TEST REPORT

No. 2011TAR366

for

Sony Ericsson Mobile Communications AB

GSM 850/900/1800/1900 quad bands mobile phone

Type: AAB-1880033-BV

FCC ID: PY7A1880033

IC No.: 4170B- A1880033

with

Hardware Version: A

Software Version: P5AB206

Issued Date: Jul. 14th, 2011

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of TMC Beijing.

Test Laboratory:

DAR accreditation (DIN EN ISO/IEC 17025): No. DGA-PL-114/01-02

FCC 2.948 Listed: No.733176

IC O.A.T.S listed: No.6629A-1

TMC Beijing, Telecommunication Metrology Center of Ministry of Industry and Information Technology

No. 52, Huayuan Bei Road, Haidian District, Beijing, P. R. China 100191.

Tel:+86(0) 10-62304633-2678, Fax:+86(0)10-62304633-2504 Email:welcome@emcite.com. www.emcite.com

CONTENTS

1. Test Laboratory

1.1. Testing Location

Company Name:	TMC Beijing, Telecommunication Metrology Center of MIIT
Address:	No 52, Huayuan beilu, Haidian District, Beijing, P.R.China
Postal Code:	100191
Telephone:	+86-10-62304633-2678
Fax:	+86-10-62304633-2504

1.2. Testing Environment

Normal Temperature:	15-35℃
Relative Humidity:	20-75%
Air pressure	980 - 1040 hPa

The climatic requirements above are general exclude the special requirements for dedicated test environments listed in section 5 and some specific test cases in other parts of this report.

1.3. Project data

Testing Start Date:	Jun. 21st, 2011
Testing End Date:	Jun. 21st, 2011

1.4. Signature

Qu Pengfei
(Prepared this test report)

Sun Xiangqian
(Reviewed this test report)

Song Chongwen
(Approved this test report)

2. Client Information

2.1. Applicant Information

Company Name:	Sony Ericsson Mobile Communications(China) Co., Ltd.
Address /Post:	Sony Ericsson Building, No.16, Guangshun South Street, Chaoyang District, Beijing
City:	Beijing
Postal Code:	100102
Country:	China
Contact Person:	Ma, Gang
Telephone:	+86-10-58656312
Fax:	+86-10-58656750

2.2. Manufacturer Information

Company Name:	Sony Ericsson Mobile Communications AB
Address /Post:	Nya Vattentornet, 22188 Lund, Sweden
City:	Lund
Postal Code:	22188
Country:	Sweden
Contact Person:	Nordlof, Anders
Telephone:	+46-46-193919
Fax:	+46-46-193295

3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

Description	GSM 850/900/1800/1900, GPRS, EDGE, BT EDR2.0, WLAN, FM-receiver mobile phone
Type	AAB-1880033-BV
FCC ID	PY7A1880033
IC No	4170B-A1880033
Frequency range	GSM 850: 824.2MHz-848.8MHz PCS 1900: 1850.2MHz-1909.8MHz
Antenna	Internal
Power supply	Battery or Charger (AC Adaptor)
Output power	29.11 dBm maximum ERP measured for GSM850 31.03 dBm maximum EIRP measured for PCS1900
Extreme vol. Limits	3.6VDC to 4.2VDC (nominal: 3.8VDC)
Extreme temp. Tolerance	-30°C to +50°C

Note: Components list, please refer to documents of the manufacturer; it is also included in the original test record of Telecommunication Metrology Center of MIIT of People's Republic of China.

3.2. Internal Identification of EUT used during the test

EUT ID*	SN	IMEI	HW Version	SW Version
N16	WUJ0298685	004402142986854	A	P5AB206

*EUT ID: is used to identify the test sample in the lab internally.

3.3. Internal Identification of AE used during the test

AE ID*	Description	SN	Revision
AE1	Battery	108809PTNKLS	2
AE2	Battery	102895PTNKLS	2
#17513	USB Cable	09510D2E0341082	1

AE1, AE2

Type Number	CBA-0002017
Manufacturer	SonyEricsson
Capacitance	1000mAh
Nominal Voltage	3.7V

#17513

Type Number	EC700
Manufacturer	Sony Ericsson
Length of DC line	141cm

*AE ID: is used to identify the test sample in the lab internally.

3.4. General Description

Equipment Under Test (EUT) is a model of GSM 850/900/1800/1900 quad bands mobile phone with integrated antenna.

It has MP3, Camera, FM radio, USB memory, Bluetooth and WLAN (802.11 b/g) functions. It also supports GPRS function with multi-slots class 10 and EGPRS function with multi-slots class 10 too.

It consists of normal options: lithium battery and USB Cable.

Manual and specifications of the EUT were provided to fulfil the test.

Samples undergoing test were selected by the client.

4. Reference Documents

4.1. Reference Documents for testing

The following documents listed in this section are referred for testing.

Reference	Title	Version
FCC Part 15, Subpart B	Radio frequency devices	V 10.1.09
ANSI C63.4	Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz	2009
ICES-003	Spectrum Management and Telecommunications Policy Interference-Causing Equipment Standard Digital Apparatus	Issue 4, Feb. 2004

5. LABORATORY ENVIRONMENT

Semi-anechoic chamber (23 meters × 17meters × 10meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ℃, Max. = 30 ℃
Relative humidity	Min. = 30 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω
Normalised site attenuation (NSA)	< ±3.2 dB, 10 m distance, from 30 to 1000 MHz
Uniformity of field strength	Between 0 and 6 dB, from 80 to 2000 MHz

Control room did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ℃, Max. = 35 ℃
Relative humidity	Min. =30 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω

Conducted chamber did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ℃, Max. = 30 ℃
Relative humidity	Min. = 30 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω

6. SUMMARY OF TEST RESULTS

6.1. Summary of test results

Abbreviations used in this clause:

P	Pass
NA	Not applicable
F	Fail

Items	Test Name	Clause in FCC rules	Clause in IC rules	Section in this report	Verdict
1	Radiated Emission	15.109(a)	Section 6 Section 7.2.3	B.1	P
2	Conducted Emission	15.107(a)	Section 7.2.2	B.2	P

6.2. Statements

The test cases listed in section 6.1 of this report for the EUT specified in section 3 were performed by TMC according to the standards or reference documents in section 4.1

The EUT met all applicable requirements of the standards or reference documents in section 4.1.

This report only deals with the USB memory function among the features described in section 3.

7. Test Equipments Utilized

NO.	Description	TYPE	SERIES NUMBER	MANUFACTURE	CAL DUE DATE
1	Test Receiver	ESCI	100344	R&S	2012-03-12
2	Test Receiver	ESI40	831564/002	R&S	2012-02-11
3	BiLog Antenna	VULB 9163	9163-302	Schwarzbeck	2012-02-10
4	Signal Generator	SMP04	100070	R&S	2012-04-18
5	LISN	ESH2-Z5	829991/012	R&S	2012-04-17
6	Dual-Ridge Waveguide Horn Antenna	3115	9906-5827	EMCO	2013-08-13
7	PC	OPTIPLEX 755	3908243625	DELL	N/A
8	Monitor	E178FPc	CN-OWR979-64180-7AJ-D2MS	DELL	N/A
9	Printer	DeskJet D2368	TH72E12G7Q	HP	N/A
10	Keyboard	L100	CN0RH659658907ATOI40	DELL	N/A
11	Mouse	M-BZ96C	810-000207	Logitech	N/A

ANNEX A: EUT photograph

Mobile Phone

Mobile Phone

Mobile Phone

Mobile Phone

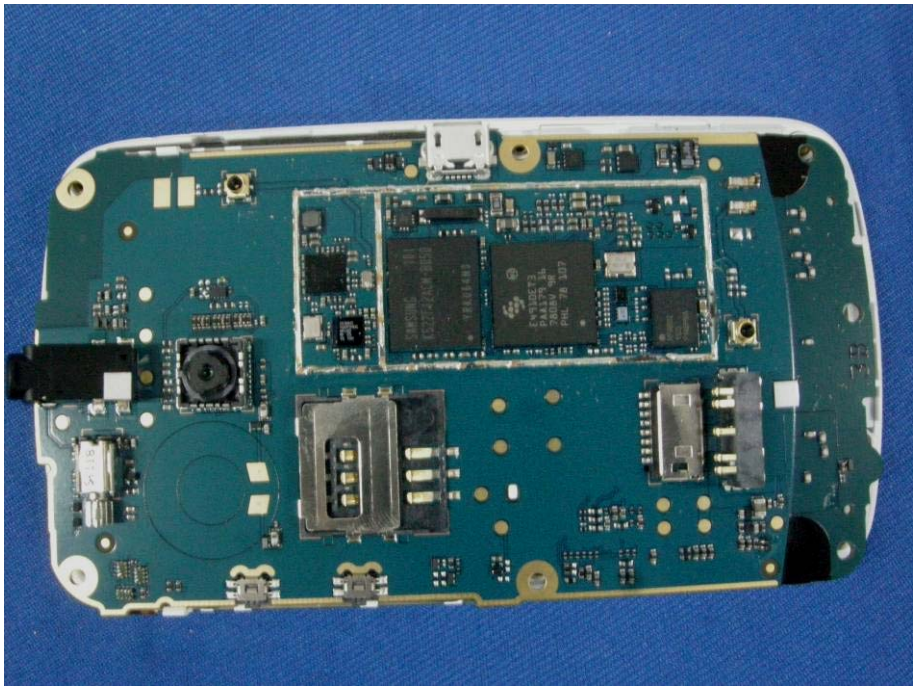
Mobile Phone

Mobile Phone

Mobile Phone

Mobile Phone

Mobile phone Disassembly

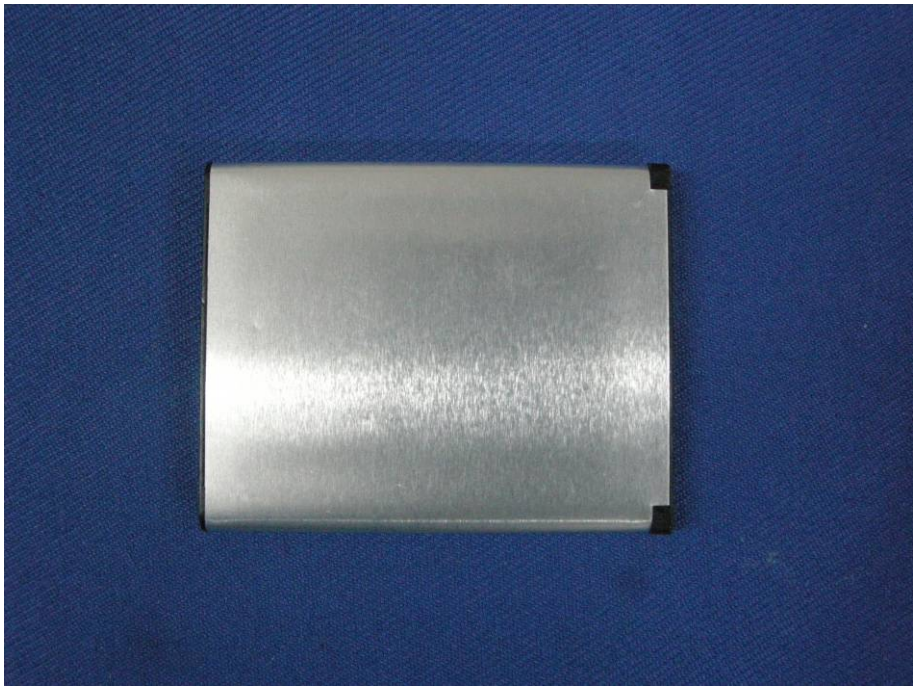


Mobile phone Disassembly

Mobile phone Disassembly

Mobile phone Disassembly

Battery



Battery

Data Cable

ANNEX B: MEASUREMENT RESULTS

B.1 Radiated Emission

Reference

FCC: CFR Part 15.109(a)

IC: ICES-003 Section 5.5.

B.1.1 Method of measurement

The field strength of radiated emissions from the unintentional radiator (USB mode of MS and/or charging mode of MS) at a distance of 3 meters is tested. Tested in accordance with the procedures of ANSI C63.4 - 2003, section 8.3.

B.1.2 EUT Operating Mode:

The MS is operating under the USB mode. During the test MS is connected to a PC via a USB cable in the case of USB mode. The model of the PC is OPTIPLEX 755, and the serial number of the PC is 3908243625. A software is used to let the PC keep on copying data to MS, reading and erasing the data after copy action was finished.

B.1.3 Test layout: see Pic.1 in ANNEX C.

B.1.4 Measurement Limit

Limit from CFR Part 15.109(a)

Frequency of emission (MHz)	Field strength (microvolts/meter)
30-88	100
88-216	150
216-960	200
Above 960	500

Limit from ICES-003 Section 5.5

Frequency range (MHz)	Field strength limits* (dBμV/m)
30 to 230	40
230 to 1000	47

*Note: The original limit is defined at 10m test distance. This limit is calculated according to CISPR requirements.

To comply with both CFR Part 15.109(a) and ICES-003 section 5.5, the following limit is used during the test.

Frequency range (MHz)	Field strength limits (dBμV/m)
30 to 230	40
230 to 960	46
960-1000	47
Above 1000	54

B.1.5 Measurement Results

USB Mode

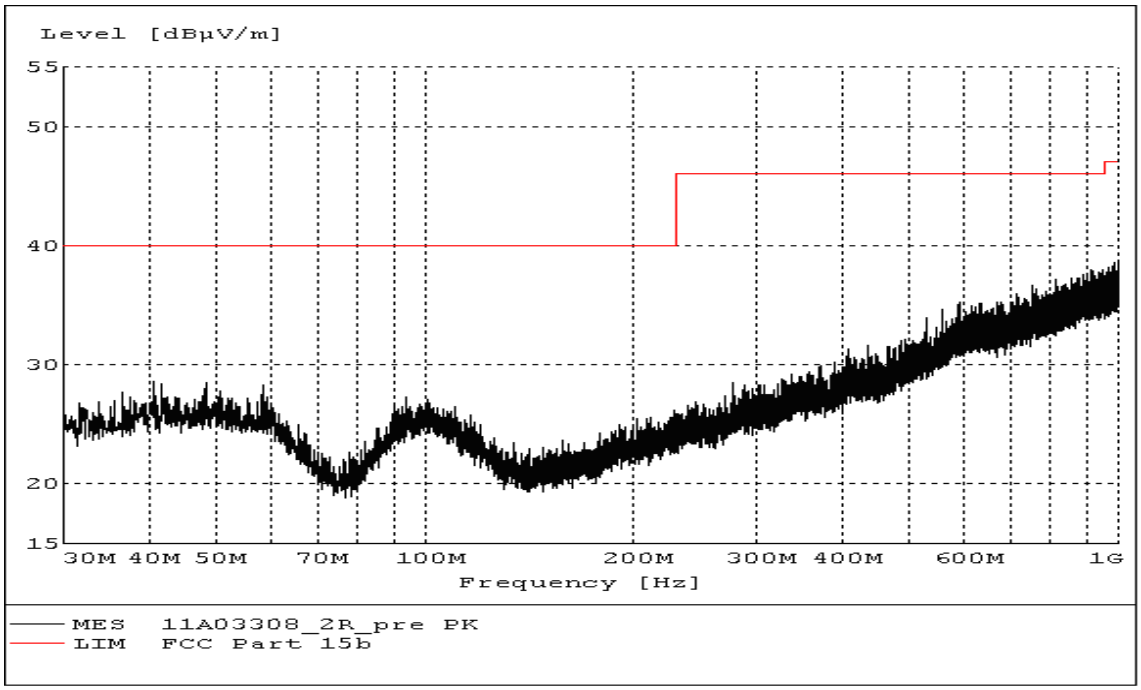


Figure B.1 Radiated Emission from 30MHz to 1GHz

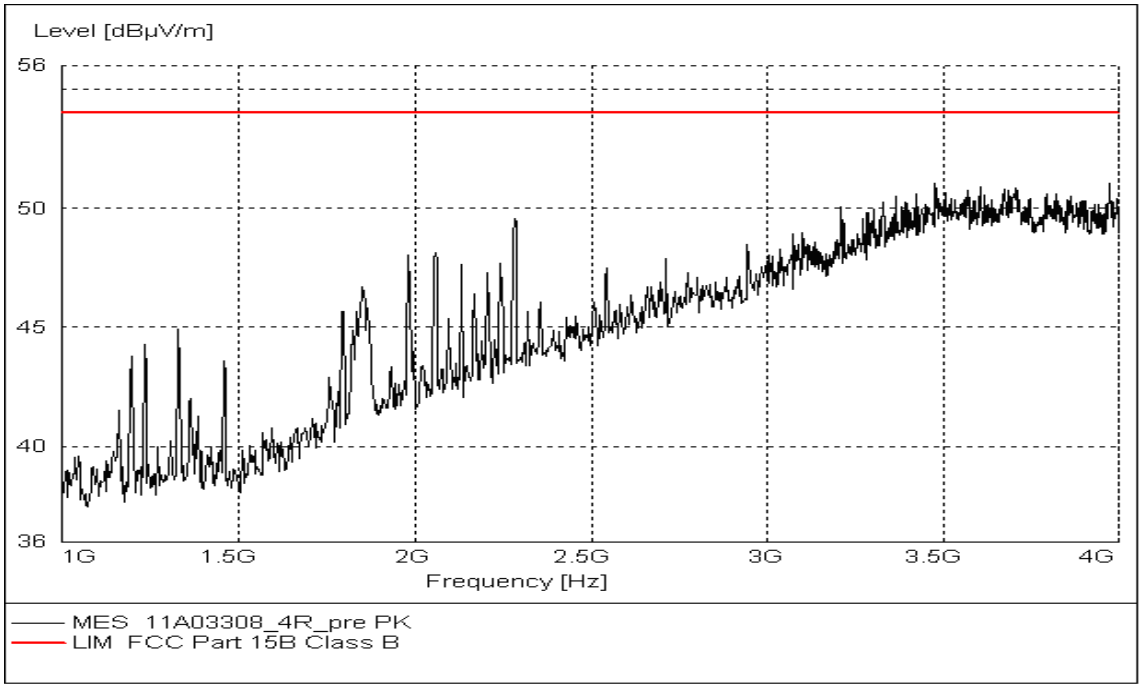


Figure B.2 Radiated Emission from 1GHz to 4GHz

B.2 Conducted Emission

Reference

FCC: CFR Part 15.107(a)

IC: ICES-003 Section 5.3.

B.2.1 Method of measurement

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30MHz shall not exceed the limits. Test is performed in accordance with the procedures of ANSI C63.4-2009, section 7.2.

B.2.2 EUT Operating Mode:

The MS is operating in the USB mode. During the test MS is connected to a PC via a USB cable in the case of USB mode. The model of the PC is OPTIPLEX 755, and the serial number of the PC is 3908243625. A software is used to let the PC keep on copying data to MS, reading and erasing the data after copy action was finished.

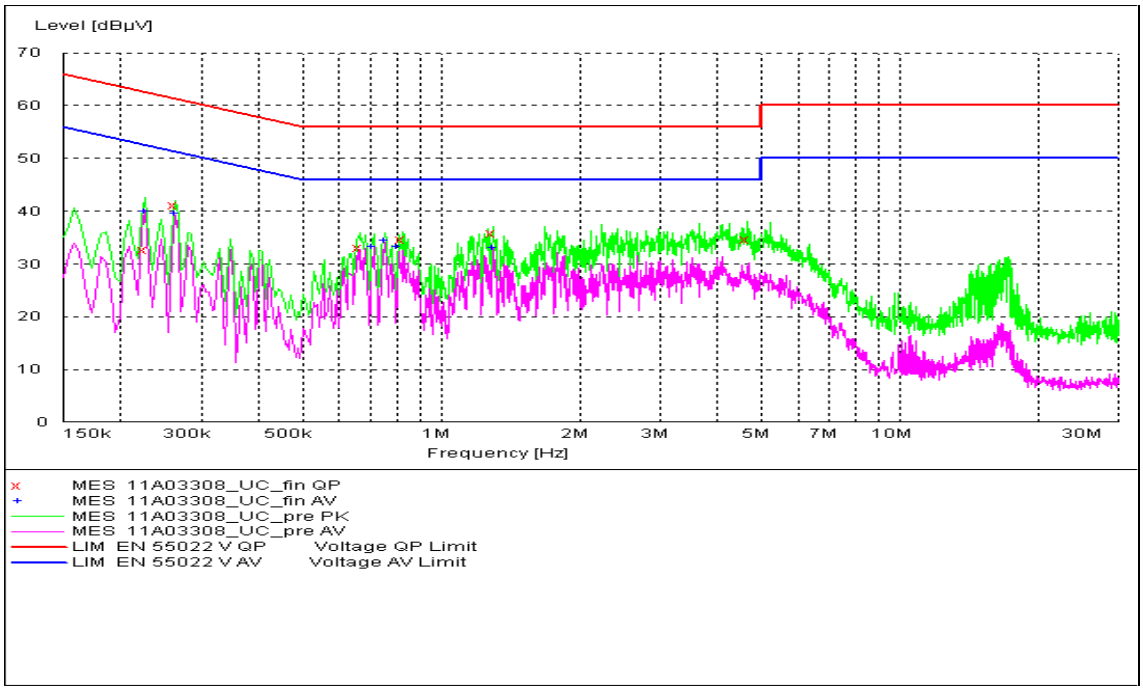
B.2.3 Test layout: see Pic.2 in ANNEX C.

B.2.4 Measurement Limit

Frequency of emission (MHz)	Conducted limit (dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50
*Decreases with the logarithm of the frequency		

B.2.5 Measurement Results

USB Mode



IF bandwidth 9 kHz

Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.

Fig B.3 Conducted Continuous Emission from 150 kHz to 30 MHz

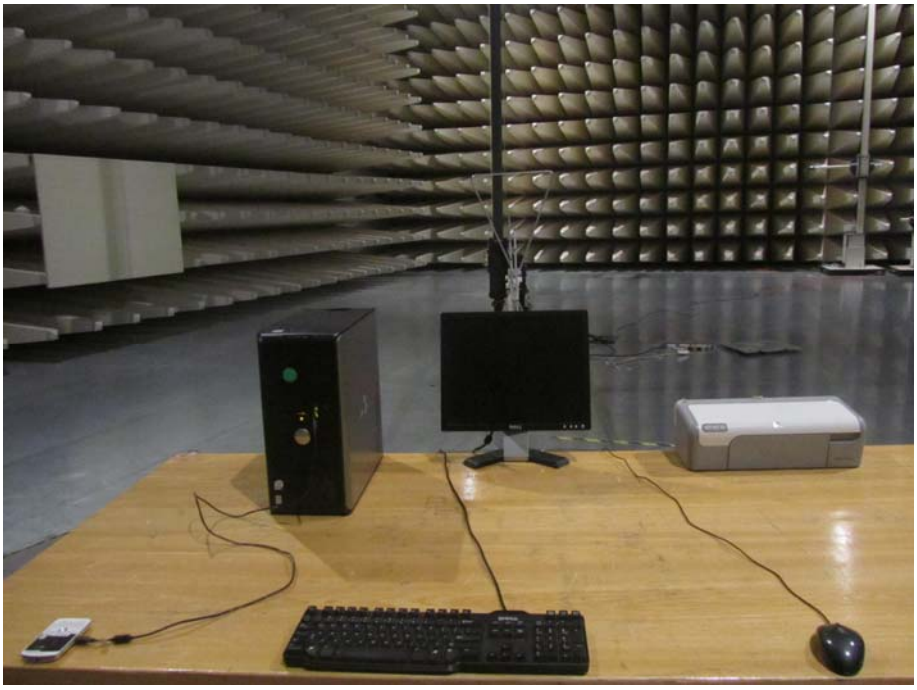
MEASUREMENT RESULT: "11A03308_UC_fin QP"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.226500	32.60	10.1	63	30.0	L1	GND
0.262500	41.10	10.1	61	20.3	N	GND
0.667500	33.10	10.1	56	22.9	L1	GND
0.825000	34.60	10.1	56	21.4	N	GND
1.297500	35.80	10.1	56	20.2	N	GND
4.654715	34.60	10.2	56	21.4	L1	GND

MEASUREMENT RESULT: "11A03308_UC_fin AV"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.226500	40.00	10.1	53	12.6	N	GND
0.262500	39.50	10.1	51	11.8	N	GND
0.712500	33.30	10.1	46	12.7	N	GND
0.753000	34.30	10.1	46	11.7	N	GND
0.807000	33.20	10.1	46	12.8	N	GND
1.297500	33.10	10.1	46	12.9	N	GND

ANNEX C: TEST LAYOUT



Pic.1 Radiated emission

Pic.2 Conducted emission

*****END OF REPORT*****