FCC 312

Approved by OMB
Estimated time per response: 0.5-80 hours
Edition date: August 2024
OMB Control Number 3060-0678

INSTRUCTIONS FOR COMPLETION OF FCC FORM 312 APPLICATION FOR SPACE STATION AND EARTH STATION AUTHORIZATIONS

PURPOSE OF FORM

FCC Form 312 is used to apply for all authorizations relating to earth and space station facilities, and to notify the Commission of changes to these facilities in cases where prior Commission approval is not required. Specifically, applicants must use FCC Form 312 when:

- Applying for a license for a new earth or space station(s);
- Applying for registration of a domestic receive-only earth station(s);
- Applying for a modification to a licensed earth or space station(s);
- Seeking Commission consent to an assignment or transfer of control of a licensed earth or space station(s);
- Notifying the Commission of a minor modification to a licensed earth or space station(s);
- Notifying the Commission of an assignment or transfer of control of a registered domestic receive-only earth station(s); and
- Filing an amendment to a pending earth or space station application(s).

The purpose of this form is to collect data and other information relating to space and earth stations to assist the FCC in determining whether the public interest would be served by a grant of the requested authorization.

APPLICABLE RULES AND REGULATIONS

Before preparing the application, the applicant should refer to parts 1 and 25 of the Commission's rules. *See* parts 1 and 25 in Title 47 of the Code of Federal Regulations (CFR), available at https://www.ecfr.gov/current/title-47. Part 1 contains rules regarding fee requirements. For specific fee information, see the fee filing guide for satellite services, available at https://www.fcc.gov/licensing-databases/fees/application-processing-fees. Part 25 contains rules regarding the information to be submitted with an application in addition to that specified in the application form. An applicant should make every effort to file a complete application in compliance with the Commission's rules. Failure to do so may result in rejection or return of the application or a delay in the processing of the application.

DESCRIPTION OF FORM

FCC Form 312 is a multi-part form comprised of a Main Form and three schedules. Each application must contain a completed Main Form in addition to any required schedules to receive consideration.

Main Form. The purpose of the mandatory Main Form, which is also referred to as "Form 312" in the International Communications Filing System (ICFS) and in these instructions, is to: (1) obtain information sufficient to identify the applicant; (2) establish the applicant's basic eligibility and

qualifications; (3) classify the filing; and (4) identify the nature of the proposed service or request. The Main Form also contains required certifications and signature block(s).

Schedules. There are three schedules – Schedule A, Schedule B, and Schedule S – that are used in conjunction with the mandatory Main Form, depending on the type of application being filed. Instructions for Schedules A and B appear below. Schedule S instructions are available separately.

Schedule A is to be completed when:

- Applying for consent to assign or transfer of control space station licenses or earth station licenses;
- Notifying the FCC of an assignment or transfer of control of receive-only earth station registrations; and
- Notifying the FCC of a non-substantial (*pro forma*) assignment or transfer of control of space station licenses or earth station licenses involving a telecommunications carrier.

Schedule B is to be completed when:

- Applying for a license for new transmit and/or receive earth station(s);
- Applying for registration of domestic receive-only earth station(s);
- Applying for blanket license for new earth station system;
- Amending a pending earth station application;
- Applying for a modification of a granted earth station or blanket license;
- Applying for a modification of a granted receive-only earth station registration; and
- Notifying the FCC of a minor modification of a granted earth station or blanket license.

Schedule S is to be completed when:

- Applying for a license for a new space station;
- Amending a pending space station application, when information in a previously-filed Schedule S is being amended;
- Applying for a license for a replacement satellite;
- Applying for modification of a space station authorization, if information in Schedule S on file would be modified; and
- Filing a Petition for Declaratory Ruling seeking to access the U.S. market, including requests for a space station to be added to the Permitted list, or an earth station application requesting new authority to serve the United States with a non-U.S.-licensed space station.

Note: as mentioned above, Schedule S instructions are available separately.

For Assistance. For additional information about FCC Form 312, contact the ICFS Helpline at (202) 418-2222 or ICFSINFO@fcc.gov. Information is also available on the FCC's internet site at https://www.fcc.gov. Examples of completed FCC Form 312 applications are available on the ICFS website. The fee filing guide for satellite services is available at https://www.fcc.gov/licensing-databases/fees/application-processing-fees.

Incorporation by Reference. Reference documents, exhibits, or other lengthy showings already on file with the FCC may be referred to in the application without further submission only if: (a) the information is current and accurate in all significant respects; and (b) the reference states specifically where the previously filed information can be found (i.e., station call sign and application file number, title of

proceeding, docket number or legal citations), including exhibit and page references. If either of these criterion is not met, the reference documents must accompany the application.

GENERAL INSTRUCTIONS

Maintaining Current Information. Information filed with the FCC must be kept current. The applicant should notify the FCC regarding any substantial and significant changes in the facts represented in the application. *See* 47 CFR § 1.65.

Waiver Requests. Requests for waivers must identify the specific rule or policy for which the waiver is requested and contain a statement of reasons sufficient to justify a waiver. Waiver requests must be included as an attachment(s) to the Main Form.

Exhibits. Each document required to be filed as an exhibit should be current as of the date of filing. Each exhibit must be identified by an alphabetical letter (e.g., Exhibit A), and each page of each exhibit must be identified by exhibit and page number using the following format: Exhibit A, Page 2 of 3. If material is to be incorporated by reference within an exhibit, see the instructions on incorporation by reference above. If interference studies, frequency coordination reports, radiation hazard reports, environmental impact statements, etc., are required by rule, include them as exhibits. All exhibits must be consecutively designated using either letters or numbers.

Filing of Applications. Applications must be filed electronically through ICFS at https://fccprod.servicenowservices.com/icfs. Application fees must be filed electronically in the Commission Registration System (CORES) Payment System, either directly at https://www.fcc.gov/licensing-databases/fees/cores-payment-system, or through the link available in ICFS. Payment can generally be made by credit card, bank draft (ACH), or wire transfer. For detailed information regarding fees, refer to the fee filing guide for satellite services available at https://www.fcc.gov/licensing-databases/fees/application-processing-fees.

Additional Information. All information provided in the FCC Form 312 will be available for public inspection, unless the applicant specifically requests confidential treatment. Relevant provisions regarding requests for confidential treatment are set out in sections 0.457 and 0.459 of the Commission's rules. *See* 47 CFR §§ 0.457, 0.459. Casual requests (including simply stamping pages "confidential") will not be considered. Any requests for confidential treatment must be narrowly tailored. Such information is also submitted electronically in ICFS, and the applicant should take care in the filing process to designate documents appropriately. For more information, see Public Notice, DA 20-579, "Enforcement Bureau Reminds Public That Requests for Confidentiality Must Cover Material Warranting Confidential Treatment under the Commission's Rules."

Paperwork Reduction and Privacy Notice. The solicitation of personal information requested in this form is authorized by the Communications Act of 1934, as amended, and the Telecommunications Act of 1996, Pub. L. 104-104 (February 8, 1996). The FCC will use the information provided in this form to determine whether grant of this application is in the public interest. In reaching that determination, or for law enforcement purposes, it may become necessary to refer personal information contained in this form to another government agency. In addition, all information provided in this form will be available for public inspection. If information requested on this form is not provided, processing of the application

may be delayed or the application may be returned without action pursuant to the Commission rules. Your response is required to obtain the requested authority.

We have estimated that each response to this collection of information will take 0.50 – 80 hours. Our estimate includes the time to read the instructions, look through existing records, gather and maintain the required data, and actually complete and review the form or response. If you have any comments on this estimate, or on how we can improve the collection and reduce the burden it causes you, please write the Federal Communications Commission, AMD-PERM, Paperwork Reduction Project (3060-0678), Washington, DC 20554. We will also accept your comments via the Internet if you send them to pra@fcc.gov. **Please do not send completed applications to this address.**

You are not required to respond to a collection of information sponsored by the Federal government, and the government may not conduct or sponsor this collection, unless it displays a currently valid OMB control number or if we fail to provide you with this notice. This collection has been assigned an OMB control number of 3060-0678.

The foregoing notice is required by the Privacy Act of 1974, Pub.L. 93-597, December 31, 1974, 5 U.S.C. § 552a(c)(3), and the Paperwork Reduction Act of 1995, Pub.L. 104-13, October 1, 1995, 44 U.S.C. § 3507.

MISCELLANEOUS INFORMATION REGARDING SPECIFIC TYPES OF FILINGS

Space Station Applications. All space station applications should be filed using the Main Form and Schedule S, unless the application is for an assignment or transfer of control, which should then include Schedule A. The Main Form provides general information about the application and the applicant. Additional required space station information, such as technical descriptions, should be provided in a narrative form attached to the Main Form.

> *Important Note*: For satellite systems using both GSO and NGSO components, the applicant must submit a separate application for each component.

Earth Station Amendments. All amendments to pending earth station applications should include the Main Form and Schedule B. Applicants may incorporate by reference those data items not being changed. (See instructions for incorporation by reference above.)

Earth Station Modifications. All modifications to existing earth station authorizations should include Main Form and Schedule B. Applicants may incorporate by reference those data items not being changed. (See instructions for incorporation by reference above.) If the applicant presently holds domestic, international, and/or transborder authorizations for the same earth station (call sign) that were previously granted under different file numbers, be sure to include the composite data from all of these previous separate authorizations. Only one modified authorization will be issued that encompasses all of the previous earth station authorizations.

Earth Station Blanket License Applications. Applications for multiple earth stations may be filed using a blanket license in a single consolidated application using FCC Form 312. The application for a new blanket license should include a single Main Form and a Schedule B, which includes the complete

data for the earth stations. Identify the associated site-ID and antenna-ID for the earth stations and attach continuation sheets for Pages 2-4 as needed.

SPECIFIC INSTRUCTIONS FOR THE MAIN FORM

Applicant Information

Items 1-16. These items ask for information about the applicant and its contact representative.

Applicant Section. These fields identify the applicant and allow for an identifying description of the application. Once an FCC Registration Number (FRN) is entered, several fields will be prefilled from the Commission's Registration System (CORES). If an authorization is granted, the information provided will become the licensee's name, address, email address, and telephone number(s) of record. Applicants must provide a current and valid mailing address and a current and valid email address. Failure to respond to FCC correspondence sent to the address of record may result in dismissal of an application, liability for forfeiture or revocation of an authorization.

Contact Section. These fields identify the contact representative (e.g., a person at the headquarters' office of the applicant, the law firm of the applicant, or the company that prepared or submitted the application on behalf of the applicant) and may be prefilled by using an FRN or checking a box if the information is the same as the applicant's, or may be entered manually.

Classification of Filing

Item 17a. This item indicates the specific type of application that is being filed. The options available in the drop-down menu will depend on the type of application selected when starting the application. Do not combine different types of actions into a single application. For example, to modify and assign the authorization for a single station, you must file two separate applications.

Application Fees

Item 17b. This item asks whether or not a fee will be paid. Depending on the answer, further questions will appear in Item 17c (and possibly Item 17d), including indicating the appropriate fee code and fee classification if a fee is required, or the reason for exemption if a fee is not required.

Waivers

Item 18. This item asks if the applicant is requesting a waiver of the Commission's rules. If yes, identify the rule section(s) for which a waiver is sought, and upload any documentation in connection with the waiver request.

Item 19. Where a pending application is to be amended, the date and file number of the original pending application will be automatically entered.

Type of Service

Item 20. This item seeks information about the nature of service requested. Multiple services can be selected – select all that apply.

Item 21. This item indicates whether or not the applicant will operate this station as a common carrier. The response to this item will be auto-filled into Schedule S, if applicable.

Item 22. This item applies to earth station applications and identifies if U.S., non-U.S., non-U.S. (TT&C only), or both U.S. and non-U.S. licensed satellites will be or are used. If the earth station will operate with a non-U.S. licensed satellite, Item B3 on Schedule B must be completed.

Item 23. Only those applicants providing International Common Carrier service need to indicate whether or not this facility is connected to the Public Switched Network. If so, appropriate Section 214 filings are required. *See* part 63 of the Commission's rules, 47 CFR part 63.

Item 24. This item specifies the proposed frequency band(s).

Type of Station

Item 25a. This item identifies the class of station to be placed in service. The response to this item will be auto-filled into Schedule S, if applicable. *Important Note*: If the application is for a "NGSO Smallsat or Spacecraft," the applicant must select that option in this item, otherwise that will not appear in Schedule S.

Item 25b. Enter the number of years for the estimated operational lifetime of the space station(s) identified in the application, from the date of launch. The response to this item will be auto-filled into Schedule S, if applicable.

Item 25c. Provide a space station or satellite network name. The response to this item will be auto-filled into Schedule S, if applicable.

Item 26. This item applies to earth station applications and identifies if the earth station transmits and/or receives.

Purpose of Modification or Amendment

An application that revises the data on a previous application that *has not yet been granted* is an Amendment, whereas an application that revises the data on a previously *granted* application (license or registration) is a Modification. Existing authorizations are "modified," while pending applications are "amended."

Item 27. This item applies to only proposed modifications or amendments, and it identifies the purpose of the proposed modification or amendment. Select all that apply. Provide the revised technical data on Schedule B or Schedule S, as appropriate.

Environmental Policy

Item 28. This item is required for compliance with the National Environmental Policy Act of 1969, as amended, 42 U.S.C. §§ 4321-4335. *See also* part 1, subpart I of the Commission's rules (47 CFR §§ 1.1301-1.1319). Examples of facilities that may have a significant effect on the environment include, but are not limited to:

- an antenna structure located in a residential area (as defined by applicable zoning laws) which will utilize high intensity aviation obstruction lighting
- a facility located in an officially designated wilderness area, wildlife preserve or floodplain
- a facility that affects a site significant in American history
- a facility, the construction of which involves extensive changes in surface features

A Radiation Hazard Study must accompany all applications for new earth station transmitting facilities, major modifications, and major amendments as Exhibit B. For information on preparing this study, consult OET Bulletin 65.

Alien Ownership

Items 29-34. These items request information that will enable the FCC to determine whether an applicant is eligible under Section 310 of the Communications Act of 1934, as amended, to hold a station license. Earth station applicants not proposing to provide broadcast, common carrier, aeronautical in-route or aeronautical fixed radio station services are not required to respond to Items 30-34.

Basic Qualifications

Items 35-40. These items request information that will enable the FCC to determine whether an applicant is basically qualified to hold an FCC authorization.

Item 41. Provide a descriptive summary of the nature of the application and services to be provided. The response to this item will be auto-filled into Schedule S, if applicable.

Item 42. Select the geographic service certification, if applicable. If the applicant selects that it is subject to the geographic coverage requirements specified in 47 CFR part 25 and will not comply with such requirements, it must upload a narrative explanation and supporting technical analysis.

Confidential Treatment of Attachments

Item 43. Identify if the applicant is requesting confidential treatment of any attachment under section 0.459 of the Commission's rules, 47 CFR § 0.459. If "Yes," the applicant must upload a supporting statement for the confidential treatment request(s) identifying the applicable rule(s) and providing other supporting materials or information. The applicant must also upload both the redacted public version and the non-redacted confidential version of the attachment(s) in the Attachments section.

Important Note: All attachments uploaded in response to any items above (e.g., Items 18, 28-43) will be displayed in the attachment table.

Certification

Item 44. To be acceptable for filing, applications, amendments, modifications, and registrations must be signed in accordance with part 1 of the Commission's rules. The signatory must be a person authorized to sign the application.

SPECIFIC INSTRUCTIONS FOR SCHEDULE A
Application for Consent to Assignment/Transfer of Control of License or Notification of Assignment/Transfer of Control of Receive-Only Registration

The Main Form and Schedule A collect information about the parties to a transaction to determine if the requested consent, governed by 47 CFR part 25, serves the public interest. The Main Form is to be completed by the prospective licensee or registrant in the case of an assignment (assignee) or the new controlling entity in the case of a transfer of control (transferee). Schedule A is to be completed by all involved parties.

Items 2, 5, 8a, and 8b must be completed by the current licensee or registrant.

Items 3, 9a, and 9b must be completed by the entity assigning or transferring the license or registration (assignor/transferor) if different from the licensee or registrant.

Items 4, 6a, 6b, 7, 10a, and 10b must be completed by the assignee/transferee.

SPECIFIC INSTRUCTIONS FOR SCHEDULE B
Technical and Operational Description of Earth Station(s)

Schedule B is used for all earth station filings that do not involve assignments or transfers of control. Schedule B and the Main Form must be completed when filing for both licenses and registrations for all new earth stations, all amendments to pending earth station applications, and all modifications to existing earth station authorizations. Schedule B collects technical and operational information relevant to the earth station.

Location of Earth Station Site

Schedule B initially presents a Site section that designates geographic information associated with one or more earth stations. A fixed earth station may be designated by specific geographic coordinates. Other earth stations, such as temporary fixed earth stations and earth stations in motion (ESIM), may be designated by a region of operation instead of a single set of coordinates. Additional sites may be added to Schedule B by selecting the **+Site** button at the top of the form.

For each site listed in Schedule B, the following information is used to describe the Site Contact Information (underlined text indicates an input field in Schedule B):

1. Site Identifier: a label identifying the site of the earth station in Schedule B;
2. Site Contact Information
    a. Contact Name: a point of contact associated with the earth station at the site

b. Phone Number: phone number for the contact
c. Street: street name associated with the site
d. City: city associated with the site
e. County: state associated with the site
f. State: county associated with the site
g. Zip code: Zip code associated with the site

3. Site Details: Designates the geographic coordinates and/or the area of operation of the earth station. ICFS will display a satellite photo and map showing the vicinity of the specified coordinates, which can assist in verifying the location of a fixed earth station. For temporary fixed earth stations, ESIMs, and blanket licenses, enter zeroes for the geodetic coordinates and use the Area of Operation to designate the extent of the earth station operations:
    a. Area of Operation: specific designators indicating extent of earth station locations during operation. For mobile operations and temporary fixed earth stations, this may include "US" or "US&P" for United States (which includes the several States and Territories, the District of Columbia, and the possessions of the United States, but does not include the Canal Zone). Mobile operations may include "U.S. territorial waters" and/or "international waters."
    b. Latitude Degrees: latitude value in degrees using the specified geodetic datum
    c. Latitude Minutes: latitude value in minutes using the specified geodetic datum
    d. Latitude Seconds: latitude value in seconds using the specified geodetic datum
    e. Latitude Hemisphere: pulldown menu specifying Northern ("N") or Southern ("S") hemisphere
    f. Longitude Degrees: longitude value in degrees using the specified geodetic datum
    g. Longitude Minutes: longitude value in minutes using the specified geodetic datum
    h. Longitude Seconds: longitude value in seconds using the specified geodetic datum
    i. Longitude Hemisphere: pulldown menu specifying Eastern ("E") or Western ("W") hemisphere
    j. Geographic Coordinate System: pulldown menu specifying the geodetic datum / reference frame for a fixed earth station's latitude and longitude coordinates, which may be based on the World Geodetic System 1984 (WGS84 recommended), North American Datum (NAD) of 1927 or 1983 (NAD-83)
    k. Site Elevation: elevation of fixed earth station above mean sea level (AMSL) in meters

Certification Details

1. 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? Indicate (Yes, No, or N/A) if 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) while operating in the Fixed Satellite Service (FSS) with geostationary satellites. If "No," provide a technical analysis showing compliance with two-degree spacing policy which includes attaching a file showing GSO antenna gain pattern compliance as required under the Commission's rules in part 25 addressing earth station antenna performance standards.

2. 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(a) and (b) as demonstrated by the manufacturer's qualification measurement? Indicate (Yes, No, or N/A) if the proposed antenna(s) comply with the antenna gain patterns specified in the Commission's rules in part 25 on earth station antenna performance standards (as demonstrated by the manufacturer's qualification measurement) while *not* operating in the Fixed Satellite Service (FSS), or if they operate in FSS with non-geostationary satellites.

Questions 1 and 2 above indicate compliance with the antenna sidelobe standard specified in the Commission's part 25 rules. FSS operations using satellites located in the geostationary satellite orbit must comply with the more stringent standard, or provide a technical analysis showing that this operation is compatible with two-degree spacing policy. Earth stations operating with non-geostationary satellites (MSS, etc.) or non-FSS operations should indicate compliance with the less stringent antenna standard.

3. Is Frequency Coordination required? Indicate (Yes or No) if frequency coordination is required. If "Yes," a frequency coordination report must be uploaded using the **Select file to upload** button. If the earth station operates in frequency bands that are shared with other radio services, such as the C-band (4/6 GHz), frequency coordination is required. In such cases, a Frequency Coordination Report and/or Coordination Contour map is required.

4. Is coordination with another country required? Indicate (Yes or No) if frequency coordination with another country is required. If "Yes," a frequency coordination report must be uploaded using the **Select file to upload** button.

5. Is FAA notification required? Indicate (Yes or No) if FAA notification is required. If "Yes," attach a copy of a completed FCC Form 854 and/or the FAA's study regarding the potential hazard of the structure to aviation using the **Select file to upload** button. **Failure to comply with 47 CFR parts 17 and 25 will result in the return of the application.** The purpose of this item is to ensure adherence to all regulations concerning the safety of air travel. *See* 47 CFR part 17 for requirements concerning the notification and coordination of antenna structures with the FAA. *See also* 47 CFR § 25.113(c) concerning earth station filing requirements.

Remote Control

Indicate (Yes or No) from pulldown menu if the earth station is operated by remote control. If "Yes," the following additional entry fields will appear for entering the remote control details:

1. Call Sign: call sign of controlling station, not the earth station for which the application is being filed
2. Phone Number: phone number of point of contact responsible for the controlling station
3. Street: street address of the controlling station
4. City: city where the controlling station is located
5. County: county where the controlling station is located
6. Zip Code: Zip Code associated with the controlling station
7. State: state where the controlling station is located
8. Country: pulldown menu indicating the country the controlling station is located

Points of Communications

The Points of Communication section provides a number of input fields and options specifying the satellites with which the earth station will communicate. If the earth station will communicate with satellites as defined in the "Permitted List" (see 47 CFR § 25.103 for the definition of Permitted Space Station List), including U.S. licensed satellites, select "Yes" from the pulldown menu labeled "Permitted List." If the earth station will not communicate with satellites on the Permitted List, "No" will be selected in this pulldown menu.

Alternatively (or in some cases, additionally), if the earth station will operate with satellites not on the Permitted List, these satellites must be individually listed as distinct points of communication. Each distinct point of communication may be designated by selecting the **Point of Communication** button. Multiple points of communication may be designated by repeated selection of this button.
Upon the first activation of the **Point of Communication** button, a number of entry fields are presented under the title "Point of Communication." The first is a pulldown menu labeled "Satellite" that provides a large list of satellites names for which one may be selected as the first distinct point of communication (hereafter "PoC 1"). The following entry fields appear which are associated with the first selected point of communication:

1. Common Name: an unofficial designation for PoC 1
2. ITU Name: a designation for PoC 1 provided by the International Telecommunication Union
3. Orbit Location: a longitude angle in degrees for PoC 1 when it is a GSO satellite
4. Country: pulldown menu indicating the country of origin for PoC 1
5. Destination Points: for earth station applications requesting a non-U.S. licensed satellite Point of Communication not previously granted U.S. market access, list all countries to which the earth station will provide service. The countries must be listed separately. The ITU 3-letter country codes may be used to identify the countries to which service will be provided.

Additional points of communication (PoC 2, … PoC N) may be designated by selecting the **Point of Communication** button.

If the earth station will operate with both satellites on the Permitted List (including any U.S.-licensed satellites) and non-U.S. licensed satellites not eligible for the Permitted List, include the notation "Permitted List" to cover all the satellites on the Permitted List and then list each non-U.S. licensed satellite not on the Permitted List individually, as noted above.

Earth Station Antenna Facilities

The Earth Station Antenna Facilities section designates various information related to one or more antennas associated with the earth station at the Site Identifier selected as described above. By default, Schedule B initially presents inputs for a first antenna. One or more additional antennas may be specified by selecting the **+Antenna** button, and inputs related to each antenna may be provided as described below. For each antenna, required inputs are provided using the adjacent **Basic** and **Frequency Bands** buttons.

1. First, in the Antennas section, select the **Frequency Bands** button *adjacent to* the **Basic** button.
2. In the Frequency Bands section, select a second **Basic** button and enter the following parameters:
    a. Frequency Lower (MHz): lower frequency value in MHz for the entire band
    b. Frequency Upper (MHz): upper frequency value in MHz for the entire band

c. Direction of Transmission: from the pulldown menu, select either "Earth-to-Space" (transmit channel) or "Space-to-Earth" (receive channel)

3. If the earth station(s) transmits *and* receives, repeat steps 2a. through 2c for the reverse direction of transmission. Once the values for one direction of transmission are entered, the **+Frequency Band** button may be selected to enter the above-noted parameters for the reverse direction of transmission.
4. Select the **Basic** button *adjacent to* the **Frequency Bands** button in the Antennas section, and enter the following parameters:
    a. Antenna ID: applicants should assign a unique identifying number or name to each antenna. This ID should be used throughout Schedule B when referring to the frequencies, emissions, heights, satellite arcs, etc., that are associated with each antenna that comprises the earth station.
    b. Quantity: number of antennas used by the earth station
    c. Manufacturer: manufacturer of the earth station antenna
    d. Model: model of the earth station antenna
    e. Diameter Antenna Size: diameter in meters if circular aperture (when rectangular aperture, enter effective diameter = 2*SQRT(minor axis*major axis/π), when elliptical aperture, enter effective diameter = SQRT(minor axis*major axis))
    f. Minor Axes (meters): minor axis diameter (d) in meters if elliptical (the default is 0 m)
    g. Major Axes (meters): major axes diameter (D) in meters if elliptical (the default is 0 m)
    h. Maximum Antenna Height Above Ground Level (meters): enter the maximum overall height to the top of the antenna structure with respect to ground level (*see* 47 CFR part 17)
    i. Maximum Antenna Height Above Mean Sea Level (meters): enter the maximum overall height to the top of the antenna structure with respect to mean sea level (*see* 47 CFR part 17)
    j. Building Height Above Ground Level (meters): for earth station antennas that will be mounted on towers or are otherwise subject to the required FCC prior tower registration, provide the Tower ID number as listed in the FCC's Tower Database (see 47 CFR part 17 for information concerning prior registration of towers)
    k. Maximum Antenna Height Above Rooftop (meters): if the antenna is located on a building or other structure, provide the height of the building above ground level, and the maximum height of the antenna above the top of the structure on which the antenna is located. Also attach a sketch of the site and other information required by 47 CFR part 17.
    l. Antenna receive gain (dBi): antenna receive gain at the receive reference frequency
    m. At: frequency in GHz used to establish receive antenna gain
    n. Antenna transmit gain (dBi): antenna transmit gain at the transmit reference frequency
    o. At: frequency in GHz used to establish transmit antenna gain
    p. Total Input Power at Antenna Flange for All Carriers (Watts): if the antenna transmits, provide the total input power (in Watts) at the antenna flange and the aggregate output EIRP (in dBW) for all r.f. carriers (these powers must be consistent with those provided in the Radiation Hazard Study)
    q. Total EIRP for All Carriers (dBW): as a check, ICFS will provide a Calculated Total EIRP for All Carriers (dBW) as an output value based upon the input parameters

5. Once values have been entered in 4.a. through 4.q. above, return to the "Frequency Bands" input section by selecting the **Frequency Bands** button to enter values associated with the "Operating Particulars" as described below.

Operating Particulars

Select the **Operating Particulars** button associated with the transmit band and enter the values below:

1. Emission Designator: enter the code associated with the transmit frequency band (for proper emission designator format, see section 2.201 of the Commission's rules)
2. Polarization: choose an antenna polarization value associated with the entered Emission Designator from the pulldown menu from the following selections:
    a. Horizontal
    b. Vertical
    c. Left Hand Circular
    d. Right Hand Circular
    e. Horizontal and Vertical
    f. Left and Right Hand Circular
    g. Linear and Circular
    h. Other (if "Other" selected, enter a description in the input field "Polarization Other")
3. Maximum EIRP per Carrier (dBW): provide the maximum EIRP (in dBW) for each radio frequency carrier of the emission
4. Maximum EIRP Density per Carrier (dBW/4kHz): provide the maximum EIRP density, in dBW/4kHz, for each radio frequency carrier of the emission
5. Modulation and Services: provide a brief description of both the modulation and services provided by this emission. Examples of modulation include QPSK, BPSK, SCPC, etc. Examples of services include video, data, voice, etc.

Select the **Operating Particulars** button associated with the receive band and enter the values for the (1) Emission Designator, (2) Polarization, and (5) Modulation Services. The (3) Maximum EIRP per Carrier (dBW) and (4) Maximum EIRP Density per Carrier (dBW/4kHz) will be 0 dBW and 0 dBW/4kHz, respectively.

Satellite Coordinations

1. Antenna Elevation Angle Eastern Limit: enter the elevation angle of the antenna in degrees to the eastern most geostationary satellite orbital arc limit. For non-geostationary satellites, provide the minimum elevation angle at which the earth station will operate.
2. Antenna Elevation Angle Western Limit: enter the elevation angle in degrees to the western most geostationary satellite orbital arc limit. For non-geostationary satellites, provide the minimum elevation angle at which the earth station will operate.
3. Earth Station Azimuth Angle Eastern Limit: enter the azimuth angle of the earth station in degrees to the eastern most geostationary satellite orbital arc limit. Provide the azimuth angle relative to true north to the eastern most geostationary satellite orbital arc limit. For non-geostationary satellites, provide the maximum azimuthal angles at which the earth station will operate (e.g., 0-360 degrees).
4. Earth Station Azimuth Angle Western Limit: enter the azimuth angle of the earth station in degrees to the western most geostationary satellite orbital arc limit. Provide the azimuth angle

relative to true north to the western most geostationary satellite orbital arc limit. For non-geostationary satellites, provide the maximum azimuthal angles at which the earth station will operate (e.g., 0-360 degrees).

5. Maximum EIRP Density towards the Horizon (dBW/4kHz): if the earth station transmits in this frequency band, provide the maximum EIRP density toward the horizon (in dBW/4kHz).