



EMC Test Report

**Product Name: HSDPA/UMTS/GPRS/GSM/EDGE Mobile Phone
with Bluetooth**

Model Number: HUAWEI U8350-51/U8350-51

Report No: SYBH(Z-EMC)108062011-2

FCC ID:QISU8350-51

Reliability Laboratory of Huawei Technologies Co., Ltd.

Huawei Base, Bantian, Longgang District, Shenzhen 518129, P.R. China

Tel: +86 755 28780808 Fax: +86 755 89652518

Notice

1. The laboratory has obtained the accreditation of China National Accreditation Service for Conformity Assessment (CNAS), and accreditation number: L0310.
2. The laboratory has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements. The site recognition number is 97456.
3. The laboratory has been listed by industry Canada to perform electromagnetic emission measurement. The site recognition number is 6369A-2.
4. The test report is invalid if not marked with "exclusive stamp for the test report".
5. The test report is invalid if not marked with the stamps or the signatures of the persons responsible for performing, revising and approving the test report.
6. The test report is invalid if there is any evidence of erasure and/or falsification.
7. If there is any dissidence for the test report, please file objection to the test centre within 15 days from the date of receiving the test report.
8. Normally, the test report is only responsible for the samples that have undergone the test.
9. Context of the test report cannot be used partially or in full for publicity and/or promotional purposes without previous written approval of the laboratory.

TABLE OF CONTENT

1	General Information.....	5
1.1	EUT Description.....	5
1.2	Test Site Information.....	7
1.3	Applied Standard.....	7
2	Summary of Results	8
3	System Configuration during EMC Test.....	9
3.1	Test Mode	9
3.2	Configurations of Test System.....	9
3.3	Cables Used during Test	12
3.4	Associated Equipment Used during Test	12
4	Electromagnetic Interference (EMI).....	13
4.1	Radiated Disturbance 30MHz to 18GHz.....	13
4.2	Conducted Disturbance 0.15 MHz to 30MHz	15
5	Main Test Instruments.....	16
6	System Measurement Uncertainty	16
7	Graph and Data of Emission Test.....	17
7.1	Radiated Disturbance	17
7.2	Conducted Disturbance	19

1 General Information

1.1 EUT Description

EUT Description	
Product Name	HSDPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth
Model Number	HUAWEI U8350-51/U8350-51
Serials Number	W5S7NA1153000052
Working Voltage	120V/60Hz
TX Frequency	GSM850: 824MHz To 849MHz PCS1900: 1850MHz To 1910MHz WCDMA850: 827MHz To 847MHz WCDMA1900: 1853MHz To 1908MHz
RX Frequency	GSM850: 869MHz To 894MHz PCS1900: 1930MHz To 1990MHz WCDMA850: 872MHz To 892MHz WCDMA1900: 1933MHz To 1988MHz
HW Version	HD1U835M
SW Version	U8350-51V100R001C00B616
EUT Accessory	
Data cable	Data Cable USB A Male to Micro Usb ,Black,
Adapter	Manufacture: Huawei Technologies Co., Ltd. Model: HW-050100U1W Input voltage: ~100-240V 50/60Hz 0.2A Output voltage: +5V $\overline{\text{---}}$ 1A S/N:HKAA52657875
Adapter	Manufacture: Huawei Technologies Co., Ltd. Model: HW-050100E1W Input voltage: ~100-240V 50/60Hz 0.2A Output voltage: +5V $\overline{\text{---}}$ 1A S/N:HKAAC0457821
Adapter	Manufacture: Huawei Technologies Co., Ltd. Model: HW-050100U1W Input voltage: ~100-240V 50/60Hz 0.2A Output voltage: +5V $\overline{\text{---}}$ 1A S/N:TPAB10372597
Adapter	Manufacture: Huawei Technologies Co., Ltd. Model: HW-050100E1W Input voltage: ~100-240V 50/60Hz 0.2A Output voltage: +5V $\overline{\text{---}}$ 1A S/N: TPAB10567424
Adapter	Manufacture: Huawei Technologies Co., Ltd. Model: HW-050100B1W Input voltage: ~100-240V 50/60Hz 0.2A Output voltage: +5V $\overline{\text{---}}$ 1A S/N: TPAB56235224
Adapter	Manufacture: Huawei Technologies Co., Ltd. Model: HW-050100B1W Input voltage: ~100-240V 50/60Hz 0.2A Output voltage: +5V $\overline{\text{---}}$ 1A

	S/N: HKAB52819851
Li-ion	Battery Model: HB511H Rated capacity: 1200mAh Nominal Voltage:  +3.7V Charging Voltage:  +4.2V Serials number: UNDB225XF0934615

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.2 Test Site Information

Test Site:	RELIABILITY LABORATORY OF HUAWEI TECHNOLOGIES CO., LTD.
Test Site Location:	Bantian Longgang District Shenzhen, P.R. China

1.3 Applied Standard

APPLIED STANDARD

FCC 47 CFR FCC Part 15 SubpartB

2 Summary of Results

Summary of Results				
Test Items	Test Mode	Performance Class & Required Performance Criteria	Result	Site
<u>Radiated Emissions</u> Enclosure Port	Mode1~ Mode2 Mode5~Mode7	CLASS B	Pass	Site1
<u>Conducted Emissions</u> <input checked="" type="checkbox"/> DC Power Port <input checked="" type="checkbox"/> AC Power Port <input type="checkbox"/> Telecommunication Ports	Mode1~ Mode4	CLASS B	Pass	Site1
Note: 1, Measurement taken is within the measurement uncertainty of measurement system. 2, <input checked="" type="checkbox"/> The item has been tested; <input type="checkbox"/> The item has not been tested.				

3 System Configuration during EMC Test

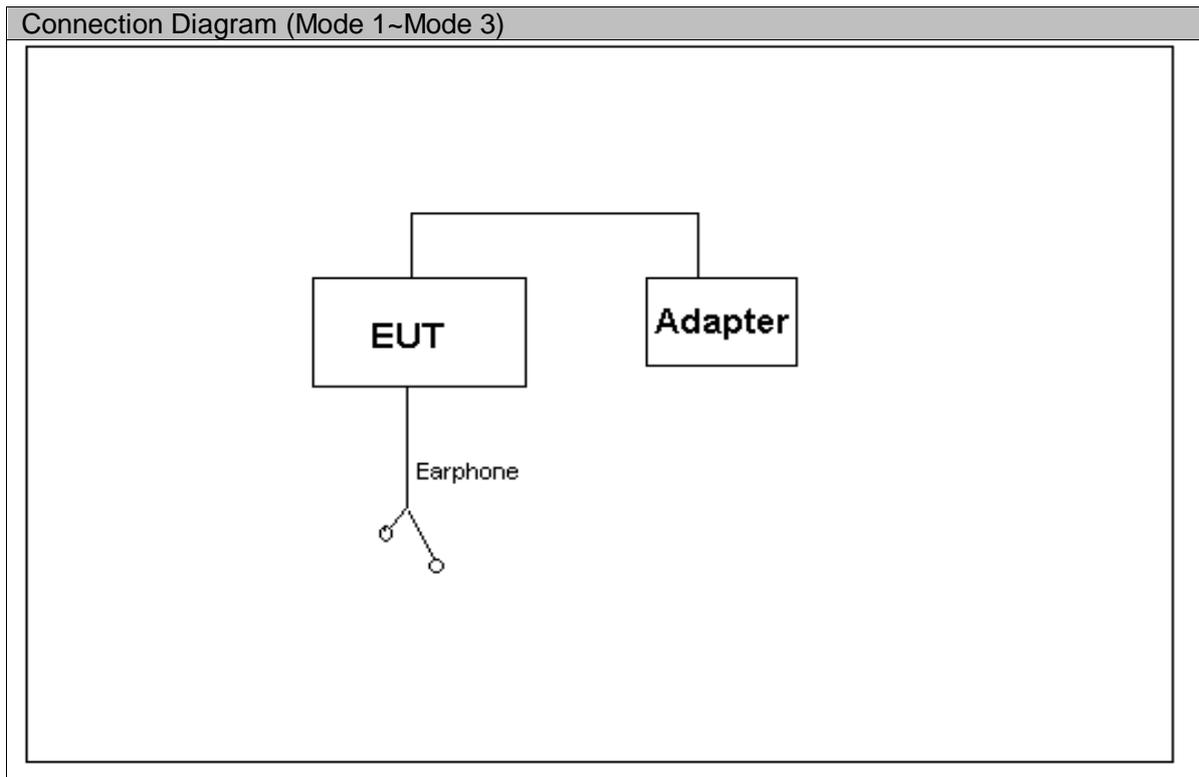
3.1 Test Mode

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

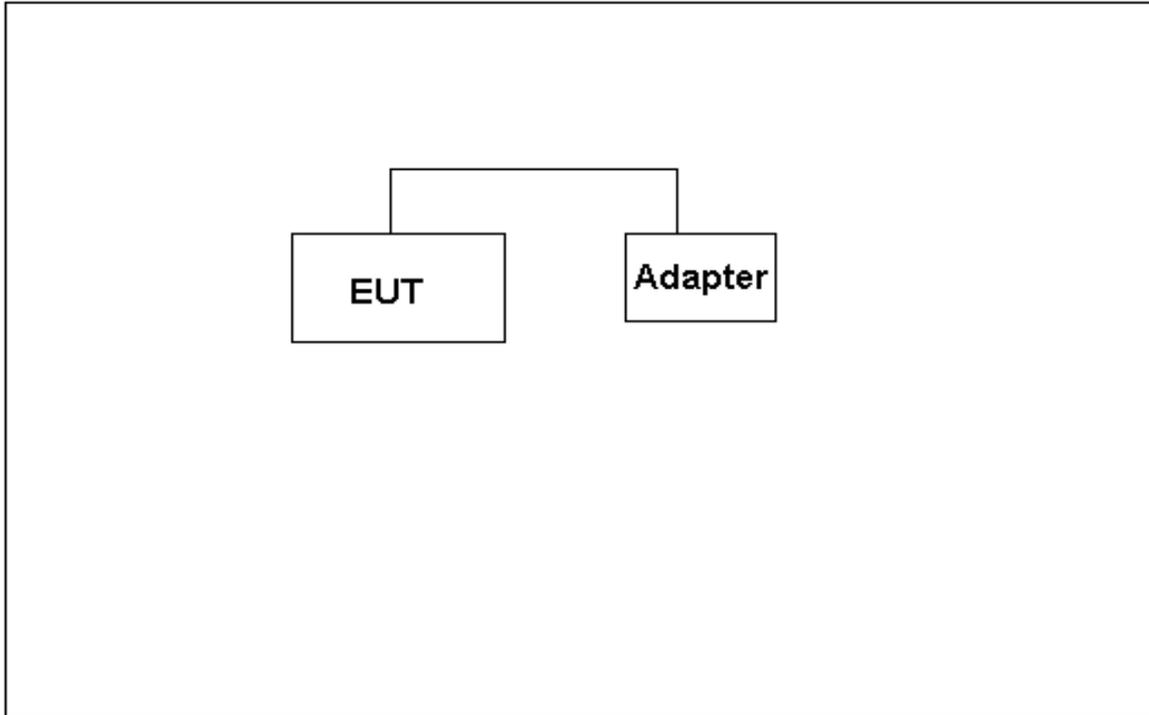
Test Mode	
Mode 1:	adapter+earphone+Camera On +Idle
Mode 2:	adapter+earphone+MP3 +Idle
Mode 3:	adapter+earphone+Traffic
Mode 4:	adapter+Traffic
Mode 5:	USB Copy(EUT with PC)+earphone +Idle
Mode 6:	Camera On+earphone+Idle
Mode 7:	earphone+MP3+Idle
Mode 8:	Traffic

Remark: When the EUT have multiple adapters, need separate test with multiple adapters. All test modes are performed, only the worst cases are recorded in this report.

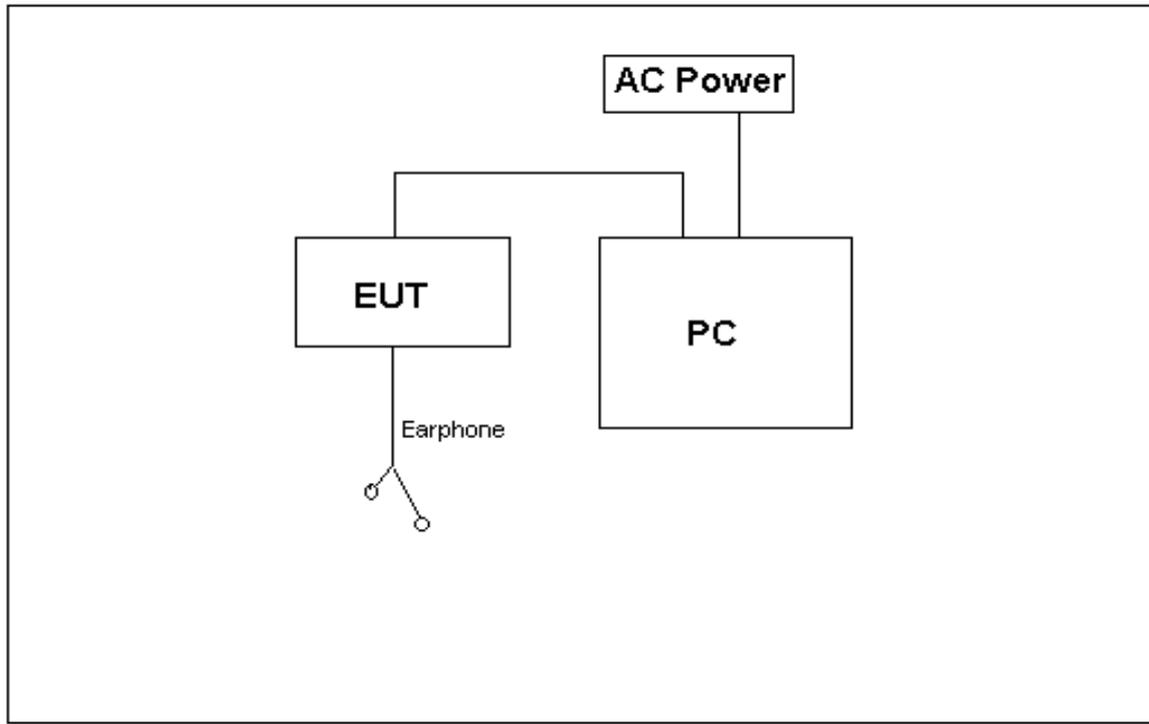
3.2 Configurations of Test System



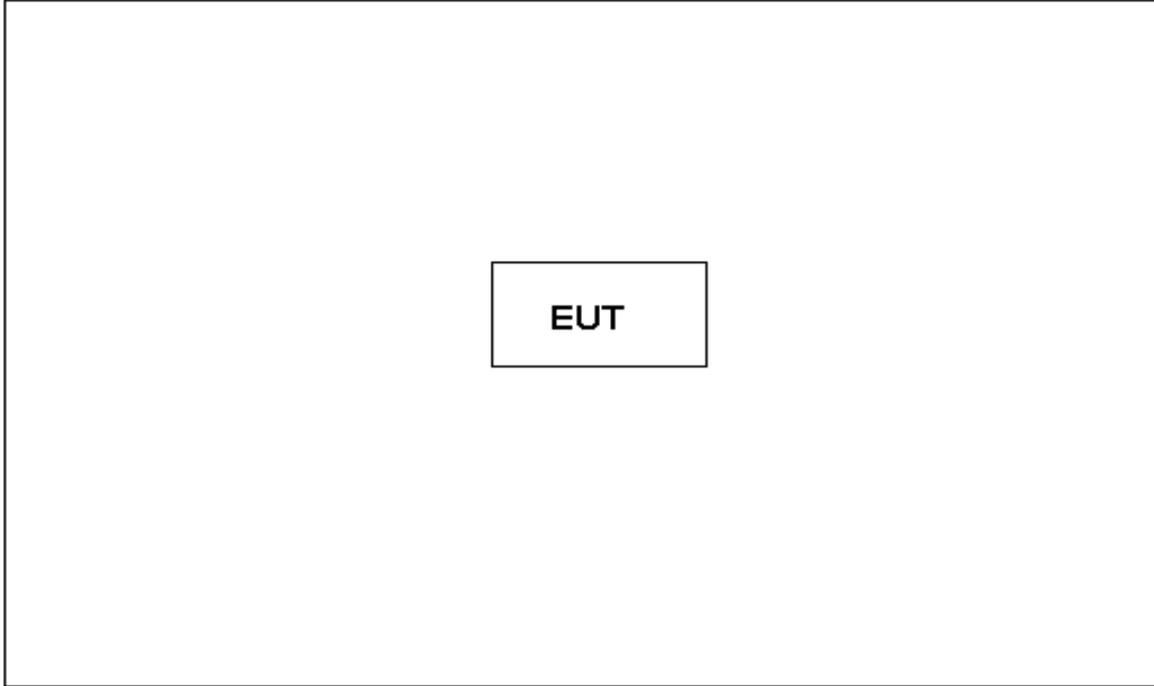
Connection Diagram (Mode 4)



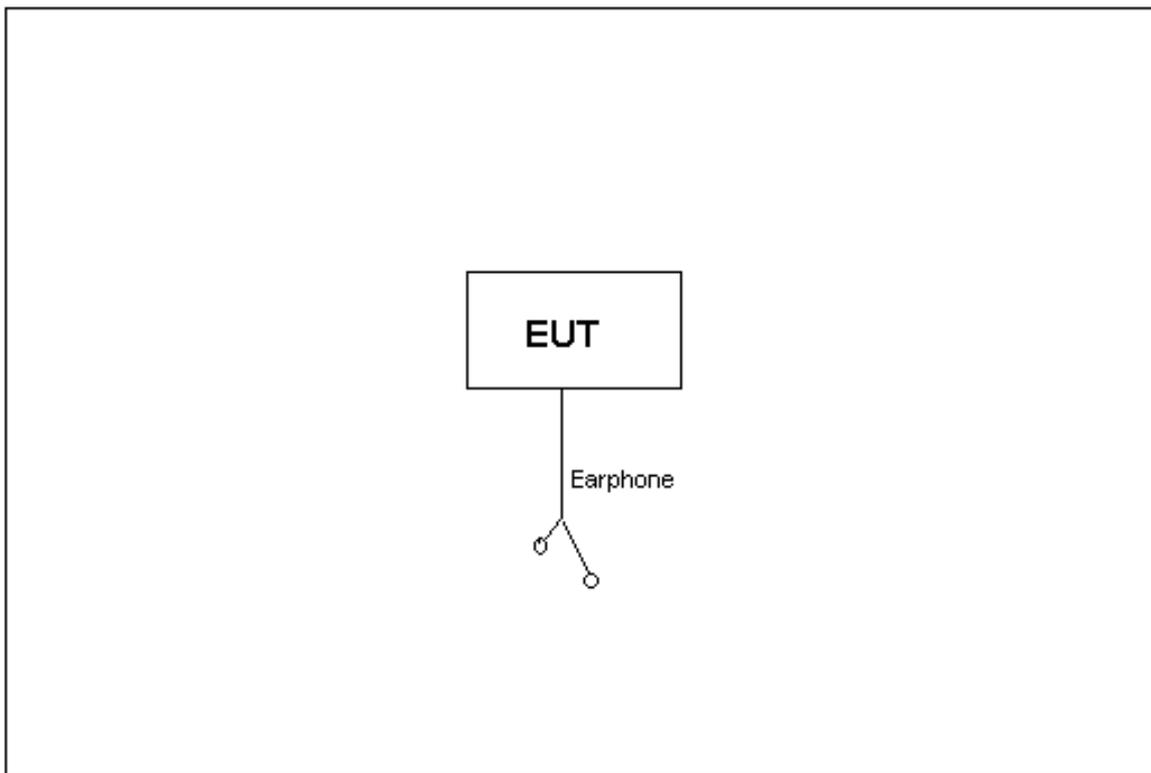
Connection Diagram (Mode 5)



Connection Diagram (Mode 6~ Mode 7)



Connection Diagram (Mode 8)



3.3 Cables Used during Test

Cable	Quantity	Length	Type of Cable
USB	1	<3m	shielded
Earphone	1	<3m	Unshielded

3.4 Associated Equipment Used during Test

Name	Model	Manufacturer	S/N	Cal Date
Radio Communication Tester	CMU200	R&S	3608082535	2010-08-04
Notebook	T61	IBM	3108052508	N/A

4 Electromagnetic Interference (EMI)

4.1 Radiated Disturbance 30MHz to 18GHz

Test Procedure

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4dB according to the standards: ANSI C63.4. The test distance was 3m. The set-up and test methods were according to ANSI C63.4 .

A preliminary scan and a final scan of the emissions were made from 30 MHz to 18 GHz by using test script of software; the emissions were measured using Quasi-Peak Detector (30MHz~1GHz) and AV/PK detector (above 1GHz). The maximal emission value was acquired by adjusting the antenna height, polarisation and turntable azimuth in accordance with the software setup. Normally, the height range of antenna was 1m to 4m, the azimuth range of turntable was 0°to 360°, The receive antenna has two polarizations V and H.

EUT was configured in idle mode and the test performed at worst emission state.

Test setup

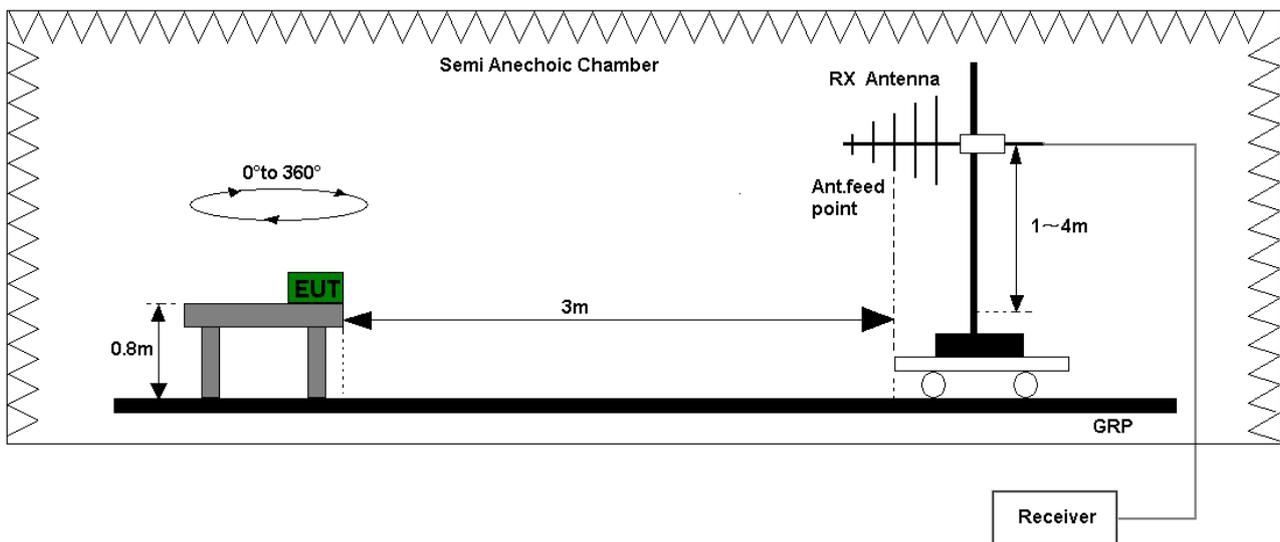


Figure 1. Test set-up of radiated disturbance(30MHz-1GHz)

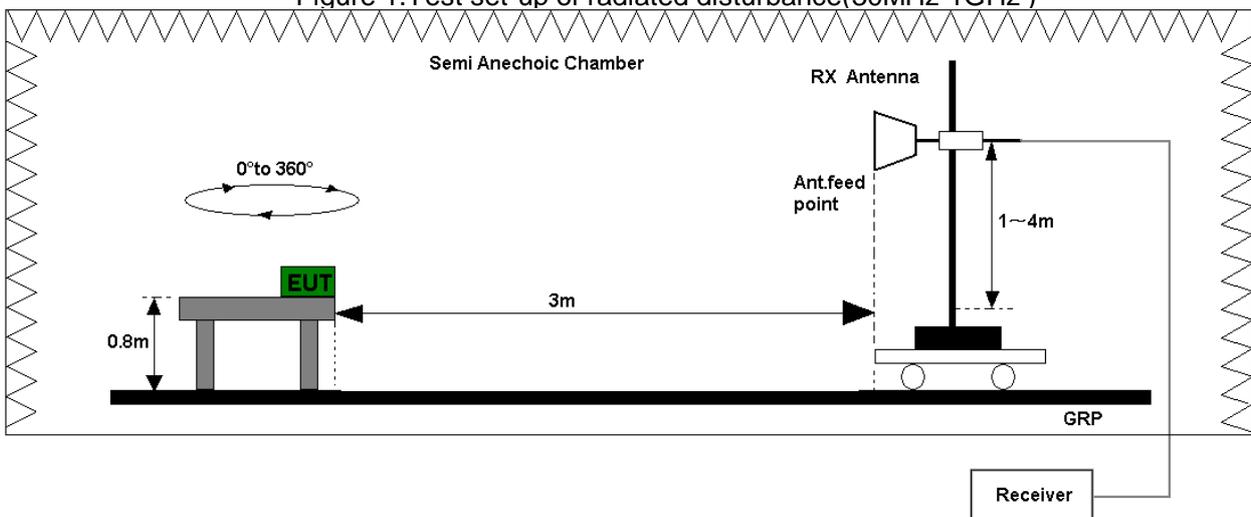


Figure 2. Test set-up of radiated disturbance(above 1GHz)

Test Results

The EUT has met the requirements for Radiated Emission of enclosure port.
The test data see section 7.1 of this report.

Test Limits				
Frequency of Emission (MHz)	Radiated Limit			
	Unit(μ V/m)		Unit(dB μ V/m)	
30-88	100		40	
88-216	150		43.5	
216-960	200		46	
Above 960	500		54	
Above 1000	AV	PK	AV	PK
	500	5000	54	74

Test environment condition:

Performed Item	Item	Required	Actual
Radiated Emission	Ambient temperature	15°C~35°C	23.4°C
	Relative humidity	25%~75%	54.5%
	Atmospheric pressure	86 kPa~106kPa	100kPa

4.2 Conducted Disturbance 0.15 MHz to 30MHz

Test Procedure

The Table-top EUT was placed upon a non-metallic table 0.8 m above the horizontal metal reference ground plane. EUT was connected to LISN and LISN was connected to reference Ground Plane. EUT was 80cm from LISN. The set-up and test methods were according to ANSI C63.4.

Conducted Disturbance at AC Port measurements were undertaken on the L and N Lines. The emissions were measured using a Quasi-Peak Detector and Average Detector.

Huawei Mobile Station was communicated with the BTS simulator through Air interface, the BTS simulator controls the Mobile Station to transmitter the maximum power which defined in specification of product. The Mobile Station operated on the typical channel.

Measurement bandwidth (RBW) for 150kHz to 30 MHz: 9 kHz;

The Mobile Station was setup in the screened chamber and operated under nominal conditions.

Test Setup

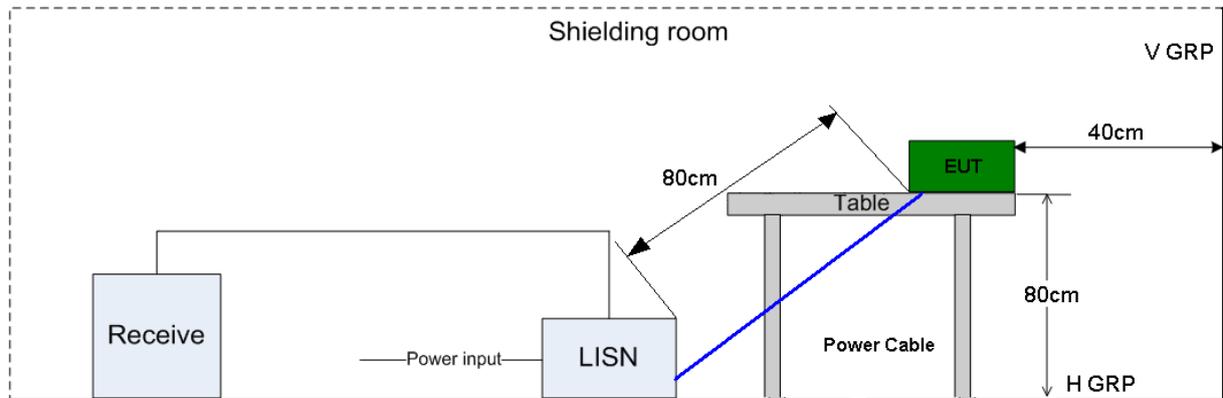


Figure 3. Test Set-up of conducted disturbance

Test Results

The EUT has met requirements for Conducted disturbance of power lines.

The test data see section 7.2 of this report.

Test Limit of AC Power Port		
Frequency range	150kHz ~ 30MHz	
Frequency	Voltage limits	
	QP	AV
0.15MHz~0.5MHz	66-56dB μ V	56-46 dB μ V
0.5MHz-5MHz	56dB μ V	46 dB μ V
5MHz~30MHz	60dB μ V	50 dB μ V

Test environment condition:

Performed Item	Item	Required	Actual
Conducted Disturbance	Ambient temperature	15°C~35°C	23.4°C
	Relative humidity	25%~75%	54.5%
	Atmospheric pressure	86 kPa~106kPa	100kPa

5 Main Test Instruments

Main Test Equipments					
Test item	Test Instrument	Model	Manufacturer	Cal-Date	Cal Interval (month)
RE/CE	EMI Test receiver	ESU26	R&S	May.30, 2011	12
	Broadband Antenna	VULB 9163	SCHWARZBECK	May.16,2011	12
	Horn Antenna	HF906	R&S	May.16,2011	12
	Artificial Mains Network	ENV216	R&S	May.30, 2011	12
Software Information					
Test Item	Software Name	Manufacturer		Version	
RE/CE	ES-K1	R&S		1.7.1	

6 System Measurement Uncertainty

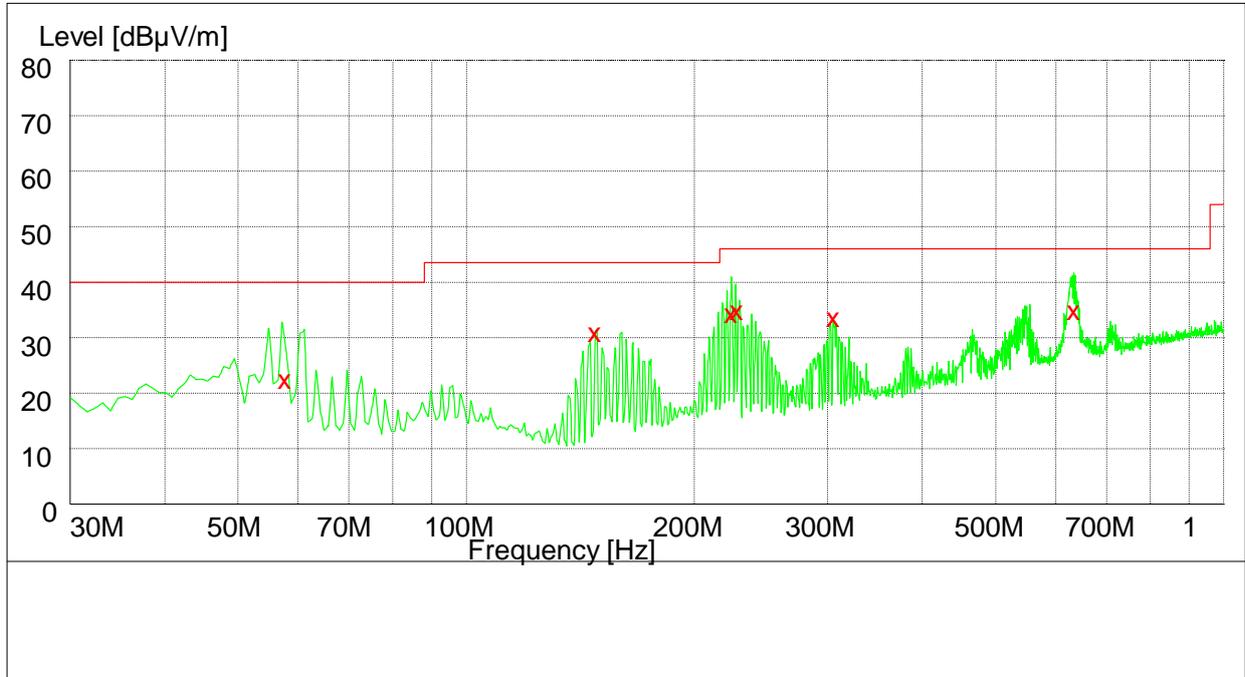
For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

System Measurement Uncertainty		
Items		Extended Uncertainty
RE(30MHz-1GHz,)	Field strength (dB μ V/m)	U=4.1dB; k=2
RE(1GHz-18GHz)	Field strength (dB μ V/m)	U=4.1dB; k=2
CE	Disturbance Voltage (dB μ V)	U=3.4dB; k=2

7 Graph and Data of Emission Test

7.1 Radiated Disturbance

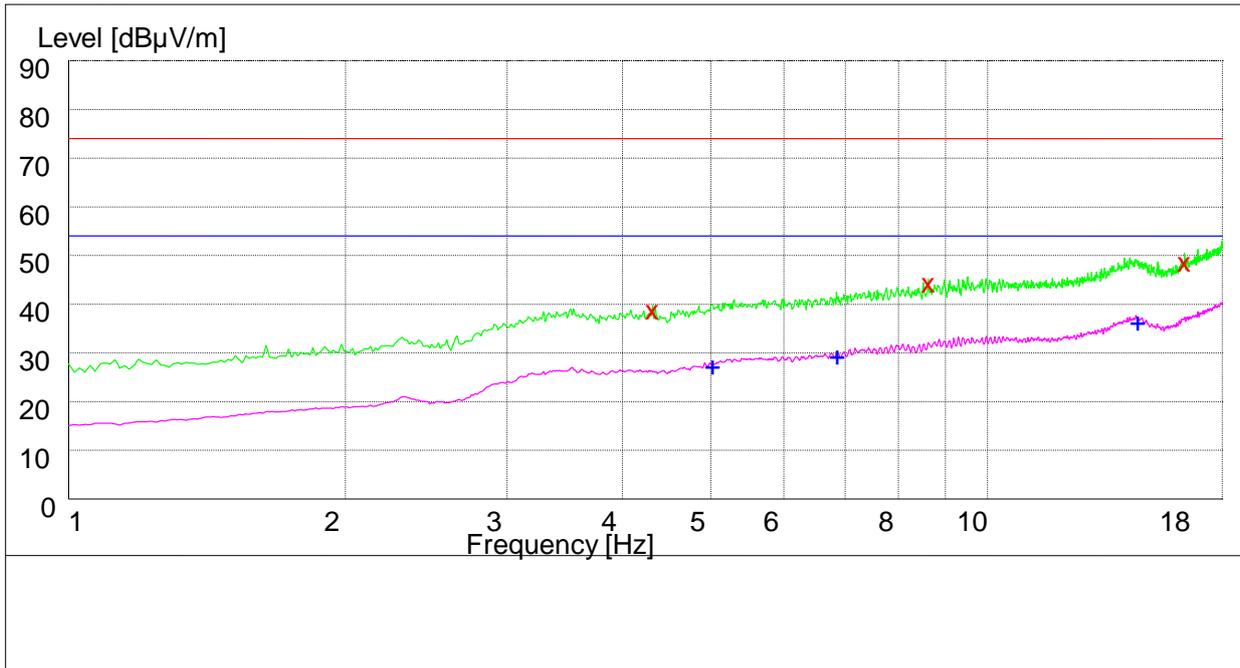
30MHz~1GHz



MEASUREMENT RESULT: QP Detector

Frequency	Level	Transd	Limit	Margin	Height	Azimuth	Polarisation
MHz	dBµV/m	dB	dBµV/m	dB	cm	deg	
57.600000	22.60	12.4	40.0	17.4	100.0	20.00	VERTICAL
148.080000	31.10	8.9	43.5	12.4	100.0	333.00	VERTICAL
223.440000	34.30	13.2	46.0	11.7	123.0	258.00	HORIZONTAL
226.320000	35.10	13.3	46.0	10.9	129.0	261.00	HORIZONTAL
304.740000	33.00	15.6	46.0	13.0	100.0	94.00	HORIZONTAL
632.880000	34.80	22.8	46.0	11.2	115.0	295.00	HORIZONTAL

1GHz~18GHz



MEASUREMENT RESULT: PK Detector

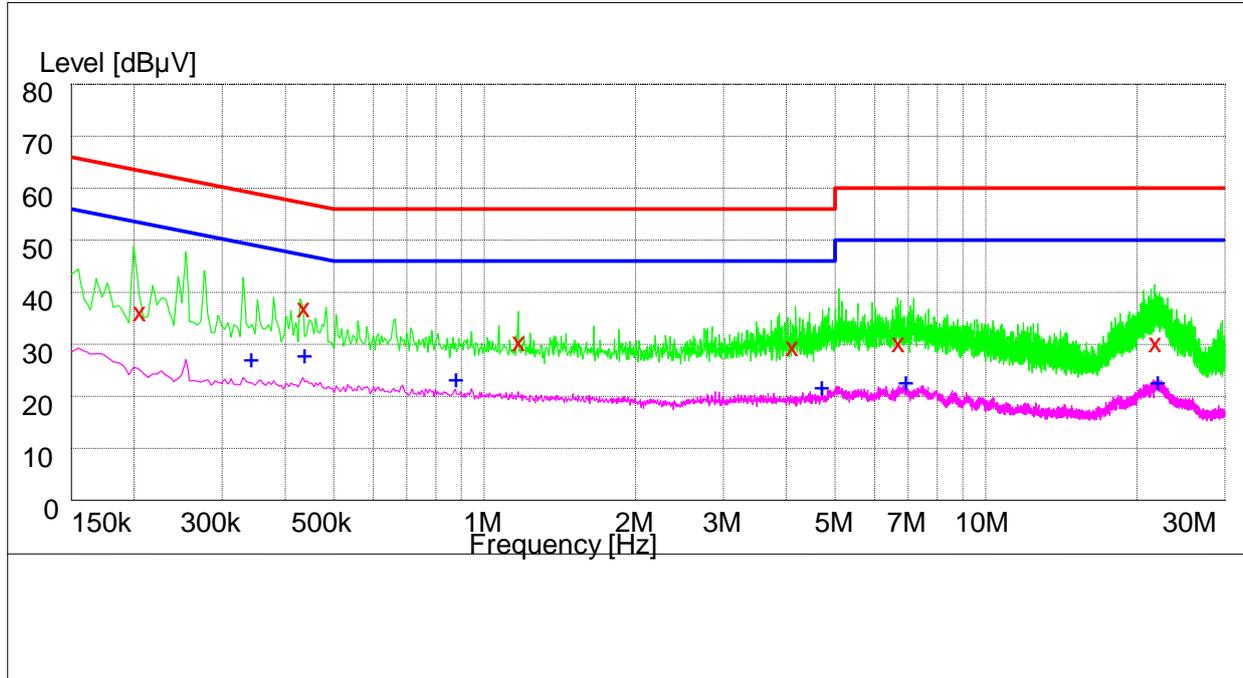
Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarisation
4315.500000	38.40	-4.6	74.0	35.6	100.0	20.00	VERTICAL
8619.000000	44.70	4.5	74.0	29.3	125.0	353.00	VERTICAL
16375.500000	49.60	15.7	74.0	24.4	100.0	16.00	VERTICAL

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarisation
5011.000000	27.80	-2.5	54.0	26.2	100.0	134.00	HORIZONTAL
6850.000000	29.70	1.0	54.0	24.3	100.0	241.00	HORIZONTAL
14521.000000	36.90	14.9	54.0	17.1	100.0	326.00	VERTICAL

7.2 Conducted Disturbance

AC Port Test Data



MEASUREMENT RESULT: QP Detector

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.206000	36.60	10.0	63	26.4	N	FLO
0.438000	37.70	10.1	57	19.3	N	FLO
1.174000	30.20	10.1	56	25.8	N	FLO
4.118000	31.20	10.2	56	24.8	N	FLO
6.694000	31.90	10.2	60	28.1	N	FLO
21.830000	32.00	10.4	60	28.0	L1	FLO

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.342000	27.00	10.0	49	22.0	N	FLO
0.438000	29.70	10.1	47	17.3	N	FLO
0.876000	24.40	10.1	46	21.6	N	FLO
4.700000	23.50	10.2	46	22.5	N	FLO
6.898000	23.10	10.2	50	26.9	N	FLO
21.908000	22.30	10.4	50	27.7	L1	FLO

-----END-----