



**UNITED STATES OF AMERICA  
FEDERAL COMMUNICATIONS COMMISSION**

**RADIO STATION AUTHORIZATION**

Name: EchoStar Operating L.L.C.

Call Sign: E080120

Authorization Type: Modification of License

File Number: SES-MOD-20170414-00528

Non Common Carrier

Grant date: 06/28/2017

Expiration Date: 11/03/2023



Nature of Service: Fixed Satellite Service

Nature of Service: Other

Class of Station: Fixed Earth Stations

**A) Site Location(s)**

#	Site ID	Address	Latitude	Longitude	Elevation (Meters)	Special Provisions NAD (Refer to Section H)
1)	D1	530 EchoStar Drive Cheyenne, Laramie, WY 82007	41°7'54.4"N	104°44'12.4"W	1810.5	83

Licensee certifies antenna(s) do not comply with Section 25.209. Please refer to Section E for special conditions placed upon antennas at this site.

2)	D2	530 ECHOSTAR DRIVE CHEYENNE, LARAMIE, WY 82007	41°7'54.4"N	104°44'13.1"W	1810.5	83
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Licensee certifies antenna(s) comply with gain patterns specified in Section 25.209

*Subject to the provisions of the Communications Act of 1934, The Communications Satellite Act of 1962, subsequent acts and treaties, and all present and future regulations made by this Commission, and further subject to the conditions and requirements set forth in this license, the grantee is authorized to construct, use and operate the radio facilities described below for radio communications for the term beginning November 3, 2008 (3 AM Eastern Standard Time) and ending November 3, 2023 (3 AM Eastern Standard Time). The required date of completion of construction and commencement of operation is June 28, 2017 (3 AM Eastern Standard Time). Grantee must file with the Commission a certification upon completion of construction and commencement of operation.*

**B) Particulars of Operations**

The General Provision 1010 applies to all receiving frequency bands.

The General Provision 1900 applies to all transmitting frequency bands.

For the text of these provisions, refer to Section H.

#	Frequency (MHz)	Polarization Code	Emission	Tx/Rx Mode	Max EIRP /Carrier (dBW)	Max EIRP Density /Carrier (dBW/4kHz)	Associated Antenna	Special Provisions (Refer to Section H)	Modulation/ Services
1)	17790.0000-17800.0000	L,R	800KG2D	Tx	78.10	55.10	D1		Telecommand
2)	17790.0000-17800.0000	L,R	1M50F3D	Tx	80.84	55.10	D1		Ranging Tones
3)	17790.0000-17800.0000	L,R	24M0G7W	Tx	86.50	48.72	D1		Digital Data and Compressed Video
4)	17300.0000-17310.0000	L,R	800KG2D	Tx	78.10	55.10	D1		Telecommand



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5)	17300.0000-17310.0000	L,R	1M50F3D	Tx	80.84	55.10	D1		Ranging Tones
6)	12690.0000-12700.0000	L,R	800KG2D	Rx	0.00	0.00	D1		Telemetry
7)	12690.0000-12700.0000	L,R	1M50F3D	Rx	0.00	0.00	D1		Ranging Tones
8)	12210.0000-12700.0000	L,R	24M0G7W	Rx	0.00	0.00	D1		Digital Data and Compressed Video
9)	12200.0000-12210.0000	L,R	800KG2D	Rx	0.00	0.00	D1		Telemetry
10)	12200.0000-12210.0000	L,R	1M50F3D	Rx	0.00	0.00	D1		Ranging Tones
11)	17790.0000-17800.0000	L,R	800KG2D	Tx	78.10	55.10	D2		Telecommand
12)	17790.0000-17800.0000	L,R	1M50F3D	Tx	80.84	55.10	D2		Ranging Tones
13)	17300.0000-17800.0000	L,R	24M0G7W	Tx	86.50	48.72	D2		Digital Data and Compressed Video
14)	17300.0000-17310.0000	L,R	800KG2D	Tx	78.10	55.10	D2		Telecommand
15)	17300.0000-17310.0000	L,R	1M50F3D	Tx	80.84	55.10	D2		Ranging Tones
16)	12690.0000-12700.0000	L,R	800KG2D	Rx	0.00	0.00	D2		Telemetry
17)	12690.0000-12700.0000	L,R	1M50F3D	Rx	0.00	0.00	D2		Ranging Tones
18)	12210.0000-12700.0000	L,R	24M0G7W	Rx	0.00	0.00	D2		Digital Data and Compressed Video
19)	12200.0000-12210.0000	L,R	800KG2D	Rx	0.00	0.00	D2		Telemetry
20)	12200.0000-12210.0000	L,R	1M50F3D	Rx	0.00	0.00	D2		Ranging Tones

**C) Frequency Coordination Limits**

#	Frequency Limits (MHz)	Satellite Arc (Deg. Long.)		Elevation (Degrees)		Azimuth (Degrees)		Max EIRP Density toward Horizon (dBW/4kHz)	Associated Antenna(s)
		East Limit	West Limit	East Limit	West Limit	East Limit	West Limit		
1)	12200.0000-12700.0000	42.0W-148.0W		11.7-25.4		108.7-235.0		0	D1
2)	17300.0000-17800.0000	42.0W-148.0W		11.7-25.4		108.7-235.0		-2.54	D1
3)	12200.0000-12700.0000	42.0W-148.0W		11.7-25.4		108.7-235.0		0	D2



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		East Limit	West Limit	East Limit	West Limit	East Limit	West Limit		
4)	17300.0000-17800.0000	42.0W	148.0W	11.7	25.4	108.7	235.0	-2.54	D2

**D) Points of Communications**

The following stations located in the Satellite orbits consistent with Sections B and C of this Entry:

- 1) D1 to US LICENSED Echostar and Dish satellites at 61.5, 110, and 119 WL clusters
- 2) D1 to CIEL 2 satellite @ 128.85 degrees W.L. (CANADIAN-licensed satellite)
- 3) D1 to NIMIQ 5 @ 72.7 degrees W.L. of the Direct Broadcast Satellite system (Canadian-licensed) Non-U.S.-I
- 4) D1 to ECHOSTAR 15 @ 61.65 W.L. (S2811) of the Direct Broadcast Satellite system (U.S.-licensed)
- 5) D2 to US LICENSED Echostar and Dish satellites at 61.5, 110, and 119 WL clusters
- 6) D2 to CIEL 2 satellite @ 128.85 degrees W.L. (CANADIAN-licensed satellite)
- 7) D2 to NIMIQ 5 @ 72.7 degrees W.L. of the Direct Broadcast Satellite system (Canadian-licensed) Non-U.S.-I
- 8) D2 to ECHOSTAR 15 @ 61.65 W.L. (S2811) of the Direct Broadcast Satellite system (U.S.-licensed)

**E) Antenna Facilities**

Site ID	Antenna ID	Units	Diameter (meters)	Manufacturer	Model number	Site Elevation (Meters)	Max Antenna Height (Meters)	Special Provisions (Refer to Section H)
D1	D1	1	9	Vertex	9m	1810.5	10.5 AGL/ 1821 AMSL	
Max Gains(s): 58.6 dBi @ 12.2000 GHz 62.9 dBi @ 17.8000 GHz								
Maximum total input power at antenna flange (Watts) =					1,200.00			
Maximum aggregate output EIRP for all carriers (dBW) =					93.70			
D2	D2	1	9	Vertex	9m	1810.5	10.5 AGL/ 1821 AMSL	
Max Gains(s): 58.6 dBi @ 12.2000 GHz 62.9 dBi @ 17.8000 GHz								
Maximum total input power at antenna flange (Watts) =					1,200.00			
Maximum aggregate output EIRP for all carriers (dBW) =					93.70			

**G) Antenna Structure marking and lighting requirements:**

None unless otherwise specified under Special and General Provisions



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## H) Special and General Provisions

A) This RADIO STATION AUTHORIZATION is granted subject to the following special provisions and general conditions:

- 4 --- Licensee must ensure that a current listing of the name, title, mailing address, email address, and telephone number of the responsible point of contact are on file at the FCC. Any changes must be filed electronically in the International Bureau Filing System (IBFS) in the "Other Filings" tab within 10 days of the change.
- 5 --- Licensee must notify the Commission when an earth station is no longer operational or when it has not been used to provide any service during any 6-month operation.
- 6 --- Licensee must comply with the license modification and notification requirements of 47 CFR § 25.118 to change the coordinates of its authorized earth station.

134 --- This grant is without prejudice and subject to the outcome of the rulemaking "The Establishment of Policies and Service Rules for the Broadcasting-Satellite Service at the 17.3-17.7 GHz Frequency Band and at the 17.7-17.8 GHz Frequency Band Internationally, and at the 24.75-25.25 GHz Frequency Band for Fixed Satellite Services Providing Feeder Links to the Broadcasting-Satellite Service and for the Satellite Services Operating Bi-directionally in the 17.3-17.8 GHz Frequency Band" (IB Docket No. 06-123). Accordingly, whether the facilities authorized in this action will be subject to new interference-mitigation requirements will be addressed in

IB	Docket	No.	06-123.
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510 --- Operations shall be consistent with applicable coordination agreements; to the extent such agreements have not been reached, operations: a) shall not exceed, under any conditions and taking into account all variations in satellite attitude, the parameters specified in Attachment A of the Letter, dated May 10, 2005, from Pantelis Michalopoulos to the Secretary, FCC, b) shall be on a non-harmful interference basis, i.e., operations of the EchoStar 8 satellite shall not cause interference to, and shall not claim protection from, interference caused to it by any other lawfully operating satellites.

2604 --- This authorization is governed by Part 100 of the Commission's rules, 47 CFR Part 100.

3212 --- The licensee shall take extraordinary measures to ensure that multiple antennas co-located at the same site do not create potential exposure to radiofrequency radiation in excess of FCC safety guidelines. Antennas shall be surrounded by a fence, at least 2 meters tall with a locked gate, to prevent human exposure in excess of the FCC-specified safety limit of 1 mW/cm<sup>2</sup>. Warning signs, such as those discussed in the FCC's OET Bulletin 65, shall be posted informing members of the public to keep outside the locked area. All operations must be in compliance with Section 1.1307 (b)(3) of the Commission's Rules. (See 47 CFR 1.1307 (b) (3)).

90398 --- Changes to previously authorized transmitting facilities, operations and devices regulated by the Commission that may have significant environmental impact, and are not excluded by §1.1306, require the preparation of an Environmental Assessment (EA) by the licensee. (see 47 C.F.R. §§1.1307, 1.1308 and 1.1311)



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## H) Special and General Provisions

A) This RADIO STATION AUTHORIZATION is granted subject to the following special provisions and general conditions:

90399 --- The licensee shall, at all times, take all necessary measures to ensure that operation of this (these) authorized earth station(s) does not create potential exposure of humans to radiofrequency radiation in excess of the FCC exposure limits defined in 47 CFR §§ 1.1307(b) and 1.1310. Physical measures must be taken to ensure compliance with limits for both occupational/controlled exposure and for general population/uncontrolled exposure, as defined in these rule sections. Compliance can be accomplished in most cases by appropriate restrictions, such as fencing. Requirements for restrictions can be determined by predictions based on calculations, modeling, or by field measurements. The FCC's OET Bulletin 65 (available on-line at [www.fcc.gov/oet/rfsafety](http://www.fcc.gov/oet/rfsafety)) provides information on predicting exposure levels and on methods for ensuring compliance, including the use of warning and alerting signs and protective equipment for workers.



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B) This RADIO STATION AUTHORIZATION is granted subject to the additional conditions specified below:

This authorization is issued on the grantee's representation that the statements contained in the application are true and that the undertakings described will be carried out in good faith.

This authorization shall not be construed in any manner as a finding by the Commission on the question of marking or lighting of the antenna system should future conditions require. The grantee expressly agrees to install such marking or lighting as the Commission may require under the provisions of Section 303(q) of the Communications Act. 47 U.S.C. § 303(q).

Neither this authorization nor the right granted by this authorization shall be assigned or otherwise transferred to any person, firm, company or corporation without the written consent of the Commission. This authorization is subject to the right of use or control by the government of the United States conferred by Section 706 of the Communications Act. 47 U.S.C. § 706. Operation of this station is governed by Part 25 of the Commission's Rules. 47 C.F.R. Part 25.

This authorization shall not vest in the licensee any right to operate this station nor any right in the use of the designated frequencies beyond the term of this license, nor in any other manner than authorized herein.

This authorization is issued on the grantee's representation that the station is in compliance with environmental requirements set forth in Section 1.1307 of the Commission's Rules. 47 C.F.R. § 1.1307.

This authorization is issued on the grantee's representation that the station is in compliance with the Federal Aviation Administration (FAA) requirements as set forth in Section 17.4 of the Commission's Rules. 47 C.F.R. § 17.4.

The following condition applies when this authorization permits construction of or modifies the construction permit of a radio station.

This authorization shall be automatically forfeited if the station is not ready for operation by the required date of completion of construction unless an application for modification of authorization to request additional time to complete construction is filed by that date, together with a showing that failure to complete construction by the required date was due to factors not under control of the grantee.

Licensees are required to pay annual regulatory fees related to this authorization. The requirement to collect annual regulatory fees from regulatees is contained in Public Law 103-66, "The Omnibus Budget Reconciliation Act of 1993." These regulatory fees, which are likely to change each fiscal year, are used to offset costs associated with the Commission's enforcement, public service, international and policy and rulemaking activities. The Commission issues a Report and Order each year, setting the new regulatory fee rates. Receive only earth stations are exempt from payment of regulatory fees.