
TEST REPORT

Report No.: SRTC2011-H024-E0058

Product Name: CDMA 1X-EVDO Digital Mobile Phone
with Bluetooth

Product Model: Sonim XP3400-A-R1

Type Number: C21F007AA

Applicant: Sonim Technologies Inc.

Manufacturer: BYD COMPANY LIMITED

Specification: FCC Part15B (Certification)

(October 1, 2009 edition)

FCC ID: WYPC21F007AA

The State Radio_monitoring_center Testing Center (SRTC)

No.80 Beilishi Road Xicheng District Beijing, China

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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)
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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: Sonim Technologies Inc.
Address: 1875 S. Grant Street, Suite 620, San Mateo, CA 94402, USA
City: San Mateo
Country or Region: USA
Grantee Code: WYP
Contacted Person: Jasen Kolev
Tel: +1 650 504 4411
Fax: -----
Email: jasen@sonimtech.com

1.4 Manufacturer's details

Company: BYD COMPANY LIMITED
Address: Floor7, Building 5, No.3000 LongDong Avenue, Pudong District, Shanghai, 201203, P.R.China
City: Shanghai
Country or Region: P.R.China
Contacted Person: Wang Luhong
Tel: +86-021-61009669-72101
Fax: +86-021-61009668
Email: wang.luhong@byd.com

1.5 Application details

Date of reception of test sample: 1st July 2011

Date of test: 1st July 2011 to 11th July 2011

1.6 Reference specification

FCC Part 15B October 1, 2009 (Certification)

1.7 Information of EUT

1.7.1 General information

Name of EUT	CDMA 1X-EVDO Digital Mobile Phone with Bluetooth
FCC ID	WYPC21F007AA
Frequency range	CDMA800: Tx:824~849MHz Rx:869~894MHz PCS1900: Tx:1850~1910MHz Rx:1930~1990MHz
Rated output power	24.0dBm
E.R.P. & E.I.R.P.	E.R.P.: 22.8dBm E.I.R.P.: 21.6dBm
Modulation type	OQPSK
Emission Designator	1M25F9W
Duplex mode	FDD
Equipment Class	Class B
Duplex spacing	CDMA800:45MHz 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: 3.4V Maximum: 4.2V
HW Version	A
SW Version	E343B_1200B03

1.7.2 EUT details

Name	Model	Type Number	MEID
CDMA 1X-EVDO Digital Mobile Phone with Bluetooth	Sonim XP3400-A-R1	C21F007AA	A100001290A08E

1.7.3 Auxiliary equipment details

Equipment	Charger
Manufacturer	DEE VAN ENTERPRISE CO., LTD
Model Number	DSA-3PFC-05 FEU 050065


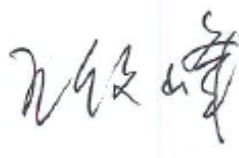

Equipment	Battery
Manufacturer	Sunwoda Electronic Co., Ltd
Model Number	XP3.20-0001100
Capacity	1750mAh
Rated Voltage	3.7V

Equipment	Headset Information
Manufacturer	MINAMI ACOUSTICS LIMITED
Model Number	ME-816B5-C

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

<p>This Test Report Is Issued by: Mr. Song Qizhu Director of the test lab</p> 	<p>Checked by: Mr. Wang Junfeng Deputy director of the test lab</p> 
<p>Tested by: Mr. Dong Qifeng Test engineer</p> 	<p>Issued date:</p> <p>2011.07.11</p>

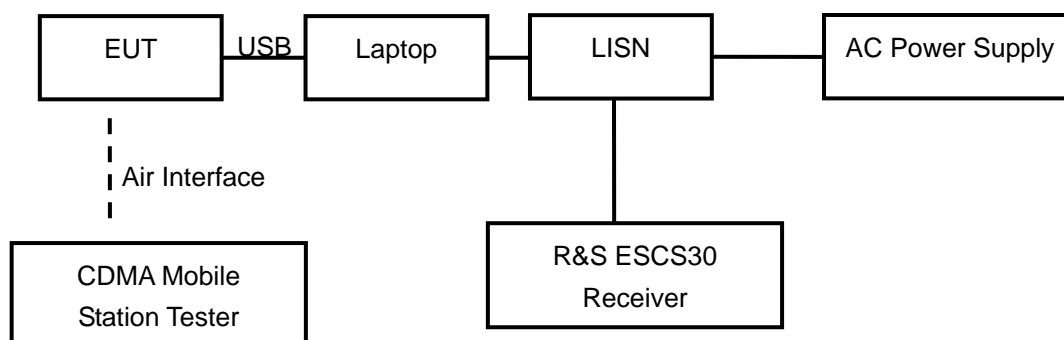
2.2 Test result

2.2.1 Conducted Emissions-FCC Part15.107

Ambient condition:

Temperature	Relative humidity	Pressure
27°C	56%	102.1kPa

Test Setup:



Test Procedure:

The EUT is placed on a non-metallic table 0.8m 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 C63.4:2003. The measurement should be done for both L line and N line. The receiver uses both average detector and Quasi-peak detector. The EUT is working in idle mode.

Limit:

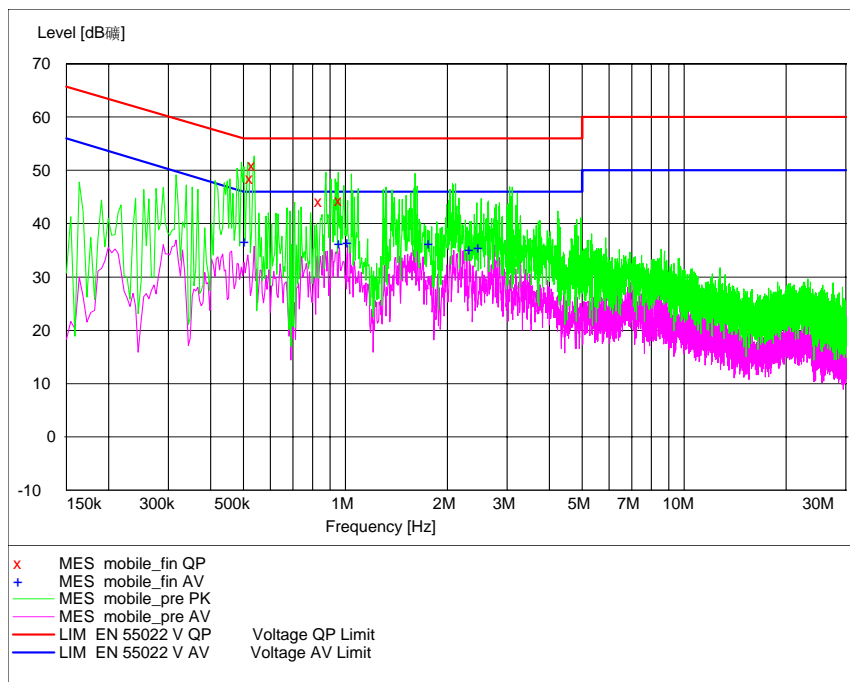
Frequency of Emission(MHz)	Limits(dBμV)	
	Quasi-peak	Average
0.15~0.5	66 to 56*	56 to 46*
0.5~5	56	46
5~30	60	50

Note: * Decreases with the logarithm of the frequency

Test result:

Refer to the following figures.

CDMA800



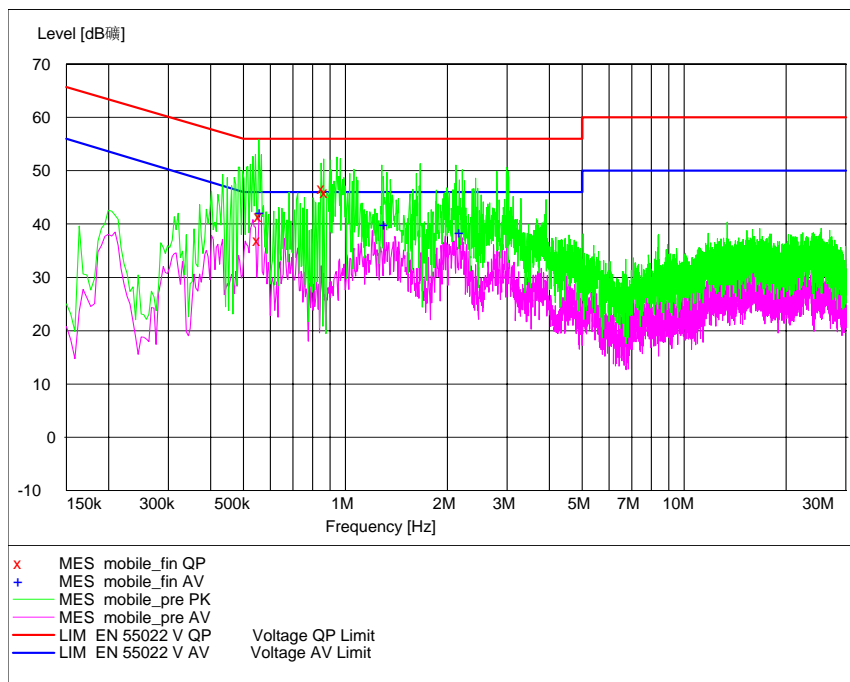
L Line

mobile_fin QP

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB
0.523500	48.40	20.3	56	7.6
0.532500	50.90	20.3	56	5.1
0.838500	44.20	20.3	56	11.8
0.960000	44.40	20.2	56	11.6

mobile_fin AV

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB
0.505500	36.70	20.3	46	9.3
0.960000	36.30	20.2	46	9.7
1.014000	36.50	20.2	46	9.5
1.765500	36.30	20.2	46	9.7
2.323500	35.20	20.3	46	10.8
2.472000	35.50	20.3	46	10.5



N Line

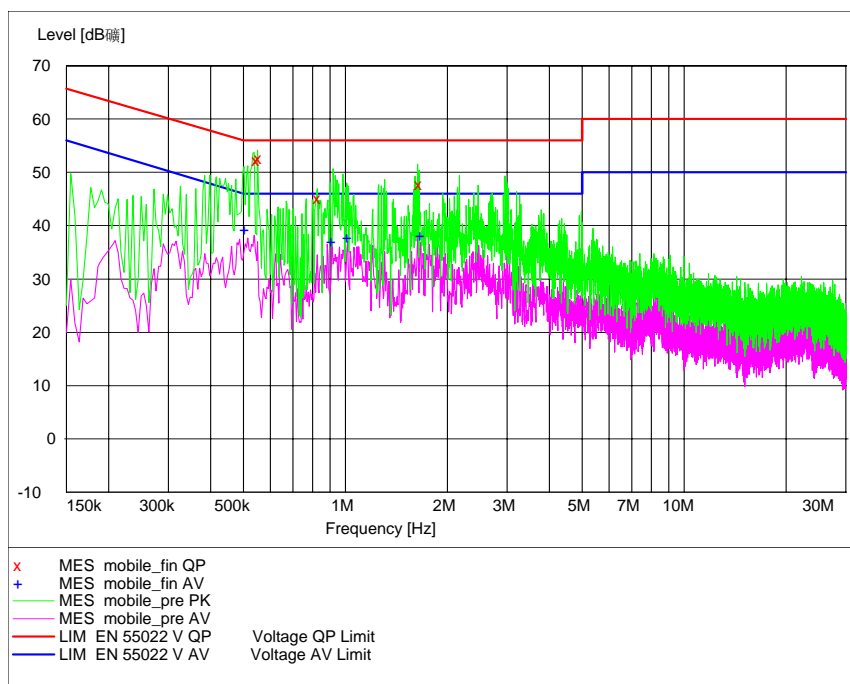
mobile_fin QP

Frequency	Level	Transd	Limit	Margin
MHz	dBμV	dB	dBμV	dB
0.550500	36.90	20.3	56	19.1
0.555000	41.50	20.3	56	14.5
0.852000	46.80	20.3	56	9.2
0.870000	46.00	20.3	56	10.0

mobile_fin AV

Frequency	Level	Transd	Limit	Margin
MHz	dBμV	dB	dBμV	dB
0.559500	42.20	20.3	46	3.8
1.302000	40.00	20.2	46	6.0
2.175000	38.40	20.3	46	7.6

PCS1900



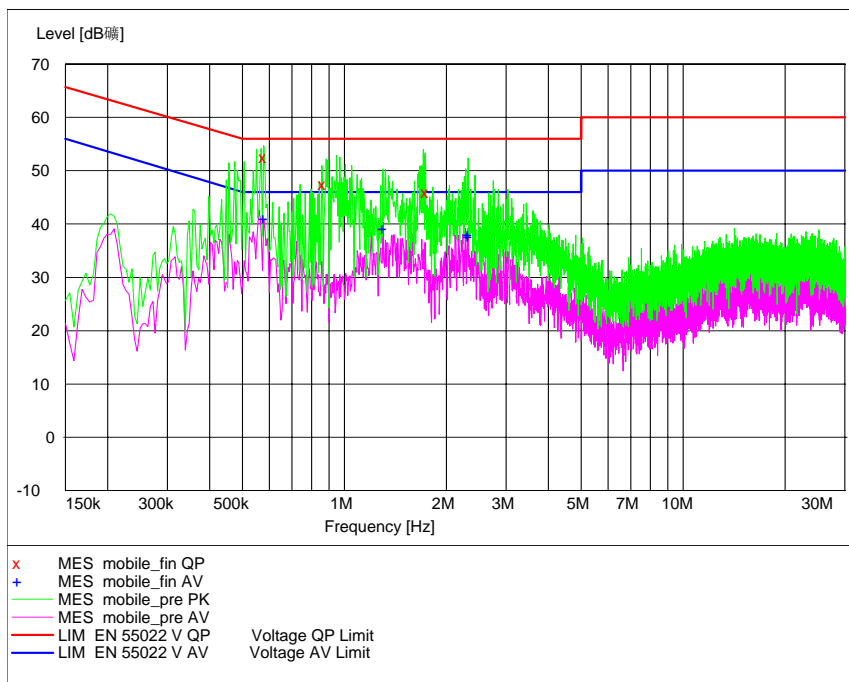
L Line

mobile_fin QP

Frequency	Level	Transd	Limit	Margin
MHz	dBμV	dB	dBμV	dB
0.546000	52.30	20.3	56	3.7
0.555000	52.70	20.3	56	3.3
0.829500	45.20	20.3	56	10.8
1.648500	47.70	20.2	56	8.3

mobile_fin AV

Frequency	Level	Transd	Limit	Margin
MHz	dBμV	dB	dBμV	Db
0.505500	39.30	20.3	46	6.7
0.910500	37.00	20.2	46	9.0
1.014000	37.80	20.2	46	8.2
1.666500	38.20	20.2	46	7.8



N Line

mobile_fin QP

Frequency	Level	Transd	Limit	Margin
MHz	dBμV	dB	dBμV	dB
0.577500	52.50	20.3	56	3.5
0.865500	47.50	20.3	56	8.5
1.734000	46.00	20.2	56	10.0

mobile_fin AV

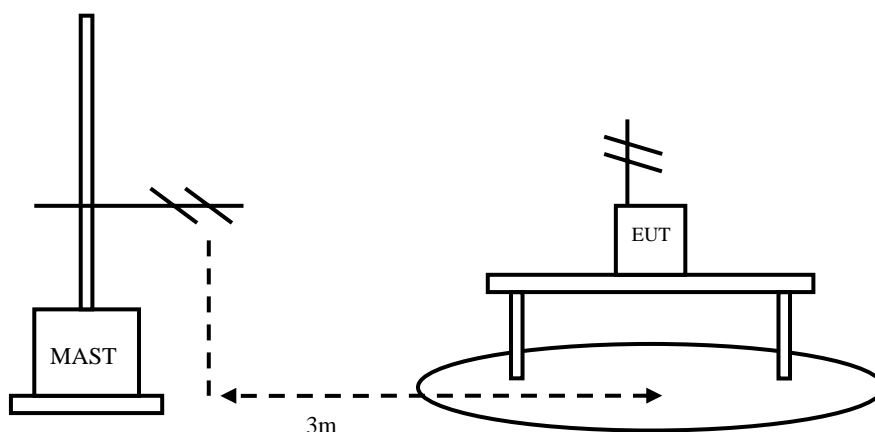
Frequency	Level	Transd	Limit	Margin
MHz	dBμV	dB	dBμV	dB
0.577500	41.00	20.3	46	5.0
1.297500	39.10	20.2	46	6.9
2.314500	38.00	20.3	46	8.0
2.319000	37.70	20.3	46	8.3

2.2.2 Radiated Emissions-FCC Part15.109

Ambient condition:

Temperature	Relative humidity	Pressure
27°C	56%	102.1kPa

Test Setup:



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 C63.4:2003.

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.

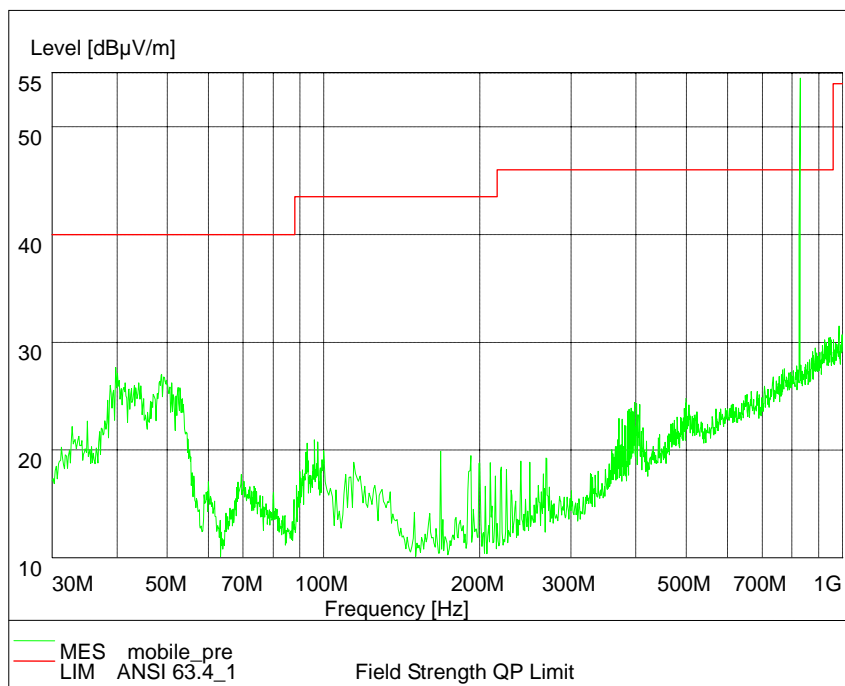
During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turn table shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be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

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

Limit:

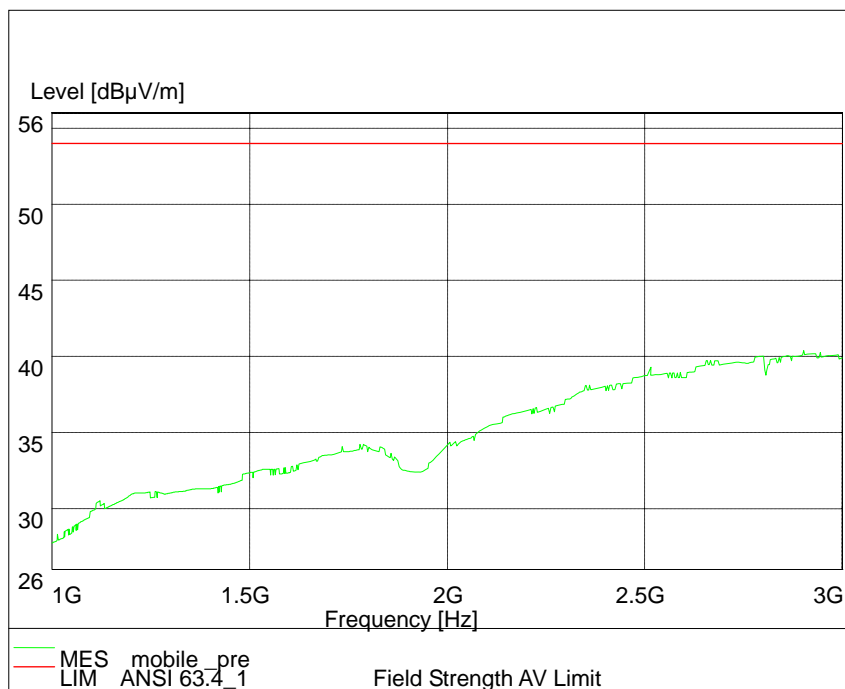
Frequency of Emission(MHz)	Limits	
	Detector	Unit (dBμV/m)
30~88	Quasi-peak	40
88~216	Quasi-peak	43.5
216~960	Quasi-peak	46
960~1000	Quasi-peak	54
1000~5th harmonic of the highest frequency or 40GHz, whichever is lower	Average Peak	54 74

Test result:

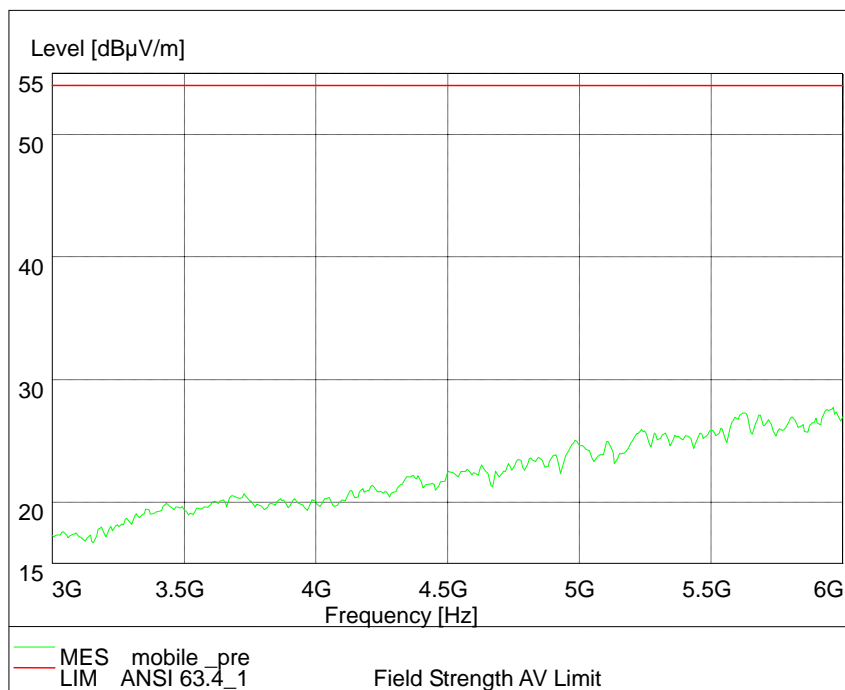


CDMA800 (30MHz – 1GHz)

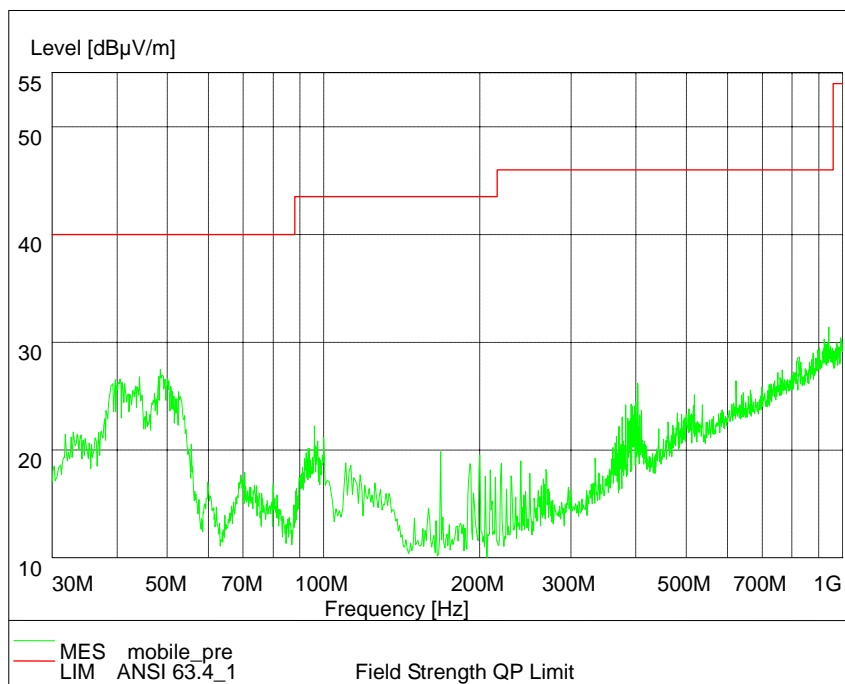
Note: The signals beyond the limit are the base station and simulator carrier.



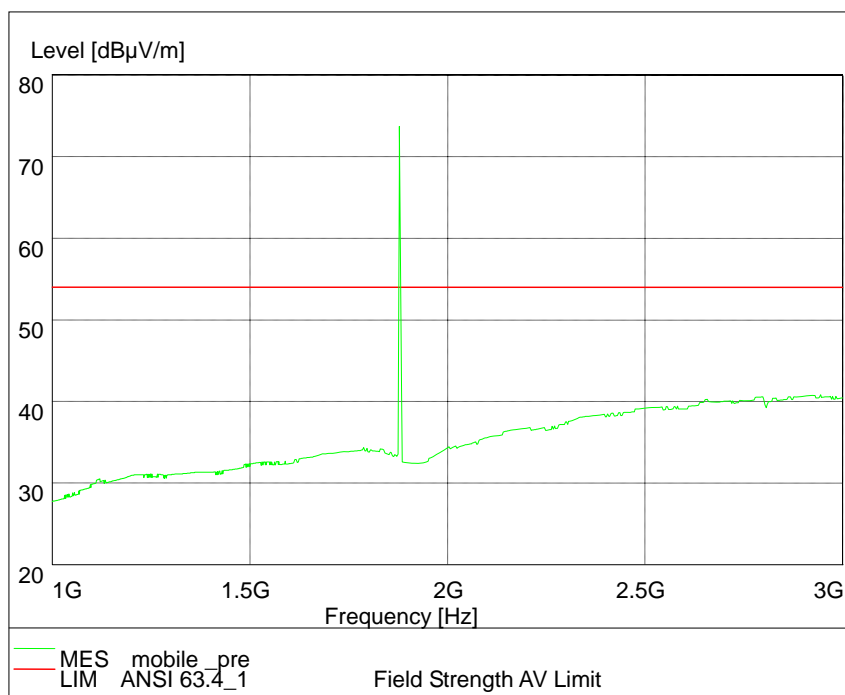
CDMA800 (1GHz – 3GHz)



CDMA800 (3GHz – 6GHz)

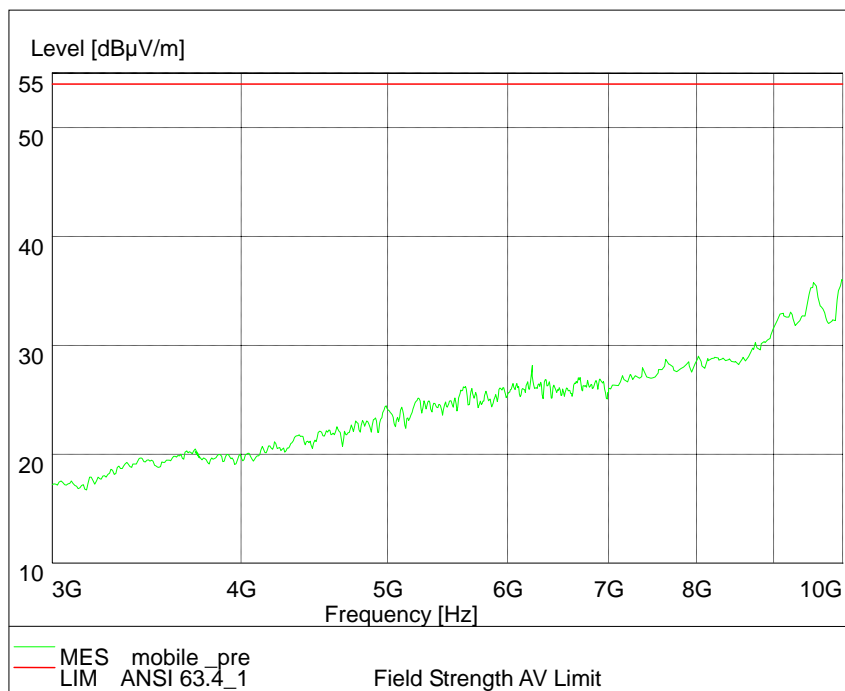


PCS1900 (30MHz – 1GHz)



PCS1900 (1GHz – 3GHz)

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



PCS1900 (3GHz – 10GHz)

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