Approved by OMB
3060−0678

Date & Time Filed: Feb 3 2004 11:10:44:960AM
File Number: SES−MOD−INTR2004−00216

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:
MOD E000166 Germantown VSAT Consolidation

1−8. Legal Name of Applicant

Name:	Hughes Network Systems, Inc.	**Phone Number:**	301−428−5500
DBA Name:		**Fax Number:**	
Street:	11717 Exploration Lane	**E−Mail:**	
City:	Germantown	**State:**	MD
Country:	USA	**Zipcode:**	20876 −
Attention:	Ken Sahai		

9−16. Name of Contact Representative (If other than applicant)

Name:	John P. Janka	**Phone Number:**	202−637−2200
Company:	Latham & Watkins	**Fax Number:**	202−637−2201
Street:	555 Eleventh Street, NW	**E−Mail:**	
	Suite 1000		
City:	Washington	**State:**	DC
Country:	USA	**Zipcode:**	20004−1304
Contact Title:		**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
- ( ) (N/A) b3. Amendment to a Pending Application
- (●) (N/A) b4. Modification of License or Registration

b5. Assignment of License or Registration
b6. Transfer of Control of License or Registration
- ( ) (N/A) 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)

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 A 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: E000166	(a) Date pending application was filed:	(b) File number: SESMOD2003040900485

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
- [x] 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)
- [x] b. Ku−Band (12/14 GHz)
- [ ] c.Other (Please specify upper and lower frequencies in MHz.)

Frequency Lower: Frequency Upper: (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)

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.)

- [x] a −− authorization to add new emission designator and related service
- [x] b −− authorization to change emission designator and related service
- [x] c −− authorization to increase EIRP and EIRP density
- [ ] d −− authorization to replace antenna
- [x] e −− authorization to add antenna
- [x] f −− authorization to relocate fixed station
- [ ] g −− authorization to change frequency(ies)
- [ ] h −− authorization to add frequency
- [x] i −− authorization to add Points of Communication (satellites & countries)
- [x] 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
- [ ] 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 Rad Haz

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 ○ N/A
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. PendingLit	◉ 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?Mexico	

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.)

Please see the Attachment for a complete description of the modifications to earth station license E000166 proposed by this application. No changes are proposed to the other types of antennas authorized under E000166 that do not appear on this application.

Descriptn

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
Joslyn Read	Assistant Vice President

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:	HUB−C	E5. Call Sign:	E000166
E2: Contact Name	Dave Zatloukal	E6. Phone Number:	301−428−5500
E3. Street:	11717 Exploration Lane	E7. City:	Germantown
		E8. County:	Montgomery
E4. State	MD	E9. Zip Code	20876
E10. Area of Operation:		N/A	
E11. Latitude:	39 °10 ’43.0 "N		
E12. Longitude:	77 °14 ’51.0 "W		
E13. Lat/Lon Coordinates are:		○ NAD−27	◉ NAD−83 ○ N/A
E14. Site Elevation (AMSL):		155.4 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: PERMITTED LIST 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)
HUB−C	HUB−C 7.6M	1	NEC	APS−12/14−F 64A	7.6	56.7 dBi at 12.0
						59.6 dBi at 14.0

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)
HUB−C 7.6M	0.0/0.0	29.3	184.7	20.8	250.0	8.5	83.6

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)
HUB−C 7.6M	14000 14500	T	Horizontal and Vertical	400KG7D	59.0	39.0

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.)

BPSK, DATA, 256 KSPS, OUTROUTE CARRIER

HUB−C 7.6M	14000 14500	T	Horizontal and Vertical	1M60G7D	65.0	39.0

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.)

BPSK, DATA, 1024 KSPS, OUTROUTE CARRIER

HUB−C 7.6M	11700 12200	R	Horizontal and Vertical	200KG7D	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.)

BPSK OR MSK, DATA, 128 KSPS, INROUTE CARRIER

HUB−C 7.6M	11700 12200	R	Horizontal and Vertical	400KG7D	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.)

BPSK OR MSK, DATA, 256 KSPS, INROUTE CARRIER

HUB−C 7.6M	11700 12200	R	Horizontal and Vertical	800KG7D	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.)

BPSK OR MSK, DATA, 512 KSPS, INROUTE CARRIER

HUB−C 7.6M	14000 14500	T	Horizontal and Vertical	6M00G7D	70.8	39.0

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.)

QPSK, DATA, 5 MSPS, MULTIMEDIA BROADCAST CARRIER

HUB−C 7.6M	14000 14500	T	Horizontal and Vertical	12M0G7D	73.8	39.0

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.)

QPSK, DATA, 10 MSPS, MULTIMEDIA BROADCAST 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)**
HUB−C 7.6M	Geostationary	14000 14500	60.0/143.0	153.8	41.2	254.1	10.0	−13.6

REMOTE CONTROL POINT LOCATION

E61. Call Sign NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.		E66. Phone Number	
E62. Street Address			
E63. City	E68. County	E67/68. State/Country /	E64. Zip Code

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:	HUB−D	E5. Call Sign:	E000166	
E2: Contact Name	Dave Zatloukal	E6. Phone Number:	301−428−5500	
E3. Street:	11717 Exploration Lane	E7. City:	Germantown	
		E8. County:	Montgomery	
E4. State	MD	E9. Zip Code	20876	
E10. Area of Operation:		N/A		
E11. Latitude:	39 °10 ’42.0 "N			
E12. Longitude:	77 °14 ’53.0 "W			
E13. Lat/Lon Coordinates are:		○ NAD−27	◉ NAD−83	○ N/A
E14. Site Elevation (AMSL):		155.5 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: PERMITTED LIST 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)
HUB−D	HUB−D 7.6M	1	NEC	APS−12/14−F07 64A	7.6	56.7 dBi at 12.0
						59.6 dBi at 14.0

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)
HUB−D 7.6M	0.0/0.0	30.8	186.2	22.3	250.0	8.5	83.6

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)
HUB−D 7.6M	14000 14500	T	Horizontal and Vertical	400KG7D	59.0	39.0

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.)

BPSK, DATA, 256 KSPS, OUTROUTE CARRIER

HUB−D 7.6M	14000 14500	T	Horizontal and Vertical	1M60G7D	65.0	39.0

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.)

BPSK, DATA, 1024 KSPS, OUTROUTE CARRIER

HUB−D 7.6M	11700 12200	R	Horizontal and Vertical	200KG7D	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.)

BPSK OR MSK, DATA, 128 KSPS, INROUTE CARRIER

HUB−D 7.6M	11700 12200	R	Horizontal and Vertical	400KG7D	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.)

BPSK OR MSK, DATA, 256 KSPS, INROUTE CARRIER

HUB−D 7.6M	11700 12200	R	Horizontal and Vertical	800KG7D	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.)

BPSK OR MSK, DATA, 512 KSPS, INROUTE CARRIER

HUB−D 7.6M	14000 14500	T	Horizontal and Vertical	6M00G7D	70.8	39.0

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.)

QPSK, DATA, 5 MSPS, MULTIMEDIA BROADCAST CARRIER

HUB−D 7.6M	14000 14500	T	Horizontal and Vertical	12M0G7D	73.8	39.0

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.)

QPSK, DATA, 1024 KSPS, MULTIMEDIA BROADCAST 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)**
HUB−D 7.6M	Geostationary	14000 14500	60.0/143.0	153.8	41.2	254.1	10.0	−13.6

REMOTE CONTROL POINT LOCATION

E61. Call Sign NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.		E66. Phone Number	
E62. Street Address			
E63. City	E68. County	E67/68. State/Country /	E64. Zip Code

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:	HUB−E	E5. Call Sign:	E000166
E2: Contact Name	Dave Zatloukal	E6. Phone Number:	301−428−5500
E3. Street:	11717 Exploration Lane	E7. City:	Germantown
		E8. County:	Montgomery
E4. State	MD	E9. Zip Code	20876
E10. Area of Operation:		N/A	
E11. Latitude:	39 °10 ’46.0 "N		
E12. Longitude:	77 °14 ’49.0 "W		

E13. Lat/Lon Coordinates are: ◉ NAD−27 ○ NAD−83 ○ N/A

E14. Site Elevation (AMSL): 135.8 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: PERMITTED LIST 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)
HUB−E	HUB−E 6.1M	1	VERTEX	6.1KPK	6.1	55.9 dBi at 11.95
						57.3 dBi at 14.25

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)
HUB−E 6.1M	0.0/0.0	19.9	155.7	12.8	550.0	7.1	84.7

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)
HUB−E 6.1M	11700 12200	R	Horizontal and Vertical	200KG7D	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.)

OQPSK, DATA, 128 KSPS, RETURN CARRIER

HUB−E 6.1M	11700 12200	R	Horizontal and Vertical	400KG7D	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.)

OQPSK, DATA, 256 KSPS, RETURN CARRIER

HUB−E 6.1M	14000 14500	T	Horizontal and Vertical	400KG7D	52.9	32.9

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.)

BPSK, DATA, 256 KSPS, OUTROUTE CARRIER

HUB−E 6.1M	14000 14500	T	Horizontal and Vertical	1M60G7D	58.9	32.9

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.)

BPSK, DATA, 1024 KSPS, OUTROUTE CARRIER

HUB−E 6.1M	11700 12200	R	Horizontal and Vertical	200KG7D	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.)

BPSK OR MSK, DATA, 128 KSPS, INROUTE CARRIER

HUB−E 6.1M	11700 12200	R	Horizontal and Vertical	400KG7D	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.)

BPSK OR MSK, DATA, 256 KSPS, INROUTE CARRIER

HUB−E 6.1M	11700 12200	R	Horizontal and Vertical	800KG7D	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.)

BPSK OR MSK, DATA, 512 KSPS, INROUTE CARRIER

HUB−E 6.1M	14000 14500	T	Horizontal and Vertical	6M00G7D	67.7	35.9

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.)

QPSK, DATA, 5 MSPS, MULTIMEDIA BROADCAST CARRIER

HUB−E 6.1M	14000 14500	T	Horizontal and Vertical	12M0G7D	70.7	35.9

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.)

QPSK, DATA, 10 MSPS, MULTIMEDIA BROADCAST CARRIER

HUB−E 6.1M	14000 14500	T	Horizontal and Vertical	24M0G7D	79.7	41.9

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.)

QPSK, DATA, 20 MSPS, MULTIMEDIA BROADCAST CARRIER

HUB−E 6.1M	14000 14500	T	Horizontal and Vertical	36M0G7D	79.7	40.2

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.)

QPSK, DATA, 30 MSPS, MULTIMEDIA BROADCAST 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)**
HUB−E 6.1M	Geostationary	11700 12200	62.0/143.0	156.7	41.9	254.1	10.0	0.0
	Geostationary	14000 14500	62.0/143.0	156.7	41.9	254.1	10.0	−8.4

REMOTE CONTROL POINT LOCATION

E61. Call Sign NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.		E66. Phone Number	
E62. Street Address			
E63. City	E68. County	E67/68. State/Country /	E64. Zip Code

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:	HUB−F	E5. Call Sign:	E000166
E2: Contact Name	Dave Zatloukal	E6. Phone Number:	301−428−5500
E3. Street:	11717 Exploration Lane	E7. City:	Germantown
		E8. County:	Montgomery
E4. State	MD	E9. Zip Code	20876
E10. Area of Operation:		N/A	
E11. Latitude:	39 °10 ’46.0 "N		
E12. Longitude:	77 °14 ’54.0 "W		
E13. Lat/Lon Coordinates are:		○ NAD−27	◉ NAD−83 ○ N/A
E14. Site Elevation (AMSL):		143.3 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: PERMITTED LIST 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)
HUB−F	HUB−F 5.6M	1	ANDREW	ES56−1	5.6	55.4 dBi at 12.00
						56.8 dBi at 14.00

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)
HUB−F 5.6M	0.0/0.0	28.9	172.2	22.3	125.0	6.6	77.7

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)
HUB−F 5.6M	11700 12200	R	Horizontal and Vertical	200KG7D	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.)

OQPSK, DATA, 128 KSPS, RETURN CARRIER

HUB−F 5.6M	11700 12200	R	Horizontal and Vertical	400KG7D	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.)

OQPSK, DATA, 256 KSPS, RETURN CARRIER

HUB−F 5.6M	14000 14500	T	Horizontal and Vertical	400KG7D	52.9	32.9

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.)

BPSK, DATA, 256 KSPS, OUTROUTE CARRIER

HUB−F 5.6M	14000 14500	T	Horizontal and Vertical	1M60G7D	58.9	32.9

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.)

BPSK, DATA, 1024 KSPS, OUTROUTE CARRIER

HUB−F 5.6M	11700 12200	R	Horizontal and Vertical	200KG7D	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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BPSK OR MSK, DATA, 128 KSPS, INROUTE CARRIER
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HUB−F 5.6M	11700 12200	R	Horizontal and Vertical	400KG7D	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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BPSK OR MSK, DATA, 256 KSPS, INROUTE CARRIER
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HUB−F 5.6M	11700 12200	R	Horizontal and Vertical	800KG7D	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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BPSK OR MSK, DATA, 522 KSPS, INROUTE CARRIER
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HUB−F 5.6M	14000 14500	T	Horizontal and Vertical	6M00G7D	67.7	35.9

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.)

QPSK, DATA, 5 MSPS, MULTIMEDIA BROADCAST CARRIER

HUB−F 5.6M	14000 14500	T	Horizontal and Vertical	12M0G7D	70.7	35.9

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.)

QPSK, DATA, 10 MSPS, MULTIMEDIA BROADCAST CARRIER

HUB−F 5.6M	14000 14500	T	Horizontal and Vertical	24M0G7D	77.7	39.9

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.)

QPSK, DATA, 20 MSPS, MULTIMEDIA BROADCAST CARRIER

HUB−F 5.6M	14000 14500	T	Horizontal and Vertical	36M0G7D	77.7	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.)

QPSK, DATA, 30 MSPS, MULTIMEDIA BROADCAST 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)**
HUB−F 5.6M	Geostationary	11700 12200	62.0/143.0	156.7	41.9	254.1	10.0	0.0
	Geostationary	14000 14500	62.0/143.0	156.7	41.9	254.1	10.0	−9.9

REMOTE CONTROL POINT LOCATION

E61. Call Sign NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.	E66. Phone Number
E62. Street Address	

E63. City	E68. County	E67/68. State/Country /	E64. Zip Code

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:	HUB−G	E5. Call Sign:	E000166
E2: Contact Name	Dave Zatloukal	E6. Phone Number:	301−428−5500
E3. Street:	10450 Pacific Center Court	E7. City:	San Diego
		E8. County:	San Diego
E4. State	CA	E9. Zip Code	92121
E10. Area of Operation:		N/A	
E11. Latitude:	32 °54 ’31.0 "N		
E12. Longitude:	117 °11 ’26.0 "W		
E13. Lat/Lon Coordinates are:		○ NAD−27	◉ NAD−83 ○ N/A
E14. Site Elevation (AMSL):		97.2 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: PERMITTED LIST 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)
HUB−G	HUB−G 4.6M	1	VERTEX	4.57KPK	4.6	53.2 dBi at 12.00
						54.5 dBi at 14.00

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)
HUB−G 4.6M	0.0/0.0	5.2	102.4	0.0	2.0	0.0	57.5

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)
HUB−G 4.6M	14000 14500	T	Horizontal and Vertical	400KG7D	57.5	37.5

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.)

BPSK, DATA, 256 KSPS, OUTROUTE CARRIER

HUB−G 4.6M	14000 14500	T	Horizontal and Vertical	1M60G7D	57.5	31.5

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.)

BPSK, DATA, 1024 KSPS, OUTROUTE CARRIER

HUB−G 4.6M	11700 12200	R	Horizontal and Vertical	200KG7D	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.)

BPSK OR MSK, DATA, 128 KSPS, INROUTE CARRIER

HUB−G 4.6M	11700 12200	R	Horizontal and Vertical	400KG7D	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.)

BPSK OR MSK, DATA, 256 KSPS, INROUTE CARRIER

HUB−G 4.6M	11700 12200	R	Horizontal and Vertical	800KG7D	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.)

BPSK OR MSK, DATA, 512 KSPS, INROUTE 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)**
HUB−G 4.6M	Geostationary	11700 12200	60.0/143.0	109.3	18.8	221.7	42.7	0.0
	Geostationary	14000 14500	60.0/143.0	109.3	18.8	221.7	42.7	−16.9

REMOTE CONTROL POINT LOCATION

E61. Call Sign NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.		E66. Phone Number	
E62. Street Address			
E63. City	E68. County	E67/68. State/Country /	E64. Zip Code

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:	MESH	E5. Call Sign:	E000166
E2: Contact Name	Dave Zatloukal	E6. Phone Number:	301−428−5500
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 "		
E12. Longitude:	0 °0 ’0.0 "		
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: PERMITTED LIST 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)
MESH	MESH 1.8M	5000	Hughes Network Systems	PES−RFT−180	1.8	45.0 dBi at 12.00
						46.7 dBi at 14.00
	MESH 2.4			PES−RFT−240	2.4	47.1 dBi at 12.00
						48.8 dBi at 14.00
	MESH 1.2			PES−RFT−120	1.2	41.5 dBi at 12.00
						43.1 dBi at 14.00
	MESH 3.5		COMTECH	846400G1	3.5	50.9 dBi at 12.00
						52.3 dBi at 14.00

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)
MESH 1.8M	0.0/0.0	0.0	0.0	0.0	1.5	0.0	48.6
MESH 2.4	0.0/0.0	0.0	0.0	0.0	3.1	0.0	53.7

MESH 1.2	0.0/0.0	0.0	0.0	0.0	1.5	0.0	45.0
MESH 3.5	0.0/0.0	0.0	0.0	0.0	24.6	0.0	66.2

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)**
MESH 1.8M	11700 12200	R	Horizontal and Vertical	156KG7D	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.) BPSK OR QPSK, DATA, MESH CARRIER						
MESH 1.8M	14000 14500	T	Horizontal and Vertical	156KG7D	48.6	32.7
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.) BPSK OR QPSK, DATA, MESH CARRIER						
MESH 2.4	11700 12200	R	Horizontal and Vertical	307KG7D	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.)

BPSK OR QPSK, DATA, MESH CARRIER

MESH 2.4	14000 14500	T	Horizontal and Vertical	307KG7D	53.7	34.8

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.)

BPSK OR QPSK, DATA, MESH CARRIER

MESH 1.2	11700 12200	R	Horizontal and Vertical	156KG7D	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.)

BPSK OR QPSK, DATA, MESH CARRIER

MESH 1.2	14000 14500	T	Horizontal and Vertical	156KG7D	45.0	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.)

BPSK OR QPSK, DATA, MESH CARRIER

MESH 3.5	11700 12200	R	Horizontal and Vertical	2M46G7D	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.)

BPSK OR QPSK, DATA, MESH CARRIER

MESH 3.5	14000 14500	T	Horizontal and Vertical	2M46G7D	66.2	38.3

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.)

BPSK OR QPSK, DATA, MESH 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)
MESH 1.8M	Geostationary	11700 12200	62.0/143.0	0.0	5.0	0.0	5.0	0.0
	Geostationary	14000 14500	62.0/143.0	0.0	5.0	0.0	5.0	−2.5
MESH 2.4	Geostationary	11700 12200	62.0/143.0	0.0	5.0	0.0	5.0	0.0
	Geostationary	14000 14500	62.0/143.0	0.0	5.0	0.0	5.0	−2.5
MESH 1.2	Geostationary	11700 12200	62.0/143.0	0.0	5.0	0.0	5.0	0.0
	Geostationary	14000 14500	62.0/143.0	0.0	5.0	0.0	5.0	−2.5
MESH 3.5	Geostationary	11700 12200	62.0/143.0	0.0	5.0	0.0	5.0	0.0
	Geostationary	14000 14500	62.0/143.0	0.0	5.0	0.0	5.0	−2.5

REMOTE CONTROL POINT LOCATION

E61. Call Sign E000166 NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.	E66. Phone Number 301−428−5500

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:	E000166
E2: Contact Name	Dave Zatloukal	E6. Phone Number:	301−428−5500
E3. Street:		E7. City:	
		E8. County:	
E4. State		E9. Zip Code	
E10. Area of Operation:		CONUS, AK, HI, VI, PR	
E11. Latitude:	0 °0 ’0.0 "		
E12. Longitude:	0 °0 ’0.0 "		
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: PERMITTED LIST 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 Corp.	1134	1.2	41.5 dBi at 11.95
						43.1 dBi at 14.25

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	0.0	0.0	0.0	2.0	0.0	46.1

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	11700 12200	R	Horizontal and Vertical	400KG7D	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.)

BPSK, DATA, 256KSPS, OUTROUTE CARRIER

TR 1.2	11700 12200	R	Horizontal and Vertical	1M60G7D	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.)

BPSK, DATA, 1024 KSPS, OUTROUTE CARRIER

TR 1.2	11700 12200	R	Horizontal and Vertical	6M00G7D	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.)

QPSK, DATA, 5 MSPS, MULTIMEDIA BROADCAST CARRIER

TR 1.2	11700 12200	R	Horizontal and Vertical	12M0G7D	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.)

QPSK, DATA, 10 MSPS, MULTIMEDIA BROADCAST CARRIER

TR 1.2	11700 12200	R	Horizontal and Vertical	24M0G7D	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.)

QPSK, DATA, 20 MSPS, MULTIMEDIA BROADCAST CARRIER

TR 1.2	11700 12200	R	Horizontal and Vertical	36M0G7D	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.)

QPSK, DATA, 30 MSPS, MULTIMEDIA BROADCAST CARRIER

TR 1.2	14000 14500	T	Horizontal and Vertical	200KG7D	46.1	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.)

OQPSK, DATA, 128 KSPS, RETURN CARRIER

TR 1.2	14000 14500	T	Horizontal and Vertical	400KG7D	46.1	26.1

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.)

OQPSK, DATA, 256 KSPS, RETURN CARRIER

TR 1.2	14000 14500	T	Horizontal and Vertical	200KG7D	46.1	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.)

BPSK OR MSK, DATA, 128 KSPS, INROUTE CARRIER

TR 1.2	14000 14500	T	Horizontal and Vertical	400KG7D	46.1	26.1

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.)

BPSK OR MSK, DATA, 256 KSPS, INROUTE CARRIER

TR 1.2	14000 14500	T	Horizontal and Vertical	800KG7D	46.1	23.1

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.)

BPSK OR MSK, DATA, 512 KSPS, INROUTE 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 1.2	Geostationary	11700 12200	62.0/143.0	0.0	5.0	0.0	5.0	0.0
	Geostationary	14000 14500	62.0/143.0	0.0	5.0	0.0	5.0	−2.5

REMOTE CONTROL POINT LOCATION

E61. Call Sign E000166 NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.		E66. Phone Number 301−428−5500	
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:	E000166
E2: Contact Name	Dave Zatloukal	E6. Phone Number:	301−428−5500
E3. Street:		E7. City:	
		E8. County:	
E4. State		E9. Zip Code	
E10. Area of Operation:		CONUS, AK, HI, VI, PR	
E11. Latitude:	0 °0 ’0.0 "		
E12. Longitude:	0 °0 ’0.0 "		
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: PERMITTED LIST 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 Corp.	1184	1.8	45.0 dBi at 11.95
						46.7 dBi at 14.25

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	0.0	0.0	0.0	2.0	0.0	49.7

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	11700 12200	R	Horizontal and Vertical	400KG7D	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.)

BPSK, DATA, 256 KSPS, OUTROUTE CARRIER

TR 1.8	11700 12200	R	Horizontal and Vertical	1M60G7D	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.)

BPSK, DATA, 1024 KSPS, OUTROUTE CARRIER

TR 1.8	11700 12200	R	Horizontal and Vertical	6M00G7D	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.)

QPSK, DATA, 5 MSPS, MULTIMEDIA BROADCAST CARRIER

TR 1.8	11700 12200	R	Horizontal and Vertical	12M0G7D	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.)

QPSK, DATA, 10 MSPS, MULTIMEDIA BROADCAST CARRIER

TR 1.8	11700 12200	R	Horizontal and Vertical	24M0G7D	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.)

QPSK, DATA, 20 MSPS, MULTIMEDIA BROADCAST CARRIER

TR 1.8	11700 12200	R	Horizontal and Vertical	36M0G7D	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.)

QPSK, DATA, 30 MSPS, MULTIMEDIA BROADCAST CARRIER

TR 1.8	14000 14500	T	Horizontal and Vertical	200KG7D	49.7	32.7

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.)

OQPSK, DATA, 128 KSPS, RETURN CARRIER

TR 1.8	14000 14500	T	Horizontal and Vertical	400KG7D	49.7	29.7

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.)

OQPSK, DATA, 256 KSPS, RETURN CARRIER

TR 1.8	14000 14500	T	Horizontal and Vertical	200KG7D	49.7	32.7

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.)

BPSK OR MSK, DATA, 128 KSPS, INROUTE CARRIER

TR 1.8	14000 14500	T	Horizontal and Vertical	400KG7D	49.7	29.7

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.)

BPSK OR MSK, DATA, 256 KSPS, INROUTE CARRIER

TR 1.8	14000 14500	T	Horizontal and Vertical	800KG7D	49.7	26.7

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.)

BPSK OR MSK, DATA, 512 KSPS, INROUTE 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 1.8	Geostationary	11700 12200	62.0/143.0	0.0	5.0	0.0	5.0	0.0
	Geostationary	14000 14500	62.0/143.0	0.0	5.0	0.0	5.0	−2.5

REMOTE CONTROL POINT LOCATION

E61. Call Sign E000166 NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.	E66. Phone Number 301−428−5500
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 2.4M	E5. Call Sign:	E000166
E2: Contact Name	Dave Zatloukal	E6. Phone Number:	301−428−5500
E3. Street:		E7. City:	
		E8. County:	
E4. State		E9. Zip Code	
E10. Area of Operation:		CONUS, AK, HI, VI, PR	
E11. Latitude:	0 °0 ’0.0 "		
E12. Longitude:	0 °0 ’0.0 "		
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: PERMITTED LIST 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 2.4M	TR 2.4	11000	Prodelin Corp.	1244	2.4	47.7 dBi at 11.95
						49.2 dBi at 14.25

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 2.4	0.0/0.0	0.0	0.0	0.0	2.0	0.0	52.2

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 2.4	11700 12200	R	Horizontal and Vertical	400KG7D	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.)

BPSK, DATA, 256 KSPS, OUTROUTE CARRIER

TR 2.4	11700 12200	R	Horizontal and Vertical	1M60G7D	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.)

BPSK, DATA, 1024 KSPS, OUTROUTE CARRIER

TR 2.4	11700 12200	R	Horizontal and Vertical	6M00G7D	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.)

QPSK, DATA, 5 MSPS, MULTIMEDIA BROADCAST CARRIER

TR 2.4	11700 12200	R	Horizontal and Vertical	12M0G7D	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.)

QPSK, DATA, 10 MSPS, MULTIMEDIA BROADCAST CARRIER

TR 2.4	11700 12200	R	Horizontal and Vertical	24M0G7D	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.)

QPSK, DATA, 20 MSPS, MULTIMEDIA BROADCAST CARRIER

TR 2.4	11700 12200	R	Horizontal and Vertical	36M0G7D	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.)

QPSK, DATA, 30 MSPS, MULTIMEDIA BROADCAST CARRIER

TR 2.4	14000 14500	T	Horizontal and Vertical	200KG7D	52.2	35.2

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.)

OQPSK, DATA, 128 KSPS, RETURN CARRIER

TR 2.4	14000 14500	T	Horizontal and Vertical	400KG7D	52.2	32.2

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.)

OQPSK, DATA, 256 KSPS, RETURN CARRIER

TR 2.4	14000 14500	T	Horizontal and Vertical	200KG7D	52.2	35.2

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.)

BPSK OR MSK, DATA, 128 KSPS, INROUTE CARRIER

TR 2.4	14000 14500	T	Horizontal and Vertical	400KG7D	52.2	32.2

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.)

BPSK OR MSK, DATA, 256 KSPS, INROUTE CARRIER

TR 2.4	14000 14500	T	Horizontal and Vertical	800KG7D	52.2	29.2

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.)

BPSK OR MSK, DATA, 512 KSPS, INROUTE 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 2.4	Geostationary	11700 12200	62.0/143.0	0.0	5.0	0.0	5.0	0.0
	Geostationary	14000 14500	62.0/143.0	0.0	5.0	0.0	5.0	−5.5

REMOTE CONTROL POINT LOCATION

E61. Call Sign E000166 NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.		E66. Phone Number 301−428−5500	
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 1.0M	E5. Call Sign:	E000166
E2: Contact Name	Dave Zatloukal	E6. Phone Number:	301−428−5500
E3. Street:		E7. City:	
		E8. County:	
E4. State		E9. Zip Code	
E10. Area of Operation:		CONUS, AK, HI, VI, PR	
E11. Latitude:	0 °0 ’0.0 "		
E12. Longitude:	0 °0 ’0.0 "		
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: PERMITTED LIST 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 1.0M	TR 1.0	100000	Prodelin Corp.	1102	1.0	39.8 dBi at 11.95
						41.0 dBi at 14.25

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 1.0	0.58/1.35	0.0	0.0	0.0	2.0	0.0	44.0

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)
TR 1.0	11700 12200	R	Horizontal and Vertical	400KG7D	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.)

BPSK, DATA, 256 KSPS, OUTROUTE CARRIER

TR 1.0	11700 12200	R	Horizontal and Vertical	1M60G7D	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.)

BPSK, DATA, 1024 KSPS, OUTROUTE CARRIER

TR 1.0	11700 12200	R	Horizontal and Vertical	6M00G7D	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.)

QPSK, DATA, 5 MSPS, MULTIMEDIA BROADCAST CARRIER

TR 1.0	11700 12200	R	Horizontal and Vertical	12M0G7D	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.)

QPSK, DATA, 10 MSPS, MULTIMEDIA BROADCAST CARRIER

TR 1.0	14000 14500	T	Horizontal and Vertical	200KG7D	44.0	27.0

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.)

BPSK OR MSK, DATA, 128 KSPS, INROUTE CARRIER

TR 1.0	14000 14500	T	Horizontal and Vertical	400KG7D	44.0	24.0

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.)

BPSK OR MSK, DATA, 256 KSPS, INROUTE CARRIER

TR 1.0	14000 14500	T	Horizontal and Vertical	800KG7D	44.0	21.0

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.)

BPSK OR MSK, DATA, 512 KSPS, INROUTE 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 1.0	Geostationary	11700 12200	62.0/143.0	0.0	5.0	0.0	5.0	0.0
	Geostationary	14000 14500	62.0/143.0	0.0	5.0	0.0	5.0	−2.5

REMOTE CONTROL POINT LOCATION

E61. Call Sign E000166 NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.		E66. Phone Number 301−428−5500	
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 75CM	E5. Call Sign:	E000166
E2: Contact Name	Dave Zatloukal	E6. Phone Number:	301−428−5500
E3. Street:		E7. City:	
		E8. County:	
E4. State		E9. Zip Code	
E10. Area of Operation:		CONUS, AK, HI, VI, PR	
E11. Latitude:	0 °0 ’0.0 "		
E12. Longitude:	0 °0 ’0.0 "		
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: PERMITTED LIST 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 75CM	TR 0.75	10000	Hughes Network Systems	3000179	0.75	37.0 dBi at 12.00
						38.8 dBi at 14.00

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 0.75	0.46/1.02	0.0	0.0	0.0	1.0	0.0	38.8

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 0.75	11700 12200	R	Horizontal and Vertical	400KG7D	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.)

BPSK, DATA, 256 KSPS, OUTROUTE CARRIER

TR 0.75	11700 12200	R	Horizontal and Vertical	1M60G7D	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.)

BPSK, DATA, 1024 KSPS, OUTROUTE CARRIER

TR 0.75	11700 12200	R	Horizontal and Vertical	6M00G7D	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.)

QPSK, DATA, 5 MSPS, MULTIMEDIA BROADCAST CARRIER

TR 0.75	11700 12200	R	Horizontal and Vertical	12M0G7D	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.)

QPSK, DATA, 10 MSPS, MULTIMEDIA BROADCAST CARRIER

TR 0.75	14000 14500	T	Horizontal and Vertical	200KG7D	38.8	21.8

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.)

BPSK OR MSK, DATA, 128 KSPS, INROUTE CARRIER

TR 0.75	14000 14500	T	Horizontal and Vertical	400KG7D	38.8	18.8

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.)

BPSK OR MSK, DATA, 256 KSPS, INROUTE 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 0.75	Geostationary	11700 12200	62.0/143.0	0.0	5.0	0.0	5.0	0.0

	Geostationary	14000 14500	62.0/143.0	0.0	5.0	0.0	5.0	−5.5

REMOTE CONTROL POINT LOCATION

E61. Call Sign E000166 NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.		E66. Phone Number 301−428−5500	
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:	E000166
E2: Contact Name	Dave Zatloukal	E6. Phone Number:	301−428−5500
E3. Street:		E7. City:	
		E8. County:	
E4. State		E9. Zip Code	
E10. Area of Operation:		CONUS, AK, HI, VI, PR	
E11. Latitude:	0 °0 ’0.0 "		
E12. Longitude:	0 °0 ’0.0 "		
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: OTHER If you selected OTHER, please enter the following:	
E21. Common Name: Galaxy 4R	E22. ITU Name:
E23. Orbit Location: 99 WL	E24. Country: USA

Satellite Name: OTHER If you selected OTHER, please enter the following:	
E21. Common Name: Satmex 5	E22. ITU Name:
E23. Orbit Location: 116.8 WL	E24. Country: Mexico

Satellite Name: OTHER If you selected OTHER, please enter the following:

E21. Common Name: Galaxy 3C	E22. ITU Name:
E23. Orbit Location: 95 WL	E24. Country: USA

Satellite Name: OTHER If you selected OTHER, please enter the following:	
E21. Common Name: Galaxy 11	E22. ITU Name:
E23. Orbit Location: 91 WL	E24. Country: USA

Satellite Name: OTHER If you selected OTHER, please enter the following:	
E21. Common Name: AMC−3	E22. ITU Name:
E23. Orbit Location: 87 W	E24. Country: USA

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 74CM	TR74	350000	Prodelin	HANT−91TR	0.74	37.7 dBi at 11.95
						39.0 dBi at 14.25

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)
TR74	0.56/0.98	0.0	0.0	0.0	1.0	0.0	39.0

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)
TR74	11700 12200	R	Horizontal and Vertical	6M00G7D	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.)

QPSK, DATA, 5 MSPS, MULTIMEDIA BROADCAST CARRIER

TR74	11700 12200	R	Horizontal and Vertical	12M0G7D	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.)

QPSK, DATA, 10 MSPS, MULTIMEDIA BROADCAST CARRIER

TR74	11700 12200	R	Horizontal and Vertical	24M0G7D	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.)

QPSK, DATA, 20 MSPS, MULTIMEDIA BROADCAST CARRIER

TR74	11700 12200	R	Horizontal and Vertical	36M0G7D	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.)

QPSK, DATA, 30 MSPS, MULTIMEDIA BROADCAST CARRIER

TR74	14000 14500	T	Horizontal and Vertical	200KG7D	39.0	22.0

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.)

OQPSK, DATA, 128 KSPS, RETURN CARRIER

TR74	14000 14500	T	Horizontal and Vertical	400KG7D	39.0	19.0

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.)

OQPSK, DATA, 256 KSPS, RETURN 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)**
TR74	Geostationary	11700 12200	62.0/143.0	0.0	5.0	0.0	5.0	0.0
	Geostationary	14000 14500	62.0/143.0	0.0	5.0	0.0	5.0	−5.5

REMOTE CONTROL POINT LOCATION

E61. Call Sign
E000166
NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.

E66. Phone Number
301−428−5500

E62. Street Address
11717Exploration 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:	TF TR 74CM	E5. Call Sign:	E000166
E2: Contact Name	Dave Zatloukal	E6. Phone Number:	301−428−5500
E3. Street:		E7. City:	
		E8. County:	
E4. State		E9. Zip Code	
E10. Area of Operation:		CONUS, AK, HI, VI, PR	
E11. Latitude:	0 °0 ’0.0 "		
E12. Longitude:	0 °0 ’0.0 "		
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: OTHER If you selected OTHER, please enter the following:

E21. Common Name: Galaxy 4R	E22. ITU Name:
E23. Orbit Location: 99 WL	E24. Country: USA

Satellite Name: OTHER If you selected OTHER, please enter the following:	
E21. Common Name: AMC−3	E22. ITU Name:
E23. Orbit Location: 87 W	E24. Country: USA

Satellite Name: OTHER If you selected OTHER, please enter the following:	
E21. Common Name: Galaxy 3C	E22. ITU Name:
E23. Orbit Location: 95 WL	E24. Country: USA

Satellite Name: OTHER If you selected OTHER, please enter the following:	
E21. Common Name: Satmex 5	E22. ITU Name:
E23. Orbit Location: 116.8 WL	E24. Country: Mexico

Satellite Name: OTHER If you selected OTHER, please enter the following:	
E21. Common Name: Galaxy 11	E22. ITU Name:
E23. Orbit Location: 91 WL	E24. Country: USA

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	TF TR 74	60200	Prodelin	HANT−91TR	0.74	37.9 dBi at 11.95
						39.0 dBi at 14.25

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 74	0.56/0.98	0.0	0.0	0.0	1.0	0.0	39.0

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)
TF TR 74	11700 12200	R	Horizontal and Vertical	6M00G7D	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.)

QPSK, DATA, 5 MSPS, MULTIMEDIA BROADCAST CARRIER

TF TR 74	11700 12200	R	Horizontal and Vertical	12M0G7D	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.)

QPSK, DATA, 10 MSPS, MULTIMEDIA BROADCAST CARRIER

TF TR 74	11700 12200	R	Horizontal and Vertical	24M0G7D	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.)

QPSK, DATA, 20 MSPS, MULTIMEDIA BROADCAST CARRIER

TF TR 74	11700 12200	T	Horizontal and Vertical	36M0G7D	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.)

QPSK, DATA, 30 MSPS, MULTIMEDIA BROADCAST CARRIER

TF TR 74	14000 14500	T	Horizontal and Vertical	200KG7D	39.0	22.0

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.)

OQPSK, DATA, 128 KSPS, RETURN CARRIER

TF TR 74	14000 14500	T	Horizontal and Vertical	400KG7D	39.0	19.0

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.)

OQPSK, DATA, 256 KSPS, RETURN 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 74	Geostationary	11700 12200	62.0/143.0	0.0	5.0	0.0	5.0	0.0

	Geostationary	14000 14500	62.0/143.0	0.0	5.0	0.0	5.0	−5.5

REMOTE CONTROL POINT LOCATION

E61. Call Sign E000166 NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.		E66. Phone Number 301−428−5500	
E62. Street Address 11717 Exploration Lane			
E63. City Germantown	E68. County Montgomery	E67/68. State/Country MD/ USA	E64. Zip Code 20878

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:	E000166
E2: Contact Name	Dave Zatloukal	E6. Phone Number:	301−428−5500
E3. Street:		E7. City:	
		E8. County:	
E4. State		E9. Zip Code	
E10. Area of Operation:		CONUS, AK, HI, VI, PR	
E11. Latitude:	0 °0 ’0.0 "		
E12. Longitude:	0 °0 ’0.0 "		
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: OTHER If you selected OTHER, please enter the following:	
E21. Common Name: Galaxy 4R	E22. ITU Name:
E23. Orbit Location: 99 WL	E24. Country: USA

Satellite Name: OTHER If you selected OTHER, please enter the following:	
E21. Common Name: Satmex 5	E22. ITU Name:
E23. Orbit Location: 116.8 WL	E24. Country: Mexico

Satellite Name: OTHER If you selected OTHER, please enter the following:

E21. Common Name: AMC−3	E22. ITU Name:
E23. Orbit Location: 87 W	E24. Country: USA

Satellite Name: OTHER If you selected OTHER, please enter the following:	
E21. Common Name: Galaxy 11	E22. ITU Name:
E23. Orbit Location: 91 WL	E24. Country: USA

Satellite Name: OTHER If you selected OTHER, please enter the following:	
E21. Common Name: Galaxy 3C	E22. ITU Name:
E23. Orbit Location: 95 WL	E24. Country: USA

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	TR98	60000	Prodelin	9008668	0.98	39.9 dBi at 11.95
						41.3 dBi at 14.25

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)
TR98	0.0/0.0	0.0	0.0	0.0	2.0	0.0	44.3

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)
TR98	11700 12200	R	Horizontal and Vertical	6M00G7D	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.)

QPSK, DATA, 5 MSPS, MULTIMEDIA BROADCAST CARRIER

TR98	11700 12200	R	Horizontal and Vertical	12M0G7D	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.)

QPSK, DATA, 10 MSPS, MULTIMEDIA BROADCAST CARRIER

TR98	11700 12200	R	Horizontal and Vertical	24M0G7D	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.)

QPSK, DATA, 20 MSPS, MULTIMEDIA BROADCAST CARRIER

TR98	11700 12200	R	Horizontal and Vertical	36M0G7D	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.)

QPSK, DATA, 30 MSPS, MULTIMEDIA BROADCAST CARRIER

TR98	14000 14500	T	Horizontal and Vertical	200KG7D	44.3	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.)

OQPSK, DATA, 128 KSPS, RETURN CARRIER

TR98	14000 14500	T	Horizontal and Vertical	400KG7D	44.3	24.3

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.)

OQPSK, DATA, 256 KSPS, MULTIMEDIA BROADCAST 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)**
TR98	Geostationary	11700 12200	62.0/143.0	0.0	5.0	0.0	5.0	0.0
	Geostationary	14000 14500	62.0/143.0	0.0	5.0	0.0	5.0	−2.5

REMOTE CONTROL POINT LOCATION

E61. Call Sign E000166 NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.	E66. Phone Number 301−428−5500
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:	TF TR 98CM	E5. Call Sign:	E000166
E2: Contact Name	Dave Zatloukal	E6. Phone Number:	301−428−5500
E3. Street:		E7. City:	
		E8. County:	
E4. State		E9. Zip Code	
E10. Area of Operation:		CONUS, AK, HI, VI, PR	
E11. Latitude:	0 °0 ’0.0 "		
E12. Longitude:	0 °0 ’0.0 "		
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: OTHER If you selected OTHER, please enter the following:

E21. Common Name: AMC−3	E22. ITU Name:
E23. Orbit Location: 87 W	E24. Country: USA

Satellite Name: OTHER If you selected OTHER, please enter the following:	
E21. Common Name: Galaxy 11	E22. ITU Name:
E23. Orbit Location: 91W	E24. Country: USA

Satellite Name: OTHER If you selected OTHER, please enter the following:	
E21. Common Name: Galaxy 4R	E22. ITU Name:
E23. Orbit Location: 99W	E24. Country: USA

Satellite Name: OTHER If you selected OTHER, please enter the following:	
E21. Common Name: Satmex 5	E22. ITU Name:
E23. Orbit Location: 116.8W	E24. Country: Mexico

Satellite Name: OTHER If you selected OTHER, please enter the following:	
E21. Common Name: Galaxy 3C	E22. ITU Name:
E23. Orbit Location: 95W	E24. Country: USA

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 98	54000	Prodelin	9008668	0.98	39.9 dBi at 11.95
						41.3 dBi at 14.25

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 98	0.0/0.0	0.0	0.0	0.0	2.0	0.0	44.3

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)
TF TR 98	11700 12200	R	Horizontal and Vertical	6M00G7D	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.)

QPSK, DATA, 5 MSPS, MULTIMEDIA BROADCAST CARRIER

TF TR 98	11700 12200	R	Horizontal and Vertical	12M0G7D	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.)

QPSK, DATA, 10 MSPS, MULTIMEDIA BROADCAST CARRIER

TF TR 98	11700 12200	R	Horizontal and Vertical	24M0G7D	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.)

QPSK, DATA, 20 MSPS, MULTIMEDIA BROADCAST CARRIER

TF TR 98	11700 12200	R	Horizontal and Vertical	36M0G7D	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.)

QPSK, DATA, 30 MSPS, MULTIMEDIA BROADCAST CARRIER

TF TR 98	14000 14500	T	Horizontal and Vertical	200KG7D	44.3	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.)

OQPSK, DATA, 128 KSPS, RETURN CARRIER

TF TR 98	14000 14500	T	Horizontal and Vertical	400KG7D	44.3	24.3

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.)

OQPSK, DATA, 256 KSPS, RETURN 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 98	Geostationary	11700 12200	62.0/143.0	0.0	5.0	0.0	5.0	0.0

	Geostationary	14000 14500	62.0/143.0	0.0	5.0	0.0	5.0	−2.5

REMOTE CONTROL POINT LOCATION

E61. Call Sign E000166 NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.		E66. Phone Number 301−428−5500	
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 1.2M	E5. Call Sign:	E000166
E2: Contact Name	Dave Zatloukal	E6. Phone Number:	301−428−5500
E3. Street:		E7. City:	
		E8. County:	
E4. State		E9. Zip Code	
E10. Area of Operation:		CONUS, AK, HI, VI, PR	
E11. Latitude:	0 °0 ’0.0 "		
E12. Longitude:	0 °0 ’0.0 "		
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: PERMITTED LIST 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 1.2M	TF TR 1.2	50000	Prodelin	1134	1.2	41.5 dBi at 11.95
						43.1 dBi at 14.25

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 1.2	0.0/0.0	0.0	0.0	0.0	2.0	0.0	46.1

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 1.2	11700 12200	R	Horizontal and Vertical	400KG7D	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.)

BPSK, DATA, 256 KSPS, OUTROUTE CARRIER

TF TR 1.2	11700 12200	R	Horizontal and Vertical	1M60G7D	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.)

BPSK, DATA, 1024 KSPS, OUTROUTE CARRIER

TF TR 1.2	11700 12200	R	Horizontal and Vertical	6M00G79	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.)

QPSK, DATA, 5 MSPS, MULTIMEDIA BROADCAST CARRIER

TF TR 1.2	11700 12200	R	Horizontal and Vertical	12M0G7D	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.)

QPSK, DATA, 10 MSPS, MULTIMEDIA BROADCAST CARRIER

TF TR 1.2	11700 12200	R	Horizontal and Vertical	24M0G7D	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.)

QPSK, DATA, 20 MSPS, MULTIMEDIA BROADCAST CARRIER

TF TR 1.2	11700 12200	R	Horizontal and Vertical	30M0G7D	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.)

QPSK, DATA, 30 MSPS, MULTIMEDIA BROADCAST CARRIER

TF TR 1.2	14000 14500	T	Horizontal and Vertical	200KG7D	46.1	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.)

OQPSK, DATA, 128 KSPS, RETURN CARRIER

TF TR 1.2	14000 14500	T	Horizontal and Vertical	400KG7D	46.1	26.1

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.)

OQPSK, DATA, 256 KSPS, RETURN CARRIER

TF TR 1.2	14000 14500	T	Horizontal and Vertical	200KG7D	46.1	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.)

BPSK OR MSK, DATA, 128 KSPS, INROUTE CARRIER

TF TR 1.2	14000 14500	T	Horizontal and Vertical	400KG7D	46.1	26.1

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.)

BPSK OR MSK, DATA, 256 KSPS, INROUTE CARRIER

TF TR 1.2	14000 14500	T	Horizontal and Vertical	800KG7D	46.1	23.1

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.)

BPSK OR MSK, DATA, 512 KSPS, INROUTE 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 1.2	Geostationary	11700 12200	62.0/143.0	0.0	5.0	0.0	5.0	0.0
	Geostationary	14000 14500	62.0/143.0	0.0	5.0	0.0	5.0	−2.5

REMOTE CONTROL POINT LOCATION

E61. Call Sign
E000166
NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.

E66. Phone Number
301−428−5500

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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