FCC TEST REPORT

For

Guangzhou Havit Technology Co.,LTD

Wireless charger

Model No.: H33

Prepared For : Guangzhou Havit Technology Co.,LTD

Address : ROOM 1307,13F,PHASE 2 B,C BUILDING OF POLY WORLD,

TRADE CENTER, NO. 1000, XINGANG EAST ROAD, HAIZHU,

GUANGDONG, China 510000

Prepared By : Shenzhen Anbotek Compliance Laboratory Limited

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Report Number : SZAWW180728002-01

Date of Receipt : Jul. 28, 2018

Date of Test : Jul. 28~Aug. 08, 2018

Date of Report : Aug. 08, 2018



Contents

1. General Information.	4
1.1. Client Information	^{Anbo}
1.2. Description of Device (EUT)	4
1.3. Auxiliary Equipment Used During Test	4
1.4. Description of Test Modes	5
1.5. List of channels	5
1.6. Description Of Test Setup.	Anbore Ann 6
1.7. Test Equipment List	7
1.8. Measurement Uncertainty	8
1.9. Description of Test Facility	8
2. Summary of Test Results	9
3. Conducted Emission Test.	10
3.1. Test Standard and Limit	10
3.2. Test Setup	10
3.3. Test Procedure	10
3.4. Test Data	10
4. Radiation Spurious Emission and Band Edge	
4.1. Test Standard and Limit	15
4.2. Test Setup	15
4.2. Test Setup	⁰¹⁶ 16
4.4. Test Data	17
APPENDIX I TEST SETUP PHOTOGRAPH	23
APPENDIX II EXTERNAL PHOTOGRAPH	25
ADDENINIV III INTERNAI DHOTOGRADU	sek abote 20



FCC ID: 2AI6I-H33

TEST REPORT

Applicant : Guangzhou Havit Technology Co.,LTD

Manufacturer : Guangzhou Havit Technology Co.,LTD

Product Name : Wireless charger

Model No. : H33

Trade Mark : Havit

Rating(s) : Input: DC 5V, 2A / DC 9V, 1.67A

Wireless Output: 10W

Test Standard(s) : FCC Part15 Subpart C 2017, Paragraph 15.209

Test Method(s) : ANSI C63.10: 2013

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC Part 15 Subpart C requirements.

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

Prepared by

(Engineer / Oliay Yang)

Reviewer

(Supervisor / Calvin Liu)

Approved & Authorized Signer

(Manager / Tom Chen)

1. General Information

1.1. Client Information

Applicant	:	Guangzhou Havit Technology Co.,LTD
Address	:	ROOM 1307,13F,PHASE 2 B,C BUILDING OF POLY WORLD, TRADE CENTER,NO.1000,XINGANG EAST ROAD,HAIZHU, GUANGDONG, China 510000
Manufacturer	:	Guangzhou Havit Technology Co.,LTD
Address	:	ROOM 1307,13F,PHASE 2 B,C BUILDING OF POLY WORLD, TRADE CENTER,NO.1000,XINGANG EAST ROAD,HAIZHU, GUANGDONG, China 510000

1.2. Description of Device (EUT)

Product Name		Wireless charger	Anbotek Anbotek Anbo
		otek Anbotek Anbo	K hotek Anbotek Anbot An
Model No.	:	H33	Annotek Anbotek Anbo
Trade Mark	:	N.A.	oto Annotek Anbotek Anbotek
Test Power Supply	:	AC 120V, 60Hz for adapter / AC	240V, 60Hz for adapter
Test Sample No.		S1, S2	Anbotek Anbotek Anbotek Anbo
		Operation Frequency:	111-205KHz
		Number of Channel:	20 Channels
Product Description	:	Modulation Type:	MSK
		Antenna Type:	Loop Antenna
		Antenna Gain(Peak):	0 dBi

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

in the	Adapter	:	Model: A2013 Input: 100-240V 50-60Hz 0.7A Output: 3.6-6.5V== 3A/6.5-9V== 2A/9-12V== 1.5A
			Anbotek Anbotek Anbotek Anbotek Anbotek Anbotek
	Mobile Phone	:	Samsung



1.4. Description of Test Modes

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	otek Anbotek Anbotek Anbotek Anbotek
Mode 2	CH10
Mode 3	CH20
Mode 4	Keeping TX+Charging mode

	For Conducted Emission
Final Test Mode	Description
Mode 4	Keeping TX+Charging mode

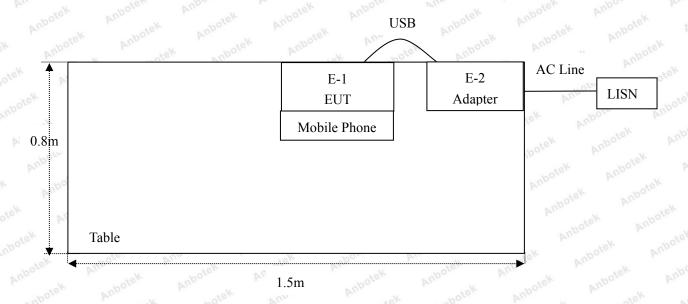
	For Radiated Emission			
Final Test Mode	Description			
Mode 1	w hotek Anbote CH01 And tek dootek A			
Mode 2	CH10 Annual CH10			
Mode 3	CH20			
Mode 4	Keeping TX+Charging mode			

1.5. List of channels

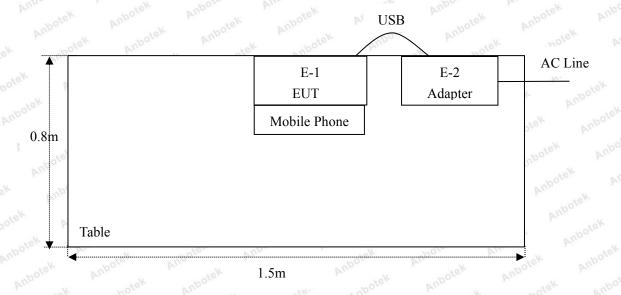
Channel Freq.		Channal	Freq.	Channal	Freq.	Chamal	Freq.
Chamilei	(MHz)	Channel	(MHz)	Channel	(MHz)	Channel	(MHz)
1 notek	0.111	6 Amb	0.135	potek 11 A	0.160	16	0.185
2	0.115	stek 7 Ant	0.140	12	0.165	And 17	0.190
3 And	0.120	abotek8	0.145	13	0.170	18	0.195
otek 4 Ar	0.125	9 K	0.150	14 tel	0.175	19	0.200
nbotes	0.130	10 tek	0.155	15	0.180	20 M	0.205

1.6. Description Of Test Setup

CE



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1.7. Test Equipment List

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
otek 1. Labotek	L.I.S.N. Artificial Mains Network	Rohde & Schwarz	ENV216	100055	Nov. 17, 2017	1 Year
2.00	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Nov. 17, 2017	1 Year
3. 🕸	RF Switching Unit	Compliance Direction	RSU-M2	38303	Nov. 17, 2017	1 Year
4.	Spectrum Analysis	Agilent	E4407B	US39390582	Nov. 17, 2017	1 Year
5.	Spectrum Analysis	Agilent	N9038A	MY53227295	Nov. 17, 2017	1 Year
6.	Preamplifier	SKET Electronic	BK1G18G30D	KD17503	Nov. 17, 2017	1 Year
17.00	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Nov. 17, 2017	1 Year
8. An	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Nov. 20, 2017	1 Year
9.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Nov. 20, 2017	1 Year
10.	Loop Antenna	Schwarzbeck	HFH2-Z2	100047	Nov. 17, 2017	1 Year
AT.	Horn Antenna	Schewarzbeck	BBHA9170	9170-375	Nov. 17, 2017	1 Year
12.	Pre-amplifier	SONOMA	310N	186860	Nov. 17, 2017	1 Year
13.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A
14.	RF Test Control System	YIHENG	YH3000	2017430	Nov. 18, 2017	1 Year
15.	Power Sensor	DAER	RPR3006W	15I00041SN045	Nov. 17, 2017	1 Year
16.	Power Sensor	DAER	RPR3006W	15I00041SN046	Nov. 17, 2017	1 Year
17.	MXA Spectrum Analysis	Agilent	N9020A	MY51170037	Nov. 18, 2017	1 Year
18.	MXG RF Vector Signal Generator	Agilent	N5182A	MY48180656	Nov. 18, 2017	1 Year
19.	Signal Generator	Agilent	E4421B	MY41000743	Nov. 18, 2017	1 Year
20.	DC Power Supply	LW MAN	TPR-6410D	349315	Nov. 01, 2017	1 Year
21.	Constant Temperature Humidity Chamber	Sertep	ZJ-HWHS80B	ZJ-17042804	Nov. 01, 2017	1 Year

FCC ID: 2AI6I-H33

1.8. Measurement Uncertainty

Radiation Uncertainty	:	Ur = 3.9 dB (Horizontal)	Anbotek Anbote An
		Ur = 3.8 dB (Vertical)	Anbotek Anbot An
		Anbotek Anbote And botek	Anbotek Anbo tek
Conduction Uncertainty	:	Uc = 3.4 dB	ek Anbotek Anbo

1.9. 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 registed 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, July 31, 2017.

ISED-Registration No.: 8058A-1

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-1, June 13, 2016.

Test Location

All Emissions tests were performed at Shenzhen Anbotek Compliance Laboratory Limited. at 1/F, Building D, Sogood Science and Technology Park, Sanwei community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.518102



2. Summary of Test Results

Standard Section	Test Item	Result
FCC Part 15, Paragraph 15.207	Conducted Emission Test	PASS
FCC Part 15, Paragraph 15.209(a)(f)	Spurious Emission	PASS



3. Conducted Emission Test

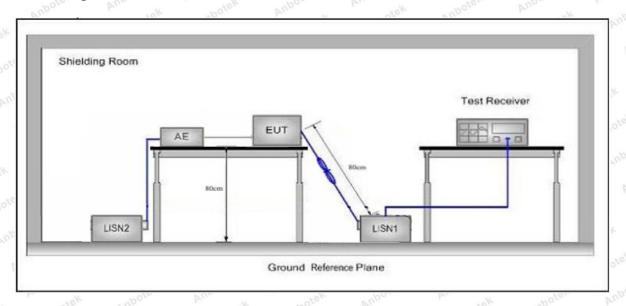
3.1. Test Standard and Limit

Test Standard	FCC Part15 Section 15.20	07 Anbore Am botek	Anboten Anbo tek			
Test Limit	Γ	Maximum RF Line Voltage (dBuV)				
	Frequency	Quasi-peak Level	Average Level			
	150kHz~500kHz	66 ~ 56 *	56 ~ 46 *			
	500kHz~5MHz	56 book	46			
	5MHz~30MHz	60	50 hotek A			

Remark: (1) *Decreasing linearly with logarithm of the frequency.

(2) The lower limit shall apply at the transition frequency.

3.2. Test Setup



3.3. 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 C63.10-2013 on Conducted Emission Measurement.

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

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

3.4. Test Data

Please to see the following pages



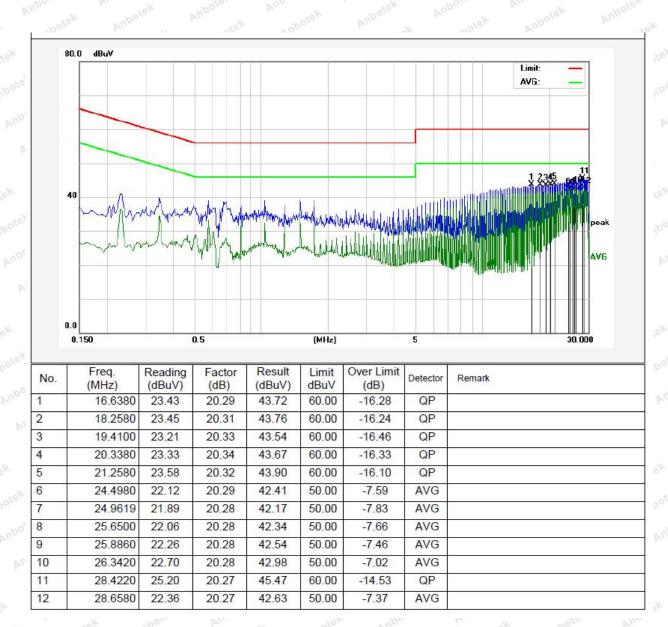
Conducted Emission Test Data

Test Site: 1# Shielded Room

Operating Condition: Keeping TX+Charging mode
Test Specification: AC 240V, 60Hz for adapter

Comment: Live Line

Tem.: 22.2°C Hum.: 59%





9

10

11 12

Conducted Emission Test Data

Test Site: 1# Shielded Room

Operating Condition: Keeping TX+Charging mode
Test Specification: AC 240V, 60Hz for adapter

Comment: Neutral Line

22.52

22.07

24.91

22.48

26.8140

28.4300

29.5820

29.5820

20.28

20.27

20.27

20.27

42.80

42.34

45.18

42.75

50.00

50.00

60.00

50.00

-7.20

-7.66

-14.82

-7.25

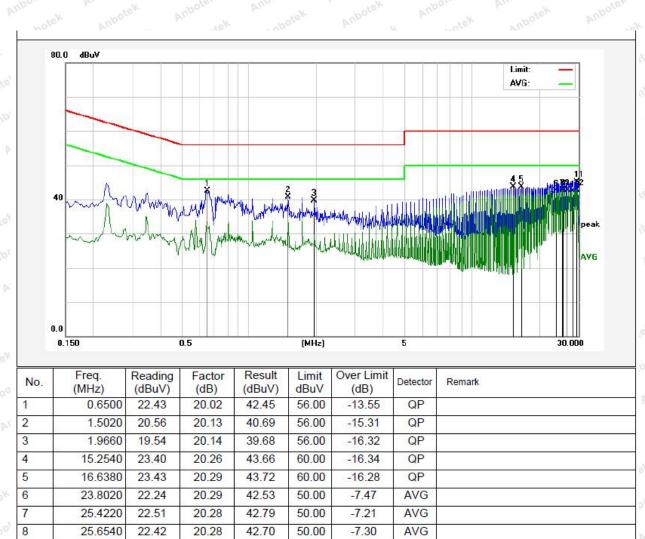
AVG

AVG

QP

AVG

Tem.: 22.2℃ Hum.: 59%





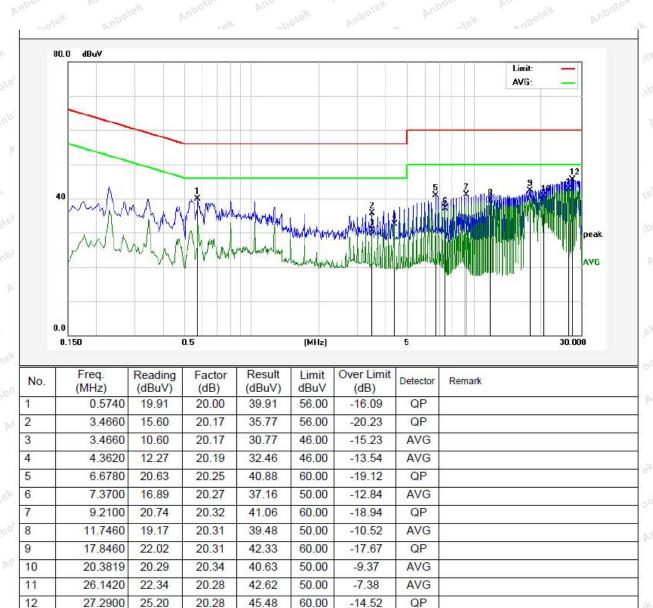
Conducted Emission Test Data

Test Site: 1# Shielded Room

Operating Condition: Keeping TX+Charging mode
Test Specification: AC 120V, 60Hz for adapter

Comment: Live Line

Tem.: 22.2°C Hum.: 59%





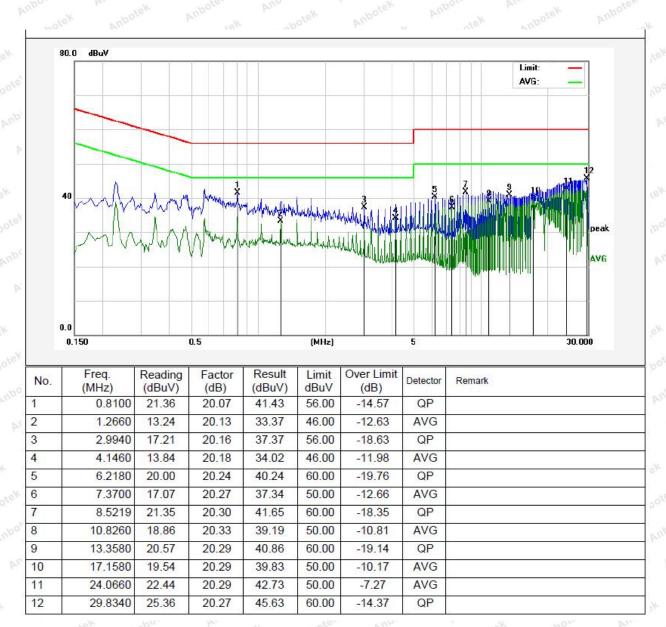
Conducted Emission Test Data

Test Site: 1# Shielded Room

Operating Condition: Keeping TX+Charging mode
Test Specification: AC 120V, 60Hz for adapter

Comment: Neutral Line

Tem.: 22.2°C Hum.: 59%





4. Radiation Spurious Emission and Band Edge

4.1. Test Standard and Limit

Test Standard	FCC Part15 C Section 15.20	Ambotek	Anbotek	inpos stek		
Test Limit	Frequency (MHz)	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)	
	0.009MHz~0.490MHz	2400/F(kHz)	ek Anbor An		300	
	0.490MHz-1.705MHz	24000/F(kHz)	nbotek Anbo	tek win	tek 30 Mbote	
	1.705MHz-30MHz	30	Anbotek A	ipo stele	30 And	
	30MHz~88MHz	100	40.0	Quasi-peak	3	
	88MHz~216MHz	150	43.5	Quasi-peak	Anh 3 tek	
	216MHz~960MHz	200	46.0	Quasi-peak	3 poten	
	960MHz~1000MHz	500	54.0	Quasi-peak	tek 3 Anbote	
	Albarra 1000MII	500	54.0	Average	botek 3 Anbe	
	Above 1000MHz	And hotek	74.0	Peak	mbote 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.

4.2. Test Setup

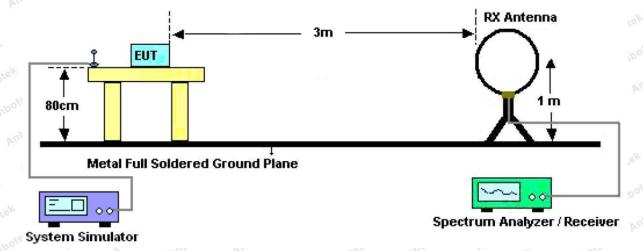


Figure 1. Below 30MHz



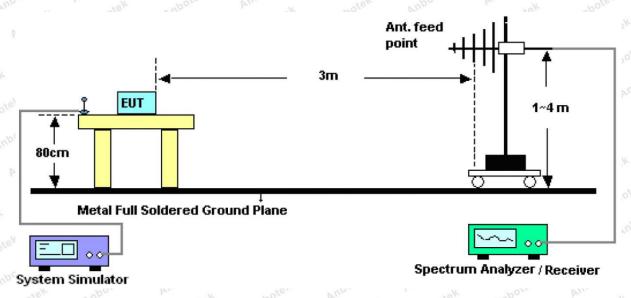


Figure 2. 30MHz to 1GHz

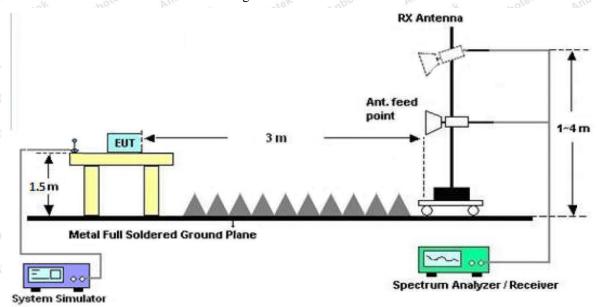


Figure 3. Above 1 GHz

4.3. Test Procedure

For below 1GHz: The EUT is placed on a turntable, which is 0.8m above the ground plane.

For above 1GHz: The EUT is placed on a turntable, which is 1.5m above the ground plane.

The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Rotated the EUT through three orthogonal axes to determine the maximum emissions, both horizontal and vertical polarization of the antenna are set on test. The EUT is tested in 9*6*6 Chamber. The device is evaluated in xyz orientation.

For 9kHz to 150kHz, Set the spectrum analyzer as:

RBW = 200Hz, VBW = 1kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.

For 150kHz to 30MHz, Set the spectrum analyzer as:



RBW = 9KHz, VBW = 30kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.

For 30MHz to 1000MHz, Set the spectrum analyzer as:

RBW = 100kHz, VBW =300kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.

4.4. Test Data

PASS



Test Results

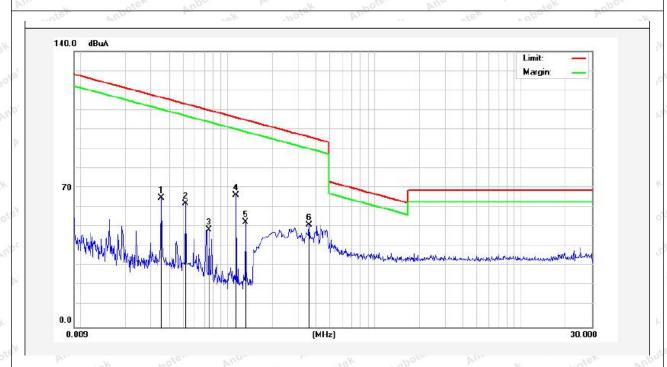
(Between 9KHz - 30MHz)

Job No.: SZAWW180728002-01

Standard: FCC PART15 C _3m Power Source: AC 120V, 60Hz for adapter

Test item: Radiation Test Temp.(°C)/Hum.(%RH): 25.4(°C)/54%RH

Test Mode: Mode 4 Distance: 3m



1	Read Level	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	degree
	(dBuV)								(dge)
0.0354	43.77	19.30	2.53	0	65.60	136.36	-70.76	Peak	35
0.0354	33.78	19.30	2.53	0	55.61	116.36	-60.75	AV	35
0.0517	40.91	19.30	2.53	0	62.74	133.07	-70.33	Peak	129
0.0517	30.64	19.30	2.53	0	52.47	113.07	-60.60	AV	129
0.0748	27.86	19.29	2.54	0	49.69	129.95	-80.26	Peak	254
0.0748	18.32	19.29	2.54	0	40.15	109.95	-69.80	AV	254
0.1145	45.20	19.29	2.54	0	67.03	126.17	-59.14	Peak	298
0.1145	35.04	19.29	2.54	0	56.87	106.17	-49.30	AV	298
0.1322	31.07	19.63	2.59	0	53.29	125.06	-71.77	Peak	89
0.1322	21.00	19.63	2.59	0	43.22	105.06	-61.84	AV	89
0.3578	29.62	19.63	2.59	0	51.84	116.43	-64.59	Peak	188
0.3578	18.25	19.63	2.59	0	40.47	96.43	-55.96	AV	188

Remark: According to FCC PART 15.209 (d), the emission limits for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz, Radiated emission limits in these three bands are based on measurements employing an average detector.

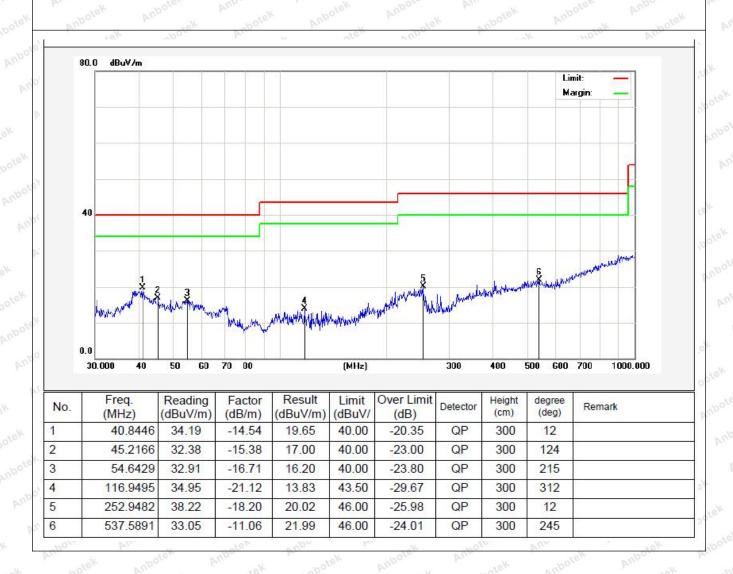


(Between 30MHz –1000 MHz)

Job No.: SZAWW180728002-01 Polarization: Horizontal

Standard: FCC PART15 C 3m Power Source: AC 120V, 60Hz for adapter

Test item: Radiation Test Temp.(℃)/Hum.(%RH): 24.3(℃)/55%RH

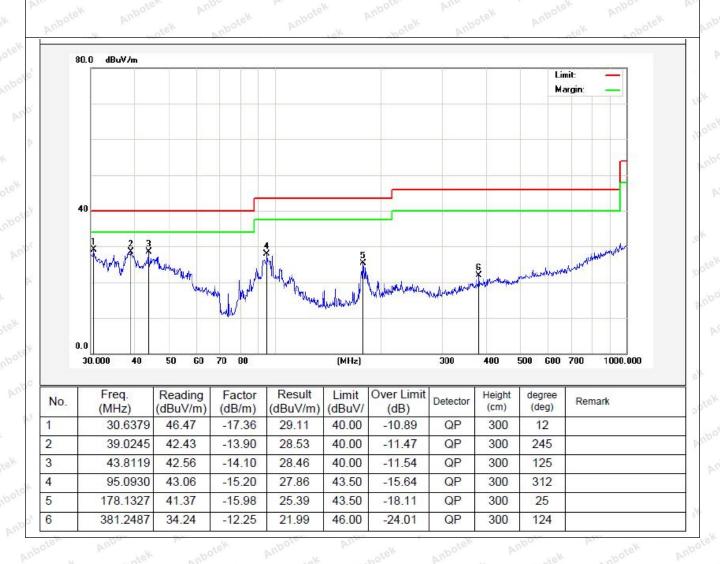




Job No.: SZAWW180728002-01 Polarization: Vertical

Standard: FCC PART15 C 3m Power Source: AC 120V, 60Hz for adapter

Test item: Radiation Test Temp.(°C)/Hum.(%RH): 24.3(°C)/55%RH

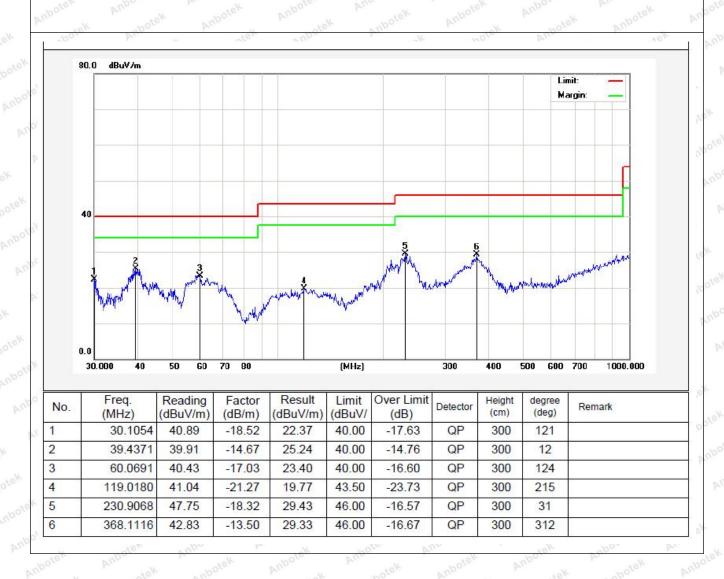




Job No.: SZAWW180728002-01 Polarization: Horizontal

Standard: FCC PART15 C _3m Power Source: AC 240V, 60Hz for adapter

Test item: Radiation Test Temp.(°C)/Hum.(%RH): 24.3(°C)/55%RH

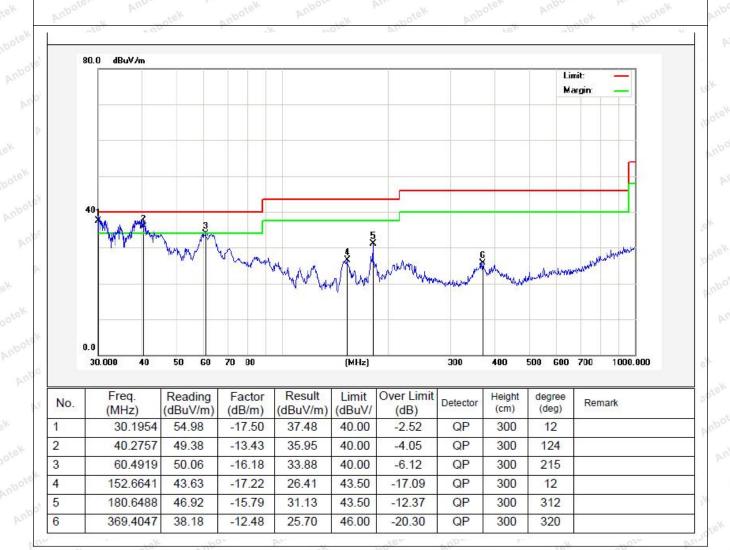




Job No.: SZAWW180728002-01 Polarization: Vertical

Standard: FCC PART15 C 3m Power Source: AC 240V, 60Hz for adapter

Test item: Radiation Test Temp.(°C)/Hum.(%RH): 24.3(°C)/55%RH



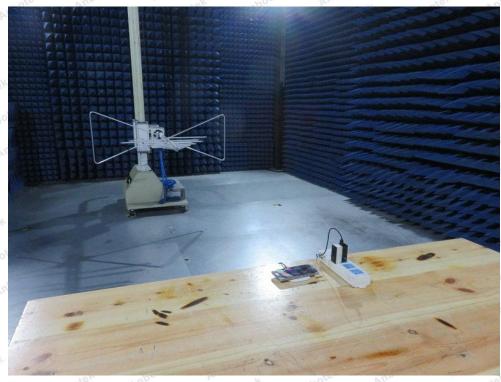


APPENDIX I -- TEST SETUP PHOTOGRAPH





Photo of Radiation Emission Test







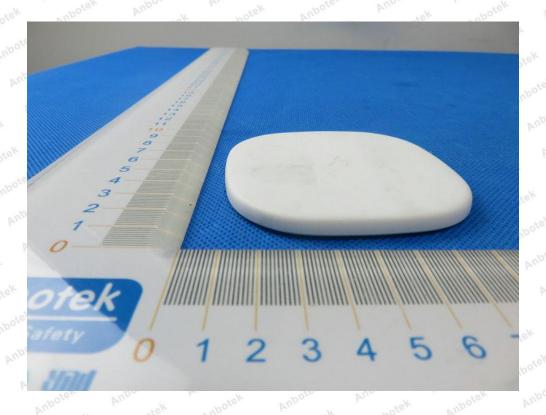


APPENDIX II -- EXTERNAL PHOTOGRAPH









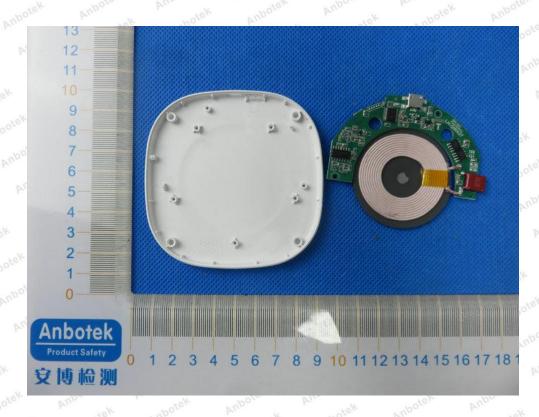






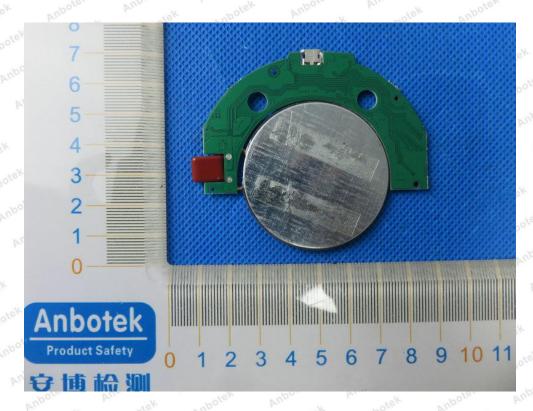
APPENDIX III -- INTERNAL PHOTOGRAPH















----- End of Report -----