FCC REPORT

Applicant:	ENPING YIYANG ELECTRONICS CO., LTD
Address of Applicant:	B12-2, Chanye Zhuan Yi Yuan Qu, Enping, Guangdong, China
Manufacturer:	ENPING YIYANG ELECTRONICS CO., LTD
Address of Manufacturer:	B12-2, Chanye Zhuan Yi Yuan Qu, Enping, Guangdong, China

Equipment Under Test (EUT)

Product Name:	UHF Wireless Microphone
Model No.:	YY-801, YY-802, YY-301, YY-302, YY-601, YY-078, YY-T1, YM-2, YY-802S, YA-2, YY-901, YY-902, H-U05, H-U25, H-U06, H-U26, H-K26, H-K25, YM-1, YY-920
FCC ID:	2AUN3-YY-801
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.249
Date of sample receipt:	September 09, 2019
Date of Test:	September 09- September 19, 2019
Date of report issued:	September 19, 2019
Test Result :	PASS *

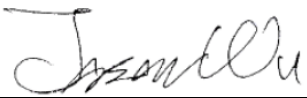
* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Robinson Lo
Laboratory Manager

2 Version

Version No.	Date	Description
00	*September 19*	*Original*

Prepared By:  ***Date:*** *September 19*

Project Engineer

Check By:  ***Date:*** *September 19*

Reviewer

3 Contents

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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	Pass
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

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

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

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:	UHF Wireless Microphone
Model No.:	YY-801, YY-802, YY-301, YY-302, YY-601, YY-078, YY-T1, YM-2, YY-802S, YA-2, YY-901, YY-902, H-U05, H-U25, H-U06, H-U26, H-K26, H-K25, YM-1, YY-920
Test model:	YY-801
Remark: All above models are identical in the same PCB layout, interior structure and electrical circuits. The differences are system version, product appearance and model name for commercial purpose.	
Serial No.:	EPH850J
Hardware Version:	HV1.0
Software Version:	SV1.0
Test sample(s) ID:	GTS201909000094-1
Sample(s) Status	Engineered sample
Operation Frequency:	902.8-927.6MHz
Channel numbers:	64
Channel separation:	400KHz
Modulation type:	FM
Antenna Type:	Internal antenna
Antenna gain:	1.0 dBi
Power supply:	DC3.7V

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	902.8MHz	11	906.8MHz	33	915.6MHz	57	925.2MHz
2	903.2MHz	12	907.2MHz	34	916MHz	58	925.6MHz
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
9	906MHz	31	914.8MHz	55	924.4MHz	64	927.6MHz
10	906.4MHz	32	915.2MHz	56	924.8MHz		

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	902.8MHz
The middle channel	915.2MHz
The Highest channel	927.6MHz

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.	

Pre-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)	96.12	96.33	96.25

Final Test Mode:

The EUT was tested in GFSK, π/4-DQPSK, 8-DPSK modulation, and found the GFSK modulation is the worst case.

According to ANSI C63.10 standards, the test results are both the "worst case" and "worst setup":

Y axis (see the test setup photo)

5.3 Description of Support Units

Manufacturer	Description	Model	Serial Number
/	/	/	/

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.

● **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.

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. 26 2019	June. 25 2020
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 26 2019	June. 25 2020
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June. 26 2019	June. 25 2020
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 26 2019	June. 25 2020
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	June. 26 2019	June. 25 2020
9	Coaxial Cable	GTS	N/A	GTS211	June. 26 2019	June. 25 2020
10	Coaxial cable	GTS	N/A	GTS210	June. 26 2019	June. 25 2020
11	Coaxial Cable	GTS	N/A	GTS212	June. 26 2019	June. 25 2020
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 26 2019	June. 25 2020
13	Amplifier(2GHz-20GHz)	HP	84722A	GTS206	June. 26 2019	June. 25 2020
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 26 2019	June. 25 2020
15	Band filter	Amindeon	82346	GTS219	June. 26 2019	June. 25 2020
16	Power Meter	Anritsu	ML2495A	GTS540	June. 26 2019	June. 25 2020
17	Power Sensor	Anritsu	MA2411B	GTS541	June. 26 2019	June. 25 2020
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	June. 26 2019	June. 25 2020
19	Splitter	Agilent	11636B	GTS237	June. 26 2019	June. 25 2020
20	Loop Antenna	ZHINAN	ZN30900A	GTS534	June. 26 2019	June. 25 2020
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. 26 2019	June. 25 2020

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.15 2019	May.14 2022
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 26 2019	June. 25 2020
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June. 26 2019	June. 25 2020
4	Artificial Mains Network	SCHWARZBECK MESS	NSLK8127	GTS226	June. 26 2019	June. 25 2020
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. 26 2019	June. 25 2020
8	Absorbing clamp	Elektronik-Feinmechanik	MDS21	GTS229	June. 26 2019	June. 25 2020
9	ISN	SCHWARZBECK	NTFM 8158	GTD565	June. 26 2019	June. 25 2020

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. 26 2019	June. 25 2020
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 26 2019	June. 25 2020
3	Spectrum Analyzer	Agilent	E4440A	GTS533	June. 26 2019	June. 25 2020
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	June. 26 2019	June. 25 2020
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	June. 26 2019	June. 25 2020
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	June. 26 2019	June. 25 2020
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	June. 26 2019	June. 25 2020
8	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	June. 26 2019	June. 25 2020

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. 26 2019	June. 25 2020
2	Barometer	ChangChun	DYM3	GTS255	June. 26 2019	June. 25 2020

7 Test results and Measurement Data

7.1 Antenna requirement

Standard requirement:	FCC Part15 C Section 15.203

15.203 requirement:

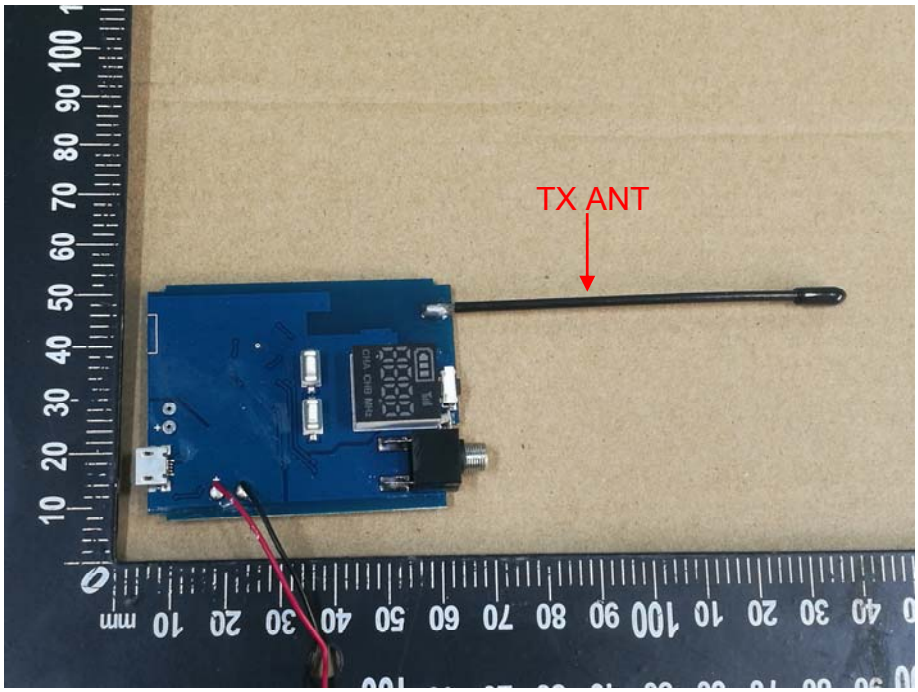
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit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

15.247(c) (1)(i) requirement:

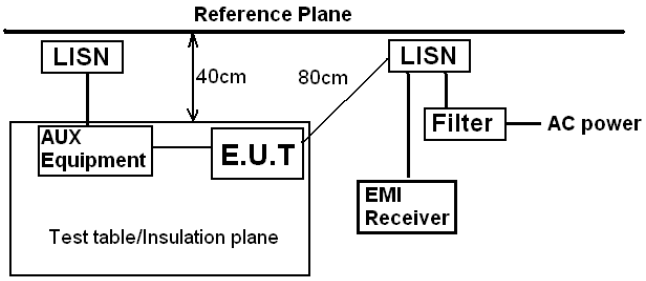
(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

EUT Antenna:

The antenna is Internal antenna, the best case gain of the antenna is 1.0dBi.



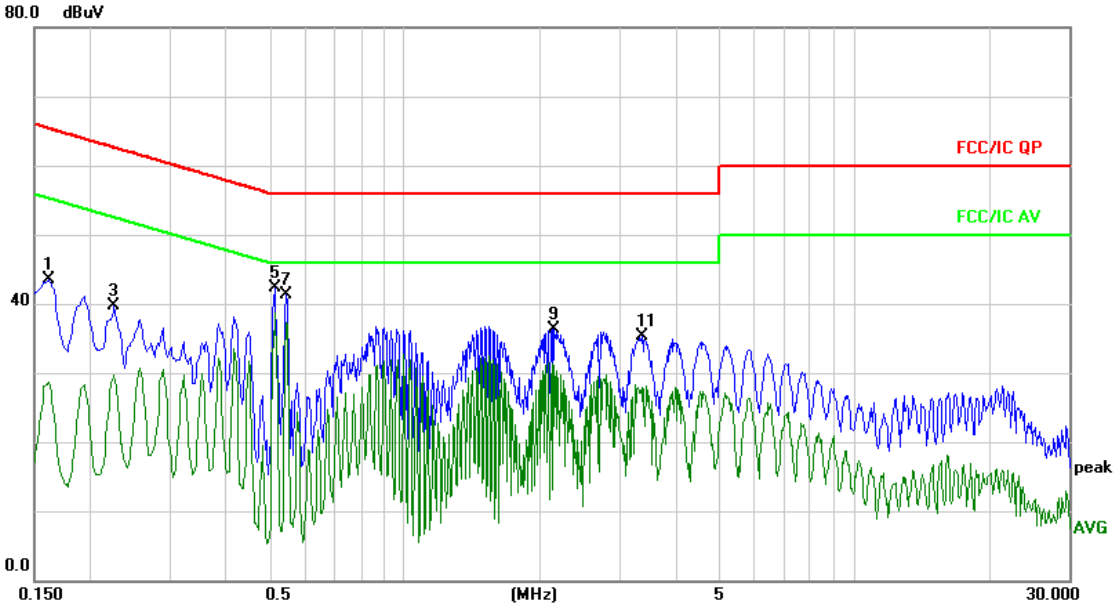
7.2 Conducted Emissions

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.207</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2013</td></tr>
<tr><td>Test Frequency Range:</td><td>150KHz to 30MHz</td></tr>
<tr><td>Class / Severity:</td><td>Class B</td></tr>
<tr><td>Receiver setup:</td><td>RBW=9KHz, VBW=30KHz, Sweep time=auto</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><td rowspan="2">Frequency range (MHz)</td><td colspan="2">Limit (dBuV)</td></tr>
<tr><td>Quasi-peak</td><td>Average</td></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.
</td></tr>
<tr><td>Test setup:</td><td>


Remark:
E.U.T: Equipment Under Test
LISN: Line Impedence Stabilization Network
Test table height=0.8m
</td></tr>
<tr><td>Test procedure:</td><td>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.</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
TX-CH01 (worst case)</td></tr>
<tr><td>Test environment:</td><td>Temp.:</td><td>25 °C</td><td>Humid.:</td><td>52%</td><td>Press.:</td><td>1012mbar</td></tr>
<tr><td>Test voltage:</td><td>AC 120V, 60Hz</td></tr>
<tr><td>Test results:</td><td>Pass</td></tr>
</table>

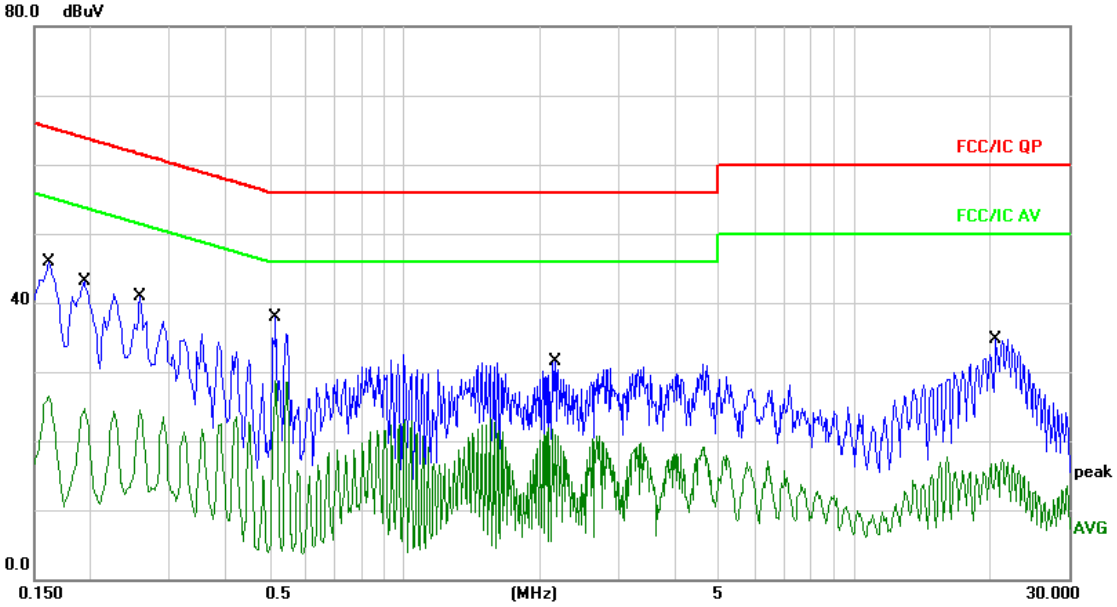
Measurement data

Line:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1620	33.80	9.67	43.47	65.36	-21.89	QP	
2		0.1620	19.09	9.67	28.76	55.36	-26.60	AVG	
3		0.2260	29.98	9.65	39.63	62.60	-22.97	QP	
4		0.2260	20.09	9.65	29.74	52.60	-22.86	AVG	
5		0.5140	32.63	9.68	42.31	56.00	-13.69	QP	
6	*	0.5140	28.99	9.68	38.67	46.00	-7.33	AVG	
7		0.5460	31.57	9.68	41.25	56.00	-14.75	QP	
8		0.5460	27.56	9.68	37.24	46.00	-8.76	AVG	
9		2.1540	26.62	9.72	36.34	56.00	-19.66	QP	
10		2.1540	21.74	9.72	31.46	46.00	-14.54	AVG	
11		3.3740	25.61	9.72	35.33	56.00	-20.67	QP	
12		3.3740	18.51	9.72	28.23	46.00	-17.77	AVG	

Neutral:

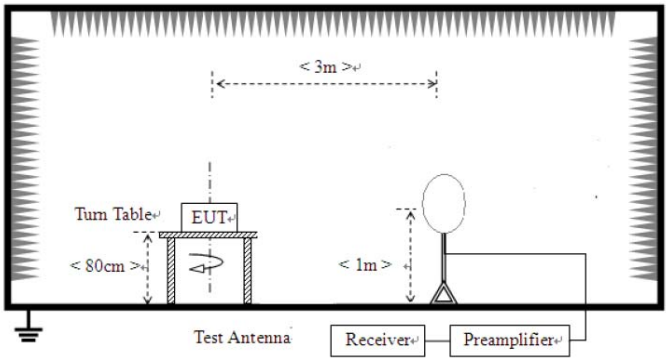


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1620	36.14	9.67	45.81	65.36	-19.55	QP	
2		0.1620	16.92	9.67	26.59	55.36	-28.77	AVG	
3		0.1940	33.51	9.65	43.16	63.86	-20.70	QP	
4		0.1940	15.06	9.65	24.71	53.86	-29.15	AVG	
5		0.2580	31.21	9.66	40.87	61.49	-20.62	QP	
6		0.2580	14.81	9.66	24.47	51.49	-27.02	AVG	
7		0.5180	28.14	9.68	37.82	56.00	-18.18	QP	
8	*	0.5180	18.95	9.68	28.63	46.00	-17.37	AVG	
9		2.1619	21.80	9.72	31.52	56.00	-24.48	QP	
10		2.1619	12.22	9.72	21.94	46.00	-24.06	AVG	
11		20.7020	24.80	9.85	34.65	60.00	-25.35	QP	
12		20.7020	7.35	9.85	17.20	50.00	-32.80	AVG	

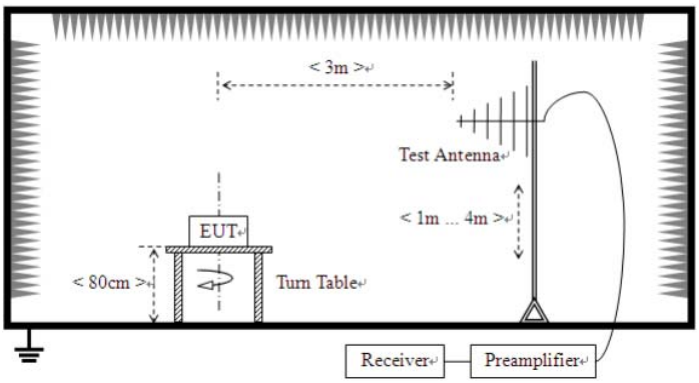
Notes:

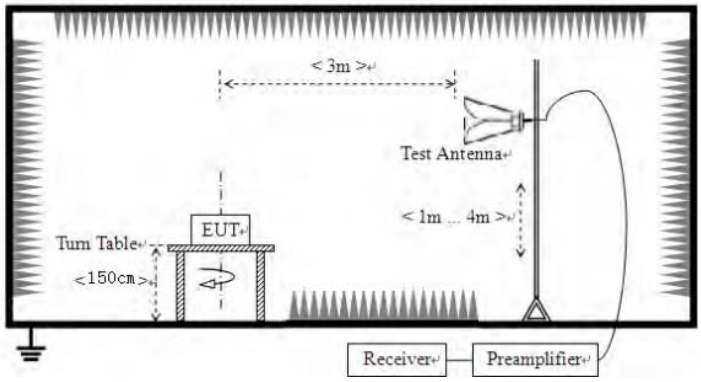
1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level =Receiver Read level + LISN Factor + Cable Loss
4. *If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.*

7.3 Radiated Emission Method

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.209</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2013</td></tr>
<tr><td>Test Frequency Range:</td><td>9kHz to 25GHz</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Remark</th></tr>
<tr><td>9kHz-150kHz</td><td>Quasi-peak</td><td>200Hz</td><td>300Hz</td><td>Quasi-peak Value</td></tr>
<tr><td>150kHz-30MHz</td><td>Quasi-peak</td><td>9kHz</td><td>10kHz</td><td>Quasi-peak Value</td></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>120KHz</td><td>300KHz</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>Peak</td><td>1MHz</td><td>10Hz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:
(Field strength of the fundamental signal)</td><td>
<table>
<tr><th>Frequency</th><th>Limit (dBuV/m @3m)</th><th>Remark</th></tr>
<tr><td rowspan="2">2400MHz-2483.5MHz</td><td>94.00</td><td>Average Value</td></tr>
<tr><td>114.00</td><td>Peak Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:
(Spurious Emissions)</td><td>
<table>
<tr><th>Frequency</th><th>Limit (uV/m)</th><th>Remark</th></tr>
<tr><td>0.009MHz-0.490MHz</td><td>2400/F(kHz) @300m</td><td>Quasi-peak Value</td></tr>
<tr><td>0.490MHz-1.705MHz</td><td>24000/F(kHz) @30m</td><td>Quasi-peak Value</td></tr>
<tr><td>1.705MHz-30.0MHz</td><td>30 @30m</td><td>Quasi-peak Value</td></tr>
<tr><td>30MHz-88MHz</td><td>100 @3m</td><td>Quasi-peak Value</td></tr>
<tr><td>88MHz-216MHz</td><td>150 @3m</td><td>Quasi-peak Value</td></tr>
<tr><td>216MHz-960MHz</td><td>200 @3m</td><td>Quasi-peak Value</td></tr>
<tr><td>960MHz-1GHz</td><td>500 @3m</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>500 @3m</td><td>Average Value</td></tr>
<tr><td>5000 @3m</td><td>Peak Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:
(band edge)</td><td>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.</td></tr>
<tr><td>Test setup:</td><td>For radiated emissions from 9kHz to 30MHz
 

For radiated emissions from 30MHz to1GHz</td></tr>
</table>

<table>
<tr><td></td><td colspan="6"> 

For radiated emissions above 1GHz

</td></tr>
<tr><td>Test Procedure:</td><td colspan="6">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 colspan="6">Refer to section 6.0 for details</td></tr>
<tr><td>Test mode:</td><td colspan="6">Refer to section 5.2 for details</td></tr>
<tr><td>Test environment:</td><td>Temp.:</td><td>25 °C</td><td>Humid.:</td><td>52%</td><td>Press.:</td><td>1012mbar</td></tr>
<tr><td>Test voltage:</td><td colspan="6">AC 120V, 60Hz</td></tr>
<tr><td>Test results:</td><td colspan="6">Pass</td></tr>
</table>

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
902.8	75.40	31.88	8.68	32.13	83.83	94.00	-10.17	Vertical
902.8	65.06	36.45	11.75	31.86	81.40	94.00	-12.60	Horizontal
915.2	66.09	38.43	14.29	31.68	87.13	94.00	-6.87	Vertical
915.2	81.51	27.55	5.49	29.93	84.62	94.00	-9.38	Horizontal
927.6	83.04	27.59	5.38	34.01	82.00	94.00	-12.00	Vertical
927.6	87.92	27.58	5.39	34.01	86.88	94.00	-7.12	Horizontal

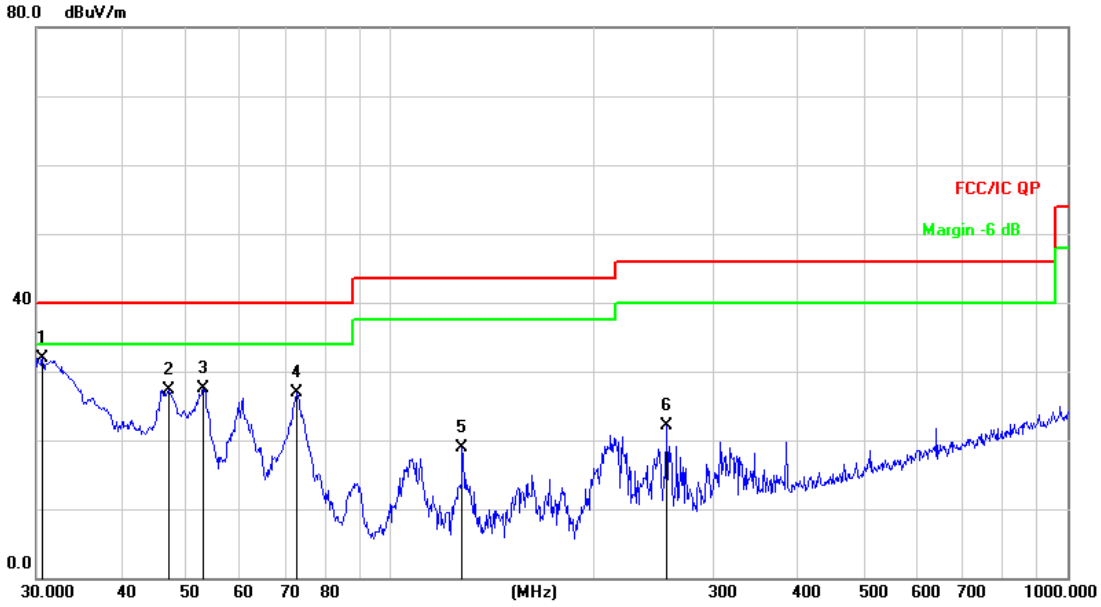
7.3.2 Spurious emissions

■ 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.

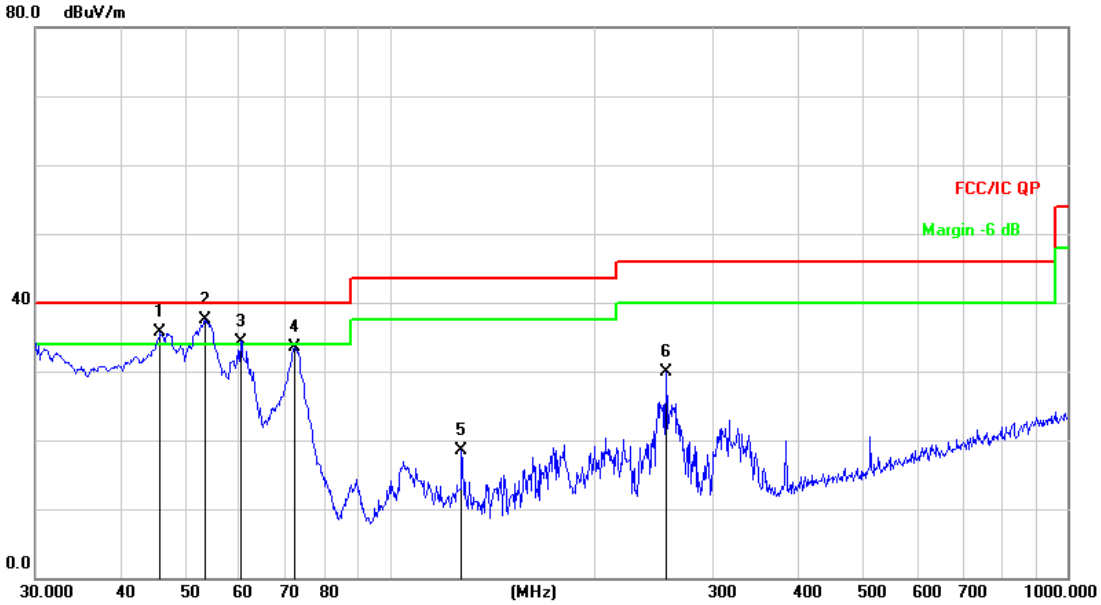
■ Below 1GHz -Lowest channel

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



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	*	30.6379	49.82	-17.94	31.88	40.00	-8.12	QP
2		46.9948	42.05	-14.76	27.29	40.00	-12.71	QP
3		52.9453	42.23	-14.81	27.42	40.00	-12.58	QP
4		72.8466	46.91	-19.92	26.99	40.00	-13.01	QP
5		127.6645	38.17	-19.35	18.82	43.50	-24.68	QP
6		255.6231	35.61	-13.55	22.06	46.00	-23.94	QP

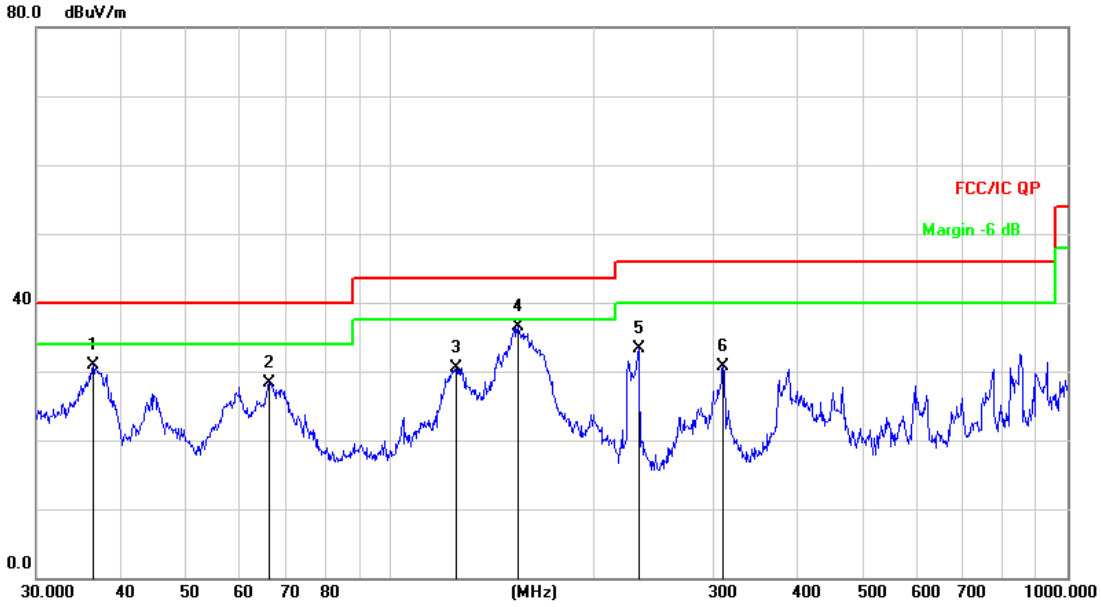
Mode:	Transmitting mode	Test by:	Jason
Temp./Hum.(%H):	26℃/56%RH	Polarziation:	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	!	45.8553	50.42	-14.77	35.65	40.00	-4.35	QP
2	*	53.3179	52.28	-14.83	37.45	40.00	-2.55	QP
3	!	60.2801	50.71	-16.31	34.40	40.00	-5.60	QP
4		72.3376	53.31	-19.79	33.52	40.00	-6.48	QP
5		127.6645	37.80	-19.35	18.45	43.50	-25.05	QP
6		255.6231	43.50	-13.55	29.95	46.00	-16.05	QP

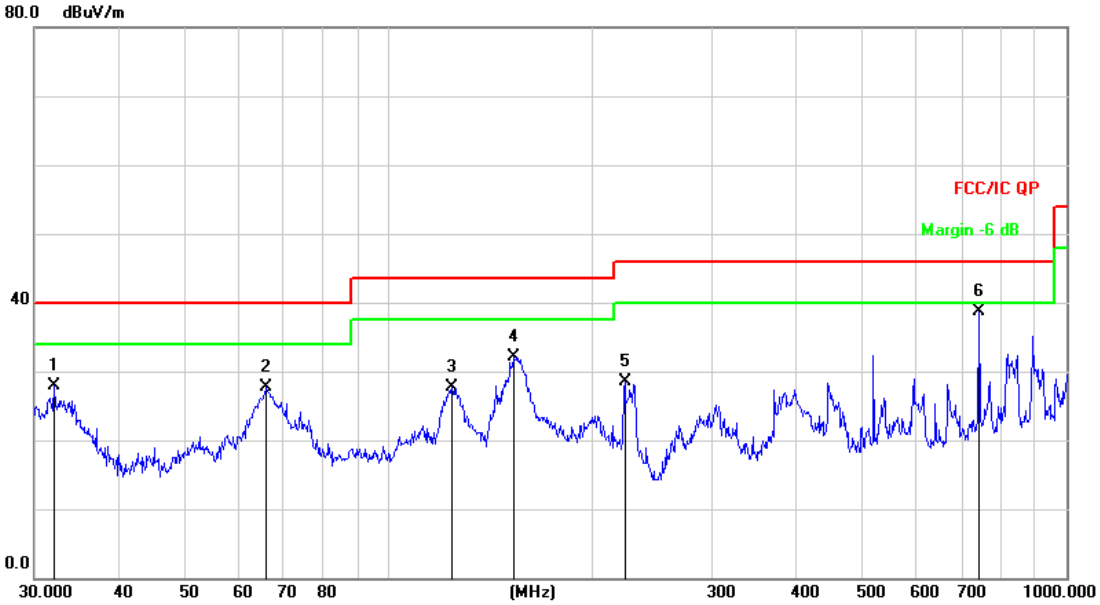
■ Below 1GHz - Middle channel

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



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		36.3814	47.83	-16.91	30.92	40.00	-9.08	QP
2		66.2662	45.57	-17.25	28.32	40.00	-11.68	QP
3		125.0066	49.66	-19.15	30.51	43.50	-12.99	QP
4	*	154.2786	55.96	-19.39	36.57	43.50	-6.93	QP
5		232.5318	47.74	-14.45	33.29	46.00	-12.71	QP
6		309.9977	42.69	-11.90	30.79	46.00	-15.21	QP

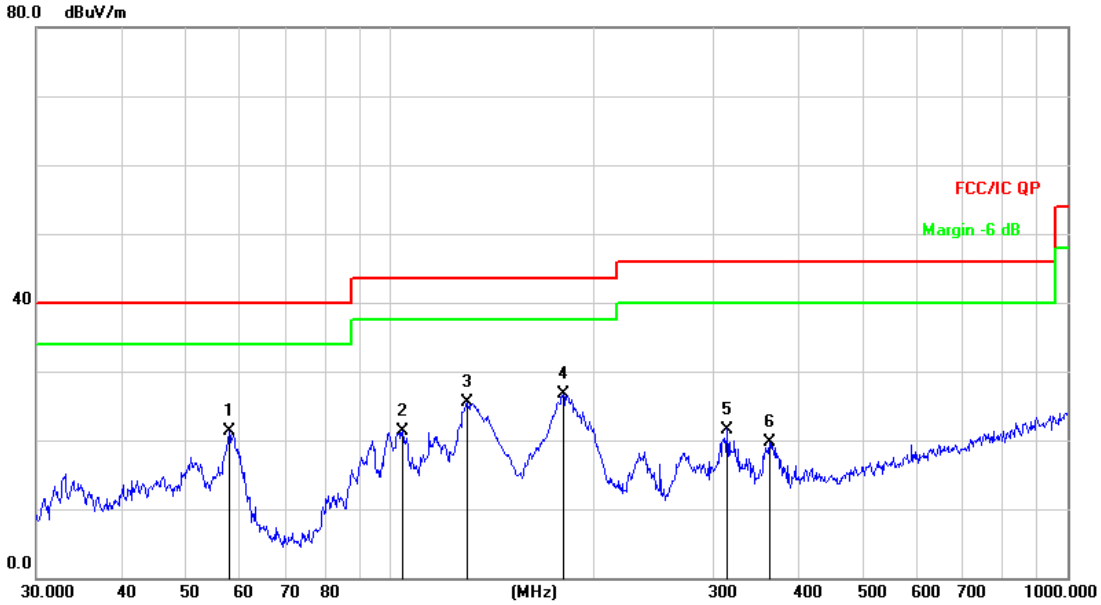
Mode:	Transmitting mode	Test by:	Jason
Temp./Hum.(%H):	26℃/56%RH	Polarziation:	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		32.0667	46.00	-18.01	27.99	40.00	-12.01	QP
2		66.0342	44.93	-17.16	27.77	40.00	-12.23	QP
3		124.1330	46.62	-18.96	27.66	43.50	-15.84	QP
4		153.2004	51.65	-19.45	32.20	43.50	-11.30	QP
5		222.9502	43.67	-15.13	28.54	46.00	-17.46	QP
6	*	742.2587	40.58	-1.96	38.62	46.00	-7.38	QP

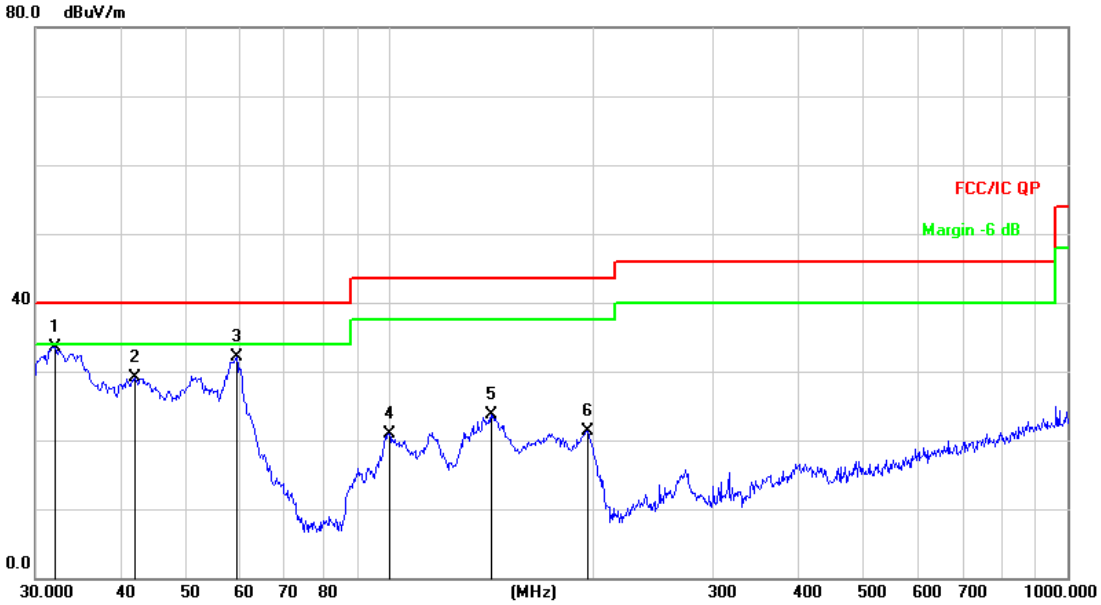
■ Below 1GHz -Highest channel

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



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		57.7962	37.17	-15.90	21.27	40.00	-18.73	QP
2		104.1701	37.58	-16.21	21.37	43.50	-22.13	QP
3		129.9226	45.04	-19.52	25.52	43.50	-17.98	QP
4	*	180.0165	44.54	-17.76	26.78	43.50	-16.72	QP
5		314.3765	33.39	-11.79	21.60	46.00	-24.40	QP
6		362.9844	30.15	-10.39	19.76	46.00	-26.24	QP

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



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	*	32.0667	51.56	-18.01	33.55	40.00	-6.45	QP
2		42.1542	44.21	-15.07	29.14	40.00	-10.86	QP
3		59.4405	48.28	-16.19	32.09	40.00	-7.91	QP
4		99.8777	37.48	-16.51	20.97	43.50	-22.53	QP
5		141.3298	43.61	-19.90	23.71	43.50	-19.79	QP
6		195.8220	37.30	-15.98	21.32	43.50	-22.18	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
1805.60	41.45	31.78	8.60	32.09	49.74	74.00	-24.26	Vertical
2708.40	33.73	36.15	11.65	32.00	49.53	74.00	-24.47	Vertical
3611.20	31.31	37.95	14.14	31.62	51.78	74.00	-22.22	Vertical
4514.00	*					74.00		Vertical
5416.80	*					74.00		Vertical
1805.60	45.21	31.78	8.60	32.09	53.50	74.00	-20.50	Horizontal
2708.40	37.33	36.15	11.65	32.00	53.13	74.00	-20.87	Horizontal
3611.20	33.87	37.95	14.14	31.62	54.34	74.00	-19.66	Horizontal
4514.00	*					74.00		Horizontal
5416.80	*					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
1805.60	28.30	31.78	8.60	32.09	36.59	54.00	-17.41	Vertical
2708.40	22.66	36.15	11.65	32.00	38.46	54.00	-15.54	Vertical
3611.20	23.36	37.95	14.14	31.62	43.83	54.00	-10.17	Vertical
4514.00	*					54.00		Vertical
5416.80	*					54.00		Vertical
1805.60	32.07	31.78	8.60	32.09	40.36	54.00	-13.64	Horizontal
2708.40	23.22	36.15	11.65	32.00	39.02	54.00	-14.98	Horizontal
3611.20	22.93	37.95	14.14	31.62	43.40	54.00	-10.60	Horizontal
4514.00	*					54.00		Horizontal
5416.80	*					54.00		Horizontal

Remark:

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

Test channel:	Middle 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
1830.40	36.94	31.85	8.67	32.12	45.62	74.00	-28.38	Vertical
2745.60	31.67	36.37	11.72	31.89	48.15	74.00	-25.85	Vertical
3660.80	29.02	38.35	14.25	31.62	50.28	74.00	-23.72	Vertical
4676.00	*					74.00		Vertical
5491.20	*					74.00		Vertical
1830.40	38.14	31.85	8.67	32.12	46.82	74.00	-27.18	Horizontal
2745.60	31.25	36.37	11.72	31.89	47.73	74.00	-26.27	Horizontal
3660.80	27.33	38.35	14.25	31.62	48.59	74.00	-25.41	Horizontal
4676.00	*					74.00		Horizontal
5491.20	*					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
1830.40	25.73	31.85	8.67	32.12	34.29	54.00	-19.71	Vertical
2745.60	21.56	36.37	11.72	31.89	37.92	54.00	-16.08	Vertical
3660.80	20.30	38.35	14.25	31.62	41.44	54.00	-12.56	Vertical
4676.00	*					54.00		Vertical
5491.20	*					54.00		Vertical
1830.40	32.71	31.85	8.67	32.12	41.27	54.00	-12.73	Horizontal
2745.60	23.76	36.37	11.72	31.89	40.12	54.00	-13.88	Horizontal
3660.80	20.18	38.35	14.25	31.62	41.32	54.00	-12.68	Horizontal
4676.00	*					54.00		Horizontal
5491.20	*					54.00		Horizontal

Remark:

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

Test channel:	Highest 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
1855.20	37.35	31.93	8.73	32.16	45.85	74.00	-28.15	Vertical
2782.80	33.71	36.59	11.79	31.78	50.31	74.00	-23.69	Vertical
3710.40	30.30	38.81	14.38	31.88	51.61	74.00	-22.39	Vertical
4638.00	*					74.00		Vertical
5565.60	*					74.00		Vertical
1855.20	38.94	31.93	8.73	32.16	47.44	74.00	-26.56	Horizontal
2782.80	31.57	36.59	11.79	31.78	48.17	74.00	-25.83	Horizontal
3710.40	31.19	38.81	14.38	31.88	52.50	74.00	-21.50	Horizontal
4638.00	*					74.00		Horizontal
5565.60	*					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
1855.20	29.67	31.93	8.73	32.16	38.17	54.00	-15.83	Vertical
2782.80	24.11	36.59	11.79	31.78	40.71	54.00	-13.29	Vertical
3710.40	22.13	38.81	14.38	31.88	43.44	54.00	-10.56	Vertical
4638.00	*					54.00		Vertical
5565.60	*					54.00		Vertical
1855.20	32.25	31.93	8.73	32.16	40.75	54.00	-13.25	Horizontal
2782.80	23.99	36.59	11.79	31.78	40.59	54.00	-13.41	Horizontal
3710.40	23.69	38.81	14.38	31.88	45.00	54.00	-9.00	Horizontal
4638.00	*					54.00		Horizontal
5565.60	*					54.00		Horizontal

Remark:

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

7.3.3 Bandedge emissions

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

Test channel:	Lowest channel

QP value:

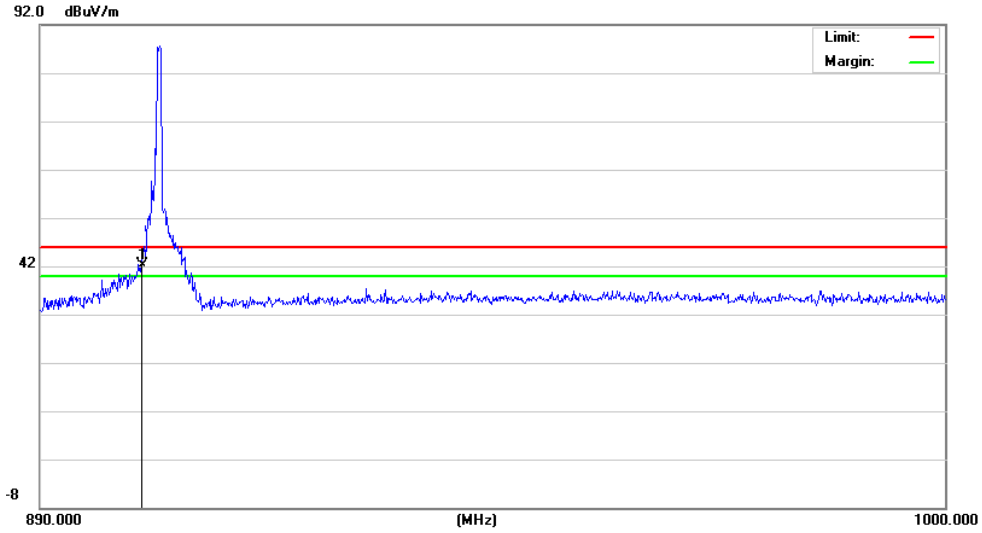
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
902	43.88	27.59	5.38	34.01	42.84	46	-3.16	Horizontal
928	37.06	27.58	5.39	34.01	36.02	46	-9.98	Horizontal
902	42.45	27.59	5.38	34.01	41.41	46	-4.59	Vertical
928	36.71	27.58	5.39	34.01	35.67	46	-10.33	Vertical

Remark:

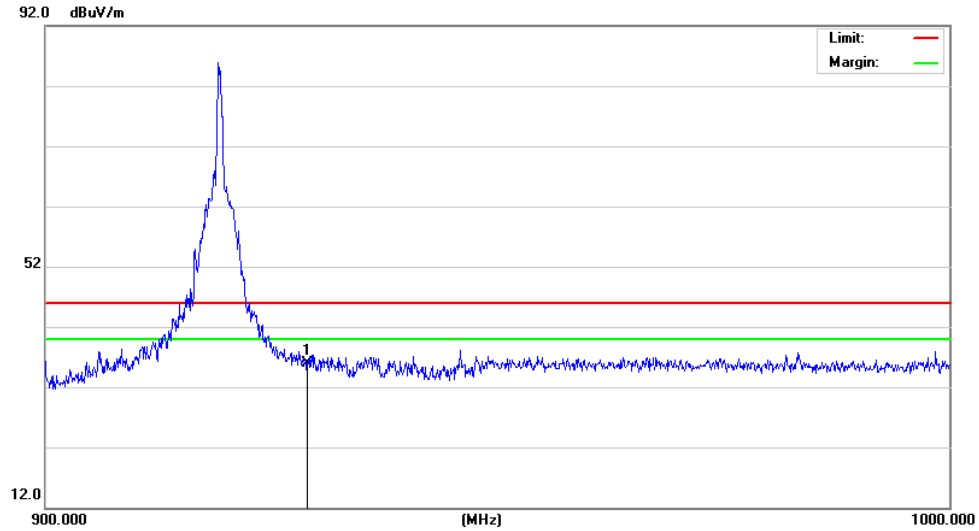
1. Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

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

Low channel: Vertical

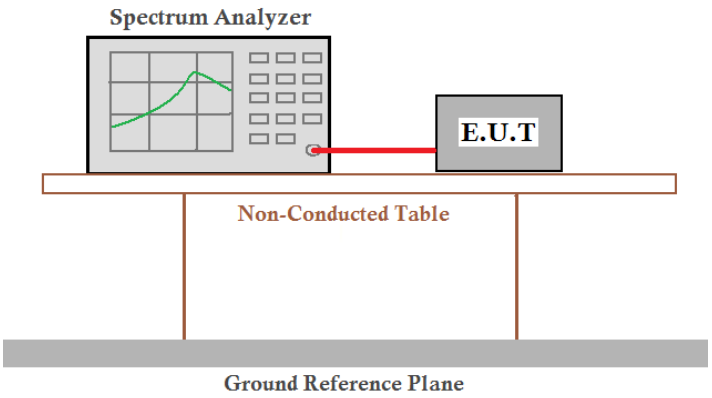


Highest Channel: Vertical



Test result: The unit does meet the FCC requirements.

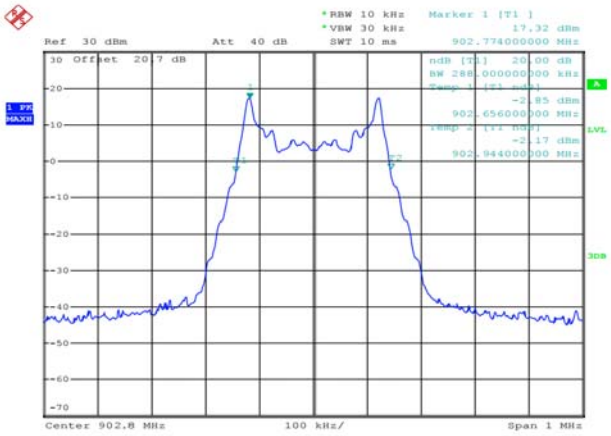
7.4 20dB Occupy Bandwidth

Test Requirement:	FCC Part15 C Section 15.249/15.215
Test Method:	ANSI C63.10:2013
Limit:	Operation Frequency range 2400MHz~2483.5MHz
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

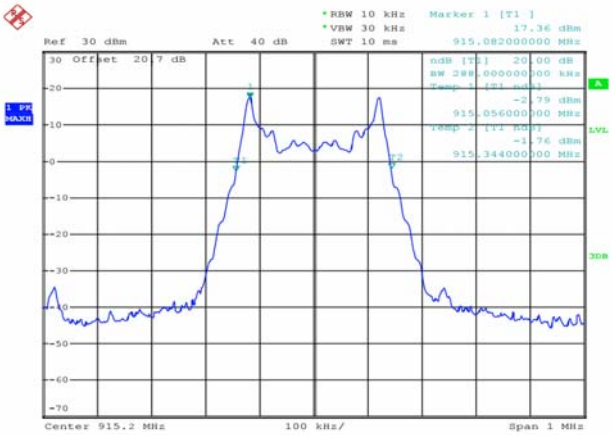
Measurement Data

Test channel	20dB bandwidth(MHz)	Result
Lowest	0.288	Pass
Middle	0.288	Pass
Highest	0.288	Pass

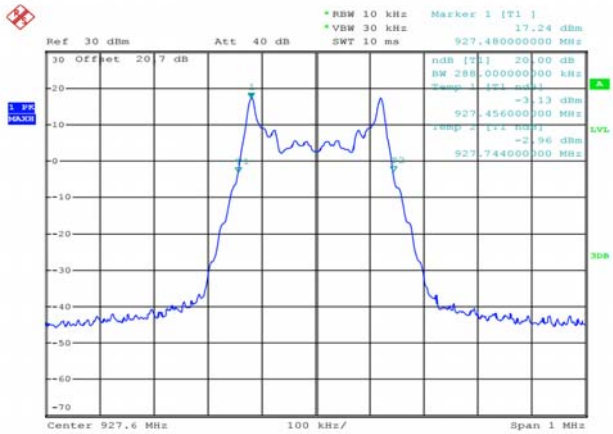
Test plot as follows:



Lowest channel

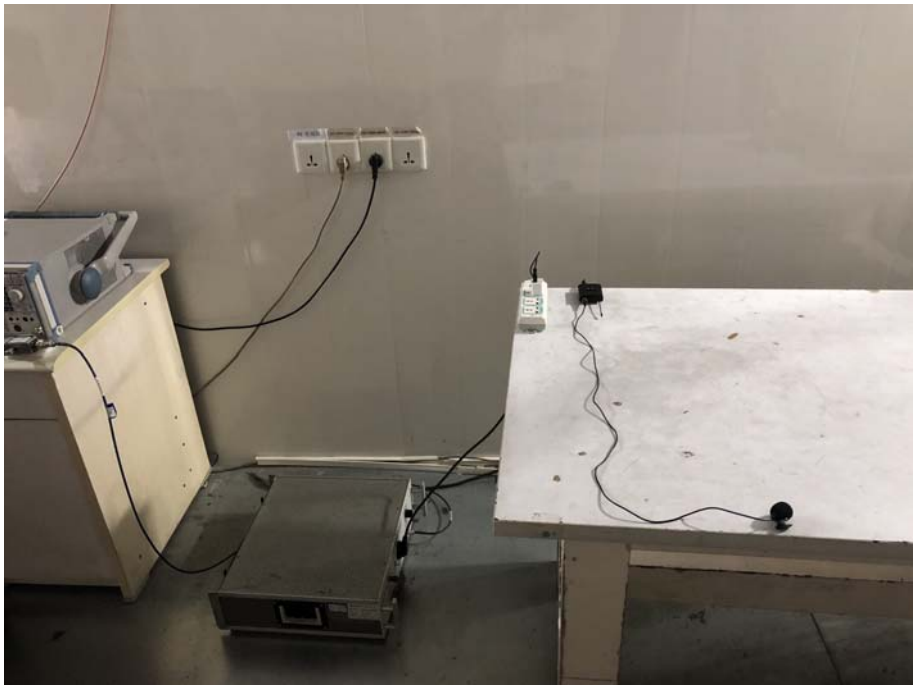


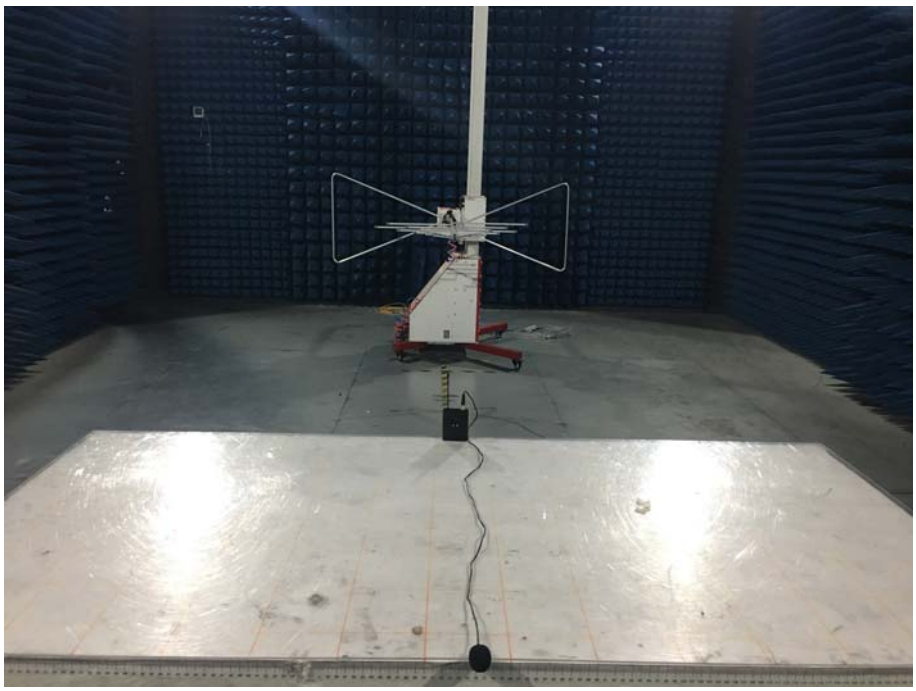
Middle channel

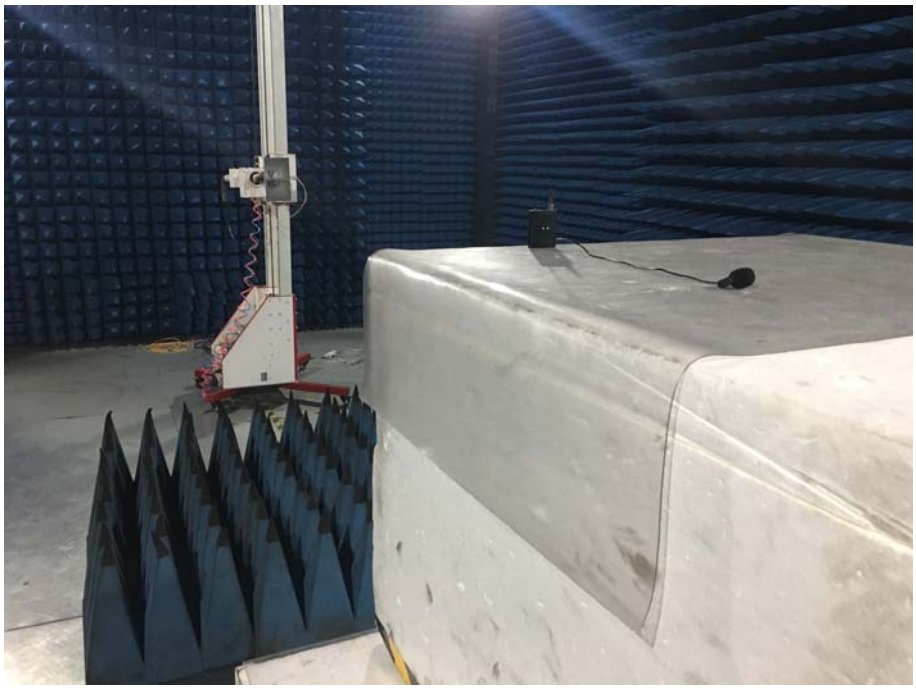


Highest channel

8 Test Setup Photo

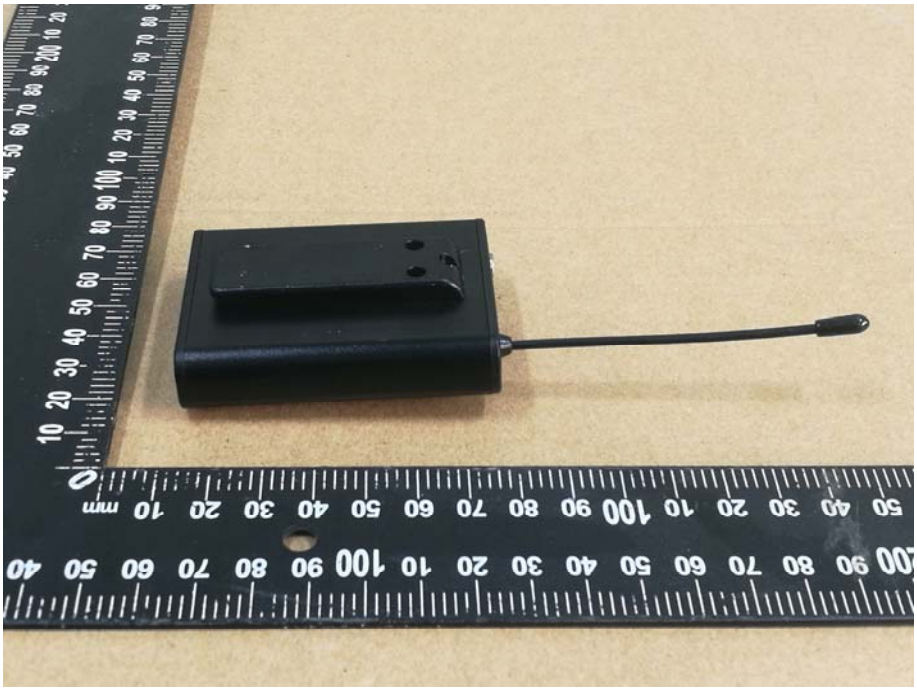




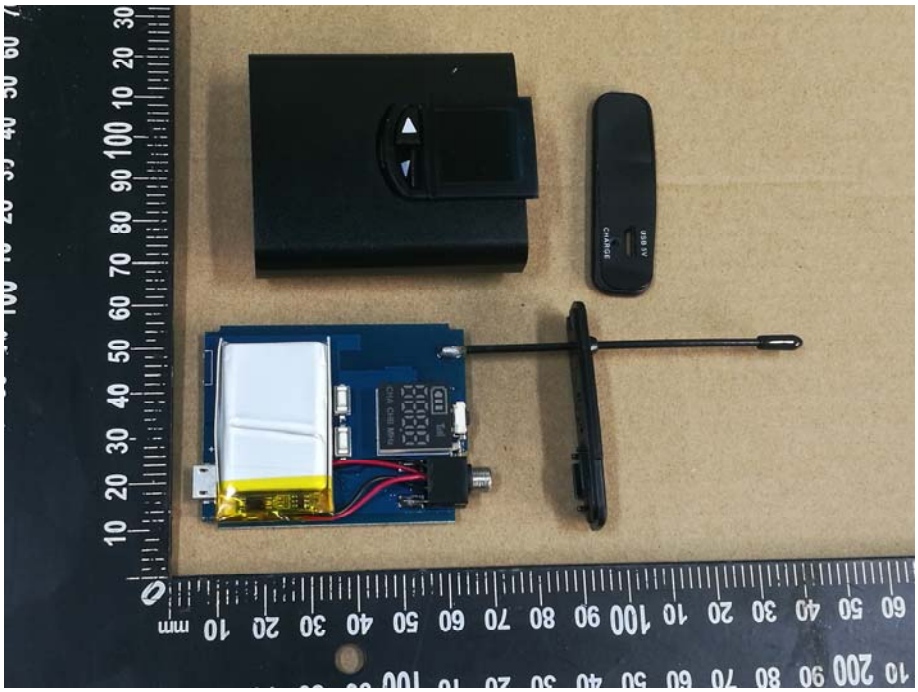


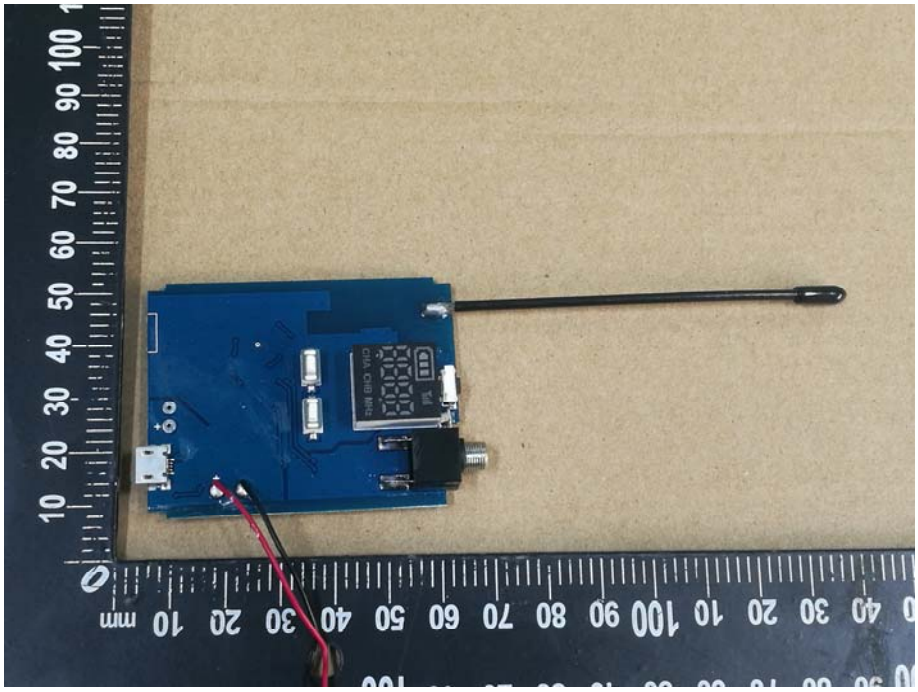
9 EUT Constructional Details

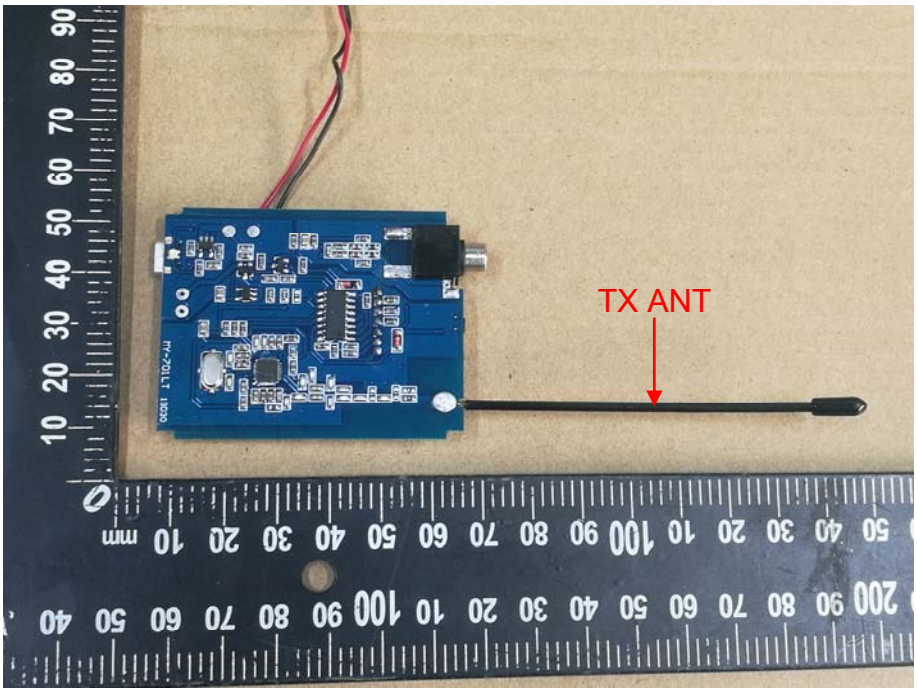

CHARGE
USB 5V




ANT
POWER
MIC


CHARGE





------End------