

# SIRIUS XM

RADIO INC.

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December 7, 2009

**Via IBFS**

Ms. Marlene H. Dortch, Secretary  
Federal Communications Commission  
445 12th Street, S.W.  
Washington, D.C. 20554

**Re: Sirius XM Radio Inc.  
Request for 30-Day Special Temporary Authority  
For a New Low Power Repeater in Las Vegas, Nevada**

Dear Ms. Dortch:

Pursuant to Section 25.120(b)(4) of the Commission's rules, 47 C.F.R. § 25.120(b)(4), Sirius XM Radio Inc. ("Sirius XM"), a satellite radio licensee in the Satellite Digital Audio Radio Service ("SDARS"), hereby requests 30-Day Special Temporary Authority ("STA") for a new low power terrestrial repeater with an Effective Isotropically Radiated Power ("EIRP") of up to 1000 watts in Las Vegas, Nevada.<sup>1</sup>

Sirius XM will operate this new repeater at the Rio Hotel in Las Vegas, Nevada, in connection with the 2010 Consumer Electronics Show ("CES") to be held January 7 through January 10, 2010. This new repeater will provide Sirius network coverage inside the Bellagio Hotel, where Sirius XM will demonstrate its radios and service during the convention. In order to provide adequate time to set up, test, and dismantle this repeater, Sirius XM requests authority to use it from December 20, 2009 through January 11, 2010.

In planning for its demonstrations at this year's CES, Sirius XM expected that it would be able to provide Sirius network service inside the Bellagio Hotel using the company's existing STA authorizations. However, during a site visit on November 20, 2009, Sirius XM learned that it could not provide adequate Sirius coverage inside the Bellagio Hotel due to satellite blockage caused by construction of the new City Center complex adjacent to the Bellagio. Sirius XM determined that it could, however, provide the necessary coverage using the low power repeater requested herein,

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<sup>1</sup> Under Section 25.120(b)(4), the Commission may grant this application for a 30-Day STA without placing it on Public Notice.

which will be co-located with an existing XM network repeater at the Rio Hotel. Accordingly, given the last-minute discovery of this issue and the importance of providing satellite radio service for the 2010 CES, Sirius XM requests STA as requested herein.

The Commission has recognized that SDARS operators require terrestrial repeaters to provide high-quality service nationwide.<sup>2</sup> Consistent with this policy, in September 2001, the Bureau granted STAs to Sirius XM to operate a nationwide network of terrestrial repeaters.<sup>3</sup> In the years since, the Bureau has granted Sirius XM additional STAs to operate terrestrial repeaters, pending issuance of final rules governing the deployment and use of repeaters.<sup>4</sup>

*Public Interest Considerations.* As noted above, granting the instant STA will serve the public interest by allowing Sirius XM to provide demonstrations of its radios and service during the CES 2010 convention. Prior to November 20, 2009, Sirius XM was unaware that it needed a further authorization to provide Sirius network satellite radio service to its display facilities at CES.

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<sup>2</sup> See *Establishment of Rules and Policies for the Digital Audio Radio Satellite Service in the 2310-2360 MHz Frequency Band, Report and Order, Memorandum Opinion and Order, and Further Notice of Proposed Rulemaking*, 12 FCC Rcd 5754, 5770 ¶ 37 (1997).

<sup>3</sup> See *Sirius Satellite Radio, Inc., Application for Special Temporary Authority to Operate Satellite Digital Audio Radio Service Complimentary Terrestrial Repeaters, Order and Authorization*, 16 FCC Rcd. 16773 ¶ 18 (2001) (“*Sirius STA Order*”). *XM Radio, Inc., Application for Special Temporary Authority to Operate Satellite Digital Audio Radio Service Complimentary Terrestrial Repeaters, Order and Authorization*, 16 FCC Rcd. 16781 ¶ 18 (2001) (“*XM STA Order*”).

<sup>4</sup> See, e.g., *Sirius Satellite Radio Inc.; Request to Modify Special Temporary Authority to Operate Additional Satellite Digital Audio Radio Service Terrestrial Repeaters, Order and Authorization*, 19 FCC Rcd. 18140 (2004) (granting Sirius an STA in File No. SAT-STA-20031106-00370, effective Sept. 15, 2004. Since that time, the Commission has extended the STA several times, pending the issuance of final rules governing the use of satellite DARS terrestrial repeaters. In September 2004, the Commission granted Sirius a new STA to operate for 180 days or until the Commission issues final rules governing the use of satellite DARS terrestrial repeaters. See *Sirius Satellite Radio Inc. Request to Modify Special Temporary Authority to Operate Satellite DARS Terrestrial Repeaters, Order and Authorization*, 19 FCC Rcd 18149 (2004) (“*2004 STA Grant Order*”). Sirius timely filed an application for renewal of this STA on March 1, 2005. See File No. SAT-STA-20050301-00053. To date, the Commission has not acted on this application. See also, *XM Radio, Inc.; Request for Special Temporary Authority to Operate Additional Satellite Digital Audio Radio Service Terrestrial Repeaters, Order and Authorization*, 19 FCC Rcd. 18140 (2004) (granting XM an STA in File No. SAT-STA-20031112-00371, effective Sept. 15, 2004); *Public Notice*, 2002 FCC Lexis 5670 (rel. Oct. 30, 2002) (granting XM an STA in File No. SAT-STA-20020815-00153, effective Sept. 30, 2002); *Public Notice*, 2003 FCC Lexis 4803 (rel. Aug. 29, 2002) (granting XM an STA in File No. SAT-STA-20030409-00076, effective June 26, 2003). XM has filed applications to renew its STAs, and those renewal applications remain pending.

*Technical Information for the New Low Power Repeaters.* The following technical information pertaining to the repeater is provided in Exhibit A: (1) antenna type; (2) antenna orientation; (3) average EIRP; (4) height above ground level (“AGL”); and (5) antenna downtilt.<sup>5</sup> Exhibits B and C consist respectively, of Google™ satellite images and topographic maps showing the location of the proposed facilities. The specification sheet for the antenna to be used by the repeater is attached as Exhibit D.

*Interference Considerations.* As proposed in this STA, the repeater will operate at an average EIRP of less than 1000 watts. Because Sirius XM has exclusive use of its licensed band, it is highly unlikely that this low power repeater will create interference to other licensees. To the extent Sirius XM’s original 2001 STAs require it to coordinate with affected Wireless Communications Services (“WCS”) licensees prior to operating any repeater, Sirius XM is not aware of any operational WCS facilities in Las Vegas.<sup>6</sup> Moreover, as the Bureau acknowledged in granting Sirius XM’s original repeater STA requests, the WCS licensees have confirmed that operating terrestrial repeaters at an EIRP of 2 kW or less is not an interference concern.<sup>7</sup> However, if prohibited interference does occur, Sirius XM will cease operation of the repeater until such interference can be eliminated.<sup>8</sup>

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<sup>5</sup> For purposes of Sirius XM’s repeater STA applications, “antenna downtilt” refers to an antenna’s mechanical downtilt, without reference to any electrical downtilt built into the antenna.

<sup>6</sup> See *Sirius STA Order* ¶ 14 and *XM STA Order* ¶ 14. Despite the Bureau’s statement in the *XM STA Order* (at ¶ 14) and *Sirius STA Order* (at ¶ 14) that it expects “WCS licensees to provide a schedule or as much advance notice as possible of when their stations are to be placed in operation,” Sirius XM has not received information directly from any WCS licensee regarding plans for WCS deployment in this market. Moreover, Sirius XM’s own reviews of “substantial service” filings do not show any operational WCS stations in this market.

<sup>7</sup> *XM STA Order* ¶ 12 (“The comments from WCS licensees express concern about blanketing interference from DARS repeaters that operate with an Equivalent Isotropically Radiated Power (EIRP) above 2 kW.”). Moreover, in March 2007, the WCS Coalition said that it will defer from objecting to STA requests that propose operations of no more than 2,000 watts EIRP, even if they do not specify peak or average EIRP, provided that grant of the STA (i) is conditioned on operation on a non-interference basis; and (ii) is subject to the condition that the issue of peak versus average EIRP will be addressed in the pending DARS rulemaking (IB Docket No. 95-91). See Letter from Paul J. Sinderbrand, Counsel to the WCS Coalition, to Ms. Helen Domenici, FCC, File No. SAT-STA-20061207-00145 (March 19, 2007). XM agrees to these conditions.

<sup>8</sup> This repeater’s design includes several automated shutdown mechanisms that are triggered in the event of equipment major malfunctions. The transmit chain also includes a transmit output coupler which feeds a self-monitoring system detecting any transmission anomalies. Any such anomalies are automatically reported back to Sirius XM’s National Repeater Control Center (202-380-4725), which is available on a continuous basis to receive any reports of any suspected interference and take immediate corrective action.

*Ownership and Control of Repeaters.* Sirius XM will own the repeater and it will be responsible for the repeater's installation and operation.

*Certifications.* Sirius XM certifies that it will operate the repeater subject to the conditions and certifications set forth in the *Sirius STA Order* and *XM STA Order* granting Sirius XM's September 2001 requests for STAs to operate terrestrial repeaters. Specifically, Sirius XM certifies the following:

- (1) Sirius XM will operate this repeater at its own risk, and such operation shall not prejudice the outcome of the final rules adopted by the Commission in GEN Docket 95-91;
- (2) Sirius XM will operate these facilities on a non-interference basis with respect to all permanently authorized radiocommunication facilities;
- (3) The facilities will be restricted to the simultaneous retransmission of the complete programming, and only that programming, transmitted by the satellite directly to SDARS receivers;
- (4) Where applicable, coordination of the facilities will be completed with all affected Administrations prior to operation, in accordance with all applicable international agreements including those with Canada and Mexico;
- (5) The facilities will comply with Part 17 of the Commission's rules – Construction, Marking, and Lighting of Antenna Structures;
- (6) The facilities will comply with Part 1 of the Commission's rules, Subpart I - Procedures Implementing the National Environmental Policy Act of 1969, including the guidelines for human exposure to radio frequency electromagnetic fields as defined in Sections 1.1307(b) and 1.1310 of the Commission's rules;
- (7) The out-of-band emissions of the facility will be limited to  $75+10\log$  (EIRP) dB less than the transmitter EIRP;
- (8) Sirius XM will operate this repeater according to the technical parameters provided in this application;
- (9) Sirius XM will maintain full ownership and operational control of this repeater; and
- (10) Sirius XM will immediately shut down this repeater upon a complaint of interference, upon direction from the Commission, or upon finding that a facility has not been properly installed.

Granting this request will not alter Sirius XM's obligation to protect authorized radio-communications facilities from interference, nor will it prejudice the outcome of the Commission's ongoing rulemaking pertaining to the deployment and operation of terrestrial repeaters.

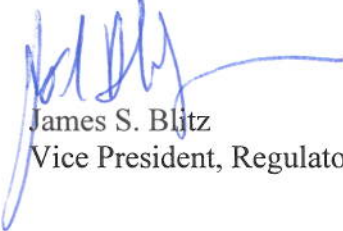
Sirius XM hereby certifies that no party to this application is subject to a denial of Federal benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. § 853(a).

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Sirius XM is submitting payment to the Federal Communications Commission in the amount of Two Thousand Eight Hundred Sixty Dollars (\$2860.00) -- the filing fee applicable to requests for STAs for non-geostationary ("NGSO") satellites.<sup>9</sup>

Please direct any questions regarding this matter to the undersigned.

Very truly yours,



James S. Blitz  
Vice President, Regulatory Counsel

cc: Stephen Duall, FCC International Bureau  
Jay Whaley, FCC International Bureau  
Sankar Persaud, FCC International Bureau

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<sup>9</sup> See International and Satellite Services Fee Filing Guide (February 2009).

**Exhibit A**

**Technical parameters for repeaters**

<b>CITY</b>	<b>NETWORK AND ANTENNA NUMBER</b>	<b>SITE LATITUDE (N)</b>	<b>SITE LONGITUDE (W)</b>	<b>ANTENNA TYPE</b>	<b>ANTENNA ORIENTATION (AZIMUTH)</b>	<b>ANTENNA HEIGHT (FT. AGL)</b>	<b>ANTENNA DOWNTILT (DEGREES)</b>	<b>TOTAL AVERAGE EIRP(W)</b>
Las Vegas, NV	Sirius LVX004B	36-06-58	115-11-12	TA2304-2-DAB (45)	140	438	10	1000

**Exhibit B**

**Google™ Satellite Image of Repeater Location**

**LVX004B**

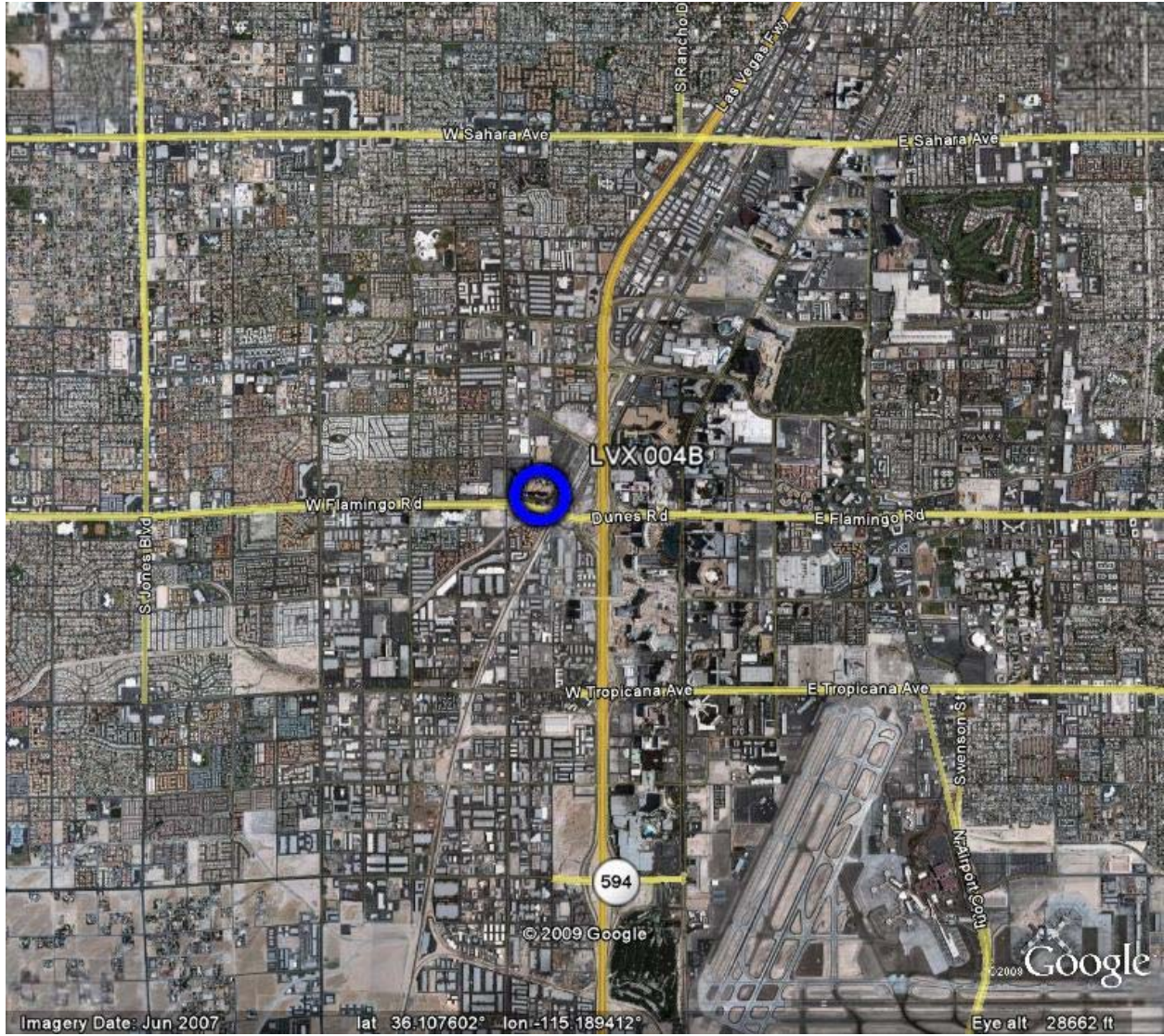
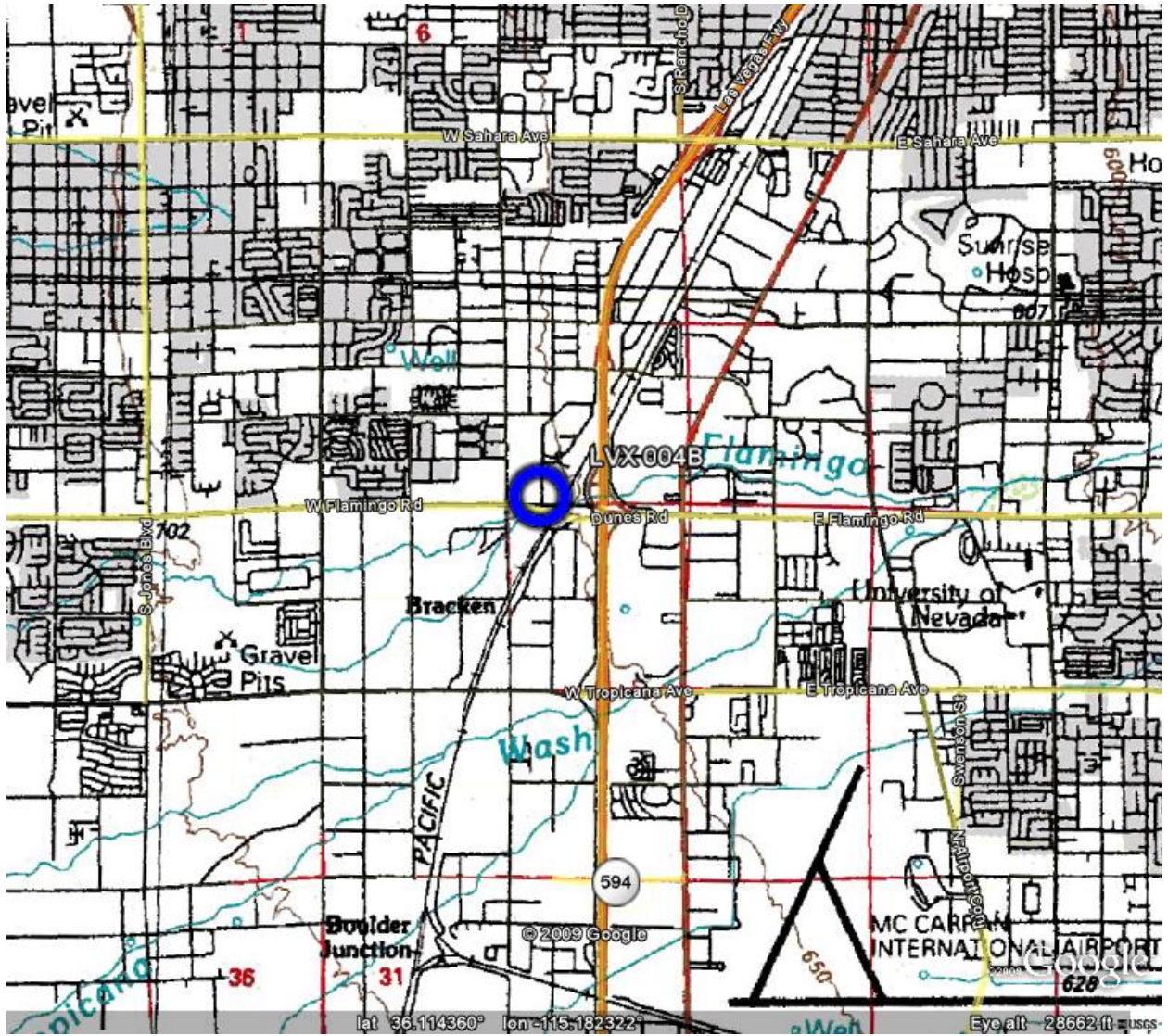


Exhibit C

Topographic Map of Repeater Location

LVX004B





**Exhibit D**

**Antenna Specification Sheet for Repeaters**



# TA-2304-2-DAB

## Medium Power Adjustable Sector

2330-2345 MHz



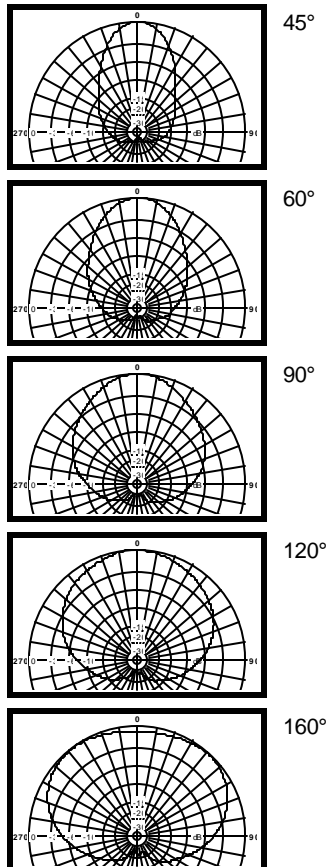
The TA-2304-2-DAB is a medium power vertically polarized sectoral antenna specifically designed for Digital Audio Broadcast transmission. The antenna is designed to provide field adjustable azimuth beamwidths of 45, 60, 90, 120, or 160 degrees by use of side panels. The antenna elements are at DC ground to aid in lightning protection.

### Electrical Specifications

- Frequency Range:** 2330-2345 MHz
- Gain:** 17 dBi @ 45°, 16 dBi @ 60°, 14 dBi @ 90°  
13 dBi @ 120°, 11.5 dBi @ 160°
- VSWR:** 1.3:1 max.
- Front to Back Ratio:** 15 dB @ 180° +/- 35°
- Polarization:** Vertical
- Power Rating:** 200 W avg., 800 W peak
- H-Plane Beamwidth:** 45°, 60°, 90°, 120°, 160°
- E-Plane Beamwidth:** 7.5 degrees
- Cross Pol. Discrimination:** 15 dB
- Impedance:** 50 ohms nominal
- Termination:** 7/16 DIN female

Typical mid band values. (For details, contact factory)

### H-Plane



### Mechanical Specifications

- Length:** 39.5 in. (1003 mm)
- Width:** 6.5 in. (165 mm) with 45° side panels  
5.0 in. (127 mm) without 45° side panels
- Depth:** 3.5 in. (89 mm)
- Weight (incl. Clamps):** 8 lb. (3.6 kg)
- Rated Wind Velocity:** 125 mph (200 km/h)
- Hor. Thrust at rated wind:** 86 lb. (39 kg)  
with 45° side panels: 113 lb. (51 kg)
- Mechanical Tilt:** +5° to -15°
- Mounting Pipe:** 0.75 - 3.0 in. (19 - 76 mm)

### Materials

- Radiating Elements:** Tin Plated copper on PCB
- Reflector:** Irridited aluminum
- Radome:** Gray UV stabilized ASA
- Clamps:** Aluminum and HDG steel

### E-Plane

