6. RF Exposure

Table 6-1 gives a summary of the expected radiation exposure levels versus distance from the transmitter antenna using equation (6-1). The maximum ERP power 1.209 W in Table 5-2 is used in evaluation of the RF exposure level.

$$S = \frac{EIRP}{4\pi D^2} = \frac{1.64 ERP}{4\pi D^2} \quad (6\text{-}1)$$

where S is power density at distance D from the antenna. For near field, equation (6-1) could be used as "worst case" or conservative prediction[1].

Table 6–1. RF exposure level versus distance

Distance (cm)	10	50	100
MPE (mW/cm^2)	0.962	0.038	0.010

Table 5-1 shows that the RF exposure level complies with the uncontrolled exposure environment defined by IEEE STD C95.1. In real application, the transmission antenna shall be mounted on a trailer roof and will be at least 2 meter apart from the ground level. In normal operation, the TUTT will be transmitting message data for 3-5 seconds every few hours. Thus, the actual duty cycle of the transmitter is very small and there would be no RF exposure risk from this product.

[1] FCC OET Bulletin, No. 65, Edition 97-01, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields", August 1997.