REQUEST FOR EXPERIMENTAL SPECIAL TEMPORARY AUTHORITY

SES Government Solutions, Inc. ("SES-GS") respectfully requests special temporary authority ("STA") to conduct evaluation and demonstration of a 17 inch L-3 satellite ground terminal at a site in Bristow, VA for communications with the O3b Ka-band non-geostationary orbit satellite fleet. The Commission has previously authorized terminals in the U.S. to communicate with the O3b satellite network,[1] and has granted experimental STA for prior demonstrations involving the L-3 17-inch antenna.[2] For this set of tests, the terminal will use the O3b channel 5 frequencies (uplink to the O3b network in the 28.855-29.071 GHz frequency range and receive in the 19.055-19.271 GHz frequency range).[3] Grant of the requested authority is consistent with Commission precedent and will serve the public interest by allowing SES-GS to conduct demonstrations of the O3b system's capabilities to potential government customers.

Information regarding the directional antenna is as follows:

Width of the antenna beam in degrees at the half-power point	1.5 degrees
Orientation of the antenna in the horizontal plane	Azimuth sweep range is from 230 degrees to 130 degrees
Orientation of the antenna in the vertical plane	Elevation will vary from 15 degrees up to 33 degrees across the pass

The terminal will be located at the SES Washington Media Port teleport in Bristow, Virginia. A map of the site is provided below.

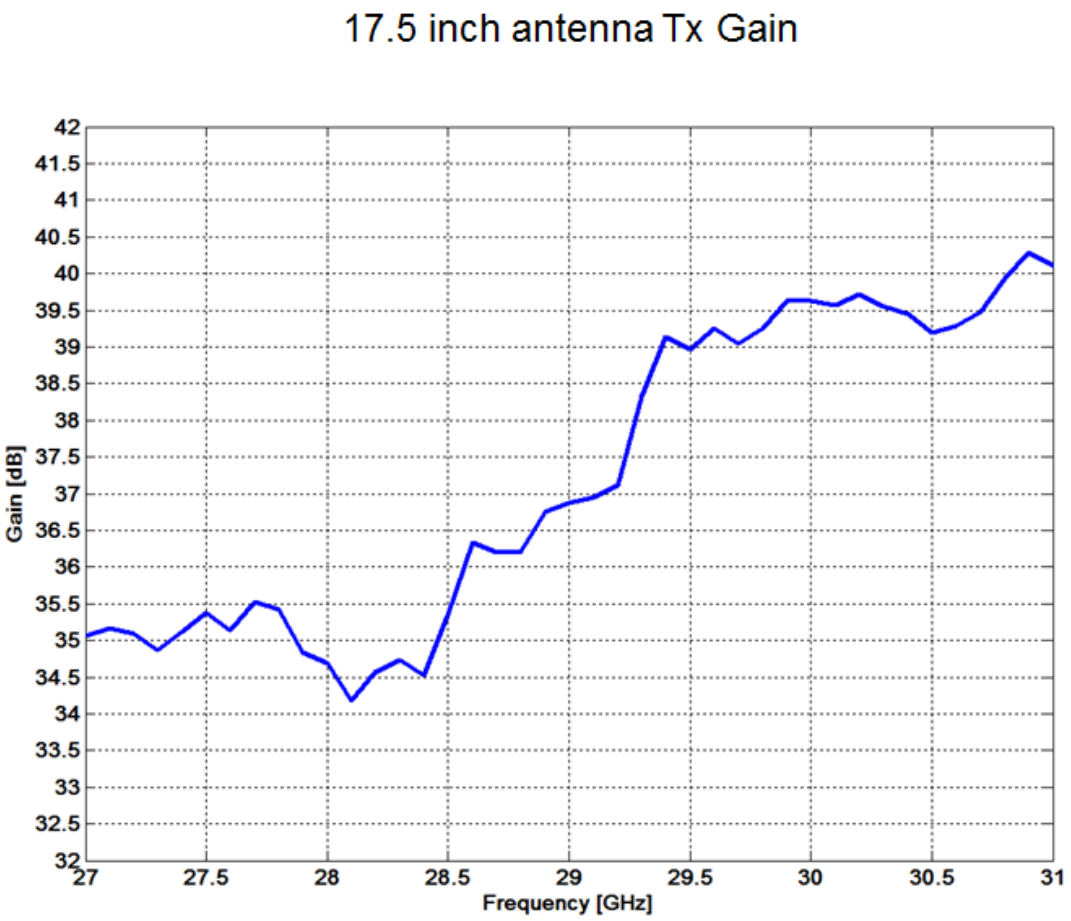
[1] *See* O3b Limited, File Nos. SAT-LOI-20141029-00118 & SAT-AMD-20150115-00004, Call Sign S2935, grant-stamped Jan. 22, 2015.

[2] *See* L-3 Communications, File No.1370-EX-ST-2016, Call Sign WK9XJK, granted Sept. 20, 2016.

[3] The instant STA request supersedes a previous SES-GS experimental STA filing that sought authority to use both the O3b Channel 3 frequencies and the O3b Channel 5 frequencies at this location. *See* SES Government Solutions, Inc., File No. 1488-EX-ST-2016. O3b has confirmed to SES-GS that the tests will use only the O3b Channel 5 frequencies, so SES-GS is no longer pursuing authority for the Channel 3 frequencies.


Wellington Rd
Rollins Ford Rd
Wellington Rd
Wellington Rd
Piney Branch Ln
Piney Branch Ln
Piney Branch Ln
Piney Branch Ln
David Allen
Gainsford Ct
SES-Washington
Media Port
Gainsford Ct
8061 Piney Branch Lane
Wellington Rd
Wellington Rd
Wellington Rd

Information regarding the antenna's transmit gain is as follows:



The following table provides additional information regarding the data provided in the STA request:

Channel	Frequency (GHz)	17 inch antenna gain (dB)	BUC Power (Watts)	ERP (dBW)	ERP (Watts)	EIRP (dBW)	EIRP (Watts)
Channel 5	28.855	36.5	11.2	44.8	30404.7	47.0	49881.6
	29.071	36.8	11.2	45.1	32579.2	47.3	53449.1

Notes:

- EIRP and ERP Calculator: http://www.csgnetwork.com/antennaecalc.html
- The BUC Power (Watts) numbers include losses between the output of the PA and the antenna input.