



TEST REPORT

Report No.: SRTC2011-H024-E0053

Product Name: GSM/GPRS/EDGE/WCDMA

Digital Mobile Phone with Bluetooth

Marketing Name: one touch 905M

Product Model: MINI3G M

Applicant: TCT Mobile Limited

Manufacturer: TCT Mobile Limited

Specification: FCC Part15B (Verification)

(October 1, 2009 edition)

FCC ID: RAD204

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	7
2.1 Summary of the test results	7
2.2 Test result	8
2.2.1 Conducted Emissions-FCC Part15.107	8
2.2.2 Radiated Emissions-FCC Part15.109	16
2.3. List of test equipments	27
Appendix	28

1. General information

1.1 Notes of the test report

The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written permission of The State Radio_monitoring_center Testing Center (SRTC).

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)
Address: No.80 Beilishi Road, Xicheng District, Beijing China
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: TCT Mobile Limited
Address: 5F, E building, No. 232, Liang Jing Road ZhangJiang High-Tech Park, Pudong Area
City: Shanghai
Country or Region: P.R.China
Grantee Code: RAD
Contacted Person: Gong Zhizhou
Tel: +86-21-61460890
Fax: +86-21-61460602
Email: zhizhou.gong@jrdcom.com

1.4 Manufacturer's details

Company: TCT Mobile Limited
Address: 5F, E building, No. 232, Liang Jing Road ZhangJiang High-Tech Park, Pudong Area
City: Shanghai
Country or Region: P.R.China
Contacted Person: Gong Zhizhou
Tel: +86-21-61460890
Fax: +86-21-61460602
Email: zhizhou.gong@jrdcom.com

1.5 Application details

Date of reception of test sample: 9th Jun 2011

Date of test: 9th Jun 2011 to 25th Jun 2011

1.6 Reference specification

FCC Part 15B October 1, 2009 (Verification)

1.7 Information of EUT

1.7.1 General information

Name of EUT	GSM/GPRS/EDGE/WCDMA Digital Mobile Phone with Bluetooth
FCC ID	RAD204
Frequency range	GSM850/WCDMA Band V: Tx:824~849MHz Rx:869~894MHz PCS1900: Tx:1850~1910MHz Rx:1930~1990MHz
Rated output power	GSM850:33.0dBm PCS1900:30.0dBm WCDMA:24.0dBm
E.R.P. & E.I.R.P.	E.R.P.: 31.67dBm E.I.R.P.: 26.6dBm
Modulation type	GSM/GPRS:GMSK EDGE:8PSK WCDMA:QPSK
Emission Designator	GSM/GPRS:300KGXW EDGE:300KG7W WCDMA:4M50F9W
Duplex mode	FDD
Equipment Class	Class B
Duplex spacing	GSM850/WCDMA Band V:45MHz PCS1900:80MHz
Antenna type	Integral
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	PIO3
SW Version	sw160

1.7.2 EUT details

Product Name	Marketing Name	Product Model	IMEI
GSM/GPRS/EDGE/WCDMA Digital Mobile Phone with Bluetooth	one touch 905M	MINI3G M	012835000000021

1.7.3 Auxiliary equipment details

AE (Auxiliary Equipment) 1#: Charger

Equipment	Charger
Manufacturer	Ten Pao International Ltd.
Model Number	CBA3120AA0C2
Input Voltage	100V-240V a.c.
Output Voltage	5.0V d.c.
Frequency	50/60Hz

AE (Auxiliary Equipment) 2#: Battery

Equipment	Battery
Manufacturer	BYD LITHIUM BATTERY CO., LTD
Model Number	CAB3120000C1
Capacity	850mAh
Rated Voltage	3.7V d.c.

AE (Auxiliary Equipment) 3#: Headset

Equipment	Headset
Manufacturer	Lianyun Electronic Technology Co.,Ltd
Model Number	CCB3160A10C2

AE (Auxiliary Equipment) 4#: Headset

Equipment	Headset
Manufacturer	Jiangxi Lianchuang Hongsheng
Model Number	CCB3160A10C3

AE (Auxiliary Equipment) 5#: Data Cable

Equipment	Data Cable
Manufacturer	Shen Zhen Ju Wei Electronic Co.,LTD
Model Number	CDA3122001C1

AE (Auxiliary Equipment) 6#: Data Cable

Equipment	Data Cable
Manufacturer	Huizhou Shenghua Industry Co.,Ltd
Model Number	CDA3122001C2

Note:


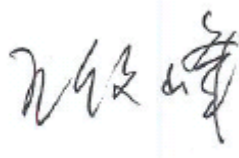

All the auxiliary equipments have been labeled with number in order to identify the test sample.

As the information described above, there are two different models of headset manufactured by two different companies. The relevant tests have been performed in order to verify that the EUT has the same features when exercised by each model. So all the tests except conducted emissions (please refer to the section 2.2.1 for details) shown in this test report are performed when the EUT exercised by only one model of these two headsets. The model which is chosen for testing is CCB3160A10C2.

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. Wang Zheng Test engineer 	Issued date: <p style="text-align: center;">2011.06.27</p>

2.2 Test result

2.2.1 Conducted Emissions-FCC Part15.107

Ambient condition:

Temperature	Relative humidity	Pressure
26.4°C	43.5%	101.4kPa

Test Setup:

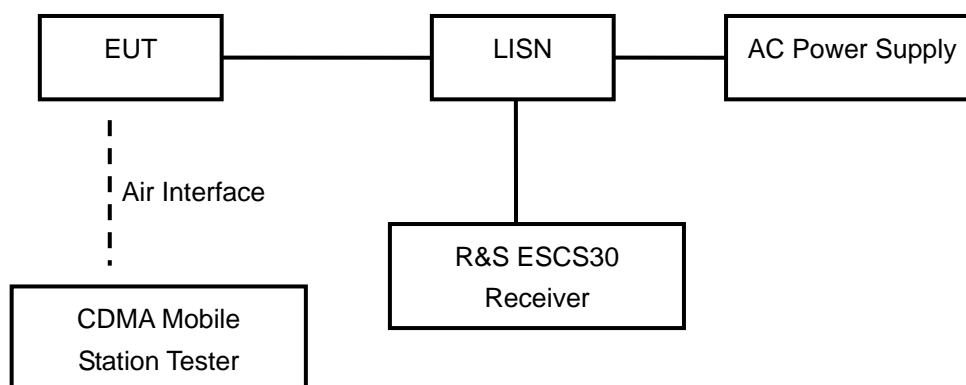


Figure 1

Test Procedure:

The EUT is placed on a non-metallic table 0.8m above the horizontal metal reference ground plane. The EUT is connected with LISN via the charger. The LISN is connected to the reference ground. 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 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:

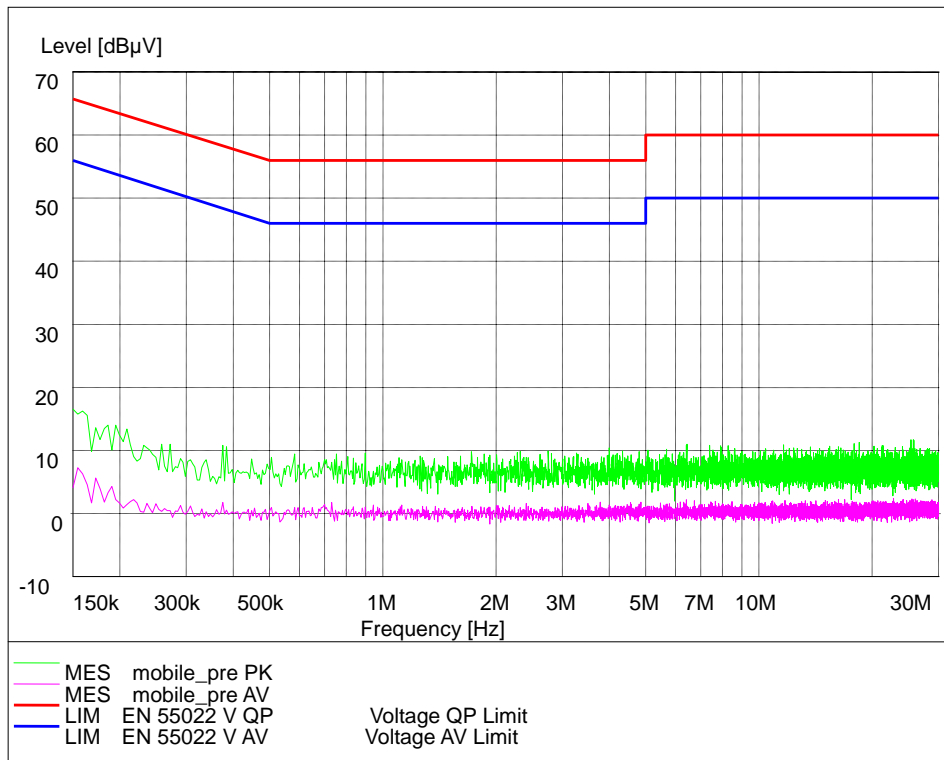
Frequency of Emission(MHz)	Limits(dBμV)	
	Quasi-peak	Average
0.15~0.5	66 to 56*	56 to 46*
0.5~5	56	46
5~30	60	50

Note: * Decreases with the logarithm of the frequency

Test result:

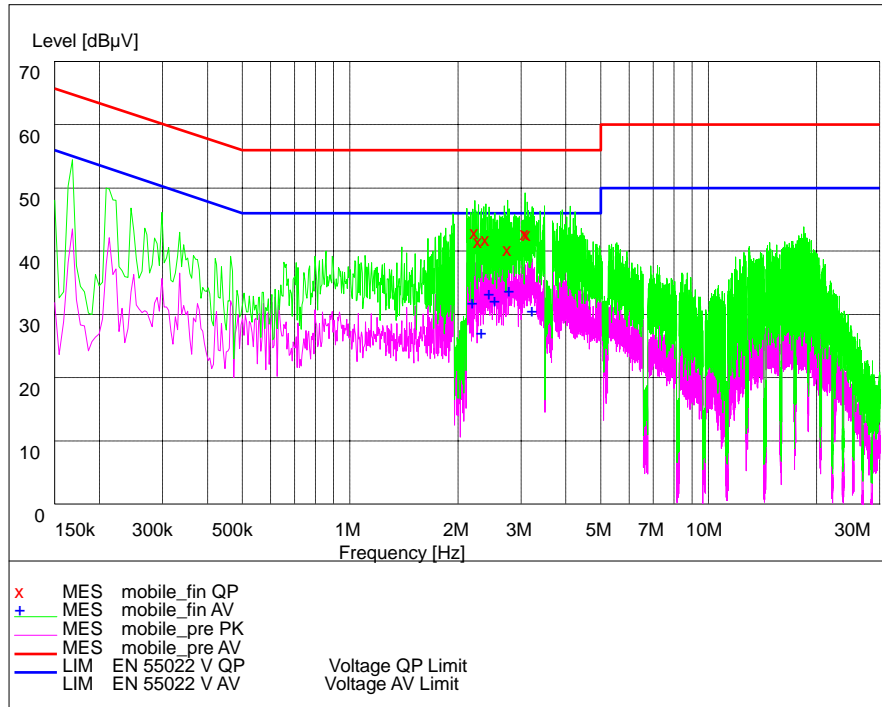
Refer to the following figures:

Noise Level of The Measuring Instrument



L and N Line

GSM 850 AE1#+AE2#+AE3#



L and N Line

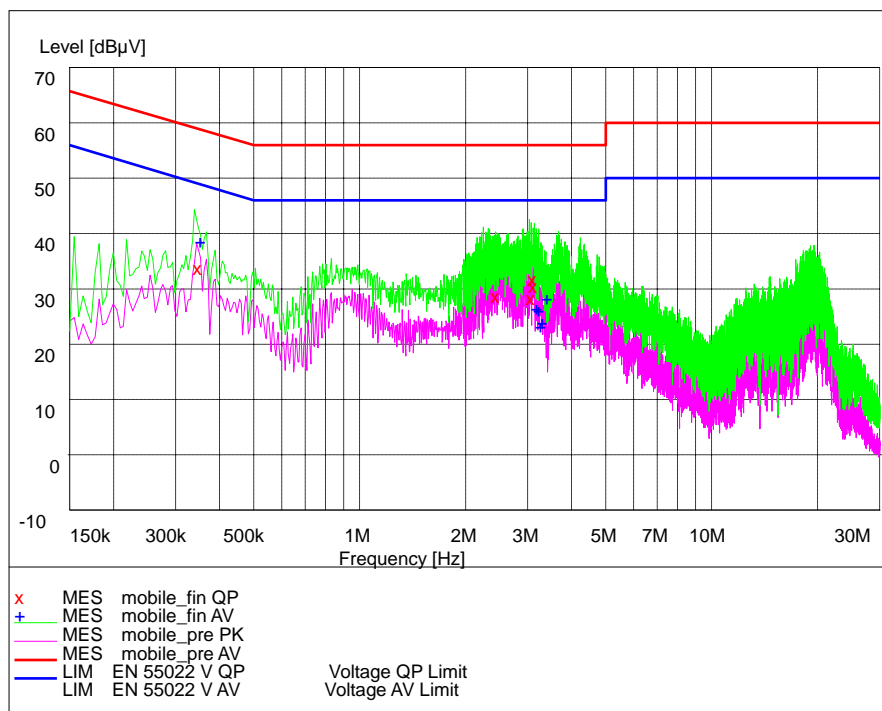
MEASUREMENT RESULT: "mobile_fin AV"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
2.197500	33.70	20.3	46	12.3	L1	GND
2.328000	28.90	20.3	46	17.1	N	GND
2.440500	35.10	20.3	46	10.9	L1	GND
2.535000	33.90	20.3	46	12.1	L1	GND
2.773500	35.60	20.3	46	10.4	N	GND
3.219000	32.40	20.3	46	13.6	L1	GND

MEASUREMENT RESULT: "mobile_fin QP"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
2.229000	44.80	20.3	56	11.2	N	GND
2.283000	43.30	20.3	56	12.7	L1	GND
2.391000	43.60	20.3	56	12.4	N	GND
2.751000	42.10	20.3	56	13.9	N	GND
3.075000	44.60	20.3	56	11.4	N	GND
3.120000	44.50	20.3	56	11.5	L1	GND

GSM 1900 AE1#+AE2#+AE3#



L and N Line

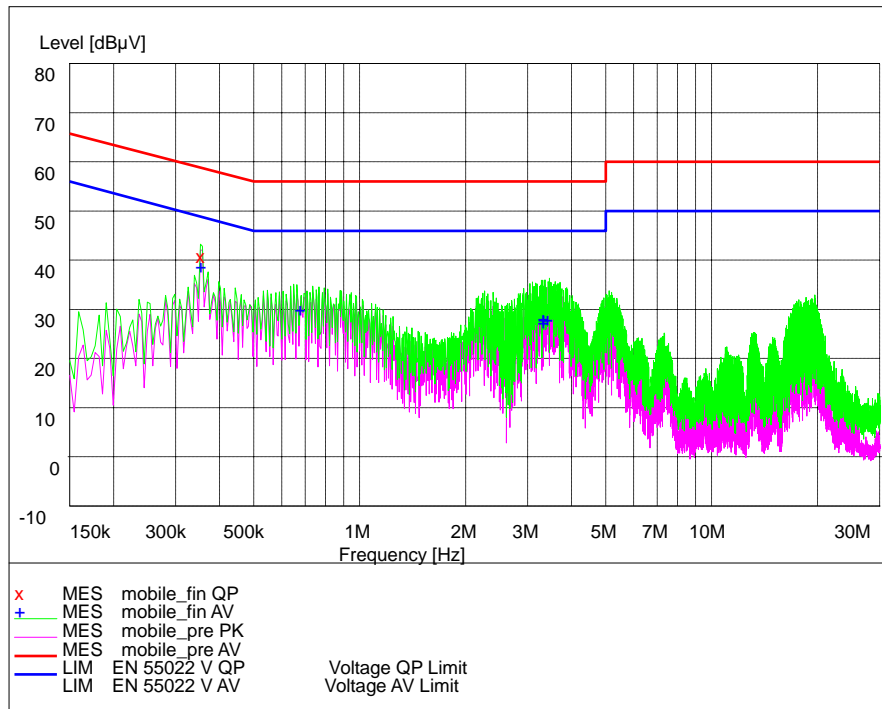
MEASUREMENT RESULT: "mobile_fin AV"

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.352500	40.70	20.2	49	8.2	N	GND
3.192000	28.60	20.3	46	17.4	L1	GND
3.223500	28.20	20.3	46	17.8	L1	GND
3.268500	25.20	20.3	46	20.8	N	GND
3.309000	26.00	20.3	46	20.0	N	GND
3.403500	30.30	20.3	46	15.7	N	GND

MEASUREMENT RESULT: "mobile_fin QP"

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.348000	35.70	20.2	59	23.3	N	GND
2.431500	30.70	20.3	56	25.3	L1	GND
3.070500	30.30	20.3	56	25.7	L1	GND
3.106500	33.80	20.3	56	22.2	L1	GND
3.111000	32.60	20.3	56	23.4	N	GND

WCDMA BAND V AE1#+AE2#+AE3#



L and N Line

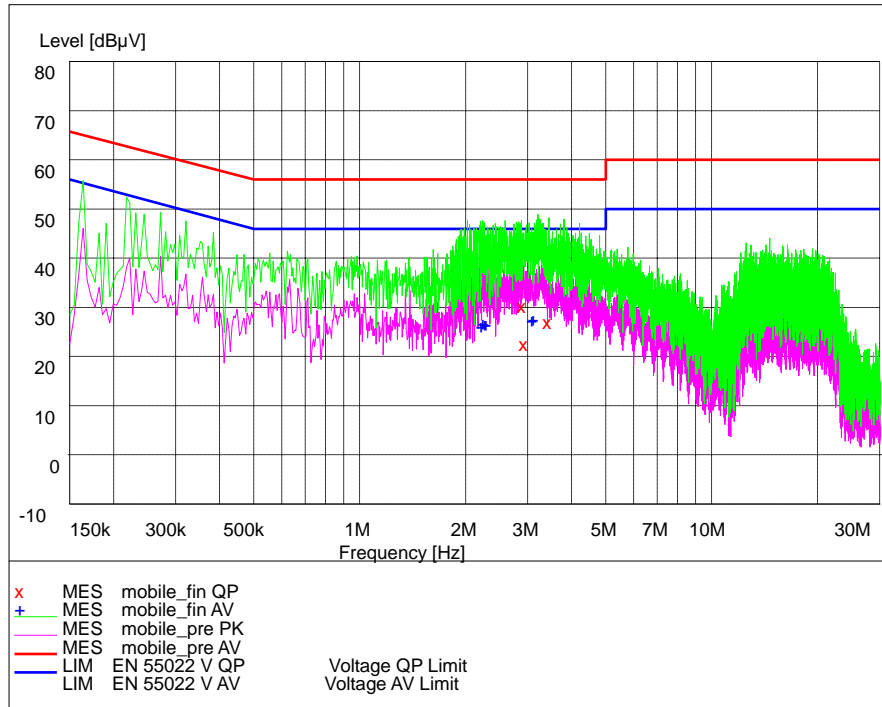
MEASUREMENT RESULT: "mobile_fin AV"

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.354000	41.00	20.2	49	7.8	L1	GND
0.679000	32.40	20.3	46	13.6	L1	GND
3.329500	30.40	20.3	46	15.6	N	GND
3.332000	29.70	20.3	46	16.3	N	GND
3.341500	30.30	20.3	46	15.7	L1	GND
3.429500	30.30	20.3	46	15.7	L1	GND

MEASUREMENT RESULT: "mobile_fin QP"

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.353500	43.10	20.2	59	15.7	L1	GND

FM Radio AE1#+AE2#+AE3#



L and N Line

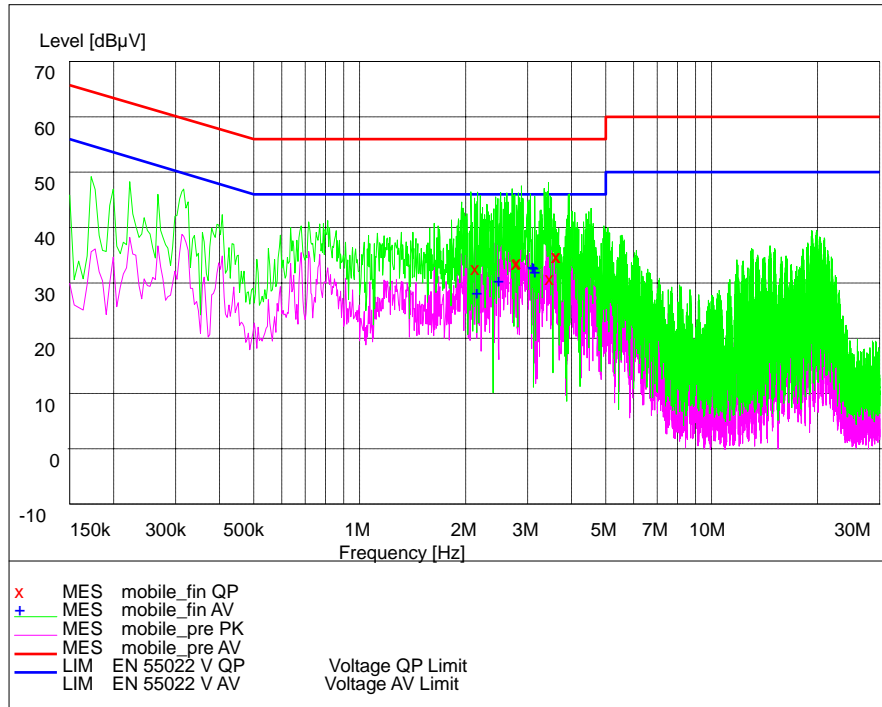
MEASUREMENT RESULT: "mobile_fin AV"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
2.217000	28.50	20.3	46	17.5	N	GND
2.245000	29.00	20.3	46	17.0	N	GND
2.274000	28.90	20.3	46	17.1	L1	GND
2.290000	28.90	20.3	46	17.1	L1	GND
3.087500	29.70	20.3	46	16.3	N	GND
3.117500	29.80	20.3	46	16.2	L1	GND

MEASUREMENT RESULT: "mobile_fin QP"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
2.896000	32.60	20.3	56	23.4	L1	GND
2.932500	24.70	20.3	56	31.3	N	GND
3.433000	29.40	20.3	56	26.6	L1	GND

MP3/MP4 AE1#+AE2#+AE3#



L and N Line

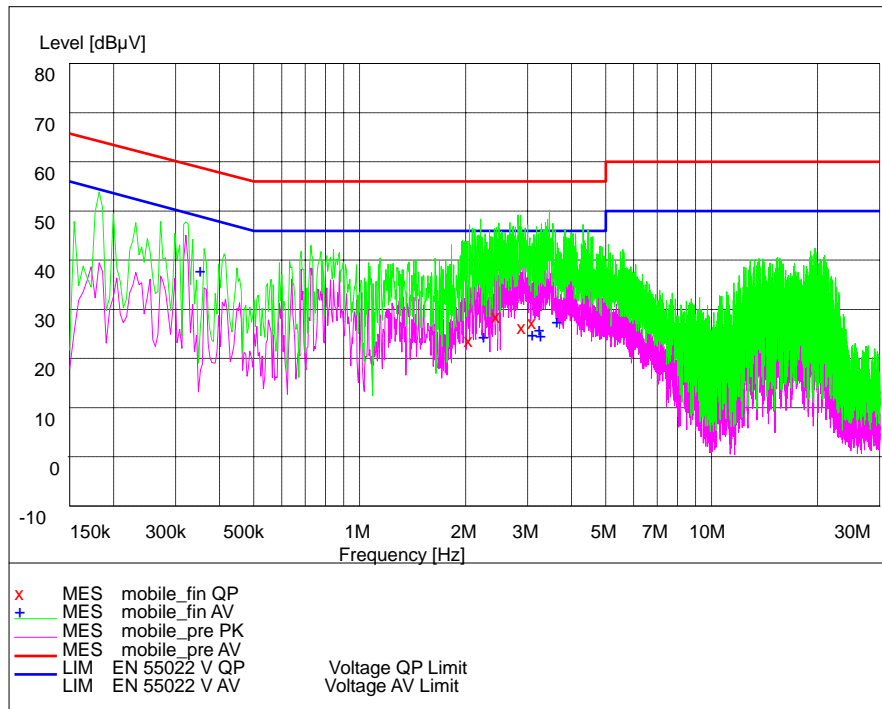
MEASUREMENT RESULT: "mobile_fin AV"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
2.157000	30.40	20.3	46	15.6	N	GND
2.481000	32.60	20.3	46	13.4	L1	GND
3.102000	35.00	20.3	46	11.0	N	GND
3.120000	34.80	20.3	46	11.2	N	GND
3.156000	34.10	20.3	46	11.9	L1	GND

MEASUREMENT RESULT: "mobile_fin QP"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
2.134500	34.60	20.3	56	21.4	N	GND
2.787000	35.60	20.3	56	20.4	L1	GND
2.809500	35.70	20.3	56	20.3	N	GND
3.480000	32.80	20.3	56	23.2	L1	GND
3.624000	36.90	20.3	56	19.1	N	GND
3.642000	36.80	20.3	56	19.2	N	GND

Camera AE1#+AE2#+AE3#



L and N Line

MEASUREMENT RESULT: "mobile_fin AV"

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
0.352500	40.30	20.2	49	8.6	N	GND
2.251000	26.90	20.3	46	19.1	L1	GND
3.100500	27.30	20.3	46	18.7	N	GND
3.243500	28.20	20.3	46	17.8	L1	GND
3.271000	27.00	20.3	46	19.0	L1	GND
3.642500	29.80	20.3	46	16.2	L1	GND

MEASUREMENT RESULT: "mobile_fin QP"

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Line	PE
2.045000	25.90	20.3	56	30.1	N	GND
2.452000	31.00	20.3	56	25.0	L1	GND
2.900000	28.70	20.3	56	27.3	L1	GND
3.096000	29.70	20.3	56	26.3	N	GND

2.2.2 Radiated Emissions-FCC Part15.109

Ambient condition:

Temperature	Relative humidity	Pressure
25.3°C	37.6%	101.1kPa

Test Setup:

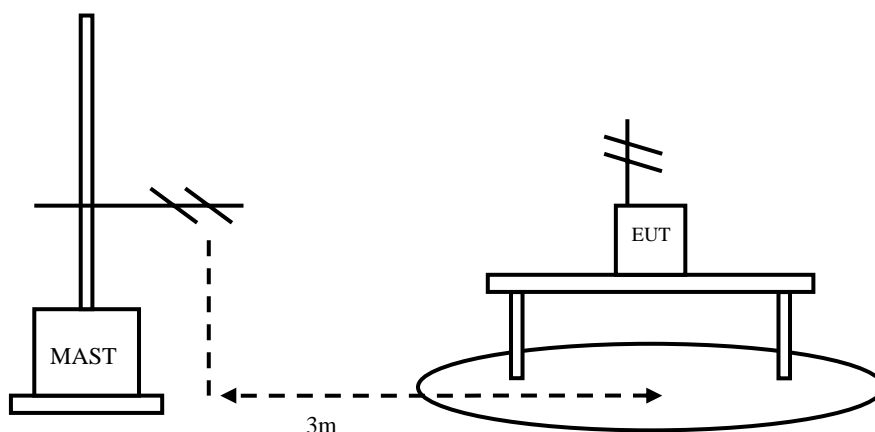


Figure 2

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 EUT should work in idle mode. 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 EUT is laid in two modes as follow: 1. put the EUT in horizontal direction; 2. put the EUT in vertical direction.

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

A “reference path loss” is established and the A_{Rpl} is the attenuation of “reference path loss”, and including the gain of receive antenna, the gain of the preamplifier, the cable loss.

The measurement results are obtained as described below:

$$\text{Result} = P_{\text{mea}} + A_{Rpl}$$

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
	Peak	74

Test result:

GSM 850 Mode

Frequency(MHz)	Result(dBuV/m)	A_{Rpl} (dB)	P_{mea} (dBuV/m)	Polarity
877.16	34.80	5.5	29.30	Vertical
883.22	35.10	5.5	29.60	Horizontal
2610.02	31.50	-23.7	55.20	Horizontal
2977.55	32.00	-21.5	53.50	Vertical
5308.61	33.19	-15.1	48.29	Vertical
5903.80	35.56	-15.9	51.46	Vertical

PCS1900 Mode

Frequency(MHz)	Result(dBuV/m)	A_{Rpl} (dB)	P_{mea} (dBuV/m)	Polarity
1479.75	29.40	-24.3	53.70	Vertical
1593.98	29.80	-24.1	53.90	Horizontal
2590.38	31.30	-23.7	55.00	Vertical
4362.72	21.07	-19.1	40.17	Vertical
7102.20	27.82	-12.8	40.62	Vertical
9969.93	29.69	-9.6	39.29	Vertical

WCDMA Band V Mode

Frequency(MHz)	Result(dBuV/m)	A _{Rpl} (dB)	P _{mea} (dBuV/m)	Polarity
1191.18	21.10	5.9	15.20	Vertical
1581.96	12.23	-24.3	36.53	Vertical
2405.21	14.89	-23.7	38.59	Vertical
2887.77	16.57	-21.5	38.07	Horizontal
4761.52	31.25	-19.0	50.25	Vertical
6000.00	35.18	-15.9	51.08	Vertical

FM Radio Mode

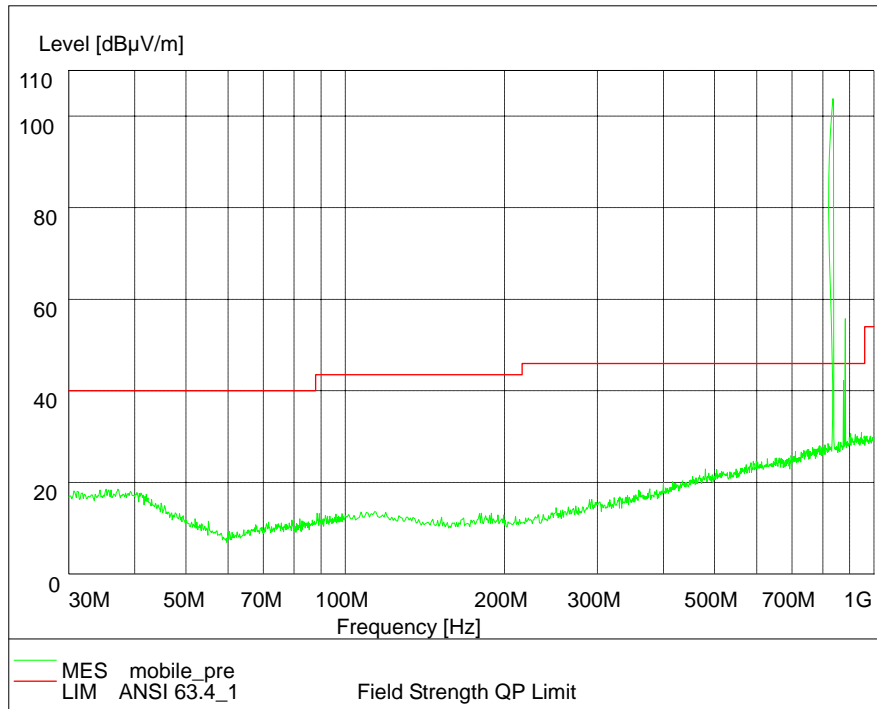
Frequency(MHz)	Result(dBuV/m)	A _{Rpl} (dB)	P _{mea} (dBuV/m)	Polarity
491.98	15.80	3.9	11.90	Vertical
955.91	35.60	5.7	29.90	Vertical
2405.21	15.28	-23.9	39.18	Horizontal
2910.22	16.75	-21.5	38.25	Vertical
4376.73	21.42	-19.1	40.52	Vertical
6000.00	25.20	-15.9	41.10	Vertical

MP3/MP4 Mode

Frequency(MHz)	Result(dBuV/m)	A _{Rpl} (dB)	P _{mea} (dBuV/m)	Polarity
474.34	15.50	3.9	11.60	Vertical
945.89	35.60	5.7	29.90	Vertical
2393.98	15.18	-23.9	39.08	Vertical
2946.69	16.45	-21.5	37.95	Horizontal
4376.77	21.34	-19.1	40.44	Vertical
5993.98	25.25	-15.9	41.15	Vertical

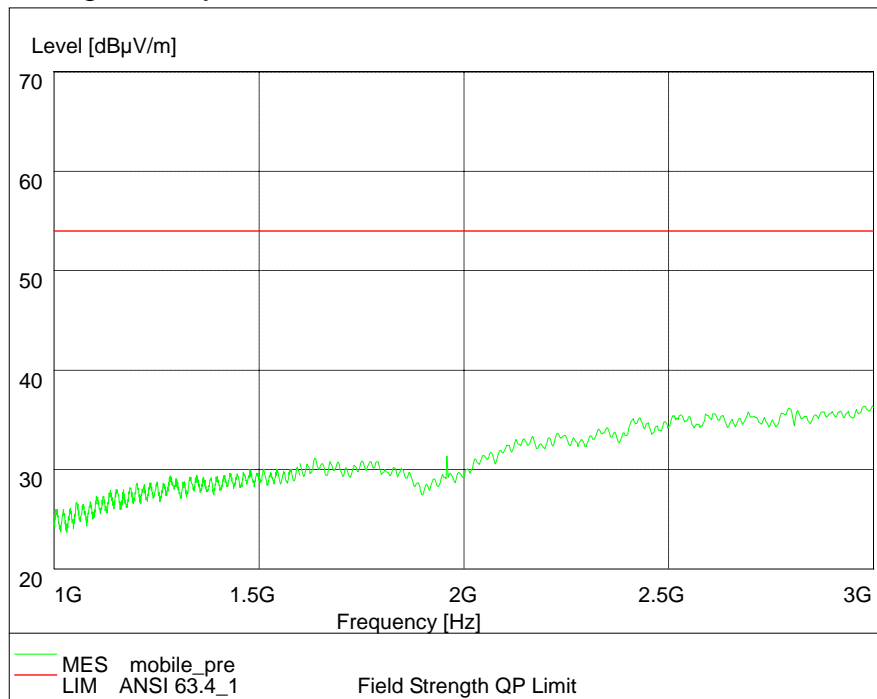
Camera Mode

Frequency(MHz)	Result(dBuV/m)	A _{Rpl} (dB)	P _{mea} (dBuV/m)	Polarity
486.37	15.40	3.9	11.50	Vertical
939.87	35.70	5.7	30.00	Horizontal
2360.32	15.04	-23.9	38.94	Vertical
2980.36	16.54	-21.5	38.04	Vertical
4364.72	21.06	-19.1	40.16	Vertical
5993.98	25.00	-15.9	40.90	Vertical

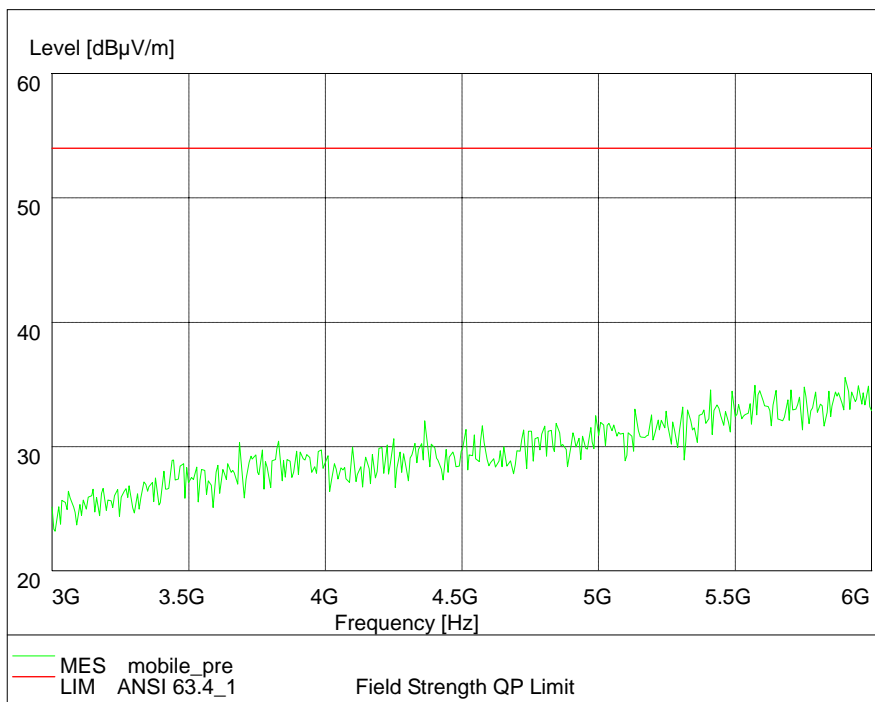


GSM 850(30MHz – 1GHz)

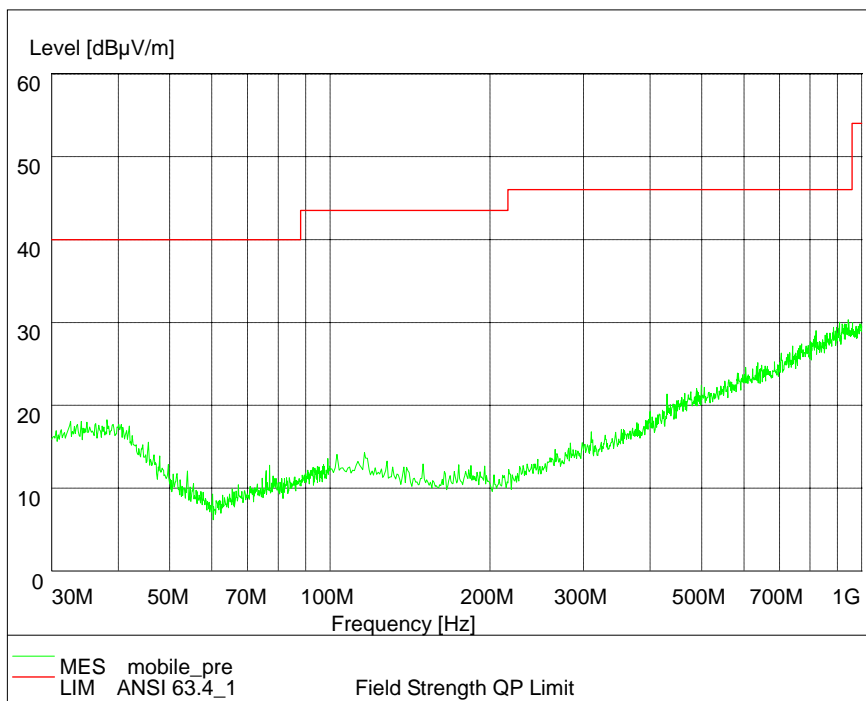
Note: The signals beyond the limit are the base station and simulator carrier.



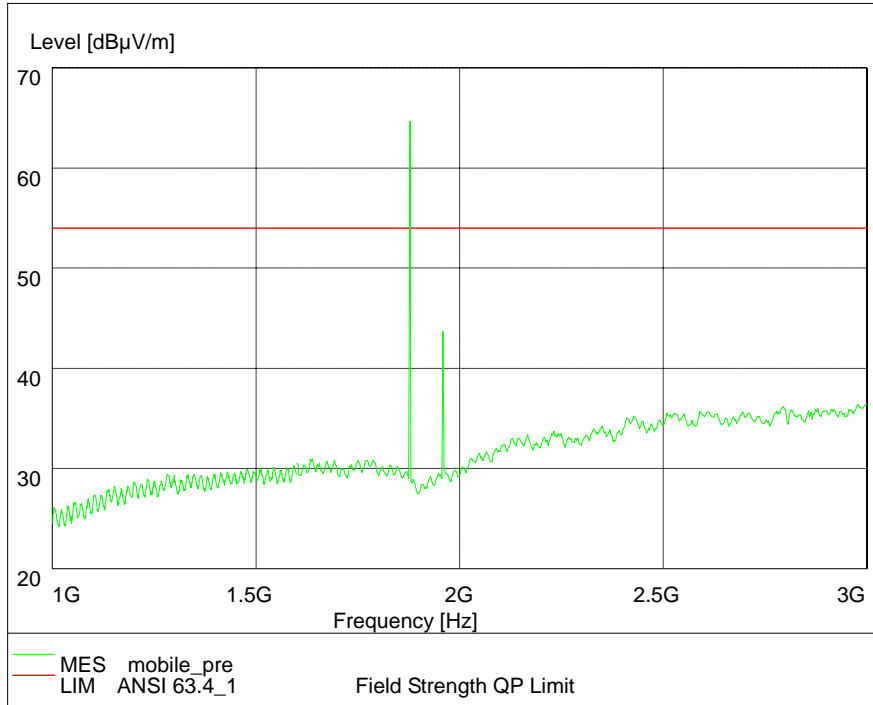
GSM 850(1GHz – 3GHz)



GSM 850(1GHz – 6GHz)

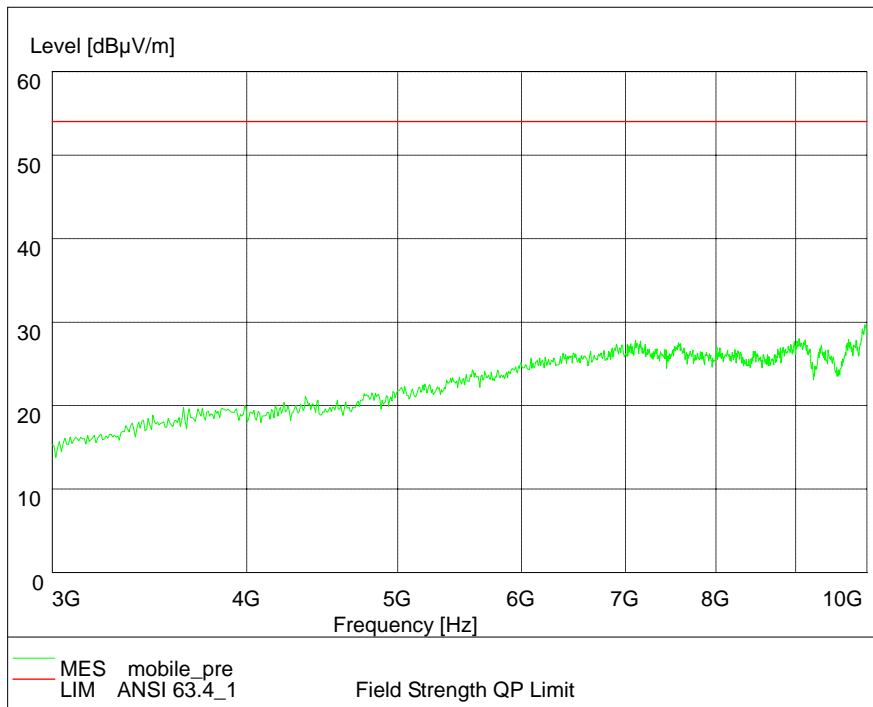


PCS 1900(30MHz – 1GHz)

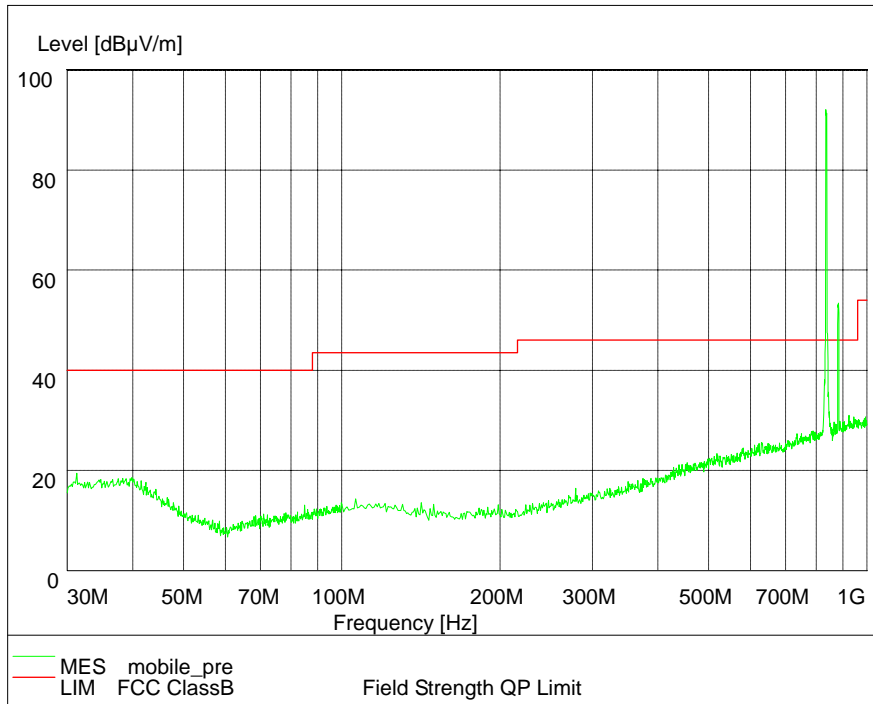


PCS 1900(1GHz – 3GHz)

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

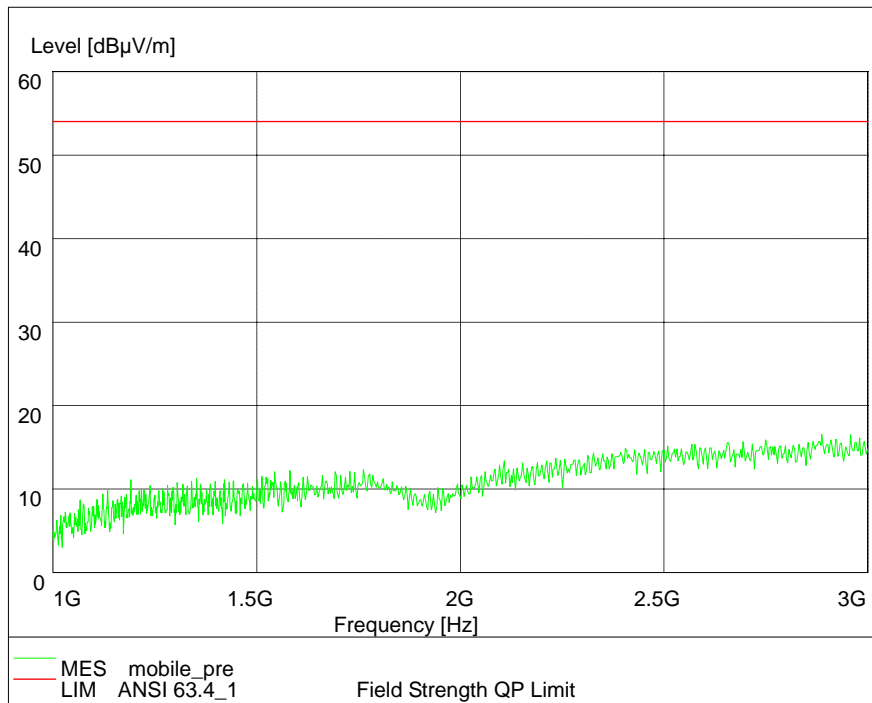


PCS 1900(3GHz – 10GHz)

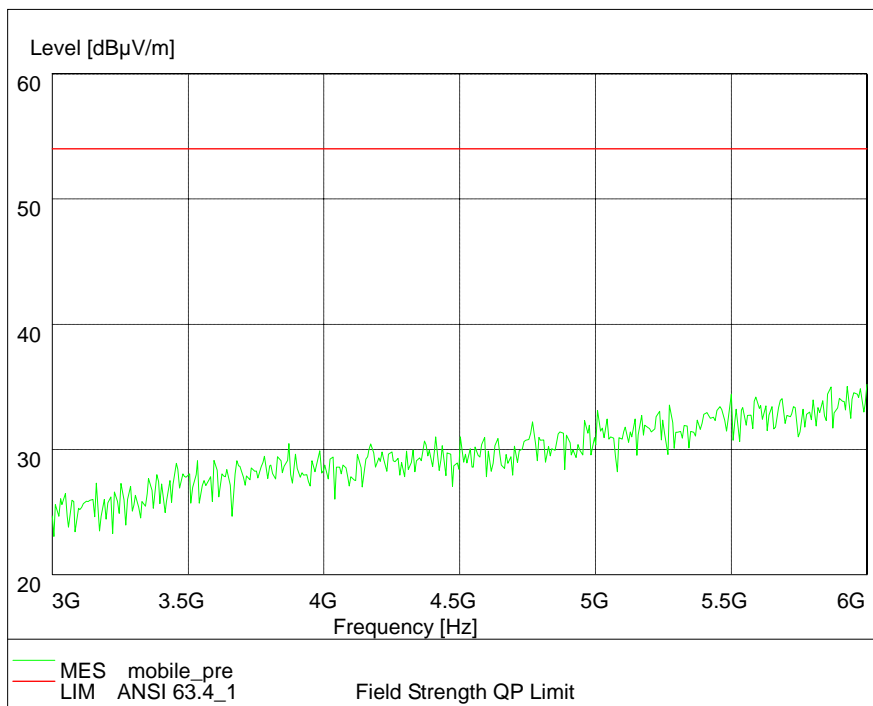


WCDMA BAND V (30MHz – 1GHz)

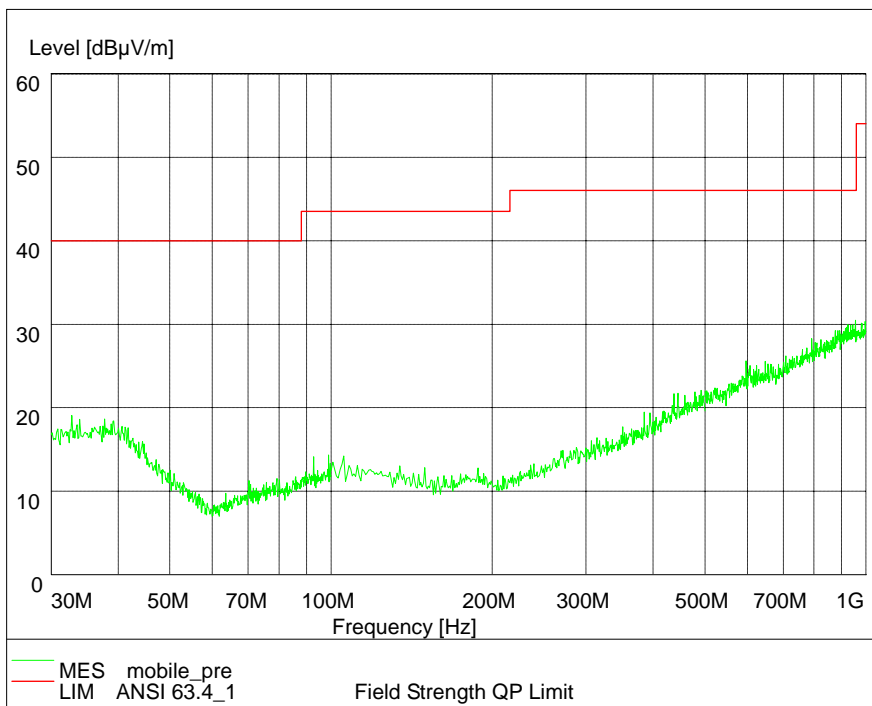
Note: The signals beyond the limit are the base station and simulator carrier.



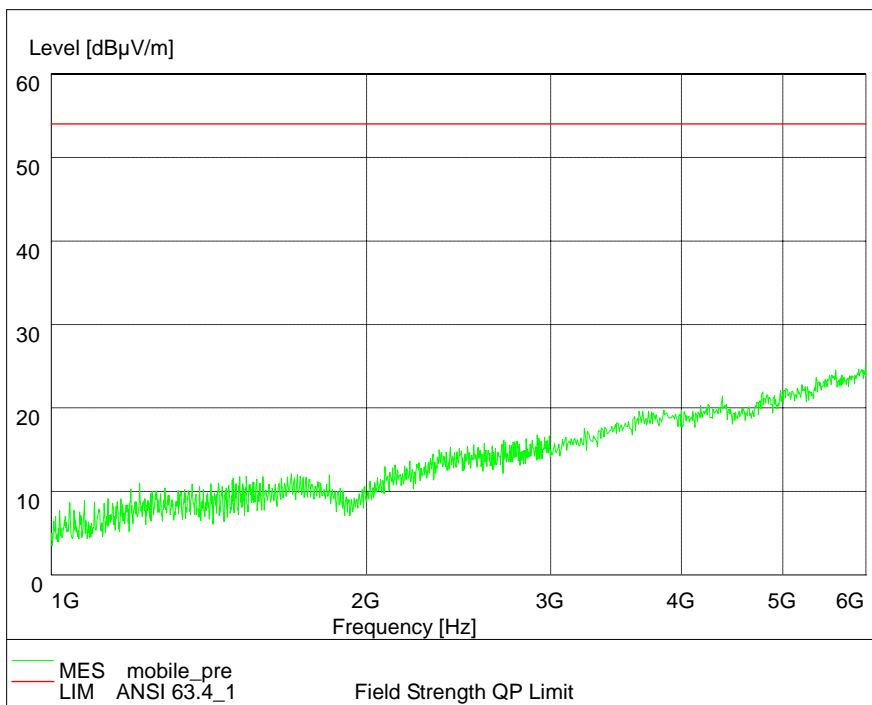
WCDMA BAND V (1GHz – 3GHz)



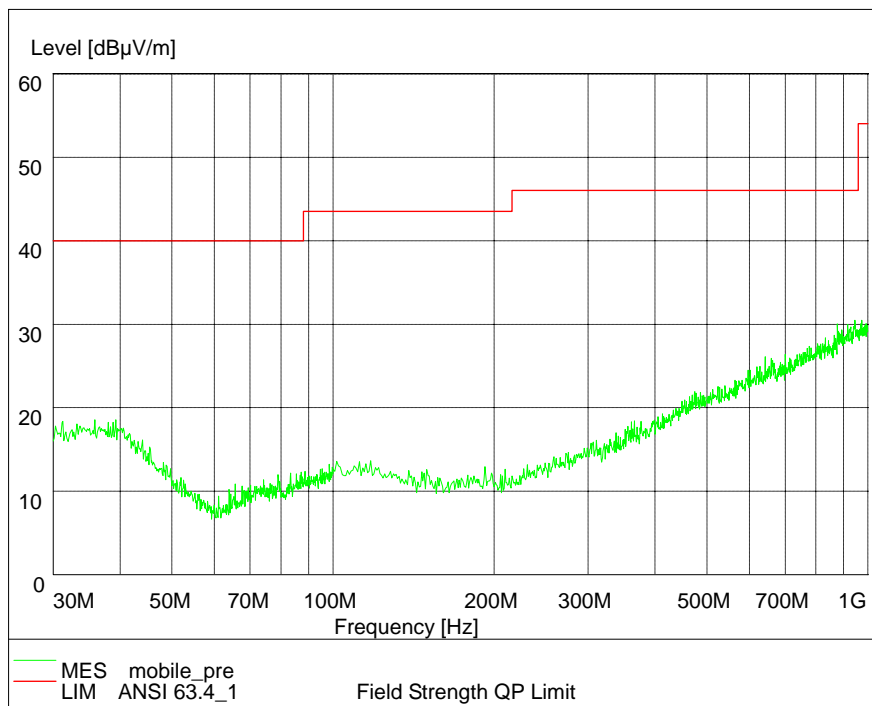
WCDMA BAND V (3GHz – 6GHz)



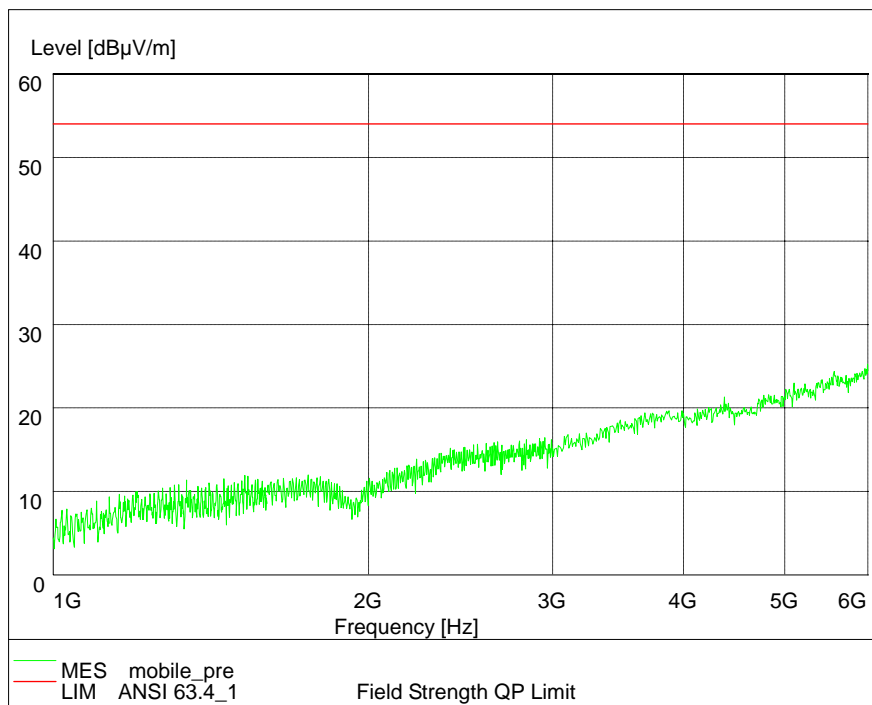
FM Radio (30MHz – 1GHz)



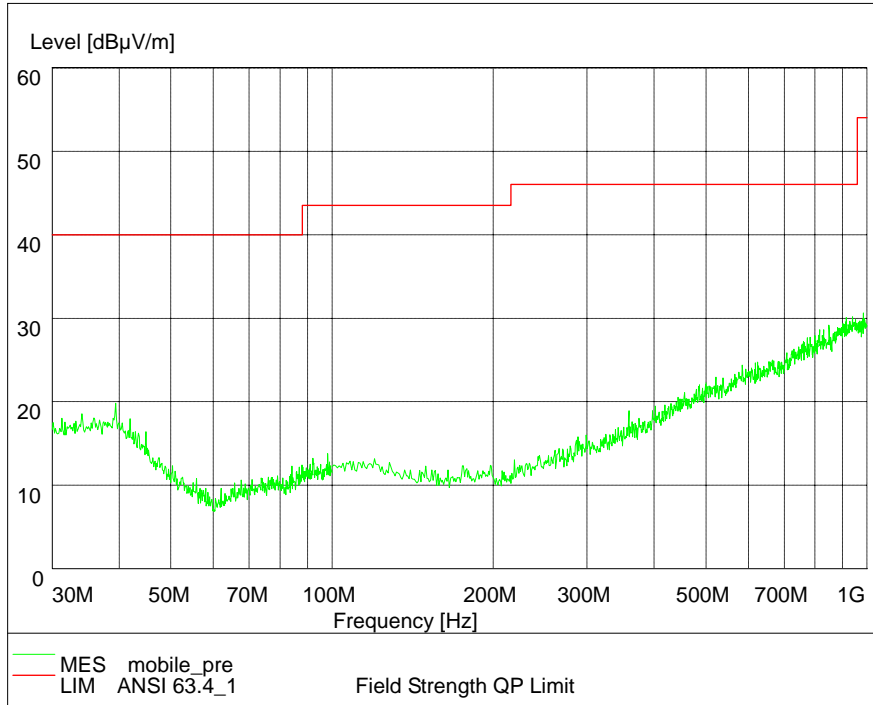
FM Radio (1GHz – 6GHz)



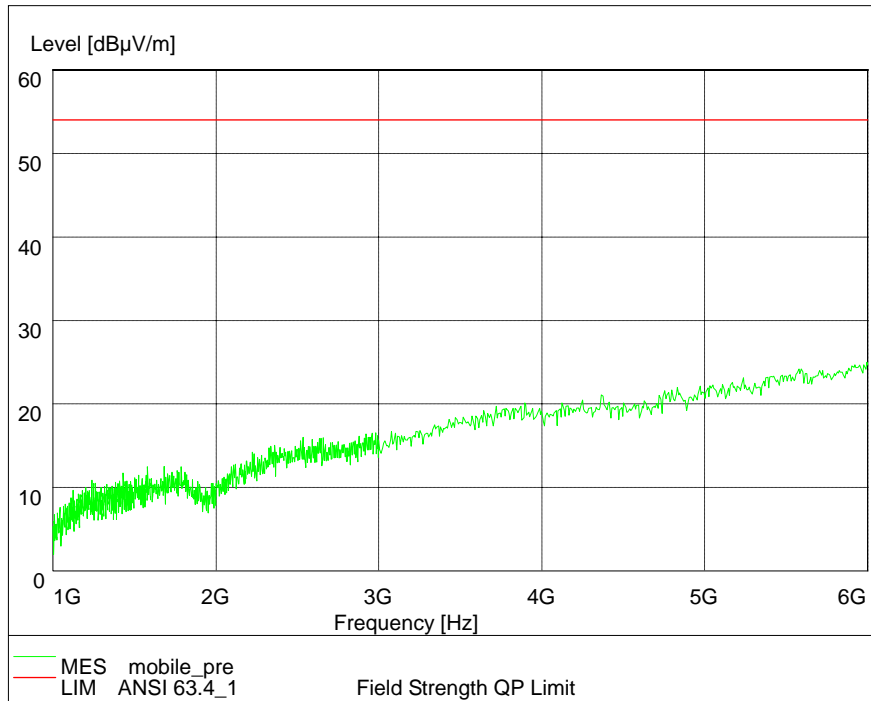
MP3/MP4 (30MHz – 1GHz)



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. 2011
2	ESI 40 EMI test receiver	R&S	100015	19 th Aug. 2011
3	E5515C(8960) Mobile Station Tester	Agilent	GB44050904	19 th Aug. 2011
4	9.080m×5.255m×3.525m Shielding room	FRANKONIA	-----	19 th Aug. 2011
5	ESCS30 EMI test receiver	R&S	100029	19 th Aug. 2011
6	HL562 Ultra log test antenna	R&S	100016	19 th Aug. 2011
7	ESH3-Z2 Pulse limiter	R&S	10002	19 th Aug. 2011
8	ESH3-Z5 Attenuator	R&S	100020	19 th Aug. 2011
9	ESH2Z11 LISN	R&S	50FH-020-10	19 th Aug. 2011
10	HF 906 Double-Ridged Waveguide Horn Antenna	R&S	100030	19 th Aug. 2011
11	HF 906 Double-Ridged Waveguide Horn Antenna	R&S	100029	19 th Aug. 2011
12	PS2000 Turn Table	FRANKONIA	-----	19 th Aug. 2011
13	MA260 Antenna Master	FRANKONIA	-----	19 th Aug. 2011
14	ES-K1EMI test software	R&S	-----	19 th Aug. 2011
15	HL562 Receive antenna	R&S	100167	19 th Aug. 2011

Appendix