



File # SAT-STA - 20091207-00140

Call Sign _____ Grant Date 12/17/09
(or other identifier)

Term Dates see attached
From 12/20/09 To: _____
Conditions

Date & Time Filed: Dec 7 2009 3:27:28:323PM
File Number: SAT-STA-20091207-00140
Callsign:

Approved by OMB
3060-0678

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

FEDERAL COMMUNICATIONS COMMISSION
APPLICATION FOR SPACE STATION SPECIAL TEMPORARY AUTHORITY

FOR OFFICIAL USE ONLY

APPLICANT INFORMATION

Enter a description of this application to identify it on the main menu:
Request for Special Temporary Authority to Operate a New Low Power Terrestrial Repeater in Las Vegas, Nevada for 30 Days

1. Applicant

Name:	Sirius XM Radio Inc.	Phone Number:	212-584-5100
DBA Name:		Fax Number:	212-584-5353
Street:	1221 Avenue of the Americas 36th Floor	E-Mail:	
City:	New York	State:	NY
Country:	USA	Zipcode:	10020 -
Attention:	Patrick L. Donnelly		

Attachment to Grant
Application of Sirius XM Radio Inc. for Special Temporary Authority
IBFS File No. SAT-STA-20091207-00140

Special temporary authority (STA) is granted to Sirius XM Radio Inc. (Sirius XM) to operate one terrestrial repeater with an average Effective Isotropically Radiated Power (EIRP) of up to 1000 watts at the Rio Hotel in Las Vegas, Nevada, for a period of 30 days, commencing on December 20, 2009, in support of the 2010 Consumer Electronics Show being held in Las Vegas from January 7-10, 2010. This authorization is granted according to the technical parameters specified in Sirius XM's application and is subject to the conditions below.

1. Any actions taken as a result of this STA are solely at the applicant's own risk. This STA shall not prejudice the outcome of the final rules adopted by the Commission in IB Docket No. 95-91. The issue concerning EIRP raised by the WCS Coalition will be addressed in that proceeding. Operations prior to such action will be subject to condition 2 below.
2. Operation of the terrestrial repeater is authorized pursuant to this STA on a non-interference basis with respect to all permanently authorized radiocommunication facilities. Sirius XM shall provide the information and follow the process set forth in paragraphs 14 and 17 in 16 FCC Rcd 16773 (Int'l Bur. 2001) and 16 FCC Rcd 16781 (Int'l Bur. 2001), as modified by 16 FCC Rcd 18481 (Int'l Bur. 2001) and 16 FCC Rcd 18484 (Int'l Bur. 2001).
3. The terrestrial repeater is restricted to the simultaneous retransmission of the complete programming, and only that programming, transmitted by the satellite directly to SDARS subscribers' receivers.
4. Coordination of the operations of the terrestrial repeater shall be completed with all affected Administrations prior to operation, in accordance with all applicable international agreements including those with Canada and Mexico.
5. The terrestrial repeater shall comply with Part 17 of the Commission's rules – Construction, Marking, and Lighting of Antenna Structures.
6. The terrestrial repeater shall 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 terrestrial repeater's out-of-band emissions shall be limited to $75 + 10\log(\text{EIRP})$ dB less than the transmitter EIRP.
8. This STA expires after 30 days, or on the date on which permanent rules governing repeater operations become effective, whichever occurs first.
9. Sirius XM is granted 30 days from the date of the release of this authorization to decline the authorization as conditioned. Failure to respond within that period will constitute formal acceptance of the authorization as conditioned.
10. 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.



File # SAT- STA- 20091207- 000140

Call Sign _____ Grant Date 12/17/09

(or other identifier) _____ Term Dates see attached

From 12/20/09 To: conditions

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

2. Contact			
Name:	James S. Blitz	Phone Number:	202-380-4000
Company:	Sirius XM Radio Inc.	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:		Relationship:	Same
(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.) Sirius XM Radio Inc. requests Special Temporary Authority (STA) to operate a new low power terrestrial repeater in Las Vegas, Nevada for 30 days pursuant to the technical parameters listed in Exhibit A.		
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 Vice President, 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.

1500 Eckington Place, N.E.
Washington, D.C. 20002
Tel: 202-380-4000
Fax: 202-380-4500
www.sirius.com www.xmradio.com

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.¹

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,

¹ 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.² Consistent with this policy, in September 2001, the Bureau granted STAs to Sirius XM to operate a nationwide network of terrestrial repeaters.³ 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.⁴

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.

² 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).

³ 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*”).

⁴ 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.⁵ 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.⁶ 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.⁷ However, if prohibited interference does occur, Sirius XM will cease operation of the repeater until such interference can be eliminated.⁸

⁵ 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.

⁶ 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.

⁷ *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.

⁸ 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.

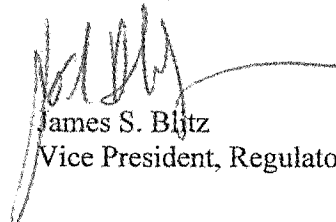
Sirius XM hereby certifies that no party to this application is subject to a denial of Federal benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. § 853(a).

Ms. Marlene H. Dortch
December 7, 2009
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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.⁹

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

⁹ See International and Satellite Services Fee Filing Guide (February 2009).

Exhibit A

Technical parameters for repeaters

CITY	NETWORK AND ANTENNA NUMBER	SITE LATITUDE (N)	SITE LONGITUDE (W)	ANTENNA TYPE	ANTENNA ORIENTATION (AZIMUTH)	ANTENNA HEIGHT (FT. AGL)	ANTENNA DOWNTILT (DEGREES)	TOTAL AVERAGE EIRP(W)
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

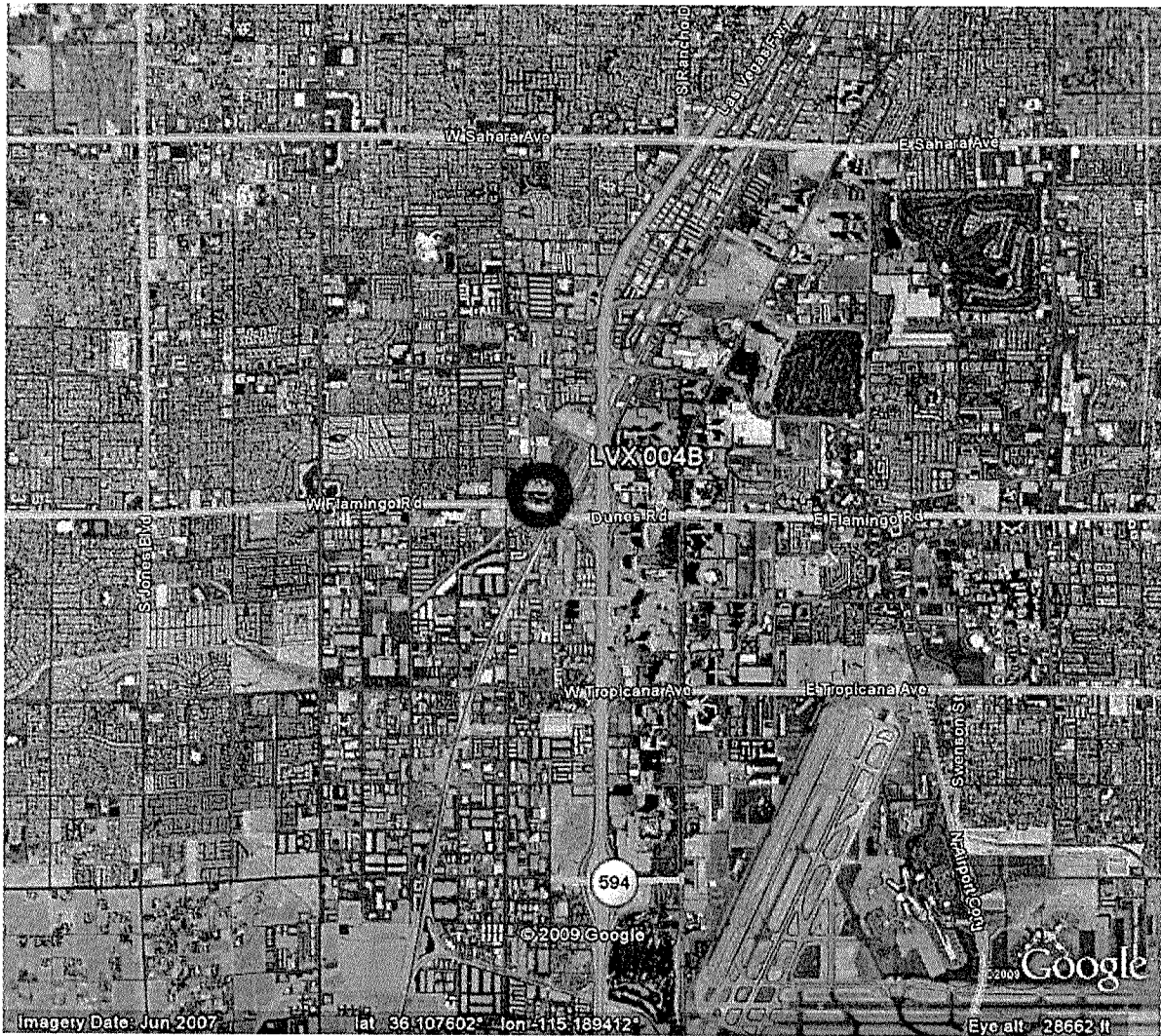


Exhibit C

Topographic Map of Repeater Location

LVX004B

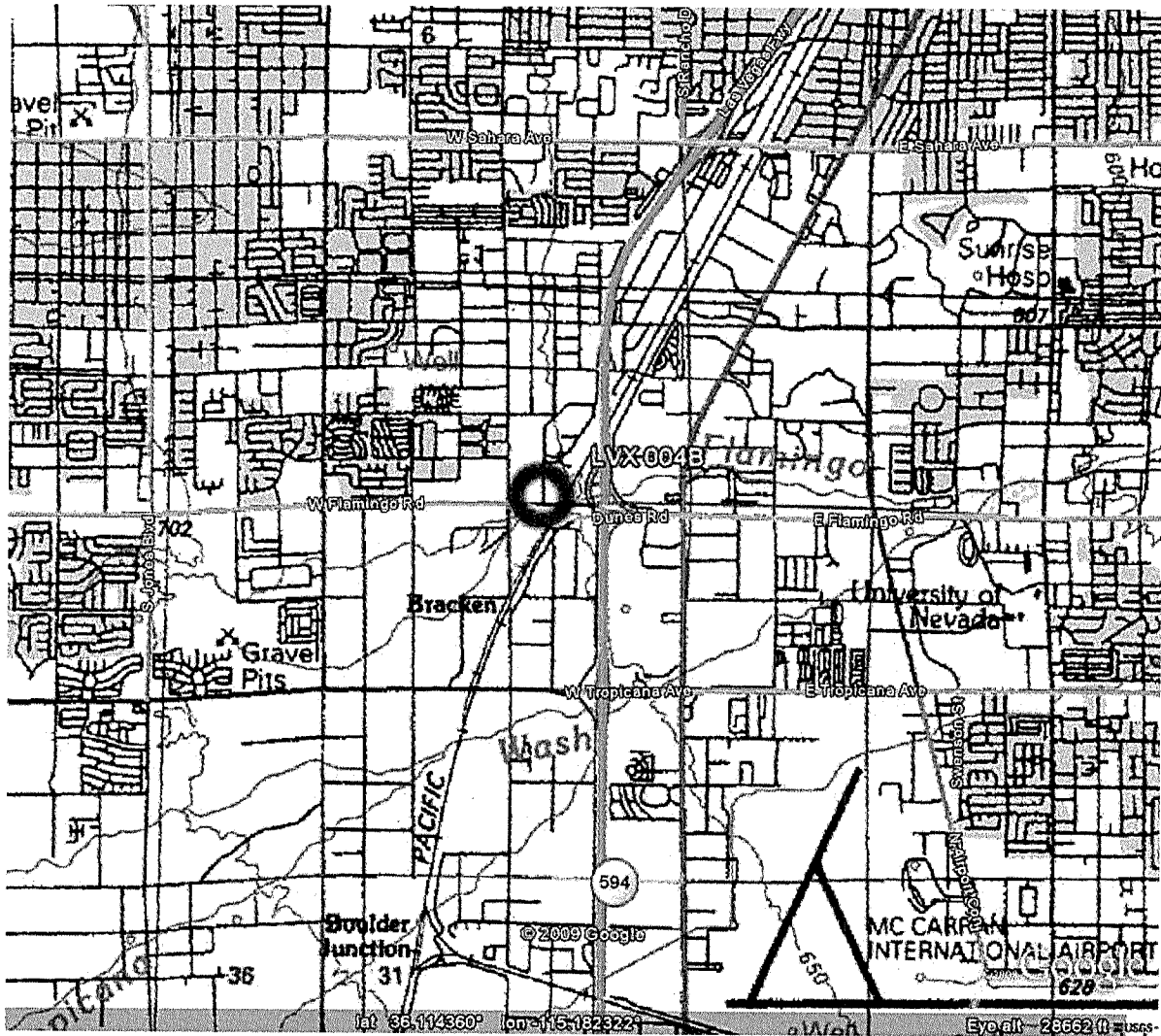


Exhibit D

Antenna Specification Sheet for Repeaters

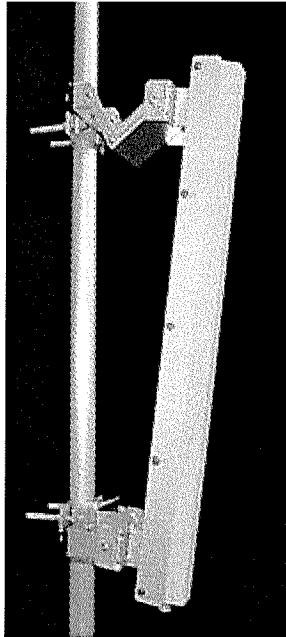


TIL-TEK

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

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

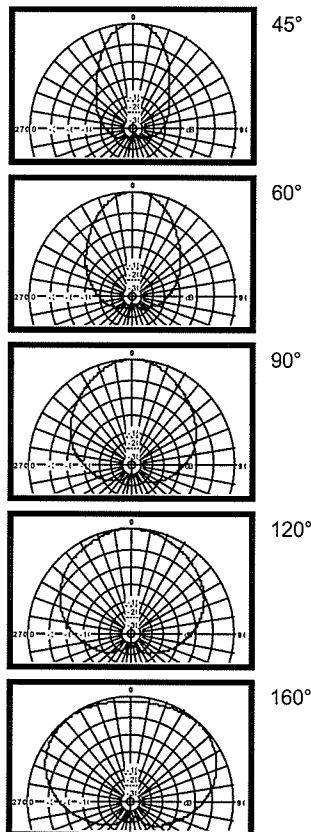
Reflector: Iridited aluminum

Radome: Gray UV stabilized ASA

Clamps: Aluminum and HDG steel

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

H-Plane



E-Plane

