D-PL-12111-01-01

CNAS L0447

Registration No.910917

TEST REPORT

Report No.: SRTC2014-H024-E0035

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

Product Model: Philips I928

Applicant: Shenzhen Sang Fei Consumer Communications Co., Ltd.

Manufacturer: Shenzhen Sang Fei Consumer Communications Co., Ltd.

Specification: FCC Part15B (Verification) (October 1, 2013 edition)

FCC ID: VQRCTI928

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

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:	Shenzhen Sang Fei Consumer Communications Co., Ltd.
Address:	11 Science & Technology Rd., Shenzhen Hi-tech Industrial Park, Nanshan District
City:	Shenzhen
Country or Region:	China
Grantee Code:	VQR
Contacted person:	Helen.Lin
Tel:	86-755-33308888
Fax:	86-755-26614979
Email:	Helen.Lin@sangfei.com

1.4 Manufacturer's details

Company:	Shenzhen Sang Fei Consumer Communications Co., Ltd.
Address:	11 Science & Technology Rd., Shenzhen Hi-tech Industrial Park, Nanshan District
City:	Shenzhen
Country or Region:	China
Contacted person:	Helen.Lin
Tel:	86-755-33308888
Fax:	86-755-26614979
Email:	Helen.Lin@sangfei.com

1.5 Application details

Date of reception of test sample: 1st July 2014
Date of test: 1st July 2014 to 7th July 2014

1.6 Reference specification

FCC Part 15B October 1, 2013 (Verification)

1.7 Information of EUT

1.7.1 General information

Name of EUT	GSM/GPRS/EDGE/UMTS Digital Mobile Phone with Bluetooth and WiFi
FCC ID	VQRCTI928
Frequency Range	GSM850/WCDMA Band V: Tx:824~849MHz Rx:869~894MHz PCS1900/WCDMA Band II: 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.:33.32dBm E.I.R.P.:30.65dBm
Modulation Type	GSM/GPRS:GMSK EDGE: GMSK(Uplink direction) 8PSK(Downlink direction) 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/WCDMA Band II: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	TMBHb
SW Version	I928_M6592_1418_00_V01A_T01_AG

1.7.2 EUT details

Product Name	Product Model	IMEI
GSM/GPRS/EDGE/UMTS Digital Mobile Phone with Bluetooth and WiFi	Philips I928	864359020040064

1.7.3 Auxiliary equipment details

AE (Auxiliary Equipment) 1#: Charger

Equipment	Charger
Manufacturer	Salcomp (Shenzhen) Co., Ltd
Model Number	S14B08
Input Voltage	100V-240V a.c.
Output Voltage	5.0V d.c.
Frequency	50/60Hz

AE (Auxiliary Equipment) 2#: Battery

Equipment	Battery
Manufacturer	harbin coslight powerco.,ltd
Model Number	AB3000BWMC
Capacity	3000mAh
Rated Voltage	3.8V d.c.

AE (Auxiliary Equipment) 3#: Headset

Equipment	Headset
Manufacturer	Shenzhen TENJI Industrial Co., Ltd.
Model Number	TJ-101100

Note:

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

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. Dong Qifeng Test engineer	Issued date: **2014.07.22**

2.2 Test result

2.2.1 Conducted Emissions-FCC Part15.107

Ambient condition:

Temperature	Relative humidity	Pressure
24.7°C	40.9%	100.9kPa

Test Setup:

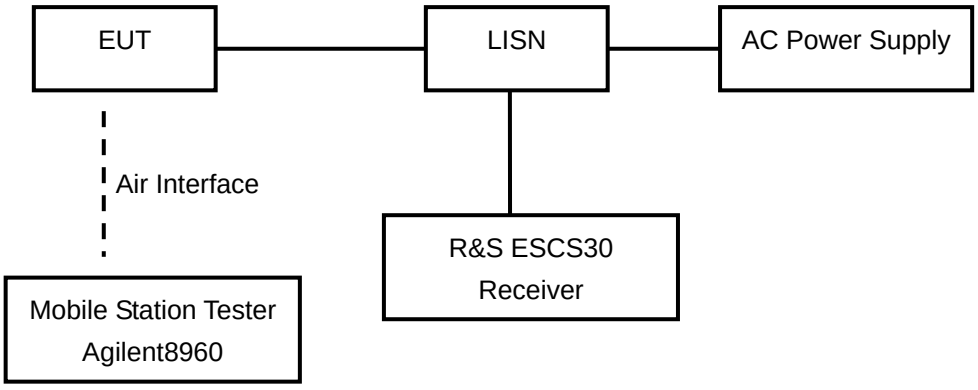


Figure 1

Test Procedure:

The EUT is placed on a non-matellic 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.

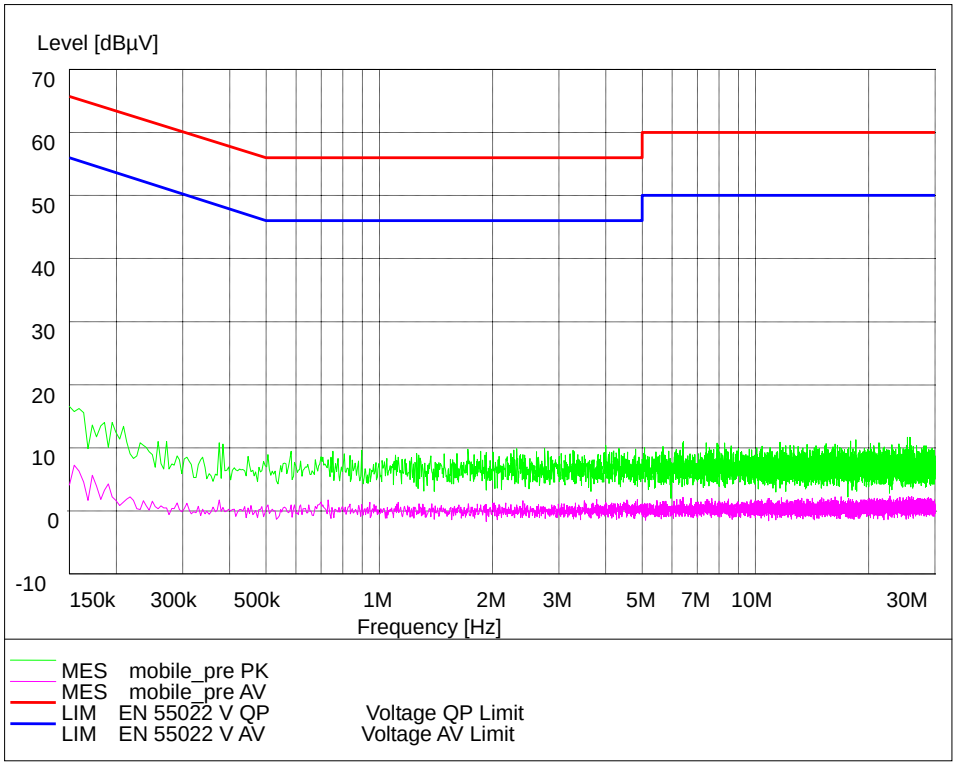
Limit:

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

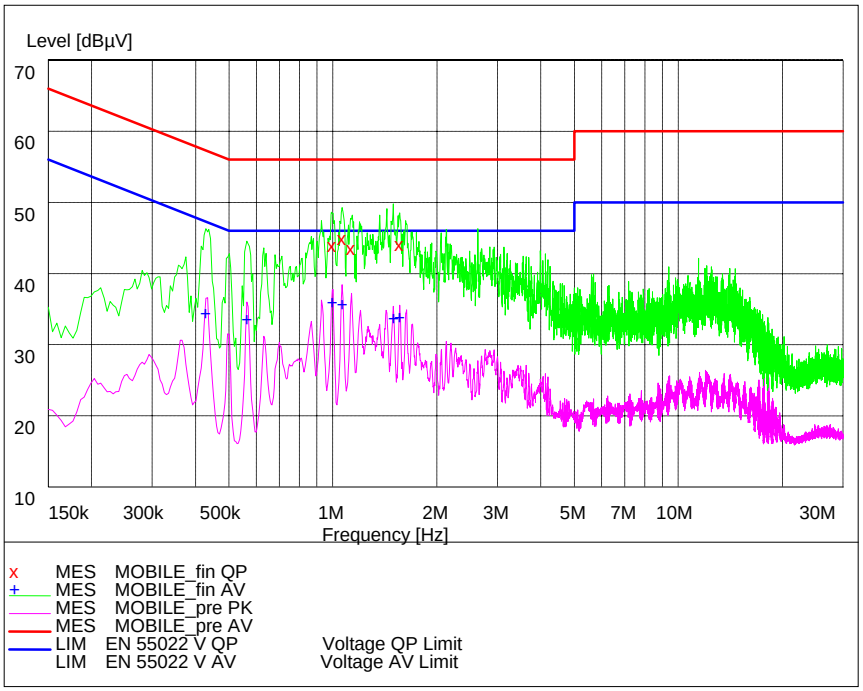
Test result:

Noise Level of The Measuring Instrument



L and N Line

GSM850 AE1#+AE2#+AE3#



L and N Line

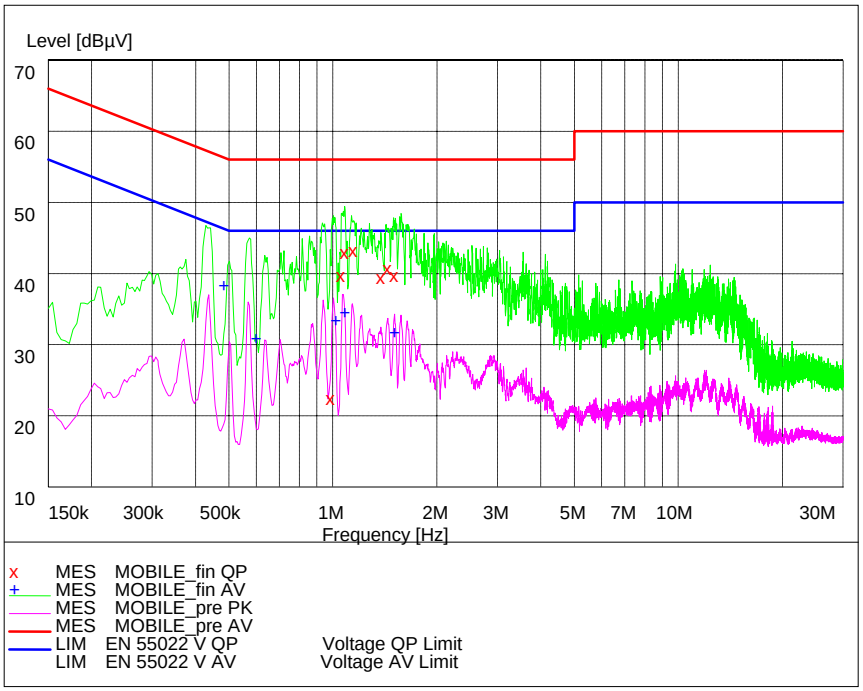
MEASUREMENT RESULT: "MOBILE_fin QP"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
0.996000	45.60	20.2	56	10.4	N	GND
1.068000	46.60	20.2	56	9.4	L1	GND
1.131000	45.10	20.2	56	10.9	N	GND
1.563000	45.70	20.2	56	10.3	L1	GND

MEASUREMENT RESULT: "MOBILE_fin AV"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
0.429000	36.00	20.3	47	11.3	N	GND
0.564000	35.20	20.3	46	10.8	L1	GND
0.996000	37.60	20.2	46	8.4	L1	GND
1.068000	37.30	20.2	46	8.7	N	GND
1.500000	35.30	20.2	46	10.7	L1	GND
1.563000	35.50	20.2	46	10.5	L1	GND

PCS1900 AE1#+AE2#+AE3#



L and N Line

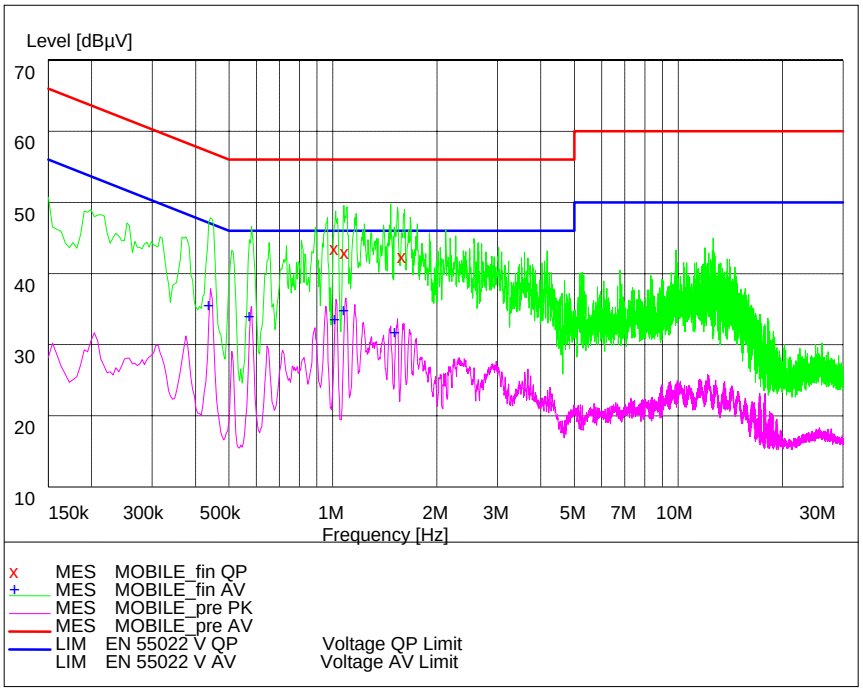
MEASUREMENT RESULT: "MOBILE_fin QP"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
0.393000	30.90	20.2	48	17.1	N	GND
0.474000	28.80	20.3	46	17.7	L1	GND
0.550500	30.10	20.3	46	15.9	L1	GND
0.789000	26.80	20.3	46	19.2	N	GND
1.104000	29.60	20.2	46	16.4	L1	GND
4.051500	24.50	20.3	46	21.5	L1	GND

MEASUREMENT RESULT: "MOBILE_fin AV"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
0.235500	46.90	20.2	62	15.2	N	GND
0.325500	43.30	20.2	60	16.2	L1	GND
0.393000	45.60	20.2	58	12.4	L1	GND
0.550500	43.40	20.3	56	12.6	N	GND
0.676500	38.70	20.4	56	17.3	L1	GND
1.257000	38.90	20.2	56	17.1	L1	GND

WCDMA BAND II AE1#+AE2#+AE3#



L and N Line

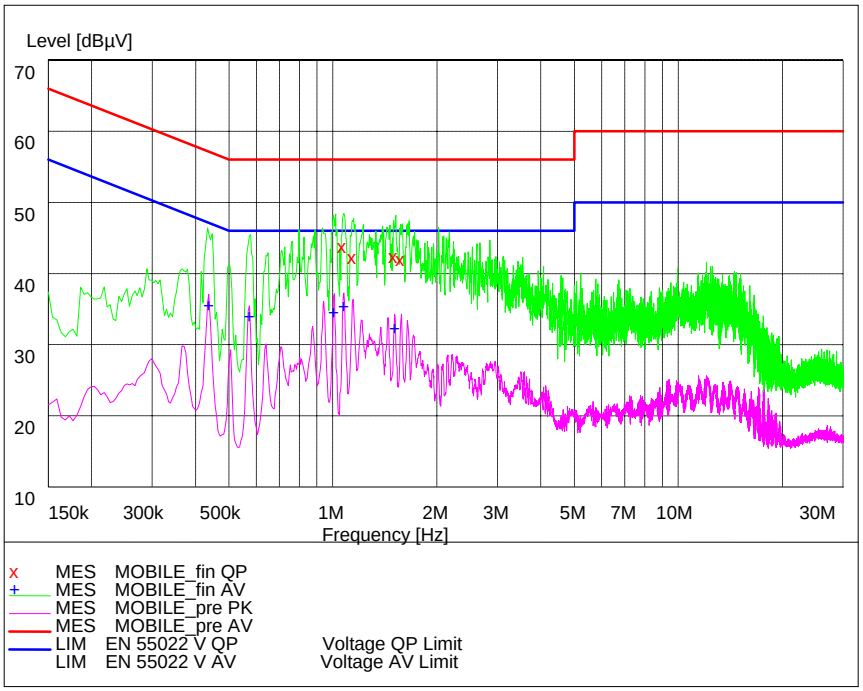
MEASUREMENT RESULT: "MOBILE_fin QP"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
1.014000	45.20	20.2	56	10.8	N	GND
1.086000	44.70	20.2	56	11.3	L1	GND
1.590000	44.10	20.2	56	11.9	L1	GND

MEASUREMENT RESULT: "MOBILE_fin AV"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
0.438000	37.20	20.3	47	9.9	N	GND
0.573000	35.70	20.3	46	10.3	L1	GND
1.014000	35.20	20.2	46	10.8	L1	GND
1.077000	36.40	20.2	46	9.6	N	GND
1.509000	33.40	20.2	46	12.6	L1	GND

WCDMA BAND V AE1#+AE2#+AE3#



L and N Line

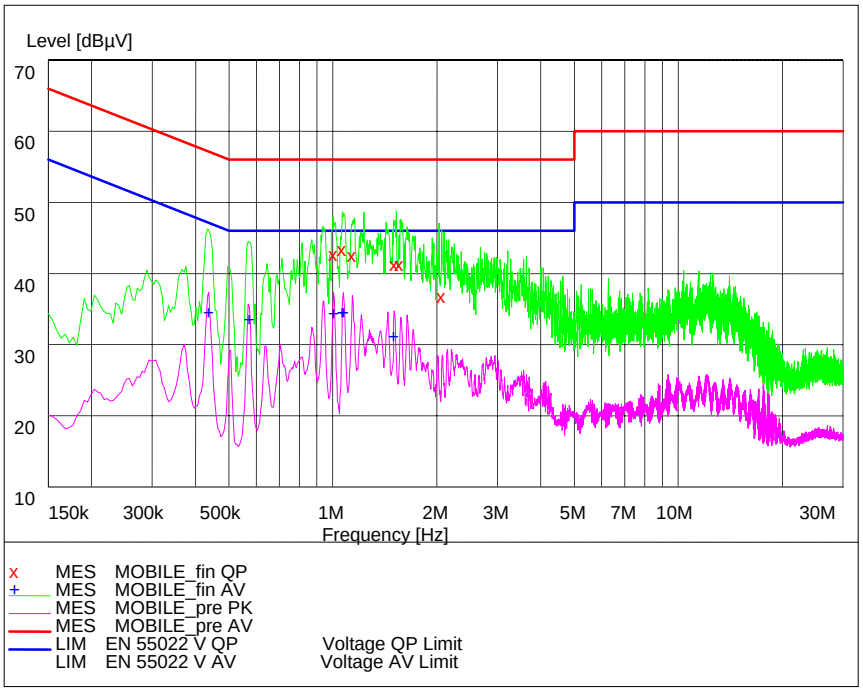
MEASUREMENT RESULT: "MOBILE_fin QP"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
1.068000	45.40	20.2	56	10.6	N	GND
1.140000	43.90	20.2	56	12.1	L1	GND
1.500000	44.00	20.2	56	12.0	L1	GND
1.572000	43.70	20.2	56	12.3	N	GND

MEASUREMENT RESULT: "MOBILE_fin AV"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
0.438000	37.20	20.3	47	9.9	L1	GND
0.573000	35.60	20.3	46	10.4	L1	GND
1.005000	36.10	20.2	46	9.9	N	GND
1.077000	37.00	20.2	46	9.0	L1	GND
1.509000	33.90	20.2	46	12.1	L1	GND

FM Radio AE1#+AE2#+AE3#



L and N Line

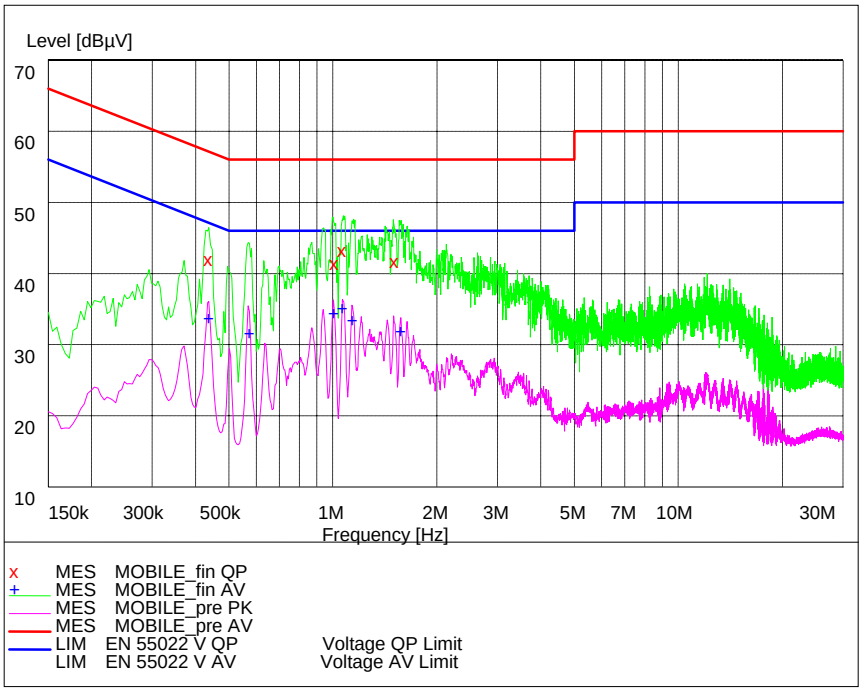
MEASUREMENT RESULT: "MOBILE_fin QP"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
1.005000	44.40	20.2	56	11.6	N	GND
1.068000	45.00	20.2	56	11.0	L1	GND
1.140000	44.20	20.2	56	11.8	L1	GND
1.509000	42.90	20.2	56	13.1	N	GND
1.563000	42.90	20.2	56	13.1	L1	GND
2.067000	38.50	20.3	56	17.5	L1	GND

MEASUREMENT RESULT: "MOBILE_fin AV"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
0.438000	36.10	20.3	47	11.0	L1	GND
0.573000	35.20	20.3	46	10.8	N	GND
1.005000	36.00	20.2	46	10.0	L1	GND
1.068000	36.10	20.2	46	9.9	L1	GND
1.077000	36.10	20.2	46	9.9	L1	GND
1.500000	32.80	20.2	46	13.2	N	GND

MP3/MP4 AE1#+AE2#+AE3#



L and N Line

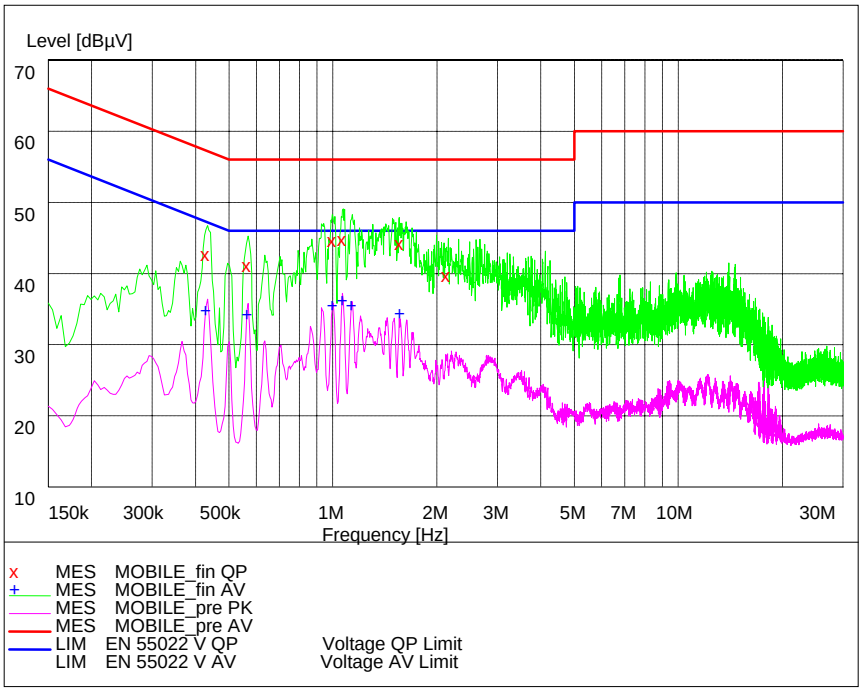
MEASUREMENT RESULT: "MOBILE_fin QP"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
0.438000	43.70	20.3	57	13.4	L1	GND
1.014000	43.10	20.2	56	12.9	L1	GND
1.068000	44.90	20.2	56	11.1	L1	GND
1.509000	43.40	20.2	56	12.6	N	GND

MEASUREMENT RESULT: "MOBILE_fin AV"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
0.438000	35.40	20.3	47	11.7	N	GND
0.573000	33.30	20.3	46	12.7	L1	GND
1.005000	36.00	20.2	46	10.0	N	GND
1.068000	36.70	20.2	46	9.3	L1	GND
1.140000	35.10	20.2	46	10.9	L1	GND
1.572000	33.50	20.2	46	12.5	L1	GND

Camera AE1#+AE2#+AE3#



L and N Line

MEASUREMENT RESULT: "MOBILE_fin QP"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
0.429000	44.30	20.3	57	13.0	N	GND
0.564000	42.80	20.3	56	13.2	L1	GND
0.996000	46.30	20.2	56	9.7	L1	GND
1.068000	46.40	20.2	56	9.6	L1	GND
1.563000	45.80	20.2	56	10.2	N	GND
2.130000	41.40	20.3	56	14.6	L1	GND

MEASUREMENT RESULT: "MOBILE_fin AV"

Frequency	Level	Transd	Limit	Margin	Line	PE
MHz	dBµV	dB	dBµV	dB		
0.429000	36.40	20.3	47	10.9	L1	GND
0.564000	35.90	20.3	46	10.1	L1	GND
0.996000	37.10	20.2	46	8.9	N	GND
1.068000	37.90	20.2	46	8.1	L1	GND
1.131000	37.10	20.2	46	8.9	L1	GND
1.563000	36.00	20.2	46	10.0	N	GND

2.2.2 Radiated Emissions-FCC Part15.109

Ambient condition:

Temperature	Relative humidity	Pressure
24.7°C	41.9%	100.9kPa

Test Setup:

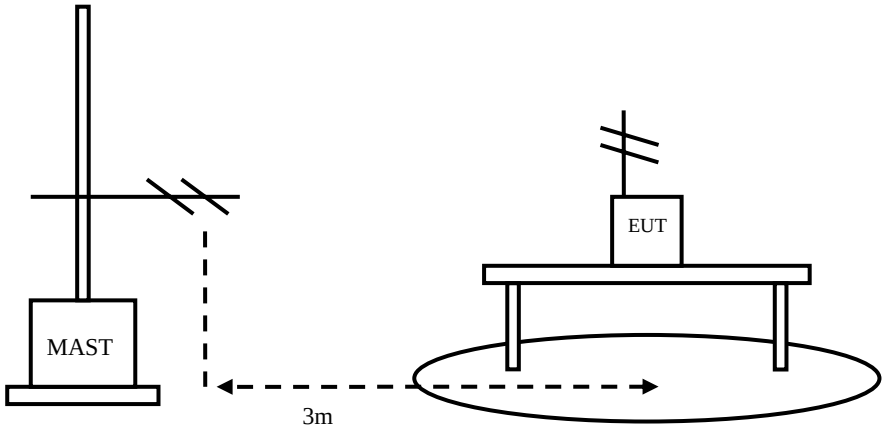


Figure 2

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 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:
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
44.73	18.60	12.40	6.20	Vertical
256.31	23.90	10.40	13.50	Vertical
264.33	25.50	10.70	14.80	Vertical
265.93	26.40	10.80	15.60	Vertical
281.16	22.40	11.10	11.30	Vertical
283.57	28.80	11.20	17.60	Vertical

PCS1900 Mode

Frequency(MHz)	Result(dBuV/m)	A_{Rpl} (dB)	P_{mea} (dBuV/m)	Polarity
44.45	18.00	12.60	5.40	Vertical
258.72	23.90	10.50	13.40	Vertical
260.32	24.30	10.60	13.70	Vertical
281.16	26.20	11.10	15.10	Vertical
283.57	26.00	11.20	14.80	Horizontal
286.77	26.00	11.40	14.60	Vertical

WCDMA BAND II Mode

Frequency(MHz)	Result(dBuV/m)	A_{Rpl} (dB)	P_{mea} (dBuV/m)	Polarity
261.12	30.20	10.60	19.60	Vertical
264.33	30.40	10.70	19.70	Vertical
267.54	25.10	10.80	14.30	Vertical
269.94	28.60	10.90	17.70	Vertical
284.37	32.50	11.30	21.20	Vertical
286.77	32.60	11.40	21.20	Vertical

WCDMA BAND V Mode

Frequency(MHz)	Result(dBuV/m)	A_{Rpl} (dB)	P_{mea} (dBuV/m)	Polarity
270.74	30.30	10.90	19.40	Vertical
273.15	26.00	10.90	15.10	Horizontal
276.35	30.70	10.90	19.80	Vertical
279.56	25.20	11.00	14.20	Vertical
281.96	32.50	11.10	21.40	Vertical
284.37	28.70	11.30	17.40	Vertical

FM Radio Mode

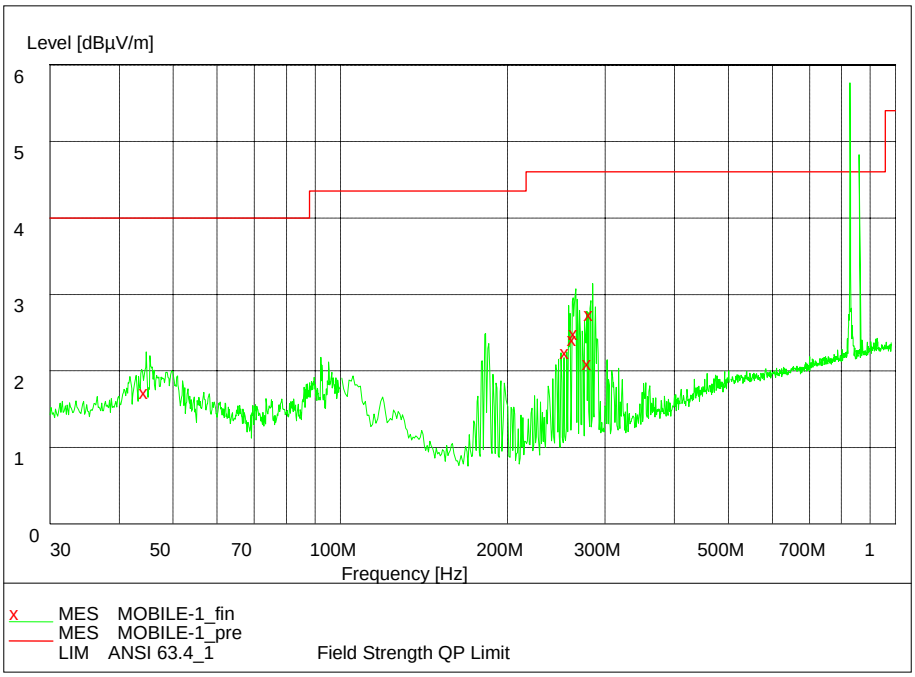
Frequency(MHz)	Result(dBuV/m)	A_{Rpl} (dB)	P_{mea} (dBuV/m)	Polarity
44.87	19.40	12.30	7.10	Vertical
270.74	30.10	10.90	19.20	Vertical
273.95	29.40	10.90	18.50	Vertical
276.35	29.20	10.90	18.30	Vertical
279.56	27.00	11.00	16.00	Vertical
281.96	30.50	11.10	19.40	Vertical

MP3/MP4 Mode

Frequency(MHz)	Result(dBuV/m)	A_{Rpl} (dB)	P_{mea} (dBuV/m)	Polarity
258.72	25.90	10.50	15.40	Vertical
262.73	24.10	10.70	13.40	Vertical
270.74	24.60	10.90	13.70	Vertical
276.35	25.90	10.90	15.00	Horizontal
282.77	18.00	11.20	6.80	Vertical
285.97	28.40	11.30	17.10	Vertical

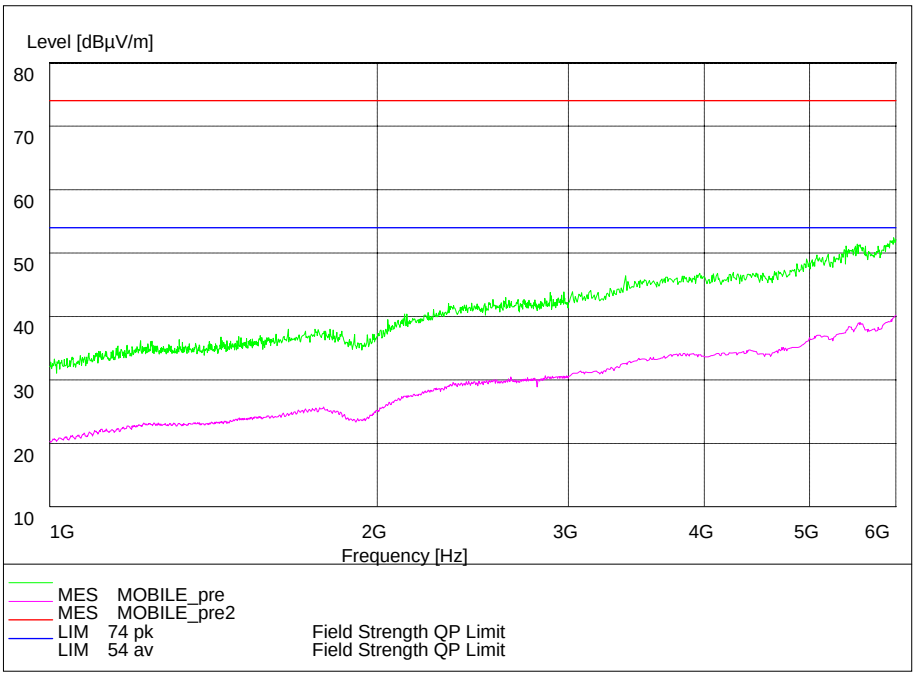
Camera Mode

Frequency(MHz)	Result(dBuV/m)	A_{Rpl} (dB)	P_{mea} (dBuV/m)	Polarity
45.57	18.70	11.80	6.90	Vertica
260.32	27.40	10.60	16.80	Vertical
263.53	27.60	10.70	16.90	Vertical
279.56	24.40	11.00	13.40	Vertical
283.57	29.40	11.20	18.20	Vertical
285.97	25.50	11.30	14.20	Horizontal

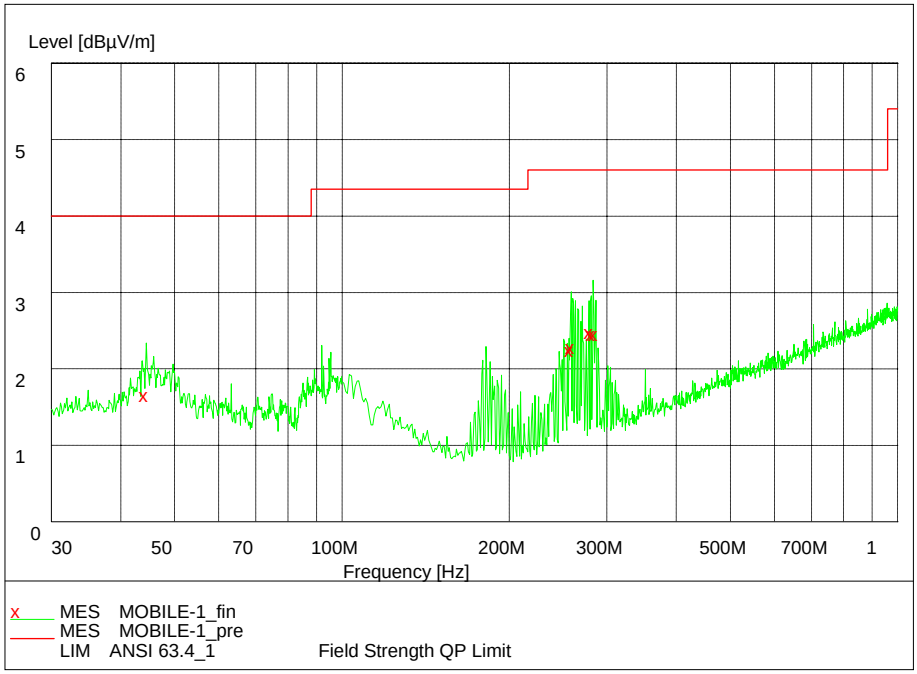


GSM850 (30MHz – 1GHz)

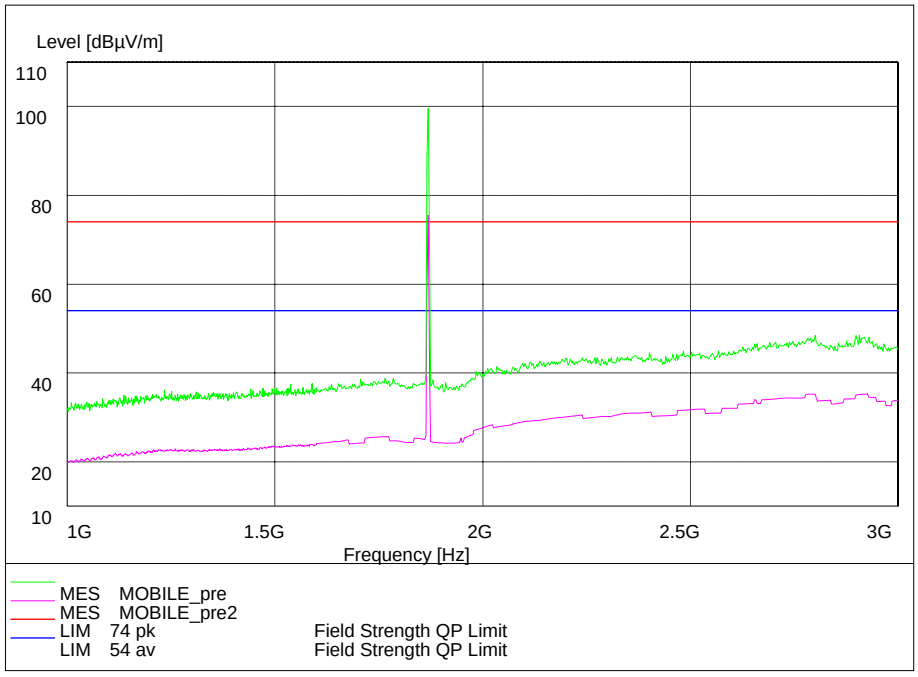
Note: The signal beyond the limit is the base station simulator carrier.



GSM850 (1GHz – 6GHz)

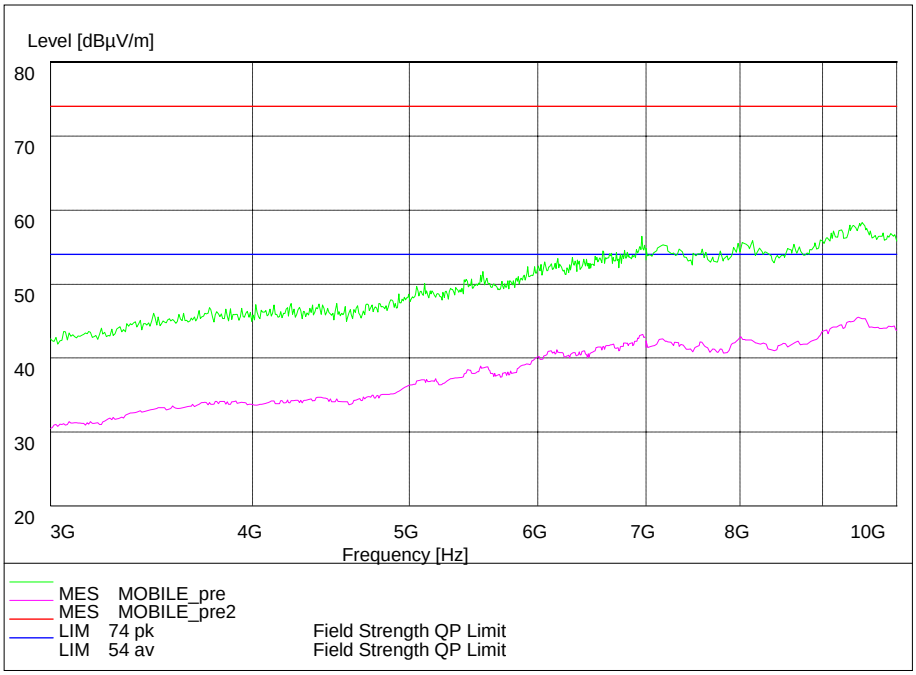


PCS1900 (30MHz – 1GHz)

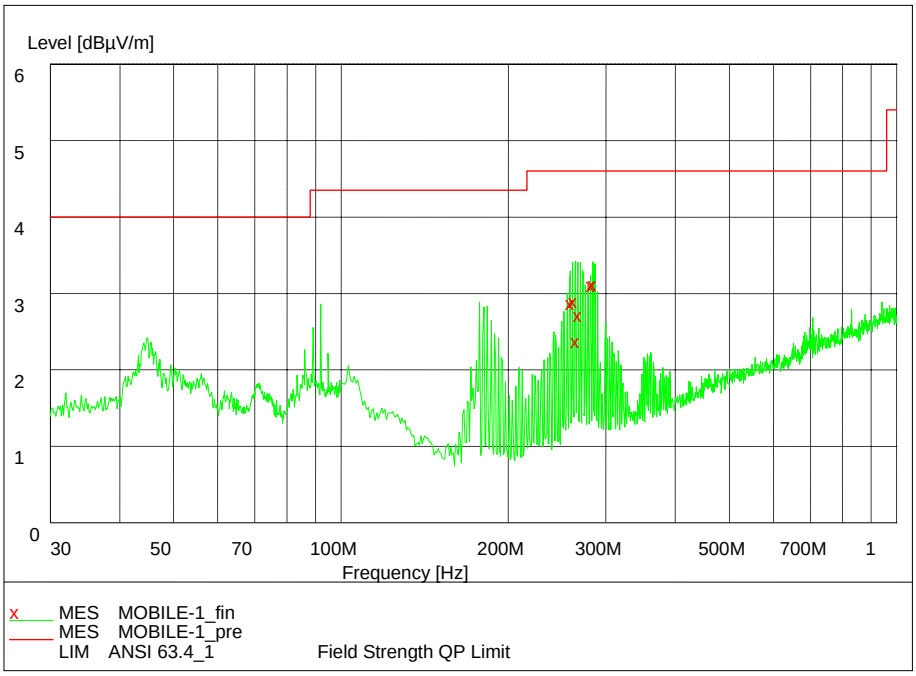


PCS1900 (1GHz – 3GHz)

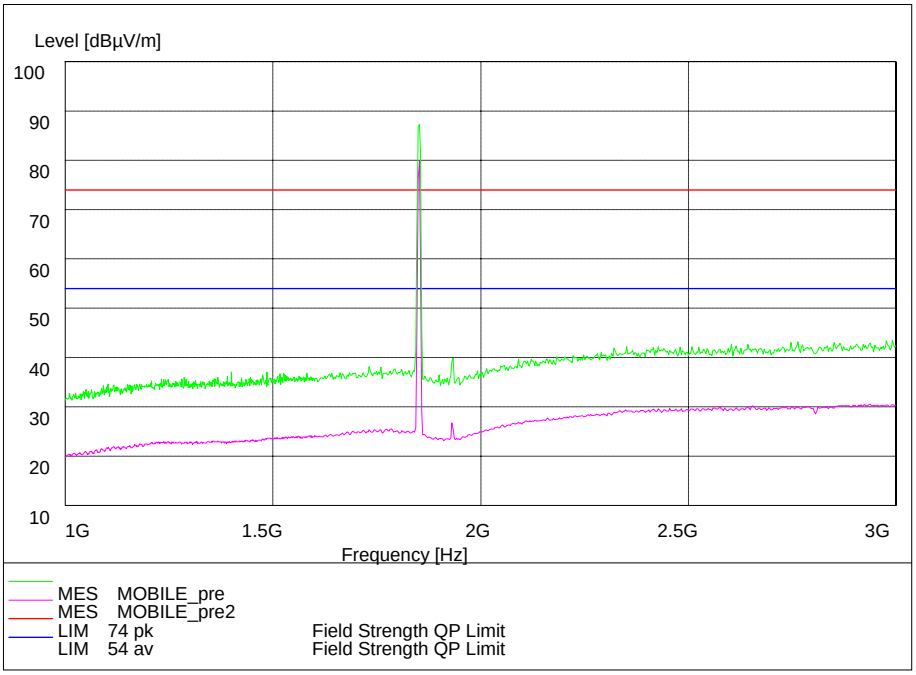
Note: The signals beyond the limit are the base station and simulator carrier.



PCS1900 (3GHz – 10GHz)

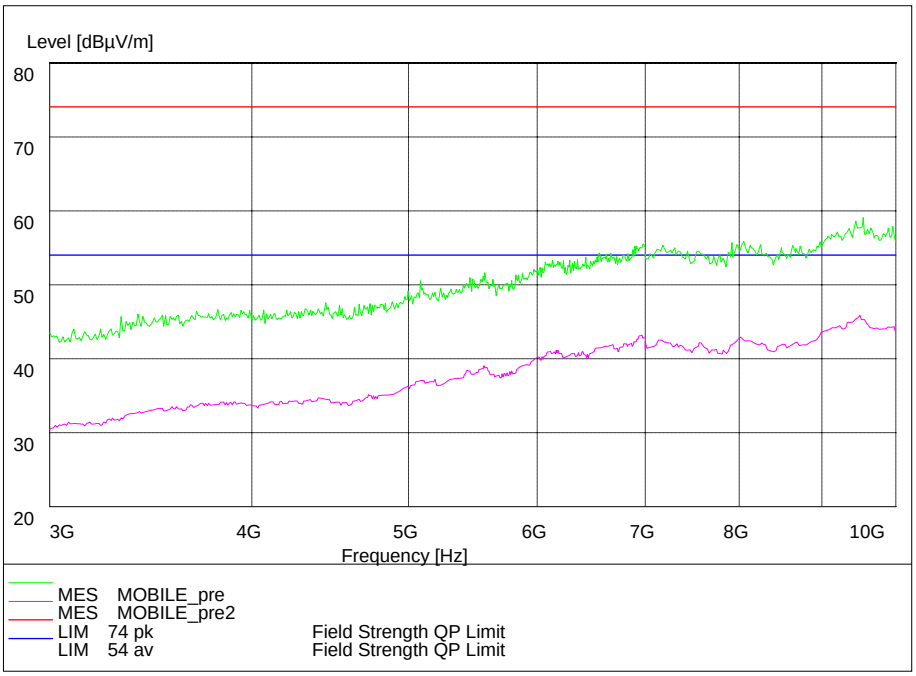


WCDMA BAND II (30MHz – 1GHz)

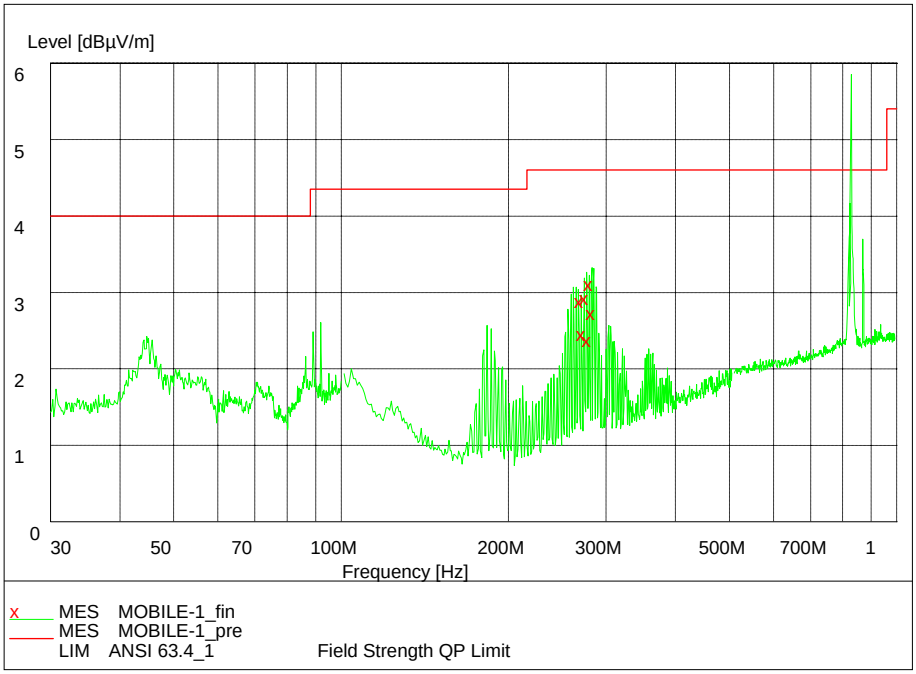


WCDMA BAND II (1GHz – 3GHz)

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

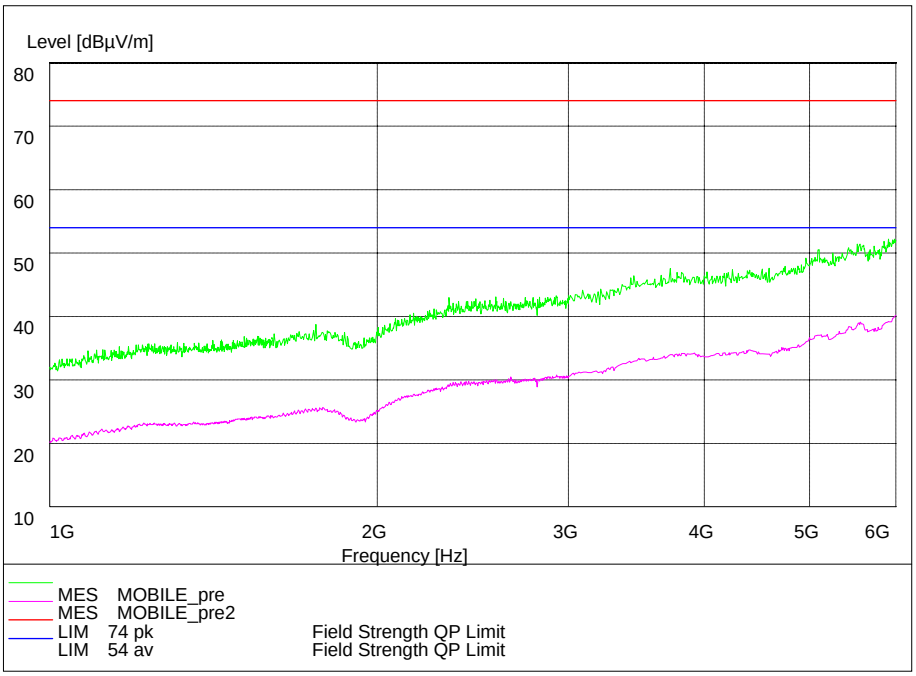


WCDMA BAND II (3GHz – 10GHz)

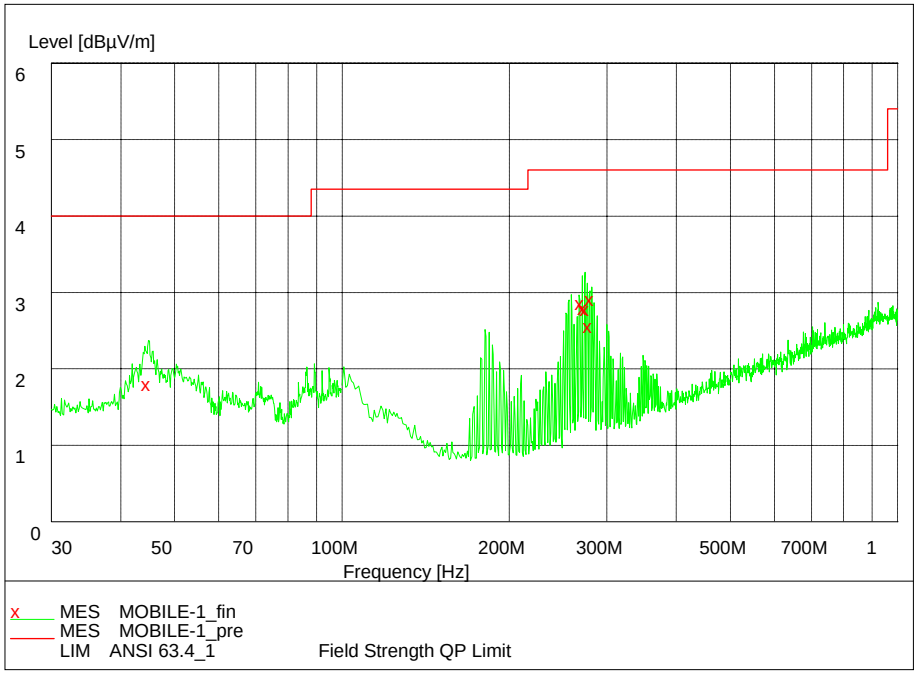


WCDMA BAND V (30MHz – 1GHz)

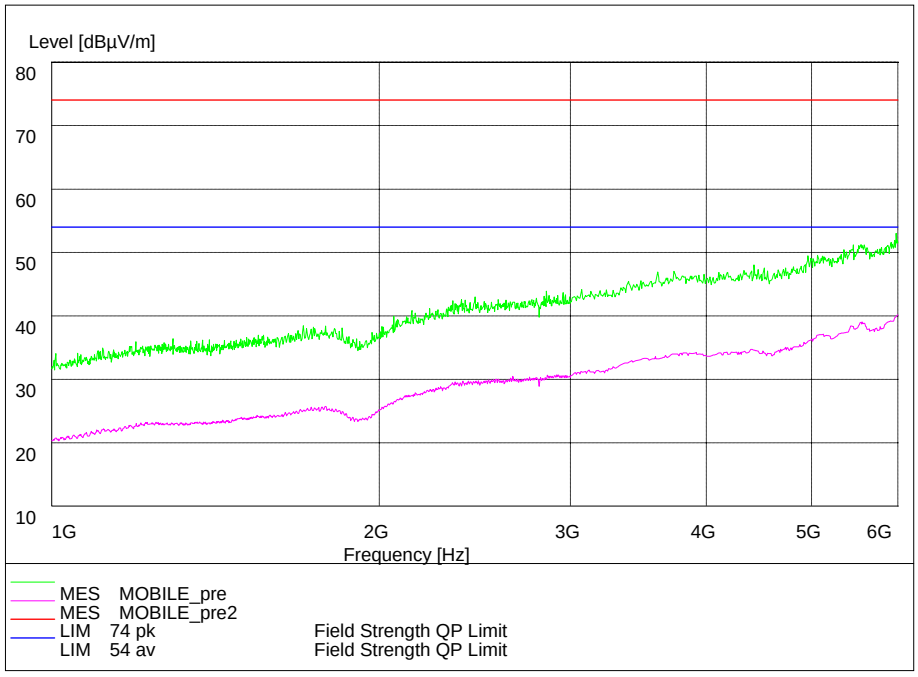
Note: The signals beyond the limit are the base station and simulator carrier.



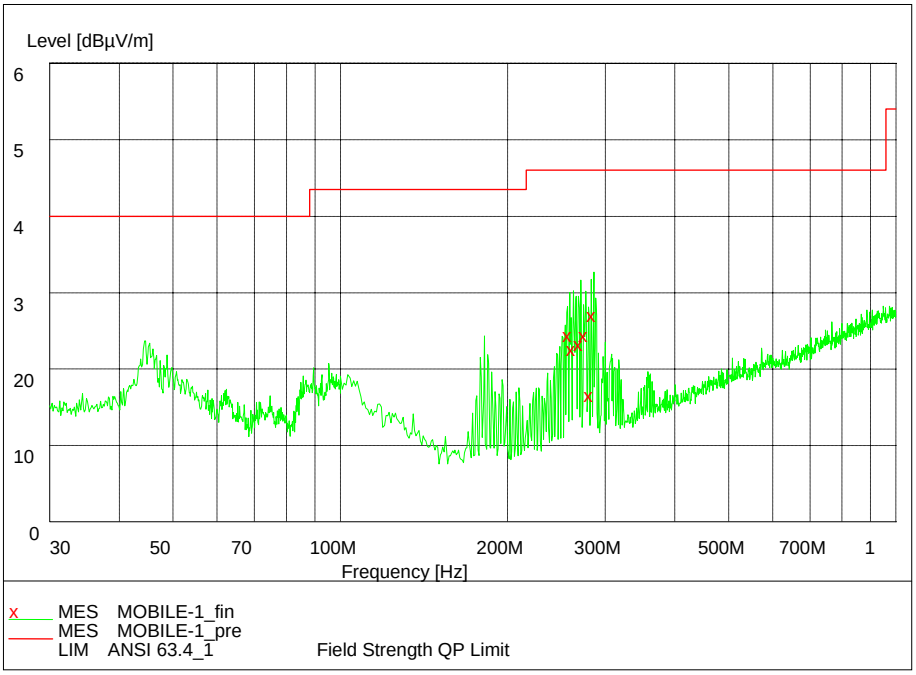
WCDMA BAND V (1GHz – 6GHz)



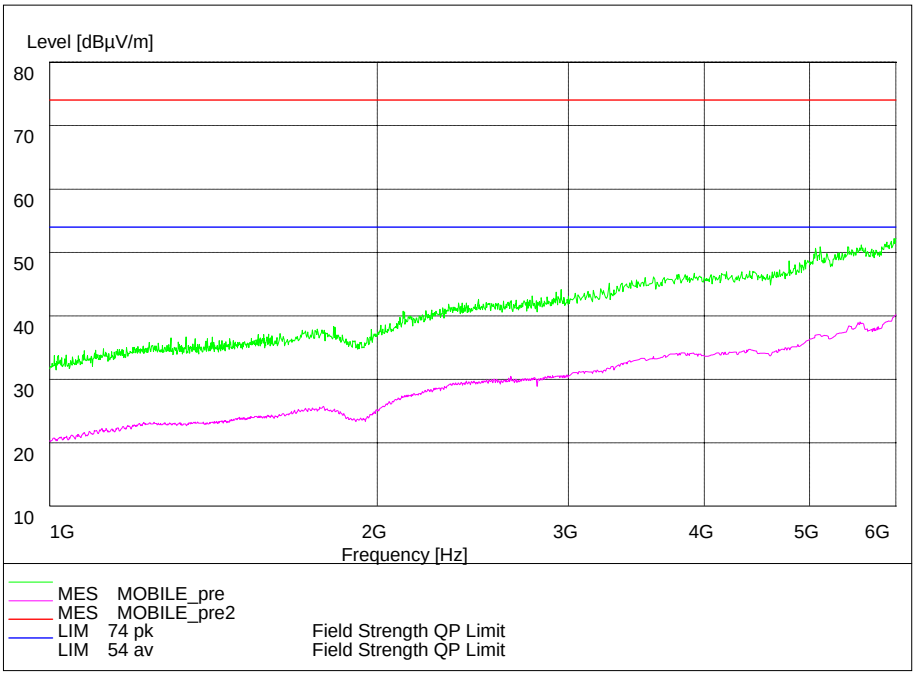
FM Radio (30MHz – 1GHz)



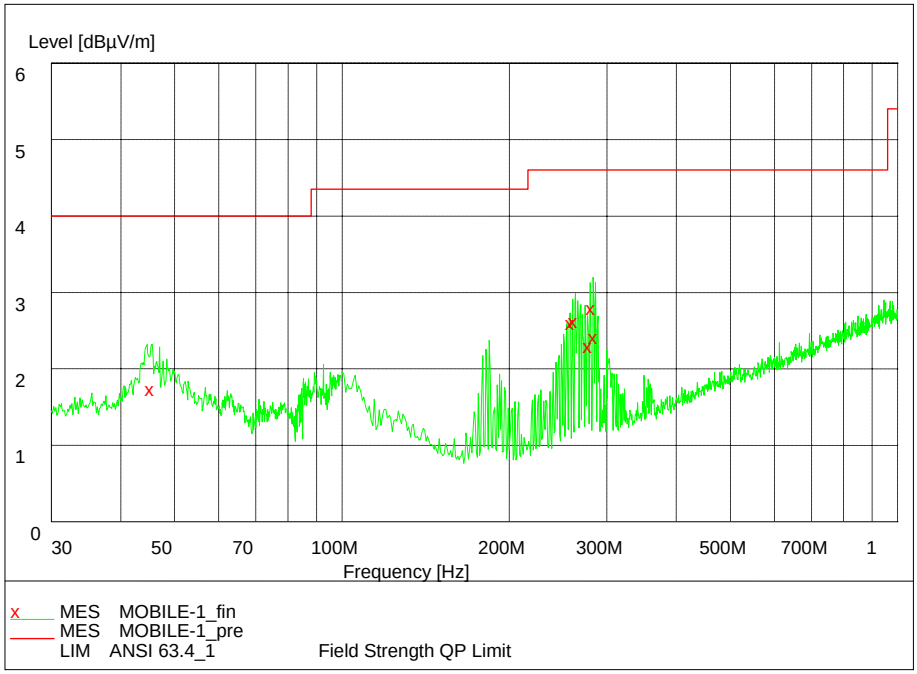
FM Radio (1GHz – 6GHz)



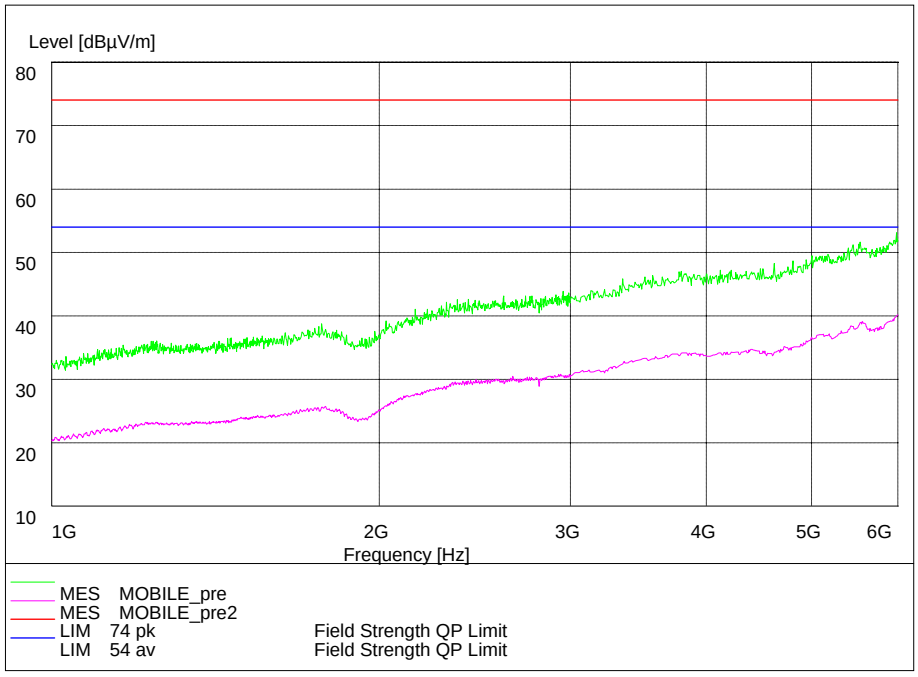
MP3/MP4 (30MHz – 1GHz)



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	-----	19th Aug. 2014
2	ESI 40 EMI test receiver	R&S	100015	19th Aug. 2014
3	E5515C(8960) Mobile Station Tester	Agilent	GB44050904	19th Aug. 2014
4	9.080m×5.255m×3.525m Shielding room	FRANKONIA	-----	19th Aug. 2014
5	ESCS30 EMI test receiver	R&S	100029	19th Aug. 2014
6	HL562 Ultra log test antenna	R&S	100016	19th Aug. 2014
7	ESH3-Z2 Pulse limiter	R&S	10002	19th Aug. 2014
8	ESH3-Z5 Attenuator	R&S	100020	19th Aug. 2014
9	ESH2Z11 LISN	R&S	50FH-020-10	19th Aug. 2014
10	HF 906 Double-Ridged Waveguide Horn Antenna	R&S	100030	19th Aug. 2014
11	HF 906 Double-Ridged Waveguide Horn Antenna	R&S	100029	19th Aug. 2014
12	PS2000 Turn Table	FRANKONIA	-----	19th Aug. 2014
13	MA260 Antenna Master	FRANKONIA	-----	19th Aug. 2014
14	ES-K1EMI test software	R&S	-----	19th Aug. 2014
15	HL562 Receive antenna	R&S	100167	19th Aug. 2014

Appendix

Appendix1 Test Setup