

RADIATION HAZARD STATEMENT

This modification application seeks authority for an additional handheld Mobile Earth Terminal (MET) that is identified in Schedule B with a site identifier of "METS2."

METS2 will comply with FCC radio frequency exposure limits, as specified in Sections 1.1307(b), 2.1091 and 2.1093 of the FCC rules. It will satisfy the Specific Absorption Rate (SAR) limits at distances less than 20 cm from the transmitting antenna,¹ as well as the general population (uncontrolled) maximum permissible exposure (MPE) limits at distances greater than 20 cm.

The following information is provided to demonstrate METS2 compliance with the Maximum Permissible Exposure (MPE) limits, using the guidelines provided in OET Bulletin 65, Edition 97-01. These rules provide for an MPE limit of 1.0 mW/cm², averaged over 30 minutes, for humans in a General Population Uncontrolled environment.

The Maximum Permissible Exposure (MPE) for METS2 at a distance of greater than 20 cm is calculated as follows:

$$S = \text{EIRP} / 4\pi R^2$$

Where,

S = Power Density (Watts/m²)

EIRP = Radiated Power (Watts)

R = Distance from body (m)

$$\text{EIRP} = \text{maximum EIRP} * \text{duty cycle}$$

¹ METS2 manufacturers will demonstrate SAR compliance in their equipment authorization submissions.

Iridium employs a TDMA/TDD burst transmission access scheme in which users are assigned 8.28 ms time slots within a 90 ms time frame. For the Iridium service used in METS2, each user will be assigned a maximum of one such time slot per frame, which provides a maximum duty cycle of $8.28/90 = 9.2\%$.

$$\text{Max EIRP within a burst} = 9.0 \text{ dBW} = 7.94 \text{ Watts}$$

$$\text{EIRP} = 7.94 * 0.092 = 0.73 \text{ Watts, or } 730 \text{ mW}$$

$$S = 730\text{mW}/(4\pi * 20\text{cm} * 20\text{cm}) = 0.14 \text{ mW/cm}^2$$

Therefore, at a separation distance of 20 cm, the METS2 maximum exposure level is well below the 1.0 mW/cm^2 MPE limit for general population.