MPE calculation

EUT: RFID Reader ST510

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MPE calculation to the FCC ID: VLUST510

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/cm2)
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

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

where EIRP = equivalent isotropically radiated power

Calculation:
(Calculated for max. EIRP)
EIRP: 28.5 dBm = 707.9 mW
calculated at distance of 20 cm:
power density = 707.9 /4π20^2 = **0.1408 mW/ cm^2**

Limit:

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

Signature

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