

FCC REPORT

Applicant: SWAGTEK

Address of Applicant: 10205 NW 19th Street, STE 101, Miami, FL33172, USA

Equipment Under Test (EUT)

Product Name: 5 inch LTE Phone

Model No.: L5U, Legacy lite, UL5002

Trade mark: LOGIC, iSWAG, UNONU

FCC ID: O55501417

Applicable standards: FCC CFR Title 47 Part 15 Subpart B

Date of sample receipt: 07 Feb., 2021

Date of Test: 07 Feb., 2021 to 09 Feb., 2021

Date of report issued: 09 Feb., 2021

Test Result: PASS *

*In the configuration tested, the EUT complied with the standards specified above.

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the JYT product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

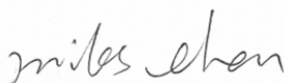
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2 Version

Version No.	Date	Description
00	20Oct., 2017	Original
01	05 Jan., 2020	First revision
02	20 Sept., 2020	Second revision
<p>Remark:</p> <p>This report was amended on FCC ID: 055501417 follow FCC Class II Permissive Change. The differences between them as below: change Model No.,trade mark and battery capacity. So the Conducted Emissions and Radiated Emission Method retest.</p>		

Tested by:

**Test Engineer**

Date:

09 Feb., 2021

Reviewed by:

**Project Engineer**

Date:

09 Feb., 2021

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4 Test Summary

Standard	Test Type	SECTION IN CFR 47	Result	Remarks
FCC Part 15, Subpart B, Class B	Conducted Test	Part15.107	PASS	Meets Class B Limit Minimum passing margin is -18.00 dB at 0.5507 MHz
	Radiated Test (30MHz- 1GHz)	Part15.109	PASS	Meets Class B Limit Minimum passing margin is -22.54 dB at 36.7900 MHz
	Radiated Test (1GHz- 6GHz)	Part15.109	PASS	Meets Class B Limit Minimum passing margin is -19.21 dB at 5410.00 MHz

Notes:

1. Pass: The EUT complies with the essential requirements in the standard.
2. N/A: The EUT not applicable of the test item.
3. Test method: C 63.4: 2014

5 General Information

5.1 Client Information

Applicant:	SWAGTEK
Address:	10205 NW 19th Street,STE 101, Miami, FL33172,USA
Manufacturer:	SWAGTEK
Address:	10205 NW 19th Street,STE 101, Miami, FL33172,USA

5.2 General Description of E.U.T.

Product Name:	5 inch LTE Phone
Model No.:	L5U, Legacy lite, UL5002
Power supply:	Rechargeable Li-ion Battery DC3.8V, 2300mAh
AC adapter:	Input: AC100-240V, 50/60Hz,0.2A Output: DC 5.0V, 1A
Test Sample Condition:	The test samples were provided in good working order with no visible defects.
Notes:	Model No.: L5U, Legacy lite, UL5002 were identical inside, the electrical circuit design, layout, components used and internal wiring with only difference being model name for different areas. So full tests were performed on the model L5U.

5.3 Test Mode and Voltage

Operating mode	Detail description
Charging+Recording mode	Keep the EUT in Charging+Recording mode
Charging+Playing mode	Keep the EUT in Charging+Playing mode
FM mode	Keep the EUT in FM receiver mode
GPS mode	Keep the EUT in GPS receiver mode
Notes: The Charging+Recording mode was worse case for Conducted Emission and Radiated Emission.	

5.4 Measurement Uncertainty

Parameters	Expanded Uncertainty
Conducted Emission (150kHz ~ 30MHz)	± 2.60 dB (k=2)
Radiated Emission (30MHz ~ 1000MHz)	± 4.20 dB (k=2)
Radiated Emission (1GHz ~ 18GHz)	± 5.20 dB (k=2)

5.5 Description of Support Units

Manufacturer	Description	Model	Serial Number	FCC ID/DoC
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5.6 Related Submittal(s) / Grant (s)

This is an original grant, no related submittals and grants.
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5.7 Description of Cable Used

Cable Type	Description	Length	From	To
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5.8 Additions to, deviations, or exclusions from the method

No

5.9 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

● **FCC - Designation No.: CN1279**

Jianyan Testing Group Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 892155.

● **ISED – CAB identifier.: CN0102**

Jianyan Testing Group Co., Ltd. has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements with ISED#:26114.

● **A2LA - Registration No.: 5568.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <https://portal.a2la.org/scopepdf/5568-01.pdf>

5.10 Laboratory Location

JianYan Testing Group Co., Ltd.

Address: No.760, Fengling Road, Tong'an District, Xiamen, Fujian, China

Tel: +86-592-2273071, Fax:+86-592-2273700

Email: quality@xmabr.com, Website: <http://www.lets.com/>

5.11 Test Instruments list

Conducted Emission:					
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
EMI Test Receiver	Rohde & Schwarz	ESR 3	102330	2020-08-12	2021-08-11
EMI Test Receiver	Rohde & Schwarz	ESR 3	102329	2020-08-12	2021-08-11
EMI Test Receiver	Rohde & Schwarz	ESR 7	102259	2020-04-12	2021-04-11
LISN	Rohde & Schwarz	ENV 216	102240	2020-08-12	2021-08-11
Voltage probe	Schwarzbeck	TK9420+VT9420	814	2020-08-12	2021-08-11
ISN	Schwarzbeck	CAT3 8158	95	2020-08-12	2021-08-11
EMI Test Software	Farad	EZ-EMC	Version: V.EMCE-3A1		

Radiated Disturbances:					
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
3m SAC	BOST	CHC-966	966-1#	2019-12-27	2022-12-26
3m SAC	BOST	CHC-966	966-2#	2019-12-27	2022-12-26
EMI Test Receiver	Rohde & Schwarz	ESR 3	102330	2020-08-05	2021-08-04
EMI Test Receiver	Rohde & Schwarz	ESR 3	102329	2020-08-06	2021-08-05
EMI Test Receiver	Rohde & Schwarz	ESR 7	102259	2020-04-12	2021-04-11
Spectrum Analyzer	Agilent	E4407B	MY45115531	2020-12-27	2021-12-26
Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102175	2020-04-15	2021-04-14
BiConiLog Antenna	SCHWARZBECK	VULB 9163	1105	2020-12-20	2021-12-19
BiConiLog Antenna	SCHWARZBECK	VULB 9168	1066	2020-04-11	2021-04-10
Horn Antenna	SCHWARZBECK	BBHA 9120 D	911	2020-04-01	2021-03-31
Pre-amplifier	SCHWARZBECK	BBV9743	00009	2020-08-06	2021-08-05
Pre-amplifier	SCHWARZBECK	BBV9744	162	2020-12-22	2021-12-21
Pre-amplifier	SCHWARZBECK	BBV9718C	00014	2020-04-08	2021-04-07
EMI Test Software	Farad	EZ-EMC	Version: V.EMCE-3A1		

6 Emission Test

6.1 Conducted Emission Measurement

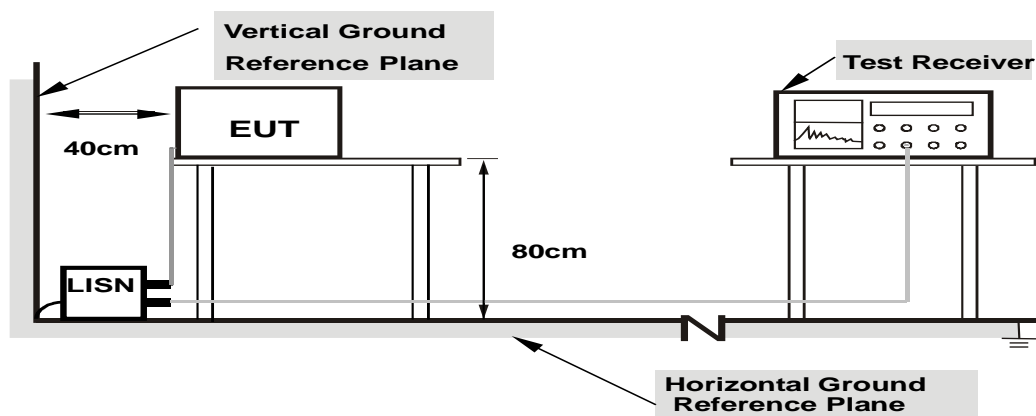
6.1.1 Limits of Conducted Emission Measurement

Frequency(MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79	66	66 - 56*	56 - 46*
0.50 - 5.0	73	60	56	46
5.0 - 30.0	73	60	60	50

Notes:

1. The lower limit shall apply at the transition frequencies.
2. *: The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.

6.1.2 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 cm from other units and other metal planes

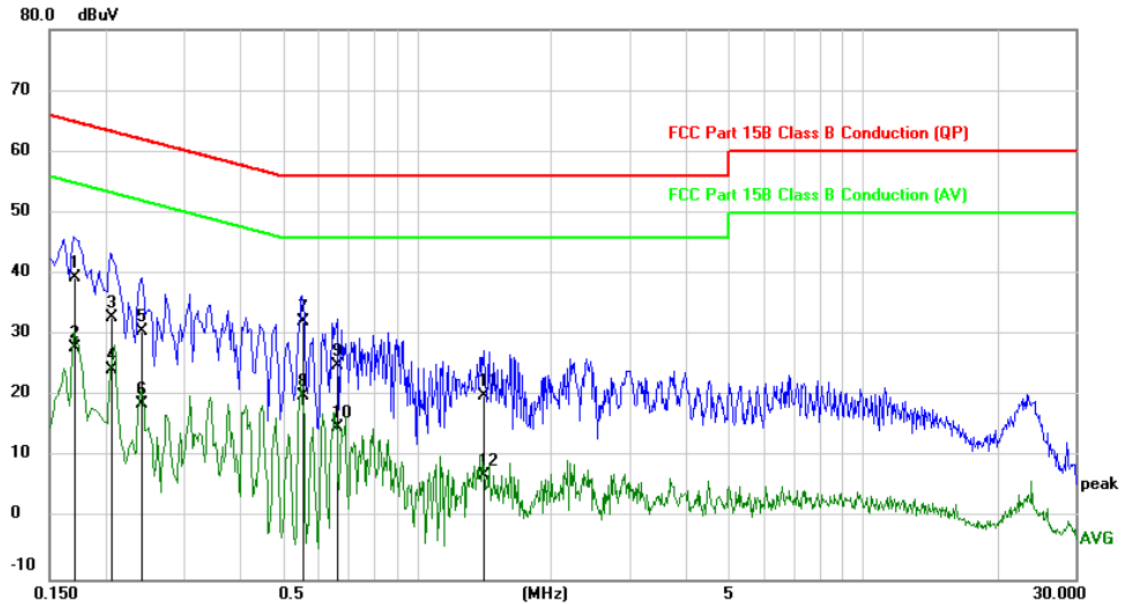
6.1.3 Test Procedure

The basic test procedure was in accordance with ANSI C63.4 (section 7).

- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit - 20dB) were not recorded.

6.1.4 Test Result

Product model:	L5U	Test result:	Pass
Test mode:	Charging+Recording mode	Test voltage:	120Vac, 60 Hz
Phase:	Line (L)	Test by:	Sam Lu
Environment:	Temp: 22.5℃ Humi: 55%		

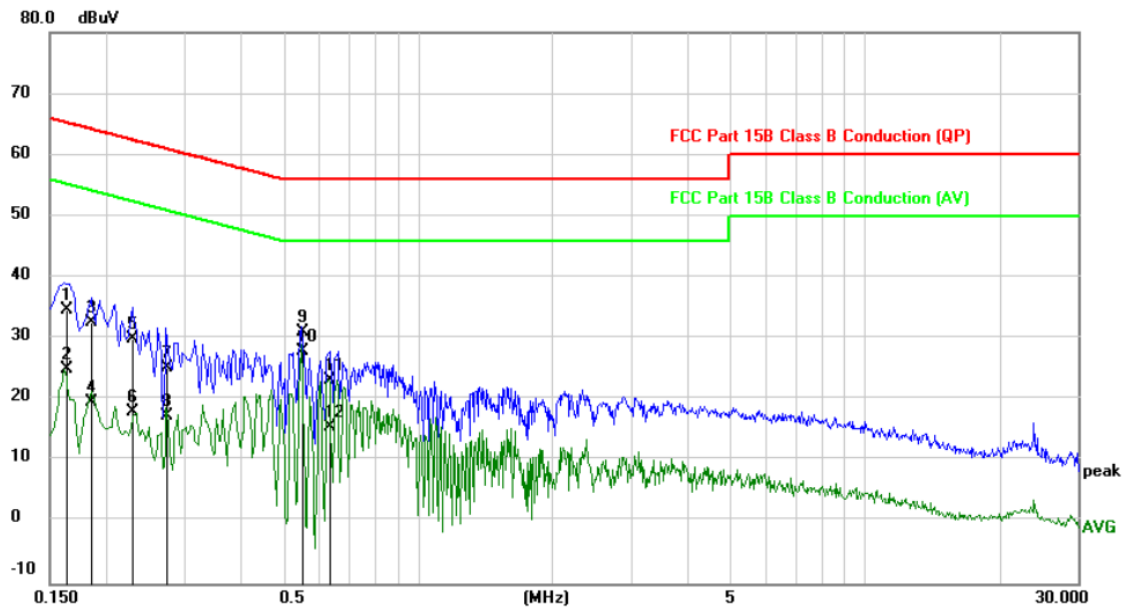


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1		0.1708	39.47	0.03	39.50	64.92	-25.42	QP
2		0.1708	27.84	0.03	27.87	54.92	-27.05	AVG
3		0.2051	32.89	0.03	32.92	63.40	-30.48	QP
4		0.2051	24.34	0.03	24.37	53.40	-29.03	AVG
5		0.2406	30.61	0.03	30.64	62.08	-31.44	QP
6		0.2406	18.60	0.03	18.63	52.08	-33.45	AVG
7	*	0.5528	32.13	0.04	32.17	56.00	-23.83	QP
8		0.5528	19.90	0.04	19.94	46.00	-26.06	AVG
9		0.6616	24.96	0.05	25.01	56.00	-30.99	QP
10		0.6616	14.83	0.05	14.88	46.00	-31.12	AVG
11		1.4088	20.03	0.07	20.10	56.00	-35.90	QP
12		1.4088	6.86	0.07	6.93	46.00	-39.07	AVG

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak and AV detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Over value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

Product model:	L5U	Test result:	Pass
Test mode:	Charging+Recording mode	Test voltage:	120Vac, 60 Hz
Phase:	Line (N)	Test by:	Sam Lu
Environment:	Temp: 22.5℃ Humi: 55%		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1		0.1629	34.61	0.03	34.64	65.31	-30.67	QP
2		0.1629	25.04	0.03	25.07	55.31	-30.24	AVG
3		0.1848	32.69	0.03	32.72	64.27	-31.55	QP
4		0.1848	19.64	0.03	19.67	54.27	-34.60	AVG
5		0.2302	29.90	0.03	29.93	62.44	-32.51	QP
6		0.2302	17.88	0.03	17.91	52.44	-34.53	AVG
7		0.2736	25.28	0.03	25.31	61.01	-35.70	QP
8		0.2736	17.24	0.03	17.27	51.01	-33.74	AVG
9		0.5507	30.94	0.04	30.98	56.00	-25.02	QP
10	*	0.5507	27.96	0.04	28.00	46.00	-18.00	AVG
11		0.6341	23.08	0.05	23.13	56.00	-32.87	QP
12		0.6341	15.54	0.05	15.59	46.00	-30.41	AVG

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak and AV detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Over value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

6.2 Radiated Emission Measurement

6.2.1 Limits of Radiated Emission Measurement

For Frequency Below 1000MHz

Frequency(MHz)	Class A (at 3m)	Class B (at 3m)
	dBuV/m	dBuV/m
30 – 88	49	40
88 – 216	53.5	43.5
216 - 960	56.5	46
960 - 1000	59.5	54

Notes:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. All emanation from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

For Frequency Above 1000MHz

Frequency(MHz)	Class A(dBuV/m) (at 3m)		Class B(dBuV/m) (at 3m)	
	Peak	Average	Peak	Average
Above 1000	80	60	74	54

Notes:

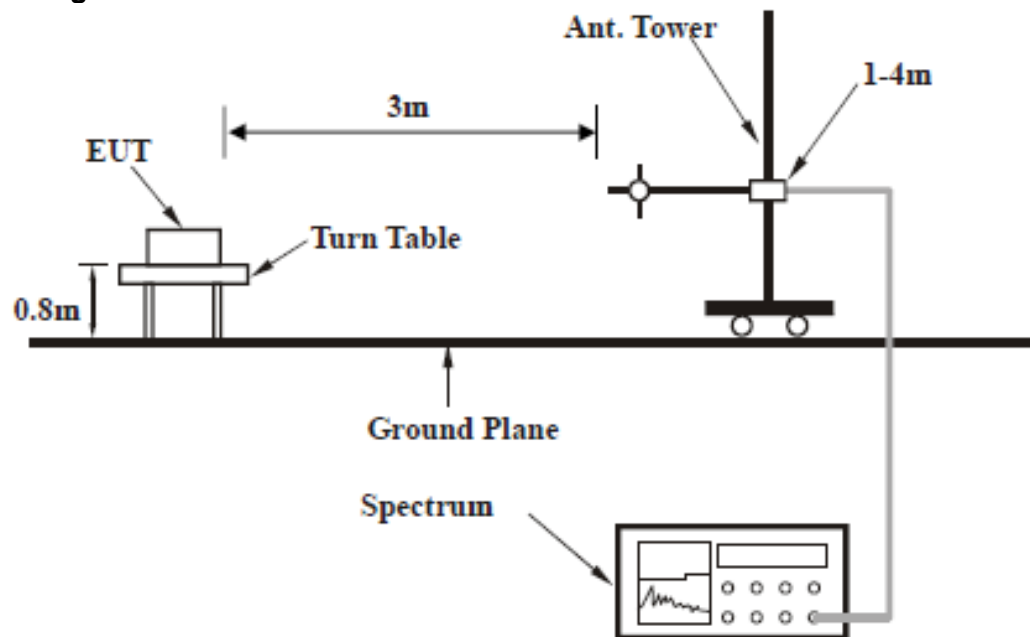
1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. All emanation from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

Frequency Range of Radiated Measurement (For unintentional radiators)

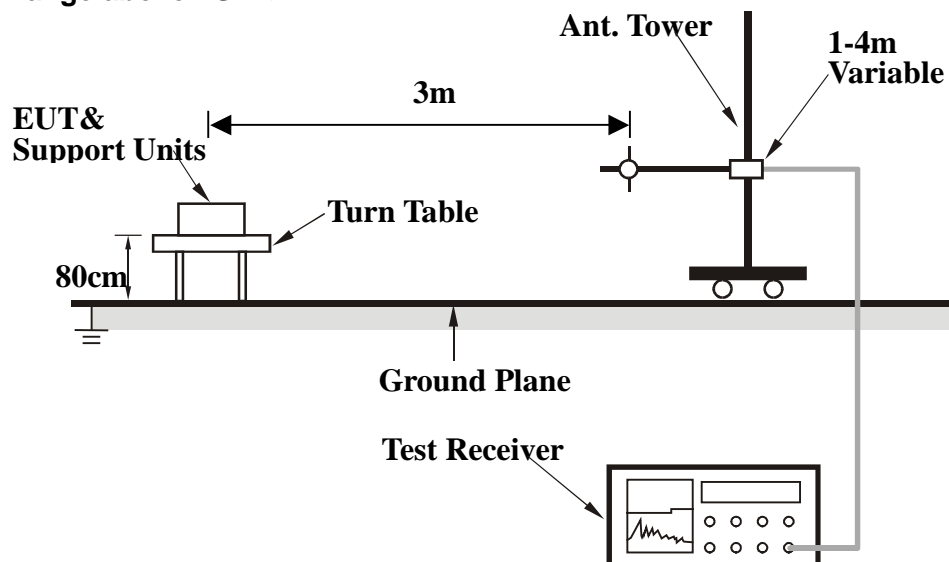
Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement Range (MHz)
Below 1.705	30
1.705 – 108	1000
108 – 500	2000
500 – 1000	5000
Above 1000	5 th harmonic of the highest frequency or 40 GHz, whichever is lower

6.2.2 Test setup

<Frequency Range 30MHz ~ 1GHz>



<Frequency Range above 1GHz>



6.2.3 Test Procedure

The basic test procedure was in accordance with ANSI C63.4-2014 (section 8).

<Frequency Range 30MHz ~ 1GHz>

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open test site. 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 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 turn 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.

Notes: The resolution bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.

<Frequency Range above 1GHz>

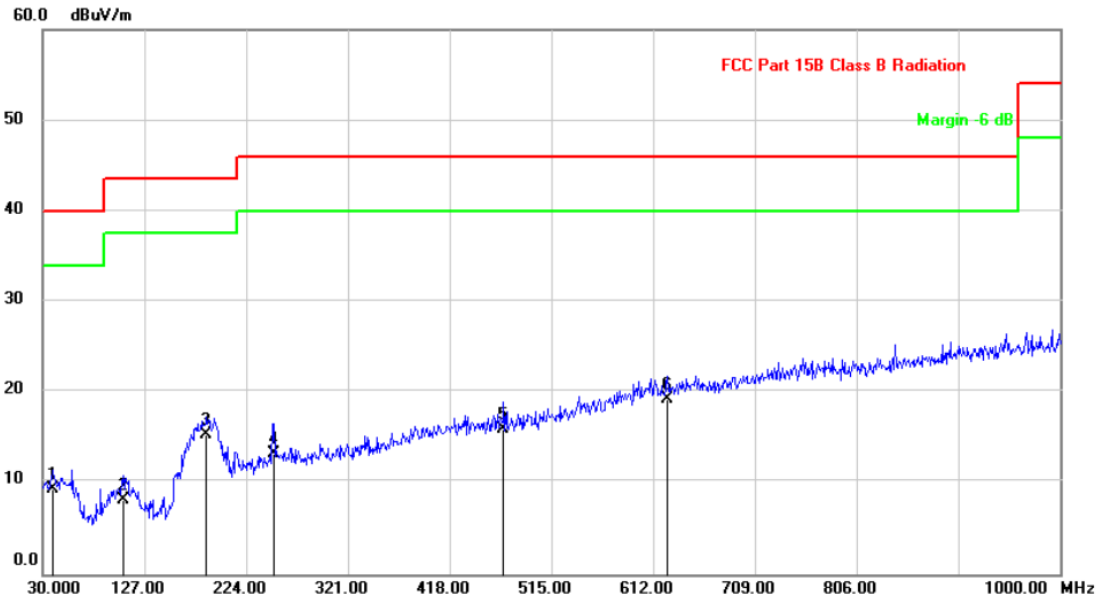
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter Semi-anechoic chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted 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 test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz.

Notes:

1. The resolution bandwidth is 1MHz and video bandwidth of test receiver/spectrum analyzer is 3MHz for Peak detection at frequency above 1GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz for Average detection (AV) at frequency above 1GHz.
2. For measurement of frequency above 1000 MHz, the EUT was set 3 meters away from the receiver antenna.

6.2.4 Test Result

Product model:	L5U	Test result:	Pass
Test mode:	Charging+Recording mode	Test voltage:	120Vac, 60 Hz
Test frequency:	30MHz-1000MHz	Ant. polarity:	Horizontal
Environment:	Temp: 22.5℃ Humi: 55%	Test by:	Sam Lu

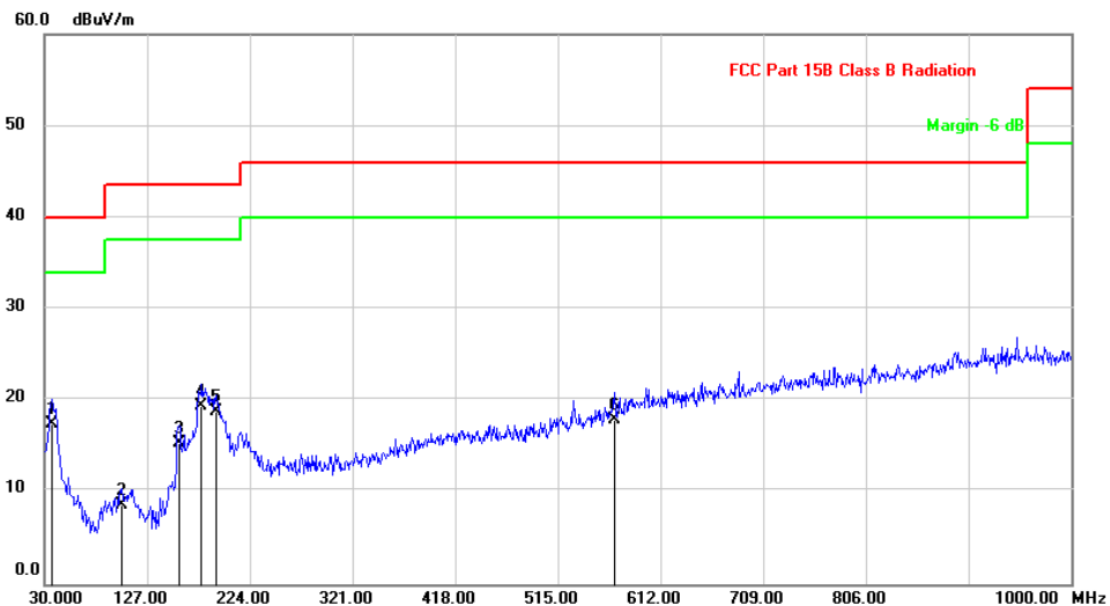


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		39.7000	22.80	-13.48	9.32	40.00	-30.68	QP
2		106.6300	22.56	-14.35	8.21	43.50	-35.29	QP
3		186.1700	30.53	-15.23	15.30	43.50	-28.20	QP
4		250.1900	24.99	-11.64	13.35	46.00	-32.65	QP
5		469.4100	23.63	-7.65	15.98	46.00	-30.02	QP
6	*	625.5800	23.05	-3.71	19.34	46.00	-26.66	QP

Notes:

1. Over value = Emission level - Limit value.
2. Emission Level = Correction Factor + Reading Value.
3. Correction Factor = Antenna Factor + Cable Factor - Amplifier Gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product model:	L5U	Test result:	Pass
Test mode:	Charging+Recording mode	Test voltage:	120Vac, 60 Hz
Test frequency:	30MHz-1000MHz	Ant. polarity:	Vertical
Environment:	Temp: 22.5℃ Temp: 22.5℃	Test by:	Sam Lu

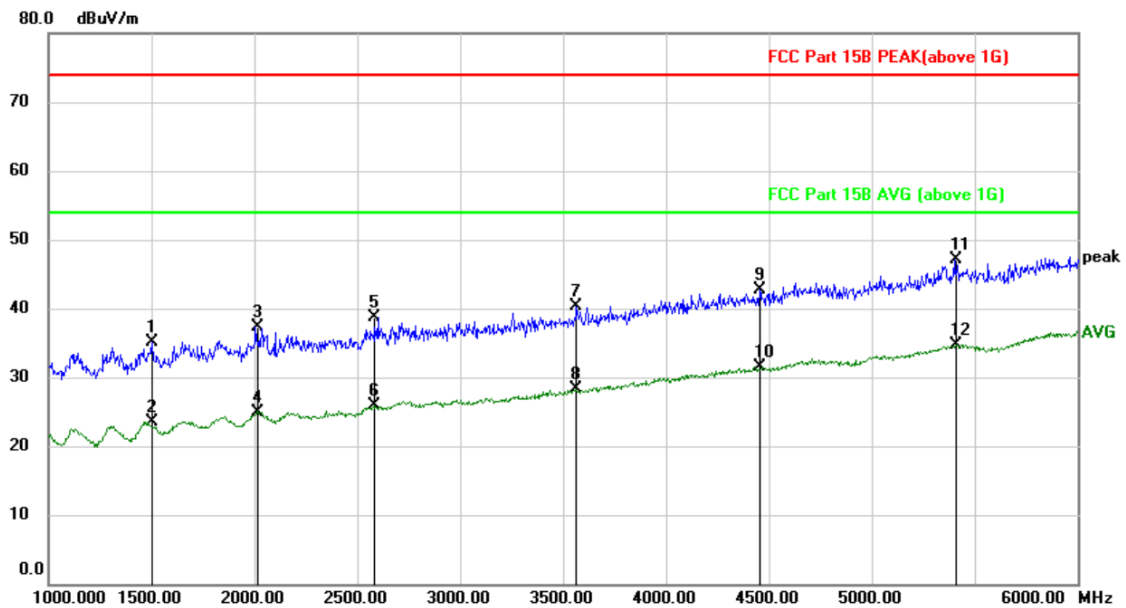


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1	*	36.7900	31.17	-13.71	17.46	40.00	-22.54	QP
2		102.7500	23.33	-14.69	8.64	43.50	-34.86	QP
3		157.0700	32.46	-17.15	15.31	43.50	-28.19	QP
4		178.4100	35.38	-16.03	19.35	43.50	-24.15	QP
5		191.9900	33.43	-14.67	18.76	43.50	-24.74	QP
6		568.3500	23.11	-5.17	17.94	46.00	-28.06	QP

Notes:

- Over value = Emission level - Limit value.
- Emission Level = Correction Factor + Reading Value.
- Correction Factor = Antenna Factor + Cable Factor - Amplifier Gain.
- The emission levels of other frequencies are very lower than the limit and not show in test report.

Product model:	L5U	Test result:	Pass
Test mode:	Charging+Recording mode	Test voltage:	120Vac, 60 Hz
Test frequency:	1000MHz-6000MHz	Ant. polarity:	Horizontal
Environment:	Temp: 22.5℃ Humi: 55%	Test by:	Sam Lu

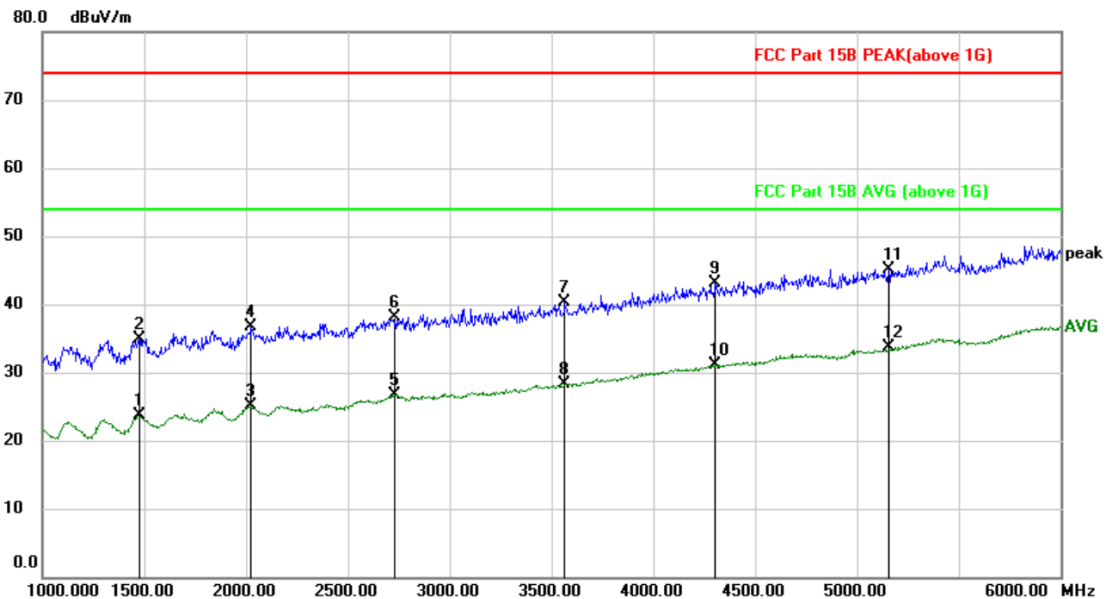


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		1500.000	40.26	-5.13	35.13	74.00	-38.87	peak
2		1500.000	28.62	-5.13	23.49	54.00	-30.51	AVG
3		2015.000	40.19	-2.95	37.24	74.00	-36.76	peak
4		2015.000	27.95	-2.95	25.00	54.00	-29.00	AVG
5		2585.000	40.41	-1.78	38.63	74.00	-35.37	peak
6		2585.000	27.67	-1.78	25.89	54.00	-28.11	AVG
7		3565.000	39.75	0.48	40.23	74.00	-33.77	peak
8		3565.000	27.74	0.48	28.22	54.00	-25.78	AVG
9		4455.000	39.37	3.32	42.69	74.00	-31.31	peak
10		4455.000	28.15	3.32	31.47	54.00	-22.53	AVG
11		5410.000	41.39	5.67	47.06	74.00	-26.94	peak
12	*	5410.000	29.12	5.67	34.79	54.00	-19.21	AVG

Notes:

1. Over value = Emission level - Limit value.
2. Emission Level = Correction Factor + Reading Value.
3. Correction Factor = Antenna Factor + Cable Factor - Amplifier Gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product model:	L5U	Test result:	Pass
Test mode:	Charging+Recording mode	Test voltage:	120Vac, 60 Hz
Test frequency:	1000MHz-6000MHz	Ant. polarity:	Vertical
Environment:	Temp: 22.5℃ Temp: 22.5℃	Test by:	Sam Lu



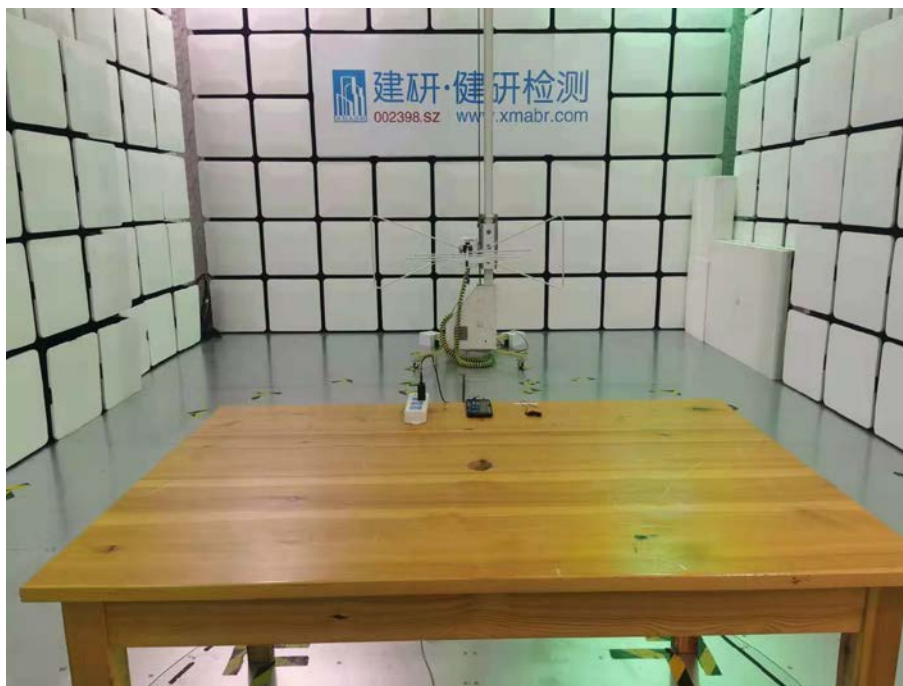
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		1475.000	28.97	-5.29	23.68	54.00	-30.32	AVG
2		1475.000	40.20	-5.29	34.91	74.00	-39.09	peak
3		2020.000	28.09	-2.94	25.15	54.00	-28.85	AVG
4		2020.000	39.58	-2.94	36.64	74.00	-37.36	peak
5		2730.000	27.97	-1.28	26.69	54.00	-27.31	AVG
6		2730.000	39.45	-1.28	38.17	74.00	-35.83	peak
7		3565.000	39.87	0.48	40.35	74.00	-33.65	peak
8		3565.000	27.85	0.48	28.33	54.00	-25.67	AVG
9		4305.000	40.32	2.87	43.19	74.00	-30.81	peak
10		4305.000	28.30	2.87	31.17	54.00	-22.83	AVG
11		5155.000	40.37	4.79	45.16	74.00	-28.84	peak
12	*	5155.000	28.91	4.79	33.70	54.00	-20.30	AVG

Notes:

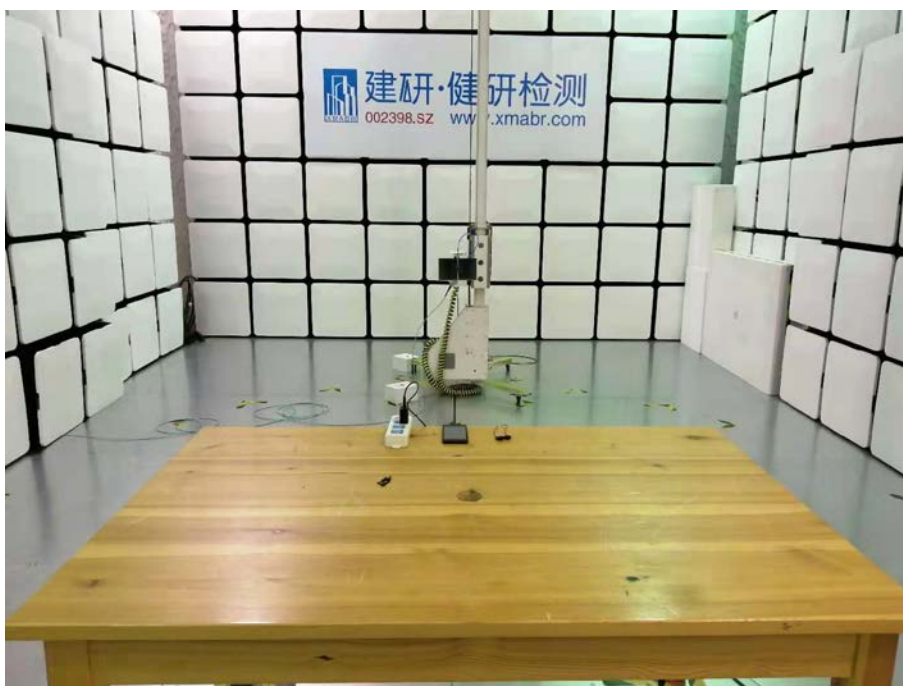
1. Over value = Emission level - Limit value.
2. Emission Level = Correction Factor + Reading Value.
3. Correction Factor = Antenna Factor + Cable Factor - Amplifier Gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

7 Test Setup Photo

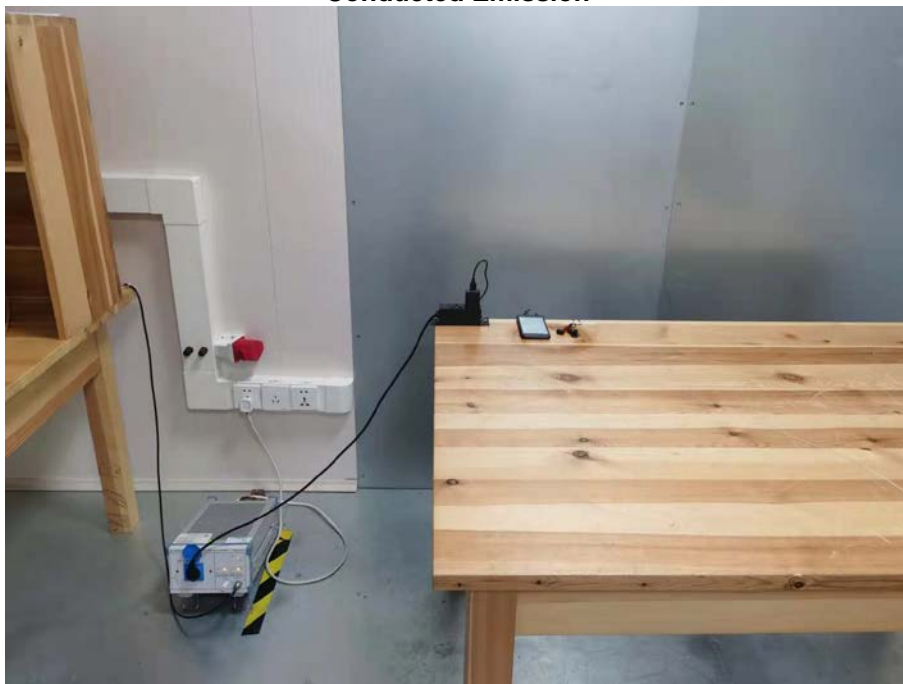
Radiated Emission
Below 1GHz



Above 1GHz



Conducted Emission



8 EUT Constructional Details

