

## Compliance with 47 CFR 2.1091 and 1.1310

The EUT is a home monitor that is used to communicate with implantable devices. It contains a cellular radio and a 15.249 radio. The EUT will only be used with a separation distance of 20 centimeters or greater between the antenna and the body of the user or nearby persons and can therefore be considered a mobile transmitter per 47 CFR 2.1091(b). The antenna is a proprietary loaded inverted-L antenna that is etched on the circuit board of the device. The antenna has a maximum gain of 0.48 dBi in the cellular band and 1.8 dBi in the PCS band. The maximum peak conducted output power is 1.778 W in the cellular band, and 0.871 W in the PCS band.

For the cellular band, the maximum peak radiated power was measured at 0.968 W (ERP). Since the transmit frequency is less than 1.5 GHz, and the output power is less than 1.5 W ERP, the EUT is categorically excluded from routine environmental evaluation per 47 CFR 2.1091(c).

For the PCS band, the maximum peak radiated power was measured at 0.646 W (EIRP). Since the transmit frequency is greater than 1.5 GHz, and the output power is less than 3 W ERP, the EUT is categorically excluded from routine environmental evaluation per 47 CFR 2.1091(c). The MPE estimates are as follows:

Table 1 in 47 CFR 1.1310 defines the maximum permissible exposure (MPE) for the general population below 1.5 GHz as  $(f_{\text{MHz}}/1500) \text{ mW/cm}^2$ . Above 1GHz the MPE level is  $1 \text{ mW/cm}^2$ . The exposure level at a 20 cm distance from the EUT's transmitting antenna is calculated using the general equation:

$$S = (PG)/4\pi R^2$$

Where: S = power density ( $\text{mW/cm}^2$ )

P = power input to the antenna (mW)

G = numeric power gain relative to an isotropic radiator

R = distance to the center of the radiation of the antenna (20 cm = limit for MPE estimates)

PG = EIRP

Solving for S, the maximum power density 20 cm from the transmitting antenna is summarized in the following table:

### FCC ID: ESCCRM649812

Antenna Type	Antenna Manufacturer	Antenna Part No.	Transmit Frequency (MHz)	Max Peak Radiated Output Power (W)	Power Density @ 20 cm ( $\text{mW/cm}^2$ )	General Population Exposure Limit from 1.1310 ( $\text{mW/cm}^2$ )
Inverted-L	Boston Scientific	PCB Etch	848.8	0.97	0.32	0.57
			1909.8	0.65	0.13	1.00

The power density does not exceed the 1.1310 limits at 20 cm; therefore, the exposure condition is compliant with FCC rules.