

# 25.0 x 7.0 x 0.5 (mm) Wi-Fi Dual Band PCB Antenna with Cable (AA258) Engineering Specification

## 1. Explanation of Product Number

|          |          |          |          |          |          |          |          |          |          |          |          |          |          |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| <u>H</u> | <u>2</u> | <u>B</u> | <u>1</u> | <u>P</u> | <u>C</u> | <u>1</u> | <u>A</u> | <u>1</u> | <u>C</u> | <u>1</u> | <u>8</u> | <u>0</u> | <u>0</u> |
|          |          |          |          | (1)      | (2)      | (3)      | (4)      |          |          | (5)      |          |          |          |



Product Code:

(1) Product Applications:

P: Wi-Fi Dual Band Antenna

(2) Dimensions:

C1: 25.0 x 7.0 x 0.5 (mm)

(3) Material:

A: GF

(4) Working Frequencies:

1C: 2400~2484 & 5150~5850 MHz

(5) Antenna Series:

18: serial number



詠業科技股份有限公司  
Unictron Technologies Corporation  
Website: www.unictron.com

THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF UNICTRON TECHNOLOGIES CORPORATION AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION

Prepared by : Wen

Designed by : James

Checked by : Mike

Approved by : Herbert

TITLE : 25.0 x 7.0 x 0.5 (mm) Wi-Fi Dual Band PCB Antenna  
with Cable (AA258) Engineering Specification

DOCUMENT  
NO.

H2B1PC1A1C1800

REV.  
A

## 2. Features

- \*Stable and reliable in performances
- \*Compact size
- \*RoHS 2.0 compliance

## 3. Applications

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

## 4. Description

Unictron's PCB antenna with cable series are specially designed for IEEE802.11(a/b/g/n) applications. Based on Unictron's proprietary design and processes, this 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 in device)

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

| Characteristics    |  | Specifications      | Unit |
|--------------------|--|---------------------|------|
| Outline Dimensions |  | 25.0 x 7.0 x 0.5    | mm   |
| Working Frequency  |  | 2400~2484           | MHz  |
| VSWR               |  | 2.5 Max. (typical). |      |
| Impedance          |  | 50                  | Ω    |
| Polarization       |  | Linear Polarization |      |
| Peak Gain          |  | 0.9 (typical)       | dBi  |
| Efficiency         |  | 44.6 (typical)      | %    |

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

2019-03-07



詠業科技股份有限公司  
Unictron Technologies Corporation  
Website: www.unictron.com

THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF UNICTRON TECHNOLOGIES CORPORATION AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION

Prepared by : Wen

Designed by : James

Checked by : Mike

Approved by : Herbert

TITLE : 25.0 x 7.0 x 0.5 (mm) Wi-Fi Dual Band PCB Antenna  
with Cable (AA258) Engineering Specification

DOCUMENT  
NO.

H2B1PC1A1C1800

REV.  
A

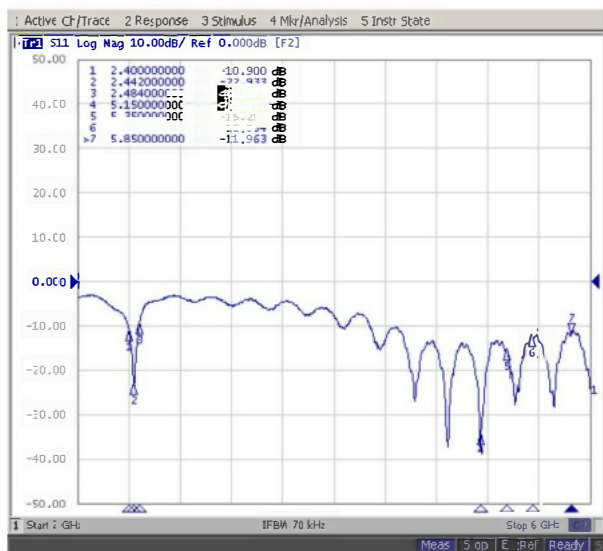
## 7-2. 5150~5850 MHz Band

| Characteristics   |  | Specifications      | Unit     |
|-------------------|--|---------------------|----------|
| Working Frequency |  | 5150~5850           | MHz      |
| VSWR              |  | 2.5 Max. (typical)  |          |
| Impedance         |  | 50                  | $\Omega$ |
| Polarization      |  | Linear Polarization |          |
| Peak Gain         |  | 4.2 (typical)       | dBi      |
| Efficiency        |  | 51.2 (typical)      | %        |

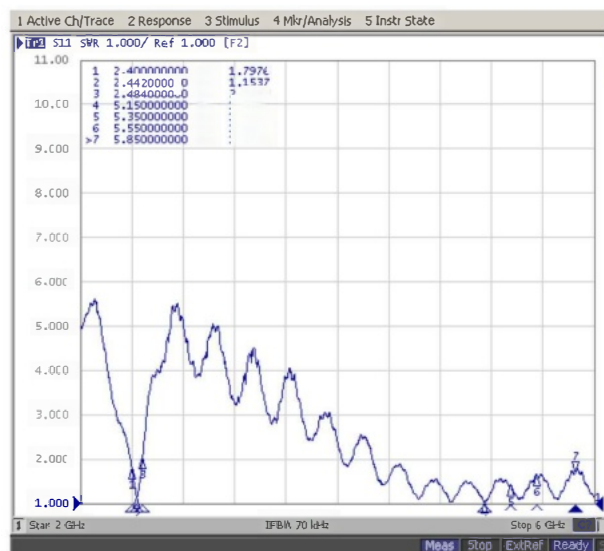
\*Center frequency will be offset to another frequency according to the conditions of user's ground plane and radome

## 7-3. Return Loss & VSWR

Return Loss



VSWR



詠業科技股份有限公司  
Unictron Technologies Corporation  
Website: www.unictron.com

THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF UNICTRON TECHNOLOGIES CORPORATION AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION

Prepared by : Wen

Designed by : James

Checked by : Mike

Approved by : Herbert

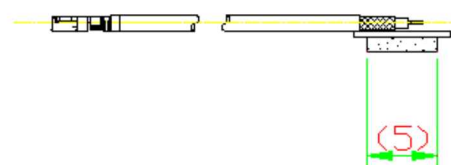
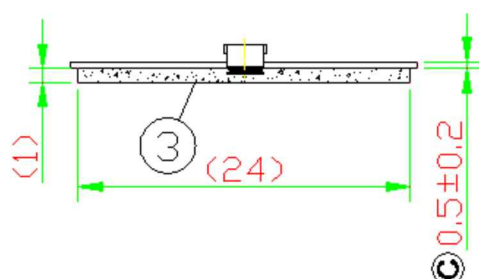
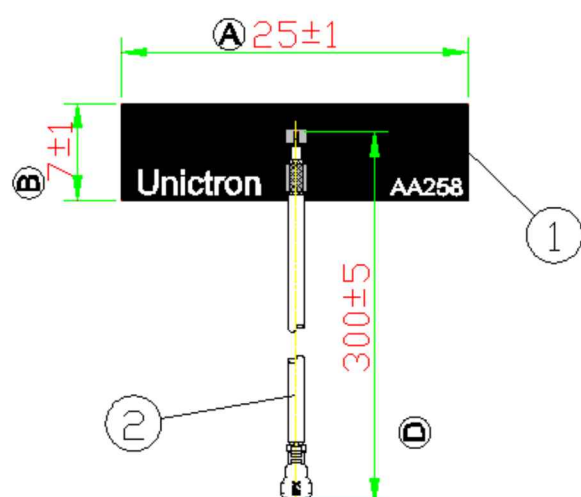
TITLE : 25.0 x 7.0 x 0.5 (mm) Wi-Fi Dual Band PCB Antenna  
with Cable (AA258) Engineering Specification

DOCUMENT  
NO.

H2B1PC1A1C1800

REV.  
A

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



### NOTE:

- 1.All materials are RoHS 2.0 compliant.
- 2."A~D" Critical Dimensions.
- 3."( )" Reference Dimensions.

| Item | Name                                     | Material | Color | Q'ty |
|------|------------------------------------------|----------|-------|------|
| 1    | AA258_PCB                                | FR4      | Black | 1    |
| 2    | I-PEX connector(MHF 4L plug)_Cable1.13mm | FEP      | Gray  | 1    |
| 3    | Adhesive                                 |          |       |      |



詠業科技股份有限公司  
Unictron Technologies Corporation  
Website:www.unictron.com

THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF UNICTRON TECHNOLOGIES CORPORATION AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION

Prepared by : Wen

Designed by : James

Checked by : Mike

Approved by : Herbert

TITLE : 25.0 x 7.0 x 0.5 (mm) Wi-Fi Dual Band PCB Antenna  
with Cable (AA258) Engineering Specification

DOCUMENT  
NO.

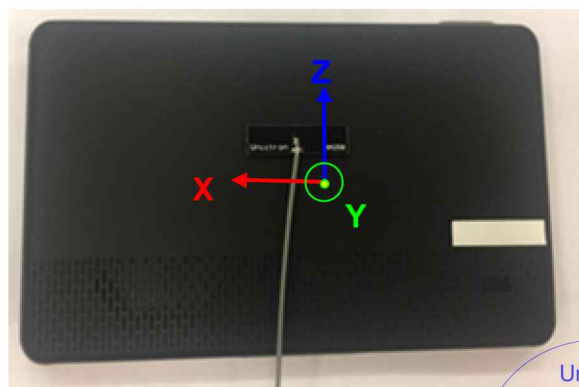
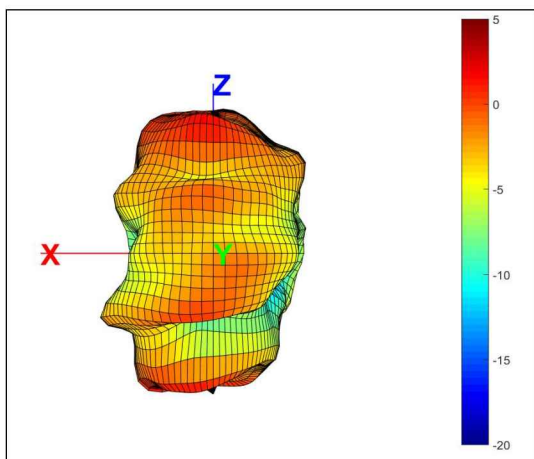
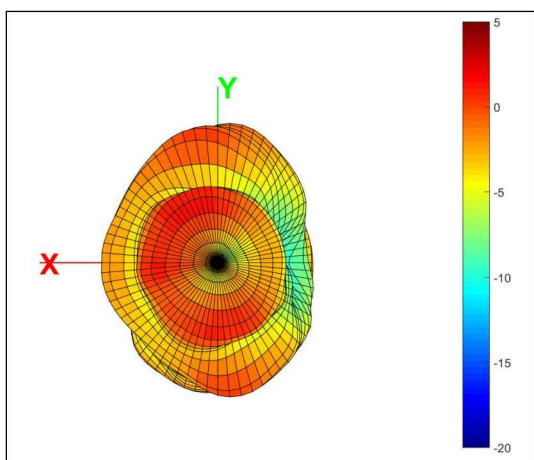
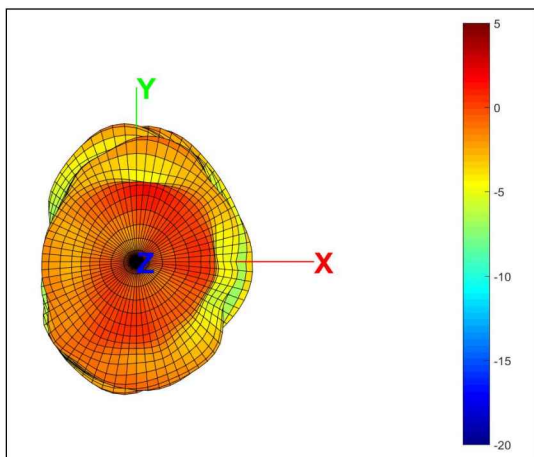
H2B1PC1A1C1800

REV.  
A

## 9. Radiation Pattern

9-1.2400~2484 MHz Band

9-1-1.3D Gain Pattern @ 2442 MHz (unit: dBi)



Unictron  
Technologies Corp.

2019-03-07

Document  
Control Center



詠業科技股份有限公司  
Unictron Technologies Corporation  
Website: www.unictron.com

THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF UNICTRON TECHNOLOGIES CORPORATION AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION

Prepared by : Wen

Designed by : James

Checked by : Mike

Approved by : Herbert

**TITLE :** 25.0 x 7.0 x 0.5 (mm) Wi-Fi Dual Band PCB Antenna  
with Cable (AA258) Engineering Specification

**DOCUMENT  
NO.**

H2B1PC1A1C1800

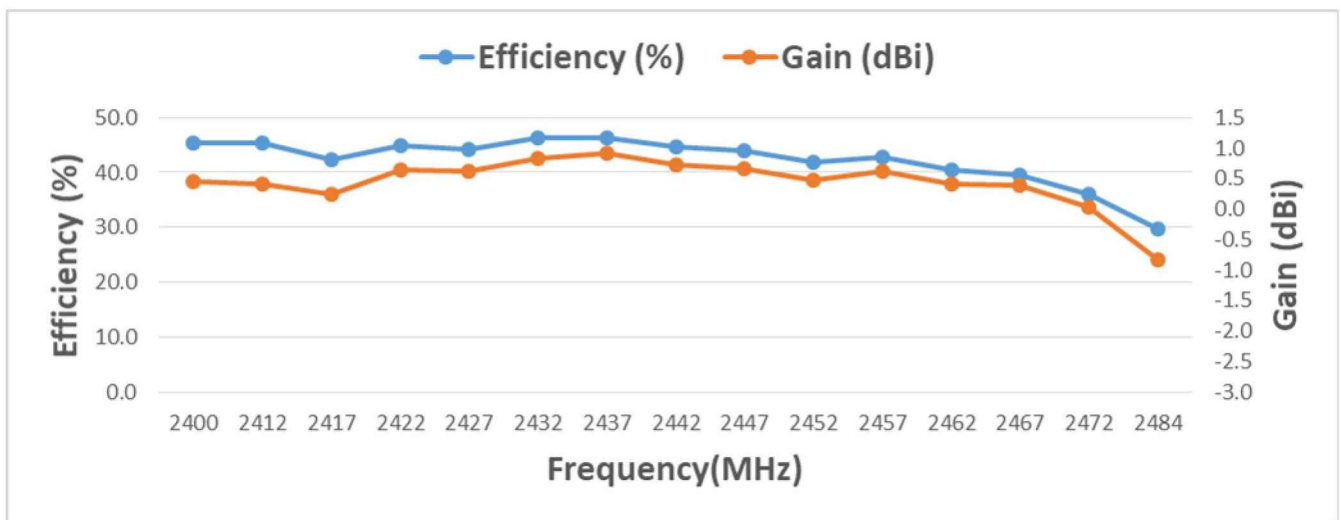
REV.

A

### 9-1-2. 3D Efficiency Table

| Frequency (MHz) | 2400 | 2412 | 2417 | 2422 | 2427 | 2432 | 2437 | 2442 | 2447 | 2452 | 2457 | 2462 | 2467 | 2472 | 2484 |
|-----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Efficiency (dB) | -3.4 | -3.4 | -3.7 | -3.5 | -3.5 | -3.3 | -3.4 | -3.5 | -3.6 | -3.8 | -3.7 | -3.9 | -4.0 | -4.4 | -5.3 |
| Efficiency (%)  | 45.3 | 45.3 | 42.3 | 45.0 | 44.2 | 46.2 | 46.2 | 44.6 | 44.0 | 41.9 | 42.8 | 40.5 | 39.5 | 36.0 | 29.7 |
| Gain (dBi)      | 0.4  | 0.4  | 0.2  | 0.6  | 0.6  | 0.8  | 0.9  | 0.7  | 0.7  | 0.5  | 0.6  | 0.4  | 0.4  | 0.0  | -0.8 |

### 9-1-3. 3D Efficiency vs. Frequency



詠業科技股份有限公司  
Unictron Technologies Corporation  
Website: www.unictron.com

THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF UNICTRON TECHNOLOGIES CORPORATION AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION

Prepared by : **Wen**

Designed by : **James**

Checked by : **Mike**

Approved by : **Herbert**

**TITLE : 25.0 x 7.0 x 0.5 (mm) Wi-Fi Dual Band PCB Antenna with Cable (AA258) Engineering Specification**

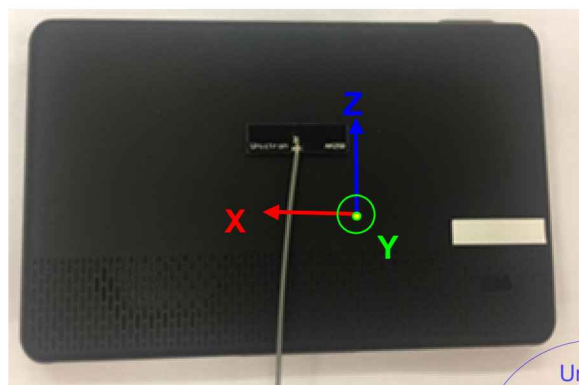
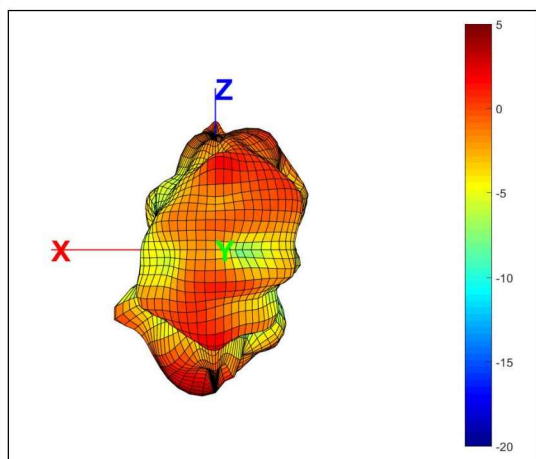
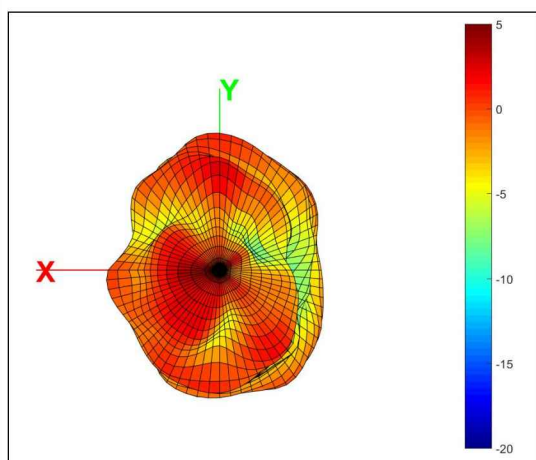
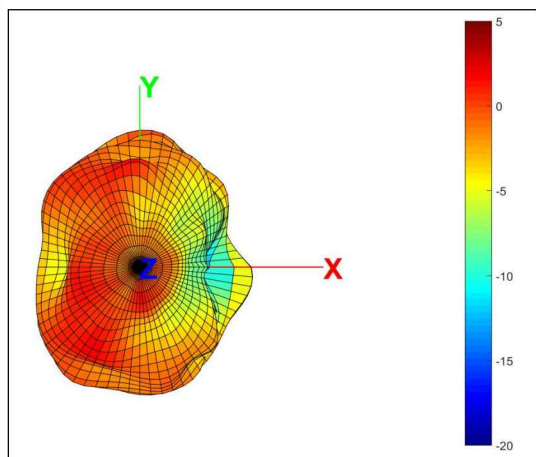
**DOCUMENT NO.**

**H2B1PC1A1C1800**

**REV. A**

## 9-2. 5150~5850 MHz Band

### 9-2-1.3D Gain Pattern @ 5550 MHz (unit: dBi)



Unictron  
Technologies Corp.

2019-03-07

Document  
Control Center



詠業科技股份有限公司  
Unictron Technologies Corporation  
Website: www.unictron.com

THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF UNICTRON TECHNOLOGIES CORPORATION AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION

Prepared by : Wen

Designed by : James

Checked by : Mike

Approved by : Herbert

**TITLE :** 25.0 x 7.0 x 0.5 (mm) Wi-Fi Dual Band PCB Antenna  
with Cable (AA258) Engineering Specification

**DOCUMENT  
NO.**

H2B1PC1A1C1800

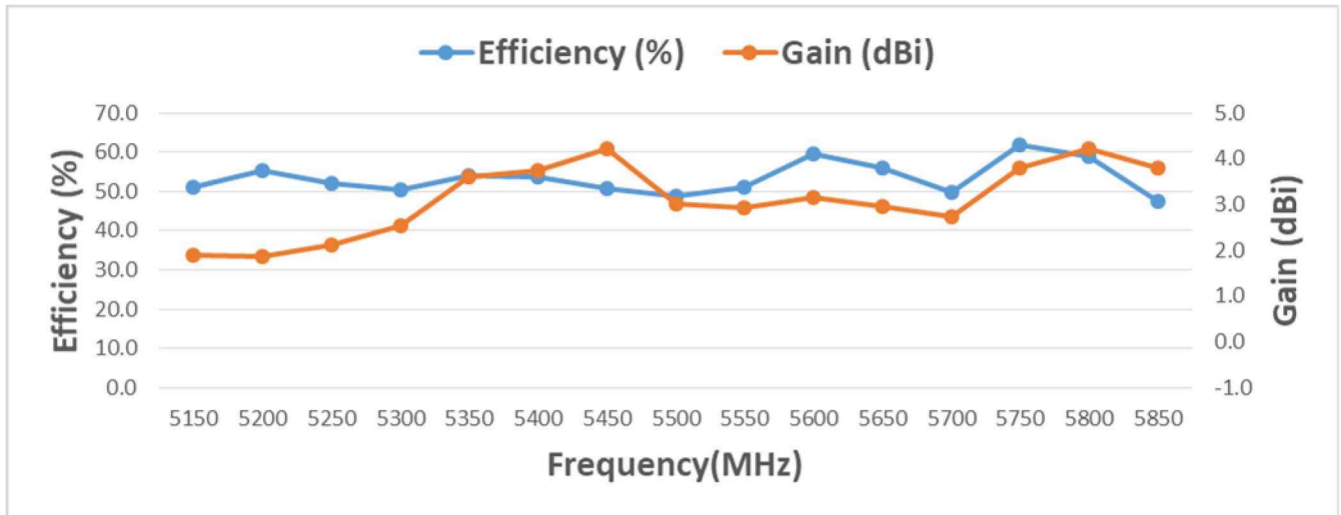
REV.

A

### 9-2-4. 3D Efficiency Table

| Frequency(MHz) | 5150 | 5200 | 5250 | 5300 | 5350 | 5400 | 5450 | 5500 | 5550 | 5600 | 5650 | 5700 | 5750 | 5800 | 5850 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Efficiency(dB) | -2.9 | -2.6 | -2.8 | -3.0 | -2.7 | -2.7 | -2.9 | -3.1 | -2.9 | -2.2 | -2.5 | -3.0 | -2.1 | -2.3 | -3.2 |
| Efficiency(%)  | 51.0 | 55.4 | 52.1 | 50.5 | 54.2 | 53.7 | 50.9 | 48.9 | 51.2 | 59.7 | 55.9 | 49.7 | 61.9 | 58.8 | 47.5 |
| Peak Gain(dBi) | 1.9  | 1.9  | 2.1  | 2.5  | 3.6  | 3.7  | 4.2  | 3.0  | 2.9  | 3.1  | 3.0  | 2.7  | 3.8  | 4.2  | 3.8  |

### 9-2-5. 3D Efficiency vs. Frequency



詠業科技股份有限公司  
Unictron Technologies Corporation  
Website: www.unictron.com

THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF UNICTRON TECHNOLOGIES CORPORATION AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION

Prepared by : Wen

Designed by : James

Checked by : Mike

Approved by : Herbert

TITLE : 25.0 x 7.0 x 0.5 (mm) Wi-Fi Dual Band PCB Antenna  
with Cable (AA258) Engineering Specification

DOCUMENT  
NO.

H2B1PC1A1C1800

REV.  
A

## 10. Package

### 10-1. Weight and Quantity:

10-1-1. Unit Weight:  $1.5 \pm 0.5$  (g)

10-1-2. Quantity:

Each PE Bag: 25 pcs

Each Outer Box: 2500 pcs

10-1-3. Total Weight:

N.W.:  $3.8 \pm 1$  kg

G.W.:  $5.2 \pm 1$  kg

| Process | Photos                                                                             | Remark                                                              |
|---------|------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| 1       |   | Put 25 pcs in a PE bag and attach label on PE bag.                  |
| 2       |  | Put 100 PE bags into an outer box with 2,500 pcs of antenna inside. |



詠業科技股份有限公司  
Unictron Technologies Corporation  
Website: www.unictron.com

THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF UNICTRON TECHNOLOGIES CORPORATION AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION

Prepared by : **Wen**

Designed by : **James**

Checked by : **Mike**

Approved by : **Herbert**

**TITLE :** 25.0 x 7.0 x 0.5 (mm) Wi-Fi Dual Band PCB Antenna  
with Cable (AA258) Engineering Specification

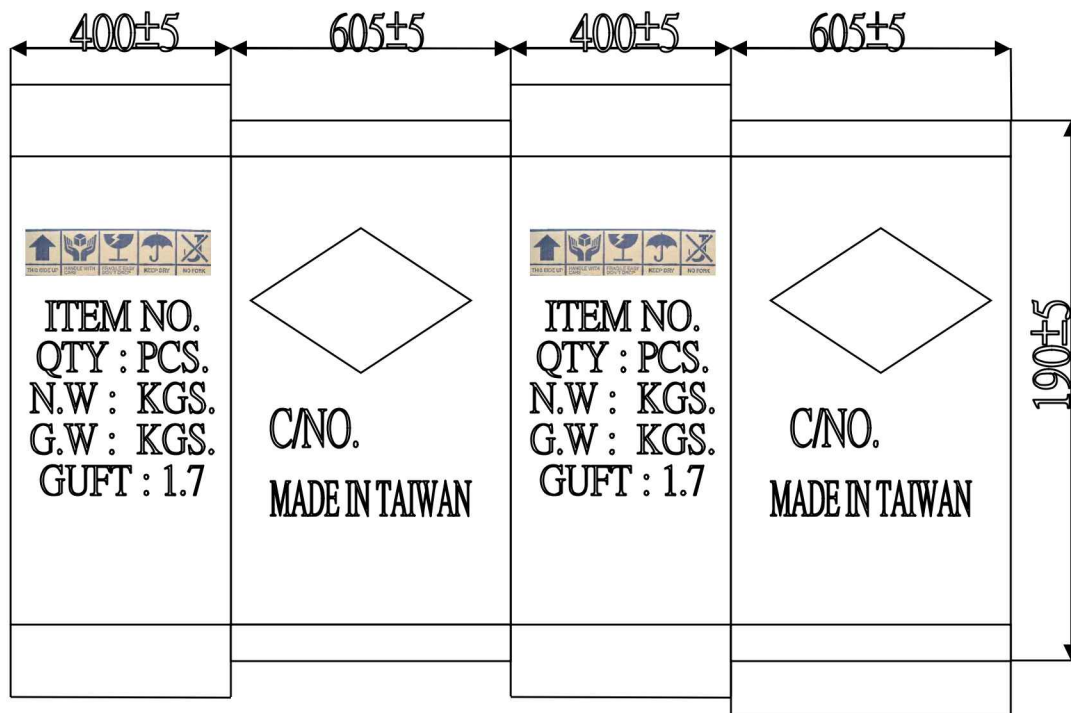
**DOCUMENT  
NO.**

**H2B1PC1A1C1800**

**REV.  
A**

## 10-2. Dimensions

### 10-2-1 Outer Box (605mm\*400mm\*190mm)



詠業科技股份有限公司  
Unictron Technologies Corporation  
Website: www.unictron.com

THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF UNICTRON TECHNOLOGIES CORPORATION AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION

Prepared by : Wen

Designed by : James

Checked by : Mike

Approved by : Herbert

TITLE : 25.0 x 7.0 x 0.5 (mm) Wi-Fi Dual Band PCB Antenna  
with Cable (AA258) Engineering Specification

DOCUMENT  
NO.

H2B1PC1A1C1800

REV.  
A