6.1 RF Safety Requirements to 2.1093 for Handheld Transmitters

Power Output

The unit under evaluation has an integrated antenna of 2.0 dBi gain with a measured output power output of 0.0813 Watts at the antenna terminals. Taking into consideration the gain of the antenna, the corrected EIRP is 128.8 mW.

Source Based Time Averaging

Source Based Time Averaging has not been applied, but the EUT only functions for a few seconds after the appropriate button has been pressed by the user. It is expected that the average user will only press this button a few times every several minutes.

MPE Calculations

The limits for this unit (uncontrolled exposure) are 1.0 mW/cm^2. Taking the RF Density Field Equation:

$S = (EIRP \text{ in } mW)/(4\pi R^2)$ and solving for Distance R

$R = SQRT (EIRP \text{ in } mW)/(S4\pi)$

Solving the above equation yields

$R (cm) = SQRT (128.8(mw))/(1.0(mW/cm^2)*4*\pi) = 3.2$ cm

The RF Density equation shows that the minimum separation distance to be 3.2 cm. Since the EUT is designed only for applications (where the expected separation distance between antenna and the human body excluding extremities is greater than 20 cm during use), all manual instructions have specified 20 cm as the minimum exposure distance.