

## *Linbergh/Kapalua Antenna Regulatory Information*

**Description :** Triple-band Antenna(Main+Aux)  
**Compal P/N:** DC330005300  
DC330005310  
**Wistron NeWeb P/N:** 81.CA915.001  
81.CA915.002

### **Wistron NeWeb Corporation**

No. 10-1,Li-hsin Road I,  
Science-base Industrial Park,  
Hsinchu 300,Taiwan, R.O.C.  
Tel: 886-3-6667799#6545  
Fax: 886-3-6667711

Provided by Wistron NeWeb Corp.	Reviewed by Wistron NeWeb Corp.
<i>David Tau</i>	<i>Weili Cheng</i>

## I. Antenna Type

<b>Position</b>	<b>Main Antenna (Right-side Antenna)</b>	<b>Aux Antenna (Left-side Antenna)</b>
<b>Antenna Type</b>	<b>PIFA</b>	<b>PIFA</b>
<b>Material</b>	<b>Metal sheet</b>	<b>Metal sheet</b>

## II. Peak Gain and Average Gain

Antenna Gain		2G4 ISM (2.400 GHz - 2.4835 GHz)			U-NII (5.150 GHz - 5.350 GHz)			HyperLAN (5.470 GHz - 5.725 GHz)		
		2.40 GHz	2.45 GHz	2.50GHz	5.15 GHz	5.25 GHz	5.35 GHz	5.47 GHz	5.5975 GHz	5.725 GHz
MAIN	Peak dBi	2.34	2.39	2.07	2.18	3.29	2.54	1.82	2.29	1.35
	Avg dBi	-2.16	-2.35	-2.25	-3.66	-2.79	-3.13	-2.65	-2.13	-3.05
AUX	Peak dBi	0.38	1.32	0.97	3.12	3.39	3.47	2.65	3.38	2.63
	Avg dBi	-2.96	-3.07	-2.88	-3.60	-2.67	-2.43	-2.63	-2.28	-2.40

## III. Antenna Model Number

Model number: CA9-C

## IV. Manufacturing Info

Wistron NeWeb Corporation  
No. 10-1, Li-hsin Road I,  
Science-base Industrial Park,  
Hsinchu 300, Taiwan, R.O.C.

## V. Antenna Dimensions (Mechanical drawings)

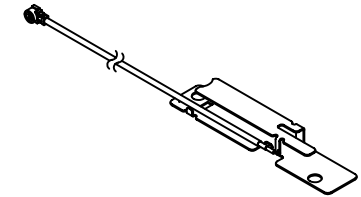
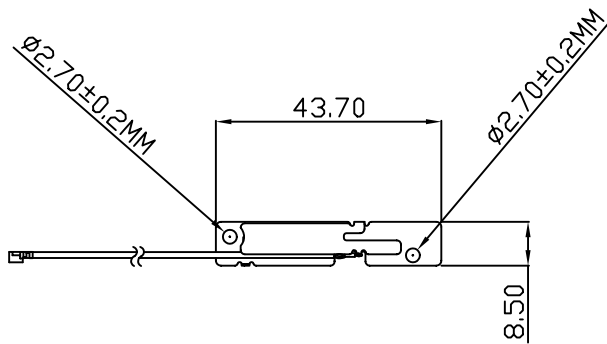
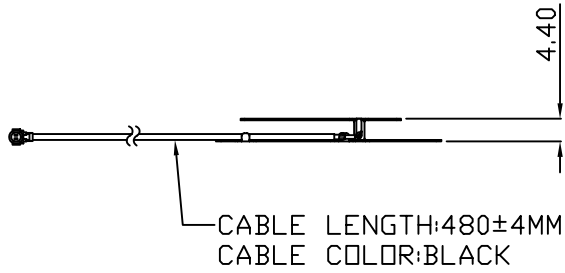
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PART NUMBER BLOCK	
PART NUMBER	REV

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN mm AND TOLERANCES ARE:				<b>wistron</b> 啟基科技股份有限公司 <small>No. 10-1, Li-hsin Road I, Science-based Industrial Park, Hsinchu 300, Taiwan, R.O.C. Tel: 886-3-6687799 Fax: 886-3-6687711</small>		
INTEGRAL DIMENSIONS ±0.2		ANGULAR DIMENSIONS ±1°				
1 PLACE DECIMAL ±0.1		HOLES UNDER Ø5.00 ±0.05		DWG TITLE		
2 PLACE DECIMALS ±0.05		MATERIAL: SEE NOTES		OUTLINE, Main, CA9-C		
FINISH: SEE NOTES		THIRD ANGLE PROJECTION		SIZE DWG NO.		
NEXT ASSY	USED ON	DRAWN	GUO CHANG	12/26/02	3A.CA945.112	
APPLICATION		ENGR	DAVID WS TAU	12/26/02		REV NO
		APVD			SCALE 1/1	SHEET 1 OF 1

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A

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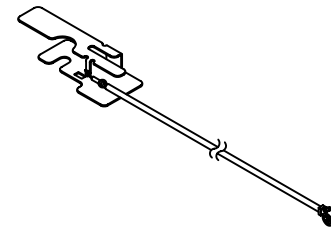
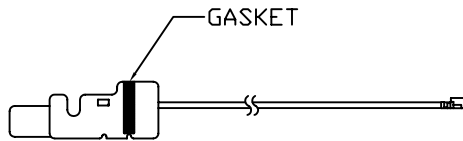
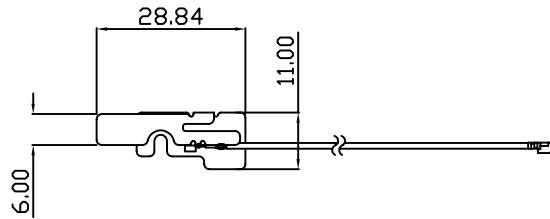
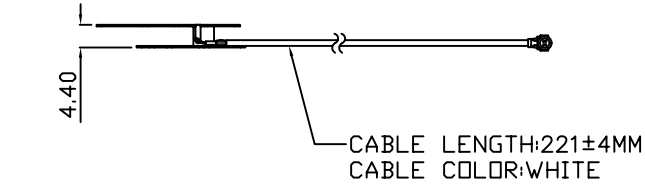
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PART NUMBER BLOCK	
PART NUMBER	REV

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



		UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN mm AND TOLERANCES ARE:				<b>wistron</b> 威基科技股份有限公司	
		INTEGRAL DIMENSIONS ±0.2		ANGULAR DIMENSIONS ±1°		No. 10-1, Li-hsin Road I, Science-based Industrial Park, Hsinchu 300, Taiwan, R.O.C.	
		1 PLACE DECIMAL ±0.1		HOLES UNDER Ø5.00 ±0.05		Tel: 886-3-6667799 Fax: 886-3-6667711	
		MATERIAL: SEE NOTES				DWG TITLE	
		FINISH: SEE NOTES				OUTLINE, AUX, CA9-C	
NEXT ASSY	USED ON	THIRD ANGLE PROJECTION	DRAWN	GUO CHANG	12/26/02	SIZE	DWG NO.
APPLICATION			ENGR	DAVID WS TAU	12/26/02	<b>A3</b>	3A.CA945.111
			APVD			SCALE	REV NO
						1/1	1 OF 1

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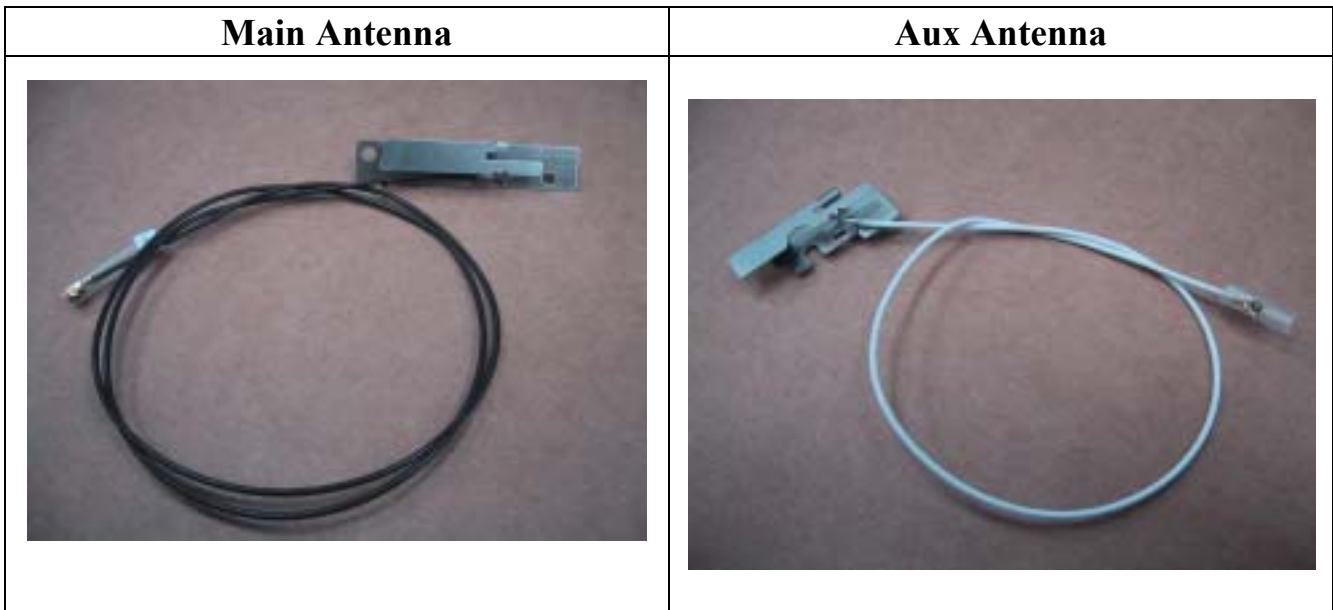
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A

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## VI. Pictures of Antennas



## VII. Cable Length

Left-side antenna: 221mm $\Phi$ 1.13mm  
 Right-side antenna: 480mm $\Phi$ 1.13mm  
 (From the center of connector to the end of cable)

## VIII. Cable Loss (including connector)

Unit: dB	2G4 band	U-NII band	HyperLAN band
221mm	1.03	1.34	1.44
480mm	1.81	2.61	2.77

## XI. Antenna Material

Main antenna	Aux antenna
<ol style="list-style-type: none"> <li>1. Stamped metal</li> <li>2. Junkosha cable and IPEX connector (Nissei cable and HRS connector)</li> <li>3. Sponge</li> <li>4. Tape</li> </ol>	<ol style="list-style-type: none"> <li>1. Stamped metal</li> <li>2. Junkosha cable and IPEX connector (Nissei cable and HRS connector)</li> <li>3. Sponge</li> <li>4. Tape</li> <li>5. Gasket e</li> </ol>

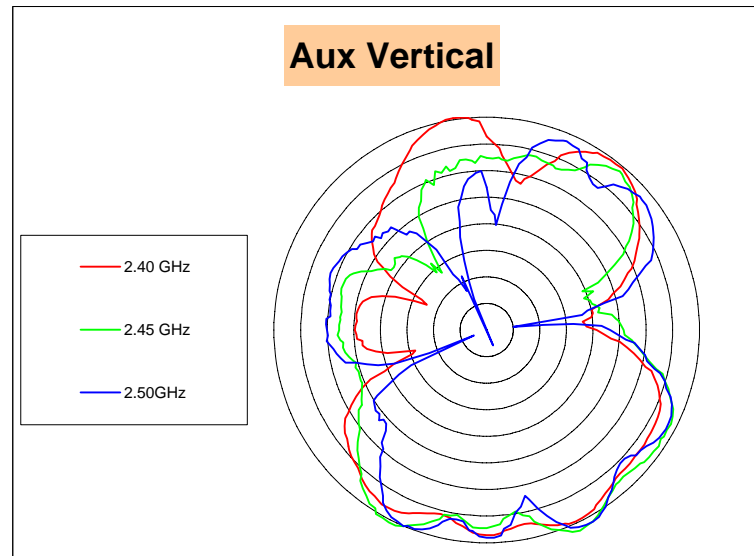
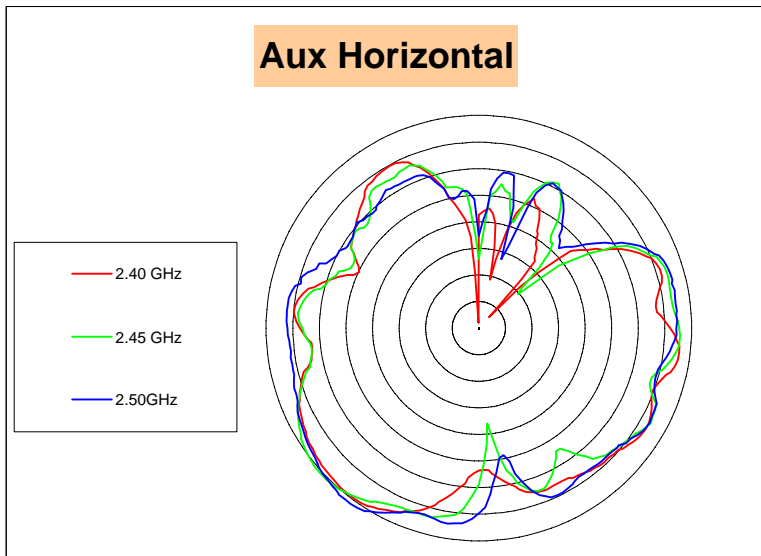
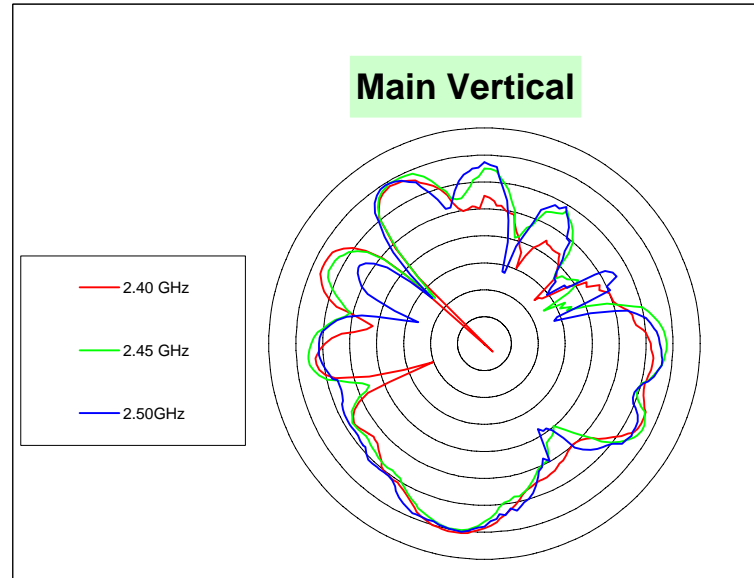
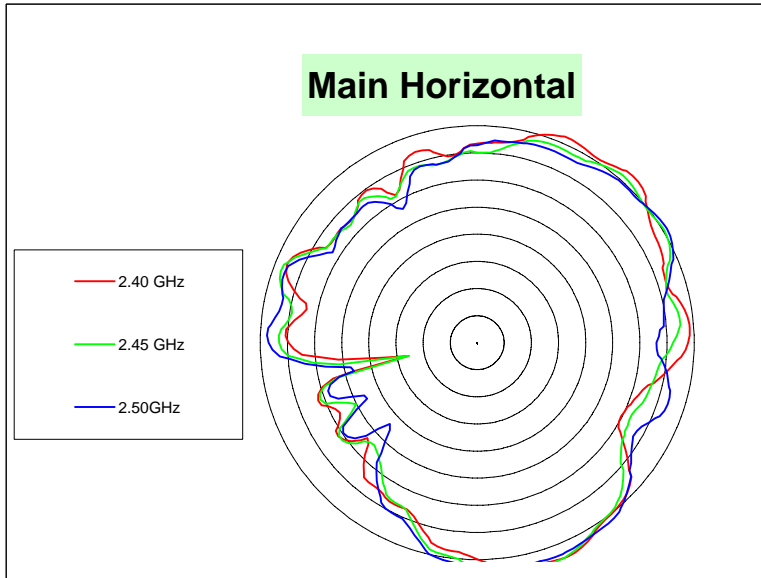
## XII. Connector Info (general description)

<b>Description (Cable)</b>	Inner Conductor: AWG#32(7/0.8), Silver plating annealed copper wire or its performance equivalent Dielectric core: D0.68mm Outer conductor: 16/4/0.05 D0.93mm, Silver plating annealed copper wire or its performance equivalent Jacket: D1.13mm		
<b>Requirements</b>	Characteristic impedance: 50(+2,-2)ohm Nominal capacitance: 97pF/m Conductor resistance of inner conductor at 293K(20 ): 520ohm/km MAX Insulation resistance: 1500mega-ohm.km MIN Dielectric withstand voltage: no breakdown at AC1000V for 1min.		
<b>Ratings</b>	Rated voltage: AC60Vrms Nominal characteristics impedance: 50ohm VSWR: 1.3MAX DC~3GHz, 1.7MAX 3~6GHz		
<b>Electric characteristics</b>	Contact resistance	10mA MAX(DC or 1000Hz)	Center contact 74mohm MAX. Outer contact 27mohm MAX.
	Insulation resistance	100V DC	500Mohm MIN
	Voltage proof	200V AC for 1 min. Current leakage 2mA MAX	No flashover or breakdown

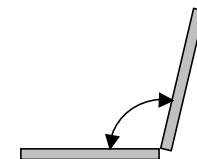
## XIII. Radiation Pattern

Platform: Linbergh PT4  
 Supplier: Wistron NeWeb coporation  
 Date: 2003/1/15

## 2G4 ISM (2.400 GHz - 2.4835 GHz) Antenna Radiation Patterns



2G4 ISM (2.400 GHz - 2.4835 GHz)			
CONFIG	FREQ GHz	Avg dBi	Pk dBi
Main Horz	2.4	-2.36	2.34
	2.45	-2.57	2.38
	2.5	-2.45	2.06
Main Vert	2.4	-9.95	0.86
	2.45	-9.78	-5.10
	2.5	-9.89	-4.89
Aux Horz	2.4	-5.85	-0.27
	2.45	-5.66	0.11
	2.5	-4.93	0.61
Aux Vert	2.4	-4.60	0.32
	2.45	-4.94	1.60
	2.5	-5.18	1.18

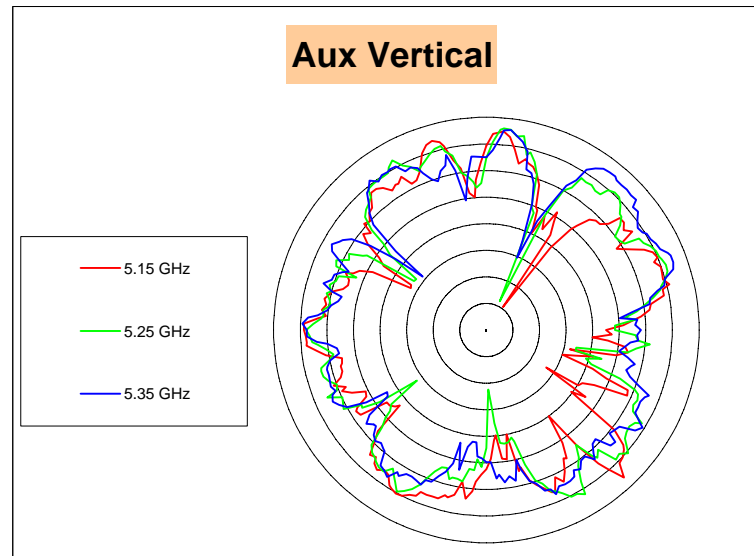
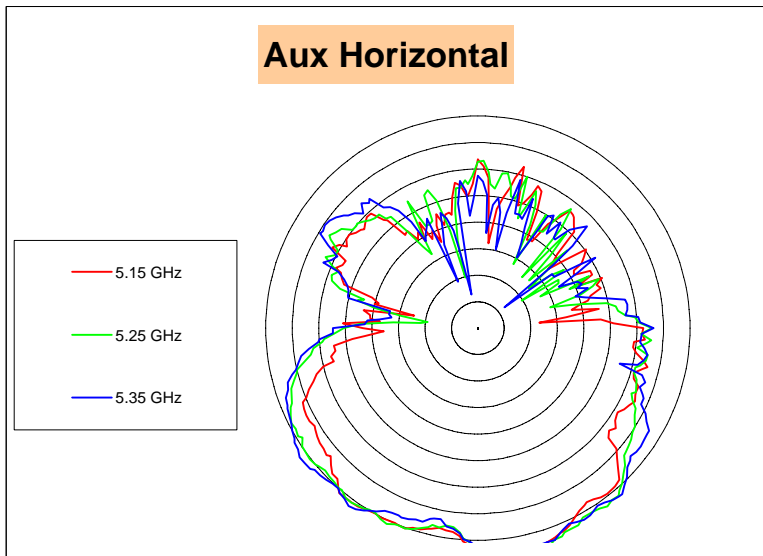
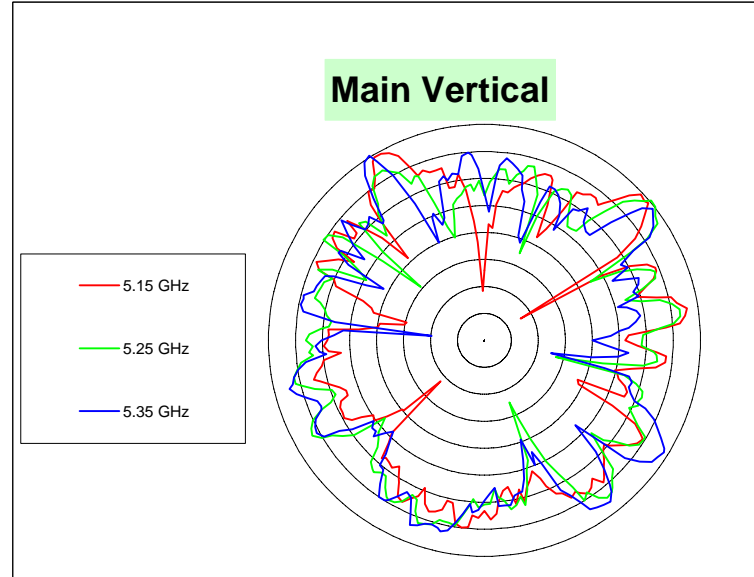
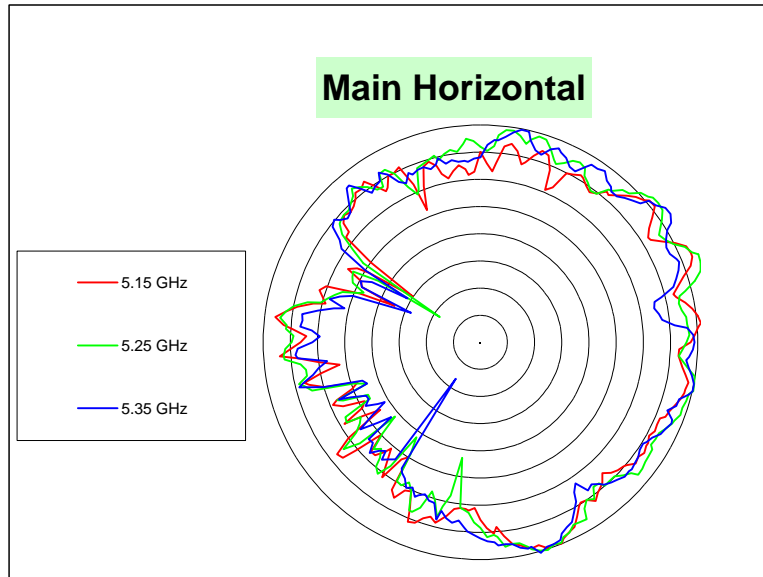


VSWR open = lid/keyboard angle 110°

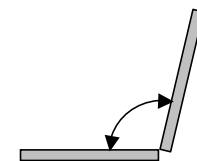
Note: The outer circle approximately represents the 0 dBi gain circle

Platform: Platform: Linbergh PT4  
 Supplier: Supplier: Wistron NeWeb coporation  
 Date: Date: 2003/1/15

## U-NII (5.150 GHz - 5.350 GHz) Antenna Radiation Patterns



U-NII (5.150 GHz - 5.350 GHz)			
CONFIG	FREQ GHz	Avg dBi	Pk dBi
Main Horz	5.15	-4.37	2.12
	5.25	-3.45	3.26
	5.35	-4.10	2.22
Main Vert	5.15	-7.77	-0.37
	5.25	-7.35	0.28
	5.35	-7.12	0.27
Aux Horz	5.15	-4.47	3.12
	5.25	-3.50	3.39
	5.35	-3.36	3.46
Aux Vert	5.15	-8.72	-2.07
	5.25	-8.03	-1.96
	5.35	-7.67	-2.09



VSWR open = lid/keyboard angle 110°

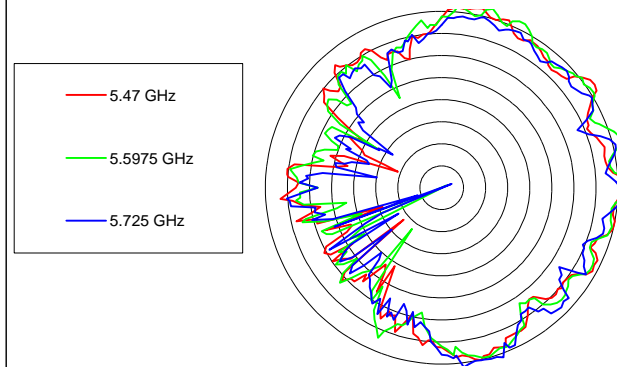
Note: The outer circle approximately represents the 0 dBi gain circle



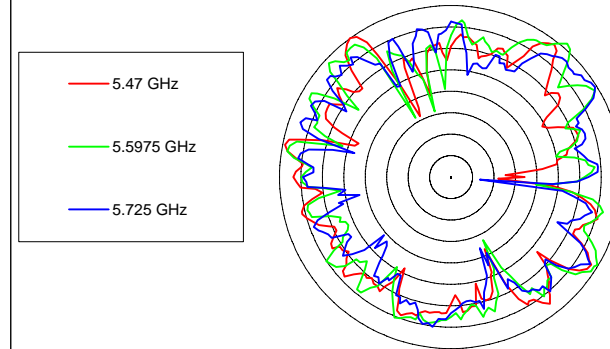
Platform: Platform: Linbergh PT4  
 Supplier: Supplier: Wistron NeWeb coporation  
 Date: Date: 2003/1/15

## HyperLAN (5.470 GHz - 5.725 GHz) Antenna Radiation Patterns

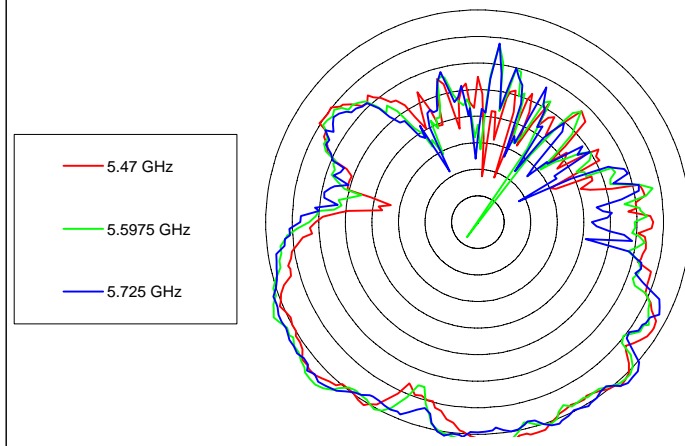
**Main Horizontal**



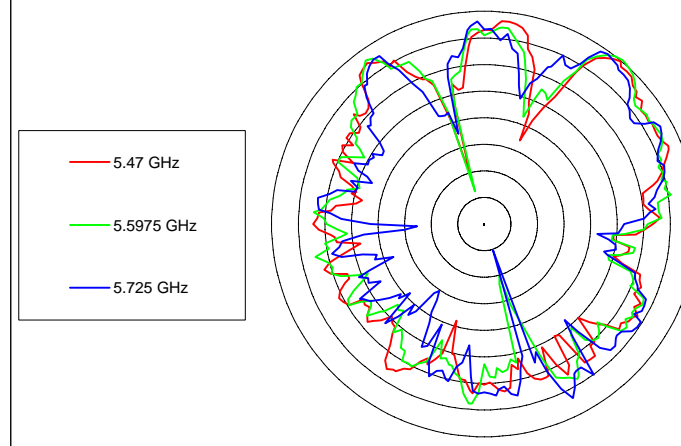
**Main Vertical**



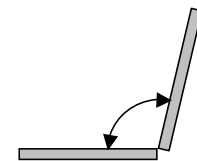
**Aux Horizontal**



**Aux Vertical**



HyperLAN (5.470 GHz - 5.725 GHz)			
CONFIG	FREQ GHz	Avg dBi	Pk dBi
Main Horz	5.47	-3.46	1.81
	5.5975	-3.12	2.28
	5.725	-4.01	1.35
Main Vert	5.47	-7.01	0.07
	5.5975	-5.74	1.29
	5.725	-6.83	-0.36
Aux Horz	5.47	-3.77	2.64
	5.5975	-3.34	3.38
	5.725	-3.37	2.63
Aux Vert	5.47	-7.30	-0.14
	5.5975	-7.31	0.30
	5.725	-7.71	-0.54



VSWR open = lid/keyboard angle 110°

Note: The outer circle approximately represents the 0 dBi gain circle