

## DUTY CYCLE INFORMATION

The Wi-Fi Tag has no pushbutton and the firmware ensures that it can only be on the maximum of 4.25ms in rare circumstances. The RF Technologies, Inc proprietary firmware and configuration software tool ensures that the worse case timing mentioned above cannot and will not be configured any faster and these parameters cannot be changed. Typically the packet size will be much less than the maximum stated (4.25ms) and they never transmit these maximum sized position packets faster than 5 seconds. A typical scenario would be a packet smaller than the maximum possible packet every few minutes.

The power density, S, generated by some value of EIRP at a given distance, d, is related by the following:

$$S = \text{EIRP} / (4 * \pi * d^2)$$

The distance, given a maximum EIRP of 22 dBm (158 mW), at which the radiated power density of the EUT is equal to the human RF exposure limit is 2.96 cm from the antenna.

Normally the device would transmit a short burst every few minutes. The worst case burst length is roughly 4.25ms. For the duty cycle test, the EUT was configured to transmit this worst case packet every 100ms for ease of testing. Therefore, the correction factor should be roughly 13.72 dB. Given a max output power of 22 dBm, the output power would be roughly 8.28 dBm (6.73mW). The EUT should therefore be exempt from SAR evaluation due to the fact that the output power is below 25mW after duty cycle adjustment.

We would like it to be considered a portable device so that down the road we could use the system for people location. Initially, we are not going to support location of people, because it is much more difficult to do so accurately, but we would like the ability to do so in the future.