FCC REPORT

Applicant:	HONBO AUDIO CHINA LIMITED
Address of Applicant:	Beijiao Suburb Industrial Zone, Enping City, Guangdong, China
Manufacturer:	HONBO AUDIO CHINA LIMITED
Address of Manufacturer:	Beijiao Suburb Industrial Zone, Enping City, Guangdong, China

Equipment Under Test (EUT)

Product Name:	UHF Wireless Transmitter
Model No.:	GXLIEM, GXLIEM2, GXLIEM4, EM-D01, EM-D02, EM-D04, DV-20, DV-500, DV-600, TR-10, TR-20SET, ST-5, VT-5, FT-5, PR-8/ST-1, PR-8/ST-4, PR-8/VT-1, PR-8/FT-1, PR-8/GT-1, PR-8/GT-2, PR-8/HT-1, PR-8/FT-10, PR-8/VT-20, ACE-88, ACE-288, EX-400, S-100, G-100, D-100, D-130
Trade Mark:	N/A
FCC ID:	2AG6Q-GXLIEM
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.249
Date of sample receipt:	March 18, 2020
Date of Test:	March 18- March 30, 2020
Date of report issued:	March 30, 2020
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	*March 30, 2020*	*Original*

Prepared By: ***Date:*** *March 30, 2020*

Project Engineer

Check By: ***Date:*** *March 30, 2020*

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	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

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:	UHF Wireless Transmitter
Model No.:	GXLIEM, GXLIEM2, GXLIEM4, EM-D01, EM-D02, EM-D04, DV-20, DV-500, DV-600, TR-10, TR-20SET, ST-5, VT-5, FT-5, PR-8/ST-1, PR-8/ST-4, PR-8/VT-1, PR-8/FT-1, PR-8/GT-1, PR-8/GT-2, PR-8/HT-1, PR-8/FT-10, PR-8/VT-20, ACE-88, ACE-288, EX-400, S-100, G-100, D-100, D-130
Test sample(s) ID:	GTSGTS202003000194
Sample(s) Status	Engineered sample
Hardware Version:	HV1.0
Software Version:	SV1.0
Operation Frequency:	903.25-927.65 MHz
Channel numbers:	16
Modulation type:	FM
Antenna Type:	External dipole antenna
Antenna gain:	2.0dBi
Power supply:	DC12V-18V/1000mA(single&dual channel) DC12V-18V/1500mA(four channel)

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	903.250	5	905.975	9	909.075	13	925.000
2	903.825	6	906.575	10	910.875	14	925.650
3	904.875	7	907.225	11	911.325	15	926.850
4	905.325	8	908.425	12	916.850	16	927.650

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	903.250
The middle channel	909.075
The Highest channel	927.650

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
SHENZHENPENGSHENGYE ELECTRONIC CO.,LTD	Adapter	FYB12006US	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.

● **IC —Registration No.: 9079A**

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

● **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. 123-128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone,

Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102

Tel: 0755-27798480

Fax: 0755-27798960

5.6 Additional Instructions

EUT Software Settings:

Mode	Special software is used. The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.	
Test Software Name	Pro_7.1_Build	
Channel	Frequency (MHz)	Software Set
CH1	903.25	TX level : default
CH2	909.75	
CH3	927.65	

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. 19 2019	Oct. 18 2020
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 19 2019	Oct. 18 2020
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 19 2019	Oct. 18 2020
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:

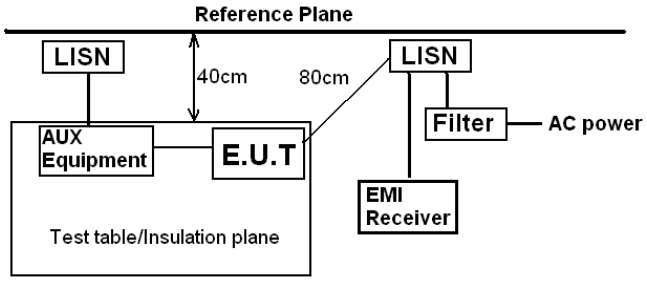
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit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

EUT Antenna:

The antenna is external dipole antenna, the best case gain of the antenna is 2.0dBi.

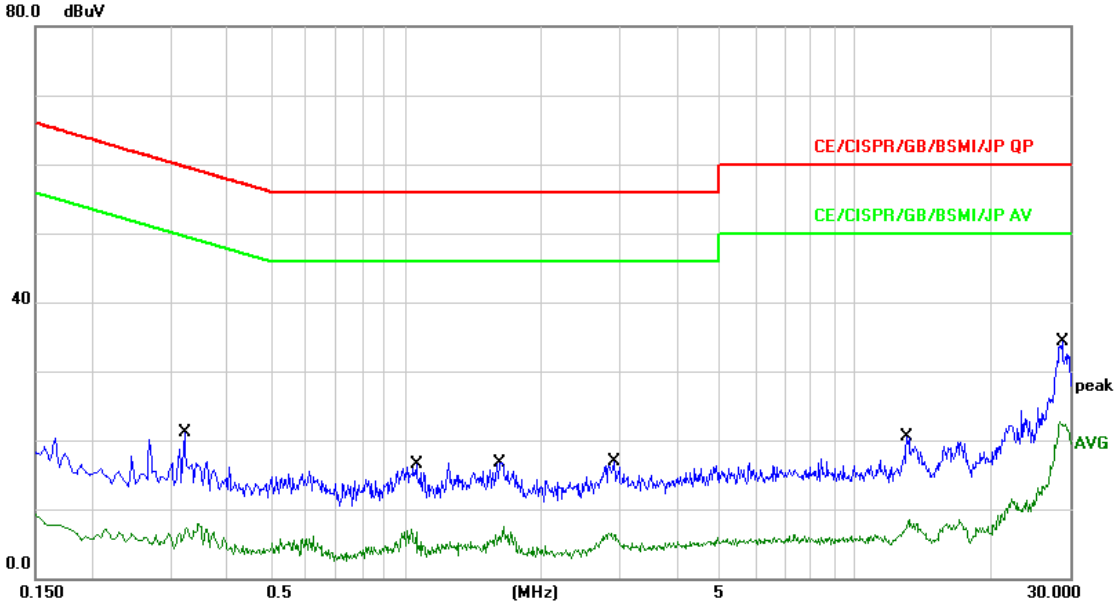
Note：The transmitter was used a unique coupling with the antenna, and it's complied with the requirements of section 15.203: antenna requirement.

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:	AC120V 60Hz
Test results:	Pass

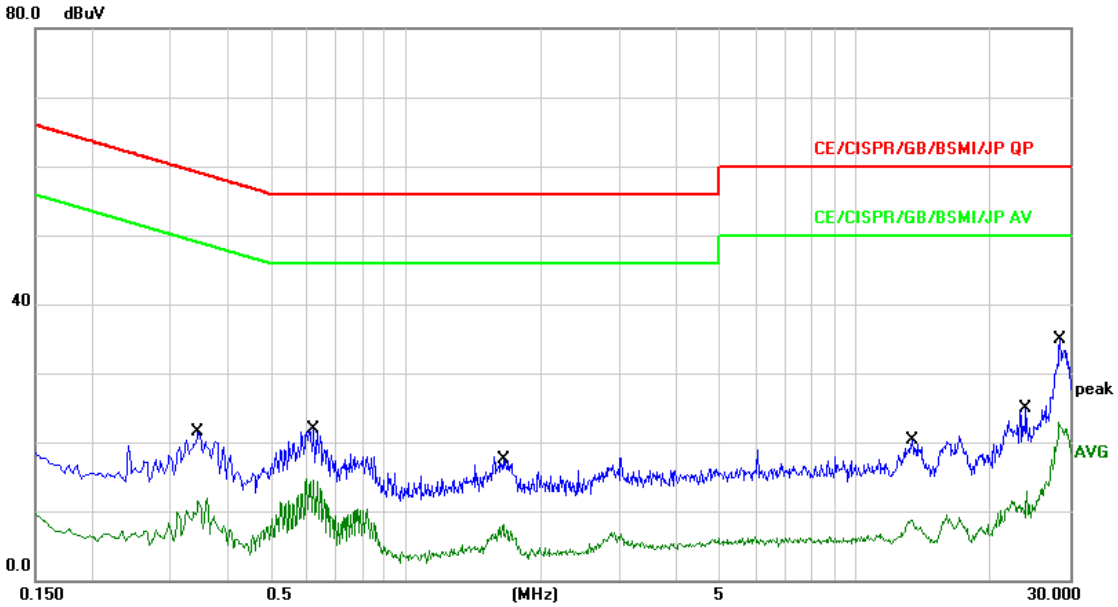
Measurement data

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



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.3220	11.55	9.65	21.20	59.65	-38.45	QP	
2		0.3220	-1.70	9.65	7.95	49.65	-41.70	AVG	
3		1.0580	6.84	9.71	16.55	56.00	-39.45	QP	
4		1.0580	-2.65	9.71	7.06	46.00	-38.94	AVG	
5		1.6220	7.02	9.71	16.73	56.00	-39.27	QP	
6		1.6220	-2.17	9.71	7.54	46.00	-38.46	AVG	
7		2.9140	7.13	9.72	16.85	56.00	-39.15	QP	
8		2.9140	-3.16	9.72	6.56	46.00	-39.44	AVG	
9		13.0020	10.55	9.88	20.43	60.00	-39.57	QP	
10		13.0020	-1.30	9.88	8.58	50.00	-41.42	AVG	
11	*	28.8700	24.17	10.08	34.25	60.00	-25.75	QP	
12		28.8700	12.53	10.08	22.61	50.00	-27.39	AVG	

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



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.3460	11.86	9.65	21.51	59.06	-37.55	QP	
2		0.3460	2.27	9.65	11.92	49.06	-37.14	AVG	
3		0.6260	12.24	9.67	21.91	56.00	-34.09	QP	
4		0.6260	5.06	9.67	14.73	46.00	-31.27	AVG	
5		1.6500	8.18	9.71	17.89	56.00	-38.11	QP	
6		1.6500	-1.58	9.71	8.13	46.00	-37.87	AVG	
7		13.3580	10.35	9.89	20.24	60.00	-39.76	QP	
8		13.3580	-1.11	9.89	8.78	50.00	-41.22	AVG	
9		23.9060	14.84	10.02	24.86	60.00	-35.14	QP	
10		23.9060	2.86	10.02	12.88	50.00	-37.12	AVG	
11	*	28.4860	24.90	10.08	34.98	60.00	-25.02	QP	
12		28.4860	12.86	10.08	22.94	50.00	-27.06	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

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)

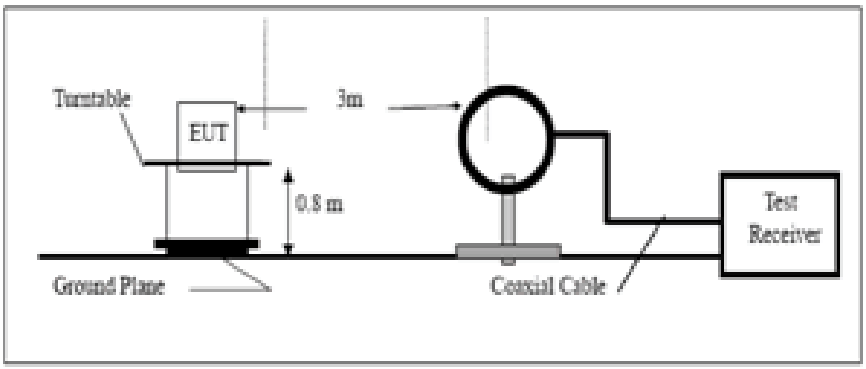
Frequency	Limit (uV/m)	Remark
0.009MHz-0.490MHz	2400/F(kHz) @300m	Quasi-peak Value
0.490MHz-1.705MHz	24000/F(kHz) @30m	Quasi-peak Value
1.705MHz-30.0MHz	30 @30m	Quasi-peak Value
30MHz-88MHz	100 @3m	Quasi-peak Value
88MHz-216MHz	150 @3m	Quasi-peak Value
216MHz-960MHz	200 @3m	Quasi-peak Value
960MHz-1GHz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

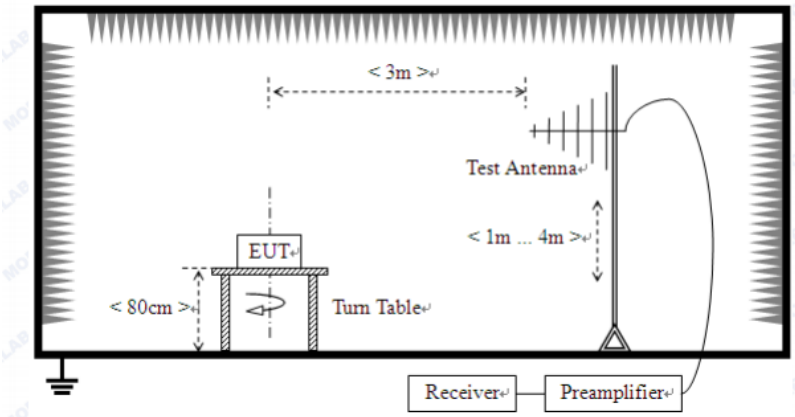
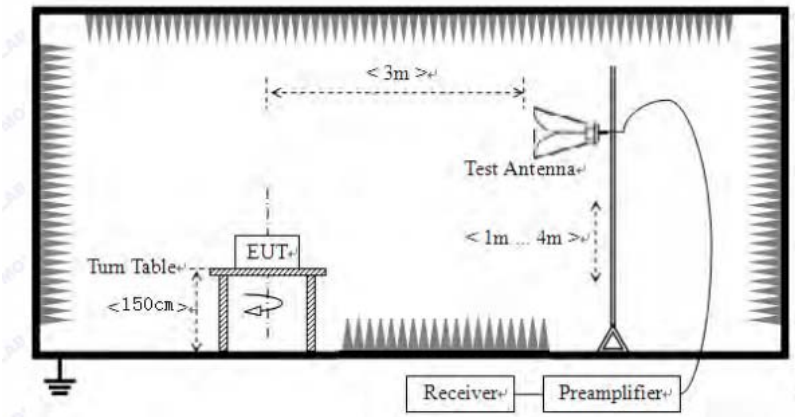
Limit:
(band edge)

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



	 Above 1GHz 
Test Procedure:	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.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test voltage:	AC120V 60Hz

Test results:	Pass

Measurement data:

7.3.1 Field Strength of The Fundamental Signal

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
903.250	86.62	31.88	8.68	32.13	95.05	114.00	-18.95	Vertical
903.250	76.09	36.45	11.75	31.86	92.43	114.00	-21.57	Horizontal
909.075	84.31	38.43	14.29	31.68	105.35	114.00	-8.65	Vertical
909.075	74.48	27.55	5.49	29.93	77.59	114.00	-36.41	Horizontal
927.650	93.16	27.59	5.38	34.01	92.12	114.00	-21.88	Vertical
927.650	87.27	27.58	5.39	34.01	86.23	114.00	-27.77	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
903.250	74.65	31.88	8.68	32.13	83.08	94.00	-10.92	Vertical
903.250	63.42	36.45	11.75	31.86	79.76	94.00	-14.24	Horizontal
909.075	64.33	38.43	14.29	31.68	85.37	94.00	-8.63	Vertical
909.075	60.89	27.55	5.49	29.93	64.00	94.00	-30.00	Horizontal
927.650	81.72	27.59	5.38	34.01	80.68	94.00	-13.32	Vertical
927.650	76.41	27.58	5.39	34.01	75.37	94.00	-18.63	Horizontal

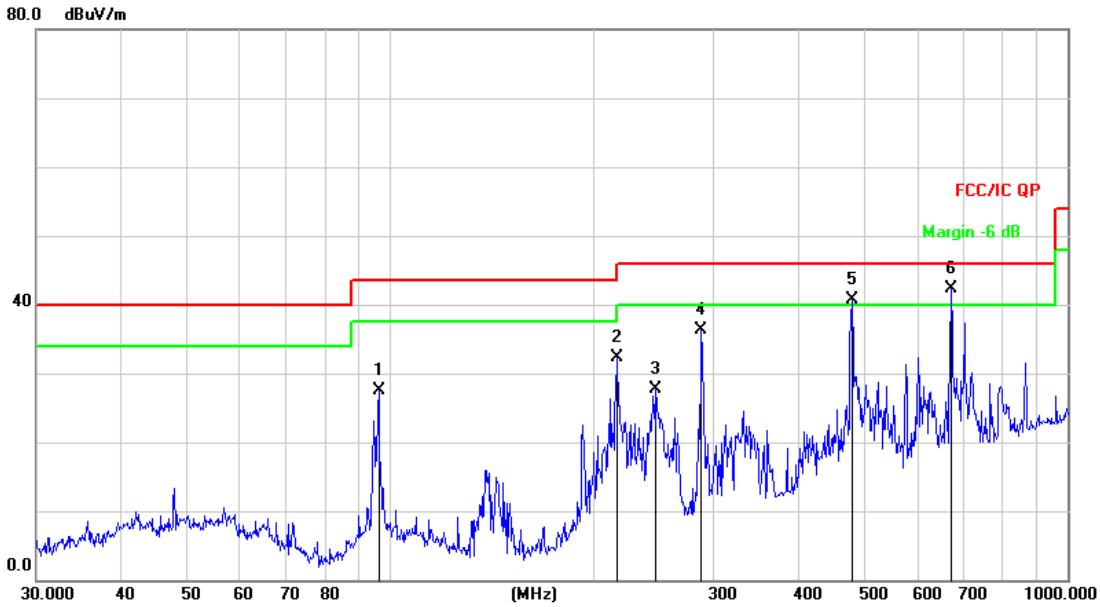
7.3.2 Spurious emissions

- 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.

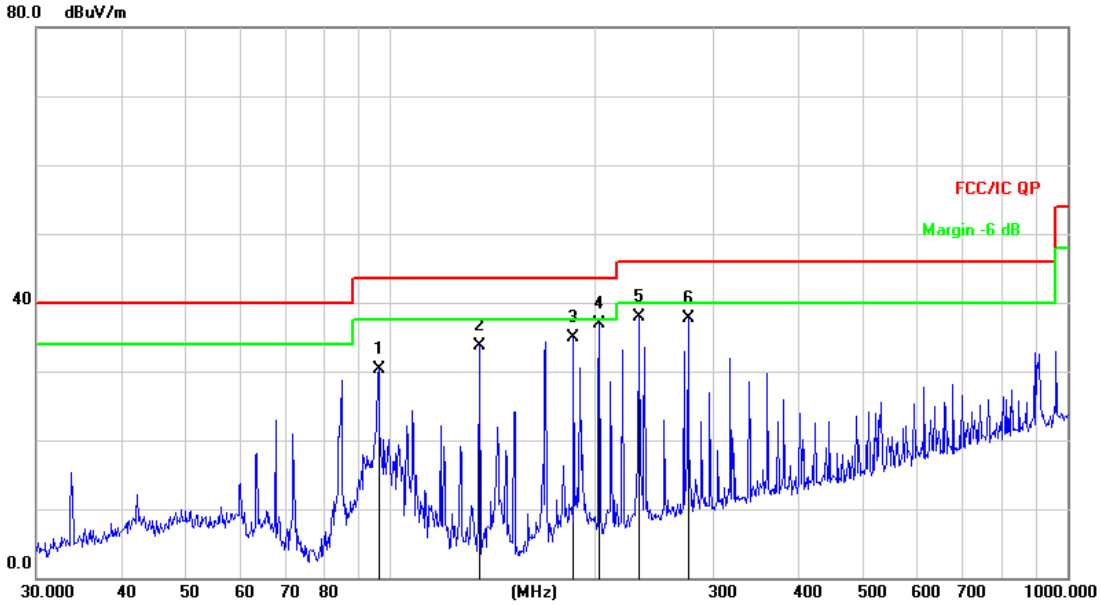
- **Below 1GHz**

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



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		96.0986	44.53	-17.07	27.46	43.50	-16.04	QP
2		216.0240	47.91	-15.61	32.30	46.00	-13.70	QP
3		246.8149	41.55	-13.87	27.68	46.00	-18.32	QP
4		287.9904	48.71	-12.39	36.32	46.00	-9.68	QP
5	!	480.5276	48.43	-7.68	40.75	46.00	-5.25	QP
6	*	672.8444	45.65	-3.42	42.23	46.00	-3.77	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	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		96.0986	47.33	-17.07	30.26	43.50	-13.24	QP
2		135.5062	53.57	-19.79	33.78	43.50	-9.72	QP
3		186.4409	52.07	-17.09	34.98	43.50	-8.52	QP
4	*	203.5228	52.57	-15.73	36.84	43.50	-6.66	QP
5		232.5318	52.39	-14.45	37.94	46.00	-8.06	QP
6		275.1570	50.65	-12.89	37.76	46.00	-8.24	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
1806.50	38.49	31.78	8.60	32.09	46.78	74.00	-27.22	Vertical
2709.75	32.96	36.15	11.65	32.00	48.76	74.00	-25.24	Vertical
3613.00	32.17	37.95	14.14	31.62	52.64	74.00	-21.36	Vertical
	*					74.00		Vertical
	*					74.00		Vertical
1806.50	35.26	31.78	8.60	32.09	43.55	74.00	-30.45	Horizontal
2709.75	31.57	36.15	11.65	32.00	47.37	74.00	-26.63	Horizontal
3613.00	29.50	37.95	14.14	31.62	49.97	74.00	-24.03	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
1806.50	28.55	31.78	8.60	32.09	36.84	54.00	-17.16	Vertical
2709.75	20.80	36.15	11.65	32.00	36.60	54.00	-17.40	Vertical
3613.00	19.28	37.95	14.14	31.62	39.75	54.00	-14.25	Vertical
	*					54.00		Vertical
	*					54.00		Vertical
1806.50	24.31	31.78	8.60	32.09	32.60	54.00	-21.40	Horizontal
2709.75	19.56	36.15	11.65	32.00	35.36	54.00	-18.64	Horizontal
3613.00	16.89	37.95	14.14	31.62	37.36	54.00	-16.64	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
1818.150	38.02	31.85	8.67	32.12	46.42	74.00	-27.58	Vertical
2727.225	30.90	36.37	11.72	31.89	47.10	74.00	-26.90	Vertical
3636.300	27.08	38.35	14.25	31.62	48.06	74.00	-25.94	Vertical
	*					74.00		Vertical
	*					74.00		Vertical
1818.150	34.36	31.85	8.67	32.12	42.76	74.00	-31.24	Horizontal
2727.225	28.84	36.37	11.72	31.89	45.04	74.00	-28.96	Horizontal
3636.300	26.47	38.35	14.25	31.62	47.45	74.00	-26.55	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
1818.150	27.38	31.85	8.67	32.12	35.78	54.00	-18.22	Vertical
2727.225	21.73	36.37	11.72	31.89	37.93	54.00	-16.07	Vertical
3636.300	19.11	38.35	14.25	31.62	40.09	54.00	-13.91	Vertical
	*					54.00		Vertical
	*					54.00		Vertical
1818.150	24.26	31.85	8.67	32.12	32.66	54.00	-21.34	Horizontal
2727.225	19.50	36.37	11.72	31.89	35.70	54.00	-18.30	Horizontal
3636.300	17.15	38.35	14.25	31.62	38.13	54.00	-15.87	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
1855.30	37.79	31.93	8.73	32.16	46.29	74.00	-27.71	Vertical
2782.95	31.15	36.59	11.79	31.78	47.75	74.00	-26.25	Vertical
3710.60	29.26	38.81	14.38	31.88	50.57	74.00	-23.43	Vertical
	*					74.00		Vertical
	*					74.00		Vertical
1855.30	33.90	31.93	8.73	32.16	42.40	74.00	-31.60	Horizontal
2782.95	29.69	36.59	11.79	31.78	46.29	74.00	-27.71	Horizontal
3710.60	26.91	38.81	14.38	31.88	48.22	74.00	-25.78	Horizontal
	*					74.00		Horizontal
	*					74.00		Horizontal

Average value:

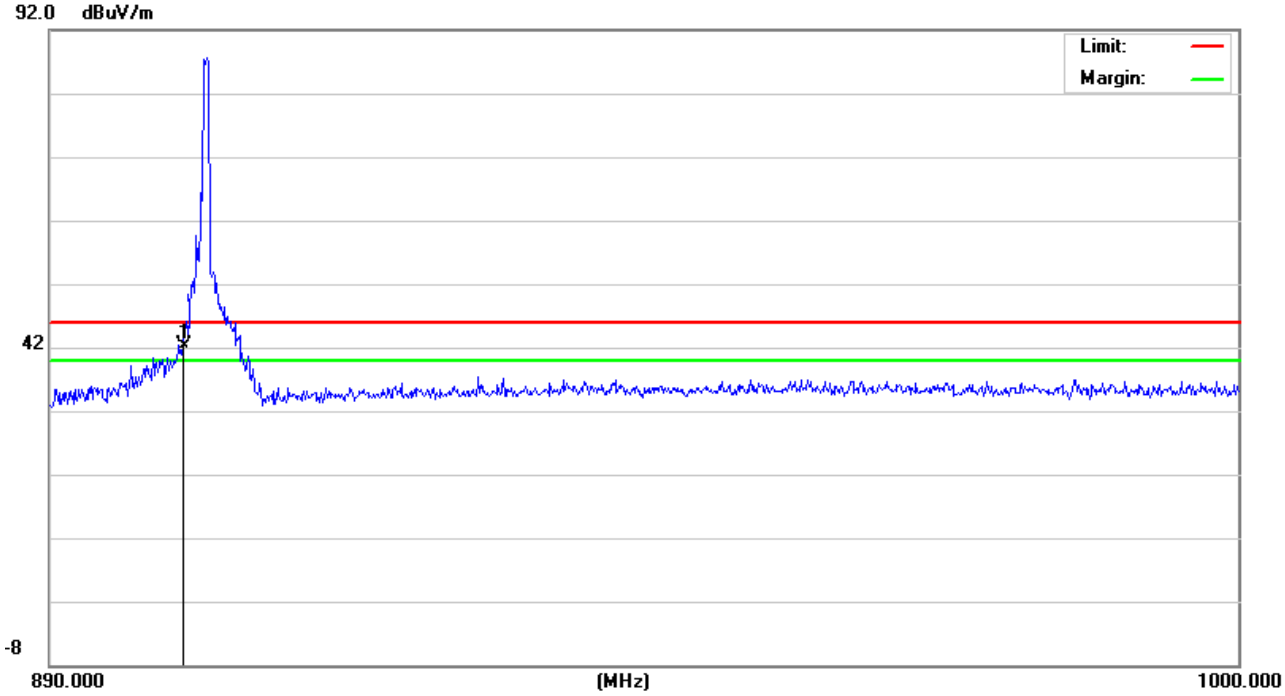
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
1855.30	27.59	31.93	8.73	32.16	36.09	54.00	-17.91	Vertical
2782.95	21.27	36.59	11.79	31.78	37.87	54.00	-16.13	Vertical
3710.60	19.80	38.81	14.38	31.88	41.11	54.00	-12.89	Vertical
	*					54.00		Vertical
	*					54.00		Vertical
1855.30	24.37	31.93	8.73	32.16	32.87	54.00	-21.13	Horizontal
2782.95	19.11	36.59	11.79	31.78	35.71	54.00	-18.29	Horizontal
3710.60	17.49	38.81	14.38	31.88	38.80	54.00	-15.20	Horizontal
	*					54.00		Horizontal
	*					54.00		Horizontal

Remark:

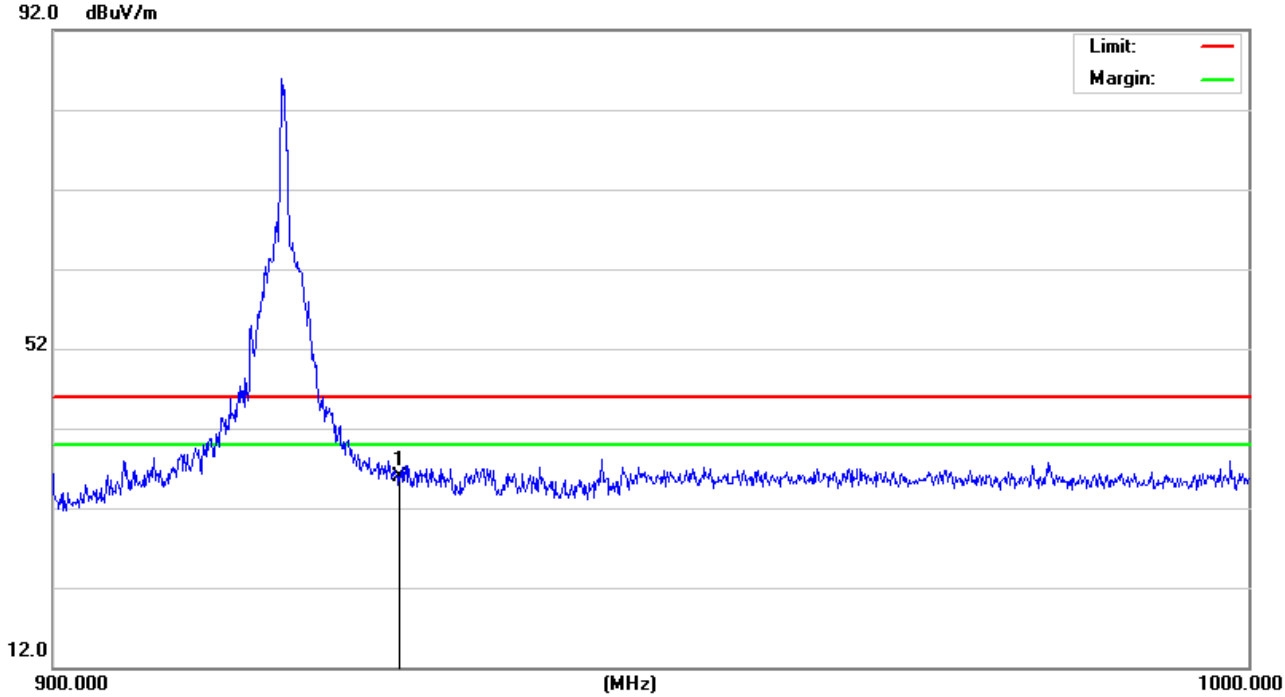
1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

7.3.3 Bandedge emissions

Low channel:



Highest Channel:



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	42.23	27.59	5.38	34.01	41.19	46.02	-4.83	Horizontal
928	33.68	27.58	5.39	34.01	32.64	46.02	-13.38	Horizontal
902	41.29	27.59	5.38	34.01	40.25	46.02	-5.77	Vertical
928	32.70	27.58	5.39	34.01	31.66	46.02	-14.36	Vertical

Test channel:	Highest channel

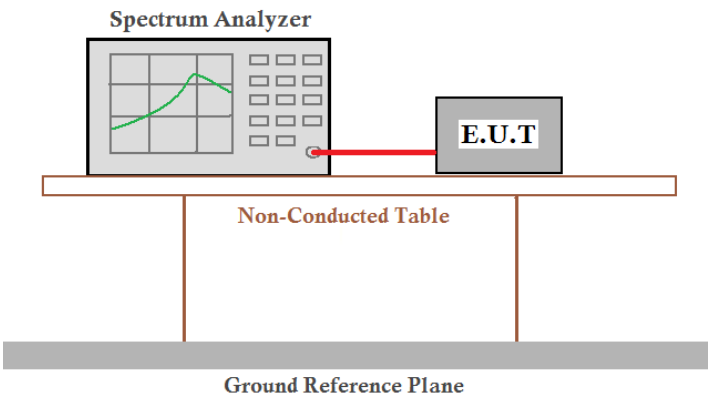
QP value:

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	32.11	27.59	5.38	34.01	31.07	46.02	-14.95	Horizontal
928	41.92	27.58	5.39	34.01	40.88	46.02	-5.14	Horizontal
902	34.85	27.59	5.38	34.01	33.81	46.02	-12.21	Vertical
928	40.17	27.58	5.39	34.01	39.13	46.02	-6.89	Vertical

Remark:

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

7.4 20dB Occupy Bandwidth

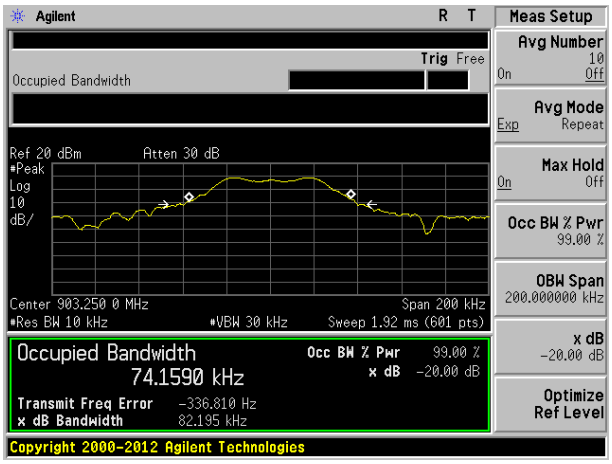
Test Requirement:	FCC Part15 C Section 15.249/15.215
Test Method:	ANSI C63.10:2013
Limit:	Operation Frequency range 902MHz~928MHz
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

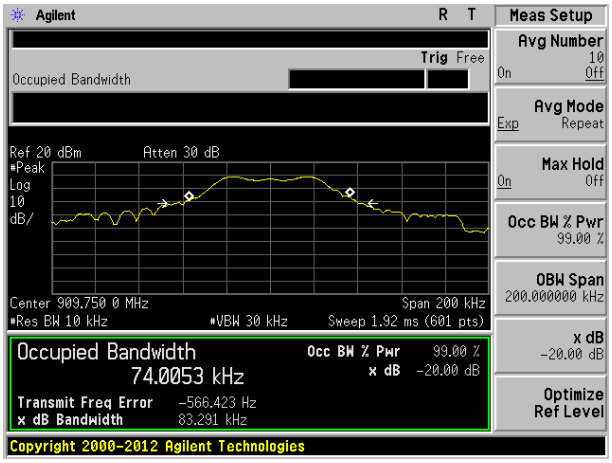
Test channel	20dB bandwidth(kHz)	Result
Lowest	82.195	Pass
Middle	83.291	Pass
Highest	80.037	Pass

Test plot as follows:

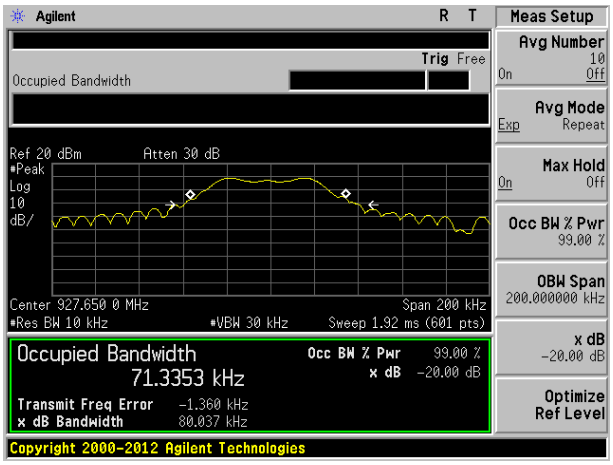
Lowest channel



Middle channel

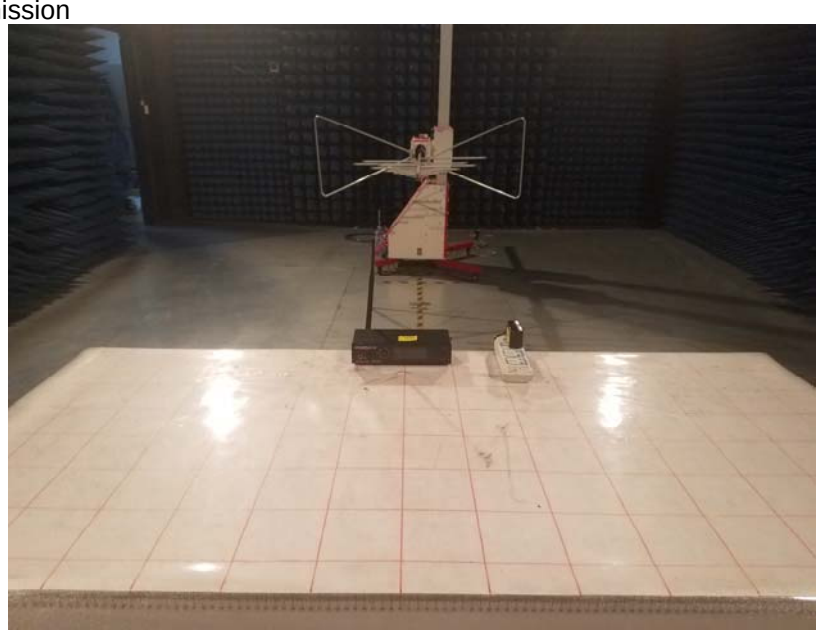


Highest channel

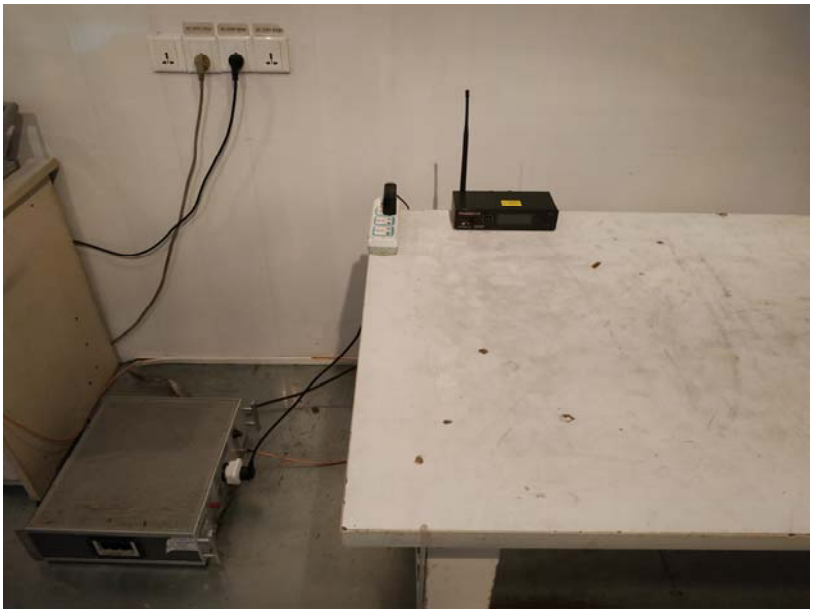


8 Test Setup Photo

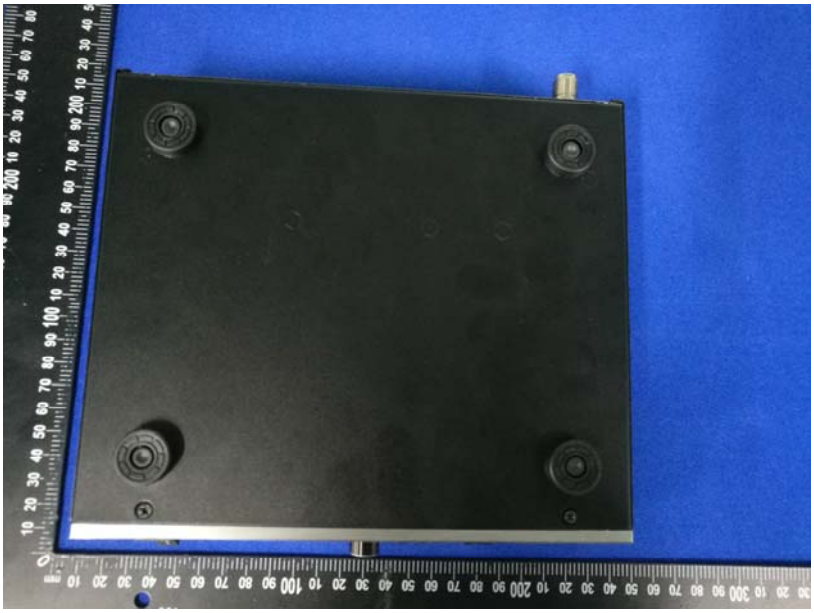
Radiated Emission



Conducted Emission



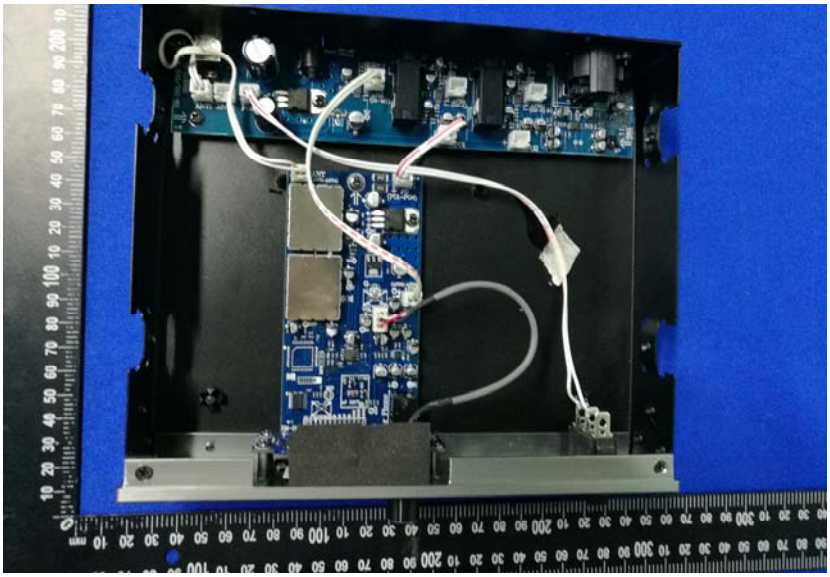
9 EUT Constructional Details

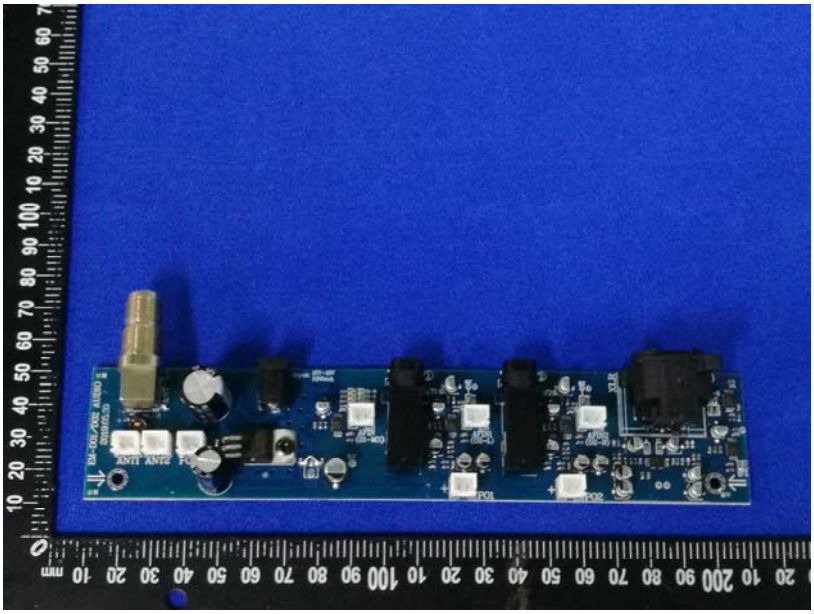


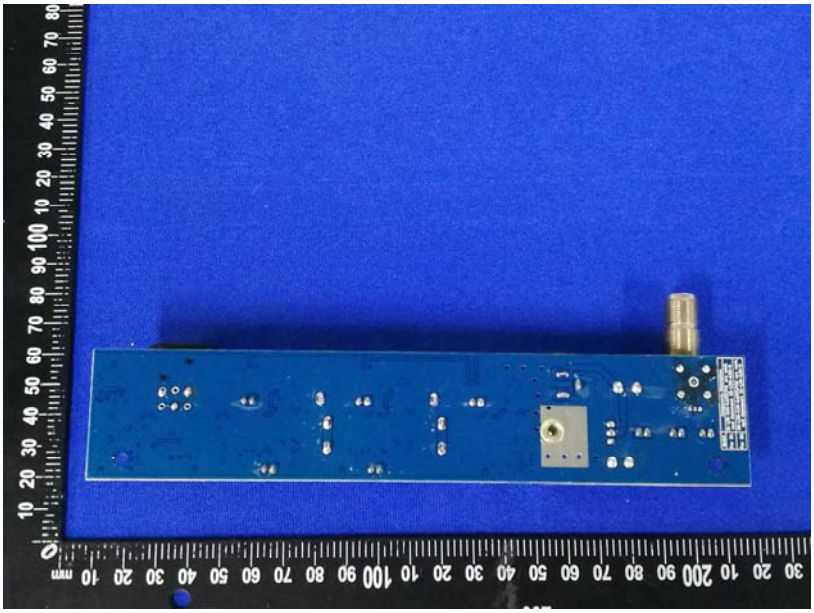
DOWN
AF
UP
IR

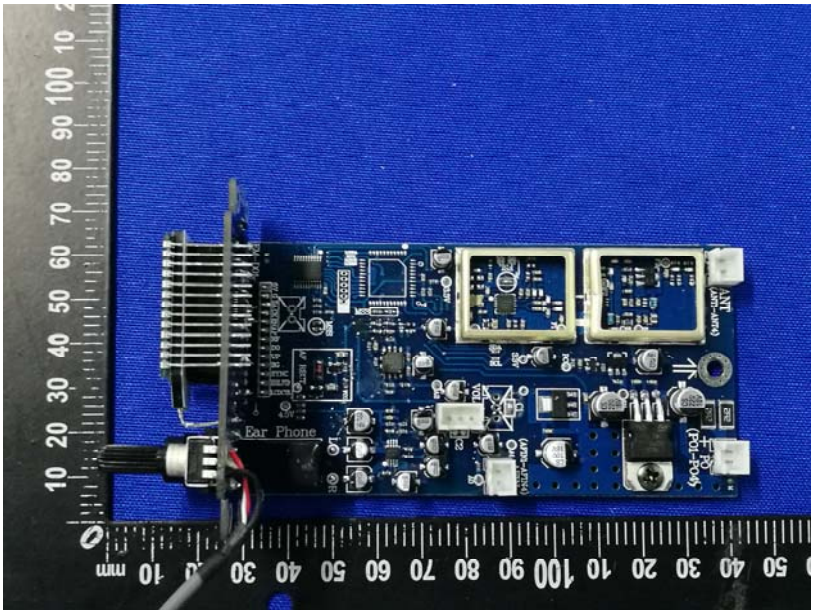
CAUTION
902-928MHz
INPUT 3
INPUT 2
INPUT 1
DC INPUT

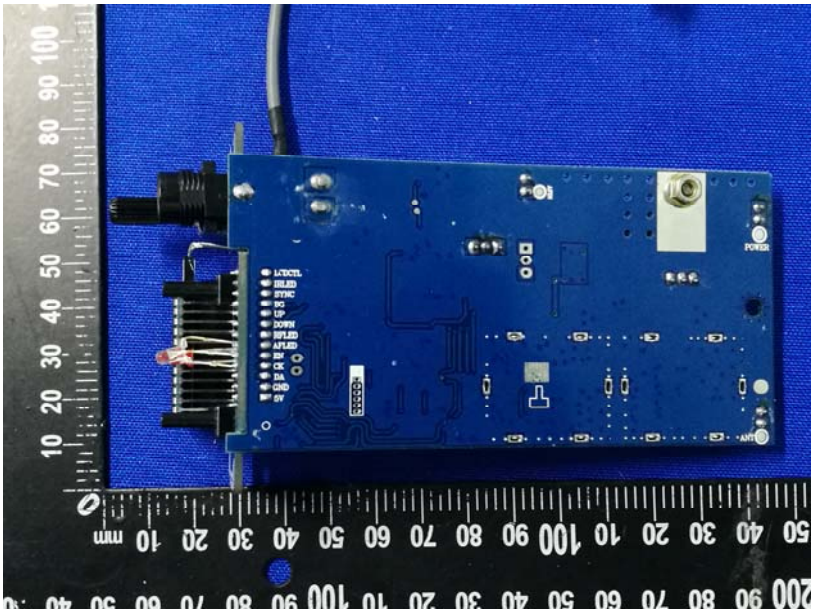
902-928MHz
INPUT
TX Antenna

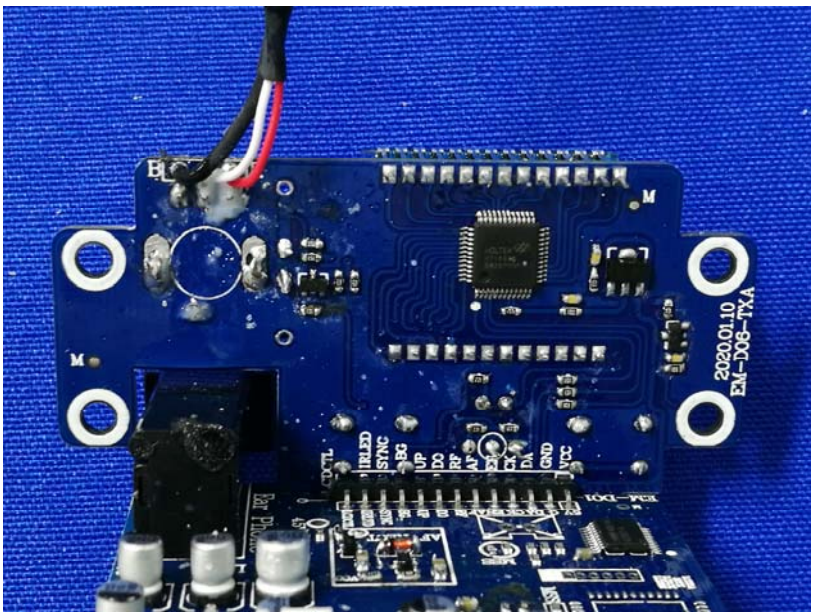


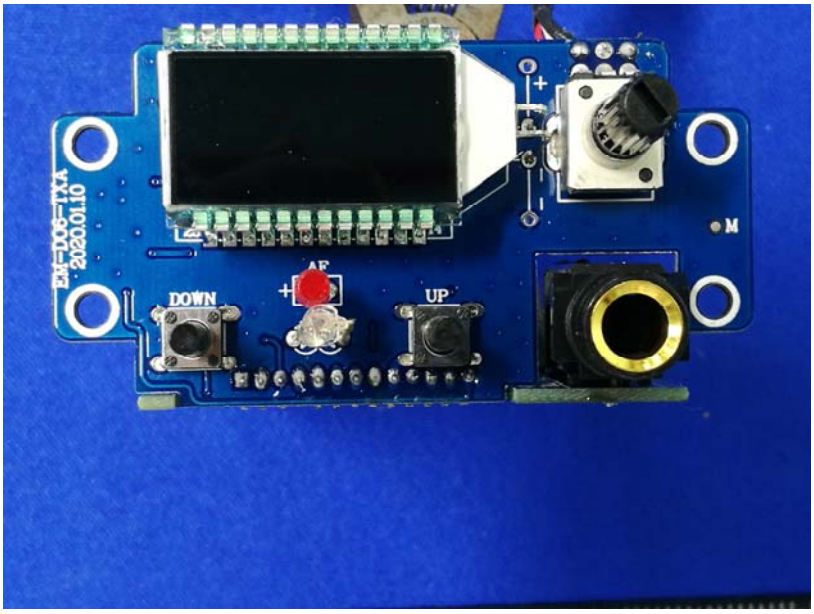





Ear Phone
ANT


POWER


2020.01.10
EM-D08-TXA


EM-D08-TXA
2020.01.10
DOWN
UP

SWITCHING ADAPTER
OUTPUT:12V
I.T.E POWER SUPPLY
LPS
LISTED
E361879
MADE IN CHINA

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