GenX Mobile, Incorporated

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Federal Communications Commission
Equipment Authorization Branch
7435 Oakland Mills Road
Columbia, MD 21046

RF Exposure Calculation Model# GNX-10

Applicant: GenX Mobile, Incorporated
FCC ID: SQVGNX-10

The external antennas used for this mobile transmitter must provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

A safety statement regarding the minimum separation distances from the GNX-10 Mobile Tracking Unit GSM/GPRS 850/1900 unit is included in the user's manual providing end-users with transmitter operating conditions for satisfying RF exposure compliance.

Calculations can be mode to predict RF field strength and power density levels around typical RF sources using the general equations (3) and (4) on page 19 of the FCC documents titled *"OET Bulletin 65, Edition 97-01 – Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields"*

These equations are generally accurate in the far field of an antenna but will over predict power density in the near field, where they could be used for a "worst case" prediction.

$$S = PG/4\pi R^2 \qquad (3)$$

Where; S = power density (mW/cm^2)
           P = power input to the antenna (mW)
           G = power gain of the antenna in the direction of interest relative to the isotropic radiator
           R = distance to the center of radiation of the antenna (cm)

Or,
$$S = EIRP/4\pi R^2 \quad (4)$$

Where;
           EIRP = Equivalent Isotropically Radiated Power

Calculations

Cellular Band 824-894 MHz, Limit = f/1500 = 0.549mW/cm^2
EIRP = 1.78 W

$S = 1780\text{mW} / (4\pi * [20\text{cm}]^2) = 0.354 \text{ mW/cm}^2 < 0.549\text{mW/cm}^2$

PCS Band 1850 – 1990 MHz, Limit = 1mW/cm^2
EIRP = 1.78 W

$S = 1780\text{mW} / (4\pi * [20\text{cm}]^2) = 0.354 \text{ mW/cm}^2 < 1\text{mW/cm}^2$