FCC Test Report

FCC ID:2AEB5M691

Product： Tablet PC

Trade Name： AOC

Model Number： M691

Serial Model： N/A

Report No.： ISOT15031101F

Prepared for

AOC

8F-3, No. 166, Jian 1st Rd., Zhonghe Dist., New Taipei City 23511, Taiwan

Prepared by

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TEST RESULT CERTIFICATION

Applicant's name	:	AOC
Address	:	8F-3, No. 166, Jian 1st Rd., Zhonghe Dist., New Taipei City 23511, Taiwan
Manufacturer's Name	:	AOC
Address	:	8F-3, No. 166, Jian 1st Rd., Zhonghe Dist., New Taipei City 23511, Taiwan
Product description		
Product name	:	Tablet PC
Model and/or type reference	:	M691
Standards	:	FCC Part15B:01 Oct.2014 ANSI C63.4:2009

This device described above has been tested by Shenzhen ISOTek, 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	:	03 Mar. 2015 ~12 Mar. 2015
Date of Issue	:	12 Mar. 2015
Test Result	:	**Pass**

Compiled by:	Approved by:
Lisa Huang/ Project Engineer	Richard Chen/ Manager

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1. TEST SUMMARY

Test procedures according to the technical standards:

EMC Emission				
Standard	Test Item	Limit	Judgment	Remark
FCC Part15.107	Conducted Emission	Class B	PASS	
FCC Part15.109	Radiated Emission	Class B	PASS	

1.1 TEST FACILITY

All the tests were performed at:

Shenzhen Huance Wei Testing Lab at 10th Floor West Logistics Information Center Build, Shenzhen, China

Shenzhen Huance Wei Testing Lab, EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration **369037** , Nov 07, 2016.

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 :

Method	Measurement Frequency Range	U，(dB)	NOTE
ANSI	150 KHz ~ 30MHz	3.2	

B. Radiated Measurement :

Method	Measurement Frequency Range	U，(dB)	NOTE
ANSI	30MHz ~ 1000MHz	4.7	
	1GHz ~12.4GHz	5.0	

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

<table>
<tr><td>Equipment</td><td>Tablet PC</td></tr>
<tr><td>Trade Name：</td><td>AOC</td></tr>
<tr><td>Model Name</td><td>M691</td></tr>
<tr><td>Serial Model</td><td>N/A</td></tr>
<tr><td>Model Difference</td><td>N/A</td></tr>
<tr><td>Product Description</td><td>The EUT is a Tablet PC.

<table><tr><td>Connecting I/O port:</td><td>USB, Earphone</td></tr><tr><td>Operation Frequency:</td><td>BT:2402~2480 MHz
WIFI: 802.11b/g/n(20MHz):
2412~2462MHz
802.11n(40MHz):2422~2452MHz</td></tr><tr><td>Modulation Type:</td><td>BT(1Mbps): GFSK
BT EDR(2Mbps): π/4-DQPSK
BT EDR(3Mbps): 8-DPSK
WIFI: CCK/OFDM/DBPSK/DAPSK</td></tr><tr><td>Crystal oscillator</td><td>26MHz; 32.768kHz</td></tr></table></td></tr>
<tr><td>Power Source</td><td>DC Voltage</td></tr>
<tr><td>Adapter</td><td>Model:XHY050150UUCH, Input: 100-240V~,50/60Hz
Output: 5.0V⎓, 1.5A</td></tr>
<tr><td>Battery</td><td>DC3.7V, 2800mAh</td></tr>
<tr><td>Software version：</td><td>Android 4.2.2</td></tr>
<tr><td>Hardware version：</td><td>MOLY.WR8.W1315.MD.WG.MP.V35.P2</td></tr>
</table>

2.1.1 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	Playing+chagring
Mode 2	Camera
Mode 3	Downloading+Charging

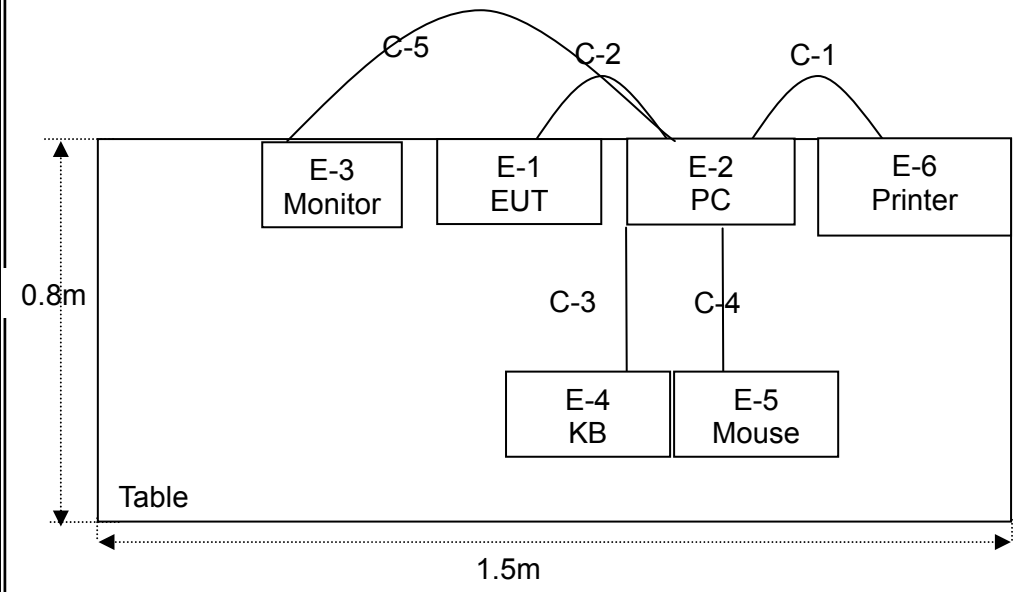
For Conducted Test	
Final Test Mode	Description
Mode 1	Playing+chagring
Mode 2	Camera
Mode 3	Downloading+Charging

For Radiated Test	
Final Test Mode	Description
Mode 1	Playing+chagring
Mode 2	Camera
Mode 3	Downloading+Charging

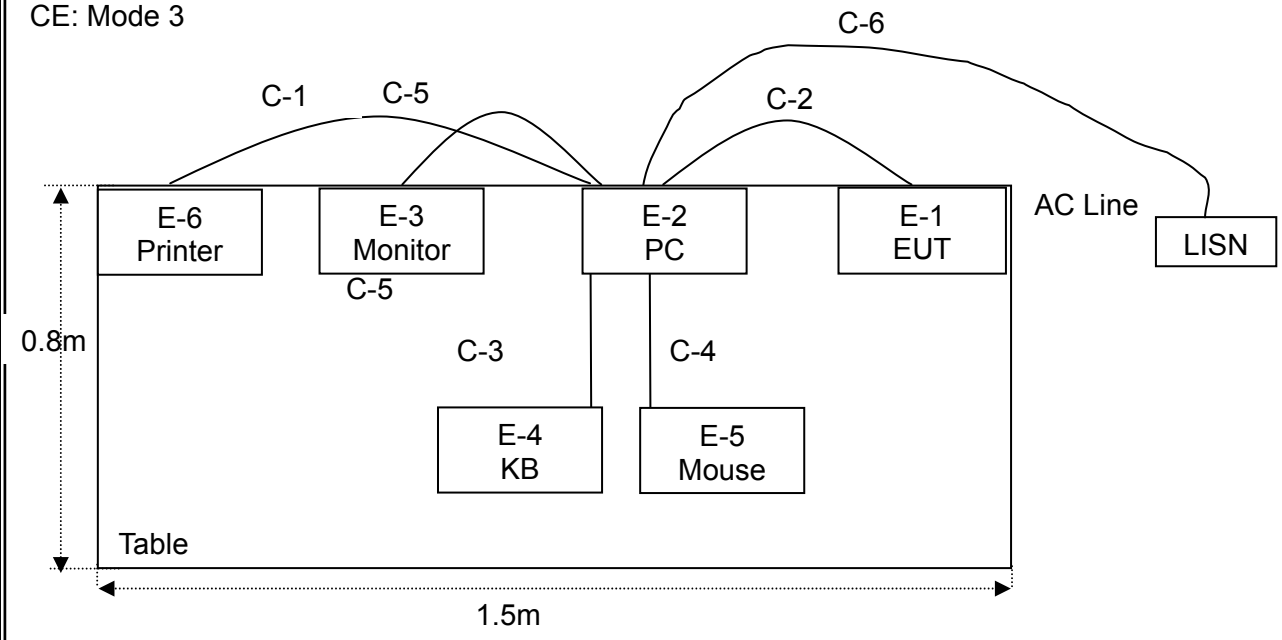
Note: Final Test Mode: Through Pre-scan, find the mode 3 is the worse case.
Only the worst case mode is recorded in the report.

2.2 DESCRIPTION OF TEST SETUP

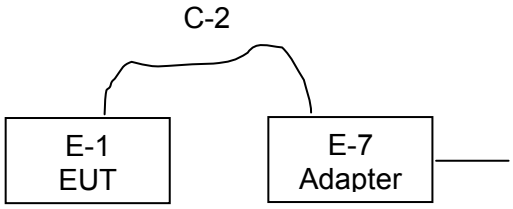
RE: Mode 3



CE: Mode 3



RE: Mode 1



2.3 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	Tablet PC	N/A	M691	N/A	EUT
E-2	Personal computer	DELL	FT4Y23X	34413561645	
E-3	Monitor	DELL	IN2020MB	cn-0y6mhx-74261-11f-67es	
E-4	Keyboard	DELL	SK-8185	OY526KUS	
E-5	Mouse	DELL	MS111-P	cn-011d3v-71581-11e-1th7	
E-6	Printer	Canon	L11121E	LBP2900	
E-7	Adapter	N/A	XHY050150UUCH	N/A	

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	
C-4	NO	NO	1.0m	
C-5	NO	NO	1.0m	
C-6	NO	NO	1.2m	

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”.

2.4 MEASUREMENT INSTRUMENTS LIST

2.4.1 CONDUCTED TEST SITE

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Spectrum Analyzer	Aglient	E4446A	US44300451	2014.07.06	2015.07.05	1 year
2	EMI Test Receiver	R&S	ESCI	101165	2014.06.07	2015.06.06	1 year
3	Bilog Antenna	Schwarzbeck	VULB 9168	VULB9168 - 438	2014.07.06	2015.07.05	1 year
4	Horn Antenna	Schwarzbeck	BBHA 9170	9170-182	2014.07.06	2015.07.05	1 year
5	Amplifier	Schwarzbeck	BBV9743	9743 - 019	2014.07.06	2015.07.05	1 year

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	LISN	messtec	AN3019	NO.1	Jul. 06, 2014	Jul. 05, 2015	1 year
2	LISN	SCHWARZBECK	NNLK 8129	8126466	Jul. 06, 2014	Jul. 05, 2015	1 year
3	Pulse Limiter	SCHWARZBECK	VTSD9596F	9618	Jul. 06, 2014	Jul. 05, 2015	1 year
4	EMI Test Receiver	R&S	ESCI	100843	Jul. 06, 2014	Jul. 05, 2015	1 year
5	Switch	Schwarzbeck	CX - 210	100196	Jul. 06, 2014	Jul. 05, 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 (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.

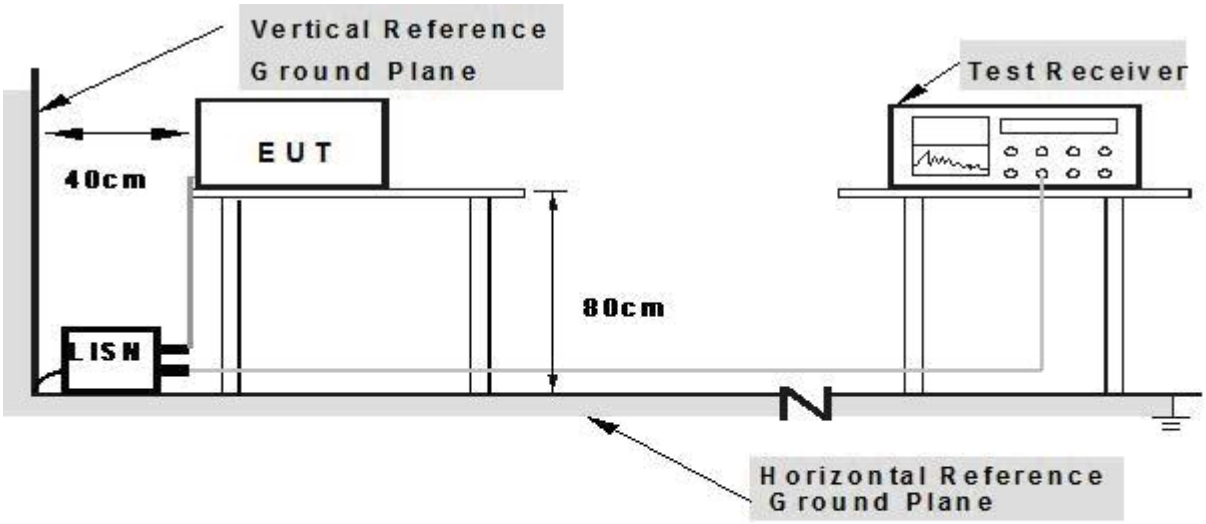
The following table is the setting of the receiver

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 0.8 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.

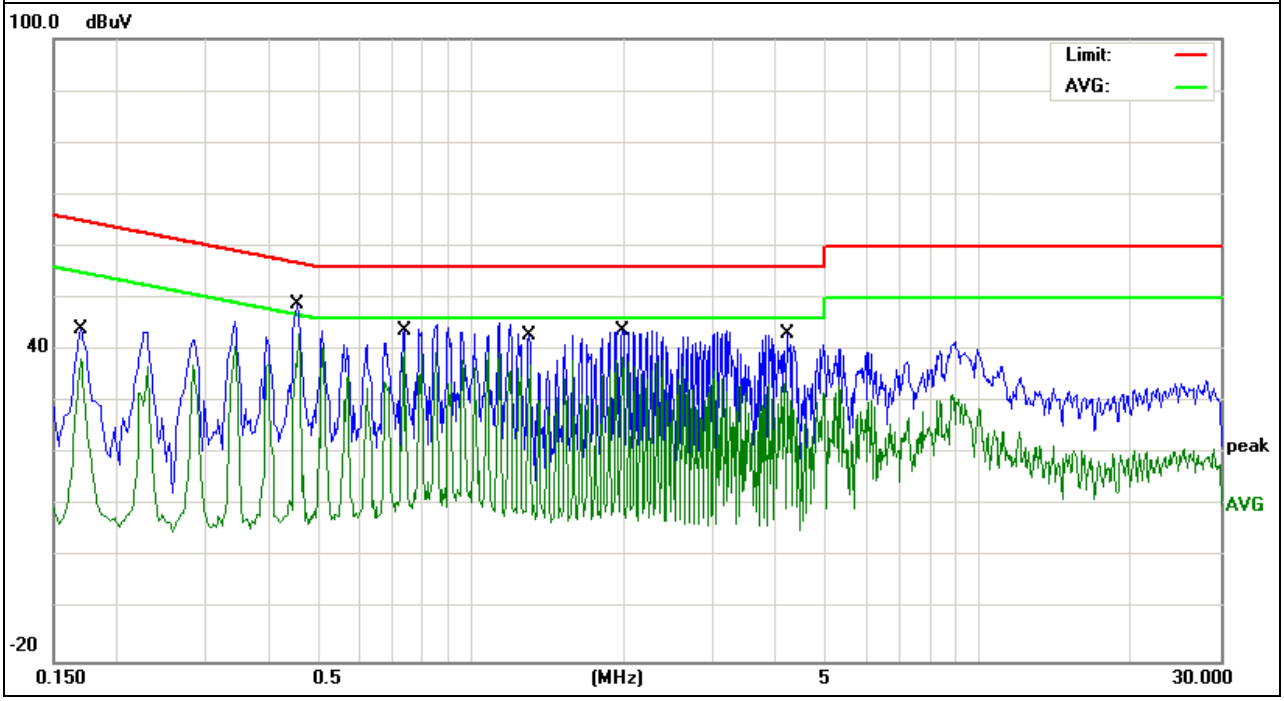
3.1.5 TEST RESULTS

EUT：	Tablet PC	Model Name. ：	M691
Temperature：	26 ℃	Relative HuTablet PCity：	54%
Pressure：	1010hPa	Test Date：	2014-08-06
Test Mode：	Mode 3	Phase：	L
Test Voltage ：	DC 5V From PC AC 120V/60Hz		

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure-ment (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.1700	34.60	9.57	44.17	64.96	-20.79	QP
0.1700	28.85	9.57	38.42	54.96	-16.54	AVG
0.4580	37.62	9.51	47.13	56.73	-9.60	QP
0.4580	33.60	9.51	43.11	46.73	-3.62	AVG
0.7380	34.35	9.53	43.88	56.00	-12.12	QP
0.7380	30.36	9.53	39.89	46.00	-6.11	AVG
1.3060	31.59	9.54	41.13	56.00	-14.87	QP
1.3060	29.12	9.54	38.66	46.00	-7.34	AVG
1.9860	34.35	9.55	43.90	56.00	-12.10	QP
1.9860	29.24	9.55	38.79	46.00	-7.21	AVG
4.1459	30.18	9.59	39.77	56.00	-16.23	QP
4.1459	24.03	9.59	33.62	46.00	-12.38	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

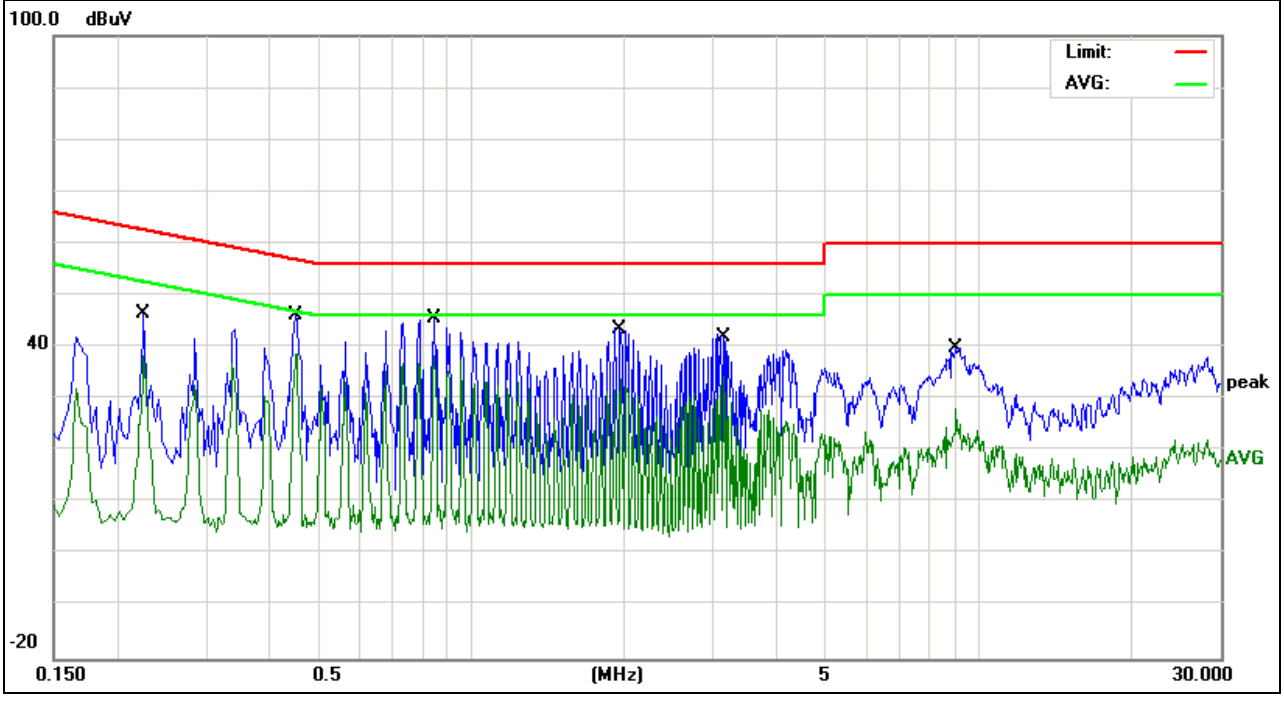


EUT：	Tablet PC	Model Name. ：	M691
Temperature：	26 ℃	Relative HuTablet PCity：	54%
Pressure：	1010hPa	Test Date：	2014-08-06
Test Mode：	Mode 1	Phase：	N
Test Voltage ：	DC 5V From PC AC 120V/60Hz		

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.2260	36.91	9.49	46.40	62.59	-16.19	QP
0.2260	28.76	9.49	38.25	52.59	-14.34	AVG
0.4500	36.66	9.51	46.17	56.87	-10.70	QP
0.4500	29.07	9.51	38.58	46.87	-8.29	AVG
0.8460	35.90	9.53	45.43	56.00	-10.57	QP
0.8460	28.67	9.53	38.20	46.00	-7.80	AVG
1.9700	33.37	9.55	42.92	56.00	-13.08	QP
1.9700	24.41	9.55	33.96	46.00	-12.04	AVG
3.1500	32.48	9.58	42.06	56.00	-13.94	QP
3.1500	24.86	9.58	34.44	46.00	-11.56	AVG
9.0459	30.12	9.72	39.84	60.00	-20.16	QP
9.0459	18.39	9.72	28.11	50.00	-21.89	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



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

Test Arrangement for Radiated Emissions up to 1 GHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at an accredited test facility. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

Frequency Band (MHz)	Function	Resolution bandwidth	Video Bandwidth
30~1000	QP	120kHz	300kHz

Test Arrangement for Radiated Emissions above 1 GHz.

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at an accredited chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The height of antenna can be varied from one meter to four meters, the height of adjustment depends on the EUT height and the antenna 3dB beamwidth both, to detect the maximum value of the field strength.Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna

was tuned to heights and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

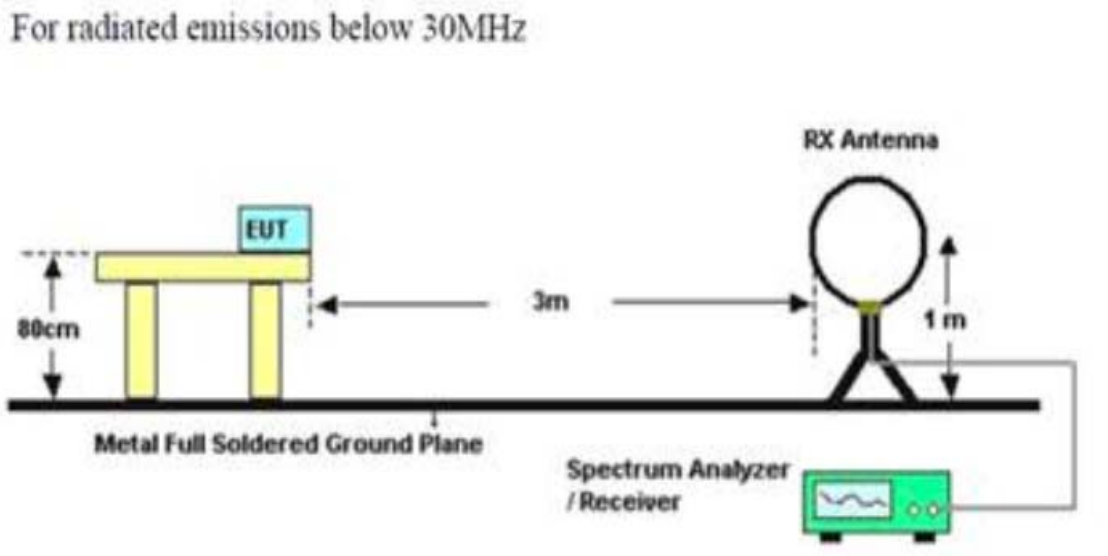
e. The spectrum analyzer system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz

Frequency Band (MHz)	Function	Resolution bandwidth	Video Bandwidth
Above 1000	Peak	1 MHz	3 MHz
	Average	1 MHz	10 Hz

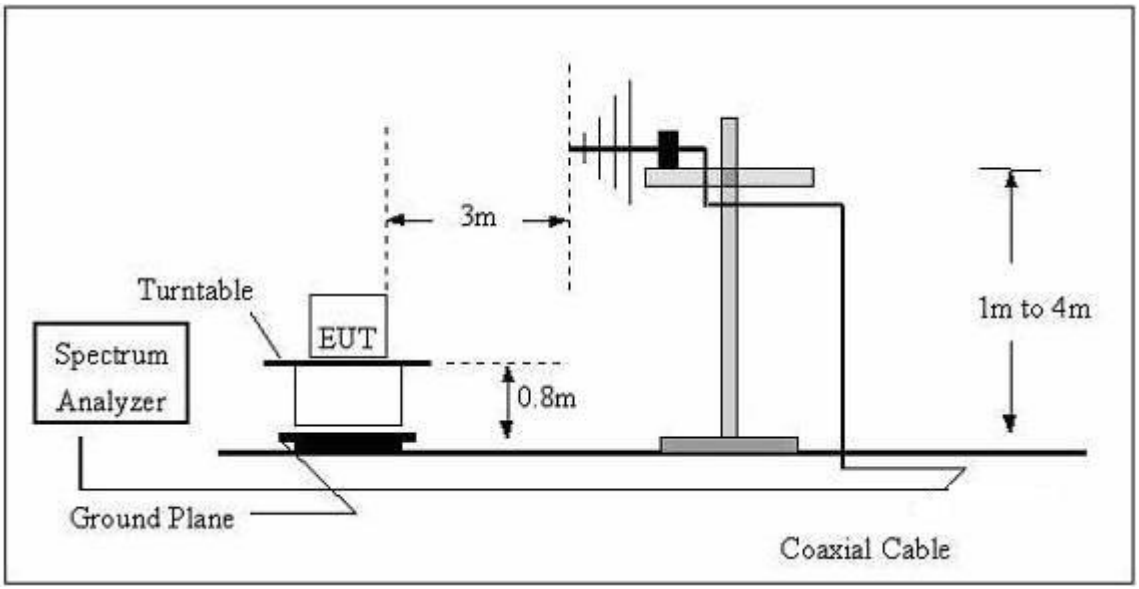
Note：For the hand-held device, the EUT should be measured for all 3 axes and only the worst case is recorded in the report

3.2.3 TEST SETUP

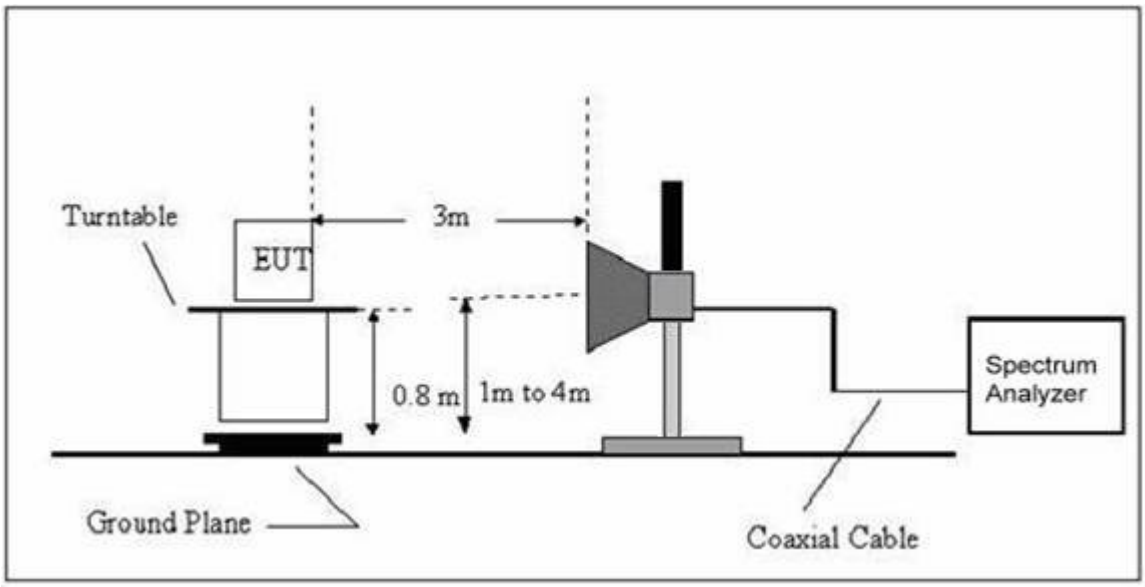
(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



For Radiated Emission 30~1000MHz



(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

TEST RESULTS (Below 30 MHz)

EUT：	3G SMARTPHONE	Model Name ：	M691
Temperature：	20 ℃	Relative HuTablet PCity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	TX	Polarization :	---

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	P
--	--	--	--	P

NOTE:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor =20 log (specific distance/test distance)(dB);

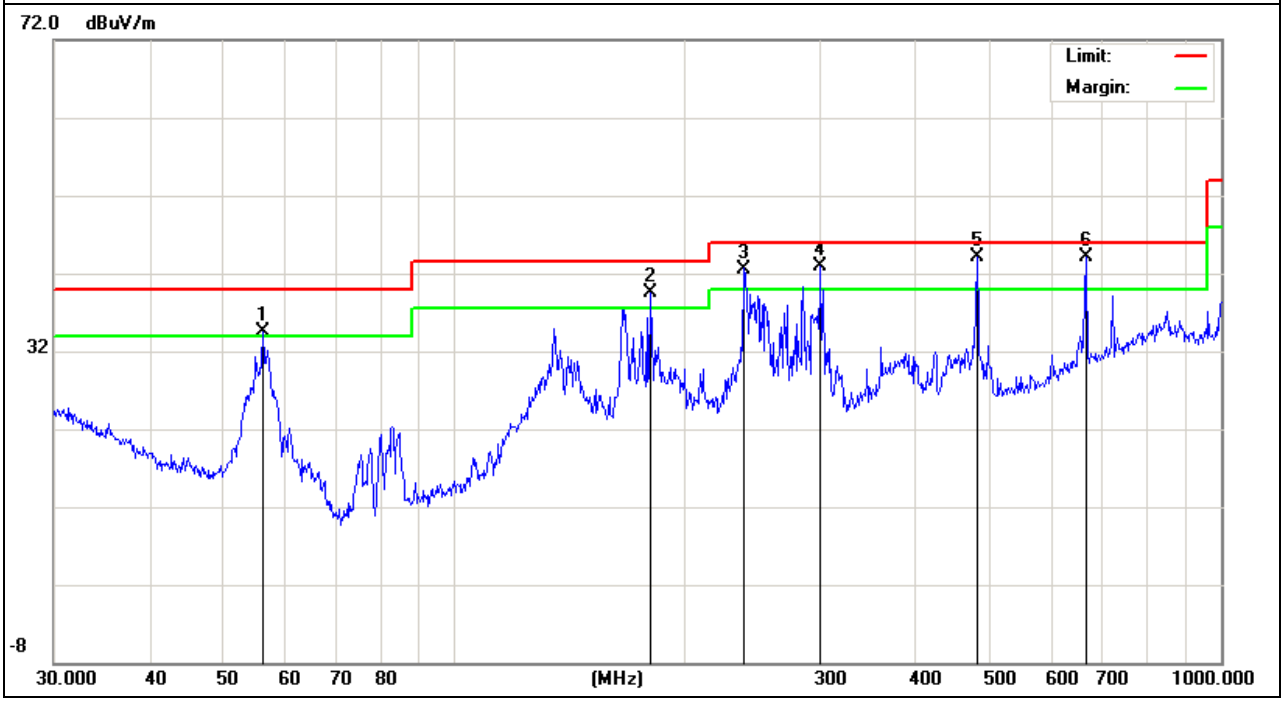
Limit line = specific limits(dBuv) + distance extrapolation factor.

TEST RESULTS (30~1000 MHz)

EUT：	Tablet PC	Model Name ：	M691
Temperature：	24 ℃	Relative HuTablet PCity：	54%
Pressure：	1010 hPa	Test Date：	2014-08-06
Test Mode ：	Mode 3	Polarization：	Horizontal
Test Power ：	DC 5V From PC AC 120V/60Hz		

Freq. (MHz)	Reading (dBuV)	Factor (dBuV)	Measurement (dBuV)	Limit (dBuV)	Over (dB)	Remark
56.1974	25.68	8.92	34.60	40.00	-5.40	QP
180.0165	28.78	10.63	39.41	43.50	-4.09	QP
238.3102	29.23	13.37	42.60	46.00	-3.40	QP
300.3672	28.82	14.16	42.98	46.00	-3.02	QP
480.5276	24.19	19.91	44.10	46.00	-1.90	QP
665.8035	20.28	23.85	44.13	46.00	-1.87	QP

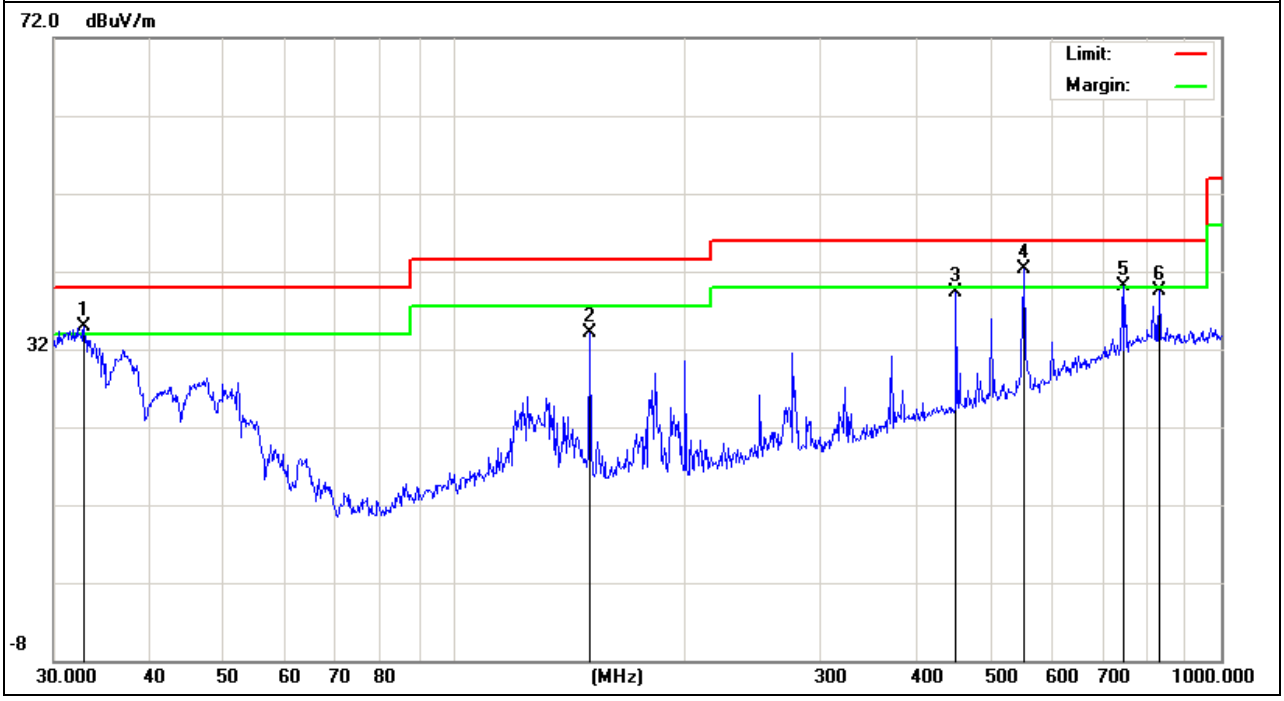
Remark:
1. Factor = Antenna Factor + Cable Loss - Amplifier.



EUT：	Tablet PC	Model Name ：	M691
Temperature：	24 ℃	Relative HuTablet PCity：	54%
Pressure：	1010 hPa	Test Date：	2014-08-06
Test Mode ：	Mode 1	Polarization：	Vertical
Test Power ：	DC 9V From PC AC 120V/60Hz		

Freq. (MHz)	Reading (dBuV)	Factor (dBuV)	Measurement (dBuV)	Limit (dBuV)	Over (dB)	Remark
32.8637	17.05	17.86	34.91	40.00	-5.09	QP
150.0107	23.69	10.41	34.10	43.50	-9.40	QP
451.1349	19.94	19.33	39.27	46.00	-6.73	QP
552.8831	20.90	21.40	42.30	46.00	-3.70	QP
744.8659	14.07	25.96	40.03	46.00	-5.97	QP
830.4002	12.13	27.30	39.43	46.00	-6.57	QP

Remark:
Factor = Antenna Factor + Cable Loss - Amplifier.



3.2.6 TEST RESULTS(1000~12400MHz)

Polar (H/V)	Frequency (MHz)	Meter Reading (dBm)	Factor (dB)	Emission Level (dBm)	Limits (dBm)	Margin (dB)	Remark
V	1894.621	85.96	-17.15	68.81	74.00	-5.19	peak
V	1894.621	60.82	-17.15	43.67	54.00	-10.33	AVG
V	2657.389	82.37	-15.76	66.61	74.00	-7.39	peak
V	2657.389	59.34	-15.76	43.58	54.00	-10.42	AVG
V	4013.629	76.71	-11.22	65.49	74.00	-8.51	peak
V	4013.629	53.98	-11.22	42.76	54.00	-11.24	AVG
H	1896.351	81.81	-17.14	64.67	74.00	-9.33	peak
H	1896.351	58.40	-17.14	41.26	54.00	-12.74	AVG
H	3116.378	82.03	-15.54	66.49	74.00	-7.51	peak
H	3116.378	58.51	-15.54	42.97	54.00	-11.03	AVG
H	4361.254	75.44	-10.13	65.31	74.00	-8.69	peak
H	4361.254	51.49	-10.13	41.36	54.00	-12.64	AVG
Remark: Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit							

----END OF REPORT----