

R.F Exposure/Safety

The E.U.T. is an irrigation controller. Typical placement of the E.U.T. is in an agricultural field or park. The typical distance between the E.U.T. and the user is at least 20cm.

Calculation of Maximum Permissible Exposure (MPE) Based on Section 1.1310 Requirements

Using table 1 of Section 1.1310 limit for general population/uncontrolled exposures, the above level is an average over 30 minutes.

1) FCC limit at 450 MHz is: $f/1500 \text{ (mW/cm}^2\text{)} = 450/1500 = 0.3 \text{ (mW/cm}^2\text{)}$

2) The power density produced by the E.U.T. is

P_t - Transmitted Power 0.108 W= 108mW (testing performed radiated; power results

$$S = \frac{P_t G_t}{4\pi R^2}$$

do not include antenna gain)

Antenna ¼ wave whip antenna 450-470MHz; 16.5cm; 0dBi

G_t - Antenna Gain, 0 dBi gain =1 numeric

R- Distance from Transmitter using 20cm worst case

3) The peak power density is:

$$S = 108 \times 1/4\pi(20^2) = 0.0214 \text{ mW/cm}^2$$

This is below the FCC limit of 0.3 (mW/cm²)