MPE calculation

m. dudde
hochfrequenz-technik

EUT: **UHF Long Range Reader ID ISC.LRU 3500**

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MPE calculation to the FCC ID: PJMLRU3000
UHF Long Range Reader ID ISC.LRU 3500

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

1st. Calculation:
(Calculated for max. EIRP)
EIRP: 35.9 dBm = 3890.5 mW
calculated at distance of 20 cm:
power density = $3890.5 /4*\pi*20^2$ = **0.774 mW/ cm^2**

2nd. Calculation for estimated safe separation:
  (Calculated for max. EIRP)
  EIRP: 35.9 dBm = 3890.5 mW
  R = $\sqrt{(PG/S4\pi)}$ = $\sqrt{(3890.5[mW]/0.774\ [mW/cm^2]4\pi)}$
minimum estimated safe separation = 22.7 cm

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

(Technical engineer)   Ralf Trepper