



Wistron NeWeb Corporation

APPROVAL SHEET

Customer Name	Wistron Corporation		
Date	10/21/2002		
Customer P/N	25.90064.001		
WNC P/N	25.90064.001		
Description	Aux. antenna for AJ system		
Version	0A	Doc. Version	0

Provided By Wistron NeWeb Corp	Reviewed By Wistron NeWeb Corp	Approved By Customer Company
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wistron

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Index

1. Introduction
2. Revision History
3. Product Spec.
4. Environment Performance Test
5. Package
6. FAI Test
7. VSWR CPK
8. VSWR GRAPH
9. Cable Spec.



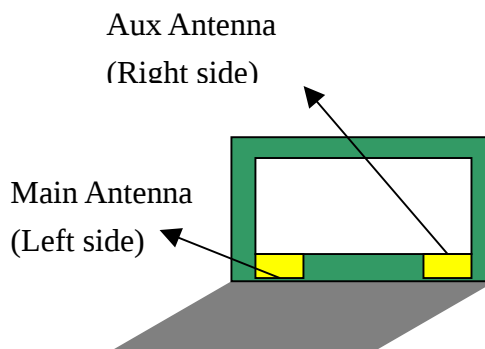
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1. Introduction

Antennas for 802.11b and 802.11a system

Aux. Antenna (PIFA type)

1. Application: Right side in hinge location
2. Cable length: 225mm, Gray
(IPEX connector with Φ 1.13mm RF cable)



2. Revision History

Date	Version	Change Description
10/21/2002	0A	New Release

3. Product Spec.

3.1 Antenna Design Specification

Measure environment LCD angle 110 degree

3.1.1 VSWR

VSWR	2G4 ISM (2.40 GHz - 2.4835 GHz)			U-NII (5.150 GHz - 5.350 GHz)		
	2.40 GHz	2.45 GHz	2.50GHz	5.15 GHz	5.25 GHz	5.35 GHz
AUX antenna (Right)	2			2.5		

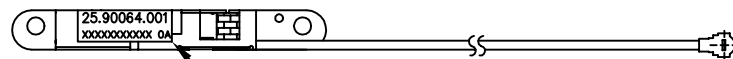
3.1.2 Average gain and peak gain

Antenna Gain (dBi)		2G4 ISM (2.40 GHz - 2.4835 GHz)			U-NII (5.150 GHz - 5.350 GHz)		
		2.40 GHz	2.45 GHz	2.50GHz	5.15 GHz	5.25 GHz	5.35 GHz
AUX (Right)	Peak	3			6		
	Average	-5			-5		

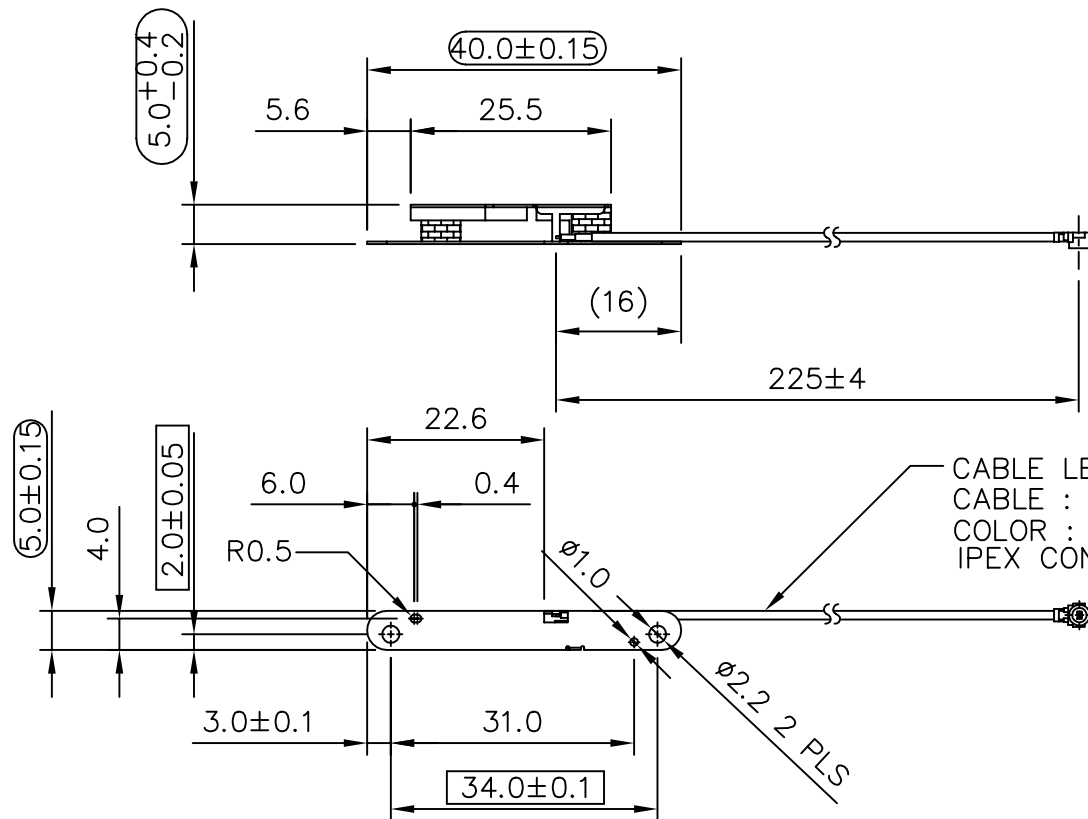
3.2 Mechanical Spec.

See the attached drawing.

PART NUMBER BLOCK	
PART NUMBER	REV
57.CA715.002	0A

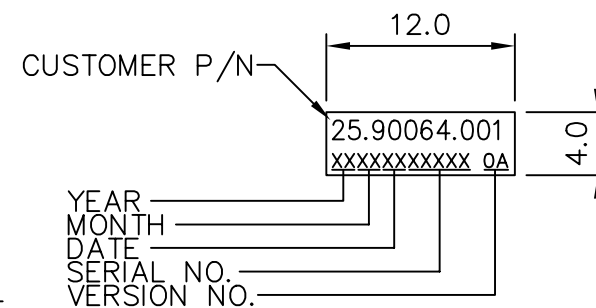


WHITE LABEL



CABLE LENGTH : 225±4
CABLE : Ø1.13
COLOR : GRAY
IPEX CONNECTOR

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
SOA	APPROVE SHEET	05/23/02	
SA	APPROVE SHEET	06/13/02	
SB	APPROVE SHEET	06/25/02	
SC	APPROVE SHEET	07/08/02	
SD	APPROVE SHEET	07/15/02	
SE	APPROVE SHEET	09/05/02	
SF	APPROVE SHEET	10/14/02	
0A	APPROVE SHEET	10/21/02	



DETAIL OF LABEL
SCALE : 2/1

NOTES :

- INDICATE THE CPK DIMENSION
- INDICATE THE Critical DIMENSION

		UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN mm AND TOLERANCES ARE:					wistron 啟碁科技股份有限公司 <i>Wistron NeWeb Corp.</i> 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 ± 0.2 1 PLACE DECIMAL ± 0.1 2 PLACE DECIMALS ± 0.05		ANGULAR DIMENSIONS ± 1° HOLES UNDER Ø5.00 ± 0.05					
		MATERIAL: NA					DWG TITLE		
		FINISH: NA					OUTLINE, RIGHT, CA7-A		
	CA7-A	THIRD ANGLE PROJECTION		DRAWN			SIZE	DWG NO.	REV
NEXT ASSY	USED ON			ENGR			A4	C414-57.CA715.002	0A
APPLICATION				APVD			SCALE	1/1	SHEET 1 OF 1



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3.3 Antenna BOM structure

NO.	Part NO	Description	Q'ty
1	25.90093.111	I-PEX connector with Junkosha CABLE GRAY 225MM WS-WN-A027	1
2	3A.CA745.112	(洋白銅)IRON SHEET, RIGHT, CA7-A	1
3	3B.CA780.211	EVA BUFFER-1, CA7-A	2

3.4 Antenna Test Results

3.4.1 VSWR

VSWR	2G4 ISM (2.40 GHz - 2.4835 GHz)			U-NII (5.150 GHz - 5.350 GHz)		
	2.40 GHz	2.45 GHz	2.50GHz	5.15 GHz	5.25 GHz	5.35 GHz
AUX antenna (Right)	1.75	1.64	1.82	1.2	1.04	1.68

3.4.2 Peak Gain and Average Gain

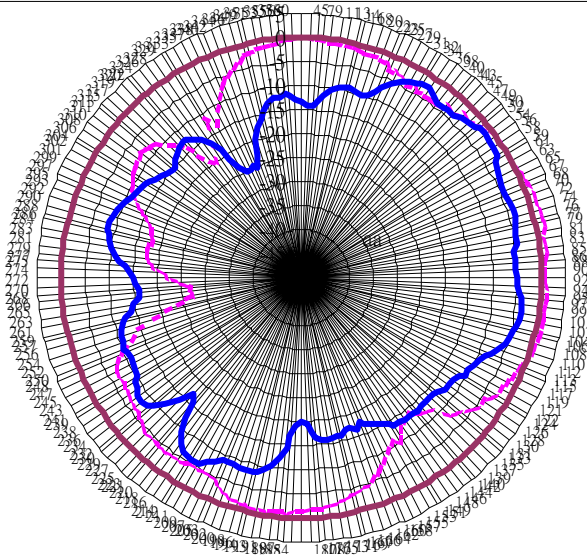
Antenna Gain (dBi)		2G4 ISM (2.40 GHz - 2.4835 GHz)			U-NII (5.150 GHz - 5.350 GHz)		
		2.40 GHz	2.45 GHz	2.50GHz	5.15 GHz	5.25 GHz	5.35 GHz
AUX (Right)	Peak	1.3	1.36	1.82	2.08	3.04	5.16
	Average	-3.39	-2.68	-3.00	-4.54	-3.56	-2.89



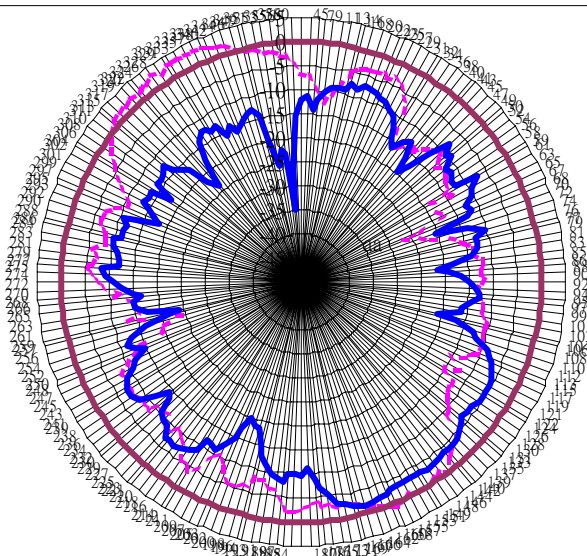
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3.4.3 Radiation Pattern

AUX. Antenna -@2.45GHz



AUX. Antenna on Azimuth plane -@5.25GHz



4. Environment Performance Test

4.1 Introduction

This EQT (Environment Qualification Test) report is used to describe the final status of PIFA type Antenna about the EQT test results.



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4.2 Test Items and Results IFA & PIFA

4.2.1 the following table is used to show the final status of PIFA type Antenna.

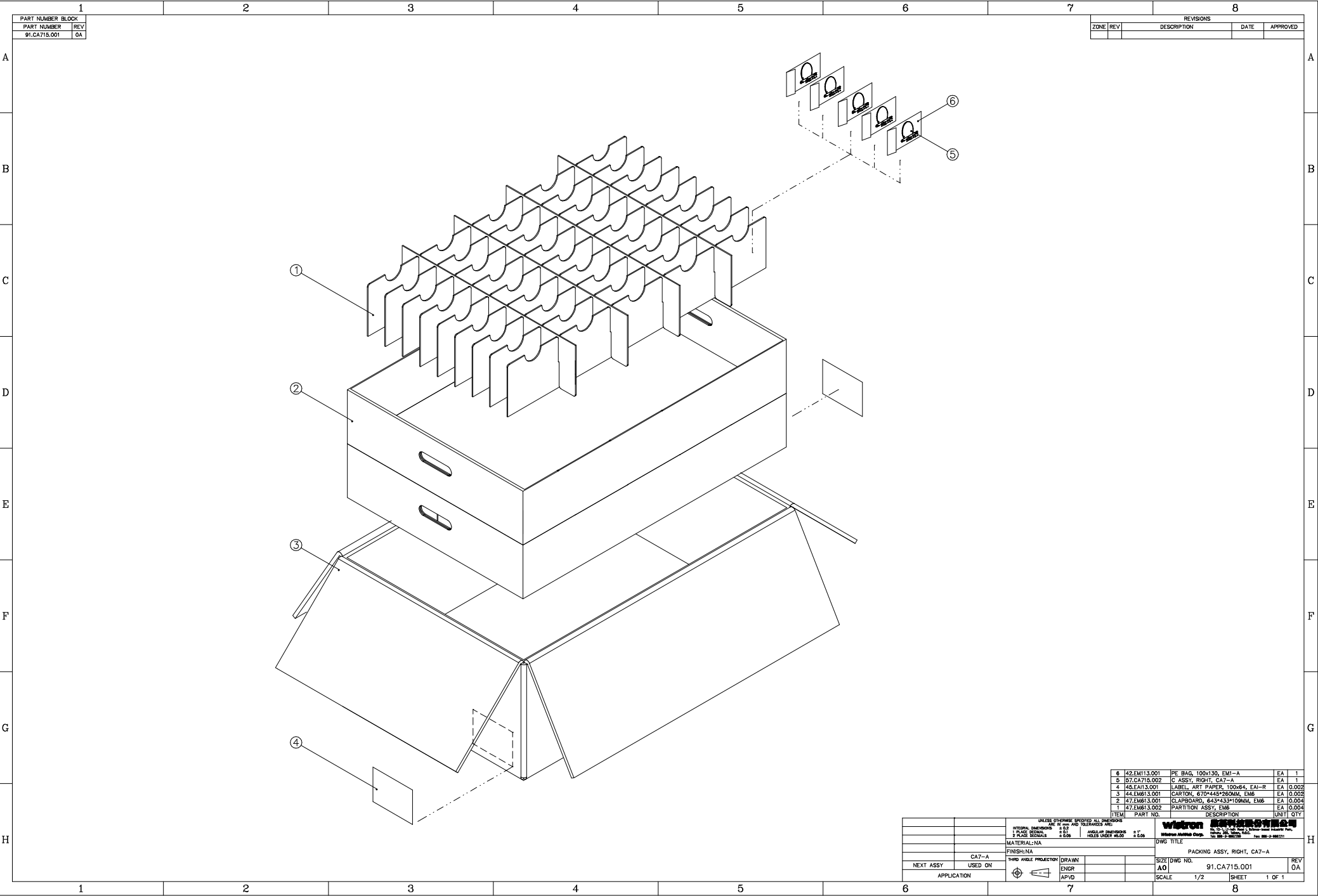
Test Item	Specification	Test Result	Tested By	Remark
Vibration (Need NB)	Frequency 5 to 500Hz Overall rms level: 0.6 G P-P~2.0 G P-P Duration of test: 1 Hr/cycle Number of axes: X, Y, Z 1 cycle / axis	Pass	IST.	
Thermal Shock	Temperature range: -20°C ~ 80°C Hold Time: 30 min Total cycle: 20 cycles	Pass	WNC.	

Aux. antenna (Right)							
VSWR	S/N	2G4 ISM (2.40 GHz - 2.4835 GHz)			U-NII (5.150 GHz - 5.350 GHz)		
		2.40 GHz	2.45 GHz	2.50GHz	5.15 GHz	5.25 GHz	5.35 GHz
Before Vibration Test	01	1.76	1.39	1.20	1.28	1.06	1.40
	02	1.80	1.25	1.28	1.33	1.24	1.13
	03	1.74	1.29	1.28	1.41	1.33	1.21
After Vibration Test	01	1.68	1.28	1.10	1.10	1.32	1.41
	02	1.33	1.10	1.14	1.35	1.33	1.20
	03	1.33	1.10	1.14	1.35	1.33	1.20

Aux. antenna (Right)							
VSWR	S/N	2G4 ISM (2.40 GHz - 2.4835 GHz)			U-NII (5.150 GHz - 5.350 GHz)		
		2.40 GHz	2.45 GHz	2.50GHz	5.15 GHz	5.25 GHz	5.35 GHz
Before Thermal Shock Test	01	1.38	1.20	1.28	1.40	1.35	1.20
	02	1.55	1.18	1.29	1.35	1.34	1.23
	03	1.65	1.29	1.34	1.35	1.30	1.18
After Thermal Shock Test	01	1.62	1.32	1.38	1.26	1.30	1.32
	02	1.62	1.71	1.90	1.11	1.23	1.33
	03	1.42	1.15	1.17	1.19	1.28	1.33

5. Package

See the attached drawing.



PART NUMBER BLOCK	
PART NUMBER	REV
91.CA715.001	0A

REVISIONS			
ZONE	REV	DESCRIPTION	DATE

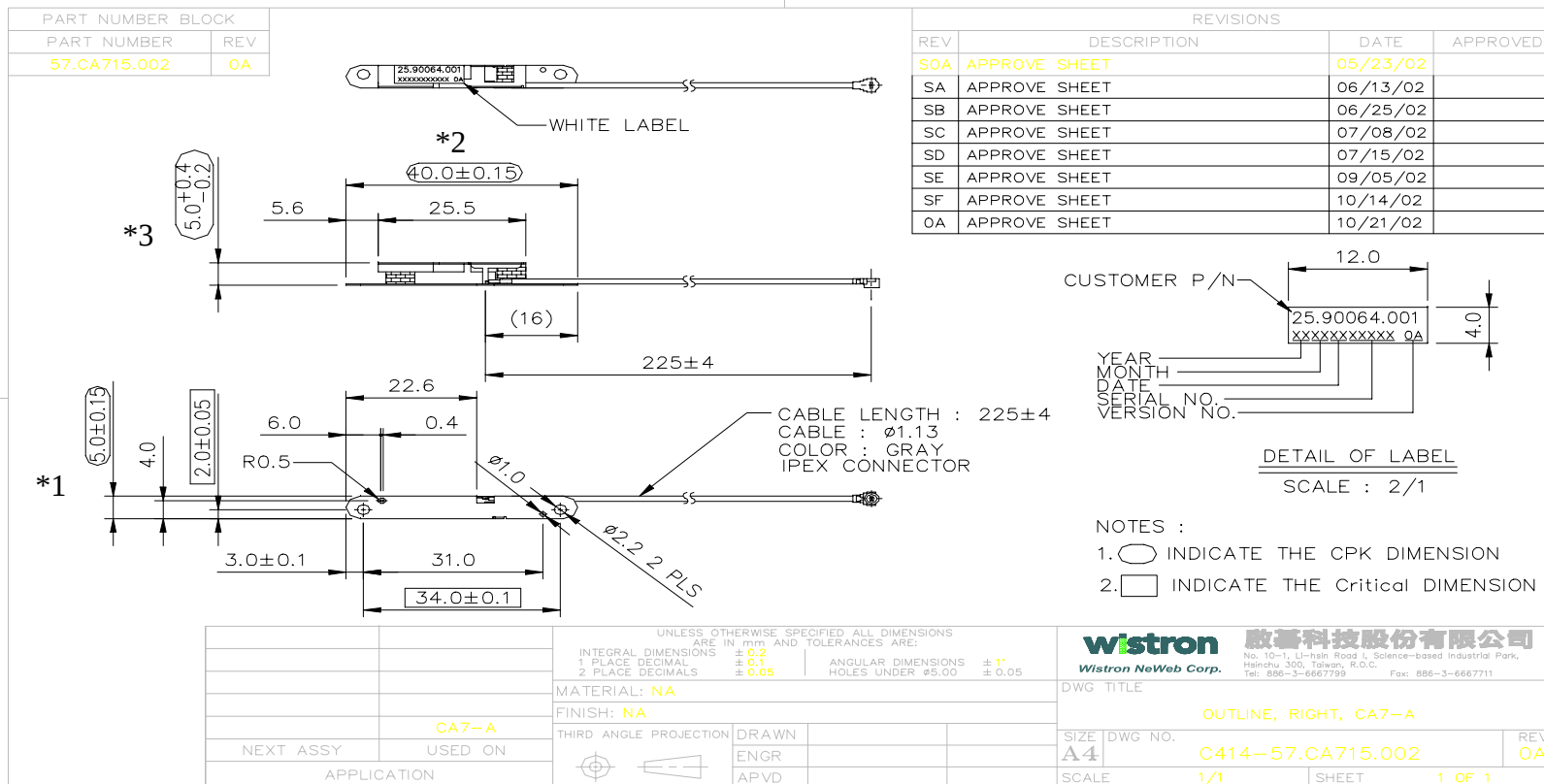
6	42.EM113.001	PC BAG, 100x130, EM1-A	EA	1
5	57.CA715.002	C ASSY, RIGHT, CA7-A	EA	1
4	45.EA113.001	LABEL, ART PAPER, 100x64, EA-R	EA	0.002
3	44.EM613.001	CARTON, 670*445*260MM, EM6	EA	0.002
2	47.EM613.001	CLAMPBOARD, 843*433*100MM, EM6	EA	0.004
1	47.EM613.002	PARTITION ASSY, EM6	EA	0.004

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN MM AND TOLERANCES ARE: DIMENSIONS 1 TO 250 ± 0.5 250 TO 500 ± 0.6 500 TO 1000 ± 0.8 OVER 1000 ± 1.0 HOLE DIMENSIONS ± 0.1 HOLE UNDER 40.00 ± 0.05		MATERIAL: NA FINISH: NA		WISTRON WISTRON SYSTEM GROUP 100, No. 100, Sec. 4, Taichung City, Taiwan Tel: 886-2-26871111 Fax: 886-2-26871111	
CA7-A		THIRD ANGLE PROJECTION		DWG TITLE PACKING ASSY, RIGHT, CA7-A	
NEXT ASSY		USED ON		SIZE/DWG NO. A0 91.CA715.001	
APPLICATION		ENGR		SCALE 1/2	
APVD		APVD		SHEET 1 OF 1	

6. FAI Test

FAI DATA SHEET

Drawing Number: 25.90064.001 Part Description: Embedded Antenna Revision: 0A					Supplier : WNC Inspected by: Manufacturing Site:WNC Approved by: Production Line:							Date: 2002/11/3 Gauge#/Unit 游標卡尺 (mm) Gauge/Unit 尺 (mm)				Wistron : SQM/Alex MH Lai	
DRAWING SPECIFICATIONS					INSPECTION RESULTS							INSPECTION ANALYSIS				Inspection Method	Precision of Gauge
					Sample Number			Deviation from Nominal			Mean	% Tolerance		Acc/Rej			
ITEM	LOCATION	NOMINAL	+TOL	-TOL	1	2	3	1	2	3			UPPER	LOWER	HIGH	LOW	
	1	5.00	0.15	0.15	5.02	5.01	4.98	0.02	0.01	-0.02	5.00	13%	13%			游標卡尺	0.01mm
	2	40.00	0.15	0.15	40.00	40.02	40.06	0.00	0.02	0.06	40.03	40%	0%			游標卡尺	0.01mm
	3	5.00	0.40	0.20	5.13	5.13	5.18	0.13	0.13	0.18	5.15	45%	0%			游標卡尺	0.01mm



Cpk of Antenna

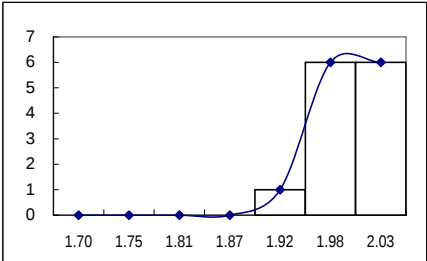
Measurement Value																												
Item	Spec.	Torance +	Torance -	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
VSWR (b)	2.00	0	0	1.87	1.92	1.77	1.92	1.95	1.85	1.87	1.92	1.87	1.88	1.82	1.67	1.77	1.76	1.88	1.91	1.92	1.88	1.82	1.89	1.78	1.78	1.87	1.92	1.93
				26	27	28	29	30	31	32	33	34	35															
				1.86	1.83	1.72	1.81	1.79																				
組界 5				1.67	1.73	1.78	1.84	1.89	1.95	2.01																		
VSWR (a)	2.50	0.00	0.00	1.81	1.67	1.72	1.88	1.98	1.92	1.87	2.01	1.72	1.68	1.98	1.68	1.82	1.85	2.01	2.11	1.92	1.82	1.92	1.86	1.76	1.84	1.93	1.95	2.11
				26	27	28	29	30	31	32	33	34	35															
				1.80	2.08	2.01	1.78	1.92																				
組界 5				1.67	1.76	1.85	1.93	2.02	2.11	2.20																		
C																												
				26	27	28	29	30	31	32	33	34	35															
組界																												
組界																												

Engineering Specification					
工程尺寸		VSWR (b)	VSWR (a)	C	
工程規格	Product spec	1.8477	1.8803		
正公差	Tolerance	0.1523	0.6197		
負公差	Tolerance	1.8477	1.8803		
工程上限	USL	2	2.5		
工程下限	LSL	0	0		
Actual Data					
量測尺寸		VSWR (b)	VSWR (a)	C	
平均數	X bar	1.8477	1.8803		
標準差	Sigma	0.0689	0.1248		
中間值	Median	1.8700	1.8750		
眾數	Mode	1.9200	1.9200		
最大值	Max	1.9500	2.1100		
最小值	Min	1.6700	1.6700		
UCL 3個標準差	1 Sigma	1.9166	2.0051		
	2 Sigma	1.9855	2.1299		
	3 Sigma	2.0544	2.2547		
LCL 3個標準差	1 Sigma	1.7787	1.7556		
	2 Sigma	1.7098	1.6308		
	3 Sigma	1.6409	1.5060		
製程能力	雙邊CP	4.84	3.34		
	單邊CPL	8.94	5.02		
	單邊CPU	0.74	1.66		
	單邊CP	0.74	1.66		
	Ca	0.00	0.00		
	Cpk	4.84	3.34		

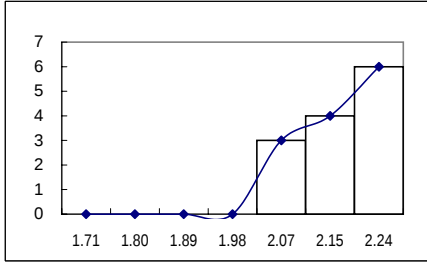
VSWR		B		C	
組別	次數	組別	次數	組別	次數
1.70	0	1.71	0	#####	0
1.75	0	1.80	0	#####	0
1.81	0	1.89	0	#####	0
1.87	0	1.98	0	#####	0
1.92	1	2.07	3	#####	0
1.98	6	2.15	4	#####	0
2.03	6	2.24	6	#####	0

Remark:
Gauge:

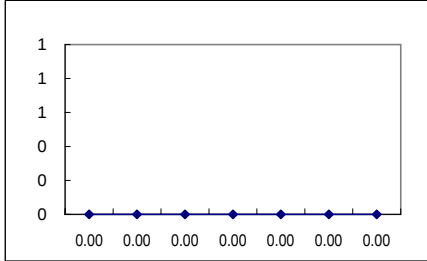
VSWR (b)



VSWR (a)



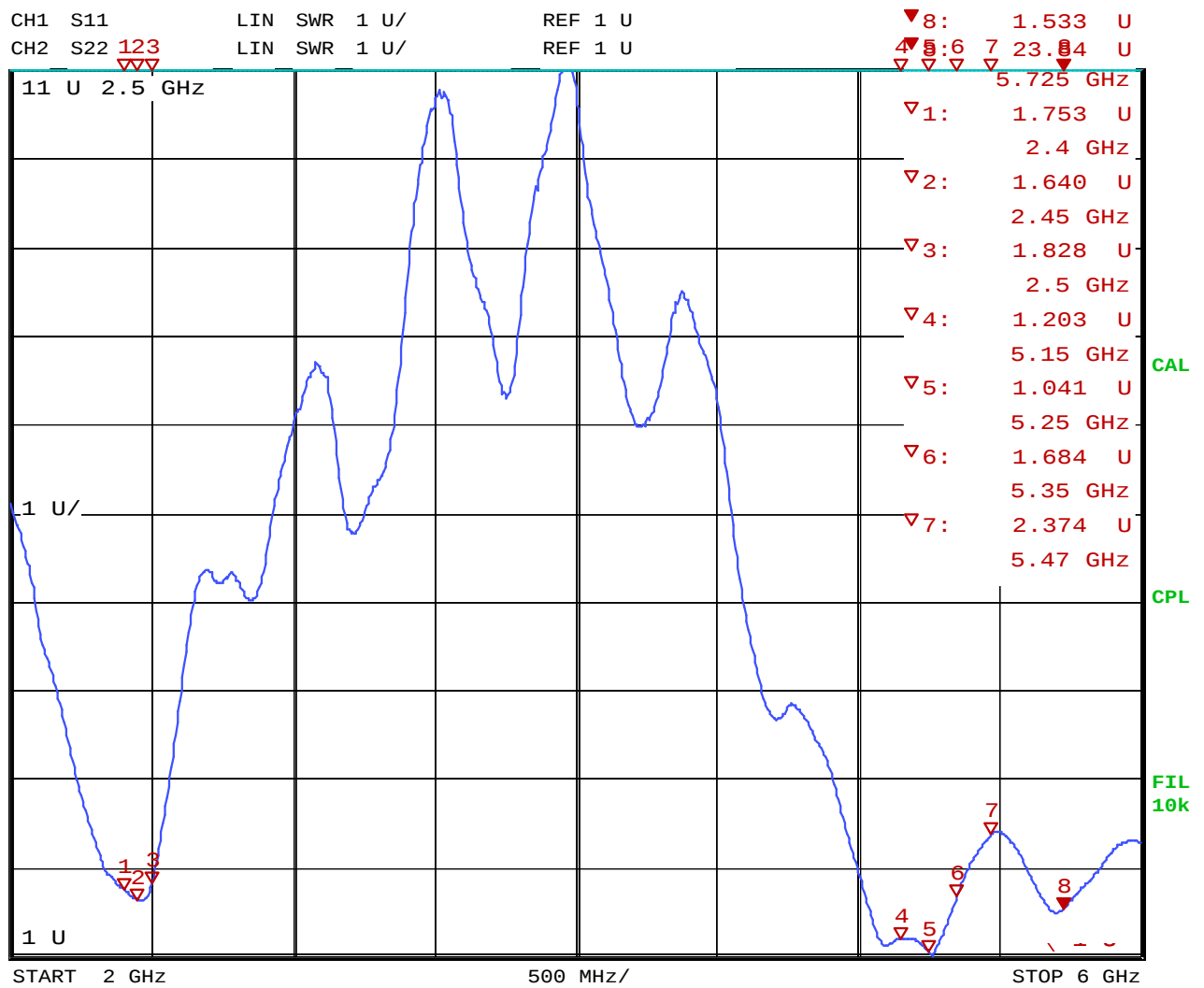
Dimension C





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8.VSWR Graph

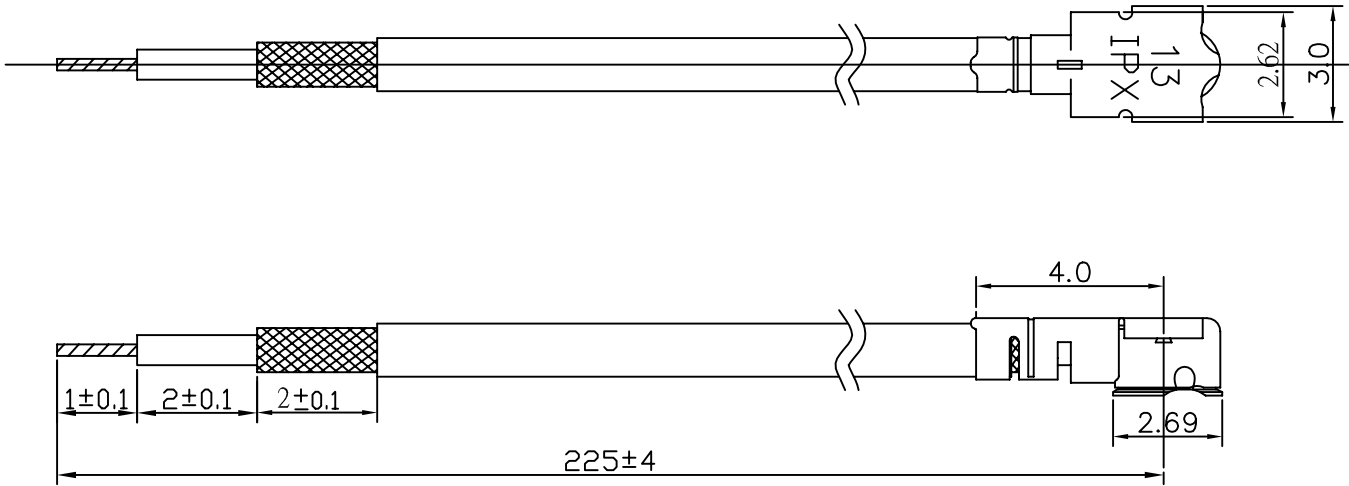


Date: 23.OCT.02 19:15:36

9.Cable Spec.

單位：MM

專案	零件內容	數量	料號	廠牌
A	0.6D $\phi 1.13\text{mm}$	1	J12B1054-2	潤工社
B	Connector $\phi 2.69 \times 5.345\text{mm(L)}$	1	20278-101R-13 (第二代)	I-PEX



1. 剥皮尺寸須正确。
2. 剥皮位置需干淨、整齊。
3. 長度需正确。
4. 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。
5. 外觀上不允許有鬆散、無加錫龔起...等現象發生。
6. 編織網不允許有鬆散、無加錫龔起...等現象發生。
7. 鐵氟龍（透明膠管）不允許有割傷、有異物...等現象發生。
8. 中心導體(7芯)不允許散亂、斷線...等現象發生。

記號	變更內容	年月日	氏名	檢印
品名	ANTENNA CABLE FOR BLUE TOOTH		圖番	WS-WN-A027
客戶	Wistro NeWeb Corp.		料號	
設計	制圖	驗圖	承認	材料 Coaxial Cable
啓碁	譚崇			顏色 GRAY
				日期 2002.10.21