TEST REPORT

Reference No.	:	WTN16S1064141-1E
FCC ID	:	2AI5MT8061Q
Applicant	:	CHUNGHSIN INTERNATIONAL ELECTRONICS CO.,LTD
Address	:	618 GONGREN WEST ROAD,JIAOJIANG AREA, TAIZHOU, China
Manufacturer	:	The same as above
Address	:	The same as above
Product Name	:	tablet
Model No.	:	TM800A620MBGP, TM800A620MBSP, TM800A620MPPM, TM800A620MPBM, TM800A620M
Standards	:	FCC PART15 SUBPART B: 2016
Date of Receipt sample	:	Oct. 31, 2016
Date of Test	:	Nov. 01 – 07. 2016
Date of Issue	:	Nov. 15, 2016
Test Result	:	**Pass**

Remarks:
The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company.The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

Prepared By:
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Compiled by:

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Approved by:

Philo Zhong / Manager

1 Test Summary

Test Item	Test Requirement	Class	Test Method	Test Result
Power Line Conducted Emission (150kHz to 30MHz)	FCC PART 15, SUBPART B: 2016	Class B	ANSI C63.4: 2014	Pass
Radiated Emission (30MHz to 1GHz)	FCC PART 15, SUBPART B: 2016	Class B	ANSI C63.4: 2014	Pass
Radiated Emission (Above 1GHz)	FCC PART 15, SUBPART B: 2016	Class B	ANSI C63.4: 2014	Pass

Remark:

Pass Test item meets the requirement

Fail Test item does not meet the requirement

N/A Test case does not apply to the test object

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3 Revision History

Test report No.	Date of Receipt sample	Date of Test	Date of Issue	Purpose	Comment	Approved
WTN16S1064141-1E	Oct. 31, 2016	Nov. 01 – 07. 2016	Nov. 09, 2016	original	-	Replaced
WTN16S1064141-1E	Oct. 31, 2016	Nov. 01 – 07. 2016	Nov. 15, 2016	Revision 1	Add test procedure of radiation emission test	Valid

4 General Information

4.1 General Description of E.U.T.

Product Name ..... :	tablet
Model No. ..... :	TM800A620MBGP, TM800A620MBSP, TM800A620MPPM, TM800A620MPBM, TM800A620M
Model Difference ..... :	Only the color of the bottom plate is different. The model TM800A620MPBM is the tested sample.
Technical Data ..... :	INPUT : DC 5.0V, 2.0A by Adapter, DC 3.7V, 3500mAh by Battery (Adapter Input: 100-240V~, 50/60Hz, 0.3A, Output: DC 5.0V ⎓ 2.0A, Model: BSY012U050200U U1USB)

4.2 Details of E.U.T.

4.3 Standards Applicable for Testing

The tests were performed according to following standards:

FCC PART 15, SUBPART B: Electronic Code of Federal Regulations- Unintentional Radiators 2016

4.4 Test Facility

The test facility has a test site registered with the following organizations:

- **IC – Registration No.: 7760A-1**

Waltek Services(Shenzhen) Co., Ltd. has been registered and fully described in a report filed with the Industry Canada. The acceptance letter from the Industry Canada is maintained in our files. Registration 7760A-1, October 15, 2015.

- **FCC – Registration No.: 880581**

Waltek Services (Shenzhen) Co., Ltd. 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 880581, April 29, 2014.

- **FCC – Registration No.: 328995**

Waltek Services(Shenzhen) Co., Ltd. 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 328995 December 3, 2014.

4.5 Subcontracted

Whether parts of tests for the product have been subcontracted to other labs:

☐ Yes ☒ No

If Yes, list the related test items and lab information:

Test Lab: N/A

Lab address: N/A

Test items: N/A

4.6 Abnormalities from Standard Conditions

None.

5 Equipment Used during Test

5.1 Equipment List

Conducted Emissions Test Site 1#						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Calibration Date**	**Calibration Due Date**
1.	EMI Test Receiver	R&S	ESCI	101155	Sep.12, 2016	Sep.11, 2017
2.	LISN	SCHWARZBECK	NSLK 8128	8128-289	Sep.12, 2016	Sep.11, 2017
3.	Limiter	York	MTS-IMP-136	261115-001-0024	Sep.12, 2016	Sep.11, 2017
4.	Cable	LARGE	RF300	-	Sep.12, 2016	Sep.11, 2017
3m Semi-anechoic Chamber for Radiation(TDK), 30~1000MHz						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No**	**Last Calibration Date**	**Calibration Due Date**
1	Test Receiver	R&S	ESCI	101296	Apr.13, 2016	Apr.12, 2017
2	Trilog Broadband Antenna	SCHWARZBECK	VULB9160	9160-3325	Apr.09, 2016	Apr.08, 2017
3	Amplifier	ANRITSU	MH648A	M43381	Apr.13, 2016	Apr.12, 2017
4	Cable	HUBER+SUHNER	CBL2	525178	Apr.13, 2016	Apr.12, 2017
3m Semi-anechoic Chamber for Radiation, Above 1GHz						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Calibration Date**	**Calibration Due Date**
1	Spectrum Analyzer	R&S	FSP	100091	Apr.29, 2016	Apr.28, 2017
2	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9120 D	667	Apr.09, 2016	Apr.08, 2017
3	Broadband Preamplifier	COMPLIANCE DIRECTION	PAP-1G18	2004	Apr.13, 2016	Apr.12, 2017
4	Coaxial Cable (above 1GHz)	Top	1GHz-25GHz	EW02014-7	Apr.13, 2016	Apr.12, 2017

5.2 Description of Support Units

Equipment	Manufacturer	Model No.	Series No.
MacBook Air	APPLE	A1465（EW03039-1）	C17KTQDNF5N7

5.3 Measurement Uncertainty

Test Item	Frequency Range	Uncertainty	Note
Conduction disturbance	150kHz~30MHz	±3.64dB	(1)
Radiation Emission	30MHz~1GHz	±5.03dB	(1)
	1GHz~7GHz	±5.47dB	(1)

(1)This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

6 Emission Test Results

6.1 Power Line Conducted Emission, 150kHz to 30MHz

Test Requirement ..... : FCC PART 15, SUBPART B

Test Method ..... : ANSI C63.4

Test Result..... : Pass

Frequency Range ..... : 150kHz to 30MHz

Class ..... : Class B

Limit ..... :

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

6.1.1 E.U.T. Operation

Operating Environment:

Temperature ..... : 23°C

Humidity ..... : 53.6%RH

Atmospheric Pressure..... : 101kPa

EUT Operation:

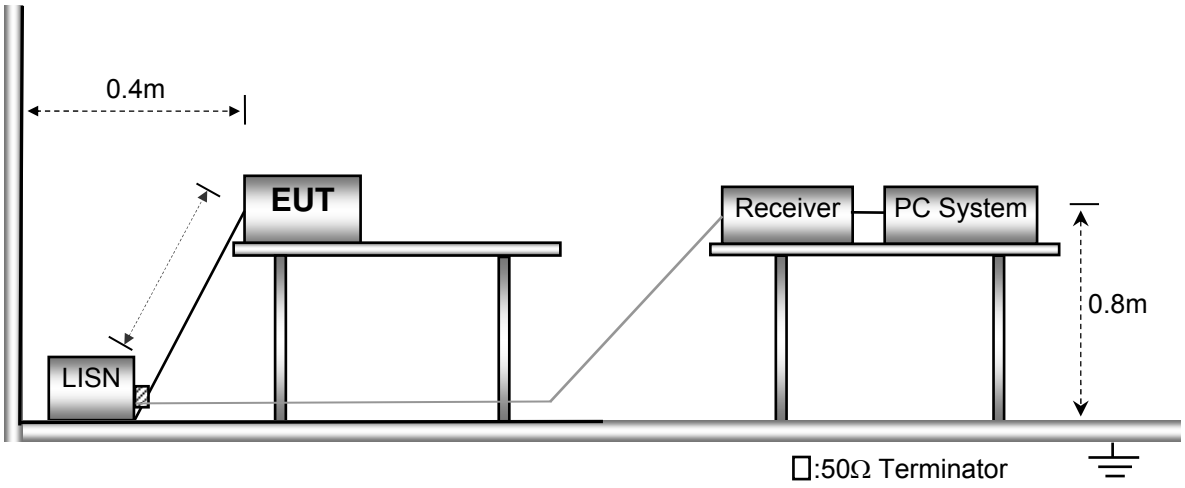
Input Voltage..... : AC 120V/60Hz

Operating Mode ..... : Video playing + earphone + adapter,
Data transfer with PC + earphone

Remark ..... : The worst case is Data transfer with PC + earphone mode and the data is shown as follow.

6.1.2 Block Diagram of Test Setup

The Mains Terminals Disturbance Voltage tests were performed in accordance with the ANSI C63.4 .

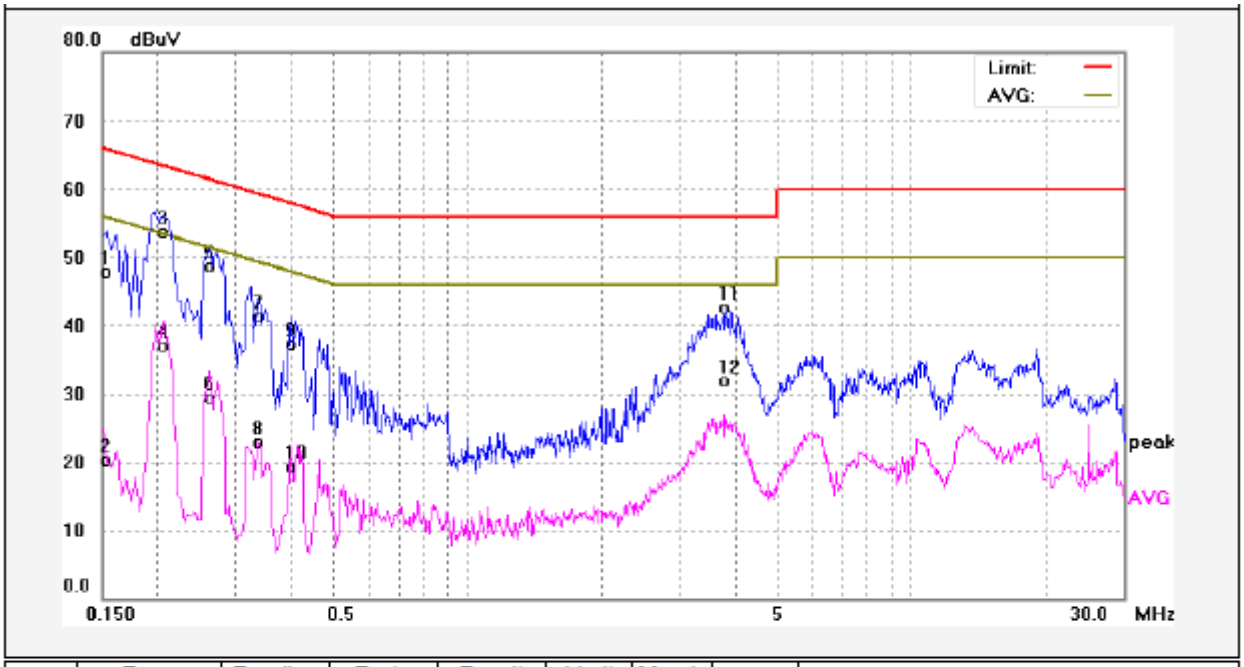


6.1.3 Measurement Data

The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line. According to the data in section 5.1.4, the EUT complied with the FCC PART 15, SUBPART B standards.

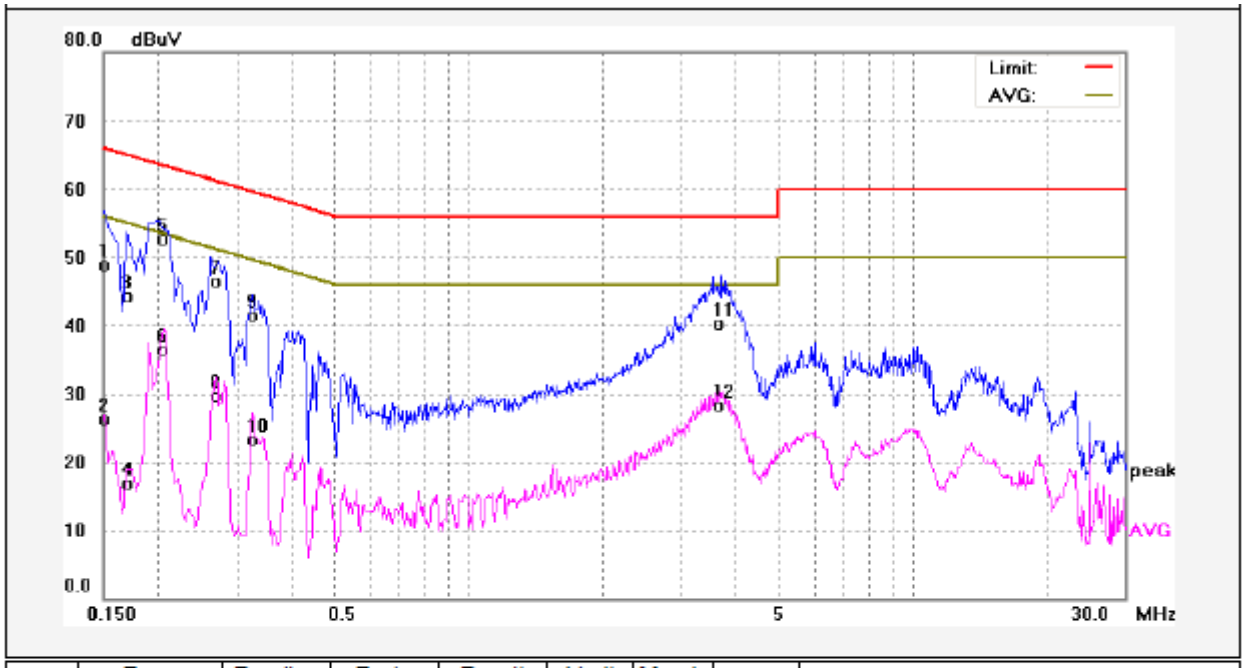
6.1.4 Power Line Conducted Emission Test Data

Live Line:



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.1539	38.21	9.75	47.96	65.78	-17.82	QP	
2	0.1539	10.60	9.75	20.35	55.78	-35.43	AVG	
3	0.2060	43.87	9.76	53.63	63.36	-9.73	QP	
4	0.2060	27.38	9.76	37.14	53.36	-16.22	AVG	
5	0.2620	38.89	9.74	48.63	61.36	-12.73	QP	
6	0.2620	19.85	9.74	29.59	51.36	-21.77	AVG	
7	0.3379	31.46	9.75	41.21	59.25	-18.04	QP	
8	0.3379	13.22	9.75	22.97	49.25	-26.28	AVG	
9	0.3980	27.47	9.75	37.22	57.89	-20.67	QP	
10	0.3980	9.50	9.75	19.25	47.89	-28.64	AVG	
11	3.7660	32.89	9.91	42.80	56.00	-13.20	QP	
12	3.7660	22.04	9.91	31.95	46.00	-14.05	AVG	

Neutral Line:



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.1500	39.17	9.75	48.92	65.99	-17.07	QP	
2	0.1500	16.65	9.75	26.40	55.99	-29.59	AVG	
3	0.1700	34.60	9.74	44.34	64.96	-20.62	QP	
4	0.1700	7.18	9.74	16.92	54.96	-38.04	AVG	
5	0.2060	42.94	9.76	52.70	63.36	-10.66	QP	
6	0.2060	26.80	9.76	36.56	53.36	-16.80	AVG	
7	0.2700	36.83	9.74	46.57	61.12	-14.55	QP	
8	0.2700	20.02	9.74	29.76	51.12	-21.36	AVG	
9	0.3260	31.70	9.75	41.45	59.55	-18.10	QP	
10	0.3260	13.50	9.75	23.25	49.55	-26.30	AVG	
11	3.6700	30.35	9.91	40.26	56.00	-15.74	QP	
12	3.6700	18.31	9.91	28.22	46.00	-17.78	AVG	

6.2 Radiation Emission, 30MHz to 1000MHz

Test Requirement ..... : FCC PART 15, SUBPART B

Test Method ..... : ANSI C63.4

Test Result ..... : Pass

Frequency Range ..... : 30MHz to 1000MHz

Class. : Class B

Limit..... :

Frequency (MHz)	Distance (Meter)	Limit (dBμV/m
		Quasi-peak
30 to 88	3	40
88 to 216	3	43.5
216 to 960	3	46
960 to 1000	3	54

6.2.1 E.U.T. Operation

Operating Environment:

Temperature ..... : 23°C

Humidity ..... : 54.1%RH

Atmospheric Pressure..... : 101kPa

EUT Operation:

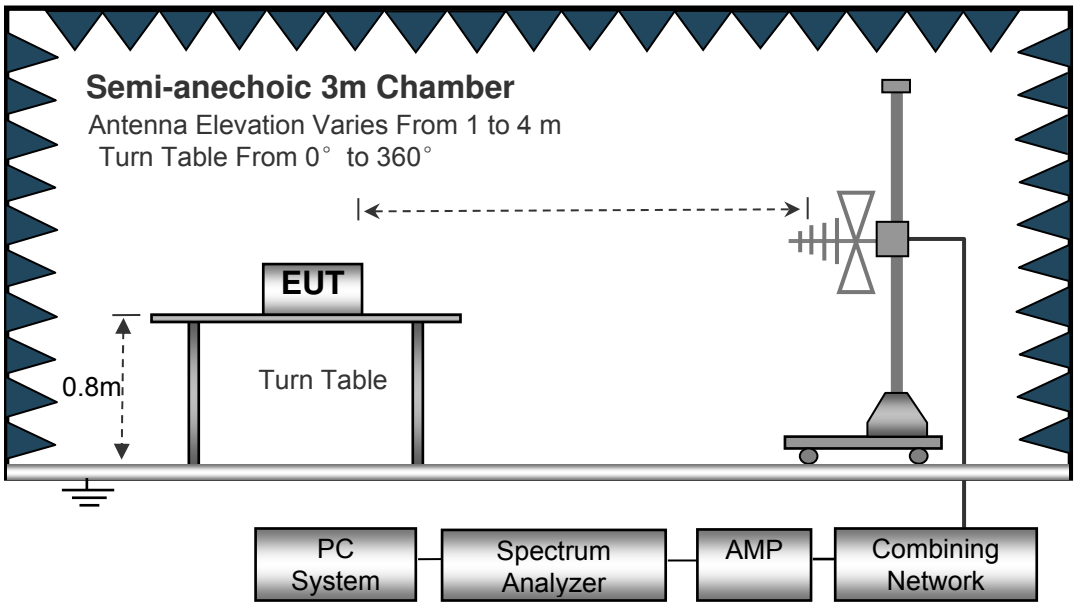
Input Voltage..... : AC 120V/60Hz

Operating Mode ..... : Video playing + earphone + adapter, Data transfer with PC, Data transfer with USB

Remark ..... : The worst case is Data transfer with PC mode and the data is shown as follow.

6.2.2 Block Diagram of Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.4.



6.2.3 Test Procedure

1. The EUT is placed on a turntable. the EUT is 0.8m above ground plane;
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions.
4. Except as otherwise indicated in paragraphs §15.33 (b) (2) or §15.33 (b)(3) of this section, for an unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table:

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705-108	1000
108-500	2000
500-1000	5000
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower.

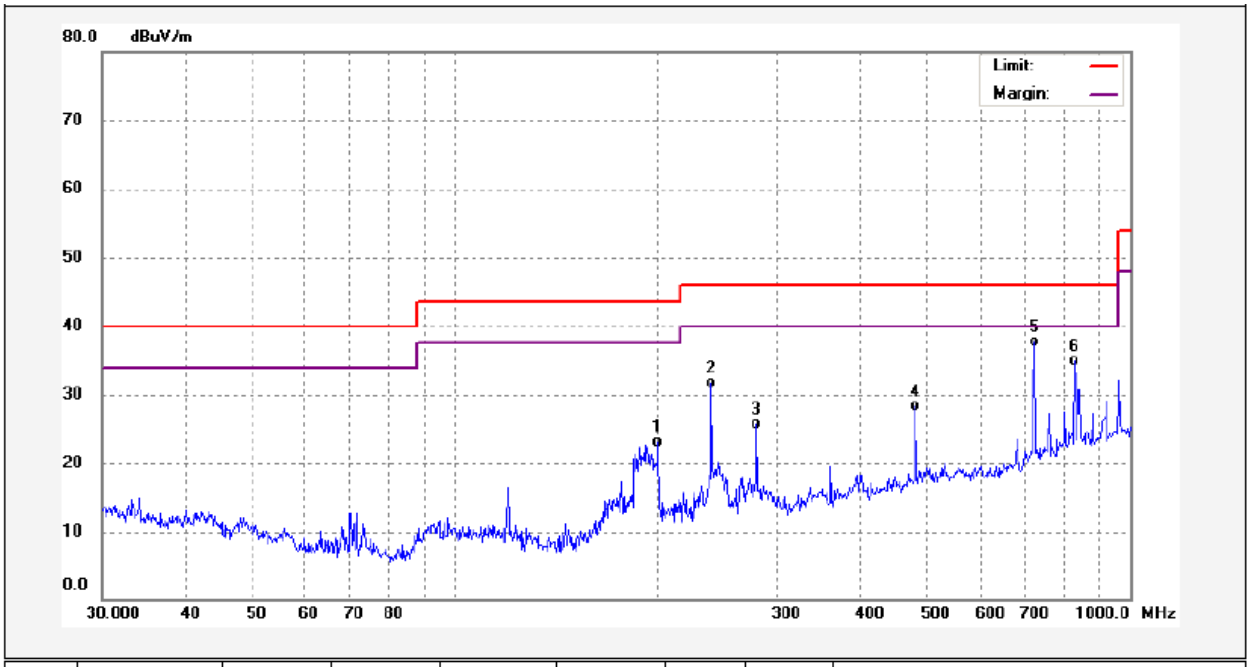
5. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
6. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
7. Repeat above procedures until the measurements for all frequencies are complete.
8. The radiation measurements are tested under 3-axes(X, Y, Z) position(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand), after pre-test, It was found that the worse radiation emission was get at the Z position. So the data shown was the Z position only.

6.2.4 Measurement Data

The maximised peak emissions from the EUT was scanned and measured for both the Antenna Vertical Polarization and Antenna Horizontal Polarization. Quasi-peak measurements were performed if peak emissions were within 6dB of the Quasi-peak limit line.

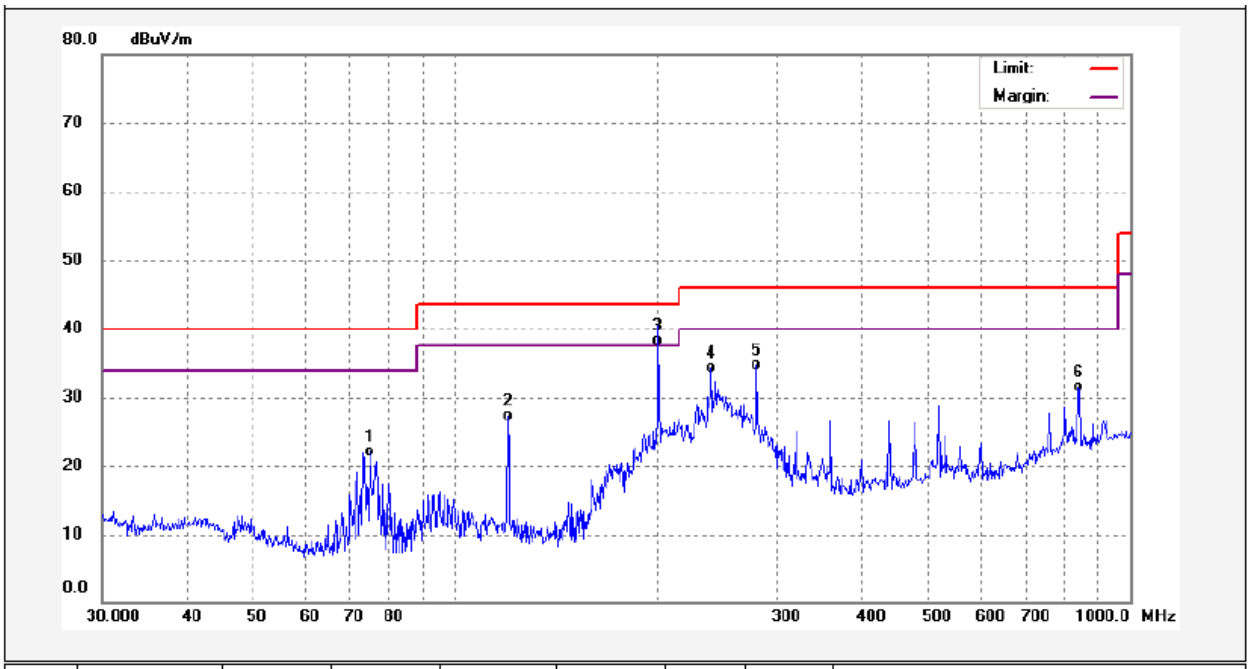
6.2.5 Radiated Emission Test Data, 30MHz to 1000MHz

Antenna Polarization: Vertical



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	199.9855	40.85	-17.76	23.09	43.50	-20.41	QP	
2	239.9873	47.89	-16.15	31.74	46.00	-14.26	QP	
3	280.0237	41.26	-15.64	25.62	46.00	-20.38	QP	
4	480.5276	39.39	-11.10	28.29	46.00	-17.71	QP	
5	721.7259	45.23	-7.45	37.78	46.00	-8.22	QP	
6	827.4933	39.69	-4.82	34.87	46.00	-11.13	QP	

Antenna Polarization: Horizontal



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	74.9191	42.73	-20.53	22.20	40.00	-17.80	QP	
2	119.8555	44.97	-17.67	27.30	43.50	-16.20	QP	
3	199.9856	56.06	-17.76	38.30	43.50	-5.20	QP	
4	239.9873	50.53	-16.15	34.38	46.00	-11.62	QP	
5	280.0237	50.42	-15.64	34.78	46.00	-11.22	QP	
6	839.1817	36.29	-4.87	31.42	46.00	-14.58	QP	

6.3 Radiation Emission, Above 1000MHz

Test Requirement ..... : FCC PART 15, SUBPART B

Test Method ..... : ANSI C63.4

Test Result..... : Pass

Frequency Range ..... : 1GHz~7GHz

Class. : Class B

Limit. ..... :

Frequency Range (MHz)	Distance (Meter)	Average Limit dB(uV/m)	Peak Limit (dBuV/m)
Above 1GHz	3	54	74

6.3.1 E.U.T. Operation

Operating Environment:

Temperature..... : 23°C

Humidity ..... : 52%RH

Atmospheric Pressure..... : 101kPa

EUT Operation:

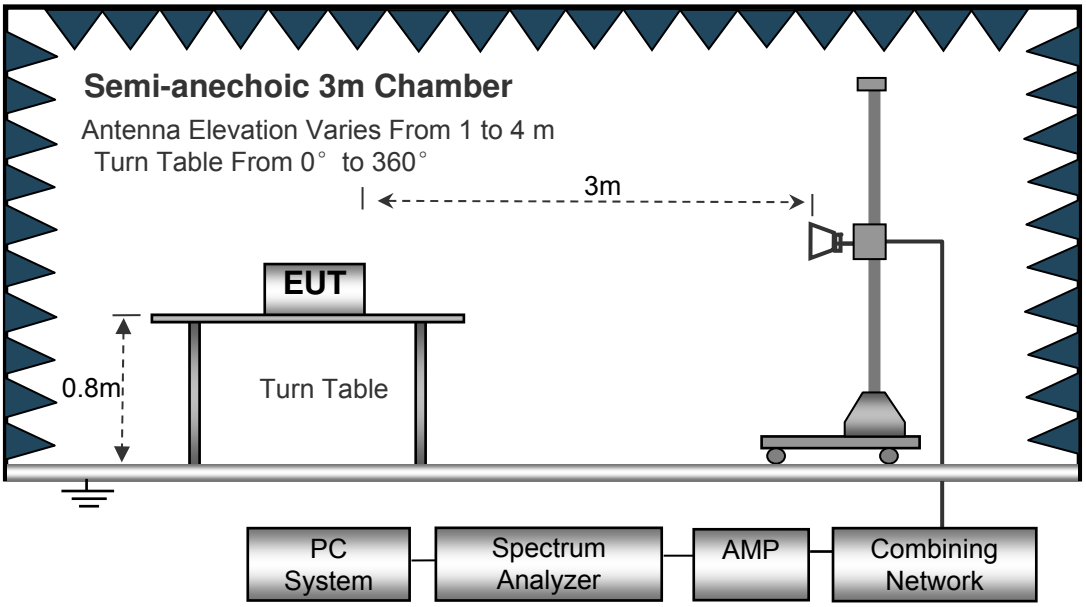
Input Voltage ..... : AC 120V/60Hz

Operating Mode ..... : Video playing + earphone + adapter, Data transfer with PC, Data transfer with USB

Remark..... : The worst case is Data transfer with PC mode and the data is shown as follow.

6.3.2 Block Diagram of Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.4.



6.3.3 Test Procedure

2. The EUT is placed on a turntable. the EUT is 0.8m above ground plane;

2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.

3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions.

4. Except as otherwise indicated in paragraphs §15.33 (b)(2) or §15.33 (b)(3) of this section, for an unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table:

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705-108	1000
108-500	2000
500-1000	5000
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower.

5. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.

6. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

7. Repeat above procedures until the measurements for all frequencies are complete.

8. The radiation measurements are tested under 3-axes(X, Y, Z) position(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand), after pre-test, It was found that the worse radiation emission was get at the Z position. So the data shown was the Z position only.

6.3.4 Measurement Data

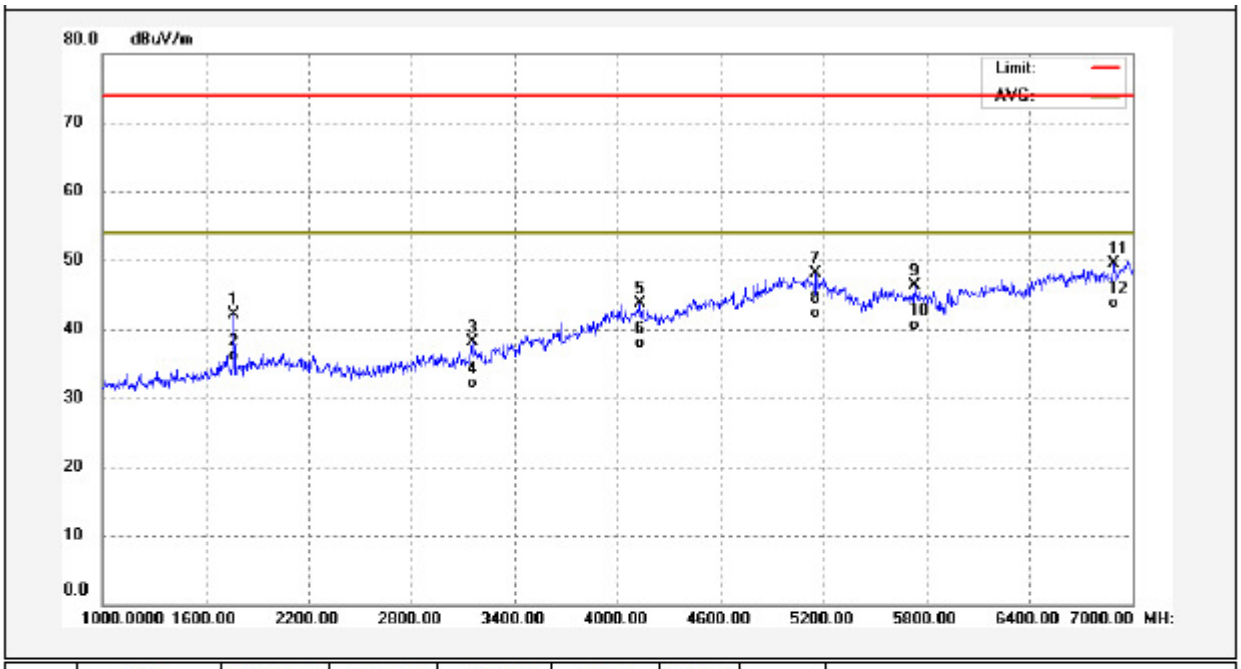
The maximised peak emissions from the EUT was scanned and measured for both the Antenna Vertical Polarization and Antenna Horizontal Polarization. Average measurements were performed if peak emissions were within 6dB of the average limit line

6.3.5 Radiated Emission test data, Above 1000MHz

Antenna Polarization: Vertical

No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	1762.000	53.07	-13.71	39.36	74.00	-34.64	peak	
2	1762.000	47.22	-13.71	33.51	54.00	-20.49	AVG	
3	3736.000	49.20	-8.05	41.15	74.00	-32.85	peak	
4	3736.000	43.37	-8.05	35.32	54.00	-18.68	AVG	
5	4114.000	49.09	-5.80	43.29	74.00	-30.71	peak	
6	4114.000	43.22	-5.80	37.42	54.00	-16.58	AVG	
7	4504.000	49.99	-4.56	45.43	74.00	-28.57	peak	
8	4504.000	44.14	-4.56	39.58	54.00	-14.42	AVG	
9	4948.000	49.38	-1.04	48.34	74.00	-25.66	peak	
10	4948.000	43.51	-1.04	42.47	54.00	-11.53	AVG	
11	6208.000	49.01	-1.20	47.81	74.00	-26.19	peak	
12	6208.000	43.15	-1.20	41.95	54.00	-12.05	AVG	

Antenna Polarization: Horizontal



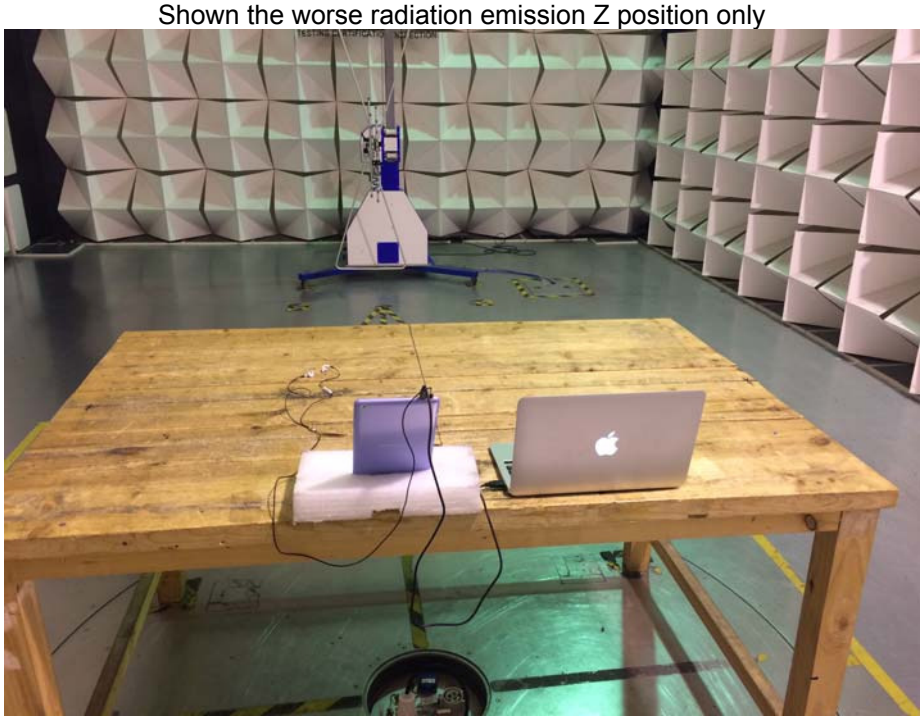
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	1762.000	55.74	-13.71	42.03	74.00	-31.97	peak	
2	1762.000	49.88	-13.71	36.17	54.00	-17.83	AVG	
3	3154.000	49.55	-11.54	38.01	74.00	-35.99	peak	
4	3154.000	43.68	-11.54	32.14	54.00	-21.86	AVG	
5	4132.000	49.46	-5.75	43.71	74.00	-30.29	peak	
6	4132.000	43.60	-5.75	37.85	54.00	-16.15	AVG	
7	5158.000	49.46	-1.34	48.12	74.00	-25.88	peak	
8	5158.000	43.60	-1.34	42.26	54.00	-11.74	AVG	
9	5728.000	48.89	-2.53	46.36	74.00	-27.64	peak	
10	5728.000	43.06	-2.53	40.53	54.00	-13.47	AVG	
11	6892.000	47.92	1.56	49.48	74.00	-24.52	peak	
12	6892.000	42.05	1.56	43.61	54.00	-10.39	AVG	

7 Photographs – Test Setup

7.1 Photograph –Power Line Conducted Emission Test Setup

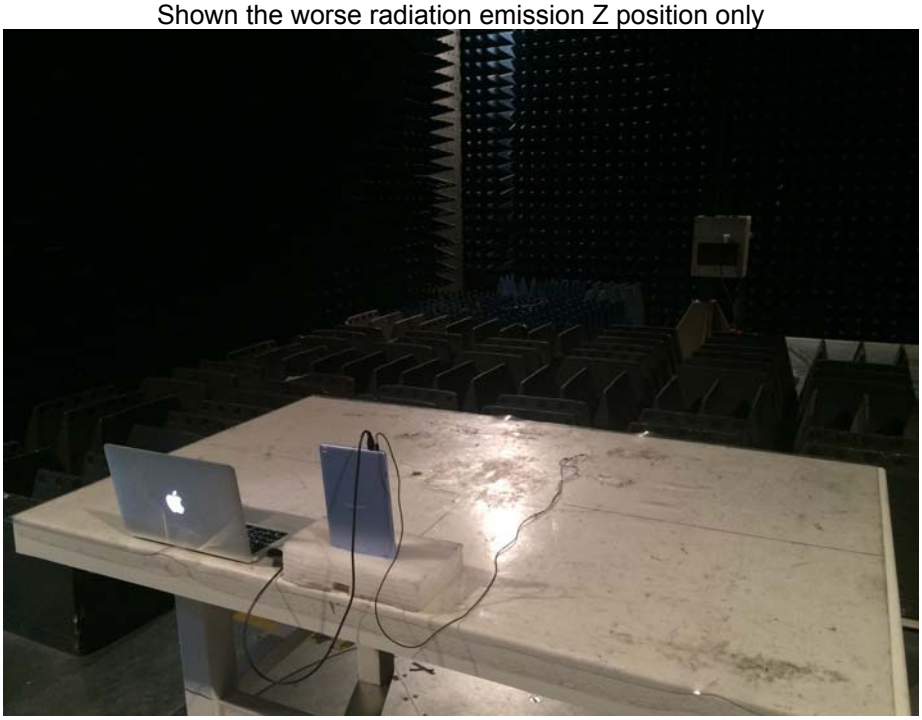
7.2 Photograph – Radiated Emission Test Setup for 30MHz~1000MHz

Shown the worse radiation emission Z position only



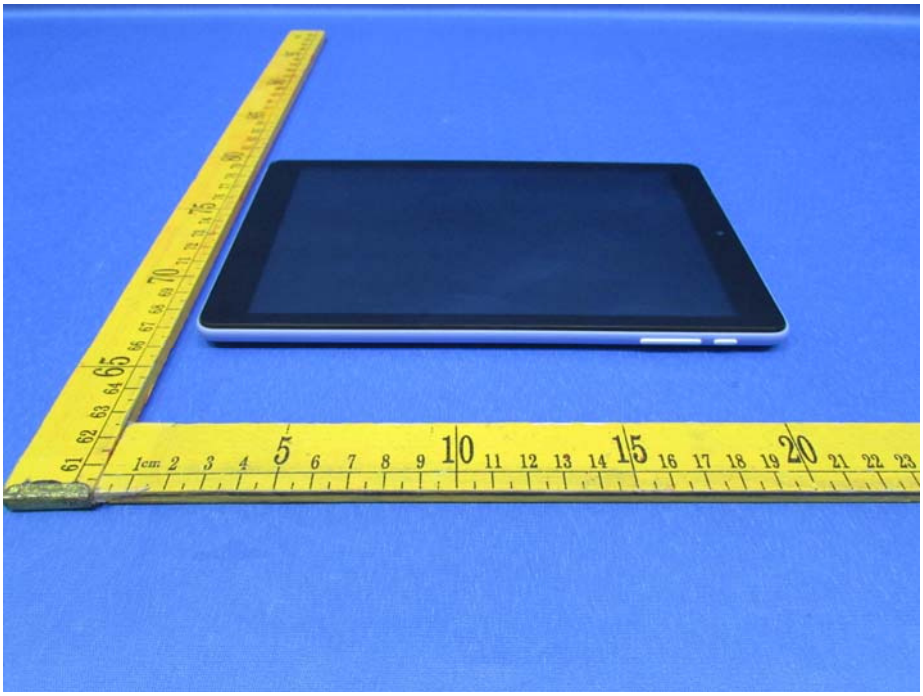
7.3 Photograph – Radiated Emission Test Setup for Above 1GHz

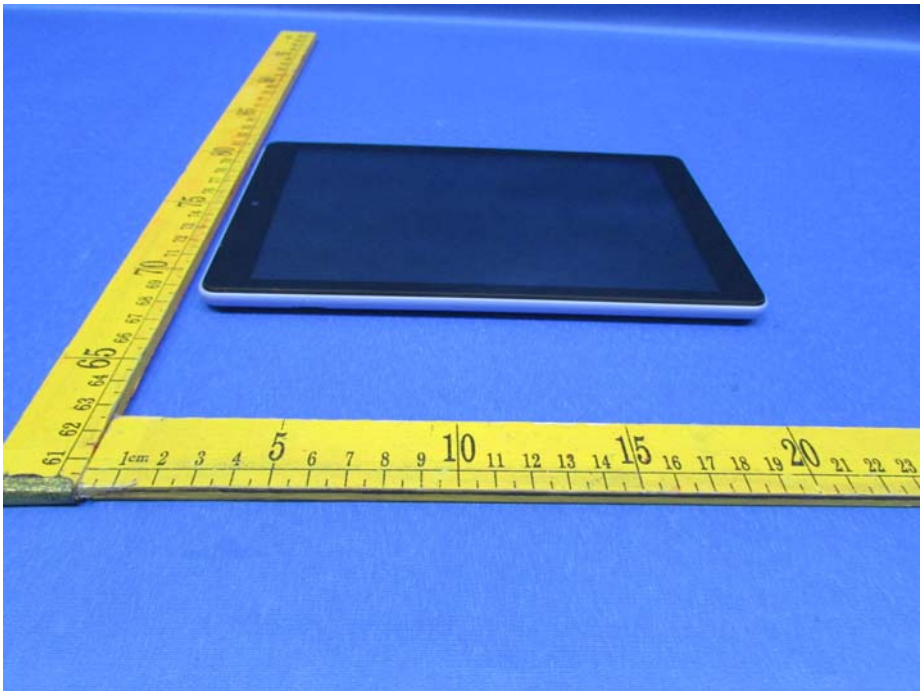
Shown the worse radiation emission Z position only

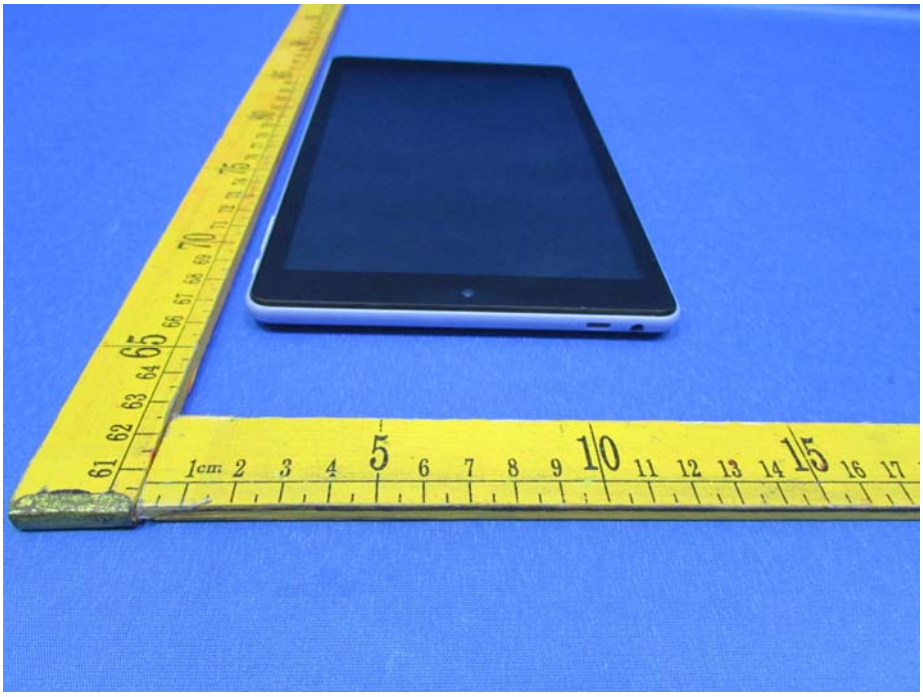


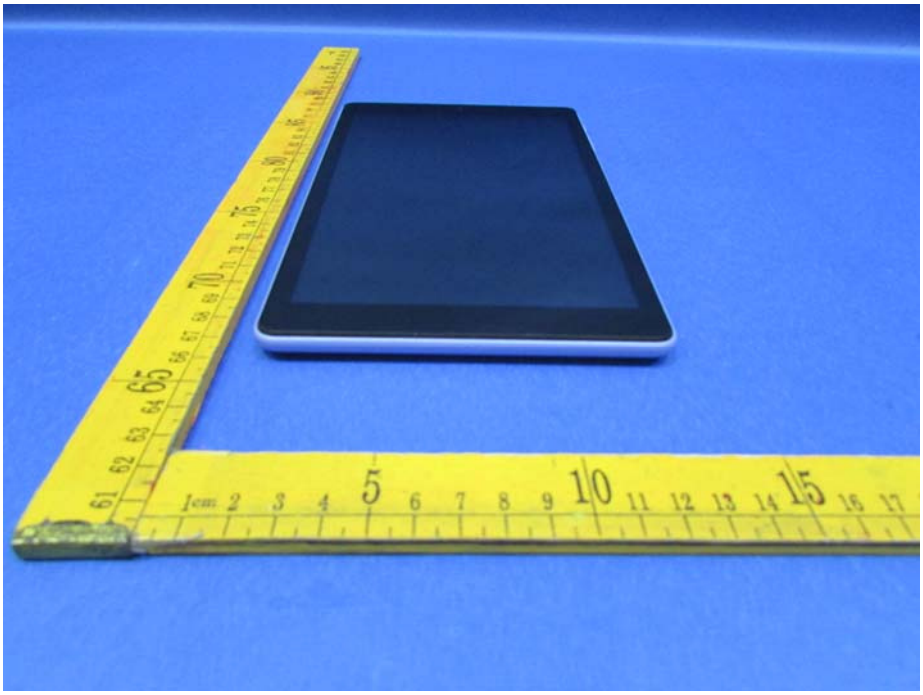
8 Photographs – Constructional Details

8.1 EUT – Appearance View

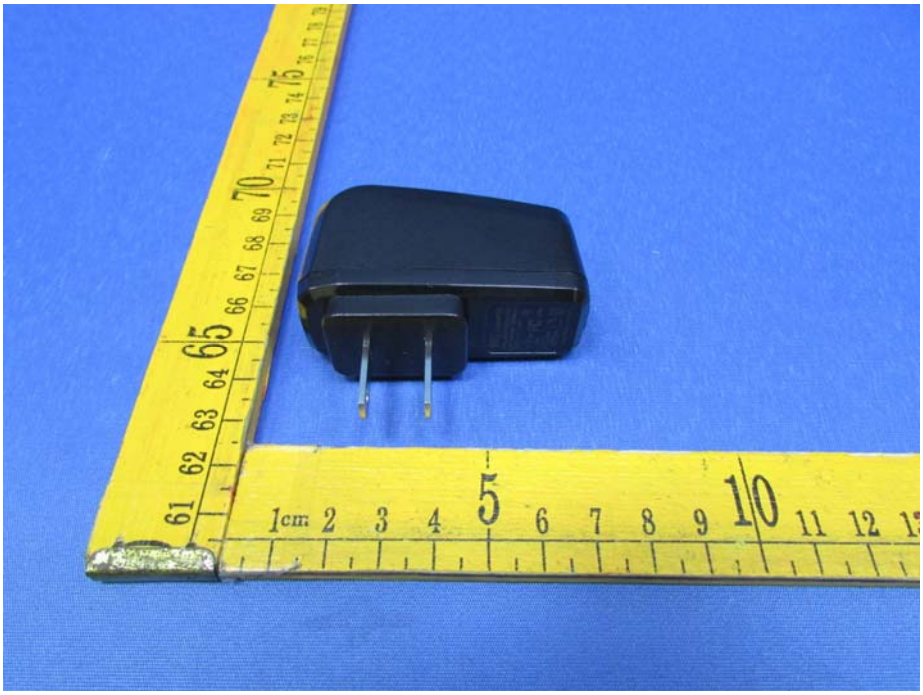






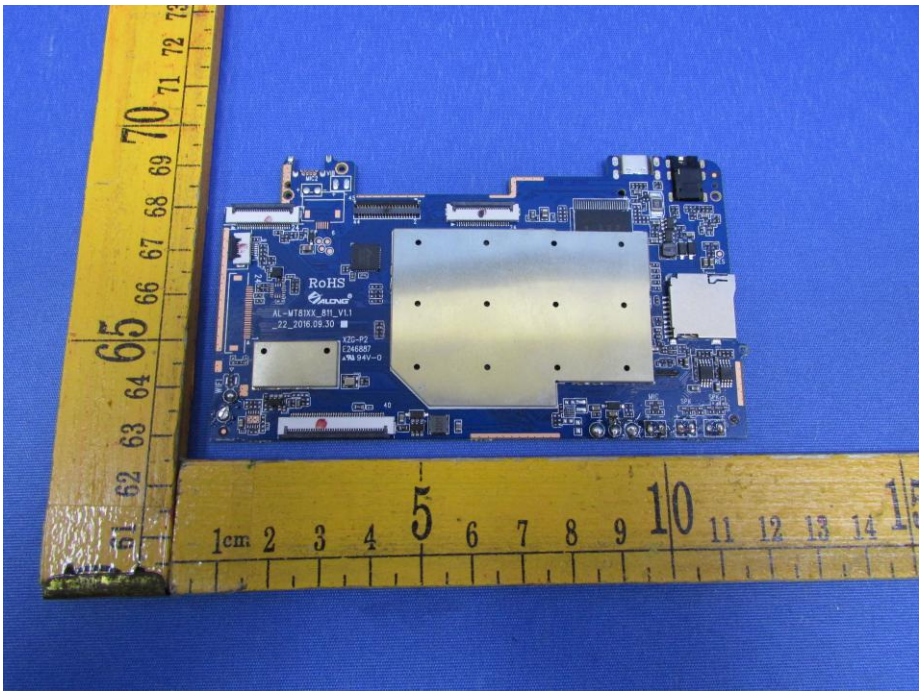


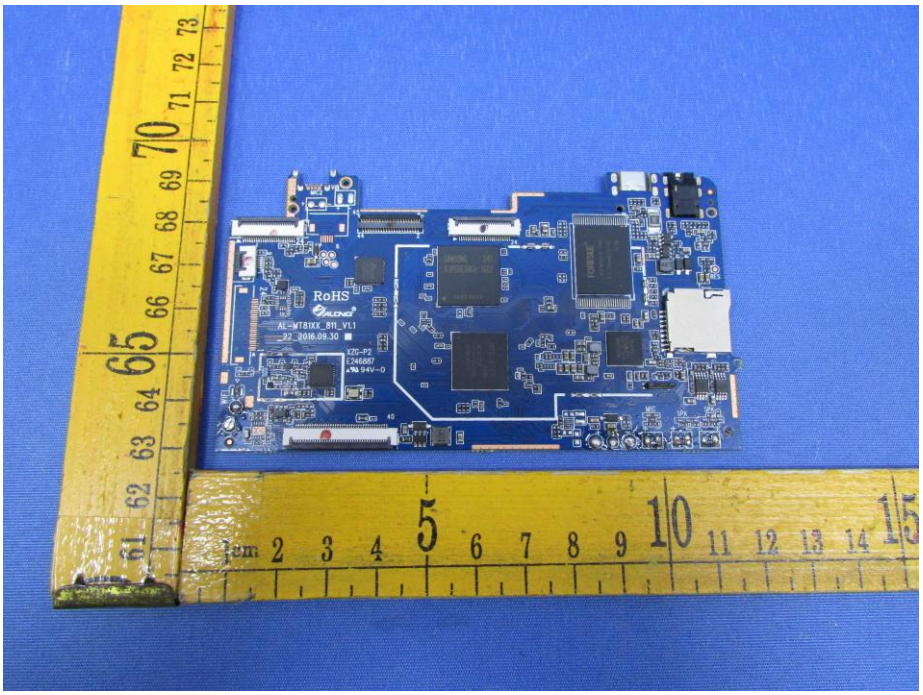
NOVISION

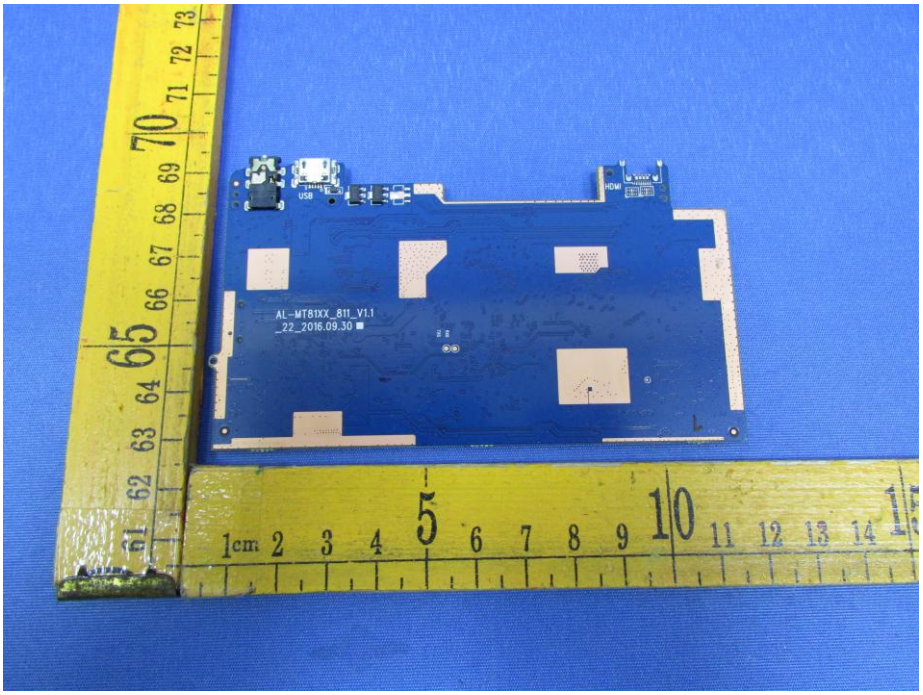


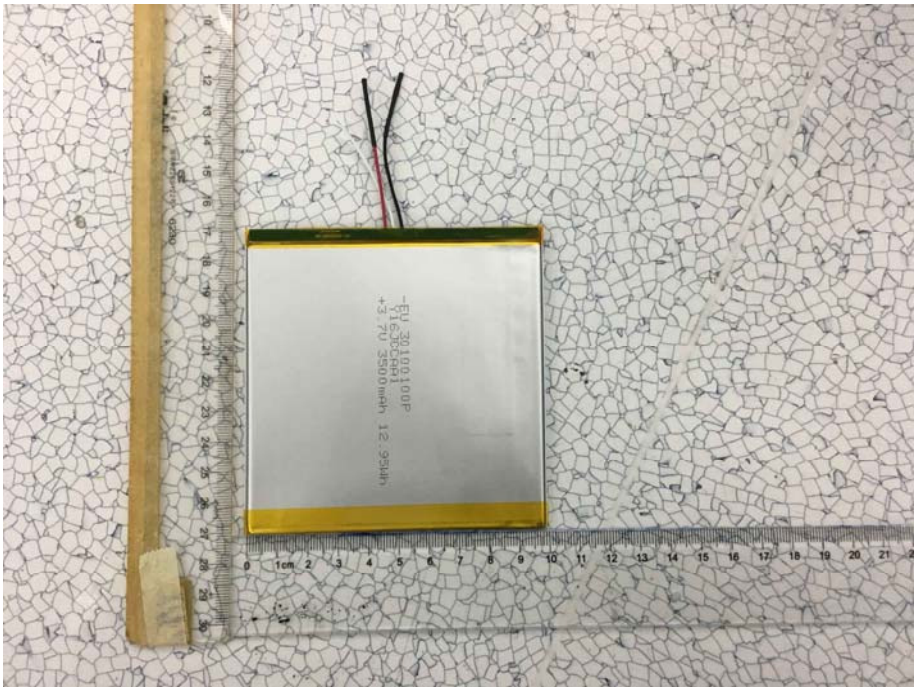
BSY AC ADAPTER
MODEL:BSY012U050200U U1USB
INPUT: 100-240V~, 50/60Hz,0.3A
OUTPUT:5.0V ⎓2.0 A
LPS

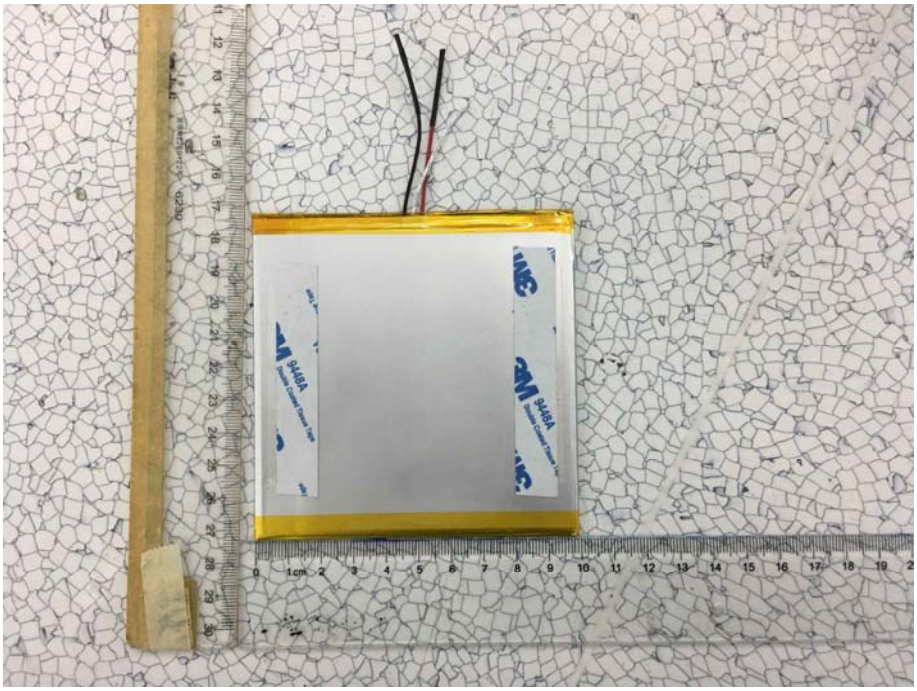
8.2 EUT – Open View




RoHS
AL-MT81XX_811_V1.1
_22_2016.09.30


USB
HDMI
AL-MT81XX_811_V1.1
_22_2016.09.30





======End of Report======