

RF Exposure Statement:

When used as directed, the MPE of this device is within the limits set forth by the FCC.

Calculation Method of RF safety Distance:

The following calculations show that at any spacing, the MPE limits for Occupational/Controlled exposure are not exceeded for an antenna of 2.1dBi gain (max theoretical gain of “noodle” antenna).

Per OET Bulletin 65, far-field equations used to predict power density “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’ or conservative prediction”⁽¹⁾. This is the method used here to predict the power density.

The far-field power density S, in mW/ cm² is:

$$S = (P \cdot G) / (4 \cdot \pi \cdot R^2)$$

Where:

P = power input into the antenna in mW

S = power density in mW/cm²

G = numeric gain of the antenna relative to an isotropic radiator

R = distance to center of radiation in cm

Substituting:

P = 1000mW

G = 1.62 (2.1dBi)

R = 20cm

An R of 20cm is chosen based on reference to OET Bulletin 65.

Results:

$$S = 0.32 \text{ mW/cm}^2$$

The limit for Maximum Permissible Exposure (MPE) for Occupational/Controlled Exposure in the frequency band 150-174MHz is 1.0 mW/cm² (47 CFR 1.1310).

Therefore, the power density is within the limits specified for Occupational/Controlled exposure when the device is used as instructed in the Operator Guide.

(1) OET Bulletin 65: Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields, Edition 97-01, August 1997. Page 19.