



International Certification Corp.

No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C.

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CE EMC Test Report

Equipment : SDC-CF10G 802.11g Compact Flash Module
with Antenna Connectors

Model No. : SDC-CF10G

Brand Name : Summit

Applicant : Summit Data Communications Inc.

Address : 526 South Main Street Suite 805, Akron, Ohio,
44311 United States

Standard : EN 301 489-1 V1.9.2 (2011-09)
EN 301 489-17 V2.2.1 (2012-09)

Received Date : Jun. 28, 2013

Tested Date : Jul. 01 ~ Jul. 03, 2013

We, International Certification Corp., would like to declare that the tested sample has been evaluated and in compliance with the requirement of the above standards. It may be duplicated completely for legal use with the approval of the applicant. It shall not be reproduced except in full without the written approval of our laboratory.

Approved & Reviewed by:

Kent Chen / Assistant Manager





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Release Record

Report No.	Version	Description	Issued Date
EH362804	Rev. 01	Initial issue	Jul. 15, 2013



Summary of Test Results

EN 301 489-1 Immunity Tests			
Ref. Std. Clause	Test Standard	Description of Test	Pass Criterion
9.3	EN 61000-4-2:2009	Electrostatic Discharge (ESD)	A
9.2	EN 61000-4-3:2006/A1:2008/A2:2010	Radio Frequency Electromagnetic Field (RS)	A



1 General Description

1.1 Information

1.1.1 Specification of the Equipment under Test (EUT)

Operating Frequency	2412 MHz ~ 2472 MHz
Antenna Type	Refer to 1.1.2
Modulation Type	802.11b: DSSS (DBPSK / DQPSK / CCK) 802.11g: OFDM (BPSK / QPSK / 16QAM / 64QAM)

1.1.2 Antenna Details

Ant. No.	Model	Type	Connector	Gain (dBi)
1	Laird / MAP24057	PCB	UFL	3.8

1.1.3 EUT Operational Condition

Supply Voltage	<input type="checkbox"/> AC mains	<input checked="" type="checkbox"/> DC	
Type of DC Source	<input type="checkbox"/> Internal DC supply	<input type="checkbox"/> External DC adapter	<input checked="" type="checkbox"/> From Host

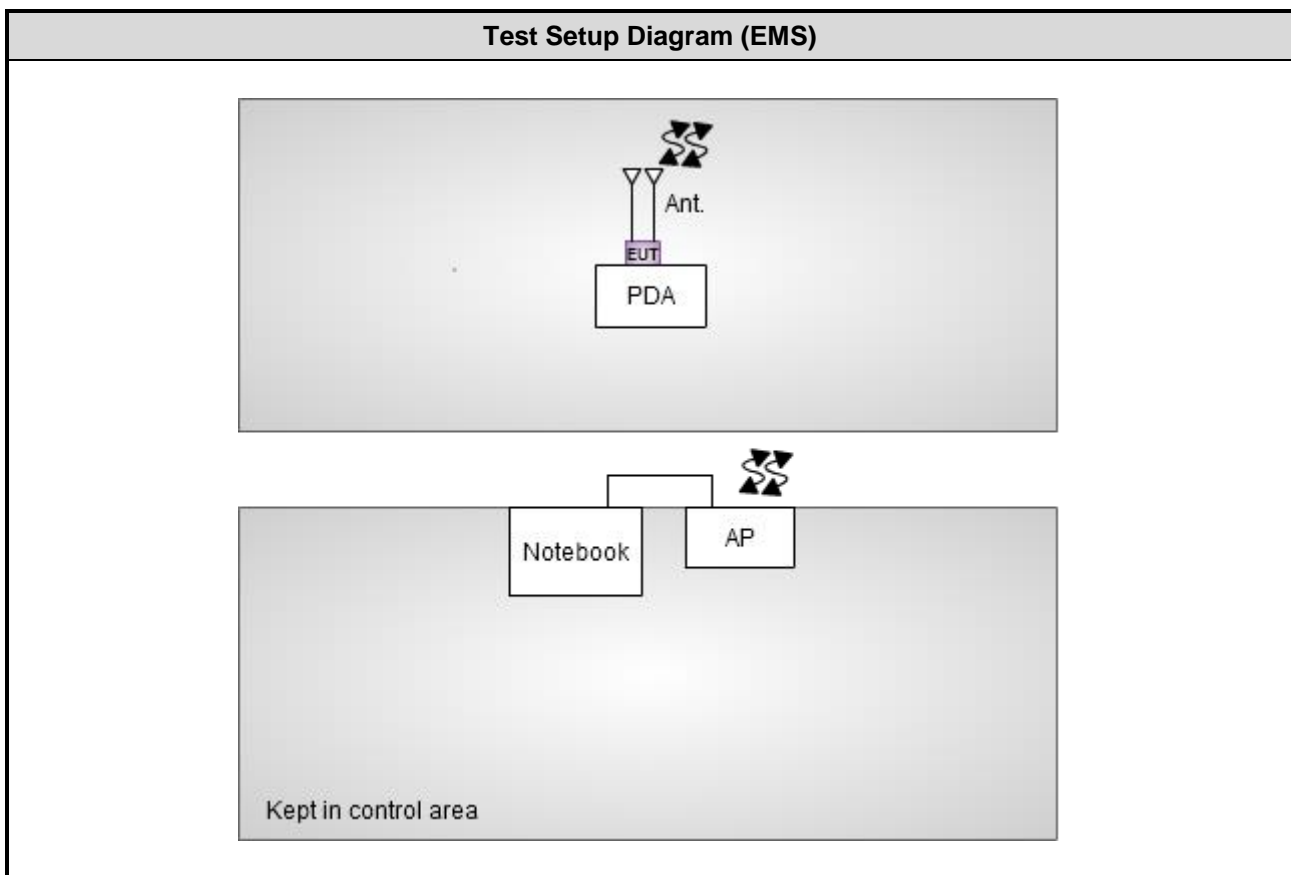


1.2 Local Support Equipment List

Support Equipment List				
No.	Equipment	Brand Name	Model Name	Serial No.
1	PDA	HP	IPAQ	HSTNH-L05C-BT
2	Notebook	DELL	Latitude E5430	6R4RWW1
3	AP	D-LINK	DIR-815	3000226

Note: No.1 were provided by client.

1.3 Test Setup Chart



1.4 Test Software and Operating Condition

- a. The EUT with fixture equipment connected to PDA.
- b. The PDA ran "SCU" program to enable WiFi function of EUT.
- c. The EUT linked with AP via WiFi.
- d. The notebook (in control area) connected to AP via RJ45 cable.
- e. The notebook (in control area) ran "ping" program to link up with EUT to transmit data via AP.



1.5 Testing Condition

Test Item	Test Site	Ambient Condition	Tested By
ESD	ES01-WS	22°C/50%/ 97kPa	JN Chen
RS	RS01-WS	22°C/60%/ 97kPa	JN Chen

1.6 Test Equipment and Calibration Data

Test Item	ESD				
Test Site	ESD room 1 / (ES01-WS)				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
ESD Generator	EMTest	Dito	V1248114239	Dec. 05, 2012	Dec. 04, 2013
Note: Calibration Interval of instruments listed above is one year.					

Test Item	Radiated Immunity (80 MHz - 6 GHz)				
Test Site	RS room 1 / (RS01-WS)				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Probe	ETS-Lindgren	HI-6105	00114784	Nov.14, 2012	Nov. 13, 2013
Signal Generator	R&S	SMB 100A	175727	Jan. 14, 2013	Jan. 13, 2014
Power Sensor	R&S	NRP-Z91	101094-UL	Nov. 06, 2012	Nov. 05, 2013
Power Sensor	R&S	NRP-Z91	101094-KY	Nov. 06, 2012	Nov. 05, 2013
Power Amplifier	BONN	BLWA 0810-160/100D	107972A	N/A	N/A
Power Amplifier	BONN	BLWA 1060-100D	107972B	N/A	N/A
Antenna	SCHWARZBECK MESS-ELEKTRONIK	STLP 9149	9149-073	N/A	N/A
Antenna	R&S	HL046E	100076-Cd	N/A	N/A
UPV AUDIO ANALYZER	R&S	UPV	103144	Jan. 30, 2013	Jan. 29, 2014
Note: Calibration Interval of instruments listed above is one year.					

1.7 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

EN 301 489-1 V1.9.2 (2011-09)

EN 301 489-17 V2.2.1 (2012-09)



2 Immunity Tests

2.1 General Description

Product Standard: EN 301 489-1, EN 301 489-17		
Basic Standard	Spec. Requirement	Performance Criteria
EN 61000-4-2 (ESD)	Contact Discharge: ± 4 kV Air Discharge: ± 8 kV	B
EN 61000-4-3 (RS)	80-1000 MHz, 1400-2700 MHz 3 V/m, 1 kHz Sine Wave 80%, AM Modulation	A



2.2 Performance Criteria Description

Performance Criteria	
Performance criteria for Continuous phenomena applied to Transmitters (CT)	The performance criteria A shall apply.
Performance criteria for Transient phenomena applied to Transmitters (TT)	The performance criteria B shall apply.
Performance criteria for Continuous phenomena applied to Receivers (CR)	The performance criteria A shall apply.
Performance criteria for Transient phenomena applied to Receivers (TR)	The performance criteria B shall apply.

Performance Table		
Criteria	During test	After test
A	<p>Shall operate as intended.</p> <p>May show degradation of performance (see note 1).</p> <p>Shall be no loss of function.</p> <p>Shall be no unintentional transmissions.</p>	<p>Shall operate as intended.</p> <p>Shall be no degradation of performance (see note 2).</p> <p>Shall be no loss of function.</p> <p>Shall be no loss of stored data or user programmable functions.</p>
B	<p>May show loss of function (one or more).</p> <p>May show degradation of performance (see note 1).</p> <p>No unintentional transmissions.</p>	<p>Functions shall be self-recoverable.</p> <p>Shall operate as intended after recovering.</p> <p>Shall be no degradation of performance (see note 2).</p> <p>Shall be no loss of stored data or user programmable functions.</p>
C	<p>May be loss of function (one or more).</p>	<p>Functions shall be recoverable by the operator.</p> <p>Shall operate as intended after recovering.</p> <p>Shall be no degradation of performance (see note 2).</p>
Note 1:	<p>Degradation of performance during the test is understood as a degradation to a level not below a minimum performance level specified by the manufacturer for the use of the apparatus as intended. In some cases the specified minimum performance level may be replaced by a permissible degradation of performance.</p> <p>If the minimum performance level or the permissible performance degradation is not specified by the manufacturer then either of these may be derived from the product description and documentation (including leaflets and advertising) and what the user may reasonably expect from the apparatus if used as intended.</p>	
Note 2:	<p>No degradation of performance after the test is understood as no degradation below a minimum performance level specified by the manufacturer for the use of the apparatus as intended. In some cases the specified minimum performance level may be replaced by a permissible degradation of performance. After the test no change of actual operating data or user retrievable data is allowed.</p> <p>If the minimum performance level or the permissible performance degradation is not specified by the manufacturer then either of these may be derived from the product description and documentation (including leaflets and advertising) and what the user may reasonably expect from the apparatus if used as intended.</p>	



2.3 Electrostatic Discharge (ESD)

2.3.1 Test Specification of Electrostatic Discharge (ESD)

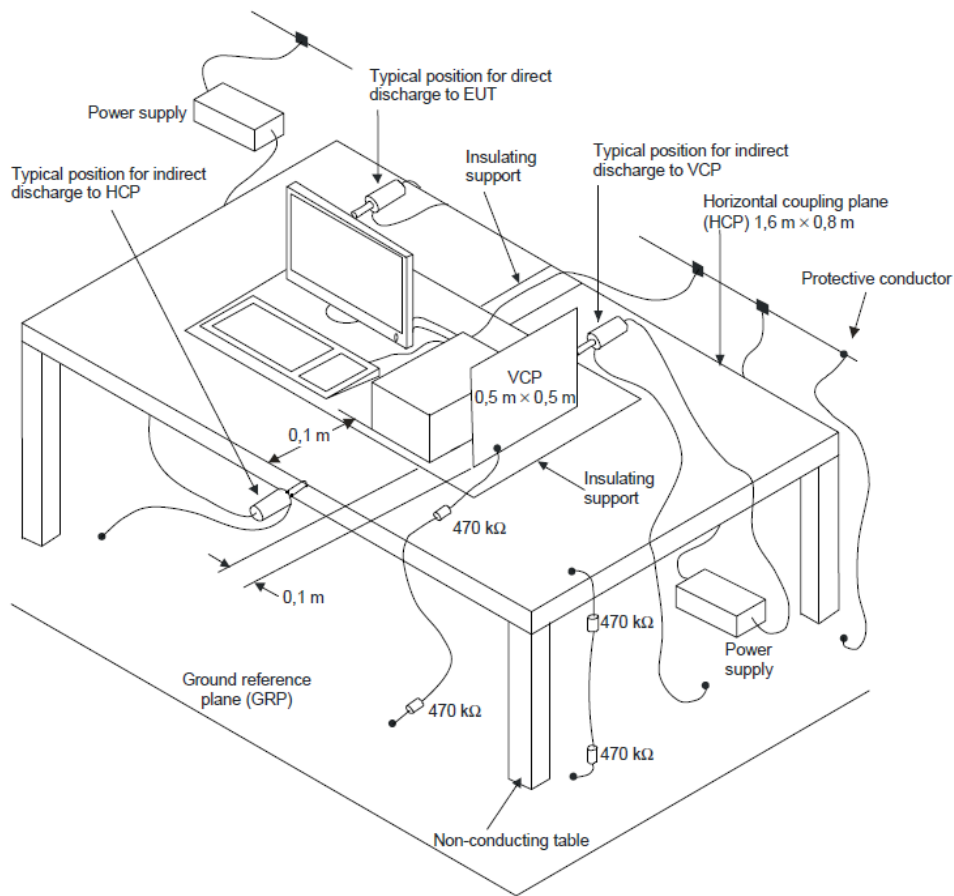
Basic Standard	EN 61000-4-2
Discharge Voltage	Contact Discharge: ± 2 kV / ± 4 kV Air Discharge: ± 2 kV / ± 4 kV / ± 8 kV
Discharge Impedance	330 ohm / 150 pF
Number of Discharge	Air Discharge: minimum 20 times at each test point Contact Discharge: minimum 20 times at each test point
Discharge Mode	Single Discharge
Discharge Period	1 second minimum

2.3.2 Test Procedures

- a. In the case of air discharge testing the climatic conditions shall be within the following ranges:
 - ambient temperature: 15°C to 35°C;
 - relative humidity : 30% to 60%;
 - atmospheric pressure : 86 kPa (860 mbar) to 106 kPa (1060 mbar).
- b. Test programs and software shall be chosen so as to exercise all normal modes of operation of the EUT. The use of special exercising software is encouraged, but permitted only where it can be shown that the EUT is being comprehensively exercised.
- c. The test voltage shall be increased from the minimum to the selected test severity level, in order to determine any threshold of failure. The final severity level should not exceed the product specification value in order to avoid damage to the equipment.
- d. The test shall be performed with both air discharge and contact discharge. On preselected points at least 10 single discharges (in the most sensitive polarity) shall be applied on air discharge. On preselected points at least 10 single discharges (in the most sensitive polarity) shall be applied on contact discharge.
- e. For the time interval between successive single discharges an initial value of one second is recommended. Longer intervals may be determined whether a system failure has occurred.
- f. In the case of contact discharges, the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.
- g. In the case of painted surface covering a conducting substrate, the following procedure shall be adopted:
 - If the coating is not declared to be an insulating coating by the equipment manufacturer, then the pointed tip of the generator shall penetrate the coating so as to make contact with the conducting substrate.
 - Coating declared as insulating by the manufacturer shall only be submitted to the air discharge.
 - The contact discharge test shall not be applied to such surfaces.
- h. In the case of air discharges, the round discharge tip of the discharge electrode shall be approached as fast as possible (without causing mechanical damage) to touch the EUT. After each discharge, the ESD generator (discharge electrode) shall be removed from the EUT. The generator is then retriggered for a new single discharge. This procedure shall be repeated until the discharges are completed. In the case of an air discharge test, the discharge switch, which is used for contact discharge, shall be closed.



2.3.3 Test Setup



The test setup shall consist of a non-conductive table, (0.8 ± 0.08) m high, standing on the ground reference plane.

A horizontal coupling plane (HCP), (1.6 ± 0.02) m \times (0.8 ± 0.02) m, shall be placed on the table. The EUT and its cables shall be isolated from the coupling plane by an insulating support (0.5 ± 0.05) mm in thickness.

2.3.4 Test Result of Electrostatic Discharge (ESD)

Indirect Application					
Test Voltage (kV)	Polarity	Test Point	Horizontal Coupling Plane (HCP)	Vertical Coupling Plane (VCP)	Performance Criteria
2, 4	+/-	At front, rear, left and right side	Note	Note	A

Note: There was no abnormal situation during the test compared with initial operation.



2.4 Radio Frequency Electromagnetic Field (RS)

2.4.1 Test Specification of Radio Frequency Electromagnetic Field (RS)

Basic Standard	EN 61000-4-3
Frequency Range	80 MHz ~ 1000 MHz, 1400 MHz to 2700 MHz
Field Strength	3 V/m
Modulation	1 kHz Sine Wave, 80%, AM Modulation
Frequency Step	1 % of preceding frequency value
Polarity of Antenna	Horizontal and Vertical
Antenna Height	1.5 m
Dwell Time	3 seconds

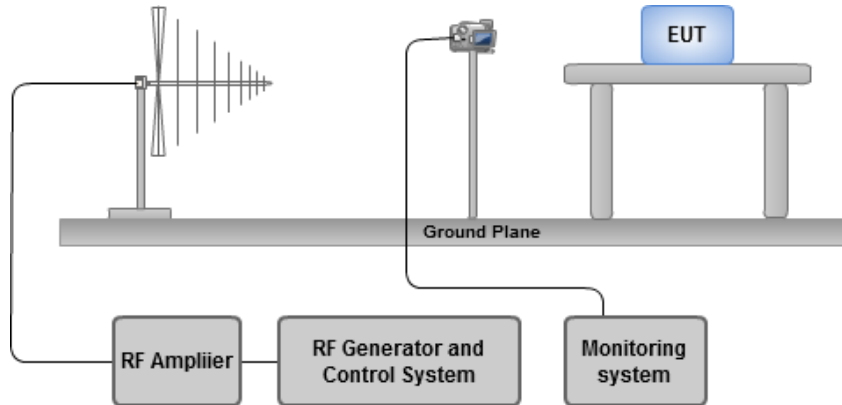
Note: The exclusion band for the transmitter and / or receiver part of the 2.45 GHz RLAN equipment under test shall extend from 2280 MHz to 2607.675 MHz.

2.4.2 Test Procedures

- a. The test level shall be 3 V/m (measured unmodulated). The test signal shall be amplitude modulated to a depth of 80 % by a sinusoidal audio signal of 1000 Hz. If the wanted signal is modulated at 1000 Hz, then an audio signal of 400 Hz shall be used.
- b. The test shall be performed over the frequency range 80 MHz to 1000 MHz & 1400MHz to 2700MHz with the exception of the exclusion band for transmitters, receivers and duplex transceivers, as appropriate.
- c. For receivers and transmitters the stepped frequency increments shall be 1 % frequency increment of the momentary used frequency, unless specified otherwise in the part of EN 301 489 series [i.13] dealing with the relevant type of radio equipment.
- d. Further product related spot frequency tests may be specified in the relevant part of EN 301 489 series [i.13] dealing with the particular type of radio equipment.
- e. Responses on receivers occurring at discrete frequencies, which are narrow band responses, shall be disregarded from the test.
- f. The frequencies selected and used during the test shall be recorded in the test report.



2.4.3 Test Setup



Note: The procedure defined in this part requires the generation of electromagnetic fields within which the test sample is placed and its operation observed. To generate fields that are useful for simulation of actual (field) conditions may require significant antenna drive power and the resultant high field strength levels. To comply with local regulations and to prevent biological hazards to the testing personnel, it is recommended that these tests be carried out in a shielded enclosure or semi-anechoic chamber.

2.4.4 Test Result of Radio Frequency Electromagnetic Field (RS)

Frequency Range (MHz)	Azimuth	Polarity	Test Field Strength (V/m)	Observation	Performance Criteria
80 – 1000	0	V&H	3	Note	A
80 – 1000	90	V&H	3	Note	A
80 – 1000	180	V&H	3	Note	A
80 – 1000	270	V&H	3	Note	A
1400 – 2700	0	V&H	3	Note	A
1400 – 2700	90	V&H	3	Note	A
1400 – 2700	180	V&H	3	Note	A
1400 – 2700	270	V&H	3	Note	A

Note: There was no abnormal situation during the test compared with initial operation.

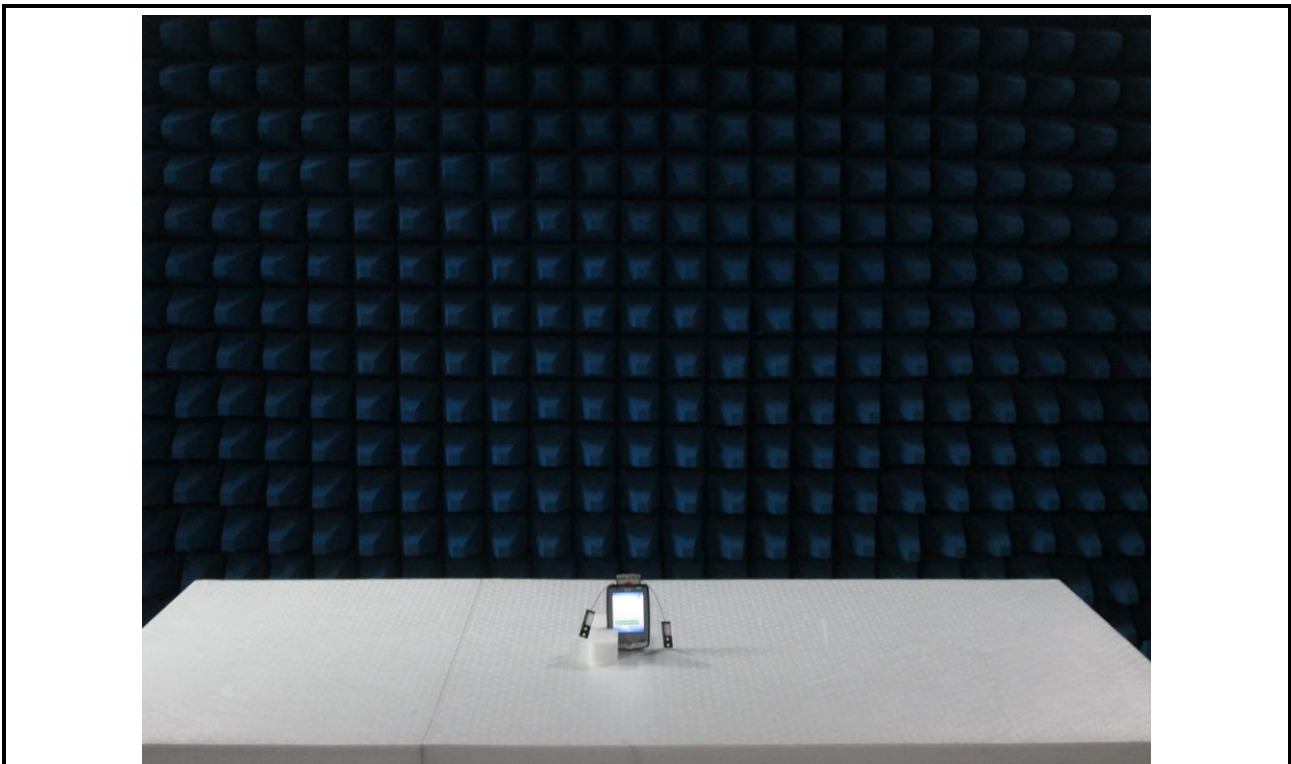


3 Photographs of the Test Configuration

ESD Test



RS Test



==END==