EMC Test Report

Product Name: HUAWEI Ascend Y 201 Pro; Skyline mini; HSDPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth

Model Number: HUAWEI U8666E-51,U8666E-51

Report No:SYBH(Z-EMC)048082012-2

FCC ID: QISU8666E-51

Reliability Laboratory of Huawei Technologies Co., Ltd.

Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C

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 passed the accreditation by The American Association for Laboratory Accreditation (A2LA). The accreditation number is 2174.01.**
3. **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.**
4. **The laboratory has been listed by industry Canada to perform electromagnetic emission measurement. The site recognition number is 6369A-2.**
5. **The test report is invalid if not marked with "exclusive stamp for the test report".**
6. **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.**
7. **The test report is invalid if there is any evidence of erasure and/or falsification.**
8. **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.**
9. **Normally, the test report is only responsible for the samples that have undergone the test.**
10. **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:	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C
Date of Receipt Test Item:	Aug.01, 2012
Start Date of Test:	Aug.02, 2012
End Date of Test:	Aug.07, 2012
Test Result:	Pass

Approved By (Lab Manager)	**2012-08-09**	**Liuchunlin**	Liu Chunlin
	Date	**Name**	**Signature**

Operator	**2012-08-09**	**Daniel**	Daniel
	Date	**Name**	**Signature**

Modification Record

No.	Last Report No.	Modification Description
1	NA	First report

TABLE OF CONTENT

1 General Information

1.1 EUT Description

EUT Description	
Product Name	HUAWEI Ascend Y 201 Pro; Skyline mini; HSDPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth
Model Number	HUAWEI U8666E-51, U8666E-51
Serials Number	V7D9MB1270500064
TX Frequency	GSM850:824MHz To 849MHz; WCDMA BAND V: 824MHz To 849MHz Bluetooth: 2400MHz To 2483.5MHz; WIFI: 2400MHz To 2483.5MHz;
RX Frequency	GSM850:869MHz To 894MHz; WCDMA BAND V: 869MHz To 894MHz Bluetooth: 2400MHz To 2483.5MHz; WIFI: 2400MHz To 2483.5MHz; GPS: 1574.4 MHz To 1576.44MHz;
HW Version	HD2U8655M
SW Version	U8666E-51V100R001C451B927
EUT Accessory	
Data cable	Data Cable USB A Male to Micro USB
Adapter	BRAND: HUAWEI Model: HW-050100U1W Input voltage: ~100-240V 50/60Hz 0.2A Output voltage: 5V ⎓ 1A Rated Power: 5W S/N: TPABA2691527 S/N: HKAB90427375
Adapter	BRAND: HUAWEI Model: HW-050100A1W Input voltage: ~100-240V 50/60Hz 0.2A Output voltage: 5V ⎓ 1A Rated Power: 5W S/N: HKAC12954752
Adapter	BRAND: HUAWEI Model: HW-050100E1W Input voltage: ~100-240V 50/60Hz 0.2A Output voltage: 5V ⎓ 1A Rated Power: 5W S/N: HKABC1416196 S/N: TPAC11469437
Adapter	BRAND: HUAWEI Model: HW-050100B1W Input voltage: ~100-240V 50/60Hz 0.2A Output voltage: 5V ⎓ 1A Rated Power: 5W S/N: TPAC31060335 S/N: BYAC31505376
Rechargeable Li-ion	BRAND: HUAWEI

	Battery Model: HB5K1H Rated capacity: 1400mAh Nominal Voltage: ⎓ +3.7V Charging Voltage: ⎓ +4.2V S/N: WHCB726HI3114378 S/N: MHCBB066I4435257 S/N: UNDC418X03000233 S/N: UAIC308X03022532

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

1.2 Test Site Information

Site 1:	RELIABILITY LABORATORY OF HUAWEI TECHNOLOGIES CO., LTD.
Test Site Location:	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C

1.3 Applied Standards

APPLIED STANDARD

47 CFR FCC Part 15:2011, 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 Mode4 Mode6 Mode8~ Mode10	CLASS B	Pass	Site1
Conducted Emissions ☐ DC Power Port ☒ AC Power Port ☐ Telecommunication Ports	Mode1~ Mode5	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	25%～75%
Atmospheric pressure	86kPa～106kPa

3 System Configuration during EMC Test

3.1 Test Mode

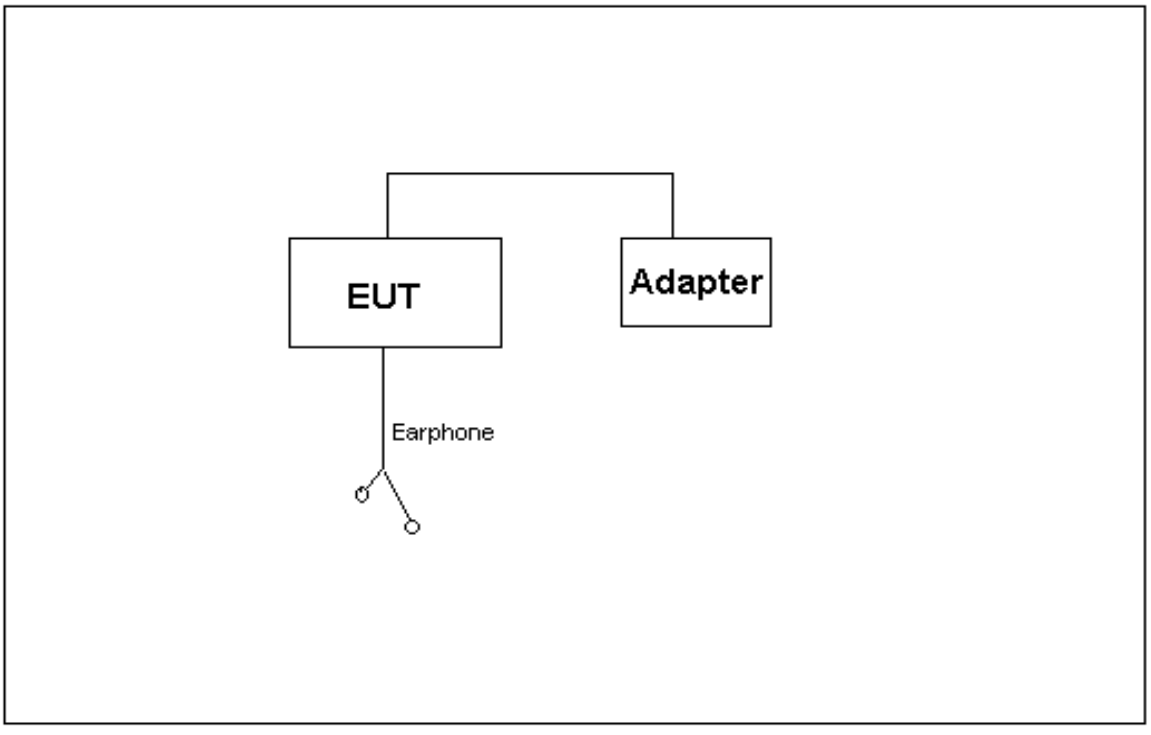
Huawei has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was in this test report and defined as:

Test Mode	
Mode 1:	Adapter + earphone + Camera On + Idle
Mode 2:	Adapter + earphone + MP3 + Idle
Mode 3:	Adapter + earphone +Traffic
Mode 4:	Adapter + earphone + FM + Idle
Mode 5:	Adapter +Traffic
Mode 6:	USB Copy(EUT with PC) + earphone + Idle
Mode 7:	Traffic
Mode 8:	Camera On + earphone + Idle
Mode 9:	Earphone + MP3 + Idle
Mode 10:	Earphone + FM + Idle

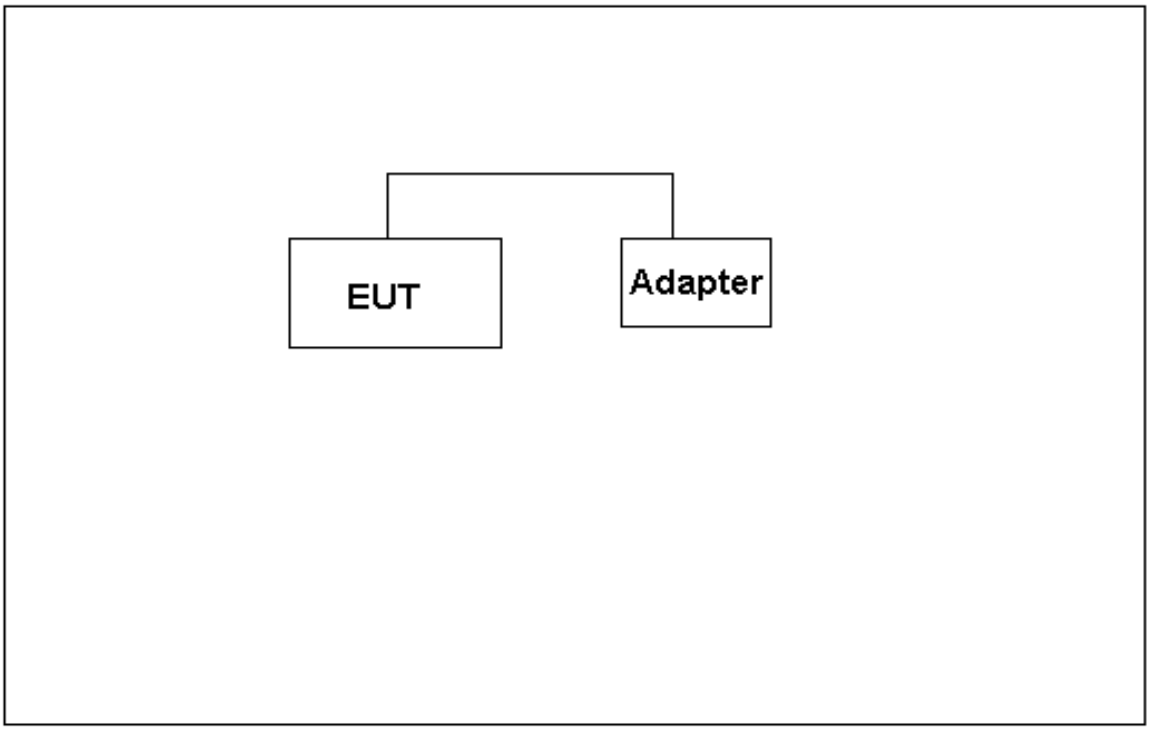
Remark: When the EUT have multiple adapters, need separate test with multiple adapters. All test modes are performed, only the worst cases are recorded in this report.

3.2 Test System Configuration

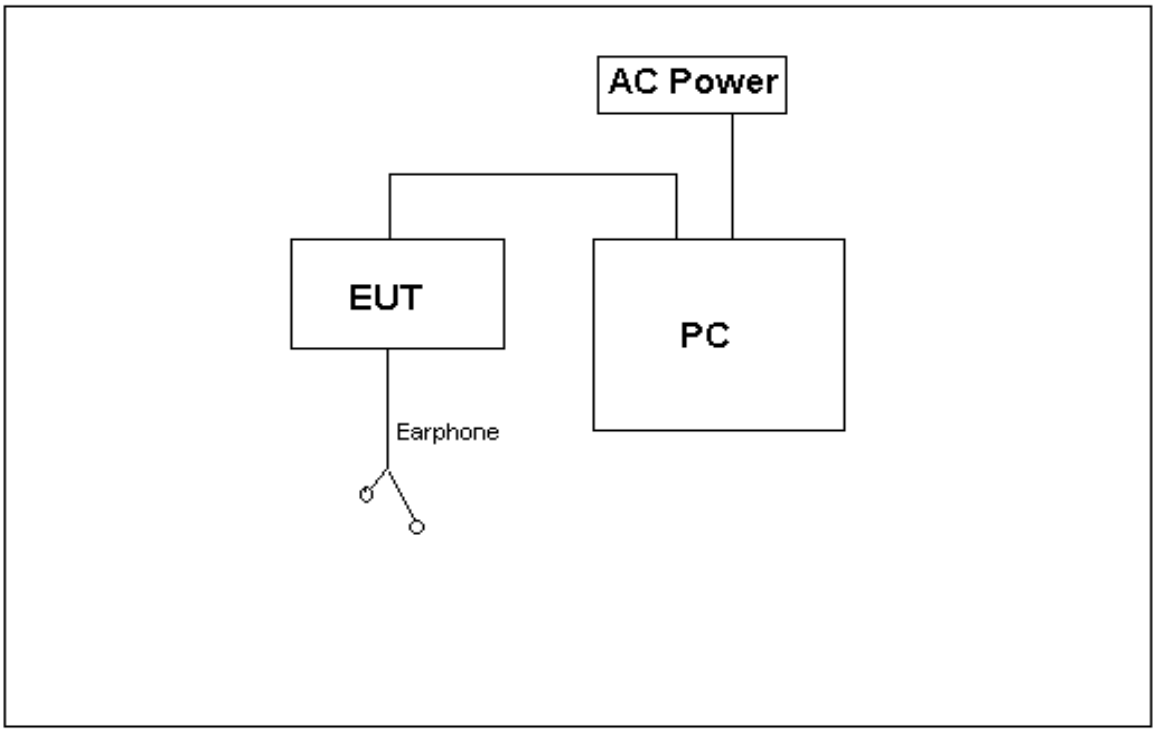
Connection Diagram (Mode 1~Mode 4)



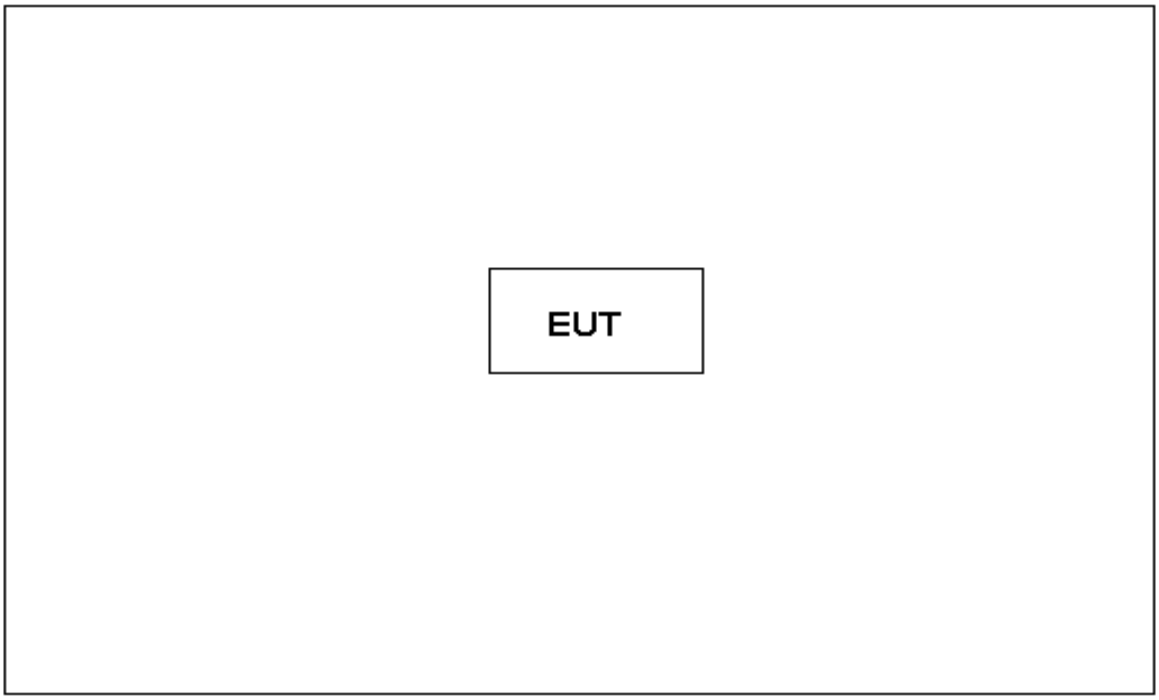
Connection Diagram (Mode 5)



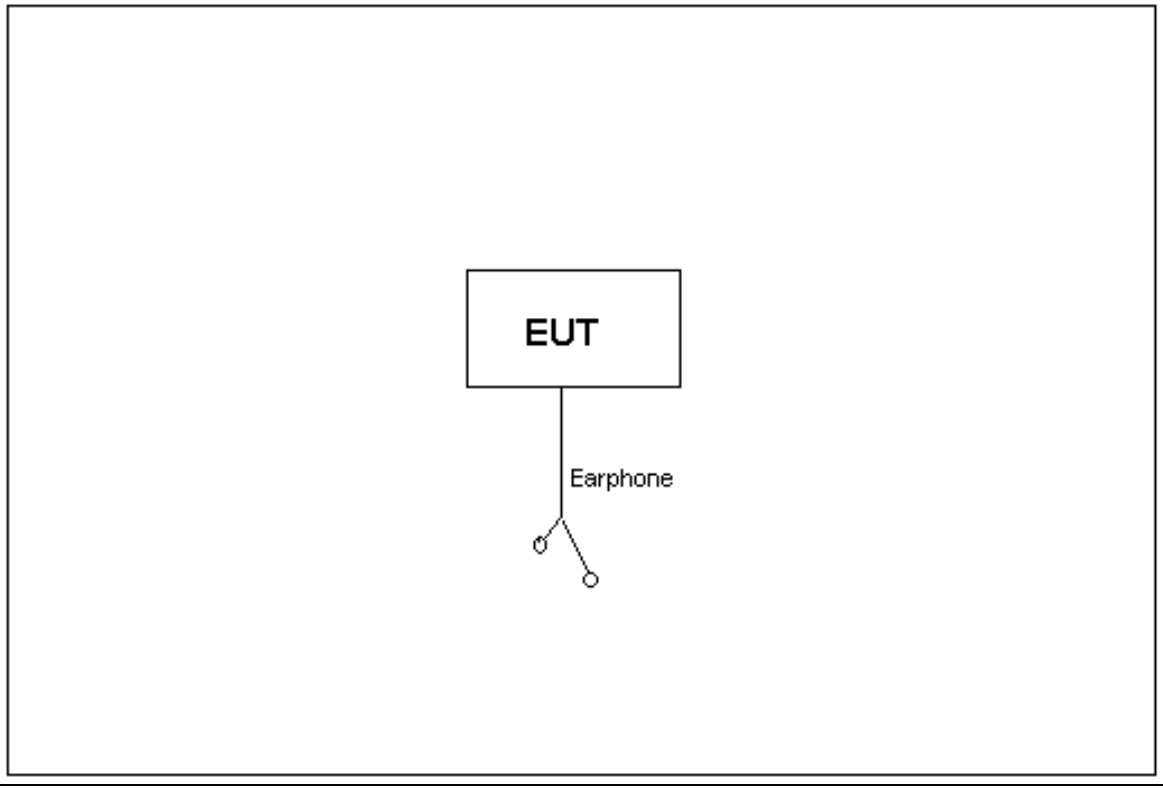
Connection Diagram (Mode 6)



Connection Diagram (Mode 7)



Connection Diagram (Mode 8~Mode 10)



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	Calibrated Deadline	Cal interval (month)
Radio Communication Tester	CMU200	R&S	3608105673	2012-11-06	12
Notebook	X200	ThinkPad	31090403588	/	/

4 Electromagnetic Interference (EMI)

4.1 Radiated Disturbance 30MHz to 18GHz

4.1.1 Test Procedure

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4dB according to the standards: ANSI C63.4-2009. The test distance was 3m.The set-up and test methods were according to ANSI C63.4-2009.
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 receiving antenna has two polarizations V and H.
Measurement bandwidth (RBW) for 30MHz to 1000 MHz: 120 kHz;
Measurement bandwidth (RBW) for 1000MHz to 18000 MHz: 1MHz;
EUT was configured in idle mode and the test performed at worst emission state.

4.1.2 Test setup

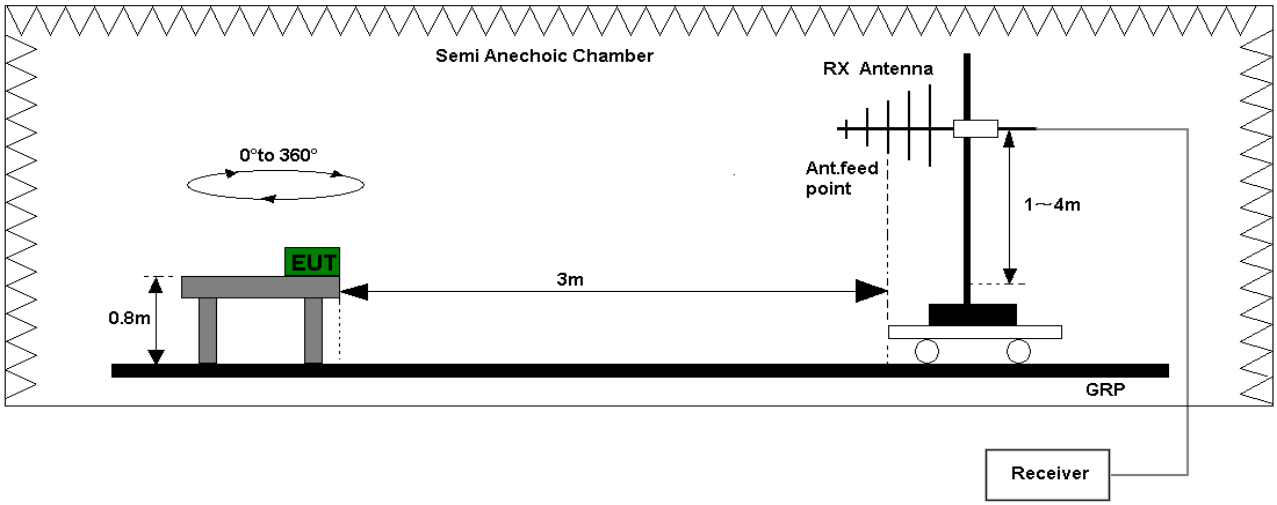


Figure 1.Test set-up of radiated disturbance(30MHz-1GHz)

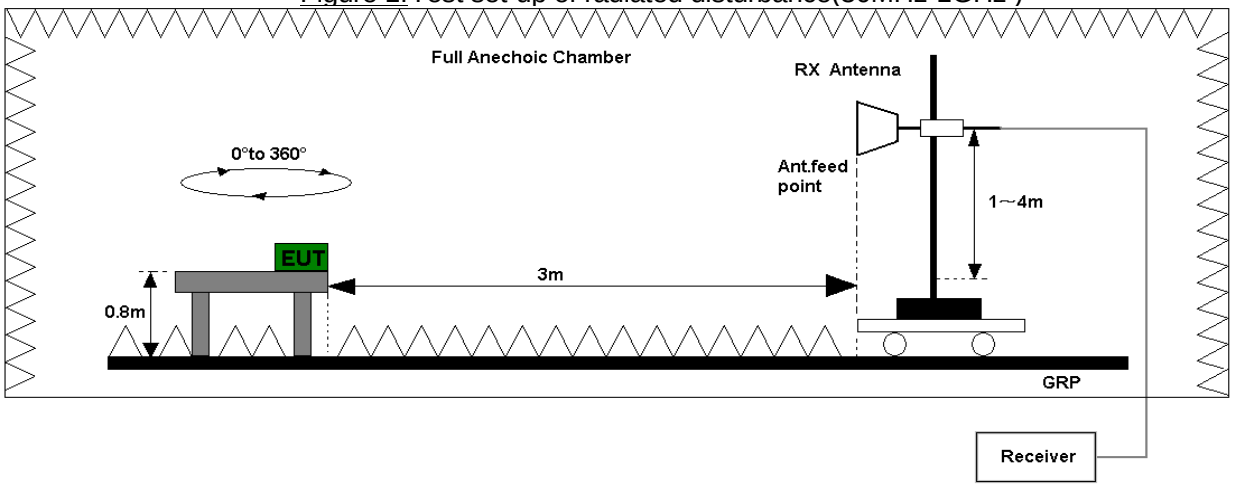


Figure 2.Test set-up of radiated disturbance(above 1GHz)

4.1.3 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

4.1.4 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 away from LISN. The set-up and test methods were according to ANSI C63.4-2009. 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 150 kHz to 30 MHz: 9 kHz;
The EUT was set in the shielded chamber and operated under nominal conditions.

4.1.5 Test Setup

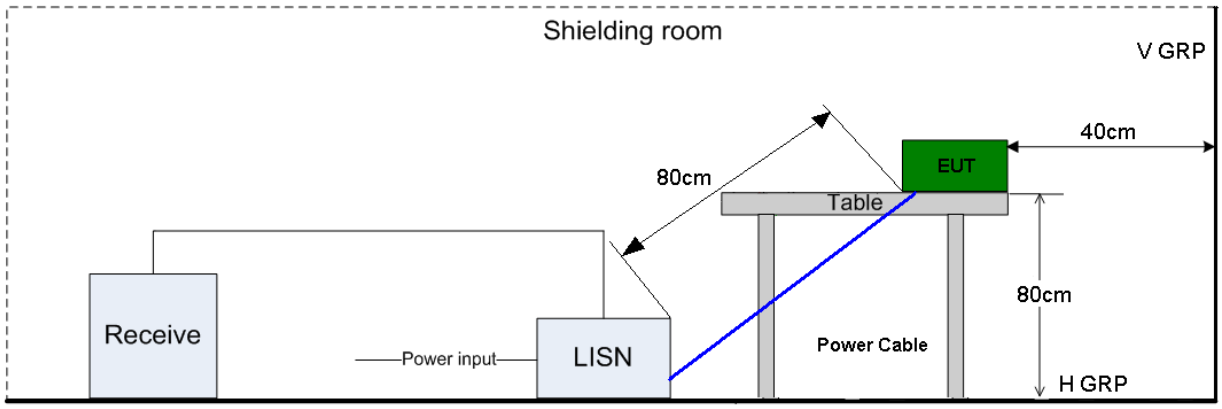


Figure 3. Test Set-up of conducted disturbance

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

5 Main Test Instruments

Main Test Equipments						
Test item	**Test Instrument**	**Model**	**S/N**	**Manufacturer**	**Calibrated Deadline**	**Cal interval (month)**
RE	EMI Test receiver	ESU26	100150	R&S	May.27, 2013	12
	Broadband Antenna	VULB 9163	9163-941	SCHWARZBECK	Jul.07, 2013	24
	Horn Antenna	HF906	100683	R&S	May.15, 2013	24
CE	EMI Test receiver	ESCI	101163	R&S	Mar. 05, 2013	12
	Artificial Mains Network	ENV216	100382	R&S	Mar.21, 2013	12

Software Information			
Test Item	Software Name	Manufacturer	Version
RE	ES-K1	R&S	1.7.1
CE	EMC32	R&S	V8.52.0

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:

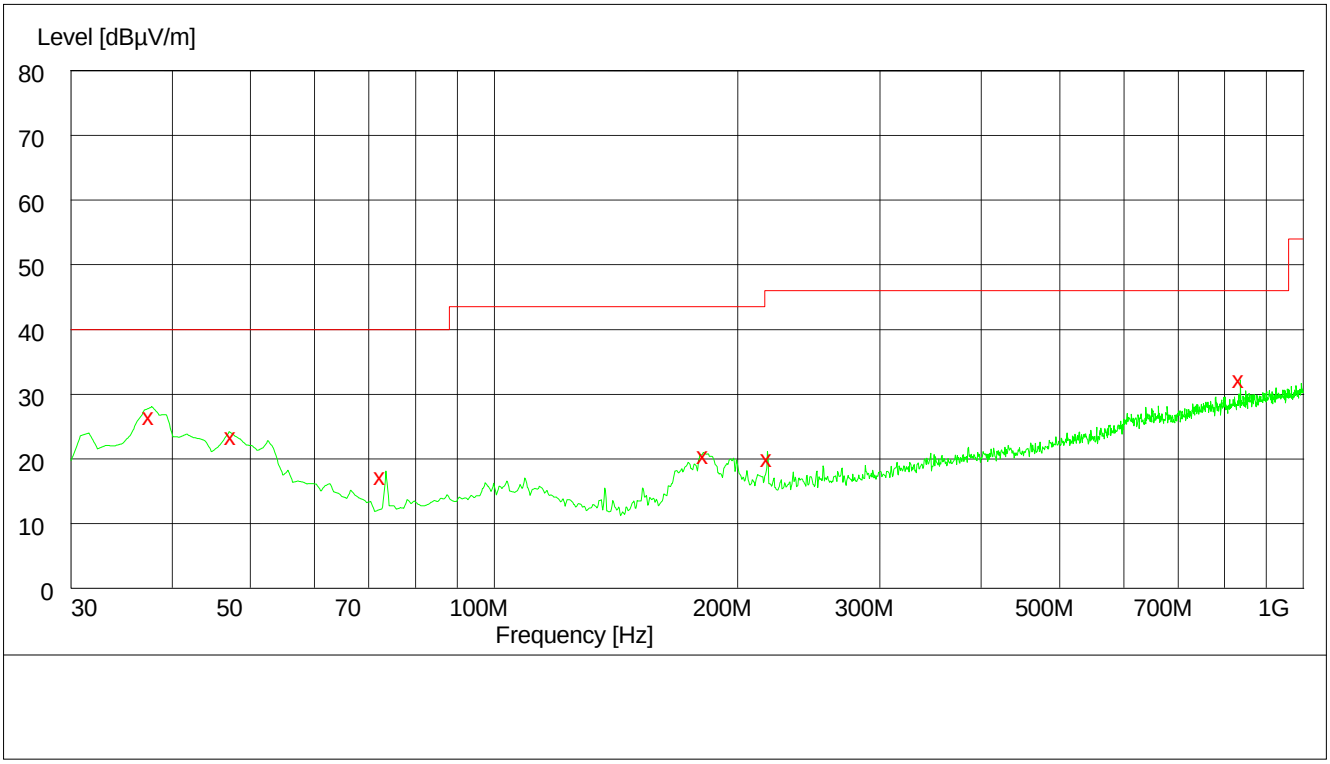
System Measurement Uncertainty		
Items		**Extended Uncertainty**
RE(30MHz-1GHz)	Field strength (dBμV/m)	U=4.1dB; k=2
RE(1GHz-18GHz)	Field strength (dBμV/m)	U=5.1dB; k=2
CE	Disturbance Voltage (dBμV)	U=2.6dB; k=2

7 Test Data and Graph

Only the worst test result was shown in this report.

7.1 Radiated Disturbance

30MHz~1GHz

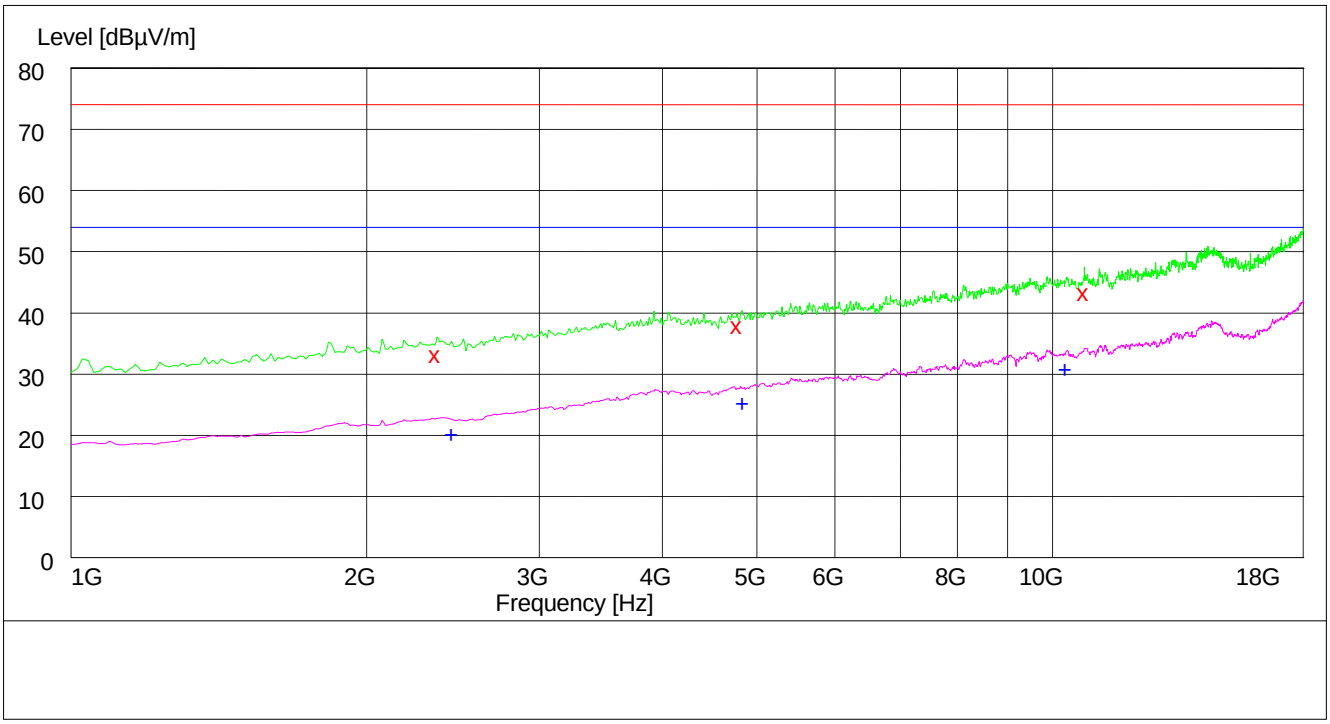


MEASUREMENT RESULT: QP Detector

Frequency MHz	Level dBµV/m	Transducer dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarisation
37.620000	26.30	15.2	40.0	13.7	120.0	84.00	VERTICAL
47.520000	23.20	15.0	40.0	16.8	101.0	136.00	VERTICAL
72.660000	17.00	10.7	40.0	23.0	200.0	42.00	HORIZONTAL
182.160000	20.30	11.4	43.5	23.2	179.0	320.00	HORIZONTAL
218.220000	19.70	12.8	46.0	26.3	148.0	119.00	HORIZONTAL
836.640000	32.00	24.0	46.0	14.0	142.0	83.00	VERTICAL

Note:
Level =Reading level by receiver + Transd (Antenna factor + cable loss – preamplifier gain)
The reading level is used to calculate by software which is not shown in the sheet.

1GHz~18GHz



MEASUREMENT RESULT: PK Detector

Frequency MHz	Level dBµV/m	Transducer dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarisation
2360.000000	33.80	-10.7	74.0	40.2	100.0	96.00	HORIZONTAL
4785.300000	38.50	-2.7	74.0	35.5	100.0	138.00	VERTICAL
10783.400000	44.00	8.9	74.0	30.0	100.0	298.00	HORIZONTAL

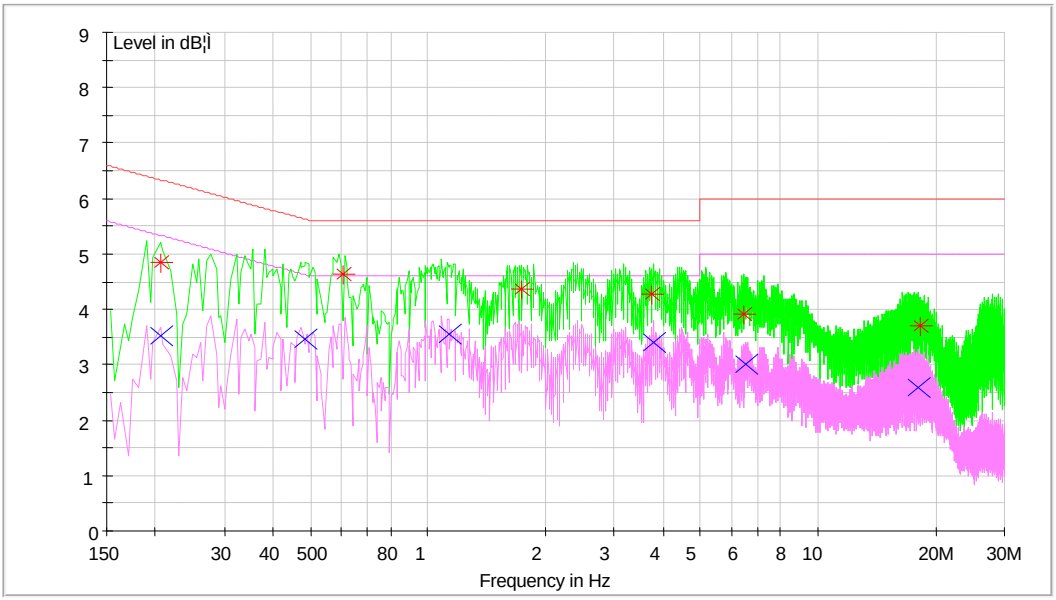
MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBµV/m	Transducer dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarisation
2448.200000	20.70	-10.5	54.0	33.3	100.0	95.00	HORIZONTAL
4845.300000	25.80	-2.6	54.0	28.2	100.0	359.00	HORIZONTAL
10334.600000	31.40	8.4	54.0	22.6	100.0	242.00	HORIZONTAL

Note:
Level =Reading level by receiver + Transd (Antenna factor + cable loss – preamplifier gain)
The reading level is used to calculate by software which is not shown in the sheet.

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	48.5	9.7	63.4	14.9	N	FLO
0.608000	46.2	9.7	56.0	9.8	N	FLO
1.728000	43.6	9.7	56.0	12.4	N	FLO
3.748000	42.9	9.7	56.0	13.1	N	FLO
6.416000	39.1	9.8	60.0	20.9	N	FLO
18.236000	37.0	10.1	60.0	23.0	N	FLO

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.206000	35.2	9.7	53.4	18.2	N	FLO
0.484000	34.7	9.7	46.3	11.6	N	FLO
1.140000	35.6	9.7	46.0	10.4	N	FLO
3.800000	34.0	9.7	46.0	12.0	N	FLO
6.532000	30.0	9.8	50.0	20.0	N	FLO
17.984000	26.0	10.1	50.0	24.0	N	FLO

Note:
Level= Reading level+ Transd (cable loss + correction factor)
The reading level is used to calculate by software which is not shown in the sheet.

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