

S2105 SAT-STA-20150722-00050
Satellite CD Radio LLC

IB2015001354



File # SAT-STA-20150722-00050

Call Sign S2105 Grant Date 07/30/15

(or other Identifier)

Term Dates period of From 08/01/15 To: 30 days

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

Approved by OMB
3060-0678

Date & Time Filed: Jul 22 2015 11:38:41:510AM
File Number: SAT-STA-20150722-00050
Callsign:

FEDERAL COMMUNICATIONS COMMISSION
APPLICATION FOR SPACE STATION SPECIAL TEMPORARY AUTHORITY

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APPLICANT INFORMATION

Enter a description of this application to identify it on the main menu:
Satellite CD Radio LLC, Request for Special Temporary Authority for 30 Days, Call Sign S2105

1. Applicant

Name:	Satellite CD Radio LLC	Phone Number:	202-380-1383
DBA Name:		Fax Number:	202-380-4981
Street:	1221 Avenue of the Americas 36th Floor	E-Mail:	james.blitz@siriusxm.com
City:	New York	State:	NY
Country:	USA	Zipcode:	10020 -
Attention:	James S. Blitz		

2. Contact

Name:	Jennifer Hindin	Phone Number:	202-719-4975
Company:	Wiley Rein LLP	Fax Number:	202-719-7049
Street:	1776 K Street, NW	E-Mail:	jhindin@wileyrein.com
City:	Washington	State:	
Country:	USA	Zipcode:	20006 -
Attention:		Relationship:	Legal Counsel

(If your application is related to an application filed with the Commission, enter either the file number or the IB Submission ID of the related application. Please enter only one.)

3. Reference File Number or Submission ID

4a. 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):

4b. Fee Classification CXW – Space Station (Non-Geostationary)

5. Type Request

- Change Station Location Extend Expiration Date Other

6. Temporary Orbit Location

7. Requested Extended Expiration Date

8. Description (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

Satellite CD Radio LLC, a wholly-owned subsidiary of Sirius XM Radio Inc., requests a grant of Special Temporary Authority for 30-days, beginning August 1, 2015, to operate the FM-1, FM-2, and FM-3 non-geostationary satellite orbit spacecraft (call sign S2105) with relaxed orbital parameters as a result of suspension of certain station-keeping maneuvers.

9. 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

10. Name of Person Signing
James S. Blitz

11. Title of Person Signing
V.P., Regulatory Counsel

12. Please supply any need attachments.

Attachment 1: STA Request

Attachment 2:

Attachment 3:

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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THE FOREGOING NOTICE IS REQUIRED BY THE PAPERWORK REDUCTION ACT OF 1995, PUBLIC LAW 104-13, OCTOBER 1, 1995, 44 U.S.C. SECTION 3507.

Sirius XM Radio Inc.
Request for Special Temporary Authority

Satellite CD Radio LLC, a wholly-owned subsidiary of Sirius XM Radio Inc. (“Sirius XM”), herein requests a grant of Special Temporary Authority (“STA”) for 30-days, beginning August 1, 2015, to operate the FM-1, FM-2, and FM-3 non-geostationary satellite orbit (“NGSO”) spacecraft (call sign S2105, collectively the “Sirius NGSO Satellites”) with relaxed orbital parameters as a result of suspension of certain station-keeping maneuvers.¹

Grant of this STA is in the public interest because it will allow Sirius XM to extend the life of the Sirius NGSO Satellites while conserving the propellant necessary to comply with end-of-life maneuvers previously approved by the Commission.² The suspension of certain station-keeping maneuvers for the Sirius NGSO Satellites is similar to inclined orbit operations for geostationary satellites: there will be a gradual growth of some of the orbital parameters but the orbit variations will not increase physical or radio interference with other satellite operators. Because the Commission has no inclined orbit rule for NGSO satellites,³ Sirius XM files the instant STA request out of an abundance of caution.

The following table details the revised orbital parameters for the Sirius NGSO Satellites:

	As Listed on 1998 FCC Application ⁴	Typical Parameters as Listed on the 2009 Application for Modification ⁵	Parameters with Relaxed SK Requirements
Perigee Altitude	24,469 km	-	24,469 ± 1200 km
Apogee Altitude	47,102 km	-	47,102 ± 1200 km
Ascending Equatorial	65.6 W ±2°	-	60.0 W ±7.6°

¹ As a result of the requested suspension of certain station-keeping maneuvers, Sirius XM anticipates that the first satellite would exceed currently licensed parameters on August 16, 2015. Sirius XM also is filing a 180-day STA request. Sirius XM anticipates operating pursuant to these relaxed operating parameters until de-orbit of each of the NGSO satellites, which is currently anticipated to occur in the second half of 2016. Sirius XM will seek renewal of its STA authority as necessary.

² See Satellite CD Radio, Inc., Application for Modification to Extend License Term and to De-Orbit the FM-1, FM-2 and FM-3 Satellites, File No. SAT-MOD-20091119-00123 (stamp grant Feb. 4, 2010).

³ Compare 47 C.F.R. § 25.280 (inclined orbit operations rule for geostationary satellites).

⁴ Satellite CD Radio, Inc., Application to Launch and Operate a Digital Audio Radio Satellite Service in the 2320.0-2332.5 MHz Frequency Band, File No. SAT-MOD-19981211-00099 (filed Dec. 11, 1998).

⁵ Satellite CD Radio, Inc., Application for Modification to Extend License Term and to De-Orbit the FM-1, FM-2 and FM-3 Satellites, File No. SAT-MOD-20091119-00123 (filed Nov. 19, 2009).

Crossing			
Descending Equatorial Crossing	126.4 W $\pm 2^\circ$	-	122.4 W $\pm 6^\circ$
Perigee Radius	-	30,847 ± 211 km	30,847 ± 1200 km
Apogee Radius	-	53,841 ± 211 km	53,841 ± 1200 km
Eccentricity	0.2684	0.2684 ± 0.005	0.2684 ± 0.03
Inclination	63.4 $\pm 7^\circ$	63.4 $\pm 2^\circ$	63.4 $\pm 7^\circ$
Argument of Perigee	-	270 $\pm 2^\circ$	267 $\pm 5^\circ$
Right Ascension of Ascending Node (RAAN)	X, X+120°, X+240°	120 $\pm 0.5^\circ$	X, X+120°, X+240°
Nominal Apogee Longitude	96° W	-	96° W

The revised orbital parameters will not increase the risk of collision with geostationary satellite orbit (“GSO”) satellites. Although eccentricity will drift beyond its nominal station-keeping range resulting in variation of the nominal apogee and perigee altitudes, the apogee and perigee altitude changes do not coincide with the equatorial crossings and thus will not impact safe physical separation distances with GSO satellite operators. The relaxation of the eccentricity and argument of perigee control will result in the equatorial crossings drifting from the nominal 65.6° and 126.4°W longitude, but the altitudes of the equatorial crossings will not change significantly and will remain a safe distance below the GSO altitude. GSO satellite operators are typically concerned at proximities of less than 10 km and the Sirius NGSO Satellites will remain at least 1300 km below the GSO altitude at the equatorial crossings. There is no increase in risk of collision with a geostationary satellite because the Sirius NGSO Satellites altitude at the equatorial crossings will be more than two orders of magnitude higher than a typical “close approach” threshold defined by a geostationary satellite operator. Moreover, the inclination, Right Ascension of the Ascending Node (RAAN), and nominal apogee longitude will not change from the currently licensed limits.

In addition, there is no increase in risk of radio frequency interference with a GSO satellite because the Sirius NGSO Satellites will continue to turn off the 4 GHz telemetry transmitter and prohibit commanding in the 6 GHz band within 2° of the equatorial crossing. Furthermore, the Sirius NGSO Satellites do not transmit S-band payload service near the equatorial crossings. Sirius XM will continue to coordinate and communicate with other satellite operators and will increase the frequency of its fleet coordination letter from bi-annually to quarterly. These notifications will cover U.S. operators within $\pm 5^\circ$ and non-U.S. operators within $\pm 10^\circ$ of a Sirius NGSO Satellite’s equatorial crossing. Sirius XM will continue to monitor close approach limits and should a Sirius NGSO Satellite get inside those limits, Sirius XM will notify any affected operator and take necessary corrective actions.

In light of the above, Sirius XM respectfully requests Commission approval of this STA request.