



Wistron NeWeb Corporation

# APPROVAL SHEET

<b>Customer Name</b>	<b>Compal Electronics, INC.</b>		
<b>Date</b>	9/19/2003		
<b>Customer P/N</b>	DC330011800		
<b>Description</b>	Dualband Antenna for CL51 system		
<b>Version</b>	A00	<b>Doc. Version</b>	0

<b>Provided By</b> Wistron NeWeb Corp	<b>Reviewed By</b> Wistron NeWeb Corp	<b>Approved By</b> Customer Company
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## 1. Introduction

### Antennas for CL51 system

#### Main antenna

1. Type: Dual-PIFA antenna
2. Application: right top of LCD site
3. Cable: 1.13 (dia) x 628 mm (white)  
with IPEX or WNC connector

#### AUX antenna

1. Type: Dual-PIFA antenna
2. Application: left top of LCD site
3. Cable: 1.13 (dia) x 493 mm (black)  
with IPEX or WNC connector



## 2. Revision History

Date	Version	Change Description
9/19/03	0A	New release

## 3. Product Specification

### 3.1 Antenna Design Specification

@ GHz	2G4 ISM (2.400 GHz - 2.4835 GHz)			U-NII (5.150 GHz - 5.350 GHz)			
	2.40	2.45	2.50	5.15	5.25	5.35	
VSWR	2.5			2.85			
Main Antenna	Peak Gain	3			6		
	Average Gain	-5			-5		
AUX Antenna	Peak Gain	NA			6		
	Average Gain	-5			-5		

Antenna Max allowable input power: 1watt (typical)

### 3.2 Physical weight

8.45 ± 0.10 g

### 3.3 Mechanical Spec.

See the attached drawing.

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### 3.4 Antenna BOM structure

	Aux Antenna	Main Antenna
Position	Left-side of LCD top	Right-side of LCD top
Type	PIFA	PIFA
Material	1. Stamped metal 2. Junkosha cable and IPEX connector (Or Nissei cable and WNC connector) 3. Sponge 4. Tape 5. Heat shrinkable tube	1. Stamped metal 2. Junkosha cable and IPEX connector (Or Nissei cable and WNC connector) 3. Sponge 4. Tape 5. Heat shrinkable tube
Cable Length #1	1.13 (dia.) x 493 mm	1.13 (dia.) x 628 mm

#1: Cable length is measured from the center of connector to the end of cable.

### 3.5 EQT Report

Test Item	Specification	Result	Tested By	Remark
Vibration (Need NB)	<i>Frequency range: 5Hz ~ 500 Hz</i> <i>Overall rms level: 0.6 G P-P ~ 2.0 G P-P</i> <i>Duration of test: 1 hour / cycle`</i> <i>Number of axes: X, Y, Z 1 cycle / axis</i>	Pass	WNC	
Thermal Shock	Temperature range: -20 ~ 80 Hold Time: 30 min <i>Total cycle: 20 cycles</i>	Pass	WNC.	
Salt Fog Test	<i>48 hours continuous exposure to 5% salt water</i>	Pass	WNC.	
High Temperature (Storage) Test	Temperature range: +80 °C High Temperature Humidity: 90 % <i>High temperature dwell time: 72 hours</i>	Pass	WNC.	
Low Temperature (Storage) Test	Temperature range: -20 °C <i>Low temperature dwell time: 72 hours</i>	Pass	WNC.	
Temperature Cycle	<i>5 cycles of +40C for 30min, +5C for 5min, +90C for 30min, + 5C for 5min</i>	Pass	WNC.	
Tensile Test for Cable Connector Assembly	<i>Connect joint: 1.0 kg -w</i>	Pass	WNC.	

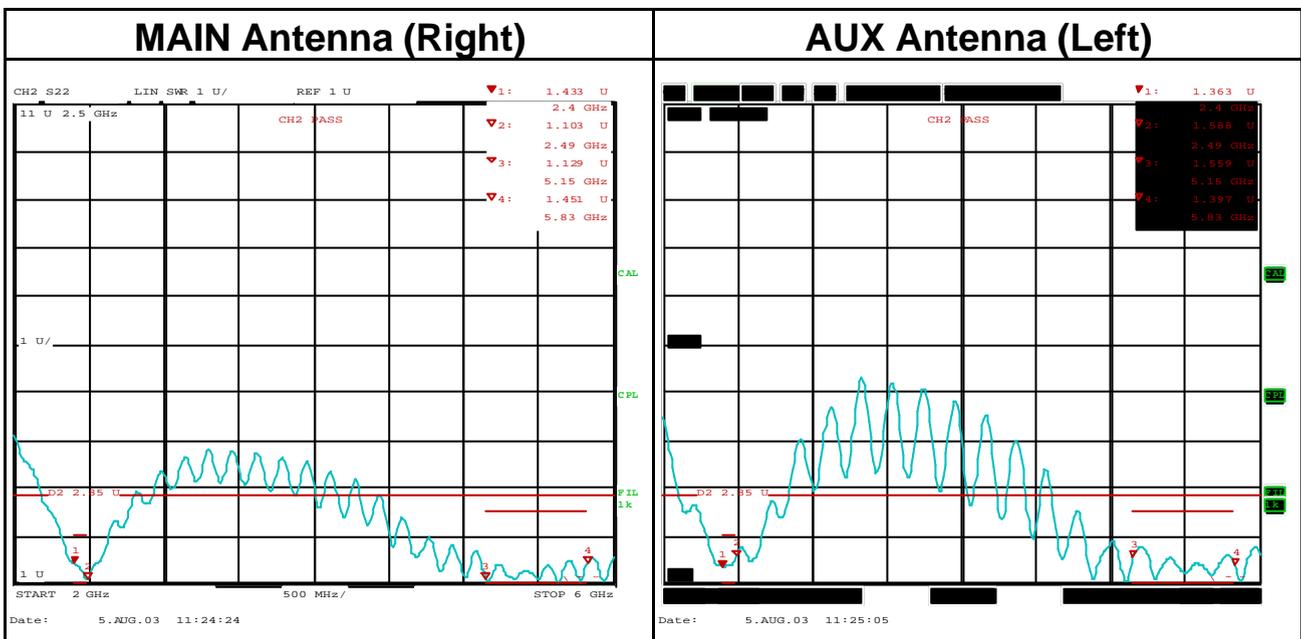


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Tensile Test for PCB Soldering Point	Weld: 1.0kg-w	Pass	WNC.	
Humidity	Temperature of +40C Humidity of 95% Let stand for 96 hours	Pass	WNC	
Connector Plug & unplug	30 cycle	Pass	WNC	

### 4. Antenna Performance Test

#### 4.1 VSWR



#### 4.2 Antenna Gain

Antenna Gain dBi @ GHz		2G4 ISM band			U-NII band			HyperLAN band		
		2.40	2.45	2.50	5.15	5.25	5.35	5.47	5.5975	5.725
MAIN	Peak Gain	-0.57	0.66	0.27	2.51	0.08	0.33	1.03	0.18	0.63
	Avg. Gain	-3.18	-2.46	-2.93	-2.51	-3.48	-3.03	-3.61	-4.31	-3.81
AUX	Peak Gain	5.00	4.17	4.17	1.89	2.08	2.48	1.88	1.76	2.92
	Avg. Gain	-0.82	-1.39	-1.51	-2.36	-2.41	-3.06	-2.89	-2.63	-2.38

#### 4.3 Radiation Pattern



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### 5. Cable Spec.

#### 5.1 Cable Loss (including connector)

Unit: dBm	2G4 band	U-NII band	HyperLAN band
628 mm (MAIN)	-2.24	-3.36	-3.46
493 mm (AUX)	-1.81	-2.72	-2.81

#### 5.2 Connector Info (general description)

Description (Cable)	Inner Conductor: AWG#32(7/0.8), Silver plating annealed copper wire Dielectric core: D0.68mm Outer conductor: 16/4/0.05 D0.93mm, Silver plating annealed copper wire 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. Package