



Report No.: RZA2010-1380EMC-R1



## Part 15B

# TEST REPORT

<b>Product Name</b>	GSM mobile phone
<b>Model Name</b>	IT385
<b>FCC ID</b>	WH7IT385
<b>Client</b>	Longcheer Technology (Shanghai) Co., Ltd.

TA Technology (Shanghai) Co., Ltd.



## GENERAL SUMMARY

Product Name	GSM mobile phone	Model Name	IT385		
FCC ID	WH7IT385				
Report No.	RZA2010-1380EMC-R1				
Client	Longcheer Technology (Shanghai) Co., Ltd.				
Manufacturer	Longcheer Technology (Shanghai) Co., Ltd.				
Reference Standard(s)	<p>FCC Code CFR47 Part15B (2009-12) Radio frequency device.</p> <p>ANSI C63.4 (2009) Methods of Measurement of Radio-Noise Emission from Low-Voltage Electrical and Electronic Equipment in the Range of 9 KHz to 40GHz.</p>				
Conclusion	<p>This portable wireless equipment has been measured in all cases requested by the relevant standards. Test results in Chapter 2 of this test report are below limits specified in the relevant standards.</p> <p>General Judgment : Pass</p> <p style="text-align: center;">(Stamp)</p> <p style="text-align: center;">Date of issue: November 25<sup>th</sup>, 2010</p>				
Comment	The test result only responds to the measured sample.				

Approved by 杨伟中  
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Revised by 范广昌  
Fan Guangchang

Performed by 刘伟  
Liu Wei

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## **1. General Information**

### **1.1. Notes of the test report**

**TA Technology (Shanghai) Co., Ltd.** guarantees the reliability of the data presented in this test report, which is the results of measurements and tests performed for the items under test on the date and under the conditions stated in this test report and is based on the knowledge and technical facilities available at **TA Technology (Shanghai) Co., Ltd.** at the time of execution of the test.

**TA Technology (Shanghai) Co., Ltd.** is liable to the client for the maintenance by its personnel of the confidentiality of all information related to the items under test and the results of the test. This report only refers to the item that has undergone the test.

This report standalone dose not constitute or imply by its own an approval of the product by the certification Bodies or competent Authorities. This report can not be used partially or in full for publicity and/or promotional purposes without previous written approval of **TA Technology (Shanghai) Co., Ltd.** and the Accreditation Bodies, if it applies.

### **1.2. Testing laboratory**

Company: TA Technology (Shanghai) Co., Ltd.  
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City: Shanghai  
Post code: 201201  
Country: P. R. China  
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Website: <http://www.ta-shanghai.com>  
E-mail: [yangweizhong@ta-shanghai.com](mailto:yangweizhong@ta-shanghai.com)

### **1.3. Applicant Information**

Company: Longcheer Technology (Shanghai) Co., Ltd.  
Address: Building 1, No.401, Caobao Rd, Xuhui District, Shanghai, P.R. China  
City: Shanghai  
Postal Code: 201204  
Country: P.R. China  
Contact: Leo BAO  
Telephone: 86-21-640888898-5108  
Fax: 021-54970876

### **1.4. Manufacturer Information**

Company: Longcheer Technology (Shanghai) Co., Ltd.  
Address: Building 1, No.401, Caobao Rd, Xuhui District, Shanghai, P.R. China  
City: Shanghai  
Postal Code: 201204  
Country: P.R. China  
Telephone: 86-21-640888898-5108  
Fax: 021-54970876

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**1.5. Information of EUT**

**General information**

Name of EUT:	GSM mobile phone
IMEI:	358688000000158
Hardware Version:	LB6M111A2-1
Software Version:	LB6UN01.8.5.1.1T20G0714_M111
Antenna Type:	Internal Antenna
Power Supply:	Battery or Charger
Used Host Product:	IBM T61

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**Auxiliary equipment details**

**AE1: Battery**

Model: BL-5C  
Manufacturer: /  
S/N: BAK08100827004089

**AE2: Notebook**

Model: IBM T61 8892-BAC  
S/N: L3-C9644

Equipment Under Test (EUT) is GSM mobile phone with internal antenna. During the test, the EUT connect to the laptop IBM T61.

The sample under test was selected by the Client.

Components list please refer to documents of the manufacturer.

**1.6. Test Date**

The test is performed on October 18, 2010.

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## **2. Test Information**

### **2.1. Summary of test results**

<b>Number</b>	<b>Test Case</b>	<b>Clause in FCC Rules</b>	<b>Verdict</b>
1	Radiated Emission	15.109, ANSI C63.4-2003	PASS
2	Conducted Emission	15.107, ANSI C63.4-2003	PASS

## **2.2. Radiated Emission**

### **Ambient condition**

Temperature	Relative humidity	Pressure
24°C~26°C	45%~50%	102.5kPa

### **Methods of Measurement**

The EUT is placed on a non-metallic table 0.8m above the horizontal metal reference ground plane. The distance between EUT and receive antenna should be 3 meters. During the test, the EUT was operating in its typical mode. The test method is according to ANSI C63.4-2003. Sweep the whole frequency band through the range from 30MHz to 6GHz. During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turn table shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. During the test, EUT is connected to a laptop via a USB cable in the case of USB mode. The EUT is used as the peripheral equipment of the PC. The model of laptop is IBM T61 8892-BAC and the serial number of laptop is L3-C9644. The phone modem drivers were installed on the laptop to be able to communicate with the EUT by continuously sending a querying text file (AT Command) to the phone using Hyper Terminal during the test.

The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing. During the test, the EUT is worked at maximum output power.

Set the spectrum analyzer in the following:

Below 1GHz:

RBW=100kHz / VBW=300kHz / Sweep=AUTO

Above 1GHz:

(a) PEAK: RBW=1MHz VBW=3MHz/ Sweep=AUTO

(b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO

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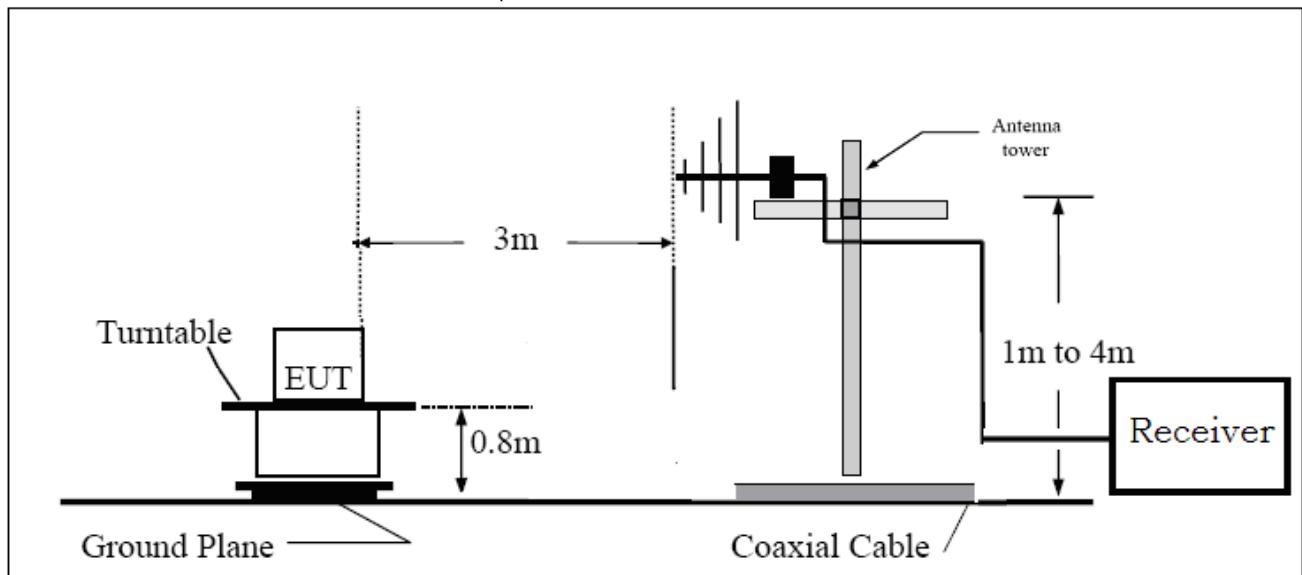
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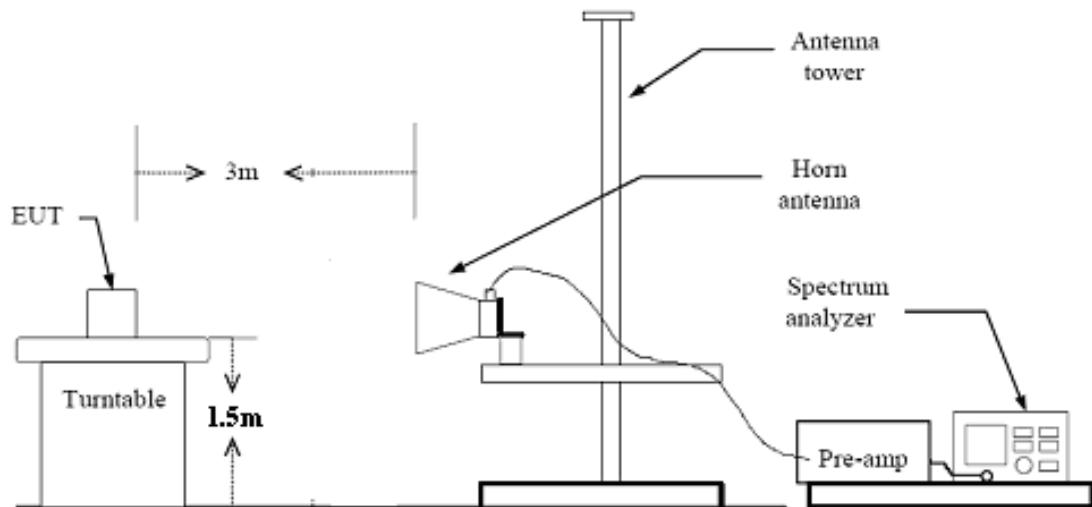
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**Test Setup**

**Below 1GHz**



**Above 1GHz**



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**Limits**

<b>Frequency (MHz)</b>	<b>Field Strength (dB<math>\mu</math>V/m)</b>	<b>Detector</b>
30 -88	40.0	Quasi-peak
88-216	43.5	Quasi-peak
216 – 960	46.0	Quasi-peak
960-1000	54.0	Quasi-peak
1000-5 <sup>th</sup> harmonic of the highest frequency or 40GHz,which is lower	54 74	Average Peak

**Measurement Uncertainty**

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 1.96$ .  $U = 3.92$  dB.

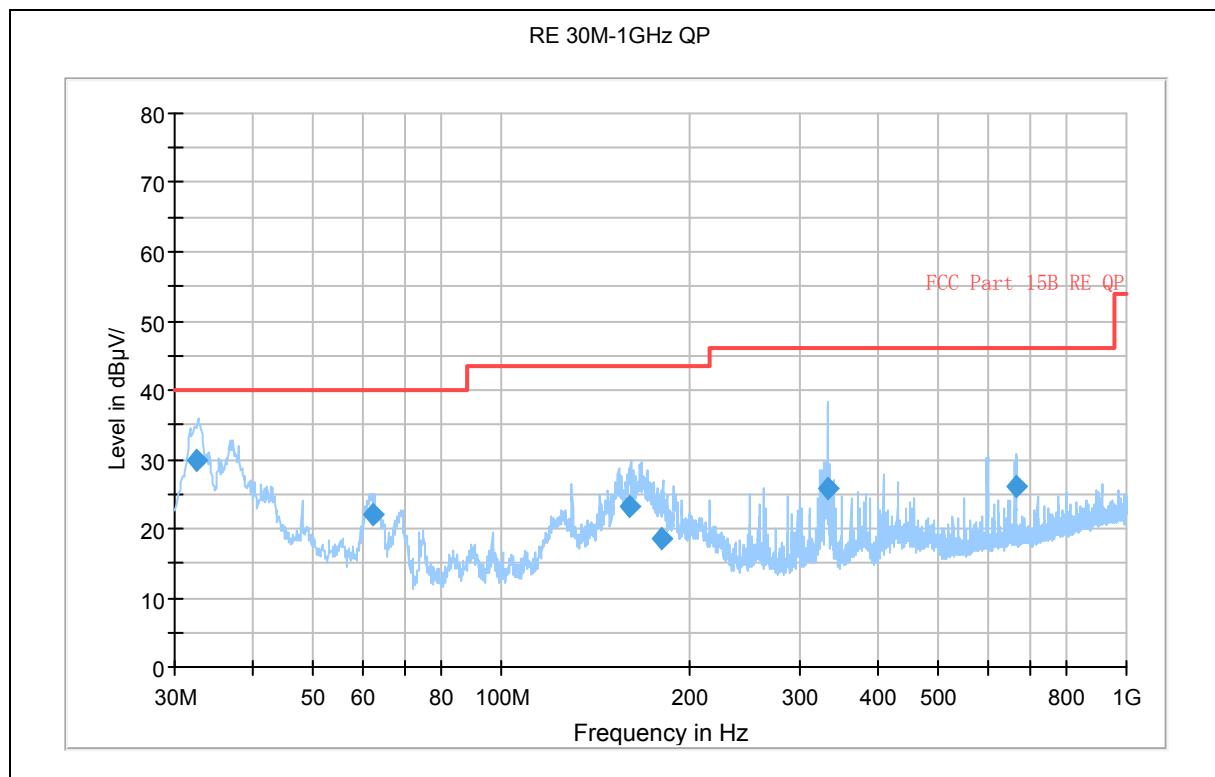
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**Test Results**



Radiated Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Corr. Factor (dB)	Margin (dB)	Limit (dBuV/m)
32.427500	29.9	100.0	V	145.0	54.3	-24.4	10.1	40.0
62.133750	22.1	100.0	V	157.0	50.2	-28.1	17.9	40.0
160.390000	23.3	100.0	V	166.0	55.5	-32.2	20.2	43.5
180.477500	18.6	100.0	V	165.0	50	-31.4	24.9	43.5
332.152500	25.8	175.0	V	22.0	52.5	-26.7	20.2	46.0
663.938750	26.2	100.0	V	184.0	46.6	-20.4	19.8	46.0

**Remark:** 1. Quasi-Peak = Reading value + Correction factor

2. Correction Factor = Insertion loss + Cable loss

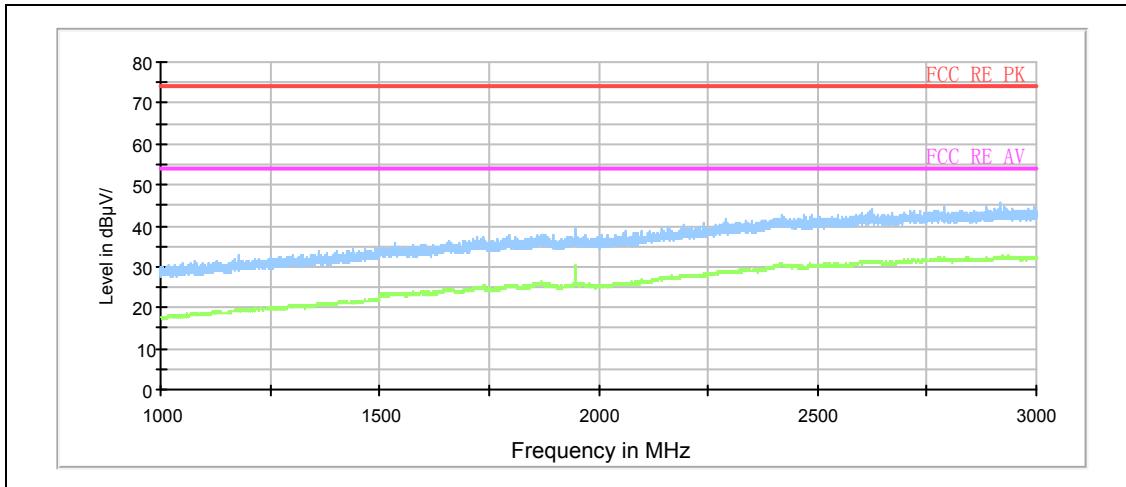
3. Margin = Limit – Quasi-Peak

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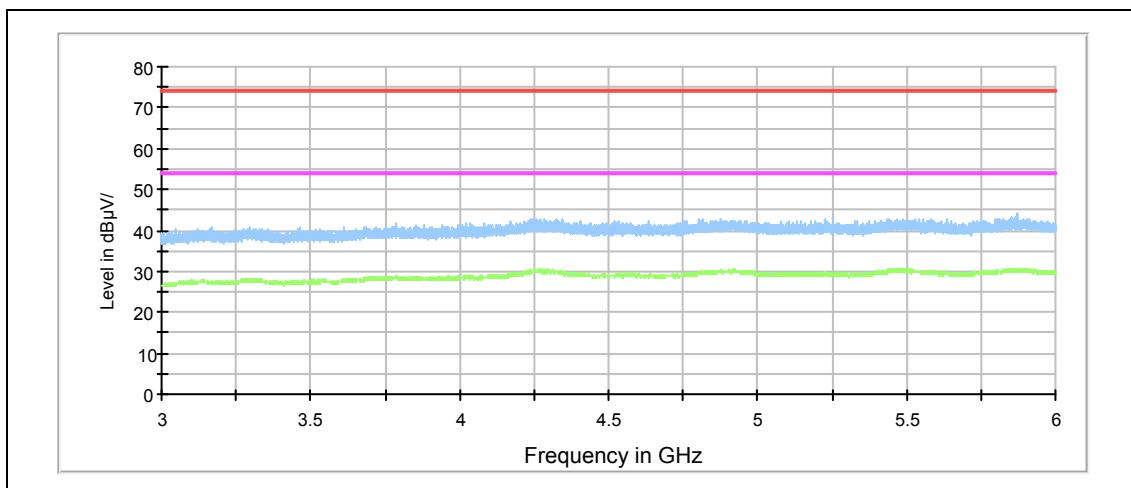
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Note: Blue trace uses the peak detection    Green trace uses the average detection

Radiated Emission from 1GHz to 3GHz



Note:Blue trace uses the peak detection    Green trace uses the average detection

Radiated Emission from 3GHz to 6GHz

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### **2.3. Conducted Emission**

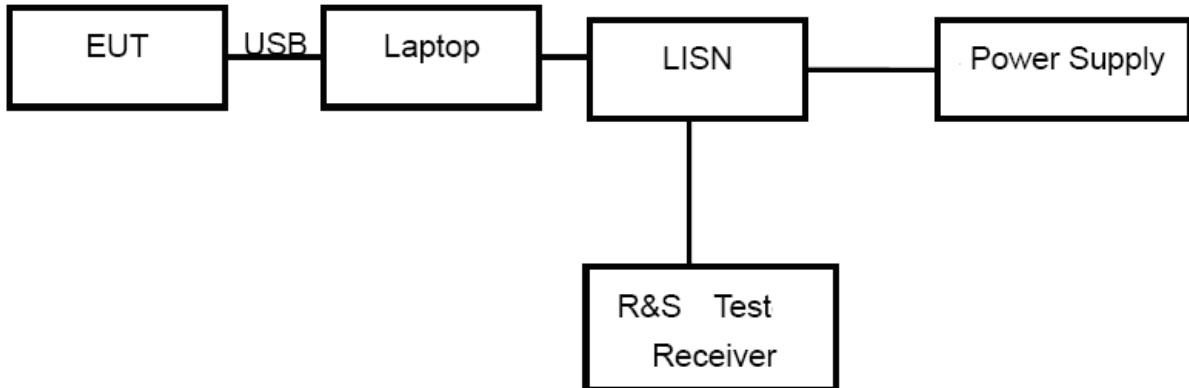
#### **Ambient condition**

Temperature	Relative humidity	Pressure
24°C ~26°C	50%~55%	102.5kPa

#### **Methods of Measurement**

The EUT is placed on a non-metallic table of 80cm height above the horizontal metal reference ground plane. During the test, the EUT was operating in its typical mode. The test method is according to ANSI C63.4-2003. Connect the AC power line of the EUT to the L.I.S.N. Use EMI receiver to detect the average and Quasi-peak value. RBW is set to 9kHz, VBW is set to 30kHz. The measurement result should include both L line and N line. During the test, EUT is connected to a laptop via a USB cable in the case of USB mode. The EUT is used as the peripheral equipment of the PC. The model of laptop is IBM T61 8892-BAC and the serial number of laptop is L3-C9644. The phone modem drivers were installed on the laptop to be able to communicate with the EUT by continuously sending a querying text file (AT Command) to the phone using Hyper Terminal during the test, and the EUT is worked at maximum output power.

#### **Test Setup**



Note: Power Supply is AC Power source and it is used to change the voltage from 220V/50Hz to 110V/60Hz.

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**Limits**

<b>Frequency (MHz)</b>	<b>Conducted Limits(dB<math>\mu</math>V)</b>	
	<b>Quasi-peak</b>	<b>Average</b>
0.15 - 0.5	66 to 56 <sup>*</sup>	56 to 46 <sup>*</sup>
0.5 - 5	56	46
5 - 30	60	50

<sup>\*</sup>: Decreases with the logarithm of the frequency.

**Measurement Uncertainty**

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 1.96$ .  $U = 2.69$  dB.

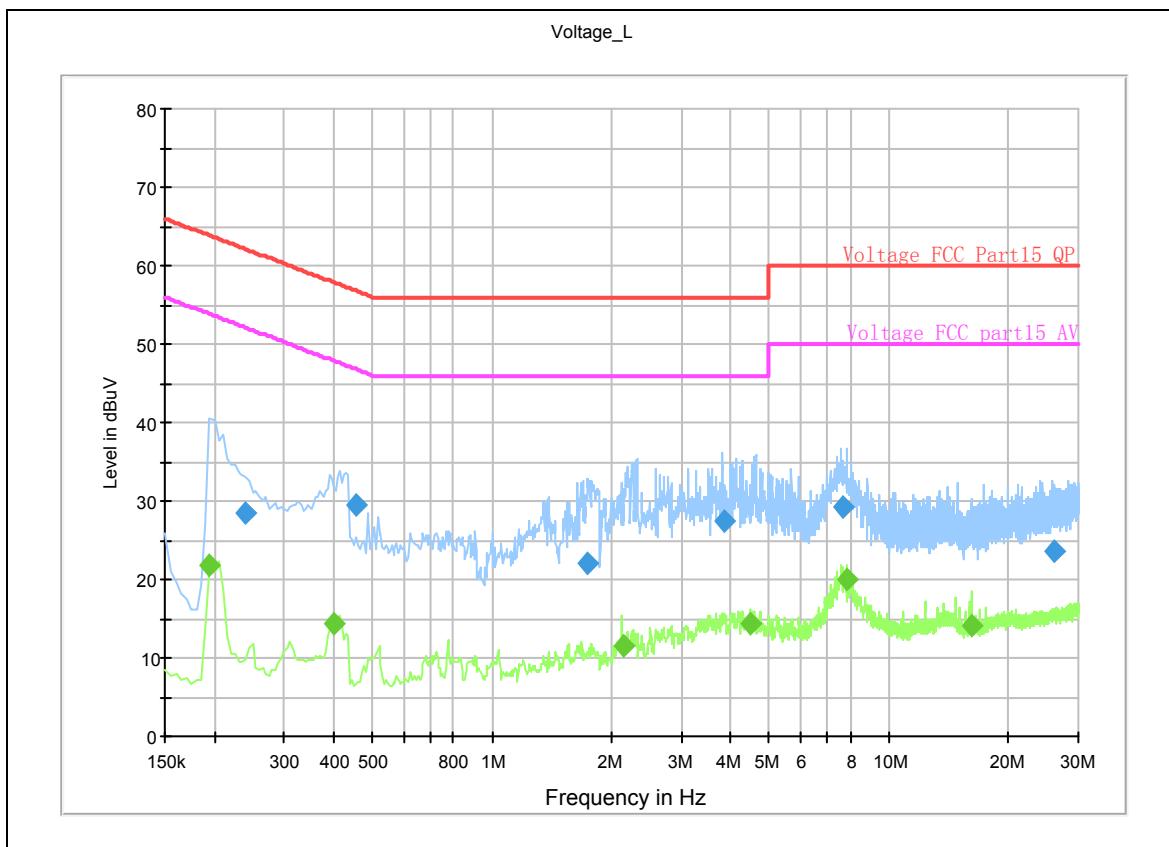
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**Test Results**



Note:Blue trace uses the peak detection      Green trace uses the average detection  
L line

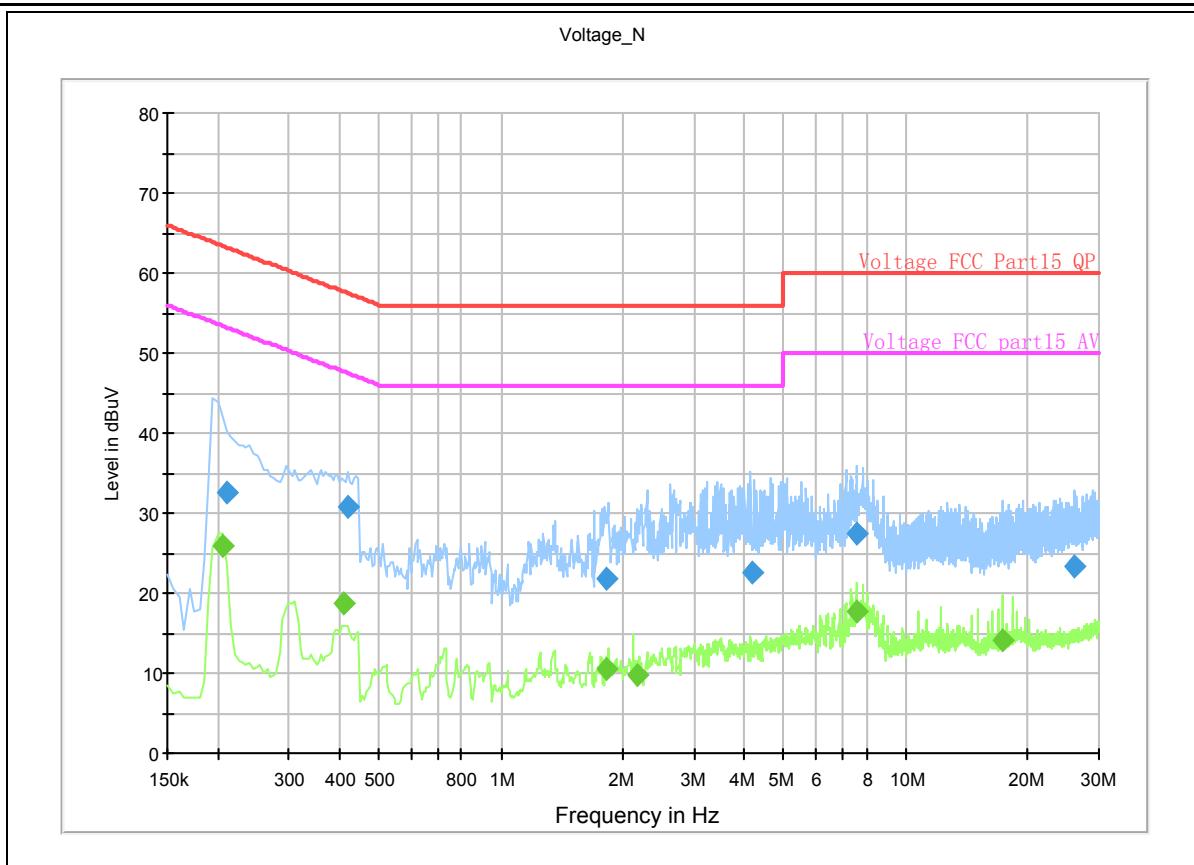
Conducted Emission from 150 KHz to 30 MHz

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Note:Blue trace uses the peak detection    Green trace uses the average detection

N line

Conducted Emission from 150 KHz to 30 MHz

Frequency (MHz)	Detector	Line	Reading Value(dBµV)	Level (dBµV)	Limit (dBµV)	Margin (dB)	Corr. Factor (dB)
0.195	Average	L	11.6	21.7	53.8	32.1	10.1
0.205	Average	N	15.9	26	53.4	27.4	10.1
0.41	Average	N	8.8	18.8	47.6	28.8	10
4.48	Average	L	4.3	14.5	46	31.5	10.2
7.59	Average	N	7.6	17.7	50	32.3	10.1
7.84	Average	L	10	20.1	50	29.9	10.1
0.21	Quasi-peak	N	22.5	32.6	63.2	30.6	10.1
0.24	Quasi-peak	L	18.3	28.4	62.1	33.7	10.1
0.42	Quasi-peak	N	20.7	30.7	57.4	26.7	10
0.455	Quasi-peak	L	19.6	29.6	56.8	27.2	10
7.545	Quasi-peak	N	17.2	27.4	60	32.6	10.2
7.62	Quasi-peak	L	19.2	29.3	60	30.7	10.1

**Remark: 1. Level = Reading value + Correction factor**

**2. Correction Factor = Insertion loss + Cable loss**

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**3. Margin = Limit – Level**

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### **3. Main Test Instruments**

No.	Name	Type	Manufacturer	Serial Number	Calibration Date	Valid Period
01	Signal Analyzer	FSV	R&S	100815	2010-06-28	One year
02	Signal generator	SMR27	R&S	100365	2010-07-01	One year
03	EMI Test Receiver	ESCI	R&S	100948	2010-07-01	One year
04	Trilog Antenna	VULB 9163	SCHWARZB ECK	9163-201	2010-06-29	Two years
05	Horn Antenna	HF907	R&S	100126	2009-07-02	Two years
06	LISN	3816/2	EMCO	00084033	2009-12-04	Two years
07	AC Power Source	AFC-11005G	APC	F309040118	2009-08-03	Three years
08	Semi-Anechoic Chamber	9.6*6.7*6.6m	ETS-Lindgren	NA	NA	NA
09	EMI test software	ES-K1	R&S	NA	NA	NA

\*\*\*\*\*END OF REPORT BODY\*\*\*\*\*

## ANNEX A: The EUT Appearance and Test Setup

### A.1 EUT Appearance



a: EUT



b: Battery

Picture 1 EUT

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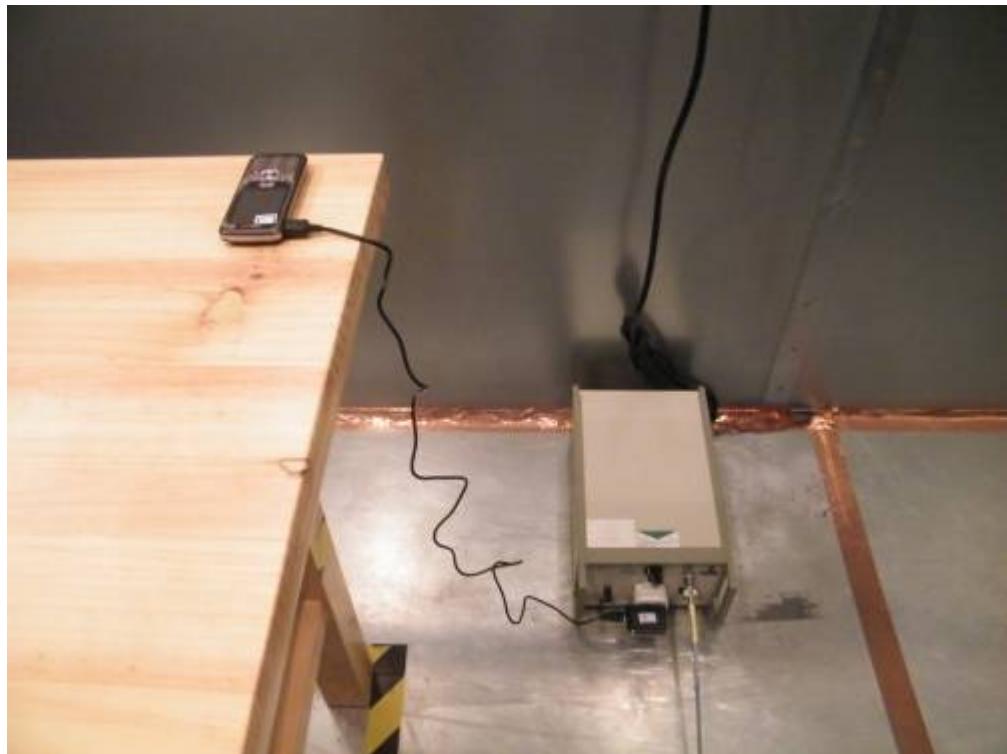
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**A.2 Test Setup**



**Picture 2 Radiated Emission Test Setup**



**Picture 3 Conducted Emission Test Setup**