November 26, 2012

GEDE01: Part 90, MDS 4310a - Maximum Permissible Exposure

FCC, Part 1 Subpart §1.1310

Calculations for Maximum Permissible Exposure Levels

Power Density = Pd (mW/cm^2) = $EIRP/(4\pi d^2)$

EIRP = P * G

P = Peak output power (mW)

G = Antenna numeric gain (numeric)

d = Separation distance (cm)

Numeric Gain = 10 ^ (G (dBi)/10)

Because the EUT belongs to the General Population/Uncontrolled Exposure the limit of power density is 0.3 mW/cm^2

Frequency (MHz)	Antenna Gain (dBi)	Numeric Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Calculated Power Density @ 20 cm (mW/cm^2)	Minimum Separation Distance (cm)
450.5	7.14	5.18	+37.46	5,572	5.74	47.93
450.5	12.14	16.37	+37.46	5,572	18.15	82.20

*Note: for mobile or fixed location transmitters the minimum separation distance is 20cm, even if calculations indicate the MPE distance to be less.

Specification

Maximum Permissible Exposure Limits

FCC, Part 1 Subpart §1.1310 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 levels in excess of the Commission's guidelines.

FCC §1.1310 Limit = 0.3 mW / cm^2 from 1.310 Table 1 (f/1500)

Laboratory Measurement Uncertainty for Power Measurements

Measurement uncertainty	±1.33 dB