FCC Test Report

Client Name	:	HUIZHOU JINGHAO MEDICAL TECHNOLOGY CO., LTD
Address	:	Floor 6, Huicheng Industry Building, No.9 Huifeng Dong'er Road, Zhongkai High tech Zone, Huizhou City, Guangdong Province
Product Name	:	Hearing aids
Date	:	Feb. 29, 2020

Shenzhen Anbotek Compliance Laboratory Limited

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TEST REPORT

Applicant	:	HUIZHOU JINGHAO MEDICAL TECHNOLOGY CO., LTD
Manufacturer	:	HUIZHOU JINGHAO MEDICAL TECHNOLOGY CO., LTD
Product Name	:	Hearing aids
Model No.	:	HA70, HA75, JH-339, JH-337, JH-338, JH-D12, JH-D26, JH-351, JH-A39, JH-D30
Trade Mark	:	N.A.
Rating(s)	:	Input: DC 1.5V, 30mAh External Charger: DC 5V, 400mA
Test Standard(s)	**:**	**FCC Rules and Regulations Part 15 Subpart B: 2019**
Test Method(s)	**:**	**ANSI C63.4-2014**

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited To determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart B Class B limits both radiated and conducted emissions. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited Is assumed full responsibility for the accuracy and completeness of these measurements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited

Date of Receipt: Feb. 20, 2020

Date of Test: Feb. 20~24, 2020

Prepared By: Flora Luo

(Engineer / Flora Luo)

Reviewer: Well Wang

(Supervisor / Well Wang)

Approved & Authorized Signer: Tom Chen

(Manager / Tom Chen)

1. General Information

1.1. Client Information

Applicant	:	HUIZHOU JINGHAO MEDICAL TECHNOLOGY CO., LTD
Address	:	Floor 6, Huicheng Industry Building, No.9 Huifeng Dong'er Road, Zhongkai High tech Zone, Huizhou City, Guangdong Province
Manufacturer	:	HUIZHOU JINGHAO MEDICAL TECHNOLOGY CO., LTD
Address	:	Floor 6, Huicheng Industry Building, No.9 Huifeng Dong'er Road, Zhongkai High tech Zone, Huizhou City, Guangdong Province
Factory	:	HUIZHOU JINGHAO MEDICAL TECHNOLOGY CO., LTD
Address	:	Floor 6, Huicheng Industry Building, No.9 Huifeng Dong'er Road, Zhongkai High tech Zone, Huizhou City, Guangdong Province

1.2. Description of Device (EUT)

Product Name	:	Hearing aids	
Model No.	:	HA70, HA75, JH-339, JH-337, JH-338, JH-D12, JH-D26, JH-351, JH-A39, JH-D30 (Note: All samples are the same except the model number & appearance, so we prepare “JH-338” for test only.)	
Trade Mark	:	N.A.	
Test Power Supply	:	DC 5V via adapter / DC 1.5V	
Test Sample No.	:	1-1-1	
Product Description	:	Adapter:	N/A
Remark: (1) For a more detailed features description, please refer to the manufacturer’s specifications or the User’s Manual.			

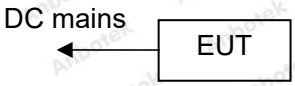
1.3. Auxiliary Equipment Used During Test

N/A		

1.4. Description of Test Modes

Pretest Modes	Descriptions
Mode 1	Charging
Mode 2	On

For Mode 1 Block Diagram of Test Setup



For Mode 2 Block Diagram of Test Setup

1.5. Test Summary

Test Items	Test Modes	Status
Power Line Conducted Emission Test (150KHz To 30MHz)	Mode 1	P
Radiated Emission Test (30MHz To 1000MHz)	All Mode	P
P) Indicates “PASS”. N) Indicates “Not applicable”.		

1.6. Test Equipment List

Conducted Emission Measurement

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	L.I.S.N. Artificial Mains Network	Rohde & Schwarz	ENV216	100055	Nov. 04, 2019	1 Year
2.	L.I.S.N. Artificial Mains Network	Schwarzbeck	NSLK 8127	8127386	Nov. 04, 2019	1 Year
3.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Nov. 04, 2019	1 Year
4.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Nov. 04, 2019	1 Year
5.	Software Name EZ-EMC	Ferrari Technology	ANB-03A	N/A	N/A	N/A

Radiated Emission Measurement

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Nov. 04, 2019	1 Year
2.	Pre-amplifier	Schwarzbeck	BBV-9745	9745-075	Nov. 04, 2019	1 Year
3.	Bilog Broadband Antenna	SCHWARZBECK	VULB 9163	01109	Nov. 01, 2019	1 Year
4.	Software Name EZ-EMC	Ferrari Technology	EMEC-3A1	N/A	N/A	N/A

1.7. Measurement Uncertainty

Radiation Uncertainty	:	Ur = 4.7 dB (Horizontal)
		Ur = 4.3 dB (Vertical)
Conduction Uncertainty	:	Uc = 3.4 dB
Disturbance Uncertainty	:	Ud = 3.4 dB

1.8. Description of Test Facility

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

FCC-Registration No.: 184111

Shenzhen Anbotek Compliance Laboratory Limited, 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 our files. Registration No. 184111, September 27, 2019.

ISED-Registration No.: 8058A

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (ISED) Innovation, Science and Economic Development Canada. The acceptance letter from the ISED is maintained in our files. Registration 8058A, March 07, 2019.

Test Location

Shenzhen Anbotek Compliance Laboratory Limited.
1/F, Building D, Sogood Science and Technology Park, Sanwei community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.518128

2. Power Line Conducted Emission Test

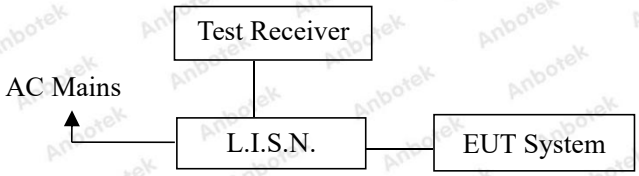
2.1. Test Standard and Limit

Test Standard	FCC Part 15 Subpart B

Power Line Conducted Emission Measurement Limits (FCC Part 15 Class B)

	Frequency (MHz)	At mains terminals (dBμV)	
		Quasi-peak Level	Average Level
Test Limit	0.15 ~ 0.50	66 ~ 56*	56 ~ 46*
	0.50 ~ 5.00	56	46
	5.00 ~ 30.00	60	50
Remark: (1) The lower limit shall apply at the transition frequencies. (2) * Decreasing linearly with logarithm of frequency.			

2.2. Test Setup



2.3. EUT Configuration on Measurement

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner which tends to maximize its emission characteristics in a normal application.

2.4. Operating Condition of EUT

2.4.1. Setup the EUT as shown in Section 2.2.

2.4.2. Turn on the power of all equipments.

2.4.3. Let the EUT work in test mode and measure it.

2.5. Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC ANSI C63.4-2014 on Conducted Emission Measurement.

The bandwidth of test receiver (ESCI) set at 9KHz.

The frequency range from 150KHz to 30MHz is checked.

All the test results are listed in Section 2.6.

2.6. Test Results

PASS

The test curves are shown in the following pages.

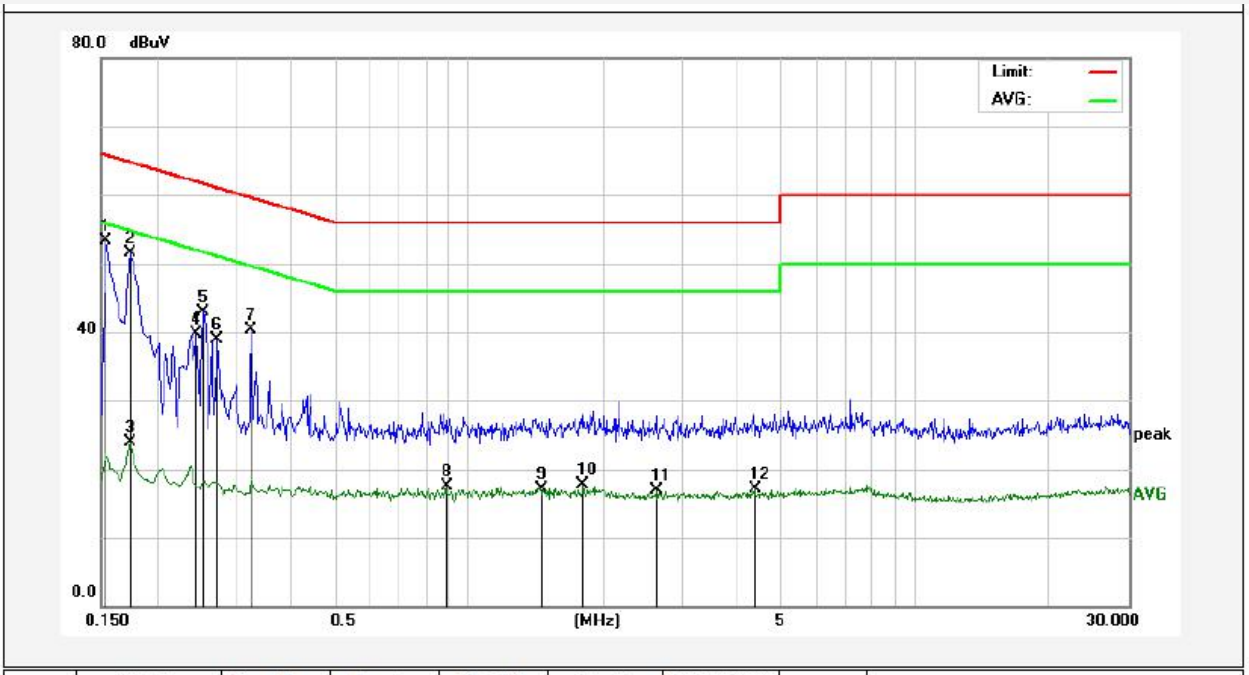
Conducted Emission Test Data

Test Site: 1# Shielded Room

Test Specification: DC 5V via adapter

Comment: Live Line

Temp.: 22.1℃ Hum.: 55%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1539	33.38	19.90	53.28	65.78	-12.50	QP	
2	0.1740	31.70	19.90	51.60	64.76	-13.16	QP	
3	0.1740	3.92	19.90	23.82	54.76	-30.94	AVG	
4	0.2460	19.89	19.89	39.78	61.89	-22.11	QP	
5	0.2540	22.98	19.89	42.87	61.62	-18.75	QP	
6	0.2740	19.01	19.89	38.90	60.99	-22.09	QP	
7	0.3260	20.44	19.90	40.34	59.55	-19.21	QP	
8	0.8900	-2.52	20.09	17.57	46.00	-28.43	AVG	
9	1.4460	-2.95	20.13	17.18	46.00	-28.82	AVG	
10	1.8060	-2.40	20.14	17.74	46.00	-28.26	AVG	
11	2.6460	-3.18	20.15	16.97	46.00	-29.03	AVG	
12	4.3740	-2.99	20.19	17.20	46.00	-28.80	AVG	

Note: Result=Reading+Factor Over Limit=Result-Limit

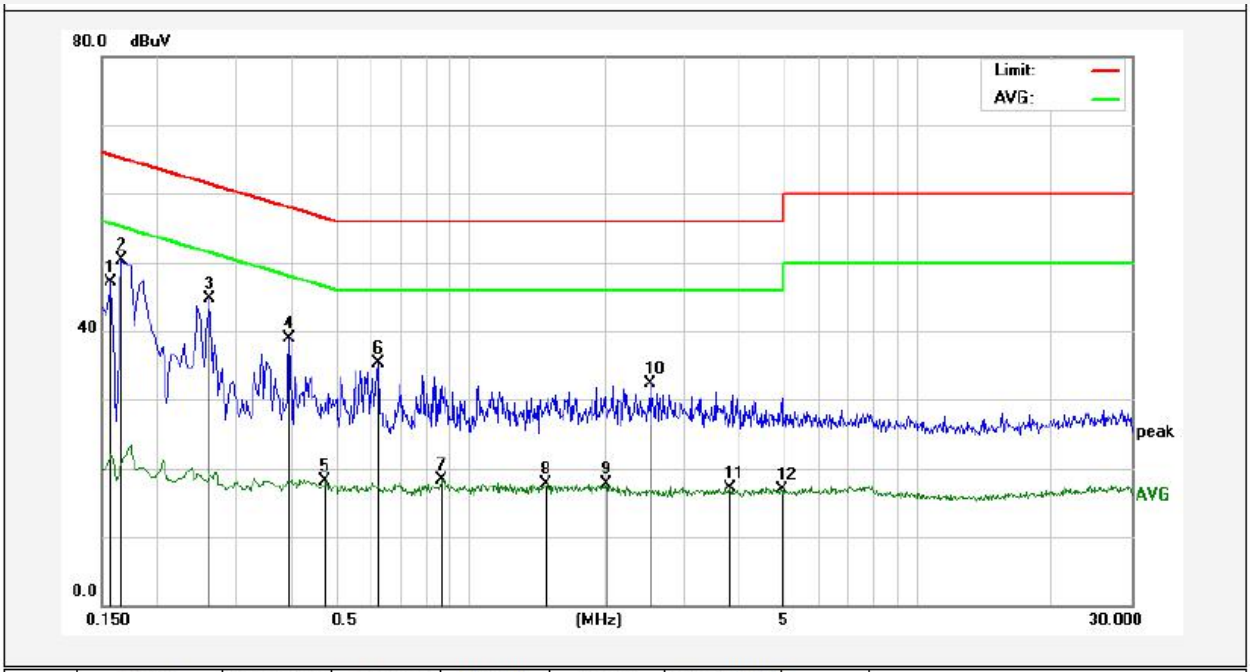
Conducted Emission Test Data

Test Site: 1# Shielded Room

Test Specification: DC 5V via adapter

Comment: Neutral Line

Temp.: 22.1℃ Hum.: 55%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1580	27.23	19.90	47.13	65.56	-18.43	QP	
2	0.1660	30.44	19.90	50.34	65.15	-14.81	QP	
3	0.2620	24.80	19.89	44.69	61.36	-16.67	QP	
4	0.3940	18.98	19.93	38.91	57.98	-19.07	QP	
5	0.4740	-1.81	19.97	18.16	46.44	-28.28	AVG	
6	0.6260	15.21	20.02	35.23	56.00	-20.77	QP	
7	0.8620	-1.80	20.08	18.28	46.00	-27.72	AVG	
8	1.4819	-2.36	20.13	17.77	46.00	-28.23	AVG	
9	2.0180	-2.49	20.14	17.65	46.00	-28.35	AVG	
10	2.5260	12.18	20.15	32.33	56.00	-23.67	QP	
11	3.8180	-3.11	20.18	17.07	46.00	-28.93	AVG	
12	4.9300	-3.33	20.20	16.87	46.00	-29.13	AVG	

Note: Result=Reading+Factor Over Limit=Result-Limit

3. Radiated Emission Test

3.1. Test Standard and Limit

Test Standard	FCC Part 15 Subpart B

Radiated Emission Test Limit (Subpart B Class B)

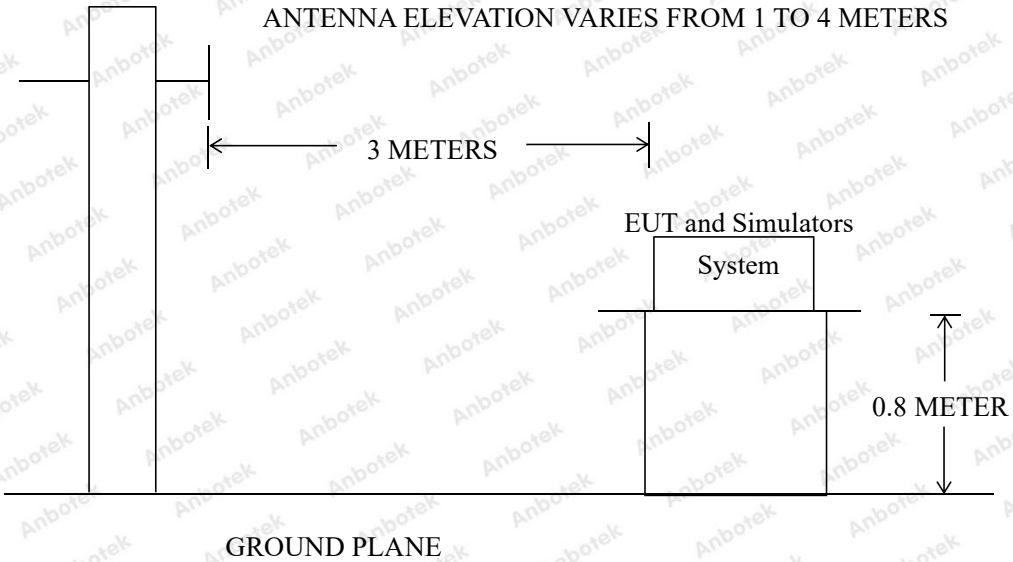
	Frequency (MHz)	DISTANCE (Meters)	FIELD STRENGTHS LIMIT	
			μV/m	(dBμV/m)
Test Limit	30 ~ 88	3	100	40
	88 ~ 216	3	150	43.5
	216 ~ 960	3	200	46
	960 ~ 1000	3	500	54

Remark: (1) Emission level (dB)μV = 20 log Emission level μV/m

(2) The smaller limit shall apply at the cross point between two frequency bands.

(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

3.2. Test Setup



3.3. EUT Configuration on Measurement

The following equipments are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

3.4. Operating Condition of EUT

3.4.1. Setup the EUT as shown in Section 3.2.

3.4.2. Turn on the power of all equipments.

3.4.3. Let the EUT work in test mode and measure it.

3.5. Test Procedure

EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (Trilog Broadband Antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4-2014 on radiated emission measurement.

The bandwidth of the EMI test receiver (ESCI) is set at 120kHz.

The frequency range from 30MHz to 1000MHz is checked.

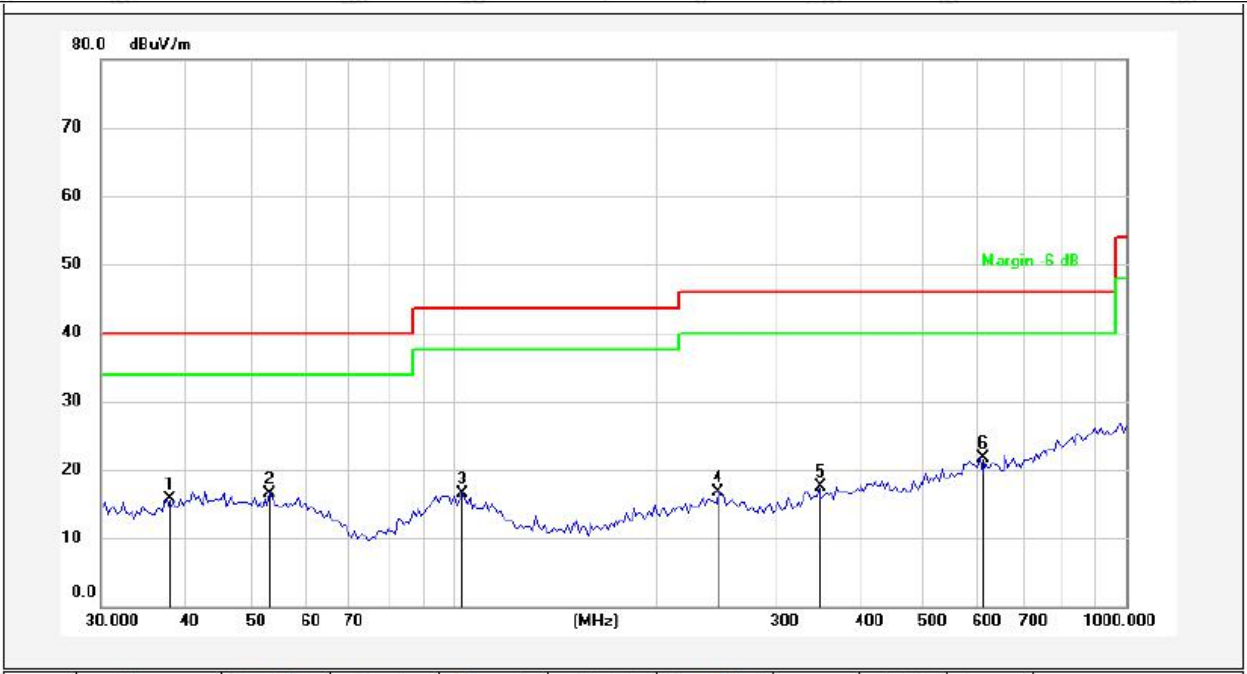
The test results are listed in Section 3.6.

3.6. Test Results

PASS

The test curves are shown in the following pages.

Test item:	**Radiation Test**	**Polarization:**	**Horizontal**
Standard:	**(RE)FCC Part 15 Subpart B**	**Power Source:**	**DC 5V via adapter**
Distance:	**3m**	**Temp.(℃)/Hum.(%RH):**	**23(℃)/56%RH**
Test Mode:	**Charging**		



No.	Freq. (MHz)	Reading (dBuV)	Factor ()	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	37.6798	32.87	-17.16	15.71	40.00	-24.29	peak			
2	53.5052	33.62	-17.06	16.56	40.00	-23.44	peak			
3	103.2609	38.45	-21.97	16.48	43.50	-27.02	peak			
4	248.1165	37.29	-20.60	16.69	46.00	-29.31	peak			
5	349.2500	34.22	-16.74	17.48	46.00	-28.52	peak			
6	606.7221	35.57	-13.93	21.64	46.00	-24.36	peak			

Note: **Result=Reading+Factor Over Limit=Result-Limit**

Test item:	**Radiation Test**	**Polarization:**	**Vertical**
Standard:	**(RE)FCC Part 15 Subpart B**	**Power Source:**	**DC 5V via adapter**
Distance:	**3m**	**Temp.(℃)/Hum.(%RH):**	**23(℃)/56%RH**
Test Mode:	**Charging**		

No.	Freq. (MHz)	Reading (dBuV)	Factor ()	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	31.0706	33.07	-16.82	16.25	40.00	-23.75	peak			
2	36.3814	35.75	-16.49	19.26	40.00	-20.74	peak			
3	51.6616	33.70	-15.99	17.71	40.00	-22.29	peak			
4	98.8326	33.01	-15.77	17.24	43.50	-26.26	peak			
5	150.5378	34.35	-20.33	14.02	43.50	-29.48	peak			
6	483.0618	34.34	-14.73	19.61	46.00	-26.39	peak			

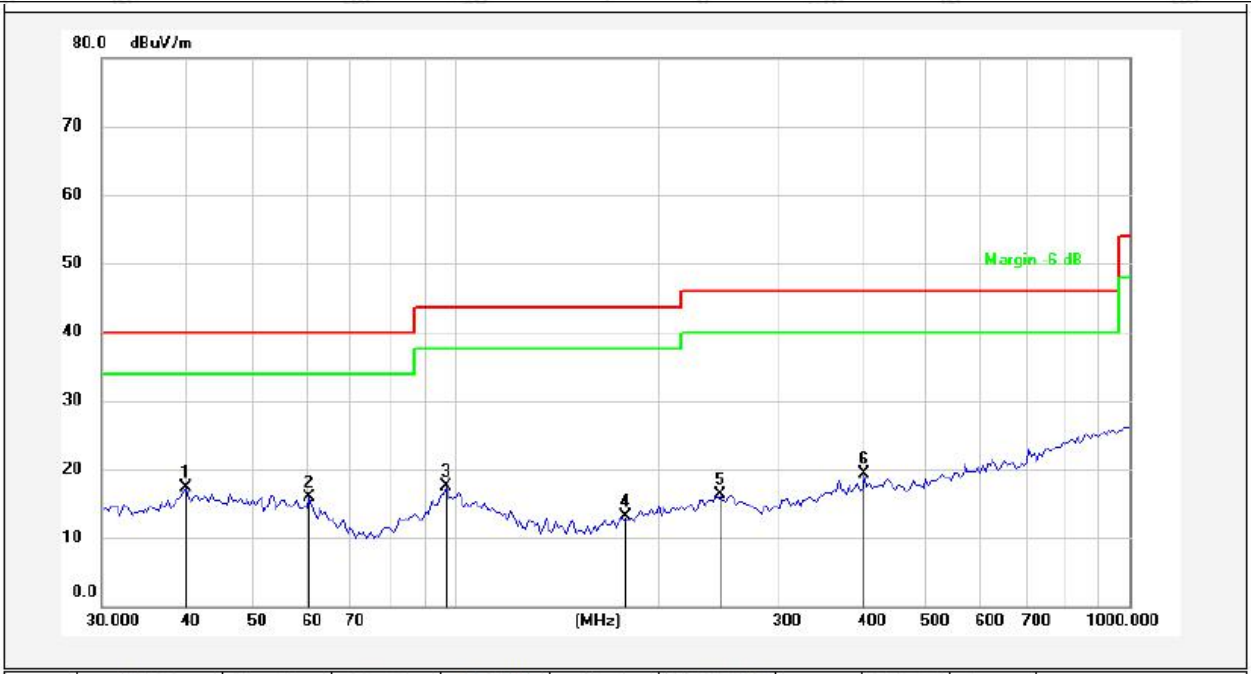
Note: **Result=Reading+Factor Over Limit=Result-Limit**

Test item:	**Radiation Test**	**Polarization:**	**Horizontal**
Standard:	**(RE)FCC Part 15 Subpart B**	**Power Source:**	**DC 1.5V**
Distance:	**3m**	**Temp.(℃)/Hum.(%RH):**	**23(℃)/56%RH**
Test Mode:	**On**		

No.	Freq. (MHz)	Reading (dBuV)	Factor ()	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	44.9004	33.16	-16.61	16.55	40.00	-23.45	peak			
2	86.6547	35.68	-22.43	13.25	40.00	-26.75	peak			
3	118.8094	37.51	-24.07	13.44	43.50	-30.06	peak			
4	248.1165	37.49	-20.60	16.89	46.00	-29.11	peak			
5	423.5403	34.59	-15.48	19.11	46.00	-26.89	peak			
6	590.9737	34.85	-14.13	20.72	46.00	-25.28	peak			

Note: **Result=Reading+Factor Over Limit=Result-Limit**

Test item:	**Radiation Test**	**Polarization:**	**Vertical**
Standard:	**(RE)FCC Part 15 Subpart B**	**Power Source:**	**DC 1.5V**
Distance:	**3m**	**Temp.(℃)/Hum.(%RH):**	**23(℃)/56%RH**
Test Mode:	**On**		



No.	Freq. (MHz)	Reading (dBuV)	Factor ()	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	40.0644	32.91	-15.57	17.34	40.00	-22.66	peak			
2	61.0245	32.79	-16.81	15.98	40.00	-24.02	peak			
3	97.1148	33.46	-15.89	17.57	43.50	-25.93	peak			
4	177.8207	32.05	-18.95	13.10	43.50	-30.40	peak			
5	248.1165	32.59	-16.20	16.39	46.00	-29.61	peak			
6	405.3766	34.07	-14.80	19.27	46.00	-26.73	peak			

Note: **Result=Reading+Factor Over Limit=Result-Limit**

APPENDIX I -- TEST SETUP PHOTOGRAPH

Photo of Power Line Conducted Emission Test

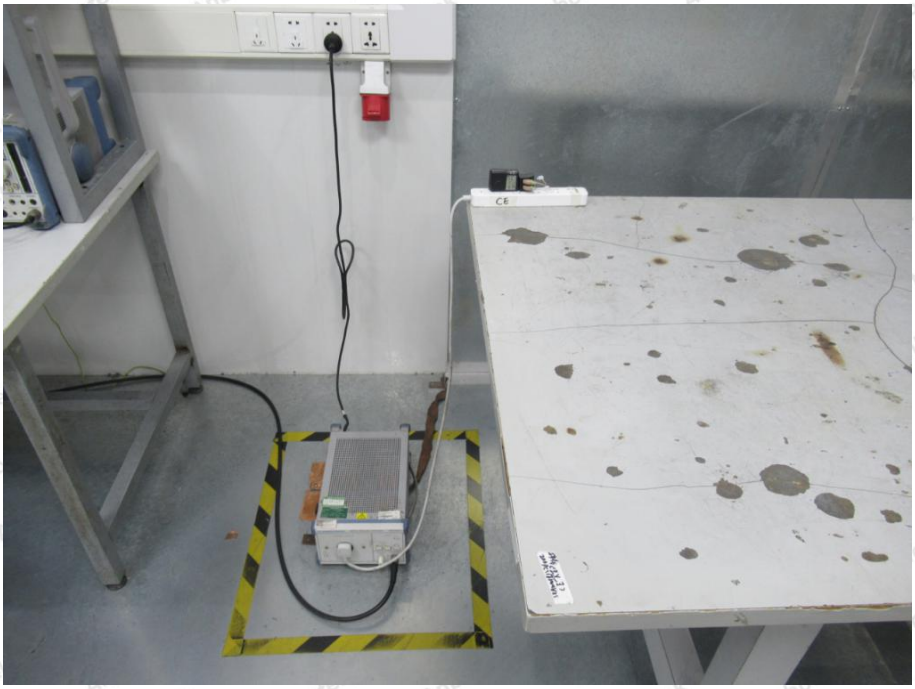
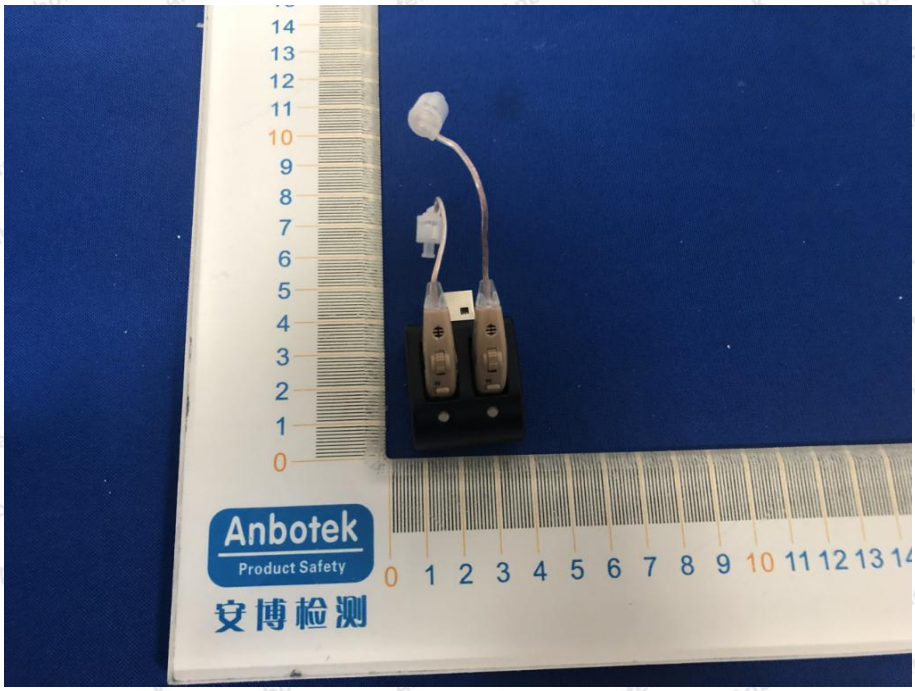
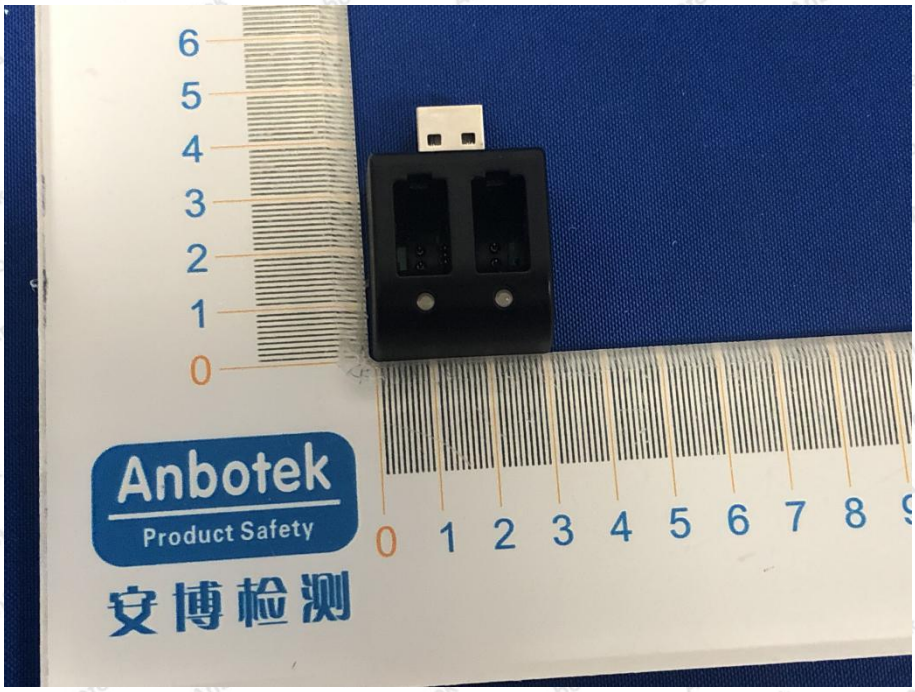
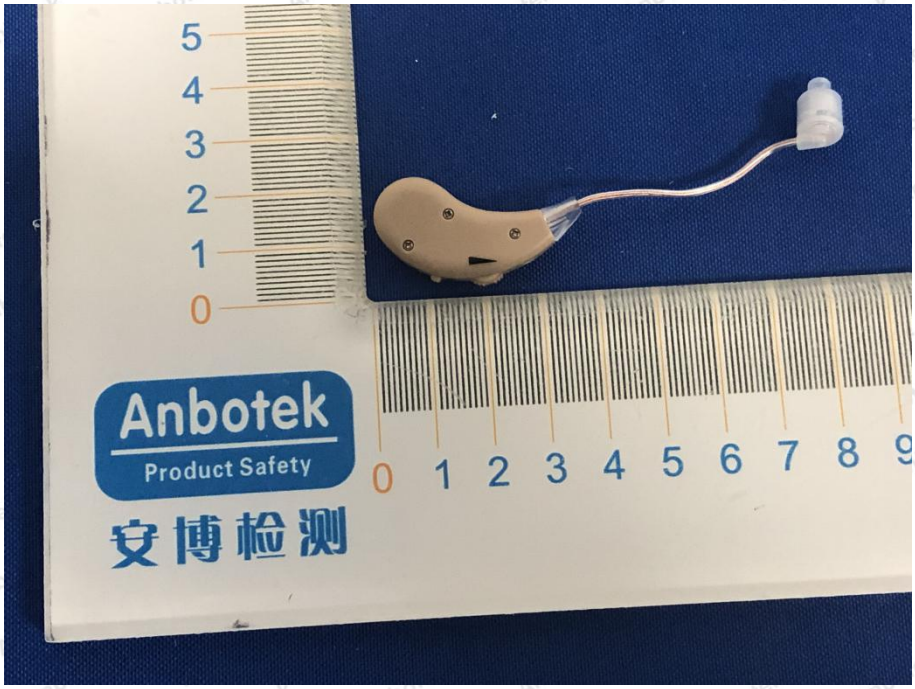


Photo of Radiated Emission Test

APPENDIX II -- EXTERNAL PHOTOGRAPH



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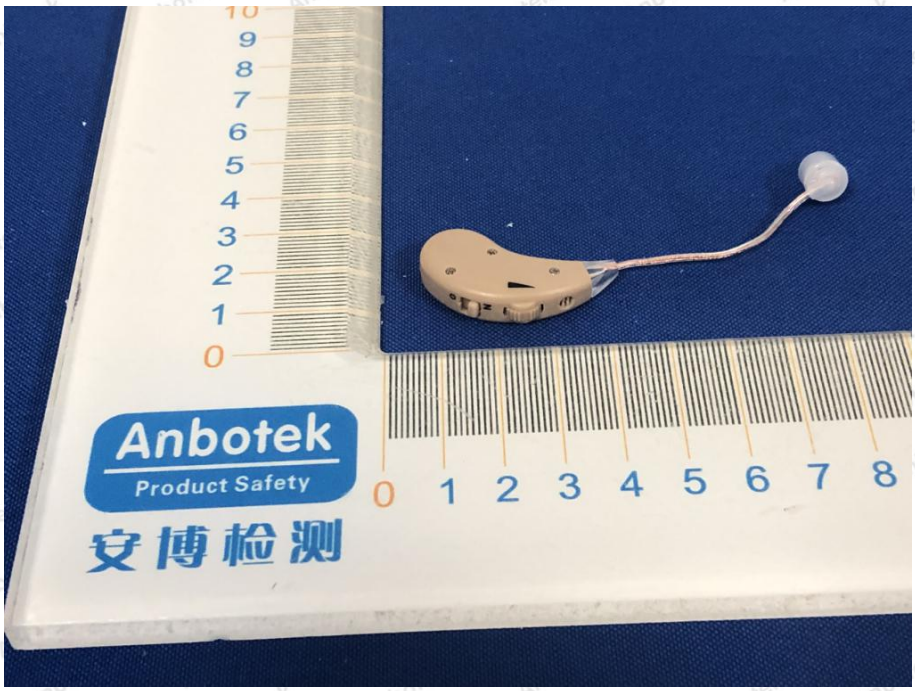
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Product Safety
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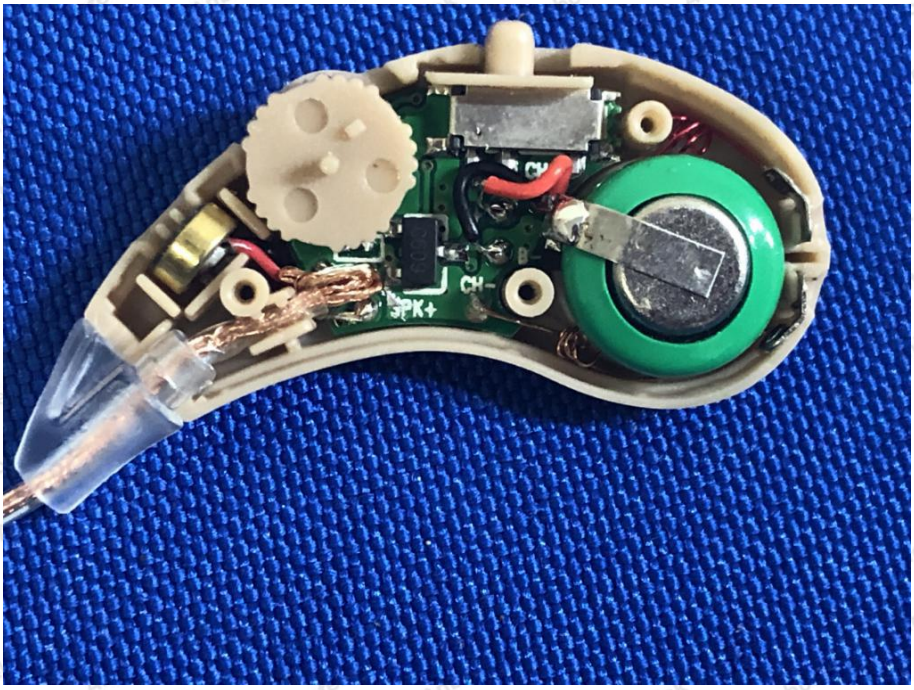
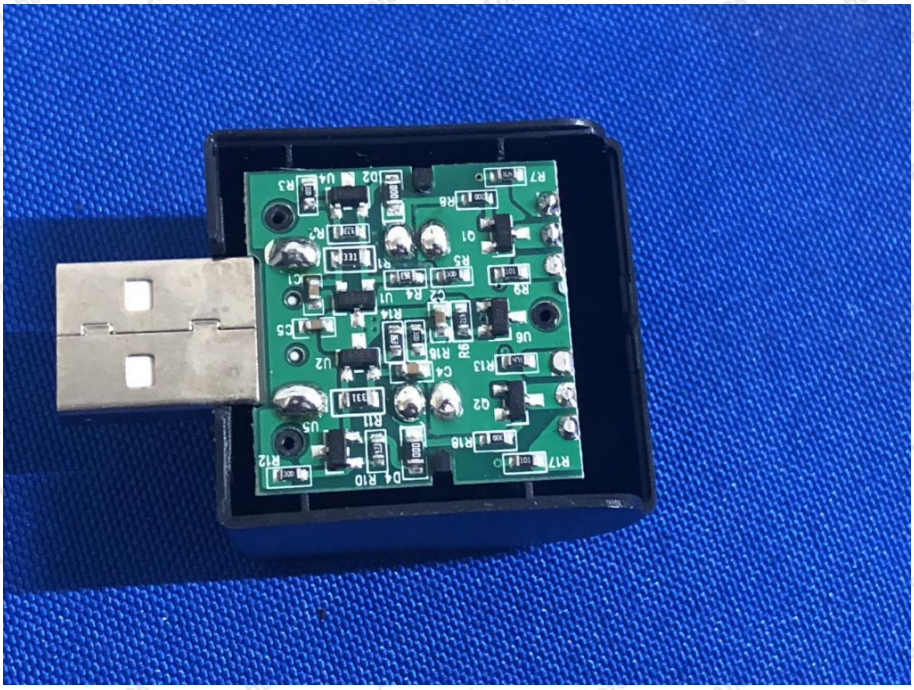
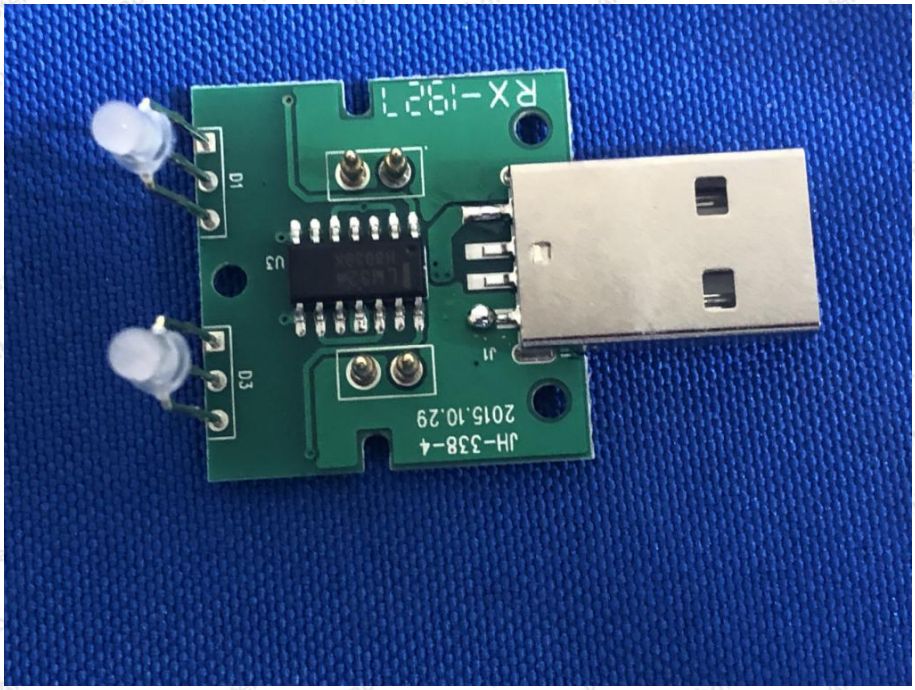
APPENDIX III -- INTERNAL PHOTOGRAPH







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