

R.F Exposure/Safety Calculation for CMP3000-B41-2496-2690 MHz

The E.U.T. is pole mounted.

Calculation of Maximum Permissible Exposure (MPE)

Based on Section 1.1307(b)(1) Requirements

(a) FCC limit at 2496-2690 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

$$S = \frac{P_t G_t}{4\pi R^2} \quad R = \sqrt{\frac{P_t G_t}{4\pi}}$$

P_t - Transmitted Peak Power (worst case)

G_t - Antenna Gain, dBi

R- Distance from Transmitter

S- MPE =1

(c) The calculated minimum distance between the EUT antenna and the general public is:

Operation Frequency (MHz)	Modulation	MIMO Pt (dBm)	MIMO Pt (mW)	Antenna Type	G _T (dBi)	G _T numeric	R (cm)
2498.50	QPSK	44.73	29717	External	18.0	63.1	386.3
	16QAM	44.77	29992	External	18.0	63.1	388.1
	64QAM	44.68	29377	External	18.0	63.1	384.1
2593.00	QPSK	44.43	27733	External	18.0	63.1	373.2
	16QAM	44.50	28184	External	18.0	63.1	376.2
	64QAM	44.41	27606	External	18.0	63.1	372.3
2687.50	QPSK	44.56	28576	External	18.0	63.1	378.8
	16QAM	44.67	29309	External	18.0	63.1	383.6
	64QAM	44.58	28708	External	18.0	63.1	379.7

5MHz Bandwidth, MIMO Operation

Operation Frequency (MHz)	Modulation	MIMO Pt (dBm)	MIMO Pt (mW)	Antenna Type	G _T (dBi)	G _T numeric	R (cm)
2501.00	QPSK	44.62	28973	External	18.0	63.1	381.4
	16QAM	44.73	29717	External	18.0	63.1	386.3
	64QAM	44.47	27990	External	18.0	63.1	374.9
2593.00	QPSK	44.54	28445	External	18.0	63.1	377.9
	16QAM	44.71	29580	External	18.0	63.1	385.4
	64QAM	44.39	27479	External	18.0	63.1	371.5
2685.00	QPSK	44.38	27416	External	18.0	63.1	371.0
	16QAM	44.50	28184	External	18.0	63.1	376.2
	64QAM	44.25	26607	External	18.0	63.1	365.5

10MHz Bandwidth, MIMO Operation