47 CFR PART 15 SUBPART B

TEST REPORT

of

850/1900 Dual-band Handset

Model Name: HG-Z1600
Trade Name: Haier
FCC ID: SG7200611HG-Z1600

prepared for

Qingdao Haier Telecom Co., Ltd.
No.1,Haier Road,Hi-tech Zone,Qingdao,266101,P.R.China

prepared by

Shenzhen Morlab Communications Technology Co., Ltd.
3/F, Electronic Testing Building, Shahe Road, Xili,
Nanshan District, Shenzhen, 518055 P. R. China
Tel: +86 755 86130398
Fax: +86 755 86130218

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Date of Issue: December 21, 2006
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1. Test Result Certification

Equipment under Test:	850/1900 Dual-band Handset
Trade Name:	Haier
Model Name:	HG-Z1600
FCC ID:	SG7200611HG-Z1600
Applicant:	Qingdao Haier Telecom Co., Ltd. No.1,Haier Road,Hi-tech Zone,Qingdao,266101,P.R.China
Manufacturer:	Qingdao Haier Telecom Co., Ltd. No.1,Haier Road,Hi-tech Zone,Qingdao,266101,P.R.China
Test Standards:	47 CFR Part 15 Subpart B
Test Result:	PASS

*** We hereby certify that:**

The equipment under test was tested by Shenzhen Morlab Communications Technology Co., Ltd. The test data, data evaluation, test procedures and equipment configurations shown in this report were made in accordance with the requirement of related FCC rules.

The test results of this report only apply for the tested sample equipment identified above. The test report shall be invalid without all the signatures of the test engineer, the reviewer and the approver.

Tested by: ..... Dated: 2006.12.21
Zhang Weimin

Reviewed by: Yang Bo ..... Dated: 2006.12.21
Yang Bo

Approved by: Shu Luan ..... Dated: 2006.12.21
Shu Luan

2. General Information

2.1 Equipment under Test (EUT) Description

EUT_1 / MS:

Description	:	850/1900 Dual-band Handset
Model Name	:	HG-Z1600
Serial No.	:	---
IMEI	:	354413010000187
Hardware Version	:	p0.1
Software Version	:	Z1600-H01-LBY-S002-SPA

EUT_2 / Battery:

Description	:	Li-ion Battery
Model Name	:	H11102
Trade Name	:	Haier
Serial No.	:	N/A
Manufacturer	:	Shenzhen XWODA Electronic Co. Ltd
Capacitance	:	650mAh
Rated Voltage	:	3.7V
Charge Limit Voltage	:	4.2V

EUT_3 / Charger:

Description	:	Travel Charger
Model Name	:	H26112
Trade Name	:	Haier
Serial No.	:	N/A
Manufacturer	:	NINGBO LISHUNDA ELECTRON CO.,LTD.
Rated Input	:	~ 100-240V, 50/60Hz, 0.2A
Rated Output	:	⎓ 5.0V, 550mA
Length of DC Cable	:	160cm

NOTE:

1. The EUT consists of EUT_1/MS and normal options EUT_2/Battery and EUT_3/Charger.
2. For the detailed function of the EUT and test mode used, please refer to section 3.1.1.
3. For detailed features about the EUT, please see user manual supplied by applicant.

2.2 Test Standards and Results

The objective of the report is to perform EMC tests according to 47 CFR Part 15 Subpart B, and the EUT is classified as a Class B digital device:

No.	Identity	Document Title
1	47 CFR Part 15 (10-1-05 Edition)	Radio Frequency Devices

Test detailed items and the results are as below:

No.	Rules	Test Type	Result	Date of Test
1	§15.107	Conducted Emission	PASS	2006-12-07
2	§15.109	Radiated Emission	PASS	2006-12-18

2.3 Facilities and Accreditations

2.3.1 Facilities

Shenzhen Electronic Product Quality Testing Center (Morlab) is a testing organization accredited by China National Accreditation Board for Laboratories (CNAL) according to ISO/IEC 17025. The accreditation certificate number is L1659.

All measurement facilities used to collect the measurement data are located at Electronic Testing Building, Shahe Road, Xili, Nanshan District, Shenzhen, P. R. China. The site was constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22, the FCC registration number is 741109.

2.3.2 Test Equipments

No.	Description	Specification
1	System Simulator	Manufacturer: Rohde&Schwarz Model No.: CMU200 Serial No.: 100448
2	System Simulator	Manufacturer: Agilent Model No.: E5515C Serial No.: GB43130131
3	Receiver	Manufacturer: Agilent Model No.: E7405A Serial No.: US44210471
4	LISN	Manufacturer: Schwarzbeck Model No.: NSLK8127 Serial No.: 8127449
5	Telecommunication Antenna	Manufacturer: European Antennas Model No.: PSA-45010R/356 Serial No.: 403688-001
6	Trilogy Antenna	Manufacturer: Schwarzbeck Model No.: VULB 9163 Serial No.: 9163-274
7	Anechoic Chamber	Manufacturer: Albatross Projects GmbH
8	Shield Room	Manufacturer: Albatross Projects GmbH

NOTE:

1. Equipments listed above have been calibrated and are in the period of validation.

2.3.3 Test Environment Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature:	20 - 25°C
Relative Humidity:	40 - 50%
Atmospheric Pressure:	86 - 106kPa

3. 47 CFR Part 15B Requirements

3.1 General Information

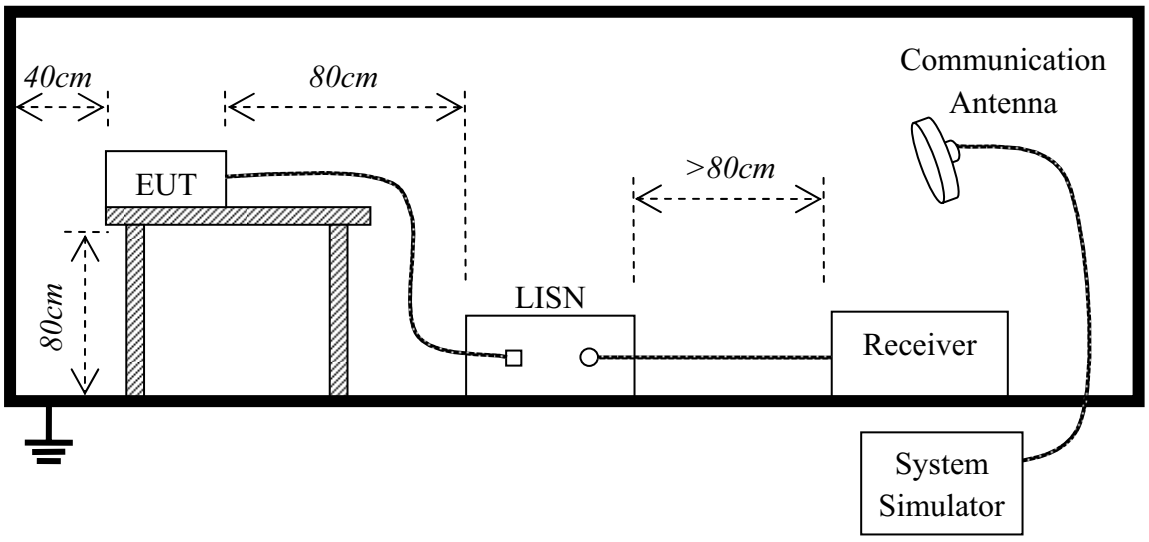
3.1.1 EUT Function and Test Mode

The EUT configuration of the emission tests was MS + Battery + Charger.
Before the measurement, the lithium battery was completely discharge.
Call Mode:
A communication link was established between the MS and a System Simulator (SS). The MS operated at mid ARFCN and maximum output power (level 5 for GSM 850 MHz and level 0 for PCS 1900 MHz).
Idle Mode:

The EUT was synchronized to the BCCH, listening to the CCCH and able to respond to paging message. Periodic location updating was disabled.

3.1.2 Test Setup

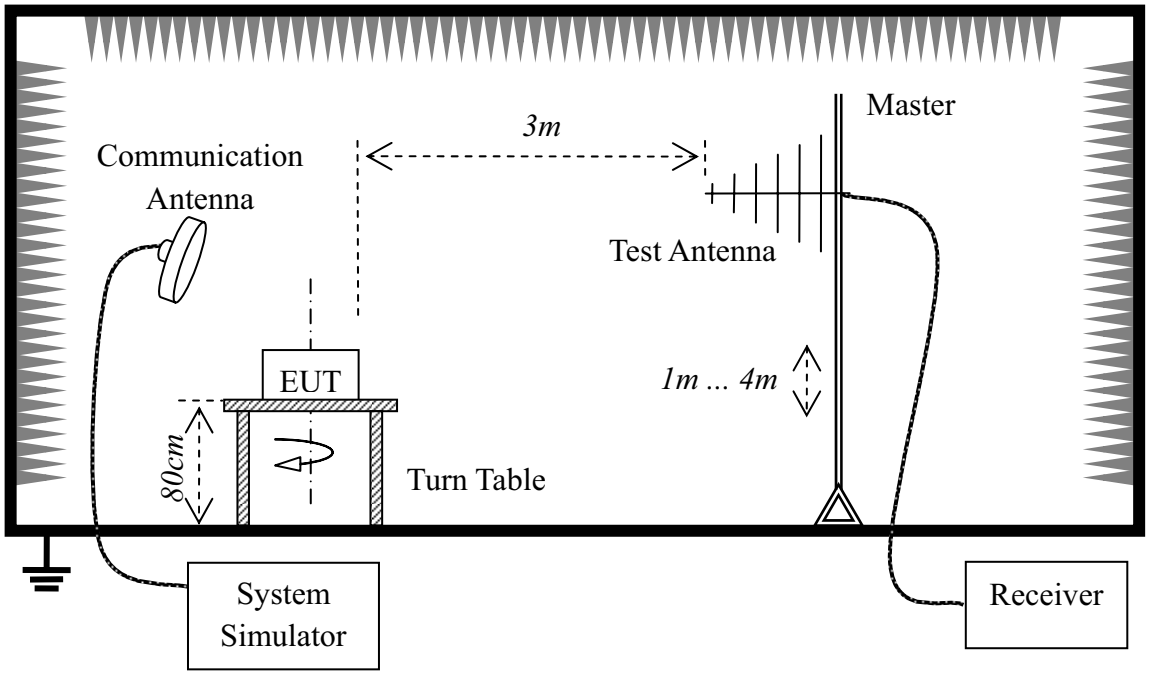
3.1.2.1 Conducted Emission Test



1. The test is performed in a Shield Room; the factors of the test system are calibrated to correct the reading.
2. The EUT is placed on a 0.8 meters high insulating table and keeps 0.4 meters away from the conducting wall of the Shield Room.

3. The EUT is connected to the power mains through a Line Impedance Stabilization Network (LISN). The LISN provides 50Ω/50μH of coupling impedance for the measuring instrument.

3.1.2.2 Radiated Emission Test



1. The test is performed in a Semi-anechoic Chamber; the factors of the test system are calibrated to correct the reading.
2. The EUT is placed on a 0.8 meters high insulating table and keeps 3 meters away from the trilogy Test Antenna, which is mounted on the top of a variable-height antenna Master tower.

3.2 Conducted Emission

3.2.1 Requirement

According to FCC §15.107, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150kHz to 30MHz shall not exceed the limits in the following table, as measured using a 50μH/50Ω line impedance stabilization network (LISN).

Frequency range (MHz)	Conducted Limit (dBμV)	
	Quasi-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
0.50 - 30	60	50

NOTE:

1. The limit subjects to the Class B digital device.
2. The lower limit shall apply at the band edges.
3. The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.

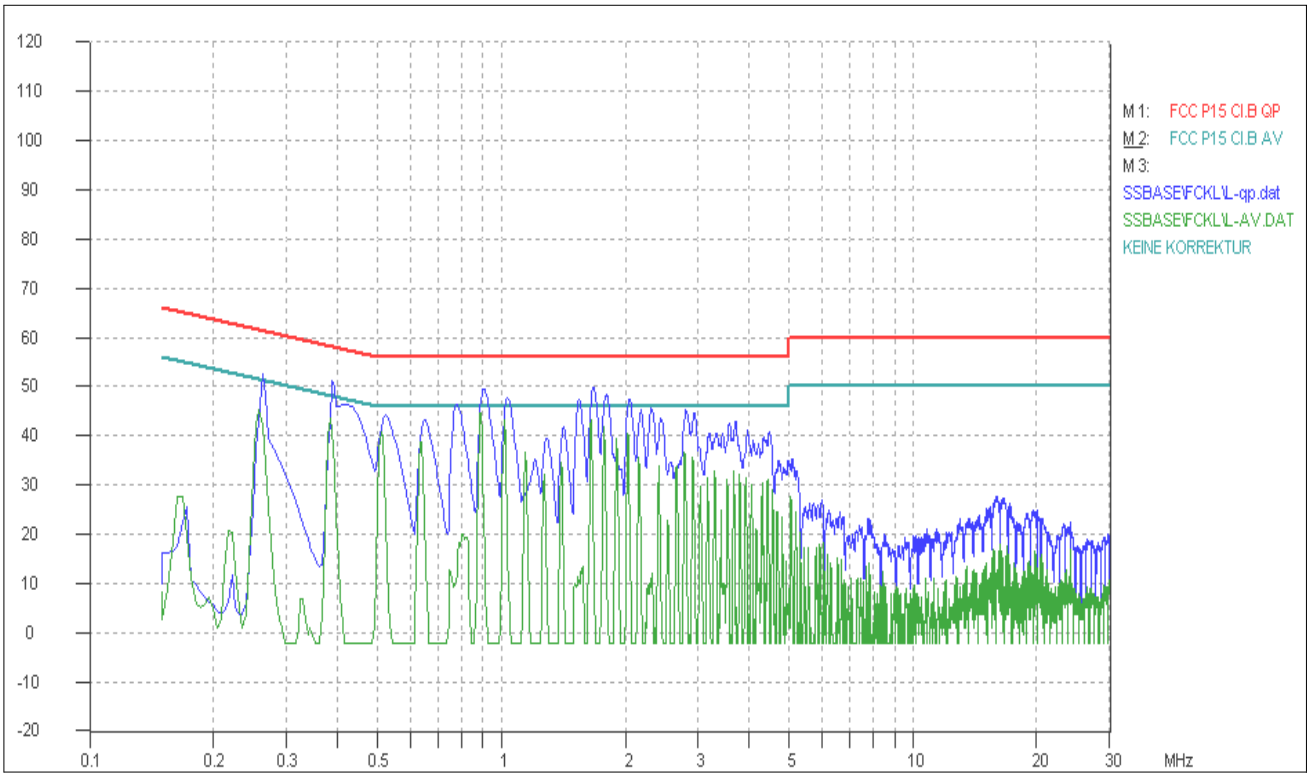
3.2.2 Test Procedure

1. Perform test setup as described in section 3.1.2.1.
2. Each test mode in section 3.1.1 should be applied. At each test mode, the frequency range from 150kHz to 30MHz is searched using the CISPR Quasi-Peak and/or the Average detector of the Receiver. If the emission levels measured with Quasi-Peak detector are lower than the Average Limit, it's not necessary to measure with Average detector.
3. The emission levels at both L phase and N phase should be tested.
4. Record the test result plot and distinct points.
5. In the test report show the worst test data.

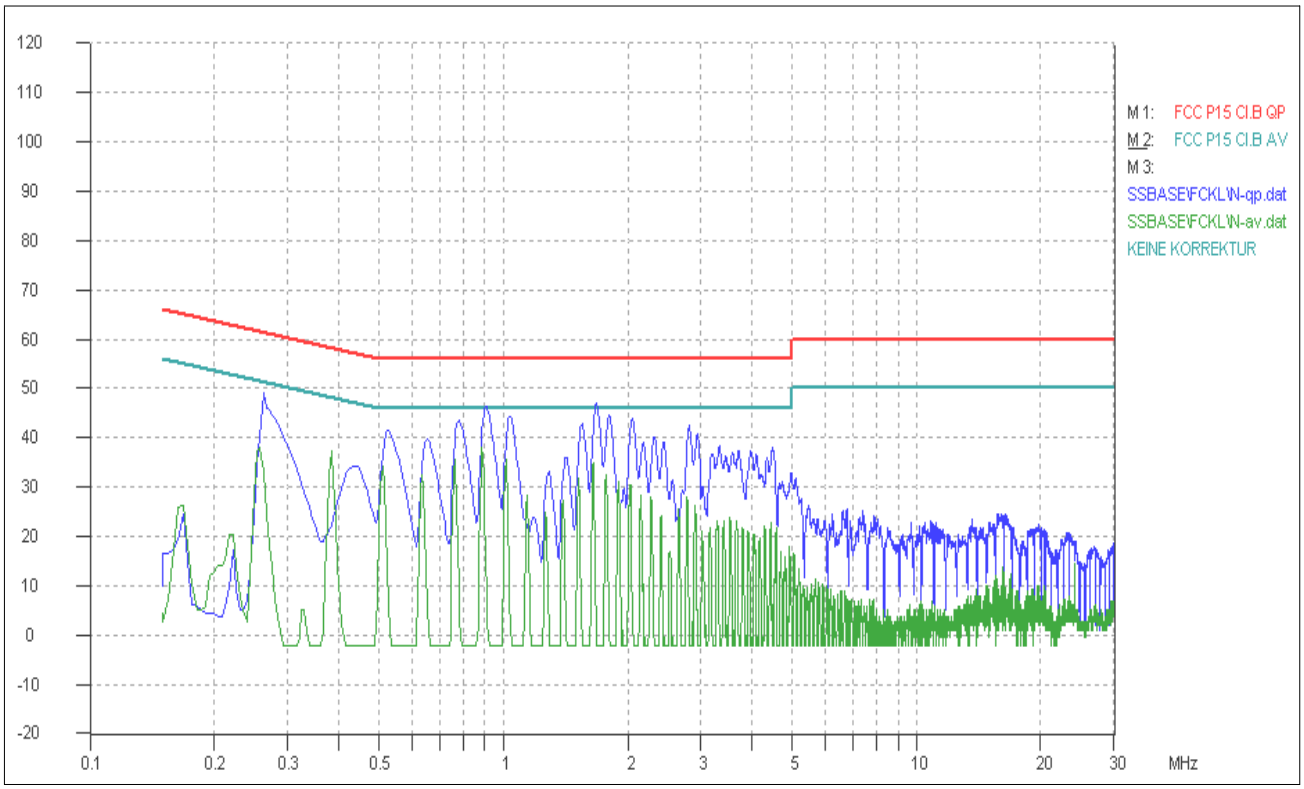
3.2.3 Test Result

No.	Frequency (MHz)	Emission Level (dBμV)			Limit (dBμV)		Result
		Quasi-Peak	Average	Phase (L/N)	Quasi-Peak	Average	
1	0.2625	52.5	45.3	L	< 61.4	< 51.4	PASS
2	0.3885	51.3	43.7	L	< 58.1	< 48.1	PASS
3	0.9060	49.6	44.8	L	< 56.0	< 46.0	PASS
4	1.0320	47.9	43.2	L	< 56.0	< 46.0	PASS
5	1.6710	49.9	43.1	L	< 56.0	< 46.0	PASS
6	1.8015	48.4	41.7	L	< 56.0	< 46.0	PASS

1. Plot for L Phase:



2. Plot for N Phase:



3.3 Radiated Emission

3.3.1 Requirement

According to FCC §15.109, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency range (MHz)	Field Strength	
	μV/m	dBμV/m
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

NOTE:

1. Field Strength (dBμV/m) = 20*log[Field Strength (μV/m)].
2. In the emission tables above, the tighter limit applies at the band edges.

3.3.2 Test Procedure

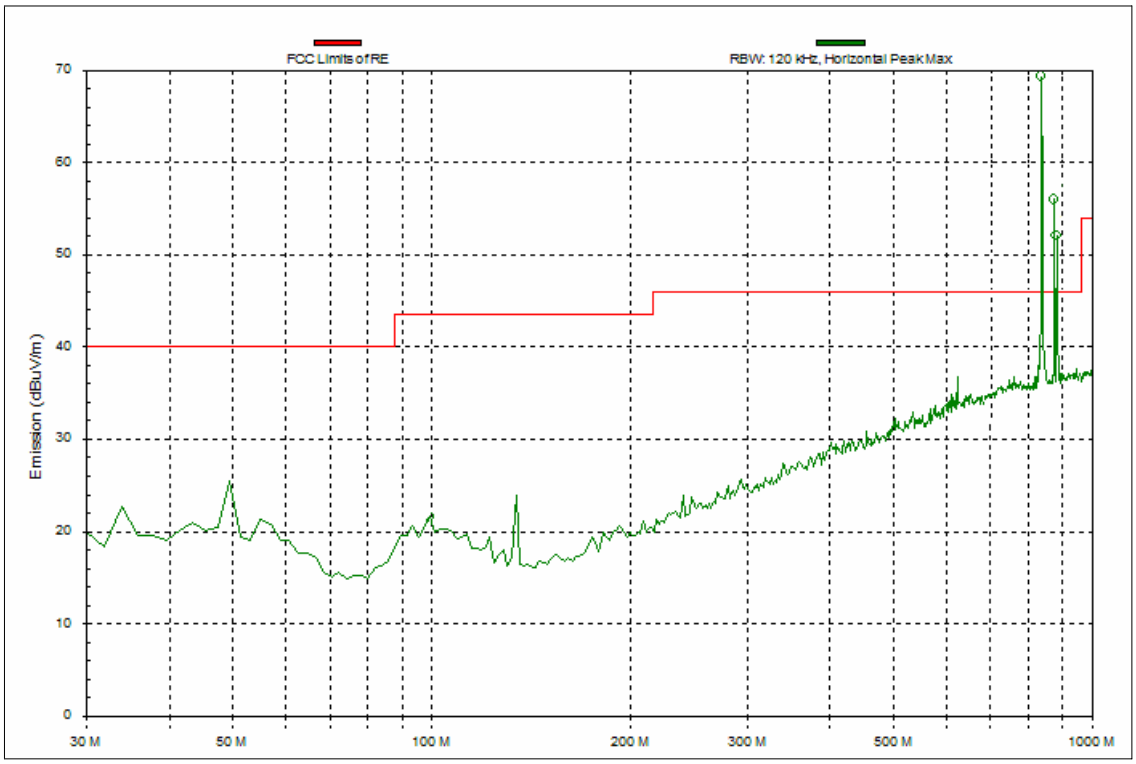
1. Perform test setup as described in section 3.1.2.2.
2. Each test mode in section 3.1.1 should be applied. At each test mode, the Turn Table turns from 0 degrees to 360 degrees to find the maximum reading; for the suspected points, the Test Antenna varies from 1 meter to 4 meters to determine the maximum value of the field strength.
3. The Receiver is set to Peak Detector function and specified bandwidth with maximum hold mode. If the emission level of the EUT in peak mode is 6dB lower than the limit specified, then testing could be stopped and the peak values would be reported; otherwise the emission less than 6dB margins would be retested one by one using the quasi-peak method.
4. The emission levels at both horizontal and vertical polarizations should be tested.
5. Record the test result plot and distinct points.
6. In the test report show the worst test data.

3.3.3 Test Result

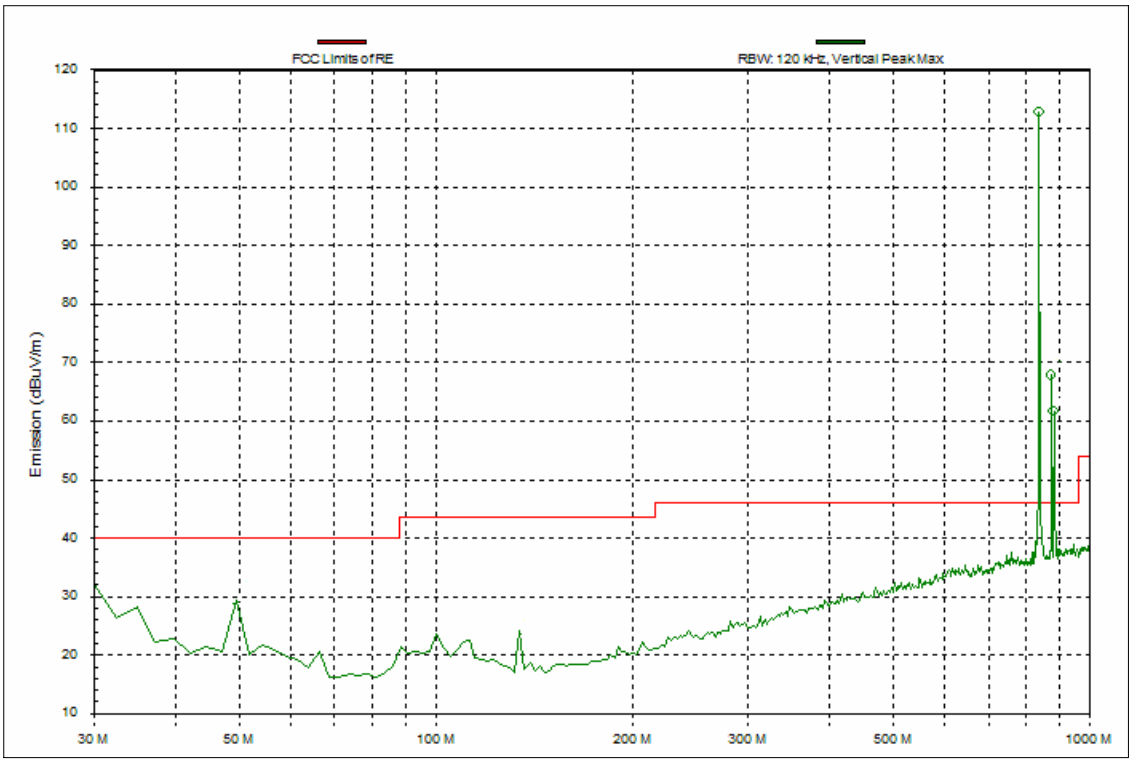
No.	Frequency (MHz)	Emission Level (dBμV/m)			Quasi-Peak Limit (dBμV/m)	Result
		Peak	Quasi-Peak	Antenna Polarization		
1	49.4	29.43	---	Vertical	< 40	PASS
2	66.375	20.66	---	Vertical	< 40	PASS
3	134.275	24.27	---	Vertical	< 43.5	PASS
4	99.3	21.58	---	Horizontal	< 43.5	PASS
5	133.95	24.1	---	Horizontal	< 43.5	PASS
6	624.825	36.79	---	Horizontal	< 46	PASS

Following is the plots for emission measurement; please note that marked spikes with circle should be ignored because they are MS and SS carrier frequency.

1. Plot when Test Antenna at Horizontal Polarization:



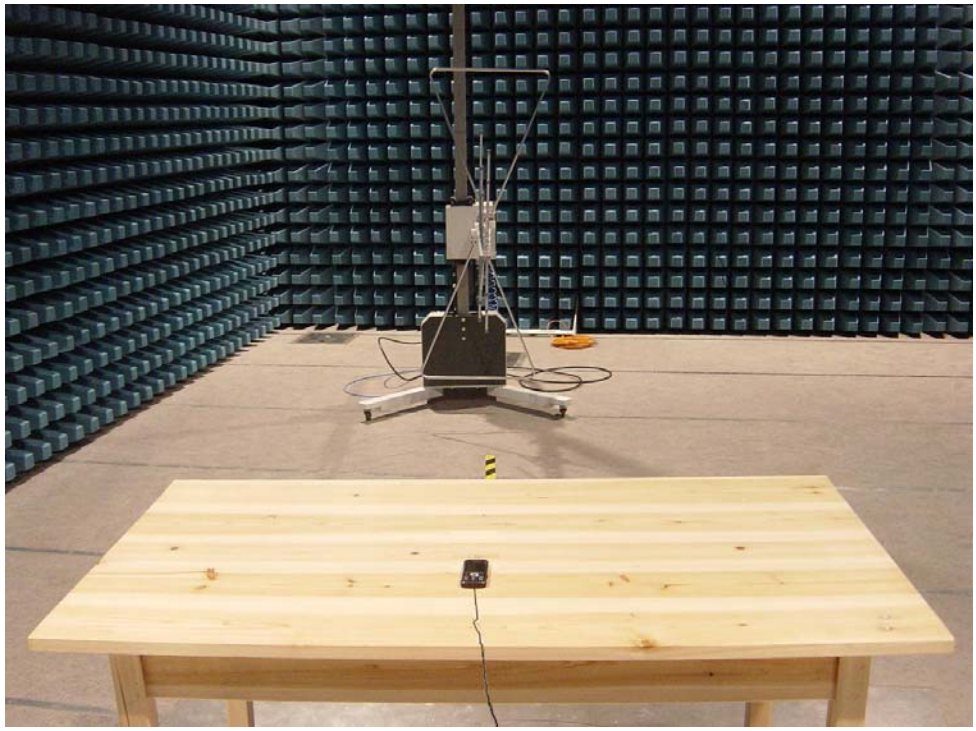
2. Plot when Test Antenna at Vertical Polarization:



Ⅰ Photograph of the test setup

1. Mains Terminal Disturbance Voltage Measurement

2. Radiated Field Strength Measurement

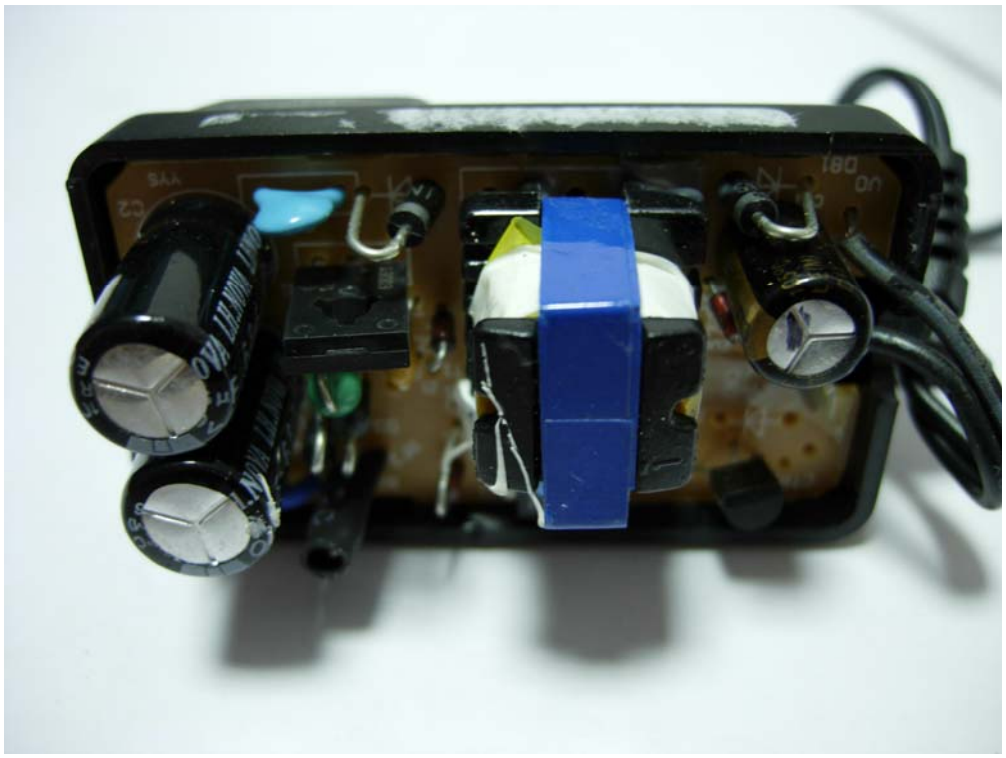


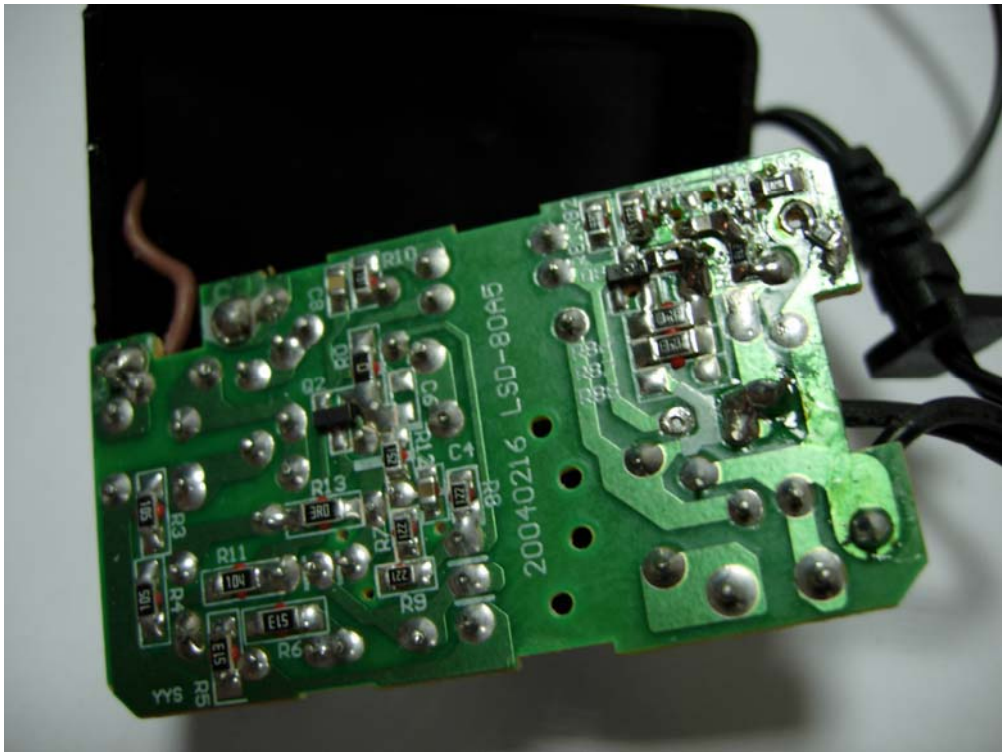
Ⅱ Photograph of the EUT

1. Appearance of the EUT

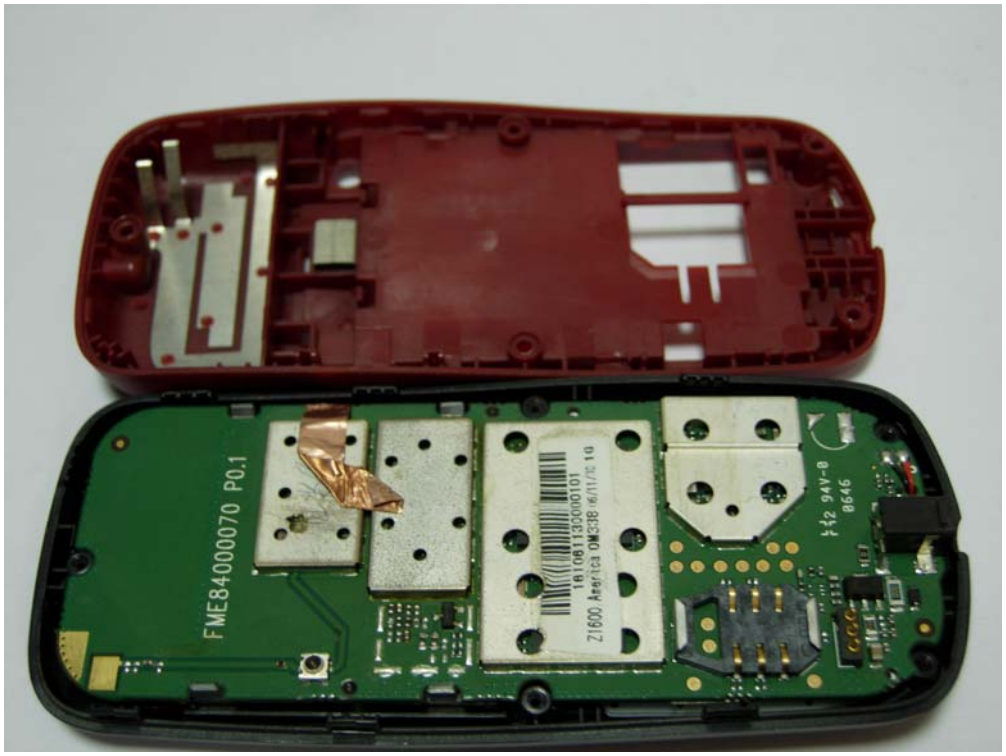
2. Appearance of the Adapter

3. Inside of the Adapter





4. Inside of the EUT

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