

R.F Exposure/Safety Calculation for RAU4

FCC ID: OJF1C85P19L70A17

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 1.1310 Requirements

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

(b) (CELL) FCC limit at 889.0 MHz is: $f / 1500 = 0.593 \frac{mW}{cm^2}$

(c) (PCS) FCC limit at 1993.8 MHz is: $1 \frac{mW}{cm^2}$

(d) (AWS) FCC limit at 2111.2 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, 12.5dBi= 17.8 numeric

R- Distance from Transmitter 50 cm

(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)
CELL	LTE 64QAM	46.8	External	12.5	17.8	50	0.026516	0.593
	GSM	37.2	External	12.5	17.8	50	0.021077	0.593
	W-CDMA	42.7	External	12.5	17.8	50	0.024193	0.593
PCS	LTE 64QAM	74.1	External	12.5	17.8	50	0.041984	1
	GSM	57.5	External	12.5	17.8	50	0.032579	1
	W-CDMA	70.8	External	12.5	17.8	50	0.040115	1
LTE	LTE 64QAM	43.7	External	12.5	17.8	50	0.02476	0.498
	LTE 16QAM	45.7	External	12.5	17.8	50	0.025893	0.498
	LTE QPSK	45.7	External	12.5	17.8	50	0.025893	0.498
AWS	LTE 64QAM	91.2	External	12.5	17.8	50	0.051673	1
	GSM	95.5	External	12.5	17.8	50	0.054109	1
	W-CDMA	87.1	External	12.5	17.8	50	0.04935	1

(d) This is below the FCC limit.