Approved by OMB 3060–0678

Date & Time Filed: Dec 16 2019 10:40:07:816AM File Number: SES-MOD-INTR2019-04274

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: E080185 modification to add 7m and 11m antennas

1–8. Legal Name of Applicant **Phone Number:** Sirius XM Radio Inc. 202-380-4000 Name: DBA **Fax Number:** 202-380-4500 Name: 1290 Avenue of the Americas Street: E-Mail: james.blitz@siriusxm.com 11th Floor City: New York State: NY USA Zipcode: **Country:** 10104 Attention: Mr. James S. Blitz

9–16. Name of Contact	Representative		
Name:	Karis A. Hastings	Phone Number:	202-599-0975
Company:	SatCom Law LLC	Fax Number:	
Street:	1317 F Street N.W	E-Mail:	karis@satcomlaw.com
	Suite 400		
City:	Washington	State:	DC
Country:	USA	Zipcode:	20004-
Attention:	Karis Hastings	Relationship:	Legal Counsel
CLASSIFICATION O 17. Choose the button n classification that applie both questions a. and b. for 17a and only one for a1. Earth Station a2. Space Station	ext to the es to this filing for Choose only one r 17b.	Satellite (N/A) b9. Letter of Intent to Use Non–U.S. I States (N/A) b10. Other (Please specify)	ew Domestic Receive–Only Station on tion ration eceive–Only Station Using Non–U.S. Licensed Licensed Satellite to Provide Service in the United o Access a Non–U.S.satellite Not Currently Authorized sed Frequencies in the United States
		• b14. Modification of Database Entry	

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):							
17d.							
Fee Classification CGX – Fixed Satellite 7 Station	Transmit/Receive Earth						
18. If this filing is in reference to an existing station, enter:	19. If this filing is an amendment to a pending a modification please enter only the file number:	pplication enter both fields, if this filing is a					
(a) Call sign of station:	(a) Date pending application was filed:	(b) File number:					
E080185		SESMOD2015122200958					

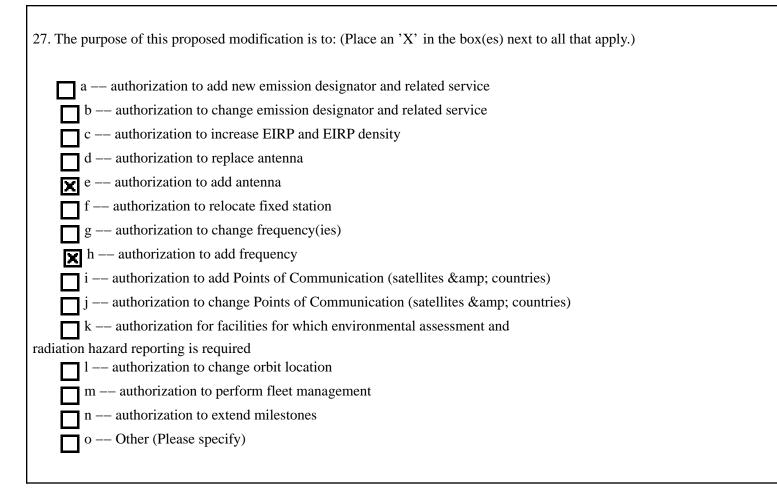
TYPE OF SERVICE

20. NATURE OF SERVICE: This filing is for an authorization to provid	le 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) Telemetry Command & Ran	ging
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 Non–Common Carrier	Using Non–U.S. licensed satellites
23. If applicant is providing INTERNATIONAL COMMON CARRIER facilities:	service, see instructions regarding Sec. 214 filings. Choose one. Are these
• 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 a	applicable frequency band(s).
a. C–Band (4/6 GHz) \square b. Ku–Band (12/14 GHz)	
c.Other (Please specify upper and lower frequencies in MHz.)	
Frequency Lower: 2320 Frequency Upper: 7075	(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
o c. 12/14 GHz VSAT Network
O 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



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 Radiation Hazard				
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 en	rou	te oi	ſ				
29. Is the applicant a foreign government or the representative of any foreign government?	0	Yes	۲	No					
30. Is the applicant an alien or the representative of an alien?	0	Yes	0	No	۲	N/A			
31. Is the applicant a corporation organized under the laws of any foreign government?	0	Yes	0	No	۲	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?	0	Yes	0	No	۲	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?

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.	O 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 explination of circumstances.	O Yes	

O Yes O No ⊚ N/A

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	♥ 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	O Yes	
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	O No
	Exhibit A	
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.		

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.



O No

Yes

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.)

Sirius XM seeks to add three antennas to its existing earth station complex in Vernon, NJ, call sign E080185, to support operations of the Sirius XM constellation of satellites.

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.	O 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.	O C

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.)	
O Individual	
• Unincorporated Association	
Partnership	
• Corporation	
Governmental Entity	
Other (please specify)	
45. Name of Person Signing	46. Title of Person Signing
James S. Blitz	Vice President Regulatory Counsel
>	
	I ARE PUNISHABLE BY FINE AND / OR IMPRISONMENT EVOCATION OF ANY STATION AUTHORIZATION 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 St	tation Site					
E1: Site Identifier:	Glenwood	E5. Call Sign:	E080185			
E2: Contact Name	Donald Jefferson	E6. Phone Number:	9737644021			
E3. Street:	24 Vernon Crossing Road	E7. City:	Vernon			
		E8. County:	Sussex			
E4. State	NJ	E9. Zip Code	07462			
E10. Area of Opera	tion:	USA				
E11. Latitude:	41 °12 '45.0 "N					
E12. Longitude:	74 °29 '39.0 "W					
E13. Lat/Lon Coord	linates are:	ONAD-27	● NAD-83	O N/A		
E14. Site Elevation	(AMSL):	128.6 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} O ^{No}	● N/A
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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}	O ^{N/A}
E17. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point.	O Yes	۲	No

E18. Is frequency coordination required? If YES, attach a frequency coordination report as Freq Coordination	۲	Yes	0	No
E19. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as	0	Yes	۲	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.	0	Yes	۲	No

POINTS OF COMMUNICATION

Satellite Name: OTHER OTHER	If you selected OTHER, please en	ter the following:
E21. Common Name: SXM-7		E22. ITU Name: USASAT28P
E23. Orbit Location: 85.15 W.L		E24. Country: USA

Satellite Name: SIRIUS FM & XM SATS | SIRIUS FM and XM sat | VARIOUS If you selected OTHER, please enter the following:

E21. Common Name:	E22. ITU Name:
E23. Orbit Location:	E24. Country:

Site ID	E28. Antenna	E29. Quantity	E30.	E31. Model	E32. Antenna	E41/42.				
ANTENNA										
E26. Common N	E26. Common Name: E27. Country:									
E25. Site Identif	fier:									
POINTS OF	POINTS OF COMMUNICATION (Destination Points)									
E23. Orbit Location: 115.25 W.L E24. Country: USA										
E21. Common Name: SXM8 E22. ITU Name: USASAT28Q										
Satellite Name: OTHER OTHER If you selected OTHER, please enter the following:										

Site ID	E28. Antenna Id	E29. Quantity	E30. Manufacturer	E31. Model	E32. Antenna Size <meters></meters>	E41/42. Antenna Gain Transmint and/or Recieve (dBi at GHz)	
Glenwood	G11	1	Viasat	11.3 meter	11.3	45.22 dBi at 2.326	
Glenwood	G11	1	Viasat	11.3 meter	11.3	56.4 dBi at 7.050	
Glenwood	G7G8	2	Viasat	7.3m Torque Tube	7.3	42.02 dBi at 2.326	
Glenwood	G7G8	2	Viasat	7.3m Torque Tube	7.3	52.4 dBi at 7.050	

Id	E33/34. Diameter Minor/Major (meters)	E35. Above Ground Level (meters)	E36. Above Sea Level(meters)	Height Above	Input Power at	E39. Maximum Antenna Height Above Rooftop (meters)	EIRP for al
G11	0.0/0.0	17.9	146.5	0.0	2383.0	0.0	90.2
G7G8	0.0/0.0	7.7	136.3	0.0	1743.0	0.0	84.8

FREQUENCY

E28. Antenna Id	E43/44. Frequency I (MHz)	Bands	E45. T/R Mode	E46. Antenna Polarization(H,V, L,R)	E47. Emission Designator	E48. Maximum EIRP per Carrier (dBW)	E49. Maximum ERIP Density per Carrier (dBW/4kHz)
G11	7025	7075	Т	Left Hand Circular	800KF2D	90.2	67.2
E50. Modulation entirety.)		(11 11			uns oox, picase go	to the end of the form	
G11	2320	2345	R	Right Hand Circular	100KG2D	0.0	0.0

E50. Modulation	n and Service	es (If the	he complete descripti	on does not appear in	n this box, please go t	to the end of the form	to view it in its
entirety.)							
PCM Telem	etry and	Rangir	ıg				
G11	2320	2345	R	Right Hand Circular	300KG1D	0.0	0.0
E50. Modulation entirety.)	n and Service	es (If th	he complete descripti	on does not appear in	n this box, please go t	to the end of the form	to view it in its
PCM Telem	etry and	Rangir	ıg				
G11	2320	2345	R	Right Hand Circular	512KG1D	0.0	0.0
E50. Modulation entirety.)	n and Service	es (If th	he complete descripti	on does not appear in	n this box, please go t	to the end of the form	to view it in its
PCM Telem	etry and	Rangir	ıg				
G11	7025	7075	Т	Right Hand Circular	12M5G1E	90.2	55.3

E50. Modulation entirety.)	n and Servic	tes (If the	he complete descripti	on does not appear in	this box, please go t	to the end of the form	to view it in its
TDM QPSK	DARS Pro	gram Up	olink				
G11	7025	7075	Т	Right Hand Circular	1M84G1E	90.2	63.6
E50. Modulation entirety.)	n and Servic	es (If the	he complete descripti	on does not appear in	this box, please go t	to the end of the form	to view it in its
TDM QPSK	DARS Pro	gram Up	olink				
G11	7025	7075	Т	Right Hand Circular	4M50G1E	90.2	59.7
E50. Modulation entirety.)	n and Servic	es (If the	he complete descripti	on does not appear in	this box, please go t	to the end of the form	to view it in its
TDM QPSK	DARS Pro	gram U <u>r</u>	olink				
G11	2320	2345	R	Left Hand Circular	12M5G1E	0.0	0.0

E50. Modulatior entirety.)	and Services	s (If th	he complete description	on does not appear in	this box, please go t	o the end of the form	to view it in its
TDM QPSK I	DARS Prog	ram Do	ownlink				
G11	2320	2345	R	Left Hand Circular	1M84G1E	0.0	0.0
E50. Modulation entirety.) TDM QPSK I				on does not appear in	this box, please go t	o the end of the form	to view it in its
	1		1-				
G11	2320	2345	R	Left Hand Circular	4M50G1E	0.0	0.0
E50. Modulatior entirety.)	and Services	s (If tl	he complete description	on does not appear in	this box, please go t	o the end of the form	to view it in its
TDM QPSK I	DARS Prog	ram Do	ownlink				
G7G8	7025	7075	Т	Left Hand Circular	800KF2D	84.8	61.8

E50. Modulation	and Service	s (If tl	ne complete descripti	on does not appear ir	n this box, please go t	to the end of the form	to view it in its
entirety.)							
PCM/PSK/FM	1 Command						
G7G8	2320	2345	R	Right Hand Circular	100KG2D	0.0	0.0
E50. Modulation entirety.)	and Service	s (If tl	ne complete descripti	on does not appear ir	n this box, please go t	to the end of the form	to view it in its
PCM Teleme	etry and :	Rangin	ıg				
G7G8	2320	2345	R	Right Hand Circular	300KG1D	0.0	0.0
E50. Modulation entirety.)	and Service	s (If tl	ne complete descripti	on does not appear ir	n this box, please go t	to the end of the form	to view it in its
PCM Teleme	etry and :	Rangin	ıg				
G7G8	2320	2345	R	Right Hand Circular	512KG1D	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.)								
PCM Telemetry and Ranging								
G7G8	7025 70)75	Т	Right Hand Circular	12M5G1E	84.8	49.9	
E50. Modulation entirety.)	and Services	(If th	e complete descriptio	on does not appear in	this box, please go t	o the end of the form	to view it in its	
TDM QPSK DARS Program Uplink								
G7G8	7025 70)75	Т	Right Hand Circular	1M84G1E	84.8	58.2	
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.)								
TDM QPSK DARS Program Uplink								
G7G8	7025 70)75	Т	Right Hand Circular	4M50G1E	84.8	54.3	

E50. Modulation entirety.)	and Services	(If th	he complete description	on does not appear in	this box, please go t	o the end of the form	to view it in its	
TDM QPSK I	DARS Progr	ram Up	olink					
G7G8	2320	2345	R	Left Hand Circular	12M5G1E	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.) TDM QPSK DARS Program Downlink								
G7G8	2320	2345	R	Left Hand Circular	1M84G1E	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.)								
TDM QPSK DARS Program Downlink								
G7G8	2320	2345	R	Left Hand Circular	4M50G1E	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.)

TDM QPSK DARS Program Downlink

FREQUENCY COORDINATION

E28. Antenna Id	E51. Satellite Orbit Type	E52/53. Frequency Limits(MHz)	E54/55. Range of Satellite Arc Eastern/West ern Limit	Station Azimuth Angle	E57. Antenna Elevation Angle Eastern Limit	E58. Earth Station Azimuth Angle Western Limit	E59. Antenna Elevation Angle Western Limit	E60. Maximum EIRP Density toward the Horizon (dBW/4kHz)
G11	Geostationary	7025 7075	4.0/146.0	103.1	5.9	257.6	5.1	6.36
G7G8	Geostationary	7025 7075	80.0/120.0	188.3	42.0	237.1	23.9	5.01

REMOTE CONTROL POINT LOCATION

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. State/Country /	E64. Zip Code

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