



## 2. Features

- \*Stable and reliable in performances
- \*Compact size
- \*RoHS compliance

## 3. Applications

- \* IEEE802.11 (b/g/n).
- \* Hand-held devices when WiFi (802.11 b/g/n) functions are needed.

## 4. Description

Unictron's PCB antenna series are specially designed for WiFi (802.11 b/g/n) applications. Based on Unictron's proprietary design and processes, this PCB antenna has excellent stability and sensitivity to consistently provide high signal reception efficiency.

## 5. Operating Condition:

|             |                |                             |
|-------------|----------------|-----------------------------|
| Temperature | -10 to +85 °C  | (With double-sided tape)    |
|             | - 40 to +85 °C | (Without double-sided tape) |
| Humidity    | 10 to 95% RH   |                             |

## 6. Storage Condition:

|             |                |                             |
|-------------|----------------|-----------------------------|
| Temperature | -10 to +85 °C  | (With double-sided tape)    |
|             | - 40 to +85 °C | (Without double-sided tape) |
| Humidity    | 10 to 95% RH   |                             |

## 7. Electrical Specifications (Antenna on the plastic housing)

### 7-1. 2400~2484 MHz Band

| Characteristics          |              | Specifications      | Unit |
|--------------------------|--------------|---------------------|------|
| Outline Dimensions       |              | 50.0 x 5.0 x 0.5    | mm   |
| Working Frequency        |              | 2400~2484           | MHz  |
| Bandwidth                |              | 84Min (typical)     | MHz  |
| VSWR(@Center Frequency)* |              | 2Max (typical)      |      |
| Impedance                |              | 50                  | Ω    |
| Polarization             |              | Linear Polarization |      |
| Peak Gain                | (@ 2442 MHz) | 3.4 (typical)       | dBi  |
| Efficiency               |              | 76.6 (typical)      | %    |

\*Center frequency will be offset to another frequency according to the conditions of user's ground plane and radome.



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Prepared by : Xenia

Designed by : Sam

Checked by : Chinling

Approved by : Herbert

TITLE : 50.0 x 5.0 x 0.5 (mm) WiFi PCB Substrate Antenna  
(AA107) Engineering Specification

DOCUMENT  
NO.

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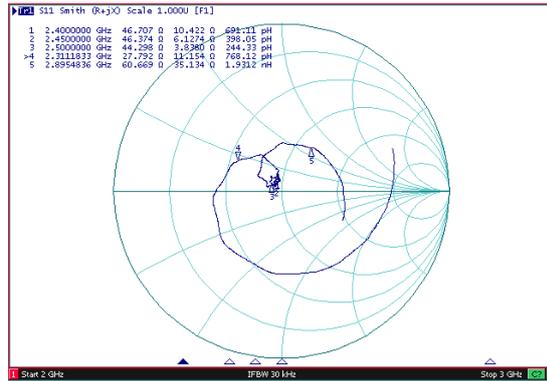
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## 7-2. Return Loss & Smith Chart

Return Loss



Smith Chart



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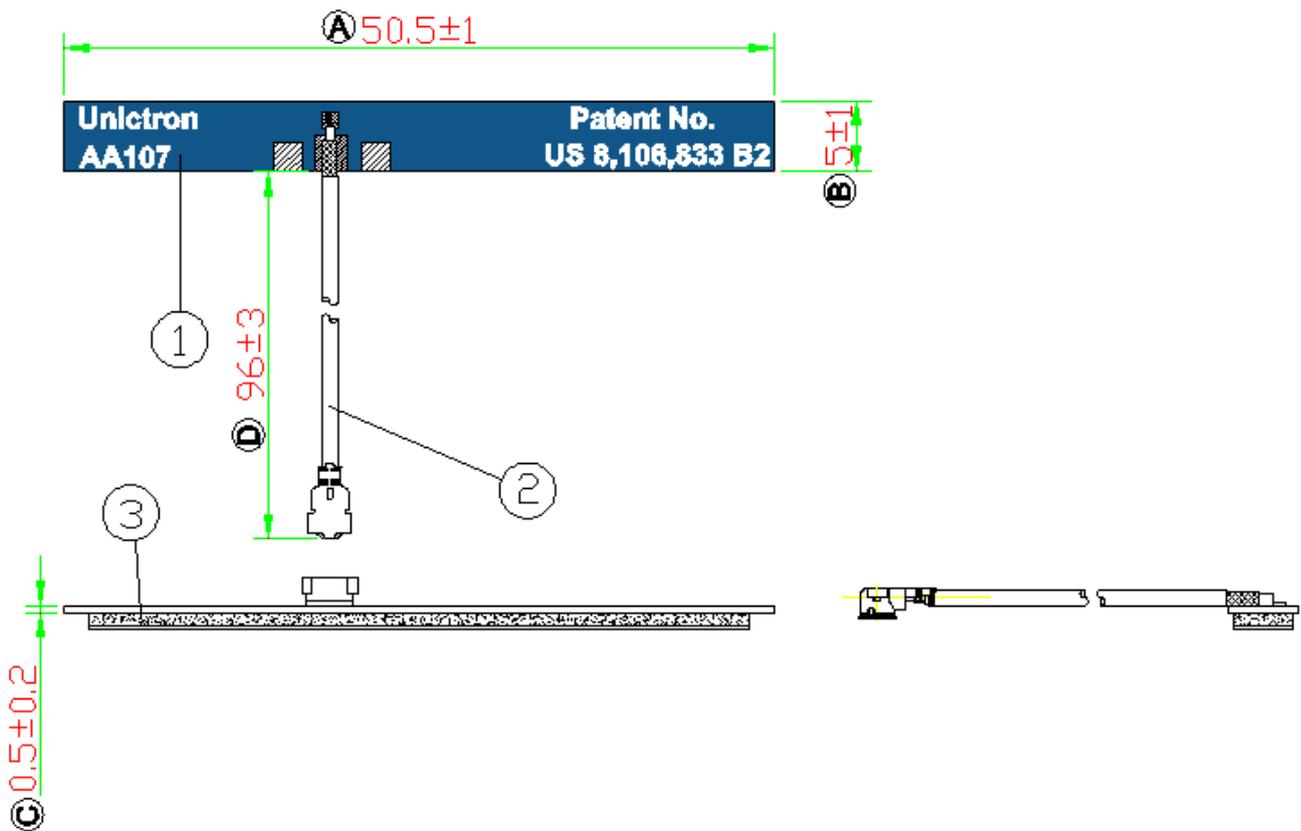
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## 8. Dimensions of PCB antenna with cable (unit: mm)



### NOTE:

1. All materials are RoHS compliant.
2. " (A)~(D) " Critical Dimensions.
3. "( ) " Reference Dimensions.

| Item | Name                                  | Material | Color | Q'ty |
|------|---------------------------------------|----------|-------|------|
| 1    | AA107_PCB                             | FR4      | Black | 1    |
| 2    | I-PEX Connector (MHF I) _ Cable1.13mm | FEP      | Gray  | 1    |
| 3    | Adhesive                              | PE       | Black | 1    |



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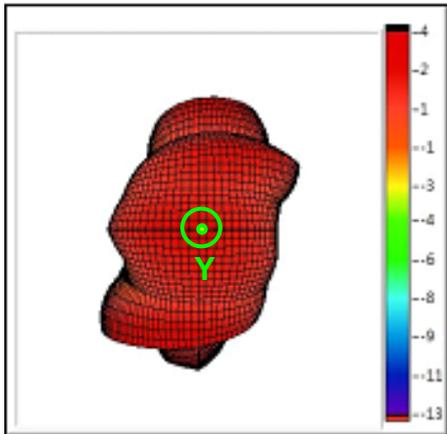
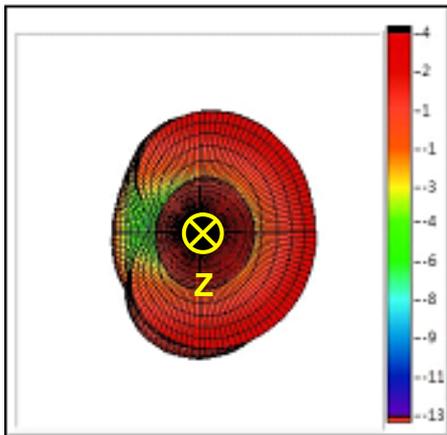
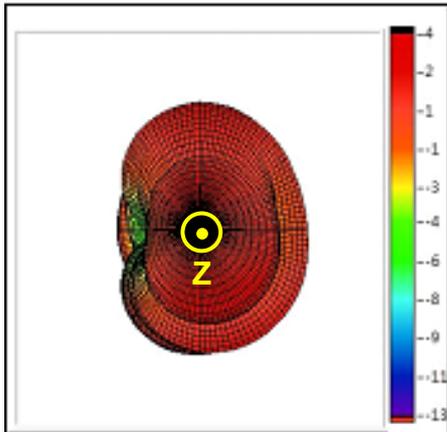
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## 9. Radiation Pattern

9-1.3D Gain Pattern @ 2442 MHz (unit: dBi)



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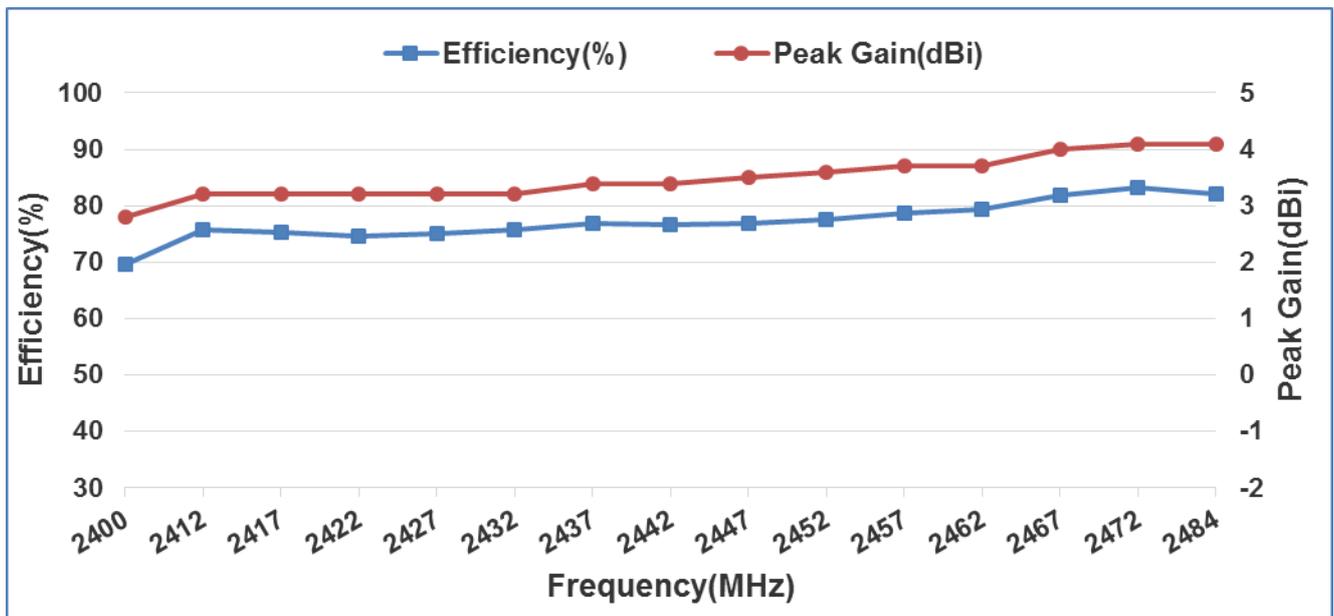
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### 9-2. 3D Efficiency Table

| Frequency (MHz) | 2400 | 2412 | 2417 | 2422 | 2427 | 2432 | 2437 | 2442 | 2447 | 2452 | 2457 | 2462 | 2467 | 2472 | 2484 |
|-----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Efficiency (dB) | -1.6 | -1.2 | -1.2 | -1.3 | -1.3 | -1.2 | -1.1 | -1.2 | -1.1 | -1.1 | -1.0 | -1.0 | -0.9 | -0.8 | -0.9 |
| Efficiency (%)  | 69.5 | 75.7 | 75.2 | 74.6 | 75.0 | 75.7 | 76.9 | 76.6 | 76.9 | 77.6 | 78.7 | 79.3 | 81.9 | 83.2 | 82.0 |
| Gain (dBi)      | 2.8  | 3.2  | 3.2  | 3.2  | 3.2  | 3.2  | 3.4  | 3.4  | 3.5  | 3.6  | 3.7  | 3.7  | 4.0  | 4.1  | 4.1  |

### 9-3. 3D Efficiency vs. Frequency



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