RF MEASUREMENT REPORT

FCC ID:	SFK-WF402B
Applicant:	CIG Shanghai Co., Ltd.
Product:	UWB Location Beacon DC Power
Model No.:	WF-402B-UWB
Brand Name:	AirFinder
FCC Classification:	Digital Transmission System (DTS)
FCC Rule Part(s):	Part 15 Subpart C (Section 15.247)
Result:	Complies
Received Date:	2023-11-20
Test Date:	2023-11-29 ~ 2023-12-05

Reviewed By: Kevin Guo

Approved By: Robin Wu

ACCREDITED
TESTING LABORATORY
CERTIFICATE #3628.01

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 and was tested in accordance with the measurement procedures specified in ANSI C63.10-2013. Test results reported herein relate only to the 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
2311RSU053-U2	V01	Initial Report	2024-01-08	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 9
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. 6dB 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 Settitng 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 6dB Bandwidth Test Result 28
A.3 Output Power Test Result 30
A.4 Power Spectral Density Test Result 31
A.5 Conducted Band Edge and Out-of-Band Emissions Test Result 33
A.6 Radiated Spurious Emission Test Result 37
A.7 Radiated Restricted Band Edge Test Result 41
A.8 AC Conducted Emissions Test Result 57

Appendix B - Test Setup Photograph 59

Appendix C - EUT Photograph 60

1. General Information

1.1. Applicant

CIG Shanghai Co., Ltd.

5F, Building 8, NO.2388 Chenhang Road, Minhang District, Shanghai, 201112, P.R.C

1.2. Manufacturer

CIG Shanghai Co., Ltd.

5F, Building 8, NO.2388 Chenhang Road, Minhang District, Shanghai, 201112, P.R.C

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	UWB Location Beacon DC Power
Model No.	WF-402B-UWB
Serial No.	90258686
Bluetooth Specification	V5.0 (Single mode, BLE)
UWB Specification	6489.6MHz
Antenna Information	Refer to Section 1.5
Power Supply	DC 5V
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	SMT
Antenna Gain	2.62dBi

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	--	--	--	--

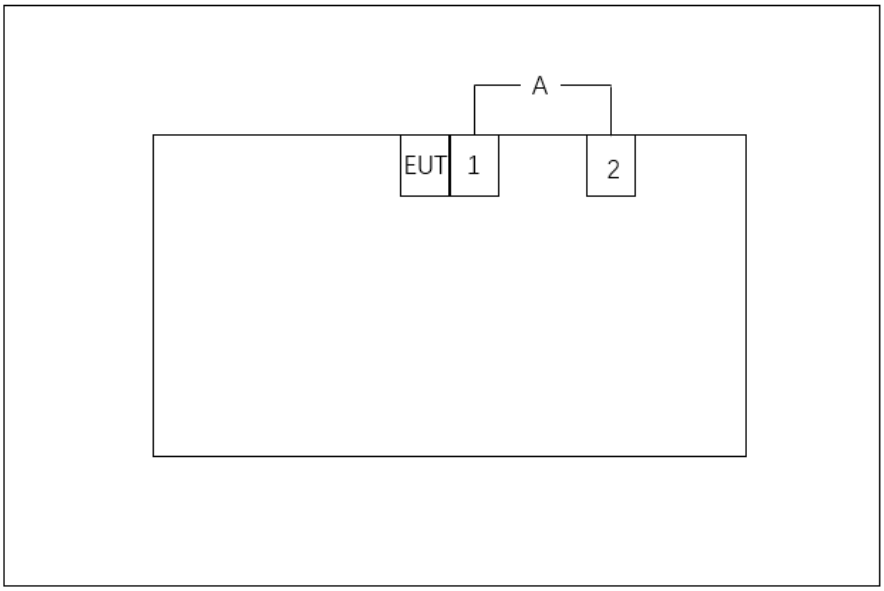
2. Test Configuration

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			
			
Cable Type		Cable Description	Length
A	Power Cable	Non shielded	1.5m
Product		Manufacturer	Model No.
1	XLE Location Beacon AC Power	CIG	WF-402CB-XLE
2	AC/DC Adapter	AtechOEM	ADS065T-W 240200

2.3. Test Software

The test utility software used during testing was “nRF_DTM.exe”.

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
Horn Antenna	Schwarzbeck	BBHA 9120D	MRTSUE06023	1 year	2024-08-09	WZ-AC1
Preamplifier	Agilent	83017A	MRTSUE06076	1 year	2024-05-07	WZ-AC1
TRILOG Antenna	Schwarzbeck	VULB 9168	MRTSUE06172	1 year	2024-06-09	WZ-AC1
Anechoic Chamber	TDK	WZ-AC1	MRTSUE06212	1 year	2024-04-20	WZ-AC1
Thermohygrometer	testo	608-H1	MRTSUE06403	1 year	2024-05-31	WZ-AC1
Signal Analyzer	Keysight	N9010B	MRTSUE06607	1 year	2024-10-23	WZ-AC1
Thermohygrometer	testo	608-H1	MRTSUE11039	1 year	2024-10-25	WZ-AC1
Horn Antenna	Schwarzbeck	BBHA 9170	MRTSUE06597	1 year	2024-11-04	WZ-AC1
Preamplifier	EMCI	EMC184045SE	MRTSUE06640	1 year	2024-01-12	WZ-AC1
Loop Antenna	Schwarzbeck	FMZB 1519	MRTSUE06025	1 year	2024-09-17	WZ-AC1
USB Power Sensor	Keysight	U2021XA	MRTSUE06446	1 year	2024-05-23	WZ-SR5
Signal Generator	Agilent	E4438C	MRTSUE06081	1 year	2024-02-29	WZ-SR5
Bluetooth Test Set	Anritsu	MT8852B	MRTSUE06389	1 year	2024-05-23	WZ-SR5
Thermohygrometer	testo	608-H1	MRTSUE06402	1 year	2024-05-31	WZ-SR5
Shielding Room	HUAMING	WZ-SR5	MRTSUE06442	N/A	N/A	WZ-SR5
Signal Analyzer	Keysight	N9010B	MRTSUE06457	1 year	2024-05-23	WZ-SR5
Signal Analyzer	Keysight	N9010B	MRTSUE06558	1 year	2024-05-23	WZ-SR5
Attenuator	MVE	MVE2213	MRTSUE11086	1 year	2024-06-08	WZ-SR5

Software	Version	Function
EMI Software	V3.0.0	EMI Test Software
BenchVue Power Meter	2018.1	Power
Controller_MF 7802	2.03C	RE Antenna & Turntable

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.

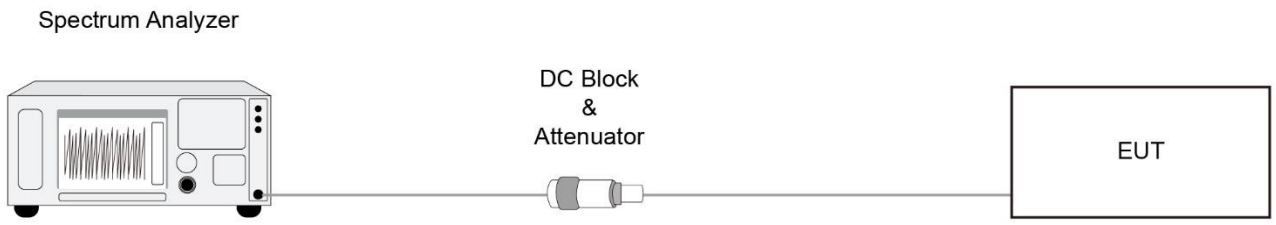
6.2.2. Test Procedure

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

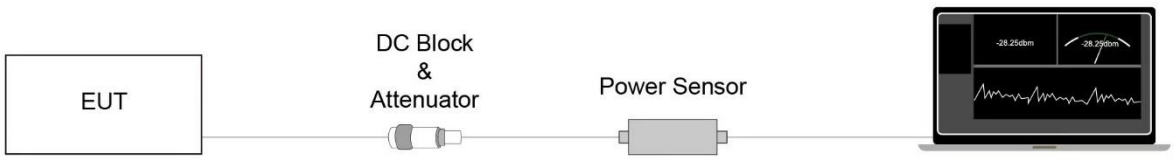
Method PKPM1 (Peak Power Measurement of Signals with DTS BW ≤ 50MHz)

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.

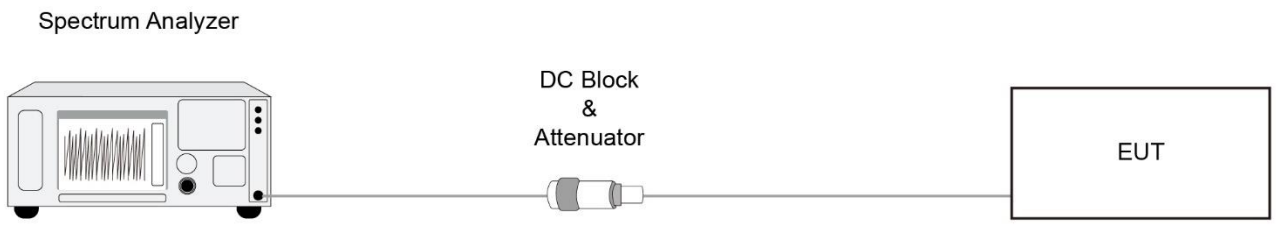
6.4.2. Test Procedure

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

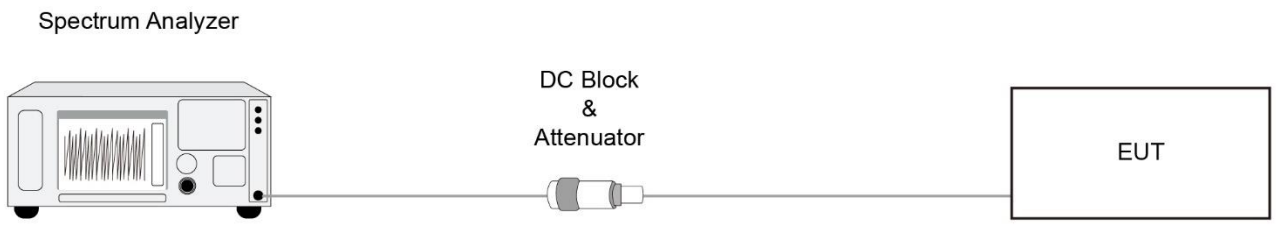
Reference level measurement

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 [μV/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)

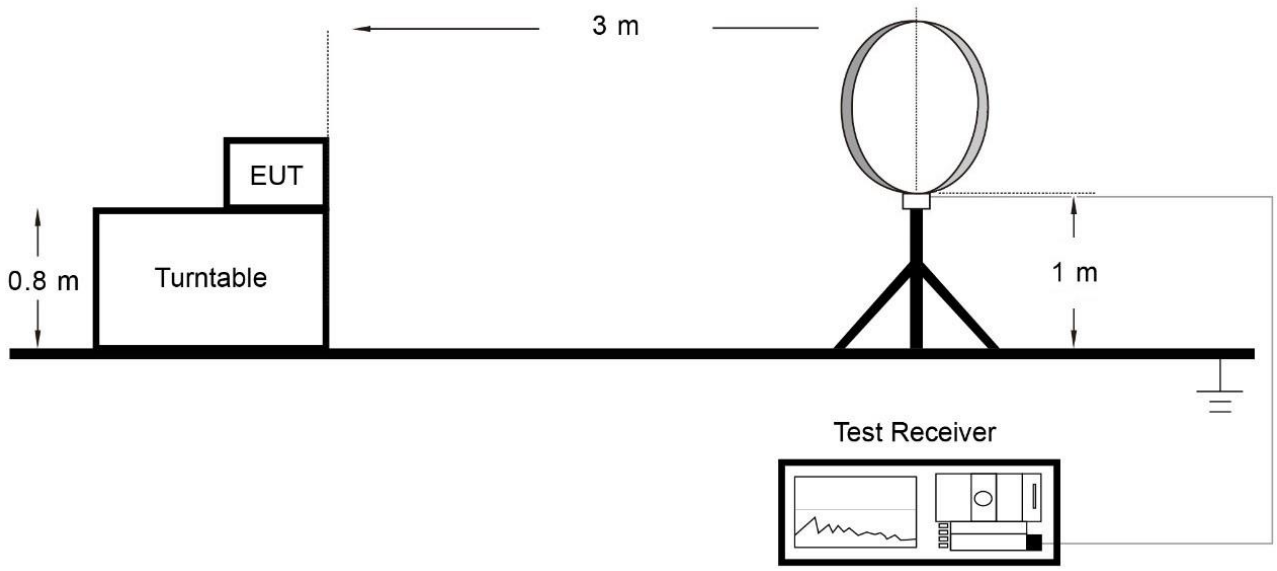
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW; If the EUT is configured to transmit with duty cycle ≥ 98%, set VBW = 10 Hz.

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

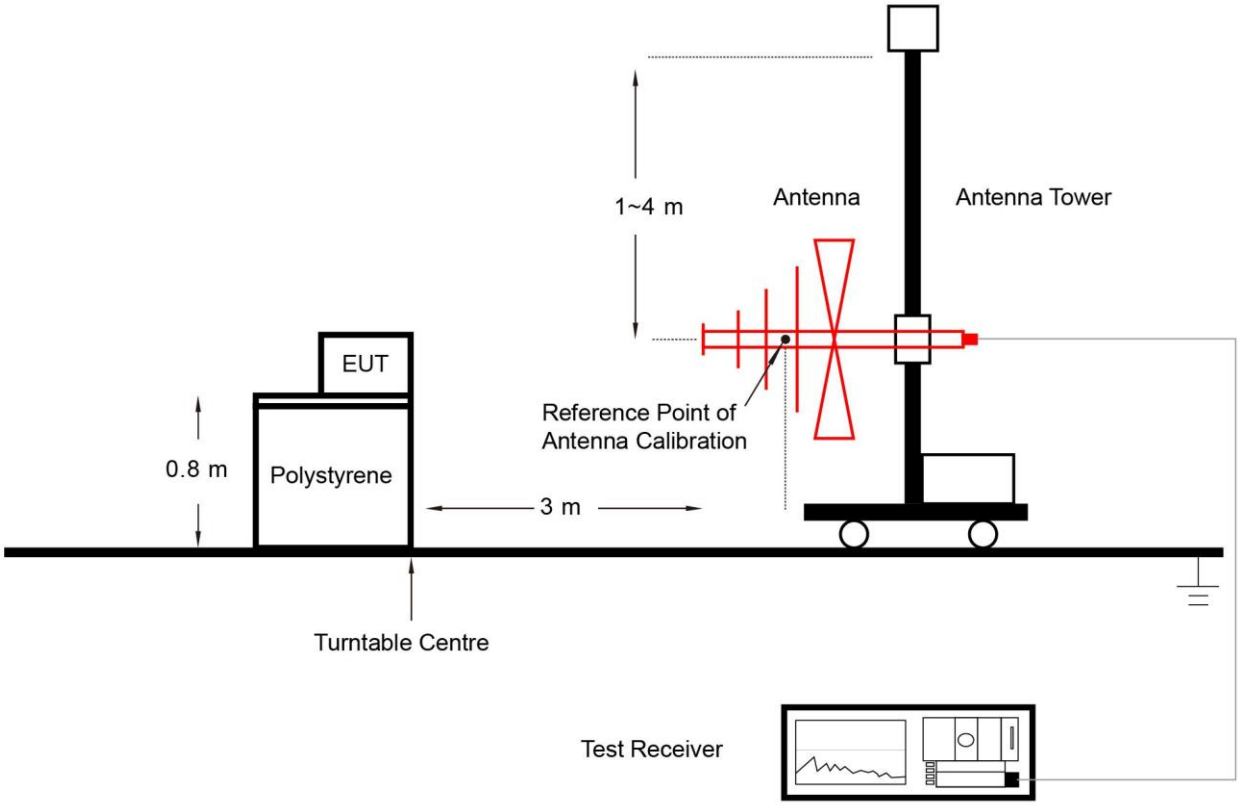
4. Detector = Peak
5. Sweep time = auto
6. Trace mode = max hold
7. Trace was allowed to stabilize

6.6.4. Test Setup

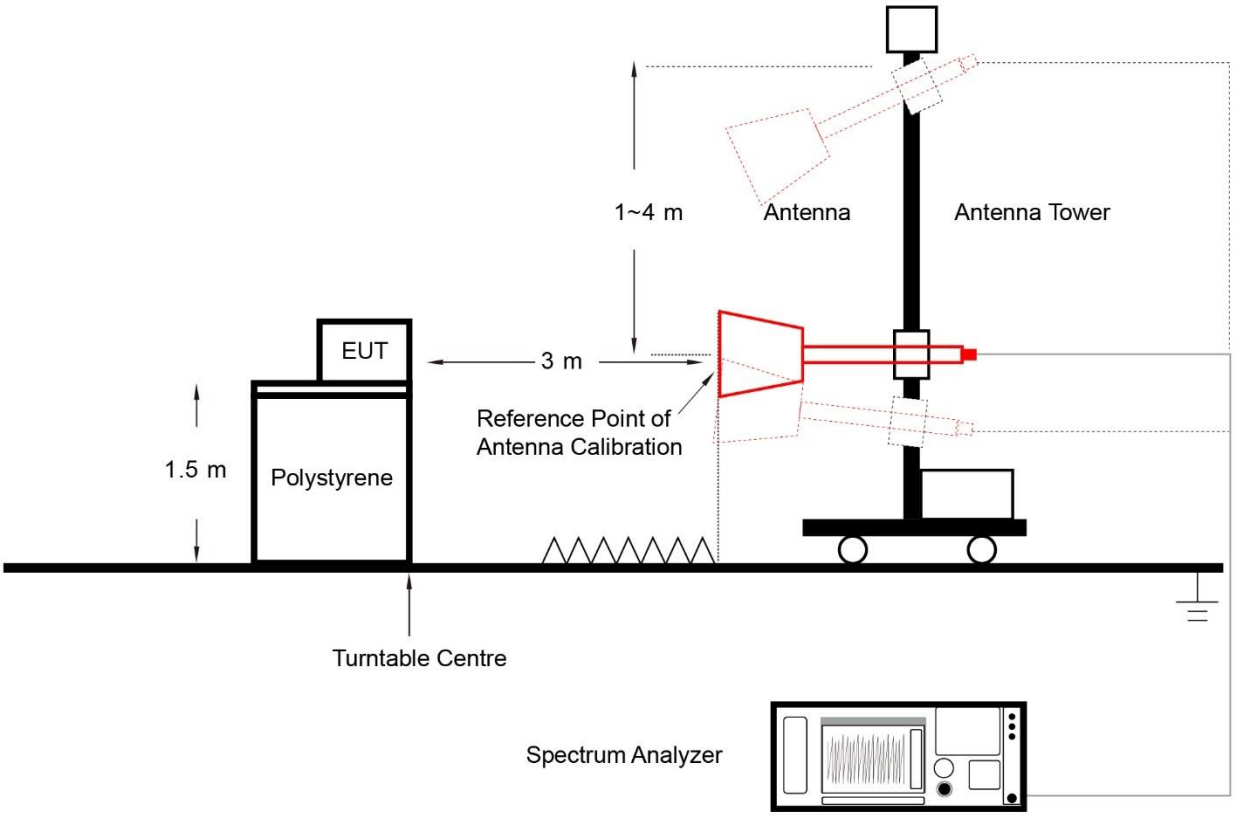
Below 30MHz Test Setup:



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 [μV/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

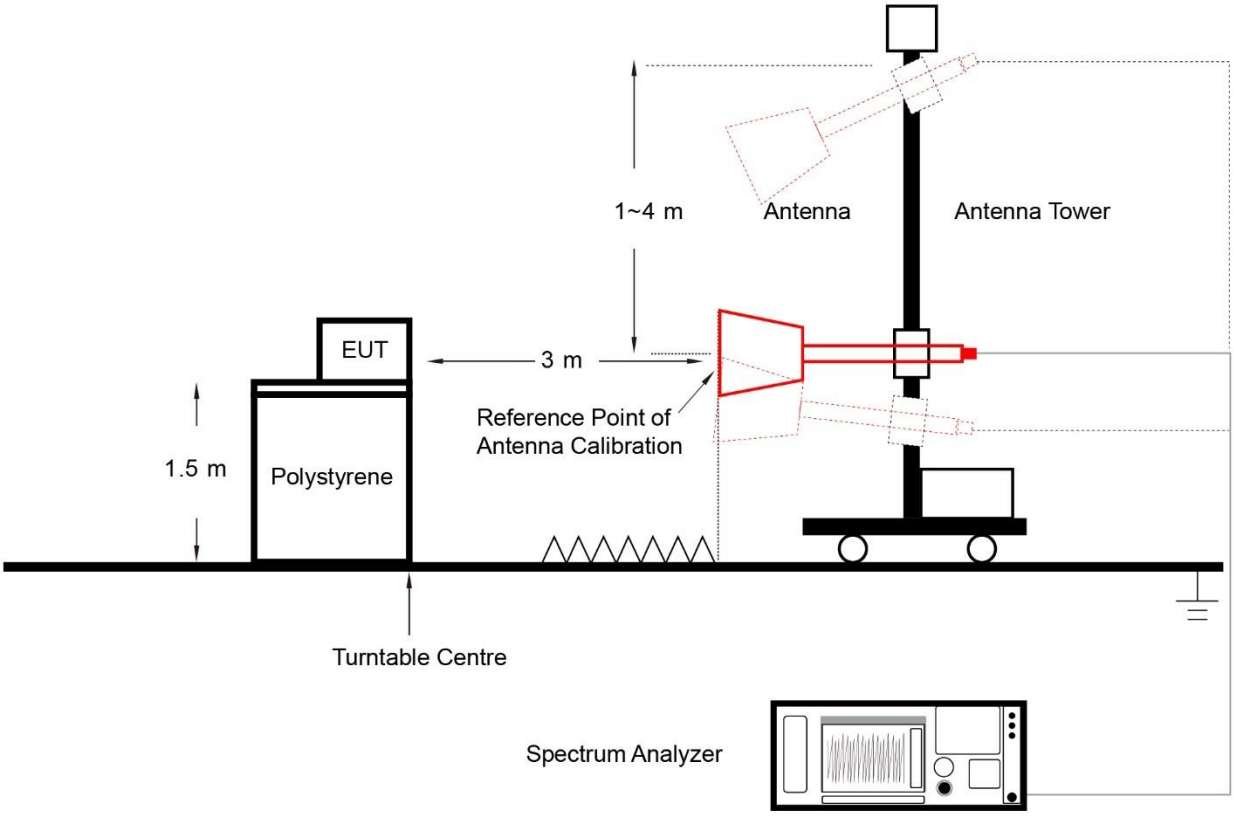
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

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

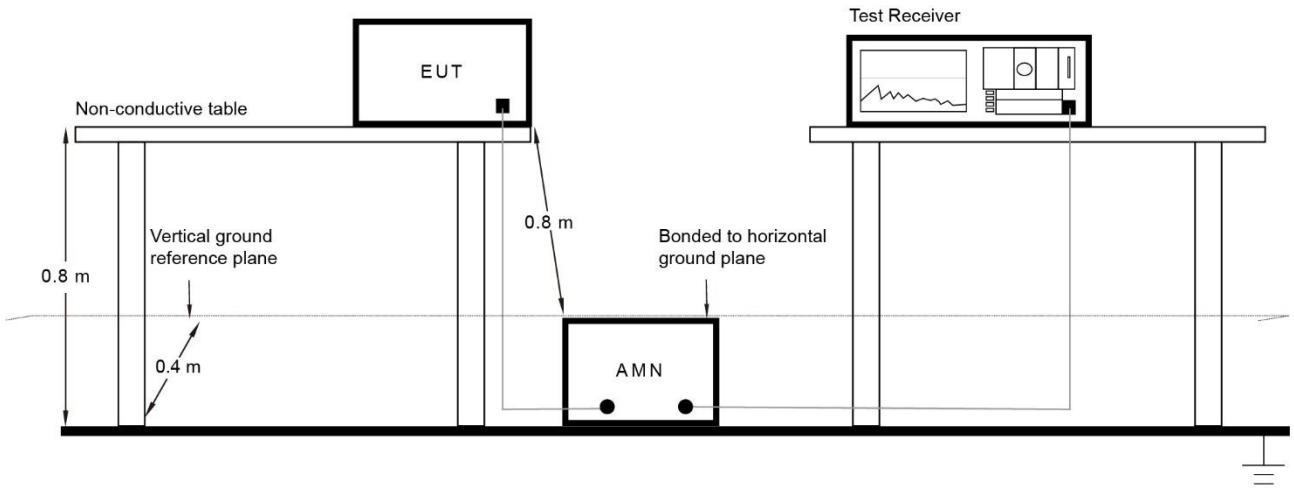
Refer to Appendix A.7.

6.8. AC Conducted Emissions Measurement

6.8.1. Test Limit

FCC Part 15 Subpart C Paragraph 15.207 Limits		
Frequency (MHz)	QP (dBμV)	AV (dBμV)
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



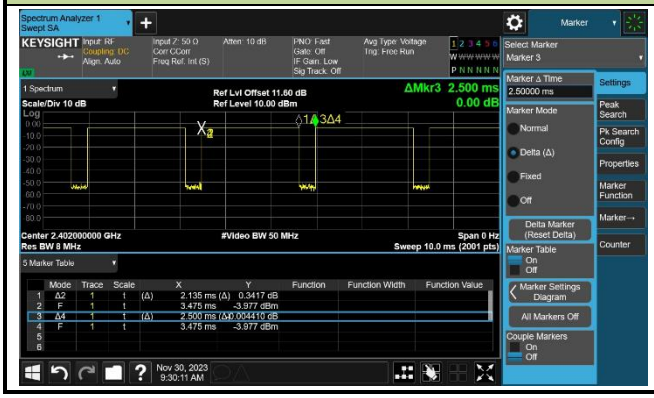
6.8.3. Test Result

Refer to Appendix A.8.

Appendix A - Test Result

A.1 Duty Cycle Test Result

Test Site	WZ-SR5	Test Engineer	Lynn Yang
Test Date	2023-11-30		

Test Mode	Duty Cycle
BLE-1Mbps	85.40%
BLE-2Mbps	57.60%
Duty Cycle (T = Transmission Duration)	
BLE-1Mbps (T = 2.135ms)	BLE-2Mbps (T = 1.080ms)
	

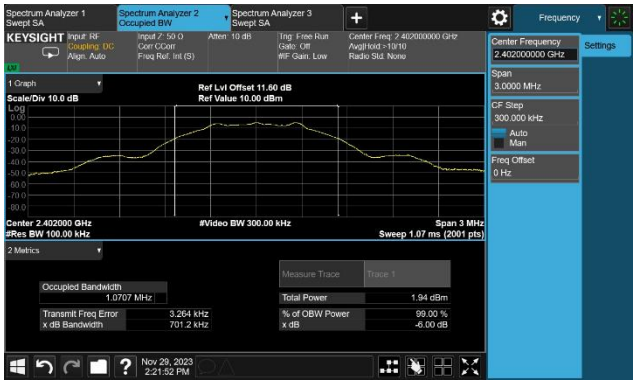
A.2 6dB Bandwidth Test Result

Test Site	WZ-SR5	Test Engineer	Lynn Yang
Test Date	2023-11-29		

Test Mode	Data Rate	Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)
BLE	1Mbps	00	2402	0.7012	≥ 0.5
BLE	1Mbps	19	2440	0.6983	≥ 0.5
BLE	1Mbps	39	2480	0.6962	≥ 0.5
BLE	2Mbps	00	2402	1.148	≥ 0.5
BLE	2Mbps	19	2440	1.158	≥ 0.5
BLE	2Mbps	39	2480	1.157	≥ 0.5

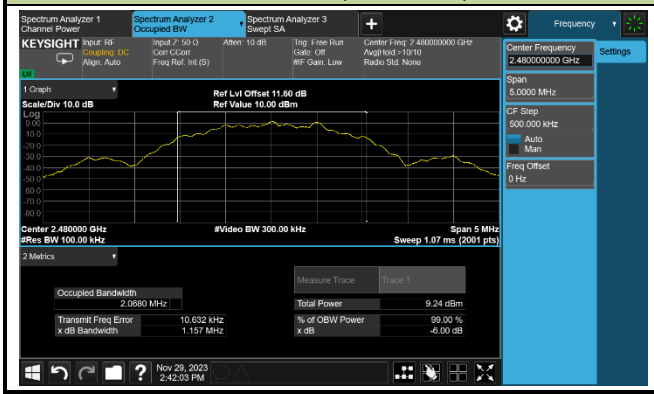
BLE-1Mbps 6dB Bandwidth

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	WZ-SR5	Test Engineer	Lynn Yang
Test Date	2023-11-29		

Test Result of Peak Output Power

Test Mode	Data Rate	Channel No.	Frequency (MHz)	Peak Power (dBm)	Limit (dBm)	Result
BLE	1Mbps	00	2402	-4.11	≤ 30.00	Pass
BLE	1Mbps	19	2440	-0.92	≤ 30.00	Pass
BLE	1Mbps	39	2480	1.98	≤ 30.00	Pass
BLE	2Mbps	00	2402	-4.06	≤ 30.00	Pass
BLE	2Mbps	19	2440	-0.83	≤ 30.00	Pass
BLE	2Mbps	39	2480	2.03	≤ 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	-4.87	≤ 30.00	Pass
BLE	1Mbps	19	2440	-1.32	≤ 30.00	Pass
BLE	1Mbps	39	2480	1.73	≤ 30.00	Pass
BLE	2Mbps	00	2402	-4.82	≤ 30.00	Pass
BLE	2Mbps	19	2440	-1.28	≤ 30.00	Pass
BLE	2Mbps	39	2480	1.77	≤ 30.00	Pass

A.4 Power Spectral Density Test Result

Test Site	WZ-SR5	Test Engineer	Lynn Yang
Test Date	2023-11-29		

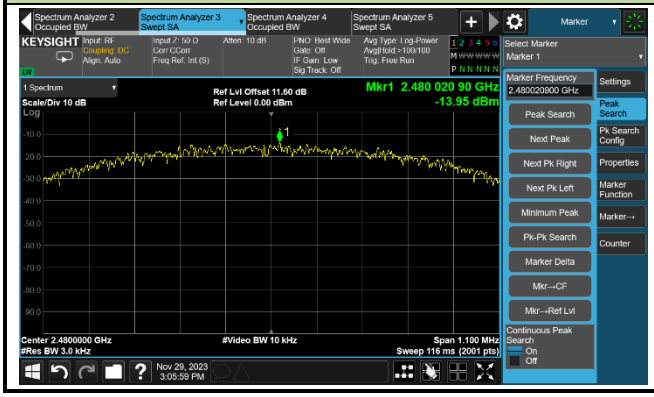
Test Mode	Data Rate	Channel No.	Frequency (MHz)	PSD Result (dBm / 3kHz)	Limit (dBm / 3kHz)	Result
BLE	1Mbps	00	2402	-20.51	≤ 8.00	Pass
BLE	1Mbps	19	2440	-16.88	≤ 8.00	Pass
BLE	1Mbps	39	2480	-13.95	≤ 8.00	Pass
BLE	2Mbps	00	2402	-22.43	≤ 8.00	Pass
BLE	2Mbps	19	2440	-18.88	≤ 8.00	Pass
BLE	2Mbps	39	2480	-15.77	≤ 8.00	Pass

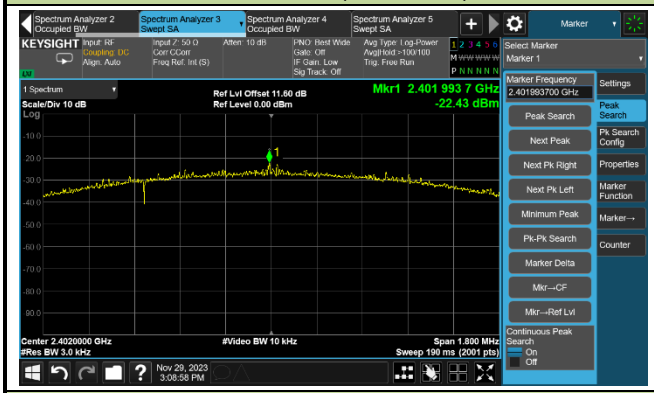
BLE-1Mbps PSD

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	WZ-SR5	Test Engineer	Lynn Yang
Test Date	2023-11-29		

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
BLE	2 Mbps	00	2402	20	Pass
BLE	2 Mbps	19	2440	20	Pass
BLE	2 Mbps	39	2480	20	Pass

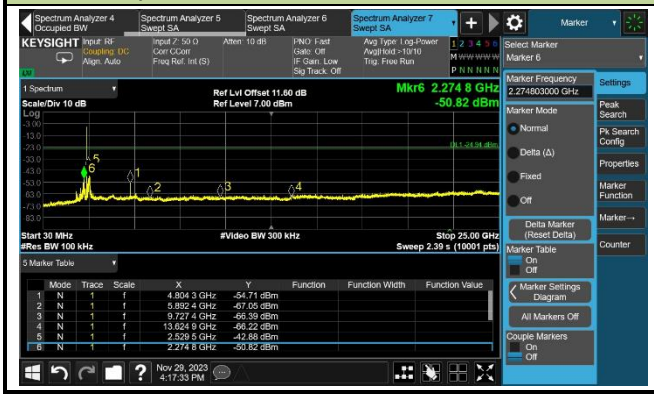
BLE-1Mbps Out-of-Band Emissions

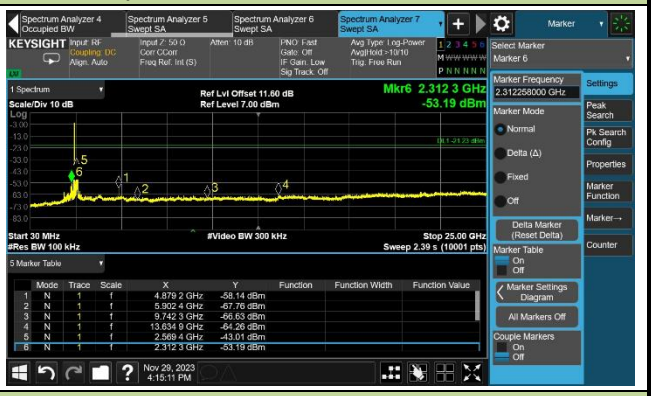
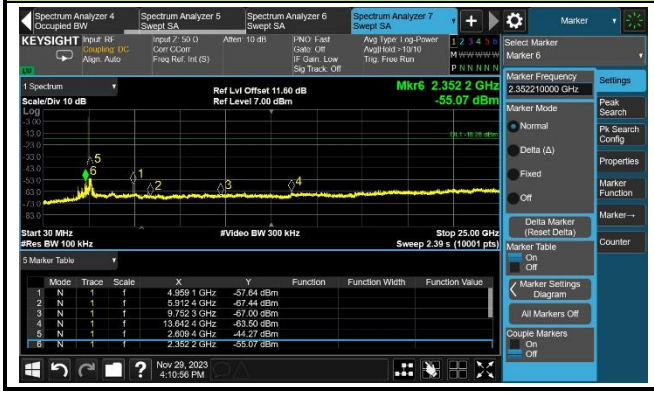
Channel 00 (2402MHz)

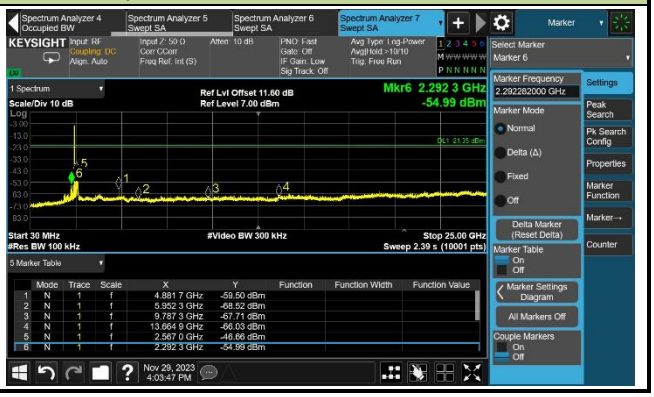
100kHz PSD Reference Level

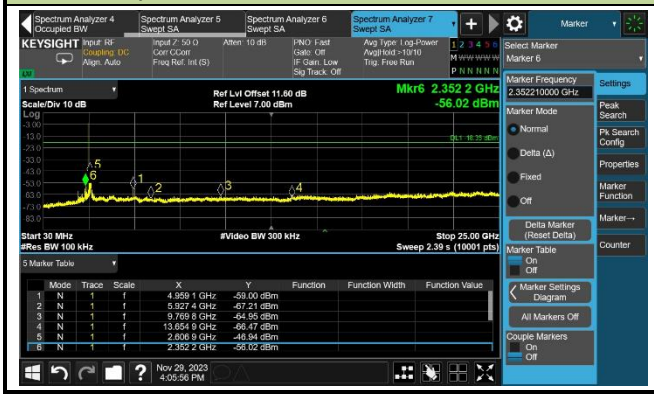
Low Band Edge

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	WZ-AC1	Test Engineer	Frank Xue
Test Date	2023-12-04	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	4723.0	37.9	3.0	40.9	74.0	-33.1	Peak	Horizontal
	7681.0	36.5	8.0	44.5	74.0	-29.5	Peak	Horizontal
	10970.5	35.9	14.0	49.9	74.0	-24.1	Peak	Horizontal
	3898.5	37.8	0.6	38.4	74.0	-35.6	Peak	Vertical
	5046.0	37.2	3.7	40.9	74.0	-33.1	Peak	Vertical
	7383.5	37.8	8.6	46.4	74.0	-27.6	Peak	Vertical
19	4884.5	37.9	3.2	41.1	74.0	-32.9	Peak	Horizontal
	9355.5	36.5	12.2	48.7	74.0	-25.3	Peak	Horizontal
	11523.0	35.9	13.6	49.5	74.0	-24.5	Peak	Horizontal
	4476.5	37.9	2.3	40.2	74.0	-28.0	Peak	Vertical
	5046.0	36.4	3.7	40.1	74.0	-33.9	Peak	Vertical
	7298.5	36.7	8.4	45.1	74.0	-28.9	Peak	Vertical
39	4799.5	37.4	3.1	40.5	74.0	-33.5	Peak	Horizontal
	8412.0	37.4	8.9	46.3	74.0	-27.7	Peak	Horizontal
	11089.5	35.6	13.9	49.5	74.0	-24.5	Peak	Horizontal
	5029.0	36.5	3.6	40.1	74.0	-33.9	Peak	Vertical
	7443.0	36.7	8.6	45.3	74.0	-28.7	Peak	Vertical
	10987.5	35.5	14.3	49.8	74.0	-24.2	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	WZ-AC1	Test Engineer	Frank Xue
Test Date	2023-12-04	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.		

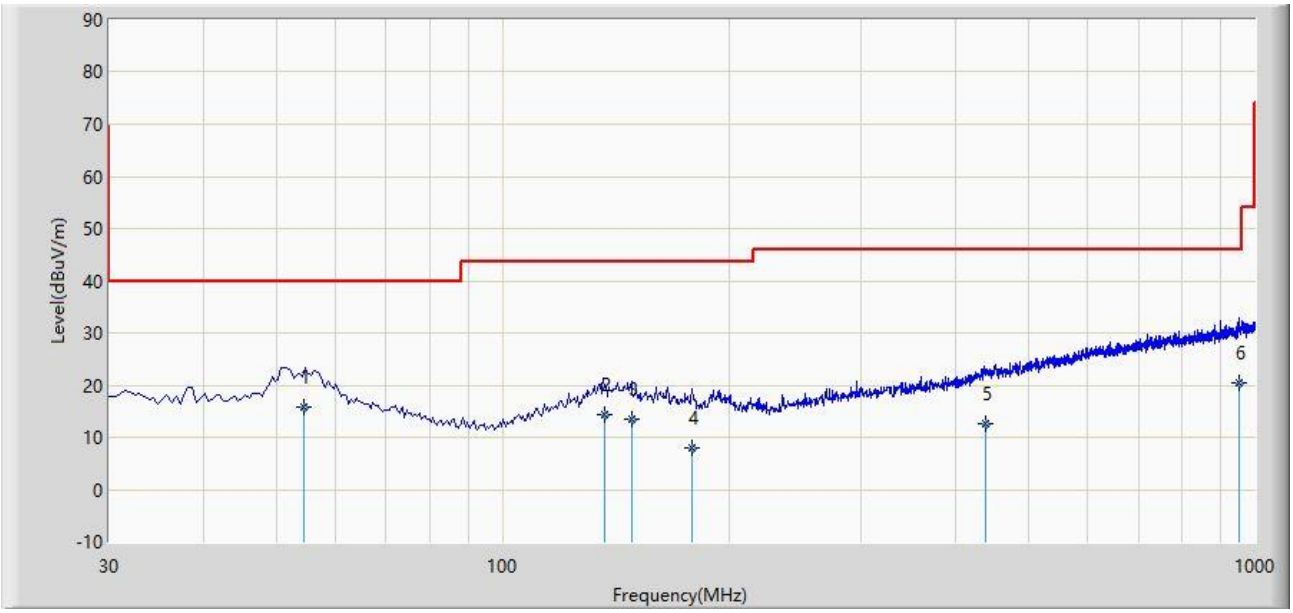
Test Channel	Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
00	3830.5	39.5	0.4	39.9	74.0	-34.1	Peak	Horizontal
	4995.0	37.7	3.7	41.4	74.0	-32.6	Peak	Horizontal
	7281.5	37.0	8.4	45.4	74.0	-28.6	Peak	Horizontal
	4034.5	37.4	1.1	38.5	74.0	-35.5	Peak	Vertical
	5097.0	37.4	3.7	41.1	74.0	-32.9	Peak	Vertical
	7426.0	36.7	8.5	45.2	74.0	-28.8	Peak	Vertical
19	3711.5	39.1	0.1	39.2	74.0	-34.8	Peak	Horizontal
	4799.5	37.3	3.1	40.4	74.0	-33.6	Peak	Horizontal
	11497.5	36.3	13.7	50.0	74.0	-24.0	Peak	Horizontal
	3873.0	37.6	0.7	38.3	74.0	-35.7	Peak	Vertical
	5029.0	36.8	3.6	40.4	74.0	-33.6	Peak	Vertical
	11336.0	36.5	13.4	49.9	74.0	-24.1	Peak	Vertical
39	4808.0	38.8	3.0	41.8	74.0	-32.2	Peak	Horizontal
	7485.5	37.1	8.6	45.7	74.0	-28.3	Peak	Horizontal
	8480.0	37.3	9.2	46.5	74.0	-27.5	Peak	Horizontal
	4850.5	38.2	3.0	41.2	74.0	-32.8	Peak	Vertical
	7460.0	37.4	8.6	46.0	74.0	-28.0	Peak	Vertical
	8208.0	37.2	8.9	46.1	74.0	-27.9	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: WZ-AC1	Test Date: 2023-12-04
Limit: FCC_Part15.209_RSE(3m)	Engineer: Frank Xue
Probe: VULB 9168_25-2000MHz	Polarity: Horizontal
EUT: UWB Location Beacon DC Power	Power: DC 5V
Test Mode: Transmit by BLE 2Mbps at 2440MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	54.400	15.863	-2.600	-24.137	40.000	18.463	QP
2		136.800	14.357	-3.100	-29.143	43.500	17.458	QP
3		148.430	13.456	-4.600	-30.044	43.500	18.056	QP
4		178.330	7.982	-9.100	-35.518	43.500	17.083	QP
5		437.780	12.654	-9.500	-33.346	46.000	22.154	QP
6		951.000	20.498	-9.500	-25.502	46.000	29.998	QP

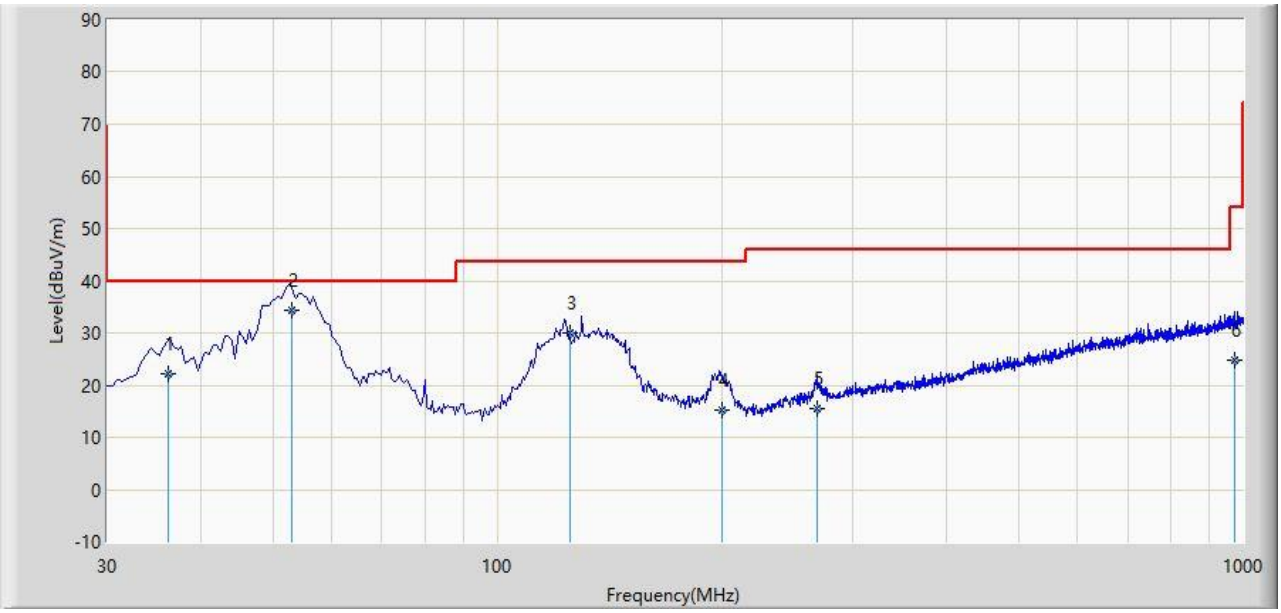
Note 1: " * ", means this data is the worst emission level.

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: The amplitude of radiated emissions (frequency range from 9kHz to 30MHz and 18GHz to 25GHz) are 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: WZ-AC1	Test Date: 2023-12-04
Limit: FCC_Part15.209_RSE(3m)	Engineer: Frank Xue
Probe: VULB 9168_25-2000MHz	Polarity: Vertical
EUT: UWB Location Beacon DC Power	Power: DC 5V
Test Mode: Transmit by BLE 2Mbps at 2440MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		36.250	22.216	4.600	-17.784	40.000	17.615	QP
2	*	52.940	34.342	15.800	-5.658	40.000	18.542	QP
3		125.000	29.938	13.600	-13.562	43.500	16.338	QP
4		200.000	15.283	0.300	-28.217	43.500	14.983	QP
5		268.000	15.451	-2.000	-30.549	46.000	17.452	QP
6		972.000	24.685	-5.600	-29.315	54.000	30.284	QP

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

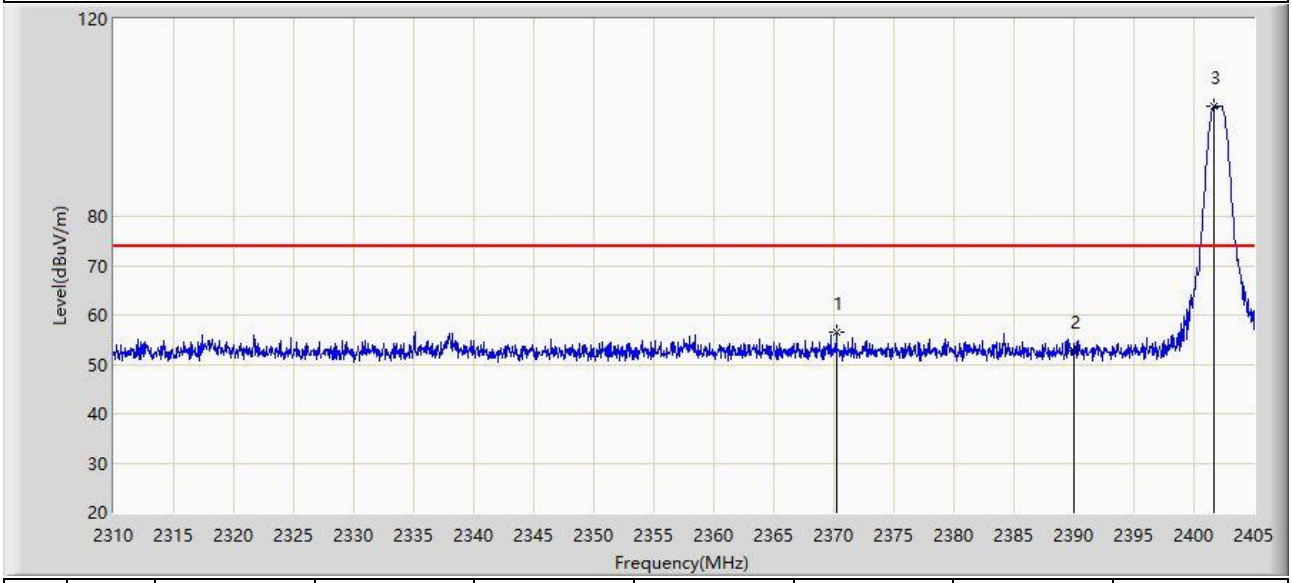
Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

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

Note 4: The amplitude of radiated emissions (frequency range from 9kHz to 30MHz and 18GHz to 25GHz) are 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: WZ-AC1	Test Date: 2023-12-04
Limit: FCC_2.4G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Horizontal
EUT: UWB Location Beacon DC Power	Power: DC 5V
Test Mode: Transmit by BLE 1Mbps at 2402MHz	



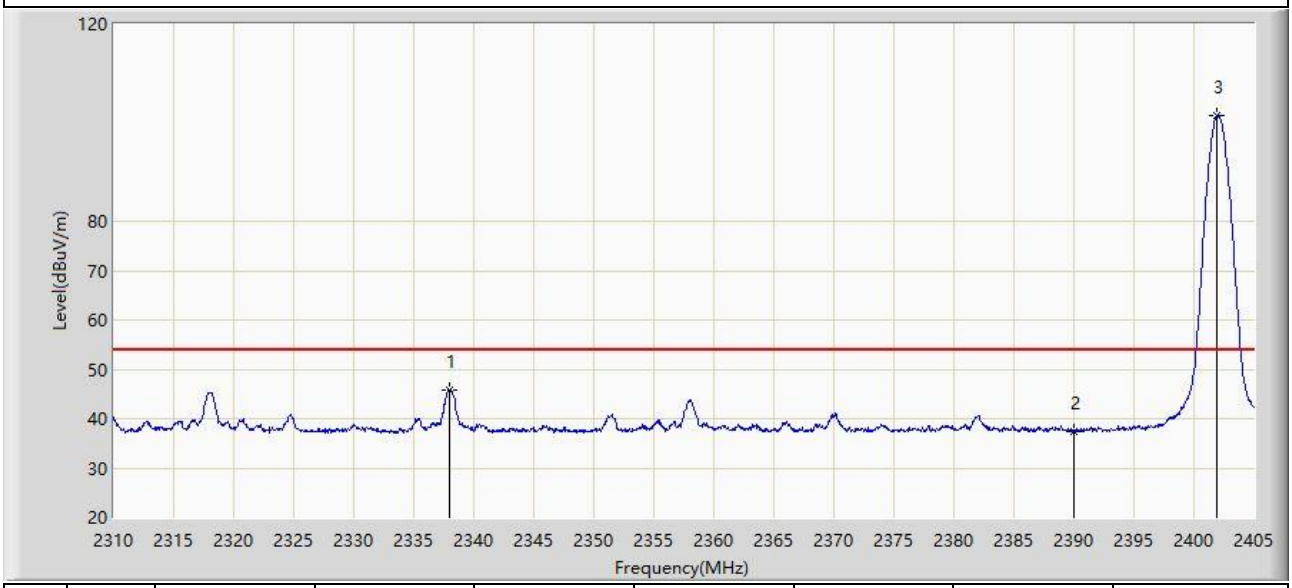
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	2370.230	56.635	25.326	-17.365	74.000	31.310	PK
2		2390.000	52.717	21.463	-21.283	74.000	31.254	PK
3		2401.627	102.191	70.933	N/A	N/A	31.258	PK

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: WZ-AC1	Test Date: 2023-12-04
Limit: FCC_2.4G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Horizontal
EUT: UWB Location Beacon DC Power	Power: DC 5V
Test Mode: Transmit by BLE 1Mbps at 2402MHz	



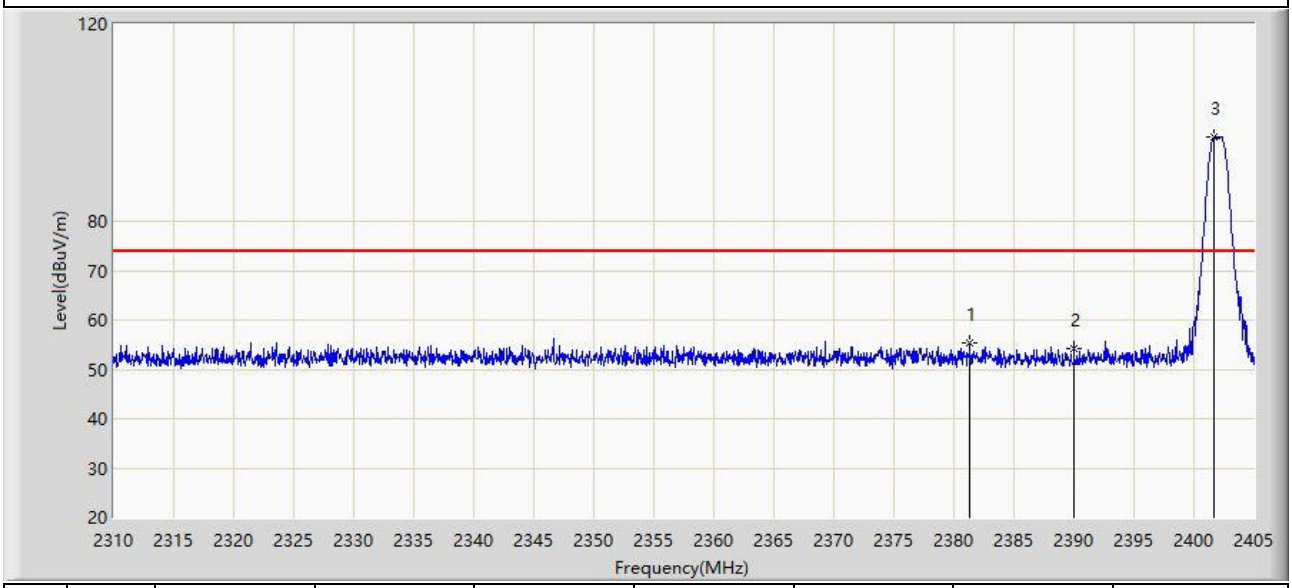
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	2337.978	45.934	14.528	-8.066	54.000	31.406	AV
2		2390.000	37.524	6.270	-16.476	54.000	31.254	AV
3		2401.960	101.534	70.276	N/A	N/A	31.258	AV

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: WZ-AC1	Test Date: 2023-12-04
Limit: FCC_2.4G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Vertical
EUT: UWB Location Beacon DC Power	Power: DC 5V
Test Mode: Transmit by BLE 1Mbps at 2402MHz	



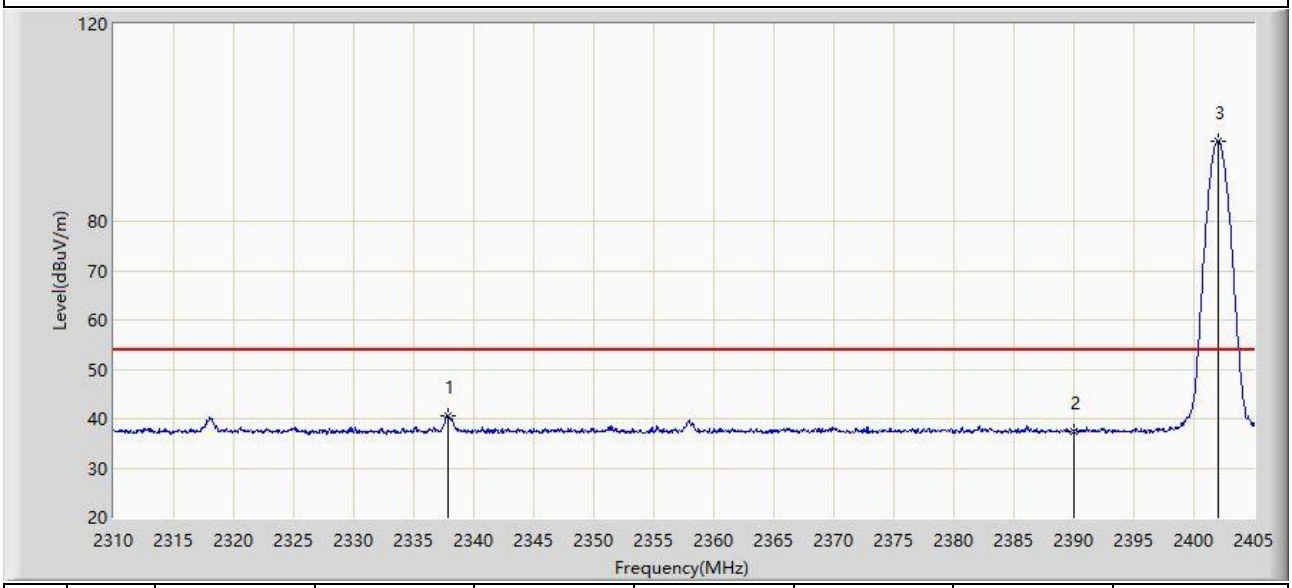
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	2381.298	55.236	23.966	-18.764	74.000	31.269	PK
2		2390.000	54.249	22.995	-19.751	74.000	31.254	PK
3		2401.675	97.091	65.833	N/A	N/A	31.258	PK

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: WZ-AC1	Test Date: 2023-12-04
Limit: FCC_2.4G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Vertical
EUT: UWB Location Beacon DC Power	Power: DC 5V
Test Mode: Transmit by BLE 1Mbps at 2402MHz	



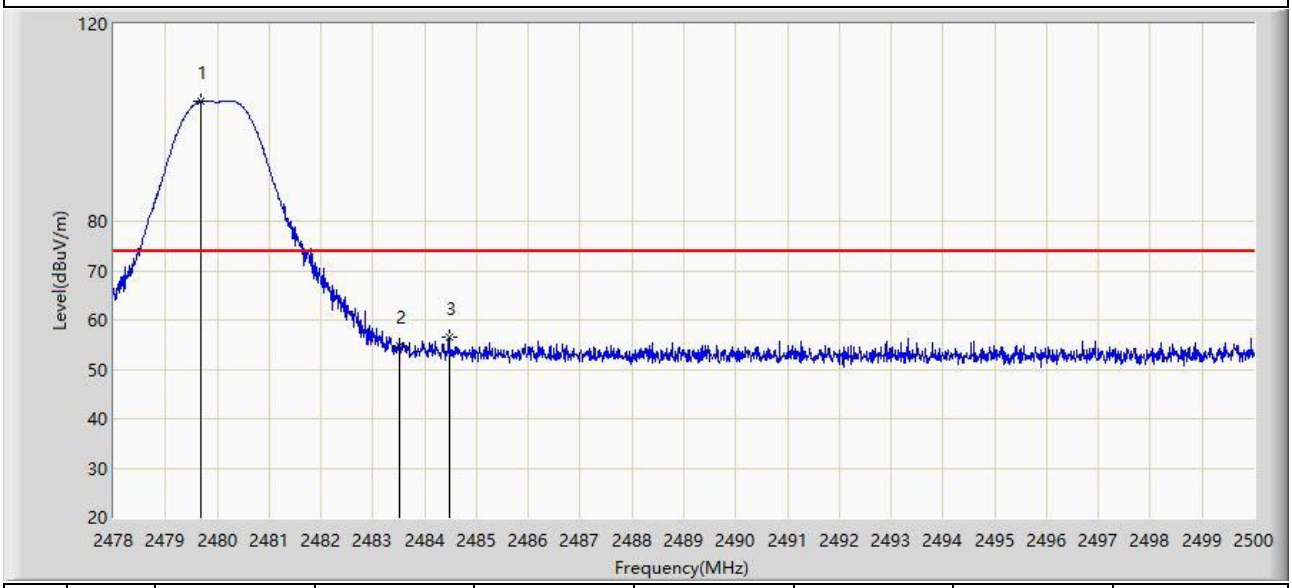
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	2337.835	40.562	9.156	-13.438	54.000	31.406	AV
2		2390.000	37.344	6.090	-16.656	54.000	31.254	AV
3		2402.008	96.245	64.987	N/A	N/A	31.258	AV

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: WZ-AC1	Test Date: 2023-12-04
Limit: FCC_2.4G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Horizontal
EUT: UWB Location Beacon DC Power	Power: DC 5V
Test Mode: Transmit by BLE 1Mbps at 2480MHz	



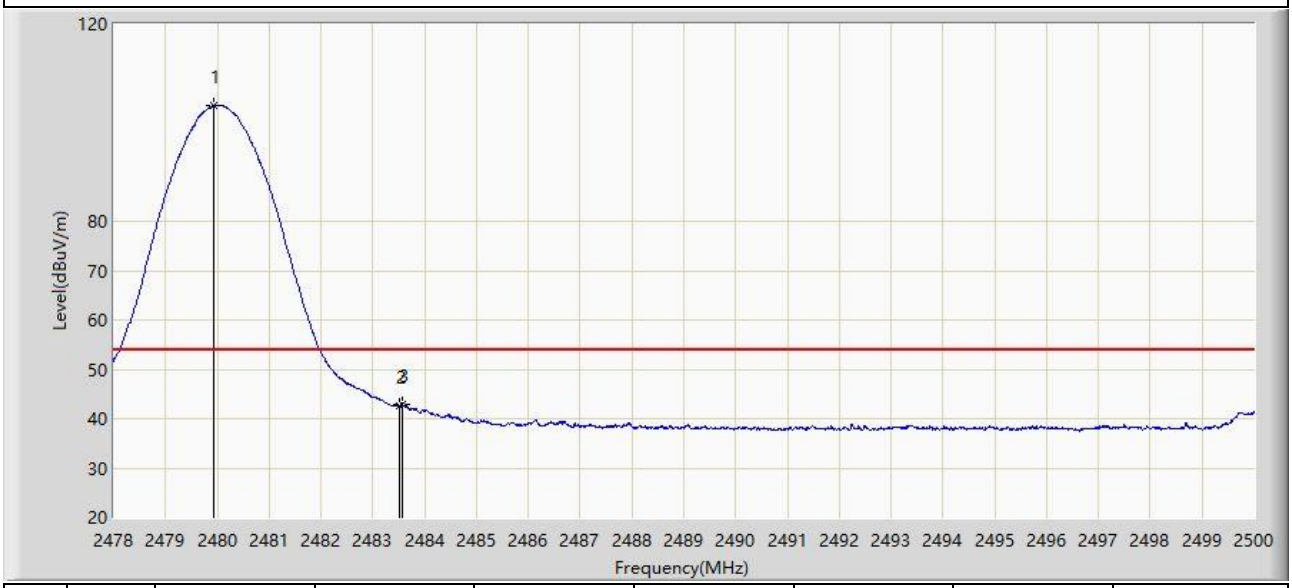
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		2479.672	104.319	73.096	N/A	N/A	31.223	PK
2		2483.500	54.708	23.482	-19.292	74.000	31.226	PK
3	*	2484.468	56.420	25.193	-17.580	74.000	31.227	PK

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: WZ-AC1	Test Date: 2023-12-04
Limit: FCC_2.4G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Horizontal
EUT: UWB Location Beacon DC Power	Power: DC 5V
Test Mode: Transmit by BLE 1Mbps at 2480MHz	



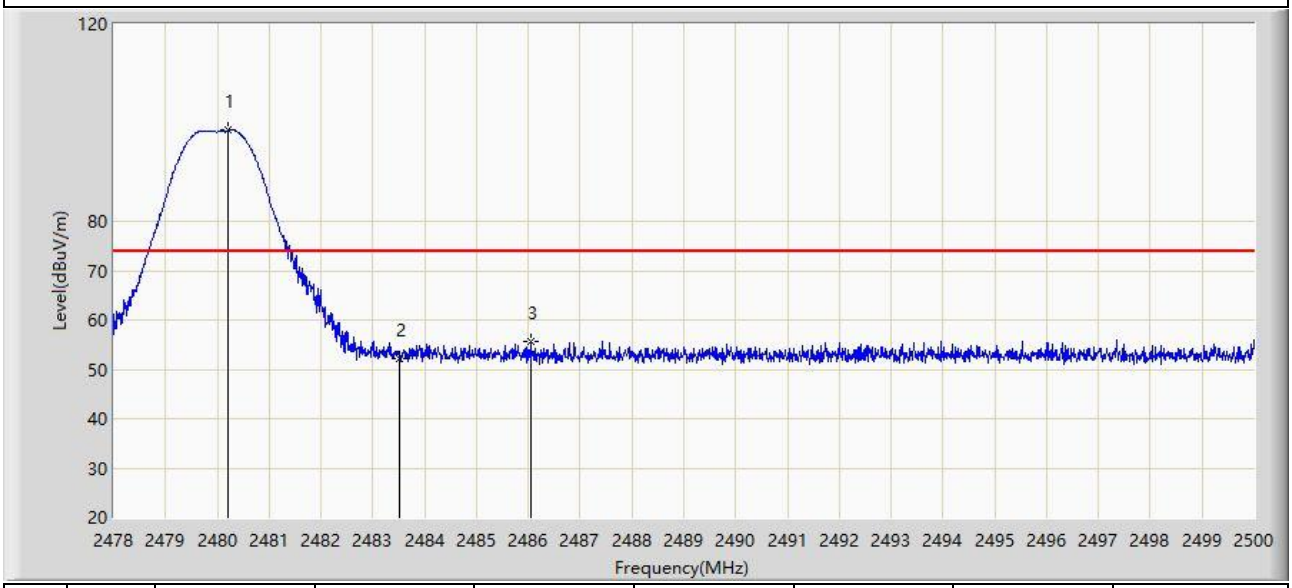
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		2479.925	103.413	72.189	N/A	N/A	31.224	AV
2		2483.500	42.514	11.288	-11.486	54.000	31.226	AV
3	*	2483.566	42.795	11.569	-11.205	54.000	31.226	AV

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: WZ-AC1	Test Date: 2023-12-04
Limit: FCC_2.4G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Vertical
EUT: UWB Location Beacon DC Power	Power: DC 5V
Test Mode: Transmit by BLE 1Mbps at 2480MHz	



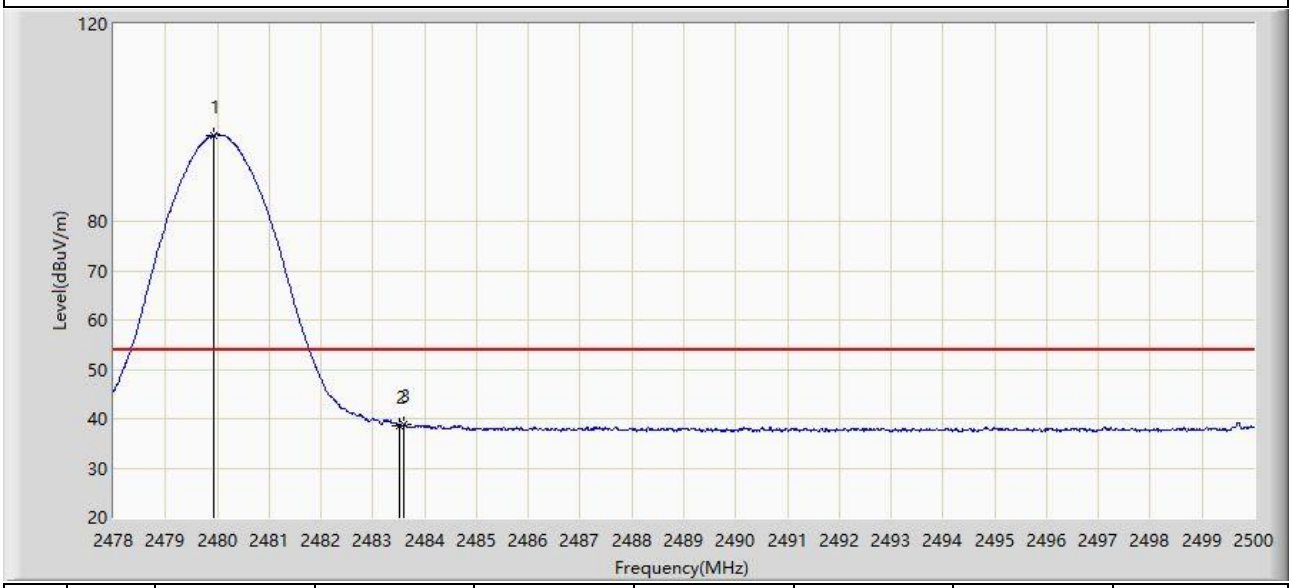
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		2480.200	98.419	67.195	N/A	N/A	31.224	PK
2		2483.500	52.273	21.047	-21.727	74.000	31.226	PK
3	*	2486.052	55.671	24.443	-18.329	74.000	31.228	PK

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: WZ-AC1	Test Date: 2023-12-04
Limit: FCC_2.4G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Vertical
EUT: UWB Location Beacon DC Power	Power: DC 5V
Test Mode: Transmit by BLE 1Mbps at 2480MHz	



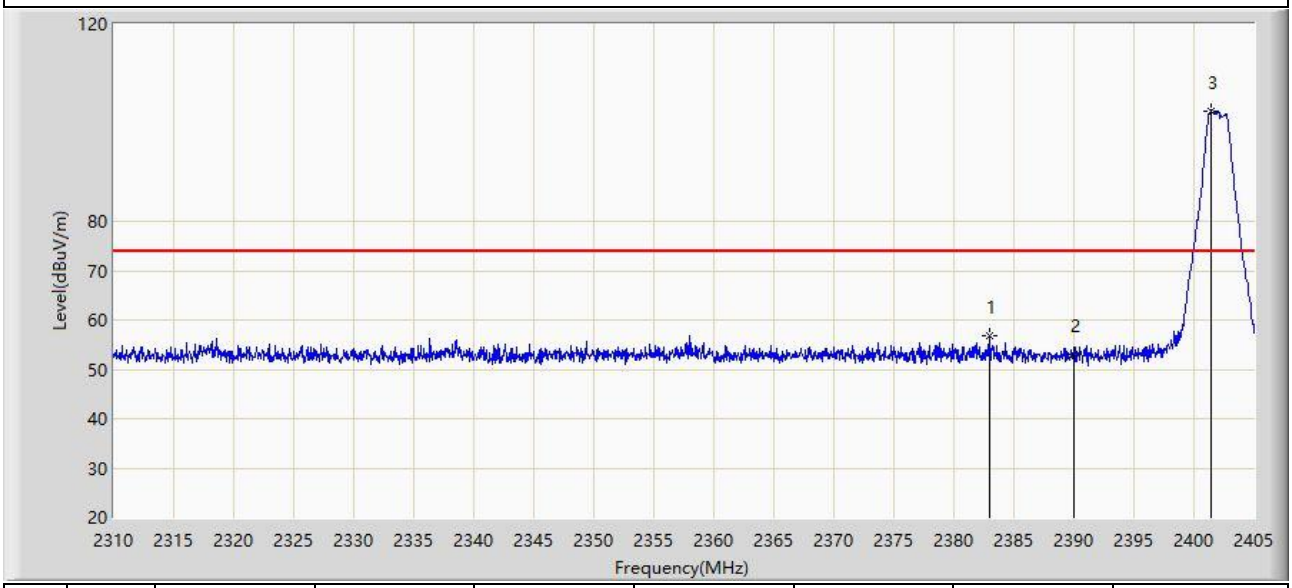
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		2479.936	97.502	66.278	N/A	N/A	31.224	AV
2		2483.500	38.561	7.335	-15.439	54.000	31.226	AV
3	*	2483.599	38.881	7.655	-15.119	54.000	31.226	AV

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: WZ-AC1	Test Date: 2023-12-04
Limit: FCC_2.4G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Horizontal
EUT: UWB Location Beacon DC Power	Power: DC 5V
Test Mode: Transmit by BLE 2Mbps at 2402MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	2383.008	56.698	25.435	-17.302	74.000	31.263	PK
2		2390.000	53.178	21.924	-20.822	74.000	31.254	PK
3		2401.437	102.454	71.196	N/A	N/A	31.258	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: WZ-AC1	Test Date: 2023-12-04
Limit: FCC_2.4G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Horizontal
EUT: UWB Location Beacon DC Power	Power: DC 5V
Test Mode: Transmit by BLE 2Mbps at 2402MHz	

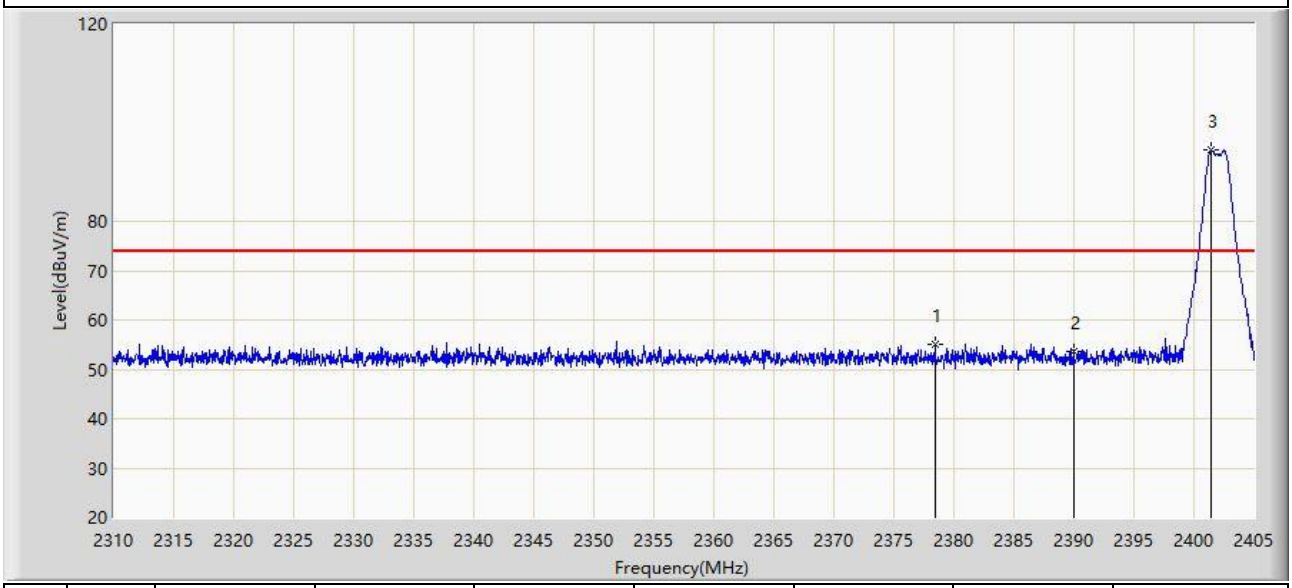
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	2337.835	44.244	12.838	-9.756	54.000	31.406	AV
2		2390.000	38.438	7.184	-15.562	54.000	31.254	AV
3		2401.960	99.680	68.422	N/A	N/A	31.258	AV

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: WZ-AC1	Test Date: 2023-12-04
Limit: FCC_2.4G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Vertical
EUT: UWB Location Beacon DC Power	Power: DC 5V
Test Mode: Transmit by BLE 2Mbps at 2402MHz	



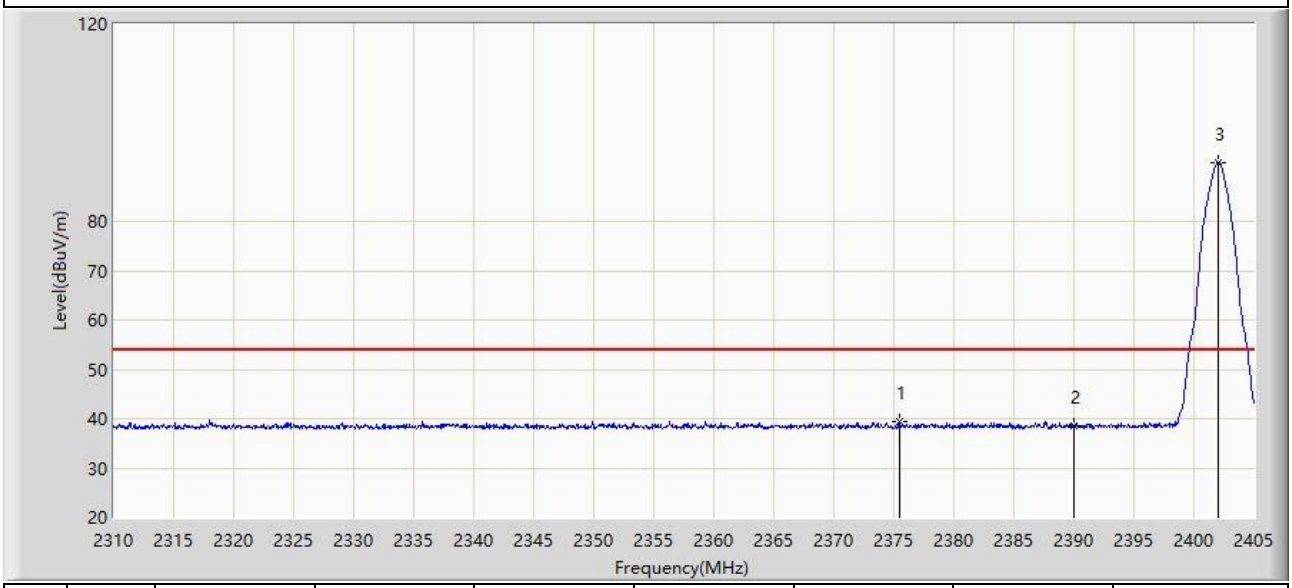
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	2378.448	54.996	23.715	-19.004	74.000	31.280	PK
2		2390.000	53.528	22.274	-20.472	74.000	31.254	PK
3		2401.485	94.381	63.123	N/A	N/A	31.258	PK

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: WZ-AC1	Test Date: 2023-12-04
Limit: FCC_2.4G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Vertical
EUT: UWB Location Beacon DC Power	Power: DC 5V
Test Mode: Transmit by BLE 2Mbps at 2402MHz	



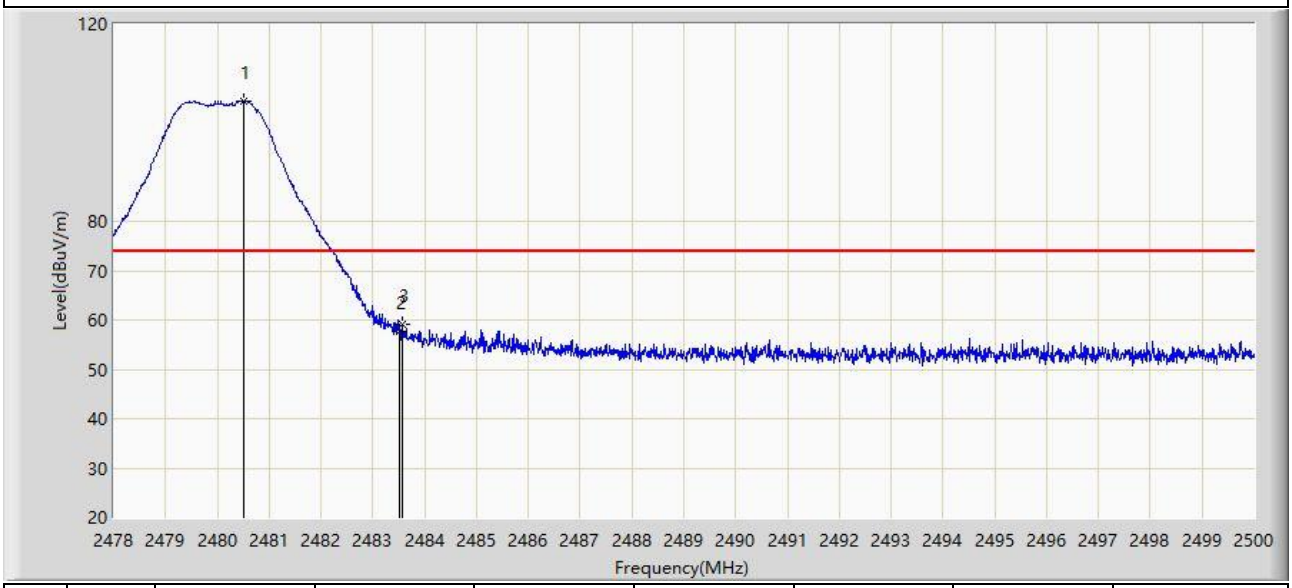
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	2375.455	39.529	8.237	-14.471	54.000	31.292	AV
2		2390.000	38.473	7.219	-15.527	54.000	31.254	AV
3		2402.008	91.990	60.732	N/A	N/A	31.258	AV

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: WZ-AC1	Test Date: 2023-12-04
Limit: FCC_2.4G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Horizontal
EUT: UWB Location Beacon DC Power	Power: DC 5V
Test Mode: Transmit by BLE 2Mbps at 2480MHz	



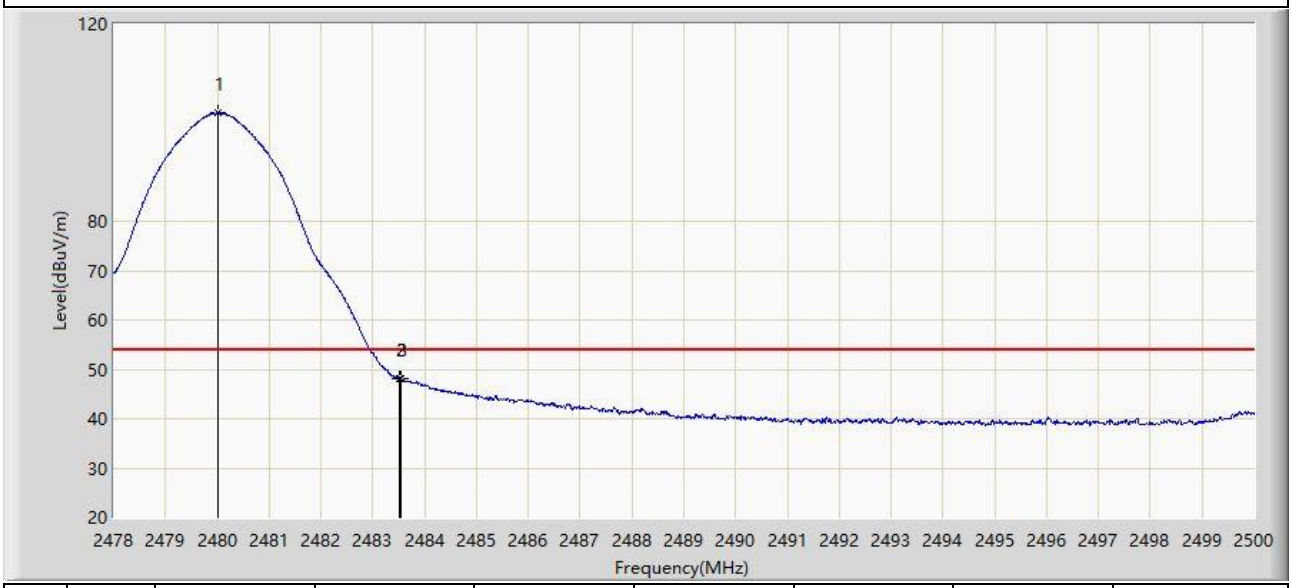
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		2480.519	104.373	73.149	N/A	N/A	31.224	PK
2		2483.500	57.764	26.538	-16.236	74.000	31.226	PK
3	*	2483.566	59.092	27.866	-14.908	74.000	31.226	PK

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: WZ-AC1	Test Date: 2023-12-04
Limit: FCC_2.4G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Horizontal
EUT: UWB Location Beacon DC Power	Power: DC 5V
Test Mode: Transmit by BLE 2Mbps at 2480MHz	



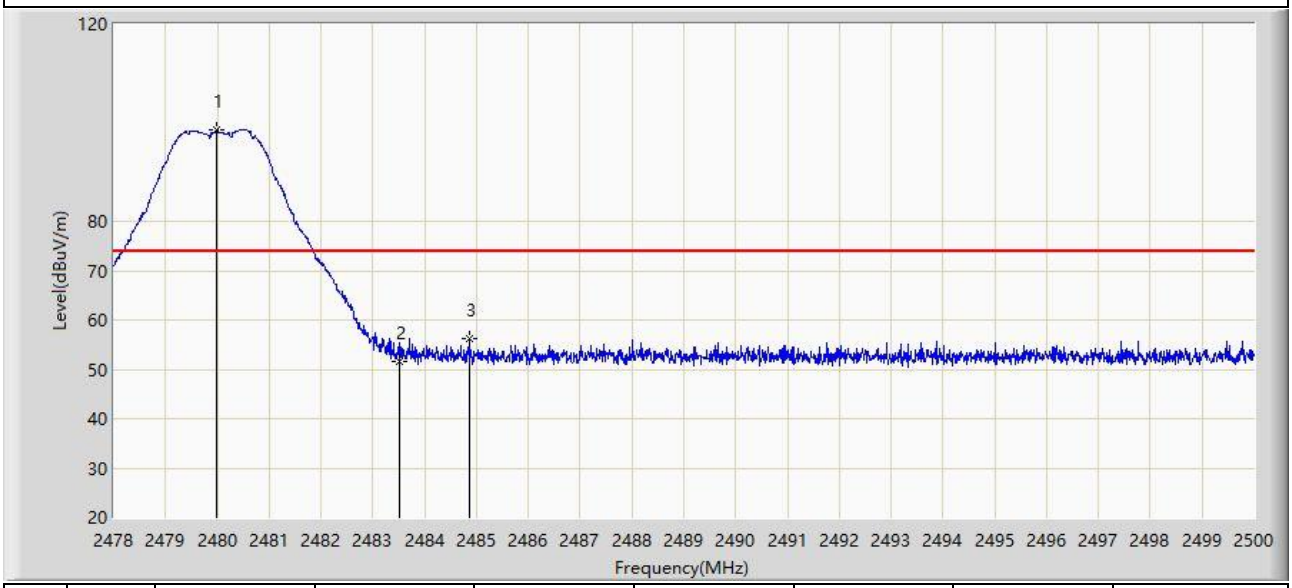
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		2480.002	101.904	70.680	N/A	N/A	31.224	AV
2		2483.500	48.163	16.937	-5.837	54.000	31.226	AV
3	*	2483.555	48.198	16.972	-5.802	54.000	31.226	AV

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: WZ-AC1	Test Date: 2023-12-04
Limit: FCC_2.4G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Vertical
EUT: UWB Location Beacon DC Power	Power: DC 5V
Test Mode: Transmit by BLE 2Mbps at 2480MHz	



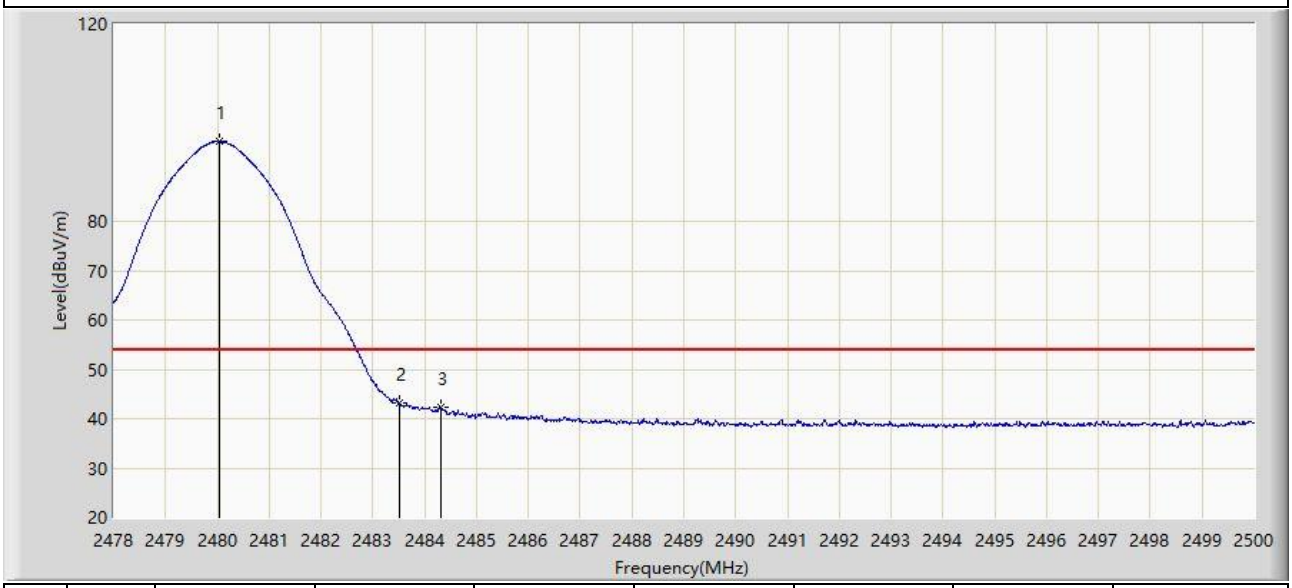
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		2479.980	98.475	67.251	N/A	N/A	31.224	PK
2		2483.500	51.738	20.512	-22.262	74.000	31.226	PK
3	*	2484.853	56.146	24.919	-17.854	74.000	31.227	PK

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: WZ-AC1	Test Date: 2023-12-04
Limit: FCC_2.4G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Vertical
EUT: UWB Location Beacon DC Power	Power: DC 5V
Test Mode: Transmit by BLE 2Mbps 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	96.163	64.939	N/A	N/A	31.224	AV
2	*	2483.500	43.298	12.072	-10.702	54.000	31.226	AV
3		2484.314	42.264	11.037	-11.736	54.000	31.227	AV

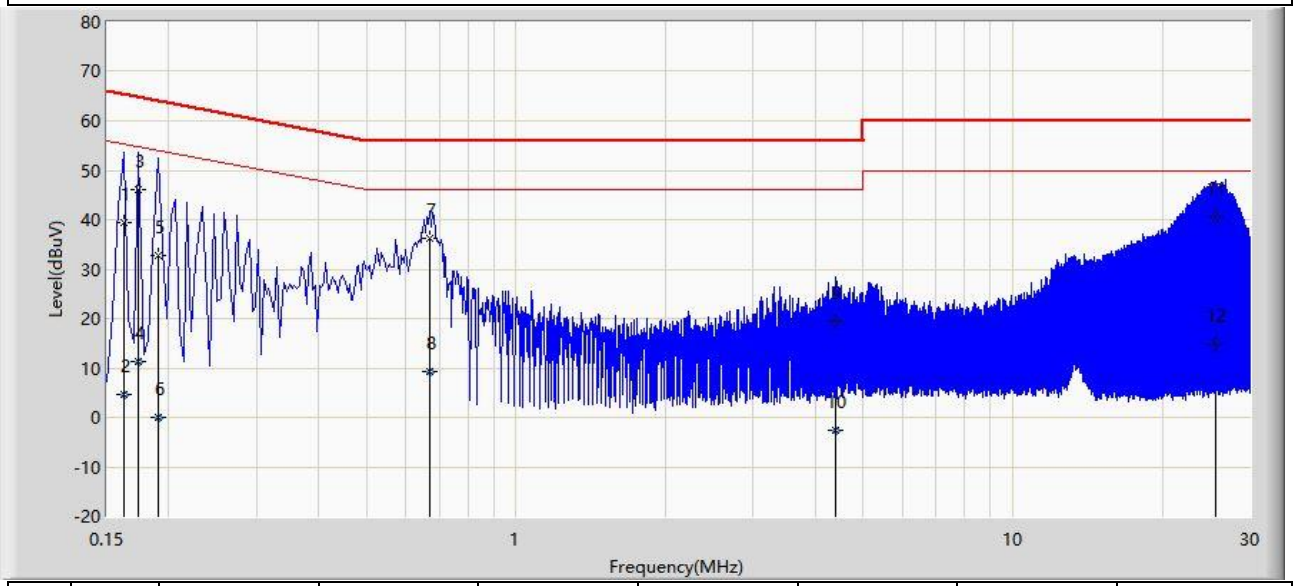
Note 1: " * ", means this data is the worst emission level.

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: WZ-SR2	Test Date: 2023-12-05
Limit: FCC_Part15.207_CE_AC Power	Engineer: Linda Wei
Probe: ENV216_101683_Filter Off_E	Polarity: Line
EUT: UWB Location Beacon DC Power	Power: AC 120V/60Hz
Test Mode: Transmit by BLE 2Mbps at 2440MHz	



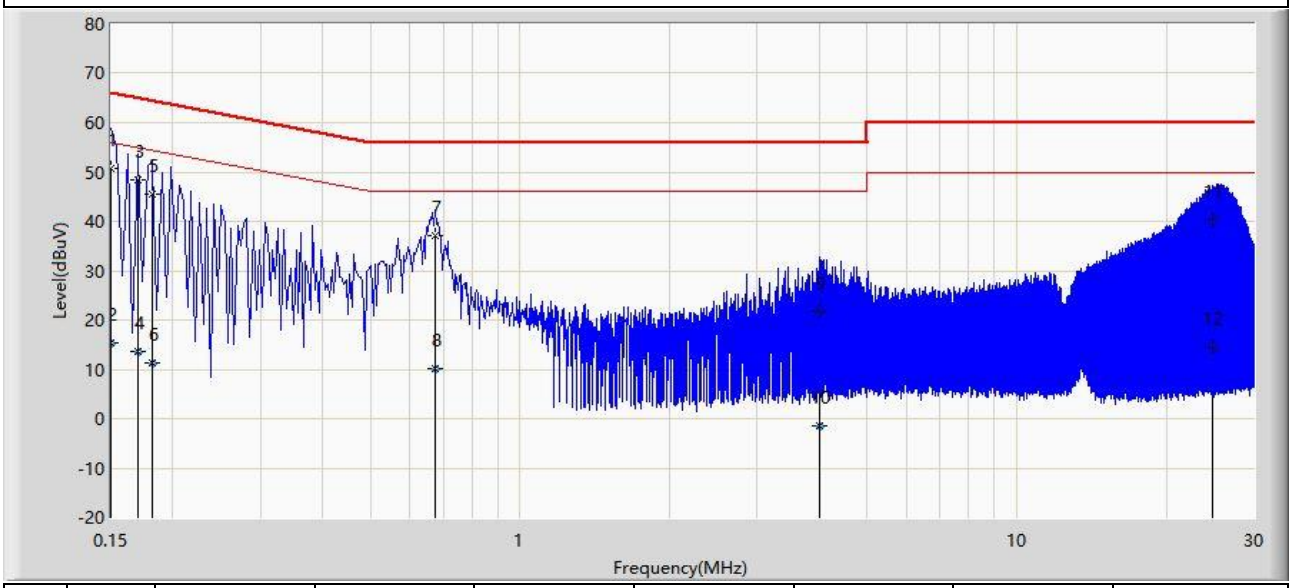
No	Mark	Frequency (MHz)	Measure Level (dBμV)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV)	Factor (dB)	Type
1		0.162	39.481	29.710	-25.879	65.361	9.772	QP
2		0.162	4.764	-5.008	-50.597	55.361	9.772	AV
3	*	0.174	45.995	36.219	-18.772	64.767	9.777	QP
4		0.174	11.197	1.421	-43.570	54.767	9.777	AV
5		0.190	32.839	23.056	-31.197	64.037	9.783	QP
6		0.190	0.064	-9.719	-53.972	54.037	9.783	AV
7		0.670	36.119	26.092	-19.881	56.000	10.027	QP
8		0.670	9.239	-0.788	-36.761	46.000	10.027	AV
9		4.382	19.371	8.647	-36.629	56.000	10.724	QP
10		4.382	-2.513	-13.237	-48.513	46.000	10.724	AV
11		25.602	40.535	28.754	-19.465	60.000	11.781	QP
12		25.602	14.712	2.931	-35.288	50.000	11.781	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: WZ-SR2	Test Date: 2023-12-05
Limit: FCC_Part15.207_CE_AC Power	Engineer: Linda Wei
Probe: ENV216_101683_Filter Off_E	Polarity: Neutral
EUT: UWB Location Beacon DC Power	Power: AC 120V/60Hz
Test Mode: Transmit by BLE 2Mbps at 2440MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV)	Factor (dB)	Type
1	*	0.150	50.604	40.831	-15.396	66.000	9.773	QP
2		0.150	15.255	5.482	-40.745	56.000	9.773	AV
3		0.170	48.320	38.542	-16.640	64.960	9.779	QP
4		0.170	13.539	3.761	-41.421	54.960	9.779	AV
5		0.182	45.589	35.807	-18.805	64.394	9.781	QP
6		0.182	11.228	1.446	-43.166	54.394	9.781	AV
7		0.674	36.989	26.950	-19.011	56.000	10.039	QP
8		0.674	10.238	0.199	-35.762	46.000	10.039	AV
9		4.002	21.621	10.723	-34.379	56.000	10.897	QP
10		4.002	-1.320	-12.217	-47.320	46.000	10.897	AV
11		24.770	40.267	28.281	-19.733	60.000	11.987	QP
12		24.770	14.564	2.577	-35.436	50.000	11.987	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 “2311RSU053-UT” file.

Appendix C - EUT Photograph

Refer to “2311RSU053-UE” file.

The End