ALL.SPACE Networks, Ltd. ("ALL.SPACE")

Application for Experimental License

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 STA is needed.

ALL.SPACE, provides satellite solutions to U.S. government customers to meet mission critical needs. To that end, ALL.SPACE has developed a terminal that can communicate with geostationary orbit ("GSO) and non-geostationary orbit ("NGSO" satellite constellations. To test this multi-orbit capability for U.S. government customers, ALL.SPACE is seeking an experimental special temporary authority ("STA") to test and demonstrate the ALL.SPACE terminal in fixed and mobile mode. This terminal will communicate with: (1) the O3b non-geostationary orbit ("NGSO") satellite system (Call Sign S2935)[1] in the 28.4-29.1 GHz and 29.5-30.0 GHz bands, and (2) the GSO satellites on the Commission's Permitted Space Station List that have authority to operate in the 28.35 – 28.6 GHz & 29.25 – 30.0 GHz bands.[2] The Commission has allocated these bands for blanket and earth station in motion ("ESIM") licensing for GSO and NGSO FSS earth stations.[3]

Specifically, ALL.SPACE requests this blanket license to perform testing and demonstration of the ALL.SPACE terminal and its multi-orbit capabilities to U.S. government customers at a variety of locations in the U.S. The purpose is to

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[1] The FCC has granted market access to the current O3b 20 satellite constellation and authorized the expansion of the constellation to up to 42 satellites. *See* O3b Limited, Order and Declaratory Ruling, 33 FCC Rcd 5508 (2018) ("O3b Market Access Grant").
[2] This request is consistent with Section 25.115(k)(1) of the Commission's rules. "Applicants for FSS earth stations that qualify for routine processing in the…conventional Ka-band…may designate the Permitted Space Station List as a point of communication."
[3] *See e.g.,* 47 C.F.R. 25.124(a)(5-6). *See also,* 25.202(a)(10)(ii-iii)

demonstrate the antenna's suitability to support satellite communications to U.S. Government customers deployed around the world.

NGSO FSS is primary in the 28.6-29.1 GHz frequencies. All operations in this band will protect other NGSO FSS transmissions and operate in accordance with O3b's existing coordination agreements.

Consistent with 47 C.F.R. 25.146(a), ALL.SPACE also certifies that all NGSO operations in the 28.4-28.6 GHz and 29.5-30.0 GHz bands will be in compliance with Article 22, Section II, and Resolution 76 of the ITU Radio Regulations.

Similarly, GSO FSS is primary in the 28.35-28.6 GHz and 29.5-30.0 GHz bands. The ALL.SPACE terminal will comply with the Commission's rules on Off-Axis EIRP density envelopes articulated in 47 C.F.R. 25.218 and will be able operate in a manner consistent with applicable coordination agreements for GSO satellites with which it communicates.

All operations in mobile mode will be of short duration and will cover a limited area. All mobile ESIM operations will comply with Section 25.228 of the Commission's rules for both NGSO and GSO ESIM earth stations.

ALL.SPACE is seeking this experimental license for operations that may occur in CONUS, Hawaii, Alaska, Puerto Rico, and the U.S. Virgin Islands.

(3) Time and Date of Proposed Operation

ALL.SPACE requests a testing license for two years to begin by October 1, 2024. The timing is driven by a schedule of upcoming demonstrations that ALL.SPACE has planned with potential U.S. Government customers.

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

The transmitting antenna(s) will operate as a fixed and mobile satellite earth station. ALL.SPACE seeks authority for both land and maritime authorizations.

(5) Description of the location(s) and geographical coordinates of the proposed operation.

ALL.SPACE is seeking this experimental license for tests and demonstrations that may occur in CONUS, Hawaii, Alaska, Puerto Rico, and the U.S. Virgin Islands.

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

ALL.SPACE DVT, 10 units.

(7) Maximum effective radiated power (ERP) or equivalent isotropically radiated power (EIRP).

The maximum transmitted EIRP will be 48.5 dBW. The transmitted power is 35.5 Watts. The peak ERP is 43167 Watts.

For all operations, ALL.SPACE 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.

(8) Emission Designator

NGSO: 20M0G7D; XXM0G7D

GSO: 2M60G7D; XMXXG7D

(9) 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 antenna's overall height is less than 1 meter.

(10) Directional Antenna Characteristics

NGSO:

Width of the antenna beam in degrees at the half-power point	0.6 degrees
Orientation of the antenna in the horizontal plane	95° - 260°
Orientation of the antenna in the vertical plane	10° - 55°

GSO:

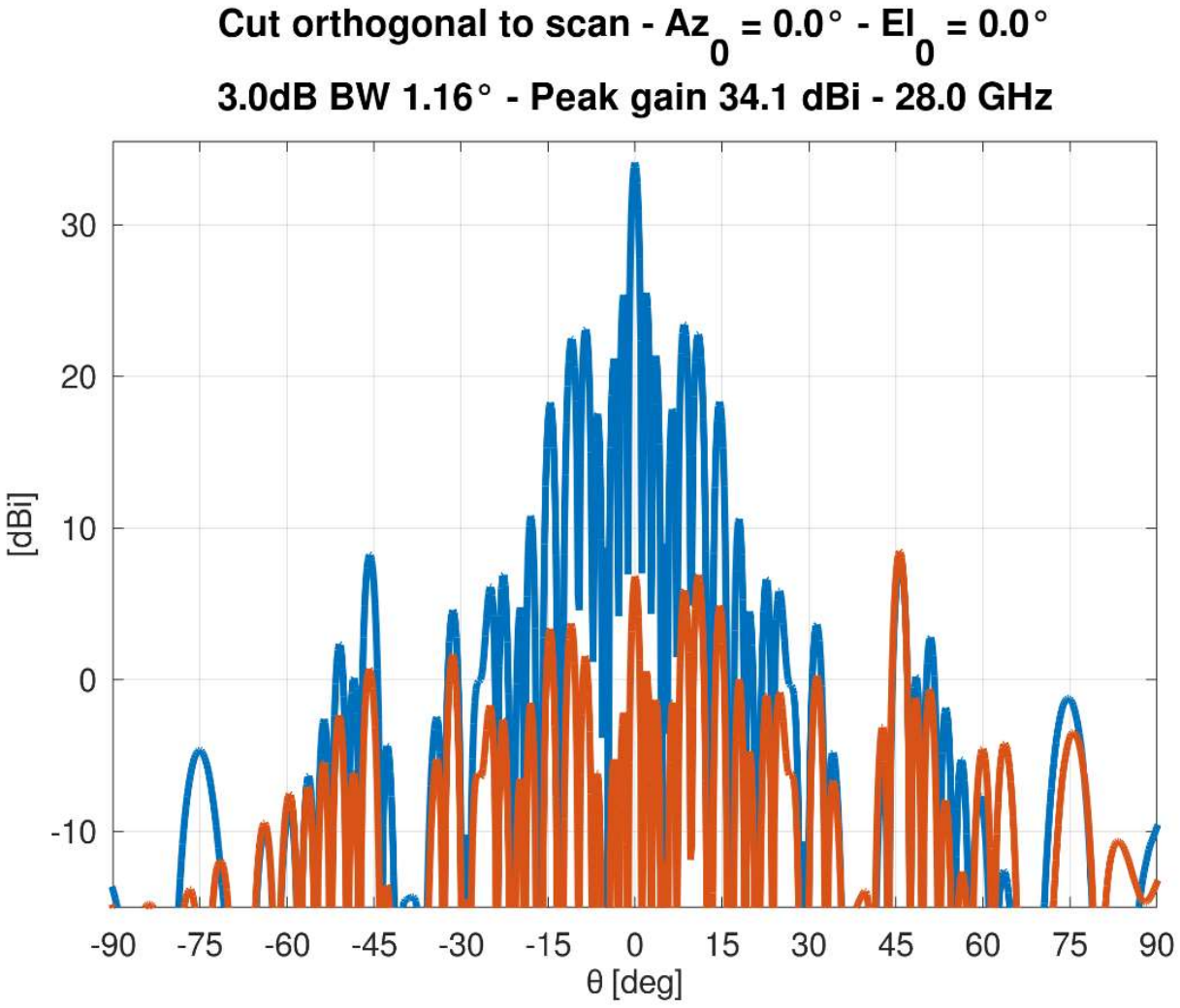
Given the operational range of CONUS, ALL.SPACE provides the ranges assuming the furthest possible North/South/East/West locations in CONUS.

Width of the antenna beam in degrees at the half-power point	0.6 degrees

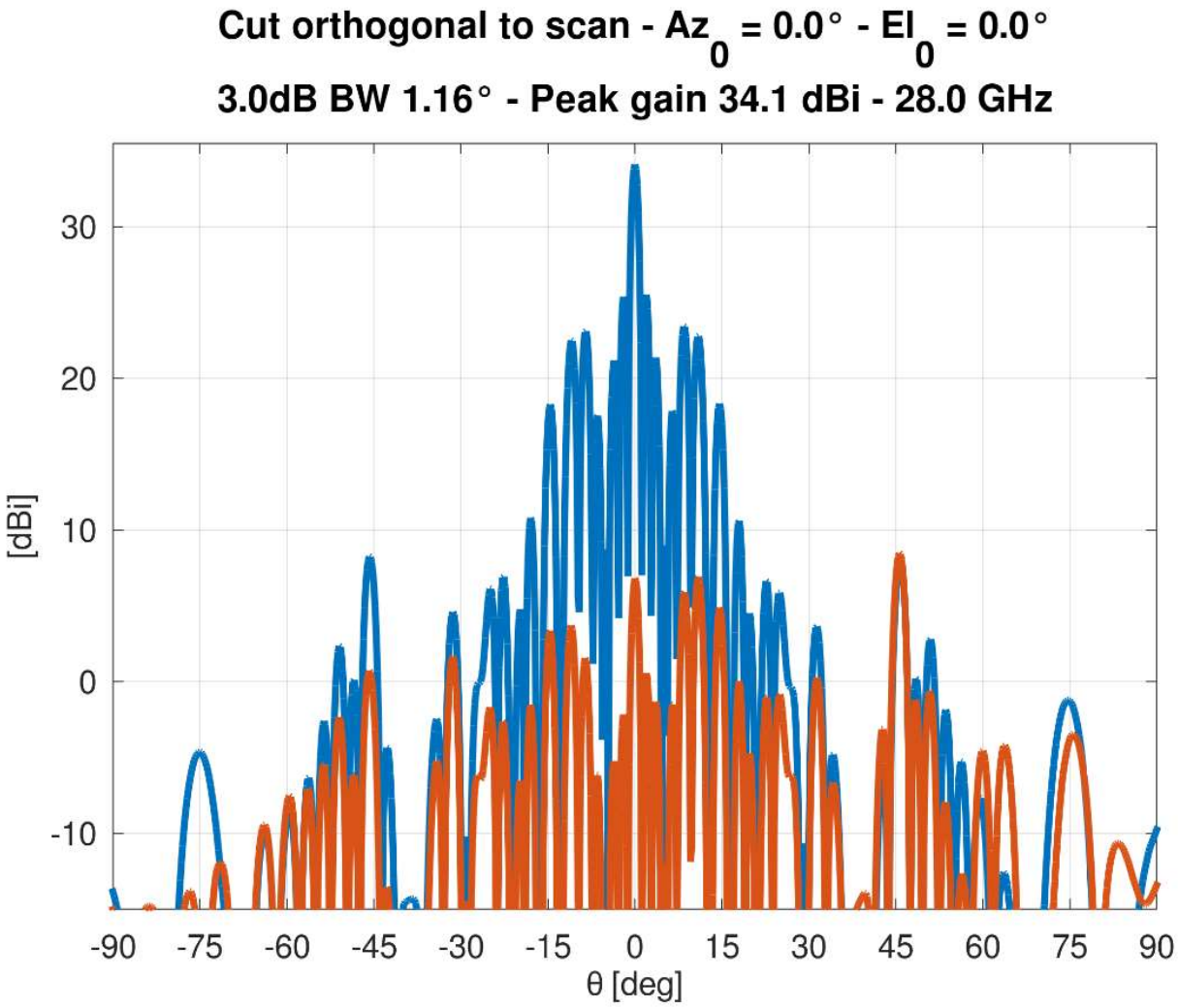
Orientation of the antenna in the horizontal plane	95° - 260°
Orientation of the antenna in the vertical plane	10° - 55°

Annex A – Antenna Patterns

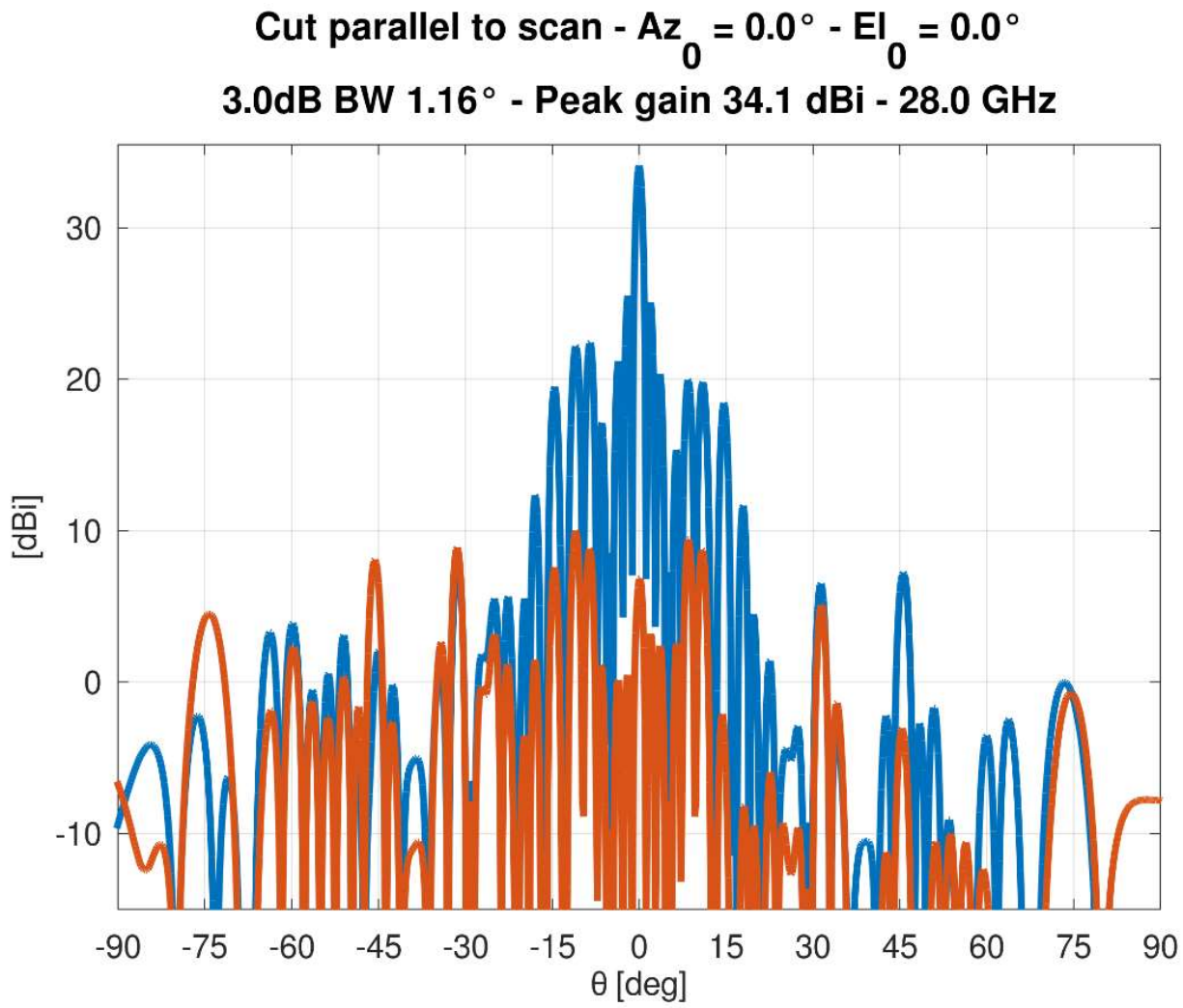
Antenna Transmit Band Azimuth Pattern RHCP

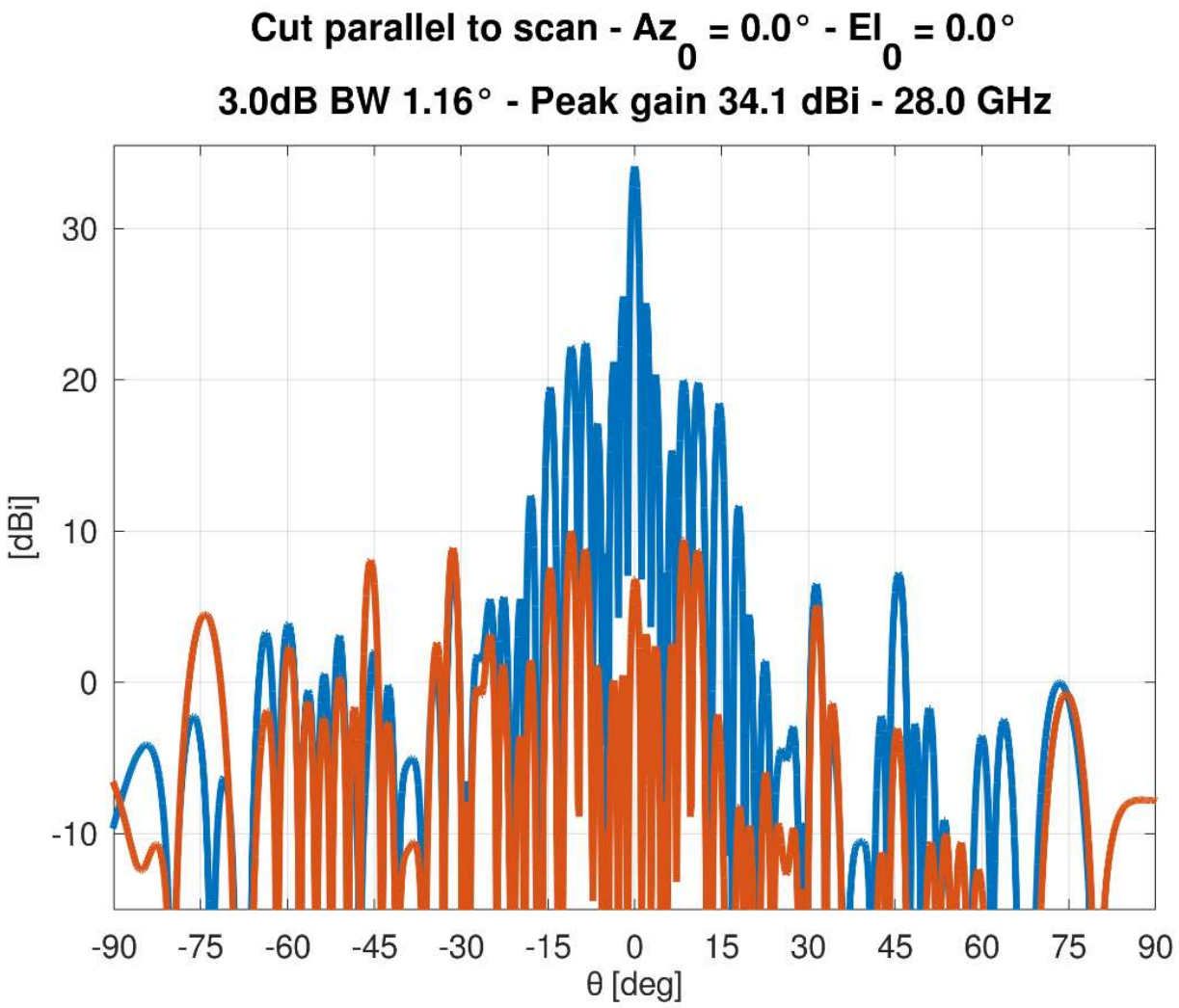


Antenna Transmit Band Azimuth Pattern LHCP



Antenna Transmit Band Elevation Pattern RHCP





Antenna Transmit Band Elevation Pattern LHCP