

FCC TEST REPORT

For

Hamedata Technology Co., Limited

Power Bank

Model No.: P64

Prepared For : Hamedata Technology Co., Limited

Address : 1st Zone, 3F, Plant#1, Huahan Industrial Park, No.16, Jinniu West Rd.,

Pingshan New District, Shenzhen, China 518118

Prepared By : Shenzhen Anbotek Compliance Laboratory Limited

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Report Number : SZAWW180523002-01

Date of Test : May 23~Jun. 28, 2018

Date of Report : Jun. 28, 2018





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TEST REPORT

Applicant : Hamedata Technology Co., Limited

Manufacturer : Hamedata Technology Co., Limited

Product Name : Power Bank

Model No. : P64

Trade Mark : N.A.

Rating(s) : Input: DC 5V, 2A(with DC 3.7V, 10000mAh Battery inside)

USB output: DC 5V, 2.1A max Wireless output: DC 5V, 1A

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	:	Hamedata Technology Co., Limited
Address	:	1st Zone, 3F, Plant#1, Huahan Industrial Park, No.16, Jinniu West Rd., Pingshan New District, Shenzhen, China 518118
Manufacturer	:	Hamedata Technology Co., Limited
Address	:	1st Zone, 3F, Plant#1, Huahan Industrial Park, No.16, Jinniu West Rd., Pingshan New District, Shenzhen, China 518118

1.2. Description of Device (EUT)

Product Name	:	Power Bank	
Model No.	:	P64	Anbotek Anbotek Anbot Anbote
Trade Mark	:	N.A.	Ann Anbotek Anbotek Anbo Atek Anti
Test Power Supply	:	AC 120V, 60Hz for adapter / AC	240V, 60Hz for adapter/ DC 3.7V battery inside
		Operation Frequency:	110-205KHz
		Number of Channel:	20 Channels
Product Description	:	Modulation Type:	FSK ANDOLE AND
Description		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

	Adapter	:	Manufacturer: Samsung	Anbolo	Ans	nbotek	Aupo.
o¹			M/N: ETA-U90CBC				Anb
			S/N: RT6FB17ZS/B-E				
			Input: 100-240V~ 50-60Hz, 0.35A				-K
			Output: DC 5V, 2A	tek bupo	-0/p	otek Anbot	0.

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	CH01
Mode 2	CH10 Anbotek Anbotek
Mode 3	CH20
Mode 4	Keeping TX+Charging mode

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

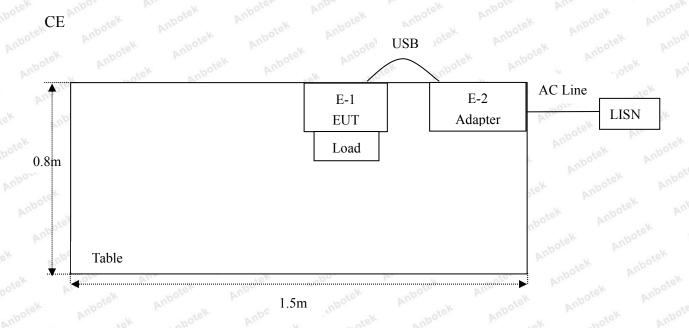
	For Radiated Emission
Final Test Mode	Description
Mode 1	K notek and CH01 And and abotek
Mode 2	CH10 And Address
Mode 3	CH20
Mode 4	Keeping TX+Charging mode

1.5. List of channels

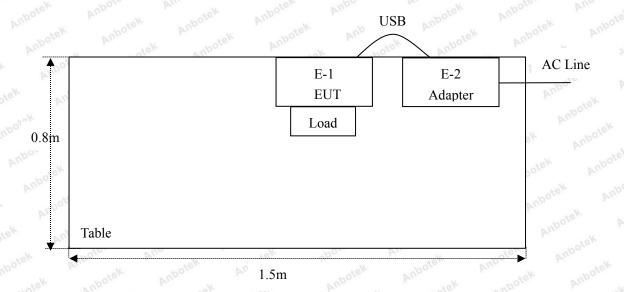
Channel	Freq.	Channel	Freq.	Channel	Freq.	Channel	Freq.
Chamilei	(MHz)	Chamilei	(MHz)		(MHz)	Chamilei	(MHz)
1 notek	0.110	6 Amb	0.135	potek 11 A	0.160	16	0.185
2	0.115	stek 7 Ant	0.140	12	0.165	Amb 17	0.190
3 And	0.120	bote ⁸ 8	0.145	13	0.170	18	0.195
oter 4 Ar	0.125	9 14	0.150	14	0.175	19	0.200
nbote5	0.130	10	0.155	15	0.180	20 Ant	0.205



1.6. Description Of Test Setup



RE





1.7. Test Equipment List

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
otek 1. Inbotek	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. bot	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Nov. 17, 2017	1 Year
8. A.	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
MJ.	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 Anna	TPR-6410D	349315	Nov. 01, 2017	1 Year
21.	Constant Temperature Humidity Chamber	Sertep	ZJ-HWHS80B	ZJ-17042804	Nov. 01, 2017	1 Year
	V/6 1/0 1/0 1/0 1/0 1/0 1/0 1/0 1/0 1/0 1/0	De.	107	AP F	V0**	10.7

1.8. Measurement Uncertainty

Radiation Uncertainty	:	Ur = 3.9 dB (Horizontal)	Anbotek	Anbore An.
		Ur = 3.8 dB (Vertical)	Anbotek	Aupor Au
		Anbotek Anbote And botek	Anbotek	Anbo. stek
Conduction Uncertainty	:	Uc = 3.4 dB	itek Anbo	tek 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

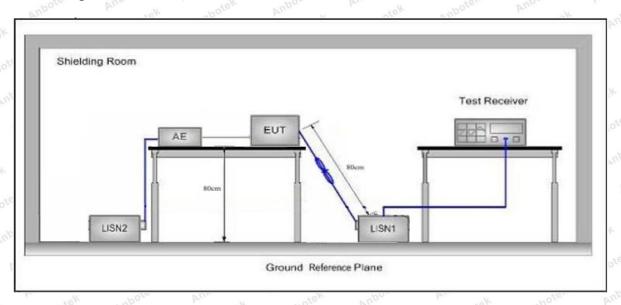
3.1. Test Standard and Limit

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

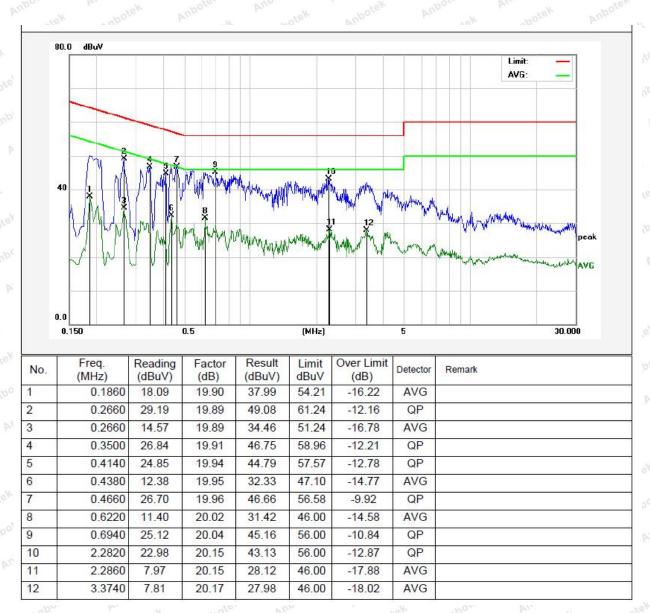
Please to see the following pages



Test Site: 1# Shielded Room

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

Comment: Live Line

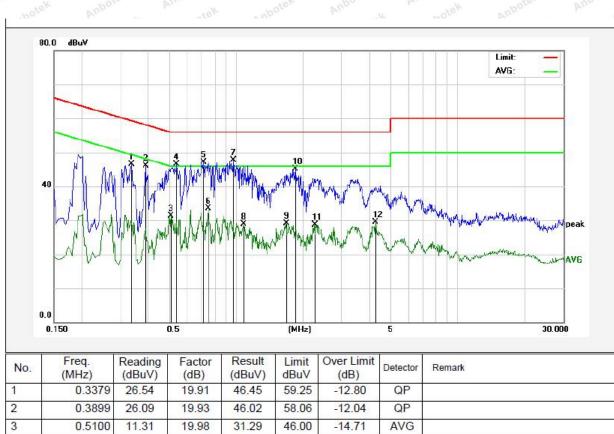




Test Site: 1# Shielded Room

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

Comment: Neutral Line



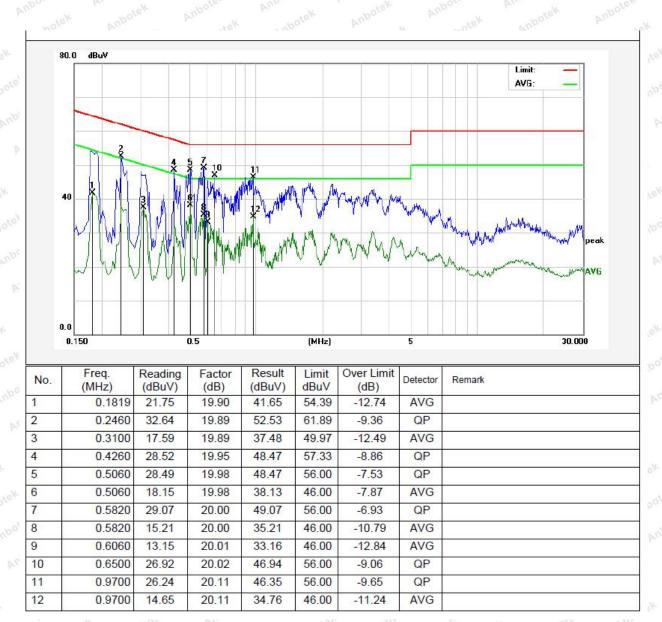
No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.3379	26.54	19.91	46.45	59.25	-12.80	QP	
2	0.3899	26.09	19.93	46.02	58.06	-12.04	QP	
3	0.5100	11.31	19.98	31.29	46.00	-14.71	AVG	
4	0.5380	26.46	19.99	46.45	56.00	-9.55	QP	
5	0.7140	26.97	20.04	47.01	56.00	-8.99	QP	
6	0.7500	13.48	20.05	33.53	46.00	-12.47	AVG	
7	0.9700	27.55	20.11	47.66	56.00	-8.34	QP	
8	1.0820	8.86	20.12	28.98	46.00	-17.02	AVG	
9	1.6740	8.88	20.13	29.01	46.00	-16.99	AVG	
10	1.8580	24.88	20.14	45.02	56.00	-10.98	QP	
11	2.2820	8.57	20.15	28.72	46.00	-17.28	AVG	
12	4 2500	9.36	20 19	29 55	46 00	-16 45	AVG	



Test Site: 1# Shielded Room

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

Comment: Live Line

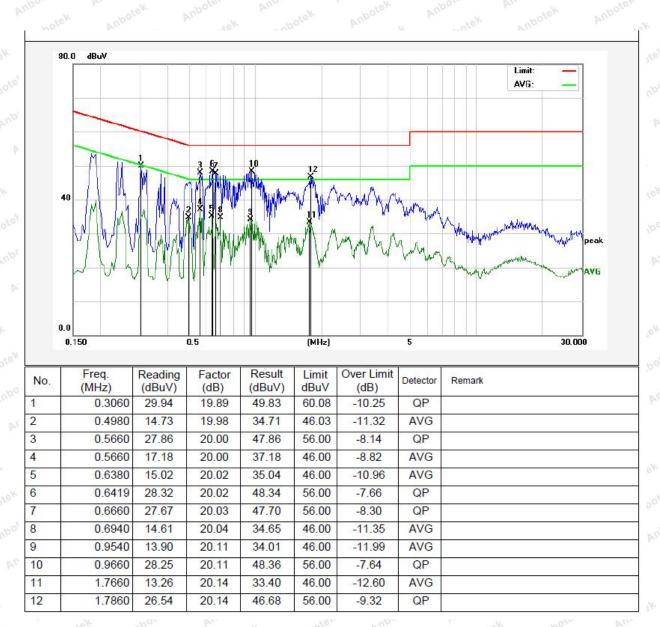




Test Site: 1# Shielded Room

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

Comment: Neutral Line





4. Radiation Spurious Emission and Band Edge

4.1. Test Standard and Limit

Test Standard	FCC Part15 C Section 15.20	99 and 15.205	Am	Anbotek	Anbo. stek	
	Frequency	Field strength	Limit	Remark	Measurement	
	(MHz)	(microvolt/meter)	(dBuV/m)		distance (m)	
	0.009MHz~0.490MHz	2400/F(kHz)	Jek - Anbo	ek hotel	300	
	0.490MHz-1.705MHz	24000/F(kHz)	hotek - Anbi	stek - who	Mek 30 Anhotes	
	1.705MHz-30MHz	30	Anboten A	lpc tek	abotek 30 Anbi	
Test Limit	30MHz~88MHz	100	40.0	Quasi-peak	anbote3 A	
	88MHz~216MHz	150	43.5	Quasi-peak	Anb 3tek	
	216MHz~960MHz	200	46.0	Quasi-peak	3,botek	
	960MHz~1000MHz	500	54.0	Quasi-peak	tek 3 Anbotek	
	Above 1000MHz	500	54.0	Average	botek 3 Anbo	
	Above 1000MHZ	All botek	74.0	Peak	ambotel3 A	

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

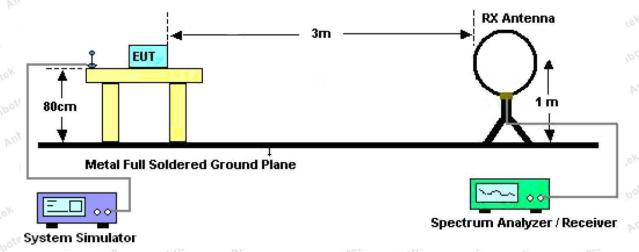


Figure 1. Below 30MHz

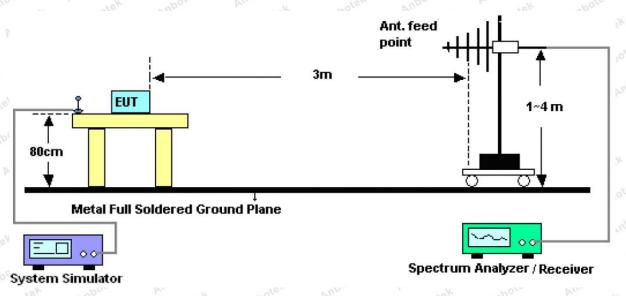


Figure 2. 30MHz to 1GHz

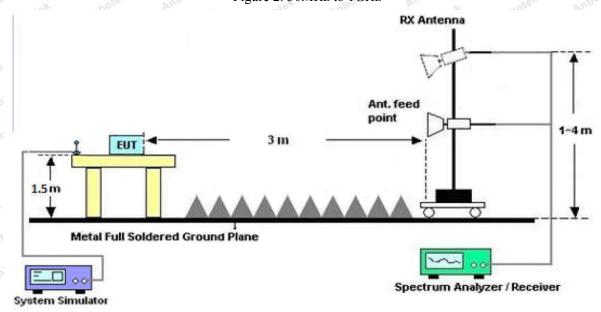


Figure 3. Above 1 GHz

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

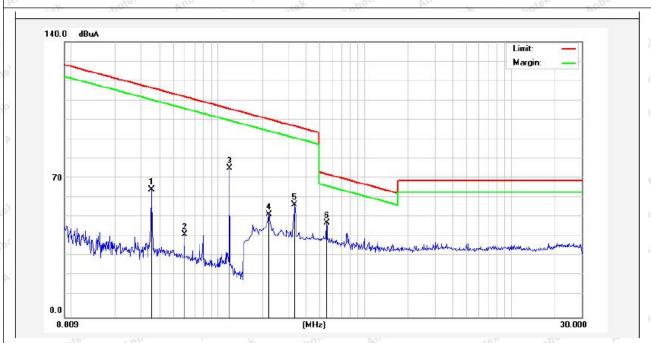
(Between 9KHz - 30MHz)

Job No.: SZAWW180523002-01

Standard: FCC PART15 C 3m Power Source: DC 3.7V battery inside

Test item: Radiation Test Temp.(C)/Hum.(%RH): 24.7(C)/51%RH

Test Mode: Mode 4 Distance: 3m



Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	degree
									(dge)
0.0352	51.29	19.30	2.53	0	73.12	136.55	-63.43	Peak	69
0.0352	43.23	19.30	2.53	0	65.06	116.55	-51.49	AV	69
0.0592	28.94	19.30	2.53	0	50.77	132.05	-81.28	Peak	263
0.0592	20.49	19.30	2.53	0	42.32	112.05	-69.73	AV	263
0.1199	61.89	19.63	2.59	0	84.11	125.96	-41.85	Peak	152
0.1199	53.69	19.63	2.59	0	75.91	105.96	-30.05	AV	152
0.2220	41.04	19.63	2.59	0	63.26	120.64	-57.38	Peak	27
0.2220	29.94	19.63	2.59	0	52.16	100.64	-48.48	AV	27
0.3339	44.73	19.63	2.59	0	66.95	117.11	-50.16	Peak	335
0.3339	34.94	19.63	2.59	0	57.16	97.11	-39.95	AV	335
0.5554	25.97	19.65	2.61	0	48.23	72.73	-24.50	QP	351

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.

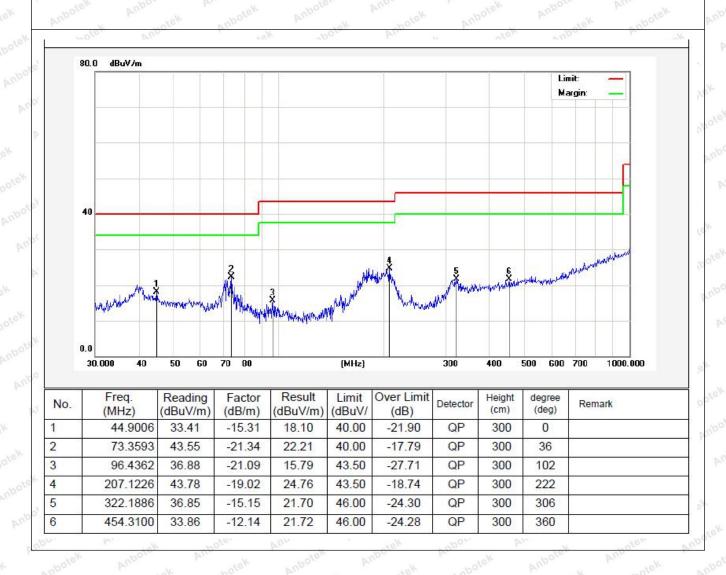


(Between 30MHz -1000 MHz)

Job No.: SZAWW180523002-01 Polarization: Horizontal

Standard: FCC PART15 C_3m Power Source: AC 120V, 60Hz for adapter

Test item: Radiation Test Temp.(C)/Hum.(%RH): 23.2(C)/54%RH

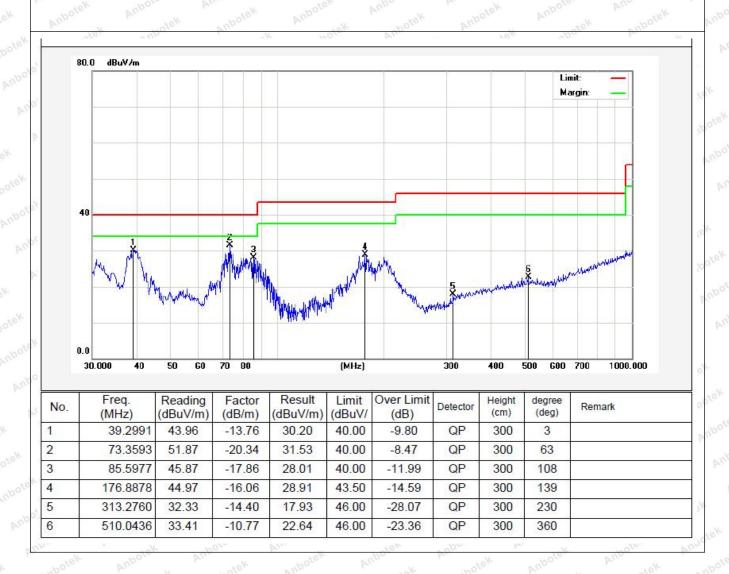




Job No.: SZAWW180523002-01 Polarization: Vertical

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

Test item: Radiation Test Temp.(C)/Hum.(%RH): 23.2(C)/54%RH

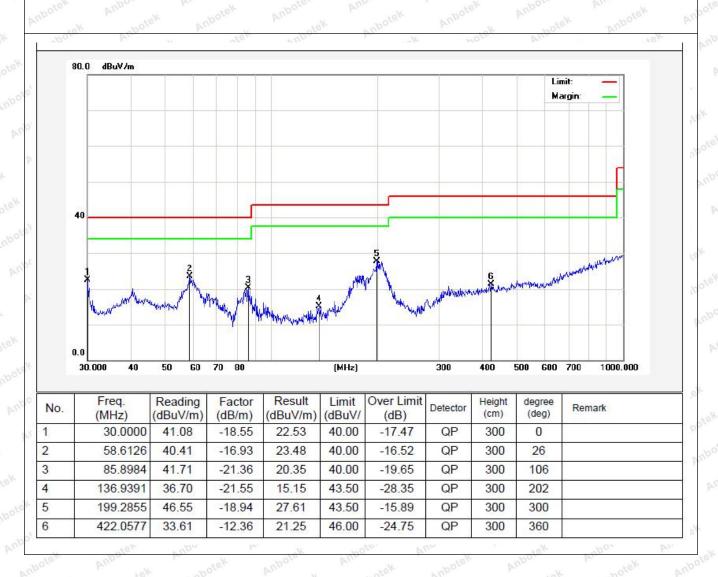




Job No.: SZAWW180523002-01 Polarization: Horizontal

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

Test item: Radiation Test Temp.(C)/Hum.(%RH): 23.2(C)/54%RH

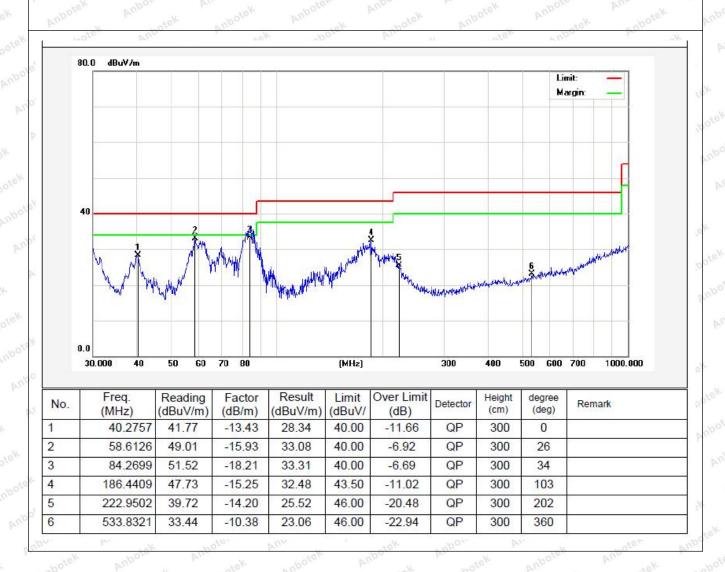




Job No.: SZAWW180523002-01 Polarization: Vertical

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

Test item: Radiation Test Temp.(C)/Hum.(%RH): 23.2(C)/54%RH





APPENDIX I -- TEST SETUP PHOTOGRAPH

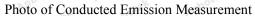
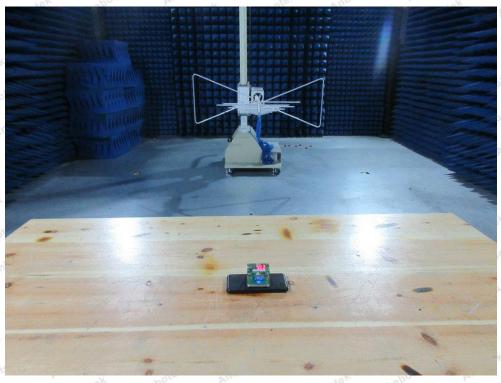




Photo of Radiation Emission Test







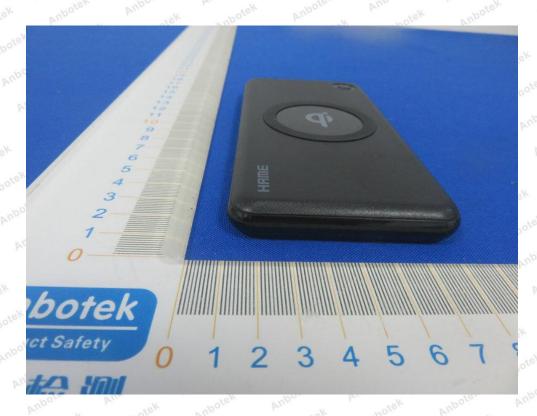
APPENDIX II -- EXTERNAL PHOTOGRAPH















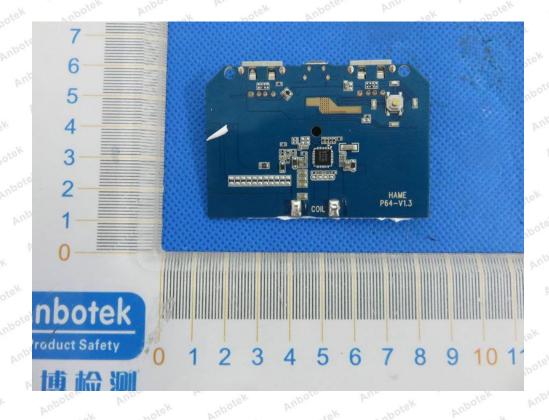


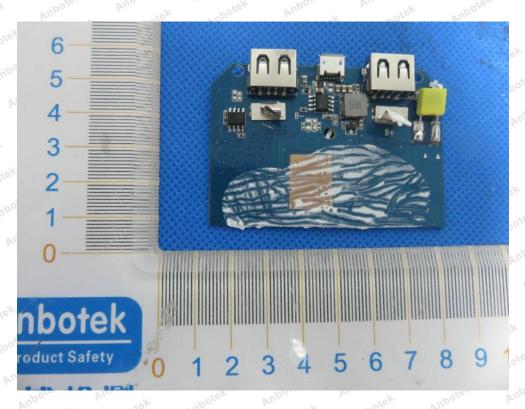


APPENDIX III -- INTERNAL PHOTOGRAPH

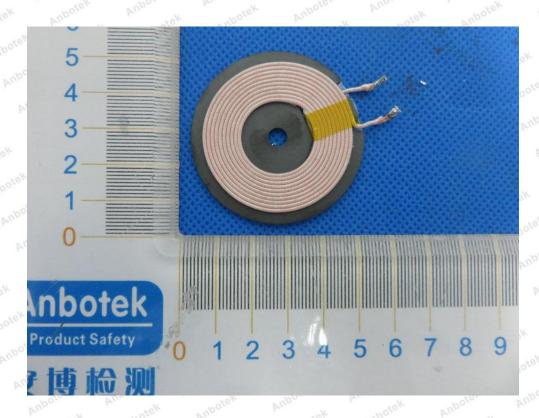






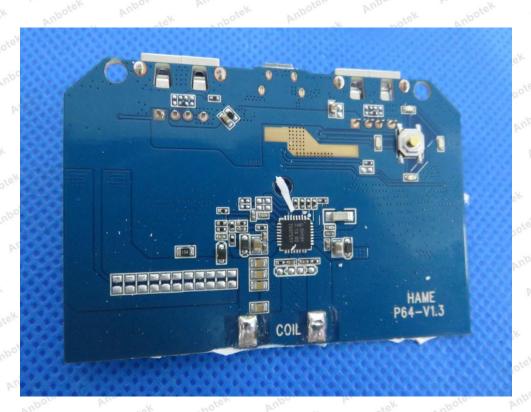












----- End of Report -----