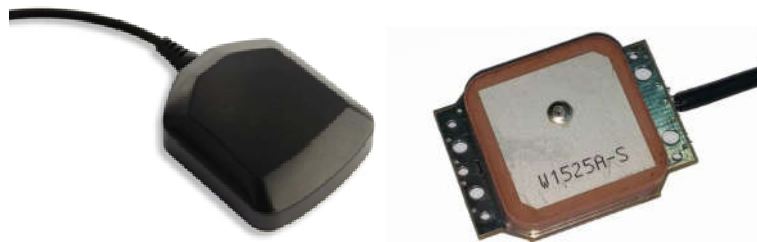


ALLISCOM

M Series GNSS Antenna

Data Sheet



Model No.	GPS : M827U, M820U, M812U M826S(Dual SAW Filter) GPS/GLONASS: M828G,M820G
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.

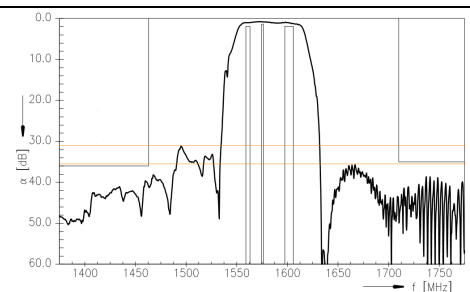
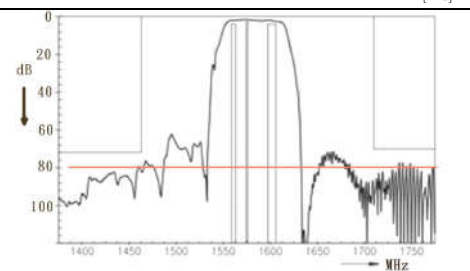
1. Electrical Specifications

1.1 Electrical Data

Patch Antenna (with 7*7cm ground plane)

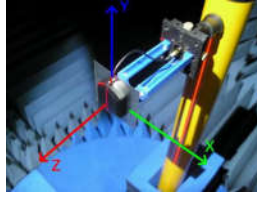
Frequency	GPS only: 1575.42 ± 3 MHz
	GPS/ GLONASS: 1585 ± 3 MHz
VSWR	1.5 max.
Bandwidth	20MHz min. at -10dB
Axial Ratio	3dB max.
Polarization	RHCP
Peak Gain	4dBic min. at 0°
Gain Coverage	≥ -4dBic at -90° ≤ θ ≤ 90°(over 75% volume)
Impedance	50Ω

LNA/Filter Module

Frequency Range	1555 ~ 1615MHz	
Module Gain	M827U	29dB typ.
	M828G(GPS/ LONASS)	29dB typ.
	M826S(Dual SAW Filter)	29dB typ.
	M820U,M820G	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,M820G(GPS/ LONASS)	6 ~ 11mA
	M826S(Dual SAW Filter)	6 ~ 11mA
	M820U	6 ~ 11mA
	M812U	3 ~ 6mA

* Specifications subject to change without notice.

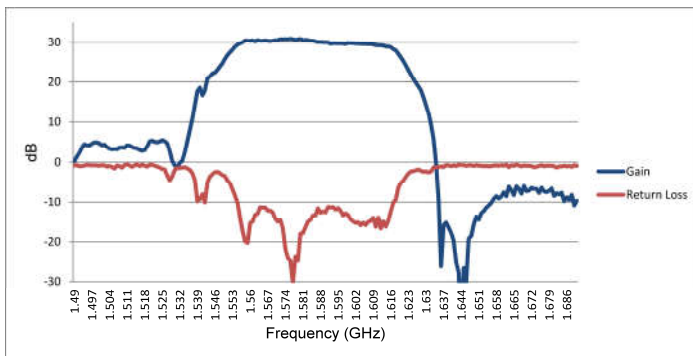
1.2 Antenna measurement



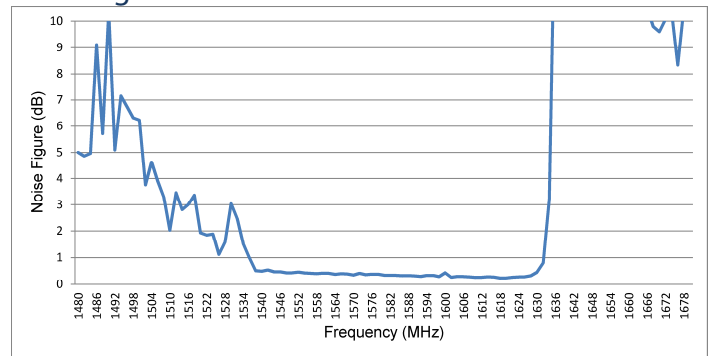
1.2.1 LNA/Filter Module (Voltage: 3V)

● M827U/ M828G

Gain and Return Loss

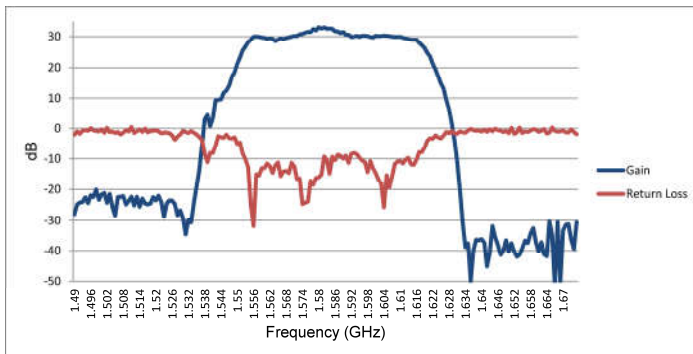


Noise Figure

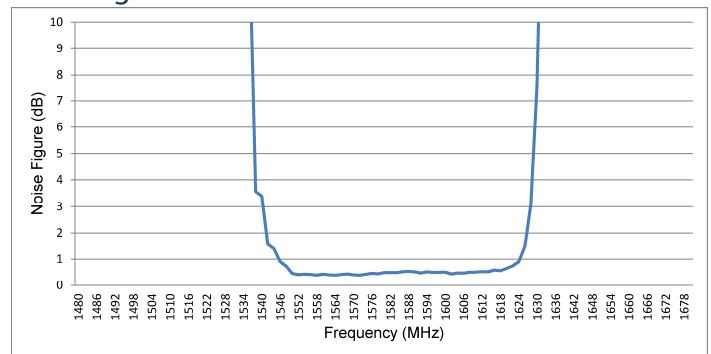


● M826S

Gain and Return Loss

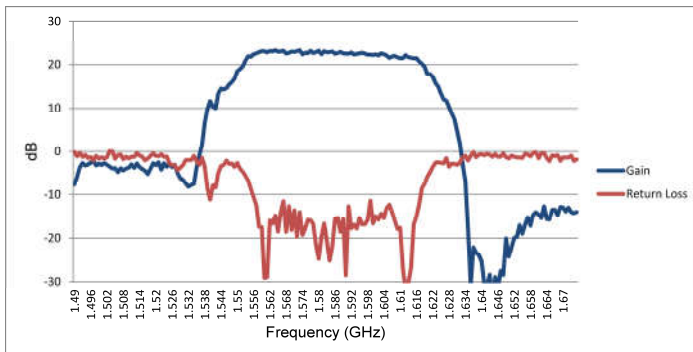


Noise Figure

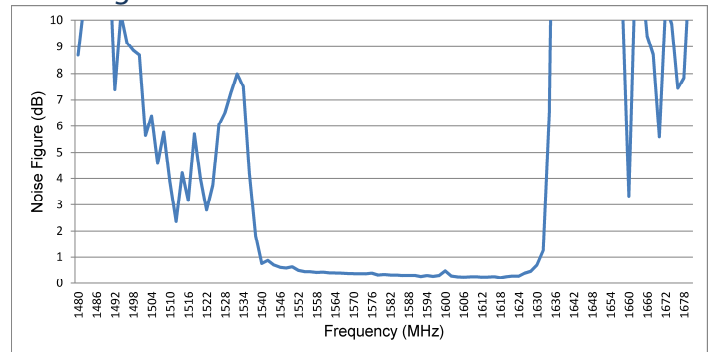


● M820U/M820G

Gain and Return Loss

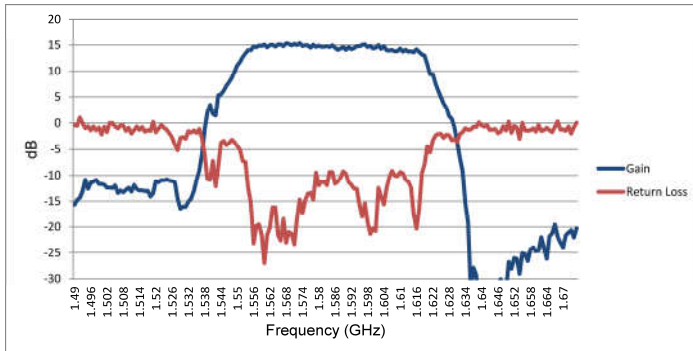


Noise Figure

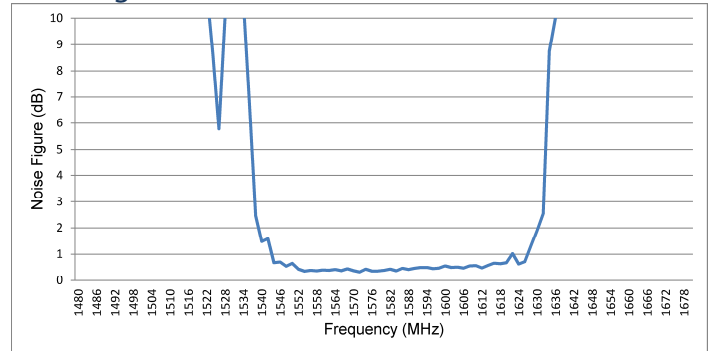


● M812U

Gain and Return Loss



Noise Figure

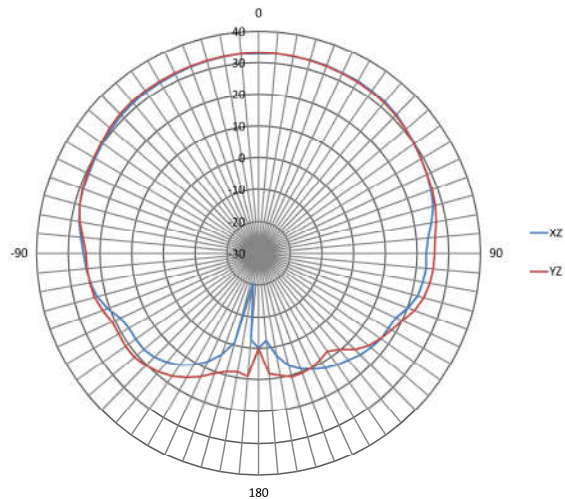


1.2.2 RHCP Radiation Pattern (Voltage=3V; 17cm RG174 cable; 7*7cm ground plane)

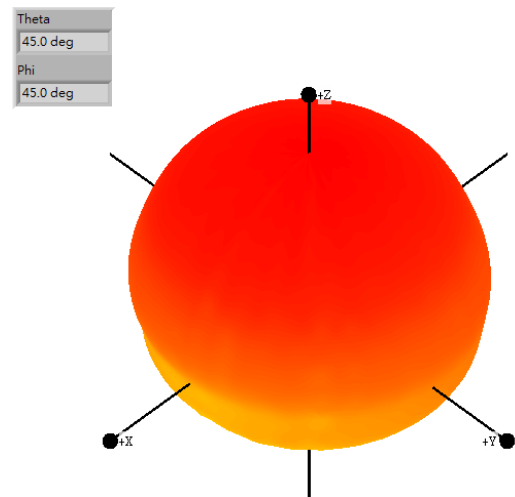
● M827U

Frequency=1575MHz; Gain=33.37dBic

2D Pattern



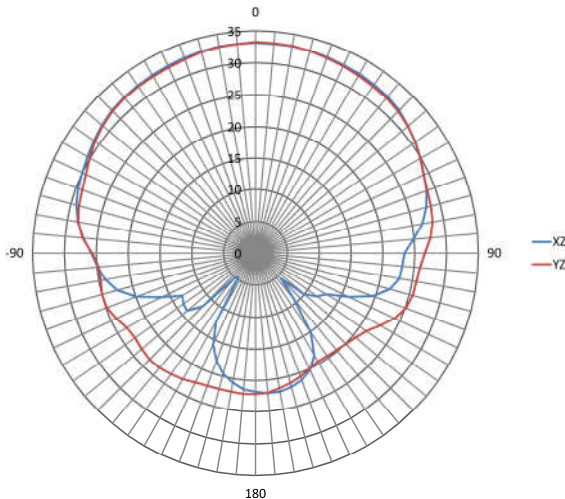
3D Pattern



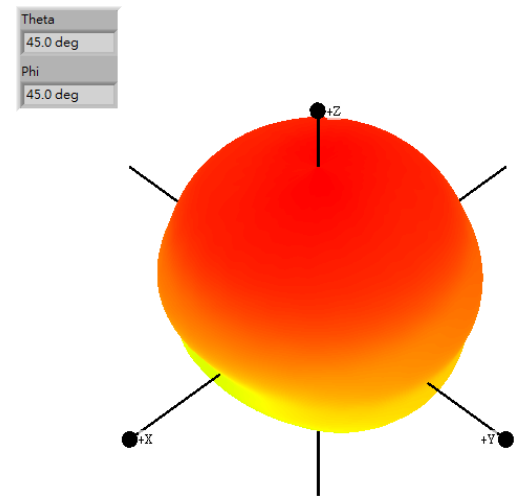
● M828G

Frequency=1575MHz; Gain=33.21dBic

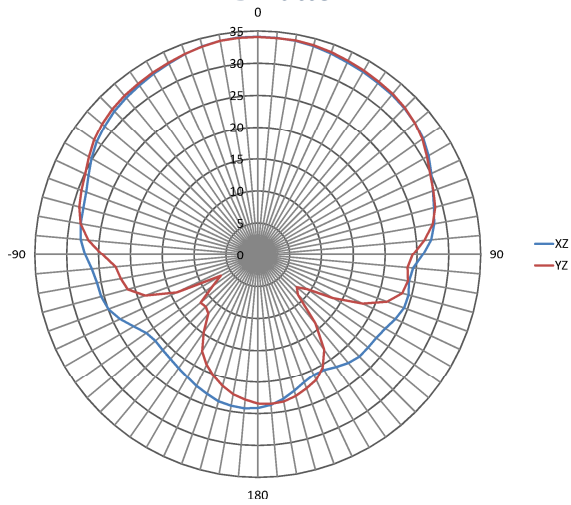
2D Pattern



3D Pattern

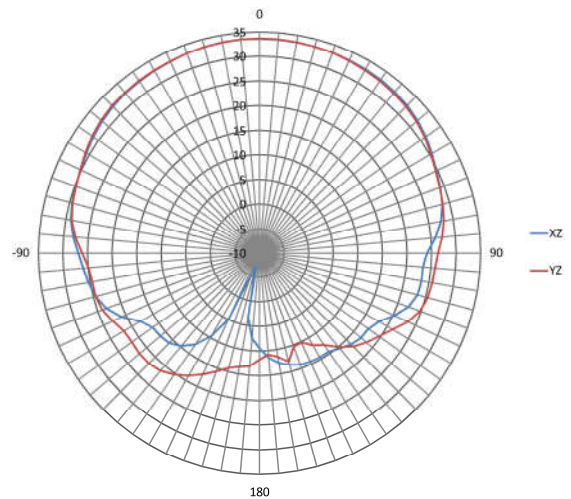


Frequency=1602MHz; Gain=33.86dBic
2D Pattern



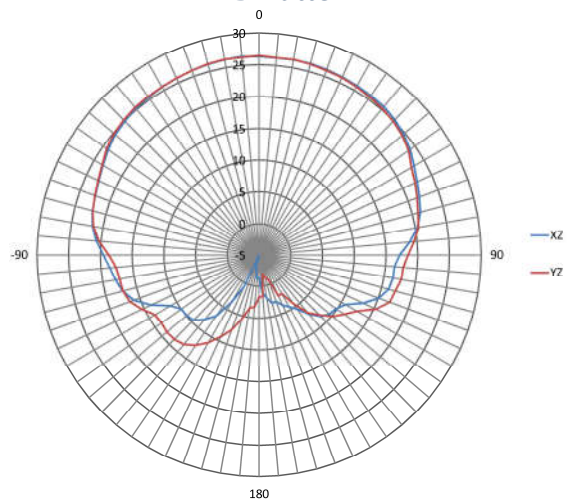
● M826S

Frequency=1575MHz; Gain=33.81dBic
2D Pattern

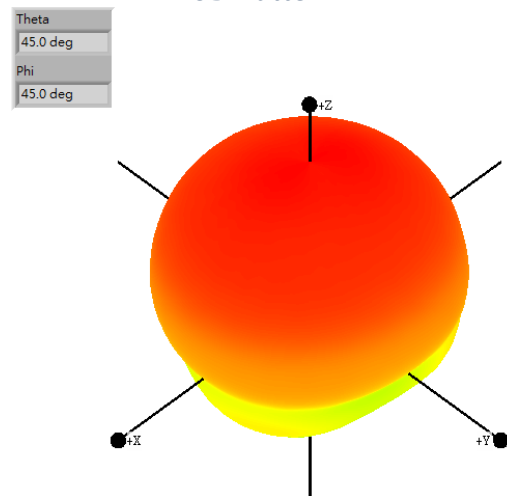


● M820U

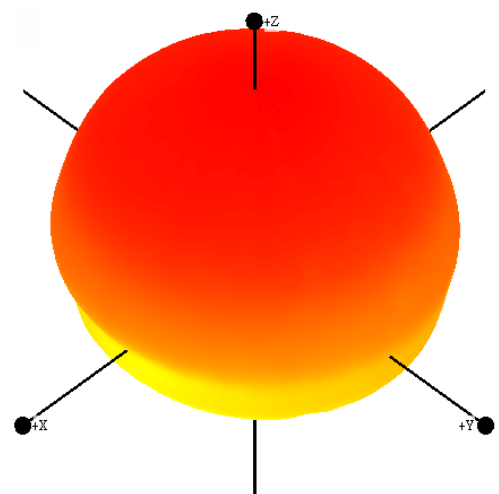
Frequency=1575MHz; Gain=26.6dBic
2D Pattern



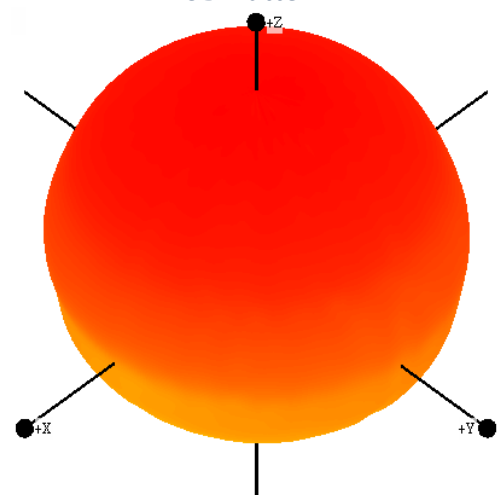
3D Pattern



3D Pattern

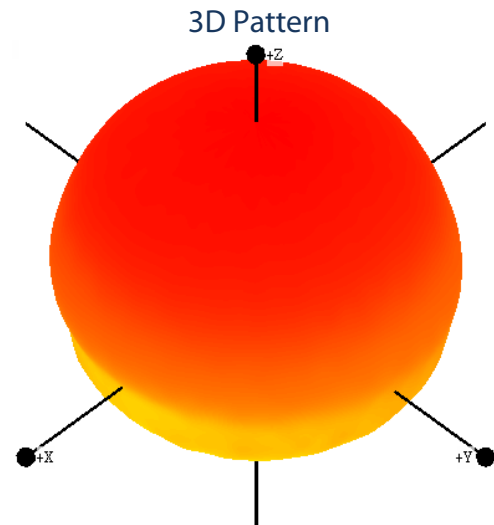
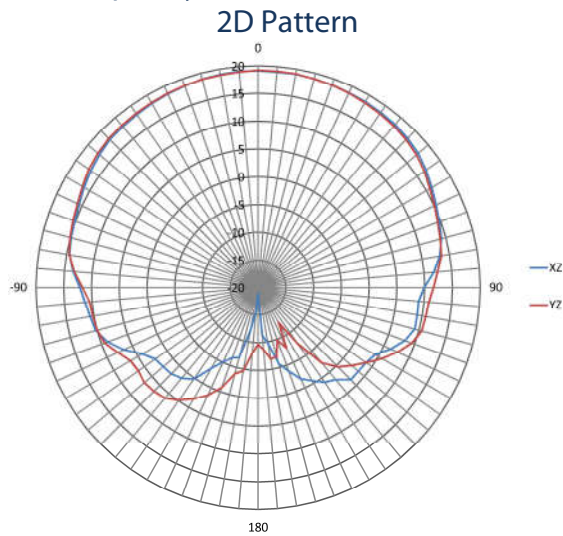


3D Pattern



● M812U

Frequency=1575MHz; Gain=19.36dBic



2. Mechanical Specifications

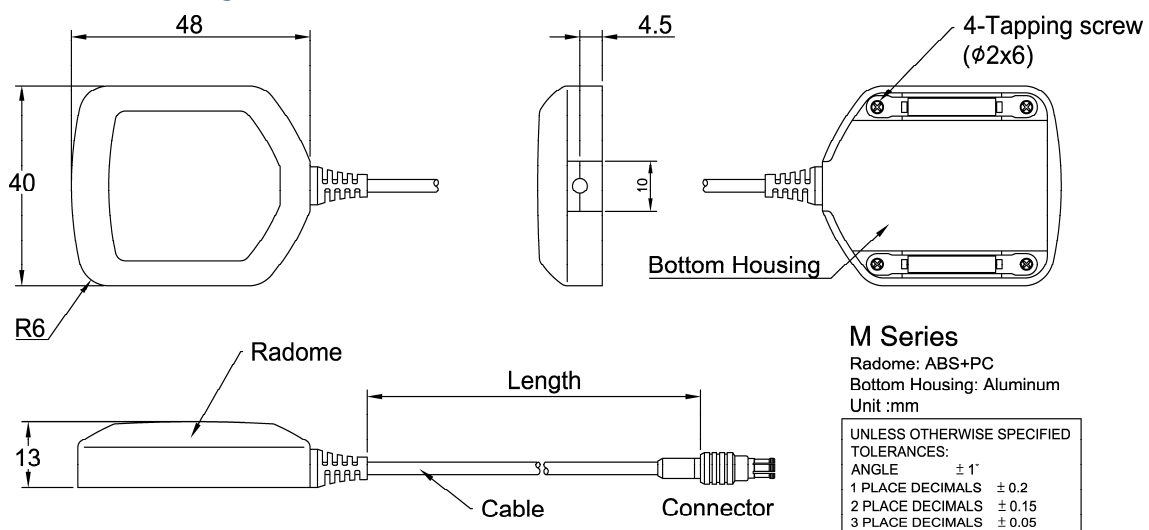
2.1 Mechanical Data

	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	

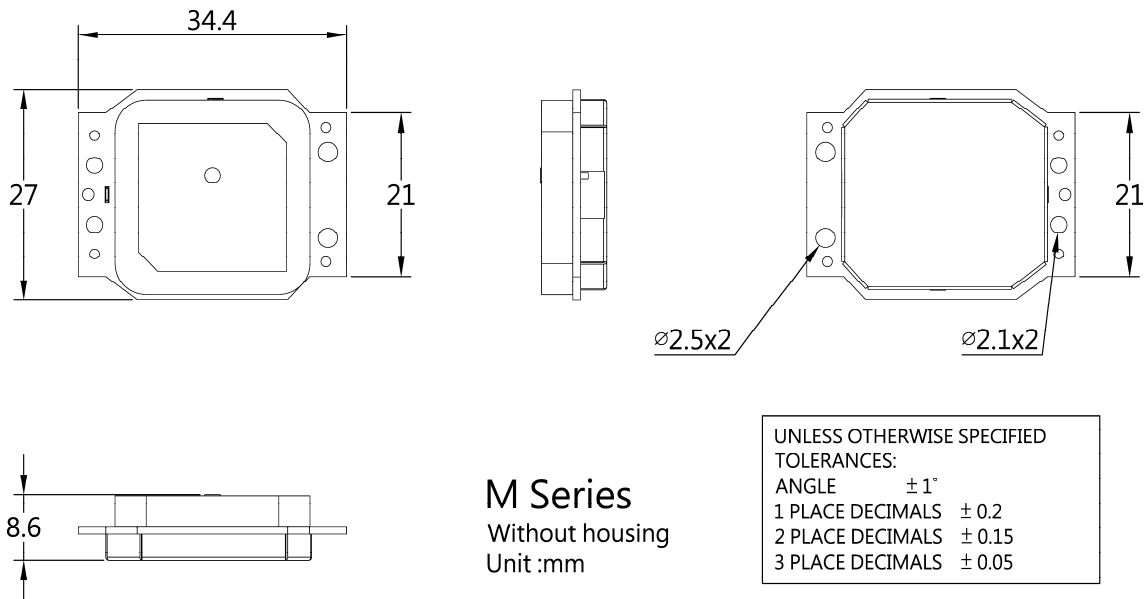
* Specifications subject to change without notice.

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.