R.F Exposure/Safety Calculation for MRU - WCS

The E.U.T. is rack or wall mounted. The typical distance between the E.U.T. and the general population is >100cm.

Calculation of Maximum Permissible Exposure (MPE)

Based on Section 1.1310 Requirements

(a)FCC limit at 2355.0 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 100 cm

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

Band	Modulation	Pt (dBm)	Pt (mW)	Antenna type	G_T (dBi)	G_T numeric	R (cm)	S_{AV} (mW/cm^2)	Spec (mW/cm^2)
WCS	GSM	35.2	3311	External	12.5	17.8	100	0.468996	1.0
	LTE 64QAM	35.6	3631	External	12.5	17.8	100	0.514324	1.0
	WCDMA	35.5	3548	External	12.5	17.8	100	0.502567	1.0

(d) This is below the FCC limit.