



Communication · Tracking · Innovation

**COMPANY:** ARMOUR AUTOMOTIVE

**PART NUMBER:** PA36MM/CH/2/GGL

**DESCRIPTION:** 36mm x 36mm x 2mm GPS/GLONASS Patch



<b>Customer Signature:</b>	<b>Customer Seal:</b>
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<b>Supplier Signature:</b>	<b>Supplier Seal:</b>
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- 1、 INTRODUCTION
- 2、 Part Number
- 3、 Structure and Material
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- 5、 Electrical Characteristics
- 6、 Characteristic curve
- 7、 Test environment
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- 9、 Environmental specifications
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## INTRODUCTION

Microwave dielectric antenna elements and its series are designed to be used for GPS and WLAN. The patch antenna with compact size incorporates a rectangular micro-strip design for GPS C/A right-hand circular polarization wave reception, featuring low RL, low Axial Ratio but high gain, etc.

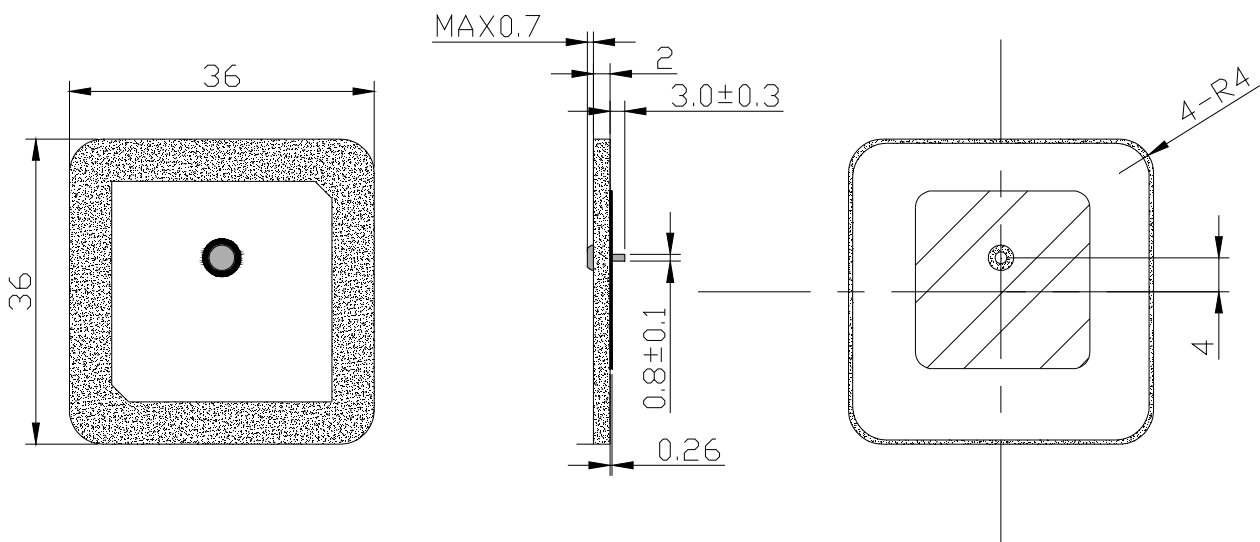
### 2. Part Number

**PA36MM/CH/2/GGL**

### 3. Structure and Material

No.	Description	Structure and Material
4.1	Antenna Substrate	Dielectric Ceramics
4.2	Pin	Copper and tinplated
4.3	Electrode	Ag Plated
4.4	Ground Base	Ag Plated
4.5	Adhesive type	NITTO 5000NS

### 4. Dimension



tolerance  $\pm 0.2$

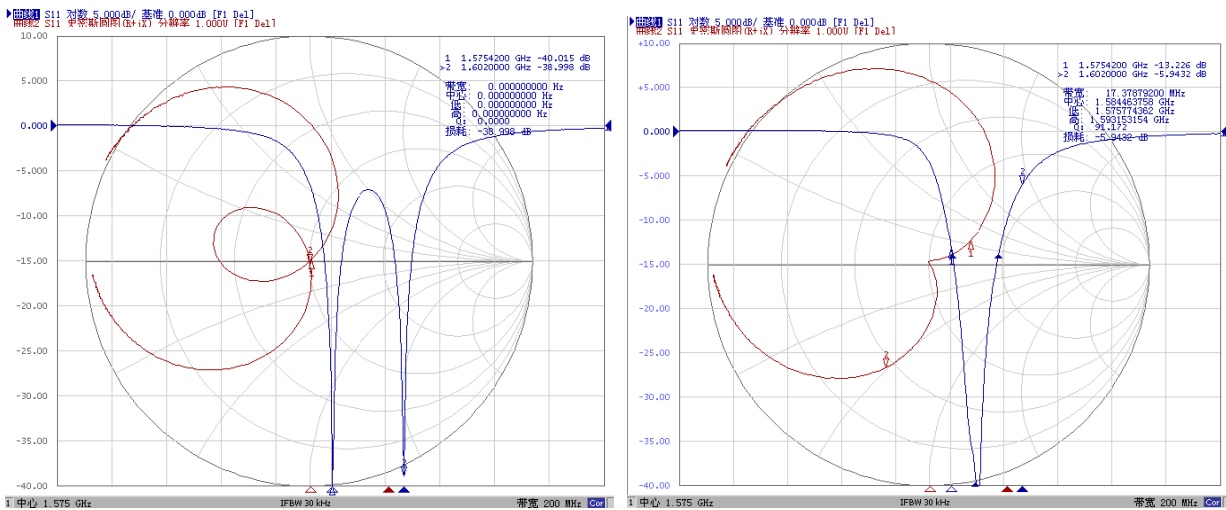
图 1 dimension

## 5. Electrical Characteristics

2

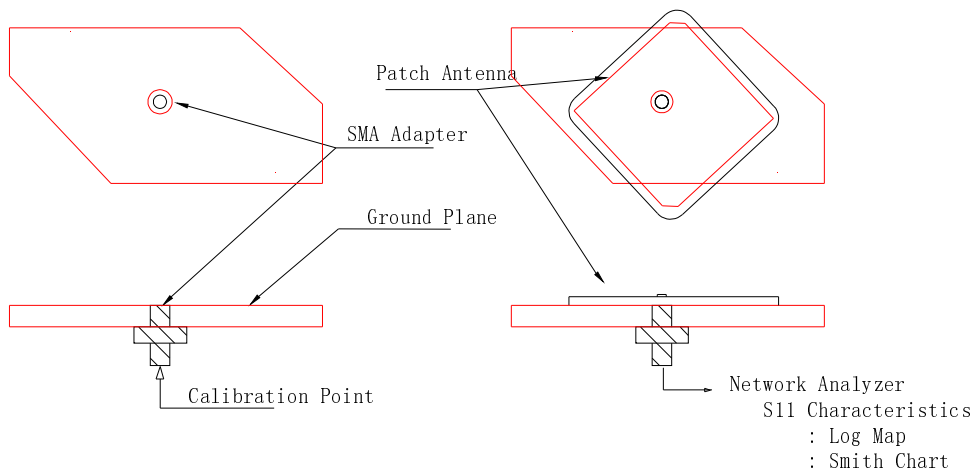
No.	Item	Specifications	Post Environmental Tolerance
5.1	(MHz) Range of Receiving Frequency	GPS: 1575 GLONASS: 1602±5	±2.5
5.2	Center Frequency (MHz) (with GL177 GND Plane)	1584	±3.0
5.3	Band With (MHz) (Return loss ≤ -10dB)	≥10	---
5.4	V.S.W.R(in Center Frequency)	≤1.5	---
5.5	Gain (Zenith) (dBi typ.)	2.0dB typical	---
5.6	Axial Ratio	5dB max	---
5.7	Polarization	Right-Handed Circular	---
5.8	Impedance ( Ω )	50	---
.9	(ppm/°C) Frequency Temperature Coefficient	0±10	---

## 6. Characteristic curve



@GL177

## 7. Test environment



## 8. Environmental specifications

Post Environmental Tolerance (Refer to the table 2)

Temperature range  $25 \pm 3^\circ\text{C}$

Relative Humidity range 55~75%RH

Operating Temperature range  $-40^\circ\text{C} \sim +85^\circ\text{C}$

Storage Temperature range  $-40^\circ\text{C} \sim +110^\circ\text{C}$

### 8.1 Moisture Proof

The device should satisfy the electrical characteristics specified in paragraph 5.1~5.6 after exposed to the temperature  $40 \pm 2^\circ\text{C}$  and the relative humidity 90~95% RH for 96 hours and 1~2 hours recovery time under normal condition.

### 8.2 Vibration Resist

The device should satisfy the electrical characteristics specified in paragraph 5.1~5.6 after applied to the vibration of 10 to 55Hz with amplitude of 1.5mm for 2 hours each in X, Y and Z directions.

### 8.3 Drop Shock

The device should satisfy the electrical characteristics specified in paragraph 5.1~5.6 after dropping onto the hard wooden board from the height of 30cm for 3 times each facet of the 3 dimensions of the device.

#### 8.4 High Temperature Endurance

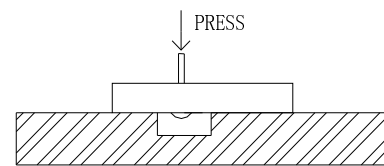
The device should satisfy the electrical characteristics specified in paragraph 5.1~5.6 after exposed to temperature  $80 \pm 5^\circ\text{C}$  for  $24 \pm 2$  hours and 1~2 hours recovery time under normal temperature.

#### 8.5 Low Temperature Endurance

The device should also satisfy the electrical characteristics specified in paragraph 5.1~5.6 after exposed to the temperature  $-40^\circ\text{C} \pm 5^\circ\text{C}$  for  $24 \pm 2$  hours and to 2 hours recovery time under normal temperature.

#### 8.6 Adhesion Strength of Soldering

Force of 2kg is applied to each lead in axial direction for  $10\text{s} \pm 1$  s (see drawing). No visible damage to the device should also satisfy the electrical characteristics specified in paragraph 5.1~5.6.



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4. Electrostatic sensitive device. Observe precautions for handling.





**COMPANY:** ARMOUR AUTOMOTIVE

**PART NUMBER:** PA36MM/CH/2

**DESCRIPTION:** 36mm x 36mm x 2mm GPS Patch

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## □ INTRODUCTION

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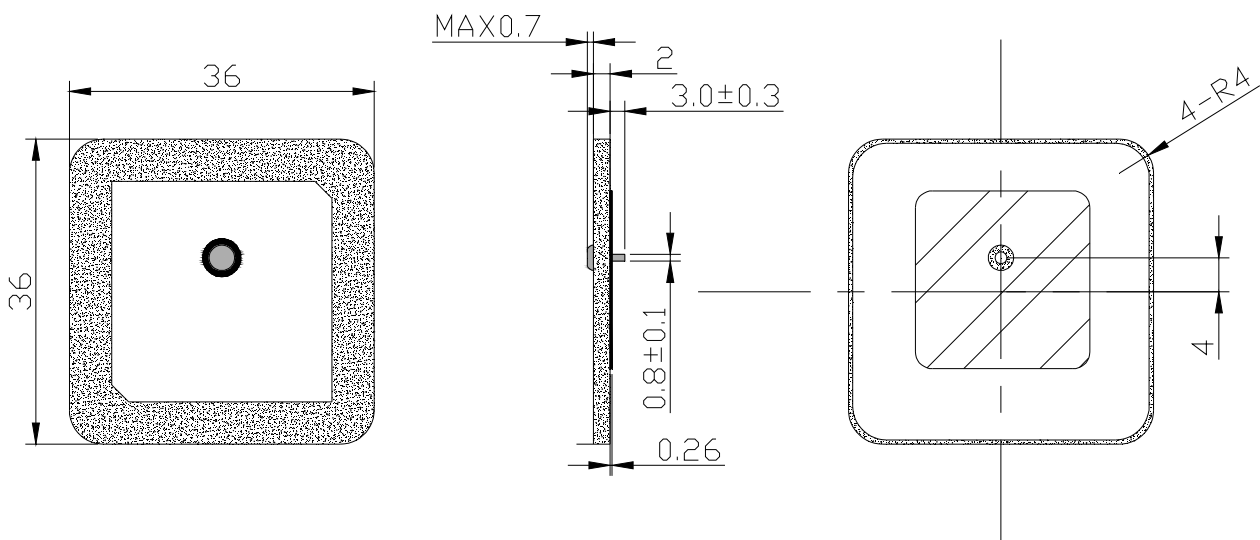
## 2. Part Number

**PA36MM/CH/2**

### 3. Structure and Material

No.	Description	Structure and Material
4.1	Antenna Substrate	Dielectric Ceramics
4.2	Pin	Copper and tinplated
4.3	Electrode	Ag Plated
4.4	Ground Base	Ag Plated
4.5	Adhesive type	NITTO 5000NS

### 4. Dimension



tolerance  $\pm 0.2$

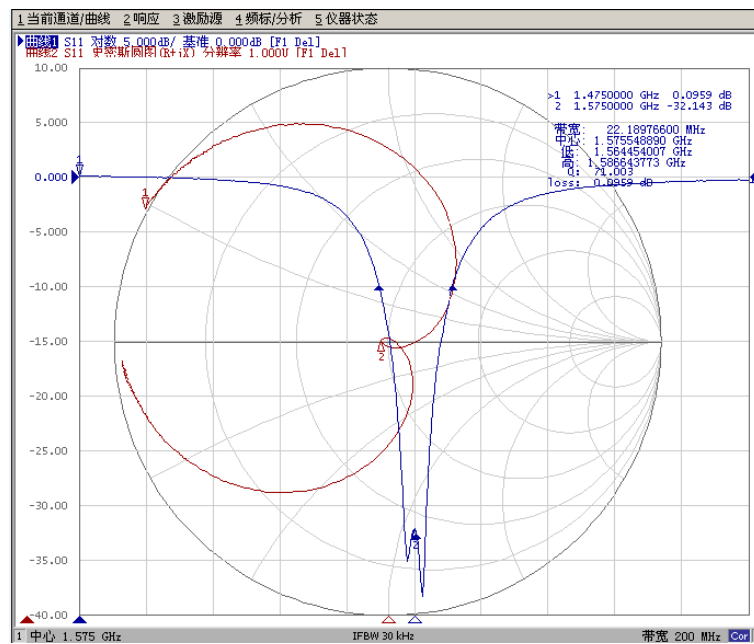
1 dimension

## 5. Electrical Characteristics

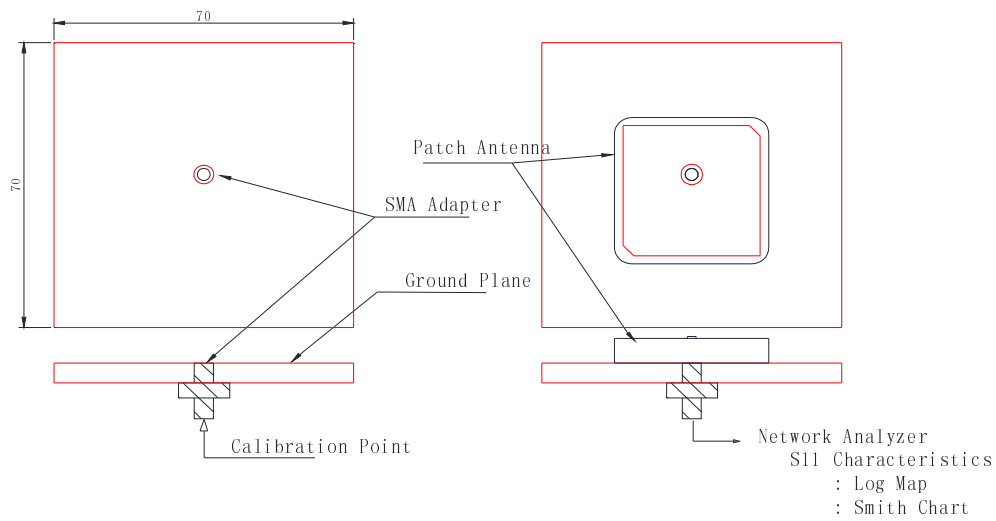
表 2

No.	Item	Specifications	Post Environmental Tolerance
5.1	(MHz) Range of Receiving Frequency	1575	±2.5
5.2	Center Frequency (MHz) (with 70X70mm GND Plane)	1575	±3.0
5.3	Band With (MHz) (Return loss ≤ -10dB)	≥10	---
5.4	V.S.W.R.(in Center Frequency)	≤1.5	---
5.5	Gain(Zenith) (dBi typ.)	2dB typical	---
5.6	Axial Ratio	5dB max	---
5.7	Polarization	Right-Handed Circular	---
5.8	Impedance ( Ω )	50	---
5.9	(ppm/°C) Frequency Temperature Coefficient	0±10	---

## 6. Characteristic curve



## 7. Test environment



## 8. Environmental specifications

Post Environmental Tolerance (Refer to the table 2 )

Temperature range  $25 \pm 3^\circ\text{C}$

Relative Humidity range 55~75%RH

Operating Temperature range  $-40^\circ\text{C} \sim +85^\circ\text{C}$

Storage Temperature range  $-40^\circ\text{C} \sim +110^\circ\text{C}$

### 8.1 Moisture Proof

The device should satisfy the electrical characteristics specified in paragraph 5.1~5.6 after exposed to the temperature  $40 \pm 2^\circ\text{C}$  and the relative humidity 90~95% RH for 96 hours and 1~2 hours recovery time under normal condition.

### 8.2 Vibration Resist

The device should satisfy the electrical characteristics specified in paragraph 5.1~5.6 after applied to the vibration of 10 to 55Hz with amplitude of 1.5mm for 2 hours each in X , Y and Z directions.

### 8.3 Drop Shock

The device should satisfy the electrical characteristics specified in paragraph 5.1~5.6 after dropping onto the hard wooden board from the height of 30cm for 3 times each facet of the 3 dimensions of the device.

#### 8.4 High Temperature Endurance

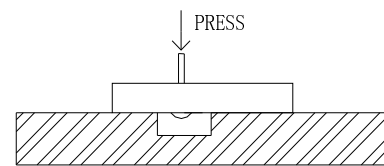
The device should satisfy the electrical characteristics specified in paragraph 5.1~5.6 after exposed to temperature  $80 \pm 5^\circ\text{C}$  for  $24 \pm 2$  hours and 1~2 hours recovery time under normal temperature.

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The device should also satisfy the electrical characteristics specified in paragraph 5.1~5.6 after exposed to the temperature  $-40^\circ\text{C} \pm 5^\circ\text{C}$  for  $24 \pm 2$  hours and to 2 hours recovery time under normal temperature.

#### 8.6 Adhesion Strength of Soldering

Force of 2kg is applied to each lead in axial direction for  $10\text{s} \pm 1\text{ s}$  (see drawing). No visible damage to the device should also satisfy the electrical characteristics specified in paragraph 5.1~5.6.



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**COMPANY:** ARMOUR AUTOMOTIVE

**PART NUMBER:** PA36MM/CH/4



**DESCRIPTION:** 36mm x 36mm x 4mm GPS Patch

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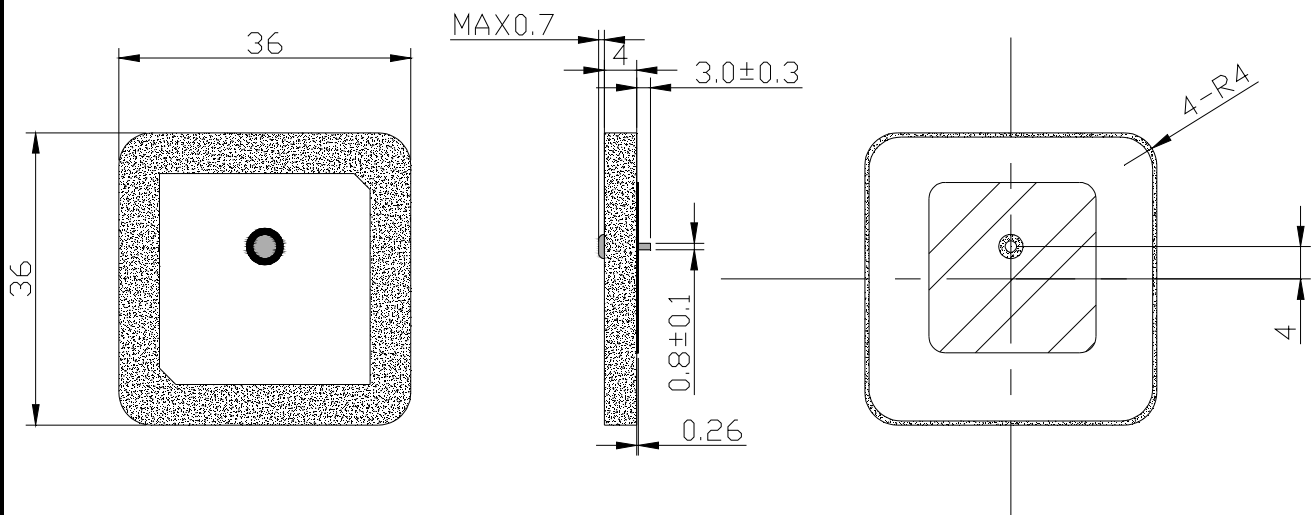
## 2. Part Number

**PA36MM/CH/4**

### 3. Structure and Material

No.	Description	Structure and Material
4.1	Antenna Substrate	Dielectric Ceramics
4.2	Pin	Copper and tinned
4.3	Electrode	Ag Plated
4.4	Ground Base	Ag Plated
4.5	Adhesive type	NITTO 5000NS

### 4. Dimension



tolerance  $\pm 0.2$

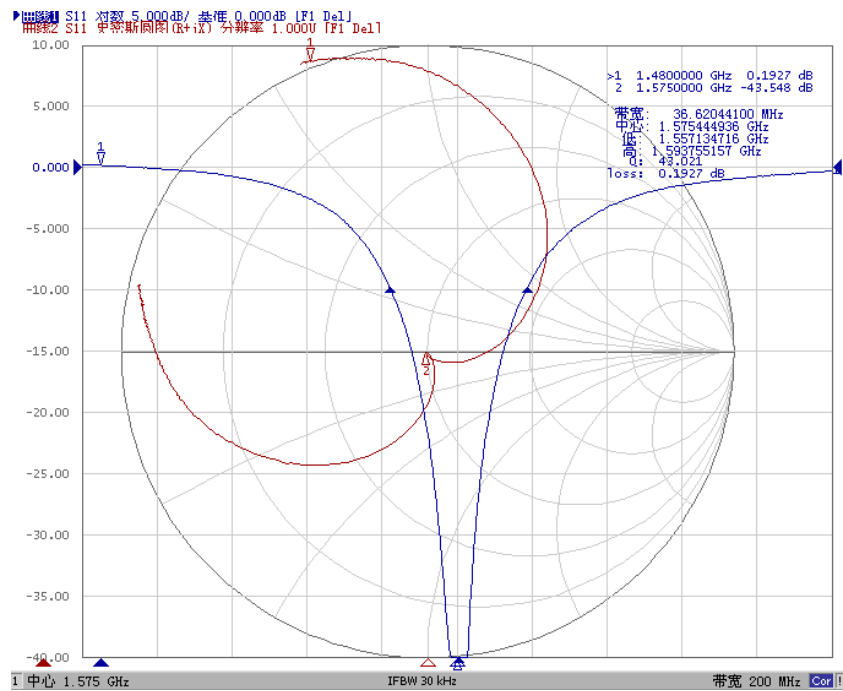
1 dimension

## 5. Electrical Characteristics

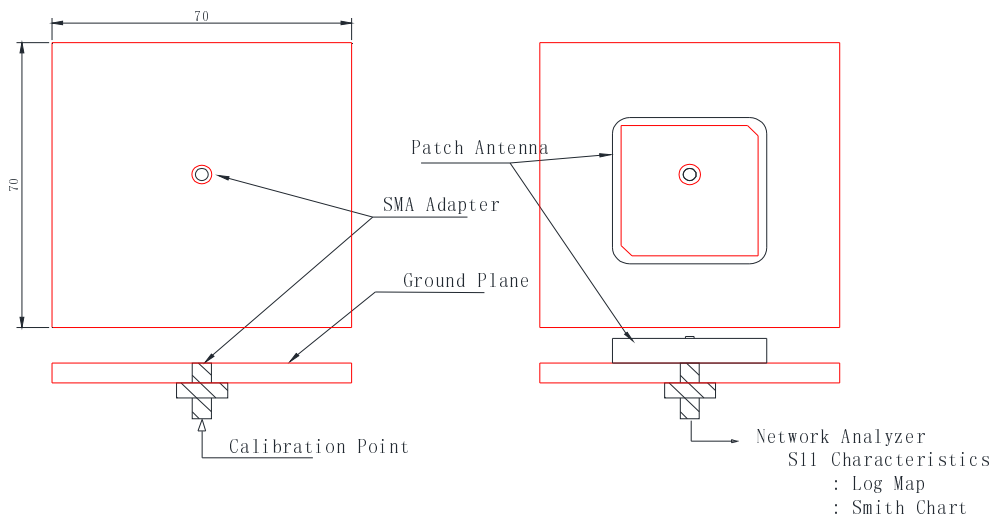
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No.	Item	Specifications	Post Environmental Tolerance
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## 6. Characteristic curve



## 7. Test environment



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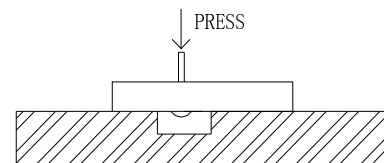
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**DESCRIPTION:** 36MM X 36MM X 4MM GPS/GLONASS PATCH



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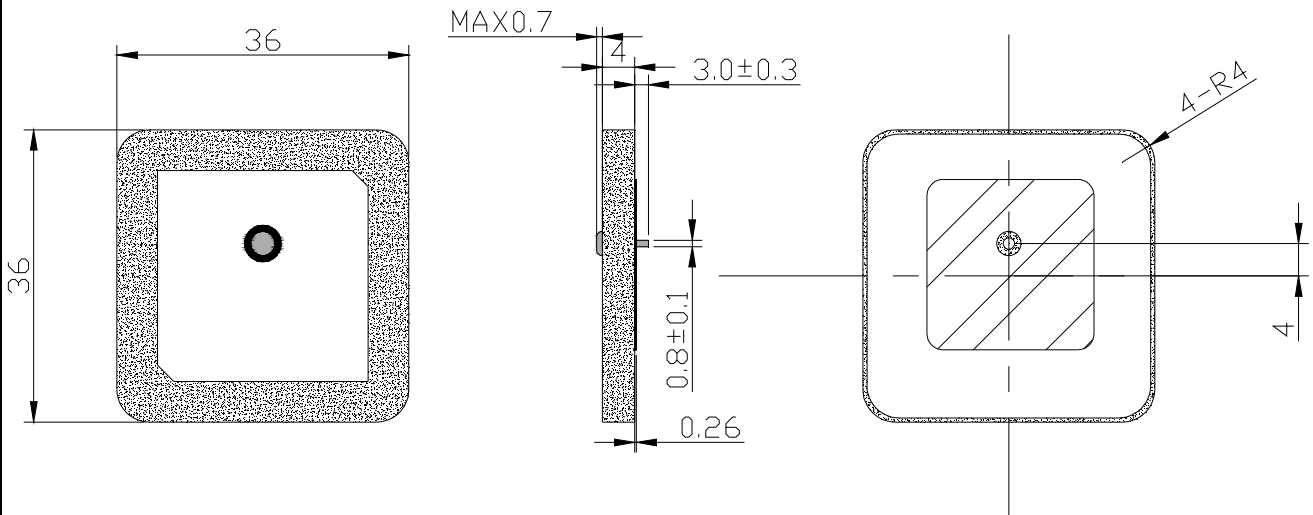
**PA36MM/CH/GGL**

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1

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tolerance  $\pm 0.2$

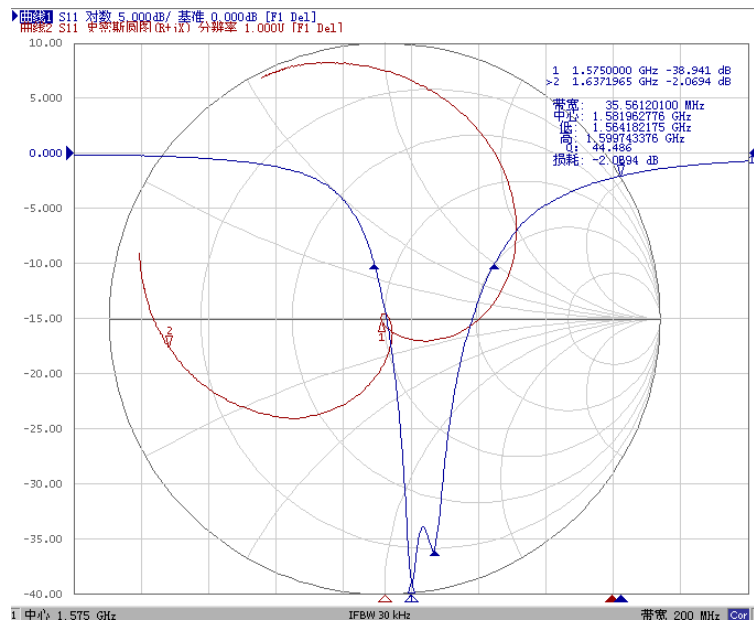
1 dimension

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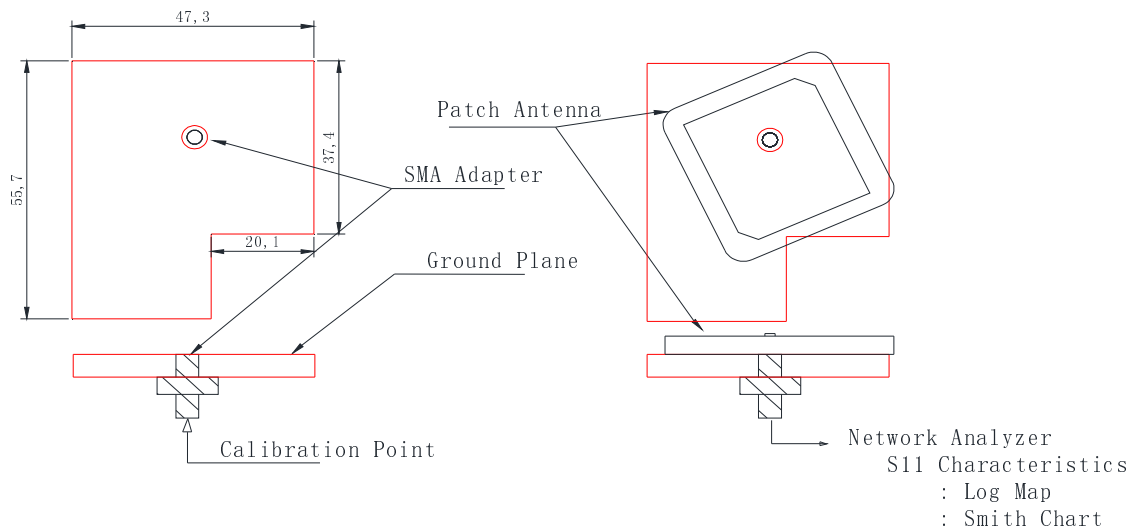
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5.1	(MHz) Range of Receiving Frequency	GPS: 1575 GLONASS: 1602±5	±2.5
5.2	Center Frequency (MHz) (with GL126 GND Plane)	1582	±3.0
5.3	Band With (MHz) (Return loss ≤ -10dB)	≥10	---
5.4	V.S.W.R(in Center Frequency)	≤1.5	---
5.5	Gain (Zenith) (dBi typ.)	3.0dB typical	---
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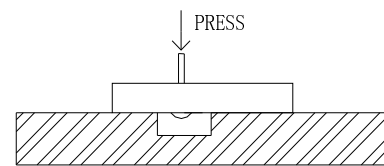
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