Approved by OMB
3060−0678

Date & Time Filed: Dec 17 2007 7:19:37:803PM
File Number: SES−MOD−INTR2007−03013

FCC APPLICATION FOR SPACE AND EARTH STATION:MOD OR AMD − MAIN FORM FCC 312 MAIN FORM FOR OFFICIAL USE ONLY	FCC Use Only

APPLICANT INFORMATION
Enter a description of this application to identify it on the main menu:
December 2007 Modification Application for Ka−Band Authorization E060445

1−8. Legal Name of Applicant

Name:	HNS License Sub, LLC	**Phone Number:**	301−428−5506
DBA Name:		**Fax Number:**	301−428−2802
Street:	11717 Exploration Lane	**E−Mail:**	sdoiron@hns.com
City:	Germantown	**State:**	MD
Country:	USA	**Zipcode:**	20876 −
Attention:	Mr. Steven Doiron		

9−16. Name of Contact Representative

Name:	Stephen D. Baruch	**Phone Number:**	202−416−6782
Company:	Leventhal Senter Lerman PLLC	**Fax Number:**	202−293−7783
Street:	2000 K Street, NW	**E−Mail:**	sbaruch@lsl−law.com
	Suite 600		
City:	Washington	**State:**	DC
Country:	USA	**Zipcode:**	20006−
Attention:		**Relationship:**	Legal Counsel

CLASSIFICATION OF FILING

17. Choose the button next to the classification that applies to this filing for both questions a. and b. Choose only one for 17a and only one for 17b. ◉ a1. Earth Station ○ a2. Space Station	(N/A) b1. Application for License of New Station (N/A) b2. Application for Registration of New Domestic Receive−Only Station ○ b3. Amendment to a Pending Application ◉ b4. Modification of License or Registration b5. Assignment of License or Registration b6. Transfer of Control of License or Registration ○ b7. Notification of Minor Modification (N/A) b8. Application for License of New Receive−Only Station Using Non−U.S. Licensed Satellite (N/A) b9. Letter of Intent to Use Non−U.S. Licensed Satellite to Provide Service in the United States (N/A) b10. Other (Please specify) (N/A) b11. Application for Earth Station to Access a Non−U.S.satellite Not Currently Authorized to Provide the Proposed Service in the Proposed Frequencies in the United States (N/A) b12. Application for Database Entry ○ b13. Amendment to a Pending Database Entry Application ○ b14. Modification of Database Entry

17c. 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):

17d.

Fee Classification CGV − Fixed Satellite VSAT System

18. If this filing is in reference to an existing station, enter:	19. If this filing is an amendment to a pending application enter both fields, if this filing is a modification please enter only the file number:	
(a) Call sign of station: E060445	(a) Date pending application was filed:	(b) File number: SESLIC2006122602232

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:

- [x] 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.

- [x] Using U.S. licensed satellites
- [ ] Using Non−U.S. licensed satellites

23. If applicant is providng 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)
- [x] c.Other (Please specify upper and lower frequencies in MHz.)

Frequency Lower: 19700.0000 Frequency Upper: 30000.0000 (Please specify additional frequencies in an attachment)

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
- ○ e. Geostationary Space Station
- ○ f. Non−Geostationary Space Station
- ◉ g. Other (please specify) 20/30 GHz VSAT Network

26. TYPE OF EARTH STATION FACILITY:

◉ Transmit/Receive ○ Transmit−Only ○ Receive−Only ○ N/A

"For Space Station applications, select 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.)

- [ ] a −− authorization to add new emission designator and related service
- [ ] b −− authorization to change emission designator and related service
- [x] c −− authorization to increase EIRP and EIRP density
- [ ] d −− authorization to replace antenna
- [ ] e −− authorization to add antenna
- [ ] f −− authorization to relocate fixed station
- [ ] g −− authorization to change frequency(ies)
- [ ] h −− authorization to add frequency
- [ ] i −− authorization to add Points of Communication (satellites & countries)
- [ ] j −− authorization to change Points of Communication (satellites & countries)
- [ ] k −− authorization for facilities for which environmental assessment and radiation hazard reporting is required
- [ ] l −− authorization to change orbit location
- [ ] m −− authorization to perform fleet management
- [ ] n −− authorization to extend milestones
- [x] o −− Other (Please specify)

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 Exhibits D E and F

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.	○ Yes ◉ 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 explination of circumstances.	○ Yes ◉ 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 explination of circumstances.	○ Yes	◉ No
38. Has any court finally adjudged the applicant, or any person directly or indirectly controlling the applicant, guilty of unlawfully monopolizing or attemptiing 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	○ Yes	◉ 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 exhinit, an explanation of the circumstances.	○ Yes	◉ 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.	(●) Yes ( ) 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.	( ) Yes (●) 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). (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

See Exhibit A.

Exhibit A

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.

(●) 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.

( ) 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.

( ) 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.)

- ○ Individual
- ○ Unincorporated Association
- ○ Partnership
- ◉ Corporation
- ○ Governmental Entity
- ○ Other (please specify)

45. Name of Person Signing	46. Title of Person Signing
Steven Doiron	Senior Director, Regulatory Affairs

−−>

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:	TF TR 98CM	E5. Call Sign:	E060445
E2: Contact Name	Duty Supervisor	E6. Phone Number:	301−601−6471
E3. Street:		E7. City:	
		E8. County:	
E4. State		E9. Zip Code	
E10. Area of Operation:		CONUS, AK, HI, PR, VI	
E11. Latitude:	0 °0 ’0.0 "N		
E12. Longitude:	0 °0 ’0.0 "W		
E13. Lat/Lon Coordinates are:		○ NAD−27	◉ NAD−83 ○ N/A
E14. Site Elevation (AMSL):		0.0 meters	

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 as a technical analysis showing compliance with two−degree spacing policy.	◉ Yes ○ No ○ 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?	○ Yes ○ No ◉ N/A
E17. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point.	◉ Yes ○ No

E18. Is frequency coordination required? If YES, attach a frequency coordination report as	○ Yes ◉ No
E19. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as	○ Yes ◉ 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.	○ Yes ◉ No

POINTS OF COMMUNICATION

Satellite Name: SPACEWAY 1 | SPACEWAY 1 | 103 W.L. If you selected OTHER, please enter the following:	
E21. Common Name:	E22. ITU Name:
E23. Orbit Location:	E24. Country:

Satellite Name: SPACEWAY 3 | USASAT 700 | 94.95 W.L. If you selected OTHER, please enter the following:

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

Satellite Name: SPACEWAY 2 | SPACEWAY 2 | 99 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:	
E26. Common Name:	E27. Country:

ANTENNA

Site ID	**E28. Antenna Id**	**E29. Quantity**	**E30. Manufacturer**	**E31. Model**	**E32. Antenna Size<meters>**	**E41/42. Antenna Gain Transmint and/or Recieve (____dBi at _____GHz)**	
TF TR 98CM	TF TR 98CM	10000	Raven Mfg. Ltd.	AN−098KA	0.98	44.6 dBi at 19.95	
TF TR 98CM	TF TR 98CM	10000	Raven Mfg. Ltd.	AN−098KA	0.98	48.0 dBi at 29.75	

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)**
TF TR 98CM	0.98/0.98	0.0	0.0	0.0	3.5	0.0	53.4

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)
TF TR 98CM	19700.0000 20200.0000	R	Left and Right Circular	500MG7W	0.0	0.0
E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) 500 MHz WIDE, PSK, DIGITAL CARRIER						
TF TR 98CM	29500.0000 30000.0000	T	Left and Right Circular	650KG7W	42.0	19.9
E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) 512 KBPS, PSK, DIGITAL CARRIER						
TF TR 98CM	29500.0000 30000.0000	T	Left and Right Circular	2M61G7W	48.0	19.9

E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

2.048 MBPS, PSK, DIGITAL CARRIER

FREQUENCY COORDINATION

E28. Antenna Id	**E51. Satellite Orbit Type**	**E52/53. Frequency Limits(MHz)**	**E54/55. Range of Satellite Arc Eastern/Western 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)**
TF TR 98CM	Geostationary	19700.0000 20200.0000	94.95/103.0	172.2	43.4	184.7	43.6	0.0
	Geostationary	29500.0000 30000.0000	94.95/103.0	172.2	43.4	184.7	43.6	−20.0

REMOTE CONTROL POINT LOCATION

E61. Call Sign
E060445
NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.

E66. Phone Number
301−601−6471

E62. Street Address
11717 Exploration Lane

E63. City	E68. County	E67/68. State/Country	E64. Zip Code
Germantown	Montgomery	MD/ USA	20876

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:	TR 98CM	E5. Call Sign:	E060445
E2: Contact Name	Duty Supervisor	E6. Phone Number:	301−601−6471
E3. Street:		E7. City:	
		E8. County:	
E4. State		E9. Zip Code	
E10. Area of Operation:		CONUS, AK, HI, PR, VI	
E11. Latitude:	0 °0 ’0.0 "N		
E12. Longitude:	0 °0 ’0.0 "W		
E13. Lat/Lon Coordinates are:		○ NAD−27	◉ NAD−83 ○ N/A
E14. Site Elevation (AMSL):		0.0 meters	

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 as a technical analysis showing compliance with two−degree spacing policy.	◉ Yes ○ No ○ 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?	○ Yes ○ No ◉ N/A
E17. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point.	◉ Yes ○ No

E18. Is frequency coordination required? If YES, attach a frequency coordination report as	○ Yes ◉ No
E19. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as	○ Yes ◉ 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.	○ Yes ◉ No

POINTS OF COMMUNICATION

Satellite Name: SPACEWAY 2 | SPACEWAY 2 | 99 W.L. If you selected OTHER, please enter the following:

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

Satellite Name: SPACEWAY 3 | USASAT 700 | 94.95 W.L. If you selected OTHER, please enter the following:	
E21. Common Name:	E22. ITU Name:
E23. Orbit Location:	E24. Country:

Satellite Name: SPACEWAY 1 | SPACEWAY 1 | 103 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:	
E26. Common Name:	E27. Country:

ANTENNA

Site ID	**E28. Antenna Id**	**E29. Quantity**	**E30. Manufacturer**	**E31. Model**	**E32. Antenna Size<meters>**	**E41/42. Antenna Gain Transmint and/or Recieve (____dBi at _____GHz)**	
TR 98CM	TR 98CM	250000	Raven Mfg. Ltd.	AN−098KA	0.98	44.6 dBi at 19.95	
TR 98CM	TR 98CM	250000	Raven Mfg. Ltd.	AN−098KA	0.98	48.0 dBi at 29.75	

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)
TR 98CM	0.0/0.0	0.0	0.0	0.0	3.5	0.0	53.4

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)
TR 98CM	19700.0000 20200.0000	R	Left and Right Circular	500MG7W	0.0	0.0

E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

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500 MHz WIDE, PSK, DIGITAL CARRIER
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TR 98CM	29500.0000 30000.0000	T	Left and Right Circular	650KG7W	42.0	19.9

E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

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512 KBPS, PSK, DIGITAL CARRIER
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TR 98CM	29500.0000 30000.0000	T	Left and Right Circular	2M61G7W	48.0	19.9

E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

2.048 MBPS, PSK, DIGITAL CARRIER

FREQUENCY COORDINATION

E28. Antenna Id	**E51. Satellite Orbit Type**	**E52/53. Frequency Limits(MHz)**	**E54/55. Range of Satellite Arc Eastern/Western 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)**
TR 98CM	Geostationary	19700.0000 20200.0000	94.95/103.0	172.2	43.4	184.7	43.6	0.0
	Geostationary	29500.0000 30000.0000	94.95/103.0	172.2	43.4	184.7	43.6	−20.0

REMOTE CONTROL POINT LOCATION

E61. Call Sign E060445 NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.	E66. Phone Number 301−601−6471

E62. Street Address 11717 Exploration Lane			
E63. City Germantown	E68. County Montgomery	E67/68. State/Country MD/ USA	E64. Zip Code 20876

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:	TR 3.5M	E5. Call Sign:	E060445
E2: Contact Name	Duty Supervisor	E6. Phone Number:	301−601−6471
E3. Street:		E7. City:	
		E8. County:	
E4. State		E9. Zip Code	
E10. Area of Operation:		CONUS, AK, HI, PR, VI	
E11. Latitude:	0 °0 ’0.0 "N		
E12. Longitude:	0 °0 ’0.0 "W		
E13. Lat/Lon Coordinates are:		○ NAD−27	◉ NAD−83 ○ N/A
E14. Site Elevation (AMSL):		0.0 meters	

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 as a technical analysis showing compliance with two−degree spacing policy.	◉ Yes ○ No ○ 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?	○ Yes ○ No ◉ N/A
E17. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point.	◉ Yes ○ No

E18. Is frequency coordination required? If YES, attach a frequency coordination report as	○ Yes ◉ No
E19. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as	○ Yes ◉ 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.	○ Yes ◉ No

POINTS OF COMMUNICATION

Satellite Name: 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:	
E26. Common Name:	E27. Country:

ANTENNA

Site ID	E28. Antenna Id	E29. Quantity	E30. Manufacturer	E31. Model	E32. Antenna Size<meters>	E41/42. Antenna Gain Transmint and/or Recieve (____dBi at _____GHz)	
TR 3.5M	TR 3.5M	50000	Andrew	ES35SRT−1	3.5	0.0 dBi at	

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)
TR 3.5M	3.5/3.5	3.9	0.0	0.0	185.0	0.0	78.3

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)
TR 3.5M	29500.0000 30000.0000	T	Left and Right Circular	650KG7W	60.3	38.2

E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

512 KBPS, PSK, DIGITAL CARRIER

TR 3.5M	29500.0000 30000.0000	T	Left and Right Circular	2M61G7W	66.3	38.2

E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

2.048 MBPS, PSK, DIGITAL CARRIER

TR 3.5M	29500.0000 30000.0000	T	Left and Right Circular	20M9G7W	75.4	38.2

E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

16.348 MBPS, PSK, DIGITAL CARRIER

FREQUENCY COORDINATION

E28. Antenna Id	**E51. Satellite Orbit Type**	**E52/53. Frequency Limits(MHz)**	**E54/55. Range of Satellite Arc Eastern/Western 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)**
			/					

REMOTE CONTROL POINT LOCATION

E61. Call Sign E060445 NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.			E66. Phone Number 301−601−6471
E62. Street Address 11717 Exploration Lane			
E63. City Germantown	E68. County Montgomery	E67/68. State/Country MD/ USA	E64. Zip Code 20876

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:	TR 1.8M	E5. Call Sign:	E060445
E2: Contact Name	Duty Supervisor	E6. Phone Number:	301−601−6471
E3. Street:		E7. City:	
		E8. County:	
E4. State		E9. Zip Code	
E10. Area of Operation:		CONUS, AK, HI, PR, VI	
E11. Latitude:	0 °0 ’0.0 "N		
E12. Longitude:	0 °0 ’0.0 "W		
E13. Lat/Lon Coordinates are:	○ NAD−27	◉ NAD−83	○ N/A
E14. Site Elevation (AMSL):	0.0 meters		

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 as a technical analysis showing compliance with two−degree spacing policy.	◉ Yes ○ No ○ 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?	○ Yes ○ No ◉ N/A

E17. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point.	◉ Yes ○ No

E18. Is frequency coordination required? If YES, attach a frequency coordination report as	○ Yes ◉ No
E19. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as	○ Yes ◉ 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.	○ Yes ◉ No

POINTS OF COMMUNICATION

Satellite Name: 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:	
E26. Common Name:	E27. Country:

ANTENNA

Site ID	E28. Antenna Id	E29. Quantity	E30. Manufacturer	E31. Model	E32. Antenna Size<meters>	E41/42. Antenna Gain Transmint and/or Recieve (____dBi at _____GHz)	
TR 1.8M	TR 1.8	50000	Prodelin	3180−131	1.8	0.0 dBi at	

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)
TR 1.8	0.0/0.0	2.3	0.0	0.0	46.0	0.0	58.7

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)
TR 1.8	29500.0000 30000.0000	T	Left and Right Circular	650KG7W	54.7	32.6
E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) 512 KBPS, PSK, DIGITAL CARRIER						
TR 1.8	29500.0000 30000.0000	T	Left and Right Circular	2M61G7W	60.7	32.6

E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

2.048 MBPS, PSK, DIGITAL CARRIER

TR 1.8	29500.0000 30000.0000	T	Left and Right Circular	20M9G7W	69.8	32.6

E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

16.348 MBPS, PSK, DIGITAL CARRIER

FREQUENCY COORDINATION

E28. Antenna Id	**E51. Satellite Orbit Type**	**E52/53. Frequency Limits(MHz)**	**E54/55. Range of Satellite Arc Eastern/Western 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)**
			/					

REMOTE CONTROL POINT LOCATION

E61. Call Sign E060445 NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.		E66. Phone Number 301−601−6471	
E62. Street Address 11717 Exploration Lane			
E63. City Germantown	E68. County Montgomery	E67/68. State/Country MD/ USA	E64. Zip Code 20876

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:	TR 1.2M	E5. Call Sign:	E060445
E2: Contact Name	Duty Supervisor	E6. Phone Number:	301−601−6471
E3. Street:		E7. City:	
		E8. County:	
E4. State		E9. Zip Code	
E10. Area of Operation:		CONUS, AK, HI, PR, VI	
E11. Latitude:	0 °0 ’0.0 "N		
E12. Longitude:	0 °0 ’0.0 "W		
E13. Lat/Lon Coordinates are:	○ NAD−27	◉ NAD−83	○ N/A
E14. Site Elevation (AMSL):	0.0 meters		

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 as a technical analysis showing compliance with two−degree spacing policy.	◉ Yes ○ No ○ 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?	○ Yes ○ No ◉ N/A

E17. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point.	◉ Yes ○ No

E18. Is frequency coordination required? If YES, attach a frequency coordination report as	○ Yes ◉ No
E19. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as	○ Yes ◉ 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.	○ Yes ◉ No

POINTS OF COMMUNICATION

Satellite Name: 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:	
E26. Common Name:	E27. Country:

ANTENNA

Site ID	E28. Antenna Id	E29. Quantity	E30. Manufacturer	E31. Model	E32. Antenna Size<meters>	E41/42. Antenna Gain Transmint and/or Recieve (____dBi at _____GHz)	
TR 1.2M	TR 1.2	100000	Prodelin	3120−131	1.2	0.0 dBi at	

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)
TR 1.2	0.0/0.0	1.7	0.0	0.0	20.0	0.0	55.2

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)
TR 1.2	29500.0000 30000.0000	T	Left and Right Circular	650KG7W	51.2	29.1
E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) 512 KBPS, PSK, DIGITAL CARRIER						
TR 1.2	29500.0000 30000.0000	T	Left and Right Circular	2M61G7W	57.2	29.1

E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

2.048 MBPS, PSK, DIGITAL CARRIER

FREQUENCY COORDINATION

E28. Antenna Id	**E51. Satellite Orbit Type**	**E52/53. Frequency Limits(MHz)**	**E54/55. Range of Satellite Arc Eastern/Western 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)**
			/					

REMOTE CONTROL POINT LOCATION

E61. Call Sign E060445 NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.			E66. Phone Number 301−601−6471
E62. Street Address 11717 Exploration Lane			
E63. City Germantown	E68. County Montgomery	E67/68. State/Country MD/ USA	E64. Zip Code 20876

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:	TF TR 98CM	E5. Call Sign:	E060445
E2: Contact Name	Duty Supervisor	E6. Phone Number:	301−601−6471
E3. Street:		E7. City:	
		E8. County:	
E4. State		E9. Zip Code	
E10. Area of Operation:		CONUS, AK, HI, PR, VI	
E11. Latitude:	0 °0 ’0.0 "N		
E12. Longitude:	0 °0 ’0.0 "W		
E13. Lat/Lon Coordinates are:	○ NAD−27	◉ NAD−83	○ N/A
E14. Site Elevation (AMSL):	0.0 meters		

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 as a technical analysis showing compliance with two−degree spacing policy.	◉ Yes ○ No ○ 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?	○ Yes ○ No ◉ N/A
E17. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point.	◉ Yes ○ No

E18. Is frequency coordination required? If YES, attach a frequency coordination report as	○ Yes ◉ No
E19. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as	○ Yes ◉ 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.	○ Yes ◉ No

POINTS OF COMMUNICATION

Satellite Name: 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:	

E26. Common Name:	E27. Country:

ANTENNA

Site ID	E28. Antenna Id	E29. Quantity	E30. Manufacturer	E31. Model	E32. Antenna Size<meters>	E41/42. Antenna Gain Transmint and/or Recieve (____dBi at _____GHz)	
TF TR 98CM	TF TR 98CM	10000	Prodelin	3980−131	0.98	0.0 dBi at	
TF TR 98CM	TFTR 98CM2	10000	Raven Mfg. Ltd.	AN−098KA	0.98	0.0 dBi at	

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)
TF TR 98CM	0.0/0.0	0.0	0.0	0.0	3.5	0.0	53.4
TFTR 98CM2	0.0/0.0	0.0	0.0	0.0	3.5	0.0	53.4

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)
TF TR 98CM	29500.0000 30000.0000	T	Left and Right Circular	650KG7W	49.4	27.3

E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

512 KBPS, PSK, DIGITAL CARRIER

TF TR 98CM	29500.0000 30000.0000	T	Left and Right Circular	2M61G7W	53.4	25.3

E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

2.048 MBPS, PSK, DIGITAL CARRIER

TFTR 98CM2	29500.0000 30000.0000	T	Left and Right Circular	650KG7W	49.4	27.3

E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

512 KBPS, PSK, DIGITAL CARRIER

TFTR 98CM2	29500.0000 30000.0000	T	Left and Right Circular	2M61G7W	53.4	25.3

E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

2.048 MBPS, PSK, DIGITAL CARRIER

FREQUENCY COORDINATION

E28. Antenna Id	**E51. Satellite Orbit Type**	**E52/53. Frequency Limits(MHz)**	**E54/55. Range of Satellite Arc Eastern/Western 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)**
			/					

REMOTE CONTROL POINT LOCATION

E61. Call Sign E060445 NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.			E66. Phone Number 301−601−6471
E62. Street Address 11717 Exploration Lane			
E63. City Germantown	E68. County Montgomery	E67/68. State/Country MD/ USA	E64. Zip Code 20876

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:	TR 98CM	E5. Call Sign:	E060445
E2: Contact Name	Duty Supervisor	E6. Phone Number:	301−601−6471
E3. Street:		E7. City:	
		E8. County:	
E4. State		E9. Zip Code	
E10. Area of Operation:		CONUS, AK, HI, PR, VI	
E11. Latitude:	0 °0 ’0.0 "N		
E12. Longitude:	0 °0 ’0.0 "W		
E13. Lat/Lon Coordinates are:		○ NAD−27	◉ NAD−83 ○ N/A
E14. Site Elevation (AMSL):		0.0 meters	

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 as a technical analysis showing compliance with two−degree spacing policy.	◉ Yes ○ No ○ 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?	○ Yes ○ No ◉ N/A
E17. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point.	◉ Yes ○ No

E18. Is frequency coordination required? If YES, attach a frequency coordination report as	○ Yes ◉ No
E19. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as	○ Yes ◉ 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.	○ Yes ◉ No

POINTS OF COMMUNICATION

Satellite Name: 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:	

E26. Common Name:	E27. Country:

ANTENNA

Site ID	E28. Antenna Id	E29. Quantity	E30. Manufacturer	E31. Model	E32. Antenna Size<meters>	E41/42. Antenna Gain Transmint and/or Recieve (____dBi at _____GHz)	
TR 98CM	TR 98CM	250000	Prodelin	3980−131	0.98	0.0 dBi at	
TR 98CM	TR 98CM2	250000	Raven Mfg. Ltd.	AN−098KA	0.98	0.0 dBi at	

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)
TR 98CM	0.0/0.0	0.0	0.0	0.0	3.5	0.0	53.4
TR 98CM2	0.0/0.0	0.0	0.0	0.0	3.5	0.0	53.4

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)
TR 98CM	29500.0000 30000.0000	T	Left and Right Circular	650KG7W	49.4	27.3

E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

512 KBPS, PSK, DIGITAL CARRIER

TR 98CM	29500.0000 30000.0000	T	Left and Right Circular	2M61G7W	53.4	25.3

E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

2.048 MBPS, PSK, DIGITAL CARRIER

TR 98CM2	29500.0000 30000.0000	T	Left and Right Circular	650KG7W	49.4	27.3

E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

512 KBPS, PSK, DIGITAL CARRIER

TR 98CM2	29500.0000 30000.0000	T	Left and Right Circular	2M61G7W	53.4	25.3

E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

2.048 MBPS, PSK, DIGITAL CARRIER

FREQUENCY COORDINATION

E28. Antenna Id	**E51. Satellite Orbit Type**	**E52/53. Frequency Limits(MHz)**	**E54/55. Range of Satellite Arc Eastern/Western 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)**
			/					

REMOTE CONTROL POINT LOCATION

E61. Call Sign E060445 NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.		E66. Phone Number 301−601−6471	
E62. Street Address 11717 Exploration Lane			
E63. City Germantown	E68. County Montgomery	E67/68. State/Country MD/ USA	E64. Zip Code 20876

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:	TF TR 74CM	E5. Call Sign:	E060445
E2: Contact Name	Duty Supervisor	E6. Phone Number:	301−601−6471
E3. Street:		E7. City:	
		E8. County:	
E4. State		E9. Zip Code	
E10. Area of Operation:		CONUS, AK, HI, PR, VI	
E11. Latitude:	0 °0 ’0.0 "N		
E12. Longitude:	0 °0 ’0.0 "W		
E13. Lat/Lon Coordinates are:	○ NAD−27	◉ NAD−83	○ N/A
E14. Site Elevation (AMSL):	0.0 meters		

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 as a technical analysis showing compliance with two−degree spacing policy.	○ Yes ◉ No ○ 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?	○ Yes ○ No ◉ N/A
E17. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point.	◉ Yes ○ No

E18. Is frequency coordination required? If YES, attach a frequency coordination report as	○ Yes ◉ No
E19. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as	○ Yes ◉ 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.	○ Yes ◉ No

POINTS OF COMMUNICATION

Satellite Name: 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:	

E26. Common Name:	E27. Country:

ANTENNA

Site ID	E28. Antenna Id	E29. Quantity	E30. Manufacturer	E31. Model	E32. Antenna Size<meters>	E41/42. Antenna Gain Transmint and/or Recieve (____dBi at _____GHz)	
TF TR 74CM	74CM−1	25000	Prodelin	HNS1031929	0.74	0.0 dBi at	
TF TR 74CM	74CM−2	25000	Raven	AN8−074R	0.74	0.0 dBi at	
TF TR 74CM	74CM−3	25000	Prodelin	AN8−074P	0.74	0.0 dBi at	

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)
74CM−1	0.56/0.98	0.0	0.0	0.0	2.0	0.0	48.6
74CM−2	0.693/0.84	0.0	0.0	0.0	2.0	0.0	47.4
74CM−3	0.65/0.92	0.0	0.0	0.0	2.0	0.0	48.6

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)
74CM−1	29500.0000 30000.0000	T	Left and Right Circular	650KG7W	47.0	24.9

E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

512 KBPS, PSK, DIGITAL CARRIER

74CM−2	29500.0000 30000.0000	T	Left and Right Circular	650KG7W	47.0	24.9

E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

512 KSPS, PSK, DIGITAL CARRIER

74CM−3	29500.0000 30000.0000	T	Left and Right Circular	650KG7W	47.0	24.9

E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

512 KSPS, PSK, DIGITAL CARRIER

FREQUENCY COORDINATION

E28. Antenna Id	**E51. Satellite Orbit Type**	**E52/53. Frequency Limits(MHz)**	**E54/55. Range of Satellite Arc Eastern/Western 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)**
			/					

REMOTE CONTROL POINT LOCATION

E61. Call Sign E060445 NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.			E66. Phone Number 301−601−6471
E62. Street Address 11717 Exploration Lane			
E63. City Germantown	E68. County Montgomery	E67/68. State/Country MD/ USA	E64. Zip Code 20876

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:	TR 74CM	E5. Call Sign:	E060445
E2: Contact Name	Duty Supervisor	E6. Phone Number:	301−601−6471
E3. Street:		E7. City:	
		E8. County:	
E4. State		E9. Zip Code	
E10. Area of Operation:		CONUS, AK, HI, PR, VI	
E11. Latitude:	0 °0 ’0.0 "N		
E12. Longitude:	0 °0 ’0.0 "W		
E13. Lat/Lon Coordinates are:	○ NAD−27	◉ NAD−83	○ N/A
E14. Site Elevation (AMSL):	0.0 meters		

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 as a technical analysis showing compliance with two−degree spacing policy.	○ Yes ◉ No ○ 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?	○ Yes ○ No ◉ N/A

E17. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point.	◉ Yes ○ No

E18. Is frequency coordination required? If YES, attach a frequency coordination report as	○ Yes ◉ No
E19. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as	○ Yes ◉ 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.	○ Yes ◉ No

POINTS OF COMMUNICATION

Satellite Name: 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:	
E26. Common Name:	E27. Country:

ANTENNA

Site ID	E28. Antenna Id	E29. Quantity	E30. Manufacturer	E31. Model	E32. Antenna Size<meters>	E41/42. Antenna Gain Transmint and/or Recieve (____dBi at _____GHz)	
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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)
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E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

512 KBPS, PSK, DIGITAL CARRIER

74CM−2	29500.0000 30000.0000	T	Left and Right Circular	650KG7W	47.0	24.9

E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

512 KSPS, PSK, DIGITAL CARRIER

74CM−3	29500.0000 30000.0000	T	Left and Right Circular	650KG7W	47.0	24.9

E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

512 KSPS, PSK, DIGITAL CARRIER

FREQUENCY COORDINATION

E28. Antenna Id	**E51. Satellite Orbit Type**	**E52/53. Frequency Limits(MHz)**	**E54/55. Range of Satellite Arc Eastern/Western 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)**
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E62. Street Address 11717 Exploration Lane			
E63. City Germantown	E68. County Montgomery	E67/68. State/Country MD/ USA	E64. Zip Code 20876

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