R.F Exposure/Safety Calculation for 1000-CELL-PCS4E-HLN Remote Hub Unit

The E.U.T. is rack or wall mounted. The typical distance between the E.U.T. and the general population is >40 cm.

Calculation of Maximum Permissible Exposure (MPE)

Based on Section 1.1307(b)(1) Requirements

(a) FCC limit at 881.0 MHz is: $f/1500 = 0.587 \dfrac{mW}{cm^2}$

FCC limit at 1960.0 MHz is: $1 \dfrac{mW}{cm^2}$

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:

Band	Modulation	Pt (mW)	Antenna type	G_T (dBi)	R (cm)	S_{AV} (mW/cm^2)	Spec (mW/cm^2)
CELL	CDMA	223.87	External	12.5	40	0.198	0.587
	GSM	169.82	External	12.5	40	0.150	0.587
	W-CDMA	275.42	External	12.5	40	0.244	0.587
	LTE-64QAM	281.84	External	12.5	40	0.249	0.587
PCS	CDMA	803.53	External	12.5	40	0.711	1
	GSM	615.18	External	12.5	40	0.544	1
	W-CDMA	963.83	External	12.5	40	0.852	1
	LTE-64QAM	1047.13	External	12.5	40	0.926	1