

APPLICATION FOR EARTH STATION SPECIAL TEMPORARY AUTHORITY

APPLICANT INFORMATION Enter a description of this application to identify it on the main menu:
30-Day STA Request for Fixed Earth Station Testing

1. Applicant

Name: Harris CapRock Communications, Inc. **Phone Number:** 832-668-2753

DBA Name: **Fax Number:** 832-668-2780

Street: 4400 S. Sam Houston Parkway Ea **E-Mail:** esands@harris.com

City: Houston **State:** TX

Country: USA **Zipcode:** 77048

Attention: Ms. EllenAnn Sands

30 days


"With conditions"

File # SES-STA-20160624-00608

Call Sign E060157 Grant Date 06/30/2016
(or other identifier)

Term Dates
From 07/01/2016 To: 07/30/2016

Approved: Paul E. Blain



The stamp is a red rectangular box containing the text "GRANTED" in large letters and "International Bureau" below it. To the left of the text is a circular seal with the words "FEDERAL COMMUNICATIONS COMMISSION" around the perimeter and a central emblem.

Applicant: Harris CapRock communications
Call Sign: E060157
File No.: SES-STA-20160624-00608
Special Temporary Authority (STA)

Harris CapRock Communications ("Harris CapRock") is granted special temporary authority (STA) for 30 days, commencing July 01, 2016 to demonstrate tri-band earth station onboard vessel ("ESV") terminal-model ST5000-2.4 at a fixed location in Concord, California using 6035 – 6055 MHz, 6343 – 6348 MHz, 6345 – 6355 MHz (Left Hand Circular) 6345 – 6380 MHz (Horizontal Polarization); and 14000 – 14500 MHz (Horizontal/Vertical) (Earth-to-space) and 3700 – 4200 MHz, 6405 – 6415 MHz, and 11700 – 12200 MHz (space-to-Earth) temporary on land under the following conditions:

1. Grant of this STA is without prejudice to any determination that the commission may make regarding pending or future Harris CapRock applications.
2. All operations under this grant of STA shall be on an unprotected and non-harmful interference basis and Harris CapRock, shall not cause harmful interference to, and shall not claim protection from interference caused to it by, any other lawfully operating radio communication system.
3. In the event of any harmful interference as a result of operations under this grant of STA, Harris CapRock shall cease operations immediately upon notification of such interference and shall immediately inform the Commission, in writing, of such an event.
4. Any action taken or expense incurred as a result of operations pursuant to this STA is solely at Harris CapRock's risk.

This grant is issued pursuant to Section 0.261 of the Commission's rules on delegated authority, 47 C.F.R. § 0.261, and is effective upon release. "With conditions"



File # SES-STA-20160624-00608
Call Sign E060157 Grant Date 06/30/2016
(or other identifier)
Term Dates
From 07/01/2016 To: 07/30/2016
Approved: Paul E. Hays

| | |
|---|---------------------------------------|
| 2. Contact | |
| Name: Carlos Nalda | Phone Number: 5713325626 |
| Company: LMI Advisors | Fax Number: |
| Street: 8601 James Creek Drive | E-Mail: cnalda@lmiadvisors.com |
| City: Springfield | State: VA |
| Country: USA | Zipcode: 22152 - |
| Attention: | Relationship: Other |
| (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 | |
| 4a. Is a fee submitted with this application? | |
| <input checked="" type="radio"/> If Yes, complete and attach FCC Form 159. If No, indicate reason for fee exemption (see 47 C.F.R. Section 1.1114). | |
| <input type="radio"/> Governmental Entity <input type="radio"/> Noncommercial educational licensee | |
| <input type="radio"/> Other (please explain): | |
| 4b. Fee Classification CGX – Fixed Satellite Transmit/Receive Earth Station | |
| 5. Type Request | |
| <input checked="" type="radio"/> Use Prior to Grant <input type="radio"/> Change Station Location <input type="radio"/> Other | |
| 6. Requested Use Prior Date 07/01/2016 | |
| 7. CityConcord | |
| 8. Latitude (dd mm ss.s h) 38 0 23.0 N | |

| | |
|--|---|
| 9. State CA | 10. Longitude (dd mm ss.s h) 122 2 38.0 W |
| 11. Please supply any need attachments. Attachment 1: InterferenceAnalysis Attachment 2: Draft 312/Sch B Attachment 3: Narrative | |
| 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.) Application of Harris CapRock Communications, Inc. for a 30-Day Special Temporary Authorization. | |
| 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. | |
| 14. Name of Person Signing EllenAnn Sands | 15. Title of Person Signing Senior Counsel |
| 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

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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.

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of

| | | |
|---|---|--------------------|
| Application of Harris CapRock |) | |
| Communications, Inc. for a 30-Day |) | Call Sign: E060157 |
| Special Temporary Authorization (“STA”) |) | |
| for Fixed Earth Station Demonstration |) | File No: |
| in the C-band and Ku-band |) | |

Application for Special Temporary Authorization

Harris CapRock Communications, Inc. (“Harris CapRock”), pursuant to Section 25.120 of the Commission’s Rules, 47 C.F.R. § 25.120, seeks a 30-day special temporary authorization (“STA”) to demonstrate its tri-band earth station onboard vessel (“ESV”) terminal – Model ST5000-2.4 – at a fixed location in Concord, California in portions of the conventional C-band and in the conventional Ku-band. Grant of this STA will enhance Harris CapRock’s existing authority to operate the subject ESV terminal, which does not cover these temporary inland operations (particularly at C-band). Harris CapRock respectfully requests that this STA request be granted for a period of 30 days commencing on July 1, 2016 or as soon as possible thereafter.

I. BACKGROUND

As the Commission is aware, Harris CapRock has been engaged in extensive development and implementation of its ST5000-2.4 terminal. In addition to commercial authority to operate the ST5000-2.4 in C-band and Ku-band frequencies,¹ it holds an STA

¹ See Harris CapRock, File Nos. SES-MOD-20150915-00599 & SES-AMD-20151205-00907 (Call Sign E060157) (granted on Feb. 25, 2016) (“*Commercial License*”).

for maritime operations in the Ka-band with O3b's NGSO system² and experimental authority to test the terminal at certain fixed locations in the United States.³

Because the terminal is now authorized to operate on a commercial basis in conventional C-band and Ku-band frequencies, Harris CapRock requests a 30-day STA from the International Bureau to demonstrate the ST5000-2.4 ESV terminal in the C-band and Ku-band at an additional site in Concord, California (coordinates: 38° 00' 23" N, 122° 02' 38" W). In the interest of administrative convenience, Harris CapRock incorporates by reference the C-band and Ku-band technical information that was previously submitted to the Commission as part of its application to operate the ST5000-2.4 terminal⁴ and will comply with all conditions of that approval and any additional conditions that may be imposed in the requested STA. Additionally, Harris CapRock provides the attached draft FCC Form 312 and Schedule B to provide the Commission with details regarding the limited operations proposed herein.

II. DISCUSSION

C-band and Ku-band operations at the Concord, CA location will be conducted with the following U.S.-licensed GSO FSS satellites: IS-18 at the 180° E orbit location and Galaxy 12 at the 129° W orbit location. The ST5000-2.4 terminal will communicate with both satellites in the conventional Ku-band (*i.e.*, 11.7-12.2 GHz (space-to-Earth) and 14.0-

² See Harris CapRock, Special Temporary Authority, File No. SES-STA-20160224-00171 (Call Sign E060157).

³ See Harris CapRock, Experimental Radio Station License, File No. 0009-EX-PL-2016.

⁴ See *Commercial License*, Technical Appendix.

14.5 GHz (Earth-to-space)). In the C-band, Harris CapRock will limit its C-band testing to the following transmit and receive frequency ranges:

IS-18: 6.035-6.055 GHz, 6.343-6.348 GHz, 6.345-6.355 GHz and 6.405-6.415 GHz.

Galaxy 12: 6.345-6.380 GHz.

As confirmed in the attached interference analysis, Harris CapRock can operate the ST5000-2.4 terminal in the proposed C-band uplink frequency ranges without causing harmful interference to any existing authorized terrestrial licensees.⁵

At all times, Harris CapRock will operate the terminal consistent with the technical characteristics specified in this STA application and examined in the C-band interference analysis. Additionally, Harris CapRock agrees not to cause harmful interference to authorized terrestrial operations in the C-band, and will accommodate any future licensees to the extent necessary to avoid harmful interference. In the event that its operations cause harmful interference to other lawfully operating spectrum users, Harris CapRock will immediately suspend operations until such interference is resolved. Harris CapRock also will comply with all FCC rules regarding Ku-band earth station operations and will similarly suspend operations in the unlikely event of interference in that band. Harris CapRock does not seek nor will it claim protection from authorized spectrum users for its receive operations.

Harris CapRock also notes that its limited and intermittent demonstration operations will be conducted at a temporary, segregated area in parking lot at the Concord, CA site. Consistent with the radiofrequency hazard assessment for the ST-5000 terminal

⁵ See Micronet Interference Analysis.

previously submitted to the Commission, will take all necessary measures to ensure that no members of the public will be exposed to excessive levels of radiofrequency radiation. Specifically, only trained personnel will operate the terminal and the area around the terminal will be cordoned off during transmit operations to ensure that no members of the general public may approach the terminal or otherwise be located in an area where they may be exposed to excessive levels of radiofrequency radiation.

Grant of the requested 30-day STA will strongly serve the public interest. Authorizing limited, temporary demonstration of the ST5000-2.4 terminal will allow Harris CapRock to continue development and implementation of its new line of terminals, which will provide more robust broadband satellite communications services to a wide array of users, including vessels in motion, marine barges and remote oil platforms that may be unable to obtain communications services through alternative facilities. In addition, the proposed operations are fully consistent with Commission's rules and policies governing earth station operations in the conventional C-band and Ku-band.

III. CONCLUSION

For all of the foregoing reasons, Harris CapRock respectfully requests that an earth station STA be granted for 30 days commencing on July 1, 2016, or as soon as possible thereafter, to permit the limited operations described herein.



Based on the information provided to Micronet Communications, Inc. regarding the location and operations of the earth station we believe there will not be any interference into the surrounding microwave systems from it's temporary operation. If any of the performance characteristics or location differs from what we have been provided, further analysis would be required.



Proposed Test Location (Concord, CA)

Micronet Communications, Inc.
 720 F Avenue, Suite 100
 Plano, Texas 75074
 972-422-7200

File: M1616709

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TECHNICAL CHARACTERISTICS OF TRANSMIT RECEIVE EARTH STATION

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| | | | |
|----------------------------------|-----------|-----------|--------|
| Company: | UNKNOWN | | |
| Site Name, State: | Clyde, CA | | |
| Call Sign: | | | |
| Latitude | (NAD83) | 38 0 | 23.0 N |
| Longitude | (NAD83) | 122 2 | 38.0 W |
| Elevation AMSL | (ft/m) | 32.80 | 10.00 |
| Receive Frequency Range | (MHz) | 3700-4200 | |
| Transmit Frequency Range | (MHz) | 6345-6380 | |
| Range of Satellite Orbital Long. | (deg W) | 129.00 | 129.00 |
| Range of Azimuths from North | (deg) | 191.21 | 191.21 |
| Antenna Centerline | (ft/m) | 12.00 | 3.66 |
| Antenna Elevation Angles | (deg) | 45.37 | 45.37 |

| Equipment Parameters | | Receive | Transmit |
|----------------------------------|---|---------|----------|
| Antenna Gain, Main Beam | (dbI) | 35.50 | 38.00 |
| 15 DB Half Beamwidth | (deg) | 3.00 | 1.00 |
| Antennas | Receive: HARRIS CORP ST5000-2.4 (2.4M) Transmit: HARRIS CORP ST5000-2.4 (2.4M) | | |
| Max Transmitter Power | (dbW/4KHz) | | -7.70 |
| Max EIRP Main Beam | (dbW/4KHz) | | 30.30 |
| Modulation / Emission Designator | ANALOG 3M75G7W | | |

| Coordination Parameters | | Receive | Transmit |
|-----------------------------------|-------|---------|----------|
| Max Greater Circle Distances | (km) | 222.57 | 148.05 |
| Max Rain Scatter Distances | (km) | 165.83 | 100.01 |
| Max Interference Power Long Term | (dbW) | -140.60 | -154.00 |
| Max Interference Power Short Term | (dbW) | -118.40 | -130.80 |
| Rain Zone / Radio Zone | | 3 | A |

Micronet Communications, Inc.
 720 F Avenue, Suite 100
 Plano, Texas 75074
 972-422-7200

File: N1616709

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TECHNICAL CHARACTERISTICS OF TRANSMIT RECEIVE EARTH STATION

=====

Company: UNKNOWN
 Site Name, State: Clyde, CA
 Call Sign:
 Latitude (NAD83) 38 0 23.0 N
 Longitude (NAD83) 122 2 38.0 W
 Elevation AMSL (ft/m) 32.80 10.00
 Receive Frequency Range (MHz) 3700-4200
 Transmit Frequency Range (MHz) 6405-6415
 Range of Satellite Orbital Long. (deg W) 180.00 180.00
 Range of Azimuths from North (deg) 248.92 248.92
 Antenna Centerline (ft/m) 12.00 3.66
 Antenna Elevation Angles (deg) 16.39 16.39

Equipment Parameters Receive Transmit

Antenna Gain, Main Beam (dbI) 35.50 38.00
 15 DB Half Beamwidth (deg) 3.00 1.00

Antennas Receive: HARRIS CORP ST5000-2.4 (2.4M)
 Transmit: HARRIS CORP ST5000-2.4 (2.4M)

Max Transmitter Power (dbW/4KHz) -8.70
 Max EIRP Main Beam (dbW/4KHz) 29.30
 Modulation / Emission Designator ANALOG 4M72G7W

Coordination Parameters Receive Transmit

Max Greater Circle Distances (km) 222.57 145.07
 Max Rain Scatter Distances (km) 163.48 100.01
 Max Interference Power Long Term (dbW) -140.60 -154.00
 Max Interference Power Short Term (dbW) -118.40 -130.80
 Rain Zone / Radio Zone 3 A

Micronet Communications, Inc.
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 Plano, Texas 75074
 972-422-7200

File: P1616709

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TECHNICAL CHARACTERISTICS OF TRANSMIT RECEIVE EARTH STATION

=====

| | | | |
|----------------------------------|-----------|-----------|--------|
| Company: | UNKNOWN | | |
| Site Name, State: | Clyde, CA | | |
| Call Sign: | | | |
| Latitude | (NAD83) | 38 0 | 23.0 N |
| Longitude | (NAD83) | 122 2 | 38.0 W |
| Elevation AMSL | (ft/m) | 32.80 | 10.00 |
| Receive Frequency Range | (MHz) | 3700-4200 | |
| Transmit Frequency Range | (MHz) | 6345-6355 | |
| Range of Satellite Orbital Long. | (deg W) | 180.00 | 180.00 |
| Range of Azimuths from North | (deg) | 248.92 | 248.92 |
| Antenna Centerline | (ft/m) | 12.00 | 3.66 |
| Antenna Elevation Angles | (deg) | 16.39 | 16.39 |

| Equipment Parameters | | Receive | Transmit |
|----------------------------------|---|---------|----------|
| Antenna Gain, Main Beam | (dbI) | 35.50 | 38.00 |
| 15 DB Half Beamwidth | (deg) | 3.00 | 1.00 |
| Antennas | Receive: HARRIS CORP ST5000-2.4 (2.4M) Transmit: HARRIS CORP ST5000-2.4 (2.4M) | | |
| Max Transmitter Power | (dbW/4KHz) | | -7.70 |
| Max EIRP Main Beam | (dbW/4KHz) | | 30.30 |
| Modulation / Emission Designator | ANALOG 3M76G7W | | |

| Coordination Parameters | | Receive | Transmit |
|-----------------------------------|-------|---------|----------|
| Max Greater Circle Distances | (km) | 222.57 | 148.05 |
| Max Rain Scatter Distances | (km) | 163.48 | 100.01 |
| Max Interference Power Long Term | (dbW) | -140.60 | -154.00 |
| Max Interference Power Short Term | (dbW) | -118.40 | -130.80 |
| Rain Zone / Radio Zone | | 3 | A |

Micronet Communications, Inc.
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 Plano, Texas 75074
 972-422-7200

File: R1616709

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TECHNICAL CHARACTERISTICS OF TRANSMIT RECEIVE EARTH STATION

=====

Company: UNKNOWN
 Site Name, State: Clyde, CA
 Call Sign:
 Latitude (NAD83) 38 0 23.0 N
 Longitude (NAD83) 122 2 38.0 W
 Elevation AMSL (ft/m) 32.80 10.00
 Receive Frequency Range (MHz) 3700-4200
 Transmit Frequency Range (MHz) 6343-6348
 Range of Satellite Orbital Long. (deg W) 180.00 180.00
 Range of Azimuths from North (deg) 248.92 248.92
 Antenna Centerline (ft/m) 12.00 3.66
 Antenna Elevation Angles (deg) 16.39 16.39

| Equipment Parameters | | Receive | Transmit |
|----------------------------------|---|---------|----------|
| Antenna Gain, Main Beam | (dbI) | 35.50 | 38.00 |
| 15 DB Half Beamwidth | (deg) | 3.00 | 1.00 |
| Antennas | Receive: HARRIS CORP ST5000-2.4 (2.4M) Transmit: HARRIS CORP ST5000-2.4 (2.4M) | | |
| Max Transmitter Power | (dbW/4KHz) | | -3.40 |
| Max EIRP Main Beam | (dbW/4KHz) | | 34.60 |
| Modulation / Emission Designator | ANALOG 1M40G7W | | |

| Coordination Parameters | | Receive | Transmit |
|-----------------------------------|-------|---------|----------|
| Max Greater Circle Distances | (km) | 222.57 | 162.57 |
| Max Rain Scatter Distances | (km) | 163.48 | 100.01 |
| Max Interference Power Long Term | (dbW) | -140.60 | -154.00 |
| Max Interference Power Short Term | (dbW) | -118.40 | -130.80 |
| Rain Zone / Radio Zone | | 3 | A |

Micronet Communications, Inc.
 720 F Avenue, Suite 100
 Plano, Texas 75074
 972-422-7200

File: S1616709

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TECHNICAL CHARACTERISTICS OF TRANSMIT RECEIVE EARTH STATION

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| | | | |
|----------------------------------|-----------|-----------|--------|
| Company: | UNKNOWN | | |
| Site Name, State: | Clyde, CA | | |
| Call Sign: | | | |
| Latitude | (NAD83) | 38 0 | 23.0 N |
| Longitude | (NAD83) | 122 2 | 38.0 W |
| Elevation AMSL | (ft/m) | 32.80 | 10.00 |
| Receive Frequency Range | (MHz) | 3700-4200 | |
| Transmit Frequency Range | (MHz) | 6035-6055 | |
| Range of Satellite Orbital Long. | (deg W) | 180.00 | 180.00 |
| Range of Azimuths from North | (deg) | 248.92 | 248.92 |
| Antenna Centerline | (ft/m) | 12.00 | 3.66 |
| Antenna Elevation Angles | (deg) | 16.39 | 16.39 |

| Equipment Parameters | | Receive | Transmit |
|----------------------------------|---|---------|----------|
| Antenna Gain, Main Beam | (dbI) | 35.50 | 38.00 |
| 15 DB Half Beamwidth | (deg) | 3.00 | 1.00 |
| Antennas | Receive: HARRIS CORP ST5000-2.4 (2.4M) Transmit: HARRIS CORP ST5000-2.4 (2.4M) | | |
| Max Transmitter Power | (dbW/4KHz) | | -10.50 |
| Max EIRP Main Beam | (dbW/4KHz) | | 27.50 |
| Modulation / Emission Designator | ANALOG 7M20G7W | | |

| Coordination Parameters | | Receive | Transmit |
|-----------------------------------|-------|---------|----------|
| Max Greater Circle Distances | (km) | 222.57 | 140.17 |
| Max Rain Scatter Distances | (km) | 163.48 | 100.01 |
| Max Interference Power Long Term | (dbW) | -140.60 | -154.00 |
| Max Interference Power Short Term | (dbW) | -118.40 | -130.80 |
| Rain Zone / Radio Zone | | 3 | A |

TYPE OF SERVICE

20. NATURE OF SERVICE: This filing is for an authorization to provide or use the following type(s) of service(s): Select all that apply:

- a. Fixed Satellite
 b. Mobile Satellite
 c. Radiodetermination Satellite
 d. Earth Exploration Satellite
 e. Direct to Home Fixed Satellite
 f. Digital Audio Radio Service
 g. Other (please specify)

21. STATUS: Choose the button next to the applicable status. Choose only one.

- Common Carrier Non-Common Carrier

22. If earth station applicant, check all that apply.

- Using U.S. licensed satellites
 Using Non-U.S. licensed satellites

23. If applicant is providing INTERNATIONAL COMMON CARRIER service, see instructions regarding Sec. 214 filings. Choose one. Are these facilities:

- Connected to a Public Switched Network Not connected to a Public Switched Network N/A

24. FREQUENCY BAND(S): Place an "X" in the box(es) next to all applicable frequency band(s).

- a. C-Band (4/6 GHz) b. Ku-Band (12/14 GHz)
 c. Other (Please specify upper and lower frequencies in MHz.)

Frequency Lower: Frequency Upper:

TYPE OF STATION

25. CLASS OF STATION: Choose the button next to the class of station that applies. Choose only one.

- a. Fixed Earth Station
 b. Temporary-Fixed Earth Station
 c. 12/14 GHz VSAT Network
 d. Mobile Earth Station
(N/A) e. Geostationary Space Station
(N/A) f. Non-Geostationary Space Station
 g. Other (please specify)

26. TYPE OF EARTH STATION FACILITY: Choose only one.

- Transmit/Receive Transmit-Only Receive-Only N/A

PURPOSE OF MODIFICATION

27. The purpose of this proposed modification is to: (Place an 'X' in the box(es) next to all that apply.)

Not Applicable

ENVIRONMENTAL POLICY

28. Would a Commission grant of any proposal in this application or amendment have a significant environmental impact as defined by 47 CFR 1.1307? If YES, submit the statement as required by Sections 1.1308 and 1.1311 of the Commission's rules, 47 C.F.R. §§ 1.1308 and 1.1311, as an exhibit to this application. A Radiation Hazard Study must accompany all applications for new transmitting facilities, major modifications, or major amendments.

Yes No

ALIEN OWNERSHIP Earth station applicants not proposing to provide broadcast, common carrier, aeronautical en route or aeronautical fixed radio station services are not required to respond to Items 30-34.

29. Is the applicant a foreign government or the representative of any foreign government?

Yes No

30. Is the applicant an alien or the representative of an alien?

Yes No N/A

31. Is the applicant a corporation organized under the laws of any foreign government?

Yes No N/A

32. Is the applicant a corporation of which more than one-fifth of the capital stock is owned of record or voted by aliens or their representatives or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country?

Yes No N/A

33. Is the applicant a corporation directly or indirectly controlled by any other corporation of which more than one-fourth of the capital stock is owned of record or voted by aliens, their representatives, or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country?

Yes No N/A

34. If any answer to questions 29, 30, 31, 32 and/or 33 is Yes, attach as an exhibit an identification of the aliens or foreign entities, their nationality, their relationship to the applicant, and the percentage of stock they own or vote.

BASIC QUALIFICATIONS

| | |
|--|---|
| 35. Does the Applicant request any waivers or exemptions from any of the Commission's Rules? If Yes, attach as an exhibit, copies of the requests for waivers or exceptions with supporting documents. | <input type="radio"/> Yes <input checked="" type="radio"/> No |
| 36. Has the applicant or any party to this application or amendment had any FCC station authorization or license revoked or had any application for an initial, modification or renewal of FCC station authorization, license, or construction permit denied by the Commission? If Yes, attach as an exhibit, an explanation of circumstances. | <input type="radio"/> Yes <input checked="" type="radio"/> No |
| 37. Has the applicant, or any party to this application or amendment, or any party directly or indirectly controlling the applicant ever been convicted of a felony by any state or federal court? If Yes, attach as an exhibit, an explanation of circumstances. | <input type="radio"/> Yes <input checked="" type="radio"/> No |
| 38. Has any court finally adjudged the applicant, or any person directly or indirectly controlling the applicant, guilty of unlawfully monopolizing or attempting unlawfully to monopolize radio communication, directly or indirectly, through control of manufacture or sale of radio apparatus, exclusive traffic arrangement or any other means or unfair methods of competition? If Yes, attach as an exhibit, an explanation of circumstances | <input type="radio"/> Yes <input checked="" type="radio"/> No |
| 39. Is the applicant, or any person directly or indirectly controlling the applicant, currently a party in any pending matter referred to in the preceding two items? If yes, attach as an exhibit, an explanation of the circumstances. | <input type="radio"/> Yes <input checked="" type="radio"/> No |
| 40. If the applicant is a corporation and is applying for a space station license, attach as an exhibit the names, address, and citizenship of those stockholders owning a record and/or voting 10 percent or more of the Filer's voting stock and the percentages so held. In the case of fiduciary control, indicate the beneficiary(ies) or class of beneficiaries. Also list the names and addresses of the officers and directors of the Filer. | |
| 41. 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. | <input checked="" type="radio"/> Yes <input type="radio"/> No |
| 42a. Does the applicant intend to use a non-U.S. licensed satellite to provide service in the United States? If Yes, answer 42b and attach an exhibit providing the information specified in 47 C.F.R. 25.137, as appropriate. If No, proceed to question 43. | <input type="radio"/> Yes <input checked="" type="radio"/> No |
| 42b. What administration has licensed or is in the process of licensing the space station? If no license will be issued, what administration has coordinated or is in the process of coordinating the space station? | |
| 43. Description. (Summarize the nature of the application and the services to be provided). DRAFT FORM 312/SCHEDULE B. Harris CapRock seeks a 30-day STA to test and demonstrate its ESV terminal at a fixed test location in Concord, California at 38 | |
| 43a. Geographic Service Rule Certification By selecting A, the undersigned certifies that the applicant is not subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25. <input checked="" type="radio"/> A | |
| By selecting B, the undersigned certifies that the applicant is subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25 and will comply with such requirements. <input type="radio"/> B | |
| By selecting C, the undersigned certifies that the applicant is subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25 and will not comply with such requirements because it is not feasible as a technical matter to do so, or that, while technically feasible, such services would require so many compromises in satellite design and operation as to make it economically unreasonable. A narrative description and technical analysis demonstrating this claim are attached. <input type="radio"/> C | |

CERTIFICATION

| | |
|--|---|
| The Applicant waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise, and requests an authorization in accordance with this application. The applicant certifies that grant of this application would not cause the applicant to be in violation of the spectrum aggregation limit in 47 CFR Part 20. All statements made in exhibits are a material part hereof and are incorporated herein as if set out in full in this application. The undersigned, individually and for the applicant, hereby certifies that all statements made in this application and in all attached exhibits are true, complete and correct to the best of his or her knowledge and belief, and are made in good faith. | |
| 44. Applicant is a (an): (Choose the button next to applicable response.) | |
| <input type="radio"/> Individual <input type="radio"/> Unincorporated Association <input type="radio"/> Partnership <input checked="" type="radio"/> Corporation <input type="radio"/> Governmental Entity <input type="radio"/> Other (please specify) | |
| 45. Name of Person Signing EllenAnn Sands | 46. Title of Person Signing Senior Counsel |

47. Please supply any need attachments.

| | | |
|---------------|---------------|---------------|
| Attachment 1: | Attachment 2: | Attachment 3: |
|---------------|---------------|---------------|

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).

**SATELLITE EARTH STATION AUTHORIZATIONS
FCC Form 312 - Schedule B:(Technical and Operational Description)**

FOR OFFICIAL USE ONLY

| | | |
|--------------------------------|------------------------------|---|
| Location of Earth Station Site | | |
| E1. Site Identifier: | Concord | E5. Call Sign: |
| E2. Contact Name | — | E6. Phone Number: |
| E3. Street: | — | E7. City: |
| E4. State | | E8. County: |
| E10. Area of Operation: | Concord, CA | E9. Zip Code |
| E11. Latitude: | 38 ° 0 ' 23.0 " N | |
| E12. Longitude: | 122 ° 2 ' 38.0 " W | |
| E13. Lat/Lon Coordinates are: | <input type="radio"/> NAD-27 | <input checked="" type="radio"/> NAD-83 |
| E14. Site Elevation (AMSL): | 0.0 meters | <input type="radio"/> N/A |

| | |
|---|---|
| E15. 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 measurement? If NO, provide a technical analysis showing compliance with two-degree spacing policy. | <input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A |
|---|---|

| | |
|--|---|
| E16. 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 measurements? | <input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> N/A |
|--|---|

| | |
|--|---|
| E17. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point. | <input type="radio"/> Yes <input checked="" type="radio"/> No |
|--|---|

| | |
|--|---|
| E18. Is frequency coordination required? If YES, attach a frequency coordination report as | <input type="radio"/> Yes <input checked="" type="radio"/> No |
|--|---|

| | |
|--|---|
| E19. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as | <input type="radio"/> Yes <input checked="" type="radio"/> No |
|--|---|

| | |
|---|---|
| E20. FAA Notification - (See 47 CFR Part 17 and 47 CFR 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 CFR PARTS 17 AND 25 WILL RESULT IN THE RETURN OF THIS APPLICATION. | <input type="radio"/> Yes <input checked="" type="radio"/> No |
|---|---|

POINTS OF COMMUNICATION

Satellite Name:INTELSAT 18 (S2817) | INTELSAT 18 | 180 E.L. If you selected OTHER, please enter the following:

| | |
|----------------------|----------------|
| E21. Common Name: | E22. ITU Name: |
| E23. Orbit Location: | E24. Country: |

Satellite Name:GALAXY 12 (S2422) | GALAXY 12 | 129 W.L. If you selected OTHER, please enter the following:

| | |
|----------------------|----------------|
| E21. Common Name: | E22. ITU Name: |
| E23. Orbit Location: | E24. Country: |

POINTS OF COMMUNICATION (Destination Points)

| |
|-------------------------------|
| E25. Site Identifier: Concord |
|-------------------------------|

| | |
|-------------------|------------------|
| E26. Common Name: | E27. Country:USA |
|-------------------|------------------|

POINTS OF COMMUNICATION (Destination Points)

| | |
|-------------------------------|------------------|
| E25. Site Identifier: Concord | |
| E26. Common Name: | E27. Country:USA |

ANTENNA

| Site ID | E28. Antenna Id | E29. Quantity | E30. Manufacturer | E31. Model | E32. Antenna Size | E41/42. Antenna GainTransmint and/or Recieve(____dBi at ____ GHz) |
|---------|-----------------|---------------|-------------------|------------|-------------------|---|
| Concord | ST5000(Ku) | 1 | Harris Caprock | ST5000 | 2.4 | 45.5 dBi at 11.7 |
| | | | | | | 43.0 dBi at 14.125 |
| | ST5000(C) | | | | | 35.5 dBi at 3.950 |
| | | | | | | 38.0 dBi at 6.175 |

| E28. Antenna Id | E33/34. Diameter Minor/Major(meters) | E35. Above Ground Level (meters) | E36. Above Sea Level (meters) | E37. Building Height Above Ground Level (meters) | E38. Total Input Power at antenna flange (Watts) | E39. Maximum Antenna Height Above Rooftop (meters) | E40. Total EIRP for al carriers (dBW) |
|-----------------|--------------------------------------|----------------------------------|-------------------------------|--|--|--|---------------------------------------|
| ST5000(Ku) | 0.0/0.0 | 0.0 | 10.0 | 0.0 | 74.5 | 0.0 | 62.2 |
| ST5000(C) | 0.0/0.0 | 0.0 | 10.0 | 0.0 | 106.2 | 0.0 | 60.0 |

FREQUENCY

| E28. Antenna Id | E43/44. Frequency Bands(MHz) | E45. T/R Mode | E46. Antenna Polarization(H,V,L,R) | E47. Emission Designator | E48. Maximum EIRP per Carrier(dBW) | E49. Maximum ERIP Density per Carrier(dBW/4kHz) |
|--|------------------------------|---------------|------------------------------------|--------------------------|------------------------------------|---|
| ST5000(Ku) | 11700 12200 | R | Horizontal and Vertical | 1M00G7D | 0.0 | 0.0 |
| E50. Modulation and Services Up to 32 APSK | | | | | | |
| ST5000(Ku) | 14000 14500 | T | Horizontal and Vertical | 1M00G7D | 62.2 | 26.23 |
| E50. Modulation and Services Up to 32 APSK | | | | | | |
| ST5000(C) | 3700 4200 | R | Right Hand Circular | 3M75G7W | 0.0 | 0.0 |
| E50. Modulation and Services NULL | | | | | | |
| ST5000(C) | 3700 4200 | R | Right Hand Circular | 1M40G7W | 0.0 | 0.0 |
| E50. Modulation and Services Analog | | | | | | |
| ST5000(C) | 3700 4200 | R | Right Hand Circular | 1M40G7W | 0.0 | 0.0 |
| E50. Modulation and Services Analog | | | | | | |
| ST5000(C) | 3700 4200 | R | Right Hand Circular | 3M75G7W | 0.0 | 0.0 |
| E50. Modulation and Services Analog | | | | | | |
| ST5000(C) | 3700 4200 | R | Right Hand Circular | 3M76G7W | 0.0 | 0.0 |
| E50. Modulation and Services Analog | | | | | | |
| ST5000(C) | 3700 4200 | R | Right Hand Circular | 4M72G7W | 0.0 | 0.0 |
| E50. Modulation and Services Analog | | | | | | |
| ST5000(C) | 3700 4200 | R | Right Hand Circular | 4M72G7W | 0.0 | 0.0 |
| E50. Modulation and Services Analog | | | | | | |
| ST5000(C) | 3700 4200 | R | Right Hand Circular | 7M20G7W | 0.0 | 0.0 |
| E50. Modulation and Services Analog | | | | | | |
| ST5000(C) | 3700 4200 | R | Right Hand Circular | 3M76G7W | 0.0 | 0.0 |
| E50. Modulation and Services Analog | | | | | | |
| ST5000(C) | 3700 4200 | R | Right Hand Circular | 7M20G7W | 0.0 | 0.0 |
| E50. Modulation and Services Analog | | | | | | |

| | | | | | | |
|-------------------------------------|-----------|---|--------------------|---------|------|------|
| ST5000(C) | 6035 6055 | T | Left Hand Circular | 7M20G7W | 60.0 | 27.5 |
| E50. Modulation and Services Analog | | | | | | |
| ST5000(C) | 6343 6348 | T | Left Hand Circular | 1M40G7W | 50.0 | 34.6 |
| E50. Modulation and Services Analog | | | | | | |
| ST5000(C) | 6345 6355 | T | Left Hand Circular | 3M76G7W | 50.0 | 30.3 |
| E50. Modulation and Services Analog | | | | | | |
| ST5000(C) | 6345 6380 | T | Horizontal | 3M75G7W | 60.0 | 30.3 |
| E50. Modulation and Services Analog | | | | | | |
| ST5000(C) | 6405 6415 | R | Left Hand Circular | 4M72G7W | 60.0 | 29.3 |
| E50. Modulation and Services Analog | | | | | | |

FREQUENCY COORDINATION

| E28. Antenna Id | E51. Satellite Orbit Type | E52/53. Frequency Limits(MHz) | E54/55. Range of Satellite Arc E/W Limit | E56. Earth Station Azimuth Angle Eastern Limit | E57. Antenna Elevation Angle Eastern Limit | E58. Earth Station Azimuth Angle Western Limit | E59. Antenna Elevation Angle Western Limit | E60. Maximum EIRP Density toward the Horizon(dBW/4kHz) |
|-----------------|---------------------------|-------------------------------|--|--|--|--|--|--|
| ST5000(Ku) | Geostationary | 11700 12200 | 129.0/129.0 | 191.21 | 45.37 | 191.21 | 45.37 | 0.0 |
| | Geostationary | 11700 12200 | 180.0/180.0 | 248.92 | 16.39 | 248.92 | 16.39 | 0.0 |
| | Geostationary | 14000 14500 | 129.0/129.0 | 191.21 | 45.37 | 191.21 | 45.37 | -33.9 |
| | Geostationary | 14000 14500 | 180.0/180.0 | 248.92 | 16.39 | 248.92 | 16.39 | -25.6 |
| ST5000(C) | Geostationary | 3700 4200 | 129.0/129.0 | 191.21 | 45.37 | 191.21 | 45.37 | 0.0 |
| | Geostationary | 3700 4200 | 180.0/180.0 | 248.92 | 16.39 | 248.92 | 16.39 | 0.0 |
| | Geostationary | 6035 6055 | 180.0/180.0 | 248.92 | 16.39 | 248.92 | 16.39 | 1.0 |
| | Geostationary | 6343 6348 | 180.0/180.0 | 248.92 | 16.39 | 248.92 | 16.39 | 8.1 |
| | Geostationary | 6345 6355 | 180.0/180.0 | 248.92 | 16.39 | 248.92 | 16.39 | 3.8 |
| | Geostationary | 6345 6380 | 129.0/129.0 | 191.21 | 45.37 | 191.21 | 45.37 | 3.8 |
| | Geostationary | 6405 6415 | 180.0/180.0 | 248.92 | 16.39 | 248.92 | 16.39 | 2.8 |

REMOTE CONTROL POINT LOCATION
REMOTE CONTROL POINT LOCATION

| | | | |
|---|--|-------------------|-----------------------|
| E61. Call Sign | | E65. Phone Number | |
| NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed. | | | |
| E62. Street Address | | | |
| E63. City | | E67. County | E64/68. State/Country |
| | | | E66. Zip Code |
| | | | |

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