

Blade 2 Antenna Regulatory Infomation

Description : Triple-band Antenna(Main+Aux)
Samsung Electronics CO., LTD P/N: BA42-00045A / BA42-00047A
BA42-00046A/ BA42-00048A

Wistron NeWeb P/N: 81.CAO15.001/81.CAO15.005
81.CAO15.002/ 81.CAO15.006
81.CAO15.003/81.CAO15.007
81.CAO15.004/81.CAO15.008

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>Justin Chang</i>	<i>Weili Cheng</i>

I. Antenna Type

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

Peak Gain

Antenna Gain		2G4 ISM (2.400 GHz - 2.4835 GHz)			U-NII (4.90 GHz - 5.350 GHz)			HyperLAN (5.470 GHz - 5.825 GHz)		
		2.40 GHz	2.45 GHz	2.50 GHz	4.9 GHz	5.15 GHz	5.35 GHz	5.47 GHz	5.6475 GHz	5.825 GHz
Aux	Peak dBi	1.22	1.03	1.03	1.52	1.35	1.34	2.36	1.76	1.48
	Avg dBi	-1.44	-1.67	-1.43	-2.03	-2.75	-2.61	-2.00	-2.16	-2.04
Main	Peak dBi	1.04	1.04	1.15	2.64	2.43	2.22	3.20	3.07	2.20
	Avg dBi	-1.45	-1.54	-1.39	-1.77	-1.59	-2.04	-1.17	-1.24	-1.38

II. Antenna Model Number

Model number: CAO-S

III. Manufacturing Info

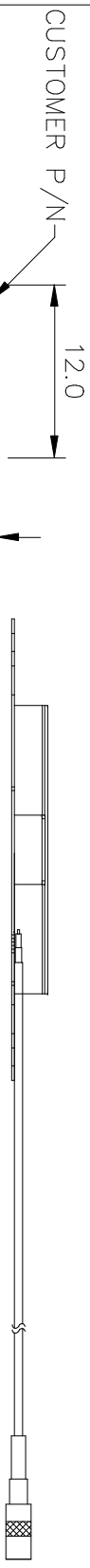
Wistron NeWeb Corporation
No. 10-1, Li-hsin Road I,
Science-base Industrial Park,
Hsinchu 300, Taiwan, R.O.C.

IV. Antenna Dimensions (Mechanical drawings)

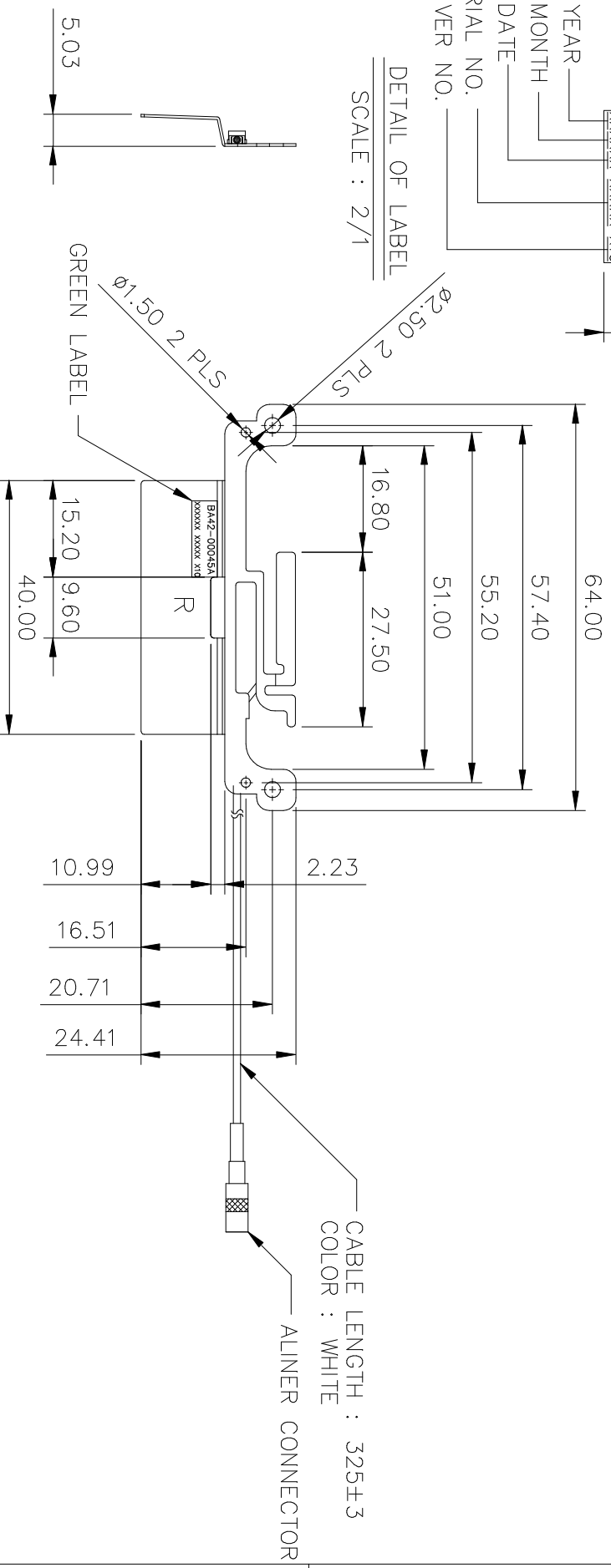
(See Next 8 Pages)

PART NUMBER BLOCK	
PART NUMBER	REV
57.CA015.001	0A

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
0A	APPROVE SHEET	04/15/03	



DETAIL OF LABEL
SCALE : 2/1



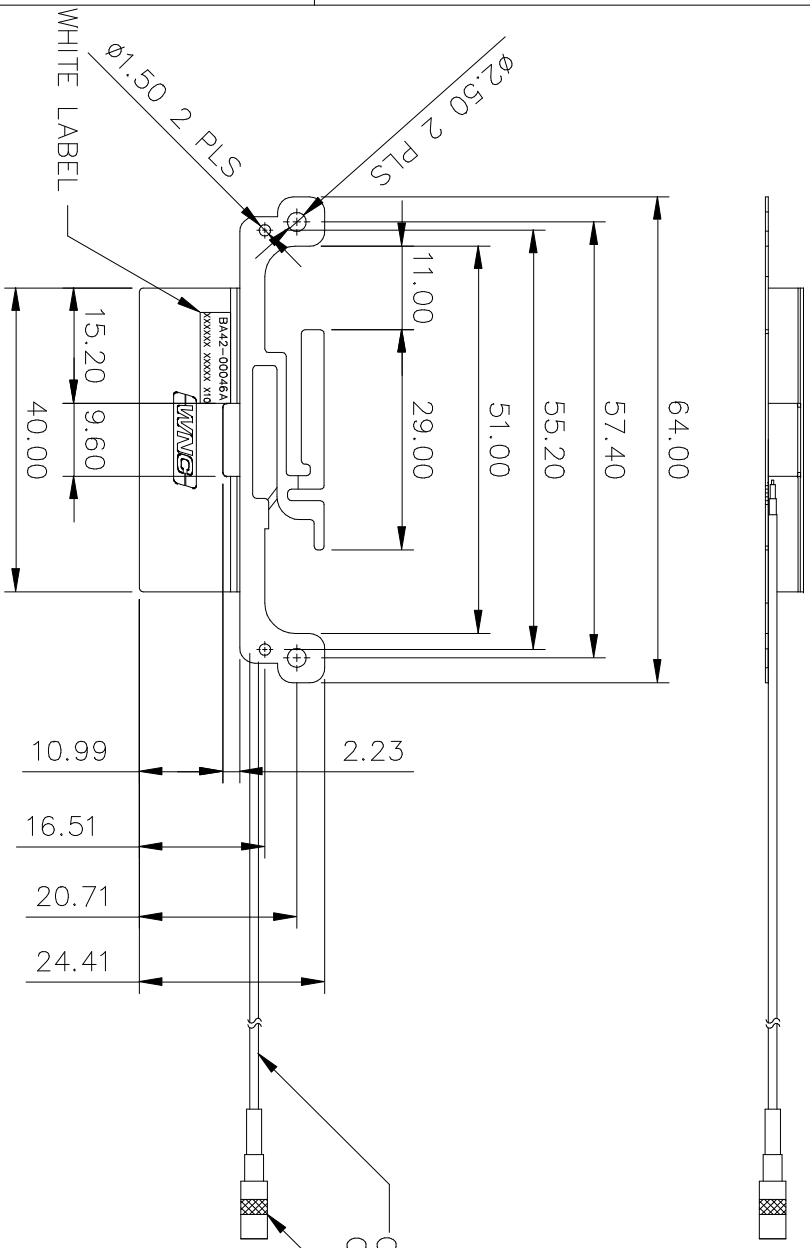
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 INTEGRAL DIMENSIONS ±0.2
 1 PLACE DECIMAL ±0.15
 2 PLACE DECIMALS ±0.10
 ANGULAR DIMENSIONS ±1°
 HOLES UNDER Ø5.00 ±0.05

Wistron 啟豐科技股份有限公司
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 Hsinchu 300, Taiwan, R.O.C. Fax: 886-3-6667711
 Tel: 886-3-6667799

FINISH: NA		DRAWN		DATE		SIZE		DWG NO.		REV	
MATERIAL: NA		ARSENE YU		04/15/03		A4		57.CA015.001		0A	
THIRD ANGLE PROJECTION		ARSENE YU		04/15/03		SCALE		1/1		SHEET	
91.CA015.001		CAO-S								1 OF 1	
NEXT ASSY		USED ON									
APPLICATION											

PART NUMBER BLOCK	
PART NUMBER	REV
57.CA015.002	0A

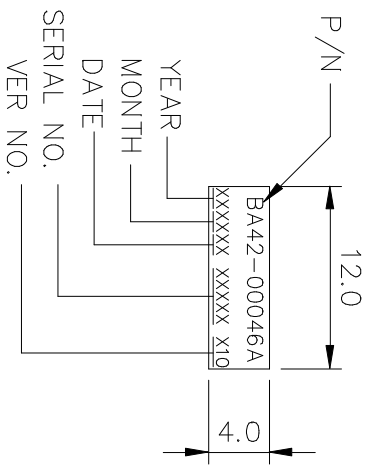
REVISIONS		
REV	DESCRIPTION	DATE
0A	APPROVE SHEET	04/15/03
		APPROVED



CABLE LENGTH : 490±3
 COLOR : BLACK

ALINER CONNECTOR

CUSTOMER P/N _____



DETAIL OF LABEL
 SCALE : 2/1

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN mm AND TOLERANCES ARE:
 INTEGRAL DIMENSIONS ±0.2
 1 PLACE DECIMAL ±0.15
 2 PLACE DECIMALS ±0.10
 ANGULAR DIMENSIONS ±1'
 HOLES UNDER ø5.00 ±0.05

MATERIAL: NA
 FINISH: NA

91.CA015.002	CAO-S
NEXT ASSY	USED ON
APPLICATION	

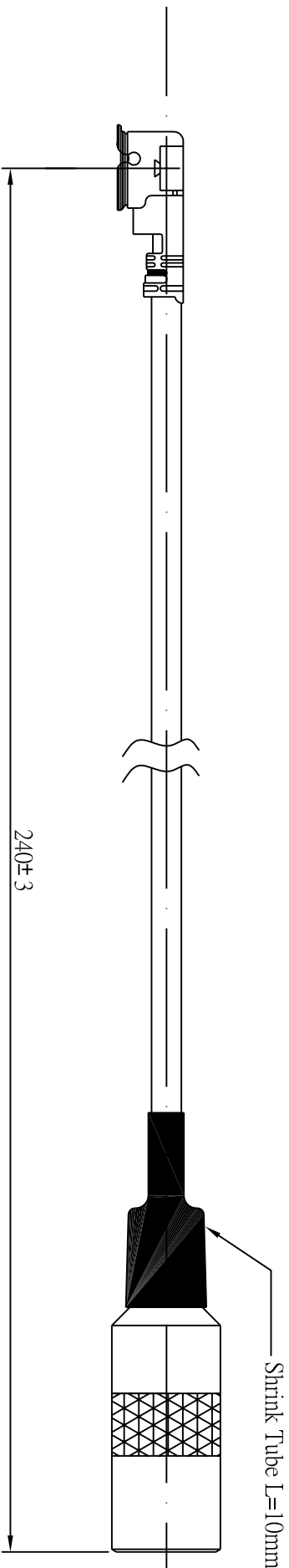
THIRD ANGLE PROJECTION	DRAWN	ARSENE YU	04/15/03
	ENGR	ARSENE YU	04/15/03
	APVD		

Wistron
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 No. 10-1, Li-Hsin Road I, Science-based Industrial Park,
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DWG TITLE	OUTLINE, LEFT, CAO-S
SIZE	DWG NO.
A4	57.CA015.002
SCALE	1/1
SHEET	1 OF 1
REV	0A

單位: mm

Item	Parts Description	Material	Vendor	Item	Parts Description	Amount	Material	Color	P/N	Vendor
A	助焊劑	NC--700	旺興達	C	0.88D ϕ 1.37mm	1	Cable	White	J12B1481-3	Junkosha
B	錫條	Sn63/37	星光	D	MMCX Jack connector	1	銅鍍金	Golden	25-122A (第二代)	Aliner
				E	ϕ 2.5mm Shrink Tube	1	橡膠	Black		長葆
				F	Connector	1	銅鍍金	Golden	20278-101R-32	I-PEX



記號	變更內容	年月日	氏名	檢印

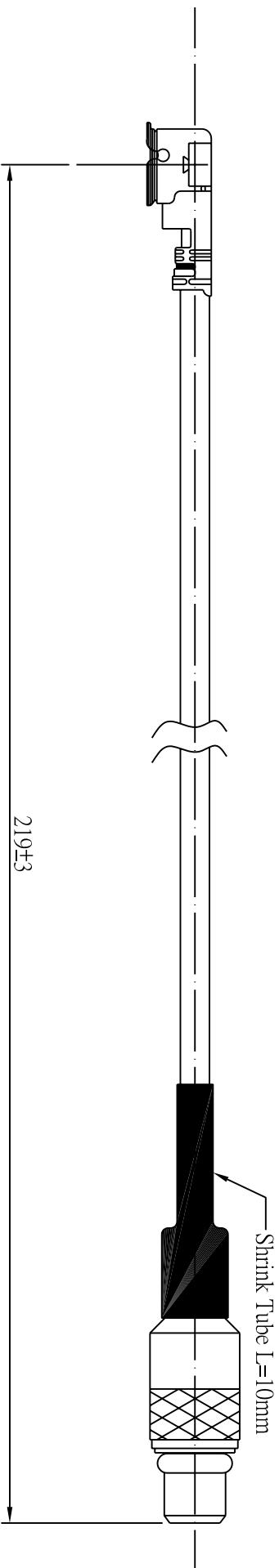
品名	WN-MMCX(母)-1.37W-IPEx-240mm-015		圖番	WN-MMCX(母)-1.37W-IPEx-240mm-015	
客戶	Wistron NeWeb Corp.		料號		
設計	制圖	驗圖	承認	材料	Coaxial Cable
啓基	曹敏			顏色	
				日期	2003.03.27
版本號: A.0			副本號:		

注: 1. 加裝連接器時需準確對齊使用專用治具嵌合、在治具上需探知中心導體位置是否正確。
 2. 外觀上不允許有割痕、被覆脫落...等現象發生。

單位: mm

Item	Parts Description	Material	Vendor	Item	Parts Description	Amount	Material	Color	P/N	Vendor
A	助焊劑	NC-700	旺興達	C	0.88D ϕ 1.37mm	1	Cable	Black	J12B1481-3	Junkosha
B	錫條	Sn63/37	星光	D	MMCX Plug connector	1	銅鍍金	Golden	25-122A (第二代)	Ailiner

E	ϕ 2.5mm Shrink Tube	1	橡膠	Black		長葆
F	Connector	1	銅鍍金	Golden	20278-101R-32	I-PEX



- 注: 1. 加裝連接器時需準確對齊使用專用治具嵌合、在治具上需探知中心導體位置是否正確.
 2. 外觀上不允許有割痕、被覆脫落...等現象發生.

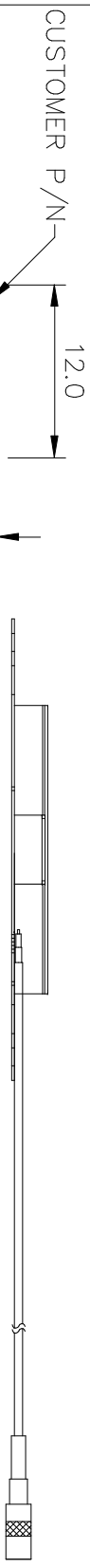
品名	變更內容			圖番
WN-MMCX(子)-1.37B-IPEX-219mm-016	記號	年月日	氏名	WN-MMCX(子)-1.37B-IPEX-219mm-016
客戶	Wistron NetWeb Corp.	料號		
設計	制圖	驗圖	承認	材料
啓碁	曹敏			顏色
				日期
				2003.03.27

版本號: A.0

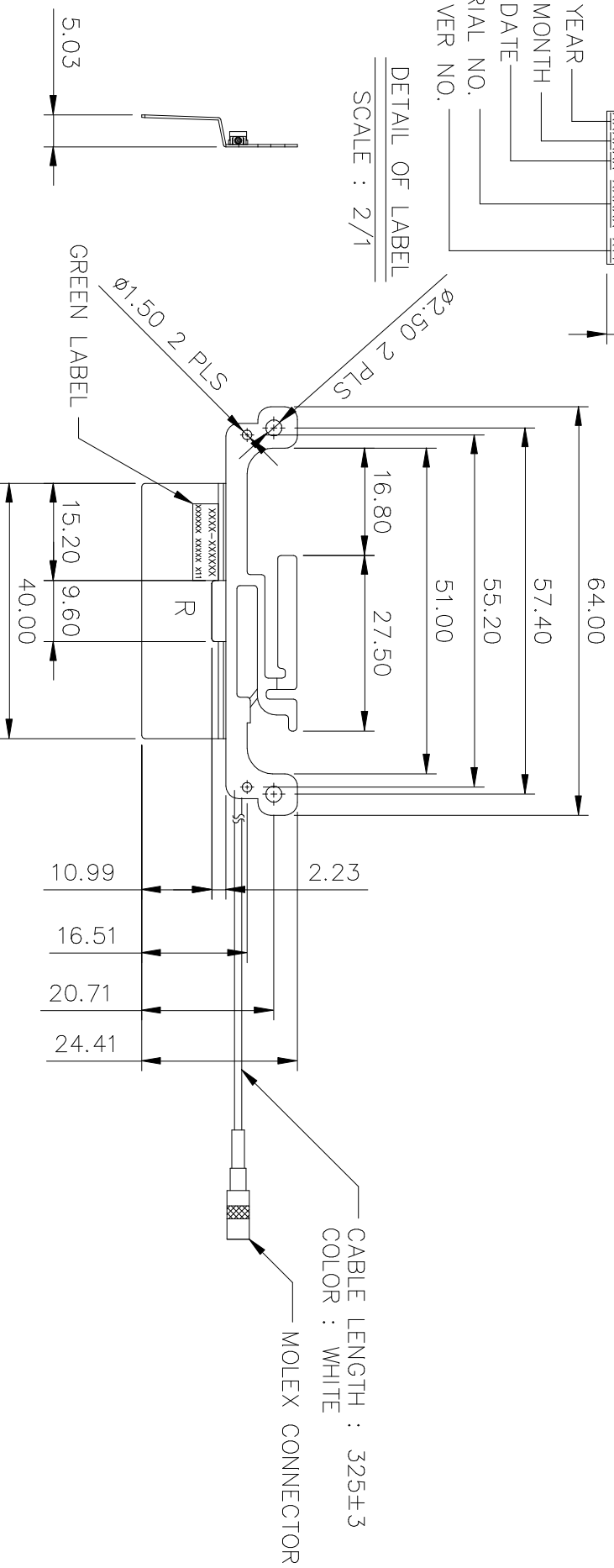
副本號:

PART NUMBER BLOCK	
PART NUMBER	REV
57.CAB015.003	0A

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
0A	APPROVE SHEET	04/15/03	



DETAIL OF LABEL
SCALE : 2/1



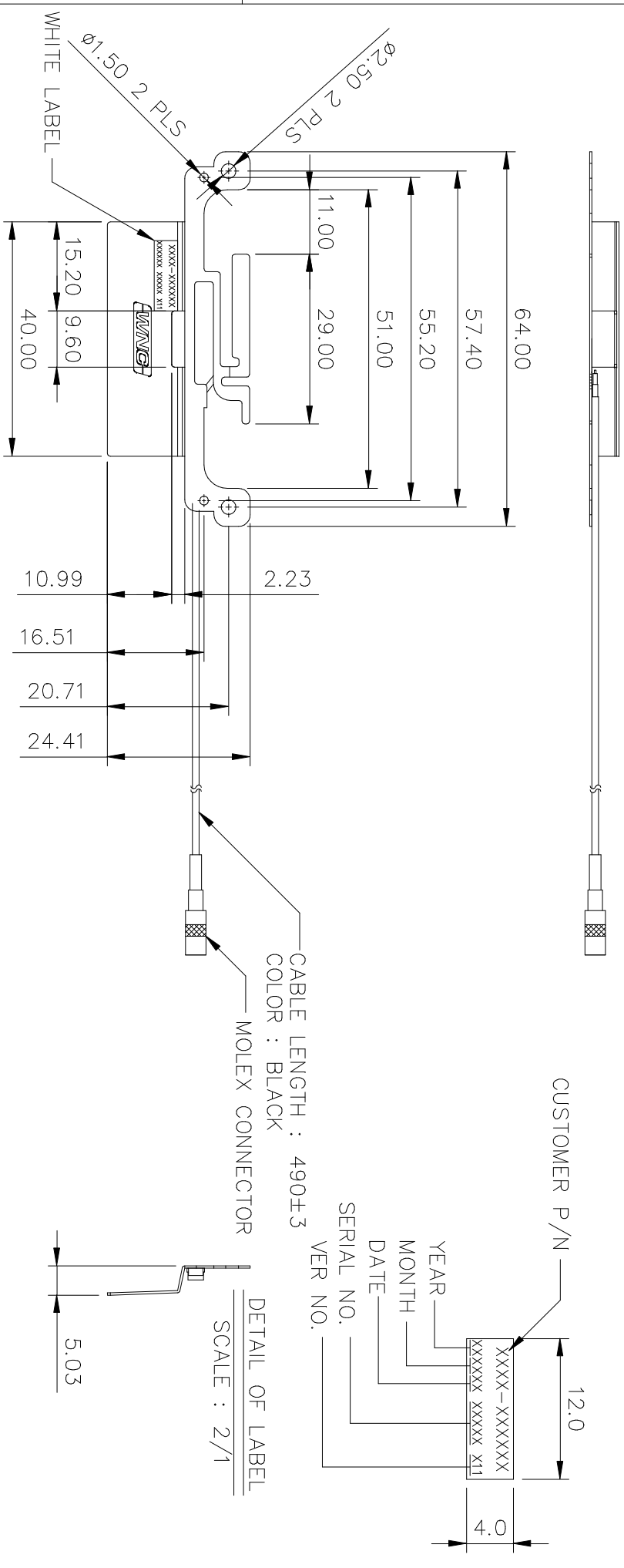
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN mm AND TOLERANCES ARE:
 INTEGRAL DIMENSIONS ±0.2
 1 PLACE DECIMAL ±0.15
 2 PLACE DECIMALS ±0.10
 ANGULAR DIMENSIONS ±1°
 HOLES UNDER Ø5.00 ±0.05

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 Tel: 886-3-6667799

FINISH: NA		DRAWN		DATE		SIZE		DWG NO.		REV	
MATERIAL: NA		ARSENE YU		04/15/03		A4		57.CA015.003		0A	
THIRD ANGLE PROJECTION		ARSENE YU		04/15/03		SCALE		1/1		SHEET 1 OF 1	
APPLICATION		USED ON		CAO-S		NEXT ASSY		91.CA015.003			

PART NUMBER BLOCK	
PART NUMBER	REV
57.CA015.004	0A

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
0A	APPROVE SHEET	04/15/03	



UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN mm AND TOLERANCES ARE:		DRAWN		SIZE		DWG NO.		REV	
1 PLACE DECIMAL ± 0.2		ENGR		A4		57.CA015.004		0A	
2 PLACE DECIMALS ± 0.10		APVD		SCALE		1/1		SHEET 1 OF 1	
ANGULAR DIMENSIONS ± 1'		ARSENE YU		OUTLINE, LEFT-2, CAO-S					
HOLES UNDER Ø5.00 ± 0.05		ARSENE YU							
MATERIAL: NA		04/15/03							
FINISH: NA		04/15/03							
THIRD ANGLE PROJECTION		04/15/03							
DRAWN		04/15/03							
ENGR		04/15/03							
APVD		04/15/03							
APPLICATION		USED ON							
NEXT ASSY		CAO-S							
91.CA015.004		CAO-S							

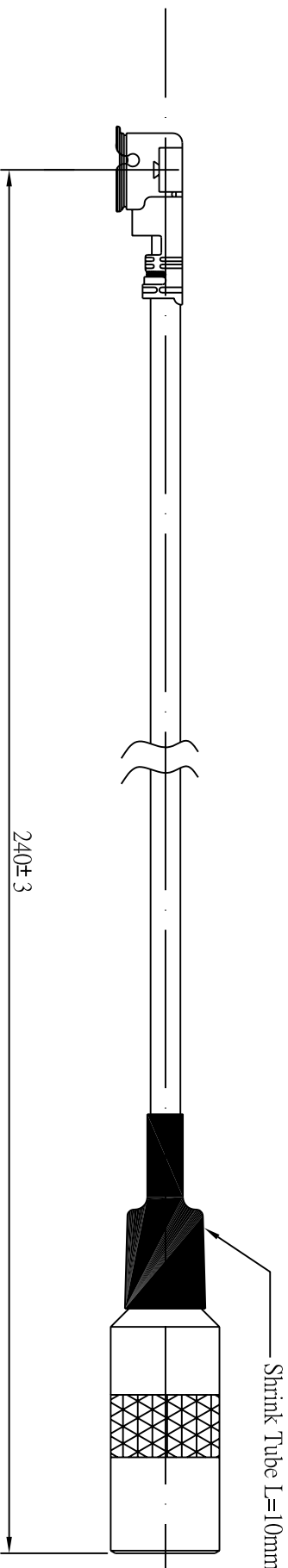
Wistron
Wistron NewWeb Corp.
 No. 10~11, 1st-Floor Road 1, Science-based Industrial Park,
 Hsinchu 300, Taiwan, R.O.C.
 Tel: 886-3-6687739 Fax: 886-3-6687711

OUTLINE, LEFT-2, CAO-S

SCALE 1/1 SHEET 1 OF 1

單位: mm

Item	Parts Description	Material	Vendor	Item	Parts Description	Amount	Material	Color	P/N	Vendor
A	助焊劑	NC--700	旺興達	C	0.88D ϕ 1.37mm	1	Cable	White	J12B1481-3	Junkosha
B	錫條	Sn63/37	星光	D	MMCX Jack connector	1	銅鍍金	Golden	25-122A (第二代)	Molex
				E	ϕ 2.5mmShrink Tube	1	橡膠	Black		長葆
				F	Connector	1	銅鍍金	Golden	20278-101R-32	I-PEX



注: 1. 加裝連接器時需準確對齊使用專用治具嵌合、在治具上需探知

中心導體位置是否正確;

2. 外觀上不允許有刮痕、被覆脫落...等現象發生.

品名	圖番	年月日	氏名	檢印
WN-MMCX(母)-1.37W-IPEX-240mm-026	WN-MMCX(母)-1.37W-IPEX-240mm-026			
客戶	料號	變更內容	記號	
Wistron NeWeb Corp.				

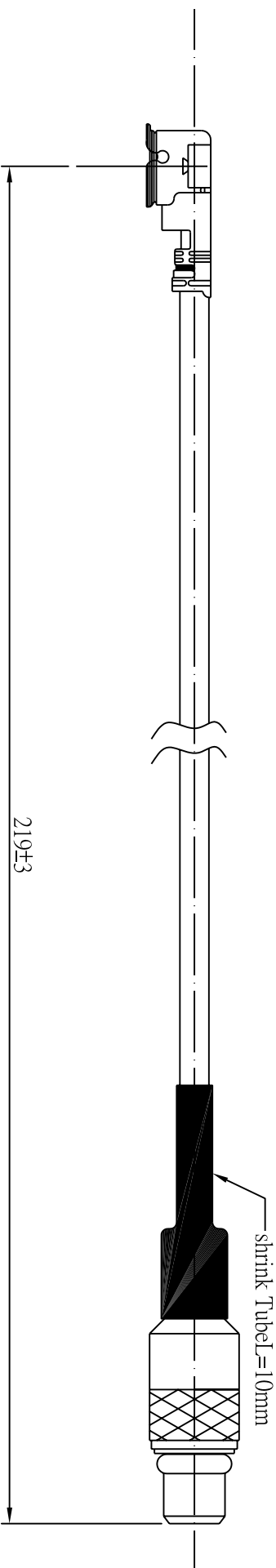
設計	制圖	驗圖	承認	材料	顏色	日期
啓基				Coaxial Cable	White	2003.04.15

版本號: A.0	副本號:
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單位: mm

Item	Parts Description	Material	Vendor	Item	Parts Description	Amount	Material	Color	P/N	Vendor
A	助焊劑	NC-700	旺興達	C	0.88D ϕ 1.37mm	1	Cable	Black	J12B1481-3	Junkosha
B	錫條	Sn63/37	星光	D	MMCX Plug connector	1	銅鍍金	Golden	25-122A (第二代)	Molex

E	ϕ 2.5mmShrink Tube	1	橡膠	Black		長葆
F	Connector	1	銅鍍金	Golden	20278-101R-32	I-PEX



品名	圖番	變更內容	年月日	氏名	檢印
WN-MMCX(子)-1.37B-IPEX-219mm-025	WN-MMCX(子)-1.37B-IPEX-219mm-025				
客戶	Wistron NetWeb Corp.	記號			

- 注: 1. 加裝連接器時需準確對齊使用專用治具嵌合、在治具上需探知中心導體位置是否正確。
 2. 外觀上不允許有割痕、被覆脫落...等現象發生。

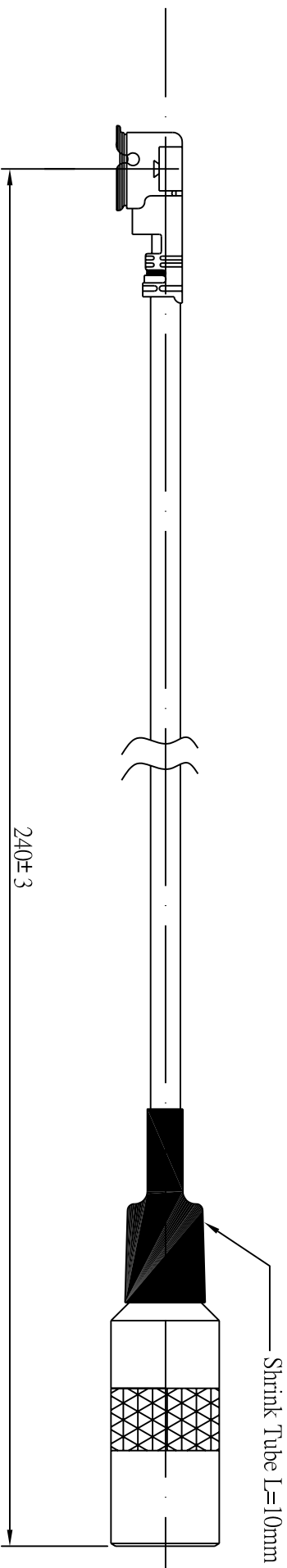
設計	制圖	驗圖	承認	料號	材料	顏色	日期
啓基	曹敏				Coaxial Cable	Black	2003.04.15

版本號: A.0

副本號:

單位: mm

Item	Parts Description	Amount	Material	Color	P/N	Vendor
C	0.88D ϕ 1.37mm	1	Cable	White	J12B1481-3	Junkosha
D	MMCX Jack connector	1	銅鍍金	Golden	25-122A (第二代)	Aliner
E	ϕ 2.5mm Shrink Tube	1	橡膠	Black		長葆
F	Connector	1	銅鍍金	Golden	U.FL-JP-088-A-240	HRS

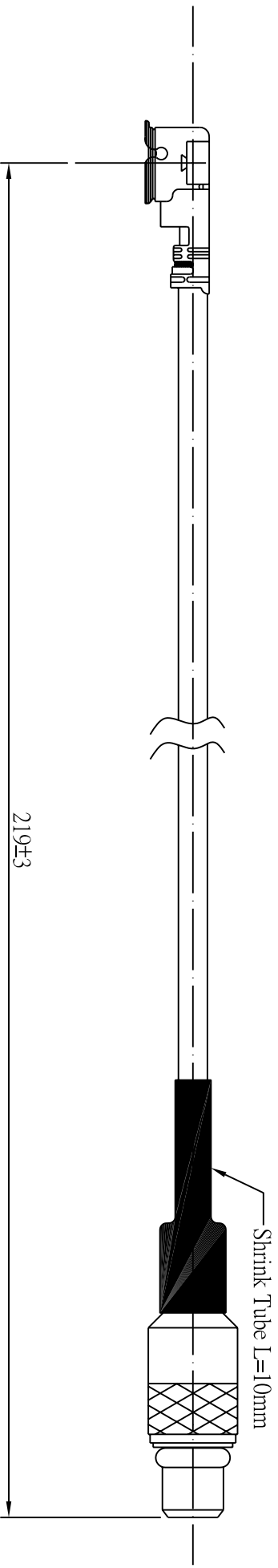


記號	變更內容	年月日	氏名	檢印

品名	C A9106157			圖番	C A9106157	
客戶	Wistron NeWeb Corp.			料號		
設計	制圖	驗圖	承認	材料	Coaxial Cable	
啓基	曹敏			顏色	White	
				日期	2003.03.27	
版本號: A.0				副本號:		

單位: mm

Item	Parts Description	Amount	Material	Color	P/N	Vendor
C	0.88D ϕ 1.37mm	1	Cable	Black	J12B1481-3	Junkosha
D	MMCX Plug connector	1	銅鍍金	Golden	25-304B (第二代)	Aliner
E	ϕ 2.5mm Shrink Tube	1	橡膠	Black		長葆
F	Connector	1	銅鍍金	Golden	U.FL-LP-088-A-560	HRS

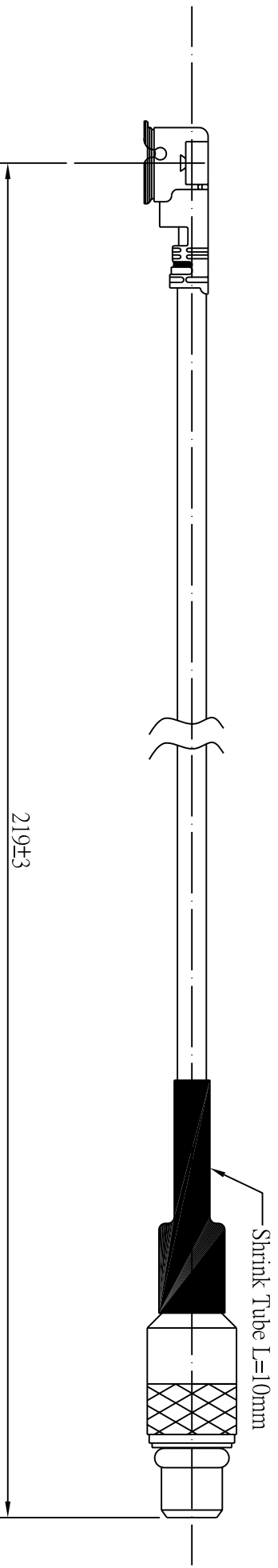


記號	變更內容	年月日	氏名	檢印

品名	C A9106156	圖番	C A9106156		
客戶	Wistron NeWeb Corp.	料號			
設計	制圖	驗圖	承認	材料	Coaxial Cable
啓基	曹敏	顏色	Black	日期	2003.03.27
版本號: A.0					副本號:

單位: mm

Item	Parts Description	Amount	Material	Color	P/N	Vendor
C	0.88D ϕ 1.37mm	1	Cable	Black	J12B1481-3	Junkosha
D	MMCX Plug connector	1	銅鍍金	Golden	73415-4650 (第二代)	Molex
E	ϕ 2.5mm Shrink Tube	1	橡膠	Black		長葆
F	Connector	1	銅鍍金	Golden	U.FL-LP-088-A-560	HRS

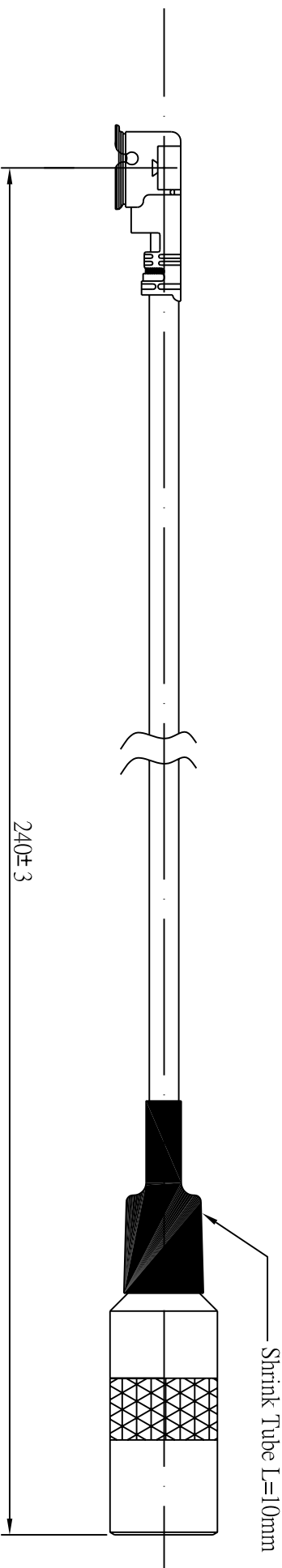


記號	變更內容	年月日	氏名	檢印

品名	C A9106157		圖番	C A9106157	
客戶	Wistron NeWeb Corp.		料號		
設計	制圖	驗圖	承認	材料	Coaxial Cable
啓基	曹敏			顏色	
				日期	2003.03.27
版本號:	A.0				副本號:

單位: mm


Item	Parts Description	Amount	Material	Color	P/N	Vendor
C	0.88D ϕ 1.37mm	1	Cable	White	J12B1481-3	Junkosha
D	MMCX Jack connector	1	銅鍍金	Golden	73415-4640 (第二代)	Molex
E	ϕ 2.5mm Shrink Tube	1	橡膠	Black		長葆
F	Connector	1	銅鍍金	Golden	U-FL-LP-088-A-240	HRS



記號	變更內容	年月日	氏名	檢印

品名	C A9106157			圖番	C A9106157	
客戶	Wistron NeWeb Corp.			料號		
設計	制圖	驗圖	承認	材料	Coaxial Cable	
啓基	曹敏			顏色	White	
				日期	2003.03.27	
版本號: A.0					副本號:	

V. Pictures of Antennas

Aux Antenna (LCD Side)	Main Antenna (LCD Side)
	
Aux System Cable	Main System Cable
	

VI. Cable Length

Left-side antenna(Aux): 490mm Φ 1.37mm(LCD Side)+219mm Φ 1.37mm(System Side)
Right-side antenna(Main): 325mm Φ 1.37mm(LCD Side)+240mm Φ 1.37mm(System Side)
(From the center of connector to the end of cable)

VII. Cable Loss (including connector)

Unit: dB	2G4 band	U-NII band	HyperLAN band
Left Side	2.12	3.34	3.64
Right Side	1.73	2.75	2.92

XI. Antenna Material

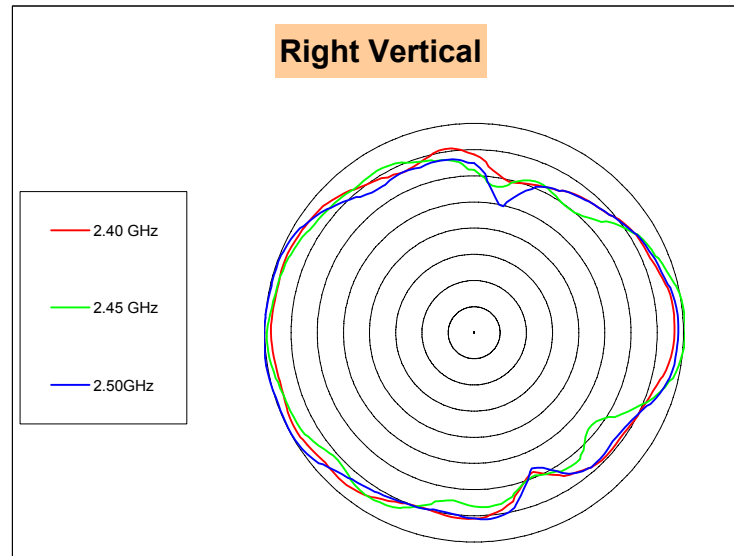
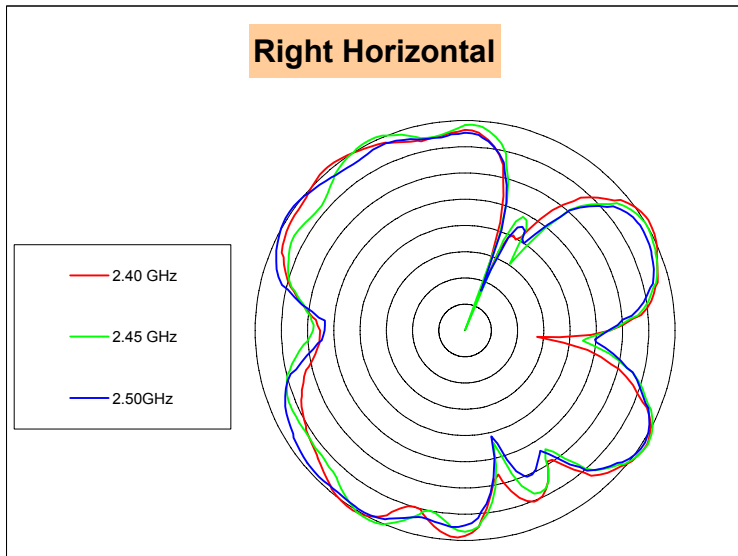
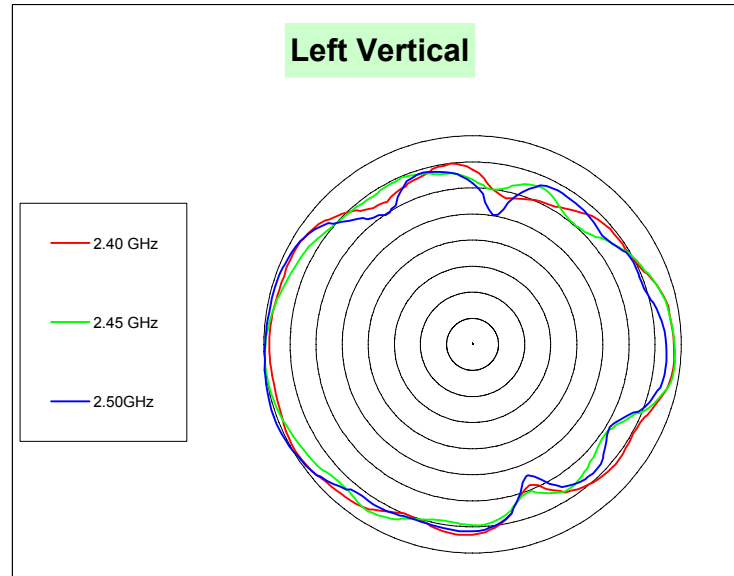
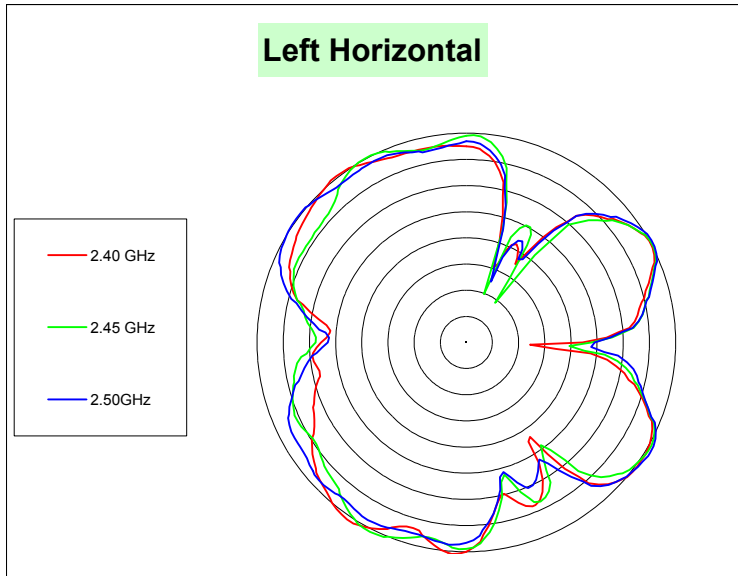
Main antenna	Aux antenna
<ol style="list-style-type: none"> 1. Stamped metal 2. Junkosha cable and MMCX connector 3. Junkosha cable and IPEX connector (Junkosha cable and HRS connector) 	<ol style="list-style-type: none"> 1. Stamped metal 2. Junkosha cable and MMCX connector 3. Junkosha cable and IPEX connector (Junkosha cable and HRS connector)

X. Connector Info (general description)

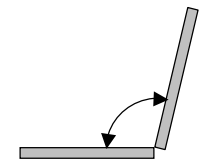
Description (Cable)	Inner Conductor: AWG#30(7/0.102), Silver plating annealed copper wire Dielectric core: D0.88mm Outer conductor: 16/5/0.05 D1.13mm, Silver plating annealed copper wire Jacket: D1.37mm		
Requirements	Characteristic impedance: 50(+2,-2)ohm Nominal capacitance: 97pF/m Conductor resistance of inner conductor at 330K(20): 1000ohm/km MAX Insulation resistance: 1000mega-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

Platform: BladII-Latitude LCD module
 Supplier: Wistron NeWeb coporation
 Date: 2003/4/15

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
Left Horz	2.4	-3.22	0.77
	2.5	-3.01	1.01
Left Vert	2.4	-3.59	-0.34
	2.5	-3.88	0.58
Right Horz	2.4	-2.96	0.90
	2.45	-3.21	1.02
Right Vert	2.4	-3.75	-1.13
	2.45	-3.83	0.34
	2.5	-3.37	0.26

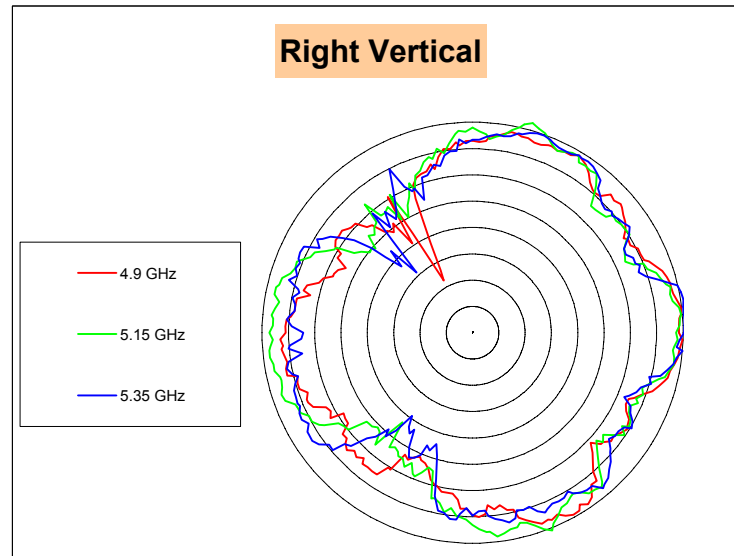
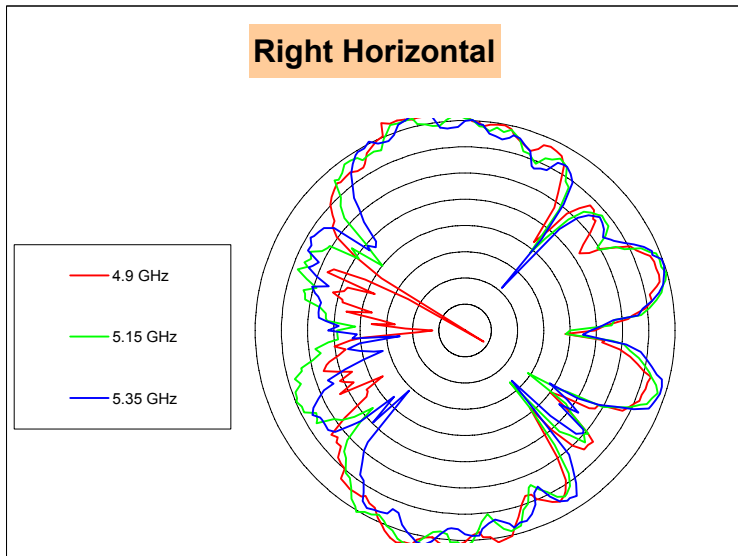
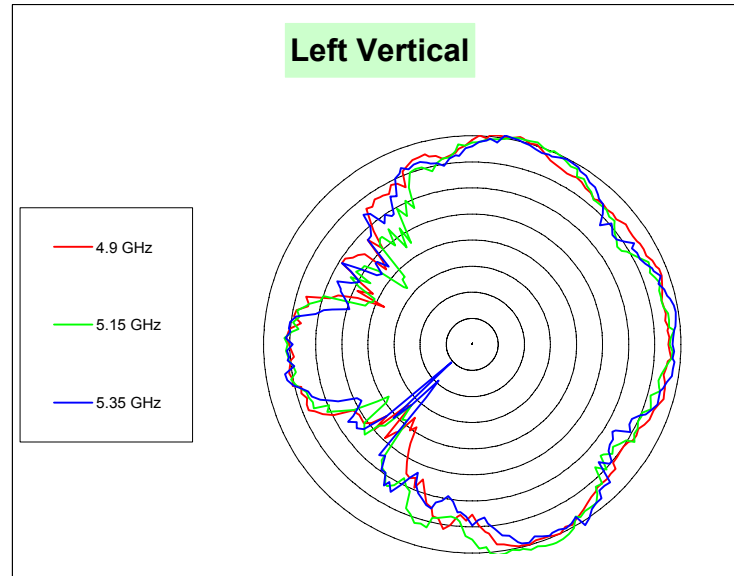
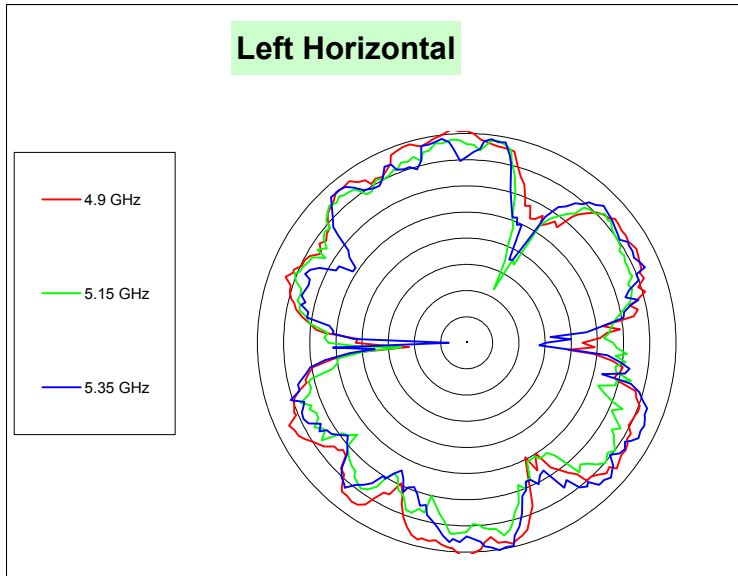


VSWR open = lid/keyboard angle 110°

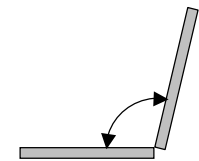
Note: The outer circle approximately represents the 0 dBi gain circle.

Platform: BladII-Latitude LCD module
 Supplier: Wistron NeWeb coporation
 Date: 2003/4/15

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



U-NII (4.90 GHz - 5.350 GHz)			
CONFIG	FREQ GHz	Avg dBi	Pk dBi
Left Horz	4.9	-4.18	0.94
	5.35	-5.33	0.10
Left Horz	4.9	-3.85	0.80
	5.15	-3.79	1.34
Right Horz	4.9	-4.05	0.87
	5.35	-3.36	2.64
Right Horz	4.9	-3.47	2.41
	5.35	-3.89	2.20
Right Horz	4.9	-3.36	-0.09
	5.15	-3.86	1.41
	5.35	-3.36	0.55

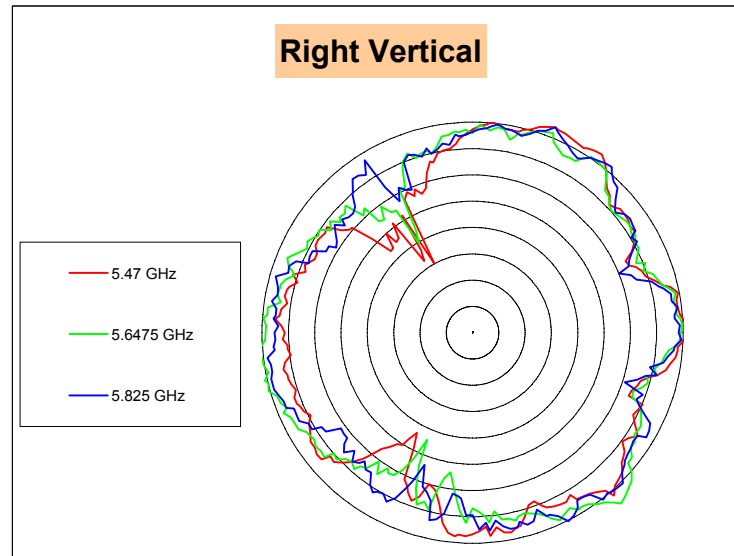
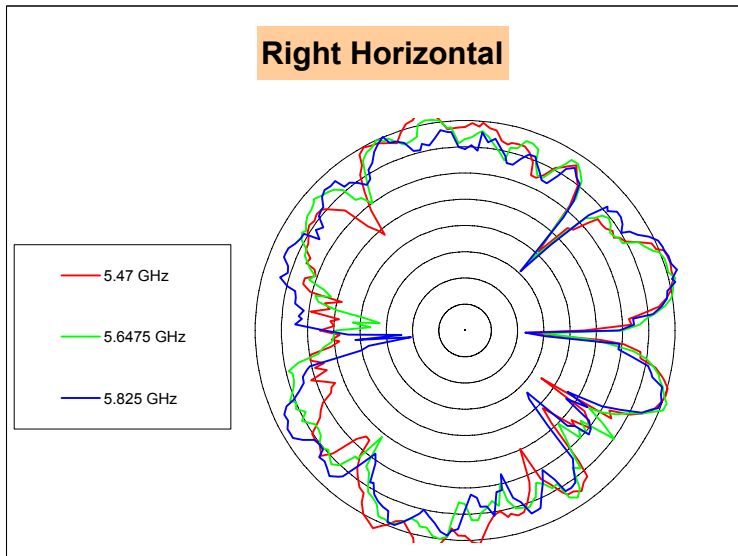
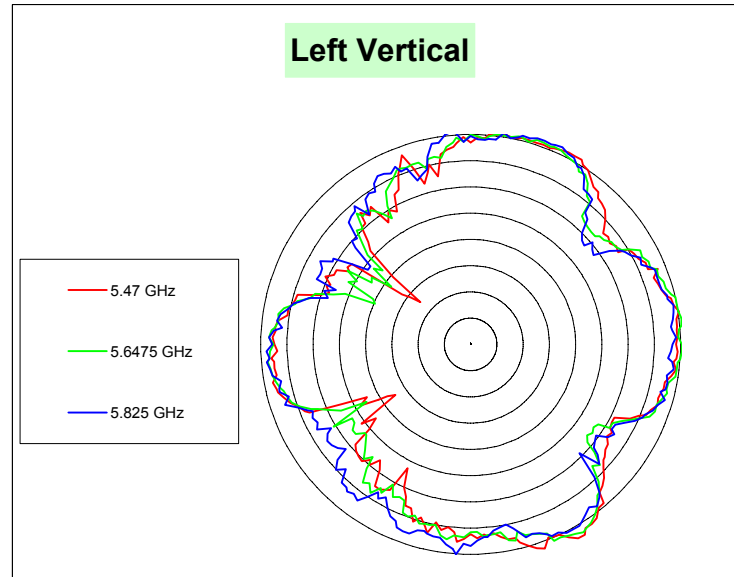
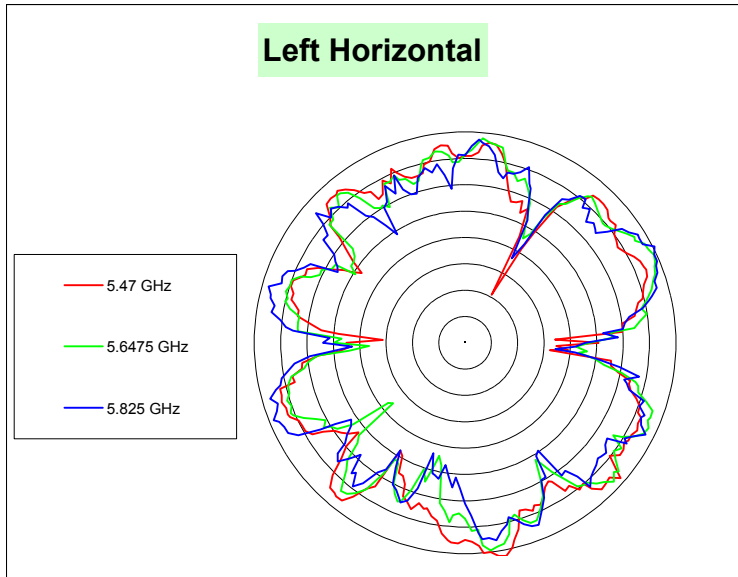


VSWR open = lid/keyboard angle 110°

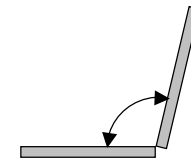
Note: The outer circle approximately represents the 0 dBi gain circle.

Platform: BladII-Latitude LCD module
 Supplier: Wistron NeWeb coporation
 Date: 2003/4/15

HyperLAN (5.470 GHz - 5.725 GHz) Antenna Radiation Patterns



HyperLAN (5.470 GHz - 5.825 GHz)			
CONFIG	FREQ GHz	Avg dBi	Pk dBi
Left Horz	5.47	-5.23	1.14
	5.6475	-5.53	-0.30
	5.825	-5.62	0.31
Left Horz	5.47	-3.14	2.35
	5.6475	-3.19	1.76
	5.825	-3.01	1.48
Right Horz	5.47	-3.31	3.19
	5.6475	-3.87	1.25
	5.825	-4.02	2.01
Right Horz	5.47	-3.22	2.05
	5.6475	-2.74	3.06
	5.825	-2.91	2.08



VSWR open = lid/keyboard angle 110°

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