



**Wistron NeWeb Corporation**

# Pebble Antenna Regulatory Information

Document Revision: 1

Customer Name	Wistron Corporation
Customer P/N	25.90077.001 / 25.90078.001
WNC P/N	81.CAB15.001 / 81.CAB15.002
Description	Triple-band antenna for Pebble

Provided By Wistron NeWeb Corp	Reviewed By Wistron NeWeb Corp
Sophia Lin	Weili Cheng



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電話：(03)666-7799  
傳真：(03)666-7711

Release Date: 2003/3/20



## Wistron NeWeb Corporation

### 1. Antenna Model Number

Model number: CAB-A

### 2. Manufacturing Information

Wistron NeWeb Corporation



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

### 3. Antenna Configuration

	Main Antenna	Aux Antenna
Position	Left-side	Right-side
Antenna Type	PIFA	PIFA
Material	1. Stamped metal 2. Junkosha cable and IPEX connector (Or Nissei cable and HRS connector) 3. Sponge 4. Tape	1. Stamped metal 2. Junkosha cable and IPEX connector (Or Nissei cable and HRS connector) 3. Sponge 4. Tape
Cable Length #1	1.13 (dia.) x 273 mm	1.13 (dia.) x 325 mm

#1: Cable length is measured from the center of connector to the end of cable.

### 4. Pictures of Antennas

Main Antenna	Aux Antenna
	

### 5. Antenna Dimensions (Mechanical drawings)

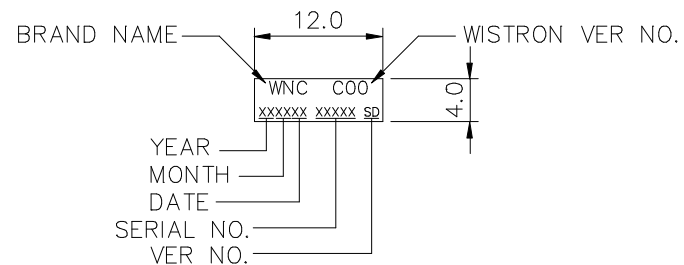
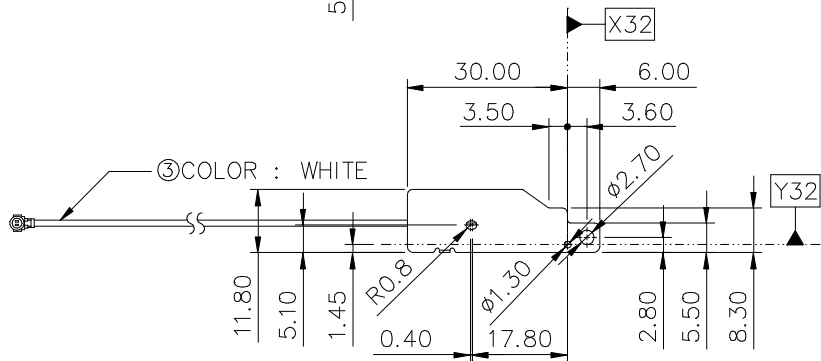
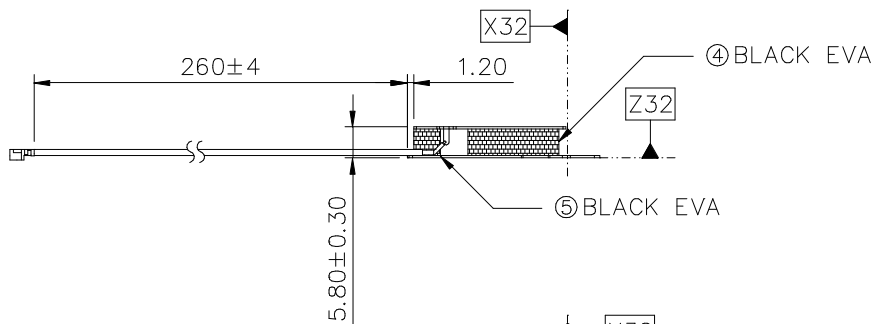
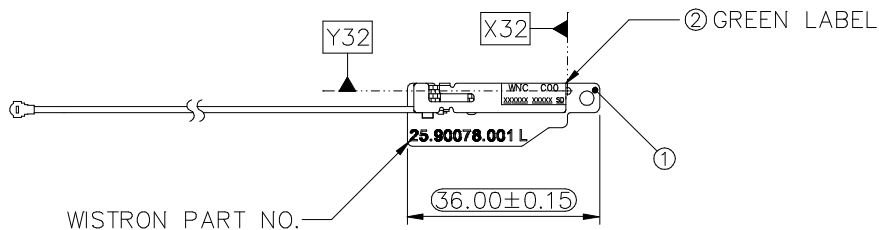
(See Next 2 Pages)

1

2

PART NUMBER BLOCK	
PART NUMBER	REV
57.CAB15.001	SD

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	SA	APPROVE SHEET	08/14/02	
	SB	APPROVE SHEET	11/14/02	
	SC	APPROVE SHEET	01/30/03	
	SD	APPROVE SHEET	02/26/03	



DETAIL OF LABEL

SCALE : 2/1

Frequency Specification		
Applicable Frequency (GHz)	2.4 - 2.484	5.15 - 5.725
V.S.W.R.	< 2.0	< 2.5

NOTES :

1. ARE CPK DIMENSIONS.

ITEM	PART NO.	DESCRIPTION	UNIT	QTY	SUPPLIER
5	3B.CAB80.111	BUFFER, CAB-A	EA	1	CHEVAL CO.
4	3B.CZ280.111	BUFFER, ANTENNA, CZ2-A	EA	1	CHEVAL CO.
3	50.CAB05.001	CABLE WN-S-1.13W-273mm-(2-2-1)	EA	1	CABLE : JUNKOSHA CO. CONNECTOR : IPEX CO.
2	45.CA513.002	LABEL, GREEN, 12x4, CA5-Q	EA	1	JENG LONG TECHNOLOGY CO.
1	3A.CAB45.111	ANTENNA, LEFT, CAB-A	EA	1	MUTUAL SUPPORT PRESS CO.

A

A

B

B

1

2

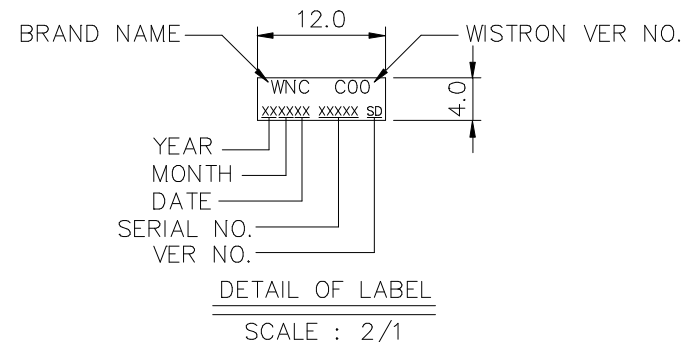
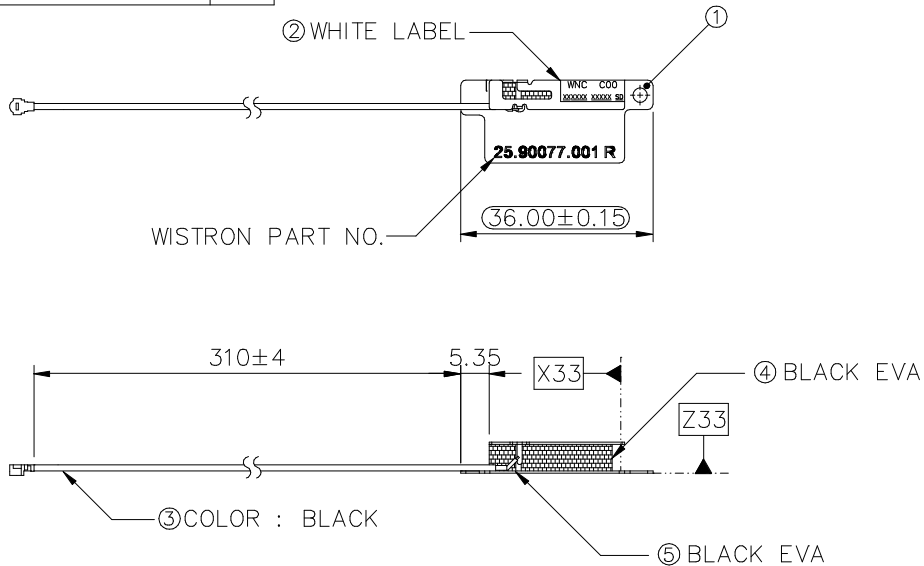
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN mm AND TOLERANCES ARE:		<b>Wistron</b> 啟碁科技股份有限公司	
INTEGRAL DIMENSIONS	±	Wistron NeWeb Corp. No. 10-1, Li-hsin Road I, Science-based Industrial Park, Hsinchu 300, Taiwan, R.O.C. Tel: 886-3-6667799 Fax: 886-3-6667711	
1 PLACE DECIMAL	±	DWG TITLE	
2 PLACE DECIMALS	±0.3	OUTLINE, MAIN, CAB-A	
MATERIAL: NA		THIRD ANGLE PROJECTION	DRAWN
FINISH: NA		ENGR	ARSENE YU
NEXT ASSY	USED ON	DATE	02/26/03
APPLICATION		DATE	02/26/03
		SIZE	DWG NO.
		APVD	57.CAB15.001
		SCALE	1/1
		SHEET	1 OF 1
		REV	SD

1

2

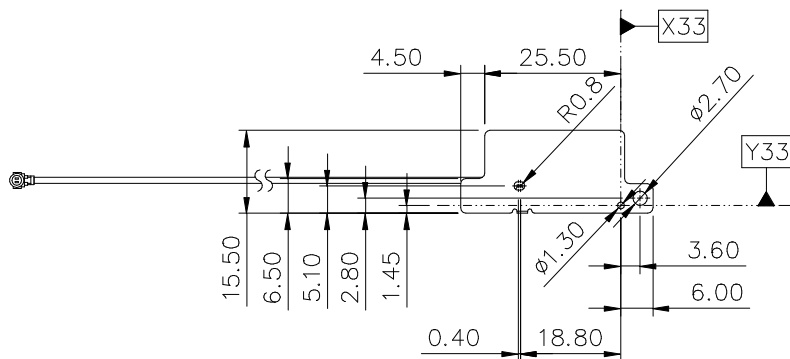
PART NUMBER BLOCK	
PART NUMBER	REV
57.CAB15.002	SD

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	SA	APPROVE SHEET	08/14/02	
	SB	APPROVE SHEET	11/14/02	
	SC	APPROVE SHEET	01/30/03	
	SD	APPROVE SHEET	02/26/03	



Frequency Specification		
Applicable Frequency (GHz)	2.4 - 2.484	5.15 - 5.725
V.S.W.R.	< 2.0	< 2.5

NOTES :  
1. ARE CPK DIMENSIONS.



ITEM	PART NO.	DESCRIPTION	UNIT	QTY	SUPPLIER
5	3B.CAB80.111	BUFFER, CAB-A	EA	1	CHEVAL CO.
4	3B.CZ280.111	BUFFER, ANTENNA, CZ2-A	EA	1	
3	50.CAB02.001	CABLE WN-S-1.13B-325MM-(2-2-1)	EA	1	CABLE : JUNKOSHA CO. CONNECTOR : IPEX CO.
2	45.CA513.001	LABEL, WHITE, 12x4, CA5-Q	EA	1	JENG LONG TECHNOLOGY CO.
1	3A.CAB45.112	ANTENNA, RIGHT, CAB-A	EA	1	MUTUAL SUPPORT PRESS CO.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN mm AND TOLERANCES ARE:		<b>啟基科技股份有限公司</b> Wistron NeWeb Corp. No. 10-1, Li-hsin Road I, Science-based Industrial Park, Hsinchu 300, Taiwan, R.O.C. Tel: 886-3-6667799 Fax: 886-3-6667711	
INTEGRAL DIMENSIONS	±		
1 PLACE DECIMAL	±	ANGULAR DIMENSIONS	± 1°
2 PLACE DECIMALS	± 0.3	HOLES UNDER φ5.00	± 0.05
MATERIAL: NA		DWG TITLE	
FINISH: NA		OUTLINE, AUX, CAB-A	
THIRD ANGLE PROJECTION	DRAWN	ARSENE YU	02/26/03
	ENGR	ARSENE YU	02/26/03
	APVD		
NEXT ASSY	USED ON	SIZE	DWG NO.
		A3	57.CAB15.002
APPLICATION		SCALE	1/1
		SHEET	1 OF 1

1

2



## Wistron NeWeb Corporation

### 6. Antenna Gain

Antenna Gain dBi @ GHz		2G4 ISM band			U-NII band			HyperLAN band		
		2.40	2.45	2.50	5.15	5.25	5.35	5.47	5.5975	5.725
MAIN	Peak Gain	0.01	2.25	2.59	4.09	3.44	3.97	3.65	3.03	1.81
	Avg. Gain	-3.71	-2.86	-3.84	-3.50	-2.90	-3.39	-2.81	-3.90	-3.32
AUX	Peak Gain	0.34	0.86	0.82	1.80	0.61	2.64	3.85	3.89	2.53
	Avg. Gain	-3.27	-3.18	-2.92	-3.50	-3.53	-1.97	-2.90	-2.73	-4.69

### 7. Cable Loss (including connector)

Unit: dBm	2G4 band	U-NII band	HyperLAN band
273 mm (MAIN)	-1.13	-1.69	-1.74
325 mm (AUX)	-1.29	-1.94	-2.00

### 8. Connector Info (general description)

Description (Cable)	Inner Conductor: AWG#32(7/0.8), Silver plating annealed copper wire Dielectric core: D0.68mm Outer conductor: 16/4/0.05 D0.93mm, Silver plating annealed copper wire Jacket: D1.13mm		
Requirements	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.		
Ratings	Rated voltage: AC60Vrms Nominal characteristics impedance: 50ohm VSWR: 1.3MAX DC~3GHz, 1.7MAX 3~6GHz		
Electric characteristics	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

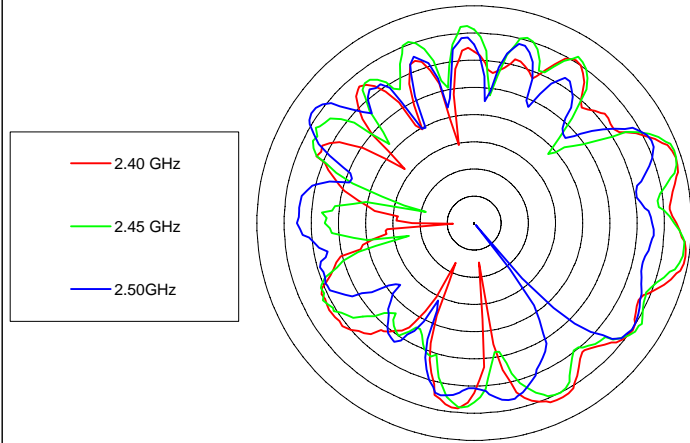
### 9. Radiation Pattern

(See the following Pages)

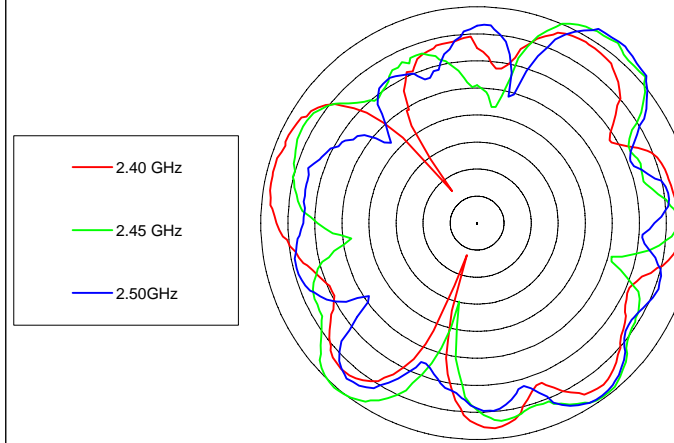
Platform: Pebble Configuration:1  
 Supplier: Wistron NeWeb coporation  
 Date: 2003/3/17

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

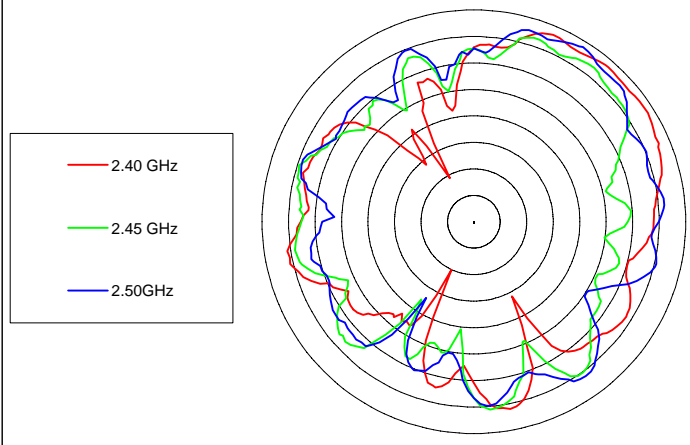
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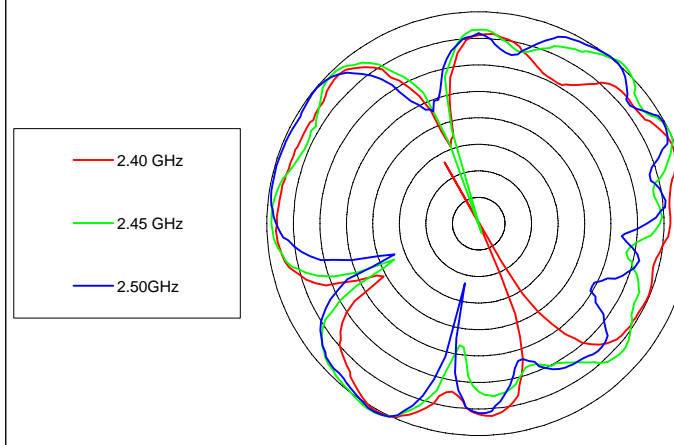
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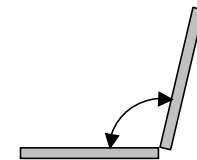
### Aux Horizontal



### Aux Vertical



2G4 ISM (2.400 GHz - 2.4835 GHz)			
CONFIG	FREQ GHz	Avg dBi	Pk dBi
Main Horz	2.4	-7.24	-0.63
	2.45	-7.12	-0.82
	2.5	-8.99	-3.82
Main Vert	2.4	-4.70	-0.94
	2.45	-3.78	2.25
	2.5	-4.45	2.59
Aux Horz	2.4	-6.46	-1.25
	2.45	-8.01	-3.17
	2.5	-6.57	-1.10
Aux Vert	2.4	-4.33	0.34
	2.45	-3.64	0.80
	2.5	-3.77	0.59



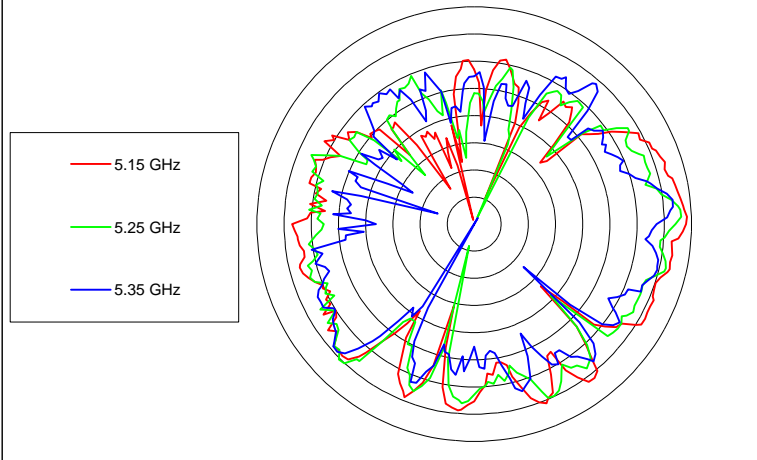
VSWR open = lid/keyboard angle 110°

Note: The outer circle approximately represents the 0 dBi gain circle  
 Each circle with 5 dBi difference (Max=0 dBi and Min=-40 dBi)

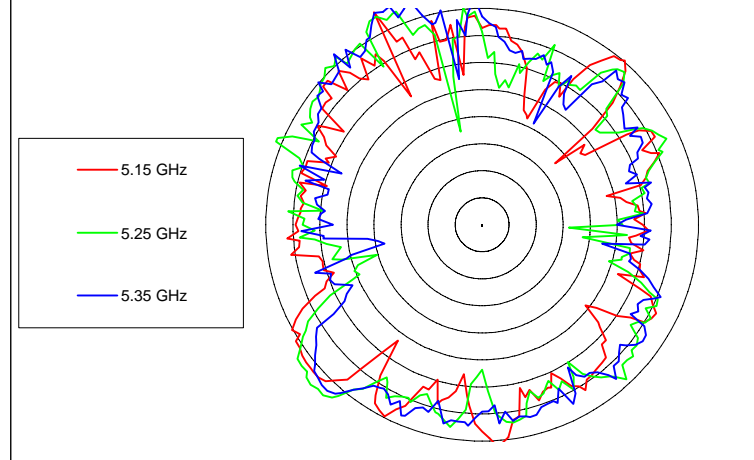
Platform: Pebble Configuration:1  
 Supplier: Wistron NeWeb coporation  
 Date: 2003/3/17

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

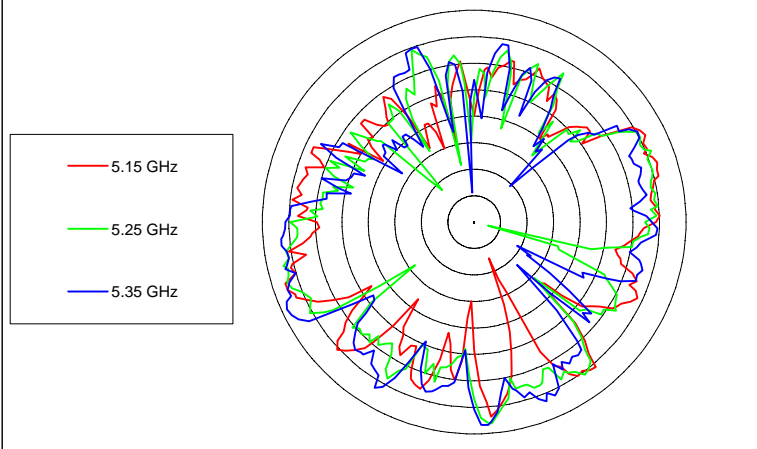
**Main Horizontal**



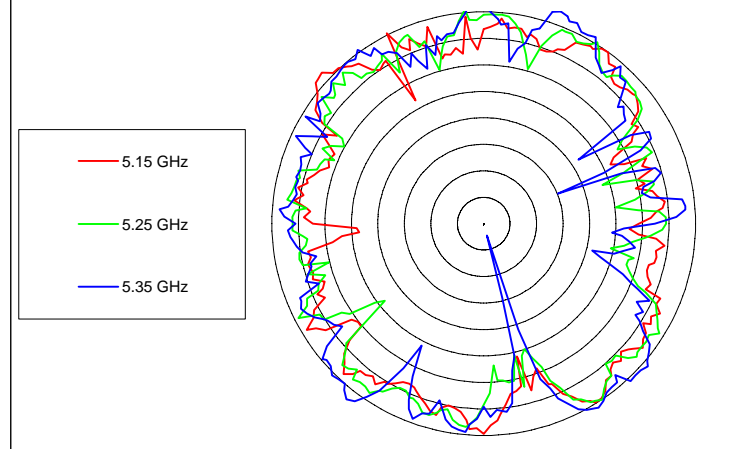
**Main Vertical**



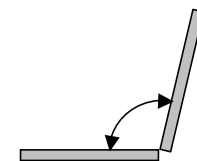
**Aux Horizontal**



**Aux Vertical**



U-NII (5.150 GHz - 5.350 GHz)			
CONFIG	FREQ GHz	Avg dBi	Pk dBi
Main Horz	5.15	-7.69	-0.83
	5.25	-8.99	-1.86
	5.35	-10.42	-3.19
Main Vert	5.15	-4.57	4.09
	5.25	-3.54	3.38
	5.35	-3.74	3.96
Aux Horz	5.15	-8.70	-2.53
	5.25	-8.62	-1.89
	5.35	-7.86	-0.98
Aux Vert	5.15	-4.01	1.80
	5.25	-3.95	0.61
	5.35	-2.66	2.64



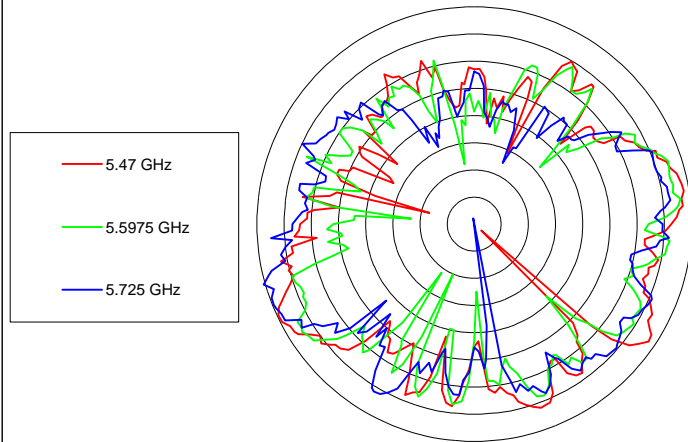
VSWR open = lid/keyboard angle 110°

Note: The outer circle approximately represents the 0 dBi gain circle  
 Each circle with 5 dBi difference (Max=0 dBi and Min=-40 dBi)

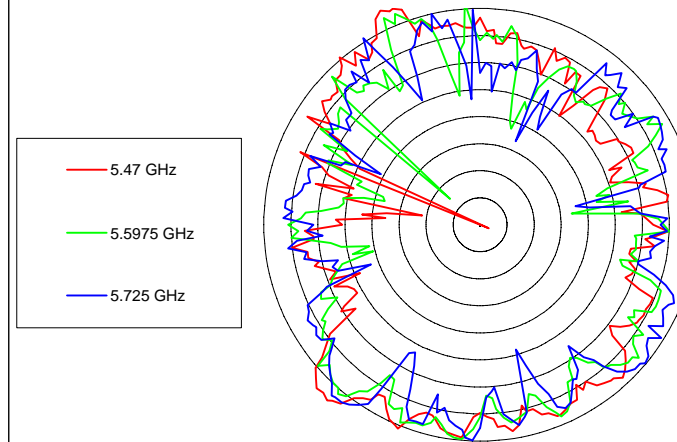
Platform: Pebble Configuration:1  
 Supplier: Wistron NeWeb coporation  
 Date: 2003/3/17

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

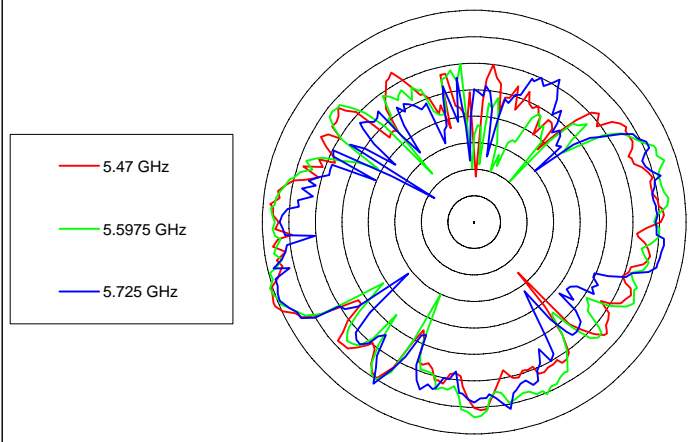
**Main Horizontal**



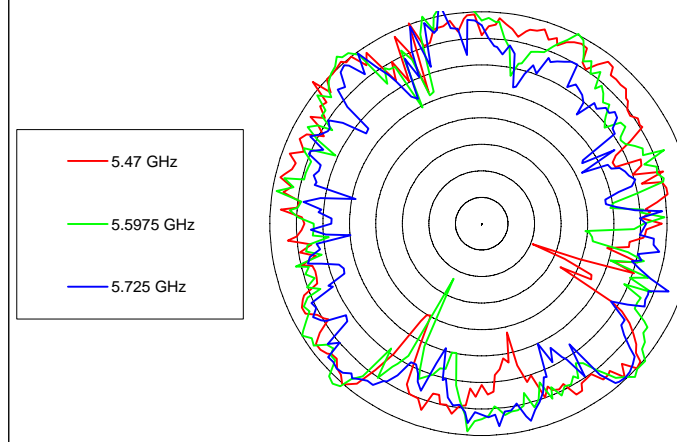
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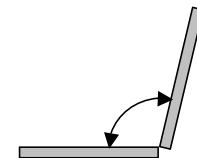
**Aux Horizontal**



**Aux Vertical**



HyperLAN (5.470 GHz - 5.725 GHz)			
CONFIG	FREQ GHz	Avg dBi	Pk dBi
Main Horz	5.47	-7.04	-0.21
	5.5975	-8.56	-1.69
	5.725	-7.66	0.32
Main Vert	5.47	-3.72	3.65
	5.5975	-5.00	2.17
	5.725	-4.51	1.81
Aux Horz	5.47	-7.26	0.86
	5.5975	-6.73	0.52
	5.725	-8.03	-0.35
Aux Vert	5.47	-3.93	1.66
	5.5975	-3.75	3.89
	5.725	-5.58	2.53



VSWR open = lid/keyboard angle 110°

Note: The outer circle approximately represents the 0 dBi gain circle  
 Each circle with 5 dBi difference (Max=0 dBi and Min=-40 dBi)