

Address : Room 608, Building 4, 1970 Science and Technology Town, Minzhi Street, Longhua District, Shenzhen.

SPECIFICATIONS

客户:

CUSTOMER: _____

产品名称:

DESCRIPTION: Geomagnetic Antenna

客户型号:

CUSTOMER PART NO: _____

产品型号:

OUR MODEL NO: **PBX1608MA02**

日期:

DATE: _____

PLEASE RETURN TO US ONE COPY OF "SPECIFICATION FOR APPROVAL"

WITH YOUR APPROVED SIGNATURES

| | | | | | |
|----------|--------|-------|--------|--------|------------|
| Approved | LiuFei | Audit | LiuFei | Making | LiuXiaoMei |
|----------|--------|-------|--------|--------|------------|

| | |
|---------------------------------|--|
| Customer Acknowledges Signature | |
| Date | |

UNLESS OTHER SPECIFIED TOLERANCES ON:

X=± X.X=± X.XX=±
ANGLES = ± HOLEDIA = ±

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SCALE: N/A

UNIT: mm

DRAWN BY: Sera

CHECKED BY: XD

DESIGNED BY: Sera

APPROVED BY: XD

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TITLE: CHIP2450-1608 Specification

DOCUMENT NO.

1608

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PBX1608MA02 Specification

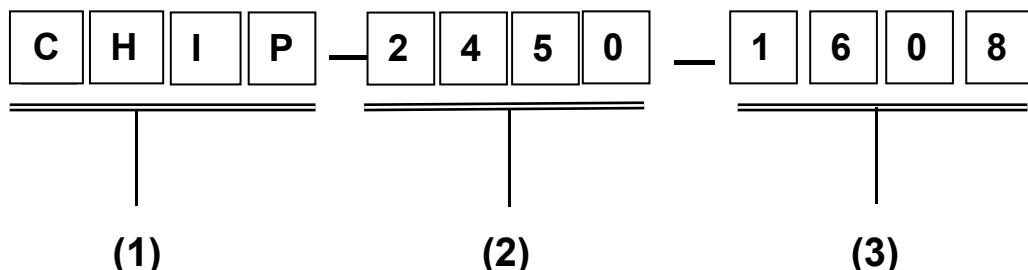
Operating Temp. : -40°C~+85°C

1. FEATURES:

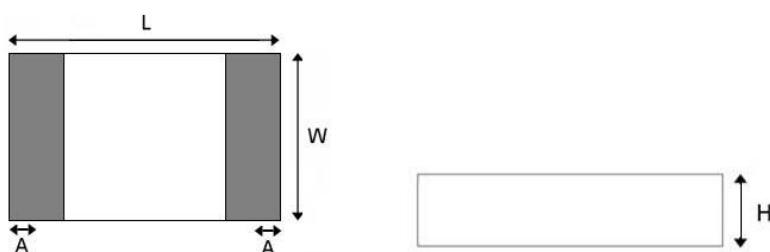
- Light weight, compact
- Wide bandwidth, low cost
- Built-in antenna with high gain

2. APPLICATIONS:

- Bluetooth, Wireless LAN, Mobile TV
- Home RF System, etc

3. PRODUCT IDENTIFICATION

- (1) Product type: Multilayer chip Antenna
- (2) Center Frequency: 2450MHz
- (3) External Dimensions (L×W) (mm): 1.6*0.8

4. SHAPE AND DIMENSIONS:

| L | W | H | A |
|-------------|-------------|-------------|-------------|
| 1. 60±0. 20 | 0. 80±0. 20 | 0. 80±0. 20 | 0. 30±0. 10 |

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| | | |
|------------|-------|--------------|
| X=± | X.X=± | X.XX= |
| ANGLES = ± | HOLES | DIAMETER = ± |

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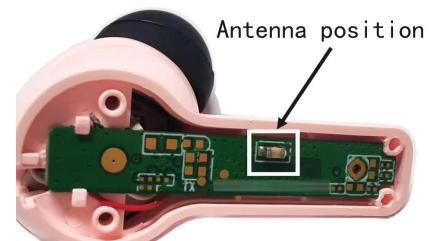
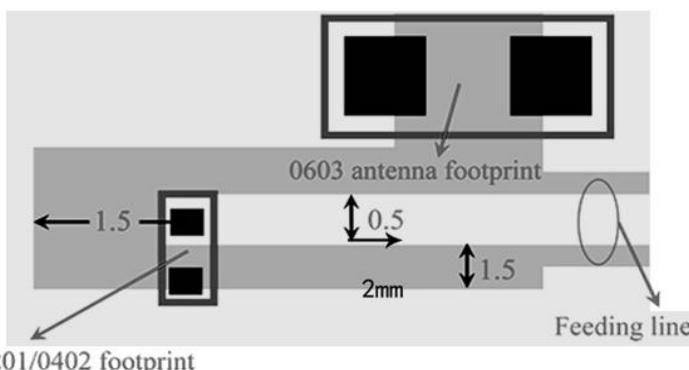
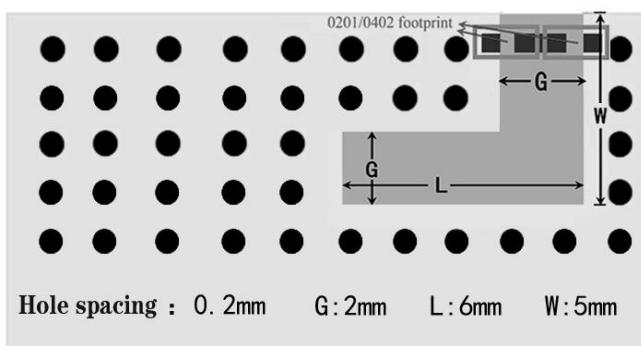
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- Antenna is located in the PCB board or the middle position (long-bar headphones): (units: mm)



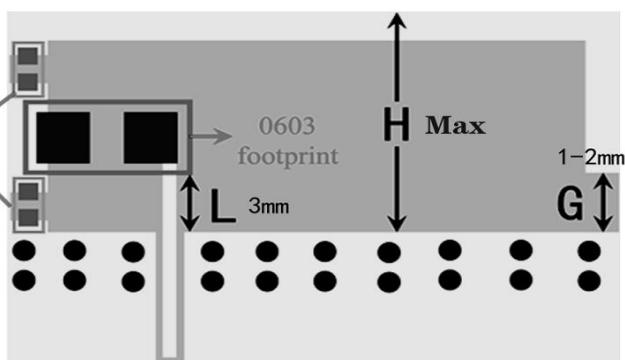
The antenna should be placed in the PCBA outer layer

The antenna is optimally placed in the middle area, and at least one row of through holes around the clearance area is optimally required.

- When the antenna is located at the edge of the PCB board (in-ear headphones and some long-bar headphones) :

The antenna is optimally placed on the edge of the PCBA; the antenna and its alignment are set on a single layer.

Design criteria::



1. The dimensions in the diagram are for reference only; the actual dimensions are optimized for different versions.
2. The optimum clearance area around the need for at least a row of holes, aperture 0.3 mm, and other PCBA circuit or material isolation.

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$X = \pm$ $X.X = \pm$ $X.XX = \pm$
ANGLES = \pm **HOLE DIA** = \pm

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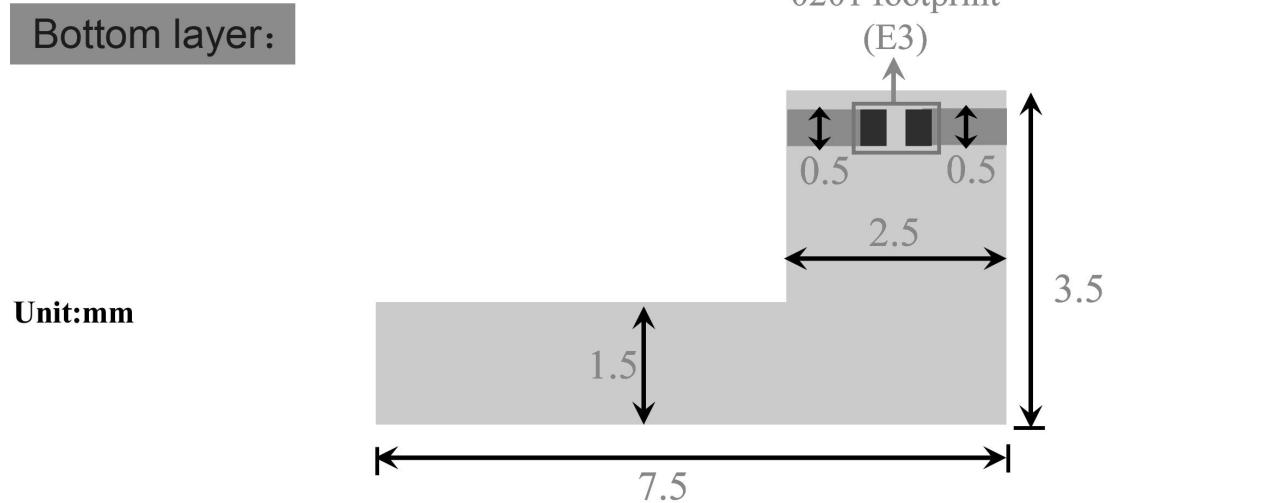
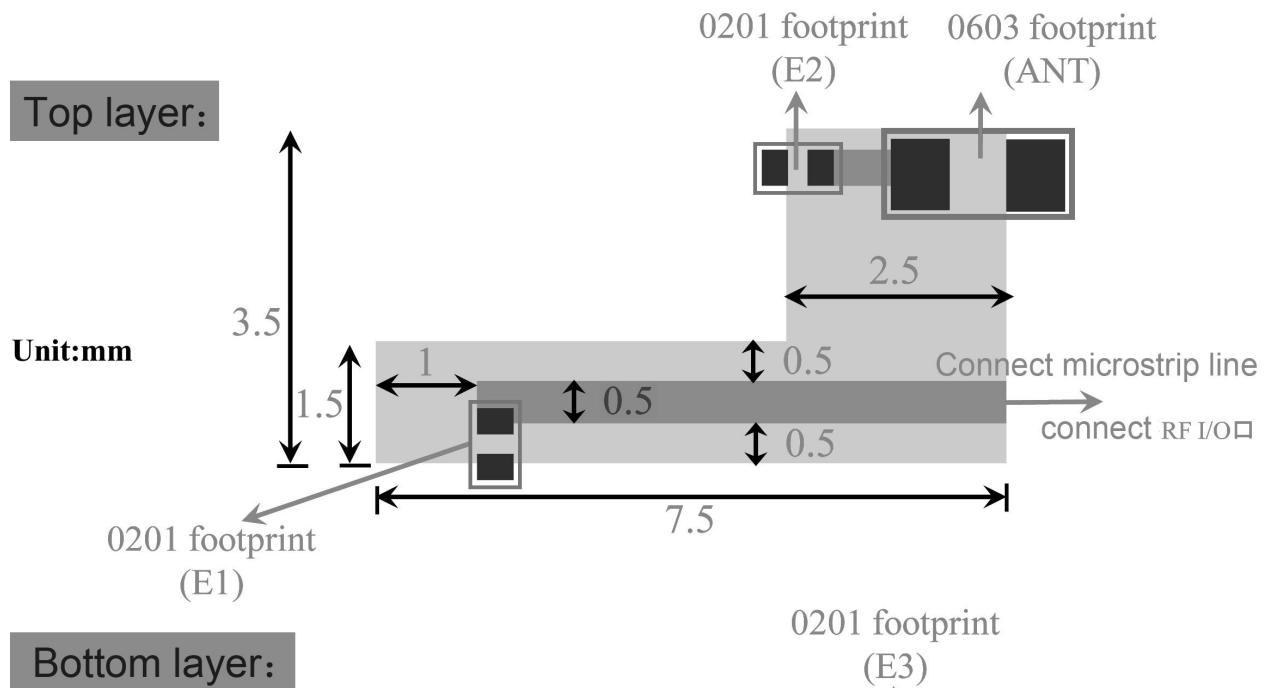
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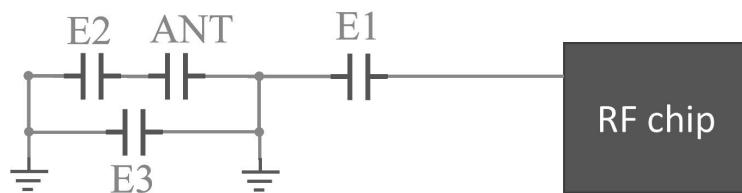
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Antenna Package Scheme 1 (3.5mm×7.5mm)



Schematic diagram



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| ANGLES = \pm | HOLE DIA = \pm | |

SCALE: N/A

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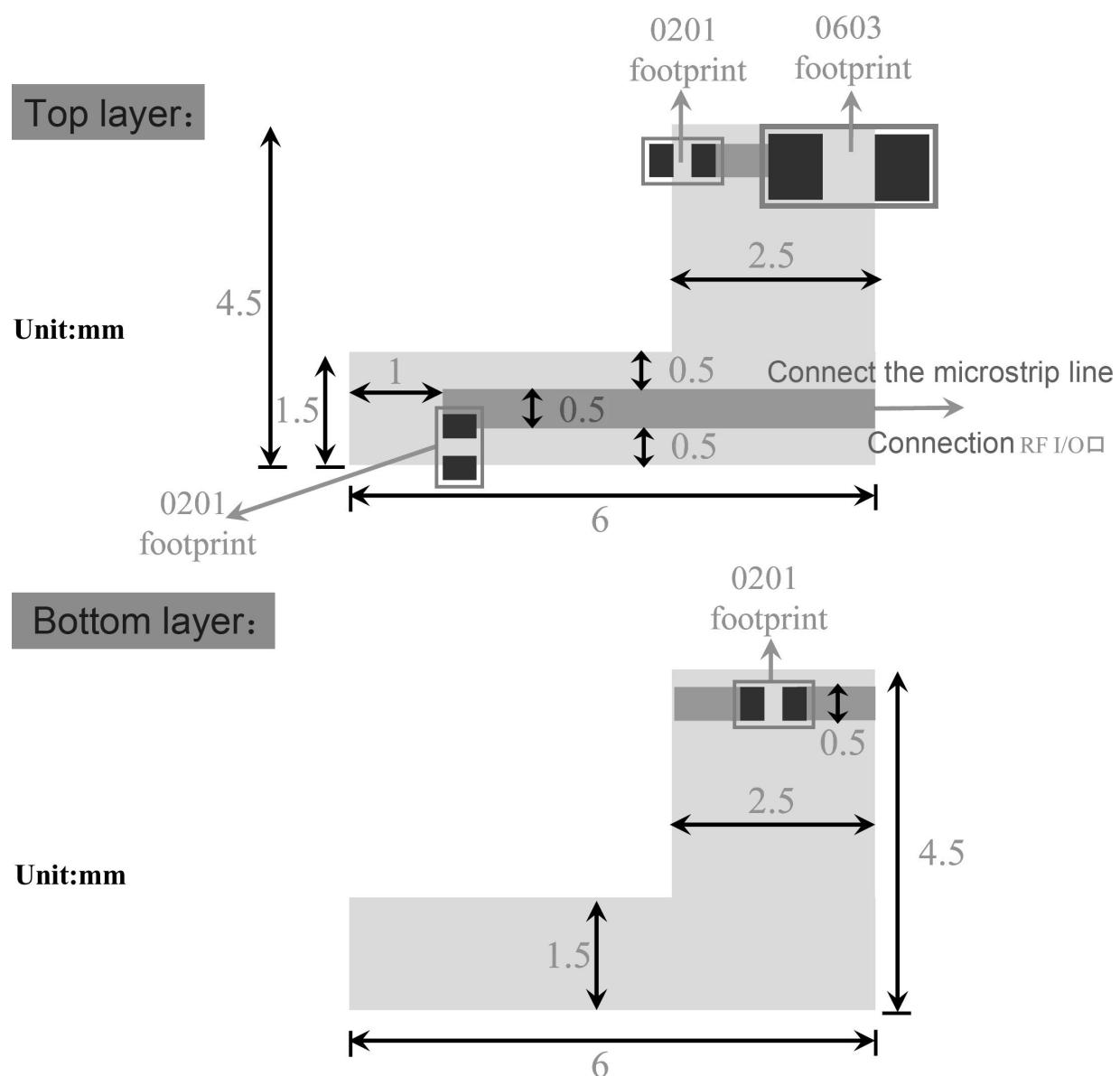
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Antenna Package Scheme II (4.5mm×6mm)

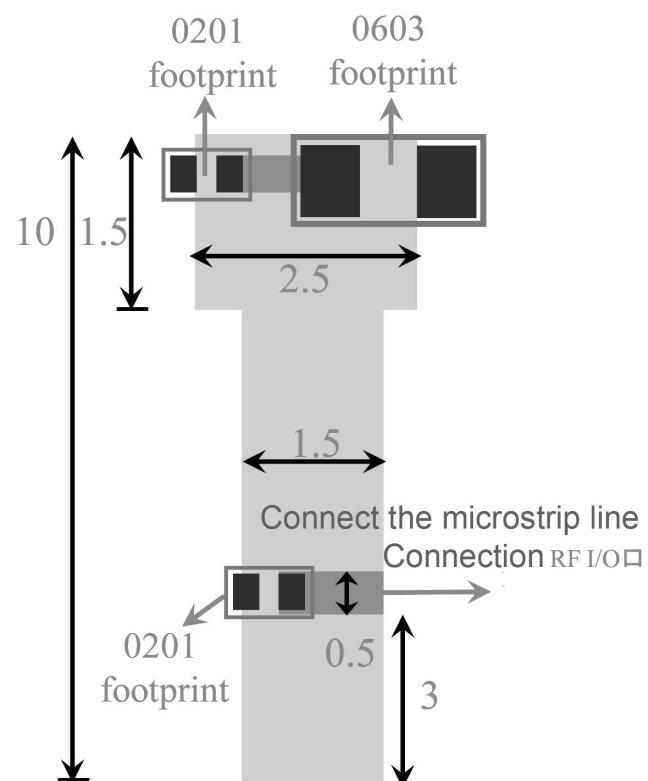


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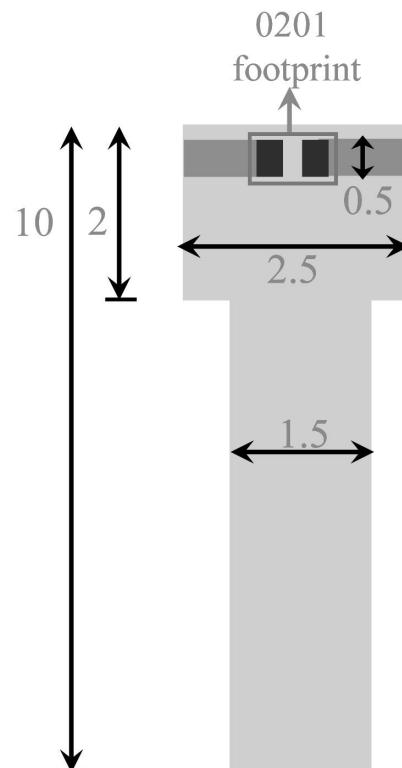
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Antenna Package Scheme III (1.5mm×10mm)

Top layer:



Bottom layer:



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| | | |
|-----------------------|-------------------------|----------|
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| ANGLES = \pm | HOLE DIA = \pm | |

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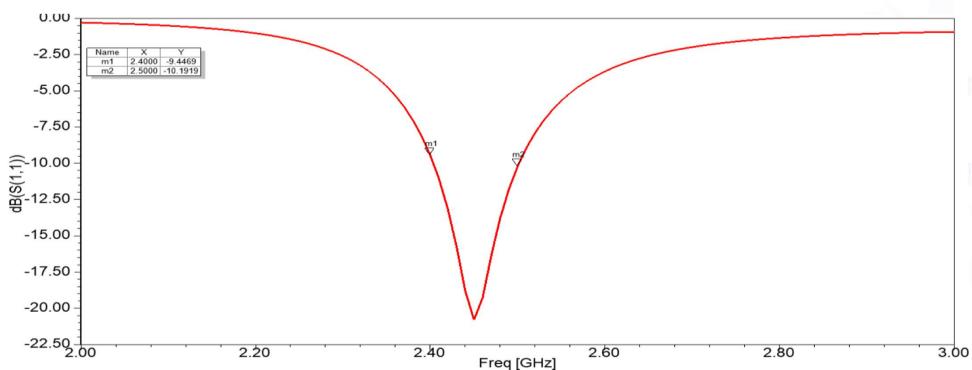
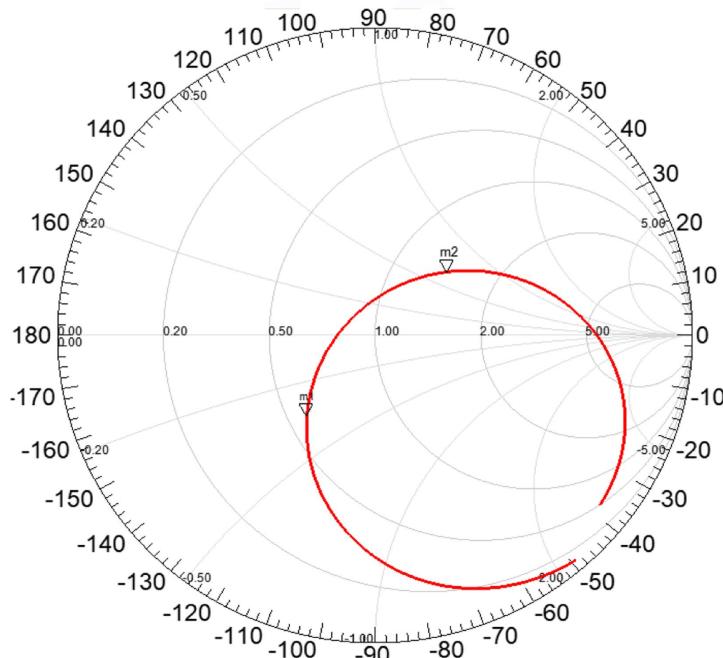
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Electrical Characteristics

| | Feature | Specification |
|---|-------------------|-----------------|
| 1 | Central frequency | 2.45GHz |
| 2 | Bandwidth | >150MHz |
| 3 | Peak gain | 2.78 dBi |
| 4 | VSWR | <2 |
| 5 | Polarization | Linear |
| 6 | Azimuth beamwidth | Omnidirectional |
| 7 | Impedance | 50 Ω |

Characteristic Curves



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| ANGLES = \pm | HOLE DIA = \pm | |

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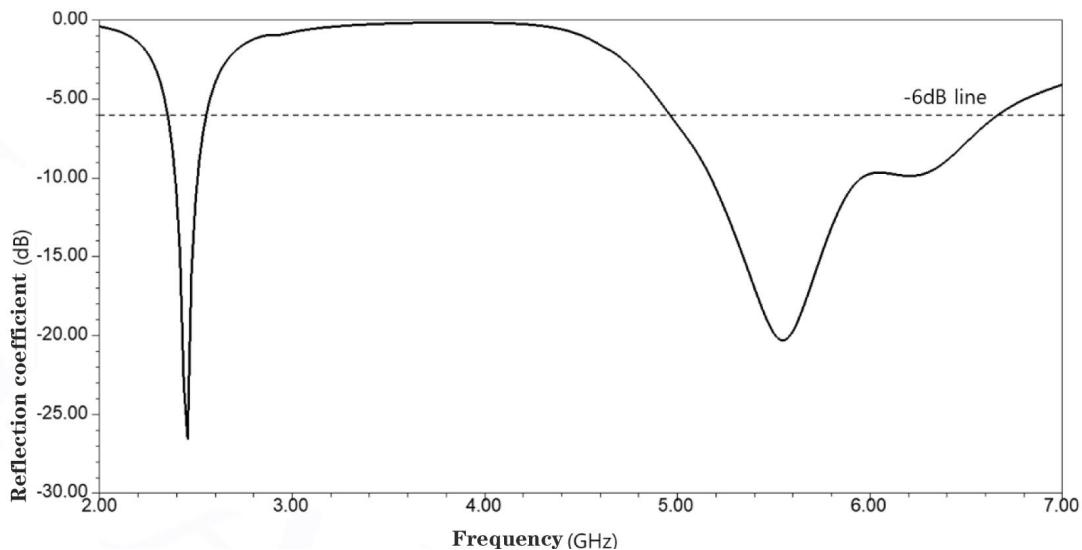
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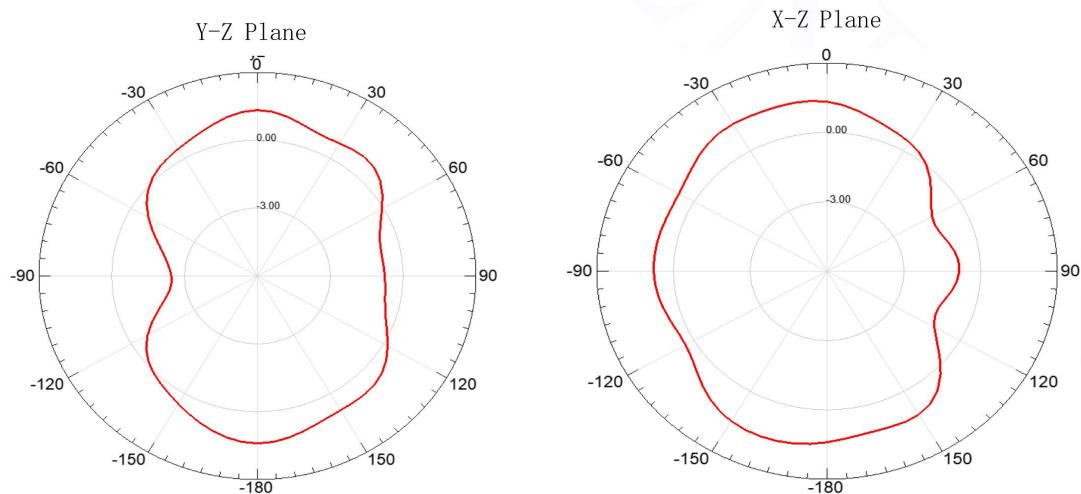
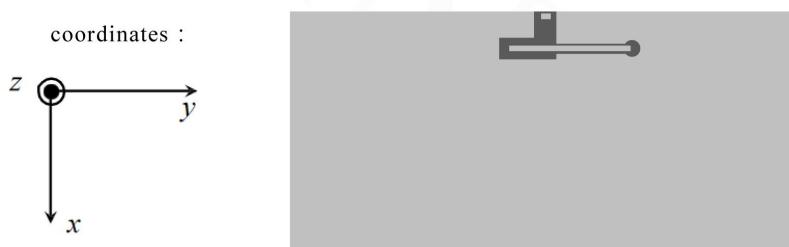
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Radiation Pattern



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SCALE: N/A UNIT: mm

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DESIGNED BY: Sera APPROVED BY: XD

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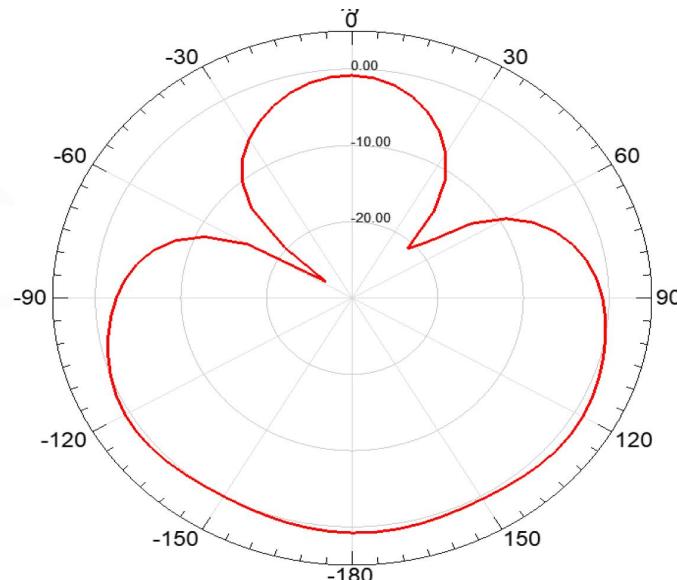
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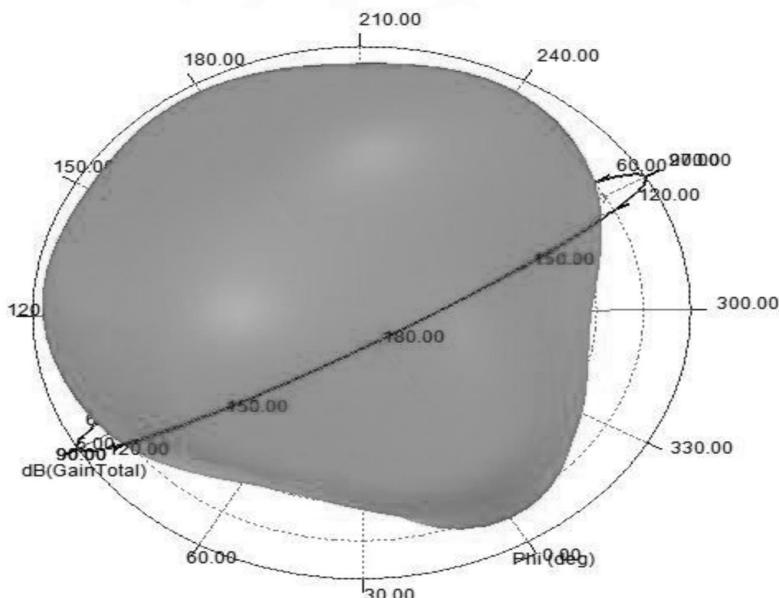
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3D Radiation Pattern



| Frequency | 2400MHz | 2450MHz | 2500MHz |
|------------|---------|---------|---------|
| Avg. gain | -1.92 | -1.35 | -1.56 |
| Peak gain | 1.79 | 2.78 | 2.66 |
| Efficiency | 74.55 | 80.25 | 76.98 |

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ANGLES = ± HOLEDIA = ±

SCALE: N/A

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UNIT: mm

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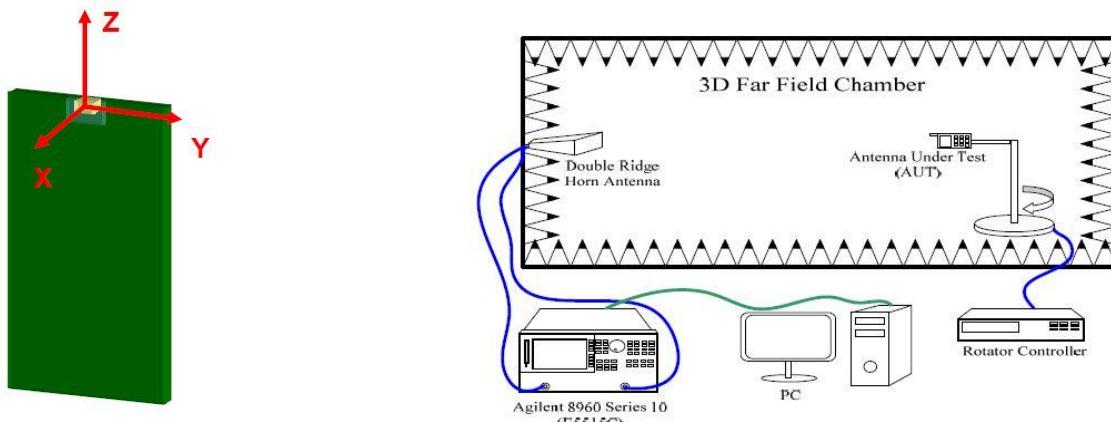
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Radiation Pattern

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



Environmental Characteristics

(1) Reliability Test

| Item | Condition | Specification |
|-----------------------------|--|--|
| Thermal shock | 1. 30 ± 3 minutes at $-40^\circ C \pm 5^\circ C$, 2. Convert to $+105^\circ C$ (5 minutes) 3. 30 ± 3 minutes at $+105^\circ C \pm 5^\circ C$, 4. Convert to $-40^\circ C$ (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: $85 \pm 5^\circ C$ 3. Time: 1000 hours. | No apparent damage Fulfill the electrical spec. after test. |
| High temperature resistance | 1. Temperature: $150^\circ C \pm 5^\circ C$ 2. Time: 1000 hours. | No apparent damage Fulfill the electrical spec. after test. |
| Low temperature resistance | 1. Temperature: $-40^\circ C \pm 5^\circ C$ 2. Time: 1000 hours. | No apparent damage Fulfill the electrical spec. after test. |
| Soldering heat resistance | 1. Solder bath temperature : $260 \pm 5^\circ C$ 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 $245 \pm 5^\circ C$ for 3 ± 1 seconds. | No apparent damage |

(2) Storage Condition

(a) At warehouse:

The temperature should be within $0 \sim 30^\circ C$ 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 $-40 \sim 85^\circ C$ and humidity should be less than 85% RH.

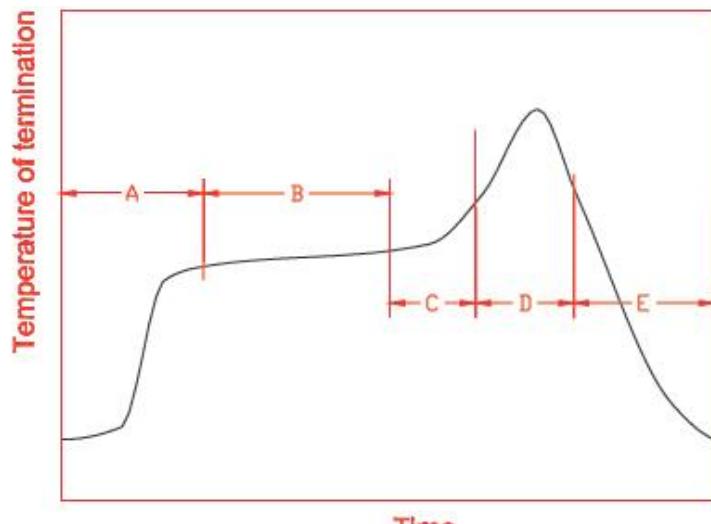
(3) Operating Temperature Range

Operating temperature range : $-40^\circ C$ to $+105^\circ C$.

| | | |
|--|-----------------|---|
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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 |
| | | if 260°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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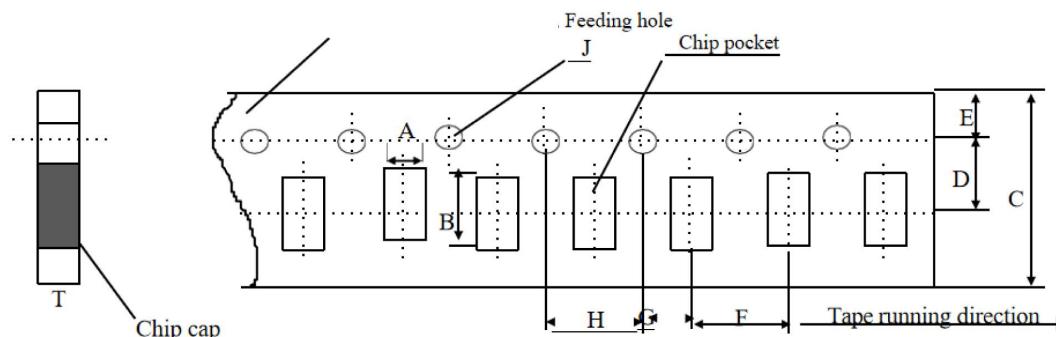
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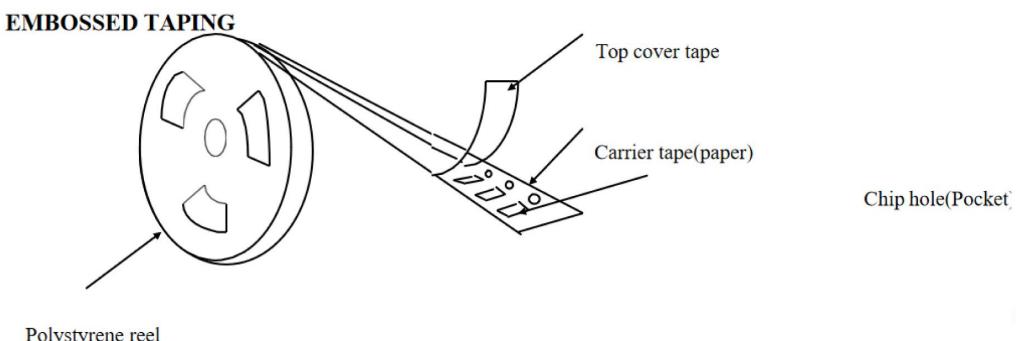
Dimensions of paper taping:



Unit: mm

| Code paper size | A | B | C | D* | E | F | G* | H | J | T |
|--------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|------------------|-------------|
| 尺寸 | 1.10 ±0.10 | 1.90 ±0.10 | 8.00 ±0.10 | 3.50 ±0.05 | 1.75 ±0.10 | 4.00 ±0.10 | 2.00 ±0.10 | 4.00 ±0.10 | 1.50 -0/+0.10 | 1.10 Max |

Reel (4000 pcs/Reel)



Storage Period

The guaranteed period for solderability is 6 months (Under deliver package condition).
 Temperature: 5~40°C / Relative Humidity: 20~70%

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