



RADIO TEST REPORT

Applicant	:	E. Mishan & Sons, Inc
Address of Applicant	:	230 5th Avenue, Suite 800, New York, USA
Manufacturer	:	Foshan Weina Light Appliance Co., Ltd
Address of Manufacturer	:	Masha Industrial Zone, Jinsha, danzao, nanhai, Foshan, Guangdong, China
Equipment under Test	:	Remote
Model No.	:	Remote Controller
FCC ID	:	2BUMM-4166IN
IC	:	35101-4166IN
Test Standard(s)	:	47 CFR Part 15 Subpart C, RSS-210 Issue 11 June 25, 2024, ANSI C63.10-2020, ANSI C63.10-2020+Cor.1-2023+C63.10a- 2024+Errata to C63.10a-2024 RSS-Gen Issue 5, Apr. 2018, Amendment 2 (February 2021)
Report No.	:	DDT-RE25112518-2E01
Issue Date	:	2026/04/07
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

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Address of Manufacturer	:	Masha Industrial Zone, Jinsha, danzao, nanhai, Foshan, Guangdong, China

Test Standard Used:
47 CFR Part 15 Subpart C,
RSS-210 Issue 11 June 25, 2024,
ANSI C63.10-2020, ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024
RSS-Gen Issue 5, Apr. 2018, Amendment 2 (February 2021)

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-RE25112518-2E01		
Date of Receipt:	2025/12/23	Date of Test:	2025/12/23 - 2026/01/21

Created: Tiger Mo	Reviewed: Johnson Huang	Approved: Ella Gong
		
2026/01/21	2026/04/06	2026/04/07

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

Version	Revision Content	Issue Date	Approved
V0	Initial issue	2026/04/07	Ella Gong

1. Summary of Test Results

No.	Test Parameter	Clause No.	Condition	Result
1	On Time and Duty Cycle	ANSI C63.10 clause 7.5	/	Pass
2	20dB Bandwidth and 99% Bandwidth	47 CFR Part 15 15.215, RSS-Gen clause 6.7	/	Pass
3	Stop Transmitting Time Test	47 CFR Part 15 15.231(a)(1), RSS-210 A.1.2	/	Pass
4	Radiated Emission	47 CFR Part 15 15.231(b), RSS-210 A.1.3, RSS-Gen clause 8.9, RSS-Gen clause 8.10	/	Pass
5	Field Strength Of The Fundamental Signal	47 CFR Part 15 15.231(b), RSS-210 A.1.3	/	Pass
6	Power Line Conducted Emissions	47 CFR Part 15: 15.207, RSS-Gen clause 8.8	/	N/A
7	Antenna Requirement	47 CFR Part 15 15.203, RSS-Gen clause 6.8	/	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	:	Remote
Model Number	:	Remote Controller
Difference of model number	:	/
EUT Function Description	:	Please reference user manual of this device
Power Supply	:	DC 3V From 2*AAA battery
Antenna Type	:	PCB antenna
Max Antenna Gain(dBi)	:	1.78
Operation frequency	:	433.92MHz
Modulation	:	OOK

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, the pathloss of external cable: 0.5dB (According to the manufacturer's claims):

Tested mode, channel information		
Mode	Channel	Frequency (MHz)
TX mode	/	433.92
RX mode	/	433.92

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 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-20240, G-20118

2.8. Measurement uncertainty

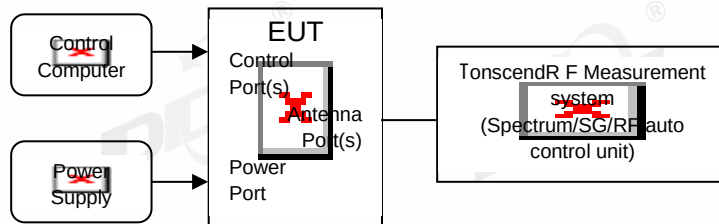
Test Item	Uncertainty
Bandwidth	1.9%
Peak Output Power (Conducted) (Spectrum analyzer)	0.98 dB
Peak Output Power (Conducted) (Power Sensor)	1.18 dB
Power Spectral Density (Base EIRP)	1.51 dB
Power Spectral Density (Spectrum analyzer)	0.98 dB
Frequencies Stability	1.9 kHz
Conducted spurious emissions	1.21 dB ($9\text{ kHz} \leq f < 7\text{ GHz}$);
	3.31 dB ($7\text{ GHz} \leq f < 40\text{ GHz}$)
Uncertainty for radio frequency (RBW < 20 kHz)	5.5×10^{-8}
Time	0.11%
Temperature	0.3 °C
Humidity	2 %
Uncertainty for Radiation Emission test (9 kHz – 30 MHz)	3.44 dB
Uncertainty for Radiation Emission test (30 MHz - 1 GHz)	4.28 dB (Antenna Polarize: V)
	4.14 dB (Antenna Polarize: H)
Uncertainty for Radiation Emission test (1 GHz - 40 GHz)	4.22 dB (1 - 6 GHz)
	4.52 dB (6 GHz - 18 GHz)
	4.58 dB (18 GHz - 40 GHz)
Uncertainty for Power line conduction emission test	3.32dB (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. Equipment Used During Conductive Test

Equipment	Manufacturer	Model No.	Serial Number	Due Date
☒ RF Connected Test (RF Measurement System 1#)				
SIGNAL ANALYZER	R&S	FSQ26	101272	2026/03/28
Wideband Radio Communication Tester	R&S	CMW500	120259	2026/03/28
MXG Vector Signal Generator	KEYSIGHT	N5182B	MY59100192	2026/03/28
MXG Vector Signal Generator	Agilent	N5182A	MY19060405	2026/03/28
RF Control Unit	Tonscend	JS0806-2	158060010	2026/03/28
TEMP&HUMI Programmable Chamber	ZHIXIANG	ZXGDJS-150L	ZX170110-A	2026/03/28
Test Software	Tonscend	JS1120-3	V3.6.21	N/A

4. On Time and Duty Cycle

4.1. Block diagram of test setup



4.2. Limits

None: for reporting purposes only.

4.3. Test procedure

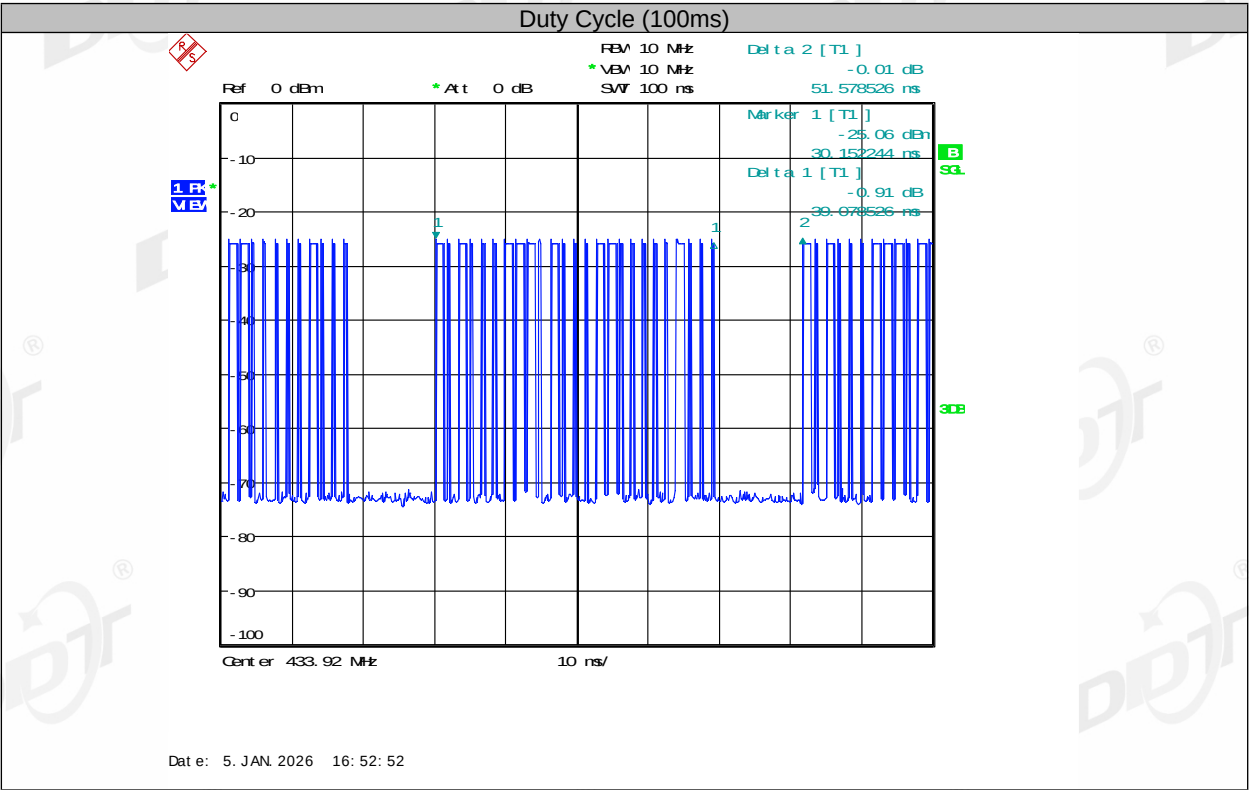
Set the Centre frequency of the spectrum analyzer to the transmitting frequency;
Set the span=0 MHz, RBW=10 MHz, VBW=10 MHz, Sweep time=100 ms;
Trace mode = Single hold.

4.4. Test result

Test Engineer:	Tiger Mo	Test Site:	RF Measurement System 1#
Ambient Condition:	23.5 °C, 55%RH	Test Date:	2026/1/5
Test Power Supply:	Battery	Sample Number:	S25112518-001

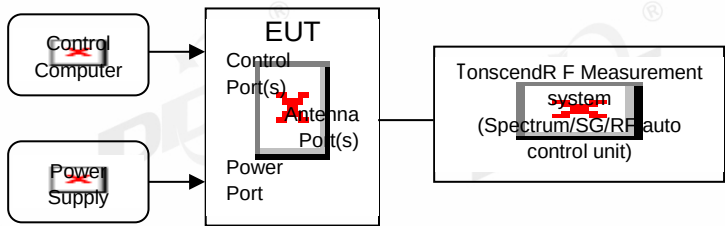
Test Channel[MHz]	Duty Cycle[%]	20log(Δ) Factor[dB]
433.92	76.00	-2.38
Note 1: The transmitter duty cycle was measured using a spectrum analyser in the time domain and calculated by below Equation: $\Delta=39.08/51.58=0.76$ $\delta(\text{dB}) = 20\log(\Delta) = 20 \log(0.76)=-2.38\text{dB}$ δ is the duty cycle correction factor (dB) Δ is the duty cycle (dimensionless) Note 2: In cases where the pulse train exceeds 0.1 s, the measured field strength shall be determined during a 0.1 s interval		

4.5. Test graphs



5. 20dB Bandwidth and 99% Bandwidth

5.1. Block diagram of test setup



5.2. Limits

The bandwidth of the emission shall be no wider than 0.25% of the center frequency of devices operation above 70MHz and below 900MHz.

5.3. Test procedure

- (1) Connect EUT's antenna output to spectrum analyzer by RF cable.
- (2) Set the spectrum analyzer as follows:

RBW:	1% to 5% of the OBW
VBW:	approximately three times RBW
Span:	between 2 times and 5 times the OBW
Detector Mode:	Peak
Sweep time:	Auto
Trace mode:	Max hold
- (3) Allow the trace to stabilize, measure the 20 dB bandwidth of signal.
- (4) Use the 99% power bandwidth function of the instrument and report the measured bandwidth.

5.4. Test result

Test Engineer:	Tiger Mo	Test Site:	RF Measurement System 1#	
Ambient Condition:	23.5 °C, 55%RH	Test Date:	2026/1/20	
Test Power Supply:	Battery	Sample Number:	S25112518-001	

Frequency [MHz]	20 dB Bandwidth[kHz]	99% Bandwidth [kHz]	Limit	Verdict
433.92	4.17	20.51	433.92MHz*0.25%=1084.8 kHz	PASS

20 dB Bandwidth

* RBW 500 Hz
VBW 2 kHz
SMF 400 ns

Marker 1 [T1]
-37.17 dB
433.924807692 MHz

Ref	Offset	dB	Att	dB
0	Offset	20		

ndB [T1] 20.00 dB
BW 4.166666667 kHz
Temp 1 [T1 ndB] -57.20 dB
433.922724359 MHz
Temp 2 [T1 ndB] -57.27 dB
433.926891026 MHz

A

LVL

3dB

Center 433.92 MHz 10 kHz/ Span 100 kHz

Date: 20. JAN. 2026 08:54:26

99% Bandwidth

* RBW 500 Hz
VBW 2 kHz
SMF 400 ns

Marker 1 [T1]
-39.05 dB
433.924807692 MHz

Ref	Offset	dB	Att	dB
0	Offset	20		

OBW 20.512820513 kHz
Temp 1 [T1 OBW] -75.53 dB
433.914711538 MHz
Temp 2 [T1 OBW] -75.18 dB
433.935224359 MHz

A

LVL

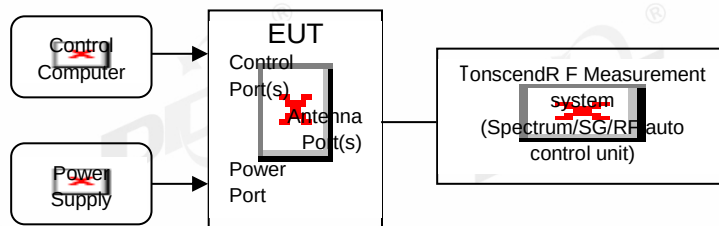
3dB

Center 433.92 MHz 10 kHz/ Span 100 kHz

Date: 20. JAN. 2026 08:53:23

6. Stop Transmitting Time Test

6.1. Block diagram of test setup



6.2. Limits

15.231(a), A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

6.3. Test procedure

- (1) The EUT's RF signal was coupled to spectrum analyzer by antenna connected to spectrum analyzer.
- (2) Set the spectrum to zero span mode, and centered of EUT frequency.
- (3) Measure the stop transmitting time after release EUT button.

6.4. Test result

Test Engineer:	Tiger Mo	Test Site:	RF Measurement System 1#
Ambient Condition:	23.5 °C, 55%RH	Test Date:	2026/1/5
Test Power Supply:	Battery	Sample Number:	S25112518-001

Frequency [MHz]	Burst Duration [s]	Limit [s]	Verdict
433.92	0.176	≤5	PASS

Stop transmitting time

Ref 0 dBm * Att 0 dB

RBW 10 MHz * VBW 10 MHz SMT 10 s

Delta 2 [T1] -62.35 dB 5.000000 s

Marker 1 [T1] -8.96 dBm 2.211538 s

Delta 1 [T1] -0.12 dB 176.284051 ns

Center 433.92 MHz 1 s/

Date: 5. JAN. 2026 16:59:35

7. Antenna Requirements

7.1. 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. 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.

For intentional device, according to RSS-Gen issue 5 section 6.8.

The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.

7.2. Result

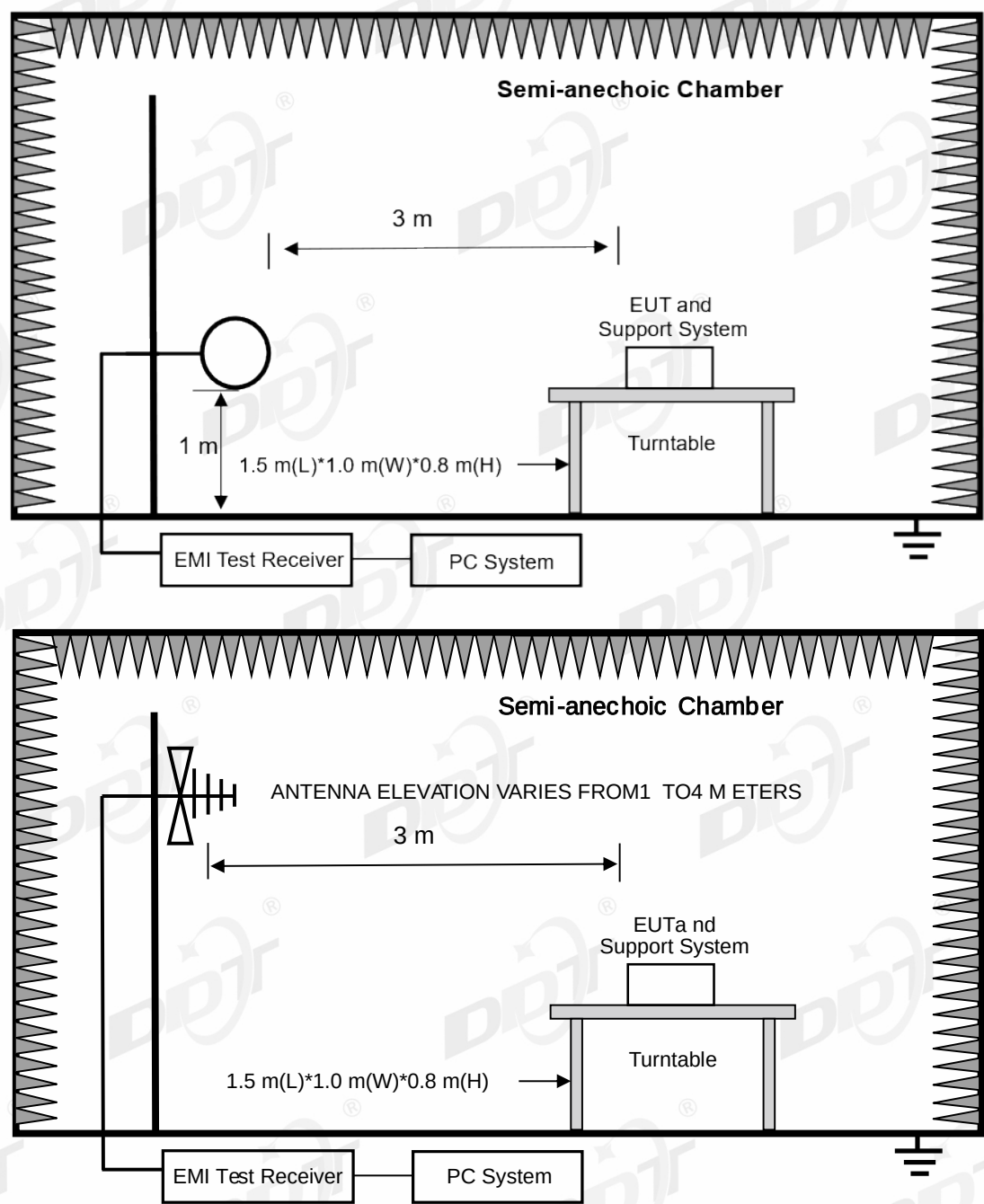
The antenna used for this product as Antenna information described in section 2.1 of the report, and there is no other antenna than that furnished by the responsible party shall be used with the device.

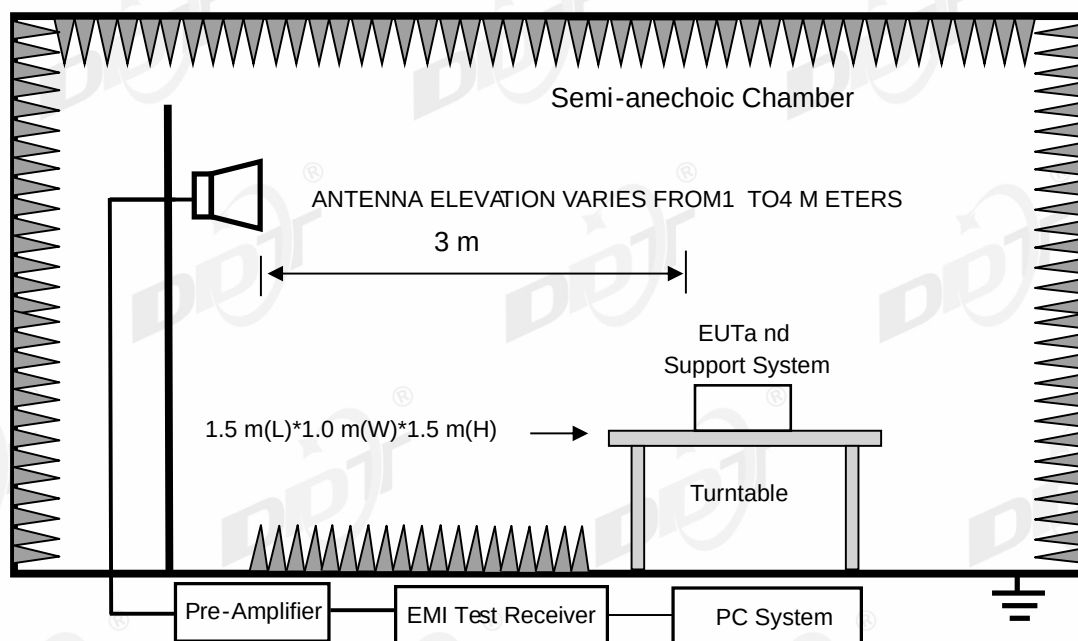
8. Radiated Emission

8.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Cal Due To
High pass filter	Micro-Tronics	HPM50102	DDT-ZC00561	2026/03/28
Radiation disturbance fully automated test software	Tonscend	JS32-RE	DDT-ZC02739	/
Pre-amplifier	SONOMA	310N	DDT-ZC01969	2026/07/06
RF Cable	N/A	W24.02 HL-562	DDT-ZC04022	2026/03/28
RF cable	Yuhu Technology	JCTB810-NJ-NJ-9M	DDT-ZC02538	2026/03/28
RF cable	Zhongke Junchuang	JCT26S-NJ-NJ-1.5M	DDT-ZC02762	/
RF cable	Yuhu Technology	ZT26S-SMAJ-SMAJ-1M	DDT-ZC02037	2026/10/10
RF Cable	N/A	W13.02 AP1-X2	DDT-ZC04023	2026/03/28
Pre-amplifier	COM-POWER	PAM-840A	DDT-ZC01693	2026/03/28
Pre-amplifier	COM-POWER	PAM-118A	DDT-ZC01293	2026/08/10
EMI TEST RECEIVER	R&S	ESU26	DDT-ZC01909	2026/03/28
Micro-Tronics filters	REBES	BRM50702	DDT-ZC03242	/
High pass filter	Micro-Tronics	HPM50108	DDT-ZC00560	2026/03/28
High Pass filter	Xi'an Xingbo	XBLBQ-GTA67	DDT-ZC02179	2026/03/28
Micro-Tronics filters	REBES	BRM50716	DDT-ZC03240	/
Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	DDT-ZC00506	2026/04/01
Trilog Broadband Antenna	Schwarzbeck	VULB 9163	DDT-ZC02050	2026/07/25
Hochgewinn-Hornantenne	SCHWARZBEC K	BBHA 9120 D	DDT-ZC02129	2026/08/11
Active Loop Antenna	Schwarzbeck	FMZB1519	DDT-ZC00524	2026/08/18
PSA Series Spectrum Analyzer	Agilent	E4447A	DDT-ZC00517	2026/03/28

8.2. Block diagram of test setup





8.3. Limits

(1) FCC 15.205 Restricted frequency band

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
10.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.1772&4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.2072&4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.6
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(²)
13.36-13.41			

RSS-Gen section 8.10 Restricted frequency bands*

MHz	MHz	MHz	GHz
0.090-0.110	12.51975-12.52025	240-285	3.5-4.4

0.495-0.505	12.57675-12.57725	322-335.4	4.5-5.15
2.1735-2.1905	13.36-13.41	399.9-410	5.35-5.46
3.020-3.026	16.42-16.423	608-614	7.25-7.75
4.125-4.128	16.69475-16.69525	960-1427	8.025-8.5
4.1772&4.17775	16.80425-16.80475	1435-1626.5	9.0-9.2
4.2072&4.20775	25.5-25.67	1645.5-1646.5	9.3-9.5
5.677-5.683	37.5-38.25	1660-1710	10.6-12.7
6.215-6.218	73-74.6	1718.8-1722.2	13.25-13.4
6.26775-6.26825	74.8-75.2	2200-2300	14.47-14.5
6.31175-6.31225	108-138	2310-2390	15.35-16.2
8.291-8.294	149.9-150.05	2483.5-2500	17.7-21.4
8.362-8.366	156.52475-156.52525	2655-2900	22.01-23.12
8.37625-8.38675	156.7-156.9	3260-3267	23.6-24.0
8.41425-8.41475	162.0125-167.17	3332-3339	31.2-31.8
12.29-12.293	167.72-173.2	3345.8-3358	36.43-36.5
			Above 38.6

* Certain frequency bands listed in table and in bands above 38.6 GHz are designated for licence-exempt applications. These frequency bands and the requirements that apply to related devices are set out in the 200 and 300 series of RSSs.

(2) FCC 15.209 Limit.

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
Above 1000	3	74.0 dB(uV)/m (Peak)	
		54.0 dB(uV)/m (Average)	

Note:

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

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

$$\text{Limit}_{3\text{m}}(\text{dBuV/m}) = \text{Limit}_{300\text{m}}(\text{dBuV/m}) + 40\text{Log}(300\text{m}/3\text{m}) = \text{Limit}_{300\text{m}}(\text{dBuV/m}) + 80$$

$$\text{Limit}_{3\text{m}}(\text{dBuV/m}) = \text{Limit}_{30\text{m}}(\text{dBuV/m}) + 40\text{Log}(30\text{m}/3\text{m}) = \text{Limit}_{30\text{m}}(\text{dBuV/m}) + 40$$

(3) Limit for this EUT

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions include fundamental emission shall not exceed FCC 15.231 section (e) limit of comply with FCC 15.209 limit which permit higher emission level.

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(b) exceed 11,000 $\mu\text{V/m}$ measured at 3 m with an average detector. The peak level of any emission within this specified frequency band shall not exceed 55,000 $\mu\text{V/m}$ measured at 3 m; and

(c) The field strength of emissions on any frequencies outside this specified band shall not exceed the general field strength limits specified in RSS-Gen.

8.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
/	/	/	/	/

8.5. Test procedure

(1) EUT was placed on a non-metallic table, 80 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
30MHz-1GHz	Trilog Broadband Antenna	3m

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:

(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 1m to 4m(Except loop antenna, it's fixed 1m 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.
- (4) For final emissions measurements at each frequency of interest, the EUT was rotated and the antenna height was varied between 1m and 4m 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 C63.10-2020 on Radiated Emission test.
- (5) The emissions from 9kHz to 1GHz were measured based on CISPR QP detector except for the frequency bands 9-90kHz, 110-490kHz, for emissions from 9kHz-90kHz,110kHz-490kHz and above 1GHz were measured based on average detector, for emissions above 1GHz, peak emissions also be measured and need comply with Peak limit.
- (6) The emissions from 9kHz to 1GHz, QP or average values were measured with EMI receiver with below RBW.

Frequency band	RBW
30MHz-1GHz	120kHz

- (7) X axis, Y axis, Z axis are tested, and worse setup X axis is reported

8.6. Test result

PASS. (See below detailed test result)

8.7. Test data

TR-4-E-009 Radiated Emission Test Result

Test Date:

2026-01-13

Tested By:

Li Xiongbín

Test Mode:

433.92MHz TX Mode

Power Supply:

Battery

Condition:

Temp:22.8°C;Humi:53.4%

Test Site:

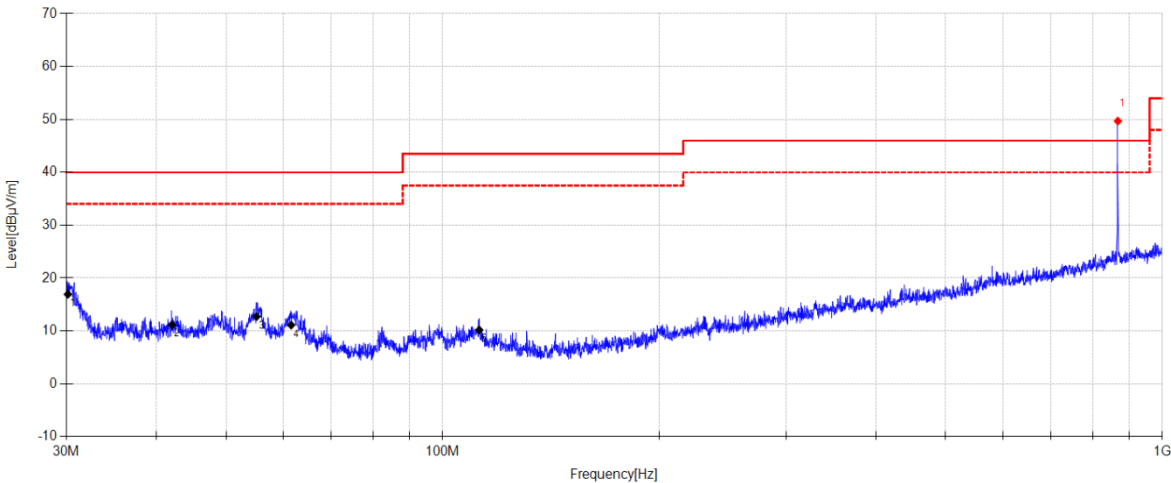
DDT 3# Chamber

File Path:

d:\ts\2025 report date\Q25112518-2E\FCC Below 1G 433\9

Memo:

Sample Number:S25112518-001



Final 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	30.148	34.97	10.47	3.78	16.92	40.00	23.08	QP	Horizontal
2	42.063	26.38	13.14	3.93	11.15	40.00	28.85	QP	Horizontal
3	55.137	28.25	12.74	4.02	12.71	40.00	27.29	QP	Horizontal
4	61.596	26.79	12.52	4.08	11.09	40.00	28.91	QP	Horizontal
5	112.416	26.4	11.71	4.37	10.17	43.50	33.33	QP	Horizontal

Final 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	867.328	53.36	21.38	7.05	-32.10	49.69	80.82	31.13	PK	Horizontal
1	867.328	/	/	/	/	47.31	60.82	13.51	AV	Horizontal

- Note:
1. Result Level = Reading + Cable loss + Antenna Factor + AMP

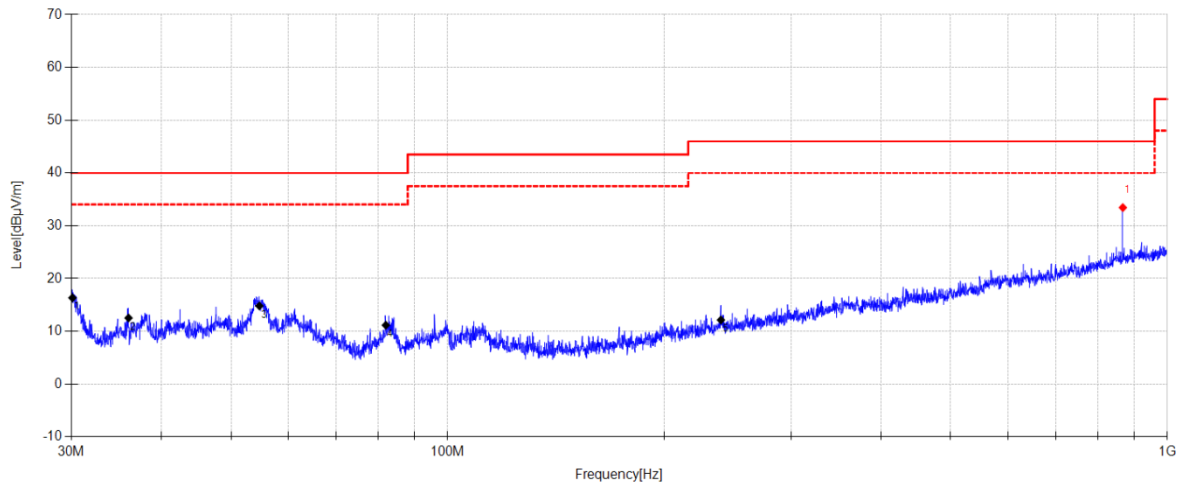
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

4. AV Result = PK Result + Duty cycle factor.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2026-01-13 **Tested By:** Li Xiongbin
Test Mode: 433.92MHz TX Mode **Power Supply:** Battery
Condition: Temp:22.8°C;Humi:53.4% **Test Site:** DDT 3# Chamber
File Path: d:\ts\2025 report date\Q25112518-2E\FCC Below 1G 433\10
Memo: Sample Number:S25112518-001

**Final 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	30.105	34.37	10.48	3.78	16.33	40.00	23.67	QP	Vertical
2	36.025	29.05	11.91	3.86	12.52	40.00	27.48	QP	Vertical
3	54.751	30.21	12.87	4.02	14.80	40.00	25.20	QP	Vertical
4	82.054	30.35	8.90	4.20	11.15	40.00	28.85	QP	Vertical
5	239.719	27.05	12.44	5.04	12.13	46.00	33.87	QP	Vertical

Final 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	867.328	37.11	21.38	7.05	-32.10	33.44	80.82	47.38	PK	Vertical
1	867.328	/	/	/	/	40	60.82	20.82	AV	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.
4. AV Result = PK Result + Duty cycle factor.

TR-4-E-009 Radiated Emission Test Result

Test Date:

2026-01-13

Tested By:

Li Xiongbin

Test Mode:

433.92MHz TX Mode

Power Supply:

Battery

Condition:

Temp:22.8°C;Humi:53.4%

Test Site:

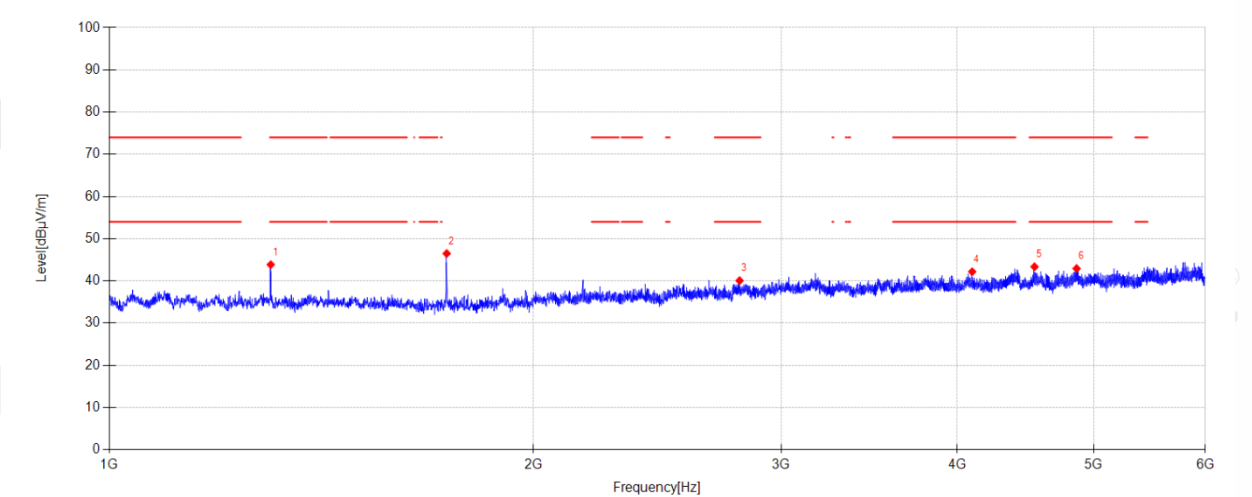
DDT 3# Chamber

File Path:

d:\ts\2025 report date\Q25112518-2E\FCC Above 1G 433\1

Memo:

Sample Number:S25112518-001



Suspected 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	1302.000	52.02	26.07	2.71	-36.94	43.86	74.00	30.14	PK	Horizontal
2	1736.000	55.56	25.54	3.11	-37.72	46.49	74.00	27.51	PK	Horizontal
3	2802.000	45.85	29.08	4.22	-39.08	40.07	74.00	33.93	PK	Horizontal
4	4098.500	46.16	31.10	4.64	-39.71	42.19	74.00	31.81	PK	Horizontal
5	4538.000	46.26	31.91	4.94	-39.75	43.36	74.00	30.64	PK	Horizontal
6	4861.000	44.63	32.94	5.16	-39.79	42.94	74.00	31.06	PK	Horizontal

Note:

1. Level = Reading + Cable loss + Antenna Factor + AMP

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date:

2026-01-13

Tested By:

Li Xiongbín

Test Mode:

433.92MHz TX Mode

Power Supply:

Battery

Condition:

Temp:22.8°C;Humi:53.4%

Test Site:

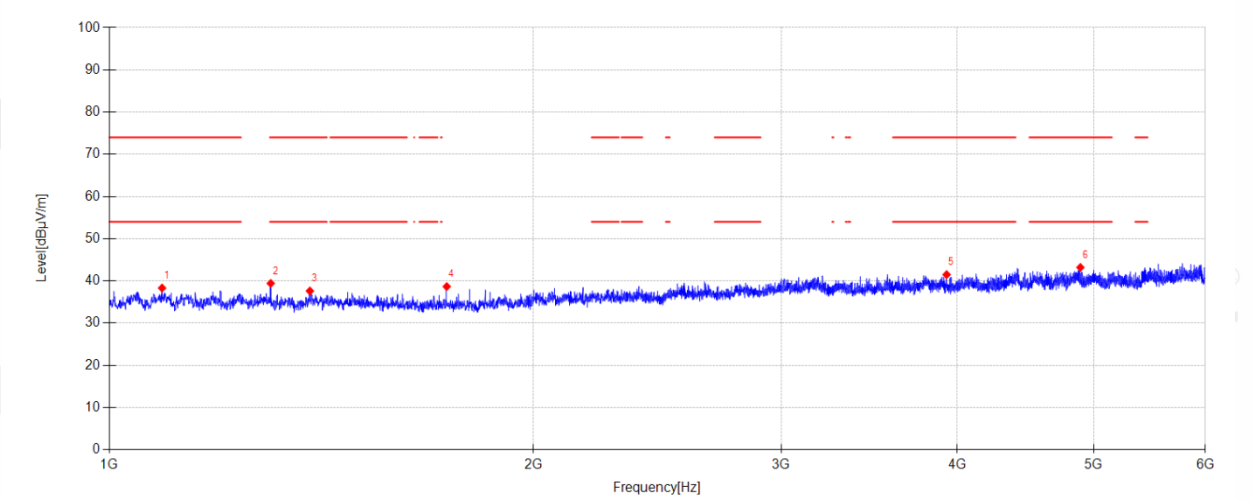
DDT 3# Chamber

File Path:

d:\ts\2025 report date\Q25112518-2E\FCC Above 1G 433\2

Memo:

Sample Number:S25112518



Suspected 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	1090.000	46.74	25.62	2.52	-36.56	38.32	74.00	35.68	PK	Vertical
2	1302.000	47.58	26.07	2.71	-36.94	39.42	74.00	34.58	PK	Vertical
3	1388.000	45.95	25.98	2.79	-37.10	37.62	74.00	36.38	PK	Vertical
4	1736.000	47.74	25.54	3.11	-37.72	38.67	74.00	35.33	PK	Vertical
5	3930.500	46.08	30.53	4.56	-39.67	41.50	74.00	32.50	PK	Vertical
6	4891.500	44.74	33.07	5.18	-39.79	43.20	74.00	30.80	PK	Vertical

Note:

1. Level = Reading + Cable loss + Antenna Factor + AMP

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

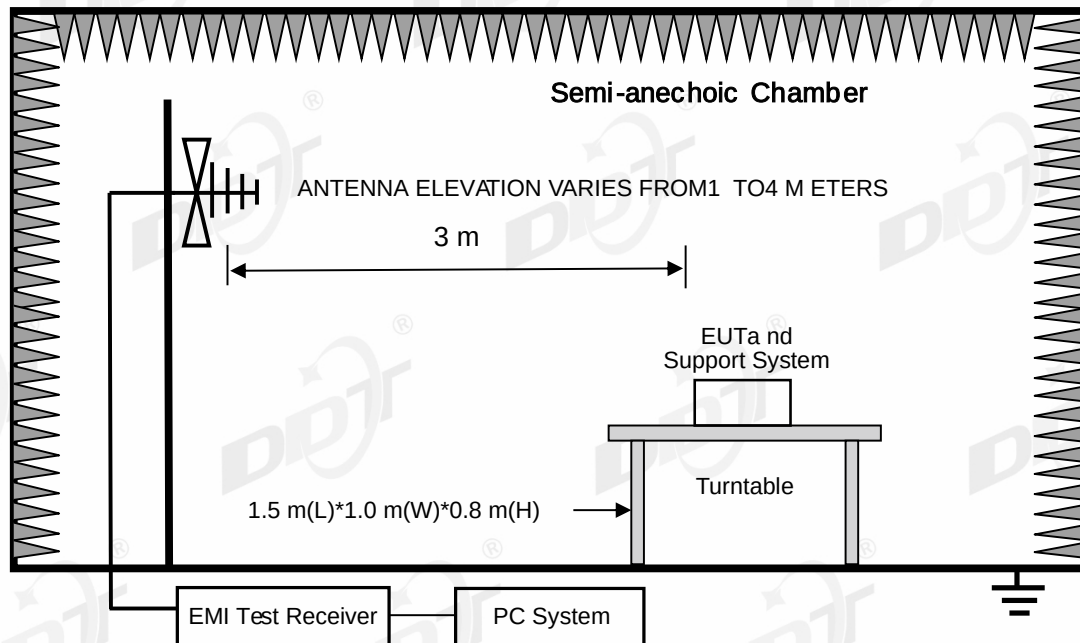
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

9. Field Strength Of The Fundamental Signal

9.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Cal Due To
High pass filter	Micro-Tronics	HPM50102	DDT-ZC00561	2026/03/28
Radiation disturbance fully automated test software	Tonscend	JS32-RE	DDT-ZC02739	/
Pre-amplifier	SONOMA	310N	DDT-ZC01969	2026/07/06
RF Cable	N/A	W24.02 HL-562	DDT-ZC04022	2026/03/28
RF cable	Yuhu Technology	JCTB810-NJ-NJ-9M	DDT-ZC02538	2026/03/28
RF cable	Zhongke Junchuang	JCT26S-NJ-NJ-1.5M	DDT-ZC02762	/
RF cable	Yuhu Technology	ZT26S-SMAJ-SMAJ-1M	DDT-ZC02037	2026/10/10
RF Cable	N/A	W13.02 AP1-X2	DDT-ZC04023	2026/03/28
Pre-amplifier	COM-POWER	PAM-840A	DDT-ZC01693	2026/03/28
Pre-amplifier	COM-POWER	PAM-118A	DDT-ZC01293	2026/08/10
EMI TEST RECEIVER	R&S	ESU26	DDT-ZC01909	2026/03/28
Micro-Tronics filters	REBES	BRM50702	DDT-ZC03242	/
High pass filter	Micro-Tronics	HPM50108	DDT-ZC00560	2026/03/28
High Pass filter	Xi'an Xingbo	XBLBQ-GTA67	DDT-ZC02179	2026/03/28
Micro-Tronics filters	REBES	BRM50716	DDT-ZC03240	/
Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	DDT-ZC00506	2026/04/01
Trilog Broadband Antenna	Schwarzbeck	VULB 9163	DDT-ZC02050	2026/07/25
Hochgewinn-Hornantenne	SCHWARZBEC K	BBHA 9120 D	DDT-ZC02129	2026/08/11
Active Loop Antenna	Schwarzbeck	FMZB1519	DDT-ZC00524	2026/08/18
PSA Series Spectrum Analyzer	Agilent	E4447A	DDT-ZC00517	2026/03/28

9.2. Block diagram of test setup



9.3. Limits

(3) FCC 15.231 section (a) limit

Fundamental Frequency (MHz)	Field Strength of Fundamental
433.92	AV: 80.83 dBuV/m @3m PK: 100.83dBuV/m @3m

9.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
/	/	/	/	/

9.5. Test procedure

- (1) EUT was placed on a non-metallic table, 80 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
30MHz-1GHz	Trilog Broadband Antenna	3m

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:

(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 1m to 4m(Except loop antenna, it's fixed 1m 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.

(4) For final emissions measurements at each frequency of interest, the EUT was rotated and the antenna height was varied between 1m and 4m 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 C63.10-2020 on Radiated Emission test.

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

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

Frequency band	RBW
30MHz-1GHz	120kHz

(7) X axis, Y axis, Z axis are tested, and worse setup X axis is reported.

9.6. Test result

Frequency (MHz)	PK Level (dBuV/m)	PK Limit Line (dBuV/m)	Margin[dB]	Polarization
433.92	50.07	100.82	50.75	Horizontal
433.92	43.70	100.82	57.12	Vertical

Frequency (MHz)	AV Level (dBuV/m)	AV Limit Line (dBuV/m)	Margin[dB]	Polarization
433.92	47.69	80.82	33.13	Horizontal
433.92	41.32	80.82	39.50	Vertical

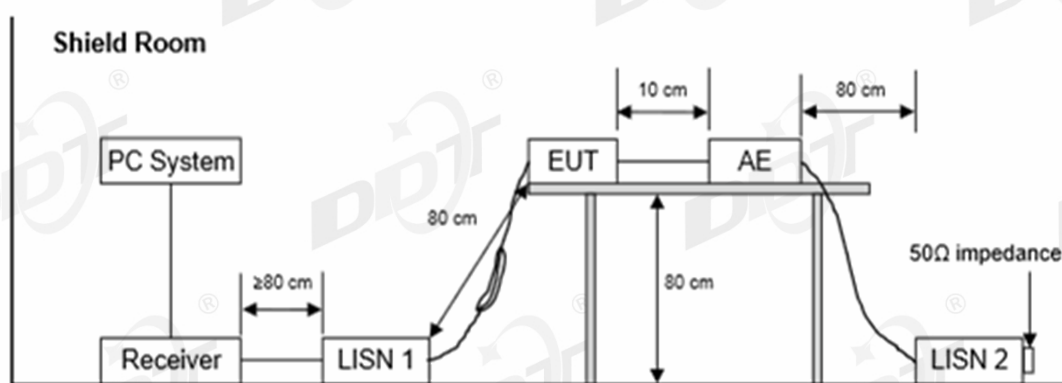
Note: AV Level= PK Level+ Duty factor

10. Power Line Conducted Emissions

10.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Cal Due To
EMI Test Receiver	R&S	ESCI	DDT-ZC00235	2026/07/06
Two Line V-Network	R&S	ENV216	DDT-ZC00535	2026/07/06
Artificial mains	R&S	ESH2-Z5	DDT-ZC00538	2026/07/06
Pulse Limiter	SCHWARZBECK	ESH3-Z2	DDT-ZC00539	2026/07/06
CE Cable 1	R&S	ESU8/RF2	DDT-ZC00566	2026/07/06
EMI Test Software	Audix	e3	DDT-ZC01252	/

10.2. Block diagram of test setup



10.3. 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.

10.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
/	/	/	/	/

10.5. 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.

10.6. Test result

N/A

Measurements to demonstrate compliance with the conducted limits are not required for devices which only employ Battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines.

12. Photos of the EUT

Please refer to DDT-Q25112518-2E appendix I

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