

# ACA-5010-A1-MF-S

## 1. Explanation of Part Number :

AC   A   -   5010   A1   -   MF   -   S   -       
(1)   (2)        (3)        (4)        (5)        (6)        (7)

- (1) Product Type : Chip Antenna
- (2) Center Frequency/Band Code : A -2.45GHz
- (3) Size Code : 5.0mm(length) x 1.0mm(width)
- (4) Design Revision Code : A1= Rev. 1
- (5) Series No. : MF=MONOPOLE PCB type
- (6) Special Code : S= RoHS Compliant
- (7) Suffix For Special Requirements

## 2. Electrical Specification :

| ITEM                  | SPECIFICATION     |
|-----------------------|-------------------|
| Frequency Band        | 2400-2500MHz      |
| Return Loss           | Less than -10     |
| Polarization          | Linear            |
| Impedance             | 50 ohm Typ.       |
| Operating temperature | -45 ~85 °C        |
| Dimension             | 5.0 x 1.0 x 1.6mm |

\* Test condition : Test board size 5\*1 mm  
Matching circuit may be required

UNLESS OTHER SPECIFIED TOLERANCES ON :  
X=N/R      X.X=N/R      X.XX =N/R  
ANGLES=N/R      HOLEDIA=N/R



INPAQ TECHNOLOGY CO., LTD.

SCALE : N/R      UNIT : mm  
DRAWN BY : 黃建棠      CHECKED BY : 鄭榮謀  
DESIGNED BY : 彭少君      APPROVED BY : 謝立庭

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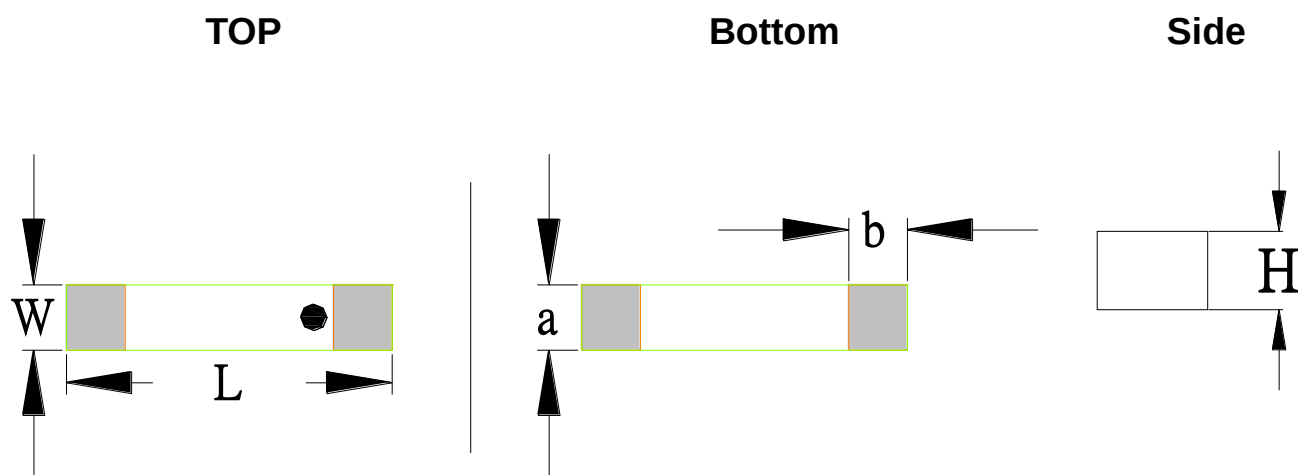
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NO.

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A1

### 3. Physical Dimension :



| Chip Antenna     | L       | W       | H       | a     | b       |
|------------------|---------|---------|---------|-------|---------|
| ACA-5010-A1-MF-S | 5.0±0.2 | 1.0±0.2 | 1.6±0.2 | 1±0.2 | 0.9±0.2 |

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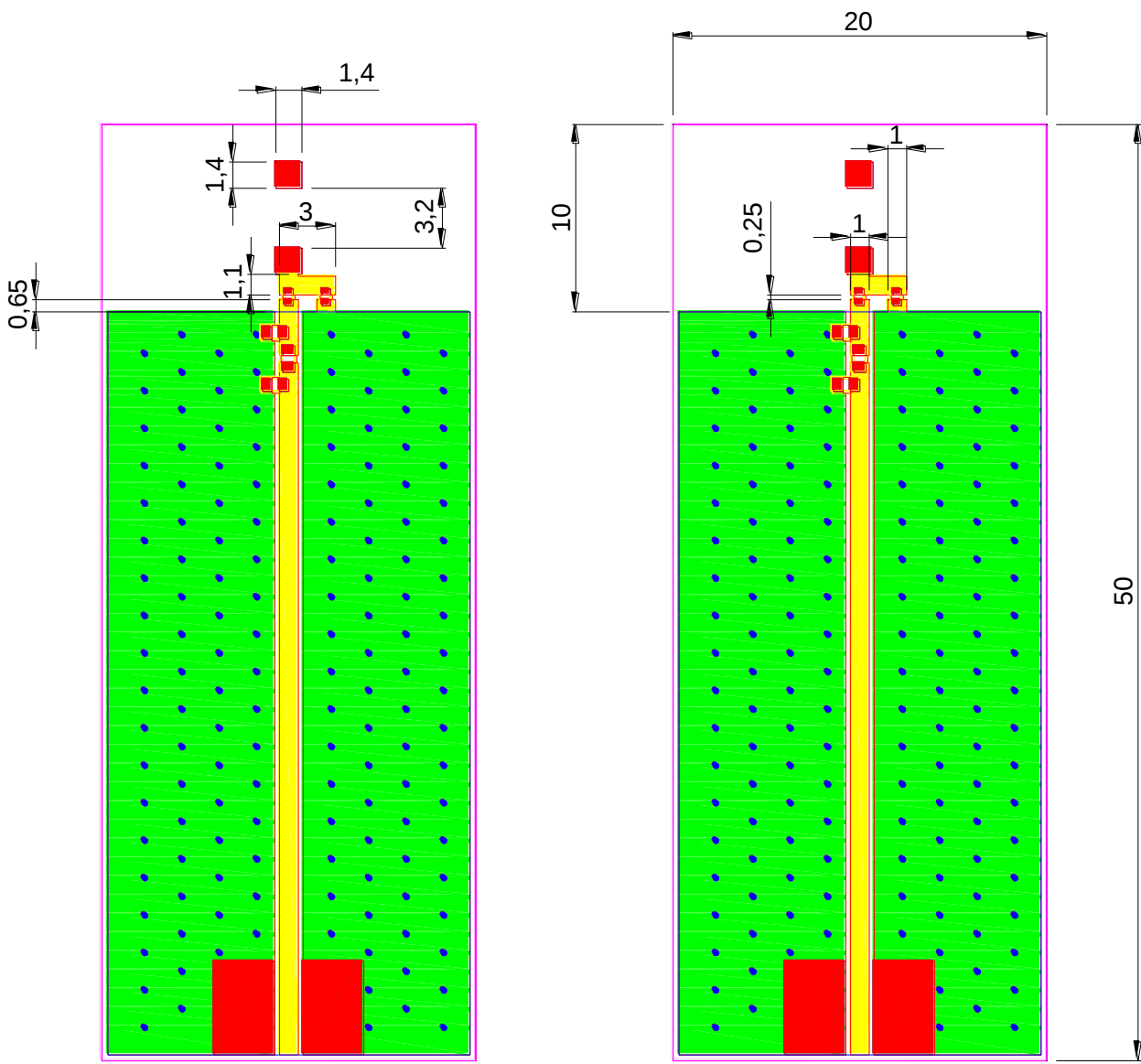
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4. Recommend PCB Layout :



Unit : mm

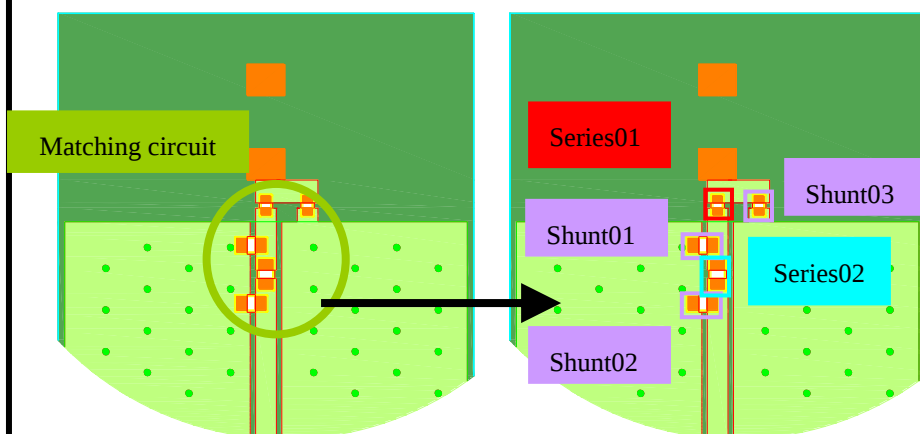
|                                        |                   |
|----------------------------------------|-------------------|
| UNLESS OTHER SPECIFIED TOLERANCES ON : |                   |
| X=N/R                                  | X.X=N/R           |
| ANGLES=N/R                             | HOLEDIA=N/R       |
| SCALE : N/R                            | UNIT : mm         |
| DRAWN BY : 黃建棠                         | CHECKED BY : 鄭榮謀  |
| DESIGNED BY : 彭少君                      | APPROVED BY : 謝立庭 |

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

|                                                                                                                                                                                                       |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
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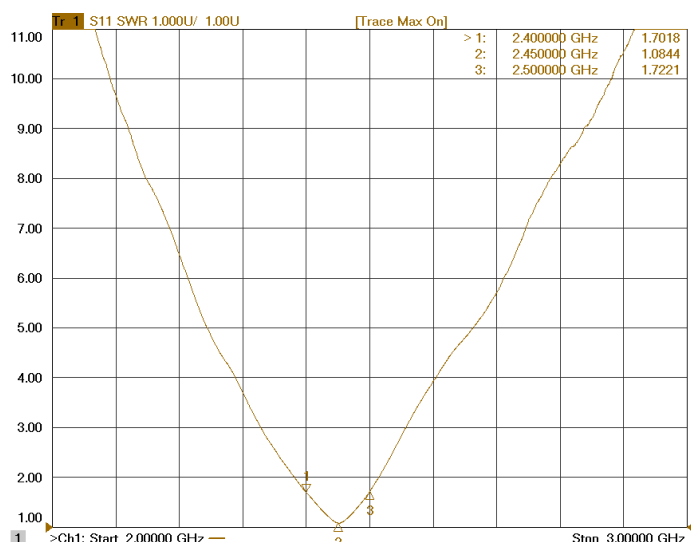
## Matching Circuit on Demoboard :



| Circuit Symbol | Size | Description |
|----------------|------|-------------|
| Series01       | 0201 | 6.8nH       |
| Series02       | 0402 | 1.2nH       |
| Shunt01        | 0402 | N/A         |
| Shunt02        | 0402 | 0.7pF       |
| Shunt03        | 0201 | N/A         |

## 5. Electrical Characteristics :

### VSWR



| Frequency (MHz) | VSWR |
|-----------------|------|
| 2400            | 1.70 |
| 2450            | 1.08 |
| 2500            | 1.72 |

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ANGLES=N/R HOLEDIA=N/R

SCALE : N/R

UNIT : mm

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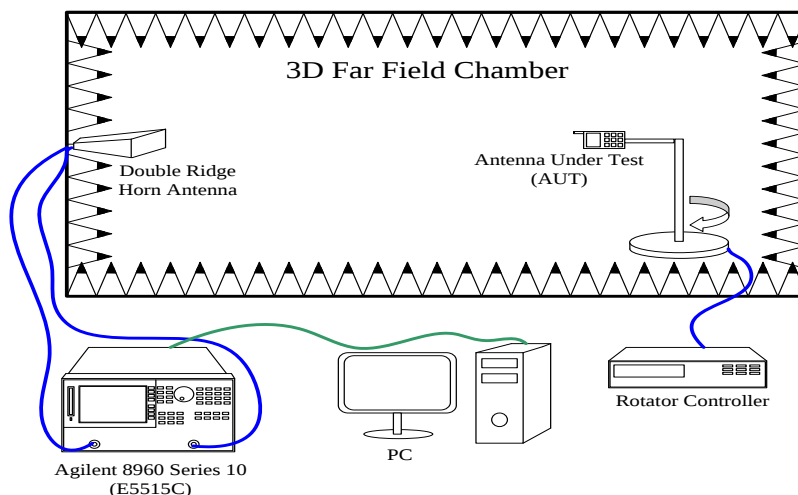
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## Radiation Pattern :

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

## Efficiency & Peak Gain :

| Frequency (MHz) | Peak Gain (dBi) | Efficiency (%) |
|-----------------|-----------------|----------------|
| 2400            | 3.62            | 47.01          |
| 2410            | 3.61            | 47.4           |
| 2420            | 3.54            | 50.07          |
| 2430            | 3.59            | 52.6           |
| 2440            | 3.54            | 54.19          |
| 2450            | 3.48            | 55.89          |
| 2460            | 3.38            | 53.92          |
| 2470            | 3.34            | 50.57          |
| 2480            | 3.27            | 47.64          |
| 2490            | 3.2             | 47.51          |
| 2500            | 3.19            | 45.6           |

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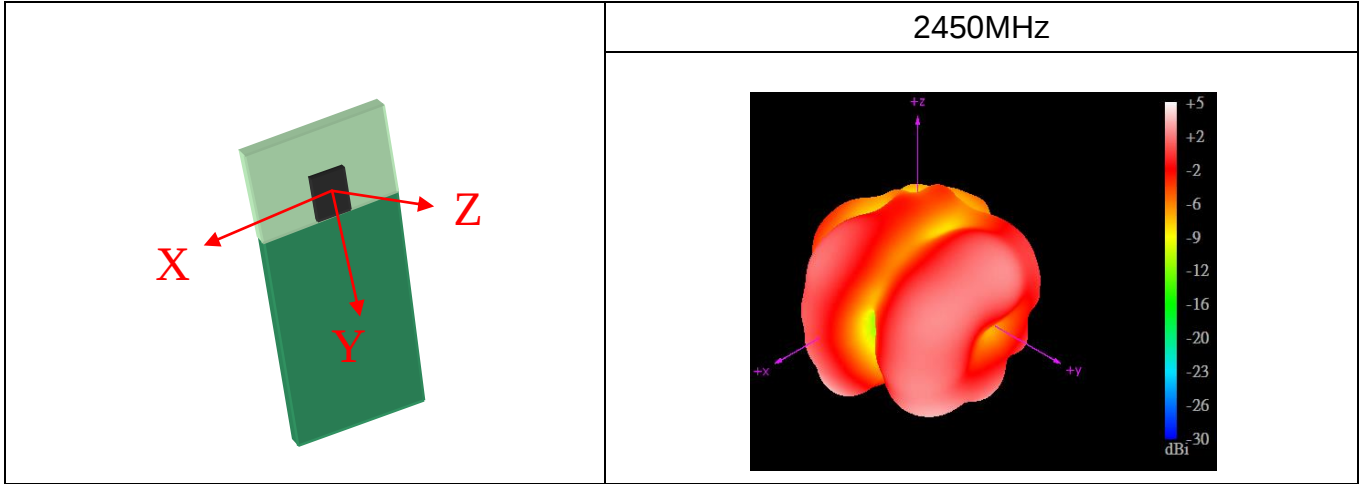
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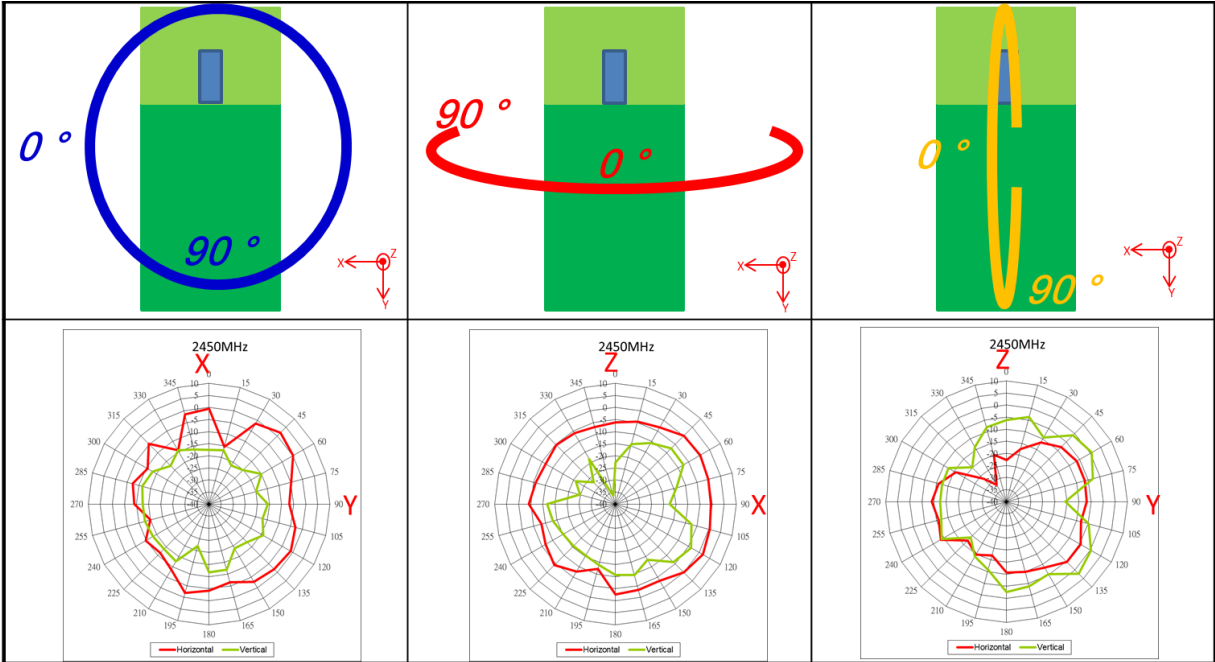
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3D radiation pattern :



2D radiation pattern :



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X=N/R      X.X=N/R      X.XX =N/R  
ANGLES=N/R      HOLEDIA=N/R



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

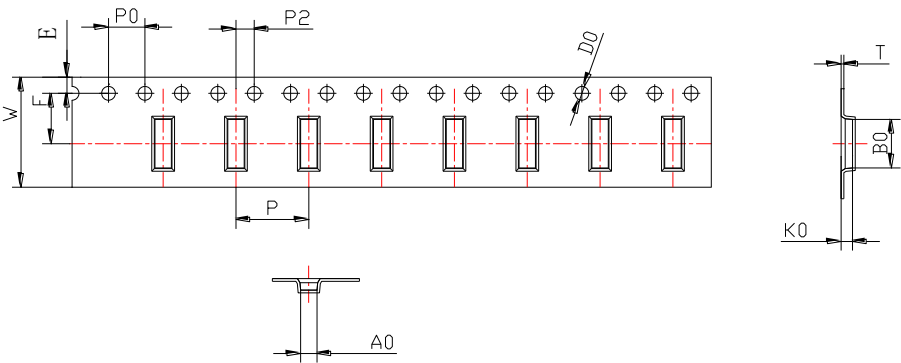
- (1) Quantity/Reel : 2000pcs/Reel
- (2) Carrier tape dimensions

2. 1共同尺寸

| 外觀   | 規格    | 公差             |
|------|-------|----------------|
| W    | 12.00 | ±0.30          |
| P    | 8.00  | ±0.10          |
| E    | 1.75  | ±0.10          |
| F    | 5.50  | ±0.10          |
| P2   | 2.00  | ±0.10          |
| D    | 1.50  | +0.10<br>-0.00 |
| D1   | ----  | ±0.10          |
| Po   | 4.00  | ±0.10          |
| 10Po | 40.00 | ±0.20          |

2. 2口袋尺寸

| 外觀 | 規格   | 公差    |
|----|------|-------|
| A0 | 1.80 | ±0.10 |
| A1 | ---- | ±0.10 |
| B0 | 5.30 | ±0.10 |
| B1 | ---- | ±0.10 |
| Ko | 1.25 | ±0.10 |
| t  | 0.30 | ±0.05 |



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