

EXHIBIT A: DESCRIPTION OF MODIFICATION

Sirius XM Radio Inc. (“SiriusXM”), a satellite digital audio radio service (“SDARS”) licensee, applies for a modification of the license for its Ellenwood, GA, earth station, Call Sign E080168.¹ The purpose of the modification is to: (1) simplify and update the license by reducing the number of separate carriers authorized; (2) specify a broader range of the geostationary arc for communications, consistent with prior coordination for the earth station; and (3) seek flexibility to allow communications with SDARS satellites operated by SiriusXM affiliates during and after authorized relocations of the satellites without the need for additional authority.² Grant of these modifications will serve the public interest by enhancing SiriusXM’s ability to use the E080168 facilities to support the provision of SDARS to over 26 million customers.

The specific requested modifications are described in this exhibit and set forth in the accompanying Form 312, Schedule B. Apart from these changes, SiriusXM certifies that the information previously provided to the Commission regarding this facility remains complete and accurate.

License Simplification and Update. First, SiriusXM proposes changes to Section B of its current license, Particulars of Operations, which currently lists characteristics for

¹ See Call Sign E080168, File No. SES-MOD-20130315-00265, granted May 9, 2013 (“E080168 License”).

² SiriusXM also advises the Commission that one of the space stations with which E080168 is currently authorized to communicate, the XM-2 spacecraft (Call Sign S2119), has been retired and therefore can be removed from the points of communication identified in Section D of the E080168 License. See Letter of Karis A. Hastings, Counsel for XM Radio LLC, to Marlene H. Dortch, Secretary, Federal Communications Commission submitted Oct. 30, 2014 in File No. SAT-STA-20141017-00109 (advising the Commission that XM-2 has been placed in a disposal orbit and requesting termination of the license account in the IBFS database).

a total of 44 carriers for the three feeder link antennas at this site.³ SiriusXM proposes to consolidate and streamline the information provided in this section by combining carriers with similar characteristics, deleting redundant or unnecessary carriers, and updating the license by specifying additional emission designators.

The attached Form 312, Schedule B, provides the information regarding the carriers that SiriusXM wishes to retain as modified or add. SiriusXM requests that the Commission remove the remaining carriers from the E080168 license. Details for the changes associated with each of the feeder link antennas are provided below.

Feeder 1

The carriers numbered 1-10 on the current E080168 License are associated with the Feeder 1 antenna. SiriusXM requests that the Commission modify the parameters for carriers 1, 3, 5, and 7, as set forth below and in the Schedule B. SiriusXM asks that current carriers 2, 4, 6, 8, 9, and 10 be deleted from the license.

Modified or New Carrier	Freq.	Pol.	Emission	T/R	Max. EIRP/Carrier	Max. EIRP Density	Assoc. Antenna	Modulation/ Services
Modified carrier 1	7060-7072.5	R	4M50G7E	T	75.0	44.5	Feeder 1	TDM QPSK 8PSK 16QUAM DARS PROGRAM UPLINK
Modified carrier 3	7051.5-7056.5	L	1M00F1D	T	75.0	51.0	Feeder 1	PCM/PSK/FM COMMAND
Modified carrier 5	2320-2332.5	R	300KG1D	R	0	0	Feeder 1	BIPHASE PCM TELEMETRY
Modified carrier 7	2320-2332.5	L	4M50G7E	R	0	0	Feeder 1	TDM QPSK 8PSK 16QUAM DARS PROGRAM DOWNLINK

³ See E080168 License, Section B, Particulars of Operations.

Feeder 2

The carriers numbered 11-27 on the current E080168 License are associated with the Feeder 2 antenna. SiriusXM requests that the Commission modify the parameters for current carriers 11, 13, 15, 17, 19, and 22, and add four carriers reflecting updated operational parameters, as set forth below and in the Schedule B. SiriusXM asks that current carriers 12, 14, 16, 18, 20, 21, 23, 24, 25, 26, and 27 be deleted from the license.

Modified or New Carrier	Freq.	Pol.	Emission	T/R	Max. EIRP/Carrier	Max. EIRP Density	Assoc. Antenna	Modulation/Services
Modified carrier 11	7060-7072.5	R	4M50G7E	T	75.0	44.5	Feeder 2	TDM QPSK 8PSK 16QUAM DARS PROGRAM UPLINK
Modified carrier 13	7051.5-7056.5	L	1M00F1D	T	75.0	51.0	Feeder 2	PCM/PSK/FM COMMAND
Modified carrier 15	6422-6425	L	1M00F1D	T	75.0	51.0	Feeder 2	PCM/PSK/FM COMMAND
Modified carrier 17	4196.3-4197.2	R	300KG1D	R	0	0	Feeder 2	BIPHASE PCM TELEMETRY
Modified carrier 19	2320-2332.5	R	300KG1D	R	0	0	Feeder 2	BIPHASE PCM TELEMETRY
Modified carrier 22	2320-2332.5	L	4M50G7E	R	0	0	Feeder 2	TDM QPSK 8PSK 16QUAM DARS PROGRAM DOWNLINK
New emission designator	7056.845-7074.869	L,R	1M84G1W	T	75.0	48.4	Feeder 2	TDM QPSK 8PSK 16QUAM DARS PROGRAM UPLINK
New emission designator	7042.6-7074.4	L	800KF2D	T	75.0	52.0	Feeder 2	PCM/PSK/FM COMMAND
New emission designator	2332.5-2345	R	100KG2D	R	0	0	Feeder 2	BIPHASE PCM TELEMETRY
New emission designator	2332.5-2345	L	1M84G1W	R	0	0	Feeder 2	TDM QPSK 8PSK 16QUAM DARS PROGRAM DOWNLINK

Feeder 3

The carriers numbered 28-44 on the current E080168 License are associated with the Feeder 3 antenna. SiriusXM requests that the Commission modify the parameters for carriers 28, 30, 32, 34, 36, and 39, and add four carriers reflecting updated operational parameters, as set forth below and in the Schedule B. SiriusXM asks that current carriers 29, 31, 33, 35, 37, 38, 40, 41, 42, 43, and 44 be deleted from the license.

Modified or New Carrier	Freq.	Pol.	Emission	T/R	Max. EIRP/Carrier	Max. EIRP Density	Assoc. Antenna	Modulation/ Services
Modified carrier 28	7060-7072.5	R	4M50G7E	T	75.0	44.5	Feeder 3	TDM QPSK 8PSK 16QUAM DARS PROGRAM UPLINK
Modified carrier 30	7051.5-7056.5	L	1M00F1D	T	75.0	51.0	Feeder 3	PCM/PSK/FM COMMAND
Modified carrier 32r	6422-6425	L	1M00F1D	T	75.0	51.0	Feeder 3	PCM/PSK/FM COMMAND
Modified carrier 34r	4196.3-4197.2	R	300KG1D	R	0	0	Feeder 3	BIPHASE PCM TELEMETRY
Modified carrier 36	2320-2332.5	R	300KG1D	R	0	0	Feeder 3	BIPHASE PCM TELEMETRY
Modified carrier 39	2320-2332.5	L	4M50G7E	R	0	0	Feeder 3	TDM QPSK 8PSK 16QUAM DARS PROGRAM DOWNLINK
New emission designator	7056.845-7074.869	L,R	1M84G1W	T	75.0	48.4	Feeder 3	TDM QPSK 8PSK 16QUAM DARS PROGRAM UPLINK
New emission designator	7042.6-7074.4	L	800KF2D	T	75.0	52.0	Feeder 3	PCM/PSK/FM COMMAND
New emission designator	2332.5-2345	R	100KG2D	R	0	0	Feeder 3	BIPHASE PCM TELEMETRY
New emission designator	2332.5-2345	L	1M84G1W	R	0	0	Feeder 3	TDM QPSK 8PSK 16QUAM DARS PROGRAM DOWNLINK

Extended Satellite Arc: Second, SiriusXM proposes to modify and update

Section C of the E080168 License, Frequency Coordination Limits, to conform to the ranges of frequencies and satellite arcs for which the earth station’s antennas have been coordinated.

Section C of the current E0801688 License includes five entries for frequency ranges and associated operational data. SiriusXM proposes to modify the data listed in items 1, 3, and 4, retain the data in items 2 and 5 with no changes, and add two new entries, as set forth in the table below and in the Schedule B.

#	Frequency Limits (MHz)	Satellite Arc (Deg. Long.)		Elevation (Degrees)		Azimuth (Degrees)		Max EIRP Density toward Horizon (dBW/4kHz)	Associated Antennas
		East Limit	West Limit	East Limit	West Limit	East Limit	West Limit		
1	7040-7075	80W-120W		50.6 - 35.4		172.3 - 232.4		-9.6	Feeder 1
2	6422-6425	NGSO						2.5	Feeder 3
3	7040-7075	25W-140W		16.8-19.8		108.2-249.3		2.5	Feeder 3
4	7040-7075	25W-140W		16.8-19.8		108.2-249.3		2.5	Feeder 2
5	6422-6425	NGSO						2.5	Feeder 2
6	7040-7075	NGSO						2.5	Feeder 2
7	7040-7075	NGSO						2.5	Feeder 3

SiriusXM has coordinated the proposed changes to the technical parameters of the E080168 License with terrestrial networks, as reflected in the Comsearch report attached as Exhibit B to the application.

Requested Flexibility: Finally, SiriusXM requests added flexibility so that its authority to use the E080168 antennas to communicate with SDARS satellites licensed to SiriusXM’s affiliates is not limited to the specific orbital locations identified in the license. Instead, SiriusXM seeks authority to communicate with SDARS satellites during and after any authorized relocations of those satellites, provided that the operations otherwise conform to the

terms of the E080168 License. Granting this flexibility will avoid the need to request a license modification or special temporary authority for E080168 each time the Commission may authorize a change in the location of an SDARS satellite.

For example, in preparation for the retirement of the XM-1 satellite, SiriusXM's affiliate XM Radio LLC plans to relocate the satellite eastward from its current position at 115.25° W.L. to 39° W.L., maintain the satellite at the latter location for an interim period, and then commence orbit-raising maneuvers during which the satellite will be drifting westward.⁴ These moves will all be within the orbital arc for which E080168 has been coordinated, but the current terms of the E080168 License permit the earth station to communicate with XM-1 only at 115.25° W.L.⁵ Thus, absent grant of the requested flexibility, SiriusXM would need to request and the Commission would need to grant special temporary authority to allow SiriusXM to use the E080168 antennas to support XM-1's retirement.

Although SiriusXM and its affiliates do not contemplate further changes in satellite locations at this time (other than those of which the Commission is already aware), should any such changes become necessary, allowing SiriusXM the requested flexibility would avoid the need to expend Commission resources on such requests and will not result in harmful interference to other authorized communications systems. SiriusXM's affiliates hold exclusive rights to the S-band frequencies used for SDARS downlink operations, so no other satellite operators will be affected by the use of those frequencies. Similarly, grant of this request will not cause harmful interference to terrestrial facilities operating in the X-band frequencies, as the proposed operations have been fully coordinated with terrestrial networks.

⁴ See *XM Radio LLC*, Call Sign S2118, File No. SAT-STA-20141017-00110.

⁵ See E080168 License, Section D, Points of Communications.

To implement the requested flexibility, SiriusXM proposes that the Commission add a condition to the E080168 License. SiriusXM suggests the following language for the Commission's consideration:

SiriusXM's authority to communicate with the satellites listed in Section D of this license is not limited to the specific orbital locations identified in that section. SiriusXM may communicate with the listed satellites at any location authorized by the Commission, provided such operations are consistent with Sections B and C of this license.

The changes proposed herein will serve the public interest by enhancing SiriusXM's ability to employ the antennas licensed under E080168 to support the delivery of reliable, diverse programming to satellite radio customers nationwide.