EMC Test Report

Product Name: UMTS Smart Phone

Model Number: HUAWEI Y340-U081, Y340-U081

Report No: SYBH(Z-EMC)109072013-2

FCC ID: QISY340-U081

Reliability Laboratory of Huawei Technologies Co., Ltd.

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

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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 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.**
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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:	Jul.26, 2013
Start Date of Test:	Jul.29, 2013
End Date of Test:	Aug.02, 2013
Test Result:	Pass

Approved By (Lab Manager)	**2013-08-03**	**Liu Chunlin**	Liu Chunlin
	Date	**Name**	**Signature**
Operator (Test Engineer)	**2013-08-03**	**Su Yuguang**	Su Yuguang
	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	UMTS Smart Phone
Model Number	HUAWEI Y340-U081, Y340-U081
TX Frequency	GSM850: 824MHz To 849MHz GSM1900:1850 MHz To 1910MHz WCDMA II: 1850 MHz To 1910MHz WCDMA IV: 1713 MHz To 1753MHz WCDMA V: 824MHz To 849MHz Bluetooth: 2402MHz To 2480MHz WIFI: 2412MHz To 2462MHz
RX Frequency	GSM850: 869MHz To 894MHz GSM1900:1930 MHz To 1990MHz WCDMA II: 1930 MHz To 1990MHz WCDMA IV: 2113 MHz To 2153MHz WCDMA V: 869MHz To 894MHz Bluetooth: 2402MHz To 2480MHz WIFI: 2412MHz To 2462MHz GPS: 1575.42MHz
S/N	L2Q01A9370900095
HW Version	HU1Y340U081M
SW Version	Y340-U081 V100R001USAC189B129
EUT Accessory	
Data cable	Data Cable USB A Male to Micro USB, shielded
Adapter	Brand: HUAWEI Model: HW-050100U2W Input voltage: ~100-240V 50/60Hz 0.2A Output voltage: 5V ⎓ 1A Rated Power: 5W S/N: HWBYAAD52501558; S/N:HWHKAAD60303149
Adapter	Brand: HUAWEI Model: HW-050100E2W Input voltage: ~100-240V 50/60Hz 0.2A Output voltage: 5V ⎓ 1A Rated Power: 5W S/N: HWBYAYD71500020; S/N:HWHKAAD70729408
Adapter	Brand: HUAWEI Model: HW-050100Z2W Input voltage: ~100-240V 50/60Hz 0.2A Output voltage: 5V ⎓ 1A Rated Power: 5W S/N: HWTPAAYMDDSSSSS; S/N:HWHKAAD61900019
Adapter	Brand: HUAWEI Model:SC141HWD Input voltage: ~100-240V 50/60Hz 0.2A Output voltage: 5V ⎓ 1A Rated Power: 5W S/N: 4513W27200009SC1418IH2

Rechargeable Li-ion	Brand: HUAWEI Battery Model: HB5V1HV Rated capacity: 1950mAh Nominal Voltage: ⎓ +3.8V Charging Voltage: ⎓ +4.35V S/N: YDCD518916923581; S/N: YAICQ13XXXX00405 S/N: UQCD205816985983; S/N: UQID201324536537

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:	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 15:2012, Subpart B

2 Summary of Results

Summary of Results				
Test Items	**Test Mode**	**Performance Class & Required Performance Criteria**	**Result**	**Site**
Radiated Emissions Enclosure Port	Mode 1~ Mode 2 Mode 5~ Mode 7	CLASS B	Pass	Site1
Conducted Emissions ☒AC Power Port	Mode 1~ Mode 4	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 below:

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:	Data Transmitting + earphone + Idle
Mode 6:	Camera On + earphone + Idle
Mode 7:	MP3 +Earphone + Idle

Remark:

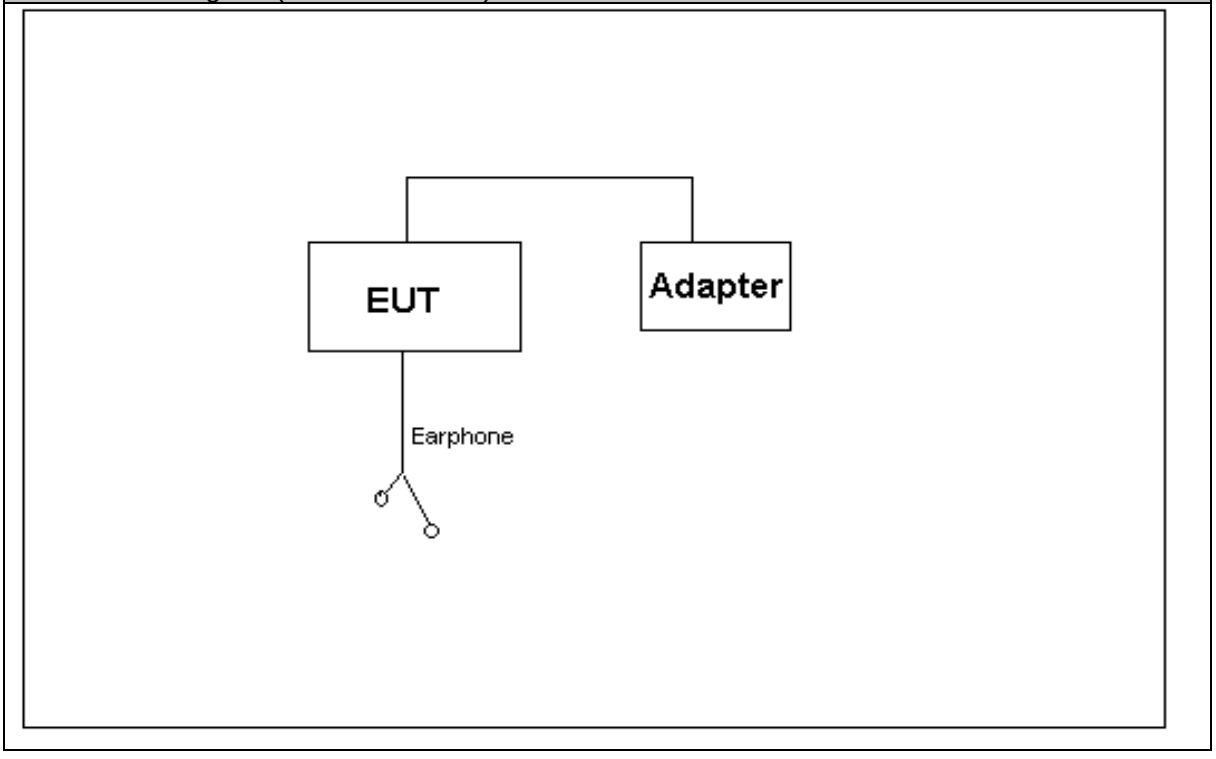
1) If there is one kind of accessories with different models, each one should be applied throughout the compliance test respectively, however, only the worst case will be recorded in this report.
2) If EUT has more than one typical operation, only the worst test mode will be recorded in this report.

Traffic Mode:
When the EUT state is switched on and with Radio Resource Control (RRC) connection established.

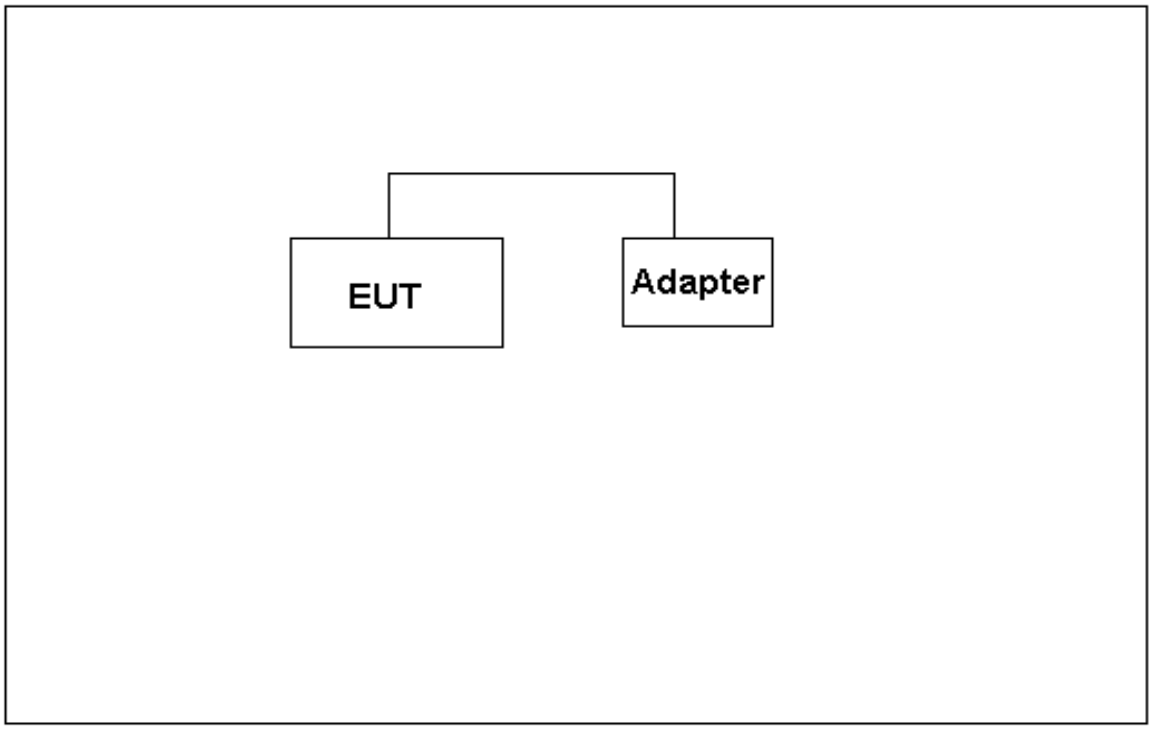
Idle Mode:
When the EUT state is switched on but without Radio Resource Control (RRC) connection.

3.2 Test System Configuration

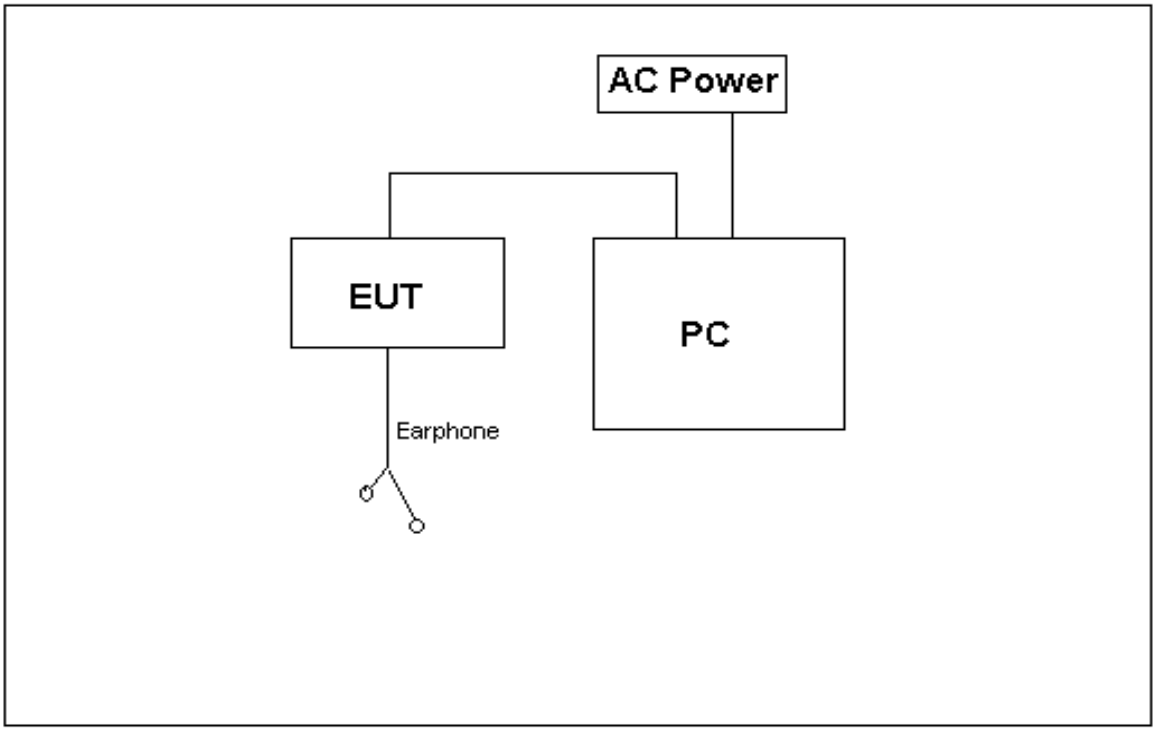
Connection Diagram (Mode 1~Mode 3)



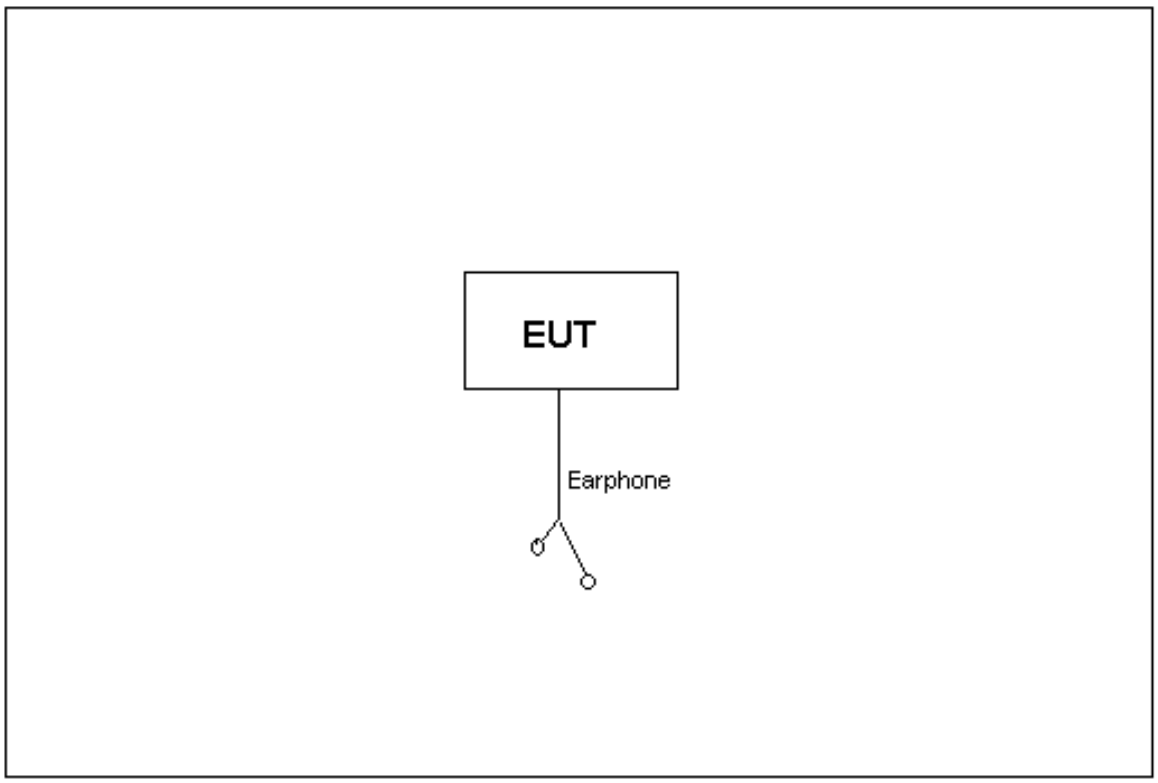
Connection Diagram (Mode 4)



Connection Diagram (Mode 5)



Connection Diagram (Mode 6~Mode 7)



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	2013-12-22	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

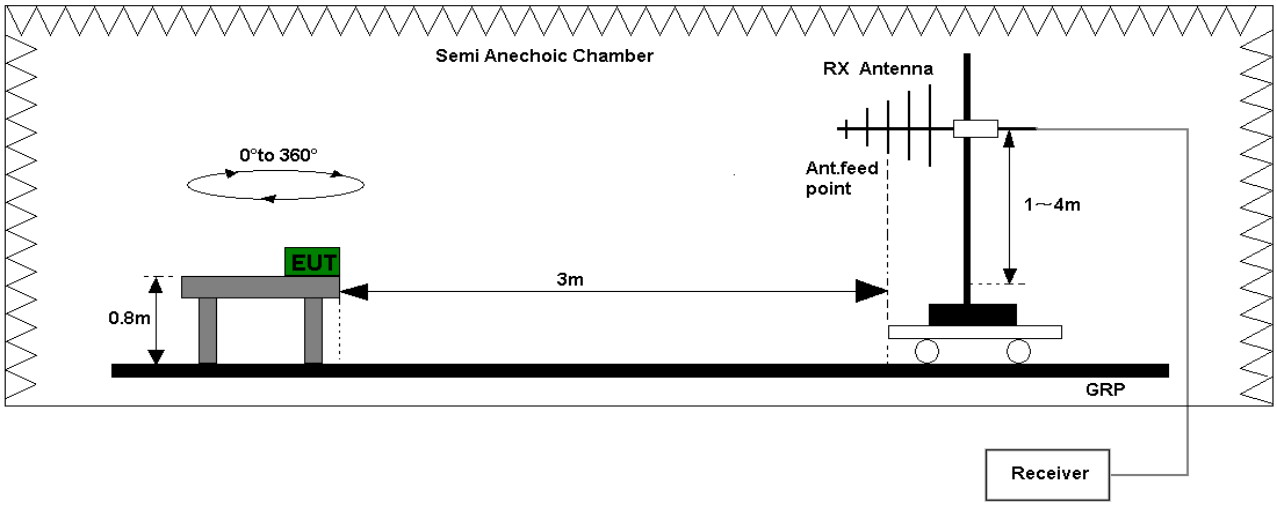


Figure 1.Test set-up of radiated disturbance(30MHz-1GHz)

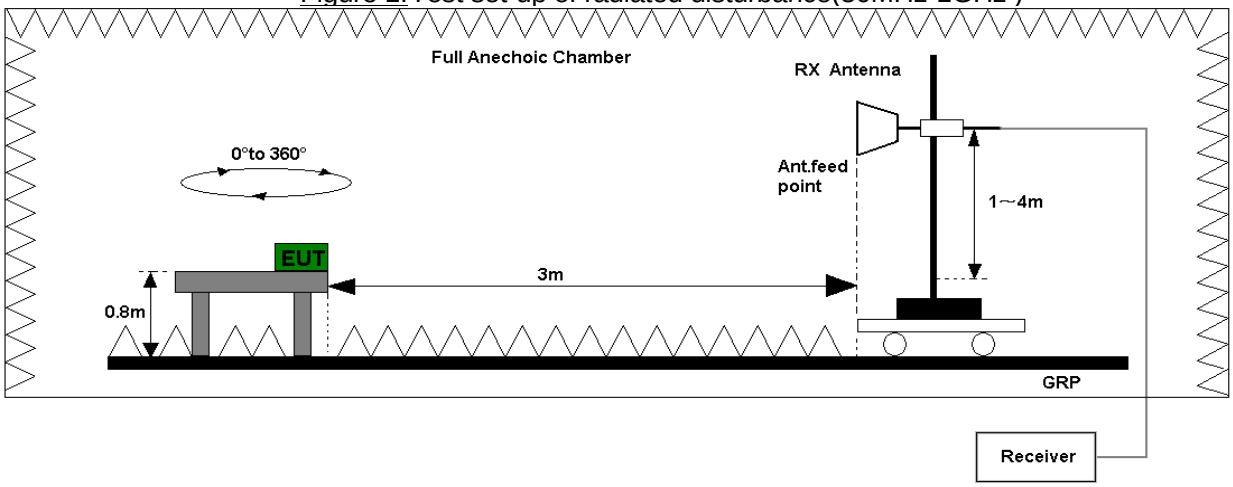


Figure 2.Test set-up of radiated disturbance(above 1GHz)

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

4.2 Conducted Disturbance 0.15 MHz to 30MHz

4.2.1 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.

4.2.2 Test Setup

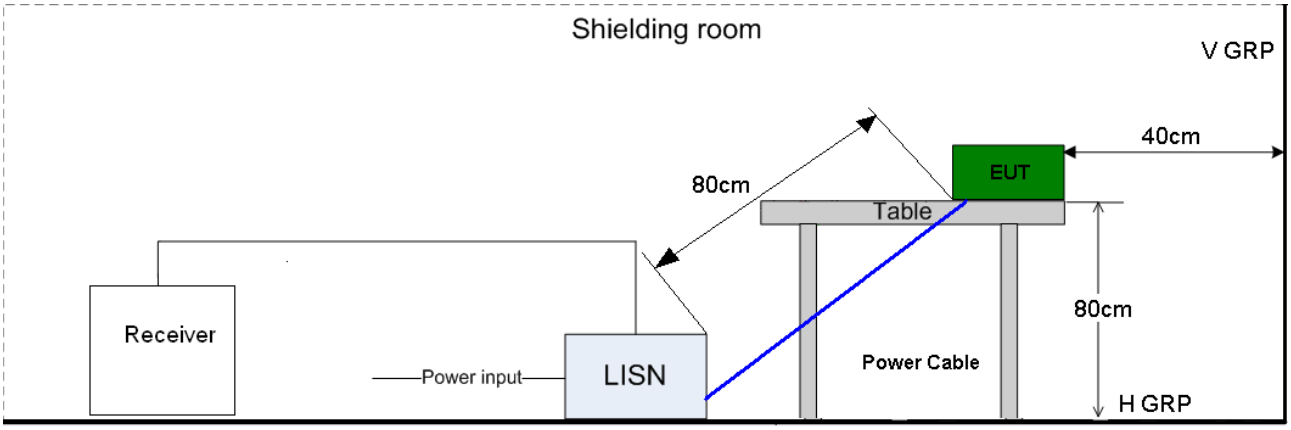


Figure 3. Test Set-up of conducted disturbance

4.2.3 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.14, 2014	12
	Broadband Antenna	VULB 9163	9163-491	SCHWARZBECK	Feb.21, 2015	24
	Horn Antenna	HF906	100683	R&S	Feb.01, 2015	24
CE	EMI Test receiver	ESCI	101163	R&S	Jan. 28, 2014	12
	Artificial Mains Network	ENV216	100382	R&S	Jan. 28, 2014	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:

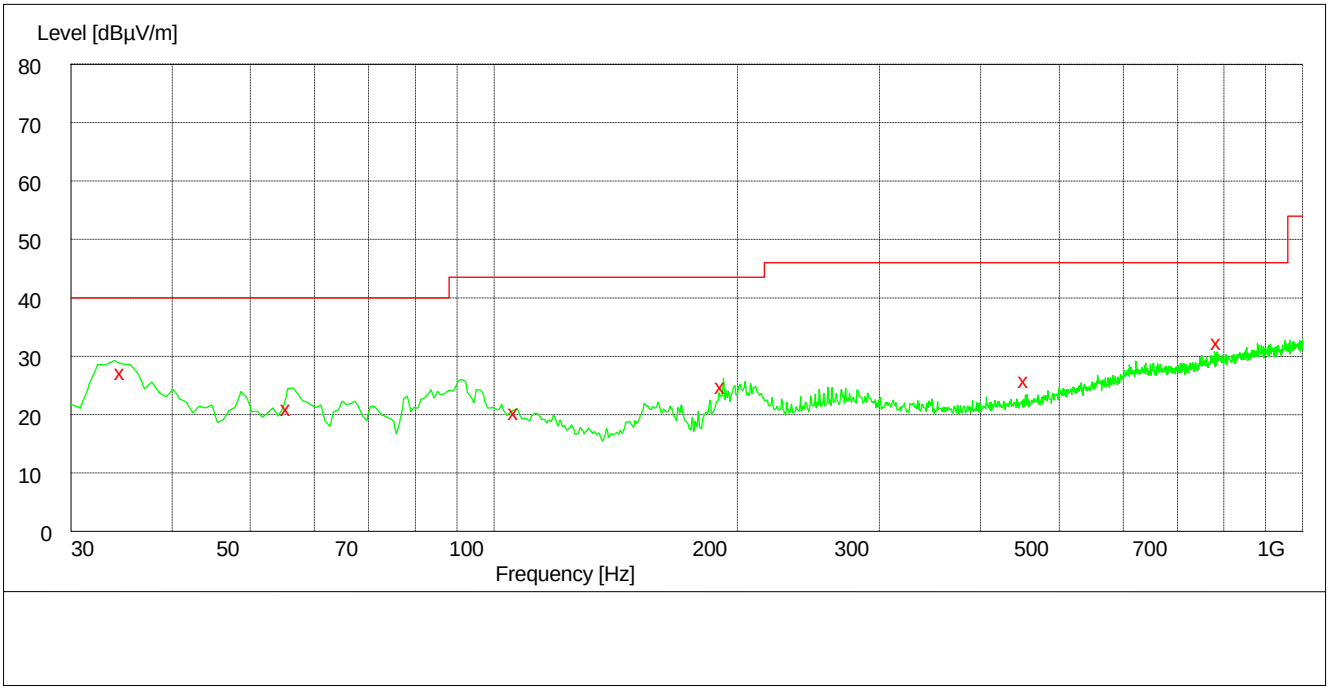
System Measurement Uncertainty		
Items		**Extended Uncertainty**
RE(30MHz-1GHz)	Field strength (dBμV/m)	U=4.1dB; k=2
RE(1GHz-18GHz)	Field strength (dBμV/m)	U=5.1dB; k=2
CE	Disturbance Voltage (dBμV)	U=2.6dB; k=2

7 Test Data and Graph

Only the worst test result was shown in this report.

7.1 Radiated Disturbance

30MHz~1GHz

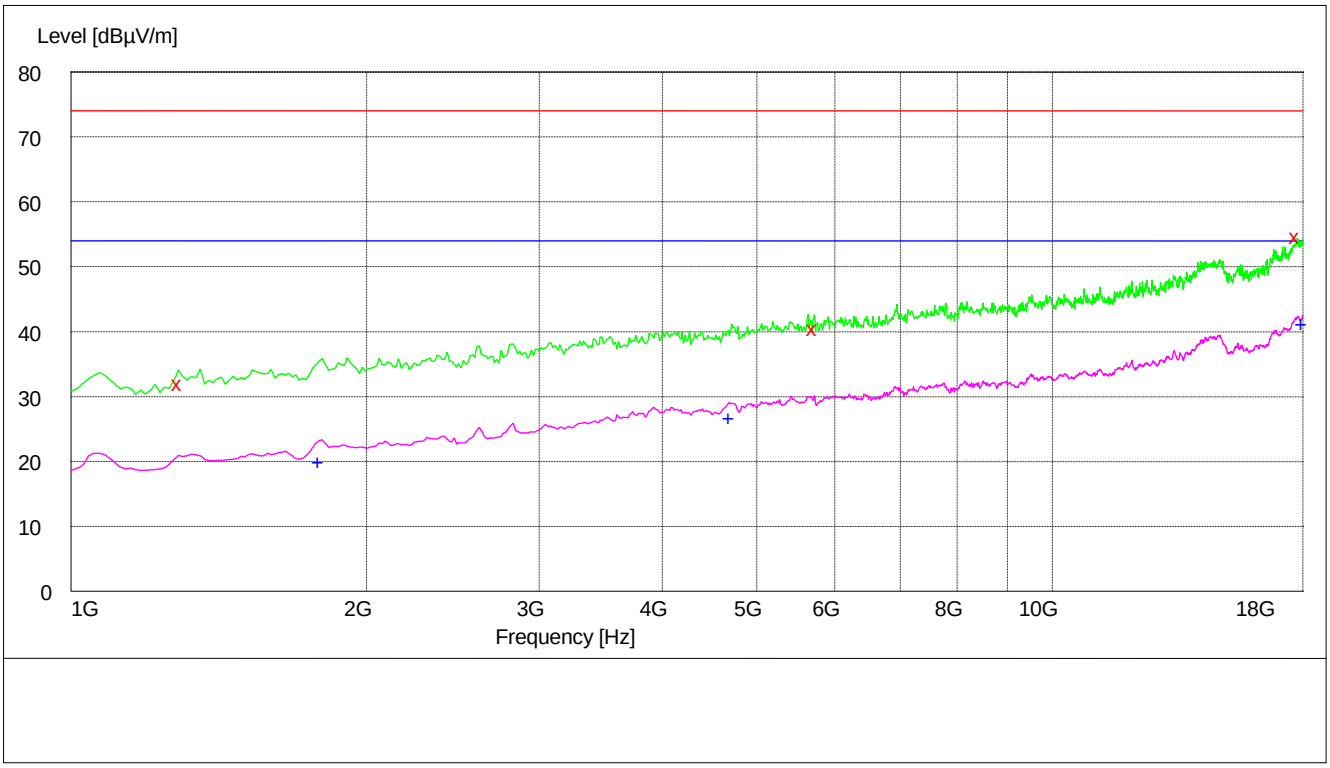


MEASUREMENT RESULT: QP Detector

Frequency MHz	Level dBµV/m	Transducer dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarisation
34.740000	27.70	11.8	40.0	12.3	100.0	15.00	VERTICAL
55.680000	21.50	12.6	40.0	18.5	100.0	148.00	VERTICAL
106.560000	20.70	12.6	43.5	22.8	149.0	67.00	VERTICAL
192.000000	25.20	12.0	43.5	18.3	100.0	172.00	VERTICAL
455.220000	26.20	19.1	46.0	19.8	142.0	29.00	HORIZONTAL
787.980000	32.80	24.8	46.0	13.2	187.0	330.00	HORIZONTAL

Note:
Level =Reading level by receiver + Transd (Antenna factor + cable loss – preamplifier gain)
The reading level is calculated 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
1290.600000	32.20	-14.4	74.0	41.8	100.0	86.00	VERTICAL
5716.200000	40.80	-0.2	74.0	33.2	150.0	181.00	HORIZONTAL
17760.700000	54.90	21.6	74.0	19.1	115.0	359.00	HORIZONTAL

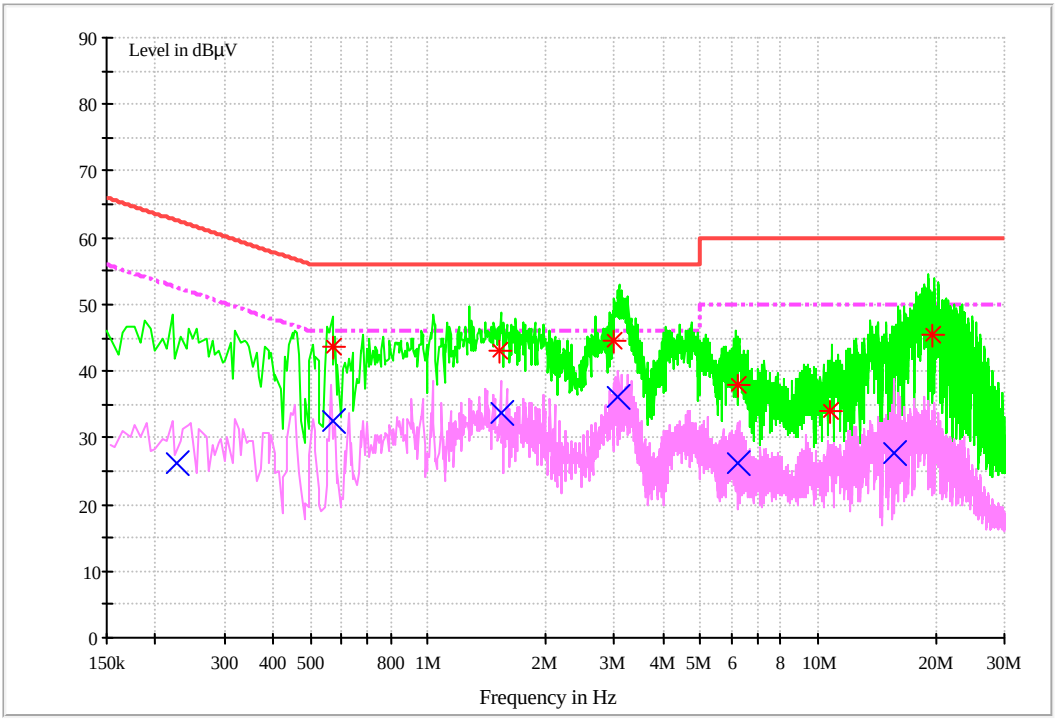
MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBµV/m	Transducer dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarisation
1792.300000	20.00	-11.6	54.0	34.0	100.0	288.00	VERTICAL
4696.700000	26.80	-2.6	54.0	27.2	108.0	93.00	HORIZONTAL
17996.500000	41.40	21.3	54.0	12.6	101.0	111.00	HORIZONTAL

Note:
Level =Reading level by receiver + Transd (Antenna factor + cable loss – preamplifier gain)
The reading level is calculated 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	Line	Transd dB	Margin dB	Limit dBµV	PE
0.570960	43.5	L1	9.7	12.5	56.0	FLO
1.530626	43.0	N	9.7	13.0	56.0	FLO
3.005726	44.7	L1	9.7	11.3	56.0	FLO
6.203058	37.8	N	9.8	22.2	60.0	FLO
10.723699	34.1	N	9.9	25.9	60.0	FLO
19.681906	45.6	L1	10.1	14.4	60.0	FLO

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBµV	Line	Transd dB	Margin dB	Limit dBµV	PE
0.227692	26.3	L1	9.7	26.2	52.5	FLO
0.569006	32.6	N	9.7	13.4	46.0	FLO
1.535622	33.7	N	9.7	12.3	46.0	FLO
3.069720	36.1	N	9.7	9.9	46.0	FLO
6.199410	26.3	N	10.1	23.7	50.0	FLO
15.593022	27.8	N	10.1	22.2	50.0	FLO

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

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