



EMC Test Report

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

Model Number: HUAWEI U8820/Huawei U8820/U8820/Titan

Report No: SYBH(Z-EMC)118082011-2

FCC ID: QISU8820

Reliability Laboratory of Huawei Technologies Co., Ltd.

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Notice

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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.
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Applicant: Huawei Technologies Co., Ltd.
Address: Huawei Base, Bantian, Longgang District, Shenzhen
518129, P.R. China
Date of Receipt Test Item: Aug.27, 2011
Start Date of Test: Aug.28, 2011
End Date of Test: Sep.02, 2011
Test Result: Pass

Approved By

2011-09-02
Date

Liuchunlin
Name

Signature

Reviewed By

2011-09-02
Date

Dailinjun
Name

Signature

Operator

2011-09-01
Date

Xuchang
Name

Signature

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1 General Information

1.1 EUT Description

EUT Description	
Product Name	HSPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth
Model Number	HUAWEI U8820/Huawei U8820/U8820/Titan
Serials Number	355263040008308
Working Voltage	== 12V/24V
TX Frequency	GSM850: 824MHz To 849MHz PCS1900: 1850MHz To 1910MHz WCDMA1700: 1713MHz To 1753MHz WCDMA1900: 1853MHz To 1908MHz BT:2400MHz To 2483.5 MHz WIFI: 2400MHz To 2483.5 MHz
RX Frequency	GSM850: 869MHz To 894MHz PCS1900: 1930MHz To 1990MHz WCDMA1700: 2113MHz To 2153MHz WCDMA1900: 1933MHz To 1988MHz BT:2400MHz To 2483.5 MHz WIFI: 2400MHz To 2483.5 MHz GPS: 1575.42MHz
HW Version	HD1U882M
SW Version	U8820V100R001USAC189B625SP01
EUT Accessory	
Data cable	Data Cable USB A Male to Micro Usb ,Black,
Adapter	Manufacture: Huizhou BYD Electronic Co., Ltd Model: DC5V0D1000mA-00 Input voltage: == 12V/24V Output voltage: +5V --- 1A Rated Power: 5W S/N: 13360002518
Li-ion	Battery Model: HB5K1H Rated capacity: 1400mAh Nominal Voltage: == +3.7V Charging Voltage: == +4.2V Serials number: WHAC31HI5301474

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

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

1.3 Applied Standard

APPLIED STANDARD

FCC 47 CFR FCC Part 15 SubpartB



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	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.				

3 System Configuration during EMC Test

3.1 Test Mode

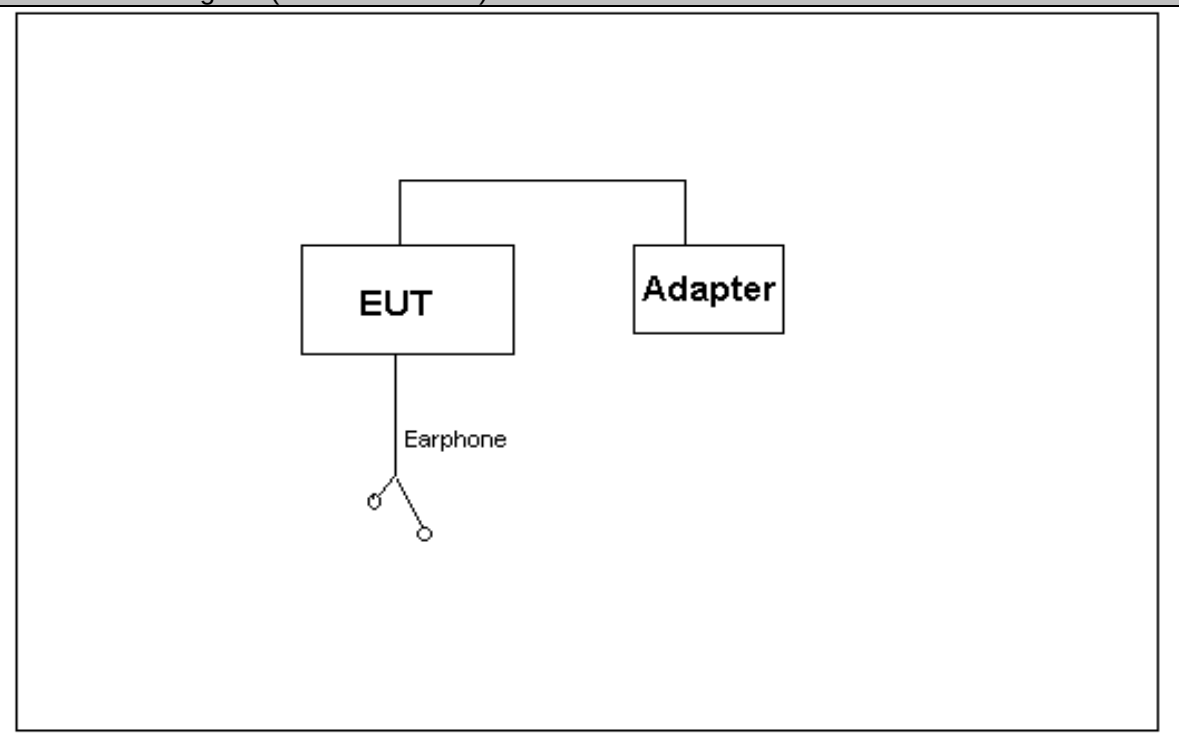
Huawei has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was in this test report and defined as:

Test Mode	
Mode 1:	adapter+earphone+Camera On +Idle
Mode 2:	adapter+earphone+MP3 +Idle
Mode 3:	adapter+earphone+Traffic
Mode 4:	adapter+Traffic

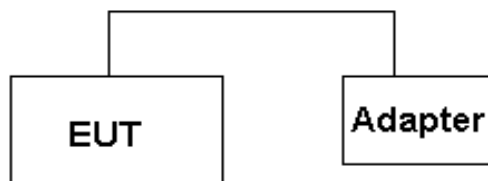
Remark: When the EUT have multiple adapters, need separate test with multiple adapters . All test modes are performed, only the worst cases are recorded in this report.

3.2 Configurations of Test System

Connection Diagram (Mode 1~Mode 3)



Connection Diagram (Mode 4)



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	3608105673	2010-10-24

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

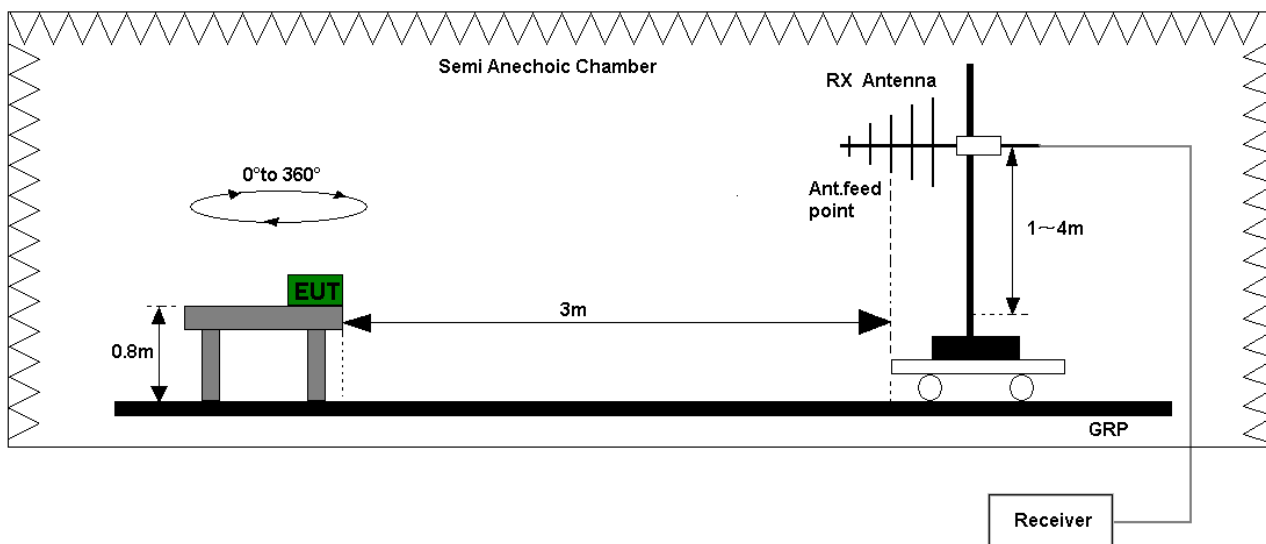


Figure 1. Test set-up of radiated disturbance(30MHz-1GHz)

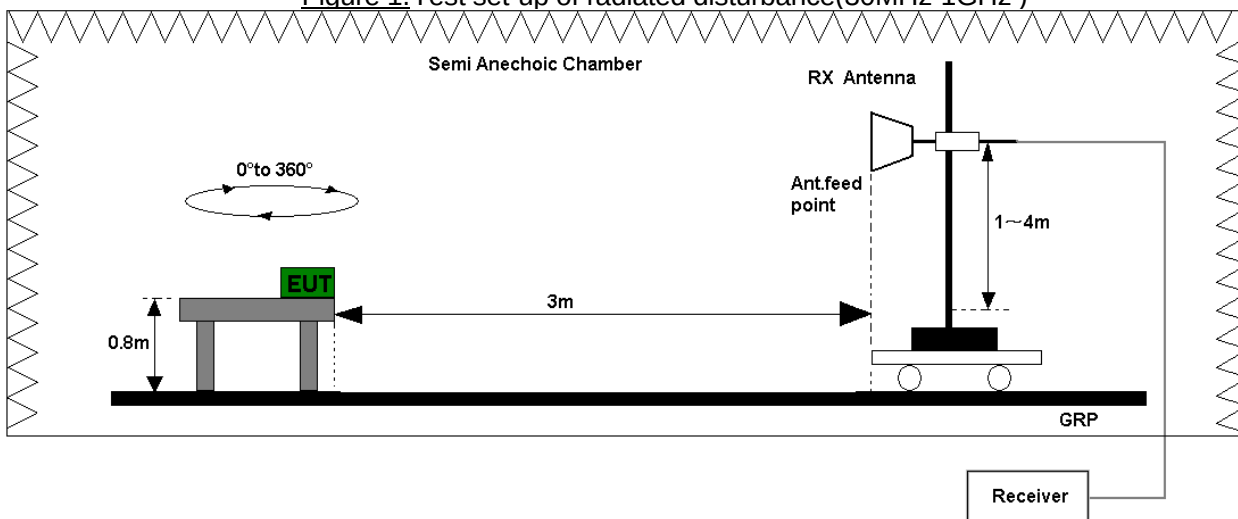


Figure 2. Test set-up of radiated disturbance(above 1GHz)

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	23.4°C
	Relative humidity	25%~75%	54.5%
	Atmospheric pressure	86 kPa~106kPa	100kPa

5 Main Test Instruments

Main Test Equipments					
Test item	Test Instrument	Model	Manufacturer	Cal-Date	Cal Interval (month)
RE	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
Software Information					
Test Item	Software Name	Manufacturer		Version	
RE	ES-K1	R&S		1.7.1	

6 System Measurement Uncertainty

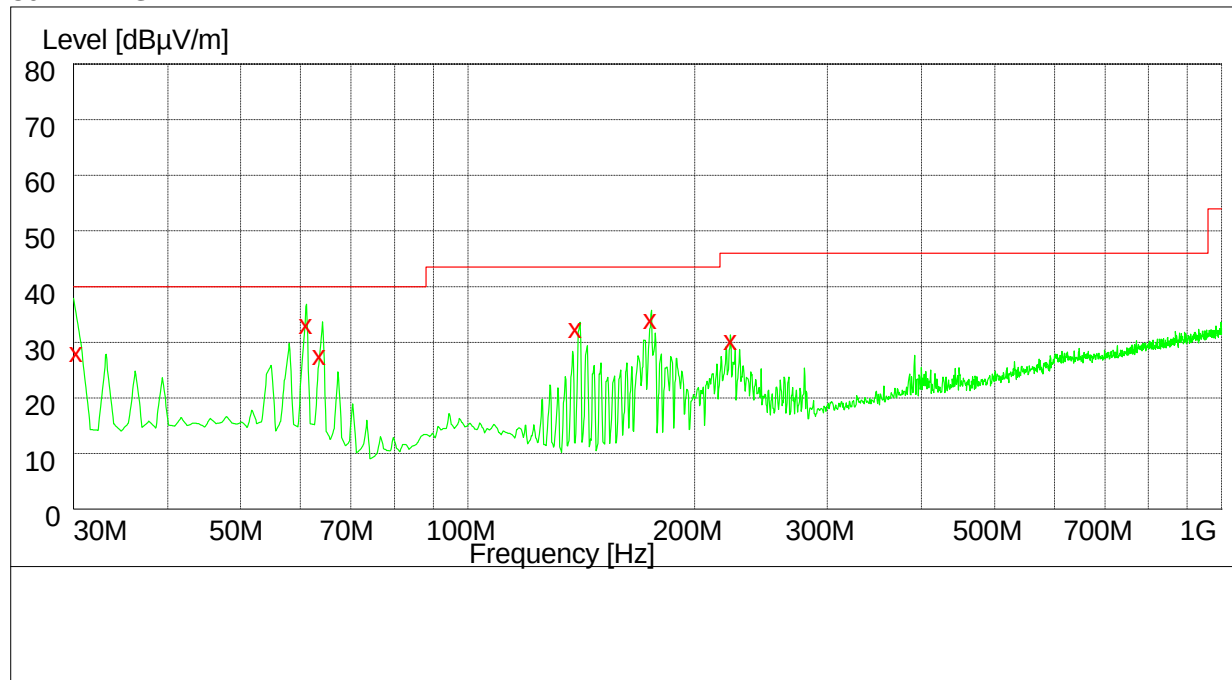
For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

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=4.1dB; k=2

7 Graph and Data of Emission Test

7.1 Radiated Disturbance

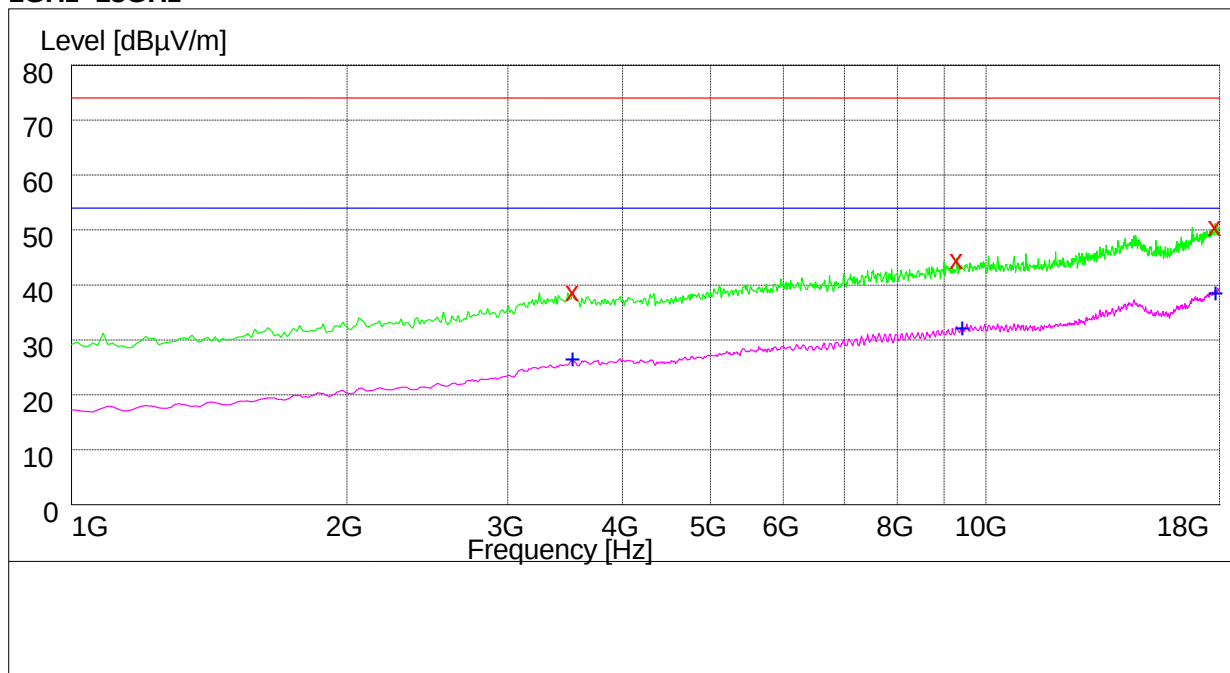
30MHz~1GHz



MEASUREMENT RESULT: QP Detector

Frequency	Level	Transd	Limit	Margin	Height	Azimuth	Polarisation
MHz	dBμV/m	dB	dBμV/m	dB	cm	deg	
30.300000	29.50	11.8	40.0	10.5	110.0	249.00	VERTICAL
61.080000	34.60	11.9	40.0	5.4	105.0	149.00	VERTICAL
63.720000	29.00	10.9	40.0	11.0	110.0	200.00	VERTICAL
150.300000	33.50	8.8	43.5	10.0	104.0	209.00	HORIZONTAL
178.080000	36.60	10.9	43.5	6.9	122.0	249.00	HORIZONTAL
222.700000	31.00	12.9	46.0	15.0	120.0	120.00	HORIZONTAL

1GHz~18GHz



MEASUREMENT RESULT: PK Detector

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Height cm	Azimuth deg	Polarisation
3536.000000	39.10	-5.3	74.0	34.9	143.0	50.00	HORIZONTAL
9296.500000	44.60	5.9	74.0	29.4	165.0	305.00	VERTICAL
17798.500000	51.00	18.6	74.0	23.0	143.0	351.00	VERTICAL

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Height cm	Azimuth deg	Polarisation
3530.500000	26.30	-5.1	54.0	27.7	200.0	23.00	HORIZONTAL
9411.000000	31.60	5.8	54.0	22.4	195.0	265.00	VERTICAL
17792.500000	38.40	18.6	54.0	15.6	200.0	21.00	VERTICAL

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