FCC CERTIFICATION TEST REPORT

Applicant	:	Tianjin Zowda New Energy Technology Co., Limited
Address of Applicant	:	NO.71 Xinhuan South Street, West Zone of Tianjin Economic and Technology Development Zone
Manufacturer	:	Tianjin Zowda New Energy Technology Co., Limited
Address of Manufacturer	:	NO.71 Xinhuan South Street, West Zone of Tianjin Economic and Technology Development Zone
Equipment under Test	:	5000mAh/20W Magnetic Power Bank
Model No.	:	J2911, J2912, J2913, N2911, N2912, N2913, Z2911, Z2912, Z2913, A2911, A2912, A2913, PW-051C20W, W203
FCC ID	:	2BFS6-J2911
Test Standard(s)	:	FCC Rules and Regulations Part 15 Subpart C, ANSI C63.10:2013
Report No.	:	DDT-RE24081515-2E03
Issue Date	:	2024/11/27
Issue By	:	Guangdong Dongdian Testing Service Co., Ltd. Unit 2, Building 1, No. 17, Zongbu 2nd Road, Songshan Lake Park, Dongguan, Guangdong, China, 523808

REPORT

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Test Report Declare

Applicant	:	Tianjin Zowda New Energy Technology Co., Limited
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Equipment under Test	:	5000mAh/20W Magnetic Power Bank
Model No.	:	J2911, J2912, J2913, N2911, N2912, N2913, Z2911, Z2912, Z2913, A2911, A2912, A2913, PW-051C20W, W203
Manufacturer	:	Tianjin Zowda New Energy Technology Co., Limited
Address of Manufacturer	:	NO.71 Xinhuan South Street, West Zone of Tianjin Economic and Technology Development Zone

Test Standard Used:

FCC Rules and Regulations Part 15 Subpart C,
ANSI C63.10:2013

We Declare:

The equipment described above is tested by Guangdong Dongdian Testing Service Co., Ltd. and in the configuration tested the equipment complied with the standards specified above. The test results are contained in this test report and Guangdong Dongdian Testing Service Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

Report No.:	DDT-RE24081515-2E03		
Date of Receipt:	2024/08/27	**Date of Test:**	2024/08/27~2024/11/27

Prepared By:	**Approved By:**
Tiger Mo	Damon Hu
Tiger Mo/Engineer	**Damon Hu/EMC Manager**

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Guangdong Dongdian Testing Service Co., Ltd.

Revision History

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	2024/11/27	

1. Summary of Test Results

No.	Test Parameter	Clause No.	Condition	Result
1	20 dB Bandwidth	FCC Part 15: 15.215	/	Pass
2	Radiated Emission	FCC Part 15: 15.205, FCC Part 15: 15.209	/	Pass
3	Power Line Conducted Emissions	FCC Part 15: 15.207(a)	/	Pass
4	Antenna Requirement	FCC Part 15: 15.203	/	Pass
Note: N/A is an abbreviation for Not Applicable, and means this item is not applicable for this device or no need to test according to standard.				

2. General Test Information

2.1. Description of EUT

EUT Name	:	5000mAh/20W Magnetic Power Bank
Model Number	:	J2911, J2912, J2913, N2911, N2912, N2913, Z2911, Z2912, Z2913, A2911, A2912, A2913, PW-051C20W, W203
Difference of model number	:	Above models are identical in schematic and structure, only the Model Number and appearance colour is different for all the models, therefore the test performed on the model PW-051C20W.
EUT Function Description	:	Please reference user manual of this device
Power Supply	:	Input: Powered by Type-C port 5V⎓3A, 9V⎓2A, 12V⎓1.5A or DC 3.85V Polymer Li-ion built-in battery Output: Type-C: 5V⎓3A, 9V⎓2.22A, 12V⎓1.65A; PPS: 5V-11V⎓2A Wireless: 5W / 7.5W / 10W / 15W
Hardware Version	:	PW-051C20W_V1.4 2024-10-21-V1
Software Version	:	CRC: 0xA8F6FDFE(MCU)

Wireless charging Operation frequency	:	111 kHz - 205 kHz, 326-331kHz
Antenna Type	:	Inductive loop coil antenna

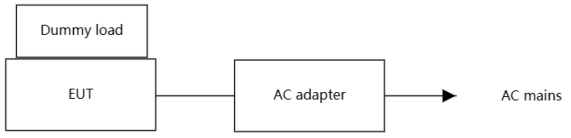
Note: The above EUT information is declared by manufacturer and for more detailed features description please refer to the manufacturer's specifications or User's Manual. The above Antenna information is declared by manufacturer and for more detailed features description please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

“☒” means to be chosen or applicable; “□” means don’t to be chosen or not applicable; This note applies to entire report.

2.2. Accessories of EUT

Accessories	Manufacturer	Model number	Description
/	/	/	/

2.3. Block diagram of EUT configuration for test



2.4. Decision of final test mode

According pre-test, the worst test modes were reported as below:
For mode 1: Tx mode (5W load, 7.5W load, 10W load, 15W load)

For mode 2: Standby mode
Note: Scan with mode 1 and mode 2, the worst case is mode 1 Tx mode (15W load) and recorded in this report

2.5. Deviations of test standard

No deviation.

2.6. Test environment conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature range:	+15℃ to +35 ℃
Humidity range:	20% to 75%
Pressure range:	86 kPa to106 kPa

Note: The specific temperature and humidity information of each test item refers to the temperature and humidity record in the corresponding test data.

2.7. Test laboratory

Guangdong Dongdian Testing Service Co., Ltd.

Add.: Unit 2, Building 1, No. 17, Zongbu 2nd Road, Songshan Lake Park, Dongguan, Guangdong, China, 523808.

Tel.: +86-0769-38826678, http://www.dgddt.com, Email: ddt@dgddt.com.

CNAS Accreditation No. L6451; A2LA Accreditation Number: 3870.01

FCC Designation Number: CN1182, Test Firm Registration Number: 540522

Innovation, Science and Economic Development Canada Site Registration Number: 10288A

Conformity Assessment Body identifier: CN0048

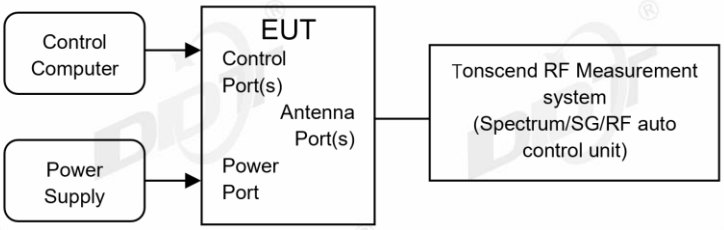
VCCI facility registration number: C-20087, T-20088, R-20123, R-20155, G-20118

2.8. Measurement uncertainty

Test Item	Uncertainty
Bandwidth	1.1%
Peak Output Power (Conducted) (Spectrum analyzer)	0.86 dB (10 MHz ≤ f < 3.6 GHz);
	1.38 dB (3.6 GHz ≤ f < 8 GHz)
Peak Output Power (Conducted) (Power Sensor)	0.74 dB
Power Spectral Density	0.74 dB (10 MHz ≤ f < 3.6 GHz);
	1.38 dB (3.6 GHz ≤ f < 8 GHz)
Frequencies Stability	6.7 x 10^{-8} (Antenna couple method)
	5.5 x 10^{-8} (Conducted method)
Conducted spurious emissions	0.86 dB (10 MHz ≤ f < 3.6 GHz);
	1.40 dB (3.6 GHz ≤ f < 8 GHz)
	1.66 dB (8 GHz ≤ f < 26.5 GHz)
Uncertainty for radio frequency (RBW < 20 kHz)	3×10^{-8}
Temperature	0.4 ℃
Humidity	2 %
Uncertainty for Radiation Emission test (9 kHz – 30 MHz)	3.44 dB
Uncertainty for Radiation Emission test (30 MHz - 1 GHz)	4.70 dB (Antenna Polarize: V)
	4.84 dB (Antenna Polarize: H)
Uncertainty for Radiation Emission test (1 GHz - 40 GHz)	4.10 dB (1 - 6 GHz)
	4.40 dB (6 GHz - 18 GHz)
	3.54 dB (18 GHz - 26 GHz)
	4.30 dB (26 GHz - 40 GHz)
Uncertainty for Power line conduction emission test	3.34dB (150KHz-30MHz)
	3.72dB (9KHz-150KHz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

3 20 dB Bandwidth

3.1. Block diagram of test setup



3.2. Limits

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in § 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

3.3. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
Dummy load	N/A	N/A	N/A	N/A
Apple Watch	N/A	N/A	N/A	N/A

3.4. Test procedure

(1) Connect EUT's antenna output to spectrum analyzer by RF cable.

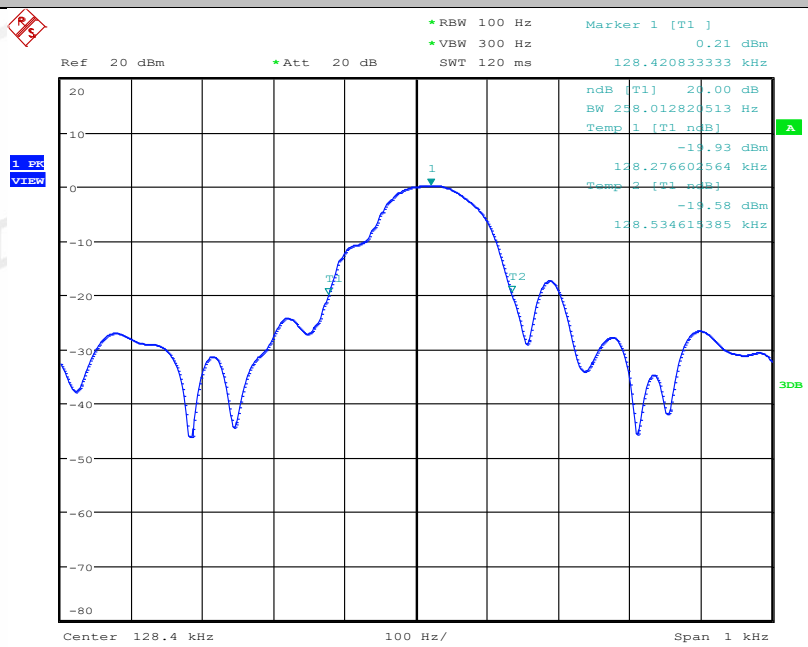
(2) The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100Hz RBW and 300Hz VBW. The 20 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20 dB.

3.5. Test result

Wireless charging Operation frequency(kHz)	Freq. (kHz)	20 dB bandwidth Result (kHz)	Conclusion
111 - 205	128.4	0.258	Pass
326-331	329.2	0.609	Pass

3.1. Original test data

128.4 kHz



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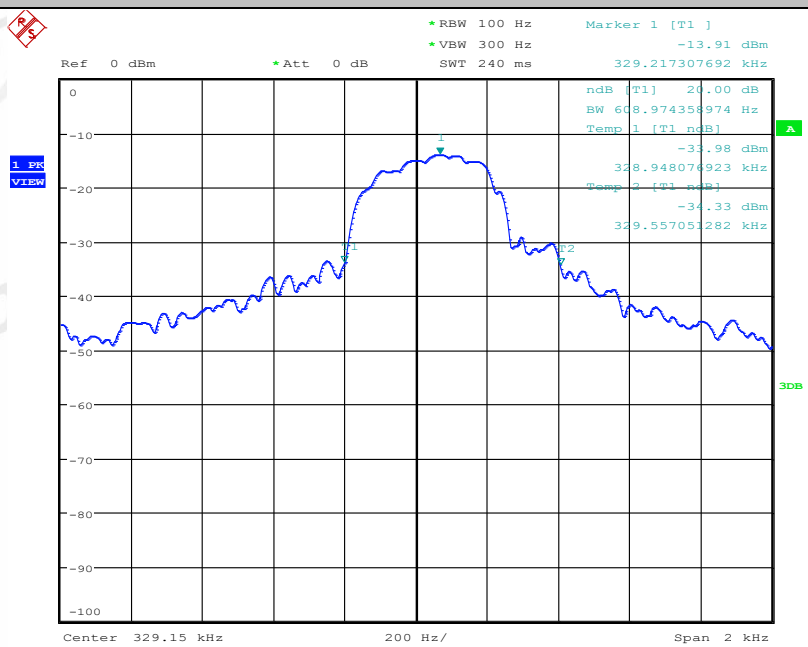
329.2 kHz



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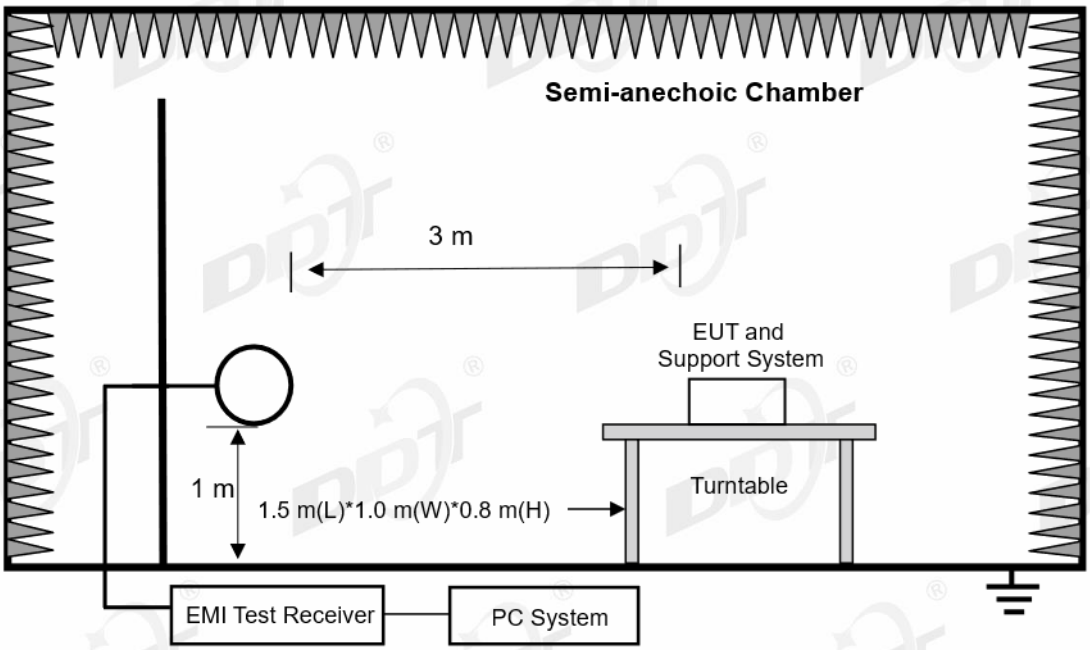
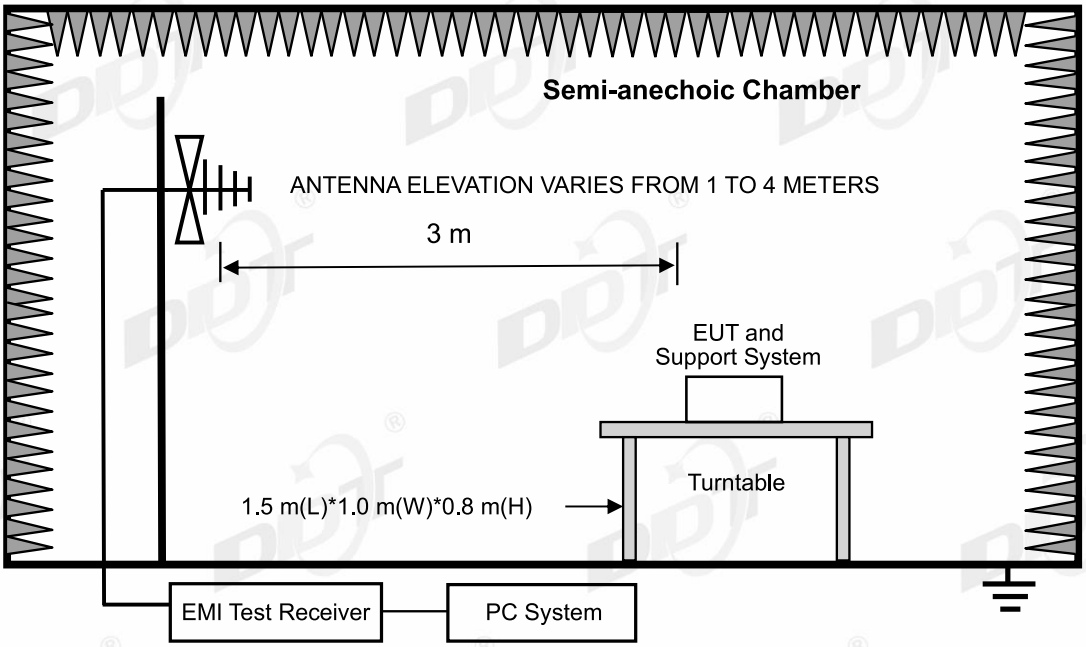
4. Radiated Emission

4.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Cal Due To
Micro-Tronics filters	REBES	BRM50702	DDT-ZC03242	/
RF Cable	N/A	W24.02 HL-562	DDT-ZC04022	2025/03/31
RF cable	Yuhu Technology	JCTB810-NJ-NJ-9M	DDT-ZC02538	2025/03/31
High pass filter	Micro-Tronics	HPM50102	DDT-ZC00561	2025/04/22
Active Loop Antenna	Schwarzbeck	FMZB1519	DDT-ZC00524	2025/09/11
EMI TEST RECEIVER	R&S	ESU26	DDT-ZC01909	2025/03/31
Trilog Broadband Antenna	Schwarzbeck	VULB 9163	DDT-ZC02050	2025/07/11
PSA Series Spectrum Analyzer	Agilent	E4447A	DDT-ZC00517	2025/03/31
High pass filter	Micro-Tronics	HPM50108	DDT-ZC00560	2025/04/22
Hochgewinn-Hornantenne	SCHWARZBECK	BBHA 9120 D	DDT-ZC02129	2025/09/18
RF cable	Zhongke Junchuang	JCT26S-NJ-NJ-1.5M	DDT-ZC02762	2025/03/31
High Pass filter	Xi'an Xingbo	XBLBQ-GTA67	DDT-ZC02179	2025/04/22
RF cable	Yuhu Technology	ZT26S-SMAJ-SMAJ-1M	DDT-ZC02037	2025/03/31
Pre-amplifier	COM-POWER	PAM-840A	DDT-ZC01693	2025/03/31
Micro-Tronics filters	REBES	BRM50716	DDT-ZC03240	/
RF Cable	N/A	W13.02 AP1-X2	DDT-ZC04023	2025/03/31
Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	DDT-ZC00506	2025/04/26
Pre-amplifier	COM-POWER	PAM-118A	DDT-ZC01293	2025/08/25

4.2. Block diagram of test setup





4.3. Limits

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		uV/m	dB(uV)/m
0.009 ~ 0.490	300	2400/F(kHz)	67.6-20log(F)
0.490 ~ 1.705	30	24000/F(kHz)	87.6-20log(F)
1.705 ~ 30.0	30	30	29.54
30~ 88	3	100	40.0
88~ 216	3	150	43.5
216~ 960	3	200	46.0
960~ 1000	3	500	54.0

Note:

(1)The emission limits shown in the above table are based on measurements employing a CISPR QP detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emissions limits in these three bands are based on measurements employing an average detector.

(2) At frequencies below 30 MHz, measurement may be performed at a distance closer than that specified, and the limit at closer measurement distance can be extrapolated by below formula:

$Limit_{3m}(dBuV/m) = Limit_{300m}(dBuV/m) + 40Log(300m/3m) = Limit_{300m}(dBuV/m) + 80$

$Limit_{3m}(dBuV/m) = Limit_{30m}(dBuV/m) + 40Log(30m/3m) = Limit_{30m}(dBuV/m) + 40$

4.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
Dummy load	N/A	N/A	N/A	N/A
Apple Watch	N/A	N/A	N/A	N/A

4.5. Test procedure

(1) EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber for below 1G and 150 cm above the ground plane inside a fully-anechoic chamber for above 1G.

(2) Test antenna was located 3 m from the EUT on an adjustable mast, and the antenna used as below table.

Test frequency range	Test antenna used	Test antenna distance
9 kHz - 30 MHz	Active Loop antenna	3 m
30 MHz - 1 GHz	Trilog Broadband Antenna	3 m

According ANSI C63.10:2013 clause 6.4.6 and 6.5.3, for measurements below 30 MHz, Antenna was located 3 m from EUT, the loop antenna was positioned in three antenna orientations (parallel, perpendicular, and round-parallel), for each measurement antenna alignment, the EUT shall be rotated through 0° to 360° on a turntable, and the lowest height of the magnetic antenna shall be 1 m above the ground. For measurement above 30MHz, the trilog Broadband Antenna or Horn Antenna was located 3m from EUT, Measurements were made with the antenna positioned in both the horizontal and vertical planes of Polarization, and the measurement antenna was varied from 1 m to 4 m. in height above the reference ground plane to obtain the maximum signal strength.

(3) Below pre-scan procedure was first performed in order to find prominent frequency spectrum radiated emissions from 9 kHz to 25 GHz:

(a) Scanning the peak frequency spectrum with the antenna specified in step (3), and the EUT was rotated 360 degree, the antenna height was varied from 1 m to 4 m (Except loop antenna, it's fixed 1 m above ground.)

(b) Change work frequency or channel of device if practicable.

(c) Change modulation type of device if practicable.

(d) Change power supply range from 85% to 115% of the rated supply voltage

(e) Rotated EUT though three orthogonal axes to determine the attitude of EUT arrangement produces highest emissions.

Spectrum frequency from 9 kHz to 25 GHz (tenth harmonic of fundamental frequency) was investigated, and no any obvious emission were detected from 18 GHz to 25 GHz, so below final test was performed with frequency range from 9 kHz to 18 GHz.

(4) For final emissions measurements at each frequency of interest, the EUT was rotated and the antenna height was varied between 1 m and 4 m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipment and all of the interface cables were changed according to ANSI C63.10:2013 on Radiated Emission test.

(5) The emissions from 9 kHz to 1 GHz were measured based on CISPR QP detector except for the frequency bands 9 - 90 kHz, 110 - 490 kHz, for emissions from 9 kHz - 90 kHz,110 kHz - 490 kHz and above 1 GHz were measured based on average detector, for emissions above 1 GHz, peak emissions also be measured and need comply with Peak limit.

(6) The emissions from 9 kHz to 1 GHz, QP or average values were measured with EMI receiver with below RBW.

Frequency band	RBW
9 kHz - 150 kHz	200 Hz
150 kHz - 30 MHz	9 kHz
30 MHz - 1 GHz	120 kHz

(7) For emissions above 1GHz, both Peak and Average level were measured with Spectrum Analyzer, and the RBW is set at 1 MHz, VBW is set at 3 MHz for Peak measure; According ANSI C63.10:2013 clause 4.1.4.2.2 procedure for average measure.

(8) For portable device, X axis, Y axis, Z axis are tested, and worse setup is reported.

4.6. Test result

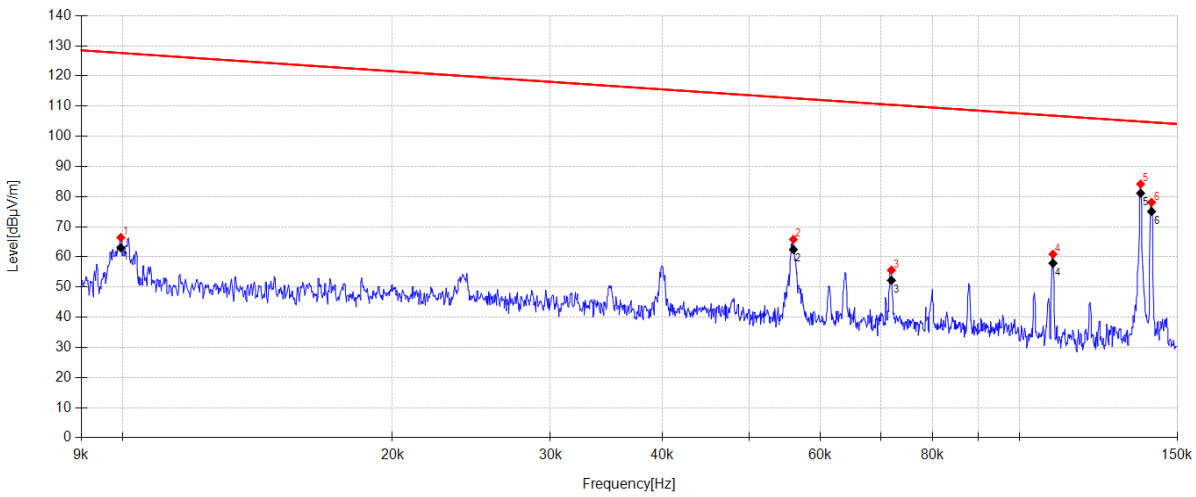
PASS. (See below detailed test result)

Note: All Polarity have been pretest, and only the worst case is shown in report.

4.7. Test data

TR-4-E-009 Radiated Emission Test Result

Test Date:	2024-09-20	**Tested By**:	Gen Liu
EUT:	5000mAh/20W Magnetic Power Bank	**Model Number**:	PW-051C20W
Test Mode:	Working Mode(Operation frequency111kHz - 205kHz)	**Power Supply**:	Battery
Condition:	Temp:24.5°C;Humi:47.4%	**Test Site**:	DDT 3# Chamber
File Path:	d:\ts\2024 report data\Q24081515-2E\FCC\20240920-030109_H		
Memo:	Sample Number:S24081515-002		



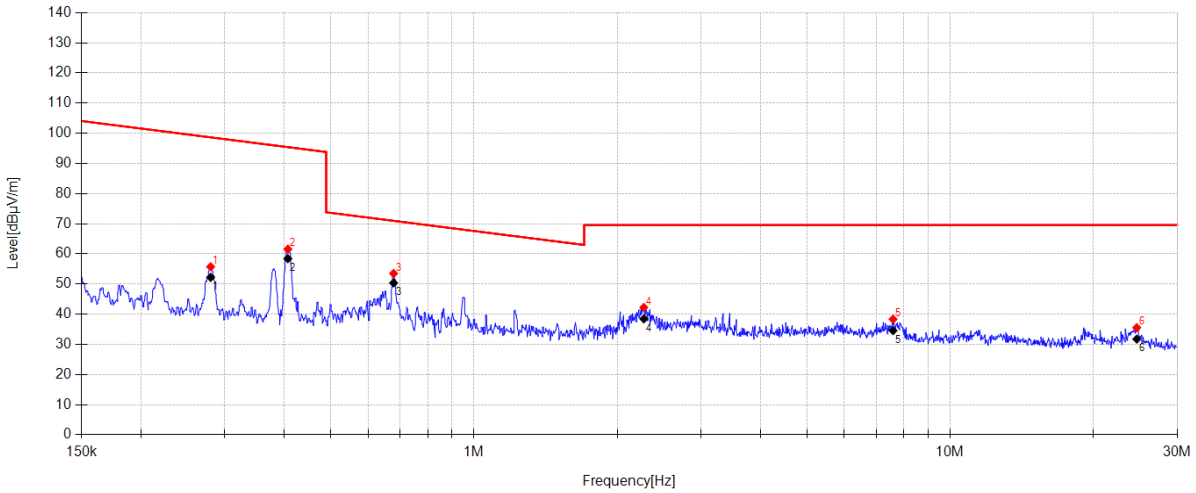
Data List										
NO.	**Freq. [MHz]**	**Reading [dBµV/m]**	**Antenna Factor [dB]**	**Cable loss [dB]**	**AMP [dB]**	**Level [dBµV/m]**	**Limit [dBµV/m]**	**Margin [dB]**	**Detector**	**Polarity**
1	0.010	73.10	20.50	3.21	-30.40	66.41	127.63	61.22	PK	X
2	0.056	72.88	20.40	3.24	-30.71	65.81	112.64	46.83	PK	X
3	0.072	62.77	20.40	3.23	-30.81	55.59	110.45	54.86	PK	X
4	0.109	68.39	20.30	3.23	-31.00	60.92	106.85	45.93	PK	X
5	0.137	91.75	20.17	3.23	-31.00	84.15	104.90	20.75	PK	X
6	0.140	85.69	20.15	3.24	-31.00	78.08	104.65	26.57	PK	X

Data List									
NO.	**Freq. [MHz]**	**Reading [dBµV/m]**	**Antenna Factor [dB]**	**Cable Loss [dB]**	**Result [dBµV/m]**	**Limit [dBµV/m]**	**Margin [dB]**	**Detector**	**Polarity**
1	0.010	69.71	20.50	3.21	63.02	127.60	64.58	AV	X
2	0.056	69.49	20.40	3.24	62.42	112.64	50.22	AV	X
3	0.072	59.38	20.40	3.23	52.20	110.45	58.25	AV	X
4	0.109	65.36	20.30	3.23	57.89	106.85	48.96	QP	X
5	0.137	88.72	20.17	3.23	81.12	104.90	23.78	AV	X
6	0.140	82.66	20.15	3.24	75.05	104.65	29.60	AV	X

Note:
1. Level = Reading + Factor.
2. Factor = Antenna Factor + Cable Loss - Preamp Gain + Site Loss Factor - 107.
3. Test setup: 9kHz-150kHz RBW: 300Hz, VBW: 1 kHz, Sweep time: auto.
150kHz-30MHz RBW: 10kHz, VBW: 30kHz, Sweep time: auto.
4. H = E – 51.5, where H is in dBµA/m and E in dBµV/m.

TR-4-E-009 Radiated Emission Test Result

Test Date:	2024-09-20	**Tested By**:	Gen Liu
EUT:	5000mAh/20W Magnetic Power Bank	**Model Number**:	PW-051C20W
Test Mode:	Working Mode(Operation frequency111kHz - 205kHz)	**Power Supply**:	Battery
Condition:	Temp:24.5°C;Humi:47.4%	**Test Site**:	DDT 3# Chamber
File Path:	d:\ts\2024 report data\Q24081515-2E\FCC\20240920-030015_H		
Memo:	Sample Number:S24081515-002		



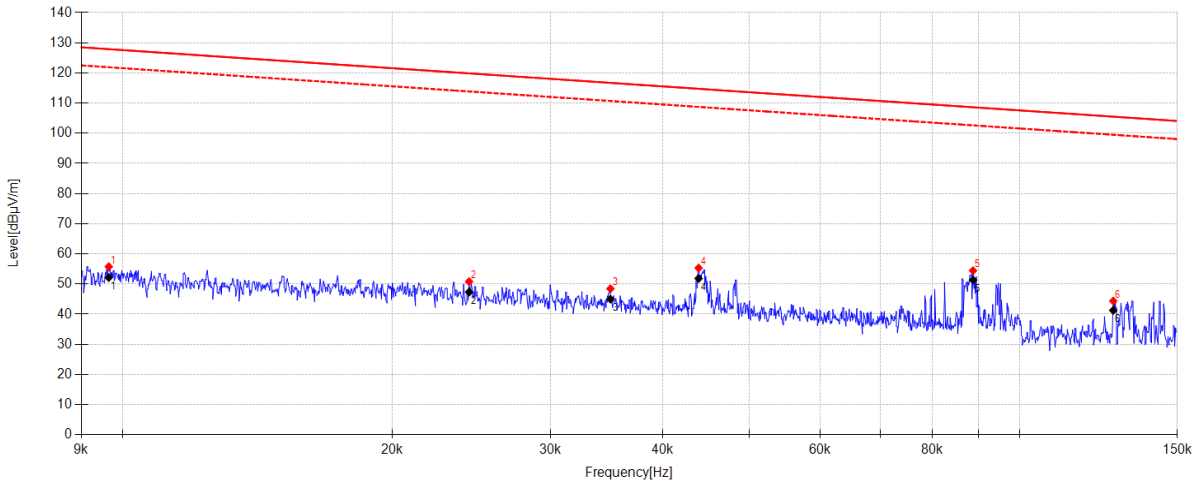
Data List										
NO.	**Freq. [MHz]**	**Reading [dBµV/m]**	**Antenna Factor [dB]**	**Cable loss [dB]**	**AMP [dB]**	**Level [dBµV/m]**	**Limit [dBµV/m]**	**Margin [dB]**	**Detector**	**Polarity**
1	0.280	63.30	20.17	3.25	-31.00	55.72	98.65	42.93	PK	X
2	0.407	69.07	20.25	3.25	-31.00	61.57	95.41	33.84	PK	X
3	0.679	60.91	20.34	3.26	-31.00	53.51	70.97	17.46	PK	X
4	2.276	49.52	20.40	3.32	-31.00	42.24	69.54	27.30	PK	X
5	7.591	45.24	20.57	3.53	-31.00	38.34	69.54	31.20	PK	X
6	24.662	43.01	19.88	3.72	-31.07	35.54	69.54	34.00	PK	X

Data List									
NO.	**Freq. [MHz]**	**Reading [dBµV/m]**	**Antenna Factor [dB]**	**Cable Loss [dB]**	**Result [dBµV/m]**	**Limit [dBµV/m]**	**Margin [dB]**	**Detector**	**Polarity**
1	0.280	59.79	20.17	3.25	52.21	98.65	46.44	AV	X
2	0.407	65.92	20.25	3.25	58.42	95.41	36.99	AV	X
3	0.679	57.76	20.34	3.26	50.36	70.97	20.61	QP	X
4	2.276	45.73	20.40	3.32	38.45	69.54	31.09	QP	X
5	7.591	41.45	20.57	3.53	34.55	69.54	34.99	QP	X
6	24.662	39.22	19.88	3.72	31.75	69.54	37.79	QP	X

Note:
1. Level = Reading + Factor.
2. Factor = Antenna Factor + Cable Loss - Preamp Gain + Site Loss Factor - 107.
3. Test setup: 9kHz-150kHz RBW: 300Hz, VBW: 1 kHz, Sweep time: auto.
150kHz-30MHz RBW: 10kHz, VBW: 30kHz, Sweep time: auto.
4. H = E – 51.5, where H is in dBµA/m and E in dBµV/m.

TR-4-E-009 Radiated Emission Test Result

Test Date:	2024-11-26	**Tested By**:	Gen Liu
EUT:	5000mAh/20W Magnetic Power Bank	**Model Number**:	PW-051C20W
Test Mode:	Working Mode(Operation frequency326kHz - 331kHz)	**Power Supply**:	Battery
Condition:	Temp:24.5°C;Humi:47.4%	**Test Site**:	DDT 3# Chamber
File Path:	d:\ts\2024 report data\Q24081515-2E\FCC\20241126-200041_H		
Memo:	Sample Number:S24081515-002		



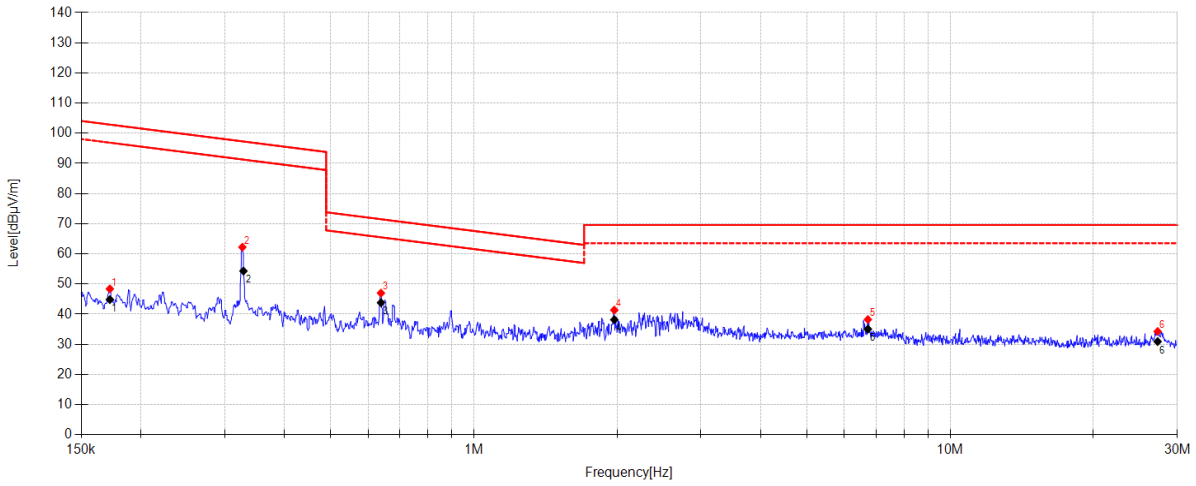
Data List										
NO.	**Freq. [MHz]**	**Reading [dBµV/m]**	**Antenna Factor [dB]**	**Cable loss [dB]**	**AMP [dB]**	**Level [dBµV/m]**	**Limit [dBµV/m]**	**Margin [dB]**	**Detector**	**Polarity**
1	0.010	62.41	20.50	3.22	-30.37	55.76	127.90	72.14	PK	X
2	0.024	57.63	20.46	3.22	-30.50	50.81	119.87	69.06	PK	X
3	0.035	55.39	20.40	3.23	-30.57	48.45	116.72	68.27	PK	X
4	0.044	62.30	20.40	3.24	-30.63	55.31	114.75	59.44	PK	X
5	0.089	61.74	20.40	3.23	-30.93	54.44	108.63	54.19	PK	X
6	0.127	51.95	20.21	3.22	-31.00	44.38	105.51	61.13	PK	X

Data List									
NO.	**Freq. [MHz]**	**Reading [dBµV/m]**	**Antenna Factor [dB]**	**Cable Loss [dB]**	**Result [dBµV/m]**	**Limit [dBµV/m]**	**Margin [dB]**	**Detector**	**Polarity**
1	0.010	58.81	20.50	3.22	52.16	127.86	75.70	AV	X
2	0.024	54.17	20.46	3.22	47.35	119.85	72.50	AV	X
3	0.035	51.93	20.40	3.23	44.99	116.72	71.73	AV	X
4	0.044	58.84	20.40	3.24	51.85	114.75	62.90	AV	X
5	0.089	58.64	20.40	3.23	51.34	108.63	57.29	AV	X
6	0.127	48.85	20.21	3.22	41.28	105.51	64.23	AV	X

Note:
1. Level = Reading + Factor.
2. Factor = Antenna Factor + Cable Loss - Preamp Gain + Site Loss Factor - 107.
3. Test setup: 9kHz-150kHz RBW: 300Hz, VBW: 1 kHz, Sweep time: auto.
150kHz-30MHz RBW: 10kHz, VBW: 30kHz, Sweep time: auto.
4. H = E – 51.5, where H is in dBµA/m and E in dBµV/m.

TR-4-E-009 Radiated Emission Test Result

Test Date:	2024-11-26	**Tested By**:	Gen Liu
EUT:	5000mAh/20W Magnetic Power Bank	**Model Number**:	PW-051C20W
Test Mode:	Working Mode(Operation frequency326kHz - 331kHz)	**Power Supply**:	Battery
Condition:	Temp:24.5°C;Humi:47.4%	**Test Site**:	DDT 3# Chamber
File Path:	d:\ts\2024 report data\Q24081515-2E\FCC\20241126-195804_H		
Memo:	Sample Number:S24081515-002		



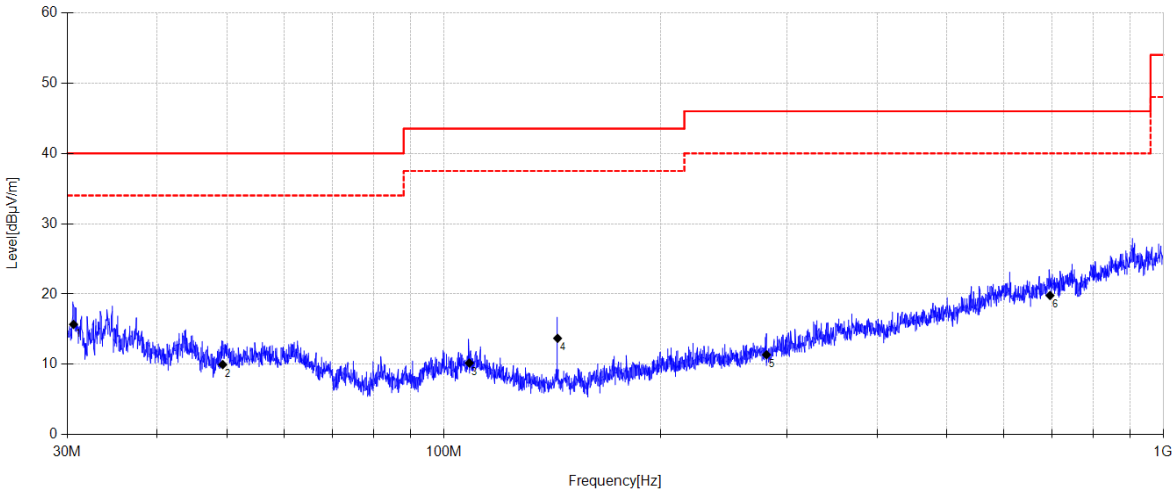
Data List										
NO.	**Freq. [MHz]**	**Reading [dBµV/m]**	**Antenna Factor [dB]**	**Cable loss [dB]**	**AMP [dB]**	**Level [dBµV/m]**	**Limit [dBµV/m]**	**Margin [dB]**	**Detector**	**Polarity**
1	0.172	56.04	20.11	3.24	-31.00	48.39	102.88	54.49	PK	X
2	0.327	69.77	20.20	3.25	-31.00	62.22	97.32	35.10	PK	X
3	0.638	54.41	20.33	3.26	-31.00	47.00	71.50	24.50	PK	X
4	1.972	48.65	20.40	3.31	-31.00	41.36	69.54	28.18	PK	X
5	6.721	45.14	20.59	3.50	-31.00	38.23	69.54	31.31	PK	X
6	27.272	41.66	19.96	3.74	-31.09	34.27	69.54	35.27	PK	X

Data List									
NO.	**Freq. [MHz]**	**Reading [dBµV/m]**	**Antenna Factor [dB]**	**Cable Loss [dB]**	**Result [dBµV/m]**	**Limit [dBµV/m]**	**Margin [dB]**	**Detector**	**Polarity**
1	0.172	52.5	20.11	3.24	44.85	102.89	58.04	AV	X
2	0.328	61.86	20.20	3.25	54.31	97.27	42.96	AV	X
3	0.638	51.23	20.33	3.26	43.82	71.50	27.68	QP	X
4	1.972	45.47	20.40	3.31	38.18	69.54	31.36	QP	X
5	6.721	41.96	20.59	3.50	35.05	69.54	34.49	QP	X
6	27.272	38.31	19.96	3.74	30.92	69.54	38.62	QP	X

Note:
1. Level = Reading + Factor.
2. Factor = Antenna Factor + Cable Loss - Preamp Gain + Site Loss Factor - 107.
3. Test setup: 9kHz-150kHz RBW: 300Hz, VBW: 1 kHz, Sweep time: auto.
150kHz-30MHz RBW: 10kHz, VBW: 30kHz, Sweep time: auto.
4. H = E – 51.5, where H is in dBµA/m and E in dBµV/m.

TR-4-E-009 Radiated Emission Test Result

Test Date:	2024-09-20	**Tested By**:	Gen Liu
EUT:	5000mAh/20W Magnetic Power Bank	**Model Number**:	PW-051C20W
Test Mode:	Working Mode	**Power Supply**:	Battery
Condition:	Temp:24.5°C;Humi:47.4%	**Test Site**:	DDT 3# Chamber
File Path:	d:\ts\2024 report data\Q24081515-2E\FCC\20240920-015640_H		
Memo:	Sample Number:S24081515-002		

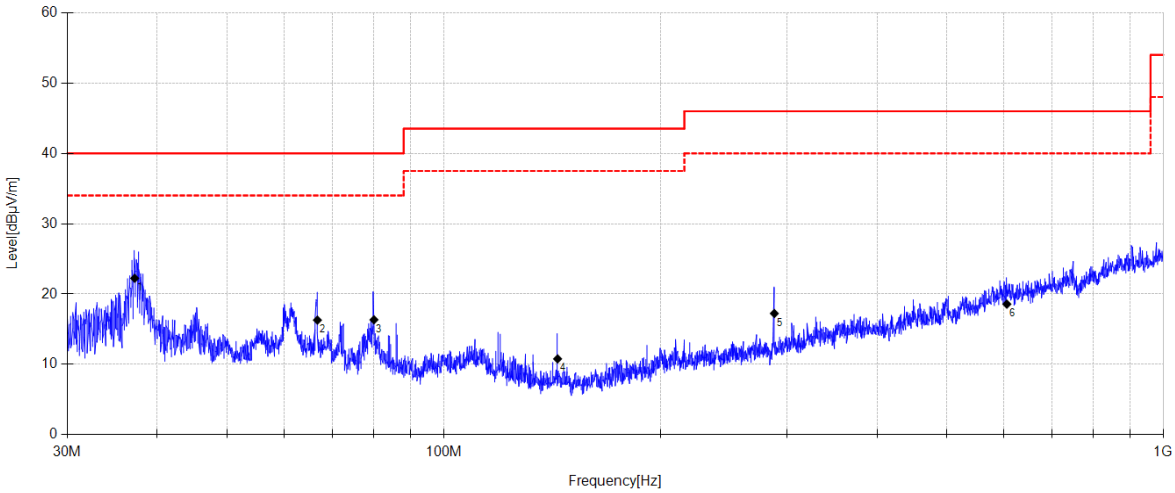


Data List									
NO.	**Freq. [MHz]**	**Reading [dBµV/m]**	**Antenna Factor [dB]**	**Cable Loss [dB]**	**Result [dBµV/m]**	**Limit [dBµV/m]**	**Margin [dB]**	**Detector**	**Polarity**
1	30.595	32.67	10.36	3.76	15.69	40.00	24.31	QP	Horizontal
2	49.320	24.4	12.80	3.88	9.98	40.00	30.02	QP	Horizontal
3	108.543	25.26	11.78	4.27	10.20	43.50	33.30	QP	Horizontal
4	143.986	31.09	9.30	4.46	13.71	43.50	29.79	QP	Horizontal
5	280.882	25.24	12.36	5.13	11.37	46.00	34.63	QP	Horizontal
6	695.930	24.94	19.68	6.68	19.80	46.00	26.20	QP	Horizontal

Note:
1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date:	2024-09-20	**Tested By**:	Gen Liu
EUT:	5000mAh/20W Magnetic Power Bank	**Model Number**:	PW-051C20W
Test Mode:	Working Mode	**Power Supply**:	Battery
Condition:	Temp:24.5°C;Humi:47.4%	**Test Site**:	DDT 3# Chamber
File Path:	d:\ts\2024 report data\Q24081515-2E\FCC\20240920-015737_V		
Memo:	Sample Number:S24081515-002		



Data List									
NO.	**Freq. [MHz]**	**Reading [dBµV/m]**	**Antenna Factor [dB]**	**Cable Loss [dB]**	**Result [dBµV/m]**	**Limit [dBµV/m]**	**Margin [dB]**	**Detector**	**Polarity**
1	37.206	37.9	11.64	3.80	22.24	40.00	17.76	QP	Vertical
2	66.769	33	10.40	4.00	16.30	40.00	23.70	QP	Vertical
3	80.009	34.66	8.70	4.09	16.35	40.00	23.65	QP	Vertical
4	143.986	28.17	9.30	4.46	10.79	43.50	32.71	QP	Vertical
5	288.062	30.64	12.81	5.17	17.24	46.00	28.76	QP	Vertical
6	606.145	24.59	19.09	6.39	18.57	46.00	27.43	QP	Vertical

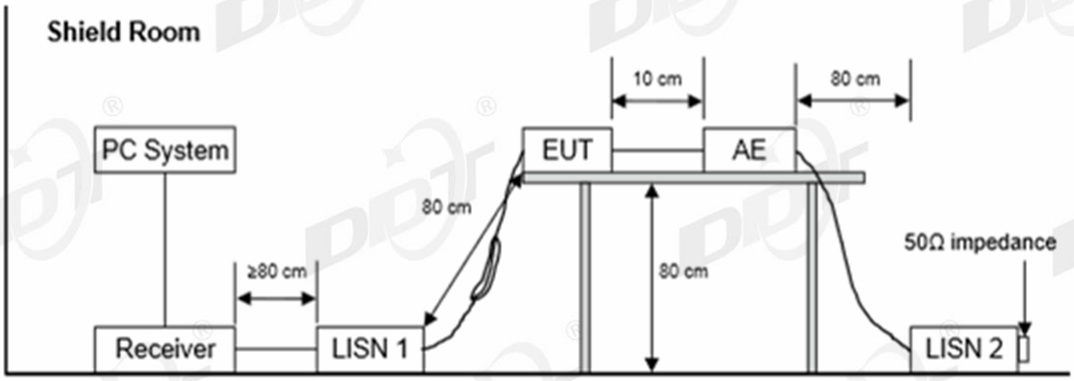
Note:
1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

5. Power Line Conducted Emissions

5.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Cal Due To
EMI Test Receiver	R&S	ESCI	DDT-ZC00235	2025/07/08
Two Line V-Network	R&S	ENV216	DDT-ZC00535	2025/07/08
Artificial mains	R&S	ESH2-Z5	DDT-ZC00538	2025/07/08
CE Cable 1	R&S	ESU8/RF2	DDT-ZC00566	2025/07/08
Pulse Limiter	SCHWARZBECK	ESH3-Z2	DDT-ZC00539	2025/07/08
EMI Test Software	Audix/TW	e3	DDT-ZC01252	/

5.2. Block diagram of test setup



5.3. Limits

Frequency	Quasi-Peak Level dB(mV)	Average Level dB(mV)
150 kHz~500 kHz	66 ~ 56*	56 ~ 46*
500 kHz~5 MHz	56	46
5 MHz~30 MHz	60	50

Note 1: * Decreasing linearly with logarithm of frequency.

Note 2: The lower limit shall apply at the transition frequencies.

5.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
AC Adapter	HUAWEI	HW-100400U01	Input: 100-240V~ 50/60Hz, Output: 5V/2A or 9V/2A or 10V/4A	N/A
Dummy load	N/A	N/A	N/A	N/A
Apple Watch	N/A	N/A	N/A	N/A

5.5. Test procedure

The EUT and Support equipment, if needed, were put placed on a non-metallic table, 80cm above the ground plane.

All support equipment power received from a second LISN.

Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.

The Receiver scanned from 150 kHz to 30 MHz for emissions in each of the test modes.

During the above scans, the emissions were maximized by cable manipulation.

The test mode(s) described in clause 2.4 were scanned during the preliminary test.

After the preliminary scan, we found the test mode producing the highest emission level.

The EUT configuration and worse cable configuration of the above highest emission levels were recorded for reference of the final test.

EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test.

A scan was taken on both power lines, Neutral and Line, recording at least the six highest emissions.

Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit.

The test data of the worst-case condition(s) was recorded.
The bandwidth of test receiver is set at 9 kHz.

5.6. Test result

PASS. (See below detailed test result)

Note1: All emissions not reported below are too low against the prescribed limits.

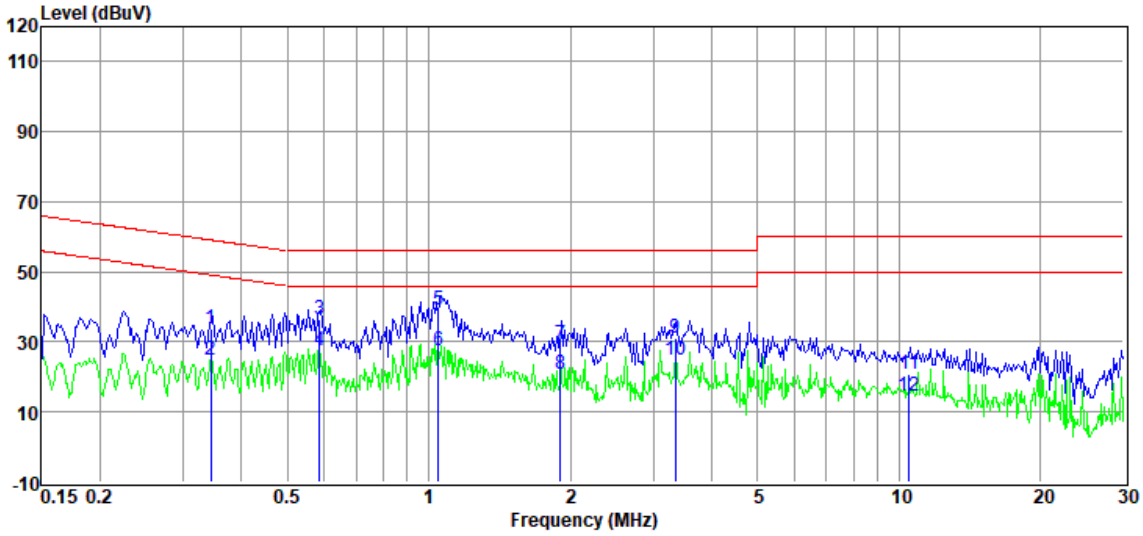
Note2: "-----" means Peak detection; "-----" means Average detection.

Note3: Pre-test AC conducted emission at both voltage AC 120V/60Hz and AC 240V/50Hz, recorded the worst case.

5.7. Test data

TR-4-E-010 Conducted Emission Test Result

Test Site	: DDT 1# Shield Room	D:\2024 CE report data\Q24081515-2E\CE-FCC.EM6	
Test Date	: 2024-09-09	**Tested By**	: Gen Liu
EUT	: 5000mAh/20W Magnetic Power Bank	**Model Number**	: PW-051C20W
Power Supply	: AC 120V/60Hz	**Test Mode**	: Charging+Working mode
Condition	: TEMP:21.5°C, RH:53.6%	**LISN**	: 2023 1# ENV216/LINE
Memo	: Sample Number:S24081515-002		

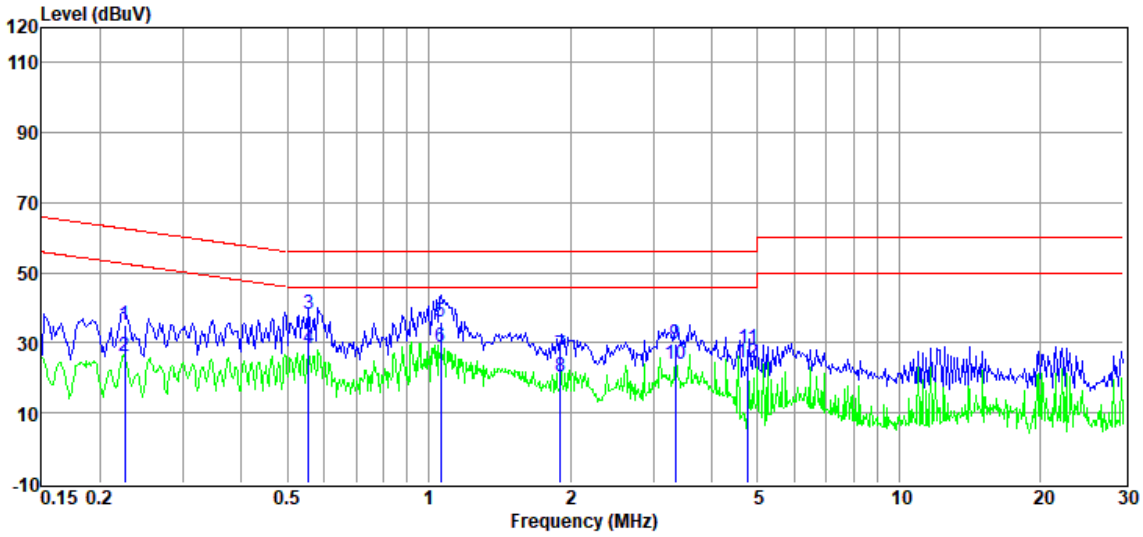


Item (Mark)	Freq. (MHz)	Read Level (dBµV)	LISN Factor (dB)	Cable Loss (dB)	Pulse Limiter Factor (dB)	Result Level (dBµV)	Limit Line (dBµV)	Over Limit (dB)	Detector	Phase
1	0.34	13.47	9.75	0.87	9.70	33.79	59.09	-25.30	QP	LINE
2	0.34	4.49	9.75	0.87	9.70	24.81	49.09	-24.28	Average	LINE
3	0.59	16.07	9.79	0.83	9.72	36.41	56.00	-19.59	QP	LINE
4	0.59	7.07	9.79	0.83	9.72	27.41	46.00	-18.59	Average	LINE
5	1.05	19.17	9.65	0.67	9.73	39.22	56.00	-16.78	QP	LINE
6	1.05	7.36	9.65	0.67	9.73	27.41	46.00	-18.59	Average	LINE
7	1.91	8.90	9.81	0.64	9.76	29.11	56.00	-26.89	QP	LINE
8	1.91	0.73	9.81	0.64	9.76	20.94	46.00	-25.06	Average	LINE
9	3.35	11.08	9.64	0.58	9.78	31.08	56.00	-24.92	QP	LINE
10	3.35	4.80	9.64	0.58	9.78	24.80	46.00	-21.20	Average	LINE
11	10.51	0.78	9.81	0.18	9.83	20.60	60.00	-39.40	QP	LINE
12	10.51	-5.20	9.81	0.18	9.83	14.62	50.00	-35.38	Average	LINE

Note:
1. Result Level = Read Level +LISN Factor + Pulse Limiter Factor + Cable loss.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

TR-4-E-010 Conducted Emission Test Result

Test Site	: DDT 1# Shield Room	D:\2024 CE report data\Q24081515-2E\CE-FCC.EM6	
Test Date	: 2024-09-09	**Tested By**	: Gen Liu
EUT	: 5000mAh/20W Magnetic Power Bank	**Model Number**	: PW-051C20W
Power Supply	: AC 120V/60Hz	**Test Mode**	: Charging+Working mode
Condition	: TEMP:21.5°C, RH:53.6%	**LISN**	: 2023 1# ENV216/NEUTRAL
Memo	: Sample Number:S24081515-002		



Item (Mark)	Freq. (MHz)	Read Level (dBµV)	LISN Factor (dB)	Cable Loss (dB)	Pulse Limiter Factor (dB)	Result Level (dBµV)	Limit Line (dBµV)	Over Limit (dB)	Detector	Phase
1	0.23	14.69	9.73	0.90	9.69	35.01	62.61	-27.60	QP	NEUTRAL
2	0.23	5.86	9.73	0.90	9.69	26.18	52.61	-26.43	Average	NEUTRAL
3	0.56	17.72	9.81	0.84	9.71	38.08	56.00	-17.92	QP	NEUTRAL
4	0.56	8.00	9.81	0.84	9.71	28.36	46.00	-17.64	Average	NEUTRAL
5	1.06	15.66	9.74	0.67	9.73	35.80	56.00	-20.20	QP	NEUTRAL
6	1.06	8.63	9.74	0.67	9.73	28.77	46.00	-17.23	Average	NEUTRAL
7	1.91	6.30	9.81	0.64	9.76	26.51	56.00	-29.49	QP	NEUTRAL
8	1.91	0.35	9.81	0.64	9.76	20.56	46.00	-25.44	Average	NEUTRAL
9	3.35	9.64	9.73	0.58	9.78	29.73	56.00	-26.27	QP	NEUTRAL
10	3.35	3.80	9.73	0.58	9.78	23.89	46.00	-22.11	Average	NEUTRAL
11	4.77	8.20	9.73	0.53	9.79	28.25	56.00	-27.75	QP	NEUTRAL
12	4.77	4.14	9.73	0.53	9.79	24.19	46.00	-21.81	Average	NEUTRAL

Note:
1. Result Level = Read Level +LISN Factor + Pulse Limiter Factor + Cable loss.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

6. Antenna Requirements

6.1. Limit

For intentional device, according to FCC 47 CFR 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. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

6.2. Result

The antenna used for this product as Antenna information described in section 2.1 of the report, and there is no other antenna than that furnished by the responsible party shall be used with the device.

8. Photos of the EUT

Please refer to DDT-Q24081515-2E appendix I

----------End Report----------