Approved by OMB
3060-0678

Date & Time Filed: Apr 21 2006 5:18:36:693PM
File Number: SAT-STA-20060421-00046
Callsign:

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:
STA Request to Operate Lower Power Repeater at PGA Tour Events

1. Applicant

Name:	XM Radio Inc.	**Phone Number:**	202-380-4000
DBA Name:		**Fax Number:**	202-380-4500
Street:	1500 Eckington Place, NE	**E-Mail:**	joseph.titlebaum@xmradio.com
City:	Washington	**State:**	DC
Country:	USA	**Zipcode:**	20002 -
Attention:	Joseph Titlebaum		

GRANTED
International Bureau

File # SAT-STA-20060421-00046

Call Sign n/a Grant Date 06/19/06
(or other identifier)

Term Dates for a period
From 07/15/06 To: of 180 days (as conditioned)

Approved: [signature]
Chief, Policy Branch

* See attached conditions *

Application of XM Radio Inc. for Special Temporary Authority
IBFS File No. SAT-STA-20060421-00046

Special temporary authority (STA) IS GRANTED to XM Radio Inc. to operate one terrestrial repeater with a power level less than 2 kW EIRP at weekly PGA Tour events occurring at various locations from July through December 2006, pursuant to the technical parameters specified in the application and subject to the following conditions:

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.

2. Operation of all SDARS repeaters authorized pursuant to this STA is on a non-interference basis with respect to all permanently authorized radiocommunication facilities. XM Radio Inc. 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. SDARS repeaters are restricted to the simultaneous retransmission of the complete programming, and only that programming, transmitted by the satellite directly to SDARS subscriber's receivers.

4. Coordination of SDARS repeater operations shall be completed with all affected Administrations prior to operation, in accordance with all applicable international agreements including those with Canada and Mexico.

5. SDARS repeaters shall comply with Part 17 of the Commission's rules – Construction, Marking, and Lighting of Antenna Structures.

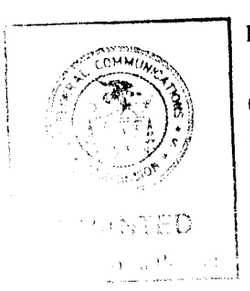
6. SDARS repeaters shall comply with Part 1 of the Commission's rules, Subpart I – Procedures Implementing the National Environmental Policy Act of 1969, including the guidelines for human exposure to radio frequency electromagnetic fields as defined in Sections 1.1307(b) and 1.1310 of the Commission's rules.

7. SDARS repeater out-of-band emissions shall be limited to 75+log(EIRP) dB less than the transmitter EIRP.

8. This STA commences on July 15, 2006, and will expire 180 days thereafter, or on the date on which permanent rules governing repeater operations become effective, whichever occurs first. The authority granted is limited to events listed as Exhibit A to the STA letter request.

9. XM Radio Inc. 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 issued pursuant to Section 0.261 of the Commission's rules on delegated authority, 47 C.F.R. § 0.261, and is effective immediately. Petitions for reconsideration under Section 1.106 or applications for review under Section 1.115 of the Commission's rules, 47 C.F.R. §§ 1.106, 1.115, may be filed within 30 days of the date of the public notice indicating that this action was taken.



File # SAT-STA-20060421-00046

Call Sign N/A Grant Date 6/19/06

(or other identifier)

Term Dates for a period of

From 7/15/06 To: 180 days

Approved: Chief, Policy Branch

2. Contact

Name:	Bruce Jacobs	**Phone Number:**	202-663-8077
Company:	Pillsbury Winthrop Shaw Pittman LLP	**Fax Number:**	202-663-8007
Street:	2300 N Street, NW	**E-Mail:**	bruce.jacobs@pillsburylaw.com
City:	Washington	**State:**	DC
Country:	USA	**Zipcode:**	20037 -1128
Attention:		**Relationship:**	Legal Counsel

(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 CRY – Space Station (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.)

XM Radio Inc. (XM) requests Special Temporary Authority (STA) to operate one lower power terrestrial repeater (less than 2 kW EIRP) at the weekly PGA Tour events occurring at the locations and during the dates listed in Exhibit A and pursuant to the technical parameters listed in Exhibit B attached hereto.

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	11. Title of Person Signing
Joseph M. Titlebaum	General Counsel

12. Please supply any need attachments.

Attachment 1: Narrative	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.

April 20, 2006

Via IBFS

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

Re: XM Radio Inc.
Request for Special Temporary Authority to Operate a Lower Power Terrestrial Repeater at PGA Tour Events

Dear Ms. Dortch:

XM Radio Inc. ("XM"), one of the two Satellite Digital Audio Radio Service ("SDARS" or "satellite radio") licensees in the United States, pursuant to Section 25.120(b)(2) of the Commission's rules,[1] hereby requests Special Temporary Authority ("STA") to operate one lower power terrestrial repeater at the weekly PGA Tour event occurring at the locations and during the dates listed in Exhibit A and pursuant to the technical parameters listed in Exhibit B.[2] The Bureau granted XM a similar STA request on January 4, 2006, which expires on July 15, 2006.[3] The lower power repeater will transmit at a maximum Effective Isotropically Radiated Power ("EIRP") of 2 kW, a power level which adjacent band licensees have stated does not present an interference concern. Because this repeater will transmit at a maximum EIRP of 2 kW and will be limited to coverage of a golf course for a limited duration, there will be no risk of harmful interference to other communications services.

Background. The Commission has recognized that terrestrial repeaters are critical to satellite radio to overcome the effects of signal blockage and multipath interference.[4] Consistent

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[1] 47 C.F.R. § 25.120.

[2] To the extent a particular tournament involves play at more than one course, XM intends to operate the lower power repeater at each course.

[3] *See XM Radio Inc.*, File No. SAT-STA-20051108-00213, DA No. 06-29 (January 4, 2006) ("*XM PGA STA Order*").

[4] *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*

Footnote continued on next page

1500 ECKINGTON PLACE NE WASHINGTON DC 20002-2194 PH 202 380 4000 FAX 202 380 4500 WWW.XMRADIO.COM

with this policy, the International Bureau ("Bureau") in September 2001 granted XM an STA to operate terrestrial repeaters while the Commission concludes its rulemaking proceeding regarding final technical rules.[5] In granting this STA, the Bureau noted that XM "needs to employ terrestrial repeaters to provide adequate service." *See XM Radio STA Order* ¶ 7. Soon after grant of this STA, XM began commercial service. Since that time, satellite radio in general and XM in particular have proven to be unmitigated successes, confirming the Commission's vision in establishing the satellite radio service. By the end of the first quarter of 2006, XM had over 6.5 million subscribers.

In March 2005, XM announced the addition of a PGA Tour Network channel to its channel line-up, which airs coverage of the weekly PGA Tour event along with daily programs designed for golf enthusiasts. Moreover, at the weekly PGA Tour event, XM offers its portable, hand-held satellite radios for sale or rental to spectators. By tuning to the XM PGA Tour Network channel, spectators are able to keep track of the leader board and real-time action around the course. The portable radios also allow spectators to be aware of impending severe weather.

Request for STA. XM requests an STA to operate one terrestrial repeater at the weekly PGA Tour event at the locations and during the dates listed in Exhibit A. XM requests this STA for a period of 180 days after grant[6] or until the date on which permanent rules become effective for the operation of terrestrial repeaters, whichever occurs first. Grant of this STA will serve the public interest by ensuring that spectators at the weekly PGA Tour event receive adequate

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Footnote continued from previous page

Further Notice of Proposed Rulemaking, 12 FCC Rcd 5754 (1997) ("*DARS Order and FNPRM*").

[5] *XM Radio, Inc., Application for Special Temporary Authority to Operate Satellite Digital Audio Radio Service Complimentary Terrestrial Repeaters, Order and Authorization*, DA 01-2172, at ¶ 18 (rel. September 17, 2001) ("*XM Radio STA Order*"). Since this time, the Bureau has granted XM five additional STAs to operate terrestrial repeaters. *See* XM Radio Inc. Request for Special Temporary Authority, File No. SAT-STA-20020815-00153 (filed August 13, 2002; granted September 30, 2002); XM Radio Inc., Request for Special Temporary Authority, File No. SAT-STA-20030409-00076 (granted June 23, 2003); *XM Radio Inc., Order and Authorization*, DA 04-2987, File No. SAT-STA-20031112-00371 (Deputy Chief, Satellite Division, International Bureau, September 15, 2004); *XM Radio Inc., Order*, DA 05-1642 (June 9, 2005); *XM Radio Inc.*, File No. SAT-STA-20051108-00213, DA No. 06-29 (January 4, 2006).

[6] XM requests authority to operate a lower power repeater only at those events listed in Exhibit A that occur within 180 days after grant of this request. XM will file a new STA request prior to the expiration of this request for authority to operate a lower power repeater at those PGA Tour events that occur beyond 180 days after grant of this request.

satellite radio service. While many areas on a golf course, such as fairways and greens, provide an unobstructed view of XM's satellites, there are many other areas on a golf course where the view may be obstructed, particularly by trees and foliage. It is in these obstructed areas where spectators at a golf tournament are located so as to avoid interfering with the golfers. By operating one lower power repeater, XM will be able to mitigate the potential blockage of its satellite signal by trees and foliage, thereby providing spectators with adequate satellite radio service.

Operation of one lower power repeater at each weekly PGA Tour event will not cause harmful interference to adjacent-band Wireless Communications Service ("WCS") licensees or any other communications service.[7] First, the repeater will be deployed in a manner intended to allow for coverage primarily of the golf course. Most of the WCS applications that have been contemplated to date are for fixed services to homes and businesses. Although XM understands that there are no WCS facilities in operation today, even if there were, it is extremely unlikely that WCS equipment would be used on a golf course. Second, the EIRP of the repeater will never exceed 2 kW EIRP. The adjacent-band WCS licensees are permitted to operate base stations at a power level of 2 kW EIRP and therefore must be able to withstand potential interference from such operations. Moreover, as the Bureau acknowledged in granting XM's original repeater STA request, the WCS licensees have confirmed that operation of terrestrial repeaters at an EIRP of 2 kW or less is not an interference concern.[8]

Attached as Exhibit B is the following technical information for the lower power repeater XM seeks to operate pursuant to this STA: (1) maximum EIRP; (2) maximum antenna height; (3) possible antenna types; (4) range of antenna beamwidth; and (5) range of orientation. XM has also attached as Exhibit C the specification sheets for each of the possible antenna types listed. Because the terrain and foliage of each golf course will vary, XM is unable to specify precisely the type of antenna, antenna beamwidth, or antenna orientation it will deploy at each golf course.[9] XM accordingly requests the flexibility to operate one lower power repeater at the events listed in Exhibit A within the range of technical parameters listed in Exhibit B.

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[7] XM previously notified Sirius Satellite Radio Inc. of a similar request, and it did not object.

[8] *XM Radio 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.").

[9] For this reason, to the extent necessary, XM requests a waiver of Section 25.120(a) of the Commission's rules which requires an STA request to include the "full particulars of the proposed operation." 47 C.F.R. § 25.120(a). The good cause for this waiver is that requiring XM to file for and receive an STA for each individual PGA Tour event will require both the Commission and XM to expend significant resources with no concomitant benefit. This is especially the case because the Bureau has acknowledged that the interference concerns of adjacent-band WCS licensees are limited to repeaters operating with an EIRP greater than 2 kW.

Footnote continued on next page

XM certifies that its operation of the lower power repeater will comply with the same conditions the Bureau imposed on XM in granting its current STA to operate a lower power repeater at PGA Tour events. *See XM Radio PGA STA Order.* Specifically, XM Radio certifies the following:

(a) Any actions taken as a result of this STA are solely at XM's own risk. This STA will not prejudice the outcome of the final rules adopted by the Commission in GEN Docket 95-91.

(b) Operation of the lower power repeater authorized pursuant to this STA is on a non-interference basis with respect to all permanently authorized radiocommunication facilities. XM will provide the information and follow the process set forth in paragraphs 14 and 17 in 16 FCC Rcd 16781 (Int'l Bur. 2001) as modified by 16 FCC Rcd 18484 (Int'l Bur. 2001).

(c) The lower power repeater is restricted to the simultaneous retransmission of the complete programming, and only that programming, transmitted by the satellite directly to SDARS receivers.

(d) Where applicable, coordination of the lower power repeater shall be completed with all affected Administrations prior to operation, in accordance with all applicable international agreements including those with Canada and Mexico.

(e) The lower power repeater will comply with Part 17 of the Commission's rules regarding antenna structures.

(f) The lower power repeater 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.

(g) The out-of-band emissions of the lower power repeater will be limited to 75+log (EIRP) dB less than the transmitter EIRP.

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XM STA Order ¶ 12. Such a waiver is also consistent with precedent. In granting XM's original repeater STA, the Bureau held that XM was not required to provide the full particulars of operation for the repeaters it proposed to operate with an EIRP of 2 kW or less because these repeaters would not impact adjacent-band WCS licensees. *Id.* ¶ 9.

One of the conditions imposed in the original STA grant was the requirement that XM pre-coordinate with WCS licensees any repeater affecting an operational WCS base station. *See XM Radio STA Order* ¶ 14. XM is not aware of any operational WCS base station in any of the locations listed in Exhibit A.

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).

XM has attached hereto a check made payable to the Federal Communications Commission for the sum of Seven Hundred Thirty-Five Dollars ($735.00). This filing fee amount is applicable to requests for STAs for geostationary ("GSO") satellites. *See* International and Satellite Services Fee Filing Guide (September 2004).

Please direct any questions regarding this matter to the undersigned.

Very truly yours,

Joseph M. Titlebaum
General Counsel

cc: Stephen Duall, FCC

Exhibit A

XM requests Special Temporary Authority to operate one lower power repeater with a maximum EIRP of 2 kW at the locations and during the dates listed below.[1]

Event	Course	Location	Dates
John Deere Classic	TPC at Deere Run	Silvis, IL	7/15-7/16
B.C. Open	En-Joie Golf Club	Endicott, NY	7/17-7/23
U.S. Bank Championship in Milwaukee	Brown Deer Park Golf Course	Milwaukee, WI	7/24-7/30
Buick Open	Warwick Hills Golf and Country Club	Grand Blanc, MI	7/31-8/6
The International	Castle Pines Golf Club	Castle Rock, CO	8/7-8/13
PGA Championship	Medinah Country Club	Medinah, IL	8/14-8/20
WGC-Bridgestone Invitational	Firestone Country Club	Akron, OH	8/21-8/27
Reno Tahoe Open	Montreux Golf and Country Club	Reno, NV	8/21-8/27
Deutsche Bank Championship	TPC of Boston	Norton, MA	8/28-9/4
84 Lumber Classic	Nemacolin Woodlands Resort & Spa (Mystic Rock Course)	Farmington, PA	9/11-9/17
Valero Texas Open	LaCantera Golf Club	San Antonio, TX	9/18-9/24
Southern Farm Bureau Classic	Annandale Golf Club	Madison, MS	9/25-10/1
Chrysler Classic of Greensboro	Forest Oaks Country Club	Greensboro, NC	10/2-10/8

[1] To the extent a particular tournament involves play at more than one course, XM intends to operate the lower power repeater at each course.

Las Vegas Invitational	TPC at Summerlin; TPC at the Canyons	Las Vegas, NV	10/9-10/15
Funai Classic	Walt Disney World Resort (Magnolia Course, Palm Course)	Lake Buena Vista, FL	10/16-10/22
Chrysler Championship	Westin Innisbrook Resort (Copperhead Course)	Palm Harbour, FL	10/23-10/29
The Tour Championship presented by Coca-Cola	East Lake Golf Club	Atlanta, GA	10/30-11/5
Tommy Bahama Challenge	Grayhawk Golf Club	Scottsdale, AZ	11/6-11/7
Merrill Lynch Shootout	Tiburon Golf Club	Naples, FL	11/10-11/12
Wendy's 3-Tour Challenge	Lake Las Vegas Resort	Henderson, NV	11/13-11/14
Bard Capital Challenge	TPC at The Canyons	Las Vegas, NV	11/18-11/19
Merrill Lynch Skins Game	Trilogy Golf Club; PGA West Stadium Course	La Quinta, CA	11/25-11/26
PGA Tour Qualifying Tournament	PGA West Stadium Course; Jack Nicklaus Tournament Course	La Quinta, California	11/29-12/4
Target World Challenge presented by Countrywide	Sherwood Country Club	Thousand Oaks, CA	12/11-12/17

Exhibit B

Maximum EIRP:	2 kW
Maximum antenna height:	25 meters
Possible antenna types:	Omni (DAB-2350) or Panel (DAB-2304)
Range of antenna beamwidth:	360, 160, 120, 90, 60, or 45
Range of orientation:	any point from 0 to 359

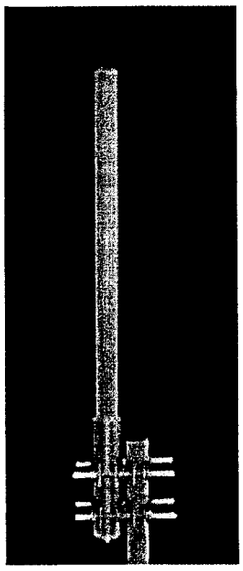
Appendix C

Antenna Specification Sheets

TIL-TEK

TA-2350-DAB Omnidirectional

2330 - 2345 MHz



The TA-2350-DAB is a medium power vertically polarized omnidirectional antenna specifically designed for Digital Audio Broadcast transmission. The antenna consists of a phased corporately fed broadband dipole array which is configured to provide electrical beam downtilt and null fill. The antenna elements are at DC ground to aid in lightning protection.

Electrical Specifications

Frequency Range: 2330-2345 MHz
Gain: (dBi) 10
VSWR: 1.4:1 max.
Polarization: Linear Vertical
Power Rating: 200 Watts average, 800 Watts peak
H-Plane Beamwidth: 360 degrees
E-Plane Beamwidth: 8 degrees
Electrical Downtilt: 2 degrees
Cross Pol. Discrimination: 20 dB min.
Null Fill: -20 dB (1st Null)
Impedance: 50 ohms nominal
Termination: 7/16 DIN female

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

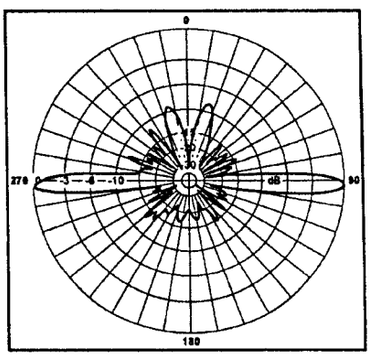
Mechanical Specifications

Length: 70 in. (1778 mm)
Diameter: 2.25 in. (57 mm)
Weight (incl. Clamps): 15 lb. (6.8 kg)
Rated Wind Velocity: 125 mph (200 km/h)
Hor. Thrust at rated wind: 31 lb. (14 kg)
Mounting Pipe: 1.75 - 4.0 in. (44.5 - 102 mm)

Materials

Radiating Elements: Nickel plated copper array
Radome: Gray UV stabilized fiberglass
Base: Irridited Aluminum
Clamps: HDG steel

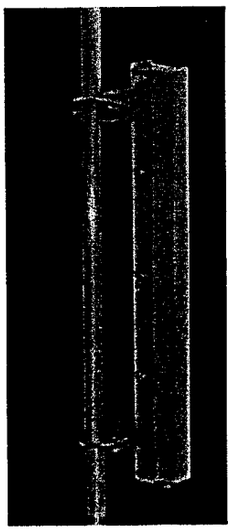
E-Plane



TIL-TEK

TA-2304-2-DAB 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: (dBi) 18 @ 45° 17 @ 60° 15 @ 90°
14 @ 120° 13 @ 160°
VSWR: 1.3:1 max.
Front/Back Ratio: 15 dB @ 180° ± 35°
Polarization: Linear Vertical
Power Rating: 200 Watts average, 800 Watts peak
H-Plane Beamwidth (-3 dBd):
Field Adjustable 45, 60, 90, 120, 160 degrees
E-Plane Beamwidth (-3 dBd): 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)

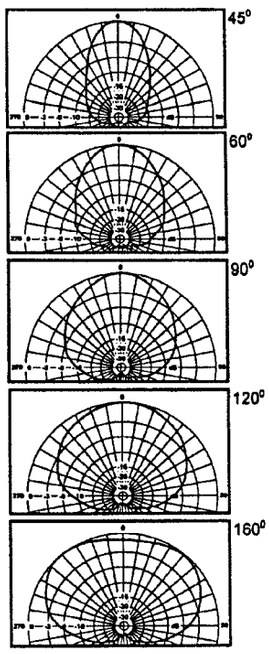
Mechanical Specifications

Length: 40 in. (1016 mm)
Width: 6.5 in. (165 mm)
Depth: 3.5 in. (89 mm)
Weight (Incl. Clamps): 10 lb. (4.5 kg)
Rated Wind Velocity: 125 mph (200 km/h)
Hor. Thrust at rated wind: 150 lb. (68 kg)
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: HDG steel

H-Plane



E-Plane