

Test Report

Verified code: 759722

Report No.: E20230717807601-3

Customer: Faurecia Clarion Electronics (Xiamen) Co., Ltd.

Address: 6F, No. 40, Guanri Road, Software Park Stage II, Xiamen City, Fujian Province, P.R. China

Sample Name: RN WCBS

Sample Model: Z0003NI

Receive Sample Date: Jul. 25, 2023

Test Date: Aug. 02, 2023 ~ Aug. 28, 2023

Reference Document: CFR 47, FCC Part 15 Subpart C

Test Result: Pass

Prepared by: Wen Wenwen
Wen Wenwen

Reviewed by: Jiang Tao
Jiang Tao

Approved by: Xiao Liang
Xiao Liang



GRG METROLOGY & TEST GROUP CO., LTD.

Issued Date: 2023-10-26

GRG METROLOGY & TEST GROUP CO., LTD.

Address: No. 163, Pingyun Road, West of Huangpu Avenue, Guangzhou, Guangdong, China
Tel: (+86) 400-602-0999 FAX: (+86) 020-38698685 Web: <http://www.grgtest.com>



Statement

1. The report is invalid without "special seal for inspection and testing"; some copies are invalid; The report is invalid if it is altered or missing; The report is invalid without the signature of the person who prepared, reviewed and approved it.
2. The sample information is provided by the client and responsible for its authenticity; The content of the report is only valid for the samples sent this time.
3. When there are reports in both Chinese and English, the Chinese version will prevail when the language problems are inconsistent.
4. If there is any objection concerning the report, please inform us within 15 days from the date of receiving the report.
5. Without the agreement of the laboratory, the client is not authorized to use the test results for unapproved propaganda.

----- The following blanks -----

TABLE OF CONTENTS

1. TEST RESULT SUMMARY	5
2. GENERAL DESCRIPTION OF EUT	6
2.1 APPLICANT	6
2.2 MANUFACTURER	6
2.3 FACTORY	6
2.4 BASIC DESCRIPTION OF EQUIPMENT UNDER TEST	6
2.5 TEST MODE	7
2.6 BLOCK DIAGRAM	7
2.7 LOCAL SUPPORTIVE INSTRUMENTS	7
3. LABORATORY AND MEASUREMENT UNCERTAINTY	8
3.1 LABORATORY	8
3.2 MEASUREMENT UNCERTAINTY	8
4. LIST OF USED TEST EQUIPMENT AT GRGT	9
4.1 LIST OF USED TEST EQUIPMENT	9
5. RADIATED SPURIOUS EMISSIONS	10
5.1 LIMITS	10
5.2 TEST PROCEDURES	10
5.3 TEST SETUP	12
5.4 DATA SAMPLE	13
5.5 TEST RESULTS	14
6. 20DB BANDWIDTH	19
6.1 LIMITS	19
6.2 TEST PROCEDURES	19
6.3 TEST SETUP	19
6.4 TEST RESULTS	20
7. FREQUENCY TOLERANCE (TEMPERATURE VARIATION AND VOLTAGE VARIATION)	21
7.1 LIMITS	21
7.2 TEST PROCEDURES	21
7.3 TEST SETUP	21
7.4 TEST RESULTS	22
8. PHOTOGRAPHS OF TEST SET-UP	24
9. PHOTOGRAPHS OF THE EUT	24

REPORT ISSUED HISTORY

Report Version	Report No.	Description	Compile Date
1.0	E20230717807601-3	Original Issue	2023-10-19

----- The following blanks -----

1. TEST RESULT SUMMARY

Technical Requirements		
CFR 47, FCC Part 15 Subpart C, ANSI C63.10:2013		
Item	FCC Standard Chapter	Result
Antenna requirements	§15.203	Complied
Radiated Spurious Emissions	§15.209 & §15.205 & 15.225	Complied
20dB Bandwidth	§15.215	Complied
Frequency Tolerance (temperature variation and voltage variation)	§15.225(e)	Complied
AC Conducted Emission	§15.207	N/A

Note: The EUT NFC antenna is coil antenna, which accordance 15.203 is considered sufficient to comply with the provisions of this section. The EUT is power by battery, the AC conduction emission is not applicant.

----- The following blanks -----

2. GENERAL DESCRIPTION OF EUT

2.1 APPLICANT

Name: Faurecia Clarion Electronics (Xiamen) Co., Ltd.
Address: 6F, No. 40, Guanri Road, Software Park Stage II, Xiamen City, Fujian Province, P.R. China

2.2 MANUFACTURER

Name: Faurecia Clarion Electronics (Xiamen) Co., Ltd.
Address: 6F, No. 40, Guanri Road, Software Park Stage II, Xiamen City, Fujian Province, P.R. China

2.3 FACTORY

Name 1: Faurecia Clarion Electronics (Fengcheng) Co. Ltd.
Address 1: No. 12 High-Tech Road, Fengcheng High Technology Industry Park, Yi chun City, Jiangxi Province, P.R. China.
Name 2: ELECTRÓNICA CLARION, S.A. DE C.V.
Address 2: Av. Nueve Oriente No. 3, Col. Zona Industrial Valle de Oro. 76803 – San Juan del Río (Mexico)

2.4 BASIC DESCRIPTION OF EQUIPMENT UNDER TEST

Product Name: RN WCBS
Product Model: Z0003NI
Adding Model: /
Model Difference: /

Trade Name:



Power Supply: DC 9V-16V by battery, typical voltage DC 12V, Rating current $\leq 2.54A$

Frequency Band: 13.56MHz for NFC

Maximum field strength: 44.67dB μ V/m@3m

FCC ID: WY2Z0003NI

Antenna Type: Coil Antenna for NFC

Modulation type: ASK for NFC

Sample submitting way: ☒ Provided by customer ☐ Sampling

Sample No: E20230717807601-0001

Temperature Range: -30°C ~ +60°C

Hardware version: 285J95096R

Software version: 283H57049R

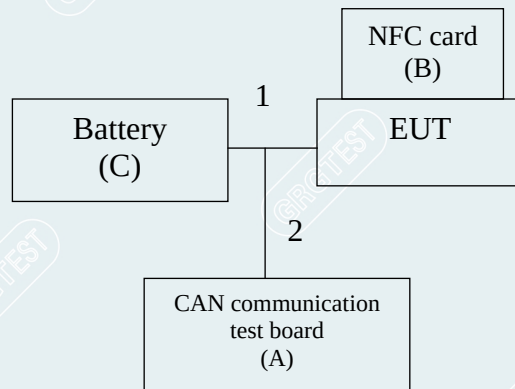
Note: The basic description of the EUT is provided by the applicant. This report is made Solely on the basis of such data and/or information. We accept no responsibility for the authenticity and completeness of the above data and information and the validity of the results and/or conclusions.

2.5 TEST MODE

Mode No.	Description of the modes
Mode 1	EUT NFC communication with NFC card+ CAN communication test board

2.6 BLOCK DIAGRAM

Mode 1:



2.7 LOCAL SUPPORTIVE INSTRUMENTS

No.	Name of Equipment	Manufacturer	Model	Serial Number
A	CAN communication test board	/	HBHQ-TEST-01	700009064
B	NFC card	/	/	/
C	Battery	/	L2-400	D8J16H288-0610

No.	Cable Type	Qty.	Shielded Type	Ferrite Core(Qty.)	Note
1	DC Cable	1	No	0	Unshielded 1.0m
2	DC Cable	1	No	0	Unshielded 1.0m

3. LABORATORY AND MEASUREMENT UNCERTAINTY

3.1 LABORATORY

The tests & measurements refer to this report were performed by Shenzhen EMC Laboratory of GRG METROLOGY & TEST GROUP CO., LTD.

Add : No.1301 Guangguang Road Xinlan Community, Guanlan Street, Longhua District
Shenzhen, 518110, People's Republic of China

P.C. : 518110

Tel : 0755-61180008

Fax : 0755-61180008

3.2 ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

USA A2LA(Certificate#:2861.01)

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

Canada ISED (Company Number: 24897, CAB identifier:CN0069)

USA FCC (Registration Number: 759402, Designation Number:CN1198)

Copies of granted accreditation certificates are available for downloading from our web site,
<http://www.grgtest.com>

3.3 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Uncertainty
RF frequency	6.00×10^{-6}
Humidity	6.00%
Temperature	2.00°C

Measurement		Frequency	Uncertainty
Radiated Emission	Coaxial	9kHz~30MHz	4.4dB
	Coplanar	9kHz~30MHz	4.4dB
	Horizontal	30MHz~200MHz	4.6dB
	Horizontal	200MHz~1000MHz	4.8dB
	Vertical	30MHz~200MHz	4.7dB
	Vertical	200MHz~1000MHz	4.7dB

Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95%.

This uncertainty represents an expanded uncertainty factor of $k=2$.

4. LIST OF USED TEST EQUIPMENT AT GRGT

4.1 LIST OF USED TEST EQUIPMENT

Name of equipment	Manufacturer	Model	Serial number	Calibration due
Radiated Spurious Emissions & 20dB Bandwidth & Frequency Stability Tolerance				
Receiver	R&S	ESR26	101758	2023-10-27
Spectrum Analyzer	R&S	FSV30	104381-rH	2023-11-17
Loop Antenna	schwarzbeck	FMZB 1513-60	1513-60-56	2024-07-15
Bi-log Antenna	schwarzbeck	VULB 9160	VULB9160-3402	2023-10-23
Preamplifiers	SHIRONG ELECTRONIC	DLNA-30M1G-G40	20200928001	2023-08-19
Temperature & humidity chamber	HOSON	HS01060SDF	1910008401	2024-02-02
DC source	Smart testing	E36131A	MY59001135	2023-10-16
Test Software	Tonscend	JS32-RE/2.5.1.5		

Note: The calibration interval of the test instruments is 12 months. The Preamplifiers frequency range in this report is 30MHz to 1GHz only.

----- The following blanks -----

5. RADIATED SPURIOUS EMISSIONS

5.1 LIMITS

- 1) The lower limit shall apply at the transition frequencies.
- 2) The field strength of any emissions with the band 13.553-13.567MHz shall not exceed 15848 microvolts/meter at 30 meters.
- 3) Within the bands 13.410-13.553MHz and 13.567-13.710MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.
- 4) Within the bands 13.110-13.410MHz and 13.710-14.010MHz, the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.
- 5) The field strength of any emissions appearing outside of the 13.110–14.010 MHz band shall not exceed the general radiated emission limits in § 15.209.

Frequency (MHz)	Quasi-peak($\mu\text{V/m}$)	Measurement distance(m)	Quasi-peak($\text{dB}\mu\text{V/m}$)@distance 3m
0.009-0.490	2400/F(kHz)	300	128.5~93.8
0.490-1.705	24000/F(kHz)	30	73.8~63
1.705-30.0	30	30	69.5
30 ~ 88	100	3	40
88~216	150	3	43.5
216 ~ 960	200	3	46
Above 960	500	3	54

5.2 TEST PROCEDURES

1) Sequence of testing 9kHz to 30MHz

Setup:

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a rotatable table with 0.8 m height is used.
- If the EUT is a floor standing device, it is placed on the ground.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions.
- The measurement distance is 3 meter.
- The EUT was set into operation.

Pre measurement:

- The turntable rotates from 0 ° to 360 °.
- The antenna height is 1 meter.
- At each turntable position the analyzer sweeps with peak detection to find the maximum of all emissions.

Final measurement:

- Identified emissions during the pre measurement the software maximizes by rotating the turntable position (0 ° to 360 °) and by rotating the elevation axes (0 ° to 360 °).
- The final measurement will be done in the position (turntable and elevation) causing the highest emissions with QP detector.
- The final levels, frequency, measuring time, bandwidth, turntable position, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the pre measurement and the limit will be stored.

2) Sequence of testing 30MHz to 1GHz

Setup:

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a table with 0.8 m height is used, which is placed on the ground plane.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions
- The measurement distance is 3 meter.
- The EUT was set into operation.

Pre measurement:

- The turntable rotates from 0 °to 360 °.
- The antenna is polarized vertical and horizontal.
- The antenna height changes from 1 to 4 meter.
- At each turntable position, antenna polarization and height the analyzer sweeps three times in peak to find the maximum of all emissions.

Final measurement:

- The final measurement will be performed with minimum the six highest peaks.
- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable rotates from 0 °to 360 °and antenna movement between 1 and 4 meter.
- The final measurement will be done with QP detector with an EMI receiver.
- The final levels, frequency, measuring time, bandwidth, antenna height, antenna polarization, turntable angle, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement with marked maximum final measurements and the limit will be stored.

MEASURING INSTRUMENTS SETTING

9kHz to 150kHz

Receiver parameters	Setting
RBW	200Hz
VBW	200Hz
Start frequency	9kHz
Stop frequency	150kHz
Sweep time	Auto
Detector	QP
Trace mode	Max Hold

150kHz to 30MHz

Receiver parameters	Setting
RBW	9kHz
VBW	10kHz
Start frequency	150kHz
Stop frequency	30MHz
Sweep time	Auto
Detector	QP
Trace mode	Max Hold

30MHz to 1GHz

Receiver parameters	Setting
RBW	100kHz
VBW	300kHz
Start frequency	30MHz
Stop frequency	1GHz
Sweep time	Auto
Detector	QP
Trace mode	Max Hold

5.3 TEST SETUP

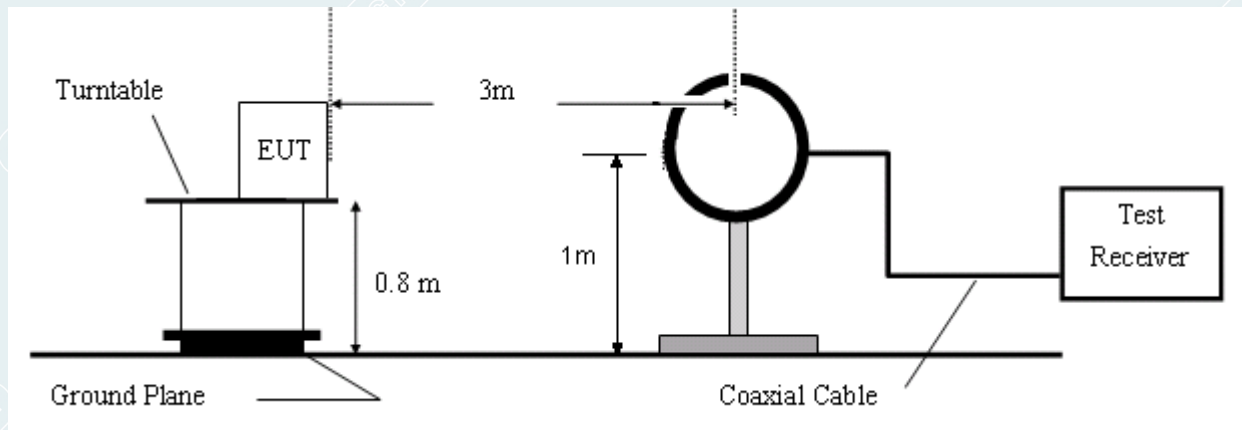


Figure 1. 9kHz to 30MHz radiated emissions test configuration

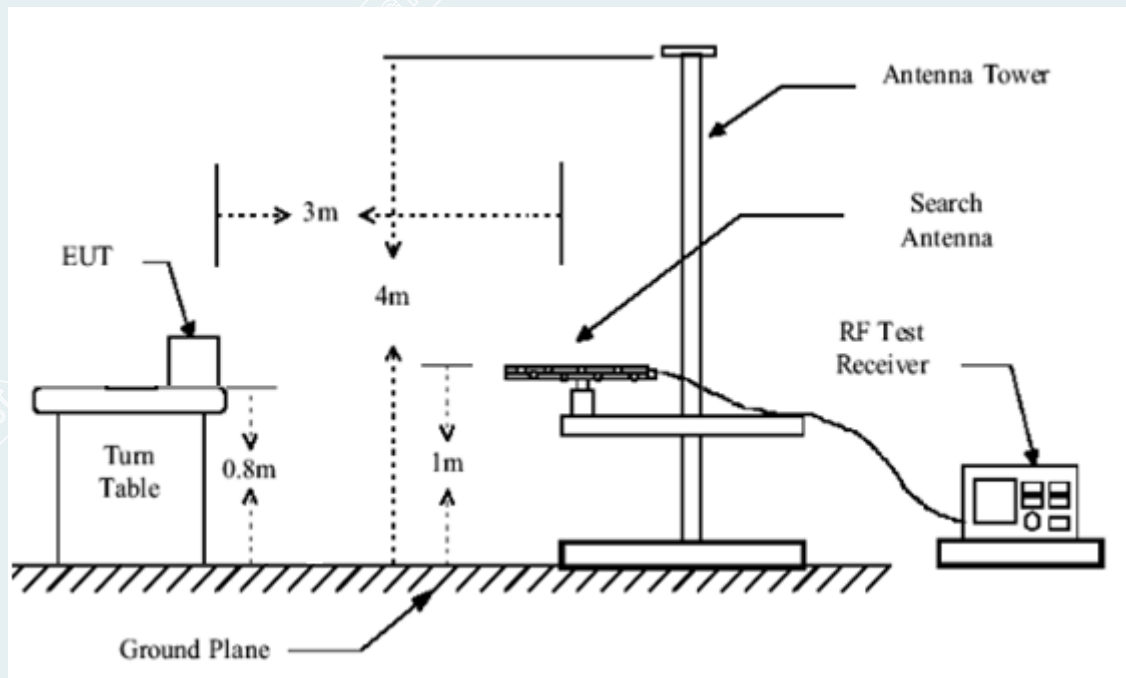


Figure 2. 30MHz to 1GHz radiated emissions test configuration

5.4 DATA SAMPLE**0.009MHz to 30MHz**

NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Trace	Height [cm]	Angle [°]	Polarity	Verdict
1	XXX	28.60	50.34	21.74	112.63	62.29	PK	100	93	Coplanar	PASS
2	XXX	29.88	51.89	22.01	107.25	55.36	PK	100	93	Coplanar	PASS

Frequency (MHz) = Emission frequency in MHz

Ant.Pol. (Coplanar/ Coaxial) = Antenna polarization

Reading (dBuV/m) = Uncorrected Analyzer / Receiver reading

Factor (dB) = Antenna factor + Cable loss – Amplifier gain

Level (dBuV/m) = Reading (dBuV/m) + Factor (dB)

Limit (dBuV/m) = Limit stated in standard

Margin (dB) = Limit (dBuV/m) – Level (dBuV/m)

PK = Peak Reading

30MHz to 1GHz**Suspected Data List**

NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Trace	Height [cm]	Angle [°]	Polarity
xxxx	xxxx	62.87	34.23	-28.64	40.00	5.77	PK	200	351	Horizontal

Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Reading [dBμV/m]	Level [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
xxxx	xxxx	-28.64	54.02	25.38	40.00	14.62	100	196	Horizontal

Frequency (MHz) = Emission frequency in MHz

Reading (dBuV/m) = Uncorrected Analyzer / Receiver reading

Level (dBuV/m) = Reading (dBuV/m) + Factor (dB)

Limit (dBuV/m) = Limit stated in standard

Margin (dB) = Limit(dBuV/m)- Level(dBuV/m)

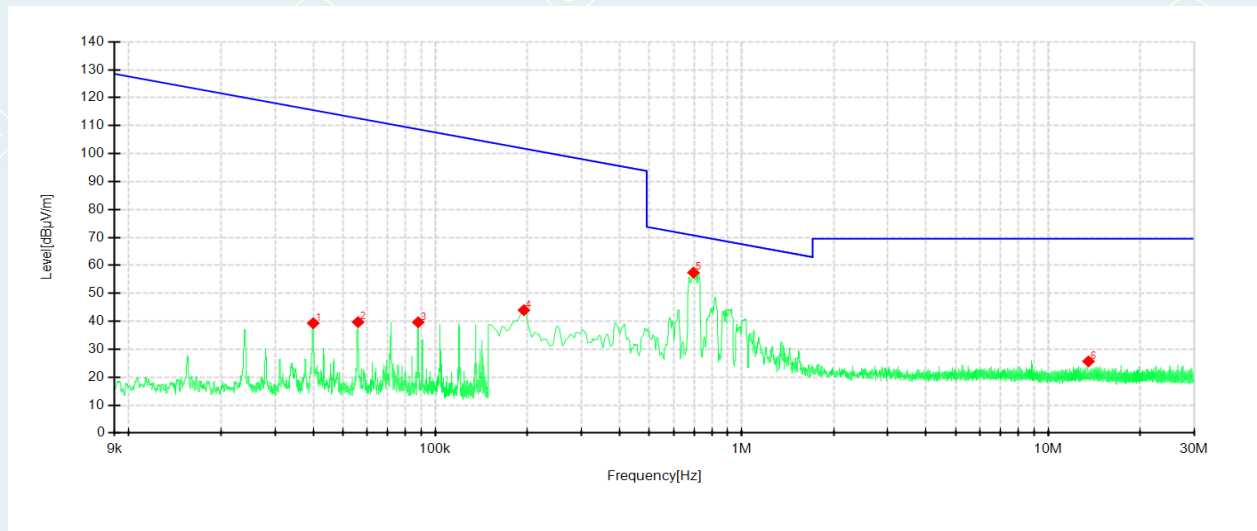
QP = Quasi-peak Reading

5.5 TEST RESULTS

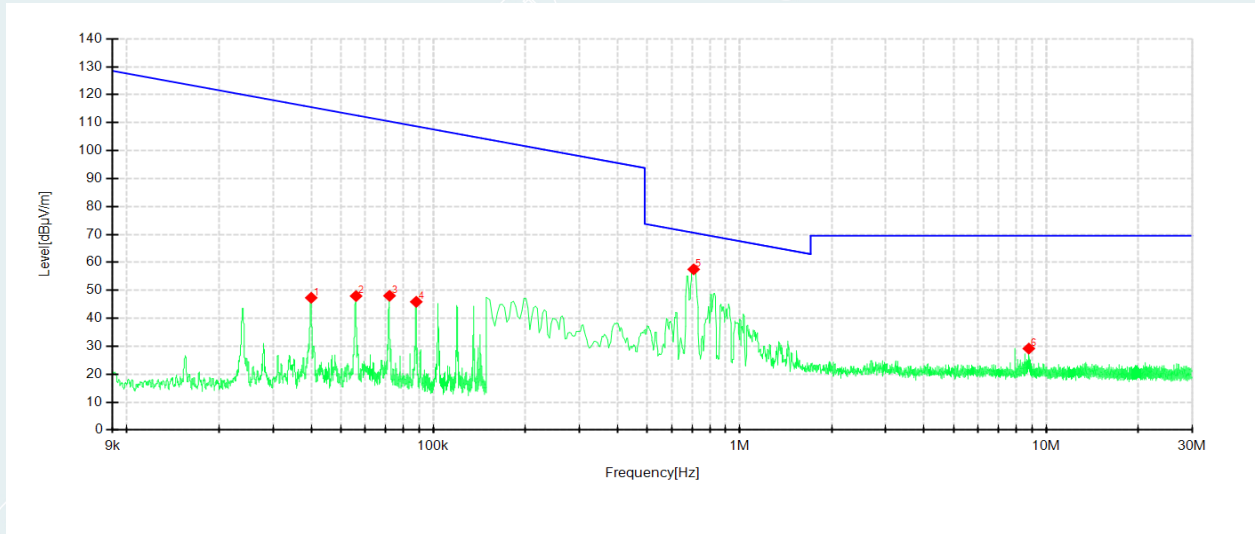
9kHz-30MHz

Note: If the margin of the pre-test results is greater than 6dB, it meets the requirements of quasi peak or average values, and final testing is no longer required.

Project Information			
Application No.:	E20230717807601	EUT:	RN WCBS
Model:	Z0003NI	SN:	E20230717807601-0001
Mode:	Mode 1	Voltage:	DC 12V
Environment:	Temp: 27.5°C; Humi: 57%; 101.0kPa	Engineer:	Zhang zishan
Tested Date:	2023-08-02	/	/



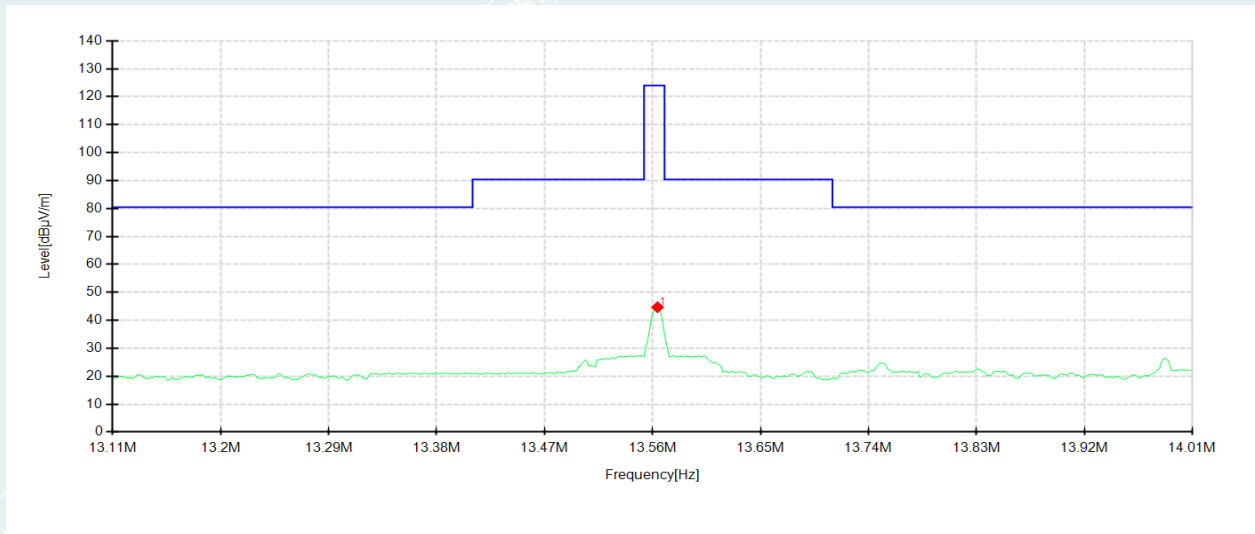
Suspected Data List											
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Trace	Height [cm]	Angle [°]	Polarity	Verdict
1	0.0400	71.32	39.32	-32.0	115.56	75.63	PK	100	196	Coplanar	PASS
2	0.0560	71.66	39.72	-31.9	112.64	72.50	PK	100	196	Coplanar	PASS
3	0.0880	71.36	39.66	-31.7	108.71	68.78	PK	100	196	Coplanar	PASS
4	0.1948	75.28	43.99	-31.2	101.81	57.82	PK	100	128	Coplanar	PASS
5	0.6963	88.58	57.42	-31.1	70.75	13.33	PK	100	282	Coplanar	PASS
6	13.549	56.01	25.66	-30.3	69.54	43.88	PK	100	119	Coplanar	PASS



Suspected Data List

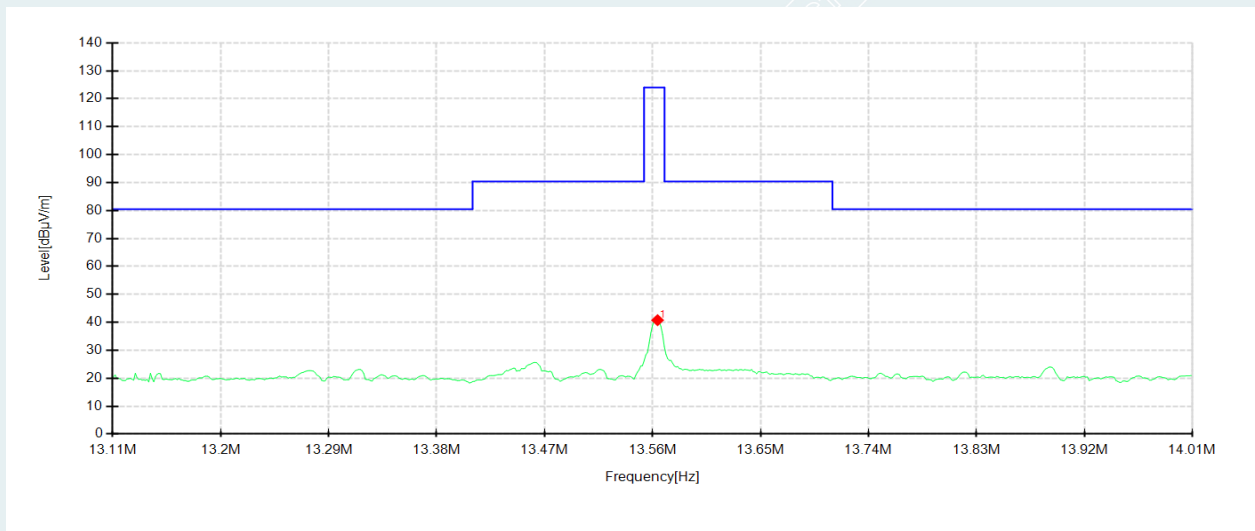
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Trace	Height [cm]	Angle [°]	Polarity	Verdict
1	0.0400	79.34	47.34	-32.00	115.57	67.64	PK	100	357	Coaxial	PASS
2	0.0560	79.89	47.95	-31.94	112.64	64.22	PK	100	357	Coaxial	PASS
3	0.0720	79.83	48.05	-31.78	110.46	62.16	PK	100	357	Coaxial	PASS
4	0.0880	77.59	45.89	-31.70	108.71	62.70	PK	100	357	Coaxial	PASS
5	0.7082	88.67	57.51	-31.16	70.60	13.09	PK	100	304	Coaxial	PASS
6	8.7856	59.79	29.17	-30.62	69.54	39.13	PK	100	160	Coaxial	PASS

----- The following blanks -----



Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity	Verdict
1	13.5642	75.05	44.67	-30.38	124.00	79.33	100	343	Coplanar	PASS



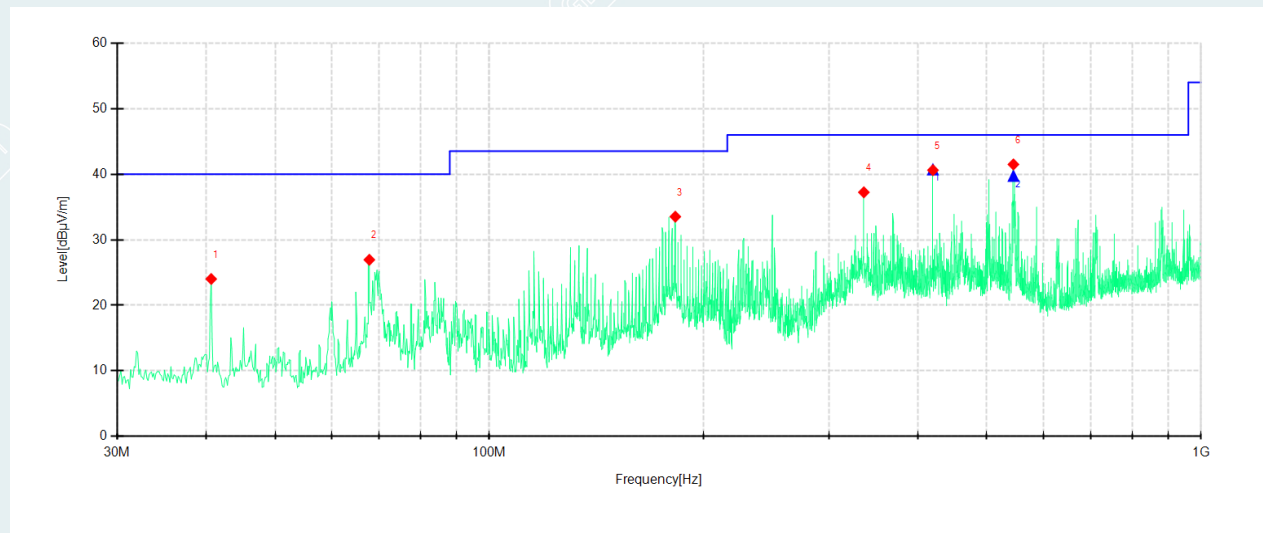
Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity	Verdict
1	13.5642	71.14	40.76	-30.38	124.00	83.24	100	291	Coaxial	PASS

30MHz-1GHz

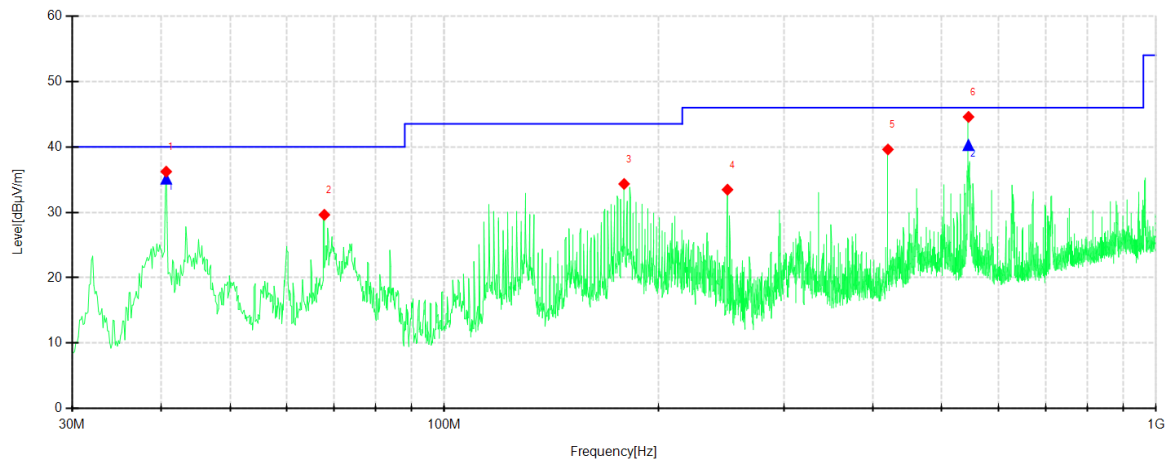
Note: If the margin of the pre test results is greater than 6db, it meets the requirements of quasi peak or average values, and final testing is no longer required.

Project Information			
Application No.:	E20230717807601	EUT:	RN WCBS
Model:	Z0003NI	SN:	E20230717807601-0001
Mode:	Mode 1	Voltage:	DC 12V
Environment:	Temp: 27.5℃; Humi: 57%; 101.0kPa	Engineer:	Zhang zishan
Tested Date:	2023-08-02	/	/



Suspected Data List											
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Trace	Height [cm]	Angle [°]	Polarity	Verdict
1	40.6713	52.67	24.02	-28.65	40.00	15.98	PK	200	253	Horizontal	PASS
2	67.8347	57.46	26.95	-30.51	40.00	13.05	PK	100	235	Horizontal	PASS
3	182.5516	63.32	33.52	-29.80	43.50	9.98	PK	200	213	Horizontal	PASS
4	335.9520	63.59	37.24	-26.35	46.00	8.76	PK	100	16	Horizontal	PASS
5	420.1100	64.18	40.61	-23.57	46.00	5.39	PK	100	255	Horizontal	PASS
6	545.0131	62.01	41.49	-20.52	46.00	4.51	PK	100	275	Horizontal	PASS

Final Data List										
NO.	Freq. [MHz]	Factor [dB]	QP Reading[dBμV/m]	Level [dBμV/m]	QP Limit[dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity	Verdict
1	419.9945	-23.57	64.28	40.71	46.00	5.29	101	249.2	Horizontal	PASS
2	545.0211	-20.52	60.23	39.71	46.00	6.29	101	273.9	Horizontal	PASS



Suspected Data List

NO.	Freq. [MHz]	Reading[dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Trace	Height [cm]	Angle [°]	Polarity	Verdict
1	40.6713	64.87	36.22	-28.65	40.00	3.78	PK	100	323	Vertical	PASS
2	67.8347	60.13	29.62	-30.51	40.00	10.38	PK	100	214	Vertical	PASS
3	178.9136	63.81	34.34	-29.47	43.50	9.16	PK	100	75	Vertical	PASS
4	249.9750	62.78	33.46	-29.32	46.00	12.54	PK	100	105	Vertical	PASS
5	420.1100	63.18	39.61	-23.57	46.00	6.39	PK	200	126	Vertical	PASS
6	545.1344	65.10	44.58	-20.52	46.00	1.42	PK	100	303	Vertical	PASS

Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Reading[dBμV/m]	Level [dBμV/m]	QP Limit[dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity	Verdict
1	40.6784	-28.65	63.76	35.11	40.00	4.89	136	334.9	Vertical	PASS
2	544.9766	-20.52	60.78	40.26	46.00	5.74	114	289.5	Vertical	PASS

----- The following blanks -----

6. 20DB BANDWIDTH

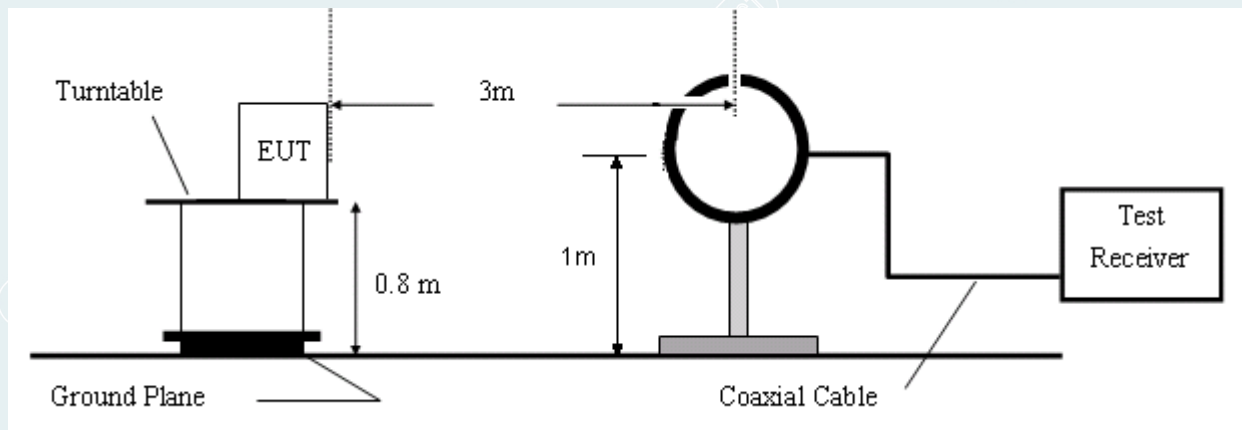
6.1 LIMITS

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. In the case of intentional radiators operating under the provisions of subpart E, the emission bandwidth may span across multiple contiguous frequency bands identified in that subpart. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

6.2 TEST PROCEDURES

- 1) The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- 2) If the EUT is a tabletop system, a rotatable table with 0.8 m height is used.
- 3) If the EUT is a floor standing device, it is placed on the ground.
- 4) Auxiliary equipment and cables were positioned to simulate normal operation conditions.
- 5) The measurement distance is 3 meter.
- 6) The EUT was set into operation.
- 7) Adjust the test instrument for the following setting.
RBW: 1Hz.
VBW: 3 times of the RBW.
Detector: Peak.
Sweep time: Auto.
- 8) Allow trace to fully stabilize.

6.3 TEST SETUP

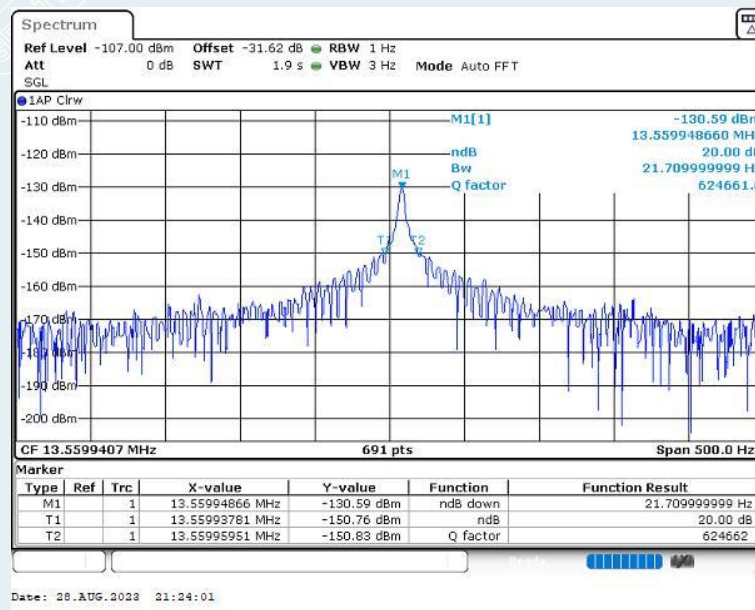


6.4 TEST RESULTS

Project Information			
Application No.:	E20230717807601	EUT:	RN WCBS
Model:	Z0003NI	SN:	E20230717807601-0001
Environment:	Temp: 27.5°C; Humi: 57%; 101.0kPa	Voltage:	DC 12V
Engineer:	Zhang zishan	Test date:	2023-08-28

Frequency (MHz)	20dB Bandwidth (Hz)	Limit(kHz)	Test Result
13.5599407	21.709999999	11.2	Complied

Note: Limit=0.8*(13.567-13.553)MHz=0.0112MHz=11.2kHz.



7. FREQUENCY TOLERANCE (TEMPERATURE VARIATION AND VOLTAGE VARIATION)

7.1 LIMITS

The frequency tolerance of the carrier signal shall be maintained within $\pm 0.01\%$ of operating frequency over a temperature variation of -20°C to $+50^{\circ}\text{C}$ 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°C . For battery operated equipment, the equipment tests shall be performed using a new battery.

7.2 TEST PROCEDURES

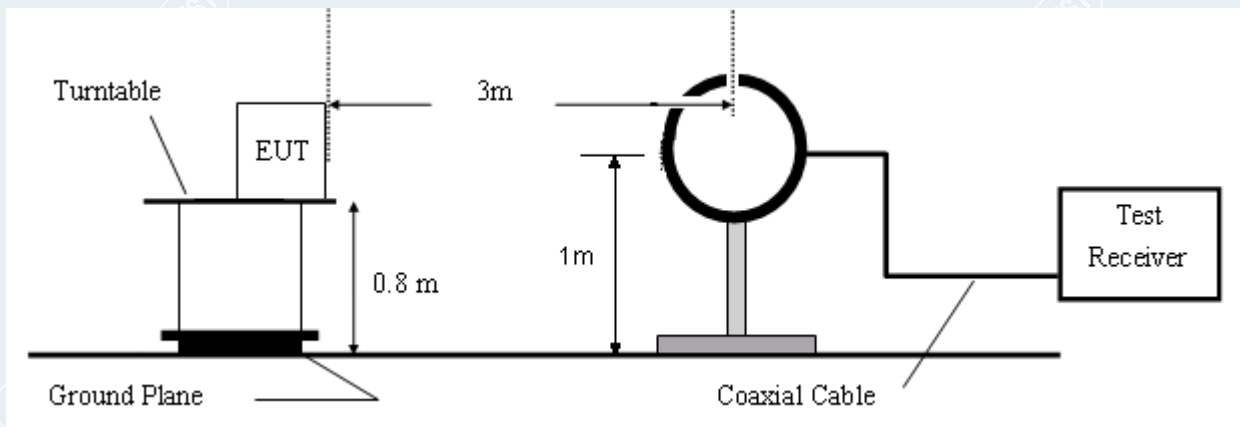
Frequency tolerance (Temperature variation)

- 1) The EUT and test equipment were setup as shown on the following page.
- 2) Set the temperature -20°C .
- 3) Leave the EUT for 1 hour after it become the temperature that was setup.
- 4) Setup the EUT to transmitting.
- 5) Measure the transmitting frequency (startup, 2min, 5min and 10min).
- 6) Set the temperature -20°C to $+50^{\circ}\text{C}$.
- 7) Repeat test procedure the step 4 to 6, and record the test data after the testing finished.

Frequency tolerance (Voltage variation)

- 1) The EUT and test equipment (set the supply voltage 100%) were setup as shown on the following page.
- 2) Set the temperature 20°C .
- 3) Leave the EUT for 1 hour after it become the temperature that was setup.
- 4) Setup the EUT to transmitting.
- 5) Measure the transmitting frequency.
- 6) Set the supply voltage 85% and 115%
- 7) Repeat test procedure the step 4 to 6, and record the test data after the testing finished.

7.3 TEST SETUP



7.4 TEST RESULTS

Project Information			
Application No.:	E20230717807601	EUT:	RN WCBS
Model:	Z0003NI	SN:	E20230717807601-0001
Engineer:	Zhang zishan	Test date:	2023-08-28

startup

Transmitting Frequency (MHz)	Temperature (Degree C)	Voltage (V)	Frequency (MHz)	Deviation (%)	Limit(±) (%)
13.56	-20	12.0	13.56071	0.00525	0.01
	-10	12.0	13.56020	0.00150	0.01
	0	12.0	13.56036	0.00265	0.01
	10	12.0	13.56032	0.00234	0.01
	20	12.0	13.56021	0.00154	0.01
	30	12.0	13.56074	0.00547	0.01
	40	12.0	13.56045	0.00335	0.01
	50	12.0	13.56048	0.00351	0.01

2min

Transmitting Frequency (MHz)	Temperature (Degree C)	Voltage (V)	Frequency (MHz)	Deviation (%)	Limit(±) (%)
13.56	-20	12.0	13.56028	0.00206	0.01
	-10	12.0	13.56030	0.00223	0.01
	0	12.0	13.56013	0.00095	0.01
	10	12.0	13.55991	-0.00070	0.01
	20	12.0	13.56039	0.00286	0.01
	30	12.0	13.55998	-0.00015	0.01
	40	12.0	13.55991	-0.00068	0.01
	50	12.0	13.56083	0.00614	0.01

5min

Transmitting Frequency (MHz)	Temperature (Degree C)	Voltage (V)	Frequency (MHz)	Deviation (%)	Limit(±) (%)
13.56	-20	12.0	13.56028	0.00208	0.01
	-10	12.0	13.56006	0.00043	0.01
	0	12.0	13.56085	0.00630	0.01
	10	12.0	13.56072	0.00533	0.01
	20	12.0	13.56021	0.00154	0.01
	30	12.0	13.56061	0.00450	0.01
	40	12.0	13.56075	0.00556	0.01
	50	12.0	13.56018	0.00136	0.01

10min

Transmitting Frequency (MHz)	Temperature (Degree C)	Voltage (V)	Frequency (MHz)	Deviation (%)	Limit(±) (%)
13.56	-20	12.0	13.55993	-0.00051	0.01
	-10	12.0	13.56013	0.00093	0.01
	0	12.0	13.56010	0.00077	0.01
	10	12.0	13.56054	0.00402	0.01
	20	12.0	13.56046	0.00339	0.01
	30	12.0	13.56060	0.00443	0.01
	40	12.0	13.56073	0.00537	0.01
	50	12.0	13.56064	0.00470	0.01

Transmitting Frequency (MHz)	Temperature (Degree C)	Voltage (V)	Frequency (MHz)	Deviation (%)	Limit(±) (%)
13.56	20	10.2	13.56019	0.00140	0.01
	20	12.0	13.56088	0.00647	0.01
	20	13.8	13.56077	0.00570	0.01

----- The following blanks -----

8. PHOTOGRAPHS OF TEST SET-UP

Please refer to the attached document E20230717807601-10-test setup photo.

9. PHOTOGRAPHS OF THE EUT

Please refer to the attached document E20230717807601-11-EUT photo.

----- **End of Report** -----