

40.0 x 6.0 x 0.5 (mm) Wi-Fi Dual Band PCB Substrate Antenna (JI003)Engineering Specification (For Silicon)

1. Explanation of Product Number

<u>H</u>	<u>2</u>	<u>B</u>	<u>1</u>	<u>P</u>	<u>D</u>	<u>1</u>	<u>A</u>	<u>1</u>	<u>C</u>	<u>3</u>	<u>8</u>	<u>5</u>	<u>L</u>
				(1)	(2)	(3)	(4)			(5)			



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: 2400~2500 & 4900~5900 MHz
- (5) Antenna Series:
38: serial number

2. Features

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

3. Applications

- * IEEE802.11n/a/b/g.
- * Hand-held devices when Wi-Fi(802.11n/a/b/g) functions are needed.

4. Description

Unictron's antenna series are specially designed for Wi-Fi(802.11n/a/b/g) 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
Humidity 10 to 95% RH

6. Storage Condition:

Temperature -10 to +85 °C
Humidity 10 to 95% RH

7. Electrical Specifications

(Antenna is attached on a 2.0mm-thick ABS + PC material plate)

7-1. 2400~2500 MHz Band

Characteristics	Specifications	Unit
Outline Dimensions	40.0 x 6.0 x 0.5	mm
Working Frequency	2400~2500	MHz
VSWR(@ center frequency)*	2 Max.	



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 : **Tom**

Checked by : **Mike**

Approved by : **Herbert**

TITLE : 40.0 x 6.0 x 0.5 (mm) Wi-Fi Dual Band PCB Substrate
Antenna (JI003)(L=100mm) Engineering Specification

DOCUMENT
NO.

H2B1PD1A1C385L

REV.

A

Characteristics Impedance		50	Ω
Polarization		Linear Polarization	
Peak Gain	(@ 2442 MHz)	3.4 (typical)	dBi
Efficiency		75.2(typical).	%

*Center frequency means the frequency with the lowest value in return loss of the antenna in free space.

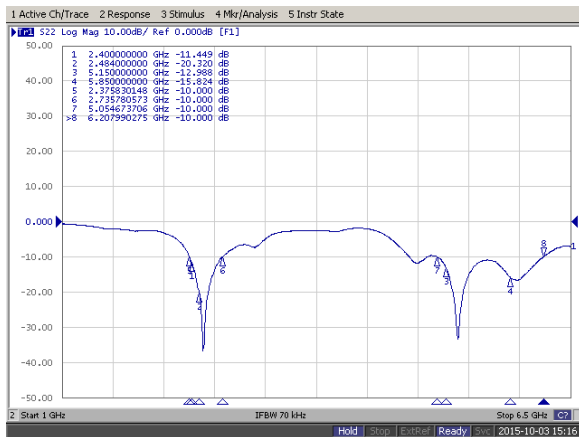
7-2. 4900~5900 MHz Band

Characteristics		Specifications	Unit
Working Frequency		4900~5900	MHz
VSWR(@ center frequency)*		2 Max.	
Characteristics Impedance		50	Ω
Polarization		Linear Polarization	
Peak Gain	(@5500 MHz)	3.9(typical)	dBi
Efficiency		77.9(typical)	%

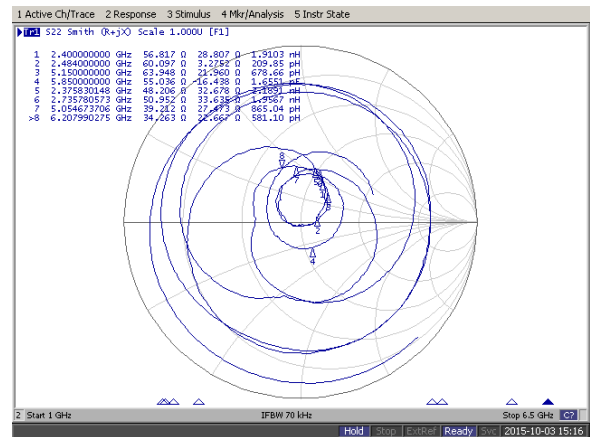
*Center frequency means the frequency with the lowest value in return loss of the antenna in free space.

7-3. Return Loss & Smith Chart

Return Loss



Smith Chart



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



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 : **Tom**

Checked by : **Mike**

Approved by : **Herbert**

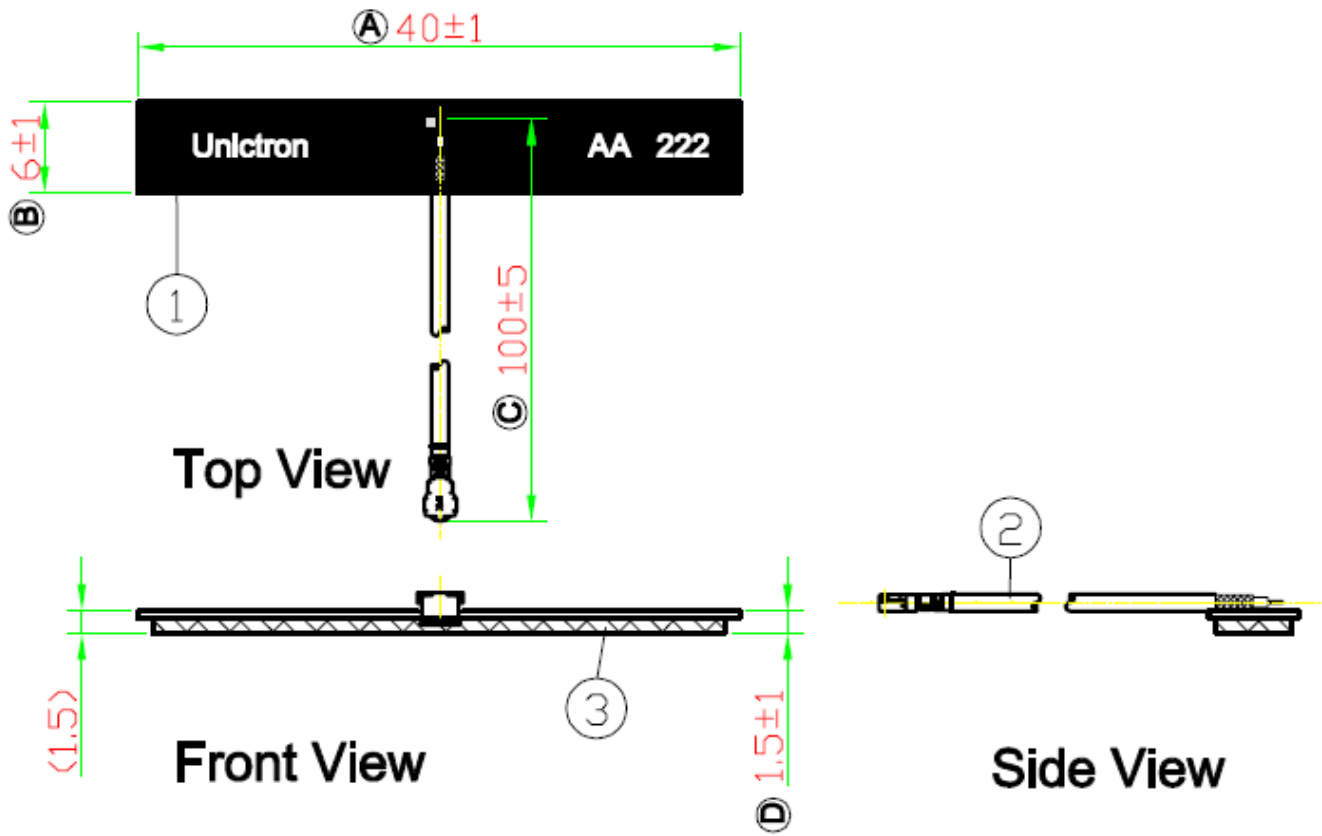
TITLE : 40.0 x 6.0 x 0.5 (mm) Wi-Fi Dual Band PCB Substrate
Antenna (JI003)(L=100mm) Engineering Specification

DOCUMENT NO.

H2B1PD1A1C385L

REV.

A



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

Item	Name	Material	Color	Q'ty
1	AA222_PCB (40mm*6mm*0.5mm)	FR4	Black	1
2	I-PEX Connector (MHF IV)_Cable Φ1.13mm	FEP	Gray	1
3	Adhesive Tape	PE	Black	1

9. Radiation Pattern

9-1. 2400~2500 MHz Band



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 : Tom

Checked by : Mike

Approved by : Herbert

TITLE : 40.0 x 6.0 x 0.5 (mm) Wi-Fi Dual Band PCB Substrate
 Antenna (JI003)(L=100mm) Engineering Specification

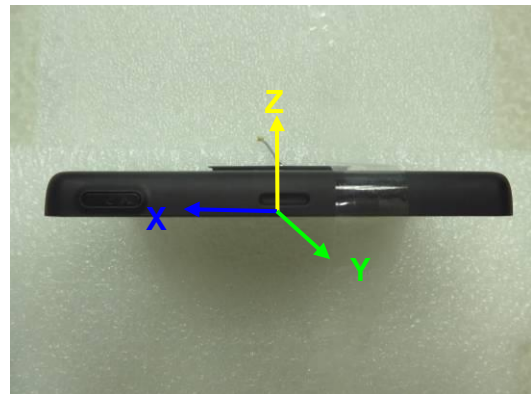
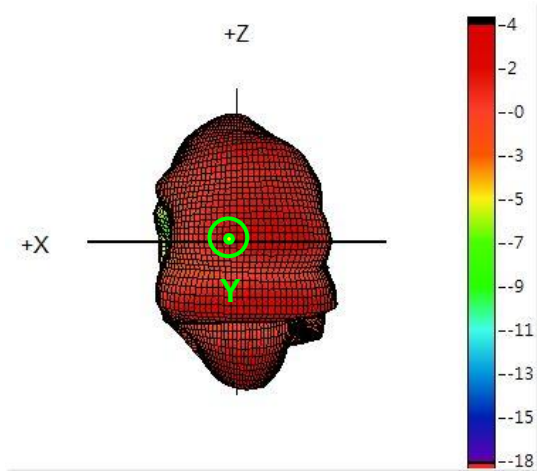
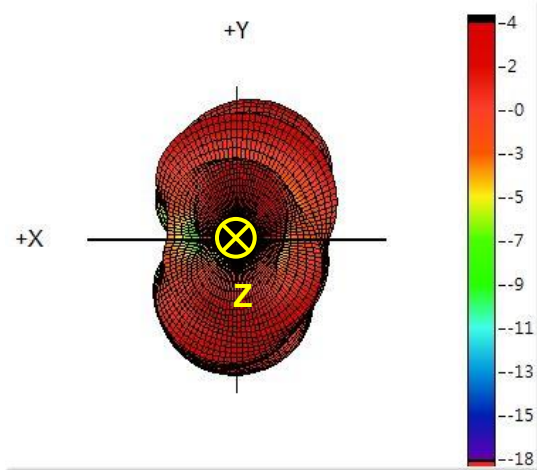
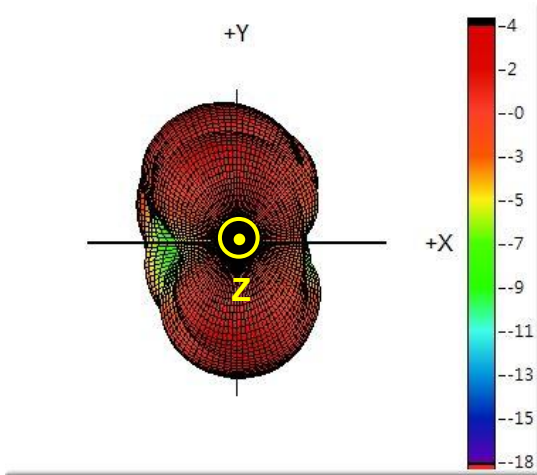
DOCUMENT
 NO.

H2B1PD1A1C385L

REV.

A

9-1-1. 3D Gain Pattern @ 2442 MHz (unit: dBi)



9-1-2. 3D Efficiency Table

Frequency (MHz)	2400	2412	2417	2422	2427	2432	2437	2442	2447	2452	2457	2462	2467	2472	2484
-----------------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------



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 : **Tom**

Checked by : **Mike**

Approved by : **Herbert**

TITLE : 40.0 x 6.0 x 0.5 (mm) Wi-Fi Dual Band PCB Substrate
 Antenna (JI003)(L=100mm) Engineering Specification

DOCUMENT NO.

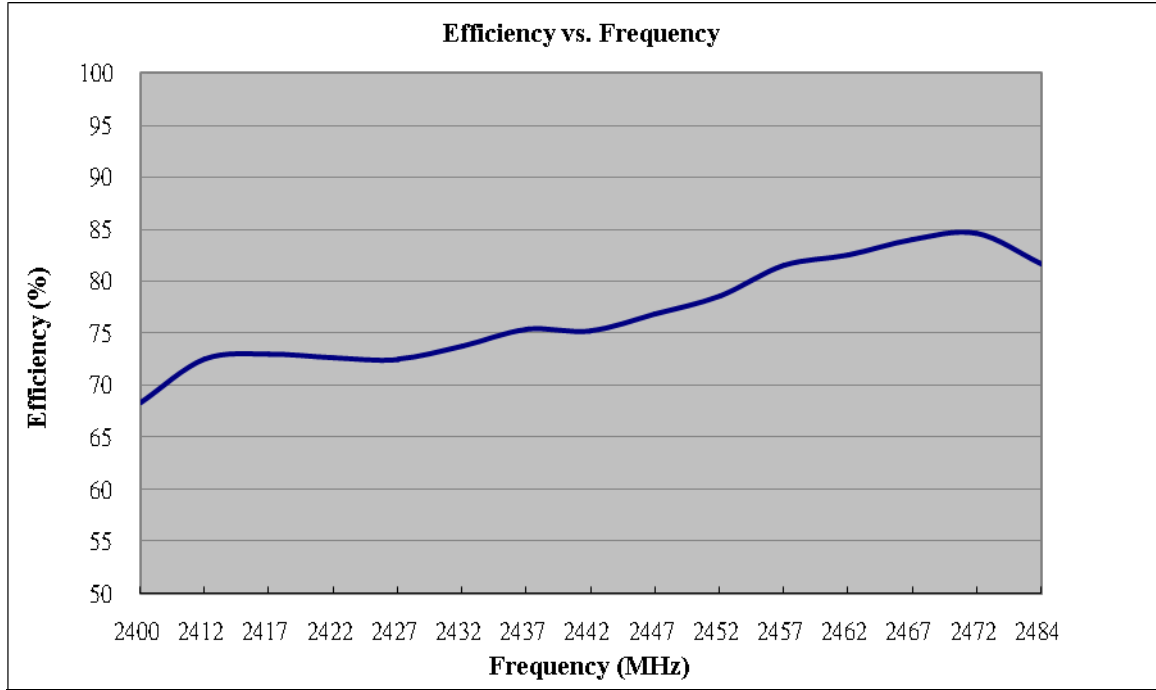
H2B1PD1A1C385L

REV.

A

Efficiency (dB)	-1.6	-1.4	-1.4	-1.4	-1.4	-1.3	-1.2	-1.2	-1.1	-1.0	-0.9	-0.8	-0.8	-0.7	-0.9
Efficiency (%)	68.4	72.5	73.0	72.7	72.5	73.8	75.4	75.2	76.8	78.6	81.5	82.5	84.0	84.6	81.7
Peak Gain (dBi)	3.0	3.3	3.3	3.4	3.4	3.4	3.5	3.4	3.5	3.5	3.6	3.6	3.7	3.9	3.9

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



9-2. 4900~5900 MHz Band

9-2-1. 3D Gain Pattern @ 5150 MHz (unit: dBi)



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 : **Tom**

Checked by : **Mike**

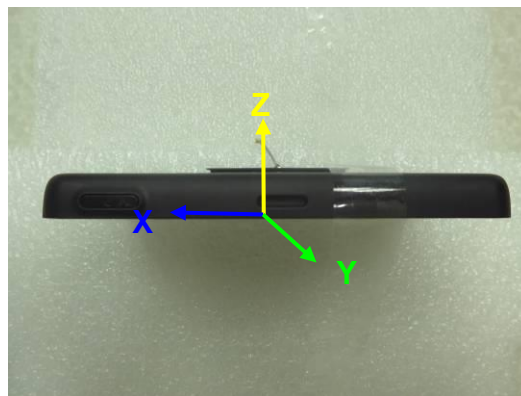
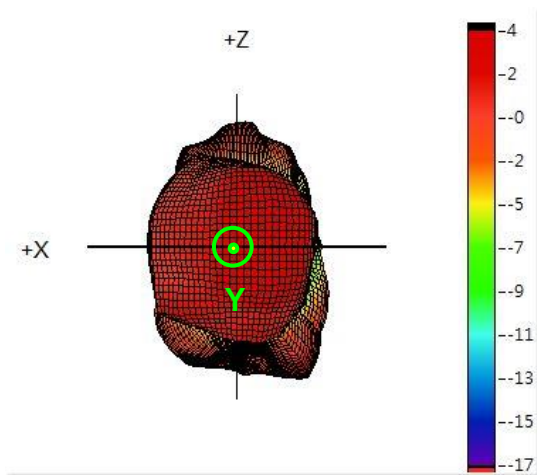
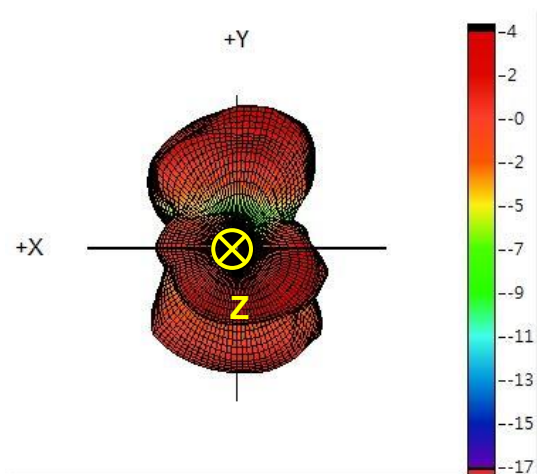
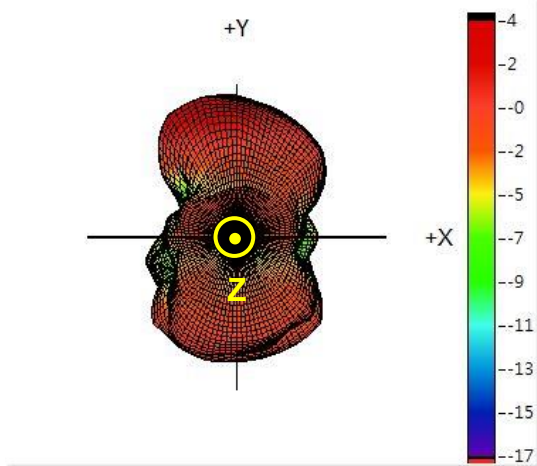
Approved by : **Herbert**

TITLE : 40.0 x 6.0 x 0.5 (mm) Wi-Fi Dual Band PCB Substrate Antenna (JI003)(L=100mm) Engineering Specification

DOCUMENT NO.

H2B1PD1A1C385L

REV.
A



9-2-2. 3D Gain Pattern @ 5500 MHz (unit: dBi)



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 : Tom

Checked by : Mike

Approved by : Herbert

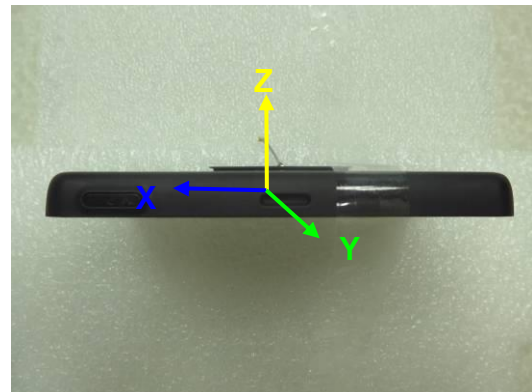
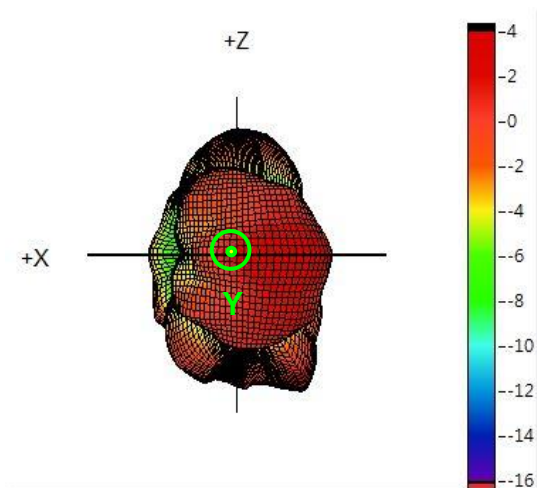
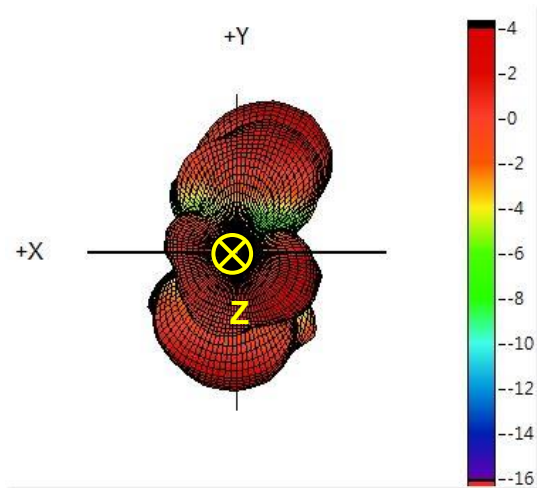
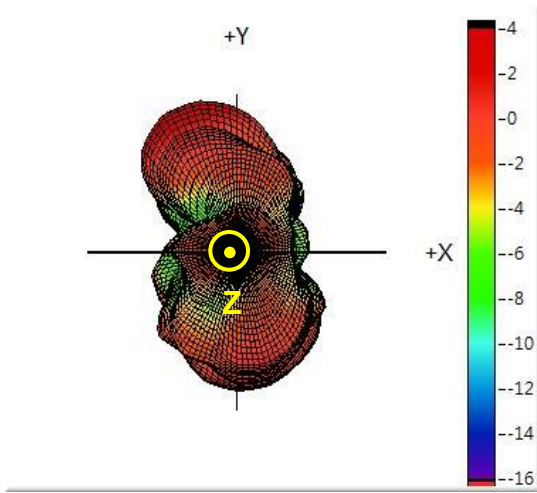
TITLE : 40.0 x 6.0 x 0.5 (mm) Wi-Fi Dual Band PCB Substrate
 Antenna (JI003)(L=100mm) Engineering Specification

DOCUMENT NO.

H2B1PD1A1C385L

REV.

A



9-2-3. 3D Gain Pattern @ 5850 MHz (unit: dBi)



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 : Tom

Checked by : Mike

Approved by : Herbert

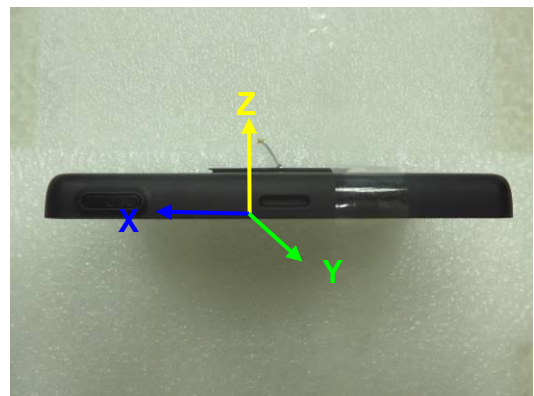
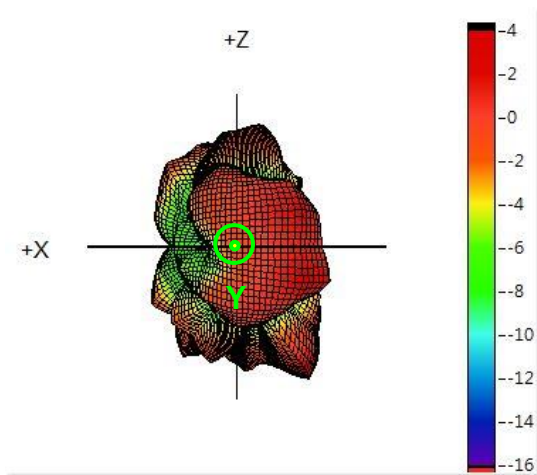
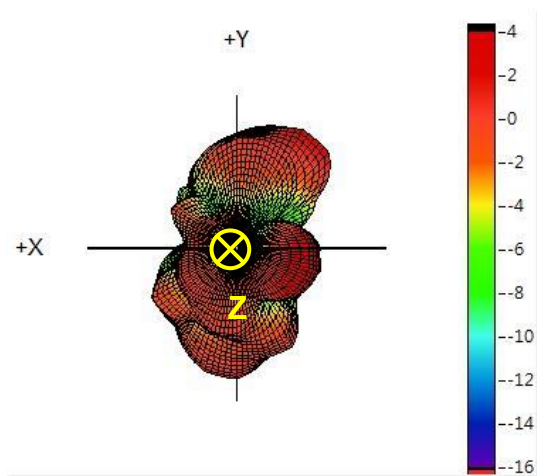
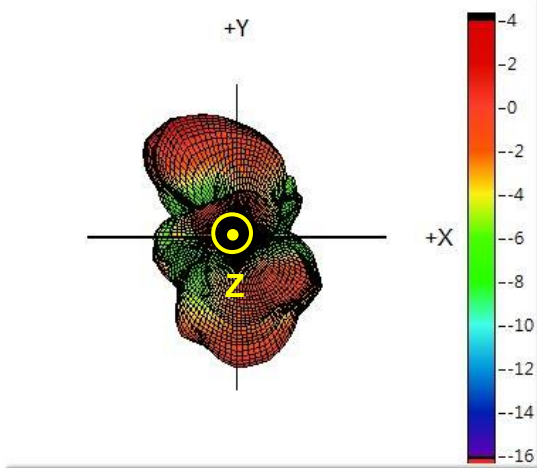
TITLE : 40.0 x 6.0 x 0.5 (mm) Wi-Fi Dual Band PCB Substrate
 Antenna (JI003)(L=100mm) Engineering Specification

DOCUMENT NO.

H2B1PD1A1C385L

REV.

A



9-2-4. 3D Efficiency Table



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 : **Tom**

Checked by : **Mike**

Approved by : **Herbert**

TITLE : 40.0 x 6.0 x 0.5 (mm) Wi-Fi Dual Band PCB Substrate
 Antenna (JI003)(L=100mm) Engineering Specification

DOCUMENT NO.

H2B1PD1A1C385L

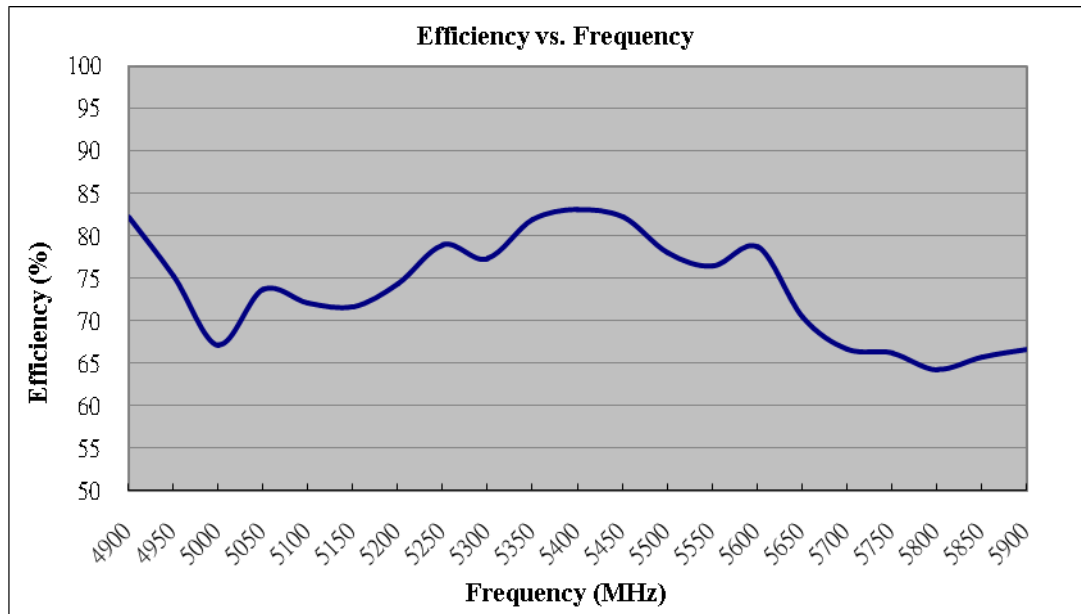
REV.

A

Frequency (MHz)	4900	4950	5000	5050	5100	5150	5200	5250	5300	5350	5400
Efficiency (dB)	-0.9	-1.2	-1.7	-1.3	-1.4	-1.6	0.3	2.0	0.8	0.6	0.3
Efficiency (%)	82.2	75.3	67.1	73.7	72.1	71.7	74.4	79.0	77.3	81.9	83.2
Peak Gain (dBi)	3.8	3.7	4.3	4.2	4.3	3.8	3.9	3.9	4.3	4.2	4.1

Frequency (MHz)	5450	5500	5550	5600	5650	5700	5750	5800	5850	5900
Efficiency (dB)	-0.9	-1.7	-1.7	-1.0	-1.5	-1.8	-1.8	-2.1	-1.8	-2.3
Efficiency (%)	82.2	77.9	76.5	78.7	70.5	66.7	66.2	64.2	65.8	66.6
Peak Gain (dBi)	3.9	3.9	4.3	4.2	4.1	3.9	4.1	4.1	3.8	3.8

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



10. Package

10-1. Weight and Quantity:



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 : **Tom**

Checked by : **Mike**

Approved by : **Herbert**

TITLE : 40.0 x 6.0 x 0.5 (mm) Wi-Fi Dual Band PCB Substrate
Antenna (JI003)(L=100mm) Engineering Specification

DOCUMENT NO.

H2B1PD1A1C385L

REV.

A

10-1-1. Unit Weight: 0.6 ± 0.5 (g)

10-1-2. Quantity

Each EPE Tray: 25 pcs

Each Outer Box: 2500 pcs

10-1-3. Total Weight

N.W.: 1.5 ± 1 kg

G.W.: 2.3 ± 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.

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 : Tom

Checked by : Mike

Approved by : Herbert

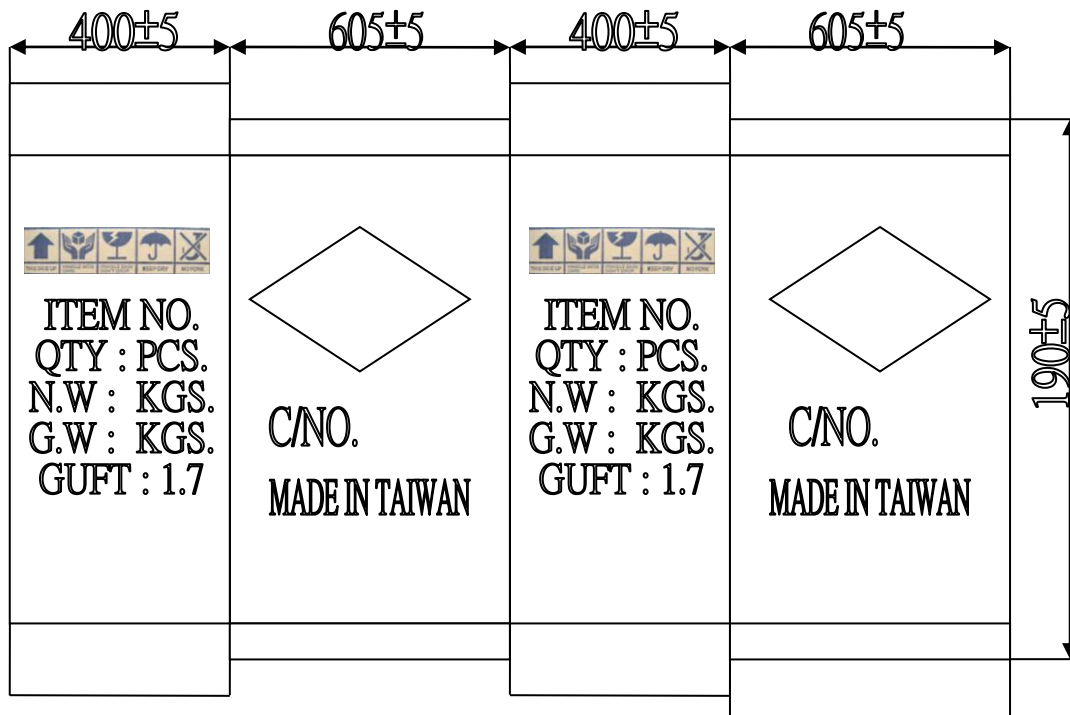
TITLE : 40.0 x 6.0 x 0.5 (mm) Wi-Fi Dual Band PCB Substrate
Antenna (JI003)(L=100mm) Engineering Specification

DOCUMENT NO.

H2B1PD1A1C385L

REV.

A



10-3. Label

10-3-1 封裝後之成品必須貼附產品製造標籤，標示產品型號、品名、數量及批號

下圖標籤為內箱標籤

Unictron Technologies Corporation	
CUST P/N	
DESC	
P/N	
L/N	
Q'TY	
DATE	



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 : **Tom**

Checked by : **Mike**

Approved by : **Herbert**

TITLE : 40.0 x 6.0 x 0.5 (mm) Wi-Fi Dual Band PCB Substrate
Antenna (JI003)(L=100mm) Engineering Specification

DOCUMENT NO.

H2B1PD1A1C385L

REV.

A