

# dBm - volts - watts conversion

(50-ohm system)

dBm	V	P <sub>o</sub>	dBm	V	P <sub>o</sub>	dBm	mV	P <sub>o</sub>	dBm	μV	P <sub>o</sub>
+53	100.0	200W	0	.225	1.0 mW	-49	0.80		-98	2.9	
+50	70.7	100W	-1	.200	.80 mW	-50	0.71	.01 μW	-99	2.51	
+49	64.0	80W	-2	.180	.64 mW	-51	0.64		-100	2.25	.1 pW
+48	58.0	64W	-3	.160	.50 mW	-52	0.57		-101	2.0	
+47	50.0	50W	-4	.141	.40 mW	-53	0.50		-102	1.8	
+46	44.5	40W	-5	.125	.32 mW	-54	0.45		-103	1.6	
+45	40.0	32W	-6	.115	.25 mW	-55	0.40		-104	1.41	
+44	32.5	25W	-7	.100	.20 mW	-56	0.351		-105	1.27	
+43	32.0	20W	-8	.090	.16 mW	-57	0.32		-106	1.18	
+42	28.0	16W	-9	.080	.125 mW	-58	0.286				
+41	26.2	12.5W	-10	.071	.10 mW	-59	0.251		<b>dBm</b>	<b>nV</b>	
+40	22.5	10W	-11	.064		-60	0.225	.001 μW	-107	1000	
+39	20.0	8W	-12	.058		-61	0.200		-108	900	
+38	18.0	6.4W	-13	.050		-62	0.180		-109	800	
+37	16.0	5W	-14	.045		-63	0.160		-110	710	.01 pW
+36	14.1	4W	-15	.040		-64	0.141		-109	640	
+35	12.5	3.2W	-16	.0355					-112	580	
+34	11.5	2.5W				<b>dBm</b>	<b>μV</b>		-113	500	
+33	10.0	2W	<b>dBm</b>	<b>mV</b>		-65	128		-114	450	
+32	9.0	1.6W	-17	31.5		-66	115		-115	400	
+31	8.0	1.25W	-18	28.5		-67	100		-116	355	
+30	7.10	1.0W	-19	25.1		-68	90		-117	825	
+29	6.40	800 mW	-20	22.5	.01 mW	-69	80		-118	285	
+28	5.80	640 mW	-21	20.0		-70	71	.1nW	-119	251	
+27	5.00	500 mW	-22	17.9		-71	65		-120	225	.001 pW
+26	4.45	400 mW	-23	15.9		-72	58		-121	200	
+25	4.00	320 mW	-24	14.1		-73	50		-122	180	
+24	3.55	250 mW	-25	12.8		-74	45		-123	160	
+23	3.20	200 mW	-26	11.5		-75	40		-124	141	
+22	2.80	160 mW	-27	10.0		-76	35		-125	128	
+21	2.52	125 mW	-28	8.9		-77	32		-126	117	
+20	2.25	100 mW	-29	8.0		-78	29		-127	100	
+19	2.00	80 mW	-30	7.1	.001mW	-79	25		-128	90	
+18	1.80	64 mW	-31	6.25		-80	22.5	.01 nW	-129	80	
+17	1.60	50 mW	-32	5.8		-81	20.0		-130	71	.1fW
+16	1.41	40 mW	-33	5.0		-82	18.0		-131	61	
+15	1.25	32 mW	-34	4.5		-83	16.0		-132	58	
+14	1.15	25 mW	-35	4.0		-84	11.1		-133	50	
+13	1.00	20 mW	-36	3.5		-85	12.9		-134	45	
+12	.90	16 mW	-37	3.2		-86	11.5		-135	40	
+11	.80	12.5 mW	-38	2.85		-87	10.0		-136	35	
+10	.71	10 mW	-39	2.5		-88	9.0		-137	33	
+9	.64	8 mW	-40	2.25	.1μW	-89	8.0		-138	29	
+8	.58	6.4 mW	-41	2.0		-90	7.1	.001 nW	-139	25	
+7	.500	5 mW	-42	1.8		-91	6.1		-140	23	.01fW
+6	.445	4 mW	-43	1.6		-92	5.75				
+5	.400	3.2 mW	-44	1.4		-93	5.0				
+4	.355	2.5 mW	-45	1.25		-94	4.5				
+3	.320	2.0 mW	-46	1.18		-95	4.0				
+2	.280	1.6 mW	-47	1.00		-96	3.51				
+1	.252	1.25 mW	-48	0.90		-97	3.2				

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# return loss Vs. VSWR

table of return loss vs. voltage standing wave ratio

RETURN LOSS (dB)	VSWR	RETURN LOSS (dB)	VSWR	RETURN LOSS (dB)	VSWR	RETURN LOSS (dB)	VSWR	RETURN LOSS (dB)	VSWR
46.064	1.01	13.842	1.51	9.485	2.01	7.327	2.51	5.999	3.01
40.086	1.02	13.708	1.52	9.428	2.02	7.294	2.52	5.970	3.02
36.607	1.03	13.577	1.53	9.372	2.03	7.262	2.53	5.956	3.03
34.151	1.04	13.449	1.54	9.317	2.04	7.230	2.54	5.935	3.04
32.256	1.05	13.324	1.55	9.262	2.05	7.198	2.55	5.914	3.05
30.714	1.06	13.201	1.56	9.208	2.06	7.167	2.56	5.893	3.06
29.417	1.07	13.081	1.57	9.155	2.07	7.135	2.57	5.872	3.07
28.299	1.08	12.964	1.58	9.103	2.08	7.105	2.58	5.852	3.08
27.318	1.09	12.849	1.59	9.051	2.09	7.074	2.59	5.832	3.09
26.444	1.10	12.736	1.60	8.999	2.10	7.044	2.60	5.811	3.10
25.658	1.11	12.625	1.61	8.949	2.11	7.014	2.61	5.791	3.11
24.943	1.12	12.518	1.62	8.899	2.12	6.984	2.62	5.771	3.12
24.289	1.13	12.412	1.63	8.849	2.13	6.954	2.63	5.751	3.13
23.686	1.14	12.308	1.64	8.800	2.14	6.925	2.64	5.732	3.14
23.127	1.15	12.207	1.65	8.752	2.15	6.896	2.65	5.712	3.15
22.607	1.16	12.107	1.66	8.705	2.16	6.867	2.66	5.693	3.16
22.120	1.17	12.009	1.67	8.657	2.17	6.839	2.67	5.674	3.17
21.664	1.18	11.913	1.68	8.611	2.18	6.811	2.68	5.654	3.18
21.234	1.19	11.818	1.69	8.565	2.19	6.783	2.69	5.635	3.19
20.828	1.20	11.725	1.70	8.519	2.20	6.755	2.70	5.617	3.20
20.443	1.21	11.634	1.71	8.474	2.21	6.728	2.71	5.598	3.21
20.079	1.22	11.545	1.72	8.430	2.22	6.700	2.72	5.579	3.22
19.732	1.23	11.457	1.73	8.386	2.23	6.673	2.73	5.561	3.23
19.401	1.24	11.370	1.74	8.342	2.24	6.646	2.74	5.542	3.24
19.085	1.25	11.285	1.75	8.299	2.25	6.620	2.75	5.524	3.25
18.783	1.26	11.202	1.76	8.257	2.26	6.594	2.76	5.506	3.26
18.493	1.27	11.120	1.77	8.215	2.27	6.567	2.77	5.488	3.27
18.216	1.28	11.039	1.78	8.173	2.28	6.541	2.78	5.470	3.28
17.949	1.29	10.960	1.79	8.138	2.29	6.516	2.79	5.452	3.29
17.690	1.30	10.881	1.80	8.091	2.30	6.490	2.80	5.435	3.30
17.445	1.31	10.804	1.81	8.051	2.31	6.465	2.81	5.417	3.31
17.207	1.32	10.729	1.82	8.011	2.32	6.440	2.82	5.400	3.32
16.977	1.33	10.654	1.83	7.972	2.33	6.415	2.83	5.383	3.33
16.755	1.34	10.581	1.84	7.933	2.34	6.390	2.84	5.365	3.34
16.540	1.35	10.509	1.85	7.894	2.35	6.366	2.85	5.348	3.35
16.332	1.36	10.437	1.86	7.856	2.36	6.341	2.86	5.331	3.36
16.131	1.37	10.367	1.87	7.818	2.37	6.317	2.87	5.315	3.37
15.936	1.38	10.298	1.88	7.781	2.38	6.293	2.88	5.298	3.38
15.747	1.39	10.230	1.89	7.744	2.39	6.270	2.89	5.281	3.39
15.563	1.40	10.163	1.90	7.707	2.40	6.246	2.90	5.265	3.40
15.385	1.41	10.097	1.91	7.671	2.41	6.223	2.91	5.248	3.41
15.211	1.42	10.032	1.92	7.635	2.42	6.200	2.92	5.232	3.42
15.043	1.43	9.968	1.93	7.599	2.43	6.177	2.93	5.216	3.43
14.879	1.44	9.904	1.94	7.564	2.44	6.154	2.94	5.200	3.44
14.719	1.45	9.842	1.95	7.529	2.45	6.131	2.95	5.184	3.45
14.564	1.46	9.780	1.96	7.494	2.46	6.109	2.96	5.168	3.46
14.412	1.47	9.720	1.97	7.460	2.47	6.086	2.97	5.152	3.47
14.264	1.48	9.660	1.98	7.426	2.48	6.064	2.98	5.137	3.48
14.120	1.49	9.601	1.99	7.393	2.49	6.042	2.99	5.121	3.49
13.979	1.50	9.542	2.00	7.360	2.50	6.021	3.00	5.105	3.50