

**Contact: INPAQ USA -James Lee**

**Email: jameslee@inpaqusa.com**

**TEL: 267-265-4079**

**Title: Business Manager**

**ACD-3216-A1-CC-S**

## **Specification**

<b>Product Name</b>	<b>INPAQ RF Chip Antenna</b>
<b>Series/PN</b>	<b>ACD-3216-A1-CC-S</b>
<b>Size</b>	<b>EIAJ 3216</b>

## PN : ACD-3216-A1-CC-S Specification

### 1. Application

GPS L1 band、1575.42MHz

### 2. Explanation of Part Number

$\frac{\text{AC}}{(1)}$   $\frac{\text{D}}{(2)}$  -  $\frac{3216}{(3)}$  -  $\frac{\text{A1}}{(4)}$  -  $\frac{\text{CC}}{(5)}$  -  $\frac{\text{S}}{(6)}$   $\frac{\text{---}}{(7)}$

- (1) Product Type : Chip Antenna
- (2) Center Frequency/Band Code : D—1575.42 MHz group
- (3) Product Code : 3.2mm(Length) x 1.6mm(Width)
- (4) Design Revision Code : Rev.1
- (5) CC= Coupling Ceramic Type
- (6) Special Code : S=RoHS Compliant
- (7) Suffix For Special Requirements

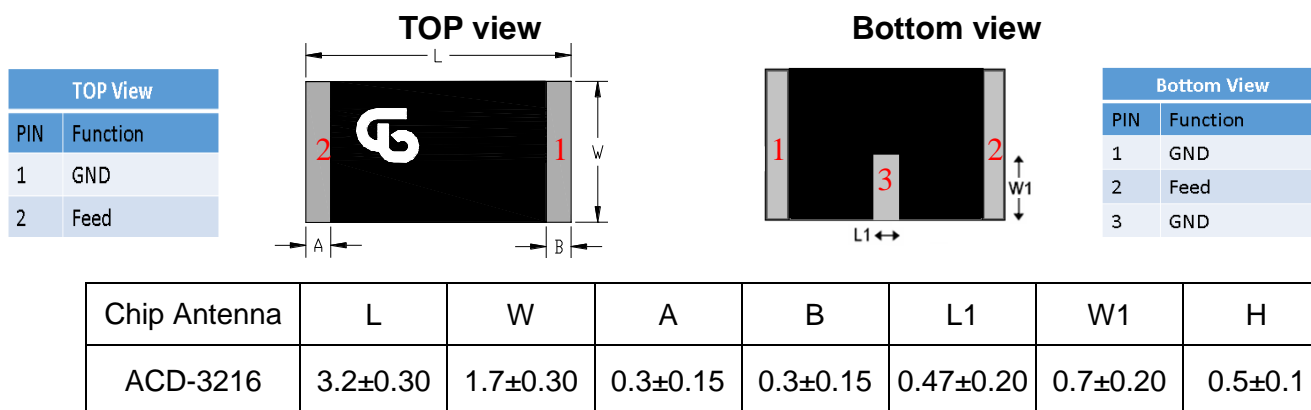
### 3. Electrical Specification

Electrical Specification*	
Center Frequency	1575.42 MHz
Frequency Range	1570 ~ 1580 MHz (S11 ≤ -10dB)*
Polarization	Linear
Pattern	Omni-Directional
Ref. Impedance	50 ohm
Peak Gain	1.80 dBi (typ.)@1575.42 MHz
Efficiency	62.2% (typ.)@1575.42 MHz
Size	3.2mm x 1.7mm x 0.5mm

\* Test condition : Test board size 100\*50 mm.

Matching circuit : Pi matching circuit will be required.

### 4. Physical Dimension (Unit : mm)



## 5. Recommended PCB layout (Unit : mm)

Contact: INPAQ USA -James Lee

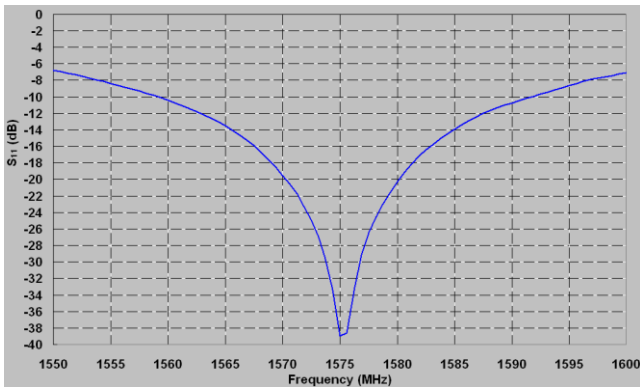
Email: jameslee@inpaqusa.com

TEL: 267-265-4079

Title: Business Manager

## 6. Electrical Characteristics

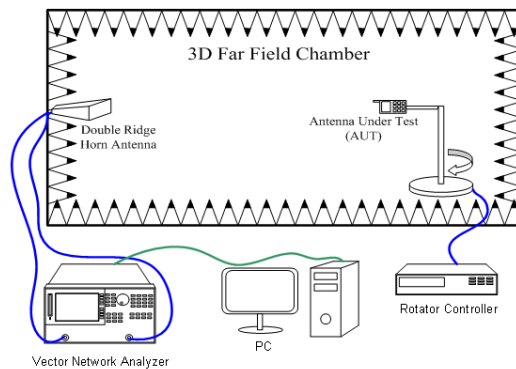
### Return Loss



Frequency (MHz)	Return Loss (dB)
1570	-19.5
1575	-39.0
1580	-20.3

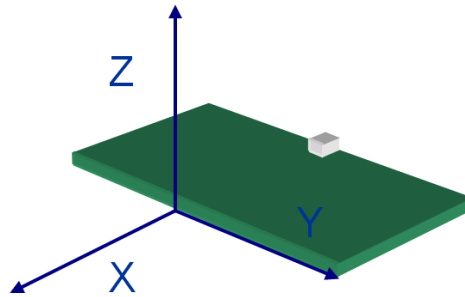
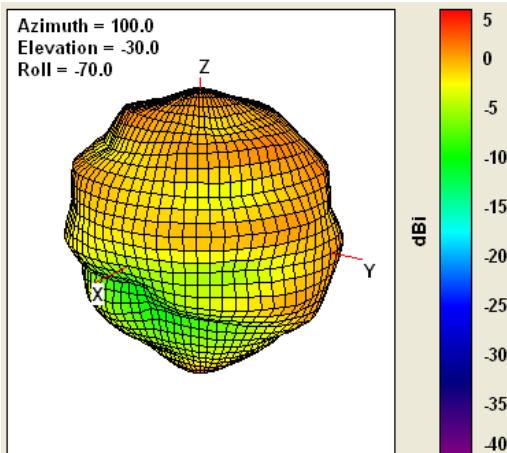
### Radiation Pattern

The Gain pattern is measured in INPAQ's FAR-field chamber. DUT is placed on the table of rotator, a standard horn antenna and Vector Network Analyzer is used to collect data.



3D Chamber Definition

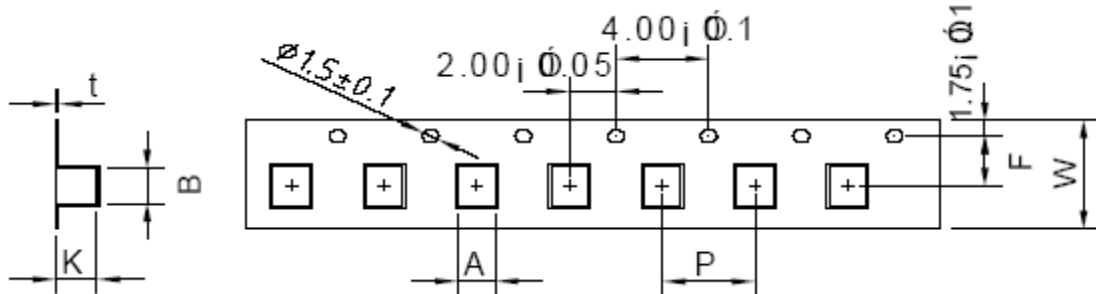
© 3D Gain Pattern (1575 MHz)



**7. Taping Package and Label Marking** (Unit : mm)

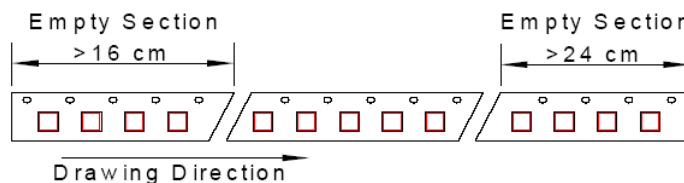
甲、Quantity : 4000pcs/Reel, T(Thickness of chip)  $\leq 1.2$

乙、Plastic Tape (Unit : mm)



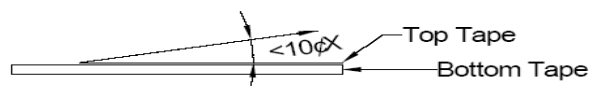
Type	W	A	B	K	t	F	P
3216	8 $\pm$ 0.1	2.0~2.2	3.50~3.60	Max. 1.40	0.22 $\pm$ 0.05	3.50 $\pm$ 0.1	4.00 $\pm$ 0.1

丙、Tape Packing



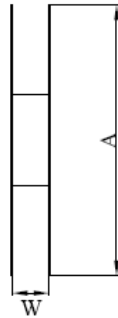
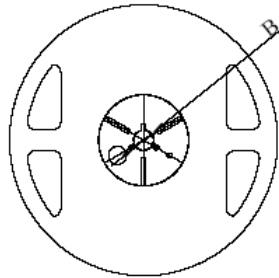
丁、Cover Tape Reel Off Force

$5g \cdot f \leq \text{Peel-Off Force} \leq 70g \cdot f$



戊、Reel Dimensions (Unit: mm)

Reel Material: Polystyrene



W	A	B
8±0.5	178±0.5	13±0.5
12±0.5	178±0.5	13±0.5

## 8. Environmental Characteristics

### (1) Reliability Test

Item	Condition	Specification
<b>Thermal shock</b>	<ol style="list-style-type: none"> <li>30±3 minutes at -40°C±5°C,</li> <li>Convert to +105°C (5 minutes)</li> <li>30±3 minutes at +105°C±5°C,</li> <li>Convert to -40°C (5 minutes)</li> <li>Total 100 continuous cycles</li> </ol>	No apparent damage Fulfill the electrical spec. after test.
<b>Humidity resistance</b>	<ol style="list-style-type: none"> <li>Humidity : 85% R.H.</li> <li>Temperature : 85±5°C</li> <li>Time : 1000 hours.</li> </ol>	No apparent damage Fulfill the electrical spec. after test.
<b>High temperature resistance</b>	<ol style="list-style-type: none"> <li>Temperature : 150°C±5°C</li> <li>Time : 1000 hours.</li> </ol>	No apparent damage Fulfill the electrical spec. after test.
<b>Low temperature resistance</b>	<ol style="list-style-type: none"> <li>Temperature : -40°C±5°C</li> <li>Time : 1000 hours.</li> </ol>	No apparent damage Fulfill the electrical spec. after test.
<b>Soldering heat resistance</b>	<ol style="list-style-type: none"> <li>Solder bath temperature : 260±5°C</li> <li>Bathing time : 10±1 seconds</li> </ol>	No apparent damage
<b>Solderability</b>	The dipped surface of the terminal shall be at least 95% covered with solder after dipped in solder bath of 245±5°C for 3±1 seconds.	No apparent damage

**(2) Storage condition**

**(a) At warehouse :**

The temperature should be within 0 ~ 30°C and humidity should be less than 60% RH.

The product should be used within 1 year from the time of delivery.

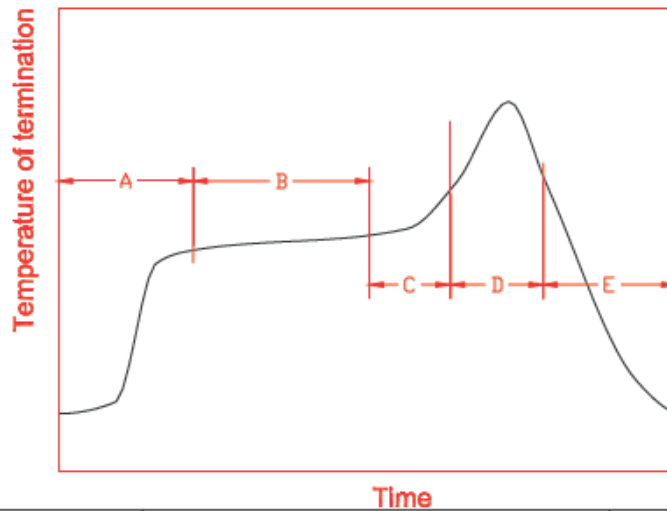
**(b) On board :**

The temperature should be within -40~85°C and humidity should be less than 85% RH.

**(3) Operating temperature range**

Operating temperature range : -40°C to +105°C.

**9. Recommended reflow soldering**



		Time	
A	1 <sup>st</sup> rising temperature	The normal to Preheating temperature	30s to 60s
B	Preheating	140°C to 160°C	60s to 120s
C	2 <sup>nd</sup> rising temperature	Preheating to 200°C	20s to 40s
D	Main heating	if 220°C	50s~60s
		if 230°C	40s~50s
		if 240°C	30s~40s
		if 250°C	20s~40s
E	Regular cooling	if 260°C	20s~40s
		200°C to 100°C	1°C/s ~ 4°C/s

\*reference: J-STD-020C

**(1) Soldering gun procedure**

Note the follows, in case of using solder gun for replacement.

- (a) The tip temperature must be less than 350°C for the period within 3 seconds by using soldering gun under 30 W.

**(b) The soldering gun tip shall not touch this product directly.**

**(2) Soldering volume**

Note that excess of soldering volume will easily get crack the body of this product.