EMC Test Report

Product Name: HUAWEI Ascend Y 100;

HSDPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth;

Model Number: HUAWEI U8185-1, U8185-1

Report No: SYBH(Z-EMC)074022012-2

FCC ID:QISU8185-1

Reliability Laboratory of Huawei Technologies Co., Ltd.

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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.**
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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.**

Applicant:	Huawei Technologies Co., Ltd.
Address:	Huawei Base, Bantian, Longgang District, Shenzhen 518129, P.R. China
Date of Receipt Test Item:	Feb.15, 2012
Start Date of Test:	Feb.15, 2012
End Date of Test:	Feb.29, 2012
Test Result:	Pass

Approved By (Lab Manager)	**2012-02-29**	**Liuchunlin**	Liu Chunlin
	Date	**Name**	**Signature**
Operator	**2012-02-29**	**Xuchang**	Xu Chang
	Date	**Name**	**Signature**

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1 General Information

1.1 EUT Description

EUT Description	
Product Name	HUAWEI Ascend Y 100; HSDPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth;
Model Number	HUAWEI U8185-1, U8185-1
Serials Number	L8X01A9211800004
Working Voltage	120V/60Hz
TX Frequency	GSM850:824MHz To 849MHz; PCS1900:1850MHz To 1910MHz Bluetooth: 2400MHz To 2483.5MHz WIFI: 2400MHz To 2483.5MHz
RX Frequency	GSM850:869MHz To 894MHz; PCS1900:1930MHz To 1990MHz Bluetooth: 2400MHz To 2483.5MHz WIFI: 2400MHz To 2483.5MHz GPS: 1575.42MHz
HW Version	HD1U8185M
SW Version	U8185-1V100R001C00B805
EUT Accessory	
Data cable	Data Cable USB A Male to Micro Usb, Black
Adapter	Manufacturer: Huawei Technologies Co., Ltd. Model: HS-050040U6 Input voltage: ~100-240V 50/60Hz 0.2A Output voltage: 5V ⎓ 400mA Rated Power: 2W S/N:BYABA0884357 S/N:HKAB40533916
Adapter	Manufacturer: Huawei Technologies Co., Ltd. Model: HS-050040A6 Input voltage: ~100-240V 50/60Hz 0.2A Output voltage: 5V ⎓ 400mA Rated Power: 2W S/N:BYAB11903345
Adapter	Manufacturer: Huawei Technologies Co., Ltd. Model: HW-050055E1W Input voltage: ~100-240V 50/60Hz 0.2A Output voltage: 5V ⎓ 550mA Rated Power:2.75W S/N:HKABB2075282 S/N:TPAB22405819
Adapter	Manufacturer: Huawei Technologies Co., Ltd. Model: HW-050055B1W Input voltage: ~100-240V 50/60Hz 0.2A Output voltage: 5V ⎓ 550mA Rated Power:2.75W S/N:BYAA42103726 S/N:HKAB51557254

Rechargeable Li-ion	Manufacturer: Huawei Technologies Co., Ltd. Battery Model: HB4J1 Rated capacity: 1050mAh Nominal Voltage: ⎓ +3.7V Charging Voltage: ⎓ +4.2V S/N:BAABA18XC1883026 S/N:GAGB928XC3962604

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**
Radiated Emissions Enclosure Port	Mode1~ Mode2 Mode5 Mode7~ Mode8	CLASS B	Pass	Site1
Conducted Emissions ☐DC Power Port ☒AC Power Port ☐Telecommunication Ports	Mode1~ Mode4	CLASS B	Pass	Site1
Note: 1, Measurement taken is within the measurement uncertainty of measurement system. 2, ☒ The item has been tested; ☐ The item has not been tested.				

During the measurement, the environmental conditions complied with the range listed as below.

Item	**Required**
Ambient temperature	15°C～35°C
Relative humidity	30%～60%
Atmospheric pressure	86kPa～106kPa

3 System Configuration during EMC Test

3.1 Test Mode

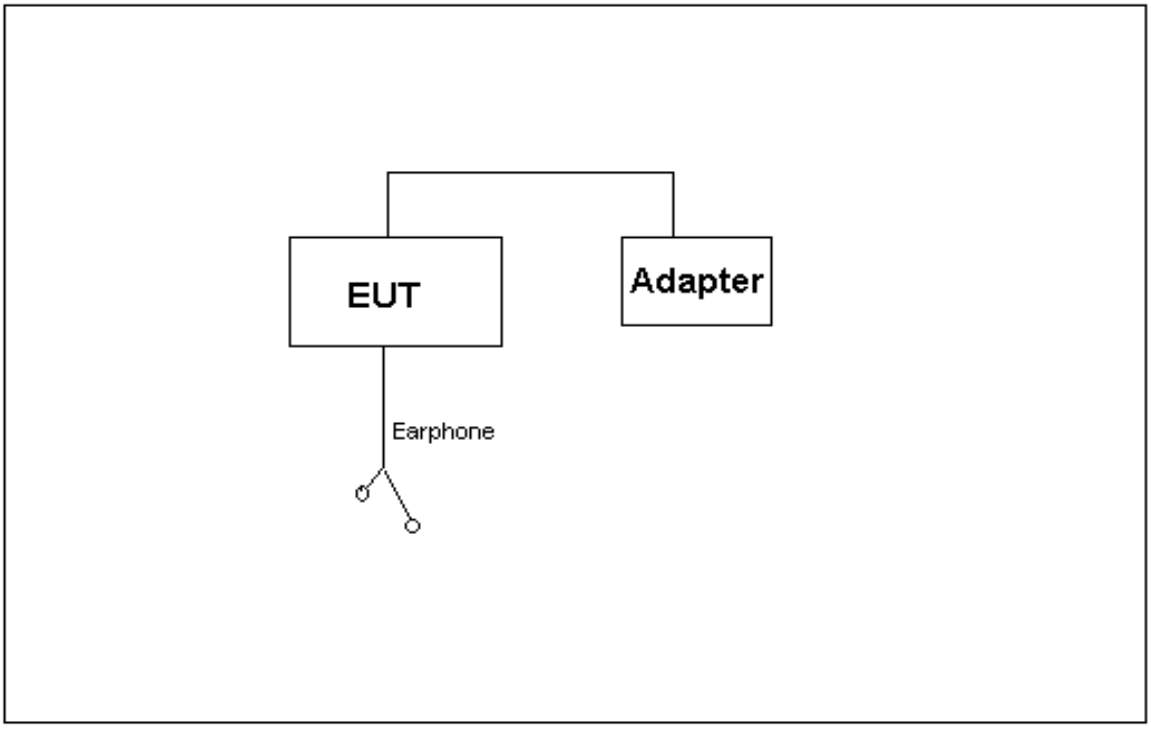
Huawei has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was in this test report and defined as:

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

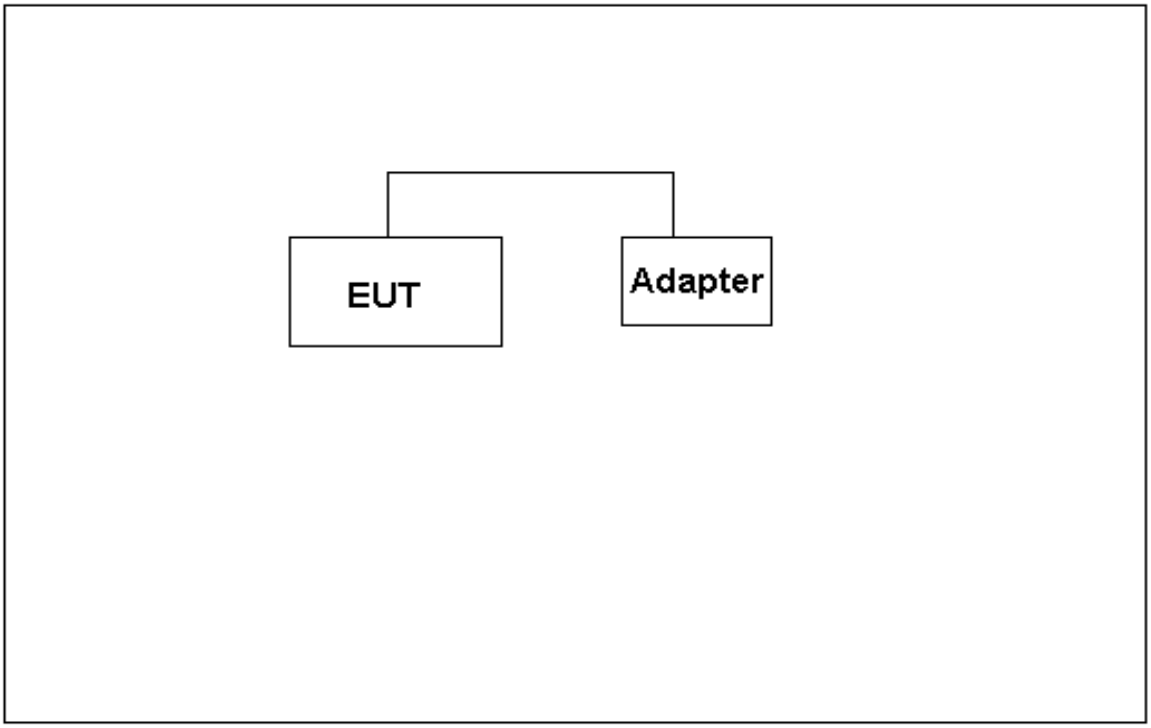
Remark：When the EUT have multiple adapters, need separate test with multiple adapters . All test modes are performed, only the worst cases are recorded in this report.

3.2 Configurations of Test System

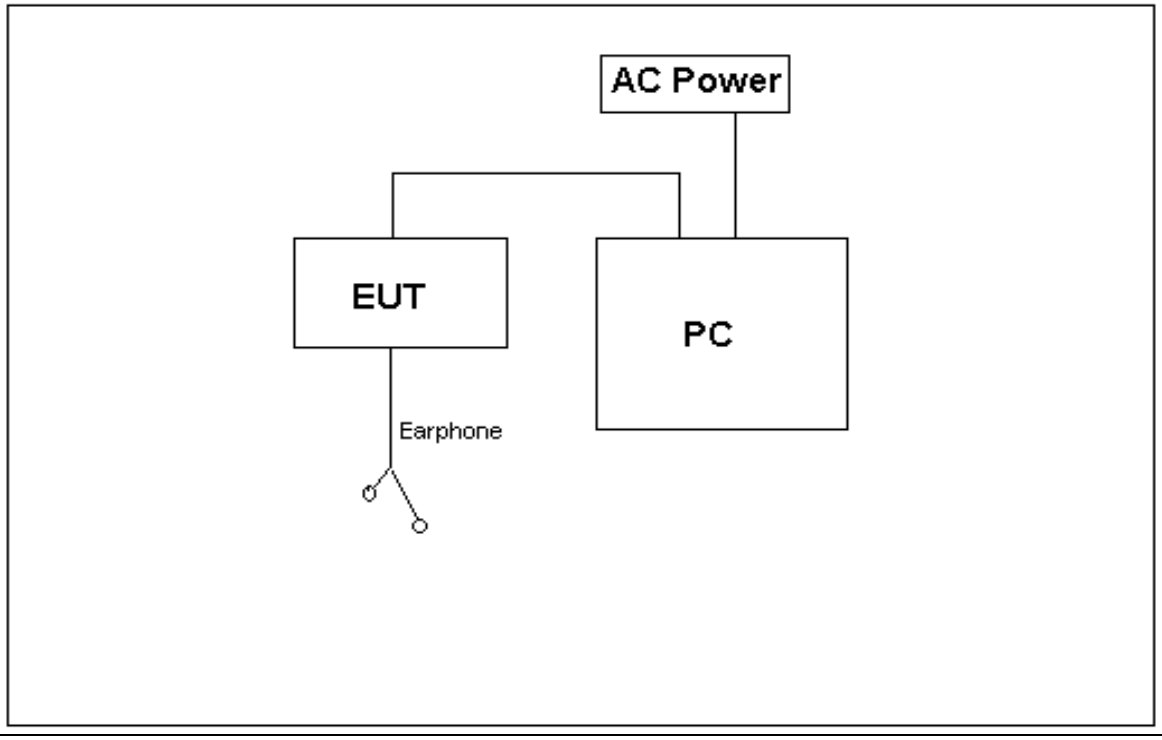
Connection Diagram (Mode 1~Mode 3)



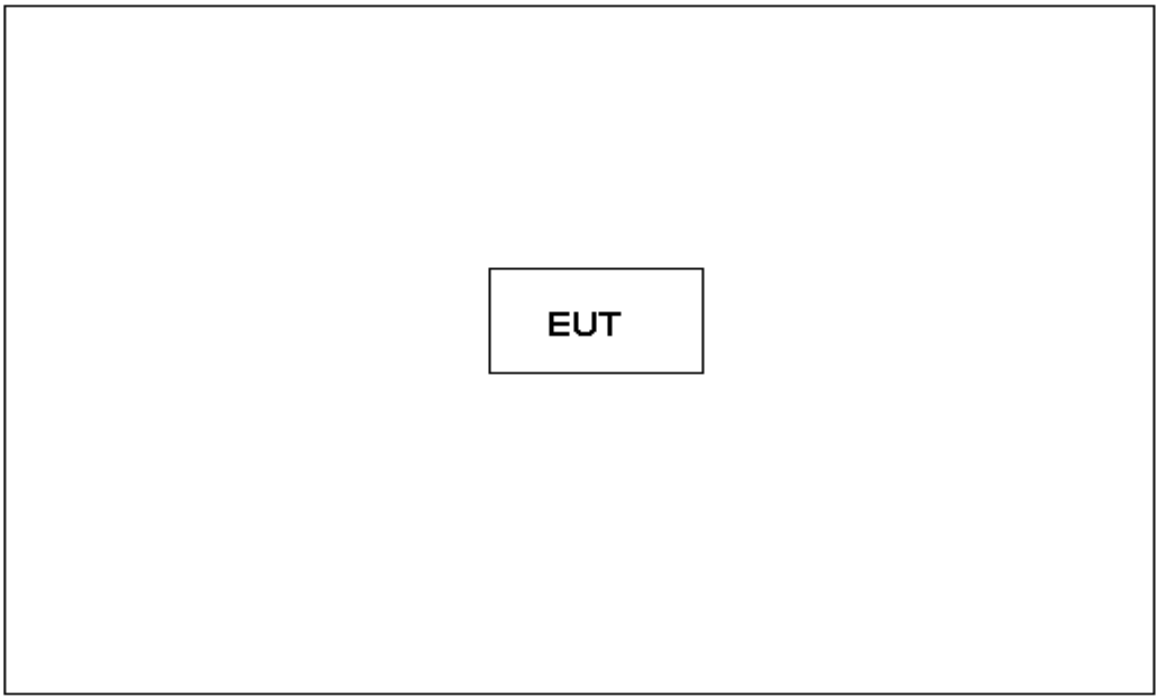
Connection Diagram (Mode 4)



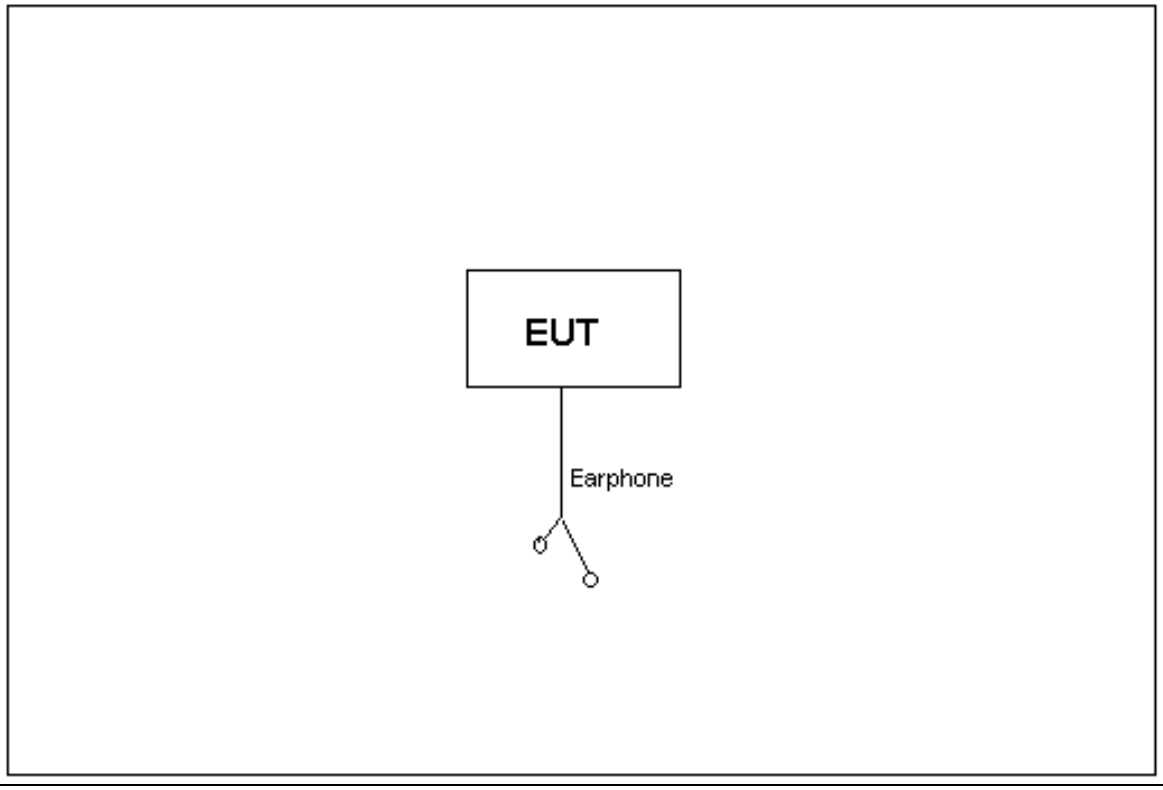
Connection Diagram (Mode 5)



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

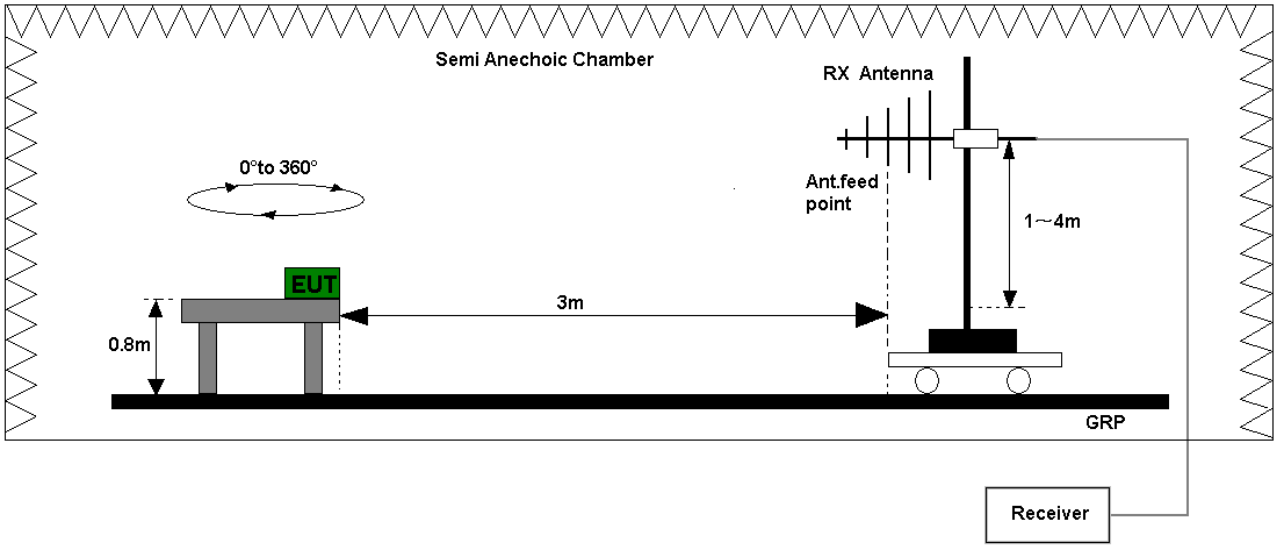
Test Procedure

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.

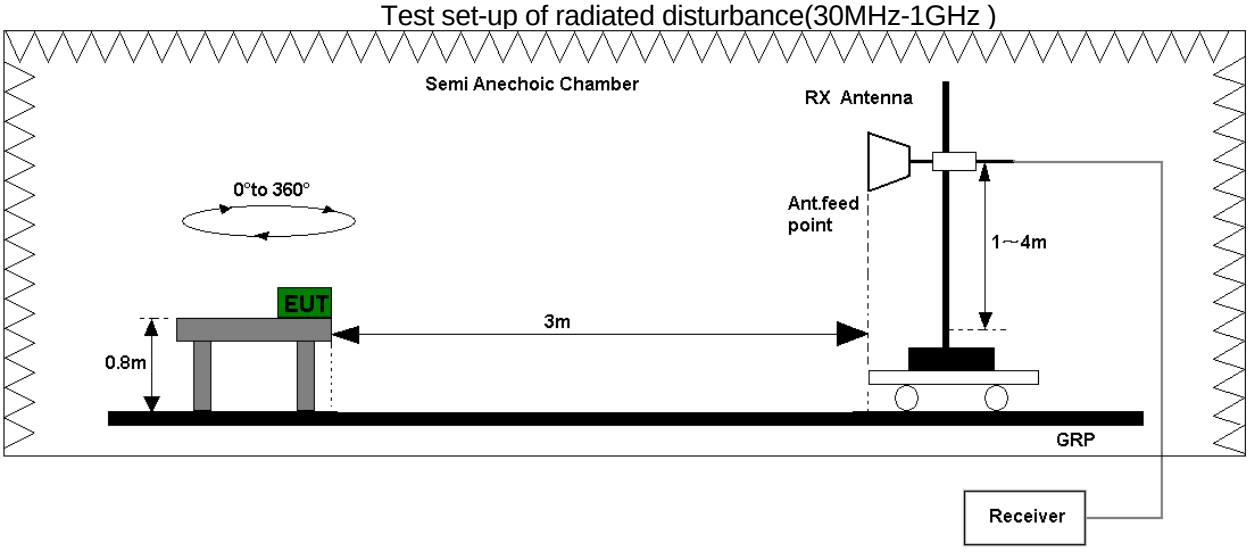
A preliminary scan and a final scan of the emissions were made from 30 MHz to18 GHz by using test script of software; the emissions were measured using Quasi-Peak Detector (30MHz~1GHz) and AV/PK detector (above 1GHz). The maximal emission value was acquired by adjusting the antenna height, polarisation 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



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



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.

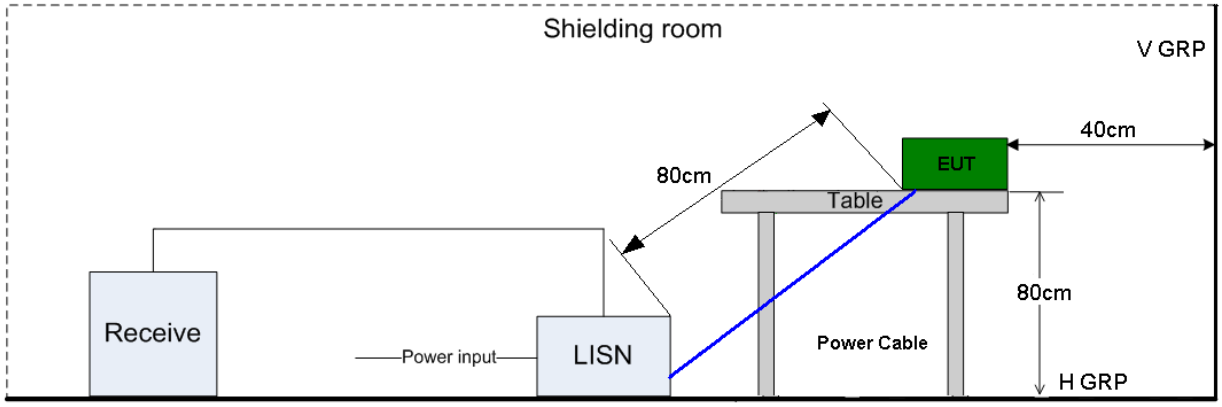
Test Limits				
Frequency of Emission (MHz)	Radiated Limit			
	Unit(μV/m)		Unit(dBμV/m)	
30-88	100		40	
88-216	150		43.5	
216-960	200		46	
Above 960	500		54	
Above 1000	AV	PK	AV	PK
	500	5000	54	74

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 150kz to 30 MHz: 9 kHz;
The EUT was setup in the screened chamber and operated under nominal conditions.

Test Setup



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

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:

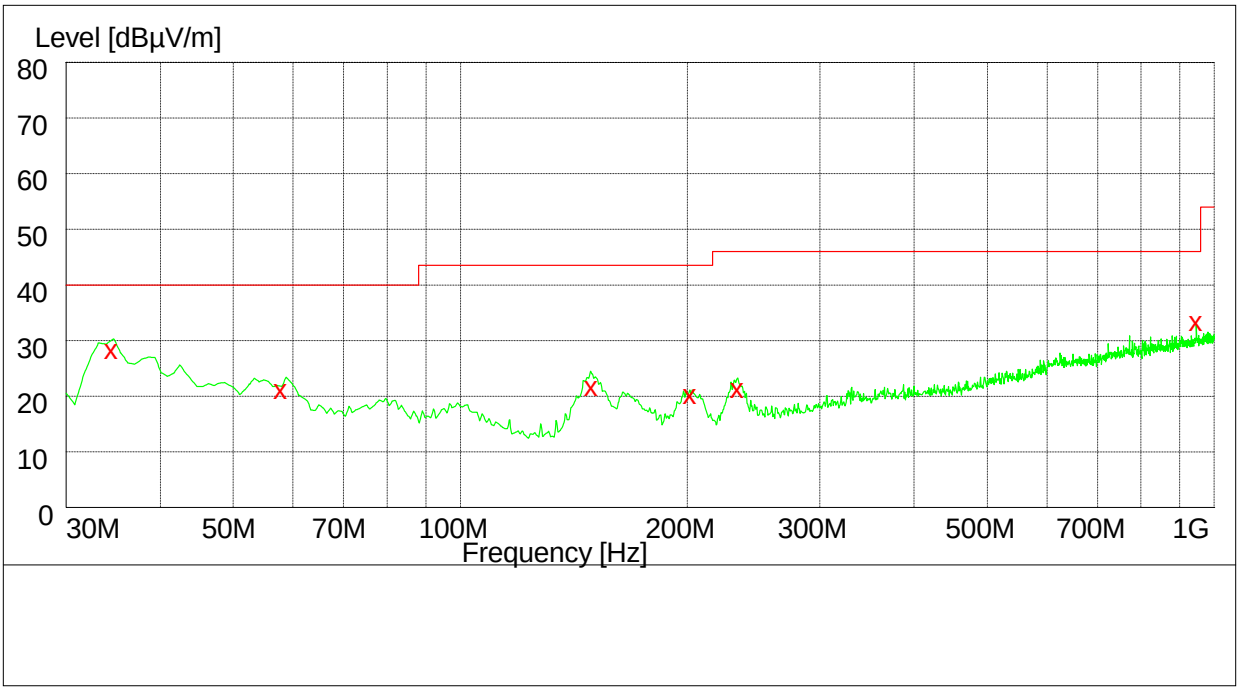
System Measurement Uncertainty		
Items		**Extended Uncertainty**
RE(30MHz-1GHz)	Field strength (dBμV/m)	U=4.1dB; k=2
RE(1GHz-18GHz)	Field strength (dBμV/m)	U=5.0dB; k=2
CE	Disturbance Voltage (dBμV)	U=2.5dB; k=2

7 Graph and Data of Test

Only the worst test result was shown in this report.

7.1 Radiated Disturbance

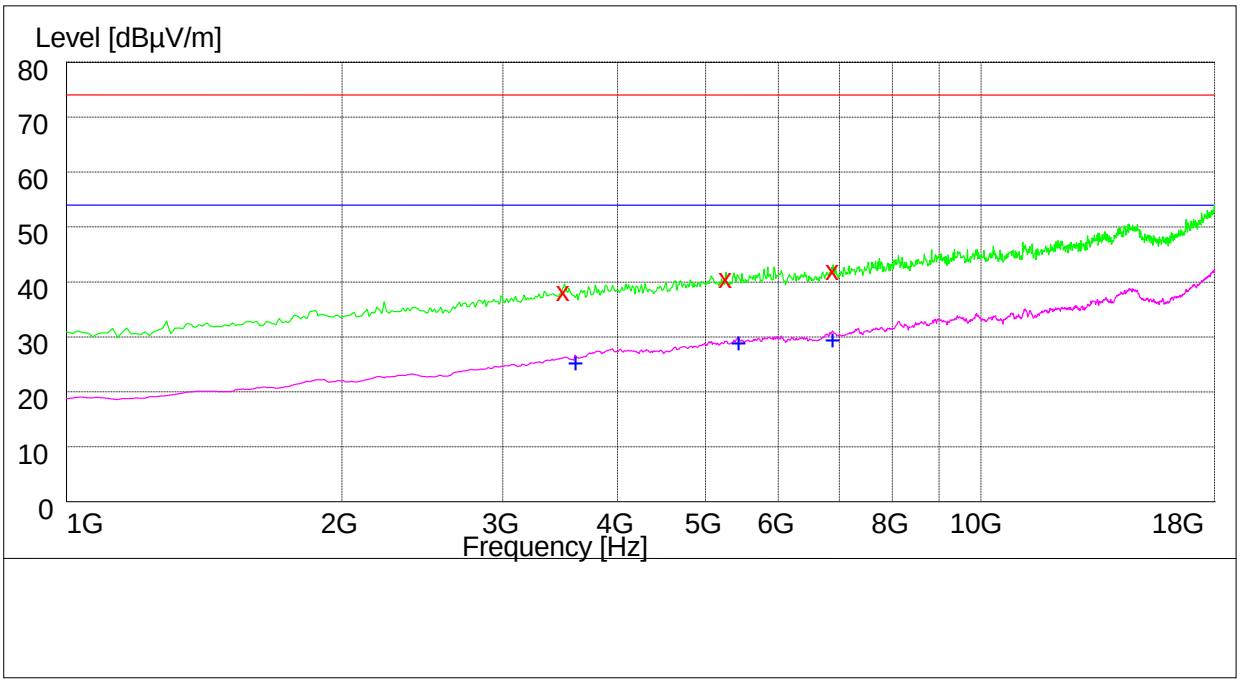
30MHz~1GHz



MEASUREMENT RESULT: QP Detector

Frequency MHz	Level dBµV/m	Transducer dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarisation
34.500000	28.30	14.9	40.0	11.7	100.0	234.00	VERTICAL
57.840000	21.20	13.8	40.0	18.8	100.0	235.00	VERTICAL
149.460000	21.70	9.8	43.5	21.8	100.0	1.00	VERTICAL
202.080000	20.20	12.4	43.5	23.3	100.0	345.00	VERTICAL
233.580000	21.40	13.6	46.0	24.6	137.0	73.00	HORIZONTAL
946.980000	33.40	25.1	46.0	12.6	127.0	258.00	HORIZONTAL

1GHz~18GHz



MEASUREMENT RESULT: PK Detector

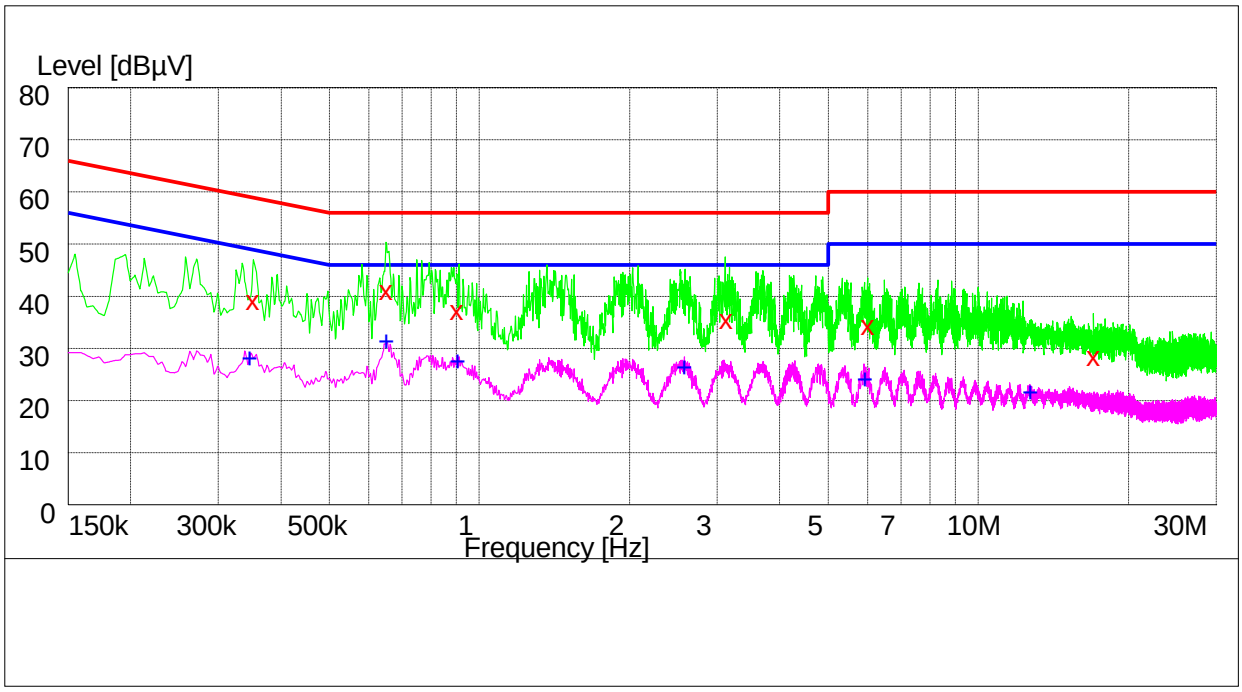
Frequency MHz	Level dBµV/m	Transducer dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarisation
3496.500000	37.40	-6.0	74.0	36.6	103.0	242.00	VERTICAL
5258.000000	39.80	-1.3	74.0	34.2	173.0	210.00	VERTICAL
6890.500000	41.30	2.4	74.0	32.7	103.0	47.00	VERTICAL

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBµV/m	Transducer dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarisation
3603.500000	24.30	-5.6	54.0	29.7	200.0	106.00	VERTICAL
5426.000000	28.00	-0.5	54.0	26.0	200.0	3.00	VERTICAL
6881.000000	28.50	2.3	54.0	25.5	100.0	166.00	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
0.352000	39.60	10.0	59	19.4	L1	FLO
0.652000	41.60	10.1	56	14.4	N	FLO
0.904000	37.70	10.1	56	18.3	N	FLO
3.130000	35.80	10.2	56	20.2	N	FLO
6.020000	34.80	10.2	60	25.2	L1	FLO
17.068000	28.80	10.3	60	31.2	L1	FLO

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBµV	Transducer dB	Limit dBµV	Margin dB	Line	PE
0.346000	28.60	10.0	49	20.4	N	FLO
0.650000	31.70	10.1	46	14.3	N	FLO
0.904000	27.90	10.1	46	18.1	N	FLO
2.568000	26.70	10.1	46	19.3	L1	FLO
5.916000	24.50	10.2	50	25.5	N	FLO
12.692000	21.90	10.3	50	28.1	L1	FLO

----------END----------