JAPAN MIC RF TEST REPORT

Applicant	:	Xiaomi Communications Co., Ltd.
Address	:	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, 100085, China
Equipment under Test	:	Robotic Vacuum Cleaner
Model No.	:	PV11GL
Trade Mark	:	Xiaomi
Manufacturer	:	Xiaomi Communications Co., Ltd.
Address	:	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, 100085, China
Report No.	:	LS-R25110633-1F01
Issue Date	:	Dec. 31, 2025

LabSure Testing Services (Tianjin) Co., Ltd.

www.lab-sure.com
E-mail: labsure@lab-sure.com
Tianjin, China Tel: +86-022-58038033
Suzhou, China Tel: +86-0512-62531270

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TEST REPORT DECLARE

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Standard: MIC Article 2, Paragraph 1, Item 19.

Test method: MIC Notification 88, Appendix No. 43.

We Declare:
The equipment described above is tested and assessed by LabSure Testing Services (Tianjin) Co., Ltd. and in the configuration assessed the equipment complied with the standards specified above. The tested and assessed results are contained in this test report and LabSure Testing Services (Tianjin) Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these assessments.
After test and evaluation, our opinion is that the equipment provided for test compliance with the requirement of the above standards.

Report No.:	LS-R25110633-1F01		
Date of Receipt:	Dec. 25, 2025	**Date of Test:**	Dec. 25, 2025 - Dec. 31, 2025

Prepared By:	***Reviewed by:***	***Authorized by:***
Sunny Zhang	Ethan Bao	Aaron Zhang
Sunny Zhang/Engineer	***Ethan Bao/Engineer***	***Aaron Zhang/Manager***

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of LabSure Testing Services (Tianjin) 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 U.S. Government.

Revision history

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	Dec. 31, 2025	

1. Summary of test results

TEST PARAMETER	STANDARD	METHOD	RESULTS
Antenna Power	MIC Article 2, Paragraph 1, Item 19	MIC Notification 88Appendix No.43	**PASS**
Tolerances for Antenna Power	MIC Article 2, Paragraph 1, Item 19	MIC Notification 88Appendix No.43	**PASS**
Frequency Tolerance	MIC Article 2, Paragraph 1, Item 19	MIC Notification 88Appendix No.43	**PASS**
Transmission Rate	MIC Article 2, Paragraph 1, Item 19	MIC Notification 88Appendix No.43	**N/A**
Occupied Frequency Bandwidth	MIC Article 2, Paragraph 1, Item 19	MIC Notification 88Appendix No.43	**PASS**
Spread Bandwidth	MIC Article 2, Paragraph 1, Item 19	MIC Notification 88Appendix No.43	**N/A**
Spreading Factor	MIC Article 2, Paragraph 1, Item 19	MIC Notification 88Appendix No.43	**N/A**
Number of Carriers	MIC Article 2, Paragraph 1, Item 19	MIC Notification 88Appendix No.43	**N/A**
Dwell Time	MIC Article 2, Paragraph 1, Item 19	MIC Notification 88Appendix No.43	**N/A**
Spurious Emissions	MIC Article 2, Paragraph 1, Item 19	MIC Notification 88Appendix No.43	**PASS**
Carrier Sense	MIC Article 2, Paragraph 1, Item 19	MIC Notification 88Appendix No.43	**N/A**
Process Gain	MIC Article 2, Paragraph 1, Item 19	MIC Notification 88Appendix No.43	**N/A**
Secondary Radiated Emissions	MIC Article 2, Paragraph 1, Item 19	MIC Notification 88Appendix No.43	**PASS**
N/A is an abbreviation for Not Applicable.			

2. General test information

2.1. Description of EUT

EUT* Name	:	Robotic Vacuum Cleaner
Test Model Number	:	PV11GL
EUT function description	:	Please refer to user manual of this device
Power supply	:	DC 14.4V by Lithium battery
Radio Specification	:	Bluetooth (LE)
Operation frequency	:	2402MHz-2480MHz
Modulation	:	GFSK
Data rate	:	1Mbps, 2Mbps
Antenna Type	:	PCB antenna, maximum PK gain: 4.20 dBi

Note1: EUT is the ab. Of equipment under test.

Channel information					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	14	2430	28	2458
1	2404	15	2432	29	2460
2	2406	16	2434	30	2462
3	2408	17	2436	31	2464
4	2410	18	2438	32	2466
5	2412	19	2440	33	2468
6	2414	20	2442	34	2470
7	2416	21	2444	35	2472
8	2418	22	2446	36	2474
9	2420	23	2448	37	2476
10	2422	24	2450	38	2478
11	2424	25	2452	39	2480
12	2426	26	2454		
13	2428	27	2456		

Remark: The information in this section is provided by the applicant or manufacturer, the laboratory is not liable to the accuracy, suitability, reliability or/and integrity of the information.

2.2. Accessories of EUT

Description of Accessories	Trade mark	Model number	Manufacturer	Other
N/A	N/A	N/A	N/A	N/A

2.3. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	EMC Compliance	SN
Notebook	Lenovo Beijing Co. Ltd.	ThinkPad	FCC/CE	TP00067A

2.4. Block diagram of EUT configuration for test

EUT

The test software was used to control EUT work in Continuous Tx mode, and select test channel, wireless mode as below table.
Test software: ADB.EXE

Tested mode, channel, and data rate information			
Mode	Channel	Frequency (MHz)	Power Level
BLE 1M	CH Low	2402	3f
	CH Middle	2440	3f
	CH High	2480	3f
BLE 2M	CH Low	2402	3f
	CH Middle	2440	3f
	CH High	2480	3f

2.5. Test environment conditions

During the measurement the environmental conditions were within the listed ranges:

	Normal Conditions
Temperature range	20-28℃
Humidity range	45-75%
Pressure range	86-106kPa
Power supply	DC 14.4V (When the input voltage to equipment fluctuated ±10%, the RF unit circuit voltage fluctuation under 1%, therefore all test performed on the rated voltage for equipment.)

The measurement result of the voltage fluctuation at RF circuit when DC 14.4V +/- 10%.		
Input voltage		RF module voltage
+10% of rate voltage	DC 15.48V	DC 3.30 V
Rate voltage	DC 14.40V	DC 3.30 V
-10% of rate voltage	DC 12.96V	DC 3.30 V

2.6. Deviations of test standard

No Deviation.

2.7. Test laboratory

LabSure Testing Services (Tianjin) Co., Ltd.
Address: Building D-1, No. 19, Weisi Road, Microelectronics Industrial Park Development Area, Tianjin, China.
Tel: +86-22-58038033, www.lab-sure.com, E-mail: labsure@lab-sure.com
NVLAP (National Voluntary Laboratory Accreditation Program) CODE: 500036-0
CNAS (China National Accreditation Service for Conformity Assessment) CODE: L13402
FCC Designation Number: CN5004; FCC Test Firm Registration Number: 368676
ISED (Innovation, Science and Economic Development Canada) Company Number: 27768
Conformity Assessment Body Identifier: CN0125
VCCI Facility Registration Number: C-20089, T-20093, R-20125, G-20122

2.8. Measurement uncertainty

Test Item	Uncertainty
Occupied Channel Bandwidth	±0.14%
Uncertainty for radio frequency	1×10^{-7}
RF Output power, conducted	±0.12dB
Power Spectral Density, Conducted	±0.12dB
Unwanted Emissions, Conducted	±0.52dB
Temperature	±1℃
Humidity	±1%
DC and Low frequency voltage	±0.5%
Time	±0.46%
Duty Cycle	±0.46%
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 test

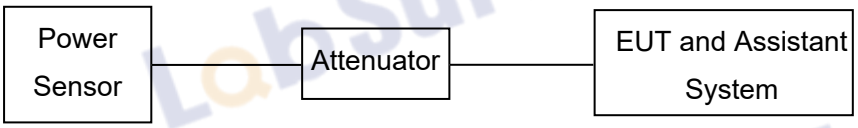
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval	Calibration body
RF Connected Test (MWRFtest Measurement System)						
PXA Signal Analyzer	Keysight	N9030B	MY56320639	2025/02/20	1 Year	GRGTEST
PXA Signal Analyzer	Keysight	N9010A	MY53281492	2025/02/20	1 Year	GRGTEST
Power Sensor	Keysight	U2021XA	MY59150007	2025/02/20	1 Year	GRGTEST
MXG Vector Signal Generator	Keysight	N5182A	MY50143288	2025/02/20	1 Year	GRGTEST
DC Power Supply	inSTEK	PSP-2010	EN122317	2025/02/03	1 Year	GRGTEST
Digital multimeters	FLUKE	15B Pro	59823530WS	2025/03/11	1 Year	GRGTEST
Test Software	MWRFtest	MTS8310	V03	N/A	N/A	N/A
Remark: Calibration conducted in countries except Japan, which shall be equivalent to the calibration conducted by the NICT or a designated calibration agency under Article 102-18 paragraph (1). GRGTEST is GRG METROLOGY & TEST GROUP CO., LTD. and compliant with the requirement in remark.						

4. Antenna Power and Antenna Power Tolerance

4.1. Limit

Modulation System	Frequency Band Used	Antenna Power (Max.)	EIRP (Max.)	
			Omnidirectional Case	Directional Case
DS, OFDM	2400-2483.5MHz	10mW/MHz	12.14dBm/MHz	22.14dBm/MHz
FH, DS-FH, FH-OFDM	2400-2483.5MHz	3mW/MHz	6.91dBm/MHz	16.91dBm/MHz
	Excluding 2427-2470.75MHz	10mW/MHz	12.14dBm/MHz	22.14dBm/MHz
Other than the above	2400-2483.5MHz	10mW	12.14dBm	22.14dBm
Tolerance: +20%				

4.2. Block diagram of test setup



4.3. Test Procedure

(1) Connect each EUT's antenna output to average power sensor by RF cable and attenuator.

(2) Antenna power is as follows:

a) Continuous wave: Value of step (1).

b) Burst wave: Calculate the average power Value from the value of step (1) and Burst Ratio.

Note: The cable loss and attenuator loss have been taken into account.

4.4. Test result

Pass

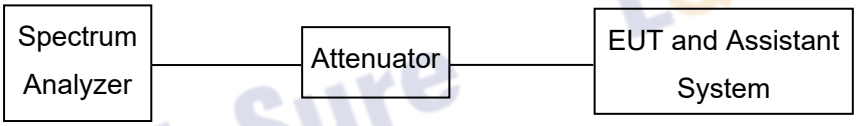
Please find the detailed data in APPENDIXES-BLE-MIC.

5. Frequency Tolerance

5.1. Limit

+/- 50 x 10^{-6} or less (50ppm)

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 center 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

Pass

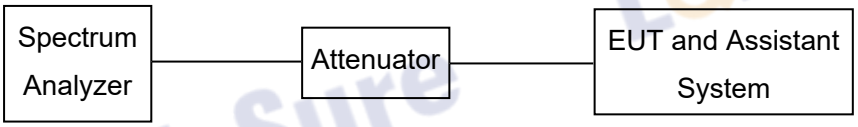
Please find the detailed data in APPENDIXES-BLE-MIC.

6. Occupied Frequency Bandwidth

6.1. Limit

26MHz or less

6.2. Block diagram of test setup



6.3. 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 center frequency of the channel under test.

Resolution BW: 30 kHz

Video BW: 30 kHz

Span: Wide enough to cover the complete power envelope of the signal of the EUT

Detector: Peak.

Trace Mode: Max Hold.

(2) When the trace is complete, measure the Occupied bandwidth (99% bandwidth) with spectrum analyzer's bandwidth measure function.

6.4. Test result

Pass

Please find the detailed data in APPENDIXES-BLE-MIC.

7. Transmitter Spurious Emissions

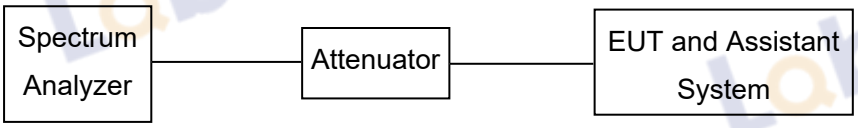
7.1. Limit

Permissible mean power of spurious emission of each frequency supplied to a feeder, that is, mean power of spurious emission in the 1 MHz bandwidth at frequency f other than frequency band used shall be as follows:

a. 2,387MHz ≤ f ≤ 2,400MHz and 2,483.5MHz < f ≤ 2,496.5MHz 25 μW (-16dBm) or less

b. 2,387MHz > f and 2,496.5MHz < f≤ 13GHz 2.5 μW (-26dBm) or less

7.2. Block diagram of test setup



7.3. Test Procedure

(1) Connected the EUT's antenna port to the Spectrum Analyzer by suitable attenuator.

(2) Set the spectrum analyzer as below, sweep the frequency, and search for unwanted emissions.

Resolution BW: Reference Bandwidth

Video BW: Same with Resolution BW

Detector: Peak

Trace Mode: Max. Hold

(3) All the emissions from 30MHz to 13GHz were measured and record.

(4) If spurious emissions are greater than [limit -3dB], the spectrum shell be set as below, the measured value shall be the result.

Centre Frequency: frequency of measured in (3).

Resolution BW: 1MHz

Video BW: 1 MHz

Span: 0Hz.

Detector: RMS.

Sweep mode: Single

(5) If there are multiple antennas, it is measured at each antenna.

7.4. Test result

Pass

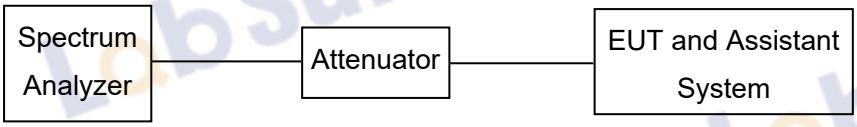
Please find the detailed data in APPENDIXES-BLE-MIC.

8. Secondary Radiated Emissions

8.1. Limit

The limit on secondary emissions radiated from the receiving equipment within which the function of other radio equipment will not be impaired shall be, in terms of the power of a dummy antenna circuit that has the same electrical constant as the receiving antenna, 4 nW (-54dBm) or less at a frequency below 1 GHz and 20 nW (-47dBm) or less at a frequency of 1 GHz or higher as measured using the circuit.

8.2. Block diagram of test setup



8.3. Test Procedure

(1) Connected the EUT's antenna port to the Spectrum Analyzer by suitable attenuator.

(2) Set the spectrum analyzer as below, search for the maximum amplitude of the secondary unwanted emissions.

Resolution BW: 100kHz for frequency below 1GHz and 1MHz for frequency above 1GHz.

Video BW: Same with Resolution BW

Detector: Peak

Trace Mode: Max. Hold

(3) All the emissions from 30MHz to 13GHz were measured and record.

(4) If the searched value is 1/10 or less of the allowable value specified in the Equipment Regulations, the searched value shall be the measured value.

(5) If the searched value exceeds 1/10 of the allowable value specified in the equipment regulations, the frequency sweep width is gradually narrowed to about 10 times the resolution bandwidth in order to improve the setting accuracy of the center frequency of the spectrum analyzer. Then, measure the secondary emission frequency, set the spectrum analyzer as below, perform averaging, and measure the secondary emission power.

Centre Frequency: frequency of measured in (3).

Resolution BW: 1MHz

Video BW: 1 MHz

Span: 0Hz.

Detector: RMS.

Sweep mode: Single

(6) If there are multiple antennas, it is measured at each antenna.

8.4. Test result

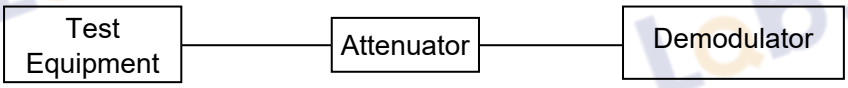
Pass

Please find the detailed data in APPENDIXES-BLE-MIC.

9. Interference prevention function

9.1. Measurement system diagram

1) When transmitting identification code



2) Condition of measuring instrument

Demodulator must be able to demodulate the transmitting signal emitted by test equipment and to indicate the identification code.

3) Condition of test equipment the mode of normal use.

9.2. Measuring operation procedure

1) When test equipment has the function to transmit identification code automatically:

A) Transmit the predetermined identification code from test equipment.

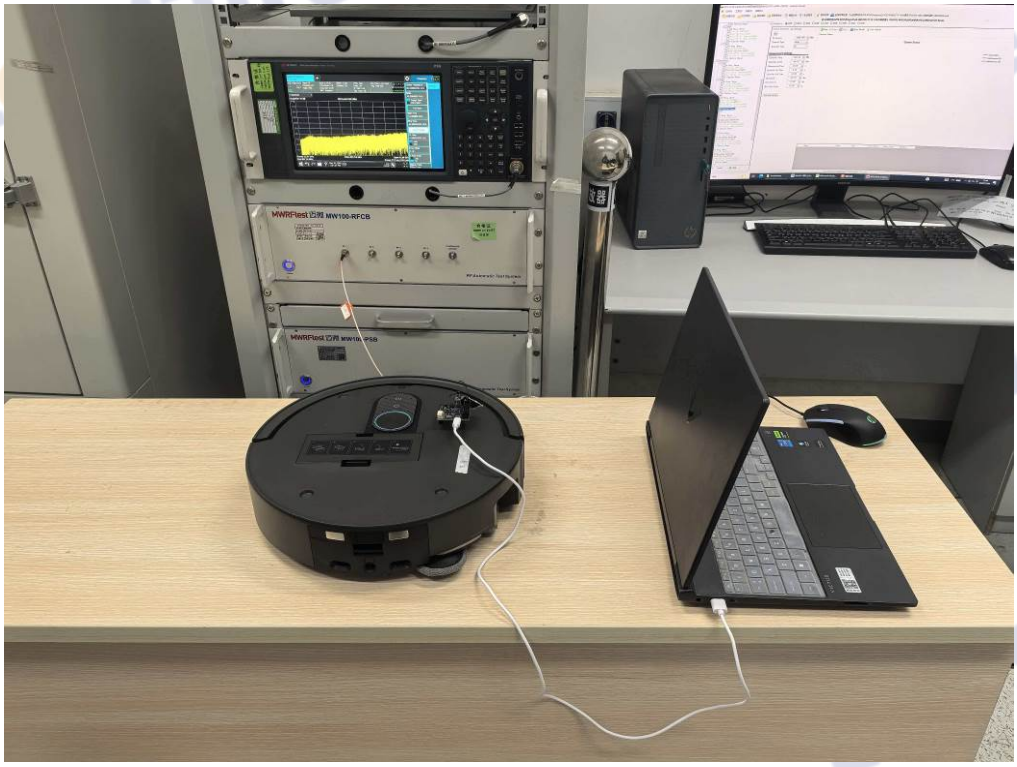
B) Confirm the transmitted identification code by demodulator.

MAC address: C0:09:25:85:9A:79

9.3. Test result: The unit does meet the requirements (Good).

Test result: The unit does meet the requirements.
PASS

10. Test setup photograph



11. Photos of the EUT

Please find the photos of EUT in APPENDIXES-Photos.

END OF REPORT