

### Parameters of Test Mobile Units and Test Base Station

Globalstar, L.P., is proposing to test the parameters of a new type of Mobile Earth Station (“MES”) terminal for Globalstar™ ATC (Ancillary Terrestrial Component, or “ATC”) service. In addition to the MES terminals, Globalstar proposes to test a terrestrial base station to provide terrestrial coverage for Globalstar ATC service.

The unit to be tested performs like a terrestrial GSM-900 cellular terminal and is hereby referred to as a Globalstar GSM Terrestrial Unit (“GGTU”). ATC will be an additional component of Globalstar operating in the same bands as existing Globalstar user terminals. The base station to be tested performs like a GSM-900 terrestrial base station and is hereby referred as Globalstar GSM Base Station (“GGBS”)

For the GGTU (mobile units):

- a) Frequency of operation: Transmit band of 1610 to 1621.35 MHz. Receive band of 2483.5 to 2500 MHz. Globalstar™ terminals are designed with the capability to operate in the entire 1610—1626.5 MHz band; however, in the U.S. the MES will operate only in the 1610—1621.35 MHz range, consistent with the FCC license held by L/Q Licensee. The GGTU transmits in one of fifty-five 200 kHz wide TDMA channels within 1610—1621.35 MHz frequency range. Similarly, the GGTU receives in one of seventy-nine 200 kHz wide TDMA channels within 2483.5 to 2500 MHz frequency range.
- b) Antenna Polarization: Left hand circular
- c) Emission Designator: 200KG7W
- d) Maximum EIRP: The maximum EIRP is dictated by the maximum available transmitter power for a particular radio and its peak antenna gain. As a conservative estimate, no factor is taken for time averaging of the variation in output power due to data rate changes and power control commands.
- e) Maximum EIRP density: The EIRP density is the EIRP divided by the channel bandwidth of 200 kHz and further corrected for the required 4 kHz bandwidth.

### **Terrestrial Mode**

| <b><i>Radio Type</i></b> | <b><i>Max Tx Power Available (dBW)</i></b> | <b><i>Peak Antenna Gain (dBic or dBi)</i></b> | <b><i>Max EIRP (dBW)</i></b> | <b><i>(e) Max EIRP Density (dBW/4 kHz)</i></b> |
|--------------------------|--------------------------------------------|-----------------------------------------------|------------------------------|------------------------------------------------|
| GGTU                     | 3.0                                        | 3.5                                           | 6.5                          | -10.49                                         |

- f) Description of Modulation: The GGTU transmitter uses Gaussian-Filtered Minimum Shift Keying (GMSK) as its modulation scheme with a time-bandwidth product of 0.3 as a compromise between spectral efficiency and intersymbol

interference. With this value of  $WT_b$ , 99% of the power spectrum is within a bandwidth of 250 kHz, and since GSM spectrum is divided into 200 kHz channels for multiple access, there is very little interference between the channels. The speed at which GSM can transmit at, with  $WT_b=0.3$ , is 270.833 kb/s. Baseband filtering is implemented as shown in Figure 1 below.

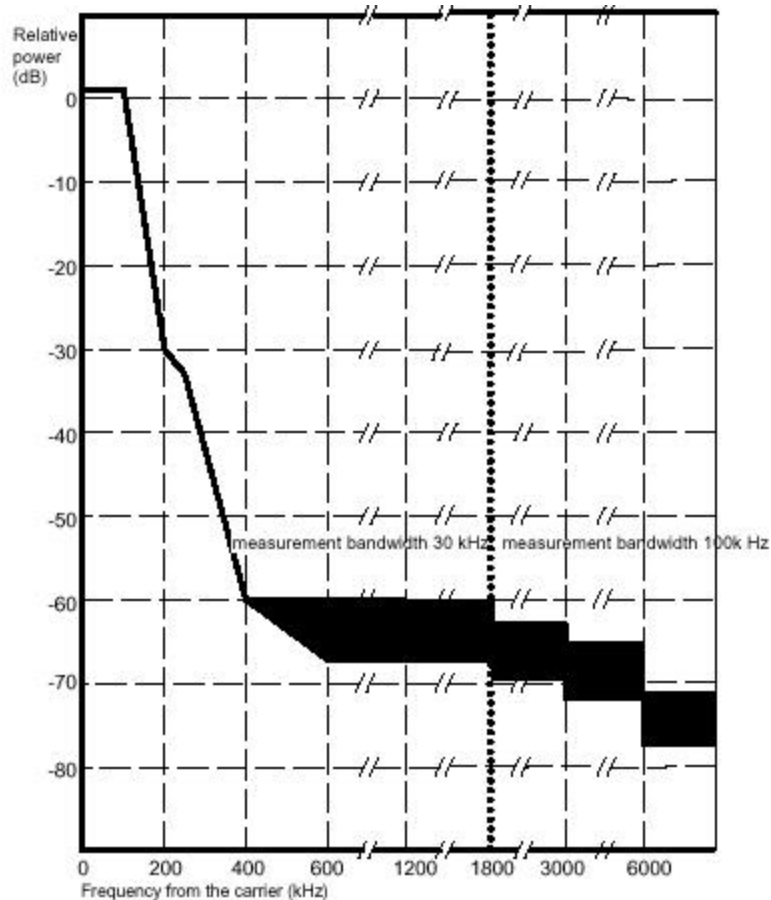


Figure 1: Baseband Filter Frequency Response

For the GGBS (base station):

- b) Frequency of operation: Transmit band of 2483.5 to 2500 MHz. Receive band of 1610 to 1621.35 MHz. GGBS will be designed with the capability to operate in the entire 1610—1626.5 MHz band; however, in the U.S. the GGBS will operate only in the 1610—1621.35 MHz range, consistent with the FCC license held by L/Q Licensee. The GGBS transmits in one of seventy-nine 200 kHz wide TDMA channels within 2483.5 to 2500 MHz frequency range. Similarly, the GGBS receives in one of fifty-five 200 kHz wide TDMA channels within 1610—1621.35 MHz frequency range.
- b) Antenna Polarization: Vertical

- c) Emission Designator: 200KG7W
- d) Height of the antenna: 2 meters
- e) Description of the antenna: Omnidirectional
- f) Maximum EIRP: The maximum EIRP is dictated by the maximum available transmitter power for a particular radio and its peak antenna gain. As a conservative estimate, no factor is taken for time averaging of the variation in output power due to data rate changes and power control commands.
- g) Maximum EIRP density: The EIRP density is the EIRP divided by the channel bandwidth of 200 kHz and further corrected for the required 4 kHz bandwidth.

| <b><i>Radio Type</i></b> | <b><i>Max Tx Power Available (dBW)</i></b> | <b><i>Peak Antenna Gain (dBic or dBi)</i></b> | <b><i>Max EIRP (dBW)</i></b> | <b><i>(e) Max EIRP Density (dBW/4 kHz)</i></b> |
|--------------------------|--------------------------------------------|-----------------------------------------------|------------------------------|------------------------------------------------|
| GGBS                     | 10                                         | 10.0                                          | 20                           | 3.01                                           |

- g) Description of Modulation: The GGBS transmitter uses Gaussian-Filtered Minimum Shift Keying (GMSK) as its modulation scheme with a time-bandwidth product of 0.3 as a compromise between spectral efficiency and inter-symbol interference. With this value of WT<sub>b</sub>, 99% of the power spectrum is within a bandwidth of 250 kHz, and since GSM spectrum is divided into 200 kHz channels for multiple access, there is very little interference between the channels. The speed at which GSM can transmit at, with WT<sub>b</sub>=0.3, is 270.833 kb/s. Baseband filtering is implemented as shown in Figure 2 below.

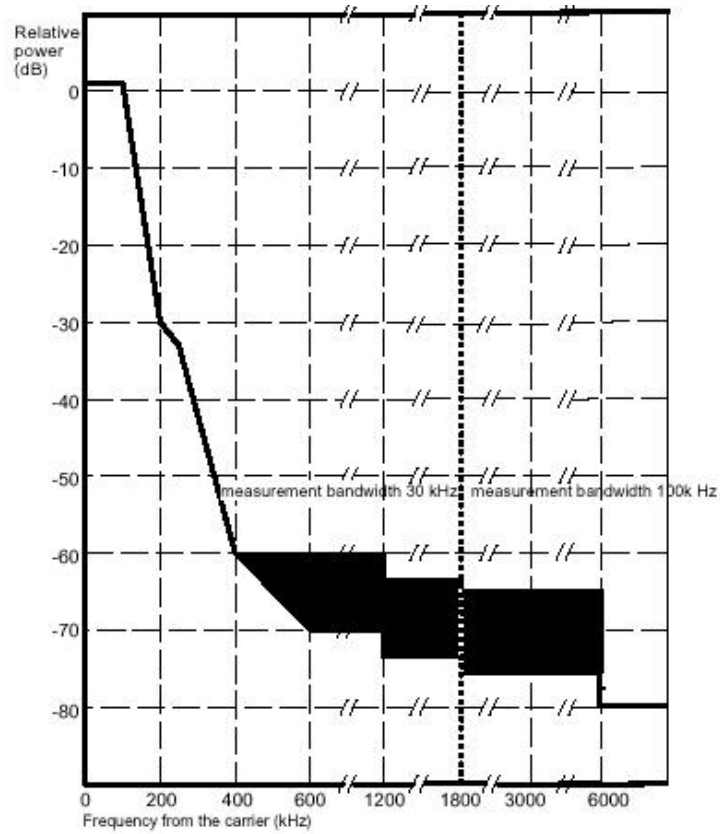


Figure 2: Baseband Filters Frequency Response