

**MPE calculation**

EUT: RFID Reader ST110

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**MPE calculation to the FCC ID: VLUST110**

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. mW/cm<sup>2</sup>)

P = power input to the antenna (in appropriate units e.g. 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. cm)

Or

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

where EIRP = equivalent isotropically radiated power

Calculation:

(Calculated for max. EIRP)

EIRP: 23.6 dBm = 229.1 mW

calculated at distance of 20 cm:

**power density** =  $229.1 / 4\pi 20^2 = 0.0456 \text{ mW/ cm}^2$

**Limit:**

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

Signature

(Technical engineer)

  
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