



Report No.: RZA2009-1265\_15B



# Part 15B

# TEST REPORT

Product Name GSM/GPRS Mobile Phone

Model W003

FCC ID XUT-W003

Client Shenzhen Hongjiayuan Communication Technology CO.,LTD.

TA Technology (Shanghai) Co., Ltd.



## GENERAL SUMMARY

Product Name	GSM/GPRS Mobile Phone	Model	W003
FCC ID	XUT-W003	Report No.	RZA2009-1265_15B
Client	Shenzhen Hongjiayuan Communication Technology CO.,LTD.		
Manufacturer	Shenzhen Hongjiayuan Communication Technology CO.,LTD.		
Reference Standard(s)	<p><b>FCC Part 15 Subpart B</b> Radio frequency device. (V10.1.07)</p> <p><b>ANSI C63.4</b> Methods of Measurement of Radio-Noise Emission from Low-Voltage Electrical and Electronic Equipment in the Range of 9 KHz to 40GHz. (2003)</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 : <b>Pass</b></p> <p style="text-align: center;">(Stamp)</p> <p style="text-align: center;">Date of issue: November 13<sup>th</sup>, 2009</p> 		
Comment	The test result only responds to the measured sample.		

Approved by 杨伟中

Yang Weizhong

Revised by 宋明

Song Ming

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 does 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.  
Address: No.145, Jintang Rd, Tangzhen Industry Park, Pudong  
City: Shanghai  
Post code: 201210  
Country: P. R. China  
Contact: Yang Weizhong  
Telephone: +86-021-50791141/2/3  
Fax: +86-021-50791141/2/3-8000  
Website: <http://www.ta-shanghai.com>  
E-mail: [yangweizhong@ta-shanghai.com](mailto:yangweizhong@ta-shanghai.com)

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### **1.3. Applicant Information**

Company: Shenzhen Hongjiayuan Communication Technology CO.,LTD.  
Address: Room 2406,Block A of Electronic Science and Technology Building,No.2070,Shennan  
Zhong Road,Futian District,Shenzhen City,Guangdong Province,China  
City: Shenzhen  
Postal Code: /  
Country: P.R. China  
Contact: Cong Chen  
Telephone: +86 755 33366555  
Fax: +86 755 33366565

### **1.4. Manufacturer Information**

Company: Shenzhen Hongjiayuan Communication Technology CO.,LTD.  
Address: Room 2406,Block A of Electronic Science and Technology Building,No.2070,Shennan  
Zhong Road,Futian District,Shenzhen City,Guangdong Province,China  
City: Shenzhen  
Postal Code: /  
Country: P.R. China  
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## 1.5. Information of EUT

### General information

Device type:	Portable device		
Name of EUT:	GSM/GPRS Mobile Phone		
Device operating configurations:			
SN or IMEI:	350039800024311		
Test modulation:	GMSK		
Antenna type:	internal antenna		
Power supply:	Battery or Charger		
Rated Power Supply Voltage:	3.7V		
Extreme Voltage:	Minimum: 3.5V Maximum: 4.2V		
Extreme Temperature:	Lowest: -10°C Highest: +55°C		
Operating frequency range(s)	Band	Tx (MHz)	Rx (MHz)
	GSM 850	824.2 ~ 848.8	869.2 ~ 893.8
	GSM 1900	1850.2 ~ 1909.8	1930.2 ~ 1989.8
Hardware version:	E709_V1.1		
Software version:	E709_JJF1.01.0		
Used host products:	IBM T61 (Mode:8892-BAC; S/N:L3-C9644)		

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**Auxiliary equipment details**

**AE1: Battery**

Model: W003

Manufacture: Shenzhen Hongjiayuan Communication Technology CO.,LTD.

IMEI or SN: /

**AE2: Travel Adaptor**

Model: HY-SW0500500X

Manufacture: Shenzhen HanYuXun Electronics CO.,LTD.

IMEI or SN: /

**AE3: Notebook**

Model: IBM T61 8892-BAC

IMEI or SN: L3-C9644

Equipment Under Test (EUT) is GSM/GPRS Mobile Phone with internal antenna. It consists of mobile phone, battery and adaptor and the detail about these is in chapter 1.5 in this report. The EUT supports GSM 850 and GSM 1900.

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 from October 23, 2009 to October 29, 2009.

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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
25°C	50%	102.5kPa

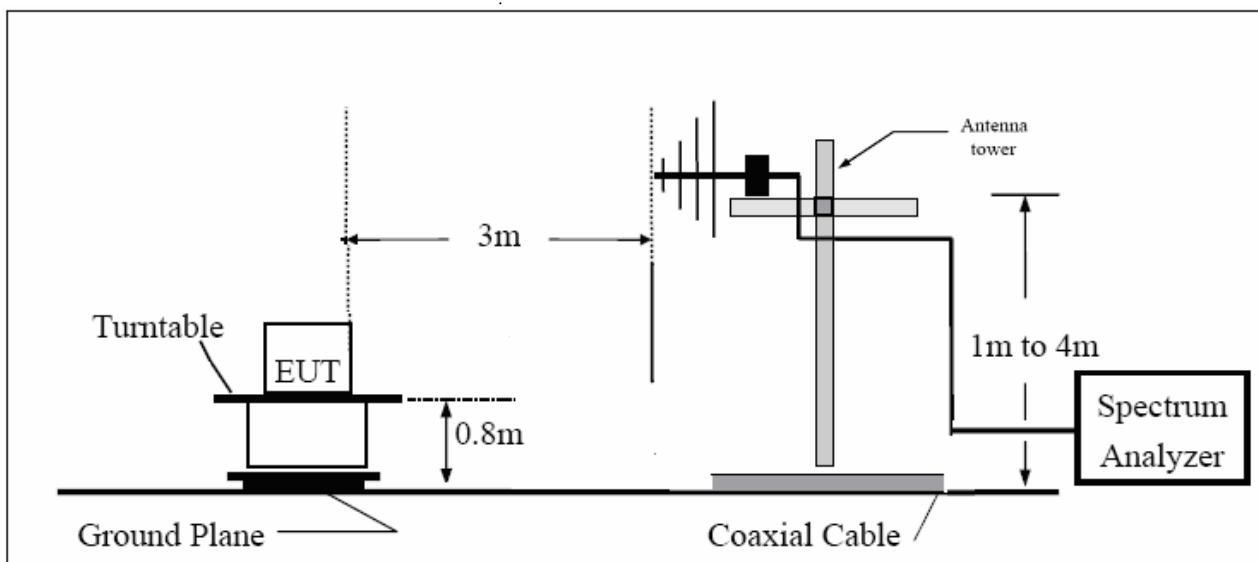
### Methods of Measurement

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 5GHz of GSM 850 band and 30MHz to 6GHz of GSM 1900 band. 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 phone modem drivers were installed on the laptop to be able to communicate with the EUT by continuously sending a querying text feel (AT Command) to the phone using Hyper Terminal during the test.

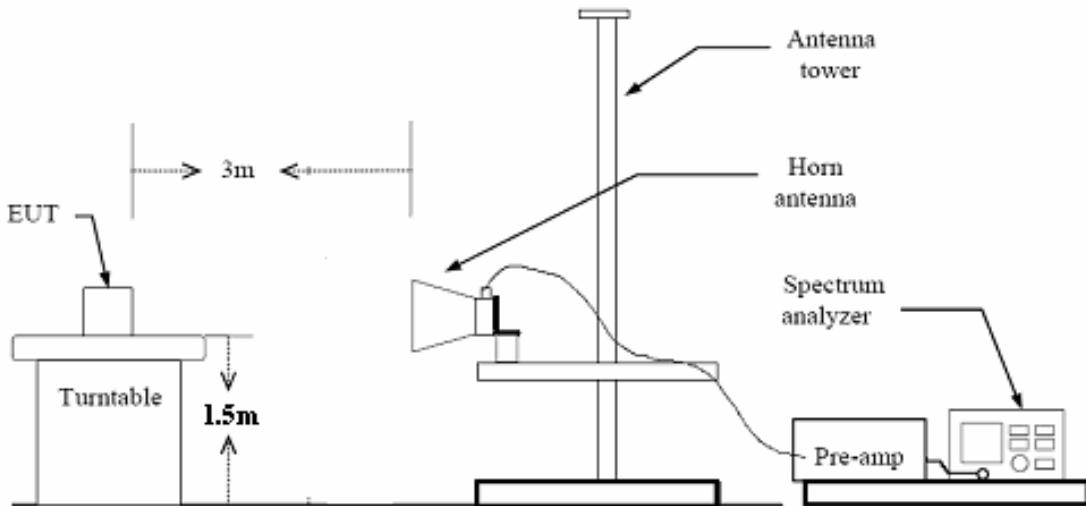
The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.

### Test Setup

#### Below 1GHz



**Above 1GHz**



**Limits**

Frequency (MHz)	Field Strength (dB $\mu$ V/m)	Detector
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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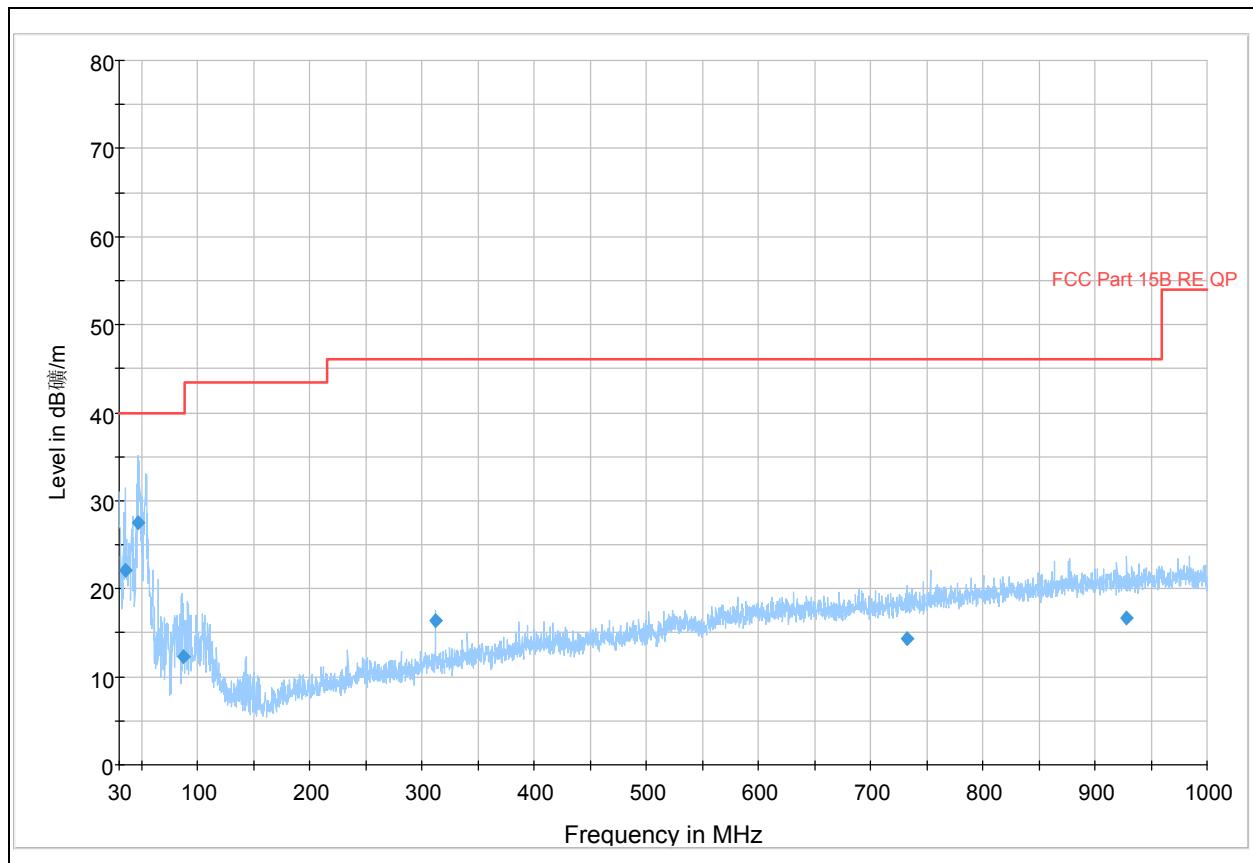
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**Test Results**

GSM 850



Radiated Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dB $\mu$ V/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dB $\mu$ V/m)
35.335000	22.1	100.0	Vertical	116.0	17.9	40.0
46.975000	27.5	150.0	Vertical	62.0	12.5	40.0
87.472500	12.2	131.0	Vertical	124.0	27.8	40.0
312.027500	16.4	116.0	Vertical	218.0	22.6	46.0
732.765000	14.4	100.0	Vertical	14.0	31.6	46.0
928.462500	16.7	138.0	Vertical	87.0	29.3	46.0

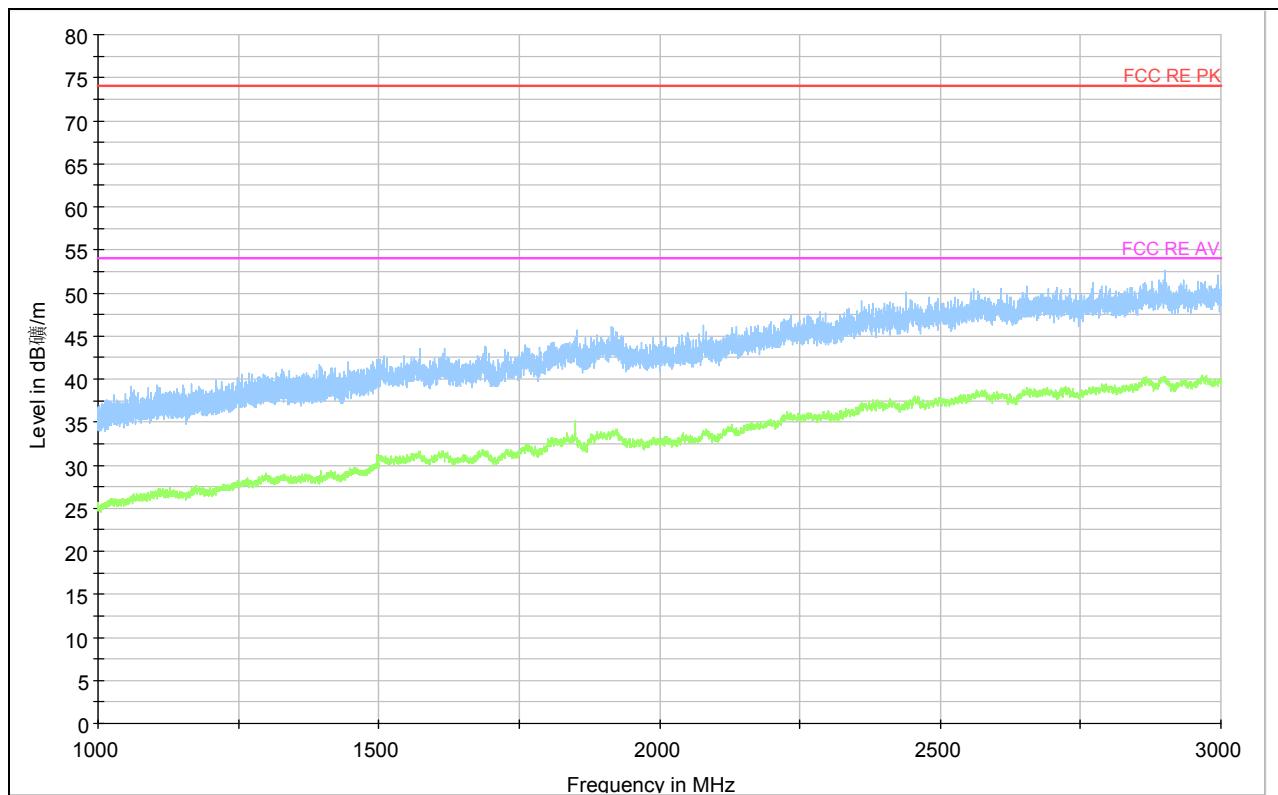
Note: All emissions level measured above 1GHz was more than 10dB below the limit.

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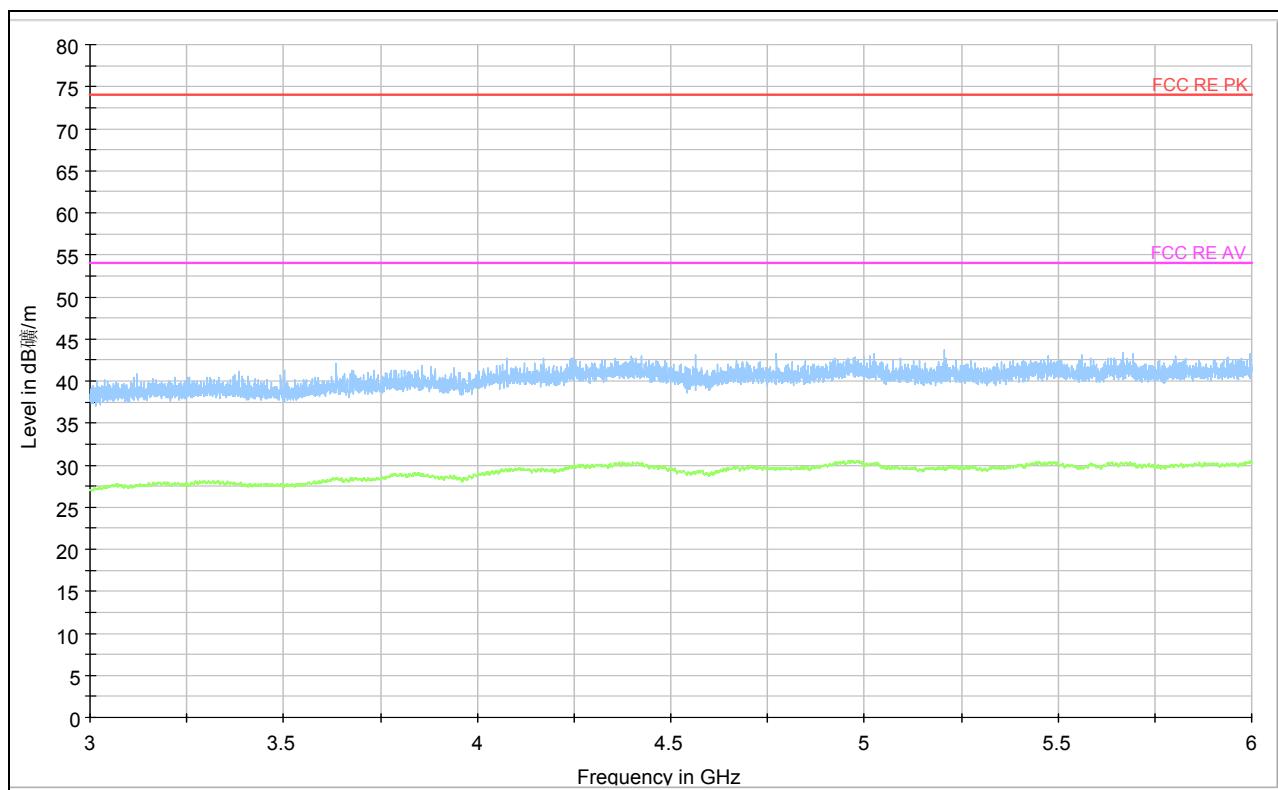
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Radiated Emission from 1GHz to 3GHz



Radiated Emission from 3GHz to 6GHz

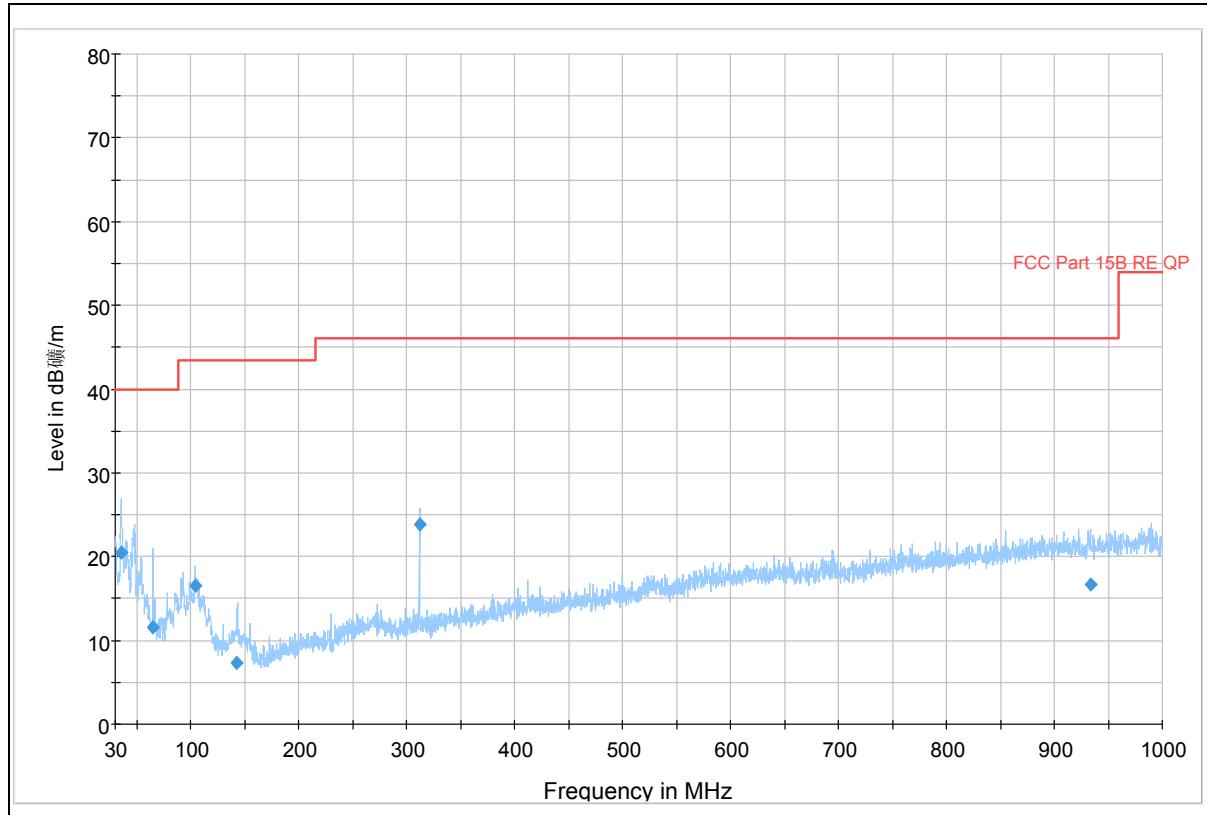
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GSM 1900



Radiated Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dB $\mu$ V/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dB $\mu$ V/m)
35.577500	20.4	150.0	Vertical	114.0	19.6	40.0
64.920000	11.6	250.0	Vertical	50.0	28.4	40.0
103.962500	16.6	100.0	Vertical	92.0	26.9	43.5
142.762500	7.3	146.0	Vertical	122.0	36.2	43.5
312.027500	23.8	130.0	Vertical	142.0	22.2	46.0
933.312500	16.7	224.0	Vertical	212.0	29.3	46.0

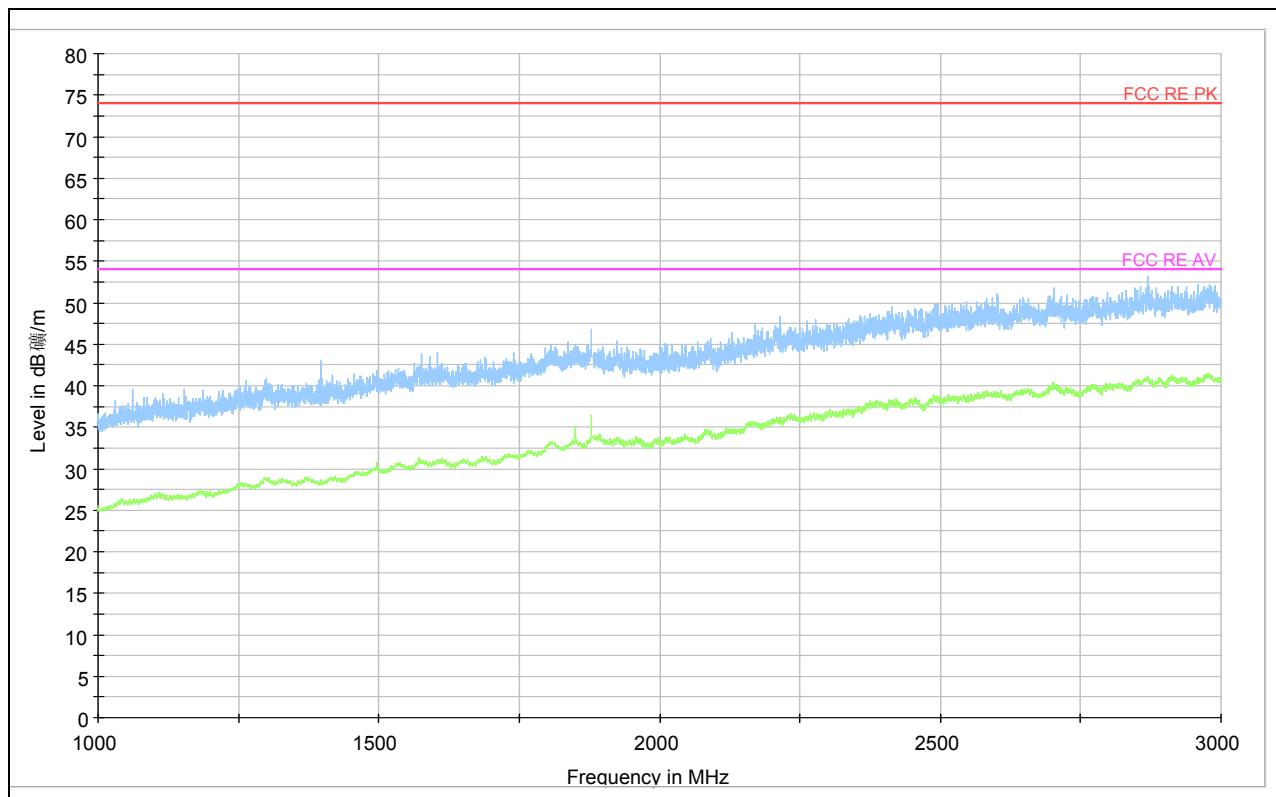
Note: All emissions level measured above 1GHz was more than 10dB below the limit.

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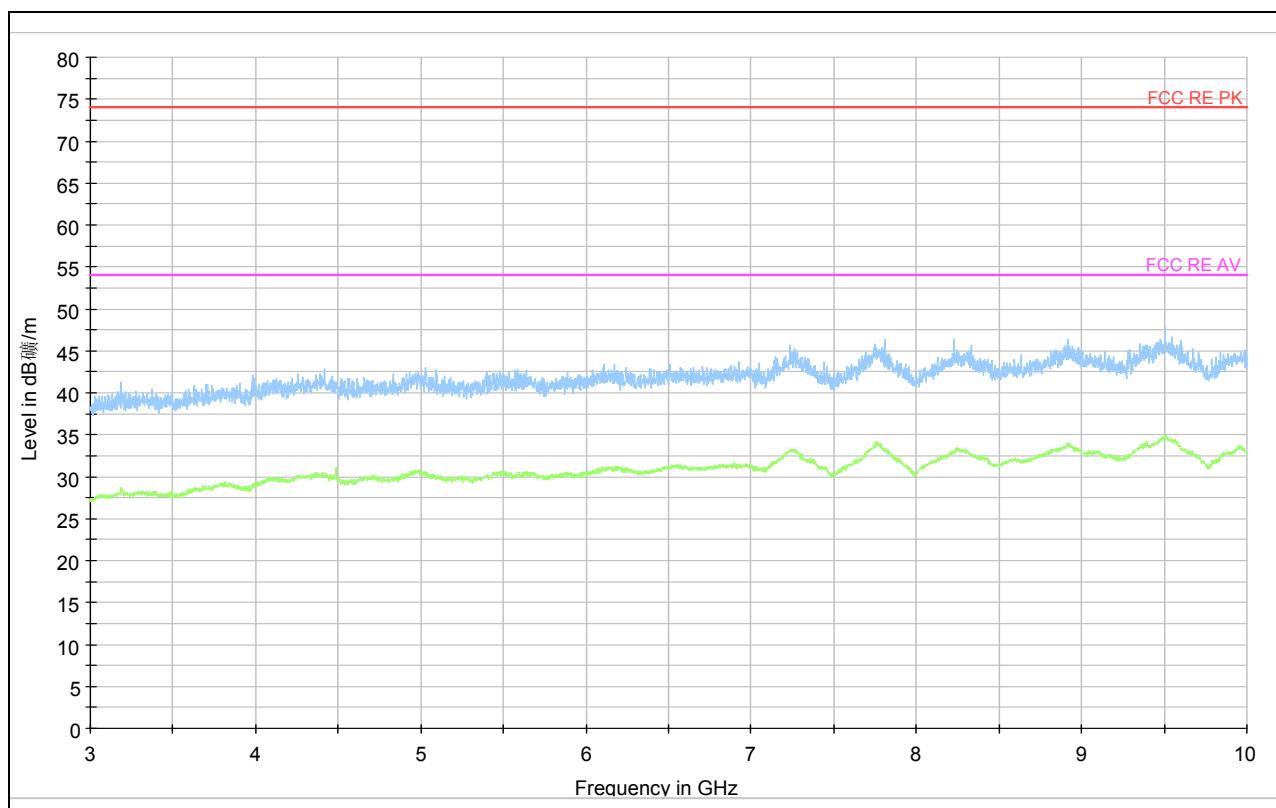
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Radiated Emission from 1GHz to 3GHz



Radiated Emission from 3GHz to 10GHz

### 2.3. Conducted Emission

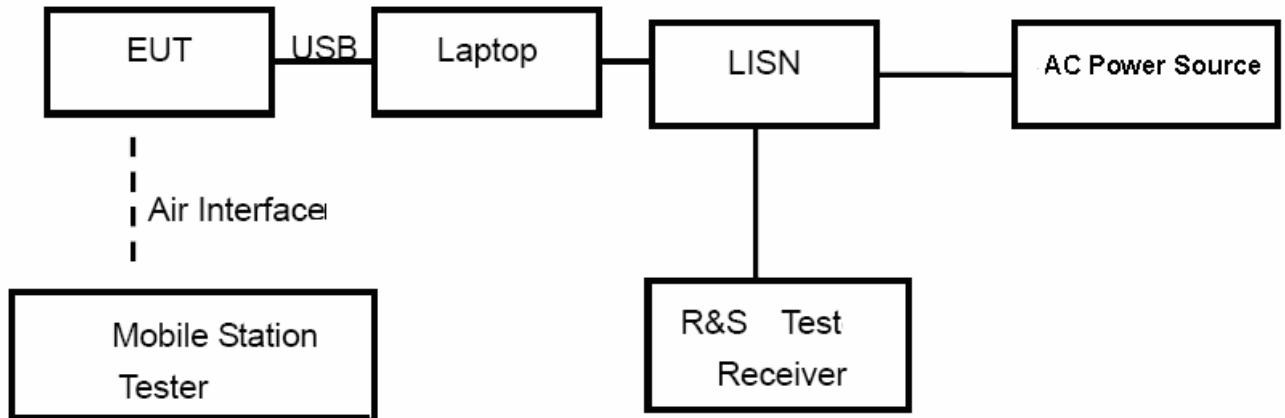
#### Ambient condition

Temperature	Relative humidity	Pressure
25°C	58%	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. 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 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.

#### 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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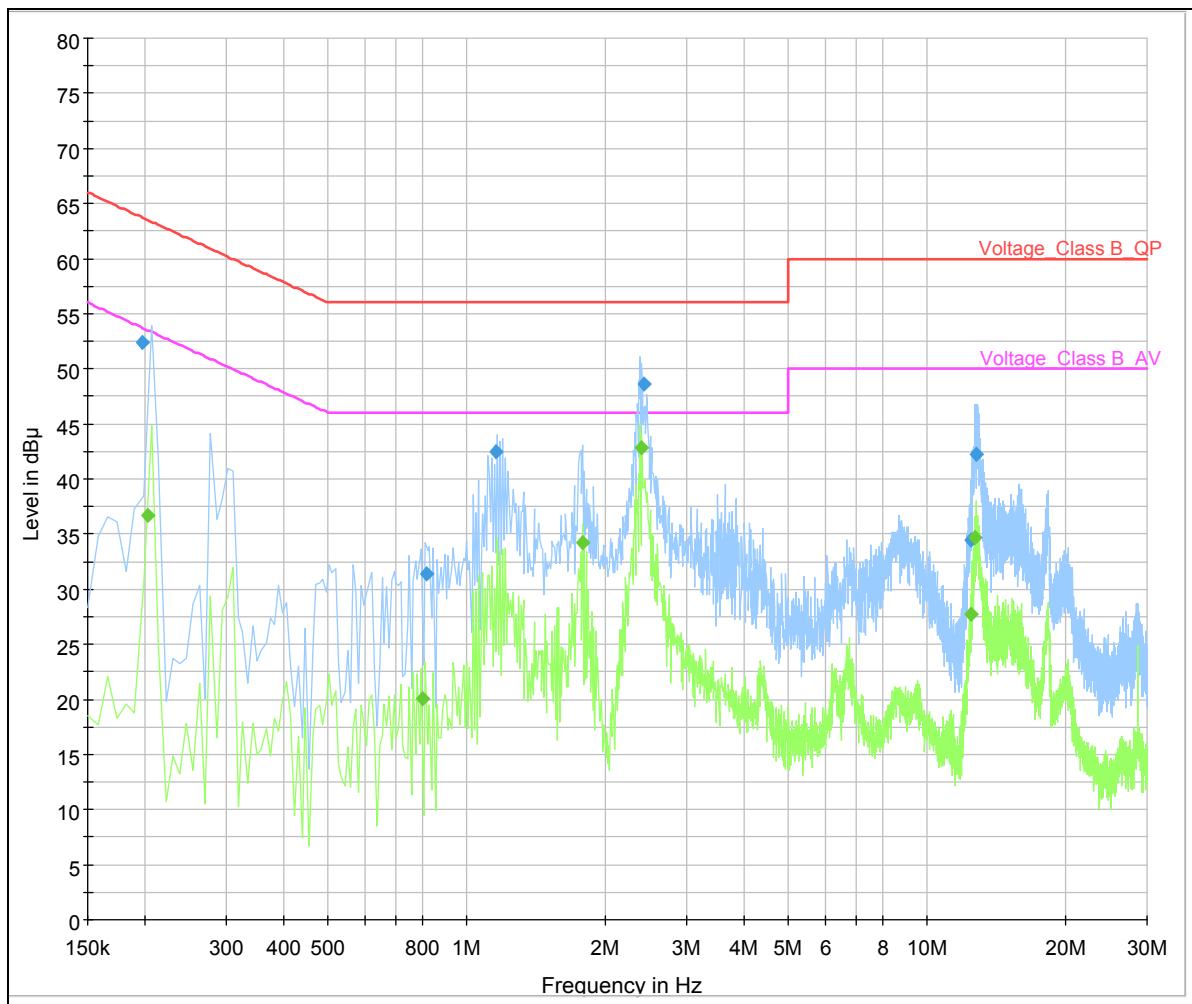
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**Test Results**

GSM 850



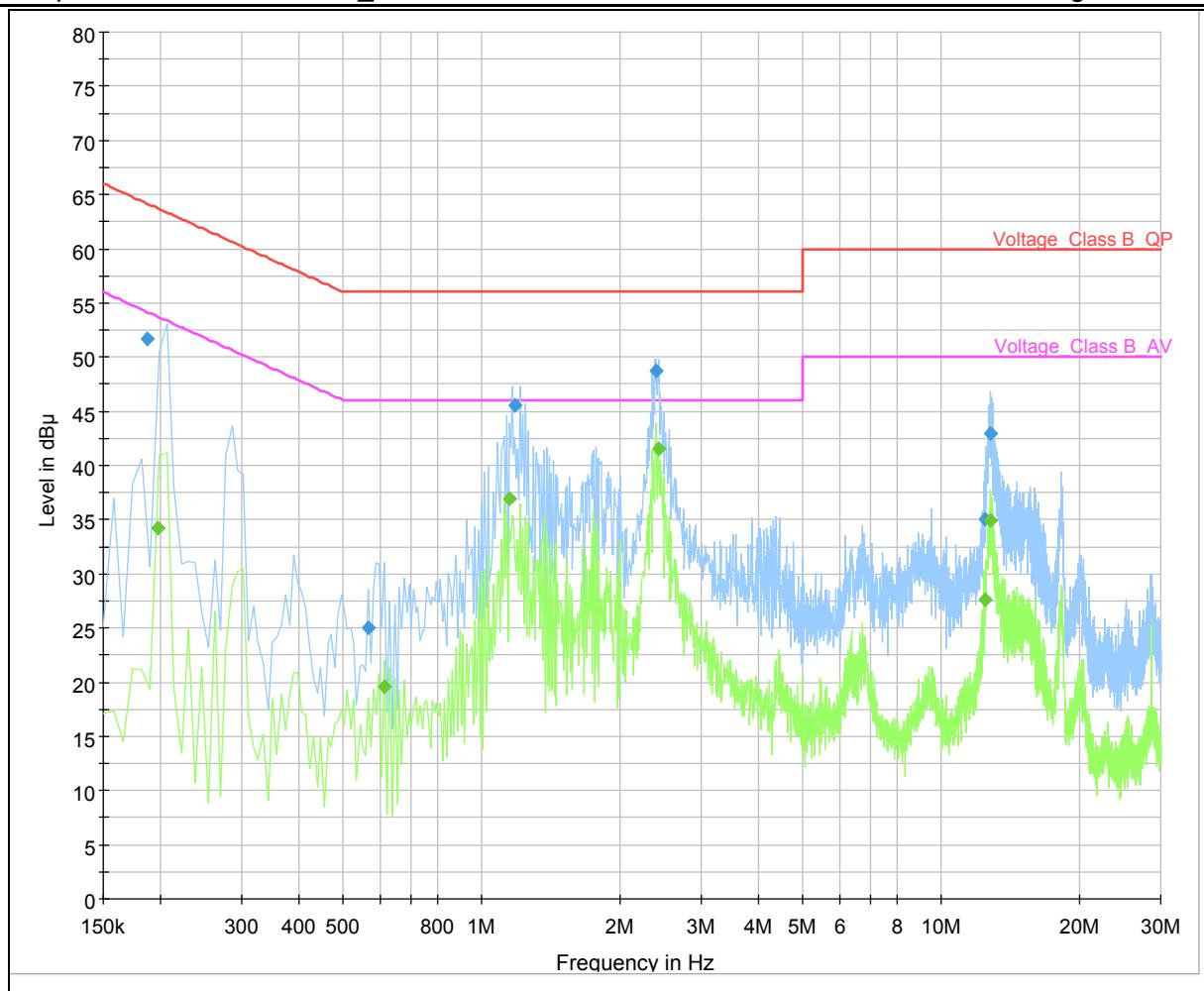
L line

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N line

Frequency (MHz)	Detector	Line	Level (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)
1.151000	Average	N	36.9	46.0	9.1
1.783000	Average	L	34.3	46.0	11.7
2.399000	Average	L	42.8	46.0	3.2
2.429000	Average	N	41.5	46.0	4.5
12.721000	Average	L	34.7	50.0	15.3
12.777000	Average	N	35.0	50.0	15.0
0.187000	Quasi-peak	N	51.7	64.2	12.5
0.197000	Quasi-peak	L	52.3	63.7	11.4
1.153000	Quasi-peak	L	42.4	56.0	13.6
1.183000	Quasi-peak	N	45.6	56.0	10.4
2.395000	Quasi-peak	N	48.8	56.0	7.2
2.427000	Quasi-peak	L	48.6	56.0	7.4

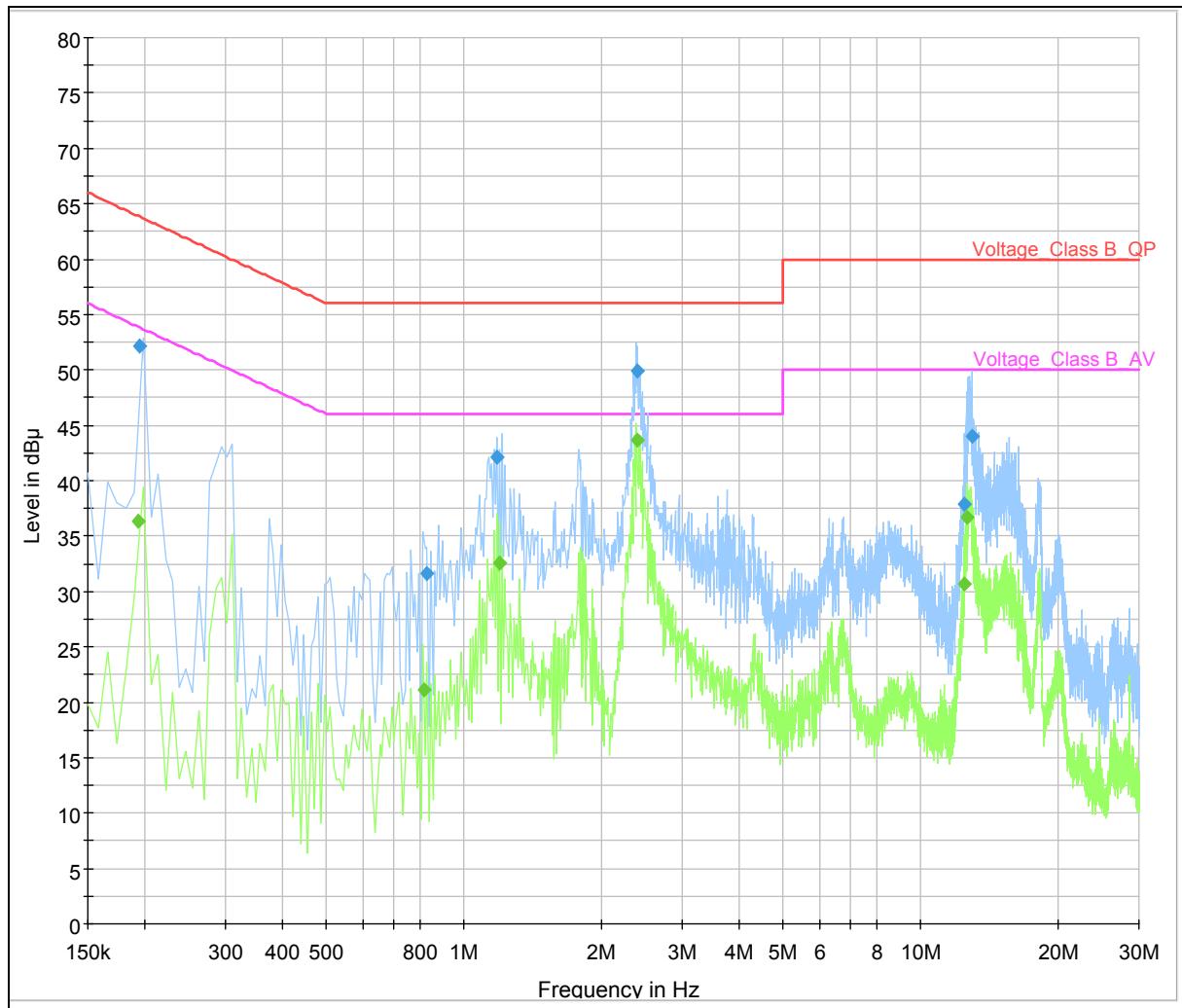
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GSM 1900



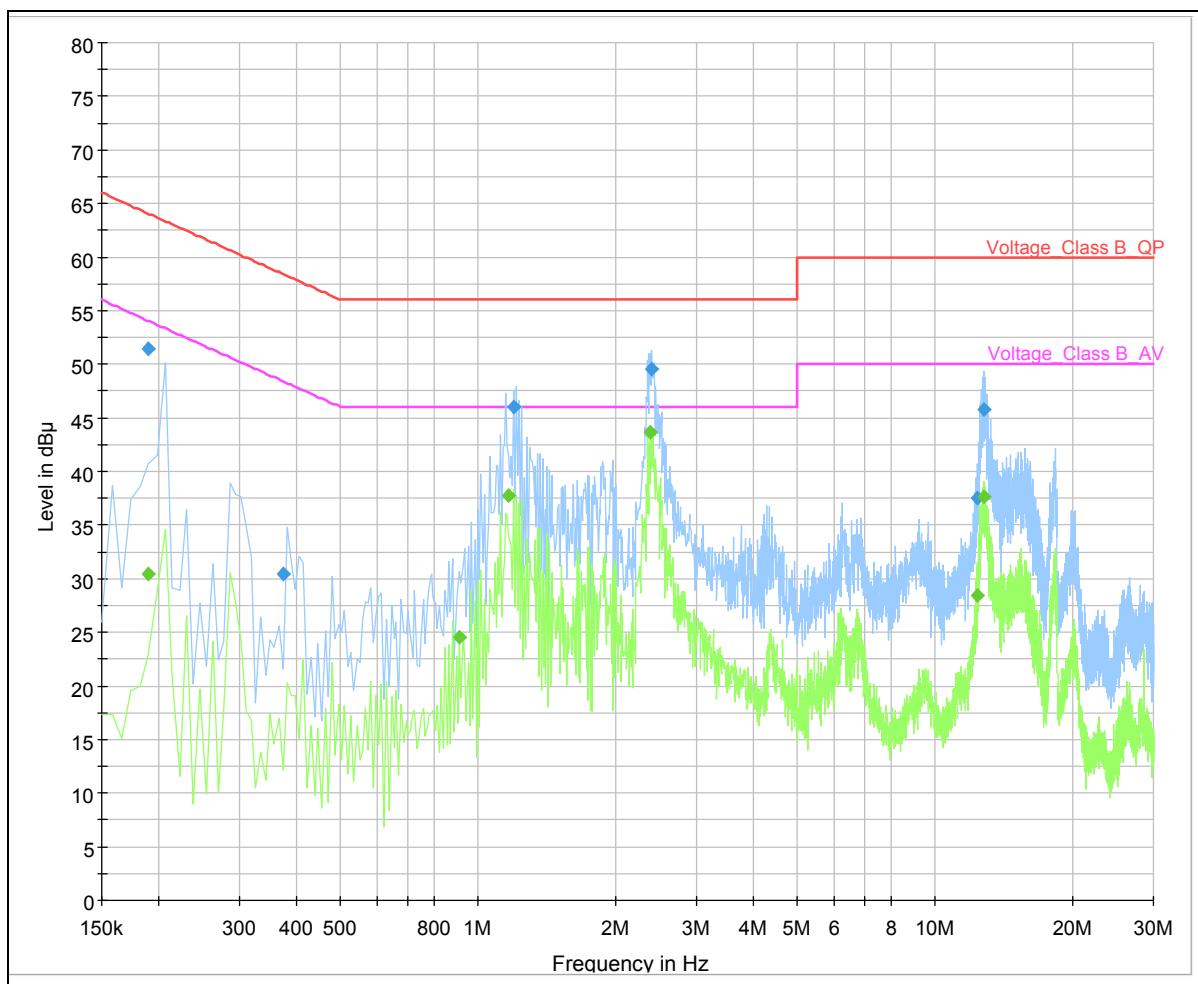
L line

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N line

Frequency (MHz)	Detector	Line	Level (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)
1.167000	Average	N	37.7	46.0	8.3
1.197000	Average	L	32.6	46.0	13.4
2.381000	Average	N	43.7	46.0	2.3
2.397000	Average	L	43.7	46.0	2.3
12.639000	Average	L	36.7	50.0	13.3
12.767000	Average	N	37.6	50.0	12.4
0.189000	Quasi-peak	N	51.4	64.1	12.7
0.195000	Quasi-peak	L	52.2	63.8	11.6
1.183000	Quasi-peak	L	42.1	56.0	13.9
1.199000	Quasi-peak	N	46.1	56.0	9.9
2.395000	Quasi-peak	L	49.9	56.0	6.1
2.395000	Quasi-peak	N	49.6	56.0	6.4

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

No.	Name	Type	Manufacturer	Serial Number	Calibration Date	Valid Period
01	Base Station Simulator	CMU200	R&S	118133	2009-06-02	One year
02	Signal Analyzer	FSV	R&S	100815	2009-06-29	One year
03	Signal generator	SMR27	R&S	1606.6000.02	2009-06-29	One year
04	EMI Test Receiver	ESCI	R&S	100948	2009-07-02	One year
05	Trilog Antenna	VULB 9163	Horn Antenna	9163-391	2009-05-14	One year
06	Horn Antenna	HF907	R&S	100125	2009-07-20	One year
07	LISN	EMCO	3816/2	00084033	2007-12-26	two year
08	AC Power Source	AFC-11005G	APC	F309040118	2009-07-25	One year
09	Semi-Anechoic Chamber	9.6*6.7*6.6m	ETS-Lindgren	NA	NA	NA
10	Shielding room	5*4*4m	ETS-Lindgren	NA	NA	NA
11	EMI test software	ES-K1	R&S	NA	NA	NA

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

## ANNEX A: EUT Appearance and Test Setup

### A.1 EUT and Auxiliary Appearance



Picture 1 EUT and Auxiliary

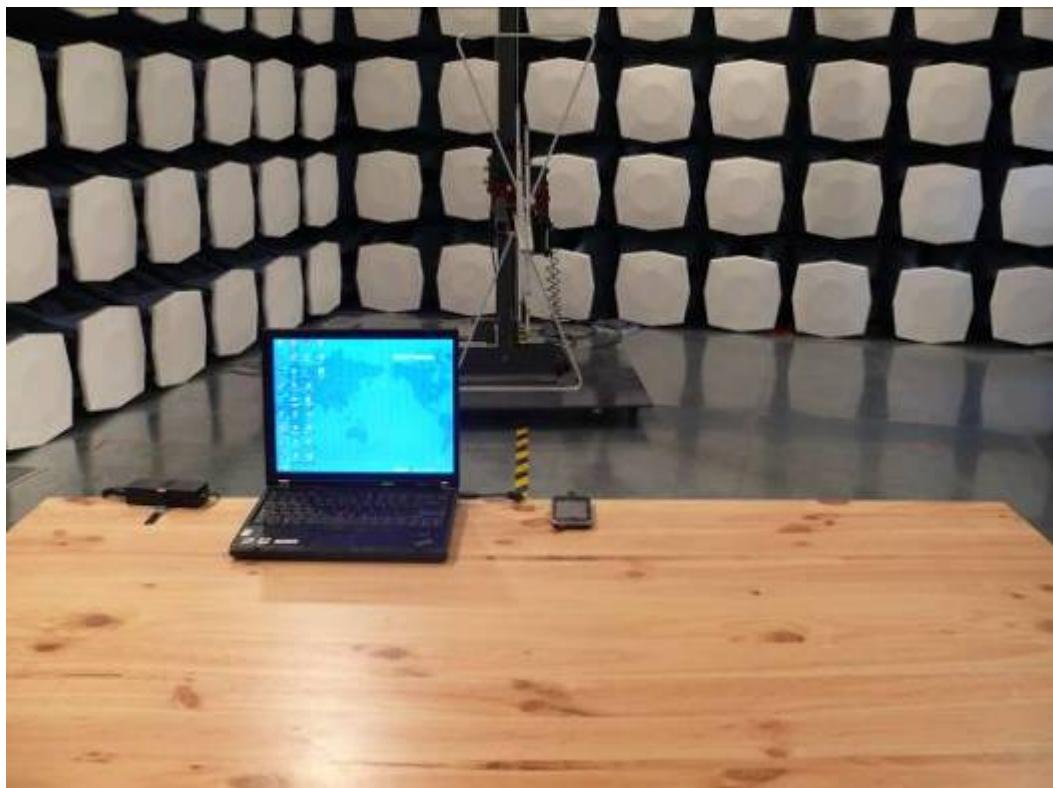
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**A.2 Test Setup**



**Picture 2 Radiated Emission Test setup**



**Picture 3-1**

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**Picture 3-2**  
**Picture 3 Conducted Emission Test setup**