

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

## 1. Explanation of Product Number

H	2	B	1	P	C	1	A	1	C	0	1	0	0
				(1)	(2)	(3)	(4)	(5)					



### Product Code:

- (1) Product Applications:  
P: WiFi Dual Band antenna
- (2) Dimensions:  
C1: 25.0 x 7.0 x 0.5(mm)
- (3) Material:  
A: GF
- (4) Working Frequencies:  
1C: 2400~2500 & 4900~5900 MHz
- (5) Antenna Series:  
01: serial number



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Prepared by : **Ann**      Designed by : **Allen**      Checked by : **Chinling**      Approved by : **Herbert**      UNIT : **mm**

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## 2. Features

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

## 3. Applications

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

## 4. Description

Unictron's PCB antenna with cable series are specially designed for IEEE802.11(a/b/g/n/ac) 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 on the plastic housing)

### 7-1. 2400~2500 MHz Band

Characteristics		Specifications	Unit
Outline Dimensions		25.0 x 7.0 x 0.5	mm
Working Frequency		2400~2500	MHz
Bandwidth		90 (min)	MHz
VSWR(@Center Frequency)*		2 (max)	
Impedance		50	Ω
Polarization		Linear Polarization	
Gain	Peak	0.9 (typical)	dB <sub>i</sub>
	Efficiency	56 (typical)	%

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

\*Bandwidth &VSWR are tested at Unicon test environment .



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## 7-2. 4900~5900 MHz Band

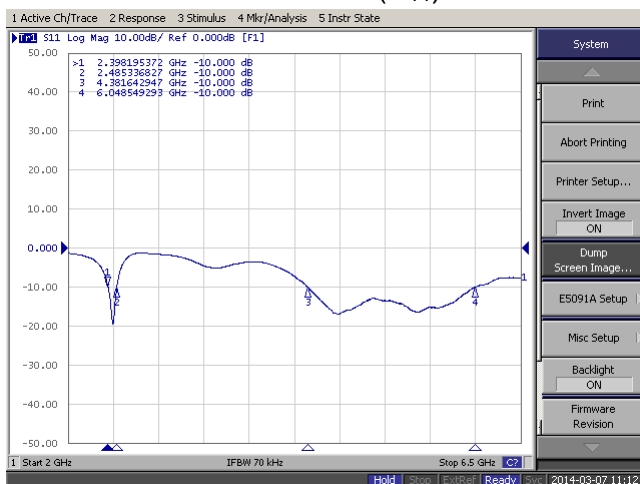
Characteristics		Specifications	Unit
Working Frequency		4900~5900	MHz
Bandwidth		1000 (min)	MHz
VSWR(@Center Frequency)*		2 (max)	
Impedance		50	$\Omega$
Polarization		Linear Polarization	
Gain	Peak	3.8 (typical)	dBi
	Efficiency	89 (typical)	%

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

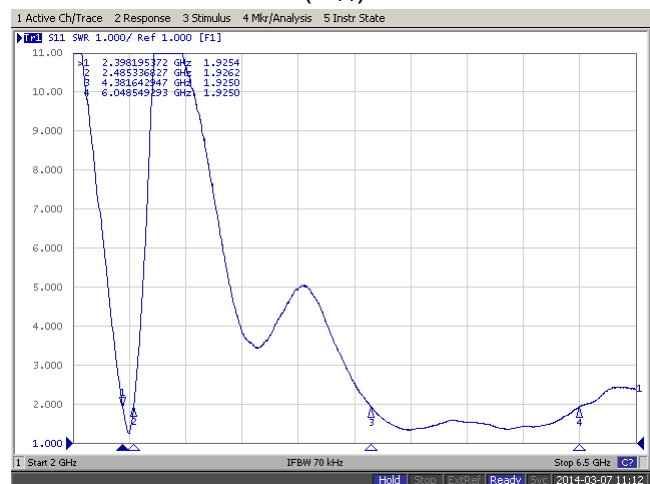
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## 7-3. Return Loss & VSWR

Return Loss ( $S_{11}$ )



VSWR ( $S_{11}$ )



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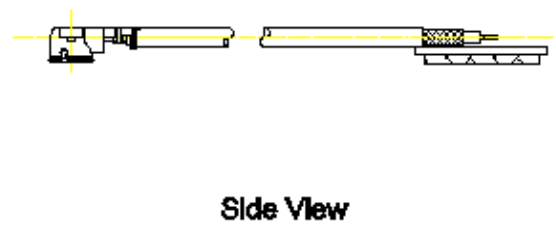
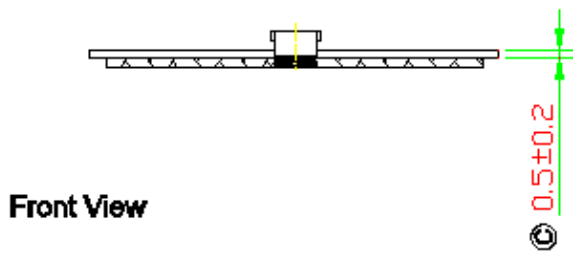
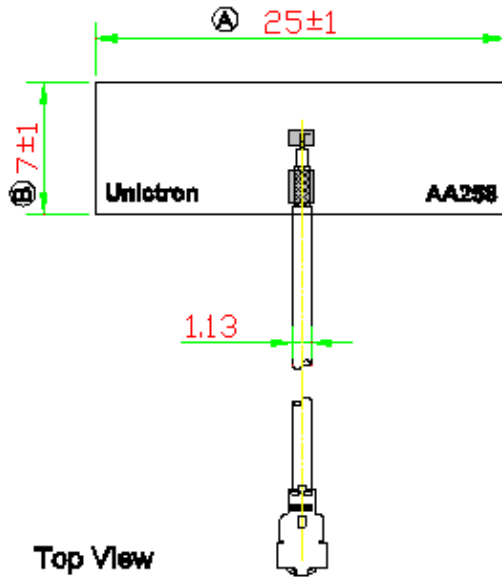
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## 8. Dimensions of PCB antenna with cable (unit: mm)



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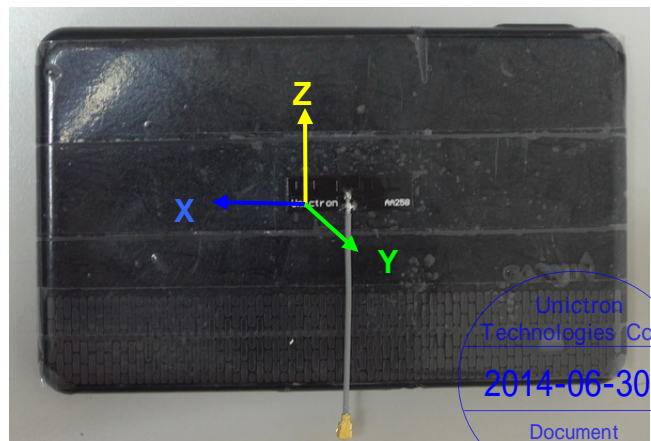
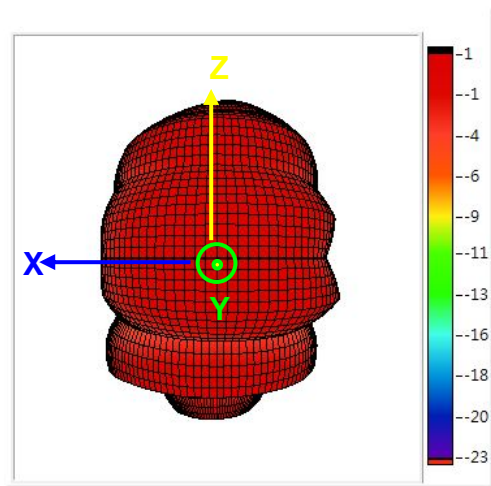
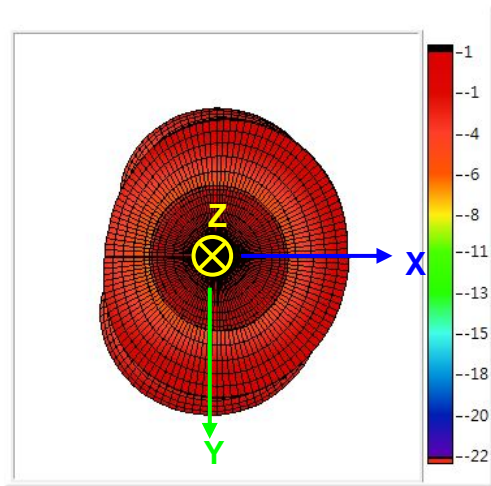
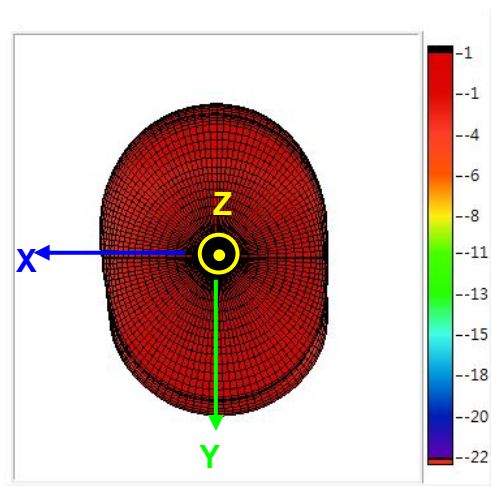
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# 9. Radiation Pattern

9-1.2400~2500 MHz Band

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



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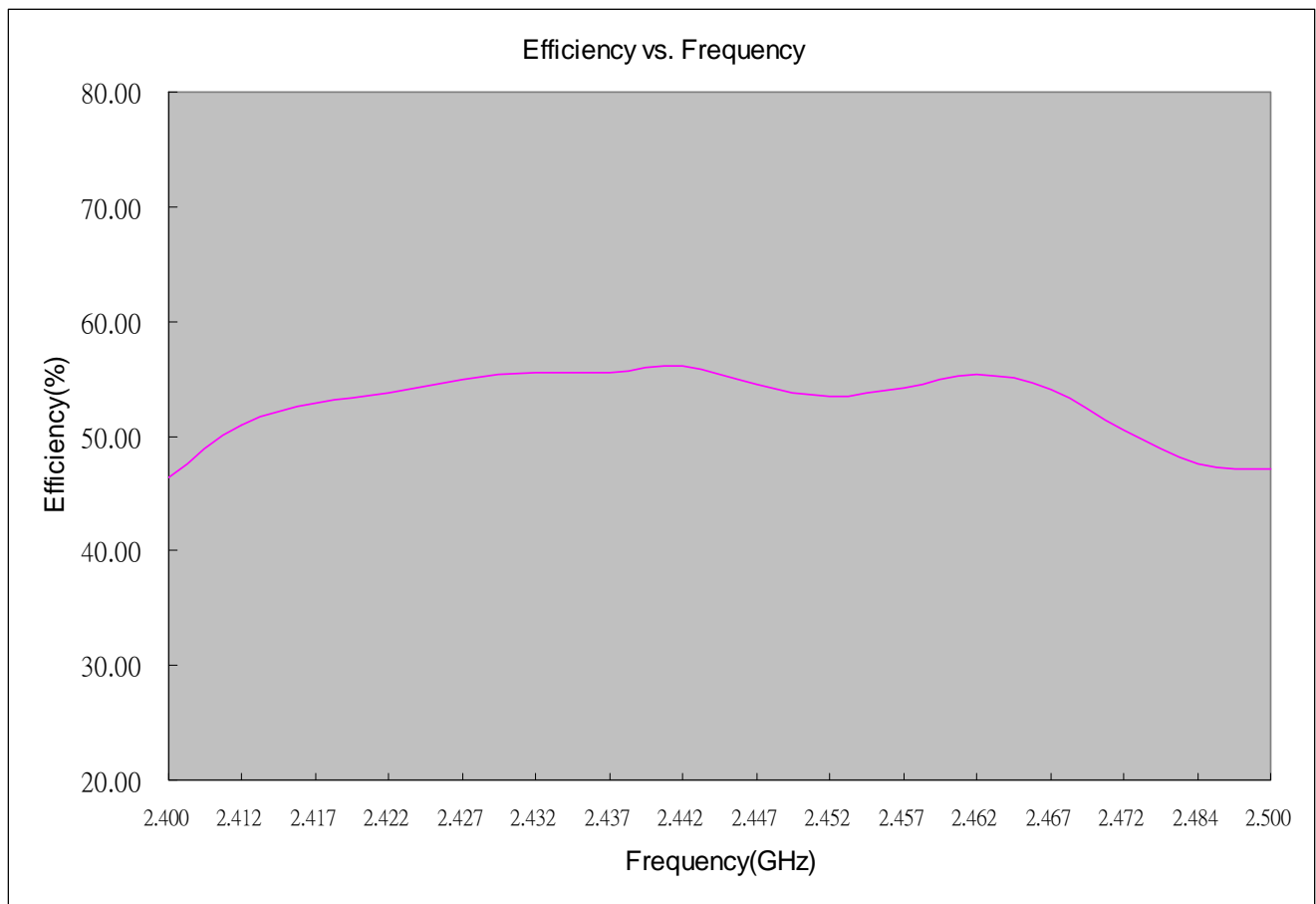
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### 9-1-2. 3D Efficiency Table

Frequency(GHz)	2.400	2.412	2.417	2.422	2.427	2.432	2.437	2.442	2.447	2.452	2.457	2.462	2.467	2.472	2.484	2.500
Efficiency(dB)	-3.34	-2.93	-2.77	-2.69	-2.60	-2.56	-2.55	-2.51	-2.64	-2.72	-2.66	-2.57	-2.67	-2.96	-3.22	-3.27
Efficiency(%)	46.34	50.93	52.84	53.83	54.95	55.46	55.59	56.10	54.45	53.46	54.20	55.34	54.08	50.58	47.64	47.10
Gain(dBi)	-0.13	0.34	0.45	0.66	0.77	0.86	0.96	0.97	0.79	0.66	0.61	0.77	0.73	0.49	0.23	0.26

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



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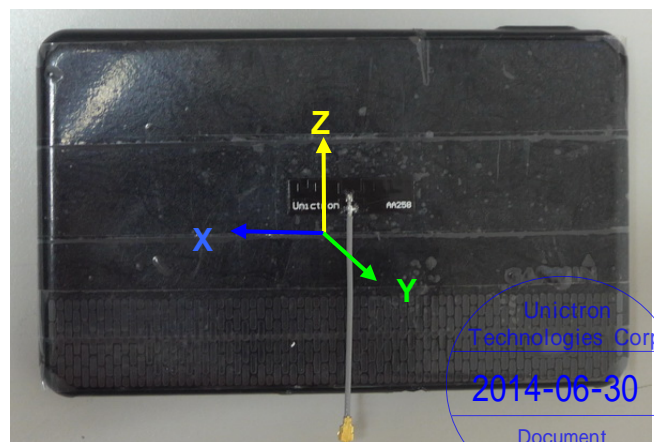
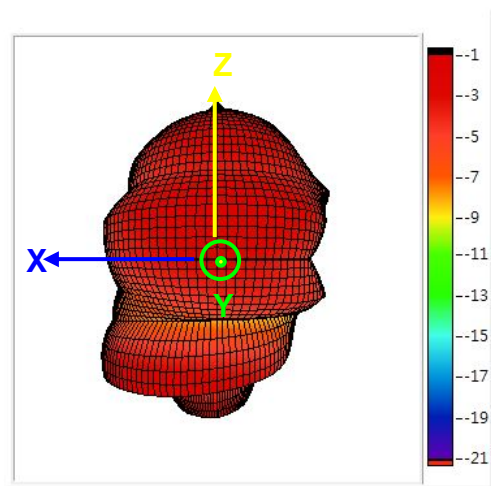
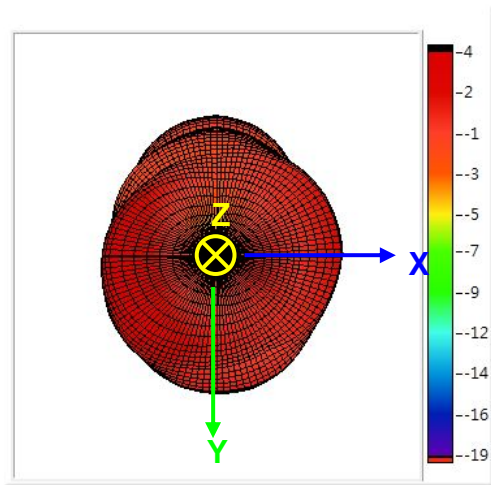
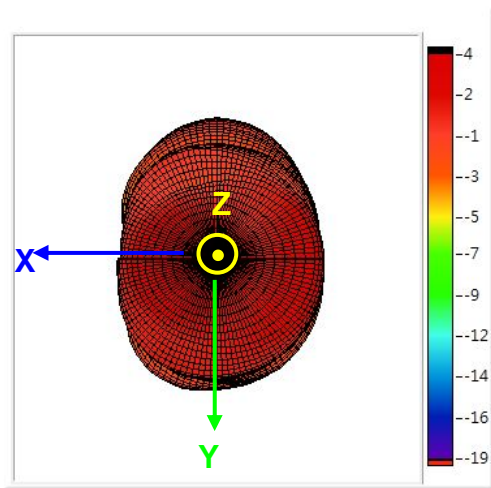
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9-2. 4900~5900 MHz Band

9-2-1.3D Gain Pattern @ 4900 MHz (unit: dBi)



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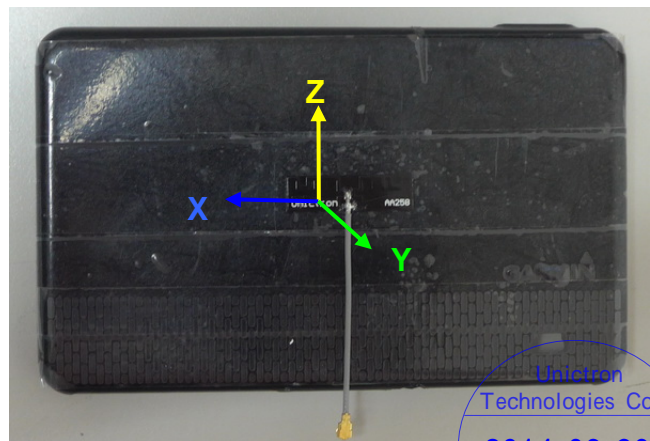
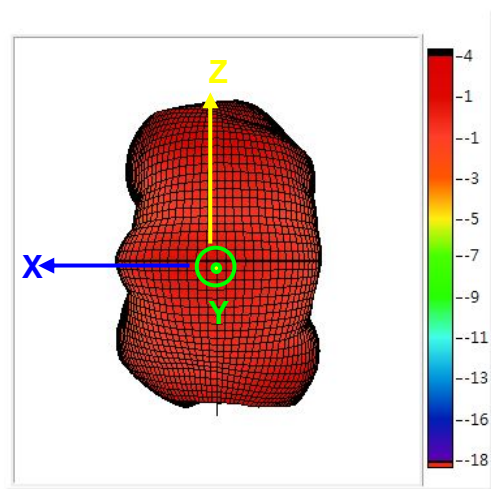
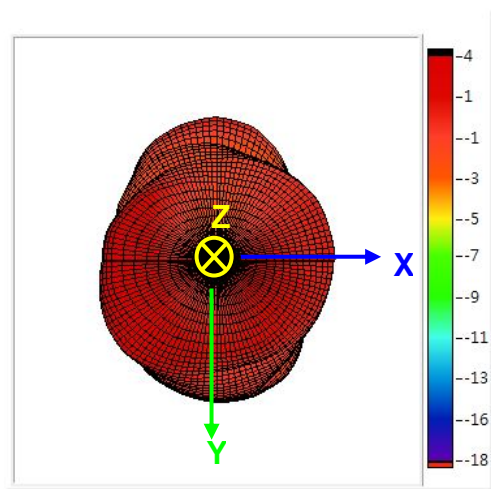
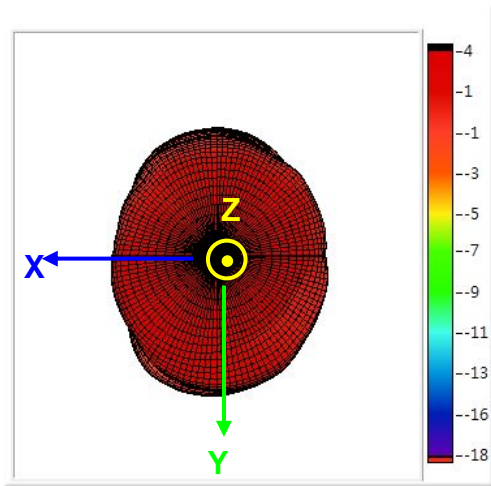
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9-2-2.3D Gain Pattern @ 5150 MHz (unit: dBi)



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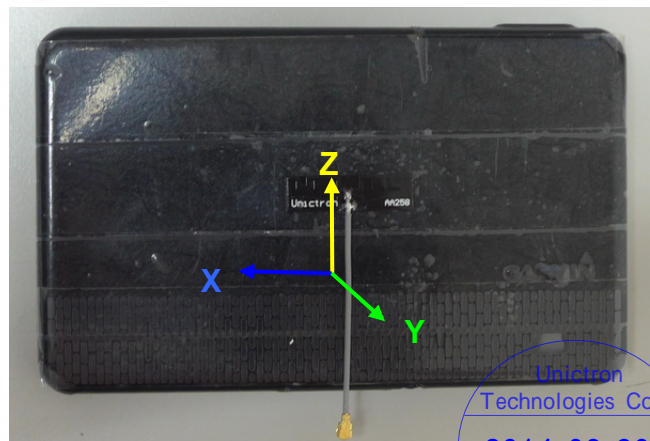
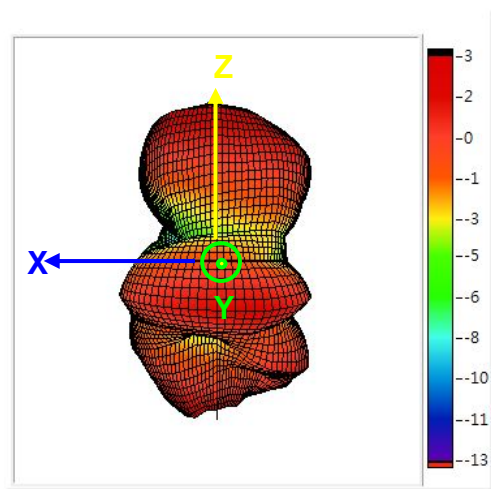
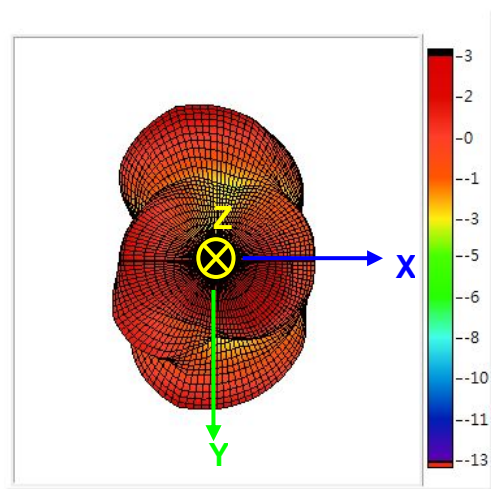
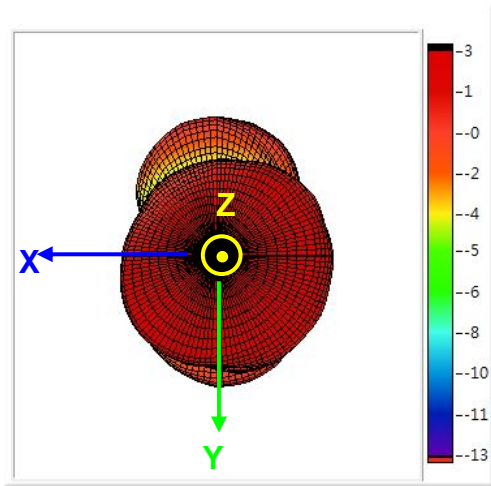
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9-2-3.3D Gain Pattern @ 5500 MHz (unit: dBi)



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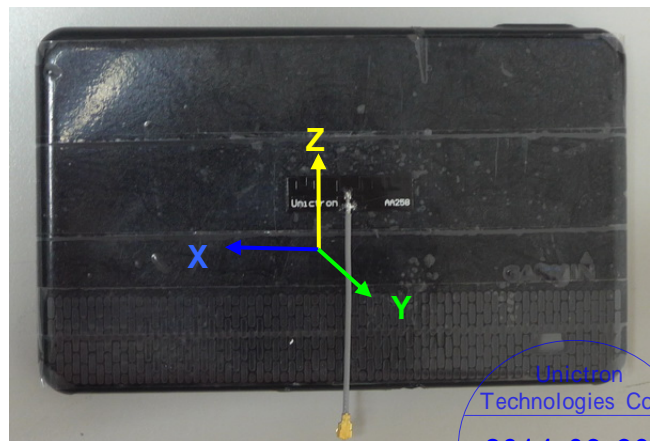
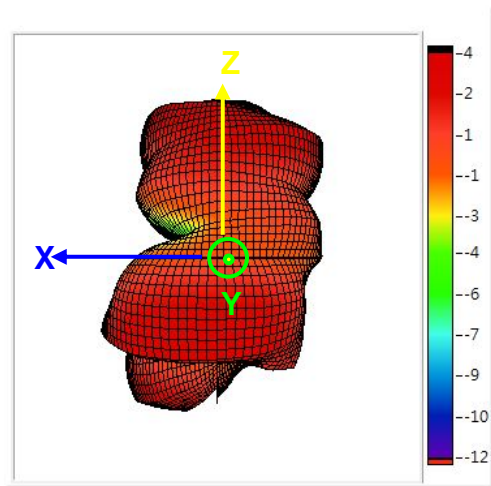
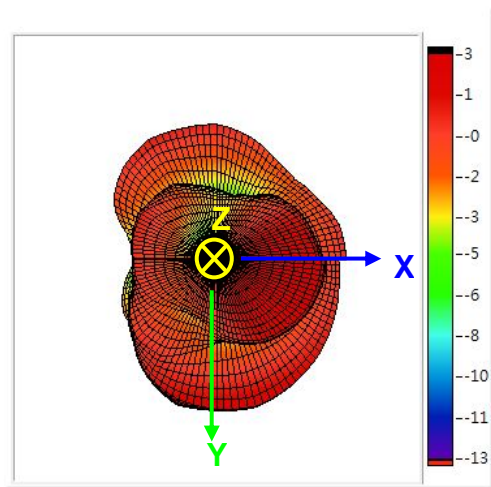
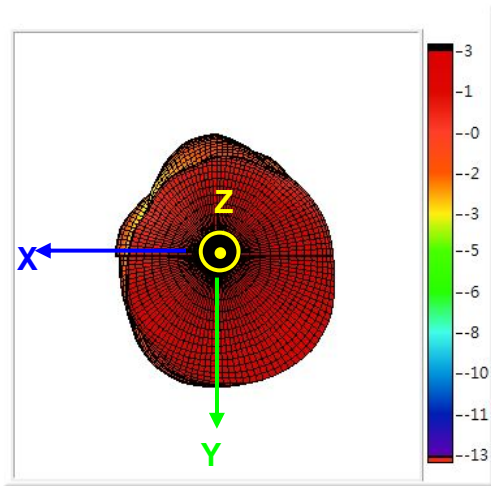
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9-2-4.3D Gain Pattern @ 5850 MHz (unit: dBi)



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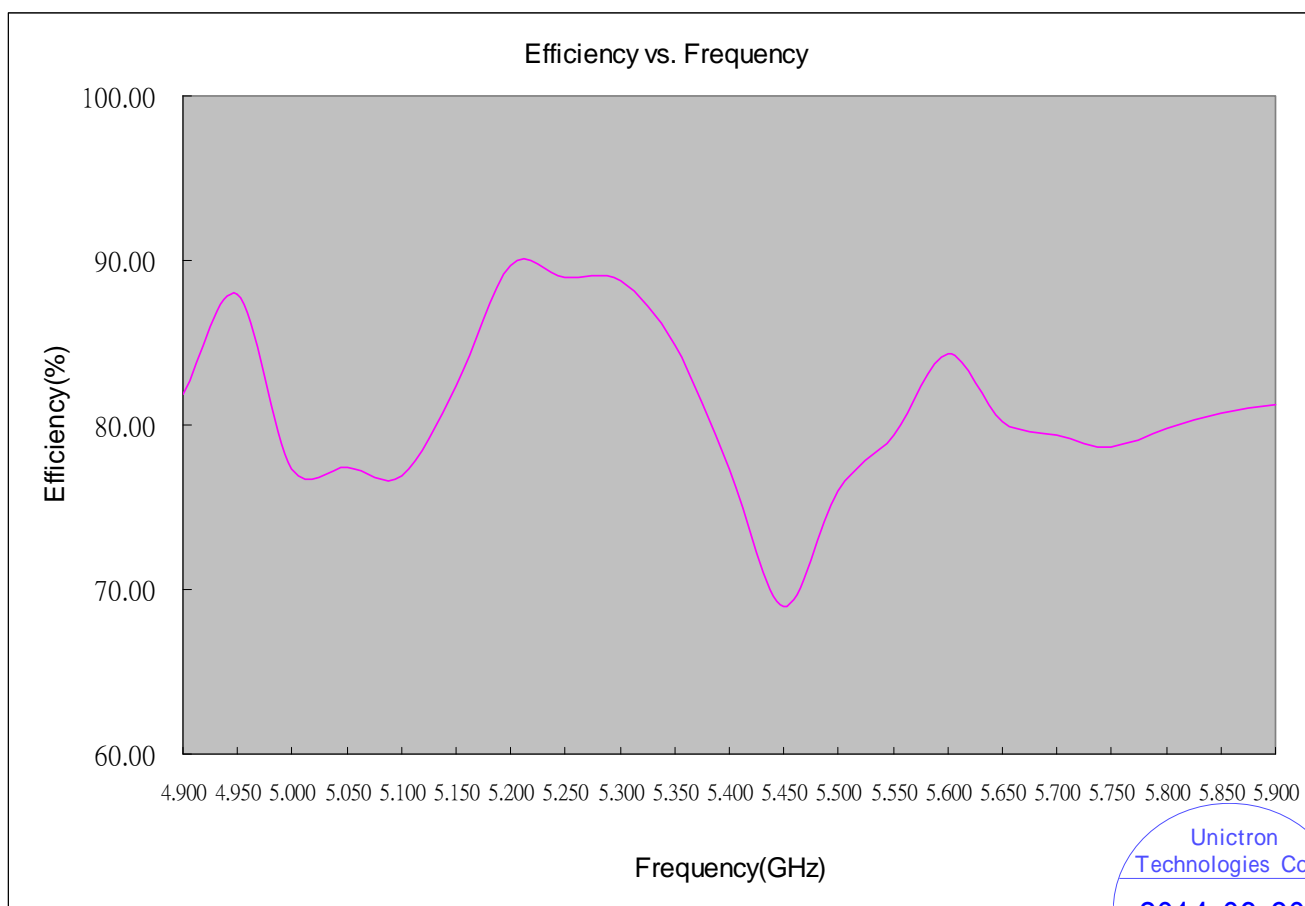
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### 9-2-5. 3D Efficiency Table

Frequency(GHz)	4.900	4.950	5.000	5.050	5.100	5.150	5.200	5.250	5.300	5.350	5.400
Efficiency(dB)	-0.87	-0.56	-1.12	-1.11	-1.14	-0.84	-0.47	-0.51	-0.52	-0.71	-1.12
Efficiency(%)	81.85	87.9	77.27	77.45	76.91	82.41	89.74	88.92	88.72	84.84	77.27
Gain(dBi)	4.07	4.41	3.84	3.69	3.36	3.58	3.81	3.65	3.53	3.60	3.19

Frequency(GHz)	5.450	5.500	5.550	5.600	5.650	5.700	5.750	5.800	5.850	5.900
Efficiency(dB)	-1.61	-1.19	-1.00	-0.74	-0.96	-1.00	-1.04	-0.98	-0.93	-0.90
Efficiency(%)	69.02	76.03	79.43	84.33	80.17	79.43	78.7	79.8	80.76	81.28
Gain(dBi)	2.66	3.46	3.92	3.58	3.26	3.36	3.43	3.09	3.30	3.75

### 9-2-6. 3D Efficiency vs. Frequency



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