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FCC TEST REPORT

Client Name : SUNVALLEYTEK INTERNATIONAL, INC.

Address 46724 Lakeview Blvd, Fremont, California, United States

94538-6529

Product Name : Wireless Charging External Battery Pack

Date : Jul. 09, 2019

Shenzhen Anbotek Compliance Laboratory Limited



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TEST REPORT

Applicant : SUNVALLEYTEK INTERNATIONAL, INC.

Manufacturer : Shenzhen NearbyExpress Technology Development Company Limited

Product Name : Wireless Charging External Battery Pack

Model No. : JCBATTERY, RP-PB167

Trade Mark : JUMPCHARG≡ RAVPOWER

Input: AC 120V, 60Hz for DC Power Supply, 2A

USB-A Output: 5Vdc, 2.4A

Rating(s) : Type-C Output: 5Vdc, 3A/ 9Vdc, 3A/ 15Vdc, 2A/ 20Vdc, 1.5A(Max)

Wireless Output: 10W Max

(with DC 5V, 24000mAh Battery inside)

Test Standard(s) : FCC Part15 Subpart C 2018, 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 Anbotek Product Safety Product Safety	Date of Receipt	Jun. 12, 2019
Prepared By (Engineer / Oliay Yang) Shary Reviewer (Supervisor / Snowy Meng) Approved & Authorized Signer	Date of Test	Jun. 12~28, 2019
Reviewer (Supervisor / Snowy Meng) Approved & Authorized Signer	Anbotek Product Safety	Man
Reviewer (Supervisor / Snowy Meng) Approved & Authorized Signer	Prepared By	Stek Ambote tek abotek Ambo
Reviewer (Supervisor / Snowy Meng) Approved & Authorized Signer	Anbode *Approved *	(Engineer / Oliay Yang)
(Supervisor / Snowy Meng) Approved & Authorized Signer	Anbotek Anbotek Anbotek	Snavy Meng
Approved & Authorized Signer	Reviewer	And tak thou At All Mek ando
Approved & Authorized Signer	botek Anbotek Anbotek Anbot	(Supervisor / Snowy Meng)
No. by		Sally Zhong
(Manager / Sally Zhang)	Approved & Authorized Signer	Ann Jokek Spor Chin Hotek hotek
	Anbotek Anbotek Anbotek	(Manager / Sally Zhang)

Shenzhen Anbotek Compliance Laboratory Limited





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1. General Information

1.1. Client Information

Applicant	: SUNVALLEYTEK INTERNATIONAL, INC.	k br
Address	: 46724 Lakeview Blvd, Fremont, California, United States 94538-6529	*tek
Manufacturer	: Shenzhen NearbyExpress Technology Development Company Limited	otek
Address	333 Bulong Road, Jialianda Industrial Park, Building 1, Bantian, Longgan District, Shenzhen, China	g Anbo
Factory	Shenzhen NearbyExpress Technology Development Company Limited	
Address	333 Bulong Road, Jialianda Industrial Park, Building 1, Bantian, Longgan District, Shenzhen, China	g

1.2. Description of Device (EUT)

Product Name	:	Wireless Charging External Ba	Vireless Charging External Battery Pack				
Model No.	:	JCBATTERY, RP-PB167 (Note: All samples are the sar "JCBATTERY" for test only.)	ne except the model number, so we prepare				
Trade Mark	:	JUMPCHARG≡ RAVPOW	/ERibotek Anbotek Anbotek Anbotek				
Test Power Supply	:	AC 120V, 60Hz for DC Power Supply / DC 5V battery inside					
Test Sample No.	:	1-2-1(Normal Sample), 1-2-2(Engineering Sample)				
		Operation Frequency:	111-205KHz				
Product		Modulation Type:	MSK Anbotek Anbotek				
Description	•	Antenna Type:	Inductive loop coil 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

	Y NA		N/A	poter			
			1 1 1 / / /	- O V			
IVA				, , , , , , , , , , , , , , , , , , ,			
IVA Love All Model	Not A Steel Mild to the More						

Hotline 400-003-0500 www.anbotek.com



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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	Full load, wireless charger module

	For Conducted Emission	n			
Final Test Mode	De	escription			
Mode 1	Full load, wire	less charg	jer module	P,	nbo

	For Radiated Emission
Final Test Mode	Description
Mode 1	Full load, wireless charger module

Note: (1)Test channel is 0.1259MHz.

(2)All the situation(full load, half load and empty load) has been tested, only the worst situation (full load) was recorded in the report.

Hotline 400-003-0500 www.anbotek.com

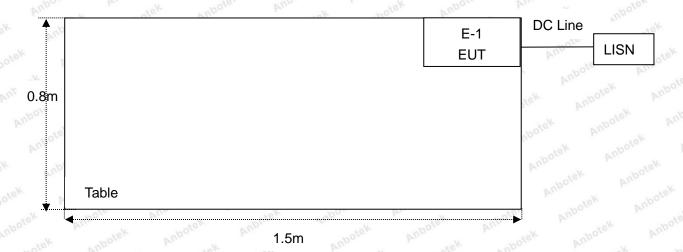


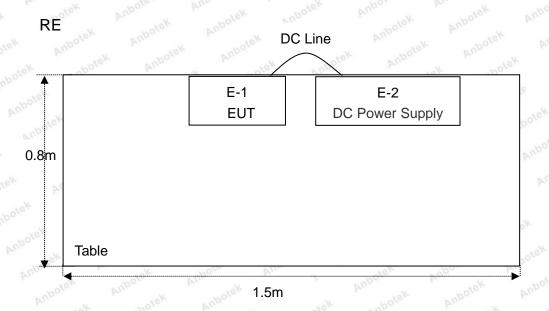
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1.5. Description Of Test Setup

CE







1.6. Test Equipment List

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.
inontek	L.I.S.N. Artificial Mains Network	Rohde & Schwarz	ENV216	100055	Nov. 26, 2018	1 Year
2.	EMI Test Receiver	Rohde & Schwarz	ESPI3	101604	Nov. 05, 2018	1 Year
3.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Nov. 05, 2018	1 Year
4.	Spectrum Analysis	Agilent	E4407B	US39390582	Nov. 05, 2018	1 Year
5.	MAX Spectrum Analysis	Agilent	N9020A	MY51170037	Nov. 05, 2018	1 Year
6.50	Preamplifier	SKET Electronic	BK1G18G30 D	KD17503	Nov. 05, 2018	1 Year
_{stel} 7.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Nov. 20, 2018	1 Year
nb8.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Nov. 19, 2018	1 Year
9.	Loop Antenna	Schwarzbeck	FMZB1519B	00053	Nov. 20, 2018	1 Year
10.	Horn Antenna	A-INFO	LB-180400- KF	J211060628	Nov. 20, 2018	1 Year
·°11.	Pre-amplifier	SONOMA	310N	186860	Nov. 05, 2018	1 Year
v12.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A
13.	RF Test Control System	YIHENG	YH3000	2017430	Nov. 05, 2018	1 Year
14.	Power Sensor	DAER	RPR3006W	15I00041SN045	Nov. 05, 2018	1 Year
×15.	Power Sensor	DAER	RPR3006W	15I00041SN046	Nov. 05, 2018	1 Year
16.	MXA Spectrum Analysis	Agilent	N9020A	MY51170037	Nov. 05, 2018	1 Year
17.	MXG RF Vector Signal Generator	Agilent	N5182A	MY48180656	Nov. 05, 2018	1 Year
18.	Signal Generator	Agilent	E4421B	MY41000743	Nov. 05, 2018	1 Year
19.	DC Power Supply	LW	TPR-6420D	374470	Oct. 31, 2018	1 Year
20.	Constant Temperature Humidity Chamber	ZHONGJIAN	ZJ-KHWS80 B	N/A	Nov. 01, 2018	1 Year

Code: AB-RF-05-a

400-003-0500 www.anbotek.com



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1.7. Measurement Uncertainty

Radiation Uncertainty	:	Ur = 3.9 dB (Horizontal)	Pin Who
		Ur = 3.8 dB (Vertical)	P. 15
		Anbotek Anbotek Anbotek Anbotek	ek
Conduction Uncertainty	:	Uc = 3.4 dB	notek

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 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

Shenzhen Anbotek Compliance Laboratory Limited.

1/F, Building D, Sogood Science and Technology Park, Sanwei community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.518102

Hotline 400-003-0500 www.anbotek.com



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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
Part 15.203	Antenna Requirement	PASS



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3. Conducted Emission Test

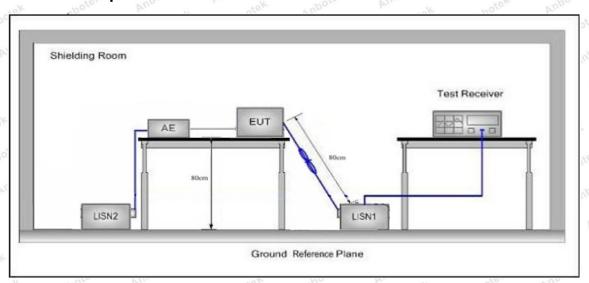
3.1. Test Standard and Limit

Test Standard	FCC Part15 Section 15.	207	
	F	Maximum RF L	ine Voltage (dBuV)
	Frequency	Quasi-peak Level	Average Level
Test Limit	150kHz~500kHz	66 ~ 56 *	56 ~ 46 *
	500kHz~5MHz	56	Hotek 46°° And
	5MHz~30MHz	Anbotek 60 Anbote	botek 50 Anbotek

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

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Conducted Emission Test Data

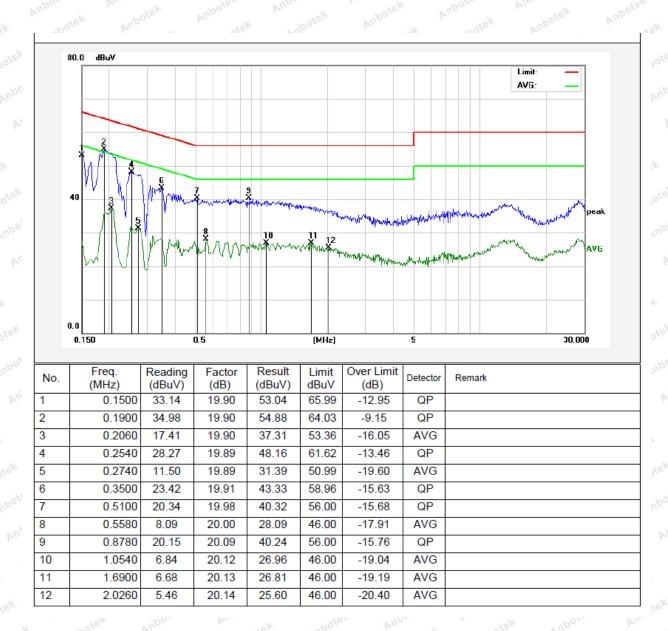
Test Site: 1# Shielded Room

Operating Condition: Mode 1

Test Specification: AC 120V, 60Hz for DC Power Supply

Comment: Live Line

Tem.: 21.9℃ Hum.: 56%





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Conducted Emission Test Data

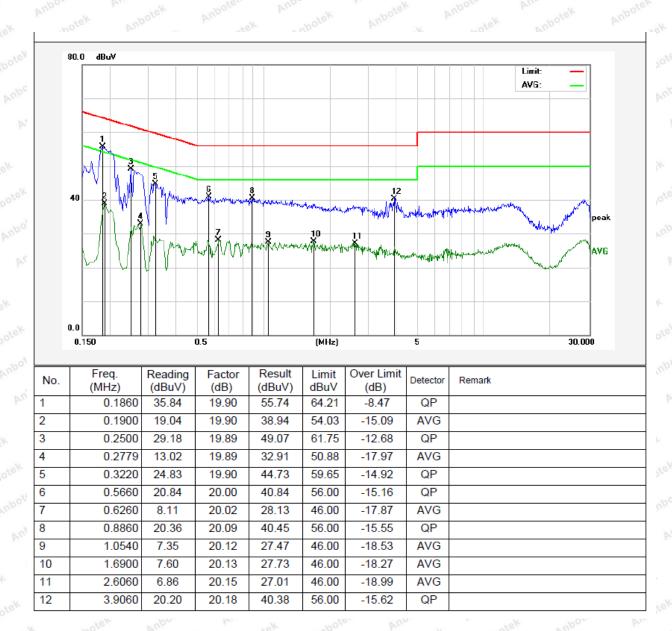
Test Site: 1# Shielded Room

Operating Condition: Mode 1

Test Specification: AC 120V, 60Hz for DC Power Supply

Comment: Neutral Line

Tem.: 21.9℃ Hum.: 56%





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4. Radiation Spurious Emission and Band Edge

4.1. Test Standard and Limit

Test Standard	FCC Part15 C Section 1	Ann	Anbotek	Aupor ak		
	Frequency (MHz)	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)	
	0.009MHz~0.490MHz	2400/F(kHz)	botek - Anbo	VOK VIII		
	0.490MHz-1.705MHz	24000/F(kHz)	Anbotek An	born burn	botek 30 Anbo	
Test Limit	1.705MHz-30MHz	30	Anbotek	Anbor A	Andre 30 Ar	
	30MHz~88MHz	100	40.0	Quasi-peak	Vup.3°k	
	88MHz~216MHz	150	43.5	Quasi-peak	3 otek	
	216MHz~960MHz	200	46.0 Quasi-peak		lek 3 _{Anbotek}	
	960MHz~1000MHz	500	54.0	Quasi-peak	ootek 3 Anbot	
	A h ave 4000ML I=	500	54.0	Average	abote ^k 3 An	
	Above 1000MHz	bote And botek	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.

4.2. Test Setup

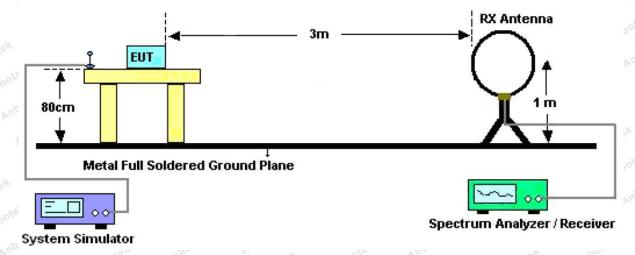


Figure 1. Below 30MHz



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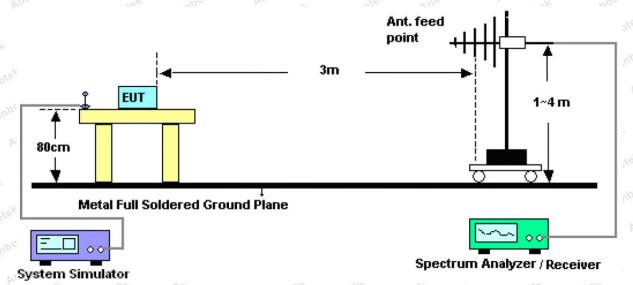


Figure 2. 30MHz to 1GHz

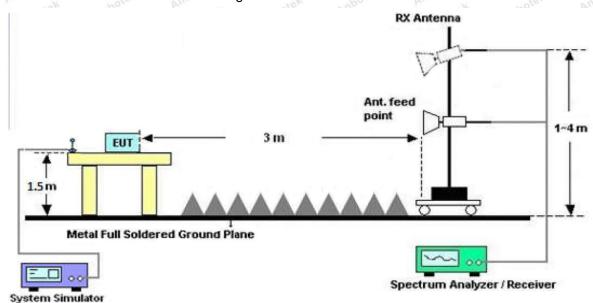


Figure 3. Above 1 GHz

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.



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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

Note: The data is in TX+ Charging mode, and this is the worst mode.



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Test Results

(Between 9KHz - 30MHz)

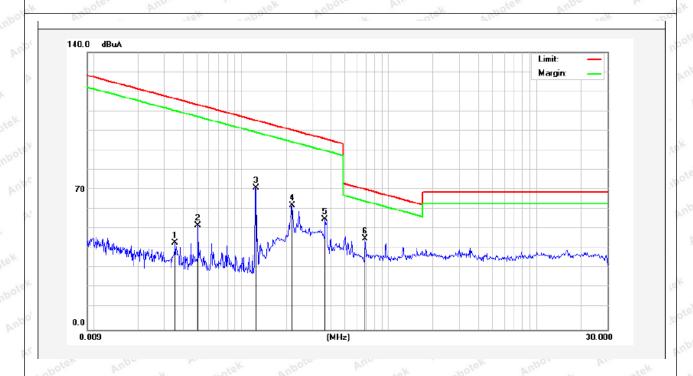
Job No.: SZAWW190612004-01

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

Supply

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

Test Mode: Mode 1 Distance: 3m

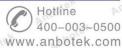


Frequency Read Level (MHz) (dBuV)	Read Level	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	degree
	(wuv)								(dge)
0.0354	48.06	19.28	2.53	0	69.87	136.50	-66.63	Peak	46
0.0354	22.22	19.28	2.53	0	44.03	116.50	-72.47	AV	46
0.0509	57.61	19.38	2.55	0	79.54	133.36	-53.82	Peak	92
0.0509	30.79	19.38	2.55	0	52.72	113.36	-60.64	AV	92
0.1259	68.30	19.40	2.57	0	90.27	125.54	-35.28	Peak	154
0.1259	49.64	19.40	2.57	0	71.61	105.54	-33.93	AV	154
0.2199	56.22	19.40	2.60	0	78.22	120.72	-42.50	Peak	258
0.2199	40.96	19.40	2.60	0	62.96	100.72	-37.76	AV	258
0.3664	48.13	19.50	2.61	0	70.24	116.31	-46.07	Peak	99
0.3664	33.80	19.50	2.61	0	55.91	96.31	-40.40	AV	99
0.6895	23.86	19.50	2.64	0	46.00	70.83	-24.83	QP	60

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)

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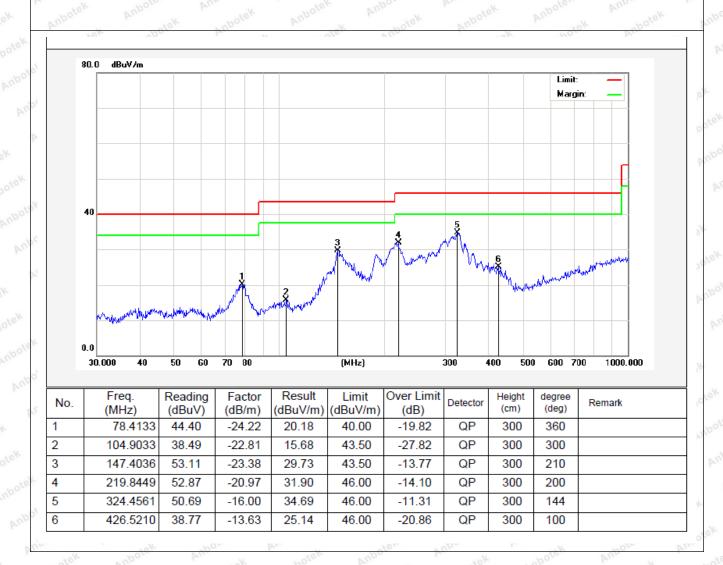
Job No.: SZAWW190612004-01 Horizontal Polarization:

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

Supply

23.7℃/51%RH Test item: Radiation Test Temp.(C)/Hum.(%RH):

Test Mode: Mode 1 Distance: 3_m





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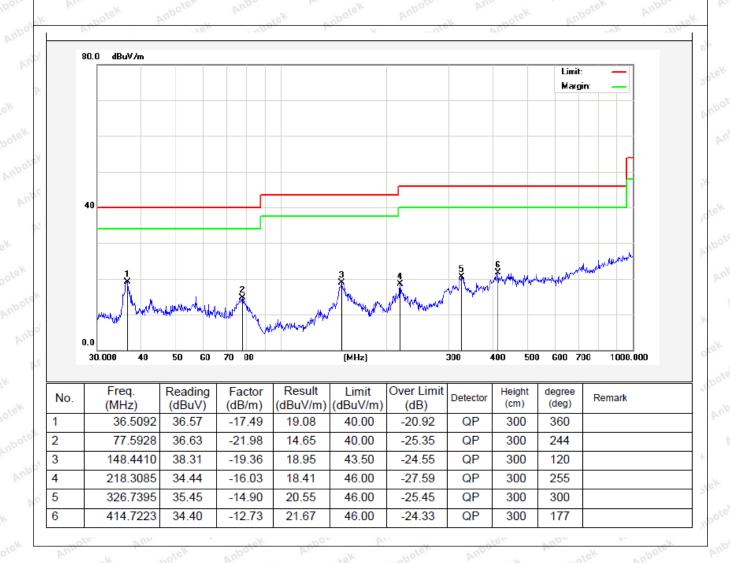
Job No.: SZAWW190612004-01 Polarization: Vertical

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

Supply

Test item: Radiation Test Temp.(C)/Hum.(%RH): 23.7℃/51%RH

Test Mode: Mode 1 Distance: 3m





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5. Antenna Requirement

5.1. Test Standard and Requirement

Test Standard	FCC Part15 Section 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.

5.2. Antenna Connected Construction

The antenna is a Inductive loop coil Antenna which permanently attached, and the best case gain of the antenna is 0 dBi. It complies with the standard requirement.



Code: AB-RF-05-a

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APPENDIX I -- TEST SETUP PHOTOGRAPH

Photo of Conducted Emission Measurement



Photo of Radiation Emission Test



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APPENDIX II -- EXTERNAL PHOTOGRAPH





Shenzhen Anbotek Compliance Laboratory Limited

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Tel:(86)755–26066440 Fax:(86)755–26014772 Email:service@anbotek.com







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APPENDIX III -- INTERNAL PHOTOGRAPH





Shenzhen Anbotek Compliance Laboratory Limited

Address: 1/F, Building D, Sogood Science and Technology Park, Sanwei Community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.

Tel:(86)755–26066440 Fax:(86)755–26014772 Email:service@anbotek.com



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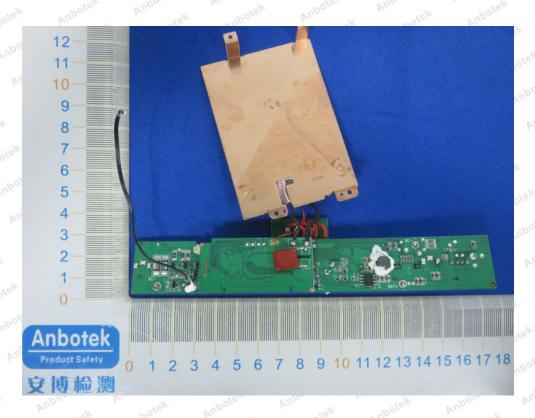






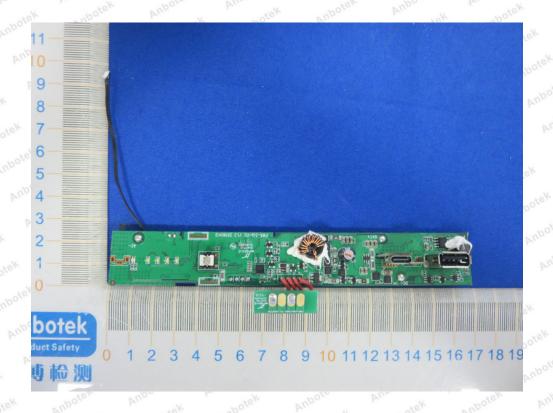
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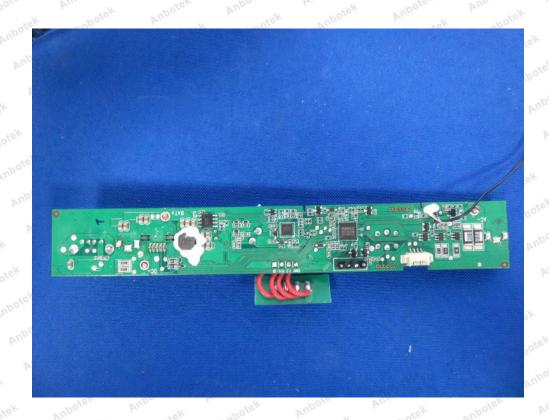
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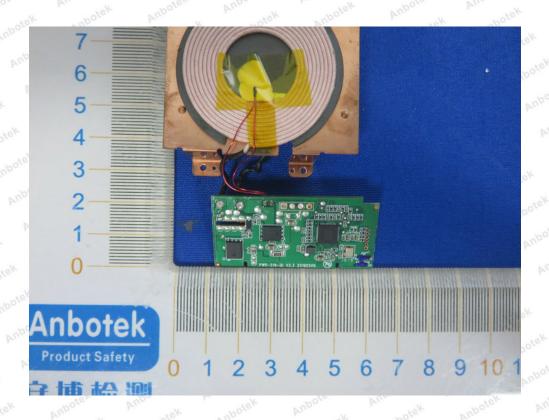


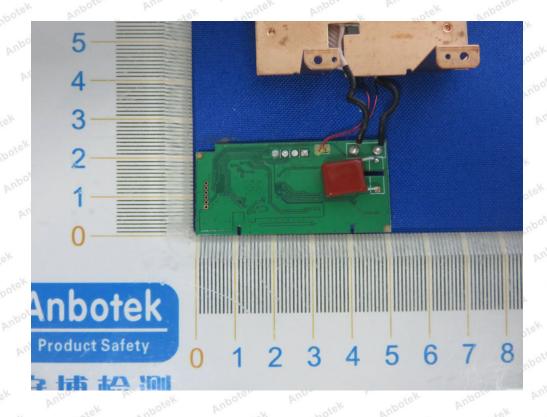


Shenzhen Anbotek Compliance Laboratory Limited



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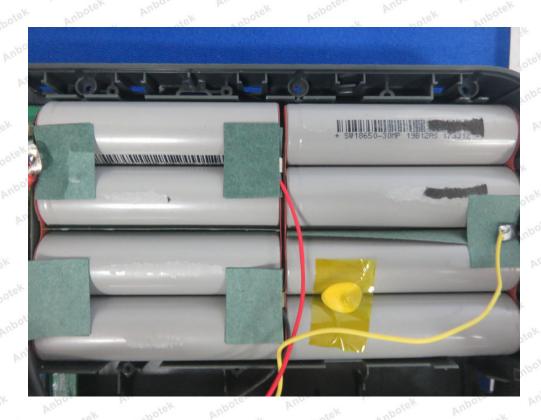






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