

S2118 SAT-MOD-20101216-00262 IB2010003884
 XM Radio Inc.
 XM-1

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File # SAT-MOD-20101216-00262
 Call Sign S2118 Grant Date 03/08/11
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 Term Dates From 03/08/11 To: 05/31/14
 Approved: *Stephen J. Duall*

Approved by OMB
 3060-0678

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

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:
 XM-1 (Call Sign S2118) Modification to reassign to 115.25 WL

1-8. Legal Name of Applicant

Name:	XM Radio Inc.	Phone Number:	202-380-4000
DBA Name:		Fax Number:	202-380-4981
Street:	1500 Eckington Place, NE	E-Mail:	James.Blitz@siriusxm.com
City:	Washington	State:	DC
Country:	USA	Zipcode:	20002 -
Attention:	James S. Blitz		

XM Radio Inc.
Application for Modification
IBFS File No. SAT-MOD-20101216-00262
(XM-1, Call Sign S2118)

The application of XM Radio Inc. (XM Radio), IBFS File No. SAT-MOD-20101216-00262, to modify its authorization to operate the Satellite Digital Audio Radio Service (SDARS) space station, XM-1 (Call Sign S2118), IS GRANTED. Accordingly, XM Radio is authorized to conduct Telemetry, Tracking, and Telecommand (TT&C) operations in the 2332.5-2345 MHz and 7025-7075 MHz frequency bands necessary to relocate the XM-1 space station from its current orbital position of 85.150° W.L. to the 115.25° W.L. orbital location and to maintain the XM-1 space station at that location. XM Radio is also authorized operate XM-1 as an in-orbit spare at the 115.25° W.L. orbital location. All operations of the XM-1 space station must be in accordance with the technical specifications set forth in its application, Federal Communication Commission (Commission) rules, and the conditions set forth below.

1. All operations during the drift to 115.25° W.L. shall be on an unprotected and non-harmful interference basis, *i.e.*, the XM-1 space station shall not cause harmful interference to, and shall not claim protection from interference caused to it by, any other lawfully operating station. In the event of any harmful interference, XM Radio shall cease operations immediately upon notification of such interference, and shall inform the Commission, in writing, immediately of such an event.

2. XM Radio is authorized to operate the XM-1 space station at the 115.25° W.L. orbital location as a non-transmitting (except for telemetry transmissions in the 2332.5-2345 MHz frequency band and command transmissions in the 7025-7075 MHz frequency band) in-orbit spare for the duration of the license term of the XM-1 space station, which expires on May 31, 2014.

3. XM Radio may activate the communications payload for XM-1 in the 2332.5-2345 MHz and 7025-7075 MHz frequency bands in the event of a service outage of the XM-3 or XM-4 space stations (Call Signs S2617 and S2616).

4. In the event XM Radio activates the communications payload of the XM-1 space station pursuant to condition 3 above, XM Radio must notify the Commission, in writing, of such activation within three business days of the start of the activation.

5. XM Radio is granted a waiver of Section 25.210(j) of the Commission's rules, 47 C.F.R. § 25.210. Section 25.210(j) requires geostationary space stations to be "be maintained within 0.05° of their assigned orbital longitude in the east/west direction, unless specifically authorized by the Commission to operate with a different longitudinal tolerance." XM Radio proposes to operate XM-1 at the 115.25° W.L. orbital location with an east-west station-keeping tolerance of +/-0.1 degrees. XM Radio states that the only satellites with which XM-1's stationkeeping volume will overlap are other spacecraft in the XM Radio fleet and thus XM-1's operations will not adversely affect the operations of other spacecraft. XM Radio also states that allowing XM-1 to be flown in formation with the XM-4 and XM-2 spacecraft in an east-west station-keeping volume of +/-0.1 degree will result in fuel savings for all three spacecraft, thus prolonging their service life. This waiver and the operations it permits shall terminate in the event that a satellite is launched into a location such that its station-keeping volume would overlap XM-1's +/-0.1 degree station-keeping volume, but would not overlap XM-1's +/-0.05 degree station-keeping volume, unless XM Radio has successfully coordinated XM-1's physical operations with those of the other spacecraft. Further, this waiver is limited to this spacecraft,

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does not extend to any replacement satellites, and is limited to operations at the 115.25° W.L. orbital location.

6. XM Radio's is granted a waiver of Section 25.283(c) of the Commission's rules, 47 C.F.R. 25.283(c). Section 25.283(c) specifies that space stations must discharge all stored energy sources at end-of-life of the space station. XM-1 is a Boeing 702 model spacecraft that was launched on May 31, 2001. XM Radio has indicated that due to its design, XM-1's two helium tanks were sealed immediately following the last orbit-raising maneuver during the launch phase for the satellite and cannot be further discharged. XM Radio states that the sealed helium tanks each contain approximately 158 grams of helium, with each tank volume being approximately 0.068 m³. Further, XM Radio states that XM-1's two xenon propellant tanks lack the ability to be discharged after the pressure in the tank falls below the set point of the regulator, which will result in a residual xenon mass of approximately 1100 grams at the end-of-life of the space station, with each tank volume being approximately 0.068 m³. This waiver is granted because modification of the spacecraft would present an undue hardship, since XM-1 is an in-orbit space station and venting XM-1's helium and xenon tanks would require direct retrieval of the satellite, which is not currently possible. In making this determination, we note that the information submitted in the application is not sufficient to support a finding that the intent of the rule would be satisfied by the described procedures for sealing the helium and xenon tanks.

7. XM Radio is granted a waiver of Section 25.114(d)(3) of the Commission's rules, 47 C.F.R. § 25.114(d)(3). Section 25.114(d)(3) requires predicted space station antenna gain contour(s) for each transmit and each receive antenna beam and nominal orbital location requested. The main purpose of the contour map is to allow evaluation of the potential for harmful interference with other operators and services in the frequency band. XM Radio's application indicates that contour maps for operation of XM-1 at the nominal 115° W.L. orbital location are already on file with the Commission, but do not fulfill the requirements in Section 25.114(d)(3) because the Commission began requiring submission of the data in .gxt format after XM-1's original application was filed. We find that the contour maps provided in the Technical Appendix to this modification application, together with the descriptive characterization provided on page one of the Technical Appendix, provide a sufficiently complete description of XM-1's antenna gain contours to enable the Commission to determine whether or not the XM-1 space station meets the Commission's technical requirements

8. XM Radio Inc. is authorized to operate XM-1 at the 115.25° W.L. orbital location with the capability of operating in the 7025-7075 MHz frequency band (Earth-to-space) designated for SDARS feeder-link use, in accordance with the technical specifications set forth in IBFS File Nos. SAT-MOD-20070912-00124, as amended by SAT-AMD-20071113-00157 and SAT-AMD-20080129-00031, and SAT-MOD-20090217-00024, and consistent with our rules. Prior to operating XM-1 in the 7025-7075 MHz band at 115.25° W.L., XM Radio must successfully coordinate these operations with Fixed and Mobile service stations that are lawfully operating in this band.

9. XM Radio must operate the XM-1 space station in compliance with international coordination agreements with Canada and Mexico that limit the power flux density level from


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U.S .-licensed DARS space stations into Canada and Mexico.

10. Grant of this modification does not change the expiration date of XM-1's authorization, which is May 31, 2014.

11. XM Radio has 30 days from the date of this grant to decline this authorization as conditioned. Failure to respond within that period will constitute formal acceptance of the authorization as conditioned.

12. This action is taken on delegated authority pursuant to 47 C.F.R. § 0.261 and is effective upon release. Petitions for reconsideration under 47 C.F.R. § 1.106 or applications for review under 47 C.F.R. § 1.115 may be filed within 30 days of the date of the Public Notice announcing this action.

 GRANTED* International Bureau *with conditions	File # <u>SAT-MOD-20101216-00262</u>
	Call Sign <u>S2118</u> Grant Date <u>03/08/11</u> (or other identifier)
	From <u>03/08/11</u> Term Dates To: <u>05/31/14</u>
	Approved: <u><i>Stephen J. Duall</i></u> Stephen J. Duall Chief, Satellite Policy Branch

9-16. Name of Contact Representative

Name:	Karis A. Hastings, Esq.	Phone Number:	202-637-5767
Company:	Hogan Lovells US LLP	Fax Number:	202-637-5910
Street:	555 Thirteenth Street, NW	E-Mail:	karis.hastings@hoganlovells.com
City:	Washington	State:	DC
Country:	USA	Zipcode:	20004-1109
Attention:		Relationship:	

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 checked="" 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 checked="" 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 checked="" type="radio"/> b13. Amendment to a Pending Database Entry Application</p> <p><input checked="" 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 checked="" type="radio"/> Governmental Entity</p> <p><input checked="" type="radio"/> Noncommercial educational licensee</p> <p><input checked="" 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: S2118</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: SATMOD2009021700024</p>
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TYPE OF SERVICE

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:

- 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)

21. STATUS: Choose the button next to the applicable status. Choose only one.

- Common Carrier
- Non-Common Carrier

22. If earth station applicant, check all that apply.

- Using U.S. licensed satellites
- Using Non-U.S. licensed satellites

23. If applicant is providing INTERNATIONAL COMMON CARRIER service, see instructions regarding Sec. 214 filings. Choose one. Are these facilities:

- 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 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: 2332.5

Frequency Upper: 2345

(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?

Yes No

30. Is the applicant an alien or the representative of an alien?

Yes No N/A

31. Is the applicant a corporation organized under the laws of any foreign government?

Yes No 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?

Yes No N/A

<p>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?</p>	<p> <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> N/A </p>
<p>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.</p>	

BASIC QUALIFICATIONS

<p>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.</p>	<p> <input checked="" type="radio"/> Yes <input type="radio"/> No </p>
<p>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.</p>	<p> <input type="radio"/> Yes <input checked="" type="radio"/> No </p>

<p>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.</p>	<p style="text-align: right;"> <input type="radio"/> Yes <input checked="" type="radio"/> No </p>
<p>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</p>	<p style="text-align: right;"> <input type="radio"/> Yes <input checked="" type="radio"/> No </p>
<p>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.</p>	<p style="text-align: right;"> <input type="radio"/> Yes <input checked="" type="radio"/> No </p>
<p>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.</p> <p style="text-align: right;">Exhibit A</p>	

<p>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.</p>	<p style="text-align: center;"> <input checked="" type="radio"/> Yes <input type="radio"/> No </p>
<p>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.</p>	<p style="text-align: center;"> <input type="radio"/> Yes <input checked="" type="radio"/> No </p>
<p>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?</p>	<p>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).</p> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>XM Radio Inc. hereby requests a modification of its XM-1 spacecraft license (call sign S2118), to reassign the satellite to 115.25 WL and operate it there with a +/- .1 degree east-west stationkeeping tolerance.</p> </div> <p style="text-align: right;">Attachment</p>

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

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
James S. Blitz

—>

46. Title of Person Signing
Vice President, Regulatory Counsel

WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND / OR IMPRISONMENT
(U.S. Code, Title 18, Section 1001), AND/OR REVOCATION OF ANY STATION AUTHORIZATION
(U.S. Code, Title 47, Section 312(a)(1)), AND/OR FORFEITURE (U.S. Code, Title 47, Section 503).

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