

S2653 SAT-MOD-20170626-00099 IB2017001695  
EchoStar Satellite Operating Corporation  
ECHOSTAR-12



File # SAT-MOD-20170626-00099

Call Sign S2653 Grant Date 08/24/17  
(or other identifier)

Term Dates see  
From 08/24/17 To: conditions

Approved by OMB  
3060-0678

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Approved: Stephen J. Duall  
Stephen J. Duall  
Chief, Satellite Policy Branch

\* with conditions

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:  
Modification for Relocation of EchoStar 12 to 86.4WL

1-8. Legal Name of Applicant

<b>Name:</b>	EchoStar Satellite Operating Corporation	<b>Phone Number:</b>	301-428-5893
<b>DBA Name:</b>		<b>Fax Number:</b>	
<b>Street:</b>	100 Inverness Terrace East	<b>E-Mail:</b>	jennifer.manner@echostar.com
<b>City:</b>	Englewood	<b>State:</b>	CO
<b>Country:</b>	USA	<b>Zipcode:</b>	80112 -
<b>Attention:</b>	Jennifer A Manner		

**ATTACHMENT TO GRANT**  
 EchoStar Satellite Operating Corporation  
 IBFS File No. SAT-MOD-20170626-00099

<b>IBFS File No(s):</b>	SAT-MOD-20170626-0009	<p><b>GRANTED – With Conditions</b></p>  <p><b>International Bureau Satellite Division</b></p>
<b>Licensee/Grantee:</b>	EchoStar Satellite Operating Corporation (EchoStar)	
<b>Call Sign:</b>	S2653	
<b>Satellite Name:</b>	EchoStar 12	
<b>Orbital Location: (required station-keeping tolerance)</b>	86.4° W.L. (+/- 0.05 degrees)	
<b>Administration:</b>	United States of America <sup>1</sup>	
<b>Nature of Service:</b>	Broadcasting Satellite Service (BSS); Telemetry, Tracking and Command (TT&C)	
<b>Scope of Grant:</b>	Modification of license to grant authority to conduct TT&C operations related to the drift of EchoStar 12 from the 61.2° W.L. orbital location to the 86.4° W.L. orbital location (and to maintaining EchoStar 12 at 86.4° W.L.) and to provide BSS from the 86.4° W.L. orbital location.	
<b>Previous Grant(s):</b>	SAT-MOD-20030110-00009; SAT-MOD-20120301-00034; SAT-MOD-20130905-00113; SAT-STA-20170206-00013; SAT-STA-20160902-00086	
<b>Service Area(s):</b>	Colombia, See Item S6 of Schedule S and accompanying .gxt files	
<b>Frequencies:</b>	12.2-12.7 GHz (space-to-Earth) 17.3-17.8 GHz (Earth-to-space)  Telemetry, Tracking, and Command center frequencies (TT&C): 12, 205.0 MHz, 12,697.0 MHz (space-to-Earth) 17,304.0 MHz, 17, 798.0 MHz (Earth-to-space)	
<p><b>Unless otherwise specified herein, operations under this grant must comport with the legal and technical specifications set forth by the applicant or petitioner and with Federal Communication Commission's rules not waived herein. This grant is also subject to the following conditions:</b></p> <ol style="list-style-type: none"> <li>1. All operations during EchoStar 12's drift to the 86.4° W.L. orbital location must be on an unprotected and non-harmful interference basis, <i>i.e.</i>, EchoStar must not cause harmful interference to, and must not claim protection from interference caused to it by, any other lawfully operating stations. In the event of harmful interference, EchoStar must cease operations immediately upon notification of such interference, and must inform the Commission, in writing, immediately of such an event.</li> <li>2. EchoStar must coordinate the operations of EchoStar 12 with existing geostationary space stations to ensure that no unacceptable interference results from its operations during drift from the 61.2° W.L. to the 86.4° W.L. orbital location.</li> <li>3. During the drift to the 86.4° W.L. orbital location, EchoStar must operate only the TT&amp;C frequencies authorized for EchoStar 12, and must not include the provision of commercial services.</li> <li>4. While at the 86.4° W.L. orbital location, EchoStar must maintain the EchoStar 12 spacecraft with an east/west longitudinal station-keeping tolerance of +/- 0.05 degrees.</li> <li>5. In connection with the provision of service in any particular country, EchoStar is obliged to comply with the applicable laws, regulations, rules, and licensing procedures of that country.</li> <li>6. EchoStar must operate EchoStar 12 at the 86.4° W.L. orbital location in compliance with all existing or future coordination agreements for this location. In the absence of a coordination agreement, such communications must comply with applicable provisions of the ITU Radio Regulations as the</li> </ol>		

<sup>1</sup> EchoStar states that it will operate EchoStar 12 at 86.4° W.L. in accordance with ITU network filings held by the United Kingdom for the IOMSAT-S21 network.

**ATTACHMENT TO GRANT**  
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 IBFS File No. SAT-MOD-20170626-00099

Commission cannot guarantee the success of the required coordinations.

7. EchoStar was previously granted a waiver of Sections 25.114(d)(14)(ii) and 25.283(c) of the Commission's rules, 47 C.F.R. §§ 25.114(d)(14)(ii) and 25.283(c). These rules require an applicant to demonstrate how stored energy will be removed at the spacecraft's end-of-life and that all stored energy will be vented at end-of-life. The EchoStar 12 space station is a Lockheed Martin A2100 model that is not designed to completely vent all its pressurized systems. Following launch of the spacecraft on July 17, 2003, two oxidizer tanks were permanently sealed by firing pyrotechnic valves. As a result, EchoStar states that at the end of life there will be oxidizer that cannot be vented. EchoStar states that residual oxidizer in EchoStar 12's oxidizer tanks has an estimated mass of 20 kilograms, and the oxidizer tanks have a combined volume of 39968 cubic inches (approximately 654.96 liters). EchoStar calculates that the oxidizer tanks will also contain an estimated 1.9 kilograms of helium pressurant. The requested waiver was granted because EchoStar 12 was launched before Section 25.283(c) became effective and compliance would require direct retrieval of the spacecraft, which is not currently possible.
8. Within 30 days of completion of the end-of-life maneuvers, EchoStar must send a letter to the Chief, Satellite Division, International Bureau, indicating the apogee and perigee of the EchoStar 12 disposal orbit.
9. This action does not extend the license term of the EchoStar 12 space station (Call Sign S2653), which expires on July 31, 2022. See IBFS File No. SAT-MOD-20130905-00113 (granted Feb. 27, 2014).

Licensee/grantee is afforded thirty (30) days from the date of release of this action to decline the grant as conditioned. Failure to respond within this period will constitute formal acceptance of the grant as conditioned.

This action is taken pursuant to Section 0.261 of the Commission's rules on delegated authority, 47 C.F.R. § 0.261, and is effective upon release.

Station licenses are subject to the conditions specified in Section 309(h) of the Communications Act of 1934, as amended, 47 U.S.C. § 309(h).

<b>Action Date:</b>	August 24, 2017	
<b>Term Dates</b>	<b>From:</b> August 24, 2017	<b>To:</b> see conditions

**Approved:**  
  
 Stephen J. Duall  
 Chief, Satellite Policy Branch

9-16. Name of Contact Representative

<b>Name:</b>	Jennifer A. Manner	<b>Phone Number:</b>	301-428-5893
<b>Company:</b>	EchoStar Satellite Operating Corporation	<b>Fax Number:</b>	
<b>Street:</b>	11717 Exploration Lane	<b>E-Mail:</b>	jennifer.manner@echostar.com
<b>City:</b>	Germantown	<b>State:</b>	MD
<b>Country:</b>	USA	<b>Zipcode:</b>	20876-
<b>Attention:</b>		<b>Relationship:</b>	Same

CLASSIFICATION OF FILING

<p>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.</p> <p><input type="radio"/> a1. Earth Station</p> <p><input checked="" type="radio"/> a2. Space Station</p>	<p>(N/A) b1. Application for License of New Station</p> <p>(N/A) b2. Application for Registration of New Domestic Receive-Only Station</p> <p><input type="radio"/> b3. Amendment to a Pending Application</p> <p><input checked="" type="radio"/> b4. Modification of License or Registration</p> <p>b5. Assignment of License or Registration</p> <p>b6. Transfer of Control of License or Registration</p> <p><input type="radio"/> b7. Notification of Minor Modification</p> <p>(N/A) b8. Application for License of New Receive-Only Station Using Non-U.S. Licensed Satellite</p> <p>(N/A) b9. Letter of Intent to Use Non-U.S. Licensed Satellite to Provide Service in the United States</p> <p>(N/A) b10. Other (Please specify)</p> <p>(N/A) b11. Application for Earth Station to Access a Non-U.S. satellite Not Currently Authorized to Provide the Proposed Service in the Proposed Frequencies in the United States</p> <p>(N/A) b12. Application for Database Entry</p> <p><input type="radio"/> b13. Amendment to a Pending Database Entry Application</p> <p><input type="radio"/> b14. Modification of Database Entry</p>
<p>17c. Is a fee submitted with this application?</p> <p><input checked="" type="radio"/> If Yes, complete and attach FCC Form 159. If No, indicate reason for fee exemption (see 47 C.F.R. Section 1.1114).</p> <p><input type="radio"/> Governmental Entity    <input type="radio"/> Noncommercial educational licensee</p> <p><input type="radio"/> Other (please explain):</p>	
<p>17d.</p> <p>Fee Classification BFY – Space Station Modification (Geostationary)</p>	

<p>18. If this filing is in reference to an existing station, enter:</p> <p>(a) Call sign of station: S2653</p>	<p>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:</p> <p>(a) Date pending application was filed: (b) File number:  SATMOD2013090500113</p>
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TYPE OF SERVICE

<p>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:</p> <p><input checked="" type="checkbox"/> a. Fixed Satellite  <input type="checkbox"/> b. Mobile Satellite  <input type="checkbox"/> c. Radiodetermination Satellite  <input type="checkbox"/> d. Earth Exploration Satellite  <input type="checkbox"/> e. Direct to Home Fixed Satellite  <input type="checkbox"/> f. Digital Audio Radio Service  <input checked="" type="checkbox"/> g. Other (please specify) Direct Broadcast Satellite</p>	
<p>21. STATUS: Choose the button next to the applicable status. Choose only one.</p> <p><input type="radio"/> Common Carrier    <input checked="" type="radio"/> Non-Common Carrier</p>	<p>22. If earth station applicant, check all that apply.</p> <p><input type="checkbox"/> Using U.S. licensed satellites  <input type="checkbox"/> Using Non-U.S. licensed satellites</p>
<p>23. If applicant is providing INTERNATIONAL COMMON CARRIER service, see instructions regarding Sec. 214 filings. Choose one. Are these facilities:</p> <p><input type="radio"/> Connected to a Public Switched Network    <input type="radio"/> Not connected to a Public Switched Network    <input checked="" type="radio"/> N/A</p>	

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

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

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

26. TYPE OF EARTH STATION FACILITY:

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

"For Space Station applications, select N/A."

PURPOSE OF MODIFICATION

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

- 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 & countries)
- k -- authorization for facilities for which environmental assessment and radiation hazard reporting is required
- l -- authorization to change orbit location
- m -- authorization to perform fleet management
- n -- authorization to extend milestones
- o -- Other (Please specify)



ENVIRONMENTAL POLICY

28. Would a Commission grant of any proposal in this application or amendment have a significant environmental impact as defined by 47 CFR 1.1307? If YES, submit the statement as required by Sections 1.1308 and 1.1311 of the Commission's rules, 47 C.F.R. 1.1308 and 1.1311, as an exhibit to this application. A Radiation Hazard Study must accompany all applications for new transmitting facilities, major modifications, or major amendments.  Yes  No

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

29. Is the applicant a foreign government or the representative of any foreign government?	<input type="radio"/> Yes <input checked="" type="radio"/> No
30. Is the applicant an alien or the representative of an alien?	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> N/A
31. Is the applicant a corporation organized under the laws of any foreign government?	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> N/A
32. Is the applicant a corporation of which more than one-fifth of the capital stock is owned of record or voted by aliens or their representatives or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country?	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> N/A

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

Yes  No  N/A

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

#### BASIC QUALIFICATIONS

35. Does the Applicant request any waivers or exemptions from any of the Commission's Rules?  
If Yes, attach as an exhibit, copies of the requests for waivers or exceptions with supporting documents.

Yes  No

36. Has the applicant or any party to this application or amendment had any FCC station authorization or license revoked or had any application for an initial, modification or renewal of FCC station authorization, license, or construction permit denied by the Commission? If Yes, attach as an exhibit, an explanation of circumstances.

Yes  No

Exhibit 3

37. Has the applicant, or any party to this application or amendment, or any party directly or indirectly controlling the applicant ever been convicted of a felony by any state or federal court? If Yes, attach as an exhibit, an explanation of circumstances.

Yes  No

38. Has any court finally adjudged the applicant, or any person directly or indirectly controlling the applicant, guilty of unlawfully monopolizing or attempting unlawfully to monopolize radio communication, directly or indirectly, through control of manufacture or sale of radio apparatus, exclusive traffic arrangement or any other means or unfair methods of competition? If Yes, attach as an exhibit, an explanation of circumstances

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 exhibit, an explanation of the circumstances.

Yes  No

40. If the applicant is a corporation and is applying for a space station license, attach as an exhibit the names, address, and citizenship of those stockholders owning a record and/or voting 10 percent or more of the Filer's voting stock and the percentages so held. In the case of fiduciary control, indicate the beneficiary(ies) or class of beneficiaries. Also list the names and addresses of the officers and directors of the Filer.

Exhibit 2

41. By checking Yes, the undersigned certifies, that neither applicant nor any other party to the application is subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Act of 1988, 21 U.S.C. Section 862, because of a conviction for possession or distribution of a controlled substance. See 47 CFR 1.2002(b) for the meaning of "party to the application"; for these purposes.

Yes  No

42a. Does the applicant intend to use a non-U.S. licensed satellite to provide service in the United States? If Yes, answer 42b and attach an exhibit providing the information specified in 47 C.F.R. 25.137, as appropriate. If No, proceed to question 43.

Yes  No

42b. What administration has licensed or is in the process of licensing the space station? If no license will be issued, what administration has coordinated or is in the process of coordinating the space station?

43. Description. (Summarize the nature of the application and the services to be provided). (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

Seeking license modifications to (i) permit relocation of EchoStar 12 to 86.4WL for regular operations; and (ii) add EchoStar 12 at 86.4WL as a point of communications for TT&C earth station operations. See Exhibit 1.

Exhibit 1

43a. Geographic Service Rule Certification

By selecting A, the undersigned certifies that the applicant is not subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25.

A

By selecting B, the undersigned certifies that the applicant is subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25 and will comply with such requirements.

B

By selecting C, the undersigned certifies that the applicant is subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25 and will not comply with such requirements because it is not feasible as a technical matter to do so, or that, while technically feasible, such services would require so many compromises in satellite design and operation as to make it economically unreasonable. A narrative description and technical analysis demonstrating this claim are attached.

C

Technical Annex

CERTIFICATION

The Applicant waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise, and requests an authorization in accordance with this application. The applicant certifies that grant of this application would not cause the applicant to be in violation of the spectrum aggregation limit in 47 CFR Part 20. All statements made in exhibits are a material part hereof and are incorporated herein as if set out in full in this application. The undersigned, individually and for the applicant, hereby certifies that all statements made in this application and in all attached exhibits are true, complete and correct to the best of his or her knowledge and belief, and are made in good faith.

44. Applicant is a (an): (Choose the button next to applicable response.)

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

45. Name of Person Signing

Jennifer A. Manner

46. Title of Person Signing

Senior Vice President, Regulatory Affairs



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(U.S. Code, Title 18, Section 1001), AND/OR REVOCATION OF ANY STATION AUTHORIZATION  
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