.00	-15.16	-17.05	-17.47	-16.23	-16.40	-17.74	-16.89	-19.51	-18.51
10.50	-14.03	-19.29	-20.60	-16.66	-16.68	-16.58	-18.23	-19.88	-17.69
11.00	-13.65	-26.17	-24.11	-23.61	-22.42	-21.39	-25.77	-24.98	-31.10
11.50	-13.56	-17.98	-19.84	-25.38	-27.44	-27.56	-21.60	-21.22	-17.25
12.00	-16.15	-28.14	-38.90	-18.81	-19.21	-20.73	-18.36	-28.77	-24.74
12.50	-14.01	-21.75	-24.42	-20.16	-20.65	-22.27	-21.05	-31.54	-21.61
13.00	-19.84	-25.80	-28.73	-22.04	-23.44	-26.33	-20.86	-31.79	-27.30
13.50	-18.35	-19.56	-22.01	-19.11	-20.84	-21.75	-19.01	-32.54	-21.25
14.00	-29.28	-17.74	-18.22	-21.25	-25.16	-23.87	-18.59	-21.09	-18.29
14.50	-28.02	-24.65	-25.64	-15.96	-15.90	-16.62	-16.88	-26.44	-33.69
15.00	-19.28	-14.40	-14.13	-17.97	-16.66	-17.81	-23.67	-15.69	-15.00
15.50	-12.31	-14.87	-14.45	-16.46	-16.01	-15.19	-17.98	-16.22	-15.65
16.00	-12.29	-19.12	-17.01	-28.16	-26.05	-26.29	-37.62	-20.57	-19.38
16.50	-13.77	-26.42	-25.71	-18.10	-18.83	-26.15	-23.48	-28.18	-20.18
17.00	-12.83	-24.50	-27.52	-19.98	-37.12	-20.01	-20.77	-18.29	-21.41
17.50	-11.99	-16.35	-14.83	-11.19	-12.18	-15.70	-11.94	-15.57	-16.00
18.00	-15.19	-15.09	-12.92	-13.73	-18.29	-25.68	-19.72	-14.97	-11.56
18.50	-31.09	-22.87	-17.21	-12.97	-15.25	-18.07	-13.95	-31.36	-16.61
18.75	-26.56	-22.18	-16.07	-13.54	-16.54	-19.45	-14.92	-23.14	-15.26
19.00	-21.92	-25.97	-27.65	-17.26	-21.97	-22.79	-19.54	-19.27	-22.49

## USB RF SP8T Switch

USB-1SP8T-183SP

## Typical Performance Data

Test Conditions: @ Temperature = 0°C, Pin = 8 dBm.

Freq. (GHz)	Return Loss, Internally terminated ports (dB)							
	J1	J2	J3	J4	J5	J6	J7	J8
0.05	-22.41	-22.26	-22.44	-22.51	-22.74	-22.79	-22.38	-22.48
0.25	-26.98	-26.86	-27.22	-27.43	-28.29	-28.01	-27.34	-27.42
0.50	-27.51	-27.04	-27.60	-27.74	-28.69	-28.52	-27.58	-27.71
1.00	-27.05	-26.86	-27.26	-27.43	-28.02	-28.37	-27.31	-27.29
1.50	-27.24	-26.74	-27.16	-27.66	-28.20	-28.48	-27.25	-27.09
2.00	-28.16	-27.24	-28.36	-28.68	-28.73	-29.48	-27.66	-28.47
2.50	-28.72	-27.79	-28.80	-29.23	-29.31	-30.38	-28.39	-29.11
3.00	-29.51	-28.09	-28.77	-29.65	-29.21	-30.82	-28.50	-29.27
3.50	-30.70	-29.11	-29.92	-30.20	-30.37	-31.90	-28.91	-31.61
4.00	-31.92	-29.97	-31.39	-31.64	-31.48	-33.06	-30.26	-33.87
4.50	-34.75	-30.55	-33.97	-33.34	-34.18	-34.69	-31.84	-37.88
5.00	-35.66	-32.57	-36.39	-34.41	-39.92	-35.44	-35.52	-43.24
5.50	-33.70	-32.75	-32.07	-31.40	-46.11	-33.63	-38.00	-31.66
6.00	-29.35	-29.52	-28.67	-28.66	-34.98	-30.08	-34.48	-27.08
6.50	-26.92	-27.90	-26.89	-27.55	-30.86	-28.36	-31.25	-24.30
7.00	-26.05	-26.41	-26.28	-26.61	-29.31	-27.27	-29.71	-23.87
7.50	-26.11	-26.63	-27.67	-26.84	-29.05	-28.41	-29.58	-24.06
8.00	-27.04	-28.48	-29.41	-27.32	-28.49	-29.97	-28.63	-24.90
8.50	-27.78	-30.53	-30.93	-28.61	-27.33	-32.97	-27.51	-24.98
9.00	-28.42	-31.40	-30.43	-30.31	-27.66	-37.67	-27.09	-24.62
9.50	-28.97	-30.77	-32.04	-33.18	-27.67	-41.56	-27.32	-23.80
10.00	-30.72	-31.99	-41.81	-38.02	-30.38	-38.75	-27.63	-24.39
10.50	-37.33	-35.80	-40.14	-48.99	-36.42	-32.94	-29.00	-26.57
11.00	-39.77	-32.47	-29.31	-31.91	-37.78	-26.77	-30.53	-30.83
11.50	-28.33	-26.60	-24.06	-25.40	-28.25	-22.71	-31.05	-31.00
12.00	-22.55	-23.07	-20.70	-21.56	-24.32	-20.10	-27.29	-24.95
12.50	-19.52	-20.53	-18.31	-19.22	-21.57	-18.08	-24.54	-20.78
13.00	-17.69	-19.19	-17.08	-17.97	-19.66	-16.89	-23.21	-18.70
13.50	-17.46	-19.16	-16.69	-18.04	-18.98	-16.88	-24.13	-18.19
14.00	-20.59	-21.66	-19.97	-19.98	-21.14	-20.79	-29.82	-22.06
14.50	-19.20	-19.71	-22.58	-20.31	-21.58	-29.25	-22.42	-21.60
15.00	-18.16	-17.84	-21.79	-19.65	-20.00	-29.76	-18.85	-18.94
15.50	-21.26	-20.46	-23.48	-22.31	-21.58	-31.77	-20.67	-22.09
16.00	-27.17	-22.21	-21.11	-21.96	-23.76	-22.31	-29.74	-26.38
16.50	-26.21	-21.92	-16.71	-19.15	-23.92	-19.23	-36.59	-21.01
17.00	-21.63	-19.39	-15.36	-17.11	-28.22	-18.62	-19.56	-20.50
17.50	-18.42	-16.63	-13.62	-15.75	-22.18	-17.27	-17.40	-17.84
18.00	-22.29	-18.64	-13.21	-16.86	-22.26	-17.20	-19.57	-15.33
18.50	-32.18	-21.76	-16.17	-20.86	-30.75	-19.66	-31.04	-19.58
18.75	-22.90	-19.51	-17.75	-21.86	-29.21	-18.78	-28.68	-20.28
19.00	-19.78	-19.04	-19.25	-23.52	-29.29	-19.14	-27.24	-19.20

## USB RF SP8T Switch

USB-1SP8T-183SP

## Typical Performance Data

Test Conditions: @ Temperature = 0°C, Pin = 8 dBm.

Freq. (GHz)	Isolation, Active states (dB)							
	COM-2	COM-3	COM-5	COM-7	J1-J2	J3-J4	J5-J6	J7-J8
0.05	-93.98	-100.36	-92.44	-90.73	-95.37	-91.39	-99.99	-96.82
0.25	-89.20	-108.65	-89.37	-87.00	-89.15	-89.61	-91.90	-91.69
0.50	-83.87	-102.95	-85.14	-84.11	-88.24	-87.73	-89.61	-89.54
1.00	-79.26	-99.06	-79.58	-80.34	-86.83	-86.09	-85.53	-86.87
1.50	-75.56	-98.18	-76.32	-76.59	-83.30	-80.84	-81.23	-83.35
2.00	-73.61	-107.62	-73.76	-73.72	-81.44	-79.62	-79.52	-80.24
2.50	-71.82	-105.69	-71.58	-72.16	-78.85	-77.37	-77.86	-77.48
3.00	-70.46	-98.57	-70.35	-70.30	-76.99	-76.22	-76.81	-75.88
3.50	-69.15	-101.50	-69.34	-69.37	-74.51	-75.77	-75.25	-73.56
4.00	-68.51	-101.93	-68.43	-68.86	-73.50	-74.75	-74.36	-72.38
4.50	-67.77	-103.09	-68.12	-68.14	-72.46	-73.22	-73.74	-71.95
5.00	-67.07	-98.74	-66.82	-67.14	-72.05	-72.36	-72.10	-71.45
5.50	-66.31	-105.27	-66.13	-66.31	-71.62	-71.33	-70.92	-70.07
6.00	-65.87	-107.20	-65.71	-65.78	-71.14	-71.06	-70.55	-70.23
6.50	-65.45	-99.03	-65.40	-65.48	-69.78	-69.82	-69.56	-69.13
7.00	-65.36	-112.56	-65.31	-65.37	-68.92	-69.07	-68.63	-68.25
7.50	-65.34	-97.71	-65.29	-65.60	-70.58	-68.35	-67.90	-69.79
8.00	-65.10	-110.79	-65.15	-65.31	-70.73	-68.29	-68.05	-69.71
8.50	-64.88	-104.26	-64.79	-64.85	-68.61	-69.34	-68.74	-68.23
9.00	-64.57	-98.72	-64.04	-64.69	-68.26	-71.34	-71.02	-68.46
9.50	-63.76	-99.36	-63.83	-64.60	-72.14	-74.08	-73.68	-71.93
10.00	-63.64	-98.37	-63.74	-64.45	-71.49	-75.75	-72.11	-71.58
10.50	-63.40	-101.32	-63.76	-64.48	-67.70	-70.64	-68.56	-67.94
11.00	-63.02	-100.59	-63.77	-64.13	-67.77	-68.32	-67.35	-68.78
11.50	-63.13	-100.01	-63.94	-64.34	-70.74	-67.81	-67.36	-70.43
12.00	-63.14	-101.07	-64.41	-64.39	-69.49	-68.91	-68.54	-69.34
12.50	-63.09	-110.92	-64.33	-64.52	-68.31	-70.48	-69.88	-69.03
13.00	-62.79	-100.23	-64.05	-64.53	-69.13	-70.93	-70.18	-70.51
13.50	-62.02	-100.10	-63.06	-63.58	-66.69	-69.45	-68.59	-68.92
14.00	-61.00	-100.40	-62.14	-62.31	-67.48	-68.68	-67.80	-72.01
14.50	-60.15	-94.10	-61.71	-61.57	-64.24	-69.53	-68.78	-67.73
15.00	-59.91	-99.70	-61.19	-61.13	-64.47	-70.12	-68.55	-68.58
15.50	-59.80	-92.65	-60.93	-61.52	-61.69	-65.52	-64.57	-65.26
16.00	-59.24	-90.37	-60.07	-61.76	-60.80	-65.52	-64.81	-63.64
16.50	-58.58	-101.52	-59.51	-62.32	-59.95	-65.00	-63.64	-64.88
17.00	-57.79	-92.29	-58.99	-59.11	-58.60	-62.38	-61.06	-59.51
17.50	-57.40	-80.56	-58.78	-56.24	-58.11	-60.38	-59.38	-64.80
18.00	-57.06	-79.57	-57.79	-56.23	-56.02	-62.74	-61.52	-61.79
18.50	-55.31	-80.67	-55.96	-59.24	-56.51	-61.37	-59.90	-66.39
18.75	-55.03	-79.64	-55.25	-59.81	-55.85	-60.10	-58.95	-65.02
19.00	-54.82	-77.51	-54.73	-59.90	-54.64	-58.27	-57.78	-72.83

## USB RF SP8T Switch

USB-1SP8T-183SP

## Typical Performance Data

Test Conditions: @ Temperature = 0°C, Pin = 8 dBm.

Freq. (GHz)	Isolation, Disconnected states (dB)							
	COM-1	COM-2	COM-3	COM-4	COM-5	COM-6	COM-7	COM-8
0.05	-103.94	-100.71	-98.73	-105.50	-89.98	-90.72	-110.53	-104.58
0.25	-103.70	-106.27	-105.67	-101.00	-85.06	-84.47	-106.53	-103.98
0.50	-113.68	-100.11	-98.71	-109.95	-82.40	-81.32	-109.55	-109.68
1.00	-105.86	-104.27	-102.66	-111.31	-77.98	-77.70	-106.09	-107.45
1.50	-109.34	-104.96	-103.71	-105.44	-74.64	-74.16	-106.61	-105.01
2.00	-106.50	-103.44	-97.13	-100.38	-71.91	-72.15	-100.83	-103.73
2.50	-102.21	-101.84	-102.74	-108.43	-70.12	-70.31	-102.49	-101.34
3.00	-110.19	-100.47	-109.23	-98.28	-69.01	-68.91	-93.22	-99.40
3.50	-102.00	-105.89	-96.04	-102.57	-67.96	-67.85	-103.76	-102.41
4.00	-98.05	-100.78	-107.86	-103.12	-67.01	-67.04	-103.58	-106.58
4.50	-104.48	-99.65	-95.49	-103.83	-66.36	-66.15	-99.68	-100.42
5.00	-98.07	-101.76	-102.25	-102.69	-65.46	-65.16	-104.79	-102.07
5.50	-112.19	-97.86	-97.92	-107.64	-65.01	-64.70	-101.51	-96.84
6.00	-105.56	-113.39	-105.40	-97.98	-64.69	-64.34	-104.50	-98.96
6.50	-100.41	-105.23	-101.85	-97.56	-64.15	-63.73	-101.29	-105.62
7.00	-101.25	-93.61	-103.79	-96.02	-64.03	-63.45	-99.71	-98.37
7.50	-105.48	-100.17	-99.19	-108.32	-64.65	-64.07	-110.87	-95.51
8.00	-99.75	-102.06	-109.72	-95.00	-65.87	-65.33	-97.95	-102.45
8.50	-99.43	-99.32	-98.82	-102.01	-67.12	-66.21	-98.54	-99.08
9.00	-99.50	-101.59	-106.75	-97.34	-67.69	-66.78	-106.52	-106.27
9.50	-100.97	-103.80	-101.10	-103.00	-67.54	-66.75	-104.34	-98.79
10.00	-102.62	-97.95	-98.16	-98.66	-67.64	-66.52	-106.38	-99.75
10.50	-102.73	-99.07	-101.73	-100.94	-68.30	-67.21	-98.46	-94.42
11.00	-100.86	-96.94	-101.04	-113.11	-69.98	-68.76	-96.32	-101.66
11.50	-103.69	-113.83	-97.99	-105.07	-71.51	-70.61	-99.10	-98.34
12.00	-102.02	-98.65	-93.20	-102.46	-71.41	-71.47	-104.19	-102.76
12.50	-100.90	-98.31	-106.70	-103.28	-70.08	-71.11	-100.01	-101.31
13.00	-101.18	-104.41	-103.58	-100.43	-68.85	-70.39	-101.43	-98.02
13.50	-97.70	-108.21	-102.42	-106.40	-66.64	-68.89	-100.34	-98.37
14.00	-107.46	-94.13	-111.74	-101.66	-63.14	-65.72	-106.78	-95.58
14.50	-100.61	-101.33	-113.87	-98.69	-60.15	-62.14	-98.39	-99.67
15.00	-107.73	-106.04	-107.60	-117.01	-59.76	-61.35	-99.39	-98.96
15.50	-105.40	-106.03	-101.06	-96.21	-58.06	-59.68	-92.23	-96.29
16.00	-115.22	-99.01	-89.87	-93.47	-56.08	-57.67	-96.96	-93.87
16.50	-92.87	-101.76	-102.82	-107.74	-55.99	-57.31	-94.89	-91.80
17.00	-95.72	-98.54	-94.98	-96.61	-54.25	-55.47	-95.74	-96.39
17.50	-96.92	-96.63	-99.04	-91.69	-51.96	-53.07	-96.14	-104.10
18.00	-98.92	-99.63	-97.76	-104.69	-53.21	-54.12	-100.41	-103.12
18.50	-104.51	-96.37	-91.37	-105.34	-52.11	-52.92	-96.89	-93.42
18.75	-96.03	-103.27	-94.58	-98.76	-51.40	-52.16	-87.42	-88.19
19.00	-97.79	-99.65	-89.92	-95.30	-50.72	-51.31	-93.05	-92.72

## USB RF SP8T Switch

USB-1SP8T-183SP

## Typical Performance Data

Test Conditions: @ Temperature = +25°C, Pin = 8 dBm.

Freq. (GHz)	Insertion Loss (dB)							
	COM-J1	COM-J2	COM-J3	COM-J4	COM-J5	COM-J6	COM-J7	COM-J8
0.05	-1.61	-1.60	-1.60	-1.60	-1.61	-1.60	-1.60	-1.60
0.25	-1.73	-1.72	-1.71	-1.71	-1.73	-1.72	-1.73	-1.73
0.50	-1.83	-1.82	-1.80	-1.80	-1.81	-1.80	-1.83	-1.83
1.00	-1.99	-1.98	-1.92	-1.92	-1.94	-1.93	-1.99	-1.99
1.50	-2.12	-2.11	-2.03	-2.03	-2.06	-2.04	-2.13	-2.12
2.00	-2.22	-2.22	-2.14	-2.14	-2.17	-2.15	-2.23	-2.23
2.50	-2.28	-2.28	-2.23	-2.23	-2.26	-2.24	-2.29	-2.29
3.00	-2.31	-2.31	-2.27	-2.27	-2.31	-2.29	-2.32	-2.32
3.50	-2.37	-2.37	-2.32	-2.33	-2.36	-2.34	-2.38	-2.39
4.00	-2.45	-2.44	-2.37	-2.38	-2.41	-2.38	-2.46	-2.47
4.50	-2.52	-2.51	-2.41	-2.42	-2.44	-2.42	-2.53	-2.54
5.00	-2.60	-2.60	-2.48	-2.48	-2.51	-2.49	-2.62	-2.62
5.50	-2.70	-2.70	-2.56	-2.56	-2.59	-2.56	-2.72	-2.72
6.00	-2.78	-2.78	-2.62	-2.62	-2.65	-2.63	-2.80	-2.82
6.50	-2.82	-2.82	-2.65	-2.65	-2.70	-2.66	-2.85	-2.85
7.00	-2.92	-2.93	-2.68	-2.69	-2.72	-2.70	-2.93	-2.93
7.50	-3.04	-3.05	-2.78	-2.78	-2.79	-2.79	-3.05	-3.07
8.00	-3.06	-3.07	-2.90	-2.91	-2.92	-2.91	-3.10	-3.08
8.50	-3.18	-3.19	-3.00	-3.01	-3.04	-3.01	-3.20	-3.21
9.00	-3.35	-3.35	-3.08	-3.08	-3.11	-3.08	-3.38	-3.40
9.50	-3.44	-3.45	-3.17	-3.16	-3.17	-3.18	-3.47	-3.45
10.00	-3.58	-3.58	-3.29	-3.31	-3.31	-3.30	-3.56	-3.59
10.50	-3.73	-3.72	-3.41	-3.43	-3.46	-3.40	-3.75	-3.78
11.00	-3.84	-3.85	-3.49	-3.50	-3.55	-3.51	-3.87	-3.87
11.50	-3.94	-3.91	-3.59	-3.61	-3.63	-3.64	-3.93	-3.98
12.00	-3.97	-3.97	-3.69	-3.70	-3.72	-3.71	-4.00	-4.01
12.50	-4.06	-4.04	-3.68	-3.69	-3.71	-3.68	-4.06	-4.09
13.00	-4.06	-4.06	-3.69	-3.69	-3.70	-3.70	-4.08	-4.09
13.50	-4.19	-4.17	-3.77	-3.77	-3.79	-3.78	-4.18	-4.20
14.00	-4.35	-4.33	-3.84	-3.83	-3.86	-3.87	-4.33	-4.36
14.50	-4.44	-4.44	-4.08	-4.09	-4.14	-4.07	-4.47	-4.46
15.00	-4.76	-4.78	-4.22	-4.24	-4.28	-4.21	-4.79	-4.79
15.50	-5.05	-5.07	-4.47	-4.47	-4.60	-4.47	-5.07	-5.05
16.00	-5.29	-5.33	-4.66	-4.68	-4.74	-4.66	-5.35	-5.30
16.50	-5.46	-5.47	-4.91	-4.92	-4.94	-4.86	-5.47	-5.46
17.00	-5.54	-5.53	-5.03	-4.93	-5.01	-4.95	-5.59	-5.59
17.50	-5.63	-5.68	-5.42	-5.18	-5.19	-5.22	-5.60	-5.63
18.00	-5.77	-5.84	-5.72	-4.92	-5.22	-4.91	-5.71	-5.80
18.50	-5.74	-5.72	-5.94	-5.01	-5.40	-5.10	-5.70	-5.70
18.75	-5.93	-5.89	-5.96	-5.08	-5.77	-5.11	-5.85	-5.81
19.00	-6.24	-5.91	-5.73	-5.09	-5.93	-5.05	-6.11	-5.80

## USB RF SP8T Switch

USB-1SP8T-183SP

## Typical Performance Data

Test Conditions: @ Temperature = +25°C, Pin = 8 dBm.

Freq. (GHz)	Return Loss, Active ports (dB)								
	COM	J1	J2	J3	J4	J5	J6	J7	J8
0.05	-16.27	-16.32	-16.30	-16.35	-16.35	-16.29	-16.33	-16.28	-16.29
0.25	-19.74	-19.68	-19.69	-19.78	-19.75	-19.72	-19.78	-19.67	-19.66
0.50	-20.88	-20.51	-20.57	-20.37	-20.35	-20.36	-20.31	-20.51	-20.47
1.00	-24.04	-22.47	-22.68	-21.21	-21.14	-21.11	-21.08	-22.54	-22.46
1.50	-29.85	-25.49	-25.67	-21.95	-21.82	-21.84	-21.78	-25.42	-25.15
2.00	-52.23	-29.58	-29.18	-22.77	-22.73	-22.49	-22.61	-28.58	-28.98
2.50	-29.10	-29.54	-28.81	-23.97	-24.18	-23.37	-23.96	-28.51	-29.27
3.00	-24.25	-25.28	-25.39	-26.23	-26.76	-25.21	-26.27	-25.18	-24.89
3.50	-22.09	-22.70	-23.18	-30.38	-31.30	-28.40	-30.39	-22.84	-21.89
4.00	-21.67	-22.08	-22.68	-40.12	-41.00	-35.07	-37.74	-22.01	-20.98
4.50	-22.52	-23.08	-23.87	-39.92	-38.41	-45.96	-39.01	-22.73	-21.87
5.00	-23.51	-26.70	-27.63	-30.44	-30.94	-30.85	-31.19	-25.87	-25.59
5.50	-22.99	-33.67	-36.56	-27.57	-28.30	-26.68	-28.24	-34.55	-31.89
6.00	-20.45	-27.03	-28.71	-24.75	-25.02	-22.87	-24.77	-26.65	-23.30
6.50	-21.24	-24.85	-25.38	-23.72	-23.62	-20.67	-23.34	-22.48	-23.51
7.00	-34.86	-27.06	-25.44	-24.01	-24.15	-21.83	-23.37	-28.08	-29.68
7.50	-26.02	-23.75	-24.92	-21.71	-21.93	-24.59	-21.61	-25.03	-22.16
8.00	-42.94	-23.07	-22.89	-21.52	-21.01	-22.93	-21.34	-20.92	-24.20
8.50	-20.47	-20.48	-19.81	-24.21	-23.28	-21.60	-24.21	-21.25	-20.51
9.00	-17.29	-22.59	-24.77	-23.04	-23.88	-22.67	-23.50	-22.98	-20.72
9.50	-17.53	-22.89	-21.15	-18.69	-18.96	-21.27	-18.44	-21.59	-25.64
10.00	-15.01	-16.96	-17.38	-16.52	-16.17	-17.56	-16.64	-19.73	-18.32
10.50	-14.24	-20.13	-22.35	-17.07	-16.86	-16.73	-18.75	-20.78	-18.82
11.00	-13.63	-26.34	-24.18	-23.45	-23.74	-21.09	-27.71	-25.23	-31.02
11.50	-13.85	-18.99	-21.45	-26.99	-27.24	-33.38	-22.09	-22.79	-18.23
12.00	-15.52	-31.34	-34.45	-19.26	-20.31	-20.83	-19.11	-26.68	-26.13
12.50	-13.94	-23.92	-27.53	-20.78	-22.57	-21.81	-22.55	-43.03	-23.84
13.00	-19.05	-29.51	-29.28	-21.94	-25.07	-26.15	-21.75	-28.62	-32.32
13.50	-18.51	-20.48	-24.19	-19.92	-21.52	-21.77	-20.43	-39.77	-23.21
14.00	-27.94	-16.60	-17.66	-21.28	-23.69	-24.30	-18.77	-20.95	-17.94
14.50	-37.48	-26.99	-27.75	-15.58	-15.57	-14.85	-15.88	-29.02	-42.28
15.00	-21.40	-16.03	-15.48	-18.81	-18.85	-18.59	-28.02	-16.34	-16.65
15.50	-13.32	-15.34	-14.75	-18.36	-18.88	-16.16	-21.58	-16.11	-16.81
16.00	-12.54	-18.05	-16.09	-24.50	-21.49	-20.63	-27.88	-16.71	-19.35
16.50	-12.35	-26.54	-22.46	-17.80	-18.05	-19.16	-20.88	-29.58	-28.18
17.00	-13.51	-44.11	-26.65	-20.48	-25.64	-22.08	-19.09	-23.61	-23.92
17.50	-14.34	-19.36	-15.97	-11.70	-13.34	-14.06	-11.99	-22.95	-20.96
18.00	-15.82	-15.78	-13.53	-17.66	-23.96	-28.76	-21.48	-19.02	-15.08
18.50	-23.06	-22.96	-17.07	-12.57	-16.69	-15.96	-13.87	-27.20	-20.51
18.75	-26.22	-20.70	-15.22	-12.65	-17.75	-20.22	-14.85	-24.00	-18.02
19.00	-26.13	-22.69	-28.82	-14.97	-23.15	-25.06	-20.59	-16.54	-33.92

## USB RF SP8T Switch

USB-1SP8T-183SP

## Typical Performance Data

Test Conditions: @ Temperature = +25°C, Pin = 8 dBm.

Freq. (GHz)	Return Loss, Internally terminated ports (dB)							
	J1	J2	J3	J4	J5	J6	J7	J8
0.05	-22.69	-22.54	-22.73	-22.80	-23.02	-23.06	-22.68	-22.77
0.25	-26.99	-26.77	-27.19	-27.34	-28.19	-28.03	-27.19	-27.23
0.50	-27.43	-27.09	-27.58	-27.76	-28.58	-28.61	-27.58	-27.64
1.00	-27.60	-27.24	-27.67	-27.94	-28.86	-28.90	-27.76	-27.82
1.50	-27.97	-27.54	-28.00	-28.36	-28.96	-29.24	-28.04	-28.06
2.00	-28.65	-27.98	-28.66	-29.13	-29.31	-29.97	-28.47	-28.84
2.50	-29.40	-28.60	-29.29	-30.00	-29.95	-30.92	-29.02	-29.80
3.00	-30.12	-29.09	-29.89	-30.61	-30.43	-31.63	-29.50	-30.62
3.50	-31.54	-30.09	-31.21	-31.77	-31.57	-33.20	-30.42	-32.76
4.00	-33.33	-31.29	-32.96	-33.20	-33.41	-34.67	-31.72	-36.11
4.50	-35.94	-32.45	-35.16	-34.46	-36.13	-36.49	-33.42	-42.31
5.00	-38.07	-33.80	-37.20	-35.08	-43.43	-37.36	-36.97	-42.01
5.50	-33.87	-32.34	-33.36	-32.60	-42.58	-34.04	-40.15	-31.43
6.00	-29.98	-29.77	-29.52	-29.74	-33.97	-30.60	-35.65	-26.98
6.50	-27.91	-28.21	-27.43	-27.85	-30.19	-28.85	-31.93	-24.79
7.00	-26.81	-27.18	-26.82	-26.77	-28.53	-28.21	-29.95	-23.97
7.50	-26.55	-27.08	-27.35	-26.69	-27.64	-28.56	-29.24	-23.87
8.00	-26.86	-27.79	-28.70	-27.34	-27.05	-29.60	-29.37	-24.48
8.50	-27.45	-30.01	-30.97	-28.88	-27.16	-31.73	-29.25	-25.16
9.00	-28.25	-32.74	-32.13	-30.71	-27.71	-36.48	-28.13	-25.60
9.50	-29.59	-35.27	-35.90	-33.33	-28.80	-48.79	-28.66	-25.50
10.00	-32.71	-36.35	-43.91	-40.50	-31.51	-39.19	-28.64	-26.43
10.50	-43.03	-33.75	-41.64	-36.19	-36.08	-30.38	-29.14	-28.99
11.00	-36.50	-29.92	-29.82	-29.24	-35.89	-25.76	-29.30	-34.29
11.50	-28.09	-26.60	-24.23	-24.91	-28.37	-22.67	-29.51	-33.17
12.00	-23.55	-23.77	-20.83	-22.02	-24.18	-20.42	-28.11	-26.28
12.50	-20.75	-21.74	-18.46	-20.07	-21.34	-18.73	-26.57	-22.42
13.00	-19.08	-20.58	-17.22	-18.94	-19.84	-17.81	-25.55	-20.28
13.50	-18.14	-20.49	-17.28	-18.53	-19.12	-17.89	-26.04	-19.38
14.00	-19.06	-20.65	-20.51	-20.17	-19.52	-20.68	-30.12	-22.06
14.50	-20.19	-20.25	-22.45	-22.05	-19.86	-26.60	-23.51	-22.97
15.00	-20.20	-19.34	-22.41	-22.57	-20.21	-37.83	-18.95	-20.55
15.50	-20.35	-19.62	-24.66	-23.92	-21.69	-45.69	-18.41	-20.94
16.00	-23.19	-19.92	-23.37	-25.15	-22.59	-28.55	-20.25	-26.65
16.50	-21.12	-17.90	-18.29	-20.08	-20.74	-19.98	-22.69	-24.96
17.00	-18.29	-15.75	-15.87	-17.20	-18.67	-16.45	-21.87	-20.17
17.50	-19.80	-16.23	-15.97	-18.02	-20.41	-16.36	-24.51	-21.63
18.00	-25.78	-20.54	-16.51	-22.06	-24.84	-19.01	-26.74	-26.94
18.50	-37.24	-21.50	-16.40	-27.01	-22.17	-21.35	-23.35	-28.29
18.75	-24.80	-19.99	-16.00	-29.57	-21.23	-19.89	-21.97	-23.30
19.00	-18.24	-18.57	-16.51	-30.46	-17.89	-19.08	-18.77	-20.31



## USB RF SP8T Switch

USB-1SP8T-183SP

## Typical Performance Data

Test Conditions: @ Temperature = +25°C, Pin = 8 dBm.

Freq. (GHz)	Isolation, Active states (dB)							
	COM-2	COM-3	COM-5	COM-7	J1-J2	J3-J4	J5-J6	J7-J8
0.05	-93.00	-102.42	-94.01	-93.14	-94.12	-96.69	-102.96	-93.36
0.25	-88.20	-101.52	-88.08	-87.07	-88.49	-88.42	-88.95	-93.37
0.50	-83.55	-107.71	-83.16	-84.64	-87.28	-88.80	-87.14	-86.45
1.00	-79.14	-105.45	-79.74	-79.33	-87.20	-84.27	-85.46	-84.19
1.50	-75.59	-100.16	-75.92	-76.02	-81.94	-80.78	-80.82	-81.90
2.00	-73.29	-104.08	-73.67	-73.46	-80.71	-79.01	-78.68	-79.61
2.50	-71.54	-107.34	-71.45	-71.46	-77.66	-77.50	-76.69	-76.63
3.00	-70.18	-95.03	-70.32	-70.30	-75.45	-76.00	-75.38	-74.44
3.50	-68.75	-99.47	-68.79	-68.92	-73.66	-75.32	-75.07	-72.48
4.00	-68.02	-100.91	-68.12	-68.32	-72.28	-73.93	-73.69	-71.19
4.50	-67.44	-101.37	-67.39	-67.81	-71.81	-72.50	-72.71	-71.02
5.00	-66.73	-100.65	-66.58	-66.70	-71.47	-71.29	-71.41	-70.45
5.50	-65.82	-99.84	-65.73	-65.68	-70.71	-70.30	-70.17	-69.34
6.00	-65.49	-104.93	-65.18	-65.15	-70.21	-69.51	-69.56	-69.05
6.50	-64.89	-99.22	-64.78	-64.92	-69.28	-69.14	-68.75	-68.28
7.00	-64.46	-111.12	-64.70	-64.82	-68.46	-68.13	-67.85	-67.65
7.50	-65.10	-102.77	-64.65	-64.94	-69.50	-67.23	-66.98	-68.55
8.00	-64.61	-96.24	-64.61	-64.66	-69.70	-67.38	-67.36	-68.95
8.50	-64.55	-102.79	-64.25	-64.65	-67.72	-68.55	-68.49	-67.11
9.00	-64.20	-98.86	-63.96	-64.34	-67.72	-70.89	-70.46	-67.70
9.50	-63.63	-96.07	-63.53	-64.21	-71.86	-73.36	-72.71	-71.05
10.00	-63.37	-106.46	-63.55	-64.31	-70.16	-72.80	-70.17	-69.09
10.50	-63.21	-103.61	-63.79	-64.49	-66.74	-68.76	-67.35	-66.86
11.00	-63.00	-101.39	-63.84	-64.37	-67.54	-67.11	-66.63	-68.22
11.50	-63.08	-99.67	-64.01	-64.33	-70.29	-67.67	-66.96	-69.58
12.00	-63.05	-108.04	-64.29	-64.43	-69.00	-69.31	-68.48	-68.69
12.50	-63.03	-103.55	-64.21	-64.68	-68.16	-70.45	-69.25	-69.27
13.00	-62.87	-95.97	-63.94	-64.69	-69.21	-70.59	-69.37	-70.07
13.50	-62.24	-100.76	-63.14	-64.12	-66.86	-69.54	-68.49	-68.60
14.00	-61.24	-105.62	-62.40	-62.78	-68.26	-69.64	-69.02	-71.16
14.50	-60.37	-100.06	-61.87	-62.15	-64.34	-72.22	-70.20	-67.80
15.00	-60.07	-98.53	-61.52	-61.65	-65.17	-70.75	-68.61	-70.46
15.50	-59.89	-100.45	-61.15	-61.59	-62.35	-66.70	-65.31	-66.92
16.00	-59.75	-90.57	-60.66	-61.67	-61.59	-66.50	-65.72	-65.82
16.50	-58.88	-94.46	-59.95	-60.94	-60.77	-65.72	-64.55	-66.23
17.00	-58.02	-99.76	-59.42	-60.45	-58.66	-61.96	-61.57	-62.55
17.50	-57.76	-95.51	-59.48	-60.12	-59.09	-61.42	-61.14	-63.88
18.00	-57.39	-82.98	-58.63	-59.36	-56.70	-62.50	-62.47	-60.44
18.50	-56.21	-80.19	-56.93	-57.89	-57.64	-61.21	-61.09	-62.25
18.75	-55.93	-78.66	-56.11	-57.26	-56.69	-58.36	-59.70	-60.35
19.00	-55.81	-79.78	-55.84	-56.93	-55.68	-57.57	-59.23	-59.14

## USB RF SP8T Switch

USB-1SP8T-183SP

## Typical Performance Data

Test Conditions: @ Temperature = +25°C, Pin = 8 dBm.

Freq. (GHz)	Isolation, Disconnected states (dB)							
	COM-1	COM-2	COM-3	COM-4	COM-5	COM-6	COM-7	COM-8
0.05	-108.40	-101.44	-108.04	-104.13	-88.91	-89.20	-102.30	-101.19
0.25	-104.98	-104.46	-97.56	-110.29	-84.97	-84.60	-105.43	-107.33
0.50	-98.78	-103.36	-101.32	-103.70	-82.24	-81.87	-104.95	-104.08
1.00	-106.46	-115.11	-102.08	-102.85	-77.82	-77.57	-104.40	-106.57
1.50	-105.28	-106.02	-101.88	-104.32	-73.90	-73.75	-106.73	-98.43
2.00	-105.09	-109.32	-102.91	-106.10	-71.54	-71.09	-102.46	-114.20
2.50	-113.23	-107.92	-110.38	-108.62	-69.78	-69.91	-96.87	-97.73
3.00	-100.98	-101.38	-98.02	-101.56	-68.45	-68.10	-98.95	-97.25
3.50	-102.87	-110.90	-105.61	-101.50	-67.35	-67.41	-99.91	-98.87
4.00	-103.74	-97.16	-107.87	-123.72	-66.25	-66.27	-101.43	-95.60
4.50	-98.78	-102.87	-100.35	-99.26	-65.64	-65.59	-104.01	-106.78
5.00	-102.16	-99.01	-100.18	-103.34	-64.63	-64.61	-101.95	-101.32
5.50	-110.36	-107.80	-98.89	-98.48	-64.05	-63.81	-94.50	-98.03
6.00	-98.95	-99.02	-99.00	-99.16	-63.62	-63.34	-103.95	-99.10
6.50	-107.11	-99.67	-104.59	-100.16	-62.98	-62.82	-99.57	-99.05
7.00	-115.66	-106.66	-111.57	-93.55	-62.70	-62.40	-107.12	-100.59
7.50	-101.66	-100.92	-94.82	-102.26	-63.22	-62.87	-97.28	-102.43
8.00	-97.62	-98.30	-102.28	-95.96	-64.55	-64.24	-102.98	-107.25
8.50	-102.95	-97.76	-103.10	-96.12	-65.64	-64.86	-102.54	-100.77
9.00	-97.87	-100.15	-104.20	-102.39	-66.13	-65.31	-101.53	-102.15
9.50	-98.70	-104.51	-101.06	-98.33	-66.20	-65.26	-111.35	-93.53
10.00	-105.50	-106.55	-98.22	-101.90	-65.97	-64.73	-102.59	-103.78
10.50	-92.62	-99.00	-105.33	-96.75	-66.80	-65.49	-100.38	-96.05
11.00	-109.28	-111.45	-98.86	-97.91	-69.08	-67.24	-123.15	-97.78
11.50	-97.71	-103.65	-98.91	-105.23	-70.39	-68.99	-99.48	-100.12
12.00	-97.37	-107.73	-97.97	-96.66	-71.45	-70.07	-101.86	-100.22
12.50	-97.30	-98.47	-105.71	-97.96	-71.19	-70.46	-97.93	-104.72
13.00	-96.30	-116.47	-112.60	-105.87	-70.30	-71.31	-102.37	-108.09
13.50	-101.90	-94.96	-110.48	-104.93	-68.19	-71.19	-99.67	-97.65
14.00	-97.61	-105.38	-101.90	-101.18	-64.79	-67.60	-105.04	-101.25
14.50	-105.46	-103.78	-98.90	-106.75	-61.32	-63.87	-103.95	-103.25
15.00	-97.30	-95.22	-102.32	-95.35	-60.73	-62.79	-96.95	-103.44
15.50	-98.68	-95.80	-104.03	-99.80	-58.98	-61.09	-95.80	-99.78
16.00	-95.26	-109.02	-100.38	-96.52	-56.75	-58.63	-104.23	-99.83
16.50	-100.74	-100.88	-104.09	-100.61	-56.80	-58.47	-90.51	-99.91
17.00	-99.81	-102.05	-103.40	-105.93	-54.49	-56.05	-97.00	-93.42
17.50	-99.35	-95.87	-104.65	-97.87	-52.84	-54.27	-97.21	-101.27
18.00	-100.00	-97.22	-98.20	-94.94	-53.94	-54.88	-94.53	-97.59
18.50	-98.54	-96.30	-90.55	-96.93	-53.12	-53.91	-97.88	-94.02
18.75	-96.34	-94.44	-85.91	-93.90	-51.97	-52.76	-85.60	-87.08
19.00	-91.44	-106.24	-81.80	-96.85	-51.77	-52.02	-86.68	-102.34

# USB RF SP8T Switch

## USB-1SP8T-183SP

### Typical Performance Data

Test Conditions: @ Temperature = +50°C, Pin = 8 dBm.

Freq. (GHz)	Insertion Loss (dB)							
	COM-J1	COM-J2	COM-J3	COM-J4	COM-J5	COM-J6	COM-J7	COM-J8
0.05	-1.69	-1.68	-1.68	-1.68	-1.70	-1.68	-1.68	-1.68
0.25	-1.81	-1.80	-1.79	-1.79	-1.81	-1.79	-1.80	-1.81
0.50	-1.92	-1.91	-1.88	-1.88	-1.90	-1.88	-1.91	-1.92
1.00	-2.09	-2.08	-2.02	-2.02	-2.04	-2.02	-2.09	-2.09
1.50	-2.22	-2.21	-2.13	-2.13	-2.15	-2.13	-2.22	-2.23
2.00	-2.33	-2.32	-2.24	-2.24	-2.27	-2.25	-2.33	-2.33
2.50	-2.39	-2.38	-2.33	-2.33	-2.36	-2.34	-2.39	-2.39
3.00	-2.42	-2.41	-2.38	-2.38	-2.42	-2.39	-2.42	-2.43
3.50	-2.48	-2.47	-2.44	-2.44	-2.47	-2.44	-2.48	-2.49
4.00	-2.56	-2.55	-2.48	-2.49	-2.52	-2.49	-2.56	-2.58
4.50	-2.63	-2.62	-2.53	-2.53	-2.56	-2.53	-2.63	-2.65
5.00	-2.72	-2.71	-2.59	-2.59	-2.63	-2.60	-2.73	-2.74
5.50	-2.82	-2.81	-2.67	-2.67	-2.71	-2.68	-2.82	-2.84
6.00	-2.90	-2.89	-2.73	-2.73	-2.78	-2.74	-2.91	-2.94
6.50	-2.94	-2.94	-2.76	-2.76	-2.82	-2.77	-2.95	-2.97
7.00	-3.05	-3.05	-2.80	-2.80	-2.85	-2.81	-3.04	-3.06
7.50	-3.18	-3.17	-2.90	-2.90	-2.93	-2.90	-3.17	-3.20
8.00	-3.19	-3.19	-3.04	-3.04	-3.06	-3.04	-3.21	-3.21
8.50	-3.31	-3.32	-3.14	-3.15	-3.21	-3.15	-3.31	-3.34
9.00	-3.51	-3.50	-3.22	-3.22	-3.27	-3.22	-3.52	-3.56
9.50	-3.59	-3.60	-3.32	-3.31	-3.34	-3.32	-3.60	-3.61
10.00	-3.75	-3.74	-3.44	-3.46	-3.47	-3.45	-3.70	-3.75
10.50	-3.89	-3.87	-3.56	-3.57	-3.63	-3.54	-3.89	-3.94
11.00	-4.01	-4.01	-3.65	-3.66	-3.74	-3.65	-4.01	-4.04
11.50	-4.10	-4.07	-3.75	-3.77	-3.81	-3.79	-4.07	-4.14
12.00	-4.14	-4.13	-3.85	-3.86	-3.93	-3.87	-4.15	-4.18
12.50	-4.23	-4.21	-3.85	-3.85	-3.91	-3.85	-4.21	-4.26
13.00	-4.24	-4.23	-3.86	-3.86	-3.97	-3.86	-4.24	-4.27
13.50	-4.38	-4.35	-3.95	-3.94	-4.00	-3.94	-4.34	-4.39
14.00	-4.56	-4.53	-4.02	-4.01	-4.30	-4.04	-4.49	-4.56
14.50	-4.66	-4.64	-4.29	-4.30	-4.38	-4.28	-4.63	-4.67
15.00	-4.96	-4.96	-4.43	-4.43	-4.58	-4.41	-4.95	-4.99
15.50	-5.22	-5.22	-4.63	-4.64	-4.83	-4.63	-5.21	-5.23
16.00	-5.50	-5.51	-4.87	-4.90	-5.06	-4.87	-5.54	-5.51
16.50	-5.76	-5.74	-5.21	-5.20	-5.24	-5.13	-5.72	-5.75
17.00	-5.83	-5.81	-5.38	-5.20	-5.29	-5.22	-5.81	-5.87
17.50	-5.86	-5.90	-5.88	-5.40	-5.34	-5.44	-5.77	-5.85
18.00	-6.03	-6.05	-6.15	-5.16	-5.17	-5.13	-5.89	-6.04
18.50	-6.23	-5.99	-5.79	-5.24	-5.30	-5.32	-6.00	-5.99
18.75	-6.64	-6.15	-5.81	-5.32	-5.39	-5.33	-6.19	-6.08
19.00	-8.23	-6.18	-5.72	-5.34	-5.40	-5.27	-6.78	-6.07

**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-Circuits' 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 <https://www.minicircuits.com/terms/viewterm.html>



# USB RF SP8T Switch

## USB-1SP8T-183SP

### Typical Performance Data

Test Conditions: @ Temperature = +50°C, Pin = 8 dBm.

Freq. (GHz)	Return Loss, Active ports								
	COM	J1	J2	J3	J4	J5	J6	J7	J8
0.05	-16.06	-16.12	-16.10	-16.15	-16.15	-16.09	-16.12	-16.08	-16.09
0.25	-19.25	-19.22	-19.22	-19.32	-19.30	-19.25	-19.31	-19.21	-19.21
0.50	-20.23	-19.88	-19.95	-19.75	-19.71	-19.74	-19.68	-19.85	-19.83
1.00	-23.30	-21.80	-22.00	-20.46	-20.39	-20.41	-20.35	-21.89	-21.84
1.50	-29.12	-25.17	-25.33	-21.25	-21.14	-21.23	-21.11	-25.12	-24.90
2.00	-42.36	-30.26	-29.81	-22.24	-22.18	-22.03	-22.10	-29.22	-29.63
2.50	-27.90	-29.21	-28.61	-23.73	-23.94	-23.17	-23.74	-28.28	-28.96
3.00	-23.44	-24.58	-24.70	-26.17	-26.75	-25.13	-26.18	-24.48	-24.26
3.50	-21.48	-22.14	-22.54	-30.30	-31.15	-28.06	-30.11	-22.25	-21.41
4.00	-21.07	-21.51	-22.01	-38.95	-39.53	-34.20	-36.88	-21.49	-20.49
4.50	-21.87	-22.39	-23.07	-41.08	-38.86	-51.42	-39.24	-22.09	-21.23
5.00	-23.17	-26.12	-26.86	-30.55	-30.82	-31.00	-30.68	-25.13	-25.09
5.50	-22.55	-33.27	-36.05	-26.82	-27.33	-25.96	-27.28	-33.90	-31.24
6.00	-20.02	-26.17	-27.61	-23.86	-24.21	-22.12	-24.18	-25.58	-22.81
6.50	-20.78	-24.05	-24.37	-22.84	-22.99	-20.15	-22.88	-21.83	-23.15
7.00	-33.28	-27.06	-25.51	-23.71	-23.49	-21.19	-22.57	-27.87	-29.84
7.50	-26.68	-23.77	-24.82	-21.48	-21.79	-24.45	-21.60	-24.79	-22.11
8.00	-48.34	-22.64	-22.67	-21.12	-20.96	-22.73	-21.15	-20.70	-23.88
8.50	-20.07	-20.37	-19.67	-24.29	-22.82	-21.40	-23.46	-21.00	-20.17
9.00	-16.80	-22.00	-23.75	-23.00	-24.23	-22.96	-24.08	-22.67	-20.49
9.50	-17.34	-23.54	-21.53	-18.56	-18.94	-21.29	-18.34	-22.17	-26.24
10.00	-14.75	-16.65	-17.07	-16.57	-15.98	-17.52	-16.47	-19.28	-18.11
10.50	-14.28	-20.44	-22.95	-17.22	-16.93	-16.98	-18.84	-21.37	-19.10
11.00	-13.53	-26.22	-24.67	-23.34	-24.26	-21.23	-28.88	-25.86	-31.82
11.50	-14.04	-19.56	-22.10	-28.57	-28.07	-43.12	-22.68	-23.32	-18.58
12.00	-15.29	-32.14	-34.14	-19.84	-21.22	-21.82	-19.58	-26.47	-25.86
12.50	-13.92	-25.74	-29.67	-21.12	-23.58	-22.41	-23.04	-49.77	-24.98
13.00	-18.69	-31.57	-29.29	-21.66	-25.53	-26.38	-21.84	-28.45	-34.78
13.50	-18.45	-20.74	-24.60	-20.23	-21.84	-22.14	-21.45	-39.60	-24.01
14.00	-27.44	-15.86	-16.89	-21.21	-23.47	-26.48	-19.02	-20.29	-17.63
14.50	-39.09	-24.29	-25.64	-14.99	-14.75	-14.33	-15.01	-32.83	-32.86
15.00	-22.52	-17.19	-16.55	-19.40	-20.38	-18.30	-33.06	-17.49	-17.45
15.50	-14.22	-16.61	-15.88	-20.04	-20.82	-17.43	-24.59	-16.98	-18.13
16.00	-13.07	-18.20	-16.64	-23.48	-19.58	-17.60	-24.07	-16.02	-19.73
16.50	-11.61	-25.53	-21.42	-17.71	-17.24	-17.35	-20.22	-25.34	-32.68
17.00	-12.90	-27.66	-22.36	-19.73	-24.10	-28.26	-18.49	-28.58	-25.14
17.50	-16.12	-19.95	-16.01	-10.60	-12.80	-13.94	-11.64	-25.32	-20.14
18.00	-16.48	-15.90	-13.49	-15.17	-24.90	-29.94	-20.84	-20.44	-14.55
18.50	-18.30	-21.18	-18.79	-14.01	-17.63	-17.21	-14.28	-20.98	-20.35
18.75	-24.85	-22.05	-15.96	-14.23	-17.80	-16.06	-15.11	-24.14	-18.70
19.00	-19.84	-14.32	-35.02	-16.53	-21.92	-17.54	-21.19	-14.26	-43.84

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## USB RF SP8T Switch

USB-1SP8T-183SP

## Typical Performance Data

Test Conditions: @ Temperature = +50°C, Pin = 8 dBm.

Freq. (GHz)	Return Loss, Internally terminated ports (dB)							
	J1	J2	J3	J4	J5	J6	J7	J8
0.05	-22.94	-22.79	-22.99	-23.05	-23.26	-23.30	-22.93	-23.02
0.25	-27.00	-26.80	-27.19	-27.30	-28.21	-28.08	-27.20	-27.26
0.50	-27.35	-27.02	-27.48	-27.63	-28.45	-28.46	-27.52	-27.56
1.00	-28.01	-27.61	-28.08	-28.39	-29.27	-29.40	-28.12	-28.19
1.50	-28.57	-28.10	-28.72	-29.06	-29.57	-30.00	-28.67	-28.67
2.00	-29.46	-28.72	-29.61	-30.14	-30.05	-30.97	-29.28	-29.65
2.50	-30.36	-29.40	-30.29	-31.13	-30.72	-31.99	-29.83	-30.68
3.00	-30.95	-29.84	-30.89	-31.59	-31.16	-32.56	-30.25	-31.48
3.50	-32.21	-30.68	-32.07	-32.42	-32.09	-33.93	-31.02	-33.53
4.00	-33.83	-31.78	-33.48	-33.58	-33.69	-35.30	-32.06	-36.70
4.50	-36.30	-32.94	-35.23	-34.67	-36.02	-37.25	-33.54	-43.31
5.00	-39.29	-34.55	-37.90	-35.86	-41.21	-38.73	-37.35	-42.63
5.50	-34.92	-33.48	-35.05	-33.64	-41.11	-34.60	-44.00	-31.44
6.00	-30.63	-30.68	-30.44	-30.34	-33.64	-30.93	-36.73	-27.01
6.50	-28.53	-28.97	-27.72	-28.24	-29.91	-29.35	-32.27	-25.06
7.00	-27.49	-27.89	-26.86	-27.27	-28.51	-29.19	-30.24	-24.31
7.50	-26.99	-27.56	-27.38	-27.19	-27.09	-29.15	-29.26	-24.04
8.00	-26.75	-27.51	-28.81	-27.60	-26.44	-29.40	-28.90	-24.31
8.50	-26.88	-29.12	-31.62	-28.59	-26.62	-30.73	-28.79	-24.88
9.00	-27.69	-31.29	-33.13	-30.13	-27.52	-34.71	-28.54	-25.66
9.50	-29.23	-35.55	-38.05	-32.80	-28.90	-43.05	-29.83	-25.90
10.00	-33.24	-42.54	-46.23	-38.27	-32.00	-37.15	-30.50	-27.17
10.50	-40.34	-34.05	-41.21	-33.26	-34.92	-29.34	-30.33	-29.62
11.00	-33.66	-29.48	-29.77	-28.34	-35.79	-25.33	-29.68	-34.62
11.50	-27.42	-26.70	-24.34	-24.84	-28.88	-22.58	-29.75	-32.96
12.00	-23.81	-24.09	-21.01	-22.33	-24.30	-20.44	-28.62	-26.61
12.50	-21.50	-22.31	-18.64	-20.62	-21.84	-18.94	-27.68	-22.98
13.00	-19.91	-21.22	-17.32	-19.47	-20.10	-18.23	-26.57	-20.91
13.50	-18.31	-20.64	-17.46	-18.76	-19.52	-18.58	-26.17	-19.80
14.00	-18.04	-19.56	-20.65	-19.75	-18.08	-20.47	-28.22	-21.58
14.50	-19.51	-19.79	-21.91	-21.61	-18.79	-24.25	-24.74	-22.70
15.00	-22.23	-21.16	-22.75	-24.56	-19.69	-37.63	-20.43	-21.94
15.50	-21.13	-20.59	-27.14	-24.65	-21.65	-35.96	-18.48	-21.75
16.00	-22.26	-19.97	-25.48	-25.04	-22.40	-35.47	-18.69	-25.30
16.50	-19.47	-16.80	-18.84	-19.49	-20.19	-20.55	-19.95	-24.21
17.00	-16.29	-14.21	-14.85	-15.90	-17.33	-15.49	-19.19	-18.62
17.50	-18.92	-15.38	-13.55	-16.92	-18.75	-15.34	-24.23	-19.32
18.00	-26.61	-20.28	-14.68	-22.99	-25.78	-19.33	-30.07	-23.21
18.50	-26.23	-24.06	-19.42	-31.10	-35.75	-22.53	-19.67	-26.57
18.75	-18.96	-23.47	-20.49	-36.49	-29.41	-21.57	-18.47	-23.26
19.00	-12.21	-21.02	-20.24	-39.12	-30.14	-19.56	-15.27	-20.94

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## USB RF SP8T Switch

USB-1SP8T-183SP

## Typical Performance Data

Test Conditions: @ Temperature = +50°C, Pin = 8 dBm.

Freq. (GHz)	Isolation, Active states (dB)							
	COM-2	COM-3	COM-5	COM-7	J1-J2	J3-J4	J5-J6	J7-J8
0.05	-94.11	-100.49	-92.63	-92.71	-92.17	-97.83	-94.39	-94.89
0.25	-87.20	-96.88	-87.51	-86.88	-88.20	-90.62	-91.57	-89.02
0.50	-83.36	-97.50	-84.79	-84.79	-87.00	-89.37	-87.67	-88.54
1.00	-79.70	-106.90	-79.34	-80.18	-85.37	-85.09	-83.46	-85.11
1.50	-75.30	-105.98	-75.81	-76.24	-82.00	-80.54	-80.68	-81.21
2.00	-73.11	-98.26	-73.16	-73.34	-79.85	-77.73	-78.40	-79.35
2.50	-71.23	-102.91	-71.28	-71.20	-77.43	-76.64	-75.99	-76.24
3.00	-70.09	-114.17	-70.01	-69.97	-74.88	-75.04	-74.83	-74.40
3.50	-68.65	-101.56	-68.57	-68.62	-72.82	-74.53	-74.46	-71.81
4.00	-67.72	-107.72	-67.97	-67.83	-71.75	-72.68	-72.79	-70.88
4.50	-66.99	-104.27	-66.94	-67.31	-70.97	-71.81	-72.25	-70.43
5.00	-66.19	-99.07	-66.02	-66.27	-70.75	-70.95	-70.73	-69.52
5.50	-65.36	-113.79	-65.32	-65.19	-70.23	-70.13	-69.56	-69.14
6.00	-64.93	-101.53	-64.62	-64.66	-69.83	-69.45	-69.22	-68.67
6.50	-64.33	-104.89	-64.43	-64.46	-68.11	-68.21	-68.22	-67.28
7.00	-64.07	-102.91	-64.24	-64.22	-67.67	-67.36	-66.94	-66.79
7.50	-64.22	-97.00	-64.42	-64.33	-69.01	-66.61	-66.43	-68.21
8.00	-64.30	-97.33	-64.28	-64.30	-68.92	-66.89	-66.65	-68.15
8.50	-63.99	-97.18	-63.93	-64.18	-66.85	-68.20	-68.03	-66.40
9.00	-63.73	-116.03	-63.51	-64.03	-67.32	-70.31	-70.21	-67.03
9.50	-63.33	-100.89	-63.28	-63.93	-71.02	-72.07	-71.28	-70.04
10.00	-63.36	-95.70	-63.26	-63.94	-68.80	-71.13	-68.93	-67.91
10.50	-62.98	-102.47	-63.12	-64.09	-66.46	-67.80	-66.55	-65.99
11.00	-63.03	-92.35	-63.63	-64.00	-67.59	-66.40	-66.29	-67.60
11.50	-63.01	-96.88	-63.81	-64.15	-69.57	-66.96	-66.70	-68.91
12.00	-62.98	-99.27	-64.08	-64.18	-68.56	-68.75	-68.09	-67.84
12.50	-63.10	-100.38	-64.22	-64.47	-68.16	-69.88	-69.42	-68.52
13.00	-62.91	-98.07	-63.99	-64.53	-68.89	-69.86	-69.00	-69.13
13.50	-62.33	-97.57	-63.29	-63.95	-67.01	-69.75	-68.33	-68.40
14.00	-61.26	-98.76	-62.84	-62.94	-69.25	-70.57	-69.36	-70.70
14.50	-60.48	-104.27	-62.12	-62.24	-64.71	-73.78	-72.04	-68.25
15.00	-60.33	-94.94	-62.01	-61.89	-66.10	-71.62	-69.46	-70.66
15.50	-60.02	-96.28	-61.43	-61.69	-63.24	-67.83	-66.66	-68.01
16.00	-59.89	-89.29	-60.86	-61.98	-62.20	-67.28	-66.62	-66.84
16.50	-59.08	-94.37	-60.38	-61.48	-61.36	-66.92	-65.62	-67.20
17.00	-58.31	-90.24	-59.43	-60.69	-58.90	-62.47	-62.04	-63.05
17.50	-58.23	-84.85	-59.76	-60.59	-59.94	-62.68	-62.25	-65.26
18.00	-57.59	-75.71	-58.32	-59.79	-57.25	-62.63	-63.18	-61.13
18.50	-56.79	-72.96	-57.06	-58.44	-58.57	-62.98	-61.81	-63.14
18.75	-56.71	-72.78	-56.34	-57.96	-57.91	-60.07	-59.88	-61.46
19.00	-56.79	-74.01	-55.68	-57.89	-57.81	-59.37	-58.76	-60.47

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# USB RF SP8T Switch

## USB-1SP8T-183SP

### Typical Performance Data

Test Conditions: @ Temperature = +50°C, Pin = 8 dBm.

Freq. (GHz)	Isolation, Disconnected states (dB)							
	COM-1	COM-2	COM-3	COM-4	COM-5	COM-6	COM-7	COM-8
0.05	-104.06	-113.50	-98.10	-97.67	-89.04	-88.61	-101.45	-98.91
0.25	-107.50	-99.53	-97.55	-103.33	-82.75	-83.48	-103.88	-98.85
0.50	-100.93	-102.16	-101.44	-100.48	-81.57	-80.93	-102.29	-105.52
1.00	-99.46	-101.33	-100.52	-108.41	-77.89	-77.19	-100.44	-103.06
1.50	-103.31	-101.06	-102.78	-102.09	-73.78	-73.25	-102.10	-104.34
2.00	-104.59	-101.70	-96.73	-102.87	-71.15	-71.25	-101.77	-100.83
2.50	-99.16	-97.91	-102.77	-101.60	-69.33	-69.15	-103.64	-102.64
3.00	-97.67	-98.03	-99.54	-106.75	-67.98	-67.66	-101.07	-95.17
3.50	-99.91	-102.91	-112.70	-106.76	-66.82	-66.70	-103.01	-98.16
4.00	-102.52	-97.68	-104.41	-101.57	-66.10	-65.89	-102.79	-100.45
4.50	-99.35	-108.55	-99.71	-100.83	-65.10	-65.01	-103.05	-105.51
5.00	-109.85	-111.55	-99.56	-103.50	-64.21	-64.07	-102.24	-103.83
5.50	-98.04	-96.14	-108.21	-98.28	-63.35	-63.25	-93.95	-102.46
6.00	-100.23	-107.77	-108.65	-98.32	-62.82	-62.68	-98.75	-100.63
6.50	-99.07	-102.94	-100.98	-97.74	-62.09	-61.91	-104.08	-97.66
7.00	-107.26	-110.48	-95.05	-102.64	-61.93	-61.54	-109.57	-107.34
7.50	-113.70	-99.43	-97.23	-104.17	-62.34	-61.92	-95.21	-96.19
8.00	-109.02	-94.83	-96.54	-95.61	-63.55	-63.11	-112.28	-109.34
8.50	-100.14	-103.39	-99.21	-109.54	-64.48	-63.97	-101.65	-103.64
9.00	-105.50	-95.51	-100.79	-97.42	-64.96	-64.26	-95.79	-99.11
9.50	-97.63	-98.99	-97.25	-94.18	-64.70	-63.92	-99.37	-101.54
10.00	-100.79	-100.88	-104.61	-100.52	-64.54	-63.52	-101.96	-97.58
10.50	-99.12	-101.73	-106.90	-105.46	-65.25	-64.13	-102.78	-108.57
11.00	-101.99	-100.70	-102.94	-107.92	-67.23	-65.79	-105.13	-115.06
11.50	-103.34	-106.81	-99.44	-110.41	-69.35	-67.49	-100.48	-110.00
12.00	-96.52	-99.71	-97.37	-98.58	-69.80	-68.27	-108.13	-96.70
12.50	-102.66	-98.69	-108.81	-100.59	-70.70	-68.95	-103.06	-104.97
13.00	-103.11	-100.90	-104.85	-102.20	-70.79	-70.20	-98.42	-106.43
13.50	-104.54	-101.76	-105.71	-101.20	-69.57	-71.27	-102.84	-95.68
14.00	-107.87	-105.11	-101.17	-107.01	-66.46	-69.28	-102.17	-99.49
14.50	-99.40	-100.91	-99.55	-105.42	-62.95	-65.35	-104.88	-95.32
15.00	-103.20	-104.17	-102.04	-99.14	-61.79	-64.26	-97.43	-104.50
15.50	-96.20	-99.97	-94.45	-105.98	-59.96	-62.01	-95.52	-98.01
16.00	-121.91	-96.29	-93.77	-102.58	-57.55	-59.56	-100.10	-99.21
16.50	-100.73	-99.10	-104.14	-100.92	-57.54	-59.34	-100.81	-107.27
17.00	-101.30	-95.46	-94.40	-98.40	-54.92	-56.72	-100.16	-100.62
17.50	-104.64	-104.44	-96.86	-100.51	-53.49	-55.19	-107.35	-105.23
18.00	-103.24	-100.67	-103.80	-98.05	-54.09	-55.52	-99.05	-102.68
18.50	-101.36	-103.07	-94.45	-97.55	-53.43	-54.76	-91.17	-98.75
18.75	-101.60	-95.96	-95.58	-103.86	-52.24	-53.47	-90.09	-90.58
19.00	-90.89	-108.44	-101.62	-99.33	-51.57	-52.64	-93.00	-94.41

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