



EMC Test Report

**Product Name: HUAWEI Ascend Y 100;
HSDPA/UMTS/GPRS/GSM/EDGE Mobile Phone with
Bluetooth**

Model Number: HUAWEI U8185-5, U8185-5

**Report No: SYBH(Z-EMC)103022012-2
FCC ID: QISU8185-5**

Reliability Laboratory of Huawei Technologies Co., Ltd.

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Notice

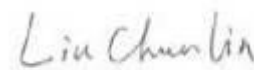
1. The laboratory has obtained the accreditation of China National Accreditation Service for Conformity Assessment (CNAS), and accreditation number: L0310.
2. The laboratory has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions 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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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: Mar.06, 2012
Test Result: Pass

Approved By
(Lab Manager)

2012-03-06
Date

Liuchunlin
Name



Signature

Operator

2012-03-06
Date

Xuchang
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 U8185-5, U8185-5
Serials Number	L8X01A9211800088
Working Voltage	120V/60Hz
TX Frequency	GSM850:824MHz To 849MHz; PCS1900:1850MHz To 1910MHz; WCDMA 850:824MHz To 849MHz; WCDMA1900:1850MHz To 1910MHz; Bluetooth/WIFI: 2400MHz To 2483.5MHz;
RX Frequency	GSM850:869MHz To 894MHz; PCS1900:1930MHz To 1990MHz; WCDMA 850:869MHz To 894MHz; WCDMA1900:1930MHz To 1990MHz; Bluetooth/WIFI: 2400MHz To 2483.5MHz; GPS: 1575.42MHz;
HW Version	HD1U8185M
SW Version	U8185-5V100R001C00B805
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
<u>Radiated Emissions</u> Enclosure Port	Mode1~ Mode2 Mode5 Mode7~ Mode8	CLASS B	Pass	Site1
<u>Conducted Emissions</u> ☒ 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

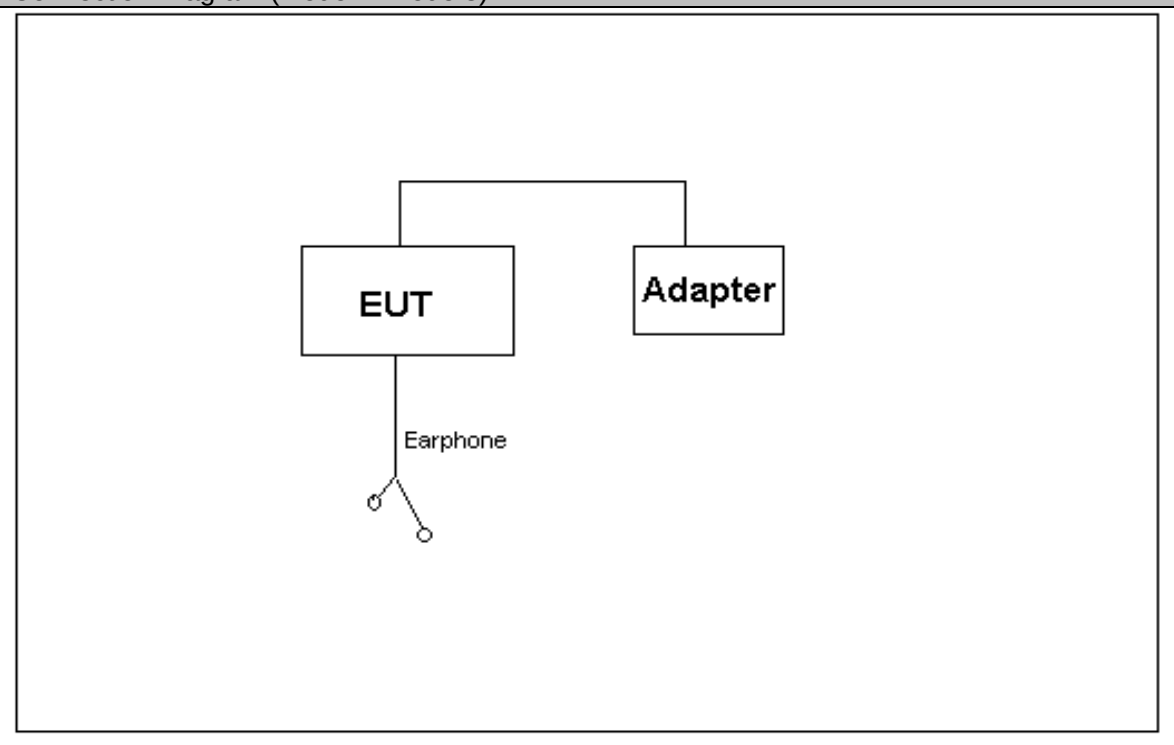
Huawei has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was in this test report and defined as:

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

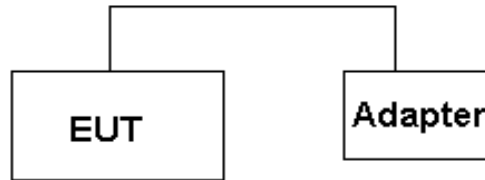
Remark: When the EUT have multiple adapters, need separate test with multiple adapters . All test modes are performed, only the worst cases are recorded in this report.

3.2 Configurations of Test System

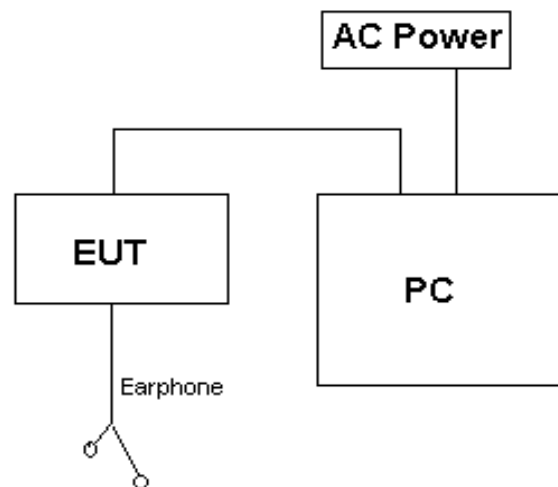
Connection Diagram (Mode 1~Mode 3)



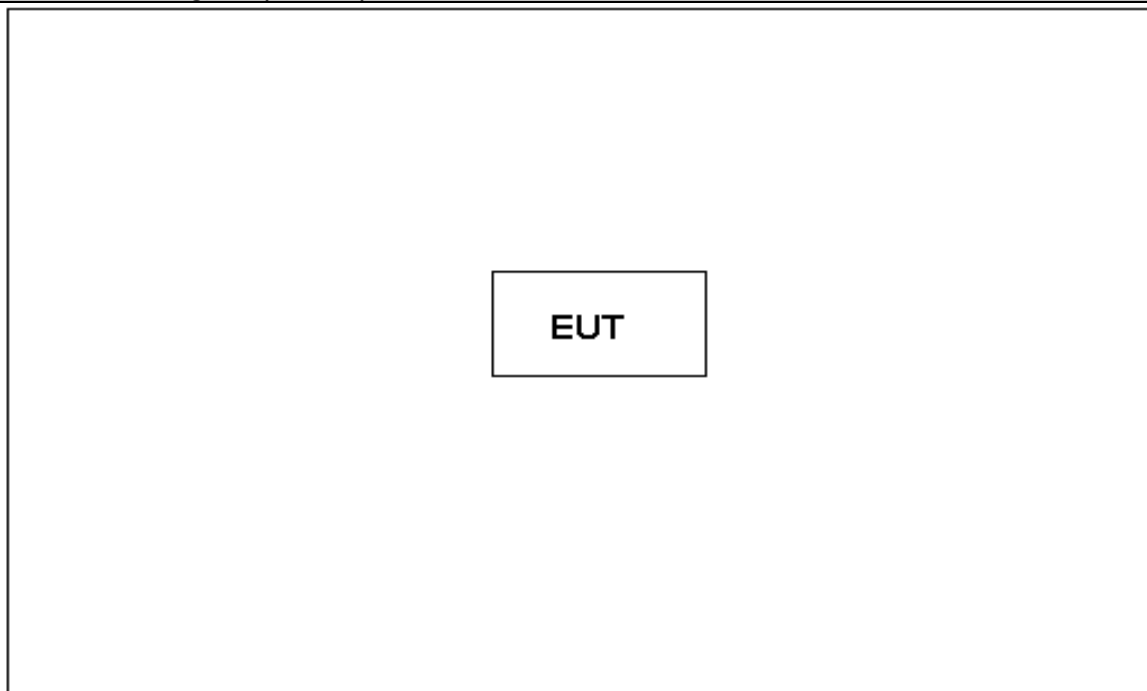
Connection Diagram (Mode 4)



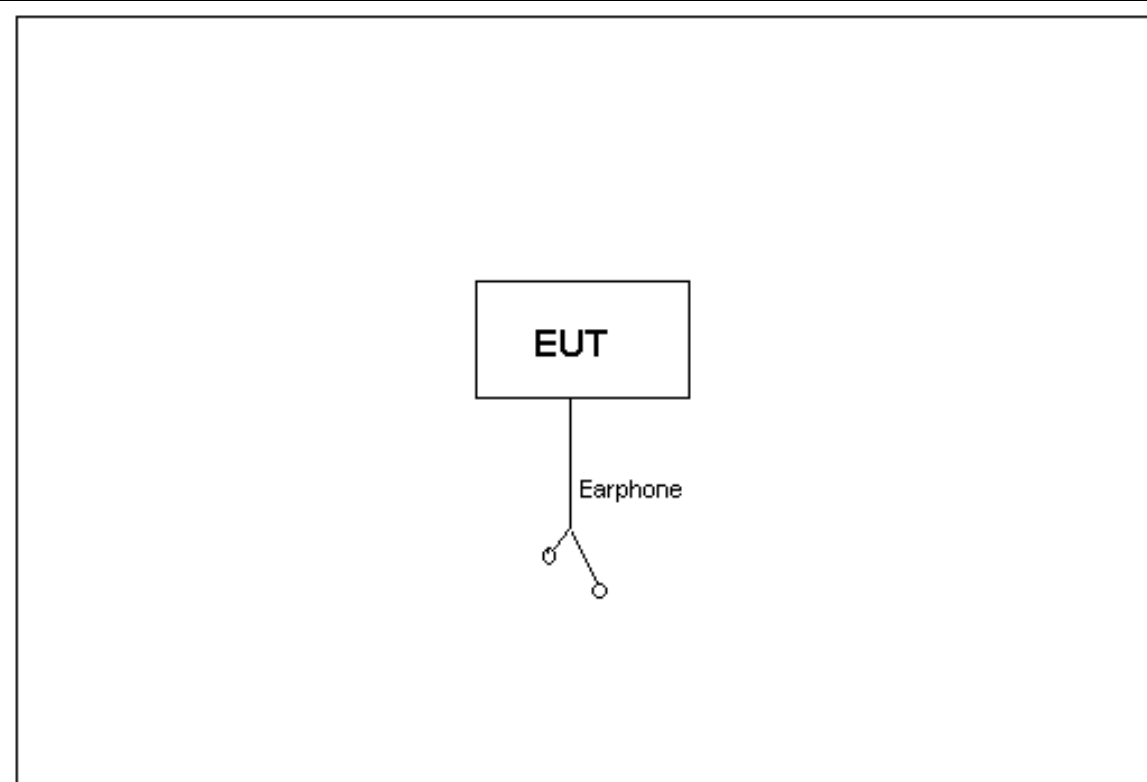
Connection Diagram (Mode 5)



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

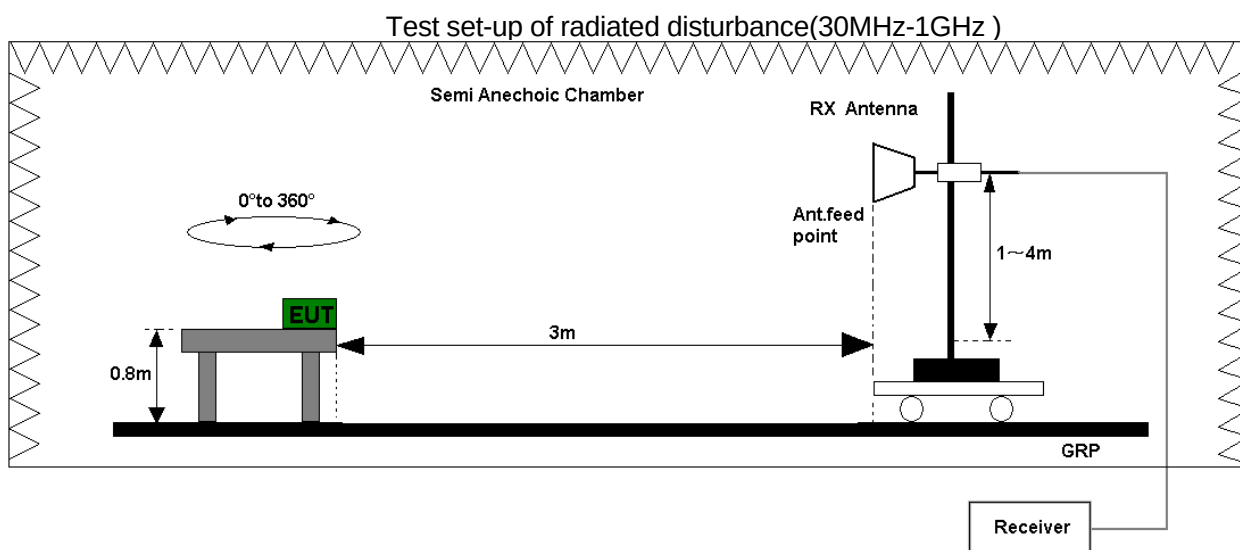
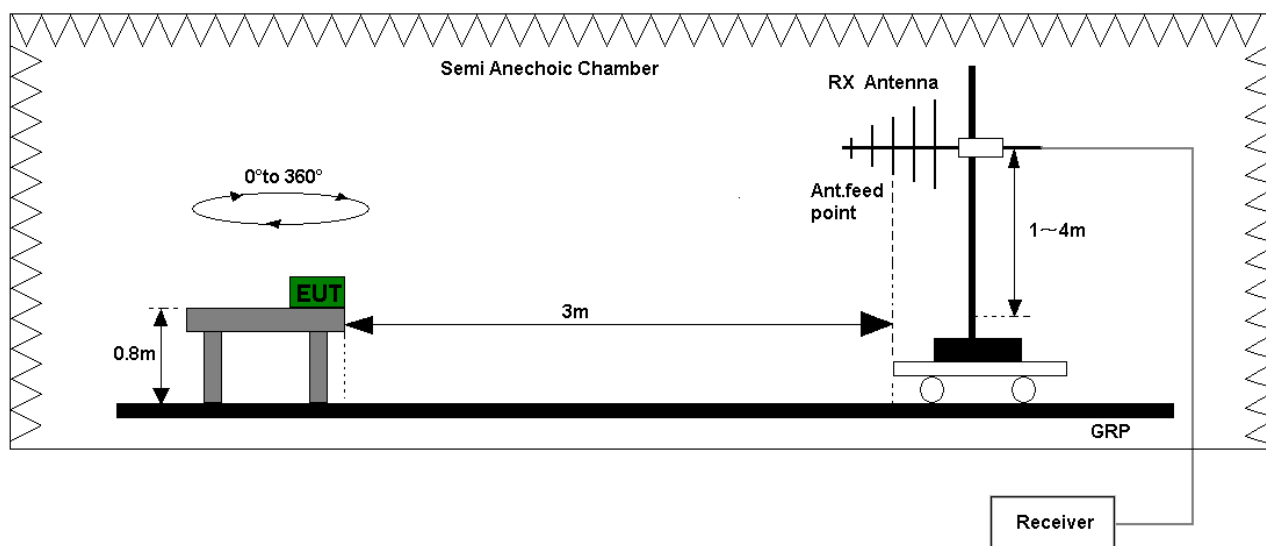
Test Procedure

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 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



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

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.

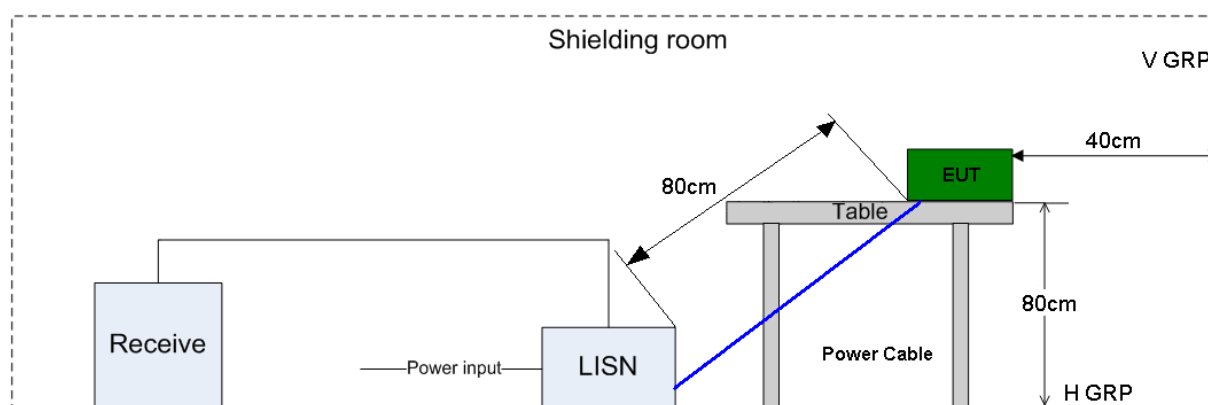
Conducted Disturbance at AC Port measurements were undertaken on the L and N Lines. The emissions were measured using a Quasi-Peak Detector and Average Detector.

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



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:

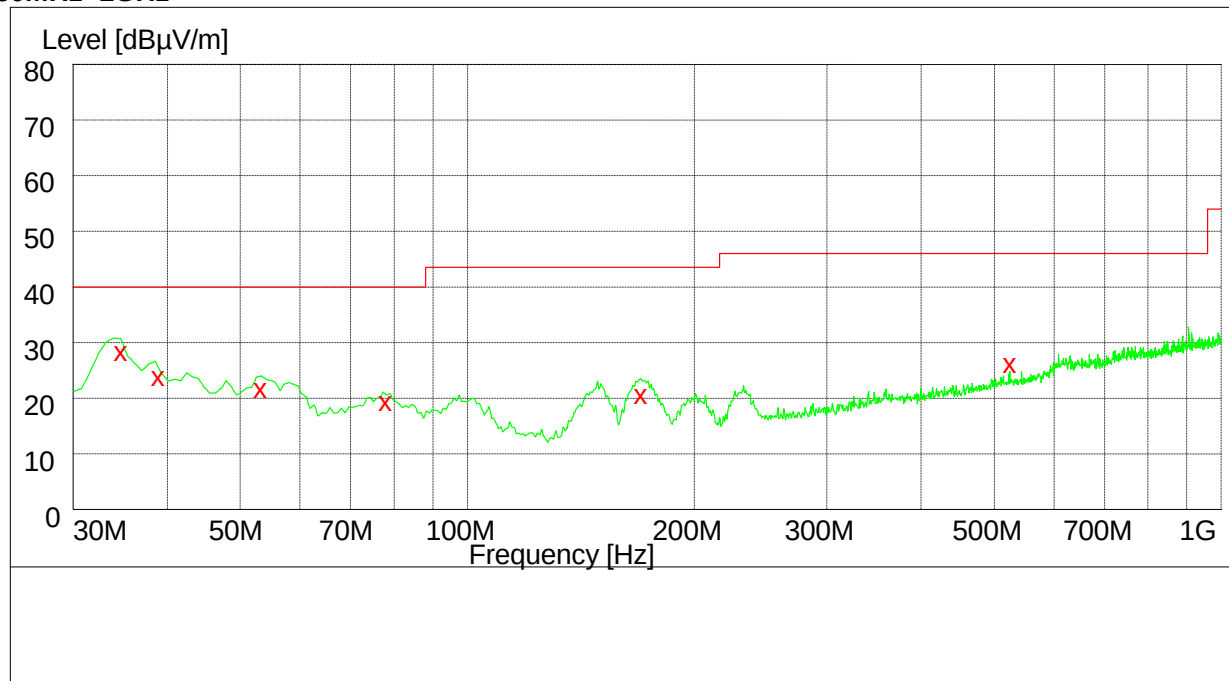
System Measurement Uncertainty		
Items		Extended Uncertainty
RE(30MHz-1GHz)	Field strength (dB μ V/m)	U=4.1dB; k=2
RE(1GHz-18GHz)	Field strength (dB μ V/m)	U=5.0dB; k=2
CE	Disturbance Voltage (dB μ V)	U=2.5dB; k=2

7 Graph and Data of Test

Only the worst test result was shown in this report.

7.1 Radiated Disturbance

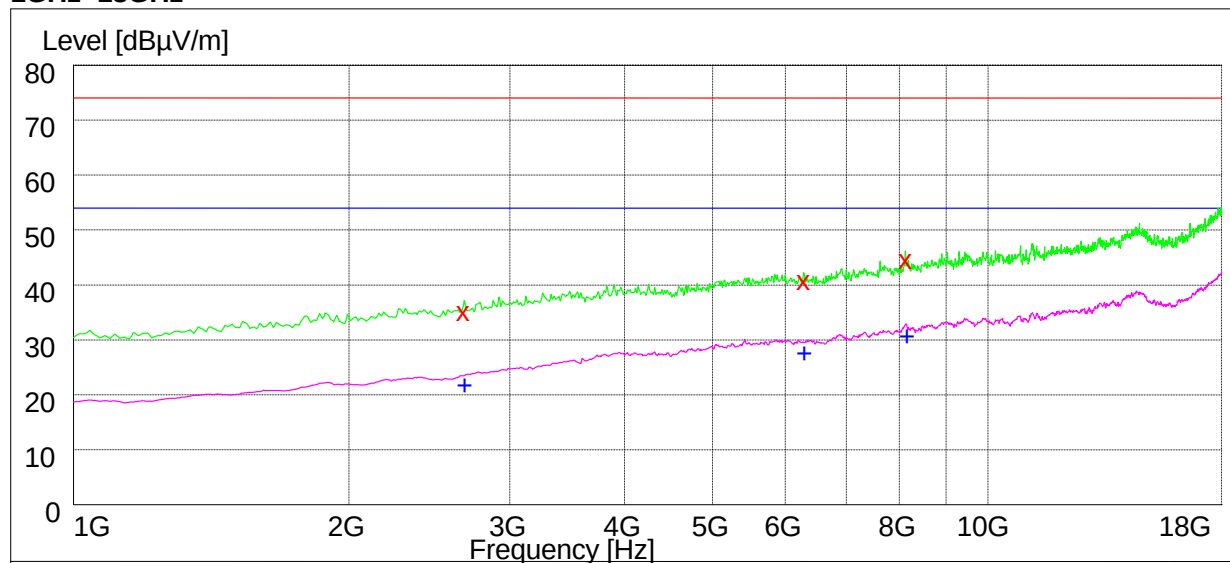
30MHz~1GHz



MEASUREMENT RESULT: QP Detector

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Height deg	Azimuth	Polarization
34.740000	29.10	15.0	40.0	10.9	100.0	274.00	VERTICAL
38.940000	24.70	15.3	40.0	15.3	129.0	304.00	VERTICAL
53.280000	22.50	14.7	40.0	17.5	100.0	272.00	VERTICAL
78.060000	20.20	10.5	40.0	19.8	155.0	136.00	VERTICAL
169.980000	21.40	10.5	43.5	22.1	121.0	359.00	VERTICAL
524.880000	27.00	19.7	46.0	19.0	100.0	79.00	VERTICAL

1GHz~18GHz



MEASUREMENT RESULT: PK Detector

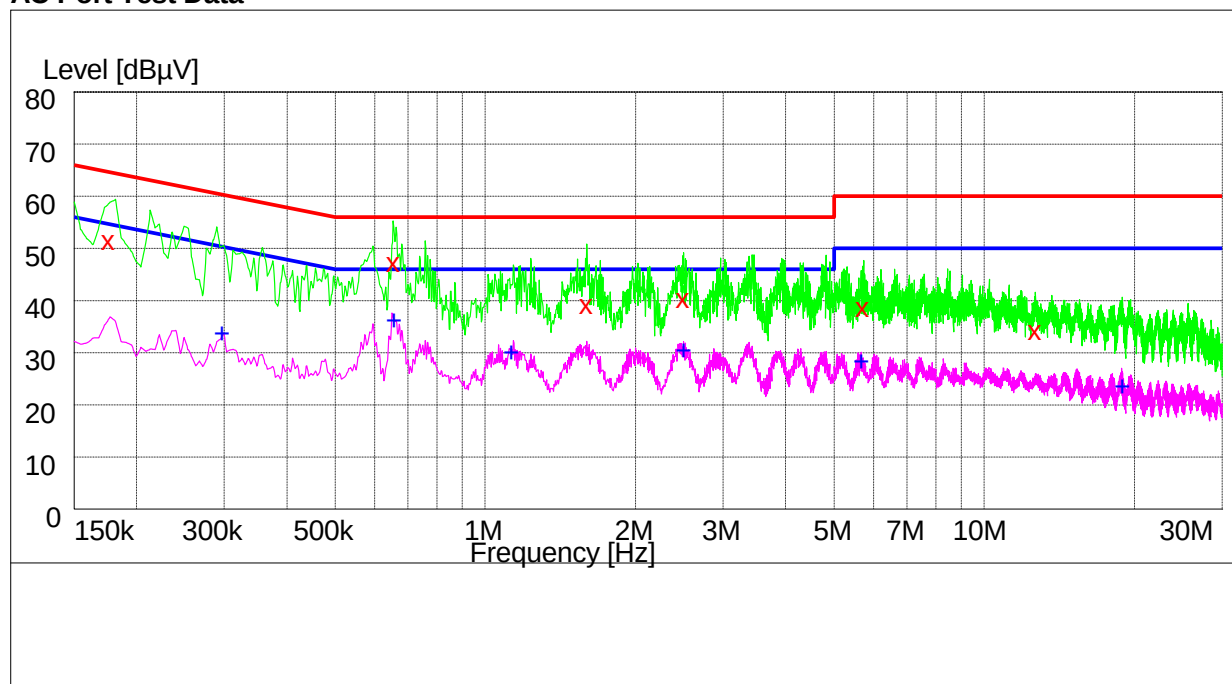
Frequency MHz	Level dBμV/m	Transducer dB	Limit dBμV/m	Margin dB	Height cm	Azimuth deg	Polarization
2669.500000	35.10	-9.6	74.0	38.9	178.0	307.00	VERTICAL
6284.000000	40.80	0.6	74.0	33.2	101.0	145.00	VERTICAL
8132.000000	44.50	5.1	74.0	29.5	101.0	45.00	VERTICAL

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Height deg	Azimuth	Polarization
2672.500000	21.70	-9.6	54.0	32.3	100.0	110.00	VERTICAL
6283.500000	27.50	0.6	54.0	26.5	100.0	107.00	VERTICAL
8142.000000	30.50	5.2	54.0	23.5	100.0	66.00	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
0.176000	52.00	10.1	65	13.0	L1	FLO
0.656000	47.60	10.1	56	8.4	N	FLO
1.598000	39.60	10.1	56	16.4	N	FLO
2.496000	40.80	10.1	56	15.2	L1	FLO
5.716000	39.10	10.2	60	20.9	L1	FLO
12.658000	34.70	10.3	60	25.3	L1	FLO

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.296000	34.00	10.0	50	16.0	L1	FLO
0.656000	36.50	10.1	46	9.5	N	FLO
1.126000	30.50	10.1	46	15.5	L1	FLO
2.496000	30.80	10.1	46	15.2	L1	FLO
5.664000	28.80	10.2	50	21.2	L1	FLO
18.868000	23.90	10.3	50	26.1	L1	FLO

-----END-----