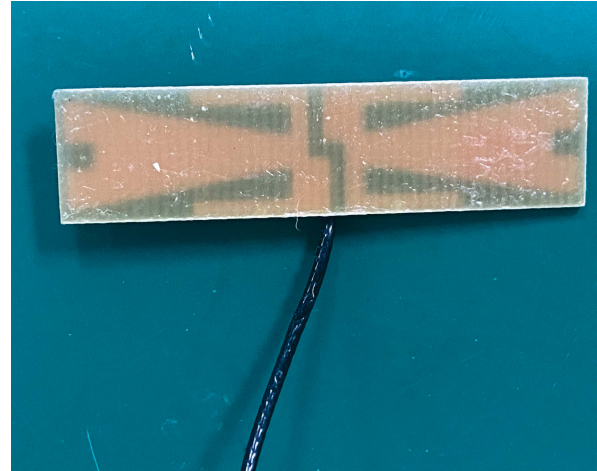
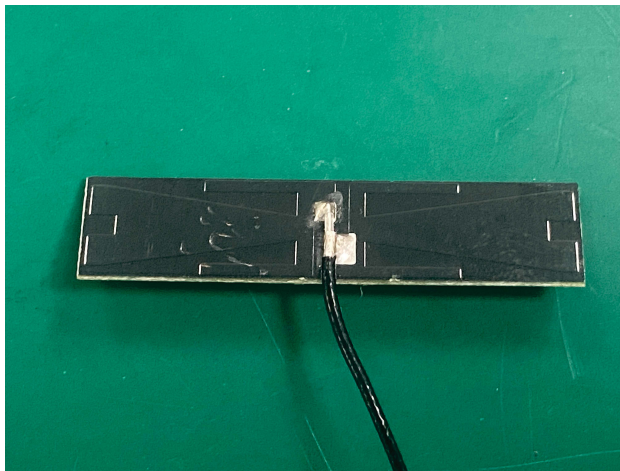
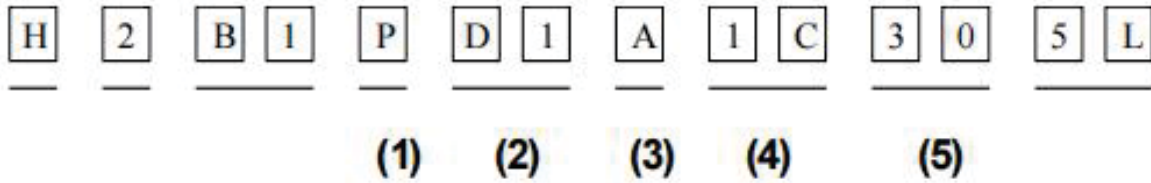


# 40.0 x 6.0 x 0.5 (mm) Wi-Fi Dual Band PCB Substrate Antenna (AA222) Engineering Specification

## 1. Explanation of Product Number



**Product Code:**

- (1) Product Applications:  
    P: Wi-Fi Dual Band Antenna
- (2) Dimensions:  
    D1: 40.0 x 6.0 x 0.5 (mm)
- (3) Material:  
    A: GF
- (4) Working Frequencies:  
    1C: 2400~2484 & 5150~5850 MHz
- (5) Antenna Series:  
    30: serial number



<b>Tolerances (Unless otherwise specified)</b>	
X : ± 1	X.X : ± 0.1      X.XX : ± 0.01
Angle : ±	Hole Dia. : ±
<b>Scale :</b>	<b>Unit: mm</b>
<b>Prepared By :shelley</b>	<b>Checked By :Joy</b>
	<b>Approved By : Frank</b>



**Unictron Technologies Corporation**  
Website: [www.unictron.com](http://www.unictron.com)

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<b>TITLE: 40 x 6.0 x 0.4mmWiFi Dual Band PCB Substrate Antenna AA222</b>	<b>PART NO.</b>	<b>H2B1PD1A1C305L</b>	REV.
			<b>A</b>
PAGE 1		OF 9	

## 2. Features

- \*Stable and reliable in performances
- \*Compact size
- \*RoHS 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		40.0 x 6.0 x 0.5	mm
Working Frequency		2400~2484	MHz
Bandwidth		84 Min (typical)	MHz
VSWR		2 Max. (typical)	
Impedance		50	Ω
Polarization		Linear Polarization	
Peak Gain	(@ 2442 MHz)	2.7 (typical)	dBi
Efficiency		80 (typical)	%

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

### Tolerances (Unless otherwise specified)

X : ± 1      X.X : ± 0.1      X.XX : ± 0.01

Angle : ±      Hole Dia. : ±

Scale :      Unit: mm

Prepared By :shelley      Checked By :Joy

Approved By : Frank



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**PART NO.**

**H2B1PD1A1C305L**

**REV.**

**A**

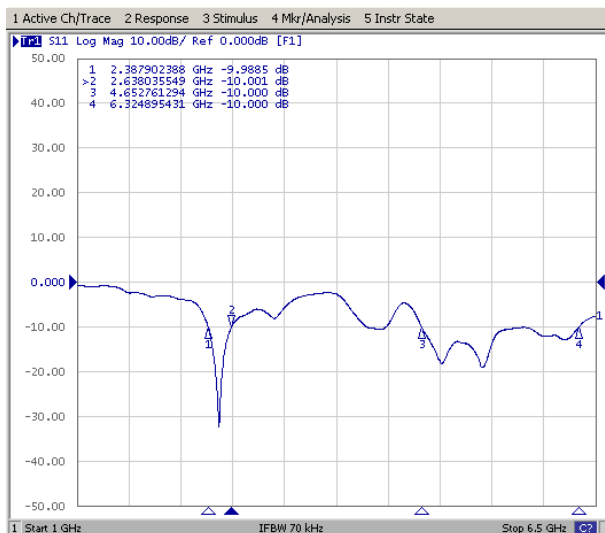
## 7-2. 5150~5850 MHz Band

Characteristics		Specifications	Unit
Working Frequency		5150~5850	MHz
Bandwidth		800 Min. (typical)	MHz
VSWR(		2.5 Max. (typical)	
Impedance		50	$\Omega$
Polarization		Linear Polarization	
Peak Gain	(@5550 MHz)	3.5 (typical)	dBi
Efficiency		72.3 (typical)	%

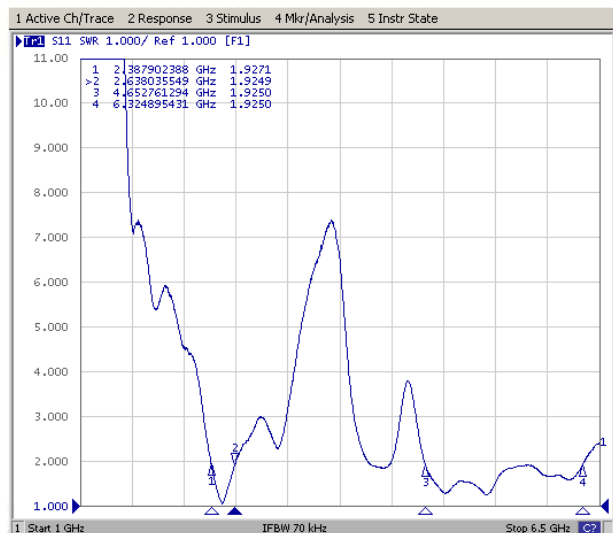
\*Center frequency will be offset to another frequency according to the conditions of user's ground plane and radome

## 7-3. Return Loss & VSWR

Return Loss



VSWR



Tolerances (Unless otherwise specified)  
 X :  $\pm 1$       X.X :  $\pm 0.1$       X.XX :  $\pm 0.01$   
 Angle :  $\pm$       Hole Dia. :  $\pm$



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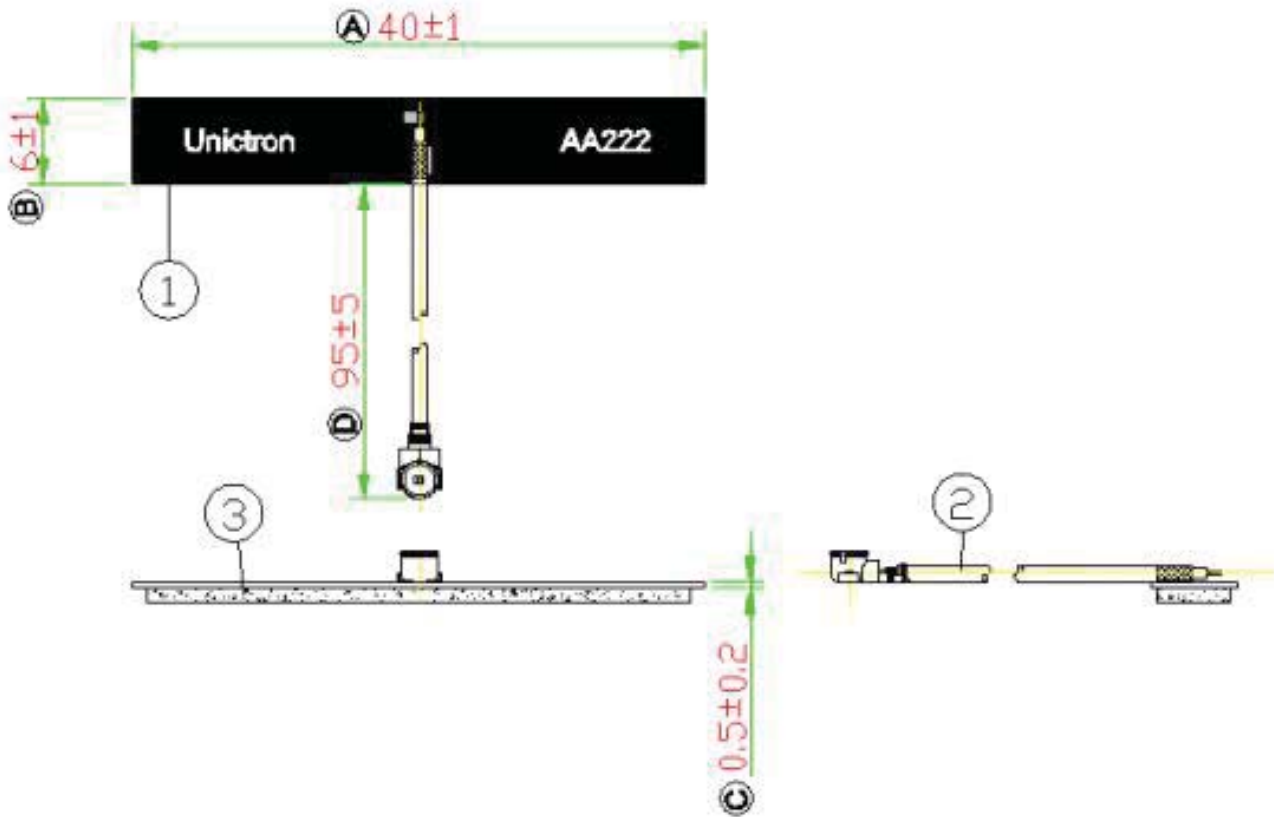
**TITLE: 40 x 6.0 x 0.4mmWiFi Dual Band PCB Substrate Antenna AA222**

**PART NO.**

**H2B1PD1A1C305L**

**REV. A**

### 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	AA222 PCB	FR4	Black	1
2	I-PEX Connector (MHF I) Cable1.13mm	FEP	Gray	1
3	Adhesive	PE	Black	1



Tolerances (Unless otherwise specified)  
 X :  $\pm 1$       X.X :  $\pm 0.1$       X.XX :  $\pm 0.01$   
 Angle :  $\pm$       Hole Dia. :  $\pm$



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**PART NO.**

**H2B1PD1A1C305L**

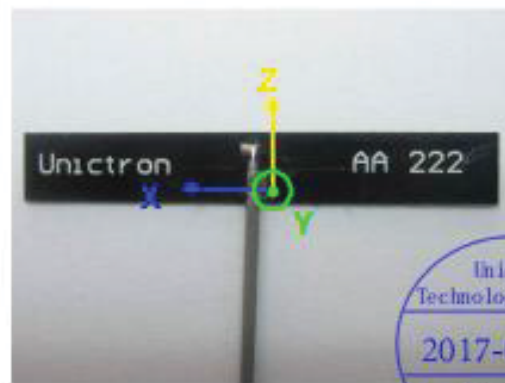
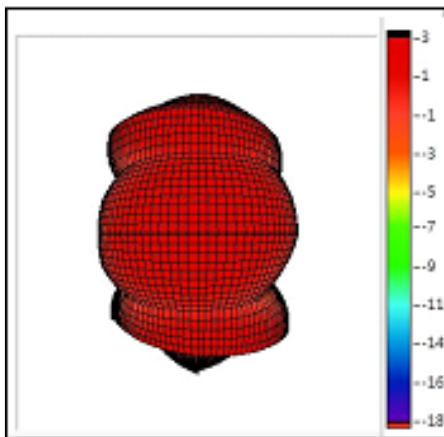
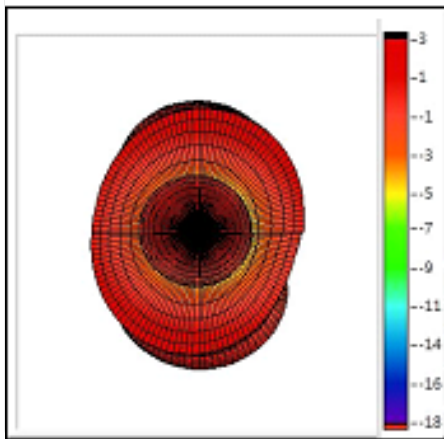
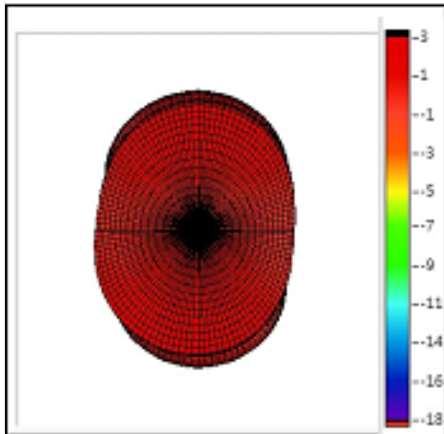
**REV.**

**A**

## 9. Radiation Pattern

9-1.2400~2484 MHz Band

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



Tolerances (Unless otherwise specified)

X :  $\pm 1$       X.X :  $\pm 0.1$       X.XX :  $\pm 0.01$

Angle :  $\pm$       Hole Dia. :  $\pm$

Scale :      Unit: mm

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**PART NO.**

**H2B1PD1A1C305L**

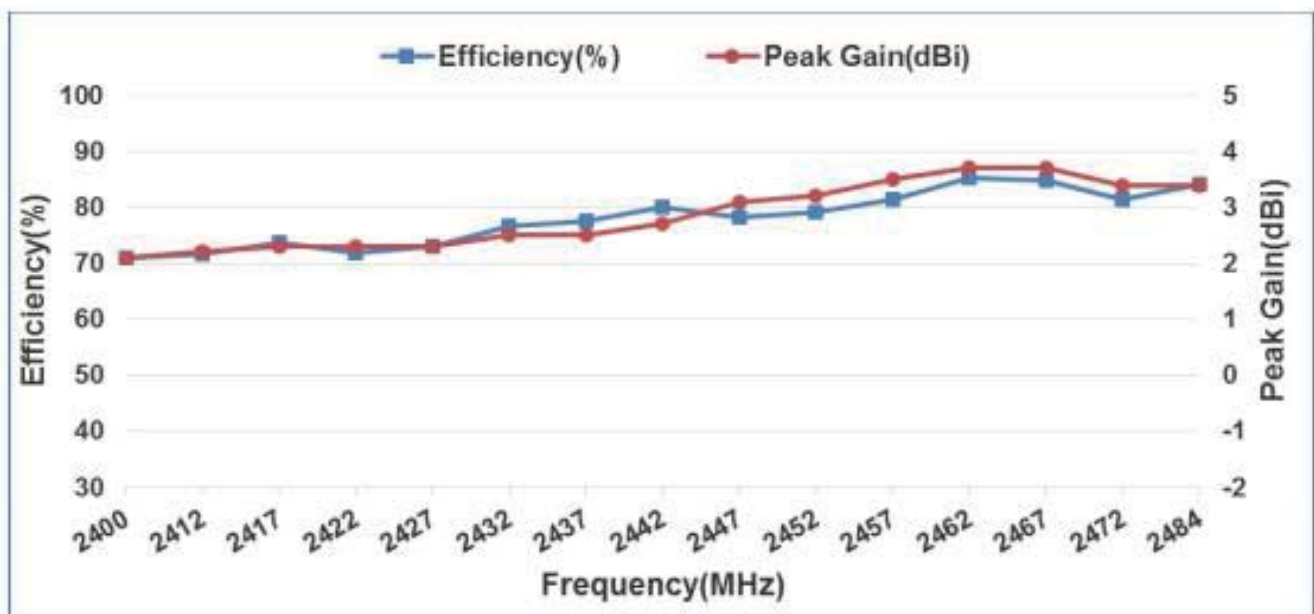
**REV.**

**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)	-1.5	-1.5	-1.3	-1.4	-1.4	-1.2	-1.1	-1.0	-1.1	-1.0	-0.9	-0.7	-0.7	-0.9	-0.8
Efficiency (%)	71.0	71.6	73.8	71.8	73.1	76.7	77.5	80.0	78.3	79.1	81.5	85.3	84.8	81.5	84.2
Gain (dBi)	2.1	2.2	2.3	2.3	2.3	2.5	2.5	2.7	3.1	3.2	3.5	3.7	3.7	3.4	3.4

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



Tolerances (Unless otherwise specified)  
 X : ± 1      X.X : ± 0.1      X.XX : ± 0.01  
 Angle : ±      Hole Dia. : ±



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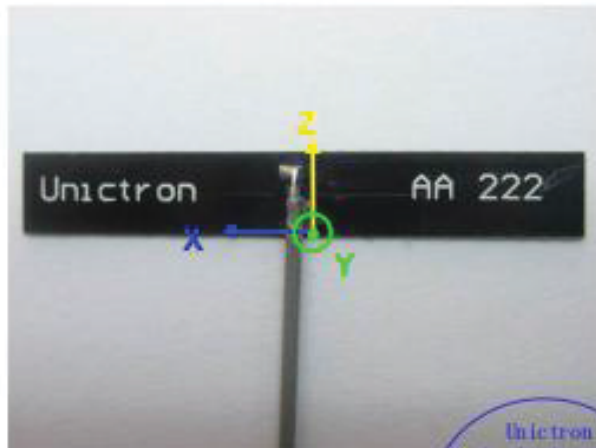
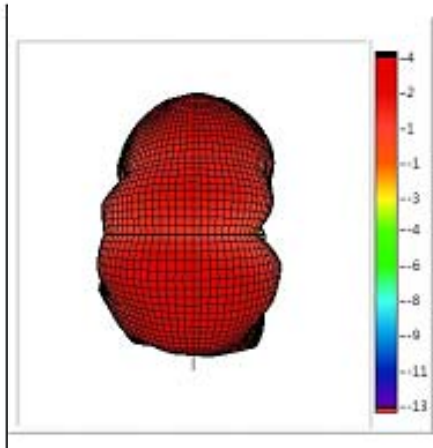
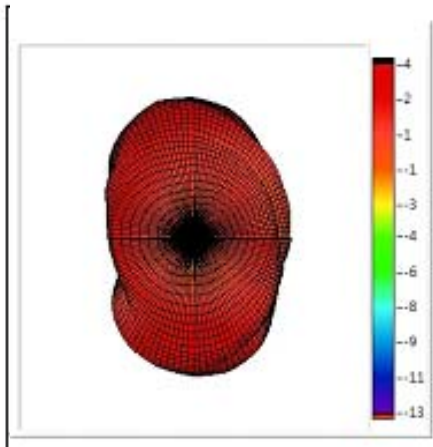
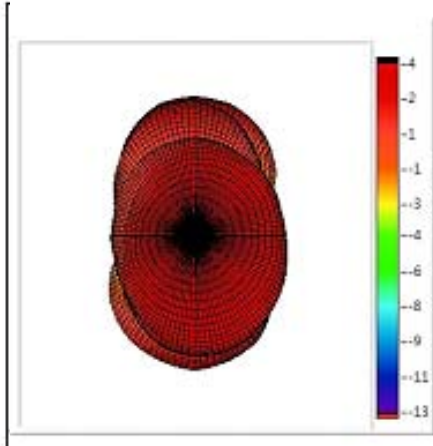
**PART NO.**

**H2B1PD1A1C305L**

**REV. A**

9-2. 5150~5850 MHz Band

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



<b>Tolerances (Unless otherwise specified)</b>	
X : ± 1	X.X : ± 0.1      X.XX : ± 0.01
Angle : ±	Hole Dia. : ±
Scale :	Unit: mm
Prepared By :shelley	Checked By :Joy
	Approved By : Frank



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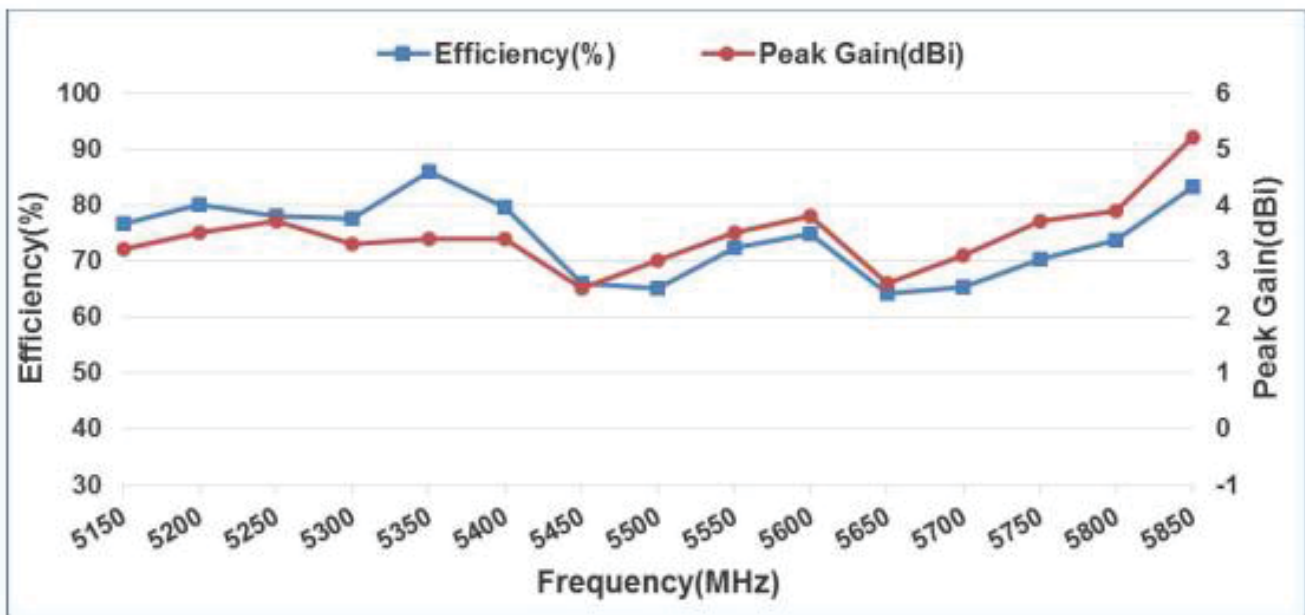
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<b>TITLE: 40 x 6.0 x 0.4mmWiFi Dual Band PCB Substrate Antenna AA222</b>	<b>PART NO.</b>	<b>H2B1PD1A1C305L</b>	<b>REV.</b>
			<b>A</b>

### 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)	-1.2	-1.0	-1.1	-1.1	-0.7	-1.0	-1.8	-1.9	-1.4	-1.3	-1.9	-1.9	-1.5	-1.3	-0.8
Efficiency(%)	76.7	80.0	78.1	77.5	86.0	79.6	65.9	65.0	72.3	74.8	64.1	65.4	70.3	73.6	83.1
Peak Gain(dBi)	3.2	3.5	3.7	3.3	3.4	3.4	2.5	3.0	3.5	3.8	2.6	3.1	3.7	3.9	5.2

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



Tolerances (Unless otherwise specified)  
 X : ± 1      X.X : ± 0.1      X.XX : ± 0.01  
 Angle : ±      Hole Dia. : ±

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**TITLE: 40 x 6.0 x 0.4mmWiFi Dual Band PCB Substrate Antenna AA222**


**PART NO. H2B1PD1A1C305L**  
 REV. **A**



## 10. Manufacturer Information

Unictron Technologies(Shenzhen)Co. Ltd

Add: Room 609, Building 3, Pingshan Private Enterprise Technology Park, No. 65  
Lishan Road, Pingshan Community, Taoyuan Street, Nanshan District, Shenzhen,  
Guangdong, China

<b>Tolerances (Unless otherwise specified)</b> X : ± 1      X.X : ± 0.1      X.XX : ± 0.01 Angle : ±                      Hole Dia. : ±		 <b>Unictron Technologies Corporation</b> Website: <a href="http://www.unictron.com">www.unictron.com</a>	
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		PAGE 9 OF 9	