

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

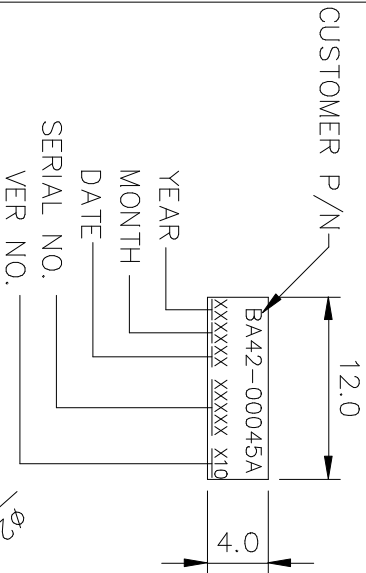
III. Manufacturing Info

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)

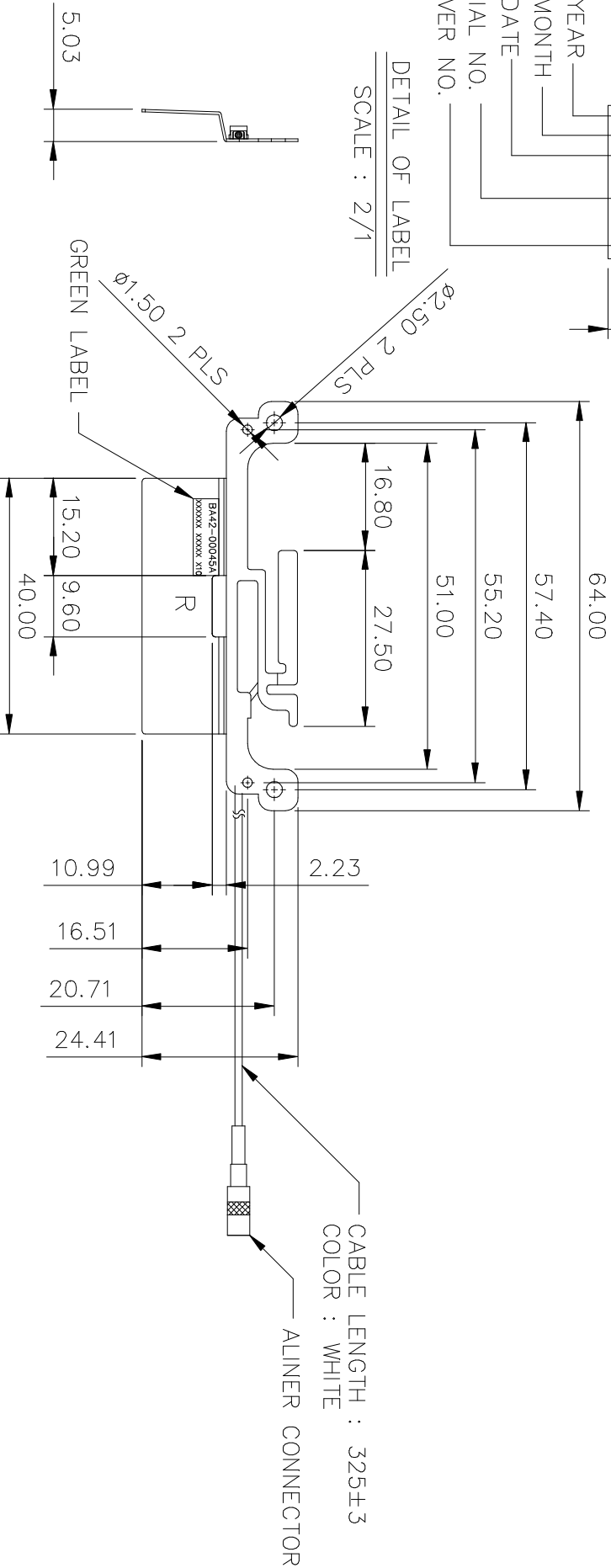
PART NUMBER BLOCK	
PART NUMBER	REV
57.CA015.001	0A

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



DETAIL OF LABEL

SCALE : 2/1

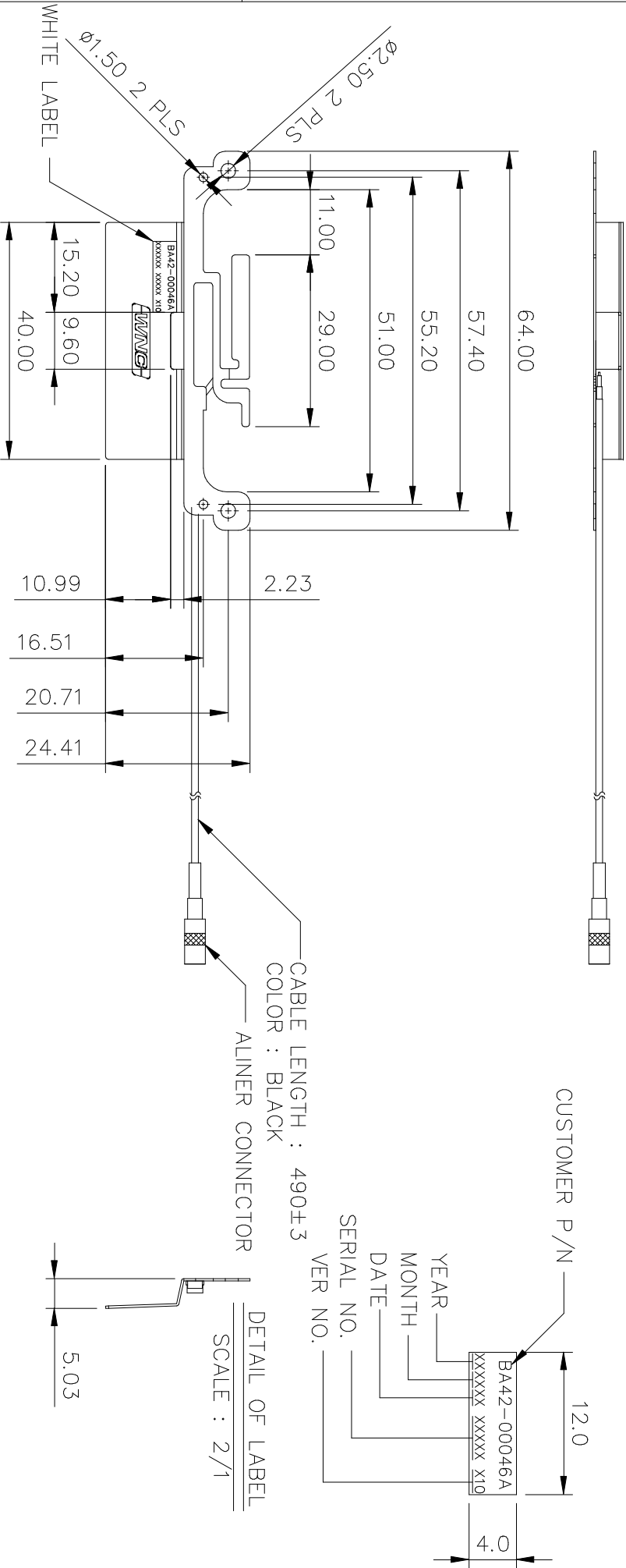


		UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN mm AND TOLERANCES ARE:							
		INTEGRAL DIMENSIONS ARE IN mm		AND TOLERANCES ARE:					
		± 0.2		ANGULAR DIMENSIONS		± 1°			
		1 PLACE DECIMAL ± 0.15		HOLES UNDER Ø5.00		± 0.05			
		2 PLACE DECIMALS ± 0.10							
		MATERIAL: NA							
		FINISH: NA							
		THIRD ANGLE PROJECTION		DRAWN	ARSENE YU	04/15/03			
				ENGR	ARSENE YU	04/15/03			
				APVD					
									
		APPLICATION							

wistron		啟碁科技股份有限公司	
Wistron NewWeb Corp.			
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Tel: 886-3-6667799		Fax: 886-3-6667711	
DWG TITLE			
OUTLINE, RIGHT, CAO-S			
SIZE		REV	
DWG NO.			
A4		0A	
57.CA015.001			
SCALE		1 OF 1	
1/1		SHEET	

PART NUMBER BLOCK	
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57.CA015.002	0A

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



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		INTEGRAL DIMENSIONS	± 0.2	ANGULAR DIMENSIONS	± 1°
		1 PLACE DECIMAL	± 0.15	HOLES UNDER	± 0.05
		2 PLACE DECIMALS	± 0.10		
		MATERIAL: NA			
		FINISH: NA			
91.CA015.002	CAO-S	THIRD ANGLE PROJECTION			
NEXT ASSY	USED ON				
APPLICATION		DRAWN	ARSENE YU	04/15/03	SIZE
		ENGR	ARSENE YU	04/15/03	DWG NO.
		APVD			SCALE
				1/1	SHEET
				1 OF 1	REV
				57.CA015.002	0A

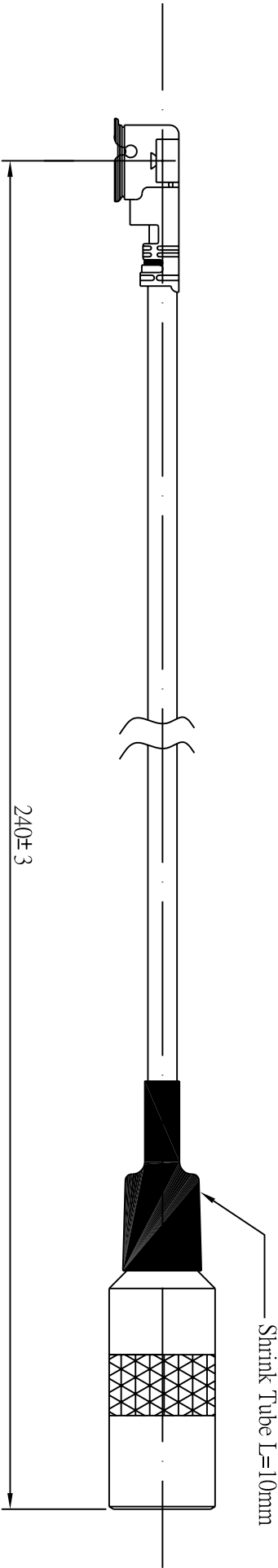
wistron 啟碁科技股份有限公司
 Wistron NetWeb Corp.
 No. 10-1, Li-shin Road I, Science-based Industrial Park,
 Hsinchu 300, Taiwan, R.O.C.
 Tel: 886-3-6667739 Fax: 886-3-6667711

OUTLINE, LEFT, CAO-S

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 Ø 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	Ø2.5mmShrink 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	

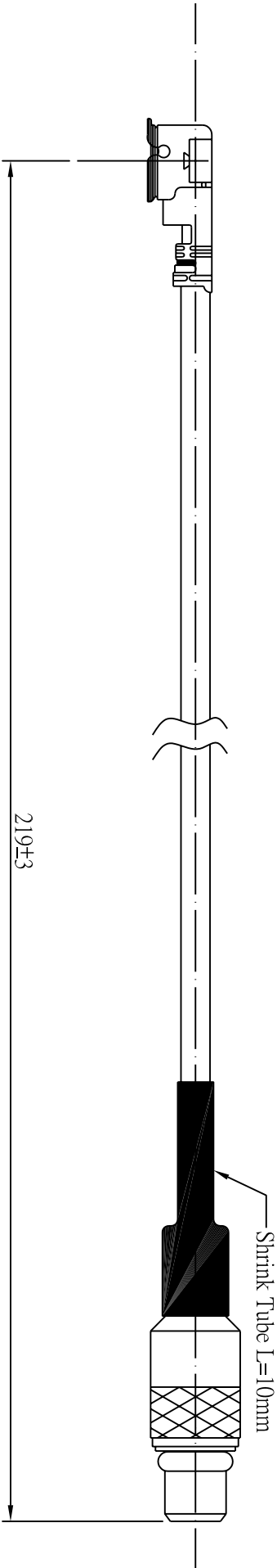
品名	WN-MMCX(母)-1.37W-IPEX-240mm-015			圖番	WN-MMCX(母)-1.37W-IPEX-240mm-015
	客戶	Wistron NeWeb Corp.		料號	
設計	制圖	驗圖	承認	材料	Coaxial Cable
啓基	曹敏			顏色	White
				日期	
版本號: A.0					2003.03.27
				副本號:	

- 注: 1. 加裝連接器時需準確對齊使用專用具嵌合、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)	Aliner

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

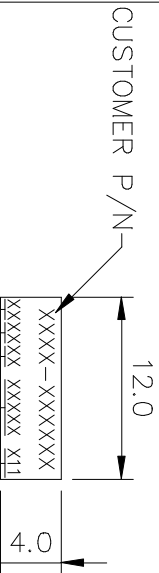


- 注: 1. 加裝連接器時需準確對齊使用專用治具嵌合、在治具上需探知中心導體位置是否正確.
2. 外觀上不允許有割痕、被覆脫落...等現象發生.

品名	WN-MMCX(子)-1.37B-1PEX-219mm-016	圖番	WN-MMCX(子)-1.37B-1PEX-219mm-016	變更內容				年月日				氏名		檢印	
				記號											
客戶	Wistron NeWeb Corp.			料號											
設計	制圖	驗圖	承認	材料	Coaxial Cable										
啓碁	曹敏			顏色	Black										
				日期	2003.03.27										
版本號: A.0								副本號:							

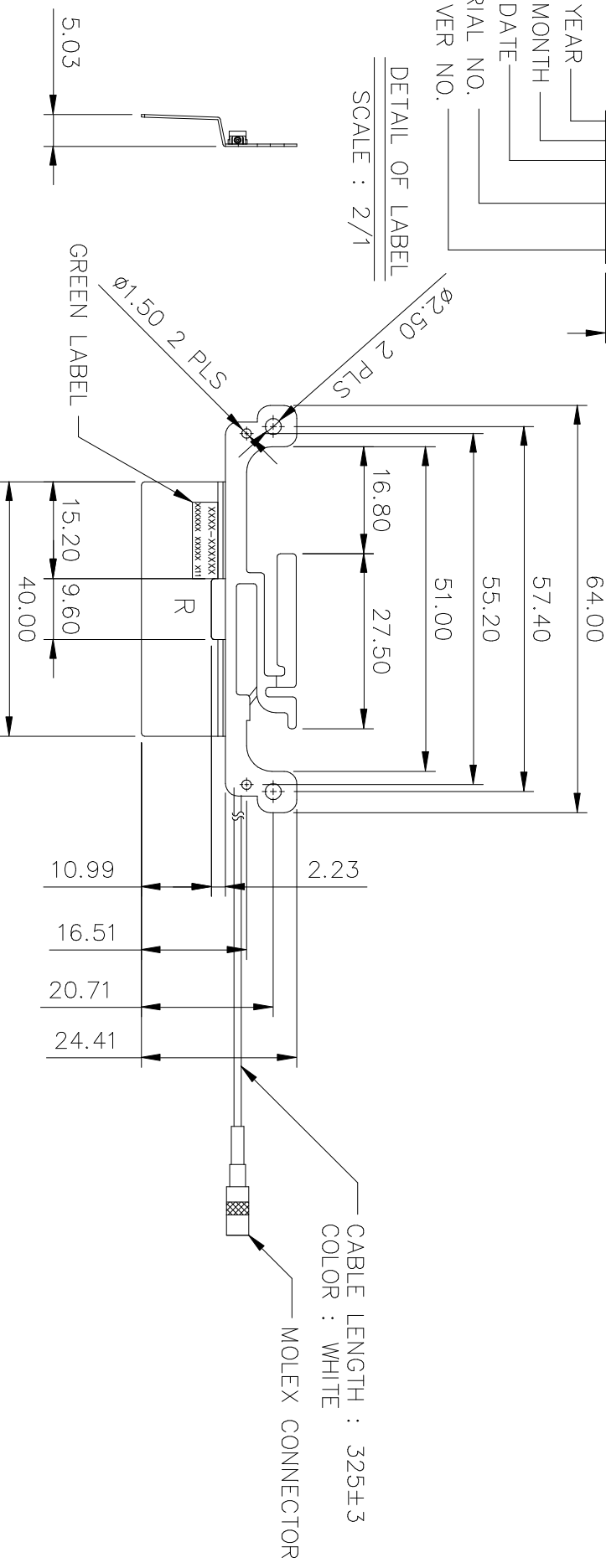
PART NUMBER BLOCK	
PART NUMBER	REV
57.CA015.003	0A

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



YEAR _____
MONTH _____
DATE _____
SERIAL NO. _____
VER NO. _____

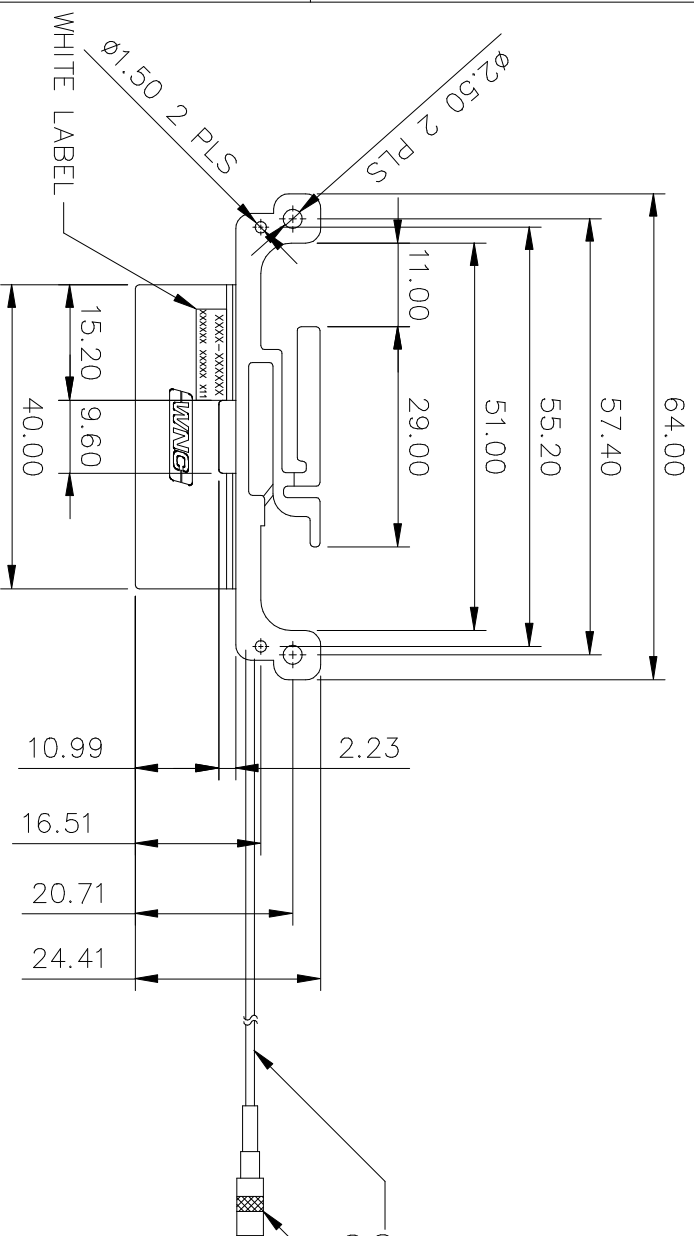
DETAIL OF LABEL
SCALE : 2/1



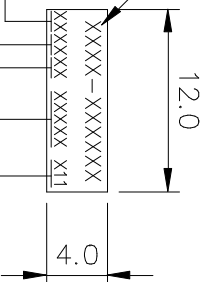
		UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN mm AND TOLERANCES ARE:				wstron 啟碁科技股份有限公司 No. 10-1, Li-hsin Road 1, Science-based Industrial Park, Hsinchu 300, Taiwan, R.O.C. Tel: 886-3-6667799 Fax: 886-3-6667711			
		INTEGRAL DIMENSIONS 1 PLACE DECIMAL 2 PLACE DECIMALS	± 0.12 ± 0.15 ± 0.10	ANGULAR DIMENSIONS HOLES UNDER Ø5.00	± 1° ± 0.05				
		MATERIAL: NA				DWG TITLE			
		FINISH: NA				OUTLINE, RIGHT-2, CAO-S			
91.CA015.003	CAO-S	THIRD ANGLE PROJECTION	DRAWN	ARSENE YU	04/15/03	SIZE	DWG NO.		REV
NEXT ASSY	USED ON		ENGR	ARSENE YU	04/15/03	A4	57.CA015.003		0A
APPLICATION			APVD			SCALE	1/1	SHEET	1 OF 1

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

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



CUSTOMER P/N _____



YEAR _____
MONTH _____
DATE _____
SERIAL NO. _____
VER NO. _____

CABLE LENGTH : 490±3
COLOR : BLACK
MOLEX CONNECTOR

DETAIL OF LABEL
SCALE : 2/1

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

MATERIAL: NA

FINISH: NA

THIRD ANGLE PROJECTION



91.CA015.004	CAO-S
NEXT ASSY	USED ON
APPLICATION	

DWG TITLE

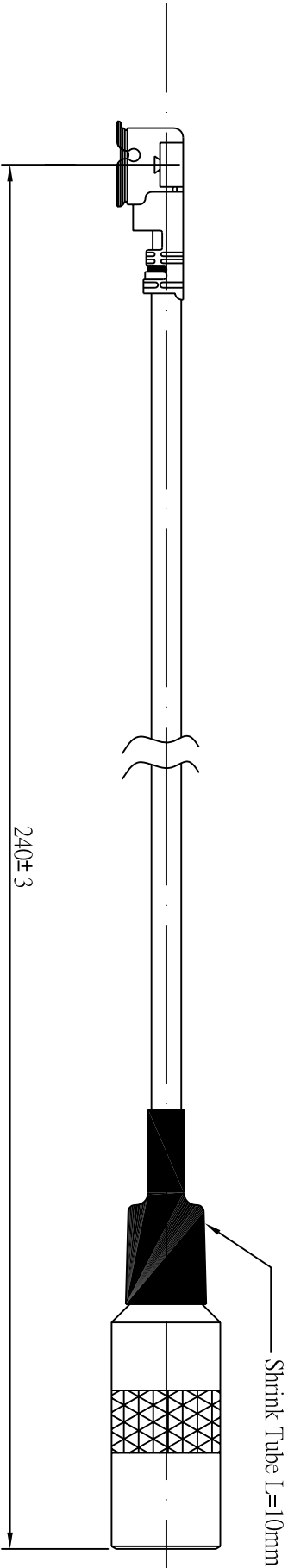
OUTLINE, LEFT-2, CAO-S

SIZE	DWG NO.	REV
A4	57.CA015.004	0A
SCALE	1/1	SHEET 1 OF 1

Wistron 啟豐科技股份有限公司
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Tel: 886-3-6667739 Fax: 886-3-6667711

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	0.88DØ1.37mm	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	Ø2.5mmShrink Tube	1	橡 膠	Black		長葆
F	Connector	1	銅鍍金	Golden	20278-101R-32	I-PEX



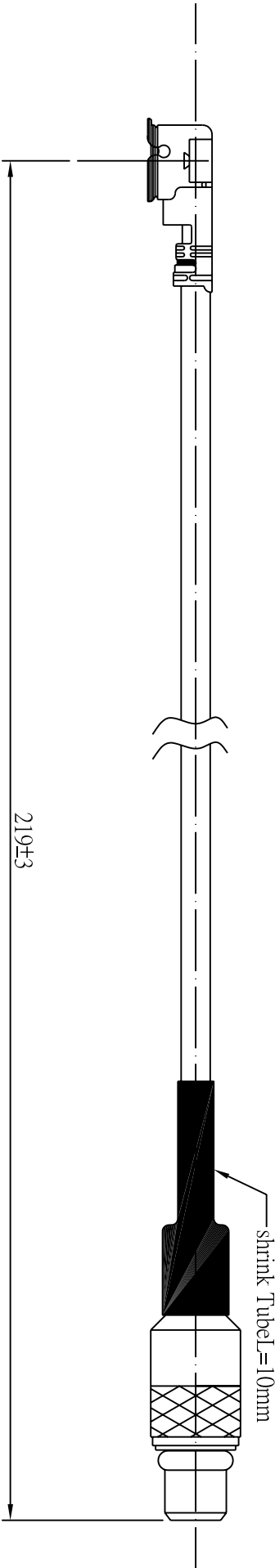
- 注: 1. 加裝連接器時需準確對齊使用專用具嵌合、在治具上需探知中心導體位置是否正確.
2. 外觀上不允許有刮痕、被覆脫落...等現象發生.

品名		WN-MMCX(母)-1.37W-IPEx-240mm-026				圖番				WN-MMCX(母)-1.37W-IPEx-240mm-026			
客戶		Wistron NeWeb Corp.		料號		Coaxial Cable		White		2003.04.15		副本號:	
設計		制圖		驗圖		承認		顏色		日期		2003.04.15	
啓碁													
版本號: A.0						副本號:							

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 Ø 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	Ø 2.5mm Shrink Tube	1	橡 膠			長葆
F	Connector	1	銅鍍金	Golden	20278-101R-32	I-PEX

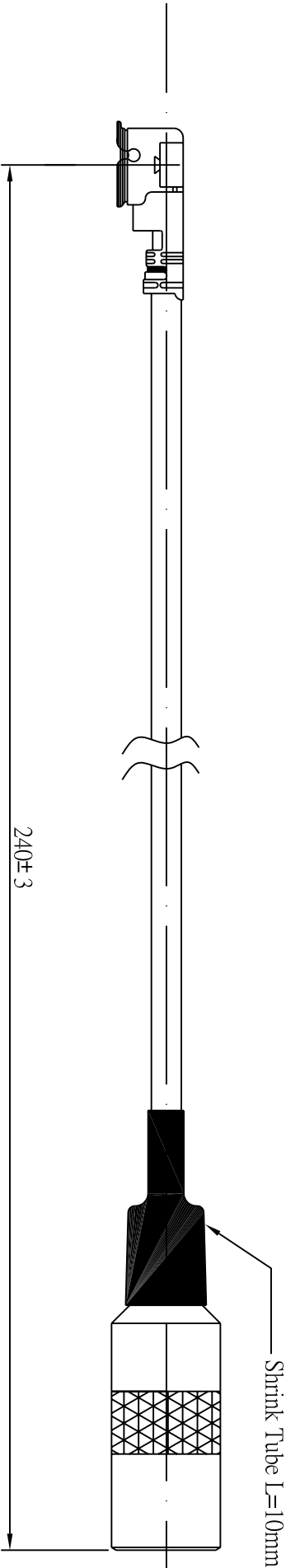


- 注: 1. 加裝連接器時需準確對齊使用專用治具嵌合、在治具上需探知中心導體位置是否正確.
2. 外觀上不允許有割痕、被覆脫落...等現象發生.

品名	WN-MMCX(子)-1.37B-IPEX-219mm-025	圖番	WN-MMCX(子)-1.37B-IPEX-219mm-025				
客戶	Wistron NeWeb Corp.	料號		年月日	氏名	檢印	
設計	制圖	驗圖	承認	Coaxial Cable			
啓碁	曹敏			顏色	Black		
		日期	2003.04.15				
版本號: A.0				副本號:			

單位: mm

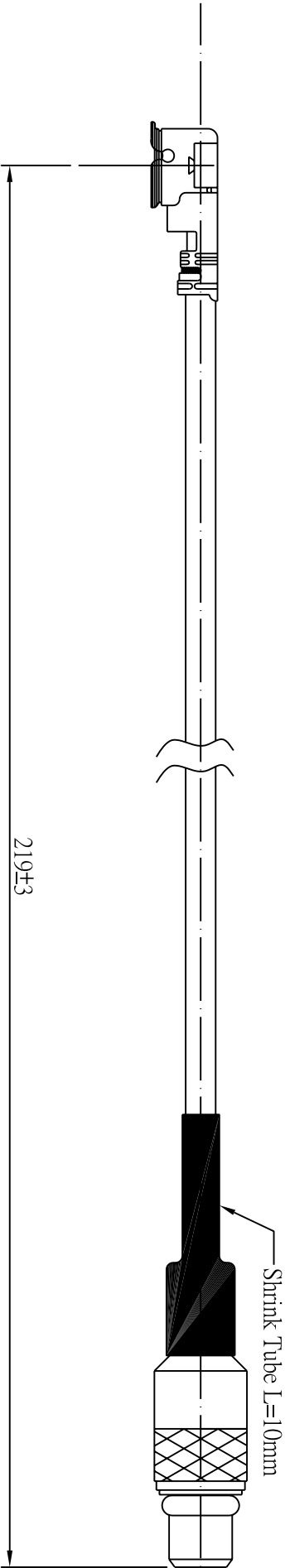
Item	Parts Description	Amount	Material	Color	P/N	Vendor
C	0.88Dø 1.37mm	1	Cable	White	J12B1481-3	Junkosha
D	MMCX Jack connector	1	銅鍍金	Golden	25-122A (第二代)	Aliner
E	ø 2.5mmShrink Tube	1	橡 膠	Black		長葆
F	Connector	1	銅鍍金	Golden	U.FL-JP-088-A-240	HRS



品名	客戶	設計	啓碁						
C A9106157		Wistron NeWeb Corp.		記號	變更內容	年月日	氏名	檢印	
圖番		料號	承認	驗圖	制圖	顏色	日期	2003.03.27	
C A9106157		Coaxial Cable		White					
版本號: A.0		副本號:							

單位: mm

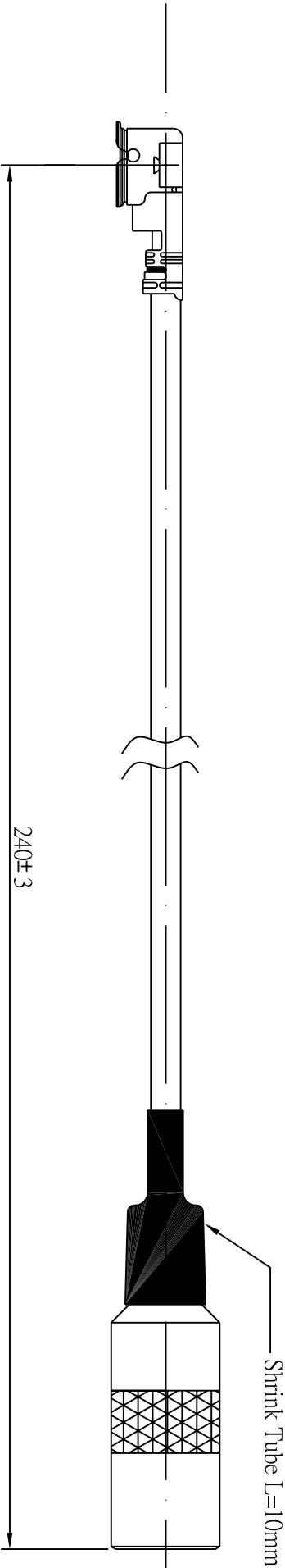
Item	Parts Description	Amount	Material	Color	P/N	Vendor
C	0.88D Ø 1.37mm	1	Cable	Black	J12B1481-3	Junkosha
D	MMCX Plug connector	1	銅鍍金	Golden	73415-4650 (第二代)	Molex
E	Ø 2.5mm Shrink Tube	1	橡 膠	Black		長 葆
F	Connector	1	銅鍍金	Golden	U.FL-JP-088-A-560	HRS



品名		C A9106157	客戶	Wistron NeWeb Corp.	圖番	C A9106157				
		記號	變更內容		年月日		氏名	檢印		
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	0.88Dø 1.37mm	1	Cable	White	J12B1481-3	Junkosha
D	MMCX Jack connector	1	銅鍍金	Golden	73415-4640 (第二代)	Molex
E	ø 2.5mmShrink 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				
啓碁	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

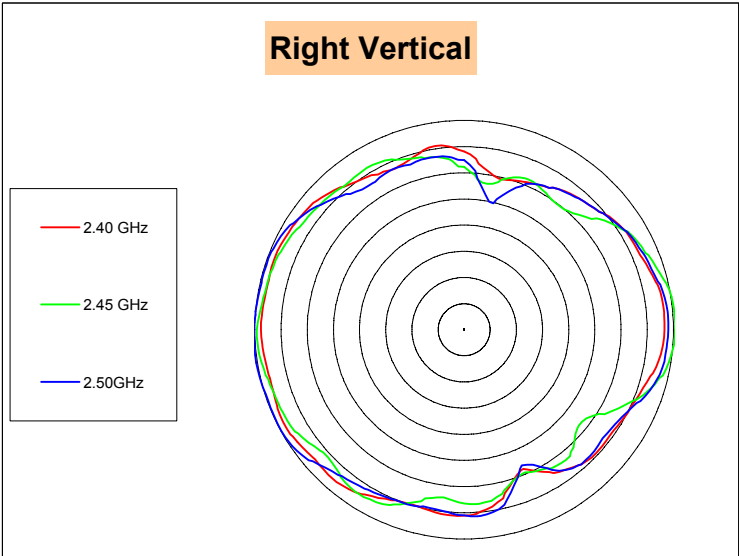
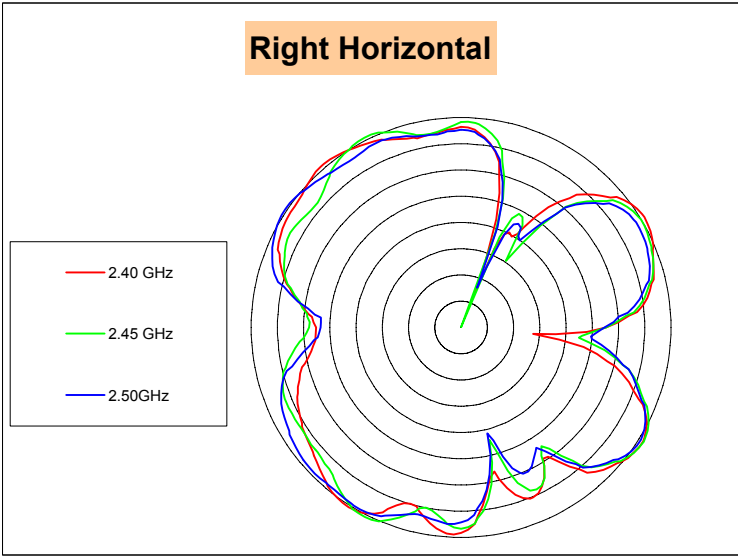
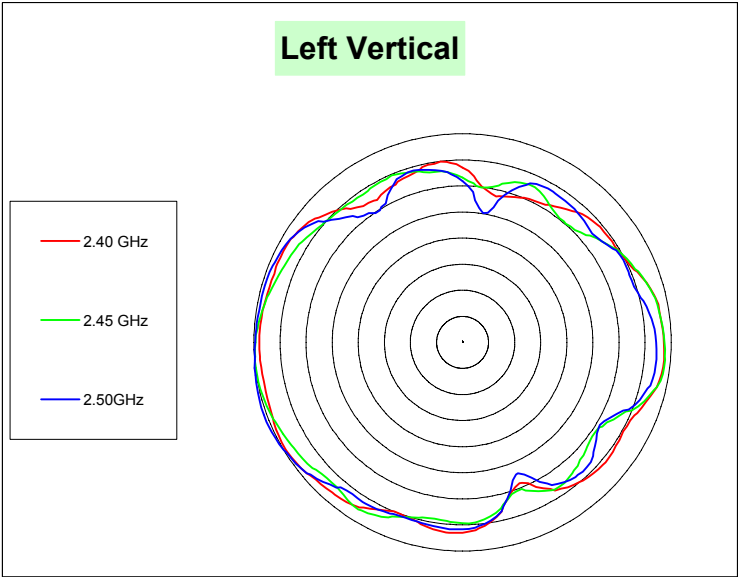
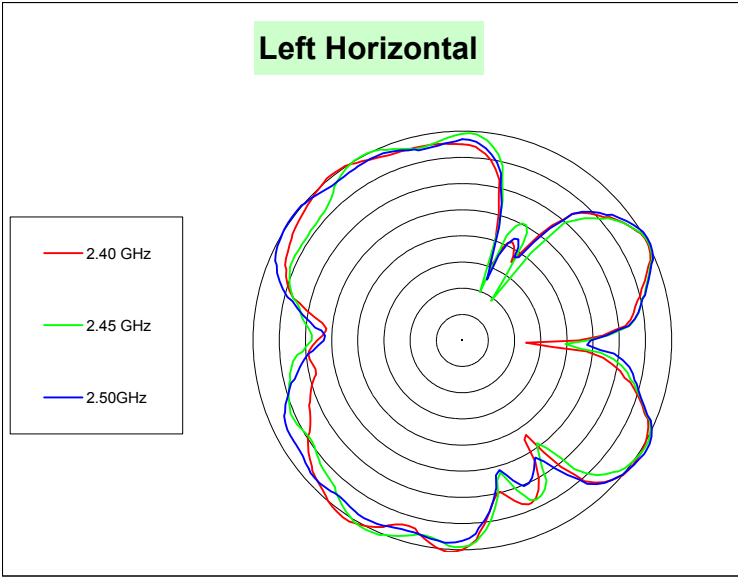
Main antenna	Aux antenna
1. Stamped metal 2. Junkosha cable and MMCX connector 3. Junkosha cable and IPEX connector (Junkosha cable and HRS connector)	1. Stamped metal 2. Junkosha cable and MMCX connector 3. Junkosha cable and IPEX connector (Junkosha cable and HRS connector)

X. Connector Info (general description)

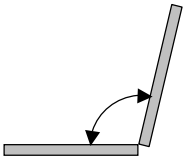
Description (Cable)	Inner Conductor: AWG#30(7/0.102), Silver plating annealed copper wire Dielectric core: D0.88mm Outer conductor: 16/5/0.05 D1.13mm, Silver plating annealed copper wire Jacket: D1.37mm		
Requirements	Characteristic impedance: 50(+2,-2)ohm Nominal capacitance: 97pF/m Conductor resistance 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
	2.45	-3.33	0.61
	2.5	-3.01	1.01
Left Vert	2.4	-3.59	-0.34
	2.45	-4.03	-0.07
	2.5	-3.88	0.58
Right Horz	2.4	-2.96	0.90
	2.45	-3.21	1.02
	2.5	-3.01	0.45
Right Vert	2.4	-3.75	-1.13
	2.45	-3.83	0.34
	2.5	-3.37	0.26



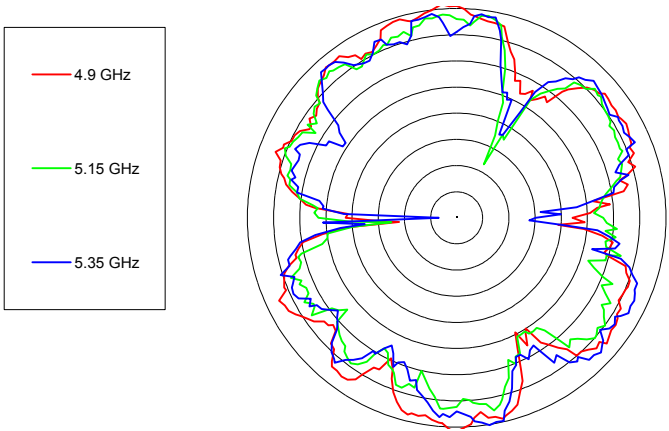
VSWR open = lid/keyboard angle 110°

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

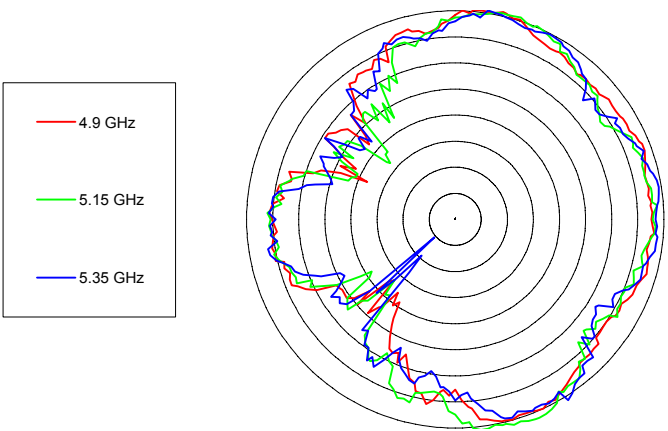
Platform: BladII-Latitude LCD module
Supplier: Wistron NeWeb coporation
Date: 2003/4/15

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

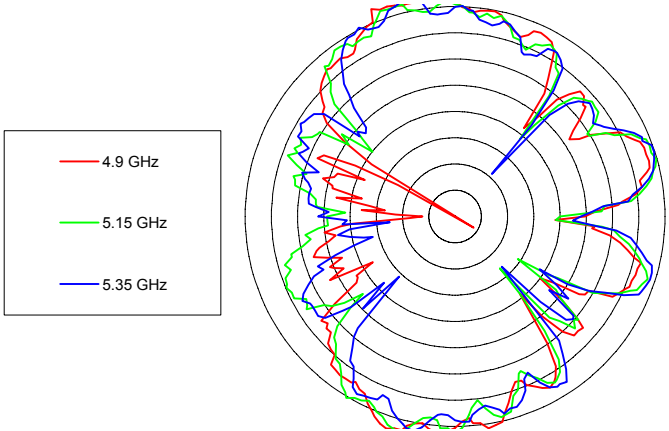
Left Horizontal



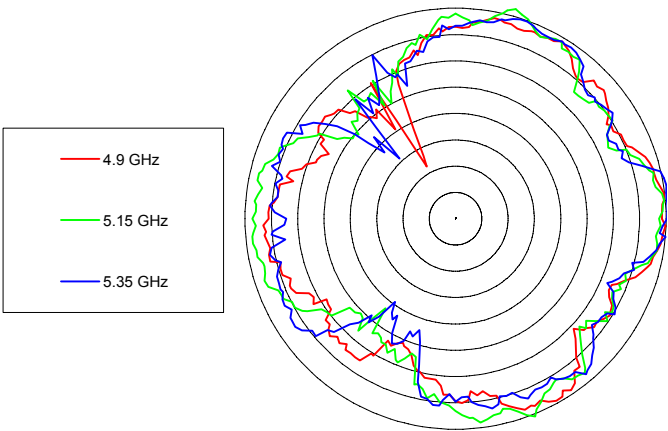
Left Vertical



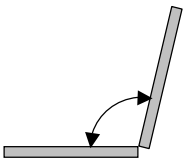
Right Horizontal



Right Vertical



U-NII (4.90 GHz - 5.350 GHz)			
CONFIG	FREQ GHz	Avg dBi	Pk dBi
Left Horz	4.9	-4.18	0.94
	5.15	-6.29	-0.94
	5.35	-5.33	0.10
Left Horz	4.9	-3.85	0.80
	5.15	-3.79	1.34
	5.35	-4.05	0.87
Right Horz	4.9	-3.36	2.64
	5.15	-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



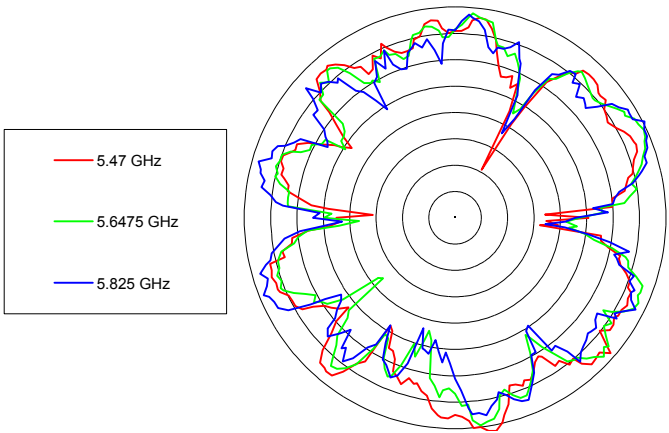
VSWR open = lid/keyboard angle 110°

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

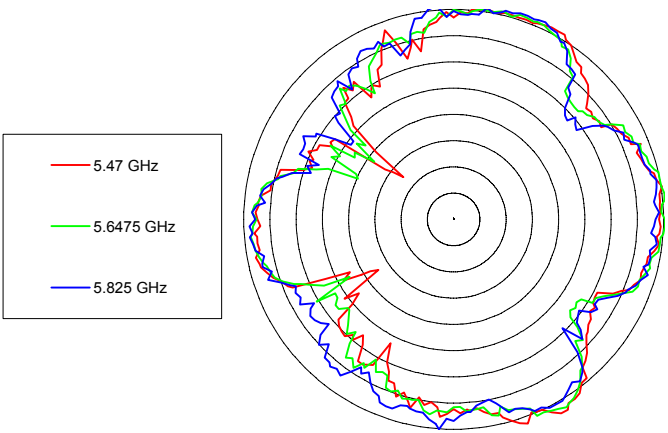
Platform: BladII-Latitude LCD module
Supplier: Wistron NeWeb coporation
Date: 2003/4/15

HyperLAN (5.470 GHz - 5.725 GHz) Antenna Radiation Patterns

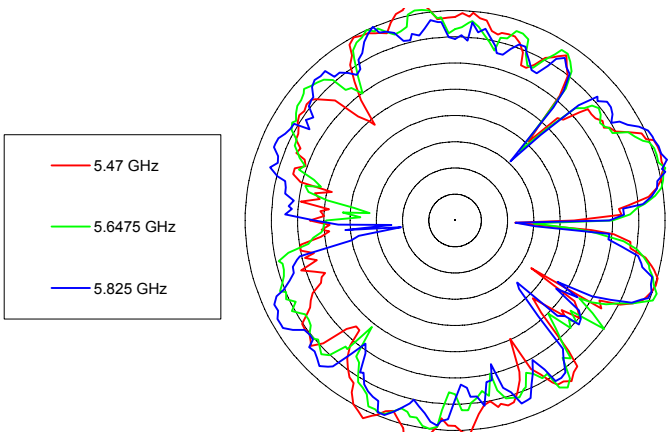
Left Horizontal



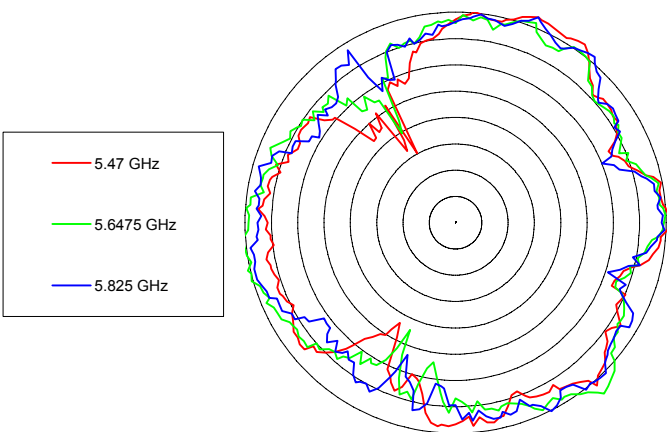
Left Vertical



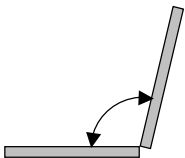
Right Horizontal



Right Vertical



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.