Formulas for Unit Conversion Charts - Bob Dahse @ http://www.GeoPathfinder.com rev.05/22/2016

I have found the following formulas convenient when reading research papers or published tables showing the results of electromagnetic field studies done in different countries, or with different instruments. The conversion charts I have published (at http://www.geopathfinder.com/ConversionChart.pdf are set up so that all revolve around Watts per square meter (W/m^2). The first 2 columns deal with dB figures. The next two columns relate to electric fields (V/m & mV/m). After that, the next six columns are power densities. And the final four columns are concerned with magnetic fields. So to find the other values if you know W/m^2, here are the formulas I used to get them:

$dBm/m^2 = [\log (W/m^2 \times 1000)] \times 10$ (decibel-milliwatts per square meter = The log of the product of Watts per square meter times 1000, multiplied by 10

$dBW/m^2 = (\log W/m^2) \times 10$ (decibel-Watts per square meter = the logarithm of Watts per square meter times 10)

$V/m = \sqrt{W/m^2 \times 377}$ (Volts per meter = the square root of the product of Watts per square meter times 377)

$mV/m = 1000 \times \sqrt{W/m^2 \times 377}$ (Milli-Volts per meter = 1000 times the square root of the product of Watts per square meter and 377)

$mW/cm^2 = W/m^2 / 10$ (Milli-Watts per square centimeter = Watts per square meter divided by 10)

$uW/m^2 = W/m^2 \times 1{,}000{,}000$ (Micro-Watts per square meter = Watts per square meter times one million)

$uW/cm^2 = W/m^2 / .01$ (Micro-Watts per square centimeter = Watts per square meter divided by .01)

$nW/cm^2 = W/m^2 / .000{,}01$ (Nano-Watts per square centimeter = Watts per square meter divided by .000,01

$pW/cm^2 = W/m^2 / .000{,}000{,}01$ (Pico-Watts per square centimeter = Watts per square meter divided by .000,000,01)

$A/m = \sqrt{W/m^2 / 377}$ (Amps per meter = the square root of the product of Watts per square meter divided by 377)

$mG = W/m^2 / 23.9$ (Milli-Gauss = Watts per square meter divided by 23.9)

$uT = W/m^2 / 239$ (Micro-Teslas = Watts per square meter divided by 239)

$nT = W/m^2 / 239{,}000$ (Nano-Teslas = Watts per square meter divided by 239,000)

Some other useful conversion formulas are :

$mG = (A/m)^2 \times 15.774059$

$A/m = \sqrt{mG / 15.774059}$

$nT = mG \times 100$

$mG = nT / 100$

$A/m = \sqrt{nT / 1{,}577.4059}$

$nT = (A/m)^2 \times 1{,}577.4059$

$V/m = W/m^2 / A/m$

$V/m = (mW/cm^2 \times 10) / A/m$

$A/m = W/m^2 / V/m$

$A/m = (mW/cm^2 \times 10) / V/m$

And some useful predictive (but possibly inaccurate*) conversions between electric, magnetic, and power units:

$V/m = \sqrt{nT \times 90{,}103}$

$V/m = \sqrt{mG \times 9{,}010.3}$

$nT = (V/m)^2 / 90{,}103$

$mG = (V/m)^2 / 9{,}010.3$

$W/m^2 = (V/m)^2 / 377$

$mW/cm^2 = (V/m)^2 / 3{,}770$

$W/m^2 = (A/m)^2 \times 377$

$mW/cm^2 = (A/m)^2 \times 37.7$

*Since power flow, electric fields, and magnetic fields are all perpendicular to each other, like the hub, spokes, and rim of a bicycle wheel respectively, these results may not perfectly correlate with measured field readings, depending on the geometry of wiring or antenna configurations and measuring distances.

Also, in the conversion tables, you will find some numbers abbreviated with an exponential notation. For instance, 2.41E-07 is really 2.41 times 10 to the negative seventh power, or 0.000000241. And 7.63E+08 is really 7.63 times ten to the eighth power, or 763,000,000.0. Count the digits before/after the decimal points and you will get the idea!