

ACA-3216-A1-CC-S Specification

1. Features and Application :

This product is for WiFi/BT band

2. Explanation of Part Number :


AC A - 3216 - A1 - CC - S —
 (1) (2) (3) (4) (5) (6) (7)

- (1) Product Type : Chip Antenna
- (2) Center Frequency/Band Code : 2.4 GHz Band
- (3) Size Code : 3.2*1.6 mm (Length * Width)
- (4) Design Revision Code : Rev.1
- (5) Antenna Type : Coupling Ceramics
- (6) Special Code : RoHS Compliant
- (7) Suffix For Special Requirements

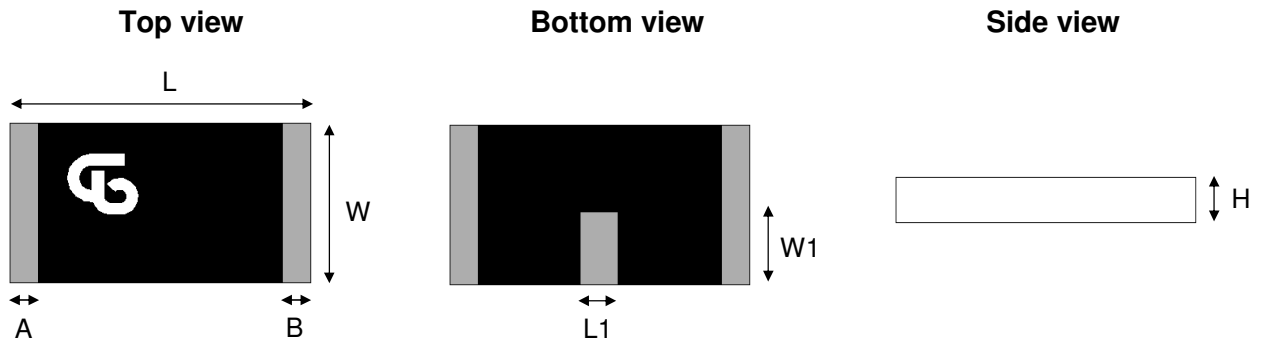
3. Electrical Specification :

| Item | Specification |
|------------------|-----------------|
| Frequency Band | 2400 ~ 2500 MHz |
| Polarization | Linear |
| Impedance | 50 ohm Typ. |
| VSWR | Less than 2.5 |
| *Peak Gain | 0.97 dBi Typ. |
| *Peak Efficiency | 71.1 % Typ. |

* Test condition : Test board size 100*50 mm
 Matching circuit may be required

| | | | |
|------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| UNLESS OTHER SPECIFIED TOLERANCES ON : X=± X.X=± X.XX= ANGLES=± HOLEDIA=± | |  | INPAQ TECHNOLOGY CO., LTD. |
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| DESIGNED BY: 林豪建 Stan | APPROVED BY: 黃月碧 Yuchie | | |
| TITLE : ACA-3216-A1-CC-S Specification | | DOCUMENT NO. | ENS000069320 |
| | | SPEC REV. A1 | |

4. Physical Dimension :

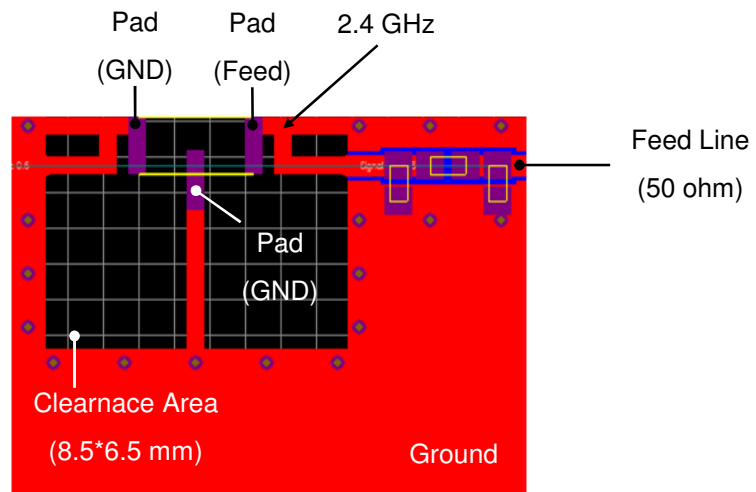



| | |
|-----------|-------------|
| L | 3.20 ± 0.30 |
| W | 1.70 ± 0.20 |
| H | 0.50 ± 0.10 |
| A | 0.30 ± 0.15 |
| B | 0.30 ± 0.15 |
| L1 | 0.47 ± 0.20 |
| W1 | 0.70 ± 0.20 |

(Unit : mm)

5. Recommended PCB Layout :

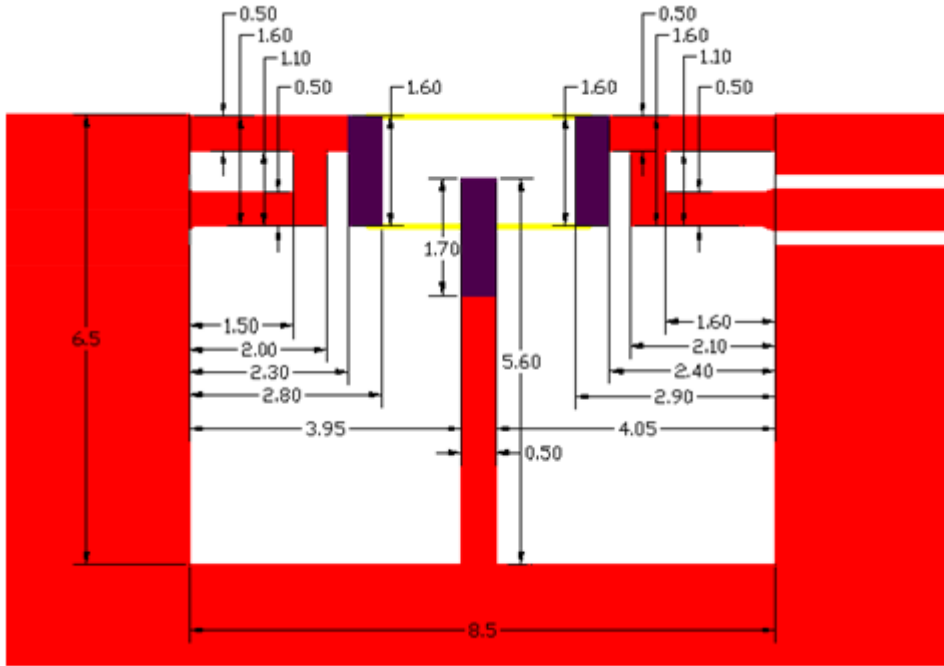
Layout



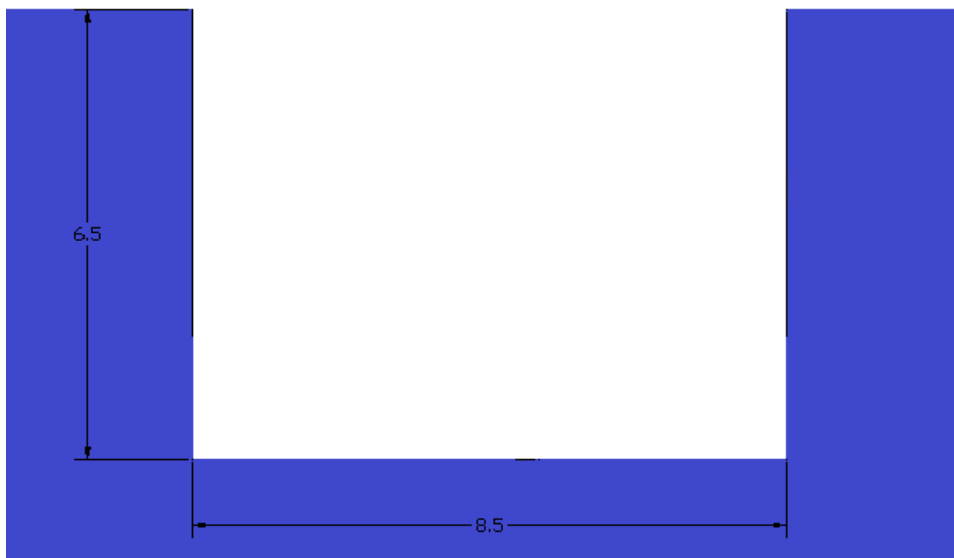
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Pad Dimensions on PCB Layout

Top View




Perspective View



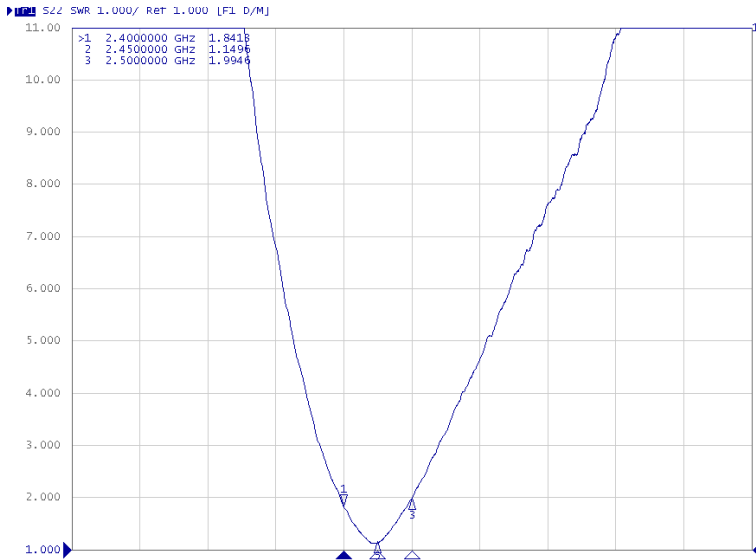
(Unit : mm)

* Tolerance : ± 0.05 mm

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6. Electrical Characteristics :

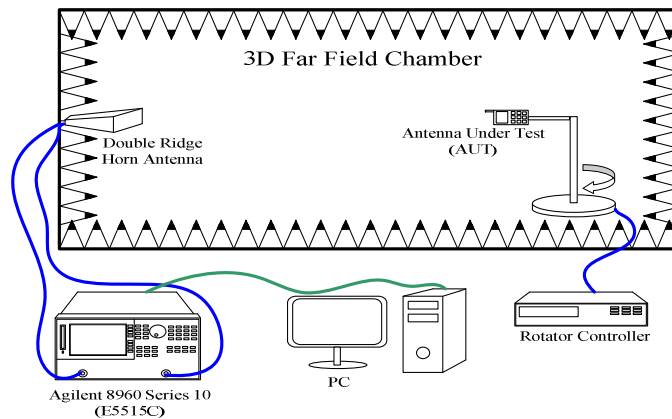
Return Loss




| Frequency (MHz) | VSWR |
|-----------------|------|
| 2400 | 1.84 |
| 2450 | 1.15 |
| 2500 | 1.99 |

Radiation Pattern :

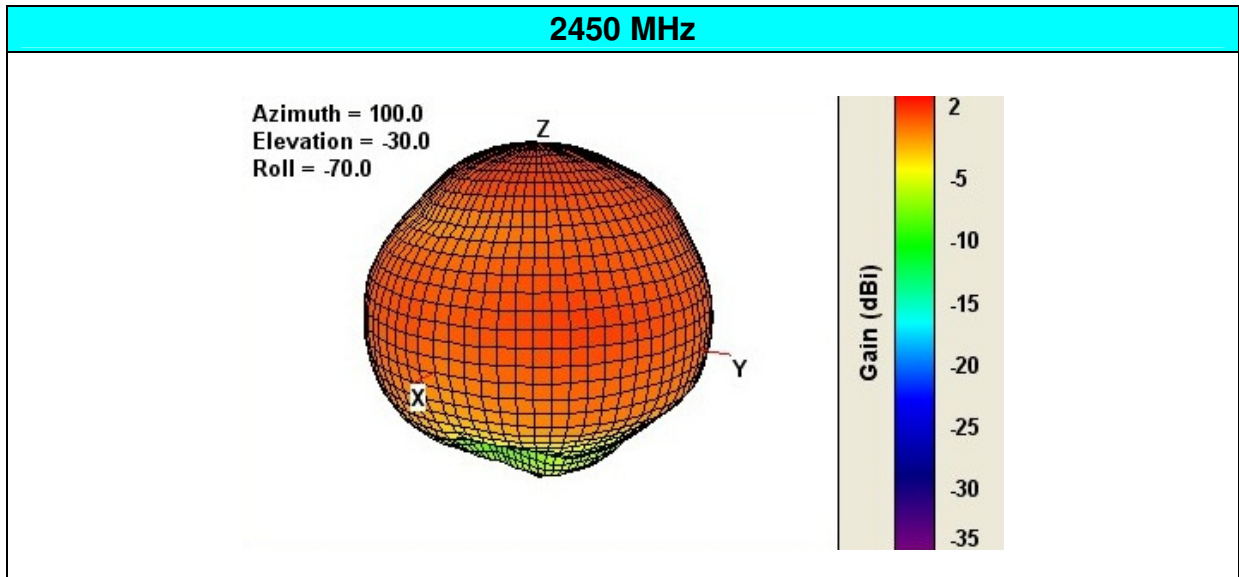
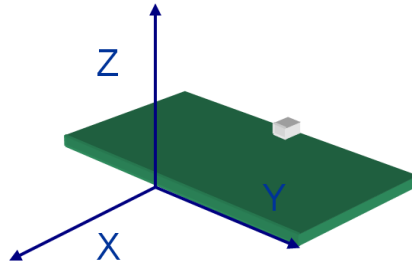
The Gain pattern is measured in INPAQ's FAR-field chamber. DUT is placed on the table of rotator, a standard horn antenna and Vector Network Analyzer is used to collect data.



3D Chamber Definition

| | | | |
|----------------------------------------|-------------------------|-------------------------------------------------------------------------------------|-----------------------------------|
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3D Gain Pattern

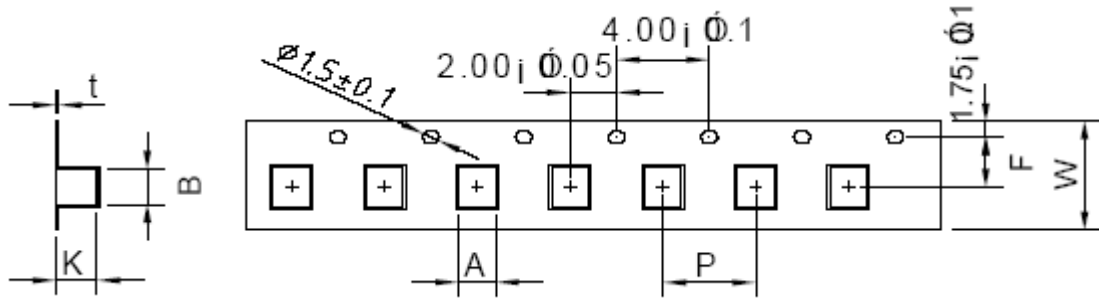
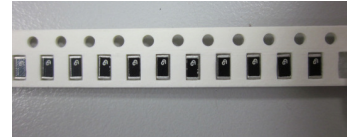


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| TITLE : ACA-3216-A1-CC-S Specification | | ENS000069320 | | A1 |

7. Taping Package and Label Marking :

(1) Quantity : 4000pcs/Reel, T(Thickness of chip) ≤ 1.2

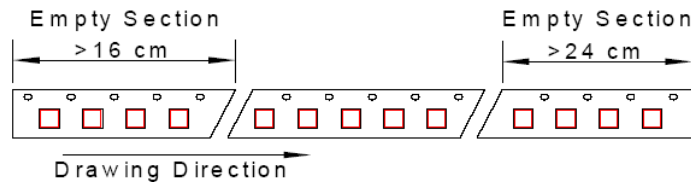
(2) Plastic Tape



| Type | W | A | B | K | t | F | P |
|------|-------|---------|-----------|-----------|-----------|----------|----------|
| 3216 | 8±0.1 | 1.9~2.1 | 3.50~3.60 | Max. 1.40 | 0.22±0.05 | 3.50±0.1 | 4.00±0.1 |

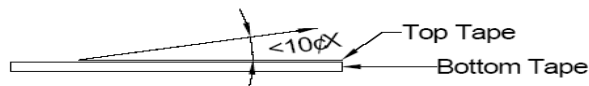
(Unit: mm)

(3) Tape Packing



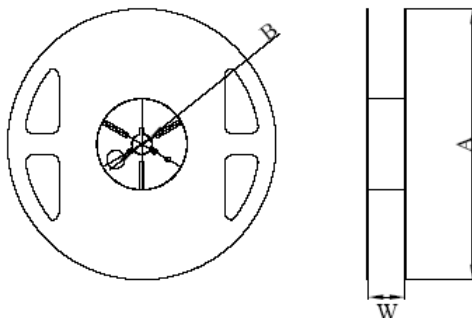
(4) Cover Tape Reel Off Force

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



(5) Reel Dimensions

Reel Material: Polystyrene



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

(Unit: mm)

UNLESS OTHER SPECIFIED TOLERANCES ON :

X=± X.X=± X.XX=

ANGLES=± HOLEDIA=±

SCALE : ----- UNIT : mm

DRAWN BY: 林豪建 Stan CHECKED BY: 吳柏青 David

DESIGNED BY: 林豪建 Stan APPROVED BY: 黃月碧 Yuchie

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A1

8. Environmental Characteristics :

(1) Reliability Test

| Item | Condition | Specification |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| Thermal shock | 1. 30±3 minutes at -40°C±5°C, 2. Convert to +105°C (5 minutes) 3. 30±3 minutes at +105°C±5°C, 4. Convert to -40°C (5 minutes) 5. Total 100 continuous cycles | No apparent damage Fulfill the electrical spec. after test. |
| Humidity resistance | 1. Humidity: 85% R.H. 2. Temperature: 85±5°C 3. Time: 1000 hours. | No apparent damage Fulfill the electrical spec. after test. |
| High temperature resistance | 1. Temperature: 150°C±5°C 2. Time: 1000 hours. | No apparent damage Fulfill the electrical spec. after test. |
| Low temperature resistance | 1. Temperature: -40°C±5°C 2. Time: 1000 hours. | No apparent damage Fulfill the electrical spec. after test. |
| Soldering heat resistance | 1. Solder bath temperature: 260±5°C 2. Bathing time: 10±1 seconds | No apparent damage |
| Solderability | 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 :

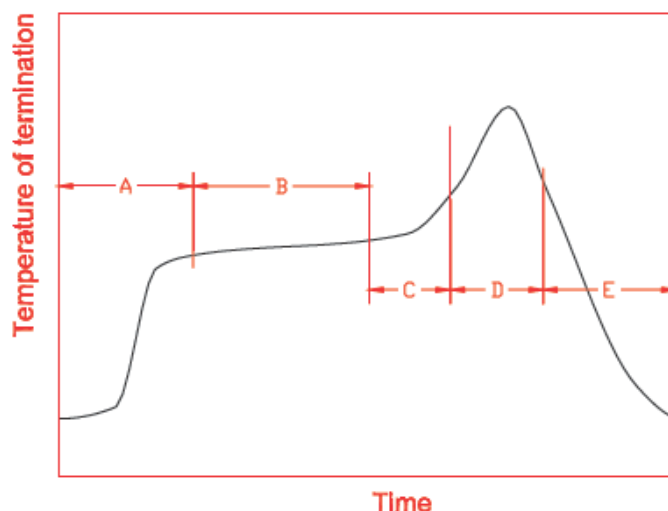
The temperature should be within -40 ~ 85°C and humidity should be less than 85% RH.

(3) Operating temperature range

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

| | | | |
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9. Recommended reflow soldering :



| | | | Time |
|---|------------------------------------|--------------------------------------|---------------|
| A | 1 st rising temperature | The normal to Preheating temperature | 30s to 60s |
| B | Preheating | 140°C to 160°C | 60s to 120s |
| C | 2 nd 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 | 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.

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

| | | | |
|-------------------------------------------------------------------------------------------------|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
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