



EMC Test Report

**Product Name:HSPA/UMTS/GPRS/GSM/EDGE Mobile Phone
with Bluetooth; Honor**

Model Number:HUAWEI U8860-51,U8860-51

Report No:SYBH(Z-EMC)013012012-2

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1 General Information

1.1 EUT Description

EUT Description	
Product Name	HSPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth; Honor
Model Number	HUAWEI U8860-51,U8860-51
Serials Number	A4R01A11B2300033
Working Voltage	120V/60Hz
TX Frequency	GSM850:824MHz-849MHz; PCS1900:1850MHz-1910MHz WCDMA850: 824MHz-849MHz; WCDMA1900:1850MHz-1910MHz Bluetooth: 2400MHz To 2483.5MHz WIFI: 2400MHz To 2483.5MHz
RX Frequency	GSM850:869MHz-894MHz; PCS1900:1930MHz-1990MHz WCDMA850:869MHz-894MHz; WCDMA1900:1930MHz-1990MHz Bluetooth: 2400MHz To 2483.5MHz WIFI: 2400MHz To 2483.5MHz GPS: 1575.42MHz
HW Version	HD2U8860M
SW Version	HUAWEI U8860-51 V100R001C00B865
EUT Accessory	
Data cable	Data Cable USB A Male to Micro Usb, Black
Adapter	Manufacturer: Huawei Technologies Co., Ltd. Model: HW-050100U1W Input voltage: ~100-240V 50/60Hz Output voltage:  5.0 V Rated Power: 5W S/N: HKABB2414883 S/N: TPABA2460114
Adapter	Manufacturer: Huawei Technologies Co., Ltd. Model: HW-050100U2W Input voltage: ~100-240V 50/60Hz Output voltage:  5.0 V Rated Power: 5W S/N: HWBYAABB2800034 S/N: HWHKAABA2000721
Adapter	Manufacturer: Huawei Technologies Co., Ltd. Model: HW-050100E1W Input voltage: ~100-240V 50/60Hz Output voltage:  5.0 V Rated Power: 5W S/N: HKABB2283174 S/N: TPABA1533706
Adapter	Manufacturer: Huawei Technologies Co., Ltd. Model: HW-050100E2W

	Input voltage: ~100-240V 50/60Hz Output voltage:  5.0 V Rated Power: 5W S/N: HWBYAAB90900017 S/N: HWHKAABA2005841
Adapter	Manufacture: Huawei Technologies Co., Ltd. Model: HW-050100B1W Input voltage: ~100-240V 50/60Hz Output voltage:  5.0 V Rated Power: 5W S/N: HKBBA1861971 S/N: TPABB1909406
Li-ion	Manufacturer: Huawei Technologies Co., Ltd. Battery Model: HB5F1H Rated capacity: 1930mAh Nominal Voltage:  +3.7V Charging Voltage:  +4.2V S/N: LKCBB126I14419407

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

Site 1:	RELIABILITY LABORATORY OF HUAWEI TECHNOLOGIES CO., LTD.
Test Site Location:	Bantian Longgang District Shenzhen, P.R. China

1.3 Applied Standards

APPLIED STANDARD

47 CFR FCC Part 15:2010, Subpart B

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~ Mode8	CLASS B	Pass	Site1
<u>Conducted Emissions</u> <input 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

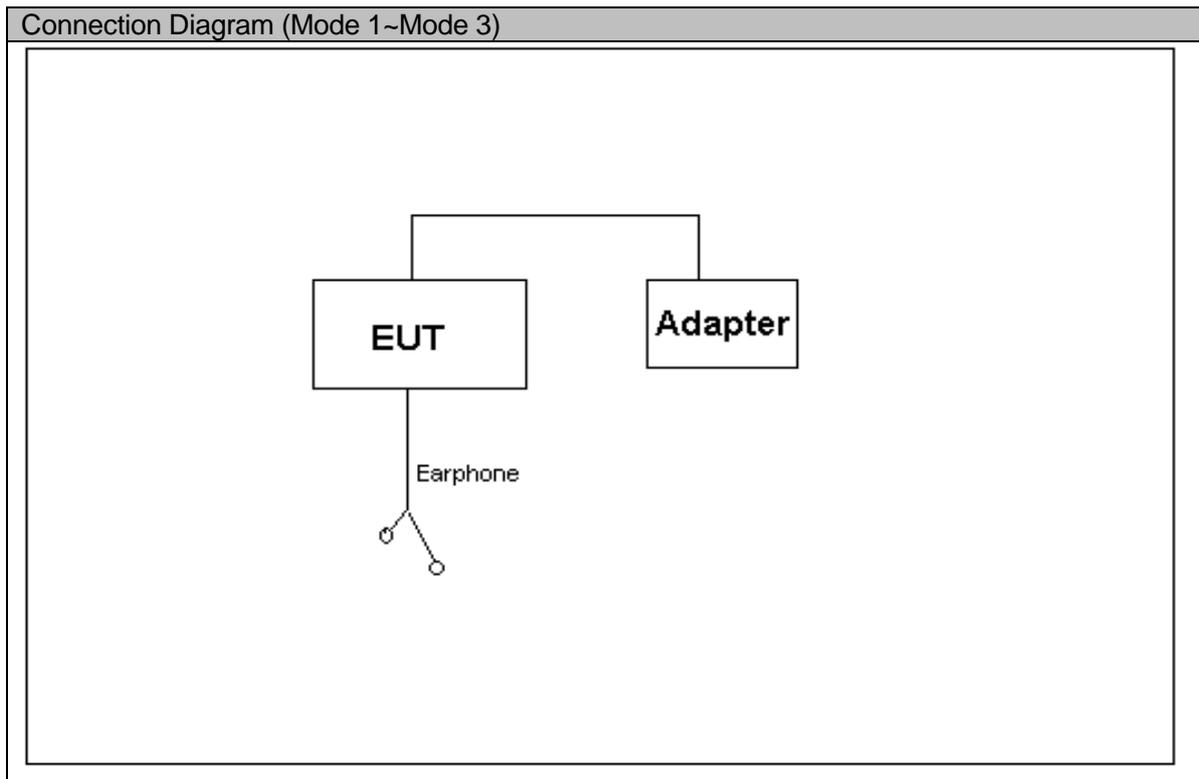
3.1 Test Mode

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:

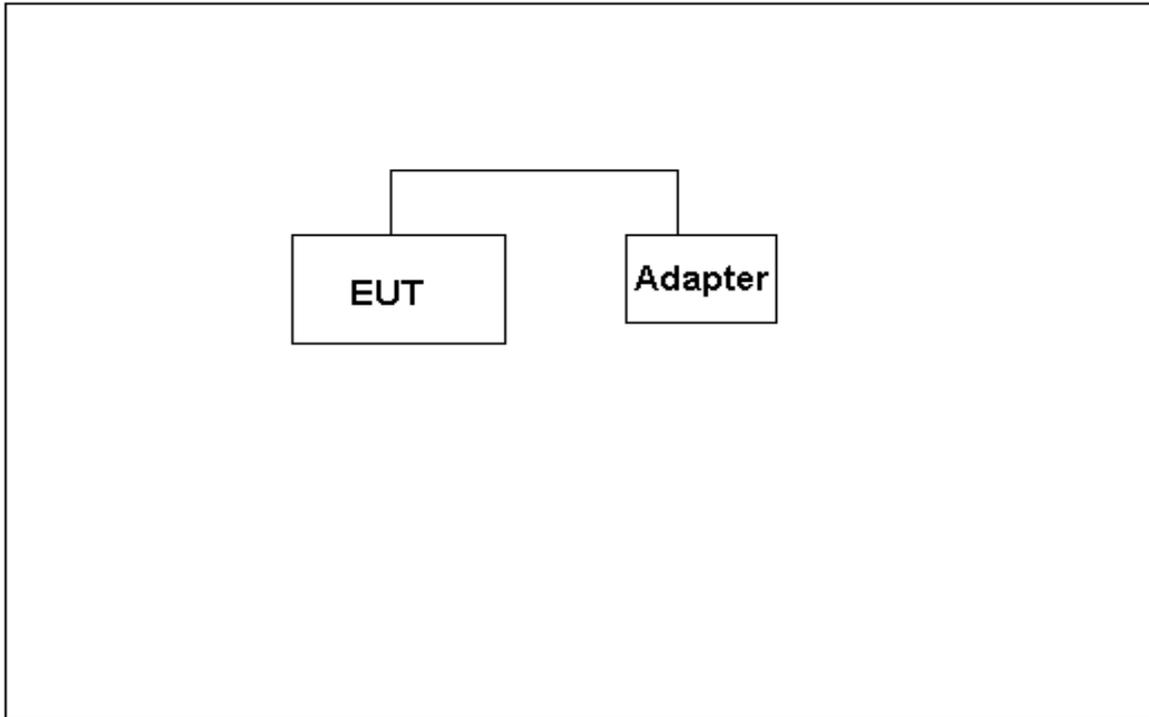
Test Mode	
Mode 1:	adapter+earphone+Camera On +Idle
Mode 2:	adapter+earphone+MP3 +Idle
Mode 3:	adapter+earphone+Traffic
Mode 4:	adapter+Traffic
Mode 5:	USB Copy(EUT with PC)+earphone +Idle
Mode 6:	Traffic
Mode 7:	Camera On+earphone+Idle
Mode 8:	earphone+MP3+Idle

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.

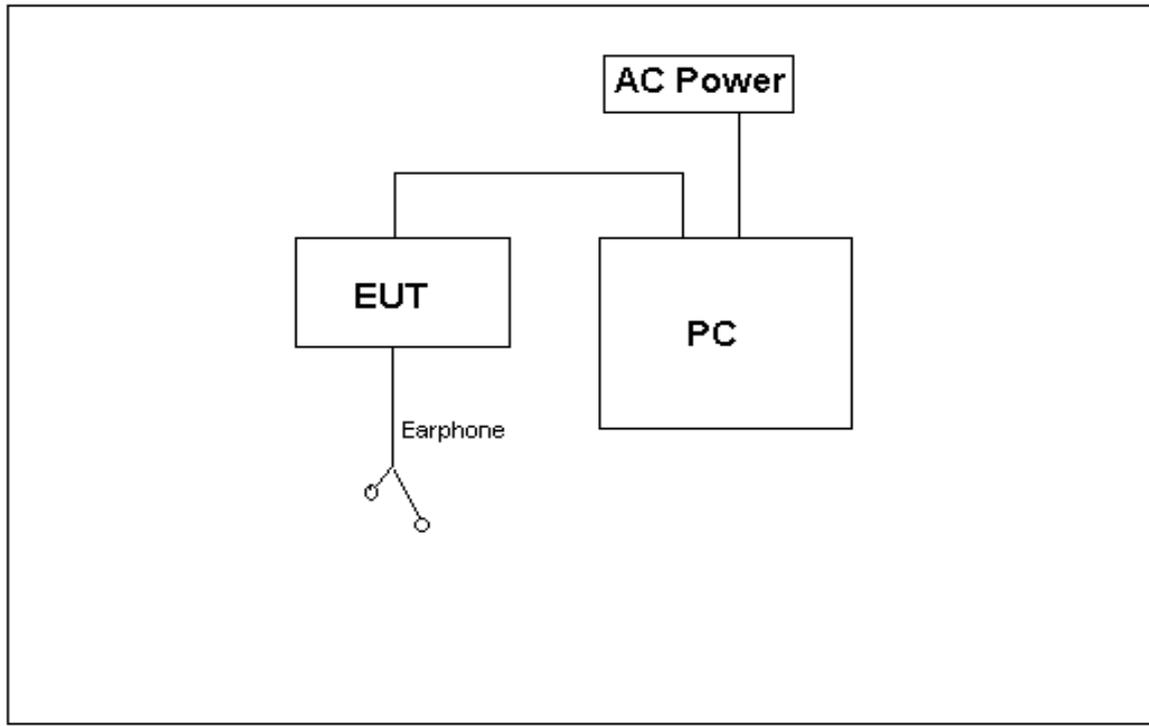
3.2 Configurations of Test System



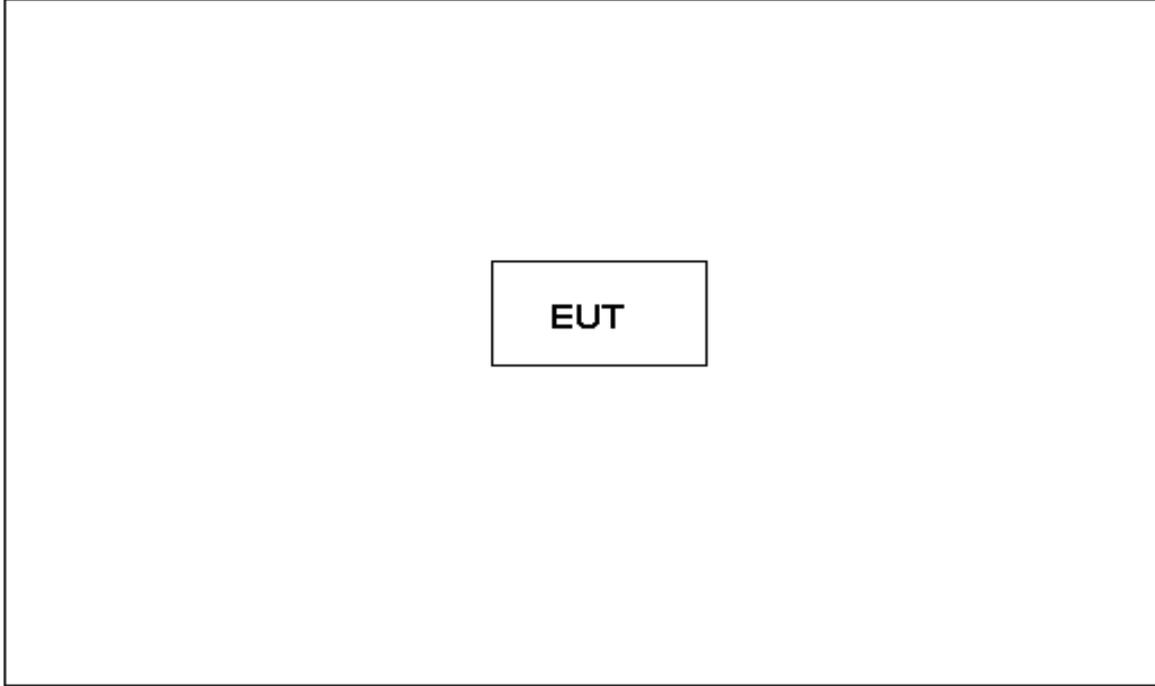
Connection Diagram (Mode 4)



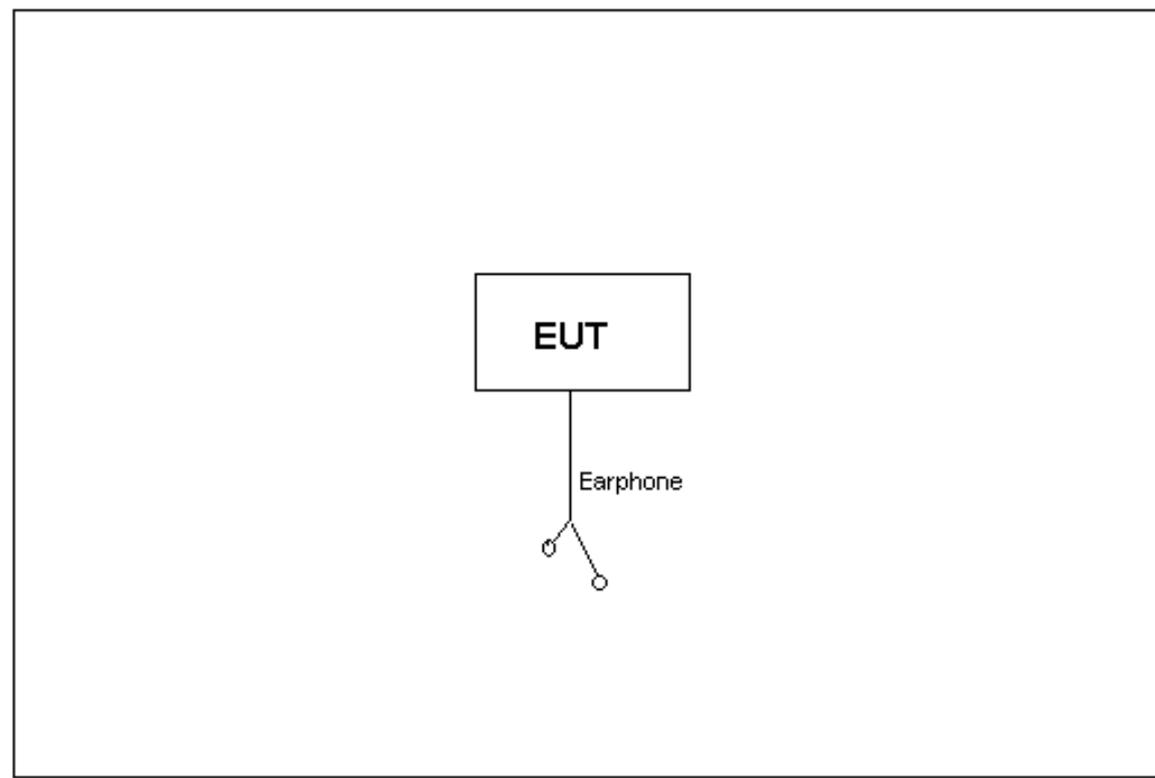
Connection Diagram (Mode 5)



Connection Diagram (Mode 6)



Connection Diagram (Mode 7-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	3607033573	2011.03.17
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

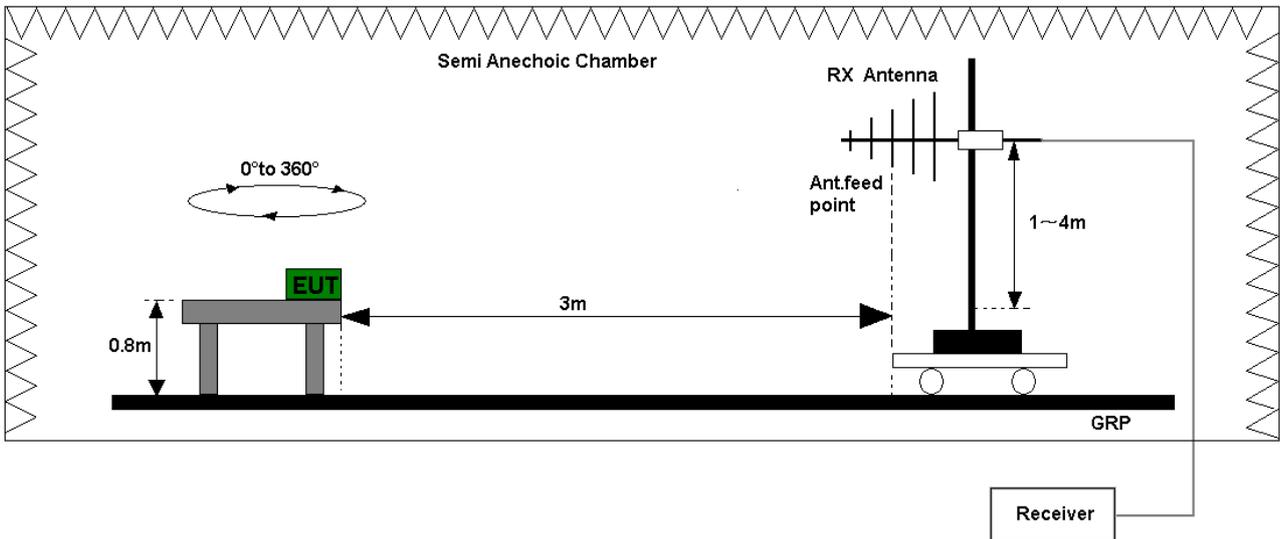


Figure 1. Test set-up of radiated disturbance(30MHz-1GHz)

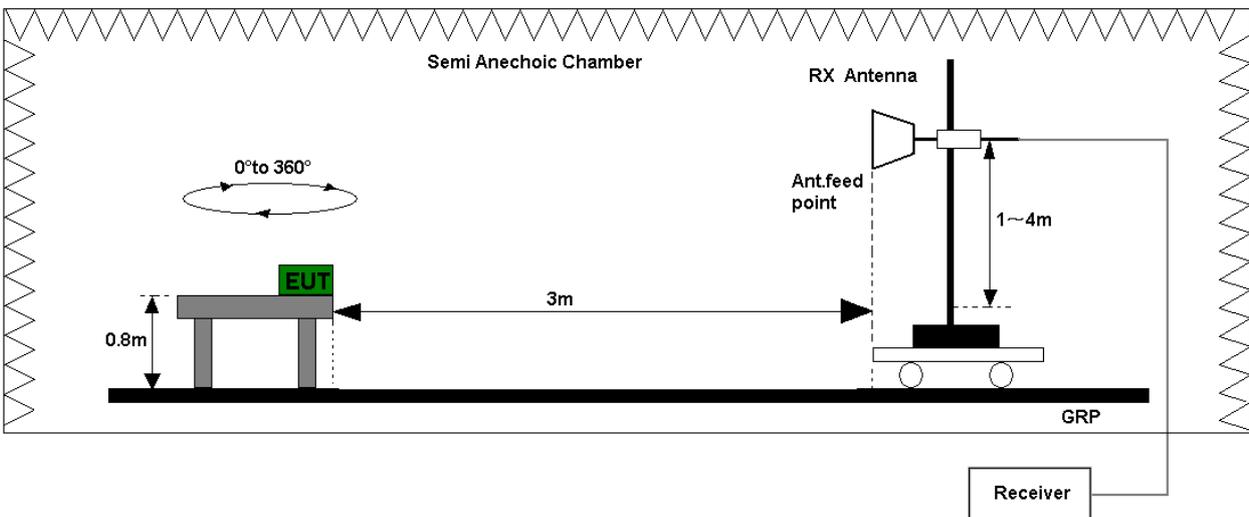


Figure 2. Test set-up of radiated disturbance(above 1GHz)

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	22.5°C
	Relative humidity	25%~75%	50.5%
	Atmospheric pressure	86 kPa~106kPa	101kPa

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. EUT was communicated with the simulator through Air interface, the simulator controls the EUT to transmitter the maximum power which defined in specification of product. The EUT operated on the typical channel. Measurement bandwidth (RBW) for 150kHz to 30 MHz: 9 kHz; The EUT was setup in the screened chamber and operated under nominal conditions.

Test Setup

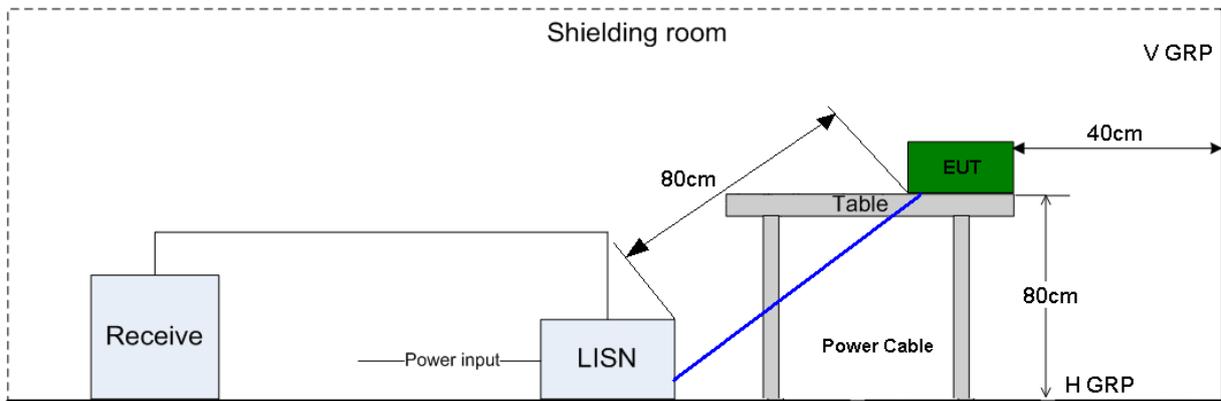


Figure 3. Test Set-up of conducted disturbance

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	66-56dBμV	56-46 dBμV
0.5MHz-5MHz	56dBμV	46 dBμV
5MHz~30MHz	60dBμV	50 dBμV

Test environment condition:

Performed Item	Item	Required	Actual
Conducted Disturbance	Ambient temperature	15°C~35°C	22.5°C
	Relative humidity	25%~75%	50.5%
	Atmospheric pressure	86 kPa~106kPa	101kPa

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:

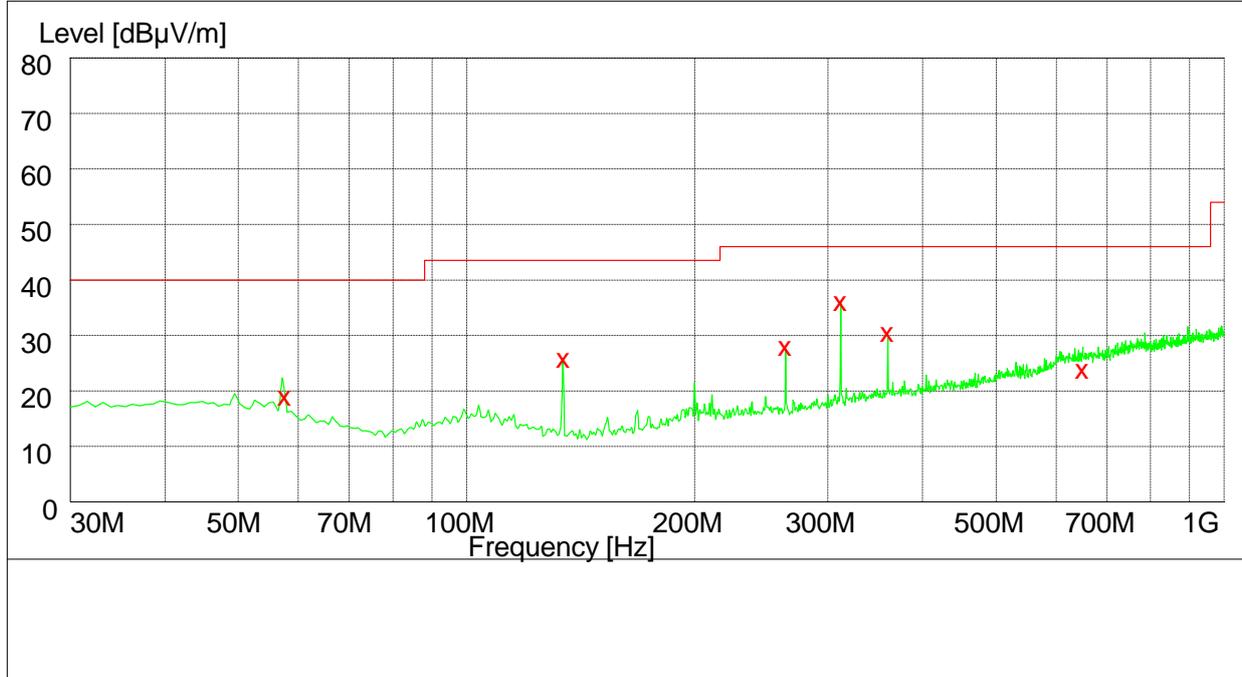
System Measurement Uncertainty		
Items		Extended Uncertainty
RE(30MHz-1GHz,)	Field strength (dB μ V/m)	U=4.1dB; k=2
RE(1GHz-18GHz)	Field strength (dB μ V/m)	U=4.1dB; k=2
CE	Disturbance Voltage (dB μ V)	U=3.4dB; k=2

7 Graph and Data of Test

Only the worst test result was shown in this report.

7.1 Radiated Disturbance

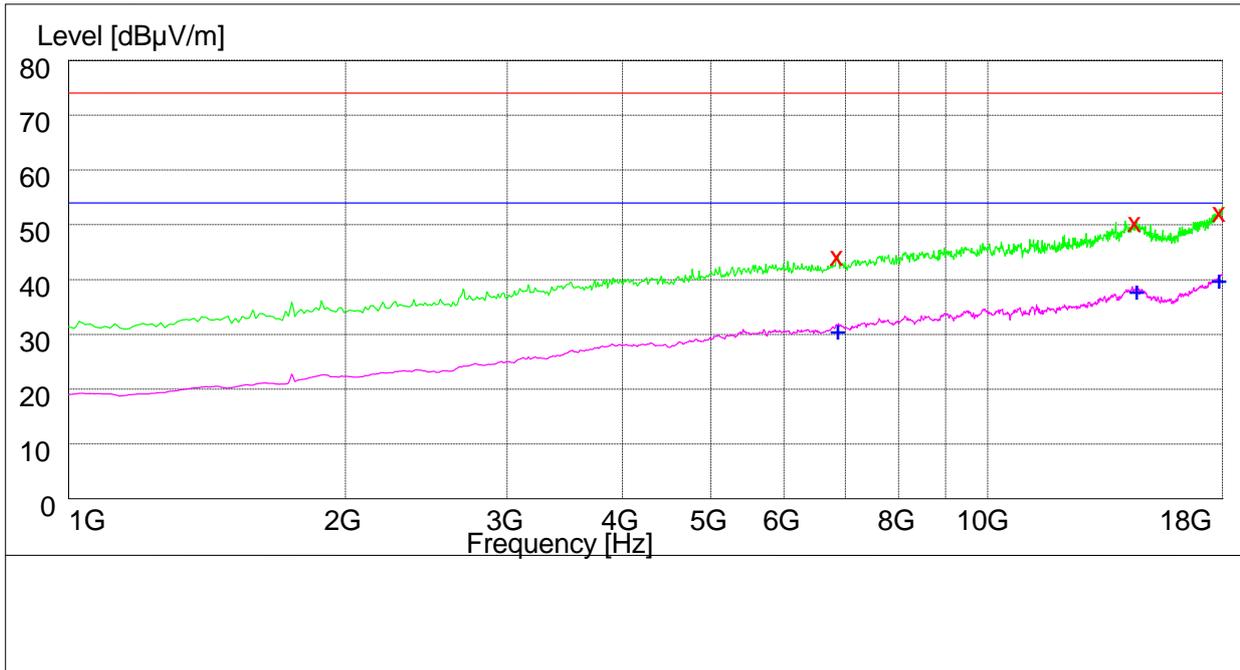
30MHz~1GHz



MEASUREMENT RESULT: QP Detector

Frequency MHz	Level dBµV/m	Transducer dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarisation
57.600000	18.90	13.8	40.0	21.1	112.0	284.00	VERTICAL
134.400000	25.90	10.2	43.5	17.6	100.0	330.00	VERTICAL
264.000000	27.50	14.2	46.0	18.5	100.0	97.00	HORIZONTAL
312.000000	36.10	15.3	46.0	9.9	100.0	107.00	HORIZONTAL
360.000000	30.20	16.7	46.0	15.8	100.0	115.00	HORIZONTAL
650.160000	22.30	21.7	46.0	23.7	100.0	47.00	VERTICAL

1GHz~18GHz



MEASUREMENT RESULT: PK Detector

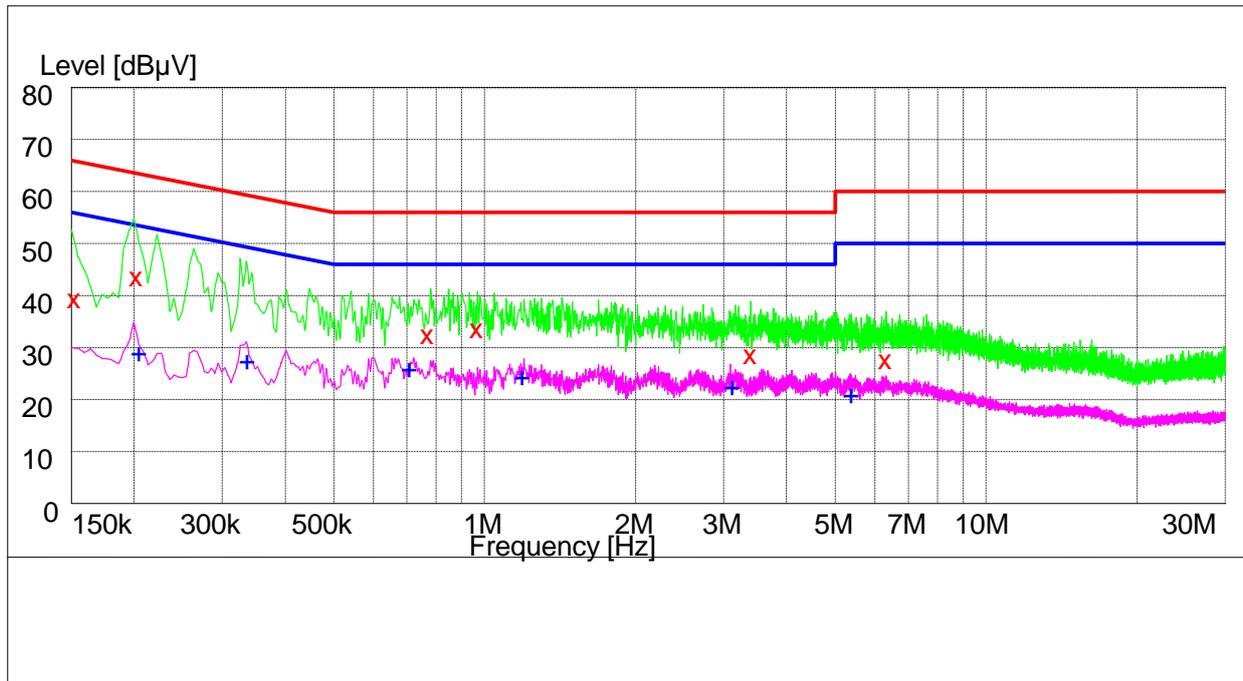
Frequency MHz	Level dBµV/m	Transducer dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarisation
6856.500000	41.90	2.1	74.0	32.1	332.0	253.00	HORIZONTAL
14474.000000	49.20	14.5	74.0	24.8	350.0	360.00	VERTICAL
17858.500000	51.10	19.1	74.0	22.9	350.0	171.00	HORIZONTAL

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBµV/m	Transducer dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarisation
6872.000000	29.50	2.3	54.0	24.5	350.0	63.00	VERTICAL
14515.500000	36.40	14.5	54.0	17.6	350.0	53.00	VERTICAL
17843.500000	38.40	19.0	54.0	15.6	350.0	13.00	VERTICAL

7.2 Conducted Disturbance

AC Port Test Data



MEASUREMENT RESULT: QP Detector

Frequency MHz	Level dBµV	Transducer dB	Limit dBµV	Margin dB	Line	PE
0.152000	41.00	10.1	66	25.0	N	FLO
0.202000	45.20	10.1	64	18.8	N	FLO
0.770000	33.90	10.1	56	22.1	N	FLO
0.966000	35.20	10.1	56	20.8	N	FLO
3.390000	30.10	10.2	56	25.9	N	FLO
6.302000	29.20	10.2	60	30.8	N	FLO

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBµV	Transducer dB	Limit dBµV	Margin dB	Line	PE
0.204000	30.50	10.1	53	22.5	N	FLO
0.336000	29.10	10.0	49	19.9	N	FLO
0.706000	27.40	10.1	46	18.6	N	FLO
1.186000	25.90	10.1	46	20.1	N	FLO
3.110000	24.00	10.2	46	22.0	N	FLO
5.368000	22.60	10.2	50	27.4	N	FLO

-----END-----