P2 Antenna Regulatory Information

Description : **Triple-band Antenna(Main+Aux)**
Quanta Computer Inc. P/N: **DQ6B1500106**
DQ610225001

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.**
Patrick Lee	***Weili Cheng***

I. Antenna Type

Position	Main Antenna (Left-side Antenna)	Aux Antenna (Right-side Antenna)
Antenna Type	PIFA	PIFA
Material	Metal sheet	Metal sheet

II. Peak Gain

Antenna Gain		2G4 ISM (2.400 GHz - 2.4835 GHz)			U-NII (5.150 GHz - 5.350 GHz)			HyperLAN (5.470 GHz - 5.875 GHz)		
		2.4GHz	2.45GHz	2.5GHz	4.9GHz	5.125GHz	5.35GHz	5.47GHz	5.673GHz	5.875GHz
MAIN	Peak dBi	1.51	0.75	0.42	0.8	1.58	2.51	4.13	3.56	2.55
	Avg dBi	-2.45	-2.05	-2.29	-3	-3.24	-2.61	-2.21	-1.64	-2.75
AUX	Peak dBi	1.48	-0.39	0.85	0.77	0.14	0.35	1.99	3.73	4.49
	Avg dBi	-1.81	-2.66	-2.12	-3.37	-4.12	-3.53	-2.97	-0.75	-1.67

III. Antenna Model Number

Model number: EBB-Q

IV. Manufacturing Info

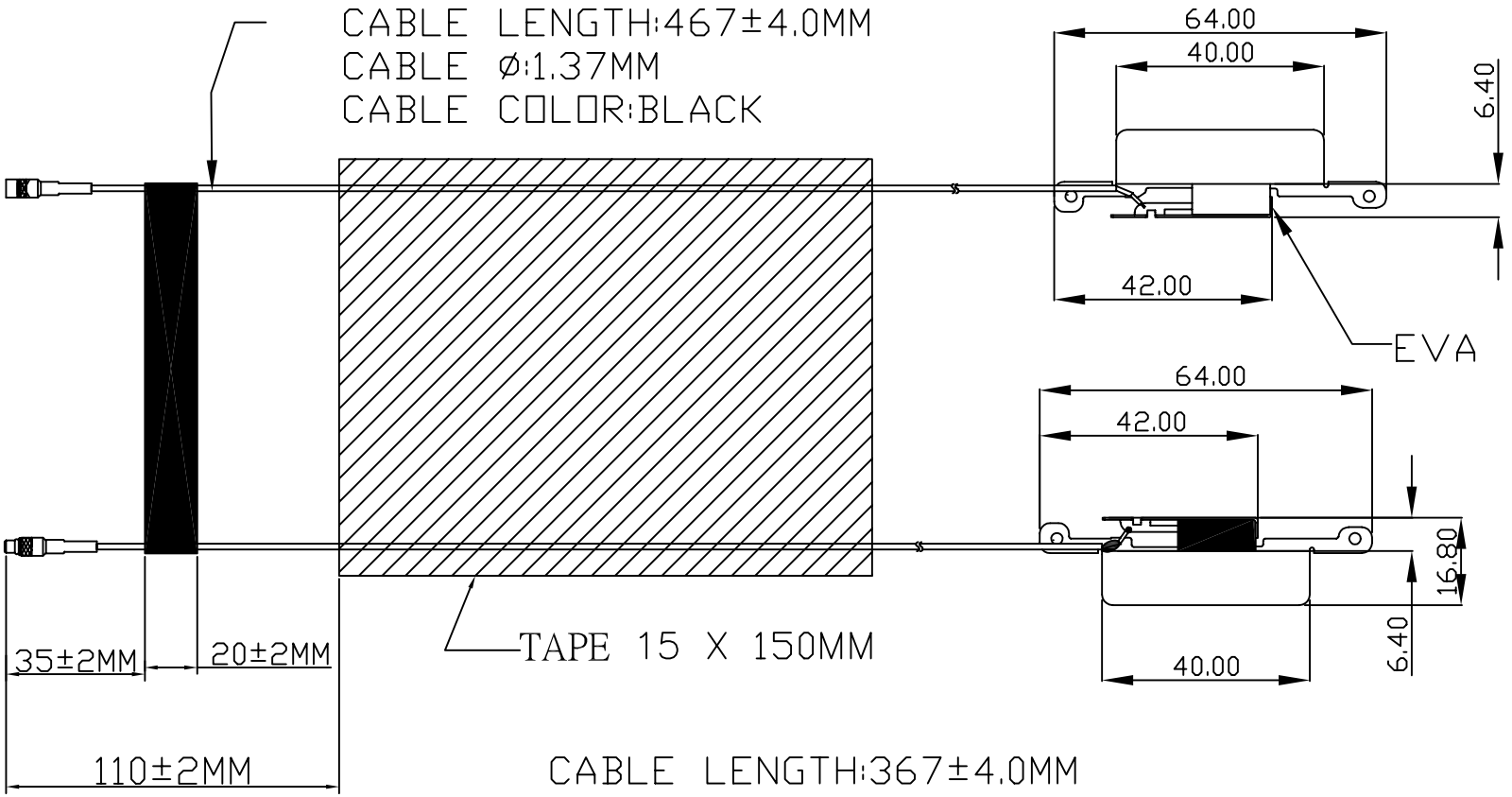
Wistron NeWeb Corporation
No. 10-1,Li-hsin Road I,
Science-base Industrial Park,
Hsinchu 300,Taiwan, R.O.C.

V. Antenna Dimensions (Mechanical drawings)

(See Next 2 Pages)

PART NUMBER BLOCK	
PART NUMBER	REV
81.EBB15.001	

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN mm AND TOLERANCES ARE:

INTEGRAL DIMENSIONS	± 0.2	ANGULAR DIMENSIONS	± 1°
1 PLACE DECIMAL	± 0.1	HOLES UNDER ø5.00	± 0.05
2 PLACE DECIMALS	± 0.05		

MATERIAL: SEE NOTES

FINISH: SEE NOTES

THIRD ANGLE PROJECTION			
DRAWN	GUO CHANG	05/22/03	
ENGR	PATRICK	07/30/03	
APVD			

wistron 啟碁科技股份有限公司
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

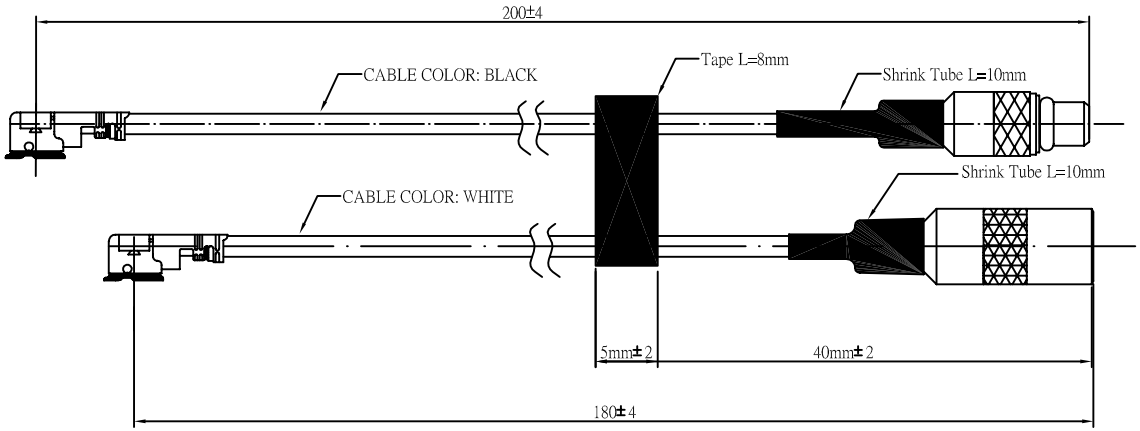
DWG TITLE: ANTENNA DRAWING

SIZE	DWG NO.	REV
A3	P2, ANTENNA	X5

SCALE 1/1 SHEET 1 OF 1

PART NUMBER BLOCK	
PART NUMBER	REV
81.EBB15.003	

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN mm AND TOLERANCES ARE:
INTEGRAL DIMENSIONS ± 0.2
1 PLACE DECIMAL ± 0.1
2 PLACE DECIMALS ± 0.05
ANGULAR DIMENSIONS ± 1°
HOLES UNDER ø5.00 ± 0.05

MATERIAL: SEE NOTES

FINISH: SEE NOTES

THIRD ANGLE PROJECTION

DRAWN	PATRICK LEE	07/18/03
ENGR	PATRICK LEE	07/18/03
APVD		

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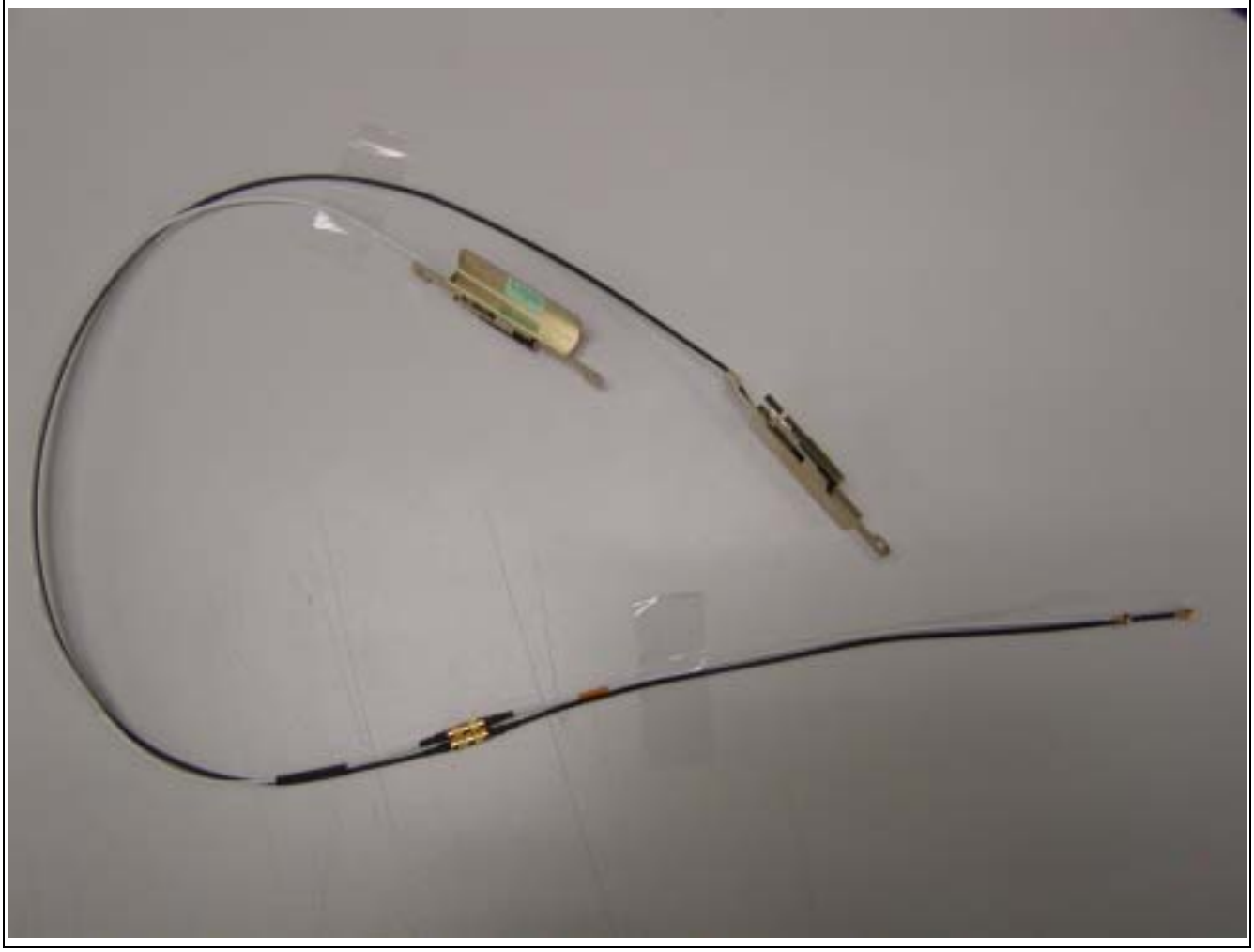
DWG TITLE: EBB-Q MMCX-IPEX DRAWING

SIZE	DWG NO.	REV
A3	NO	X2

SCALE 1/1 SHEET 1 OF 1

VI. Pictures of Antennas

Main Antenna	Aux Antenna
	



VII. Cable Length

Left-side antenna: 367mmΦ1.37mm + 180mmΦ1.37mm Right-side antenna: 467mmΦ1.37mm + 200mmΦ1.37mm (From the center of connector to the end of cable)

VIII. Cable Loss (including connector)

Unit: dB	2G4 band	U-NII band	HyperLAN band
367mm+180mm	1.78	3.50	3.73
467mm+200mm	2.25	3.68	4.13

IX. Antenna Material

Main antenna	Aux antenna
1. Stamped metal 2. Junkosha cable and IPEX connector (Nissei cable and HRS connector) 3. Sponge 4. Tape 5. MMCX connector (Plug and Jack)	1. Stamped metal 2. Junkosha cable and IPEX connector (Nissei cable and HRS connector) 3. Sponge 4. Tape 5. MMCX connector (Jack and Plug)

X. Connector Info (general description)

X.1 MiniPCI connector

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

X.2 MMCX connector

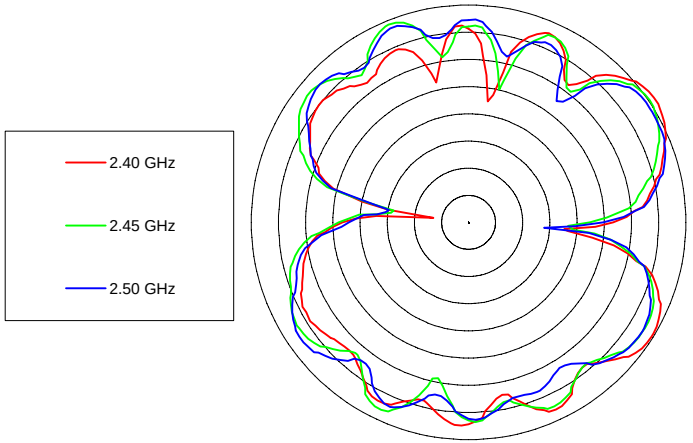
Engineering data	Nominal Impedance: 50Ohms Frequency Range: DC-6GHz Voltage Rating: 170Vrms(Sea level 70000 Feet) Temperature Rating: -55℃ to +155℃
Electrical	Insulation Resistance: 1000Megaohms Dielectric Withstanding Voltage: 500Vrms Contact Resistance: Center Contact initial: 5.0 Milliohms Outer Contact: 2.5 Milliohms Outer Cable Conductor to Body: N/A Voltage Standing Wave Ratio: 1.12@6GHz, 1.08@2.5GHz, 1.04@1GHz RF leakage: 60dB
Mechanical	Force to Engage: Axial Force: 3.4 lb MAX Force to Disengage: Axial Force: 1.4 – 3.4 lb Connector Durability: 500 Cycles Center Contact Retention: Axial Force 2.3 lb

XI. Antenna Pattern

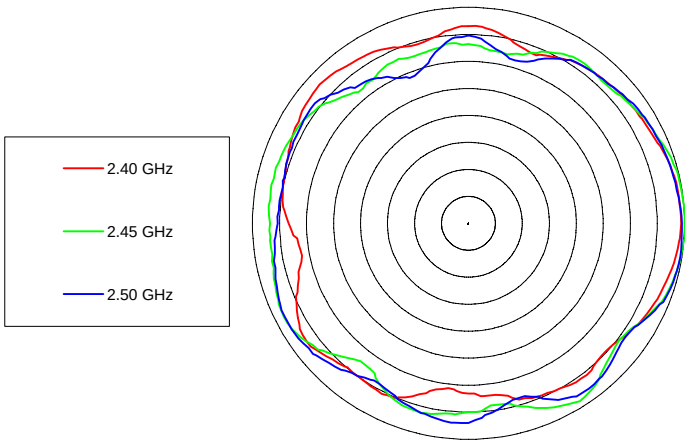
Platform: P2-001
Supplier: Wistron NeWeb coporation
Date: 2003/7/24

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

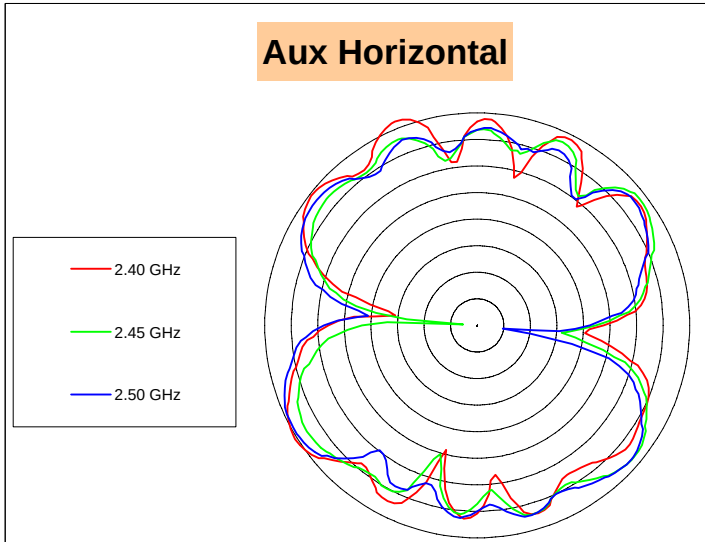
Main Horizontal



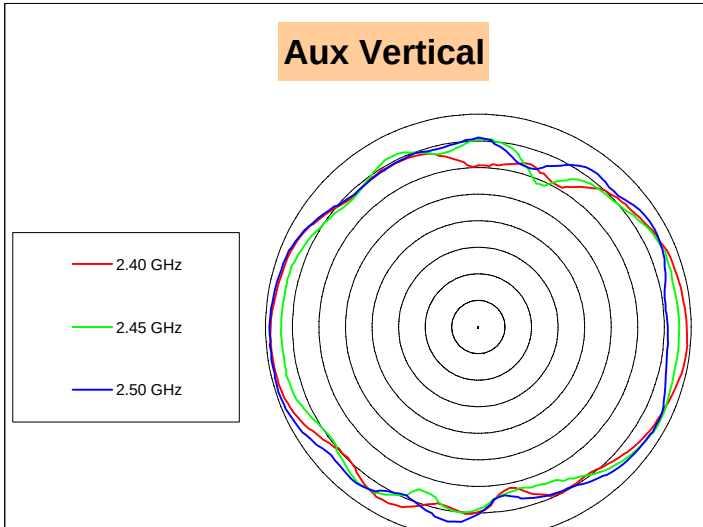
Main Vertical



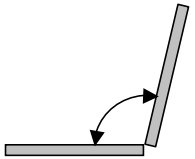
Aux Horizontal



Aux Vertical



2G4 ISM (2.400 GHz - 2.4835 GHz)			
CONFIG	FREQ GHz	Avg dBi	Pk dBi
Main Horz	2.4	-4.63	1.15
	2.45	-4.48	0.23
	2.5	-4.72	-0.54
Main Vert	2.4	-3.95	-0.61
	2.45	-3.40	0.15
	2.5	-3.58	-0.31
Aux Horz	2.4	-3.95	1.40
	2.45	-4.74	-1.22
	2.5	-4.43	-0.37
Aux Vert	2.4	-3.59	-0.59
	2.45	-4.24	-1.53
	2.5	-3.42	-0.49



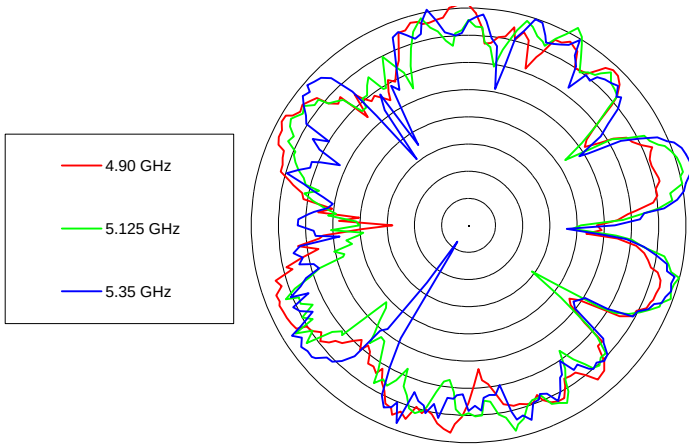
VSWR open = lid/keyboard angle 110°

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

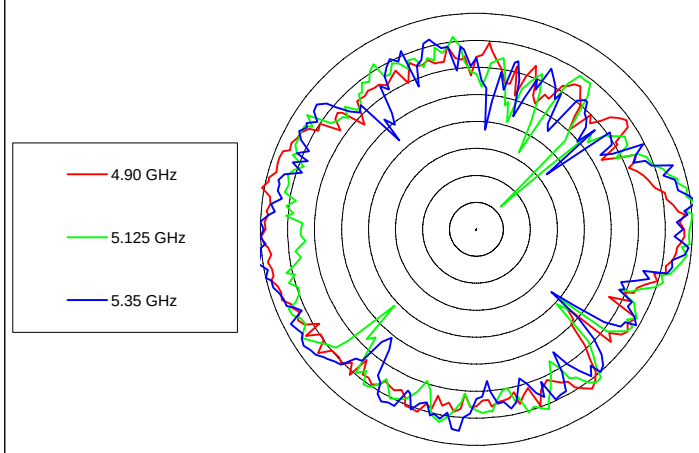
Platform: P2-001
Supplier: Wistron NeWeb coporation
Date: 2003/7/24

U-NII (4.90 GHz - 5.350 GHz) Antenna Radiation Patterns

Main Horizontal

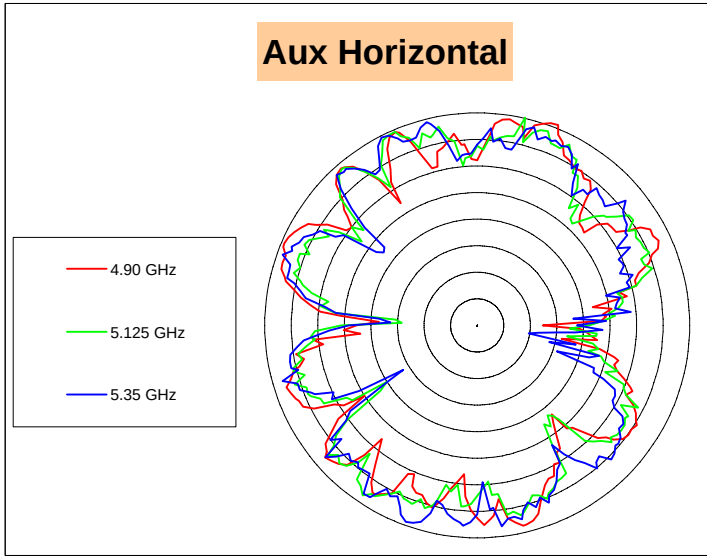


Main Vertical

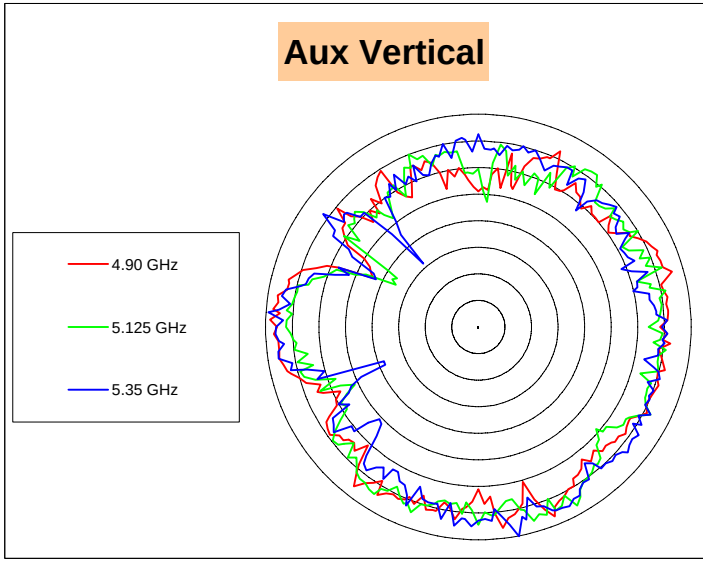


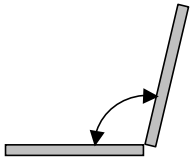
U-NII (4.90 GHz - 5.350 GHz)			
CONFIG	FREQ GHz	Avg dBi	Pk dBi
Main Horz	4.9	-4.75	0.79
	5.125	-4.91	1.58
	5.35	-4.43	2.40
Main Vert	4.9	-5.29	0.49
	5.125	-5.60	0.65
	5.35	-4.93	1.10
Aux Horz	4.9	-5.06	0.65
	5.125	-5.80	0.11
	5.35	-5.21	-0.31
Aux Vert	4.9	-5.84	-0.83
	5.125	-6.35	-1.61
	5.35	-5.87	0.04

Aux Horizontal



Aux Vertical





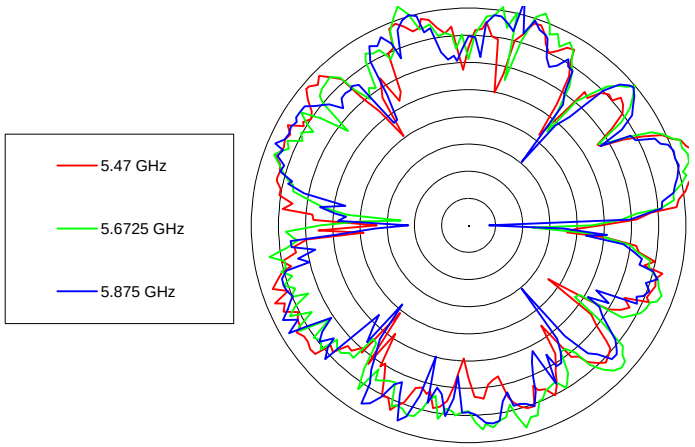
VSWR open = lid/keyboard angle 110°

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

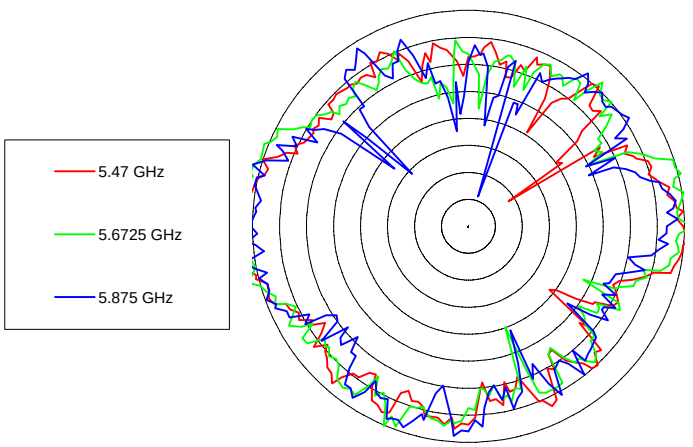
Platform: P2-001
Supplier: Wistron NeWeb coporation
Date: 2003/7/24

HyperLAN (5.470 GHz - 5.875 GHz) Antenna Radiation Patterns

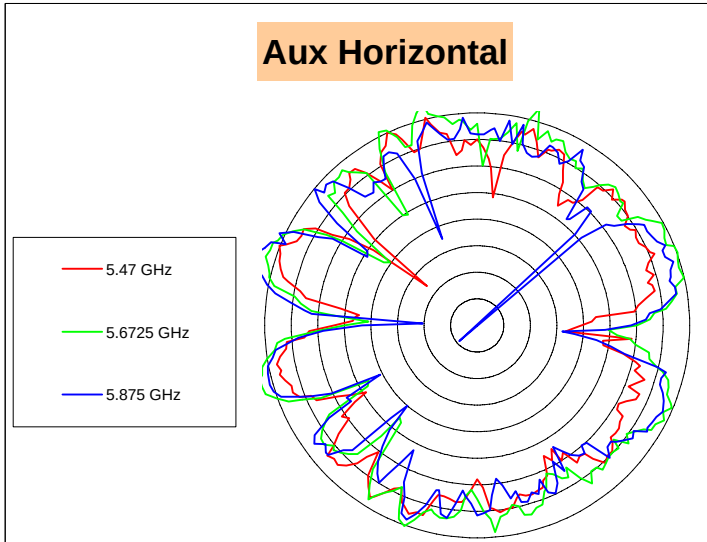
Main Horizontal



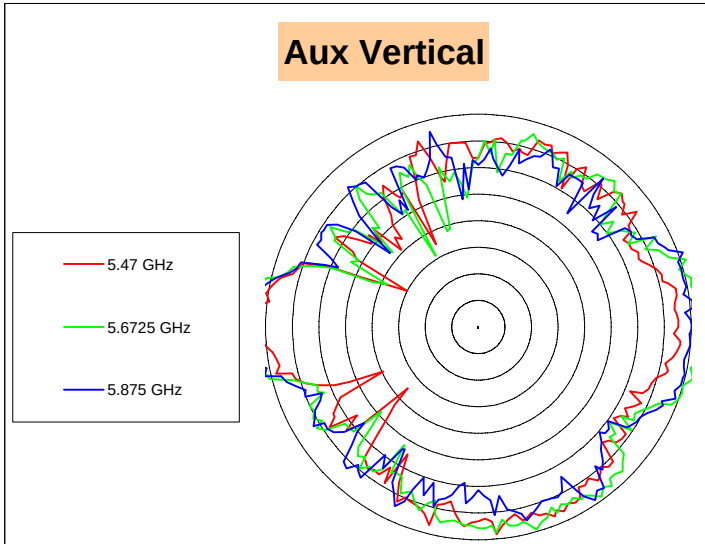
Main Vertical



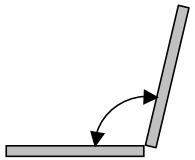
Aux Horizontal



Aux Vertical



HyperLAN (5.470 GHz - 5.875 GHz)			
CONFIG	FREQ GHz	Avg dBi	Pk dBi
Main Horz	5.47	-4.42	4.09
	5.6725	-3.91	2.44
	5.875	-4.87	2.54
Main Vert	5.47	-4.17	2.47
	5.6725	-3.60	3.56
	5.875	-4.86	1.57
Aux Horz	5.47	-5.38	0.32
	5.6725	-2.81	3.03
	5.875	-3.99	3.79
Aux Vert	5.47	-4.65	1.99
	5.6725	-2.79	3.73
	5.875	-3.45	4.49



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)