R.F Exposure/Safety Calculation for VE LTE 700L

The E.U.T. is an in-building antenna distribution system, supporting a single frequency band. The "worst case" distance between the E.U.T. and the general population is 10 cm.

Calculation of Maximum Permissible Exposure (MPE)

Based on Section 1.1307(b)(1) Requirements

(a) FCC Occupational user limit at 733 MHz is: $\frac{f}{300} = \frac{733}{300} = 2.44 \frac{mW}{cm^2}$

FCC Occupational user limit at 741 MHz is: $\frac{f}{300} = \frac{741}{300} = 2.47 \frac{mW}{cm^2}$

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

R- Distance from Transmitter

(c) Peak power density:

Operation Frequency	Modulation	Pt (mW)	Antenna type	G_T(dBi)	R (cm)	S_{AV} (mW/cm^2)	Spec (mW/cm^2)
733 MHz.	QPSK	37.9	External	7	10	0.15	2.44
	16QAM	43.6	External	7	10	0.24	2.44
	64QAM	40.8	External	7	10	0.16	2.44
741 MHz	QPSK	38.7	External	7	10	0.15	2.47
	16QAM	42.7	External	7	10	0.17	2.47
	64QAM	35.1	External	7	10	0.14	2.47