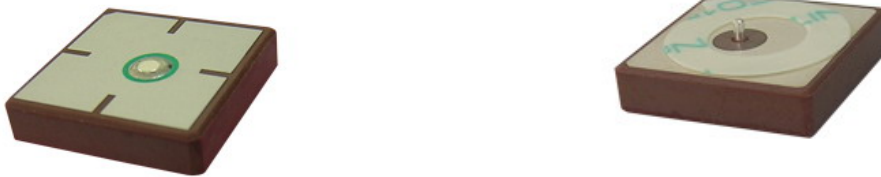


# Ct-PA100

## CERAMIC PATCH ANTENNA



**17x17x4mm**

**SPECIFICATIONS****1. SCOPE**

This specification covers the dielectric antenna for GPS.

**2. Name of the product**

This product is named 'Dielectric Antenna'.

**3. Electrical characteristics**

3-1 Electrical characteristics of antenna

The antenna has the electrical characteristics given in Table 1 under the Connectec standard test conditions shown in the figure in Appendix

No	Parameter	Specification	Notes
1	Range Of Receiving Frequency	1575.42MHz $\pm$ 1.023MHz	
2	Center Frequency	1570Hz $\pm$ 3MHz	With 61.5*33.6mmGND Plane
3	Bandwidth	8 MHz min	Return Loss $\leq$ -10dB
4	VSWR	1.5 max	Center Frequency
5	Gain at Zenith	+0.5 dBic typ.	
6	Gain at 10° Elevation	-6.5 dBic typ	
7	Axial Ratio	3 dB max	
8	Polarization	RHCP	Right Hand Circular Polarization
9	Impedance	50 Ohm	
10	Frequency Temperature Coefficient (tf)	0 $\pm$ 20ppm / °C	-40°C to +105°C
11	Operating Temperature		-40°C to +105°C
12	Material	Environmetally Friendly Pb free,RoHs compliant	



## 4. Environmental conditions

### 4-1 Operating conditions

The antenna has the electrical characteristics given in Tables 1 in the temperature range of  $-40^{\circ}\text{C}$  to  $+105^{\circ}\text{C}$  and under the environmental conditions of  $+40^{\circ}\text{C}$  and 0-95% r.h.

### 4-2 Storage temperature range

The storage temperature range of product is  $-40^{\circ}\text{C}$  to  $+105^{\circ}\text{C}$

## 5. Reliability tests

5-5-2 and 5-6 examination of enforced. Moreover, the decision standard of the movement confirmation is judged by 3 and 4 of the tables-1, and the decision standard of the appearance isn't thought function problem become defect be.

The decision standard of the confirmation of the movement is doing the characteristic electric standard of the antenna module. And, the decision standard of the appearance isn't thought function problem become defect be.

### 5-1. Low-temperature test

Expose the specimen to  $-45^{\circ}\text{C}$  for 400 hours and then to normal temperature/humidity for 24 hours or more. After that examine the appearance and functions.

### 5-2 High-temperature test

Expose the specimen to  $+105^{\circ}\text{C}$  for 400 hours and then to normal temperature/humidity for 24 hours or more. After that examine the appearance and functions.

### 5-3 High-temperature/high-humidity test

Subject the object to the environmental conditions of  $+85^{\circ}\text{C}$  and 90-95% r.h. for 96 hours, then expose to normal temperature/humidity for 24 hours or more After this, check the appearance and functions.

### 5-4 Thermal shock test

Subject the object to cyclic temperature change ( $-30^{\circ}\text{C}$ , 30 minutes  $+80$ , 30 minutes ) for 1500 cycles, the expose to normal temperature/humidity for 24 hours or more.

### 5-5 Vibration test

#### 5-5-1 Sinusoidal vibration test

Subject the object to vibrations of 5 to 200 to 5Hz swept in 10 minutes, 4.5G at maximum (2mm amplitude), in X and Y directions for two hours each and in Z direction for four hours. After this, check the appearance functions.

### 5-5-2 Vibration test in packaged condition

Subject the object, which is packaged as illustrated, to vibrations of 15 to 60 to 15Hz swept in 6 minutes, 4G at maximum (2mm amplitude at maximum), applied in X, Y and Z directions for two hours each, i.e. six hours in total. After this, check the appearance and functions.

### 5-6 Free fall test in packaged condition

Drop the object, which is packaged as illustrated, to a concrete surface from the height of 90 cm, on one corner, three edges and six faces once each, i.e. 10 times in total. After this, check the appearance and functions.

## 6. Inspection

As for the examination in the mass production, the receiving character of the ratio wave sent in a shield box from the standard antenna and VSWR are confirmed in the picking out examination.

## 7. Test Record

A Copy of test record filled with following contents shall be provided at time of delivery.

7-1 Quantity of delivery

7-2 Measurement of electrical characteristics : following data at normal temperature obtained by the method described in section 8.

- Output VSWR

7-3 Temperature and humidity of test

Quantity for sampling inspection shall be  $n=5$  for any lot. In case quantity per lot is less than 5, the whole lot shall be inspected.

## 8. Warranty

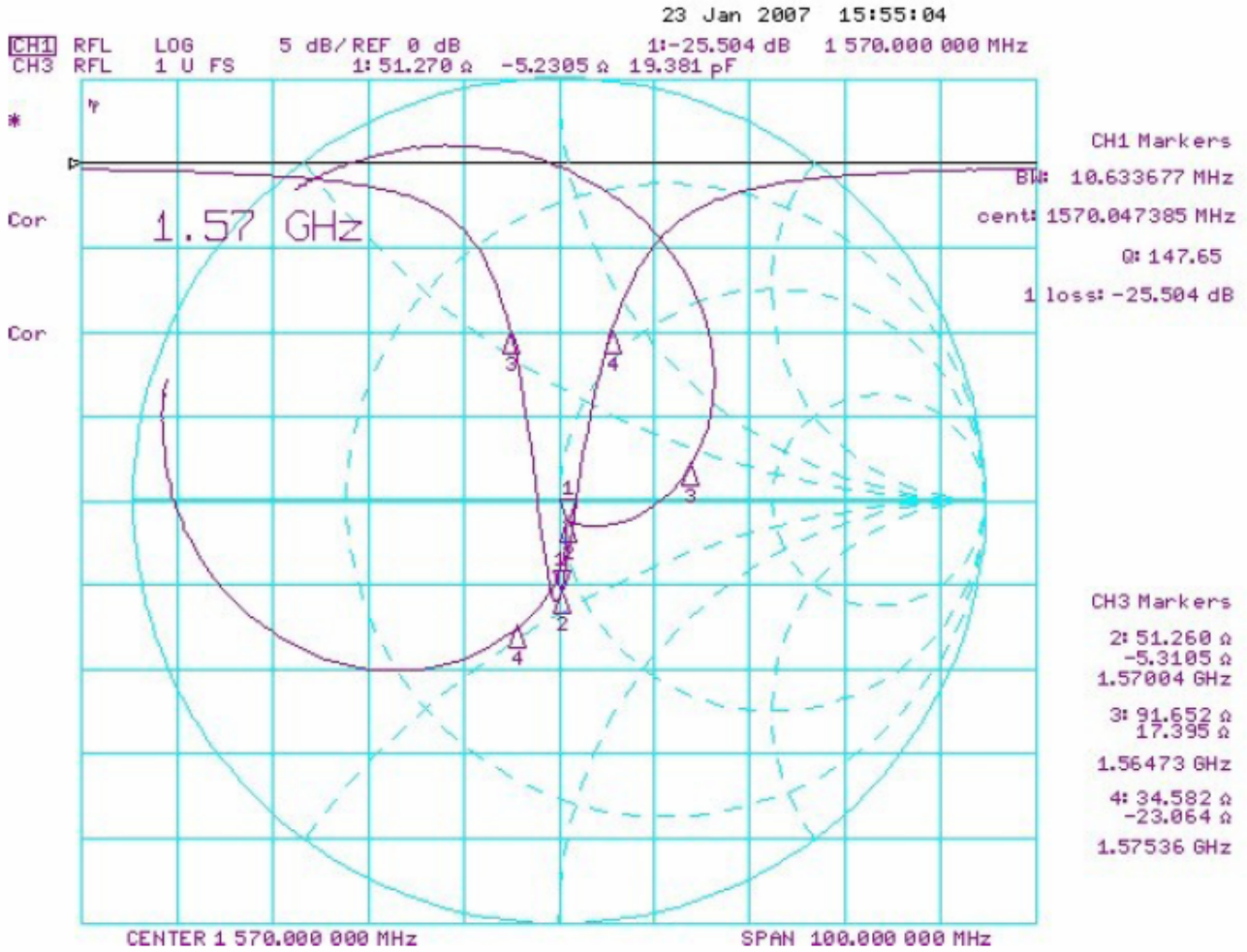
If any defect occurs from the product during proper use within a year after delivery, it will be repaired or replaced.

## 9. Other

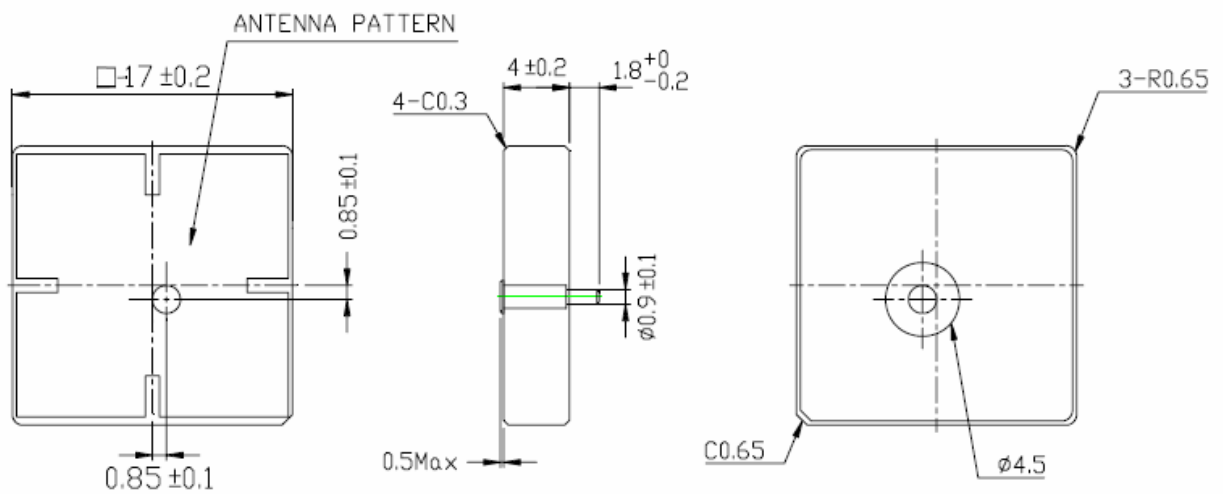
Any question arising from this specification manual shall be solved by arrangement made by both parties.

## 10. Precautions for use

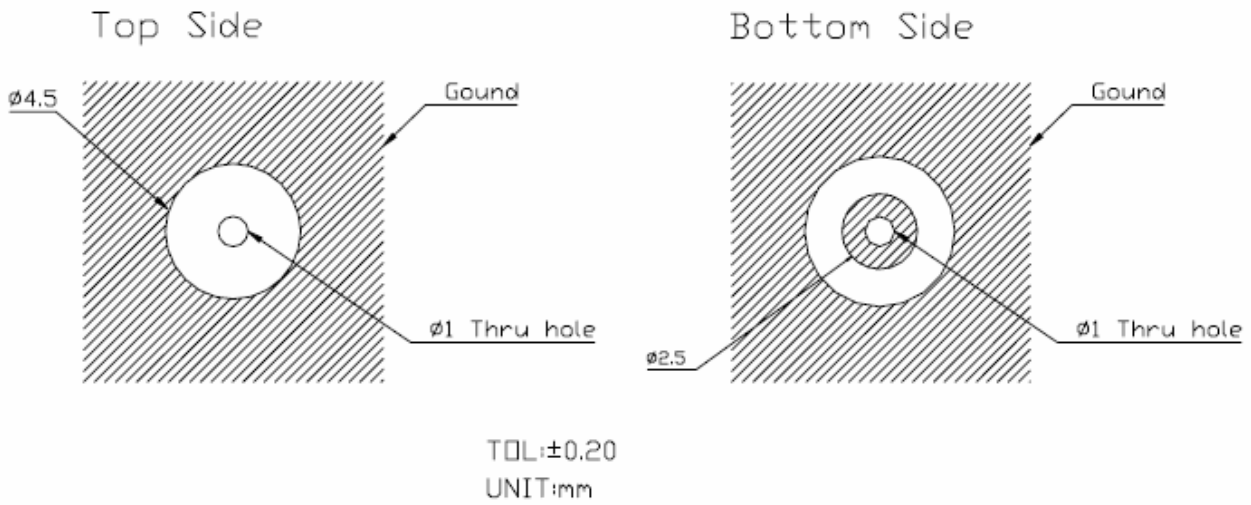
- Antenna pattern use a silver electrode.
- Please don't use the corrosion gas (sulfur gas, chlorine gas) in the atmosphere.
- Please don't direct solder onto the silver electrode of Antenna pattern.



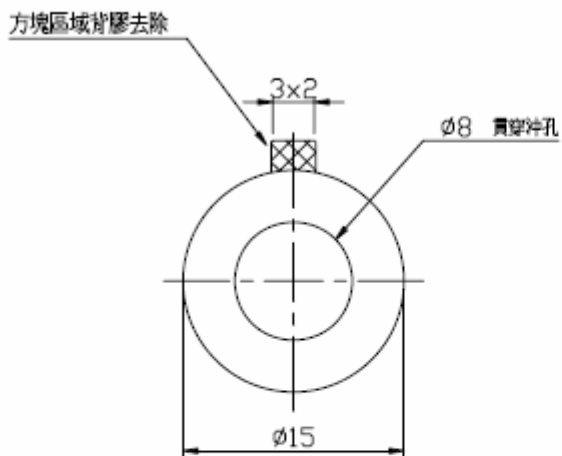
### Shape and Dimension



## Layout Dimension

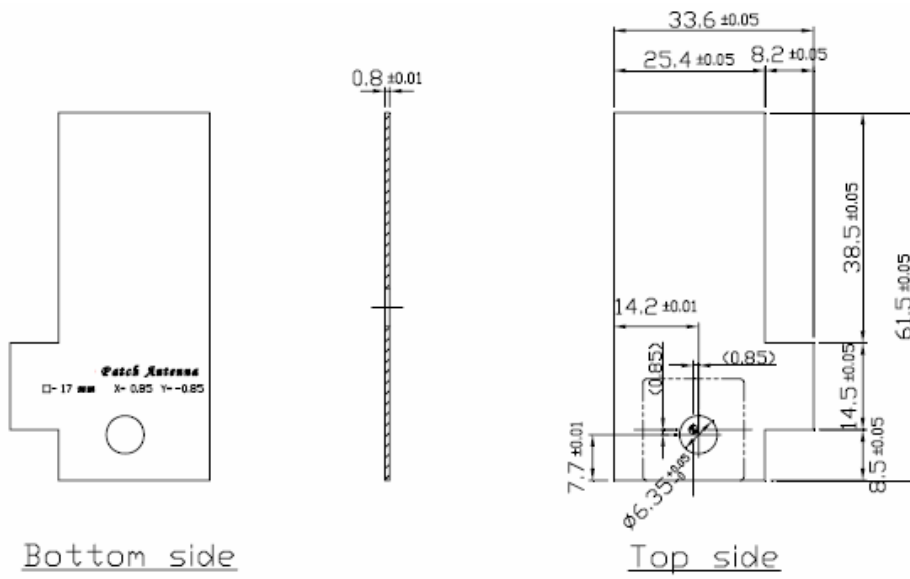


## Tape Dimension



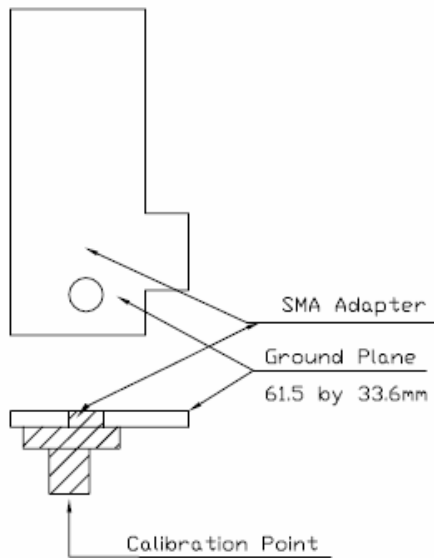
- 備註：1. NITTO : NO.5015  
2. Double-coated adhesive tape for industrial use  
3. Thickness : 0.12mm

## Test Jig and Dimension



## Test Fixture Antenna Setup & Measurements

Test Fixture



Antenna Setup & Measurements

