

# FM/AM/GPS Active Antenna

## RG-GPV-R101SMB/PLUG-M5



This application shall apply for antenna unit which shall be used with an engine for automotive.  
(Impedance  $50\Omega$  for GPS and  $75\Omega$  for FM/AM)

## Features

1. High Gain and low noise.
2. Small type and no radome type are available.
3. Variable cable length and connectors are available.
4. RoHS compliance.
5. ESD resistance.  $\pm 15kV$  (air)

## Applications

GPS/Radio(FM/AM) antenna for Automotive

## Part Number

SK 01 - XX

(1) (2) (3)

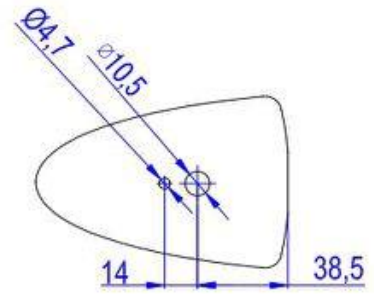
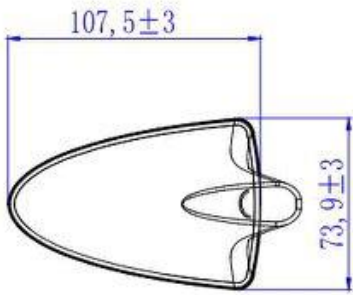
(1) GPS/FM/AM AAF SYMBOL

(2) Serial No.

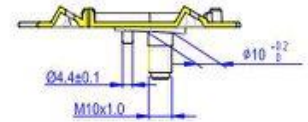
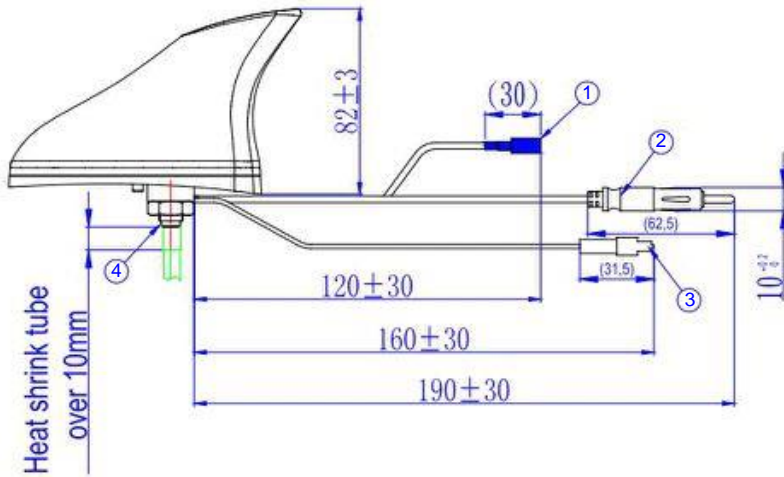
(4) Assembly type : 00~99; 00: GPS,SMB PLUG,120mm RG174; FM/AM,RADIO PLUG(M),  
190mm SYV-75-2,160mm Power Line;

# Dimensions

## 1. Antenna



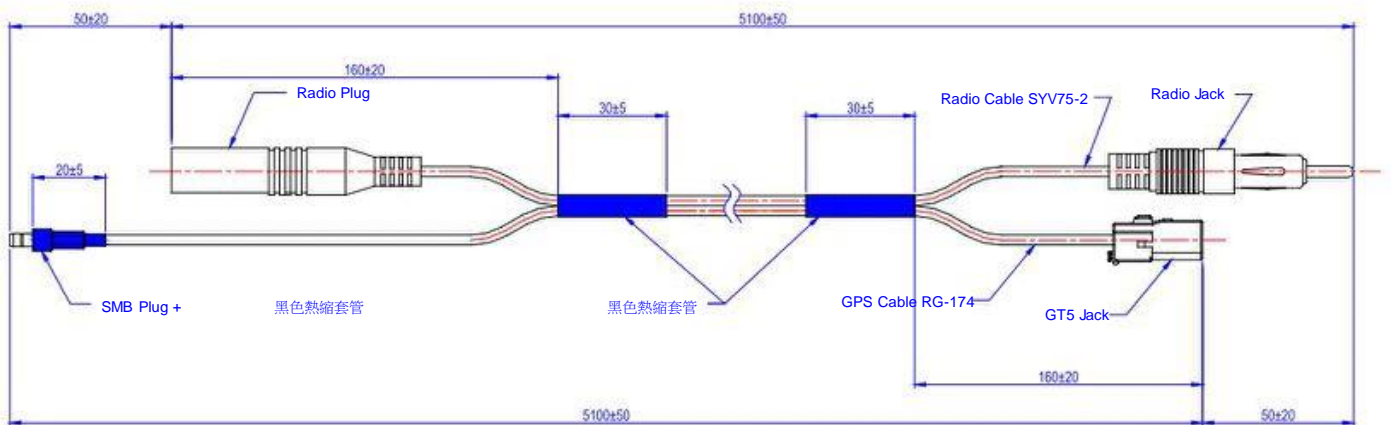
Mounting Hole



REMARK:

- ① SMB Plug for RG-174 120±30mm
- ② Radio Jack for SYV75-2 190±30mm
- ③ Power connector (61118-1/1-480351-0) for UL1015 AWG22 160±30mm
- ④ Nut: M10x1.0

## 2. Cable



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# Specifications

## 1. Environmental

Item	SK01 Series
Operating Temperature	-40 to + 85℃
Operating Humidity	10 to 95% RH
Storage Temperature	-40 to + 85℃
Storage Humidity	10 to 95% RH

## 2. Electrical

\* All value are defined at  $25\pm 15^{\circ}\text{C}$  ,  $65\pm 20\%$  RH, power handling 1 u watt, air pressure  $960 \pm 100$  HPA unless

\* Patch characteristics are measured with 70x70 mm ground plane in an anechoic chamber.

### 2.1 GPS

#### 2.1.1 PATCH

Characteristics	Specification
Center Frequency	$1575.42 \pm 1.023$ MHz (when covered with a radome and measured by LNA ground plane)
Bandwidth (10dB return loss)	10 MHz min
Gain at Zenith	5.0 dBic typ.
Gain at 10o elevation	- 1.0 dBic min
Polarization	R.H.C.P
Axial Ratio	3.0 dB typ.

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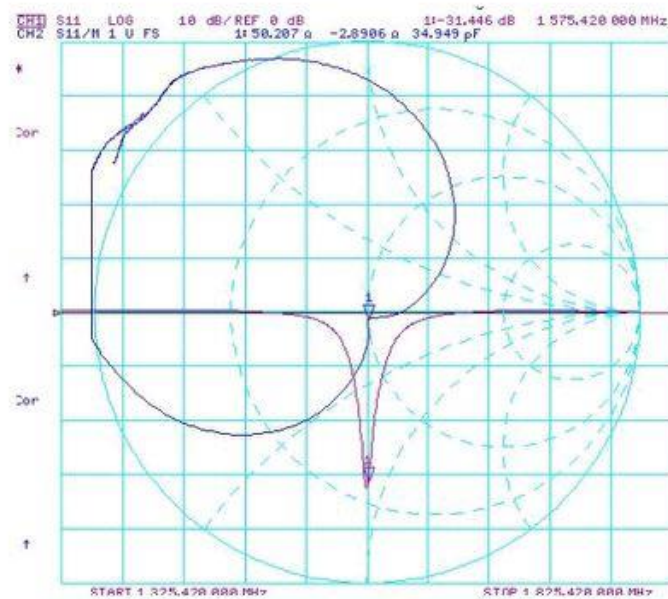
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## Patch test result

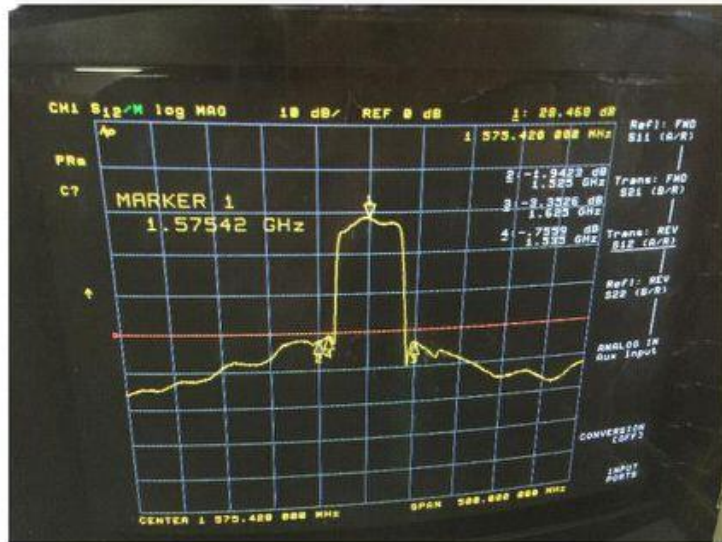


### 2.1.2 Filter/LNA

Characteristics	Specification	
Center Frequency	1575.42 ±1.023 MHz	
Gain	28 dB typ.	
Noise Figure	1.5dB (max)	
Filer Out band attenuation	Dielectric SAW 20dB min. $f_0 \pm 50\text{MHz}$ 30dB min. $f_0 \pm 100\text{MHz}$ ( $f_0=1575.42\text{ MHz}$ )	0.1~1525MHz min:37dB 1625~6000MHz min:30dB
Output V.S.W.R	1.6 max	
Voltage	DC =2.7~5.3V	
Current	7mA±3mA(DC=3.0V)	

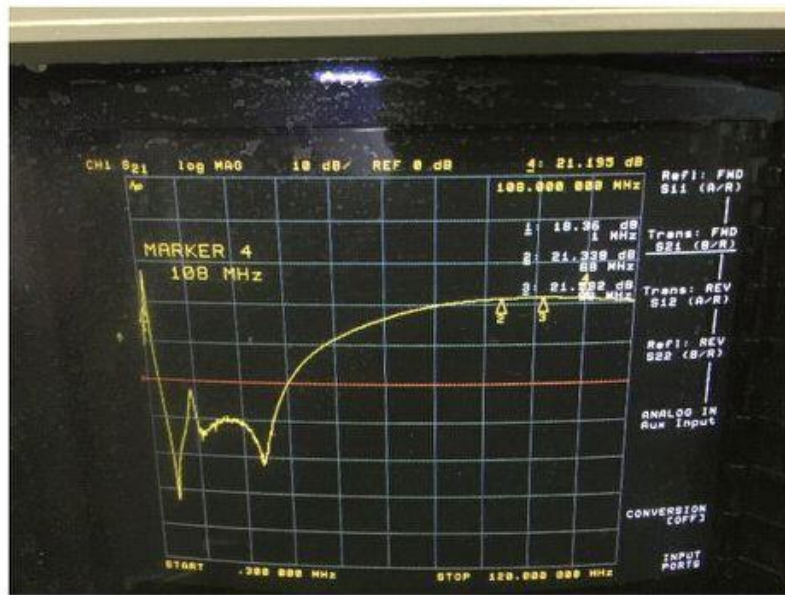
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## LNA/Filter test result



### 2.2 FM/AM

Item	AM	FM
Frequency	520~1710kHz	87.5~108MHz
Impedance	75	75
Gain	18dB ± 3dB	20dB ± 3dB
Noise Figure	<5dB	<5dB
Filter	Resonate	LC Band PASS
Voltage	9~16VDC	9~16VDC
Current Consumption	35mA ± 10mA@12V	35mA ± 10mA@12V



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### 3. Physical Properties

#### 3.1 GPS

Connector Type	SMB PLUG
Cable Type	RG174

#### 3.2 FM/AM

Connector Type	RADIO PLUG(M)	RADIO PLUG(M)
Cable Type	SYV-75-2	SYV-75-2

### 4. Mechanical

Item	Test Condition	Specification
Pulling test for connector and cable	Fix the cable on the pulling machine and then pull down the Radio/GPS connector till Radio/GPS connector is broken.	Guarantee value: 5kgs
Waterproof	Place the unit under 30cm depth of water, 24hr, Wipe the water in the gap or on the unit.	Electrical characteristics shall satisfy item 2. There is no water across the packing to PCB.

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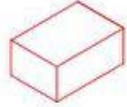


5. Reliability

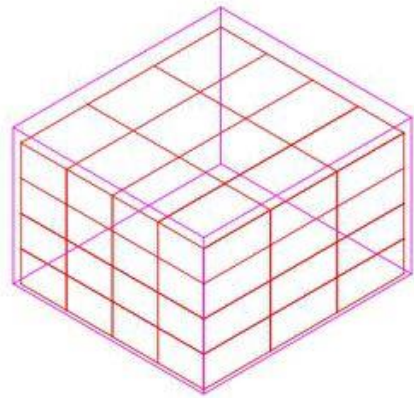
Item	Test Condition	Specification
Vibration Test	Test the antenna on the quaking test machine. Vibration frequency:20Hz~200Hz Vibration acceleration: 2G Vibration time: 3hrs Vibration axes: X,Y and Z	Inspect the appearance: No damage. Electrical characteristics shall satisfy item 2.
Drop Test	Height = 1m, drop the antenna unit for each direction (XYZ) 2 times.	Same as above.
Humidity Test	Place the unit at 60°C, 90~95% RH, 72 hr, and then, move it to the room more than 2 hr. Wipe the water drop on the unit.	Electrical characteristics shall satisfy item 2.
Cold Storage Test	Place the unit at -40°C, 72 hr, and then, move it to the room more than 2 hr.	Same as above.
Heat Storage Test	Place the unit at 85°C, 72 hr, and then, move it to the room more than 2 hr.	Same as above.
Thermal Cycle Test	Place the unit at -30°C 1hr, 65°C 1hr, 40 cycles, and then, move it to the room more than 2 hr.	Same as above.

6. Package

1pcs/Box



48Box/Carton



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