

ALLISCOM

M Series

GPS Antenna

Data Sheet



Model No.	M Series
Feature	Low Noise Figure < 1.5dB Waterproof Housing Magnetic Mounting` Low Profile
Benefit	Resistant to harsh outdoor environment High Performance Concealable
Description	Allis Communications M Series GPS Active Antenna is a waterproof Magnetic Mount Antenna. The M Series Antenna is the perfect antenna for external use with harsh outdoor environment.

1. Electrical Specifications

1.1 Patch Antenna

Frequency	1575.42 ± 3 MHz
VSWR / Impedance	1.5 max./ 50Ω
Bandwidth	10MHZ / 20MHz min. at -10dB
Axial Ratio/ Polarization	3dB typical/ RHCP
Peak Gain	2.5dBic / 4dBic min. at 0° (7cm x 7cm ground plane)
Gain Coverage	≥ -4dBic at -90° ≤ θ ≤ 90°(over 75% volume)
Power Handling	1 watt

1.2 Amplifier Module

Type	Model No.	Gain w/o cable	Filtering	Noise Figure	Output VSWR	DC Voltage	DC Current	
Active Antenna	M535C	35 dB typical	At ±40MHz 9dB At ±75MHz 20dB At ±100MHz 28dB	2.0dB	2.0 max.	4.0V to 6.0V	22±5mA	
	M335C					2.7V to 4.2V		
	M827A	27dB typical		1.4dB		3.0V to 5.5V		
	M827B	27dB typical		1.8dB		2.7V to 6.0V		8.5±4.5mA
	M820B	20dB typical						3.5±2mA
	M812B	12dB typical						4.5±2.5mA
	M828T	28dB typical						8.5±4.5mA
	M828S	28dB typical		At ±40MHz 35dB At ±75MHz 30dB At ±100MHz 30dB		2.0dB		2.7V to 6.0V
M840C	40dB Typical 38dB(3V),	At ±40MHz 60dB At ±75MHz 50dB At ±100MHz 50dB	25±3.5mA					
Passive Antenna	Model No.	Gain w/o cable	Bandwidth		Axial Ratio	VSWR		
	IMPXA	4dB typical	20MHz at -10dB		3 dB typical	1.5 max.		

1.3 Gain Pattern

Model No.	Peak Gain (at 0°)	Axial Ratio (at 0°)	Test Voltage and Cable Length
M535C	29.3dB	1.0dB	Voltage: 5V Cable: 5m RG174 / Loss ≐ 6dB
M335C	28.6dB	2.5dB	
M827A	23.1dB	3.0dB	Voltage: 5V Cable: 5m RG174 / Loss ≐ 6dB
M827B	22.3dB	2.0dB	
M828T	23.4 dB	3.0dB	
M820B	15.1dB	1.0dB	
M812B	6.20dB	3.0dB	
M828S	23.3dB	3.0dB	
M840C	34.1dB	3.0dB	
IMPXA	1.10dB	1.5dB	

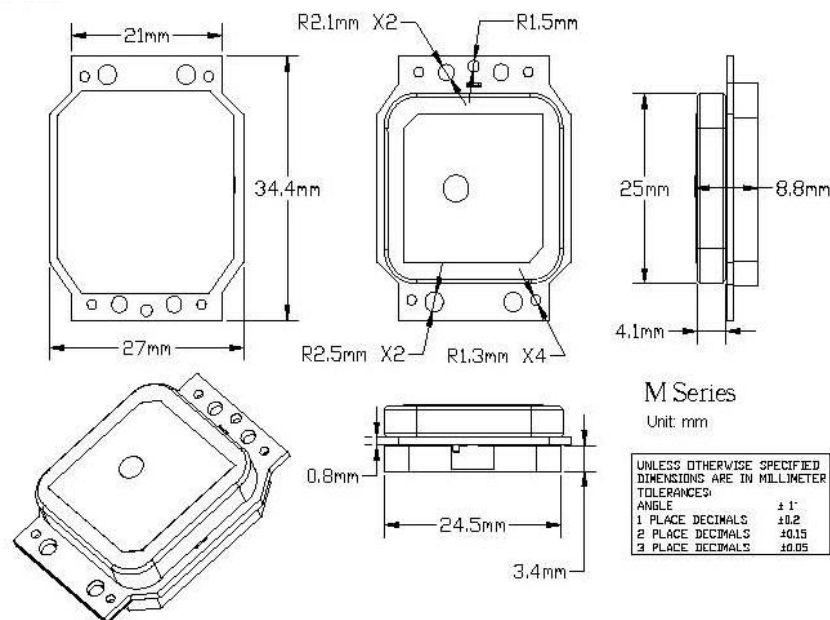
2. Mechanical Specifications

2.1 Mechanical Data

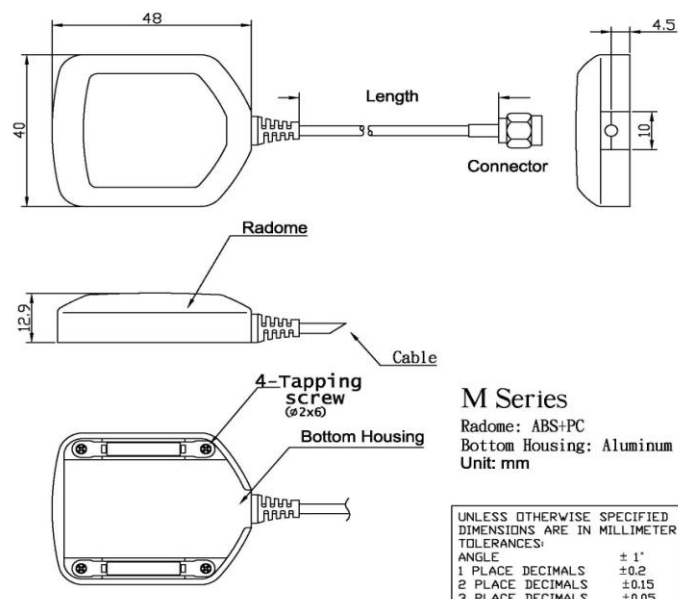
Item	Specification
Housing Material	ABS+PC
Weight (Without Cable)	42 grams max.
Mounting	Magnetic base
Size	48 x 40 x 13 mm
Waterproof	IP56

2.2 Dimensions

Without Housing



With Housing

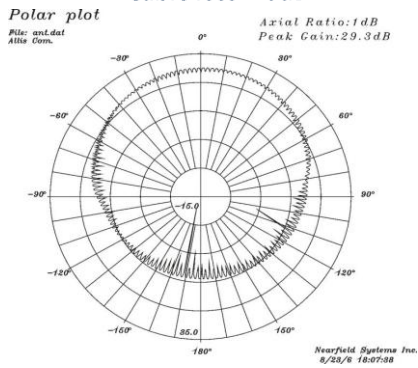


3. Appendix: Gain Patterns

Test Equipment: NSI Spherical near-field measurement system

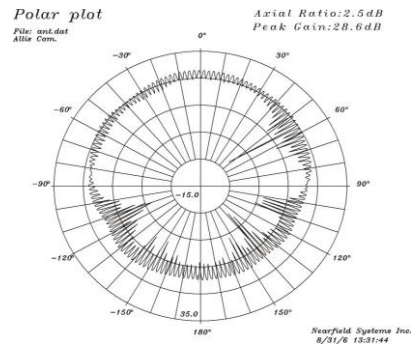
● **M535C**

Test Voltage : 5V
Cable length: 5m
Cable loss \approx 6dB



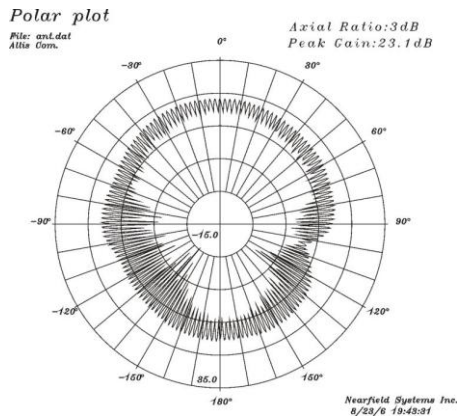
● **M335C**

Test Voltage : 5V
Cable length: 5m
Cable loss \approx 6dB



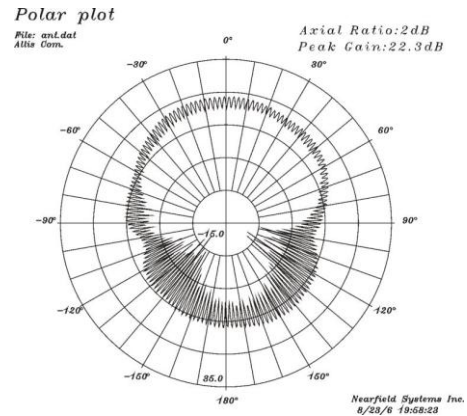
● **M827A**

Test Voltage : 5V
Cable length: 5m
Cable loss \approx 6dB



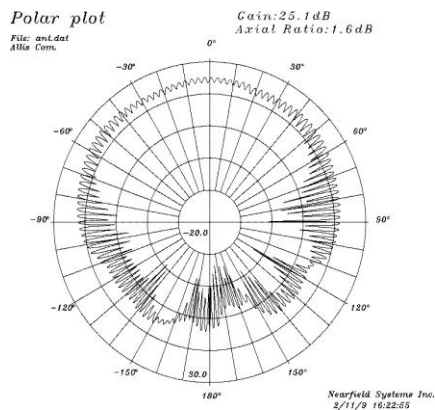
● **M827B**

Test Voltage : 5V
Cable length: 5m
Cable loss \approx 6dB



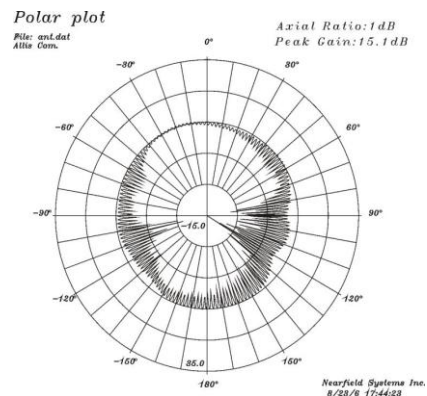
● **M828T**

Test Voltage : 5V
Cable length: 5m
Cable loss \approx 6dB



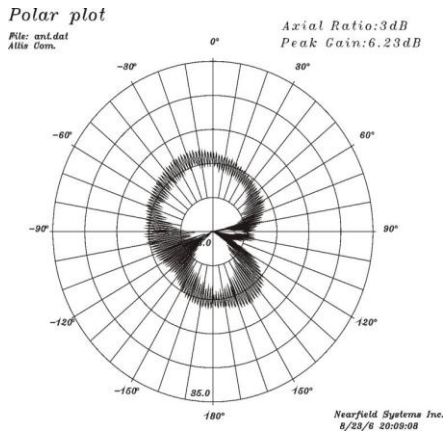
● **M820B**

Test Voltage : 5V
Cable length: 5m
Cable loss \approx 6dB



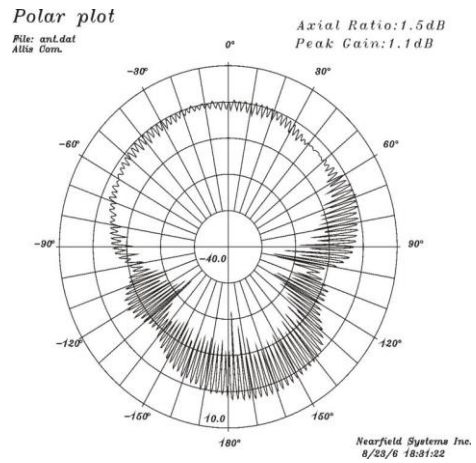
● **M812B**

Test Voltage : 5V
 Cable length: 5m
 Cable loss \approx 6dB



● **IMPXA**

Cable length: 18cm
 Cable length: 5m
 Cable loss \approx 1dB



Patch Antenna simulation

