# MPE Calculation page for 011-01326-0x.

MPE Calculator Garmin IPH-01017 Test 060208

MPE uses EIRP for calculation. EIRP is based on TX power added to the antenna gain in dBi.
dBi = dB gain compared to an isotropic radiator.
S = power density in mW/cm^2

| | | | | | |
|---|---|---|---|---|---|
| | | | | Antenna Gain (dBi) | 1 |
| | | Output Power | dBd + 2.17 = dBi | dBi to dBd | 2.17 |
| Tx Frequency (MHz) | 2457 | (Watts) | 0.0005 | Antenna Gain (dBd) | -1.17 |
| Cable Loss (dB) | 0.0 | (dBm) | -3.01 | Antenna minus cable (dBi) | 1.00 |

Calculated ERP (mw) 0.382
Calculated EIRP (mw) 0.629

EIRP = Po(dBM) + Gain (dB)
Radiated (EIRP) dBm -2.010
ERP = EIRP - 2.17 dB
Radiated (ERP) dBm -4.180

**Occupational Limit**
**5.00000 mW/cm$^2$**

**General Public Limit**
**1.00000 mW/cm$^2$**

Power density (S)
EIRP
------- = mW/cm^2
4 π r^2
r (cm) EIRP (mW)

| FCC radio frequency radiation exposure limits per 1.1310 | | |
|---|---|---|
| Frequency (MHz) | Occupational Limit | Public Limit |
| 300-1,500 | f/300 | f/1500 |
| 1,500-10,000 | 5 | 1 |

| FCC radio frequency radiation exposure limits per 1.1310 | | |
|---|---|---|
| Frequency (MHz) | Occupational Limit @ Tx Freq (mW/cm^2) | Public Limit @ Tx Freq (mW/cm^2) |
| 300-1,500 | 8.19 | 1.638 |
| 1,500-10,000 | 5 | 1 |

| EIRP | Distance | Distance | S |
|---|---|---|---|
| milliwatts | cm | inches | mW/cm$^2$ |
| 0.629 | 50.00 | 19.69 | 0.00002 |
| 0.629 | 40.00 | 15.75 | 0.00003 |
| 0.629 | 30.00 | 11.81 | 0.00006 |
| 0.629 | 25.00 | 9.84 | 0.00008 |
| 0.629 | 20.00 | 7.87 | 0.00013 |
| 0.629 | 15.00 | 5.91 | 0.00022 |
| 0.629 | 14.00 | 5.51 | 0.00026 |
| 0.629 | 13.00 | 5.12 | 0.00030 |
| 0.629 | 12.00 | 4.72 | 0.00035 |
| 0.629 | 11.00 | 4.33 | 0.00041 |
| 0.629 | 10.00 | 3.94 | 0.00050 |
| 0.629 | 9.00 | 3.54 | 0.00062 |
| 0.629 | 8.00 | 3.15 | 0.00078 |
| 0.629 | 7.00 | 2.76 | 0.00102 |
| 0.629 | 6.00 | 2.36 | 0.00139 |
| 0.629 | 5.00 | 1.97 | 0.00200 |
| 0.629 | 4.00 | 1.57 | 0.00313 |
| 0.629 | 3.00 | 1.18 | 0.00557 |
| 0.629 | 2.00 | 0.79 | 0.01252 |
| 0.629 | 1.75 | 0.69 | 0.01636 |
| 0.629 | 1.50 | 0.59 | 0.02226 |
| 0.629 | 1.25 | 0.49 | 0.03206 |
| 0.629 | 1.00 | 0.39 | 0.05009 |
| 0.629 | 0.75 | 0.30 | 0.08905 |
| 0.629 | 0.50 | 0.20 | 0.20036 |