Comprehensive dBm to Watts Conversion Chart

Reference Guide for RF & Audio Engineering | Generated by AppliedCalc

Power (dBm)	Power (Watts)	Power (milliwatts)	Typical Application / Note
-100 dBm	0.0000000000001 W	0.0000000001 mW	*Thermal noise floor / Deep space*
-90 dBm	0.000000000001 W	0.000000001 mW	*Excellent cellular signal*
-80 dBm	0.00000000001 W	0.00000001 mW	*Good cellular signal*
-70 dBm	0.0000000001 W	0.0000001 mW	*Typical Wi-Fi received signal*
-60 dBm	0.000000001 W	0.000001 mW	*Strong Wi-Fi received signal*
-50 dBm	0.00000001 W	0.00001 mW	*Excellent Wi-Fi signal*
-40 dBm	0.0000001 W	0.0001 mW	-
-30 dBm	0.000001 W	0.001 mW	*Typical fiber optic signal (1 µW)*
-20 dBm	0.00001 W	0.01 mW	-
-10 dBm	0.0001 W	0.1 mW	*Receiver sensitivity testing*
-5 dBm	0.000316 W	0.316 mW	-
0 dBm	**0.001 W**	**1.0 mW**	***Absolute Reference Point (1 mW)***
3 dBm	0.001995 W	1.995 mW	*~2x Power of 0 dBm*
5 dBm	0.003162 W	3.162 mW	-
10 dBm	0.01 W	10.0 mW	*Bluetooth (Class 1) max power*
15 dBm	0.03162 W	31.62 mW	*Typical wireless router*
20 dBm	0.1 W	100.0 mW	*Wi-Fi Router (EIRP Max for 2.4GHz)*
25 dBm	0.3162 W	316.2 mW	-
30 dBm	**1.0 W**	**1,000 mW**	***Standard 1 Watt Reference***

Power (dBm)	Power (Watts)	Power (milliwatts)	Typical Application / Note
33 dBm	1.995 W	1,995 mW	*~2 Watts (3dB increase = double power)*
35 dBm	3.162 W	3,162 mW	*Handheld two-way radio*
40 dBm	10.0 W	10,000 mW	*Small cell / Amateur radio booster*
45 dBm	31.62 W	31,620 mW	*VHF marine radio*
50 dBm	100.0 W	100,000 mW	*Cellular base station output*
55 dBm	316.2 W	316,200 mW	-
60 dBm	1,000.0 W	1,000,000 mW	*High-power broadcast transmitter (1 kW)*
70 dBm	10,000.0 W (10 kW)	10,000,000 mW	*Large FM radio broadcast tower*
80 dBm	100,000.0 W (100 kW)	100,000,000 mW	*UHF television broadcasting*
90 dBm	1,000,000.0 W (1 MW)	1,000,000,000 mW	*Military early-warning radar*
100 dBm	10,000,000.0 W (10 MW)	10,000,000,000 mW	*Deep space communication (NASA)*

Formula: P(W) = 10^((dBm - 30) / 10) | P(mW) = 10^(dBm / 10)