



TEST REPORT

Report No.: SRTC2013-H024-E0002

Product Name: GSM/GPRS/EDGE Digital Mobile Phone
with Bluetooth and WiFi

Product Model: ZTE R239

Applicant: ZTE Corporation

Manufacturer: ZTE Corporation

Specification: FCC Part15B (Certification)
(October 1, 2009 edition)

FCC ID: SRQ-ZTER239

The State Radio_monitoring_center Testing Center (SRTC)

No.80 Beilishi Road Xicheng District Beijing, China

Tel: 86-10-68009202 Fax: 86-10-68009205

CONTENTS

1. General information	3
1.1 Notes of the test report	3
1.2 Information about the testing laboratory.....	3
1.3 Applicant's details	3
1.4 Manufacturer's details.....	3
1.5 Application details	4
1.6 Reference specification.....	4
1.7 Information of EUT	4
1.7.1 General information.....	4
1.7.2 EUT details	5
1.7.3 Auxiliary equipment details.....	5
2. Test information	6
2.1 Summary of the test results.....	6
2.2 Test result.....	7
2.2.1 Conducted Emissions-FCC Part15.107	7
2.2.2 Radiated Emissions-FCC Part15.109	12
2.3. List of test equipments	19
Appendix	20

1. General information

1.1 Notes of the test report

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The test results relate only to individual items of the samples which have been tested.

1.2 Information about the testing laboratory

Company: The State Radio_monitoring_center Testing Center (SRTC)
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City: Beijing
Country or Region: China
Contacted person: Wang Junfeng
Tel: +86 10 68009181 +86 10 68009202
Fax: +86 10 68009195 +86 10 68009205
Email: wangjf@srrc.org.cn / wangjunfeng@srtc.org.cn

1.3 Applicant's details

Company: ZTE Corporation
Address: ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park,
Nanshan District, 518057
City: Shenzhen
Country or Region: P.R.China
Grantee Code: SRQ
Contacted person: Min Zhang
Tel: +86-021-68897541
Fax: +86-021-50801070
Email: zhang.min13@zte.com.cn

1.4 Manufacturer's details

Company: ZTE Corporation
Address: Zhongxing Bldg, Hi-Tech Park, NanShan District, 518057
City: Shenzhen
Country or Region: P.R.China
Contacted person: Li Dezi
Tel: +86-021-68895196
Fax: +86-021-50801070
Email: li.dezi@zte.com.cn

1.5 Application details

Date of reception of test sample: 8th May 2013

Date of test: 9th May 2013 to 23rd May 2013

1.6 Reference specification

FCC Part 15B October 1, 2009 (Certification)

1.7 Information of EUT

1.7.1 General information

Name of EUT	GSM/GPRS/EDGE Digital Mobile Phone with Bluetooth and WiFi
FCC ID	SRQ-ZTER239
Frequency Range	GSM850: Tx:824~849MHz Rx:869~894MHz PCS1900: Tx:1850~1910MHz Rx:1930~1990MHz
Rated Output Power	GSM850:33.0dBm PCS1900:30.0dBm
E.R.P. & E.I.R.P.	E.R.P.:29.4dBm E.I.R.P.:28.9dBm
Modulation Type	GSM/GPRS:GMSK EDGE: GMSK(Uplink direction) 8PSK(Downlink direction)
Emission Designator	300KGXW
Duplex Mode	FDD
Equipment Class	Class B
Duplex Spacing	GSM850:45MHz PCS1900:80MHz
Antenna Type	Fixed Internal
Power Supply	Battery or Charger
Rated Power Supply Voltage	3.8V
Extreme Temperature	Lowest: -30°C Highest: +50°C
Extreme Voltage	Minimum: 3.5V Maximum: 4.2V
HW Version	GMBA
SW Version	ZTE-CN-QS-P150A40V1.0.0

1.7.2 EUT details

Name	Model	IMEI
GSM/GPRS/EDGE Digital Mobile Phone with Bluetooth and WiFi	ZTE R239	355278040000211

1.7.3 Auxiliary equipment details

AE (Auxiliary Equipment) 1#: Charger

Equipment	Charger
Manufacturer	ZTE CORPORATION
Model Number	STC-A22O50I400M5-C
Input Voltage	100-240V ac.
Output Voltage	5.0V dc.
Frequency	50/60Hz

AE (Auxiliary Equipment) 2#: Battery

Equipment	Battery
Manufacturer	ZTE CORPORATION
Model Number	Li3706T42P3h453756
Capacity	670mAh
Rated Voltage	3.7V

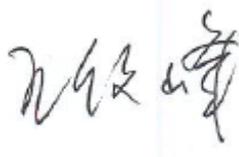
AE (Auxiliary Equipment) 3#: Headset

Equipment	Headset
Manufacturer	ZTE CORPORATION
Model Number	NLD-EM127E-031S

2. Test information

2.1 Summary of the test results

No.	Test case	FCC reference	Verdict
1	Conducted emissions	15.107	Pass
2	Radiated emissions	15.109	Pass

This Test Report Is Issued by: Mr. Song Qizhu Director of the test lab 	Checked by: Mr. Wang Junfeng Deputy director of the test lab 
Tested by: Mr. Wu Chengwang Test engineer 	Issued date: <p style="text-align: center;">2013.06.26</p>

2.2 Test result

2.2.1 Conducted Emissions-FCC Part15.107

Ambient condition:

Temperature	Relative humidity	Pressure
21.4°C	32.8%	99.7kPa

Test Setup:

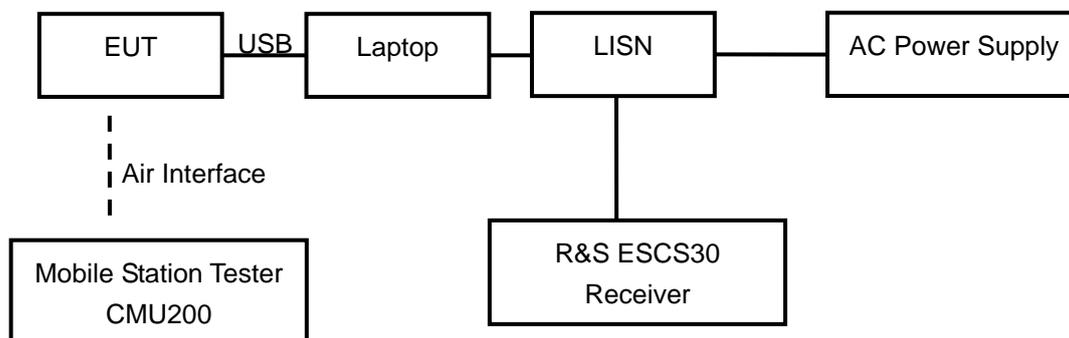


Figure 1

Test Procedure:

The EUT is placed on a non-metallic table 0.4m above the horizontal metal reference ground plane. The EUT connect with a laptop via the USB cable. The accessories of the EUT are connected with the EUT such as headset etc. During the test the data transferring via USB cable between EUT and laptop is maintained. The AC main power supply of the laptop is connected to LISN and LISN is connected to the reference ground. The test set-up and the test methods are performed according to ANSI C63.4:2009.

Then start the test software ES-K1. Sweep the whole frequency band through the range from 150 KHz to 30 MHz. The measurement should be done for both L line and N line. During pre-test, the receiver uses both peak detector and average detector. And the final test, the receiver uses both average detector and Quasi-peak detector.

The data of cable loss has been calibrated in full testing frequency range before the testing.

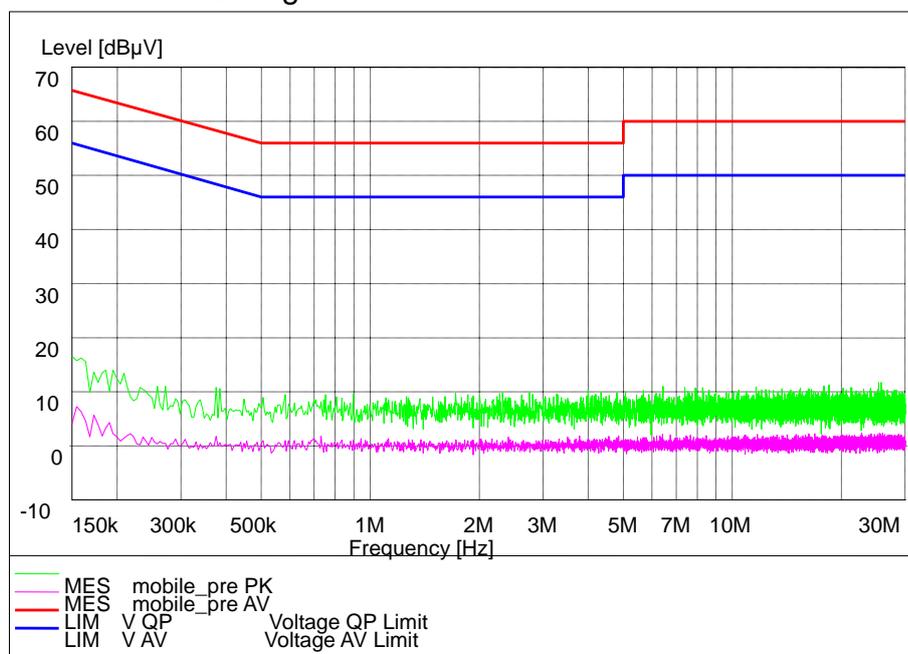
Limit:

Frequency of Emission(MHz)	Limits(dB μ V)	
	Quasi-peak	Average
0.15~0.5	66 to 56*	56 to 46*
0.5~5	56	46
5~30	60	50

Note: * Decreases with the logarithm of the frequency

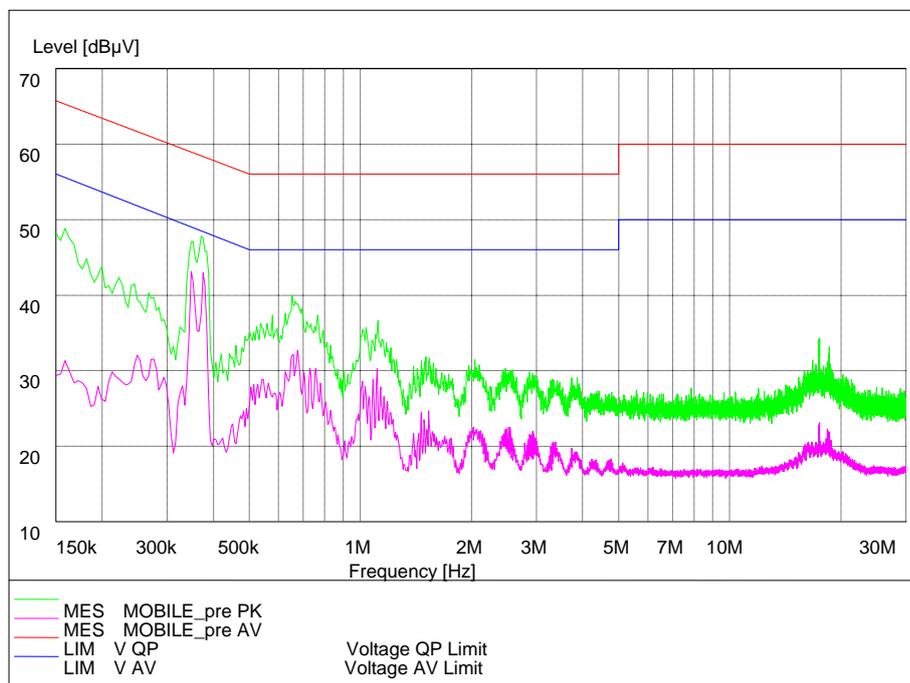
Test result:

Noise Level of The Measuring Instrument



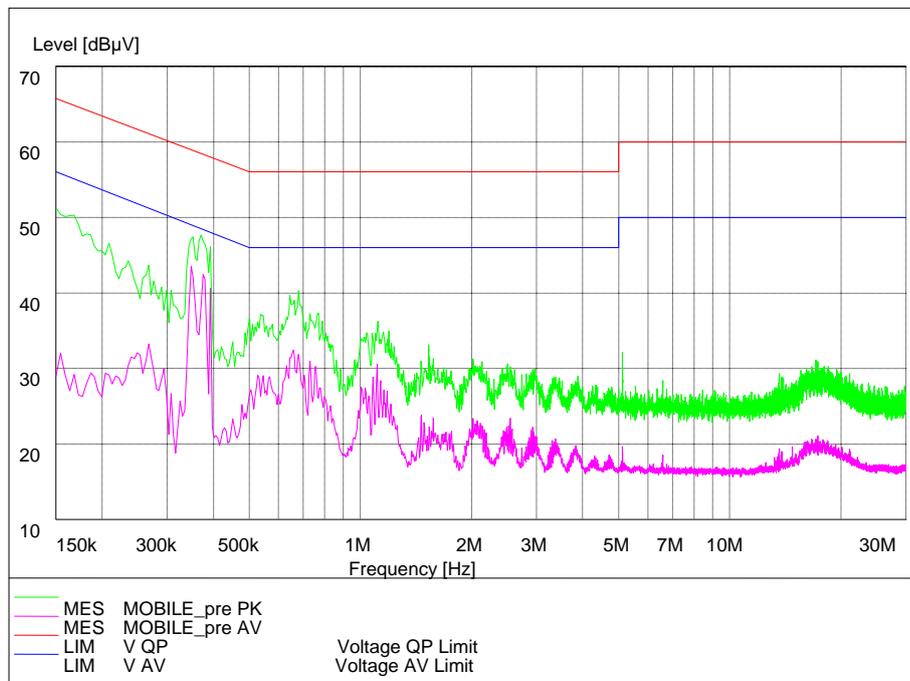
L and N Line

GSM850 Laptop+AE2#+AE3#



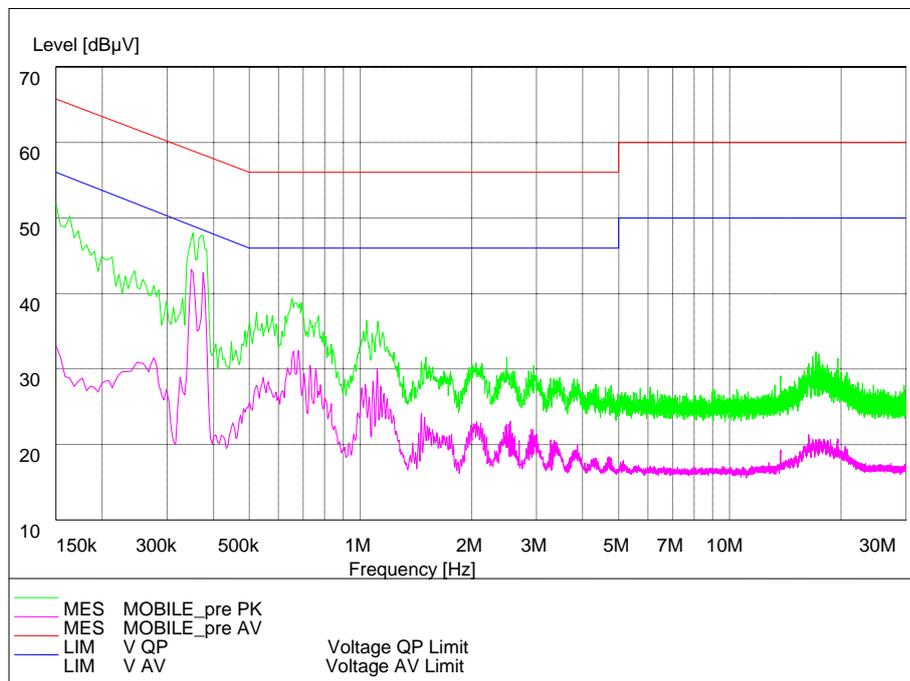
L and N Line

PCS1900 Laptop+AE2#+AE3#



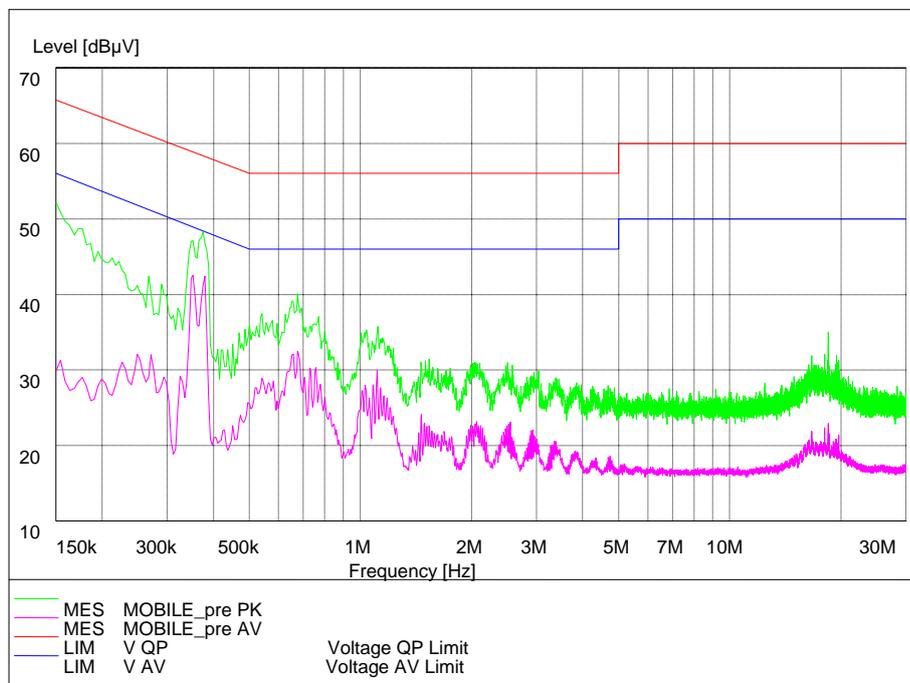
L and N Line

FM Radio Laptop+AE2#+AE3#



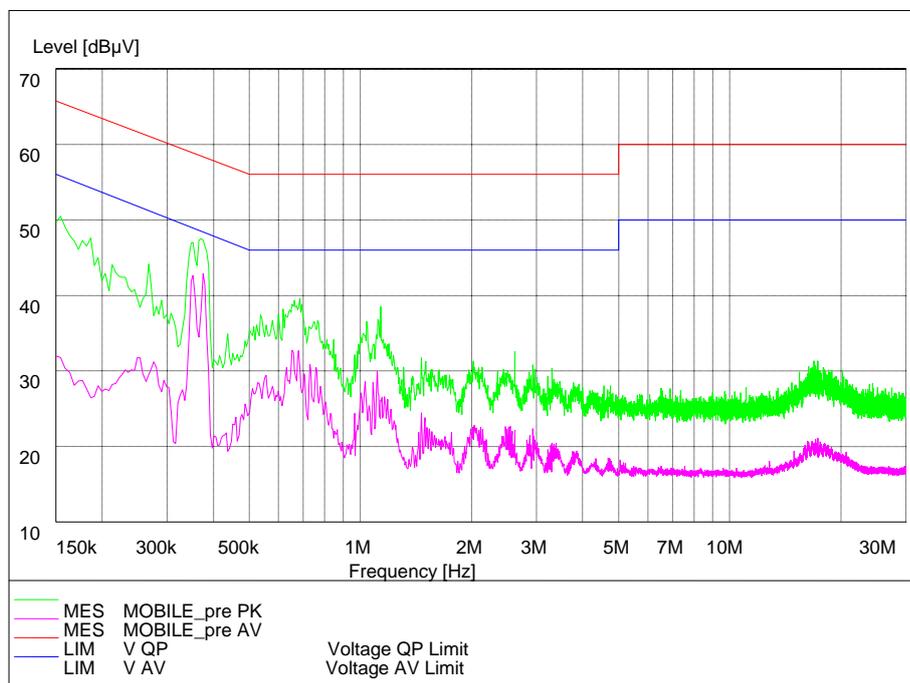
L and N Line

MP3/MP4 Laptop+AE2#+AE3#



L and N Line

Camera Laptop+AE2#+AE3#



L and N Line

2.2.2 Radiated Emissions-FCC Part15.109

Ambient condition:

Temperature	Relative humidity	Pressure
21.2°C	34.7%	99.7kPa

Test Setup:

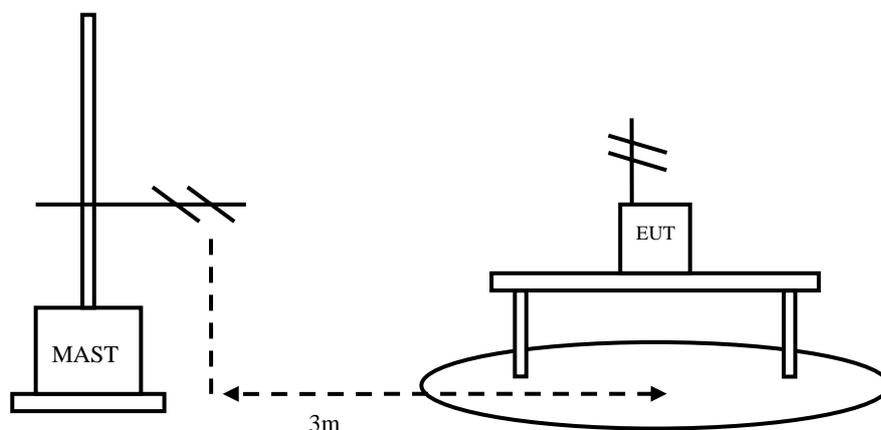


Figure 2

Test Procedure:

The EUT should be placed on a non-metallic table 80cm above the ground plane. The receive antennas shall be moved from 1 to 4 meters. The distance between EUT and receive antenna should be 3 meters.

The accessories of the EUT are connected with the EUT such as headset etc. The test set-up and the test methods are performed according to ANSI C63.4:2009.

Then start the test software ES-K1. Sweep the whole frequency band through the range from 30MHz to 1GHz, using receive log period antenna HL562.

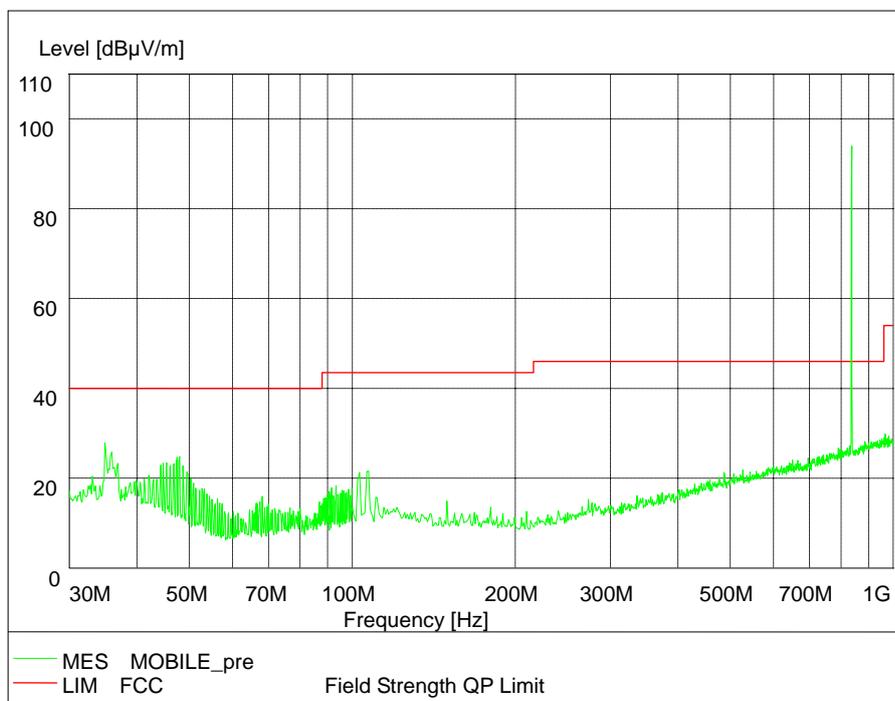
During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turn table shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna.

The data of cable loss and antenna factor have been calibrated in full testing frequency range before the testing.

Limit:

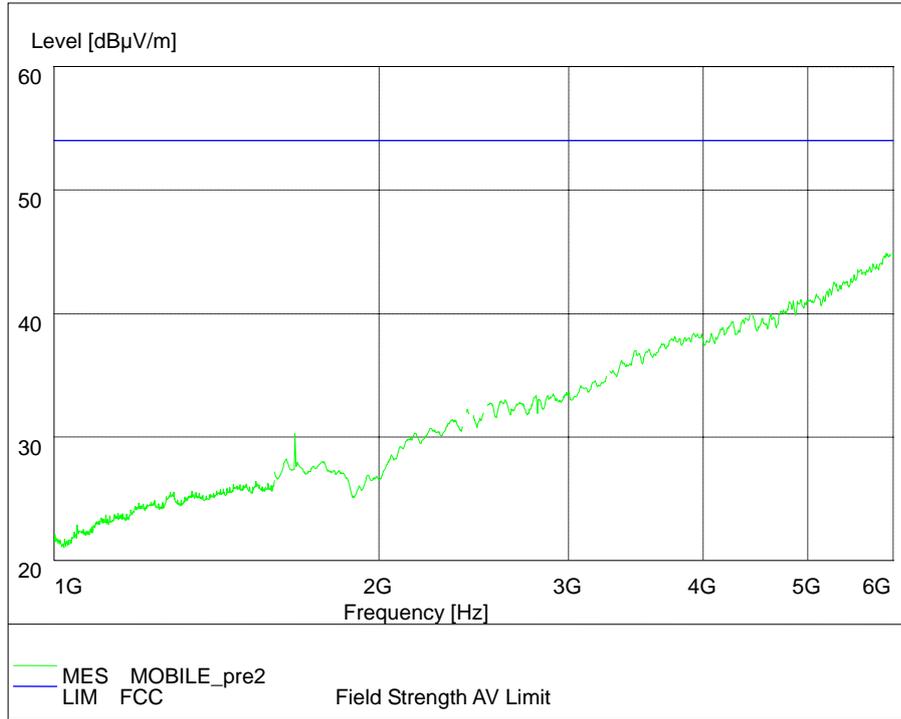
Frequency of Emission(MHz)	Limits	
	Detector	Unit (dB μ V/m)
30~88	Quasi-peak	40
88~216	Quasi-peak	43.5
216~960	Quasi-peak	46
960~1000	Quasi-peak	54
1000~5th harmonic of the highest frequency or 40GHz, whichever is lower	Average	54

Test result:

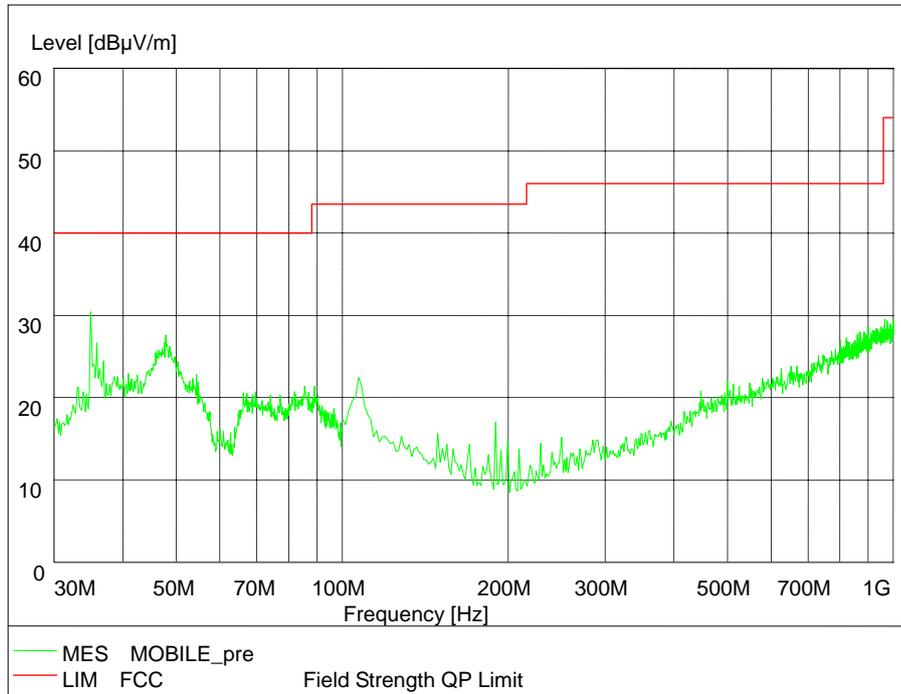


GSM 850 (30MHz – 1GHz)

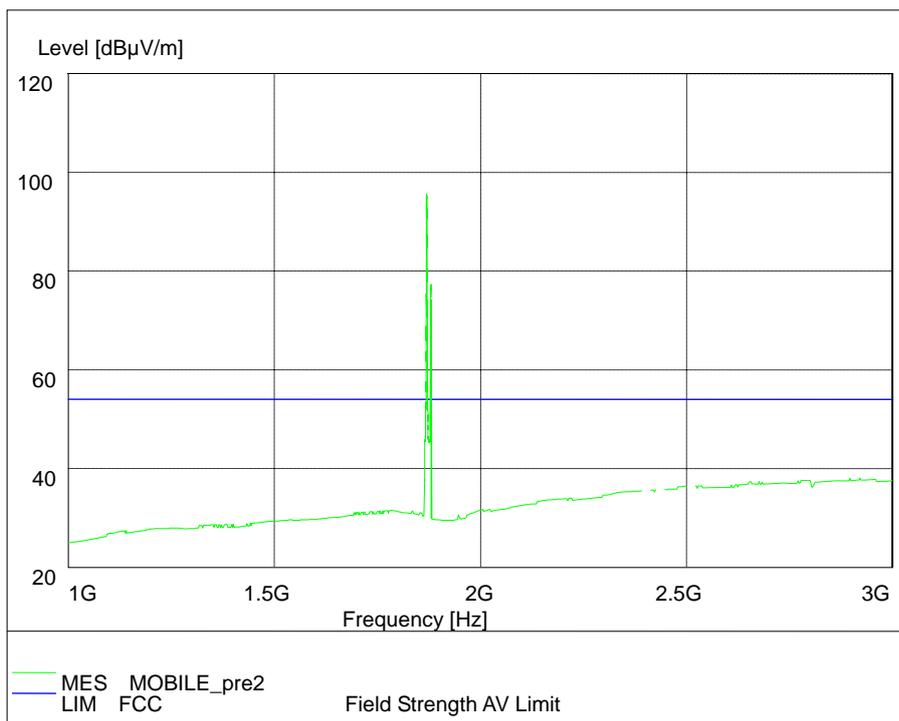
Note: The signal beyond the limit is the base station simulator carrier



GSM 850 (1GHz – 6GHz)

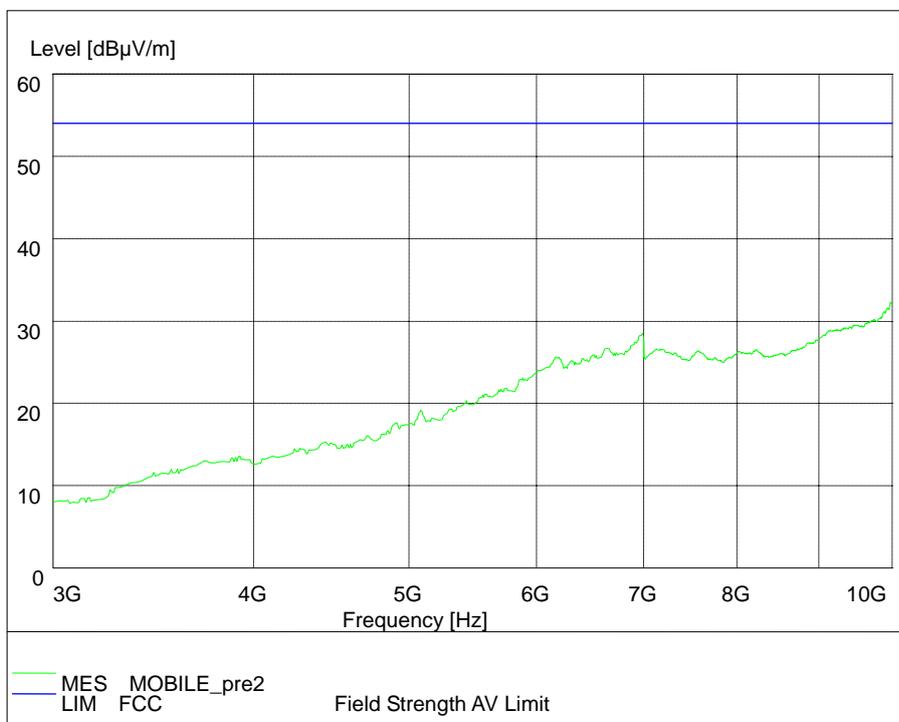


PCS 1900 (30MHz – 1GHz)

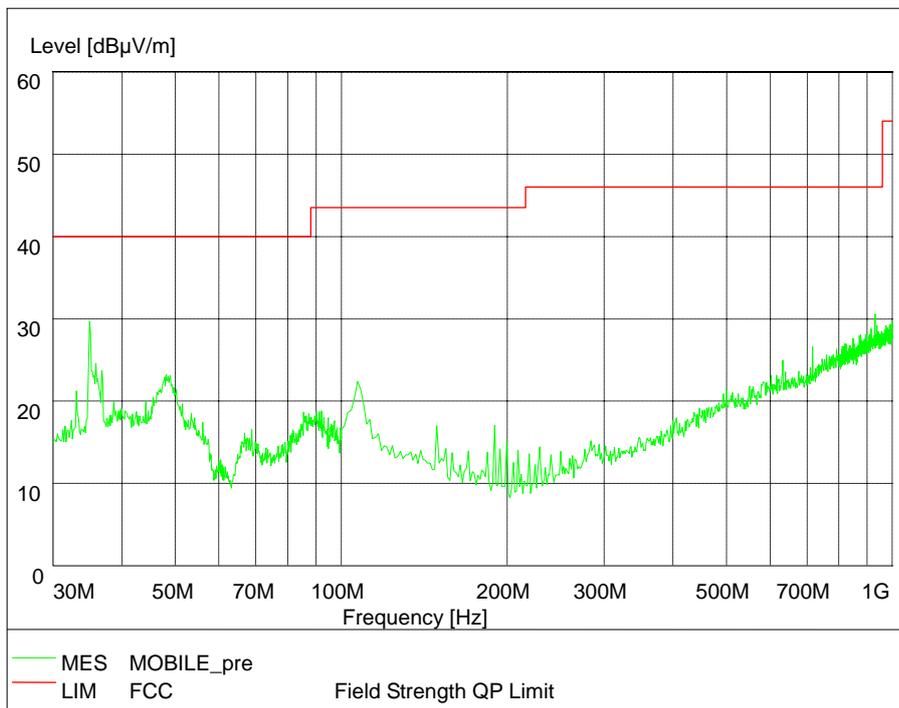


PCS 1900 (1GHz – 3GHz)

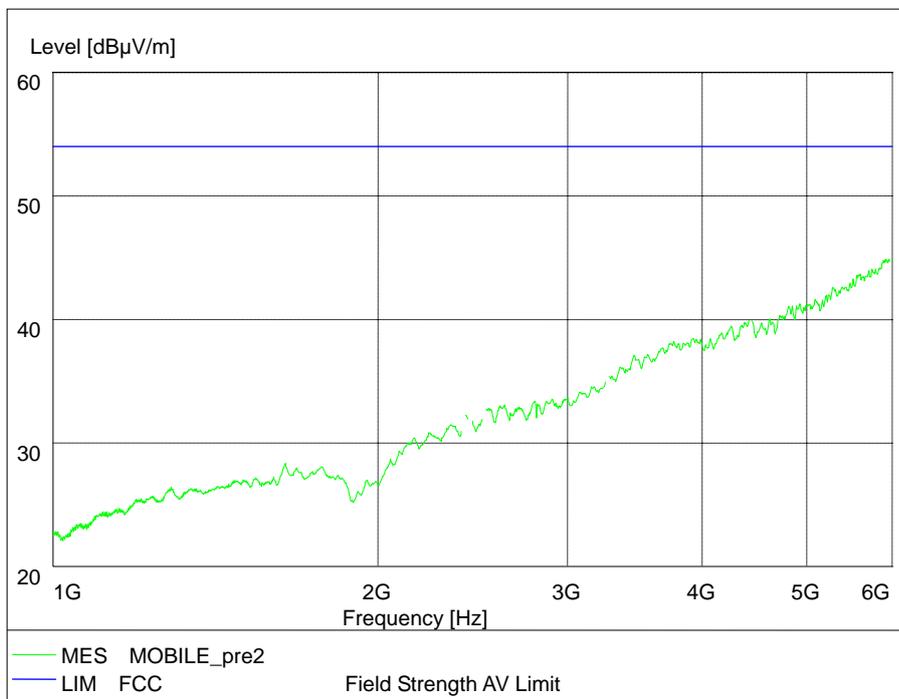
Note: The signals beyond the limit are the base station and simulator carrier.



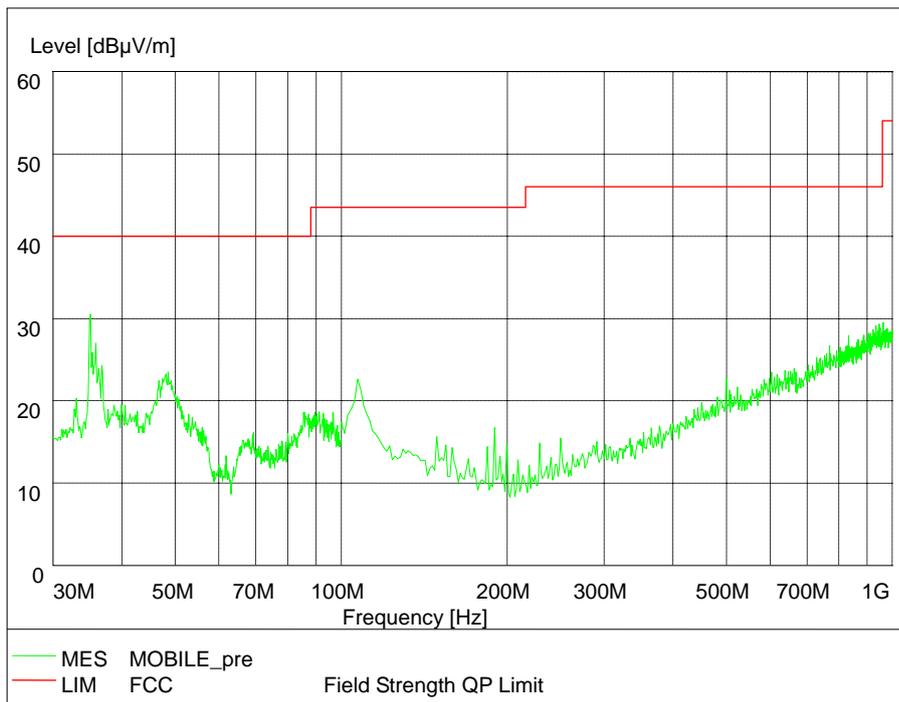
PCS 1900 (3GHz – 10GHz)



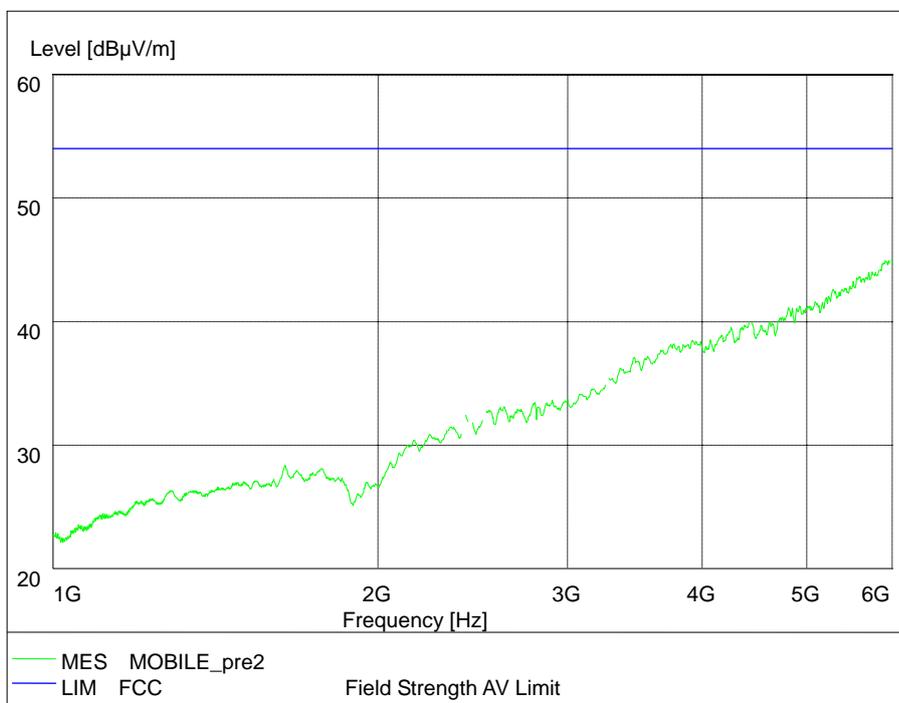
FM Radio (30MHz – 1GHz)



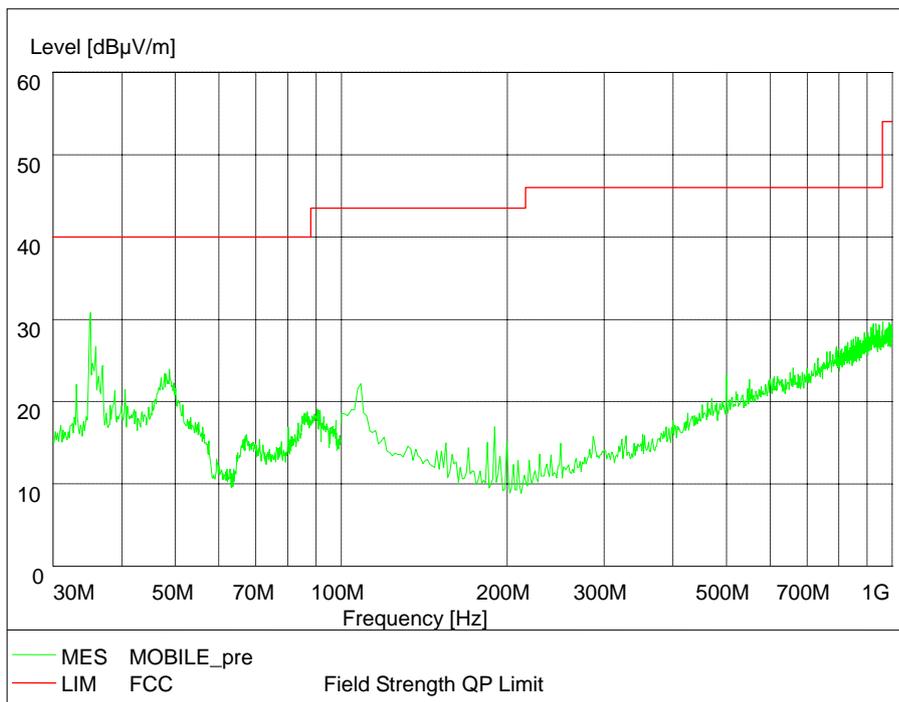
FM Radio (1GHz – 6GHz)



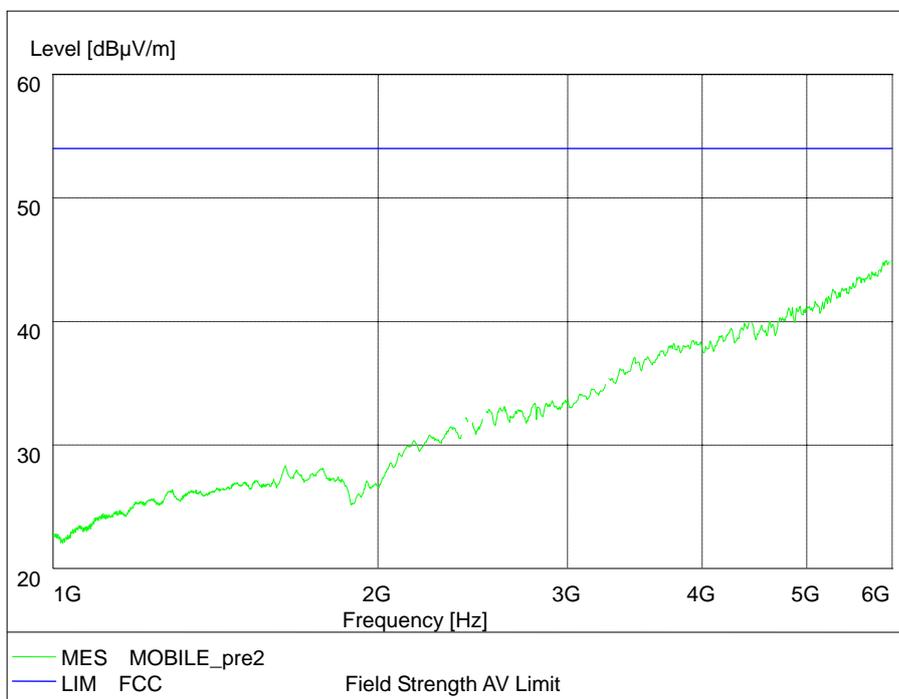
MP3/MP4 (30MHz – 1GHz)



MP3/MP4 (1GHz – 6GHz)



Camera (30MHz – 1GHz)



Camera (1GHz – 6GHz)

2.3. List of test equipments

No.	Name/Model	Manufacturer	S/N	Calibration Due Date
1	23.18m×16.88m×9.60m Semi-Anechoic Chamber	FRANKONIA	-----	19 th Aug. 2013
2	ESI 40 EMI test receiver	R&S	100015	19 th Aug. 2013
3	E5515C(8960) Mobile Station Tester	Agilent	GB44050904	19 th Aug. 2013
4	9.080m×5.255m×3.525m Shielding room	FRANKONIA	-----	19 th Aug. 2013
5	ESCS30 EMI test receiver	R&S	100029	19 th Aug. 2013
6	HL562 Ultra log test antenna	R&S	100016	19 th Aug. 2013
7	ESH3-Z2 Pulse limiter	R&S	10002	19 th Aug. 2013
8	ESH3-Z5 Attenuator	R&S	100020	19 th Aug. 2013
9	ESH2Z11 LISN	R&S	50FH-020-10	19 th Aug. 2013
10	HF 906 Double-Ridged Waveguide Horn Antenna	R&S	100030	19 th Aug. 2013
11	HF 906 Double-Ridged Waveguide Horn Antenna	R&S	100029	19 th Aug. 2013
12	PS2000 Turn Table	FRANKONIA	-----	19 th Aug. 2013
13	MA260 Antenna Master	FRANKONIA	-----	19 th Aug. 2013
14	ES-K1EMI test software	R&S	-----	19 th Aug. 2013
15	HL562 Receive antenna	R&S	100167	19 th Aug. 2013

Appendix

Appendix1 Test Setup