Approved Antennas

Antennas approved for use without Bi-Directional Amplifier

When the module is connected directly to an antenna, the following antennas may be used.

Type	Pattern	Manufacturer	Manufacturer's Part Number	Gain	Connector	Locus PN
1/2 Wave	Omni	NCC	N2400SM9B	2dB	SMA-RP	540-0003
1/2 Wave art.	Omni	Nearson	S181AH-2450S	2dB	SMA-RP	540-0002
Collinear Array	Omni	Antenex	TRA24003NP	3dB	SMA-RP	540-0036
Collinear Array,art.	Omni	Nearson	S151AH-2450S	5dB	SMA-RP	540-0005
Collinear Array	Omni	Maxrad	MFB-24008RPN	8dB	N-RP	540-0006
Collinear Array	Omni	Mobile Mark	OD9-2400	9dB	N-RP	540-0037
Collinear Array	Omni	Mobile Mark	OD12-2400	12dB	N-RP	540-0038
Patch	Directional	Arc Wireless	AAI-000-89	8dB	SMA-RP	540-0010
Patch	Directional	Maxrad	MP24011PTRPMSMA	11dB	SMA-RP	540-0011
Patch	Directional	Arc Wireless	AAI-000-79	13dB	N-RP	540-0034
Patch *	Directional	Arc Wireless	AAI-000-84	19dB	N-RP	540-0035
Yagi	Directional	Maxrad	MYP24013PTRPNF	13dB	N-RP	540-0009
Parabolic *	Directional	Pacific Wireless	PMANT15-HD-PF1 RPN	15 dB	N-RP	540-0017
Parabolic *	Directional	Pacific Wireless	PMANT19-HD-PF1 RPN	19 dB	N-RP	540-0018
Parabolic *	Directional	Pacific Wireless	PMANT25 RPN	24 dB	N-RP	540-0008

Antennas for use with Amplifier

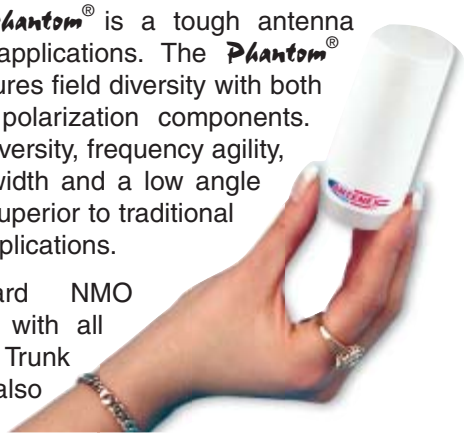
When the module is used in conjunction with the Amplifier, the antennas are limited to those below.

Type	Pattern	Manufacturer	Manufacturer's Part Number	Gain	Connector	Locus PN
1/2 Wave	Omni	NCC	N2400SM9B	2dB	SMA-RP	540-0003
1/2 Wave art.	Omni	Nearson	S181AH-2450S	2dB	SMA-RP	540-0002
Collinear Array	Omni	Antenex	TRA24003NP	3dB	SMA-RP	540-0036
Collinear Array,art.	Omni	Nearson	S151AH-2450S	5dB	SMA-RP	540-0005
Collinear Array	Omni	Maxrad	MFB-24008RPN	8dB	N-RP	540-0006
Collinear Array	Omni	Mobile Mark	OD9-2400	9dB	N-RP	540-0037
Collinear Array	Omni	Mobile Mark	OD12-2400	12dB	N-RP	540-0038
Patch	Directional	Arc Wireless	AAI-000-89	8dB	SMA-RP	540-0010
Patch	Directional	Maxrad	MP24011PTRPMSMA	11dB	SMA-RP	540-0011
Patch	Directional	Arc Wireless	AAI-000-79	13dB	N-RP	540-0034
Yagi	Directional	Maxrad	MYP24013PTRPNF	13dB	N-RP	540-0009

Note: To prevent high gain antennas from being used with an amplifier, Parabolic antennas will not be sold if the user is ordering an amplifier.

Phantom® Antennas *Patented Whipless Performance*

Our unique patented Phantom® is a tough antenna for outdoor or indoor applications. The Phantom® revolutionary design features field diversity with both vertical and horizontal polarization components. This gives the antenna diversity, frequency agility, low visibility, wide bandwidth and a low angle radiation pattern that is superior to traditional gain antennas in most applications.



The industry standard NMO mounting socket mates with all ANTENEX® Magnetic, Trunk lid, and hole mounts. We also provide a threaded stud mount model for vandal resistant mounting on brackets, panels, ceilings or any other kind of housing.

The Phantom® patented technology is beneficial when high performance is desired and extreme ruggedness and low profile is required.

Indoor Enhancement

Product Courtesy of Gastronics, Inc.

Wireless Data Collection

PCS

Vending

The ANTENEX® Phantom® Antennas are Ideal for Vending, Data, Mobile Transit, and PCS Applications.

TRA4503P Permanent Mount

TRA8063

TRAB8063

TRA4503

TRAB4503

Custom Tuning Available on Phantom® models for only $10.00

Ordering Guide - *Clear, Easy & Sensible!*

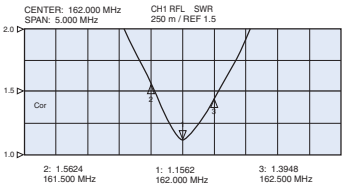
***TRA9023** = Phantom® Antenna Model, White, 902-928 MHz, 3 dB-MEG.*

TRA	**Antenna Style**	**Phantom®** *Low-Profile Transit Antenna*			
Blank	**Finish**	**Blank** = White **B** = Black			
902	**Frequency**	*Frequency component of part number in bold below:*			
		142-164	**150**-174	**210**-230	**410**-425
		430-450	**450**-470	**470**-490	**806**-866
		821-896	**890**-960	**902**-928	**2400**-2500
3	**Gain**	**0** = Unity	**3** = 3 dB-MEG		
Blank	**Mount**	**Blank** = Normal Model		**N** = No Ground Plane Model	
Blank	**Mount Option**	**Blank** = 3/4" Screw Base		**P** = Permanent Hole Mount	

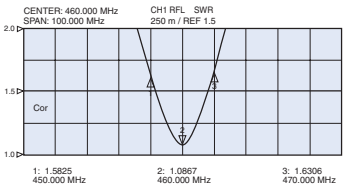
US Patent Number: 5,977,931

Model	Frequency Range	Radome Height	Gain	MSRP
WHITE MODELS				
VHF UNITY MODELS				
TRAT1420	142-160 MHz	3.30"	Unity	72.00
TRAT1500	150-168 MHz	3.30"	Unity	72.00
TRAT1560	162-172 MHz	3.30"	Unity	72.00
TRA2100	210-225 MHz	3.30"	Unity	72.00
UHF 3 dB-MEG MODELS				
TRA4103	410-425 MHz	3.30"	3 dB-MEG*	41.08
TRA4303	430-450 MHz	3.30"	3 dB-MEG*	41.08
TRA4503	450-470 MHz	3.30"	3 dB-MEG*	41.08
TRA4703	470-490 MHz	3.30"	3 dB-MEG*	41.08
800 MHz to 2.4 GHz 3 dB-MEG MODELS				
TRA8063	806-866 MHz	2.30"	3 dB-MEG*	38.70
TRA8213	821-896 MHz	2.30"	3 dB-MEG*	38.70
TRA8903	890-960 MHz	2.30"	3 dB-MEG*	38.70
TRA9023	902-928 MHz	2.30"	3 dB-MEG*	38.70
TRA24003	2400-2500 MHz	2.30"	3 dB-MEG*	38.70
900 MHz to 2.4 GHz NGP 3 dB-MEG MODELS				
TRA9023N	902-928 MHz	3.30"	3 dB-MEG*	41.08
TRA24003N	2400-2500 MHz	3.30"	3 dB-MEG*	41.08
UHF PERMANENT 3 dB-MEG MODELS				
TRA4303P	430-450 MHz	3.30"	3 dB-MEG*	65.13
TRA4503P	450-470 MHz	3.30"	3 dB-MEG*	65.13
TRA4703P	470-490 MHz	3.30"	3 dB-MEG*	65.13
800 MHz to 2.4 GHz PERMANENT 3 dB-MEG MODELS				
TRA8063P	806-866 MHz	2.30"	3 dB-MEG*	65.13
TRA8213P	821-896 MHz	2.30"	3 dB-MEG*	65.13
TRA24003P	2400-2500 MHz	2.30"	3 dB-MEG*	65.13
800 MHz to 2.4 GHz PERMANENT NGP 3 dB-MEG MODELS				
TRA8213NP	821-896 MHz	2.30"	3 dB-MEG*	65.13
TRA8903NP	890-960 MHz	2.30"	3 dB-MEG*	65.13
TRA9023NP	902-928 MHz	2.30"	3 dB-MEG*	65.13
TRA24003NP	2400-2500 MHz	2.30"	3 dB-MEG*	65.13

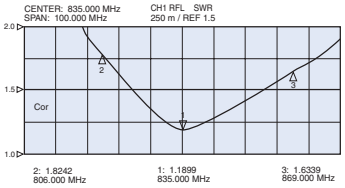
VSWR



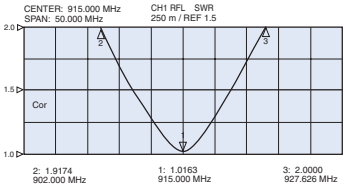
TRAT1500



TRA4503



TRA8063



TRA9023N

 See http://www.antenex.com for product additions and more product details

BLACK MODELS

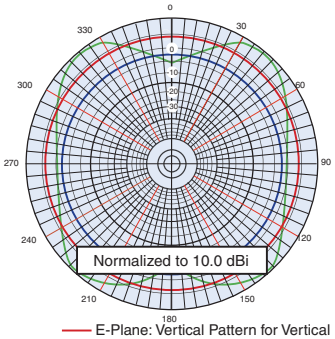
Model	Frequency Range	Radome Height	Gain	MSRP
VHF UNITY BLACK MODELS				
TRABT1420	142-160 MHz	3.30”	Unity	72.00
TRABT1500	150-168 MHz	3.30”	Unity	72.00
TRABT1560	162-172 MHz	3.30”	Unity	72.00
TRAB2100	210-225 MHz	3.30”	Unity	72.00
UHF 3 dB-MEG BLACK MODELS				
TRAB4103	410-425 MHz	3.30”	3 dB-MEG*	41.08
TRAB4303	430-450 MHz	3.30”	3 dB-MEG*	41.08
TRAB4503	450-470 MHz	3.30”	3 dB-MEG*	41.08
TRAB4703	470-490 MHz	3.30”	3 dB-MEG*	41.08
800 MHz to 2.4 GHz 3 dB-MEG BLACK MODELS				
TRAB8063	806-866 MHz	2.30”	3 dB-MEG*	38.70
TRAB8213	821-896 MHz	2.30”	3 dB-MEG*	38.70
TRAB8903	890-960 MHz	2.30”	3 dB-MEG*	38.70
TRAB9023	902-928 MHz	2.30”	3 dB-MEG*	38.70
TRAB24003	2400-2500 MHz	2.30”	3 dB-MEG*	38.70
900 MHz to 2.4 GHz NGP 3 dB-MEG BLACK MODELS				
TRAB9023N	902-928 MHz	2.30”	3 dB-MEG*	41.08
TRAB24003N	2400-2500 MHz	2.30”	3 dB-MEG*	41.08
UHF PERMANENT 3 dB-MEG BLACK MODELS				
TRAB4303P	430-450 MHz	3.30”	3 dB-MEG*	65.13
TRAB4503P	450-470 MHz	3.30”	3 dB-MEG*	65.13
TRAB4703P	470-490 MHz	3.30”	3 dB-MEG*	65.13
800 MHz to 2.4 GHz PERMANENT 3 dB-MEG BLACK MODELS				
TRAB8063P	806-866 MHz	2.30”	3 dB-MEG*	65.13
TRAB8213P	821-896 MHz	2.30”	3 dB-MEG*	65.13
TRAB24003P	2400-2500 MHz	2.30”	3 dB-MEG*	65.13
900 MHz to 2.4 GHz NGP 3 dB-MEG PERMANENT BLACK MODELS				
TRAB9023NP	902-928 MHz	2.30”	3 dB-MEG*	65.13
TRAB24003NP	2400-2500 MHz	2.30”	3 dB-MEG*	65.13

*Gain on a Phantom® antenna is measured in db-MEG.
For more information on dB-MEG, visit our website at http://www.antenex.com.

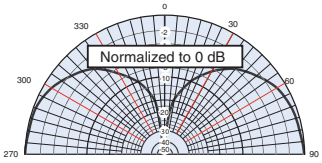
Phantom® Cutaway

TRABT1420 VHF Field Tunable with Easy Tuning Port
with the use of a 1/16” Allen key

Typical Field Pattern for 3.0 dB - MEG Phantom



Typical Vertical Field Pattern for VHF Phantom (0 dB - MEG)



E-Plane: Vertical Pattern for Vertical Polarization
Elevation Cut: Elevation Pattern from Phantom™ to Illuminated Signals
H-Plane: Horizantal Pattern for Horizontal Polarization

Features & Benefits

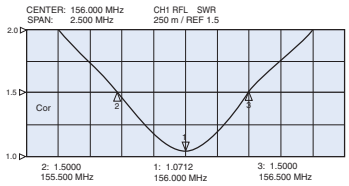
Whipless Design: The patented whipless design of our Phantom® antenna allows car washes without removing the antenna. Whipless means they don't look like antennas, attract less attention, less vandalism, and have lower wind resistance. The Phantom® is also less susceptible to damage by trees, garages or other obstructions.

Field Diversity: Field diversity means that the antenna is simultaneously sensitive to both the electric and magnetic fields of the signal, like having two antennas. Field diversity makes the antenna resistant to the picket-fence fading and multipath nulls that are found in urban operation and undulating mobile environments.

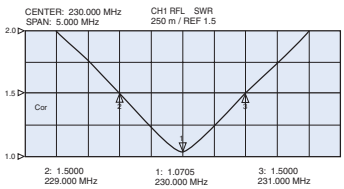
Permanent Mounting: Permanent mount versions of the UHF and higher frequency models are available for high risk applications such as metering where antennas must resist vandalism and achieve economical mounting.

Versatile: Excellent for voice or telemetry applications.

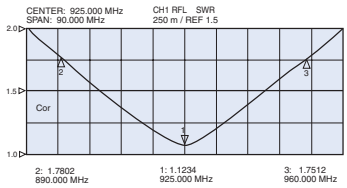
VSWR



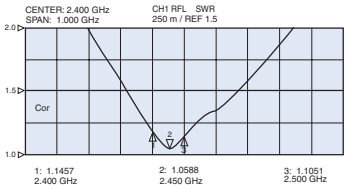
TRABT1420



TRAB2100



TRA8903



TRAB24003

Technical Data - Product Features & Information

	142-172 MHz	210-225 MHz	
● ***Gain:***	*Unity*	*Unity*	
● ***Frequency Range:***	*142-160 MHz* *150-168 MHz* *162-172 MHz*	*210-225 MHz*	
● ***VSWR:***	*<1.5: 1 850 kHz* *<2.0:1 1.5 MHz*	*<1.5:1 2.2 MHz* *<2.0:1 4.0 MHz*	
● ***Maximum Power:***	*60 watts*	*100 watts*	
● ***Bandwidth:***	*1 MHz*	*4 MHz*	
● ***Impedance:***	*50 ohms*	*50 ohms*	
● ***Height:***	*3 1/2” / 2 3/4”*	*2 3/4”*	
	410-490 MHz	**800-900 MHz**	**2400 MHz**
● ***Gain:***	*3 dB-MEG*	*3 dB-MEG*	*3 dB-MEG*
● ***Frequency Range:***	*410-425 MHz* *430-450 MHz* *450-470 MHz* *470-490 MHz*	*806-866 MHz* *821-896 MHz* *890-960 MHz* *902-928 MHz*	*2400-2500 MHz*
● ***VSWR:***	*<1.5:1 10 MHz* *<2.0:1 20 MHz*	*<1.8:170 MHz*	*<1.5:1 100 MHz*
● ***Maximum Power:***	*150 watts*	*150 watts* *100 watts NGP*	*100 watts*
● ***Bandwidth:***	*>20 MHz*	*>70 MHz*	*>100 MHz*
● ***Impedance:***	*50 ohms*	*50 ohms*	*50 ohms*
● ***Height:***	*3½”*	*2½”*	*3½”*

ARC wireless solutions™

Bridging the gaps in end-to-end wireless network solutions, through innovation™

ARC Wireless Communications Products Division

Antennas America™

2.45 GHz Panel Antennas

Features

- Complete line of planar antennas
- Flat design provides high efficiency and low back lobes with minimal depth dimension
- Allowed in covenant controlled areas
- Easy installation saves time and money
- Mounting brackets included
- Protected from the environment (ice loading and wildlife)
- Supports all applications from 2.4 to 2.5 GHz (ISM, Home RF, 802.11b, Bluetooth™.

Specifications

Electrical (typical)	**Panel 8.5dBi**	**Panel 13dBi**	**Panel 19dBi**
Frequency	2.45 GHz	2.45 GHz	2.45 GHz
Gain	8.5dBi	13dBi	19dBi
Polarization	Linear	Linear	Linear
Antenna design	Single patch	Four patch	Sixteen patch
Bandwidth - 1.5:1 VSWR	100 MHz	100 MHz	100 MHz
Horizontal beamwidth	60°	38°	18°
Vertical beamwidth	60°	38°	18°
Cross polarization	>30dB	>30dB	>30dB
Maximum power input watts	100	100	100
Front-to-back ratio	>30dB	>30dB	>30dB
Efficiency	85%	75%	70%
Connectors	SMA female, TNC female, N female	SMA female, TNC female, N female	N female
Lightning protection	Direct ground	Direct ground	Direct ground
Mechanical			
Width - in (cm)	5.15 (13.1)	8.5 (21.6)	15.5 (39.4)
Height - in (cm)	5.15 (13.1)	8.5 (21.6)	15.5 (39.4)
Depth - in (cm)	.82 (2.1)	1.125 (2.8)	1.125 (2.8)
Case material	High impact UV stabilized plastic, ultrasonically welded	High impact UV stabilized plastic, ultrasonically welded	High impact UV stabilized plastic, ultrasonically welded
Case color	White	Gray, other colors available on customer order	
Wind/ice loading area - in^2 (cm^2)	26.5 (171)	72 (466)	240 (1552)
Lateral thrust @100 mph - lbs (kg)	5 (11)	10 (22)	15 (33)
Torsional moment @ 100 MPH with standard mounting - ft/lbs (m/kg)	0.1 (0.22)	0.2 (0.22)	0.4 (0.88)

4860 Robb St., Suite 101 • Wheat Ridge, CO 80033 • 303.421.4063 • FAX: 303.424.5085 • www.antennas.com
For more information e-mail sales@antennas.com or call sales 800.508.6532

XtremeWave™ MFBXP Series

MAXRAD™
An ISO-9001 Registered Company

PCS, 2.4 GHz ISM, MMDS and 5.8 GHz ISM Omnidirectional Base Station Antenna Series

The MAXRAD XtremeWave™ wireless broadband omnidirectional antennas are designed to provide maximum performance and reliability under the toughest weather conditions. These antennas feature a U.V. stable, vented radome that provides ultimate protection against weather elements. The line includes seven models covering MMDS, ISM and PCS frequencies with gains ranging from 4 to 12 dBi. These antennas can be mast, wall or ceiling mounted.

General Specifications:
Omnidirectional base station antennas

Radome Material:
UV resistant pultruded fiberglass

Polarization:
Vertical

Nominal Impedance:
50 Ohms

Mounting Base Diameter:
1.25 inches (all models except MFB24012)
1.5 inches (model MFB24012)

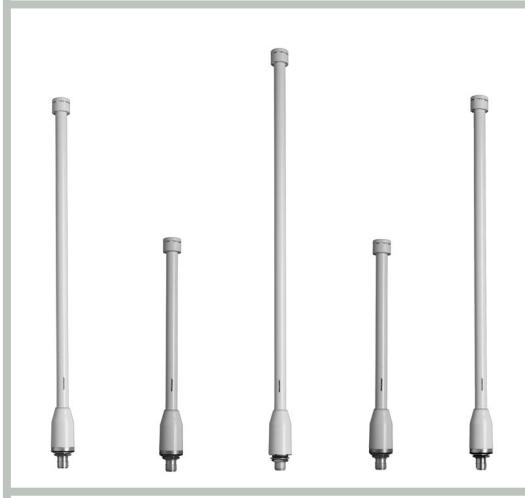
Mounting Method (sold separately):
MMK1924 – L-bracket mount for wall or pipe mount (not recommended for use with model MFB24010 or MFB24012)
MMK8 - Aluminum extruded bracket for mast mounting (not recommended for use with MFB24012)
MMK11 - Ceiling mount bracket (for MFB24004, MFB24006 and MFB24008 only)
MMK12 - Heavy duty bracket for mast mounting the MFB24012
MMK14 - light duty mounting clamp for MFB24012

Termination:
Type N female standard with all models, except MFB24012
Type N female reverse polarity and reverse threaded connectors optional
16” RG-213 pigtail with N female connector for model MFB24012 only

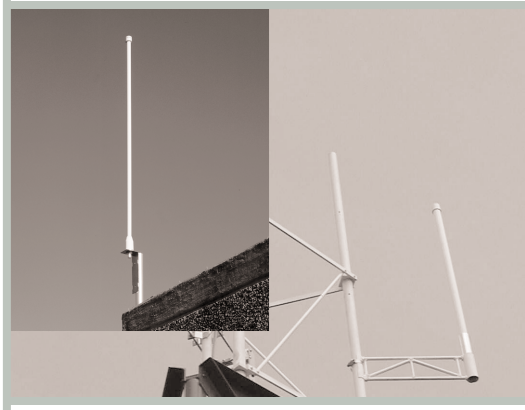
Features and Benefits:

- U.V. stable, pultruded fiberglass radome. Allows outdoor installation even in harsh climates.
- Vented system design. Provides reliable performance by protecting the electrical design against extreme moisture and/or temperatures.
- Thread relief on connector (all models, except MFB24012 which has a pigtail.) Improved accessibility for taping reduces installation time and improves overall effectiveness.
- Internal o-ring seal in the base of the antenna with integrated connector at the base. Assures a watertight seal to prevent water from migrating into the antenna connector (all models, except MFB24012 which has a pigtail.)
- Electrical downtilt options on select models. Provide system planners flexibility in challenging operating environments.

XtremeWave™ MFB24012 (2.4 GHz ISM)



XtremeWave™ Models 25007 (MMDS), MFB58009 (5.8 GHz ISM) and MFB19008A (PCS), MFB24006 and MFB24008 (2.4 GHz ISM) Antennas



Specifications

Electrical Specifications

Model #	Frequency Range	Gain	Bandwidth @ 1.5:1 WSWR	Vertical Beamwidth @ 1/2 Power	VSWR	Maximum Power	Downtilt
MFB19008A	1850-1990 MHz	8 dBi	140 MHz	12°	< 1.5:1	25 Watts	N/A
MFB24004	2400-2483.5 MHz	4 dBi	100 MHz	30°	< 1.5:1	25 Watts	N/A
MFB24006	2400-2483.5 MHz	6 dBi	100 MHz	20°	< 1.5:1	25 Watts	N/A
MFB24008	2400-2483.5 MHz	8 dBi	100 MHz	13°	< 1.5:1	25 Watts	N/A
MFB24008DT3	2400-2483.5 MHz	8 dBi	100 MHz	13°	< 1.5:1	25 Watts	3°
MFB24008DT5	2400-2483.5 MHz	8 dBi	100 MHz	13°	< 1.5:1	25 Watts	5°
MFB24008DT7	2400-2483.5 MHz	8 dBi	100 MHz	13°	< 1.5:1	25 Watts	7°
MFB24008DT12	2400-2483.5 MHz	8 dBi	100 MHz	13°	< 1.5:1	25 Watts	12°
MFB24010	2400-2483.5 MHz	10 dBi	100 MHz	9°	< 1.5:1	25 Watts	N/A
MFB24012	2400-2500 MHz	12 dBi	100 MHz	7°	< 1.5:1	25 Watts	N/A
MFB25007	2500-2700 MHz	7 dBi	200 MHz	13°	< 1.5:1	25 Watts	N/A
MFB25007DT3	2500-2700 MHz	7 dBi	200 MHz	13°	< 1.5:1	25 Watts	3°
MFB58009	5725-5875 MHz	9 dBi	150 MHz	8°	< 1.5:1	25 Watts	N/A

Mechanical Specifications

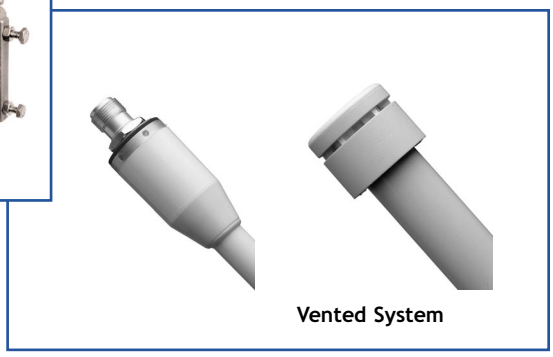
Model #	Wind Survival	Equivalent Flat Plate Area	Lateral Thrust @ Rated Wind	Bending Moment @ Rated Wind	Height	Weight
MFB19008A	125 mph	.07 ft^2	5.9 lbs	5.7 ft-lbs	24.0” (609.6 mm)	0.70 lbs (0.318 kg)
MFB24004	125 mph	.02 ft^2	2.1 lbs	0.7 ft-lbs	8.1” (205.7 mm)	0.34 lbs (0.154 kg)
MFB24006	125 mph	.04 ft^2	3.0 lbs	1.4 ft-lbs	11.6” (294.6 mm)	0.38 lbs (0.172 kg)
MFB24008	125 mph	.06 ft^2	5.2 lbs	4.4 ft-lbs	20.2” (513.1 mm)	0.50 lbs (0.226 kg)
MFB24008DT3	125 mph	.06 ft^2	5.2 lbs	4.4 ft-lbs	20.2” (513.1 mm)	0.50 lbs (0.226 kg)
MFB24008DT5	125 mph	.06 ft^2	5.2 lbs	4.4 ft-lbs	20.2” (513.1 mm)	0.50 lbs (0.226 kg)
MFB24008DT7	125 mph	.06 ft^2	5.2 lbs	4.4 ft-lbs	20.2” (513.1 mm)	0.50 lbs (0.226 kg)
MFB24008DT12	125 mph	.06 ft^2	5.2 lbs	4.4 ft-lbs	20.2” (513.1 mm)	0.50 lbs (0.226 kg)
MFB24010	125 mph	.11 ft^2	10.1 lbs	14.7 ft-lbs	36.0” (914.4 mm)	0.65 lbs (0.295 kg)
MFB24012	125 mph	.25 ft^2	22.4 lbs	41 ft-lbs	44.0” (1,118 mm)	3.00 lbs (1.400 kg)
MFB25007	125 mph	.06 ft^2	5.2 lbs	4.4 ft-lbs	20.2” (513.1 mm)	0.50 lbs (0.226 kg)
MFB25007DT3	125 mph	.06 ft^2	5.2 lbs	4.4 ft-lbs	20.2” (513.1 mm)	0.50 lbs (0.226 kg)
MFB58009	125 mph	.046 ft^2	4.1 lbs	2.7 ft-lbs	15.7” (398.8 mm)	0.43 lbs (0.195 kg)

MFB24004 with MMK11

MMK1924

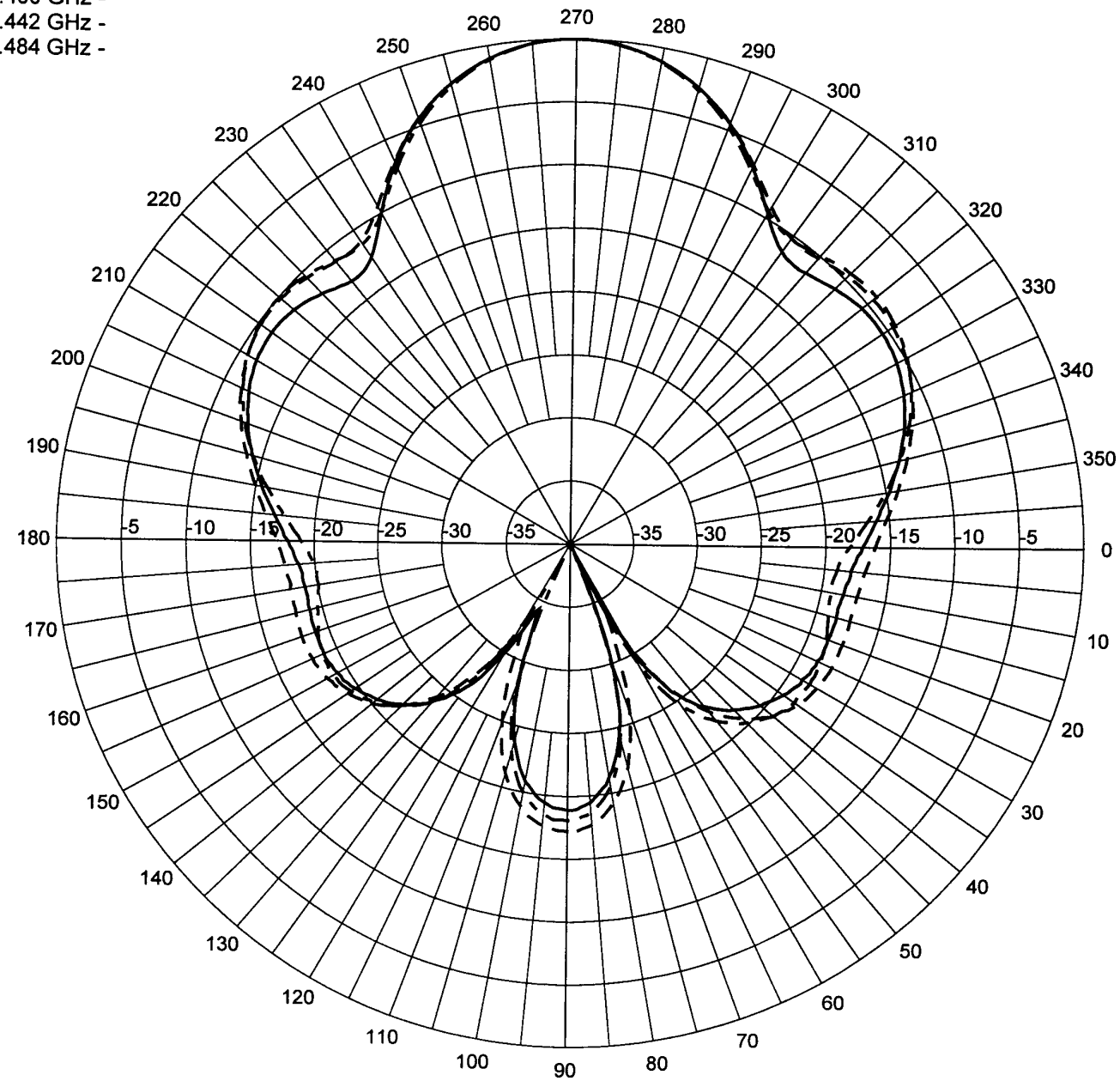
MMK8

MMK12


Vented System

MP240011 - Azimuth Plane Cut

2.400 GHz -
2.442 GHz -
2.484 GHz -



MAXRAD, Inc.
4350 Chandler Drive
Hanover Park, IL 60103-6763

Orders: (800) 323-9122
Phone: (630) 372-6800
Fax: (630) 372-8077

XtremeWave™ MYP Series

MAXRAD®
An ISO-9001 Registered Company

2.4 GHz ISM
Enclosed Yagi Antenna Series

The MAXRAD MYP yagis can be used as bridge antennas between two networks or for point-to-point communications. They are field adjustable for vertical or horizontal polarization with matched principal plane beamwidths for optimum performance in either orientation. This design also provides improved front-to-back ratio and sidelobe suppression that reduces intereference. All models feature a robust mounting structure for consistent performance regardless of weather conditions.

General Specifications:
2.4 GHz ISM enclosed yagi antenna series

Polarization:
Vertical or horizontal, linear (user adjustable)

Nominal Impedance:
50 Ohms

Mounting Method:
Heavy duty yagi mounting bracket (included) permits mast mounting on masts up to 2” O.D.
MYK18 adjustable wall/pipe mount allows 180° (included angle) azimuth and elevation adjustment (sold separately)

Termination:
N, female is standard
Consult factory for other connector options

Features and Benefits

- Field adjustable to allow vertical or horizontal polarity. Eliminates co-channel interference from neighboring radiators. Polarity markings molded on the antenna ensure installation in the correct orientation.
- Optional, articulating mount. Allows precise adjustment of the antenna both vertically and horizontally.
- All antennas include a robust mast mount bracket designed to withstand 125 mph wind.
- Matched principal plane beamwidths with excellent sidelobe suppresion and cross-polarization rejection of more than 20 dB. Provides superior signal quality with enhanced gain performance and minimal interference from neighboring radiators.
- 30 dB front-to-back ratio permits less physical separation on the tower thus adding mounting flexibility at installation sites where space is limited.
- Attractive weather-proof radome constructed of UV resistant material. Provides robust and trouble-free use in harsh outdoor environments.

The MYP24015PT provides 15 dBi of gain and covers frequencies between 2400 and 2485 MHz. A broadband version (model MYPB24015PT) covering frequencies from 2400 to 2686 MHz is also available.

MYK18 adjustable azimuth and elevation mount bracket is optional with all XtremeWave™ yagi models.

Specifications

Electrical Specifications

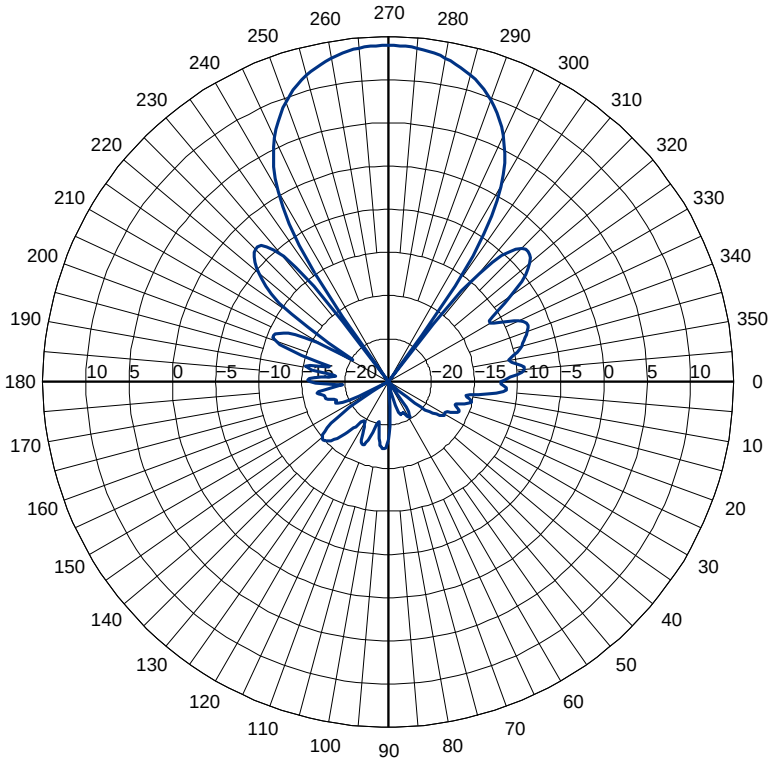
Model #	Frequency Range	VSWR	Front-to-Back Ratio	Nominal Gain	Vertical Beamwidth @ 1/2 Power	Horizontal Beamwidth @ 1/2 Power
MYP24010	2400-2485 MHz	< 1.5:1	23 dB	10 dBi	55°	55°
MYP24014PT	2400-2485 MHz	< 1.5:1	30 dB	14 dBi	30°	30°
MYP24015PT	2400-2485 MHz	< 1.5:1	30 dB	15 dBi	30°	30°
MYPB24015PT	2400-2485 MHz	< 1.5:1	30 dB	15 dBi	30°	30°

Mechanical Specifications

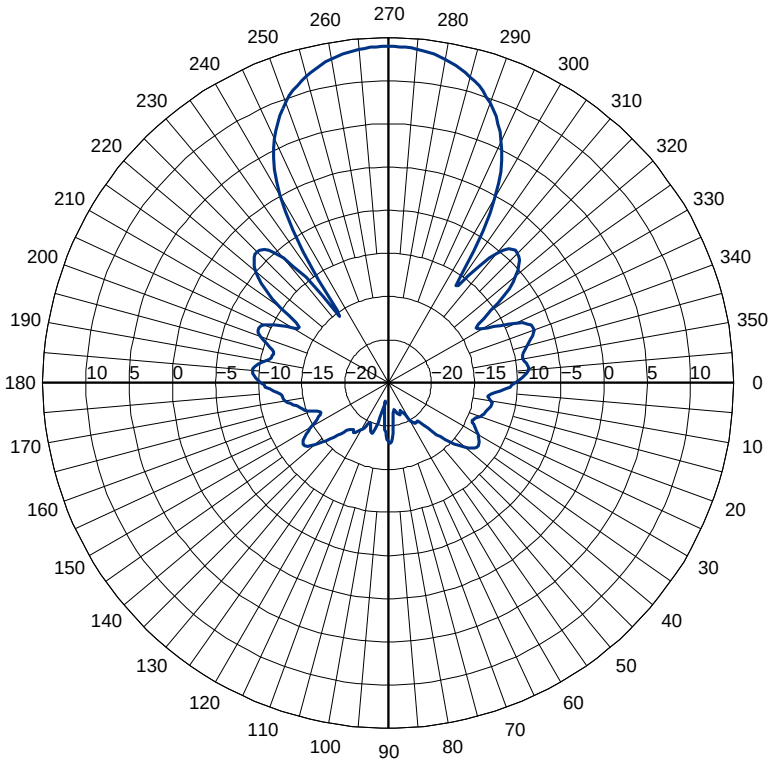
Model #	Wind Survival	Lateral Thrust at Rated Wind	Equivalent Flat Plate Area	Cable	Length	Weight
MYP24010	125 mph	5.8 lbs	0.060 ft^2	18” (457 mm) coax	4.5” L x 3” OD (114 mm L x 76 mm OD)	1 lb (0.5 kg)
MYP24014PT	125 mph	18.3 lbs	0.20 ft^2	36” (914 mm) coax	14” x 3” OD (356 mm L x 76 mm OD)	1 lb (0.5 kg)
MYP24015PT	125 mph	18.3 lbs	0.20 ft^2	18” (457 mm) coax	14” x 3” OD (356 mm L x 76 mm OD)	1 lb (0.5 kg)
MYPB24015PT	125 mph	18.3 lbs	0.20 ft^2	12” (305 mm) LMR195	14” x 3” OD (356 mm L x 76 mm OD)	1 lb (0.5 kg)

Patterns

MAXRAD®
An ISO-9001 Registered Company

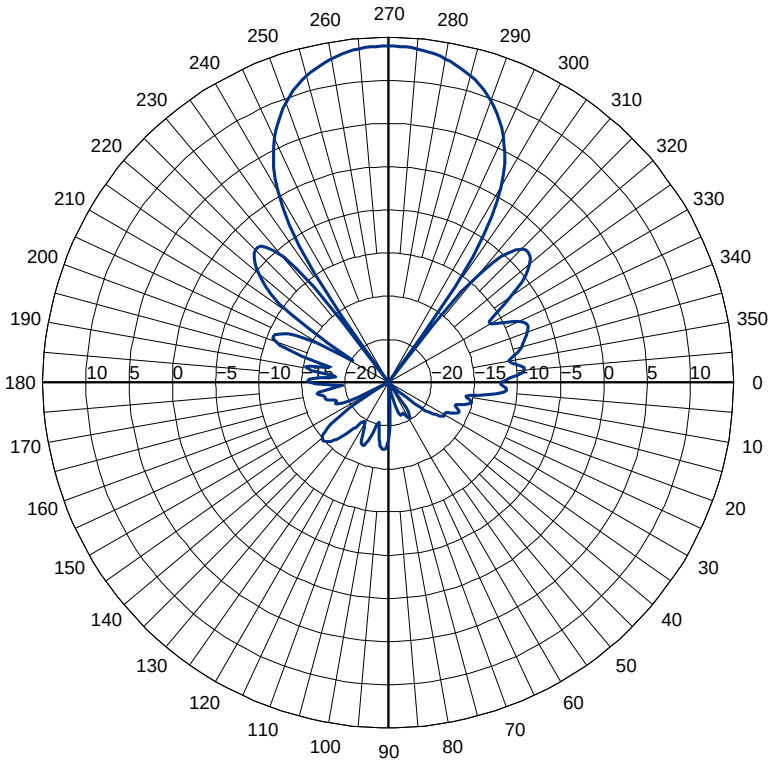


MYP24015PT Elevation Cut

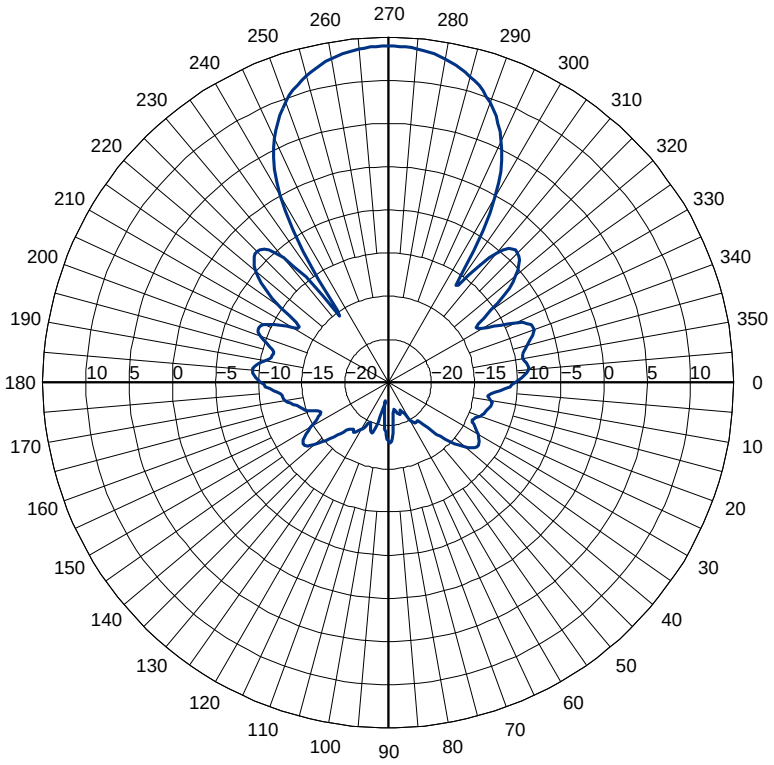


MYP24015PT Azimuth Cut

Patterns



MYPB24015PT Elevation Cut



MYPB24015PT Azimuth Cut

OD9 Mounted & Reflector Kit

OD9, OD12, OD6 Shown

OD Series Omni Antenna

For WLAN, Video and Data Systems

- 3 dBi, 6 dBi, 9 dBi & 12 dBi antennas provide uniform omni coverage
- Unique design allows economical build out
- Mounting kit includes all hardware needed
- Reflector option provides directional beamshaping & increased performance

The OD Series Antennas are optimized for use in a wide variety of wireless systems. Typical uses include WLAN access points or bridge (802.11b/g), and surveillance transmitters.

These antennas consist of a collinear array with elements stacked vertically. Unique phasing cancels out-of-phase current distribution, improving system performance. This design maintains an omni pattern in the horizontal plane. The OD Series are free space antennas; no ground plane is required.

An option for the OD series is a reflector kit that beam shapes the omni pattern into a directional cardioid shape. This can result in improved directional gain, and isolation for reduced interference.

The low profile black radome (1" diameter) makes the antennas durable and rugged. They can withstand the harshest environments of snow, wind, rain and ice. The feed assembly is made of precision machined aluminum components and is irridited for weather protection. The antennas comes with all the hardware needed to install it to a mast. The OD antennas normally terminate with a female N connector. Optional models include pigtail cable with connector. For ISM, Part 15 compliant connectors are available (reverse polarized), please consult factory.

Model Numbers

Model	Freq.(MHz)	Gain	Applications
OD3-2400	2400-2485	3 dBi	WLAN, ISM, Video
OD6-2400	2400-2485	6 dBi	WLAN, ISM, Video
OD9-2400	2400-2485	9 dBi	WLAN, ISM, Video
OD12-2400	2400-2485	12 dBi	WLAN, ISM, Video

For pigtail cable options and special frequencies, please consult factory for latest model numbers and configurations.

Options	Model
Add-on kit for 6 dBi models	ODR6-Kit
Add-on kit for 9 dBi models	ODR9-Kit
Add-on kit for 12 dBi models	ODR12-Kit
Rev TNC with 1 ft Cable option	add -PTA to OD model
Rev BNC with 4 ft Cable option	add -PT2 to OD model

Specifications

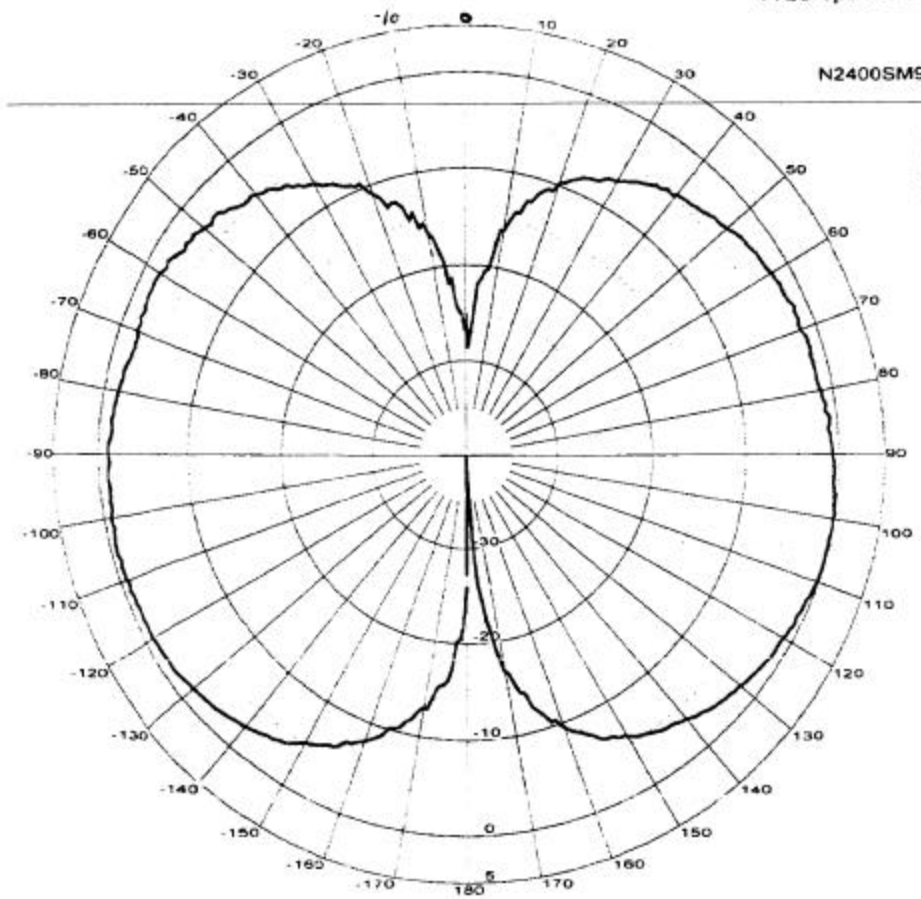
Frequency & Gain:	See above
Bandwidth @2:1 VSWR:	See above
Nominal Impedance:	50 ohms
Max. Power (continuous):	100 watts
Vertical Beamwidth (-3 dB point):	
3 dBi Model	55 degrees
6 dBi Model	25 degrees
9 dBi Model	14 degrees
12 dBi Model	7 degrees
Wind Loading (flat plate equiv.):	30-40 sq. inches
Rated Wind Velocity:	100+ mph
Lightning Protection:	External suggested
Antenna Diameter:	1", main mast
Length/Weight:	
3 dBi Models	16 inches, 1.5 lbs
6 dBi Models	19 inches, 1.5 lbs
9 dBi Models	27 inches, 2.0 lbs
12 dBi Model	41 inches, 2.5 lbs
OD Series Interface:	N female connector
Mounting Kit:	Mast mount kit included
Mounting Dimensions:	Use mast up to 2" OD
Material:	Polycarbonate with aluminum body, fiberglass radome on OD12 with aluminum body
Options:	Reflector Option Kit Pigtail Cable Option Part 15 Reverse Connectors

US Office & Headquarters: 3900-B River Road, Schiller Park, IL 60176 Tel: 800-648-2800 or 847-671-6690 Fax: 847-671-6715
UK Office: 106 Anglesey Business Park, Hednesford, Staffs. WS12 5NR UK Tel: (+44) 1543-878343 Fax: (+44) 1543-871714
Visit our web page at www.mobilemark.com. Specifications subject to change without notice (2/2002).

NCC

Free Space Azimuth Pattern Ref. Dipole = 0dB

N2400SM9G



File: NCC_05.DAT
Date: 10-Aug-00
Time: 14:08
Operator: RT
Ser. no.:
Channel: Rx Power Tx pol: Vert. Rx: Vert.
Frequency : 2.442 GHz

Calibration status:

File:	NCC_05.DAT
Table:	Normalize
Chan.:	Rx Power
Units:	dB

2 dB, straight

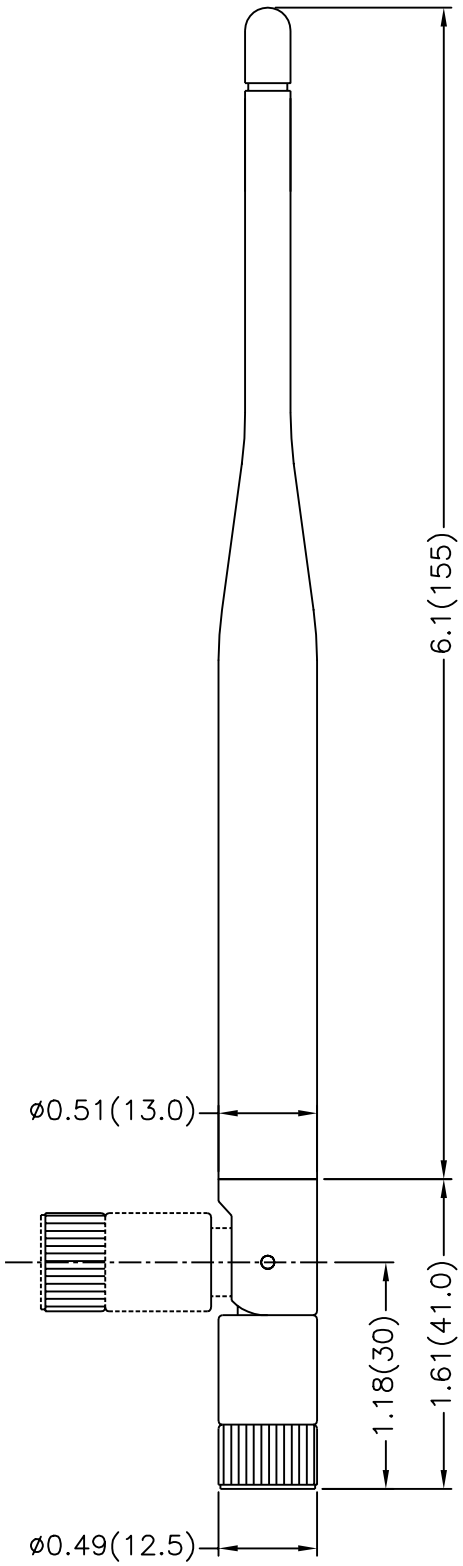
LOCUS
590-000300

Electrical Properties:

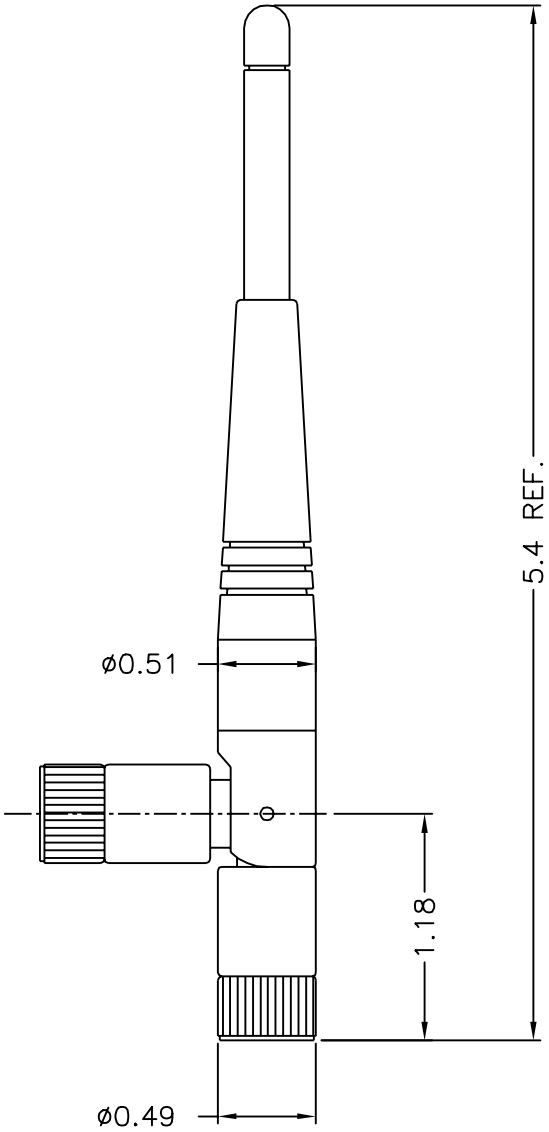
Frequency Range:	2.4~2.5 GHz
Impedance:	50Ω nominal
VSWR:	<2.0:1
Gain:	5 dBi
Radiation:	Omni
Polarization:	Vertical
Wave:	5/8 wave

Mechanical Properties:

Connector:	SMA Reverse Polarity Plug
Material:	
Whip:	Polyurethene(Black)
Swivel Mechanism:	Polycarbonate(Black)
Connector:	Brass with black nickel plating
Operation Temp.:	−20°C to +65°C
Storage Temp.:	−30°C to +75°C



TITLE	2.4GHz Swivel Antenna 151 Model	DATE	SHEET 1 OF 1
UNIT in.(mm)	DWG. NO. S151AH−2450S		A4
SCALE NONE	NEARSON		



Electrical Properties:

Frequency Range:	2.4~2.5 GHz
Impedance:	50Ω nominal
VSWR:	<2.0:1
Gain:	2 dBi
Radiation:	Omni
Polarization:	Vertical
Wave:	Half Wave Dipole

Mechanical Properties:

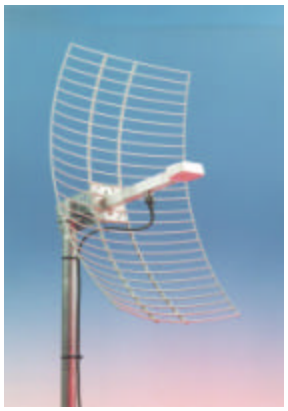
Connector:	SMA Reverse Polarity Plug (female)
Material:	
Whip:	Polyurethene(Black)
Swivel Mechanism:	Polycarbonate(Black)
Connector:	Brass with black nickel plating
Operation Temp.:	−20°C to +65°C
Storage Temp.:	−30°C to +75°C

TITLE	2.4GHz Swivel Antenna 181 Model	DATE	SHEET 1 OF 1
UNIT inch	DWG. NO. S181AH−2450S		A4
SCALE 1:1	NEARSON		

Pacific Wireless
2844 Mar Vista Dr. Suite 101
Aptos, CA 95003
TEL (831) 684-2474
FAX (831) 684-2494
www.pacwireless.com

PMANT / PMPF
DATA SHEET

Directional Antenna Systems
1700 to 2700 MHz Operation



19 dBi Antenna

Features

- **50 W Passive Feed Dipole**
- **Type N Female Connector**
- **Horizontal or Vertical Polarity**
- **15, 19, 21 or 24 dBi Antenna Gain**
- **Rugged, Lightweight and Waterproof**
- **Heavy Duty Adjustable Tilt Bracket**

Applications

- **2.4 GHz ISM Band Applications**
- **Point to Point Repeaters**
- **Wireless Local Loop**
- **Point to Multipoint Receive Sites**
- **DECT Applications**
- **Wireless Internet Access**
- **Wireless T1 Data Link**
- **Streaming Video**
- **Wireless Bridges**
- **MMDS Applications**

Description

The directional antenna systems offered by Pacific Wireless incorporate parabolic grid type antenna reflectors with the PMPF, patented 50 ohm passive feed dipole with integrated type N female connector. The antenna reflectors and PMPF dipole can be bought separately for maximum system flexibility. Installation is simple with the Pacific Wireless adjustable tilt "Heavy Duty" bracket which is standard on all antennas. The bracket accommodates poles from 1" up to 2.5" OD. Brackets are full galvanized for extreme corrosion protection and each reflector assembly comes complete with Stainless Steel hardware and complete assembly instructions.

Specifications

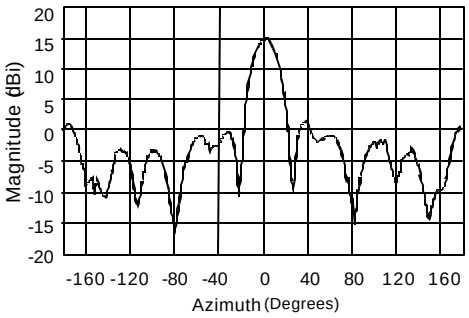
Parameter	Model	Min	Typ	Max	Units
Frequency Range	PMPF-1 PMPF-2 PMPF-19 PMPF-18 PMPF-18S	2300 2100 1880 1750 1700		2500 2700 1930 1850 1850	MHz
Input Return Loss (S_{11})			-12		dB
VSWR			1.5:1		
Impedance			50		OHM
Input Power			50		W
Pole Diameter (OD)		1 25		2.5 60	inch mm
Operating Temperature		-45		+70	Deg C

*Note: Pacific Wireless does not supply the mounting pole or coax cable. Antenna system assembly is required.

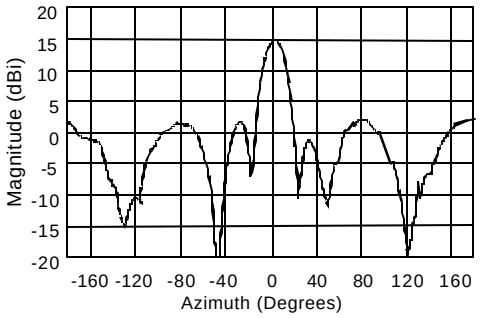
1700 – 2700 MHz	PMANT15	PMANT19	PMANT21	PMANT25
Gain	15 dB	19 dB	21 dB	24dB
3dB Beam Angle	19 deg	17 deg	12 deg	8 deg
Cross Pole	21 dB	32 dB	26dB	26dB
Front to Back	> 19 dB	> 22 dB	>25	> 24 dB
Side Lobe	-15 dB	-17 dB	-25dB	-20dB
Wind Loading *100MPH*	8.2 Lbs	16.6 Lbs	22.7 Lbs	40 Lbs
140MPH	16.1 Lbs	32.5 Lbs	40.6 Lbs	78Lbs
100MPH: ½" Radial Ice	33.2 Lbs	72.4 Lbs	136.8 Lbs	166Lbs
Weight	2.6 Lbs	3.9 Lbs	4.2Lbs	8.2 Lbs
Dimension (LxW)	14" x 11.5"	23.6" x 16.7"	30" x 22"	34" x 28"
Focal Length	7"	9.5"	9.5"	16"

Integrated Antenna Patterns

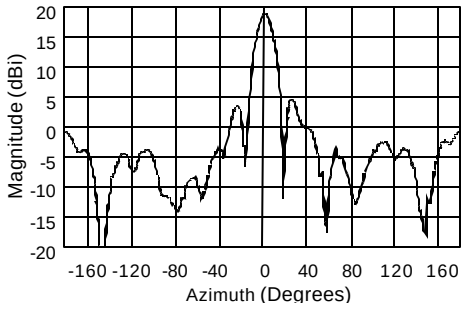
PMANT15 (Horizontal)



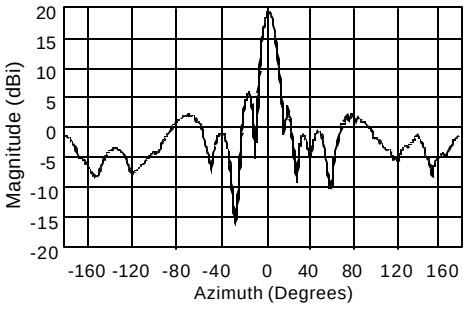
PMANT15 (Vertical)



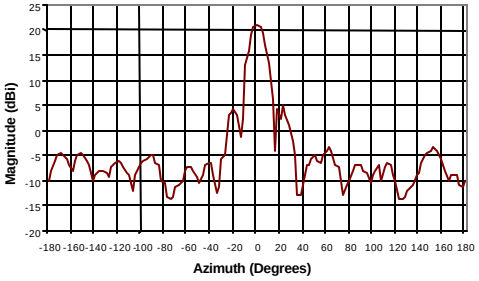
PMANT19 (Horizontal)



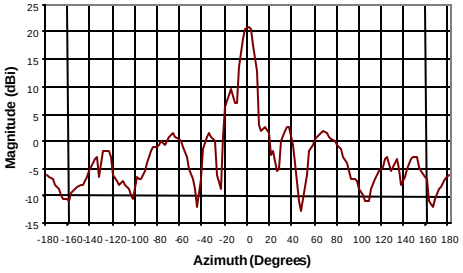
PMANT19 (Vertical)

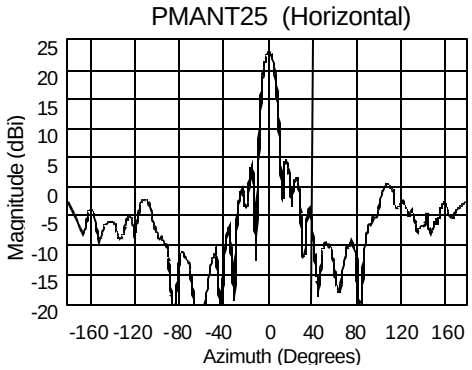


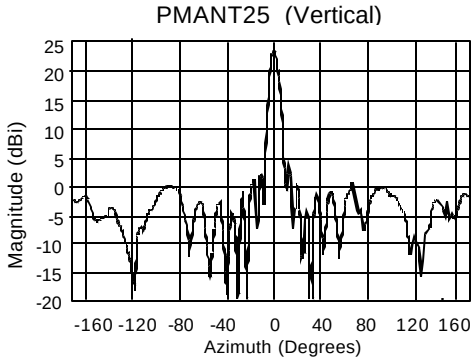
PMANT21 (Horizontal)

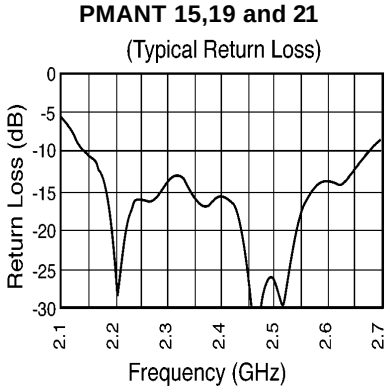


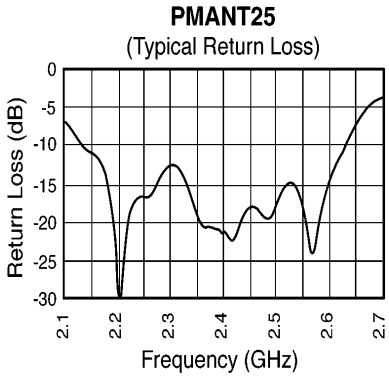
PMANT21 (Vertical)

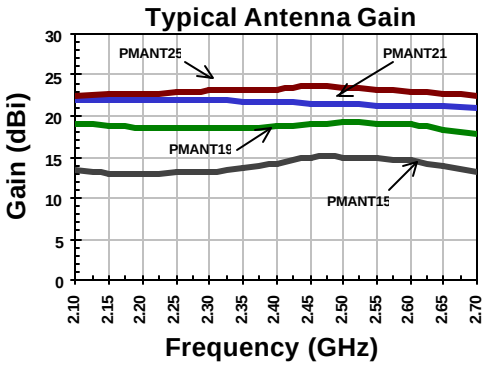








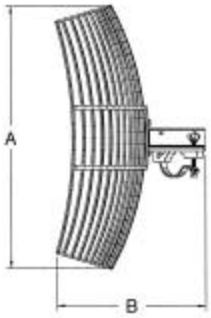




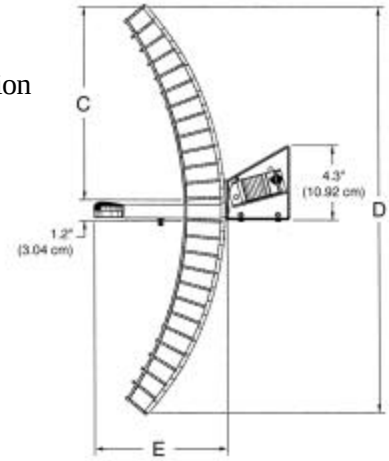
Note: Above are typical return loss and gain using PMPF-1 Dipole

Mechanical Specifications

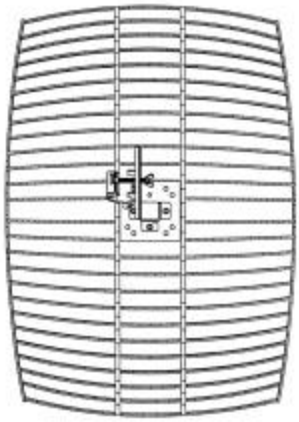
Antenna Reflector: Welded Wire Construction



Top View



Side View



Rear View

	A		B		C		D		E	
	in.	*cm.*	in.	*cm.*	in.	*cm.*	in.	*cm.*	in.	*cm.*
PMANT15	11.5	29.21	6.5	16.51	6.4	16.26	14.0	35.56	7.2	18.29
PMANT19	16.7	42.42	9.4	23.88	11.2	28.45	23.6	59.95	9.4	23.87
PMANT21	22	55.88	13.5	34.29	9.25	23.5	30.1	76.45	9.35	23.75
PMANT25	28.0	71.12	11.4	28.96	16.4	41.66	34.0	86.36	16.0	40.64

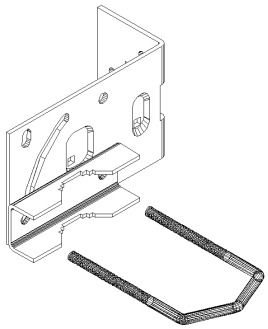
Approximate Installed Weight

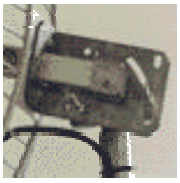
- *including PMPF Dipole*

PMANT15	2.6 lbs (1.18 kg)
PMANT19	3.9 lbs (1.77 kg)
PMANT21	6.0 lbs (2.72 kg)
PMANT25	8.2 lbs (3.72 kg)

Heavy Duty bracket fits up to 2.5” (60mm) dia. Pole

Ships standard with all models





Notes:

- Mounting brackets are disassembled from the antenna reflectors so the reflectors stack compactly, which saves volume in both shipping and warehouse storage.
- A complete antenna system includes one PMPF-xx , one antenna reflector assembly and bracket with all necessary hardware for pole mounting.
- All shipments F.O.B. Pacific Wireless Midwest Warehouse in Portage, Michigan 49024
- All antennas carry a 2 Year Warranty

Standard Packaging:

Model	Units per box	L x W x H	Weight	Dimensional Weight (For Air Freight Calculations)
PMANT15	**10 Pack**	**20” x 16” x 12”**	**39 Lbs.**	**39 Lbs.**
PMANT19	**5 Pack**	**26” x 23” x 10”**	**31 Lbs.**	**37 Lbs.**
PMANT21	**5 Pack**	**32” x 23” x 11”**	**40 Lbs.**	**49 Lbs.**
PMANT25	**5 Pack**	**38” x 31” x 11”**	**59 Lbs.**	**74 Lbs.**

System Ordering:

PMANT□□-HD-PF□□

Antenna Gain
15 – 15dBi
19 – 19dBi
21 – 21dBi
25 – 24dBi

Bracket Type
HD – Heavy Duty

Feed Type
Blank – No Feed
PF1 – PMPF-1 2.4 GHz ISM Band Feed
PF2 – PMPF-2 2.5 GHz MMDS Band Feed
PF18 – PMPF-18 1.75 to 1.85 GHz Feed
PF18S – PMPF-18S 1.70 to 1.85 GHz Feed
PF19 – PMPF-19 1.88 to 1.93 GHz DECT

For further information contact:

Pacific Wireless
2844 Mar Vista Dr. Suite 101
Aptos, CA 95003
TEL (831) 684-2474
FAX (831) 684-2494
www.pacwireless.com