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1135-100 MPE Calculation - OET Bulletin 65

FCC ID: YPHDEB1135-100

The FCC requires that the calculated MPE be equal to or less than a given limit dependent on frequency at a distance of 20 cm from a device to the body of a user.

The MPE calculation as given in FCC OET Bulletin 65, page 19 is used to calculate the safe operating distance for the user.

The transmitter for the 1135-100 operates at 906 MHz

CALCULATION

From OET Bulletin 65 the following far field power density equation is applicable:

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

Where

S = Power density

EIRP = Effective Isotropically Radiated Power (EIRP = P x G)

P = Conducted Transmitter Power

G = Antenna Gain (relative to an isotropic radiator)

R = distance to the centre of radiation of the antenna

Requirement

From table 1 (b) - Limits for General Population/ Uncontrolled Exposure of FCC Rule Part 1.1310 for 1,500-100,000MHz

$$S = f/1500 = 0.604 \text{ mW/cm}^2$$

Calculation for 20cm safe distance

Values: P = 436.52 mW* (26.4 dBm); G= 2.35 dBi ∴ EIRP = 749.84 mW (28.75 dBm); R = 20cm

*Measured conducted power

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

$$S = 749.84/(12.56 \times 20^2)$$

$$= 749.84/5024$$

$$S = 0.149 \text{ mW/cm}^2$$

Conclusion

The 1135-100 at 20 cm meets the required OET Bulletin 65 RF exposure requirements.

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