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December 23, 2020

Via Electronic Filing

Tom Sullivan
Chief, International Bureau
Federal Communications Commission
45 L Street NE
Washington, DC 20554

**Re: Request for Modification of Blanket License for Mobile Earth Stations;
GUSA Licensee LLC – Call Sign E970381**

Dear Mr. Sullivan:

Pursuant to Section 25.117 of the Commission's rules,¹ GUSA Licensee LLC (together with its parent Globalstar, Inc., "Globalstar") through its attorneys hereby requests modification of its blanket license for mobile earth stations ("MESs") operating in the Big LEO mobile satellite service ("MSS") band.

As described in the attached Technical Operations Exhibit for the instant application, Globalstar proposes the addition of a new MES type to its current MES blanket license (call sign E970381), which authorizes MES operations in the United States, all U.S. territories and possessions, and all U.S. territorial waters. Specifically, Globalstar seeks to add to its blanket license an MES category for "Handheld 3" MSS transceivers that will support short-messaging data services.² The proposed Handheld 3 units will transmit and receive a new waveform over Globalstar's MSS network. This new waveform is a burst mode packet data carrier with a channel bandwidth of 200 kilohertz in the Big LEO MES uplink spectrum at 1610-1618.725 MHz and 4.5 megahertz in the Big LEO MES receive spectrum at 2483.5-2500 MHz.³

¹ 47 C.F.R. § 25.117.

² Globalstar's blanket license currently includes the "Handheld" and "Handheld 2" MES transceiver types.

³ The proposed transmit emission designators for the new waveform at 1610-1618.725 MHz are 200KG1D, 230KG1D, and 280KG1D, while the proposed receive emission designator for the new waveform at 2483.5-2500 MHz is 4M50G7D. *See* Schedule B, E50 of FCC Form 312. The addition of three transmit emission designators will permit flexible implementation of this new carrier.

Globalstar requests authority to operate up to 500,000 units under the proposed MES category for Handheld 3 transceivers. In addition, within the Handheld 3 category, Globalstar proposes to specify the “Manufacturer” and “Model” designations as “Various” rather than identify a static group of manufacturers and terminal models. This approach provides appropriate flexibility in a dynamic equipment marketplace. Individual manufacturers and models in the Handheld 3 device category will be identified in the equipment certification filings for these units.⁴ The technical parameters provided in Globalstar’s Technical Operations Exhibit and Schedule B of FCC Form 312 encompass all of the MES models that will be operated under the Handheld 3 MES category.

As discussed in the Technical Operations Exhibit, devices in the proposed Handheld 3 category will comply with all applicable technical requirements contained in Globalstar’s blanket license and the Commission rules.⁵ The proposed MES operations will avoid harmful interference to other licensed systems and services.

Grant of the proposed blanket license modification will facilitate the ongoing growth of Globalstar’s global MSS business, which provides extraordinary benefits to consumers and public safety customers in the United States and elsewhere. Currently, Globalstar uses its constellation of satellites and ground stations on six continents to provide affordable, high-quality MSS to over 700,000 customers in over 120 countries around the world. Addition of the proposed Handheld 3 MES category to Globalstar’s blanket license will promote the roll-out of new, innovative services over its network.

⁴ In response to prior Globalstar blanket license modification requests, the Commission previously changed the “Manufacturer” and “Model” designations to “Various” for the following MES categories under Globalstar’s license: A Fixed4, Handheld 2, PTracker, Telemetry, and V Mobile. *See Satellite Communications Services Information re: Actions Taken*, Public Notice, Report No. SES-01865, at 20-22 (IB rel. July 6, 2016); Application of GUSA Licensee LLC, SES-MOD-20160412-00344, call sign E970381 (filed Apr. 12, 2016; grant effective July 5, 2016); *Satellite Communications Services Information re: Actions Taken*, Public Notice, Report No. SES-01370, at 9 (IB rel. Aug. 3, 2011); Application of GUSA Licensee LLC, SES-MOD20110303-00241, call sign E970381 (filed March 3, 2011; grant effective Aug. 2, 2011).

⁵ The equipment certification process will further ensure that all device models operated under the Handheld 3 category comply with all applicable technical requirements.

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Expeditious grant of the proposed blanket license modification will produce substantial benefits and further the public interest, convenience, and necessity. Please do not hesitate to contact me with any questions.

Respectfully submitted,

/s/ Stephen J. Berman
Stephen J. Berman

cc: Paul Blais

MOBILE EARTH STATION TECHNICAL AND OPERATIONAL INFORMATION

GUSA Licensee LLC (together with its parent Globalstar, Inc., “Globalstar”) includes this Technical Operations Exhibit as an attachment to its FCC Earth Station License Modification Application, which seeks to add up to 500,000 units of a new handheld mobile terminal type (“Handheld 3”) to Globalstar’s current blanket Mobile Earth Station (“MES”) license. Globalstar below provides the relevant technical and operational information for the proposed Handheld 3 devices.

1. Antenna Characteristics

The Handheld 3 mobile terminal is equipped with two linearly polarized mobile satellite service (“MSS”) transmit/receive antennas integrated in a single housing with the radio unit. These antennas will be fabricated by third party manufacturers.

Key characteristics of the Handheld 3 device antenna are summarized in the table below:

Parameter	Transmit Antenna	Receive Antenna
Frequency	1610 to 1618.725 MHz	2483.5 to 2500 MHz
Polarization	Linear	Linear
Peak Gain	<4.0 dBi	<4.0 dBi
Elevation Plane Coverage	0 to 90 degrees	0 to 90 degrees
Azimuth Plane Coverage	360 degrees	360 degrees
Gain below 10 degrees elevation	<4.0 dBi	<4.0 dBi
Size	<3”	<3”

2. Antenna Height

The handheld form factor of the Handheld 3 mobile terminal makes FAA notification unnecessary. See Section 17.14(b) of the FCC’s rules.

The Handheld 3 device is intended to be used as a handheld portable radio at roughly chest level approximately four to five feet above ground, but will still operate if held higher or set down on a surface.

3. Operational Parameters

- a) Frequencies of operation:
 - Transmit band of 1610-1618.725 MHz
 - Receive band of 2483.5-2500 MHz

- b) Antenna Polarization: Linear

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- c) Emission Designators: 200KG1D/230KG1D/280KG1D (Transmit); 4M50G7D (Receive)
- d) Maximum EIRP: The maximum EIRP of 0 dBW is dictated by the maximum available transmitter power of the radio and its peak antenna gain.
- e) Maximum EIRP Density: The maximum EIRP density is the EIRP divided by the channel bandwidth of 200 kHz and further corrected for the required 4 kHz bandwidth.

Max Tx Power Available (dBW)	Peak Antenna Gain (dBic or dBi)	Max EIRP (dBW)	(e) Max EIRP Density/Carrier (dBW/4 kHz) ²
-4.0	4.0	0	-17.0

² Meets the -15 dBW/4 kHz MES limit specified in the FCC General Rules and Regulations governing Frequency Allocations and Radio Treaty Matters (47 C.F.R. Part 2), Section 2.106, footnote S5.364.

- f) Description of Modulation: The Handheld 3 mobile terminal transmitter utilizes one physical resource block wide SC-FDMA BPSK modulation with CFR. Baseband filtering is implemented to meet the out-of-band emissions requirements as shown in Figure 1. The Handheld 3 MES terminal will use power control. The Handheld 3 mobile terminal receiver utilizes $\Pi/2$ BPSK modulation with direct sequence spread spectrum mode and with baseband filtering as shown in Figure 2.

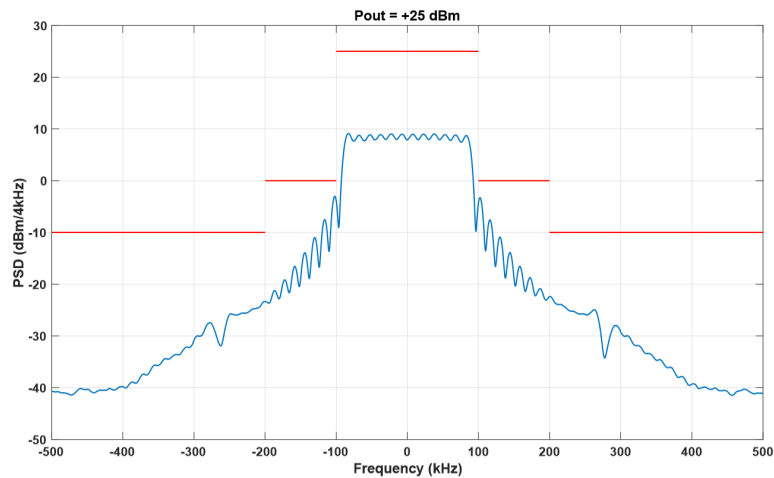


Figure 1 - Return baseband filtering response

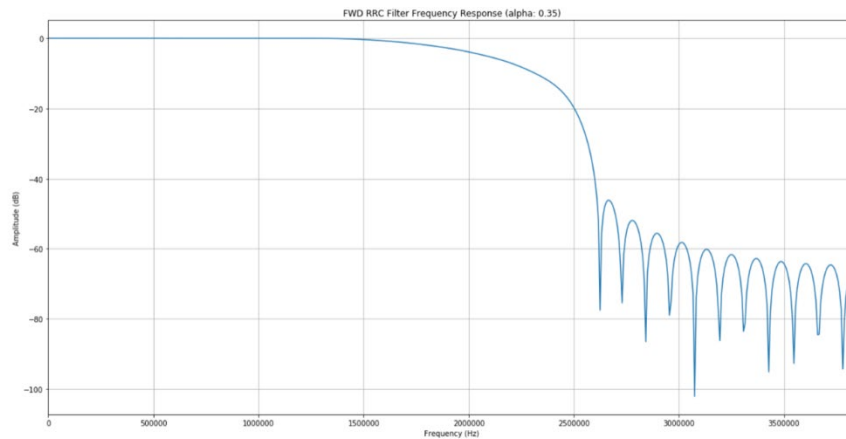


Figure 2 - Forward Baseband Filter response

4. Protection of Other Radio Services

- **Radioastronomy Protection**

Globalstar mobile terminals operate in the 1610-1618.725 MHz (earth-to-space) band. In this band, MSS is co-primary with Radiodetermination Satellite Services.

For operation of the Handheld 3 mobile terminals, Globalstar intends to abide by the radioastronomy coordination guidelines set forth in Section 25.213(a) of the FCC's rules. A coordination procedure is outlined in the "Technical Operational Coordination Agreement for the Joint Usage of the Band 1610.6-1613.8 MHz between the National Science Foundation and Globalstar for Airborne Mobile Earth Stations Operating in its Mobile Satellite Service (MSS) Network," dated November 29, 2001. Under the agreed operational procedure, radioastronomy sites in the United States will inform the operator of the Globalstar gateway serving its area as to the planned schedule for radioastronomy measurements. Handheld 3 MESs will not use particular channels between 1610.6-1613.8 MHz whenever they are located within the radioastronomy exclusion zones.

As with previously authorized Globalstar mobile terminals, operation of Handheld 3 devices will be prohibited in the joint band in designated radioastronomy exclusion zones.

- **GNSS Protection**

As with previously authorized Globalstar MES equipment, Handheld 3 devices will protect radionavigation satellite services in the band 1559-1610 MHz, including GPS and GLONASS receivers, in accordance with Sections 25.202 (f) and 25.216 of the FCC's rules. Since each device contains an integrated GPS receiver, internal specifications require particularly stringent transmit filtering to protect its own GPS receiver performance. Specifically, Handheld 3 terminals will not

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exceed an out-of-band emissions EIRP density level (averaged over any 2 ms active transmission period) of at least:

-70 dBW/MHz between 1559-1605 MHz; and,
-70 to -10 dBW/MHz, linearly interpolated between 1605-1610 MHz.

The EIRP of any discrete spurious emission (i.e. bandwidth less than 700 Hz) will not exceed:

-80 dBW between 1559-1605 MHz; and,
-80 to -20 dBW/MHz, linearly interpolated between 1605-1610 MHz.

The peak EIRP density of carrier-off state emissions (averaged over any 2 ms active transmission period) will not exceed:

-80 dBW/MHz between 1559-1610 MHz.