D-PL-12111-01-01

CNAS L0447

Registration No.910917

TEST REPORT

Report No.: SRTC2012-H024-E0041

Product Name: GSM/GPRS Digital Mobile Phone

Product Model: Movistar Urban M

Applicant: ZTE Corporation

Manufacturer: ZTE Corporation

Specification: FCC Part15B (Certification)

(October 1, 2009 edition)

FCC ID: Q78-URBANM

The State Radio_monitoring_center Testing Center (SRTC)

No.80 Beilishi Road Xicheng District Beijing, China

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

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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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Contacted person: Wang Junfeng
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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: Q78
Contacted person: Min Zhang
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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: 28th June 2012
Date of test: 29th June 2012 to 6th July 2012

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 Digital Mobile Phone
FCC ID	Q78-URBANM
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.: 31.1dBm E.I.R.P.: 28.4dBm
Modulation type	GMSK
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	3.7V
Extreme Temperature	Lowest: -30°C Highest: +50°C
Extreme Voltage	Minimum: 3.5V Maximum: 4.2V
HW Version	GMAJb
SW Version	SSV-MOVI-8HS-P120A41V1.0.0

1.7.2 EUT details

Name	Model	IMEI
GSM/GPRS Digital Mobile Phone	Movistar Urban M	865606010001566

1.7.3 Auxiliary equipment details

AE (Auxiliary Equipment) 1#: Charger

Equipment	Charger
Manufacturer	RUIDE
Model Number	STC-A22O50I400M5-C
Input Voltage	100V-240V a.c.
Output Voltage	5.0V d.c.
Frequency	50/60Hz

AE (Auxiliary Equipment) 2#: Battery

Equipment	Battery
Manufacturer	ZTE CORPORATION
Model Number	Li3706T42P3h553447
Capacity	600mAh
Rated Voltage	3.7V d.c.

AE (Auxiliary Equipment) 3#: Headset

Equipment	Headset
Manufacturer	NEW LEADER INDUSTRY CO.,LTD
Model Number	NLD-EM127E-041S

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. Du Hao Test engineer	Issued date: **2012.07.06**

2.2 Test result

2.2.1 Conducted Emissions-FCC Part15.107

Ambient condition:

Temperature	Relative humidity	Pressure
24.6°C	36.4%	100.1kPa

Test Setup:

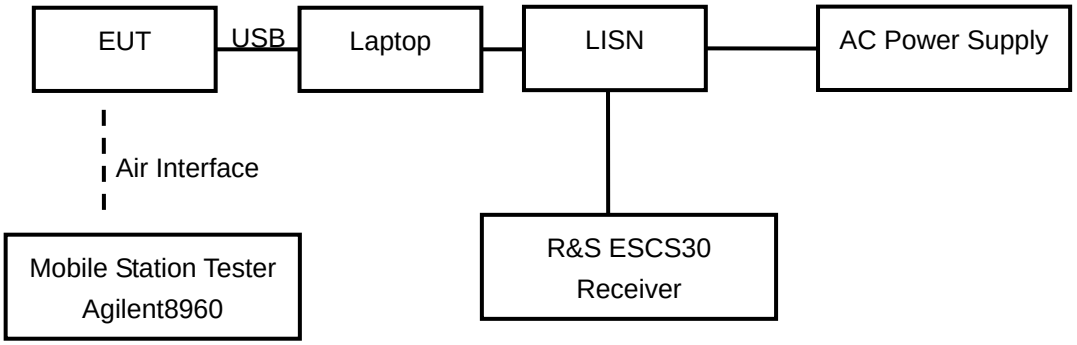


Figure 1

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.

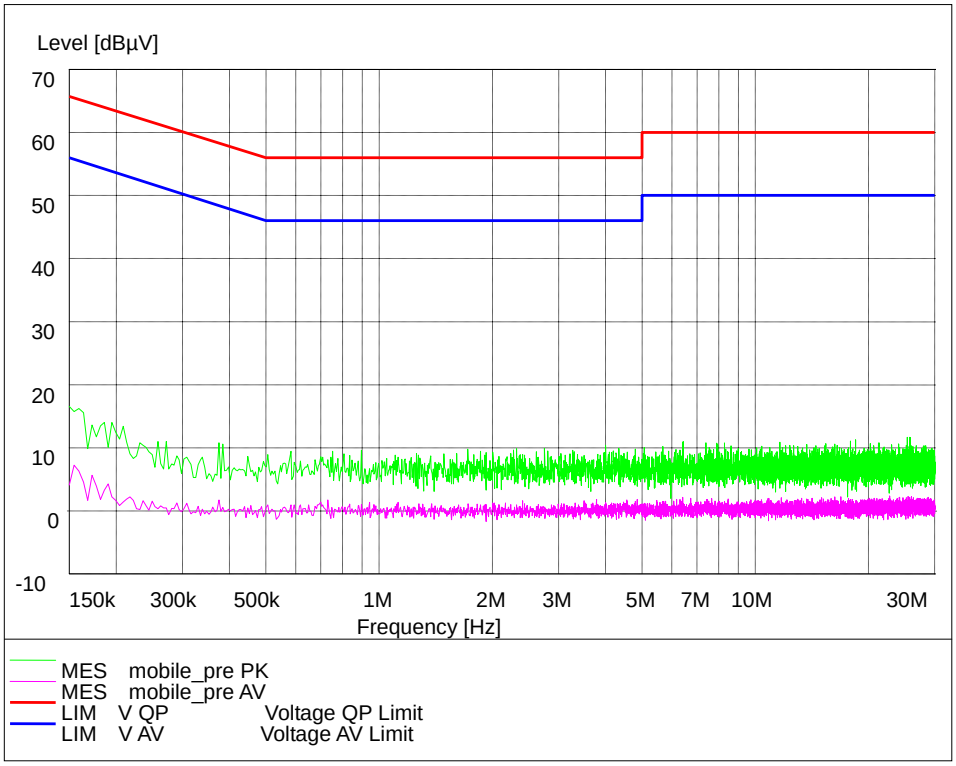
Limit:

Frequency of Emission(MHz)	Limits(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

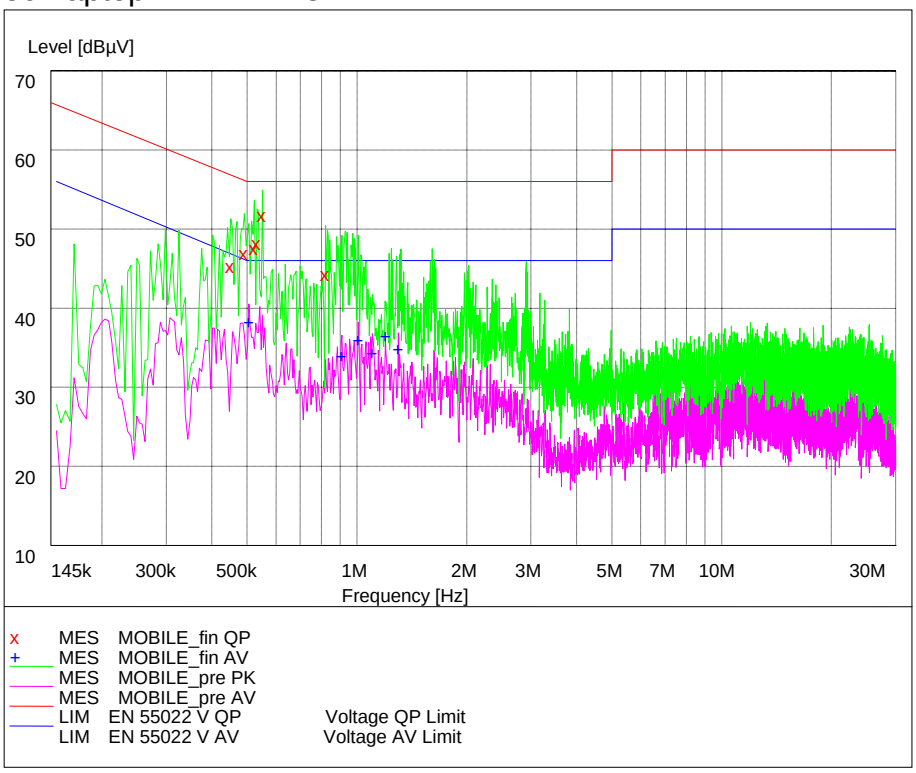
Test result:

Noise Level of The Measuring Instrument



L and N Line

GSM 850 Laptop+AE2#+AE3#



L and N Line

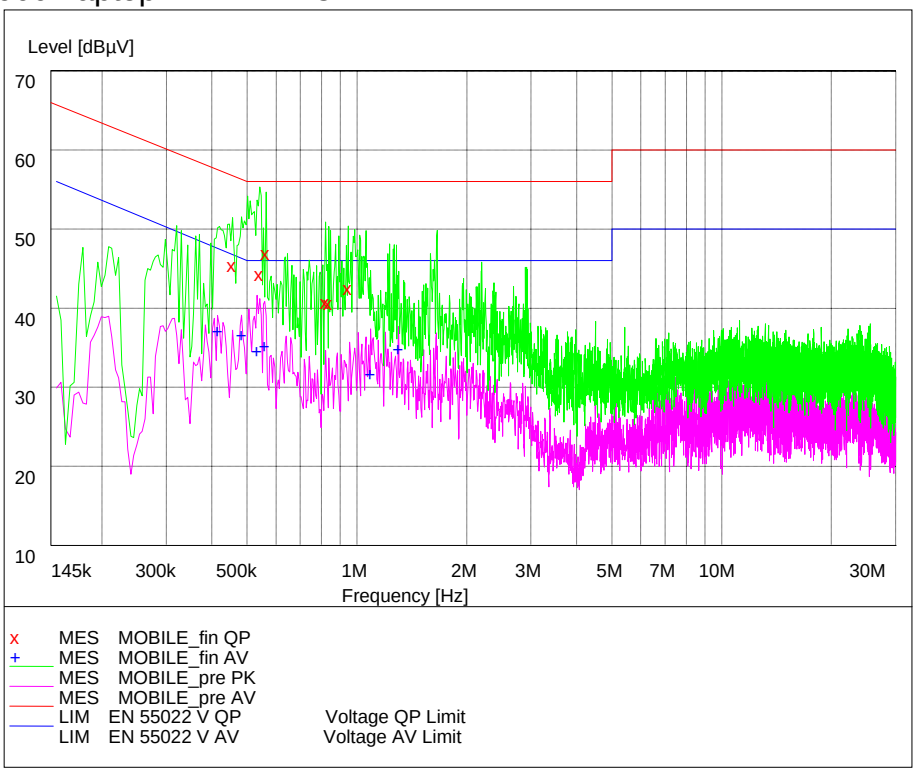
MEASUREMENT RESULT: "MOBILE_fin QP"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
0.451500	46.60	20.3	57	10.4	L1	GND
0.492000	48.20	20.3	56	7.8	L1	GND
0.523500	48.90	20.3	56	7.1	N	GND
0.532500	49.50	20.3	56	6.5	N	GND
0.550500	53.10	20.3	56	2.9	L1	GND
0.820500	45.60	20.3	56	10.4	L1	GND

MEASUREMENT RESULT: "MOBILE_fin AV"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
0.505500	39.50	20.3	46	6.5	L1	GND
0.910500	35.30	20.2	46	10.7	L1	GND
1.009500	37.30	20.2	46	8.7	L1	GND
1.104000	35.60	20.2	46	10.4	L1	GND
1.198500	37.70	20.2	46	8.3	L1	GND
1.297500	36.10	20.2	46	9.9	L1	GND

PCS 1900 Laptop+AE2#+AE3#



L and N Line

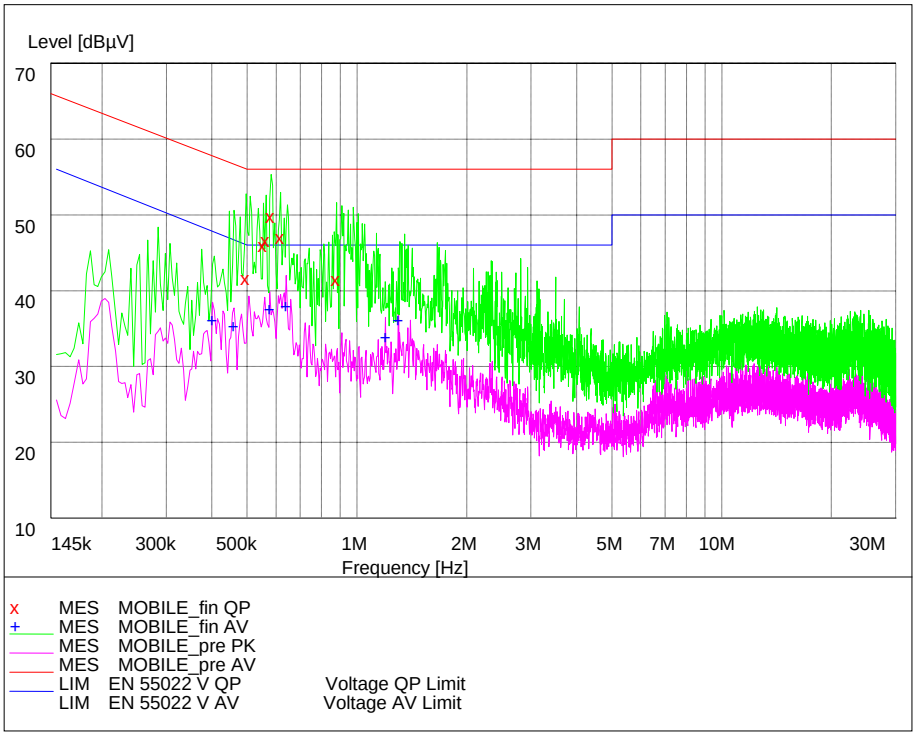
MEASUREMENT RESULT: "MOBILE_fin QP"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.456000	46.70	20.3	57	10.3	N	GND
0.541500	45.60	20.3	56	10.4	L1	GND
0.564000	48.20	20.3	56	7.8	N	GND
0.820500	42.10	20.3	56	13.9	L1	GND
0.838500	42.00	20.3	56	14.0	L1	GND
0.946500	43.90	20.3	56	12.1	N	GND

MEASUREMENT RESULT: "MOBILE_fin AV"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.415500	38.40	20.3	48	9.6	L1	GND
0.483000	37.90	20.3	46	8.1	L1	GND
0.532500	35.90	20.3	46	10.1	L1	GND
0.559500	36.50	20.3	46	9.5	N	GND
1.090500	33.00	20.2	46	13.0	L1	GND
1.302000	36.10	20.2	46	9.9	L1	GND

FM Radio Laptop+AE2#+AE3#



L and N Line

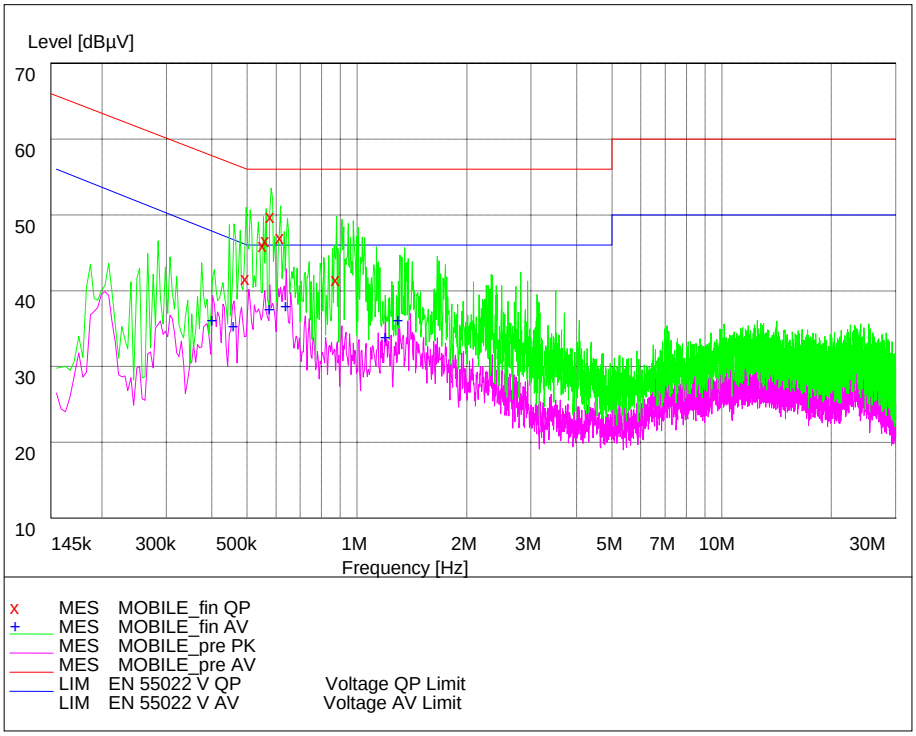
MEASUREMENT RESULT: "MOBILE_fin QP"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
0.496500	43.10	20.3	56	12.9	N	GND
0.555000	47.40	20.3	56	8.6	L1	GND
0.564000	48.00	20.3	56	8.0	L1	GND
0.582000	51.20	20.3	56	4.8	L1	GND
0.618000	48.40	20.3	56	7.6	L1	GND
0.879000	42.90	20.3	56	13.1	N	GND

MEASUREMENT RESULT: "MOBILE_fin AV"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
0.402000	37.50	20.2	48	10.5	L1	GND
0.460500	36.70	20.3	47	10.3	L1	GND
0.577500	38.90	20.3	46	7.1	L1	GND
0.640500	39.40	20.3	46	6.6	L1	GND
1.198500	35.30	20.2	46	10.7	L1	GND
1.297500	37.50	20.2	46	8.5	L1	GND

MP3/MP4 Laptop+AE2#+AE3#



L and N Line

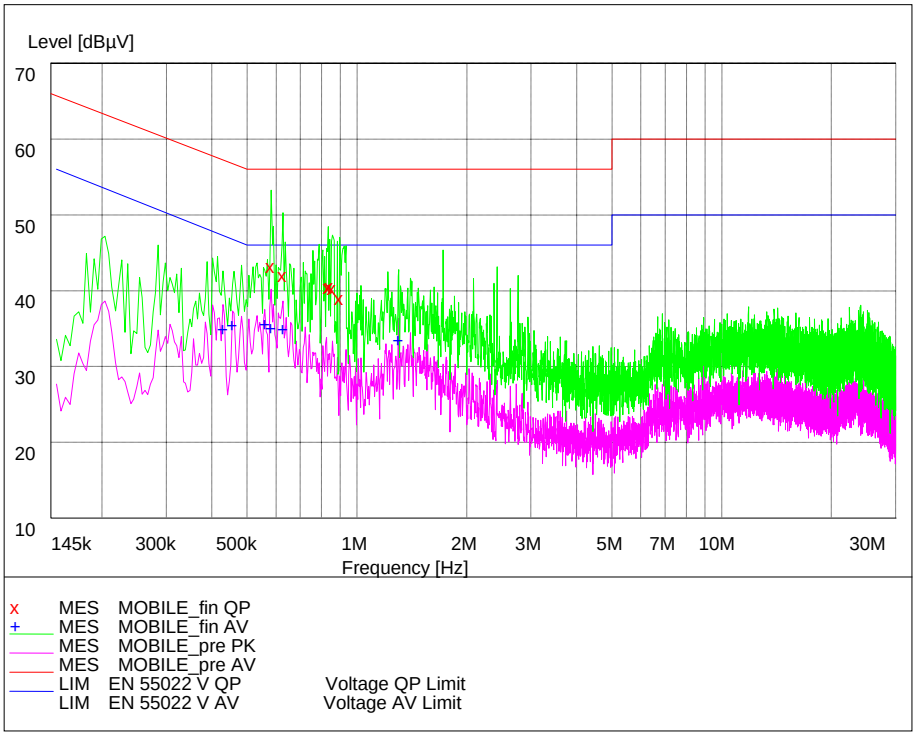
MEASUREMENT RESULT: "MOBILE_fin QP"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
0.474000	40.80	20.3	56	15.2	N	GND
0.501000	41.30	20.3	56	14.7	N	GND
0.537000	44.00	20.3	56	12.0	L1	GND
0.550500	43.40	20.3	56	12.6	N	GND
0.582000	49.00	20.3	56	7.0	N	GND
0.631500	44.30	20.3	56	11.7	N	GND

MEASUREMENT RESULT: "MOBILE_fin AV"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
0.406000	37.60	20.2	48	10.4	L1	GND
0.481500	37.70	20.3	47	9.3	L1	GND
0.590000	39.90	20.3	46	6.1	L1	GND
0.700500	39.80	20.3	46	6.2	L1	GND
1.098500	35.10	20.2	46	10.9	L1	GND
1.310000	37.80	20.2	46	8.2	L1	GND

Camera Laptop+AE2#+AE3#



L and N Line

MEASUREMENT RESULT: "MOBILE_fin QP"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.582000	44.60	20.3	56	11.4	L1	GND
0.627000	43.50	20.3	56	12.5	L1	GND
0.834000	41.90	20.3	56	14.1	L1	GND
0.843000	42.00	20.3	56	14.0	N	GND
0.856500	41.70	20.3	56	14.3	L1	GND
0.897000	40.50	20.2	56	15.5	L1	GND

MEASUREMENT RESULT: "MOBILE_fin AV"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.429000	36.30	20.3	47	10.7	L1	GND
0.456000	36.80	20.3	47	10.2	L1	GND
0.559500	37.00	20.3	46	9.0	L1	GND
0.582000	36.40	20.3	46	9.6	L1	GND
0.627000	36.30	20.3	46	9.7	L1	GND
1.302000	34.90	20.2	46	11.1	L1	GND

2.2.2 Radiated Emissions-FCC Part15.109

Ambient condition:

Temperature	Relative humidity	Pressure
23.2°C	36.7%	99.9kPa

Test Setup:

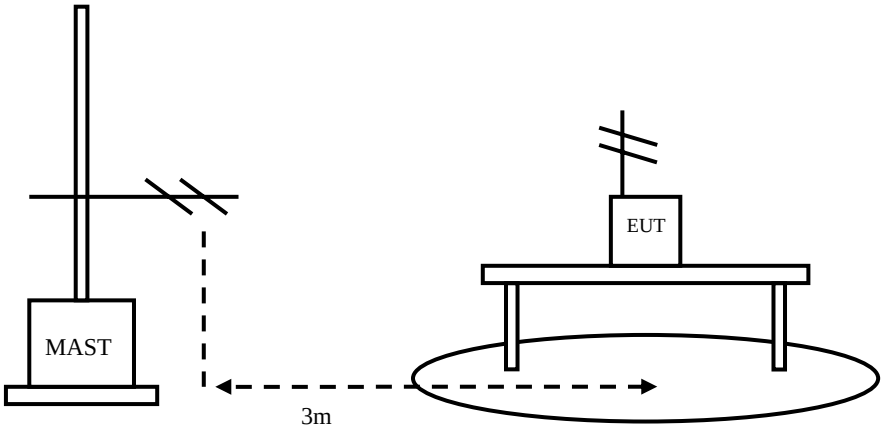


Figure 2

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. During the test the data transferring via USB cable between EUT and laptop is maintained. 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:

Result= P_{mea} + A_{Rpl}

Limit:

Frequency of Emission(MHz)	Limits	
	Detector	Unit (dBμV/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 Peak	54 74

Test result:

GSM850 Mode

Frequency(MHz)	Result(dBuV/m)	A_{Rpl} (dB)	P_{mea} (dBuV/m)	Polarity
34.91	27.88	15.5	12.38	Vertical
45.43	23.38	11.9	11.48	Vertical
47.39	24.75	10.5	14.25	Vertical
47.96	24.81	10.2	14.61	Vertical
527.05	31.47	18.0	13.47	Vertical
960.32	29.97	24.3	5.67	Horizontal

PCS1900 Mode

Frequency(MHz)	Result(dBuV/m)	A_{Rpl} (dB)	P_{mea} (dBuV/m)	Polarity
34.91	30.44	15.5	14.94	Vertical
47.82	27.64	10.2	17.44	Vertical
54.41	22.84	7.2	15.64	Vertical
85.41	21.36	8.0	13.36	Horizontal
899.40	28.67	23.9	4.77	Vertical
959.45	29.57	24.3	5.27	Vertical

FM Radio Mode

Frequency(MHz)	Result(dBuV/m)	A_{Rpl} (dB)	P_{mea} (dBuV/m)	Polarity
34.91	29.66	15.5	14.16	Vertical
48.10	23.19	10.1	13.09	Vertical
717.23	26.60	21.4	15.20	Horizontal
930.26	30.58	24.4	6.18	Horizontal
4418.84	39.90	17.3	22.60	Vertical
5951.90	44.85	17.3	27.55	Horizontal

MP3/MP4 Mode

Frequency(MHz)	Result(dBuV/m)	A_{Rpl} (dB)	P_{mea} (dBuV/m)	Polarity
35.10	30.52	15.5	15.02	Vertical
48.52	23.48	9.8	13.68	Vertical
769.14	26.68	22.0	4.68	Vertical
946.29	29.30	24.4	14.9	Horizontal
4418.84	39.97	12.1	27.87	Vertical
5951.90	44.91	17.3	27.61	Vertical

Camera Mode

Frequency(MHz)	Result(dBuV/m)	A_{Rpl} (dB)	P_{mea} (dBuV/m)	Polarity
33.09	22.09	15.4	6.69	Vertical
35.05	30.83	15.5	15.33	Vertical
48.80	23.95	9.7	14.25	Vertical
791.58	26.72	22.2	4.52	Vertical
933.87	29.48	24.4	5.08	Vertical
4418.84	39.97	12.1	27.87	Vertical

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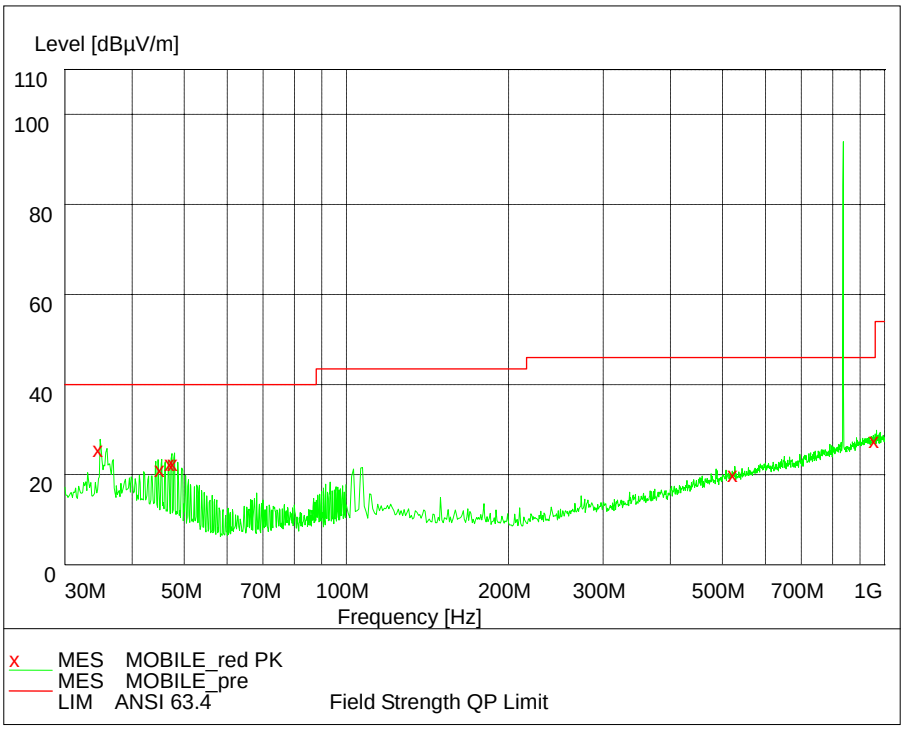
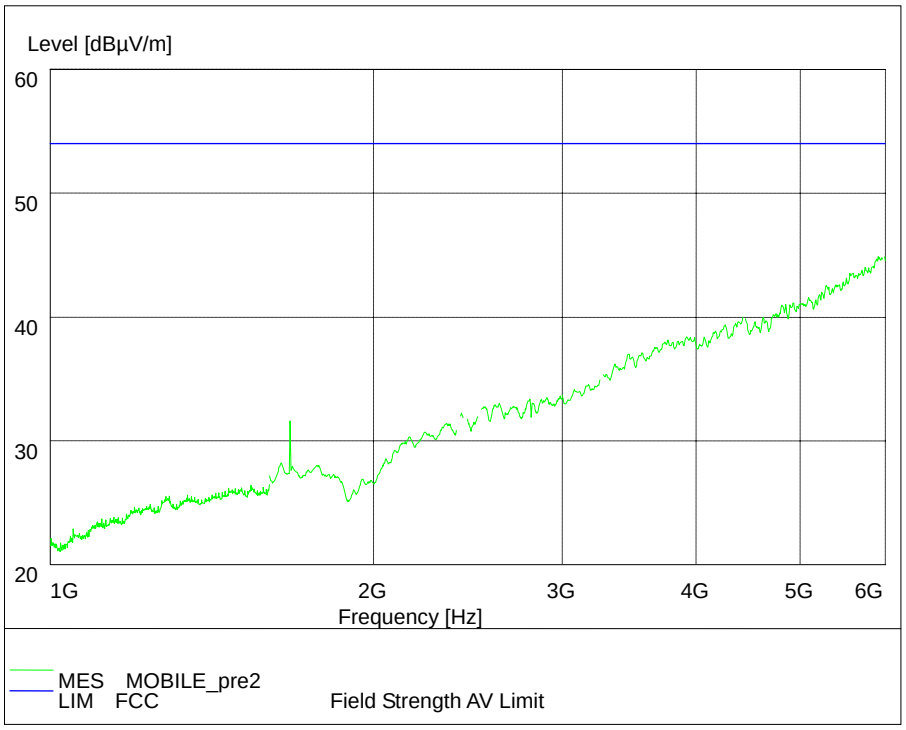
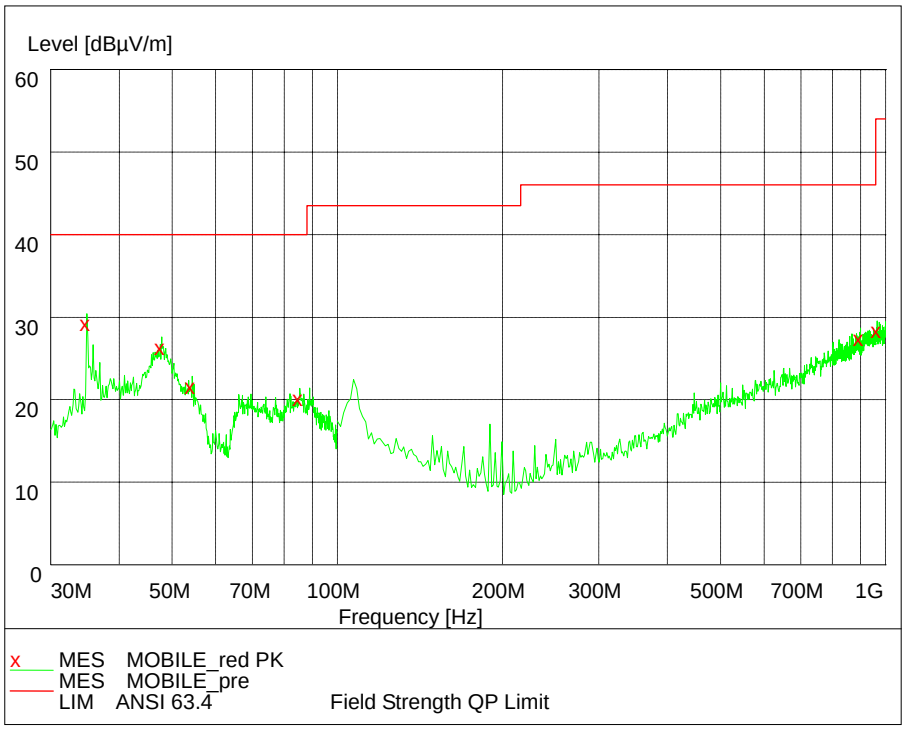


GSM 850(30MHz – 1GHz)

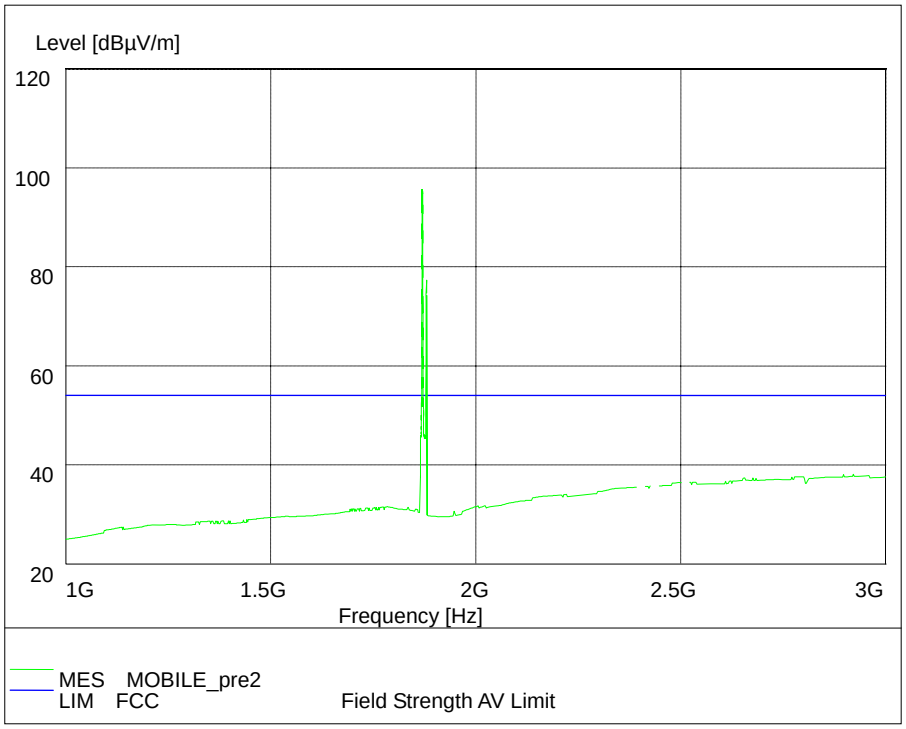
Note: The signal beyond the limit is the base station simulator carrier.



GSM 850(1GHz – 6GHz)

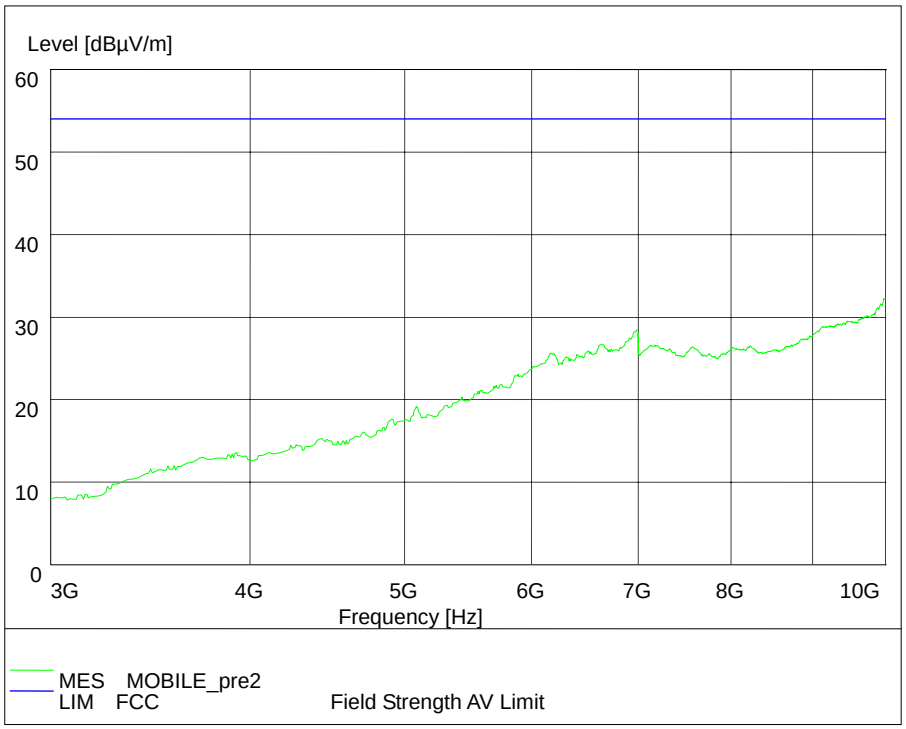


PCS 1900(30MHz – 1GHz)

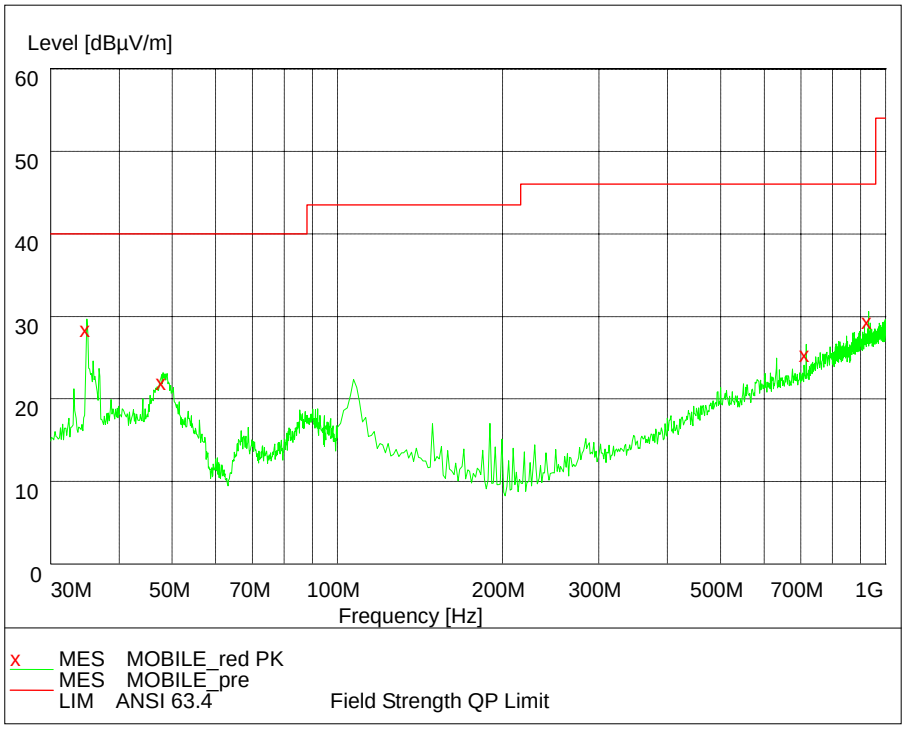


PCS 1900(1GHz – 3GHz)

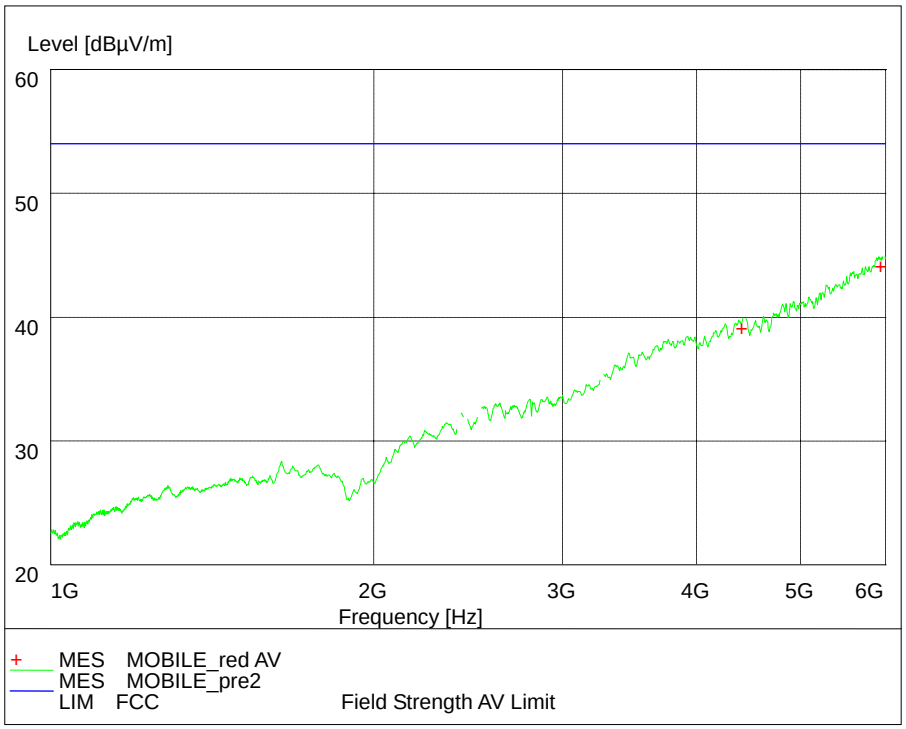
Note: The signals beyond the limit are the base station and simulator carrier.



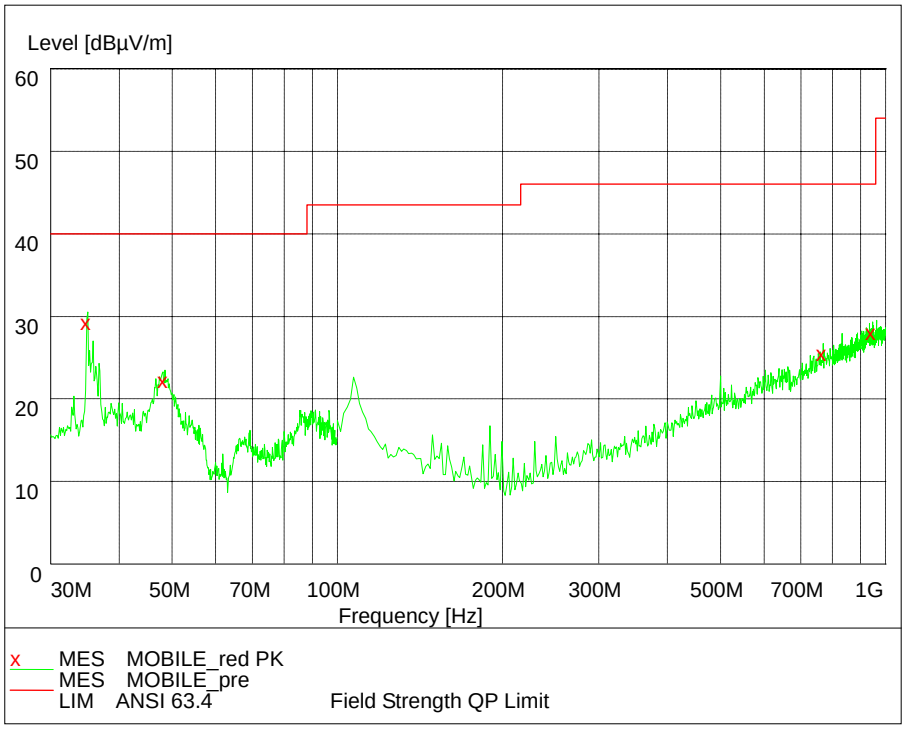
PCS 1900(3GHz – 10GHz)



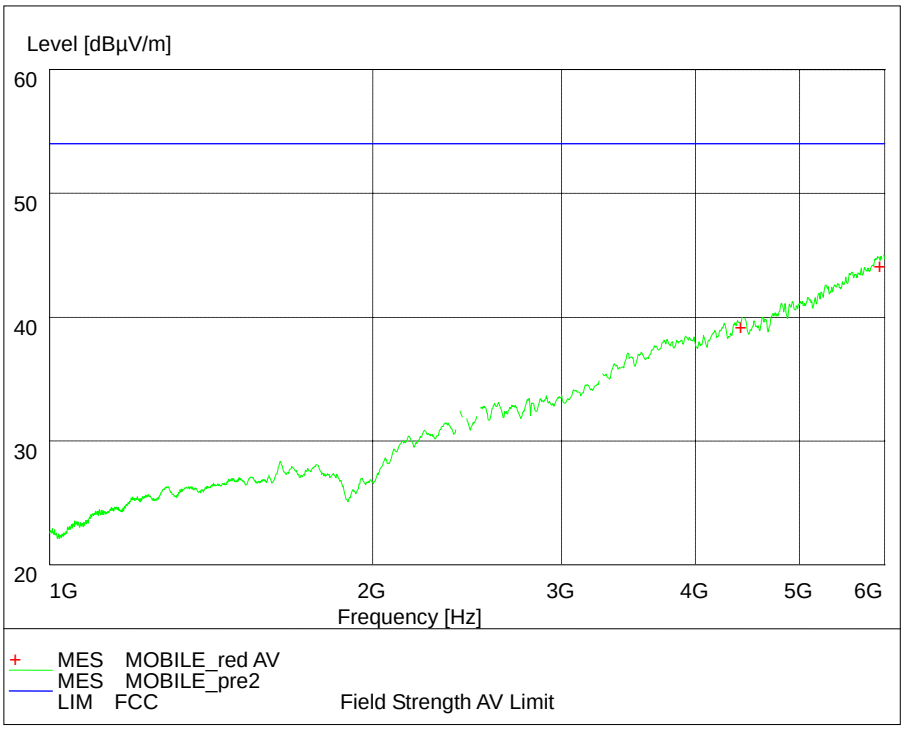
FM Radio (30MHz – 1GHz)



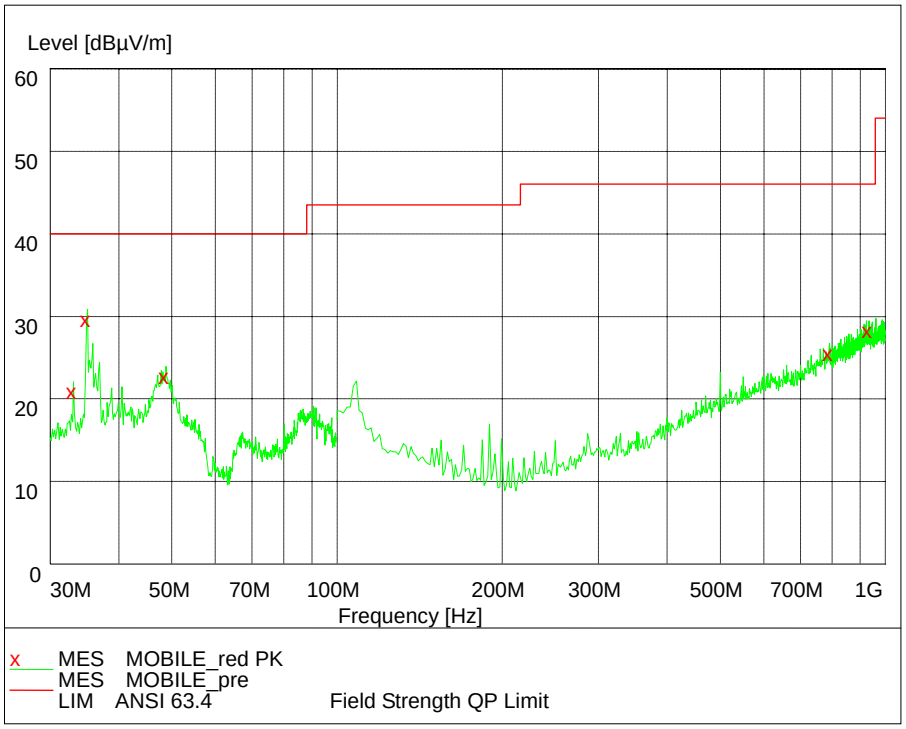
FM Radio (1GHz – 6GHz)



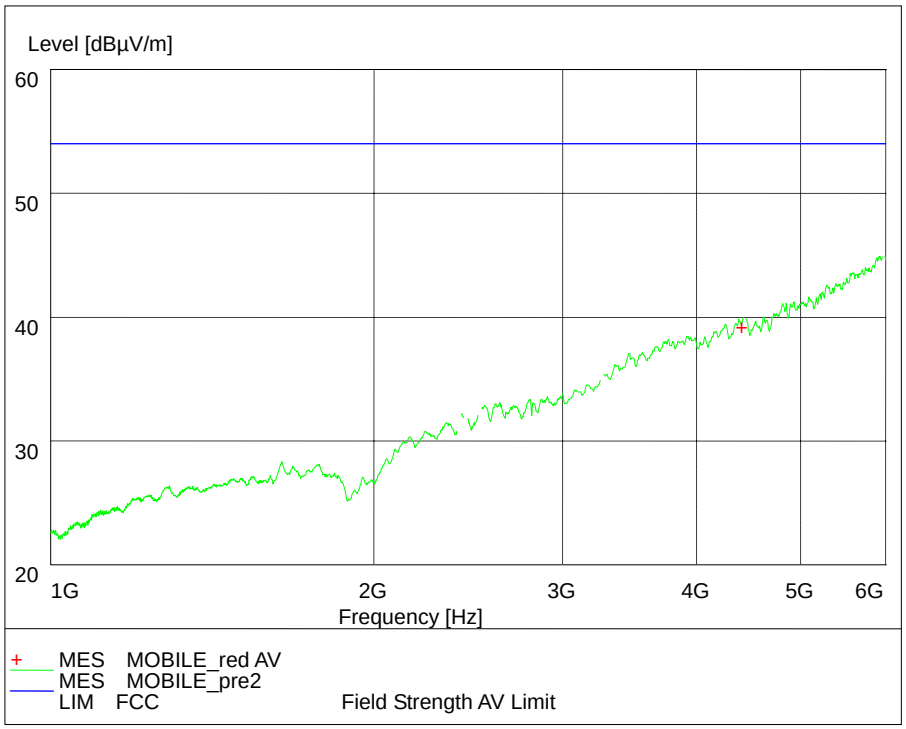
MP3/MP4 (30MHz – 1GHz)



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	-----	19th Aug. 2012
2	ESI 40 EMI test receiver	R&S	100015	19th Aug. 2012
3	E5515C(8960) Mobile Station Tester	Agilent	GB44050904	19th Aug. 2012
4	9.080m×5.255m×3.525m Shielding room	FRANKONIA	-----	19th Aug. 2012
5	ESCS30 EMI test receiver	R&S	100029	19th Aug. 2012
6	HL562 Ultra log test antenna	R&S	100016	19th Aug. 2012
7	ESH3-Z2 Pulse limiter	R&S	10002	19th Aug. 2012
8	ESH3-Z5 Attenuator	R&S	100020	19th Aug. 2012
9	ESH2Z11 LISN	R&S	50FH-020-10	19th Aug. 2012
10	HF 906 Double-Ridged Waveguide Horn Antenna	R&S	100030	19th Aug. 2012
11	HF 906 Double-Ridged Waveguide Horn Antenna	R&S	100029	19th Aug. 2012
12	PS2000 Turn Table	FRANKONIA	-----	19th Aug. 2012
13	MA260 Antenna Master	FRANKONIA	-----	19th Aug. 2012
14	ES-K1EMI test software	R&S	-----	19th Aug. 2012
15	HL562 Receive antenna	R&S	100167	19th Aug. 2012

Appendix

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