



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 Technology Development Zone
Manufacturer	:	Tianjin Zowda New Energy Technology Co., Limited
Address of Manufacturer	:	NO. 71 Xinhuan South Street, West Zone of Tianjin Economic Technology Development Zone
Equipment under Test	:	10000mAh/22.5W Magnetic
Model No.	:	J2641, ZWPWWA-101C1A22W, W201, J2642, J2643, J2644 J2645, J2646, J2647, J2648, J2649, J2650, A2641, A2642, A2643, A2644, A2645, A2646, A2647, A2648, A2649, A2650, B2641, B2642, B2643, B2644, B2645, B2646, B2647, B2648, B2649, B2650
FCC ID	:	2BFS6-J2641
Test Standard(s)	:	FCC Rules and Regulations Part 15 Subpart C, ANSI C63.10:2013
Report No.	:	DDT-RE24021919-2E01
Issue Date	:	2024/05/16
Issue By	:	Guangdong Dongdian Testing Service Co., Ltd.
Address of Laboratory	:	Unit 2, Building 1, No. 17, Zongbu 2nd Road, Songshan Lake Park, Dongguan, Guangdong, China, 523808

REPORT

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Test Report Declare

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Manufacturer	:	Tianjin Zowda New Energy Technology Co., Limited
Address of Manufacturer	:	NO. 71 Xinhuan South Street, West Zone of Tianjin Economic Technology Development Zone

Test Standard Used:

FCC Rules and Regulations Part 15 Subpart C

Test procedure used:

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.

After test and evaluation, our opinion is that the equipment provided for test compliance with the requirement of the above FCC standards.

Report No.:	DDT-RE24021919-2E01		
Date of Receipt:	2024/03/28	Date of Test:	2024/03/28 ~ 2024/05/16

Prepared By:**Approved By:****Ziqin Chen/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	2024/05/16	

1 Summary of Test Results

Description of Test Item	Standard	Results
20 dB Bandwidth	FCC Part 15: 15.215	Pass
Radiated Emission	FCC Part 15: 15.209	Pass
Power Line Conducted Emissions	FCC Part 15: 15.207	Pass
Antenna Requirement	FCC Part 15: 15.203	Pass

2 General Test Information

2.1. Description of EUT

EUT* Name	: 10000mAh/22.5W Magnetic
Model Number	: J2641, ZWPWWWA-101C1A22W, W201, J2642, J2643, J2644, J2645, J2646, J2647, J2648, J2649, J2650, A2641, A2642, A2643, A2644, A2645, A2646, A2647, A2648, A2649, A2650, B2641, B2642, B2643, B2644, B2645, B2646, B2647, B2648, B2649, B2650
Difference of model number	: All models are identical except the model number, therefore the test performed on the model ZWPWWWA-101C1A22W.
EUT function description	: Please reference user manual of this device
Power Supply	: Input: Powered by Type-C port 5V $\overline{\text{---}}$ 3A, 9V $\overline{\text{---}}$ 2.22A, 12V $\overline{\text{---}}$ 1.67A or DC 3.85V Polymer Li-ion built-in battery Output: Type-C port: 5V $\overline{\text{---}}$ 3A, 9V $\overline{\text{---}}$ 2.22A, 12V $\overline{\text{---}}$ 1.75A; PPS: 5V-11V $\overline{\text{---}}$ 2A USB-A port: 5V $\overline{\text{---}}$ 3A, 9V $\overline{\text{---}}$ 2.2A, 12V $\overline{\text{---}}$ 1.75A Wireless: 5V $\overline{\text{---}}$ 1A, 7.5V $\overline{\text{---}}$ 1A, 9V $\overline{\text{---}}$ 1.12A, 9V $\overline{\text{---}}$ 1.66A
Wireless charging Operation frequency	: 111kHz - 205kHz
Antenna Type	: Inductive loop coil antenna
Sample type	: Series production

Note: EUT is the abbreviation of equipment under test.

In section 15.31(m), regards to the operating frequency range less than 1 MHz, only one of channel was selected to perform the test.

Frequency (kHz)
132.3

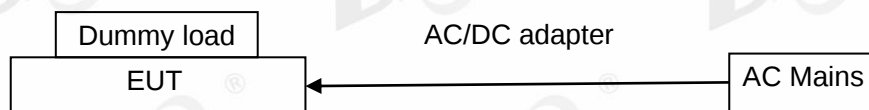
2.2. Accessories of EUT

Description of Accessories	Manufacturer	Model number	Serial No.	Other
/	/	/	/	/

2.3. Assistant equipment used for test

Description of Accessories	Manufacturer	Model number	Serial No.	Other
Dummy load	N/A	N/A	N/A	N/A

2.4. Block diagram of EUT configuration for test



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:	21-25 °C
Humidity range:	40-75%
Pressure range:	86-106 kPa

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, G-20118

2.8. Measurement uncertainty

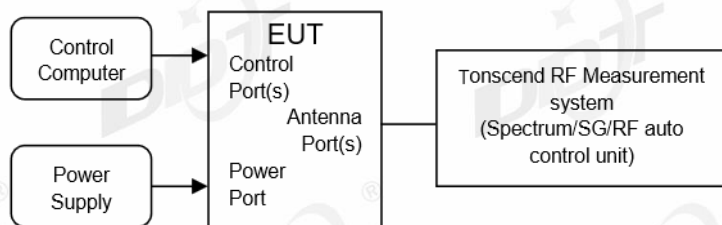
Test Item	Uncertainty
Uncertainty for Conduction emission test	3.32 dB (150 kHz - 30 MHz)
	3.72 dB (9 kHz - 150 kHz)
Uncertainty for Radiation Emission test (30 MHz - 1 GHz)	4.70 dB (Antenna Polarize: V)
	4.84 dB (Antenna Polarize: H)
Uncertainty for Radiation Emission test (1 GHz to 18 GHz)	4.10 dB (1-6 GHz)
	4.40 dB (6 GHz - 18 GHz)
Bandwidth	1.1%
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

3 Equipment Used During Test

Equipment	Manufacturer	Model No.	Serial Number	Due Date
☑RF Connected Test (RF Measurement System 4#)				
Signal &Spectrum Analyzer	R&S	FSV3044	101173	2025/03/31
Wideband Radio Communication Tester	R&S	CMW500	168801	2025/03/31
MXG Vector Signal Generator	Agilent	N5182A	MY48180737	2025/03/31
PSG Vector Signal Generator	Agilent	E8267D	US49060192	2024/09/05
RF Control Unit	Tonsend	JS0806-2	21I8060485	2025/03/31
TEMP&HUMI Programmable Chamber	ZHIXIANG	ZXGDJS-150L	ZX170110-A	2025/04/22
Test Software	Tonscend	JS1120-3	Ver.3.2.22	N/A

4 20 dB Bandwidth

4.1. Block diagram of test setup



4.2. 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.

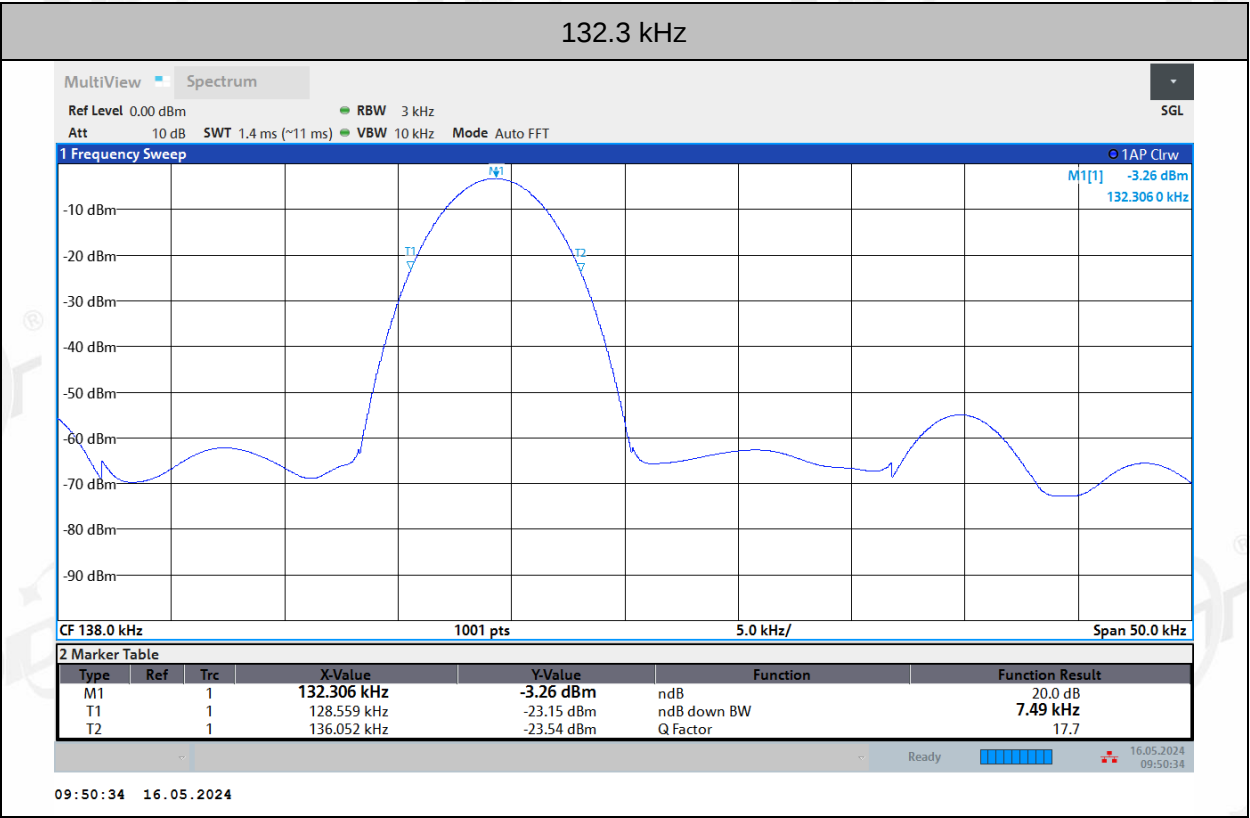
4.3. Test procedure

- (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 3kHz RBW and 10 kHz VBW. The 20 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20 dB.

4.4. Test result

Freq. (kHz)	20 dB bandwidth Result (kHz)	Conclusion
132.3	7.49	Pass

4.5. Original test data



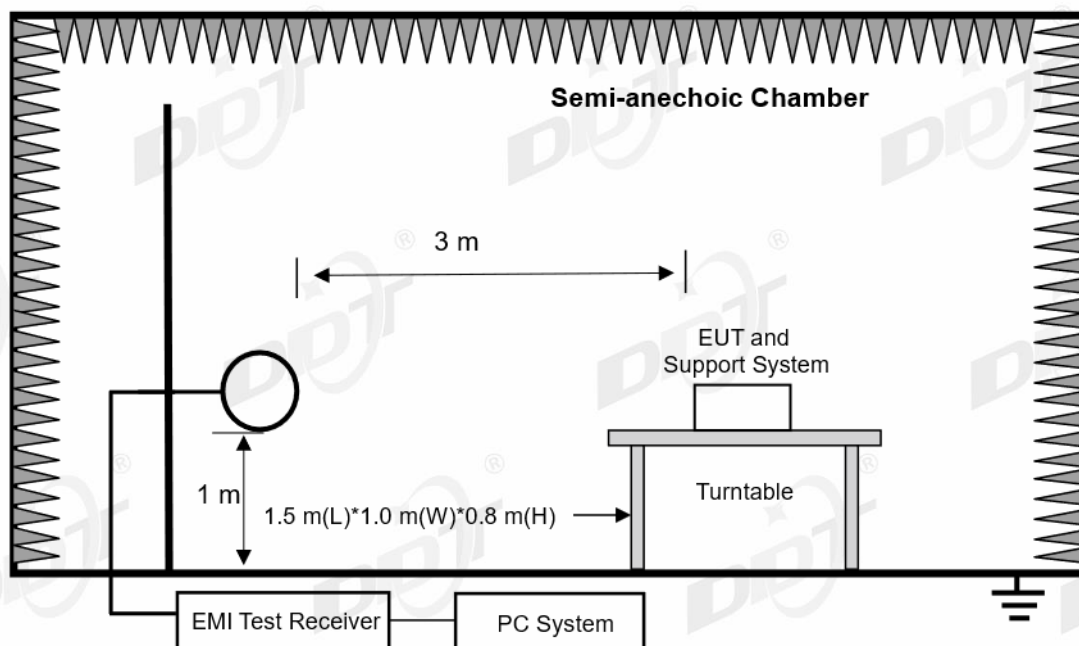
5 Radiated Emission

5.1. Test equipment

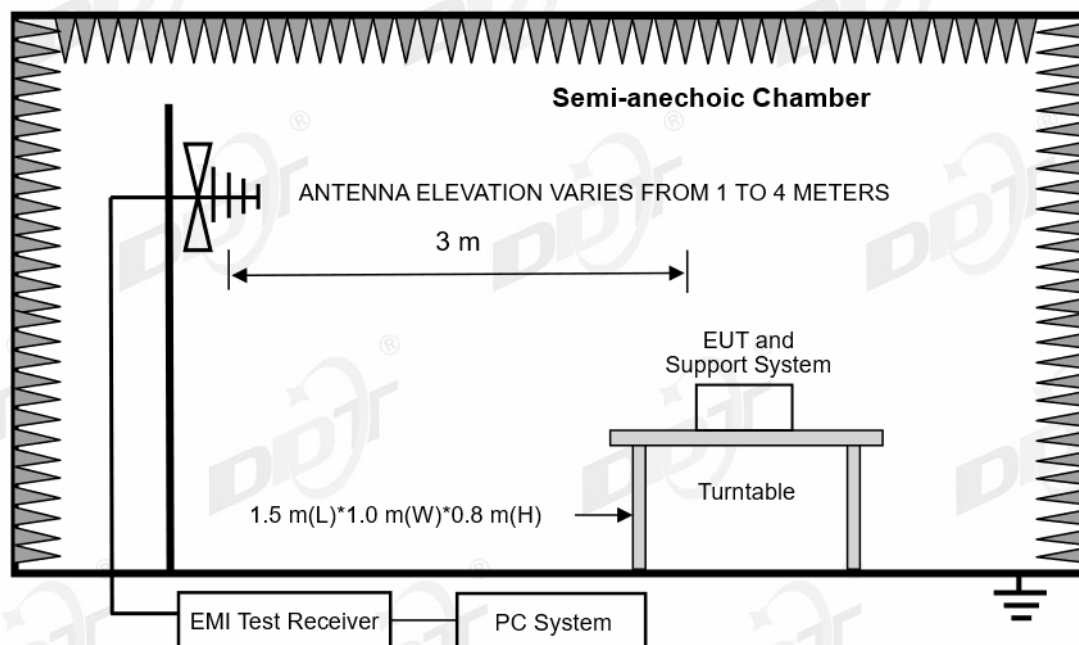
Equipment	Manufacturer	Model No.	Serial Number	Due Date
☑Radiation 3#chamber				
EMI TEST RECEIVER	R&S	ESU26	100472	2025/03/31
PSA Series Spectrum Analyzer	Agilent	E4447A	MY50180031	2025/03/31
Active Loop Antenna	Schwarzbeck	FMZB-1519	1519-038	2025/09/10
Trilog Broadband Antenna	Schwarzbeck	VULB 9163	01429	2025/07/11
Double Ridged Horn Antenna	Schwarzbeck	BBHA 9120 D	02468	2024/09/17
Broad Band Horn Antenna	Schwarzbeck	BBHA 9170	790	2025/04/25
Pre-amplifier	COM-POWER	PAM-118A	18040084	2024/07/14
Pre-amplifier	COM-POWER	PAM-840A	461369	2025/03/31
RE Cable	N/A	W23.02 CP1-X2 + W23.09 AP1-X8+ JCT26S-NJ-NJ-1.5 M	4.5M+8M+1.5 M	2025/03/31
RF Cable	Yuhu	JCTB810-NJ-NJ-9 M+ ZT26S-SMAJ-SMA J-1M	21123964	2025/03/31
Band Reject Filter(2400-2500 MHz)	REBES	BRM50702	G555	N/A
Band Reject Filter(5150-5880 MHz)	REBES	BRM50716	G392	N/A
High Pass Filter(8000-25000 MHz)	XB	XBLBQ-GTA67	210820-2-3	N/A
High Pass Filter(500-2000 MHz)	REBES	HPM50102	004	N/A
High Pass Filter(1200-18000 MHz)	REBES	HPM50108	056	N/A
Test Software	Tonscend	JS32-RE	V 5.0.0.1	N/A

5.2. Block diagram of test setup

In 3 m Anechoic Chamber, test setup diagram for 9 kHz - 30 MHz:



In 3 m Anechoic Chamber, test setup diagram for 30 MHz - 1 GHz:



5.3. Limit

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V/m}$	$\text{dB}(\mu\text{V})/\text{m}$
0.009 ~ 0.490	300	$2400/F(\text{kHz})$	$67.6-20\log(F)$
0.490 ~ 1.705	30	$24000/F(\text{kHz})$	$87.6-20\log(F)$
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:

$$\text{Limit}_{3\text{m}}(\text{dB}\mu\text{V/m}) = \text{Limit}_{300\text{m}}(\text{dB}\mu\text{V/m}) + 40\log(300\text{m}/3\text{m}) = \text{Limit}_{300\text{m}}(\text{dB}\mu\text{V/m}) + 80$$

$$\text{Limit}_{3\text{m}}(\text{dB}\mu\text{V/m}) = \text{Limit}_{30\text{m}}(\text{dB}\mu\text{V/m}) + 40\log(30\text{m}/3\text{m}) = \text{Limit}_{30\text{m}}(\text{dB}\mu\text{V/m}) + 40$$

5.4. Test procedure

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

(2) Test antenna was located 3m 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 30 MHz, the Trilog Broadband Antenna or Horn Antenna was located 3 m 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 1 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) Rotated EUT though three orthogonal axes to determine the attitude of EUT arrangement produce highest emissions. Spectrum frequency from 9 kHz to 1 GHz (tenth harmonic of fundamental frequency) was investigated.

(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 equipments 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

5.5. Test result

Pass. (See below detailed test result)

Below 30 MHz:

TR-4-E-009 Radiated Emission Test Result

Test Date: 2024-05-14

Tested By: Genliu

EUT: 10000mAh/22.5W Magnetic

Model Number: ZWPWWWA-101C1A22W

Test Mode: Operate mode

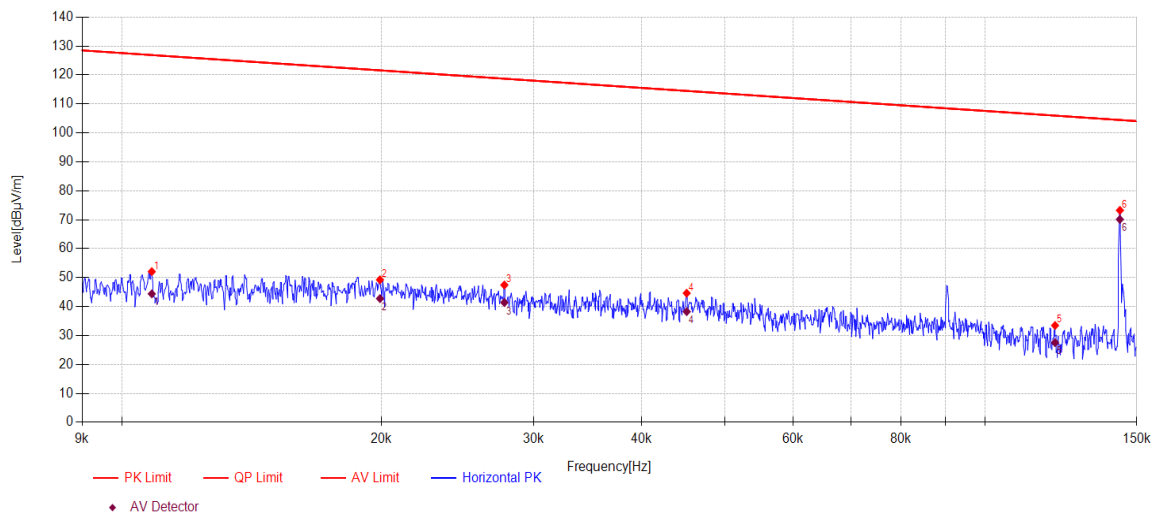
Power Supply: Battery

Condition: Temp:23.4°C;Humi:62.3%

Test Site: DDT 3# Chamber

File Path: d:\ts\2024 report data\Q24021919-2E\FCC 30M-1G\20240514-213403_X

Memo: X



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	0.011	60.80	20.50	0.07	-29.30	52.07	126.90	74.83	PK	Horizontal
2	0.020	57.99	20.50	0.07	-29.32	49.24	121.61	72.37	PK	Horizontal
3	0.028	56.29	20.42	0.07	-29.33	47.45	118.73	71.28	PK	Horizontal
4	0.045	53.52	20.40	0.07	-29.36	44.63	114.51	69.88	PK	Horizontal
5	0.121	42.63	20.25	0.07	-29.49	33.46	105.97	72.51	PK	Horizontal
6	0.143	82.57	20.13	0.07	-29.53	73.24	104.47	31.23	PK	Horizontal

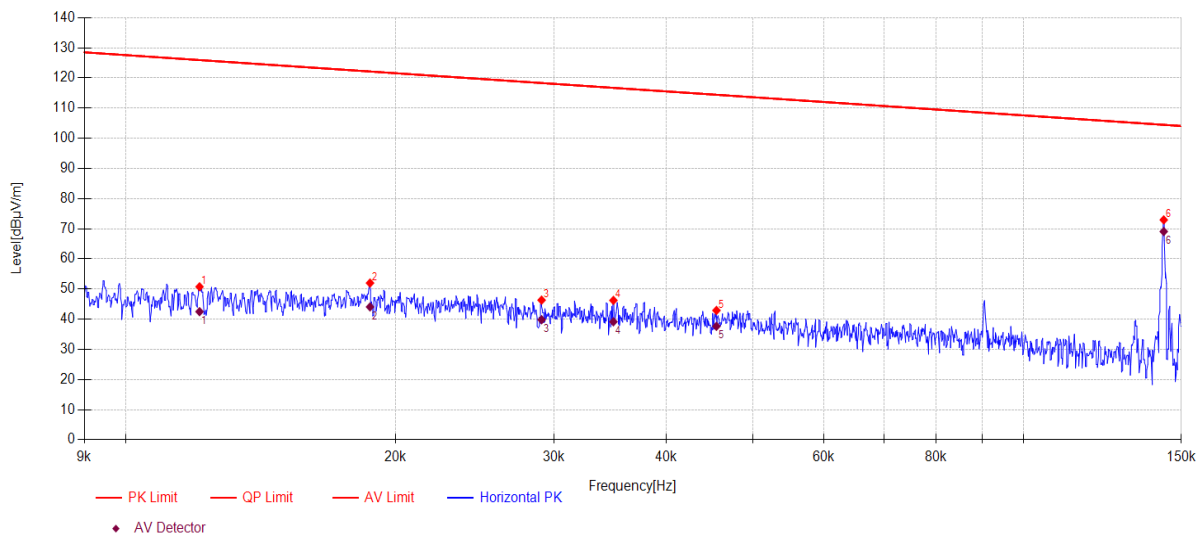
Data List										
NO.	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	0.011	53.12	20.50	0.07	-29.30	44.39	126.93	82.54	AV	Horizontal
2	0.020	51.51	20.50	0.07	-29.32	42.76	121.62	78.86	AV	Horizontal
3	0.028	50.23	20.42	0.07	-29.33	41.39	118.72	77.33	AV	Horizontal
4	0.045	47.14	20.40	0.07	-29.36	38.25	114.51	76.26	AV	Horizontal
5	0.121	36.71	20.25	0.07	-29.49	27.54	105.97	78.43	AV	Horizontal
6	0.143	79.45	20.13	0.07	-29.53	70.12	104.47	34.35	AV	Horizontal

Note:

- Level = Reading + Cable Loss + Antenna Factor + AMP
- If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
- Test setup: 9kHz-150kHz RBW: 300Hz, VBW: 1 kHz, Sweep time: auto.
150kHz-30MHz RBW: 10kHz, VBW: 30kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2024-05-14 **Tested By:** Genliu
EUT: 10000mAh/22.5W Magnetic **Model Number:** ZWPWWWA-101C1A22W
Test Mode: Operate mode **Power Supply:** Battery
Condition: Temp:23.4°C;Humi:62.3% **Test Site:** DDT 3# Chamber
File Path: d:\ts\2024 report data\Q24021919-2E\FCC 30M-1G\20240514-213431_Y
Memo: Y



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	0.012	59.49	20.50	0.07	-29.31	50.75	125.95	75.20	PK	Horizont
2	0.019	60.74	20.50	0.07	-29.32	51.99	122.15	70.16	PK	Horizont
3	0.029	55.17	20.41	0.07	-29.33	46.32	118.33	72.01	PK	Horizont
4	0.035	55.11	20.40	0.07	-29.34	46.24	116.73	70.49	PK	Horizont
5	0.046	51.79	20.40	0.07	-29.36	42.90	114.43	71.53	PK	Horizont
6	0.143	82.27	20.13	0.07	-29.53	72.94	104.47	31.53	PK	Horizont

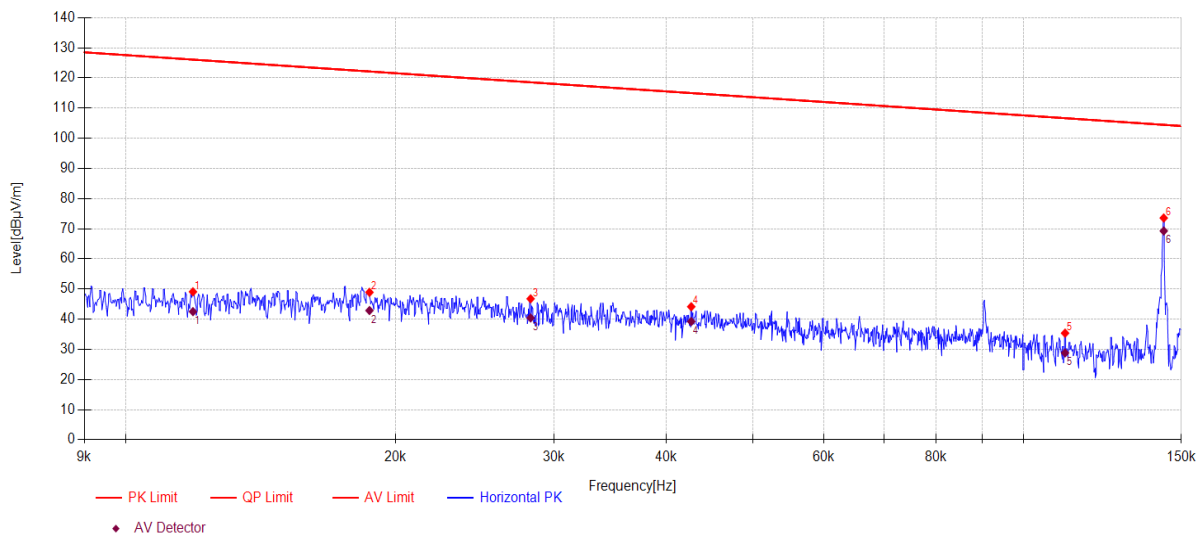
Data List										
NO.	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	0.012	51.23	20.50	0.07	-29.31	42.49	125.94	83.45	AV	Horizont
2	0.019	52.82	20.50	0.07	-29.32	44.07	122.16	78.09	AV	Horizont
3	0.029	48.66	20.41	0.07	-29.33	39.81	118.32	78.51	AV	Horizont
4	0.035	48.01	20.40	0.07	-29.34	39.14	116.72	77.58	AV	Horizont
5	0.046	46.52	20.40	0.07	-29.36	37.63	114.44	76.81	AV	Horizont
6	0.143	78.41	20.13	0.07	-29.53	69.08	104.47	35.39	AV	Horizont

Note:

- Level = Reading + Cable Loss + Antenna Factor + AMP
- If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
- Test setup: 9kHz-150kHz RBW: 300Hz, VBW: 1 kHz, Sweep time: auto.
150kHz-30MHz RBW: 10kHz, VBW: 30kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2024-05-14 **Tested By:** Genliu
EUT: 10000mAh/22.5W Magnetic **Model Number:** ZWPWWWA-101C1A22W
Test Mode: Operate mode **Power Supply:** Battery
Condition: Temp:23.4°C;Humi:62.3% **Test Site:** DDT 3# Chamber
File Path: d:\ts\2024 report data\Q24021919-2E\FCC 30M-1G\20240514-213459_Z
Memo: Z



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	0.012	57.82	20.50	0.07	-29.30	49.09	126.09	77.00	PK	Horizont
2	0.019	57.67	20.50	0.07	-29.32	48.92	122.16	73.24	PK	Horizont
3	0.028	55.60	20.42	0.07	-29.33	46.76	118.57	71.81	PK	Horizont
4	0.043	53.03	20.40	0.07	-29.36	44.14	114.99	70.85	PK	Horizont
5	0.111	44.48	20.29	0.07	-29.48	35.36	106.67	71.31	PK	Horizont
6	0.143	82.90	20.13	0.07	-29.53	73.57	104.47	30.90	PK	Horizont

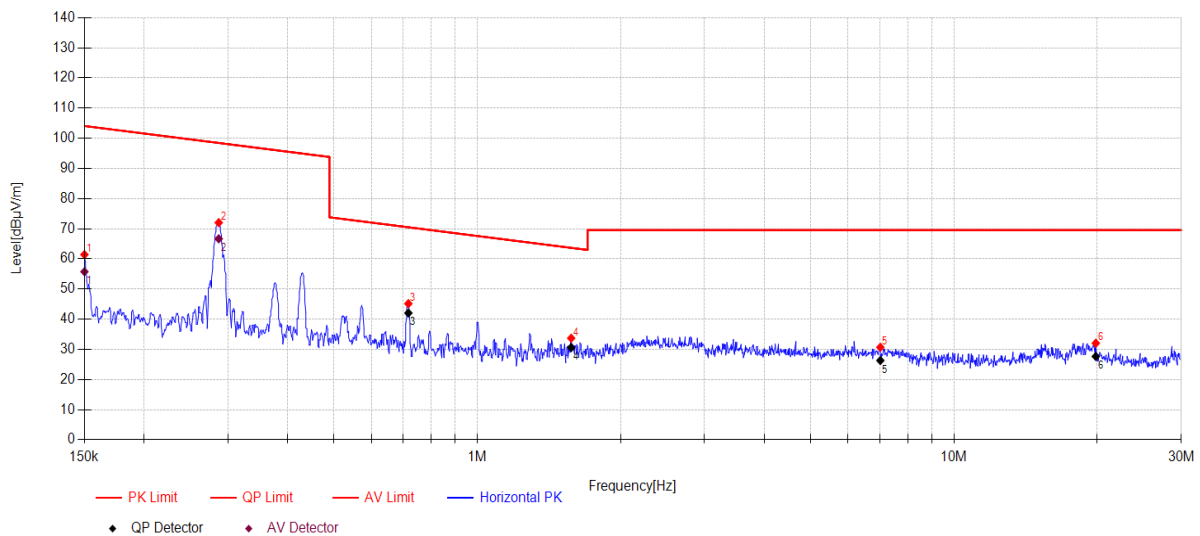
Data List										
NO.	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	0.012	51.23	20.50	0.07	-29.30	42.50	126.08	83.58	AV	Horizont
2	0.019	51.62	20.50	0.07	-29.32	42.87	122.16	79.29	AV	Horizont
3	0.028	49.24	20.42	0.07	-29.33	40.40	118.56	78.16	AV	Horizont
4	0.043	48.11	20.40	0.07	-29.36	39.22	114.99	75.77	AV	Horizont
5	0.111	37.92	20.29	0.07	-29.48	28.80	106.67	77.87	AV	Horizont
6	0.143	78.59	20.13	0.07	-29.53	69.26	104.47	35.21	AV	Horizont

Note:

- Level = Reading + Cable Loss + Antenna Factor + AMP
- If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
- Test setup: 9kHz-150kHz RBW: 300Hz, VBW: 1 kHz, Sweep time: auto.
150kHz-30MHz RBW: 10kHz, VBW: 30kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2024-05-14 **Tested By:** Genliu
EUT: 10000mAh/22.5W Magnetic **Model Number:** ZWPWWWA-101C1A22W
Test Mode: Operate mode **Power Supply:** Battery
Condition: Temp:23.4°C;Humi:62.3% **Test Site:** DDT 3# Chamber
File Path: d:\ts\2024 report data\Q24021919-2E\FCC 30M-1G\20240514-213535_X
Memo: X



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	0.150	70.79	20.10	0.07	-29.54	61.42	104.08	42.66	PK	Horizont
2	0.287	81.55	20.18	0.08	-29.78	72.03	98.45	26.42	PK	Horizont
3	0.717	55.54	20.34	0.08	-30.81	45.15	70.49	25.34	PK	Horizont
4	1.575	44.66	20.40	0.13	-31.49	33.70	63.66	29.96	PK	Horizont
5	7.011	41.29	20.60	0.17	-31.37	30.69	69.54	38.85	PK	Horizont
6	19.849	42.72	20.07	0.40	-31.15	32.04	69.54	37.50	PK	Horizont

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	0.150	65.12	20.10	0.07	-29.54	55.75	104.08	48.33	AV	Horizont
2	0.287	76.18	20.18	0.08	-29.78	66.66	98.45	31.79	AV	Horizont
3	0.717	52.42	20.34	0.08	-30.81	42.03	70.49	28.46	QP	Horizont
4	1.575	41.54	20.40	0.13	-31.49	30.58	63.66	33.08	QP	Horizont
5	7.011	36.89	20.60	0.17	-31.37	26.29	69.54	43.25	QP	Horizont
6	19.849	38.32	20.07	0.40	-31.15	27.64	69.54	41.90	QP	Horizont

Note:

- Level = Reading + Cable Loss + Antenna Factor + AMP
- If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
- Test setup: 9kHz-150kHz RBW: 300Hz, VBW: 1 kHz, Sweep time: auto.
150kHz-30MHz RBW: 10kHz, VBW: 30kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2024-05-14

Tested By: Genliu

EUT: 10000mAh/22.5W Magnetic

Model Number: ZWPWWWA-101C1A22W

Test Mode: Operate mode

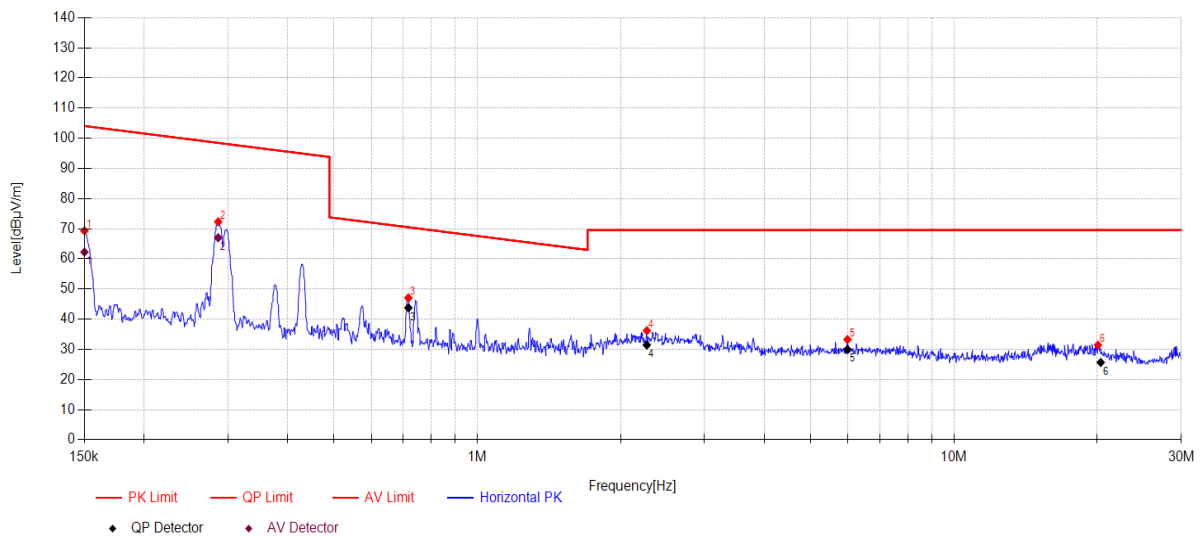
Power Supply: Battery

Condition: Temp:23.4°C;Humi:62.3%

Test Site: DDT 3# Chamber

File Path: d:\ts\2024 report data\Q24021919-2E\FCC 30M-1G\20240514-213608_Y

Memo: Y



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	0.150	78.65	20.10	0.07	-29.54	69.28	104.08	34.80	PK	Horizont
2	0.286	81.81	20.18	0.08	-29.78	72.29	98.47	26.18	PK	Horizont
3	0.717	57.47	20.34	0.08	-30.81	47.08	70.49	23.41	PK	Horizont
4	2.269	47.13	20.40	0.13	-31.47	36.19	69.54	33.35	PK	Horizont
5	5.981	43.92	20.55	0.16	-31.39	33.24	69.54	36.30	PK	Horizont
6	20.060	42.10	20.04	0.40	-31.15	31.39	69.54	38.15	PK	Horizont

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	0.150	71.62	20.10	0.07	-29.54	62.25	104.08	41.83	AV	Horizont
2	0.286	76.52	20.18	0.08	-29.78	67.00	98.47	31.47	AV	Horizont
3	0.717	54.16	20.34	0.08	-30.81	43.77	70.49	26.72	QP	Horizont
4	2.269	42.37	20.40	0.13	-31.47	31.43	69.54	38.11	QP	Horizont
5	5.981	40.61	20.55	0.16	-31.39	29.93	69.54	39.61	QP	Horizont
6	20.327	36.38	20.00	0.41	-31.15	25.64	69.54	43.90	QP	Horizont

Note:

1. 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: 9kHz-150kHz RBW: 300Hz, VBW: 1 kHz, Sweep time: auto.
150kHz-30MHz RBW: 10kHz, VBW: 30kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2024-05-14

Tested By: Genliu

EUT: 10000mAh/22.5W Magnetic

Model Number: ZWPWWWA-101C1A22W

Test Mode: Operate mode

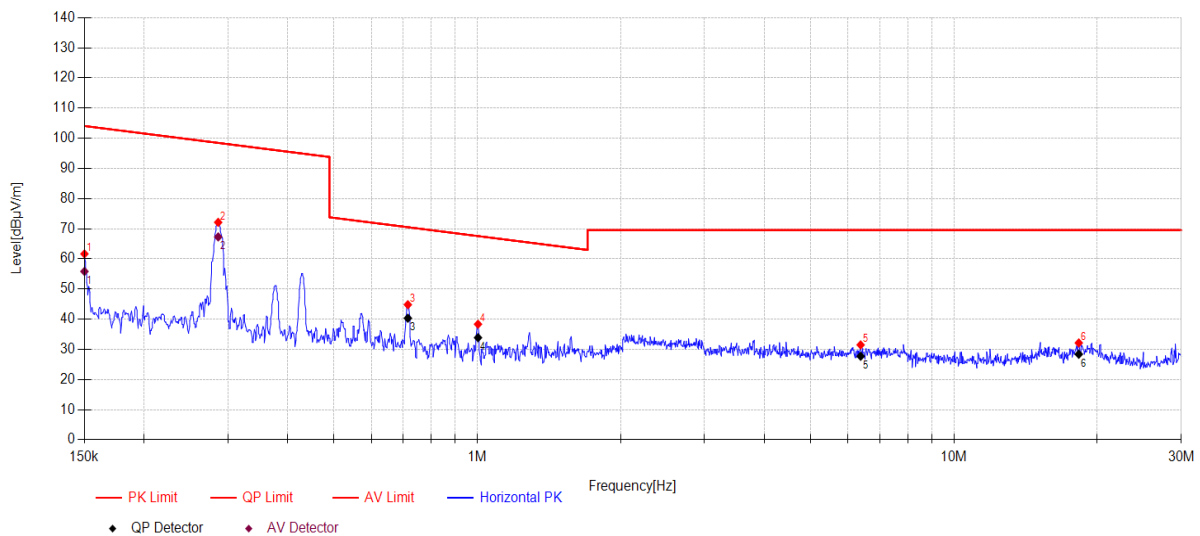
Power Supply: Battery

Condition: Temp:23.4°C;Humi:62.3%

Test Site: DDT 3# Chamber

File Path: d:\ts\2024 report data\Q24021919-2E\FCC 30M-1G\20240514-213709_Z

Memo: Z



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	0.150	71.03	20.10	0.07	-29.54	61.66	104.08	42.42	PK	Horizont
2	0.286	81.64	20.18	0.08	-29.78	72.12	98.47	26.35	PK	Horizont
3	0.715	55.20	20.34	0.08	-30.81	44.81	70.51	25.70	PK	Horizont
4	1.004	49.32	20.40	0.12	-31.50	38.34	67.57	29.23	PK	Horizont
5	6.374	42.11	20.57	0.17	-31.38	31.47	69.54	38.07	PK	Horizont
6	18.284	42.79	20.16	0.37	-31.18	32.14	69.54	37.40	PK	Horizont

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	0.150	65.21	20.10	0.07	-29.54	55.84	104.08	48.24	AV	Horizont
2	0.286	76.81	20.18	0.08	-29.78	67.29	98.47	31.18	AV	Horizont
3	0.715	50.72	20.34	0.08	-30.81	40.33	70.51	30.18	QP	Horizont
4	1.004	44.84	20.40	0.12	-31.50	33.86	67.57	33.71	QP	Horizont
5	6.374	38.35	20.57	0.17	-31.38	27.71	69.54	41.83	QP	Horizont
6	18.284	39.03	20.16	0.37	-31.18	28.38	69.54	41.16	QP	Horizont

Note:

1. 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: 9kHz-150kHz RBW: 300Hz, VBW: 1 kHz, Sweep time: auto.
150kHz-30MHz RBW: 10kHz, VBW: 30kHz, Sweep time: auto.

Above 30 MHz:

TR-4-E-009 Radiated Emission Test Result

Test Date: 2024-05-14

Tested By: Genliu

EUT: 10000mAh/22.5W Magnetic

Model Number: ZWPWWWA-101C1A22W

Test Mode: Operate mode

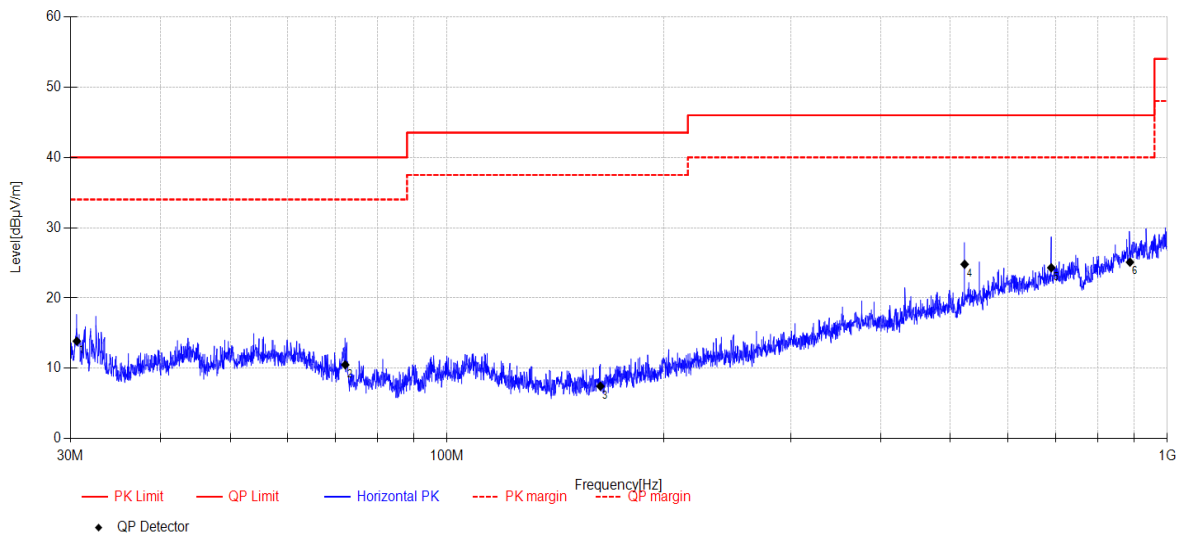
Power Supply: Battery

Condition: Temp:23.4°C;Humi:62.3%

Test Site: DDT 3# Chamber

File Path: d:\ts\2024 report data\Q24021919-2E\FCC 30M-1G\20240514-210508_H

Memo:



Data List										
NO.	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable Loss [dB]	AMP [dB]	Result [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	30.616	30.02	10.36	4.48	-30.99	13.87	40.00	26.13	QP	Horizontal
2	72.223	26.75	9.51	4.80	-30.55	10.51	40.00	29.49	QP	Horizontal
3	163.241	23.75	9.00	5.43	-30.71	7.47	43.50	36.03	QP	Horizontal
4	523.152	30.59	17.09	7.02	-29.90	24.80	46.00	21.20	QP	Horizontal
5	690.099	26.99	19.50	7.72	-29.90	24.31	46.00	21.69	QP	Horizontal
6	887.631	24.5	21.41	8.30	-29.11	25.10	46.00	20.90	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: 2024-05-14

Tested By: Genliu

EUT: 10000mAh/22.5W Magnetic

Model Number: ZWPWWWA-101C1A22W

Test Mode: Operate mode

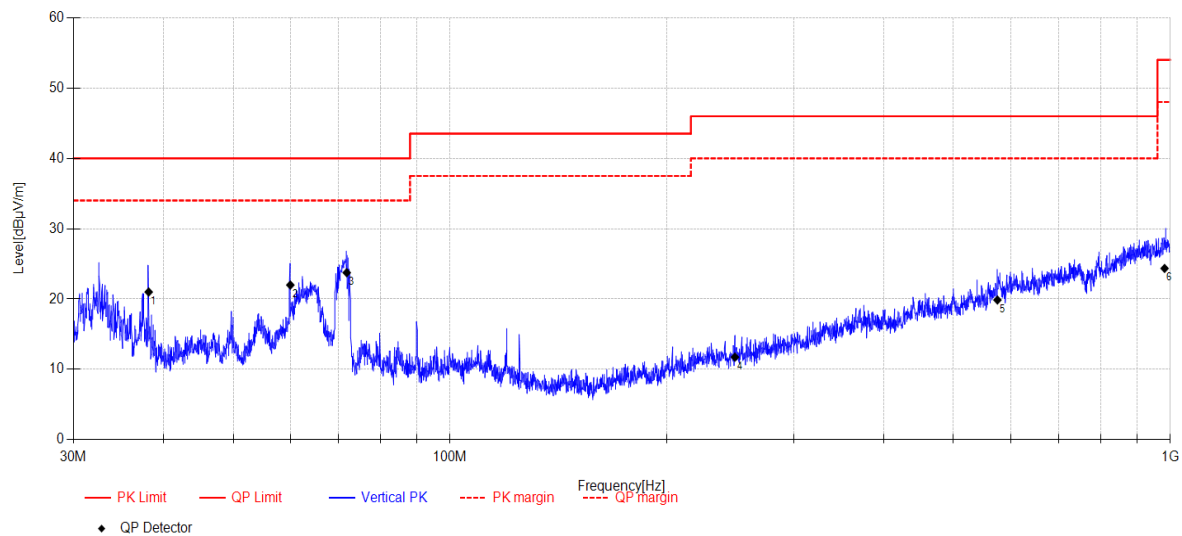
Power Supply: Battery

Condition: Temp:23.4°C;Humi:62.3%

Test Site: DDT 3# Chamber

File Path: d:\ts\2024 report data\Q24021919-2E\FCC 30M-1G\20240514-210600_V

Memo:



Data List										
NO.	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable Loss [dB]	AMP [dB]	Result [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
1	38.157	35.89	11.42	4.58	-30.88	21.01	40.00	18.99	QP	Vertical
2	60.019	35.08	12.79	4.76	-30.63	22.00	40.00	18.00	QP	Vertical
3	71.870	39.91	9.59	4.80	-30.55	23.75	40.00	16.25	QP	Vertical
4	248.621	24.63	11.64	5.93	-30.45	11.75	46.00	34.25	QP	Vertical
5	575.496	24.08	18.46	7.23	-29.90	19.87	46.00	26.13	QP	Vertical
6	981.935	21.97	22.02	8.63	-28.26	24.36	54.00	29.64	QP	Vertical

Note:

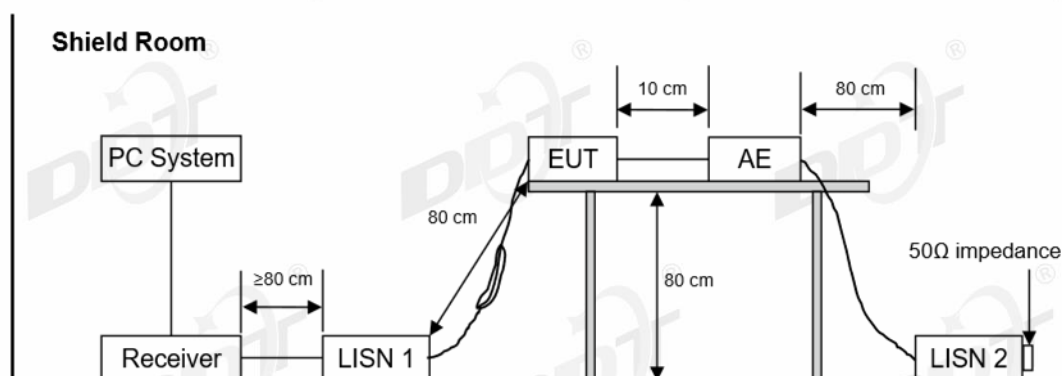
- Result Level = Reading + Cable loss + Antenna Factor + AMP
- If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
- Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

6 Power Line Conducted Emission

6.1. Test equipment

Equipment	Manufacturer	Model No.	Serial Number	Due Date
☑Power Line Conducted Emissions Test 2#				
Equipment	Manufacturer	Model No.	Serial No.	Cal Due To
EMI Test Receiver	R&S	ESCI	DDT-ZC01972	2025/04/01
Two Line V-Network	R&S	ENV216	DDT-ZC00586	2024/07/11
Two Line V-Network	R&S	ENV216	DDT-ZC01247	2024/07/11
Pulse Limiter	R&S	KH43101	DDT-ZC00747	2025/04/23
Copper shaft signal cable	H&S	RG214-5	DDT-ZC01817	2025/04/01
Conducted Radiated Software	Audix	E3	DDT-ZC00562	/

6.2. Block diagram of test setup



6.3. Power line conducted emission limits

Frequency	Quasi-Peak Level dB(μV)	Average Level dB(μV)
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.

6.4. Test procedure

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

Configuration EUT to simulate typical usage as described in clause 2.4 and test equipment as described in clause 6.1 of this report.

All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.

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.

6.5. 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 worse case.

TR-4-E-010 Conducted Emission Test Result

Test Site : DDT 5# Shield Room

D:\2024 report data\Q24021919-2\FCC.EM6

Test Date : 2024-05-16

Tested By : Junchang Du

EUT : 10000mAh/22.5W Magnetic

Model Number : ZWPWWWA-101C1A22W

Power Supply : AC 120V/60Hz

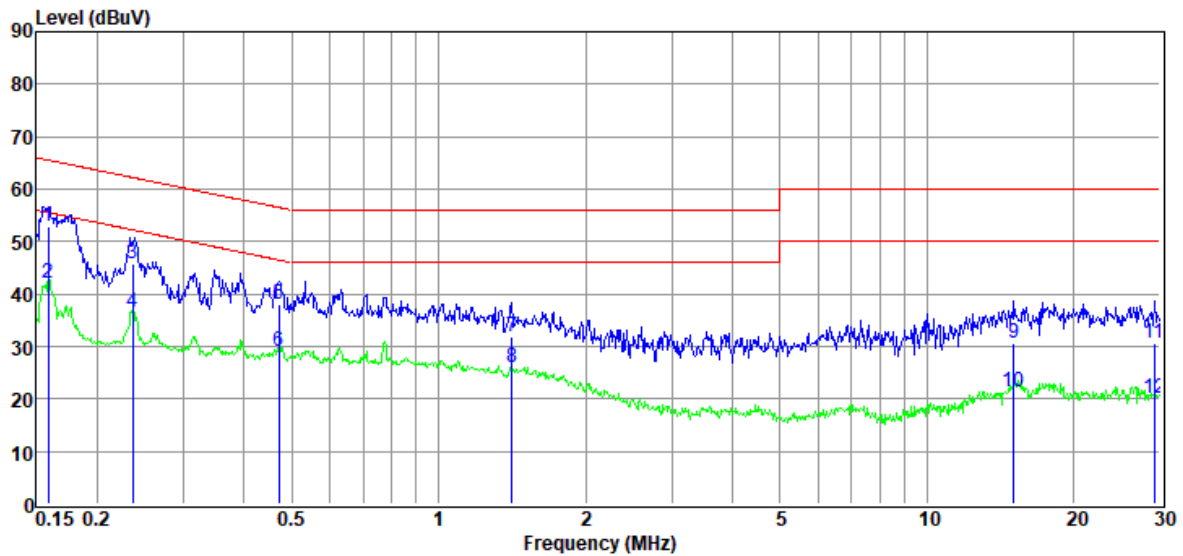
Test Mode : TX mode

Condition : Temp:24.5°C,Humi:55.5%

LISN : 2023 ENV216 2#/LINE

Memo : S24021919-001

Data: 2



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	0.16	32.53	9.94	0.19	10.15	52.81	65.52	-12.71	QP	LINE
2	0.16	21.92	9.94	0.19	10.15	42.20	55.52	-13.32	Average	LINE
3	0.24	25.35	9.99	0.21	10.13	45.68	62.22	-16.54	QP	LINE
4	0.24	16.18	9.99	0.21	10.13	36.51	52.22	-15.71	Average	LINE
5	0.47	17.88	10.00	0.25	10.06	38.19	56.49	-18.30	QP	LINE
6	0.47	8.84	10.00	0.25	10.06	29.15	46.49	-17.34	Average	LINE
7	1.41	11.63	9.99	0.35	9.81	31.78	56.00	-24.22	QP	LINE
8	1.41	5.89	9.99	0.35	9.81	26.04	46.00	-19.96	Average	LINE
9	15.07	10.05	10.04	0.39	10.11	30.59	60.00	-29.41	QP	LINE
10	15.07	0.68	10.04	0.39	10.11	21.22	50.00	-28.78	Average	LINE
11	29.22	10.35	10.02	0.42	9.91	30.70	60.00	-29.30	QP	LINE
12	29.22	-0.25	10.02	0.42	9.91	20.10	50.00	-29.90	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 5# Shield Room

D:\2024 report data\Q24021919-2\FCC.EM6

Test Date : 2024-05-16

Tested By : Junchang Du

EUT : 10000mAh/22.5W Magnetic

Model Number : ZWPWWWA-101C1A22W

Power Supply : AC 120V/60Hz

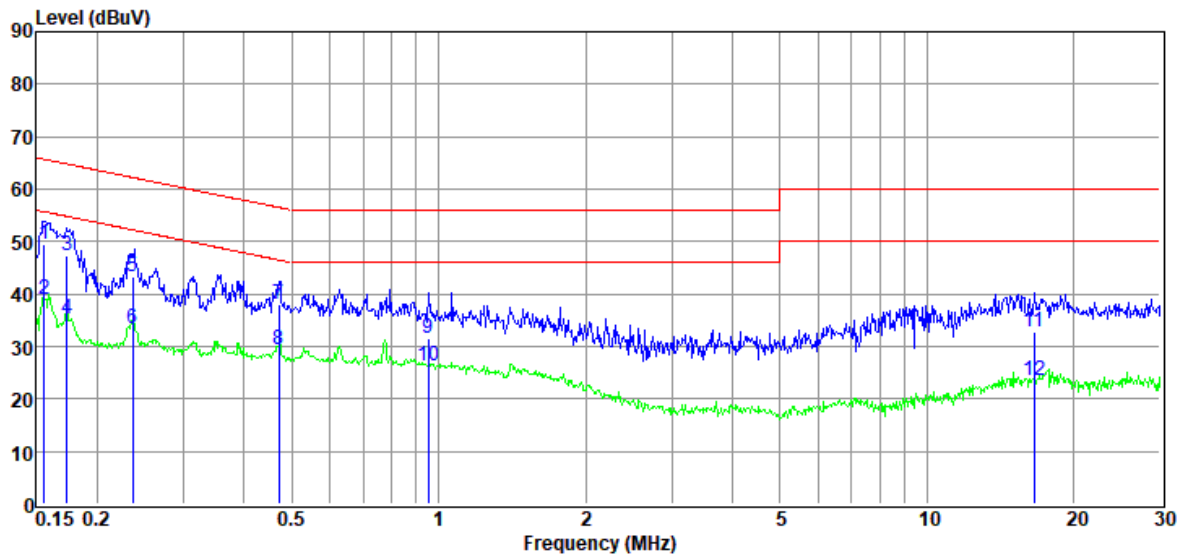
Test Mode : TX mode

Condition : Temp:24.5°C,Humi:55.5%

LISN : 2023 ENV216 2#/NEUTRAL

Memo : S24021919-001

Data: 4



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	0.16	29.34	9.93	0.19	10.15	49.61	65.69	-16.08	QP	NEUTRAL
2	0.16	18.58	9.93	0.19	10.15	38.85	55.69	-16.84	Average	NEUTRAL
3	0.17	26.94	9.96	0.19	10.15	47.24	64.81	-17.57	QP	NEUTRAL
4	0.17	15.03	9.96	0.19	10.15	35.33	54.81	-19.48	Average	NEUTRAL
5	0.24	23.16	9.92	0.21	10.13	43.42	62.22	-18.80	QP	NEUTRAL
6	0.24	13.13	9.92	0.21	10.13	33.39	52.22	-18.83	Average	NEUTRAL
7	0.47	17.64	9.98	0.25	10.06	37.93	56.49	-18.56	QP	NEUTRAL
8	0.47	9.05	9.98	0.25	10.06	29.34	46.49	-17.15	Average	NEUTRAL
9	0.95	11.35	9.93	0.33	9.89	31.50	56.00	-24.50	QP	NEUTRAL
10	0.95	6.12	9.93	0.33	9.89	26.27	46.00	-19.73	Average	NEUTRAL
11	16.57	12.37	10.01	0.40	10.09	32.87	60.00	-27.13	QP	NEUTRAL
12	16.57	2.96	10.01	0.40	10.09	23.46	50.00	-26.54	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.

7 Antenna Requirements

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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. 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.

Conclusion: The antenna used for this product is inductive loop coil antenna and that no antenna other than that furnished by the responsible party shall be used with the device.

9 Photos of the EUT

Please refer to DDT-Q24021919-2E appendix I

END OF REPORT