FCC RF Test Report

APPLICANT: Xiaomi Communications Co., Ltd.

EQUIPMENT: Mobile Phone

BRAND NAME : POCO

MODEL NAME : 24122RKC7G FCC ID : 2AFZZRKC7G

STANDARD : FCC Part 15 Subpart C §15.209

CLASSIFICATION: (DCD) Part 15 Low Power Transmitter Below 1705 kHz

TEST DATE(S) : Oct. 23, 2024 ~ Oct. 25, 2024

We, Sporton International Inc. (Kunshan), would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. (Kunshan), the test report shall not be reproduced except in full.

JasonJia

Approved by: Jason Jia





Report No.: FR491407F

Sporton International Inc. (Kunshan)

No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China

Sporton International Inc. (Kunshan)

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Report Version : 01

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History of this test report

Report No.	Version	Description	Issued Date
FR491407F	01	Initial issue of report	Oct. 31, 2024

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Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	2.1049	20dB Bandwidth	Reporting Only	-
3.1	2.1049	99% Occupied Bandwidth	Reporting Only	-
3.2	15.209	Radiated Emission	Pass	Under limit 9.94 dB at 42.61 MHz
3.3	15.207	AC Conducted Emission	Pass	Under limit 6.91 dB at 1.790 MHz
3.4	15.203	Antenna Requirements	Pass	-

Conformity Assessment Condition:

- The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or
 in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of
 non-compliance that may potentially occur if measurement uncertainty is taken into account.
- 2. The measurement uncertainty please refer to each test result in the section "Measurement Uncertainty"

Disclaimer:

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.

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1 General Description

1.1 Applicant

Xiaomi Communications Co., Ltd.

#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

1.2 Manufacturer

Xiaomi Communications Co., Ltd.

#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

1.3 Product Feature of Equipment Under Test

Product Feature		
Equipment	Mobile Phone	
Brand Name	POCO	
Model Name	24122RKC7G	
FCC ID	2AFZZRKC7G	
	Conducted: 864775070042025/864775070042033	
IMEI Code	Conduction: 864775070040185/864775070040193	
	Radiation: 864775070039443/864775070039450	
HW Version	13510O11U	
SW Version	Xiaomi HyperOS 2.0	
WPT Frequency Range	110~148kHz	
WPT Type of Modulation	ASK	
WPT Antenna Type	Loop Antenna	
EUT Stage	Identical Prototype	

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.4 Modification of EUT

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No modifications are made to the EUT during all test items.

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Report No.: FR491407F

1.5 **Test Location**

Sporton International Inc. (Kunshan) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

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Test Firm	Sporton International Inc. (Kunshan)			
	No. 1098, Pengxi North Road, Kunshan Economic Development Zone			
Test Site Location	Jiangsu Province 215300 People's Republic of China			
	TEL: +86-512-57900158			
	Sporton Sito No	ECC Designation No.	FCC Test Firm	
Test Site No.	Sporton Site No.	FCC Designation No.	Registration No.	
rest one NO.	CO01-KS 03CH07-KS TH01-KS	CN1257	314309	

1.6 **Test Software**

	ltem	Site	Manufacture	Name	Version
I	1.	03CH07-KS	AUDIX	E3	210616
Ī	2.	CO01-KS	AUDIX	E3	6.2009-8-24

1.7 **Applied Standards**

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15 Subpart C §15.209, §15.207
- FCC KDB 414788 D01 Radiated Test Site v01r01.
- ANSI C63.10-2013

Remark: All test items were verified and recorded according to the standards and without any deviation during the test.

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2 Test Configuration of Equipment Under Test

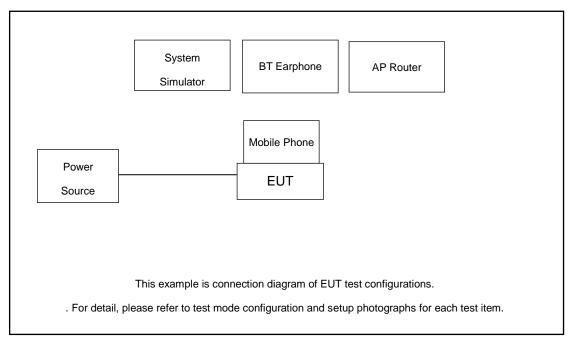
2.1 Test Mode

- a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 1000 MHz).
- b. AC power line Conducted Emission was tested under maximum output power.

Test Items	Function Type	
AC Conducted Emission	Mode 1: GSM 850 Idle + Bluetooth Link + WLAN Link (2.4G) + USB Cable (Charging from Adapter) + Wireless Charging(Reverse charging for other phone)	
Radiated Emission	Mode 1: Wireless Charging(Reverse charging for other phone)	
Remark: The tests were performed with Adapter, USB Cable		

2.2 Connection Diagram of Test System

AC Conducted Emission:



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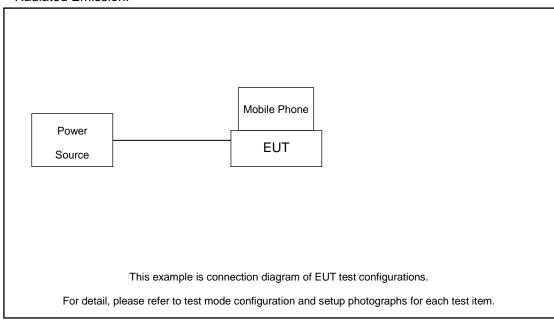
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Radiated Emission:



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2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8821C	N/A	N/A	Unshielded,1.8m
2.	WLAN AP	D-link	DIR-655	KA21R655B1	N/A	Unshielded,1.8m
3.	Notebook	Lenovo	G480	QDS-BRCM1050I	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
4.	Bluetooth Earphone	Xiaomi	LYEJ02LM	N/A	N/A	N/A
5.	Mobile Phone	N/A	N/A	N/A	N/A	N/A
6.	SD Card	Kingston	8GB	N/A	N/A	N/A

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3 Test Result

3.1 20dB and 99% Occupied Bandwidth Measurement

3.1.1 Limit of 20dB and 99% Occupied Bandwidth

Reporting only, 99% OBW shall not located within 15.205 restricted bands.

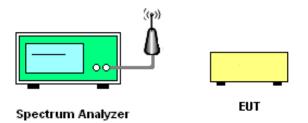
3.1.2 Measuring Instruments

See list of measuring equipment of this test report.

3.1.3 Test Procedures

- 1. The 20dB bandwidth is measured with a spectrum analyzer connected via a receiver antenna placed near the EUT while wirelessly charging a charging board.
- 2. Use the following spectrum analyzer settings for 99 % Bandwidth measurement.
- 3. Measure and record the results in the test report.

3.1.4 Test Setup



3.1.5 Test Result of 20dB and 99% Bandwidth

Toot Engineer		Temperature :	22-24°C
Test Engineer :	Супп	Relative Humidity :	53-55%

Occupied Bandwidth (kHz)	Frequency (kHz)
20dB Bandwidth(KHz)	0.742
99% Bandwidth(KHz)	0.630

Remark: Because the measured signal is CW adjusting the RBW per C63.10 would not be practical since measured bandwidth will always follow the RBW and the result will be approximately twice the RBW

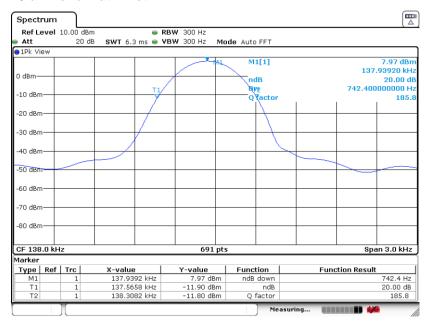
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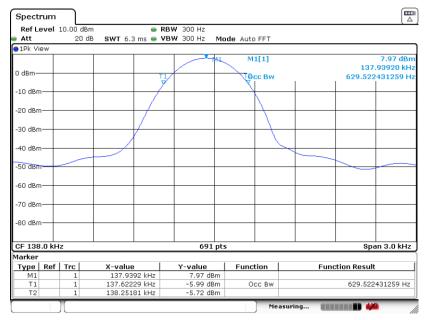
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20 dB Bandwidth Plot



Date: 25.0CT.2024 04:35:12

99% Occupied Bandwidth Plot



Date: 25.0CT.2024 04:34:44

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3.2 Radiated Emission Measurement

3.2.1 Limit of Radiated Emission

The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

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Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 - 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

Receiver Parameter	Setting
Frequency Range: 9kHz~150kHz	RBW 200Hz for QP
Frequency Range: 150kHz~30MHz	RBW 9kHz for QP
Frequency Range: 30MHz~1000MHz	RBW 120kHz for Peak

Note: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz. Radiated emission limits in these two bands are based on measurements employing an average detector.

For radiated emissions from 9kHz to 1GHz test distance is 3m

For 9kHz ~ 30MHz

- 1. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
- 2. Distance extrapolation factor = 40 log (specific distance / test distance) (dB);
- 3. specific line $(dB\mu V/m) = 20 \log Emission level (\mu V/m)$
- 4. Limit line = specific limits $(dB\mu V/m)$ + distance extrapolation factor.

3.2.2 Measuring Instruments

See list of measuring equipment of this test report.

3.2.3 Measuring Instrument Setting

Follow the guidelines in ANSI C63.10-2013 with respect to maximizing the emission by rotating the EUT, measuring the emission for three EUT orthogonal planes, and adjusting the measurement antenna height and polarization. A pre-amp and a high pass filter are used for this test in order to get the good signal level.

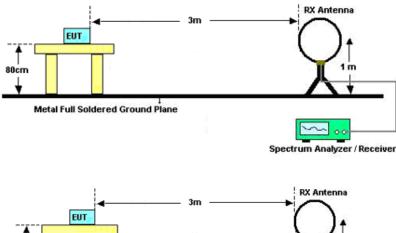
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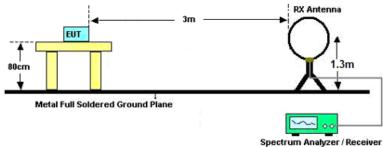
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3.2.4 Test Setup of Radiated Emission

For radiated emissions below 30MHz

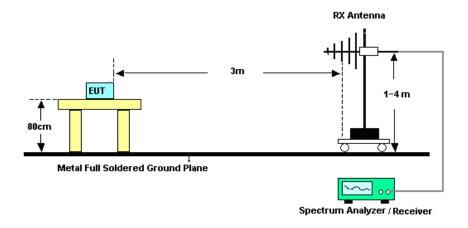




Note:

- 1. There is a comparison data of both open-field test site and alternative test site semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.
- Tested for radiated below 30 MHz using a loop antenna in accordance with C63.10, the antenna
 was positioned in three antenna orientations: horizontal, vertical, and ground-parallel three
 polarization's, the worst case is horizontal & vertical polarization, test data of two mode was
 reported.

For radiated emissions above 30MHz



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3.2.5 Test Result of Fundamental Emission

Frequency (MHz)	Level (dBuV/m) @3m	Distance Factor (dB)	Corrected level @300m (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)		Pol/Phase
0.13824	69.31	-80	-10.69	24.79	-35.48	49.53	19.69	0.09	QP	Perpendicular
0.13824	64.10	-80	-15.9	24.79	-40.69	44.32	19.69	0.09	QP	Parallel

Note: The field strength is tested at 3m distance then convert to 300m by adding distance factor 40*log(d1/d2)

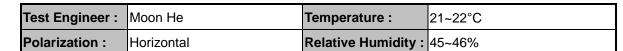
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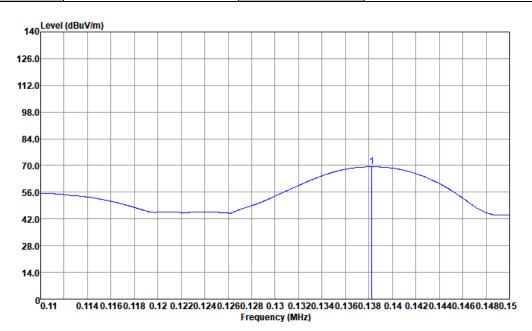
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Site : 03CH07-K5

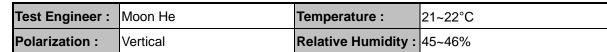
Condition : 3m NFC 101125 HORIZONTAL

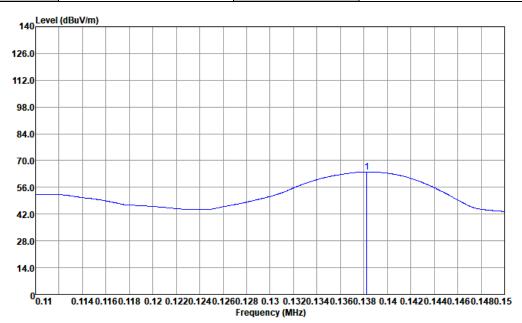
	Freq	Level		Limit Line				A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1 n	a 1382	69 31			49 53	10 60	a aq			Deak

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Site : 03CH07-KS

Condition : 3m NFC 101125 VERTICAL

	Freq	Level		Limit Line				A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1 p	0.1382	64.10			44.32	19.69	0.09			Peak

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3.2.6 Test Result of Radiated Emission (9kHz ~ 30MHz)

Eroguency		Distance	Corrected	Limit	Over	Read	Antenna	Cable		
(MHz)	Level 3m (dBuV/m)	Factor (dB)	Level (dBuV/m)	Line	Limit	Level (dBuV)		Loss (dB)	Remark	Pol/Phase
0.05	57.7		-22.3	33.78	-56.08	, ,	19.8	• •	Average	Perpendicular
		80							Ŭ	<u> </u>
0.07	54.34	80	-25.66	30.24	-55.9	34.55	19.7	0.09	Average	Perpendicular
0.59	49.89	40	9.89	32.23	-22.34	30.3	19.5	0.09	QP	Perpendicular
4.59	37.56	40	-2.44	29.5	-31.94	18.05	19.37	0.14	QP	Perpendicular
15.51	37.31	40	-2.69	29.5	-32.19	17.3	19.7	0.31	QP	Perpendicular
29.40	32.28	40	-7.72	29.5	-37.22	11.41	20.34	0.53	QP	Perpendicular
0.05	54.04	80	-25.96	32.99	-58.95	34.15	19.8	0.09	Average	Parallel
0.08	48.49	80	-31.51	29.48	-60.99	28.7	19.7	0.09	Average	Parallel
0.59	51.34	40	11.34	32.23	-20.89	31.75	19.5	0.09	QP	Parallel
4.59	38.18	40	-1.82	29.5	-31.32	18.67	19.37	0.14	QP	Parallel
15.41	38.51	40	-1.49	29.5	-30.99	18.5	19.7	0.31	QP	Parallel
29.03	30.53	40	-9.47	29.5	-38.97	9.71	20.3	0.52	QP	Parallel

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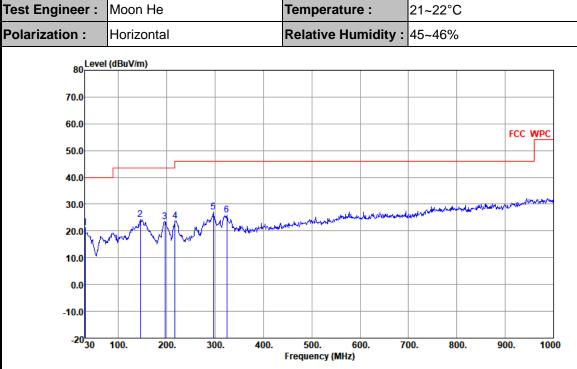
Note:

- 1. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
- 2. Distance extrapolation factor = 40 log (specific distance / test distance) (dB);
- 3. Corrected Level = Level @3m (dB μ V/m) distance extrapolation factor.

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3.2.7 Test Result of Radiated Emission (30MHz ~ 1000MHz)



Site : 03CH07-KS

Condition : FCC WPC 3m CBL6111D-49921 NEW HORIZONTAL

	Freq	Level		Limit Line					A/Pos	T/Pos	Remark
_	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 p	30.97	21.19	-18.81	40.00	27.79	24.42	1.19	32.21			Peak
2	145.43	24.33	-19.17	43.50	37.15	17.37	1.87	32.06			Peak
3	195.87	23.55	-19.95	43.50	38.43	15.06	2.15	32.09			Peak
4	217.21	23.79	-22.21	46.00	38.21	15.43	2.15	32.00			Peak
5	296.75	26.97	-19.03	46.00	37.05	19.53	2.66	32.27			Peak
6	323.91	25.86	-20.14	46.00	35.50	19.75	2.76	32.15			Peak

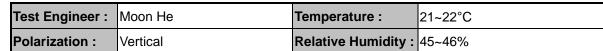
Sporton International Inc. (Kunshan)

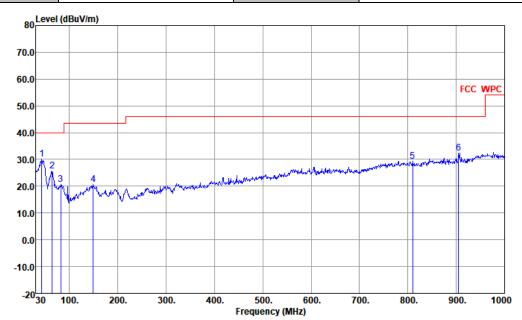
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Site : 03CH07-K5

Condition : FCC WPC 3m CBL6111D-49921 NEW VERTICAL

			0ver	Limit	ReadA	ntenna	Cable	Preamp	A/Pos	T/Pos		
	Freq	Level	Limit	Line	Level	Factor	Loss	Factor			Remark	
_	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg		
1 p	42.61	30.06	-9.94	40.00	42.85	18.21	1.19	32.19			Peak	
2	63.95	25.57	-14.43	40.00	43.98	12.10	1.53	32.04			Peak	
3	82.38	20.60	-19.40	40.00	37.27	13.77	1.53	31.97			Peak	
4	149.31	20.59	-22.91	43.50	33.57	17.21	1.87	32.06			Peak	
5	809.88	29.40	-16.60	46.00	28.06	28.71	4.30	31.67			Peak	
6	904.94	32.41	-13.59	46.00	29.40	29.75	4.62	31.36			Peak	

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3.3 **AC Conducted Emission Measurement**

3.3.1 **Limits of AC Conducted Emission**

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

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Frequency of Emission	Conducted	Limit (dΒμV)
(MHz)	Quasi-Peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

^{*}Decreases with the logarithm of the frequency.

3.3.2 **Measuring Instruments**

See list of measuring equipment of this test report.

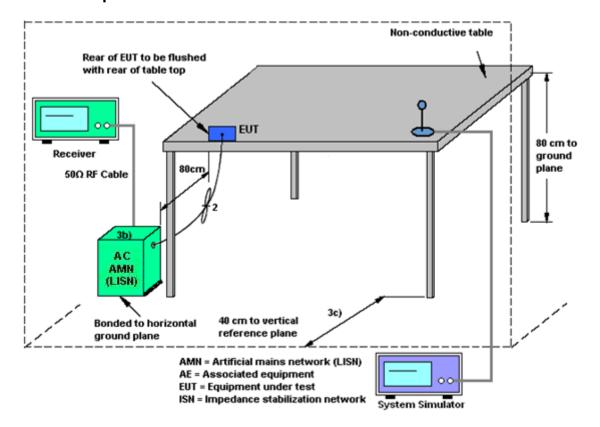
3.3.3 **Test Procedure**

- 1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- Connect EUT to the power mains through a line impedance stabilization network (LISN).
- 3. All the support units are connecting to the other LISN.
- 4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
- 5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
- 6. Both sides of AC line were checked for maximum conducted interference.
- 7. The frequency range from 150 kHz to 30 MHz was searched.
- 8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

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3.3.4 Test Setup



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3.3.5 Test Result of AC Conducted Emission

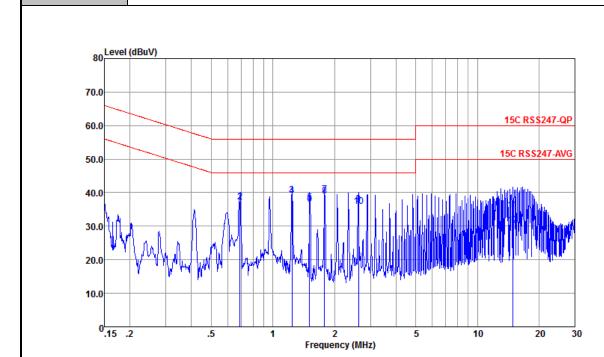
Toot Engineer :	Amos Zhang	Temperature :	25.3~26.2°C
Test Engineer :	Amos Zhang	Relative Humidity	: 38~40%
Гest Voltage :	120Vac / 60Hz	Phase:	Line
Remark :	All emissions not reported here are	e more than 10 dB below the p	rescribed limit
Love	el (dBuV)		
80	, (ubuv)		
70.0			
60.0			15C RS\$247-QP
00.0			
50.0		1:	5C RSS247-AVG
40.0			
\			
30.0			7 7 7 7
20.0			,
10.0	4 1 L In 11 Mars 1 Mars	Albinia Company	
0.15		2 5 10 ency (MHz)	20 30
Site	: CO01-KS		
Condition	: 15C RSS247-QP LISN-060105-L 2	024 LINE	
	Over Limit Read LIS Freq Level Limit Line Level Facto	N Cable r Loss Remark	
		B ——————	
1 2	0.413 33.43 -24.16 57.59 23.20 -0.0 0.413 23.53 -24.06 47.59 13.30 -0.0	4 10.27 QP 4 10.27 Average	
3 4 *	1.790 33.47 -22.53 56.00 23.60 -0.2 1.790 32.07 -13.93 46.00 22.20 -0.2	1 10.08 QP 1 10.08 Average	
5 6 7	2.346 33.48 -22.52 56.00 23.61 -0.2 2.346 30.18 -15.82 46.00 20.31 -0.2 2.900 31.41 -24.59 56.00 21.50 -0.1	0 10.07 Average 6 10.07 QP	
8 9	2.900 30.81 -15.19 46.00 20.90 -0.1 16.055 37.60 -22.40 60.00 26.60 -0.2	6 10.07 Average 4 11.24 QP	
11	16. 055	0 11.32 QP	
		-	

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Test Engineer :	Amos Zhang	Temperature :	25.3~26.2°C				
rest Engineer.	Amos Zhang	Relative Humidity :	38~40%				
Test Voltage :	120Vac / 60Hz	Phase :	Neutral				
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.						



Site : CO01-KS

Condition : 15C RSS247-QP LISN-060105-N 2024 NEUTRAL

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1 2 3 4 5 6 7 8 * 9 10 11 12	0. 690 0. 690 1. 242 1. 242 1. 511 1. 511 1. 790 1. 790 2. 622 2. 622 14. 907	37. 18 39. 20 39. 00 37. 10 36. 50 39. 49 39. 09 36. 47 35. 97 34. 82	-18. 52 -8. 82 -16. 80 -7. 00 -18. 90 -9. 50 -16. 51 -6. 91 -19. 53 -10. 03 -25. 18 -19. 68	56. 00 46. 00 56. 00 46. 00 56. 00 46. 00 56. 00 46. 00 56. 00 46. 00 50. 00	27. 50 27. 20 29. 29 29. 09 27. 21 26. 61 29. 60 29. 20 26. 60 26. 10 23. 80 19. 30	-0. 16 -0. 16 -0. 18 -0. 19 -0. 19 -0. 19 -0. 20 -0. 20 -0. 18 -0. 18	10. 09 10. 09 10. 08 10. 08 10. 08 10. 07 10. 07 11. 20	Average QP Average QP Average QP Average QP Average

Note:

- 1. Level($dB\mu V$) = Read Level($dB\mu V$) + LISN Factor(dB) + Cable Loss(dB)
- 2. Over Limit(dB) = Level(dB μ V) Limit Line(dB μ V)

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3.4 Antenna Requirements

3.4.1 Standard Applicable

Except for special regulations, the Low-power Radio-frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. 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 the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited.

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 rule.

3.4.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

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4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Oct. 10, 2024	Oct. 25, 2024	Oct. 09, 2025	Conducted (TH01-KS)
EMI Test Receiver	R&S	ESR7	101403	9kHz~7GHz;Ma x 30dBm	Oct. 11, 2024	Oct. 24, 2024	Oct. 10, 2025	Radiation (03CH07-KS)
Loop Antenna	R&S	HFH2-Z2E	101125	9kHz~30MHz	Sep. 08, 2024	Oct. 24, 2024	Sep. 07, 2025	Radiation (03CH07-KS)
Bilog Antenna	TESEQ	CBL 6111D	49921	30MHz-1GHz	Apr. 18, 2024	Oct. 24, 2024	Apr. 17, 2025	Radiation (03CH07-KS)
AC Power Source	Chroma	61601	616010002 473	N/A	NCR	Oct. 24, 2024	NCR	Radiation (03CH07-KS)
Turn Table	EM	EM 1000-T	N/A	0~360 degree	NCR	Oct. 24, 2024	NCR	Radiation (03CH07-KS)
Antenna Mast	EM	EM 1000-A	N/A	1 m~4 m	NCR	Oct. 24, 2024	NCR	Radiation (03CH07-KS)
Amplifier	SONOMA	310N	413740	9KHz-1GHz	Jan. 04, 2024	Oct. 24, 2024	Jan. 03, 2025	Radiation (03CH07-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz;	Apr 18, 2024	Oct. 23, 2024	Apr 17, 2025	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060103	9kHz~30MHz	Aug. 20, 2024	Oct. 23, 2024	Aug. 19, 2025	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060105	9kHz~30MHz	Apr. 18, 2024	Oct. 23, 2024	Apr. 17, 2025	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP00000 0811	AC 0V~300V, 45Hz~1000Hz	Oct. 09, 2024	Oct. 23, 2024	Oct. 08, 2025	Conduction (CO01-KS)

NCR: No Calibration Required

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5 Measurement Uncertainty

Uncertainty of Conducted Measurement

Occupied Channel Bandwidth	±0.1%
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Uncertainty of AC Conducted Emission Measurement (150 kHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence	2.84dB
of 95% (U = 2Uc(y))	2.04UB

Uncertainty of Radiated Emission Measurement (9 kHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence	3 304B
of 95% (U = 2Uc(y))	3.30dB

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence	6.06dB
of 95% (U = 2Uc(y))	0.000B

----- THE END -----

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