

Power in Watts expressed in dB

$$\text{dB} = 10 \log (P_{\text{out}}/ P_{\text{in}})$$

where dB is the power expressed in Decibel
P_{out} is the output power
P_{in} is the input power in reference to 1 watt

Power in Watts expressed in dBm

$$\text{dBm} = 10 \log (P_{\text{out}}/ P_{\text{in}})$$

where dB is the power expressed in Decibel
P_{out} is the output power
P_{in} is the input power in reference to 1 milliwatt

dBd to dBi

$$\text{dBi} = \text{dBd} + 2.15$$

where dBd is a unit to measure antenna gain in reference to a loss less half-wave dipole antenna
dBi is a unit to measure antenna gain in reference to an isotropic or ideal antenna

ERP to EIRP

$$\text{EIRP} = \text{ERP} + 2.15$$

Where ERP is the Effective Radiated Power. It is the transmitted power with respect to a dipole antenna within a given geographic area.
EIRP is the Effective Isotropic Radiated Power. It is the transmitted power from an isotropic antenna.

dBW to dBm



$$\mathbf{dBm = dBW + 30}$$

where dBW is also dB in reference to watts

dBW to dBK

$$\mathbf{dBK = dBW - 30}$$

where dBK is the power in reference to kilowatts