R.F Exposure/Safety Calculation for RXU

The E.U.T. is rack or wall mounted. The typical distance between the E.U.T. and the general population is >50cm.

Calculation of Maximum Permissible Exposure (MPE)

Based on Section 1.1307(b)(1) Requirements

(a) FCC limit at 747 MHz is: $f/1500 = 0.498 \frac{mW}{cm^2}$

FCC limit at 2135 MHz is: $1 \frac{mW}{cm^2}$

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)	$G_{T\ numeric}$	R (cm)	S_{AV} (mW/cm^2)	Spec (mW/cm^2)
LTE	LTE 64QAM	46.1	External	12.5	17.8	50	0.026	0.498
	LTE 16QAM	45.7	External	12.5	17.8	50	0.026	0.498
	LTE QPSK	48.6	External	12.5	17.8	50	0.028	0.498
AWS	CDMA	116	External	12.5	17.8	50	0.065	1.0
	LTE 64QAM	124	External	12.5	17.8	50	0.111	1.0
	GSM	196	External	12.5	17.8	50	0.070	1.0
	W-CDMA	146	External	12.5	17.8	50	0.083	1.0