

# Data Sheet

**CUSTOMER:** ASUS

**MODEL NAME:** S300 WLAN Antenna

**ACON P/N:** APP6P-700766



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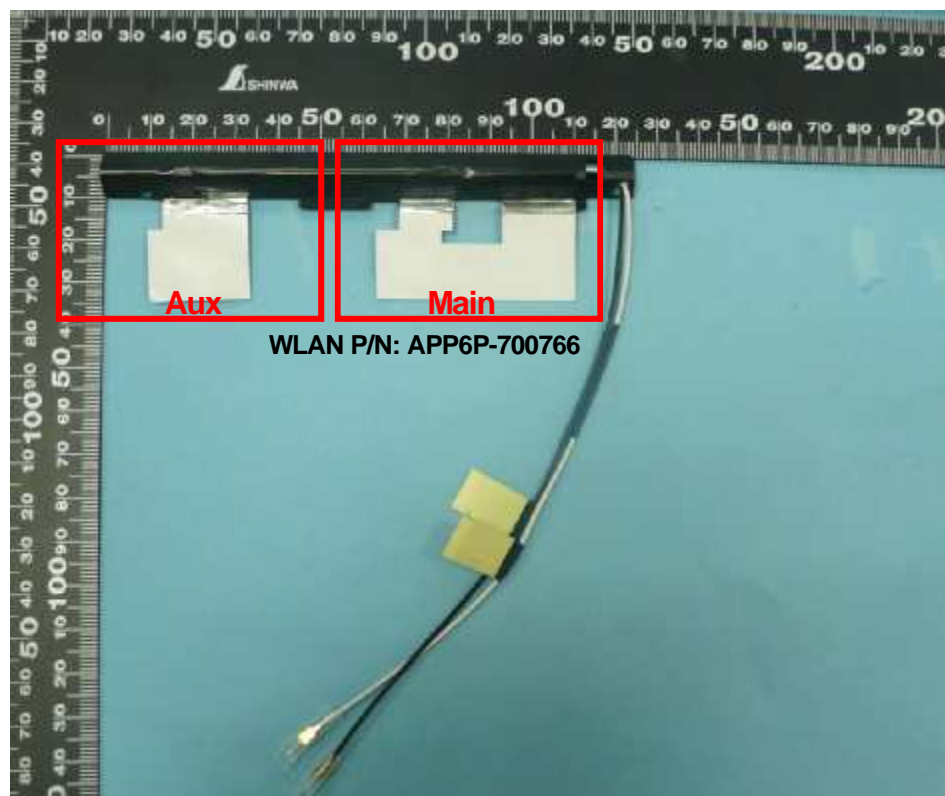
1. Description-----	1
1.1	
Specifications-----	1
1.2 Antenna Picture-----	1
2. Electrical Specification-----	2
2.1 Test Equipment-----	2
2.2 Test	
Setup-----	2
2.2.1 Frequency Range-----	2
2.2.2 VSWR-----	2
2.2.3 Radiation Pattern &	
Gain-----	2
3. Performance Data-----	4
3.1 VSWR-----	4
3.2 Radiation pattern & Gain(WLAN Main	
Antenna)-----	5
3.2.1 2D WLAN Main Antenna (XY Plane)-----	5
3.2.2 3D WLAN Main Antenna	
-----	12
3.3 Radiation pattern & Gain(WLAN Aux	
Antenna)-----	14
3.3.1 2D WLAN Aux Antenna(XY Plane)-----	14
3.3.2 3D WLAN Aux	
Antenna-----	21
3.4 Gain -----	23
4. Mechanical Specification-----	24
4.1 Assembly Drawing(WLAN	
Antenna)-----	24

## 1. Description

### 1.1 Specifications

Antennas Type	PIFA Antenna for WLAN 802.11a/b/g application	
Connector Type	I-PEX & Hirose Connector for 1.13 cable	
Cable Type	OD 1.13 RF Cable	
Impedance	50Ω	
Polarization	Linear	
Radiation pattern	Omni-directional	
Frequency	WLAN 802.11b/g	2.40~2.50 GHz
	WLAN 802.11a	5.15~5.85 GHz
VSWR	WLAN 802.11b/g	2.0 Max
	WLAN 802.11a	
Peak gain	WLAN 802.11b/g	Main : 1.26 dBi Aux : 0.76 dBi
	WLAN 802.11a	Main : -1.72 dBi Aux : 0.60 dBi
Cable Loss	WLAN 802.11b/g	Main : 0.57 dBi Aux : 0.57 dBi
	WLAN 802.11a	Main : 0.80 dBi Aux : 0.80 dBi
Cable length	WLAN ( APP6P-700766)	Main : 151mm, Black Aux : 151mm, White

### 1.2 Antenna Picture



## 2. Electrical Specification

### 2.1 Test Equipment

- A. VSWR and input impedance: Agilent 8720/8753 Network Analyzer
- B. Antenna gain and efficiency: ETS three-dimensional anechoic chamber

### 2.2 Test Setup

#### 2.2.1 Frequency Range

- A. WLAN 802.11 b/g : 2.40~2.50 GHz
- B. WLAN 802.11 a : 5.15~5.85 GHz

#### 2.2.2 VSWR

- Step 1: The antenna is arranged on the customer provided test fixture.
- Step 2: The VSWR of the antenna is measured via Agilent 8720/8753 Network Analyzer (see figure. 1).



Figure.1

#### 2.2.3 Radiation pattern and Gain

- A. The 3D chamber provides less than -40dB reflectivity from 800MHz to 6GHz and a 40cm diameter spherical quiet zone. The measurement results are calibrated using both dipoles and standard gain horns (see figure. 2).
- B. The antenna under tested is arranged in the turned table and a decoupling sleeve is used to reduce feed line radiation (see figure. 3).
- C. The measured results of the radiation patterns and antenna gain are obtained from the control system and showed on the monitor (see figure. 4 and 5).

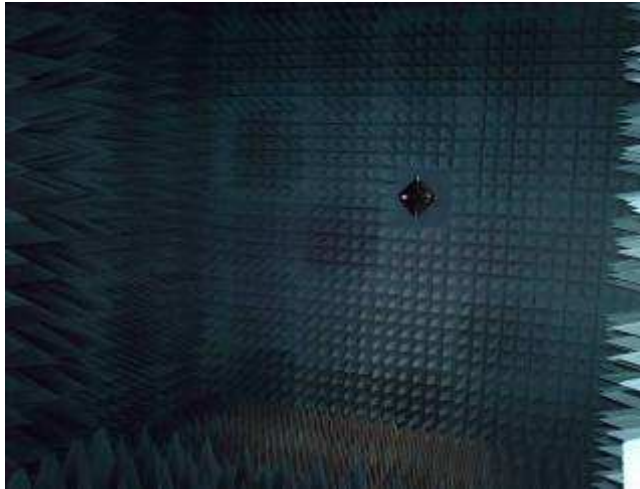


Figure.2

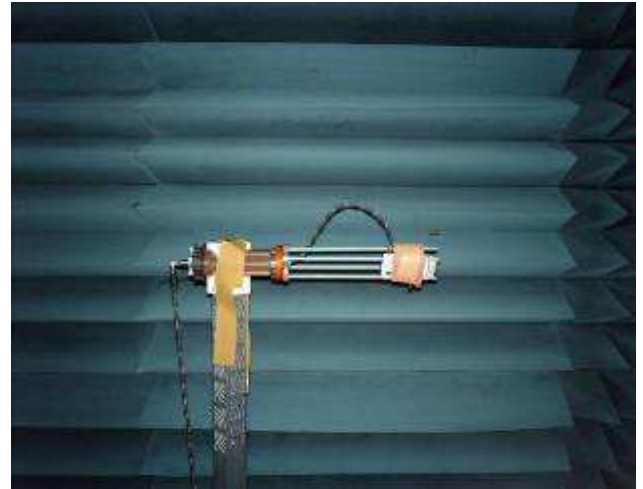


Figure.3



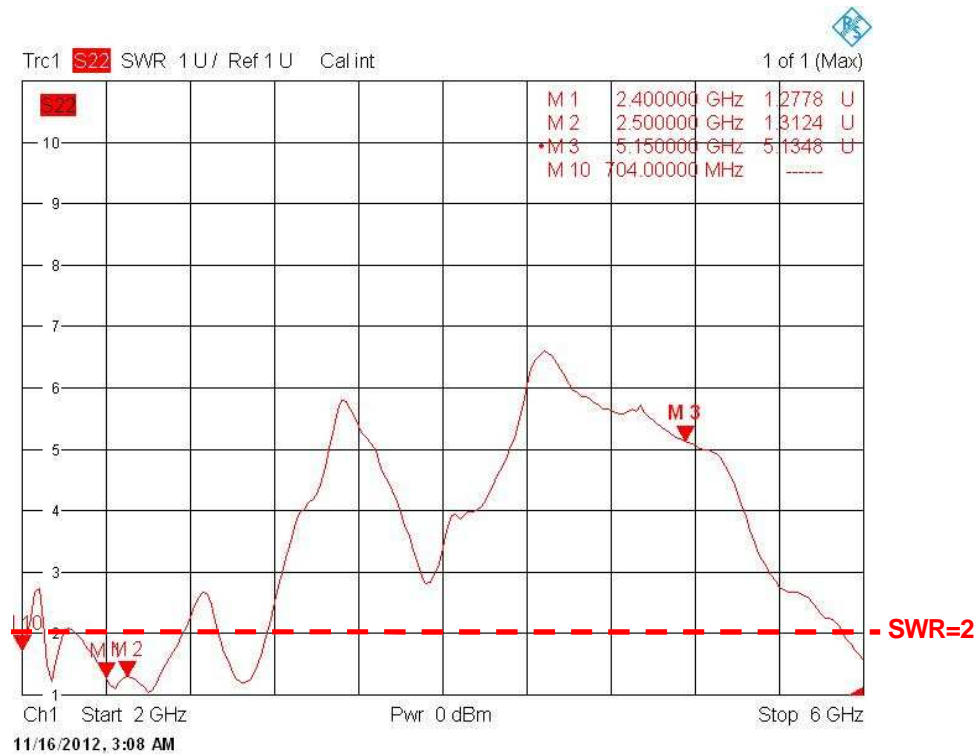
Figure.4



Figure.5

### 3. Performance Data

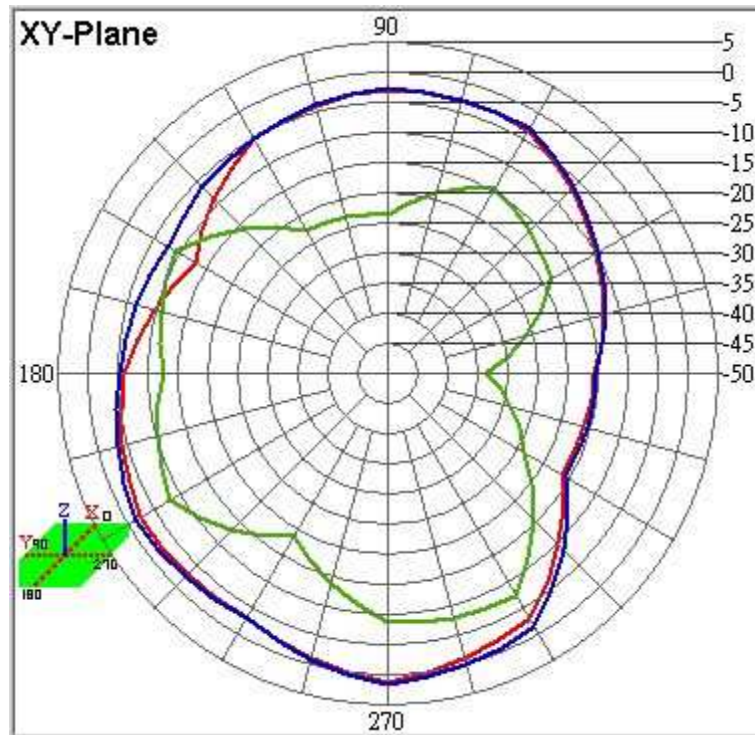
#### 3.1 VSWR





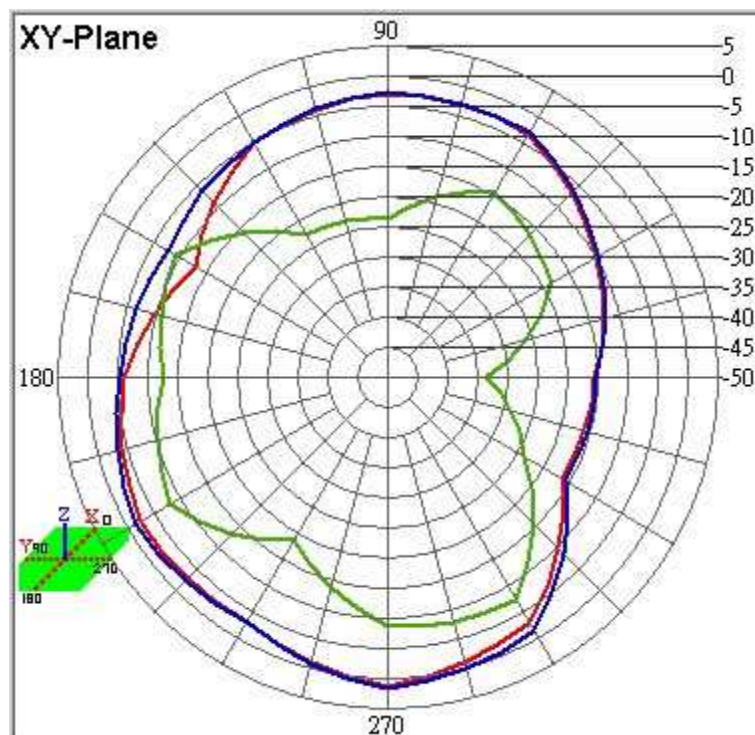
### 3.2 Radiation pattern & Gain (WLAN MAIN Antenna)

#### 3.2.1 2D WLAN MAIN Antenna (XY Plane)



Center Frequency	<b>2400 MHz</b>
Horizontal (dBi)	<b>1.21</b>
Vertical (dBi) peak	<b>-7.30</b>

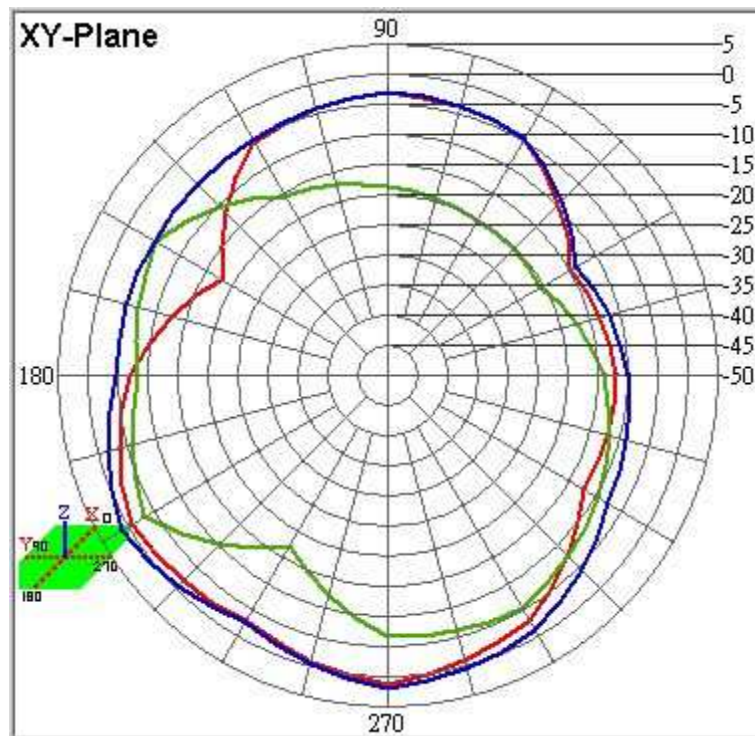
<span style="color: red;">—</span>	<b>Horizontal</b>
<span style="color: green;">—</span>	<b>Vertical</b>
<span style="color: blue;">—</span>	<b>H+V</b>



Center Frequency	<b>2450 MHz</b>
Horizontal (dBi)	<b>1.26</b>
Vertical (dBi) peak	<b>-3.20</b>

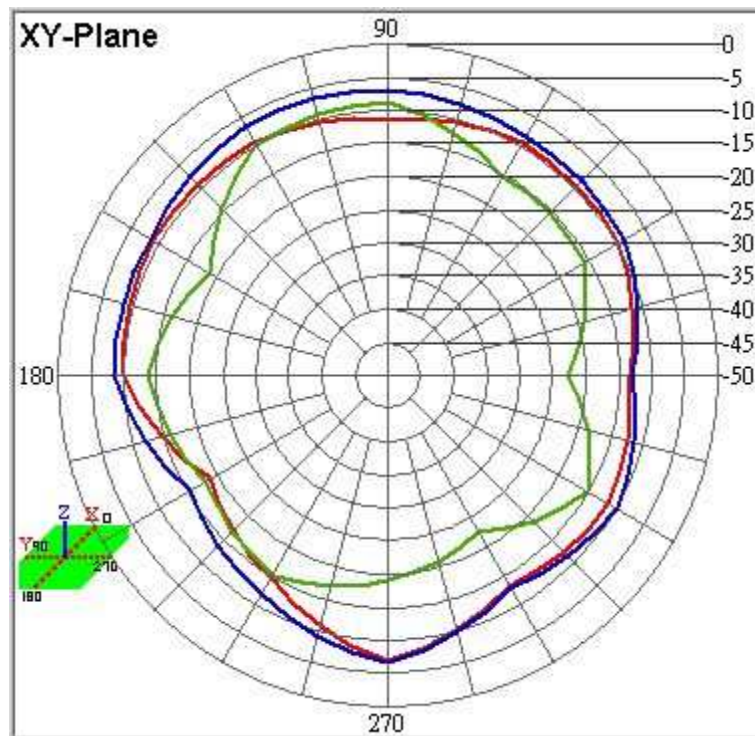
<span style="color: red;">—</span>	<b>Horizontal</b>
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<span style="color: blue;">—</span>	<b>H+V</b>





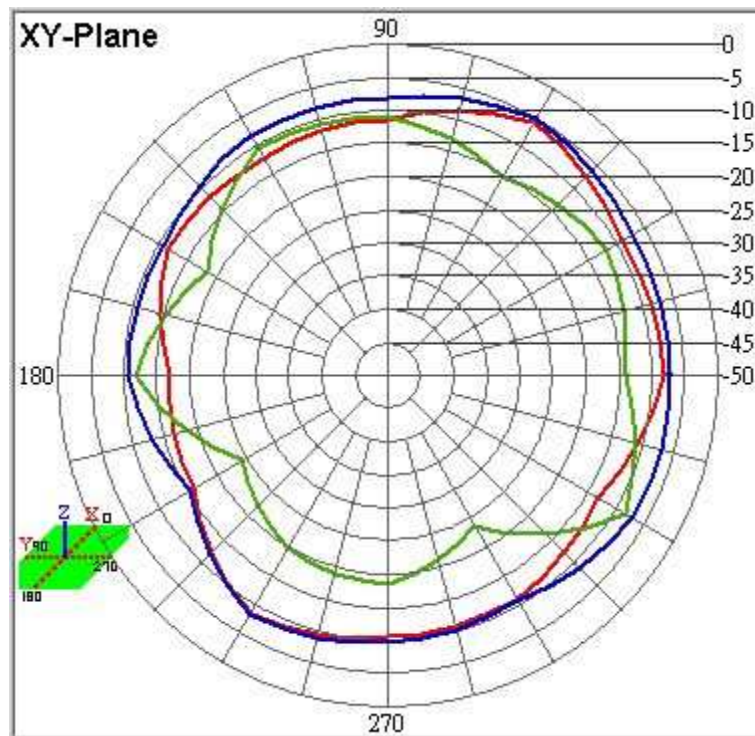
Center Frequency	<b>2500 MHz</b>
Horizontal (dBi)	<b>-1.01</b>
Vertical (dBi) peak	<b>-3.10</b>

<span style="color: red;">—</span>	<b>Horizontal</b>
<span style="color: green;">—</span>	<b>Vertical</b>
<span style="color: blue;">—</span>	<b>H+V</b>



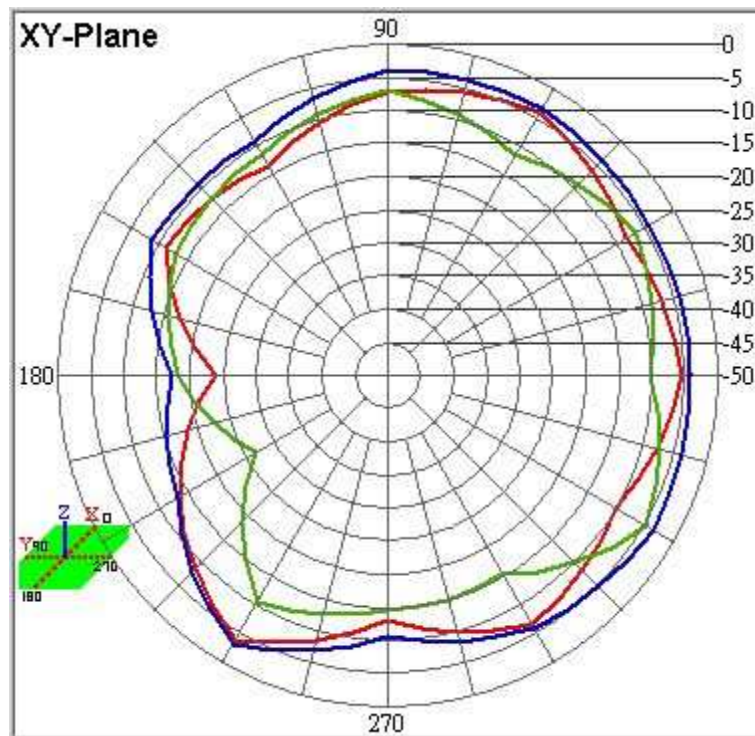
Center Frequency	<b>5150 MHz</b>
Horizontal (dBi)	<b>-6.87</b>
Vertical (dBi) peak	<b>-8.73</b>

<span style="color: red;">—</span>	<b>Horizontal</b>
<span style="color: green;">—</span>	<b>Vertical</b>
<span style="color: blue;">—</span>	<b>H+V</b>



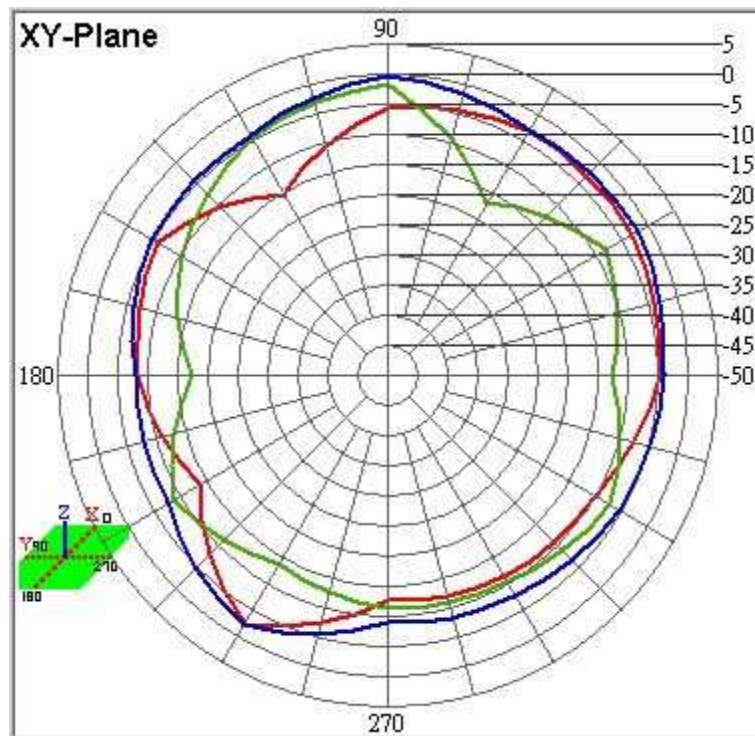
Center Frequency	<b>5350 MHz</b>
Horizontal (dBi)	<b>-5.82</b>
Vertical (dBi) peak	<b>-8.43</b>

<span style="color: red;">—</span>	<b>Horizontal</b>
<span style="color: green;">—</span>	<b>Vertical</b>
<span style="color: blue;">—</span>	<b>H+V</b>



Center Frequency	<b>5470 MHz</b>
Horizontal (dBi)	<b>-3.96</b>
Vertical (dBi) peak	<b>-4.73</b>

<span style="color: red;">—</span>	<b>Horizontal</b>
<span style="color: green;">—</span>	<b>Vertical</b>
<span style="color: blue;">—</span>	<b>H+V</b>

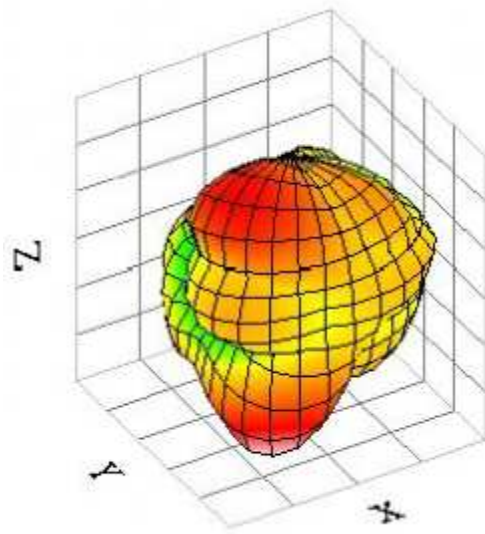


Center Frequency	<b>5850 MHz</b>
Horizontal (dBi)	<b>-2.38</b>
Vertical (dBi) peak	<b>-1.72</b>

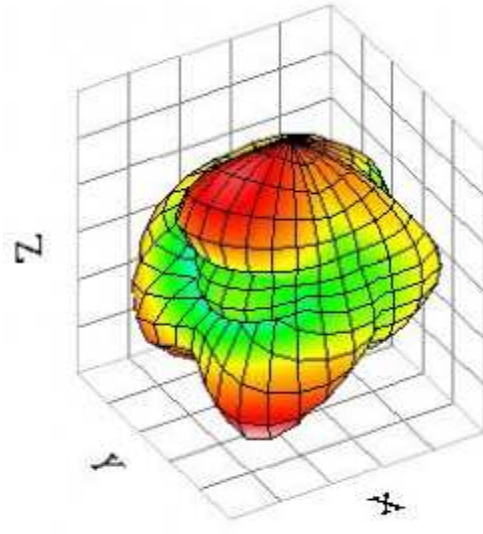
<span style="color: red;">—</span>	<b>Horizontal</b>
<span style="color: green;">—</span>	<b>Vertical</b>
<span style="color: blue;">—</span>	<b>H+V</b>



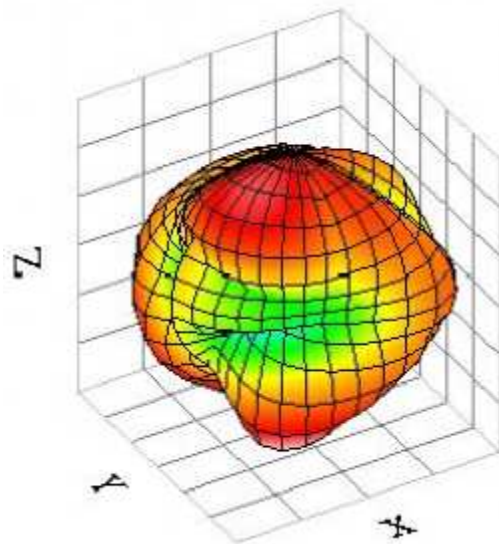
### 3.2.2 3D WLAN MAIN Antenna



2.40GHz



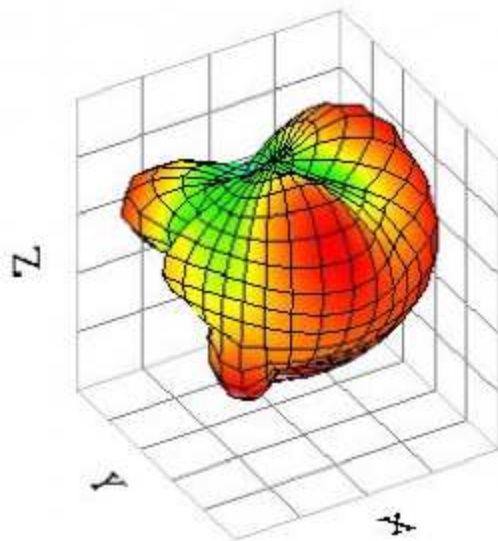
2.45GHz



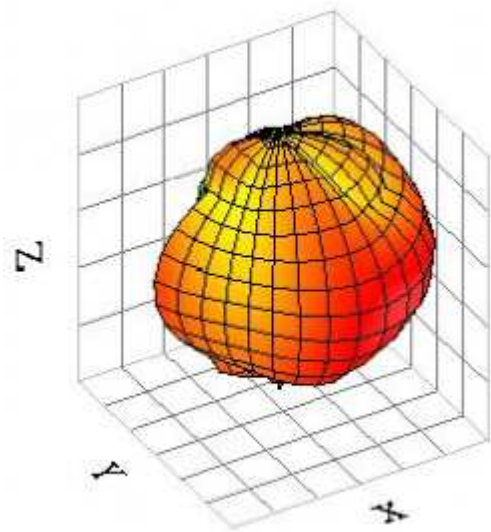
2.50GHz

**WLAN MAIN Antenna 2.40GHz~2.50GHz**

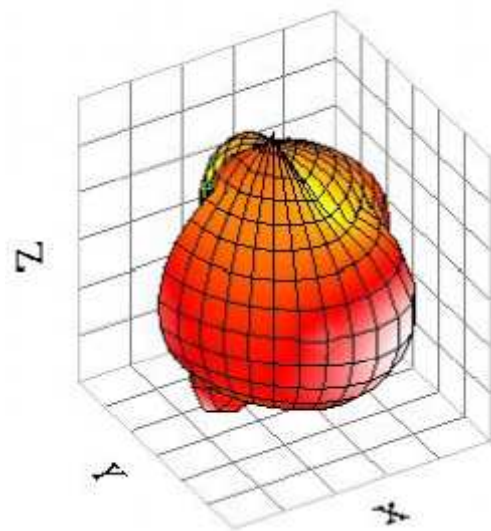




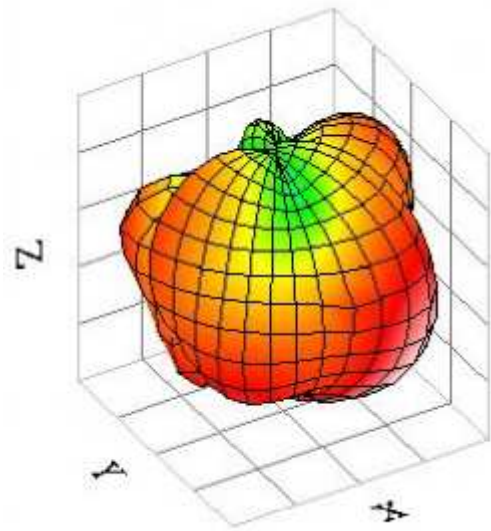
5.15GHz



5.35GHz



5.47GHz

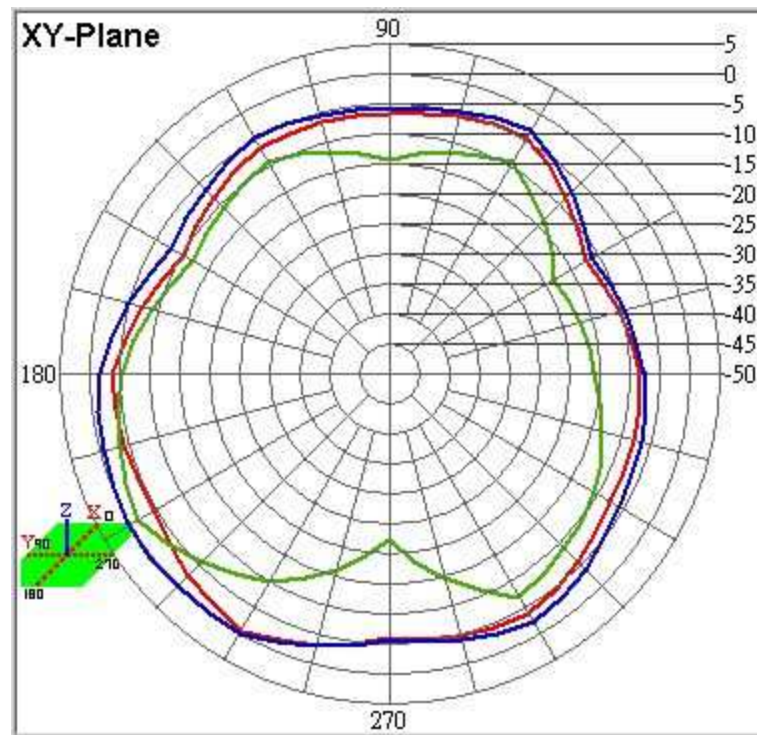


5.85GHz

**WLAN MAIN Antenna 5.15GHz~5.85GHz**

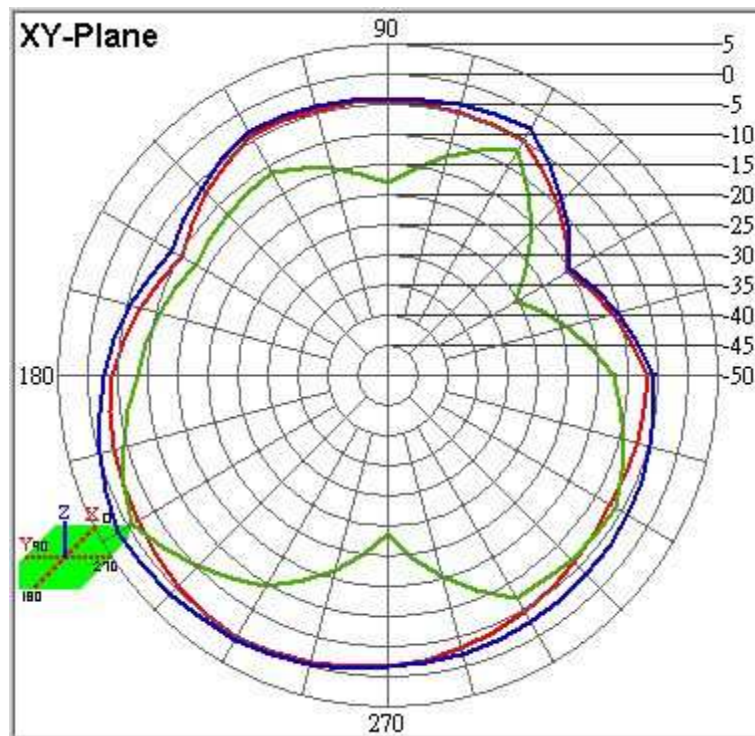
### 3.3 Radiation pattern & Gain (WLAN AUX Antenna )

#### 3.3.1 2D WLAN AUX Antenna (XY Plane)



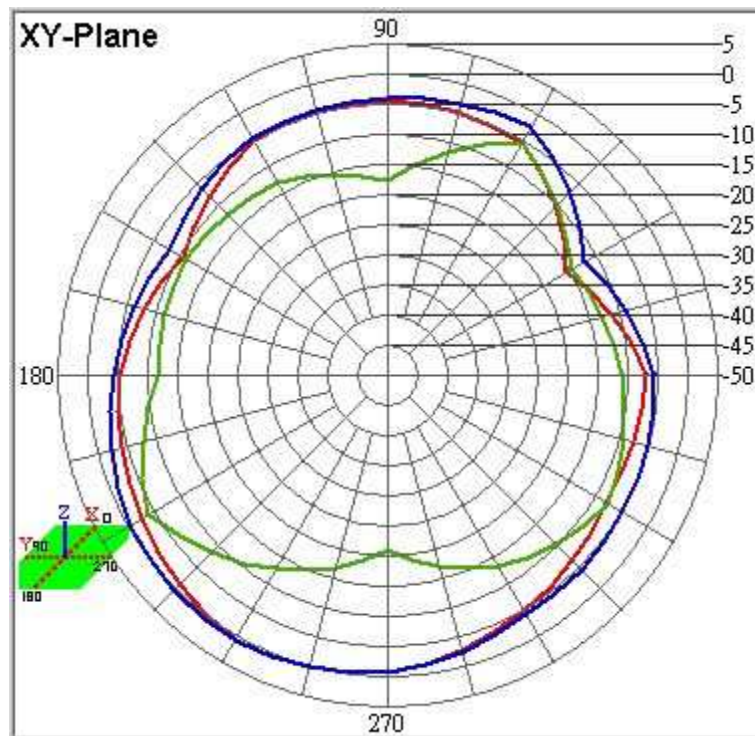
Center Frequency	<b>2400 MHz</b>
Horizontal (dBi)	<b>-0.51</b>
Vertical (dBi) peak	<b>-1.34</b>

<span style="color: red;">—</span>	<b>Horizontal</b>
<span style="color: green;">—</span>	<b>Vertical</b>
<span style="color: blue;">—</span>	<b>H+V</b>

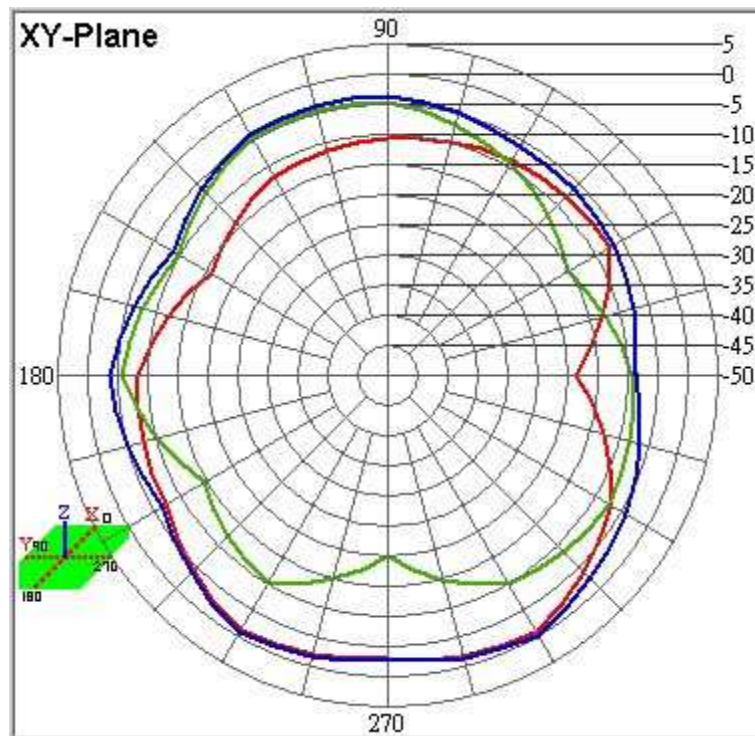


Center Frequency	<b>2450 MHz</b>
Horizontal (dBi)	<b>0.32</b>
Vertical (dBi) peak	<b>-0.63</b>

<span style="color: red;">—</span>	<b>Horizontal</b>
<span style="color: green;">—</span>	<b>Vertical</b>
<span style="color: blue;">—</span>	<b>H+V</b>



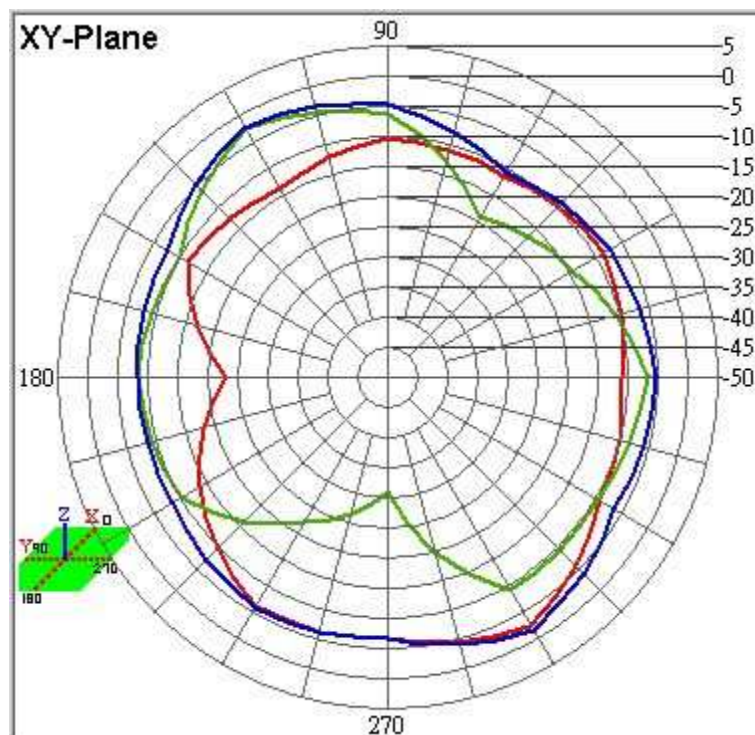
Center Frequency	<b>2500 MHz</b>	<div> <div>Horizontal</div> <div>Vertical</div> <div>H+V</div> </div>
Horizontal (dBi)	<b>0.76</b>	
Vertical (dBi) peak	<b>-3.83</b>	



Center Frequency	<b>5150 MHz</b>
Horizontal (dBi)	<b>-0.63</b>
Vertical (dBi) peak	<b>-4.43</b>

<span style="color: red;">—</span>	<b>Horizontal</b>
<span style="color: green;">—</span>	<b>Vertical</b>
<span style="color: blue;">—</span>	<b>H+V</b>

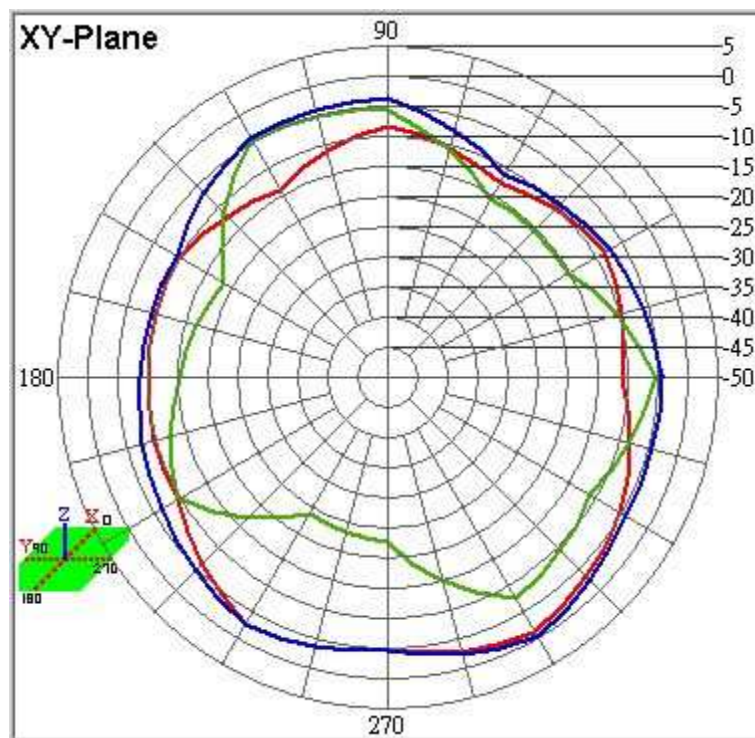




Center Frequency	<b>5350 MHz</b>
Horizontal (dBi)	<b>-2.36</b>
Vertical (dBi) peak	<b>-2.44</b>

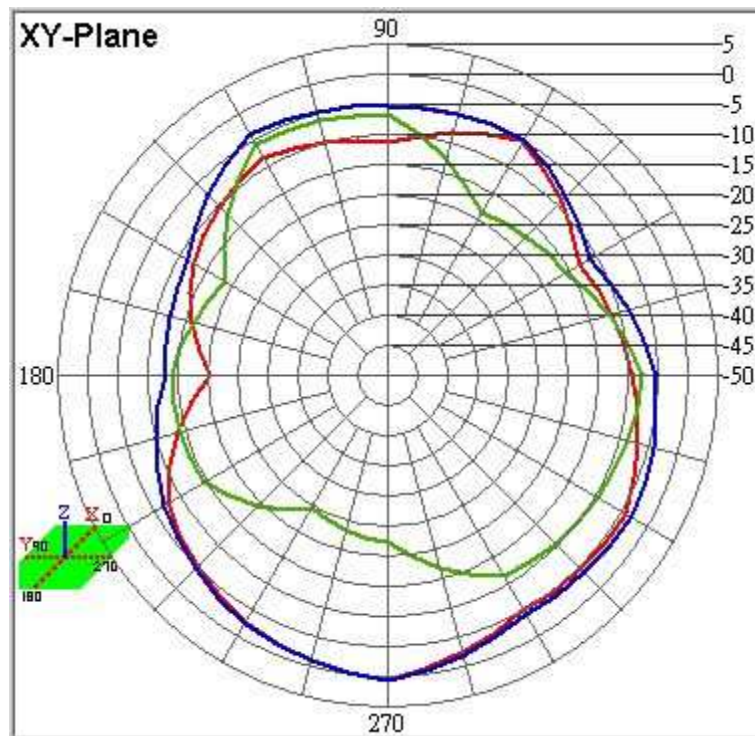
<span style="color: red;">—</span>	<b>Horizontal</b>
<span style="color: green;">—</span>	<b>Vertical</b>
<span style="color: blue;">—</span>	<b>H+V</b>





Center Frequency	<b>5470 MHz</b>
Horizontal (dBi)	<b>-1.07</b>
Vertical (dBi) peak	<b>-4.61</b>

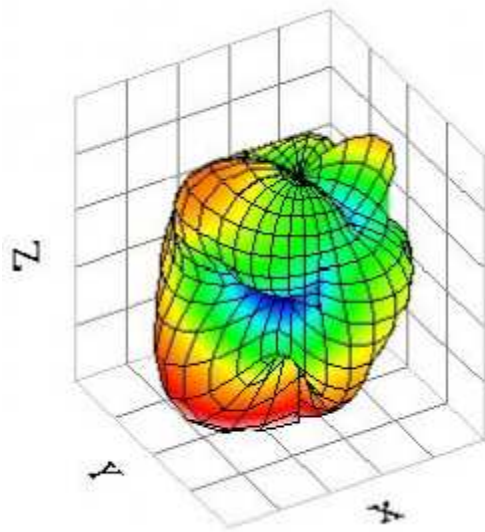
<span style="color: red;">—</span>	<b>Horizontal</b>
<span style="color: green;">—</span>	<b>Vertical</b>
<span style="color: blue;">—</span>	<b>H+V</b>



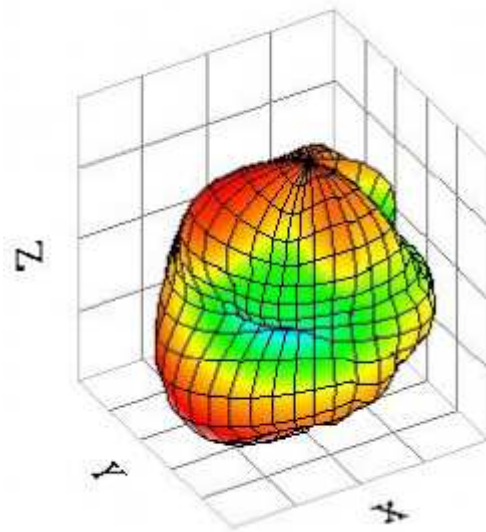
Center Frequency	<b>5850 MHz</b>
Horizontal (dBi)	<b>0.60</b>
Vertical (dBi) peak	<b>-5.92</b>

<span style="color: red;">—</span>	<b>Horizontal</b>
<span style="color: green;">—</span>	<b>Vertical</b>
<span style="color: blue;">—</span>	<b>H+V</b>

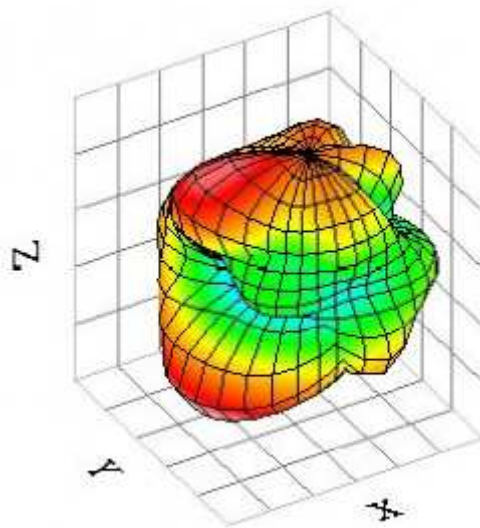
### 3.3.2 3D WLAN AUX Antenna



2.40GHz

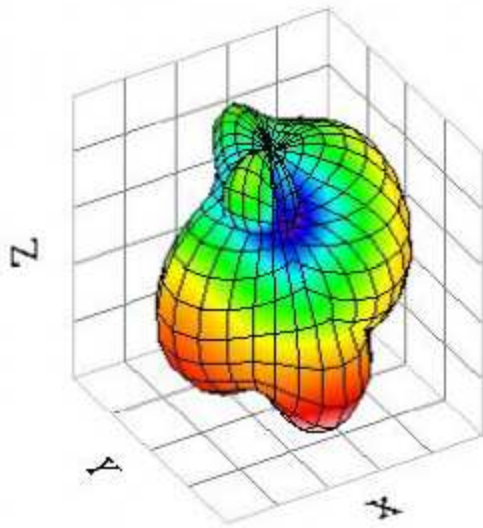


2.45GHz

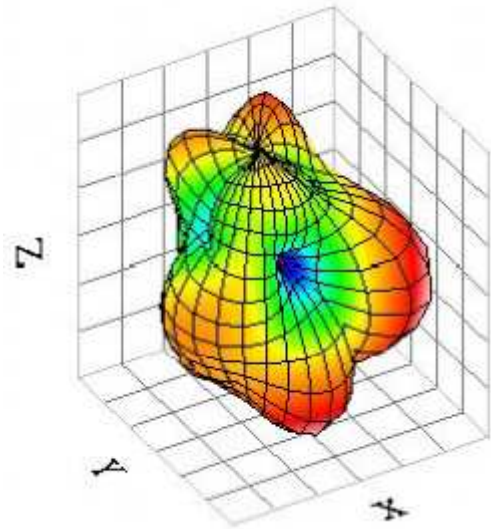


2.50GHz

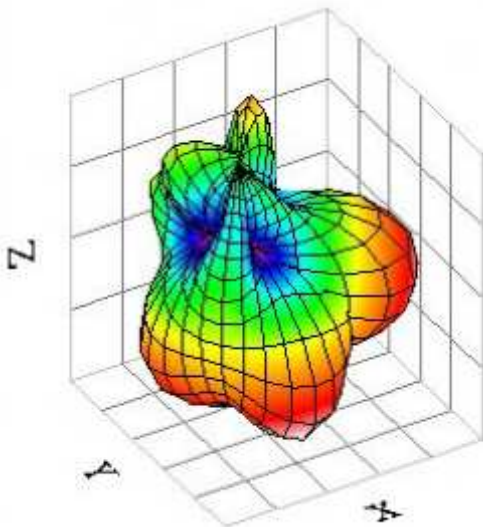
**WLAN AUX Antenna 2.40GHz~2.50GHz**



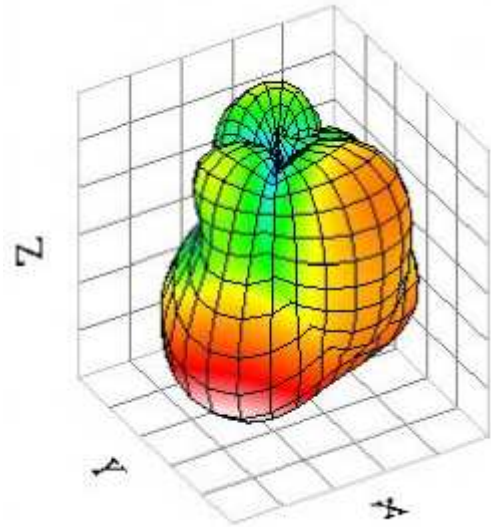
5.15GHz



5.35GHz



5.47GHz



5.85GHz

**WLAN AUX Antenna 5.15GHz~5.85GHz**

### 3.4 Gain

Antenna Gain Table:

WLAN Main Antenna						
Frequency	MAX Value (dBi)		Average (dBi)		3D	
	H-pol	V-pol	H-pol	V-pol	Efficiency(dB)	Efficiency(%)
2400(MHz)	1.21	-7.30	-4.14	-12.12	-3.16	48.35
2450(MHz)	1.26	-3.20	-4.04	-8.67	-2.93	50.93
2500(MHz)	-1.01	-3.10	-5.27	-7.11	-3.69	42.79
5150(MHz)	-6.87	-8.73	-10.60	-14.23	-9.14	12.20
5350(MHz)	-5.82	-8.43	-10.22	-13.30	-8.49	14.17
5470(MHz)	-3.96	-4.73	-7.90	-9.96	-6.18	24.10
5850(MHz)	-2.38	-1.72	-6.22	-8.05	-4.95	31.99
WLAN Aux Antenna						
Frequency	MAX Value (dBi)		Average (dBi)		3D	
	H-pol	V-pol	H-pol	V-pol	Efficiency(dB)	Efficiency(%)
2400(MHz)	-0.51	-1.34	-5.24	-8.26	-3.73	42.36
2450(MHz)	0.32	-0.63	-4.02	-7.87	-2.99	50.19
2500(MHz)	0.76	-3.83	-4.11	-9.66	-3.53	44.37
5150(MHz)	-0.63	-4.43	-5.74	-8.28	-4.98	31.77
5350(MHz)	-2.36	-2.44	-8.45	-8.63	-6.24	23.75
5470(MHz)	-1.07	-4.61	-6.44	-9.43	-5.72	26.76
5850(MHz)	0.60	-5.92	-5.55	-10.98	-5.74	26.65

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## Revision

Revision	Date	Change Notification	Notes
Rev.0	2012-11-16	--	