

APPLICATION FOR VERIFICATION
On Behalf of
Shenzhen Bluetimes Technology Co., Ltd.

Wireless power bank

Model No.: WP-1055A, WP-18B, WP-1013A, WP-08A,
CWP-02A, WP-538A, WP-1019A, WP-1031A

FCC ID: 2ADI9-WP-1055A

Prepared for : Shenzhen Bluetimes Technology Co., Ltd.
Address : 5-7F, Block B, Taixinglong Industrial Zone, Hezhou,
Xixiang Town, Baoan district, Shenzhen, China

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Report No. : ATE20190689
Date of Test : May 16, 2019--May 22, 2019
Date of Report : May 23, 2019

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Test Report Declaration

Applicant& address : Shenzhen Bluetimes Technology Co., Ltd.
5-7F, Block B, Taixinglong Industrial Zone, Hezhou, Xixiang Town, Baoan district, Shenzhen, China

Manufacturer& address : Shenzhen Bluetimes Technology Co., Ltd.
5-7F, Block B, Taixinglong Industrial Zone, Hezhou, Xixiang Town, Baoan district, Shenzhen, China

Product : Wireless power bank

Model No. : WP-1055A, WP-18B, WP-1013A, WP-08A, CWP-02A, WP-538A, WP-1019A, WP-1031A
(Note: These samples are same except their model name is different. So we prepare WP-1055A for test.)

Trade name : Bluetimes


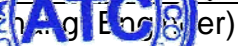
Measurement Procedure Used:


FCC CFR47 Part 15 Subpart C Section 15.207 and 15.209
ANSI C63.10: 2013

The device described above is tested by Shenzhen Accurate Technology Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C limits both radiated and conducted emissions. The measurement results are contained in this test report and Shenzhen Accurate Technology Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Shenzhen Accurate Technology Co., Ltd.

Date of Test : May 16, 2019--May 22, 2019
Date of Report : May 23, 2019

Prepared by : 
(Tim g Engineer)

Approved & Authorized Signer : 
(Sean Liu, Manager)

1. TEST RESULTS SUMMARY

Test Items	Test Standard	Test Results
Power Line Conducted Emission	FCC Part 15.207	Pass
Radiated Emission	FCC Part 15.209	Pass

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

The submitted sample is Wireless power bank, which declared Transmitter channel frequency is 110-205kHz.

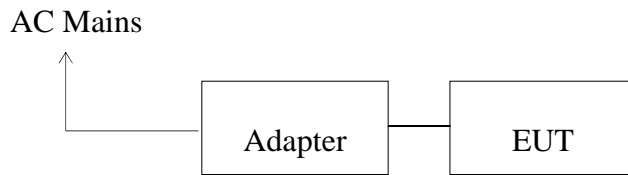
		Wireless power bank
Frequency	:	110-205kHz
Modulation Type	:	ASK
Type of Antenna	:	Coil Antenna
Power Supply	:	<p>Rated input: Type C 5V/2A; FCP, AFC Fast charge input. PD3.0, 5V/2.4A / 9V2A base Type C input: 5V/2A</p> <p>Rated Output: USB1: Standard QC3.0 Output 5-6.5V/3.0A, 6.5-9V/2A, 9-12V/1.5A FCP Fast charge: 9V/2A AFC Fast charge: 9V/2A</p> <p>Type C: Standard QC3.0 Output 5-6.5V/3.0A, 6.5-9V/2A, 9-12V/1.5A FCP Fast charge: 9V/2A PD3.0: 5V/2.4A/9V/2A/12V/1.5A</p> <p>USB1+Type C: 5V/3.0A max(Two ports output at the same time, the output is 5V/3.0A) Wireless charging: 5V/1A or 9V/1.1A max When any two channels output at the same time, the output voltage drop to 5V which is standard output.</p>
Sample Number	:	1900524

2.2. Model difference declaration

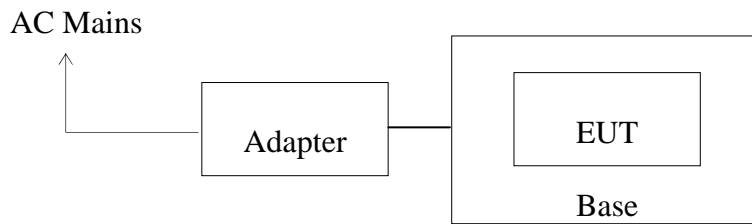
WP-1055A, WP-18B, WP-1013A, WP-08A, CWP-02A, WP-538A, WP-1019A, WP-1031A are identical in interior structure, electrical circuits and components except the product's model number is different.

2.3. Test mode description

Test setup figure 1: Charging



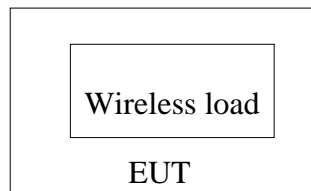
Test setup figure 2: Charging



Test setup figure 3: Wired USB port output



Test setup figure 4: Wireless charging



2.4. Special Accessory and Auxiliary Equipment

1. AC/DC Power Adapter: Model: MX12X6-0502000VU
(provided by laboratory) INPUT: 100-240V~50/60Hz 0.5A
OUTPUT:5V/2A

2. Load

2.5. Description of Test Facility

EMC Lab	:	Recognition of accreditation by Federal Communications Commission (FCC) The Designation Number is CN1189 The Registration Number is 708358
		Listed by Innovation, Science and Economic Development Canada (ISED) The Registration Number is 5077A-2
		Accredited by China National Accreditation Service for Conformity Assessment (CNAS) The Registration Number is CNAS L3193
		Accredited by American Association for Laboratory Accreditation (A2LA) The Certificate Number is 4297.01
Name of Firm	:	Shenzhen Accurate Technology Co., Ltd
Site Location	:	1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China

2.6. Measurement Uncertainty

Conducted Emission Expanded Uncertainty (Mains ports, 9kHz-30MHz)	=	2.72dB, k=2
Radiated emission expanded uncertainty (9kHz-30MHz)	=	2.66dB, k=2
Radiated emission expanded uncertainty (30MHz-1000MHz)	=	4.28dB, k=2
Radiated emission expanded uncertainty (1G-18GHz)	=	4.98dB, k=2
Radiated emission expanded uncertainty (18G-26.5GHz)	=	5.06dB, k=2

3. MEASURING DEVICE AND TEST EQUIPMENT

3.1. For Radiated Emission Measurement

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan.05, 2019	1 Year
2.	Spectrum Analyzer	Rohde&Schwarz	FSV40	101495	Jan.05, 2019	1 Year
3.	Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan.05, 2019	1 Year
4.	Test Receiver	Rohde& Schwarz	ESPI	100396/003	Jan.05, 2019	1 Year
5.	Test Receiver	Rohde& Schwarz	ESPI	101526/003	Jan.05, 2019	1 Year
6.	Test Receiver	Rohde& Schwarz	ESR	101817	Jan.05, 2019	1 Year
7.	Bilog Antenna	Schwarzbeck	VULB9163	9163-194	Jan.05, 2019	1 Year
8.	Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan.05, 2019	1 Year
9.	Log.-Per.Antenna	Schwarzbeck	VUSLP 9111B	9111B-074	Jan.05, 2019	1 Year
10.	Biconical Broad Band Antenna	Schwarzbeck	VHBB 9124+BBA 9106	9124-617	Jan.05, 2019	1 Year
11.	Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan.05, 2019	1 Year
12.	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan.05, 2019	1 Year
13.	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1067	Jan.05, 2019	1 Year
14.	Vertical Active Monopole Antenna	Schwarzbeck	VAMP 9243	9243-370	Jan.05, 2019	1 Year
15.	RF Switching Unit+PreAMP	Compliance Direction	RSU-M2	38322	Jan.05, 2019	1 Year
16.	Pre-Amplifier	Agilent	8447D	294A10619	Jan.05, 2019	1 Year
17.	Pre-Amplifier	Rohde&Schwarz	CBLU11835 40-01	3791	Jan.05, 2019	1 Year
18.	50 Coaxial Switch	Anritsu Corp	MP59B	6200237248	Jan.05, 2019	1 Year
19.	50 Coaxial Switch	Anritsu Corp	MP59B	6200506474	Jan.05, 2019	1 Year
20.	RF Coaxial Cable	Schwarzbeck	N-5m	No.1	Jan.05, 2019	1 Year
21.	RF Coaxial Cable	Schwarzbeck	N-1m	No.6	Jan.05, 2019	1 Year
22.	RF Coaxial Cable	Schwarzbeck	N-1m	No.7	Jan.05, 2019	1 Year
23.	RF Coaxial Cable	SUHNER	N-3m	No.8	Jan.05, 2019	1 Year
24.	RF Coaxial Cable	RESENBERGER	N-3.5m	No.9	Jan.05, 2019	1 Year
25.	RF Coaxial Cable	SUHNER	N-6m	No.10	Jan.05, 2019	1 Year
26.	RF Coaxial Cable	RESENBERGER	N-12m	No.11	Jan.05, 2019	1 Year
27.	RF Coaxial Cable	RESENBERGER	N-0.5m	No.12	Jan.05, 2019	1 Year
28.	RF Coaxial Cable	SUHNER	N-2m	No.13	Jan.05, 2019	1 Year
29.	RF Coaxial Cable	SUHNER	N-0.5m	No.15	Jan.05, 2019	1 Year
30.	RF Coaxial Cable	SUHNER	N-2m	No.16	Jan.05, 2019	1 Year
31.	RF Coaxial Cable	RESENBERGER	N-6m	No.17	Jan.05, 2019	1 Year
Radiated Emission Measurement Software: EZ_EMV V1.1.4.2						

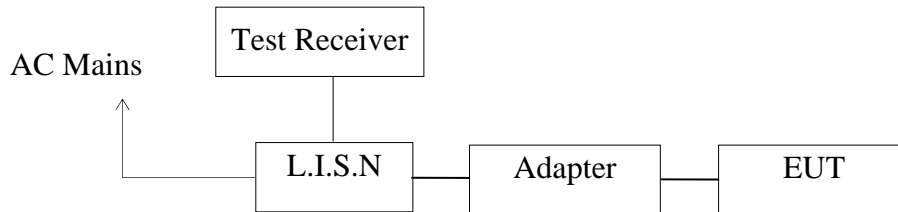
3.2. The Equipment Used to Measure Conducted Disturbance (L.I.S.N)

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESCS30	100307	Jan.05, 2019	1 Year
2.	Test Receiver	Rohde & Schwarz	ESPI3	100396/003	Jan.05, 2019	1 Year
3.	Test Receiver	Rohde & Schwarz	ESPI3	101526/003	Jan.05, 2019	1 Year
4.	L.I.S.N.	Schwarzbeck	NLSK8126	8126431	Jan.05, 2019	1 Year
5.	L.I.S.N.	Rohde & Schwarz	ESH3-Z5	100305	Jan.05, 2019	1 Year
6.	L.I.S.N.	Rohde & Schwarz	ESH3-Z5	100310	Jan.05, 2019	1 Year
7.	L.I.S.N.	Rohde & Schwarz	ESH3-Z6	100132	Jan.05, 2019	1 Year
8.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100305	Jan.05, 2019	1 Year
9.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100312	Jan.05, 2019	1 Year
10.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100815	Jan.05, 2019	1 Year
11.	50Ω Coaxial Switch	Anritsu Corp	MP59B	6200283936	Jan.05, 2019	1 Year
12.	50Ω Coaxial Switch	Anritsu Corp	MP59B	6200283933	Jan.05, 2019	1 Year
13.	50Ω Coaxial Switch	Anritsu Corp	MP59B	6200506474	Jan.05, 2019	1 Year
14.	VOLTAGE PROBE	Schwarzbeck	TK9416	N/A	Jan.05, 2019	1 Year
15.	RF CURRENT PROBE	Rohde & Schwarz	EZ-17	100048	Jan.05, 2019	1 Year
16.	8-Wire Impedance Stabilisation Network	Schwarzbeck	CAT5 8158	8158-0035	Jan.05, 2019	1 Year
17.	RF Coaxial Cable	SUHNER	N-2m	No.2	Jan.05, 2019	1 Year
18.	RF Coaxial Cable	SUHNER	N-2m	No.3	Jan.05, 2019	1 Year
19.	RF Coaxial Cable	SUHNER	N-2m	No.14	Jan.05, 2019	1 Year
Conducted Emission Measurement Software: ES-K1 V1.71						

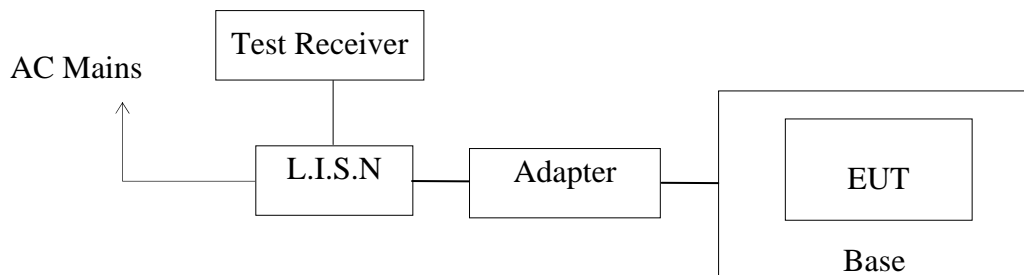
4. POWER LINE CONDUCTED MEASUREMENT

4.1. Block Diagram of Test Setup

Test setup figure 1:



Test setup figure 2:



(EUT: Wireless power bank)

4.2. Power Line Conducted Emission Measurement Limits

Frequency (MHz)	Limit dB(μV)	
	Quasi-peak Level	Average Level
0.15 - 0.50	66.0 – 56.0 *	56.0 – 46.0 *
0.50 - 5.00	56.0	46.0
5.00 - 30.00	60.0	50.0

NOTE1: The lower limit shall apply at the transition frequencies.
NOTE2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.

4.3. Configuration of EUT 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.

4.4. Operating Condition of EUT

4.4.1. Setup the EUT and simulator as shown as Section 4.1.

4.4.2. Turn on the power of all equipment.

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

4.5. Test Procedure

The EUT is put on the plane 0.8 m high above the ground by insulating support and 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 lines 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 ANSI C63.10: 2013 on Conducted Emission Measurement.

The bandwidth of test receiver (R & S ESCS30) is set at 9kHz.

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

4.6. DATA SAMPLE

Frequency (MHz)	Quasi Peak Level (dB μ v)	Average Level (dB μ v)	Transducer value (dB)	QuasiPeak Result (dB μ v)	Average Result (dB μ v)	Quasi Peak Limit (dB μ v)	Average Limit (dB μ v)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)
X.XX	29.4	18.3	11.1	40.5	29.4	56.0	56.0	15.5	16.6	Pass

Transducer value = Insertion loss of LISN + Cable Loss

Result = Quasi-peak Level/Average Level + Transducer value

Limit = Limit stated in standard

Calculation Formula:

Margin = Limit – Reading level value – Transducer value

4.7. Power Line Conducted Emission Measurement Results

PASS.

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

Test mode 1 : Charging								
Test Voltage: 120V/60Hz								
MEASUREMENT RESULT: "F-0689-1_fin"								
2019-5-17 9:57								
Frequency	Level	Transd	Limit	Margin	Detector	Line	PE	
MHz	dBuV	dB	dBuV	dB				
0.204000	44.50	10.8	63	18.9	QP	L1	GND	
0.816000	39.10	11.1	56	16.9	QP	L1	GND	
1.293000	42.90	11.2	56	13.1	QP	L1	GND	
2.310000	42.90	11.3	56	13.1	QP	L1	GND	
5.221500	33.20	11.4	60	26.8	QP	L1	GND	
14.307000	31.10	11.6	60	28.9	QP	L1	GND	
MEASUREMENT RESULT: "F-0689-1_fin2"								
2019-5-17 9:57								
Frequency	Level	Transd	Limit	Margin	Detector	Line	PE	
MHz	dBuV	dB	dBuV	dB				
0.339000	32.30	10.9	49	16.9	AV	L1	GND	
0.816000	30.50	11.1	46	15.5	AV	L1	GND	
1.221000	32.30	11.2	46	13.7	AV	L1	GND	
2.310000	31.60	11.3	46	14.4	AV	L1	GND	
5.226000	22.70	11.4	50	27.3	AV	L1	GND	
14.118000	16.30	11.6	50	33.7	AV	L1	GND	
MEASUREMENT RESULT: "F-0689-2_fin"								
2019-5-17 10:00								
Frequency	Level	Transd	Limit	Margin	Detector	Line	PE	
MHz	dBuV	dB	dBuV	dB				
0.339000	48.70	10.9	59	10.5	QP	N	GND	
0.681000	45.50	11.1	56	10.5	QP	N	GND	
1.225500	46.20	11.2	56	9.8	QP	N	GND	
2.242500	50.00	11.3	56	6.0	QP	N	GND	
5.158500	40.70	11.4	60	19.3	QP	N	GND	
14.253000	28.80	11.6	60	31.2	QP	N	GND	
MEASUREMENT RESULT: "F-0689-2_fin2"								
2019-5-17 10:00								
Frequency	Level	Transd	Limit	Margin	Detector	Line	PE	
MHz	dBuV	dB	dBuV	dB				
0.339000	41.20	10.9	49	8.0	AV	N	GND	
0.681000	38.20	11.1	46	7.8	AV	N	GND	
1.225500	38.20	11.2	46	7.8	AV	N	GND	
2.242500	41.50	11.3	46	4.5	AV	N	GND	
5.230500	28.90	11.4	50	21.1	AV	N	GND	
14.068500	22.60	11.6	50	27.4	AV	N	GND	

Test mode 2 : Charging								
Test Voltage: 120V/60Hz								
MEASUREMENT RESULT: "F-0689-3_fin"								
2019-5-17 10:04								
Frequency	Level	Transd	Limit	Margin	Detector	Line	PE	
MHz	dBuV	dB	dBuV	dB				
0.348000	40.90	10.9	59	18.1	QP	N	GND	
0.681000	43.40	11.1	56	12.6	QP	N	GND	
1.243500	37.30	11.2	56	18.7	QP	N	GND	
2.206500	39.80	11.3	56	16.2	QP	N	GND	
5.388000	32.50	11.5	60	27.5	QP	N	GND	
17.911500	24.50	11.7	60	35.5	QP	N	GND	
MEASUREMENT RESULT: "F-0689-3_fin2"								
2019-5-17 10:04								
Frequency	Level	Transd	Limit	Margin	Detector	Line	PE	
MHz	dBuV	dB	dBuV	dB				
0.348000	29.20	10.9	49	19.8	AV	N	GND	
0.762000	28.40	11.1	46	17.6	AV	N	GND	
1.243500	27.70	11.2	46	18.3	AV	N	GND	
2.206500	30.40	11.3	46	15.6	AV	N	GND	
6.121500	21.80	11.5	50	28.2	AV	N	GND	
16.417500	15.50	11.7	50	34.5	AV	N	GND	
MEASUREMENT RESULT: "F-0689-4_fin"								
2019-5-17 10:08								
Frequency	Level	Transd	Limit	Margin	Detector	Line	PE	
MHz	dBuV	dB	dBuV	dB				
0.334500	46.90	10.9	59	12.4	QP	L1	GND	
0.820500	45.20	11.1	56	10.8	QP	L1	GND	
1.221000	46.40	11.2	56	9.6	QP	L1	GND	
2.305500	47.30	11.3	56	8.7	QP	L1	GND	
5.221500	36.00	11.4	60	24.0	QP	L1	GND	
13.213500	35.00	11.6	60	25.0	QP	L1	GND	
MEASUREMENT RESULT: "F-0689-4_fin2"								
2019-5-17 10:08								
Frequency	Level	Transd	Limit	Margin	Detector	Line	PE	
MHz	dBuV	dB	dBuV	dB				
0.334500	39.60	10.9	49	9.7	AV	L1	GND	
0.820500	35.80	11.1	46	10.2	AV	L1	GND	
1.221000	37.80	11.2	46	8.2	AV	L1	GND	
2.238000	36.70	11.3	46	9.3	AV	L1	GND	
5.356500	23.20	11.5	50	26.8	AV	L1	GND	
13.488000	20.50	11.6	50	29.5	AV	L1	GND	

Emissions attenuated more than 20 dB below the permissible value are not reported.

The spectral diagrams are attached as below.

Test mode 1

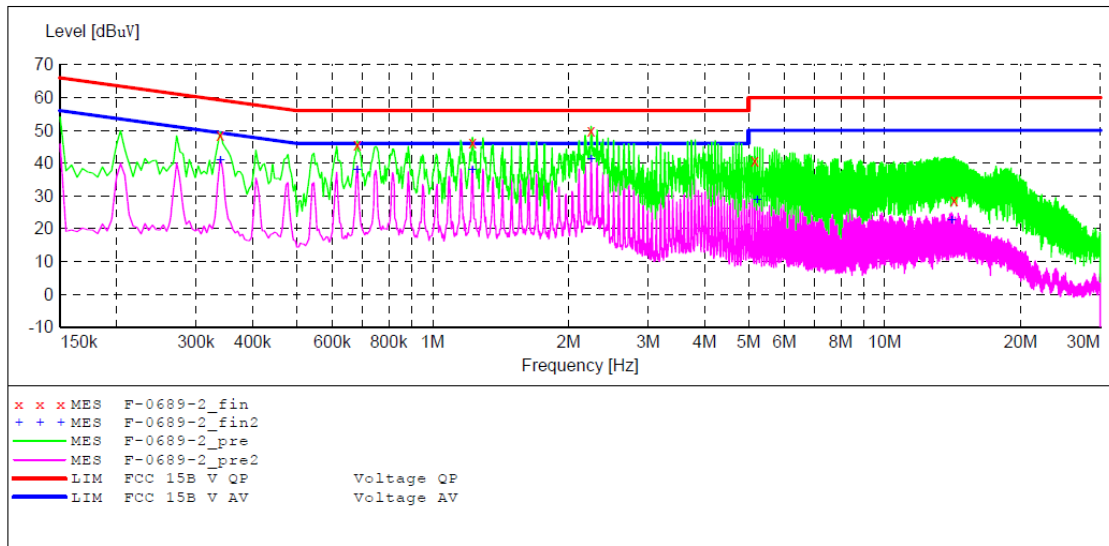
ACCURATE TECHNOLOGY CO., LTD

CONDUCTED EMISSION STANDARD FCC PART 15.207

EUT: Wireless power bank M/N:WP-1055A
 Manufacturer: Shenzhen Bluetimes Technology Co., Ltd.
 Operating Condition: Charging
 Test Site: 1#Shielding Room
 Operator: Frank
 Test Specification: N 120V/60Hz
 Comment: Report NO.:ATE20190689
 Start of Test: 2019-5-17 / 9:58:14

SCAN TABLE: "V 150K-30MHz fin"

Short Description: SUB STD VTERM2 1.70
 Start Stop Step Detector Meas. IF Transducer
 Frequency Frequency Width Time Bandw.
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008
 Average



MEASUREMENT RESULT: "F-0689-2_fin"

2019-5-17 10:00

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.339000	48.70	10.9	59	10.5	QP	N	GND
0.681000	45.50	11.1	56	10.5	QP	N	GND
1.225500	46.20	11.2	56	9.8	QP	N	GND
2.242500	50.00	11.3	56	6.0	QP	N	GND
5.158500	40.70	11.4	60	19.3	QP	N	GND
14.253000	28.80	11.6	60	31.2	QP	N	GND

MEASUREMENT RESULT: "F-0689-2_fin2"

2019-5-17 10:00

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.339000	41.20	10.9	49	8.0	AV	N	GND
0.681000	38.20	11.1	46	7.8	AV	N	GND
1.225500	38.20	11.2	46	7.8	AV	N	GND
2.242500	41.50	11.3	46	4.5	AV	N	GND
5.230500	28.90	11.4	50	21.1	AV	N	GND
14.068500	22.60	11.6	50	27.4	AV	N	GND

ACCURATE TECHNOLOGY CO., LTD

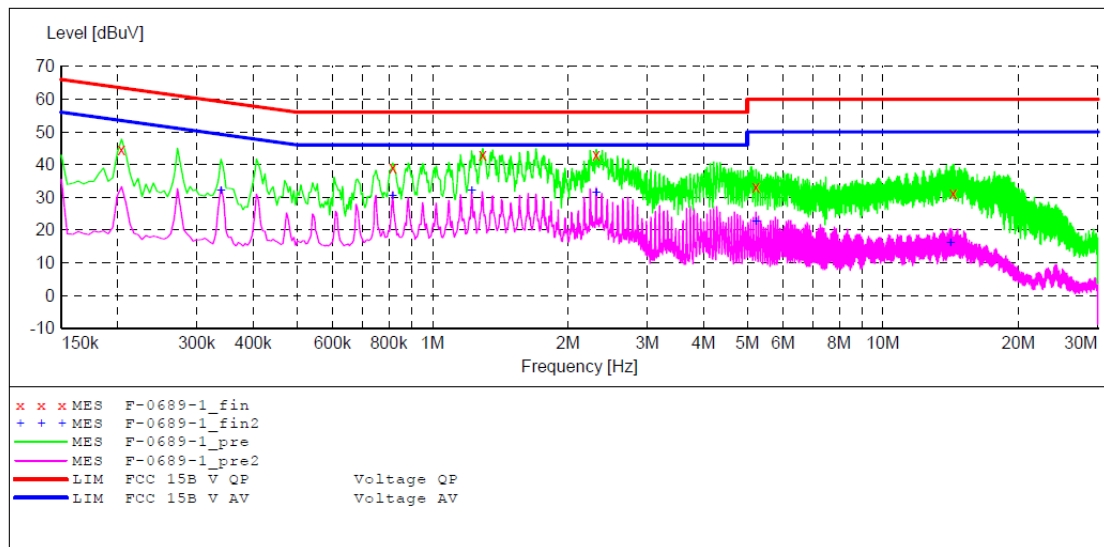
CONDUCTED EMISSION STANDARD FCC PART 15.207

EUT: Wireless power bank M/N:WP-1055A
 Manufacturer: Shenzhen Bluetimes Technology Co., Ltd.
 Operating Condition: Charging
 Test Site: 1#Shielding Room
 Operator: Frank
 Test Specification: L 120V/60Hz
 Comment: Report NO.:ATE20190689
 Start of Test: 2019-5-17 / 9:56:37

SCAN TABLE: "V 150K-30MHz fin"

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	30.0 MHz	4.5 kHz	QuasiPeak	1.0 s	9 kHz	NSLK8126 2008

Short Description: SUB STD VTERM2 1.70
 Average



MEASUREMENT RESULT: "F-0689-1_fin"

2019-5-17 9:57

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.204000	44.50	10.8	63	18.9	QP	L1	GND
0.816000	39.10	11.1	56	16.9	QP	L1	GND
1.293000	42.90	11.2	56	13.1	QP	L1	GND
2.310000	42.90	11.3	56	13.1	QP	L1	GND
5.221500	33.20	11.4	60	26.8	QP	L1	GND
14.307000	31.10	11.6	60	28.9	QP	L1	GND

MEASUREMENT RESULT: "F-0689-1_fin2"

2019-5-17 9:57

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.339000	32.30	10.9	49	16.9	AV	L1	GND
0.816000	30.50	11.1	46	15.5	AV	L1	GND
1.221000	32.30	11.2	46	13.7	AV	L1	GND
2.310000	31.60	11.3	46	14.4	AV	L1	GND
5.226000	22.70	11.4	50	27.3	AV	L1	GND
14.118000	16.30	11.6	50	33.7	AV	L1	GND

Test mode 2

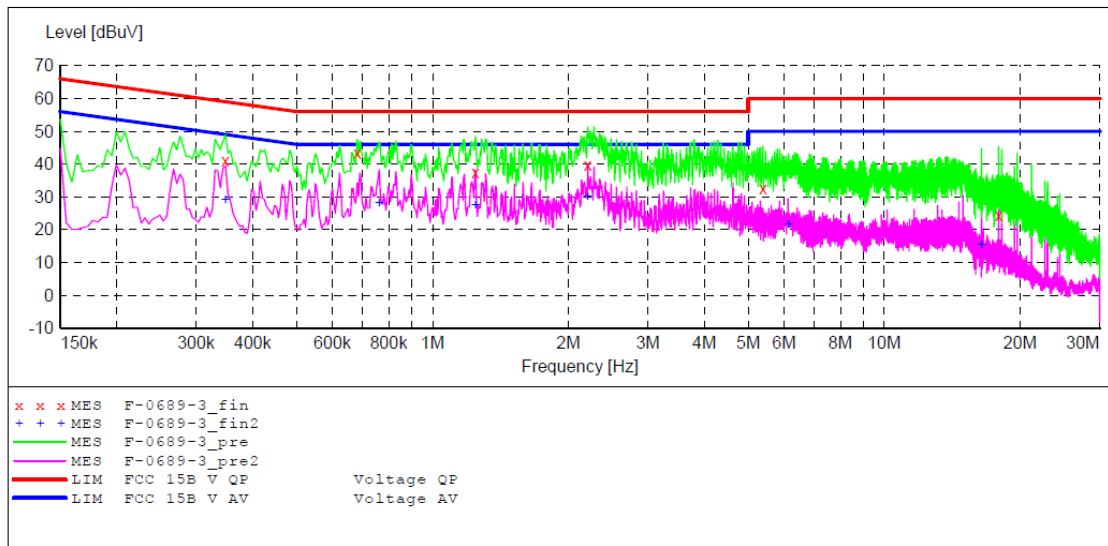
ACCURATE TECHNOLOGY CO., LTD

CONDUCTED EMISSION STANDARD FCC PART 15.207

EUT: Wireless power bank M/N:WP-1055A
 Manufacturer: Shenzhen Bluetimes Technology Co., Ltd.
 Operating Condition: Charging
 Test Site: 1#Shielding Room
 Operator: Frank
 Test Specification: N 120V/60Hz
 Comment: Report NO.:ATE20190689
 Start of Test: 2019-5-17 / 10:02:07

SCAN TABLE: "V 150K-30MHz fin"

Short Description: SUB STD VTERM2 1.70
 Start Stop Step Detector Meas. IF Transducer
 Frequency Frequency Width Time Bandw.
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008
 Average



MEASUREMENT RESULT: "F-0689-3_fin"

2019-5-17 10:04

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.348000	40.90	10.9	59	18.1	QP	N	GND
0.681000	43.40	11.1	56	12.6	QP	N	GND
1.243500	37.30	11.2	56	18.7	QP	N	GND
2.206500	39.80	11.3	56	16.2	QP	N	GND
5.388000	32.50	11.5	60	27.5	QP	N	GND
17.911500	24.50	11.7	60	35.5	QP	N	GND

MEASUREMENT RESULT: "F-0689-3_fin2"

2019-5-17 10:04

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.348000	29.20	10.9	49	19.8	AV	N	GND
0.762000	28.40	11.1	46	17.6	AV	N	GND
1.243500	27.70	11.2	46	18.3	AV	N	GND
2.206500	30.40	11.3	46	15.6	AV	N	GND
6.121500	21.80	11.5	50	28.2	AV	N	GND
16.417500	15.50	11.7	50	34.5	AV	N	GND

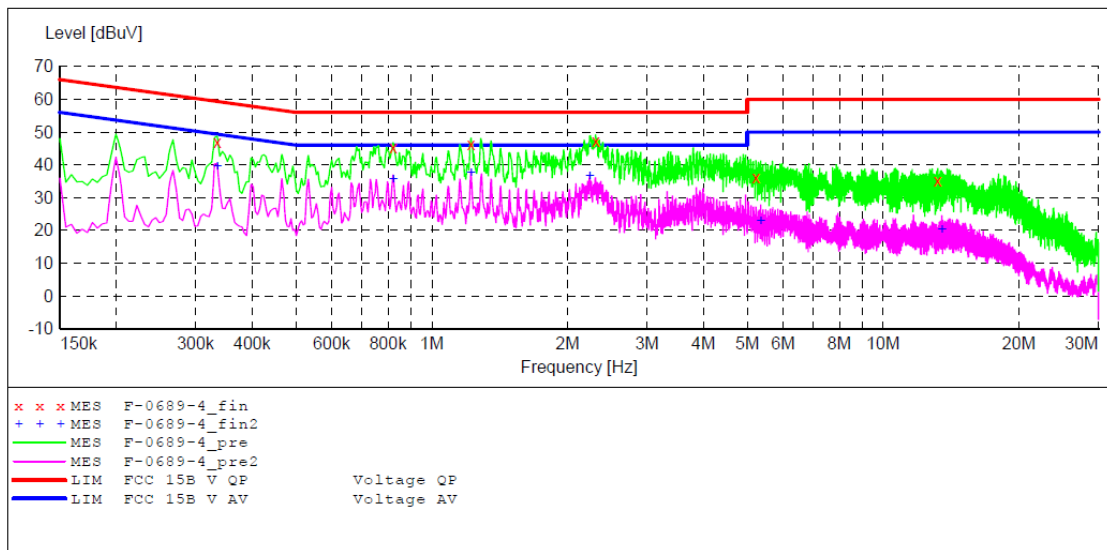
ACCURATE TECHNOLOGY CO., LTD

CONDUCTED EMISSION STANDARD FCC PART 15.207

EUT: Wireless power bank M/N:WP-1055A
 Manufacturer: Shenzhen Bluetimes Technology Co., Ltd.
 Operating Condition: Charging
 Test Site: 1#Shielding Room
 Operator: Frank
 Test Specification: L 120V/60Hz
 Comment: Report NO.:ATE20190689
 Start of Test: 2019-5-17 / 10:05:36

SCAN TABLE: "V 150K-30MHz fin"

Short Description: SUB STD VTERM2 1.70
 Start Stop Step Detector Meas. IF Transducer
 Frequency Frequency Width Time Bandw.
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008
 Average



MEASUREMENT RESULT: "F-0689-4_fin"

2019-5-17 10:08

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.334500	46.90	10.9	59	12.4	QP	L1	GND
0.820500	45.20	11.1	56	10.8	QP	L1	GND
1.221000	46.40	11.2	56	9.6	QP	L1	GND
2.305500	47.30	11.3	56	8.7	QP	L1	GND
5.221500	36.00	11.4	60	24.0	QP	L1	GND
13.213500	35.00	11.6	60	25.0	QP	L1	GND

MEASUREMENT RESULT: "F-0689-4_fin2"

2019-5-17 10:08

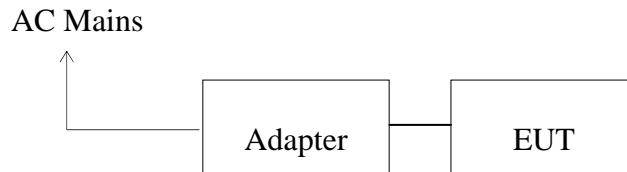
Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.334500	39.60	10.9	49	9.7	AV	L1	GND
0.820500	35.80	11.1	46	10.2	AV	L1	GND
1.221000	37.80	11.2	46	8.2	AV	L1	GND
2.238000	36.70	11.3	46	9.3	AV	L1	GND
5.356500	23.20	11.5	50	26.8	AV	L1	GND
13.488000	20.50	11.6	50	29.5	AV	L1	GND

5. RADIATED EMISSION MEASUREMENT

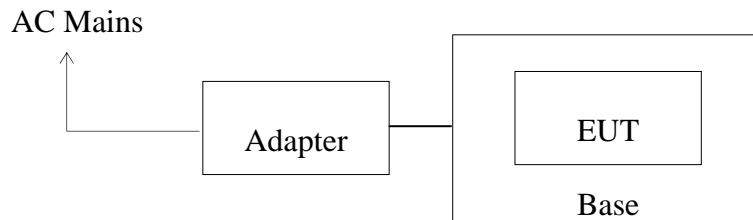
5.1. Block Diagram of Test

5.1.1. Block diagram of connection between the EUT and simulators

Test setup figure 1:



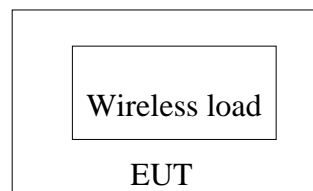
Test setup figure 2:



Test setup figure 3:



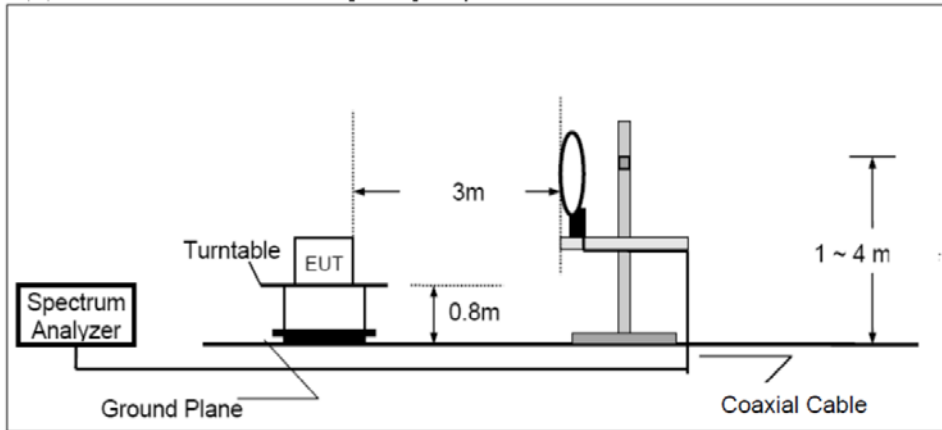
Test setup figure 4:



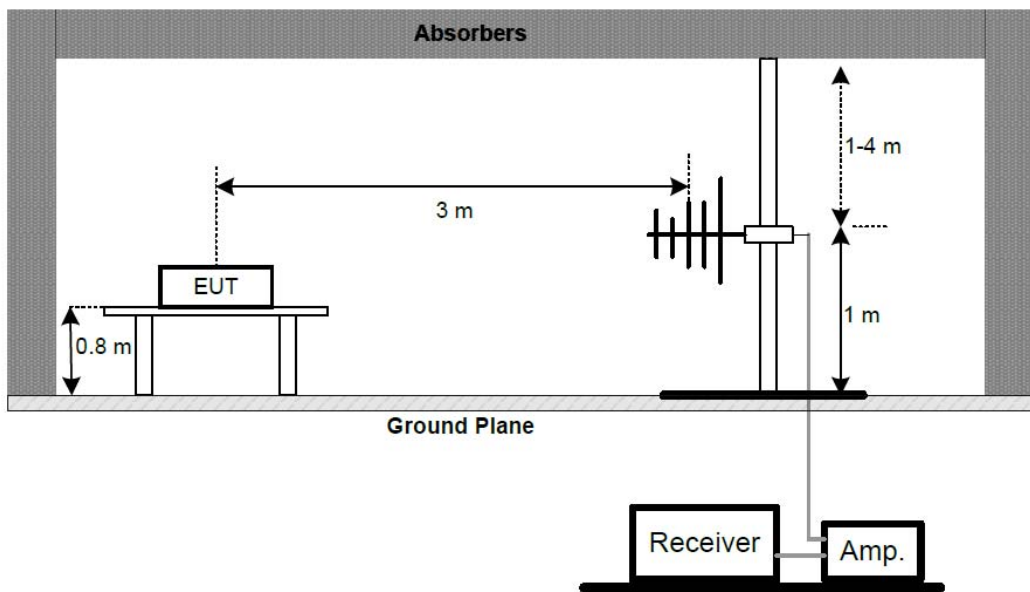
(EUT: Wireless power bank)

5.1.2. Block diagram of test setup (In chamber)

(A) Radiated Emission Test Set-Up, Frequency below 30MHz



(B) Radiated Emission Test Set-Up, Frequency below 1GHz



5.2. Radiated Emission Limit (Class B)

Frequency (MHz)	Field Strength Limitation		Field Strength Limitation at 3m Measurement Dist	
	(uV/m)	Dist	(uV/m)	(dBuV/m)
0.009 – 0.490	2400 / F(KHz)	300m	10000 * 2400/F(KHz)	20log 2400/F(KHz) + 80
0.490 – 1.705	24000 / F(KHz)	30m	100 * 24000/F(KHz)	20log 24000/F(KHz) + 40
1.705 – 30.00	30	30m	100 * 30	20log 30 + 40
30.0 – 88.0	100	3m	100	20log 100
88.0 – 216.0	150	3m	150	20log 150
216.0 – 960.0	200	3m	200	20log 200
Above 960.0	500	3m	500	20log 500

Limit: $2400/175=13.7\mu\text{V/m}@300\text{m}$

Distance Correction Factor= $40\log(\text{test distance}/\text{specific distance})$

5.3.Manufacturer

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.

5.3.1.Wireless power bank (EUT)

Model Number: WP-1055A

Manufacturer: Shenzhen Bluetimes Technology Co., Ltd.

5.4.Operating Condition of EUT

5.4.1.Setup the EUT and simulator as shown as Section 5.1.

5.4.2.Turn on the power of all equipment.

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

5.5.DATA SAMPLE

Frequency (MHz)	Reading (dB μ v)	Factor (dB/m)	Result (dB μ v/m)	Limit (dB μ v/m)	Margin (dB)	Remark
X.XX	49.83	-22.03	27.80	43.50	-15.70	QP

Frequency(MHz) = Emission frequency in MHz

Reading(dB μ v) = Uncorrected Analyzer/Receiver reading

Factor (dB/m)= Antenna factor + Cable Loss – Amplifier gain

Result(dB μ v/m) = Reading + Factor

Limit (dB μ v/m)= Limit stated in standard

Margin (dB) = Result(dB μ v/m) - Limit (dB μ v/m)

Calculation Formula:

Margin(dB) = Result (dB μ v/m)–Limit(dB μ v/m)

Result(dB μ v/m)= Reading(dB μ v)+ Factor(dB/m)

The “Margin” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the limit.

5.6. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable 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 an 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 (calibrated bilog 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 C63.10: 2013 on radiated emission measurement.

From 9kHz to 30MHz at distance 3m The EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity.

From 30MHz to 1000MHz at distance 3m The measuring antenna height varied between 1 and 4m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity. The measurements were performed for both vertical and horizontal antenna polarization.

The final measurement will be performed with an EMI Receiver set to Quasi Peak detector for the frequency bands 9kHz to 90kHz and 110 to 490 kHz where an average detector will be used according to Section 15.209(d)(2).

The final level, expressed in dBuV/m, is arrived at by taking the reading from the EMI receiver(Level dBuV) and adding the antenna correction factor and cable loss factor(Factor dB) to it. This result then has to be compared with the relevant FCC limit. The resolution bandwidth during the measurement is as follows:

9kHz – 150kHz: ResBW: 200Hz
150kHz – 30MHz: ResBW: 9kHz

The bandwidth of the EMI test receiver (R&S ESCS30) is set at 120kHz from 30MHz to 1000MHz.

5.7.Radiated Emission Noise Measurement Result

PASS.

From 9kHz to 30MHz(175kHz TX) worse case

Frequency (MHz)	Quasi Peak (dB μ V/m)	Detector	Azimuth	Height (cm)	Limit @3m (dB μ V/m)	Margin (dB)
0.175	93.76	Peak	78	124	122.7	-28.94
0.175	84.48	AV	78	124	102.7	-18.22
2.21	35.2	QP	356	150	69.5	-34.30
2.59	34.42	QP	229	202	69.5	-35.08
0.175	88.14	Peak	145	145	122.7	-34.56
0.175	78.87	AV	145	145	102.7	-23.83
2.66	30.31	QP	37	154	69.5	-39.19
3.56	33.38	QP	40	148	69.5	-36.12

Part 15 Section 15.31(f)(2) (9kHz-30MHz)

Limit at 3m=Limit at 300m-40*log(3(m)/300(m))

Limit at 3m=Limit at 30m-40*log(3(m)/30(m))

From 30MHz to 1000MHz(Worse case)

Test mode 1



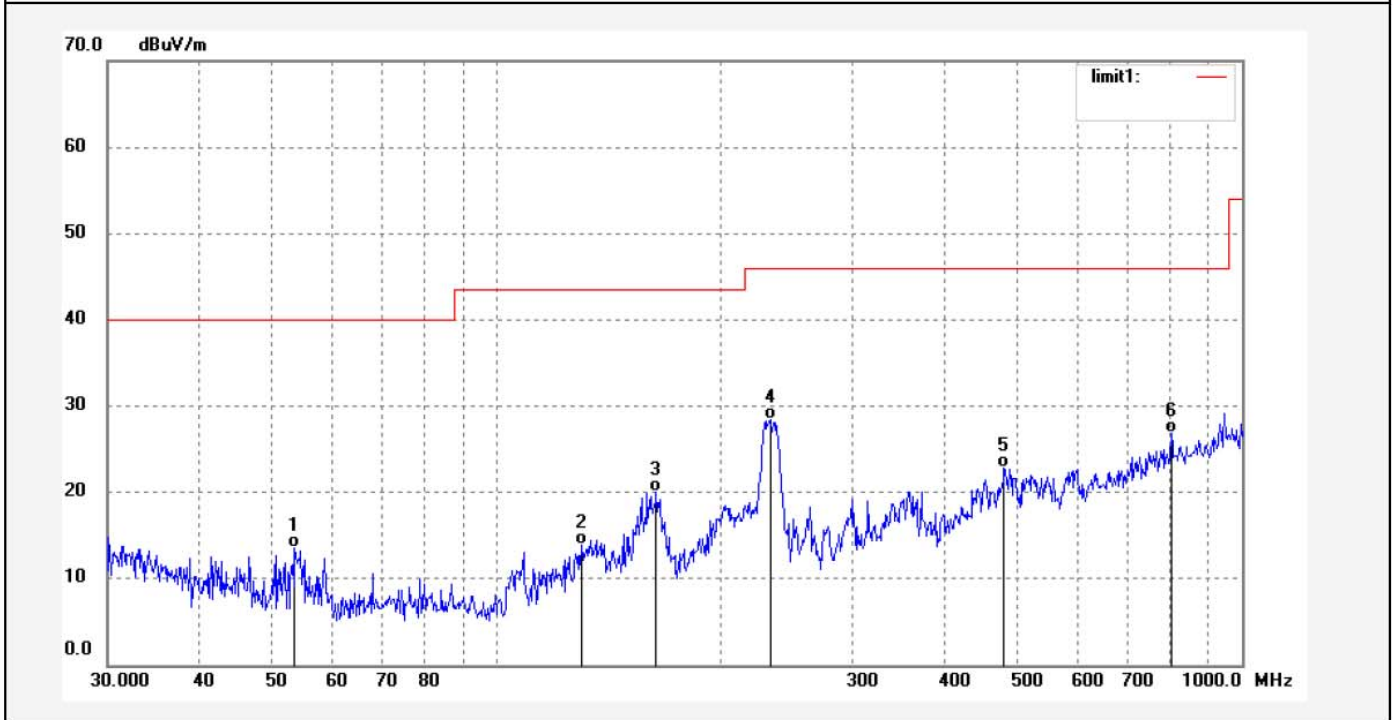
ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: FRANK2019 #1084	Polarization: Horizontal
Standard: FCC 15.209 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2019/05/18
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 16:57:13
EUT: Wireless power bank	Engineer Signature:
Mode: Charging	Distance: 3m
Model: WP-1055A	
Manufacturer: Shenzhen Bluetimes Technology Co., Ltd.	

Note: Report NO.:ATE20190689



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	53.5673	40.36	-26.78	13.58	40.00	-26.42	QP			
2	129.8477	41.58	-27.71	13.87	43.50	-29.63	QP			
3	163.7366	46.80	-26.68	20.12	43.50	-23.38	QP			
4	232.6690	52.30	-23.82	28.48	46.00	-17.52	QP			
5	479.8224	39.46	-16.63	22.83	46.00	-23.17	QP			
6	804.2522	35.68	-8.89	26.79	46.00	-19.21	QP			

Job No.: FRANK2019 #1085

Polarization: Vertical

Standard: FCC 15.209 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 2019/05/18

Temp.(C)/Hum.(%) 25 C / 55 %

Time: 16:57:41

EUT: Wireless power bank

Engineer Signature:

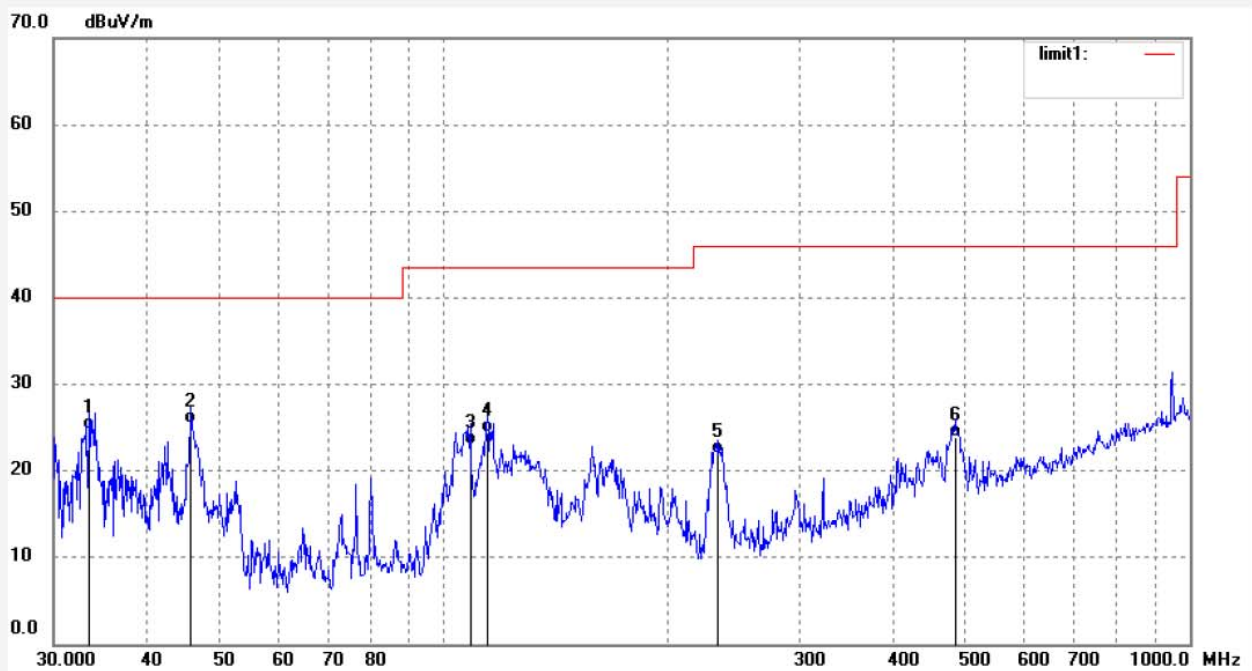
Mode: Charging

Distance: 3m

Model: WP-1055A

Manufacturer: Shenzhen Bluetimes Technology Co., Ltd.

Note: Report NO.:ATE20190689



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	33.4522	45.78	-21.06	24.72	40.00	-15.28	QP			
2	45.8943	50.12	-24.74	25.38	40.00	-14.62	QP			
3	108.5455	50.45	-27.52	22.93	43.50	-20.57	QP			
4	114.4197	51.78	-27.35	24.43	43.50	-19.07	QP			
5	233.4881	45.78	-23.81	21.97	46.00	-24.03	QP			
6	484.9068	40.45	-16.54	23.91	46.00	-22.09	QP			

Test mode 2



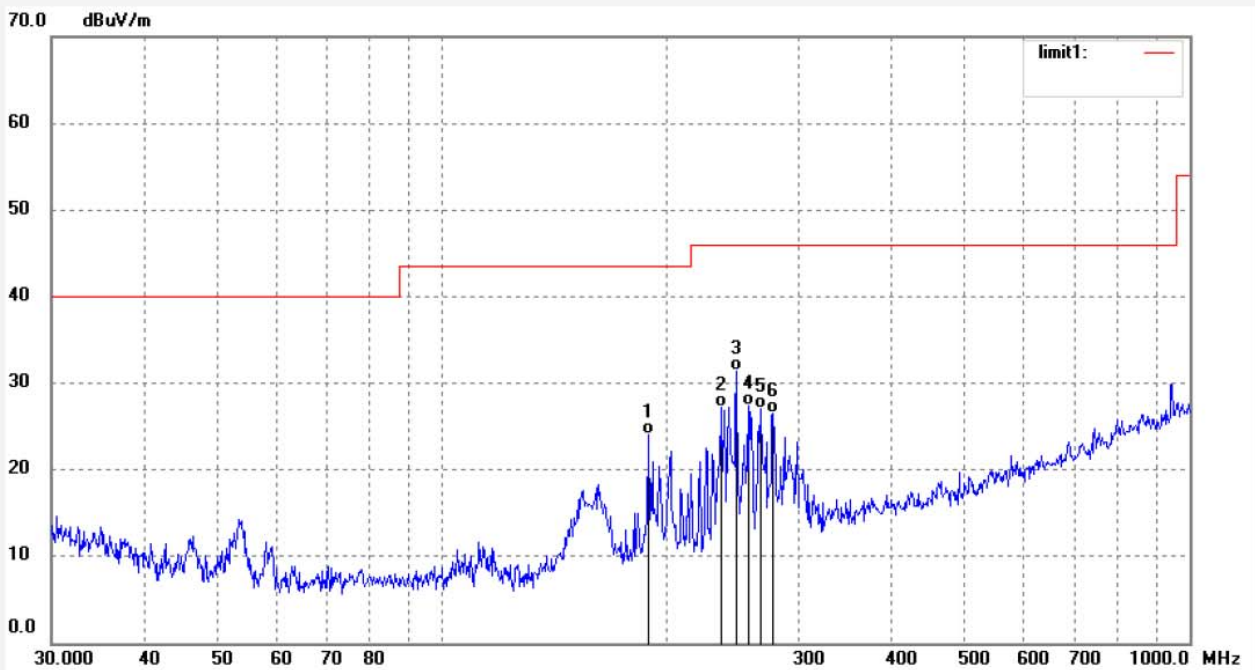
ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: FRANK2019 #1083	Polarization: Horizontal
Standard: FCC 15.209 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2019/05/18
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 16:56:32
EUT: Wireless power bank	Engineer Signature:
Mode: Charging	Distance: 3m
Model: WP-1055A	
Manufacturer: Shenzhen Bluetimes Technology Co., Ltd.	

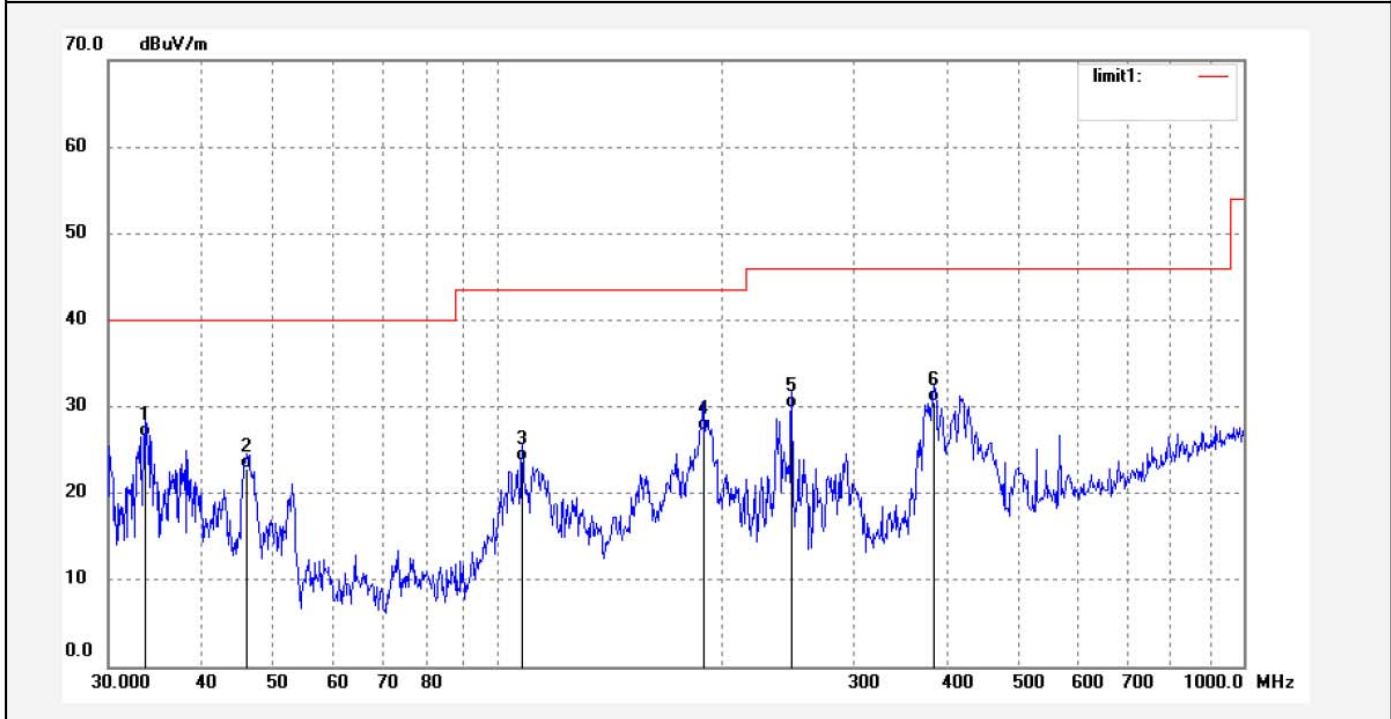
Note: Report NO.:ATE20190689



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	188.4442	49.37	-25.25	24.12	43.50	-19.38	QP			
2	235.9621	51.08	-23.79	27.29	46.00	-18.71	QP			
3	247.8594	55.11	-23.65	31.46	46.00	-14.54	QP			
4	256.7230	50.72	-23.25	27.47	46.00	-18.53	QP			
5	266.8394	49.64	-22.68	26.96	46.00	-19.04	QP			
6	277.3546	48.85	-22.27	26.58	46.00	-19.42	QP			

Job No.: FRANK2019 #1082	Polarization: Vertical
Standard: FCC 15.209 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2019/05/18
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 16:55:58
EUT: Wireless power bank	Engineer Signature:
Mode: Charging	Distance: 3m
Model: WP-1055A	
Manufacturer: Shenzhen Bluetimes Technology Co., Ltd.	

Note: Report NO.:ATE20190689



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	33.6880	47.65	-21.12	26.53	40.00	-13.47	QP			
2	46.0557	47.64	-24.80	22.84	40.00	-17.16	QP			
3	107.7853	51.41	-27.66	23.75	43.50	-19.75	QP			
4	188.4442	52.46	-25.25	27.21	43.50	-16.29	QP			
5	247.8594	53.45	-23.65	29.80	46.00	-16.20	QP			
6	384.5446	49.12	-18.57	30.55	46.00	-15.45	QP			

Test mode 3



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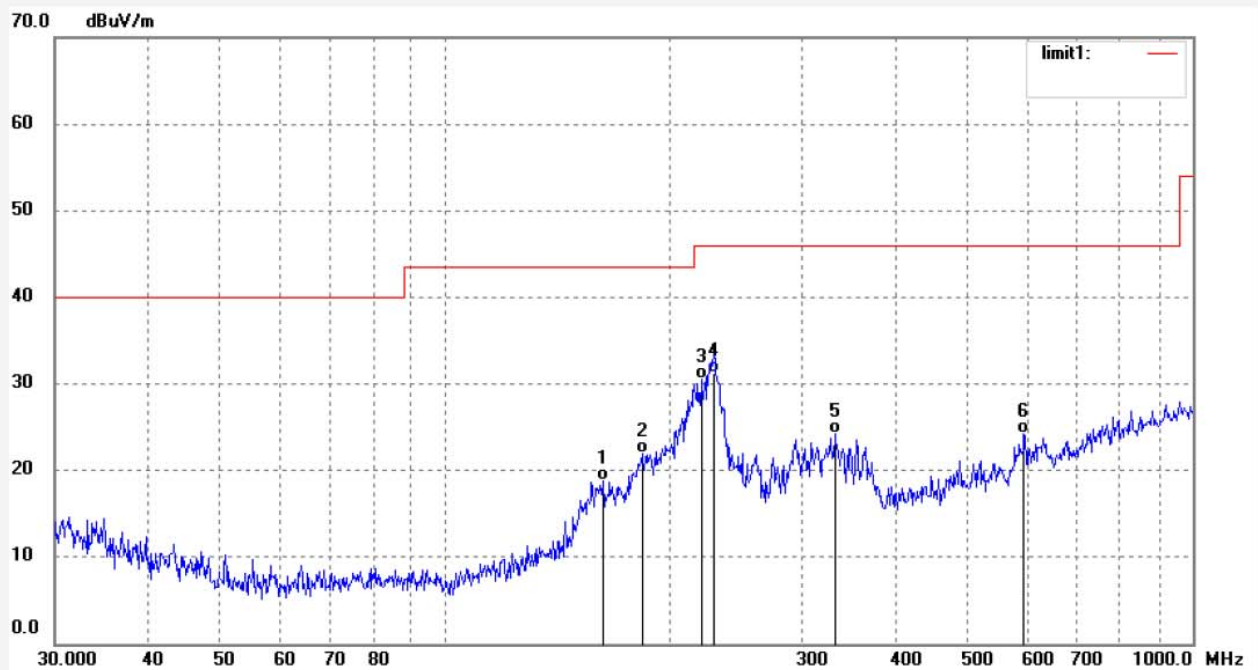
Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: FRANK2019 #1080	Polarization: Horizontal
Standard: FCC 15.209 3M Radiated	Power Source: DC 5V
Test item: Radiation Test	Date: 2019/05/18
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 16:53:08
EUT: Wireless power bank	Engineer Signature:
Mode: Discharging-connect wired Load	Distance: 3m
Model: WP-1055A	
Manufacturer: Shenzhen Bluetimes Technology Co., Ltd.	

Note: Report NO.:ATE20190689



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	162.5900	45.64	-26.80	18.84	43.50	-24.66	QP			
2	183.2211	47.74	-25.71	22.03	43.50	-21.47	QP			
3	219.9499	54.61	-24.02	30.59	46.00	-15.41	QP			
4	228.6173	55.12	-23.89	31.23	46.00	-14.77	QP			
5	331.7857	44.37	-20.07	24.30	46.00	-21.70	QP			
6	594.5143	38.08	-13.81	24.27	46.00	-21.73	QP			

Job No.: FRANK2019 #1081

Standard: FCC 15.209 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Wireless power bank

Mode: Discharging-connect wired Load

Model: WP-1055A

Manufacturer: Shenzhen Bluetimes Technology Co., Ltd.

Polarization: Vertical

Power Source: DC 5V

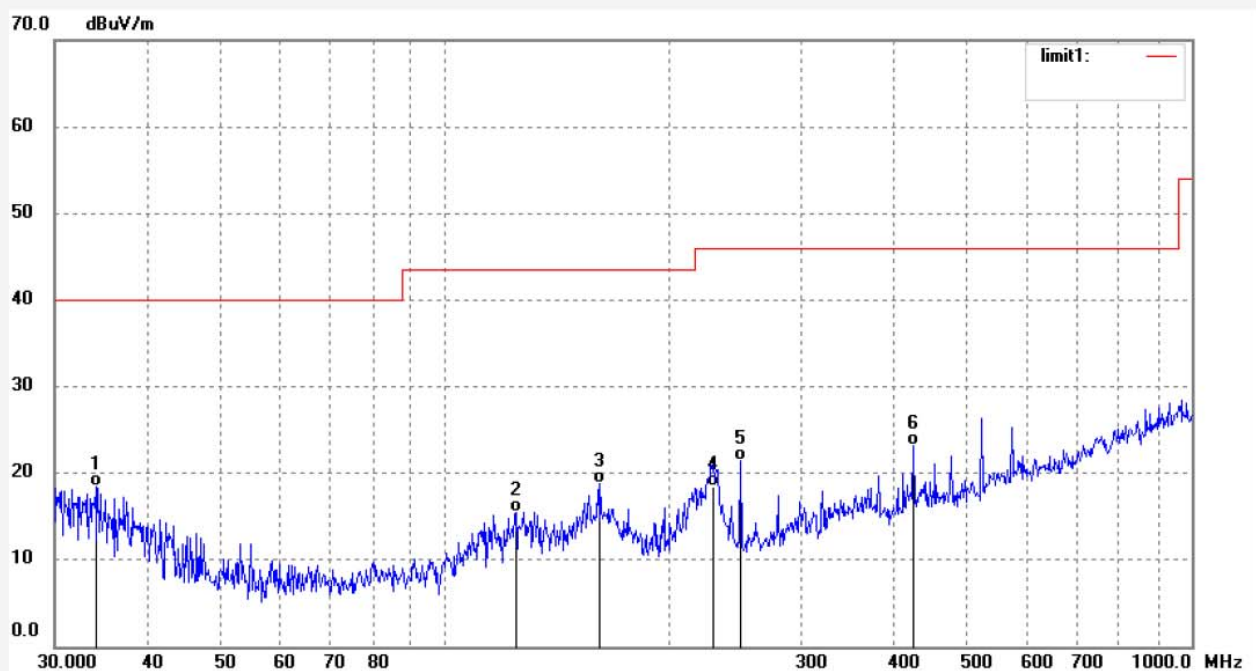
Date: 2019/05/18

Time: 16:53:39

Engineer Signature:

Distance: 3m

Note: Report NO.:ATE20190689



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	34.0449	39.69	-21.22	18.47	40.00	-21.53	QP			
2	124.4868	43.12	-27.58	15.54	43.50	-27.96	QP			
3	161.4515	45.72	-26.91	18.81	43.50	-24.69	QP			
4	228.6173	42.42	-23.89	18.53	46.00	-27.47	QP			
5	248.7317	45.06	-23.65	21.41	46.00	-24.59	QP			
6	424.2998	41.21	-17.94	23.27	46.00	-22.73	QP			

Test mode 4


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 Science & Industry Park,Nanshan Shenzhen,P.R.China

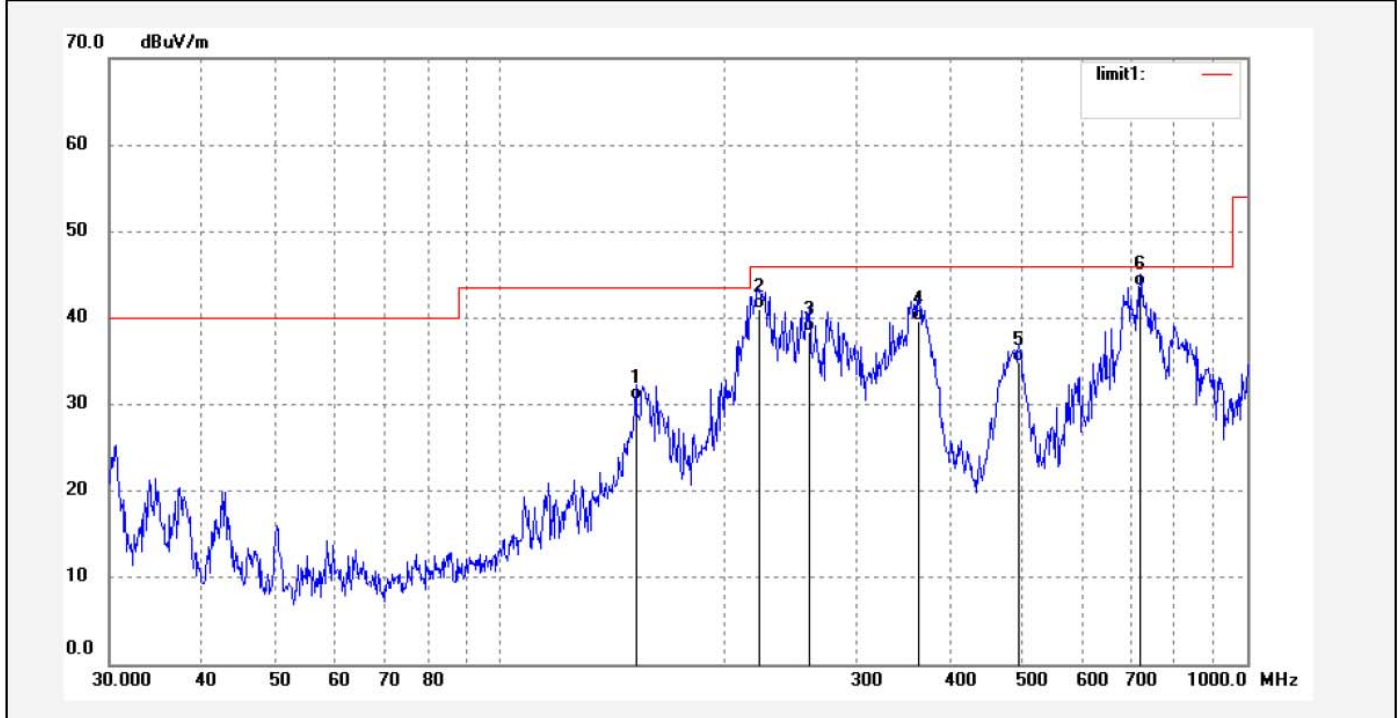
Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: FRANK2019 #1079	Polarization: Horizontal
Standard: FCC 15.209 3M Radiated	Power Source: DC 5V
Test item: Radiation Test	Date: 2019/05/18
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 16:43:27
EUT: Wireless power bank	Engineer Signature:
Mode: Discharging-Connect wireless load	Distance: 3m
Model: WP-1055A	
Manufacturer: Shenzhen Bluetimes Technology Co., Ltd.	

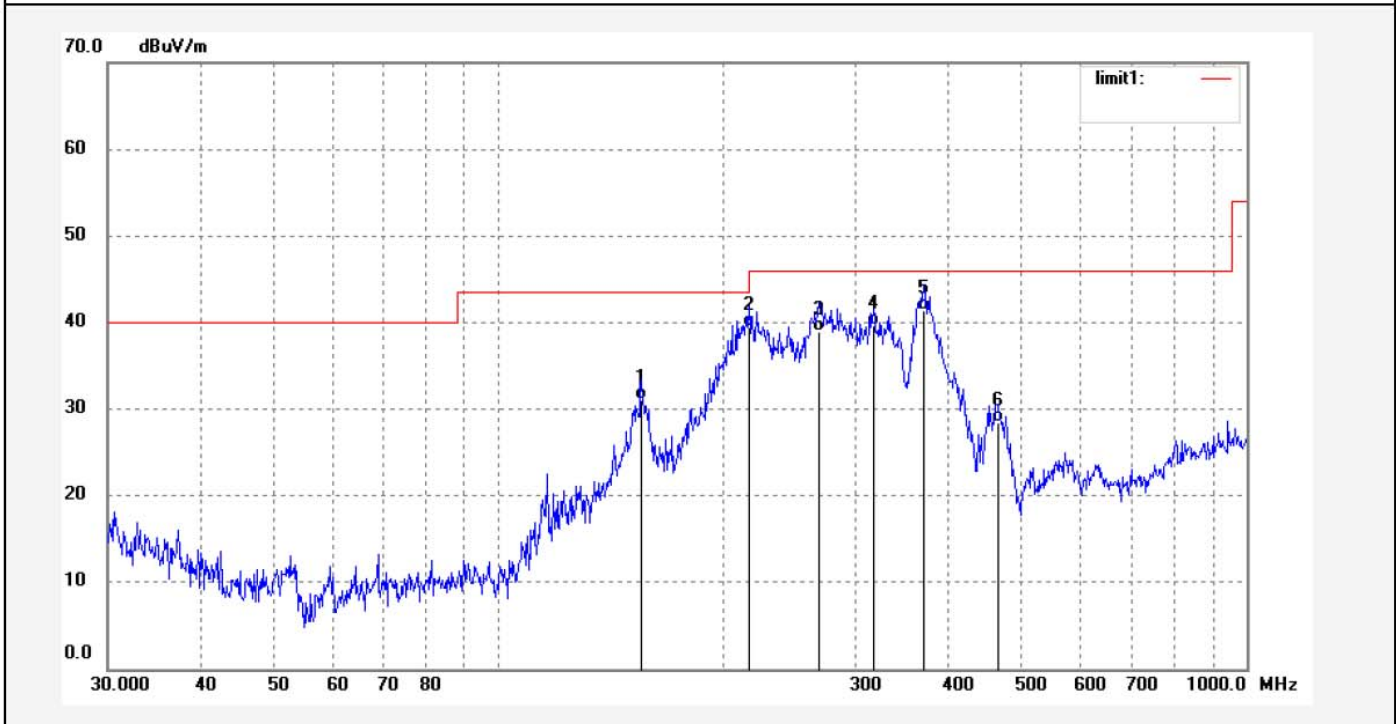
Note: Report NO.:ATE20190689



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	152.0902	58.45	-27.87	30.58	43.50	-12.92	QP			
2	222.2806	65.00	-23.98	41.02	46.00	-4.98	QP			
3	259.4433	61.55	-23.07	38.48	46.00	-7.52	QP			
4	363.5230	58.46	-18.86	39.60	46.00	-6.40	QP			
5	495.2379	51.34	-16.38	34.96	46.00	-11.04	QP			
6	718.7246	54.65	-11.05	43.60	46.00	-2.40	QP			

Job No.: FRANK2019 #1078	Polarization: Vertical
Standard: FCC 15.209 3M Radiated	Power Source: DC 5V
Test item: Radiation Test	Date: 2019/05/18
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 16:43:09
EUT: Wireless power bank	Engineer Signature:
Mode: Discharging-Connect wireless load	Distance: 3m
Model: WP-1055A	
Manufacturer: Shenzhen Bluetimes Technology Co., Ltd.	

Note: Report NO.:ATE20190689



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	155.3305	58.65	-27.58	31.07	43.50	-12.43	QP			
2	216.1196	63.46	-24.05	39.41	46.00	-6.59	QP			
3	268.7212	61.49	-22.61	38.88	46.00	-7.12	QP			
4	316.9717	60.46	-20.74	39.72	46.00	-6.28	QP			
5	369.9658	60.15	-18.77	41.38	46.00	-4.62	QP			
6	464.8867	45.34	-16.83	28.51	46.00	-17.49	QP			

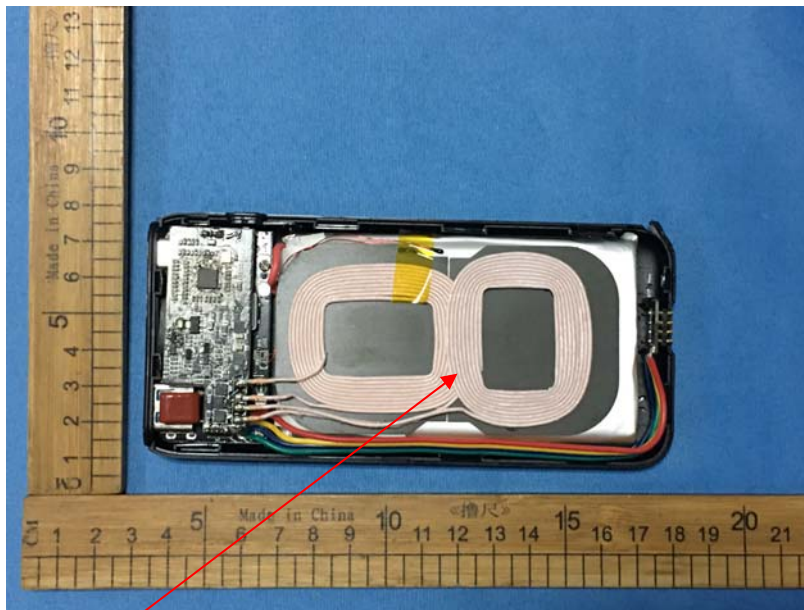
6. ANTENNA REQUIREMENT

6.1. The Requirement

According to Section 15.203, 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.

6.2. Antenna Construction

Device is equipped with permanent attached antenna, which isn't displaced by other antenna. The max Antenna gain of EUT is 0dBi. Therefore, the equipment complies with the antenna requirement of Section 15.203.



Antenna