EMC TEST REPORT

Report No.: 18070273-FCC-E

Supersede Report No: N/A

Applicant	North of You, LLC
Product Name	Arsenal
Model No.	Madison
Serial No.	N/A
Test Standard	FCC Part 15 Subpart B Class B:2016, ANSI C63.4: 2014
Test Date	March 21 to March 25, 2018
Issue Date	March 26, 2018
Test Result	☑ Pass ☐ Fail
Equipment complied with the specification	☑
Equipment did not comply with the specification	☐

Evans He	David Huang	
Evans He 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

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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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1. Report Revision History

Report No.	Report Version	Description	Issue Date
18070273-FCC-E	NONE	Original	March 26, 2018

2. Customer information

Applicant Name	North of You, LLC
Applicant Add	2434 Lasso Ave, Bozeman MT, 59718 USA
Manufacturer	Computime Limited
Manufacturer Add	6/F, Building 20E, Hong Kong Science Park, 20 Hong Kong Science Park Avenue East, Shatin, New Territories, Hong Kong

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.	535293
IC Test Site No.	4842E-1
Test Software of Radiated Emission	Radiated Emission Program-To Shenzhen v2.0
Test Software of Conducted Emission	EZ-EMC(ver.lcp-03A1)

4. Equipment under Test (EUT) Information

Description of EUT:	Arsenal
Main Model:	Madison
Serial Model:	N/A
Antenna Gain:	WIFI: 0dBi
Antenna Type:	Internal antenna
Input Power:	Adapter: Model: ADS-6RA-06 05060EPCU-L Input: AC100-120V~50/60Hz, 0.3A Output: DC 5.0V,1.0A Battery: Spec: 3.7V, 1400mAh, 5.18Wh
Equipment Category：	JBP
Type of Modulation:	802.11b/g/n: DSSS, OFDM
RF Operating Frequency (ies):	WIFI: 802.11b/g/n(20M): 2412-2462 MHz WIFI: 802.11n(40M): 2422-2452 MHz
Number of Channels:	WIFI :802.11b/g/n(20M): 11CH WIFI :802.11n(40M): 7CH
Port:	Pls refer to the user’ s manual
Trade Name :	Arsenal
FCC ID:	2AOYX-NOYP1
Date EUT received:	March 20, 2018
Test Date(s):	March 21 to March 25, 2018

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

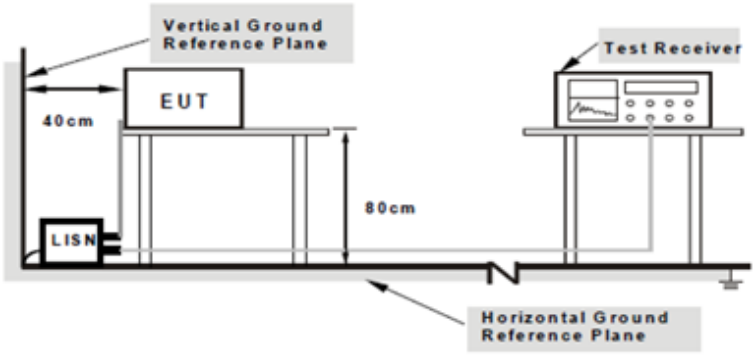
Parameter	Uncertainty
AC Power Line Conducted Emissions (150kHz~30MHz)	±3.11dB
Radiated Emission(30MHz~1GHz)	±5.12dB
Radiated Emission(1GHz~6GHz)	±5.34dB

6. Measurements, Examination And Derived Results

6.1 AC Power Line Conducted Emissions

Temperature	25 °C
Relative Humidity	57%
Atmospheric Pressure	1024mbar
Test date :	March 24, 2018
Tested By :	Evans He

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"> 

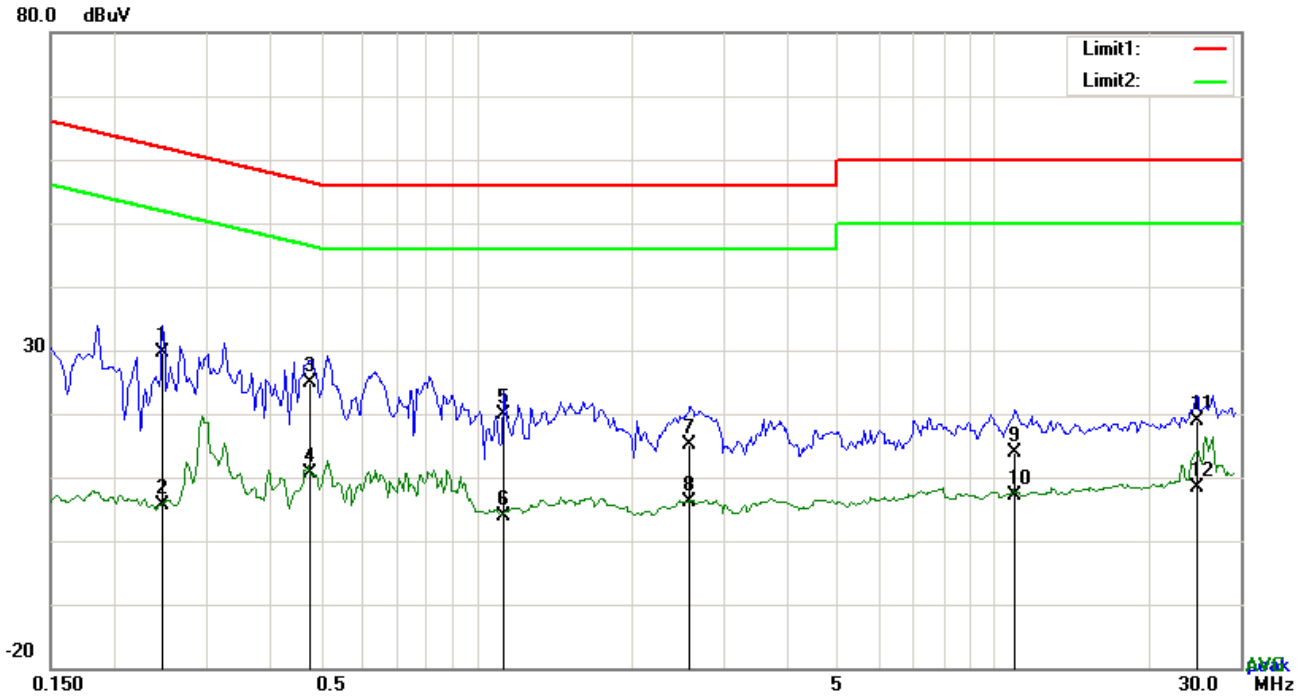
Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80cm from EUT and at least 80cm from other units and other metal planes support units.</td></tr>
<tr><td>Procedure</td><td colspan="3">1. The EUT and supporting equipment were set up in accordance with the requirements of 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 50Ω /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 :	ON and Charging

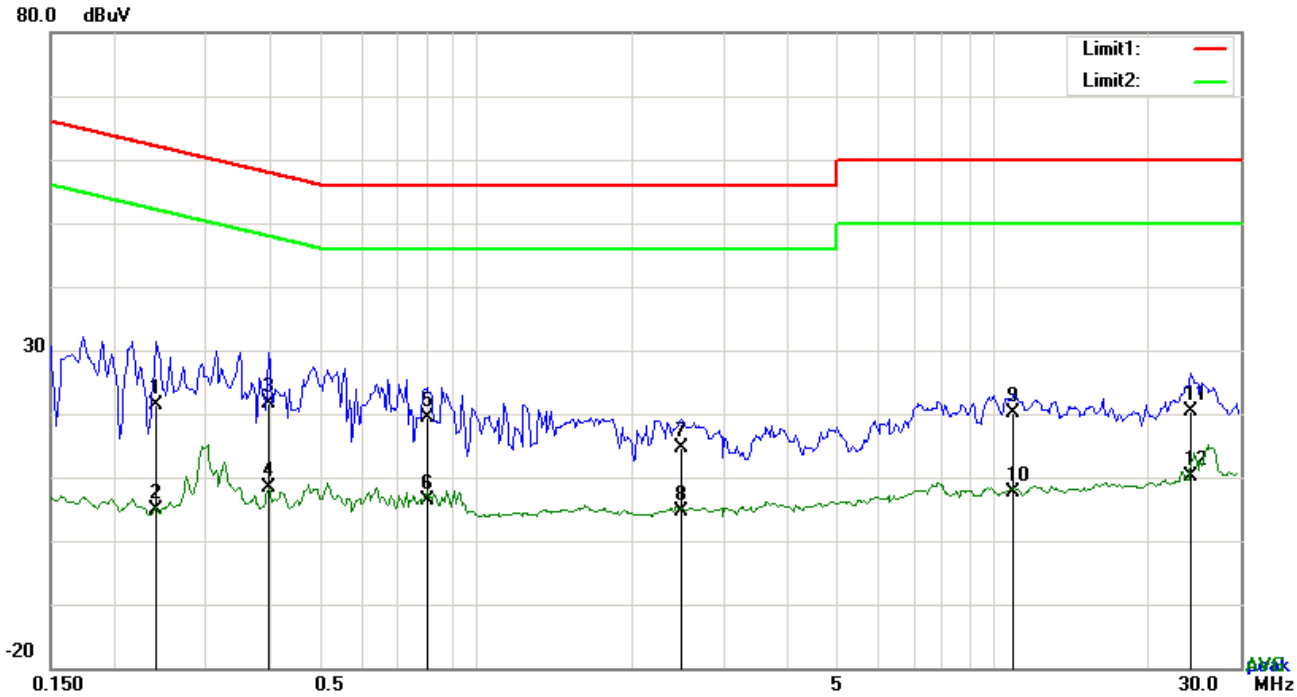


Test Data

Phase Line Plot at 120Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	L1	0.2475	19.50	QP	10.02	29.52	61.84	-32.32
2	L1	0.2475	-4.48	AVG	10.02	5.54	51.84	-46.30
3	L1	0.4776	14.81	QP	10.02	24.83	56.38	-31.55
4	L1	0.4776	0.54	AVG	10.02	10.56	46.38	-35.82
5	L1	1.1289	9.89	QP	10.03	19.92	56.00	-36.08
6	L1	1.1289	-6.24	AVG	10.03	3.79	46.00	-42.21
7	L1	2.5914	5.15	QP	10.05	15.20	56.00	-40.80
8	L1	2.5914	-3.94	AVG	10.05	6.11	46.00	-39.89
9	L1	10.9716	3.75	QP	10.15	13.90	60.00	-46.10
10	L1	10.9716	-3.10	AVG	10.15	7.05	50.00	-42.95
11	L1	24.7503	8.66	QP	10.34	19.00	60.00	-41.00
12	L1	24.7503	-1.99	AVG	10.34	8.35	50.00	-41.65

Test Mode :	ON and Charging

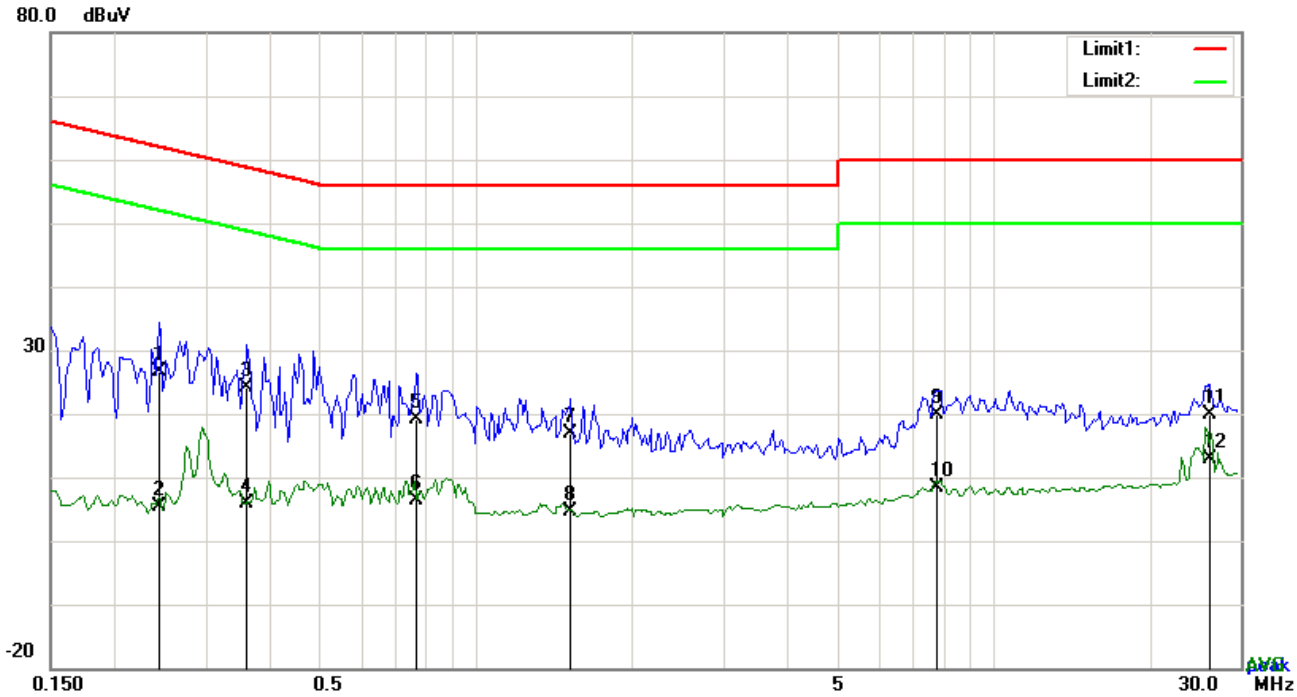


Test Data

Phase Neutral Plot at 120Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	N	0.2397	11.34	QP	10.02	21.36	62.11	-40.75
2	N	0.2397	-5.23	AVG	10.02	4.79	52.11	-47.32
3	N	0.3957	11.50	QP	10.02	21.52	57.94	-36.42
4	N	0.3957	-1.66	AVG	10.02	8.36	47.94	-39.58
5	N	0.8013	9.30	QP	10.03	19.33	56.00	-36.67
6	N	0.8013	-3.53	AVG	10.03	6.50	46.00	-39.50
7	N	2.4900	4.58	QP	10.04	14.62	56.00	-41.38
8	N	2.4900	-5.35	AVG	10.04	4.69	46.00	-41.31
9	N	10.9053	9.87	QP	10.15	20.02	60.00	-39.98
10	N	10.9053	-2.60	AVG	10.15	7.55	50.00	-42.45
11	N	24.0444	10.09	QP	10.32	20.41	60.00	-39.59
12	N	24.0444	-0.09	AVG	10.32	10.23	50.00	-39.77

Test Mode :	ON and Charging

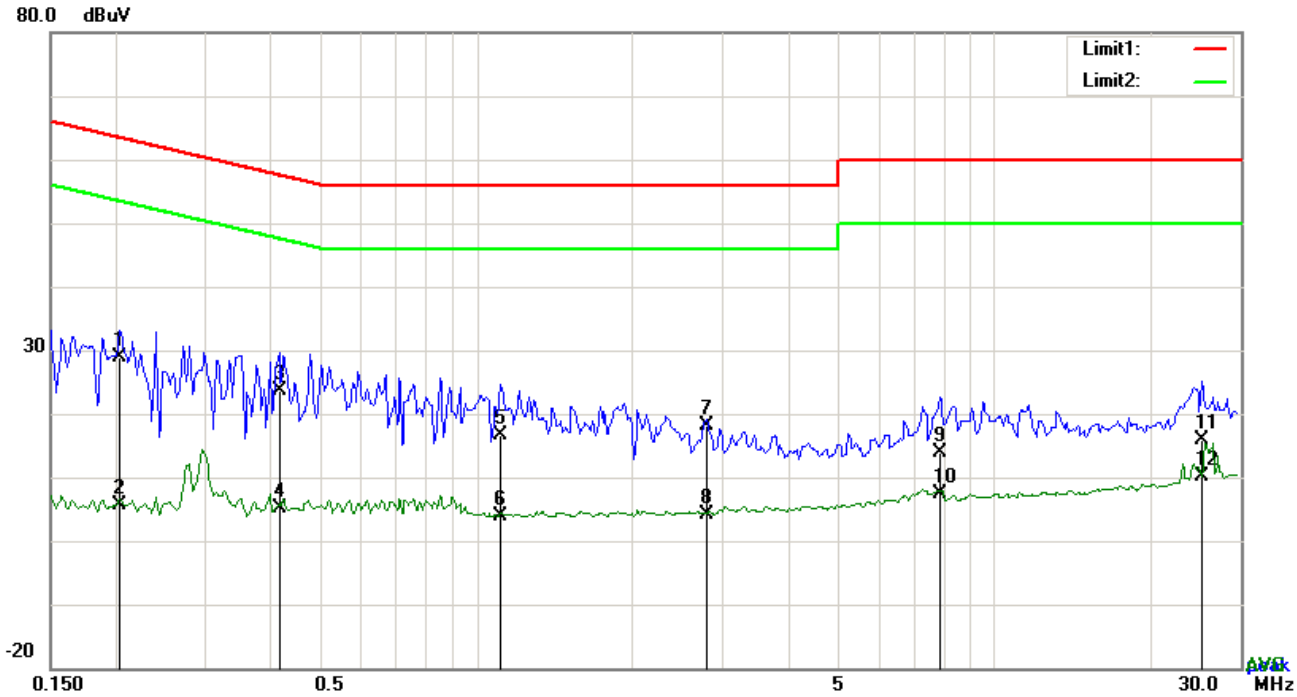


Test Data

Phase Line Plot at 240Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	L1	0.2436	16.58	QP	10.02	26.60	61.97	-35.37
2	L1	0.2436	-4.55	AVG	10.02	5.47	51.97	-46.50
3	L1	0.3606	14.22	QP	10.02	24.24	58.71	-34.47
4	L1	0.3606	-4.07	AVG	10.02	5.95	48.71	-42.76
5	L1	0.7662	9.15	QP	10.03	19.18	56.00	-36.82
6	L1	0.7662	-3.58	AVG	10.03	6.45	46.00	-39.55
7	L1	1.5228	6.80	QP	10.04	16.84	56.00	-39.16
8	L1	1.5228	-5.51	AVG	10.04	4.53	46.00	-41.47
9	L1	7.7931	9.87	QP	10.11	19.98	60.00	-40.02
10	L1	7.7931	-1.83	AVG	10.11	8.28	50.00	-41.72
11	L1	26.1816	9.61	QP	10.36	19.97	60.00	-40.03
12	L1	26.1816	2.49	AVG	10.36	12.85	50.00	-37.15

Test Mode :	ON and Charging



Test Data

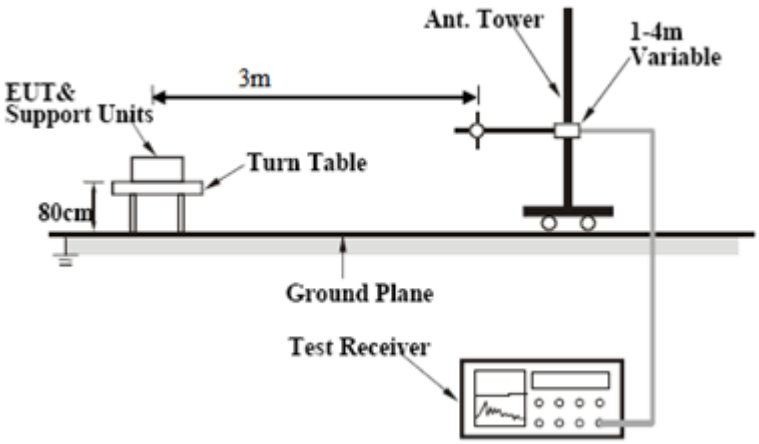
Phase Neutral Plot at 240Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	N	0.2046	18.87	QP	10.02	28.89	63.42	-34.53
2	N	0.2046	-4.47	AVG	10.02	5.55	53.42	-47.87
3	N	0.4152	13.56	QP	10.02	23.58	57.54	-33.96
4	N	0.4152	-4.82	AVG	10.02	5.20	47.54	-42.34
5	N	1.1133	6.66	QP	10.03	16.69	56.00	-39.31
6	N	1.1133	-6.24	AVG	10.03	3.79	46.00	-42.21
7	N	2.7825	8.08	QP	10.05	18.13	56.00	-37.87
8	N	2.7825	-5.86	AVG	10.05	4.19	46.00	-41.81
9	N	7.8867	3.82	QP	10.11	13.93	60.00	-46.07
10	N	7.8867	-2.84	AVG	10.11	7.27	50.00	-42.73
11	N	25.2066	5.58	QP	10.34	15.92	60.00	-44.08
12	N	25.2066	-0.25	AVG	10.34	10.09	50.00	-39.91

6.2 Radiated Emissions

Temperature	25 °C
Relative Humidity	57%
Atmospheric Pressure	1024mbar
Test date :	March 24, 2018
Tested By :	Evans He

Requirement(s):

<table>
<tr><th>Spec</th><th>Item</th><th>Requirement</th><th>Applicable</th></tr>
<tr><td>47CFR§15.109(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>

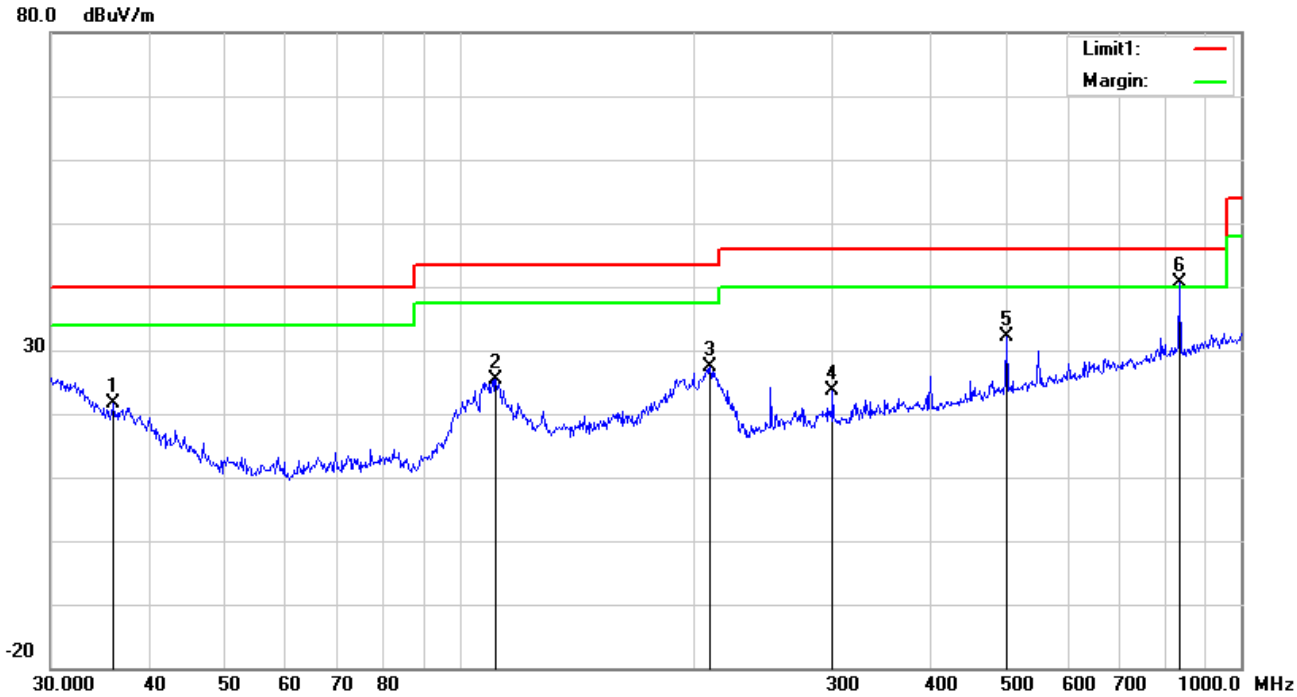
	over a full rotation of the EUT) was chosen. b. The EUT was then rotated to the direction that gave the maximum emission. c. Finally, the antenna height was adjusted to the height that gave the maximum emission. 3. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 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 :	ON and Charging

Below 1GHz

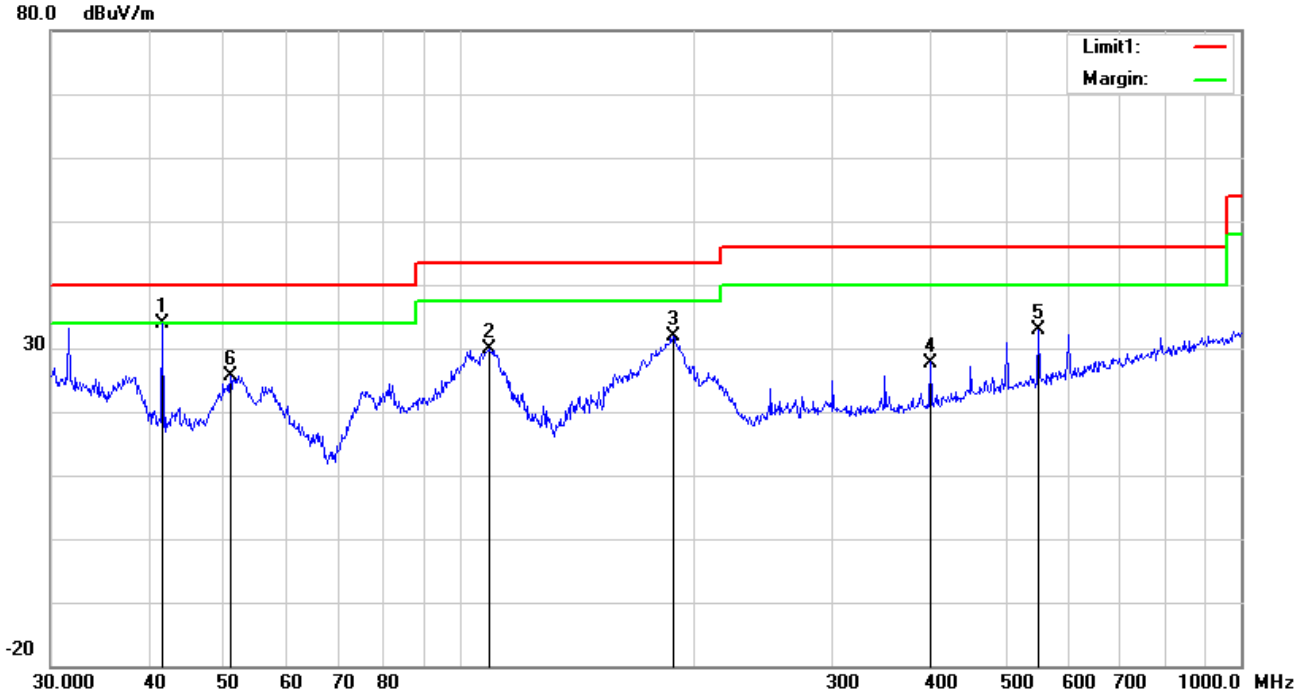


Test Data

Horizontal Polarity Plot @3m

No.	P/L	Frequency	Reading	Detector	Ant_F	PA_G	Cab_L	Result	Limit	Margin	Height	Degree
		(MHz)	(dBuV/m)		(dB/m)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	( )
1	H	36.1272	26.27	peak	16.73	22.26	0.77	21.51	40.00	-18.49	100	198
2	H	111.3468	34.15	peak	12.39	22.34	1.17	25.37	43.50	-18.13	100	313
3	H	209.3129	36.28	peak	11.97	22.36	1.57	27.46	43.50	-16.04	100	35
4	H	300.3673	30.49	peak	13.61	22.29	1.79	23.60	46.00	-22.40	100	65
5	H	501.1790	33.76	peak	17.72	21.81	2.42	32.09	46.00	-13.91	100	318
6	H	833.3171	36.98	QP	21.77	21.06	2.90	40.59	46.00	-5.41	100	281

Below 1GHz



Test Data

Vertical Polarity Plot @3m

No.	P/L	Frequency	Reading	Detector	Ant_F	PA_G	Cab_L	Result	Limit	Margin	Height	Degree
		(MHz)	(dBuV/m)		(dB/m)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	( )
1	V	41.7130	42.50	peak	12.77	22.28	0.78	33.77	40.00	-6.23	100	171
2	V	109.4116	38.94	peak	12.05	22.34	1.17	29.82	43.50	-13.68	100	345
3	V	187.7530	41.15	peak	11.43	22.30	1.50	31.78	43.50	-11.72	200	94
4	V	400.4319	32.04	peak	15.71	22.01	2.01	27.75	46.00	-18.25	100	233
5	V	550.9480	33.74	peak	18.41	21.69	2.48	32.94	46.00	-13.06	100	168
6	V	50.9420	38.87	peak	8.30	22.38	0.80	25.59	40.00	-14.41	100	127

Above 1GHz

Frequency (MHz)	Read_level (dBμV/m)	Azimuth	Height (cm)	Polarity (H/V)	Level (dBμV/m)	Factors (dB)	Limit (dBμV/m)	Margin (dB)	Detector (PK/AV)
1873.78	65.19	126	100	V	-15.41	49.78	74	-24.22	PK
2311.2	59.42	148	100	V	-13.47	45.95	74	-28.05	PK
1069.03	70.78	337	100	V	-19.86	50.92	74	-23.08	PK
3120.12	60.38	233	100	H	-13.49	46.89	74	-27.11	PK
1996.98	65.94	221	100	H	-14.63	51.31	74	-22.69	PK
3799.58	59.18	307	100	H	-10.34	48.84	74	-25.16	PK

*Note1: The highest frequency of the EUT is 2462 MHz, so the testing has been conformed to 5*2462MHz=12,310MHz.*

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

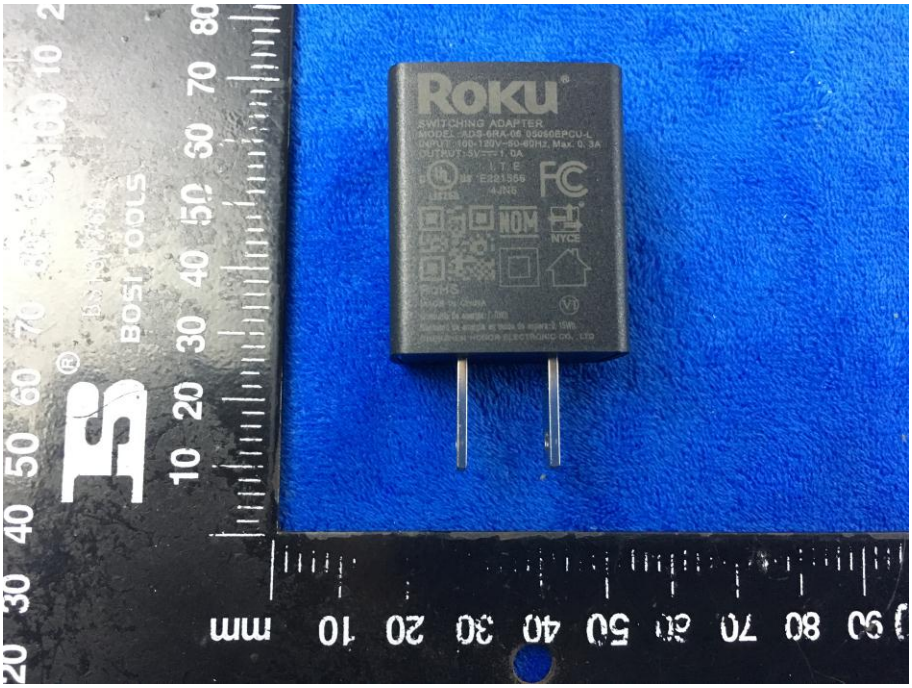
Instrument	Model	Serial #	Cal Date	Cal Due	In use
AC Line Conducted Emissions					
EMI test receiver	ESCS30	8471241027	09/15/2017	09/14/2018	☑
Line Impedance Stabilization Network	LI-125A	191106	09/23/2017	09/22/2018	☑
Line Impedance Stabilization Network	LI-125A	191107	09/23/2017	09/22/2018	☑
ISN	ISN T800	34373	09/23/2017	09/22/2018	☐
Transient Limiter	LIT-153	531118	08/30/2017	08/29/2018	☑
Radiated Emissions					
EMI test receiver	ESL6	100262	09/15/2017	09/14/2018	☑
OPT 010 AMPLIFIER (0.1-1300MHz)	8447E	2727A02430	08/30/2017	08/29/2018	☑
Microwave Preamplifier (1 ~ 26.5GHz)	8449B	3008A02402	03/23/2017	03/22/2018	☑
Bilog Antenna (30MHz~6GHz)	JB6	A110712	09/19/2017	09/18/2018	☑
Double Ridge Horn Antenna	AH-118	71259	09/22/2017	09/21/2018	☑

Annex B. EUT And Test Setup Photographs

Annex B.i. Photograph: EUT External Photo

Whole Package View

Adapter - Lable View



EUT - Front View

EUT - Rear View

EUT - Top View

EUT - Bottom View

EUT - Left View

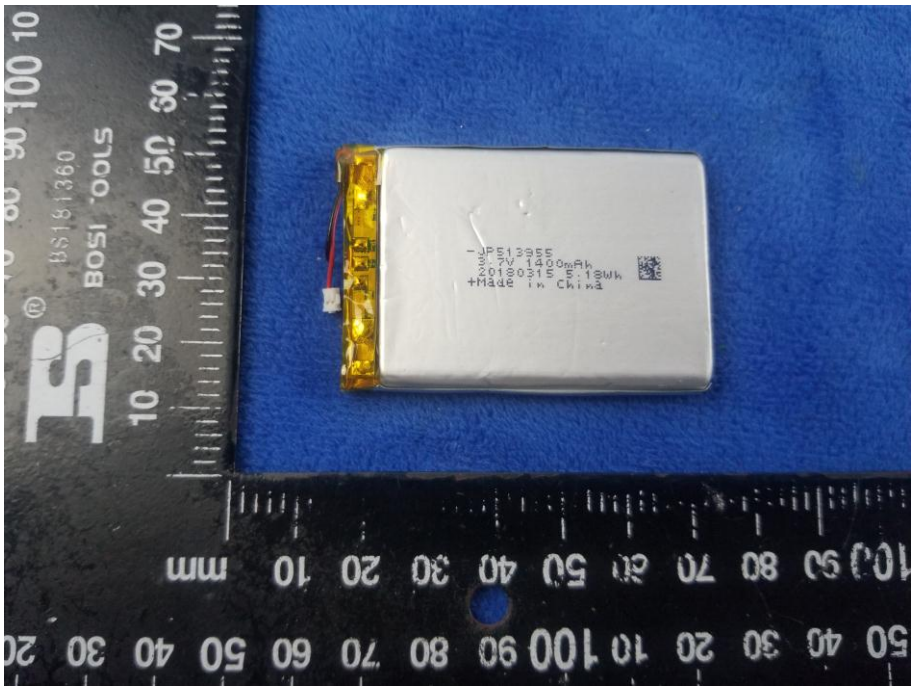
EUT - Right View

Annex B.ii. Photograph: EUT Internal Photo

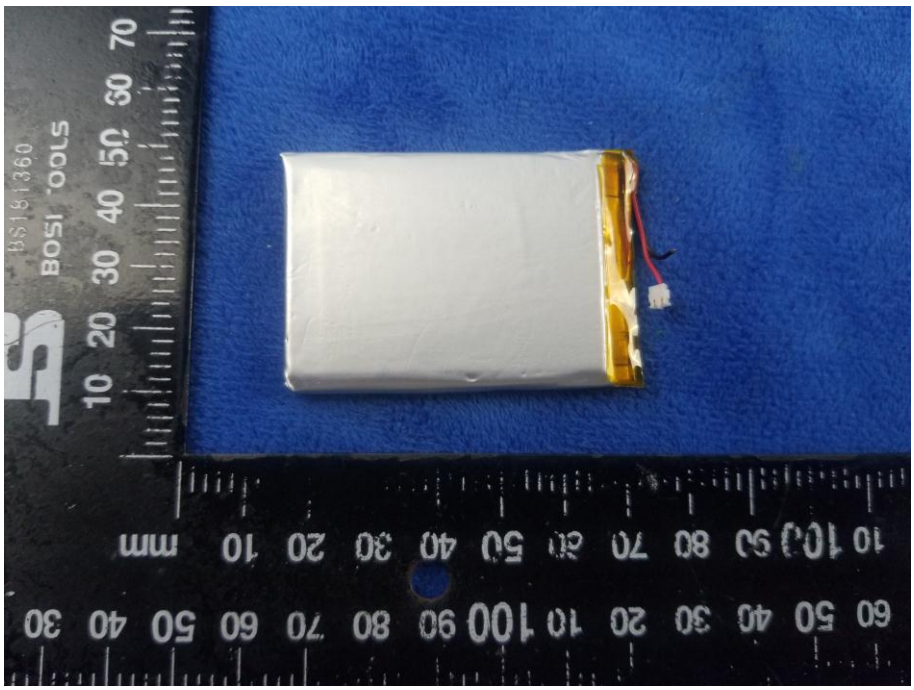
Cover Off - Top View 1

Cover Off - Top View 2

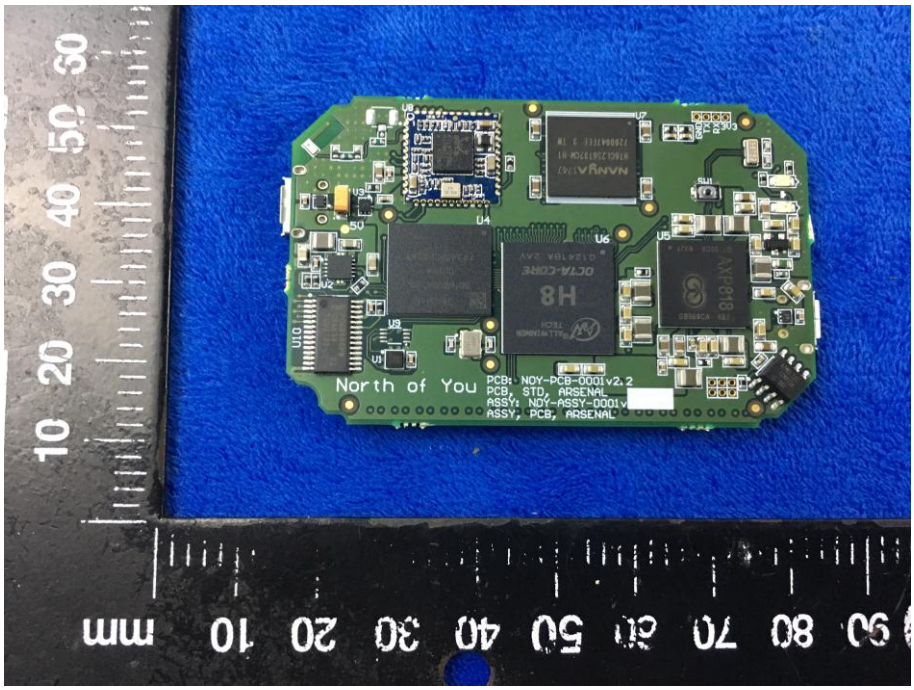
Battery - Front View



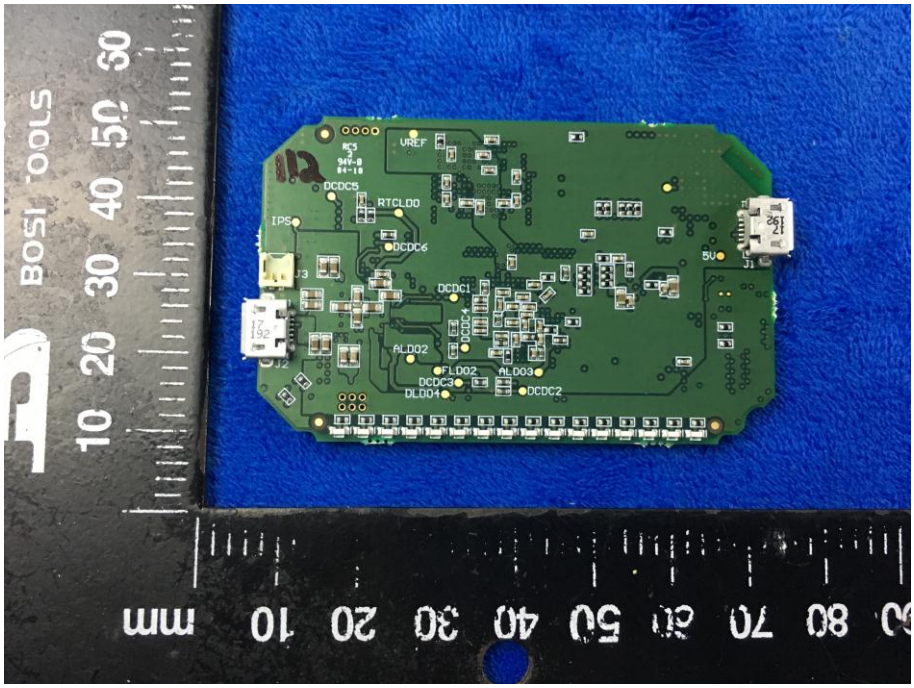
Battery - Rear View



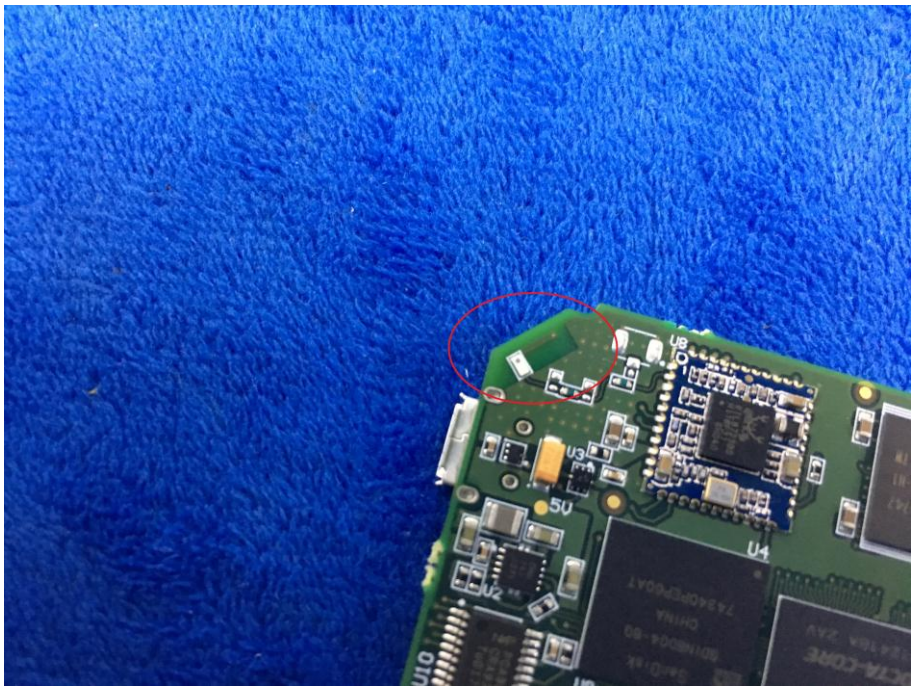
Mainboard – Front View



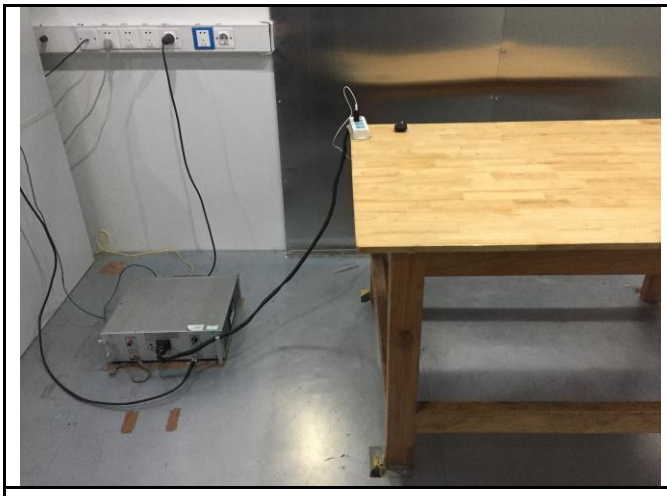
Mainboard – Rear View



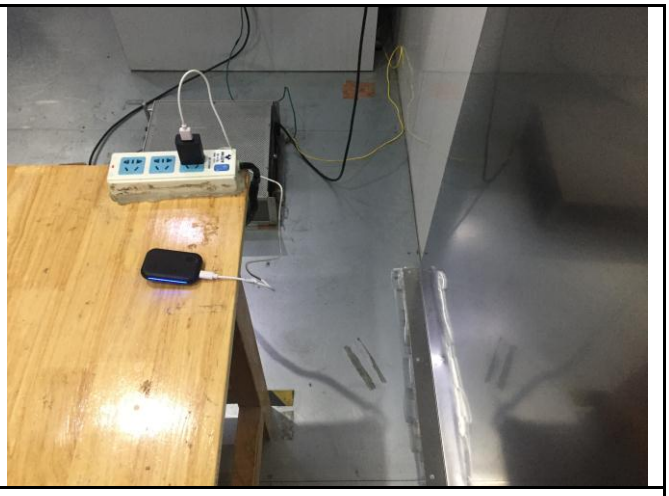
WIFI - Antenna View



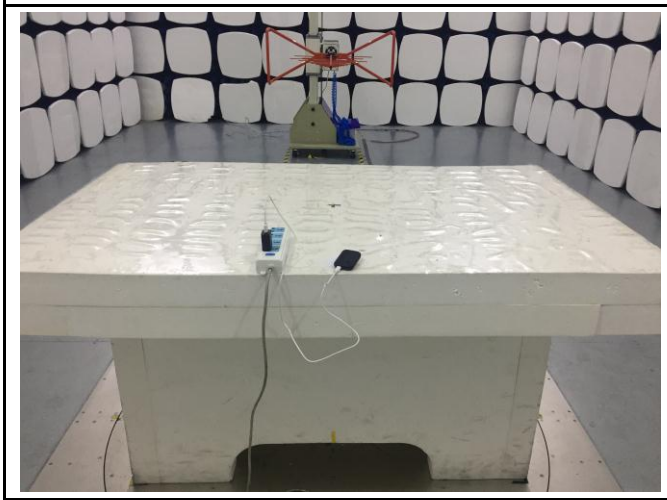
Annex B.iii. Photograph: Test Setup Photo



Conducted Emissions Test Setup – Front View



Conducted Emissions Test Setup – Side View



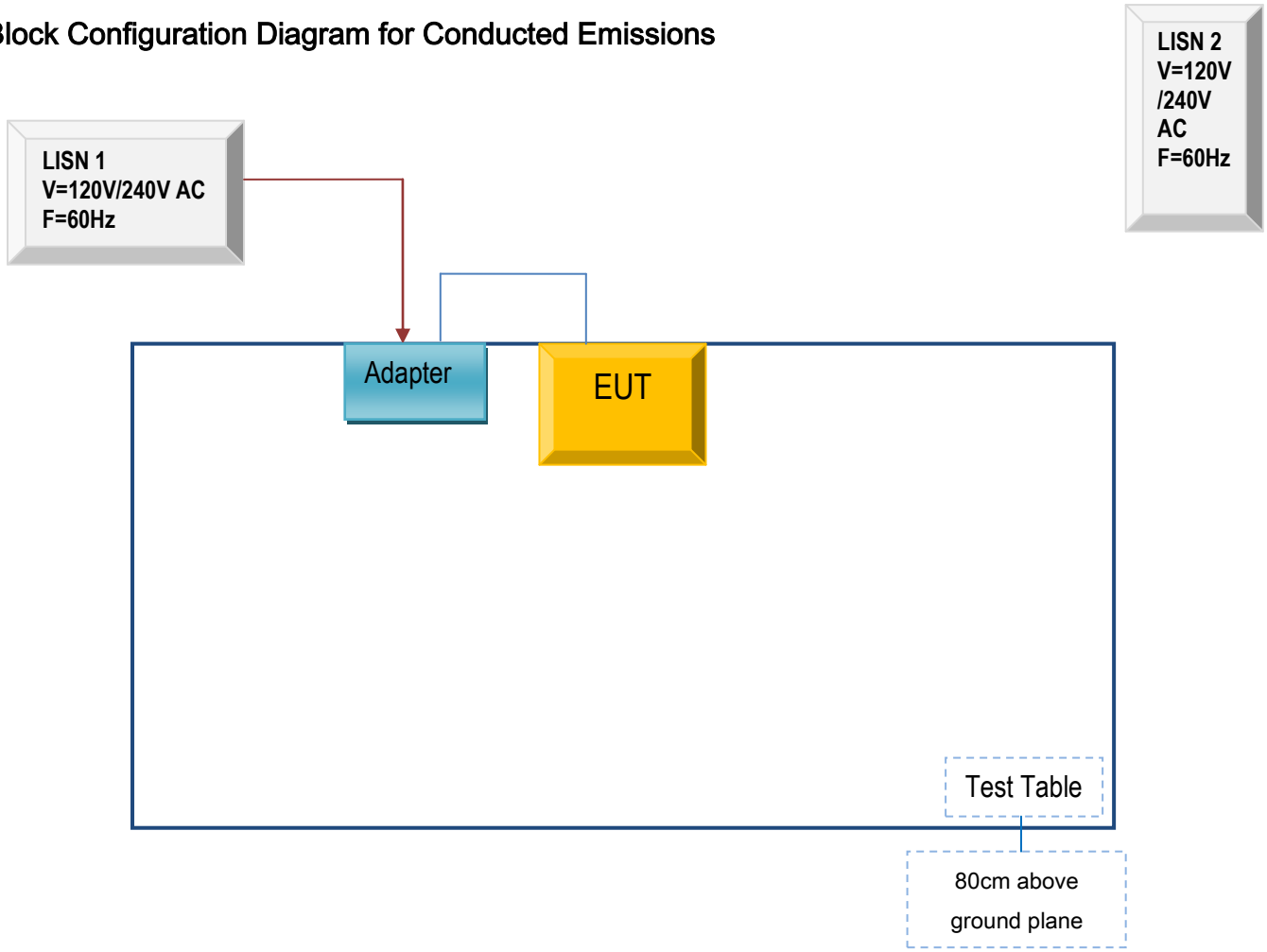
Radiated Emissions Test Setup Below 1GHz

Radiated Emissions Test Setup Above 1GHz

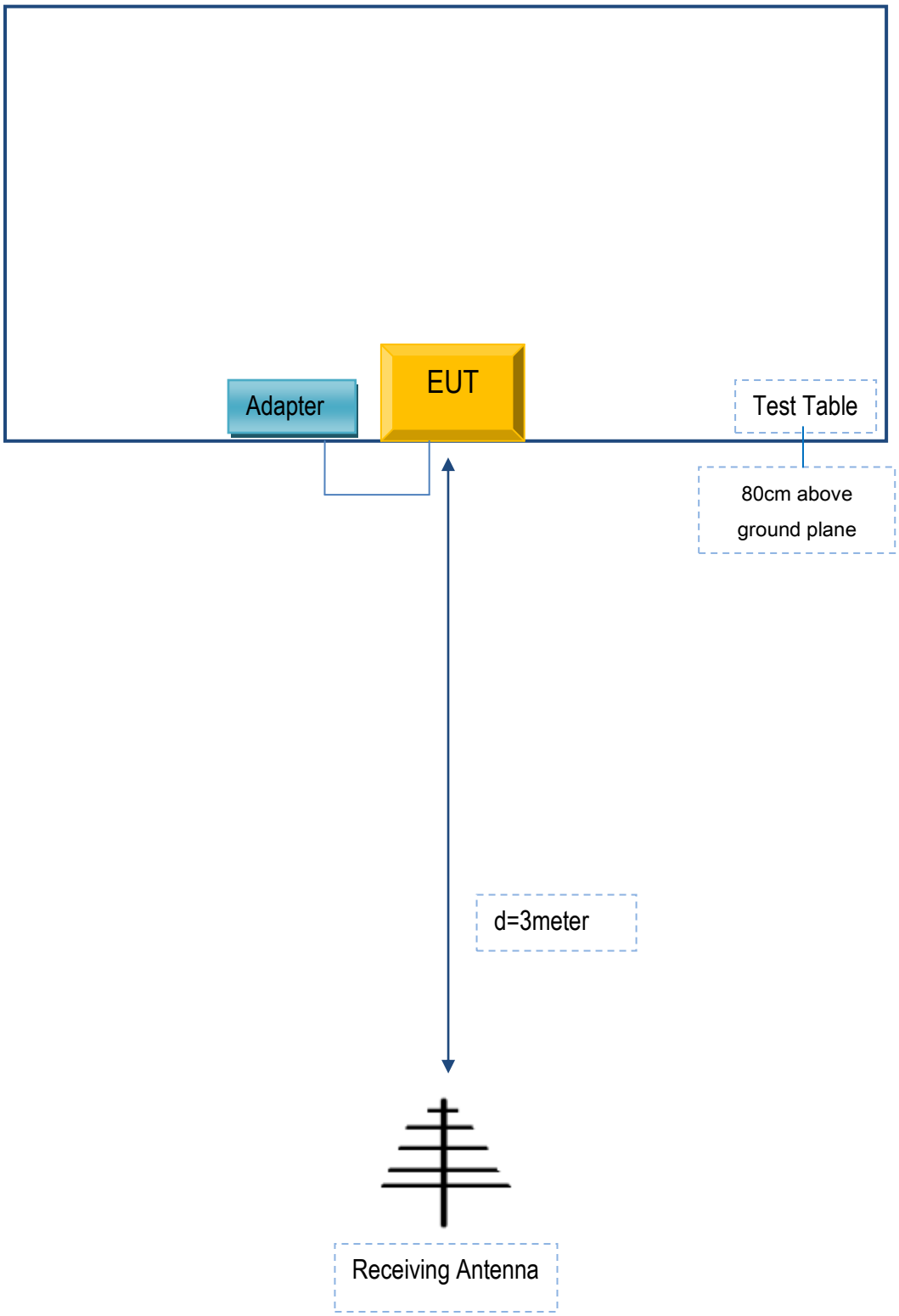
Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

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 Equipment:

Manufacturer	Equipment Description	Model	Serial No
North of You, LLC	Adapter	ADS-6RA-06 05060EPCU-L	N/A

Supporting Cable:

Cable type	Shield Type	Ferrite Core	Length	Serial No
USB Cable	Un-shielding	No	2m	N/A

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

Please see the attachment

Annex E. DECLARATION OF SIMILARITY

N/A