

FCC RF Exposure Information – Low Duty Factor Exemption

(Based on October 2009 TCB Workshop Presentation for Low Transmission Duty Factor Devices)

Operational Description

The eTrak ETC100 is a body worn tracking device. The unit utilizes GPS technology to ascertain the current location. The most aggressive automatic (non user initiate) location update frequency is every 5 minutes. The device has a panic button that the user can initiate (press and hold for 2 seconds) for emergency tracking, which location updates occur every 1 minute for 10 minutes. After ten minutes, it will fall back to the normal location update frequency (the highest frequency is 5 minute tracking). Each location data is less 3KB, and based on CDMA2000 1xRTT data rate of 153kbps, it should take less than 1 second to transmit the data after a successful network connection.

The worse case would be the location updates during emergency tracking.

Worse case duty cycle: 1:60 (transmits for 1 sec, and no transmission for 60 seconds)

Longest time device transmits: < 1 sec

Shortest possible time between transmissions: 1 minute for panic mode

RF Exposure Conditions

The eTrak ETC100 tracking device is intended for operation in the general population / uncontrolled RF exposure environment. The device supports being held to the body with body worn accessories.

Transmission Mode

The Locator utilizes an internal CDMA Cellular transmitter module (FCCID: P4M-DTW200D).

Duty Cycle

The device supports a **maximum** transmission rate of once per minute. The on-air transmission time is <1 second. This leads to an on air duty cycle of 1.67%.



RF Output Power Comparison

The conducted output power listed below is that which is listed on the FCC grant for the CDMA module.

CDMA Cell Band

Maximum Measured Conducted Output Power = 288mW

Source Based Time Averaged Duty Cycle – 1.67%

Source Based Time Averaged Output Power = $288\text{mW} \times .0167 = 4.8\text{mW}$

$60/f(\text{GHz}) \text{ mW} = 70.7 \text{ mW}$

The source based time-averaged output power is much less than $60/f$

CDMA PCS 1900 Band

Maximum Measured Conducted Output Power = 269mW

Source Based Time Averaged Duty Cycle – 1.67%

Source Based Time Averaged Output Power = $269\text{mW} \times .0167 = 4.5\text{mW}$

$60/f(\text{GHz}) \text{ mW} = 31.4 \text{ mW}$

The source based time-averaged output power is much less than $60/f$

Simultaneous Transmission Consideration

The device does not have simultaneous transmitters

Conclusion:

As shown by the calculations above, the eTrak ETC100 complies with the low power exemption on FCCP KDB 447498.

