Approved by OMB
3060–0678

APPLICATION FOR EARTH STATION SPECIAL TEMPORARY AUTHORITY

APPLICANT INFORMATIONEnter a description of this application to identify it on the main menu:
E030342 Prior Use STA Request (Telstar 12)

1. Applicant

Name:	LBiSat LLC	**Phone Number:**	801–501–9090
DBA Name:		**Fax Number:**	801–501–7338
Street:	10288 S. Jordan Gateway # K	**E–Mail:**	andre@lbisat.com
City:	South Jordan	**State:**	UT
Country:	USA	**Zipcode:**	84095 –3911
Attention:	Mr Andre B Finlinson		

GRANTED
International Bureau

File # SES-STA-20170817-00927
Call Sign E030342 Grant Date 8-30-17
(or other identifier)
Term Dates
From: 9-1-17 To: 10-1-17
Approved:

GRANTED
International Bureau

File # SES-STA-20170817-00927
E030342
Call Sign _____ Grant Date 8-30-17
(or other identifier)
Term Dates
From: 9-1-17 To: 10-1-17
Approved:

Application: LBiSat, LLC
File No.: SES-STA-20170817-00927
Call Sign: E030342
Special Temporary Authority

LBiSat, LLC, is granted special temporary authority for 30 days, beginning on September 1, 2017, to operate a 9.2 meter earth station antenna located at 40° 33" 54' N, 111° 54" 14' W, in South Jordon, Utah, to communicate with Telstar 12 (S2462) satellite at 109.2° W.L. using the following frequency band (Transmitting Only): 13750-14000 MHz (Earth-to-space), under the following conditions:

1. Operations under this authority are on a non-interference basis only.

2. Operations under this authority are on a non-protected basis only.

3. Uplink (Earth-to-space) frequency band will be on 13750-14000 MHz within the coordinated emission and power limits. The maximum EIRP shall not exceed 85 dBW per NTIA manual US 356.

4. US 357 establishes additional EIRP density limits of 71 dBW/6MHz for operations with GSO satellites and 51 dBW/6MHz for operations with NGSO satellites for any emission in the 13.75-13.78 GHz band.

5. All operations under this grant of special temporary authority shall be on an unprotected and non-harmful interference basis. LBiSat, LLC's (E030342), shall not cause harmful interference to, and shall not claim protection from interference caused to it by, any other lawfully operating radio communication system.

6. In the event of any harmful interference under this grant of special temporary authority, LBiSat, LLC's (E030342), must cease operations immediately upon notification of such interference, and must inform the Commission, in writing, immediately of such an event.

7. Any action taken or expense incurred as a result of operations pursuant to this special temporary authority is solely 'at LBiSat, LLC's risk.

8. This action is issued pursuant to Section 0.261 of the Commission's rules on delegated authority, 47 C.F.R. §0.261, and is effective immediately.

2. Contact

Name:	Frank R. Jazzo, Esq	**Phone Number:**	703-812-0470
Company:	Fletcher, Heald & Hildreth, PLC	**Fax Number:**	703-812-0486
Street:	1300 N 17th Street	E-Mail:	jazzo@fhhlaw.com
	11th Floor		
City:	Arlington	**State:**	VA
Country:	USA	**Zipcode:**	22209 -
Attention:		**Relationship:**	Legal Counsel

(If your application is related to an application filed with the Commission, enter either the file number or the IB Submission ID of the related application. Please enter only one.)
3. Reference File Number or Submission ID IB2017002294

4a. Is a fee submitted with this application?
◉ If Yes, complete and attach FCC Form 159. If No, indicate reason for fee exemption (see 47 C.F.R.Section 1.1114).
○ Governmental Entity ○ Noncommercial educational licensee
○ Other(please explain):

4b. Fee Classification CGX – Fixed Satellite Transmit/Receive Earth Station

5. Type Request

◉ Use Prior to Grant ○ Change Station Location ○ Other

6. Requested Use Prior Date 09/01/2017	
7. CitySouth Jordan	8. Latitude (dd mm ss.s h) 40 33 54.0 N

9. State UT	10. Longitude (dd mm ss.s h) 111 54 14.0 W

11. Please supply any need attachments.

Attachment 1: Sched.B Attachment 2: RadHaz Attachment 3: 13GHz

12. Description. (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

This application requests prior use authorization to operate the 9.2 m KU-band antenna with Telstar12.

13. By checking Yes, the undersigned certifies that neither applicant nor any other party to the application is subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Act of 1988, 21 U.S.C. Section 862, because of a conviction for possession or distribution of a controlled substance. See 47 CFR 1.2002(b) for the meaning of "party to the application" for these purposes.

(◉) Yes ( ) No

14. Name of Person Signing Andre Finlinson	15. Title of Person Signing Vice President, Chief Technical Officer

WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND / OR IMPRISONMENT (U.S. Code, Title 18, Section 1001), AND/OR REVOCATION OF ANY STATION AUTHORIZATION (U.S. Code, Title 47, Section 312(a)(1)), AND/OR FORFEITURE (U.S. Code, Title 47, Section 503).

FCC NOTICE REQUIRED BY THE PAPERWORK REDUCTION ACT

The public reporting for this collection of information is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the required data, and completing and reviewing the collection of information. If you have any comments on this burden estimate, or how we can improve the collection and reduce the burden it causes you, please write to the Federal Communications Commission, AMD–PERM, Paperwork Reduction Project (3060–0678), Washington, DC 20554. We will also accept your comments regarding the Paperwork Reduction Act aspects of this collection via the Internet if you send them to PRA@fcc.gov. PLEASE DO NOT SEND COMPLETED FORMS TO THIS ADDRESS.

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THE FOREGOING NOTICE IS REQUIRED BY THE PAPERWORK REDUCTION ACT OF 1995, PUBLIC LAW 104–13, OCTOBER 1, 1995, 44 U.S.C. SECTION 3507.

Exhibit For
LBiSat LLC
South Jordan, Utah
RSI 9.2 Meter Earth Station
Call Sign: E030342

Compliance with FCC Report & Order (FCC96-377) for the 13.75 - 14.0 GHz Band
Analysis and Calculations

1. Background

This Exhibit is presented to demonstrate the extent to which the LBiSat LLC satellite earth station planned for South Jordan, Ut is in compliance with FCC REPORT & ORDER 96-377. The potential interference from the earth station to US Navy shipboard radiolocation operations (RADAR) and the NASA space research activities in the 13.75 - 14.0 GHz Band is addressed in this exhibit. The parameters for the earth station are:

Table 1. Earth Station Characteristics

• Coordinates (NAD83):	40° 33' 54.0" N, 111° 54' 14.0" W
• Satellite Location for Earth Station:	(61.0° W) and (109.0° W)
• Frequency Band:	13.75-14.5 GHz for uplink
• Polarizations:	H,V
• Emissions:	409KG7D, 36M0G7D and 54M0G7W
• Modulation:	Digital
Maximum Aggregate Uplink EIRP:	65.5 dBW for the 409 kHz Carriers 85.5 dBW for the 36 MHz Carriers 72.1 dBW for the 54 MHz Carriers
• Transmit Antenna Characteristics	
Antenna Size:	9.2 meter in Diameter
Antenna Type/Model:	RSI KS
Gain:	60.2 dBi
RF power into Antenna Flange:	409 kHz 5.3 dBW or -14.8 dBW/4 kHz (Maximum) 36 MHz 25.3 dBW or –14.2 dBW/4 kHz (Maximum)

(continued)

54 MHz
11.9 dBW or –29.4 dBW/4 kHz (Maximum

- Minimum Elevation Angle(s):
  South Jordan, Ut — 20.5° @ 117.9° Az and 43.0° @ 175.5° Az
- Side Lobe Antenna Gain: — 32 - 25*log(θ)

Because the above uplink spectrum is shared with the Federal Government, coordination in this band require resolution data pertaining to potential interference between the earth stations and both Navy Department and NASA systems. Potential interference from the earth station could impact with the Navy and/or NASA systems in two areas. These areas are noted in FCC Report and Order 96-377 dated September 1996, and consist of (1) Radiolocation and radio navigation, (2) Data Relay Satellites.

Summary of Coordination Issues:

1) Potential Impact to Government Radiolocation (Shipboard Radar)
2) Potential Impact to NASA Data Relay Satellite Systems (TDRSS)

2. Potential Impact to Government Radiolocation (Shipboard Radar)

Radiolocation operations (RADAR) may occur anywhere in the 13.4 - 14 GHz frequency band aboard ocean going United States Navy ships. The Federal Communication Commission (FCC) order 96-377 allocates the top 250 MHz of this 600 MHz band to the Fixed Satellite Service (FSS) on a co-primary basis with the radiolocation operations and provides for an interference protection level of -167 dBW/m^2/4 kHz.

The closest distance to the shoreline from the South Jordan earth station is approximately 950 km west toward the Pacific Ocean. The calculation of the power spectral density at this distance is given by:

		409 kHz	36.0 MHz	54 MHz
1.	Clear Sky EIRP (dBW):	65.5	85.5	72.1
2.	Carrier Bandwidth:	409 kHz	36 MHz	54 MHz
3.	PD at antenna Input: (dBW/4 kHz)	-14.8	-14.2	-29.4
4.	Transmit Antenna Gain:	60.2 dBi		
5.	Antenna Gain Horizon:	FCC Reference Pattern		
6.	Antenna Elevation Angle:	20.5°		

The proposed earth station will radiate interference toward the ocean according to its off-axis side-lobe performance. A conservative analysis, using FCC standard reference pattern, results in off-axis antenna gains of –7.8 dBi towards the Pacific.

The signal density at the shoreline, through free space is:

409 kHz Carriers
PFD = Antenna Feed Power density (dBW/4 kHz) + Antenna Off-Axis Gain (dBi) – Spread Loss (dBw-m^2).

= -14.8 dBw/4 kHz + (-7.8) dBi – 10*log[4Π*(950000m)^2]
= -153.1 dBW/m^2/4 kHz + Additional Path Losses (~90.7 dB)
= -243.8 dBW/m^2/4 kHz

36 MHz Carriers
PFD = Antenna Feed Power density (dBW/4 kHz) + Antenna Off-Axis Gain (dBi) – Spread Loss (dBw-m^2).

= -14.2 dBw/4 kHz + (-7.8) dBi – 10*log[4Π*(950000m)^2]
= -152.2 dBW/m^2/4 kHz + Additional Path Losses (~90.7 dB)
= -242.9 dBW/m^2/4 kHz

54 MHz Carriers
PFD = Antenna Feed Power density (dBW/4 kHz) + Antenna Off-Axis Gain (dBi) – Spread Loss (dBw-m^2).

= -29.4 dBw/4 kHz + (-7.8) dBi – 10*log[4Π*(950000m)^2]
= -167.7 dBW/m^2/4 kHz + Additional Path Losses (~90.7 dB)
= -258.4 dBW/m^2/4 kHz

Our calculations show additional path loss of approximately 90.7 dB including absorption loss and earth diffraction loss for the actual path profiles from the proposed earth station to the nearest shoreline.

The calculated PFD including additional path losses to the closest shoreline location is –242.9 dBW/m^2/4 kHz. This is 75.9 dB below the –167 dBW/m2/4 kHz interference criteria of R&O 96-377. Therefore, there should be no interference to the US Navy RADAR from the South Jordan earth station due to the distance and the terrain blocking between the site and the shore.

3. Potential Impact to NASA's Data Relay Satellite System (TDRSS)

The geographic location of the LBiSat LLC earth station in South Jordan, Utah is outside the 390 km radius coordination contour surrounding NASA's White Sands, New Mexico ground station complex. Therefore, the TDRSS space-to-earth link will not be impacted by the LBiSat LLC earth station in South Jordan, Ut.

The TDRSS space-to-space link in the 13.772 to 13.778 GHz band is assumed to be protected if an earth station produces an EIRP less than 71 dBW/6 MHz in this band. The 9.2 meter earth station antenna will have an EIRP less than 71 dBW/6 MHz for both the 409 kHz and 54 MHz carriers in this band. The total EIRP for the 409 kHz Carrier is 65.5 dBW and the equivalent EIRP per 6 MHz segment will remain at 65.5 dBW/6 MHz. The total EIRP for the 54 MHz

carriers is 72.1 dBW. The equivalent EIRP per 6 MHz segment will be 63.1 dBW/6 MHz. Therefore, there should not be interference to the TDRSS space-to-space link for the 409 kHz and 54 MHz carriers.

For the 36 MHz carrier the total EIRP of 85.5 dBW equates to an EIRP per 6 MHz of 79.5 dBW/6 MHz. To avoid interference to the TDRSS space-to-space link the 36 MHz carriers will not be used for the transmit spectrum of 13.772 to 13.778 GHz by this earth station.

Note 1: In order to meet the 71 dBW/6 MHz interference criteria, the earth station would have to be limited to a maximum total EIRP of 77 dBW for the 36 MHz carrier.

4. Coordination Issue Result Summary and Conclusions

The results of the analysis and calculations performed in this exhibit indicate that compatible operation between the earth station at the South Jordan earth station and the US Navy and NASA systems is probable. These analyses have been based on the assumption of 406 kHz, 36 MHz and 54 MHz bandwidth digital video and/or data transmissions. Should signals with significantly lower bandwidths be transmitted, the station total EIRP should also be reduced in order to continue to meet the Navy radiolocation and NASA space research interference criteria.

No interference to US Navy RADAR operations from the South Jordan, Utah site earth station will occur.

Analysis of Non-Ionizing Radiation for a 9.2-Meter Earth Station System

This report analyzes the non-ionizing radiation levels for a 9.2-meter earth station system. The analysis and calculations performed in this report comply with the methods described in the FCC Office of Engineering and Technology Bulletin, No. 65 first published in 1985 and revised in 1997 in Edition 97-01. The radiation safety limits used in the analysis are in conformance with the FCC R&O 96-326. Bulletin No. 65 and the FCC R&O specifies that there are two separate tiers of exposure limits that are dependant on the situation in which the exposure takes place and/or the status of the individuals who are subject to the exposure. The Maximum Permissible Exposure (MPE) limits for persons in a General Population/Uncontrolled environment are shown in Table 1. The General Population/Uncontrolled MPE is a function of transmit frequency and is for an exposure period of thirty minutes or less. The MPE limits for persons in an Occupational/Controlled environment are shown in Table 2. The Occupational MPE is a function of transmit frequency and is for an exposure period of six minutes or less. The purpose of the analysis described in this report is to determine the power flux density levels of the earth station in the far-field, near-field, transition region, between the subreflector or feed and main reflector surface, at the main reflector surface, and between the antenna edge and the ground and to compare these levels to the specified MPEs.

Table 1. Limits for General Population/Uncontrolled Exposure (MPE)

Frequency Range (MHz)	Power Density (mW/cm^2)
30-300	0.2
300-1500	Frequency (MHz)*(0.8/1200)
1500-100,000	1.0

Table 2. Limits for Occupational/Controlled Exposure (MPE)

Frequency Range (MHz)	Power Density (mW/cm^2)
30-300	1.0
300-1500	Frequency (MHz)*(4.0/1200)
1500-100,000	5.0

Table 3. Formulas and Parameters Used for Determining Power Flux Densities

Parameter	Symbol	Formula	Value	Units
Antenna Diameter	D	Input	9.2	m
Antenna Surface Area	$A_{surface}$	$\pi D^2 / 4$	66.48	m^2
Subreflector Diameter	D_{sr}	Input	107.5	cm
Area of Subreflector	A_{sr}	$\pi D_{sr}{}^2/4$	9076.26	cm^2
Frequency	F	Input	13900	MHz
Wavelength	λ	300 / F	0.021583	m
Transmit Power	P	Input	302.00	W
Antenna Gain (dBi)	G_{es}	Input	60.2	dBi
Antenna Gain (factor)	G	$10^{Ges/10}$	1047128.5	n/a
Pi	π	Constant	3.1415927	n/a
Antenna Efficiency	η	$G\lambda^2/(\pi^2D^2)$	0.58	n/a

1. Far Field Distance Calculation

The distance to the beginning of the far field can be determined from the following equation:

Distance to the Far Field Region

$$R_{ff} = 0.60\ D^2 / \lambda \quad (1)$$
$$= 2353.0\ \text{m}$$

The maximum main beam power density in the far field can be determined from the following equation:

On-Axis Power Density in the Far Field

$$S_{ff} = G\ P / (4\ \pi\ R_{ff}^2) \quad (2)$$
$$= 4.545\ \text{W/m}^2$$
$$= 0.455\ \text{mW/cm}^2$$

2. Near Field Calculation

Power flux density is considered to be at a maximum value throughout the entire length of the defined Near Field region. The region is contained within a cylindrical volume having the same diameter as the antenna. Past the boundary of the Near Field region, the power density from the antenna decreases linearly with respect to increasing distance.

The distance to the end of the Near Field can be determined from the following equation:

Extent of the Near Field

$$R_{nf} = D^2 / (4\ \lambda) \quad (3)$$
$$= 980.4\ \text{m}$$

The maximum power density in the Near Field can be determined from the following equation:

Near Field Power Density

$$S_{nf} = 16.0\ \eta\ P / (\pi\ D^2) \quad (4)$$
$$= 10.611\ \text{W/m}^2$$
$$= 1.061\ \text{mW/cm}^2$$

3. Transition Region Calculation

The Transition region is located between the Near and Far Field regions. The power density begins to decrease linearly with increasing distance in the Transition region. While the power density decreases inversely with distance in the Transition region, the power density decreases inversely with the square of the distance in the Far Field region. The maximum power density in the Transition region will not exceed that calculated for the Near Field region. The power density calculated in Section 1 is the highest power density the antenna can produce in any of the regions away from the antenna. The power density at a distance R_t can be determined from the following equation:

Transition Region Power Density

$$S_t = S_{nf}\ R_{nf} / R_t \quad (5)$$
$$= 1.061\ \text{mW/cm}^2$$

4. Region between the Main Reflector and the Subreflector

Transmissions from the feed assembly are directed toward the subreflector surface, and are reflected back toward the main reflector. The most common feed assemblies are waveguide flanges, horns or subreflectors. The energy between the subreflector and the reflector surfaces can be calculated by determining the power density at the subreflector surface. This can be determined from the following equation:

Power Density at the Subreflector

$$S_{sr} = 4000\ P / A_{sr} \quad (6)$$
$$= 133.095\ mW/cm^2$$

5. Main Reflector Region

The power density in the main reflector is determined in the same manner as the power density at the subreflector. The area is now the area of the main reflector aperture and can be determined from the following equation:

Power Density at the Main Reflector Surface

$$S_{surface} = 4\ P / A_{surface} \quad (7)$$
$$= 18.172\ W/m^2$$
$$= 1.817\ mW/cm^2$$

6. Region between the Main Reflector and the Ground

Assuming uniform illumination of the reflector surface, the power density between the antenna and the ground can be determined from the following equation:

Power Density between Reflector and Ground

$$S_g = P / A_{surface} \quad (8)$$
$$= 4.543\ W/m^2$$
$$= 0.454\ mW/cm^2$$

7. Summary of Calculations

Table 4. Summary of Expected Radiation levels for Uncontrolled Environment

Region		Calculated Maximum Radiation Power Density Level (mW/cm^2)	Hazard Assessment
1. Far Field (R_{ff} = 2353.0 m)	S_{ff}	0.455	Satisfies FCC MPE
2. Near Field (R_{nf} = 980.4 m)	S_{nf}	1.061	Potential Hazard
3. Transition Region ($R_{nf} < R_t < R_{ff}$)	S_t	1.061	Potential Hazard
4. Between Main Reflector and Subreflector	S_{sr}	133.095	Potential Hazard
5. Main Reflector	$S_{surface}$	1.817	Potential Hazard
6. Between Main Reflector and Ground	S_g	0.454	Satisfies FCC MPE

Table 5. Summary of Expected Radiation levels for Controlled Environment

Region		Calculated Maximum Radiation Power Density Level (mW/cm^2)	Hazard Assessment
1. Far Field (R_{ff} = 2353.0 m)	S_{ff}	0.455	Satisfies FCC MPE
2. Near Field (R_{nf} = 980.4 m)	S_{nf}	1.061	Satisfies FCC MPE
3. Transition Region ($R_{nf} < R_t < R_{ff}$)	S_t	1.061	Satisfies FCC MPE
4. Between Main Reflector and Subreflector	S_{sr}	133.095	Potential Hazard
5. Main Reflector	$S_{surface}$	1.817	Satisfies FCC MPE
6. Between Main Reflector and Ground	S_g	0.454	Satisfies FCC MPE

It is the applicant's responsibility to ensure that the public and operational personnel are not exposed to harmful levels of radiation.

8. Conclusions

Based on the above analysis it is concluded that the FCC MPE guidelines have been exceeded (or met) in the regions of Table 4 and 5. The applicant proposes to comply with the MPE limits by one or more of the following methods.

Means of Compliance Uncontrolled Areas

This antenna will be located in a fenced area. The area will be sufficient to prohibit access to the areas that exceed the MPE limited. The general public will not have access to areas within ½ diameter removed from the edge of the antenna.

Since one diameter removed from the main beam of the antenna or ½ diameter removed from the edge of the antenna the RF levels are reduced by a factor of 100 or 20 dB. None of the areas exceeding the MPE levels will be accessible by the general public.

Radiation hazard signs will be posted while this earth station is in operation.

The applicant will ensure that no buildings or other obstacles will be in the areas that exceed the MPE levels.

Means of Compliance Controlled Areas

The earth station's operational personnel will not have access to the areas that exceed the MPE levels while the earth station is in operation.

The transmitters will be turned off during antenna maintenance.

FCC 312
Schedule B

FEDERAL COMMUNICATIONS COMMISSION
APPLICATION FOR SATELLITE SPACE AND EARTH STATION AUTHORIZATIONS
Technical and Operational Description)

(Place an "X" in one of the blocks below)

☐ License of New Station ☐ Registration of new Domestic Receive-Only Station ☐ Amendment to a Pending Application ☒ Modification of License/Registration ☐ Notification of Minor Modification

B1. Location of Earth Station Site. If temporary-fixed, mobile, or VSAT remote facility, specify area of operation and point of contact. If VSAT hub station, give its location For VSAT networks attach individual Schedule B, Page 1 sheets for each hub station and each remote station. Individually provide the Location, Points of Communications, and Destination Points for each hub and remote station.

B1a. Station Call Sign	B1b. Site identifier (HUB, REMOTE1, etc.)	B1c. Telephone Number	B1j. Geographic Coordinates N/S, Deg. - Min. - Sec. - E/W	B1k. Lat./Lon. Coordinates are:
E030342	South Jordan	(801) 501 - 9090	Lat. 40° 33' 54" N Lon. 111° 54' 14.0" W	☐ NAD-27 ☒ NAD-83
B1d. Mailing Street Address of Station or Area of Operation		B1e. Name of Contact Person		
10288 South Jordan Gateway		Andre Finlinson		

B1f. City	B1g. County	B1h. State	B1i. Zip Code	B1l. Site Elevation (AMSL)
South Jordan	Salt Lake	UT	84095	1319.8 meters

B2. Points of Communications: List the names and orbit locations of all satellites with which this earth station will communicate. The entry "ALSAT" is sufficient to identify the names and locations of all satellite facilities licensed by the U.S. All non-U.S. licensed satellites must be listed individually.

Satellite Name and Orbit Location	Satellite Name and Orbit Location	Satellite Name and Orbit Location
Permitted List (ALSAT)		

B3. Destination points for communications using non-U.S. licensed satellites. For each non-U.S. licensed satellite facility identified in section B2 above, specify the destination point(s) (countries) where the services will be provided by this earth station via each non-U.S. license satellite system. Use additional sheets as needed.

Satellite Name	List of Destination Points

FEDERAL COMMUNICATIONS COMMISSION
APPLICATION FOR SATELLITE SPACE AND EARTH STATION AUTHORIZATIONS
FCC Form 312 - Schedule B: (Technical and Operational Description)

B4. Earth Station Antenna Facilities: Use additional pages as needed.

(a) Site ID*	(b) Antenna ID**	(c) Quantity	(d) Manufacturer	(e) Model	(f) Antenna Size (meters)	(g) Antenna Gain Transmit and/or Receive (____dBi at____GHz)
South Jordan	9.2 KU-BAN	1	RSI	KS	9.2	59.2 dBi at 12.0 GHz
						60.2 dBi at 14.0 GHz

B5. Antenna Heights and Maximum Power Limits: (The corresponding Antenna ID in tables B4 and B5 applies to the same antenna)

(a) Antenna ID**	(b) Antenna Structure Registration No.	Maximum Antenna Height (c) Above Ground Level (meters)	Maximum Antenna Height (d) Above Mean Sea Level (meters)	(e) Building Height Above Ground Level (meters)***	(f) Maximum Antenna Height Above Rooftop (meters)***	(g) Total Input Power at antenna flange (Watts)	(h) Total EIRP for all carriers (dBW)
9.2 KU-BAN		10.2	1329.8			302	85.0

Notes: * If this is an application for a VSAT network, identify the site (Item B1b, Schedule B, Page 1) where each antenna is located. Also include this Site-ID on Schedule B, Page 5.

** Identify each antenna in VSAT network or multi-antenna station with a unique identifier, such as HUB, REMOTE1, A1, A2, 10M, 12M, 7M, etc. Use this same antenna ID throughout tables B4, B5, B6, and B7 when referring to the same antenna.

*** Attach sketch of site or exemption, See 47 CFR Part 17.

FEDERAL COMMUNICATIONS COMMISSION
APPLICATION FOR SATELLITE SPACE AND EARTH STATION AUTHORIZATIONS
FCC Form 312 - Schedule B: (Technical and Operational Description)

B6. Frequency Coordination Limits: Use additional pages as needed.

(a) Antenna ID*	(b) Frequency Limits (MHz)	(c) Range of Satellite Arc Eastern Limit**	(d) Range of Satellite Arc Western Limit**	(e) Antenna Elevation Angle Eastern Limit	(f) Antenna Elevation Angle Western Limit	(g) Earth Station Azimuth Angle Eastern Limit	(h) Earth Station Azimuth Angle Western Limit	(i) Maximum EIRP Density toward the Horizon (dBW/4kHz)
9.2 KU-BAN	13750.0 – 14000.0	61.0° W.L.	109.0° W.L.	20.5°	43.0°	117.9°	175.5°	

Notes: * Provide the ANTENNA-ID from table B4 to identify the antenna to which each frequency band and orbital arc range is associated.
** If operating with geostationary satellites, give the orbital arc limits and the associated elevation and azimuth angles. If operating with non-geostationary satellites,

FEDERAL COMMUNICATIONS COMMISSION
APPLICATION FOR SATELLITE SPACE AND EARTH STATION AUTHORIZATIONS
FCC Form 312 - Schedule B: (Technical and Operational Description)

B7. Particulars of Operation (Full particulars are required for each r.f. carrier): Use additional pages as needed.

(a) Antenna ID*	(b) Frequency Limits (MHz)	(c) T/R Mode **	(d) Antenna Polarization (H,V,L,R)	(e) Emission Designator	(f) Maximum EIRP per Carrier (dBW)	(g) Maximum EIRP Density per Carrier (dBW/4kHz)	(h) Description of Modulation and Services
9.2 KU-BAN	13750.0 – 14000.0	T	H,V	409KG7D	65.5	45.4	Digital Data
	13750.0 – 14000.0	T	H,V	36M0G7D	85.0	45.5	Digital Data
	13750.0 – 14000.0	T	H,V	54M0G7W	72.1	30.8	Digital Data

Notes: * Provide the ANTENNA-ID from table B4 to identify the antenna to which each frequency band and emission is associated. For VSAT networks, include frequencies and emissions for all HUB and REMOTE units.

** Indicate whether the earth station transmits or receives in each frequency band.

FEDERAL COMMUNICATIONS COMMISSION
APPLICATION FOR SATELLITE SPACE AND EARTH STATION AUTHORIZATIONS
FCC Form 312 - Schedule B: (Technical and Operational Description)

If VSAT Network, provide the SITE-ID (Item B1b) of the station that B8-B13 are in response to (HUB, REMOTE1, etc.): _____

B8. If the proposed antenna(s) operate in the Fixed Satellite Service (FSS) with **geostationary** satellites, do(es) the proposed antenna(s) comply with the antenna gain patterns specified in Section 25.209(a) and (b) as demonstrated by the manufacturer's qualification measurements? If NO, provide as an exhibit, a technical analysis showing compliance with two-degree spacing policy.	☒ YES	☐ NO	
B9. If the proposed antenna(s) do not operate in the Fixed Satellite Service (FSS), or if they operate in the Fixed Satellite Service (FSS) with **non-geostationary** satellites, do(es) the proposed antenna(s) comply with the antenna gain patterns specified in Section 25.209(a2) and (b) as demonstrated by the manufacturer's qualification measurement?	☐ YES	☐ NO	N/A
B10. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point.	☐ YES	☒ NO	

Remote Control Point Location:

B10a. Street Address			
B10b. City	B10c. County	B10.d. State/Country	B10e. Zip Code
B10f. Telephone Number	B10g. Call Sign of Control Station (if appropriate)		

B11. Is frequency coordination required? If YES, attach a frequency coordination report as an exhibit.	☐ YES	☒ NO
B12. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as an exhibit.	☐ YES	☒ NO
B13. FAA Notification - (See 47 CFT Part 17and 47 CFT Part 25.113(c)) **Where FAA notification is required, have you attached a copy of a completed FCC Form 854 and/or the FAA's study regarding the potential hazard of the structure to aviation?** **FAILURE TO COMPLY WITH 47 CFT PARTS 17 AND 25 WILL RESULT IN THE RETURN OF THIS APPLICATION**	☐ YES	☒ NO