



RF MEASUREMENT REPORT

FCC ID: 2BAXN-MR0010
Applicant: Willand (Beijing) Technology Co., LTD.
Product: Robotic Lawn Mower
Model No.: Mi2710N
Serial Model No.: Mi2706N
Brand Name: Segway Navimow
FCC Classification: Digital Transmission System (DTS)
FCC Rule Part(s): Part 15 Subpart C (Section 15.247)
Result: Complies
Received Date: 2025-09-05
Test Date: 2025-09-20 ~ 2025-10-22

Reviewed By:

Vincent Yu

Vincent Yu

Approved By:

Robin Wu

Robin Wu



The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report. Testing was performed in accordance with the applicable measurement procedures. The test results reported herein apply only to the specific item(s) tested.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

Revision History

Report No.	Version	Description	Issue Date	Note
R25S1020096-U202	V01	Initial Report	2025-11-20	Valid

CONTENTS

Description	Page
1. General Information	5
1.1. Applicant	5
1.2. Manufacturer	5
1.3. Testing Facility	5
1.4. Product Information	6
1.5. Radio Specification under Test	6
1.6. Working Frequencies	7
2. Test Configuration	8
2.1. Test Mode	8
2.2. Test System Connection Diagram	8
2.3. Test Software	8
2.4. Applied Standards	9
2.5. Test Environment Condition	9
3. Antenna Requirements	10
4. Measuring Instrument	11
5. Decision Rules and Measurement Uncertainty	12
5.1. Decision Rules	12
5.2. Measurement Uncertainty	12
6. Test Result	13
6.1. Summary	13
6.2. 6 dB Bandwidth Measurement	14
6.2.1. Test Limit	14
6.2.2. Test Procedure	14
6.2.3. Test Setting	14
6.2.4. Test Setup	14
6.2.5. Test Result	14
6.3. Output Power Measurement	15
6.3.1. Test Limit	15
6.3.2. Test Procedure	15
6.3.3. Test Setting	15
6.3.4. Test Setup	15
6.3.5. Test Result	15
6.4. Power Spectral Density Measurement	16
6.4.1. Test Limit	16
6.4.2. Test Procedure	16

6.4.3.	Test Setting	16
6.4.4.	Test Setup	16
6.4.5.	Test Result	16
6.5.	Conducted Band Edge and Out-of-Band Emissions Measurement	17
6.5.1.	Test Limit	17
6.5.2.	Test Procedure	17
6.5.3.	Test Setting	17
6.5.4.	Test Setup	17
6.5.5.	Test Result	18
6.6.	Radiated Spurious Emission Measurement.....	19
6.6.1.	Test Limit	19
6.6.2.	Test Procedure	19
6.6.3.	Test Setting	19
6.6.4.	Test Setup	21
6.6.5.	Test Result	22
6.7.	Radiated Restricted Band Edge Measurement	23
6.7.1.	Test Limit	23
6.7.2.	Test Procedure	24
6.7.3.	Test Setting	24
6.7.4.	Test Setup	25
6.7.5.	Test Result	25
6.8.	AC Conducted Emissions Measurement	26
6.8.1.	Test Limit	26
6.8.2.	Test Setup	26
6.8.3.	Test Result	26
Appendix A - Test Result.....		27
A.1	Duty Cycle Test Result	27
A.2	6 dB Bandwidth Test Result	28
A.3	Output Power Test Result	29
A.4	Power Spectral Density Test Result	30
A.5	Conducted Band Edge and Out-of-Band Emissions Test Result	31
A.6	Radiated Spurious Emission Test Result	33
A.7	Radiated Restricted Band Edge Test Result	37
A.8	AC Conducted Emissions Test Result	45
Appendix B - Test Setup Photograph		49
Appendix C - EUT Photograph		50

1. General Information

1.1. Applicant

Willand (Beijing) Technology Co., LTD.

Room 203, A1 Bldg. Zhongguancun Dongsheng Technology Park (Northern Territory), No. 66, Xixiaokou Rd,
Haidian Dist., Beijing, China.

1.2. Manufacturer

Willand (Beijing) Technology Co., LTD.

Room 203, A1 Bldg. Zhongguancun Dongsheng Technology Park (Northern Territory), No. 66, Xixiaokou Rd,
Haidian Dist., Beijing, China.

1.3. Testing Facility

☒	Test Site - MRT Suzhou Laboratory
	Laboratory Location (Suzhou - Wuzhong) D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China
	Laboratory Location (Suzhou - SIP) 4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China
	Laboratory Location (Suzhou - Wujiang) Building 1, No.1 Xingdong Road, Wujiang, Suzhou, Jiangsu, People's Republic of China
	Laboratory Accreditations
	A2LA: 3628.01 FCC: CN1166
	CNAS: L10551 ISED: CN0001
☐	Test Site - MRT Shenzhen Laboratory
	Laboratory Location (Shenzhen) 1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen, China
	Laboratory Accreditations
	A2LA: 3628.02 FCC: CN1284
	CNAS: L10551 ISED: CN0105
☐	Test Site - MRT Taiwan Laboratory
	Laboratory Location (Taiwan) No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)
	Laboratory Accreditations
	TAF: 3261 FCC: 291082, TW3261
	ISED: TW3261

1.4. Product Information

Product Name	Robotic Lawn Mower
Model No.	Mi2710N
Serial Model No.	Mi2706N
Brand Name	Segway Navimow
EUT Identification No.	20250906Sample#01 (Conducted) 20250905Sample#01 (Radiated)
Wi-Fi Specification	802.11b/g/n
Bluetooth Specification	Bluetooth_LE only
SRD Specification	915.05 ~ 917.9 MHz
GNSS Specification	BDS, Galileo, GPS
3GPP Specification	LTE Band 2/4/5/12/13/66
Antenna Information	Refer to section 1.5
Operating Temperature	0 ~ 40 °C
Power Type	By Battery
Integrated Modular Information	
Specification	Modular Name: LTE Cat 1 bis Module Model Number: EG800Q-NA Manufacturer: Quectel
Remarks:	
- The information of the EUT (Equipment Under Test) was provided by the manufacturer. The accuracy, completeness, and validity of the information are solely the responsibility of the manufacturer. - The differences between the models lie in the different battery capacities and slight variations in the wheel hub covers, while everything else is completely identical. In this report, the model (Model No.: Mi2710N) with the most complete configuration was selected for testing.	

1.5. Radio Specification under Test

Frequency Range	2400 ~ 2483.5 MHz
Channel Number	40
Type of modulation	GFSK
Data Rate	1 Mbps
Antenna Type	PCB Antenna
Antenna Gain	-1.26 dBi

1.6. Working Frequencies

Channel	Frequency	Channel	Frequency	Channel	Frequency
00	2402 MHz	01	2404 MHz	02	2406 MHz
03	2408 MHz	04	2410 MHz	05	2412 MHz
06	2414 MHz	07	2416 MHz	08	2418 MHz
09	2420 MHz	10	2422 MHz	11	2424 MHz
12	2426 MHz	13	2428 MHz	14	2430 MHz
15	2432 MHz	16	2434 MHz	17	2436 MHz
18	2438 MHz	19	2440 MHz	20	2442 MHz
21	2444 MHz	22	2446 MHz	23	2448 MHz
24	2450 MHz	25	2452 MHz	26	2454 MHz
27	2456 MHz	28	2458 MHz	29	2460 MHz
30	2462 MHz	31	2464 MHz	32	2466 MHz
33	2468 MHz	34	2470 MHz	35	2472 MHz
36	2474 MHz	37	2476 MHz	38	2478 MHz
39	2480 MHz	--	--	--	--

2. Test Configuration

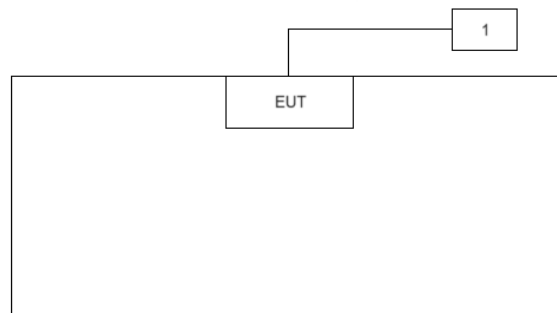
2.1. Test Mode

Mode 1: Transmit by BLE-1 Mbps.

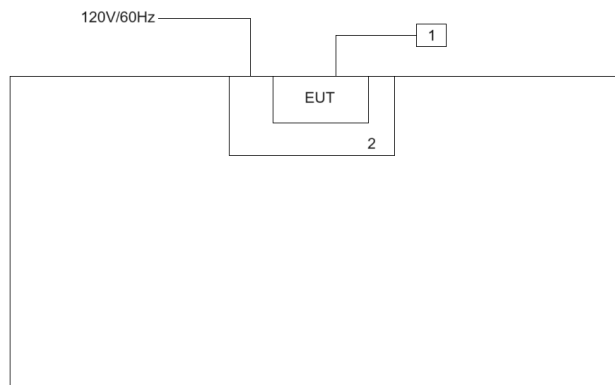
2.2. Test System Connection Diagram

The device was tested per the guidance ANSI C63.10-2020 was used to reference the appropriate EUT setup for radiated emissions testing and AC line conducted testing.

Connection Diagram - Radiated Emissions testing



Connection Diagram - AC Line Conducted testing



Product		Manufacturer	Model No.
1	Notebook	Lenovo	E430C
2	Navimow Charging Station	Navimow B.V.	i1C00G

2.3. Test Software

The test utility software used during testing was “nRF Connect for Desktop” app, and the version was “5.2.0”.

2.4. Applied Standards

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

- FCC Part 15.247
- KDB 558074 D01 v05r02
- ANSI C63.10-2020
- ANSI C63.10-2020/Cor1-2023
- ANSI C63.10a-2024

2.5. Test Environment Condition

Ambient Temperature	15 ~ 35 °C
Relative Humidity	20 ~ 75%RH

3. Antenna Requirements

Excerpt from §15.203 of the FCC Rules/Regulations:

“An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can 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 antenna of the device is **permanently attached**.
- There are no provisions for connection to an external antenna.

Conclusion:

The unit complies with the requirement of §15.203.

4. Measuring Instrument

Instrument	Manufacturer	Model No.	Asset No.	Cali. Interval	Cali. Due Date	Test Site
EMI Test Receiver	R&S	ESR3	MRTSUE07110	1 year	2026-04-19	WJ-AC1
EXA Signal Analyzer	Keysight	N9010B	MRTSUE07147	1 year	2025-11-06	WJ-AC1
Active Loop Antenna	Schwarzbeck	FMZB 1519-60 D	MRTSUE07076	1 year	2025-11-19	WJ-AC1
TRILOG Broad Band Antenna	Schwarzbeck	VULB 9163	MRTSUE07099	1 year	2026-04-22	WJ-AC1
Horn Antenna	ETS	3117	MRTSUE06257	1 year	2026-08-13	WJ-AC1
Preamplifier	EMCI	EMC001330	MRTSUE06643	1 year	2026-05-13	WJ-AC1
Thermohygrometer	testo	608-H1	MRTSUE11333	1 year	2026-06-16	WJ-AC1
Thermohygrometer	testo	608-H1	MRTSUE11402	1 year	2025-12-01	WJ-AC1
Anechoic Chamber	TDK	WJ-AC1	MRTSUE07115	1 year	2026-07-09	WJ-AC1
Signal Analyzer	Keysight	N9010B	MRTSUE07285	1 year	2026-02-18	WJ-AC2
Broadband Horn Antenna	Schwarzbeck	BBHA 9170	MRTSUE07100	1 year	2026-04-10	WJ-AC2
Preamplifier	EMCI	EMC184045SE	MRTSUE07103	1 year	2026-04-09	WJ-AC2
Thermohygrometer	testo	608-H1	MRTSUE11315	1 year	2026-06-16	WJ-AC2
Thermohygrometer	testo	608-H1	MRTSUE11332	1 year	2026-06-05	WJ-AC2
Anechoic Chamber	TDK	WJ-AC2	MRTSUE07117	1 year	2026-05-12	WJ-AC2
EMI Test Receiver	R&S	ESR3	MRTSUE07112	1 year	2026-04-19	WJ-SR5
Two-Line V-Network	R&S	ENV216	MRTSUE07201	1 year	2026-05-26	WJ-SR5
Shielding Room	TDK	WJ-SR5	MRTSUE07127	N/A	N/A	WJ-SR5
Thermohygrometer	testo	608-H1	MRTSUE11317	1 year	2026-06-05	WJ-SR5
Signal Analyzer	Keysight	N9010B	MRTSUE07285	1 year	2026-02-18	WJ-SR3
USB Power Sensor	Keysight	U2021XA	MRTSUE07141	1 year	2026-03-15	WJ-SR3
Shielding Room	TDK	WJ-SR3	MRTSUE07125	N/A	N/A	WJ-SR3
Thermohygrometer	testo	608-H1	MRTSUE11331	1 year	2026-06-05	WJ-SR3
Thermohygrometer	testo	608-H1	MRTSUE11403	1 year	2025-12-01	WJ-TR1
Signal Analyzer	Keysight	N9010B	MRTSUE07285	1 year	2026-02-18	WJ-TR1
Fixed Attenuator	MVE	MVE2213	MRTSUE07318	Note	Note	WJ-TR1
RF Cable	UCwave	UCE500	MRTSUE07349	Note	Note	WJ-TR1

Note: The loss of the Attenuator & Cable will be measured before testing.

Software	Version	Function
e3	230711	RE & CE
CONTROLLER CO3000	v 1.03.02	RE Antenna & Turntable
Agilent Power Panel	V 3.9	Power

5. Decision Rules and Measurement Uncertainty

5.1. Decision Rules

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4:2012 Clause 8.2.

(Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

5.2. Measurement Uncertainty

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.

AC Conducted Emission Measurement	
The maximum measurement uncertainty is evaluated as:	
9 kHz ~ 150 kHz:	3.58 dB
150 kHz ~ 30 MHz:	3.20 dB
Radiated Emission Measurement	
The maximum measurement uncertainty is evaluated as:	
Coaxial:	9 kHz ~ 30 MHz: 2.35 dB
Coplanar:	9 kHz ~ 30 MHz: 2.37 dB
Horizontal:	30 MHz ~ 200 MHz: 3.47 dB
	200 MHz ~ 1 GHz: 4.17 dB
	1 GHz ~ 40 GHz: 4.97 dB
Vertical:	30 MHz ~ 200 MHz: 4.07 dB
	200 MHz ~ 1 GHz: 5.28 dB
	1 GHz ~ 40 GHz: 4.84 dB
Spurious Emissions, Conducted	
Measuring Uncertainty for a Level of Confidence of 95% ($U=2 U_c(y)$): 2.5 dB	
Output Power	
Measuring Uncertainty for a Level of Confidence of 95% ($U=2 U_c(y)$): 1.5 dB	
Power Spectrum Density	
Measuring Uncertainty for a Level of Confidence of 95% ($U=2 U_c(y)$): 2.5 dB	
Occupied Bandwidth	
Measuring Uncertainty for a Level of Confidence of 95% ($U=2 U_c(y)$): 3.2%	

6. Test Result

6.1. Summary

FCC Section(s)	Test Description	Test Condition	Verdict
15.247(a)(2)	6 dB Bandwidth	Conducted	Pass
15.247(b)(3)	Output Power		Pass
15.247(e)	Power Spectral Density		Pass
15.247(d)	Band Edge / Out-of-Band Emissions		Pass
15.205 15.209	General Field Strength (Restricted Bands and Radiated Emission)	Radiated	Pass
15.207	AC Conducted Emissions 150 kHz - 30 MHz	Line Conducted	Pass

Note: The analyzer plots shown in this section were captured using a correction table to account for cable and attenuator losses in the system connecting the EUT to the analyzer across relevant frequencies.

6.2. 6 dB Bandwidth Measurement

6.2.1. Test Limit

The minimum 6 dB bandwidth shall be at least 500 kHz.

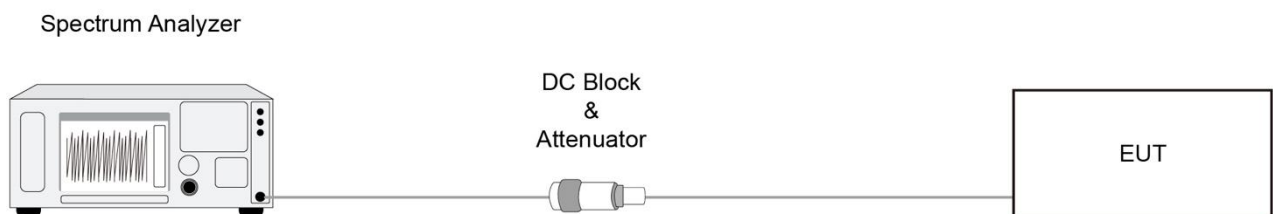
6.2.2. Test Procedure

ANSI C63.10-2020 - Section 11.8

6.2.3. Test Setting

1. The Spectrum's automatic bandwidth measurement capability was used to perform the 6 dB bandwidth measurement. The "X" dB bandwidth parameter was set to $X = 6$. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 1% to 5% of the OBW, but not less than 100 kHz
3. VBW $\geq 3 \times$ RBW
4. Detector = Peak
5. Trace mode = Max hold
6. Sweep = Auto couple
7. Allow the trace to stabilize

6.2.4. Test Setup



6.2.5. Test Result

Refer to Appendix A.2.

6.3. Output Power Measurement

6.3.1. Test Limit

The maximum output power shall be less 1 Watt (30 dBm).

The conducted output power limit specified in paragraph FCC Part 15.247(b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs FCC Part 15.247(b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

6.3.2. Test Procedure

ANSI C63.10-2020 - Section 11.9.1.2

ANSI C63.10-2020 - Section 11.9.2.3.2

6.3.3. Test Setting

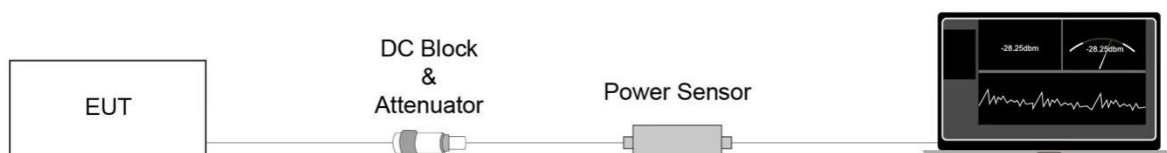
Method PKPM1 (Peak Power Measurement of Signals with DTS BW $\leq$ 50 MHz)

Peak power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The pulse sensor employs a VBW = 50 MHz so this method was only used for signals whose DTS bandwidth was less than or equal to 50 MHz.

Average Power Measurement

Average power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter.

6.3.4. Test Setup



6.3.5. Test Result

Refer to Appendix A.3.

6.4. Power Spectral Density Measurement

6.4.1. Test Limit

The maximum permissible power spectral density is 8 dBm in any 3 kHz band.

The same method of determining the conducted output power shall be used to determine the power spectral density.

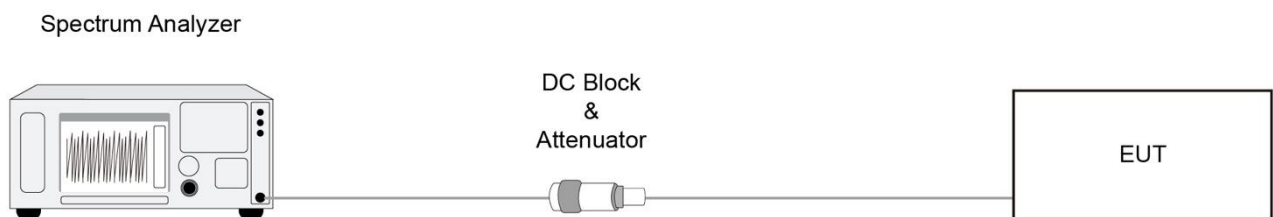
6.4.2. Test Procedure

ANSI C63.10-2020 Section 11.10.2

6.4.3. Test Setting

1. Analyzer was set to the center frequency of the DTS channel under investigation
2. Span = 1.5 times the DTS channel bandwidth
3. RBW = 3 kHz
4. VBW = 10 kHz
5. Detector = peak
6. Sweep time = auto couple
7. Trace mode = max hold
8. Trace was allowed to stabilize

6.4.4. Test Setup



6.4.5. Test Result

Refer to Appendix A.4.

6.5. Conducted Band Edge and Out-of-Band Emissions Measurement

6.5.1. Test Limit

The limit for out-of-band spurious emissions at the band edge is 20 dB below the fundamental emission level, as determined from the in-band power measurement of the DTS channel performed in a 100 kHz bandwidth per the PSD procedure.

6.5.2. Test Procedure

ANSI C63.10-2020 - Section 11.11

6.5.3. Test Setting

Reference level measurement

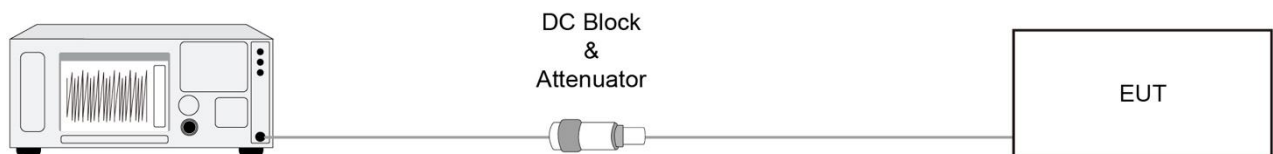
1. Set instrument center frequency to DTS channel center frequency
2. Set the span to ≥ 1.5 times the DTS bandwidth
3. Set the RBW = 100 kHz
4. Set the VBW $\geq 3 \times$ RBW
5. Detector = peak
6. Sweep time = auto couple
7. Trace mode = max hold
8. Allow trace to fully stabilize

Emission level measurement

1. Set the center frequency and span to encompass frequency range to be measured
2. RBW = 100 kHz
3. VBW = 300 kHz
4. Detector = Peak
5. Trace mode = max hold
6. Sweep time = auto couple
7. The trace was allowed to stabilize

6.5.4. Test Setup

Spectrum Analyzer



6.5.5. Test Result

Refer to Appendix A.5.

6.6. Radiated Spurious Emission Measurement

6.6.1. Test Limit

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [$\mu\text{V/m}$]	Measured Distance [Meters]
0.009 - 0.490	2400/F (kHz)	300
0.490 - 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

6.6.2. Test Procedure

ANSI C63.10-2020 - Section 11.11 & 11.12

ANSI C63.10-2020 - Section 6.3 (General Requirements)

ANSI C63.10-2020 - Section 6.4 (Standard test method below 30 MHz)

ANSI C63.10-2020 - Section 6.5 (Standard test method above 30 MHz to 1 GHz)

ANSI C63.10-2020 - Section 6.6 (Standard test method above 1 GHz)

6.6.3. Test Setting

Table 1 - RBW as a function of frequency

Frequency	RBW
9 ~ 150 kHz	200 ~ 300 Hz
0.15 ~ 30 MHz	9 ~ 10 kHz
30 ~ 1000 MHz	100 ~ 120 kHz
> 1000 MHz	1 MHz

Quasi-Peak Measurements below 1 GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. Span was set greater than 1 MHz
3. RBW = as specified in Table 1
4. Detector = CISPR quasi-peak
5. Sweep time = auto couple
6. Trace was allowed to stabilize

Peak Measurements above 1 GHz

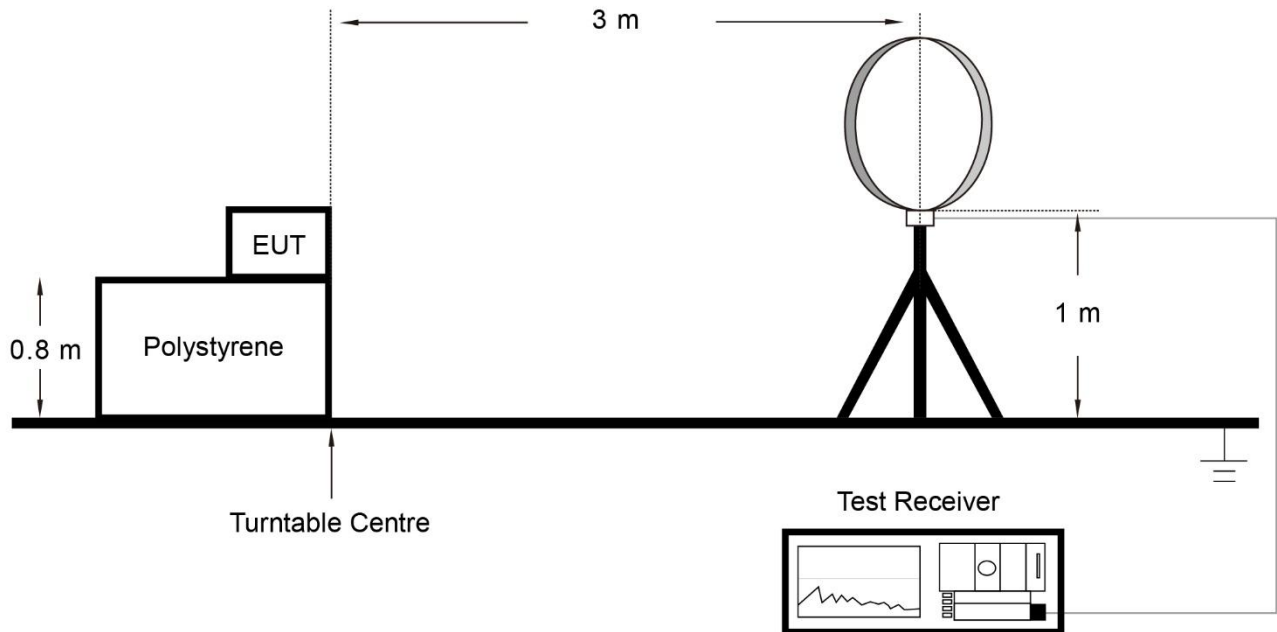
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1 MHz
3. VBW = 3 MHz
4. Detector = Peak
5. Sweep time = Auto couple
6. Trace mode = Max hold
7. Trace was allowed to stabilize

Average Measurements above 1 GHz (Method VB)

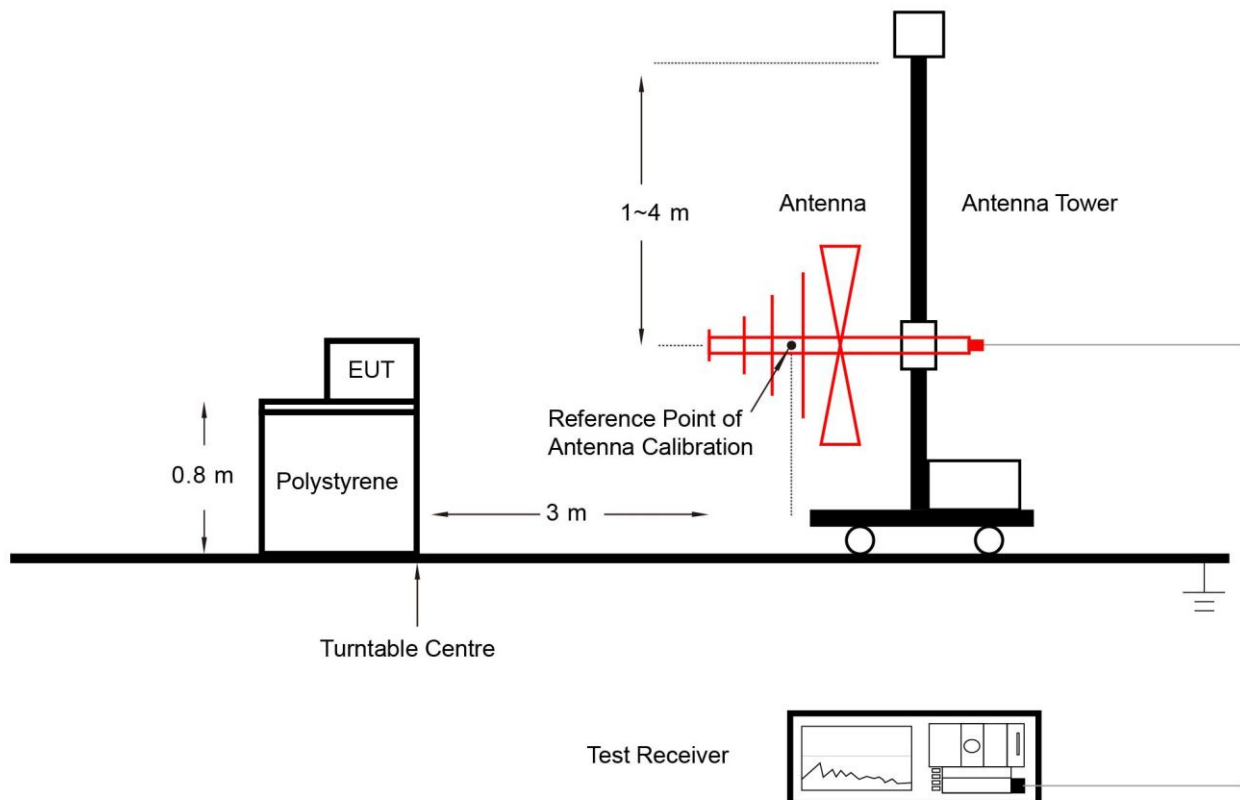
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1 MHz
3. VBW; if the EUT is configured to transmit with duty cycle $\geq 98\%$, set VBW = 10 Hz
If the EUT duty cycle is $< 98\%$, set $VBW \geq 1/T$. T is the minimum transmission duration.
4. As an alternative, the instrument may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). Some instruments require linear display mode in order to accomplish this. Others have a setting for Average-VBW Type, which can be set to "Voltage" regardless of the display mode
5. Detector = Peak
6. Sweep time = Auto
7. Trace mode = Max hold
8. Trace was allowed to stabilize

6.6.4. Test Setup

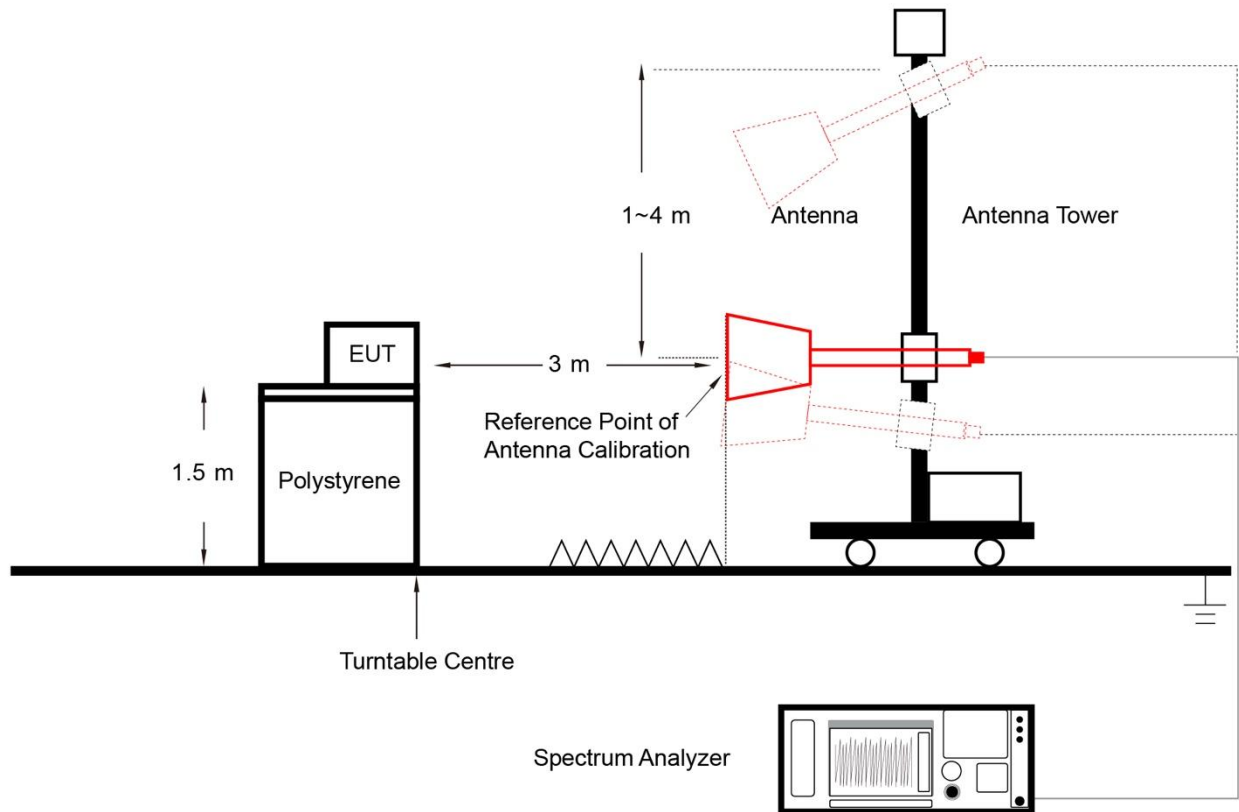
Below 30 MHz Test Setup:



Below 1 GHz Test Setup:



Above 1 GHz Test Setup:



6.6.5. Test Result

Refer to Appendix A.6.

6.7. Radiated Restricted Band Edge Measurement

6.7.1. Test Limit

For 15.205 requirement:

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) of FCC part 15, must also comply with the radiated emission limits specified in Section 15.209(a).

Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)
13.36 - 13.41	--	--	--

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [μ V/m]	Measured Distance [Meters]
0.009 - 0.490	2400/F (kHz)	300
0.490 - 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

6.7.2. Test Procedure

ANSI C63.10-2020 - Section 6.3 & 6.6 & 11.12

6.7.3. Test Setting

Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1 MHz
3. VBW = 3 MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

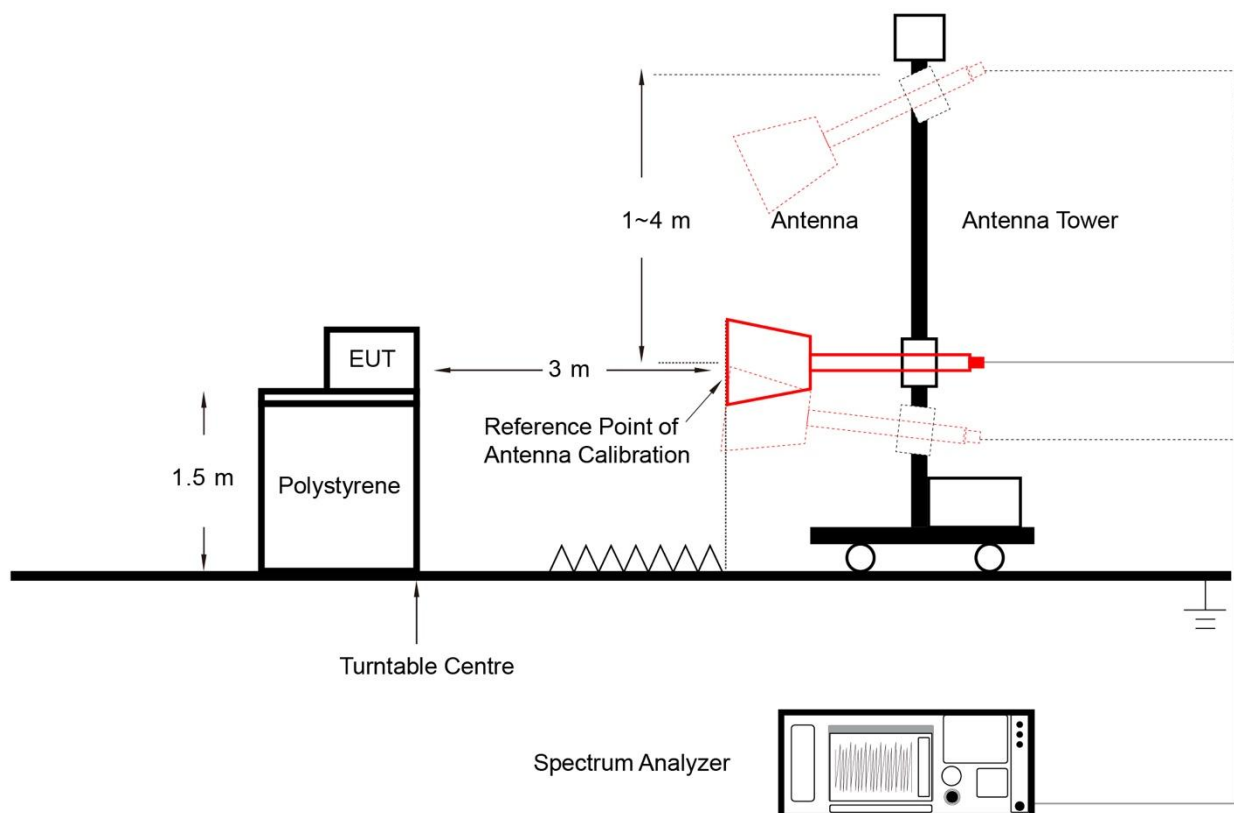
Average Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1 MHz
3. VBW; If the EUT is configured to transmit with duty cycle $\geq 98\%$, set VBW = 10 Hz.

If the EUT duty cycle is $< 98\%$, set VBW $\geq 1/T$. T is the minimum transmission duration.

4. As an alternative, the instrument may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). Some instruments require linear display mode in order to accomplish this. Others have a setting for Average-VBW Type, which can be set to "Voltage" regardless of the display mode
5. Detector = Peak
6. Sweep time = auto
7. Trace mode = max hold
8. Allow max hold to run for at least 50 times (1/duty cycle) traces

6.7.4. Test Setup



6.7.5. Test Result

Refer to Appendix A.7.

6.8. AC Conducted Emissions Measurement

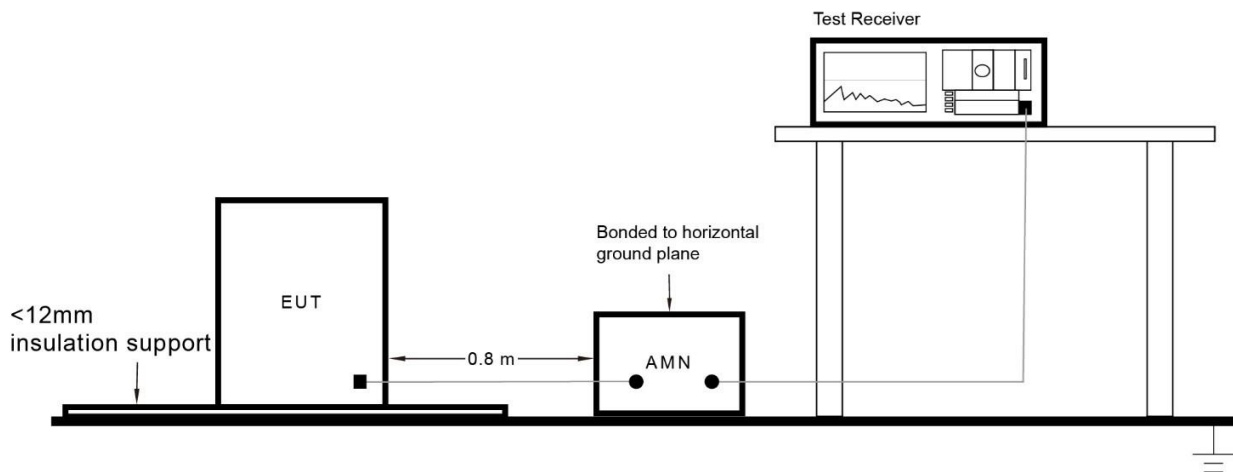
6.8.1. Test Limit

FCC Part 15 Subpart C Paragraph 15.207 Limits		
Frequency (MHz)	QP (dB μ V)	AV (dB μ V)
0.15 - 0.50	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30	60	50

Note 1: The lower limit shall apply at the transition frequencies.

Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

6.8.2. Test Setup



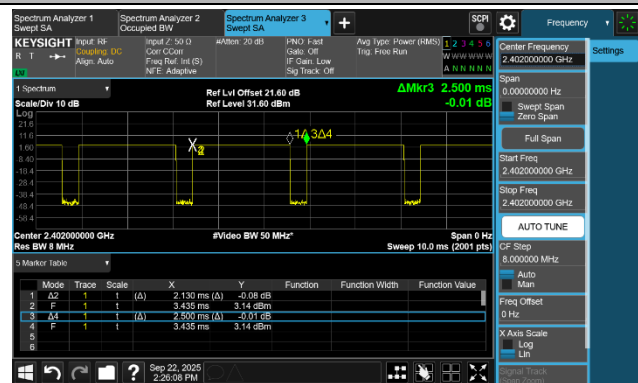
6.8.3. Test Result

Refer to Appendix A.8.

Appendix A - Test Result

A.1 Duty Cycle Test Result

Test Site	WJ-SR3	Test Engineer	Ellie Wang
Test Date	2025-09-22		

Test Mode	Duty Cycle
BLE-1 Mbps	85.2%
Duty Cycle (T = Transmission Duration)	
BLE-1 Mbps (T = 2.130 ms)	
	

A.2 6 dB Bandwidth Test Result

Test Site	WJ-TR1	Test Engineer	Ellie Wang
Test Date	2025-09-20		

Test Mode	Data Rate	Channel No.	Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (MHz)
BLE	1 Mbps	00	2402	0.6956	≥ 0.5
BLE	1 Mbps	19	2440	0.6962	≥ 0.5
BLE	1 Mbps	39	2480	0.7030	≥ 0.5



A.3 Output Power Test Result

Test Site	WJ-TR1	Test Engineer	Ellie Wang
Test Date	2025-09-20		

Test Result of Peak Output Power

Test Mode	Data Rate	Channel No.	Frequency (MHz)	Peak Power (dBm)	Limit (dBm)	Result
BLE	1 Mbps	00	2402	3.82	≤ 30.00	Pass
BLE	1 Mbps	19	2440	3.74	≤ 30.00	Pass
BLE	1 Mbps	39	2480	4.25	≤ 30.00	Pass

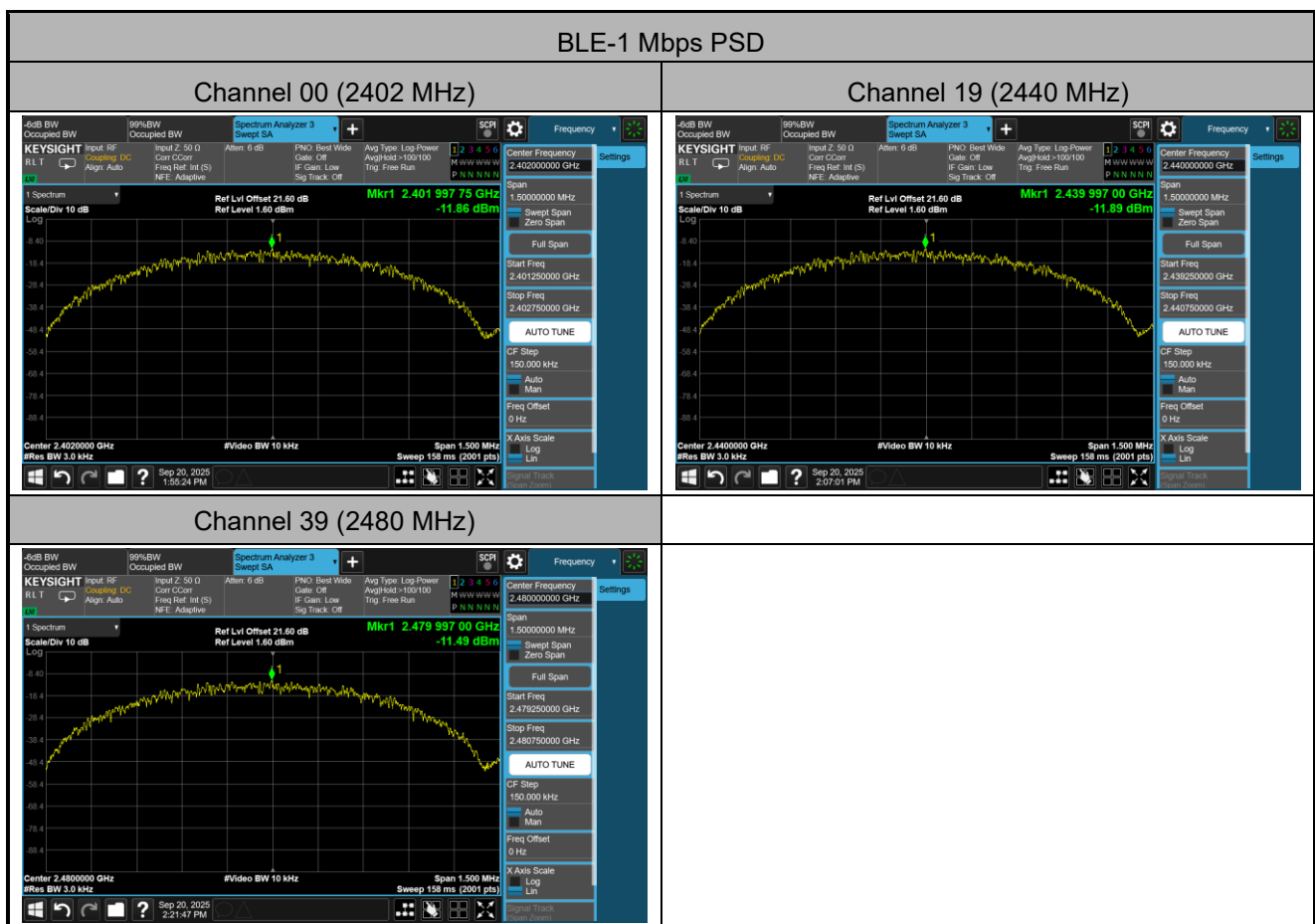
Test Result of Average Output Power (Reporting Only)

Test Mode	Data Rate	Channel No.	Frequency (MHz)	Average Power (dBm)	Limit (dBm)	Result
BLE	1 Mbps	00	2402	2.68	≤ 30.00	Pass
BLE	1 Mbps	19	2440	2.65	≤ 30.00	Pass
BLE	1 Mbps	39	2480	3.25	≤ 30.00	Pass

A.4 Power Spectral Density Test Result

Test Site	WJ-TR1	Test Engineer	Ellie Wang
Test Date	2025-09-20		

Test Mode	Data Rate	Channel No.	Frequency (MHz)	PSD Result (dBm/3 kHz)	Limit (dBm/3 kHz)	Result
BLE	1 Mbps	00	2402	-11.86	≤ 8.00	Pass
BLE	1 Mbps	19	2440	-11.89	≤ 8.00	Pass
BLE	1 Mbps	39	2480	-11.49	≤ 8.00	Pass



A.5 Conducted Band Edge and Out-of-Band Emissions Test Result

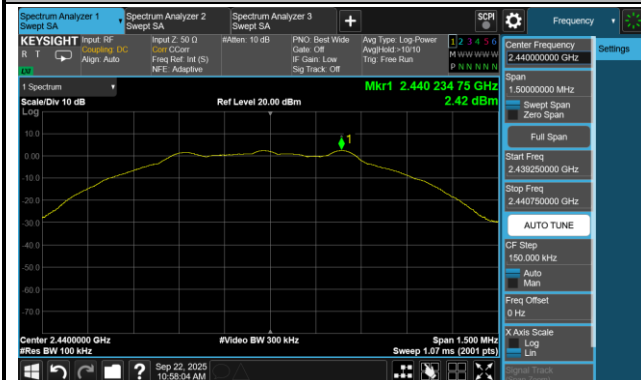
Test Site	WJ-SR3	Test Engineer	Ellie Wang
Test Date	2025-09-22		

Test Mode	Data Rate	Channel No.	Frequency (MHz)	Limit (dBc)	Result
BLE	1 Mbps	00	2402	20	Pass
BLE	1 Mbps	19	2440	20	Pass
BLE	1 Mbps	39	2480	20	Pass

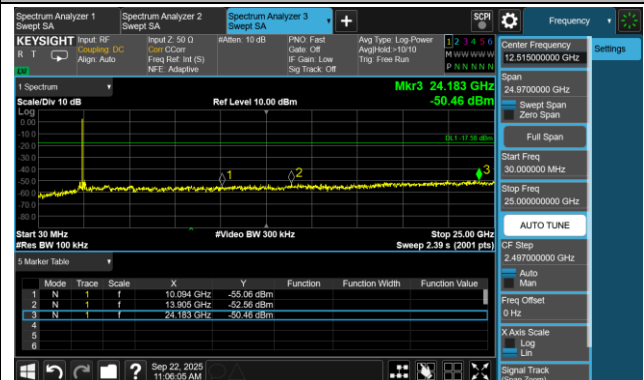


Channel 19 (2440 MHz)

100 kHz PSD Reference Level

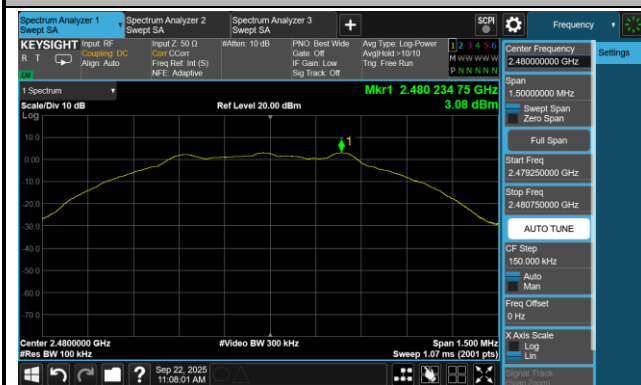


Spurious Emission 30 MHz ~ 25 GHz

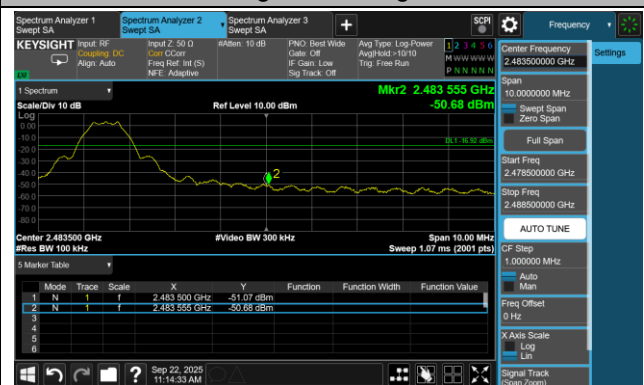


Channel 39 (2480 MHz)

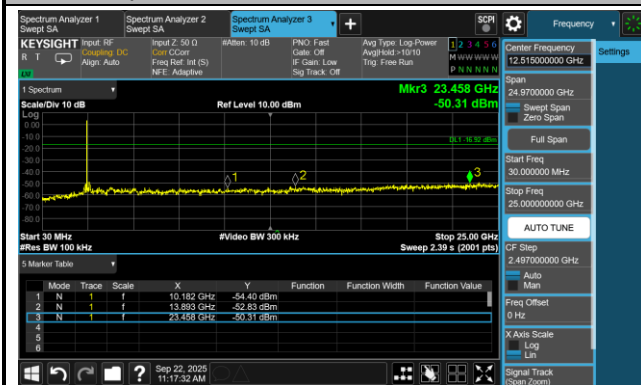
100 kHz PSD Reference Level



High Band Edge



Spurious Emission 30 MHz ~ 25 GHz



A.6 Radiated Spurious Emission Test Result

Test Site	WJ-AC1	Test Engineer	Carl Jiang
Test Date	2025-10-09 ~ 2025-10-13	Test Mode	BLE-1 Mbps
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20 dB below limit line within 1-18 GHz, there is not show in the report.		

Test Channel	Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
00	3871.30	35.12	7.08	42.20	74.00	-31.80	Peak	Horizontal
	12009.20	32.79	20.37	53.16	54.00	-0.84	Average	Horizontal
	12009.20	37.29	20.37	57.66	74.00	-16.34	Peak	Horizontal
	17874.20	11.74	29.61	41.35	54.00	-12.65	Average	Horizontal
	17874.20	29.14	29.61	58.75	74.00	-15.25	Peak	Horizontal
	3856.00	34.83	6.98	41.81	74.00	-32.19	Peak	Vertical
	12009.20	29.07	20.37	49.44	54.00	-4.56	Average	Vertical
	12009.20	33.30	20.37	53.67	74.00	-20.33	Peak	Vertical
	17804.50	11.49	28.95	40.44	54.00	-13.56	Average	Vertical
	17804.50	29.76	28.95	58.71	74.00	-15.29	Peak	Vertical
19	4197.70	34.60	7.31	41.91	74.00	-32.09	Peak	Horizontal
	12201.30	29.42	20.79	50.21	54.00	-3.79	Average	Horizontal
	12201.30	34.37	20.79	55.16	74.00	-18.84	Peak	Horizontal
	17801.10	11.85	28.72	40.57	54.00	-13.43	Average	Horizontal
	17801.10	30.38	28.72	59.10	74.00	-14.90	Peak	Horizontal
	4141.60	33.66	7.40	41.06	74.00	-32.94	Peak	Vertical
	12199.60	27.15	20.79	47.94	54.00	-6.06	Average	Vertical
	12199.60	32.79	20.79	53.58	74.00	-20.42	Peak	Vertical
	17823.20	11.73	29.58	41.31	54.00	-12.69	Average	Vertical
	17823.20	27.98	29.58	57.56	74.00	-16.44	Peak	Vertical
39	4746.80	34.02	8.28	42.30	74.00	-31.70	Peak	Horizontal
	12401.90	26.04	21.18	47.22	54.00	-6.78	Average	Horizontal
	12401.90	32.65	21.18	53.83	74.00	-20.17	Peak	Horizontal
	17875.90	11.90	29.66	41.56	54.00	-12.44	Average	Horizontal
	17875.90	29.30	29.66	58.96	74.00	-15.04	Peak	Horizontal
	4959.30	38.29	8.38	46.67	74.00	-27.33	Peak	Vertical
	12398.50	27.11	21.17	48.28	54.00	-5.72	Average	Vertical
	12398.50	31.72	21.17	52.89	74.00	-21.11	Peak	Vertical

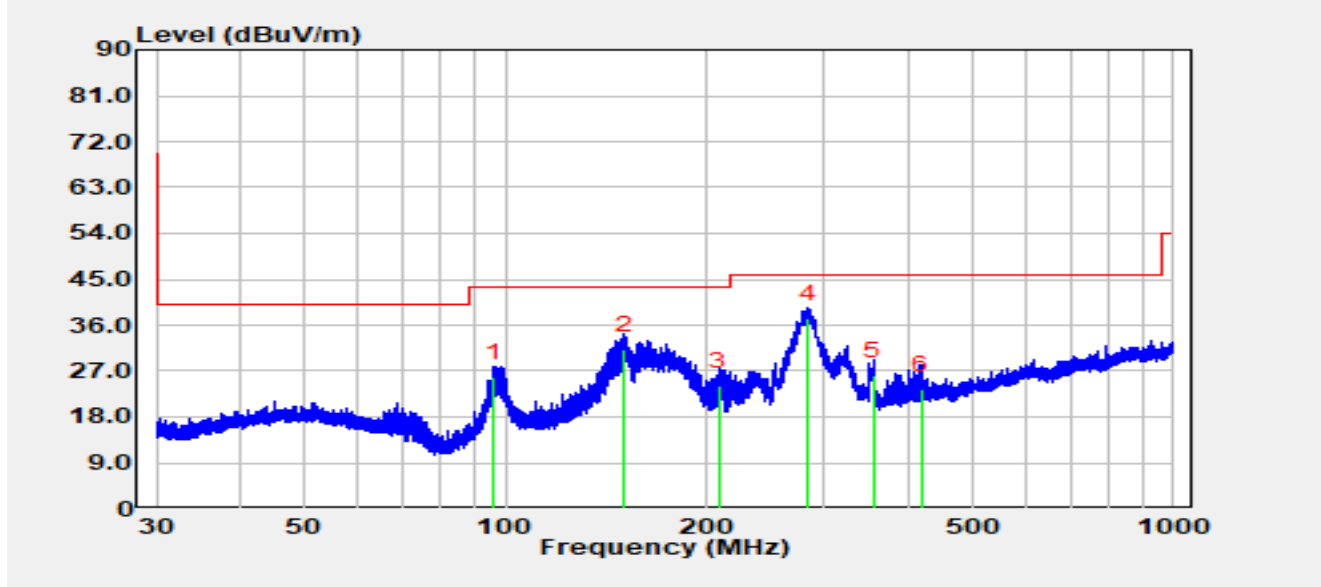
	17843.60	11.75	28.21	39.96	54.00	-14.04	Average	Vertical
	17843.60	27.07	28.21	55.28	74.00	-18.72	Peak	Vertical

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB/m)

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

The Result of Radiated Emission below 1 GHz:

Site	WJ-AC1	Test Date	2025-10-09
Temperature	25.2 °C	Humidity	54.2%
Limit	FCC_Part 15.209_RSE (3 m)	Test Engineer	Carl Jiang
Test Voltage	By Battery	Polarity	Horizontal
Test Mode	Transmit by BLE 1M at 2402 MHz		

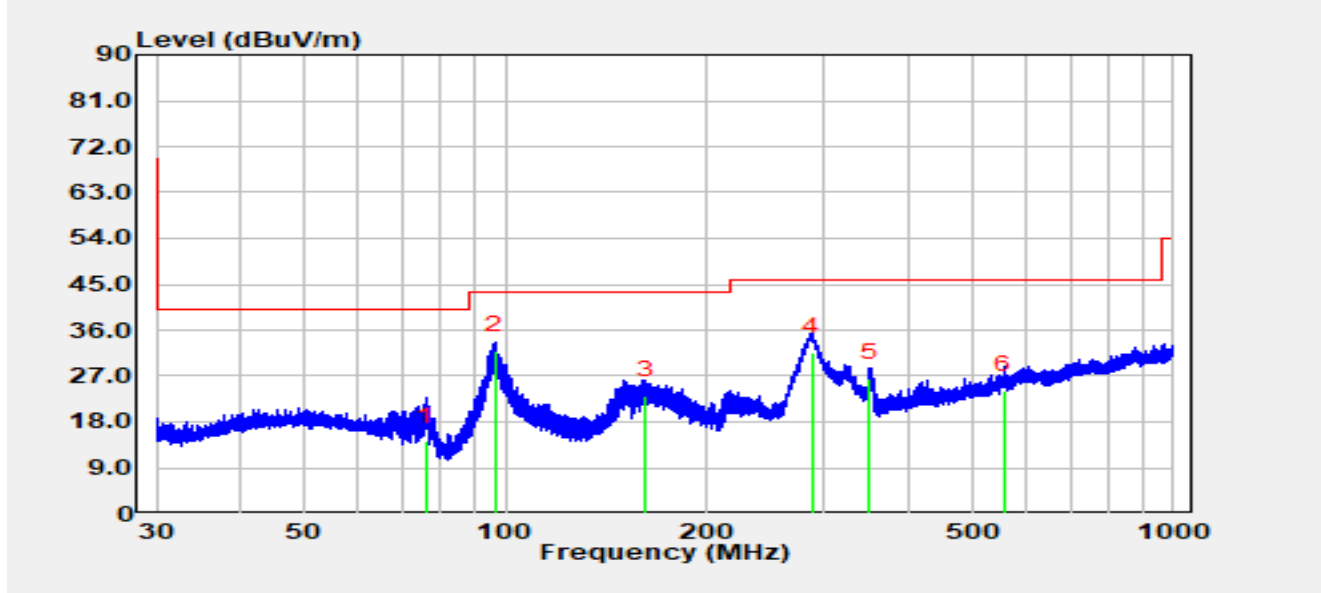


No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1		95.90	7.60	18.11	25.71	-17.79	43.50	QP
2		150.54	16.30	14.91	31.21	-12.29	43.50	QP
3		208.95	6.20	17.86	24.06	-19.44	43.50	QP
4	*	283.58	16.90	20.29	37.19	-8.81	46.00	QP
5		356.18	4.10	21.99	26.09	-19.91	46.00	QP
6		418.37	-0.40	23.70	23.30	-22.70	46.00	QP

Notes:

1. " * " indicates the worst-case emission level observed during the measurement.
2. C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBμV/m) = Reading (dBμV) + C.F (dB/m).
4. The amplitude of the radiated emissions in the frequency range from 9 kHz to 30 MHz and 18 GHz to 25 GHz is close to the ambient noise level, and all emissions are at least 20 dB below the applicable limit. Therefore, the data is not presented in this report.

Site	WJ-AC1	Test Date	2025-10-09
Temperature	25.2 °C	Humidity	54.2%
Limit	FCC_Part 15.209_RSE (3 m)	Test Engineer	Carl Jiang
Test Voltage	By Battery	Polarity	Vertical
Test Mode	Transmit by BLE 1M at 2402 MHz		



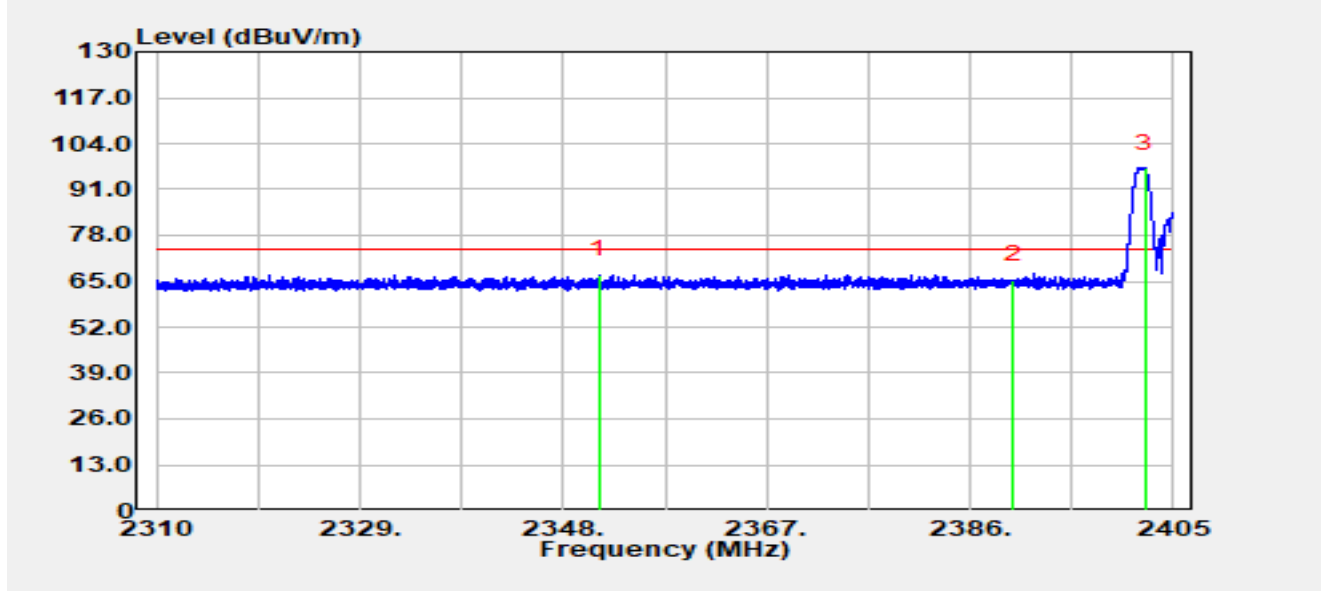
No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1		76.08	0.20	13.91	14.11	-25.89	40.00	QP
2	*	96.40	13.90	18.19	32.09	-11.41	43.50	QP
3		162.33	7.70	15.53	23.23	-20.27	43.50	QP
4		287.49	11.20	20.40	31.60	-14.40	46.00	QP
5		351.34	4.10	22.47	26.57	-19.43	46.00	QP
6		557.56	-1.90	26.04	24.14	-21.86	46.00	QP

Notes:

- "*" indicates the worst-case emission level observed during the measurement.
- C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB).
- Measurement (dBμV/m) = Reading (dBμV) + C.F (dB/m).
- The amplitude of the radiated emissions in the frequency range from 9 kHz to 30 MHz and 18 GHz to 25 GHz is close to the ambient noise level, and all emissions are at least 20 dB below the applicable limit. Therefore, the data is not presented in this report.

A.7 Radiated Restricted Band Edge Test Result

Site	WJ-AC1	Test Date	2025-09-26
Temperature	25.8 °C	Humidity	54.9%
Limit	FCC_Part 15_Band Edge (3 m)	Test Engineer	Carl Jiang
Test Voltage	By Battery	Polarity	Horizontal
Test Mode	Transmit by BLE 1M 2402 MHz		

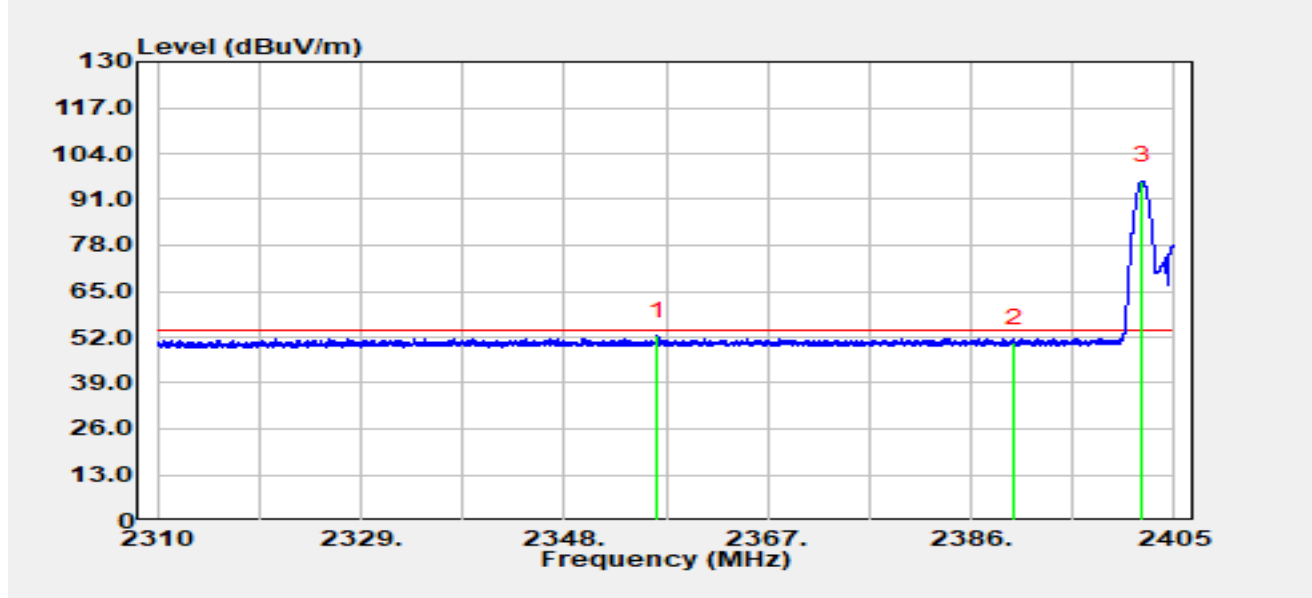


No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1	*	2351.37	30.23	36.71	66.94	-7.06	74.00	Peak
2		2390.00	28.50	36.83	65.33	-8.67	74.00	Peak
3		2402.30	60.06	36.92	96.97	N/A	N/A	Peak

Notes:

1. “*” indicates the worst-case emission level observed during the measurement.
2. C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBμV/m) = Reading (dBμV) + C.F (dB/m).

Site	WJ-AC1	Test Date	2025-09-26
Temperature	25.8 °C	Humidity	54.9%
Limit	FCC_Part 15_Band Edge (3 m)	Test Engineer	Carl Jiang
Test Voltage	By Battery	Polarity	Horizontal
Test Mode	Transmit by BLE 1M 2402 MHz		

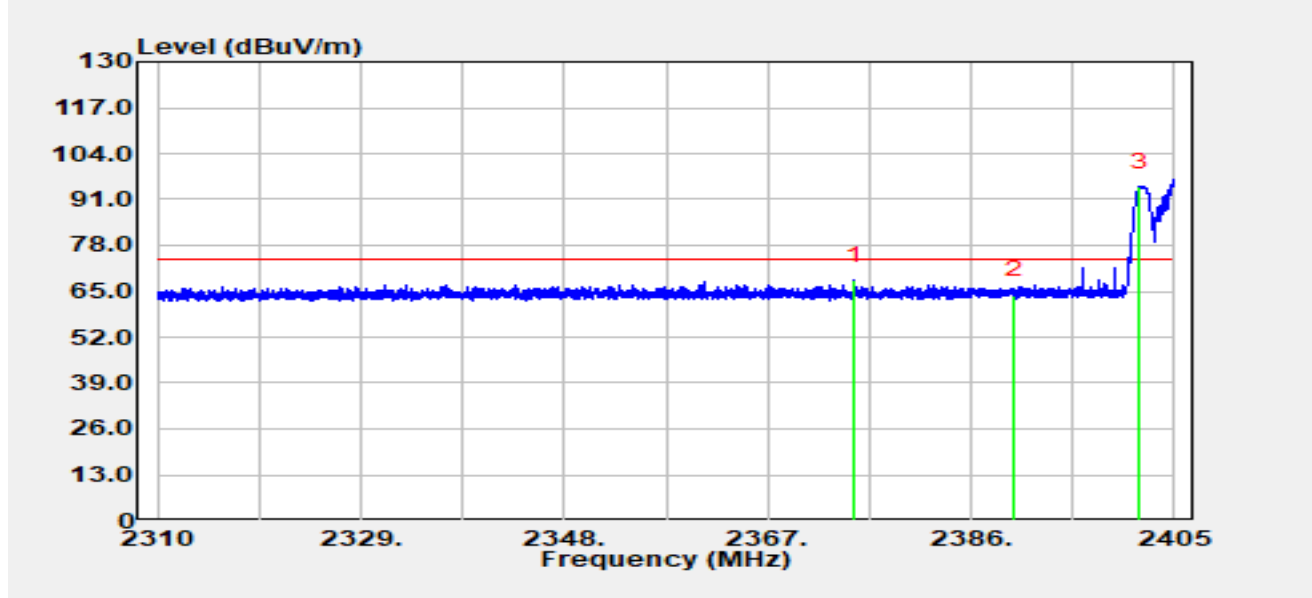


No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1	*	2356.74	15.62	36.71	52.33	-1.67	54.00	Average
2		2390.00	13.59	36.83	50.42	-3.58	54.00	Average
3		2402.04	59.38	36.92	96.30	N/A	N/A	Average

Notes:

1. “ * ” indicates the worst-case emission level observed during the measurement.
2. C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBμV/m) = Reading (dBμV) + C.F (dB/m).

Site	WJ-AC1	Test Date	2025-09-26
Temperature	25.8 °C	Humidity	54.9%
Limit	FCC_Part 15_Band Edge (3 m)	Test Engineer	Carl Jiang
Test Voltage	By Battery	Polarity	Vertical
Test Mode	Transmit by BLE 1M 2402 MHz		

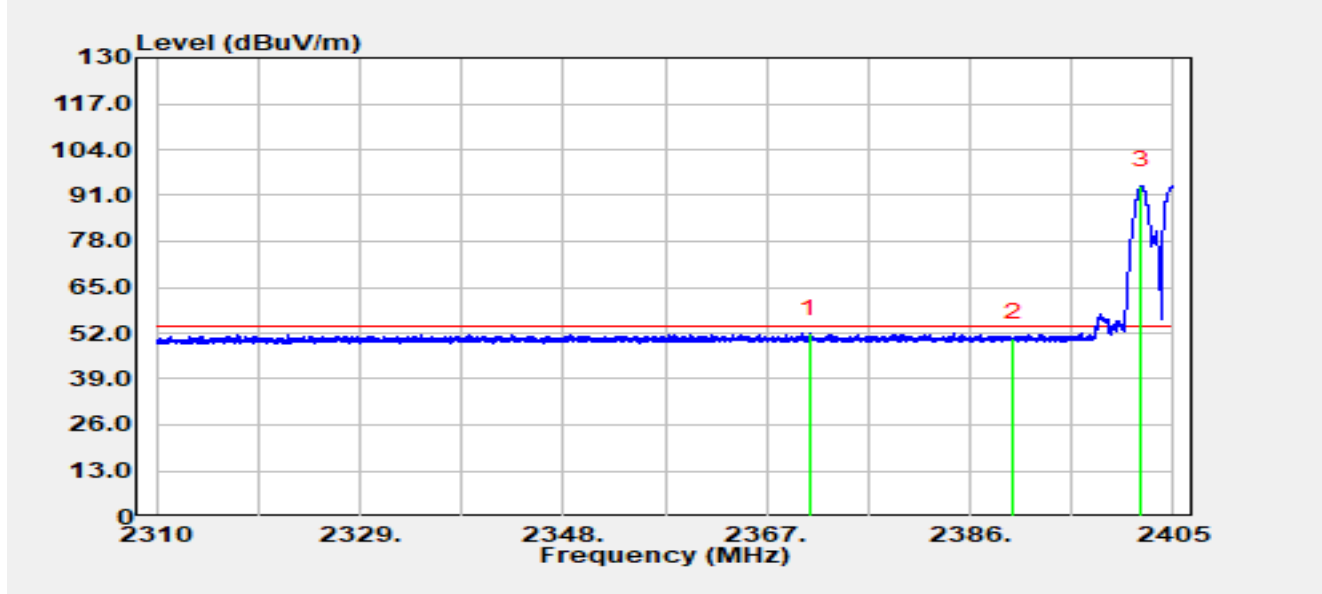


No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1	*	2375.08	31.41	36.76	68.17	-5.83	74.00	Peak
2		2390.00	27.12	36.83	63.95	-10.05	74.00	Peak
3		2401.73	57.74	36.91	94.65	N/A	N/A	Peak

Notes:

1. “*” indicates the worst-case emission level observed during the measurement.
2. C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBμV/m) = Reading (dBμV) + C.F (dB/m).

Site	WJ-AC1	Test Date	2025-09-26
Temperature	25.8 °C	Humidity	54.9%
Limit	FCC_Part 15_Band Edge (3 m)	Test Engineer	Carl Jiang
Test Voltage	By Battery	Polarity	Vertical
Test Mode	Transmit by BLE 1M 2402 MHz		

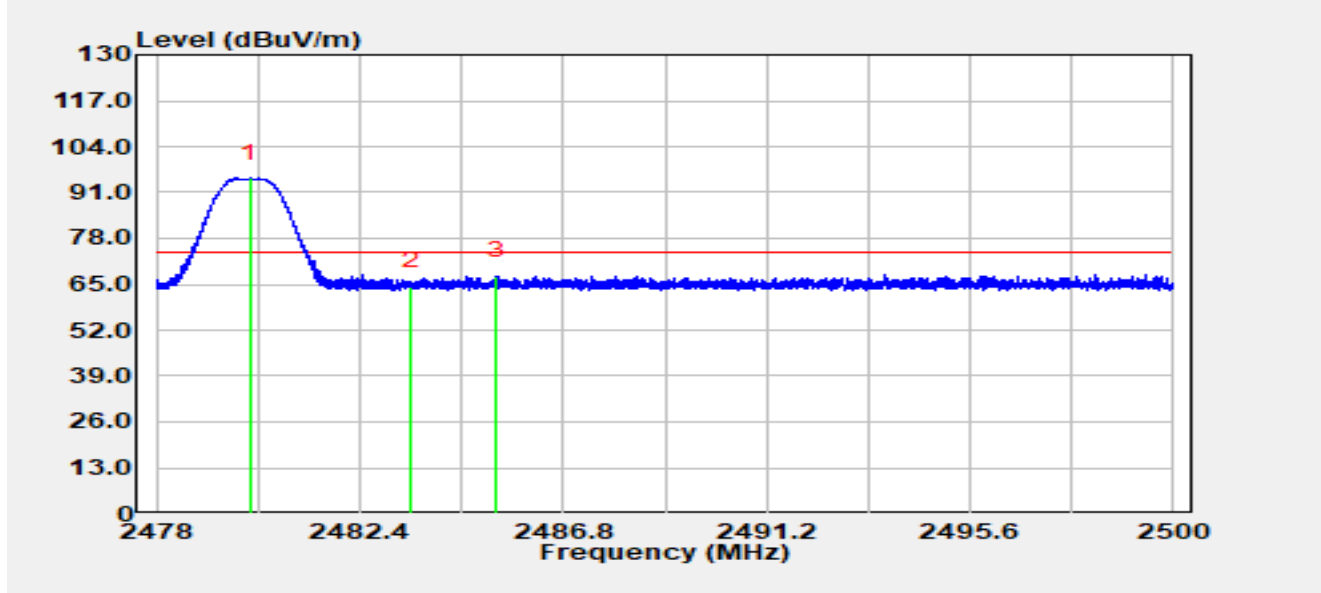


No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1	*	2371.04	15.16	36.74	51.90	-2.10	54.00	Average
2		2390.00	13.72	36.83	50.55	-3.45	54.00	Average
3		2402.01	56.87	36.92	93.79	N/A	N/A	Average

Notes:

1. “*” indicates the worst-case emission level observed during the measurement.
2. C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBμV/m) = Reading (dBμV) + C.F (dB/m).

Site	WJ-AC1	Test Date	2025-09-26
Temperature	25.8 °C	Humidity	54.9%
Limit	FCC_Part 15_Band Edge (3 m)	Test Engineer	Carl Jiang
Test Voltage	By Battery	Polarity	Horizontal
Test Mode	Transmit by BLE 1M 2480 MHz		

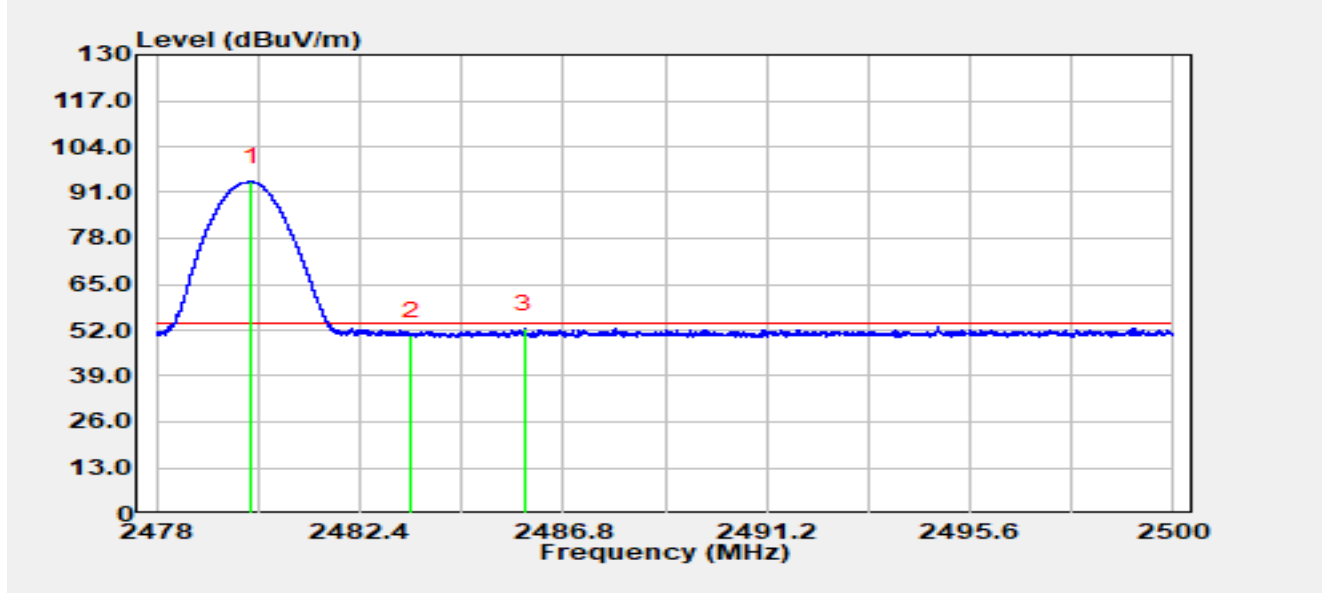


No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1		2480.02	57.92	37.04	94.96	N/A	N/A	Peak
2		2483.50	27.41	37.05	64.46	-9.54	74.00	Peak
3	*	2485.37	30.18	37.06	67.24	-6.76	74.00	Peak

Notes:

1. “ * ” indicates the worst-case emission level observed during the measurement.
2. C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBμV/m) = Reading (dBμV) + C.F (dB/m).

Site	WJ-AC1	Test Date	2025-09-26
Temperature	25.8 °C	Humidity	54.9%
Limit	FCC_Part 15_Band Edge (3 m)	Test Engineer	Carl Jiang
Test Voltage	By Battery	Polarity	Horizontal
Test Mode	Transmit by BLE 1M 2480 MHz		

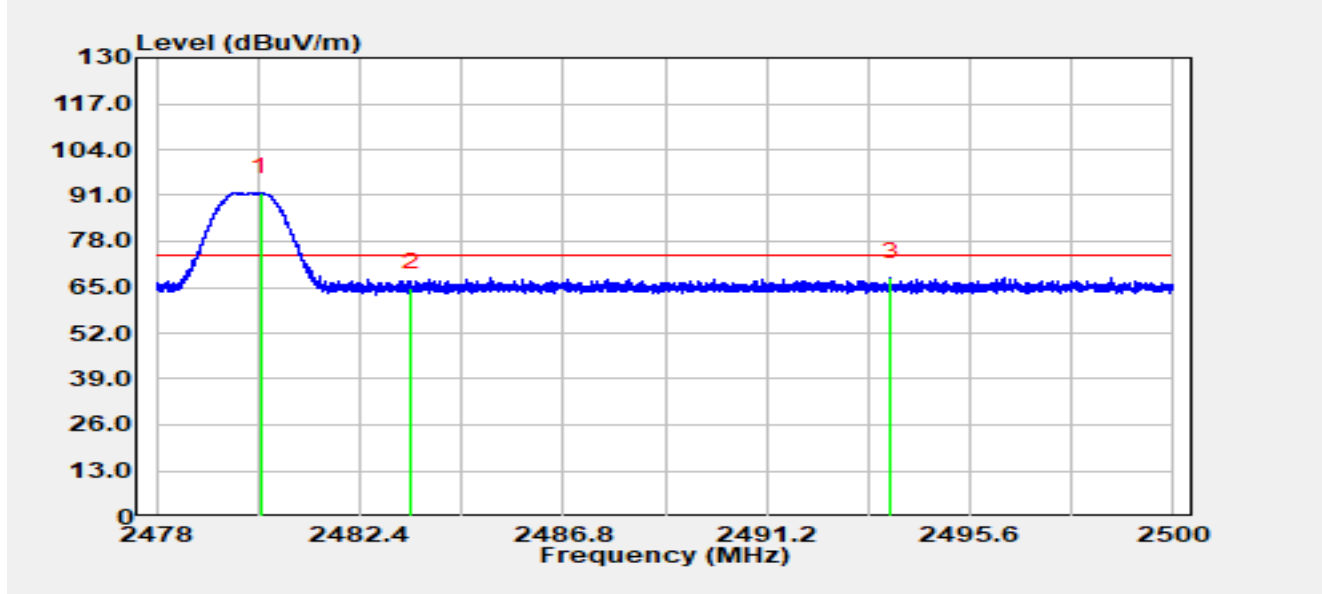


No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1		2480.05	56.99	37.04	94.03	N/A	N/A	Average
2		2483.50	13.38	37.05	50.43	-3.57	54.00	Average
3	*	2485.96	15.28	37.06	52.34	-1.66	54.00	Average

Notes:

1. “ * ” indicates the worst-case emission level observed during the measurement.
2. C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBμV/m) = Reading (dBμV) + C.F (dB/m).

Site	WJ-AC1	Test Date	2025-09-26
Temperature	25.8 °C	Humidity	54.9%
Limit	FCC_Part 15_Band Edge (3 m)	Test Engineer	Carl Jiang
Test Voltage	By Battery	Polarity	Vertical
Test Mode	Transmit by BLE 1M 2480 MHz		

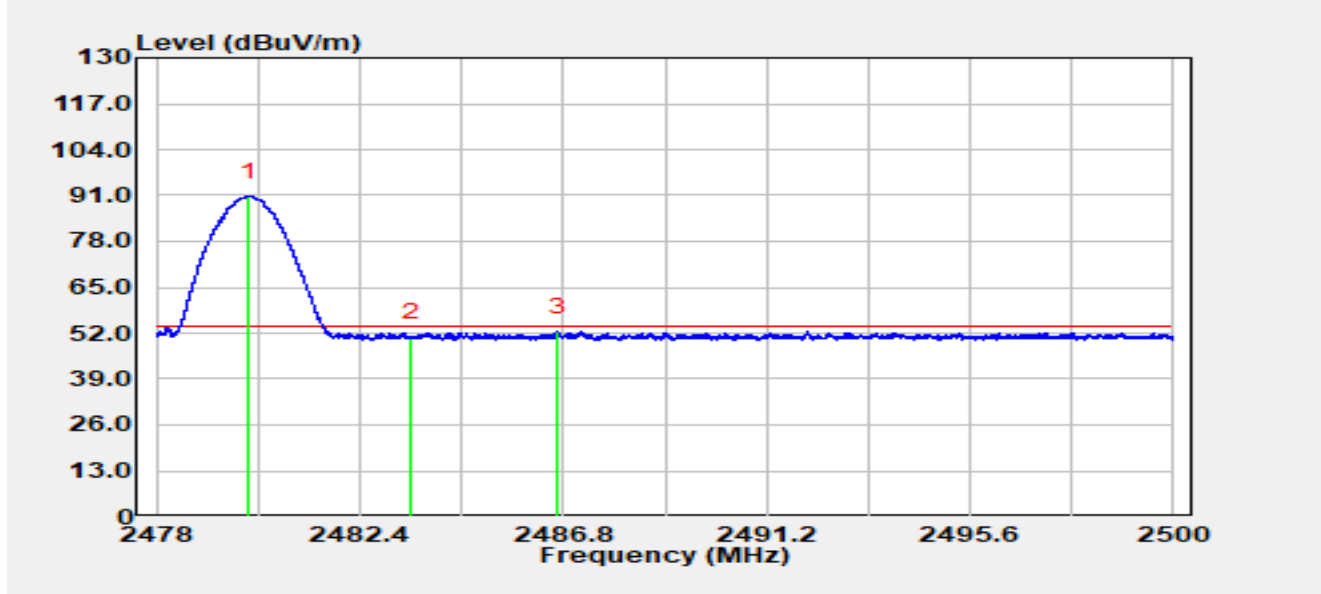


No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1		2480.25	54.79	37.04	91.83	N/A	N/A	Peak
2		2483.50	27.86	37.05	64.91	-9.09	74.00	Peak
3	*	2493.87	30.73	37.08	67.80	-6.20	74.00	Peak

Notes:

1. “ * ” indicates the worst-case emission level observed during the measurement.
2. C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBμV/m) = Reading (dBμV) + C.F (dB/m).

Site	WJ-AC1	Test Date	2025-09-26
Temperature	25.8 °C	Humidity	54.9%
Limit	FCC_Part 15_Band Edge (3 m)	Test Engineer	Carl Jiang
Test Voltage	By Battery	Polarity	Vertical
Test Mode	Transmit by BLE 1M 2480 MHz		



No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1		2479.98	53.63	37.04	90.68	N/A	N/A	Average
2		2483.50	13.60	37.05	50.66	-3.34	54.00	Average
3	*	2486.68	15.35	37.06	52.41	-1.59	54.00	Average

Notes:

1. “ * ” indicates the worst-case emission level observed during the measurement.
2. C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBμV/m) = Reading (dBμV) + C.F (dB/m).

A.8 AC Conducted Emissions Test Result

Note Transmit By BLE

Test Voltage AC 120 V/60 Hz

Test Engineer Carl Jiang

Test Date 2025-10-21

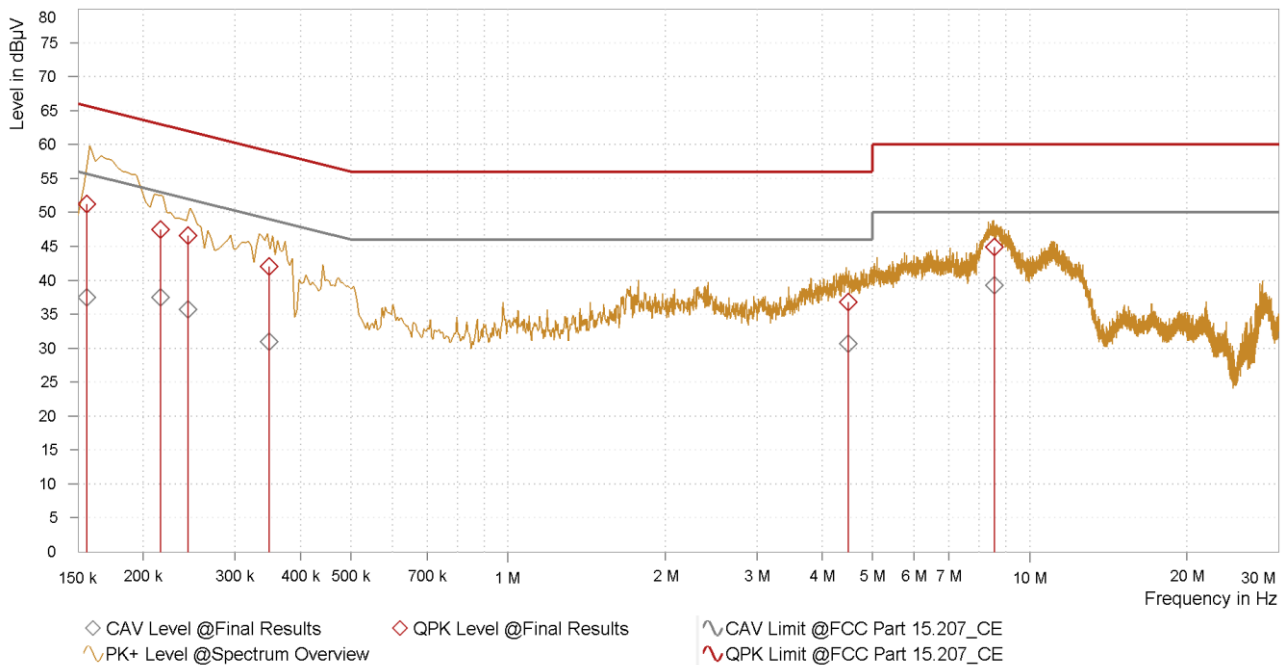
Temp 23.5 °C

Humi 50.1%

Polarity L

Test Site WJ-SR5

Spectrum Overview



Final Results

Frequency [MHz]	QPK Level [dBμV]	QPK Limit [dBμV]	QPK Margin [dB]	QPK Raw Lvl [dBμV]	CAV Level [dBμV]	CAV Limit [dBμV]	CAV Margin [dB]	CAV Raw Lvl [dBμV]	Correction [dB]	Line
0.156	51.26	65.67	14.42	41.52	37.48	55.67	18.20	27.74	9.73	L1
0.216	47.44	62.97	15.53	37.68	37.45	52.97	15.52	27.69	9.76	L1
0.244	46.60	61.96	15.35	36.85	35.69	51.96	16.27	25.93	9.76	L1
0.349	42.00	58.99	16.99	32.23	30.94	48.99	18.04	21.17	9.77	L1
4.490	36.77	56.00	19.23	26.61	30.63	46.00	15.37	20.48	10.15	L1
8.565	44.89	60.00	15.11	34.65	39.28	50.00	10.72	29.04	10.24	L1

Notes:

1. QPK Level [dB μ V]=QPK Raw Lvl [dB μ V] + Correction [dB]
2. CAV Level [dB μ V]=CAV Raw Lvl [dB μ V] + Correction [dB]
3. Correction [dB]= LISN Factor [dB] + Cable Loss [dB]

Note Transmit By BLE

Test Voltage AC 120 V/60 Hz

Test Engineer Carl Jiang

Test Date 2025-10-21

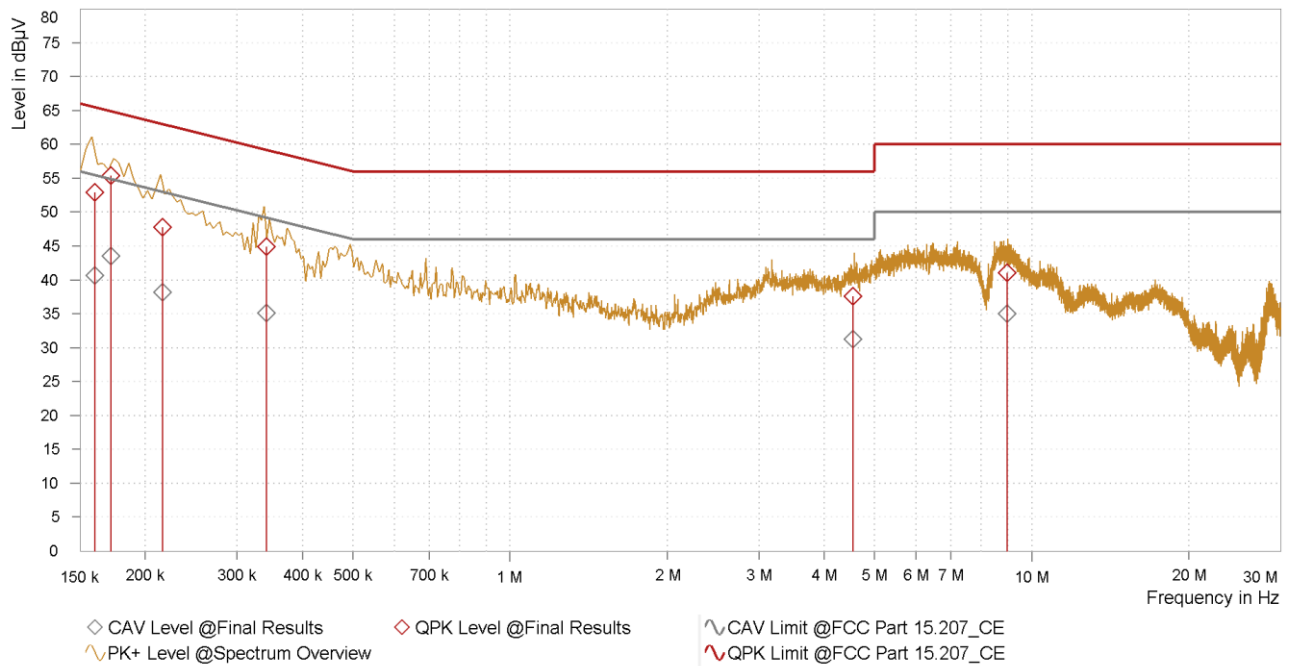
Temp 23.5 °C

Humi 50.1%

Polarity N

Test Site WJ-SR5

Spectrum Overview



Final Results

Frequency [MHz]	QPK Level [dBμV]	QPK Limit [dBμV]	QPK Margin [dB]	QPK Raw Lvl [dBμV]	CAV Level [dBμV]	CAV Limit [dBμV]	CAV Margin [dB]	CAV Raw Lvl [dBμV]	Correction [dB]	Line
0.160	52.89	65.46	12.57	43.21	40.62	55.46	14.85	30.94	9.68	N
0.172	55.38	64.86	9.48	45.69	43.49	54.86	11.37	33.80	9.69	N
0.216	47.79	62.97	15.18	38.07	38.21	52.97	14.76	28.49	9.72	N
0.341	44.88	59.18	14.30	35.12	35.07	49.18	14.11	25.31	9.76	N
4.544	37.53	56.00	18.47	27.40	31.28	46.00	14.72	21.16	10.12	N
8.968	41.01	60.00	18.99	30.74	34.97	50.00	15.03	24.70	10.27	N

Notes:

1. QPK Level [dB μ V]=QPK Raw Lvl [dB μ V] + Correction [dB]
2. CAV Level [dB μ V]=CAV Raw Lvl [dB μ V] + Correction [dB]
3. Correction [dB]= LISN Factor [dB] + Cable Loss [dB]

Appendix B - Test Setup Photograph

Refer to “R25S1020096-UT” file.

Appendix C - EUT Photograph

Refer to "R25S1020096-UE" file.

_____ The End _____