SES Americom, Inc.
Application for Experimental License to Operate Temporary Fixed Earth Station System

Narrative Statement

(1) Name, address, phone number (also e-mail address and facsimile number, if available) of the applicant.

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(2) Description of why an experimental license is needed

SES is developing a vehicle-based platform that will support antennas capable of communicating with SES's Ka-band spectrum satellites operated in non-geostationary orbit by O3b Limited. The vehicle will be at a complete stop (vs. communications on the move) when communicating with the satellite(s). SES is seeking experimental authority to demonstrate and assess the use of these antennas to support various applications including disaster response, Intelligence, Surveillance and Reconnaissance technologies and other applications designed to support US Government and non-governmental organizations.

(3) Description of the operation to be conducted and its purpose

SES seeks experimental authority to test the antennas identified below and to evaluate their capabilities to support US Government requirements from fixed locations throughout the continental United States. The demonstrations will enable SES and its customers to evaluate the performance characteristics of the earth stations and associated applications.

(4) Time and dates of proposed operation

SES requests a blanket license for two years, from September 6, 2019 to September 6, 2021. SES will notify any U.S. authorized Ka-band satellite operators at least seven days prior to any transmit testing and will provide emergency contact information. SES will also conduct any necessary coordination with terrestrial operators and will immediately cease transmissions in the event that there is harmful interference.

(5) Class(es) of station (fixed, mobile, fixed and mobile) and call sign of station (if applicable).

The transmitting station will operate in fixed mode.

(6) Description of the location(s) and, if applicable, geographical coordinates of the proposed operation.

Although SES selected "United States & Territories" on the OET application form, SES only requests authority to operate in the contiguous United States, Hawaii, Puerto Rico, and the U.S. Virgin Islands,

mimicking the area of operations it requested in its FCC blanket license application.[1] If the earth stations will transmit in spectrum bands shared with terrestrial operators, SES will complete frequency coordination prior to testing.

For all operations, SES will comply with the radiofrequency radiation exposure limits in 47 C.F.R. 1.1310 and apply the measures recommended in the FCC's OET Bulletin 65 to ensure compliance.

(7) Transmit equipment to be used, including name of manufacturer, model and number of units.

Manufacturer	Frequency	Size	Model	Number of Units
AvL Technologies	Ka-band	1.0 meter	1080	10

(8) Frequencies desired.

Transmit:
27.5 – 28.35 GHz

Receive:
17.8-18.6 GHz

Action	Frequency	Station Class	Output Power/EIRP	Mean Peak	Frequency Tolerance (+/-)	Emission Designator	Modulating Signal
1.0m Ka-band	27.50-28.35 GHz	FX	40.0 W/ 60.2 dbW	P	0.00030%	216MG7D	180 Msps

(11) Overall height of antenna of antenna structure above the ground (if greater than 6 meters above the ground or an existing structure, see part 17 of this Chapter concerning notification to the FAA).

The overall height of the antennas above ground level and above existing structures will not exceed six (6) meters.

Certification of Compliance with RR Article 22 and FCC Rule § 25.289

SES certifies that the proposed operations will comply with 47 C.F.R. § 25.289 and will abide by the applicable equivalent power flux-density limits in Article 22, Section II of the ITU Radio Regulations to protect the GSO arc. For the Commission's reference we have attached the antenna patterns for this terminal as an annex.

[1] *See* O3b Limited, Call Sign E140101, File No. SES-LIC-20141001-00781 (Granted on June 8, 2015).

Exhibit 1: Directional Antenna Information

	1.0 meter
Is a directional antenna (other than radar) used?	Yes
Width of the beam in degrees at the half power point	Beamwidth (-3dB) 0.7° at Transmit
Orientation in horizontal plane (degrees)	Azimuth sweep range is from 230 deg. to 130 deg.
Orientation in vertical plane (degrees)	Elevation will vary from 15° up to 33° across the pass