

RF POWER & VOLTAGE MEASUREMENT

dBm / VOLTS / WATTS / CONVERSION TABLE (50ohm SYSTEM)

dBm	nV	dBm	uV	Po	dBm	mV	Po	dBm	V	Po
-140	23	-97	3.2		-49	0.80		0	.225	1mW
-139	25	-96	3.51		-48	0.90		+1	.252	1.25mW
-138	29	-95	4.0		-47	1.00		+2	.280	1.6mW
-137	33	-94	4.5		-46	1.18		+3	.320	2mW
-136	35	-93	5.0		-45	1.25		+4	.355	2.5mW
-135	40	-92	5.75		-44	1.4		+5	.400	3.2mW
-134	45	-91	6.1		-43	1.6		+6	.445	4mW
-133	50	-90	7.1		-42	1.8		+7	.500	5mW
-132	58	-89	8.0		-41	2.0		+8	.58	6mW
-131	61	-88	9.0		-40	2.25	.1uW	+9	.64	8mW
-130	71	-87	10.0		-39	2.5		+10	.71	10mW
-129	80	-86	11.5		-38	2.85		+11	.80	12.5mW
-128	90	-85	12.9		-37	3.2		+12	.90	16mW
-127	100	-84	14.1		-36	3.5		+13	1.00	20mW
-126	117	-83	16.0		-35	4.0		+14	1.15	25mW
-125	128	-82	18.0		-34	4.5		+15	1.25	32mW
-124	141	-81	20.0		-33	5.0		+16	1.41	40mW
-123	160	-80	22.5		-32	5.8		+17	1.60	50mW
-122	180	-79	25		-31	6.25		+18	1.80	64mW
-121	200	-78	29		-30	7.1		+19	2.00	80mW
-120	225	-77	32		-29	8.0		+20	2.25	100mW
-119	251	-76	35		-28	8.9		+21	2.52	125mW
-118	285	-75	40		-27	10.0		+22	2.80	160mW
-117	325	-74	45		-26	11.5		+23	3.20	200mW
-116	355	-73	50		-25	12.8		+24	3.55	250mW
-115	400	-72	58		-24	14.1		+25	4.00	320mW
-114	450	-71	65		-23	15.9		+26	4.45	400mW
-113	500	-70	71		-22	17.9		+27	5.00	500mW
-112	580	-69	80		-21	20.0		+28	5.80	640mW
-111	640	-68	90		-20	22.5	.01mW	+29	6.40	800mW
-110	710	-67	100		-19	25.1		+30	7.10	1.00W
-109	800	-66	115		-18	28.5		+31	8.0	1.25W
-108	900	-65	128		-17	31.5		+32	9.0	1.60W
								+33	10.0	2.00W
								+34	11.5	2.50W
								+35	12.5	3.20W
								+36	14.1	4.00W
-107	1.0				-16	.0355		+37	16.0	5.00W
-106	1.18	-64	0.141		-15	.040		+38	18.0	6.40W
-105	1.27	-63	0.160		-14	.045		+39	20.0	8.00W
-104	1.41	-62	0.180		-13	.050		+40	22.5	10.W
-103	1.6	-61	0.200		-12	.058		+41	26.2	12.W
-102	1.8	-60	0.225	.001mW	-11	.064		+42	28.0	16.W
-101	2.0	-59	0.251		-10	.071	.10mW	+43	32.0	20.W
-100	2.25	-58	0.286		-9	.080	.125mW	+44	32.5	25W
-99	2.51	-57	0.35		-8	.090	.16mW	+45	40.0	32W
-98	2.9	-56	0.351		-7	.100	.20mW	+46	44.5	40W
		-55	0.40		-6	.115	.25mW	+47	50.0	50W
		-54	0.45		-5	.125	.32mW	+48	58.0	64W
		-53	0.50		-4	.141	.40mW	+49	64.0	80W
		-52	0.57		-3	.160	.50mW			
		-51	0.64		-2	.180	.64mW	+50	70.7	100W
		-50	0.71	.01uW	-1	.200	.8mW	+53	100.0	200W

POWER MEASUREMENT

dBm = 10 Log₁₀ (Power in Milliwatts)

Power In Milliwatts = 10(dBm / 10)

Calculate **dBm** from **100mW**

Calculate **Power in mW** from **20dBm**

100mW Log x 10 = **20dBm**

20dBm ÷ 10 = 2 then 10 to the power of 2 = **100mW**