

dBm Milliwatts, Watts & Voltage Conversion Chart

Conversion table to convert between dBm, Watts and voltage in a 50 Ω system.

dB Tutorial Includes:

- [dB - the basics](#)
- [Decibels levels table](#)
- [dBm to dBW & power conversion chart](#)
- [dBm to watts and volts conversion chart](#)
- [dB, decibel online calculator](#)
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Working with RF power, it is often useful to know the voltage level for a given power.

Below provides a chart to convert between dBm, watts and voltage - peak to peak in a 50Ω system.

Voltage levels are unlikely to rise to significant levels which might cause damage for power levels measured in dBm. The voltages are often used in other calculations.

Values have been included. These have been chosen because the voltages move from readings measured in dBm to those in volts. Also as the milliwatts change to watts, the change in the table is made.

dBm / millivolts / milliWatts conversion table

Conversion table charts the values for dBm against milliwatts and the relevant voltage expressed in millivolts.

Table to many lower power applications.

MILLIWATTS	VOLTAGE MILLIVOLTS (P-P)	VOLTAGE MILLIVOLTS (RMS)
0.0010	20	7.1
0.0016	25.2	8.9
0.0025	31.7	11.2
0.0040	40.0	14.2
0.0063	50.2	17.8
0.010	63.2	22.4
0.016	79.6	28.2
0.025	100	35.5
0.040	126	44.7
0.063	159	56.4
0.100	200	71.0
0.16	252	89.4
0.25	317	112
0.40	399	142
0.63	502	178
1.00	632	224
1.58	796	282
2.51	4000	1420

dBm - milliwatts - Volts conversion table:-

Conversion table charts the values for dBm against milliwatts and the relevant voltage expressed in volts.

Table to many medium power applications.

MILLIWATTS	VOLTAGE VOLTS (P-P)	VOLTAGE VOLTS (RMS)
1.00	0.632	0.224
1.58	0.796	282
2.51	4.00	1.42
3.98	1.26	0.45
6.31	1.59	0.56
10	2.00	0.71

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MILLIWATTS	VOLTAGE VOLTS (P-P)	VOLTAGE VOLTS (RMS)
15.8	2.52	0.89
25.1	3.17	1.12
39.8	3.99	1.41
63.1	5.02	1.78
100	6.32	2.24
158	7.95	2.82
251	10.0	3.55
398	12.6	4.48
631	15.9	5.64
1000	20.0	7.10
1585	25.2	8.94
2510	31.7	11.2

- Watts - Volts conversion table

ersion table charts the values for dBm against milliwatts and the relevant voltage expressed in volts.

able to many high power applications.

WATTS	VOLTAGE MV (P-P)	VOLTAGE MV (RMS)
1.00	20	7.10
1.58	25.2	8.94
2.51	31.7	11.3
3.98	40.0	14.1
6.31	50.2	17.8
10.0	63.2	22.4
15.9	79.6	28.2
25.1	100	35.5
39.8	126	44.7
63.1	159	56.4
100	200	71.0
159	252	89.4
251	317	112
398	399	142
631	502	178
1000	632	224
1585	796	282

oles of dBm, dBW, watts and miliwatts to volts are useful to discover the voltages present. Converting from
from the other values of dBW and watts to voltage, both peak to peak and RMS can be useful in many
RF design.

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