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Sirius Satellite Radio Inc. **ORIGINAL**

XM Radio Inc.

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

September 26, 2001

Ms. Magalie Roman Salas, Secretary
Federal Communications Commission
445 Twelfth Street, S.W.
12th Street Lobby, TW-A325
Washington, DC 20554

Re: Establishment of Rules and Policies for the Satellite Digital Audio Radio Service in the 2310-2360 MHz Band, IB Docket No. 95-91

Dear Ms. Salas:

On behalf of Sirius Satellite Radio Inc. ("Sirius") and XM Radio Inc. ("XM Radio"), attached for inclusion in the record of IB Docket No. 95-91 are proposed final rules clarifying all necessary technical parameters for DARS terrestrial repeaters. The attached rules would complete the above-referenced rulemaking and address all issues raised by the commenters.

Please do not hesitate to contact me should you have any questions.

Sincerely,

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§ 25.144 Licensing provisions for the 2.3 GHz satellite digital audio radio service.

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(e) *Terrestrial repeaters.*

(1) *General.* Satellite DARS licensees may operate complimentary ground-based transmitters ("terrestrial repeaters") in the following circumstances:

(i) *Low power.* A satellite DARS licensee may operate an unlimited number of low power and replacement terrestrial repeaters.

(ii) *High power.* A satellite DARS licensee may operate:

(A) Prior to January 1, 2003, up to 150 high power terrestrial repeaters; and

(B) On or after January 1, 2003, any number of high power terrestrial repeaters.

(2) *Prior Approval.* A satellite DARS licensee shall obtain prior Commission approval to operate:

(i) Any terrestrial repeater that exceeds the power levels and/or proximity restrictions specified in the existing coordination agreements with Canada and Mexico for co-frequency systems (see Agreement Concerning the Coordination between U.S. Satellite Digital Audio Radio Service and Canadian Fixed Service and Mobile Aeronautical Telemetry Service in the band 2320-2345 MHz, and Agreement Between the Government of the United States of America and the Government of the United Mexican States Concerning the Use of the 2310-2360 MHz band); except that Commission approval shall not be required for terrestrial repeaters already coordinated successfully with Canada or Mexico.

(ii) Any terrestrial repeater that fails to comply with the requirements of Section 17.4 of the Commission's Rules.

(iii) Any terrestrial repeater that will have significant environmental effects, as defined by Sections 1.1301 through 1.1319 of the Commission's Rules.

(3) *Interference Issues.*

(i) *Interference to Wireless Communications Service (WCS) Licensees.*

(A) *Coordination Obligation*:

Satellite DARS licensees shall have no obligation to coordinate either with WCS base stations located within 1.6 miles of a DARS licensee's terrestrial repeater or with any WCS customer premises

equipment (including WCS licensee-owned equipment installed to serve customers). Satellite DARS licensees shall coordinate in good faith with WCS licensees with respect to WCS base stations located more than 1.6 miles from a DARS licensee's terrestrial repeaters if such base stations receive harmful interference from one or more high power terrestrial repeaters that prevents such WCS base station from providing commercial service.

(B) *Site Information*:

Each DARS licensee shall use reasonable efforts to provide, on a confidential basis, information about its terrestrial repeaters to WCS licensees that provide the DARS licensee with its plans for WCS base station deployment. The DARS licensees shall use reasonable efforts to provide this information to the WCS licensees in a given market 90 days prior to operation of the terrestrial repeater. The obligation to provide 90 days prior notice shall not apply to low power terrestrial repeaters.

(C) *Coordination Expenses:*

(1) *WCS Base Stations In Service prior to December 31, 2001:* If a WCS licensee has notified all DARS licensees of the characteristics of the WCS base station prior to August 21, 2001, and receives interference as described in Section 25.144(e)(3)(i)(A), the DARS licensee shall pay the reasonable costs of eliminating or mitigating such interference, except to the extent that the affected WCS base station would receive interference from a low power terrestrial repeater operating from the same location as the high power terrestrial repeater.

(2) *WCS Base Stations In Service Prior to March 18, 2002*: If a WCS licensee notifies a DARS licensee of interference described in Section 25.144(e)(3)(i)(A) to a WCS base station whose characteristics were not provided to all DARS licensees prior to August 21, 2001 and that becomes operational prior to March 18, 2002, the WCS and DARS licensees shall share equally the reasonable costs of eliminating or mitigating such interference, except to the extent that the affected WCS base station would receive interference from a low power terrestrial repeater operating from the same location as the high power terrestrial repeater.

(ii) *Interference to wide-band analog MDS/ITFS receivers.* A satellite DARS licensee shall have no obligation to remedy interference to wide-band analog MDS/ITFS receivers; except that a satellite DARS licensee shall reimburse an MDS/ITFS customer or licensee for a band-pass or band-stop filter if the satellite DARS licensee receives a written complaint prior to February 20, 2002 from such

MDS/ITFS customer or licensee and such MDS/ITFS customer or licensee demonstrates by a preponderance of the evidence all of the following:

(A) The wide-band analog MDS/ITFS receiver was installed and operating prior to August 20, 1998;

(B) The wide-band analog MDS/ITFS receiver is located within the satellite DARS licensee's high power terrestrial repeater's free space power flux density contour of -34 dBW/m^2;

(C) The high power terrestrial repeater operated by the satellite DARS licensee is the sole cause of interference to the wide-band analog MDS/ITFS receiver;

(D) The interference to the wide-band analog MDS/ITFS receiver would not have been caused by a low power terrestrial repeater; and

(E) The MDS/ITFS customer or licensee is not entitled to compensation pursuant to Section 27.58 of the Commission's Rules;

provided that the maximum cumulative liability of each satellite DARS licensee under this subsection shall not exceed $500,000.

(4) *Authorized Transmissions.* Terrestrial repeaters shall be used only to transmit programming that is also transmitted by an authorized DARS satellite and in such a way that the DARS satellite signal and the terrestrial repeater signal are received nearly simultaneously.

(5) *Out of Band Emissions:* Satellite DARS licensees must attenuate emissions outside the DARS band in accordance with the following:

$75 + 10\log(P)$

Where P is measured in EIRP.

(6) *Definitions.* For the purpose of §25.144, the following definitions shall apply:

(i) *Low power.* The term "low power" means an omnidirectional EIRP not exceeding 2 kW (33 dBW). If a repeater site sectorizes or otherwise uses one or more transmitting antennas with a non-omnidirection horizontal plane radiation pattern, the maximum EIRP in a given direction shall be determined by the following formula:

EIRP = 33 dBW + 10 log(360/beamwidth) dBW, where 10 log(360/beamwidth) is less than 6 dB.

Beamwidth is the total horizontal plane beamwidth of the individual transmitting antenna for the repeater or any sector measured at the half-power points.

(ii) *High power.* The term "high power" means an omnidirectional EIRP greater than 2 kW but not exceeding 18 kW (42.6 dBW). If a repeater site sectorizes or otherwise uses one or more transmitting antennas with a non-omnidirection horizontal plane radiation pattern, the maximum EIRP in a given direction shall be determined by the following formula:

EIRP = 42.6 dBW + 10 log(360/beamwidth) dBW, where 10 log(360/beamwidth) is less than 3 dB.

(iii) *Base station.* The term "base station" has the same meaning as that term as that term has in Section 27.4 of this chapter.

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§ 1.1307 Actions that may have a significant environmental effect, for which Environmental Assessments (EAs) must be prepared

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Table 1: Transmitters, Facilities and Operations Subject to Routine Environmental Evaluation

Service (title 47 CFR rule part)	Evaluation required if
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Satellite Communications (part 25)	*Satellite DARS Terrestrial Repeaters*: >2000 W EIRP All others included.