

ALLISCOM

U Series GNSS Antenna

Data Sheet



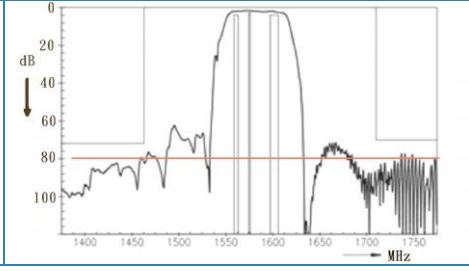
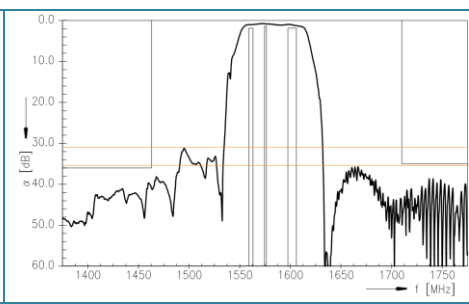
Model No.	GPS : U827U, U820U, U812U U826S(Dual SAW Filter) GPS/ GLONASS: U828G
Feature	Low Noise Figure < 0.9dB IP67 Waterproof Housing Magnetic Mounting Low Profile
Benefit	Resistant to harsh outdoor environment High Performance Concealable
Description	Allis Communications U Series GNSS Active Antenna is a waterproof Magnetic Mount Antenna. The U Series Antenna is the perfect antenna for external use with harsh outdoor environment.

1. Electrical Specifications

1.1 Electrical Data

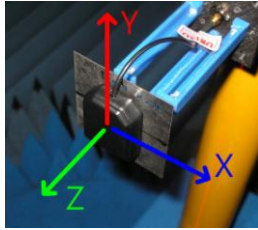
Patch Antenna (with 7*7cm ground plane)	
Frequency	GPS only: 1575.42 ± 3 MHz
	GPS/ GLONASS: 1585 ± 3 MHz
VSWR	1.5 max.
Bandwidth	20MHz min. at -10dB
Axial Ratio	3dB max.
Polarization	RHCP
Peak Gain	4dBic min. at 0°
Gain Coverage	≥ -4dBic at -90° ≤ θ ≤ 90°(over 75% volume)
Impedance	50Ω

LNA/Filter Module		
Frequency Range	1555 ~ 1615MHz	
Module Gain	U827U	29dB typ.
	U828G(GPS/GLONASS)	29dB typ.
	U826S (Dual SAW Filter)	29dB typ.
	U820U	22dB typ.
	U812U	14dB typ.
Noise Figure	0.9 dB max.	
Single Filter Out of band Attenuation	1500MHz <	<-25dB
	1530MHz --	-30dB
	1630MHz --	<-15dB
	1640MHz --	-54dB
	1660MHz >	<-30dB
Dual Filter Out of band Attenuation (M826S)	1500MHz <	<-50dB
	1530MHz --	-60dB
	1630MHz --	<-30dB
	1640MHz --	-108dB
	1660MHz >	<-60dB
Output VSWR	2.0 max.	
Output Impedance	50Ω	
Operation Voltage	DC 2.7 ~ 5.5V	
Current	U827U	6 ~ 11mA
	U828G(GPS/GLONASS)	6 ~ 11mA
	U826S (Dual SAW Filter)	6 ~ 11mA
	U820U	6 ~ 11mA
	U812U	3 ~ 6mA



* Specifications subject to change without notice.

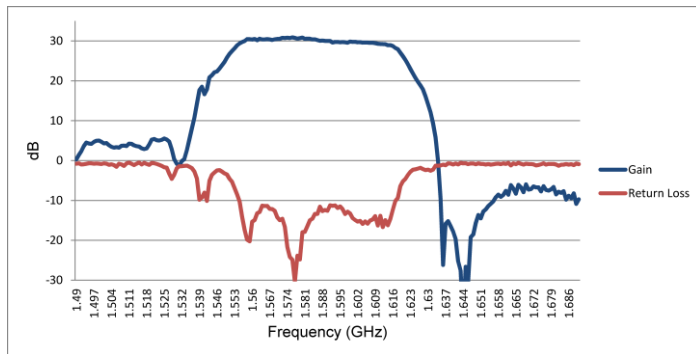
1.2 Antenna measurement



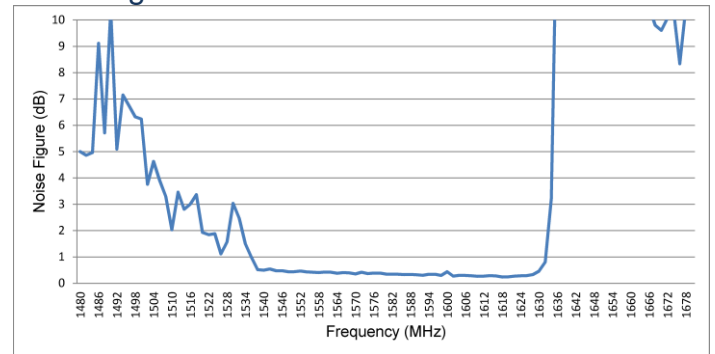
1.2.1 LNA/Filter Module (Voltage: 3V)

● U827U/ U828G

Gain and Return Loss

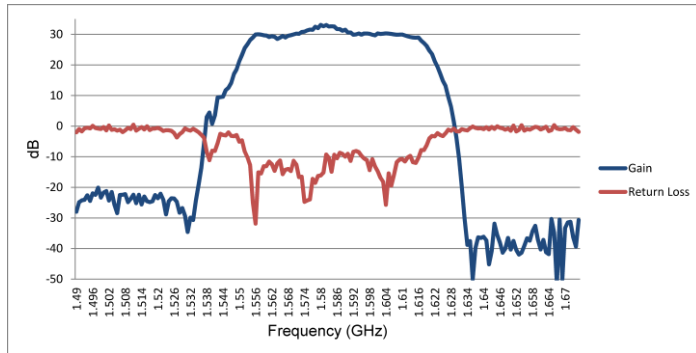


Noise Figure

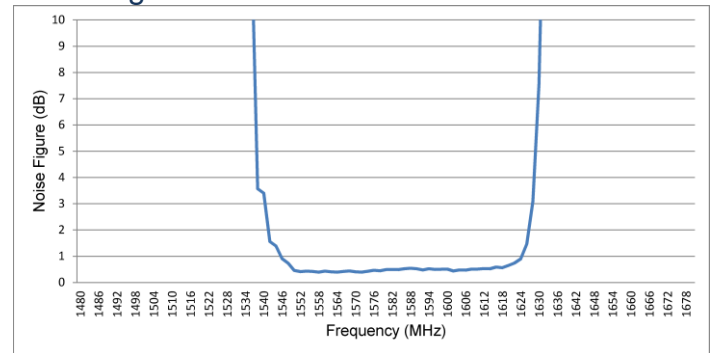


● U826S

Gain and Return Loss

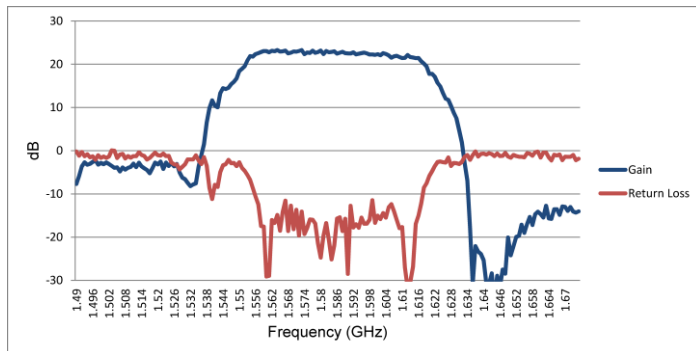


Noise Figure

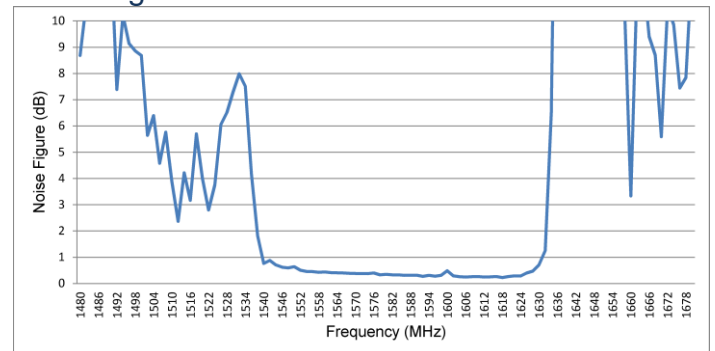


● U820U

Gain and Return Loss

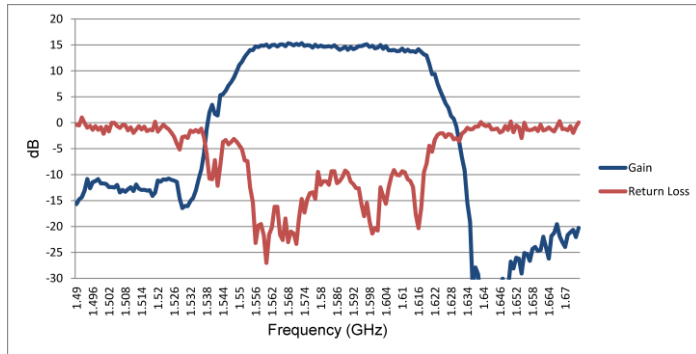


Noise Figure

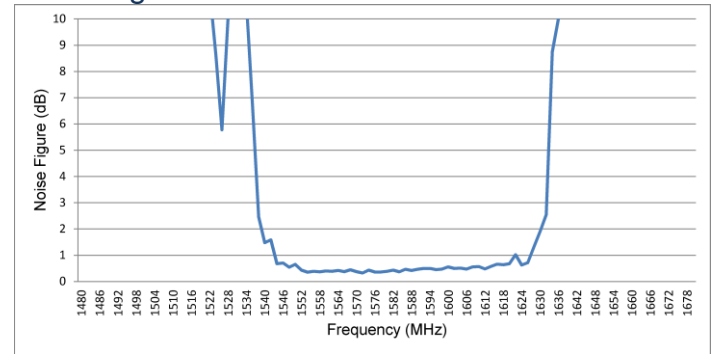


● **U812U**

Gain and Return Loss



Noise Figure

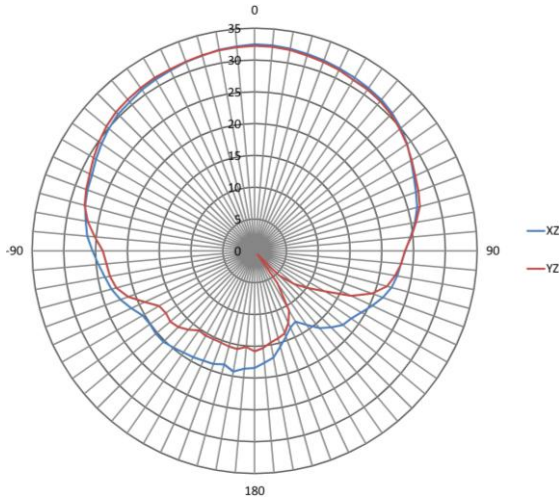


1.2.2 RHCP Radiation Pattern (Voltage=3V; 17cm RG174 cable; 7*7cm ground plane)

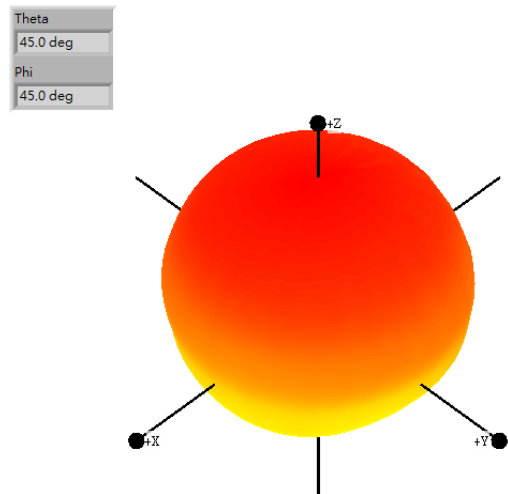
● **U827U**

Frequency=1575MHz; Gain=32.52dBic

2D Pattern



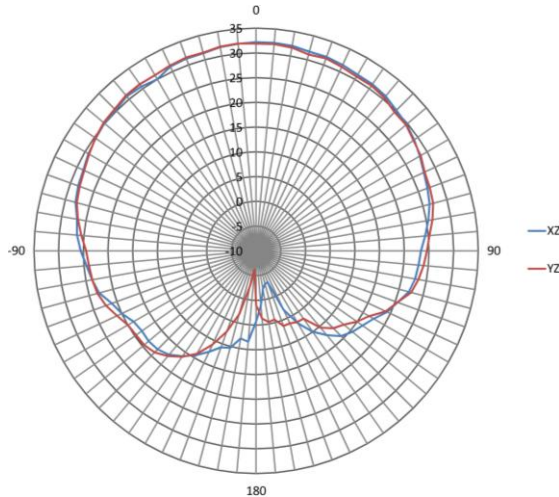
3D Pattern



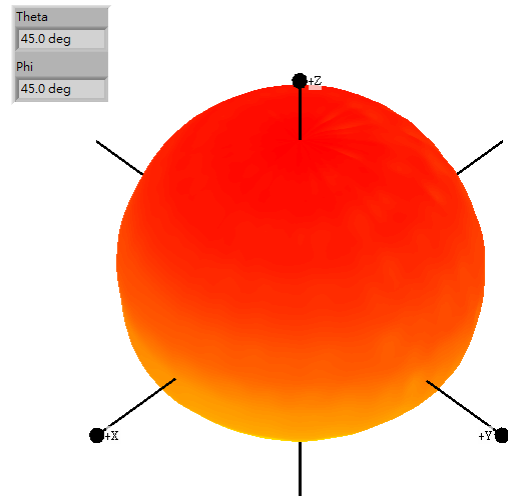
● **U828G**

Frequency=1575MHz; Gain=32.31dBic

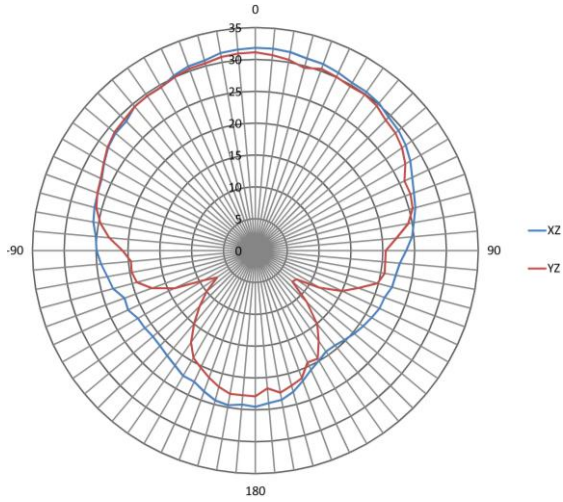
2D Pattern



3D Pattern

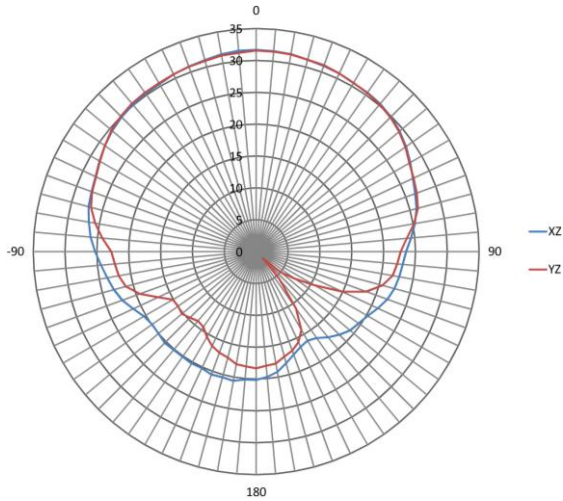


Frequency=1602MHz; Gain=31.96dBic
2D Pattern



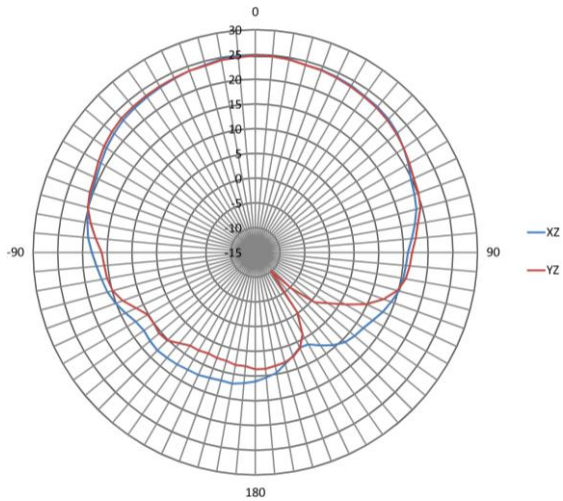
● **U826S**

Frequency=1575MHz; Gain=31.8dBic
2D Pattern



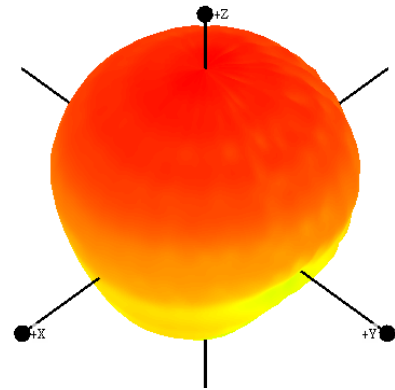
● **U820U**

Frequency=1575MHz; Gain=25.11dBic
2D Pattern



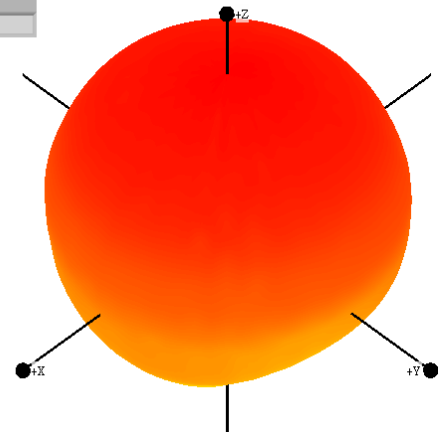
3D Pattern

Theta
45.0 deg
Phi
45.0 deg



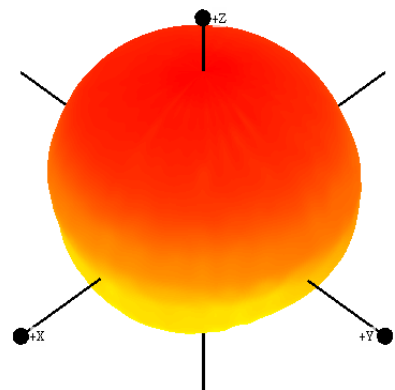
3D Pattern

Theta
45.0 deg
Phi
45.0 deg



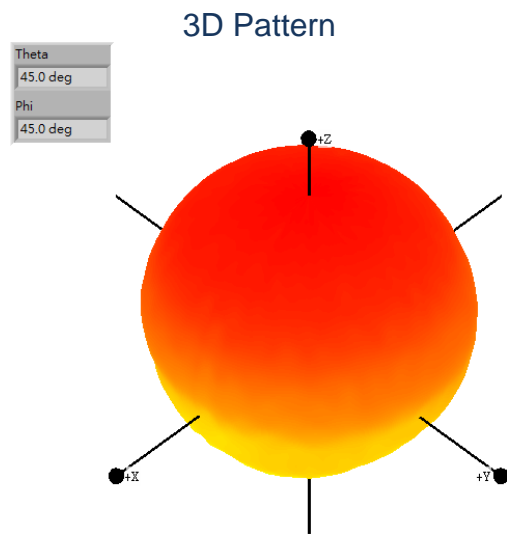
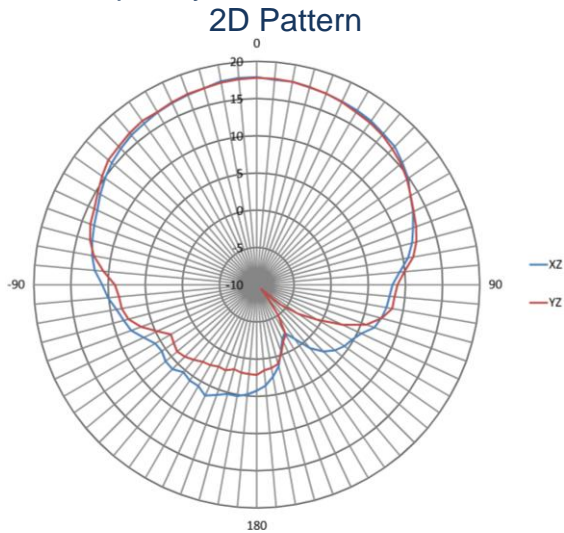
3D Pattern

Theta
45.0 deg
Phi
45.0 deg



● **U812U**

Frequency=1575MHz; Gain=18.04dBic



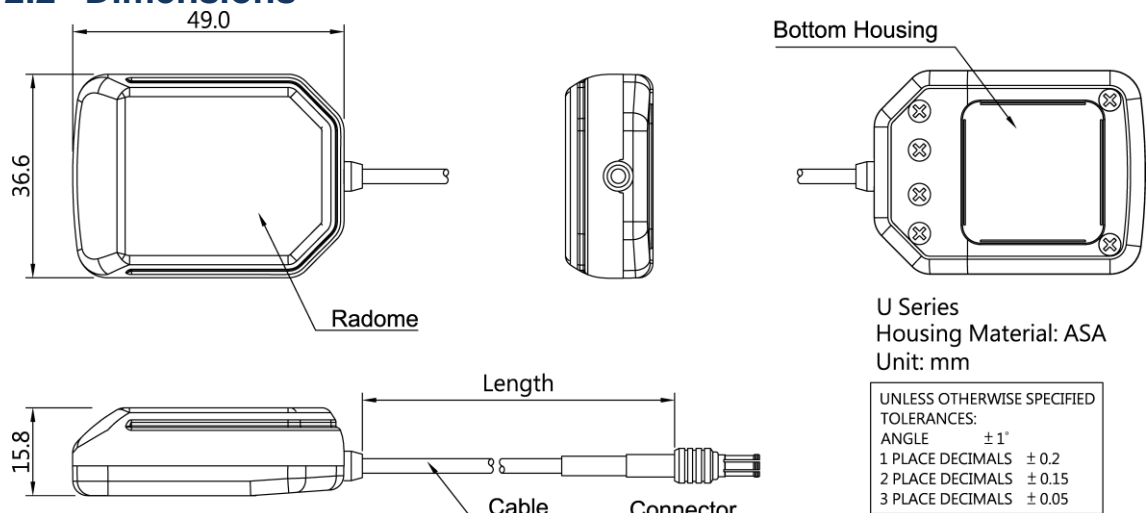
2. Mechanical Specifications

2.1 Mechanical Data

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

* Specifications subject to change without notice.

2.2 Dimensions



U Series
Housing Material: ASA
Unit: mm

UNLESS OTHERWISE SPECIFIED TOLERANCES:	
ANGLE	± 1°
1 PLACE DECIMALS	± 0.2
2 PLACE DECIMALS	± 0.15
3 PLACE DECIMALS	± 0.05

3. Environmental Specifications

Working Temperature	-40°C < T < +85°C
Storage Temperature	-50°C < T < +95°C
Vibration	Sine Sweep, 1G(0-P), 10-150-10Hz each axis
Humidity	95%~100% RH
Weatherproof	IP67

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