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Satellite Division
International Bureau

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January 27, 2006

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Federal Communications Commission
Office of Secretary

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: IB File No. SES-LIC-20050825-01183 – Globalstar USA, LLC Clifton Earth Station/IOT Antenna Application

Dear Ms. Dortch:

In response to an inquiry from staff in the Commission's International Bureau, Globalstar USA, LLC is submitting the attached information for association with the above-referenced application. Should there be any questions concerning this submission, please contact the undersigned.

Sincerely yours,

Josh L. Roland
Counsel to Globalstar USA, LLC

cc: Scott Kotler
William F. Adler
David Weinreich

Justification of EIRP for Globalstar Clifton, TX In-Orbit-Test Antenna

Globalstar wishes to perform In-Orbit Test (IOT) on existing and future spacecraft using an antenna operating in the 1.6/2.4 GHz bands at its Clifton Texas Earth Station Facility.

One of the primary tests to be performed is the determination and verification of spacecraft antenna patterns. Downlink, or spacecraft 2.4 GHz transmit, antenna verification requires the use of a high gain antenna which is accommodated by the receive function of the subject antenna.

Uplink, or spacecraft 1.6 GHz receive, antenna verification requires the use of an unmodulated carrier (CW) at an EIRP greater than that transmitted from a Globalstar handset transceiver. This increased EIRP is required in order to create sufficient dynamic range to provide the ability to measure peak-to-null antenna pattern variations of 30 dB.

The attached link budget indicates the Carrier-to-Noise ratio (C/N) expected when using an uplink EIRP of 24 dBW. Using this EIRP provides the nominal 30 dB C/N. The performance of these In-Orbit-Tests will be crucial to the successful deployment of the eight spare Globalstar spacecraft that is planned for the near future.

In the downlink analysis, it is expected that there will be no Adjacent Channel Interference and, thus, the Adjacent Channel Interference Density is an extremely low level.

It is anticipated that any interference to other operators in the uplink band can be avoided through coordination.

File No. SES-LIC-20050825-01183
January 26, 2006

IOT Link Analysis: 1.6 GHz Up/7 GHz Down		
Uplink Analysis		
Frequency (GHz)	1.61	
EIRP (dBW)	24	
Satellite Altitude (km)	1414	
IOT Antenna Elevation Angle (degrees)	5	
Slant Range (km)	3959.44	
Free Space Loss (dB)	-168.53	
Polarization and Tracking Loss (dB)	-1	
S/C Rx Signal Strength (dBW)	-145.53	
Satellite Antenna Gain (dBi)	12.6	
Line Loss (dB)	-1.1	
Signal at Transponder (dBW)	-134.03	
System Noise Temperature (K)	500	
Thermal Noise Density (dBW/Hz)	-201.61	
Adjacent Channel Interference Density (dBW/Hz)	-214.2	
IOT Measurement Bandwidth (dB-Hz)	34.77	
Uplink C/N (dB)	32.58	
Nominal Transponder Gain (dB)	125.9	
Downlink Analysis		
Frequency (GHz)	6.98	
Tx Power (dBW)	-11.33	
Transmit Line Loss (dB)	-2.1	
Satellite Antenna Gain (dBi)	6	
EIRP (dBW)	-7.43	
Gateway Antenna Elevation Angle (degrees)	5	
Range (km)	3959.44	
Free Space Loss (dB)	-181.27	
Polarization and Tracking Loss (dB)	-0.1	
Pointing Loss (dB)	-1	
Rx Signal Level (dBW)	-189.80	
Gateway Antenna Gain (incl. Line Loss) (dBi)	49.5	
Rx Signal at Antenna Output (dBW)	-140.30	
System Noise Temperature (K)	127.7	
Thermal Noise Density (dBW/Hz)	-207.5	
Adjacent Channel Interference Density (dBW/Hz)	-999	
Downlink C/N (dB)	32.46	
Overall C/N (dB)	29.51	
Required Measurement Dynamic Range (dB)	30	
Worst Case Measurement C/N (dB)	-0.49	
Constants		
Earth Radius (km)	6398	
c (m/S)	3.00E+08	
degrees-to-radians	57.29577951	