

R.F Exposure/Safety Calculation for MobileAccessHX High Power DAS Remote Unit

The E.U.T. is rack or wall mounted. The typical distance between the E.U.T. and the general population is >75 cm.

Calculation of Maximum Permissible Exposure (MPE)

Based on Section 1.1307(b)(1) 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 747 MHz is: $f / 1500 = 0.498 \frac{mW}{cm^2}$

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 ,dBi

R- Distance from Transmitter

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

Band	Modulation	Pt (mW)	Antenna type	G _T (dBi)	R (cm)	S _{AV} (mW/cm ²)	Spec (mW/cm ²)
CELL	CDMA	3767	External	10	75	0.533	0.587
	GSM	3899	External	10	75	0.552	0.587
	W-CDMA	3199	External	10	75	0.453	0.587
PCS	CDMA	3664	External	10	75	0.518	1.0
	GSM	3715	External	10	75	0.526	1.0
	W-CDMA	3221	External	10	75	0.456	1.0
LTE	W-CDMA	2864	External	10	75	0.405	0.498
	QPSK	3048	External	10	75	0.431	0.498
	16QAM	3327	External	10	75	0.471	0.498
	64QAM	2818	External	10	75	0.399	0.498
AWS	CDMA	2911	External	10	75	0.412	1.0
	W-CDMA	3926	External	10	75	0.555	1.0