

Action Item #5:

“Submit the page of the User’s Manual with the RF exposure warning and required user separation distance from the antenna of 20 cm.”

Rather than change the user manual, the device is shown to meet the requirements of 47CFR2.1093, at maximum duty cycle.

The duty cycle is calculated over a 100 mSec averaging window as specified in the rules. The longest message contains a total of 213 pulses each 20 uSec in duration, for a total transmitter on time of 4.26 mSec which represents a worst-case duty cycle of 4.26%.

This device is used in fixed locations and is not carried or worn by the end user.

The time-averaged RF transmit power is then,

$$250mW \times \frac{72 \text{ packets}}{6 \text{ min}} \times \frac{4.26ms}{\text{packet}} \times \frac{1 \text{ min}}{60 \times 10^3 ms} = 0.213mW$$

Worst case, if all of the transmitted power were absorbed in a 1-gram sample of tissue, the power density is 0.213 mW/gram and is well below the 1.6 mW/gram limit found in 47CFR2.1093.

The maximum duty cycle of the device is

$$\frac{72 \text{ packets}}{6 \text{ min}} \times \frac{4.26ms}{\text{packet}} \times \frac{1 \text{ min}}{60 \times 10^3 ms} = 0.000852 = 0.0852\%$$