

## R.F Exposure/Safety Calculation for HX-C85P19L70A17-AC-A

The E.U.T. is rack or wall mounted. The typical distance between the E.U.T. and the general population is >115 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 2135 MHz is:  $1 \frac{mW}{cm^2}$

Using table 1 of Section 1.1307(b)(1) 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<sub>t</sub>- Transmitted Peak Power (worst case)

G<sub>T</sub>- Antenna Gain, 12.5 dBi = 17.8 numeric

R- Distance from Transmitter 115cm

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

| Band | Modulation | Pt<br>(mW) | Antenna<br>type | G <sub>T</sub><br>(dBi) | G <sub>T</sub><br>numeric | R<br>(cm) | S <sub>AV</sub><br>(mW/cm <sup>2</sup> ) | Spec<br>(mW/cm <sup>2</sup> ) |
|------|------------|------------|-----------------|-------------------------|---------------------------|-----------|------------------------------------------|-------------------------------|
| CELL | 16 QAM     | 4265.8     | External        | 12.5                    | 17.8                      | 115       | 0.456893                                 | 0.587                         |
|      | 64QAM      | 4508.17    | External        | 12.5                    | 17.8                      | 115       | 0.482852                                 | 0.587                         |
|      | QPSK       | 3872.58    | External        | 12.5                    | 17.8                      | 115       | 0.414777                                 | 0.587                         |
| PCS  | 16 QAM     | 3083.19    | External        | 12.5                    | 17.8                      | 115       | 0.330228                                 | 1                             |
|      | 64QAM      | 3069.02    | External        | 12.5                    | 17.8                      | 115       | 0.328711                                 | 1                             |
|      | QPSK       | 3140.51    | External        | 12.5                    | 17.8                      | 115       | 0.336368                                 | 1                             |
| AWS  | 16 QAM     | 2985.38    | External        | 12.5                    | 17.8                      | 115       | 0.319753                                 | 1                             |
|      | 64QAM      | 2951.21    | External        | 12.5                    | 17.8                      | 115       | 0.316093                                 | 1                             |
|      | QPSK       | 3026.91    | External        | 12.5                    | 17.8                      | 115       | 0.324201                                 | 1                             |

(d) This is below the FCC limit.