EMC TEST REPORT

Report No.: 15070515-FCC-E

Supersede Report No.: N/A

Applicant	Sharetronic Data Technology Co., Ltd
Product Name	Virtual Reality
Model No.	Uranus One
Serial No.	N/A
Test Standard	FCC Part 15 Subpart B Class B:2015, ANSI C63.4: 2014
Test Date	August 14, 2015 to January 20, 2016&March 22, 2016
Issue Date	April 06, 2016
Test Result	☑ Pass ☐ Fail
Equipment complied with the specification	☑
Equipment did not comply with the specification	☐

Winnie Zhang	David Huang	
Winnie Zhang Test Engineer	David Huang Checked By	

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Test result presented in this test report is applicable to the tested sample only

Issued by:

SIEMIC (SHENZHEN-CHINA) LABORATORIES

Zone A, Floor 1, Building 2 Wan Ye Long Technology Park

South Side of Zhoushi Road, Bao' an District, Shenzhen, Guangdong China 518108

Phone: +86 0755 2601 4629801 Email: China@siemic.com.cn

Laboratories Introduction

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.

In addition to testing and certification, SIEMIC provides initial design reviews and compliance management throughout a project. Our extensive experience with China, Asia Pacific, North America, European, and International compliance requirements, assures the fastest, most cost effective way to attain regulatory compliance for the global markets.

Accreditations for Conformity Assessment

Country/Region	Scope
USA	EMC, RF/Wireless, SAR, Telecom
Canada	EMC, RF/Wireless, SAR, Telecom
Taiwan	EMC, RF, Telecom, SAR, Safety
Hong Kong	RF/Wireless, SAR, Telecom
Australia	EMC, RF, Telecom, SAR, Safety
Korea	EMI, EMS, RF, SAR, Telecom, Safety
Japan	EMI, RF/Wireless, SAR, Telecom
Singapore	EMC, RF, SAR, Telecom
Europe	EMC, RF, SAR, Telecom, Safety

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CONTENTS

1. Report Revision History

Report No.	Report Version	Description	Issue Date
15070515-FCC-E	NONE	Original	April 01, 2016
15070515-FCC-E	V1	Adding data	April 06, 2016

2. Customer information

Applicant Name	Sharetronic Data Technology Co., Ltd
Applicant Add	Room1209,Chuangjian Building,No.6023,Shennan Blvd, Futian District,Shenzhen,China
Manufacturer	Sharetronic Data Technology Co., Ltd.
Manufacturer Add	Room1209,Chuangjian Building,No.6023,Shennan Blvd, Futian District,Shenzhen,China

3. Test site information

Lab performing tests	SIEMIC (Shenzhen-China) LABORATORIES
Lab Address	Zone A, Floor 1, Building 2 Wan Ye Long Technology Park South Side of Zhoushi Road, Bao' an District, Shenzhen, Guangdong China 518108
FCC Test Site No.	718246
IC Test Site No.	4842E-1
Test Software	Radiated Emission Program-To Shenzhen v2.0

4. Equipment under Test (EUT) Information

Description of EUT:	Virtual Reality
Main Model:	Uranus One
Serial Model:	N/A
Date EUT received:	August 13, 2015
Test Date(s):	August 14, 2015 to January 20, 2016&March 22, 2016
Equipment Category：	Class B
Antenna Gain:	WIFI/ Bluetooth: 5 dBi
Type of Modulation:	802.11b/g/n: DSSS, OFDM Bluetooth: GFSK, π /4DQPSK, 8DPSK
RF Operating Frequency (ies):	WIFI:802.11b/g/n(20M): 2412-2462 MHz Bluetooth: 2402-2480 MHz
Number of Channels:	WIFI :802.11b/g/n(20M): 11CH Bluetooth: 79CH
Port:	USB Port ,TF-Card Port, HDMI Port,Earphone Port
Input Power:	Adapter: Model : EP10-050250WUCZ Input : AC100 ~ 240V, 50/60Hz,0.35A Max Output: DC5.0V, 2.5A Battery: Standard: 3.7V,3000mAh
Trade Name :	N/A
FCC ID:	2AEU9URANUSONE01

5. Test Summary

The product was tested in accordance with the following specifications.

All testing has been performed according to below product classification:

FCC Rules	Description of Test	Result
§15.107; ANSI C63.4: 2014	AC Power Line Conducted Emissions	Compliance
§15.109; ANSI C63.4: 2014	Radiated Emissions	Compliance

Measurement Uncertainty

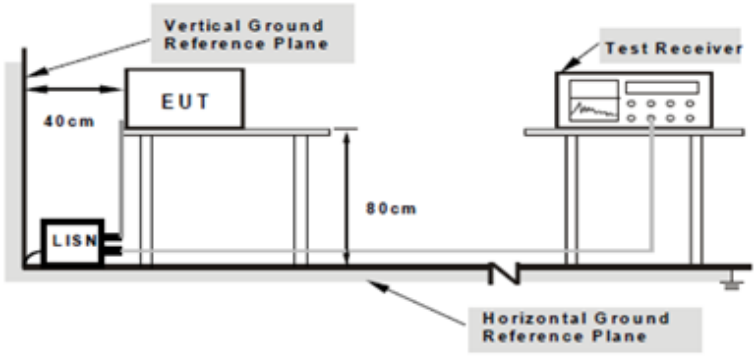
Emissions		
Test Item	**Description**	**Uncertainty**
Band Edge and Radiated Spurious Emissions	Confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2 (for EUTs < 0.5m X 0.5m X 0.5m)	+5.6dB/-4.5dB
-	-	-

6. Measurements, Examination And Derived Results

6.1 AC Power Line Conducted Emissions

Temperature	24°C
Relative Humidity	57%
Atmospheric Pressure	1015mbar
Test date :	January 15, 2016
Tested By :	Winnie Zhang

Requirement(s):

<table>
<tr><th>Spec</th><th>Item</th><th>Requirement</th><th>Applicable</th></tr>
<tr><td>47CFR§15.107</td><td>a)</td><td>For Low-power radio-frequency devices 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 30 MHz, shall not exceed the limits in the following table, as measured using a 50 [mu] H/50 ohms line impedance stabilization network (LISN). The lower limit applies at the boundary between the frequencies ranges.
<table>
<tr><th rowspan="2">Frequency ranges (MHz)</th><th colspan="2">Limit (dBμV)</th></tr>
<tr><th>QP</th><th>Average</th></tr>
<tr><td>0.15 ~ 0.5</td><td>66 – 56</td><td>56 – 46</td></tr>
<tr><td>0.5 ~ 5</td><td>56</td><td>46</td></tr>
<tr><td>5 ~ 30</td><td>60</td><td>50</td></tr>
</table>
</td><td>☑</td></tr>
<tr><td>Test Setup</td><td colspan="3"> 

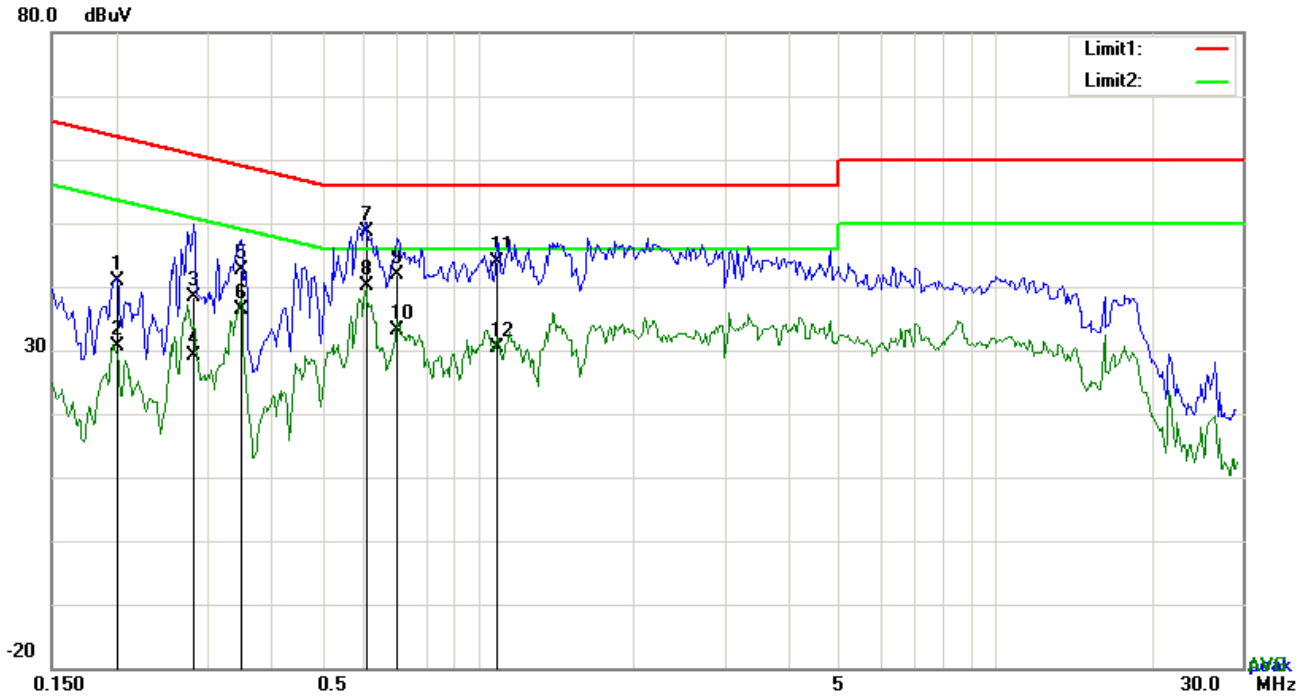
Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80cm from EUT and at least 80cm from other units and other metal planes support units.</td></tr>
<tr><td>Procedure</td><td colspan="3">1. The EUT and supporting equipment were set up in accordance with the requirements of the standard on top of a 1.5m x 1m x 0.8m high, non-metallic table.
2. The power supply for the EUT was fed through a 50W/50mH EUT LISN, connected to filtered mains.</td></tr>
</table>

	3. The RF OUT of the EUT LISN was connected to the EMI test receiver via a low-loss coaxial cable. 4. All other supporting equipment were powered separately from another main supply. 5. The EUT was switched on and allowed to warm up to its normal operating condition. 6. A scan was made on the NEUTRAL line (for AC mains) or Earth line (for DC power) over the required frequency range using an EMI test receiver. 7. High peaks, relative to the limit line, The EMI test receiver was then tuned to the selected frequencies and the necessary measurements made with a receiver bandwidth setting of 10 kHz. 8. Step 7 was then repeated for the LIVE line (for AC mains) or DC line (for DC power).
Remark	
Result	☑ Pass ☐ Fail

Test Data ☑ Yes ☐ N/A

Test Plot ☑ Yes (See below) ☐ N/A

Test Mode:	USB Mode

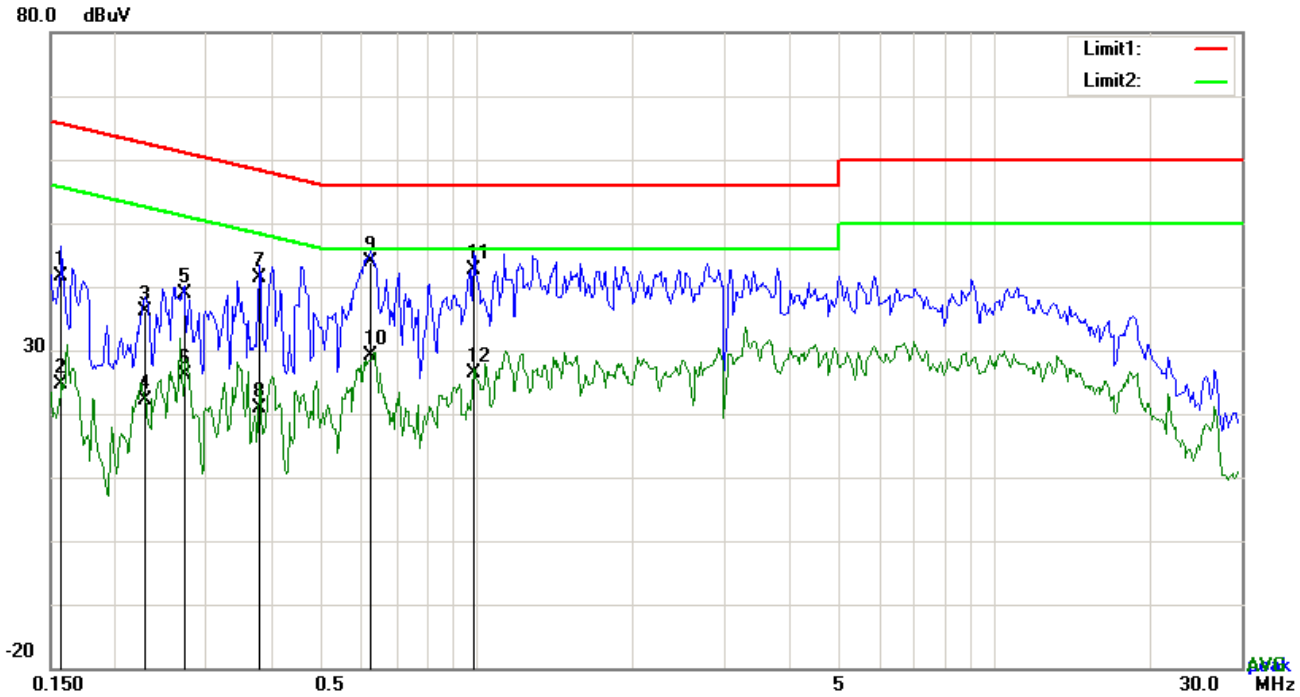


Test Data

Phase Line Plot at 120Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	L1	0.2007	30.81	QP	10.03	40.84	63.58	-22.74
2	L1	0.2007	20.64	AVG	10.03	30.67	53.58	-22.91
3	L1	0.2826	28.29	QP	10.03	38.32	60.74	-22.42
4	L1	0.2826	19.12	AVG	10.03	29.15	50.74	-21.59
5	L1	0.3489	32.67	QP	10.03	42.70	58.99	-16.29
6	L1	0.3489	26.32	AVG	10.03	36.35	48.99	-12.64
7	L1	0.6075	38.70	QP	10.03	48.73	56.00	-7.27
8	L1	0.6075	29.98	AVG	10.03	40.01	46.00	-5.99
9	L1	0.6999	31.97	QP	10.03	42.00	56.00	-14.00
10	L1	0.6999	22.98	AVG	10.03	33.01	46.00	-12.99
11	L1	1.0938	33.80	QP	10.03	43.83	56.00	-12.17
12	L1	1.0938	20.47	AVG	10.03	30.50	46.00	-15.50

Test Mode:	USB Mode

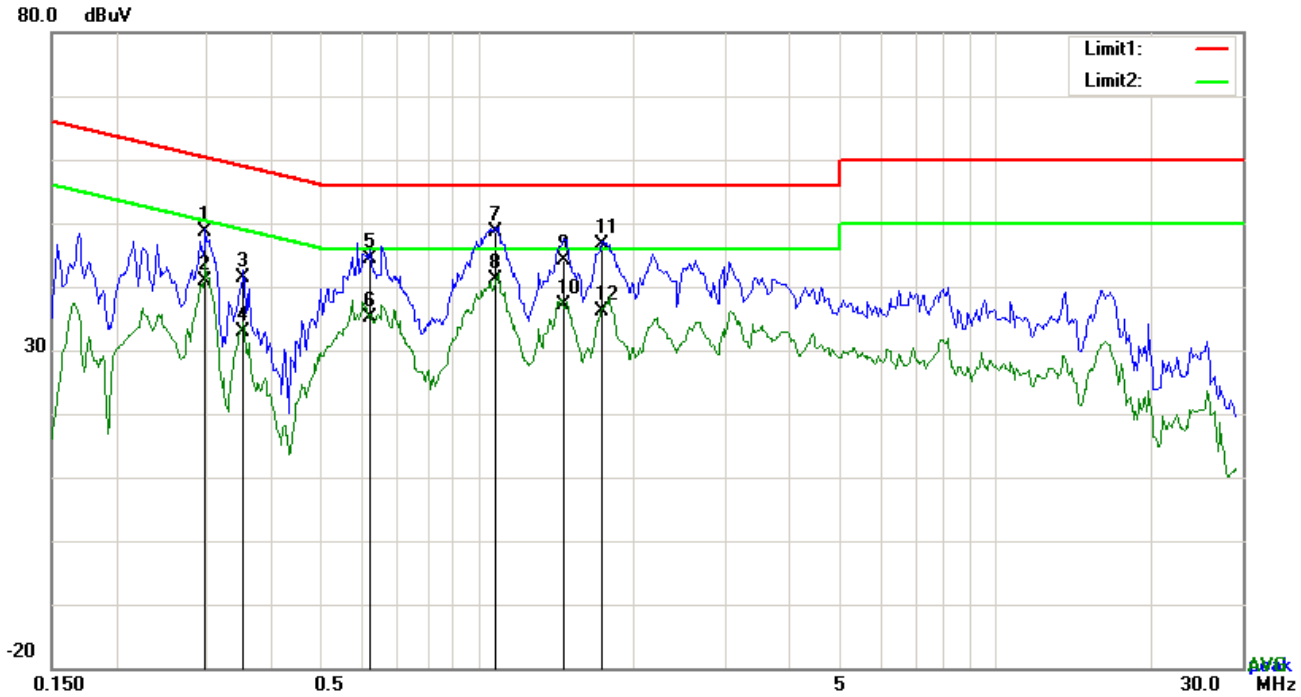


Test Data

Phase Neutral Plot at 120Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	N	0.1578	31.73	QP	10.02	41.75	65.58	-23.83
2	N	0.1578	14.52	AVG	10.02	24.54	55.58	-31.04
3	N	0.2280	26.10	QP	10.02	36.12	62.52	-26.40
4	N	0.2280	12.19	AVG	10.02	22.21	52.52	-30.31
5	N	0.2715	28.91	QP	10.02	38.93	61.07	-22.14
6	N	0.2715	16.21	AVG	10.02	26.23	51.07	-24.84
7	N	0.3801	31.46	QP	10.02	41.48	58.28	-16.80
8	N	0.3801	10.91	AVG	10.02	20.93	48.28	-27.35
9	N	0.6258	33.98	QP	10.02	44.00	56.00	-12.00
10	N	0.6258	19.06	AVG	10.02	29.08	46.00	-16.92
11	N	0.9846	32.68	QP	10.03	42.71	56.00	-13.29
12	N	0.9846	16.45	AVG	10.03	26.48	46.00	-19.52

Test Mode:	USB Mode

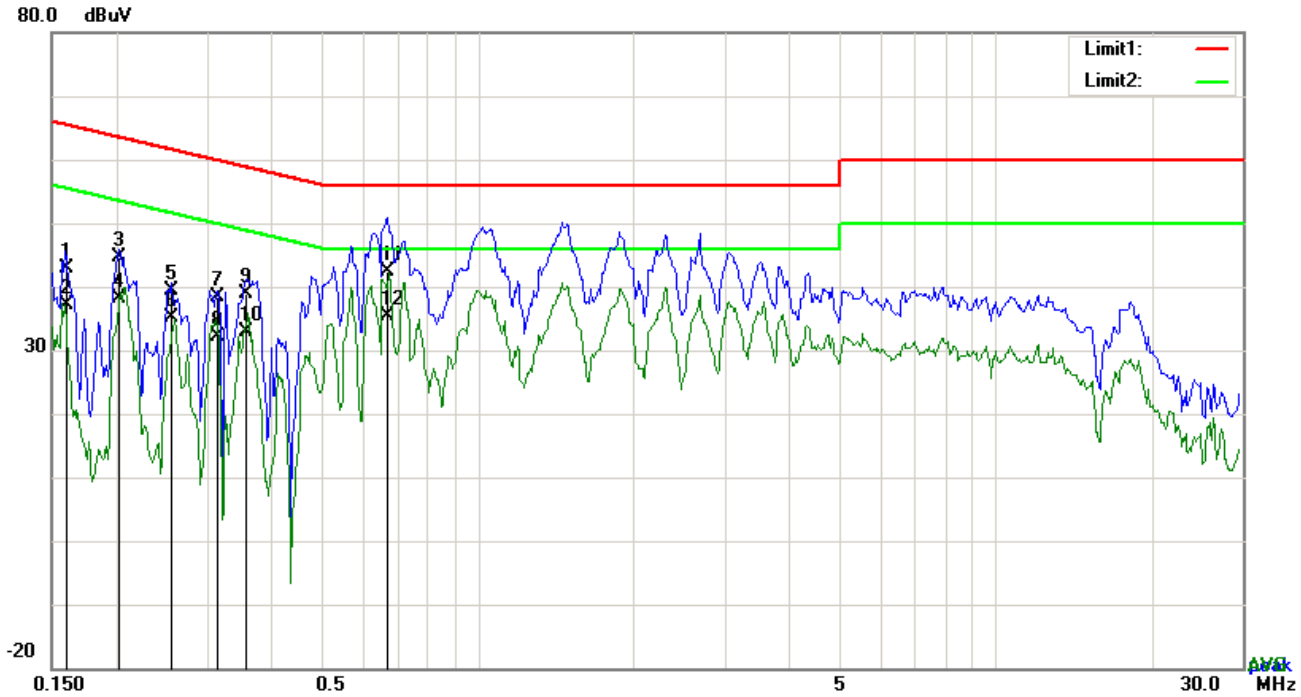


Test Data

Phase Line Plot at 240Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	L1	0.2982	38.64	QP	10.03	48.67	60.29	-11.62
2	L1	0.2982	30.96	AVG	10.03	40.99	50.29	-9.30
3	L1	0.3528	31.26	QP	10.03	41.29	58.90	-17.61
4	L1	0.3528	22.75	AVG	10.03	32.78	48.90	-16.12
5	L1	0.6180	34.43	QP	10.03	44.46	56.00	-11.54
6	L1	0.6180	25.05	AVG	10.03	35.08	46.00	-10.92
7	L1	1.0767	38.54	QP	10.03	48.57	56.00	-7.43
8	L1	1.0767	31.22	AVG	10.03	41.25	46.00	-4.75
9	L1	1.4682	34.14	QP	10.04	44.18	56.00	-11.82
10	L1	1.4682	27.19	AVG	10.04	37.23	46.00	-8.77
11	L1	1.7412	36.61	QP	10.04	46.65	56.00	-9.35
12	L1	1.7412	26.19	AVG	10.04	36.23	46.00	-9.77

Test Mode:	USB Mode



Test Data

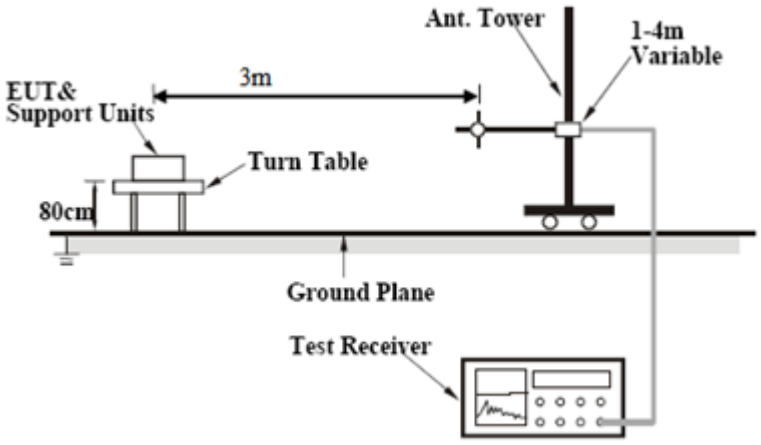
Phase Neutral Plot at 240Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	N	0.1607	32.86	QP	10.03	42.89	65.43	-22.54
2	N	0.1607	27.08	AVG	10.03	37.11	55.43	-18.32
3	N	0.2029	34.67	QP	10.03	44.70	63.49	-18.79
4	N	0.2029	28.22	AVG	10.03	38.25	53.49	-15.24
5	N	0.2553	29.24	QP	10.03	39.27	61.58	-22.31
6	N	0.2553	25.05	AVG	10.03	35.08	51.58	-16.50
7	N	0.3138	28.29	QP	10.03	38.32	59.87	-21.55
8	N	0.3138	22.20	AVG	10.03	32.23	49.87	-17.64
9	N	0.3567	28.75	QP	10.03	38.78	58.80	-20.02
10	N	0.3567	22.83	AVG	10.03	32.86	48.80	-15.94
11	N	0.6687	32.30	QP	10.03	42.33	56.00	-13.67
12	N	0.6687	25.28	AVG	10.03	35.31	46.00	-10.69

6.2 Radiated Emissions

Temperature	24°C
Relative Humidity	57%
Atmospheric Pressure	1015mbar
Test date :	January 15, 2016&March 22, 2016
Tested By :	Winnie Zhang

Requirement(s):

<table>
<tr><th>Spec</th><th>Item</th><th>Requirement</th><th>Applicable</th></tr>
<tr><td>47CFR§15.
107(d)</td><td>a)</td><td>Except higher limit as specified elsewhere in other section, the emissions from the low-power radio-frequency devices shall not exceed the field strength levels specified in the following table and the level of any unwanted emissions shall not exceed the level of the fundamental emission. The tighter limit applies at the band edges
<table>
<tr><th>Frequency range (MHz)</th><th>Field Strength (μV/m)</th></tr>
<tr><td>30 – 88</td><td>100</td></tr>
<tr><td>88 – 216</td><td>150</td></tr>
<tr><td>216 960</td><td>200</td></tr>
<tr><td>Above 960</td><td>500</td></tr>
</table></td><td>☑</td></tr>
<tr><td>Test Setup</td><td colspan="3"> 
</td></tr>
<tr><td>Procedure</td><td colspan="3">1. The EUT was switched on and allowed to warm up to its normal operating condition.
2. The test was carried out at the selected frequency points obtained from the EUT characterization. Maximization of the emissions, was carried out by rotating the EUT, changing the antenna polarization, and adjusting the antenna height in the following manner:
a. Vertical or horizontal polarization (whichever gave the higher emission level</td></tr>
</table>

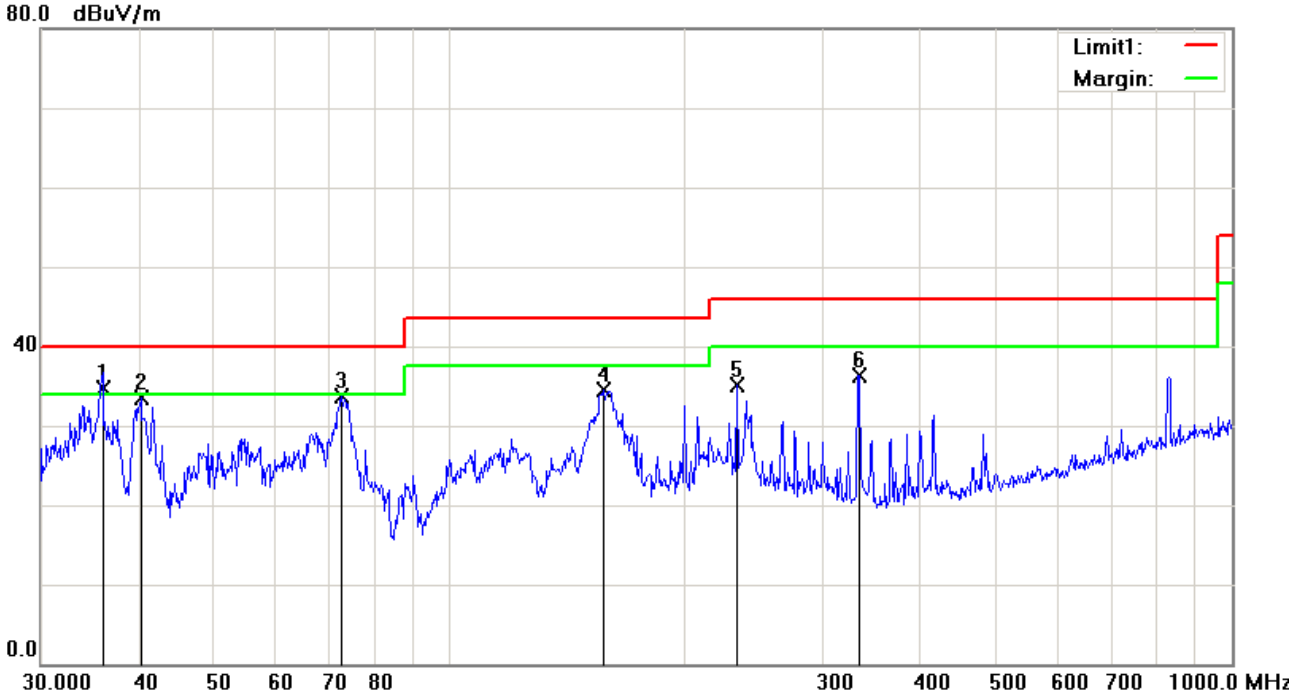
	over a full rotation of the EUT) was chosen. b. The EUT was then rotated to the direction that gave the maximum emission. c. Finally, the antenna height was adjusted to the height that gave the maximum emission. 3. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasiy Peak detection at frequency below 1GHz. 4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz with Peak detection for Peak measurement at frequency above 1GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth with Peak detection for Average Measurement as below at frequency above 1GHz. ■ 1 kHz (Duty cycle < 98%) □ 10 Hz (Duty cycle > 98%) 5. Steps 2 and 3 were repeated for the next frequency point, until all selected frequency points were measured.
Remark	
Result	☑ Pass ☐ Fail

Test Data ☑ Yes ☐ N/A

Test Plot ☑ Yes (See below) ☐ N/A

Test Mode :	USB Mode

Below 1GHz

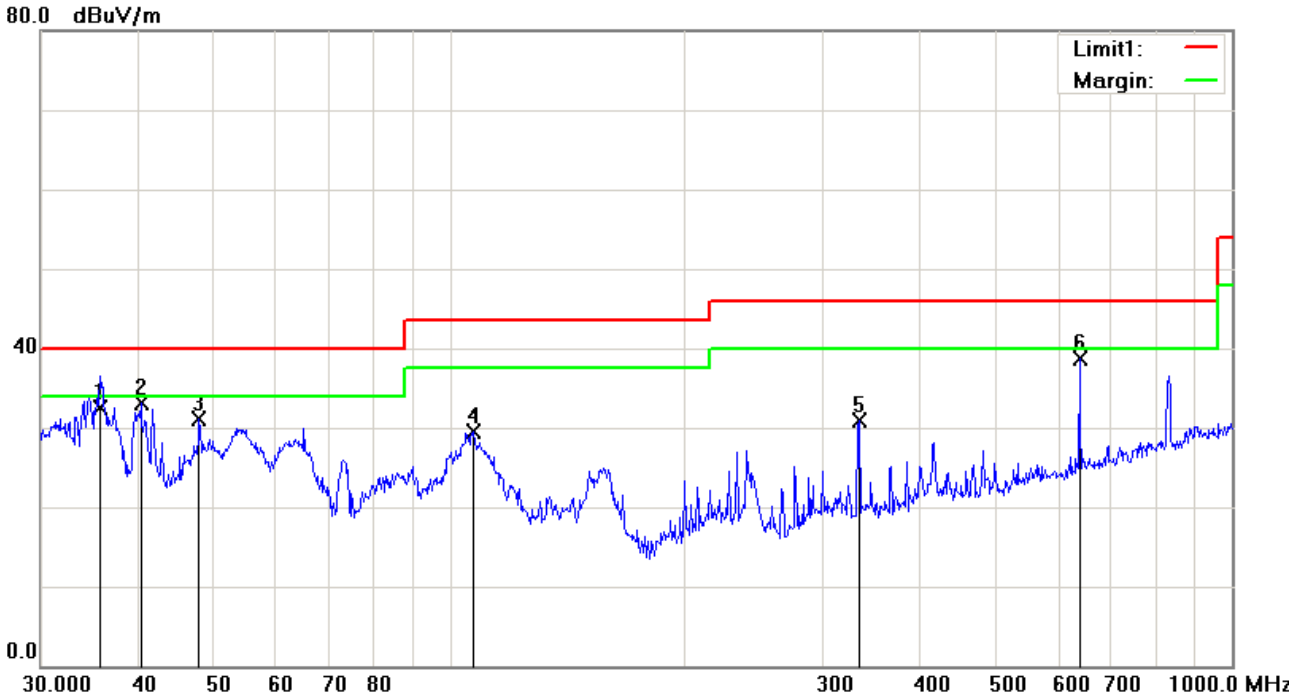


Test Data

Horizontal Polarity Plot @3m

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin	Height	Degree
		(MHz)	(dBuV/m)		(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	( )
1	H	36.0007	39.45	QP	-4.67	34.78	40.00	-5.22	100	297
2	H	40.2757	41.27	peak	-7.77	33.50	40.00	-6.50	100	331
3	H	72.8466	47.45	peak	-13.68	33.77	40.00	-6.23	100	133
4	H	157.5589	42.83	peak	-8.31	34.52	43.50	-8.98	100	137
5	H	232.5318	44.22	peak	-9.04	35.18	46.00	-10.82	100	99
6	H	333.6867	42.23	peak	-5.93	36.30	46.00	-9.70	100	125

Below 1GHz



Test Data

Vertical Polarity Plot @3m

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin	Height	Degree
		(MHz)	(dBuV/m)		(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	( )
1	V	35.7491	37.00	QP	-4.49	32.51	40.00	-7.49	100	349
2	V	40.2757	40.90	peak	-7.77	33.13	40.00	-6.87	100	218
3	V	47.8260	43.27	peak	-12.20	31.07	40.00	-8.93	100	278
4	V	107.1337	39.05	peak	-9.52	29.53	43.50	-13.97	100	221
5	V	333.6867	36.93	peak	-5.93	31.00	46.00	-15.00	100	45
6	V	638.3686	38.01	peak	0.62	38.63	46.00	-7.37	100	207

Above 1GHz

Frequency (MHz)	Amplitude (dBμV/m)	Azimuth	Height (cm)	Polarity (H/V)	Factors (dB)	Limit (dBμV/m)	Margin (dB)	Detector (PK/AV)
1550.08	50.18	55	120	V	-21.30	74	-23.82	PK
2061.52	50.42	130	140	V	-22.47	74	-23.58	PK
1668.30	49.37	85	185	V	-22.72	74	-24.63	PK
2114.71	50.84	55	210	H	-22.12	74	-23.16	PK
2860.18	49.69	120	120	H	-22.55	74	-24.31	PK
1820.35	50.54	47	160	H	-23.48	74	-23.46	PK

*Note1: The highest frequency of the EUT is 2480 MHz, so the testing has been conformed to 5*2480MHz=12,400MHz.*

Note2: The frequency that above 3GHz is mainly from the environment noise.

Note3: The AV measurement performed, more than 20dB below limit so AV test data was not presented.

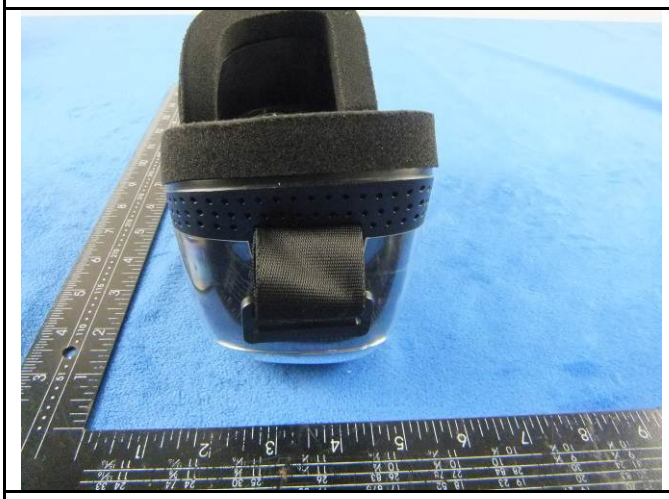
Annex A. TEST INSTRUMENT

Instrument	Model	Serial #	Cal Date	Cal Due	In use
AC Line Conducted Emissions					
EMI test receiver	ESCS30	8471241027	09/17/2015	09/16/2016	☑
Line Impedance Stabilization Network	LI-125A	191106	09/25/2015	09/24/2016	☑
Line Impedance Stabilization Network	LI-125A	191107	09/25/2015	09/24/2016	☑
LISN	ISN T800	34373	09/25/2015	09/24/2016	☑
Transient Limiter	LIT-153	531118	09/01/2015	08/31/2016	☑
Radiated Emissions					
EMI test receiver	ESL6	100262	09/17/2015	09/16/2016	☑
OPT 010 AMPLIFIER (0.1-1300MHz)	8447E	2727A02430	09/01/2015	08/31/2016	☑
Microwave Preamplifier (1 ~ 26.5GHz)	8449B	3008A02402	03/25/2015	03/24/2016	☑
Bilog Antenna (30MHz~6GHz)	JB6	A110712	09/21/2015	09/20/2016	☑
Double Ridge Horn Antenna	AH-118	71259	09/24/2015	09/23/2016	☑

Annex B. EUT And Test Setup Photographs

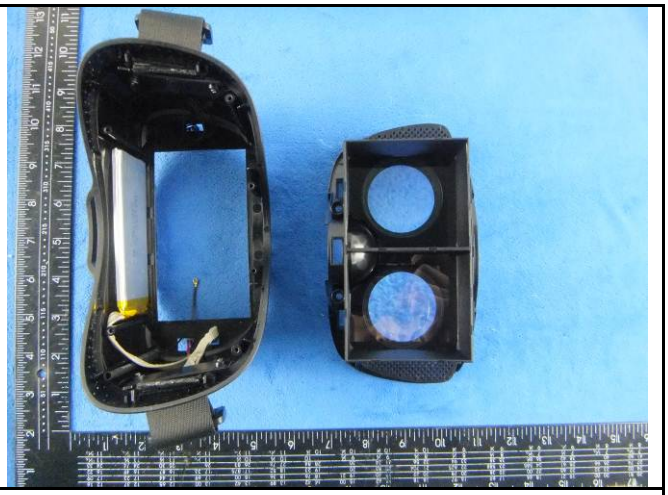
Annex B.i. Photograph: EUT External Photo

<table>
<tr><td>  </td><td> 
</td></tr>
<tr><td>Whole package - Front View</td><td>Adapter - Front View</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td>EUT - Front View</td><td>EUT - Rear View</td></tr>
</table>

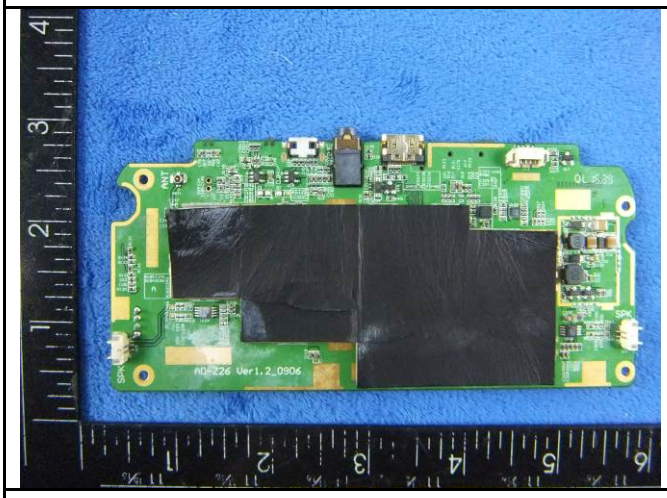
	
EUT - Top View	EUT - Bottom View
	
EUT - Left View	EUT - Right View

Annex B.ii. Photograph: EUT Internal Photo

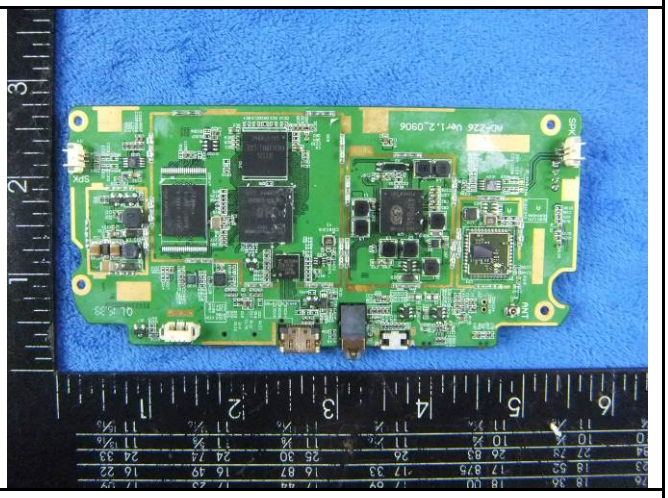
EUT - Uncover Front View 1



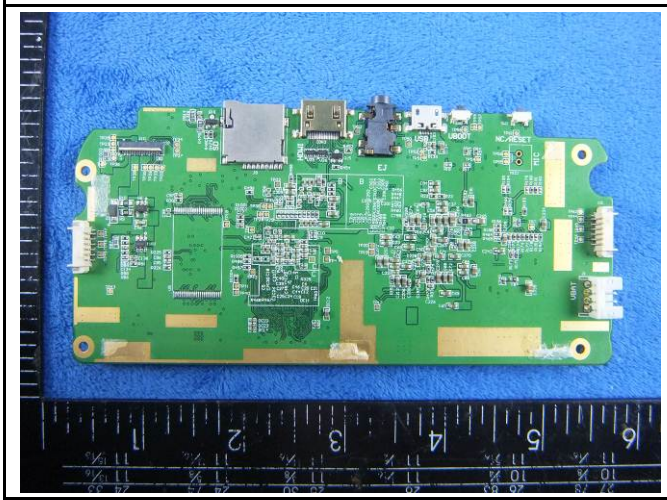
EUT - Uncover Front View 2



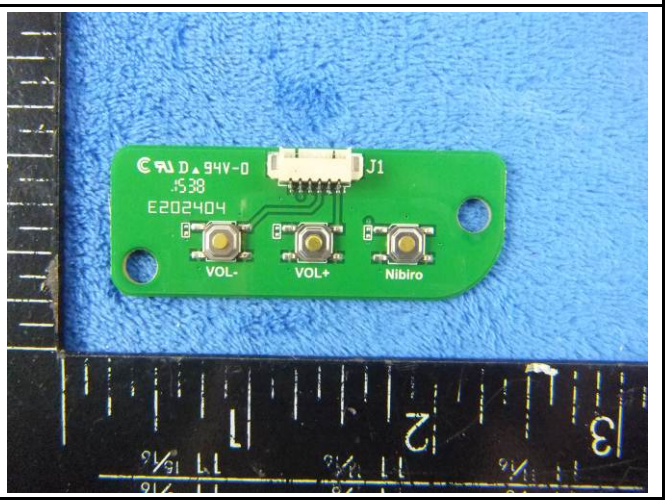
Mainboard with Shielding - Front View



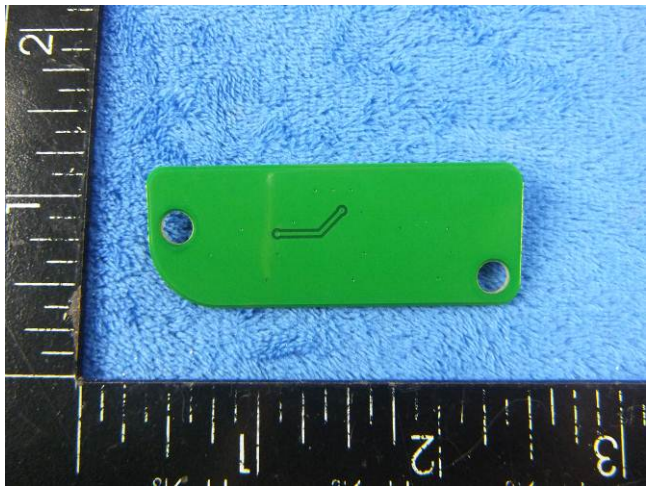
Mainboard without Shielding - Front View



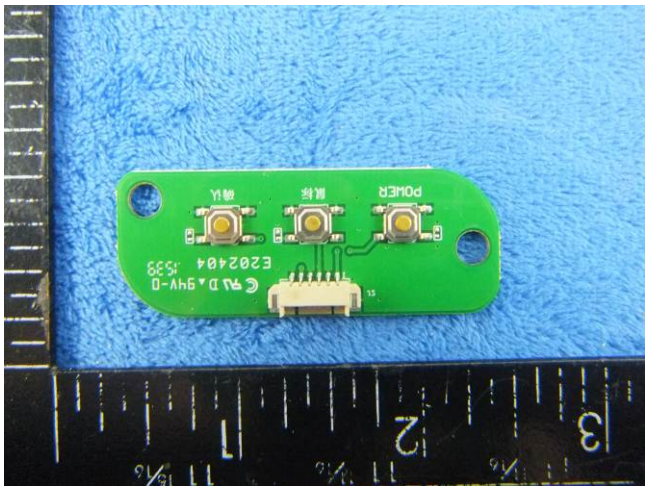
Mainboard - Rear View



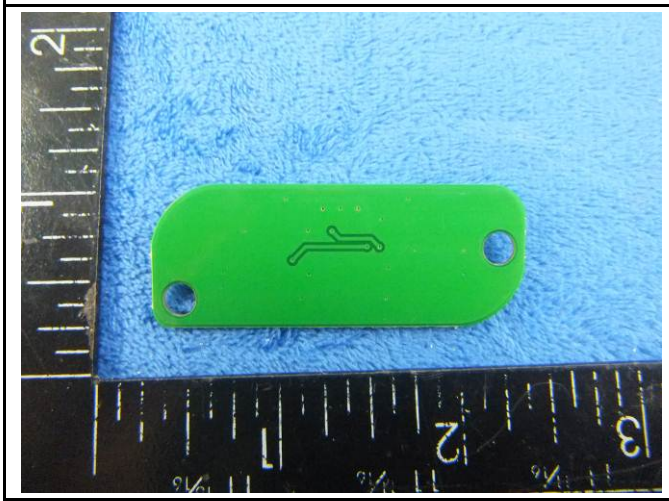
Mini Mainboard 1 - Front View



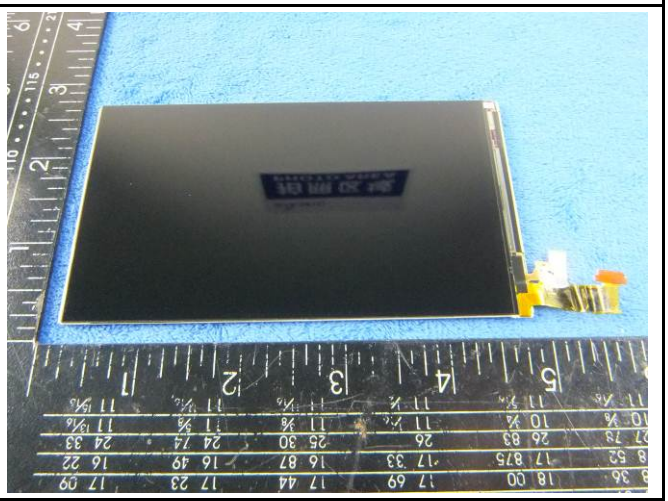
Mini Mainboard 1 -Rear View



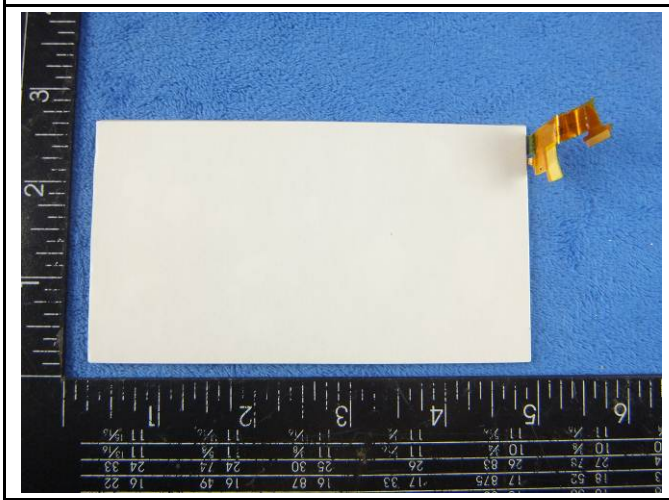
Mini Mainboard 2 - Front View



Mini Mainboard 2 -Rear View

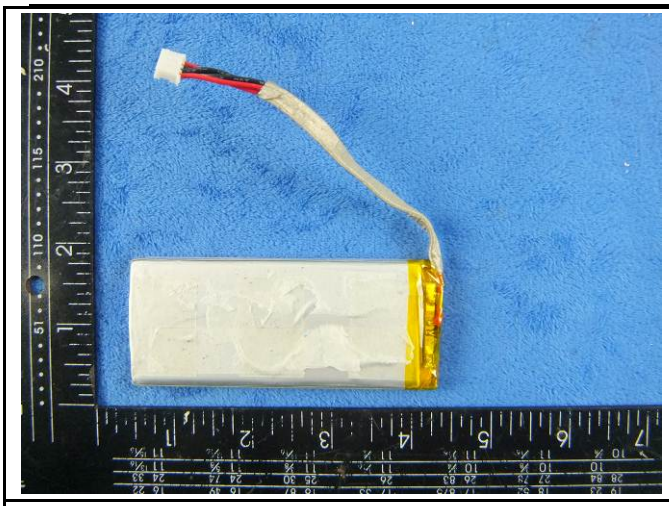
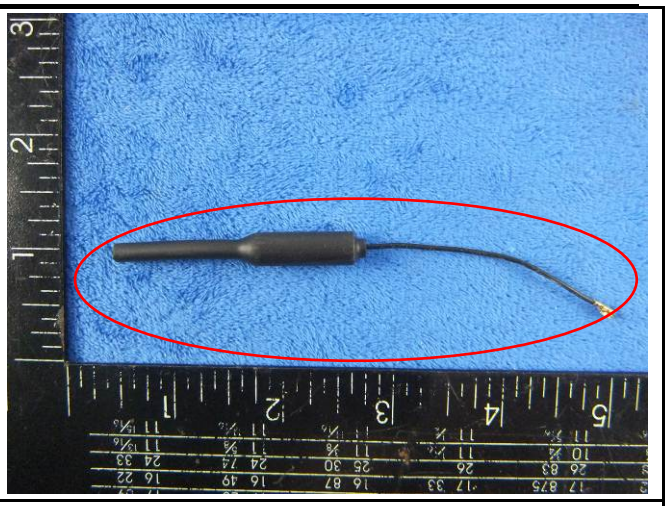


LCD - Front View

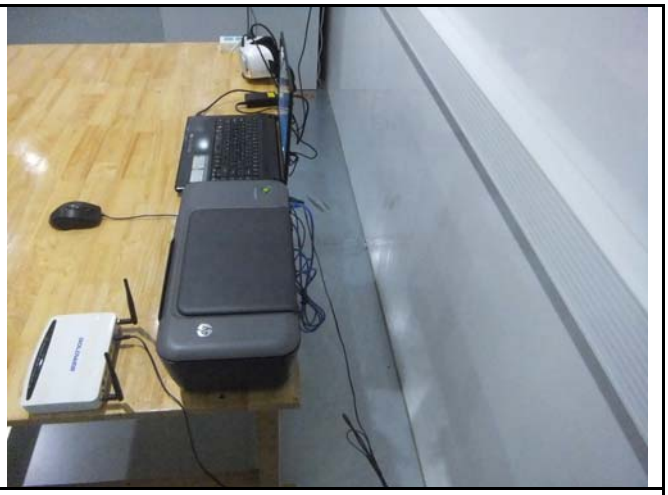
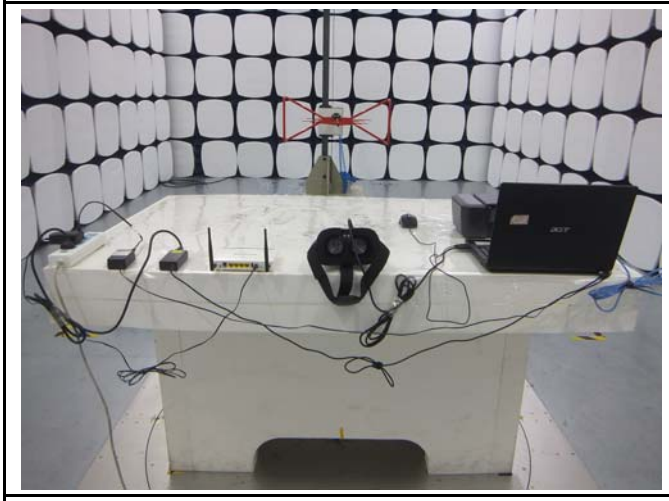
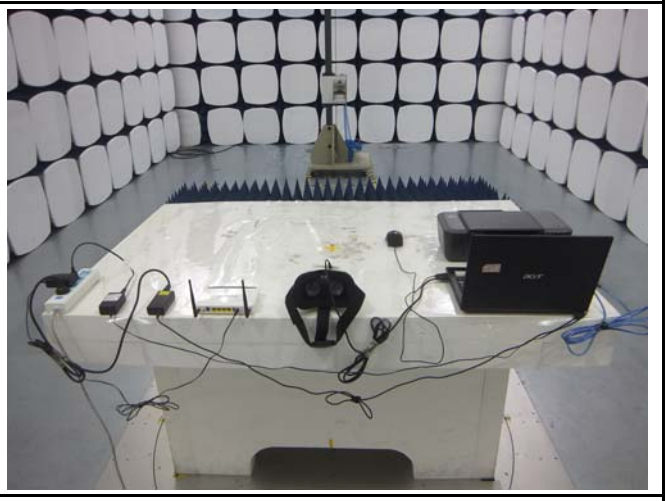


LCD – Rear View

Battery - Front View

	
Battery - Rear View	BT/WIFI Antenna View

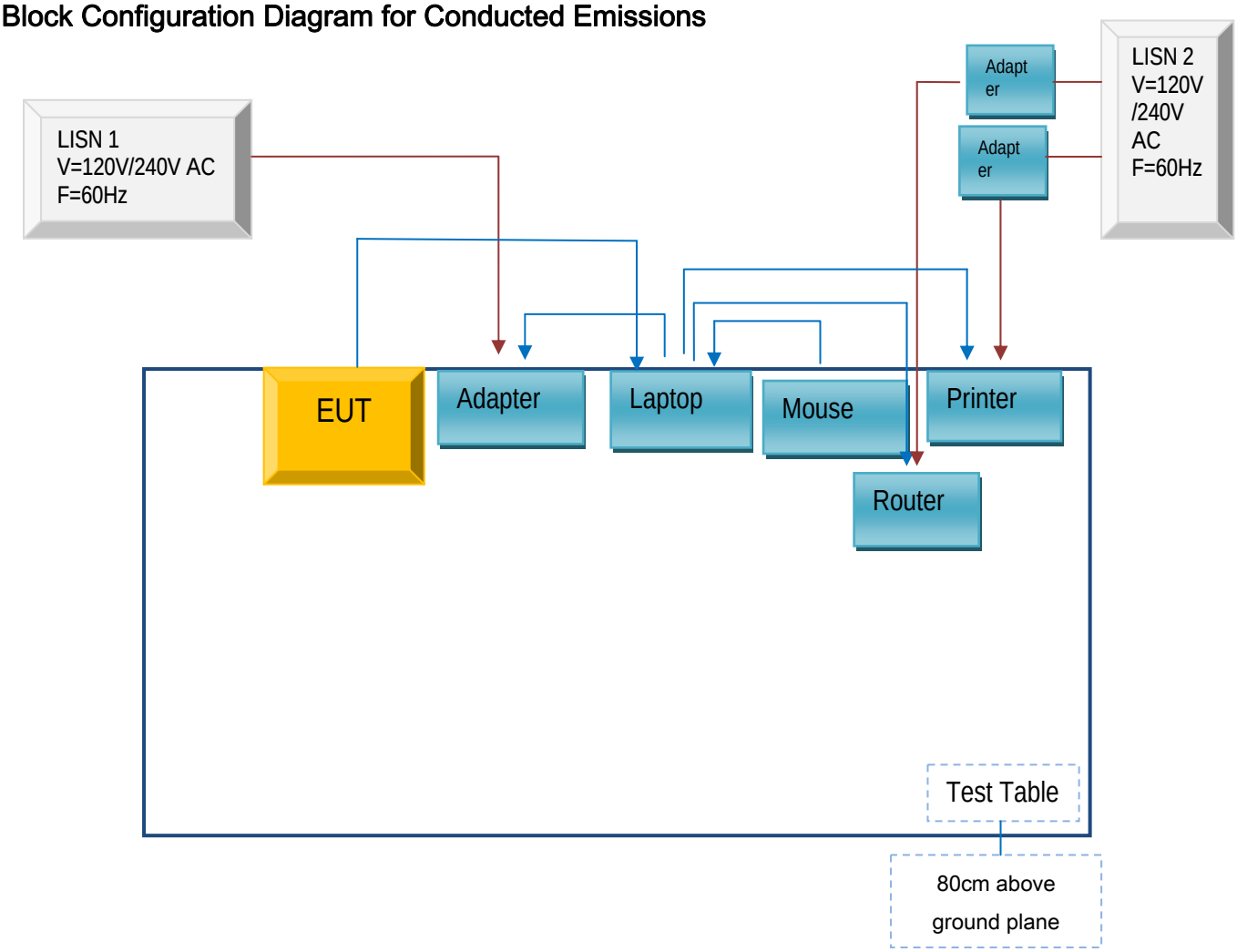
Annex B.iii. Photograph: Test Setup Photo

	
Conducted Emissions Test Setup – TF Card Front View	Conducted Emissions Test Setup – TF Card Side View
	
Radiated Emissions Test Setup Below 1GHz - TF Card Front View	Radiated Emissions Test Setup Above 1GHz - TF Card Side View

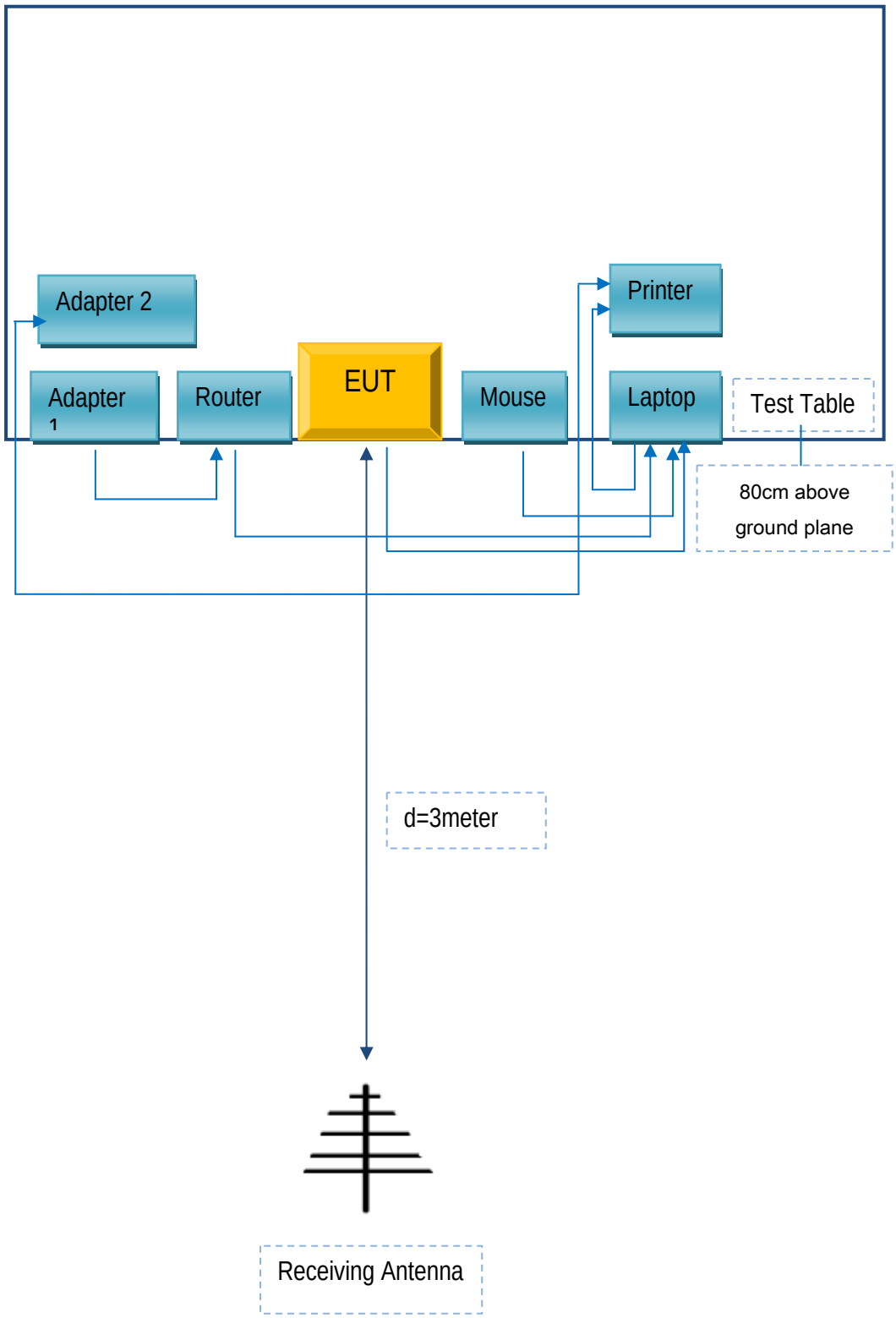
Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

Annex C.ii. TEST SET UP BLOCK

Block Configuration Diagram for Conducted Emissions



Block Configuration Diagram for Radiated Emissions



Annex C. il. SUPPORTING EQUIPMENT DESCRIPTION

The following is a description of supporting equipment and details of cables used with the EUT.

Supporting Euquipment:

Manufacturer	Equipment Description	Model	Serial No
Lenovo	Lenovo Laptop	E40& 0579A52	LR-1EHRX
GOLDWEB	Router	R102	1202032094
HP	Printer	VCVRA-1003	CN36M19JWX
DELL	Mouse	E100	912NMTUT41481
JETHRO TRADING LTD.	Adapter	HJ-050050-US	ST1274111

Supporting Cable:

Cable type	Shield Type	Ferrite Core	Length	Serial No
USB Cable	Un-shielding	No	2m	JX120051274
RJ45 Cable	Un-shielding	No	2m	KX156327541
Router Power cable	Un-shielding	No	2m	13274630Z
Printer Power cable	Un-shielding	No	2m	127581031
USB Cable	Un-shielding	No	0.8m	ST1274111

Annex D. User Manual / Block Diagram / Schematics / Partlist

N/A

Annex E. DECLARATION OF SIMILARITY

N/A