

Mb02 Antenna Sample Approval Report

Description: 802.11a+b Antenna & Bluetooth Antenna
FIC P/N: 21-92148-01/21-92149-01
WistronNeWeb P/N: 91.CAN15.001/002/003
Vendor Code: H222

啓碁科技股份有限公司

新竹市科學園區力行一路 10-1 號

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.	Approved by First International Computer Inc.
Justin Chang	Weili Cheng	

I. Antenna Spec.

I-1. Antenna Spec. For WLAN(LCD site)

1. 802.11b Spec.

- 1.1. Frequency range : 2.4 ~ 2.5GHz (Nominal)
- 1.2. Impedance : 50Ω
- 1.3. LCD Panel : Open (100°)
- 1.4. System Plane : XY plane
- 1.5. VSWR : ≤ 2 (Main & Aux. Antenna)
- 1.6. Band Width : ≥ 130MHz (2450MHz±65MHz at least).
- 1.7. Any 30° angle range can't has null depth.
- 1.8. Average gain & Peak gain

Antenna	Peak Gain (dBi)			Average Gain (dBi)		
	Frequency			Frequency		
	2.4GHz	2.45GHz	2.5GHz	2.4GHz	2.45GHz	2.5GHz
Main	≤ 3	≤ 3	≤ 3	≥ -5	≥ -5	≥ -5
Auxiliary				≥ -5	≥ -5	≥ -5

- 1.9. Diversity Sum : ≥ -2.5dBi

2. 802.11a Spec.

- 2.1. Frequency range : 5.15 ~ 5.35GHz (Nominal)
- 2.2. Impedance : 50Ω
- 2.3. LCD Panel : Open (100°)
- 2.4. System Plane : XY plane
- 2.5. VSWR : ≤ 2.5 (Main & Aux. Antenna)
- 2.6. Band Width : ≥ 250MHz (5250MHz±125MHz at least).
- 2.7. Any 30° angle range can't has null depth.
- 2.8. Average gain & Peak gain

Antenna	Peak Gain (dBi)			Average Gain (dBi)		
	Frequency			Frequency		
	5.15GHz	5.25GHz	5.35GHz	5.15GHz	5.25GHz	5.35GHz
Main	≤ 6	≤ 6	≤ 6	≥ -5	≥ -5	≥ -5

Auxiliary				≥ -5	≥ -5	≥ -5
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2.9. Diversity Sum : $\geq -4\text{dBi}$

I.2 Antenna description

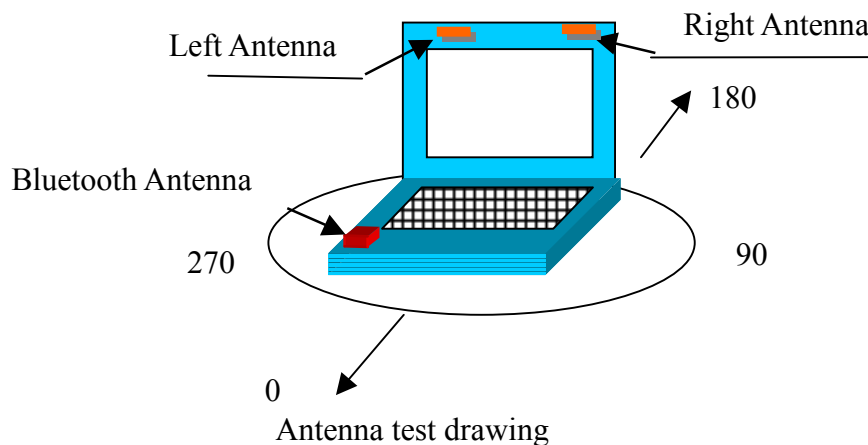
Antenna type	Wireless antenna :PIFA Bluetooth antenna:IFA
Antenna material	Metal sheet
Cable length	Left-side antenna: 730mm Φ 1.13mm Right-side antenna: 590mm Φ 1.13mm Bluetooth antenna: 105mm Φ 1.13mm (From the center of connector to the metal edge of antenna)
Connector type	HRS U.FL-LP-066

II. Mechanical spec.

Mechanical drawing: (Attached the file below)

III. Antenna test report

a. Average gain and peak gain test result



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 z	5.15 GHz	5.25 GHz	5.35 GHz	5.47 GHz	5.5975 GHz	5.825 GHz
Left Ant.	Peak dBi	2.45	1.99	2.24	0.4	0.5	0.7	2.51	1.5	2.61
	Avg dBi	-1.83	-1.74	-1.42	-4.06	-3.77	-3.22	-3.38	-3.05	-2.86
Right Ant.	Peak dBi	1.66	2.57	2.41	1.98	1.28	2.03	2.65	1.87	2.45
	Avg dBi	-1.41	-1.31	-1.87	-3.88	-4.02	-3.18	-3.17	-2.85	-2.36
Bluetooth Ant.	Peak dBi	1.55	0.96	1.47						
	Avg dBi	-4.05	-4.36	-4.54						

Diversity Sum

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 z	5.15 GHz	5.25 GHz	5.35 GHz	5.47 GHz	5.5975 GHz	5.825 GHz
Diversity Sum		-1.13	-0.84	-1.24	-3.42	-3.25	-2.82	-2.85	-2.52	-2.04

b .VSWR

Frequency	2.40 GHz	2.45 GHz	2.50 GHz	5.15 GHz	5.25 GHz	5.35 GHz	5.47 GHz	5.5975 GHz	5.825 GHz
Left A Antenna	1.56	1.23	1.65	1.56	1.43	1.75	1.52	1.45	1.75
Right Antenna	1.62	1.32	1.45	1.45	1.35	1.42	1.67	1.52	1.44
Bluetooth Antenna	1.65	1.34	1.57						

c. Cable & Connector Loss

1.13mm (dia.) Nissei RF cable with double end HRS connector										
S21 (dBm)										
length (mm)	2.4G	2.45G	2.5G	5.15G	5.25G	5.35G	5.47G	5.5975G	5.725G	5.825G
198	-1.104	-1.091	-1.104	-1.540	-1.644	-1.799	-1.819	-1.666	-1.656	-1.854
362	-1.700	-1.699	-1.689	-2.391	-2.519	-2.606	-2.450	-2.750	-2.539	-2.694
750	-2.980	-3.020	-3.033	-4.620	-4.710	-4.800	-4.810	-4.737	-4.833	-4.877
1000	-3.539	-3.584	-3.619	-5.217	-5.269	-5.312	-5.364	-5.444	-5.499	-5.537

d. Antenna pattern

Right-side Antenna

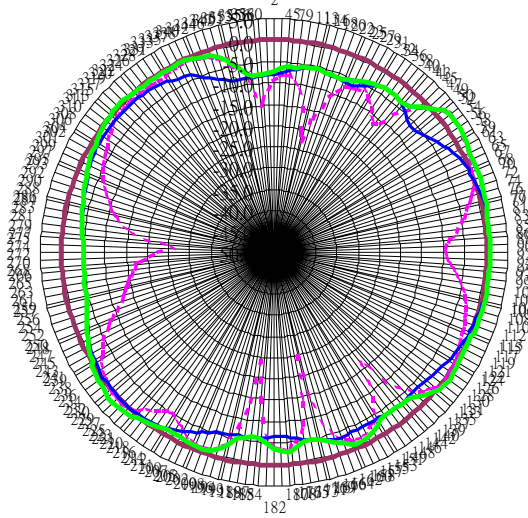
Freq. : 2.45/5.25/5.6475GHz

Polarization : V pol. And H pol.

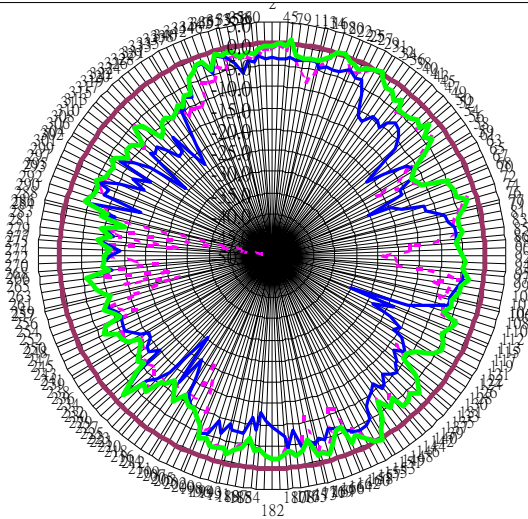
LCD angle: 110°

Elevation angle: 0°

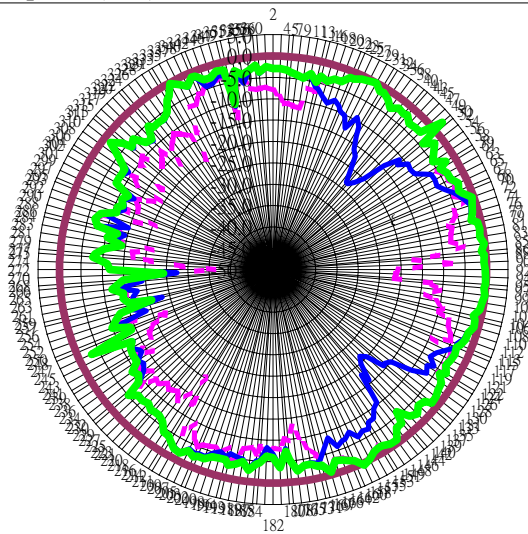
Antenna Radiation pattern -@2.45GHz



Antenna Radiation pattern -@5.25GHz



Antenna Radiation pattern -@5.6475GHz



Left-side Antenna

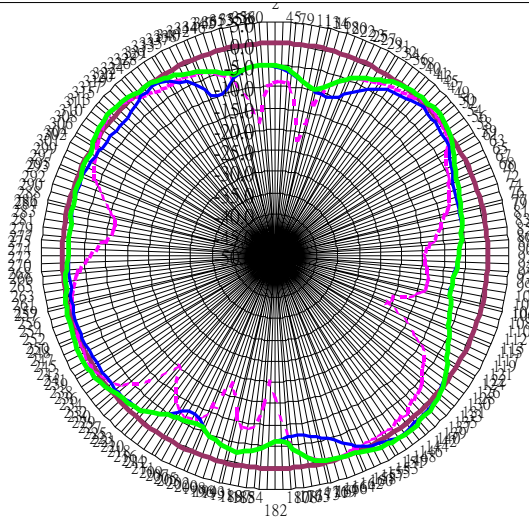
Freq. : 2.45/5.25/5.6475GHz

Polarization : V pol. And H pol.

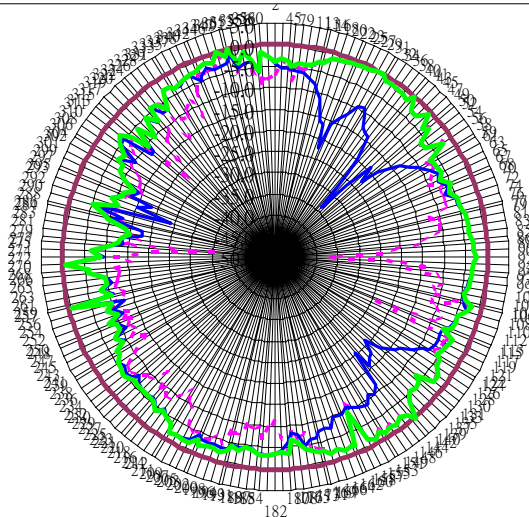
LCD angle: 110°

Elevation angle: 0°

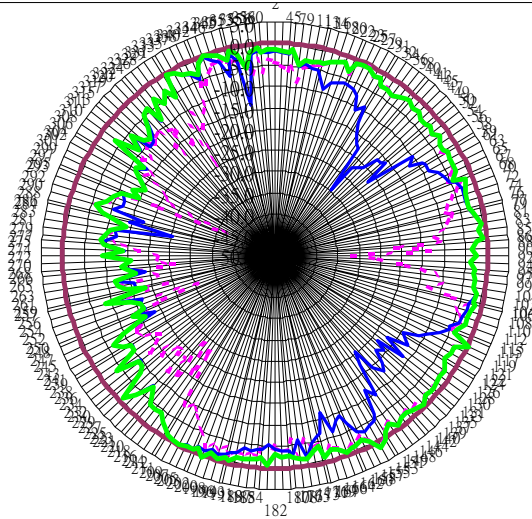
Antenna Radiation pattern -@2.45GHz



Antenna Radiation pattern -@5.25GHz

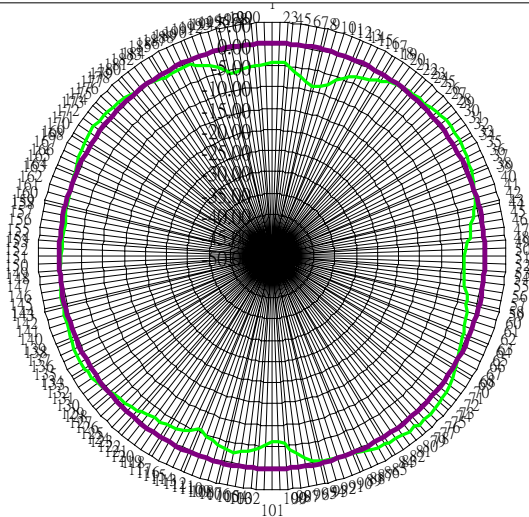
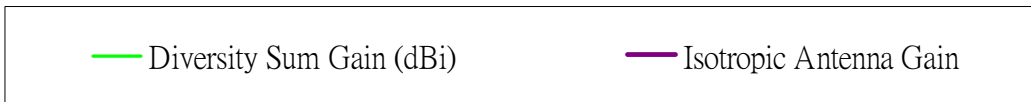


Antenna Radiation pattern -@5.6475GHz



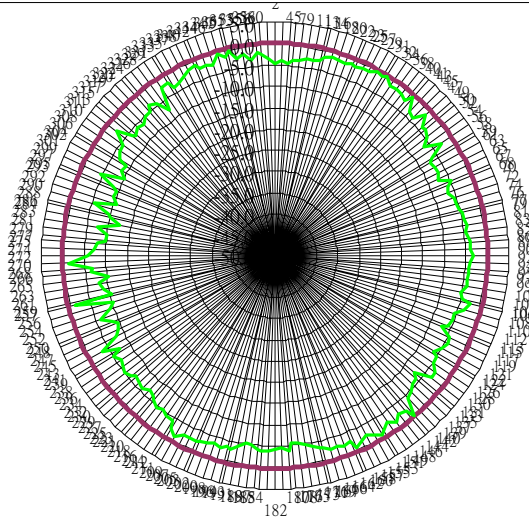
Wireless LAN Antenna Diversity Sum

Antenna Radiation pattern -@2.45GHz



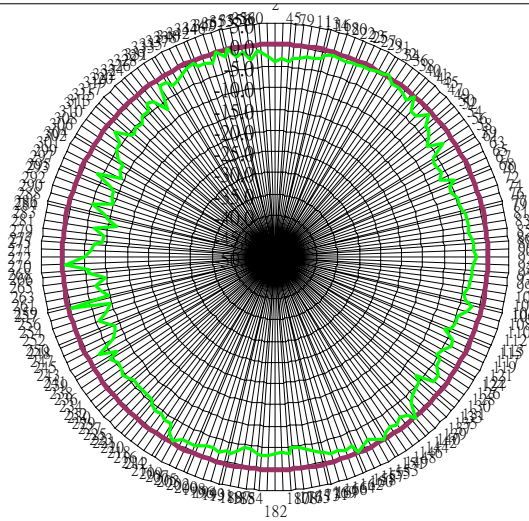
Antenna Radiation pattern -@5.25GHz

— Isotropic Antenna Gain — Diversity Sum Gain (dBi)



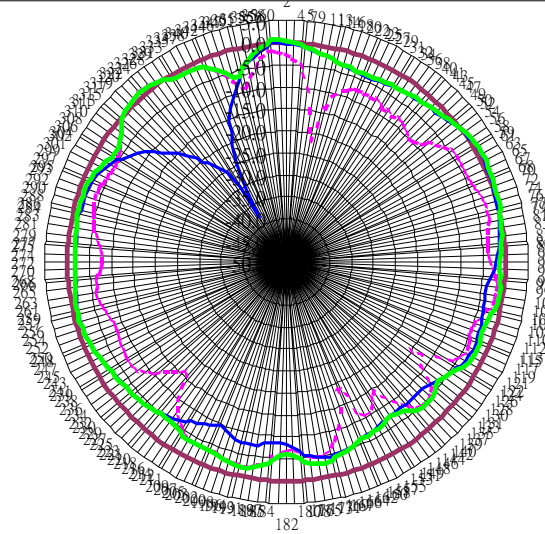
Antenna Radiation pattern -@5.6475GHz

— Isotropic Antenna Gain — Diversity Sum Gain (dBi)



Bluetooth Antenna
Freq. : 2.45GHz
Polarization : V pol. And H pol.
LCD angle: 110°
Elevation angle: 0°

Antenna Radiation pattern -@2.45GHz



IV. Cable spec.

U. FL-LP-5016B-A-37(590)

U. FL-LP-5016-A-39(730)

U. FL-LP-5016-A-67(105)

Approval sheet is as the attached document.

2003/2/13

REF: RF-A20020518

TO Wistron Neweb Corporation.

DRAWING FOR APPROVAL

U. FL-LP-5016-A-67-(105)

U. FL-LP-5016-A-39-(730)

U. FL-LP-5016B-A-37-(590)

HIROSE ELECTRIC CO.,LTD.

COUNT	DESCRIPTION OF REVISIONS	BY	CHKD	DATE	COUNT	DESCRIPTION OF REVISIONS	BY	CHKD	DATE
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APPLICABLE STANDARD			
RATING	OPERATING TEMPERATURE RANGE	-40°C TO +90°C(90%RH MAX)	STORAGE TEMPERATURE RANGE -40°C TO +90°C(90%RH MAX)
	POWER	——W	CHARACTERISTIC IMPEDANCE 50Ω (0 TO 3GHz)
	PECULIARITY	——	APPLICABLE CABLE RF-MF5016 :NISSEI ELECTRIC CO.,LTD.

SPECIFICATIONS

ITEM	TEST METHOD	REQUIREMENTS	QT	AT
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CONSTRUCTION				
GENERAL EXAMINATION	VISUALLY AND BY MEASURING INSTRUMENT.	ACCORDING TO DRAWING.	○	○
MARKING	CONFIRMED VISUALLY.		○	○

ELECTRIC CHARACTERISTICS				
CONTACT RESISTANCE	10 mA MAX (DC OR 1000 Hz).	CENTER CONTACT 77 mΩ MAX.	○	○
		OUTER CONTACT 28 mΩ MAX.	○	○
INSULATION RESISTANCE	100 V DC.	500 MΩ MIN.	○	○
VOLTAGE PROOF	200 V AC FOR 1 min.CURRENT LEAKAGE 2mA MAX.	NO FLASHOVER OR BREAKDOWN.	○	○
VOLTAGE STANDING WAVE RATIO	FREQUENCY 0.045 TO 3 GHz.	VSWR 1.3 MAX.	○	—
INSERTION LOSS	FREQUENCY —— TO —— GHz	—— dB MAX.	—	—

MECHANICAL CHARACTERISTICS				
CABLE CLAMP ROBUSTNESS (AGAINST CABLE PULL)	APPLYING A PULL FORCE THE CABLE AXIALLY AT 9.8 N MAX.	① NO WITHDRAWAL AND BREAKAGE OF CABLE. ② NO BREAKAGE OF CLAMP.	○	—

REMARKS For Wistron Neweb Corporation.	DRAWN	DESIGNED	CHECKED	APPROVED	RELEASED
	SSATO 03.02.12	SSATO 03.02.12	m. yamane 02.02.13	F. Kobayashi 03.02.13	

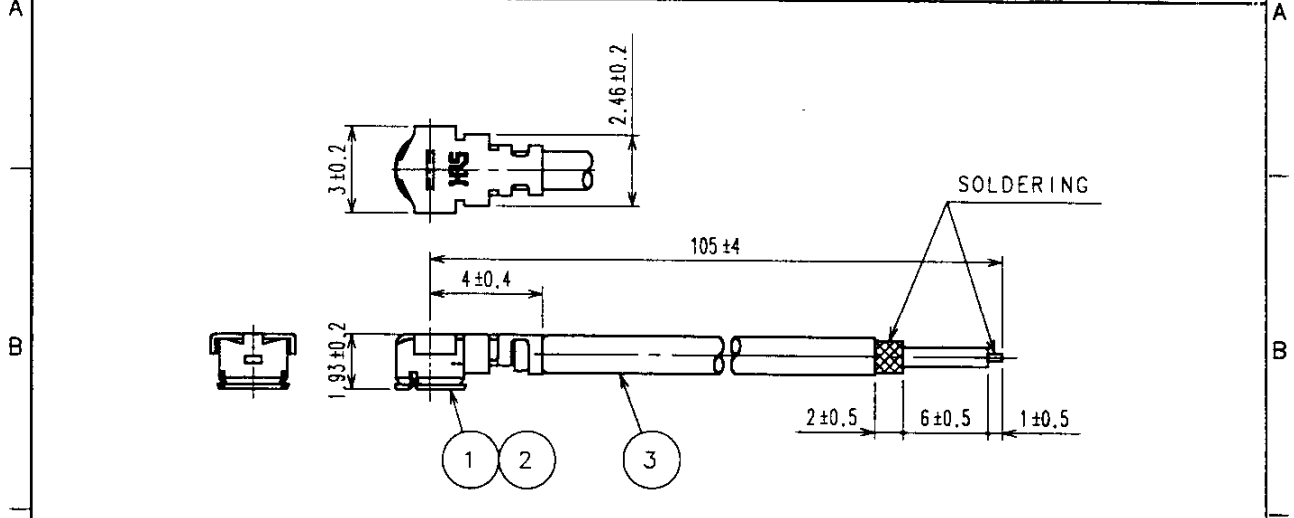
Note QT:Qualification Test AT:Assurance Test O:Applicable Test

HRS HIROSE ELECTRIC CO., LTD.	SPECIFICATION SHEET	PART NO. U.FL-LP-5016-A-67-(105)
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CODE NO.(OLD) CL	DRAWING NO. ELC4-302837	PART NO. CL396-9396-0	1/1
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COUNT	DESCRIPTION OF REVISIONS				BY	CHKD	DATE	COUNT	DESCRIPTION OF REVISIONS				BY	CHKD	DATE				
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PRECAUTIONS FOR HANDLING

◆Connector insertion and extraction
 a. Connector shall be extracted vertically by specialised extraction JIG.
 Part No.: E.FL-LP-N (CL Code: CL331-0441-9)
 U.FL-LP-N-2 (CL Code: CL331-0494-5)
 Never hold the cable when extracting the cable because it damages the connector.
 b. Insert the connector as perpendicularly to the mating surface as possible by aligning the mating axes of both connectors. Do not excessively slant the connectors when inserting.
 ◆Allowable loads on the cable after the connectors are mated.
 The figures below show the maximum allowable loads on the cable. Do not apply loads exceeding these values to the cable.

2	U.FL-CONTACT	CL331-0461-6			
1	U.FL-LP-066	CL331-0452-5	3	RF-MF5016	NISSEI ELECTRIC CO., LTD
NO.	PART NO.	CODE NO.	NO.	PART NO.	MANUFACTURER

CODE NO. (OLD) CL		DRAWN	DESIGNED	CHECKED	APPROVED	RELEASED
For Wistron NeWeb Corporation.		S.SATO 03.02.12	S.SATO 03.02.12	M. Yamane 03.02.13	F. Kobayashi 03.02.13	ENG SEP

TO RF F	SCALE FREE UNITS mm	DRAWING NO. EDC4-302837 HIROSE ELECTRIC CO., LTD.	PART NO. U.FL-LP-5016-A-67-(105) CODE NO. CL396-9396-0	1/1
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COUNT	DESCRIPTION OF REVISIONS	BY	CHKD	DATE	COUNT	DESCRIPTION OF REVISIONS	BY	CHKD	DATE
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APPLICABLE STANDARD				
RATING	OPERATING TEMPERATURE RANGE	-40°C TO +90°C(90%RH MAX)	STORAGE TEMPERATURE RANGE	-40°C TO +90°C(90%RH MAX)
	POWER	———W	CHARACTERISTIC IMPEDANCE	50Ω (0 TO 3GHz)
	PECULIARITY	———	APPLICABLE CABLE	RF-MF5016 :NISSEI ELECTRIC CO.,LTD.

SPECIFICATIONS

ITEM	TEST METHOD	REQUIREMENTS	QT	AT
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CONSTRUCTION				
GENERAL EXAMINATION	VISUALLY AND BY MEASURING INSTRUMENT.	ACCORDING TO DRAWING.	<input type="checkbox"/>	<input type="checkbox"/>
MARKING	CONFIRMED VISUALLY.		<input type="checkbox"/>	<input type="checkbox"/>

ELECTRIC CHARACTERISTICS				
CONTACT RESISTANCE	10 mA MAX (DC OR 1000 Hz).	CENTER CONTACT	402 mΩ MAX.	<input type="checkbox"/>
		OUTER CONTACT	128 mΩ MAX.	<input type="checkbox"/>
INSULATION RESISTANCE	100 VDC.		500 MΩ MIN.	<input type="checkbox"/>
VOLTAGE PROOF	200 V AC FOR 1 min.CURRENT LEAKAGE 2mA MAX.		NO FLASHOVER OR BREAKDOWN.	<input type="checkbox"/>
VOLTAGE STANDING WAVE RATIO	FREQUENCY 0.045 TO 3 GHz.	VSWR	1.3 MAX.	<input type="checkbox"/>
INSERTION LOSS	FREQUENCY —— TO —— GHz		—— dB MAX.	<input type="checkbox"/>

MECHANICAL CHARACTERISTICS				
CABLE CLAMP ROBUSTNESS (AGAINST CABLE PULL)	APPLYING A PULL FORCE THE CABLE AXIALLY AT 9.8 N MAX.	① NO WITHDRAWAL AND BREAKAGE OF CABLE.	<input type="checkbox"/>	<input type="checkbox"/>
		② NO BREAKAGE OF CLAMP.	<input type="checkbox"/>	<input type="checkbox"/>

REMARKS For Wistron Neweb Corporation.	DRAWN S.SATO 03.02.12	DESIGNED S.SATO 03.02.12	CHECKED M. Yamane 03.02.13	APPROVED T. Kobayashi 03.02.13	RELEASED
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Note QT:Qualification Test AT:Assurance Test O:Applicable Test

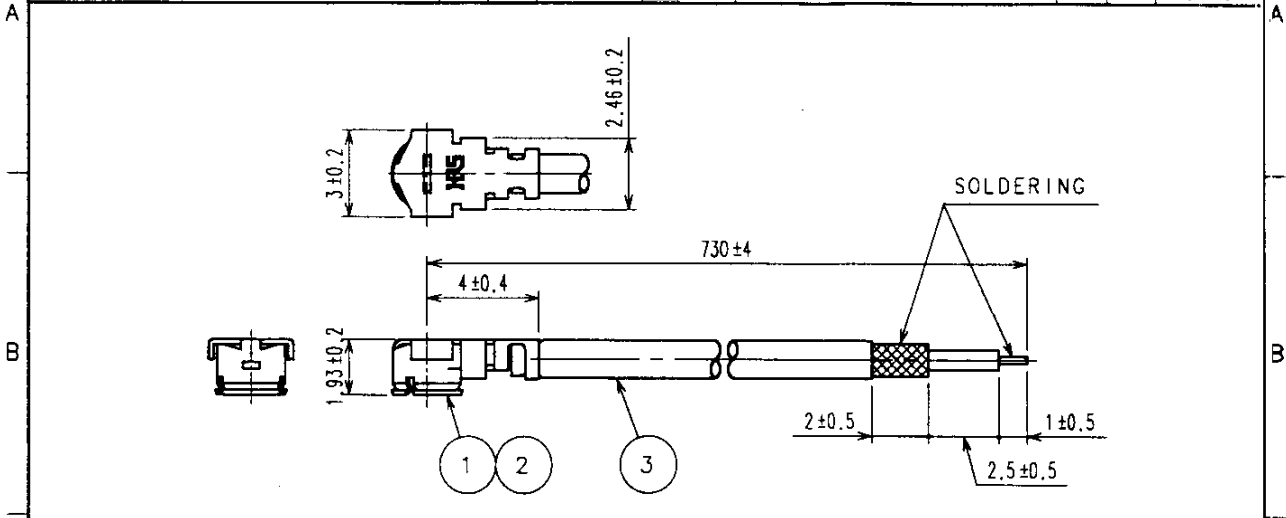
HRS HIROSE ELECTRIC CO., LTD.	SPECIFICATION SHEET	PART NO. U.FL-LP-5016-A-39-(730)
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CODE NO.(OLD) CL	DRAWING NO. ELC4-302838	PART NO. CL396-9397-3	1/1
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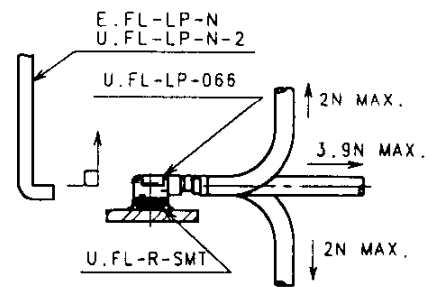
RF

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COUNT	DESCRIPTION OF REVISIONS	BY	CHKD	DATE	COUNT	DESCRIPTION OF REVISIONS	BY	CHKD	DATE	COUNT	DESCRIPTION OF REVISIONS	BY	CHKD	DATE	
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[PRECAUTIONS FOR HANDLING]

◆Connector insertion and extraction
a. Connector shall be extracted vertically by specialised extraction JIG.
Part No.: E.FL-LP-N (CL Code: CL331-0441-9)
U.FL-LP-N-2 (CL Code: CL331-0494-5)
Never hold the cable when extracting the cable because it damages the connector.
b. Insert the connector as perpendicularly to the mating surface as possible by aligning the mating axes of both connectors. Do not excessively slant the connectors when inserting.
◆Allowable loads on the cable after the connectors are mated.
The figures below show the maximum allowable loads on the cable. Do not apply loads exceeding these values to the cable.



2	U.FL-CONTACT	CL331-0461-6			
1	U.FL-LP-066	CL331-0452-5	3	RF-MF5016	NISSEI ELECTRIC CO., LTD.
NO.	PART NO.	CODE NO.	NO.	PART NO.	MANUFACTURER

CODE NO. (OLD) CL	DRAWN S.SATO 03.02.12	DESIGNED S.SATO 03.02.12	CHECKED M. Yamane 03.02.13	APPROVED F. Kobayashi 03.02.13	RELEASED ENG. DEPT.
For Wistron NeWeb Corporation.					

 SCALE FREE UNITS mm	DRAWING NO. EDC4-302838 HIROSE ELECTRIC CO., LTD.	PART NO. U.FL-LP-5016-A-39-(730) CODE NO. CL396-9397-3	1/1
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COUNT	DESCRIPTION OF REVISIONS	BY	CHKD	DATE	COUNT	DESCRIPTION OF REVISIONS	BY	CHKD	DATE
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APPLICABLE STANDARD

RATING	OPERATING TEMPERATURE RANGE	-40°C TO +90°C(90%RH MAX)	STORAGE TEMPERATURE RANGE	-40°C TO +90°C(90%RH MAX)
	POWER	——W	CHARACTERISTIC IMPEDANCE	50Ω (0 TO 3GHz)
	PECULIARITY	——	APPLICABLE CABLE	RF-MF5016 (BLACK) :NISSEI ELECTRIC CO.,LTD.

SPECIFICATIONS

ITEM	TEST METHOD	REQUIREMENTS	QT	AT
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CONSTRUCTION


GENERAL EXAMINATION	VISUALLY AND BY MEASURING INSTRUMENT.	ACCORDING TO DRAWING.	<input type="checkbox"/>	<input type="checkbox"/>
MARKING	CONFIRMED VISUALLY.		<input type="checkbox"/>	<input type="checkbox"/>

ELECTRIC CHARACTERISTICS

CONTACT RESISTANCE	10 mA MAX (DC OR 1000 Hz).	CENTER CONTACT	329 mΩ MAX.	<input type="checkbox"/>	<input type="checkbox"/>
		OUTER CONTACT	105 mΩ MAX.	<input type="checkbox"/>	<input type="checkbox"/>
INSULATION RESISTANCE	100 VDC.	500 MΩ MIN.	<input type="checkbox"/>	<input type="checkbox"/>	
VOLTAGE PROOF	200 VAC FOR 1 min.CURRENT LEAKAGE 2mA MAX.	NO FLASHOVER OR BREAKDOWN.	<input type="checkbox"/>	<input type="checkbox"/>	
VOLTAGE STANDING WAVE RATIO	FREQUENCY 0.045 TO 3 GHz.	VSWR 1.3 MAX.	<input type="checkbox"/>	<input type="checkbox"/>	-
INSERTION LOSS	FREQUENCY —— TO —— GHz	—— dB MAX.	<input type="checkbox"/>	<input type="checkbox"/>	-

MECHANICAL CHARACTERISTICS

CABLE CLAMP ROBUSTNESS (AGAINST CABLE PULL)	APPLYING A PULL FORCE THE CABLE AXIALLY AT 9.8 N MAX.	① NO WITHDRAWAL AND BREAKAGE OF CABLE. ② NO BREAKAGE OF CLAMP.	<input type="checkbox"/>	<input type="checkbox"/>
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REMARKS For Wistron Neweb Corporation.	DRAWN S.SATO 03.02.12	DESIGNED S.SATO 03.02.12	CHECKED m. Yamane 03.02.13	APPROVED F. Kobayashi 03.02.13	RELEASED 
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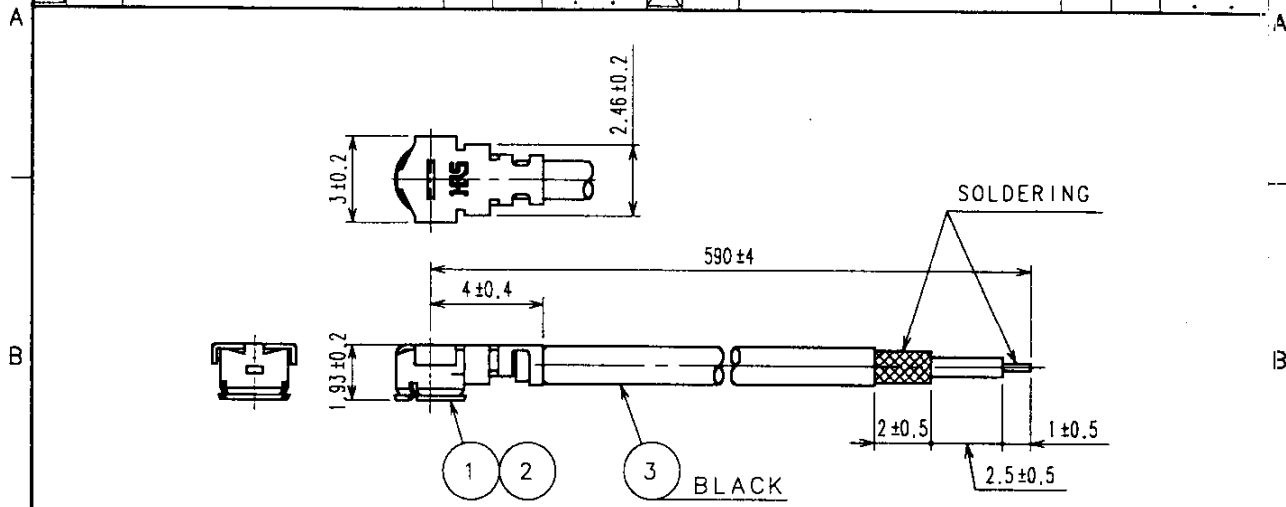
Note QT:Qualification Test AT:Assurance Test O:Applicable Test

HRS HIROSE ELECTRIC CO., LTD.	SPECIFICATION SHEET	PART NO. U.FL-LP-5016B-A-37-(590)
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CODE NO (OLD) CL	DRAWING NO. ELC4-302839	PART NO. CL396-9398-6	1/1
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COUNT	DESCRIPTION OF REVISIONS	BY	CHKD	DATE	COUNT	DESCRIPTION OF REVISIONS	BY	CHKD	DATE	COUNT	DESCRIPTION OF REVISIONS	BY	CHKD	DATE	COUNT	DESCRIPTION OF REVISIONS	BY	CHKD	DATE
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[PRECAUTIONS FOR HANDLING]

◆Connector insertion and extraction
a.Connector shall be extracted vertically by specialised extraction JIG.
Part No.:E.FL-LP-N(CL Code:CL331-0441-9)
U.FL-LP-N-2(CL Code:CL331-0494-5)
Never hold the cable when extracting the cable because it damages the connector.
b.Insert the connector as perpendicularly to the mating surface as possible by aligning the mating axes of both connectors. Do not excessively slant the connectors when inserting.

◆Allowable loads on the cable after the connectors are mated.
The figures below show the maximum allowable loads on the cable. Do not apply loads exceeding these values to the cable.

2	U.FL-CONTACT	CL331-0461-6			
1	U.FL-LP-066	CL331-0452-5	3	RF-MF5016(BLACK)	NISSEI ELECTRIC CO.,LTD.
NO.	PART NO.	CODE NO.	NO.	PART NO.	MANUFACTURER

CODE NO. (OLD) CL		DRAWN	DESIGNED	CHECKED	APPROVED	RELEASED
For Wistron NeWeb Corporation.		SSATO 03.02.12	SSATO 03.02.12	m. yamane 03.02.13	7 Kobayashi 03.02.13	ENG T REP

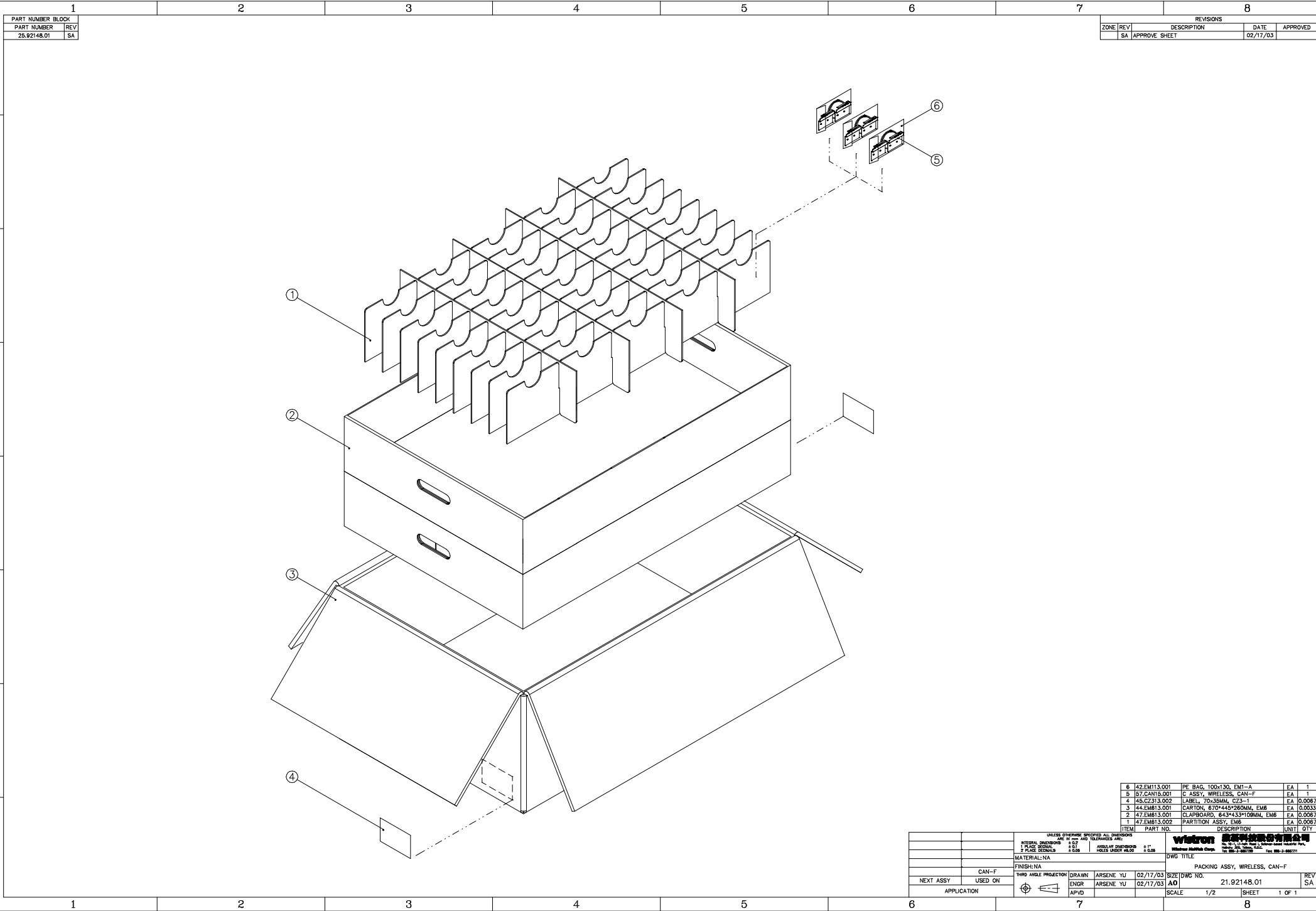
 SCALE FREE UNITS mm	DRAWING NO. EDC4-302839	PART NO. U.FL-LP-5016B-A-37-(590)
	 HIROSE ELECTRIC CO.,LTD.	CODE NO. CL396-9398-6
		1/1

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V. Package

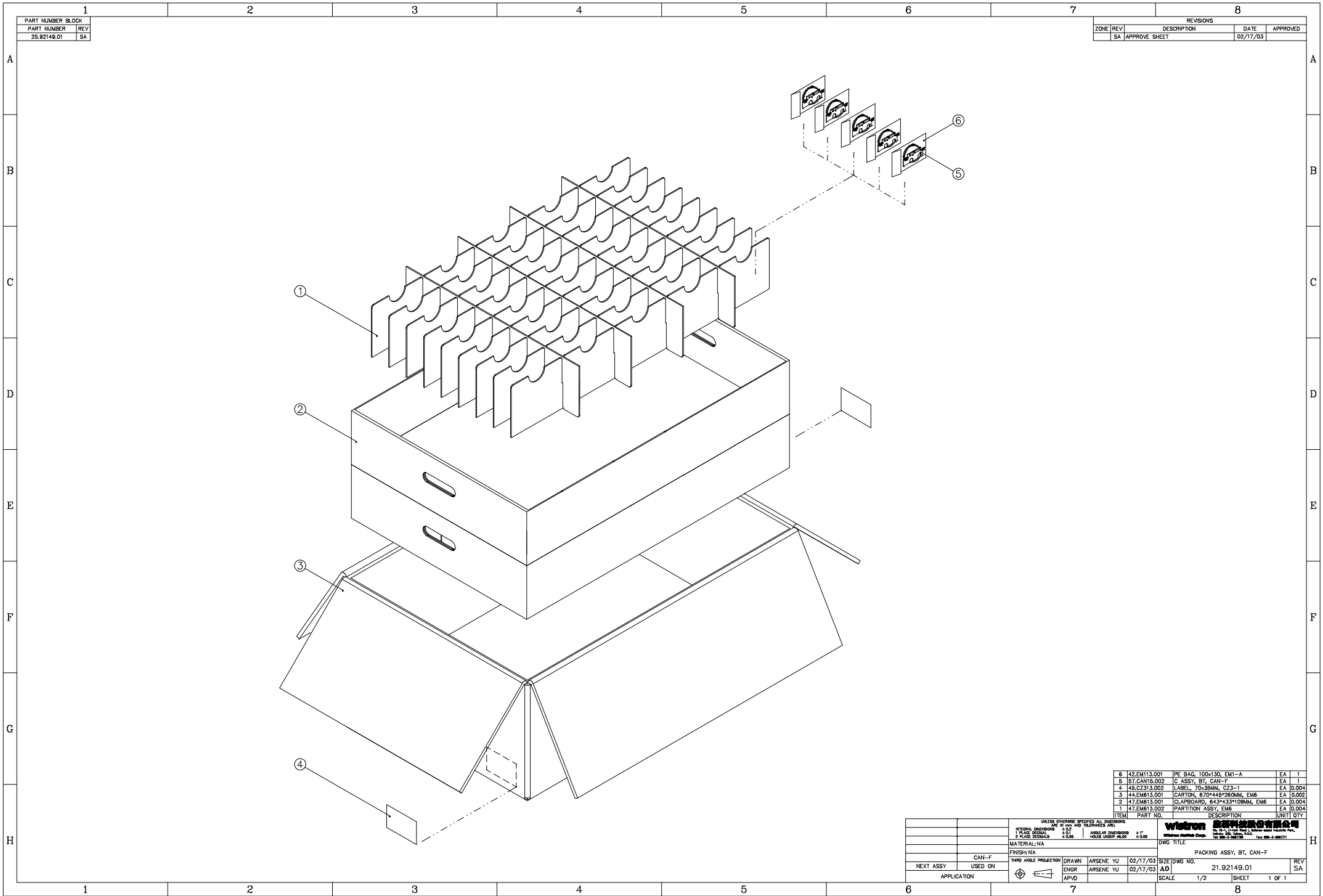


PART NUMBER BLOCK	
PART NUMBER	REV
25.92148.01	SA

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
SA	APPROVE SHEET		02/17/03	

ITEM	PART NO.	DESCRIPTION	UNIT	QTY
6	42.EM13.001	PE BAG, 100x130, EM1-A	EA	1
5	57.CAN16.001	C ASSY, WIRELESS, CAN-F	EA	1
4	45.CZ313.002	LABEL, 70x38MM, CZ3-1	EA	0.0067
3	44.EM813.001	CARTON, 670*440*280MM, EM8	EA	0.0533
2	47.EM613.001	C. APPROARD, 643*433*100MM, EM6	EA	0.0067
1	47.EM613.002	PARTITION ASSY, EM6	EA	0.0067

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES AND TOLERANCES ARE: 1 PLACE DECIMALS ± 0.125 2 PLACE DECIMALS ± 0.0625 3 PLACE DECIMALS ± 0.03125		ALL DIMENSIONS ARE IN MILLIMETERS AND TOLERANCES ARE: HOLE UNDER 48.00 ± 0.10		 Wistron Wistron America Corp. 10000 S. De Soto Ave., Suite 100 Southfield, MI 48034 Tel: 800-2-887799 Fax: 800-2-887711	
MATERIAL: NA		FINISH: MA		DWG TITLE	
CAN-F		DRAWN		PACKING ASSY, WIRELESS, CAN-F	
USED ON		ENGR		SIZE	
APPLICATION		APVD		DWG NO.	
		DRAWN		21.92148.01	
		ENGR		REV	
		APVD		SA	
		SCALE		SHEET	
		1/2		1 OF 1	



PART NUMBER BLOCK	
PART NUMBER	REV
25.92149.01	SA

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
SA	APPROVE SHEET		02/17/03	

ITEM	PART NO.	DESCRIPTION	UNIT	QTY
6	42.EM13.001	PE BAG, 100x150, EM1-A	EA	1
5	57.CAN16.002	C ASSY, BT, CAN-F	EA	1
4	45.CZ31.002	LABEL, 70x58MM, CZ3-1	EA	0.004
3	44.EM613.001	CARTON, 670*449*260MM, EM6	EA	0.002
2	47.EM613.001	C APRDARD, 643*453*109MM, EM6	EA	0.004
1	47.EM613.002	PARTITION ASSY, EM6	EA	0.004

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES AND DECIMALS ARE IN HUNDRETHS OF AN INCH		WISTRON	
1 PLACE DECIMALS ± 0.05	2 PLACE DECIMALS ± 0.005	ANGLE DIMENSIONS ± 0.5°	HOLE DIMENSIONS ± 0.005
FINISH: NA			
MATERIAL: NA		DWG TITLE	
CAN-F		PACKING ASSY, BT, CAN-F	
NEXT ASSY	USED ON	DRAWN	ENGR
		ARSENE YU	ARSENE YU
APPLICATION		DATE	DATE
		02/17/03	02/17/03
		SIZE	SCALE
		A0	1/2
		DWG NO.	SHEET
		21.92149.01	1 OF 1
		REV	SA

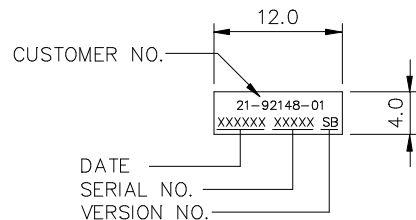
VI. Antenna Outline Drawing

1

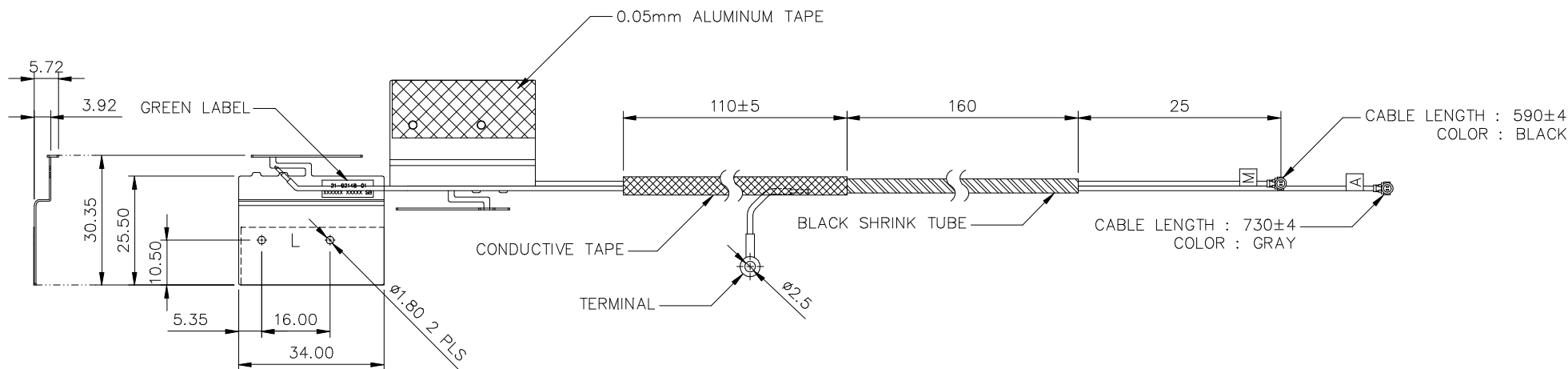
2

PART NUMBER BLOCK	
PART NUMBER	REV
57.CAN15.001	SA

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	SA	APPROVE SHEET	01/16/03	
	SB	APPROVE SHEET	02/19/03	



DETAIL OF LABEL
SCALE : 2/1



A

A

B

B

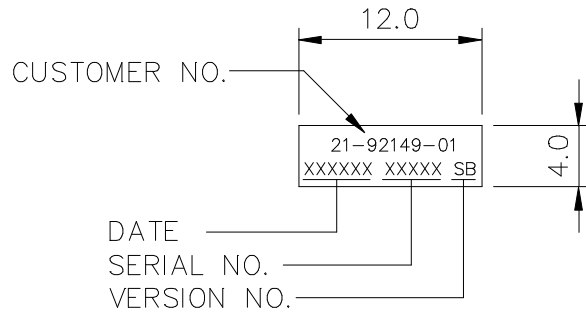
		UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN mm AND TOLERANCES ARE: INTEGRAL DIMENSIONS ± 4 1 PLACE DECIMAL ± 0.1 2 PLACE DECIMALS ±				ANGULAR DIMENSIONS ± 1° HOLES UNDER Ø5.00 ± 0.05		啟碁科技股份有限公司 <small>Wistron NeWeb Corp.</small> No. 10-1, Li-hsin Road I, Science-based Industrial Park, Hsinchu 300, Taiwan, R.O.C. Tel: 886-3-6667799 Fax: 886-3-6667711	
		MATERIAL:				DWG TITLE		OUTLINE, CAN-F	
		FINISH:				THIRD ANGLE PROJECTION		DRAWN	
NEXT ASSY		USED ON		APVD		ARSENE YU		02/19/03	
APPLICATION						ENGR		02/19/03	
						SIZE		DWG NO.	
						A3		57.CAN15.001	
						SCALE		1/1	
						SHEET		1 OF 1	

1

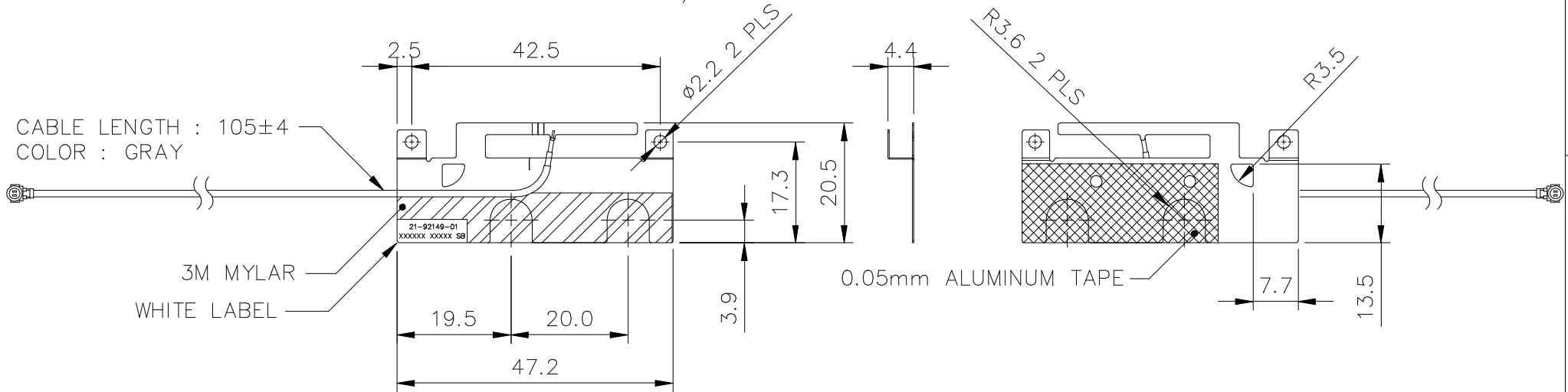
2

PART NUMBER BLOCK	
PART NUMBER	REV
57.CAN15.002	SB

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
SA	APPROVE SHEET	01/16/03	
SB	APPROVE SHEET	02/19/03	



DETAIL OF LABEL
SCALE : 2/1



		UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN mm AND TOLERANCES ARE:				Wistron 啟碁科技股份有限公司			
		INTEGRAL DIMENSIONS ± 4		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:				DWG TITLE			
		FINISH:				OUTLINE, BT, CAN-F			
CAN-F		THIRD ANGLE PROJECTION		DRAWN	ARSENE YU	02/19/03	SIZE		
NEXT ASSY	USED ON			ENGR	ARSENE YU	02/19/03	DWG NO.		
APPLICATION				APVD				57.CAN15.002	REV
						SCALE	1/1	SHEET	1 OF 1