RF MEASUREMENT REPORT

FCC ID:	2BD7T-IF0001
Applicant:	Beijing Ninebot Information Technology Co., Ltd.
Product:	BT Module
Model No.:	NB-BT100
FCC Classification:	Digital Transmission System (DTS)
FCC Rule Part(s):	Part 15 Subpart C (Section 15.247)
Result:	Complies
Received Date:	2023-11-28
Test Date:	2023-12-11 ~ 2023-12-29

Reviewed By: Vincent Yu

Approved By: Robin Wu

Revision History

Report No.	Version	Description	Issue Date	Note
2311RSU069-U3	V01	Initial Report	2024-01-04	Valid

CONTENTS

1. General Information

1.1. Applicant

Beijing Ninebot Information Technology Co., Ltd.

Room 306, 3rd Floor, Building A-1, Dongsheng Science Park, Zhongguancun, No.66 XiXiaokou Road, Haidian District, Beijing

1.2. Manufacturer

Beijing Ninebot Information Technology Co., Ltd.

Room 306, 3rd Floor, Building A-1, Dongsheng Science Park, Zhongguancun, No.66 XiXiaokou Road, Haidian District, Beijing

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 Accreditations				
	A2LA: 3628.01		CNAS: L10551		
	FCC: CN1166		ISED: CN0001		
	VCCI:	☐R-20025	☐G-20034	☐C-20020	☐T-20020
		☐R-20141	☐G-20134	☐C-20103	☐T-20104
☐	**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		CNAS: L10551		
	FCC: CN1284		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	BT Module
Model No.	NB-BT100
EUT Identification No.	20231128Sample#08(Conducted Testing) 20231128Sample#06(Radiated Testing)
Bluetooth Specification	BR/EDR/BLE(1M/2M)
Antenna Specification	Refer to Section 1.5
Working Voltage	3.3 ~ 5VDC
Operating Temperature	-30 ~ 85°C
Remark: The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.	

1.5. Radio Specification under Test

Bluetooth Frequency	2402 ~ 2480MHz
Channel Number	40
Type of modulation	GFSK
Data Rate	1Mbps & 2Mbps
Antenna Type	PCB Antenna
Antenna Gain	0.79 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

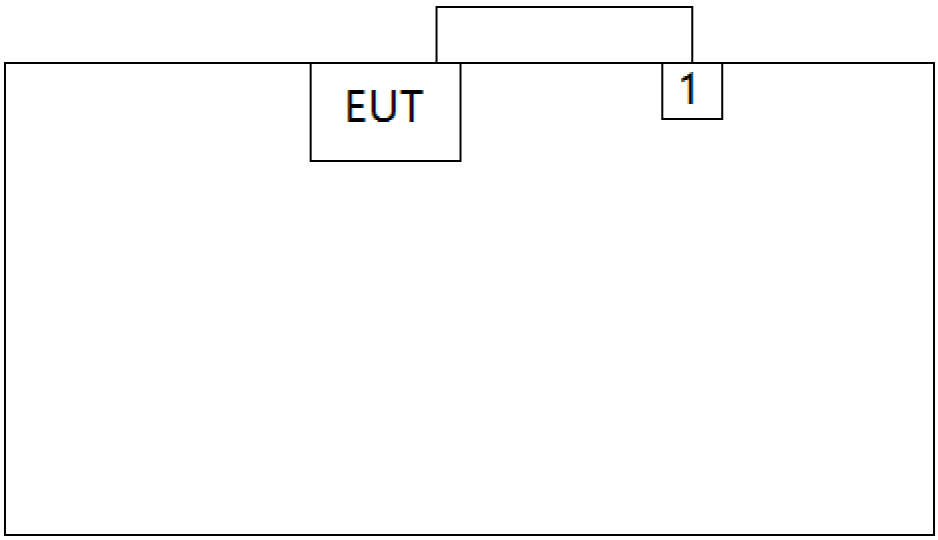
2.1. Test Mode

Mode 1: Transmit by BLE-1Mbps
Mode 2: Transmit by BLE-2Mbps

2.2. Test System Connection Diagram

The device was tested per the guidance ANSI C63.10: 2013 was used to reference the appropriate EUT setup for radiated emissions testing and AC line conducted testing.

Connection Diagram – Radiated Emission testing & AC Conducted Emissions



Product		Manufacturer	Model No.
1	Notebook	Lenovo	E495

2.3. Test Software

The test utility software used during testing was “sscom.exe”, and the version was 5.13.1.

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 D01v05r02
- ANSI C63.10-2013

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
Anechoic Chamber	RIKEN	SIP-AC1	MRTSUE06554	1 year	2023-12-22	SIP-AC1
Anechoic Chamber	RIKEN	SIP-AC1	MRTSUE06554	1 year	2024-12-21	SIP-AC1
Thermohygrometer	testo	608-H1	MRTSUE06616	1 year	2024-10-28	SIP-AC1
Thermohygrometer	testo	608-H1	MRTSUE06620	1 year	2024-11-03	SIP-AC1
TRILOG Antenna	Schwarzbeck	VULB 9168	MRTSUE06645	1 year	2024-07-13	SIP-AC1
EMI Test Receiver	R&S	ESR3	MRTSUE06185	1 year	2023-12-16	SIP-AC1
EMI Test Receiver	R&S	ESR3	MRTSUE06185	1 year	2024-12-17	SIP-AC1
Preamplifier	EMCI	EMC184045SE	MRTSUE06602	1 year	2024-10-09	SIP-AC3
Loop Antenna	Schwarzbeck	FMZB 1519 B	MRTSUE06937	1 year	2024-02-26	SIP-AC1
Signal Analyzer	Keysight	N9010B	MRTSUE06559	1 year	2024-05-23	SIP-AC3
Horn Antenna	Schwarzbeck	BBHA 9170	MRTSUE06599	1 year	2024-09-24	SIP-AC3
Horn Antenna	R&S	HF907	MRTSUE06611	1 year	2024-07-14	SIP-AC3
Thermohygrometer	testo	608-H1	MRTSUE06619	1 year	2024-10-28	SIP-AC3
Preamplifier	EMCI	EMC012645SE	MRTSUE06642	1 year	2024-01-12	SIP-AC3
Anechoic Chamber	RIKEN	SIP-AC3	MRTSUE06782	1 year	2023-12-22	SIP-AC3
Anechoic Chamber	RIKEN	SIP-AC3	MRTSUE06782	1 year	2024-12-21	SIP-AC3
Thermohygrometer	testo	608-H1	MRTSUE11255	1 year	2024-08-13	SIP-AC3
Two-Line V-Network	R&S	ENV216	MRTSUE06003	1 year	2024-05-23	SIP-SR2
EMI Test Receiver	R&S	ESR3	MRTSUE06612	1 year	2024-05-23	SIP-SR2
Four-Line V-Network	R&S	ENV432	MRTSUE06614	1 year	2024-10-23	SIP-SR2
Thermohygrometer	testo	608-H1	MRTSUE06621	1 year	2024-11-03	SIP-SR2
50 Ω to 150 Ω Adapter	Schwarzbeck	SR100-6W	MRTSUE06936	1 year	2024-02-12	SIP-SR2
Shielding Room	MIX-BEP	SIP-SR2	MRTSUE06949	5 years	2024-10-23	SIP-SR2
Thermohygrometer	testo	608-H1	MRTSUE11022	1 year	2024-10-28	SIP-TR1
Signal Analyzer	Keysight	N9010B	MRTSUE07036	1 year	2024-02-29	SIP-TR1
USB Power Sensor	Agilent	U2021XA	MRTSUE06030	1 year	2024-09-27	SIP-TR1

Software	Version	Function
EMI V3	V3.0.0	EMI Test Software
Controller_MF 7802BS	1.02	RE Antenna & Turntable
BenchVue Power Meter	2019	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: 9kHz~150kHz: 3.58dB 150kHz~30MHz: 3.20dB
Radiated Emission Measurement
The maximum measurement uncertainty is evaluated as: Coaxial: 9kHz~30MHz: 2.61dB Coplanar: 9kHz~30MHz: 2.62dB Horizontal: 30MHz~200MHz: 3.79dB 200MHz~1GHz: 3.91dB 1GHz~40GHz: 4.99dB Vertical: 30MHz~200MHz: 4.06dB 200MHz~1GHz: 5.21dB 1GHz~40GHz: 4.90dB
Spurious Emissions, Conducted
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 2.2dB
Output Power
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 1.4dB
Power Spectrum Density
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 2.2dB
Occupied Bandwidth
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 2.7%

6. Test Result

6.1. Summary

FCC Section(s)	Test Description	Test Condition	Verdict
15.247(a)(2)	6dB 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 150kHz - 30MHz	Line Conducted	Pass

Notes:

1. The analyzer plots shown in this section were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables and attenuators used as part of the system to connect the EUT to the analyzer at all frequencies of interest.
2. For radiated emission test, every axis (X, Y, Z) was also verified. The test results shown in the following sections represent the worst-case emissions.

6.2. 6dB Bandwidth Measurement

6.2.1. Test Limit

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

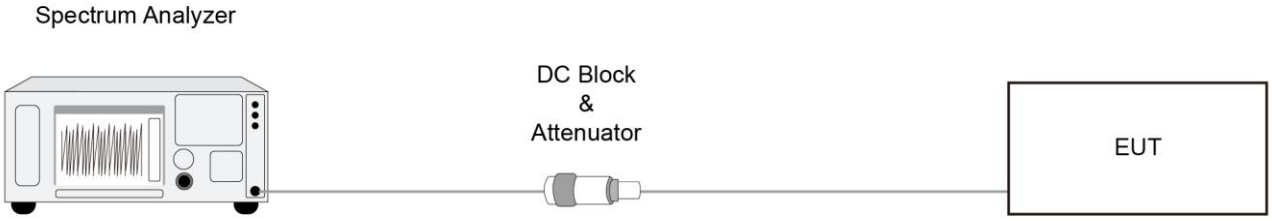
6.2.2. Test Procedure

ANSI C63.10 - 2013 - Section 11.8

6.2.3. Test Setting

1. The Spectrum's automatic bandwidth measurement capability was used to perform the 6dB 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. Set RBW = 100 kHz
3. VBW ≥ 3 × 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 (30dBm).

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 - 2013 - Section 11.9.1.3

ANSI C63.10 - 2013 - Section 11.9.2.3.2

6.3.3. Test Setting

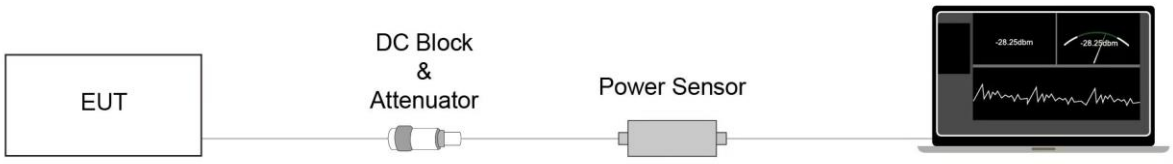
Method PKPM1 (Peak Power Measurement of Signals with DTS BW ≤ 50MHz)

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 = 50MHz so this method was only used for signals whose DTS bandwidth was less than or equal to 50MHz.

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 8dBm in any 3 kHz band.

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

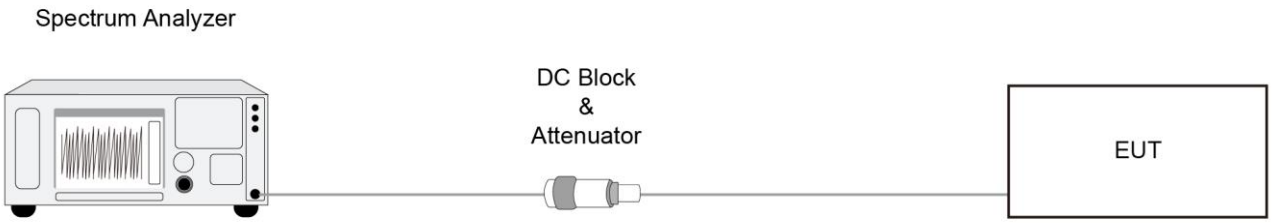
6.4.2. Test Procedure

ANSI C63.10-2013 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 = 3kHz
4. VBW = 10kHz
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 20dB 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 C63.10-2013 - Section 11.11

6.5.3. Test Settitng

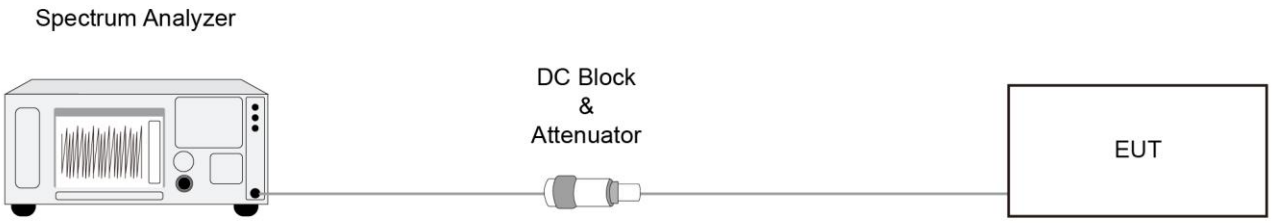
Reference level measurement

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 ≥ 3 x 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 = 100kHz
3. VBW = 300kHz
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



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 [uV/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 - 2013 - Section 11.11 & 11.12

ANSI C63.10 - 2013 - Section 6.3 (General Requirements)

ANSI C63.10 - 2013 - Section 6.4 (Standard test method below 30MHz)

ANSI C63.10 - 2013 - Section 6.5 (Standard test method above 30MHz to 1GHz)

ANSI C63.10 - 2013 - Section 6.6 (Standard test method above 1GHz)

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
> 1000MHz	1MHz

Quasi-Peak Measurements below 1GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest

2. Span was set greater than 1MHz

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 1GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest

2. RBW = 1MHz

3. VBW = 3MHz

4. Detector = peak

5. Sweep time = auto couple

6. Trace mode = max hold

7. Trace was allowed to stabilize

Average Measurements above 1GHz (Method VB)

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest

2. RBW = 1MHz

3. VBW; If the EUT is configured to transmit with duty cycle ≥ 98%, set VBW = 10 Hz.

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

4. Detector = Peak

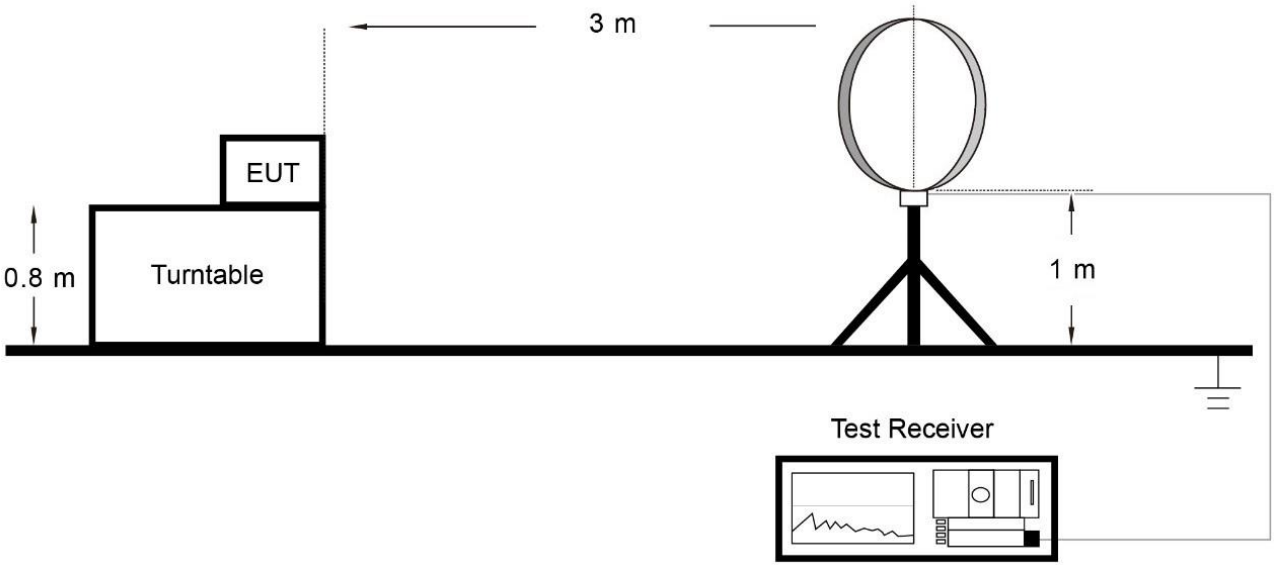
5. Sweep time = auto

6. Trace mode = max hold

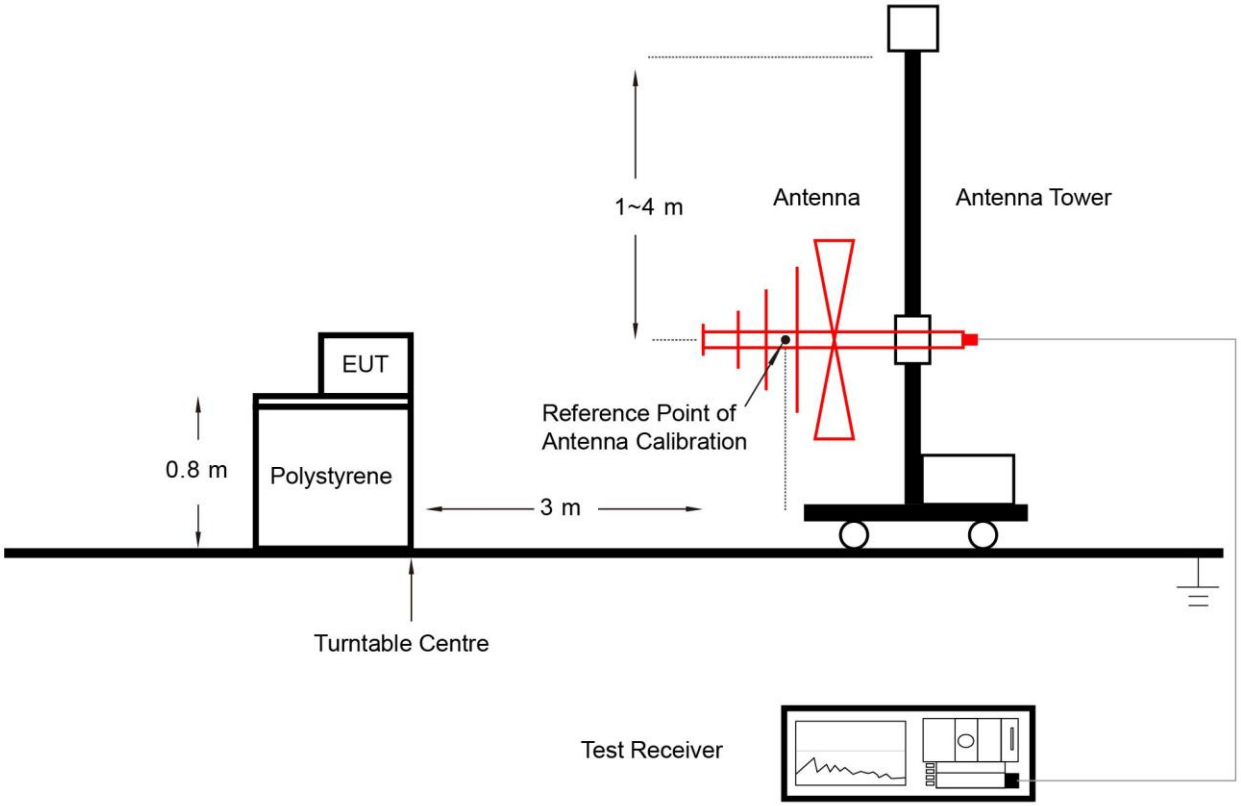
7. Trace was allowed to stabilize

6.6.4. Test Setup

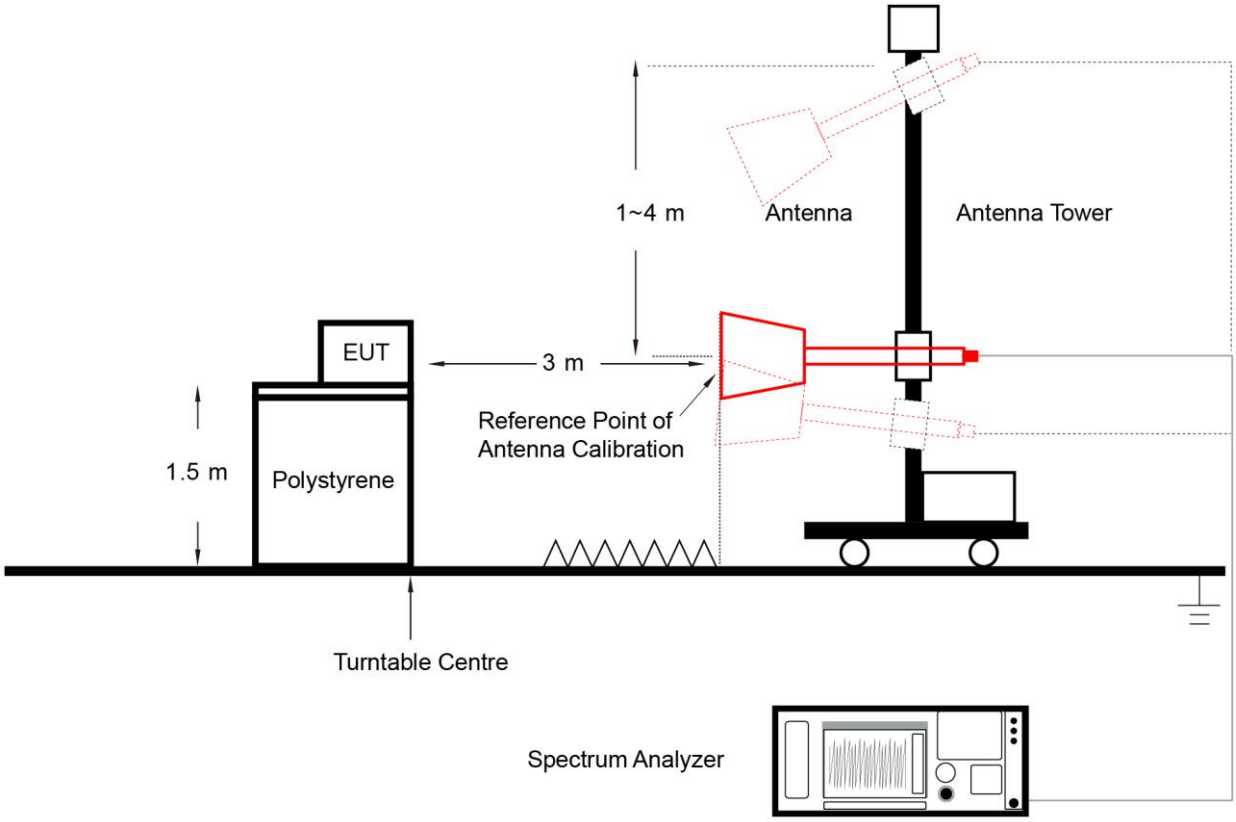
Below 30MHz Test Setup:



Below 1GHz Test Setup:



Above 1GHz 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
[1] 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 47CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [uV/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 C63.10-2013 Section 6.3 & 6.6 & 11.13

6.7.3. Test Setting

Peak Field Strength Measurements

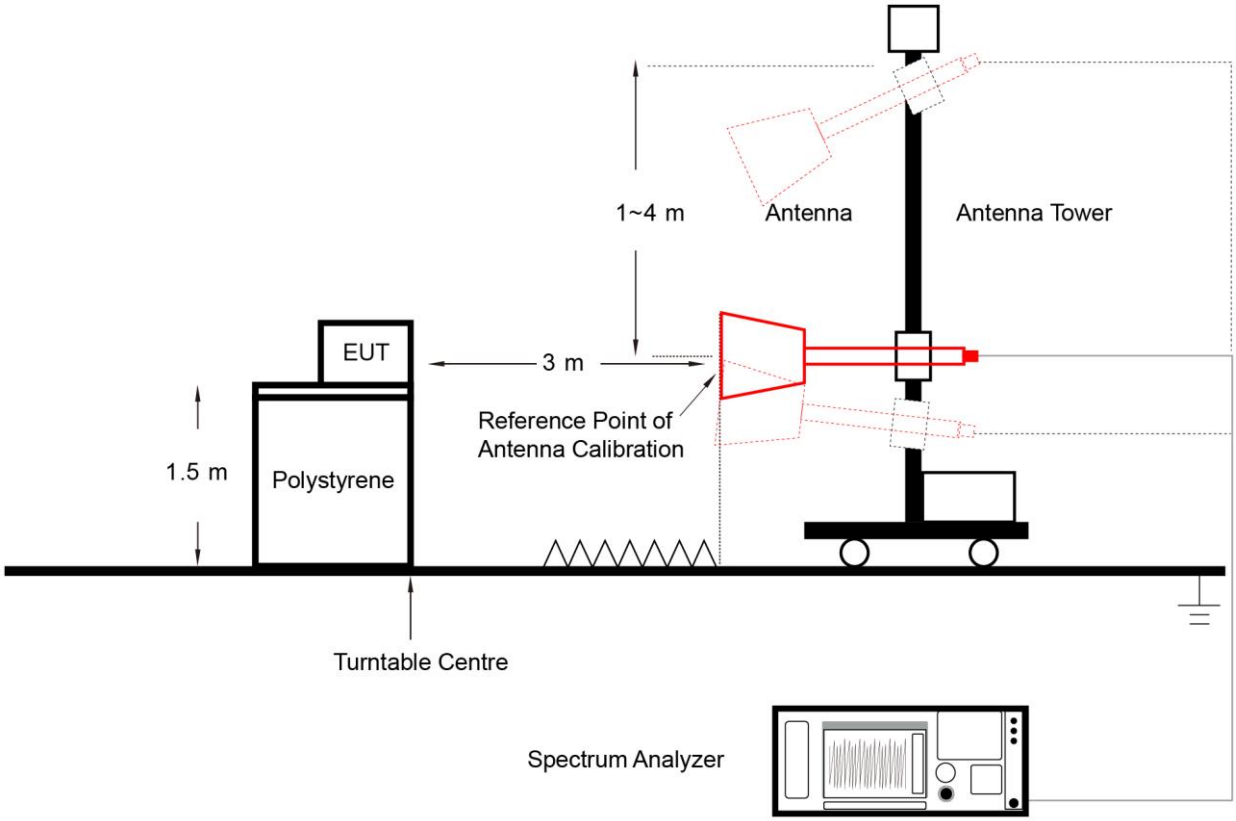
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Average Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW ≥ 1/T
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

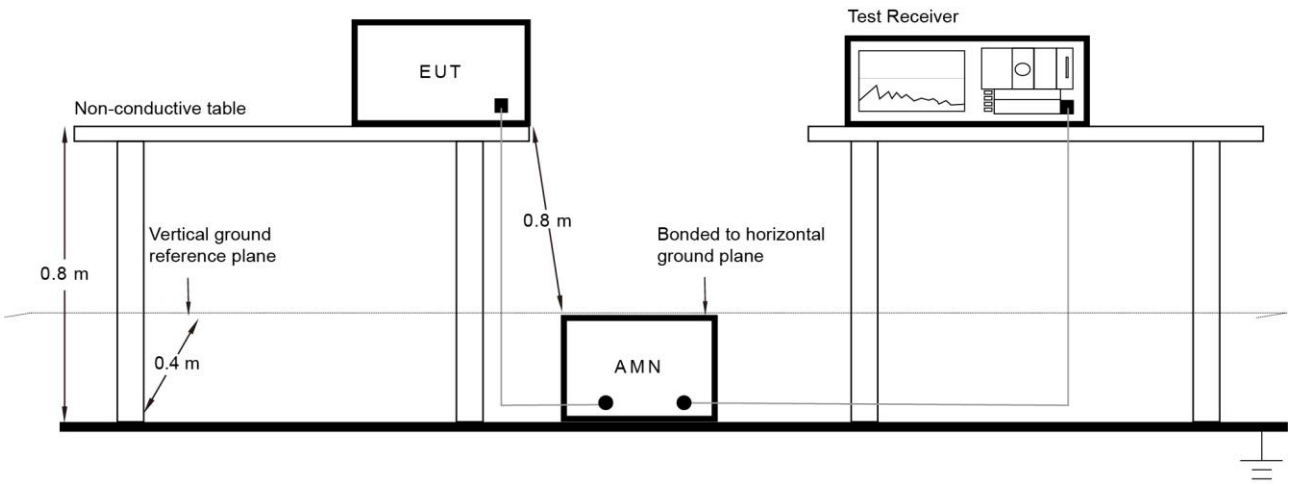
Refer to Appendix A.7.

6.8. AC Conducted Emissions Measurement

6.8.1. Test Limit

FCC Part 15 Subpart C Paragraph 15.207 Limits		
Frequency (MHz)	QP (dBuV)	AV (dBuV)
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 0.15MHz to 0.5MHz.		

6.8.2. Test Setup



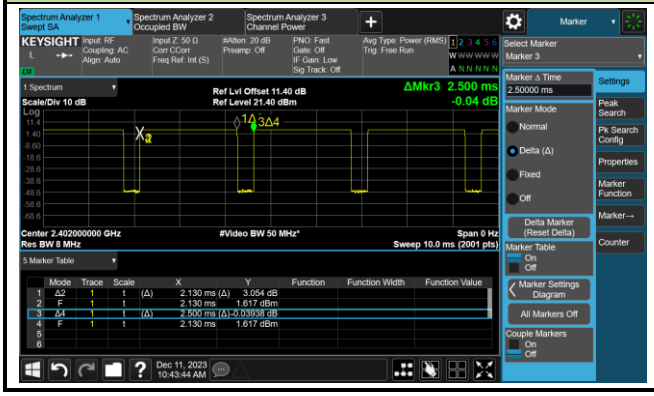
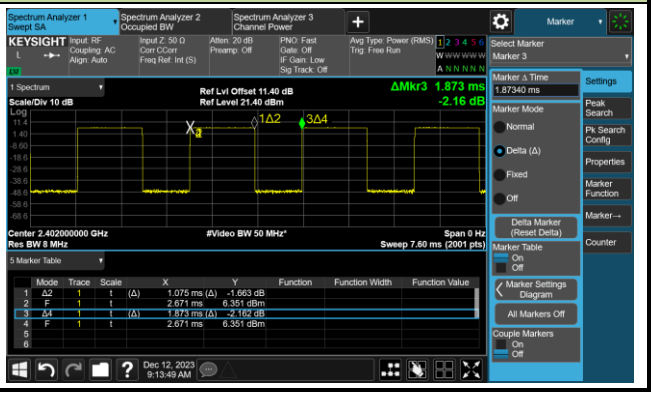
6.8.3. Test Result

Refer to Appendix A.8.

Appendix A - Test Result

A.1 Duty Cycle Test Result

Test Site	SIP-TR1	Test Engineer	Alisa Deng
Test Date	2023-12-11 ~ 2023-12-12		

Test Mode	Duty Cycle
BLE-1Mbps	85.20%
BLE-2Mbps	57.39%
Duty Cycle (T = Transmission Duration)	
BLE-1Mbps (T = 2.130ms)	BLE-2Mbps (T = 1.075ms)
	

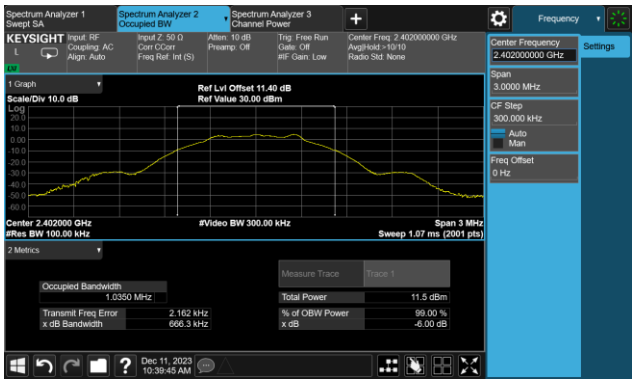
A.2 6dB Bandwidth Test Result

Test Site	SIP-TR1	Test Engineer	Alisa Deng
Test Date	2023-12-11 ~ 2023-12-12		

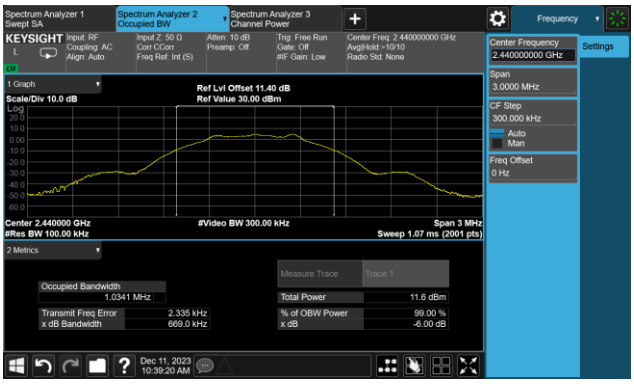
Test Mode	Data Rate	Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)
BLE	1Mbps	00	2402	0.666	≥ 0.5
BLE	1Mbps	19	2440	0.669	≥ 0.5
BLE	1Mbps	39	2480	0.668	≥ 0.5
BLE	2Mbps	00	2402	1.142	≥ 0.5
BLE	2Mbps	19	2440	1.138	≥ 0.5
BLE	2Mbps	39	2480	1.136	≥ 0.5

BLE-1Mbps 6dB Bandwidth

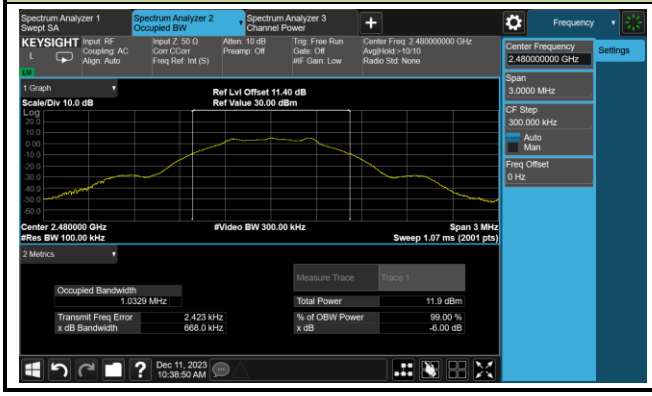
Channel 00 (2402MHz)

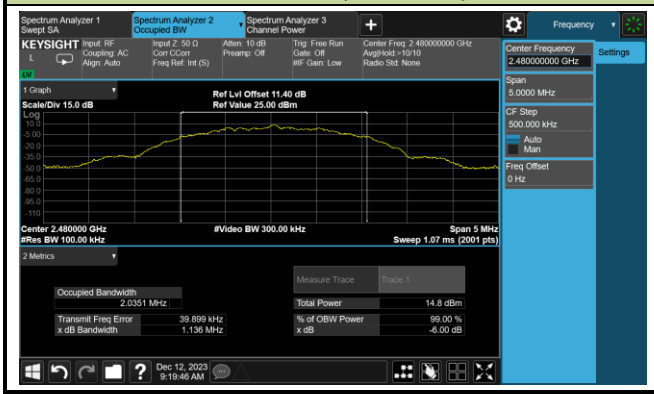


Channel 19 (2440MHz)



Channel 39 (2480MHz)



BLE-2Mbps 6dB Bandwidth	
Channel 00 (2402MHz)	Channel 19 (2440MHz)
	
Channel 39 (2480MHz)	
	

A.3 Output Power Test Result

Test Site	SIP-TR1	Test Engineer	Alan Yu
Test Date	2023-12-11		

Test Result of Peak Output Power

Test Mode	Data Rate	Channel No.	Frequency (MHz)	Peak Power (dBm)	Limit (dBm)	Result
BLE	1Mbps	00	2402	7.09	≤ 30.00	Pass
BLE	1Mbps	19	2440	7.46	≤ 30.00	Pass
BLE	1Mbps	39	2480	7.96	≤ 30.00	Pass
BLE	2Mbps	00	2402	7.07	≤ 30.00	Pass
BLE	2Mbps	19	2440	7.56	≤ 30.00	Pass
BLE	2Mbps	39	2480	8.12	≤ 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	1Mbps	00	2402	6.75	≤ 30.00	Pass
BLE	1Mbps	19	2440	7.23	≤ 30.00	Pass
BLE	1Mbps	39	2480	7.71	≤ 30.00	Pass
BLE	2Mbps	00	2402	6.38	≤ 30.00	Pass
BLE	2Mbps	19	2440	6.94	≤ 30.00	Pass
BLE	2Mbps	39	2480	7.57	≤ 30.00	Pass

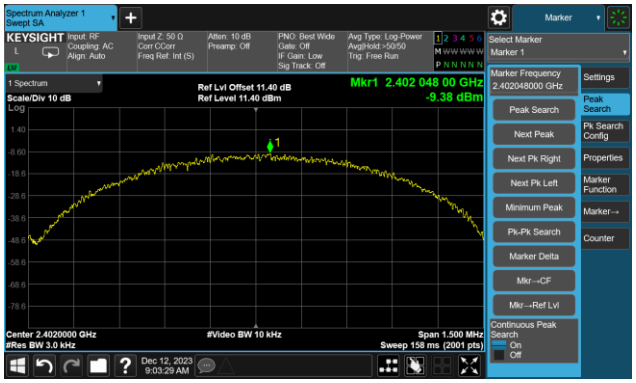
A.4 Power Spectral Density Test Result

Test Site	SIP-TR1	Test Engineer	Alisa Deng
Test Date	2023-12-12		

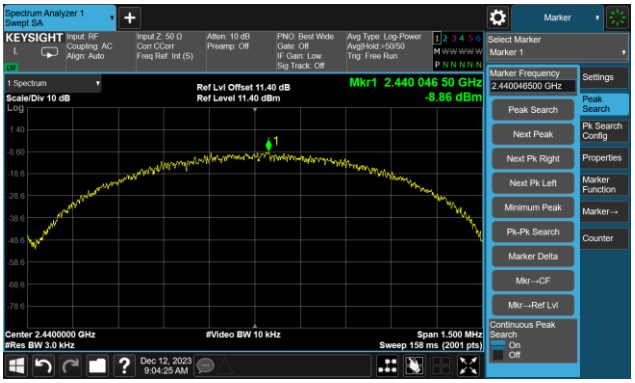
Test Mode	Data Rate	Channel No.	Frequency (MHz)	PSD Result (dBm / 3kHz)	Limit (dBm / 3kHz)	Result
BLE	1Mbps	00	2402	-9.38	≤ 8.00	Pass
BLE	1Mbps	19	2440	-8.86	≤ 8.00	Pass
BLE	1Mbps	39	2480	-7.96	≤ 8.00	Pass
BLE	2Mbps	00	2402	-10.67	≤ 8.00	Pass
BLE	2Mbps	19	2440	-9.90	≤ 8.00	Pass
BLE	2Mbps	39	2480	-9.30	≤ 8.00	Pass

BLE-1Mbps PSD

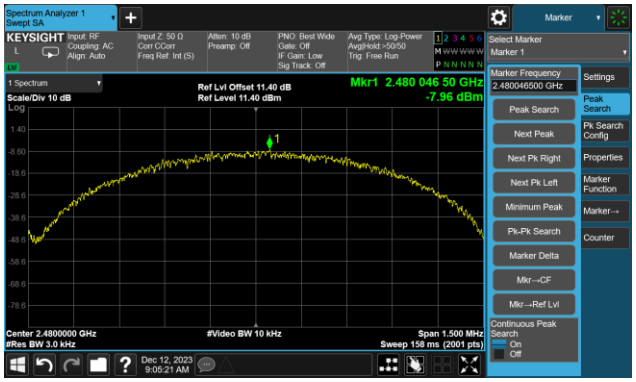
Channel 00 (2402MHz)

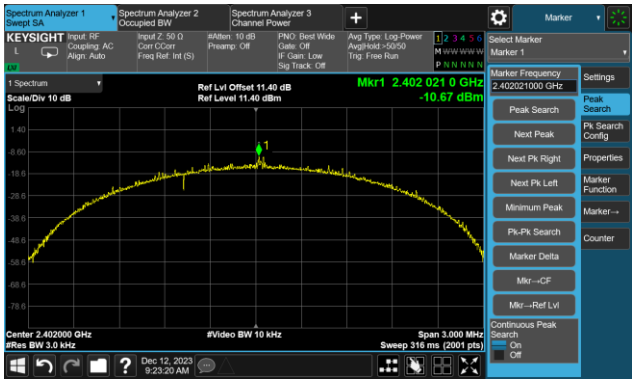
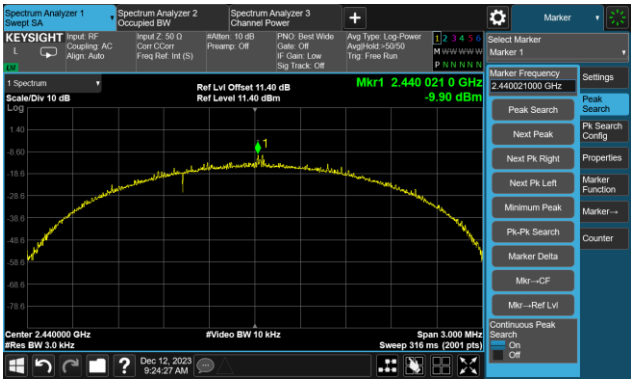
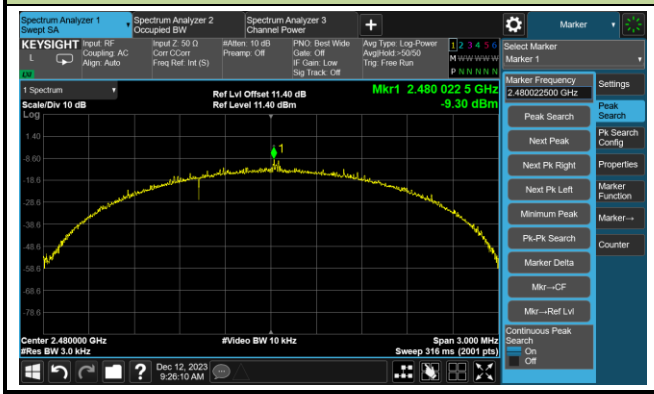


Channel 19 (2440MHz)



Channel 39 (2480MHz)



BLE-2Mbps PSD	
Channel 00 (2402MHz)	Channel 19 (2440MHz)
	
Channel 39 (2480MHz)	
	

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

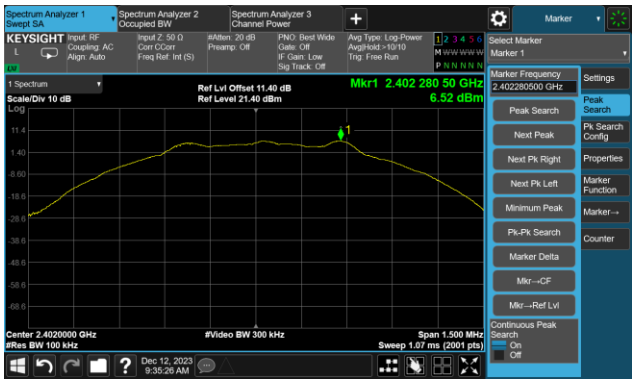
Test Site	SIP-TR1	Test Engineer	Alisa Deng
Test Date	2023-12-12		

Test Mode	Data Rate / Mbps	Channel No.	Frequency (MHz)	Limit (dBc)	Result
BLE	1	00	2402	20	Pass
BLE	1	19	2440	20	Pass
BLE	1	39	2480	20	Pass
BLE	2	00	2402	20	Pass
BLE	2	19	2440	20	Pass
BLE	2	39	2480	20	Pass

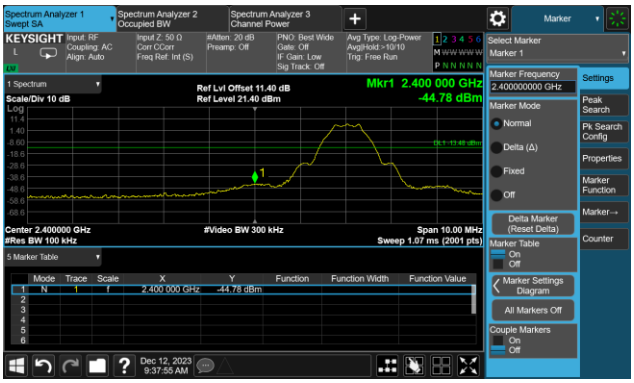
BLE-1Mbps Out-of-Band Emissions

Channel 00 (2402MHz)

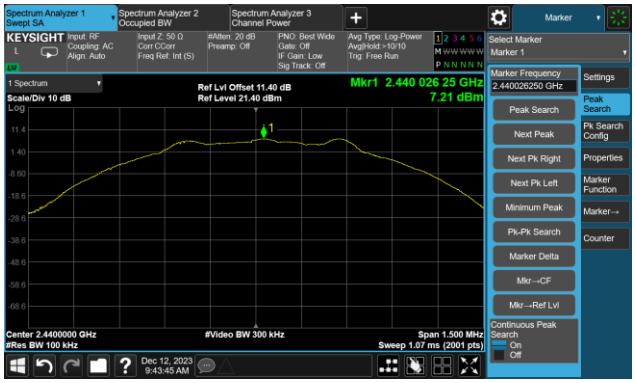
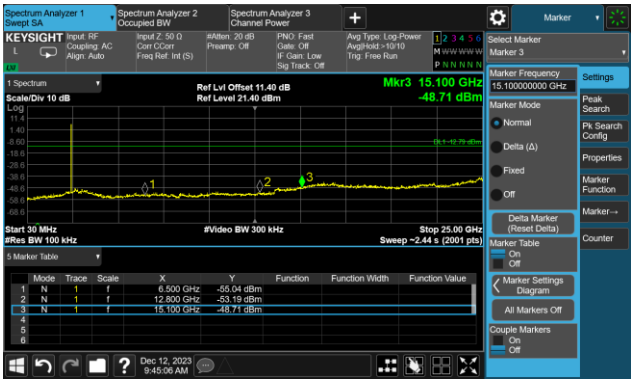
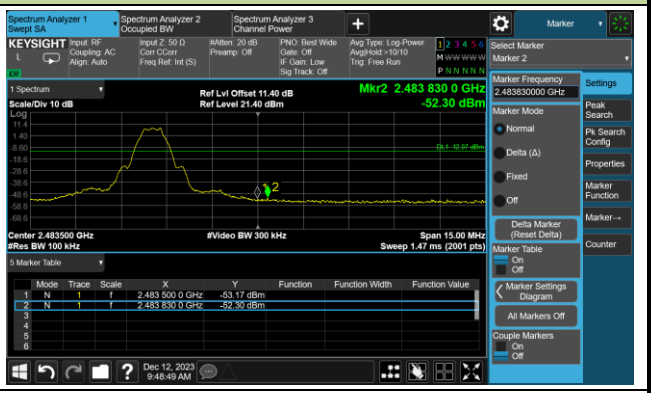
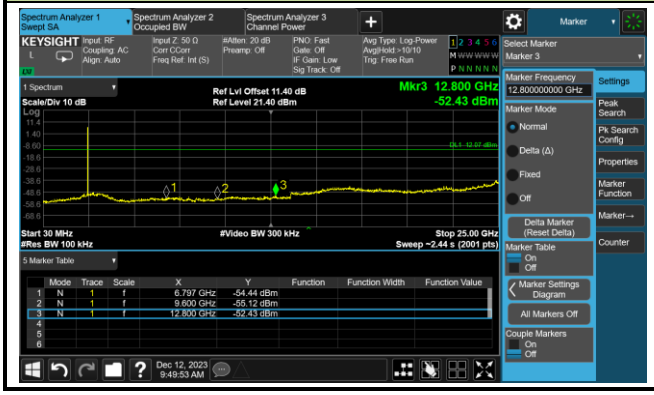
100kHz PSD Reference Level

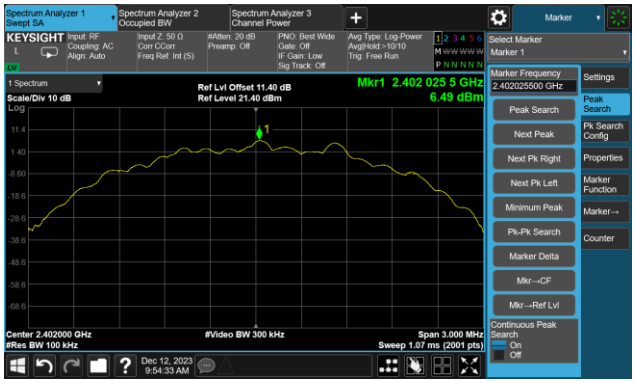
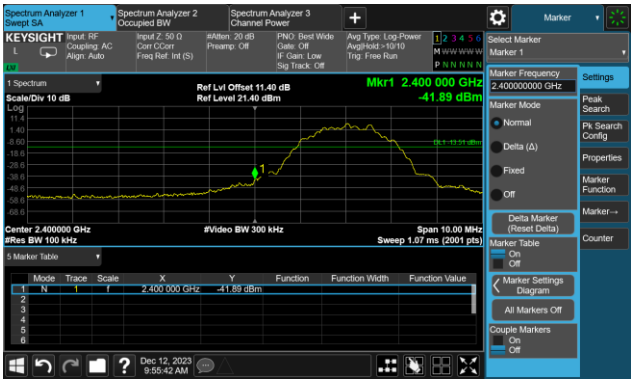
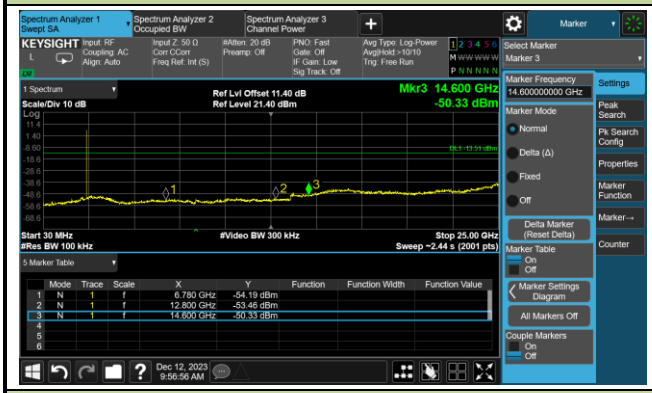
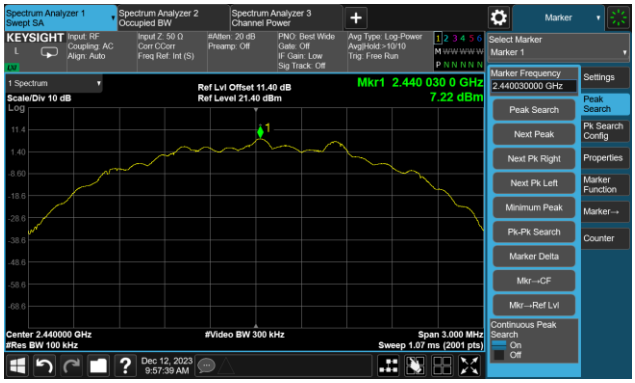
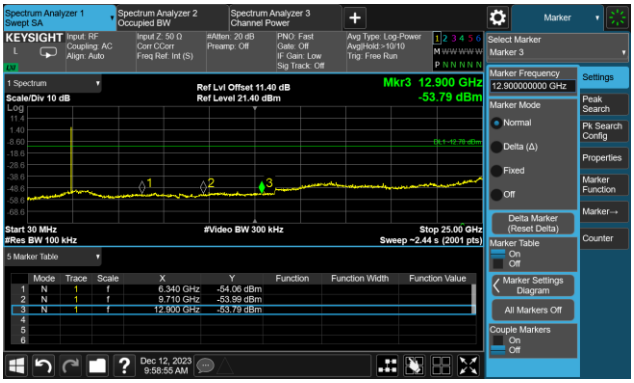


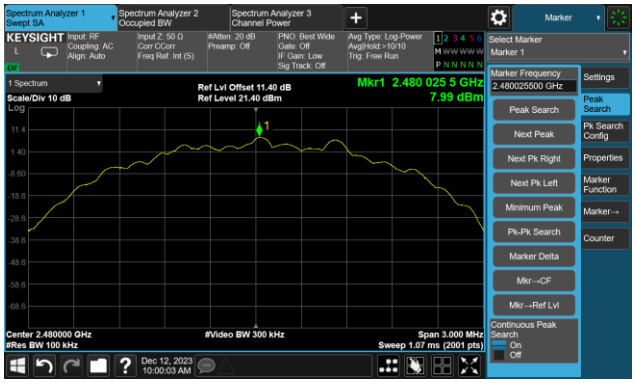
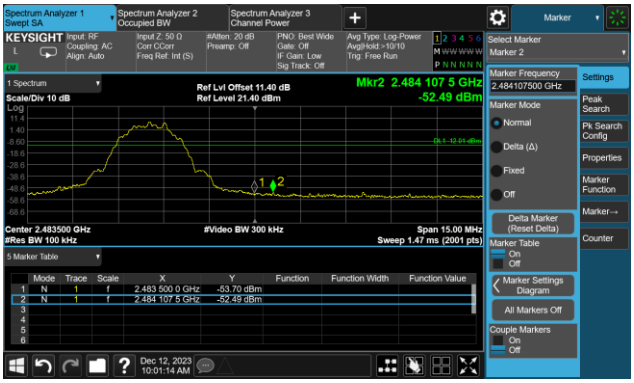
Low Band Edge



Spurious Emission 30MHz ~ 25GHz

Channel 19 (2440MHz)	
100kHz PSD Reference Level	Spurious Emission 30MHz ~ 25GHz
	
Channel 39 (2480MHz)	
100kHz PSD Reference Level	High Band Edge
	
Spurious Emission 30MHz ~ 25GHz	
	

BLE-2Mbps Out-of-Band Emissions	
Channel 00 (2402MHz)	
100kHz PSD Reference Level	Low Band Edge
	
Spurious Emission 30MHz ~ 25GHz	
	
Channel 19 (2440MHz)	
100kHz PSD Reference Level	Spurious Emission 30MHz ~ 25GHz
	

Channel 39 (2480MHz)	
100kHz PSD Reference Level	High Band Edge
	
Spurious Emission 30MHz ~ 25GHz	
	

A.6 Radiated Spurious Emission Test Result

Test Site	SIP-AC3	Test Engineer	Fusco Pan
Test Date	2023-12-16 ~ 2023-12-27	Test Mode:	BLE-1Mbps
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, 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	4808.0	55.2	-7.8	47.4	74.0	-26.6	Peak	Horizontal
	8250.5	49.1	-3.2	45.9	74.0	-28.1	Peak	Horizontal
	11123.5	47.6	-1.4	46.2	74.0	-27.8	Peak	Horizontal
	4808.0	51.6	-7.8	43.8	74.0	-30.2	Peak	Vertical
	7723.5	49.3	-4.2	45.1	74.0	-28.9	Peak	Vertical
	12160.5	48.3	-1.6	46.7	74.0	-27.3	Peak	Vertical
19	4876.0	56.0	-7.5	48.5	74.0	-25.5	Peak	Horizontal
	11489.0	48.3	-1.6	46.7	74.0	-27.3	Peak	Horizontal
	15900.5	45.9	5.1	51.0	74.0	-23.0	Peak	Horizontal
	4901.5	50.6	-7.7	42.9	74.0	-31.1	Peak	Vertical
	8276.0	48.6	-3.3	45.3	74.0	-28.7	Peak	Vertical
	12143.5	48.6	-1.7	46.9	74.0	-27.1	Peak	Vertical
39	4961.0	56.9	-7.6	49.3	74.0	-24.7	Peak	Horizontal
	8276.0	48.5	-3.3	45.2	74.0	-28.8	Peak	Horizontal
	11166.0	47.4	-1.3	46.1	74.0	-27.9	Peak	Horizontal
	4961.0	55.8	-7.6	48.2	74.0	-25.8	Peak	Vertical
	8293.0	47.8	-3.2	44.6	74.0	-29.4	Peak	Vertical
	11608.0	47.8	-1.6	46.2	74.0	-27.8	Peak	Vertical

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

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

Test Site	SIP-AC3	Test Engineer	Fusco Pan
Test Date	2023-12-16 ~ 2023-12-27	Test Mode:	BLE-2Mbps
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

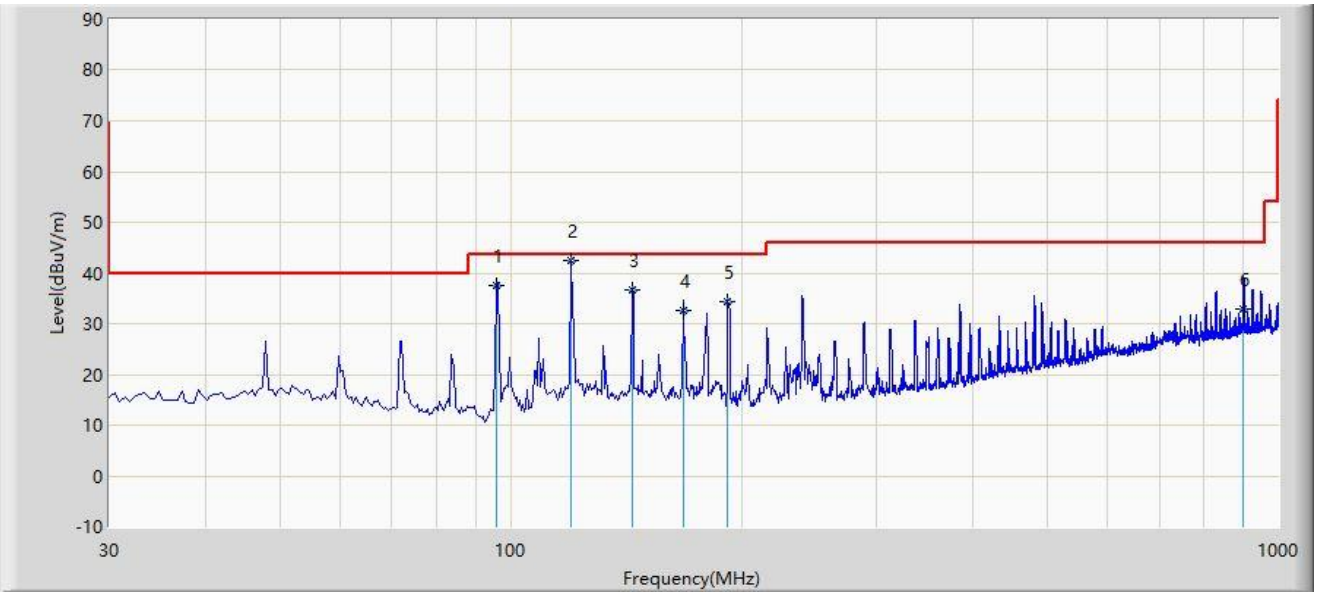
Test Channel	Frequency (MHz)	Reading Level (dBµV)	Factor (dB/m)	Measure Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Polarization
00	4799.5	53.2	-7.8	45.4	74.0	-28.6	Peak	Horizontal
	8148.5	48.2	-3.4	44.8	74.0	-29.2	Peak	Horizontal
	11684.5	48.0	-1.6	46.4	74.0	-27.6	Peak	Horizontal
	7638.5	48.6	-4.3	44.3	74.0	-29.7	Peak	Vertical
	8293.0	48.8	-3.2	45.6	74.0	-28.4	Peak	Vertical
	11523.0	48.1	-1.5	46.6	74.0	-27.4	Peak	Vertical
19	4884.5	55.1	-7.6	47.5	74.0	-26.5	Peak	Horizontal
	8208.0	48.3	-3.1	45.2	74.0	-28.8	Peak	Horizontal
	12109.5	48.3	-1.8	46.5	74.0	-27.5	Peak	Horizontal
	4876.0	50.2	-7.5	42.7	74.0	-31.3	Peak	Vertical
	8182.5	48.3	-3.5	44.8	74.0	-29.2	Peak	Vertical
	11336.0	47.9	-1.4	46.5	74.0	-27.5	Peak	Vertical
39	4961.0	55.6	-7.6	48.0	74.0	-26.0	Peak	Horizontal
	8420.5	48.4	-3.2	45.2	74.0	-28.8	Peak	Horizontal
	11905.5	48.9	-1.8	47.1	74.0	-26.9	Peak	Horizontal
	4961.0	52.8	-7.6	45.2	74.0	-28.8	Peak	Vertical
	8131.5	49.0	-3.5	45.5	74.0	-28.5	Peak	Vertical
	11480.5	48.3	-1.6	46.7	74.0	-27.3	Peak	Vertical

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

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

The Result of Radiated Emission below 1GHz:

Site: SIP-AC1	Test Date: 2023-12-26
Limit: FCC_Part15.209_RSE(3m)	Engineer: Justin Guo
Probe: VULB 9168_00998_25-2000MHz	Polarity: Horizontal
EUT: BT Module	Power: By DC 5V
Test Mode: Transmit by BLE 1M at 2402MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		95.960	37.625	24.900	-5.875	43.500	12.726	QP
2	*	119.725	42.497	26.900	-1.003	43.500	15.597	QP
3		143.975	36.649	18.400	-6.851	43.500	18.249	QP
4		167.740	32.564	15.200	-10.936	43.500	17.364	QP
5		191.990	34.455	19.600	-9.045	43.500	14.855	QP
6		900.575	32.980	3.300	-13.020	46.000	29.680	QP

Note 1: " * ", means this data is the worst emission level.

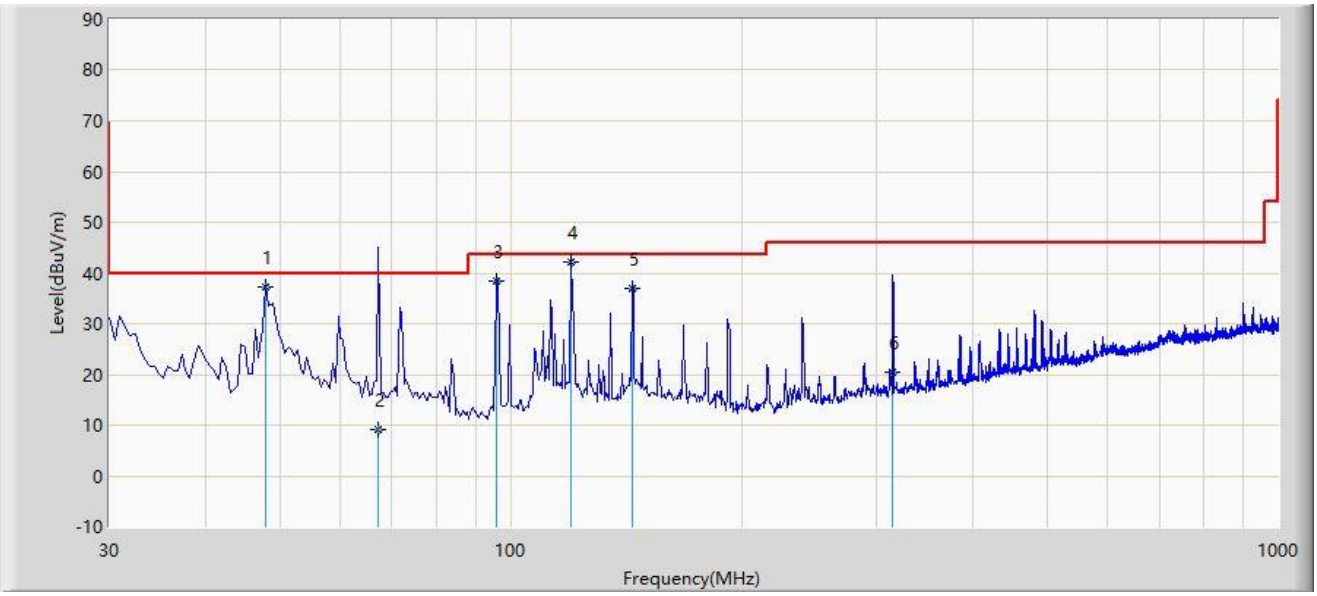
Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Note 4: Quasi-Peak measurement was not performed when peak measure level was lower than the quasi-peak limit.

Note 5: The amplitude of radiated emissions (frequency range from 9kHz to 30MHz and 18GHz to 25GHz) is that proximity to ambient noise, which also are attenuated more than 20 dB below the permissible value. Therefore, the data is not presented in the report.

Site: SIP-AC1	Test Date: 2023-12-26
Limit: FCC_Part15.209_RSE(3m)	Engineer: Justin Guo
Probe: VULB 9168_00998_25-2000MHz	Polarity: Vertical
EUT: BT Module	Power: By DC 5V
Test Mode: Transmit by BLE 1M at 2402MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		47.945	37.345	19.300	-2.655	40.000	18.045	QP
2		67.345	9.270	-6.900	-30.730	40.000	16.170	QP
3		95.960	38.425	25.700	-5.075	43.500	12.726	QP
4	*	119.725	42.097	26.500	-1.403	43.500	15.597	QP
5		143.975	36.849	18.600	-6.651	43.500	18.249	QP
6		314.695	20.316	1.500	-25.684	46.000	18.816	QP

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

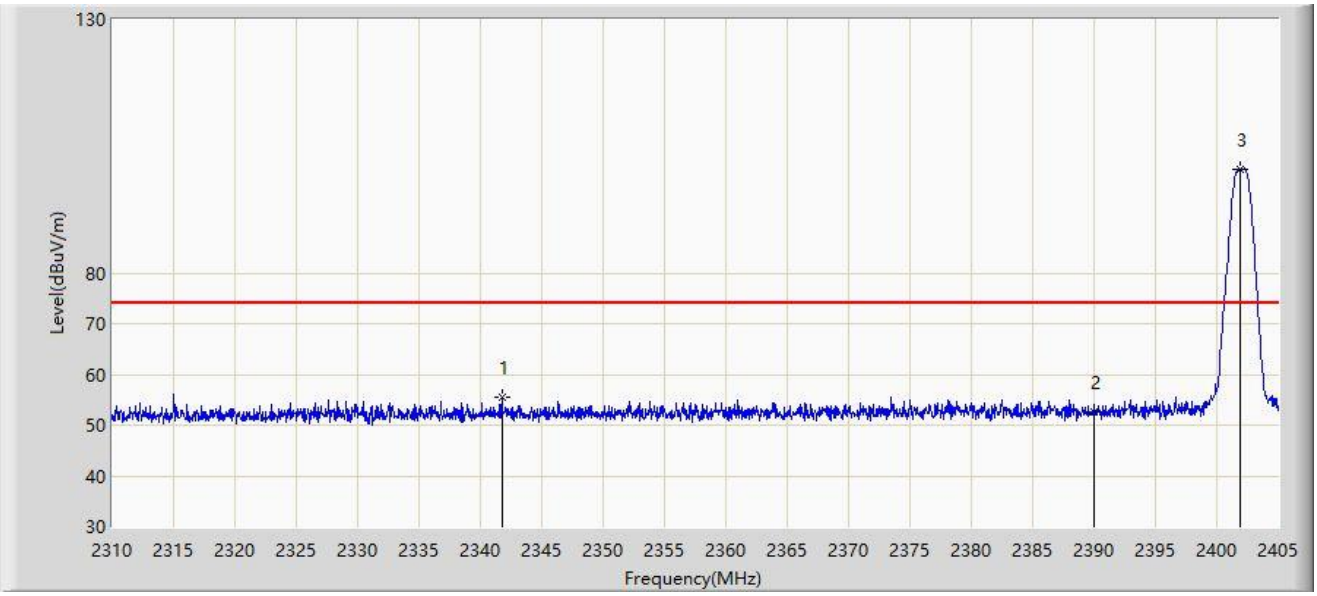
Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Note 4: Quasi-Peak measurement was not performed when peak measure level was lower than the quasi-peak limit.

Note 5: The amplitude of radiated emissions (frequency range from 9kHz to 30MHz and 18GHz to 25GHz) is that proximity to ambient noise, which also are attenuated more than 20 dB below the permissible value. Therefore, the data is not presented in the report.

A.7 Radiated Restricted Band Edge Test Result

Site: SIP-AC3	Test Date: 2023-12-16
Limit: FCC_2.4G_RE(3m)	Engineer: Fusco Pan
Probe: HF907_102861_1-18GHz	Polarity: Horizontal
EUT: BT Module	Power: By DC 5V
Test Mode: Transmit by BLE 1M at 2402MHz	



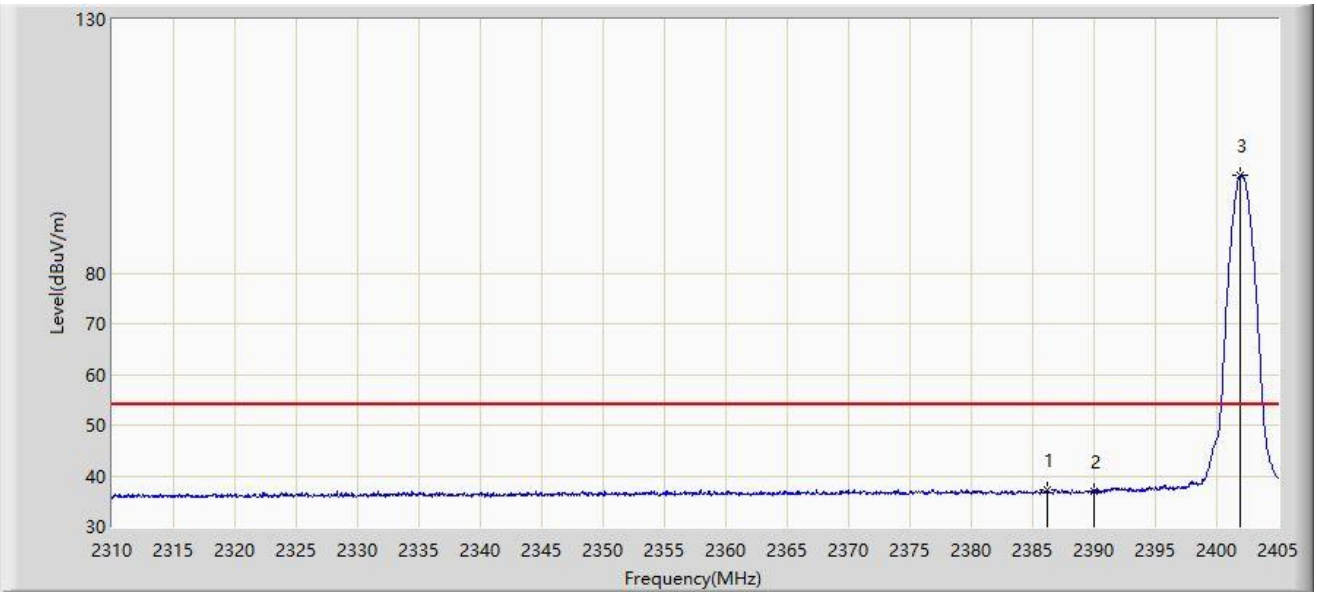
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	2341.730	55.495	23.748	-18.505	74.000	31.747	PK
2		2390.000	52.697	20.674	-21.303	74.000	32.023	PK
3		2401.865	100.395	68.358	N/A	N/A	32.038	PK

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: SIP-AC3	Test Date: 2023-12-16
Limit: FCC_2.4G_RE(3m)	Engineer: Fusco Pan
Probe: HF907_102861_1-18GHz	Polarity: Horizontal
EUT: BT Module	Power: By DC 5V
Test Mode: Transmit by BLE 1M at 2402MHz	



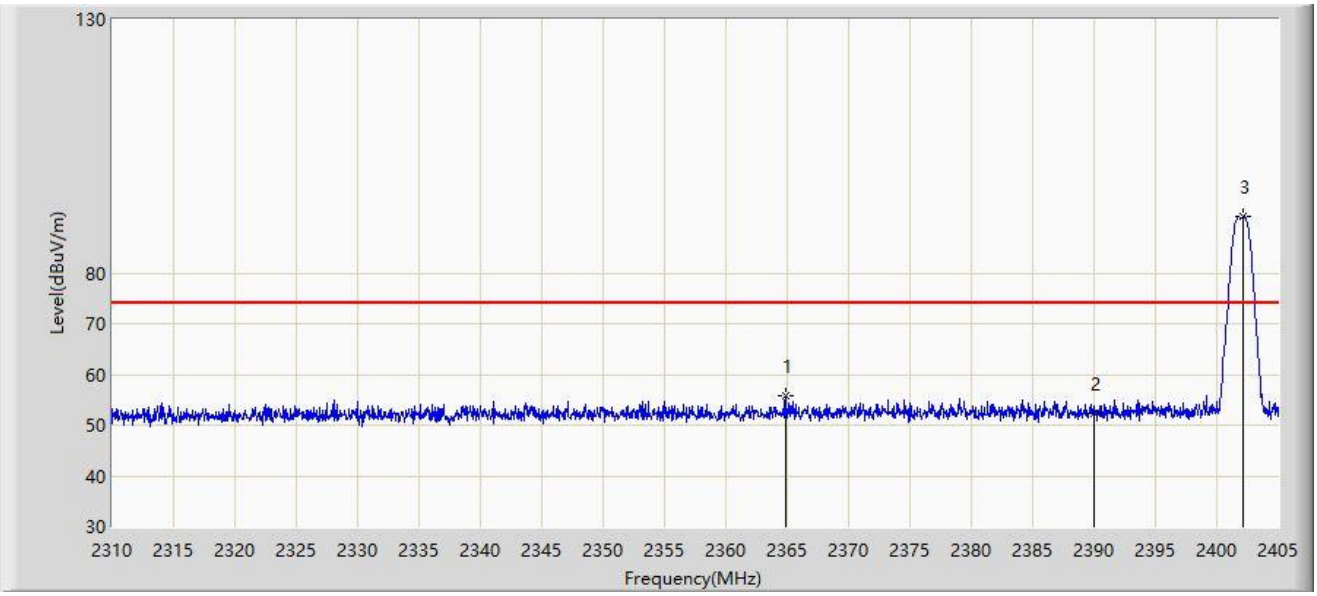
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	2386.143	37.282	5.267	-16.718	54.000	32.015	AV
2		2390.000	37.039	5.016	-16.961	54.000	32.023	AV
3		2401.913	99.174	67.136	N/A	N/A	32.038	AV

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: SIP-AC3	Test Date: 2023-12-16
Limit: FCC_2.4G_RE(3m)	Engineer: Fusco Pan
Probe: HF907_102861_1-18GHz	Polarity: Vertical
EUT: BT Module	Power: By DC 5V
Test Mode: Transmit by BLE 1M at 2402MHz	



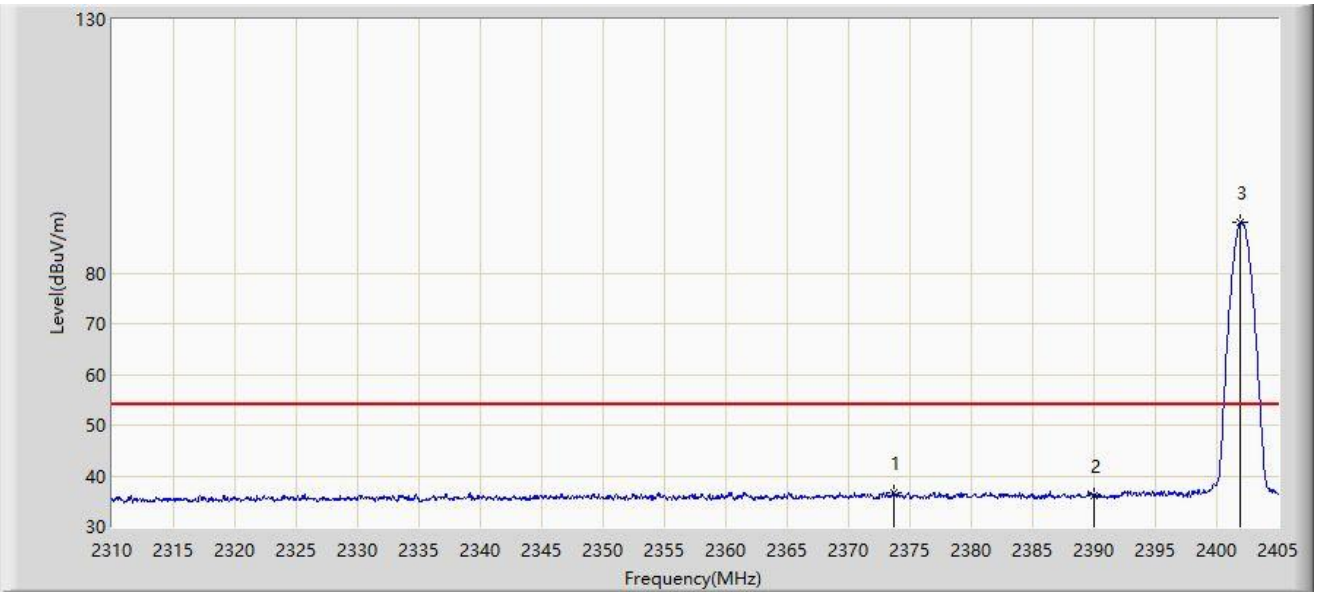
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	2364.863	55.828	23.889	-18.172	74.000	31.940	PK
2		2390.000	52.232	20.209	-21.768	74.000	32.023	PK
3		2402.198	91.111	59.073	N/A	N/A	32.038	PK

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: SIP-AC3	Test Date: 2023-12-16
Limit: FCC_2.4G_RE(3m)	Engineer: Fusco Pan
Probe: HF907_102861_1-18GHz	Polarity: Vertical
EUT: BT Module	Power: By DC 5V
Test Mode: Transmit by BLE 1M at 2402MHz	



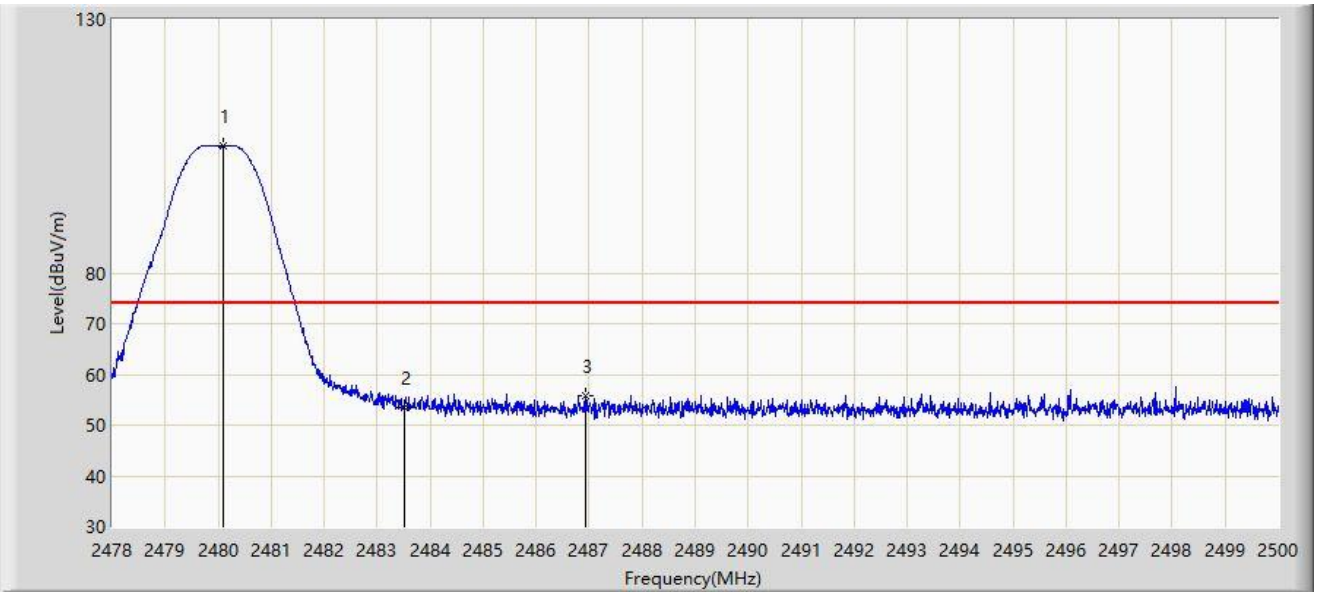
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	2373.650	36.685	4.704	-17.315	54.000	31.981	AV
2		2390.000	36.227	4.204	-17.773	54.000	32.023	AV
3		2401.913	89.867	57.829	N/A	N/A	32.038	AV

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: SIP-AC3	Test Date: 2023-12-16
Limit: FCC_2.4G_RE(3m)	Engineer: Fusco Pan
Probe: HF907_102861_1-18GHz	Polarity: Horizontal
EUT: BT Module	Power: By DC 5V
Test Mode: Transmit by BLE 1M at 2480MHz	



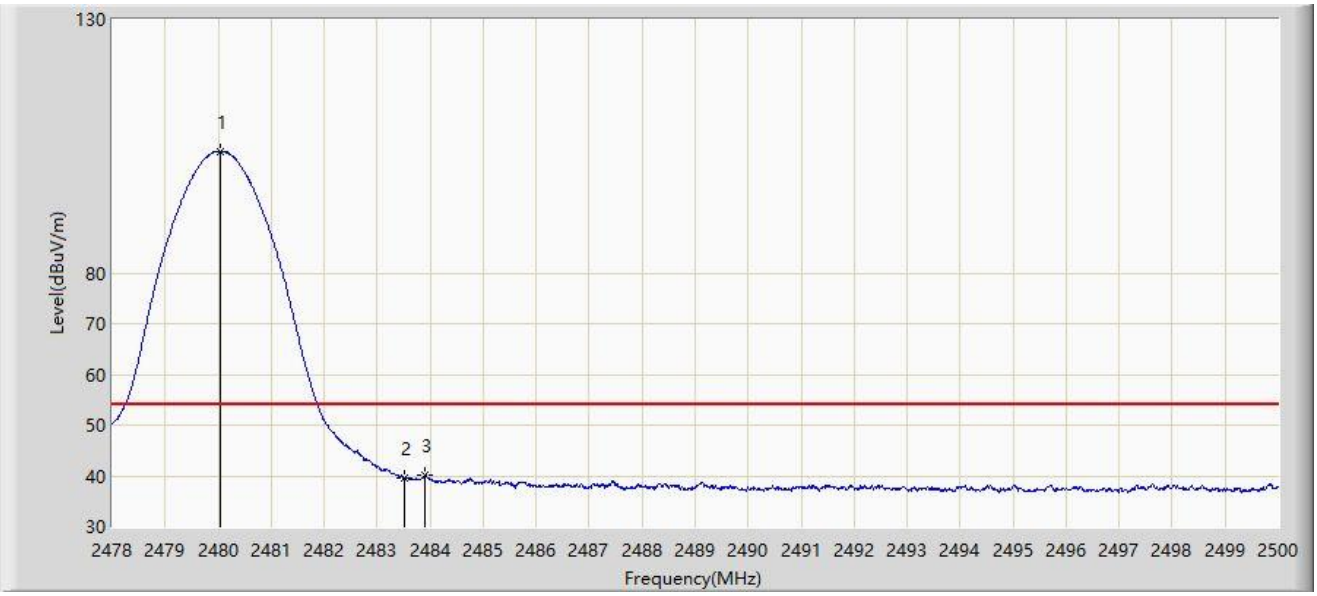
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		2480.090	105.042	72.759	N/A	N/A	32.282	PK
2		2483.500	53.406	21.106	-20.594	74.000	32.300	PK
3	*	2486.943	55.935	23.617	-18.065	74.000	32.318	PK

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: SIP-AC3	Test Date: 2023-12-16
Limit: FCC_2.4G_RE(3m)	Engineer: Fusco Pan
Probe: HF907_102861_1-18GHz	Polarity: Horizontal
EUT: BT Module	Power: By DC 5V
Test Mode: Transmit by BLE 1M at 2480MHz	



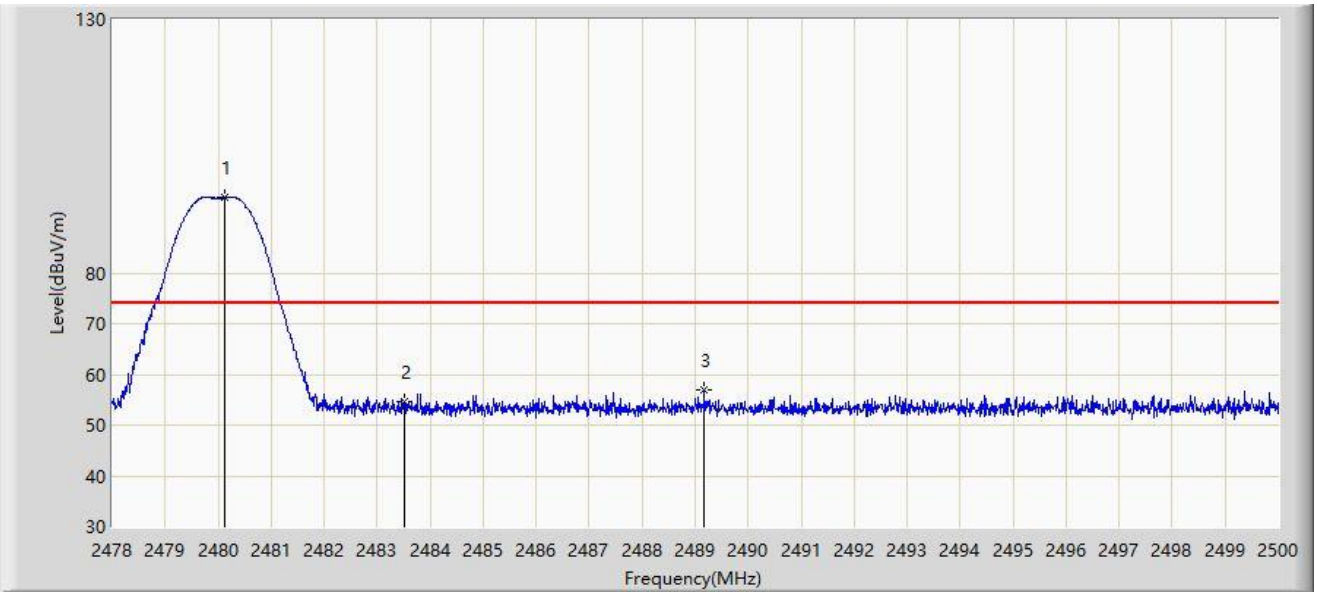
No	Mark	Frequency (MHz)	Measure Level (dBµV/m)	Reading Level (dBµV)	Margin (dB)	Limit (dBµV/m)	Factor (dB/m)	Type
1		2480.046	104.018	71.736	N/A	N/A	32.282	AV
2		2483.500	39.563	7.263	-14.437	54.000	32.300	AV
3	*	2483.907	40.129	7.827	-13.871	54.000	32.303	AV

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: SIP-AC3	Test Date: 2023-12-16
Limit: FCC_2.4G_RE(3m)	Engineer: Fusco Pan
Probe: HF907_102861_1-18GHz	Polarity: Vertical
EUT: BT Module	Power: By DC 5V
Test Mode: Transmit by BLE 1M at 2480MHz	



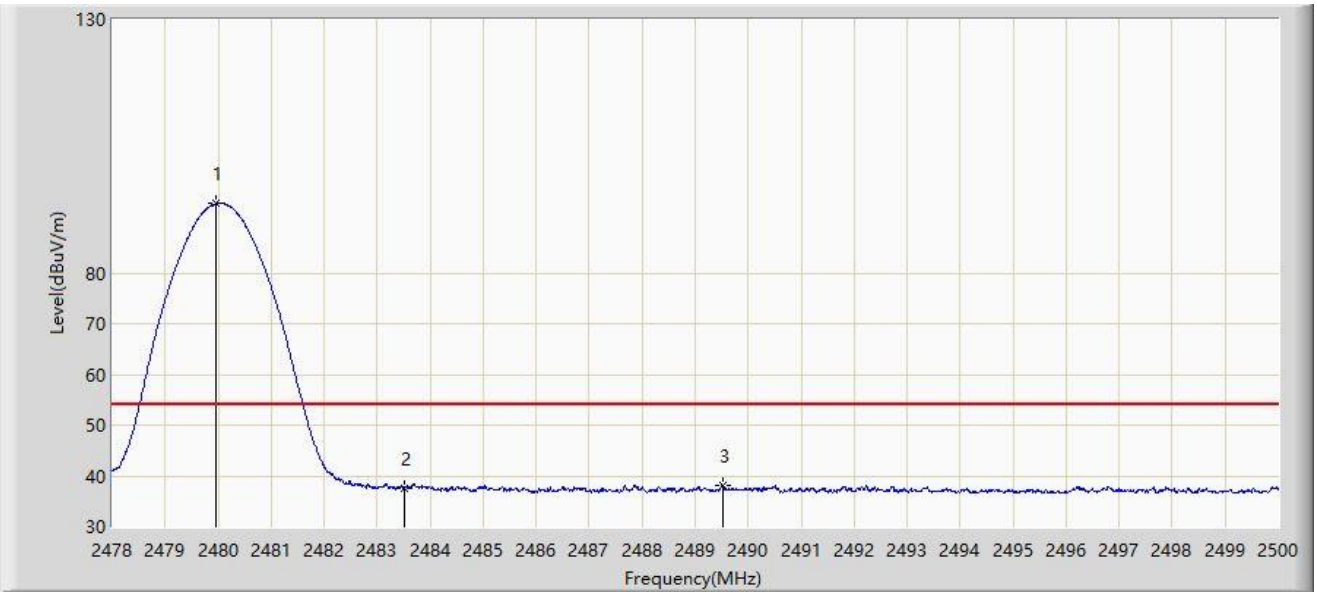
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		2480.112	94.851	62.568	N/A	N/A	32.283	PK
2		2483.500	54.506	22.206	-19.494	74.000	32.300	PK
3	*	2489.176	56.964	24.634	-17.036	74.000	32.330	PK

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: SIP-AC3	Test Date: 2023-12-16
Limit: FCC_2.4G_RE(3m)	Engineer: Fusco Pan
Probe: HF907_102861_1-18GHz	Polarity: Vertical
EUT: BT Module	Power: By DC 5V
Test Mode: Transmit by BLE 1M at 2480MHz	



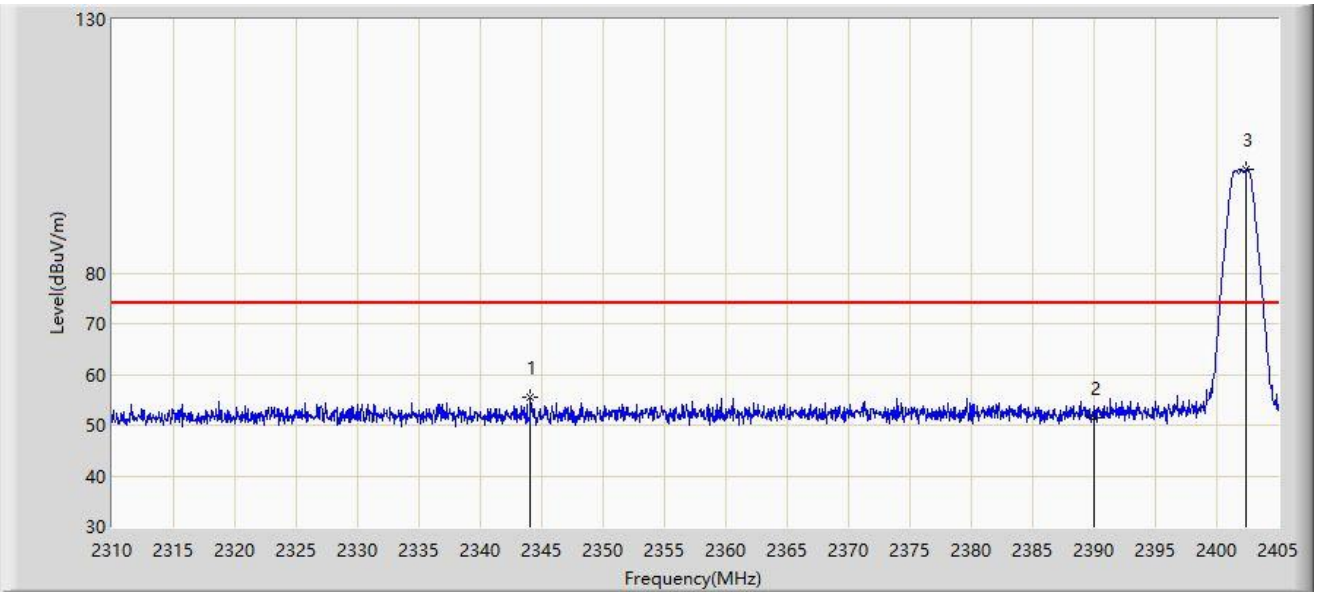
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		2479.969	93.701	61.419	N/A	N/A	32.282	AV
2		2483.500	37.418	5.118	-16.582	54.000	32.300	AV
3	*	2489.517	38.059	5.728	-15.941	54.000	32.332	AV

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: SIP-AC3	Test Date: 2023-12-16
Limit: FCC_2.4G_RE(3m)	Engineer: Fusco Pan
Probe: HF907_102861_1-18GHz	Polarity: Horizontal
EUT: BT Module	Power: By DC 5V
Test Mode: Transmit by BLE 2M at 2402MHz	



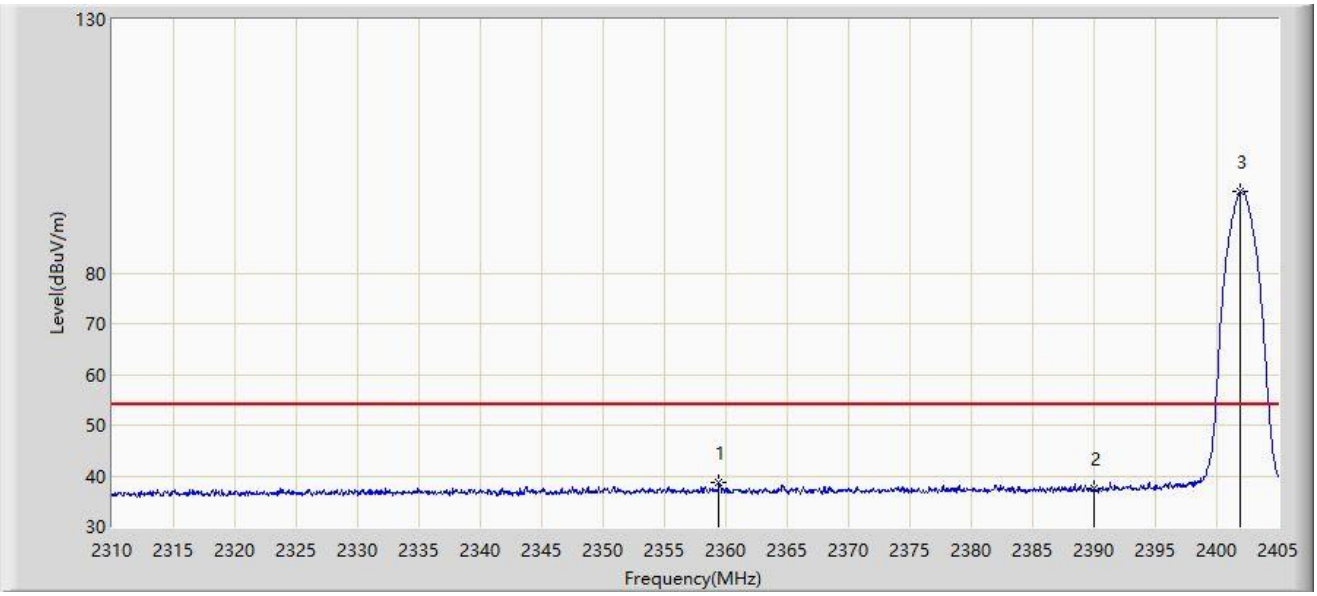
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	2344.058	55.455	23.690	-18.545	74.000	31.765	PK
2		2390.000	51.588	19.565	-22.412	74.000	32.023	PK
3		2402.435	100.399	68.361	N/A	N/A	32.038	PK

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: SIP-AC3	Test Date: 2023-12-16
Limit: FCC_2.4G_RE(3m)	Engineer: Fusco Pan
Probe: HF907_102861_1-18GHz	Polarity: Horizontal
EUT: BT Module	Power: By DC 5V
Test Mode: Transmit by BLE 2M at 2402MHz	



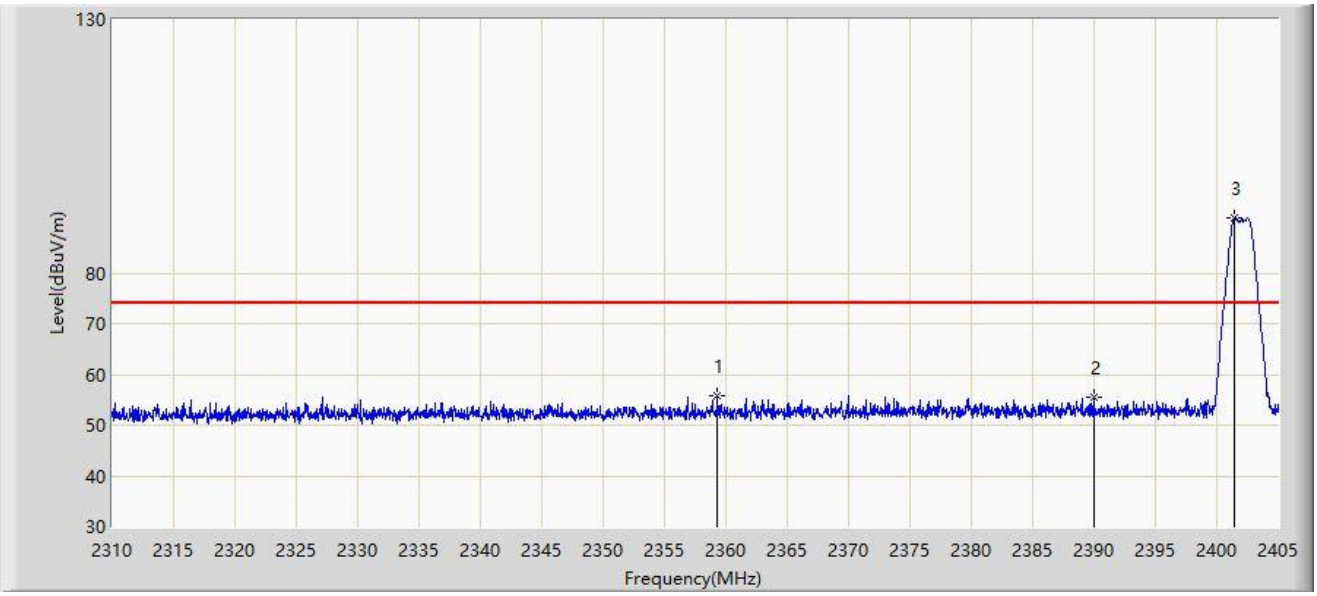
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	2359.400	38.725	6.815	-15.275	54.000	31.910	AV
2		2390.000	37.392	5.369	-16.608	54.000	32.023	AV
3		2401.913	96.040	64.002	N/A	N/A	32.038	AV

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: SIP-AC3	Test Date: 2023-12-16
Limit: FCC_2.4G_RE(3m)	Engineer: Fusco Pan
Probe: HF907_102861_1-18GHz	Polarity: Vertical
EUT: BT Module	Power: By DC 5V
Test Mode: Transmit by BLE 2M at 2402MHz	



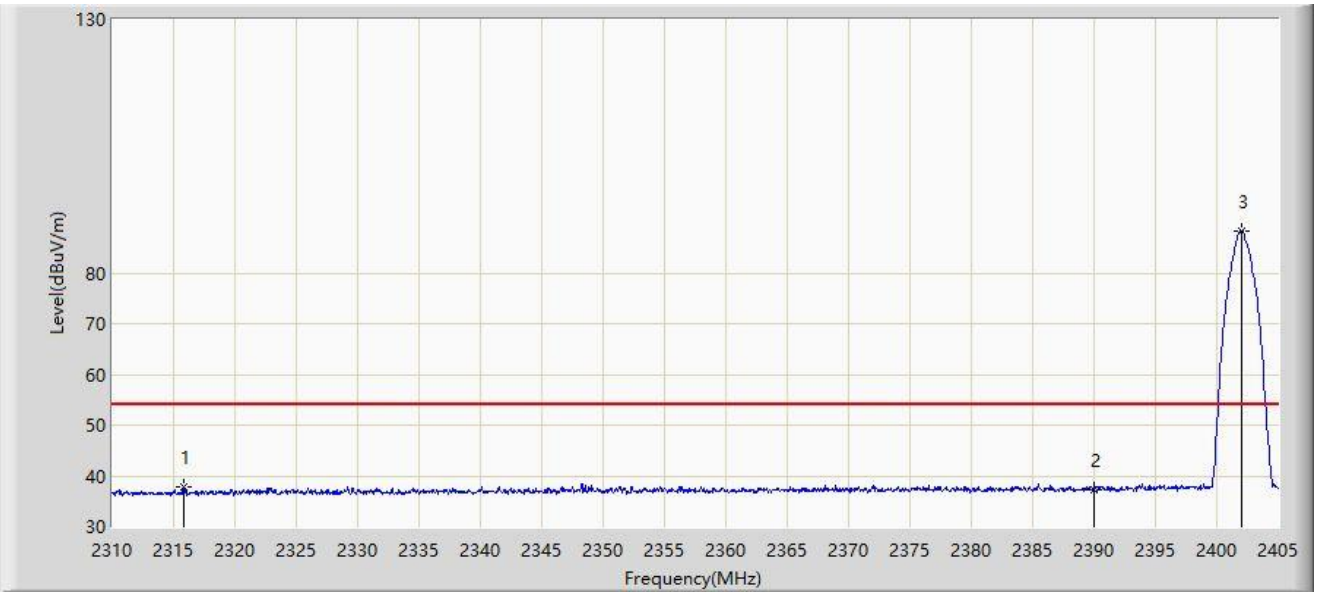
No	Mark	Frequency (MHz)	Measure Level (dBµV/m)	Reading Level (dBµV)	Margin (dB)	Limit (dBµV/m)	Factor (dB/m)	Type
1	*	2359.305	55.681	23.772	-18.319	74.000	31.909	PK
2		2390.000	55.458	23.435	-18.542	74.000	32.023	PK
3		2401.485	90.737	58.700	N/A	N/A	32.037	PK

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: SIP-AC3	Test Date: 2023-12-16
Limit: FCC_2.4G_RE(3m)	Engineer: Fusco Pan
Probe: HF907_102861_1-18GHz	Polarity: Vertical
EUT: BT Module	Power: By DC 5V
Test Mode: Transmit by BLE 2M at 2402MHz	



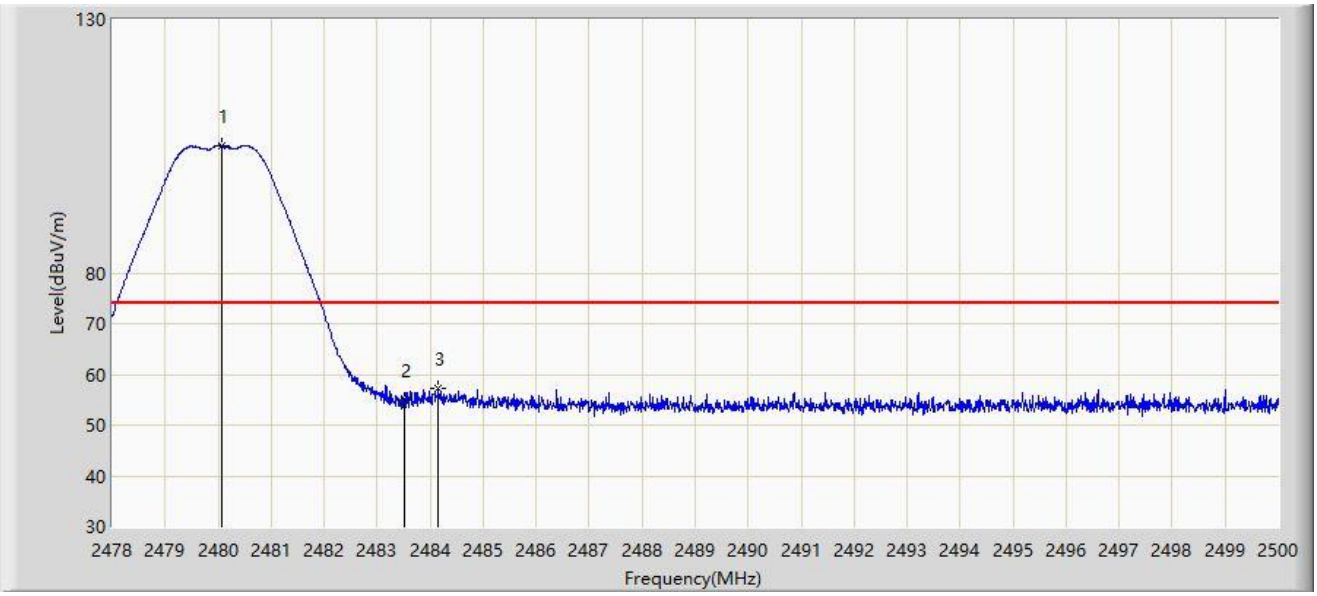
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	2315.795	37.705	6.132	-16.295	54.000	31.572	AV
2		2390.000	37.269	5.246	-16.731	54.000	32.023	AV
3		2402.008	88.292	56.254	N/A	N/A	32.037	AV

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: SIP-AC3	Test Date: 2023-12-16
Limit: FCC_2.4G_RE(3m)	Engineer: Fusco Pan
Probe: HF907_102861_1-18GHz	Polarity: Horizontal
EUT: BT Module	Power: By DC 5V
Test Mode: Transmit by BLE 2M at 2480MHz	



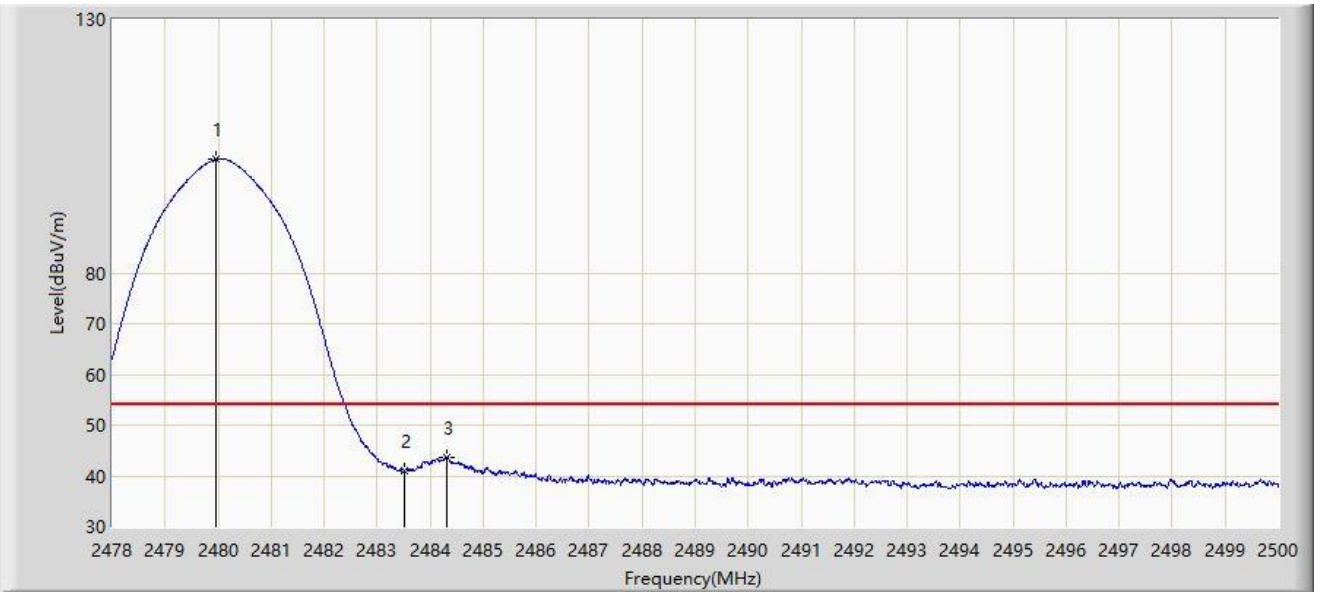
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		2480.079	105.083	72.800	N/A	N/A	32.282	PK
2		2483.500	54.824	22.524	-19.176	74.000	32.300	PK
3	*	2484.160	57.132	24.828	-16.868	74.000	32.304	PK

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: SIP-AC3	Test Date: 2023-12-16
Limit: FCC_2.4G_RE(3m)	Engineer: Fusco Pan
Probe: HF907_102861_1-18GHz	Polarity: Horizontal
EUT: BT Module	Power: By DC 5V
Test Mode: Transmit by BLE 2M at 2480MHz	



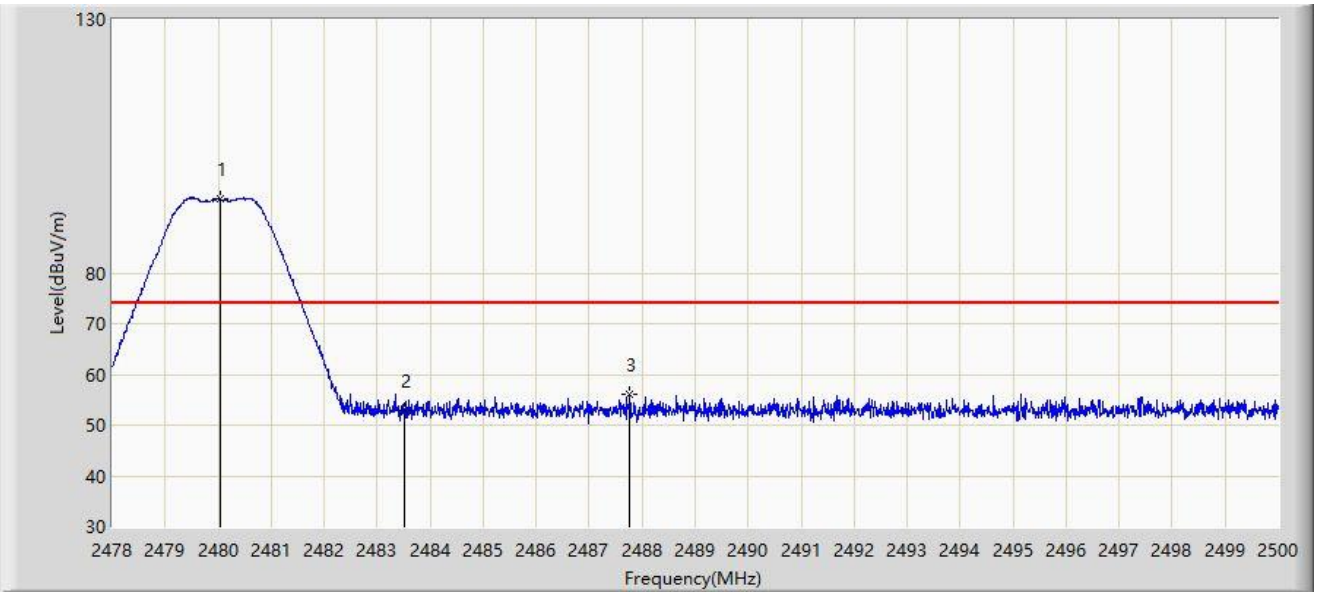
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		2479.969	102.406	70.124	N/A	N/A	32.282	AV
2		2483.500	40.924	8.624	-13.076	54.000	32.300	AV
3	*	2484.314	43.762	11.457	-10.238	54.000	32.305	AV

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: SIP-AC3	Test Date: 2023-12-16
Limit: FCC_2.4G_RE(3m)	Engineer: Fusco Pan
Probe: HF907_102861_1-18GHz	Polarity: Vertical
EUT: BT Module	Power: By DC 5V
Test Mode: Transmit by BLE 2M at 2480MHz	



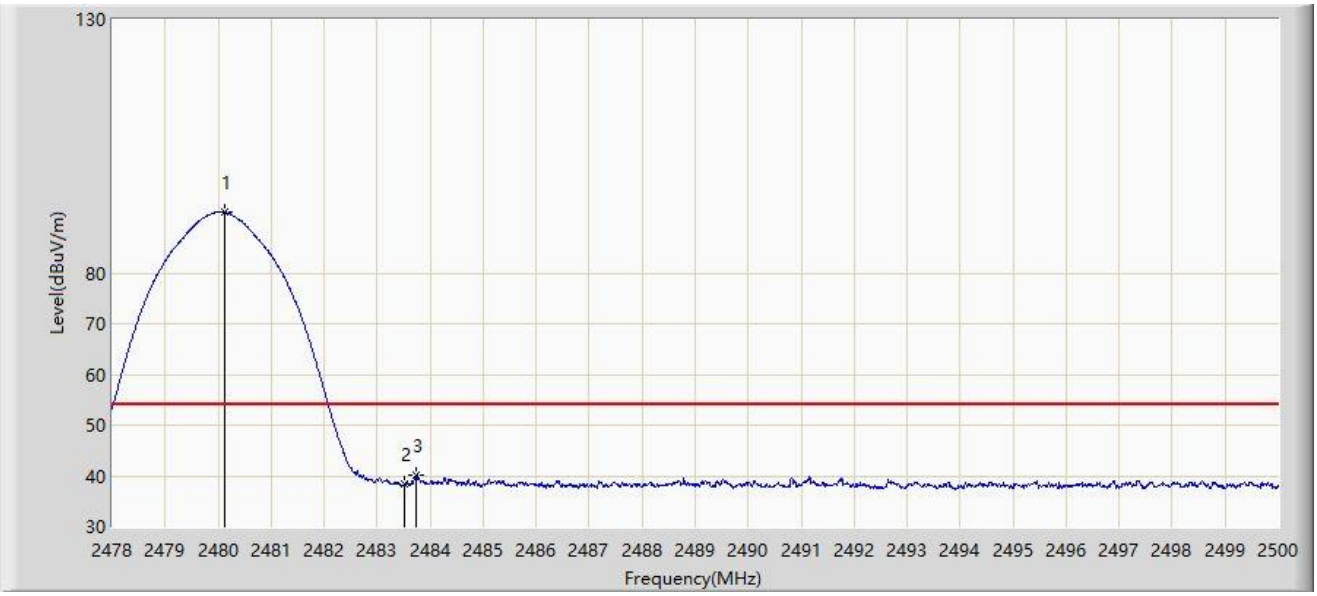
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		2480.046	94.531	62.249	N/A	N/A	32.282	PK
2		2483.500	52.924	20.624	-21.076	74.000	32.300	PK
3	*	2487.768	56.058	23.736	-17.942	74.000	32.323	PK

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: SIP-AC3	Test Date: 2023-12-16
Limit: FCC_2.4G_RE(3m)	Engineer: Fusco Pan
Probe: HF907_102861_1-18GHz	Polarity: Vertical
EUT: BT Module	Power: By DC 5V
Test Mode: Transmit by BLE 2M at 2480MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		2480.112	91.967	59.684	N/A	N/A	32.283	AV
2		2483.500	38.297	5.997	-15.703	54.000	32.300	AV
3	*	2483.742	40.229	7.927	-13.771	54.000	32.302	AV

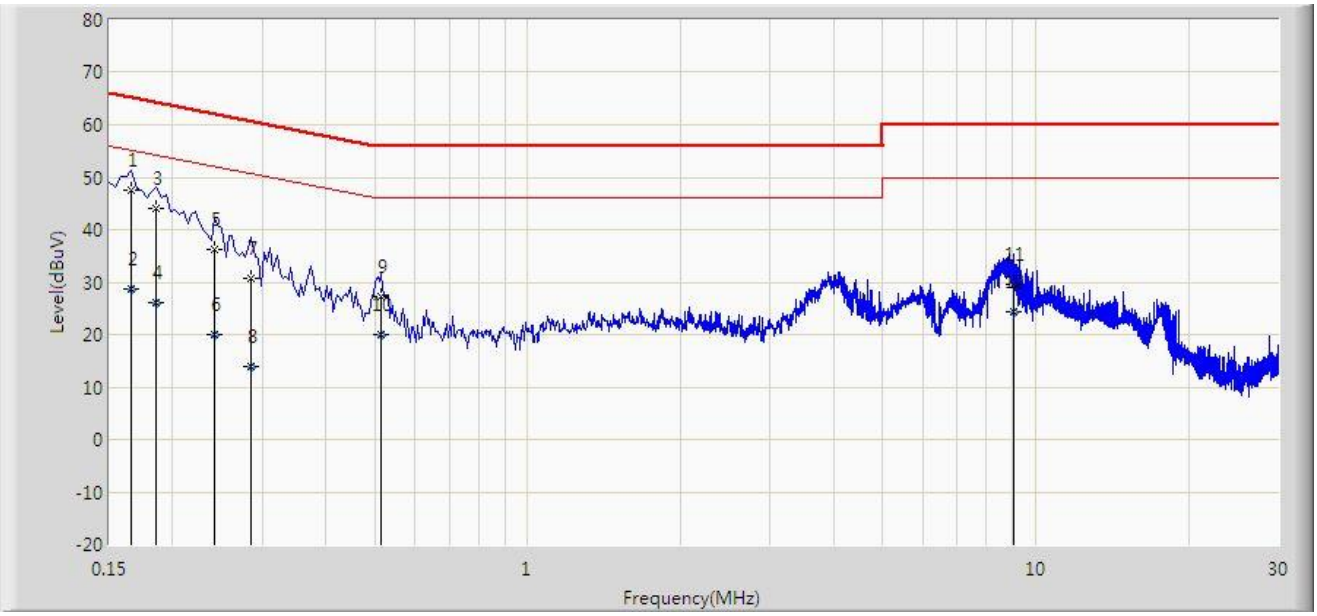
Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

A.8 AC Conducted Emissions Test Result

Site: SIP-SR2	Test Date: 2023-12-29
Temperature: 17.6°C	Humidity: 49.1%
Limit: FCC_Part15.207_CE_AC Power	Engineer: Mark Long
Probe: SIP-SR2-ENV216_101684_C	Polarity: Neutral
EUT: BT Module	Power: AC 120V/60Hz
Test Mode: Transmit by BLE 1M at 2402MHz	



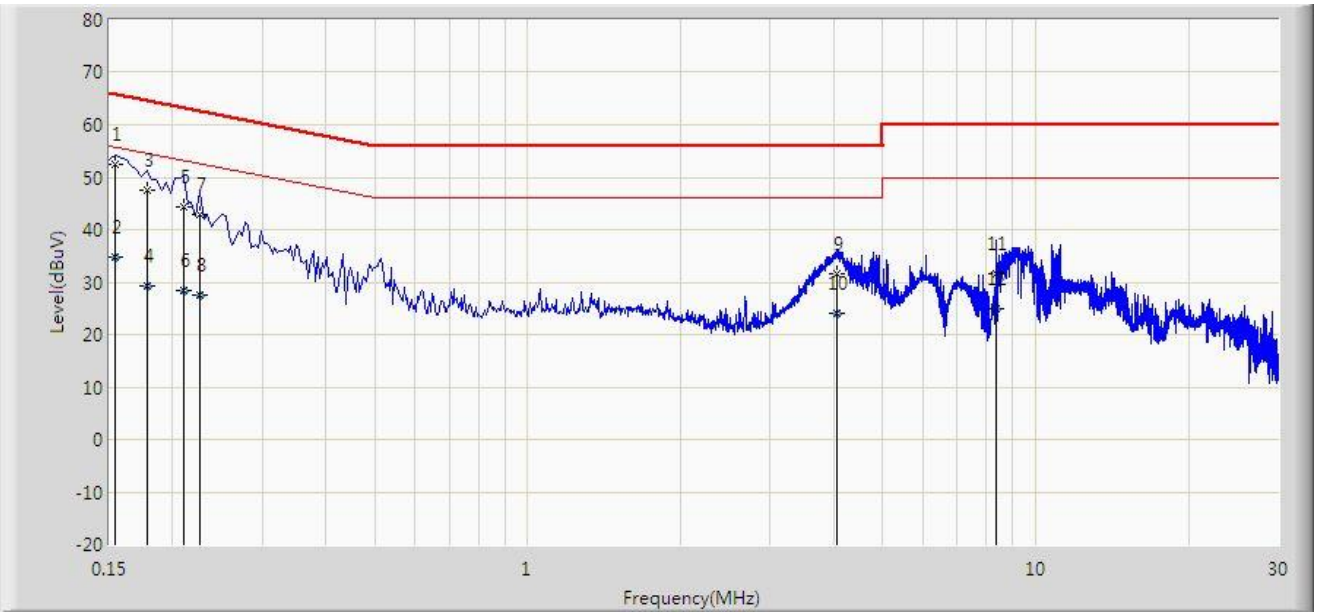
No	Mark	Frequency (MHz)	Measure Level (dBµV)	Reading Level (dBµV)	Margin (dB)	Limit (dBµV)	Factor (dB)	Type
1	*	0.166	47.544	37.904	-17.614	65.158	9.640	QP
2		0.166	28.716	19.076	-26.442	55.158	9.640	AV
3		0.186	43.915	34.267	-20.298	64.213	9.648	QP
4		0.186	26.014	16.366	-28.199	54.213	9.648	AV
5		0.242	36.358	26.666	-25.670	62.027	9.691	QP
6		0.242	20.014	10.322	-32.014	52.027	9.691	AV
7		0.286	30.601	20.905	-30.039	60.640	9.696	QP
8		0.286	14.048	4.352	-36.592	50.640	9.696	AV
9		0.514	27.225	17.515	-28.775	56.000	9.710	QP
10		0.514	19.923	10.213	-26.077	46.000	9.710	AV
11		9.022	29.584	19.571	-30.416	60.000	10.014	QP
12		9.022	24.220	14.206	-25.780	50.000	10.014	AV

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBµV) = Reading Level (dBµV) + Factor (dB).

Note 3: Factor (dB) = Cable Loss (dB) + LISN Factor (dB).

Site: SIP-SR2	Test Date: 2023-12-29
Temperature: 17.6°C	Humidity: 49.1%
Limit: FCC_Part15.207_CE_AC Power	Engineer: Mark Long
Probe: SIP-SR2-ENV216_101684_C	Polarity: Line
EUT: BT Module	Power: AC 120V/60Hz
Test Mode: Transmit by BLE 1M at 2402MHz	



No	Mark	Frequency (MHz)	Measure Level (dBµV)	Reading Level (dBµV)	Margin (dB)	Limit (dBµV)	Factor (dB)	Type
1	*	0.154	52.466	42.551	-13.316	65.781	9.915	QP
2		0.154	34.832	24.917	-20.949	55.781	9.915	AV
3		0.178	47.611	37.607	-16.967	64.578	10.004	QP
4		0.178	29.352	19.348	-25.227	54.578	10.004	AV
5		0.210	44.261	34.228	-18.945	63.205	10.033	QP
6		0.210	28.414	18.381	-24.791	53.205	10.033	AV
7		0.226	43.004	33.029	-19.592	62.595	9.975	QP
8		0.226	27.450	17.475	-25.146	52.595	9.975	AV
9		4.062	31.655	21.804	-24.345	56.000	9.851	QP
10		4.062	24.192	14.341	-21.808	46.000	9.851	AV
11		8.362	31.624	21.621	-28.376	60.000	10.004	QP
12		8.362	24.897	14.893	-25.103	50.000	10.004	AV

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBµV) = Reading Level (dBµV) + Factor (dB).

Note 3: Factor (dB) = Cable Loss (dB) + LISN Factor (dB).

Appendix B - Test Setup Photograph

Refer to “2311RSU069-UT” file.

Appendix C - EUT Photograph

Refer to “2311RSU069-UE” file.

The End