

MPE Estimates

The MPE estimate is calculated below:

From the test results, the maximum field strength is measured at 103.29 dBuV/m at 3m

$$E_{\text{max}} := 10^{\frac{103.29-120}{20}}$$

$$E_{\text{max}} = 0.146 \text{ V/m}$$

The corresponds to an EIRP of:

$$\begin{aligned} \text{EIRP} &:= 0.3 \cdot E_{\text{max}}^2 \\ \text{EIRP} &= 6.399 \times 10^{-3} \text{ W} \quad 6.399\text{mW} \end{aligned}$$

$$P_t := 6.399 \text{ mW} \text{ maximum power measured from hose timer}$$

$$r := 2.0 \text{ cm} \text{ minimum distance between antenna and user (occurs at rotary dial)}$$

$$P_{d\text{Max}} := \frac{\text{EIRP}}{4 \cdot \pi \cdot r^2} \text{ formula for calculation of power density}$$

$$P_{d\text{Max}} := \frac{\text{EIRP}}{4 \cdot \pi \cdot r^2}$$

$$P_{d\text{Max}} = 1.273 \times 10^{-4} \frac{\text{W}}{\text{cm}^2} \text{ maximum power density}$$

$$P_{d\text{Max}} = 0.1273 \text{ mW/cm}^2$$

The 0.1273 mW maximum power density of the Lowes Iris™ HT8 Timer is below the 1.0mW allowable maximum power density.