



Wistron NeWeb Corporation

APPROVAL SHEET

Customer Name	Compal Electronics, INC.		
Date	10/22/2003		
Customer P/N	DC330010310		
Customer REV	A01		
WNC P/N	DC330010310		
Description	Main antenna for HR60 system		
Version	A01	Doc. Version	0

Provided By Wistron NeWeb Corp	Reviewed By Wistron NeWeb Corp	Approved By Customer Company
Yuan Li Chang	Eric Fang	

wistron

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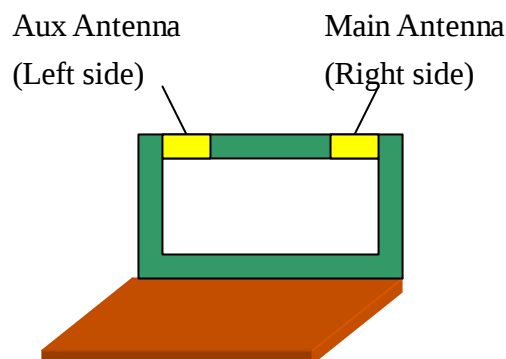
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1. Introduction

Antennas for 802.11a+b+h system

AUX. antenna (PIFA type)

1. Application: left side in hinge location
2. Cable length: 580 mm, White
(connector with $\Phi 1.13\text{mm}$ RF cable)



2. Revision History

Date	Version	Change Description
09/17/2003	A00-N	New Release
10/22/2003	A01-N	Change copper foil tape, antenna 背膠, into T4000 tape

3. Product Spec.

3.1 Antenna Design Specification

Measure environment LCD angle 110 degree

3.1.1 VSWR

VSWR	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	5.15 GHz	5.25 GHz	5.35 GHz	5.47 GHz	5.5975 GHz	5.725 GHz
AUX	<2.5			<2.5			<2.5		

3.1.2 Average gain and peak gain

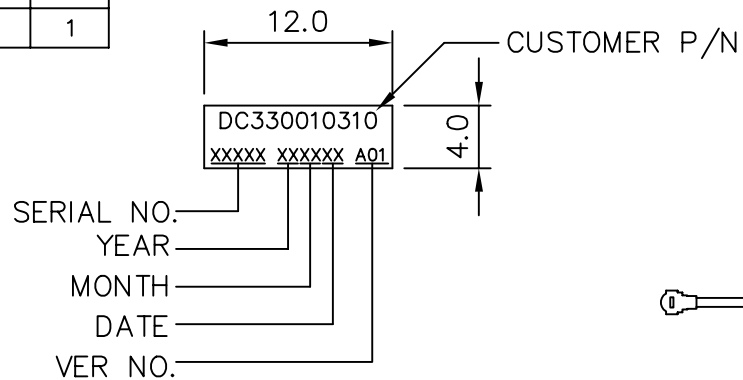
Antenna Gain		2G4 ISM (2.400 GHz - 2.4835 GHz)			U-NII (5.150 GHz - 5.350 GHz)			HyperLAN (5.470 GHz - 5.725 GHz)		
		2.40 GHz	2.45 GHz	2.50GHz	5.15 GHz	5.25 GHz	5.35 GHz	5.47 GHz	5.5975 GHz	5.725 GHz
AUX	Peak dBi	<3			<6			<6		
	Avg dBi	>-6			>-5			>-5		

3.2 Mechanical Spec.

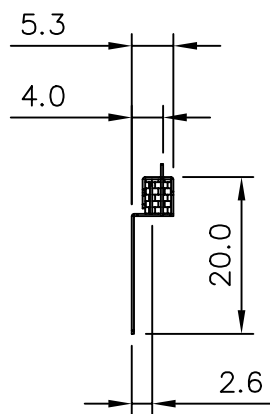
See the attached drawing.

PART NUMBER BLOCK	
PART NUMBER	REV
57.EBC15.001	1

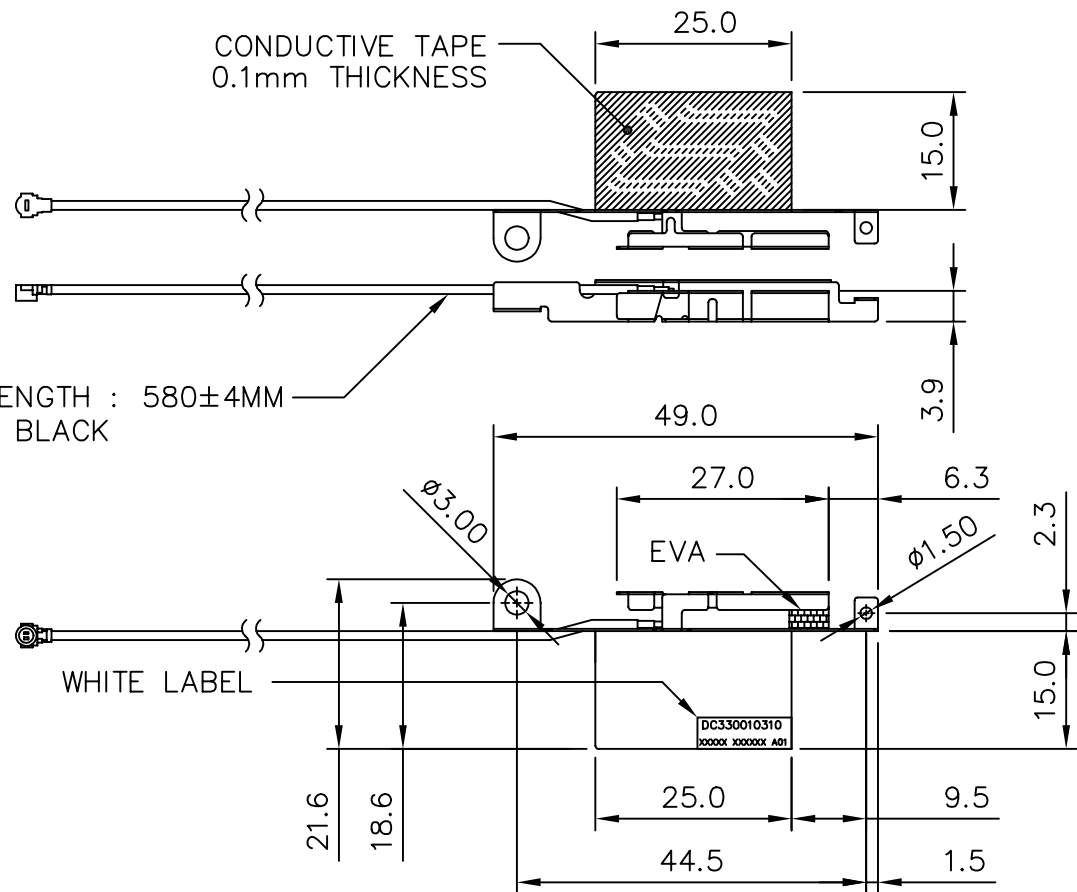
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
0	RELEASE TO FILE	09/16/03	ERIC LIU
1	MODIFY TAPE DIMENSION	10/22/03	BILLSON LIN



DETAIL OF LABEL
SCALE : 2/1



CABLE LENGTH : 580±4MM
COLOR : BLACK



		UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN mm AND TOLERANCES ARE:				wistron 啟基科技股份有限公司 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°					
		1 PLACE DECIMAL ±0.1		HOLES UNDER Ø5.00 ±0.05					
		2 PLACE DECIMALS ±0.05							
		MATERIAL: NA				DWG TITLE			
		FINISH: NA				OUTLINE, RIGHT, EBC-C			
	EBC-C	THIRD ANGLE PROJECTION		DRAWN	BENSON TSAI	10/22/03	SIZE	DWG NO.	REV
NEXT ASSY	USED ON			ENGR	BENSON TSAI	10/22/03	A4	C414-57.EBC15.001	1
APPLICATION				APVD	BILLSON LIN	10/22/03	SCALE	1/1	SHEET 1 OF 1



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3.3 Antenna Material structure

Aux antenna
1. Stamped metal 2. Junkosha cable and IPEX connector (Nissei cable and HRS connector) 3. Sponge 4. Label 5. Physical weight:4.22g 6. T4000 tape

3.4 Antenna Test Results

3.4.1 VSWR

VSWR	2G4 ISM (2.400 GHz - 2.4835 GHz)			U-NII (5.150 GHz - 5.350 GHz)			HyperLAN (5.470 GHz - 5.825 GHz)		
	2.40 GHz	2.45 GHz	2.50GHz	5.15 GHz	5.25 GHz	5.35 GHz	5.47 GHz	5.6475 GHz	5.825 GHz
Main for WLAN	1.29	1.52	1.65	1.36	1.32	1.44	1.36	1.52	1.38

3.4.2 Peak Gain and Average Gain

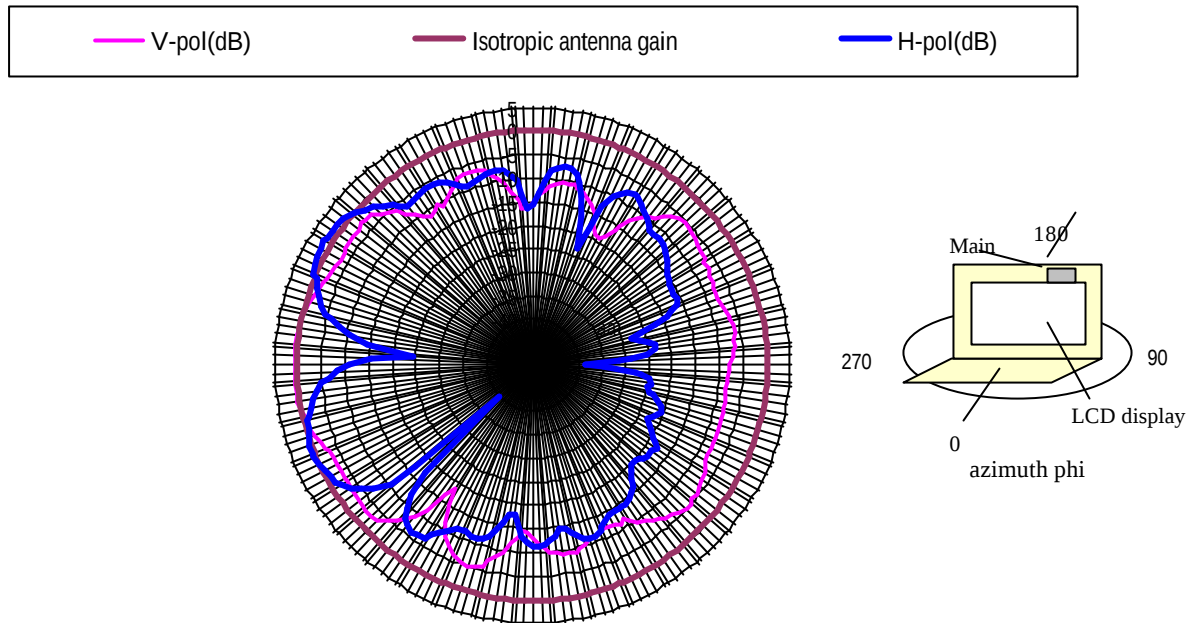
Antenna Gain		2G4 ISM (2.400 GHz - 2.4835 GHz)			U-NII (5.150 GHz - 5.350 GHz)			HyperLAN (5.470 GHz - 5.825 GHz)		
		2.40 GHz	2.45 GHz	2.50GHz	5.15 GHz	5.25 GHz	5.35 GHz	5.47 GHz	5.6475 GHz	5.825 GHz
Main	Peak dBi	2.78	2.46	2.52	1.00	0.57	0.24	1.82	0.43	0.89
	Avg dBi	-2.28	-3.23	-2.77	-3.90	-3.63	-3.91	-3.70	-3.73	-3.64



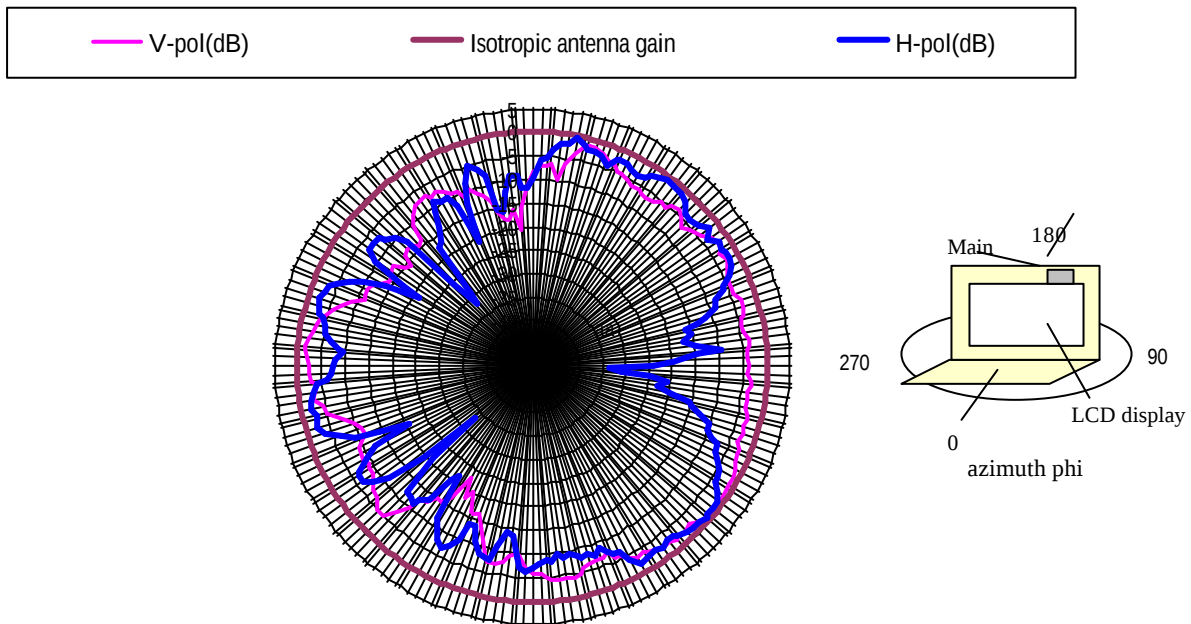
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3.4.3 Radiation Pattern

Main chart@2.45GHz



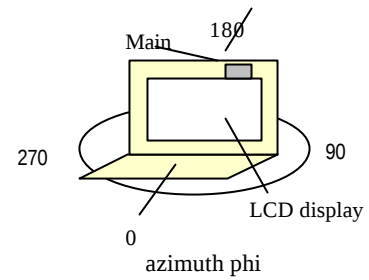
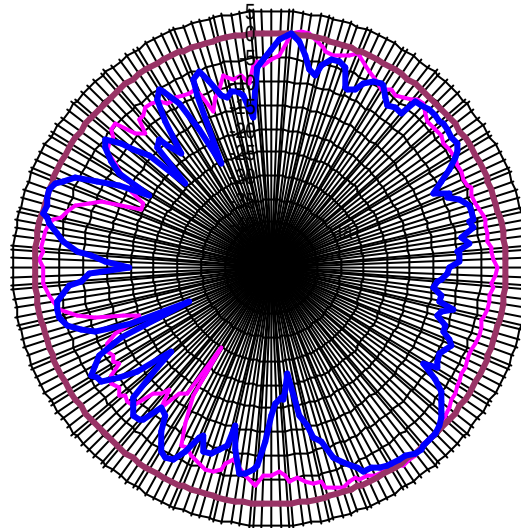
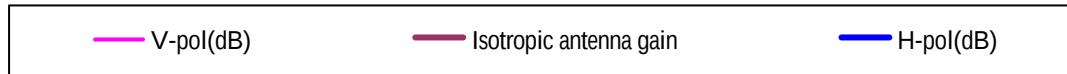
Main chart@5.25GHz



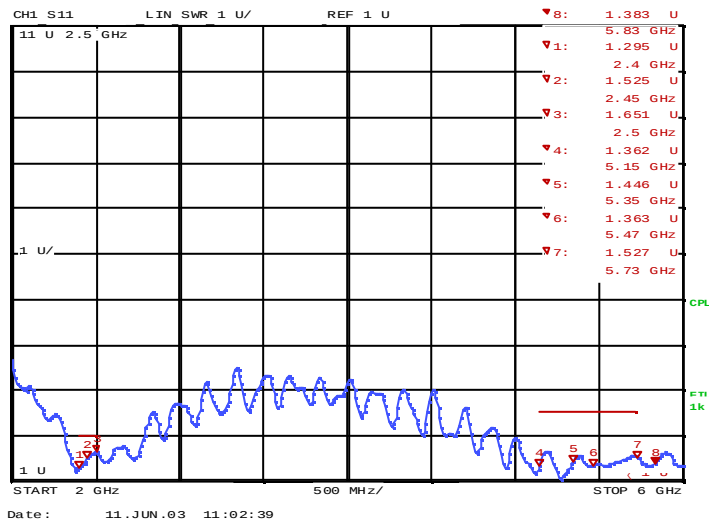


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Main chart@5.6475GHz



4. VSWR Graph



5. Package

See the attached drawing.

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	0	RELEASE TO FILE	09/16/03	ERIC LIU



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6.Cable Spec.

6.1. Connector Info (general description)

Description (Cable)	Inner Conductor: AWG#32(7/0.8), Silver plating annealed copper wire or its performance equivalent Dielectric core: D0.68mm Outer conductor: 16/4/0.05 D0.93mm, Silver plating annealed copper wire or its performance equivalent Jacket: D1.13mm		
Requirements	Characteristic impedance: 50(+2,-2)ohm Nominal capacitance: 97pF/m Conductor resistance of inner conductor at 293K(20): 520ohm/km MAX Insulation resistance: 1500mega-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

6.2. Cable Loss (including connector)

Unit: dB	2400-2500MHz	5150-5350MHz	5470-5825MHz
580mm	2.34	3.51	3.41

Product System(ps)

Other(x)

Subject: C419 Reliability Test Report

Part No:

REV: 0

EQT report for PIFA type Antenna

Doc No: EANT-C419

Project Code:

Release Date:

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Project Name/Model No: Antenna /

EQT Report of PIFA type Antenna

Mar. 22, 2002

Rev.0

Prepared By : Winson Tai
QE Engineer

Reviewed By : Weili Cheng
Program Manager

Approved By : Charlie CH Wu
QE Director

Product System(ps)

Other(x)

Subject: C419 Reliability Test Report

Part No:

REV: 0

EQT report for PIFA type Antenna

Doc No: EANT-C419

Project Code:

Release Date:

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Project Name/Model No: Antenna /

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Accessories Test Data

Product System(ps)

Other(x)

Subject: C419 Reliability Test Report

Part No:

REV: 0

EQT report for PIFA type Antenna

Doc No: EANT-C419

Project Code:

Release Date:

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Project Name/Model No: Antenna /

1.0 Introduction

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

2.0 Test Items and Results

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 10 to 100Hz, single amplitude of 1.5mm, acceleration of 59m/s ² , for 5 cycles in the direction of each of the 3 axes	Pass	IST.	
Thermal Shock	Temperature range: -20°C ~ 85°C Hold Time : 30 min Total cycle : 20 cycles	Pass	WNC.	
Salt Fog Test	48 hours continuous exposure to 5% salt water	Pass	WNC.	
High Temperature (Storage) Test	Temperature range : +80 °C High Temperature Humidity : 90 % High temperature dwell time : 72 hours	Pass	WNC.	
Low Temperature (Storage)Test	Temperature range : -20 °C Low temperature dwell time : 72 hours	Pass	WNC.	
Package Vibration Test	Frequency range : 5 ~ 500 Hz Duration of test: 1 hr. Vibration acceleration: 1.88 Grms Number of axes: X, Y, Z axis	Pass	IST.	
Package Drop Test	Condition of drop height: 30 inches (76 cm) Number of drop: 1 corner, 3 edges and 6 faces	Pass	IST.	

Vibration Test(Need NB)		Quantity	4 pcs
Model : EA9-F		Date	Mar. 4.2002
Serial Number: Please see the test data		Site	IST
Test Conditions : Frequency 10 to 100Hz, single amplitude of 1.5mm, acceleration of 59m/s ² , for 5 cycles in the direction of each of the 3 axes			
Result Before Testing			
Appearance	Function		
OK	Passed Tested By: Winson Tai		
Result After Testing			
Appearance	Function		
OK	Passed Tested By: Winson Tai		
Conclusion :			
1. The test samples which have passed Vibration Test(Need NB).			
2. The test result refers only to the samples, which is submitted to this test, and is valid as the same reliability is built into the design.			
Tested By:	Winson Tai	Approved By :	<u>Charlie CH Wu</u>
Date	Mar.15.2002	Date	Mar. 15.2001

Before Vibration Test for EA9

S/N	Frequency (GHz)				Frequency (GHz)			S/N	Frequency (GHz)				Frequency (GHz)		
		2.4GHz	2.45GHz	2.5GHz	5.15GHz	5.25GHz	5.35GHz			2.4GHz	2.45GHz	2.5GHz	5.15GHz	5.25GHz	5.35GHz
Spec.	<2				<2			Spec.	<2				<2		
2A100386	81.EA913.001	1.46	1.25	1.19	1.07	1.31	1.32	2A100408	81.EA913.001	1.65	1.17	1.23	1.28	1.12	1.31
	81.EA913.003	1.78	1.37	1.22	1.27	1.06	1.38		81.EA913.003	1.72	1.30	1.30	1.40	1.32	1.20
2A100440	81.EA913.001	1.35	1.13	1.19	1.06	1.32	1.36	2A100396	81.EA913.001	1.20	1.29	1.32	1.04	1.255	1.37
	81.EA913.003	1.80	1.24	1.28	1.31	1.26	1.13		81.EA913.003	1.45	1.20	1.24	1.39	1.36	1.13

After Vibration Test for EA9

S/N	Frequency (GHz)				Frequency (GHz)			S/N	Frequency (GHz)				Frequency (GHz)		
		2.4GHz	2.45GHz	2.5GHz	5.15GHz	5.25GHz	5.35GHz			2.4GHz	2.45GHz	2.5GHz	5.15GHz	5.25GHz	5.35GHz
Spec.	<2				<2			Spec.	<2				<2		
2A100386	81.EA913.001	1.65	1.16	1.31	1.20	1.28	1.13	2A100408	81.EA913.001	1.61	1.42	1.49	1.40	1.58	1.71
	81.EA913.003	1.66	1.30	1.11	1.10	1.30	1.42		81.EA913.003	1.61	1.42	1.49	1.40	1.58	1.71
2A100440	81.EA913.001	1.40	1.31	1.18	1.11	1.34	1.42	2A100396	81.EA913.001	1.53	1.22	1.10	1.05	1.30	1.25
	81.EA913.003	1.33	1.07	1.14	1.36	1.33	1.19		81.EA913.003	1.66	1.42	1.50	1.44	1.35	1.11

Tested By: Winson Tai

Approved By: Charlie CH Wu

Thermal Shock		Quantity	10 pcs
Model : EA9-F		Date	Mar. 4.2002
Serial Number: Please see the test data		Site	WNC.
Test Conditions : Temp range: -20℃ ~ 85℃ , Hold Time : 30 min , 20 cycles			
Result Before Testing			
Appearance	Function		
OK	Passed		
Tested By: Winson Tai			
Result After Testing			
Appearance	Function		
OK	Passed		
Tested By: Winson Tai			
Conclusion :			
1. The test samples which have passed Thermal Shock.			
2. The test result refers only to the samples, which is submitted to this test, and is valid as the same reliability is built into the design.			
Tested By:	Winson Tai	Approved By :	Charlie CH Wu
Date	Mar.15.2002	Date	Mar. 15.2001

Before Thermal Shock Test for EA9

S/N	Frequency (GHz)				Frequency (GHz)			S/N	Frequency (GHz)				Frequency (GHz)		
		2.4GHz	2.45GHz	2.5GHz	5.15GHz	5.25GHz	5.35GHz			2.4GHz	2.45GHz	2.5GHz	5.15GHz	5.25GHz	5.35GHz
Spec.	<2				<2			Spec.	<2				<2		
2A100375	81.EA913.001	1.59	1.18	1.16	1.06	1.36	1.31	2A100409	81.EA913.001	1.37	1.21	1.33	1.06	1.25	1.27
	81.EA913.003	1.39	1.18	1.30	1.39	1.36	1.21		81.EA913.003	1.40	1.15	1.36	1.07	1.23	1.30
2A100452	81.EA913.001	1.45	1.05	1.22	1.20	1.18	1.44	2A100427	81.EA913.001	1.41	1.36	1.15	1.16	1.49	1.21
	81.EA913.003	1.54	1.17	1.28	1.34	1.34	1.22		81.EA913.003	1.49	1.15	1.27	1.27	1.31	1.19
2A100088	81.EA913.001	1.39	1.31	1.24	1.10	1.38	1.115	2A100365	81.EA913.001	1.43	1.26	1.27	1.18	1.38	1.48
	81.EA913.003	1.64	1.28	1.35	1.34	1.29	1.17		81.EA913.003	1.42	1.12	1.17	1.17	1.30	1.33
2A100401	81.EA913.001	1.62	1.40	1.10	1.11	1.32	1.17	2A100371	81.EA913.001	1.38	1.15	1.28	1.09	1.41	1.25
	81.EA913.003	1.56	1.12	1.20	1.36	1.21	1.06		81.EA913.003	1.56	1.21	1.31	1.40	1.27	1.11
2A100372	81.EA913.001	1.33	1.25	1.19	1.05	1.34	1.32	2A100376	81.EA913.001	1.50	1.25	1.25	1.00	1.33	1.37
	81.EA913.003	1.45	1.26	1.23	1.32	1.28	1.22		81.EA913.003	1.64	1.23	1.23	1.36	1.30	1.56

After Thermal Shock Test for EA9

S/N	Frequency (GHz)				Frequency (GHz)			S/N	Frequency (GHz)				Frequency (GHz)		
		2.4GHz	2.45GHz	2.5GHz	5.15GHz	5.25GHz	5.35GHz			2.4GHz	2.45GHz	2.5GHz	5.15GHz	5.25GHz	5.35GHz
Spec.	<2				<2			Spec.	<2				<2		
2A100375	81.EA913.001	1.65	1.08	1.22	1.17	1.09	1.44	2A100409	81.EA913.001	1.58	1.39	1.06	1.14	1.17	1.43
	81.EA913.003	1.63	1.32	1.37	1.25	1.30	1.32		81.EA913.003	1.66	1.44	1.63	1.12	1.28	1.32
2A100452	81.EA913.001	1.56	1.05	1.34	1.18	1.48	1.31	2A100427	81.EA913.001	1.59	1.39	1.13	1.15	1.37	1.24
	81.EA913.003	1.61	1.70	1.90	1.10	1.22	1.34		81.EA913.003	1.55	1.37	1.47	1.17	1.27	1.29
2A100088	81.EA913.001	1.35	1.30	1.17	1.11	1.34	1.26	2A100365	81.EA913.001	1.89	1.45	1.32	1.28	1.24	1.42
	81.EA913.003	1.43	1.15	1.16	1.20	1.27	1.32		81.EA913.003	1.30	1.13	1.41	1.17	1.25	1.31
2A100401	81.EA913.001	1.88	1.50	1.10	1.10	1.20	1.29	2A100371	81.EA913.001	1.84	1.35	1.01	1.12	1.28	1.34
	81.EA913.003	1.43	1.17	1.08	1.26	1.21	1.16		81.EA913.003	1.71	1.32	1.28	1.25	1.26	1.21
2A100372	81.EA913.001	1.58	1.31	1.10	1.15	1.17	1.44	2A100376	81.EA913.001	1.31	1.19	1.19	1.14	1.18	1.49
	81.EA913.003	1.58	1.32	1.33	1.16	1.19	1.30		81.EA913.003	1.59	1.30	1.41	1.26	1.38	1.33

Tested By: Winson Tai

Approved By: Charlie CH Wu

Salt Spray Test		Quantity	10 pcs
Model : EA9-F		Date	Mar. 12.2002
Serial Number: Please see the test data		Site	WNC.
Test Conditions : 48 hours continuous exposure to 5% salt water			
Result Before Testing			
Appearance	Function		
OK	Passed		
Tested By: Winson Tai			
Result After Testing			
Appearance	Function		
OK	Passed		
Tested By: Winson Tai			
Conclusion :			
1. The test samples which have passed Salt Spray Test.			
2. The test result refers only to the samples, which is submitted to this test, and is valid as the same reliability is built into the design.			
Tested By:	Winson Tai	Approved By :	Charlie CH Wu
Date	Mar.12.2002	Date	Mar. 12.2001

Before Salt Fog Test for EA9

S/N	Frequency (GHz)				Frequency (GHz)			S/N	Frequency (GHz)				Frequency (GHz)		
		2.4GHz	2.45GHz	2.5GHz	5.15GHz	5.25GHz	5.35GHz			2.4GHz	2.45GHz	2.5GHz	5.15GHz	5.25GHz	5.35GHz
Spec.	<2				<2			Spec.	<2				<2		
2A100450	81.EA913.001	1.67	1.32	1.18	1.03	1.24	1.20	2A100451	81.EA913.001	1.38	1.23	1.10	1.10	1.33	1.21
	81.EA913.003	1.69	1.15	1.15	1.31	1.23	1.16		81.EA913.003	1.82	1.26	1.31	1.41	1.20	1.14
2A100399	81.EA913.001	1.57	1.28	1.24	1.07	1.40	1.26	2A100090	81.EA913.001	1.66	1.21	1.08	1.18	1.30	1.31
	81.EA913.003	1.70	1.26	1.21	1.33	1.43	1.22		81.EA913.003	1.37	1.44	1.30	1.12	1.19	1.24
2A100455	81.EA913.001	1.62	1.26	1.04	1.09	1.36	1.30	2A100413	81.EA913.001	1.60	1.15	1.31	1.14	1.41	1.20
	81.EA913.003	1.68	1.41	1.26	1.12	1.40	1.62		81.EA913.003	1.53	1.19	1.24	1.45	1.30	1.07
2A100415	81.EA913.001	1.55	1.14	1.22	1.08	1.31	1.32	2A100436	81.EA913.001	1.70	1.09	1.21	1.05	1.25	1.50
	81.EA913.003	1.53	1.19	1.24	1.45	1.30	1.07		81.EA913.003	1.85	1.28	1.28	1.41	1.35	1.07
2A100382	81.EA913.001	1.64	1.11	1.29	1.50	1.24	1.88	2A100449	81.EA913.001	1.20	1.27	1.56	1.67	1.32	1.40
	81.EA913.003	1.53	1.22	1.23	1.26	1.31	1.30		81.EA913.003	1.87	1.19	1.22	1.51	1.35	1.07

After Salt Fog Test for EA9

S/N	Frequency (GHz)				Frequency (GHz)			S/N	Frequency (GHz)				Frequency (GHz)		
		2.4GHz	2.45GHz	2.5GHz	5.15GHz	5.25GHz	5.35GHz			2.4GHz	2.45GHz	2.5GHz	5.15GHz	5.25GHz	5.35GHz
Spec.	<2				<2			Spec.	<2				<2		
2A100450	81.EA913.001	1.58	1.20	1.13	1.13	1.25	1.30	2A100451	81.EA913.001	1.36	1.23	1.17	1.27	1.19	1.14
	81.EA913.003	1.42	1.56	1.97	1.59	1.16	1.18		81.EA913.003	1.49	1.35	1.58	1.14	1.21	1.36
2A100399	81.EA913.001	1.36	1.14	1.04	1.28	1.54	1.05	2A100090	81.EA913.001	1.29	1.13	1.31	1.39	1.99	1.53
	81.EA913.003	1.53	1.42	1.52	1.16	1.45	1.41		81.EA913.003	1.37	1.42	1.22	1.35	1.10	1.08
2A100455	81.EA913.001	1.98	1.27	1.62	1.39	1.03	1.40	2A100413	81.EA913.001	1.34	1.69	1.74	1.29	1.93	1.00
	81.EA913.003	1.85	1.27	1.40	1.22	1.37	1.03		81.EA913.003	1.222	1.42	1.30	1.23	1.36	1.33
2A100415	81.EA913.001	1.56	1.14	1.32	1.17	1.25	1.43	2A100436	81.EA913.001	1.56	1.36	1.37	1.07	1.17	1.27
	81.EA913.003	1.30	1.12	1.02	1.26	1.43	1.36		81.EA913.003	1.54	1.35	1.24	1.05	1.21	1.32
2A100382	81.EA913.001	1.36	1.23	1.17	1.27	1.19	1.14	2A100449	81.EA913.001	1.78	1.35	1.32	1.33	1.32	1.10
	81.EA913.003	1.37	1.54	1.42	1.27	1.03	1.21		81.EA913.003	1.29	1.22	1.31	1.07	1.20	1.41

Tested By: Winson Tai

Approved By: Charlie CH Wu

High Temperature (Storage) Test		Quantity	10 pcs
Model : EA9-F		Date	Mar. 1.2002
Serial Number: Please see the test data		Site	WNC.
Test Conditions : Temp range : +80 °C , Humidity : 90 % , dwell time : 72 hours			
Result Before Testing			
Appearance	Function		
OK	Passed		
Tested By: Winson Tai			
Result After Testing			
Appearance	Function		
OK	Passed		
Tested By: Winson Tai			
Conclusion : 1. The test samples which have passed High Temperature (Storage) Test. 2. The test result refers only to the samples, which is submitted to this test, and is valid as the same reliability is built into the design.			
Tested By:	Winson Tai	Approved By :	<u>Charlie CH Wu</u>
Date	Mar.1.2002	Date	Mar. 1.2001

Before High Temperature Test for EA9

S/N	Frequency (GHz)				Frequency (GHz)			S/N	Frequency (GHz)				Frequency (GHz)		
		2.4GHz	2.45GHz	2.5GHz	5.15GHz	5.25GHz	5.35GHz			2.4GHz	2.45GHz	2.5GHz	5.15GHz	5.25GHz	5.35GHz
Spec.	<2				<2			Spec.	<2				<2		
2A100385	81.EA913.001	1.46	1.17	1.12	1.21	1.16	1.46	2A100388	81.EA913.001	1.47	1.10	1.23	1.19	1.45	1.12
	81.EA913.003	1.48	1.10	1.15	1.28	1.22	1.23		81.EA913.003	1.56	1.26	1.36	1.25	1.35	1.24
2A100374	81.EA913.001	1.41	1.24	1.21	1.06	1.37	1.31	2A100373	81.EA913.001	1.49	1.19	1.25	1.13	1.39	1.29
	81.EA913.003	1.42	1.43	1.34	1.18	1.12	1.20		81.EA913.003	1.48	1.17	1.14	1.33	1.31	1.23
2A100454	81.EA913.001	1.38	1.08	1.24	1.25	1.18	1.44	2A100416	81.EA913.001	1.37	1.16	1.19	1.15	1.47	1.24
	81.EA913.003	1.54	1.20	1.41	1.28	1.32	1.17		81.EA913.003	1.63	1.25	1.31	1.40	1.24	1.19
2A100434	81.EA913.001	1.56	1.23	1.17	1.13	1.42	1.21	2A100387	81.EA913.001	1.47	1.16	1.11	1.20	1.19	1.36
	81.EA913.003	1.63	1.25	1.23	1.41	1.11	1.14		81.EA913.003	1.47	1.12	1.18	1.29	1.35	1.24
2A100375	81.EA913.001	1.59	1.18	1.16	1.06	1.36	1.31	2A100420	81.EA913.001	1.64	1.31	1.27	1.07	1.29	1.34
	81.EA913.003	1.39	1.18	1.30	1.39	1.36	1.21		81.EA913.003	1.45	1.31	1.32	1.09	1.23	1.28

After High Temperature Test for EA9

S/N	Frequency (GHz)				Frequency (GHz)			S/N	Frequency (GHz)				Frequency (GHz)		
		2.4GHz	2.45GHz	2.5GHz	5.15GHz	5.25GHz	5.35GHz			2.4GHz	2.45GHz	2.5GHz	5.15GHz	5.25GHz	5.35GHz
Spec.	<2				<2			Spec.	<2				<2		
2A100385	81.EA913.001	1.51	1.15	1.07	1.28	1.04	1.36	2A100388	81.EA913.001	1.92	1.44	1.12	1.23	1.38	1.36
	81.EA913.003	1.38	1.08	1.25	1.17	1.17	1.29		81.EA913.003	1.65	1.41	1.47	1.05	1.25	1.41
2A100374	81.EA913.001	1.42	1.26	1.05	1.13	1.24	1.36	2A100373	81.EA913.001	1.58	1.21	1.03	1.20	1.23	1.37
	81.EA913.003	1.53	1.41	1.30	1.17	1.10	1.32		81.EA913.003	1.69	1.30	1.49	1.26	1.30	1.27
2A100454	81.EA913.001	1.44	1.10	1.03	1.31	1.09	1.47	2A100416	81.EA913.001	1.68	1.42	1.14	1.2	1.31	1.37
	81.EA913.003	1.71	1.43	1.35	1.06	1.28	1.34		81.EA913.003	1.61	1.29	1.47	1.32	1.27	1.25
2A100434	81.EA913.001	1.44	1.46	1.11	1.05	1.32	1.31	2A100387	81.EA913.001	1.73	1.30	1.16	1.33	1.07	1.42
	81.EA913.003	1.46	1.17	1.25	1.43	1.28	1.10		81.EA913.003	1.61	1.43	1.30	1.15	1.29	1.27
2A100375	81.EA913.001	1.46	1.20	1.12	1.13	1.14	1.34	2A100420	81.EA913.001	1.10	1.47	1.61	1.20	1.13	1.43
	81.EA913.003	1.20	1.19	1.22	1.17	1.34	1.40		81.EA913.003	1.70	1.38	1.27	1.10	1.23	1.32

Tested By: Winson Tai

Approved By: Charlie CH Wu

Low Temperature (Storage)Test		Quantity	10 pcs
Model : EA9-F		Date	Mar. 1.2002
Serial Number: Please see the test data		Site	WNC.
Test Conditions : Temp range : -20 °C , dwell time : 72 hours.			
Result Before Testing			
Appearance	Function		
OK	Passed		
Tested By: Winson Tai			
Result After Testing			
Appearance	Function		
OK	Passed		
Tested By: Winson Tai			
Conclusion :			
1. The test samples which have passed Low Temperature (Storage)Test.			
2. The test result refers only to the samples, which is submitted to this test, and is valid as the same reliability is built into the design.			
Tested By:	Winson Tai	Approved By :	<u>Charlie CH Wu</u>
Date	Mar.1.2002	Date	Mar. 1.2001

Before Low Temperature Test for EA9

S/N	Frequency (GHz)				Frequency (GHz)			S/N	Frequency (GHz)				Frequency (GHz)		
		2.4GHz	2.45GHz	2.5GHz	5.15GHz	5.25GHz	5.35GHz			2.4GHz	2.45GHz	2.5GHz	5.15GHz	5.25GHz	5.35GHz
Spec.	<2				<2			Spec.	<2				<2		
2A100389	81.EA913.001	1.50	1.17	1.12	1.12	1.12	1.38	2A100398	81.EA913.001	1.58	1.36	1.23	1.18	1.37	1.26
	81.EA913.003	1.70	1.24	1.12	1.33	1.29	1.21		81.EA913.003	1.81	1.19	1.16	1.40	1.29	1.13
2A100432	81.EA913.001	1.57	1.28	1.15	1.10	1.18	1.30	2A100342	81.EA913.001	1.62	1.17	1.12	1.01	1.28	1.20
	81.EA913.003	1.60	1.12	1.07	1.41	1.29	1.12		81.EA913.003	1.53	1.52	1.51	1.53	1.18	1.07
2A100422	81.EA913.001	1.47	1.41	1.25	1.07	1.26	1.38	2A100384	81.EA913.001	1.49	1.24	1.28	1.13	1.30	1.19
	81.EA913.003	1.87	1.31	1.29	1.34	1.50	1.26		81.EA913.003	1.44	1.21	1.08	1.10	1.27	1.27
2A100089	81.EA913.001	1.75	1.26	1.12	1.16	1.29	1.16	2A100429	81.EA913.001	1.48	1.24	1.03	1.18	1.38	1.48
	81.EA913.003	1.56	1.22	1.19	1.43	1.24	1.02		81.EA913.003	1.61	1.32	1.36	1.40	1.31	1.24
2A100456	81.EA913.001	1.50	1.73	1.57	1.12	1.37	1.42	2A100406	81.EA913.001	1.32	1.30	1.28	1.33	1.13	1.60
	81.EA913.003	1.65	1.25	1.23	1.36	1.59	1.41		81.EA913.003	1.67	1.33	1.10	1.24	1.10	1.20

After Low Temperature Test for EA9

S/N	Frequency (GHz)				Frequency (GHz)			S/N	Frequency (GHz)				Frequency (GHz)		
		2.4GHz	2.45GHz	2.5GHz	5.15GHz	5.25GHz	5.35GHz			2.4GHz	2.45GHz	2.5GHz	5.15GHz	5.25GHz	5.35GHz
Spec.	<2				<2			Spec.	<2				<2		
2A100389	81.EA913.001	1.53	1.41	1.14	1.13	1.09	1.38	2A100398	81.EA913.001	1.61	1.47	1.11	1.18	1.31	1.30
	81.EA913.003	1.24	1.33	1.34	1.34	1.25	1.19		81.EA913.003	1.67	1.38	1.44	1.35	1.21	1.10
2A100432	81.EA913.001	1.64	1.29	1.10	1.06	1.17	1.31	2A100342	81.EA913.001	1.67	1.48	1.10	1.06	1.27	1.25
	81.EA913.003	1.65	1.28	1.19	1.20	1.36	1.37		81.EA913.003	1.59	1.20	1.33	1.48	1.21	1.10
2A100422	81.EA913.001	1.63	1.52	1.44	1.07	1.23	1.32	2A100384	81.EA913.001	1.32	1.29	1.14	1.13	1.32	1.18
	81.EA913.003	1.40	1.15	1.27	1.26	1.50	1.32		81.EA913.003	1.28	1.13	1.16	1.13	1.28	1.27
2A100089	81.EA913.001	1.64	1.76	1.52	1.16	1.35	1.17	2A100429	81.EA913.001	1.74	1.18	1.12	1.16	1.31	1.45
	81.EA913.003	1.64	1.21	1.14	1.50	1.29	1.06		81.EA913.003	1.72	1.26	1.16	1.39	1.25	1.18
2A100456	81.EA913.001	1.61	1.22	1.06	1.11	1.40	1.41	2A100406	81.EA913.001	1.56	1.41	1.11	1.19	1.17	1.40
	81.EA913.003	1.64	1.60	1.63	1.39	1.61	1.57		81.EA913.003	1.54	1.37	1.17	1.23	1.10	1.27

Tested By: Winson Tai

Approved By: Charlie CH Wu

Package Vibration Test		Quantity	10 pcs
Model : EM7 / CZ3		Date	Mar. 1.2002
Serial Number: Please see the test data		Site	WNC.
Test Conditions : Frequency : 5 ~ 500 Hz , Duration: 1 hr. , 1.88 Grms ,X , Y, Z axis.			
Result Before Testing			
Appearance	Function		
OK	Passed		
Tested By: Winson Tai			
Result After Testing			
Appearance	Function		
OK	Passed		
Tested By: Winson Tai			
Conclusion :			
1. The test samples which have passed Package Vibration Testt.			
2. The test result refers only to the samples, which is submitted to this test, and is valid as the same reliability is built into the design.			
Tested By:	Winson Tai	Approved By :	<u>Charlie CH Wu</u>
Date	Mar.1.2002	Date	Mar. 1.2001

Before Package Vibration Test for E M 7 & C Z 3															
S / N	91.E M 713.007			S / N	91.E M 713.008			S / N	91.C Z 313.003			S / N	91.C Z 313.001		
	Frequency (G H z)				Frequency (G H z)				Frequency (G H z)				Frequency (G H z)		
	2.4 G H z	2.45 G H z	2.5 G H z		3.2 G H z	3.25 G H z	3.3 G H z		2.25 G H z	2.3 G H z	2.35 G H z		2.05 G H z	2.1 G H z	2.15 G H z
Spec.	< 2			Spec.	< 2			Spec.	< 2			Spec.	< 2		
1L101256	1.499	1.159	1.180	1L104647	1.500	1.240	1.474	1L129143	1.283	1.495	1.468	2A101114	1.959	1.633	1.935
1L101069	1.477	1.269	1.957	1L104652	1.570	1.249	1.351	1L128439	1.428	1.577	1.570	2A101323	1.231	1.121	1.509
1L101092	1.599	1.41	1.958	1L104637	1.536	1.351	1.537	1L130334	1.482	1.613	1.572	2A101029	1.365	1.239	1.336
1L101058	1.720	1.079	1.308	1L104615	1.360	1.102	1.061	1L129135	1.527	1.699	1.793	2A101035	1.971	1.120	1.601
1L101119	1.348	1.053	1.445	1L104769	1.321	1.082	1.220	1L129662	1.497	1.403	1.270	2A101031	1.844	1.213	1.683
1L101043	1.270	1.112	1.690	1L104654	1.369	1.117	1.277	1L129668	1.358	1.577	1.560	2A101095	1.300	1.338	1.398
1L101107	1.845	1.227	1.528	1L104904	1.619	1.332	1.368	1L129659	1.541	1.425	1.389	2A101072	1.857	1.410	1.931
1L101245	1.344	1.256	1.765	1L104650	1.668	1.418	1.436	1L129652	1.605	1.577	1.535	2A101068	1.338	1.363	1.215
1L101103	1.365	1.040	1.481	1L107206	1.412	1.368	1.811	1L130301	1.675	1.646	1.659	2A101043	1.703	1.275	1.672
1L101070	1.591	1.384	1.825	1L106952	1.651	1.463	1.448	1L129265	1.382	1.476	1.501	2A101060	1.427	1.230	1.241
After Package Vibration Test for E M 7 & C Z 3															
S / N	91.E M 713.007			S / N	91.E M 713.008			S / N	91.C Z 313.003			S / N	91.C Z 313.001		
	Frequency (G H z)				Frequency (G H z)				Frequency (G H z)				Frequency (G H z)		
	2.4 G H z	2.45 G H z	2.5 G H z		3.2 G H z	3.25 G H z	3.3 G H z		2.25 G H z	2.3 G H z	2.35 G H z		2.05 G H z	2.1 G H z	2.15 G H z
Spec.	< 2			Spec.	< 2			Spec.	< 2			Spec.	< 2		
1L101256	1.338	1.042	1.726	1L104647	1.635	1.365	1.604	1L129143	1.801	1.588	1.703	2A101114	1.351	1.372	1.362
1L101069	1.32	1.123	1.650	1L104652	1.667	1.263	1.531	1L128439	1.465	1.401	1.534	2A101323	1.609	1.364	1.525
1L101092	1.549	1.123	1.739	1L104637	1.486	1.608	1.746	1L130334	1.745	1.740	1.768	2A101029	1.267	1.521	1.741
1L101058	1.543	1.031	1.370	1L104615	1.257	1.079	1.346	1L129135	1.633	1.575	1.690	2A101035	1.520	1.465	1.612
1L101119	1.372	1.082	1.354	1L104769	1.257	1.079	1.346	1L129662	1.704	1.573	1.631	2A101031	1.723	1.622	1.609
1L101043	1.404	1.233	1.417	1L104654	1.513	1.366	1.413	1L129668	1.394	1.373	1.480	2A101095	1.846	1.815	1.745
1L101107	1.356	1.257	1.280	1L104904	1.569	1.369	1.508	1L129659	1.350	1.236	1.380	2A101072	1.249	1.329	1.409
1L101245	1.390	1.311	1.666	1L104650	1.546	1.456	1.619	1L129652	1.872	1.703	1.640	2A101068	1.215	1.434	1.598
1L101103	1.341	1.142	1.127	1L107206	1.222	1.592	1.925	1L130301	1.690	1.589	1.717	2A101043	1.496	1.651	1.716
1L101070	1.130	1.265	1.455	1L106952	1.467	1.547	1.462	1L129265	1.74	1.524	1.616	2A101060	1.467	1.480	1.539
Package Vibration Test - Difference for E M 7 & C Z 3															
S / N	91.E M 713.007			S / N	91.E M 713.008			S / N	91.C Z 313.003			S / N	91.C Z 313.001		
	Frequency (G H z)				Frequency (G H z)				Frequency (G H z)				Frequency (G H z)		
	2.4 G H z	2.45 G H z	2.5 G H z		3.2 G H z	3.25 G H z	3.3 G H z		2.25 G H z	2.3 G H z	2.35 G H z		2.05 G H z	2.1 G H z	2.15 G H z
Spec.	< 2			Spec.	< 2			Spec.	< 2			Spec.	< 2		
1L101256	-0.161	-0.117	0.546	1L104647	0.135	0.125	0.13	1L129143	0.518	0.093	0.235	2A101114	-0.608	-0.261	-0.573
1L101069	-0.157	-0.146	-0.307	1L104652	0.097	0.014	0.18	1L128439	0.037	-0.176	-0.036	2A101323	0.378	0.243	0.016
1L101092	-0.05	-0.287	-0.219	1L104637	-0.05	0.257	0.209	1L130334	0.263	0.127	0.196	2A101029	-0.098	0.282	0.405
1L101058	-0.177	-0.048	0.062	1L104615	-0.103	-0.023	0.285	1L129135	0.106	-0.124	-0.103	2A101035	-0.451	0.345	0.011
1L101119	0.024	0.029	-0.091	1L104769	-0.064	-0.003	0.126	1L129662	0.207	0.17	0.361	2A101031	-0.121	0.409	-0.074
1L101043	0.134	0.121	-0.273	1L104654	0.144	0.249	0.136	1L129668	0.036	-0.204	-0.08	2A101095	0.546	0.477	0.347
1L101107	-0.489	0.03	-0.248	1L104904	-0.05	0.037	0.14	1L129659	-0.191	-0.189	-0.009	2A101072	-0.608	-0.081	-0.522
1L101245	0.046	0.055	-0.099	1L104650	-0.122	0.038	0.183	1L129652	0.267	0.126	0.105	2A101068	-0.123	0.071	0.383
1L101103	-0.024	0.102	-0.354	1L107206	-0.19	0.224	0.114	1L130301	0.015	-0.057	0.058	2A101043	-0.207	0.376	0.044
1L101070	-0.461	-0.119	-0.37	1L106952	-0.184	0.084	0.014	1L129265	0.358	0.048	0.115	2A101060	0.04	0.25	0.298

Package Drop Test		Quantity	10 pcs
Model : EM7 / CZ3		Date	Mar. 1.2002
Serial Number: Please see the test data		Site	WNC.
Test Conditions : height: 30 inches (76 cm) , 1 corner, 3 edges and 6 faces			
Result Before Testing			
Appearance	Function		
OK	Passed		
Tested By: Winson Tai			
Result After Testing			
Appearance	Function		
OK	Passed		
Tested By: Winson Tai			
Conclusion :			
1. The test samples which have passed Package Drop Test .			
2. The test result refers only to the samples, which is submitted to this test, and is valid as the same reliability is built into the design.			
Tested By:	Winson Tai	Approved By :	<u>Charlie CH Wu</u>
Date	Mar.1.2002	Date	Mar. 1.2001

Before Package Drop Test for E M 7 & C Z 3															
S / N	91.E M 713.007			S / N	91.E M 713.008			S / N	91.C Z 313.003			S / N	91.C Z 313.001		
	Frequency (G H z)				Frequency (G H z)				Frequency (G H z)				Frequency (G H z)		
	2.4 G H z	2.45 G H z	2.5 G H z		3.2 G H z	3.25 G H z	3.3 G H z		2.25 G H z	2.3 G H z	2.35 G H z		2.05 G H z	2.1 G H z	2.15 G H z
Spec.	< 2			Spec.	< 2			Spec.	< 2			Spec.	< 2		
1L101256	1.338	1.042	1.726	1L104647	1.635	1.365	1.604	1L129143	1.801	1.588	1.703	2A101114	1.351	1.372	1.362
1L101069	1.32	1.123	1.650	1L104652	1.667	1.263	1.531	1L128439	1.465	1.401	1.534	2A101323	1.609	1.364	1.525
1L101092	1.549	1.123	1.739	1L104637	1.486	1.608	1.746	1L130334	1.745	1.740	1.768	2A101029	1.267	1.521	1.741
1L101058	1.543	1.031	1.370	1L104615	1.257	1.079	1.346	1L129135	1.633	1.575	1.690	2A101035	1.520	1.465	1.612
1L101119	1.372	1.082	1.354	1L104769	1.257	1.079	1.346	1L129662	1.704	1.573	1.631	2A101031	1.723	1.622	1.609
1L101043	1.404	1.233	1.417	1L104654	1.513	1.366	1.413	1L129668	1.394	1.373	1.480	2A101095	1.846	1.815	1.745
1L101107	1.356	1.257	1.280	1L104904	1.569	1.369	1.508	1L129659	1.350	1.236	1.380	2A101072	1.249	1.329	1.409
1L101245	1.390	1.311	1.666	1L104650	1.546	1.456	1.619	1L129652	1.872	1.703	1.640	2A101068	1.215	1.434	1.598
1L101103	1.341	1.142	1.127	1L107206	1.222	1.592	1.925	1L130301	1.690	1.589	1.717	2A101043	1.496	1.651	1.716
1L101070	1.130	1.265	1.455	1L106952	1.467	1.547	1.462	1L129265	1.740	1.524	1.616	2A101060	1.467	1.480	1.539
After Package Drop Test for E M 7 & C Z 3															
S / N	91.E M 713.007			S / N	91.E M 713.008			S / N	91.C Z 313.003			S / N	91.C Z 313.001		
	Frequency (G H z)				Frequency (G H z)				Frequency (G H z)				Frequency (G H z)		
	2.4 G H z	2.45 G H z	2.5 G H z		3.2 G H z	3.25 G H z	3.3 G H z		2.25 G H z	2.3 G H z	2.35 G H z		2.05 G H z	2.1 G H z	2.15 G H z
Spec.	< 2			Spec.	< 2			Spec.	< 2			Spec.	< 2		
1L101256	1.354	1.074	1.600	1L104647	1.509	1.214	1.321	1L129143	1.657	1.320	1.139	2A101114	1.454	1.674	1.997
1L101069	1.110	1.274	1.469	1L104652	1.468	1.211	1.305	1L128439	1.669	1.546	1.408	2A101323	1.402	1.598	1.788
1L101092	1.440	1.319	1.906	1L104637	1.422	1.248	1.476	1L130334	1.858	1.461	1.170	2A101029	1.032	1.334	1.601
1L101058	1.908	1.253	1.592	1L104615	1.107	1.140	1.029	1L129135	1.241	1.103	1.108	2A101035	1.230	1.634	1.867
1L101119	1.315	1.105	1.563	1L104769	1.285	1.184	1.222	1L129662	1.701	1.405	1.106	2A101031	1.817	1.818	1.846
1L101043	1.216	1.113	1.664	1L104654	1.366	1.103	1.234	1L129668	1.105	1.037	1.094	2A101095	1.161	1.344	1.623
1L101107	1.388	1.282	1.227	1L104904	1.338	1.184	1.440	1L129659	1.644	1.306	1.198	2A101072	1.122	1.184	1.732
1L101245	1.200	1.249	1.771	1L104650	1.635	1.409	1.347	1L129652	1.610	1.584	1.426	2A101068	1.542	1.475	1.870
1L101103	1.148	1.270	1.191	1L107206	1.366	1.259	1.569	1L130301	1.840	1.456	1.449	2A101043	1.230	1.312	1.424
1L101070	1.406	1.295	1.623	1L106952	1.520	1.369	1.411	1L129265	1.624	1.584	1.426	2A101060	1.517	1.527	1.808
Package Drop Test - Difference for E M 7 & C Z 3															
S / N	91.E M 713.007			S / N	91.E M 713.008			S / N	91.C Z 313.003			S / N	91.C Z 313.001		
	Frequency (G H z)				Frequency (G H z)				Frequency (G H z)				Frequency (G H z)		
	2.4 G H z	2.45 G H z	2.5 G H z		3.2 G H z	3.25 G H z	3.3 G H z		2.25 G H z	2.3 G H z	2.35 G H z		2.05 G H z	2.1 G H z	2.15 G H z
Spec.	< 2			Spec.	< 2			Spec.	< 2			Spec.	< 2		
1L101256	0.016	0.032	-0.126	1L104647	-0.126	-0.151	-0.283	1L129143	-0.144	-0.268	-0.564	2A101114	0.103	0.302	0.635
1L101069	-0.21	0.151	-0.181	1L104652	-0.199	-0.052	-0.226	1L128439	0.204	0.145	-0.126	2A101323	-0.207	0.234	0.263
1L101092	-0.109	0.196	0.167	1L104637	-0.064	-0.36	-0.27	1L130334	0.113	-0.279	-0.598	2A101029	-0.235	-0.187	-0.14
1L101058	0.365	0.222	0.222	1L104615	-0.15	0.061	-0.317	1L129135	-0.392	-0.472	-0.582	2A101035	-0.29	0.169	0.255
1L101119	-0.057	0.023	0.209	1L104769	0.028	0.105	-0.124	1L129662	-0.003	-0.168	-0.525	2A101031	0.094	0.196	0.237
1L101043	-0.188	-0.12	0.247	1L104654	-0.147	-0.263	-0.179	1L129668	-0.289	-0.336	-0.386	2A101095	-0.685	-0.471	-0.122
1L101107	0.032	0.025	-0.053	1L104904	-0.231	-0.185	-0.068	1L129659	0.294	0.07	-0.182	2A101072	-0.127	-0.145	0.323
1L101245	-0.19	-0.062	0.105	1L104650	0.089	-0.047	-0.272	1L129652	-0.262	-0.119	-0.214	2A101068	0.327	0.041	0.272
1L101103	-0.193	0.128	0.064	1L107206	0.144	-0.333	-0.356	1L130301	0.15	-0.133	-0.268	2A101043	-0.266	-0.339	-0.292
1L101070	0.276	0.03	0.168	1L106952	0.053	-0.178	-0.051	1L129265	-0.116	0.06	-0.19	2A101060	0.05	0.047	0.269

Test Object: IPEX Connect with 潤工社Cable拉力測試

試驗產品：

驗證： IPEX Connector(廠商：IPEX)與潤工社 Cable 拉力測試

試驗設備：

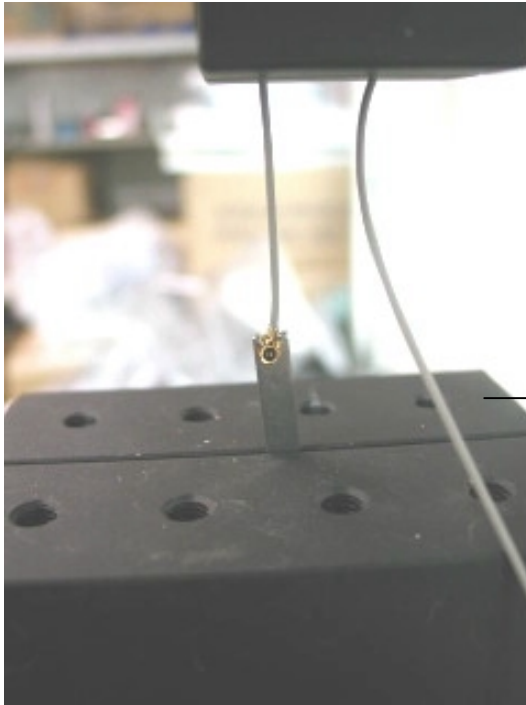
1. 拉力機

試驗時間：

05/12/2003

試驗結果：

Tester By : Winson Tai
Date :05/13/2003



Connector 與測試治具固定方式

Tester By : Winson Tai
Date :05/13/2003

(Main)編號	斷裂力量	斷裂方式
A1	1.87 Kg	Connector 與 Cable 接合處脫落斷裂
A2	1.74 Kg	Connector 與 Cable 接合處脫落斷裂
A3	1.81 Kg	Connector 與 Cable 接合處脫落斷裂
A4	1.83 Kg	Connector 與 Cable 接合處脫落斷裂
A5	1.92 Kg	Connector 與 Cable 接合處脫落斷裂

(Aux)編號	斷裂力量	斷裂方式
B1	1.71 Kg	Connector 與 Cable 接合處脫落斷裂
B2	1.84 Kg	Connector 與 Cable 接合處脫落斷裂
B3	1.94 Kg	Connector 與 Cable 接合處脫落斷裂
B4	2.34 Kg	Connector 與 Cable 接合處脫落斷裂
B5	1.70 Kg	Connector 與 Cable 接合處脫落斷裂

Tester By : Winson Tai

Date :05/13/2003

天線鐵片焊點拉力分析報告

測試分析：鄭文賢、戴鴻檳

測試日期:2003/04/29

測試天線：CAB-A

銲錫溫度：360±10℃

錫線線徑：0.3mm

鐵片焊點處型態：一般(平整面)

測試項目：焊點拉力測試

試驗產品：一般(平整面)

驗證： 焊點拉力測試

試驗設備：

拉力機

試驗結果：



斷裂處

(白色 Cable) 拉取方式：Cable 與鐵片方向“平行”

編號	斷裂力量	斷裂方式
1	4.10 Kg	兩焊點並無斷裂，斷裂處在儀器夾合處
2	4.47 Kg	兩焊點並無斷裂，斷裂處在儀器夾合處
3	4.35 Kg	兩焊點並無斷裂，斷裂處在儀器夾合處
4	3.94 Kg	兩焊點並無斷裂，斷裂處在儀器夾合處
5	4.33 Kg	兩焊點並無斷裂，斷裂處在儀器夾合處
6	4.26 Kg	兩焊點並無斷裂，斷裂處在儀器夾合處
7	4.35 Kg	兩焊點並無斷裂，斷裂處在儀器夾合處
8	4.37 Kg	兩焊點並無斷裂，斷裂處在儀器夾合處
9	4.28 Kg	兩焊點並無斷裂，斷裂處在儀器夾合處
10	4.23 Kg	兩焊點並無斷裂，斷裂處在儀器夾合處

結論:

- 1、 平整面型態焊點位置，經焊接後拉力測試分析焊點可能承受拉力是平均 4Kg 以上。
- 2、 拉力測試後斷裂型態以一般平整面最為理想，焊點並無脫落分離情形發生。