FCC EMC Test Report

FCC ID: 2AC7J-A5

Product： Mobile phone

Trade Name： N/A

Model Number： A5

Serial Model： Z5, G5, R5, M5.

Report No.： NTEK-2014DC0902009E

Prepared for

iDROID Inc.

1715 Mission Springs Dr, KATY, TEXAS 77450 USA

Prepared by

Shenzhen NTEK Testing Technology Co., Ltd.

1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street,
Bao'an District, Shenzhen P.R. China

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Website: www.ntek.org.cn

TEST RESULT CERTIFICATION

Applicant's name	:	iDROID Inc.
Address	:	1715 Mission Springs Dr, KATY, TEXAS 77450 USA
Manufacturer's Name	:	iDROID Inc.
Address	:	1715 Mission Springs Dr, KATY, TEXAS 77450 USA

Product description

Product name	:	Mobile phone
Model and/or type reference	:	A5
Serial Model：		Z5, G5, R5, M5.
Standards	:	47 CFR FCC part15 subpart B, 10-1-2013 ANSI C63.4:2003

This device described above has been tested by NTEK, and the test results show that the equipment under test (EUT) is in compliance with Part 15 of FCC Rules. And it is applicable only to the tested sample identified in the report.

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Date of Test	:	
Date (s) of performance of tests	:	02 Sep. 2014 ~29 Sep. 2014
Date of Issue	:	29 Sep. 2014
Test Result	:	**Pass**

Testing Engineer : Jason chen

(Jason Chen)

Technical Manager : Brown Lu

(Brown Lu)

Authorized Signatory :

(Bill Yao)

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1. TEST SUMMARY

Test procedures according to the technical standards:

EMC Emission				
Standard	Test Item	Limit	Judgment	Remark
FCC part15 subpart B, 10-1-2013 ANSI C63.4: 2003	Conducted Emission	Class B	PASS	
	Radiated Emission	Class B	PASS	

NOTE:

(1) 'N/A' denotes test is not applicable in this Test Report

(2) For client's request and manual description, the test will not be executed.

1.1 TEST FACILITY

NTEK Testing Technology Co., Ltd
Add. : 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen P.R. China.
FCC Registration Number:238937; IC Registration Number:9270A-1
CNAS Registration Number:L5516

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y** ± **U**，where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2**，providing a level of confidence of approximately **95** %.

A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U，(dB)	NOTE
NTEKC01	ANSI	150 KHz ~ 30MHz	3.6	

B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	U，(dB)	NOTE
NTEKA01	ANSI	30MHz ~ 1000MHz	4.8	
		1GHz ~6GHz	4.5	

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

<table>
<tr><td>Equipment</td><td>Mobile phone</td></tr>
<tr><td>Trade Name</td><td>N/A</td></tr>
<tr><td>Model Name</td><td>A5</td></tr>
<tr><td>Serial Model</td><td>Z5, G5, R5, M5.</td></tr>
<tr><td>Model Difference</td><td>All the model are the same circuit and RF module,
except the model name and colour.</td></tr>
<tr><td>Product Description</td><td>The EUT is a Mobile phone.

<table><tr><td>Operating frequency:</td><td>N/A</td></tr><tr><td>Connecting I/O port:</td><td>USB</td></tr></table>
Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.</td></tr>
<tr><td>Adapter</td><td>Model:DG10
P/N:79H0095-01M
Input:AC100-240V 50/60Hz
Output: 5V/700mAh</td></tr>
<tr><td>Battery</td><td>DC 3.7V, 2000mAh</td></tr>
</table>

2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

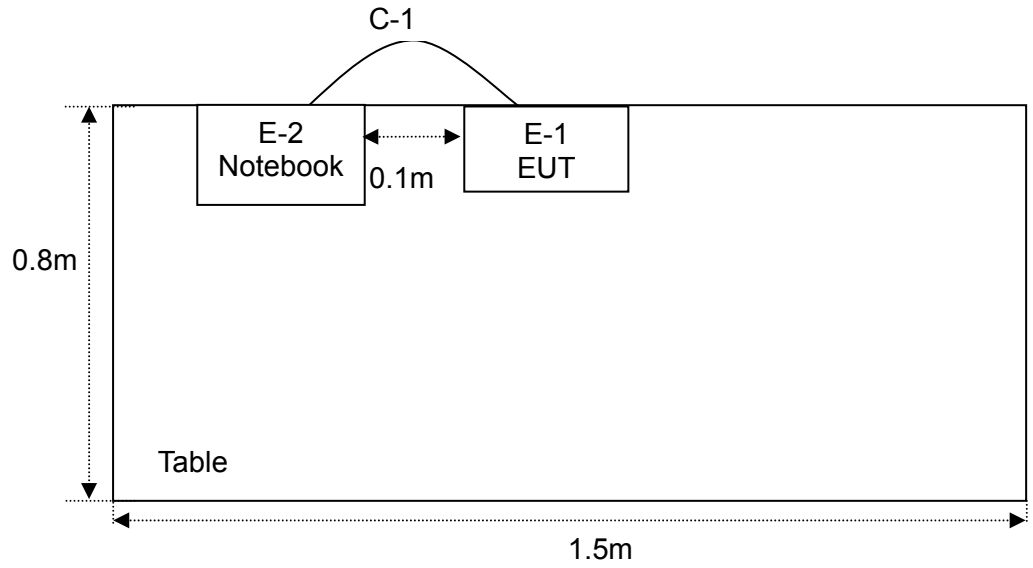
Pretest Mode	Description
Mode 1	Charging +Playing
Mode 2	Charging +Downloading

For Conducted Test	
Final Test Mode	Description
Mode 1	Charging +Playing

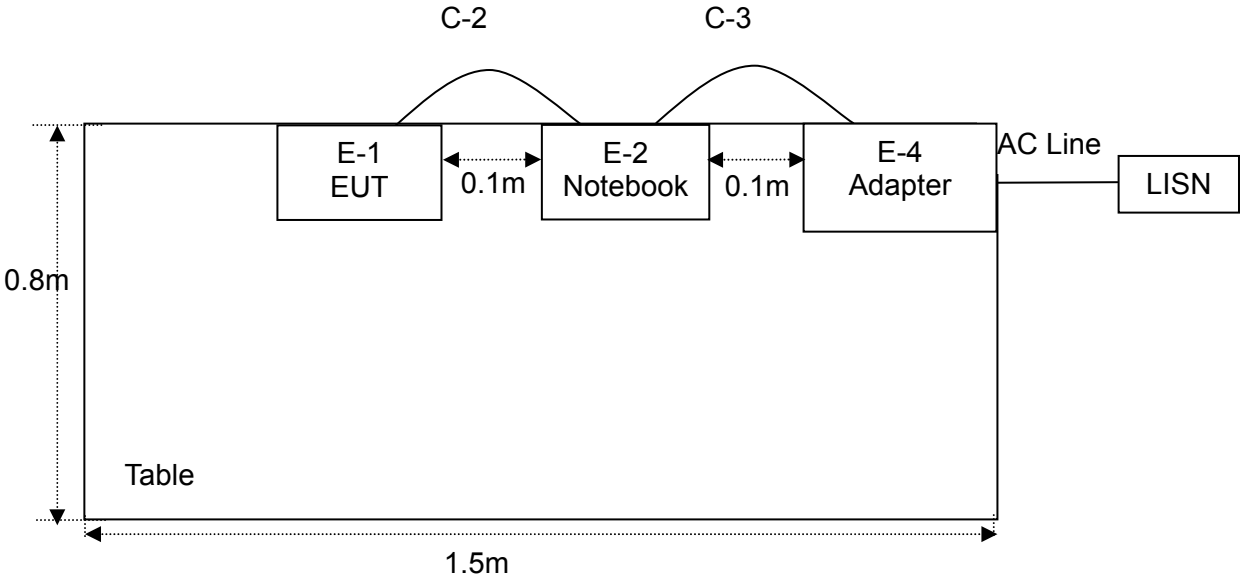
For Radiated Test	
Final Test Mode	Description
Mode 1	Charging +Playing
Mode 2	Charging +Downloading

2.3 DESCRIPTION OF TEST SETUP

Mode RE: Discharging



Mode CE: Charging



2.4 DESCRIPTION TEST PERIPHERAL AND EUT PERIPHERAL

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Brand	Model/Type No.	Series No.	Note
E-1	Mobile phone	N/A	A5	N/A	EUT
E-2	Notebook	Lenovo	ThinkPad Edge E430	N/A	
E-3	Adapter	Lenovo	ADLX90NCT3A	N/A	

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	30cm	
C-2	NO	NO	60cm	
C-3	NO	YES	140cm	

Note:

(1) The support equipment was authorized by Declaration of Confirmation.
(2) For detachable type I/O cable should be specified the length in cm in『Length』column.
(3) “YES” means “shielded” “with core”; “NO” means “unshielded” “without core”.

2.5 MEASUREMENT INSTRUMENTS LIST

2.5.1 CONDUCTED TEST SITE

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	LISN	R&S	ENV216	101313	Jul. 06, 2014	Jul. 05, 2015	1 year
2	LISN	R&S	ENV216	111315	Jul. 06, 2014	Jul. 05, 2015	1 year
3	50Ω Switch	ANRITSU CORP	MP59B	6200983704	Jun. 16, 2014	Jun. 15, 2015	1 year
4	Test Cable	N/A	C01	N/A	Jun. 16, 2014	Jun. 15, 2015	1 year
5	Test Cable	N/A	C02	N/A	Jun. 16, 2014	Jun. 15, 2015	1 year
6	Test Cable	N/A	C03	N/A	Jun. 16, 2014	Jun. 15, 2015	1 year
7	EMI Test Receiver	R&S	ESCI	101160	Jun. 16, 2014	Jun. 15, 2015	1 year
8	Triple-Loop Antenna	EVERFINE	LIA-2	11020003	Jun. 18, 2014	Jun. 17, 2015	1 year
9	Absorbing Clamp	R&S	MDS-21	100423	Jun. 16, 2014	Jun. 15, 2015	1 year

2.5.2 RADIATED TEST SITE

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Bilog Antenna	TESEQ	CBL6111D	31216	Jun. 16, 2014	Jun. 15, 2015	1 year
2	Test Cable	N/A	R-01	N/A	Jun. 16, 2014	Jun. 15, 2015	1 year
3	Test Cable	N/A	R-02	N/A	Jun. 16, 2014	Jun. 15, 2015	1 year
4	EMI Test Receiver	R&S	ESCI-7	101318	Jun. 16, 2014	Jun. 15, 2015	1 year
5	Antenna Mast	EM	SC100_1	N/A	N/A	N/A	N/A
6	Turn Table	EM	SC100	060531	N/A	N/A	N/A
7	50Ω Switch	Anritsu Corp	MP59B	6200983705	Jun. 16, 2014	Jun. 15, 2015	1 year
8	Spectrum Analyzer	Aglient	E4407B	MY45108040	Jun. 16, 2014	Jun. 15, 2015	1 year
9	Horn Antenna	EM	EM-AH-10180	2011071402	Jun. 16, 2014	Jun. 15, 2015	1 year
10	Amplifier	EM	EM-30180	060538	Jun. 16, 2014	Jun. 15, 2015	1 year

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	☐Class A (dBμV)		☒Class B (dBμV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *
0.50 -5.0	73.00	60.00	56.00	46.00
5.0 -30.0	73.00	60.00	60.00	50.00

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

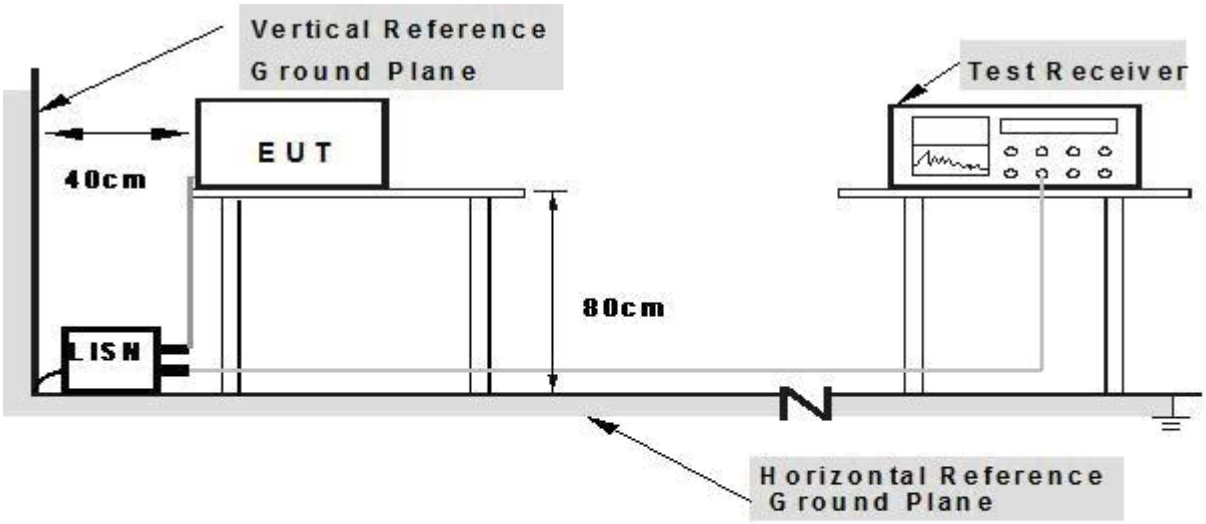
The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 KHz

3.1.2 TEST PROCEDURE

a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.1.4 EUT OPERATING CONDITIONS

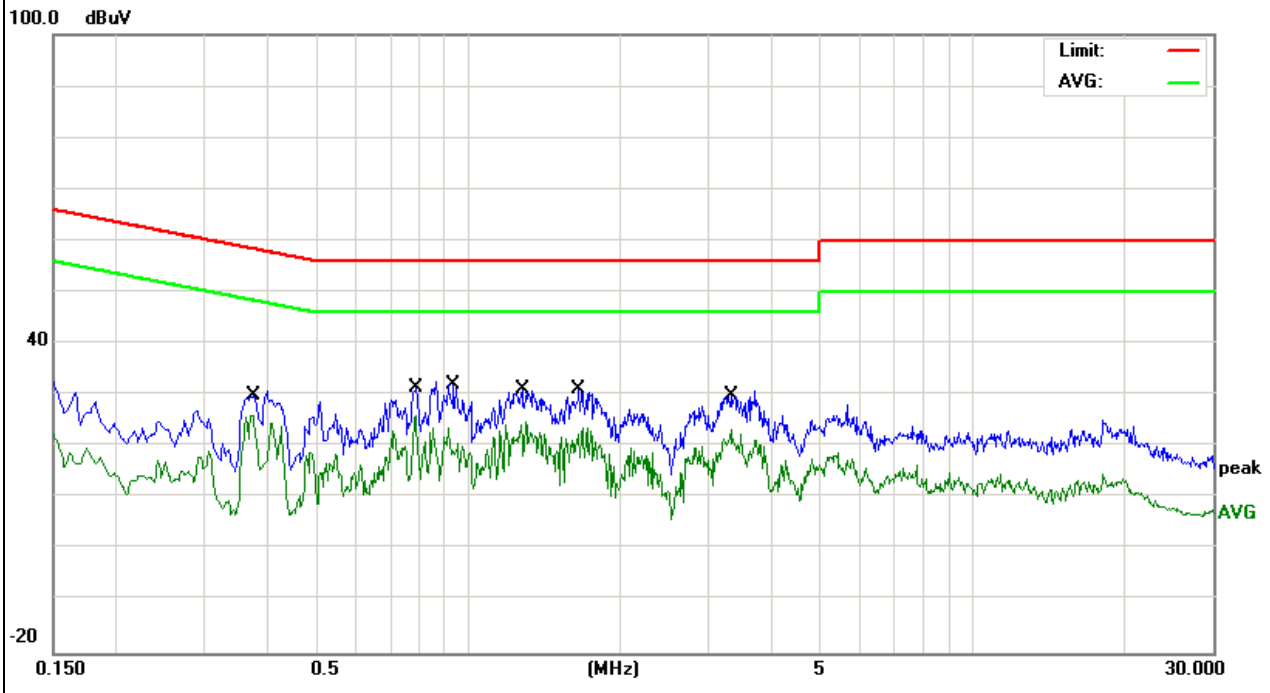
The EUT tested system was configured as the statements of **2.3** Unless otherwise a special operating condition is specified in the follows during the testing.

3.1.5 TEST RESULTS

EUT：	Mobile phone	Model Name. ：	A5
Temperature：	26℃	Relative Humidity：	54%
Pressure：	1010hPa	Test Date：	2014-09-16
Test Mode：	Mode 1	Phase：	L
Test Voltage ：	DC 5.0V from Adapter AC 120V/60Hz		

Freq. (MHz)	Reading (dBμV)	Factor (dB)	Measurement (dBμV)	Limit (dBμV)	Over (dB)	Detector
0.3740	20.39	9.50	29.89	58.41	-28.52	QP
0.3740	16.55	9.50	26.05	48.41	-22.36	AVG
0.7900	16.61	9.53	26.14	46.00	-19.86	AVG
0.7900	22.00	9.53	31.53	56.00	-24.47	QP
0.9340	14.25	9.53	23.78	46.00	-22.22	AVG
0.9340	22.64	9.53	32.17	56.00	-23.83	QP
1.2780	21.69	9.54	31.23	56.00	-24.77	QP
1.2780	15.26	9.54	24.80	46.00	-21.20	AVG
1.6540	21.51	9.54	31.05	56.00	-24.95	QP
1.6540	14.07	9.54	23.61	46.00	-22.39	AVG
3.3220	20.37	9.58	29.95	56.00	-26.05	QP
3.3220	13.89	9.58	23.47	46.00	-22.53	AVG

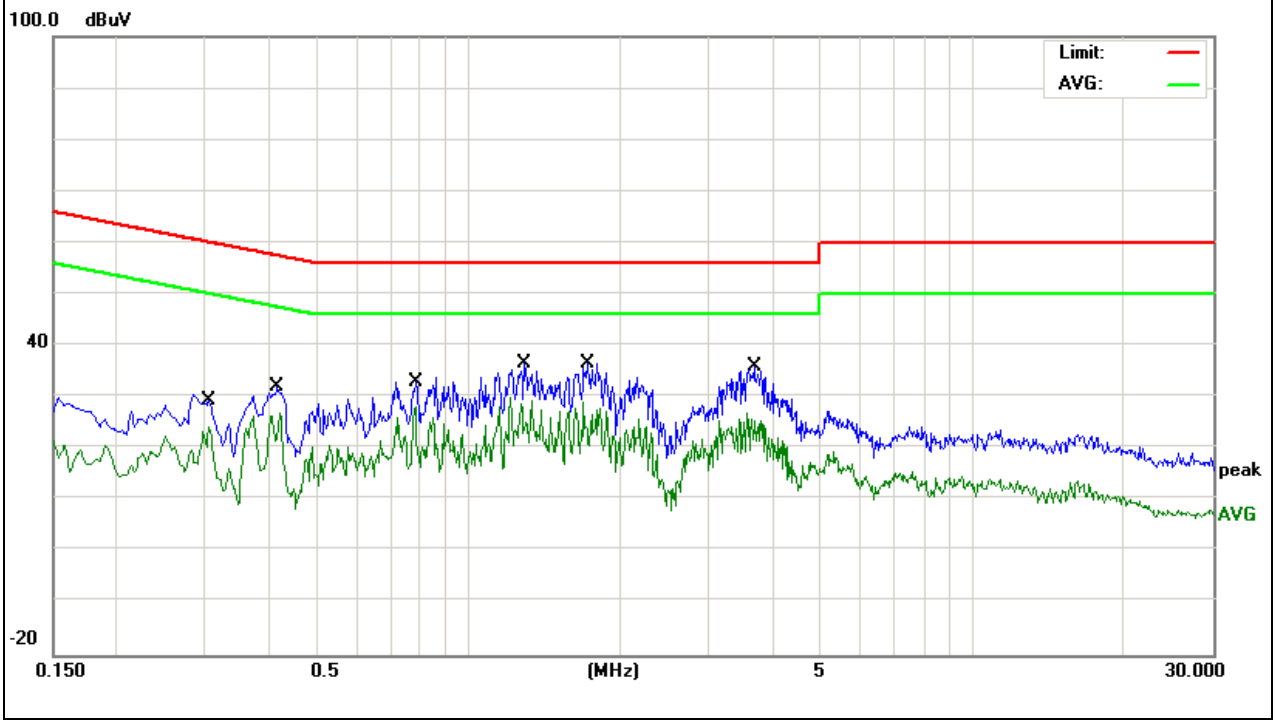
Remark:
Factor = Insertion Loss + Cable Loss.



EUT：	Mobile phone	Model Name. ：	A5
Temperature：	26℃	Relative Humidity：	54%
Pressure：	1010hPa	Test Date：	2014-09-16
Test Mode：	Mode 1	Phase：	N
Test Voltage ：	DC 5.0V from Adapter AC 120V/60Hz		

Freq. (MHz)	Reading (dBμV)	Factor (dB)	Measurement (dBμV)	Limit (dBμV)	Over (dB)	Detector
0.3060	19.93	9.50	29.43	60.08	-30.65	QP
0.3060	14.63	9.50	24.13	50.08	-25.95	AVG
0.4180	22.51	9.50	32.01	57.49	-25.48	QP
0.4180	17.35	9.50	26.85	47.49	-20.64	AVG
0.7900	23.42	9.53	32.95	56.00	-23.05	QP
0.7900	18.62	9.53	28.15	46.00	-17.85	AVG
1.2900	26.88	9.54	36.42	56.00	-19.58	QP
1.2900	20.55	9.54	30.09	46.00	-15.91	AVG
1.7180	27.11	9.54	36.65	56.00	-19.35	QP
1.7180	19.38	9.54	28.92	46.00	-17.08	AVG
3.6980	26.29	9.58	35.87	56.00	-20.13	QP
3.6980	17.27	9.58	26.85	46.00	-19.15	AVG

Remark:
Factor = Insertion Loss + Cable Loss.



3.2 RADIATED EMISSION MEASUREMENT

3.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

FREQUENCY (MHz)	☐Class A (at 3m)	☒Class B (at 3m)
	dBμV/m	dBμV/m
30 ~ 88	49.0	40.0
88 ~ 216	53.5	43.5
216 ~ 960	56.5	46.0
Above 960	59.5	54.0

Notes:

(1) The limit for radiated test was performed according to as following: FCC PART 15B /ICES-003.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBμV/m)=20log Emission level (uV/m).

3.2.2 TEST PROCEDURE

a. The measuring distance of at 10 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.

b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.

c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured, above 1G Average mode will be instead.

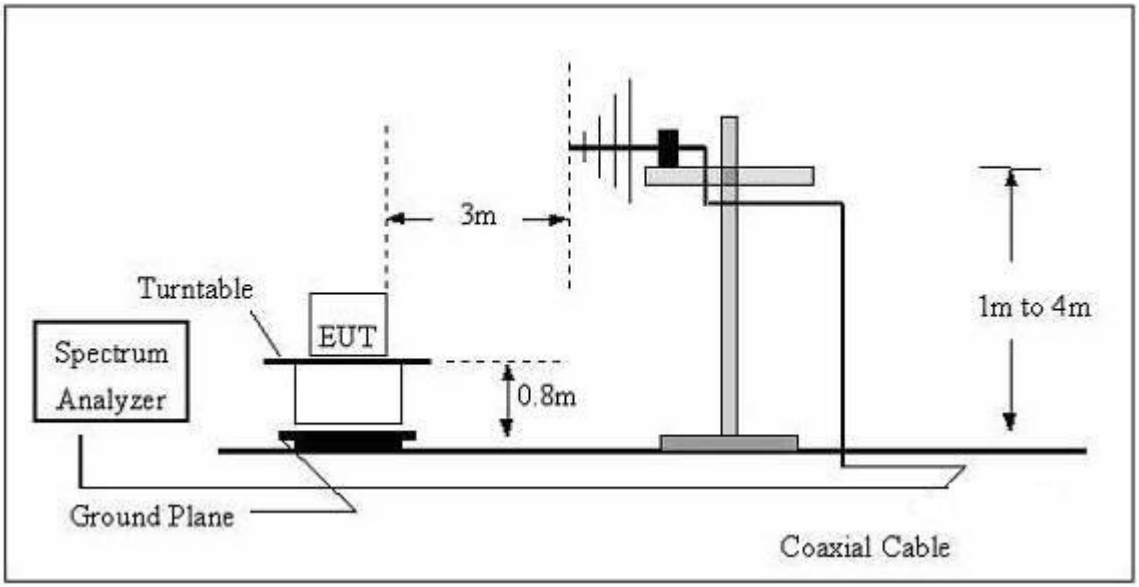
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

During the radiated emission test, the Spectrum Analyzer was set with the following configurations:

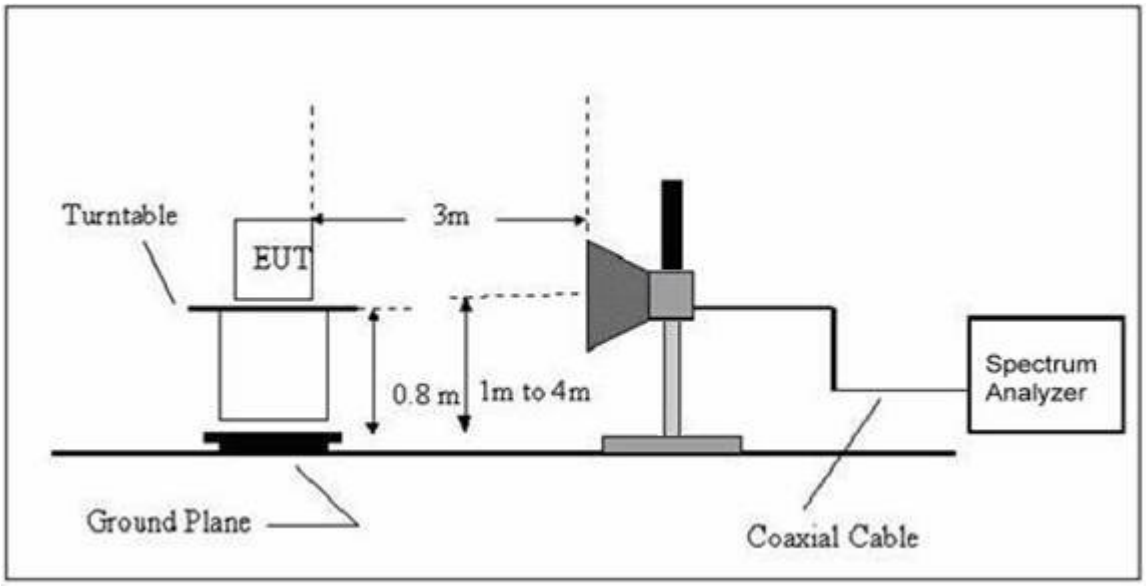
Frequency Band (MHz)	Function	Resolution bandwidth	Video Bandwidth
30 to 1000	QP	120 kHz	300 kHz
Above 1000	Peak	1 MHz	1 MHz
	Peak	1 MHz	10 Hz

3.2.3 TEST SETUP

(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



(B) Radiated Emission Test Set-Up Frequency Above 1GHz



3.2.4 EUT OPERATING CONDITIONS

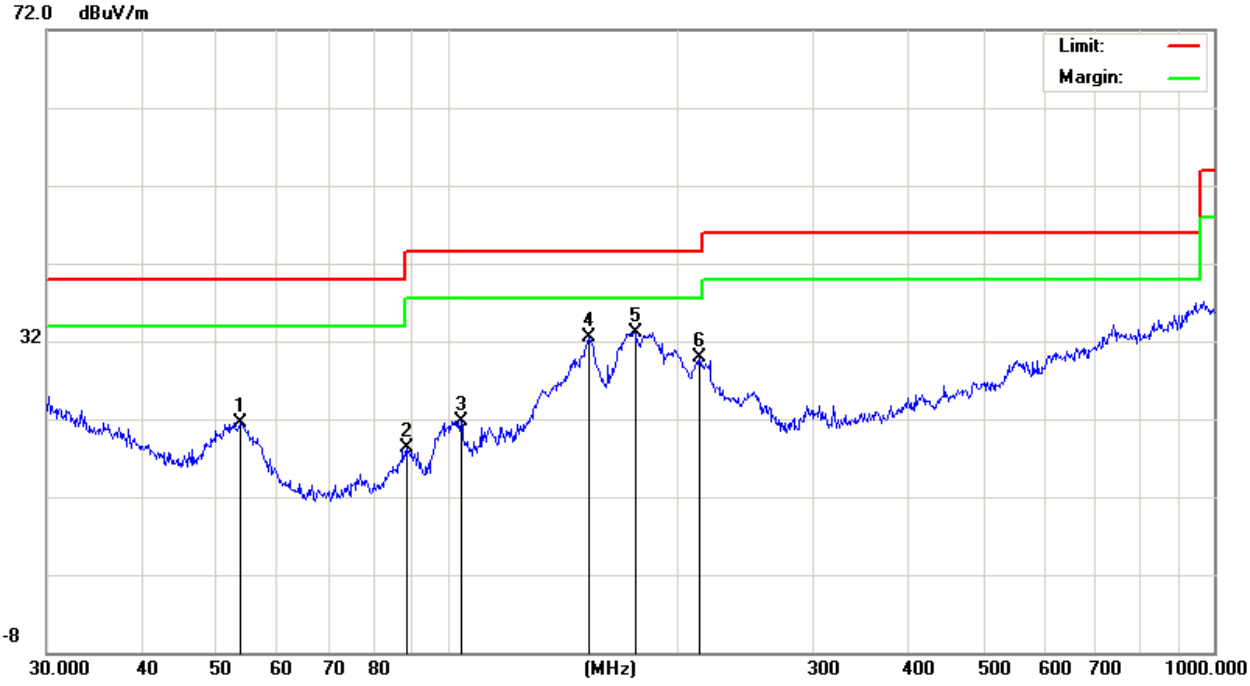
The EUT tested system was configured as the statements of **2.3** Unless otherwise a special operating condition is specified in the follows during the testing.

3.2.5 TEST RESULTS

EUT：	Mobile phone	Model Name ：	A5
Temperature：	24℃	Relative Humidity：	54%
Pressure：	1010hPa	Test Date：	2014-09-16
Test Mode ：	Mode 1	Polarization：	Horizontal
Test Power ：	DC 5.0V from Adapter AC 120V/60Hz		

Freq. (MHz)	Reading (dBμV/m)	Factor (dB)	Measurement (dBμV/m)	Limit (dBμV/m)	Over (dB)	Detector
53.6931	14.83	6.69	21.52	40.00	-18.48	QP
88.3421	9.07	9.18	18.25	43.50	-25.25	QP
104.1701	10.74	11.00	21.74	43.50	-21.76	QP
153.2004	20.85	11.56	32.41	43.50	-11.09	QP
175.6516	23.05	10.08	33.13	43.50	-10.37	QP
213.0149	20.07	9.82	29.89	43.50	-13.61	QP

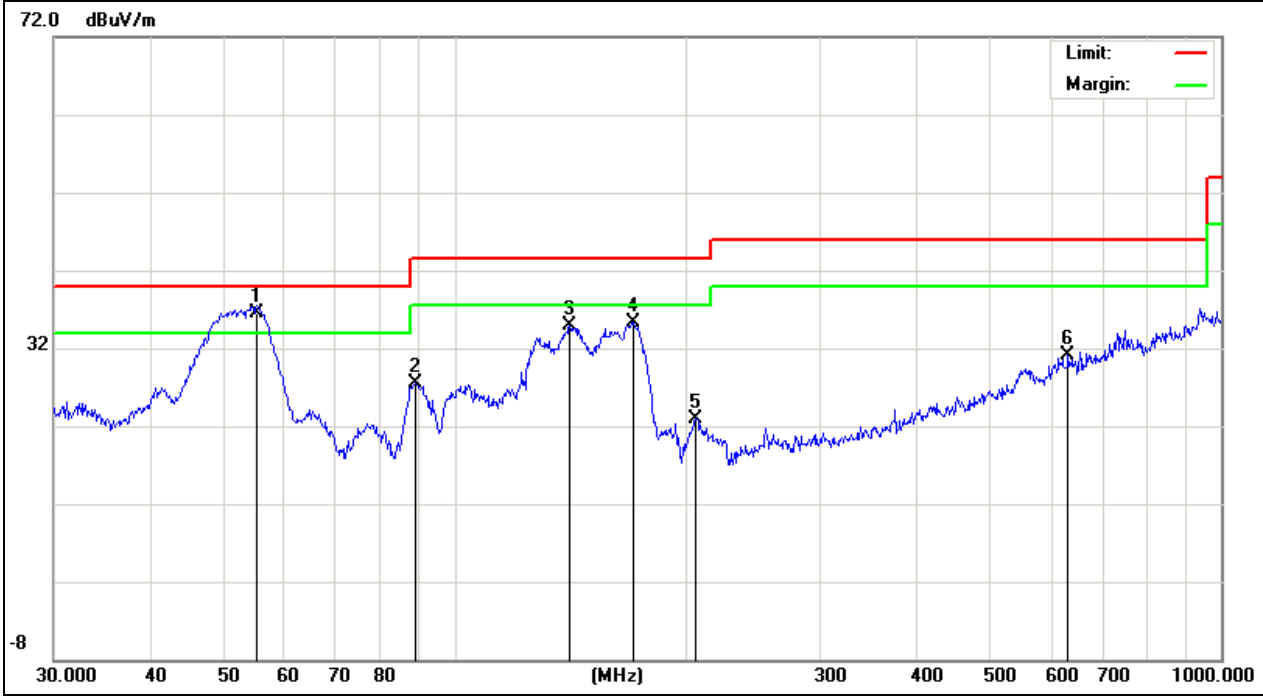
Remark:
Factor = Antenna Factor + Cable Loss.



EUT：	Mobile phone	Model Name ：	A5
Temperature：	24℃	Relative Humidity：	54%
Pressure：	1010hPa	Test Date：	2014-09-16
Test Mode ：	Mode 1	Polarization：	Vertical
Test Power ：	DC 5.0V from Adapter AC 120V/60Hz		

Freq. (MHz)	Reading (dBμV/m)	Factor (dB)	Measurement (dBμV/m)	Limit (dBμV/m)	Over (dB)	Detector
55.2207	30.21	6.21	36.42	40.00	-3.58	QP
88.9637	18.22	9.27	27.49	43.50	-16.01	QP
141.3298	22.71	12.13	34.84	43.50	-8.66	QP
171.3926	25.03	10.32	35.35	43.50	-8.15	QP
206.3976	13.48	9.38	22.86	43.50	-20.64	QP
631.6884	7.48	23.56	31.04	46.00	-14.96	QP

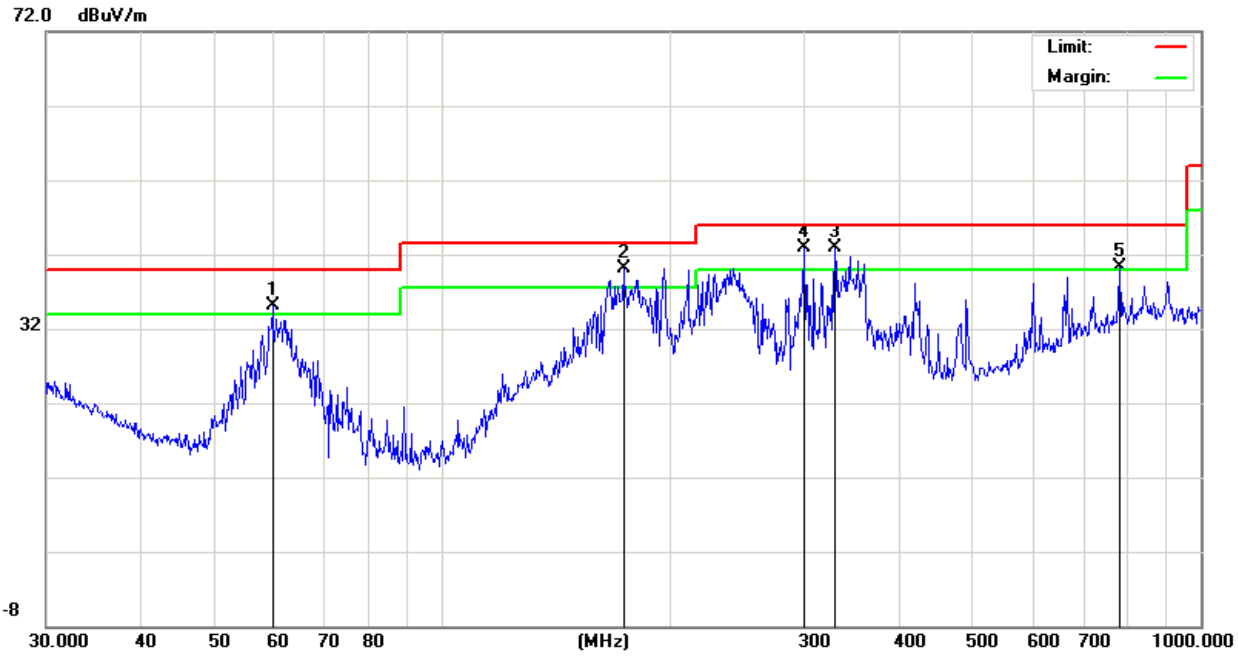
Remark:
Factor = Antenna Factor + Cable Loss.



EUT：	Mobile phone	Model Name ：	A5
Temperature：	24℃	Relative Humidity：	54%
Pressure：	1010hPa	Test Date：	2014-09-16
Test Mode ：	Mode 2	Polarization：	Horizontal
Test Power ：	DC 5.0V from PC AC 120V/60Hz		

Freq. (MHz)	Reading (dBμV/m)	Factor (dB)	Measurement (dBμV/m)	Limit (dBμV/m)	Over (dB)	Detector
59.65	27.16	7.93	35.09	40.00	-4.91	QP
173.21	29.44	10.58	40.02	43.50	-3.48	QP
329.04	27.63	15.36	42.99	46.00	-3.01	QP
300.37	28.68	14.16	42.84	46.00	-3.16	QP
782.35	13.34	26.95	40.29	46.00	-5.71	QP

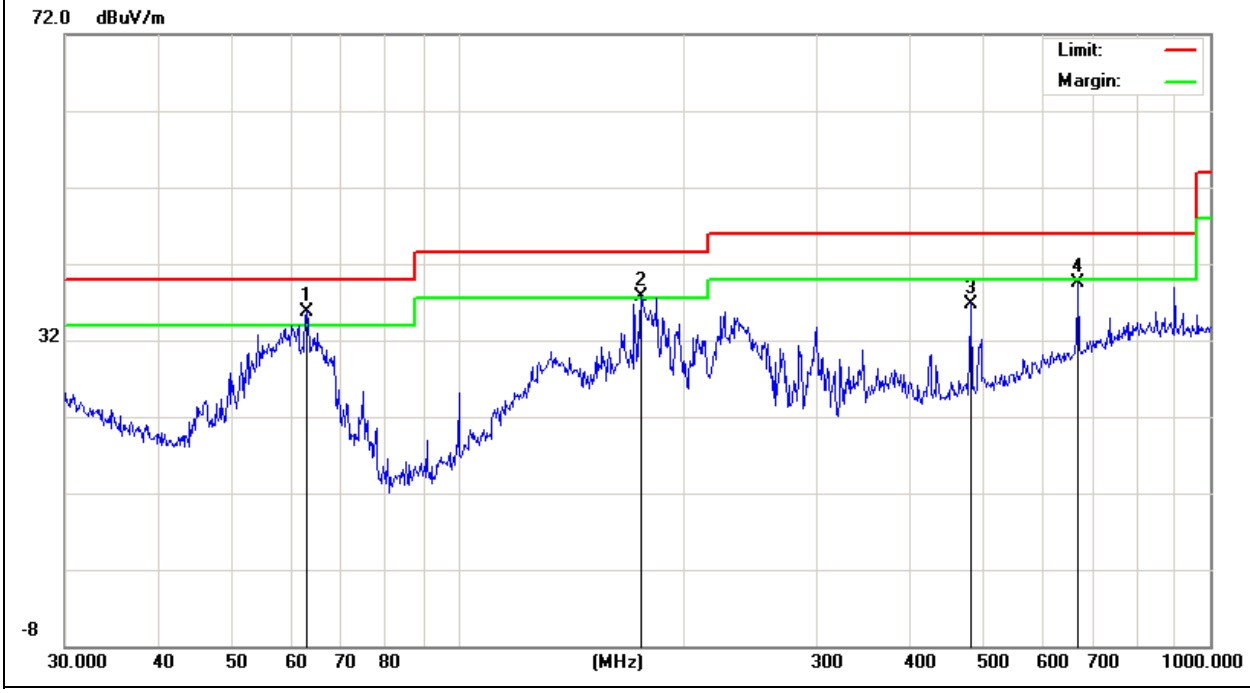
Remark:
Factor = Antenna Factor + Cable Loss.



EUT：	Mobile phone	Model Name ：	A5
Temperature：	24℃	Relative Humidity：	54%
Pressure：	1010hPa	Test Date：	2014-09-16
Test Mode ：	Mode 2	Polarization：	Vertical
Test Power ：	DC 5.0V from PC AC 120V/60Hz		

Freq. (MHz)	Reading (dBμV/m)	Factor (dB)	Measurement (dBμV/m)	Limit (dBμV/m)	Over (dB)	Detector
62.87	28.61	7.19	35.80	40.00	-4.20	QP
175.04	27.14	10.60	37.74	43.50	-5.76	QP
480.53	16.89	19.91	36.80	46.00	-9.20	QP
668.14	15.61	23.91	39.52	46.00	-6.48	QP

Remark:
Factor = Antenna Factor + Cable Loss.

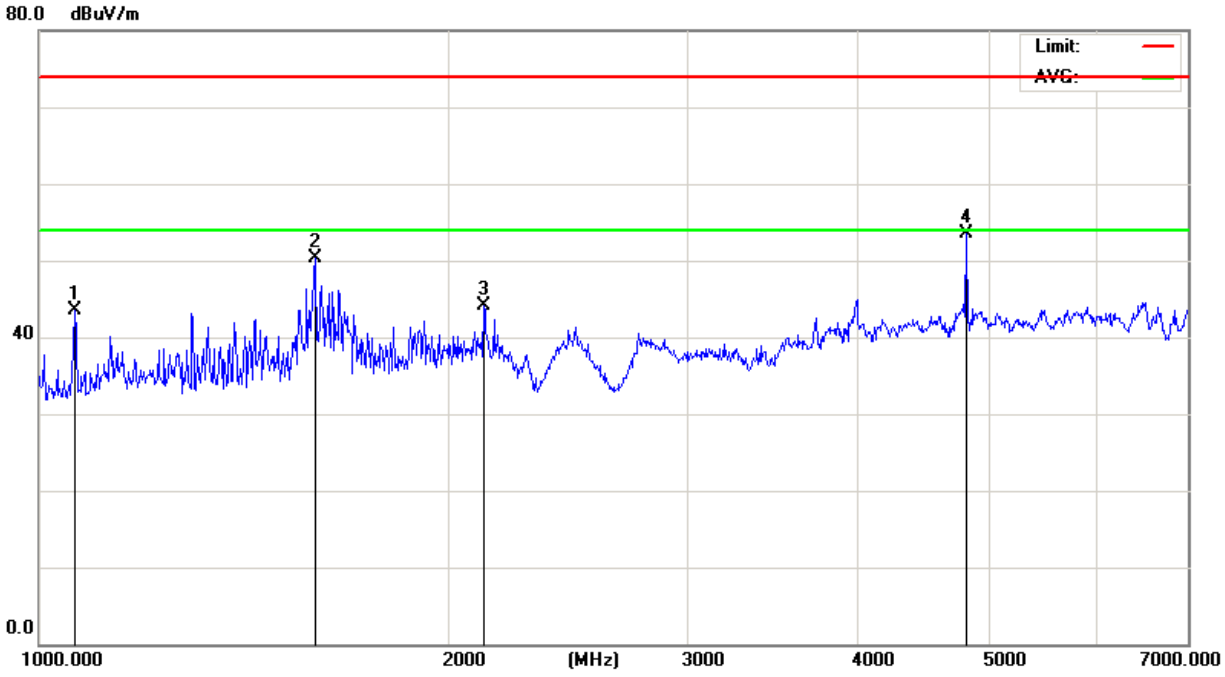


3.2.6 TEST RESULTS(Above 1GHz)

EUT：	Mobile phone	Model Name ：	A5
Temperature：	24℃	Relative Humidity：	54%
Pressure：	1010hPa	Test Date：	2014-09-16
Test Mode ：	Mode 2	Polarization：	Horizontal
Test Power ：	DC 5.0V from PC AC 120V/60Hz		

Freq. (MHz)	Reading (dBμV/m)	Factor (dB)	Measurement (dBμV/m)	Limit (dBμV/m)	Over (dB)	Detector
1062.18	63.22	-19.79	43.43	74.00	-30.57	QP
1595.23	66.64	-16.43	50.21	74.00	-23.79	QP
2123.50	56.12	-11.97	44.15	74.00	-29.85	QP
4808.33	57.21	-3.63	53.58	74.00	-20.42	QP

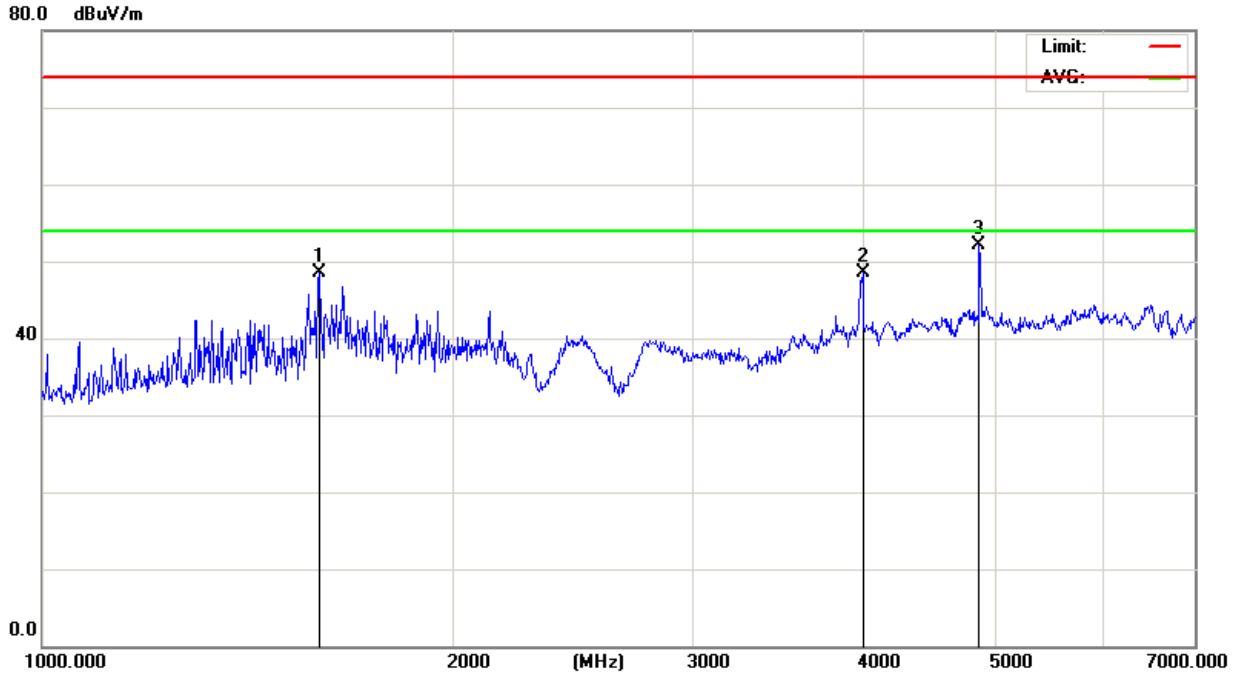
Remark:
Factor = Antenna Factor + Cable Loss.



EUT：	Mobile phone	Model Name ：	A5
Temperature：	24℃	Relative Humidity：	54%
Pressure：	1010hPa	Test Date：	2014-09-16
Test Mode ：	Mode 2	Polarization：	Vertical
Test Power ：	DC 5.0V from PC AC 120V/60Hz		

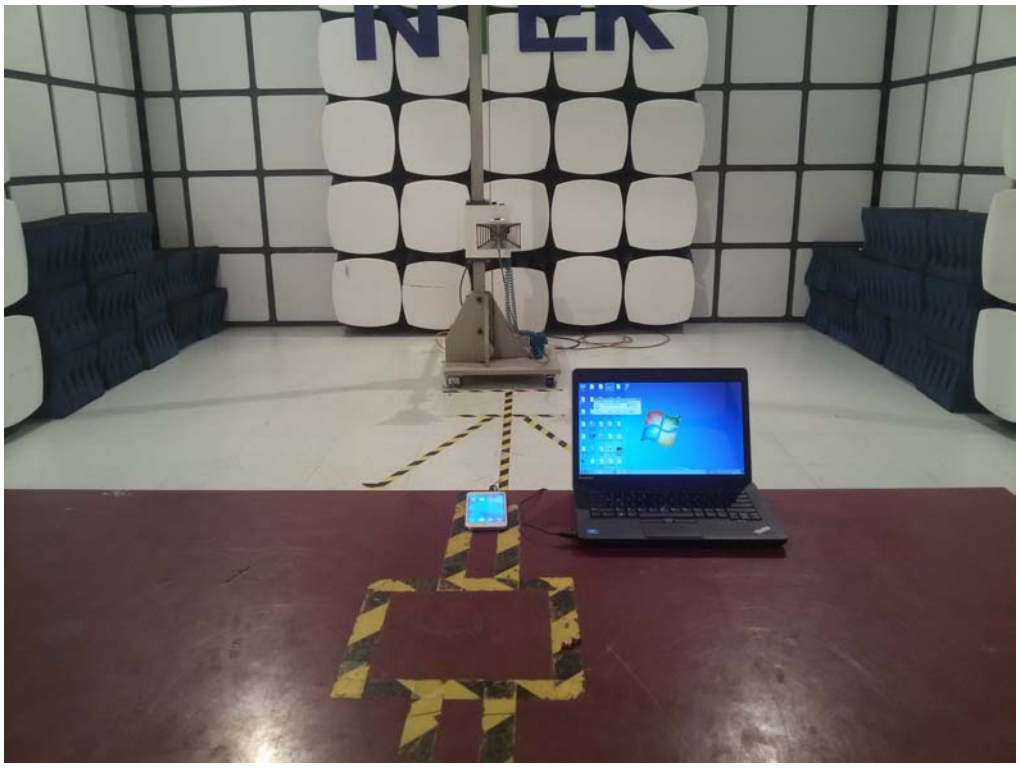
Freq. (MHz)	Reading (dBμV/m)	Factor (dB)	Measurement (dBμV/m)	Limit (dBμV/m)	Over (dB)	Detector
1598.34	64.90	-16.40	48.50	74.00	-25.50	QP
3996.78	55.00	-6.51	48.49	74.00	-25.51	QP
4864.80	55.74	-3.59	52.15	74.00	-21.85	QP

Remark:
Factor = Antenna Factor + Cable Loss.



4. EUT TEST PHOTO

Radiated Measurement Photos



Conducted Measurement Photos