



UNITED STATES OF AMERICA
FEDERAL COMMUNICATIONS COMMISSION

RADIO STATION AUTHORIZATION

Name: Sirius XM Radio Inc.

Call Sign: E080185

Authorization Type: Modification of License

File Number: SES-MOD-20191216-01736

Common Carrier

Grant date: 05/14/2020

Expiration Date: 10/09/2023

Nature of Service: Satellite Digital Audio Radio Service

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)	1	24 Vernon Crossing Road Vernon, Sussex, NJ 07462	41°12'45.0"N	74°29'39.0"W	128.6	83

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 October 9, 2008 (3 AM Eastern Standard Time) and ending October 9, 2023 (3 AM Eastern Standard Time). The required date of completion of construction and commencement of operation is May 14, 2021 (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)	7068.0000-7072.5000	R	4M50G7E	Tx	75.00	44.50	1		TDM QPSK DARS PROGRAM UPLINK
2)	7060.0000-7064.5000	R	4M50G7E	Tx	75.00	44.50	1		TDM QPSK DARS PROGRAM UPLINK
3)	7055.5000-7056.5000	L	1M00F1D	Tx	75.00	51.00	1		PCM/PSK/FM COMMAND
4)	7051.5000-7052.5000	L	1M00F1D	Tx	75.00	51.00	1		PCM/PSK/FM COMMAND
5)	2331.8500-2332.1500	R	300KG1D	Rx	0.00	0.00	1		BIPHASE PCM TELEMETRY
6)	2331.3500-2331.6500	R	300KG1D	Rx	0.00	0.00	1		BIPHASE PCM TELEMETRY
7)	2328.0000-2332.5000	L	4M50G7E	Rx	0.00	0.00	1		TDM QPSK DARS PROGRAM DOWNLINK
8)	2320.8500-2321.1500	R	300KG1D	Rx	0.00	0.00	1		BIPHASE PCM TELEMETRY



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9)	2320.3500-2320.6500	R	300KG1D	Rx	0.00	0.00	1		BIPHASE PCM TELEMETRY
10)	2320.0000-2324.5000	L	4M50G7E	Rx	0.00	0.00	1		TDM QPSK DARS PROGRAM DOWNLINK
11)	7068.0000-7072.0000	R	4M50G7E	Tx	80.00	49.50	2		TDM QPSK DARS PROGRAM UPLINK
12)	7060.0000-7064.5000	R	4M50G7E	Tx	80.00	49.50	2		TDM QPSK DARS PROGRAM UPLINK
13)	7056.8450-7074.8690	L, R	1M84G1W	Tx	80.00	53.40	2		AUDIO CONTENT ANCILLARY DATA, QPSK
14)	7055.5000-7056.5000	L	1M00F1D	Tx	80.00	55.00	2		PCM/PSK/FM COMMAND
15)	7051.6000-7052.5000	L	1M00F1D	Tx	80.00	55.00	2		PCM/PSK/FM COMMAND
16)	7042.6000-7074.4000	L	800KF2D	Tx	80.00	67.00	2		TELEMETRY
17)	2332.5000-2345.0000	R	100KG2D	Rx			2		TELEMETRY
18)	2332.5000-2345.0000	R	1M84G1W	Rx			2		AUDIO CONTENT ANCILLARY DATA, QPSK
19)	2328.0000-2332.5000	L	4M50G7E	Rx			2		TDM QPSK DARS PROGRAM UPLINK
20)	2320.0000-2332.5000	R	300KG1D	Rx			2		BIPHASE PCM TELEMETRY
21)	2320.0000-2324.5000	L	4M50G7E	Rx			2		TDM QPSK DARS PROGRAM UPLINK
22)	7025.0000-7075.0000	L	800KF2D	Tx	90.20	67.20	G11		PCM/PSK/FM Command
23)	7025.0000-7075.0000	R	12M5G1E	Tx	90.20	55.30	G11		TDM QPSK DARS Program Uplink
24)	7025.0000-7075.0000	R	1M84G1E	Tx	90.20	63.60	G11		TDM QPSK DARS Program Uplink
25)	7025.0000-7075.0000	R	4M50G1E	Tx	90.20	59.70	G11		TDM QPSK DARS Program Uplink
26)	2320.0000-2345.0000	R	100KG2D	Rx			G11		PCM Telemetry and Ranging
27)	2320.0000-2345.0000	R	300KG1D	Rx			G11		PCM Telemetry and Ranging
28)	2320.0000-2345.0000	R	512KG1D	Rx			G11		PCM Telemetry and Ranging



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#	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
29)	2320.0000-2345.0000	L	12M5G1E	Rx			G11		TDM QPSK DARS Program Downlink
30)	2320.0000-2345.0000	L	1M84G1E	Rx			G11		TDM QPSK DARS Program Downlink
31)	2320.0000-2345.0000	L	4M50G1E	Rx			G11		TDM QPSK DARS Program Downlink
32)	7025.0000-7075.0000	L	800KF2D	Tx	84.80	61.80	G7G8		PCM/PSK/FM Command
33)	7025.0000-7075.0000	R	12M5G1E	Tx	84.80	49.90	G7G8		TDM QPSK DARS Program Uplink
34)	7025.0000-7075.0000	R	1M84G1E	Tx	84.80	58.20	G7G8		TDM QPSK DARS Program Uplink
35)	7025.0000-7075.0000	R	4M50G1E	Tx	84.80	54.30	G7G8		TDM QPSK DARS Program Uplink
36)	2320.0000-2345.0000	R	100KG2D	Rx			G7G8		PCM Telemetry and Ranging
37)	2320.0000-2345.0000	R	300KG1D	Rx			G7G8		PCM Telemetry and Ranging
38)	2320.0000-2345.0000	R	512KG1D	Rx			G7G8		PCM Telemetry and Ranging
39)	2320.0000-2345.0000	L	12M5G1E	Rx			G7G8		TDM QPSK DARS Program Downlink
40)	2320.0000-2345.0000	L	1M84G1E	Rx			G7G8		TDM QPSK DARS Program Downlink
41)	2320.0000-2345.0000	L	4M50G1E	Rx			G7G8		TDM QPSK DARS Program Downlink

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)	7040.0000-7075.0000	80.0W	120.0W	42.0	23.9	188.3	237.1	1.13	1
2)	7040.0000-7075.0000	80.0W	120.0W	42.0	23.9	188.3	237.1	1.13	2
3)	7025.0000-7075.0000	4.0W	146.0W	05.9	05.1	103.1	257.6	6.36	G11
4)	7025.0000-7075.0000	80.0W	120.0W	42.0	23.9	188.3	237.1	5.01	G7G8



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D) Points of Communications

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

- 1) 1 to SIRIUS FM 5 (S2710) satellite @86.15 W.L. (U.S.-licensed satellite) (DARS)
- 2) 1 to XM 3 satellite (S2617) @ 85.15 degrees W.L. (U.S.-licensed) (DARS)
- 3) 1 to XM 1 satellite (S2118) @ 115.25 degrees W.L. (U.S.-licensed) (DARS)
- 4) 1 to XM 4 satellite (S2616) @ 115.25 degrees W.L. (U.S.-licensed) (DARS)
- 5) 1 to XM-5 satellite (S2786) @ 85.15 degrees W.L. (U.S.-licensed) (DARS)
- 6) 1 to SIRIUS FM 6 (S2812) satellite @116.15 W.L. (U.S.-licensed satellite) (DARS)
- 7) 1 to US LICENSED SIRIUS FM and XM satellites (DARS)
- 8) 1 to SIRIUS FM 5 (S2710) satellite @86.15 W.L. (U.S.-licensed satellite) (DARS)

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)
1	1	1	7.2	General Dynamics	N/A	128.6	7.3 AGL/ 135.9 AMSL	
		Max Gains(s):	42.2 dBi @	2.3260 GHz	50.5 dBi @	7.0500 GHz		
		Maximum total input power at antenna flange (Watts) =			563.60			
		Maximum aggregate output EIRP for all carriers (dBW) =			78.00			
1	2	1	7.2	GENERAL DYNAMICS	N/A	128.6	7.3 AGL/ 135.9 AMSL	
		Max Gains(s):	42.2 dBi @	2.2360 GHz	50.5 dBi @	7.0500 GHz		
		Maximum total input power at antenna flange (Watts) =			891.30			
		Maximum aggregate output EIRP for all carriers (dBW) =			80.00			
1	G11	1	11.3	Viasat		128.6	17.9 AGL/ 146.5 AMSL	
		Max Gains(s):						
		Maximum total input power at antenna flange (Watts) =			2,383.00			
		Maximum aggregate output EIRP for all carriers (dBW) =			90.20			
1	G7G8	2	7.3	Viasat		128.6	7.3 AGL/ 136.3 AMSL	
		Max Gains(s):						
		Maximum total input power at antenna flange (Watts) =			1,743.00			
		Maximum aggregate output EIRP for all carriers (dBW) =			84.80			



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F) Remote Control Point:

1 1500 ECKINGTON PLACE NE
WASHINGTON, DC 20002
202-380-4796

Call Sign: E000158

G) Antenna Structure marking and lighting requirements:

None unless otherwise specified under Special and General Provisions

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 (MyIBFS) using the "Pleadings and Comments" link on the MyIBFS homepage within 10 days of the change.

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.

8 --- Licensee must notify the Commission when all earth stations operating under this authorization are no longer operational or when they have not been used to provide any service during any 6-month operation.

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)

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) 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.