ALLISCOM
M Series GNSS Antenna
Data Sheet

Model No. GPS : M827U, M820U, M812U
M826S(Dual SAW Filter)
GPS/GLONASS: M828G

Feature
- Low Noise Figure < 0.9dB
- Waterproof Housing
- Magnetic Mounting`
- Low Profile

Benefit
- Resistant to harsh outdoor environment
- High Performance
- Concealable

Description Allis Communications M Series GNSS Active Antenna is a waterproof Magnetic Mount Antenna. The Antenna is the perfect antenna for external use with harsh outdoor environment.

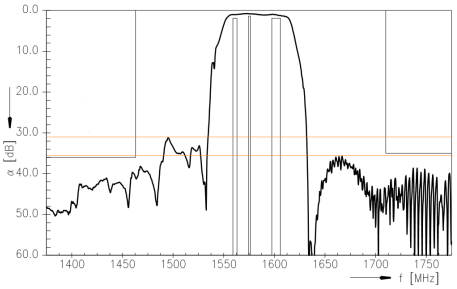
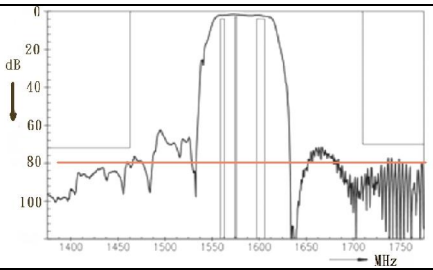
1. Electrical Specifications

1.1 Electrical Data

Patch Antenna (with 7*7cm ground plane)

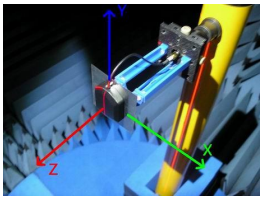
Frequency	GPS only: 1575.42 ± 3 MHz
	GPS/ GLONASS: 1585 ± 3 MHz
VSWR	1.5 max.
Bandwidth	20MHz min. at -10dB
Axial Ratio	3dB max.
Polarization	RHCP
Peak Gain	4dBic min. at 0°
Gain Coverage	≥ -4dBic at –90° ≤ θ ≤ 90°(over 75% volume)
Impedance	50Ω

LNA/Filter Module

Frequency Range	1555 ~ 1615MHz	
Module Gain	M827U	29dB typ.
	M828G(GPS/ LONASS)	29dB typ.
	M826S(Dual SAW Filter)	29dB typ.
	M820U	22dB typ.
	M812U	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	M827U	6 ~ 11mA
	M828G(GPS/ LONASS)	6 ~ 11mA
	M826S(Dual SAW Filter)	6 ~ 11mA
	M820U	6 ~ 11mA
	M812U	3 ~ 6mA

∗ Specifications subject to change without notice.

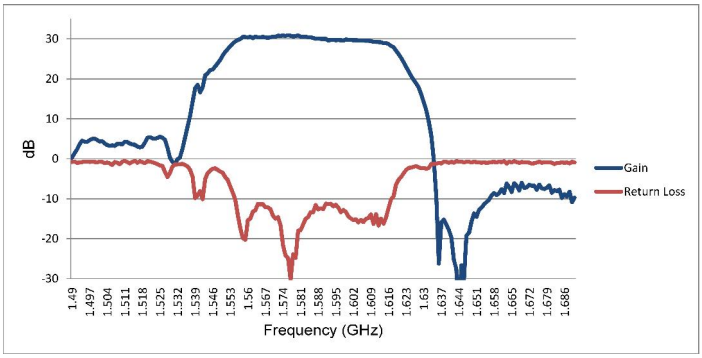
1.2 Antenna measurement



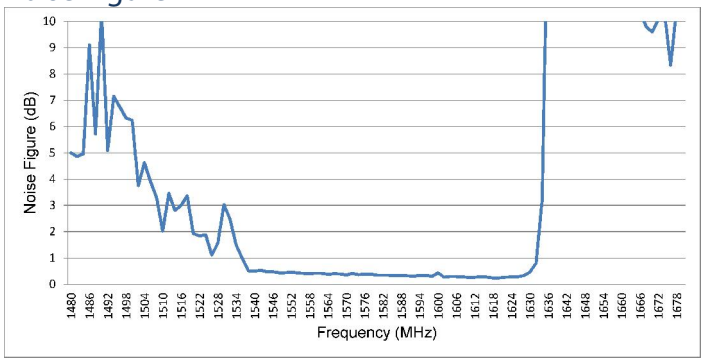
1.2.1 LNA/Filter Module (Voltage: 3V)

- **M827U/ M828G**

Gain and Return Loss

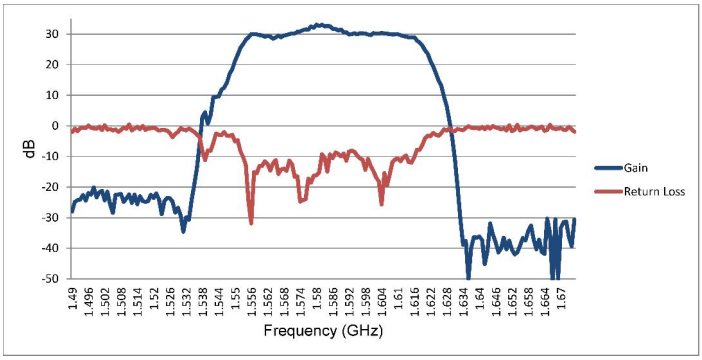


Noise Figure

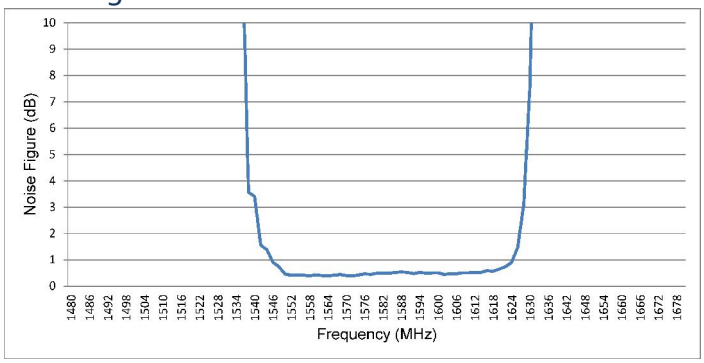


- **M826S**

Gain and Return Loss

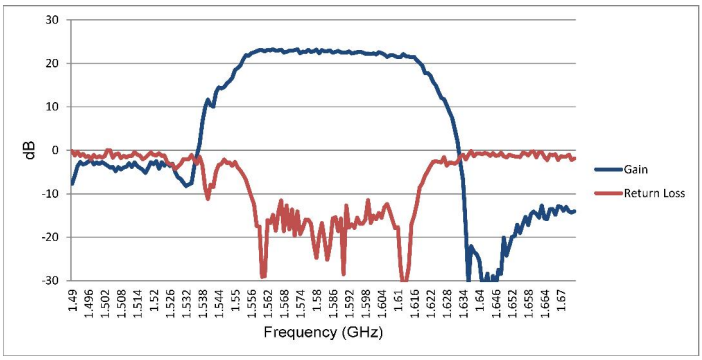


Noise Figure

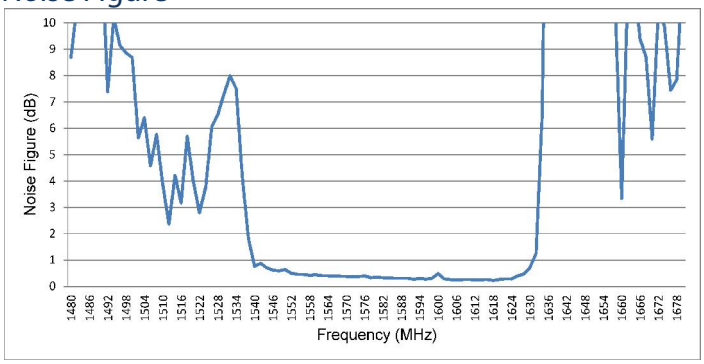


- **M820U**

Gain and Return Loss

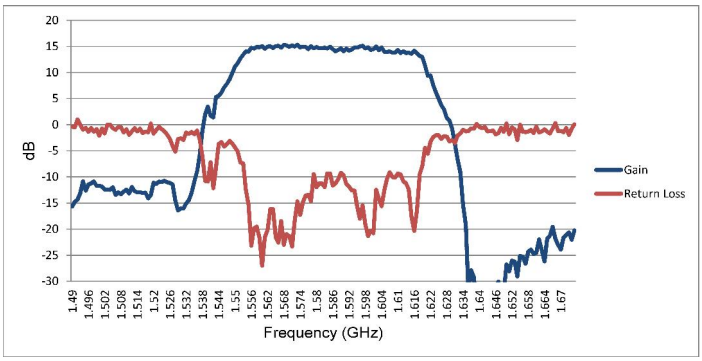


Noise Figure

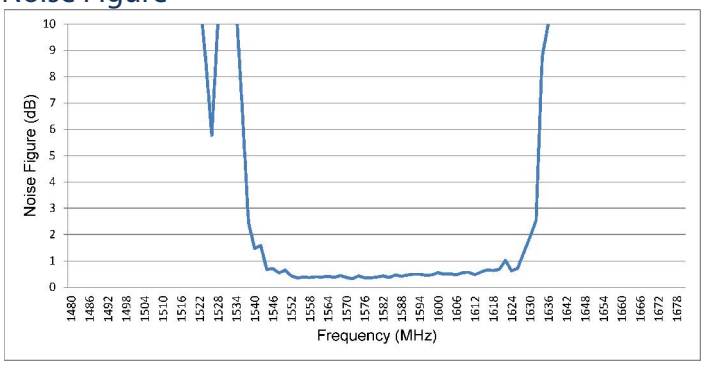


- **M812U**

Gain and Return Loss



Noise Figure

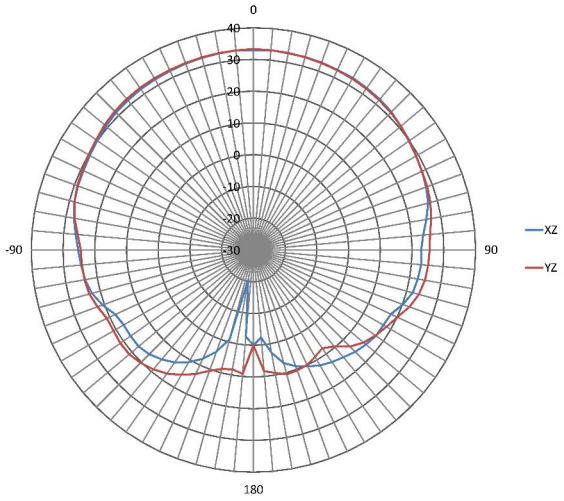


1.2.2 RHCP Radiation Pattern (Voltage=3V; 17cm RG174 cable; 7*7cm ground plane)

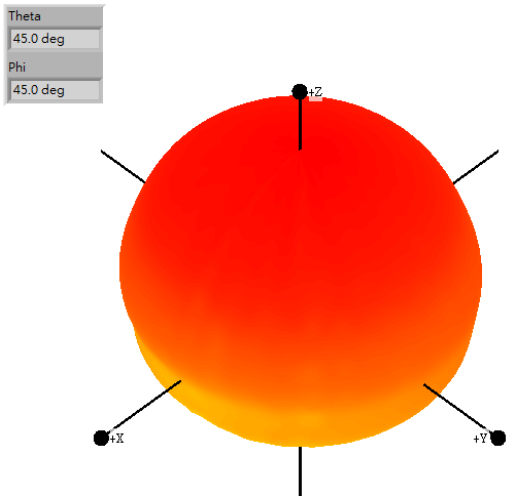
- **M827U**

Frequency=1575MHz; Gain=33.37dBic

2D Pattern



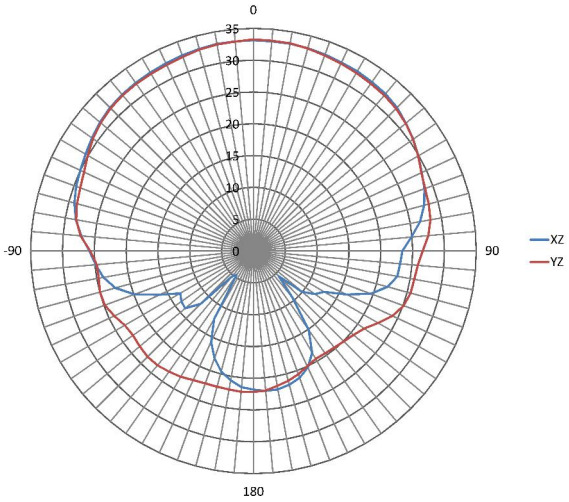
3D Pattern



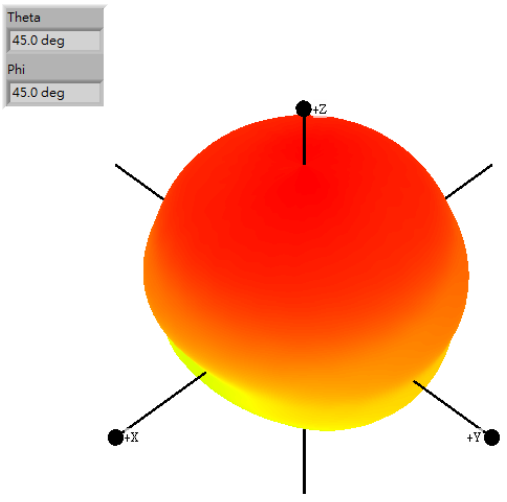
- **M828G**

Frequency=1575MHz; Gain=33.21dBic

2D Pattern

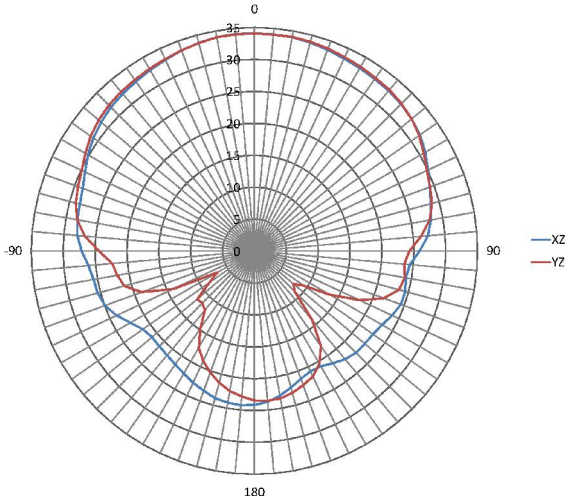


3D Pattern

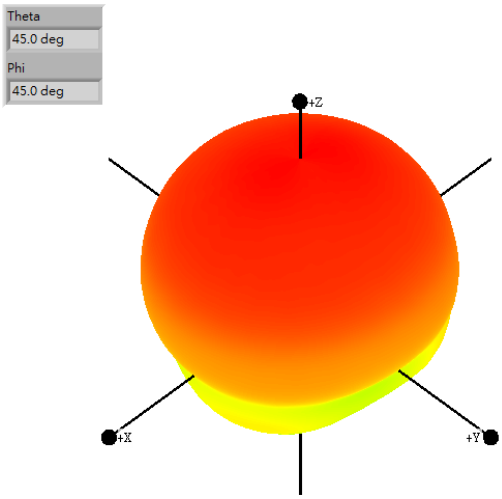


Frequency=1602MHz; Gain=33.86dBic

2D Pattern



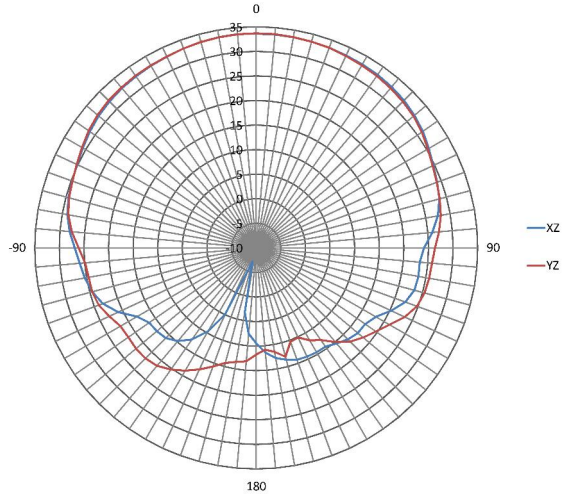
3D Pattern



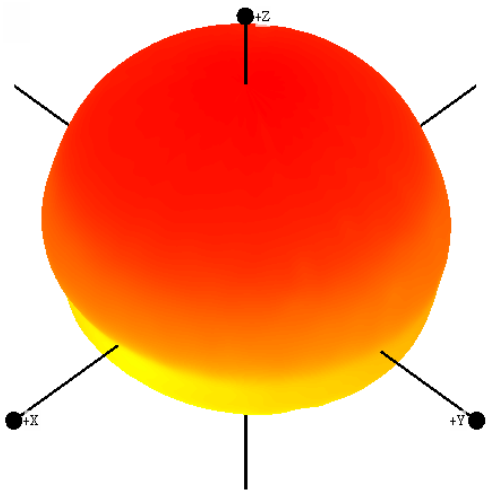
- **M826S**

Frequency=1575MHz; Gain=33.81dBic

2D Pattern



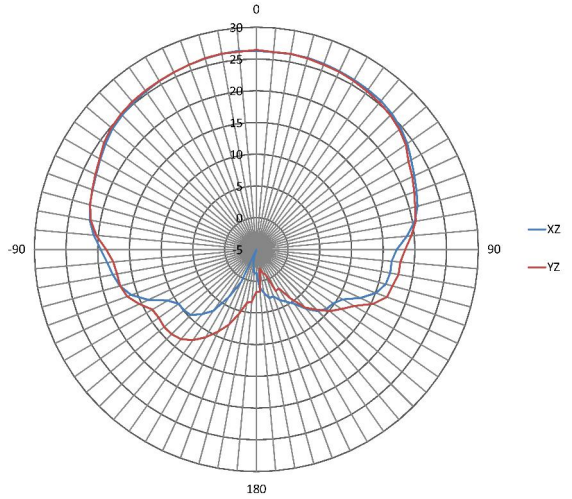
3D Pattern



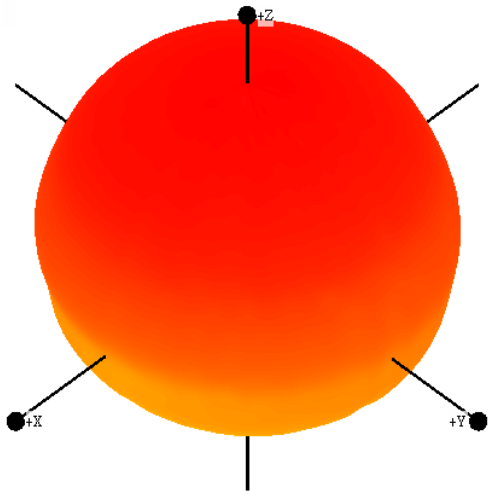
- **M820U**

Frequency=1575MHz; Gain=26.6dBic

2D Pattern



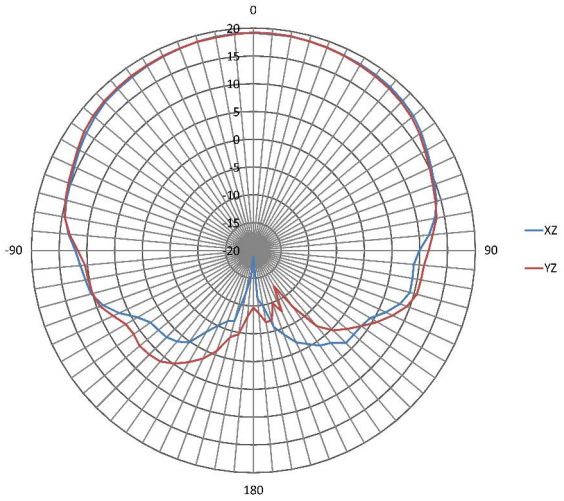
3D Pattern



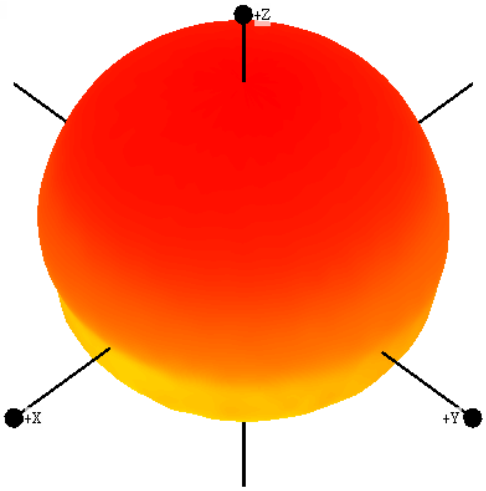
- **M812U**

Frequency=1575MHz; Gain=19.36dBic

2D Pattern



3D Pattern



2. Mechanical Specifications

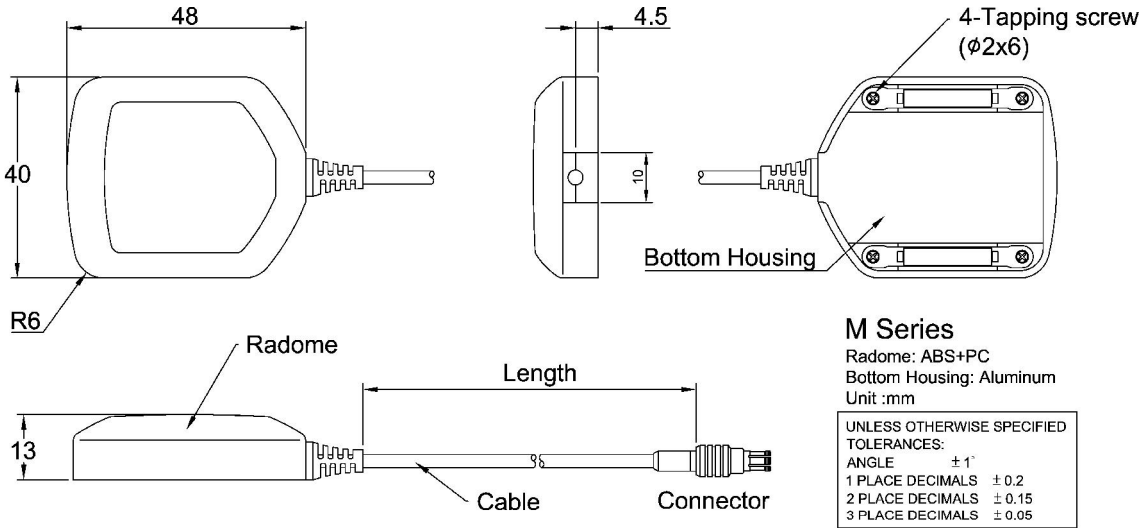
2.1 Mechanical Data

	With housing	Without housing
Weight (Without Cable)	42 grams max.	16 grams max.
Size	48 x 40 x 13 mm	34.4 x 27 x 8.6 mm
Mounting	Magnetic base	--
RF Cable/ Connector	Custom	
Housing Color	Black	

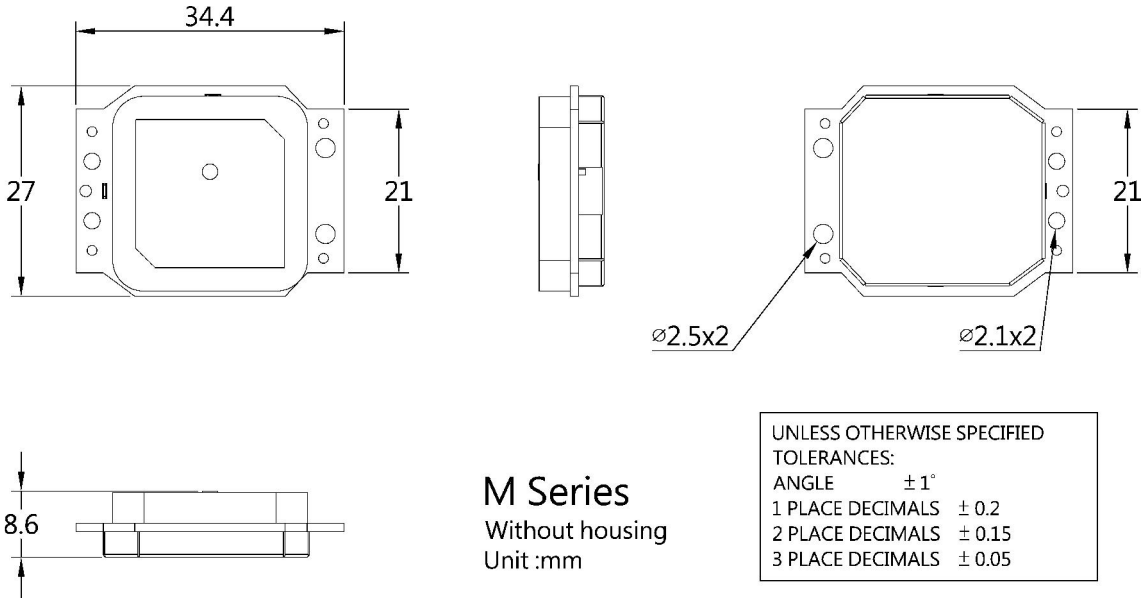
* Specifications subject to change without notice.

2.2 Dimensions

- **With housing**



- **Without housing**



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	IP56

* Specifications subject to change without notice.