



# FCC Part15B Test Report

Product Name : HUAWEI Ascend G 500D; Ascend G 500D; Panama;  
PANAMA; HSDPA/UMTS/GPRS/GSM/EDGE Mobile  
Phone with Bluetooth  
Model No. : HUAWEIU8832D-5, U8832D-5

Applicant : Huawei Technologies Co., Ltd.  
Address : Bantian, Longgang District, Shenzhen, 518129  
Guangdong, P. R. China

Date of Receipt : 15/06/2012  
Test Date : 15/06/2012~05/07/2012  
Issued Date : 11/07/2012  
Report No. : 126S044R-HP-US-P01V01  
Report Version : V 1.2

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

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# Test Report Certification

Issued Date: 11/07/2012

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 Guangdong, P. R. China

Model No. : HUAWEIU8832D-5, U8832D-5

EUT Voltage : DC 3.7V

Brand Name : HUAWEI

Applicable Standard : FCC Part 15 Subpart B: 2012  
 ANSI C63.4: 2009

Test Result : Complied

Performed Location : Suzhou EMC Laboratory  
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## Laboratory Information

We, **Quietek Corporation**, are an independent EMC and safety consultancy that was established the whole facility in our laboratories. The test facility has been accredited/accepted(audited or listed) by the following related bodies in compliance with ISO 17025, EN 45001 and specified testing scope:

<b>Taiwan R.O.C.</b>	<b>:</b>	<b>BSMI, NCC, TAF</b>
<b>Germany</b>	<b>:</b>	<b>TUV Rheinland</b>
<b>Norway</b>	<b>:</b>	<b>Nemko, DNV</b>
<b>USA</b>	<b>:</b>	<b>FCC, NVLAP</b>
<b>Japan</b>	<b>:</b>	<b>VCCI</b>
<b>China</b>	<b>:</b>	<b>CNAS</b>

The related certificate for our laboratories about the test site and management system can be downloaded from Quietek Corporation's Web Site :<http://www.quietek.com/tw/ctg/cts/accreditations.htm>

The address and introduction of Quietek Corporation's laboratories can be founded in our Web site :  
<http://www.quietek.com/>

If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

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## 1. General Information

### 1.1. EUT Description

Product Name	HUAWEI Ascend G 500D; Ascend G 500D; Panama; PANAMA; HSDPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth
Model No.	HUAWEIU8832D-5, U8832D-5
Hardware Version	A61_MB_V2.0
Software Version	U8832DV100R001C41B100SP06
Device Category	Portable
RF Exposure Environment	Uncontrolled
Antenna Type	Internal
<b>GPS</b>	
Operate Frequency	1575.42MHz
Type of modulation	BPSK
<b>2G</b>	
Support Band	GSM850/GSM900/DCS1800/PCS1900
GPRS Type	Class B
GPRS Class	Class 12
Uplink	GSM 850: 824~849MHz PCS 1900: 1850~1910MHz
Downlink	GSM 850: 869~894MHz PCS 1900: 1930~1990MHz
Release Version	Rel-6
Type of modulation	GMSK for GSM/GPRS; 8PSK for EDGE
Antenna Gain	GSM 850: -2.0dBi PCS1900: -0.3dBi
<b>3G</b>	
Support Band	WCDMA Band I/WCDMA Band II/WCDMA Band V/ WCDMA Band VIII
Uplink	WCDMA Band V: 824~849MHz WCDMA Band II: 1850~1910MHz
Downlink	WCDMA Band V: 869~894MHz WCDMA Band II: 1930~1990MHz
Release Version	UMTS FDD: Rel-6
Type of modulation	QPSK

Antenna Gain	WCDMA Band V: -2.0dBi WCDMA Band II: -0.3dBi
<b>Bluetooth</b>	
Bluetooth Frequency	2402~2480MHz
Bluetooth Version	V2.1 + EDR
Type of modulation	FHSS
Data Rate	1Mbps(GFSK), 2Mbps(Pi/4 DQPSK), 3Mbps (8DPSK)
Antenna Gain	-4.0dBi
<b>Wi-Fi</b>	
Hotspots Function	YES
Wi-Fi Frequency	802.11b/g/n(20MHz): 2412 ~ 2462 MHz 802.11n(40MHz): 2422 ~ 2452 MHz
Type of modulation	802.11b: DSSS; 802.11g/n: OFDM
Data Rate	802.11b: 1/2/5.5/11 Mbps
	802.11g: 6/9/12/18/24/36/48/54 Mbps
	802.11n: up to 150 Mbps
Antenna Gain	-4.0dBi
<b>Components</b>	
Headset Model Number #1	HUAWEI/ 125G#+3261# 3.5MM-2
Headset Model Number #2	HUAWEI/ MEMD1532A761A00
Battery #1	Brand Name: HUAWEI M/N: HB5R1 Rated Voltage and Capacitance: 3.7V/1930mAh S/N: AAIC612X04100854
Battery #2	Brand Name: HUAWEI M/N: HB5R1 Rated Voltage and Capacitance: 3.7V/1930mAh S/N: GAGC525Z04102141
Battery #3	Brand Name: HUAWEI M/N: HB5R1H Rated Voltage and Capacitance: 3.7V/1930mAh S/N: SASC507AC3500764
Adapter #1	Brand Name: HUAWEI M/N: HW-050100U1W Input: 100-240V~50/60Hz 0.2A MAX Output: 5Vdc, 1A S/N: HKAB51621442

Adapter #2	Brand Name: HUAWEI M/N: HW-050100U1W Input: 100-240V~50/60Hz 0.2A MAX Output: 5Vdc, 1A S/N: TPAB61442664
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Note 1: They are only for different marketing requirement.

Note 2: Headset #1 and #2 have the same circuit.

**1.2. Mode of Operation**

Quietek has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

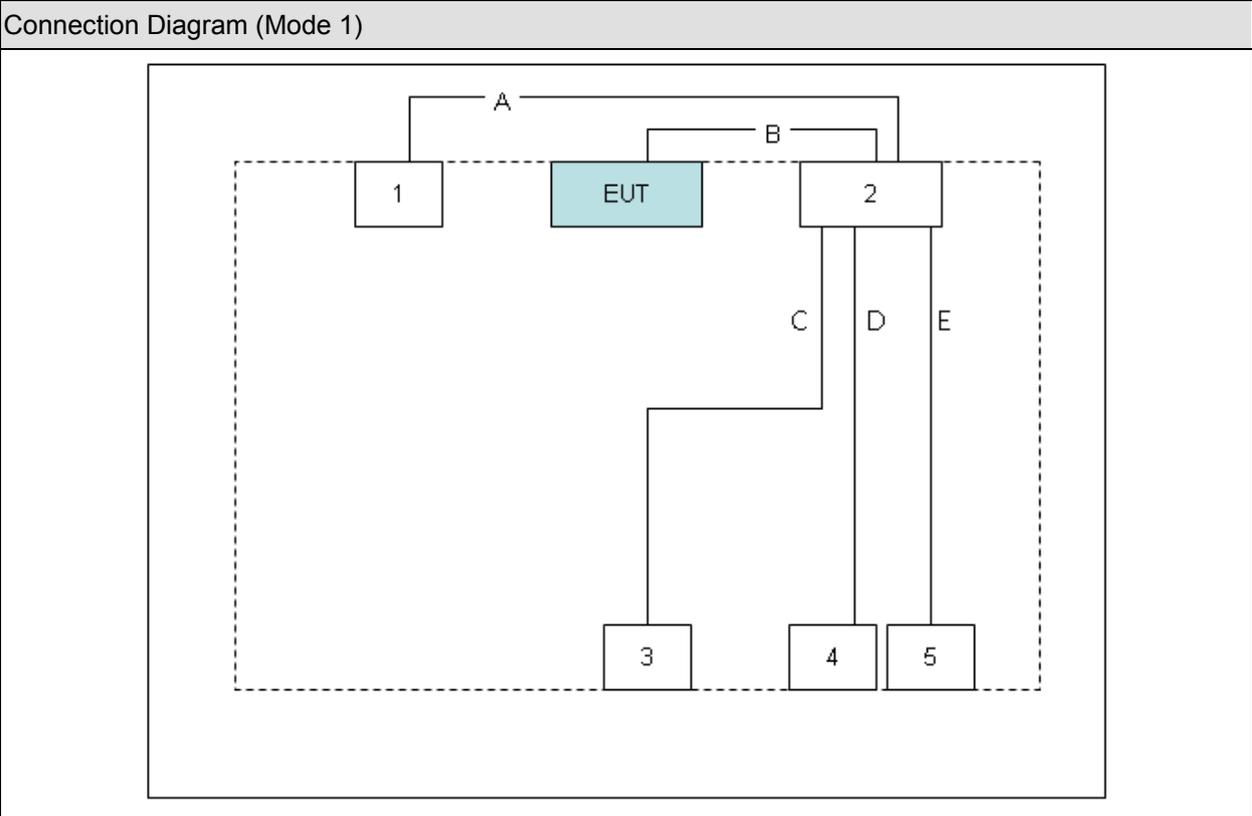
Pre Test Mode
Mode 1: USB Copy

### 1.3. Tested System Details

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product	Manufacturer	Model No.	Serial No.	Power Cord
1 LCD Monitor	Lenovo	L2361PWA	3M03896A0520853	Non-Shielded, 1.8m
2 PC	DELL	DCMF	11DMF2X	Non-Shielded, 1.8m
3 Microphone& Earphone	SOMIC	V85	N/A	Power by PC
4 iPod	Apple	A1199	7J71085BVQ5	Power by PC
5 USB Mouse	DELL	MOC5UO	10D00JL	Power by PC

1.4. Configuration of Tested System



Signal Cable Type		Signal cable Description
A	VGA Cable	Shielded, 1.5m
B	USB Cable	Shielded, 1.2m
C	USB Cable	Shielded, 1.0m
D	Earphone & Microphone Cable	No-Shielded, 2.1m
E	USB Cable	Shielded, 1.8m

**1.5. EUT Exercise Software**

1	Setup the EUT and simulators as shown on above.
2	Turn on the power of equipment.
3	Open the software "WINTHRAX", and then transmit data with notebook.
4	Start Test.

**2. Technical Test**

**2.1. Summary of Test Result**

- No deviations from the test standards
- Deviations from the test standards as below description:

Emission			
Performed Test Item	Normative References	Test Performed	Deviation
Conducted Emission	FCC CFR Title 47 Part 15 Subpart B: 2012 Class B ANSI C63.4: 2009	Yes	No
Radiated Emission	FCC CFR Title 47 Part 15 Subpart B: 2012 Class B ANSI C63.4: 2009	Yes	No

## 2.2. List of Test Equipment

### Conducted Emission / TR-1

Instrument	Manufacturer	Type No.	Serial No	Cal. Due Date
EMI Test Receiver	R&S	ESCI	100906	2013/01/13
Two-Line V-Network	R&S	ENV216	100043	2013/04/18
Two-Line V-Network	R&S	ENV216	100044	2012/09/07
Impedance Stabilization Network	Teseq GmbH	ISN T800	30306	2013/02/24
Impedance Stabilization Network	Teseq GmbH	ISN T8-Cat6	29680	2013/02/24
Impedance Stabilization Network	Teseq GmbH	ISN ST08	31281	2013/02/24
Current Probe	R&S	EZ-17	100255	2013/04/18
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	2013/03/02
50ohm Termination	SHX	TF2	07081401	2012/09/22
50ohm Termination	SHX	TF2	07081402	2012/09/22
50ohm Termination	SHX	TF2	07081403	2012/09/22
Temperature/Humidity Meter	zhicheng	ZC1-2	TR1-TH	2013/01/10

### Radiated Emission / AC-2

Instrument	Manufacturer	Type No.	Serial No.	Cal. Due Date
EMI Test Receiver	R&S	ESCI	100573	2013/04/18
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2012/10/18
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC2-C	2013/03/02
Temperature/Humidity Meter	Zhicheng	ZC1-2	AC2-TH	2013/01/10

### Radiated Emission / AC-5

Instrument	Manufacturer	Type No.	Serial No.	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2013/04/18
Preamplifier	Quietek	AP-180C	CHM-0602013	2013/05/04
Preamplifier	Quietek	AP-040G	CHM-0906001	2013/05/04
Bilog Antenna	Teseq GmbH	CBL6112D	27612	2012/10/18
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	499	2014/06/08
High-Pass Filter	Wainwright	WHKX2.8/18G-12SS	SN1	2013/03/03
High-Pass Filter	Wainwright	WHKX7.0/18G-8SS	SN16	2013/03/03
Lowpass Filter	Wainwright	WLKS4500-9SS	SN2	2013/03/03

**2.3. Measurement Uncertainty**

Conducted Emission
The maximum measurement uncertainty is evaluated as $\pm 2.26\text{dB}$ .
Radiated Emission
The maximum measurement uncertainty is evaluated as $\pm 3.19\text{dB}$ .

**2.4. Test Environment**

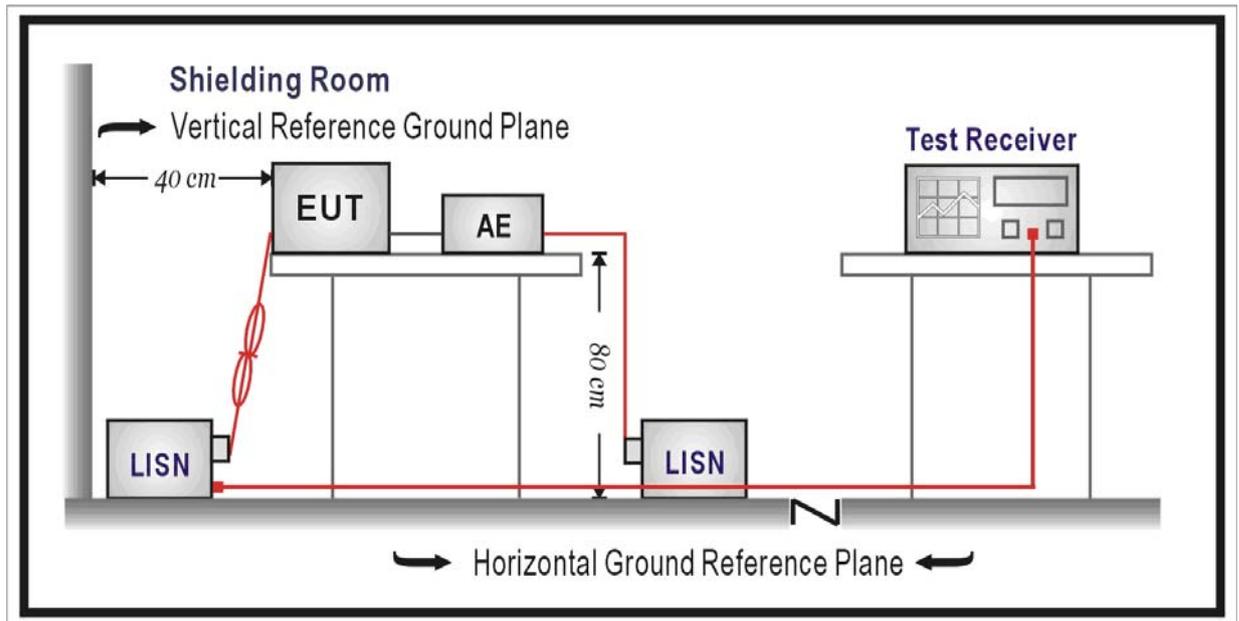
Performed Item	Items	Required	Actual
Conducted Emission	Temperature (°C)	15-35	25
	Humidity (%RH)	25-75	50
	Barometric pressure (mbar)	860-1060	950-1000
Radiated Emission	Temperature (°C)	15-35	25
	Humidity (%RH)	25-75	50
	Barometric pressure (mbar)	860-1060	950-1000

### 3. Conducted Emission

#### 3.1. Test Specification

According to EMC Standard: FCC Part 15 Subpart B Class B, ANSI C63.4

#### 3.2. Test Setup



#### 3.3. Limit

Limits for Conducted Emission of Class B ITE		
Frequency range MHz	Limits dB(μV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

NOTE: Decreases with the logarithm of the frequency.

#### 3.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50Ω / 50μH coupling impedance for the

measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a  $50\Omega$  /  $50\mu\text{H}$  coupling impedance with  $50\Omega$  termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed on conducted measurement.

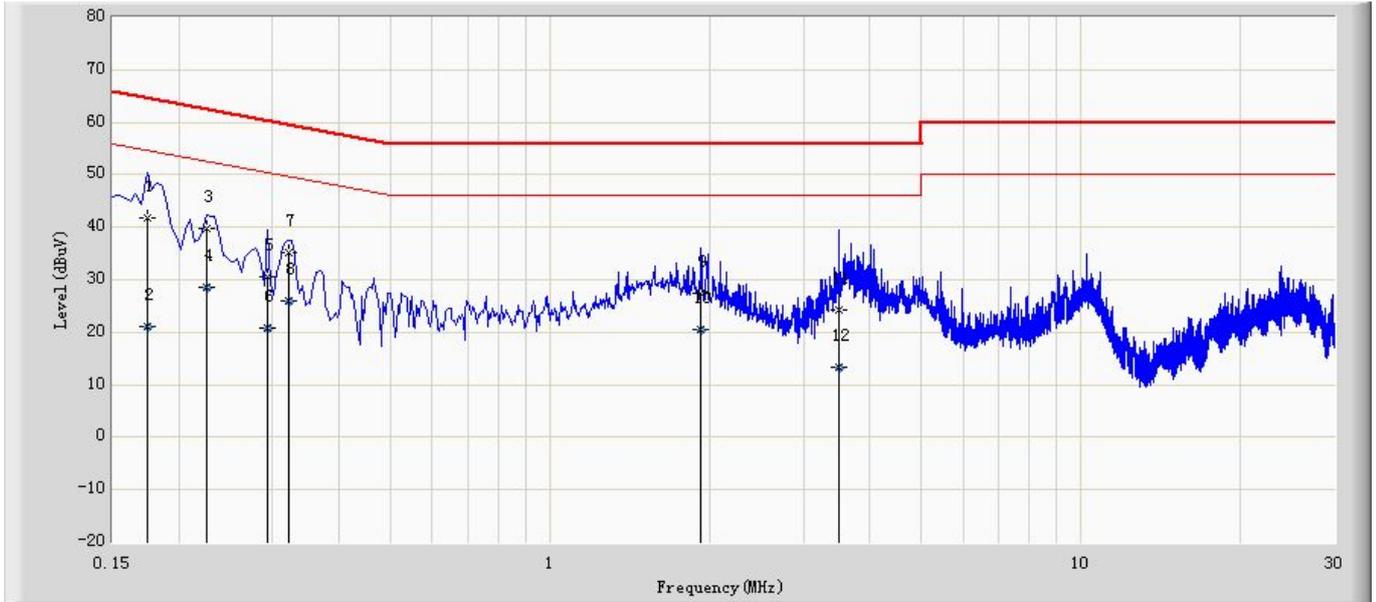
Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

### **3.5. Deviation from Test Standard**

No deviation.

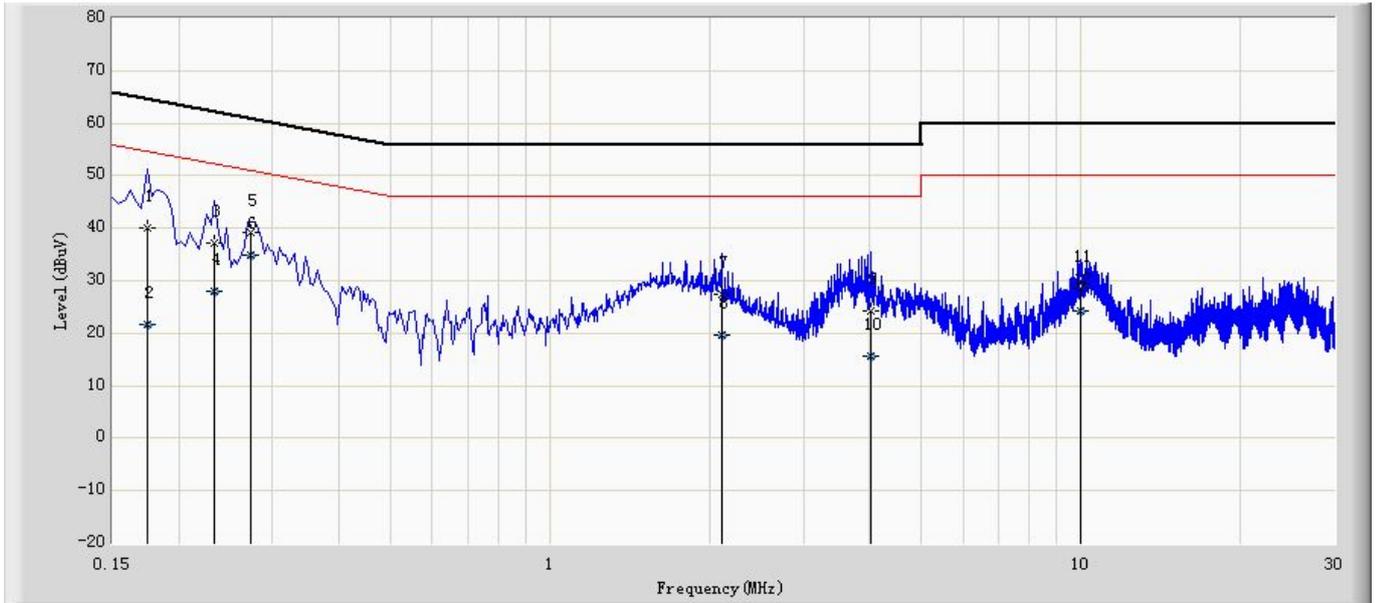
### 3.6. Test Result

Engineer: Sunny	
Site: TR1	Time: 2012/06/30 - 16:23
Limit: FCC_Part15.107_CE_AC Power_ClassB	Margin: 0
Probe: ENV216_101044(0.009-30MHz)	Polarity: Line
EUT: Mobile Phone	Power: AC 120V/60Hz
Note: Mode 3:USB Copy	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1		0.174	41.891	32.036	-22.876	64.767	9.855	QP
2		0.174	21.062	11.207	-33.706	54.767	9.855	AV
3	*	0.226	39.882	30.018	-22.713	62.595	9.864	QP
4		0.226	28.683	18.819	-23.913	52.595	9.864	AV
5		0.294	30.508	20.634	-29.903	60.411	9.873	QP
6		0.294	20.909	11.036	-29.502	50.411	9.873	AV
7		0.322	35.302	25.425	-24.353	59.655	9.877	QP
8		0.322	25.979	16.103	-23.676	49.655	9.877	AV
9		1.926	27.316	17.563	-28.684	56.000	9.753	QP
10		1.926	20.642	10.889	-25.358	46.000	9.753	AV
11		3.502	24.196	14.441	-31.804	56.000	9.755	QP
12		3.502	13.283	3.528	-32.717	46.000	9.755	AV

Engineer: Sunny	
Site: TR1	Time: 2012/06/30 - 16:27
Limit: FCC_Part15.107_CE_AC Power_ClassB	Margin: 0
Probe: ENV216_101044(0.009-30MHz)	Polarity: Neutral
EUT: Mobile Phone	Power: AC 120V/60Hz
Note: Mode 3:USB Copy	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1		0.174	40.043	30.080	-24.724	64.767	9.963	QP
2		0.174	21.686	11.723	-33.081	54.767	9.963	AV
3		0.234	37.140	27.223	-25.167	62.307	9.917	QP
4		0.234	28.055	18.138	-24.252	52.307	9.917	AV
5		0.274	39.327	29.391	-21.669	60.996	9.937	QP
6	*	0.274	34.785	24.849	-16.210	50.996	9.937	AV
7		2.102	27.415	17.502	-28.585	56.000	9.913	QP
8		2.102	19.586	9.673	-26.414	46.000	9.913	AV
9		4.030	24.267	14.296	-31.733	56.000	9.971	QP
10		4.030	15.647	5.676	-30.353	46.000	9.971	AV
11		9.978	28.652	18.473	-31.348	60.000	10.179	QP
12		9.978	24.259	14.079	-25.741	50.000	10.179	AV

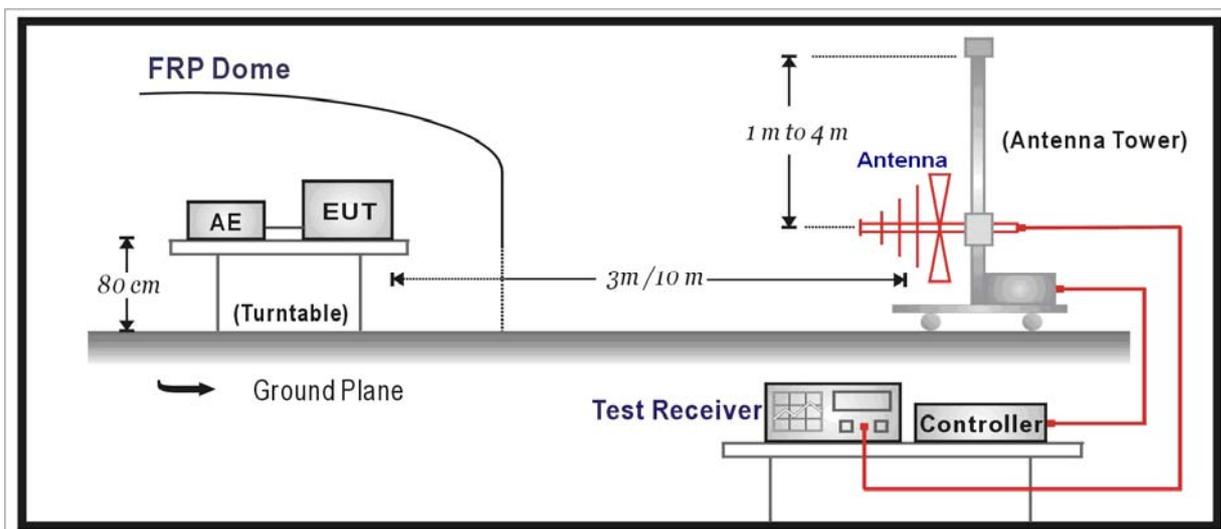
## 4. Radiated Emission

### 4.1. Test Specification

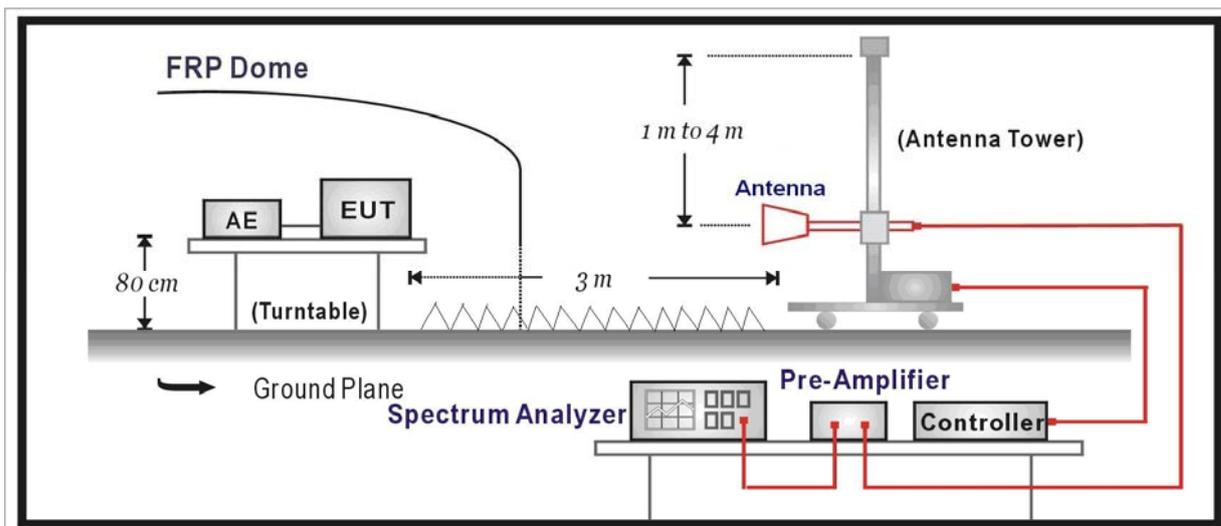
According to EMC Standard: FCC Part 15 Subpart B Class B, ANSI C63.4

### 4.2. Test Setup

Below 1GHz Test Setup:



Above 1GHz Test Setup:



**4.3. Limit**

FCC Part 15 Subpart B Paragraph 15.109		
Frequency (MHz)	Distance (m)	Level (dBuV/m)
30 - 88	3	40
88 - 216	3	43.5
216 - 960	3	46
Above 960	3	54

Note 1: The lower limit shall apply at the transition frequency.

Note 2: Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

Note 3: E field strength (dBuV/m) = 20 log E field strength (uV/m)

**4.4. Test Procedure**

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated on radiated measurement.

For an unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table:

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705 - 108	1000
108 - 500	2000

500 - 1000	5000
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower

On any frequency or frequencies below or equal to 1000 MHz, the radiated limits shown are based on measuring equipment employing a quasi-peak detector function and above 1000 MHz, the radiated limits shown are based measuring equipment employing an average detector function.

When average radiated emission measurement are included emission measurement Above 1000 MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

For class A, the measurement distance between the EUT and antenna is 10 meters for under 1GHz and above 1GHz.

For class B, the measurement distance between the EUT and antenna is 3 meters for under 1GHz and 3 meters for above 1GHz.

The bandwidth below 1GHz setting on the field strength meter (R&S Test Receiver ESCI) is 120 kHz and above 1GHz is 1MHz.

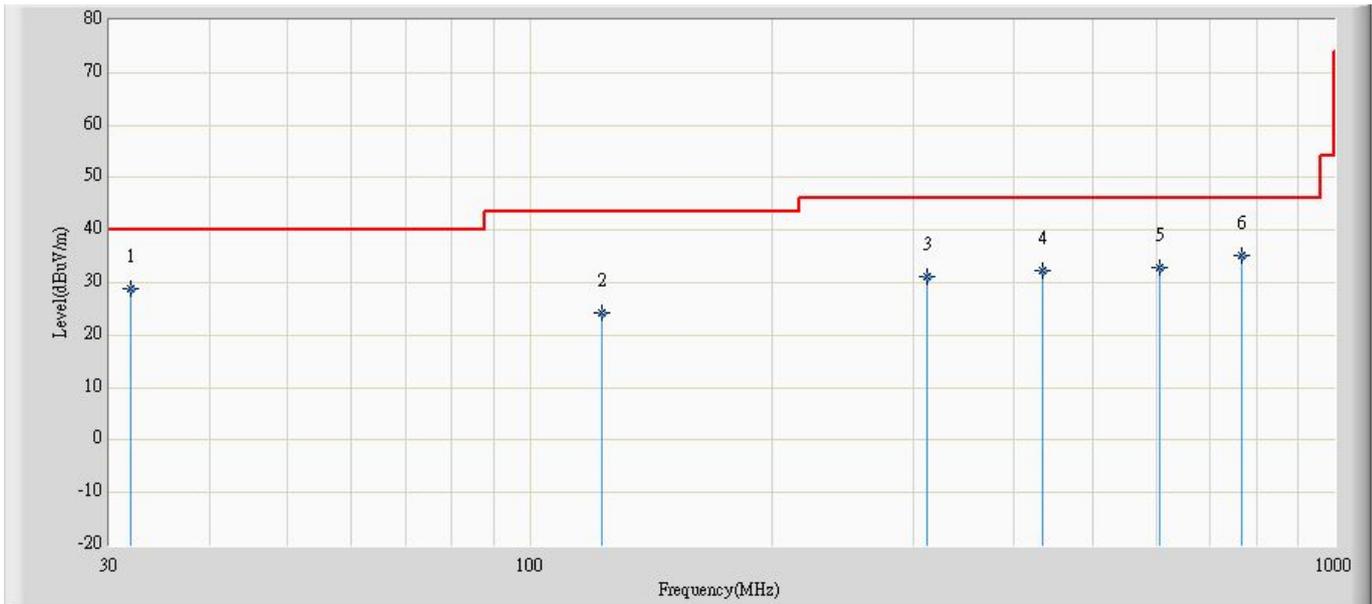
Note: When measurement above 1GHz, the horn antenna will bend down a little (as horn antenna have the narrow beamwidth) in order to find the maximum emission of EUT.

**4.5. Deviation from Test Standard**

No deviation.

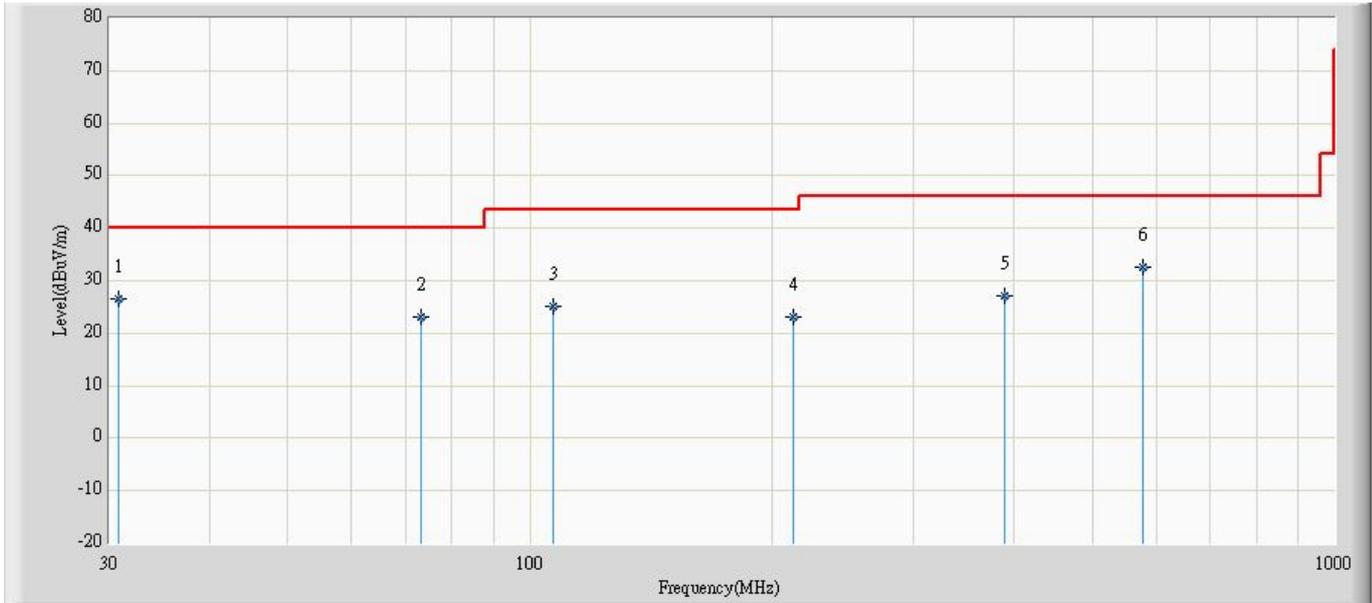
4.6. Test Result

Engineer: Sunny	
Site: AC2	Time: 2012/07/05 - 21:04
Limit: FCC_Part15.109_RE(3m)_ClassB	Margin: 0
Probe: CBL6112D_27611(30-1000MHz)	Polarity: Horizontal
EUT: Mobile Phone	Power: AC 120V/60Hz
Note: Mode 1: USB Copy	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		31.819	28.730	5.696	-11.270	40.000	23.035	QP
2		122.635	24.224	5.608	-19.276	43.500	18.616	QP
3		312.027	31.214	10.302	-14.786	46.000	20.911	QP
4		433.277	32.171	7.974	-13.829	46.000	24.197	QP
5		607.029	32.900	5.928	-13.100	46.000	26.973	QP
6	*	766.715	35.056	6.672	-10.944	46.000	28.384	QP

Engineer: Sunny	
Site: AC2	Time: 2012/07/05 - 21:05
Limit: FCC_Part15.109_RE(3m)_ClassB	Margin: 0
Probe: CBL6112D_27611(30-1000MHz)	Polarity: Vertical
EUT: Mobile Phone	Power: AC 120V/60Hz
Note: Mode 1: USB Copy	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		30.845	26.551	2.846	-13.449	40.000	23.706	QP
2		73.044	23.022	10.841	-16.978	40.000	12.181	QP
3		106.872	25.215	7.040	-18.285	43.500	18.175	QP
4		212.845	22.965	7.372	-20.535	43.500	15.593	QP
5		388.779	27.094	3.939	-18.906	46.000	23.155	QP
6	*	578.171	32.696	6.006	-13.304	46.000	26.689	QP