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^2)

Power density at prediction frequency: 0.005543 (mW/cm^2)

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:	-1.73	(dBm)
Maximum peak output power at the antenna terminal:	0.671803883	(mW)
Antenna gain(typical):	0	(dBi)
Maximum antenna gain:	1	(numeric)
Prediction distance:	20	(cm)
Prediction frequency:	2450	(MHz)
MPE limit for uncontrolled exposure at prediction frequency:	1	(mW/cm^2)
Power density at prediction frequency:	0.000134	(mW/cm^2)

Collocated RF Exposure MPE Calculation for simultaneous operation:
There are 4 antennas for unlicensed PCS transmitter and 1 antenna for 2.4GHz
All 5 antennas are at least 20cm away from the user, but individual antennas <u>can</u> <u>not</u> be separated by 20cm from each other.

$$\frac{0.005543\text{mW/cm2} * 4}{1\text{mW/cm2}} + \frac{0.000134\text{mW/cm2}}{1\text{mW/cm2}} = 0.022306\text{mW/cm2}$$

0.022306 < 1

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