

Sirius XM Radio Inc.
SAT-STA-20091002-00103
IB2009004889

Date & Time Filed: Oct 2 2009 5:02:48:583PM
File Number: SAT-STA-20091002-00103
Callsign:



File # SAT- STA- 20091002- 00103
Call Sign _____ Grant Date 11/19/09
(or other identifier) see attached
Term Dates conditions
From 11/19/09 To: _____
Approved: *Stephen J. Duall*
Stephen J. Duall
Chief, Policy Branch

Approved by OMB
3060-0678

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 Two New Low Power Repeaters in Detroit, Michigan for 180 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-20091002-00103

Special temporary authority (STA) is granted to Sirius XM Radio Inc. (Sirius XM) to operate two terrestrial repeaters with an Effective Isotropically Radiated Power (EIRP) of up to 2,000 watts (average) in Detroit, MI, for a period of 180 days. 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 repeaters 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 repeaters are 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 repeaters 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 repeaters shall comply with Part 17 of the Commission's rules – Construction, Marking, and Lighting of Antenna Structures.
6. The terrestrial repeaters 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 repeaters' out-of-band emissions shall be limited to 75+ 10log(EIRP) dB less than the transmitter EIRP.
8. This STA expires after 180 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.



*subject to conditions

File # SAT-STA-20091002-00103

Call Sign _____ Grant Date 11/19/09

(or other identifier)

Term Dates see attached conditions

From 11/19/09 To: _____

Approved: Stephen J. Duall

Stephen J. Duall
Chief 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?	
<input checked="" type="radio"/> If Yes, complete and attach FCC Form 159. If No, indicate reason for fee exemption (see 47 C.F.R. Section 1.1114).	
<input type="radio"/> Governmental Entity <input type="radio"/> Noncommercial educational licensee	
<input type="radio"/> Other (please explain):	
4b. Fee Classification CXW - Space Station (Non-Geostationary)	
5. Type Request	
<input type="radio"/> Change Station Location	<input type="radio"/> Extend Expiration Date
	<input checked="" type="radio"/> Other
6. Temporary Orbit Location	
	7. Requested Extended Expiration Date

<p>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.)</p> <div style="border: 1px solid black; padding: 5px;"> <p>Sirius XM Radio Inc. requests Special Temporary Authority to operate two new low power terrestrial repeaters in Detroit, Michigan for 180 days pursuant to the technical parameters listed in Exhibit A.</p> </div>					
<p>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.</p> <p style="text-align: right;"> <input checked="" type="radio"/> Yes <input type="radio"/> No </p>					
<p>10. Name of Person Signing James S. Blitz</p>	<p>11. Title of Person Signing Vice President, Regulatory Counsel</p>				
<p>12. Please supply any need attachments.</p> <table border="1" style="width: 100%;"> <tr> <td style="width: 50%;">Attachment 1: STA Request</td> <td style="width: 50%;">Attachment 2:</td> </tr> <tr> <td> </td> <td>Attachment 3:</td> </tr> </table>		Attachment 1: STA Request	Attachment 2:		Attachment 3:
Attachment 1: STA Request	Attachment 2:				
	Attachment 3:				
<p style="text-align: center;">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).</p>					

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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

October 2, 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 180-Day Special Temporary Authority to Operate
Two New Low Power Repeaters in Detroit, Michigan**

Dear Ms. Dortch:

Pursuant to Section 25.120(b)(2) of the Commission's rules, 47 C.F.R. § 25.120(b)(2), Sirius XM Radio Inc. ("Sirius XM"),¹ a satellite radio licensee in the Satellite Digital Audio Radio Service, hereby requests 180-Day Special Temporary Authority ("STA") to operate in its licensed frequency band two new low power terrestrial repeaters, each of which has average Effective Isotropically Radiated Power ("EIRP") of up to 2000 watts. Specifically, this application seeks authority to operate the two low power repeaters in the former Sirius Satellite Radio Inc. ("Sirius") frequency band (2320-2332.5 MHz).

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

¹ Pursuant to the merger to which the Commission consented in *Applications of XM Satellite Radio Holdings Inc. and Sirius Satellite Radio Inc. for Consent to Transfer Control of Licenses*, Memorandum Opinion and Order and Report and Order, 23 FCC Rcd 12348 (2008), Sirius XM is the parent company of XM Radio Inc. Satellite CD Radio Inc., the corporate entity holding Sirius's satellite authorizations, is also a subsidiary of Sirius XM.

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*

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. Grant of the STA will serve the public interest by enabling Sirius XM to provide quality service to subscribers in the Detroit, Michigan area. Without these low power terrestrial repeaters, Sirius XM cannot provide the signal quality that its subscribers in Detroit expect.⁵

Technical Information for the New Low Power Repeater. The following technical information pertaining to the repeaters is provided in Exhibit A: (1) antenna type; (2) antenna orientation; (3) average EIRP; (4) height above ground level (“AGL”); and (5) antenna downtilt.⁶ 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 antennas to be used by the repeaters is

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 Repeater, 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 Repeater, 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 Repeater, 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 Repeater, 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.

⁵ The repeaters proposed herein will serve subscribers who were previously served by a repeater that Sirius discontinued operating on October 13, 2006. See File No. SAT-STA-20061013-00121 and SAT-STA-20061013-00122.

⁶ For purposes of Sirius XM repeater STA applications, “antenna downtilt” refers to an antenna’s mechanical downtilt, without reference to any electrical downtilt built into the antenna.

attached as Exhibit D. As noted on Exhibit A, many of these repeaters will operate with two sectors.

Interference Considerations. The new low power repeaters will each operate at an average EIRP of less than 2000 watts. Because Sirius XM has exclusive use of its licensed band, it is highly unlikely that these new low power repeaters 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,⁷ Sirius XM is sending a copy of this STA application to Comcast WCS ME16, Inc. ("Comcast") in satisfaction of this coordination requirement.⁸ 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.⁹ However, if prohibited interference does occur, Sirius XM will cease operation of the new repeaters until such interference can be eliminated.¹⁰

Ownership and Control of Repeaters. Sirius XM will own the new low power repeaters and it will be responsible for their installation and operation.

⁷ See *Sirius STA Order* ¶ 14 and *XM STA Order* ¶ 14.

⁸ 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. However, Sirius XM's own review of Commission files shows that Comcast has certified that it operates two WCS stations serving the Detroit, Michigan area, Call Signs KNLB278 and WPQL632. Although the Commission's files contain these certifications, those files provide no specific base station information for these WCS stations that would enable Sirius XM to conduct an interference analysis confirming that these repeaters will not interfere with Comcast's sites.

⁹ *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). Sirius XM agrees to these conditions.

¹⁰ These repeaters' 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.

Certifications. Sirius XM certifies that it will operate the new low power repeaters 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 these repeaters 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 these repeaters according to the technical parameters provided in this application;
- (9) Sirius XM will maintain full ownership and operational control of these repeaters; and
- (10) Sirius XM will immediately shut down these repeaters 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 radiocommunications facilities from interference, and it will not prejudice the outcome of the Commission's ongoing rulemaking pertaining to the deployment and operation of terrestrial repeaters.

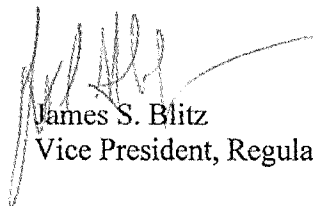
Ms. Marlene H. Dortch
October 2, 2009
Page 5

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).

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.¹¹

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

David Don, Comcast Corp. (david_don@comcast.com)

¹¹ See International and Satellite Services Fee Filing Guide (February 2009).

Exhibit A

Technical parameters for repeaters

CITY	ANTENNA NUMBER	SITE LATITUDE (N)	SITE LONGITUDE (W)	ANTENNA TYPE	ANTENNA ORIENTATION (AZIMUTH)	ANTENNA HEIGHT (FT. AGL)	ANTENNA DOWNTILT (DEGREES)	TOTAL AVERAGE EIRP(W)
Detroit, MI	Sirius - DET 301	42-23-06	83-10-47	TA-2304-2-DAB	250	202	2	2000
Detroit, MI	Sirius - DET 14-16 (Sector 1)	42-22-58	83-18-56	TA-2304-2-DAB(45)	105	131	3	2000
Detroit, MI	Sirius - DET 14-16 (Sector 2)	42-22-58	83-18-56	TA-2304-2-DAB(45)	250	131	2	2000

Exhibit B

Google™ Satellite Image of Repeater Location

Sirius DET 301



Exhibit B

Google™ Satellite Image of Repeater Location

Sirius DET 14-16



Exhibit C

Topographic Map of Repeater Location

Sirius DET 301



Exhibit C

Topographic Map of Repeater Location

Sirius DET 14-16

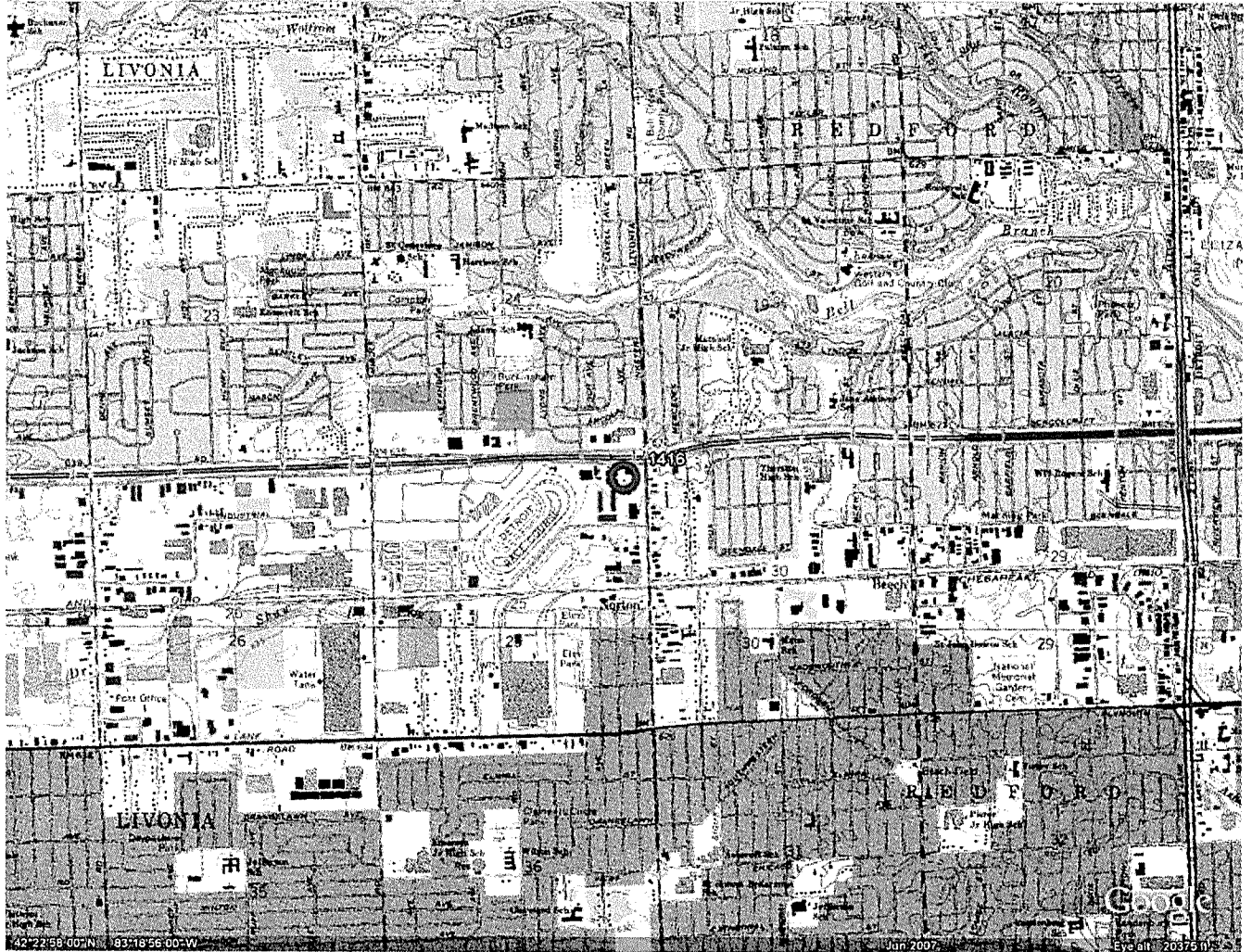


Exhibit D

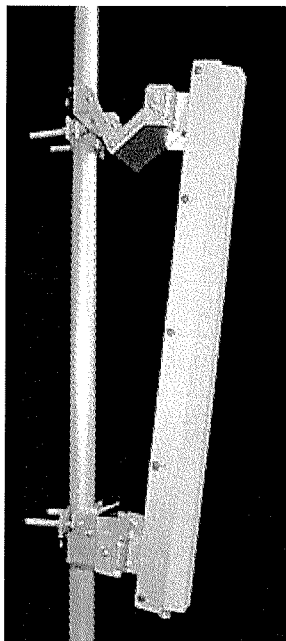
Antenna Specification Sheet for Repeaters



TA-2304-2-DAB

Medium Power Adjustable Sector

2330-2345 MHz



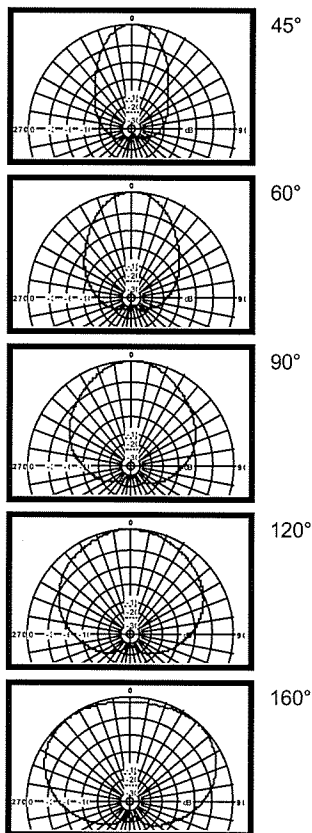
The TA-2304-2-DAB is a medium power vertically polarized sectoral antenna specifically designed for Digital Audio Broadcast transmission. The antenna is designed to provide field adjustable azimuth beamwidths of 45, 60, 90, 120, or 160 degrees by use of side panels. The antenna elements are at DC ground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

