

# Antenna Regulatory Information

• <b>Product type</b>	• <b>WLAN antenna</b>
• <b>Model number</b>	• <b>Hawke</b>
• <b>Revision</b>	• <b>Rev. 1</b>
• <b>Manufacturer Part No. : Main / Aux / MIMO</b>	• <b>APP8P-700001/APM6P-700026/</b> • <b>APM6P-700027</b>
• <b>Dell Part No. : Main / Aux / MIMO</b>	•

**ADVANCED-CONNECTEK INC.**

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Http : //www.acon.com

Template Revision 062007

# 1. Specifications

## Antenna Specifications

Antenna Type (Material, Technology)	PIFA
Antenna Model Number	Hawke
Operating Frequency Range(s)	2.4GHz ~ 2.5GHz and 4.9GHz ~ 5.9GHz
Peak Gain (802.11b/g / 2.4GHz Band) (dBi)	Main -1.6 / Aux 0.04 / MIMO 1.67
Peak Gain (802.11a / 5GHz Band) (dBi)	Main -1.35 / Aux 0.10 / MIMO 1.09
Radio Connector Type	IPEX 20278-111R-13
Mid-Line Connector Type (If Applicable)	N/A

**Remark:** Peak Gains include all system losses (connector, cable, etc)

## Cable Specifications

Cable Parameters	Main			Aux			MIMO		
	LCD Side	Base Side	Total	LCD Side	Base Side	Total	LCD Side	Base Side	Total
Length (mm)	N/A	N/A	625	N/A	N/A	505	N/A	N/A	390
Loss (Including Connectors) (dB, 2.4GHz / 5GHz)			1.8 / 2.6			1.5 / 2.2			1.1 / 1.5
Description (Color, Diameter, Manufacturer)	Color: White OD: 1.13 mm (low loss) Vendor: Kurabe/Hitachi/Sumitomo			Color: Black OD: 1.13 mm (low loss) Vendor: Kurabe/Hitachi/Sumitomo			Color: Gray OD: 1.13 mm (low loss) Vendor: Kurabe/Hitachi/Sumitomo		

## 2. Antenna Assembly

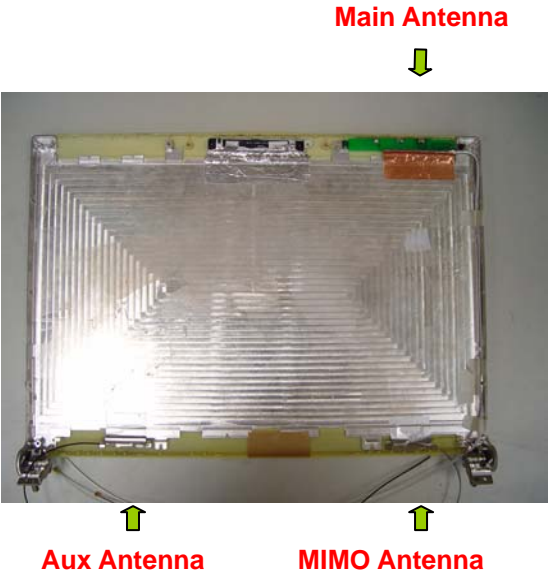


Main Antenna

Aux Antenna

MIMO Antenna

## 3. Antenna Assembly Installed in The Notebook



Main Antenna

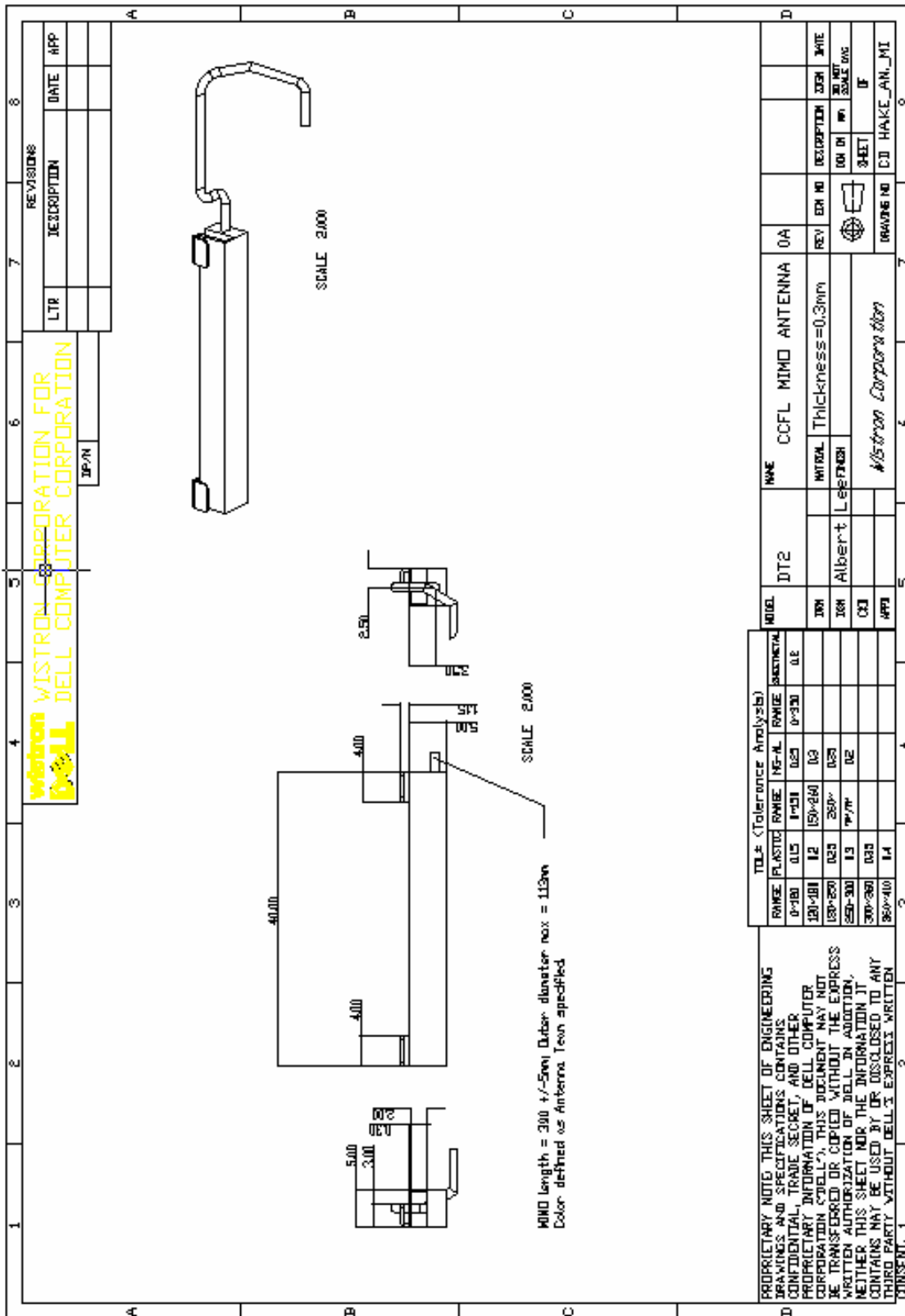


Aux Antenna



MIMO Antenna

# 4. Mechanical Drawing of Antennas



**wistron** WISTRON CORPORATION FOR  
**DELL** DELL COMPUTER CORPORATION

DP/IN

8

7

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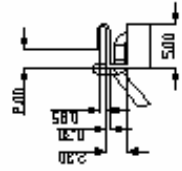
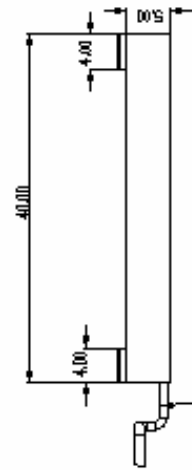
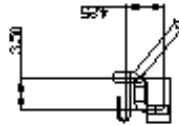
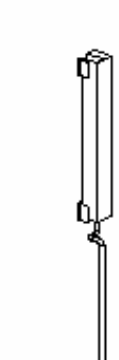
5

4

3

2

REVISIONS		DATE	APP
LTR	DESCRIPTION		



SCALE 1.00

SCALE 2.00

USB length = 505 +/- 5mm Outer diameter MAX = 11.0mm  
 Color defined as Antenna. Text specified.

8

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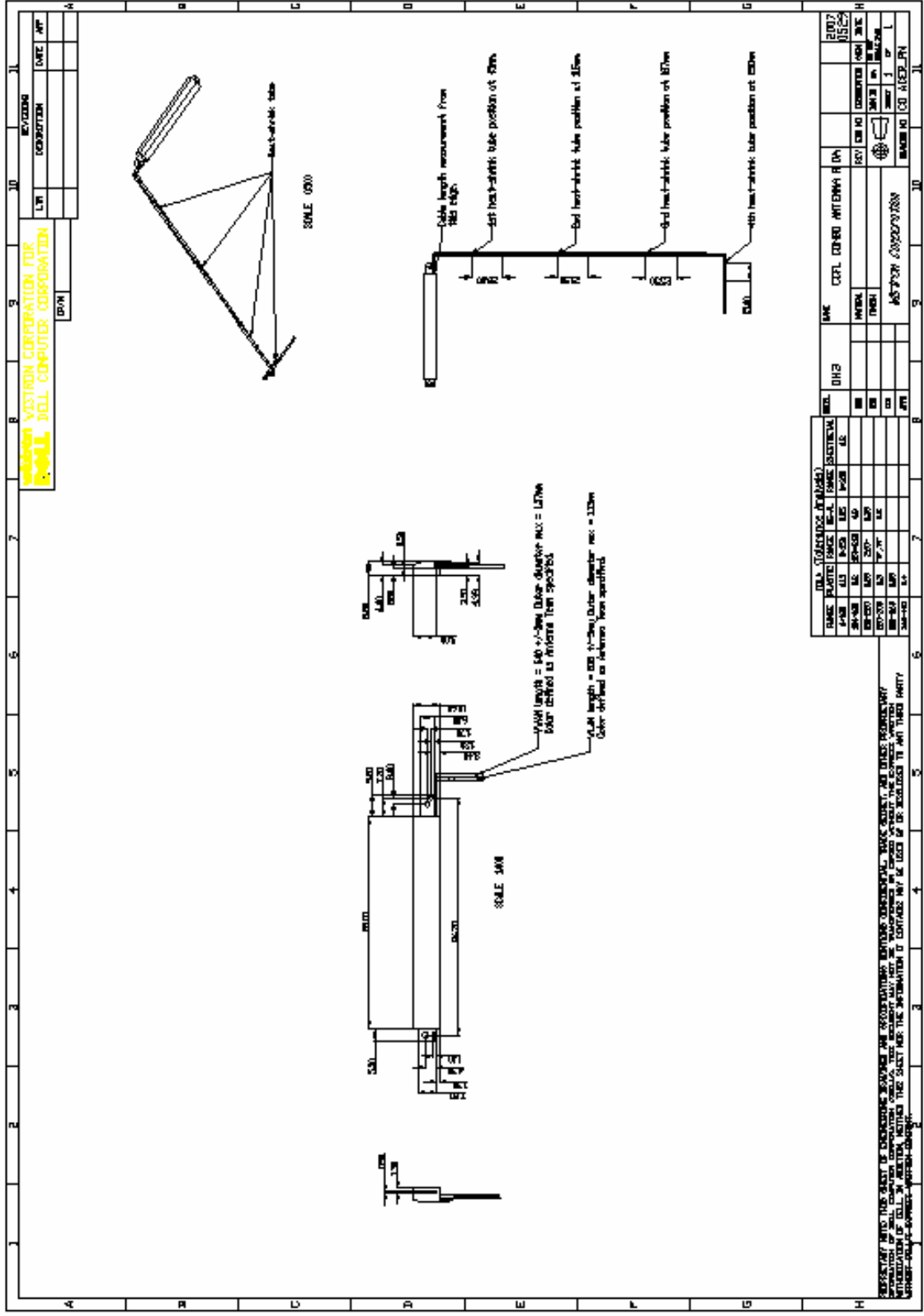
1

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RANGE	TELs (Tolerance Analysis)	
	PLASTIC RANGE	MG-NL RANGE
0-150	0.15	0+20
150-300	0.2	15P-650
300-450	0.25	550+
450-600	0.3	447F
600-750	0.35	
750-900	0.4	

MODEL	DWG NO	REV	EDN NO	DESCRIPTION	JOB	DATE
DH3		0A			20070529D	

NAME: HAWKE\_ANT\_WLAN  
 MATERIAL:   
 FINISH:   
 Wistron Corporation 2007



# 5. Gain Patterns

- Main Antenna

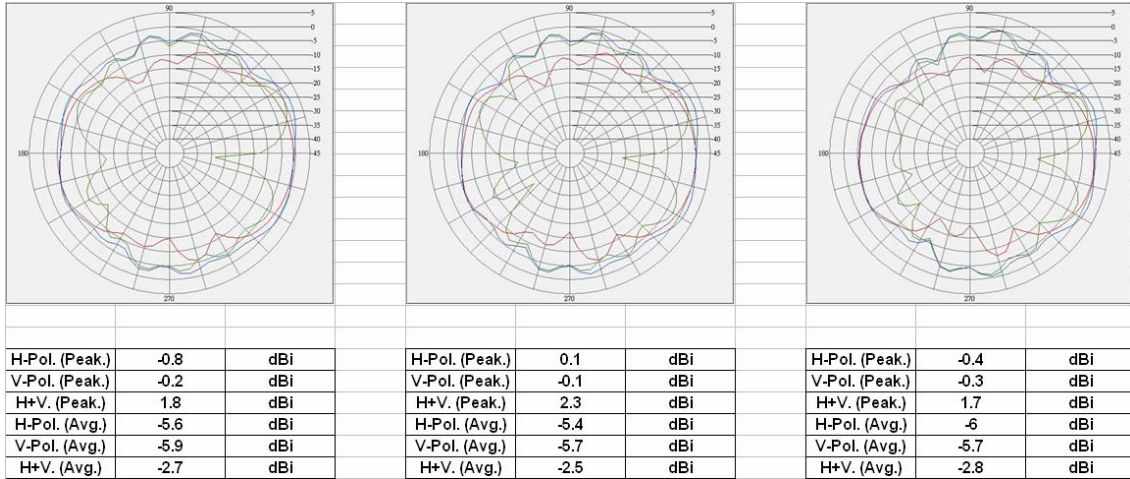
*The Most Appropriate Antenna for Your Best Design!*

— H-Pol     
 — V-Pol     
 — H+V

**Fre. = 2412 MHz**

**Fre. = 2437 MHz**

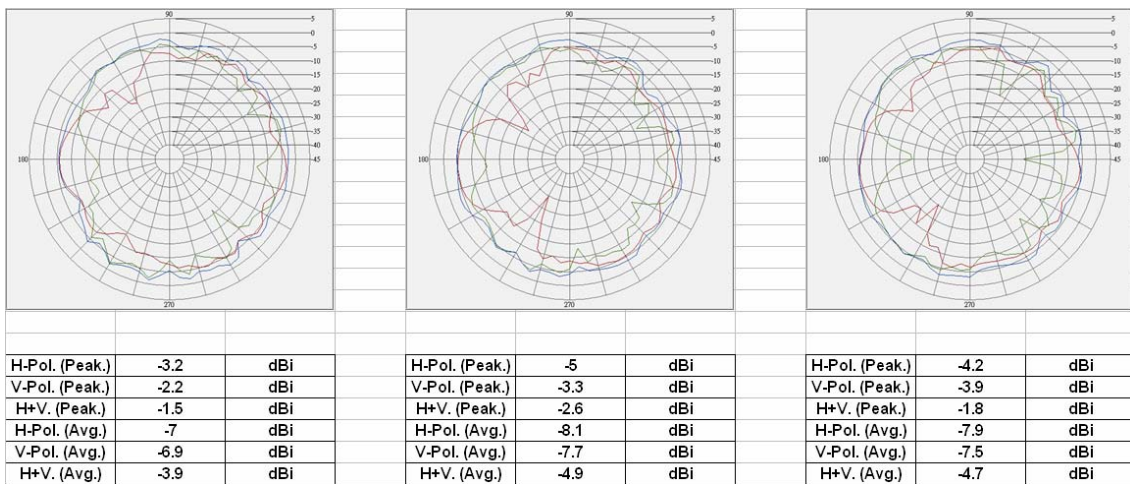
**Fre. = 2462 MHz**



**Fre. = 4900 MHz**

**Fre. = 5150 MHz**

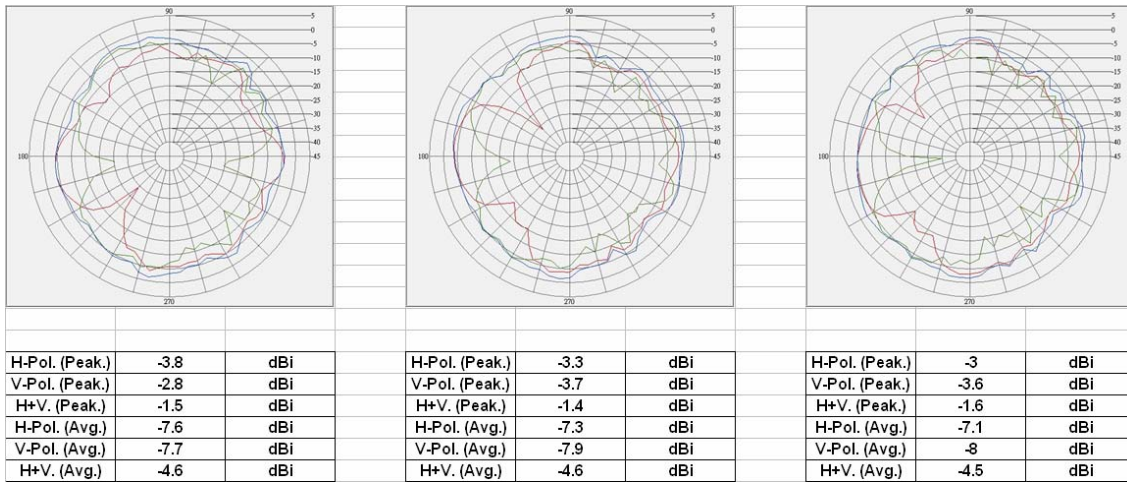
**Fre. = 5350 MHz**



**Fre. = 5470 MHz**

**Fre. = 5725 MHz**

**Fre. = 5875 MHz**



*The Most Appropriate Antenna for Your Best Design!*

**- Aux Antenna**

— H-Pol

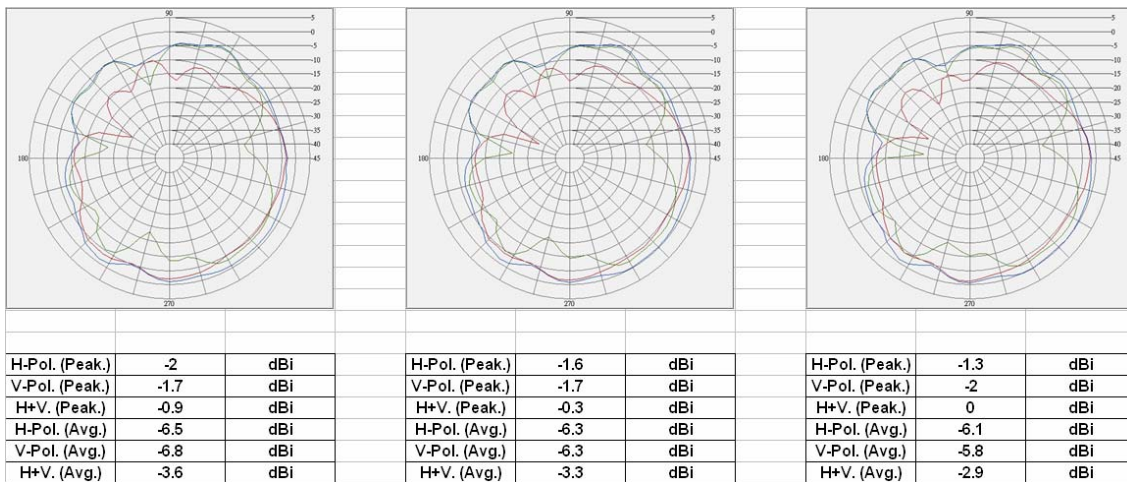
— V-Pol

— H+V

**Fre. = 2412 MHz**

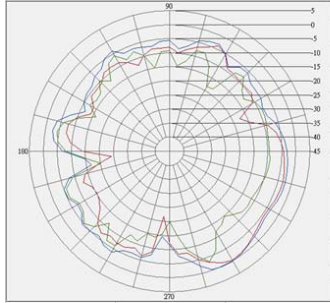
**Fre. = 2437 MHz**

**Fre. = 2462 MHz**



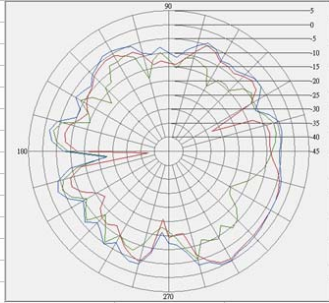


**Fre. = 4900 MHz**



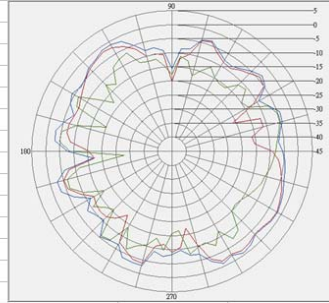
H-Pol. (Peak.)	-0.2	dBi
V-Pol. (Peak.)	-3.3	dBi
H+V. (Peak.)	0.1	dBi
H-Pol. (Avg.)	-6.7	dBi
V-Pol. (Avg.)	-9.1	dBi
H+V. (Avg.)	-4.8	dBi

**Fre. = 5150 MHz**



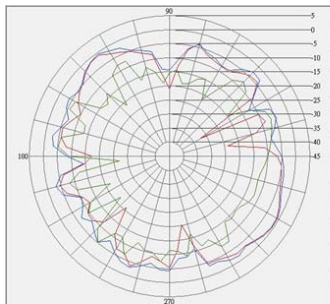
H-Pol. (Peak.)	-0.9	dBi
V-Pol. (Peak.)	-3.3	dBi
H+V. (Peak.)	-0.3	dBi
H-Pol. (Avg.)	-7.1	dBi
V-Pol. (Avg.)	-9.6	dBi
H+V. (Avg.)	-5.1	dBi

**Fre. = 5350 MHz**



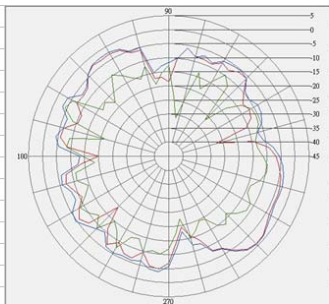
H-Pol. (Peak.)	-1.9	dBi
V-Pol. (Peak.)	-4.7	dBi
H+V. (Peak.)	-0.8	dBi
H-Pol. (Avg.)	-6.2	dBi
V-Pol. (Avg.)	-9.7	dBi
H+V. (Avg.)	-4.6	dBi

**Fre. = 5470 MHz**



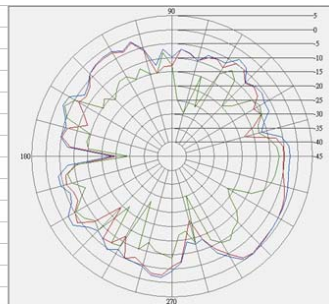
H-Pol. (Peak.)	-0.8	dBi
V-Pol. (Peak.)	-5.3	dBi
H+V. (Peak.)	-0.6	dBi
H-Pol. (Avg.)	-5.8	dBi
V-Pol. (Avg.)	-10.4	dBi
H+V. (Avg.)	-4.5	dBi

**Fre. = 5725 MHz**



H-Pol. (Peak.)	-1	dBi
V-Pol. (Peak.)	-4.3	dBi
H+V. (Peak.)	-0.9	dBi
H-Pol. (Avg.)	-6.7	dBi
V-Pol. (Avg.)	-12	dBi
H+V. (Avg.)	-5.6	dBi

**Fre. = 5875 MHz**



H-Pol. (Peak.)	-0.2	dBi
V-Pol. (Peak.)	-2.8	dBi
H+V. (Peak.)	0.1	dBi
H-Pol. (Avg.)	-5.5	dBi
V-Pol. (Avg.)	-10.4	dBi
H+V. (Avg.)	-4.3	dBi

**- MIMO Antenna**

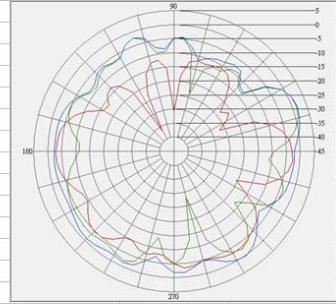
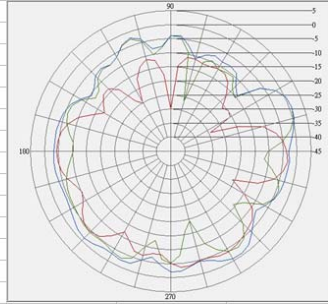
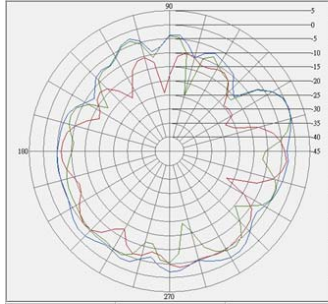
*The Most Appropriate Antenna for Your Best Design!*

— H-Pol — V-Pol — H+V

**Fre. = 2412 MHz**

**Fre. = 2437 MHz**

**Fre. = 2462 MHz**



H-Pol. (Peak.)	-3.1	dBi
V-Pol. (Peak.)	0.2	dBi
H+V. (Peak.)	0.2	dBi
H-Pol. (Avg.)	-8.4	dBi
V-Pol. (Avg.)	-6.5	dBi
H+V. (Avg.)	-4.3	dBi

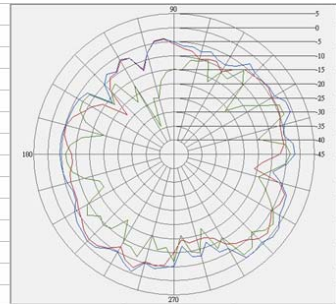
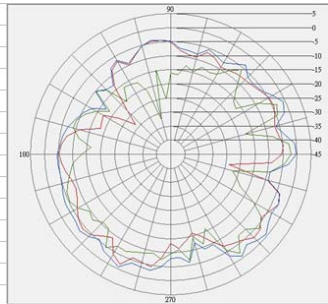
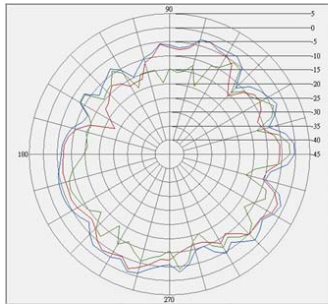
H-Pol. (Peak.)	-3.1	dBi
V-Pol. (Peak.)	0.8	dBi
H+V. (Peak.)	0.9	dBi
H-Pol. (Avg.)	-7.9	dBi
V-Pol. (Avg.)	-5.8	dBi
H+V. (Avg.)	-3.7	dBi

H-Pol. (Peak.)	-2.5	dBi
V-Pol. (Peak.)	1.6	dBi
H+V. (Peak.)	1.7	dBi
H-Pol. (Avg.)	-7.2	dBi
V-Pol. (Avg.)	-5.2	dBi
H+V. (Avg.)	-3.1	dBi

**Fre. = 4900 MHz**

**Fre. = 5150 MHz**

**Fre. = 5350 MHz**



H-Pol. (Peak.)	-1.6	dBi
V-Pol. (Peak.)	-2.1	dBi
H+V. (Peak.)	-0.5	dBi
H-Pol. (Avg.)	-7.1	dBi
V-Pol. (Avg.)	-8.7	dBi
H+V. (Avg.)	-4.9	dBi

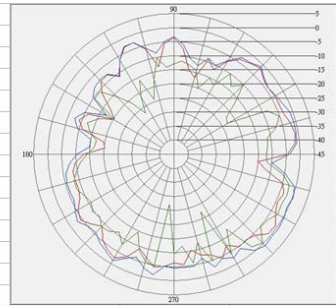
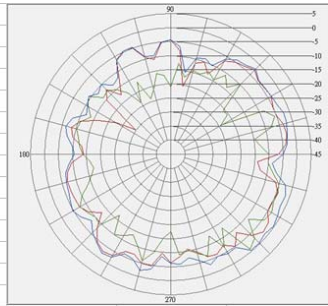
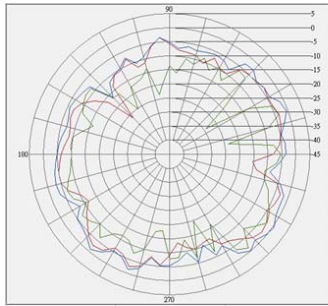
H-Pol. (Peak.)	-2	dBi
V-Pol. (Peak.)	-2	dBi
H+V. (Peak.)	-0.4	dBi
H-Pol. (Avg.)	-6.7	dBi
V-Pol. (Avg.)	-8.6	dBi
H+V. (Avg.)	-4.6	dBi

H-Pol. (Peak.)	-1.4	dBi
V-Pol. (Peak.)	-1.3	dBi
H+V. (Peak.)	0.9	dBi
H-Pol. (Avg.)	-6.1	dBi
V-Pol. (Avg.)	-8.4	dBi
H+V. (Avg.)	-4.1	dBi

**Fre. = 5470 MHz**

**Fre. = 5725 MHz**

**Fre. = 5875 MHz**



H-Pol. (Peak.)	-1.9	dBi
V-Pol. (Peak.)	-1.5	dBi
H+V. (Peak.)	0.4	dBi
H-Pol. (Avg.)	-6.4	dBi
V-Pol. (Avg.)	-8.6	dBi
H+V. (Avg.)	-4.3	dBi

H-Pol. (Peak.)	-1.9	dBi
V-Pol. (Peak.)	-1	dBi
H+V. (Peak.)	-0.3	dBi
H-Pol. (Avg.)	-6.5	dBi
V-Pol. (Avg.)	-9.6	dBi
H+V. (Avg.)	-4.8	dBi

H-Pol. (Peak.)	-0.9	dBi
V-Pol. (Peak.)	-0.5	dBi
H+V. (Peak.)	1.1	dBi
H-Pol. (Avg.)	-5.6	dBi
V-Pol. (Avg.)	-8.4	dBi
H+V. (Avg.)	-3.7	dBi