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# 单位换算

电磁场、功率密度、电压、电流、功率

## 电磁场&功率密度

dBμV/m to V/m	$V/m = 10^{((dB\mu V/m) - 120) / 20}$
V/m to dBμV/m	$dB\mu V/m = 20 \log(V/m) + 120$
dBμV/m to dBmW/m²	$dBmW/m^2 = dB\mu V/m - 115.8$
dBmW/m² to dBμV/m	$dB\mu V/m = dBmW/m^2 + 115.8$
dBμV/m to dBμA/m	$dB\mu A/m = dB\mu V/m - 51.5$
dBμA/m to dBμV/m	$dB\mu V/m = dB\mu A + 51.5$
dBμA/m to dBpT	$dBpT = dB\mu A/m + 2$
dBpT to dBμA/m	$dB\mu A/m = dBpT - 2$
W/m² to V/m	$V/m = \sqrt{W/m^2 * 377}$
V/m to W/m²	$W/m^2 = (V/m)^2 / 377$
μT to A/m	$A/m = \mu T / 1.25$
A/m to μT	$\mu T = 1.25 * A/m$

## 环形天线

Correction Factors	$dB\mu A/m = dB\mu V + AF$
E-field (take care about E-field suppression!)	$dB\mu V/m = dB\mu A/m + 51.5$

## 频率 波长

3Hz - 30Hz (ELF)	100000km - 10000km
30Hz - 300Hz (SLF)	10000km - 1000km
300Hz - 3kHz (ULF)	1000km - 100km
3kHz - 30kHz (VLF)	100km - 10km
30kHz - 300kHz (LF)	10km - 1km
300kHz - 3MHz (MF)	1km - 100m
3MHz - 30MHz (HF)	100m - 10m
30MHz - 300MHz (VHF)	10m - 1m
300MHz - 3GHz (UHF)	1m - 10cm
3GHz - 30GHz (SHF)	10cm - 1cm
30GHz - 300GHz (EHF)	1cm - 1mm

## 功率

dBm to Watts	$W = 10^{((dBm) - 30) / 10}$
Watts to dBm	$dBm = 10 \log(W) + 30$
dBW to Watts	$W = 10^{(dBW / 10)}$
Watts to dBW	$dBW = 10 \log(W)$
dBW to dBm	$dBm = dBW + 30$
dBm to dBW	$dBW = dBm - 30$

## 电流

dBμA to μA	$\mu A = 10^{(dB\mu A / 20)}$
μA to dBμA	$dB\mu A = 20 \log(\mu A)$
dBA to A	$A = 10^{(dBA / 20)}$
A to dBA	$dBA = 20 \log(A)$
dBA to dBμA	$dB\mu A = dBA + 120$
dBμA to dBA	$dBA = dB\mu A - 120$

## 电压

dBμV to Volts	$V = 10^{((dB\mu V) - 120) / 20}$
Volts to dBμV	$dB\mu V = 20 \log(V) + 120$
dBV to Volts	$V = 10^{(dBV / 20)}$
Volts to dBV	$dBV = 20 \log(V)$
dBV to dBμV	$dB\mu V = dBV + 120$
dBμV to dBV	$dBV = dB\mu V - 120$

## 单位转换

dBm to dBμV	$dB\mu V = dBm + 107_{(50\Omega)}$
dBμV to dBm	$dBm = dB\mu V - 107_{(50\Omega)}$
dBm to dBμA	$dB\mu A = dBm + 73_{(50\Omega)}$
dBμA to dBm	$dBm = dB\mu A - 73_{(50\Omega)}$
dBμA to dBμV	$dB\mu V = dB\mu A + 34_{(50\Omega)}$
dBμV to dBμA	$dB\mu A = dB\mu V - 34_{(50\Omega)}$