

R.F Exposure/Safety Calculation for HX-C85P19L70MA17M-AC-A – HX MIMO

The E.U.T. is rack or wall mounted. The typical distance between the E.U.T. and the general population is >170cm.

Calculation of Maximum Permissible Exposure (MPE)
Based on Section 1.1310 Requirements

(a) FCC limit at 881.0 MHz is: $f / 1500 = 0.587 \frac{mW}{cm^2}$

FCC limit at 1960 MHz is: $1 \frac{mW}{cm^2}$

FCC limit at 2135 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 170 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	16 QAM	11246	External	12.5	17.8	170	0.551201	0.587
	64QAM	11830	External	12.5	17.8	170	0.579825	0.587
	QPSK	10965	External	12.5	17.8	170	0.537429	0.587
PCS	16 QAM	11967	External	12.5	17.8	170	0.58654	1
	64QAM	9795	External	12.5	17.8	170	0.480083	1
	QPSK	11508	External	12.5	17.8	170	0.564043	1
AWS	16 QAM	5383	External	12.5	17.8	170	0.263838	1
	64QAM	5636	External	12.5	17.8	170	0.276238	1
	QPSK	5188	External	12.5	17.8	170	0.25428	1

*RF Output via 2 MIMO antenna ports.

(d) This is below the FCC limit.