FCC Test Report

Client Name	:	ZHENGZHOU YSAIR TECHNOLOGY CO.,LTD
Address	:	ROOM 709,SANJIANG BUILDING,NO.170 NANYANG ROAD,HUIJI DISTRICT,ZHENGZHOU HENAN, China
Product Name	:	Watch Receiver
Date	:	Dec. 07, 2021

Shenzhen Anbotek Compliance Laboratory Limited

Contents

TEST REPORT

Applicant	:	ZHENGZHOU YSAIR TECHNOLOGY CO.,LTD
Manufacturer	:	ZHENGZHOU YSAIR TECHNOLOGY CO.,LTD
Product Name	:	Watch Receiver
Model No.	:	T128, TD106, TD108, TD109, TD110, TD111, TD112, TD113, TD114, TD115, TD116, TD117, TD118, TD119, TD120
Trade Mark	:	RETEKESS
Rating(s)	:	Input: DC 5V, 1A(with DC 3.7V, 400mAh battery inside)
Test Standard(s)	**:**	**FCC Rules and Regulations Part 15 Subpart B**
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	Oct. 22, 2021
Date of Test	Oct. 22~30, 2021
Prepared By	(Ella Liang)
Approved & Authorized Signer	(Kingkong Jin)

1. General Information

1.1. Client Information

Applicant	:	ZHENGZHOU YSAIR TECHNOLOGY CO.,LTD
Address	:	ROOM 709,SANJIANG BUILDING,NO.170 NANYANG ROAD,HUIJI DISTRICT,ZHENGZHOU HENAN, China
Manufacturer	:	ZHENGZHOU YSAIR TECHNOLOGY CO.,LTD
Address	:	ROOM 709,SANJIANG BUILDING,NO.170 NANYANG ROAD,HUIJI DISTRICT,ZHENGZHOU HENAN, China
Factory	:	ZHENGZHOU YSAIR TECHNOLOGY CO.,LTD
Address	:	ROOM 709,SANJIANG BUILDING,NO.170 NANYANG ROAD,HUIJI DISTRICT,ZHENGZHOU HENAN, China

1.2. Description of Device (EUT)

Product Name	:	Watch Receiver	
Model No.	:	T128, TD106, TD108, TD109, TD110, TD111, TD112, TD113, TD114, TD115, TD116, TD117, TD118, TD119, TD120 (Note: All samples are the same except the model number & appearance, so we prepare “T128” for test only.)	
Trade Mark	:	RETEKESS	
Test Power Supply	:	AC 120V, 60Hz for adapter	
Test Sample No.	:	1-2-1(Normal Sample), 1-2-2(Engineering Sample)	
Product Description	:	Adapter:	Model: DSA-5PF07-05 FUS 050100 Input: 100-240V~50/60Hz 0.2A Max Output: DC 5V 1000mA
Remark: (1) For a more detailed features description, please refer to the manufacturer’s specifications or the User’s Manual.			

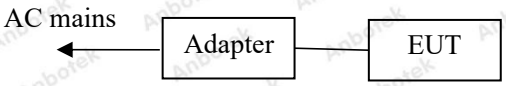
1.3. Auxiliary Equipment Used During Test

N/A		

1.4. Description of Test Mode

Pretest Mode	Description
Mode 1	Charging mode
Mode 2	working mode

For Mode 1 Block Diagram of Test Setup



For Mode 2 Block Diagram of Test Setup

1.5. Test Summary

Test Items	Standard Section	Test Mode	Status
Power Line Conducted Emission Test (150KHz To 30MHz)	Part 15.107	Mode 1	P
Radiated Emission Test (30MHz To 960MHz)	Part 15.109	Mode 1	P
Radiated Emission Test (above 960MHz)	Part 15.109	Mode 1	P
N)	P) Indicates “PASS”. O) 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	Oct. 22, 2021	1 Year
2.	Three Phase V-type Artificial Power Network	CYBERTEK	EM5040DT	E215040DT001	Jul 05, 2021	1 Year
3.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Oct. 22, 2021	1 Year
4.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Oct. 22, 2021	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	ESR26	101481	Oct. 22, 2021	1 Year
2.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Oct. 22, 2021	2 Year
3.	Pre-amplifier	SONOMA	310N	186860	Oct. 22, 2021	1 Year
4.	Software Name EZ-EMC	Ferrari Technology	ANB-03A	N/A	N/A	N/A
5.	Preamplifier	SKET Electronic	BK1G18G30D	KD17503	Oct. 22, 2021	1 Year
6.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Oct. 22, 2021	2 Year

1.7. 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.

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.

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

1.8. Measurement Uncertainty

Radiation Uncertainty	:	Ur = 3.9 dB (Horizontal)
		Ur = 3.8 dB (Vertical)
Conduction Uncertainty	:	Uc = 3.4 dB

2. Power Line Conducted Emission Test

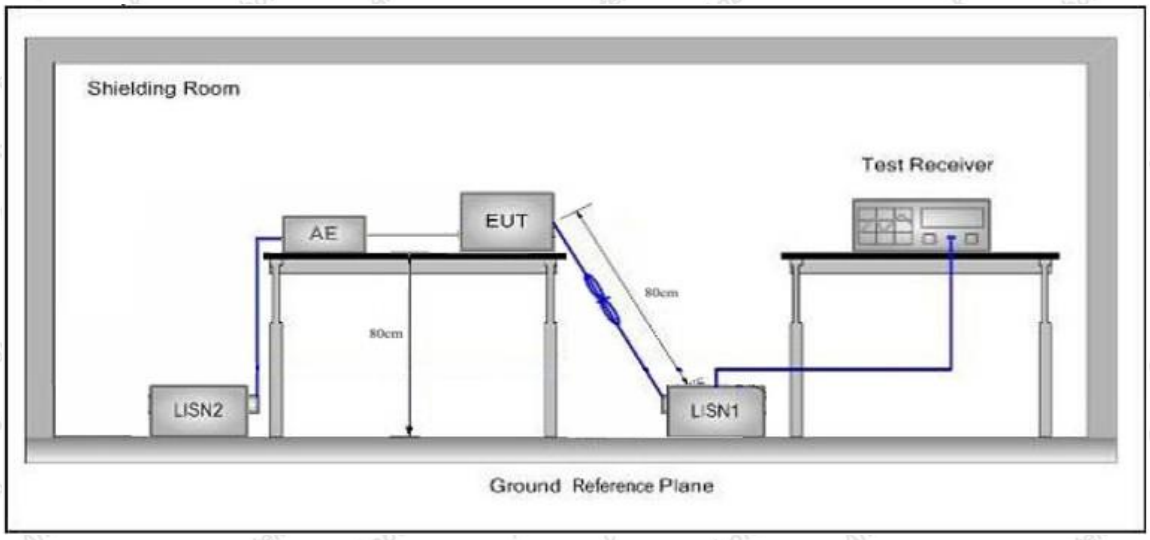
2.1. Test Standard and Limit

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

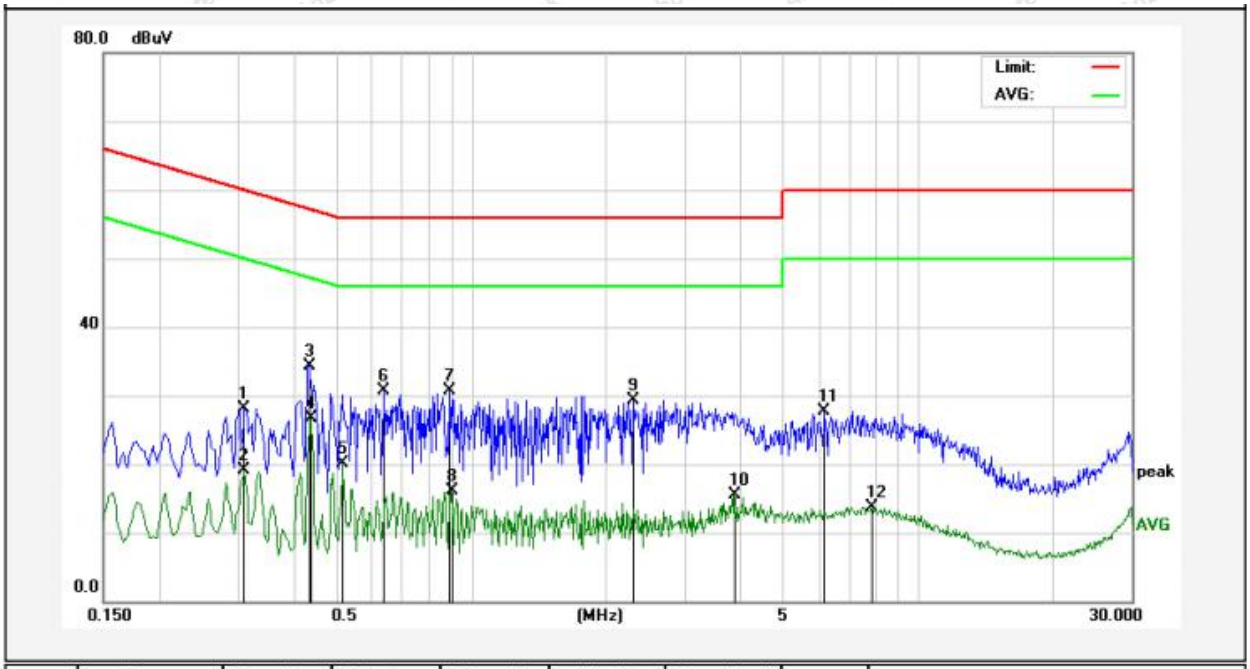
PASS

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

Only the worst case data was showed in the report, please to see the following pages.

Conducted Emission Test Data

Test Site:	1# Shielded Room
Operating Condition:	Mode 1
Test Specification:	AC 120V, 60Hz for adapter
Comment:	Live Line
	Tem.: 23.4℃ Hum.: 46%

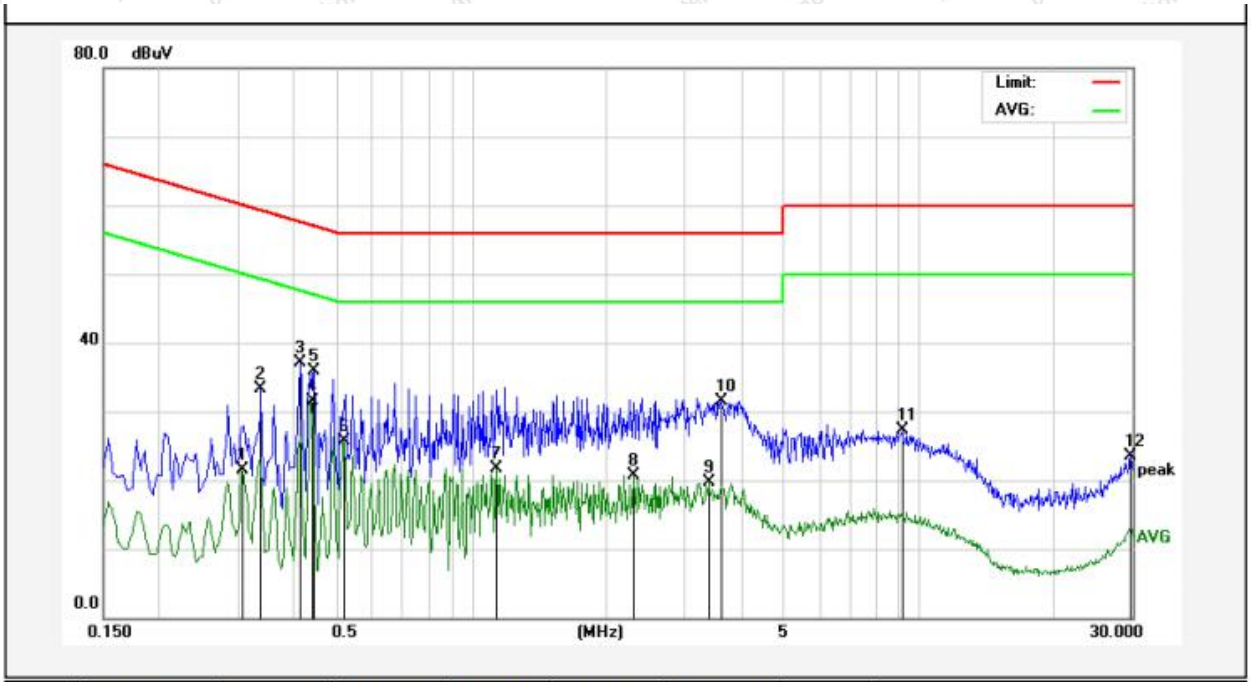


No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.3100	28.05	0.00	28.05	59.97	-31.92	QP	
2	0.3100	19.07	0.00	19.07	49.97	-30.90	AVG	
3	0.4340	34.27	0.00	34.27	57.18	-22.91	QP	
4	0.4380	26.67	0.00	26.67	47.10	-20.43	AVG	
5	0.5140	20.16	0.00	20.16	46.00	-25.84	AVG	
6	0.6380	30.68	0.00	30.68	56.00	-25.32	QP	
7	0.8940	30.73	0.00	30.73	56.00	-25.27	QP	
8	0.9020	16.05	0.00	16.05	46.00	-29.95	AVG	
9	2.2980	29.36	0.00	29.36	56.00	-26.64	QP	
10	3.8780	15.55	0.00	15.55	46.00	-30.45	AVG	
11	6.1698	27.75	0.00	27.75	60.00	-32.25	QP	
12	7.8619	13.77	0.00	13.77	50.00	-36.23	AVG	

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

Conducted Emission Test Data

Test Site:	1# Shielded Room
Operating Condition:	Mode 1
Test Specification:	AC 120V, 60Hz for adapter
Comment:	Neutral Line
	Tem.: 23.4℃ Hum.: 46%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.3060	21.42	0.00	21.42	50.08	-28.66	AVG	
2	0.3379	33.25	0.00	33.25	59.25	-26.00	QP	
3	0.4140	37.05	0.00	37.05	57.57	-20.52	QP	
4	0.4380	31.46	0.00	31.46	47.10	-15.64	AVG	
5	0.4460	35.89	0.00	35.89	56.95	-21.06	QP	
6	0.5180	25.75	0.00	25.75	46.00	-20.25	AVG	
7	1.1380	21.71	0.00	21.71	46.00	-24.29	AVG	
8	2.3020	20.61	0.00	20.61	46.00	-25.39	AVG	
9	3.3860	19.77	0.00	19.77	46.00	-26.23	AVG	
10	3.6220	31.50	0.00	31.50	56.00	-24.50	QP	
11	9.1820	27.25	0.00	27.25	60.00	-32.75	QP	
12	29.7900	23.56	0.00	23.56	60.00	-36.44	QP	

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)	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
Test Limit	0.009MHz~0.490MHz	2400/F(kHz)	-	-	300
	0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
	1.705MHz-30MHz	30	-	-	30
	30MHz~88MHz	100	40.0	Quasi-peak	3
	88MHz~216MHz	150	43.5	Quasi-peak	3
	216MHz~960MHz	200	46.0	Quasi-peak	3
	Above 960MHz	500	54.0	Average	3
		-	74.0	Peak	3

Remark:
(1)The lower limit shall apply at the transition frequency.
(2) 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

3.2. Test Setup

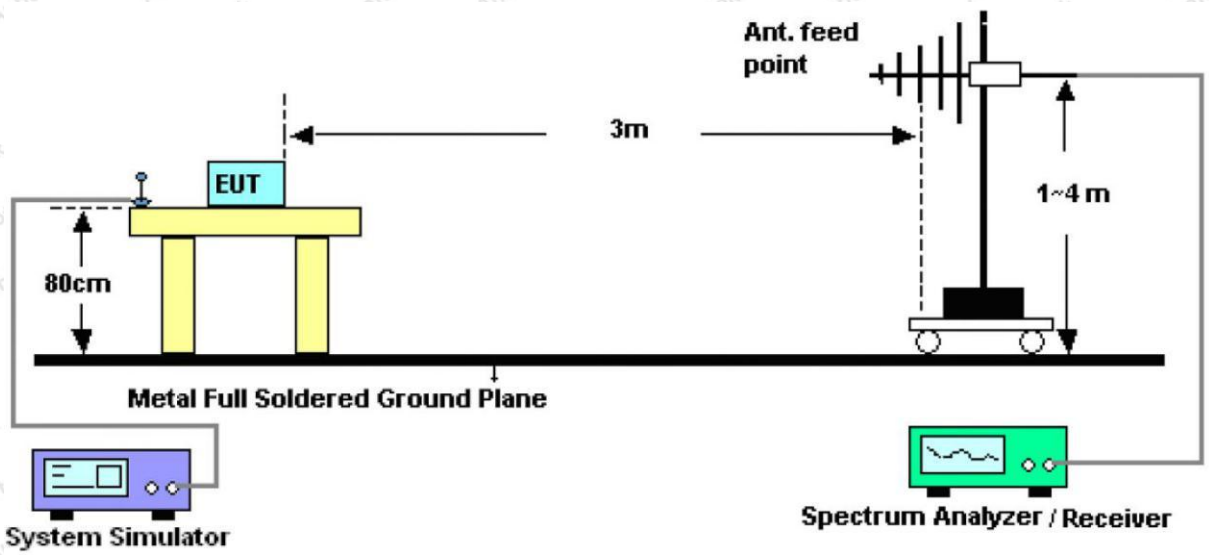


Figure 1. 30MHz to 1GHz

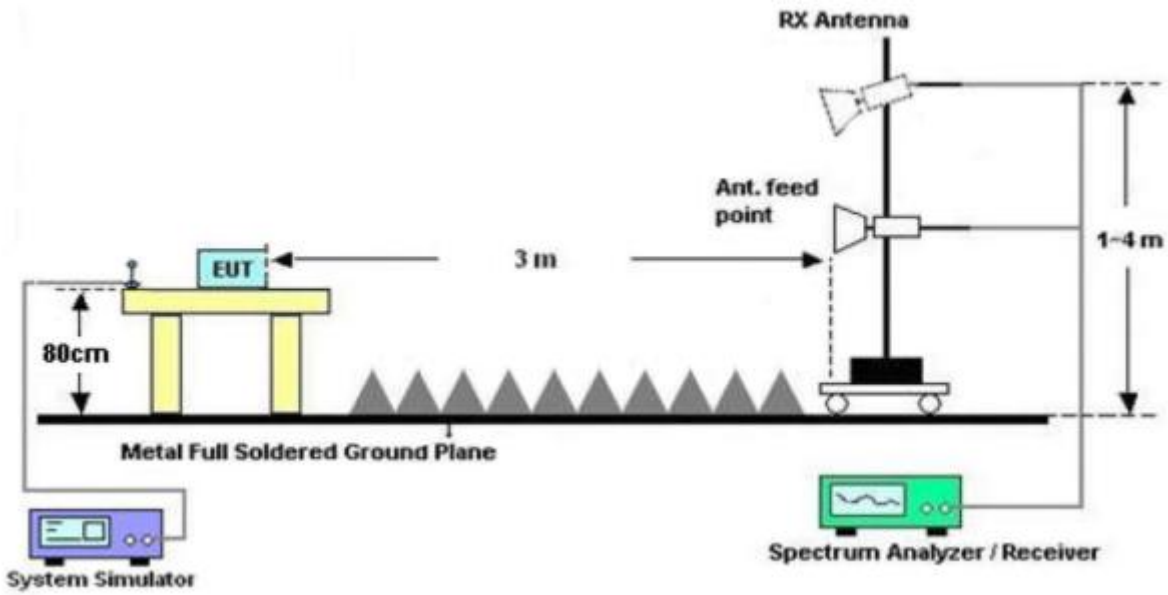


Figure 2. Above 1 GHz

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 6000MHz is checked.

The test results are listed in Section 3.6.

3.6. Test Results

PASS

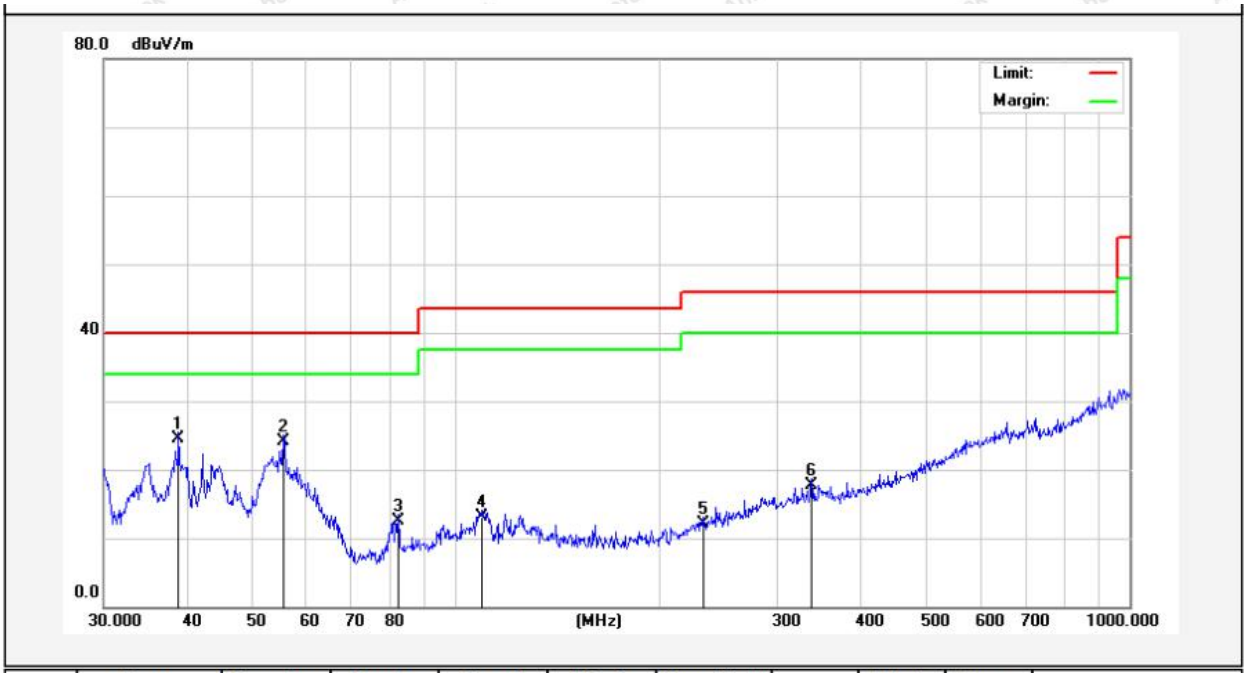
The test curves are shown in the following pages.
Only the worst case data was showed in the report, please to see the following pages.

Test item:	Radiation Test	Polarization:	Horizontal
Standard:	(RE)FCC Part 15 Subpart B	Power Source:	AC 120V, 60Hz for adapter
Test Mode:	Mode 1	Temp.(℃)/Hum.(%RH):	24.4℃/47%RH

No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	34.5173	35.37	-17.76	17.61	40.00	-22.39	QP	100	360	
2	39.9942	37.22	-15.05	22.17	40.00	-17.83	QP	100	0	
3	55.6094	37.18	-16.49	20.69	40.00	-19.31	QP	100	360	
4	106.0126	37.19	-20.50	16.69	43.50	-26.81	QP	100	0	
5	225.3080	34.75	-19.35	15.40	46.00	-30.60	QP	100	360	
6	470.5232	31.61	-11.24	20.37	46.00	-25.63	QP	100	0	

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

Test item:	Radiation Test	Polarization:	Vertical
Standard:	(RE)FCC Part 15 Subpart B	Power Source:	AC 120V, 60Hz for adapter
Test Mode:	Mode 1	Temp.(℃)/Hum.(%RH):	24.4℃/47%RH



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	38.7518	38.84	-14.25	24.59	40.00	-15.41	QP	100	360	
2	55.4147	40.62	-16.51	24.11	40.00	-15.89	QP	100	0	
3	82.0706	29.84	-17.33	12.51	40.00	-27.49	QP	100	360	
4	109.0286	29.12	-16.08	13.04	43.50	-30.46	QP	100	0	
5	232.5318	28.12	-15.95	12.17	46.00	-33.83	QP	100	360	
6	337.2155	30.16	-12.36	17.80	46.00	-28.20	QP	100	0	

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

Test Results (1GHz~6GHz)

Frequency (MHz)	Read Level (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.	Detector
1541.65	55.48	-2.70	52.78	74.00	-21.22	H	PEAK
2087.60	49.69	-2.95	46.75	74.00	-27.25	H	PEAK
2058.15	48.49	-4.18	44.32	74.00	-29.68	H	PEAK
3929.15	48.68	-5.05	43.63	74.00	-30.37	H	PEAK
4462.49	53.67	-4.52	49.15	74.00	-24.85	H	PEAK
4933.18	45.41	-5.27	40.14	74.00	-33.86	H	PEAK
1541.65	40.64	-2.70	37.94	54.00	-16.06	H	AVG
2087.60	39.09	-2.95	36.14	54.00	-17.86	H	AVG
2058.15	40.86	-4.18	36.68	54.00	-17.32	H	AVG
3929.15	43.66	-5.05	38.62	54.00	-15.38	H	AVG
4462.49	42.64	-4.52	38.12	54.00	-15.88	H	AVG
4933.18	37.87	-5.27	32.60	54.00	-21.40	H	AVG
1645.44	54.47	-2.46	52.01	74.00	-21.99	V	PEAK
2142.20	48.69	-3.01	45.68	74.00	-28.32	V	PEAK
1998.02	48.42	-3.63	44.80	74.00	-29.20	V	PEAK
4189.47	49.86	-4.99	44.86	74.00	-29.14	V	PEAK
4337.95	53.79	-5.20	48.59	74.00	-25.41	V	PEAK
5093.07	50.01	-5.50	44.52	74.00	-29.48	V	PEAK
1645.44	36.92	-2.46	34.46	54.00	-19.54	V	AVG
2142.20	39.83	-3.01	36.83	54.00	-17.17	V	AVG
1998.02	37.67	-3.63	34.04	54.00	-19.96	V	AVG
4189.47	43.42	-4.99	38.43	54.00	-15.57	V	AVG
4337.95	37.91	-5.20	32.72	54.00	-21.28	V	AVG
5093.07	40.52	-5.50	35.02	54.00	-18.98	V	AVG

Remark:

1. Level =Receiver Read level + Antenna Factor

APPENDIX I -- TEST SETUP PHOTOGRAPH

Photo of Conducted Emission Test

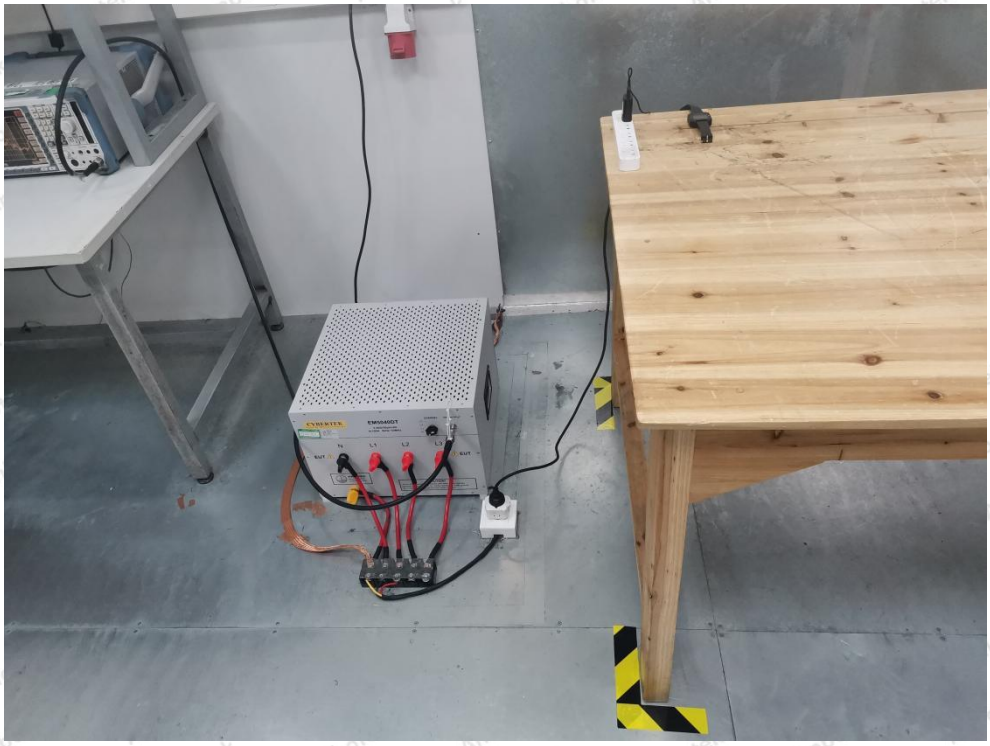
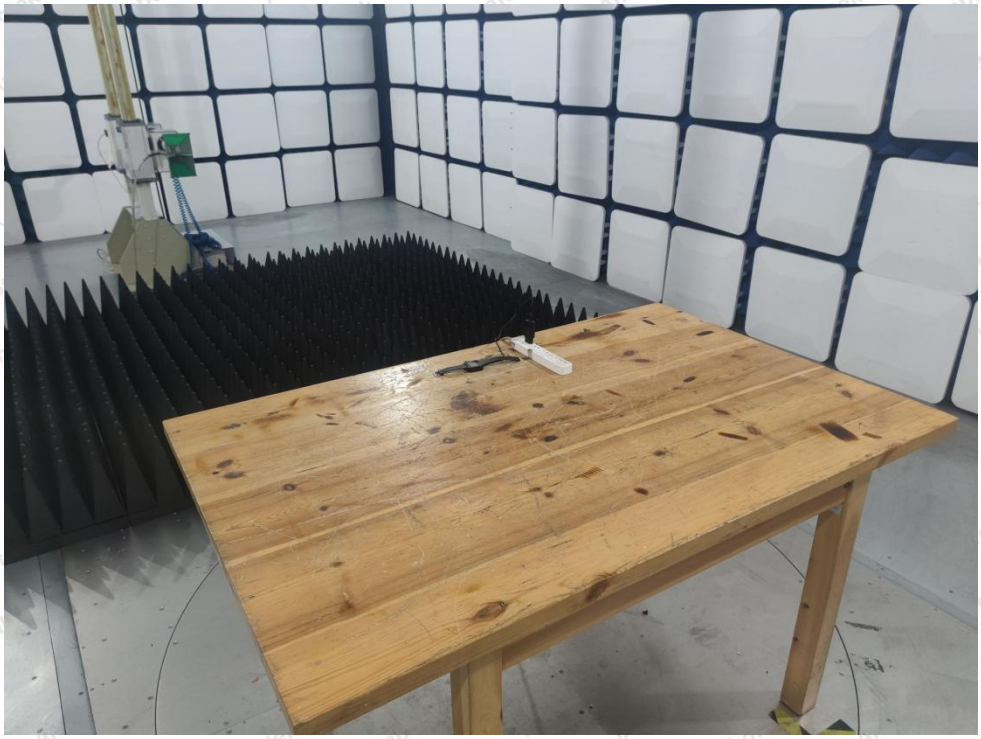


Photo of Radiation Emission Test



APPENDIX II -- EXTERNAL PHOTOGRAPH

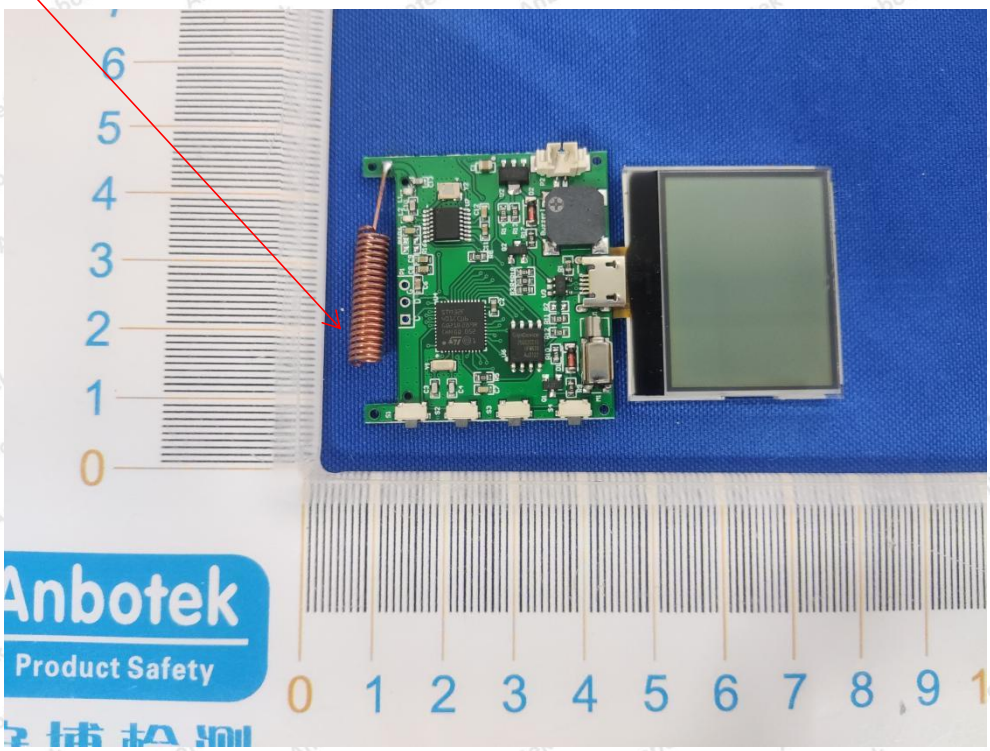

Anbotek
Product Safety
安博检测

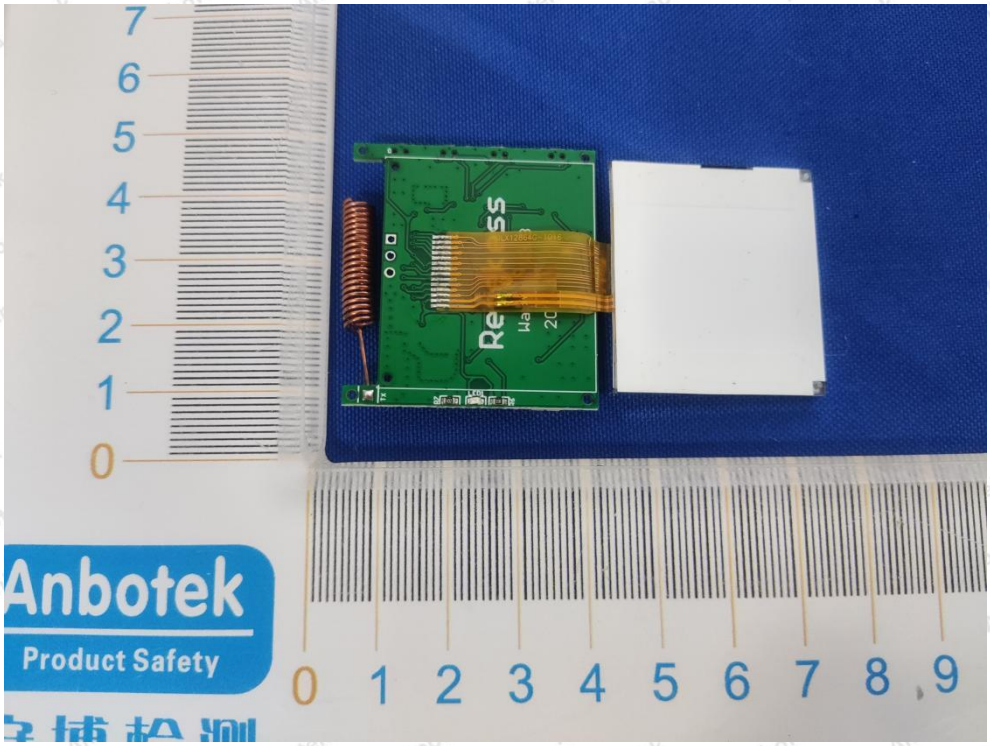

RETEKESS

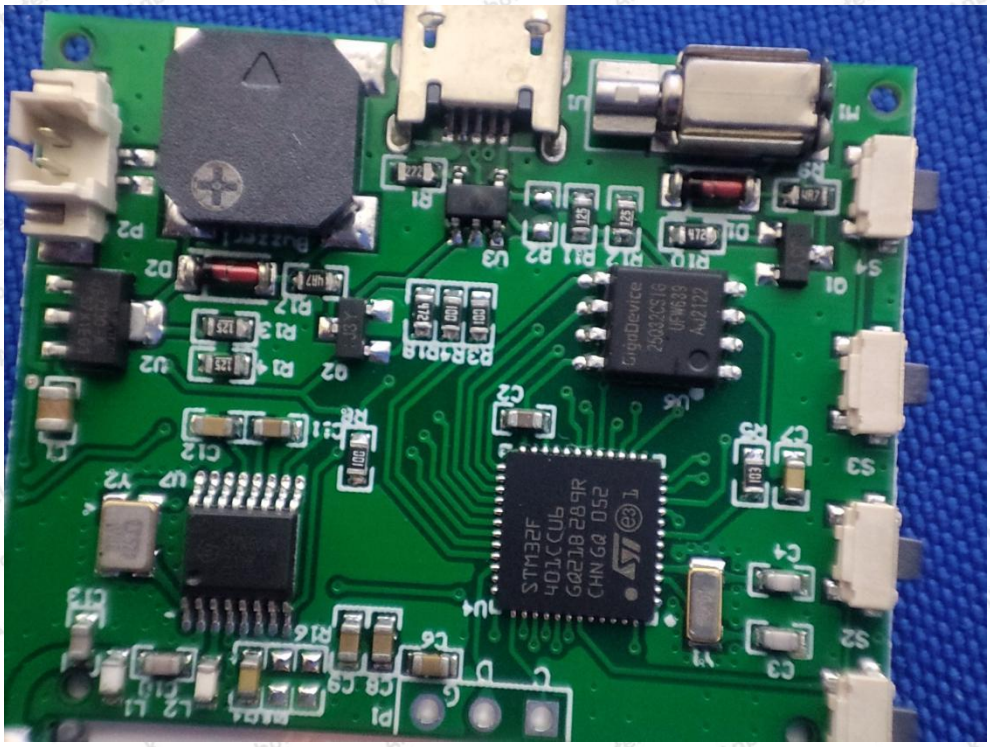

RETEVIS
Switching Adapter
Made in China

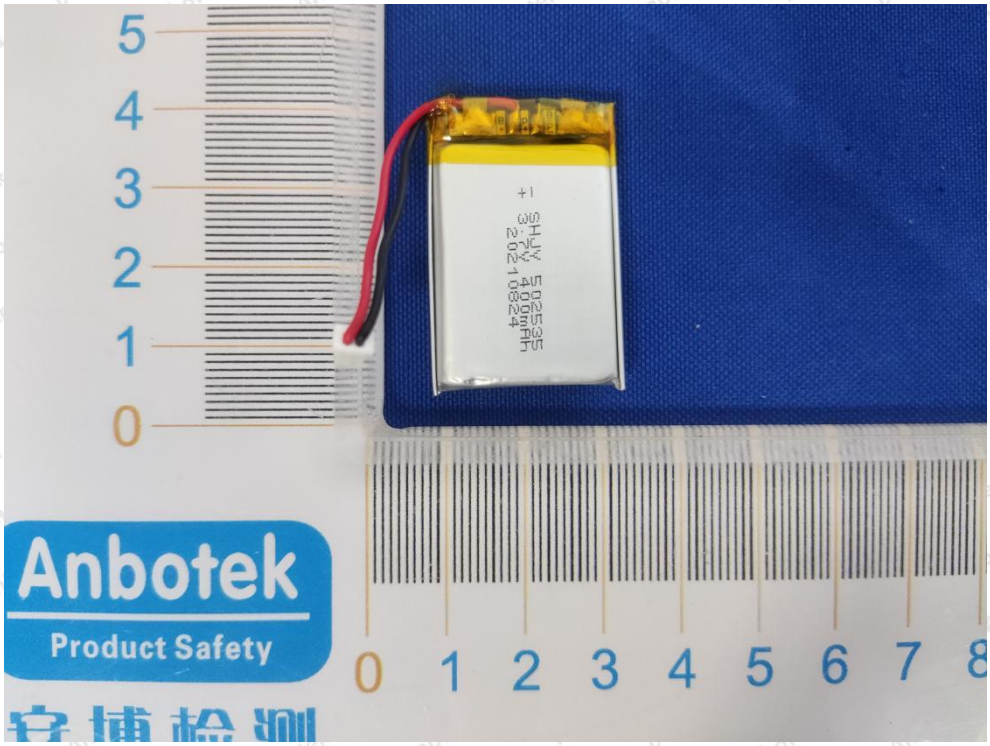
APPENDIX III -- INTERNAL PHOTOGRAPH

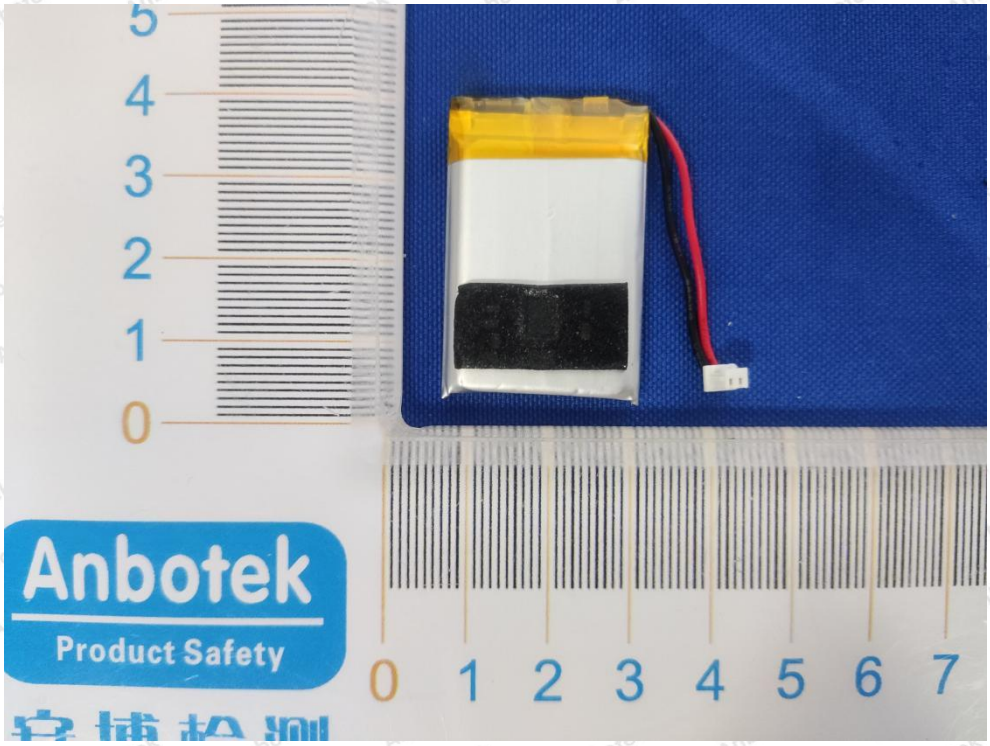
433.92M RX ANT




Anbotek
Product Safety







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