R.F Exposure/Safety Calculation for Mobile Access VE CELL-PCS System

The E.U.T. is desk, wall, ceiling or floor mounted. The typical distance between the E.U.T. and the general population is >10 cm for desk mounted operation (distance between E.U.T. and any person's arm while seated at desk) and >20 cm for wall, ceiling or floor mounted operation.

Calculation of Maximum Permissible Exposure (MPE)

Based on Section 1.1307(b)(1) Requirements

(a) FCC limit at 1960 MHz is: $1\dfrac{mW}{cm^2}$

FCC limit at 881.5 MHz is: $f/1500 = 0.587\dfrac{mW}{cm^2}$

Using table 1 of Section 1.1310 limit for general population/uncontrolled exposures, the above level is an average over 30 minutes.

(b) The power density produced by the E.U.T. is

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

P_t- Transmitted Peak Power (worst case)

G_T- Antenna Gain ,dBi

R- Distance from Transmitter

(c) Peak power density at worst case continuous transmission:

Modulation	Pt (mW)	Antenna type	G_T(dBi)	R (cm)	S_{AV} (mW/cm^2)	Spec (mW/cm^2)
GSM	31.6	Integral	0	10	0.025	1.0
W-CDMA	91.6	Integral	0	10	0.073	1.0
CDMA	40.6	Integral	0	10	0.032	0.59
GSM	31.6	External	10	10	0.25	1.0
W-CDMA	91.6	External	10	10	0.73	1.0
CDMA	40.6	External	10	10	0.32	0.59