



FCC CERTIFICATION TEST REPORT

Applicant	:	HAMPTON PRODUCTS INTERNATIONAL CORP.
Address of Applicant	:	50 Icon. Foothil Ranch, CA. 92610
Manufacturer	:	JSW Dongguan Ltd
Address of Manufacturer	:	No.38 Sanjiang Industrial Park, Hengli Town, Dongguan City, Guangdong, China 523462.
Equipment under Test	:	AIQ DBLT NFC Keypad Rechargeable ORB, AIQ DBLT NFC Keypad Rechargeable SN, AIQ DBLT NFC Keypad Rechargeable MB
Model No.	:	Q1001-613, Q1001-619, Q1001-622
FCC ID	:	2ANTY-Q1001
Test Standard(s)	:	FCC Rules and Regulations Part 15 Subpart C, ANSI C63.10:2013
Report No.	:	DDT-RE24091803-2E02
Issue Date	:	2024/12/03
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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Manufacturer	:	JSW Dongguan Ltd
Address of Manufacturer	:	No.38 Sanjiang Industrial Park, Hengli Town, Dongguan City, Guangdong, China 523462.

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-RE24091803-2E02		
Date of Receipt:	2024/09/19	Date of Test:	2024/09/19~2024/12/03

Prepared By:

Tiger Mo

Tiger Mo/Engineer

Approved By:

Damon Hu

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	2024/12/03	

1. Summary of Test Results

Description of Test Item	Standard	Results
20 dB Bandwidth & 99% Bandwidth	FCC Part 15: 15.215 ANSI C63.10:2013	Pass
Frequency Tolerance	FCC Part 15:15.225 ANSI C63.10:2013	Pass
Radiated Emission	FCC Part 15: 15.209 FCC Part 15: 15.225 ANSI C63.10:2013	Pass
Power Line Conducted Emissions	FCC Part 15: 15.207 ANSI C63.10:2013	Pass
Antenna Requirement	FCC Part 15: 15.203 ANSI C63.10:2013	Pass

2. General Test Information

2.1. Description of EUT

EUT Name	: AIQ DBLT NFC Keypad Rechargeable ORB, : AIQ DBLT NFC Keypad Rechargeable SN, : AIQ DBLT NFC Keypad Rechargeable MB
Model Number	: Q1001-613, Q1001-619, Q1001-622
Difference of model number	: Above models are identical in schematic and structure, only the EUT Name, Model Number and appearance colour are different for all the models, therefore the test performed on the model Q1001-622.
EUT Function Description	: Please reference user manual of this device
Power Supply	: DC 5V From External adapter or Built-in lithium battery
Antenna Type	: Built-in antenna
Radio Specification	: NFC
Operation Frequency	: 13.56 MHz

Note: This EUT support Bluetooth LE, NFC, this report only for NFC.

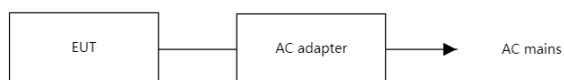
Note: The above EUT information is declared by manufacturer and for more detailed features description please refer to the manufacturer's specifications or User's Manual. The above Antenna information is declared by manufacturer and for more detailed features description please refer to the manufacturer's 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
AC ADAPTER	SHENZHEN TEKA TECHNOLOGY CO.,LTD.	TEKA- UCA20US	INPUT: 100-240V~50/60Hz 0.35A MAX OUTPUT: 5.0V – 2.0A

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

For mode 2: Standby mode

Note: Scan with mode 1 and mode 2, the worst case is mode 1 Tx mode and recorded in this report.

2.5. Deviations of test standard

No deviation.

2.6. Test environment conditions

/	Normal Conditions	Extreme Conditions
Temperature range:	21-25 °C	0 °C and +45 °C
Humidity range:	40-75%	10-90%
Pressure range:	86-106 kPa	86-106 kPa
Power supply	NV: AC 120V/60Hz	AC 102V/60Hz, AC 138V/60Hz (from 85% to 115% of the rated supply voltage)
Note: The Extreme temperature range and extreme voltages are declared by the manufacturer.		

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 ($10 \text{ MHz} \leq f < 3.6 \text{ GHz}$);
	1.38 dB ($3.6 \text{ GHz} \leq f < 8 \text{ GHz}$)
Peak Output Power (Conducted) (Power Sensor)	0.74 dB
Power Spectral Density	0.74 dB ($10 \text{ MHz} \leq f < 3.6 \text{ GHz}$);
	1.38 dB ($3.6 \text{ GHz} \leq f < 8 \text{ GHz}$)
Frequencies Stability	6.7×10^{-8} (Antenna couple method)
	5.5×10^{-8} (Conducted method)
Conducted spurious emissions	0.86 dB ($10 \text{ MHz} \leq f < 3.6 \text{ GHz}$);
	1.40 dB ($3.6 \text{ GHz} \leq f < 8 \text{ GHz}$)
	1.66 dB ($8 \text{ GHz} \leq f < 26.5 \text{ GHz}$)
Uncertainty for radio frequency (RBW < 20 kHz)	3×10^{-8}
Temperature	0.4 °C
Humidity	2 %
Uncertainty for Radiation Emission test (9 kHz – 30 MHz)	3.44 dB
Uncertainty for Radiation Emission test (30 MHz - 1 GHz)	4.70 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)

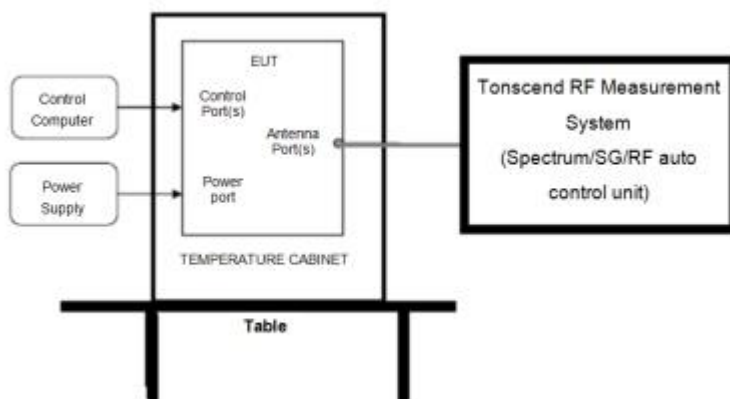
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3. Equipment Used During Conductive Test

Equipment	Manufacturer	Model No.	Serial Number	Due Date
☑RF Connected Test (RF Measurement System 3#)				
SIGNAL ANALYZER	R&S	FSV40	101407	2025/07/08
Wideband Radio Communication Tester	R&S	CMW500	117491	2025/03/31
EXG Analog Signal Generator	KEYSIGHT	N5173B	MY62153058	2025/07/08
MXG Vector Signal Generator	Agilent	N5182A	MY48180912	2025/03/31
RF Control Unit	Tonscend	JS0806-2	20C8060230	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 & 99% 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) Set the spectrum analyzer as follows:

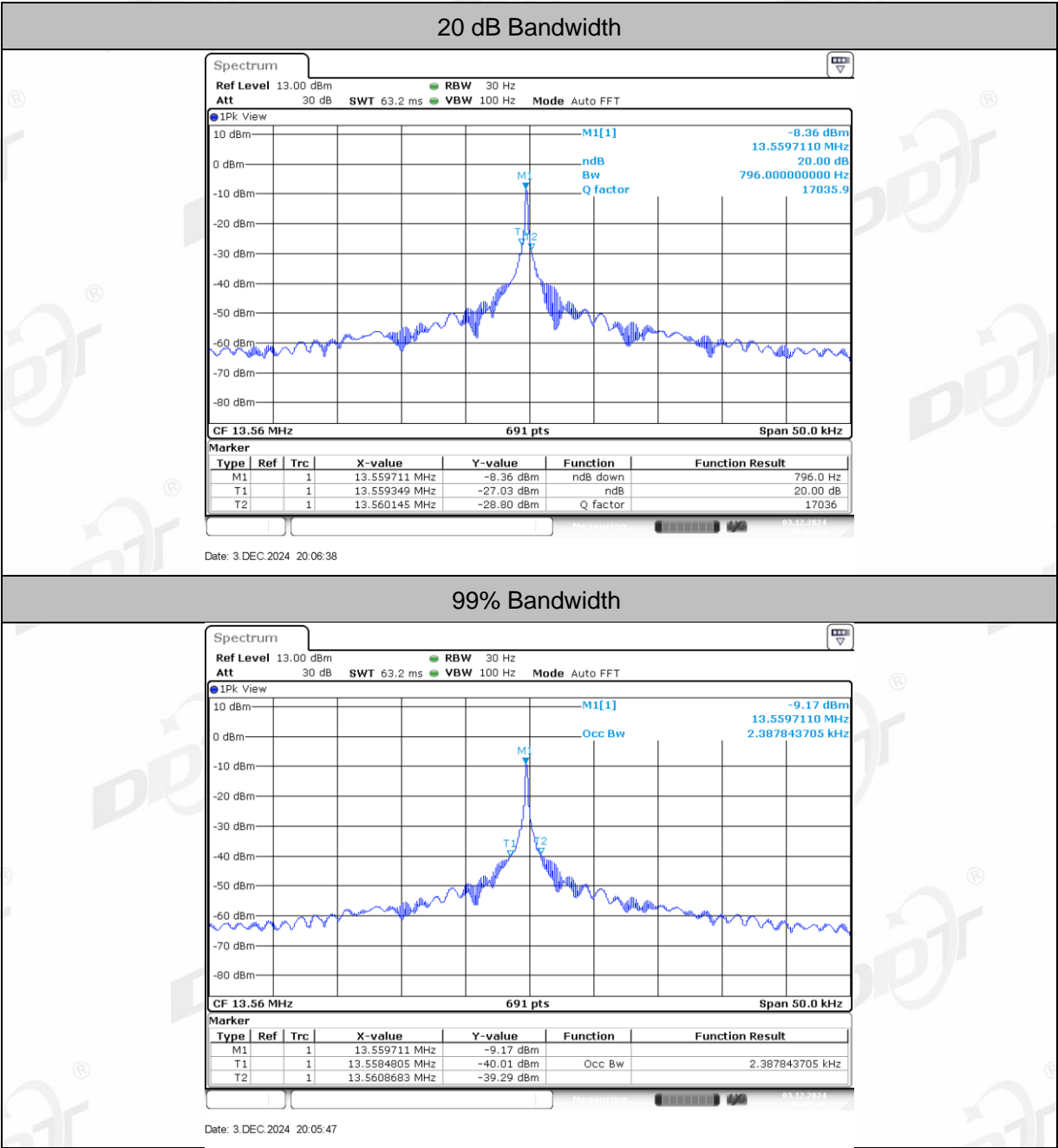
RBW:	30 Hz
VBW:	100 Hz
Detector Mode:	Peak
Sweep time:	auto
Trace mode	Max hold

- (3) Allow the trace to stabilize, measure the 20 dB bandwidth of signal.

4.4. Test result

Mode	Frequency (MHz)	20 dB bandwidth Result (kHz)	99% bandwidth Result (kHz)	Conclusion
ASK	13.56	0.796	2.39	Pass

4.5. Original test data

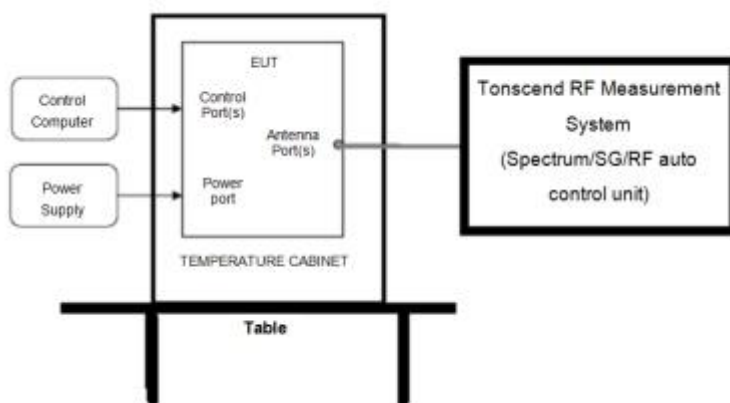


5. Frequency Tolerance

5.1. Limit

As contained in § 15.225 the frequency tolerance of the carrier signal shall be maintained within $\pm 0.01\%$ of the operating frequency over a temperature variation of -20 degrees to $+50$ degrees C at normal supply Voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

5.2. Block diagram of test setup



5.3. Test procedure

- (1) Connected the EUT's antenna port to the Spectrum Analyzer by suitable attenuator, set the Spectrum Analyzer as below:

Centre Frequency: The centre frequency of the channel under test.

Resolution BW: 10 kHz.

Video BW: 10 kHz.

Span: 1 MHz.

Detector: Peak.

Trace Mode: Max Hold.

- (2) When the trace is complete, find the peak value of the power envelope and record the frequency.

5.4. Test result

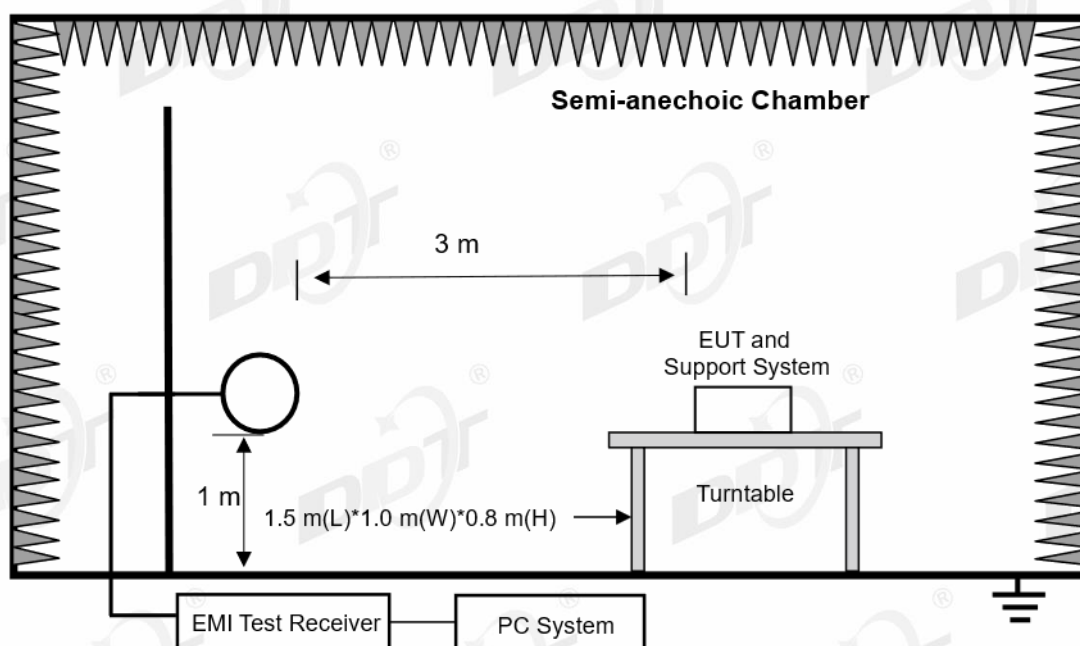
Mode	Condition		Result			Limit
	Temperature (°C)	Voltage (V)	Measured (MHz)	Tolerance (kHz)	Tolerance (ppm)	ppm
Carrier Tx Mode	NT	NV	13.560	0	0	±100
	-20	NV	13.560	0	0	±100
	-10	NV	13.560	0	0	±100
	0	NV	13.560	0	0	±100
	10	NV	13.560	0	0	±100
	30	NV	13.560	0	0	±100
	40	NV	13.560	0	0	±100
	NT	AC 102V	13.560	0	0	±100
	NT	AC 138V	13.560	0	0	±100
Note: NT: 20 °C, NV: AC 120V/60Hz						

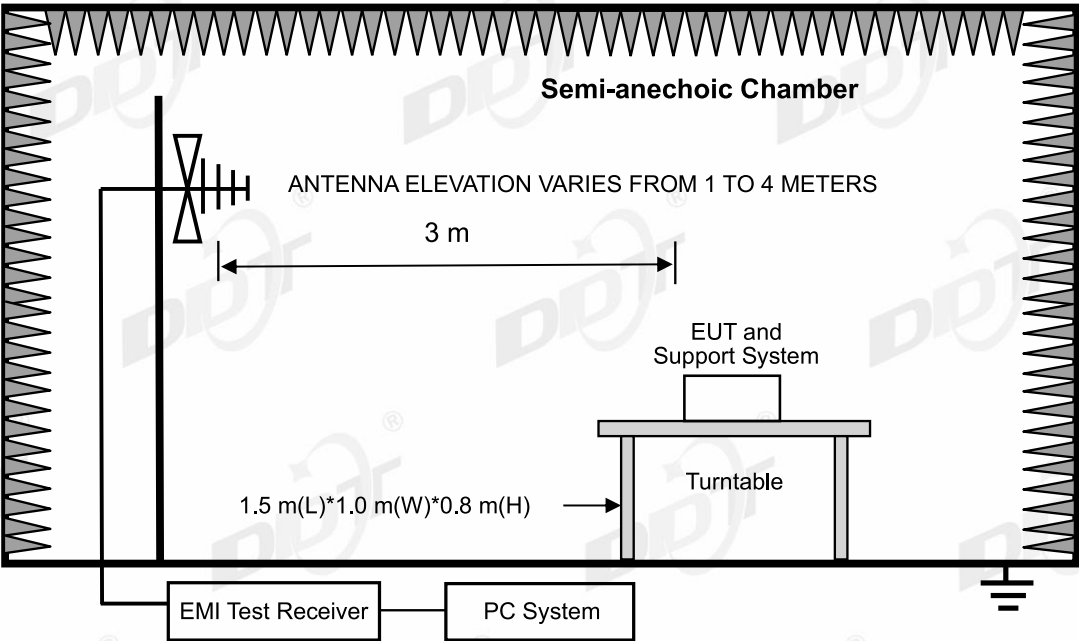
6. Radiated Emission

6.1. Test equipment

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

6.2. Block diagram of test setup





6.3. Limits

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/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:

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

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

6.4. Assistant equipment used for test

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

6.5. 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.

6.6. Test result

PASS. (See below detailed test result)

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

6.7. Test data

TR-4-E-009 Radiated Emission Test Result

Test Date:

2024-09-29

Tested By:

Zhong Nan

EUT:

AIQ DBLT NFC Keypad Rechargeable MB

Model Number:

Q1001-622

Test Mode:

working mode

Power Supply:

battery

Condition:

Temp:24.5°C;Humi:47.4%

Test Site:

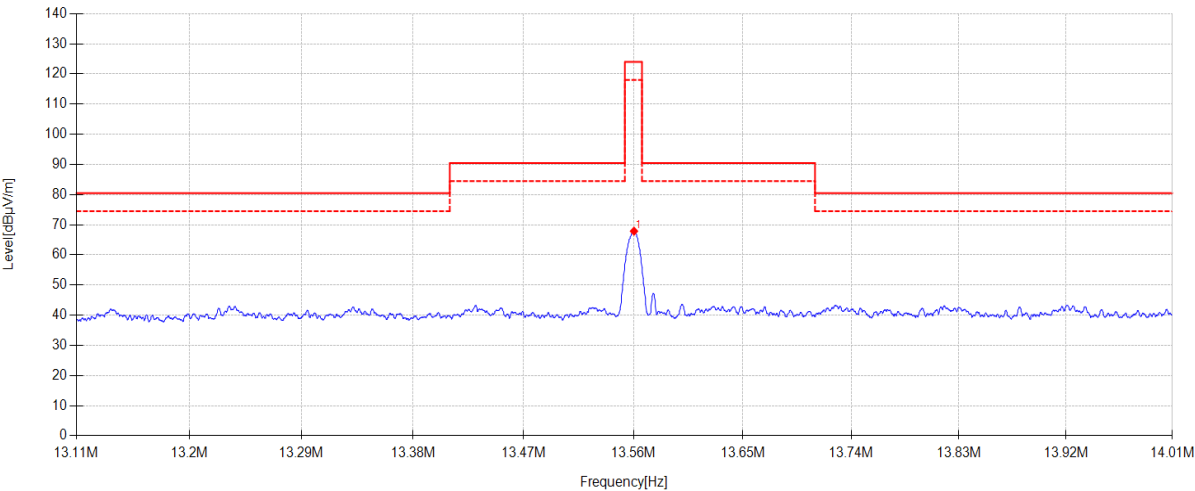
DDT 3# Chamber

File Path:

d:\ts\2024 report data\Q24091803\FCC BELOW1G 9K-30M\20240929-193648_V

Memo:

X Sample Number:S24091803-001 Power Setting:NA



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	13.560	74.94	20.30	3.65	-31.02	67.87	124.00	56.13	PK	X

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:

2024-09-29

Tested By:

Zhong Nan

EUT:

AIQ DBLT NFC Keypad Rechargeable MB

Model Number:

Q1001-622

Test Mode:

working mode

Power Supply:

battery

Condition:

Temp:24.5°C;Humi:47.4%

Test Site:

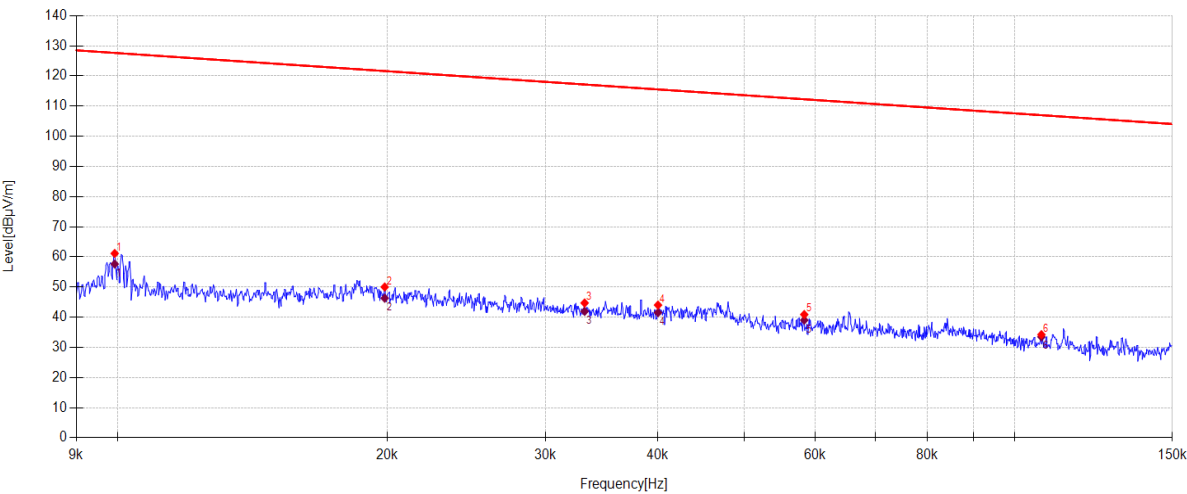
DDT 3# Chamber

File Path:

d:\ts\2024 report data\Q24091803\FCC BELOW1G 9K-30M\20240929-194314_V

Memo:

X Sample Number:S24091803-001 Power Setting:NA



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	67.82	20.50	3.21	-30.39	61.14	127.66	66.52	PK	X
2	0.020	56.76	20.50	3.22	-30.47	50.01	121.64	71.63	PK	X
3	0.033	51.63	20.40	3.23	-30.55	44.71	117.18	72.47	PK	X
4	0.040	50.99	20.40	3.23	-30.60	44.02	115.54	71.52	PK	X
5	0.058	47.97	20.40	3.23	-30.72	40.88	112.28	71.40	PK	X
6	0.107	41.68	20.31	3.23	-31.00	34.22	107.00	72.78	PK	X

Data List										
NO.	Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable loss [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity	
1	0.010	64.31	20.50	3.21	57.63	127.68	70.05	AV	X	
2	0.020	53.04	20.50	3.22	46.29	121.62	75.33	AV	X	
3	0.033	48.87	20.40	3.23	41.95	117.18	75.23	AV	X	
4	0.040	48.48	20.40	3.23	41.51	115.54	74.03	AV	X	
5	0.058	46.12	20.40	3.23	39.03	112.29	73.26	AV	X	
6	0.107	40.94	20.31	3.23	33.48	107.00	73.52	AV	X	

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:

2024-09-29

Tested By:

Zhong Nan

EUT:

AIQ DBLT NFC Keypad Rechargeable MB

Model Number:

Q1001-622

Test Mode:

working mode

Power Supply:

battery

Condition:

Temp:24.5°C;Humi:47.4%

Test Site:

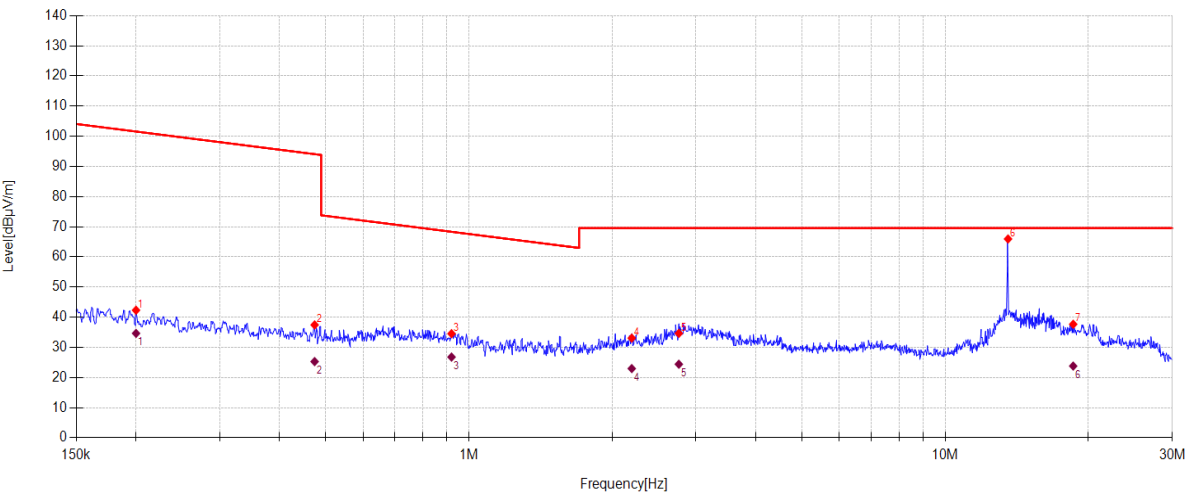
DDT 3# Chamber

File Path:

d:\ts\2024 report data\Q24091803\FCC BELOW1G 9K-30M\20240929-194441_V

Memo:

X Sample Number:S24091803-001 Power Setting:NA



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	0.200	49.94	20.13	3.24	-31.00	42.31	101.57	59.26	PK	X
2	0.475	44.90	20.29	3.25	-31.00	37.44	94.08	56.64	PK	X
3	0.920	41.88	20.38	3.27	-31.00	34.53	68.33	32.75	PK	X
4	2.199	40.34	20.40	3.32	-31.00	33.06	69.54	35.03	PK	X
5	2.761	41.90	20.40	3.34	-31.00	34.64	69.54	31.73	PK	X
6	13.556	73.01	20.30	3.65	-31.02	65.94	69.54	3.60	PK	X
7	18.577	44.83	20.18	3.68	-31.04	37.65	69.54	31.89	PK	X

Data List										
NO.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity	
1	0.200	42.26	20.13	3.24	34.63	101.57	66.94	AV	X	
2	0.475	32.73	20.29	3.25	25.27	94.08	68.81	AV	X	
3	0.920	34.13	20.38	3.27	26.78	68.33	41.55	AV	X	
4	2.199	30.24	20.40	3.32	22.96	69.54	46.58	AV	X	
5	2.761	31.66	20.40	3.34	24.40	69.54	45.14	AV	X	
6	18.577	30.97	20.18	3.68	23.79	69.54	45.75	AV	X	

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:

2024-09-27

Tested By:

Zhong Nan

EUT:

AIQ DBLT NFC Keypad Rechargeable MB

Model Number:

Q1001-622

Test Mode:

NFC Mode

Power Supply:

battery

Condition:

Temp:24.5°C;Humi:47.4%

Test Site:

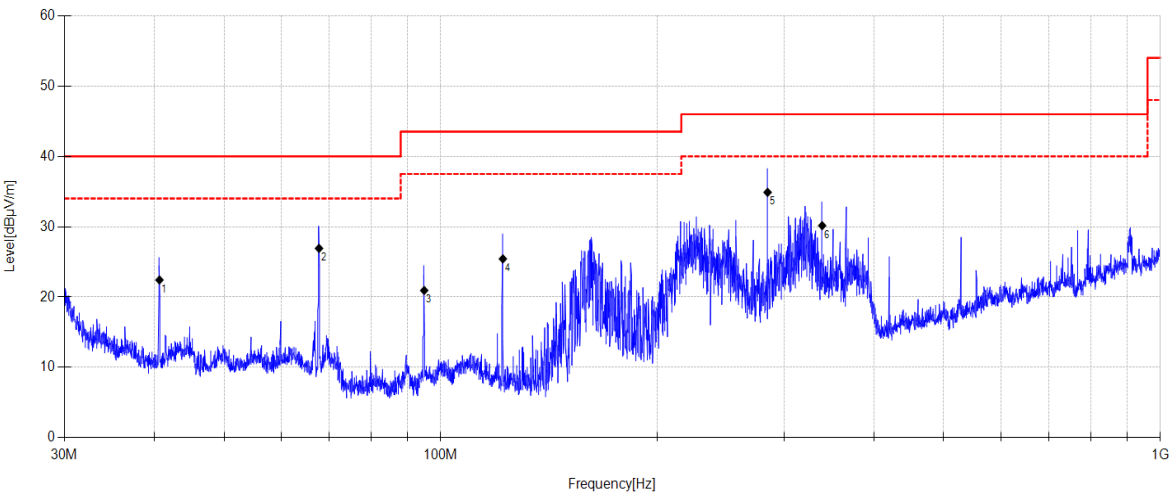
DDT 3# Chamber

File Path:

d:\ts\2024 report data\Q24091803\FCC ABOVE1G\20240927-154028_H

Memo:

Sample Number:S24091803-001 Power Setting:NA



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	40.671	37.44	12.27	3.82	22.43	40.00	17.57	QP	Horizontal
2	67.759	43.83	10.18	4.01	26.92	40.00	13.08	QP	Horizontal
3	94.871	37.41	10.45	4.18	20.94	43.50	22.56	QP	Horizontal
4	122.027	42.81	9.40	4.34	25.43	43.50	18.07	QP	Horizontal
5	284.649	48.9	12.21	5.15	34.89	46.00	11.11	QP	Horizontal
6	338.948	42.06	14.13	5.38	30.15	46.00	15.85	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:

2024-09-27

Tested By:

Zhong Nan

EUT:

AIQ DBLT NFC Keypad Rechargeable MB

Model Number:

Q1001-622

Test Mode:

NFC Mode

Power Supply:

battery

Condition:

Temp:24.5°C;Humi:47.4%

Test Site:

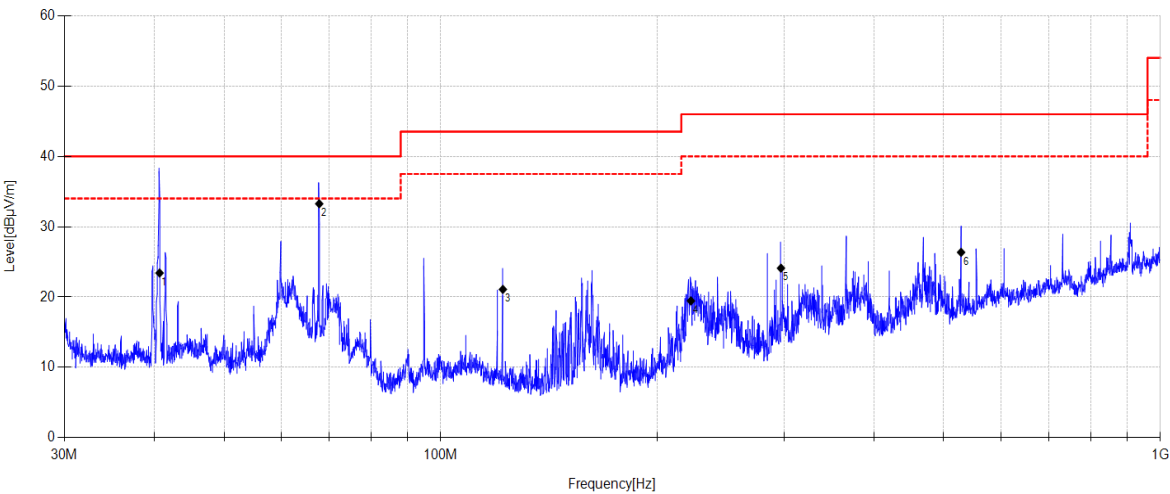
DDT 3# Chamber

File Path:

d:\ts\2024 report data\Q24091803\FCC ABOVE1G\20240927-154115_V

Memo:

Sample Number:S24091803-001 Power Setting:NA



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	40.687	38.43	12.27	3.82	23.42	40.00	16.58	QP	Vertical
2	67.807	50.17	10.18	4.01	33.26	40.00	6.74	QP	Vertical
3	122.027	38.47	9.40	4.34	21.09	43.50	22.41	QP	Vertical
4	222.705	34.69	11.16	4.86	19.46	46.00	26.54	QP	Vertical
5	297.088	37.17	13.12	5.21	24.11	46.00	21.89	QP	Vertical
6	528.684	34.1	17.65	6.11	26.36	46.00	19.64	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.

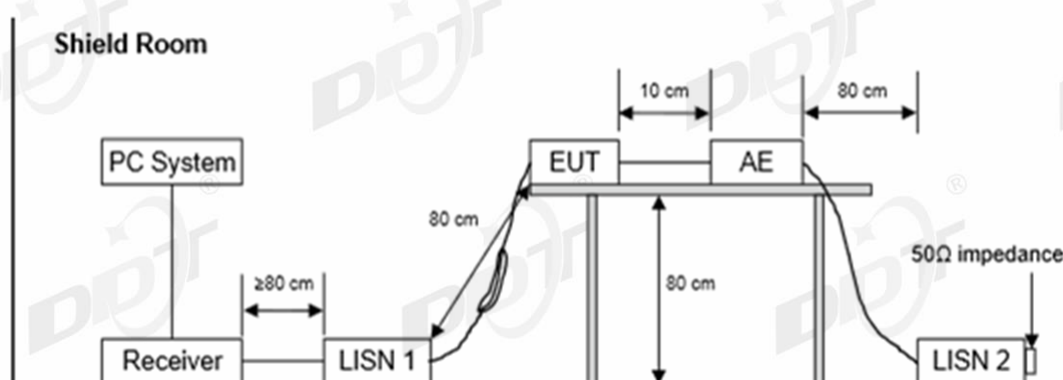
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

7. Power Line Conducted Emissions

7.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Cal Due To
Three-phase artificial power network	SCHWARZBECK	NSLK 8163	DDT-ZC01572	2025/07/08
Δ-shaped artificial power network	SCHWARZBECK	PVDC 8301	DDT-ZC03939	2025/03/31
Pulse Limiter	SCHWARZBECK	VTSD 9561	DDT-ZC02128	2025/07/08
Conducted Radiated Software	Audix	E3	DDT-ZC00562	/
EMI Test Receiver	R&S	ESCI/E3	DDT-ZC01297	2025/07/08
RF Cable	Yuhu Technology	Z806-NJ-NJ-6M	DDT-ZC02004	2025/07/08
Two Line V-Network	R&S	ENV216	DDT-ZC02056	2025/07/08
Two Line V-Network	R&S	ENV216	DDT-ZC02059	2025/07/08

7.2. Block diagram of test setup



7.3. 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.

7.4. Assistant equipment used for test

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

7.5. 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.

7.6. 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.

7.7. Test data

TR-4-E-010 Conducted Emission Test Result

Test Site : DDT 6# Shield Room

Test Date : 2024-09-29

EUT : AIQ DBLT NFC Keypad Rechargeable MB

Power Supply : AC 120V/60Hz

Condition : Temp:21.8°C,Humi:51.5%

Memo :

D:\2024 Report Date\Q24091803-2E\0929 CE.EM6

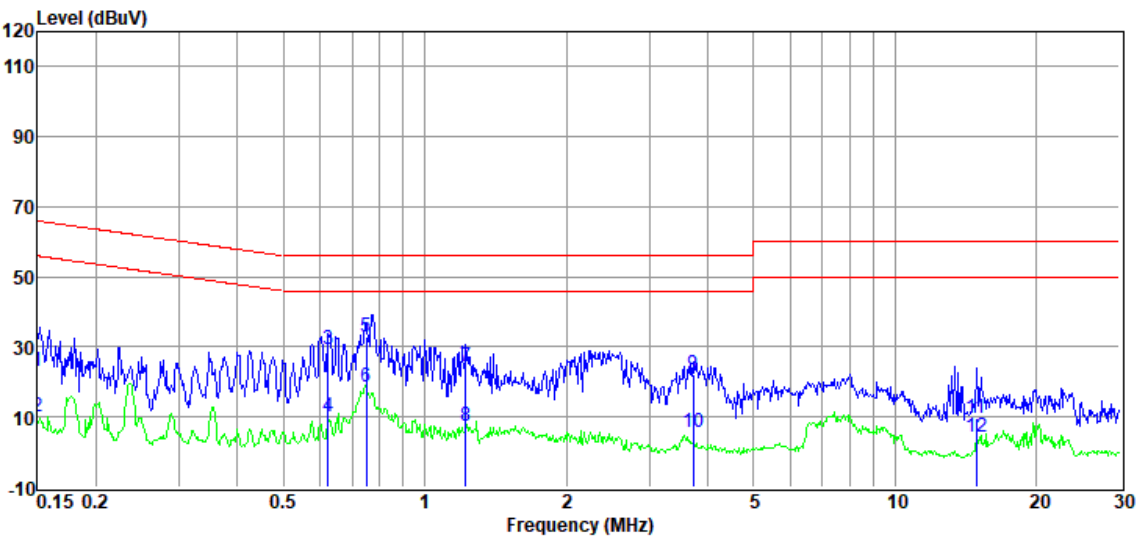
Tested By : Gen liu

Model Number : Q1001-622

Test Mode : NFC mode

LISN : 2024 ENV216 3#/NEUTRAL

Data: 6



Item	Freq.	Read Level	LISN Factor	Cable Loss	Pulse Limiter Factor	Result Level	Limit Line	Over Limit	Detector	Phase
(Mark)	(MHz)	(dBUV)	(dB)	(dB)	(dB)	(dBUV)	(dBUV)	(dB)		
1	0.15	3.51	9.78	0.07	9.83	23.19	66.00	-42.81	QP	NEUTRAL
2	0.15	-9.58	9.78	0.07	9.83	10.10	56.00	-45.90	Average	NEUTRAL
3	0.62	9.70	9.75	0.08	9.83	29.36	56.00	-26.64	QP	NEUTRAL
4	0.62	-9.66	9.75	0.08	9.83	10.00	46.00	-36.00	Average	NEUTRAL
5	0.75	13.05	9.75	0.06	9.84	32.70	56.00	-23.30	QP	NEUTRAL
6	0.75	-0.88	9.75	0.06	9.84	18.77	46.00	-27.23	Average	NEUTRAL
7	1.22	4.62	9.76	0.12	9.84	24.34	56.00	-31.66	QP	NEUTRAL
8	1.22	-12.24	9.76	0.12	9.84	7.48	46.00	-38.52	Average	NEUTRAL
9	3.72	2.64	9.78	0.10	9.85	22.37	56.00	-33.63	QP	NEUTRAL
10	3.72	-14.08	9.78	0.10	9.85	5.65	46.00	-40.35	Average	NEUTRAL
11	14.91	-10.38	9.91	0.24	9.91	9.68	60.00	-50.32	QP	NEUTRAL
12	14.91	-15.88	9.91	0.24	9.91	4.18	50.00	-45.82	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.

TR-4-E-010 Conducted Emission Test Result

Test Site : DDT 6# Shield Room

Test Date : 2024-09-29

EUT : AIQ DBLT NFC Keypad Rechargeable MB

Power Supply : AC 120V/60Hz

Condition : Temp:21.8°C,Humi:51.5%

Memo :

D:\2024 Report Date\Q24091803-2E\0929 CE.EM6

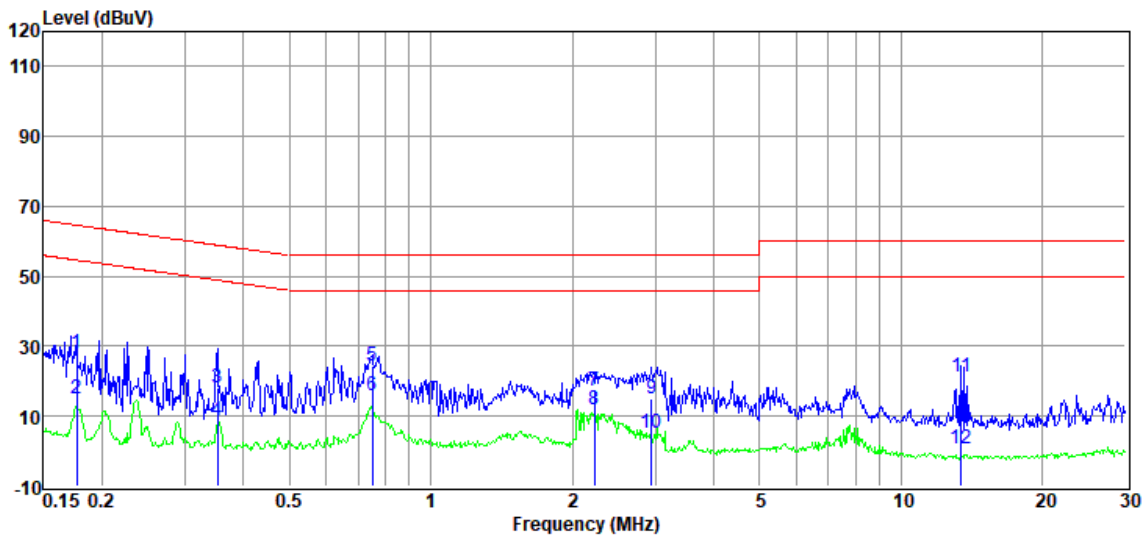
Tested By : Gen liu

Model Number : Q1001-622

Test Mode : NFC mode

LISN : 2024 ENV216 3#/LINE

Data: 8



Item	Freq.	Read Level	LISN Factor	Cable Loss	Pulse Limiter Factor	Result Level	Limit Line	Over Limit	Detector	Phase
(Mark)	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV)	(dBuV)	(dB)		
1	0.18	8.36	9.78	0.06	9.83	28.03	64.64	-36.61	QP	LINE
2	0.18	-4.63	9.78	0.06	9.83	15.04	54.64	-39.60	Average	LINE
3	0.35	-1.40	9.76	0.08	9.83	18.27	58.91	-40.64	QP	LINE
4	0.35	-10.71	9.76	0.08	9.83	8.96	48.91	-39.95	Average	LINE
5	0.75	4.72	9.75	0.06	9.84	24.37	56.00	-31.63	QP	LINE
6	0.75	-3.58	9.75	0.06	9.84	16.07	46.00	-29.93	Average	LINE
7	2.23	-2.34	9.75	0.11	9.84	17.36	56.00	-38.64	QP	LINE
8	2.23	-7.75	9.75	0.11	9.84	11.95	46.00	-34.05	Average	LINE
9	2.95	-4.90	9.76	0.11	9.84	14.81	56.00	-41.19	QP	LINE
10	2.95	-14.68	9.76	0.11	9.84	5.03	46.00	-40.97	Average	LINE
11	13.41	1.18	9.88	0.23	9.90	21.19	60.00	-38.81	QP	LINE
12	13.41	-19.25	9.88	0.23	9.90	0.76	50.00	-49.24	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.

8. Antenna Requirements

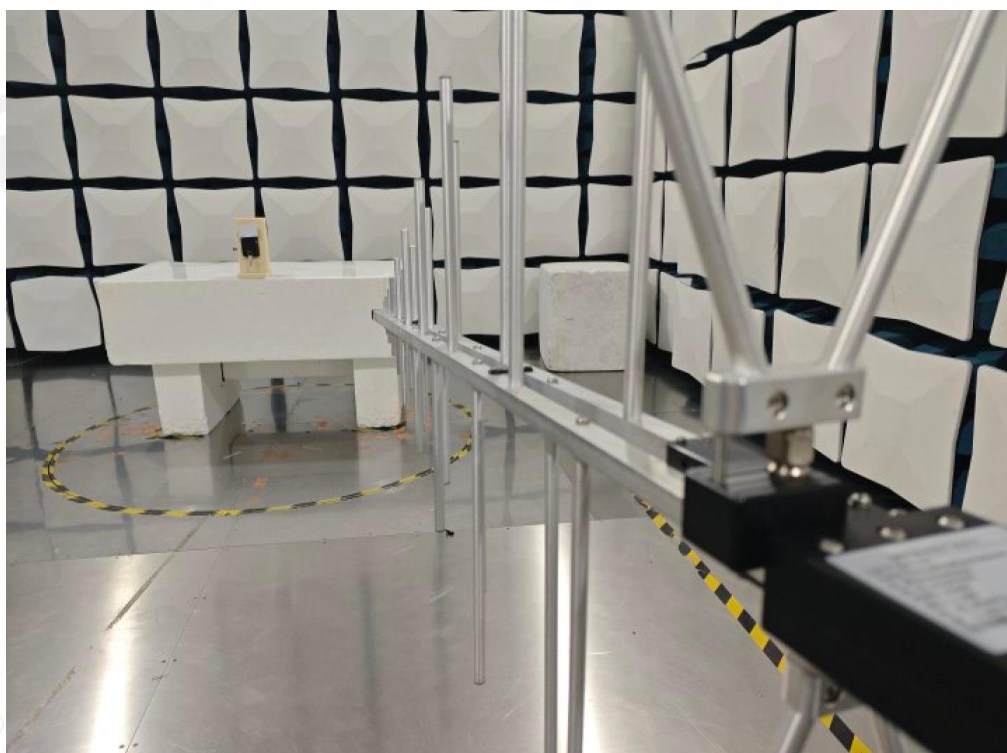
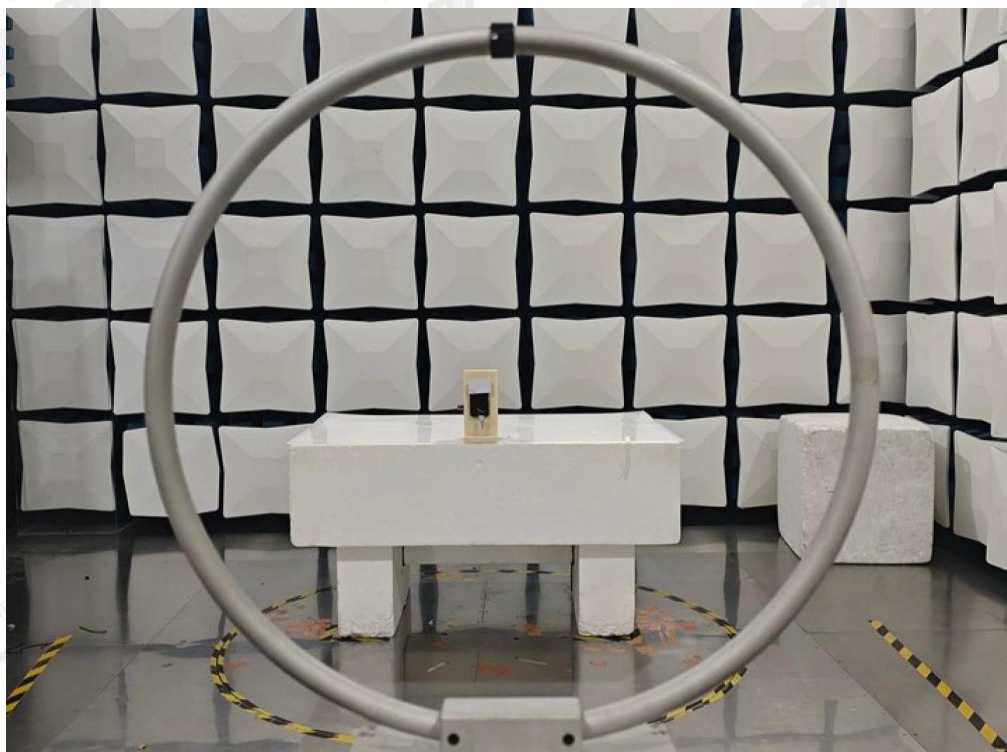
8.1. Limit

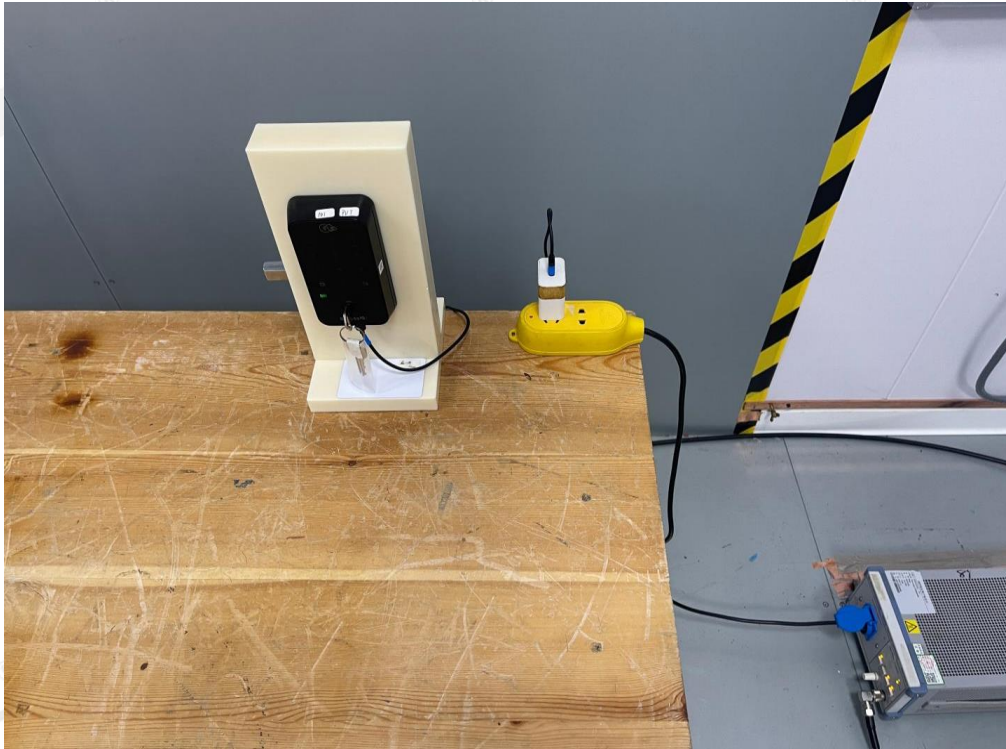
For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional 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.

8.2. 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.

9. Test Setup Photograph





10. Photos of the EUT

Please refer to DDT-Q24091803-1E appendix I

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