

## R.F Exposure/Safety for TAG-2300-CUT

Typical uses of the E.U.T. are tracking of children in amusement parks, security personnel in enterprises, hospital patients, and many more. The E.U.T. is typically worn on a wristband. The typical distance between the E.U.T. and the user in the worst case application, is 1 cm.

### Calculation of Maximum Permissible Exposure (MPE)

Based on Section 1.1307(b)(1) Requirements

(a) FCC limits at 2437 MHz is:  $1 \frac{mW}{cm^2}$

Using table 1 of Section 1.1310 limit for general population/uncontrolled exposures, the above level is an average over 30 minutes.

(b) The power density produced by the E.U.T. is

$$S = \frac{P_t G_t}{4\pi R^2}$$

$P_t$ - Transmitted Power 17.7 dBm (peak) = 58.9 mW

$G_t$ - Antenna Gain, -4 dBi

R- Distance from Transmitter using 1 cm worst case

(c) The duty cycle of transmission in actual worst case is 500 $\mu$ sec every 1 second (500 $\mu$ sec\100msec<1%).

The average power source is:

$$P_{AV} = 58.9 \times 0.01 = 0.589mW$$

(d) The peak power density (time averaging) of the E.U.T. is:

$$S_{AV} = \frac{0.589 \times 0.4}{4\pi} = 0.019 \frac{mW}{cm^2}$$

(e) This is below the FCC limit.