

# Solid State USB RF SP4T Switch

# USB-1SP4T-34

## Typical Performance Data

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

Frequency (MHz)	Insertion Loss			
	(dB)			
	COM-J1	COM-J2	COM-J3	COM-J4
100	1.39	1.39	1.39	1.42
500	1.66	1.67	1.67	1.70
1000	1.85	1.86	1.86	1.90
1500	1.98	1.99	2.00	2.04
2000	2.07	2.08	2.08	2.13
2500	2.13	2.15	2.15	2.20
3000	2.25	2.26	2.27	2.31
3500	2.35	2.36	2.37	2.42
4000	2.40	2.41	2.41	2.48
4500	2.41	2.43	2.42	2.50
5000	2.46	2.48	2.47	2.55
5500	2.52	2.54	2.54	2.62
6000	2.60	2.62	2.62	2.71
6500	2.67	2.68	2.69	2.78
7000	2.79	2.81	2.81	2.89
7500	2.90	2.92	2.92	3.00
8000	3.01	3.02	3.03	3.16
8500	3.04	3.05	3.06	3.21
9000	3.09	3.11	3.11	3.23
9750	3.21	3.23	3.24	3.38
10500	3.38	3.41	3.41	3.56
11250	3.53	3.59	3.56	3.69
12000	3.71	3.75	3.75	3.90
12750	3.88	3.91	3.91	4.14
13500	4.02	4.04	4.04	4.29
14250	4.24	4.25	4.25	4.50
15000	4.38	4.40	4.37	4.62
15750	4.48	4.55	4.49	4.67
16500	4.63	4.71	4.64	4.82
17250	4.78	4.85	4.77	5.01
18000	4.87	4.92	4.84	5.10
18750	4.97	5.00	4.94	5.21
19500	5.06	5.07	5.03	5.35
20250	5.16	5.20	5.15	5.36
21000	5.24	5.28	5.23	5.47
21500	5.29	5.32	5.29	5.53
22000	5.34	5.37	5.37	5.53
22500	5.41	5.46	5.43	5.67
23000	5.61	5.66	5.61	5.92
23500	5.73	5.77	5.75	5.93
24000	5.61	5.67	5.64	5.85
24500	5.74	5.81	5.71	6.04
25000	6.06	6.14	6.01	6.25
25500	6.12	6.22	6.11	6.33
26000	6.05	6.14	6.05	6.37
26500	6.11	6.13	6.08	6.38
27000	6.22	6.22	6.20	6.40
27500	6.31	6.33	6.32	6.48
28000	6.36	6.41	6.39	6.59
28500	6.52	6.59	6.54	6.76
29000	6.84	6.92	6.83	7.01
29500	7.08	7.15	7.08	7.23
30000	7.07	7.13	7.11	7.39

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## Typical Performance Data

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

Frequency (MHz)	VSWR, Active Ports (:1)					VSWR, Internally Terminated Ports (:1)			
	COM	J1	J2	J3	J4	J1	J2	J3	J4
100	1.16	1.16	1.16	1.16	1.17	1.09	1.08	1.09	1.08
500	1.12	1.12	1.12	1.12	1.13	1.10	1.09	1.10	1.09
1000	1.06	1.06	1.07	1.06	1.07	1.12	1.12	1.12	1.11
1500	1.07	1.07	1.07	1.07	1.05	1.14	1.14	1.14	1.13
2000	1.08	1.05	1.05	1.06	1.06	1.15	1.14	1.15	1.13
2500	1.05	1.05	1.05	1.04	1.05	1.13	1.12	1.13	1.13
3000	1.12	1.16	1.15	1.15	1.11	1.11	1.10	1.11	1.12
3500	1.15	1.18	1.17	1.18	1.15	1.07	1.06	1.07	1.10
4000	1.13	1.11	1.09	1.11	1.12	1.02	1.03	1.03	1.07
4500	1.15	1.05	1.03	1.06	1.07	1.03	1.05	1.03	1.05
5000	1.15	1.08	1.08	1.08	1.09	1.07	1.09	1.07	1.02
5500	1.07	1.08	1.06	1.06	1.10	1.11	1.13	1.10	1.05
6000	1.05	1.05	1.04	1.03	1.08	1.15	1.16	1.14	1.11
6500	1.11	1.02	1.01	1.02	1.07	1.18	1.18	1.17	1.16
7000	1.09	1.11	1.13	1.12	1.02	1.19	1.18	1.18	1.20
7500	1.16	1.25	1.25	1.24	1.18	1.19	1.16	1.18	1.23
8000	1.25	1.30	1.26	1.28	1.32	1.17	1.13	1.16	1.25
8500	1.19	1.16	1.12	1.15	1.29	1.12	1.09	1.12	1.25
9000	1.14	1.01	1.06	1.03	1.11	1.08	1.07	1.08	1.22
9750	1.17	1.15	1.11	1.15	1.21	1.07	1.12	1.07	1.12
10500	1.23	1.11	1.13	1.12	1.19	1.15	1.21	1.15	1.04
11250	1.20	1.22	1.27	1.22	1.11	1.24	1.28	1.23	1.17
12000	1.11	1.27	1.29	1.27	1.26	1.30	1.30	1.29	1.32
12750	1.12	1.32	1.29	1.30	1.40	1.30	1.26	1.29	1.41
13500	1.10	1.18	1.13	1.17	1.33	1.23	1.16	1.21	1.40
14250	1.33	1.24	1.17	1.21	1.37	1.12	1.05	1.09	1.29
15000	1.27	1.15	1.07	1.11	1.29	1.03	1.11	1.05	1.12
15750	1.22	1.06	1.15	1.09	1.07	1.12	1.21	1.15	1.11
16500	1.23	1.16	1.24	1.17	1.21	1.23	1.30	1.25	1.31
17250	1.20	1.29	1.31	1.27	1.45	1.30	1.32	1.30	1.49
18000	1.23	1.17	1.14	1.14	1.38	1.32	1.28	1.29	1.56
18750	1.14	1.23	1.21	1.22	1.45	1.26	1.18	1.22	1.50
19500	1.17	1.32	1.21	1.26	1.53	1.19	1.12	1.16	1.34
20250	1.20	1.21	1.15	1.20	1.25	1.15	1.14	1.17	1.18
21000	1.15	1.10	1.02	1.08	1.24	1.10	1.12	1.14	1.12
21500	1.18	1.26	1.14	1.24	1.34	1.06	1.06	1.09	1.19
22000	1.18	1.32	1.21	1.33	1.25	1.12	1.06	1.08	1.31
22500	1.09	1.17	1.08	1.17	1.23	1.25	1.19	1.19	1.43
23000	1.34	1.35	1.28	1.30	1.45	1.38	1.32	1.31	1.51
23500	1.43	1.46	1.39	1.45	1.35	1.50	1.45	1.43	1.55
24000	1.18	1.20	1.17	1.22	1.15	1.56	1.52	1.50	1.50
24500	1.33	1.31	1.27	1.20	1.40	1.55	1.52	1.50	1.38
25000	1.56	1.51	1.46	1.41	1.35	1.46	1.45	1.44	1.21
25500	1.44	1.30	1.31	1.28	1.04	1.32	1.34	1.33	1.05
26000	1.26	1.08	1.03	1.03	1.22	1.18	1.23	1.22	1.11
26500	1.20	1.33	1.20	1.24	1.30	1.05	1.10	1.09	1.24
27000	1.11	1.48	1.32	1.39	1.21	1.13	1.08	1.05	1.33
27500	1.13	1.47	1.33	1.42	1.11	1.30	1.23	1.21	1.37
28000	1.23	1.37	1.25	1.38	1.04	1.48	1.40	1.40	1.37
28500	1.14	1.36	1.28	1.38	1.06	1.67	1.59	1.60	1.35
29000	1.19	1.57	1.53	1.56	1.18	1.83	1.78	1.80	1.38
29500	1.55	1.74	1.70	1.75	1.35	1.90	1.87	1.91	1.45
30000	1.70	1.55	1.51	1.60	1.47	1.85	1.85	1.92	1.55

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# USB-1SP4T-34

## Typical Performance Data

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

Frequency (MHz)	Isolation @ Active states (dB)				Isolation @ Disconnected state (dB)			
	COM-1	COM-2	J2-J3	J3-J4	COM-1	COM-2	COM-3	COM-4
100	86.04	115.24	118.28	91.14	122.76	118.30	115.94	115.10
500	77.54	120.65	116.94	84.42	119.76	117.76	119.95	115.63
1000	71.34	108.51	110.71	77.57	111.85	107.91	109.50	109.27
1500	68.06	112.52	115.69	74.66	117.54	110.45	110.96	112.19
2000	66.40	116.92	110.41	72.73	117.87	115.98	111.85	109.77
2500	65.37	116.05	117.51	70.78	117.90	108.01	107.73	108.14
3000	64.80	104.48	107.01	68.97	106.74	100.55	101.95	106.21
3500	64.40	101.54	109.20	68.47	111.95	101.57	103.76	112.09
4000	64.05	102.92	104.21	68.20	101.88	99.93	99.78	104.01
4500	64.09	109.43	107.42	67.90	100.52	109.66	112.97	106.61
5000	64.10	98.72	94.67	67.35	99.34	93.75	98.47	97.94
5500	64.13	110.07	99.07	67.36	102.32	100.96	99.94	104.38
6000	63.72	93.73	92.73	67.34	93.21	91.27	91.88	96.51
6500	63.13	95.14	103.95	67.93	100.19	96.33	98.48	98.98
7000	62.54	90.88	89.34	67.35	88.90	91.58	92.33	89.58
7500	61.81	93.65	92.98	66.95	94.48	95.54	97.41	97.17
8000	61.38	101.15	94.26	66.10	99.29	92.03	95.04	94.16
8500	60.85	95.01	102.93	64.67	100.74	86.91	89.86	86.43
9000	60.58	91.95	88.05	64.39	95.95	91.17	84.67	86.19
9750	60.76	92.20	102.74	65.12	83.67	87.30	77.51	82.32
10500	60.41	103.97	93.68	66.32	95.61	87.37	82.19	84.55
11250	60.02	107.24	94.54	67.74	95.18	88.49	78.56	75.45
12000	59.92	86.56	96.36	75.20	95.69	84.39	69.61	72.68
12750	60.47	78.40	88.36	72.82	89.31	78.08	68.00	82.28
13500	60.96	77.26	77.84	71.61	94.56	81.66	75.05	74.49
14250	60.99	71.21	83.25	73.71	98.71	85.67	72.08	82.93
15000	61.14	71.38	81.55	62.72	87.15	73.84	68.75	77.65
15750	62.03	64.95	68.15	59.37	84.10	63.68	66.21	73.79
16500	63.95	65.60	65.43	59.22	69.32	64.19	73.62	70.88
17250	72.82	60.76	61.49	58.67	63.89	56.84	64.62	68.14
18000	63.08	66.17	69.07	58.97	72.66	60.15	65.47	70.44
18750	58.53	64.24	75.46	58.95	66.61	59.35	68.94	73.58
19500	58.74	67.26	71.37	57.12	85.82	66.96	71.42	71.63
20250	58.48	74.41	75.74	57.31	90.42	74.30	75.51	76.84
21000	57.90	76.84	72.15	58.41	95.73	81.19	77.43	79.04
21500	57.54	74.40	77.16	57.54	97.21	90.64	83.94	91.59
22000	56.97	71.19	73.76	58.13	93.57	81.55	84.60	93.48
22500	56.11	68.63	76.83	56.50	81.14	72.15	72.39	75.42
23000	56.60	72.15	81.47	54.78	81.09	69.15	69.97	81.17
23500	57.43	70.14	77.44	54.50	80.97	65.29	67.17	72.53
24000	55.72	83.03	78.73	54.57	69.55	74.94	69.61	75.68
24500	56.58	84.51	90.84	54.15	81.98	82.30	74.73	92.47
25000	55.82	80.67	85.39	52.13	92.19	78.92	84.27	91.08
25500	55.06	88.99	90.22	50.76	80.89	82.01	82.38	91.72
26000	54.68	84.69	104.49	50.68	89.94	88.21	97.09	90.11
26500	54.78	90.29	87.21	51.29	83.29	105.53	88.26	85.73
27000	55.52	92.77	90.08	51.66	92.70	87.82	87.35	92.48
27500	56.75	80.98	89.92	51.85	93.94	82.72	82.27	93.42
28000	57.49	78.87	82.06	51.95	94.07	85.89	81.70	85.40
28500	58.62	77.22	79.05	51.95	106.01	88.34	85.30	91.23
29000	59.92	78.03	72.70	51.95	99.80	80.95	73.37	77.29
29500	60.26	74.87	76.81	51.30	84.10	75.74	72.39	73.77
30000	61.05	73.74	79.23	50.46	93.91	74.05	74.63	72.15

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# USB-1SP4T-34

## Typical Performance Data

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

Frequency (MHz)	Insertion Loss			
	(dB)			
	COM-J1	COM-J2	COM-J3	COM-J4
100	1.47	1.47	1.46	1.47
500	1.75	1.76	1.75	1.76
1000	1.96	1.96	1.95	1.96
1500	2.10	2.10	2.09	2.10
2000	2.18	2.19	2.18	2.19
2500	2.25	2.25	2.25	2.25
3000	2.34	2.35	2.34	2.35
3500	2.45	2.46	2.45	2.45
4000	2.53	2.53	2.52	2.53
4500	2.58	2.59	2.57	2.58
5000	2.66	2.67	2.65	2.66
5500	2.72	2.72	2.71	2.72
6000	2.78	2.79	2.78	2.79
6500	2.85	2.86	2.85	2.87
7000	2.96	2.97	2.96	2.97
7500	3.10	3.11	3.09	3.10
8000	3.23	3.23	3.22	3.24
8500	3.30	3.31	3.29	3.33
9000	3.36	3.38	3.35	3.37
9750	3.52	3.53	3.51	3.53
10500	3.71	3.73	3.70	3.73
11250	3.90	3.94	3.89	3.92
12000	4.10	4.13	4.09	4.13
12750	4.30	4.31	4.28	4.34
13500	4.42	4.43	4.40	4.46
14250	4.64	4.64	4.59	4.66
15000	4.72	4.73	4.67	4.75
15750	4.80	4.85	4.77	4.83
16500	4.91	4.98	4.88	4.95
17250	5.03	5.09	4.99	5.08
18000	5.09	5.12	5.04	5.13
18750	5.19	5.20	5.14	5.24
19500	5.29	5.29	5.24	5.37
20250	5.38	5.41	5.36	5.47
21000	5.48	5.51	5.44	5.56
21500	5.55	5.57	5.52	5.63
22000	5.59	5.62	5.59	5.68
22500	5.67	5.72	5.66	5.78
23000	5.86	5.90	5.83	5.99
23500	5.96	6.00	5.95	6.09
24000	5.91	5.98	5.91	6.04
24500	6.06	6.12	6.00	6.18
25000	6.39	6.48	6.32	6.52
25500	6.49	6.60	6.44	6.63
26000	6.44	6.52	6.40	6.58
26500	6.54	6.55	6.46	6.62
27000	6.68	6.68	6.61	6.75
27500	6.80	6.82	6.75	6.88
28000	6.89	6.93	6.84	6.98
28500	7.08	7.15	7.02	7.19
29000	7.45	7.52	7.35	7.53
29500	7.64	7.71	7.58	7.72
30000	7.58	7.64	7.57	7.69

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## Typical Performance Data

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

Frequency (MHz)	VSWR, Active Ports (:1)					VSWR, Internally Terminated Ports (:1)			
	COM	J1	J2	J3	J4	J1	J2	J3	J4
100	1.18	1.18	1.18	1.18	1.18	1.08	1.08	1.08	1.08
500	1.14	1.13	1.13	1.13	1.13	1.09	1.09	1.09	1.09
1000	1.07	1.07	1.07	1.07	1.07	1.12	1.11	1.12	1.11
1500	1.06	1.07	1.06	1.07	1.06	1.13	1.13	1.14	1.13
2000	1.07	1.05	1.04	1.05	1.06	1.14	1.13	1.14	1.14
2500	1.06	1.05	1.05	1.05	1.04	1.13	1.12	1.13	1.13
3000	1.14	1.17	1.17	1.17	1.15	1.10	1.09	1.10	1.10
3500	1.18	1.22	1.20	1.21	1.20	1.06	1.05	1.07	1.07
4000	1.15	1.14	1.11	1.14	1.13	1.02	1.02	1.02	1.03
4500	1.16	1.05	1.04	1.07	1.06	1.03	1.05	1.02	1.03
5000	1.15	1.08	1.07	1.08	1.07	1.07	1.09	1.06	1.06
5500	1.06	1.08	1.06	1.05	1.06	1.11	1.13	1.11	1.10
6000	1.06	1.05	1.04	1.03	1.04	1.15	1.16	1.14	1.14
6500	1.12	1.01	1.02	1.02	1.02	1.18	1.17	1.17	1.17
7000	1.11	1.11	1.13	1.11	1.08	1.19	1.17	1.18	1.19
7500	1.16	1.24	1.23	1.23	1.21	1.18	1.15	1.17	1.20
8000	1.21	1.28	1.24	1.26	1.27	1.16	1.12	1.15	1.19
8500	1.19	1.17	1.12	1.15	1.20	1.13	1.08	1.12	1.16
9000	1.13	1.00	1.05	1.02	1.04	1.08	1.06	1.08	1.13
9750	1.19	1.15	1.11	1.16	1.14	1.06	1.11	1.06	1.08
10500	1.21	1.10	1.11	1.11	1.13	1.14	1.20	1.14	1.13
11250	1.19	1.21	1.27	1.22	1.21	1.24	1.28	1.24	1.23
12000	1.09	1.27	1.29	1.26	1.27	1.31	1.31	1.30	1.31
12750	1.14	1.35	1.31	1.33	1.36	1.31	1.27	1.29	1.33
13500	1.13	1.18	1.12	1.16	1.20	1.24	1.17	1.21	1.26
14250	1.36	1.25	1.19	1.22	1.24	1.11	1.03	1.09	1.13
15000	1.25	1.14	1.05	1.11	1.13	1.03	1.12	1.05	1.02
15750	1.27	1.07	1.17	1.11	1.10	1.16	1.25	1.18	1.17
16500	1.19	1.20	1.27	1.20	1.23	1.26	1.33	1.27	1.29
17250	1.18	1.28	1.30	1.26	1.31	1.30	1.32	1.29	1.35
18000	1.20	1.12	1.10	1.10	1.16	1.29	1.25	1.26	1.33
18750	1.14	1.23	1.20	1.21	1.26	1.23	1.15	1.20	1.26
19500	1.18	1.31	1.20	1.26	1.32	1.17	1.11	1.15	1.19
20250	1.20	1.18	1.12	1.17	1.18	1.12	1.11	1.14	1.13
21000	1.15	1.12	1.02	1.09	1.10	1.05	1.09	1.09	1.05
21500	1.19	1.26	1.13	1.24	1.23	1.04	1.07	1.03	1.03
22000	1.15	1.26	1.16	1.28	1.22	1.13	1.09	1.07	1.13
22500	1.10	1.14	1.06	1.14	1.11	1.24	1.18	1.18	1.24
23000	1.29	1.30	1.24	1.27	1.31	1.34	1.29	1.29	1.35
23500	1.34	1.37	1.32	1.38	1.37	1.44	1.39	1.39	1.45
24000	1.16	1.16	1.15	1.19	1.17	1.51	1.47	1.46	1.51
24500	1.31	1.29	1.26	1.19	1.29	1.51	1.50	1.49	1.52
25000	1.52	1.48	1.46	1.41	1.47	1.44	1.46	1.44	1.46
25500	1.44	1.30	1.33	1.29	1.30	1.34	1.37	1.35	1.35
26000	1.26	1.10	1.04	1.06	1.08	1.18	1.23	1.22	1.20
26500	1.23	1.38	1.25	1.29	1.29	1.07	1.07	1.07	1.05
27000	1.14	1.51	1.35	1.42	1.38	1.18	1.09	1.11	1.12
27500	1.19	1.49	1.35	1.44	1.37	1.37	1.27	1.28	1.29
28000	1.27	1.41	1.29	1.40	1.33	1.55	1.45	1.46	1.46
28500	1.15	1.40	1.31	1.38	1.34	1.71	1.62	1.63	1.61
29000	1.27	1.62	1.56	1.58	1.54	1.84	1.77	1.79	1.75
29500	1.58	1.72	1.67	1.72	1.65	1.85	1.82	1.86	1.82
30000	1.66	1.49	1.46	1.56	1.48	1.80	1.80	1.87	1.83

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# Solid State USB RF SP4T Switch

# USB-1SP4T-34

## Typical Performance Data

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

Frequency (MHz)	Isolation @ Active states (dB)				Isolation @ Disconnected state (dB)			
	COM-1	COM-2	J2-J3	J3-J4	COM-1	COM-2	COM-3	COM-4
100	85.39	119.85	119.96	89.78	120.35	124.19	122.73	119.75
500	77.13	118.78	124.63	83.59	122.57	115.60	136.15	116.99
1000	70.93	111.57	118.70	76.85	114.06	110.65	110.93	115.78
1500	67.57	111.54	107.17	74.24	125.82	107.68	113.59	111.88
2000	65.86	112.13	110.73	71.82	110.81	112.33	111.33	110.19
2500	64.86	106.57	112.77	69.47	106.03	115.84	110.10	114.42
3000	64.20	102.92	120.02	68.76	103.93	103.68	99.85	101.45
3500	63.76	109.44	114.74	67.84	104.91	98.01	117.24	103.63
4000	63.49	99.85	109.98	66.85	106.09	101.11	98.63	103.90
4500	63.55	104.05	99.56	67.27	105.71	102.60	106.86	104.03
5000	63.61	96.79	96.62	67.03	99.30	100.33	98.17	101.08
5500	63.63	105.62	101.75	66.91	100.89	107.88	99.00	99.98
6000	63.30	96.80	95.44	66.85	96.79	96.03	92.68	93.02
6500	62.90	100.44	99.54	67.28	99.23	107.07	100.50	108.65
7000	62.32	90.16	87.89	66.71	92.01	88.55	90.78	95.29
7500	61.89	97.35	95.93	66.64	93.95	93.36	96.74	94.57
8000	61.35	93.83	91.43	65.72	107.85	96.26	93.98	105.61
8500	61.39	94.00	84.50	65.02	92.29	87.36	83.46	93.51
9000	60.76	87.43	92.21	64.23	97.78	86.82	88.64	88.83
9750	61.14	94.10	98.44	65.29	87.56	83.13	76.08	79.73
10500	60.87	100.12	95.20	66.01	95.60	89.48	80.74	85.40
11250	60.67	89.84	94.99	68.97	95.18	88.99	77.09	73.85
12000	60.65	87.74	96.08	82.13	90.94	82.91	70.16	71.28
12750	61.16	77.39	83.48	72.25	97.66	77.85	68.32	86.91
13500	61.96	74.50	76.59	83.98	101.43	78.87	76.02	73.53
14250	61.87	69.04	79.00	73.70	98.57	85.28	70.50	80.74
15000	61.67	70.35	79.54	64.32	89.43	72.71	69.64	76.56
15750	61.98	64.09	67.43	60.97	78.68	63.09	67.69	75.31
16500	65.58	64.64	64.83	60.45	69.13	63.39	73.16	71.25
17250	71.36	60.10	61.23	59.93	64.35	56.06	64.33	69.31
18000	66.31	67.70	72.63	60.15	73.05	62.40	66.27	72.18
18750	59.53	65.21	76.79	59.72	67.27	61.01	69.70	74.21
19500	59.77	68.16	72.25	58.48	85.67	68.07	72.18	73.34
20250	59.68	75.90	77.07	58.96	84.87	75.52	77.58	76.37
21000	58.64	76.51	73.55	60.46	88.30	81.37	79.75	78.70
21500	58.33	75.07	79.04	59.23	102.90	93.20	87.72	93.18
22000	57.81	73.20	76.10	60.40	104.85	82.33	79.81	83.40
22500	56.86	69.47	79.29	58.31	80.52	72.52	71.32	74.32
23000	57.22	74.34	84.28	56.08	81.98	70.60	69.37	79.68
23500	57.79	72.14	77.12	55.68	80.92	66.51	67.32	71.72
24000	56.19	87.18	81.39	55.63	69.58	76.65	70.16	74.59
24500	57.11	92.35	92.73	54.41	80.57	85.67	75.45	94.14
25000	56.51	80.61	82.76	52.21	88.37	78.02	83.24	95.80
25500	55.69	88.50	102.94	51.01	79.47	83.54	82.33	92.29
26000	55.31	83.28	97.54	51.00	85.94	85.63	90.56	89.46
26500	55.43	93.39	89.50	51.36	84.26	89.88	90.51	91.12
27000	56.00	86.32	93.77	51.57	91.28	84.15	89.82	89.79
27500	57.20	79.68	85.20	51.69	98.58	86.35	84.64	91.72
28000	58.10	78.44	80.07	51.83	95.80	88.26	82.69	88.27
28500	59.14	78.10	77.45	51.75	94.19	84.81	84.93	90.46
29000	60.59	79.23	73.53	51.67	89.52	79.83	73.02	79.74
29500	60.81	73.23	76.09	51.02	83.78	73.78	72.57	75.00
30000	61.70	74.09	79.37	50.17	88.35	73.35	76.33	74.81

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# Solid State USB RF SP4T Switch

# USB-1SP4T-34

## Typical Performance Data

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

Frequency (MHz)	Insertion Loss			
	(dB)			
	COM-J1	COM-J2	COM-J3	COM-J4
100	1.54	1.53	1.52	1.53
500	1.84	1.84	1.82	1.83
1000	2.05	2.05	2.03	2.04
1500	2.20	2.20	2.18	2.19
2000	2.29	2.29	2.27	2.29
2500	2.36	2.36	2.34	2.36
3000	2.47	2.47	2.46	2.47
3500	2.60	2.59	2.58	2.59
4000	2.67	2.66	2.64	2.66
4500	2.71	2.70	2.67	2.69
5000	2.78	2.77	2.74	2.75
5500	2.84	2.83	2.80	2.82
6000	2.92	2.91	2.89	2.91
6500	3.00	2.99	2.96	2.99
7000	3.12	3.13	3.09	3.11
7500	3.27	3.27	3.23	3.25
8000	3.42	3.40	3.37	3.40
8500	3.49	3.47	3.43	3.48
9000	3.56	3.55	3.50	3.53
9750	3.74	3.72	3.68	3.71
10500	3.97	3.96	3.89	3.94
11250	4.18	4.18	4.10	4.15
12000	4.38	4.37	4.30	4.36
12750	4.55	4.52	4.46	4.55
13500	4.64	4.62	4.56	4.64
14250	4.80	4.77	4.71	4.78
15000	4.87	4.85	4.77	4.86
15750	4.90	4.94	4.84	4.91
16500	5.01	5.05	4.94	5.02
17250	5.12	5.16	5.05	5.14
18000	5.19	5.20	5.10	5.20
18750	5.29	5.29	5.20	5.31
19500	5.42	5.39	5.32	5.45
20250	5.52	5.53	5.44	5.56
21000	5.63	5.64	5.54	5.67
21500	5.71	5.70	5.63	5.74
22000	5.77	5.77	5.70	5.80
22500	5.87	5.89	5.80	5.93
23000	6.06	6.07	5.97	6.14
23500	6.17	6.18	6.09	6.24
24000	6.16	6.18	6.06	6.22
24500	6.33	6.35	6.18	6.38
25000	6.64	6.69	6.49	6.71
25500	6.75	6.82	6.63	6.84
26000	6.75	6.78	6.61	6.82
26500	6.87	6.84	6.70	6.89
27000	7.04	6.98	6.86	7.03
27500	7.17	7.13	7.00	7.18
28000	7.28	7.26	7.12	7.31
28500	7.50	7.50	7.31	7.52
29000	7.85	7.85	7.63	7.85
29500	8.03	8.02	7.85	8.03
30000	7.95	7.96	7.84	8.00

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# Solid State USB RF SP4T Switch

# USB-1SP4T-34

## Typical Performance Data

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

Frequency (MHz)	VSWR, Active Ports (:1)					VSWR, Internally Terminated Ports (:1)			
	COM	J1	J2	J3	J4	J1	J2	J3	J4
100	1.19	1.19	1.19	1.19	1.19	1.08	1.08	1.08	1.08
500	1.15	1.15	1.15	1.14	1.14	1.09	1.09	1.09	1.09
1000	1.07	1.08	1.08	1.07	1.07	1.11	1.11	1.11	1.11
1500	1.06	1.07	1.06	1.07	1.06	1.13	1.13	1.13	1.13
2000	1.07	1.05	1.05	1.05	1.06	1.14	1.13	1.14	1.14
2500	1.05	1.05	1.06	1.05	1.05	1.12	1.12	1.13	1.12
3000	1.14	1.18	1.17	1.17	1.16	1.10	1.09	1.10	1.10
3500	1.19	1.22	1.21	1.22	1.20	1.06	1.05	1.06	1.07
4000	1.17	1.14	1.11	1.14	1.13	1.02	1.01	1.02	1.02
4500	1.18	1.06	1.04	1.07	1.06	1.03	1.05	1.02	1.03
5000	1.16	1.09	1.08	1.08	1.08	1.07	1.09	1.07	1.07
5500	1.06	1.07	1.06	1.05	1.06	1.11	1.13	1.11	1.10
6000	1.08	1.05	1.04	1.02	1.04	1.15	1.16	1.14	1.14
6500	1.13	1.01	1.01	1.02	1.02	1.17	1.17	1.16	1.17
7000	1.10	1.11	1.14	1.12	1.09	1.18	1.17	1.17	1.18
7500	1.16	1.25	1.25	1.25	1.22	1.18	1.15	1.17	1.19
8000	1.24	1.30	1.26	1.28	1.29	1.16	1.12	1.15	1.18
8500	1.21	1.17	1.13	1.16	1.21	1.12	1.08	1.12	1.16
9000	1.16	1.01	1.06	1.02	1.04	1.08	1.06	1.07	1.12
9750	1.17	1.15	1.11	1.15	1.14	1.06	1.12	1.06	1.08
10500	1.22	1.09	1.12	1.10	1.12	1.15	1.21	1.15	1.14
11250	1.18	1.21	1.27	1.22	1.22	1.25	1.29	1.24	1.24
12000	1.07	1.26	1.28	1.25	1.27	1.31	1.30	1.29	1.31
12750	1.13	1.33	1.30	1.31	1.35	1.29	1.25	1.27	1.31
13500	1.16	1.15	1.10	1.14	1.18	1.21	1.14	1.19	1.24
14250	1.33	1.24	1.18	1.21	1.22	1.09	1.01	1.07	1.11
15000	1.28	1.15	1.05	1.12	1.14	1.05	1.13	1.06	1.03
15750	1.24	1.07	1.17	1.11	1.11	1.16	1.24	1.18	1.17
16500	1.19	1.18	1.26	1.19	1.22	1.26	1.32	1.26	1.29
17250	1.16	1.26	1.28	1.24	1.30	1.30	1.31	1.29	1.34
18000	1.22	1.12	1.10	1.10	1.16	1.27	1.23	1.24	1.31
18750	1.12	1.23	1.20	1.20	1.25	1.22	1.14	1.19	1.25
19500	1.20	1.31	1.20	1.26	1.31	1.16	1.10	1.15	1.18
20250	1.21	1.18	1.12	1.17	1.18	1.11	1.10	1.13	1.12
21000	1.14	1.14	1.04	1.09	1.11	1.04	1.08	1.08	1.04
21500	1.18	1.26	1.14	1.25	1.24	1.06	1.06	1.03	1.04
22000	1.14	1.25	1.15	1.27	1.22	1.14	1.09	1.09	1.13
22500	1.10	1.15	1.06	1.15	1.13	1.24	1.18	1.19	1.24
23000	1.27	1.29	1.23	1.26	1.30	1.34	1.28	1.29	1.35
23500	1.29	1.34	1.29	1.36	1.35	1.42	1.38	1.38	1.44
24000	1.13	1.15	1.14	1.19	1.17	1.47	1.44	1.44	1.49
24500	1.29	1.26	1.23	1.18	1.27	1.47	1.46	1.46	1.49
25000	1.48	1.43	1.42	1.38	1.44	1.41	1.43	1.42	1.43
25500	1.39	1.27	1.30	1.28	1.28	1.31	1.34	1.33	1.33
26000	1.24	1.12	1.04	1.07	1.09	1.17	1.21	1.20	1.19
26500	1.21	1.39	1.25	1.30	1.30	1.09	1.06	1.06	1.05
27000	1.14	1.52	1.36	1.43	1.39	1.20	1.09	1.12	1.13
27500	1.21	1.50	1.35	1.44	1.38	1.37	1.26	1.28	1.29
28000	1.28	1.41	1.28	1.40	1.33	1.55	1.44	1.46	1.45
28500	1.15	1.40	1.31	1.39	1.34	1.69	1.59	1.62	1.59
29000	1.26	1.61	1.53	1.57	1.53	1.79	1.72	1.76	1.71
29500	1.54	1.69	1.63	1.70	1.63	1.81	1.77	1.83	1.78
30000	1.60	1.44	1.41	1.52	1.44	1.74	1.74	1.82	1.77

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# Solid State USB RF SP4T Switch

# USB-1SP4T-34

## Typical Performance Data

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

Frequency (MHz)	Isolation @ Active states (dB)				Isolation @ Disconnected state (dB)			
	COM-1	COM-2	J2-J3	J3-J4	COM-1	COM-2	COM-3	COM-4
100	84.69	122.91	121.88	89.23	115.92	120.99	121.91	115.53
500	76.86	115.57	118.87	83.43	116.71	117.29	119.04	128.08
1000	70.54	110.52	107.44	76.53	111.42	108.46	109.67	111.46
1500	67.24	108.35	116.14	73.51	130.88	111.63	113.17	112.26
2000	65.46	109.48	110.18	71.53	118.86	110.28	109.72	107.33
2500	64.40	117.65	106.26	69.47	112.66	115.91	107.79	111.25
3000	63.74	102.54	103.28	67.81	101.78	101.26	99.23	106.55
3500	63.27	110.10	110.95	67.21	102.97	103.04	99.26	108.59
4000	63.02	100.15	107.03	66.99	103.00	100.07	99.08	103.78
4500	63.08	104.74	108.59	66.71	116.32	110.24	110.26	100.80
5000	63.19	96.78	94.54	66.34	96.70	96.46	96.73	105.91
5500	63.03	103.35	100.80	66.55	102.11	98.52	102.38	103.74
6000	62.84	94.44	93.95	66.71	91.09	89.75	92.81	92.06
6500	62.55	91.99	96.71	67.15	93.87	96.72	97.47	93.87
7000	62.15	88.54	88.07	66.75	86.58	90.42	89.71	91.86
7500	61.77	99.70	92.23	66.46	97.91	96.01	97.53	97.65
8000	61.40	107.47	93.15	65.94	102.56	92.32	100.09	96.46
8500	61.00	86.01	98.49	65.29	96.27	87.53	87.85	96.51
9000	60.71	96.49	97.48	65.05	94.78	94.70	82.94	91.07
9750	61.02	92.98	97.01	66.41	93.17	83.28	77.43	80.74
10500	61.06	106.36	90.74	67.93	99.04	87.47	81.44	82.99
11250	60.90	87.97	97.47	71.69	110.86	86.73	77.92	75.83
12000	60.97	88.53	92.10	83.53	99.62	82.64	69.33	72.13
12750	61.45	77.45	85.09	68.98	91.05	78.25	67.09	88.24
13500	62.19	73.49	77.95	80.06	90.80	79.70	71.61	72.29
14250	61.98	69.91	80.23	76.55	95.59	86.55	70.93	79.84
15000	61.97	70.44	83.24	65.84	90.25	73.78	69.49	77.57
15750	62.57	64.44	69.49	61.71	77.87	63.73	66.79	75.65
16500	66.04	64.95	65.76	61.34	69.12	62.77	71.96	73.60
17250	71.11	60.89	61.49	60.77	64.66	56.89	63.35	69.42
18000	68.05	67.61	70.61	61.53	73.54	62.01	65.62	71.11
18750	60.10	65.01	75.18	64.76	67.61	60.57	68.98	75.69
19500	60.62	67.70	71.18	69.87	89.55	67.71	71.35	73.84
20250	60.46	74.11	75.69	62.20	82.66	74.04	76.26	76.77
21000	59.44	74.54	71.98	61.95	88.48	78.47	80.59	79.64
21500	59.05	73.67	77.67	60.61	97.59	90.46	87.86	95.54
22000	58.47	71.48	75.01	61.50	99.67	80.96	79.41	83.40
22500	57.62	68.24	76.05	59.69	78.78	72.55	71.11	73.36
23000	58.10	73.96	80.20	57.27	82.14	70.30	69.23	80.60
23500	58.59	71.97	77.86	56.74	82.97	66.96	67.28	71.58
24000	57.00	83.41	77.62	56.60	69.65	75.69	70.38	74.92
24500	58.07	86.63	89.31	55.45	81.04	83.41	75.68	92.64
25000	57.49	82.55	88.42	53.17	90.38	78.89	82.68	88.21
25500	56.68	87.72	92.74	51.89	80.16	82.29	82.01	90.68
26000	56.51	85.92	98.26	51.99	84.68	88.03	85.99	90.61
26500	56.52	87.45	84.23	52.30	83.29	92.66	88.72	88.55
27000	57.34	87.32	91.31	52.54	87.92	86.67	91.17	88.51
27500	58.62	82.47	86.18	52.75	105.07	82.62	86.21	92.84
28000	59.53	78.41	82.27	52.81	91.43	87.33	83.40	95.82
28500	60.73	78.76	78.82	52.53	95.99	85.85	82.70	96.03
29000	62.24	79.18	73.72	52.18	94.12	80.44	73.86	80.54
29500	62.27	73.36	77.93	51.48	82.69	73.91	72.74	75.29
30000	63.25	75.43	82.72	50.58	87.97	75.50	77.38	75.09

**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 [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp)

