EMC TEST REPORT

Report No.: 18071055-FCC-E

Supersede Report No: N/A

Applicant	MOBIWIRE MOBILES (NINGBO) CO.,LTD
Product Name	3G feature phone
Model No.	HW3020
Serial No.	N/A
Test Standard	FCC Part 15 Subpart B Class B, ANSI C63.4: 2014
Test Date	November 20 to December 04, 2018
Issue Date	December 07, 2018
Test Result	☑ Pass ☐ Fail
Equipment complied with the specification	☑
Equipment did not comply with the specification	☐

Evans He	David Huang	
Test Engineer	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

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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
18071055-FCC-E	NONE	Original	December 07, 2018

2. Customer information

Applicant Name	MOBIWIRE MOBILES (NINGBO) CO.,LTD
Applicant Add	Ningbo Fenghua No.999,Dacheng East Road,Fenghua,Zhejiang,China
Manufacturer	MOBIWIRE MOBILES (NINGBO) CO.,LTD
Manufacturer Add	Ningbo Fenghua No.999,Dacheng East Road,Fenghua,Zhejiang,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.	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.Icp-03A1)

4. Equipment under Test (EUT) Information

Description of EUT:	3G feature phone
Main Model:	HW3020
Serial Model:	N/A
Antenna Gain:	GSM850: -1dBi PCS1900: -0.5dBi UMTS-FDD Band V: -1dBi UMTS-FDD Band II: -0.5dBi
Antenna Type:	PIFA antenna
Equipment Category：	JBP
Type of Modulation:	GSM / GPRS: GMSK UMTS-FDD: QPSK
RF Operating Frequency (ies):	GSM850 TX: 824.2 ~ 848.8 MHz; RX: 869.2 ~ 893.8 MHz PCS1900 TX: 1850.2 ~ 1909.8 MHz; RX: 1930.2 ~ 1989.8 MHz UMTS-FDD Band V TX: 826.4 ~ 846.6 MHz; RX: 871.4 ~ 891.6 MHz UMTS-FDD Band II TX:1852.4 ~ 1907.6 MHz; RX: 1932.4 ~ 1987.6 MHz
Number of Channels:	GSM 850: 124CH PCS1900: 299CH UMTS-FDD Band V: 102CH UMTS-FDD Band II: 277CH
Input Power:	Adapter : Model: A31A-050055U-US1 Input: AC100-240V~50/60Hz,0.2A Output: DC 5.0V, 550mA Battery : Model: HW3020

	Spec: 3.7V, 800mAh/2.96Wh Limited charge voltage: 4.2V
Port:	Please refer to the user’ s manual
Trade Name :	bind.u
FCC ID:	2ADA4HW3020
Date EUT received:	November 19, 2018
Test Date(s):	November 20 to December 04, 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

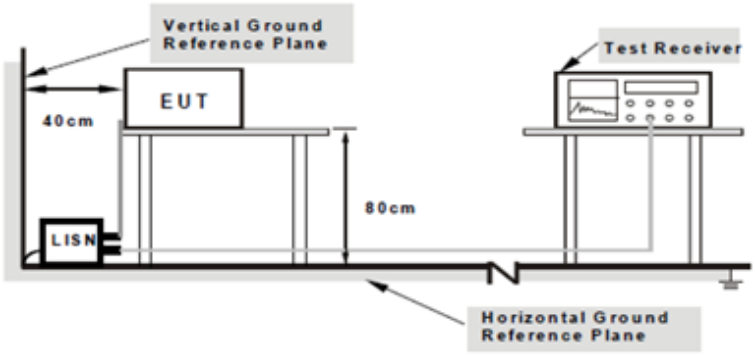
Parameter	Uncertainty
AC Power Line Conducted Emissions (150kHz~30MHz)	±3.11dB
Radiated Emission(30MHz~1GHz)	±5.12dB
Radiated Emission(1GHz~6GHz)	±5.34dB

6. Measurements, Examination And Derived Results

6.1 AC Power Line Conducted Emissions

Temperature	26°C
Relative Humidity	59%
Atmospheric Pressure	1015mbar
Test date :	December 03, 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"> 

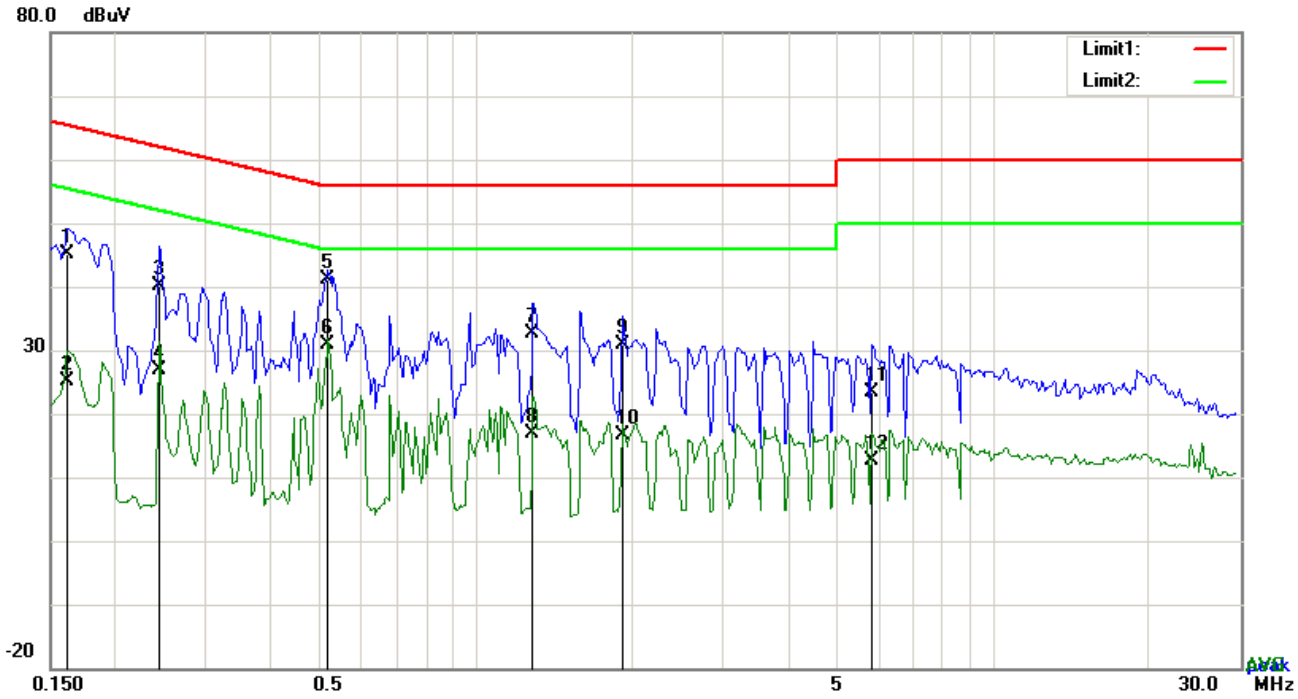
Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80cm from EUT and at least 80cm from other units and other metal planes support units.</td></tr>
<tr><td>Procedure</td><td colspan="3">1. The EUT and supporting equipment were set up in accordance with the requirements of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

Test Data ☑ Yes ☐ N/A

Test Plot ☑ Yes (See below) ☐ N/A

Test Mode :	Charging Mode

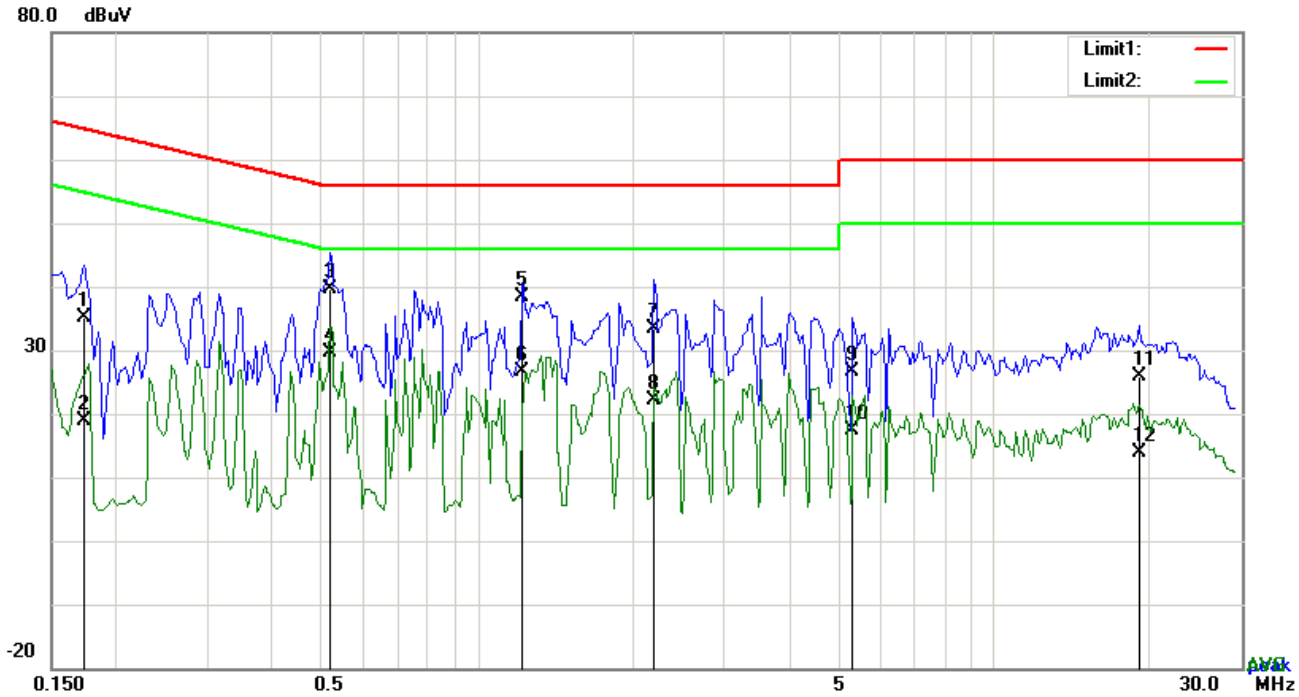


Test Data

Phase Line Plot at 120Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	L1	0.1617	34.99	QP	10.03	45.02	65.38	-20.36
2	L1	0.1617	15.12	AVG	10.03	25.15	55.38	-30.23
3	L1	0.2436	30.22	QP	10.03	40.25	61.97	-21.72
4	L1	0.2436	16.94	AVG	10.03	26.97	51.97	-25.00
5	L1	0.5166	31.20	QP	10.03	41.23	56.00	-14.77
6	L1	0.5166	20.79	AVG	10.03	30.82	46.00	-15.18
7	L1	1.2888	22.57	QP	10.03	32.60	56.00	-23.40
8	L1	1.2888	6.86	AVG	10.03	16.89	46.00	-29.11
9	L1	1.9128	20.93	QP	10.04	30.97	56.00	-25.03
10	L1	1.9128	6.51	AVG	10.04	16.55	46.00	-29.45
11	L1	5.8158	13.27	QP	10.09	23.36	60.00	-36.64
12	L1	5.8158	2.54	AVG	10.09	12.63	50.00	-37.37

Test Mode:	Charging Mode

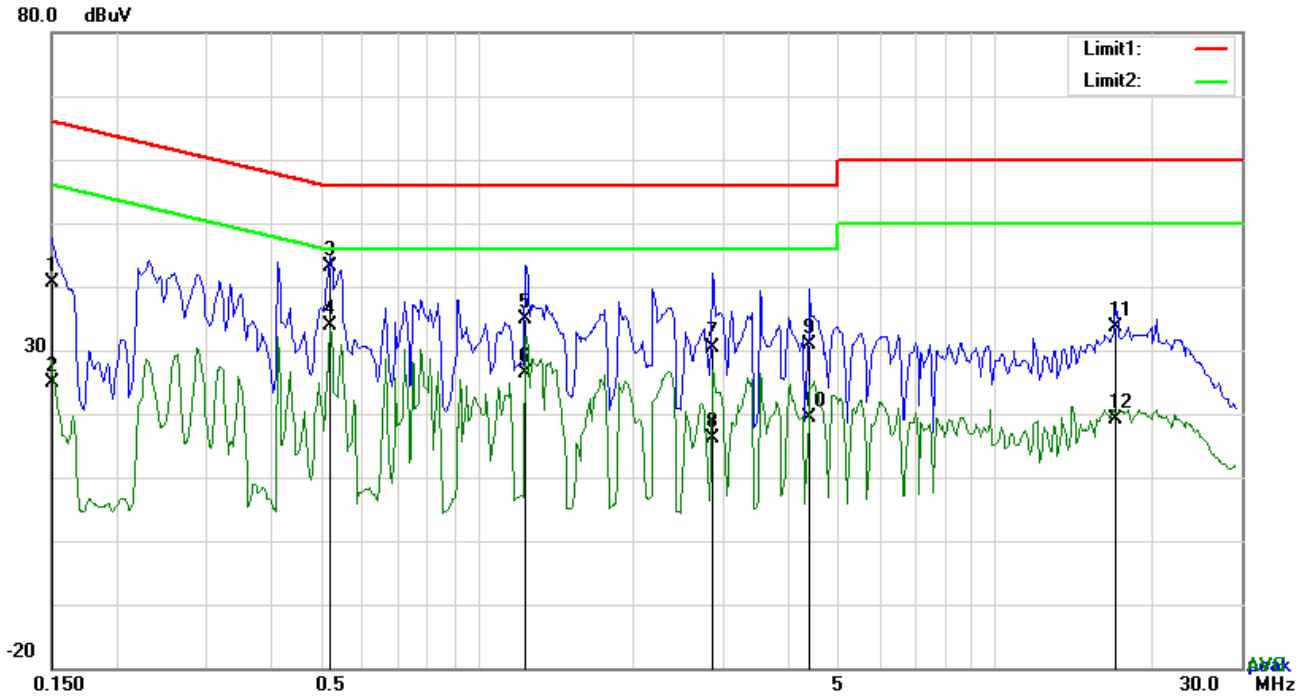


Test Data

Phase Neutral Plot at 120Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	N	0.1734	25.10	QP	10.02	35.12	64.80	-29.68
2	N	0.1734	8.79	AVG	10.02	18.81	54.80	-35.99
3	N	0.5205	29.58	QP	10.02	39.60	56.00	-16.40
4	N	0.5205	19.60	AVG	10.02	29.62	46.00	-16.38
5	N	1.2186	28.41	QP	10.03	38.44	56.00	-17.56
6	N	1.2186	16.55	AVG	10.03	26.58	46.00	-19.42
7	N	2.1975	23.27	QP	10.04	33.31	56.00	-22.69
8	N	2.1975	12.02	AVG	10.04	22.06	46.00	-23.94
9	N	5.3127	16.65	QP	10.07	26.72	60.00	-33.28
10	N	5.3127	7.30	AVG	10.07	17.37	50.00	-32.63
11	N	19.0368	15.68	QP	10.25	25.93	60.00	-34.07
12	N	19.0368	3.73	AVG	10.25	13.98	50.00	-36.02

Test Mode :	Charging Mode

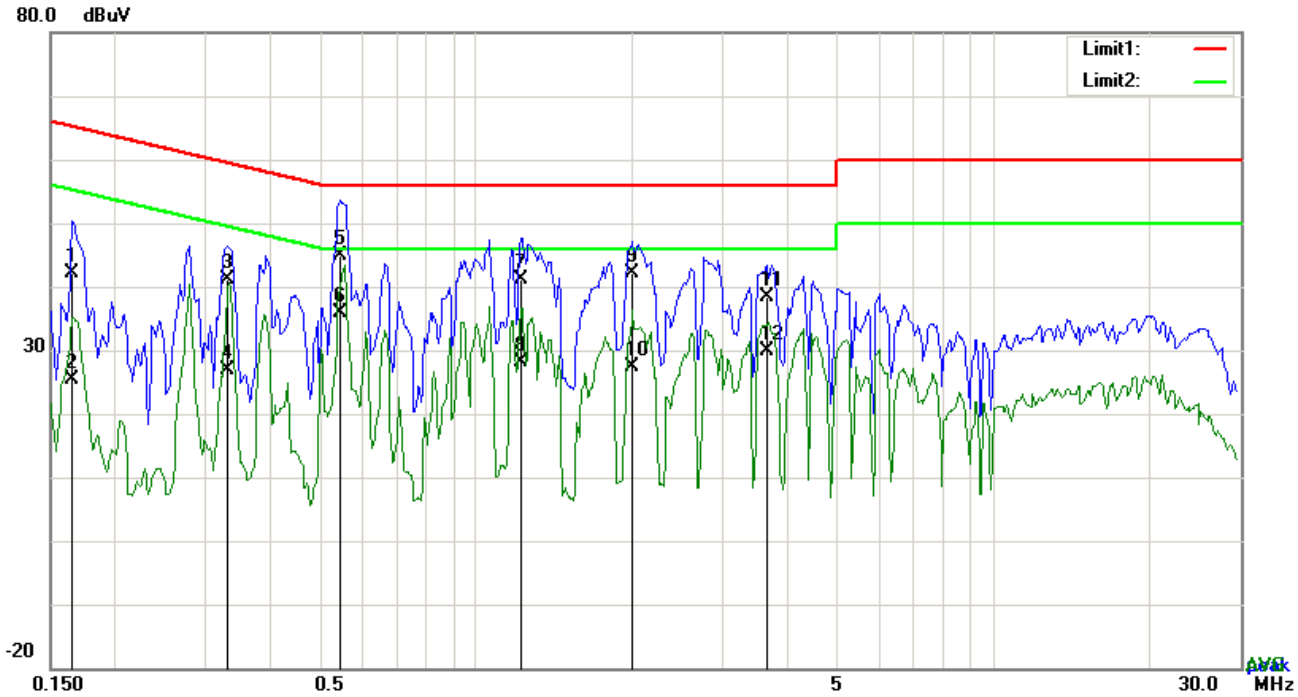


Test Data

Phase Line Plot at 240Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	L1	0.1500	30.53	QP	10.03	40.56	66.00	-25.44
2	L1	0.1500	14.80	AVG	10.03	24.83	56.00	-31.17
3	L1	0.5205	33.22	QP	10.03	43.25	56.00	-12.75
4	L1	0.5205	23.81	AVG	10.03	33.84	46.00	-12.16
5	L1	1.2420	24.82	QP	10.03	34.85	56.00	-21.15
6	L1	1.2420	16.34	AVG	10.03	26.37	46.00	-19.63
7	L1	2.8410	20.26	QP	10.05	30.31	56.00	-25.69
8	L1	2.8410	6.14	AVG	10.05	16.19	46.00	-29.81
9	L1	4.3923	20.83	QP	10.07	30.90	56.00	-25.10
10	L1	4.3923	9.28	AVG	10.07	19.35	46.00	-26.65
11	L1	17.1648	23.39	QP	10.26	33.65	60.00	-26.35
12	L1	17.1648	8.77	AVG	10.26	19.03	50.00	-30.97

Test Mode :	Charging Mode



Test Data

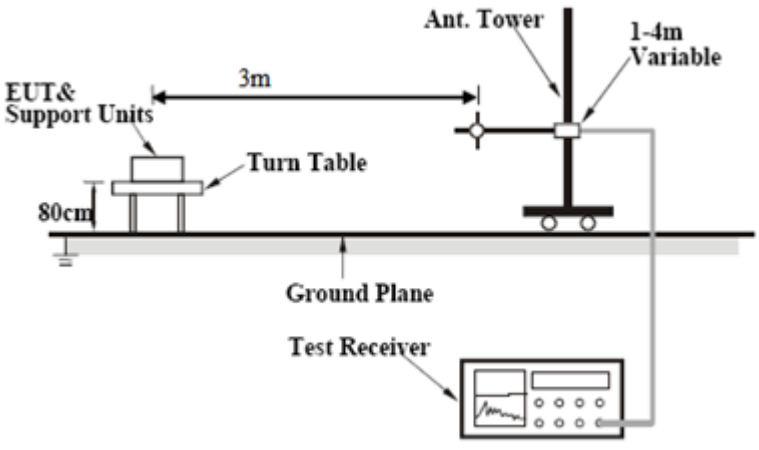
Phase Neutral Plot at 240Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	N	0.1656	32.21	QP	10.02	42.23	65.18	-22.95
2	N	0.1656	15.25	AVG	10.02	25.27	55.18	-29.91
3	N	0.3294	31.09	QP	10.02	41.11	59.47	-18.36
4	N	0.3294	16.85	AVG	10.02	26.87	49.47	-22.60
5	N	0.5439	34.91	QP	10.02	44.93	56.00	-11.07
6	N	0.5439	25.76	AVG	10.02	35.78	46.00	-10.22
7	N	1.2225	31.01	QP	10.03	41.04	56.00	-14.96
8	N	1.2225	18.20	AVG	10.03	28.23	46.00	-17.77
9	N	2.0025	32.12	QP	10.04	42.16	56.00	-13.84
10	N	2.0025	17.25	AVG	10.04	27.29	46.00	-18.71
11	N	3.6513	28.21	QP	10.06	38.27	56.00	-17.73
12	N	3.6513	19.89	AVG	10.06	29.95	46.00	-16.05

6.2 Radiated Emissions

Temperature	26°C
Relative Humidity	59%
Atmospheric Pressure	1015mbar
Test date :	December 03, 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>

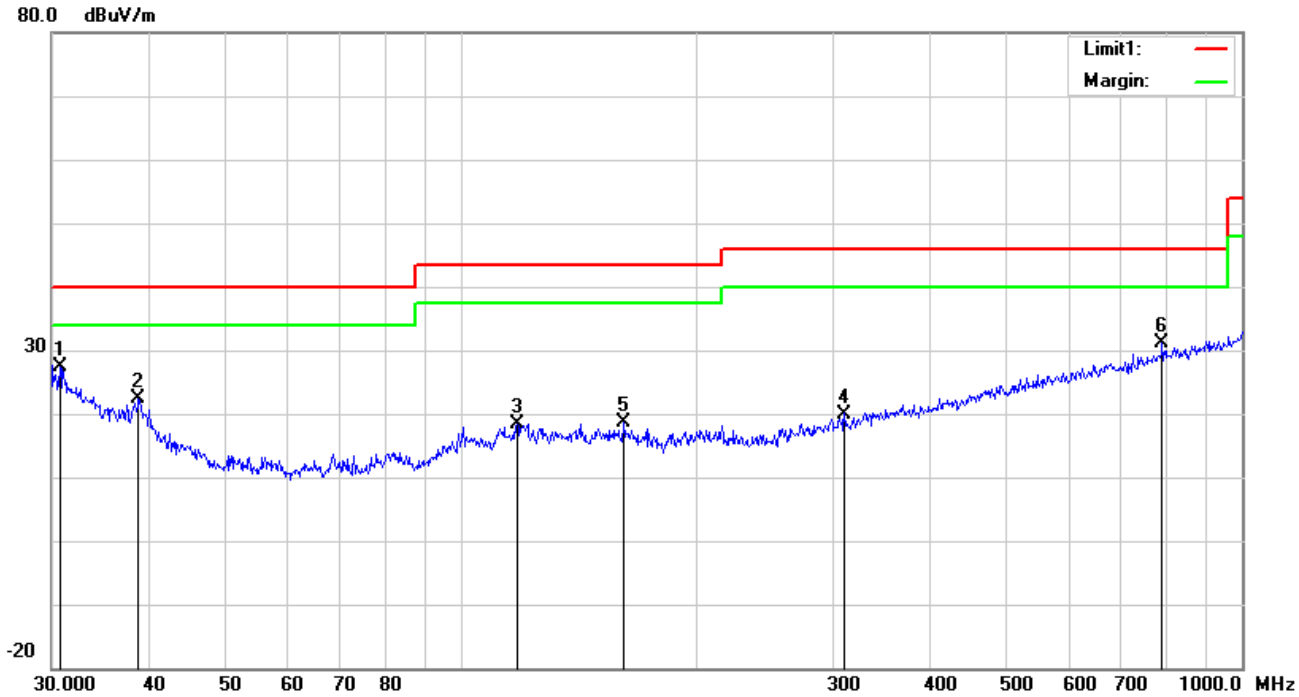
	over a full rotation of the EUT) was chosen. b. The EUT was then rotated to the direction that gave the maximum emission. c. Finally, the antenna height was adjusted to the height that gave the maximum emission. 3. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120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

Below 1GHz



Test Data

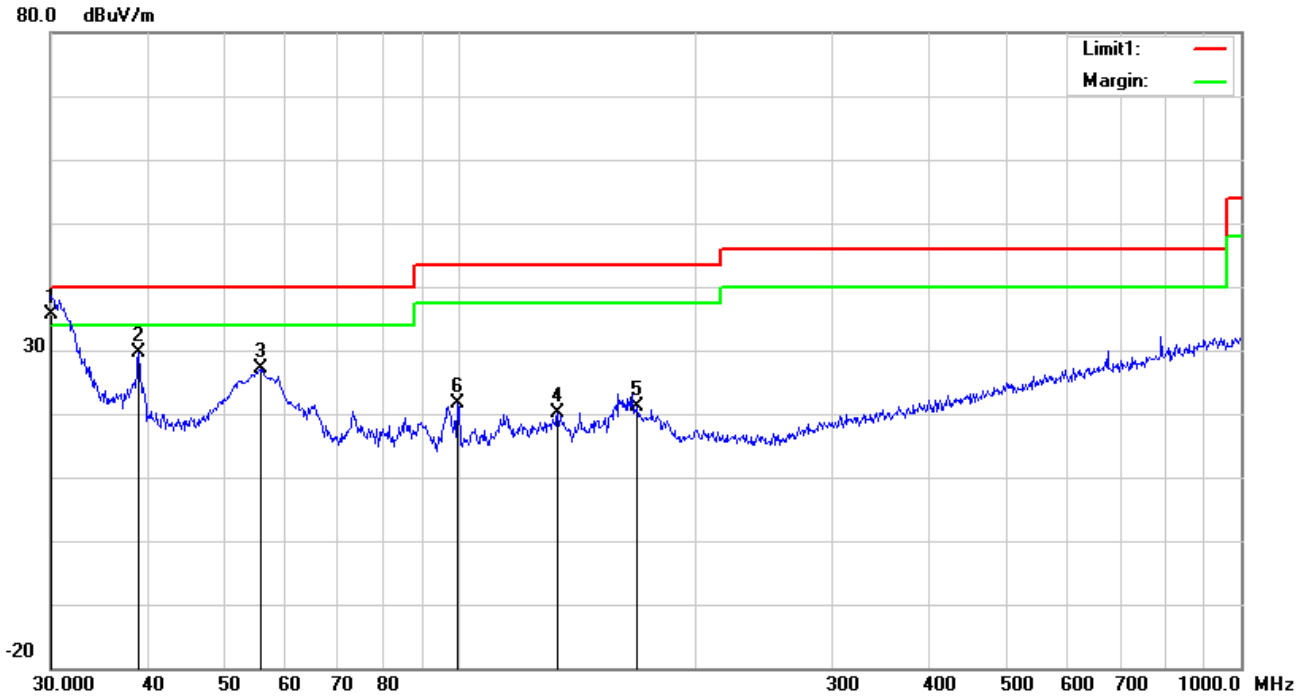
Horizontal Polarity Plot @3m

No.	P/L	Frequency	Reading	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	30.7455	28.10	20.83	22.28	0.64	27.29	40.00	-12.71	100	358
2	H	38.7518	28.97	14.81	22.27	0.78	22.29	40.00	-17.71	100	128
3	H	118.1862	26.12	13.58	22.36	1.16	18.50	43.50	-25.00	100	96
4	H	309.9977	26.61	13.81	22.26	1.84	20.00	46.00	-26.00	200	292
5	H	162.0414	27.00	12.44	22.27	1.38	18.55	43.50	-24.95	100	232
6	H	790.6188	28.10	21.29	21.17	2.94	31.16	46.00	-14.84	100	295

Above 1GHz

Note: The frequency that above 1GHz is mainly from the environment noise.

Below 1GHz



Test Data

Vertical Polarity Plot @3m

No.	P/L	Frequency	Reading	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	30.0000	35.77	21.40	22.28	0.62	35.51	40.00	-4.49	100	147
2	V	38.8879	36.50	14.71	22.27	0.78	29.72	40.00	-10.28	100	58
3	V	55.6094	40.91	7.78	22.40	0.78	27.07	40.00	-12.93	100	323
4	V	133.6188	28.28	13.01	22.39	1.23	20.13	43.50	-23.37	100	33
5	V	169.0054	30.09	11.88	22.26	1.36	21.07	43.50	-22.43	100	172
6	V	99.5281	32.55	10.29	22.32	1.11	21.63	43.50	-21.87	100	327

Above 1GHz

Note: The frequency that above 1GHz is mainly from the environment noise.

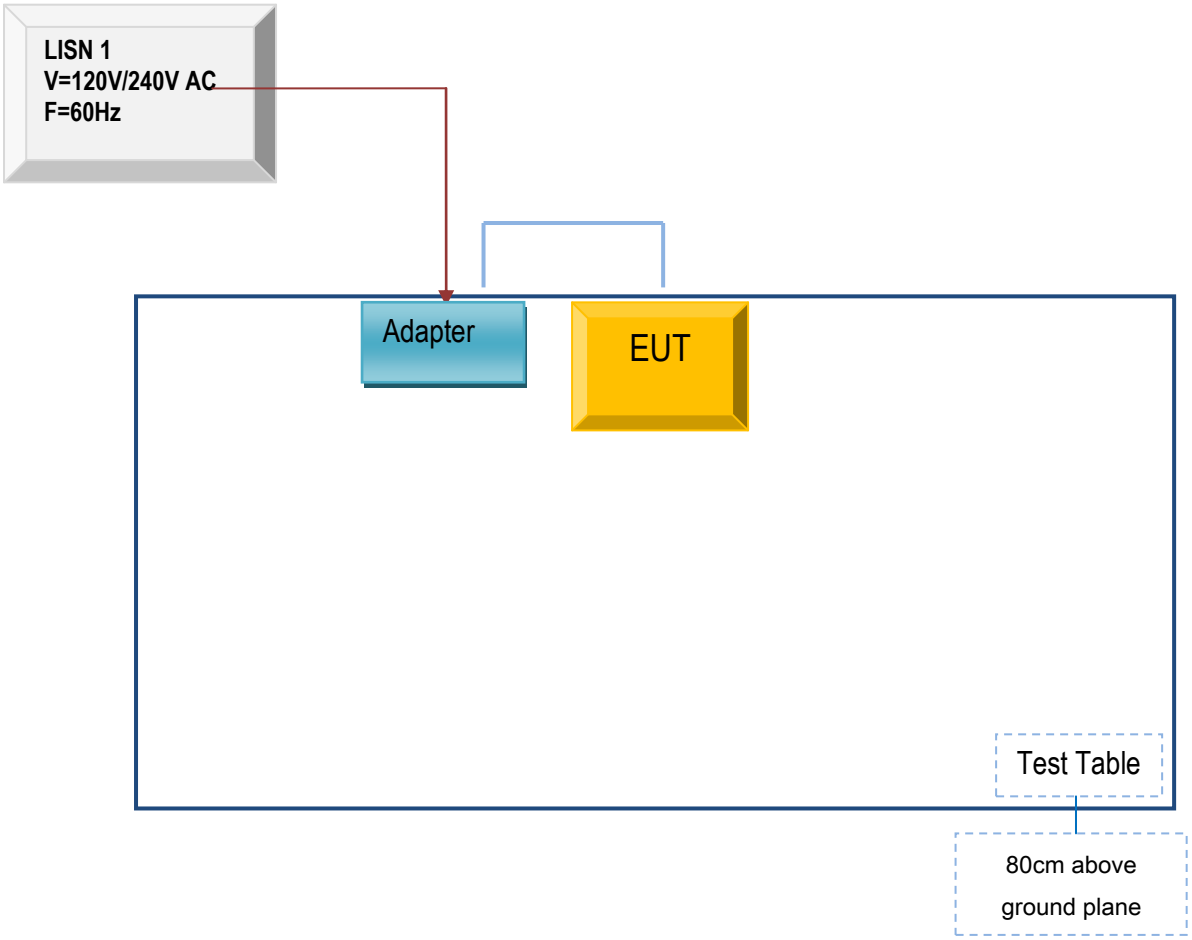
Annex A. TEST INSTRUMENT

Instrument	Model	Serial #	Cal Date	Cal Due
AC Line Conducted Emissions				
EMI test receiver	ESCS30	8471241027	01/05/2018	01/04/2019
Artificial Mains Network	8127	8127713	01/05/2018	01/04/2019
ISN	ISN T800	34373	01/05/2018	01/04/2019
Radiated Emissions				
EMI test receiver	ESL6	1300.5001K06-100262-eQ	01/05/2018	01/04/2019
Active Antenna	AL-130	121031	02/08/2018	02/07/2019
3m Semi-anechoic Chamber	9m*6m*6m	N/A	10/18/2018	10/17/2019
Signal Amplifier	8447E	443008	01/25/2018	01/24/2019
MXA signal analyzer	N9020A	MY49100060	01/05/2018	01/04/2019
Horn Antenna	HAH-118	71259	01/26/2018	01/25/2019
Horn Antenna	HAH-118	71283	02/02/2018	02/01/2019
AMPLIFIER	EM01G26G	60613	01/25/2018	01/24/2019
AMPLIFIER	Emc012645	980077	01/05/2018	01/04/2019
Bilog Antenna (30MHz~6GHz)	JB6	A110712	02/08/2018	02/07/2019

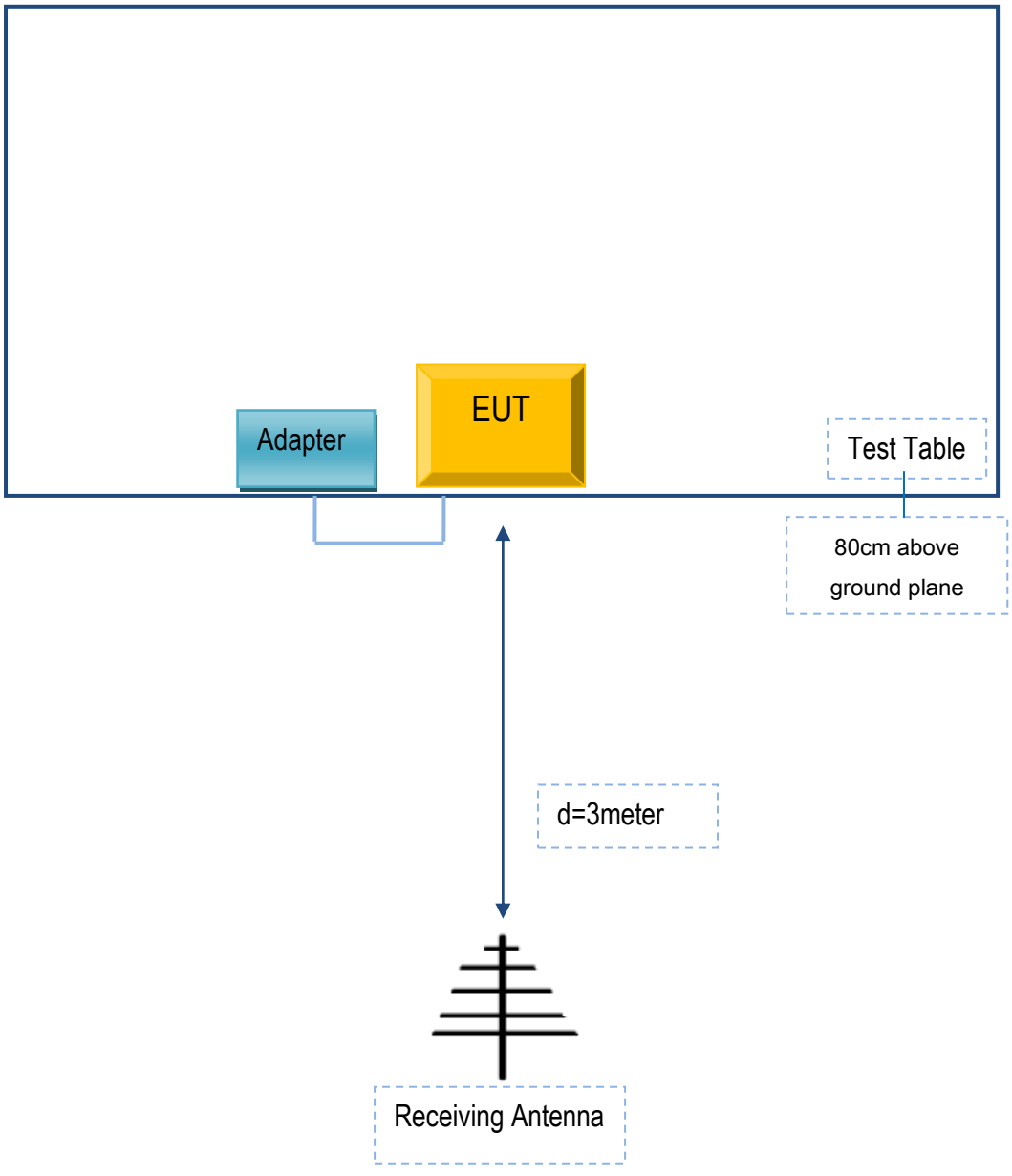
Annex B. TEST SETUP AND SUPPORTING EQUIPMENT

Annex B.i. TEST SET UP BLOCK

Block Configuration Diagram for AC Line 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
Dongguan Aohai Technology Co.,Ltd	Adapter	A31A-050055U-US1	N/A

Supporting Cable:

Cable type	Shield Type	Ferrite Core	Length	Serial No
Power Cables	Un-shielding	No	0.8m	N/A

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

Please see the attachment

Annex D. DECLARATION OF SIMILARITY

N/A