

MPE / Health Hazard

Requirement:

According to CFR 15 §1.1307 (b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines.

MPE / Health Hazard Separation Distance:

The minimum separation distance calculated following FCC OET Bulletin 65 is calculated as follows, where S is power density,

$$\text{EIRP(dBm)} = E_3(\text{dB}\mu\text{V/m}) - 95.2 \text{ dB(mW}/(\mu\text{V/m}))$$

$$\text{EIRP} = 120.4 (\text{dB}\mu\text{V/m}) - 95.2 \text{ dB(mW}/(\mu\text{V/m})) = 25.2 \text{ dBm} = 331.1 \text{ mW}$$

$$\text{ERP} = \text{EIRP} - 2.15 = 25.2 - 2.15 = 23.05 \text{ dBm}$$

$$= 201.8 \text{ mW} = 0.202 \text{ W}$$

The power density at 20 cm is computed to be:

$$S(\text{mW}/\text{cm}^2) = \text{EIRP}(\text{mW})/(4 \text{ R}(\text{cm})^2) = 0.066 \text{ mW}/\text{cm}^2$$

NOTE: Under no circumstances is the ERP of this device greater than 3W, as required by 2.1091 and the FCC mm-wave accepted test procedures.