RADIATION HAZARD ANALYSIS

GUSA Licensee LLC's (together with its parent Globalstar, Inc., "Globalstar's") new "Handheld 3" Mobile Earth Station (MES) terminals are designed to comply with Specific Absorption Rates (SAR) limits for distances within 20 cm of the transmitting elements of the MES, and with general public uncontrolled environment Maximum Permissible Exposure (MPE) limits at distances greater than 20 cm from the transmitting elements of the MES, as required by Sections 1.1307 through 1.1310, 2.1091, and 2.1093 of the FCC's rules. Handheld 3 MES terminals will also comply with the MPE requirements from ANSI/IEEE C95.1-1992 and the NCRP Report No. 86, on which the FCC RF safety limits are based. To ensure compliance, transmit power levels and/or duty cycles will be limited using SAR time averaging methods pursuant to FCC guidance.

For distances greater than 20 cm, the Office of Engineering and Technology (OET) Bulletin 65 specifies a maximum permissible exposure (MPE) limit for the general population, i.e. uncontrolled exposure, at an average power level of 1 mW/cm^2 over a 30-minute period. OET Bulletin 65 (Edition 97-01), Supplement C (Edition 01-01), permits RF radiation hazard compliance evaluation through field strength or power density calculations. The following analysis, prepared by Globalstar, follows the OET Bulletin 65 guidelines and shows that harmful levels of radiation above the maximum allowable exposure level of 1 mW/cm^2 will not exist in areas normally occupied by anyone, even when utilizing "worst case" over-predictions for the near field and for antenna positioning with respect to any user or subjects in the vicinity of a user.

To estimate the radiation hazard that could potentially exist in the vicinity of a 1.6 GHz transmit MES, the following equation is generally accurate in the far-field of an antenna but will over-predict the radiation hazard in the near-field, representing a "worst case" or conservative prediction. The maximum power density is defined by the equation $S = P*G/(4*\pi*R^2)$, where P is the maximum power at the antenna input flange which is 0.4 watts, G is the peak gain of the antenna in the direction of interest relative to an isotropic radiator which is 4.0 dBi, and R is the distance to the center of radiation of the antenna which is at least 20 centimeters away from any subjects.

$$S = 400mW*10^{0.4}/(4*\pi*(20cm)^2) = \mathbf{0.20\ mW/cm^2},$$

which meets the maximum allowable exposure level of 1 mW/cm^2.