

R.F Exposure/Safety Calculation for FCC ID: OJFDMRUDPAM67 (LTE 700+600)

The E.U.T. is rack or wall mounted. The typical distance between the E.U.T. and the general population is >120cm.

Calculation of Maximum Permissible Exposure (MPE)

Based on Section 1.1310 Requirements

(a) FCC limit at 751.5 MHz is: $f/1500 = 0.50100 \text{ mW/cm}^2$

(b) FCC limit at 627 MHz is: $f/1500 = 0.41800 \text{ mW/cm}^2$

Using table 1 of Section 1.1310 limit for general population/uncontrolled exposures, the above level is an average over 30 minutes.

(c) 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 (worst case) , 12.5dBi= 17.8 numeric

R- Distance from Transmitter 120 cm

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

generation	Modulation	Pt (dBm)	Pt (W)	Antenna type	G_T (dBi)	G_T numeric	R (cm)	S_{AV} (mW/cm ²)	Limit (mW/cm ²)
5G	16QAM	34.22	2.642	External	12.5	17.8	120	0.25988	0.50100
	64QAM	34.23	2.649	External	12.5	17.8	120	0.26057	0.50100
	256QAM	33.98	2.500	External	12.5	17.8	120	0.24591	0.50100
	QPSK	34.27	2.673	External	12.5	17.8	120	0.26293	0.50100
4G	16QAM	33.98	2.500	External	12.5	17.8	120	0.24591	0.50100
	64QAM	33.94	2.477	External	12.5	17.8	120	0.24365	0.50100
	QPSK	33.99	2.506	External	12.5	17.8	120	0.24650	0.50100

LTE 700

generation	Modulation	Pt (dBm)	Pt (W)	Antenna type	G_T (dBi)	G_T numeric	R (cm)	S_{AV} (mW/cm ²)	Spec (mW/cm ²)
5G	16QAM	34.34	2.716	External	12.5	17.8	120	0.26716	0.41800
	64QAM	34.04	2.535	External	12.5	17.8	120	0.24936	0.41800
	256QAM	33.98	2.500	External	12.5	17.8	120	0.24591	0.41800
	QPSK	34.31	2.698	External	12.5	17.8	120	0.26539	0.41800

LTE 600

(e) This is below the FCC limit.