

ACA-2012-A1-CC-S Specification

1. APPLICATION:

WLAN, 802.11b/g, Bluetooth, etc...

2. Explanation of Part Number :

$\frac{AC}{(1)}$ $\frac{A}{(2)}$ - $\frac{2012}{(3)}$ - $\frac{A1}{(4)}$ - $\frac{CC}{(5)}$ - $\frac{S}{(6)}$ $\bar{(7)}$

- (1) Product Type : Chip Antenna
- (2) Center Frequency/Band Code : A—2442MHz group
- (3) Size Code: 2.0mm(Length) x 1.2mm(Width)
- (4) Design Revision Code: Rev.1
- (5) CC= Coupling Ceramic Type
- (6) Special Code: S=RoHS Compliant
- (7) Suffix For Special Requirements

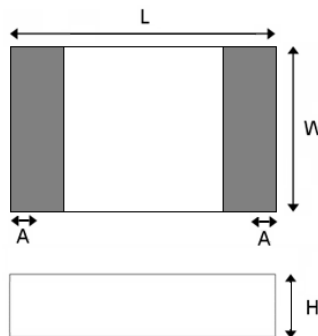
3. Electrical Specification :

| ITEM | SPECIFICATION |
|------------------|-----------------|
| Frequency Band | 2400MHz~2483MHz |
| VSWR | Less than 3 |
| Polarization | Linear |
| *Peak Gain | 1.72 dBi Typ. |
| *Peak Efficiency | 72.3% Typ. |
| Impedance | 50Ω Typ. |

* Test condition: Test board size 110*55 mm

Matching circuit: Pi matching circuit will be required

4. Physical Dimension : (Unit:mm)



| Chip Antenna | L | W | H | A |
|--------------|---------|---------|----------|----------|
| ACA2012 | 2.0±0.3 | 1.2±0.3 | 0.55±0.2 | 0.4±0.25 |

UNLESS OTHER SPECIFIED TOLERANCES ON :

X=± X.X=± X.XX=

ANGLES=± HOLEDIA=±



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SCALE : -----

UNIT : mm

DRAWN BY : 楊奇峰 楊奇峰

CHECKED BY : 蔡孟學 蔡孟學

DESIGNED BY : 謝立庭 謝立庭

APPROVED BY : 黃月碧 黃月碧

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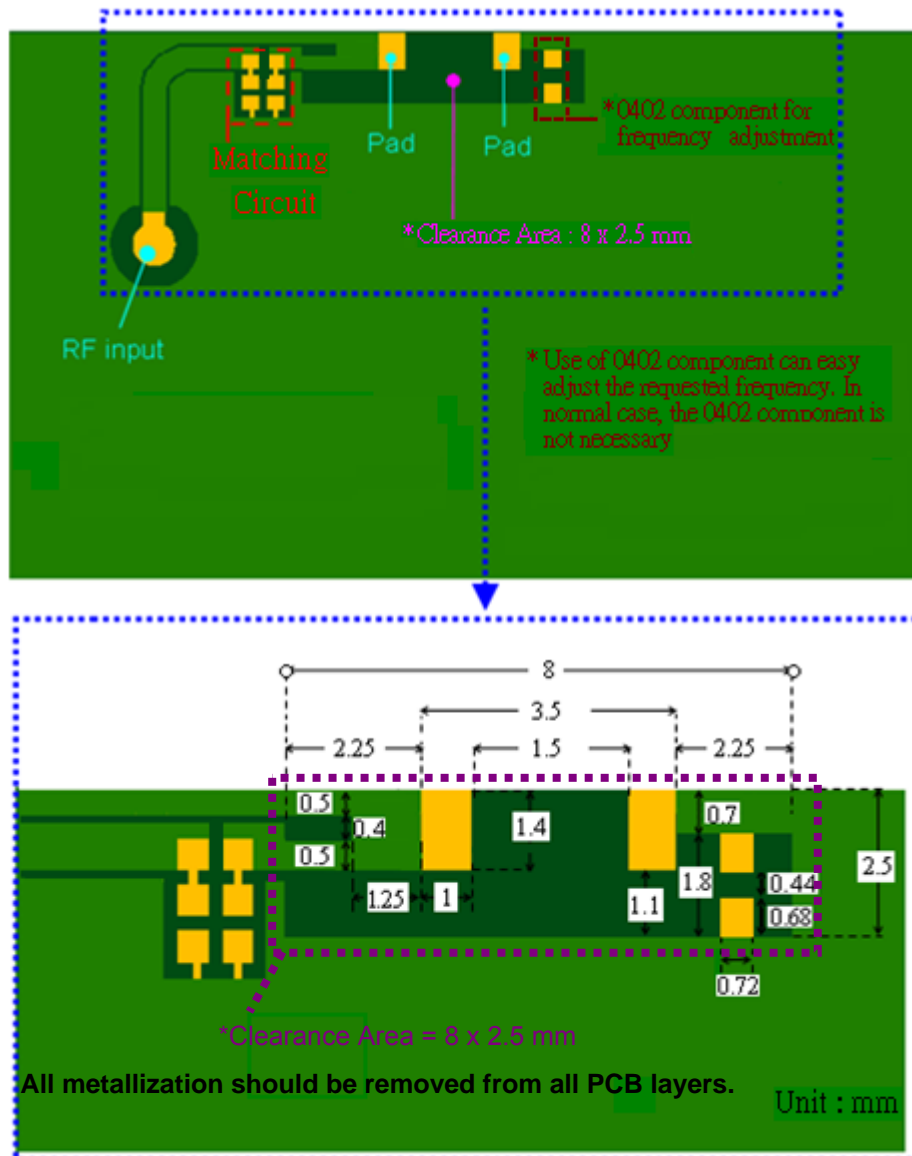
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5. Recommend PCB Layout : (Unit:mm)



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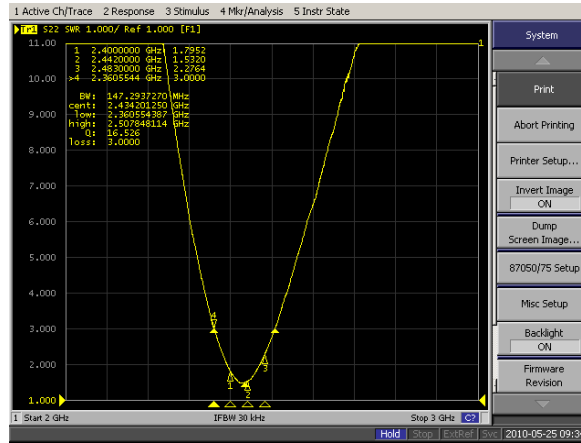
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6. Electrical Characteristics :

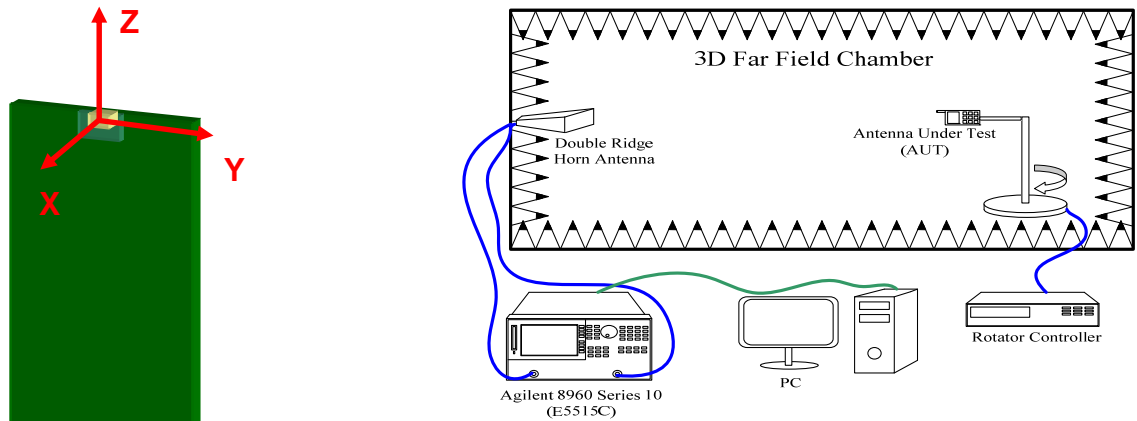
VSWR



| Mark | Frequency | VSWR |
|------|-----------|------|
| 1 | 2400 MHz | 1.80 |
| 2 | 2442 MHz | 1.53 |
| 3 | 2483 MHz | 2.28 |

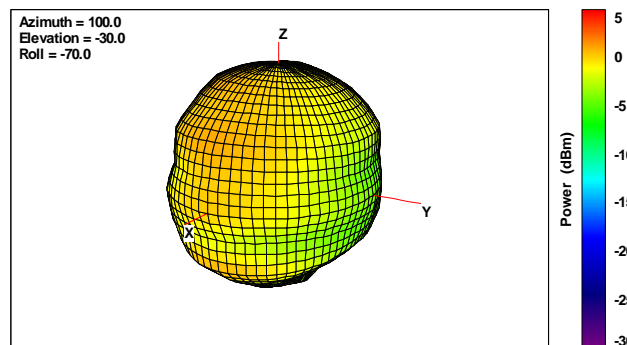
Radiation Pattern

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 (2442 MHz)



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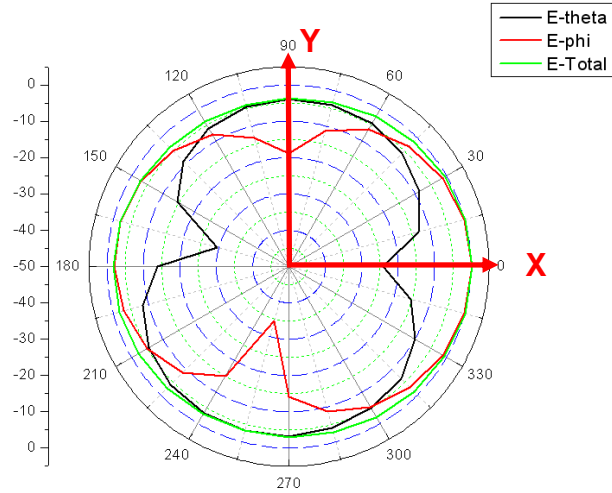
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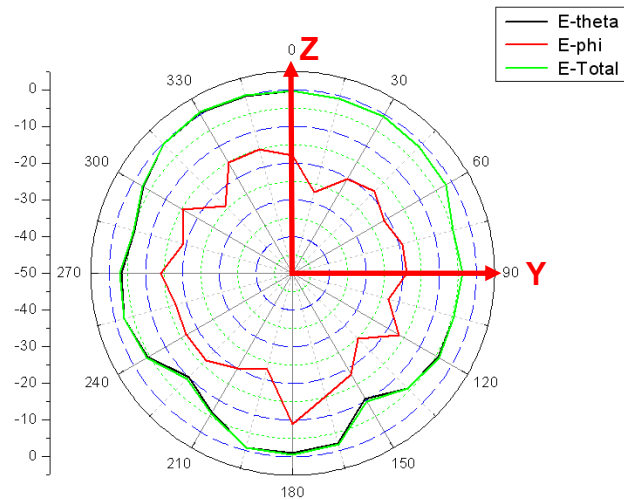
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© 2D Gain Pattern (2442 MHz)

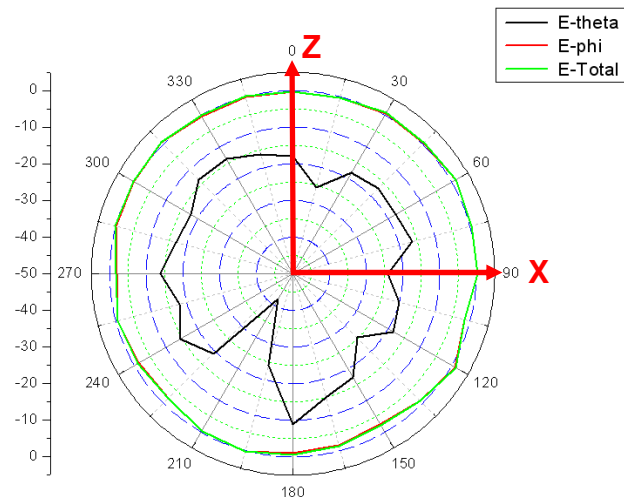
X-Y Plane



Y-Z Plane



X-Z Plane



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7. 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°C to +105°C.

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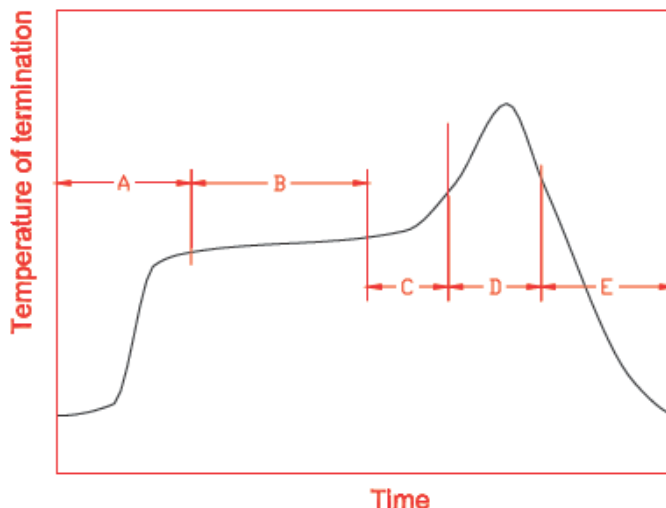
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8. Recommended Reflow Soldering



| | | | |
|---|------------------------------------|--------------------------------------|---------------|
| 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.

- (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.

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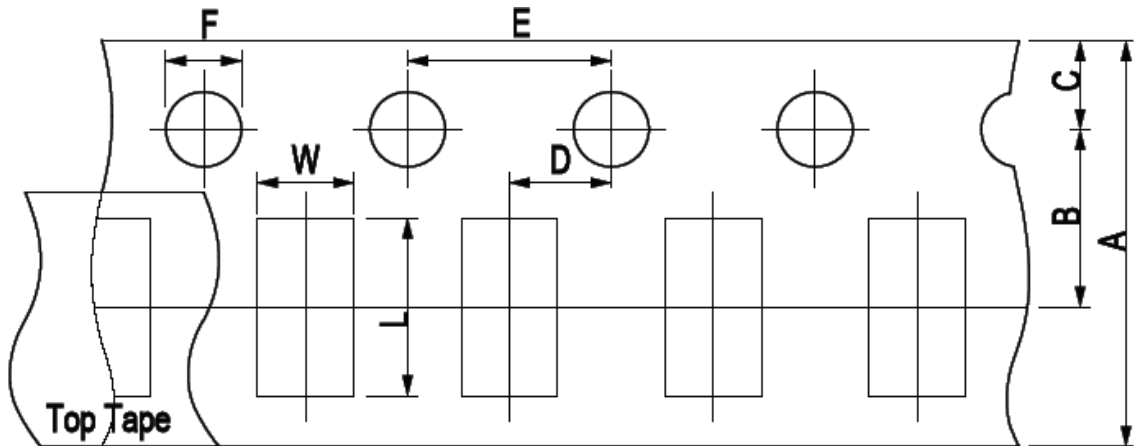
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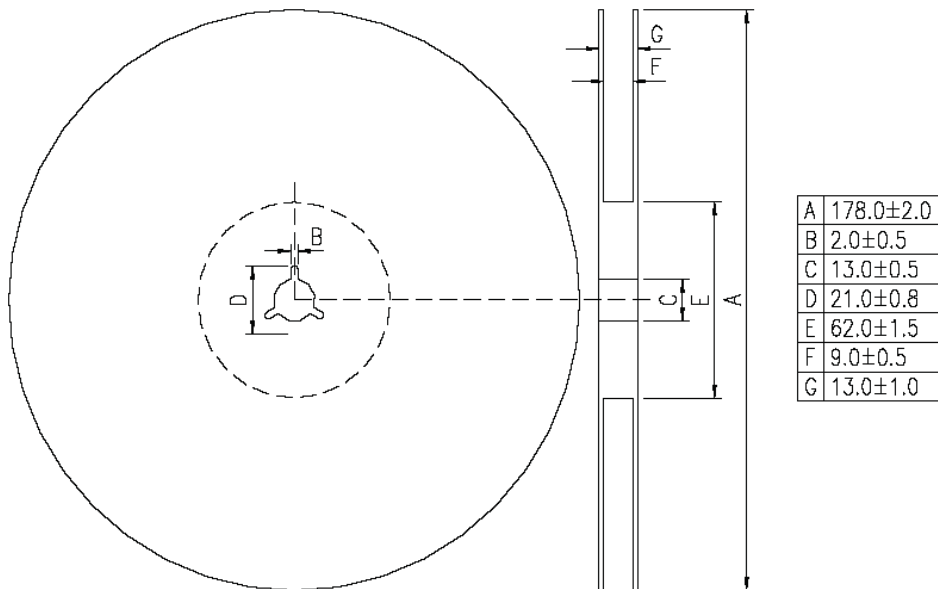
9. Taping Package and Label Marking: (unit: mm)

- (1) Quantity/Reel: 5000pcs/Reel
- (2) Carrier tape dimensions



| Type | A | B | C | D | E | F | L | W |
|---------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| ACA2012 | 8.00± 0.30 | 3.50± 0.05 | 1.75± 0.10 | 2.00± 0.05 | 4.00± 0.10 | 1.50± 0.10 | 2.30± 0.10 | 1.55± 0.10 |

- (3) Taping reel dimensions



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