



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
David WS Tau	Weili Cheng	

wistron

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傳真：(03)666-7711



Wistron NeWeb Corporation

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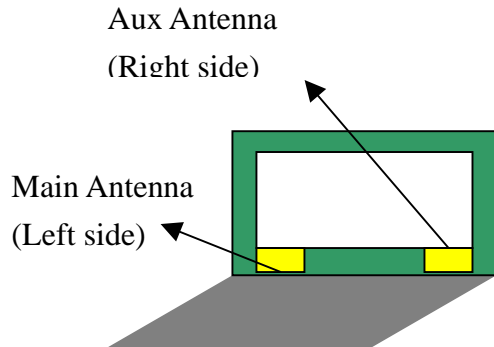
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1. Introduction

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 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

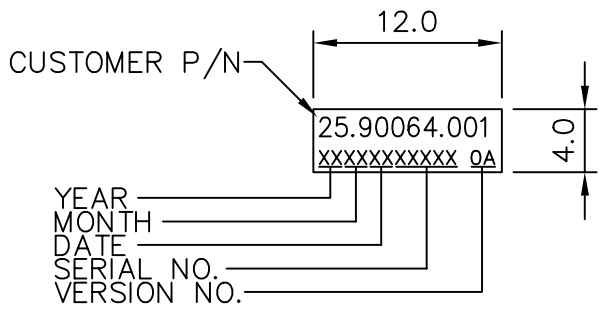
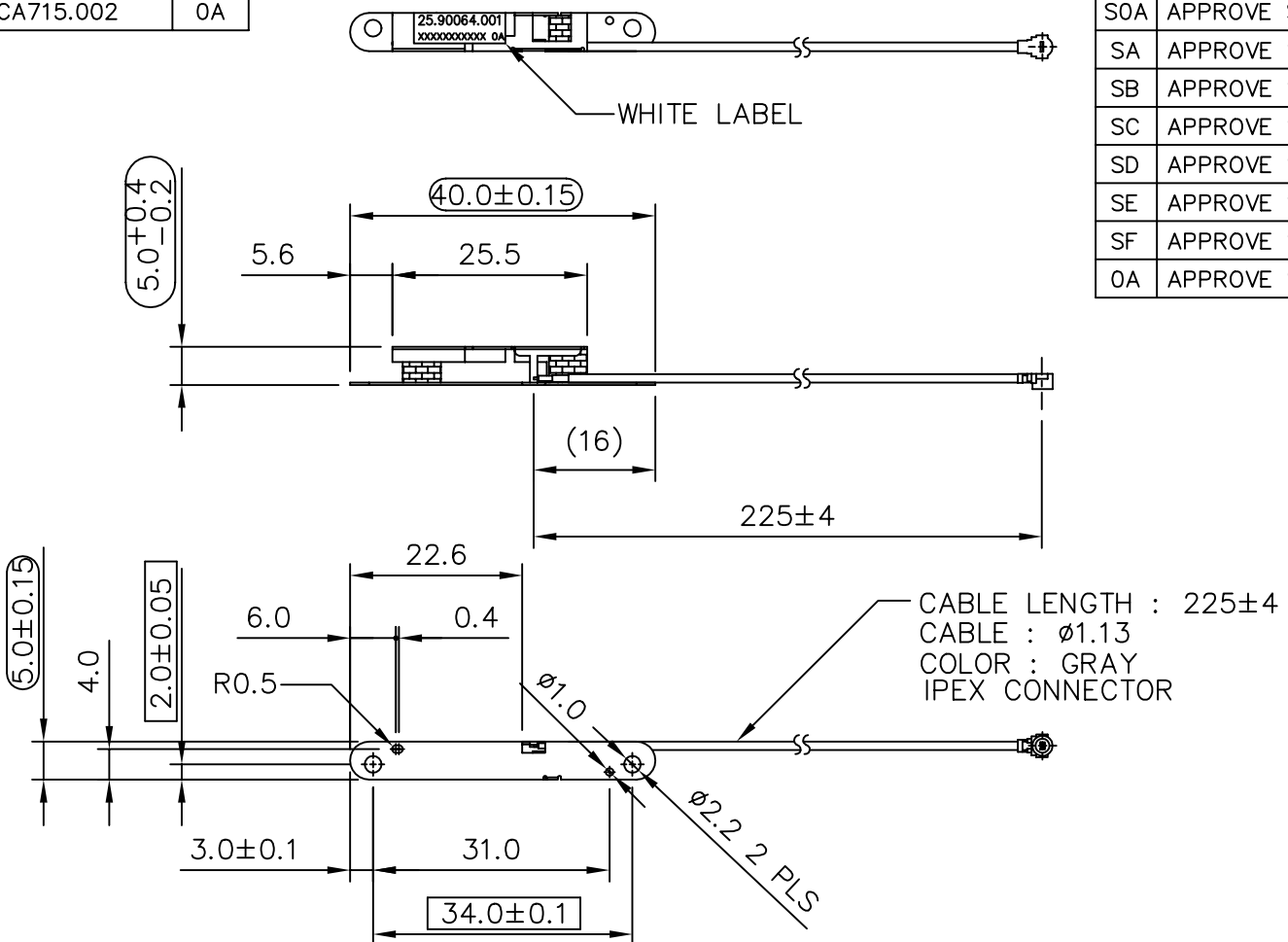
Antenna Gain (dBi)		2G4 ISM (2.40 GHz - 2.4835 GHz)			U-NII (5.150 GHz - 5.350 GHz)		
		2.40 GHz	2.45 GHz	2.50GHz	5.15 GHz	5.25 GHz	5.35 GHz
AUX (Right)	Peak	3			6		
	Average	-5			-5		

3.2 Mechanical Spec.

See the attached drawing.

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

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:		啟基科技股份有限公司 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	
		INTEGRAL DIMENSIONS ± 0.2	ANGULAR DIMENSIONS ± 1°	DWG TITLE	
		1 PLACE DECIMAL ± 0.1	HOLES UNDER Ø5.00 ± 0.05	OUTLINE, RIGHT, CA7-A	
		2 PLACE DECIMALS ± 0.05		SIZE	DWG NO.
MATERIAL: NA		THIRD ANGLE PROJECTION		A4	C414-57.CA715.002
FINISH: NA		DRAWN		SCALE	1/1
CA7-A		ENGR		SHEET	1 OF 1
NEXT ASSY	USED ON	APVD			
APPLICATION					



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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

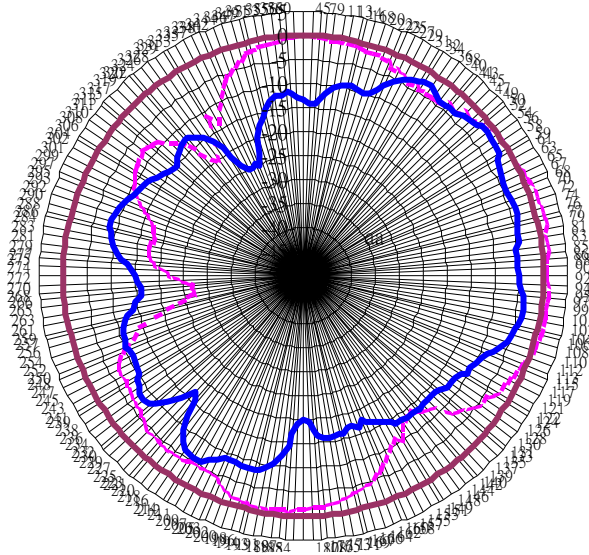
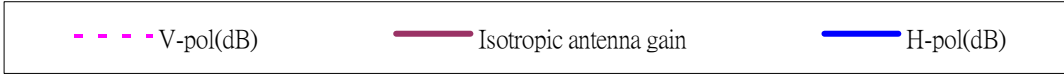
Antenna Gain (dBi)		2G4 ISM (2.40 GHz - 2.4835 GHz)			U-NII (5.150 GHz - 5.350 GHz)		
		2.40 GHz	2.45 GHz	2.50GHz	5.15 GHz	5.25 GHz	5.35 GHz
AUX (Right)	Peak	1.3	1.36	1.82	2.08	3.04	5.16
	Average	-3.39	-2.68	-3.00	-4.54	-3.56	-2.89



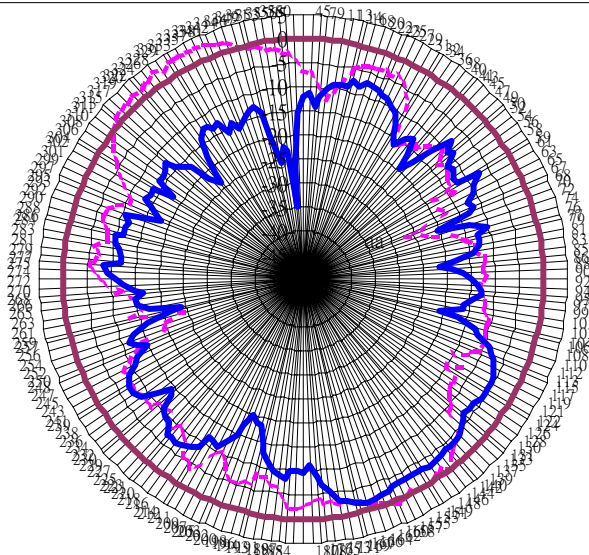
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3.4.3 Radiation Pattern

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

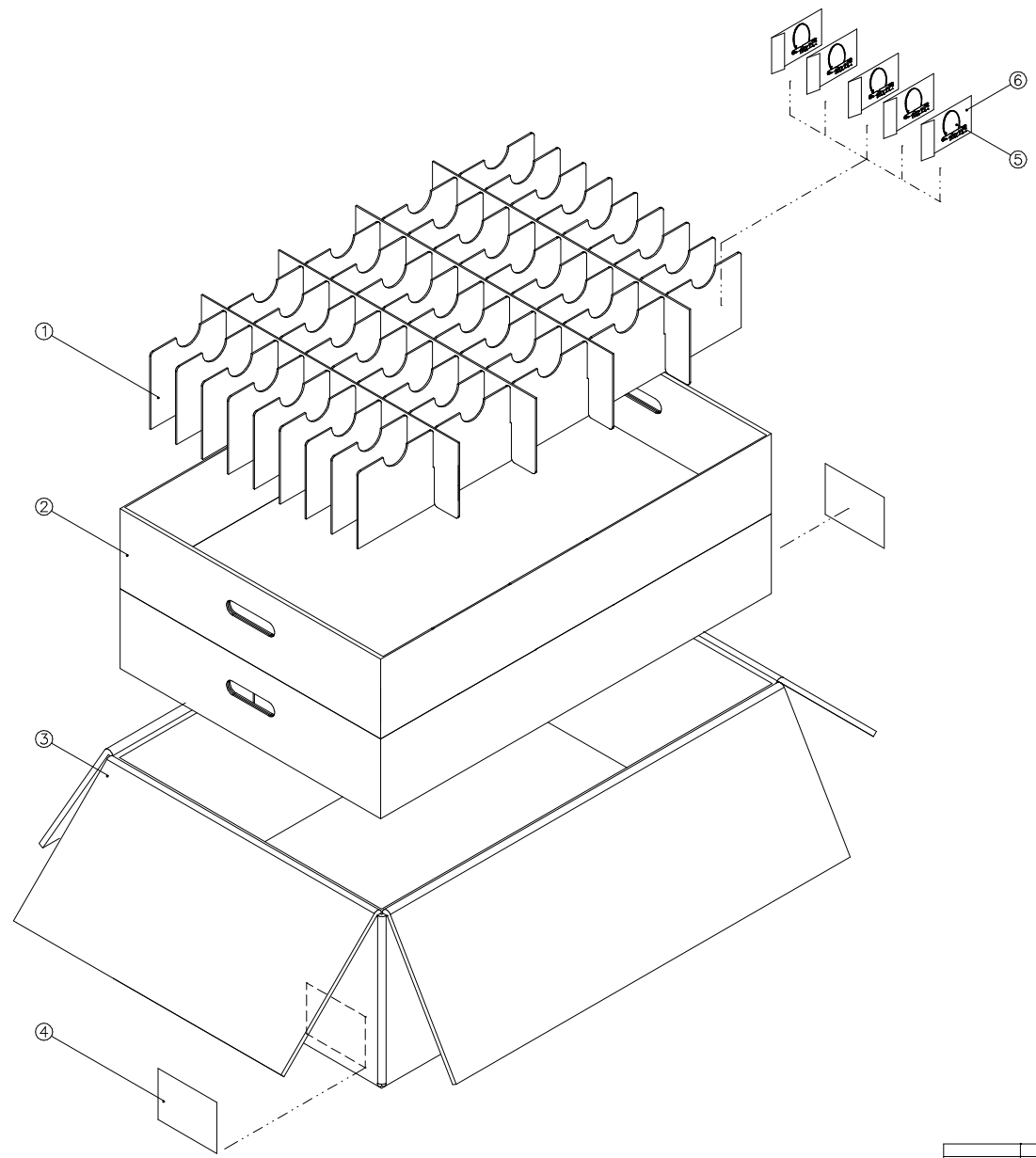
Aux. antenna (Right)							
VSWR	S/N	2G4 ISM (2.40 GHz - 2.4835 GHz)			U-NII (5.150 GHz - 5.350 GHz)		
		2.40 GHz	2.45 GHz	2.50GHz	5.15 GHz	5.25 GHz	5.35 GHz
Before Thermal Shock Test	01	1.38	1.20	1.28	1.40	1.35	1.20
	02	1.55	1.18	1.29	1.35	1.34	1.23
	03	1.65	1.29	1.34	1.35	1.30	1.18
After Thermal Shock 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	APPROVED



ITEM	PART NO.	DESCRIPTION	UNIT	QTY
6	42.EM13.001	PE BAG, 100x130, EM1-A	EA	1
5	57.CA715.002	C ASSY, RIGHT, CA7-A	EA	1
4	45.EA13.001	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	CLAMP/DRAW, 64.5*43.5*10MM, EM6	EA	0.004
1	47.EM613.002	PARTITION ASSY, EM6	EA	0.004

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN MILLIMETERS AND TOLERANCES ARE: DIMENSIONS > 0.00 ± 0.05 DIMENSIONS 0.00 ± 0.02 HOLE DIMENSIONS ± 0.05 HOLE UNDER ± 0.05			
MATERIALS: FINISHES:		Wistron Wistron (Humble) Corp. 100-100, 100-100, 100-100 TEL: 886-2-288770 FAX: 886-2-288771	
CA7-A	THIRD ANGLE PROJECTION	DRAWN	DWG TITLE
ENGR	APVD	ENGR	PACKING ASSY, RIGHT, CA7-A
APVD	SCALE	1/2	SHEET 1 OF 1

A
B
C
D
E
F
G
H

A
B
C
D
E
F
G
H

1 2 3 4 5 6 7 8

6. FAI Test

FAI DATA SHEET

Drawing Number: 25.90064.001 Part Description: Embedded Antenna Revision: 0A					Supplier : WNC Inspected by: _____ Approved by: _____					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			
ITEM	LOCATION	NOMINAL	+TOL	-TOL	1	2	3	1	2	3	Mean	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

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

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
SOA	APPROVE SHEET	05/23/02	
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SC	APPROVE SHEET	07/08/02	
SD	APPROVE SHEET	07/15/02	
SE	APPROVE SHEET	09/05/02	
SF	APPROVE SHEET	10/14/02	
OA	APPROVE SHEET	10/21/02	

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

DETAIL OF LABEL
SCALE : 2/1

NOTES :
1. ○ INDICATE THE CPK DIMENSION
2. □ INDICATE THE Critical DIMENSION

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: NA	
FINISH: NA	
THIRD ANGLE PROJECTION	DRAWN
USED ON	ENGR
APPLICATION	APVD

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DWG TITLE	
OUTLINE, RIGHT, CA7-A	
SIZE DWG NO.	REV
A4 C414-57.CA715.002	0A
SCALE	SHEET
1/1	1 OF 1

7. VSWR CPK

Part Number: 25.90064.001

Cpk of Antenna

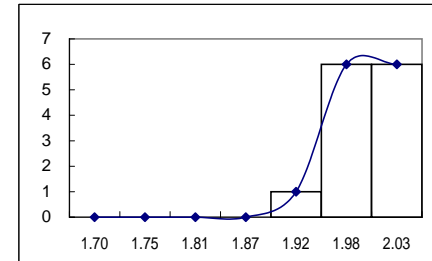
				Measurement Value																								
Item	Spec.	Tolerance +	Tolerance -	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
VSWR (b)	2.00	0	0	1.87	1.92	1.77	1.92	1.95	1.85	1.87	1.92	1.87	1.88	1.82	1.67	1.77	1.76	1.88	1.91	1.92	1.88	1.82	1.89	1.78	1.78	1.87	1.92	1.93
				26	27	28	29	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	1 Sigma	1.9166	2.0051	
	2 Sigma	1.9855	2.1299	
	3 Sigma	2.0544	2.2547	
LCL	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		

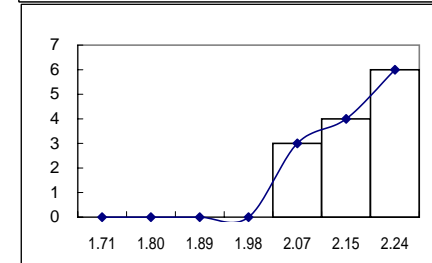
VSWR		B		C	
組別	次數	組別	次數	組別	次數
1.70	0	1.71	0	#####	0
1.75	0	1.80	0	#####	0
1.81	0	1.89	0	#####	0
1.87	0	1.98	0	#####	0
1.92	1	2.07	3	#####	0
1.98	6	2.15	4	#####	0
2.03	6	2.24	6	#####	0

Remark:
Gauge:

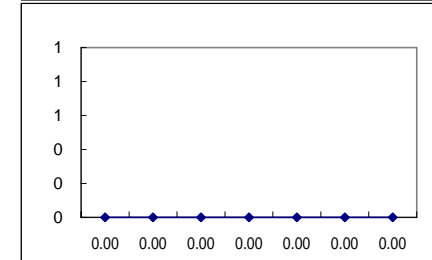
VSWR (b)



VSWR (a)



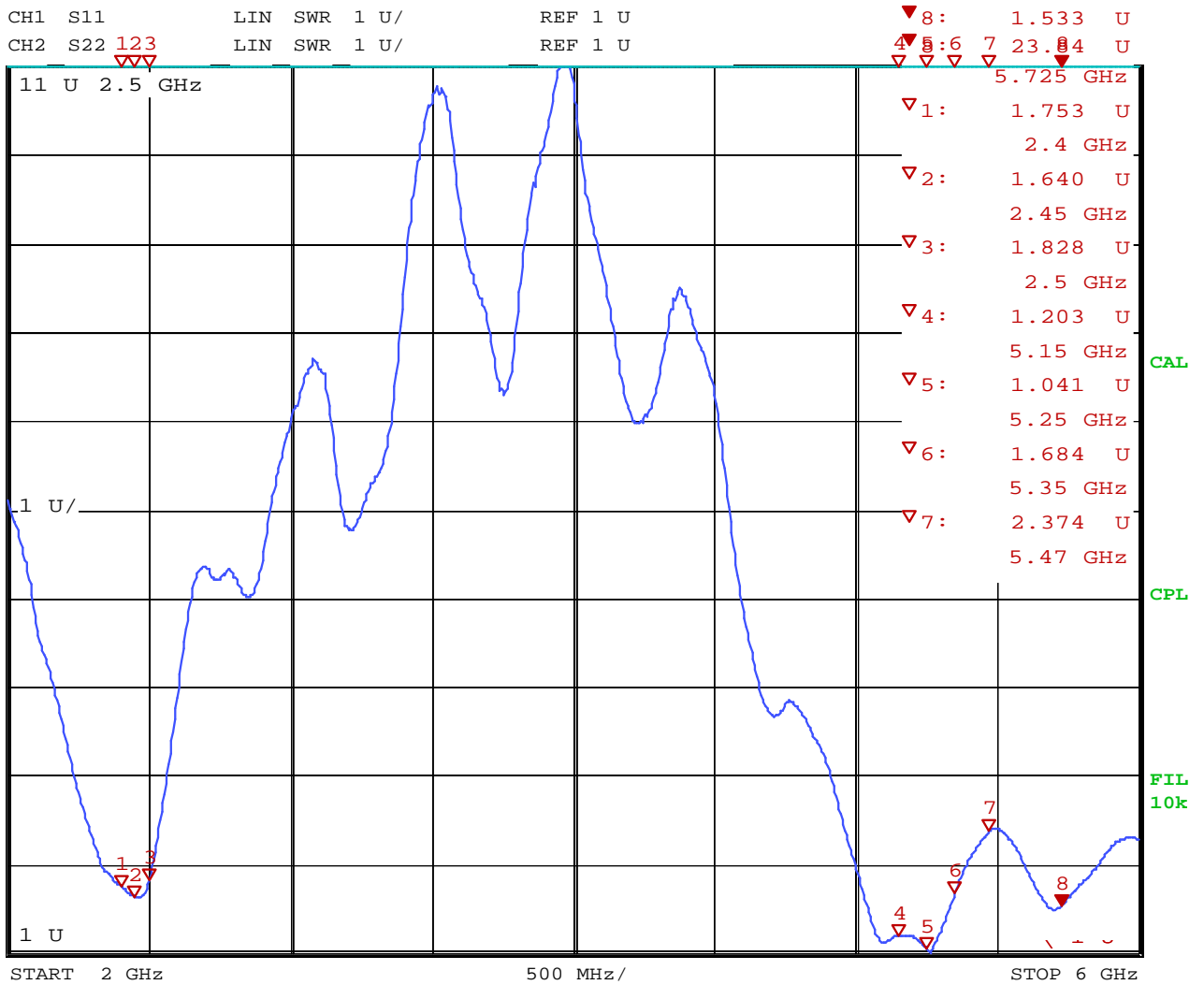
Dimension C





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8.VSWR Graph

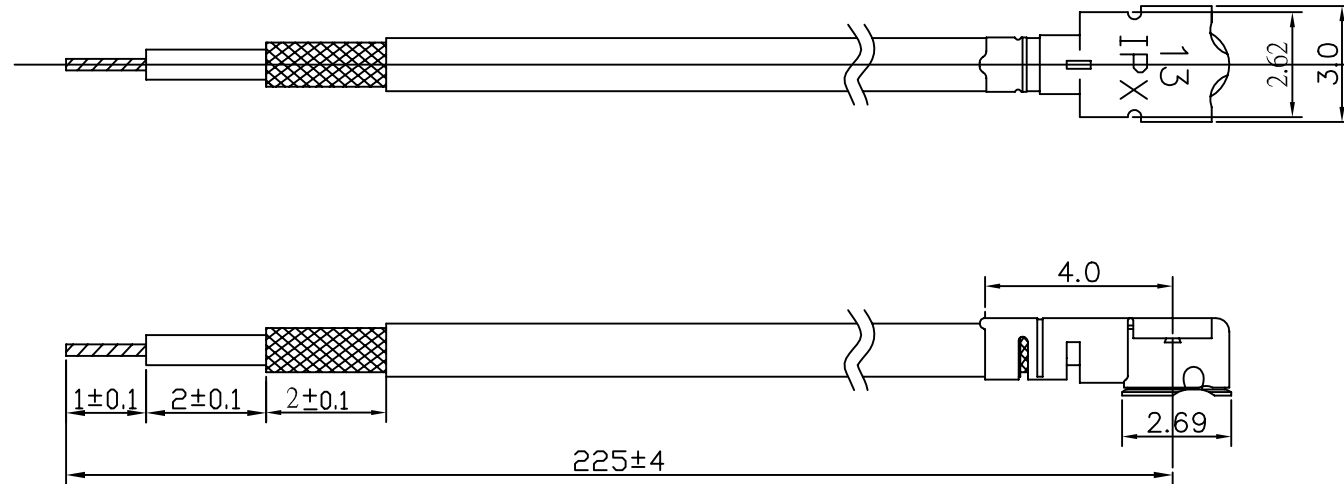


Date: 23.OCT.02 19:15:36

9.Cable Spec.

單位：MM

專案	零件內容	數量	料號	廠牌
A	0.6D ϕ 1.13mm	1	J12B1054-2	潤工社
B	Connector ϕ 2.69*5.345mm(L)	1	20278-101R-13 (第二代)	I-PEX



1. 剝皮尺寸須正確。
2. 剝皮位置需干淨、整齊。
3. 長度需正確。
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