Date & Time Filed: Jul 21 2005 3:05:34:550PM File Number: SES-MFS-20050721-00952

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

#### APPLICANT INFORMATION

Enter a description of this application to identify it on the main menu:

DW 7000 Mods for NLV

| Legal Name of A <sub>l</sub> | pplicant               |               |               |
|------------------------------|------------------------|---------------|---------------|
| Name:                        | HNS License Sub, LLC   | Phone Number: | 301-601-7226  |
| DBA<br>Name:                 |                        | Fax Number:   | 301–428–2802  |
| Street:                      | 11717 Exploration Lane | E–Mail:       | jread@hns.com |
| City:                        | Germantown             | State:        | MD            |
| Country:                     | USA                    | Zipcode:      | 20876 –       |
| Attention:                   | Ms Joslyn Read         |               |               |

#### 9–16. Name of Contact Representative

Name: Steven Doiron Phone Number: 301–428–5506

Company: HNS License Sub, LLC Fax Number: 301–428–2802

Street: 11717 Exploration Lane E–Mail: sdoiron@hns.com

City: Germantown State: MD

Country: USA Zipcode: 20876–

Attention: Relationship: Engineer

#### **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

 $\ \ \, \bigcirc \ \, (N/A)$  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):  | Other(please explain): |  |  |  |  |  |  |  |
| 17d.  |                        |  |  |  |  |  |  |  |
| Fee Classification CGV – Fixed Satellite VSAT System  |                        |  |  |  |  |  |  |  |
| 18. If this filing is in reference to an existing station, enter:  19. If this filing is an amendment to a pending application enter both fields, if this filing is a modification please enter only the file number: |                        |  |  |  |  |  |  |  |
| (a) Call sign of station:<br>E940460  |                        |  |  |  |  |  |  |  |
| SESMOD2005022200214   |                        |  |  |  |  |  |  |  |
|   |                        |  |  |  |  |  |  |  |

## TYPE OF SERVICE

| 20. NATURE OF SERVICE: This filing is for an authorization to provide or use the following type(s) of service(s): Select all that apply:           |
|--|
| a. Fixed Satellite   |
| b. Mobile Satellite  |
| c. Radiodetermination Satellite  |
| d. Earth Exploration Satellite   |
| e. Direct to Home Fixed Satellite  |
| f. Digital Audio Radio Service   |
| g. Other (please specify)  |
|  |
| 21. STATUS: Choose the button next to the applicable status. Choose 22. If earth station applicant, check all that apply.                          |
| only one. Using U.S. licensed satellites   |
| Common Carrier   |
| 23. If applicant is providing INTERNATIONAL COMMON CARRIER service, see instructions regarding Sec. 214 filings. Choose one. Are these facilities: |
| Connected to a Public Switched Network Not connected to a Public Switched Network N/A  |
| 24. FREQUENCY BAND(S): Place an 'X' in the box(es) next to all applicable frequency band(s).   |
| a. C–Band (4/6 GHz)  b. Ku–Band (12/14 GHz)  |
| c.Other (Please specify upper and lower frequencies in MHz.)   |
| Frequency Lower: Frequency Upper: (Please specify additional frequencies in an attachment)   |

#### TYPE OF STATION

| 5. 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)  |  |
|  |  |
| 5. TYPE OF EARTH STATION FACILITY:   |  |
| Transmit/Receive Transmit-Only Receive-Only N/A  |  |
| For Space Station applications, select N/A."   |  |

## PURPOSE OF MODIFICATION

| 27. The purpose of this proposed modification is to: (Place an 'X' in the box(es) next to all that apply.) |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|
| a — authorization to add new emission designator and related service                                       |  |  |  |  |  |  |  |
| b — authorization to change emission designator and related service  |  |  |  |  |  |  |  |
| c — authorization to increase EIRP and EIRP density  |  |  |  |  |  |  |  |
| d — authorization to replace antenna   |  |  |  |  |  |  |  |
| e — authorization to add antenna   |  |  |  |  |  |  |  |
| f — authorization to relocate fixed station  |  |  |  |  |  |  |  |
| g — authorization to change frequency(ies)   |  |  |  |  |  |  |  |
| h — authorization to add frequency   |  |  |  |  |  |  |  |
| i — authorization to add Points of Communication (satellites & countries)                                  |  |  |  |  |  |  |  |
| j — authorization to change Points of Communication (satellites & tountries)                               |  |  |  |  |  |  |  |
| k — authorization for facilities for which environmental assessment and                                    |  |  |  |  |  |  |  |
| radiation hazard reporting is required   |  |  |  |  |  |  |  |
| 1 — authorization to change orbit location   |  |  |  |  |  |  |  |
| m — authorization to perform fleet management  |  |  |  |  |  |  |  |
| n — authorization to extend milestones   |  |  |  |  |  |  |  |
| o — Other (Please specify)   |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

#### **ENVIRONMENTAL POLICY**

under the laws of a foreign country?

| 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. | _     |       | •     |       |     |     |
|---|-------|-------|-------|-------|-----|-----|
| ALIEN OWNERSHIP Earth station applicants not proposing to provide broadcast, common carrier, aerona aeronautical fixed radio station services are not required to respond to Items 30–34.   | autic | al er | ı roı | ıte o | r   |     |
| 29. Is the applicant a foreign government or the representative of any foreign government?  | ٥     | Yes   | •     | , No  | )   |     |
| 30. Is the applicant an alien or the representative of an alien?  | 0     | Yes   | •     | . No  | 0   | N/A |
| 31. Is the applicant a corporation organized under the laws of any foreign government?  | 0     | Yes   | •     | , No  | , o | 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  | 0     | Yes   | •     | . No  | · o | N/A |

O Yes No

28. Would a Commission grant of any proposal in this application or amendment have a significant environmental

| 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?       | O Yes | ` ❷ | No <sub>1</sub> | O 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 | ٥               | . 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. | 0     | 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          | <b>⊚</b> No |
|--|----------------|-------------|
| 38. Has any court finally adjudged the applicant, or any person directly or indirectly controlling the applicant, guilty of unlawfully monopolizing or attemptiing unlawfully to monopolize radio communication, directly or indirectly, through control of manufacture or sale of radio apparatus, exclusive traffic arrangement or any other means or unfair methods of competition? If Yes, attach as an exhibit, an explanation of circumstances | ○ Yes          | No          |
| 39. Is the applicant, or any person directly or indirectly controlling the applicant, currently a party in any pending matter referred to in the preceding two items? If yes, attach as an exhinit, an explanation of the circumstances.   | Yes  Exhibit D | 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. | Exhibit C      |             |

| 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. |    |
|--|----|
| 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.  Exhibit B   |    |
| 42b. What administration has licensed or is in the process of licensing the space station? If no license will be issued, what administration has coordinated or is in the process of coordinating the space station?   |    |
| 43. Description. (Summarize the nature of the application and the services to be provided). (If the complete description does not appear in the box, please go to the end of the form to view it in its entirety.)  See exhibit A  Exhibit A   | is |

#### **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.  | 4. Applicant is a (an): (Choose the button next to applicable response.)                                 |  |  |  |  |  |  |  |  |
|------|--|--|--|--|--|--|--|--|--|
| 0000 | Individual Unincorporated Association Partnership Corporation Governmental Entity Other (please specify) |  |  |  |  |  |  |  |  |
|      | 45. Name of Person Signing Joslyn Read>  | 46. Title of Person Signing AVP Regulatory Affairs |  |  |  |  |  |  |  |

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

## SATELLITE EARTH STATION AUTHORIZATIONS FCC Form 312 – Schedule B:(Technical and Operational Description) FOR OFFICIAL USE ONLY

| Location of Earth S         | tation Site               |                      |              |       |   |   |
|-----------------------------|---------------------------|----------------------|--------------|-------|---|---|
| E1: Site Identifier:        | TR 74–2 CM                | E5. Call Sign:       | E940460      |       |   |   |
| E2: Contact Name            | Dave Zatloukal            | E6. Phone<br>Number: | 301-428-5500 |       |   |   |
| E3. Street:                 | 11717 Exploration<br>Lane | E7. City:            | Germantown   |       |   |   |
|                             |                           | E8. County:          | Montgomery   |       |   |   |
| E4. State                   | MD                        | E9. Zip Code         | 20876        |       |   |   |
| E10. Area of Operation:     |                           | CONUS, AK, HI,       | VI, PR       |       |   |   |
| E11. Latitude:              | 0 °0 '0.0 "N              |                      |              |       |   |   |
| E12. Longitude:             | 0 °0 '0.0 "W              |                      |              |       |   |   |
| E13. Lat/Lon Coord          | dinates are:              | O NAD-27             | NAD-83       | O 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. | <b>O</b> Yes | <b>⊚</b> No | O N/A |
|--|--------------|-------------|-------|
|--|--------------|-------------|-------|

| E16. If the proposed antenna(s) do not operate in the Fixed Satellite Set Satellite Service (FSS) with non–geostationary satellites, do(es) the progain patterns specified in Section 25.209(a2) and (b) as demonstrated by measurements? | O Yes                                       | O No  | <b>⊚</b> N/A |    |
|---|---|-------|--------------|----|
| E17. Is the facility operated by remote control? If YES, provide the loca point.  | ation and telephone number of the control   | ● Yes | ٥            | No |
| E18. Is frequency coordination required? If YES, attach a frequency coordination  | ordination report as                        | O Yes | •            | No |
| E19. Is coordination with another country required? If YES, attach the recoordination contours as   | name of the country(ies) and plot of        | O Yes | •            | No |
| E20. FAA Notification – (See 47 CFR Part 17 and 47 CFR part 25.1 have you attached a copy of a completed FCC Form 854 and/or the FAA the structure to aviation?  FAILURE TO COMPLY WITH 47 CFR PARTS 17 AND 25 WILL APPLICATION.          | A's study regarding the potential hazard of | O Yes | •            | No |
| POINTS OF COMMUNICATION   |   | •     |              |    |
| Satellite Name: GALAXY XI   GALAXY XI   91 W.L. If you selected   | d OTHER, please enter the following:        |       |              |    |
| E21. Common Name:   | E22. ITU Name:                              |       |              |    |
| E23. Orbit Location:  | E24. Country:                               |       |              |    |
| Satellite Name: IA-8   IA-8   89 W.L. If you selected OTHER, please   | e enter the following:                      |       |              |    |

| E21. Common Name:  | E22. ITU Name:                                     |
|--|--|
| E23. Orbit Location:   | E24. Country:                                      |
|  |  |
| Satellite Name: AMC-4 (formerly GE-4   AMC-4   101 W.L. If you   | selected OTHER, please enter the following:        |
| E21. Common Name:  | E22. ITU Name:                                     |
| E23. Orbit Location:   | E24. Country:                                      |
|  |  |
| Satellite Name: AMC-9   AMERICOM 9   83 W.L. If you selected O'  | ΓHER, please enter the following:                  |
| E21. Common Name:  | E22. ITU Name:                                     |
| E23. Orbit Location:   | E24. Country:                                      |
|  |  |
| Satellite Name: AMC-3   AMC-3   87 W.L. If you selected OTHER,   | please enter the following:                        |
| E21. Common Name:  | E22. ITU Name:                                     |
| E23. Orbit Location:   | E24. Country:                                      |
|  |  |
| Satellite Name: SATMEX-5   SATMEX-5   116.8 W.L. If you selected | ed OTHER, please enter the following:              |
| E21. Common Name:  | E22. ITU Name:                                     |
| E23. Orbit Location:   | E24. Country:                                      |
|  |  |
| Satellite Name: INTELSAT AMERICAS 5   USASAT-24D   97 W.L.       | If you selected OTHER, please enter the following: |
| E21. Common Name:  | E22. ITU Name:                                     |
| E23. Orbit Location:   | E24. Country:                                      |
|  |  |
| Satellite Name: AMC-6   AMC-6   72 W.L. If you selected OTHER,   | please enter the following:                        |

| E21. Common Name:   | E22. ITU Name:                              |  |  |
|---|---|--|--|
| E23. Orbit Location:  | E24. Country:                               |  |  |
|   |   |  |  |
| Satellite Name: GALAXY 10R   GALAXY 10R   123 W.L. If you sele  | ected OTHER, please enter the following:    |  |  |
| E21. Common Name:   | E22. ITU Name:                              |  |  |
| E23. Orbit Location:  | E24. Country:                               |  |  |
|   |   |  |  |
| Satellite Name: HORIZONS 1   HORIZONS 1   127 DEG WL If you s   | selected OTHER, please enter the following: |  |  |
| E21. Common Name:   | E22. ITU Name:                              |  |  |
| E23. Orbit Location:  | E24. Country:                               |  |  |
|   |   |  |  |
| Satellite Name: GALAXY III-C   GALAXY III-C   95 W.L. If you se | elected OTHER, please enter the following:  |  |  |
| E21. Common Name:   | E22. ITU Name:                              |  |  |
| E23. Orbit Location:  | E24. Country:                               |  |  |
|   |   |  |  |
| Satellite Name: GALAXY 4R   GALAXY 4R   99 W.L. If you selected | d 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<br>Id | E29. Quantity | E30.<br>Manufacturer | E31. Model  | E32. Antenna<br>Size <meters></meters> | E41/42. Antenna Gain Transmint and/or Recieve (dBi atGHz) |  |
|------------|--------------------|---------------|----------------------|-------------|--|---|--|
| TR 74–2 CM | TR 74–2            | 500000        | RAVEN                | HNS-1035610 | 0.74                                   | 36.7 dBi at 11.95   |  |
| TR 74–2 CM | TR 74–2            | 500000        | RAVEN                | HNS-1035610 | 0.74                                   | 38.7 dBi at 14.25   |  |

| E28. A |     | Diameter  |     | ,   | Height Above<br>Ground Level | Input Power at antenna flange | E39. Maximum<br>Antenna Height<br>Above Rooftop<br>(meters) | EIRP for al |
|--------|-----|-----------|-----|-----|------------------------------|-------------------------------|---|-------------|
| TR 74  | 4–2 | 0.69/0.84 | 0.0 | 0.0 | 0.0                          | 2.0                           | 0.0   | 41.7        |

# FREQUENCY

|         | E43/44.<br>Frequency Bands<br>(MHz) |   |                            |         | EIRP per Carrier (dBW) | E49. Maximum<br>ERIP Density per<br>Carrier<br>(dBW/4kHz) |
|---------|-------------------------------------|---|----------------------------|---------|------------------------|---|
| TR 74–2 | 11700<br>12200                      | R | Horizontal and<br>Vertical | 6M00G7D | 0.0                    | 0.0   |

| E50. Modulati entirety.) | ion and Services (I | f the complete d | escription does not appear | in this box, please | go to the end of | the form to view it ir | ı its |
|--------------------------|---------------------|------------------|----------------------------|---------------------|------------------|------------------------|-------|
| QPSK, DAT                | ΓA, 5 MSPS, MUI     | TIMEDIA          |                            |                     |                  |                        |       |
| TR 74–2                  | 11700<br>12200      | R                | Horizontal and<br>Vertical | 12M0G7D             | 0.0              | 0.0                    |       |
| entirety.)               | ion and Services (I |                  | escription does not appear | in this box, please | go to the end of | the form to view it in | n its |
| TR 74–2                  | 11700<br>12200      | R                | Horizontal and<br>Vertical | 24M0G7D             | 0.0              | 0.0                    |       |
| entirety.)               | ion and Services (I |                  | escription does not appear | in this box, please | go to the end of | the form to view it in | n its |
| TR 74–2                  | 11700<br>12200      | R                | Horizontal and<br>Vertical | 36M0G7D             | 0.0              | 0.0                    |       |

|    | E50. Modulation rety.) | and Services (If | the complete descrip | otion does not appear      | in this box, please | go to the end of the | he form to view it in its |  |
|----|------------------------|------------------|----------------------|----------------------------|---------------------|----------------------|---------------------------|--|
|    | QPSK, DATA             | , 30 MSPS, MU    | LTIMEDIA             |                            |                     |                      |                           |  |
| TR | 74–2                   | 14000<br>14500   | Т                    | Horizontal and<br>Vertical | 200KG7D             | 38.7                 | 21.7                      |  |
|    | E50. Modulation rety.) | and Services (If | the complete descrip | otion does not appear      | in this box, please | go to the end of the | he form to view it in its |  |
|    | QPSK, DIGI             | TAL, 128 KSPS    | , RETURN CARRI       | ER                         |                     |                      |                           |  |
| TR | 74–2                   | 14000<br>14500   | Т                    | Horizontal and<br>Vertical | 400KG7D             | 41.7                 | 21.7                      |  |
|    | E50. Modulation rety.) | and Services (If | the complete descrip | otion does not appear      | in this box, please | go to the end of the | he form to view it in its |  |
|    | QPSK, DIGI             | TAL, 256 KSPS    | , RETURN CARRI       | ER                         |                     |                      |                           |  |
| TR | 74–2                   | 14000<br>14500   | Т                    | Horizontal and<br>Vertical | 800KG7D             | 41.7                 | 18.7                      |  |

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.)

QPSK, DIGITAL, 512 KSPS, RETURN CARRIER

| L |         |       |   |                |         |      |      |
|---|---------|-------|---|----------------|---------|------|------|
| ĺ | TR 74-2 | 14000 | T | Horizontal and | 1M60G7D | 41.7 | 15.7 |
|   |         | 14500 |   | Vertical       |         |      |      |

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, DIGITAL, 1024 KSPS, RETURN CARRIER

## FREQUENCY COORDINATION

| E28.<br>Antenna Id |               | E52/53.<br>Frequency<br>Limits(MHz) |            | Station<br>Azimuth<br>Angle |      | Station<br>Azimuth<br>Angle | Elevation<br>Angle<br>Western | E60.<br>Maximum<br>EIRP Density<br>toward the<br>Horizon<br>(dBW/4kHz) |
|--------------------|---------------|-------------------------------------|------------|-----------------------------|------|-----------------------------|-------------------------------|--|
| TR 74–2            | Geostationary | 14000<br>14500                      | 50.0/150.0 | 134.0                       | 36.7 | 257.0                       | 8.3                           | -9.0   |

REMOTE CONTROL POINT LOCATION

| E61. Call Sign E940460 NOTE: Please enter the callsign of the contro callsign for which this application is being filed. | E66. Phone Number 301–428–5500 |  |                                     |                        |
|--|--------------------------------|--|-------------------------------------|------------------------|
| E62. Street Address<br>11717 Exploration Lane  |                                |  |                                     |                        |
| E63. City<br>Germantown  | E68. County<br>Montgomery      |  | E67/68.<br>State/Country<br>MD/ USA | E64. Zip Code<br>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: TFTR 74–2 CM E5. Call Sign: E940460

E2: Contact Name Dave Zatloukal E6. Phone 301–428–5500

Number:

E3. Street: 11717 Exploration E7. City: Germantown

Lane

E8. County: Montgomery

E4. State MD E9. Zip Code 20876

E10. Area of Operation: CONUS, AK, HI, VI, PR

E11. Latitude: 0 °0 '0.0 "N

E12. Longitude: 0 °0 '0.0 "W

E13. Lat/Lon Coordinates are: NAD-27 NAD-83 NAD-83

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. | O Yes | No   | O 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?                     | O Yes | O No | <b>⊚</b> N/A |
| E17. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point.   | Yes   | ٥    | No           |
|  | 1     |      |              |
| E18. Is frequency coordination required? If YES, attach a frequency coordination report as   | O Yes | •    | No           |
| E19. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as   | O 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.  POINTS OF COMMUNICATION         | O Yes | •    | No           |

Satellite Name: INTELSAT AMERICAS 5 | USASAT-24D | 97 W.L. If you selected OTHER, please enter the following:

| E21. Common Name:  | E22. ITU Name:                              |
|--|---|
| E23. Orbit Location:   | E24. Country:                               |
|  |   |
| Satellite Name: AMC-6   AMC-6   72 W.L. If you selected OTHER, 1 | please enter the following:                 |
| E21. Common Name:  | E22. ITU Name:                              |
| E23. Orbit Location:   | E24. Country:                               |
|  |   |
| Satellite Name: GALAXY 4R   GALAXY 4R   99 W.L. If you selecte   | d OTHER, please enter the following:        |
| E21. Common Name:  | E22. ITU Name:                              |
| E23. Orbit Location:   | E24. Country:                               |
|  |   |
| Satellite Name: AMC-3   AMC-3   87 W.L. If you selected OTHER, 1 | please enter the following:                 |
| E21. Common Name:  | E22. ITU Name:                              |
| E23. Orbit Location:   | E24. Country:                               |
|  |   |
| Satellite Name: GALAXY 10R   GALAXY 10R   123 W.L. If you seld   | ected OTHER, please enter the following:    |
| E21. Common Name:  | E22. ITU Name:                              |
| E23. Orbit Location:   | E24. Country:                               |
|  |   |
| Satellite Name: SATMEX-5   SATMEX-5   116.8 W.L. If you selecte  | d OTHER, please enter the following:        |
| E21. Common Name:  | E22. ITU Name:                              |
| E23. Orbit Location:   | E24. Country:                               |
|  |   |
| Satellite Name: AMC-4 (formerly GE-4   AMC-4   101 W.L. If you s | selected OTHER, please enter the following: |

| E21. Common Name:   | E22. ITU Name:                              |
|---|---|
| E23. Orbit Location:  | E24. Country:                               |
|   | •   |
| Satellite Name: GALAXY XI   GALAXY XI   91 W.L. If you selected     | OTHER, please enter the following:          |
| E21. Common Name:   | E22. ITU Name:                              |
| E23. Orbit Location:  | E24. Country:                               |
|   |   |
| Satellite Name: IA-8   IA-8   89 W.L. If you selected OTHER, please | enter the following:                        |
| E21. Common Name:   | E22. ITU Name:                              |
| E23. Orbit Location:  | E24. Country:                               |
|   | •   |
| Satellite Name: HORIZONS 1   HORIZONS 1   127 DEG WL If you         | selected OTHER, please enter the following: |
| E21. Common Name:   | E22. ITU Name:                              |
| E23. Orbit Location:  | E24. Country:                               |
|   |   |
| Satellite Name: AMC 9   AMC 9   85 W.L. If you selected OTHER, pl   | ease enter the following:                   |
| E21. Common Name:   | E22. ITU Name:                              |
| E23. Orbit Location:  | E24. Country:                               |
|   |   |
| Satellite Name: GALAXY III–C   GALAXY III–C   95 W.L. If you se     | elected 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<br>Id | E29. Quantity | E30.<br>Manufacturer | E31. Model  | Size <meters></meters> | E41/42. Antenna Gain Transmint and/or Recieve (dBi atGHz) |  |
|--------------|--------------------|---------------|----------------------|-------------|------------------------|---|--|
| TFTR 74–2 CM | TFTR 74–2          | 50000         | RAVEN                | HNS-1035610 | 0.74                   | 36.7 dBi at 11.95   |  |
| TFTR 74–2 CM | TFTR 74-2          | 50000         | RAVEN                | HNS-1035610 | 0.74                   | 38.7 dBi at 14.25   |  |

| Id        | Diameter  |     | , , | Height Above | Input Power at | E39. Maximum<br>Antenna Height<br>Above Rooftop<br>(meters) | EIRP for al |
|-----------|-----------|-----|-----|--------------|----------------|---|-------------|
| TFTR 74-2 | 0.69/0.84 | 0.0 | 0.0 | 0.0          | 2.0            | 0.0   | 41.7        |

# FREQUENCY

|           | E43/44.<br>Frequency Bands<br>(MHz) |   |                            |         | E48. Maximum<br>EIRP per Carrier<br>(dBW) | E49. Maximum<br>ERIP Density per<br>Carrier<br>(dBW/4kHz) |
|-----------|-------------------------------------|---|----------------------------|---------|---|---|
| TFTR 74-2 | 11700<br>12200                      | R | Horizontal and<br>Vertical | 6M00G7D | 0.0                                       | 0.0   |

| E50. Modulati entirety.) | on and Services (If | the complete de | escription does not appear | in this box, please | go to the end of | the form to view it in its |
|--------------------------|---------------------|-----------------|----------------------------|---------------------|------------------|----------------------------|
| QPSK, DAT                | TA, 5 MSPS, MUL     | TIMEDIA         |                            |                     |                  |                            |
| TFTR 74–2                | 11700<br>12200      | R               | Horizontal and<br>Vertical | 12M0G7D             | 0.0              | 0.0                        |
| E50. Modulati entirety.) | on and Services (If | the complete de | escription does not appear | in this box, please | go to the end of | the form to view it in its |
| QPSK, DAT                | TA, 10 MSPS, MU     | LTIMEDIA        |                            |                     |                  |                            |
| TFTR 74–2                | 11700<br>12200      | R               | Horizontal and<br>Vertical | 24M0G7D             | 0.0              | 0.0                        |
| E50. Modulati entirety.) | on and Services (If | the complete de | escription does not appear | in this box, please | go to the end of | the form to view it in its |
| QPSK, DAT                | TA, 20 MSPS, MU     | LTIMEDIA        |                            |                     |                  |                            |
| TFTR 74–2                | 11700<br>12200      | R               | Horizontal and<br>Vertical | 36M0G7D             | 0.0              | 0.0                        |

| E50. Modulation entirety.) | on and Services (If | the complete des | scription does not appear  | in this box, please | go to the end of t | he form to view it in its |  |
|----------------------------|---------------------|------------------|----------------------------|---------------------|--------------------|---------------------------|--|
| QPSK, DATA                 | A, 30 MSPS, MU      | LTIMEDIA         |                            |                     |                    |                           |  |
| TFTR 74–2                  | 14000<br>14500      | Т                | Horizontal and<br>Vertical | 200KG7D             | 38.7               | 21.7                      |  |
| E50. Modulation entirety.) | on and Services (If | the complete des | scription does not appear  | in this box, please | go to the end of t | he form to view it in its |  |
| QPSK, DIG                  | ITAL, 128 KSPS      | , RETURN CAI     | RRIER                      |                     |                    |                           |  |
| TFTR 74-2                  | 14000<br>14500      | Т                | Horizontal and<br>Vertical | 400KG7D             | 41.7               | 21.7                      |  |
| E50. Modulation entirety.) | on and Services (If | the complete des | scription does not appear  | in this box, please | go to the end of t | he form to view it in its |  |
| QPSK, DIG                  | ITAL, 256 KSPS      | , RETURN CAI     | RRIER                      |                     |                    |                           |  |
| TFTR 74–2                  | 14000<br>14500      | Т                | Horizontal and<br>Vertical | 800KG7D             | 41.7               | 18.7                      |  |

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.)

QPSK, DIGITAL, 512 KSPS, RETURN CARRIER

| TFTR 74-2 | 14000 | Т | Horizontal and | 1M60G7D | 41.7 | 15.7 |
|-----------|-------|---|----------------|---------|------|------|
|           | 14500 |   | Vertical       |         |      |      |

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, DIGITAL, 1024 KSPS, RETURN CARRIER

## FREQUENCY COORDINATION

| E28.<br>Antenna Id |               | Frequency      | Range of<br>Satellite Arc<br>Eastern/West | Station<br>Azimuth<br>Angle | E57.<br>Antenna<br>Elevation<br>Angle<br>Eastern Limit | Station<br>Azimuth<br>Angle | Antenna<br>Elevation<br>Angle<br>Western | E60.<br>Maximum<br>EIRP Density<br>toward the<br>Horizon<br>(dBW/4kHz) |
|--------------------|---------------|----------------|---|-----------------------------|--|-----------------------------|--|--|
| TFTR 74–2          | Geostationary | 14000<br>14500 | 50.0/150.0                                | 134.3                       | 36.7   | 257.0                       | 8.3                                      | -9.0   |

REMOTE CONTROL POINT LOCATION

E61. Call Sign E940460 E66. Phone Number 301–428–5500

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

E62. Street Address 11717 Exploration Lane

E63. City Germantown E68. County Montgomery

E67/68. State/Country MD/ USA E64. Zip Code 20876

SA

#### 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: E940460

E2: Contact Name Dave Zatloukal E6. Phone 301–428–5500

Number:

E3. Street: 11717 Exploration E7. City: Germantown

Lane

E8. County: Montgomery

E4. State MD E9. Zip Code 20876

E10. Area of Operation: CONUS, AK, HI, VI, PR

E11. Latitude: 0 °0 '0.0 "N

E12. Longitude: 0 °0 '0.0 "W

E13. Lat/Lon Coordinates are: NAD-27 NAD-83 N/A

E14. Site Elevation (AMSL): 0.0 meters

| E15. If the proposed antenna(s) operate in the Fixed Satellite Service (FSS) with geostationary satellites, do(es) the proposed antenna(s) comply with the antenna gain patterns specified in Section 25.209(a) and (b) as demonstrated by the manufacturer's qualification measurement? If NO, provide as a technical analysis showing compliance with two–degree spacing policy. | <b>O</b> Yes | <b>⊚</b> No | O 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?                     | <b>O</b> Yes | O No        | ● N/A |

| No          |
|-------------|
| No          |
|             |
|             |
|             |
|             |
|             |
|             |
|             |
| -<br>-<br>- |

| Satellite Name: SATMEX-5   SATMEX-5   116.8 W.L. If you select     | ted OTHER, please enter the following:             |
|--|--|
| E21. Common Name:  | E22. ITU Name:                                     |
| E23. Orbit Location:   | E24. Country:                                      |
|  |  |
| Satellite Name: INTELSAT AMERICAS 5   USASAT-24D   97 W.L.         | If you selected OTHER, please enter the following: |
| E21. Common Name:  | E22. ITU Name:                                     |
| E23. Orbit Location:   | E24. Country:                                      |
|  |  |
| Satellite Name: GALAXY XI   GALAXY XI   91 W.L. If you selected    | ed OTHER, please enter the following:              |
| E21. Common Name:  | E22. ITU Name:                                     |
| E23. Orbit Location:   | E24. Country:                                      |
|  |  |
| Satellite Name: AMC-4 (formerly GE-4   AMC-4   101 W.L. If you     | selected OTHER, please enter the following:        |
| E21. Common Name:  | E22. ITU Name:                                     |
| E23. Orbit Location:   | E24. Country:                                      |
|  |  |
| Satellite Name: HORIZONS 1   HORIZONS 1   127 DEG WL If you        | selected OTHER, please enter the following:        |
| E21. Common Name:  | E22. ITU Name:                                     |
| E23. Orbit Location:   | E24. Country:                                      |
|  |  |
| Satellite Name: IA-8   IA-8   89 W.L. If you selected OTHER, pleas | e enter the following:                             |
| E21. Common Name:  | E22. ITU Name:                                     |
| E23. Orbit Location:   | E24. Country:                                      |

|                                    |                    |                  |                      |                     |  | Transmint and/or Recieve (dBi atGHz) |  |  |  |
|------------------------------------|--------------------|------------------|----------------------|---------------------|--|--------------------------------------|--|--|--|
| Site ID                            | E28. Antenna<br>Id | E29. Quantity    | E30.<br>Manufacturer | E31. Model          | E32. Antenna<br>Size <meters></meters> | E41/42.<br>Antenna Gain              |  |  |  |
| ANTENNA                            | _                  |                  |                      |                     | _                                      |                                      |  |  |  |
| E26. Common N                      | ame:               |                  |                      | E27. Country:       |  |                                      |  |  |  |
| E25. Site Identifi                 | ier:               |                  |                      |                     |  |                                      |  |  |  |
| POINTS OF C                        | COMMUNICATI        | ON (Destination  | Points)              |                     |  |                                      |  |  |  |
| E23. Orbit Locat                   | ion:               |                  |                      | E24. Country:       |  |                                      |  |  |  |
| E21. Common N                      | ame:               |                  |                      | E22. ITU Name       | :                                      |                                      |  |  |  |
| Satellite Name: C                  | GALAXY 10R   GA    | ALAXY 10R   123  | W.L. If you seld     | ected OTHER, ple    | ease enter the follo                   | wing:                                |  |  |  |
| E23. Orbit Location: E24. Country: |                    |                  |                      |                     |  |                                      |  |  |  |
| E21. Common Name: E22. ITU Name:   |                    |                  |                      |                     |  |                                      |  |  |  |
| Satellite Name: A                  | AMC-6   AMC-6      | 72 W.L. If you   | selected OTHER,      | please enter the fo | ollowing:                              |                                      |  |  |  |
|                                    |                    |                  |                      |                     |  |                                      |  |  |  |
| E23. Orbit Locat                   | ion:               |                  |                      | E24. Country:       |  |                                      |  |  |  |
| E21. Common N                      | ame:               |                  |                      | E22. ITU Name       | :                                      |                                      |  |  |  |
| Satellite Name: C                  | GALAXY 4R   GA     | LAXY 4R   99 W.I | L. If you selecte    | d OTHER, please     | enter the followin                     | g:                                   |  |  |  |
| 21 2222 200                        |                    |                  |                      | 1                   |  |                                      |  |  |  |
| E23. Orbit Locat                   | ion:               |                  |                      | E24. Country:       |  |                                      |  |  |  |
| E21. Common N                      | ame:               |                  |                      | E22. ITU Name       | :                                      |                                      |  |  |  |
| Satellite Name: C                  | GALAXY III–C   C   | GALAXY III–C   9 | 5 W.L. If you se     | elected OTHER, p    | lease enter the foll                   | owing:                               |  |  |  |

| TR 98CM | TR 98 CM | 60000 | Prodelin | 9008668 | 0.98 | 39.9 dBi at<br>11.95 |  |
|---------|----------|-------|----------|---------|------|----------------------|--|
| TR 98CM | TR 98 CM | 60000 | Prodelin | 9008668 | 0.98 | 41.3 dBi at 14.25    |  |

| Id       |           |     | ` ′ | Height Above<br>Ground Level | Input Power at | E39. Maximum<br>Antenna Height<br>Above Rooftop<br>(meters) | EIRP for al |
|----------|-----------|-----|-----|------------------------------|----------------|---|-------------|
| TR 98 CM | 0.98/0.98 | 0.0 | 0.0 | 0.0                          | 2.0            | 0.0   | 44.3        |

## FREQUENCY

|          | E43/44.<br>Frequency Bands<br>(MHz) |   |       |   | EIRP per Carrier (dBW) | E49. Maximum<br>ERIP Density per<br>Carrier<br>(dBW/4kHz) |
|----------|-------------------------------------|---|-------|---|------------------------|---|
| TR 98 CM |                                     | R | OTHER | 0 | 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.)

| (Deleted) |  |  |  |
|-----------|--|--|--|
|           |  |  |  |
|           |  |  |  |

| TR 98 CM | R | OTHER | 0 | 0.0 | 0.0 |
|----------|---|-------|---|-----|-----|

| E50. Modulation entirety.)           | n and Services               | (If the complete de | escription does not appear | in this box, please | go to the end of the | he form to view it in its |
|--------------------------------------|------------------------------|---------------------|----------------------------|---------------------|----------------------|---------------------------|
| (Deleted)                            |                              |                     |                            |                     |                      |                           |
| TR 98 CM                             | 14000<br>14500               | Т                   | Horizontal and<br>Vertical | 800KG7D             | 44.3                 | 21.3                      |
| entirety.)  QPSK, DIG                | ITAL, 512 KS                 | PS, RETURN C        | ARRIER                     |                     |                      |                           |
| TR 98 CM                             | 14000<br>14500               | Т                   | Horizontal and<br>Vertical | 1M60G7D             | 44.3                 | 18.3                      |
| E50. Modulatio entirety.)  QPSK, DIG | n and Services  ITAL, 1024 K |                     | escription does not appear | in this box, please | go to the end of the | he form to view it in its |

FREQUENCY COORDINATION

| E28.<br>Antenna Id | E51. Satellite<br>Orbit Type | E52/53.<br>Frequency<br>Limits(MHz) | E54/55.<br>Range of<br>Satellite Arc<br>Eastern/West<br>ern Limit | E56. Earth<br>Station<br>Azimuth<br>Angle<br>Eastern Limit | E57.<br>Antenna<br>Elevation<br>Angle<br>Eastern Limit | E58. Earth<br>Station<br>Azimuth<br>Angle<br>Western<br>Limit | E59. Antenna Elevation Angle Western Limit | E60. Maximum EIRP Density toward the Horizon (dBW/4kHz) |
|--------------------|------------------------------|-------------------------------------|---|--|--|---|--|---|
| REMOTE CO          | ONTROL POIN                  | T LOCATION                          |   | F66  | . Phone Number   |   |  |   |
| NOTE: Ple          | ase enter the calls          | •                                   | •   |  | . I none i tambei                                      |   |  |   |
| E62. Street        | Address                      |                                     |   |  |  |   |  |   |
| E63. City          |                              |                                     | E68. County   | I  |  | E67/68.   | F  | E64. Zip Code   |

### SATELLITE EARTH STATION AUTHORIZATIONS FCC Form 312 – Schedule B:(Technical and Operational Description) FOR OFFICIAL USE ONLY

State/Country

| Location of Earth St        | ation Site                |                      |                 |       |  |
|-----------------------------|---------------------------|----------------------|-----------------|-------|--|
| E1: Site Identifier:        | TF TR 98CM                | E5. Call Sign:       | E940460         |       |  |
| E2: Contact Name            | Dave Zatloukal            | E6. Phone<br>Number: | 301-428-5500    |       |  |
| E3. Street:                 | 11717 Exploration<br>Lane | E7. City:            | Germantown      |       |  |
|                             |                           | E8. County:          | Montgomery      |       |  |
| E4. State                   | MD                        | E9. Zip Code         | 20876           |       |  |
| E10. Area of Operat         | tion:                     | CONUS, AK, HI, V     | I, PR           |       |  |
| E11. Latitude:              | 0 °0 '0.0 "N              |                      |                 |       |  |
| E12. Longitude:             | 0 °0 '0.0 "W              |                      |                 |       |  |
| E13. Lat/Lon Coord          | linates are:              | ○ NAD-27             | <b>●</b> NAD-83 | O 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. | <b>O</b> Yes | <b>●</b> No | O 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?                     | O Yes        | O No        | ● N/A |

| E17. Is the facility operated by remote control? If YES, provide the log point.  | <b>⊚</b> Yes                            | O No  |             |  |
|--|---|-------|-------------|--|
| E18. Is frequency coordination required? If YES, attach a frequency co   | oordination report as                   | O Yes | No          |  |
| E19. Is coordination with another country required? If YES, attach the coordination contours as  | name of the country(ies) and plot of    | O Yes | <b>⊚</b> No |  |
| E20. FAA Notification – (See 47 CFR Part 17 and 47 CFR part 25. have you attached a copy of a completed FCC Form 854 and/or the FA the structure to aviation?  FAILURE TO COMPLY WITH 47 CFR PARTS 17 AND 25 WILI APPLICATION. | O Yes                                   | No    |             |  |
| POINTS OF COMMUNICATION  |   | ·     |             |  |
| Satellite Name: AMC 9   AMC 9   85 W.L. If you selected OTHER,   | please enter the following:             |       |             |  |
| E21. Common Name:  | E22. ITU Name:                          |       |             |  |
| E23. Orbit Location:   | E24. Country:                           |       |             |  |
| Satellite Name: AMC-3   AMC-3   87 W.L. If you selected OTHER  | R, please enter the following:          |       |             |  |
| E21. Common Name:  | E22. ITU Name:                          |       |             |  |
| E23. Orbit Location:   | Orbit Location: E24. Country:           |       |             |  |
|  | •                                       |       |             |  |
| Satellite Name: SATMEX-5   SATMEX-5   116.8 W.L. If you select   | eted OTHER, please enter the following: |       |             |  |

| E21. Common Name:   | E22. ITU Name:  |  |  |  |  |  |  |
|---|---|--|--|--|--|--|--|
| E23. Orbit Location:  | E24. Country:   |  |  |  |  |  |  |
|   |   |  |  |  |  |  |  |
| Satellite Name: INTELSAT AMERICAS 5   USASAT-24D   97 W.L. If you selected OTHER, please enter the following: |   |  |  |  |  |  |  |
| E21. Common Name:   | E22. ITU Name:  |  |  |  |  |  |  |
| E23. Orbit Location:  | E24. Country:   |  |  |  |  |  |  |
| Satellite Name: GALAXY XI   GALAXY XI   91 W.L.   | If you selected OTHER, please enter the following:      |  |  |  |  |  |  |
| E21. Common Name:   | E22. ITU Name:  |  |  |  |  |  |  |
| E23. Orbit Location:  | E24. Country:   |  |  |  |  |  |  |
|   | •   |  |  |  |  |  |  |
| Satellite Name: AMC-4 (formerly GE-4   AMC-4   101 W  | V.L. If you selected OTHER, please enter the following: |  |  |  |  |  |  |
| E21. Common Name:   | E22. ITU Name:  |  |  |  |  |  |  |
| E23. Orbit Location:  | E24. Country:   |  |  |  |  |  |  |
| Satellite Name: HORIZONS 1   HORIZONS 1   127 DEG   | WL If you selected OTHER, please enter the following:   |  |  |  |  |  |  |
| E21. Common Name:   | E22. ITU Name:  |  |  |  |  |  |  |
| E23. Orbit Location:  | E24. Country:   |  |  |  |  |  |  |
| Satellite Name: IA-8   IA-8   89 W.L. If you selected O   | ΓHER, please enter the following:                       |  |  |  |  |  |  |
| E21. Common Name:   | E22. ITU Name:  |  |  |  |  |  |  |
| E23. Orbit Location:  | E24. Country:   |  |  |  |  |  |  |
|   |   |  |  |  |  |  |  |

| TF TR 98CM         | TF TR 98 C         | 54000            | Prodelin             | 9008668            | 0.98                                   | 39.9 dBi at 11.95   |  |  |  |
|--------------------|--------------------|------------------|----------------------|--------------------|--|---|--|--|--|
| Site ID            | E28. Antenna<br>Id | E29. Quantity    | E30.<br>Manufacturer | E31. Model         | E32. Antenna<br>Size <meters></meters> | E41/42. Antenna Gain Transmint and/or Recieve (dBi atGHz) |  |  |  |
| ANTENNA            |                    |                  |                      |                    |  |   |  |  |  |
| E26. Common N      | lame:              |                  |                      | E27. Country:      |  |   |  |  |  |
| E25. Site Identifi | ier:               |                  |                      |                    |  |   |  |  |  |
| POINTS OF C        | COMMUNICATI        | ION (Destination | Points)              |                    |  |   |  |  |  |
| E23. Orbit Locat   | ion:               |                  |                      | E24. Country:      |  |   |  |  |  |
| E21. Common N      | lame:              |                  |                      | E22. ITU Name:     |  |   |  |  |  |
| Satellite Name: C  | GALAXY 10R   G     | ALAXY 10R   123  | W.L. If you sel      | ected OTHER, pl    | ease enter the follo                   | wing:   |  |  |  |
|                    |                    |                  |                      |                    |  |   |  |  |  |
| E23. Orbit Locat   |                    |                  |                      | E24. Country:      |  |   |  |  |  |
| E21. Common N      |                    | ·                |                      | E22. ITU Name      |  |   |  |  |  |
| Satellite Name: A  | AMC-6   AMC-6      | 72 W.L. If you   | selected OTHER,      | please enter the f | following:                             |   |  |  |  |
| E23. Orbit Locat   | tion:              |                  |                      | E24. Country:      |  |   |  |  |  |
| E21. Common N      | Jame:              |                  |                      | E22. ITU Name      | e:                                     |   |  |  |  |
| Satellite Name: C  | GALAXY 4R   GA     | LAXY 4R   99 W.  | L. If you selecte    | ed OTHER, please   | e enter the followin                   | g:  |  |  |  |
|                    |                    |                  |                      | 1                  |  |   |  |  |  |
| E23. Orbit Locat   | tion:              |                  |                      | E24. Country:      |  |   |  |  |  |
| E21. Common Name:  |                    |                  |                      | E22. ITU Name:     |  |   |  |  |  |

| TF TR 98CM  | TF TR 98 C                                     | 5400 | 0                          | Prodeli | n                              | 9008668                                       |                  | 0.98   |     | 41.3 dBi at 14.25  |   |
|---|--|------|----------------------------|---------|--------------------------------|---|------------------|--|-----|--|---|
| E28. Antenna<br>Id  | E33/34.<br>Diameter<br>Minor/Major<br>(meters) |      | Above<br>and Level<br>ers) |         | bove Sea<br>meters)            | E37. Buil<br>Height A<br>Ground I<br>(meters) | bove             | E38. Total<br>Input Powe<br>antenna fla<br>(Watts) |     | E39. Maximum<br>Antenna Heigh<br>Above Rooftop<br>(meters) | nt EIRP for al  |
| TF TR 98 C  | 0.98/0.98                                      | 0.0  |                            | 0.0     |                                | 0.0   |                  | 2.0  |     | 0.0  | 44.3  |
| FREQUENCY   |  |      |                            | 1       |                                |   |                  |  |     |  |   |
| E28. Antenna Io   | E43/44.<br>Frequency B<br>(MHz)                |      | E45.<br>T/R<br>M           | ode     | E46. Ante<br>Polarizat<br>L,R) |   | E47. I<br>Design | Emission<br>nator                                  |     | P per Carrier<br>W)  | E49. Maximum<br>ERIP Density per<br>Carrier<br>(dBW/4kHz) |
| TF TR 98 C  |  |      | R                          |         | OTHER                          |   | 0                | 0.0  |     |  | 0.0   |
| TF TR 98 C R OTHER 0 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.)  (deleted) |  |      |                            |         |                                |   |                  |  |     |  |   |
| TF TR 98 C  |  |      | R                          |         | OTHER                          |   | 0                |  | 0.0 |  | 0.0   |

| E50. Modulatio entirety.) | n and Services ( | If the complete d | escription does not appear | in this box, please | go to the end of the | he form to view it in its |
|---------------------------|------------------|-------------------|----------------------------|---------------------|----------------------|---------------------------|
| (deleted)                 |                  |                   |                            |                     |                      |                           |
| TF TR 98 C                | 14000<br>14500   | Т                 | Horizontal and<br>Vertical | 800KG7D             | 44.3                 | 21.3                      |
| E50. Modulatio entirety.) | n and Services ( | If the complete d | escription does not appear | in this box, please | go to the end of the | he form to view it in its |
| QPSK, DIG                 | ITAL, 512 KSI    | PS, RETURN C      | CARRIER                    |                     |                      |                           |
| TF TR 98 C                | 14000<br>14500   | Т                 | Horizontal and<br>Vertical | 1M60G7D             | 44.3                 | 18.3                      |
| E50. Modulatio            | n and Services ( | If the complete d | escription does not appear | in this box, please | go to the end of the | he form to view it in its |
| QPSK, DIG                 | ITAL, 1024 KS    | SPS, RETURN       | CARRIER                    |                     |                      |                           |

FREQUENCY COORDINATION

| E28.<br>Antenna Id  | E51. Satellite<br>Orbit Type | E52/53.<br>Frequency<br>Limits(MHz) | E54/55.<br>Range of<br>Satellite Arc<br>Eastern/West<br>ern Limit | E56. Earth<br>Station<br>Azimuth<br>Angle<br>Eastern Li |      | E57.<br>Antenna<br>Elevation<br>Angle<br>Eastern Limit | E58. Earth<br>Station<br>Azimuth<br>Angle<br>Western<br>Limit | E59.<br>Antenn<br>Elevati<br>Angle<br>Wester<br>Limit | on   | E60.<br>Maximum<br>EIRP Density<br>toward the<br>Horizon<br>(dBW/4kHz) |
|---------------------|------------------------------|-------------------------------------|---|---|------|--|---|---|------|--|
| REMOTE CO           | NTROL POIN                   | T LOCATION                          |   |   |      |  |   |   |      |  |
|                     | se enter the calls           | sign of the contro                  | •   |   | E66. | Phone Number   |   |   |      |  |
| E62. Street Address |                              |                                     |   |   |      |  |   |   |      |  |
| E63. City           |                              |                                     | E68. County   | 7   |      |  | E67/68.<br>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 St        | ation Site                |                      |                 |       |  |
|-----------------------------|---------------------------|----------------------|-----------------|-------|--|
| E1: Site Identifier:        | TR 74 CM                  | E5. Call Sign:       | E940460         |       |  |
| E2: Contact Name            | Dave Zatloukal            | E6. Phone<br>Number: | 301-428-5500    |       |  |
| E3. Street:                 | 11717 Exploration<br>Lane | E7. City:            | Germantown      |       |  |
|                             |                           | E8. County:          | Montgomery      |       |  |
| E4. State                   | MD                        | E9. Zip Code         | 20876           |       |  |
| E10. Area of Operat         | tion:                     | CONUS, AK, HI, V     | I, PR           |       |  |
| E11. Latitude:              | 0 °0 '0.0 "N              |                      |                 |       |  |
| E12. Longitude:             | 0 °0 '0.0 "W              |                      |                 |       |  |
| E13. Lat/Lon Coord          | linates are:              | O NAD-27             | <b>●</b> NAD-83 | O 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. | <b>O</b> Yes | <b>⊚</b> No | O 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?                     | O Yes        | O No        | <b>⊚</b> N/A |

| E17. Is the facility operated by remote control? If YES, provide the loc point.  | Yes   | O No  |             |
|--|---|-------|-------------|
| E18. Is frequency coordination required? If YES, attach a frequency co   | pordination report as                       | O Yes | No          |
| E19. Is coordination with another country required? If YES, attach the coordination contours as  | name of the country(ies) and plot of        | O Yes | <b>⊚</b> No |
| E20. FAA Notification – (See 47 CFR Part 17 and 47 CFR part 25. have you attached a copy of a completed FCC Form 854 and/or the FA the structure to aviation?  FAILURE TO COMPLY WITH 47 CFR PARTS 17 AND 25 WILL APPLICATION. | A's study regarding the potential hazard of | O Yes | No          |
| POINTS OF COMMUNICATION  |   | !     |             |
| Satellite Name: AMC-6   AMC-6   72 W.L. If you selected OTHER  | , please enter the following:               |       |             |
| E21. Common Name:  | E22. ITU Name:                              |       |             |
| E23. Orbit Location:   | E24. Country:                               |       |             |
| Satellite Name: GALAXY 4R   GALAXY 4R   99 W.L. If you selec   | ted OTHER, please enter the following:      |       |             |
| E21. Common Name:  | E22. ITU Name:                              |       |             |
| E23. Orbit Location:   | E24. Country:                               |       |             |
|  | •   |       |             |
| Satellite Name: GALAXY III–C   GALAXY III–C   95 W.L. If you   | selected OTHER, please enter the following: |       |             |

| E21. Common Name:  | E22. ITU Name:                                     |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|
| E23. Orbit Location:   | E24. Country:                                      |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| Satellite Name: IA-8   IA-8   89 W.L. If you selected OTHER, please enter the following: |  |  |  |  |  |  |  |
| E21. Common Name:  | E22. ITU Name:                                     |  |  |  |  |  |  |
| E23. Orbit Location:   | E24. Country:                                      |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| Satellite Name: HORIZONS 1   HORIZONS 1   127 DEG WL If you                              | selected OTHER, please enter the following:        |  |  |  |  |  |  |
| E21. Common Name:  | E22. ITU Name:                                     |  |  |  |  |  |  |
| E23. Orbit Location:   | E24. Country:                                      |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| Satellite Name: GALAXY 10R   GALAXY 10R   123 W.L. If you sel                            | ected OTHER, please enter the following:           |  |  |  |  |  |  |
| E21. Common Name:  | E22. ITU Name:                                     |  |  |  |  |  |  |
| E23. Orbit Location:   | E24. Country:                                      |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| Satellite Name: GALAXY XI   GALAXY XI   91 W.L. If you selected                          | d OTHER, please enter the following:               |  |  |  |  |  |  |
| E21. Common Name:  | E22. ITU Name:                                     |  |  |  |  |  |  |
| E23. Orbit Location:   | E24. Country:                                      |  |  |  |  |  |  |
| Satellite Name: INTELSAT AMERICAS 5   USASAT-24D   97 W.L.                               | If you selected OTHER, please enter the following: |  |  |  |  |  |  |
| E21. Common Name:  | E22. ITU Name:                                     |  |  |  |  |  |  |
| E23. Orbit Location:   | E24. Country:                                      |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| Satellite Name: SATMEX-5   SATMEX-5   116.8 W.L. If you selected                         | ed OTHER, please enter the following:              |  |  |  |  |  |  |

| TR 74 CM          | TR 74              | 350000            | Prodelin             | HANT-91TR                 | 0.74                                   | 37.9 dBi at 11.95   |              |  |  |
|-------------------|--------------------|-------------------|----------------------|---------------------------|--|---|--------------|--|--|
| Site ID           | E28. Antenna<br>Id | E29. Quantity     | E30.<br>Manufacturer | E31. Model                | E32. Antenna<br>Size <meters></meters> | E41/42. Antenna Gain Transmint and/or Recieve (dBi atGHz) |              |  |  |
| ANTENNA           | Inc.               | T-0.0             | T-20                 | Trac 3                    |  | T   | <del> </del> |  |  |
| E26. Common N     | Name:              |                   |                      | E27. Country:             |  |   |              |  |  |
| E25. Site Identit |                    |                   |                      |                           |  |   |              |  |  |
|                   | COMMUNICAT         | ION (Destination  | Points)              |                           |  |   |              |  |  |
| E23. Orbit Loca   | ntion:             |                   |                      | E24. Country:             |  |   |              |  |  |
| E21. Common N     | Name:              |                   |                      | E22. ITU Name:            |  |   |              |  |  |
| Satellite Name:   | AMC–4 (formerly    | GE-4   AMC-4   1  | 101 W.L. If you      | selected OTHER,           | please enter the fo                    | llowing:  |              |  |  |
| L23. Of the Loca  |                    |                   |                      | 1227. Country.            |  |   |              |  |  |
| E23. Orbit Loca   |                    |                   |                      | E24. Country:             |  |   |              |  |  |
| E21. Common N     | <u> </u>           |                   | , r                  | E22. ITU Name:            |  |   |              |  |  |
| Satellite Name:   | AMC 9   AMC 9   8  | 85 W.L. If you so | elected OTHER, p     | lease enter the following | lowing:                                |   |              |  |  |
| E23. Orbit Loca   | ntion:             |                   |                      | E24. Country:             |  |   |              |  |  |
| E21. Common N     |                    |                   |                      | E22. ITU Name:            |  |   |              |  |  |
|                   | AMC-3   AMC-3      | 87 W.L. If you    | selected OTHER,      | <u>-</u>                  |  |   |              |  |  |
|                   |                    |                   |                      |                           |  |   |              |  |  |
| E23. Orbit Loca   | ntion:             |                   |                      | E24. Country:             |  |   |              |  |  |
| E21. Common N     | Name:              |                   |                      | E22. ITU Name:            |  |   |              |  |  |

| TR 74 CM           | TR 74  | 3500 | 00                         | Prodeli | in                             | HANT-9                                       | 1TR              | 0.74   |       | 39.0 dBi at 14.250   |   |
|--------------------|--|------|----------------------------|---------|--------------------------------|--|------------------|--|-------|--|---|
| E28. Antenna<br>Id | E33/34.<br>Diameter<br>Minor/Major<br>(meters) |      | Above<br>and Level<br>ers) |         | bove Sea<br>meters)            | E37. Bui<br>Height A<br>Ground I<br>(meters) | bove<br>Level    | E38. Total<br>Input Powe<br>antenna fla<br>(Watts) |       | E39. Maximum<br>Antenna Heigh<br>Above Roofton<br>(meters) | nt EIRP for al  |
| TR 74              | 0.56/0.98                                      | 0.0  |                            | 0.0     |                                | 0.0  |                  | 2.0  |       | 0.0  | 42.0  |
| FREQUENCY          | •  | -!   |                            |         |                                | •  |                  | •  |       |  | -   |
| E28. Antenna Io    | E43/44.<br>Frequency B<br>(MHz)                | I    | E45.<br>T/R<br>M           | ode     | E46. Anto<br>Polarizat<br>L,R) |  | E47. E<br>Design | Emission<br>nator                                  |       | P per Carrier  | E49. Maximum<br>ERIP Density per<br>Carrier<br>(dBW/4kHz) |
| TR 74              | 14000<br>14500                                 |      | T                          |         | Horizonta<br>Vertical          | al and                                       | 400KC            | 37D  | 42.0  |  | 22.0  |
| entirety.)         | ion and Services                               |      |                            |         |                                | t appear in                                  | this bo          | x, please go t                                     | o the | end of the form  | to view it in its   |
| TR 74              | 14000<br>14500                                 |      | T                          |         | Horizonta<br>Vertical          | al and                                       | 800KC            | 67D  | 42.0  |  | 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, DIGITAL, 512 KSPS, RETURN CARRIER

| TR 74 | 14000 | T | Horizontal and | 1M60G7D | 42.0 | 16.0 |
|-------|-------|---|----------------|---------|------|------|
|       | 14500 |   | Vertical       |         |      |      |

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, DIGITAL, 1024 KSPS, RETURN CARRIER

#### FREQUENCY COORDINATION

|       | E51. Satellite<br>Orbit Type | Frequency<br>Limits(MHz) | Range of<br>Satellite Arc<br>Eastern/West | Station<br>Azimuth | E57.<br>Antenna<br>Elevation<br>Angle<br>Eastern Limit | Station<br>Azimuth<br>Angle | Elevation<br>Angle<br>Western | E60.<br>Maximum<br>EIRP Density<br>toward the<br>Horizon<br>(dBW/4kHz) |
|-------|------------------------------|--------------------------|---|--------------------|--|-----------------------------|-------------------------------|--|
| TR 74 | Geostationary                | 14000<br>14500           | 50.0/150.0                                | 134.0              | 36.0   | 257.0                       | 8.0                           | -9.0   |

| E61. Call Sign   | E66. Phone Number |   |                          |               |
|--|-------------------|---|--------------------------|---------------|
| NOTE: Please enter the callsign of the control callsign for which this application is being filed. |                   |   |                          |               |
| E62. Street Address  |                   | • |                          |               |
|  |                   |   |                          |               |
| E63. City  | E68. County       |   | E67/68.<br>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 St | ation Site             |                       |                 |       |  |  |  |
|----------------------|------------------------|-----------------------|-----------------|-------|--|--|--|
| E1: Site Identifier: | TF TR 74 CM            | E5. Call Sign:        | E940460         |       |  |  |  |
| E2: Contact Name     | Dave Zatloukal         | E6. Phone<br>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 Operat  | tion:                  | CONUS, AK, HI, VI, PR |                 |       |  |  |  |
| E11. Latitude:       | 0 °0 '0.0 "N           |                       |                 |       |  |  |  |
| E12. Longitude:      | 0 °0 '0.0 "W           |                       |                 |       |  |  |  |
| E13. Lat/Lon Coord   | linates are:           | <b>○</b> NAD-27       | <b>●</b> NAD-83 | O 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. | <b>O</b> Yes | <b>⊚</b> No | O 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?                     | O Yes        | O No        | <b>⊚</b> N/A |

| E17. Is the facility operated by remote control? If YES, provide the location point.   | ation and telephone number of the control   | ● Yes   | No          |
|--|---|---------|-------------|
| E18. Is frequency coordination required? If YES, attach a frequency co   | ordination report as                        | O Yes   | <b>)</b> No |
| E19. Is coordination with another country required? If YES, attach the coordination contours as  | name of the country(ies) and plot of        | O Yes   | ) No        |
| E20. FAA Notification – (See 47 CFR Part 17 and 47 CFR part 25.1 have you attached a copy of a completed FCC Form 854 and/or the FA. the structure to aviation?  FAILURE TO COMPLY WITH 47 CFR PARTS 17 AND 25 WILL APPLICATION. | A's study regarding the potential hazard of | O Yes   | <b>)</b> No |
| POINTS OF COMMUNICATION  |   | !       | -           |
| Satellite Name: AMC-4 (formerly GE-4   AMC-4   101 W.L. If you   | selected OTHER, please enter the following: |         |             |
| E21. Common Name:  | E22. ITU Name:                              |         |             |
| E23. Orbit Location:   | E24. Country:                               |         |             |
| Satellite Name: GALAXY XI   GALAXY XI   91 W.L. If you selecte   | ed OTHER, please enter the following:       |         |             |
| E21. Common Name:  | E22. ITU Name:                              |         |             |
| E23. Orbit Location:   | E24. Country:                               |         |             |
| Satellite Name: INTELSAT AMERICAS 5   USASAT-24D   97 W.L.   | If you selected OTHER, please enter the fol | lowing: |             |

| E21. Common Name:  | E22. ITU Name:                             |
|--|--|
| E23. Orbit Location:   | E24. Country:                              |
|  |  |
| Satellite Name: SATMEX-5   SATMEX-5   116.8 W.L. If you selecte    | d OTHER, please enter the following:       |
| E21. Common Name:  | E22. ITU Name:                             |
| E23. Orbit Location:   | E24. Country:                              |
|  |  |
| Satellite Name: AMC-3   AMC-3   87 W.L. If you selected OTHER, I   | please enter the following:                |
| E21. Common Name:  | E22. ITU Name:                             |
| E23. Orbit Location:   | E24. Country:                              |
|  |  |
| Satellite Name: AMC 9   AMC 9   85 W.L. If you selected OTHER, plo | ease enter the following:                  |
| E21. Common Name:  | E22. ITU Name:                             |
| E23. Orbit Location:   | E24. Country:                              |
|  |  |
| Satellite Name: AMC-6   AMC-6   72 W.L. If you selected OTHER, I   | please enter the following:                |
| E21. Common Name:  | E22. ITU Name:                             |
| E23. Orbit Location:   | E24. Country:                              |
|  |  |
| Satellite Name: GALAXY 4R   GALAXY 4R   99 W.L. If you selected    | d OTHER, please enter the following:       |
| E21. Common Name:  | E22. ITU Name:                             |
| E23. Orbit Location:   | E24. Country:                              |
|  |  |
| Satellite Name: GALAXY III-C   GALAXY III-C   95 W.L. If you se    | elected OTHER, please enter the following: |

| E21. Common N     | Vame:              |                   |                      | E22. ITU Name:      |  |   |  |  |  |
|-------------------|--------------------|-------------------|----------------------|---------------------|--|---|--|--|--|
| E23. Orbit Locat  | tion:              |                   |                      | E24. Country:       |  |   |  |  |  |
|                   |                    |                   |                      | •                   |  |   |  |  |  |
| Satellite Name: I | A-8   IA-8   89 W  | L. If you select  | ed OTHER, please     | e enter the followi | ng:                                    |   |  |  |  |
| E21. Common N     | Vame:              |                   |                      | E22. ITU Name:      |  |   |  |  |  |
| E23. Orbit Locat  | tion:              |                   |                      | E24. Country:       |  |   |  |  |  |
|                   |                    |                   |                      | •                   |  |   |  |  |  |
| Satellite Name: I | HORIZONS 1   HO    | ORIZONS 1   127 I | DEG WL If you        | selected OTHER,     | please enter the fo                    | ollowing:   |  |  |  |
| E21. Common N     | Vame:              |                   |                      | E22. ITU Name       | :                                      |   |  |  |  |
| E23. Orbit Locat  | tion:              |                   |                      | E24. Country:       |  |   |  |  |  |
|                   |                    |                   |                      | •                   |  |   |  |  |  |
| Satellite Name: C | GALAXY 10R   G     | ALAXY 10R   123   | W.L. If you sel      | ected OTHER, ple    | ease enter the follo                   | wing:   |  |  |  |
| E21. Common N     | lame:              |                   |                      | E22. ITU Name       | :                                      |   |  |  |  |
| E23. Orbit Locat  | tion:              |                   |                      | E24. Country:       |  |   |  |  |  |
| POINTS OF C       | COMMUNICAT         | ION (Destination  | Points)              | •                   |  |   |  |  |  |
| E25. Site Identif | ier:               |                   |                      |                     |  |   |  |  |  |
| E26. Common N     | Vame:              |                   |                      | E27. Country:       |  |   |  |  |  |
| ANTENNA           |                    |                   |                      |                     |  |   |  |  |  |
| Site ID           | E28. Antenna<br>Id | E29. Quantity     | E30.<br>Manufacturer | E31. Model          | E32. Antenna<br>Size <meters></meters> | E41/42. Antenna Gain Transmint and/or Recieve (dBi atGHz) |  |  |  |
| TF TR 74 CM       | TF TR 74           | 60200             | Prodelin             | HANT-91TR           | 0.74                                   | 37.9 dBi at   |  |  |  |

| TF TR 74 CM             | TF TR 74                              | 6020   | 0                          | Prodeli   | in                             | HANT-9  | 1TR              | 0.74   |       | 39.0 dBi at 14.25  |   |
|-------------------------|---------------------------------------|--------|----------------------------|-----------|--------------------------------|---|------------------|--|-------|--|---|
| E28. Antenna<br>Id      | E33/34. Diameter Minor/Major (meters) |        | Above<br>and Level<br>ers) |           | bove Sea<br>meters)            | E37. Buil<br>Height A<br>Ground I<br>(meters) | bove<br>Level    | E38. Total<br>Input Powe<br>antenna fla<br>(Watts) |       | E39. Maximum<br>Antenna Heigh<br>Above Rooftop<br>(meters) | t EIRP for al   |
| TF TR 74                | 0.56/0.98                             | 0.0    |                            | 0.0       |                                | 0.0   |                  | 2.0  |       | 0.0  | 42.0  |
| FREQUENCY               |                                       |        |                            |           |                                |   |                  | I  |       |  | •   |
| E28. Antenna Id         | E43/44.<br>Frequency B<br>(MHz)       |        | E45.<br>T/R<br>M           | ode       | E46. Ante<br>Polarizat<br>L,R) |   | E47. E<br>Design | Emission<br>nator                                  |       | P per Carrier<br>W)  | E49. Maximum<br>ERIP Density per<br>Carrier<br>(dBW/4kHz) |
| TF TR 74                | 14000<br>14500                        |        | Т                          |           | Horizonta<br>Vertical          | al and  | 400KC            | 57W  | 42.0  |  | 22.0  |
| E50. Modulat entirety.) | ion and Services                      | (If th | e complete o               | descripti | on does no                     | t appear in                                   | this bo          | x, please go to                                    | o the | end of the form t  | o view it in its  |
| OQPSK, I                | DIGITAL, 256                          | KSPS   | , RETURN                   | CARRI     | ER                             |   |                  |  |       |  |   |
| TF TR 74                | 14000<br>14500                        |        | Т                          |           | Horizonta<br>Vertical          | al and  | 800KC            | 67D  | 42.0  |  | 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, DIGITAL, 512 KSPS, RETURN CARRIER

| F TR 74 1 | 14000 | T | Horizontal and | 1M60G7D | 42.0 | 16.0 |
|-----------|-------|---|----------------|---------|------|------|
| 1         | 14500 |   | Vertical       |         |      |      |

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, DIGITAL, 1024 KSPS, RETURN CARRIER

#### FREQUENCY COORDINATION

| E28.<br>Antenna Id |               | E52/53.<br>Frequency<br>Limits(MHz) |            | Station<br>Azimuth<br>Angle | E57.<br>Antenna<br>Elevation<br>Angle<br>Eastern Limit | Station<br>Azimuth<br>Angle | Elevation<br>Angle<br>Western | E60.<br>Maximum<br>EIRP Density<br>toward the<br>Horizon<br>(dBW/4kHz) |
|--------------------|---------------|-------------------------------------|------------|-----------------------------|--|-----------------------------|-------------------------------|--|
| TF TR 74           | Geostationary | 14000<br>14500                      | 50.0/150.0 | 134.0                       | 36.0   | 257.0                       | 8.0                           | -9.0   |

| E61. Call Sign  |             | E66. Phone Number |               |
|---|-------------|-------------------|---------------|
| NOTE: Please enter the callsign of the callsign for which this application is being |             |                   |               |
| E62. Street Address   |             | •                 |               |
|   |             |                   |               |
| E63. City   | E68. County | E67/68.           | E64. Zip Code |
|   |             | State/Country     |               |
|   |             | <u> </u>          |               |

### SATELLITE EARTH STATION AUTHORIZATIONS

FCC Form 312 – Schedule B:(Technical and Operational Description)
FOR OFFICIAL USE ONLY

| Location of Earth St | cation Site               |                      |              |       |  |  |
|----------------------|---------------------------|----------------------|--------------|-------|--|--|
| E1: Site Identifier: | TR 1.2M                   | E5. Call Sign:       | E940460      |       |  |  |
| E2: Contact Name     | Dave Zatloukal            | E6. Phone<br>Number: | 301-428-5000 |       |  |  |
| E3. Street:          | 11717 Exploration<br>Lane | E7. City:            | Germantown   |       |  |  |
|                      |                           | E8. County:          | Montgomery   |       |  |  |
| E4. State            | MD                        | E9. Zip Code         | 20876        |       |  |  |
| E10. Area of Operat  | tion:                     | CONUS, AK, HI, V     | I, PR        |       |  |  |
| E11. Latitude:       | 0 °0 '0.0 "N              |                      |              |       |  |  |
| E12. Longitude:      | 0 °0 '0.0 "W              |                      |              |       |  |  |
| E13. Lat/Lon Coord   | linates are:              | O NAD-27             | ● NAD-83     | O 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          | O No | O 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?                     | <b>O</b> Yes | O No | <b>⊚</b> N/A |

| E17. Is the facility operated by remote control? If YES, provide the point.   | e location and telephone number of the control | • Yes    | O No |
|---|--|----------|------|
| E18. Is frequency coordination required? If YES, attach a frequency   | y coordination report as                       | <u> </u> |      |
| E16. Is frequency coordination required: If TES, attach a frequency   | y coordination report as                       | O Yes    | No   |
| E19. Is coordination with another country required? If YES, attach coordination contours as   | the name of the country(ies) and plot of       | O Yes    | No   |
| E20. FAA Notification – (See 47 CFR Part 17 and 47 CFR part have you attached a copy of a completed FCC Form 854 and/or the the structure to aviation?  FAILURE TO COMPLY WITH 47 CFR PARTS 17 AND 25 W. APPLICATION. | FAA's study regarding the potential hazard of  | O Yes    | No   |
| POINTS OF COMMUNICATION   |  | •        |      |
| Satellite Name: If you selected OTHER, please enter the following   | ng:  |          |      |
| E21. Common Name:   | E22. ITU Name:                                 |          |      |
| E23. Orbit Location:  | E24. Country:                                  |          |      |
| POINTS OF COMMUNICATION (Destination Points)  |  |          |      |
| E25. Site Identifier:   |  |          |      |
| E26. Common Name:   | E27. Country:                                  |          |      |
| A NITTENINI A   |  |          |      |

ANTENNA

| Site ID | E28. Antenna<br>Id | E29. Quantity | E30.<br>Manufacturer | E31. Model | E32. Antenna<br>Size <meters></meters> | E41/42. Antenna Gain Transmint and/or Recieve (dBi atGHz) |  |
|---------|--------------------|---------------|----------------------|------------|--|---|--|
| TR 1.2M | TR 1.2M            | 100000        | Prodelin             | 1134       | 1.2                                    | 41.5 dBi at 11.95   |  |
| TR 1.2M | TR 1.2M            | 100000        | Prodelin             | 1134       | 1.2                                    | 43.1 dBi at 14.250  |  |

| Id      | Diameter |     | , , | Height Above<br>Ground Level | Input Power at antenna flange | E39. Maximum<br>Antenna Height<br>Above Rooftop<br>(meters) | EIRP for al |
|---------|----------|-----|-----|------------------------------|-------------------------------|---|-------------|
| TR 1.2M | 1.2/1.2  | 0.0 | 0.0 | 0.0                          | 2.0                           | 0.0   | 46.1        |

## FREQUENCY

|         | E43/44.<br>Frequency Bands<br>(MHz) | E45.<br>T/R<br>Mode |                            |         | EIRP per Carrier (dBW) | E49. Maximum<br>ERIP Density per<br>Carrier<br>(dBW/4kHz) |
|---------|-------------------------------------|---------------------|----------------------------|---------|------------------------|---|
| TR 1.2M | 14000<br>14500                      | Т                   | Horizontal and<br>Vertical | 800KG7D | 46.1                   | 23.1  |

## FREQUENCY COORDINATION

| E28.       | E51. Satellite | E52/53.     | E54/55.       | E56. Earth    | E57.          | E58. Earth | E59.      | E60.         |
|------------|----------------|-------------|---------------|---------------|---------------|------------|-----------|--------------|
| Antenna Id | Orbit Type     | Frequency   | Range of      | Station       | Antenna       | Station    | Antenna   | Maximum      |
|            |                | Limits(MHz) | Satellite Arc | Azimuth       | Elevation     | Azimuth    | Elevation | EIRP Density |
|            |                |             | Eastern/West  | Angle         | Angle         | Angle      | Angle     | toward the   |
|            |                |             | ern Limit     | Eastern Limit | Eastern Limit | Western    | Western   | Horizon      |
|            |                |             |               |               |               | Limit      | Limit     | (dBW/4kHz)   |
|            |                |             |               |               |               |            |           |              |
|            |                |             | /             |               |               |            |           |              |
|            |                |             |               |               |               |            |           |              |

| E61. Call Sign  |             | E66. Phone Number |                          |               |
|---|-------------|-------------------|--------------------------|---------------|
| NOTE: Please enter the callsign of the control callsign for which this application is being filed |             |                   |                          |               |
| E62. Street Address   |             |                   |                          |               |
|   |             |                   |                          |               |
| E63. City   | E68. County |                   | E67/68.<br>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 St | tation Site               |                      |                 |       |  |  |
|----------------------|---------------------------|----------------------|-----------------|-------|--|--|
| E1: Site Identifier: | TF TR 1.2M                | E5. Call Sign:       | E940460         |       |  |  |
| E2: Contact Name     | Dave Zatloukal            | E6. Phone<br>Number: | 301-428-5500    |       |  |  |
| E3. Street:          | 11717 Exploration<br>Lane | E7. City:            | Germantown      |       |  |  |
|                      |                           | E8. County:          | Montgomery      |       |  |  |
| E4. State            | MD                        | E9. Zip Code         | 20876           |       |  |  |
| E10. Area of Opera   | tion:                     | CONUS, AK, HI, V     | I, PR           |       |  |  |
| E11. Latitude:       | 0 °0 '0.0 "N              |                      |                 |       |  |  |
| E12. Longitude:      | 0 °0 '0.0 "W              |                      |                 |       |  |  |
| E13. Lat/Lon Coord   | linates are:              | O NAD-27             | <b>●</b> NAD-83 | O 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   | O No | O 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 | O No | ● N/A |

| nd telephone number of the control  | <b>⊚</b> Y   | es   | 0   | No   |
|---|--|--|---|--|
| ion report as   |  |  |   |  |
|   | OY   | es   | •   | No   |
| f the country(ies) and plot of  | O Y  | es   | •   | No   |
| Where FAA notification is required, dy regarding the potential hazard of LT IN THE RETURN OF THIS | O Y  | es   | •   | No   |
|   |  |  |   |  |
|   |  |  |   |  |
| ITU Name:   |  |  |   |  |
| Country:  |  |  |   |  |
|   |  |  |   |  |
|   |  |  |   |  |
| Country:  |  |  |   |  |
|   | ion report as  f the country(ies) and plot of  Where FAA notification is required, dy regarding the potential hazard of  LT IN THE RETURN OF THIS  ITU Name:  Country: | ion report as  Y  If the country(ies) and plot of  Where FAA notification is required, dy regarding the potential hazard of  LT IN THE RETURN OF THIS  ITU Name:  Country: | ion report as  Yes  The country (ies) and plot of  Yes  Where FAA notification is required, dy regarding the potential hazard of  LT IN THE RETURN OF THIS  ITU Name:  Country: | ion report as  Yes  Yes  f the country(ies) and plot of  Where FAA notification is required, dy regarding the potential hazard of  LT IN THE RETURN OF THIS  ITU Name:  Country: |

ANTENNA

| Site ID    | E28. Antenna<br>Id | E29. Quantity | E30.<br>Manufacturer | E31. Model | E32. Antenna<br>Size <meters></meters> | E41/42. Antenna Gain Transmint and/or Recieve (dBi atGHz) |  |
|------------|--------------------|---------------|----------------------|------------|--|---|--|
| TF TR 1.2M | TF TR 1.2          | 50000         | Prodelin             | 1134       | 1.2                                    | 41.5 dBi at<br>11.95                                      |  |
| TF TR 1.2M | TF TR 1.2          | 50000         | Prodelin             | 1134       | 1.2                                    | 43.1 dBi at 14.25   |  |

| E28. Antenna<br>Id |         |     | ` ′ | Height Above | Input Power at antenna flange | E39. Maximum<br>Antenna Height<br>Above Rooftop<br>(meters) | EIRP for al |
|--------------------|---------|-----|-----|--------------|-------------------------------|---|-------------|
| TF TR 1.2          | 1.2/1.2 | 0.0 | 0.0 | 0.0          | 2.0                           | 0.0   | 46.1        |

## FREQUENCY

|           | E43/44.<br>Frequency Bands<br>(MHz) | E45.<br>T/R<br>Mode |                            |         | E48. Maximum<br>EIRP per Carrier<br>(dBW) | E49. Maximum<br>ERIP Density per<br>Carrier<br>(dBW/4kHz) |
|-----------|-------------------------------------|---------------------|----------------------------|---------|---|---|
| TF TR 1.2 | 14000<br>14500                      | Т                   | Horizontal and<br>Vertical | 800KG7W | 46.1                                      | 23.1  |

#### FREQUENCY COORDINATION

| E28.<br>Antenna Id | E51. Satellite<br>Orbit Type | Frequency | Range of<br>Satellite Arc<br>Eastern/West | Station<br>Azimuth | Antenna<br>Elevation<br>Angle | Station<br>Azimuth<br>Angle | Antenna<br>Elevation<br>Angle<br>Western | E60.<br>Maximum<br>EIRP Density<br>toward the<br>Horizon<br>(dBW/4kHz) |
|--------------------|------------------------------|-----------|---|--------------------|-------------------------------|-----------------------------|--|--|
|                    |                              |           | /   |                    |                               |                             |  |  |

| E61. Call Sign   |             | E66. Phone Number |                          |               |
|--|-------------|-------------------|--------------------------|---------------|
| NOTE: Please enter the callsign of the control callsign for which this application is being filed. |             |                   |                          |               |
| E62. Street Address  |             | •                 |                          |               |
|  |             |                   |                          |               |
| E63. City  | E68. County |                   | E67/68.<br>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 St          | tation Site               |                      |                 |       |  |
|-------------------------------|---------------------------|----------------------|-----------------|-------|--|
| E1: Site Identifier:          | TR 1.8M                   | E5. Call Sign:       | E940460         |       |  |
| E2: Contact Name              | Dave Zatloukal            | E6. Phone<br>Number: | 301-428-5500    |       |  |
| E3. Street:                   | 11717 Exploration<br>Lane | E7. City:            | Germantown      |       |  |
|                               |                           | E8. County:          | Montgomery      |       |  |
| E4. State                     | MD                        | E9. Zip Code         | 20876           |       |  |
| E10. Area of Operat           | tion:                     | CONUS, AK, HI, V     | I, PR           |       |  |
| E11. Latitude:                | 0 °0 '0.0 "N              |                      |                 |       |  |
| E12. Longitude:               | 0 °0 '0.0 "W              |                      |                 |       |  |
| E13. Lat/Lon Coordinates are: |                           | O NAD-27             | <b>●</b> NAD-83 | O 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. | <b>♦</b> Yes | O No | O 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?                     | O Yes        | O No | ● N/A |

| nd telephone number of the control  | <b>⊚</b> Y   | es   | 0   | No   |
|---|--|--|---|--|
| ion report as   |  |  |   |  |
|   | OY   | es   | •   | No   |
| f the country(ies) and plot of  | O Y  | es   | •   | No   |
| Where FAA notification is required, dy regarding the potential hazard of LT IN THE RETURN OF THIS | O Y  | es   | •   | No   |
|   |  |  |   |  |
|   |  |  |   |  |
| ITU Name:   |  |  |   |  |
| Country:  |  |  |   |  |
|   |  |  |   |  |
|   |  |  |   |  |
| Country:  |  |  |   |  |
|   | ion report as  f the country(ies) and plot of  Where FAA notification is required, dy regarding the potential hazard of  LT IN THE RETURN OF THIS  ITU Name:  Country: | ion report as  Y  If the country(ies) and plot of  Where FAA notification is required, dy regarding the potential hazard of  LT IN THE RETURN OF THIS  ITU Name:  Country: | ion report as  Yes  The country (ies) and plot of  Yes  Where FAA notification is required, dy regarding the potential hazard of  LT IN THE RETURN OF THIS  ITU Name:  Country: | ion report as  Yes  Yes  f the country(ies) and plot of  Where FAA notification is required, dy regarding the potential hazard of  LT IN THE RETURN OF THIS  ITU Name:  Country: |

ANTENNA

| Site ID | E28. Antenna<br>Id | E29. Quantity | E30.<br>Manufacturer | E31. Model | E32. Antenna<br>Size <meters></meters> | E41/42. Antenna Gain Transmint and/or Recieve (dBi atGHz) |
|---------|--------------------|---------------|----------------------|------------|--|---|
| TR 1.8M | TR 1.8M            | 50000         | Prodelin             | 1184       | 1.8                                    | 45.0 dBi at 11.95   |
| TR 1.8M | TR 1.8M            | 50000         | Prodelin             | 1184       | 1.8                                    | 46.7 dBi at 14.250  |

| Id      | Diameter |     | , , | Height Above<br>Ground Level | Input Power at antenna flange | E39. Maximum<br>Antenna Height<br>Above Rooftop<br>(meters) | EIRP for al |
|---------|----------|-----|-----|------------------------------|-------------------------------|---|-------------|
| TR 1.8M | 1.8/1.8  | 0.0 | 0.0 | 0.0                          | 2.0                           | 0.0   | 49.7        |

## FREQUENCY

|         | E43/44.<br>Frequency Bands<br>(MHz) |   |                            |         | EIRP per Carrier (dBW) | E49. Maximum<br>ERIP Density per<br>Carrier<br>(dBW/4kHz) |
|---------|-------------------------------------|---|----------------------------|---------|------------------------|---|
| TR 1.8M | 14000<br>14500                      | Т | Horizontal and<br>Vertical | 800KG7D | 49.7                   | 26.7  |

## FREQUENCY COORDINATION

| E28.       | E51. Satellite | E52/53.     | E54/55.       | E56. Earth    | E57.          | E58. Earth | E59.      | E60.         |
|------------|----------------|-------------|---------------|---------------|---------------|------------|-----------|--------------|
| Antenna Id | Orbit Type     | Frequency   | Range of      | Station       | Antenna       | Station    | Antenna   | Maximum      |
|            |                | Limits(MHz) | Satellite Arc | Azimuth       | Elevation     | Azimuth    | Elevation | EIRP Density |
|            |                |             | Eastern/West  | Angle         | Angle         | Angle      | Angle     | toward the   |
|            |                |             | ern Limit     | Eastern Limit | Eastern Limit | Western    | Western   | Horizon      |
|            |                |             |               |               |               | Limit      | Limit     | (dBW/4kHz)   |
|            |                |             |               |               |               |            |           |              |
|            |                |             | /             |               |               |            |           |              |
|            |                |             |               |               |               |            |           |              |
|            |                |             |               |               |               |            |           |              |

| E61. Call Sign  |             | E66. Phone Number |               |
|---|-------------|-------------------|---------------|
| NOTE: Please enter the callsign of the callsign for which this application is being |             |                   |               |
| E62. Street Address   |             | •                 |               |
|   |             |                   |               |
| E63. City   | E68. County | E67/68.           | E64. Zip Code |
|   |             | State/Country     |               |
|   |             | <u> </u>          |               |

#### SATELLITE EARTH STATION AUTHORIZATIONS

FCC Form 312 – Schedule B:(Technical and Operational Description)
FOR OFFICIAL USE ONLY

| Location of Earth St | ration Site               |                      |                 |       |  |
|----------------------|---------------------------|----------------------|-----------------|-------|--|
| E1: Site Identifier: | TR 2.4M                   | E5. Call Sign:       | E940460         |       |  |
| E2: Contact Name     | Dave Zatloukal            | E6. Phone<br>Number: | 301-428-5500    |       |  |
| E3. Street:          | 11717 Exploration<br>Lane | E7. City:            | Germantown      |       |  |
|                      |                           | E8. County:          | Montgomery      |       |  |
| E4. State            | MD                        | E9. Zip Code         | 20876           |       |  |
| E10. Area of Operat  | tion:                     | CONUS, AK, HI, V     | I, PR           |       |  |
| E11. Latitude:       | 0 °0 '0.0 "N              |                      |                 |       |  |
| E12. Longitude:      | 0 °0 '0.0 "W              |                      |                 |       |  |
| E13. Lat/Lon Coord   | linates are:              | O NAD-27             | <b>●</b> NAD-83 | O 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. | <b>●</b> Yes | O No | O 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?                     | O Yes        | O No | ● N/A |

| E17. Is the facility operated by remote control? If YES, provide the point.   | ne location and telephone number of the control  | Yes   | O No |
|---|--|-------|------|
| E18. Is frequency coordination required? If YES, attach a frequen   | cy coordination report as                        |       |      |
|   |  | O Yes | No   |
| E19. Is coordination with another country required? If YES, attack coordination contours as   | h the name of the country(ies) and plot of       |       |      |
| coordination contours as  |  | O Yes | No   |
| E20. FAA Notification – (See 47 CFR Part 17 and 47 CFR part have you attached a copy of a completed FCC Form 854 and/or the structure to aviation?  FAILURE TO COMPLY WITH 47 CFR PARTS 17 AND 25 VAPPLICATION. | ne FAA's study regarding the potential hazard of | O Yes | No   |
| POINTS OF COMMUNICATION   |  | •     |      |
| Satellite Name: If you selected OTHER, please enter the follow  | ving:  |       |      |
| 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<br>Id | E29. Quantity | E30.<br>Manufacturer | E31. Model | Size <meters></meters> | E41/42. Antenna Gain Transmint and/or Recieve (dBi atGHz) |
|---------|--------------------|---------------|----------------------|------------|------------------------|---|
| TR 2.4M | TR 2.4M            | 11000         | PRODELIN             | 1244       | 2.4                    | 47.7 dBi at 11.95   |
| TR 2.4M | TR 2.4M            | 11000         | PRODELIN             | 1244       | 2.4                    | 49.2 dBi at 14.250  |

| Id      | Diameter |     | , , | Height Above | Input Power at antenna flange |     | EIRP for al |
|---------|----------|-----|-----|--------------|-------------------------------|-----|-------------|
| TR 2.4M | 2.4/2.4  | 0.0 | 0.0 | 0.0          | 2.0                           | 0.0 | 52.2        |

## FREQUENCY

|         | E43/44.<br>Frequency Bands<br>(MHz) | E45.<br>T/R<br>Mode |                            |         | EIRP per Carrier (dBW) | E49. Maximum<br>ERIP Density per<br>Carrier<br>(dBW/4kHz) |
|---------|-------------------------------------|---------------------|----------------------------|---------|------------------------|---|
| TR 2.4M | 14000<br>14500                      | Т                   | Horizontal and<br>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.)

QPSK, DIGITAL, 512 KSPS, RETURN CARRIER

| TR 2.4M | 14000 | T | Horizontal and | 1M60G7D | 52.2 | 26.2 |
|---------|-------|---|----------------|---------|------|------|
|         | 14500 |   | Vertical       |         |      |      |

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, DIGITAL, 1024 KSPS, RETURN CARRIER

#### FREQUENCY COORDINATION

| E28.<br>Antenna Id | E51. Satellite<br>Orbit Type | Frequency | Range of<br>Satellite Arc<br>Eastern/West | Station<br>Azimuth<br>Angle | Station<br>Azimuth<br>Angle | Elevation<br>Angle<br>Western | E60.<br>Maximum<br>EIRP Density<br>toward the<br>Horizon<br>(dBW/4kHz) |
|--------------------|------------------------------|-----------|---|-----------------------------|-----------------------------|-------------------------------|--|
|                    |                              |           | /   |                             |                             |                               |  |

| E61. Call Sign  | E66. Phone Number |  |                          |               |
|---|-------------------|--|--------------------------|---------------|
| NOTE: Please enter the callsign of the contro callsign for which this application is being filed. |                   |  |                          |               |
| E62. Street Address   |                   |  |                          |               |
|   |                   |  |                          |               |
| E63. City   | E68. County       |  | E67/68.<br>State/Country | E64. Zip Code |

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