

File # SAT-STA-20091023-00112

Call Sign _____ Grant Date 11/05/09
(or other identifier)

Approved by OMB
3060-0678

Term Dates see attached
From 11/05/09 To: Conditions

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



Date & Time Filed: Oct 23 2009 4:22:25:790PM
File Number: SAT-STA-20091023-00112
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:
Request for Special Temporary Authority to Operate a Low Power Terrestrial Repeater in Puerto Rico for 60 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-20091023-00112

Special temporary authority (STA) is granted to Sirius XM Radio Inc. (Sirius XM) to operate one terrestrial repeater with an Effective Isotropically Radiated Power (EIRP) of up to 1000 watts (average) in San Juan, Puerto Rico, for a period of 60 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 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+ 10log(EIRP) dB less than the transmitter EIRP.
8. This STA expires after 60 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-20091023-00112

Call Sign _____ Grant Date 11/05/09
(or other identifier)

From 11/05/09 Term Dates see conditions
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 a low power terrestrial repeater in Puerto Rico for 60 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>Attachment 3:</td> <td></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>					

FCC NOTICE REQUIRED BY THE PAPERWORK REDUCTION ACT

The public reporting for this collection of information is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the required data, and completing and reviewing the collection of information. If you have any comments on this burden estimate, or how we can improve the collection and reduce the burden it causes you, please write to the Federal Communications Commission, AMD-PERM, Paperwork Reduction Project (3060-0678), Washington, DC 20554. We will also accept your comments regarding the Paperwork Reduction Act aspects of this collection via the Internet if you send them to PRA@fcc.gov. PLEASE DO NOT SEND COMPLETED FORMS TO THIS ADDRESS.

Remember – You are not required to respond to a collection of information sponsored by the Federal government, and the government may not conduct or sponsor this collection, unless it displays a currently valid OMB control number or if we fail to provide you with this notice. This collection has been assigned an OMB control number of 3060-0678.

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 23, 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 60-Day Special Temporary Authority
For a Low Power Repeater in Puerto Rico**

Dear Ms. Dortch:

Pursuant to Section 25.120(b)(3) of the Commission's rules, 47 C.F.R. § 25.120(b)(3), Sirius XM Radio Inc. ("Sirius XM"), a satellite radio licensee in the Satellite Digital Audio Radio Service, hereby requests 60-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 Puerto Rico.¹

The Commission authorized the use of this repeater last month through an STA covering multiple sites in Puerto Rico.² This repeater -- identified as PR01-01 -- is the anchor site for the repeater network that Sirius XM is constructing in Puerto Rico. The PR01-01 site has been constructed and began providing commercial service. Shortly thereafter, Sirius XM was notified by the landlord of the building on which this repeater is located that a planned replacement of four 12' chillers on the roof (used in connection with the building's central cooling system) would require equipment lifting devices to be operated on the rooftop, in the vicinity of the transmit antennas, for the duration of that project. Sirius XM believes that the persons controlling these devices may be exposed to unacceptable levels of RF radiation if the PR01-01 repeater were to transmit at its currently authorized height. However, by conducting tests pursuant to our experimental license, Call Sign WF2XDO, OET File No. 0326-EX-PL-2009, Sirius XM has confirmed that relocating the

¹ Under Section 25.120(b)(3), the Commission may grant this application for a 60-Day STA without placing it on Public Notice.

² See Sirius XM Radio Inc., *Order and Authorization*, IBFS File No. SAT-STA-20081027-00210 (Int'l. Bureau, Sept. 11, 2009).

two omni-directional antennas only six feet higher than the STA height will eliminate the potential for excessive levels of RF radiation exposure to those workers. Sirius XM has completed an MPE test report showing this result and will retain that report in its files

Anticipating the commencement of construction on the rooftop and to avoid this potential RF hazard, Sirius XM has discontinued providing service using this repeater and herein requests authority to increase the antenna height from 260 feet to 266 feet. This application seeks to make no changes to this repeater other than this minor increase in height.³ Sirius XM intends to promptly resume commercial operations at this site once the Commission grants this application and to keep the antenna at the new height after construction has been completed.

The Commission has recognized that SDARS operators require terrestrial repeaters to provide high-quality service nationwide.⁴ Consistent with this policy, in September 2001, the Bureau granted STAs to Sirius XM to operate a nationwide network of terrestrial repeaters.⁵ 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.⁶

³ The 180 day STA that Sirius XM will file for this site will also request authority to increase this repeater's power from 1000 watts to 2000 watts EIRP.

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 Further Notice of Proposed Rulemaking*, 12 FCC Rcd 5754, 5770 ¶ 37 (1997).

⁵ *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").

⁶ *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

Public Interest Considerations. As noted above, granting the instant STA will serve the public interest by allowing Sirius XM to continue service using this repeater, thereby minimizing the disruption of service to residents of San Juan, Puerto Rico and ensuring their continued ability to receive high quality satellite radio service. Granting this STA will also serve the public interest by eliminating the possibility of any excessive RF radiation exposure to workers replacing equipment on the building's roof.

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.⁷ 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 repeater is attached as Exhibit D.

Interference Considerations. As proposed in this STA, the repeater will continue to 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 Puerto Rico.⁸ 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.⁹ However,

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.

⁷ 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.

⁸ 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 these markets. Moreover, Sirius XM's own reviews of "substantial service" filings do not show any operational WCS stations in this market.

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.

if prohibited interference does occur, Sirius XM will cease operation of the repeater until such interference can be eliminated.¹⁰

Ownership and Control of Repeaters. Sirius XM will continue to 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;

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.

¹⁰ 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.

- (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).

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

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)
San Juan, PR	PR01-01 (Sector 1)	66-03-32	18-25-28	TA-2350-DAB	N/A	266	0	1000
San Juan, PR	PR01-01 (Sector 2)	66-03-32	18-25-28	TA-2350-DAB	N/A	266	0	1000

Exhibit B

Google™ Satellite Image of Repeater Location

PR01-01



Exhibit C

Topographic Map of Repeater Location

PR01-01

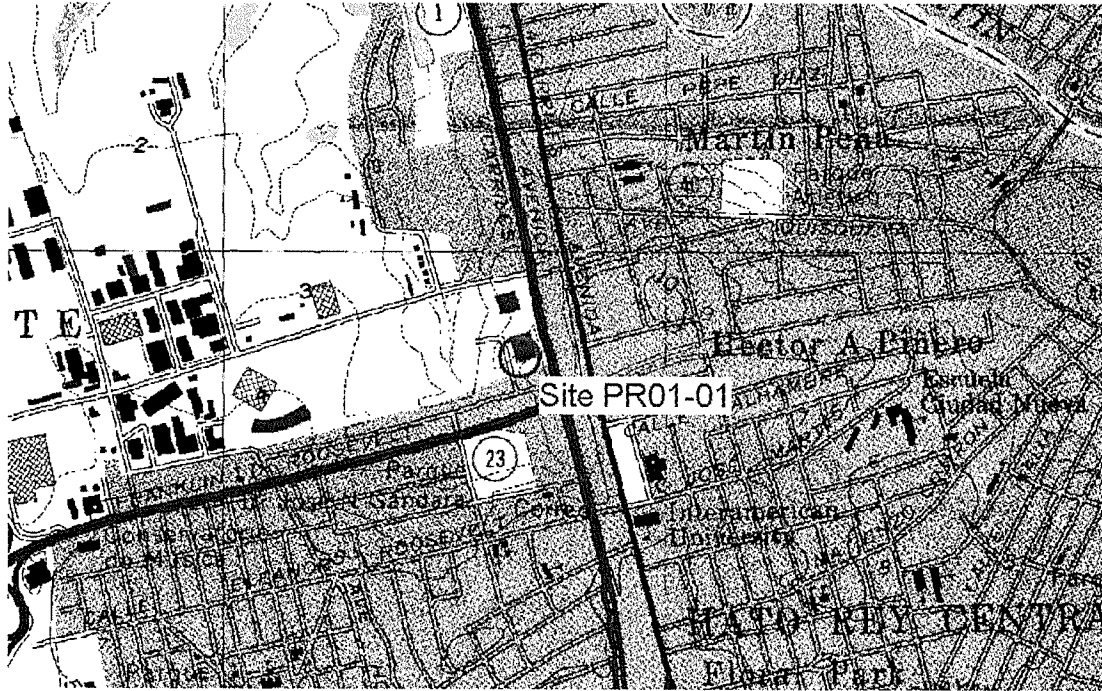


Exhibit D

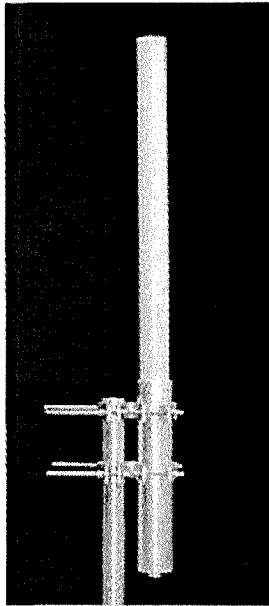
Antenna Specification Sheet for Repeaters



TA-2350-DAB

Medium Power 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: 10 dBi
- VSWR: 1.4:1 max.
- Polarization: Vertical
- Power Rating: 200 W avg., 800 W peak
- H-Plane Beamwidth: 360 degrees
- E-Plane Beamwidth: 8 degrees
- Electrical_Downtilt: 2, 4, 6 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
- Clamps: HDG steel

E-Plane

