

## RF exposure calculation

### Regulation

FCC Part 15.247(i) Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See § 1.1307(b)(1) of this Chapter.

### MPE calculation to FCC ID: PTSPURDNGL100U

These equations are generally accurate in the far field of an antenna but will over predict power density in the near field, where they could be used for making a “worst case” prediction.

$$S = PG/4\pi R^2$$

where  $S$  = power density ( in appropriate units, e.g.  $\text{mW/cm}^2$ )

$P$  = power input to the antenna (in appropriate units e.g.  $\text{mW}$ )

$G$  = power gain of the antenna in the direction of interest relative to the isotropic radiator

$R$  = distance to the center of radiation of the antenna (appropriate units e.g.  $\text{cm}$ )

Or

$$S = \text{EIRP}/(4\pi R^2)$$

where  $\text{EIRP}$  = equivalent isotropically radiated power

Calculation:

(Calculated for max. EIRP)

EIRP: 18.7 dBm = 74.1 mW

calculated at distance of 20 cm:

$$\text{power density} = 74.1 / (4\pi \cdot 20^2) = \mathbf{0.0147 \text{ mW/cm}^2}$$

### Limit:

**0.451 mW/ cm<sup>2</sup> is the reference level for general public exposure according to the OET Bulletin 65, Edition 97-01 Table 1.**