

**For Unlicensed PCS radio**

**Prediction of MPE limit at a given distance**

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = \frac{PG}{4\pi R^2}$$

where: S = power density

P = power input to the antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna

Maximum peak output power at the antenna terminal: 12.30 (dBm)

Maximum peak output power at the antenna terminal: 16.98243652 (mW)

Antenna gain(typical): 2.15 (dBi)

Maximum antenna gain: 1.640589773 (numeric)

Prediction distance: 20 (cm)

Prediction frequency: 1922 (MHz)

MPE limit for uncontrolled exposure at prediction frequency: 1 (mW/cm<sup>2</sup>)

**Power density** at prediction frequency: **0.005543** (mW/cm<sup>2</sup>)

**For 2.4GHz DXX Radio**

**Prediction of MPE limit at a given distance**

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = \frac{PG}{4\pi R^2}$$

where: S = power density

P = power input to the antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna

Measured Field Strength (3m):	93.5 (dBuV)
Maximum peak output power at the antenna terminal:	<u>-1.73</u> (dBm)
Maximum peak output power at the antenna terminal:	<u>0.671803883</u> (mW)
Antenna gain(typical):	<u>0</u> (dBi)
Maximum antenna gain:	<u>1</u> (numeric)
Prediction distance:	<u>20</u> (cm)
Prediction frequency:	<u>2450</u> (MHz)
MPE limit for uncontrolled exposure at prediction frequency:	<u>1</u> (mW/cm <sup>2</sup> )
<b>Power density</b> at prediction frequency:	<b>0.000134</b> (mW/cm <sup>2</sup> )

Collocated RF Exposure MPE Calculation for simultaneous operation:

There are 2 antennas for unlicensed PCS transmitter and 1 antenna for 2.4GHz

All 3 antennas are at least 20cm away from the user, but individual antennas can not be separated by 20cm from each other.

$$\frac{0.005543\text{mW/cm}^2 * 2}{1\text{mW/cm}^2} + \frac{0.000134\text{mW/cm}^2}{1\text{mW/cm}^2} = 0.01122\text{mW/cm}^2$$

$$0.01122 < 1$$

Therefore, the device complies with FCC's RF radiation exposure limit for general population for a mobile device.