

9. RF Exposure Information:

Calculation for compliance with MPE requirements (47CFR2.1091) is done using a worst-case transmitter power of 50 mW, assumption of a unity gain antenna, and an exposure limit of 0.6 mW/cm² (f/1500 mW/cm² at 20 cm per 47CFR1.1310) for general applications. This device is not carried or worn by the end user. It has an extremely low duty cycle and a low rate of transmission that dramatically reduces the average power level that could pose an exposure hazard.

The transmitter is activated by an on-board timer or if the change in temperature between the last transmitted temperature and the current measurement exceeds a programmed differential. The averaging interval specified in Table 1(B) of 47CFR1.1310 is 30 minutes. For the purposes of this calculation, it is assumed that 180 messages will be sent in the 30-minute interval. Each supervisory message consists of 2 redundant packets. A packet is typically 20 ms in length.

The worst-case power density at a distance of 20 cm is then,

$$50mW \times \frac{360 \text{ packets}}{30 \text{ min}} \times \frac{20ms}{\text{packet}} \times \frac{1 \text{ min}}{60 \times 10^3 ms} \times \frac{1}{4\pi(20cm)^2} = 40.0 \frac{nW}{cm^2}$$

This is well below the 0.6 mW/cm² limit.