FCC PART 15C TEST REPORT FOR CERTIFICATION
On Behalf of

RONDISH CO. LTD

Wireless Handset

NEC-05M

FCC ID: WNG-NEC-05M

Prepared for : RONDISH CO. LTD
UNIT G&H, 4/F, Block 1, KWAI TAKIND, CTR, 15-33 K

Prepared By : Audix Technology (Shenzhen) Co., Ltd.
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Report Number	:	ACS-F23053
Date of Test	:	Mar.08~10, 2023
Date of Report	:	Apr.15, 2023

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TEST REPORT CERTIFICATION

Applicant	:	RONDISH CO. LTD
Manufacturer	:	RONDISH CO. LTD
Product	:	Wireless Handset
FCC ID	:	WNG-NEC-05M

(A)Model No. : NEC-05M
(B)Power Supply : DC 3V
(C)Test Voltage : DC 3V

Tested for comply with:
FCC CFR47 Part 15 Subpart C

Test procedure used:
ANSI C63.10: 2020

The device described above is tested by udix Technology (Shenzhen) Co., Ltd. to confirm comply with all the FCC Part 15 Subpart C requirements.

The test results are contained in this test report and udix Technology (Shenzhen) Co., Ltd. is assumed full responsibility for the accuracy and completeness of these tests. This report contains data that are not covered by the NVLAP accreditation. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to single evaluation of one sample of above mentioned product and shall not be reproduced in part without written approval of Audix Technology (Shenzhen) Co., Ltd.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

Date of Test : Mar.08~10, 2023 Report of date: Apr.15, 2023

Prepared by : Mia Zhao
Mia Zhao / Assistant

Reviewed by : Thomas Chen
Thomas Chen / Assistant Manager

AUDIX® 信華科技（深圳）有限公司
Audix Technology (Shenzhen) Co., Ltd.
EMC 部門報告專用章
Stamp only for EMC Dept. Report

Approved & Authorized Signer : Signature: Sunny Lu
Sunny Lu / Manager

1. SUMMARY OF STANDARDS AND RESULTS

1.1.Description of Standards and Results

The EUT has been tested according to the applicable standards as referenced below.

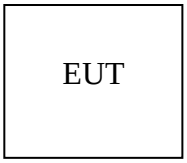
EMISSION		
Description of Test Item	**Standard**	**Results**
Conducted Emission Test	FCC Part 15C: 15.207 ANSI C63.10: 2020	N/A
Radiated Emission Test	FCC Part 15C: 15.231(b) ANSI C63.10: 2020	PASS
Stop Transmitting Time Test	FCC Part 15C: 15.231(a)(1)	PASS
Cease Time After Activation	FCC Part 15C: 15.231(a)(2)	PASS
20 dB Bandwidth Test	FCC Part 15C: 15.231(c)	PASS
N/A is an abbreviation for Not Applicable.		

2. GENERAL INFORMATION

2.1.Description of Device (EUT)

Product	:	Wireless Handset
Model No.	:	NEC-05M
FCC ID	:	WNG-NEC-05M
Operation frequency	:	433.92MHz
Applicant	:	RONDISH CO. LTD UNIT G&H, 4/F, Block 1, KWAI TAKIND, CTR, 15-33 K
Manufacturer	:	RONDISH CO. LTD UNIT G&H, 4/F, Block 1, KWAI TAKIND, CTR, 15-33 K
Antenna Type &Gain	:	Antenna Type: PCB Antenna, 0dBi gain.
Date of Test	:	Mar.08~10, 2023
Date of Receipt	:	Mar.01, 2023
Sample Type	:	Prototype production

2.1. EUT Configuration and operation conditions for test



(EUT: Wireless Handset)

2.2.Test Facility

Site Description

Name of Firm : Audix Technology (Shenzhen) Co., Ltd.
No. 6, Kefeng Road, Science & Technology Park,
Nanshan District , Shenzhen, Guangdong, China

EMC Lab. : Accredited by NVLAP, USA
NVLAP Code: 200372-0
Valid Date: Mar.31, 2024

Certificated by FCC USA.
Designation No.: CN5022
Valid Date: Mar.31, 2024

Accredited by TAF, Taiwan
Registration No.: 1418
Valid Date: Nov.30, 2023

2.3.Measurement Uncertainty (95% confidence levels, k=2)

Test Item	Uncertainty
Uncertainty for Radiation Emission test in 3m chamber	±3.8dB(30~200MHz, Polarization: H)
	±3.8dB(30~200MHz, Polarization: V)
	±4.0dB(200M~1GHz, Polarization: H)
	±4.0dB(200M~1GHz, Polarization: V)
Uncertainty for Radiation Emission test in 3m chamber	±4.0dB (1~6GHz, Distance: 3m)
	±4.0dB (6~18GHz, Distance: 3m)
Uncertainty for Bandwidth test	±4.6%
Uncertainty for DC power test	±0.1 %
Uncertainty for test site temperature and humidity	±0.6℃
	±3%

3. POWER LINE CONDUCTED EMISSION TEST

According to Paragraph (c) of FCC Part 15 section 15.231, Tests 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.

4. RADIATED EMISSION TEST

4.1.Test Equipments

Frequency range: 30~1000MHz

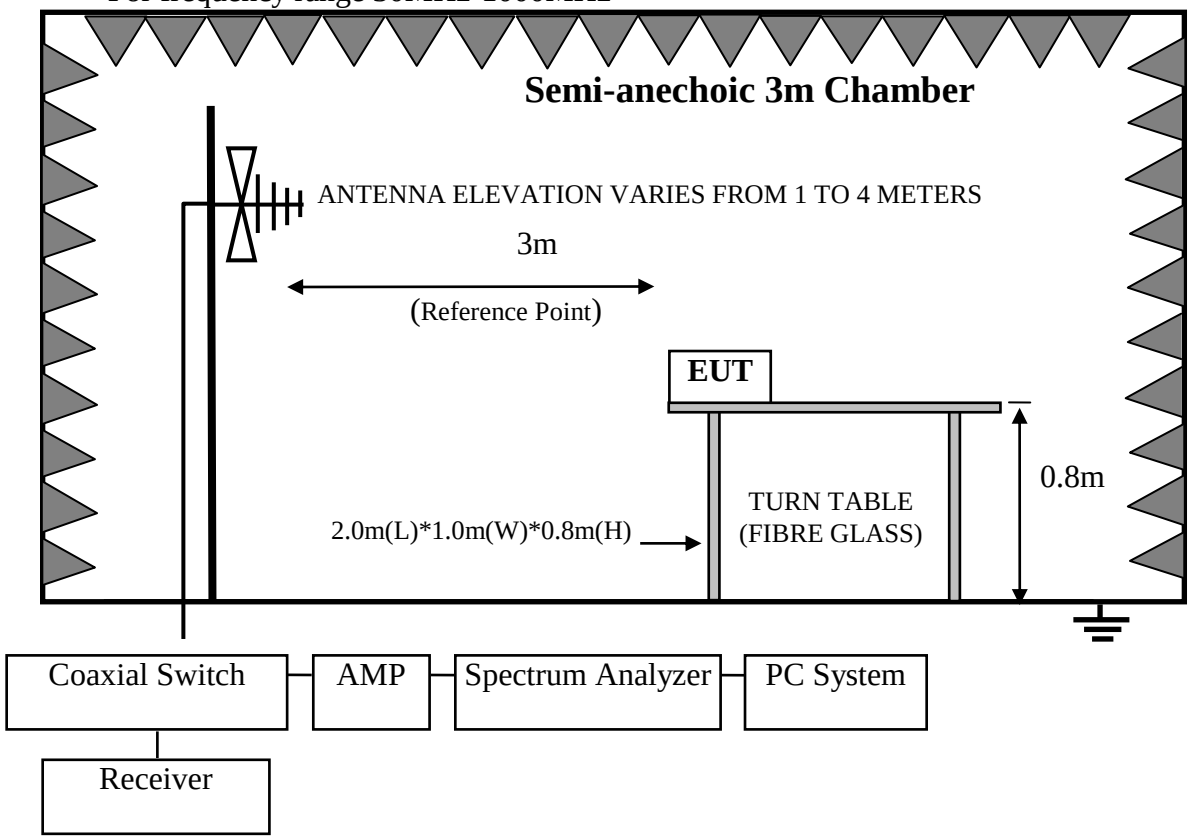
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	3m Chamber(NSA)	AUDIX	N/A	N/A	Aug.11,22	5 Year
2.	3m Chamber(SE)	AUDIX	N/A	N/A	Sep.16,22	5 Year
3.	Signal Analyzer	Rohde & Schwarz	FSV30	104050	Apr.06,22	1 Year
4.	Tri-log-Broadband Antenna	SCHWARZBECK	VULB 9168	01317	Oct.28,22	1 Year
5.	NSA Cable	HUBER+SUHNER	CFD400NL-LW	No.3	Oct.09,22	1 Year
6.	Coaxial Switch	Anritsu	MP59B	6201397223	Apr.06,22	1 Year
7.	EMI Test Receiver	Rohde & Schwarz	ESR3	101931	Apr.06,22	1 Year
8.	Amplifier	HP	8447D	2944A11159	Apr.06,22	1 Year
9.	Test Software	AUDIX	e3	6.100913a	N/A	N/A
Note: N/A means Not applicable.						

Frequency range: above 1000MHz

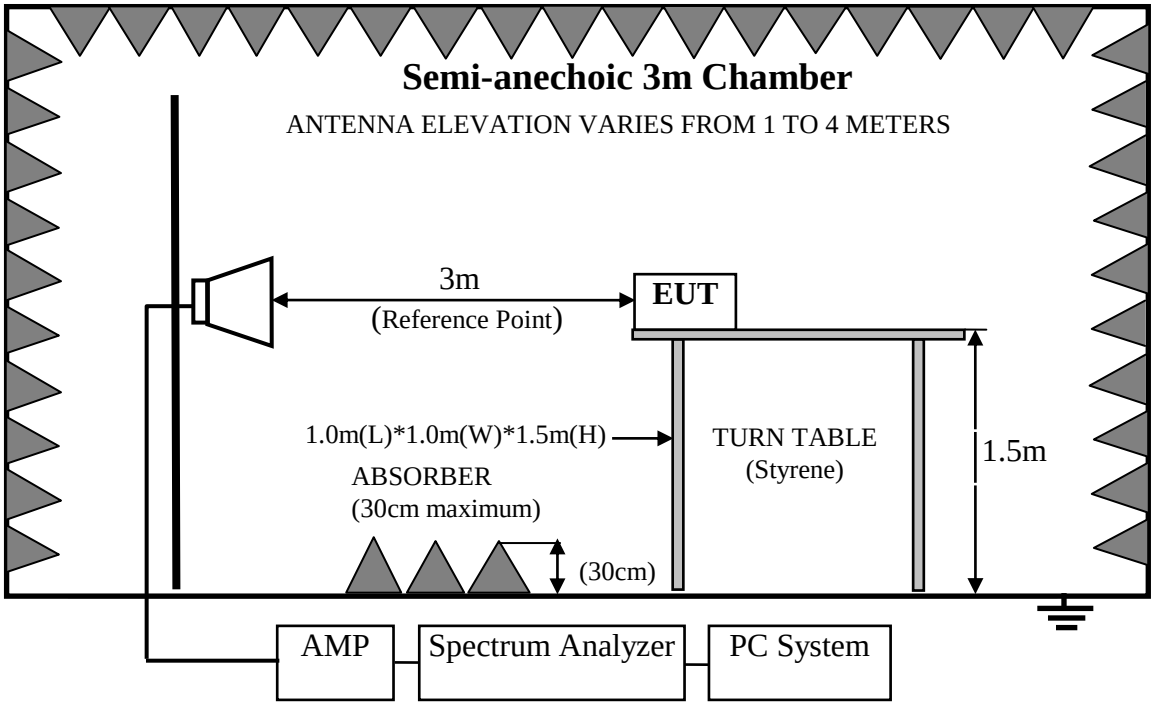
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	3mChamber(Svswr)	AUDIX	N/A	N/A	Aug.09,22	5 Year
2.	3mChamber(SE)	AUDIX	N/A	N/A	Sep.16,22	5 Year
3.	Signal Analyzer	Rohde & Schwarz	FSV30	104050	Apr.06,22	1 Year
4.	Amplifier	Agilent	83017A	MY53270084	Oct.09,22	1 Year
5.	RF Cable	EMCI	EMC104-SM-SM-15000	190407	Jul.01,22	1 Year
6.	Test Software	AUDIX	e3	6.100913a	N/A	N/A
7.	Horn Antenna	ETC	MCTD 1209	DRH15F03007	Aug.12,22	1 Year
Note: N/A means Not applicable.						

4.2.Block Diagram of Test Setup

For frequency range 30MHz-1000MHz



For frequency range above 1GHz



4.3.Radiated Emission Limit

All emanations from a Class B computing devices or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified below:

Fundamental Frequency(MHz)	Field Strength of Fundamental	Field Strength of Spurious emissions
433.92	QP:80.83dBuV/m at 3m distance	AV:60.83dBuV/m at 3m distance (Above 1GHz) PK:80.83dBuV/m at 3m distance (Above 1GHz) QP:60.83dBuV/m at 3m distance (Below 1GHz)

Note: The spurious emissions appearing within the frequency band listed in 15.205 Shall also comply with limits shown in section 15.209

4.4.EUT Configuration on Test

The following equipment are installed on Radiated Emission Test to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

4.5.Operating Condition of EUT

4.5.1.Setup the EUT and simulator as shown as Section 4.2.
4.5.2.Turn on the power of all equipments.
4.5.3.Let EUT work in Tx mode.

4.6.Test Procedure

The EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on Test. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.10 on radiated emission Test.

During the pretest the EUT was rotated through three orthogonal axes to determine the attitude that maximizes the emissions.

After that the EUT was manually handled to find the orientation that has the maximum emission, which is the orientation show in the test setup photos.

The bandwidth of the EMI test receiver (R&S ESR3) is set at 120kHz for frequency range from 30MHz to 1000MHz.

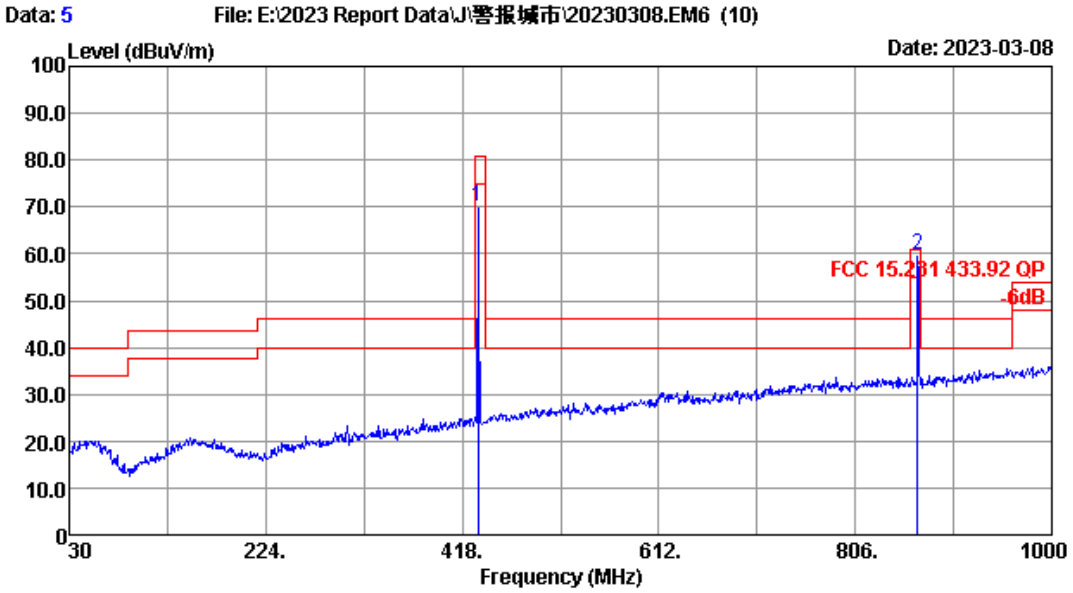
The bandwidth of the Spectrum's RBW is set at 1MHz and VBW is set at 3MHz for peak emissions measurement above 1GHz

This device is pulse modulated; a duty cycle factor was used to calculate average level based measured peak level.

4.7.Radiated Emission Test Results

PASS.

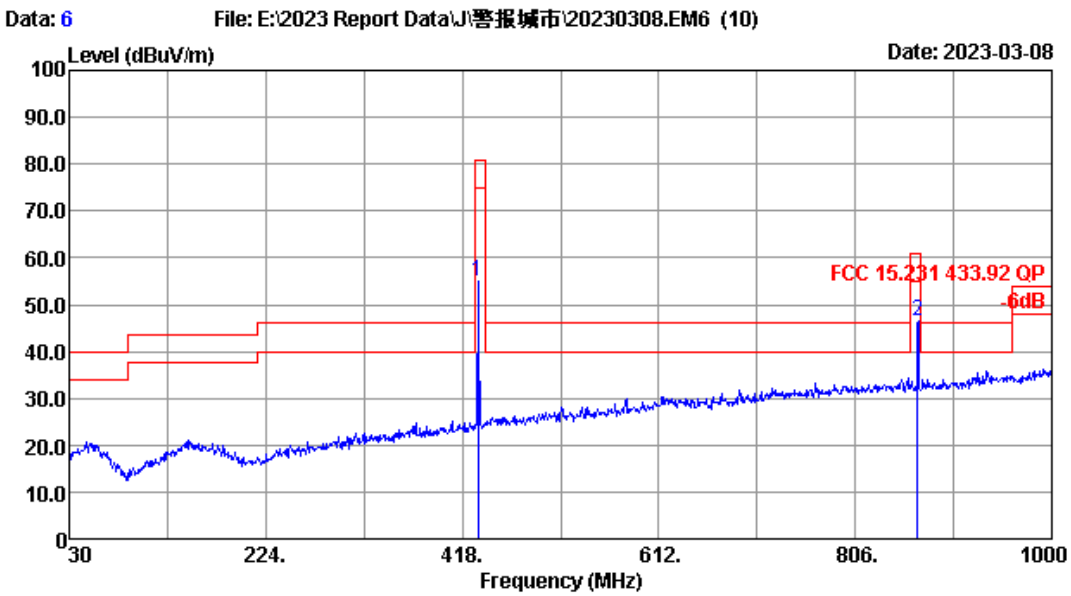
Frequency: 30MHz~1GHz



Site no. : 3m Chamber Data no. : 5
Dis. / Ant. : 3m 2022 VULB 9168-01317 Ant. pol. : HORIZONTAL
Limit : FCC 15.231 433.92 QP
Env. / Ins. : 22.8*C/51% Engineer : Abel
Test Mode : TX Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	433.920	22.57	2.17	45.25	69.99	80.83	10.84	QP
2	867.840	28.54	3.34	27.80	59.68	60.83	1.15	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

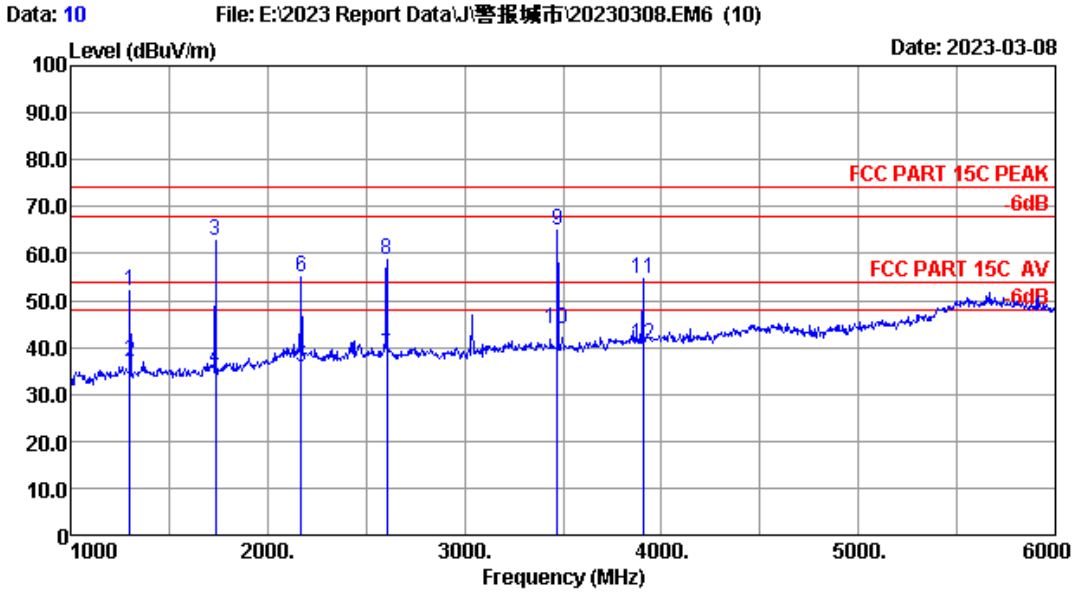


Site no. : 3m Chamber Data no. : 6
Dis. / Ant. : 3m 2022 VULB 9168-01317 Ant. pol. : VERTICAL
Limit : FCC 15.231 433.92 QP
Env. / Ins. : 22.8*C/51% Engineer : Abel
Test Mode : TX Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	433.920	22.57	2.17	30.10	54.84	80.83	25.99	QP
2	867.840	28.54	3.34	14.56	46.44	60.83	14.39	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Frequency: 1GHz~6GHz



Site no. : 3m Chamber
Data no. : 10
Dis. / Ant. : 3m 2022 MCTD1209-3007
Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 22.8*C/51%
Engineer : Abel
Test Mode : TX Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1300.000	25.40	4.38	57.04	52.10	74.00	21.90	Peak
2	1301.848	25.40	4.38	41.81	36.87	54.00	17.13	Average
3	1735.000	25.50	5.24	65.39	62.76	74.00	11.24	Peak
4	1735.799	25.50	5.24	37.99	35.36	54.00	18.64	Average
5	2169.600	28.30	5.95	33.96	35.83	54.00	18.17	Average
6	2170.000	28.30	5.95	53.27	55.14	74.00	18.86	Peak
7	2603.701	28.30	6.34	35.86	38.42	54.00	15.58	Average
8	2605.000	28.30	6.34	56.13	58.69	74.00	15.31	Peak
9	3470.000	29.20	7.31	59.86	64.80	74.00	9.20	Peak
10	3470.749	29.20	7.31	38.90	43.84	54.00	10.16	Average
11	3905.000	30.50	7.88	47.58	54.62	74.00	19.38	Peak
12	3905.500	30.50	7.88	33.70	40.74	54.00	13.26	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

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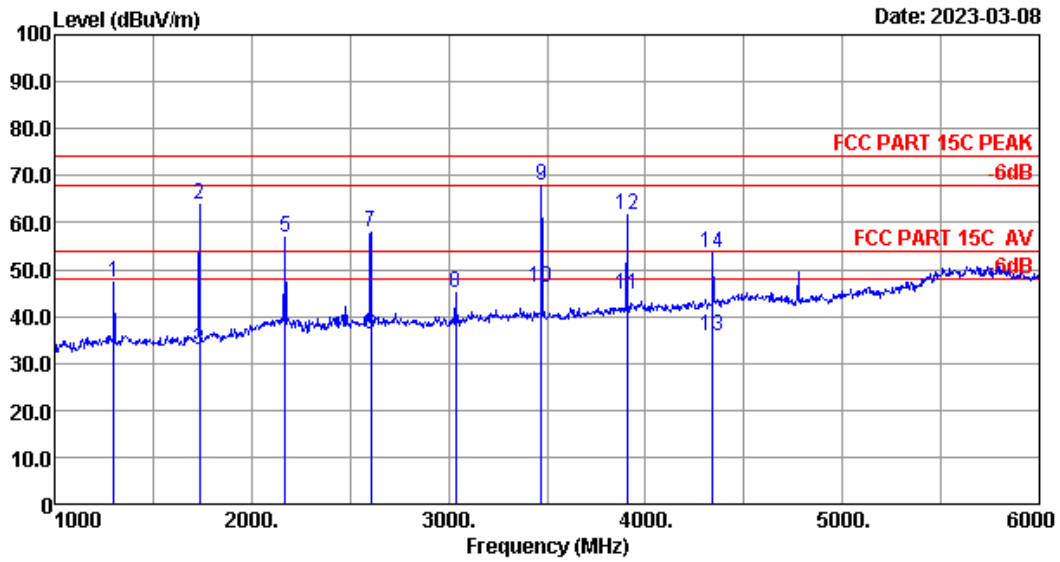


Site no. : 3m Chamber
Dis. / Ant. : 3m 2022 MCTD1209-3007
Limit : FCC PART 15C PEAK
Env. / Ins. : 22.8*C/51%
Test Mode : TX Mode

Data no. : 9
Ant. pol. : VERTICAL
Engineer : Abel

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1300.000	25.40	4.38	52.29	47.35	74.00	26.65	Peak
2	1735.000	25.50	5.24	66.33	63.70	74.00	10.30	Peak
3	1735.500	25.50	5.24	35.53	32.90	54.00	21.10	Average
4	2169.750	28.30	5.95	35.04	36.91	54.00	17.09	Average
5	2170.000	28.30	5.95	54.84	56.71	74.00	17.29	Peak
6	2603.801	28.30	6.34	33.47	36.03	54.00	17.97	Average
7	2605.000	28.30	6.34	55.46	58.02	74.00	15.98	Peak
8	3035.000	28.33	6.76	41.65	44.96	74.00	29.04	Peak
9	3470.000	29.20	7.31	63.07	68.01	74.00	5.99	Peak
10	3470.699	29.20	7.31	41.05	45.99	54.00	8.01	Average
11	3905.000	30.50	7.88	37.63	44.67	54.00	9.33	Average
12	3905.000	30.50	7.88	54.72	61.76	74.00	12.24	Peak
13	4338.801	31.03	8.34	27.56	35.73	54.00	18.27	Average
14	4340.000	31.03	8.34	45.21	53.38	74.00	20.62	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

5. STOP TRANSMITTING TIME TEST

5.1. Test Equipments

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	PXA Signal Analyzer	Agilent	N9030A	MY51380221	Apr.07,22	1 Year

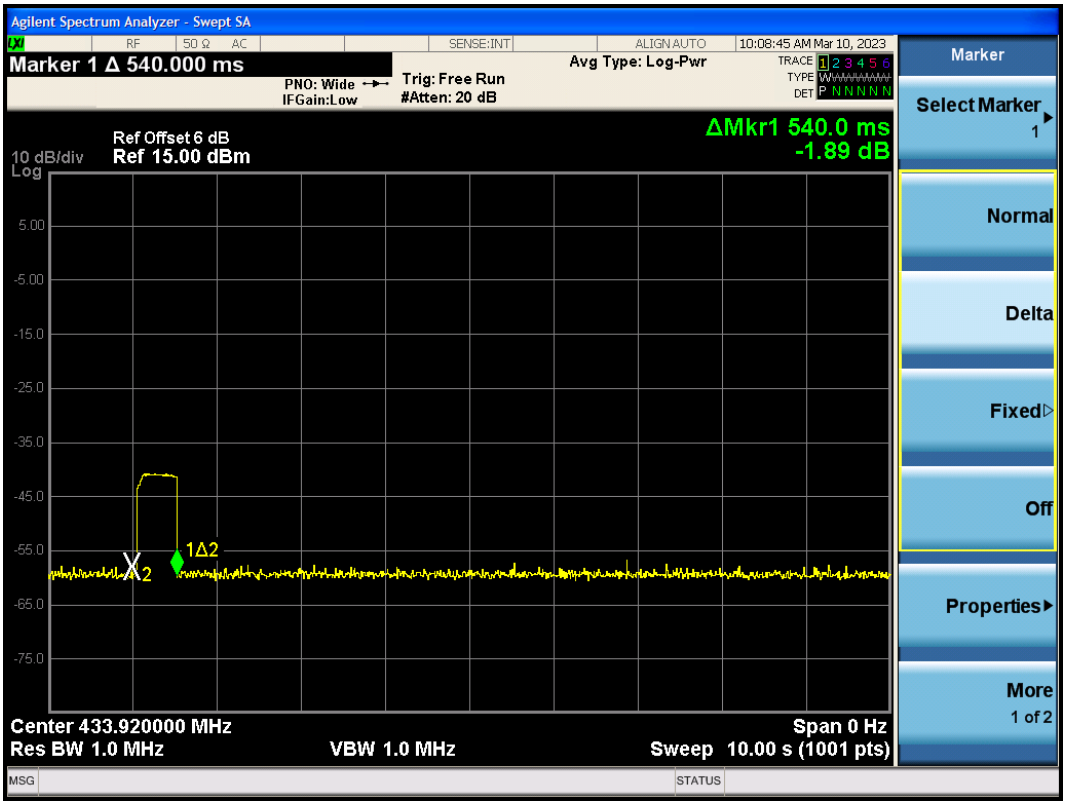
5.2. Limit

Per Part 15.231(a)(1): A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

5.3. Test Results

EUT: Wireless Handset		
M/N: NEC-05M		
Test Date: 2023-03-10	Pressure: 103.2±1.0 kpa	Humidity: 51.1±3.0%
Tested By: Winter	Test Site: RF site	Temperature:21.4±0.6℃

Frequency (MHz)	Test Mode	Stop Transmitting Time (s)	Limit (s)
433.92	Tx	0.540	<5
Conclusion：PASS			



6. CEASE TIME AFTER ACTIVATION TEST

6.1. Test Equipments

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	PXA Signal Analyzer	Agilent	N9030A	MY51380221	Apr.07,22	1 Year

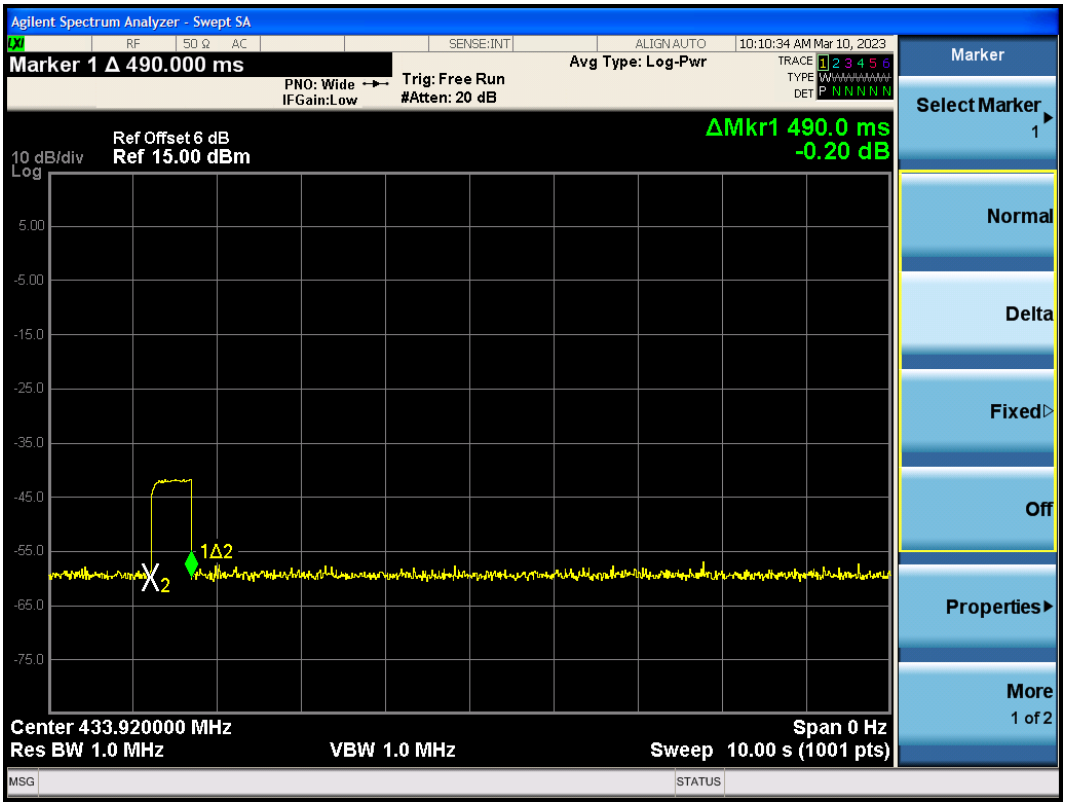
6.2. Limit

Per Part 15.231(a)(2): A transmitter activated automatically shall cease transmission within 5 seconds after activation.

6.3. Test Result

EUT: Wireless Handset		
M/N: NEC-05M		
Test Date: 2023-03-10	Pressure: 103.2±1.0 kpa	Humidity: 51.1±3.0%
Tested By: Winter	Test Site: RF site	Temperature:21.4±0.6℃

Frequency (MHz)	Test Mode	Cease Time After Activation (s)	Limit (s)
433.92	Tx	0.490	<5
Conclusion：PASS			



7. 20 DB BANDWIDTH TEST

7.1. Test Equipments

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	PXA Signal Analyzer	Agilent	N9030A	MY51380221	Apr.07,22	1Year
2.	Attenuator	Agilent	8491B	MY39269201	Oct.09,22	1 Year
3.	RF Cable	eastsheep	141-SMA-JJ-1000	NO.1	Jul.01,22	1 Year

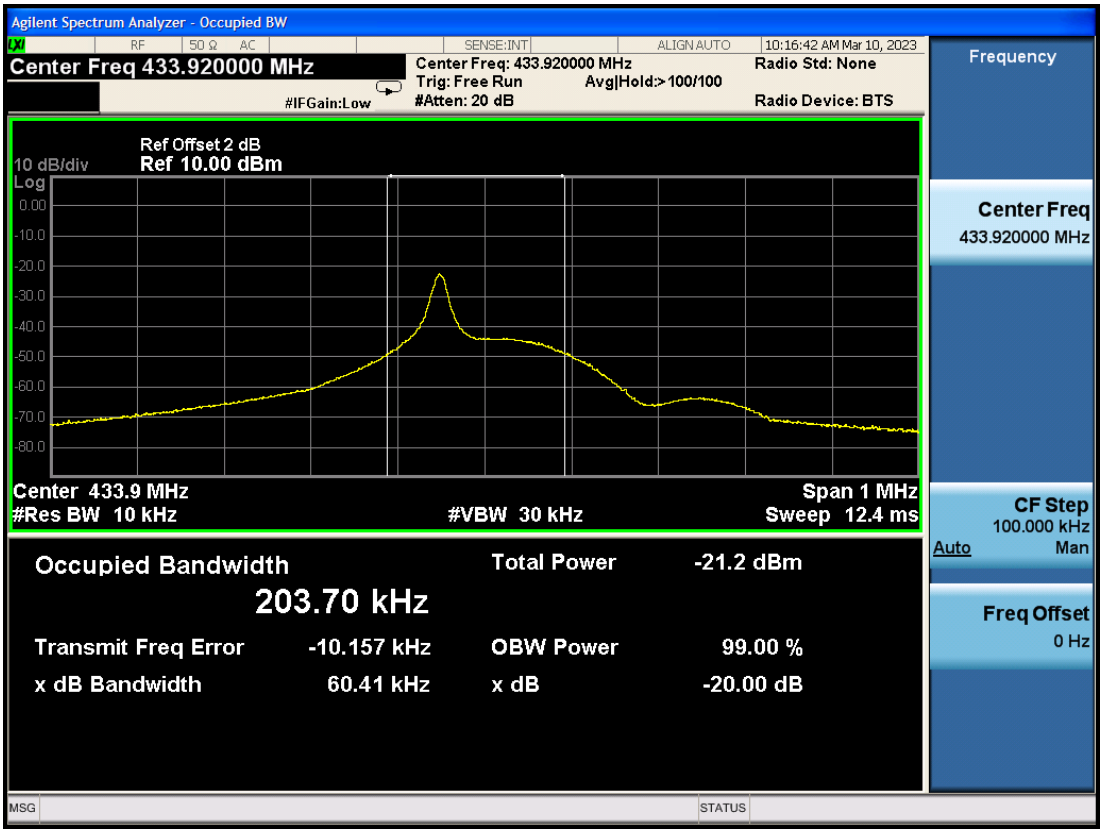
7.2. Limit

The bandwidth of the emission shall be no wider than 0.25% of the center frequency.

7.3. Test Results

EUT: Wireless Handset		
M/N: NEC-05M		
Test Date: 2023-03-10	Pressure: 103.2±1.0 kpa	Humidity: 51.1±3.0%
Tested By: Winter	Test Site: RF site	Temperature:21.4±0.6℃

Frequency (MHz)	Test Mode	-20dB Bandwith (kHz)	Limit (MHz)
433.92	Tx	60.41	<1.0848
Conclusion：PASS			



8. ANTENNA REQUIREMENT

RESULT : PASS

Test Date : Mar.08~10, 2023

Test standard : FCC Part 15.231

Limit : the use of antennas with directional gains that do not exceed 6 dBi

According to the manufacturer declared, the EUT has an PCB antenna, the directional gain of antenna is 0dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to comply the provision.

9. RADIO FRREQUENCY EXPOSURE COMPLIANCE

RESULT : PASS

Test standard : FCC KDB Publication 447498 D04 V01

Since maximum peak output power of the transmitter is<10mW, i.e.0.0042mW<10mW, hence the EUT is excluded from SAR evaluation according to FCC KDB Publication 447498 D04: Interim General RF Exposure Guidance v01.

10. DEVIATION TO TEST SPECIFICATIONS

[NONE]