

## **Pd-TX-5000A-2.4 RF Exposure:**

### **Calculation Method of RF Power Density:**

The power density S, in mW/ cm<sup>2</sup> is:

$$S = (P * G) / (4 * \pi * r^2)$$

Where:

S = allowable power density in mW/cm<sup>2</sup>

P = power to the antenna in mW

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

r = 20 cm (minimum limit for a 'mobile' product)

The limit for Maximum Permissible Exposure (MPE) limits for Occupational/ Controlled and General Population/uncontrolled in the frequency band 1.50 – 100 GHz are 5/1 mW/cm<sup>2</sup> respectively (47 CFR 1.1310).

Antennas intended for use with this device have an approximate gain of 2.1 dBi.

The maximum transmitter power is 5 Watts.

Conversion of antenna gain from dB to numeric:

$$G = 10^{(2.1/10)} = 1.62$$

Substitute P, G, and r into Eq. 2 to solve for the Power Density in mW :

$$S = (P * G) / (4 * \pi * r^2)$$
$$1.612 = (5000 * 1.62) / (4 * 3.14 * 400)$$

$$S = 1.612 \text{ mW/cm}^2$$

Therefore, the Maximum Permissible Exposure (MPE) limits as specified in FCC 47 CFR 1.1310 are not exceeded for Occupational/controlled when the device is used as described in the Operator Guide.

Note: This device exceeds the limits for General Population/uncontrolled per 47 CFR 1.1310