

FCC EMC Test Report

FCC ID: 2ADTY-M182

For

**GUANGDONG GUANTONG HOLDING CO., Ltd
NO.2,BEIAO AVENUE,DAWENBA,AOTOU,DAYABAY,HUIZHOU**

Product : Mobile Phone

Trade Name : Ole!

Model No : M182

Serial Model : N/A

Prepared By : ShenZhen Nowd Testing Services Co.,Ltd.
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Report No. : NTS141205029E

Date of Test : Dec.25, 2014

Date of Rep. : Dec.29, 2014

Applicant : GUANGDONG GUANTONG HOLDING CO., Ltd
Address : NO.2,BEIAO AVENUE,DAWENBA,AOTOU,DAYABAY,HUIZHOU
Manufacturer : GUANGDONG GUANTONG HOLDING CO., Ltd
Address : NO.2,BEIAO AVENUE,DAWENBA,AOTOU,DAYABAY,HUIZHOU
EUT Description : Mobile Phone
Trademark : Ole!
Model No. : M182
Serial Model : N/A
Power Supply : DC 3.7V
Standards : 47 CFR FCC part 15 subpart B,
ANSI C63.4:2003

Test Procedure Used:

The device described above has been tested by NTS. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart B Class B limits both conducted and radiated emissions. The test results are contained in this test report and NTS. is assumed of full responsibility for the accuracy and completeness of these tests. Also, this report shows that the EUT (Equipment under Test) is complies with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of NTS.

Date of Test: _____ Dec. 29, 2014

Prepared by: _____ *jack*
Jack Wu
Testing Engineer

Reviewed by: _____ *Andy*
Andy Xie
Technical Manager

Approved by: _____ *Somnus*
Somnus
Authorized Signatory

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1. TEST SUMMARY

Test procedures according to the technical standards:

EMC Emission				
Standard	Test Item	Limit	Judgment	Remark
47 CFR FCC part 15 subpart B, 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

Test Firm : ACCURATE TECHNOLOGY CO.,LTD
Address : F1,Bldg.A,Changyuan New Material Port Keyuan Rd.,
Science&Industry Park, Nanshan ShenZhen,P.R.China

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, 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** %.

Conducted Emission Uncertainty = $\pm 2.23\text{dB}$

Radiated Emission Uncertainty = $\pm 4.26\text{dB}$

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Mobile Phone					
Model Name	M182					
Serial No	N/A					
Model Difference	N/A					
Product Description	<p>The EUT is a Mobile Phone.</p> <table border="1"><tr><td>Operating frequency:</td><td>26MHz</td></tr><tr><td>Connecting I/O port:</td><td>Micro USB</td></tr></table> <p>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.</p>		Operating frequency:	26MHz	Connecting I/O port:	Micro USB
Operating frequency:	26MHz					
Connecting I/O port:	Micro USB					
Battery	<p>Rated Voltage: 3.7V Charge Limit: 4.2V Capacity : 500mAh</p>					
Adapter	<p>Model: GT-001 Input:100-240VAC 50/60Hz 0.2A Output: DC 5.0V/0.25A</p>					

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.

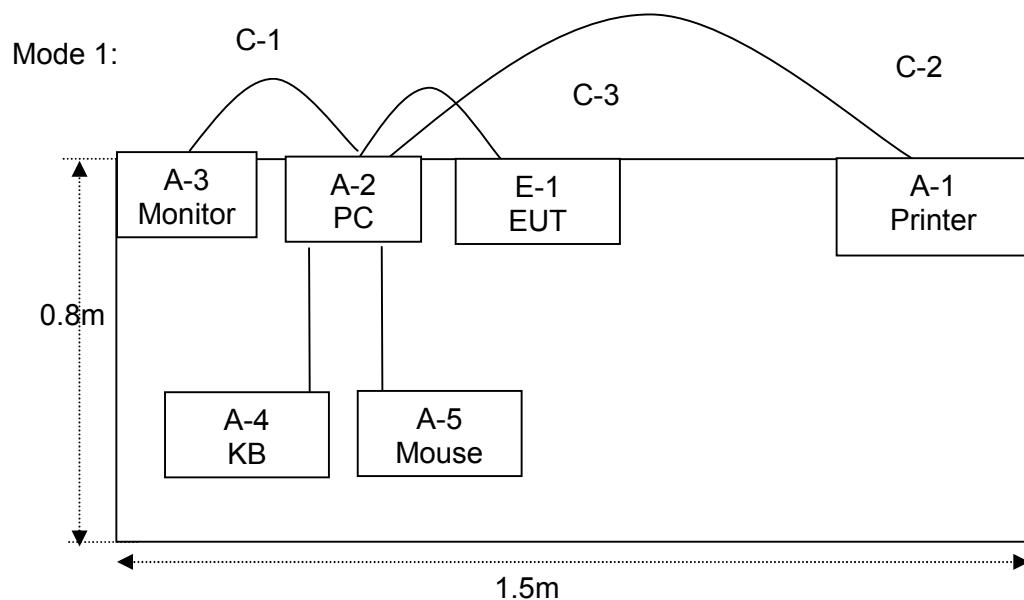
Pretest Mode	Description
Mode 1	Downloading Mode

For Conducted Test	
Final Test Mode	Description
Mode 1	Downloading Mode

For Radiated Test	
Final Test Mode	Description
Mode 1	Downloading Mode

Note EUT is connected to the computer, the computer runs a program to copy data via the USB port for data transmission on the EUT

2.3 DESCRIPTION OF TEST SETUP



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	Mfr/Brand	Model/Type No.	Series No.	Note
E-1	Mobile Phone	Ole!	M182	N/A	EUT
A-1	Personal computer	DELL	FT4Y23X	400930221	
A-2	Monitor	DELL	IN2020MB	HQ1209883	
A-3	Keyboard	DELL	SK-8185	FQ3041930	
A-4	Mouse	DELL	MS111-P	HQ273831	

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	1.2m	
C-2	NO	NO	1.0m	
C-3	NO	NO	1.0m	

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.	Calibrated until
1	LISN	R&S	ENV216	101313	Jul. 06, 2015
2	LISN	EMCO	3816/2	00042990	Jul. 06, 2015
3	50Ω Switch	ANRITSU CORP	MP59B	6200983704	Jul. 06, 2015
4	Test Cable	ElectricFever	C01	1006433	Jul. 06, 2015
7	EMI Test Receiver	R&S	ESCI	101160	Jul. 06, 2015
8	Passive Voltage Probe	ESH2-Z3	R&S	100196	Jul. 06, 2015
9	Triple-Loop Antenna	EVERFINE	LIA-2	11020003	Jul. 06, 2015

2.5.2 RADIATED TEST SITE

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Bilog Antenna	TESEQ	CBL6111D	31216	Jul. 06, 2015
2	Test Cable	ElectricFever	R-01	1259400	Jul. 06, 2015
3	Test Cable	ElectricFever	R-02	1258670	Jul. 06, 2015
4	EMI Test Receiver	R&S	ESCI-7	101318	Jul. 06, 2015
5	Antenna Mast	EM	SC100_1	N/A	N/A
6	Turn Table	EM	SC100	060531	N/A
7	50Ω Switch	Anritsu Corp	MP59B	6200983705	Jul. 06, 2015
8	Spectrum Analyzer	Aglient	E4407B	MY45108040	Jul. 06. 2015
9	Horn Antenna	EM	EM-AH-10180	2011071402	Jul. 06. 2015
10	Amplifier	EM	EM-30180	060538	Jul. 06. 2015

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

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

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	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.

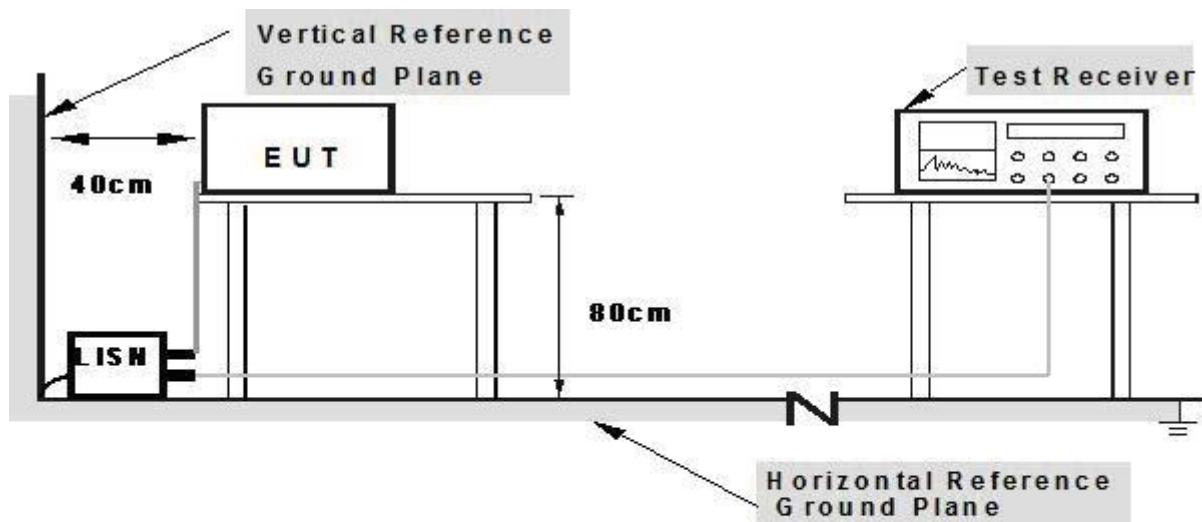
The following table is the setting of the receiver

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 0.4 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 (A and B) are 80 cm from EUT and at least 80 cm 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.

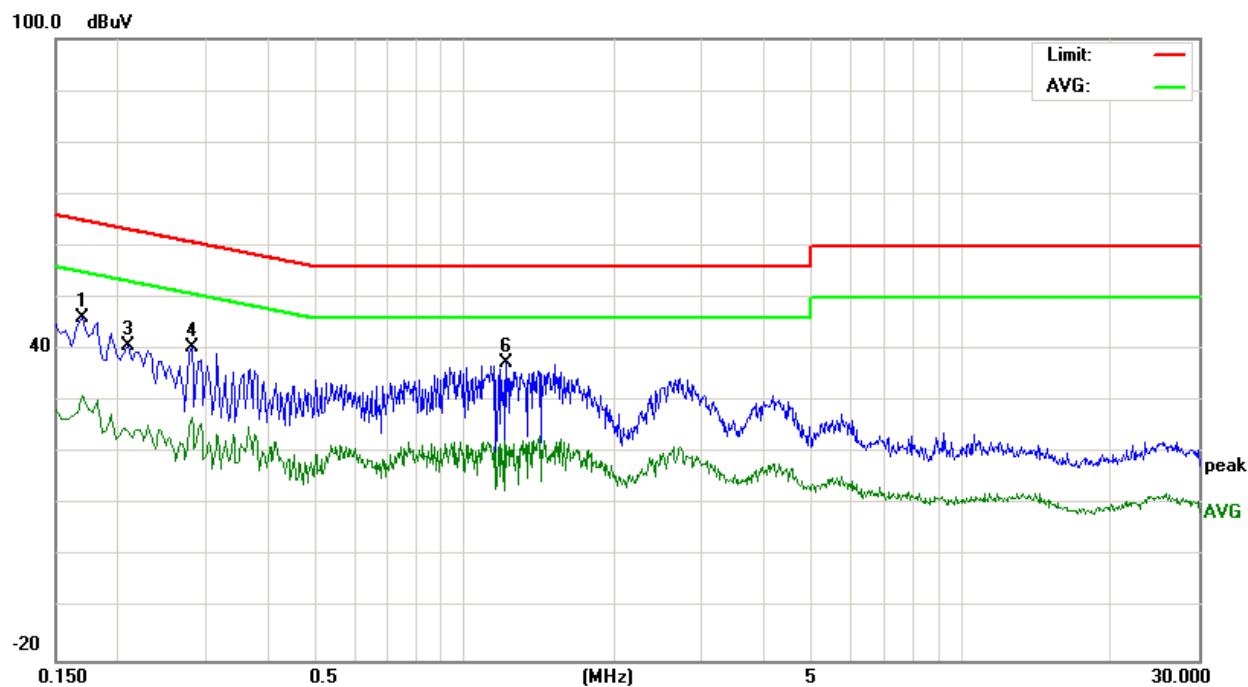
3.1.5 TEST RESULTS

EUT :	Mobile Phone	Model Name. :	M182
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Test Date :	2014-12-25
Test Mode :	Mode 1	Phase :	L
Test Voltage :	DC 5V From PC AC 120V/60Hz		

Freq.	Reading	Factor	Measurement	Limit	Over	Detector
(MHz)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	
0.17	36.72	9.57	46.29	64.96	-18.67	peak
0.17	21.48	9.57	31.05	54.96	-23.91	Avg
0.21	31.36	9.49	40.85	63.20	-22.35	peak
0.28	31.01	9.50	40.51	60.75	-20.24	peak
0.28	17.42	9.50	26.92	50.75	-23.83	Avg
1.21	27.80	9.53	37.33	56.00	-18.67	peak

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. N/A means All Data have pass Limit

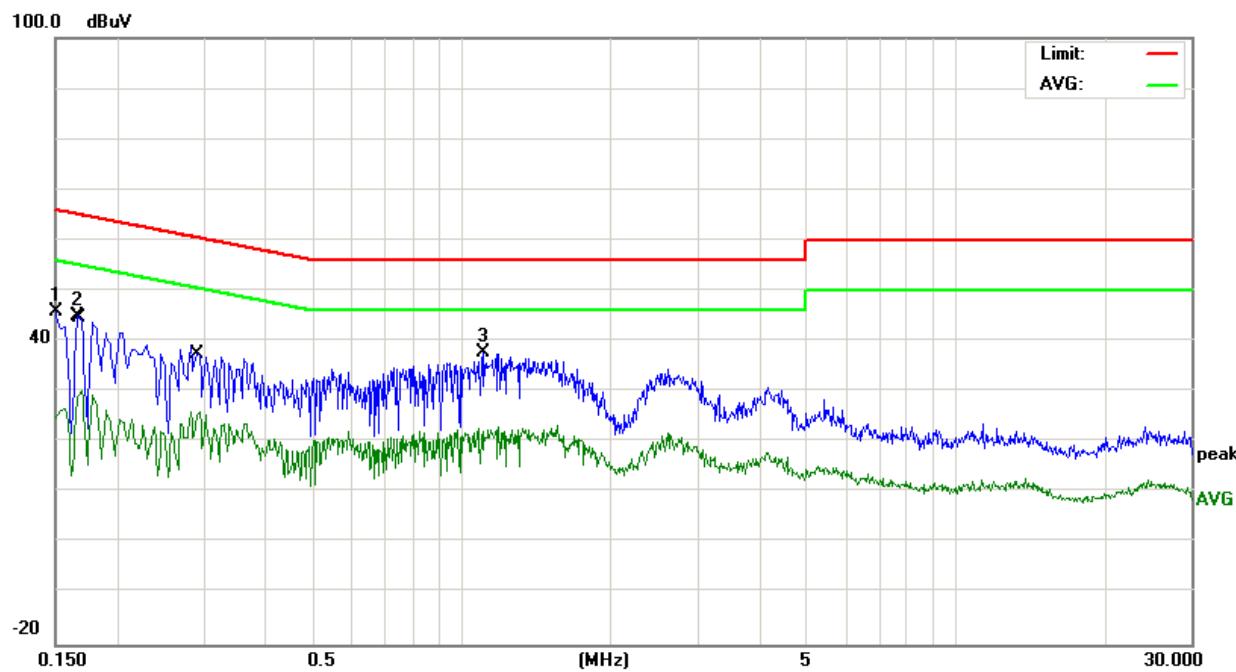


EUT :	Mobile Phone	Model Name. :	M182
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Test Date :	2014-12-25
Test Mode :	Mode 1	Phase :	N
Test Voltage :	DC 5V From PC AC 120V/60Hz		

Freq. (MHz)	Reading (dBuV)	Factor (dBuV)	Measurement (dBuV)	Limit (dBuV)	Over (dB)	Detector
0.15	36.10	9.66	45.76	66.00	-20.24	peak
0.17	35.44	9.61	45.05	65.15	-20.10	peak
1.11	28.11	9.55	37.66	56.00	-18.34	peak
0.17	20.56	9.59	30.15	54.96	-24.81	AVG
0.29	16.56	9.51	26.07	50.41	-24.34	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. N/A means All Data have pass Limit



3.2 RADIATED EMISSION MEASUREMENT

3.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

FREQUENCY (MHz)	Class A (at 10m)	Class B (at 3m)
	dBuV/m	dBuV/m
30 ~ 88	39.0	40.0
88 ~ 216	43.5	43.5
216 ~ 960	46.5	46.0
Above 960	49.5	54.0

Notes:

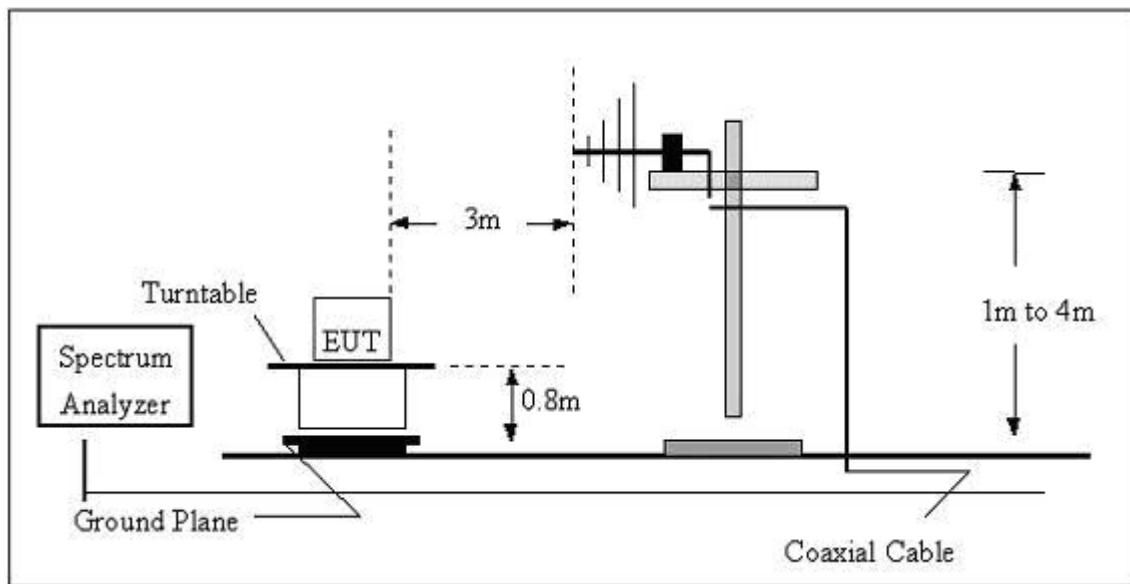
- (1) The limit for radiated test was performed according to as following:
FCC PART 15B /ICES-003.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

3.2.2 TEST PROCEDURE

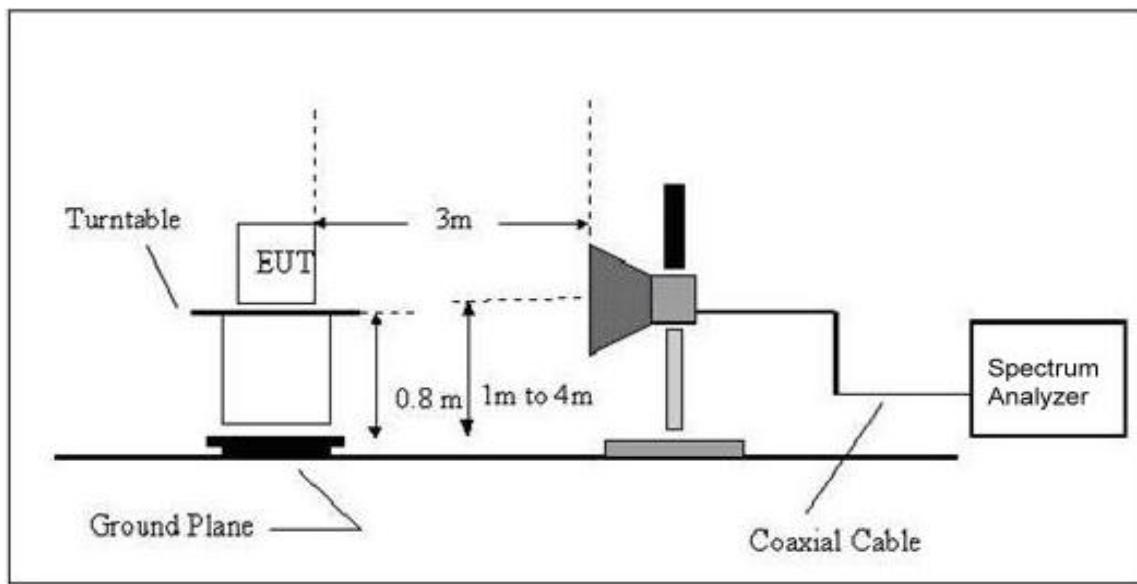
- a. The measuring distance of at 10 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. The table was rotated 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 detector mode will be instead.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP(AV) Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

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.

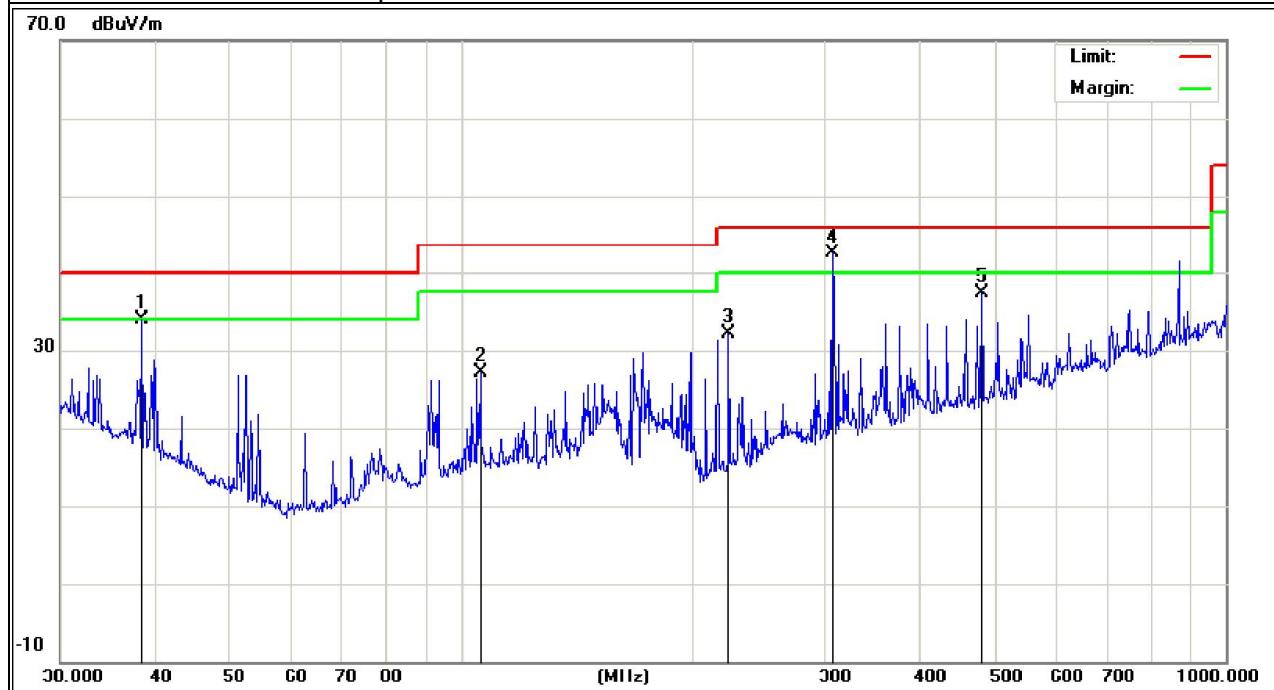
3.2.5 TEST RESULTS

EUT :	Mobile Phone	Model Name :	M182
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2014-12-25
Test Mode :	Mode 1	Polarization :	Horizontal
Test Power :	DC 5V From PC AC 120V/60Hz		

Freq. (MHz)	Reading (dBuV)	Factor (dBuV)	Measurement (dBuV)	Limit (dBuV)	Over (dB)	Detector
38.3462	19.78	14.12	33.90	40.00	-16.13	peak
106.0126	16.03	11.03	27.06	43.50	16.44	peak
223.7333	22.00	10.18	32.18	46.00	-13.82	peak
306.7536	27.91	14.59	42.50	46.00	-3.50	peak
480.5276	18.51	18.72	37.23	46.00	-8.77	peak

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Antenna Factor + Cable Loss.
3. N/A means All Data have pass Limit

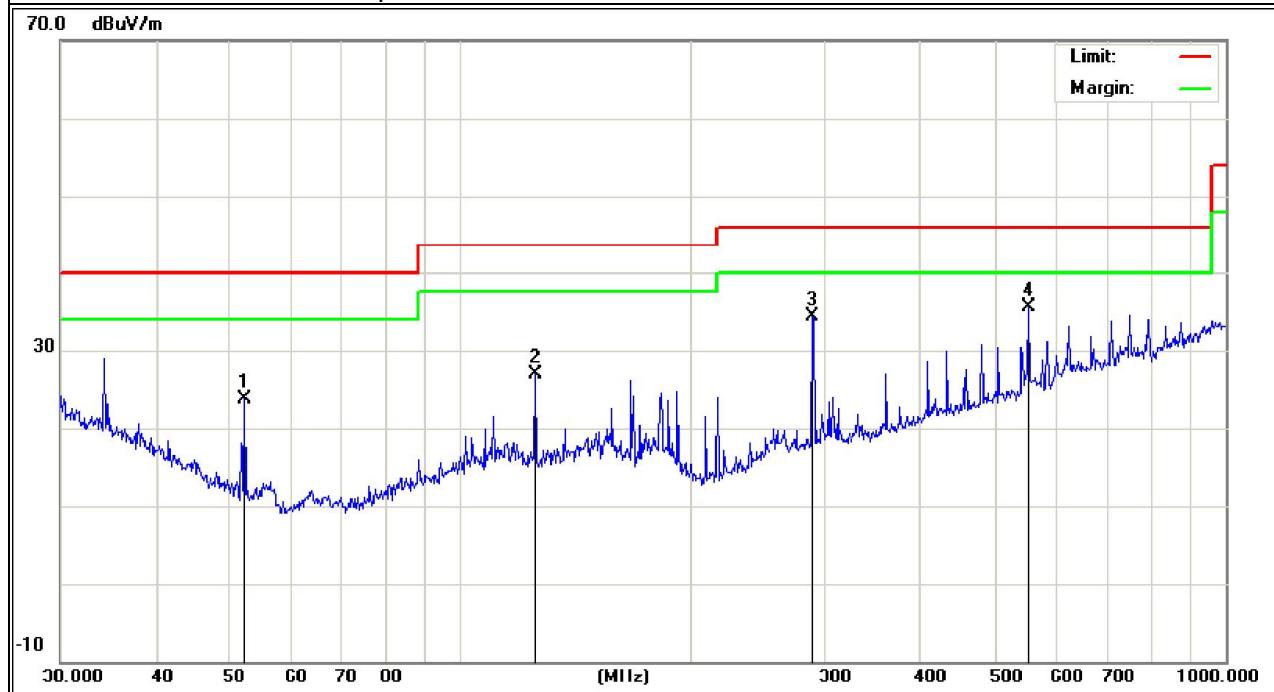


EUT :	Mobile Phone	Model Name :	M182
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2014-12-25
Test Mode :	Mode 1	Polarization :	Vertical
Test Power :	DC 5V From PC AC 120V/60Hz		

	Freq. (MHz)	Reading (dBuV)	Factor (dBuV)	Measurement (dBuV)	Limit (dBuV)	Over (dB)	Detector
	52.2079	16.64	7.15	23.79	40.00	-10.63	peak
	125.0066	14.91	11.90	26.81	43.50	-16.69	peak
	289.0021	20.39	13.89	34.28	46.00	-11.72	peak
	552.8832	13.65	21.78	35.43	46.00	-10.57	peak

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Antenna Factor + Cable Loss.
3. N/A means All Data have pass Limit



3.2.6 TEST RESULTS(Above 1GHz)

EUT :	Mobile Phone	Model Name :	M182
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2014-12-25
Test Mode :	Mode 1	Polarization :	Horizontal
Test Power :	DC 5V From PC AC 120V/60Hz		

Freq. (MHz)	Reading (dBuV)	Factor (dBuV)	Measurement (dBuV)	Limit (dBuV)	Over (dB)	Detector
1896.3510	78.94	-14.25	64.69	74.00	-9.31	QP
1896.3510	53.94	-14.25	39.69	54.00	-14.31	AVG
3861.2400	70.47	-7.27	63.20	74.00	-10.80	QP
3861.2400	46.13	-7.27	38.86	54.00	-15.14	AVG
4967.3100	69.42	-3.63	65.79	74.00	-8.21	QP
4967.3100	44.42	-3.63	40.79	54.00	-13.21	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Antenna Factor + Cable Loss.
3. N/A means All Data have pass Limit

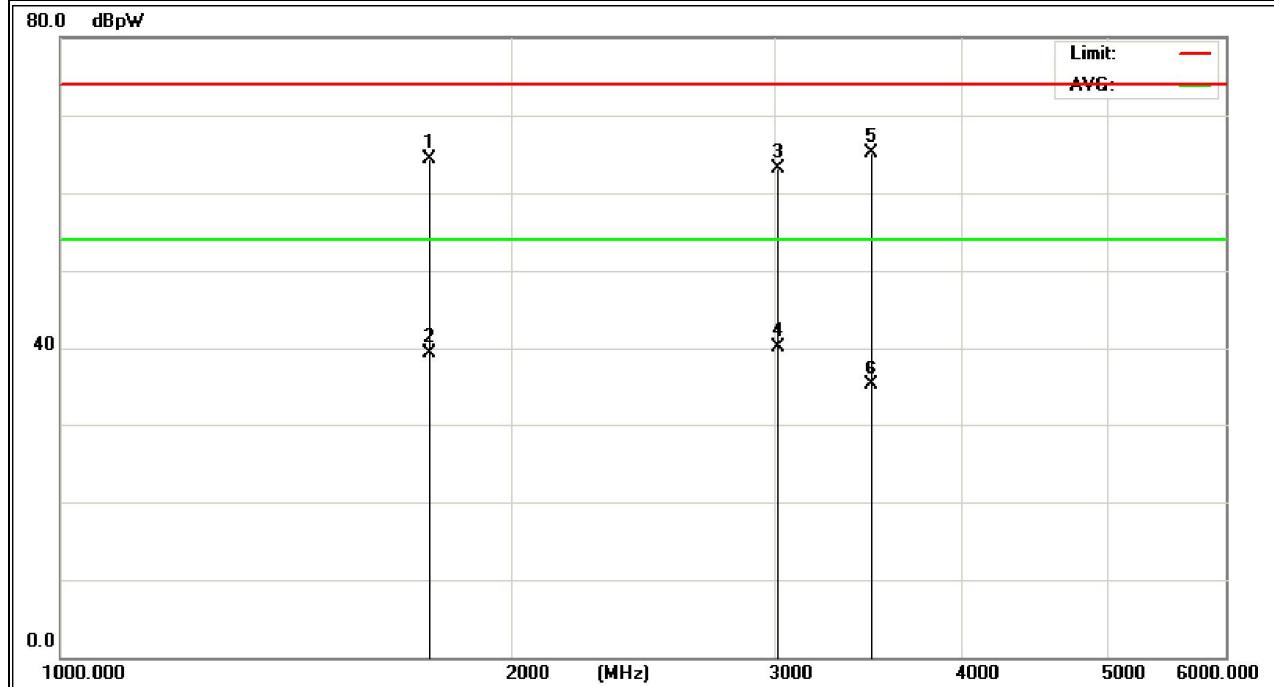


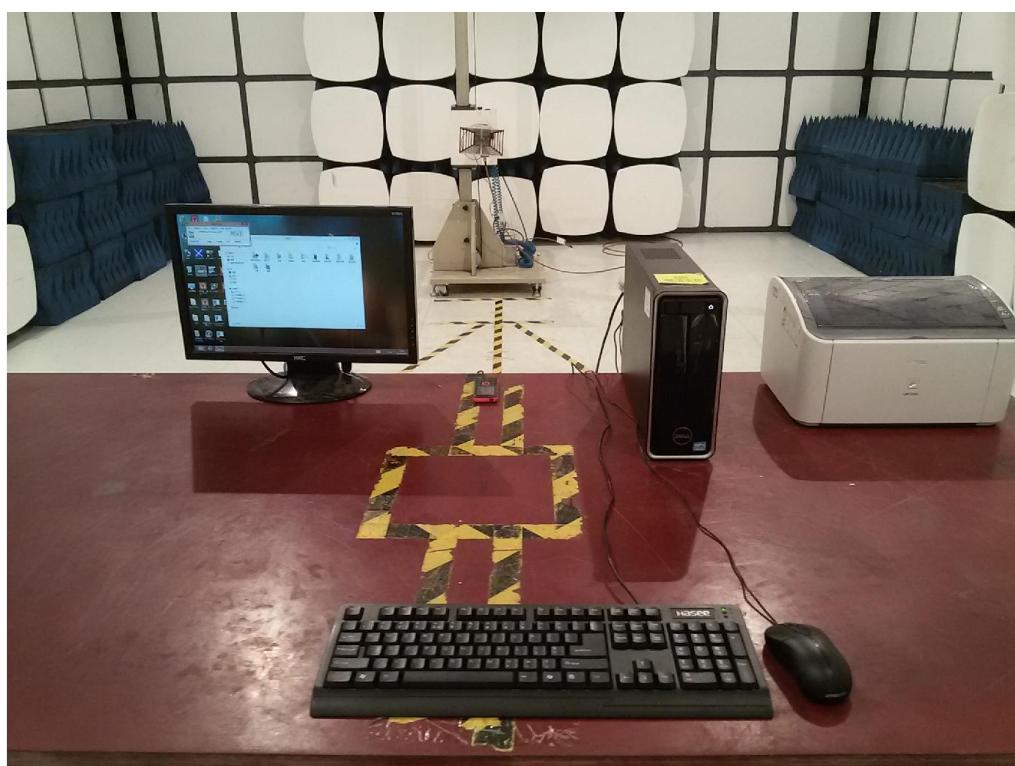
EUT :	Mobile Phone	Model Name :	M182
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2014-12-25
Test Mode :	Mode 1	Polarization :	Vertical
Test Power :	DC 5V From PC AC 120V/60Hz		

	(MHz)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	Detector
	1761.0900	79.54	-15.23	64.31	74.00	-9.31	QP
	1761.0900	54.54	-15.23	39.31	54.00	-14.69	AVG
	3018.0200	74.90	-11.75	63.15	74.00	-10.85	QP
	3018.0200	51.90	-11.75	40.15	54.00	-13.85	AVG
	3476.5900	74.62	-9.52	65.10	74.00	-8.90	QP
	3476.5900	44.62	-9.52	35.10	54.00	-18.90	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Antenna Factor + Cable Loss.
3. N/A means All Data have pass Limit



4. EUT TEST PHOTO**Radiated Measurement Photos****Radiated Measurement Photos Above 1G**

Conducted Measurement Photos