

ALLISCOM

Magnetic GPS Antenna

Data Sheet



Model No. U Series

Feature	Low Noise Figure < 1.5dB Waterproof Housing Magnetic Mounting Durable Body
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Benefit	Resistant to harsh outdoor environment Withstand heavy physical abuse High Performance Concealable
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Description	Allis Communications U Series GPS External Antenna is a waterproof Magnetic Mount Antenna. The U Series is an ultra durable antenna that will withstand harsh environment and any heavy physical abuse.
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1. Electrical Specifications

1.1 Patch Antenna

Frequency	1575.42 ± 3 MHz					
VSWR	1.5 max.					
Bandwidth	20MHz min. at -10dB					
Axial Ratio	3dB typical					
Impedance	50Ω					
Peak Gain	4dBic min. at 0° (7cm x 7cm ground plane)					
Gain Coverage	≥ -4dBic at −90° ≤ θ ≤ 90°(over 75% volume)					
Power Handling	1 watt					
Polarization	RHCP					
Amplifier Module						
Type	Model No.	Amplifier Gain without cable	Noise Figure	Output VSWR	DC Voltage	DC Current
Active Antenna	U535C	35dB typical	2.0dB typical	2.0 max.	DC 4.0V to 6.0V	22±5mA
	U335C				DC 2.7V to 4.2V	
	U827A	27dB typical	1.4dB typical		DC 3.0V to 5.5V	
	U827B	27dB typical	1.8dB typical		DC 2.7V to 6.0V	8.5±4.5mA
	U820B	20dB typical				3.5±2mA
	U812B	12dB typical				4.5±2.5mA

1.2 Gain Pattern

Model No.	Peak Gain (at 0°)	Axial Ratio (at 0°)	Test Voltage and Cable Length
U535C	28.9dB	1dB	Voltage: 5V Cable: 5m RG174 / Loss ≐ 6dB
U335C	29.0dB	2dB	Voltage: 3V Cable: 5m RG174 / Loss ≐ 6dB
U827A	23.4dB	3dB	Voltage: 5V Cable: 5m RG174 / Loss ≐ 6dB
U827B	23.3dB	2dB	
U820B	14.8dB	2dB	
U812B	6.5dB	3dB	

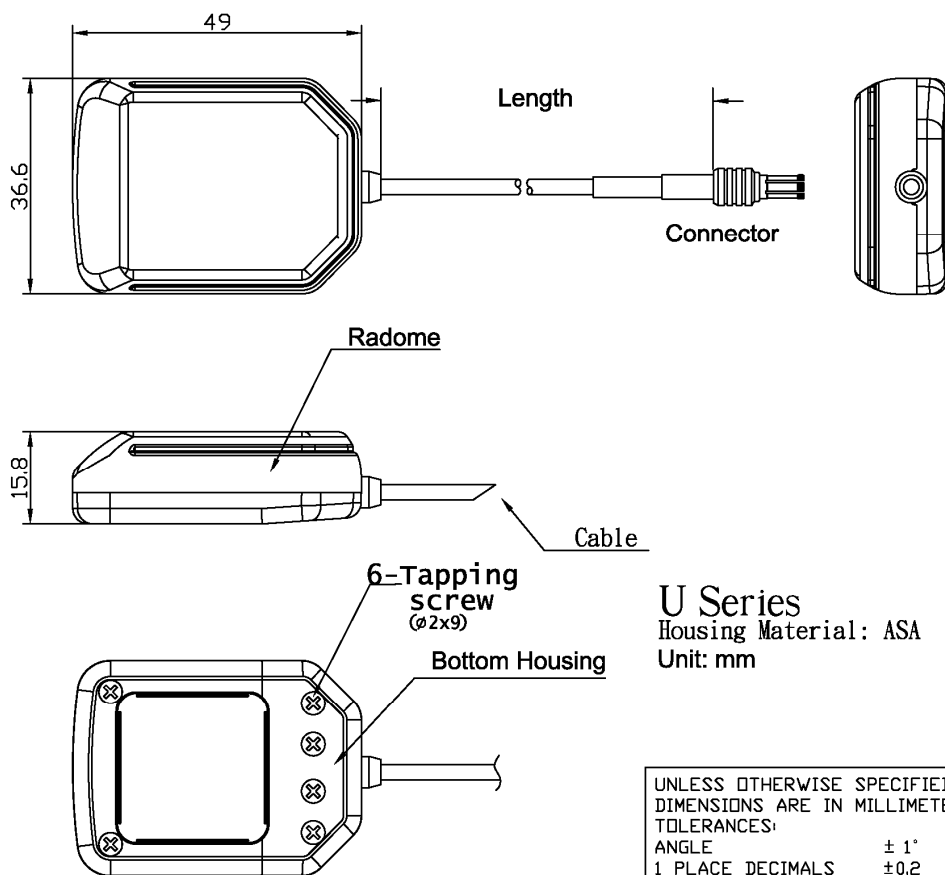
2. Mechanical Specification

2.1 Mechanical

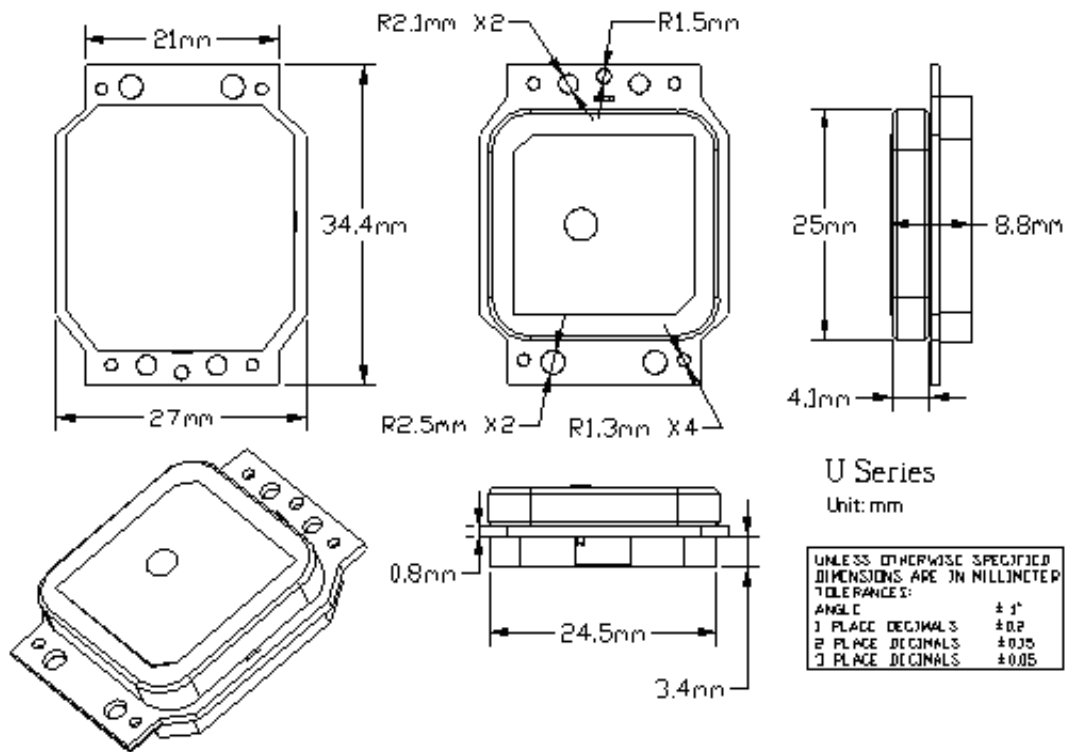
Item	Specification
Weight (Without Cable)	42 grams max.
Size	49 x 36.6 x 15.8 mm
Connector	Custom
RF Cable	Custom
Mounting	Magnetic base
Housing Color	Black

2.2 Dimension

With Housing



Without Housing



3. Appendix: Gain Patterns

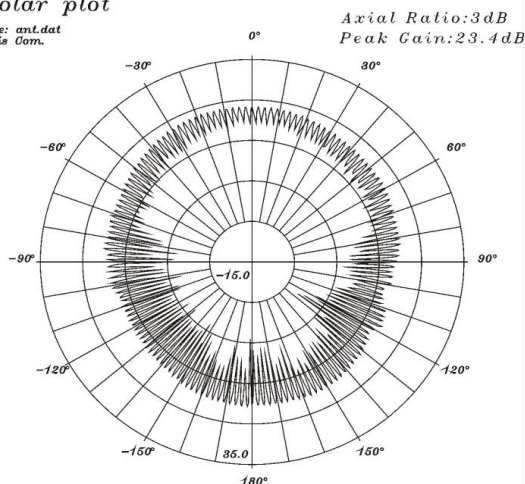
Test Equipment: NSI Spherical near-field measurement system

● U535C

Test Voltage : 5V
Cable length: 5m
Cable loss ≐ 6dB

Polar plot

File: ant.dat
Allis Com.

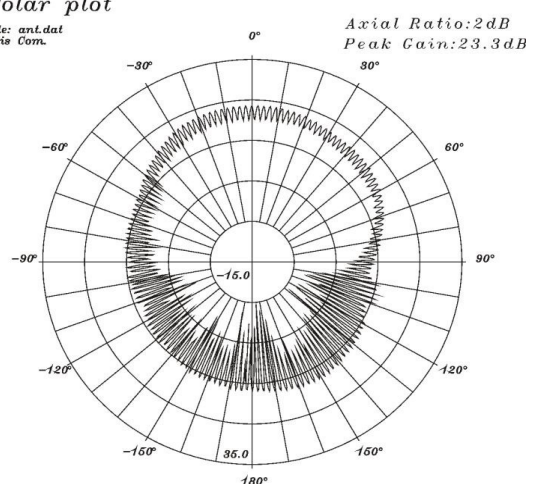


● U335C

Test Voltage : 3V
Cable length: 5m
Cable loss ≐ 6dB

Polar plot

File: ant.dat
Allis Com.



● U827A

Test Voltage : 5V

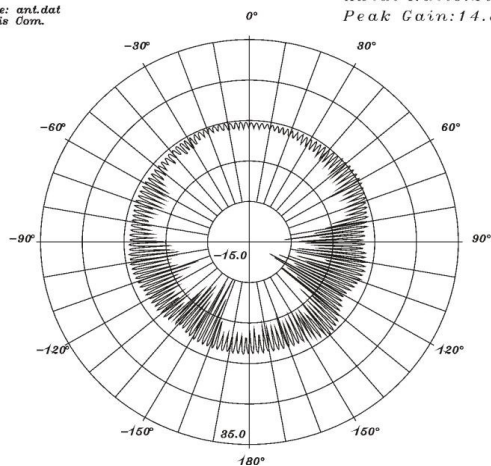
Cable length: 5m

Cable loss $\div$ 6dB

Polar plot

File: ant.dat
Allis Com.

Axial Ratio: 2dB
Peak Gain: 14.8dB



● U827B

Test Voltage : 5V

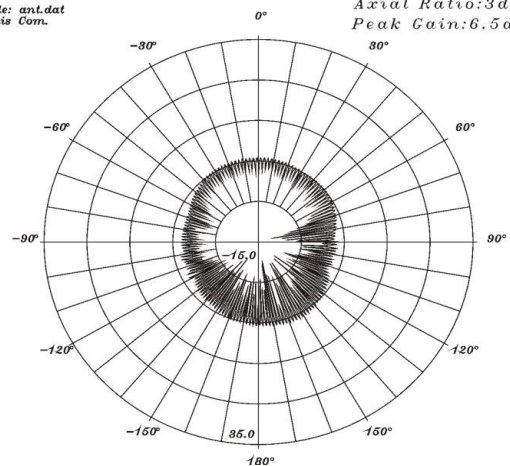
Cable length: 5m

Cable loss $\div$ 6dB

Polar plot

File: ant.dat
Allis Com.

Axial Ratio: 3dB
Peak Gain: 6.5dB



● U820B

Test Voltage : 5V

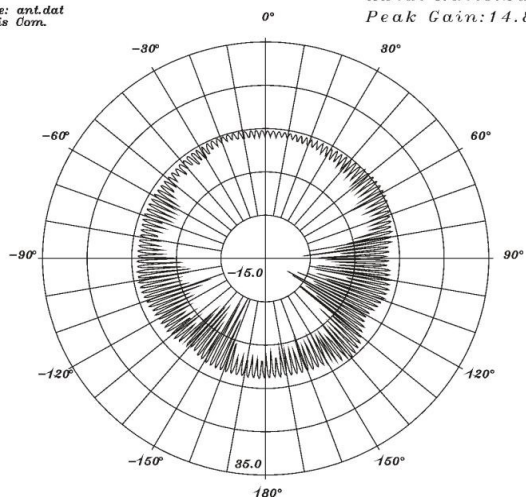
Cable length: 5m

Cable loss $\div$ 6dB

Polar plot

File: ant.dat
Allis Com.

Axial Ratio: 2dB
Peak Gain: 14.8dB



● U812B

Test Voltage : 5V

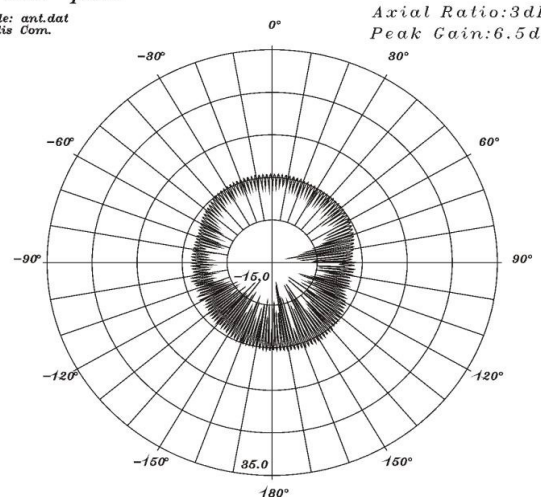
Cable length: 5m

Cable loss $\div$ 6dB

Polar plot

File: ant.dat
Allis Com.

Axial Ratio: 3dB
Peak Gain: 6.5dB



- Patch Antenna simulation

