FCC REPORT

Applicant:	ENPING TONGLI Electronic Technology Co., Ltd.
Address of Applicant:	1-24th lane,XINYUAN road, ENPING,GUANGDONG,CHINA
Manufacturer:	ENPING TONGLI Electronic Technology Co., Ltd.
Address of Manufacturer:	1-24th lane,XINYUAN road, ENPING,GUANGDONG,CHINA

Equipment Under Test (EUT)

Product Name:	Wireless Microphone Transmitter
Model No.:	ATX 3000, ATX 1500, ATX 2000, ATX 4000, ATX 5000, ATX 6000, ATX 7000, ATX 8000, ATX 9000, ATX 1000
Trade Mark:	N/A
FCC ID:	2ASY8-ATX3000
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.249
Date of sample receipt:	April 02, 2019
Date of Test:	April 02- April 09, 2019
Date of report issued:	April 09, 2019
Test Result :	PASS *

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

Authorized Signature:

Robinson Lo
Laboratory Manager

This 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.

2 Version

Version No.	Date	Description
00	*April 09, 2019*	*Original*

Prepared By: ***Date:*** *April 09, 2019*

Project Engineer

Check By: ***Date:*** *April 09, 2019*

Reviewer

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4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	N/A
Field strength of the fundamental signal	15.249 (a)	Pass
Spurious emissions	15.249 (a) (d)/15.209	Pass
Band edge	15.249 (d)/15.205	Pass
20dB Occupied Bandwidth	15.215 (c)	Pass

Remark: Test according to ANSI C63.10: 2013.

Pass: The EUT complies with the essential requirements in the standard.

4.1 Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	9kHz ~ 30MHz	± 4.34dB	(1)
Radiated Emission	30MHz ~ 1000MHz	± 4.24dB	(1)
Radiated Emission	1GHz ~ 26.5GHz	± 4.68dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	± 3.45dB	(1)
Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.			

5 General Information

5.1 General Description of EUT

Product Name:	Wireless Microphone Transmitter
Model No.:	ATX 3000, ATX 1500, ATX 2000, ATX 4000, ATX 5000, ATX 6000, ATX 7000, ATX 8000, ATX 9000, ATX 1000
Serial No.	3155158
Test sample(s) ID:	GTS201904000040-1
Sample(s) Status	Engineered sample
Hardware Version:	HV1.0
Software Version:	SV1.0
Operation Frequency:	902.3-927.8MHz
Channel numbers:	86
Modulation type:	FM
Antenna Type:	Internal antenna
Antenna gain:	0dBi
Power supply:	DC3V

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	902.300	23	908.900	45	915.500	67	922.100
2	902.600	24	909.200	46	915.800	68	922.400
3	902.900	25	909.500	47	916.100	69	922.700
4	903.200	26	909.800	48	916.400	70	923.000
5	903.500	27	910.100	49	916.700	71	923.300
6	903.800	28	910.400	50	917.000	72	923.600
7	904.100	29	910.700	51	917.300	73	923.900
8	904.400	30	911.000	52	917.600	74	924.200
9	904.700	31	911.300	53	917.900	75	924.500
10	905.000	32	911.600	54	918.200	76	924.800
11	905.300	33	911.900	55	918.500	77	925.100
12	905.600	34	912.200	56	918.800	78	925.400
13	905.900	35	912.500	57	919.100	79	925.700
14	906.200	36	912.800	58	919.400	80	926.000
15	906.500	37	913.100	59	919.700	81	926.300
16	906.800	38	913.400	60	920.000	82	926.600
17	907.100	39	913.700	61	920.300	83	926.900
18	907.400	40	914.000	62	920.600	84	927.200
19	907.700	41	914.300	63	920.900	85	927.500
20	908.000	42	914.600	64	921.200	86	927.800
21	908.300	43	914.900	65	921.500		
22	908.600	44	915.200	66	921.800		

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Channel	Frequency
The lowest channel	902.3
The middle channel	914.9
The Highest channel	927.8

5.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode.
Remark: During the test, the dutycycle >98%, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.	

Per-test mode.

We have verified the construction and function in typical operation, The EUT was placed on three different polar directions; i.e. X axis, Y axis, Z axis. which was shown in this test report and defined as follows:

Axis	X	Y	Z
Field Strength(dBuV/m)	88.38	89.62	87.45

5.3 Description of Support Units

Manufacturer	Description	Model	Serial Number
APPLE	USB Charger	A1399	N/A

5.4 Test Facility

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

● **FCC —Registration No.: 381383**

Global United Technology Services Co., Ltd., Shenzhen 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 files. Registration 381383.

● **Industry Canada (IC) —Registration No.: 9079A-2**

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-2.

● **NVLAP (LAB CODE:600179-0)**

Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). LAB CODE:600179-0

5.5 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Address: No. 301-309, 3/F., Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102

Tel: 0755-27798480

Fax: 0755-27798960

6 Test Instruments list

Radiated Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	July. 03 2015	July. 02 2020
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	June. 27 2018	June. 26 2019
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 27 2018	June. 26 2019
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June. 27 2018	June. 26 2019
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 27 2018	June. 26 2019
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	June. 27 2018	June. 26 2019
9	Coaxial Cable	GTS	N/A	GTS211	June. 27 2018	June. 26 2019
10	Coaxial cable	GTS	N/A	GTS210	June. 27 2018	June. 26 2019
11	Coaxial Cable	GTS	N/A	GTS212	June. 27 2018	June. 26 2019
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 27 2018	June. 26 2019
13	Amplifier(2GHz-20GHz)	HP	84722A	GTS206	June. 27 2018	June. 26 2019
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 27 2018	June. 26 2019
15	Band filter	Amindeon	82346	GTS219	June. 27 2018	June. 26 2019
16	Power Meter	Anritsu	ML2495A	GTS540	June. 27 2018	June. 26 2019
17	Power Sensor	Anritsu	MA2411B	GTS541	June. 27 2018	June. 26 2019
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	June. 27 2018	June. 26 2019
19	Splitter	Agilent	11636B	GTS237	June. 27 2018	June. 26 2019
20	Loop Antenna	ZHINAN	ZN30900A	GTS534	June. 27 2018	June. 26 2019
21	Breitband hornantenne	SCHWARZBECK	BBHA 9170	GTS579	Oct. 20 2018	Oct. 19 2019
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 20 2018	Oct. 19 2019
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 20 2018	Oct. 19 2019
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June. 27 2018	June. 26 2019

Conducted Emission						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	May.16 2014	May.15 2019
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 27 2018	June. 26 2019
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June. 27 2018	June. 26 2019
4	Artificial Mains Network	SCHWARZBECK MESS	NSLK8127	GTS226	June. 27 2018	June. 26 2019
5	Coaxial Cable	GTS	N/A	GTS227	N/A	N/A
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Thermo meter	KTJ	TA328	GTS233	June. 27 2018	June. 26 2019
8	Absorbing clamp	Elektronik-Feinmechanik	MDS21	GTS229	June. 27 2018	June. 26 2019

RF Conducted Test:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	MXA Signal Analyzer	Agilent	N9020A	GTS566	June. 27 2018	June. 26 2019
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 27 2018	June. 26 2019
3	Spectrum Analyzer	Agilent	E4440A	GTS533	June. 27 2018	June. 26 2019
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	June. 27 2018	June. 26 2019
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	June. 27 2018	June. 26 2019
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	June. 27 2018	June. 26 2019
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	June. 27 2018	June. 26 2019
8	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 27 2018	June. 26 2019
9	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	June. 27 2018	June. 26 2019

General used equipment:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	June. 27 2018	June. 26 2019
2	Barometer	ChangChun	DYM3	GTS255	June. 27 2018	June. 26 2019

7 Test results and Measurement Data

7.1 Antenna requirement

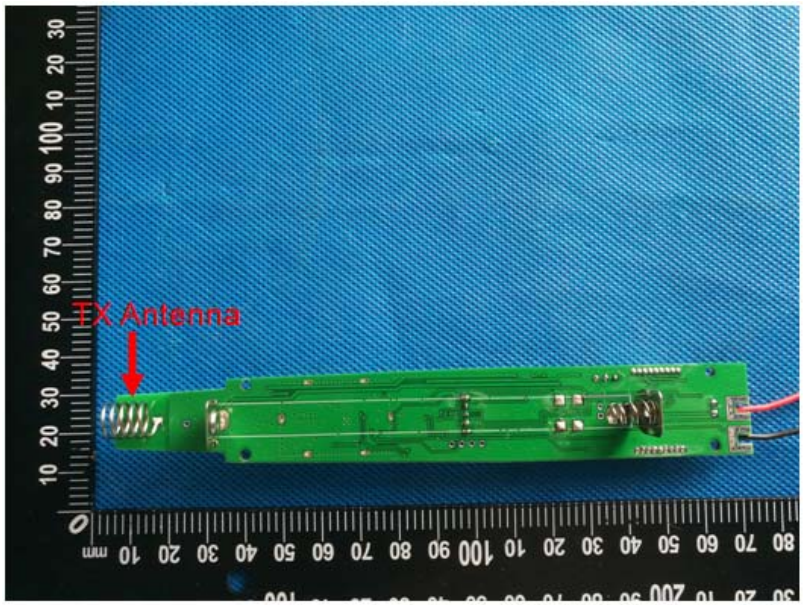
Standard requirement:	FCC Part15 C Section 15.203

15.203 requirement:

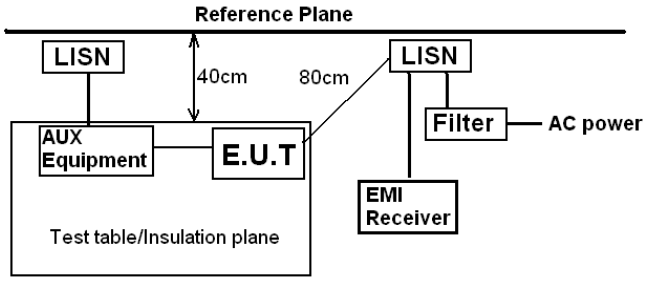
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT Antenna:

The antenna is Internal antenna, the best case gain of the antenna is 0dBi.



7.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10:2013
Test Frequency Range:	150KHz to 30MHz
Class / Severity:	Class B
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto
Limit:	<table><tr><th rowspan="2">Frequency range (MHz)</th><th colspan="2">Limit (dBuV)</th></tr><tr><th>Quasi-peak</th><th>Average</th></tr><tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 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> * Decreases with the logarithm of the frequency.
Test setup:	 *Remark:* *E.U.T: Equipment Under Test* *LISN: Line Impedence Stabilization Network* *Test table height=0.8m*
Test procedure:	1. The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test voltage:	DC3.0V
Test results:	N/A, The EUT employ battery power for operation and which do not operate from the AC power lines. Measurements to demonstrate compliance with the conducted limits are not required for devices.

7.3 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209
Test Method:	ANSI C63.10:2013
Test Frequency Range:	9kHz to 25GHz
Test site:	Measurement Distance: 3m

Receiver setup:

Frequency	Detector	RBW	VBW	Remark
9kHz-150kHz	Quasi-peak	200Hz	300Hz	Quasi-peak Value
150kHz-30MHz	Quasi-peak	9kHz	10kHz	Quasi-peak Value
30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value
Above 1GHz	Peak	1MHz	3MHz	Peak Value
	Peak	1MHz	10Hz	Average Value

Limit:
(Field strength of the fundamental signal)

Frequency	Limit (dBuV/m @3m)	Remark
902-928MHz	94.00	Average Value
	114.00	Peak Value

Limit:
(Spurious Emissions)

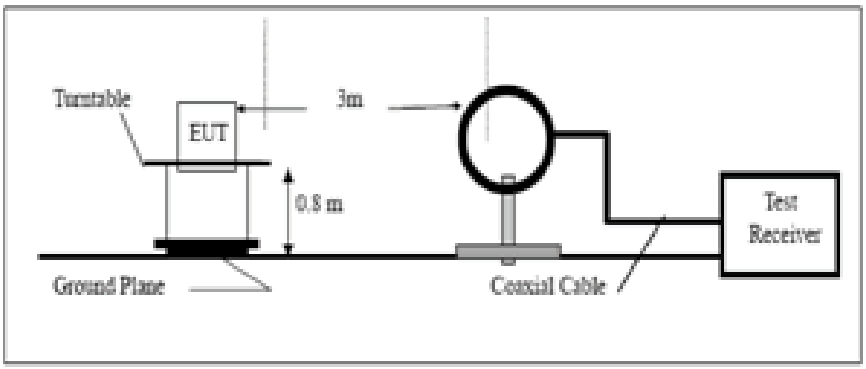
Frequency	Limit (uV/m)	Remark
0.009MHz-0.490MHz	2400/F(kHz) @300m	Quasi-peak Value
0.490MHz-1.705MHz	24000/F(kHz) @30m	Quasi-peak Value
1.705MHz-30.0MHz	30 @30m	Quasi-peak Value
30MHz-88MHz	100 @3m	Quasi-peak Value
88MHz-216MHz	150 @3m	Quasi-peak Value
216MHz-960MHz	200 @3m	Quasi-peak Value
960MHz-1GHz	500 @3m	Quasi-peak Value
Above 1GHz	500 @3m	Average Value
	5000 @3m	Peak Value

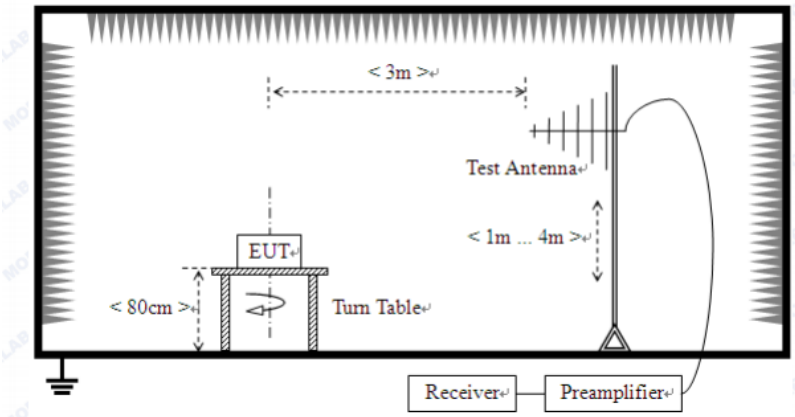
Limit:
(band edge)

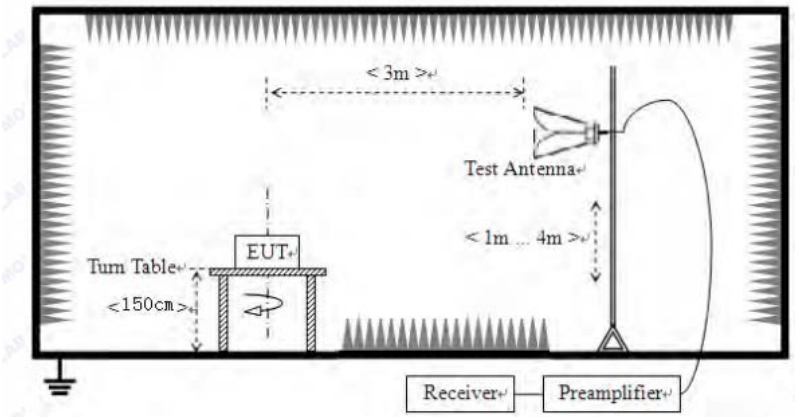
Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

Test setup:

Below 1GHz



<table>
<tr><td></td><td>


Above 1GHz


</td></tr>
<tr><td>Test Procedure:</td><td>1. The EUT was placed on the top of a rotating table (0.8m for below 1GHz and 1.5 meters for above 1GHz) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The antenna height 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.
4. 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 rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.</td></tr>
<tr><td>Test Instruments:</td><td>Refer to section 6.0 for details</td></tr>
<tr><td>Test mode:</td><td>Refer to section 5.2 for details</td></tr>
<tr><td>Test voltage:</td><td>DC3.0V</td></tr>
</table>

Test results:	Pass

Measurement data:

7.3.1 Field Strength of The Fundamental Signal

Quasi-peak measurement

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
902.3	74.45	31.88	8.68	32.13	82.88	94.00	-11.12	Vertical
902.3	64.61	36.45	11.75	31.86	80.95	94.00	-13.05	Horizontal
914.9	65.04	38.43	14.29	31.68	86.08	94.00	-7.92	Vertical
914.9	80.78	27.55	5.49	29.93	83.89	94.00	-10.11	Horizontal
927.8	82.39	27.59	5.38	34.01	81.35	94.00	-12.65	Vertical
927.8	87.17	27.58	5.39	34.01	86.13	94.00	-7.87	Horizontal

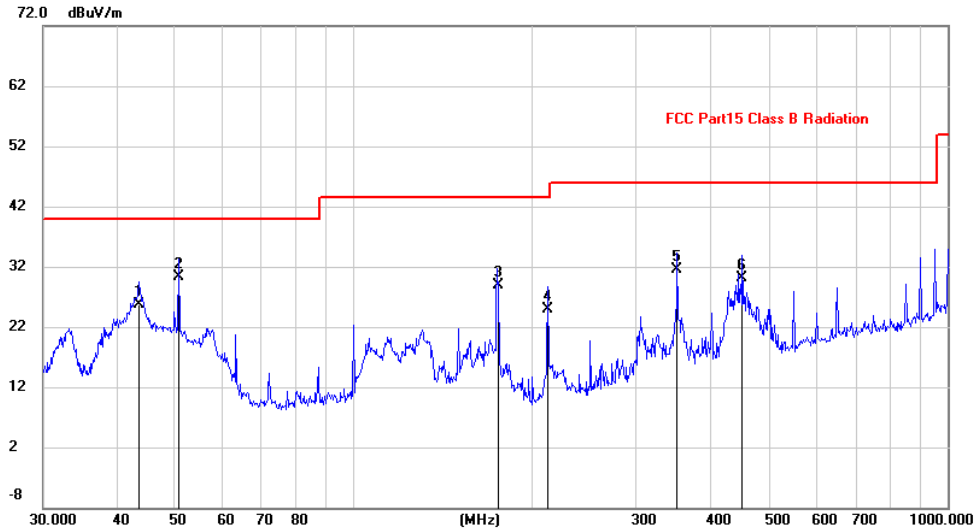
7.3.2 Spurious emissions

■ Below 30MHz

The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o), the test result no need to reported.

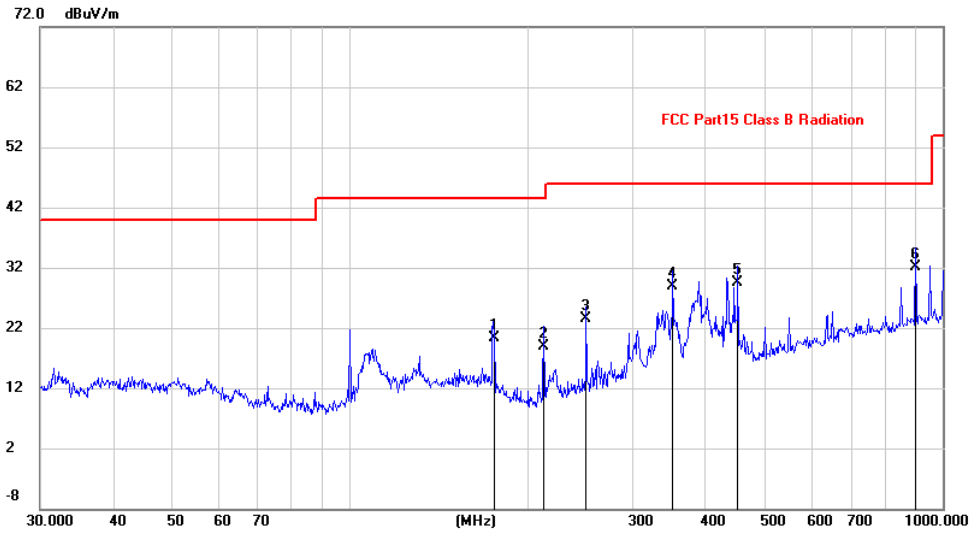
■ **Below 1GHz**

Mode:	**Transmitting mode**	**Test by:**	**Bill**
Temp./Hum.(%H):	**26℃/56%RH**	**Polarziation:**	**Horizontal**



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		43.5057	11.73	13.90	25.63	40.00	-14.37	QP
2	*	50.9419	16.57	13.64	30.21	40.00	-9.79	QP
3		175.0367	15.92	12.95	28.87	43.50	-14.63	QP
4		212.2694	14.14	10.83	24.97	43.50	-18.53	QP
5		350.4768	17.11	14.41	31.52	46.00	-14.48	QP
6		451.1350	13.00	17.01	30.01	46.00	-15.99	QP

Mode:	**Transmitting mode**	**Test by:**	**Bill**
Temp./Hum.(%H):	**26℃/56%RH**	**Polarziation:**	**Vertical**



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		175.0368	7.27	12.95	20.22	43.50	-23.28	QP
2		212.2695	8.15	10.83	18.98	43.50	-24.52	QP
3		250.3012	11.48	12.06	23.54	46.00	-22.46	QP
4		350.4768	14.50	14.41	28.91	46.00	-17.09	QP
5		451.1350	12.52	17.01	29.53	46.00	-16.47	QP
6	*	900.1474	9.12	22.95	32.07	46.00	-13.93	QP

■ **Above 1GHz**

Test channel:	Lowest channel

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
1804.6	48.82	31.78	8.60	32.09	57.11	74.00	-16.89	Vertical
2706.9	44.39	36.15	11.65	32.00	60.19	74.00	-13.81	Vertical
3609.2	42.54	37.95	14.14	31.62	63.01	74.00	-10.99	Vertical
	*					74.00		Vertical
	*					74.00		Vertical
1804.6	45.78	31.78	8.60	32.09	54.07	74.00	-19.93	Horizontal
2706.9	43.50	36.15	11.65	32.00	59.30	74.00	-14.70	Horizontal
3609.2	40.17	37.95	14.14	31.62	60.64	74.00	-13.36	Horizontal
	*					74.00		Horizontal
	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
1804.6	40.04	31.78	8.60	32.09	48.33	54.00	-5.67	Vertical
2706.9	32.86	36.15	11.65	32.00	48.66	54.00	-5.34	Vertical
3609.2	30.70	37.95	14.14	31.62	51.17	54.00	-2.83	Vertical
	*					54.00		Vertical
	*					54.00		Vertical
1804.6	35.96	31.78	8.60	32.09	44.25	54.00	-9.75	Horizontal
2706.9	30.12	36.15	11.65	32.00	45.92	54.00	-8.08	Horizontal
3609.2	29.29	37.95	14.14	31.62	49.76	54.00	-4.24	Horizontal
	*					54.00		Horizontal
	*					54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*

Test channel:	Middle

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
1829.8	48.94	31.85	8.67	32.12	57.34	74.00	-16.66	Vertical
2744.7	42.31	36.37	11.72	31.89	58.51	74.00	-15.49	Vertical
3659.6	37.96	38.35	14.25	31.62	58.94	74.00	-15.06	Vertical
	*					74.00		Vertical
	*					74.00		Vertical
1829.8	45.60	31.85	8.67	32.12	54.00	74.00	-20.00	Horizontal
2744.7	39.89	36.37	11.72	31.89	56.09	74.00	-17.91	Horizontal
3659.6	37.63	38.35	14.25	31.62	58.61	74.00	-15.39	Horizontal
	*					74.00		Horizontal
	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
1829.8	38.59	31.85	8.67	32.12	46.99	54.00	-7.01	Vertical
2744.7	32.81	36.37	11.72	31.89	49.01	54.00	-4.99	Vertical
3659.6	30.10	38.35	14.25	31.62	51.08	54.00	-2.92	Vertical
	*					54.00		Vertical
	*					54.00		Vertical
1829.8	35.36	31.85	8.67	32.12	43.76	54.00	-10.24	Horizontal
2744.7	29.98	36.37	11.72	31.89	46.18	54.00	-7.82	Horizontal
3659.6	28.08	38.35	14.25	31.62	49.06	54.00	-4.94	Horizontal
	*					54.00		Horizontal
	*					54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*

Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
1855.6	49.52	31.93	8.73	32.16	58.02	74.00	-15.98	Vertical
2783.4	42.89	36.59	11.79	31.78	59.49	74.00	-14.51	Vertical
3711.2	40.68	38.81	14.38	31.88	61.99	74.00	-12.01	Vertical
	*					74.00		Vertical
	*					74.00		Vertical
1855.6	45.72	31.93	8.73	32.16	54.22	74.00	-19.78	Horizontal
2783.4	40.58	36.59	11.79	31.78	57.18	74.00	-16.82	Horizontal
3711.2	38.25	38.81	14.38	31.88	59.56	74.00	-14.44	Horizontal
	*					74.00		Horizontal
	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
1855.6	38.03	31.93	8.73	32.16	46.53	54.00	-7.47	Vertical
2783.4	32.54	36.59	11.79	31.78	49.14	54.00	-4.86	Vertical
3711.2	28.28	38.81	14.38	31.88	49.59	54.00	-4.41	Vertical
	*					54.00		Vertical
	*					54.00		Vertical
1855.6	35.78	31.93	8.73	32.16	44.28	54.00	-9.72	Horizontal
2783.4	30.65	36.59	11.79	31.78	47.25	54.00	-6.75	Horizontal
3711.2	28.42	38.81	14.38	31.88	49.73	54.00	-4.27	Horizontal
	*					54.00		Horizontal
	*					54.00		Horizontal

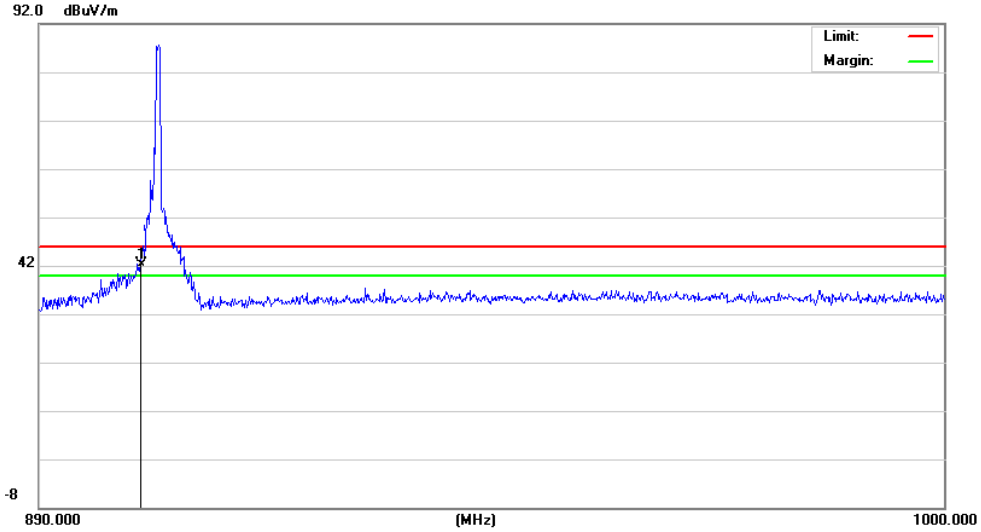
Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

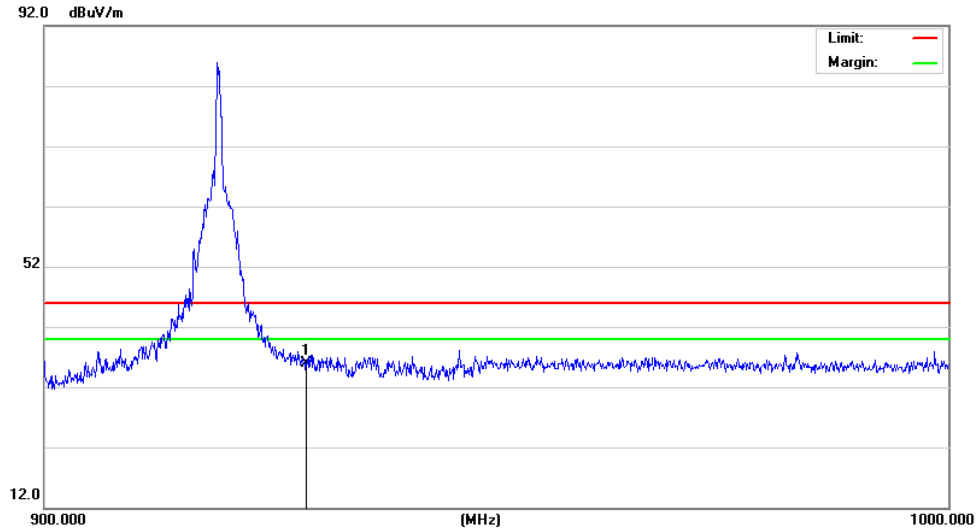
7.3.3 Bandedge emissions

Pre-test horizontal and vertical radiated find that vertical radiated is worst case,only show worst case as follow:

Low channel: Vertical



Highest Channel: Vertical



Test result: The unit does meet the FCC requirements.

All of the restriction bands were tested, and only the data of worst case was exhibited.

Test channel:	Lowest channel

QP value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
902	42.82	27.59	5.38	34.01	41.78	46	-4.22	Horizontal
928	36.43	27.58	5.39	34.01	35.39	46	-10.61	Horizontal
902	41.06	27.59	5.38	34.01	40.02	46	-5.98	Vertical
928	35.38	27.58	5.39	34.01	34.34	46	-11.66	Vertical

Test channel:	Highest channel

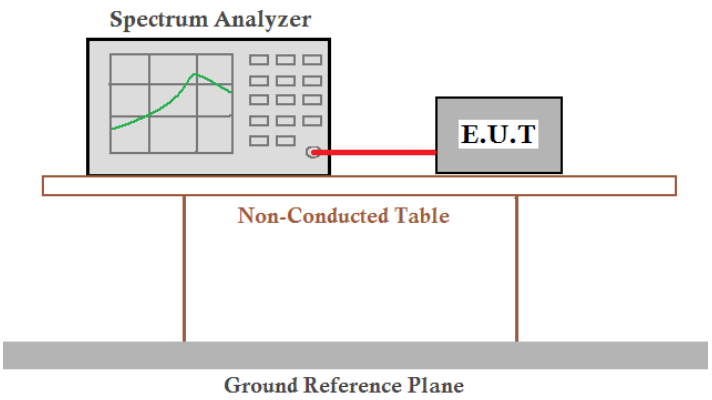
QP value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
902	39.32	27.59	5.38	34.01	38.28	46	-7.72	Horizontal
928	34.15	27.58	5.39	34.01	33.11	46	-12.89	Horizontal
902	38.03	27.59	5.38	34.01	36.99	46	-9.01	Vertical
928	36.75	27.58	5.39	34.01	35.71	46	-10.29	Vertical

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*

7.4 20dB Occupy Bandwidth

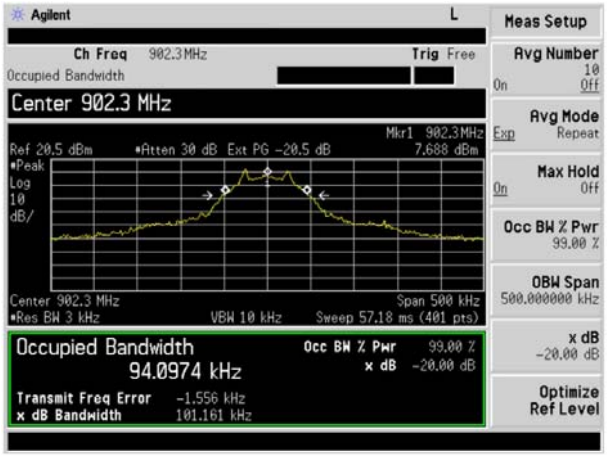
Test Requirement:	FCC Part15 C Section 15.249/15.215
Test Method:	ANSI C63.10:2013
Limit:	Operation Frequency range 902MHz~928MHz
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

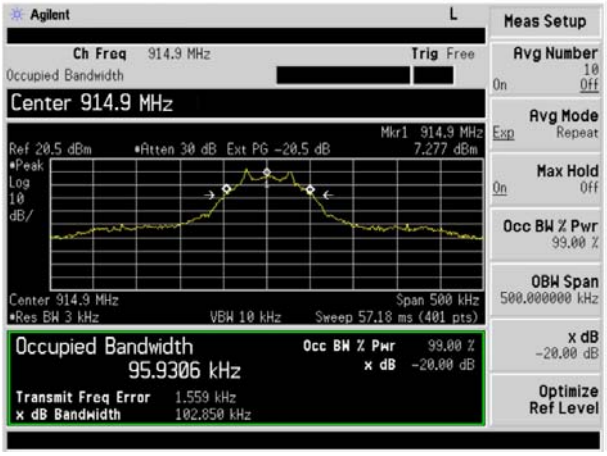
Test channel	20dB bandwidth(kHz)	Result
Lowest	101.161	Pass
Middle	102.850	Pass
Highest	104.860	Pass

Test plot as follows:

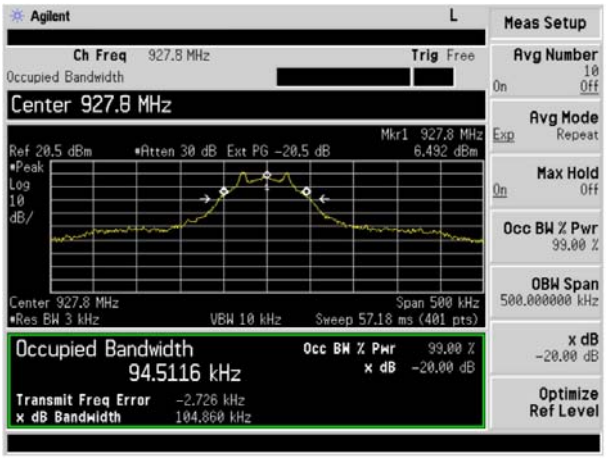
Lowest channel



Middle channel

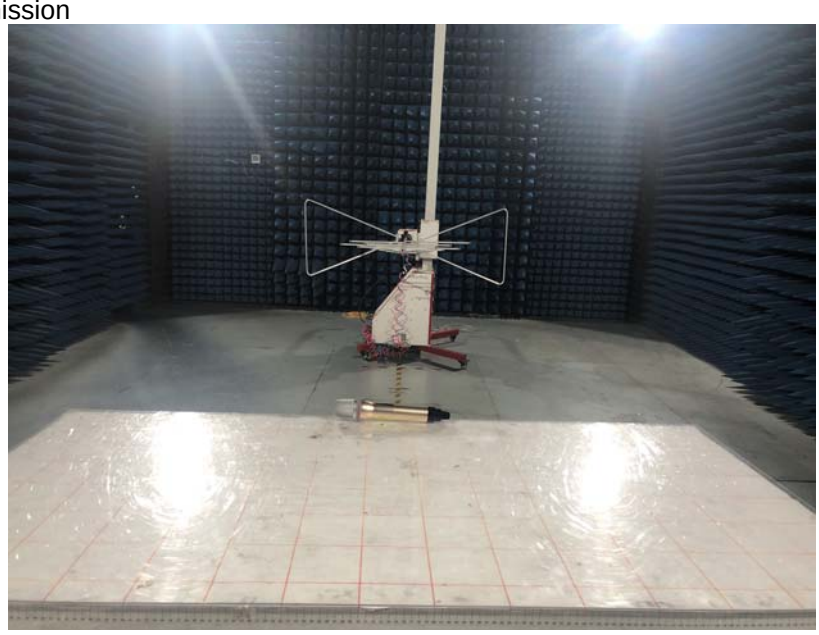


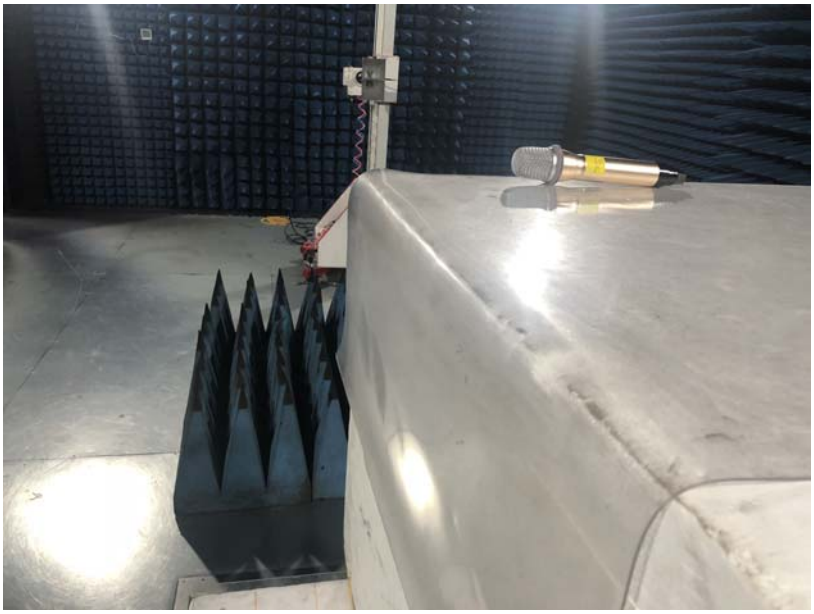
Highest channel



8 Test Setup Photo

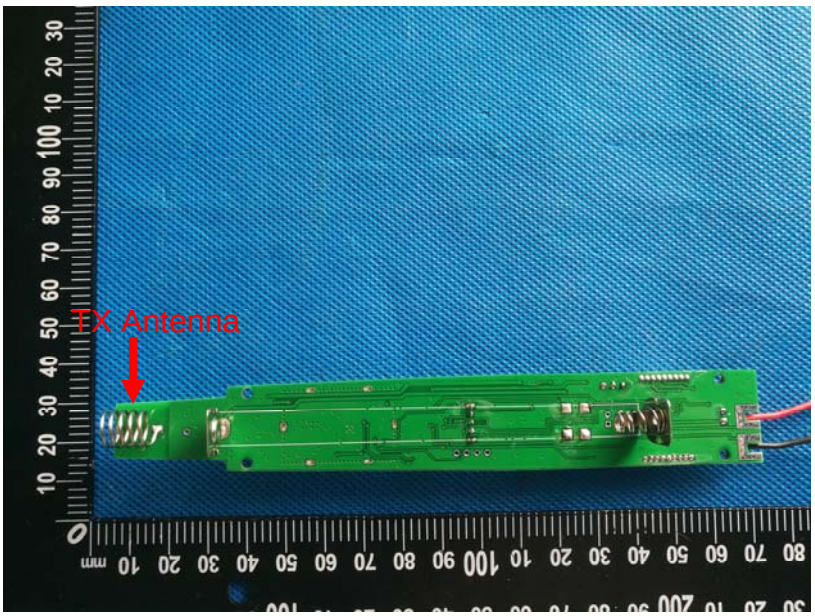
Radiated Emission

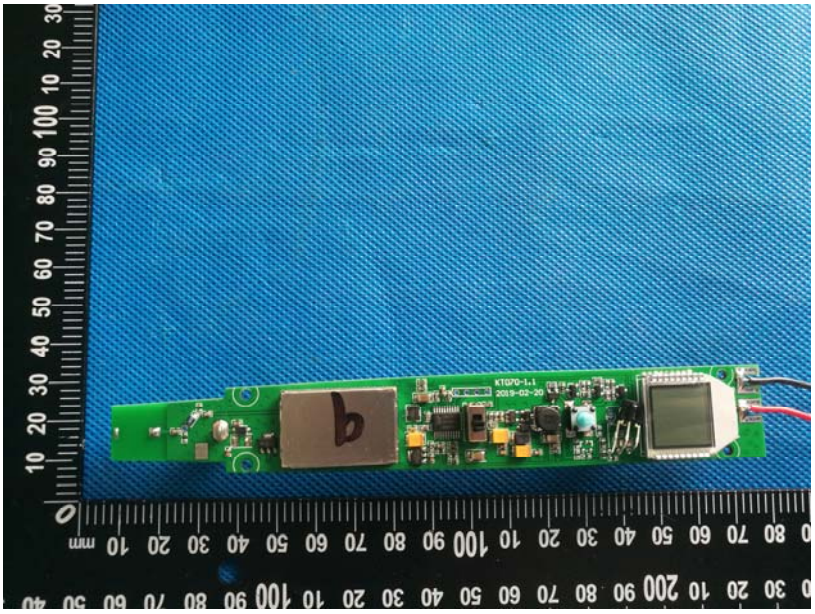


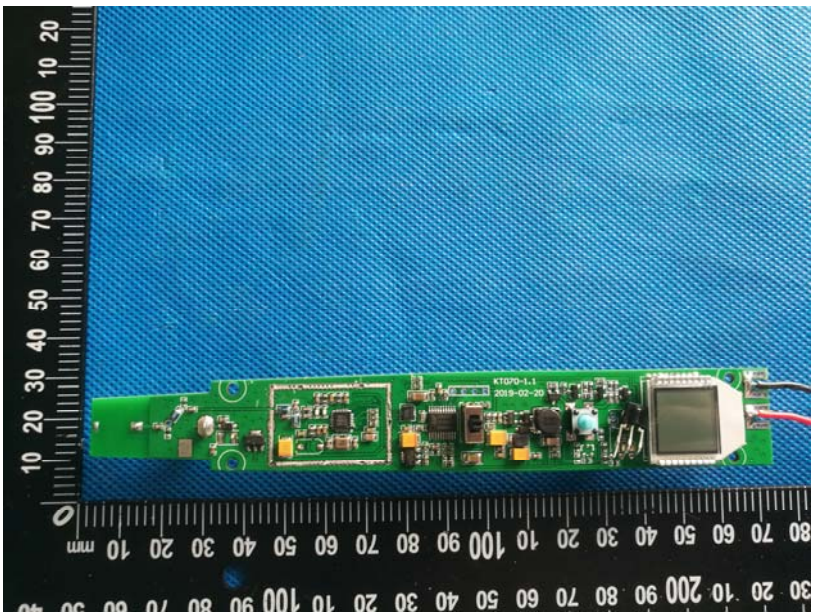


9 EUT Constructional Details

ATX3000


TX Antenna





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