RF MEASUREMENT REPORT

FCC ID:	Q9DAPIN0634
Applicant:	Hewlett Packard Enterprise
Product:	ACCESS POINT
Model No.:	APIN0634
Trademark:	Hewlett Packard Enterprise, HPE aruba networking
FCC Classification:	Digital Transmission System (DTS)
FCC Rule Part(s):	Part 15 Subpart C (Section 15.247)
Result:	Complies
Received Date:	2023-06-25
Test Date:	2023-07-10 ~ 2023-08-24

Reviewed By: Jame Yuan

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
2306RSU040-U3	V01	Initial Report	2023-08-25	Invalid
2306RSU040-U3	V02	Update test date	2023-10-05	Valid

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1. General Information

1.1. Applicant

Hewlett Packard Enterprise

6280 America Center Drive, San Jose CA 95002, United States

1.2. Manufacturer

Hewlett Packard Enterprise

6280 America Center Drive, San Jose CA 95002, United States

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: L3261-190725				
	FCC: 291082, TW3261		ISED: TW3261		

1.4. Product Information

Product Name	ACCESS POINT
Model No.	APIN0634
Serial No.	CNQJLZJ01R
Software Version	20210315 spf.11.3.cs
Wi-Fi Specification	802.11a/b/g/n/ac/ax
Bluetooth Specification	v5.0 single mode, BLE only
Zigbee Specification	802.15.4
GNSS Specification	GPS, GLONASS, Galileo
Working Voltage	AC/DC Adapter or PoE Injector input
Operating Temperature	0 ~ 50 °C
Operating Environment	Indoor Use
Note: 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

Zigbee Specification	802.15.4
Frequency Range	2405 ~ 2480MHz
Channel Number	16
Type of Modulation	O-QPSK
Antenna Type	PIFA Antenna
Antenna Gain	3.20dBi

1.6. Working Frequencies

Channel	Frequency	Channel	Frequency	Channel	Frequency
11	2405 MHz	12	2410 MHz	13	2415 MHz
14	2420 MHz	15	2425 MHz	16	2430 MHz
17	2435 MHz	18	2440 MHz	19	2445 MHz
20	2450 MHz	21	2455 MHz	22	2460 MHz
23	2465 MHz	24	2470 MHz	25	2475 MHz
26	2480 MHz	--	--	--	--

1.7. Description of Operating Paths

Filter	Specification	Remark
Wi-Fi		
Filter 1#	Band Pass Filter (2412-2472)	Allowing any transmission on all channels
Filter 2#	Band Pass Filter (2402-2447)	Allowing any transmission on 20MHz channels 1 thru 6
Filter 3#	Band Pass Filter (2452-2472)	Allowing any transmission on 20MHz channel 11
Bluetooth / ZigBee		
Filter 4#	Band Pass Filter (2402-2480)	Allowing any transmission on all channels
Filter 5#	Band Pass Filter (2402-2430)	Allowing transmission on BLE channels 00 (2402MHz) thru 12 (2426MHz) and Zigbee channel 11 (2405MHz)
Filter 6#	Band Pass Filter (2478-2482)	Allowing transmission on BLE channel 39 (2480MHz) and Zigbee channel 26(2480MHz)
Note: ZigBee and BLE can’t work simultaneously.		

Working Mode

Wi-Fi	Bluetooth	Remark
Filter 1#	Filter 4#	Filter 1# or Filter 4# work alone
Filter 2#	Filter 6#	Transmission simultaneously
Filter 3#	Filter 5#	Transmission simultaneously
Note: Filter groups on the 2.4GHz Wi-Fi and BLE/Zigbee outputs to prevent reverse IMD when both 2.4GHz Wi-Fi and BLE/Zigbee are transmitting simultaneously		

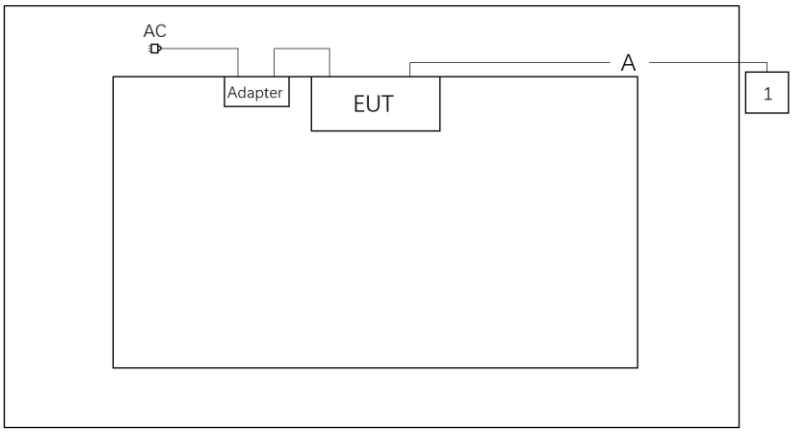
2. Test Configuration

2.1. Test Mode

Mode 1: Transmit by 802.15.4

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.



Cable Type		Cable Spec.	Length
A	Ethernet Cable	Non-Shielding, Cat 5e	>10.0m
Product		Manufacturer	Model No.
1	Notebook	Dell	Latitude 5491

2.3. Test Software

The test utility software used during testing was “telnet.exe” and command was provided by the manufacturer.

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
EMI Test Receiver	R&S	ESR7	MRTSUE06001	1 year	2023-12-28	WZ-AC1
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	2023-12-28	WZ-AC1
Thermohygrometer	testo	608-H1	MRTSUE11039	1 year	2023-11-01	WZ-AC1
Loop Antenna	Schwarzbeck	FMZB 1519	MRTSUE06025	1 year	2023-09-29	WZ-AC1
Horn Antenna	Schwarzbeck	BBHA 9170	MRTSUE06597	1 year	2023-11-05	WZ-AC1
Preamplifier	EMCI	EMC184045SE	MRTSUE06640	1 year	2024-01-12	WZ-AC1
TRILOG Antenna	Schwarzbeck	VULB 9162	MRTSUE06022	1 year	2024-05-15	WZ-AC2
EMI Test Receiver	Agilent	N9038A	MRTSUE06125	1 year	2024-05-23	WZ-AC2
Thermohygrometer	Mingle	ETH529	MRTSUE06170	1 year	2023-11-27	WZ-AC2
Horn Antenna	Schwarzbeck	BBHA 9120D	MRTSUE06171	1 year	2023-10-13	WZ-AC2
Preamplifier	Schwarzbeck	BBV 9718	MRTSUE06176	1 year	2024-05-07	WZ-AC2
Anechoic Chamber	RIKEN	WZ-AC2	MRTSUE06213	1 year	2024-04-20	WZ-AC2
Thermohygrometer	testo	608-H1	MRTSUE11038	1 year	2023-11-01	WZ-AC2
Two-Line V-Network	R&S	ENV216	MRTSUE06002	1 year	2024-05-23	WZ-SR2
Shielding Room	MIX-BEP	WZ-SR2	MRTSUE06215	5 years	2026-12-20	WZ-SR2
Thermohygrometer	testo	608-H1	MRTSUE06404	1 year	2024-05-31	WZ-SR2
EMI Test Receiver	R&S	ESR3	MRTSUE06909	1 year	2023-10-27	WZ-SR2
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
Attenuator	MVE	MVE2213	MRTSUE11076	1 year	2024-06-08	WZ-SR5
Attenuator	MVE	MVE2213	MRTSUE11077	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
Controller_MF 7802	1.02	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
Measurement Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 9kHz~150kHz: 3.58dB 150kHz~30MHz: 3.20dB
Radiated Emission Measurement
The maximum measurement uncertainty is evaluated as: Coaxial: 9kHz~30MHz: 2.59dB Coplanar: 9kHz~30MHz: 2.60dB Horizontal: 30MHz~200MHz: 3.85dB 200MHz~1GHz: 4.36dB 1GHz~40GHz: 4.98dB Vertical: 30MHz~200MHz: 4.06dB 200MHz~1GHz: 5.28dB 1GHz~40GHz: 4.91dB
Spurious Emissions, Conducted
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 2.3dB
Output Power
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 1.5dB
Power Spectrum Density
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 2.3dB
Occupied Bandwidth
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 3.2%

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 tests, every axis (X, Z) was also verified. The test results shown in the following sections represent the worst-case emissions.

Test Items	Filter 4#	Filter 5#	Filter 6#
6dB Bandwidth	●		
Output Power	●	●	●
Power Spectral Density	●		
Band Edge / Out-of-Band Emissions	●	●	●
Radiated Spurious Emission	●	●	●
Radiated Band Edge	●	●	●
AC Conducted Emissions 150kHz - 30MHz	●		

6.2. 6dB Bandwidth Measurement

6.2.1. Test Limit

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

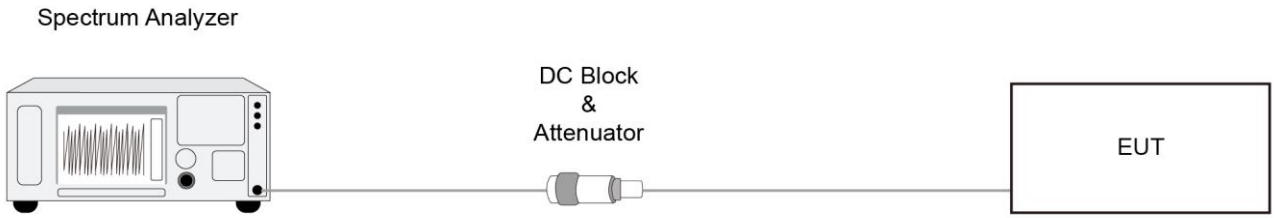
6.2.2. Test Procedure

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 11.9.2.3.2

6.3.3. Test Setting

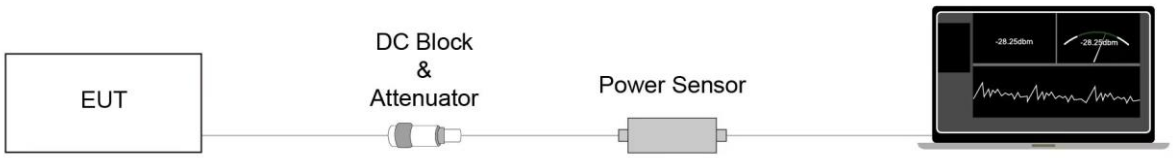
Method PKPM1 (Peak Power Measurement of Signals with DTS BW ≤ 50MHz)

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.

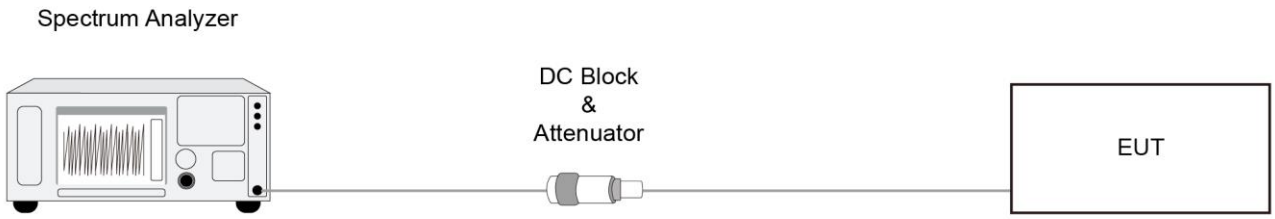
6.4.2. Test Procedure

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

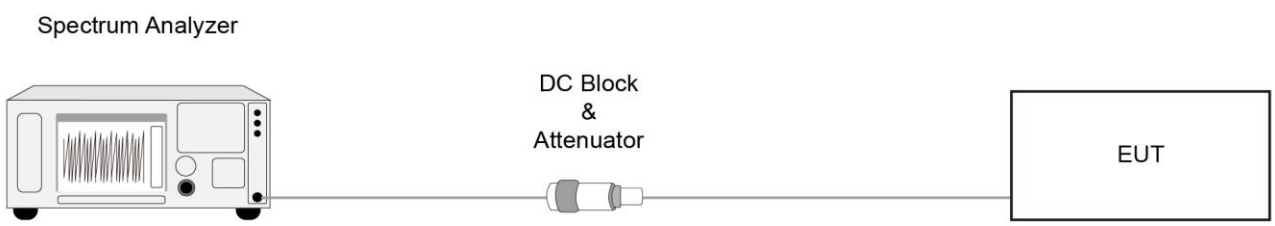
Reference level measurement

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

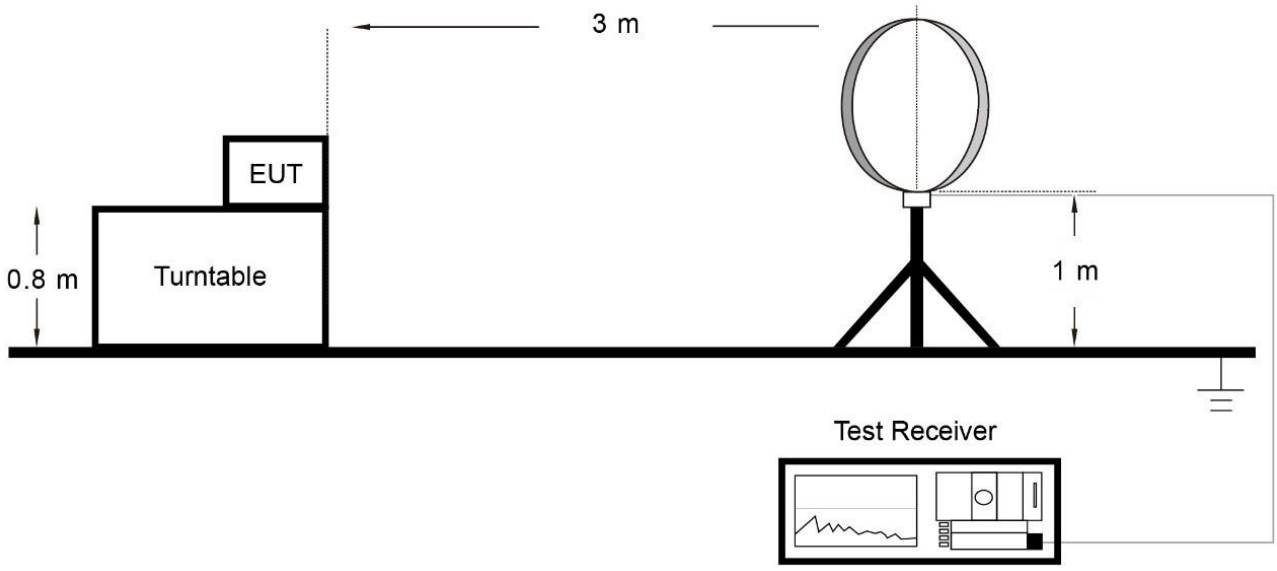
5. Sweep time = auto

6. Trace mode = max hold

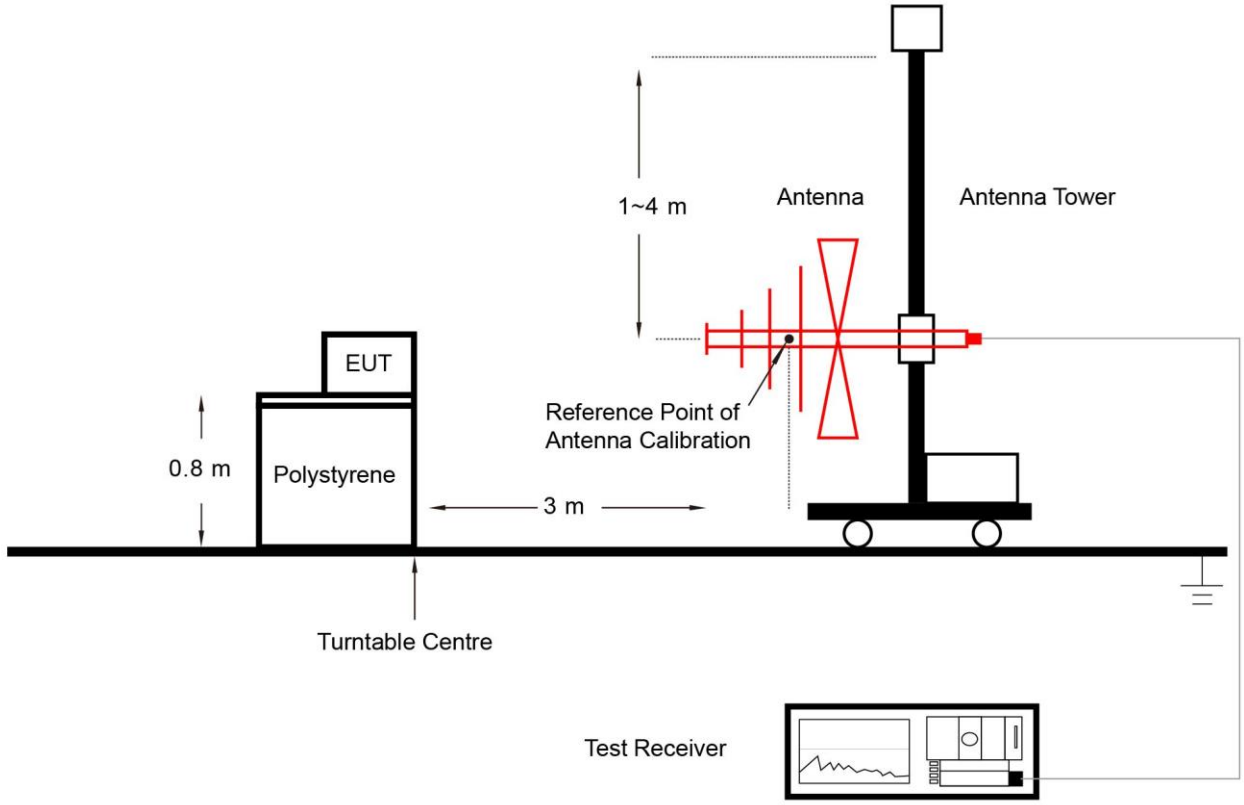
7. Trace was allowed to stabilize

6.6.4. Test Setup

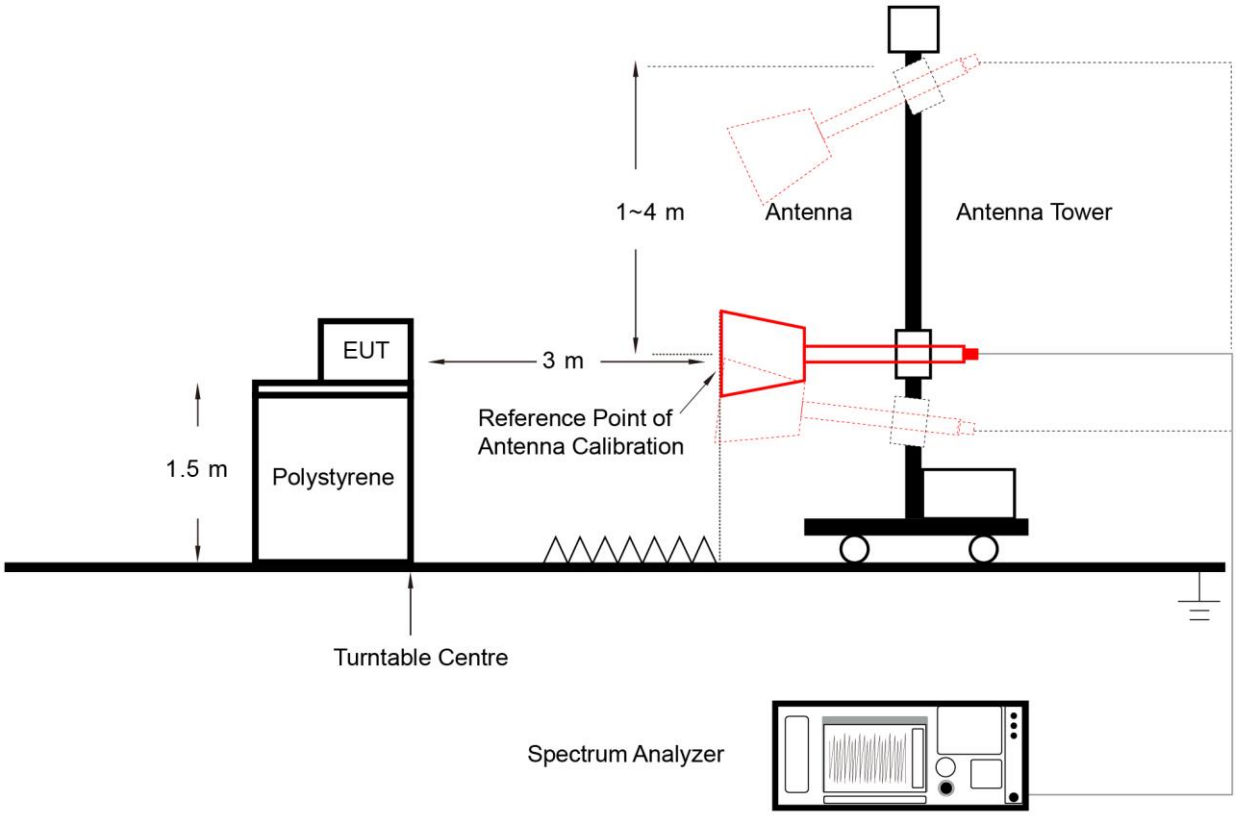
Below 30MHz Test Setup:



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

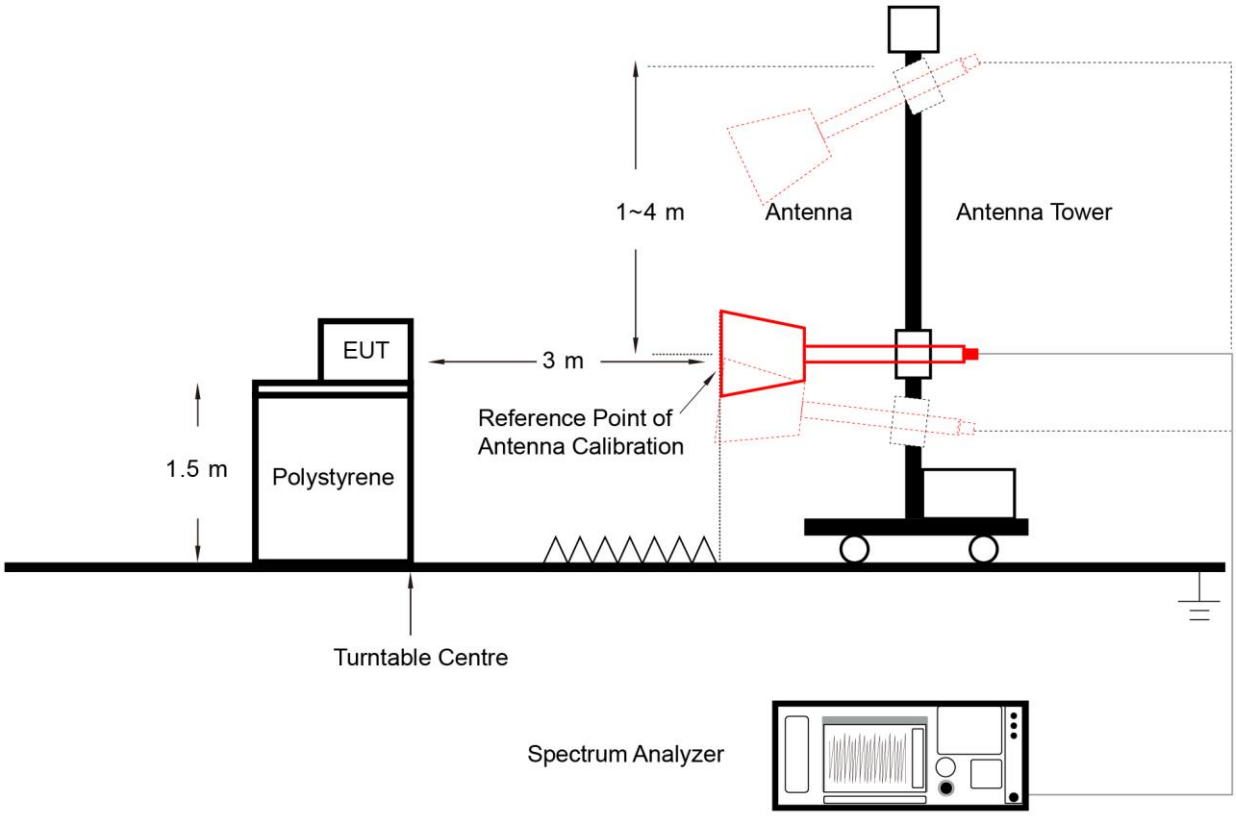
Peak Field Strength Measurements

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. Average Type = Voltage
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

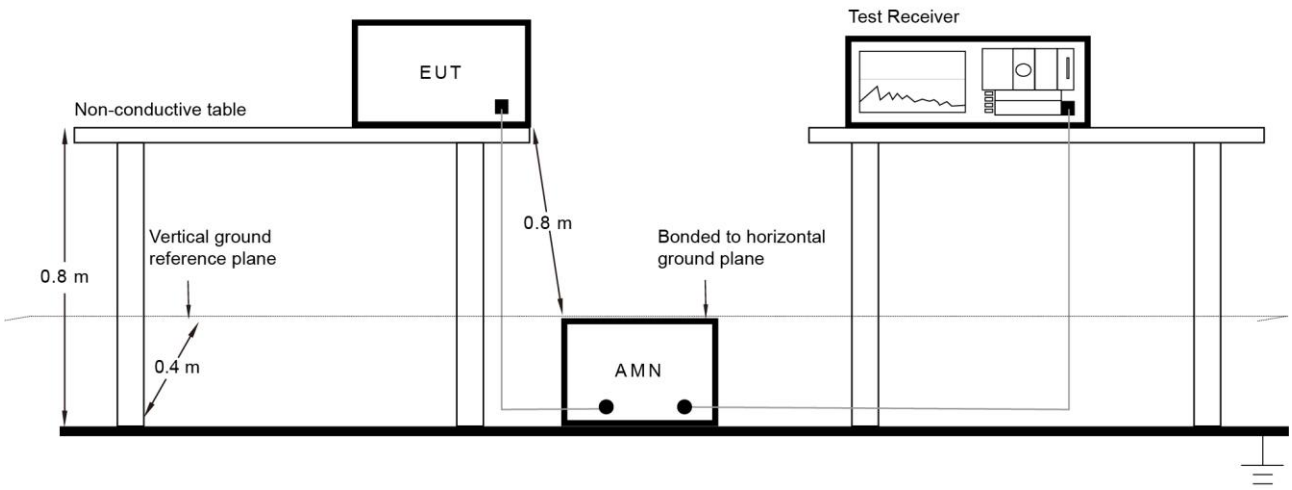
Refer to Appendix A.7.

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

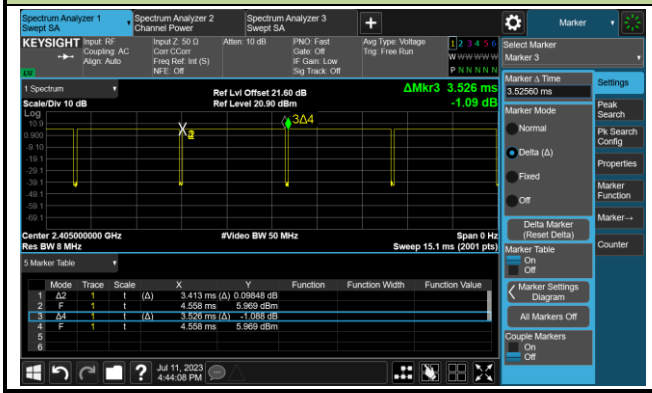
Refer to Appendix A.8.

Appendix A - Test Result

A.1 Duty Cycle Test Result

Test Site	WZ-SR5	Test Engineer	Lynn Yang
Test Date	2023-07-11		

Test Mode	Duty Cycle
802.15.4	96.80%

Duty Cycle (T = Transmission Duration)	
802.15.4 (T= 3.413ms)	
	

Note 1: This duty cycle was only suitable for continuous transmission of signals via commands.

Note 2: The manufacturer, declared that the ZigBee normal operation, when implemented, will be limited to a max duty cycle of 10% or less in any 100ms period. So -20dB correction factor was used during peak and average band edge testing.

A.2 6dB Bandwidth Test Result

Test Site	WZ-SR5	Test Engineer	Lynn Yang
Test Date	2023-07-13		

Test Mode	Modulation Mode	Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	Result
802.15.4	O-QPSK	11	2405	1.121	≥ 0.5	Pass
802.15.4	O-QPSK	18	2440	1.121	≥ 0.5	Pass
802.15.4	O-QPSK	26	2480	1.118	≥ 0.5	Pass

802.15.4 6dB Bandwidth

Channel 11 (2405MHz)

Channel 18 (2440MHz)

Channel 26 (2480MHz)

A.3 Output Power Test Result

Test Site	WZ-SR5	Test Engineer	Lynn Yang
Test Date	2023-07-13	Filter Configuration	Filter 4#

Test Result of Peak Output Power

Test Mode	Modulation Mode	Channel No.	Freq. (MHz)	Peak Power (dBm)	Limit (dBm)	Result
802.15.4	O-QPSK	11	2405	6.97	≤ 30.00	Pass
802.15.4	O-QPSK	18	2440	6.96	≤ 30.00	Pass
802.15.4	O-QPSK	26	2480	6.71	≤ 30.00	Pass

Test Result of Average Output Power (Reporting Only)

Test Mode	Modulation Mode	Channel No.	Freq. (MHz)	Average Power (dBm)	Limit (dBm)	Result
802.15.4	O-QPSK	11	2405	6.87	≤ 30.00	Pass
802.15.4	O-QPSK	18	2440	6.86	≤ 30.00	Pass
802.15.4	O-QPSK	26	2480	6.61	≤ 30.00	Pass

Test Site	WZ-SR5	Test Engineer	Lynn Yang
Test Date	2023-07-13	Filter Configuration	Filter 5#

Test Result of Peak Output Power

Test Mode	Modulation Mode	Channel No.	Freq. (MHz)	Peak Power (dBm)	Limit (dBm)	Result
802.15.4	O-QPSK	11	2405	6.39	≤ 30.00	Pass

Test Result of Average Output Power (Reporting Only)

Test Mode	Modulation Mode	Channel No.	Freq. (MHz)	Average Power (dBm)	Limit (dBm)	Result
802.15.4	O-QPSK	11	2405	6.29	≤ 30.00	Pass

Test Site	WZ-SR5	Test Engineer	Lynn Yang
Test Date	2023-07-13	Filter Configuration	Filter 6#

Test Result of Peak Output Power

Test Mode	Modulation Mode	Channel No.	Freq. (MHz)	Peak Power (dBm)	Limit (dBm)	Result
802.15.4	O-QPSK	26	2480	4.90	≤ 30.00	Pass

Test Result of Average Output Power (Reporting Only)

Test Mode	Modulation Mode	Channel No.	Freq. (MHz)	Average Power (dBm)	Limit (dBm)	Result
802.15.4	O-QPSK	26	2480	4.76	≤ 30.00	Pass

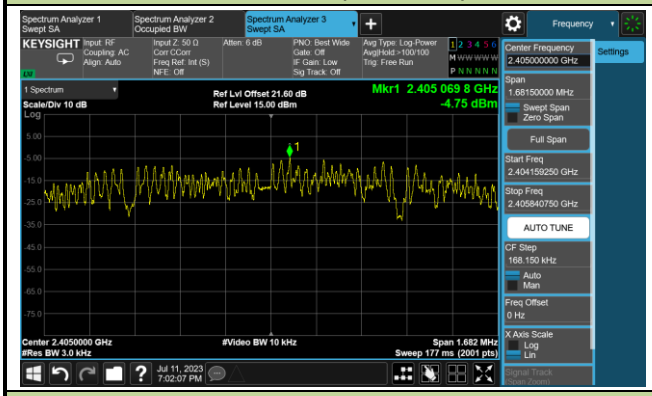
A.4 Power Spectral Density Test Result

Test Site	WZ-SR5	Test Engineer	Lynn Yang
Test Date	2023-07-11		
Filter Configuration	Filter 4#		

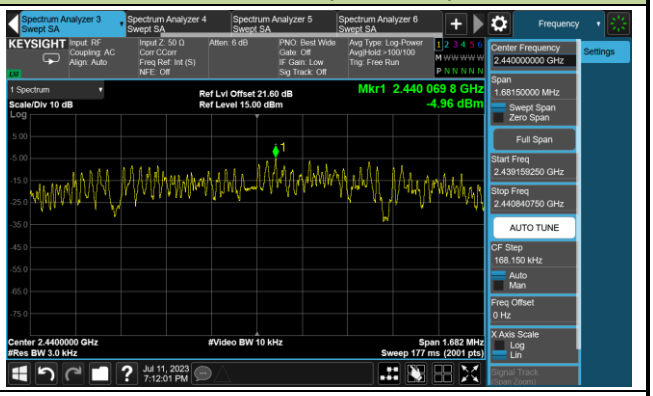
Test Mode	Modulation Mode	Channel No.	Frequency (MHz)	PK PSD (dBm / 3kHz)	Limit (dBm / 3kHz)	Result
802.15.4	O-QPSK	11	2405	-4.75	≤ 8.00	Pass
802.15.4	O-QPSK	18	2440	-4.96	≤ 8.00	Pass
802.15.4	O-QPSK	26	2480	-4.97	≤ 8.00	Pass

802.15.4 Power Density

Channel 11 (2405MHz)



Channel 18 (2440MHz)



Channel 26 (2480MHz)

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

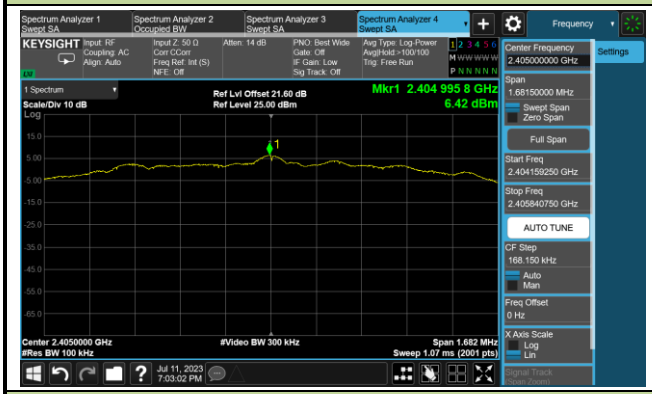
Test Site	WZ-SR5	Test Engineer	Lynn Yang
Test Date	2023-07-11	Filter Configuration	Filter 4#

Test Mode	Data Rate / MCS	Channel No.	Frequency (MHz)	Limit (dBc)	Result
802.15.4	O-QPSK	11	2405	20	Pass
802.15.4	O-QPSK	18	2440	20	Pass
802.15.4	O-QPSK	26	2480	20	Pass

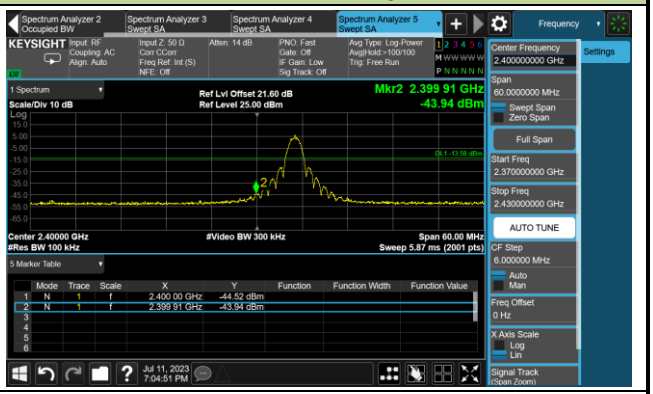
802.15.4 Out-of-Band Emissions

Channel 11 (2405MHz)

100kHz PSD Reference Level



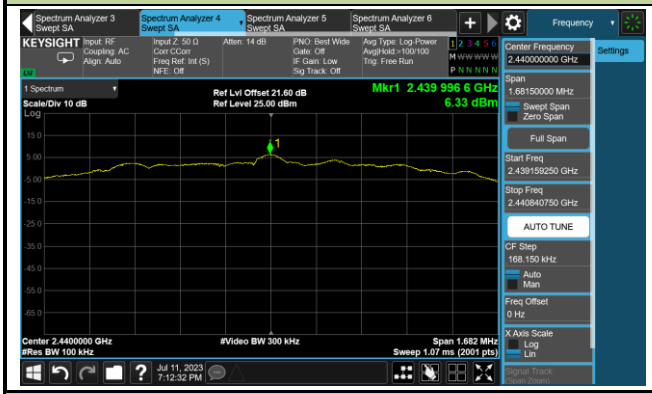
Low Band Edge



Spurious Emission

Channel 18 (2440MHz)

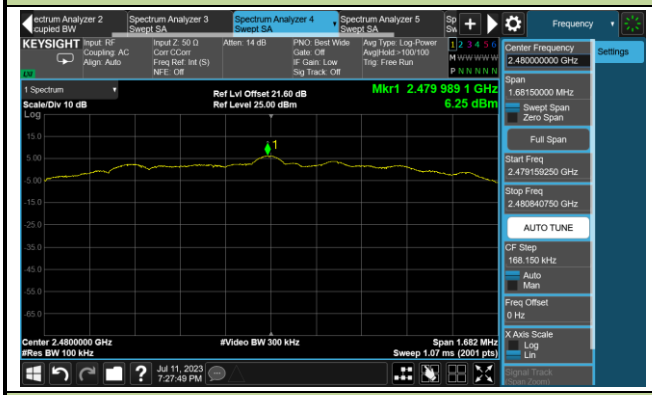
100kHz PSD Reference Level



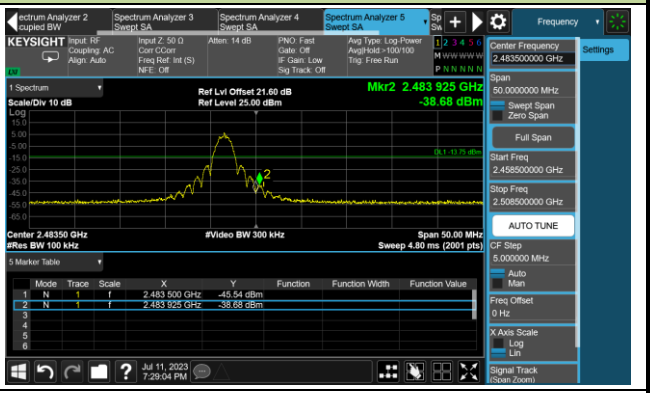
Spurious Emission

Channel 26 (2480MHz)

100kHz PSD Reference Level



High Band Edge



Spurious Emission

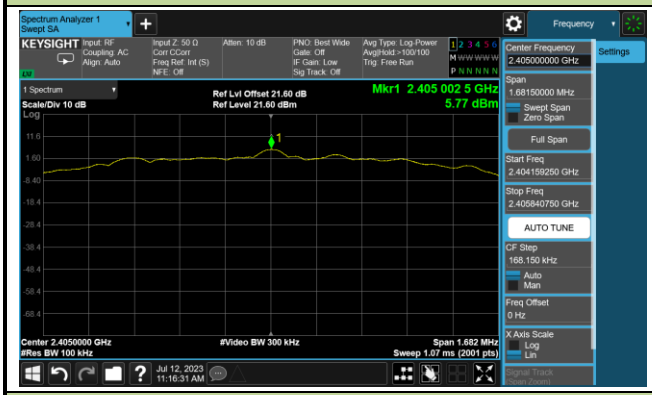
Test Site	WZ-SR5	Test Engineer	Lynn Yang
Test Date	2023-07-12	Filter Configuration	Filter 5#

Test Mode	Data Rate / MCS	Channel No.	Frequency (MHz)	Limit (dBc)	Result
802.15.4	O-QPSK	11	2405	20	Pass

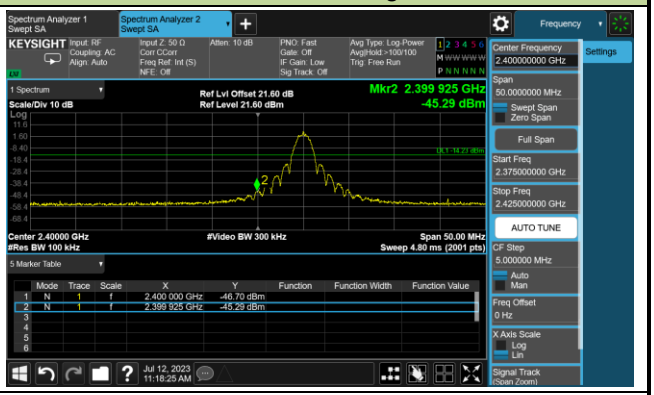
802.15.4 Out-of-Band Emissions

Channel 11 (2405MHz)

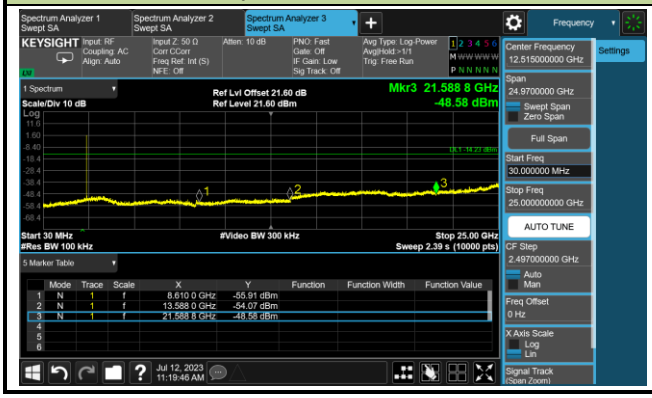
100kHz PSD Reference Level



Low Band Edge



Spurious Emission



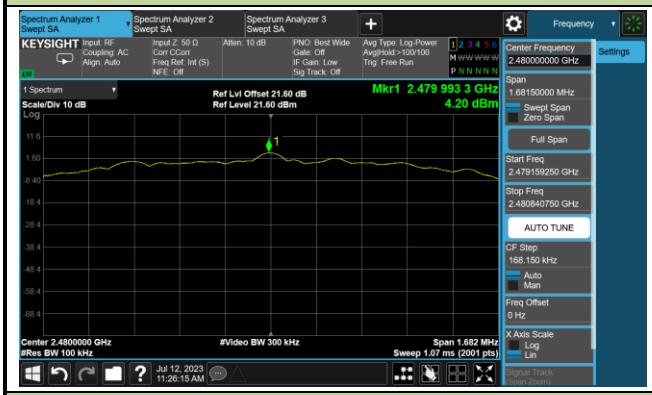
Test Site	WZ-SR5	Test Engineer	Lynn Yang
Test Date	2023-07-12	Filter Configuration	Filter 6#

Test Mode	Data Rate / MCS	Channel No.	Frequency (MHz)	Limit (dBc)	Result
802.15.4	O-QPSK	26	2480	> 20	Pass

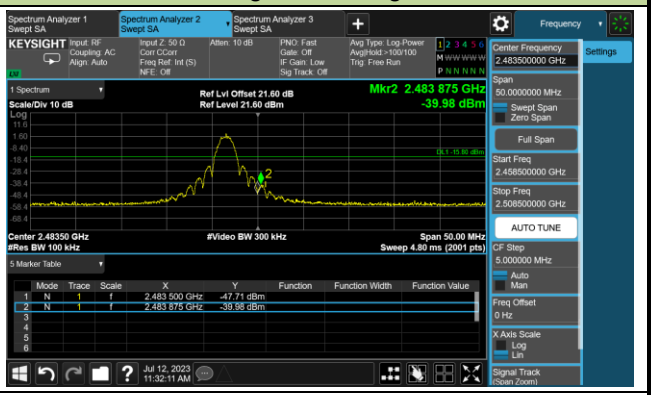
802.15.4 Out-of-Band Emissions

Channel 26 (2480MHz)

100kHz PSD Reference Level



High Band Edge



Spurious Emission

A.6 Radiated Spurious Emission Test Result

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2023-07-10	Filter Configuration	Filter 4#
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
11	8276.0	36.2	8.4	44.6	74.0	-29.4	Peak	Horizontal
	11395.5	37.0	12.9	49.9	74.0	-24.1	Peak	Horizontal
	12033.0	36.4	12.3	48.7	74.0	-25.3	Peak	Horizontal
	8301.5	36.3	8.6	44.9	74.0	-29.1	Peak	Vertical
	10715.5	34.9	13.7	48.6	74.0	-25.4	Peak	Vertical
	12126.5	37.0	12.3	49.3	74.0	-24.7	Peak	Vertical
18	8386.5	34.7	8.8	43.5	74.0	-30.5	Peak	Horizontal
	11072.5	35.1	13.5	48.6	74.0	-25.4	Peak	Horizontal
	11888.5	36.5	11.9	48.4	74.0	-25.6	Peak	Horizontal
	7604.5	37.0	8.2	45.2	74.0	-28.8	Peak	Vertical
	11395.5	36.6	12.9	49.5	74.0	-24.5	Peak	Vertical
	12330.5	37.3	12.3	49.6	74.0	-24.4	Peak	Vertical
26	8199.5	36.8	8.7	45.5	74.0	-28.5	Peak	Horizontal
	11276.5	36.1	12.6	48.7	74.0	-25.3	Peak	Horizontal
	11786.5	37.4	11.9	49.3	74.0	-24.7	Peak	Horizontal
	8352.5	35.0	8.7	43.7	74.0	-30.3	Peak	Vertical
	11021.5	35.3	13.6	48.9	74.0	-25.1	Peak	Vertical
	12033.0	35.6	12.3	47.9	74.0	-26.1	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	Carl Jiang
Test Date	2023-07-10	Filter Configuration	Filter 5#
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.		

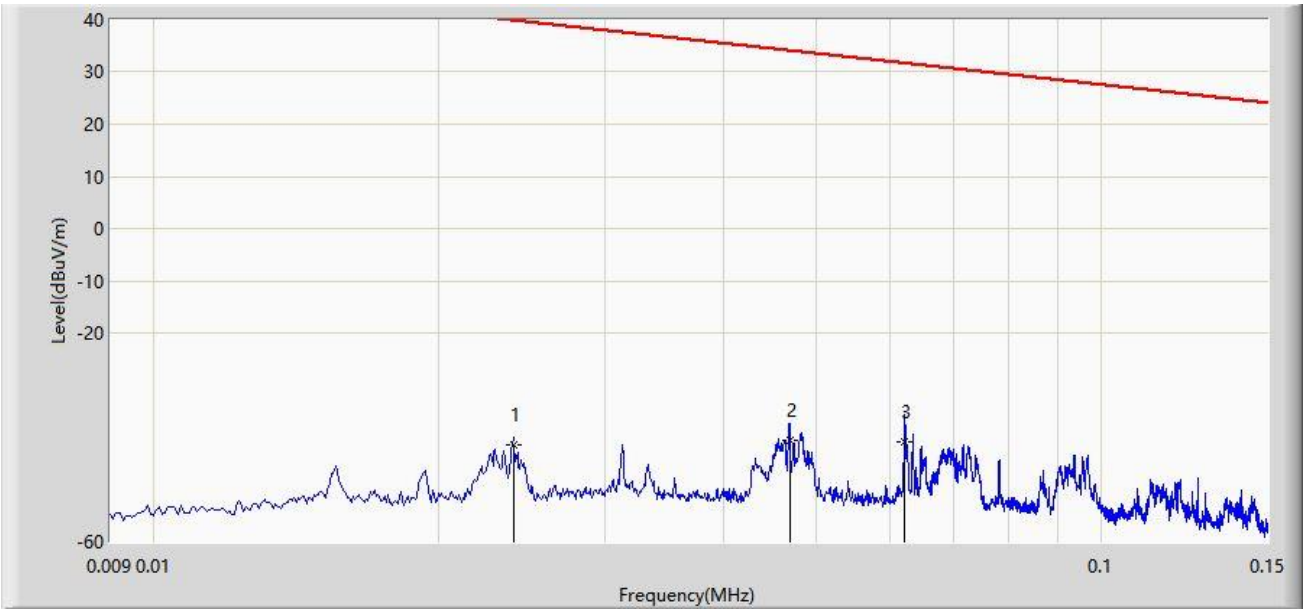
Test Channel	Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
11	8191.0	36.7	8.7	45.4	74.0	-28.6	Peak	Horizontal
	11089.5	35.8	13.4	49.2	74.0	-24.8	Peak	Horizontal
	12288.0	36.8	12.1	48.9	74.0	-25.1	Peak	Horizontal
	8386.5	34.9	8.8	43.7	74.0	-30.3	Peak	Vertical
	11072.5	34.9	13.5	48.4	74.0	-25.6	Peak	Vertical
	11931.0	37.2	12.1	49.3	74.0	-24.7	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	Carl Jiang
Test Date	2023-07-10	Filter Configuration	Filter 6#
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
26	8242.0	36.7	8.6	45.3	74.0	-28.7	Peak	Horizontal
	11123.5	35.2	12.9	48.1	74.0	-25.9	Peak	Horizontal
	12109.5	38.1	12.2	50.3	74.0	-23.7	Peak	Horizontal
	8310.0	36.6	8.6	45.2	74.0	-28.8	Peak	Vertical
	11540.0	36.8	12.8	49.6	74.0	-24.4	Peak	Vertical
	12092.5	37.0	12.2	49.2	74.0	-24.8	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)								

The Result of Radiated Emission below 1GHz:

Site: WZ-AC1	Test Date: 2023-08-23
Limit: FCC_Part 15.209_RSE(3m)	Engineer: Carl Jiang
Probe: FMZB1519_0.009-30MHz	Polarity: Coaxial
EUT: ACCESS POINT	Power: AC 120V/60Hz
Test Mode: Transmit by Zigbee at 2440MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		0.024	-41.344	19.588	-81.329	39.985	-60.476	PK
2		0.047	-40.471	25.026	-74.622	34.151	-62.325	PK
3	*	0.062	-40.940	26.893	-72.686	31.746	-62.475	PK

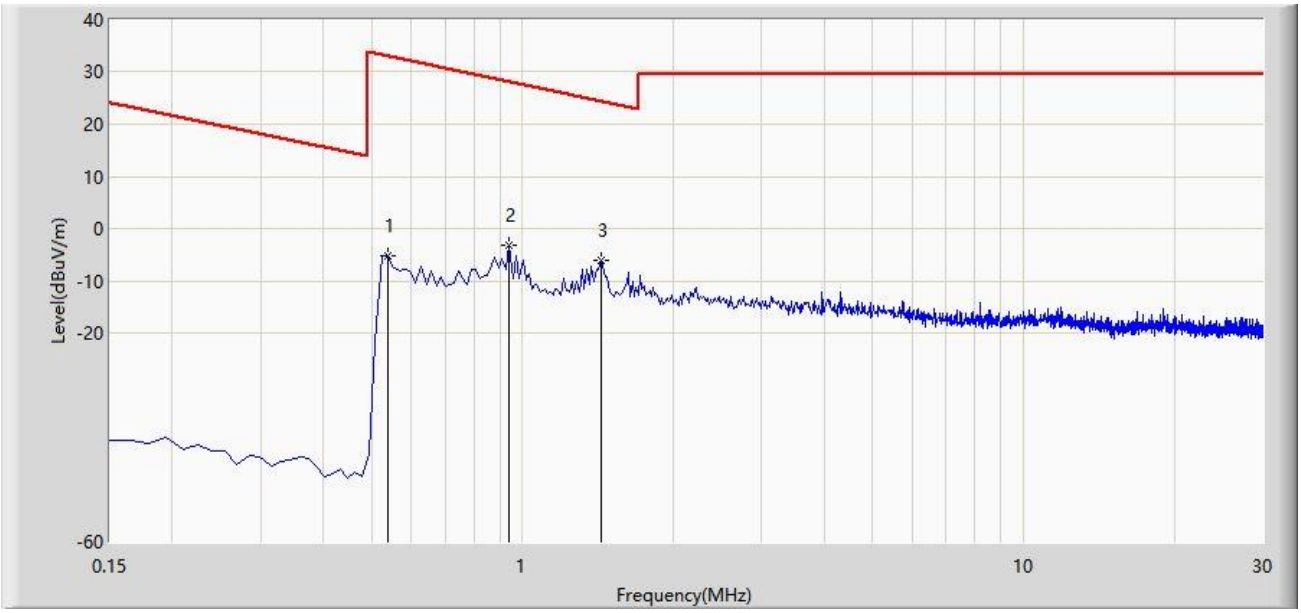
Note 1: " * ", means this data is the worst emission level.

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

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

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

Site: WZ-AC1	Test Date: 2023-08-23
Limit: FCC_Part 15.209_RSE(3m)	Engineer: Carl Jiang
Probe: FMZB1519_0.009-30MHz	Polarity: Coaxial
EUT: ACCESS POINT	Power: AC 120V/60Hz
Test Mode: Transmit by Zigbee at 2440MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		0.538	-5.155	17.234	-38.146	32.991	-22.390	PK
2		0.941	-3.146	19.165	-31.294	28.148	-22.303	PK
3	*	1.434	-6.228	16.137	-30.727	24.499	-22.339	PK

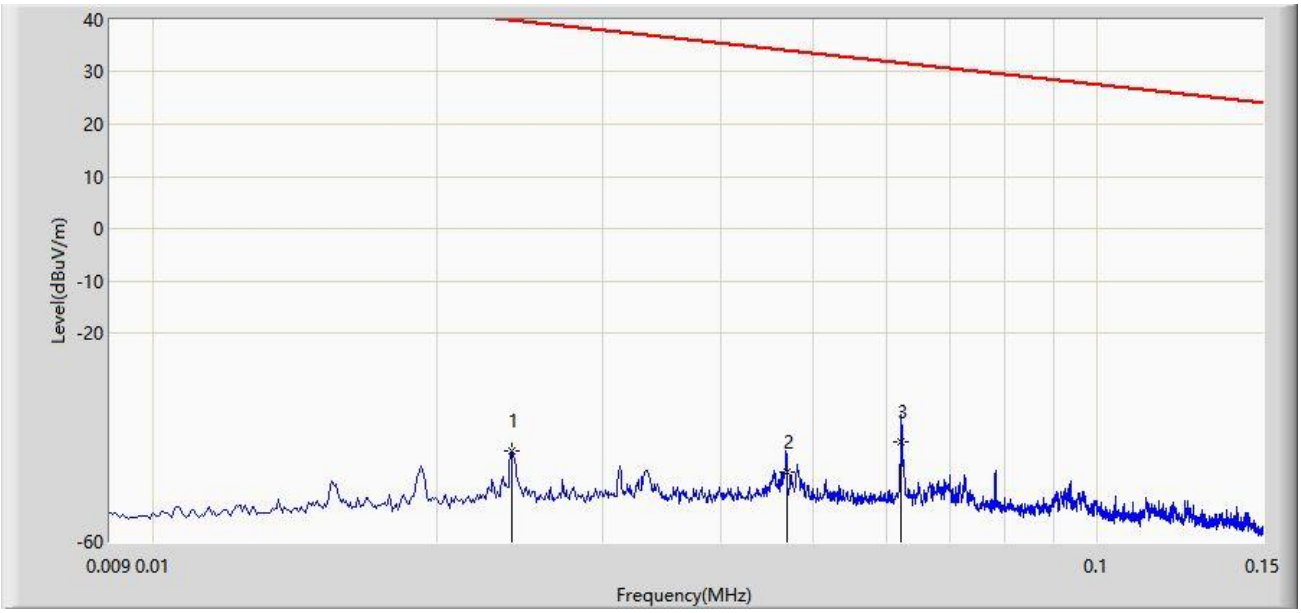
Note 1: " * ", means this data is the worst emission level.

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

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

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

Site: WZ-AC1	Test Date: 2023-08-23
Limit: FCC_Part 15.209_RSE(3m)	Engineer: Carl Jiang
Probe: FMZB1519_0.009-30MHz	Polarity: Coplanar
EUT: ACCESS POINT	Power: AC 120V/60Hz
Test Mode: Transmit by Zigbee at 2440MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		0.024	-42.729	17.827	-82.714	39.985	-60.476	PK
2		0.047	-46.601	19.663	-80.752	34.151	-62.325	PK
3	*	0.062	-40.739	26.893	-72.485	31.746	-62.475	PK

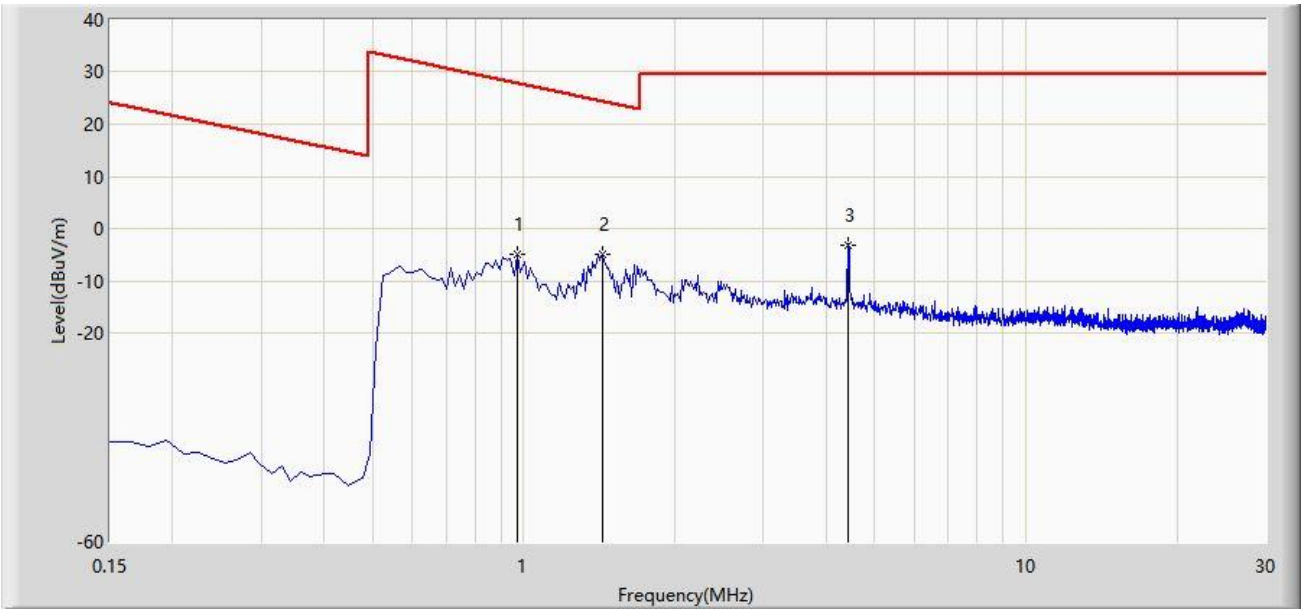
Note 1: " * ", means this data is the worst emission level.

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

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

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

Site: WZ-AC1	Test Date: 2023-08-23
Limit: FCC_Part 15.209_RSE(3m)	Engineer: Carl Jiang
Probe: FMZB1519_0.009-30MHz	Polarity: Coplanar
EUT: ACCESS POINT	Power: AC 120V/60Hz
Test Mode: Transmit by Zigbee at 2440MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		0.971	-4.848	17.487	-32.724	27.876	-22.303	PK
2	*	1.434	-4.887	17.486	-29.386	24.499	-22.339	PK
3		4.419	-3.044	19.240	-32.544	29.500	-22.285	PK

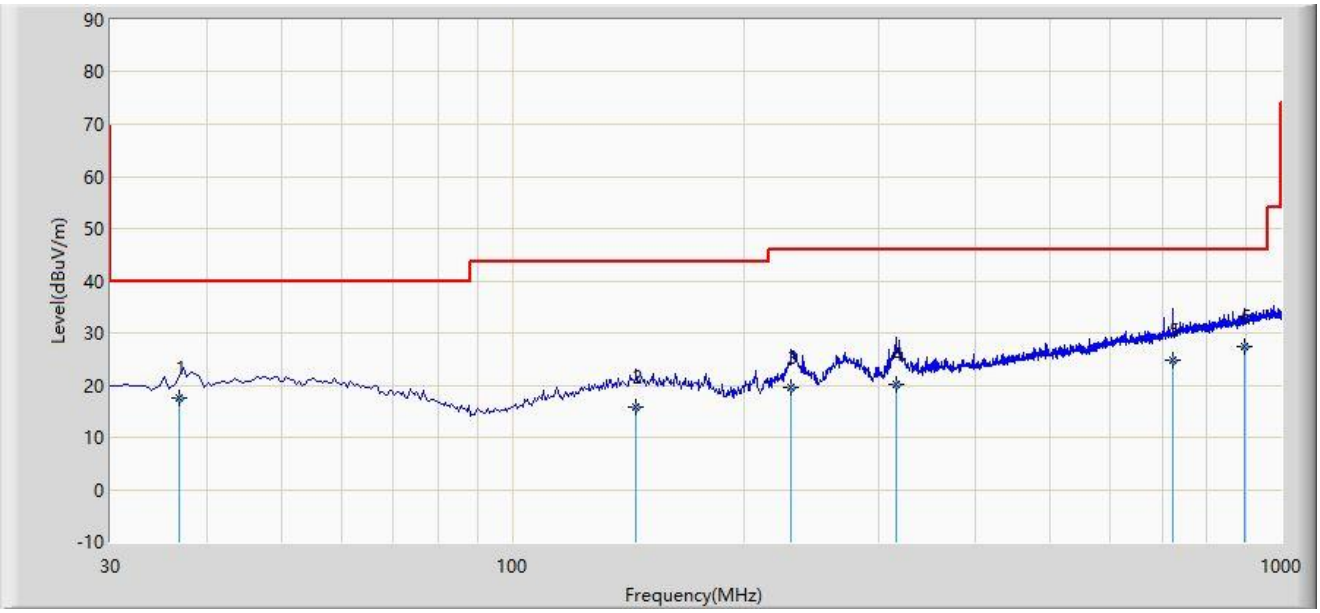
Note 1: " * ", means this data is the worst emission level.

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

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

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

Site: WZ-AC1	Test Date: 2023-08-22
Limit: FCC_Part 15.209_RSE(3m)	Engineer: Carl Jiang
Probe: VULB 9168_25-2000MHz	Polarity: Horizontal
EUT: ACCESS POINT	Power: AC 120V/60Hz
Test Mode: Transmit by Zigbee at 2440MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		36.940	17.456	-0.230	-22.544	40.000	17.686	QP
2		144.950	15.847	-2.130	-27.653	43.500	17.978	QP
3		230.500	19.687	4.556	-26.313	46.000	15.130	QP
4		315.400	20.158	1.120	-25.842	46.000	19.037	QP
5		723.010	24.776	-2.334	-21.224	46.000	27.110	QP
6	*	895.120	27.484	-1.770	-18.516	46.000	29.254	QP

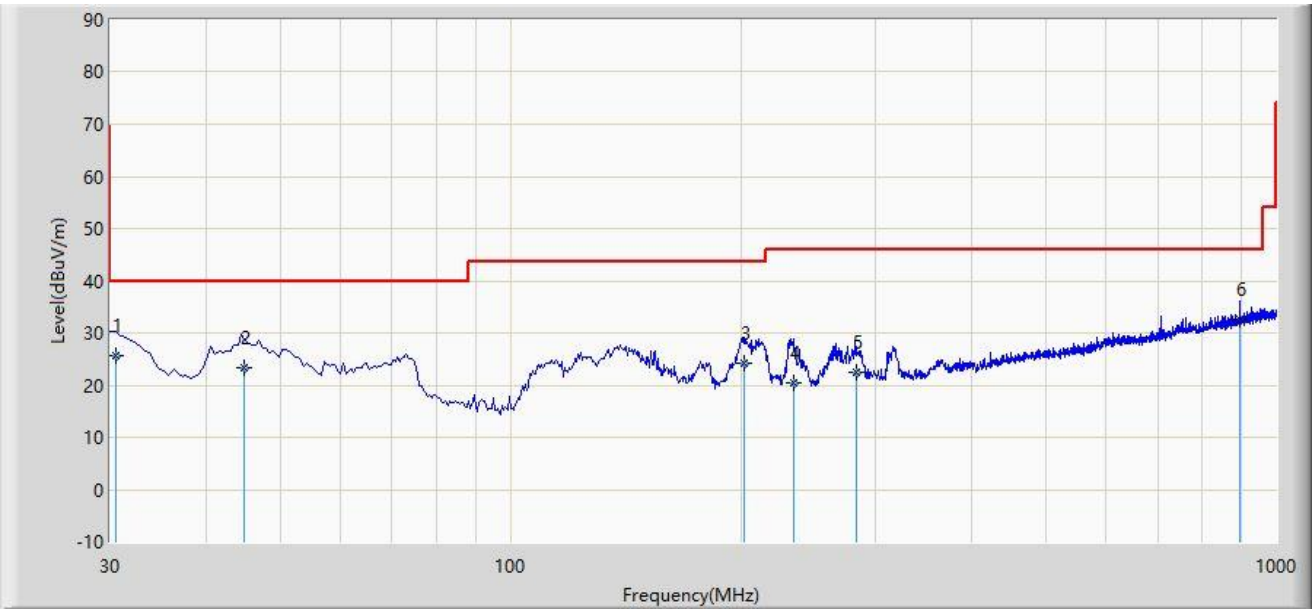
Note 1: " * ", means this data is the worst emission level.

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) 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: WZ-AC1	Test Date: 2023-08-22
Limit: FCC_Part 15.209_RSE(3m)	Engineer: Carl Jiang
Probe: VULB 9168_25-2000MHz	Polarity: Vertical
EUT: ACCESS POINT	Power: AC 120V/60Hz
Test Mode: Transmit by Zigbee at 2440MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		30.490	25.676	8.260	-14.324	40.000	17.416	QP
2		44.930	23.470	5.021	-16.530	40.000	18.449	QP
3		201.600	24.075	9.128	-19.425	43.500	14.947	QP
4		234.300	20.457	4.857	-25.543	46.000	15.599	QP
5		282.400	22.415	4.240	-23.585	46.000	18.175	QP
6	*	895.600	32.465	3.191	-13.535	46.000	29.274	QP

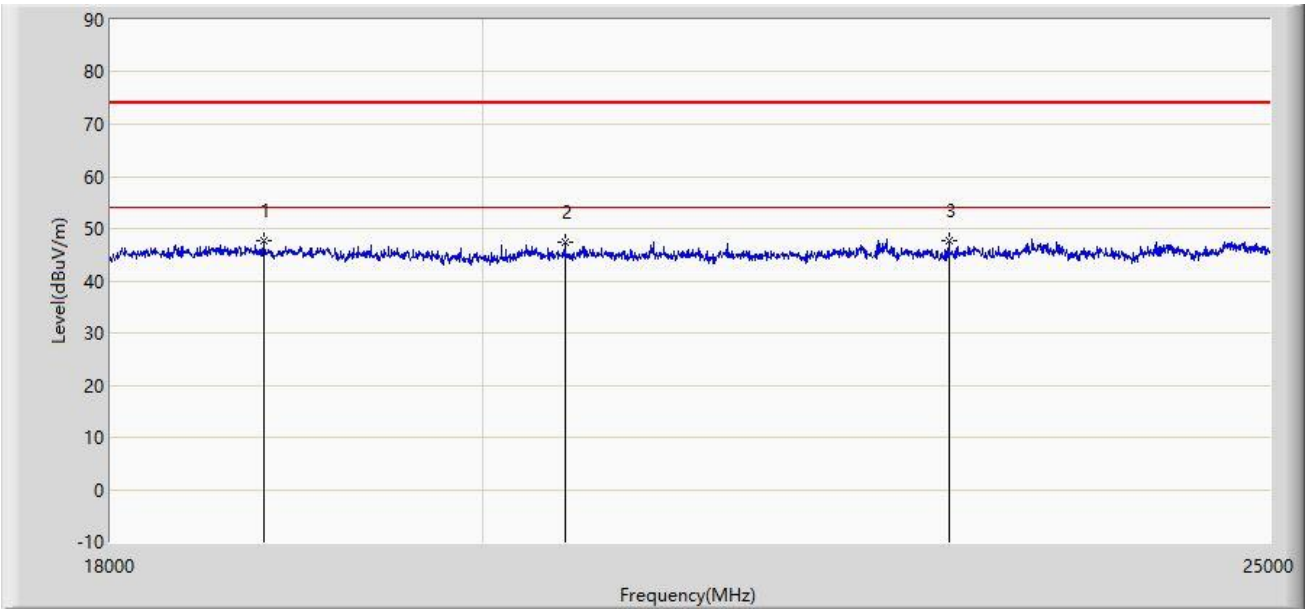
Note 1: " * ", means this data is the worst emission level.

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) 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: WZ-AC2	Test Date: 2023-08-24
Limit: FCC_Part 15.209_RSE(3m)	Engineer: Dick Shen
Probe: BBHA9170_993_18-40GHz	Polarity: Horizontal
EUT: ACCESS POINT	Power: AC 120V/60Hz
Test Mode: Transmit by Zigbee at 2440MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	18798.000	47.624	58.183	-26.376	74.000	-10.559	PK
2		20474.500	47.438	57.261	-26.562	74.000	-9.823	PK
3		22830.000	47.580	55.640	-26.420	74.000	-8.061	PK

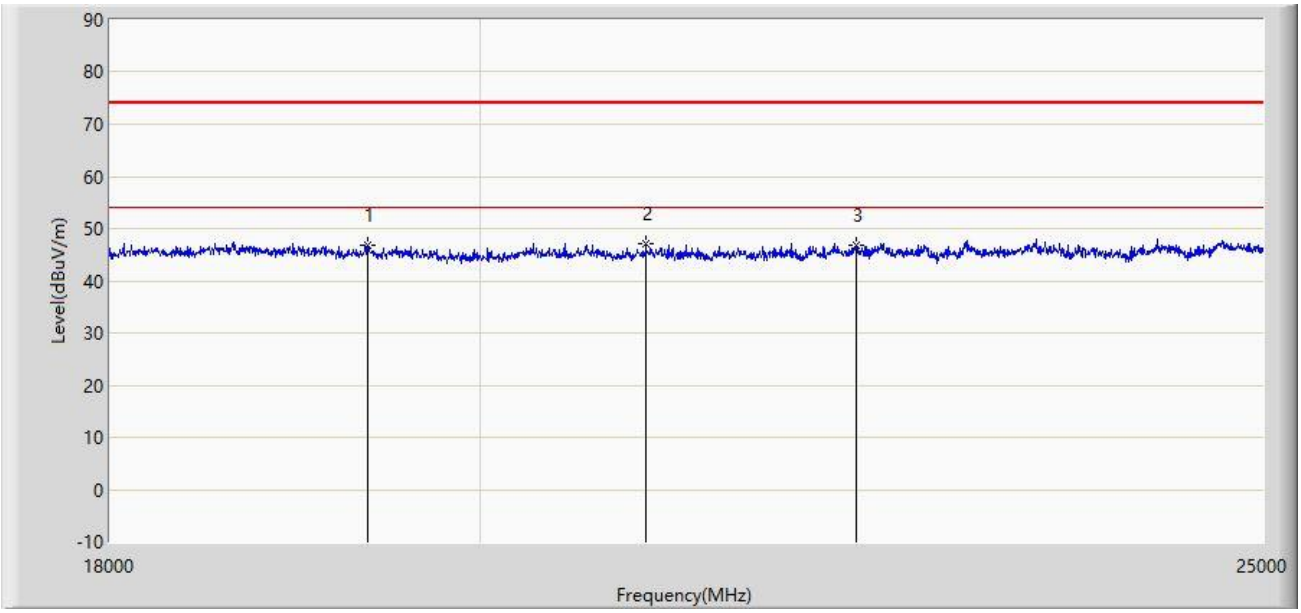
Note 1: " * ", means this data is the worst emission level.

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

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

Note 4: Average measurement was not performed when peak measure level was lower than the average limit.

Site: WZ-AC2	Test Date: 2023-08-24
Limit: FCC_Part 15.209_RSE(3m)	Engineer: Dick Shen
Probe: BBHA9170_993_18-40GHz	Polarity: Vertical
EUT: ACCESS POINT	Power: AC 120V/60Hz
Test Mode: Transmit by Zigbee at 2440MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		19375.500	46.715	56.960	-27.285	74.000	-10.245	PK
2	*	20971.500	47.150	56.502	-26.850	74.000	-9.352	PK
3		22270.000	46.892	54.382	-27.108	74.000	-7.490	PK

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

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

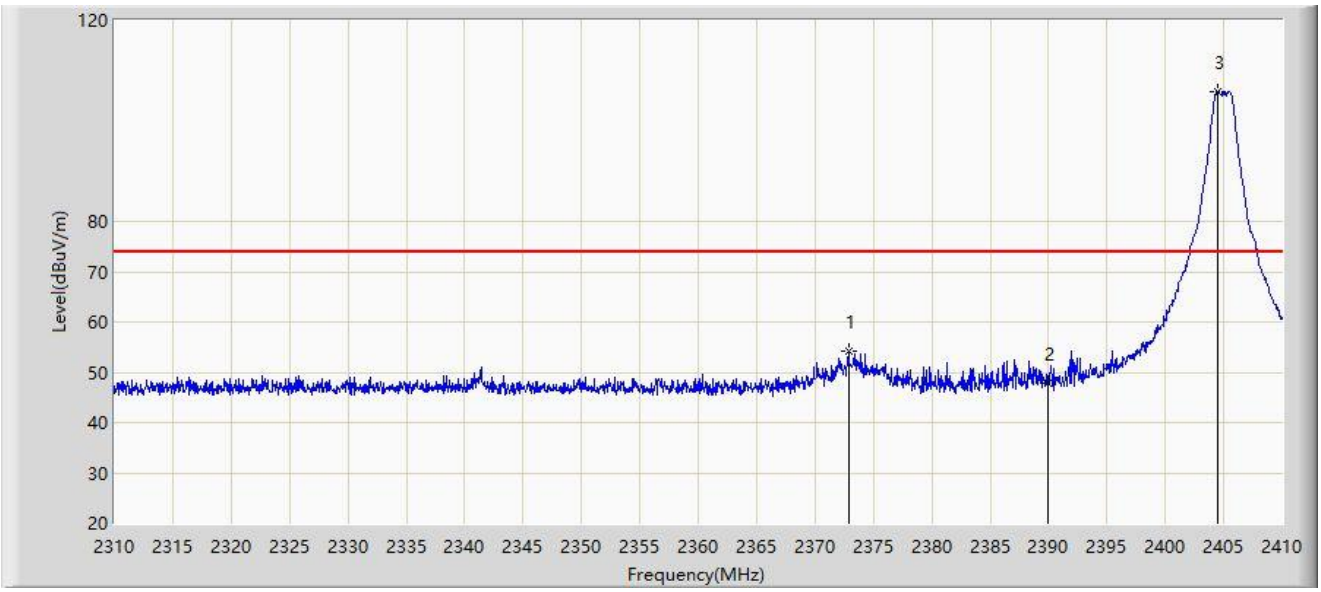
Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB).

Note 4: Average measurement was not performed when peak measure level was lower than the average limit.

A.7 Radiated Restricted Band Edge Test Result

Filter Configuration 4#

Site: WZ-AC1	Test Date: 2023-07-10
Limit: FCC_2.4G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Horizontal
EUT: ACCESS POINT	Power: AC 120V/60Hz
Test Mode: Transmit by Zigbee at 2405MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Duty cycle Factor (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	2372.850	54.309	23.102	-19.691	N/A	74.000	31.207	PK
		2372.850	34.309	23.102	-19.691	-20.00	54.000	31.207	AV
2		2390.000	47.799	16.641	-26.201	N/A	74.000	31.158	PK
		2390.000	27.799	16.641	-26.201	-20.00	54.000	31.158	AV
3		2404.450	105.884	74.737	N/A	N/A	N/A	31.147	PK
		2404.450	85.884	74.737	N/A	-20.00	N/A	31.147	AV

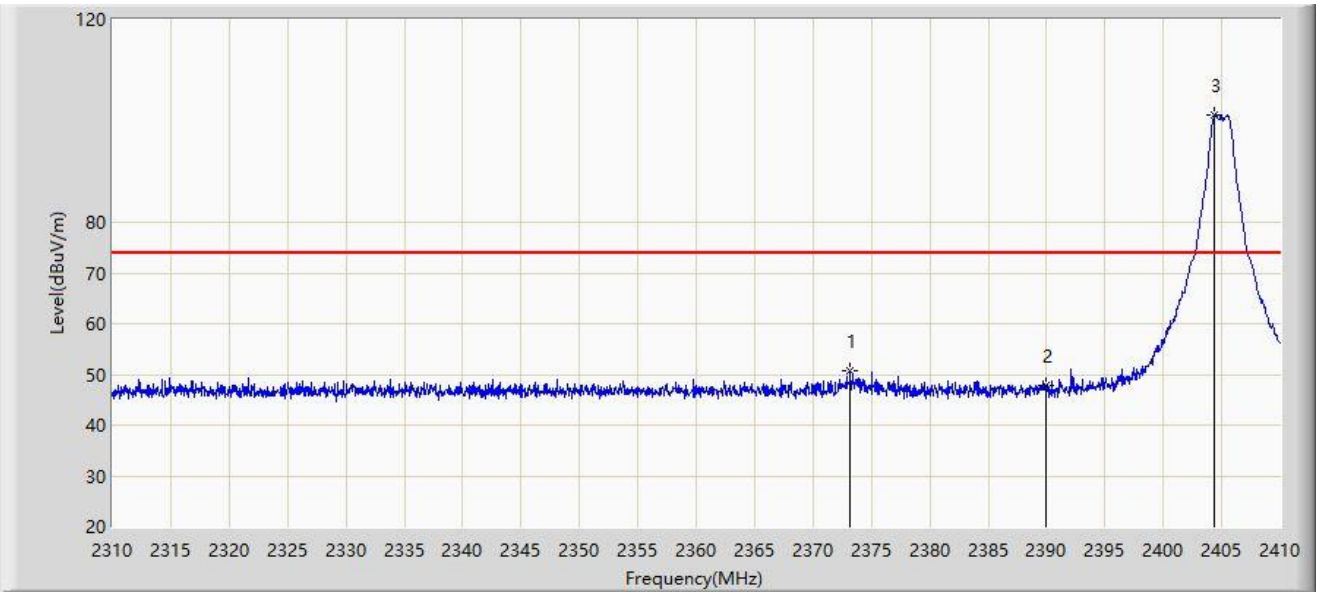
Note 1: " * ", means this data is the worst emission level.

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

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

Note 4. Average Measure Level = Peak Measure Level + Duty Cycle Factor, Duty cycle factor = -20dB.

Site: WZ-AC1	Test Date: 2023-07-10
Limit: FCC_2.4G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Vertical
EUT: ACCESS POINT	Power: AC 120V/60Hz
Test Mode: Transmit by Zigbee at 2405MHz	



No	Mark	Frequency (MHz)	Measure Level (dBµV/m)	Reading Level (dBµV)	Margin (dB)	Duty cycle Factor (dB)	Limit (dBµV/m)	Factor (dB/m)	Type
1	*	2373.200	50.743	19.538	-23.257	N/A	74.000	31.205	PK
		2373.200	30.743	19.538	-23.257	-20.00	54.000	31.205	AV
2		2390.000	47.859	16.701	-26.141	N/A	74.000	31.158	PK
		2390.000	27.859	16.701	-26.141	-20.00	54.000	31.158	AV
3		2404.400	101.035	69.888	N/A	N/A	N/A	31.147	PK
		2404.400	81.035	69.888	N/A	-20.00	N/A	31.147	AV

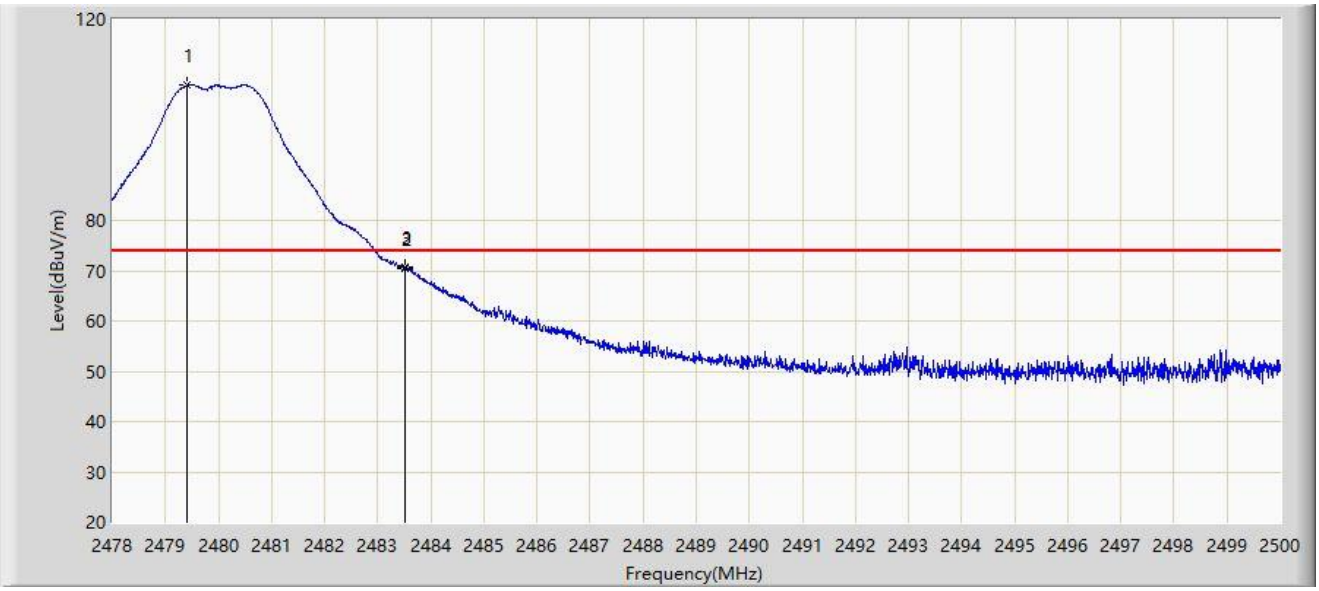
Note 1: " * ", means this data is the worst emission level.

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

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

Note 4. Average Measure Level = Peak Measure Level + Duty Cycle Factor, Duty cycle factor = -20dB.

Site: WZ-AC1	Test Date: 2023-07-10
Limit: FCC_2.4G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Horizontal
EUT: ACCESS POINT	Power: AC 120V/60Hz
Test Mode: Transmit by Zigbee at 2480MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Duty cycle Factor (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		2479.408	106.817	75.728	N/A	N/A	N/A	31.089	PK
		2479.408	86.817	75.728	N/A	-20.00	N/A	31.089	AV
2		2483.500	70.475	39.382	-3.525	N/A	74.000	31.093	PK
		2483.500	50.475	39.382	-3.525	-20.00	54.000	31.093	AV
3	*	2483.511	70.760	39.667	-3.240	N/A	74.000	31.093	PK
		2483.511	50.760	39.667	-3.240	-20.00	54.000	31.093	AV

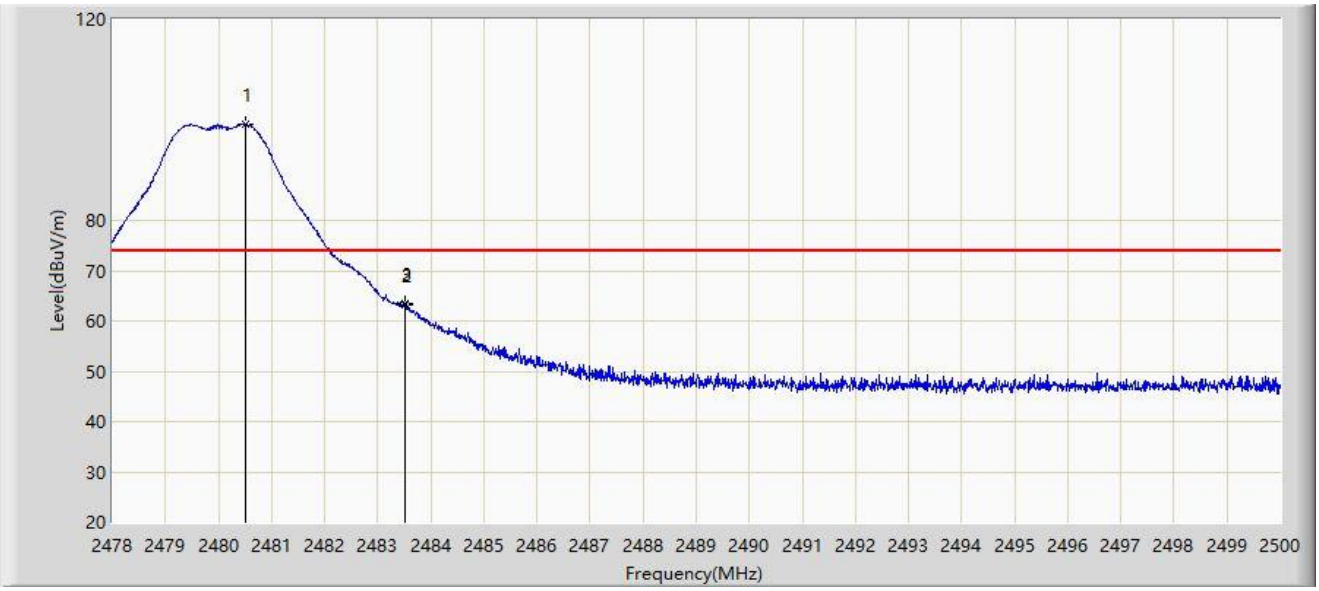
Note 1: " * ", means this data is the worst emission level.

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

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

Note 4. Average Measure Level = Peak Measure Level + Duty Cycle Factor, Duty cycle factor = -20dB.

Site: WZ-AC1	Test Date: 2023-07-10
Limit: FCC_2.4G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Vertical
EUT: ACCESS POINT	Power: AC 120V/60Hz
Test Mode: Transmit by Zigbee at 2480MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Duty cycle Factor (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		2480.497	99.042	67.952	N/A	N/A	N/A	31.090	PK
		2480.497	79.042	67.952	N/A	-20.00	N/A	31.090	AV
2		2483.500	63.138	32.045	-10.862	N/A	74.000	31.093	PK
		2483.500	43.138	32.045	-10.862	-20.00	54.000	31.093	AV
3	*	2483.511	63.588	32.495	-10.412	N/A	74.000	31.093	PK
		2483.511	43.588	32.495	-10.412	-20.00	54.000	31.093	AV

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

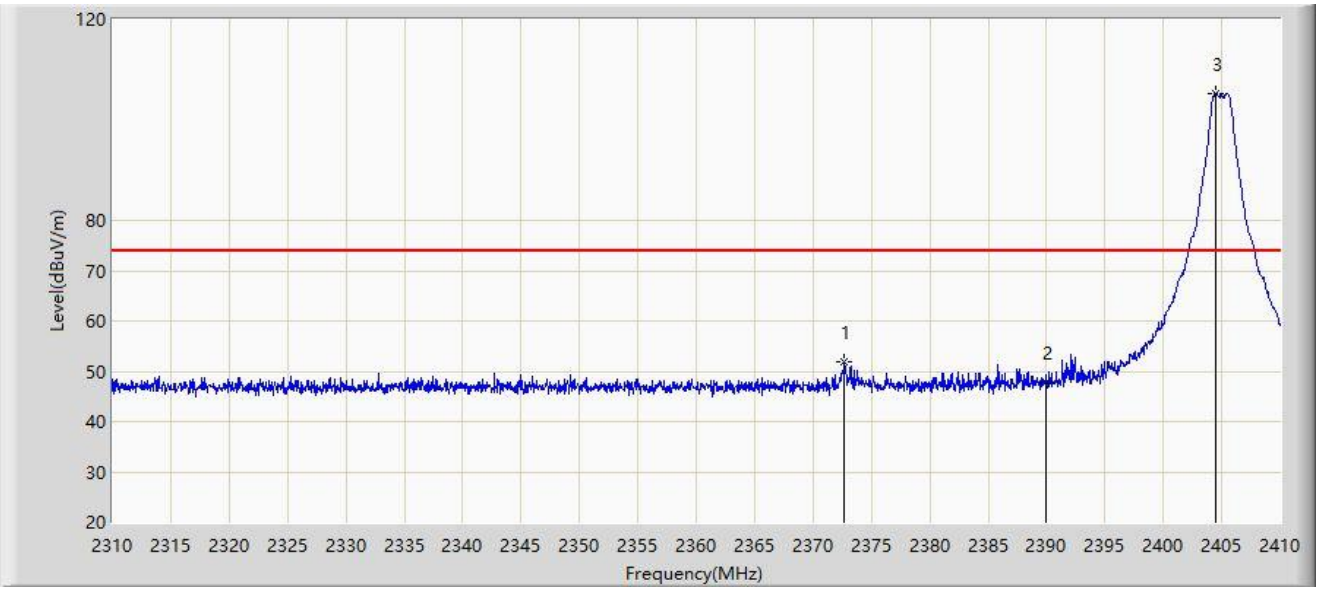
Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

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

Note 4. Average Measure Level = Peak Measure Level + Duty Cycle Factor, Duty cycle factor = -20dB.

Filter Configuration 5#

Site: WZ-AC1	Test Date: 2023-07-10
Limit: FCC_2.4G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Horizontal
EUT: ACCESS POINT	Power: AC 120V/60Hz
Test Mode: Transmit by Zigbee at 2405MHz	



No	Mark	Frequency (MHz)	Measure Level (dBµV/m)	Reading Level (dBµV)	Margin (dB)	Duty cycle Factor (dB)	Limit (dBµV/m)	Factor (dB/m)	Type
1	*	2372.700	51.759	20.552	-22.241	N/A	74.000	31.208	PK
		2372.700	31.759	20.552	-22.241	-20.00	54.000	31.208	AV
2		2390.000	47.919	16.761	-26.081	N/A	74.000	31.158	PK
		2390.000	27.919	16.761	-26.081	-20.00	54.000	31.158	AV
3		2404.450	105.300	74.153	N/A	N/A	N/A	31.147	PK
		2404.450	85.300	74.153	N/A	-20.00	N/A	31.147	AV

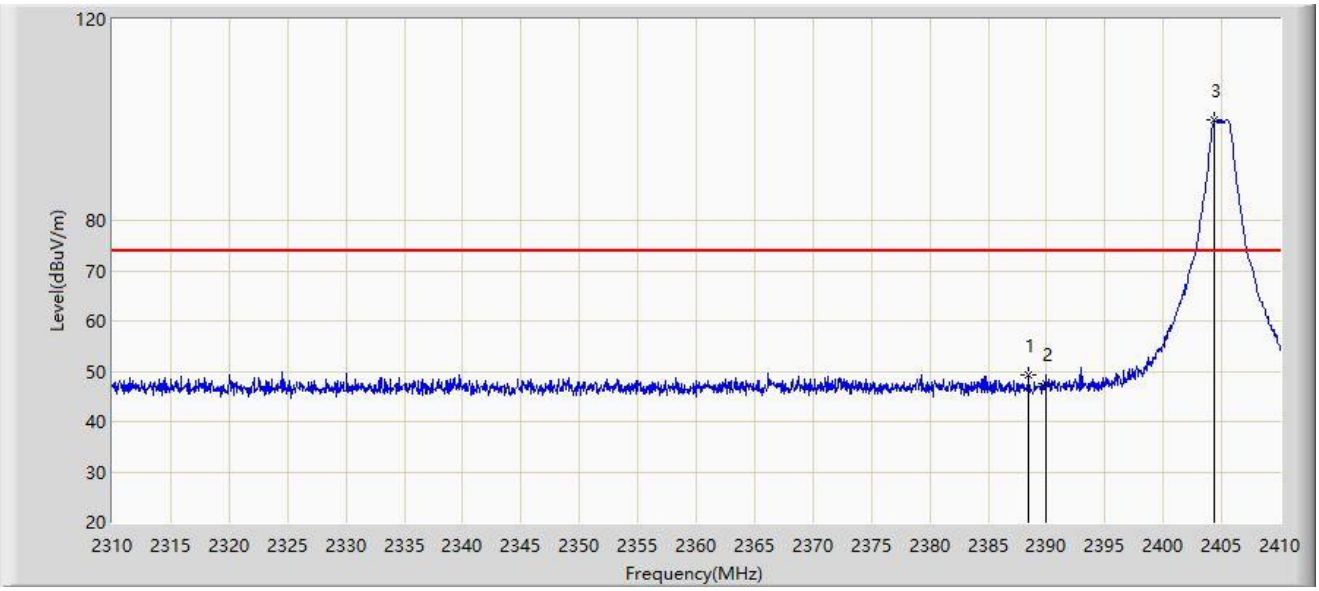
Note 1: " * ", means this data is the worst emission level.

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

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

Note 4. Average Measure Level = Peak Measure Level + Duty Cycle Factor, Duty cycle factor = -20dB.

Site: WZ-AC1	Test Date: 2023-07-10
Limit: FCC_2.4G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Vertical
EUT: ACCESS POINT	Power: AC 120V/60Hz
Test Mode: Transmit by Zigbee at 2405MHz	



No	Mark	Frequency (MHz)	Measure Level (dBµV/m)	Reading Level (dBµV)	Margin (dB)	Duty cycle Factor (dB)	Limit (dBµV/m)	Factor (dB/m)	Type
1	*	2388.500	49.363	18.204	-24.637	N/A	74.000	31.158	PK
		2388.500	29.363	18.204	-24.637	-20.00	54.000	31.158	AV
2		2390.000	47.478	16.320	-26.522	N/A	74.000	31.158	PK
		2390.000	27.478	16.320	-26.522	-20.00	54.000	31.158	AV
3		2404.400	100.103	68.956	N/A	N/A	N/A	31.147	PK
		2404.400	80.103	68.956	N/A	-20.00	N/A	31.147	AV

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

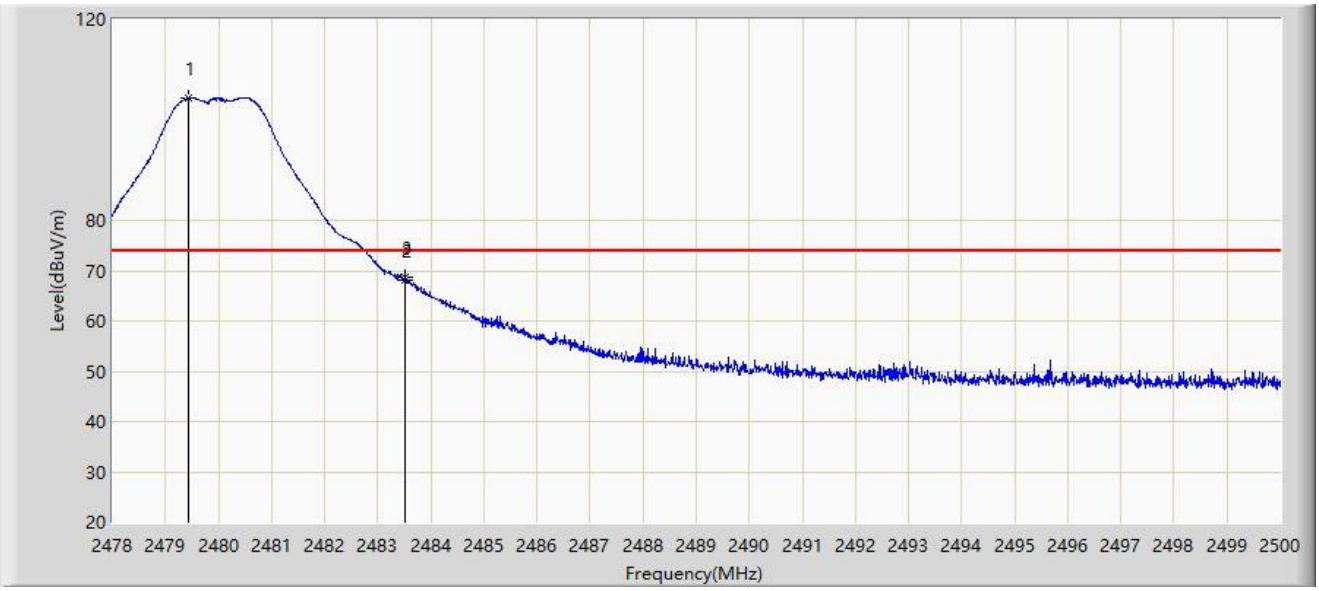
Note 2: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB/m).

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

Note 4. Average Measure Level = Peak Measure Level + Duty Cycle Factor, Duty cycle factor = -20dB.

Filter Configuration 6#

Site: WZ-AC1	Test Date: 2023-07-10
Limit: FCC_2.4G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Horizontal
EUT: ACCESS POINT	Power: AC 120V/60Hz
Test Mode: Transmit by Zigbee at 2480MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Duty cycle Factor (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		2479.430	104.325	73.236	N/A	N/A	N/A	31.089	PK
		2479.430	84.325	73.236	N/A	-20.00	N/A	31.089	AV
2		2483.500	68.186	37.093	-5.814	N/A	74.000	31.093	PK
		2483.500	48.186	37.093	-5.814	-20.00	54.000	31.093	AV
3	*	2483.522	68.663	37.570	-5.337	N/A	74.000	31.093	PK
		2483.522	48.663	37.570	-5.337	-20.00	54.000	31.093	AV

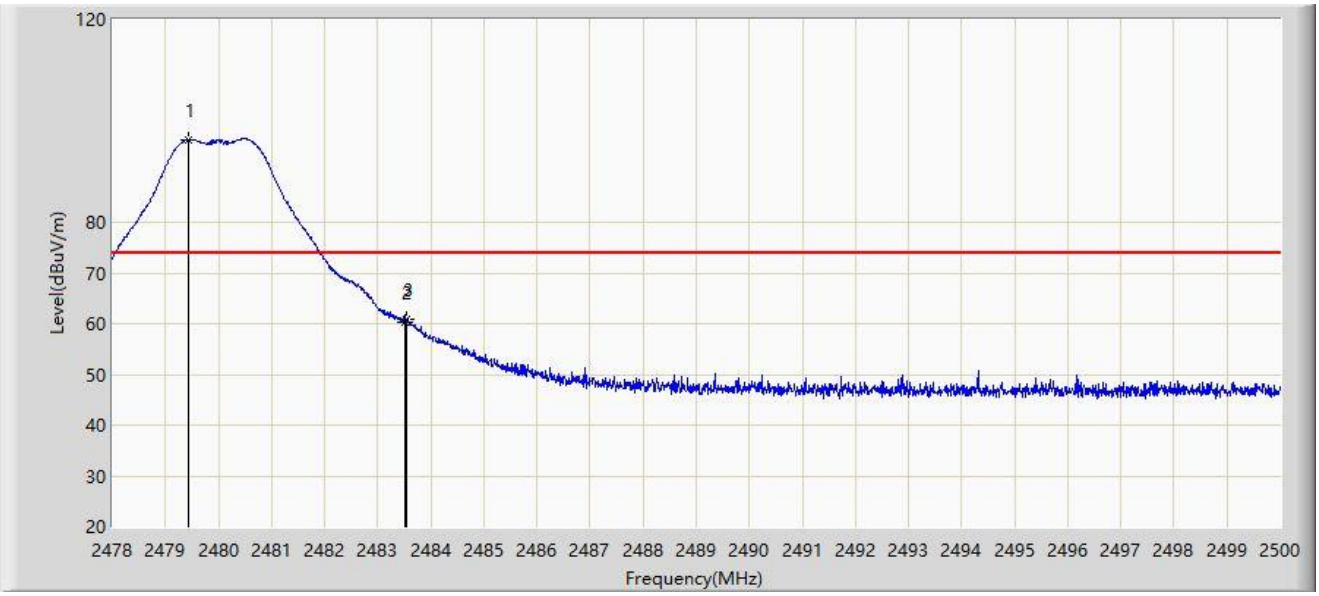
Note 1: " * ", means this data is the worst emission level.

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

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

Note 4. Average Measure Level = Peak Measure Level + Duty Cycle Factor, Duty cycle factor = -20dB.

Site: WZ-AC1	Test Date: 2023-07-10
Limit: FCC_2.4G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Vertical
EUT: ACCESS POINT	Power: AC 120V/60Hz
Test Mode: Transmit by Zigbee at 2480MHz	



No	Mark	Frequency (MHz)	Measure Level (dBµV/m)	Reading Level (dBµV)	Margin (dB)	Duty cycle Factor (dB)	Limit (dBµV/m)	Factor (dB/m)	Type
1		2479.430	96.270	65.181	N/A	N/A	N/A	31.089	PK
		2479.430	76.270	65.181	N/A	-20.00	N/A	31.089	AV
2		2483.500	60.242	29.149	-13.758	N/A	74.000	31.093	PK
		2483.500	40.242	29.149	-13.758	-20.00	54.000	31.093	AV
3	*	2483.533	60.932	29.839	-13.068	N/A	74.000	31.093	PK
		2483.533	40.932	29.839	-13.068	-20.00	54.000	31.093	AV

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

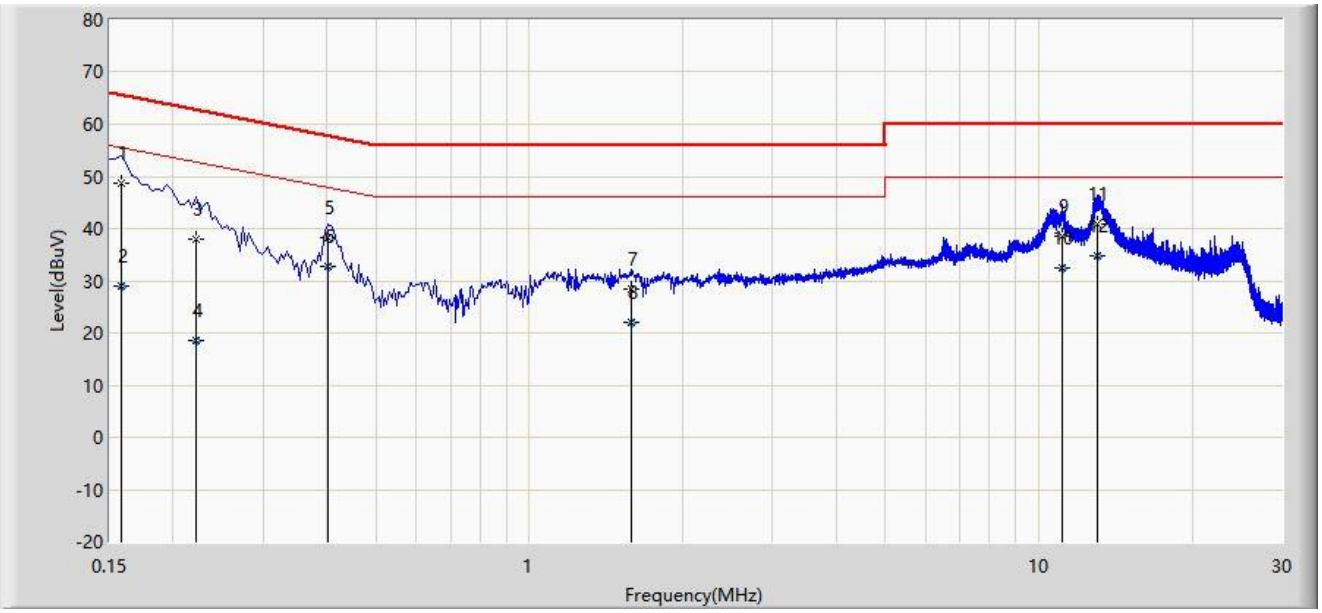
Note 2: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB/m).

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

Note 4. Average Measure Level = Peak Measure Level + Duty Cycle Factor, Duty cycle factor = -20dB.

A.8 AC Conducted Emissions Test Result

Site: WZ-SR2	Test Date: 2023-08-24
Limit: FCC_Part15.207_CE_AC Power	Engineer: Linda Wei
Probe: ENV216_101683_Filter Off_C	Polarity: Line
EUT: ACCESS POINT	Power: AC 120V/60Hz
Test Mode: Transmit by Zigbee at 2440MHz	



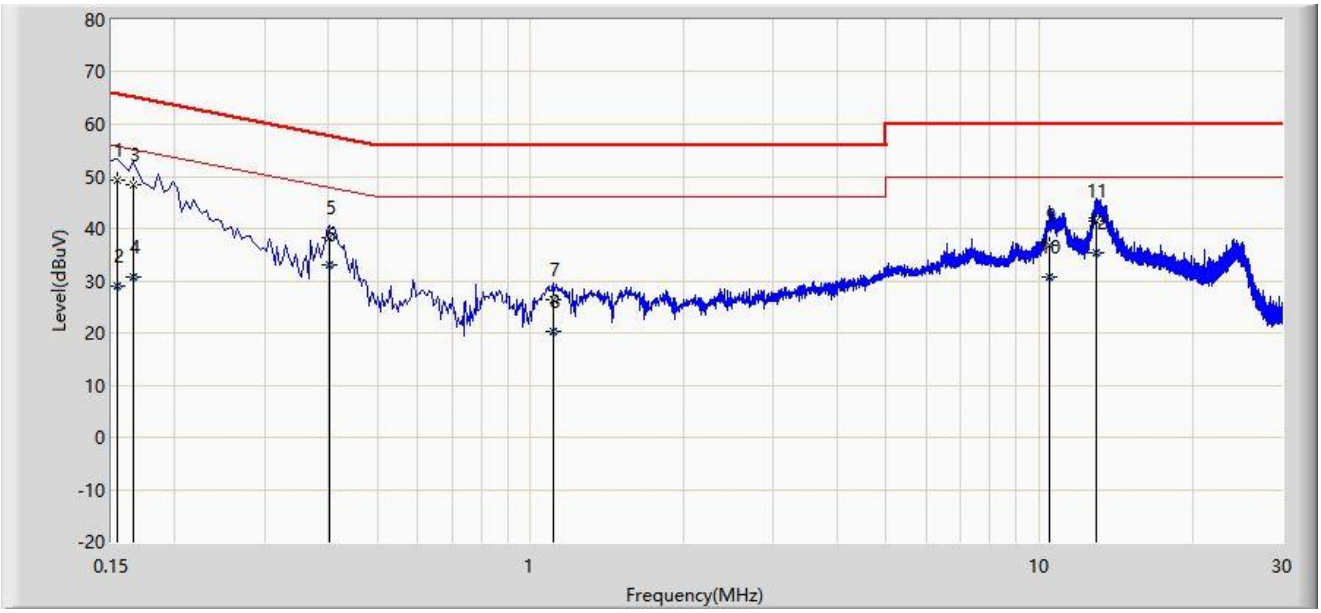
No	Mark	Frequency (MHz)	Measure Level (dBμV)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV)	Factor (dB)	Type
1		0.158	48.710	38.994	-16.859	65.568	9.716	QP
2		0.158	28.973	19.257	-26.596	55.568	9.716	AV
3		0.222	38.083	28.352	-24.660	62.744	9.732	QP
4		0.222	18.624	8.892	-34.120	52.744	9.732	AV
5		0.402	38.134	28.337	-19.678	57.812	9.796	QP
6		0.402	32.625	22.829	-15.187	47.812	9.796	AV
7		1.582	28.351	18.263	-27.649	56.000	10.088	QP
8		1.582	21.915	11.826	-24.085	46.000	10.088	AV
9		11.078	38.680	28.382	-21.320	60.000	10.298	QP
10		11.078	32.360	22.062	-17.640	50.000	10.298	AV
11		13.062	40.962	30.668	-19.038	60.000	10.294	QP
12	*	13.062	34.902	24.608	-15.098	50.000	10.294	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: 2023-08-24
Limit: FCC_Part15.207_CE_AC Power	Engineer: Linda Wei
Probe: ENV216_101683_Filter Off_C	Polarity: Neutral
EUT: ACCESS POINT	Power: AC 120V/60Hz
Test Mode: Transmit by Zigbee at 2440MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV)	Factor (dB)	Type
1		0.154	49.415	39.700	-16.366	65.781	9.716	QP
2		0.154	28.969	19.254	-26.812	55.781	9.716	AV
3		0.166	48.414	38.697	-16.744	65.158	9.718	QP
4		0.166	30.817	21.099	-24.341	55.158	9.718	AV
5		0.402	38.135	28.338	-19.677	57.812	9.796	QP
6		0.402	32.907	23.110	-14.905	47.812	9.796	AV
7		1.106	26.402	16.321	-29.598	56.000	10.081	QP
8		1.106	20.386	10.305	-25.614	46.000	10.081	AV
9		10.442	36.910	26.611	-23.090	60.000	10.299	QP
10		10.442	30.601	20.302	-19.399	50.000	10.299	AV
11		12.978	41.336	31.042	-18.664	60.000	10.294	QP
12	*	12.978	35.272	24.978	-14.728	50.000	10.294	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 “2306RSU040-UT” file.

Appendix C - EUT Photograph

Refer to “2306RSU040-UE” file.

The End