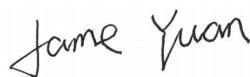




RF MEASUREMENT REPORT

FCC ID: Q9DAPIN0725
Applicant: Hewlett Packard Enterprise Company
Product: ACCESS POINT
Model No.: APIN0725
Trademark: 
FCC Classification: Digital Transmission System (DTS)
FCC Rule Part(s): Part 15 Subpart C (Section 15.247)
Result: Complies
Received Date: 2024-12-20
Test Date: 2025-02-14 ~ 2025-02-28

Reviewed By:



Jame Yuan

Approved By:



Robin Wu



The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report 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
2412RSU035-U3	V01	Initial Report	2025-04-22	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 Settintg	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	29
A.4	Power Spectral Density Test Result	30
A.5	Conducted Band Edge and Out-of-Band Emissions Test Result.....	31
A.6	Radiated Spurious Emission Test Result.....	33
A.7	Radiated Restricted Band Edge Test Result.....	42
A.8	AC Conducted Emissions Test Result	46
Appendix B	- Test Setup Photograph	50
Appendix C	- EUT Photograph	51

1. General Information

1.1. Applicant

Hewlett Packard Enterprise Company

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

1.2. Manufacturer

Hewlett Packard Enterprise Company

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 Location (Suzhou - Wujiang)				
	Building 1, No.1 Xingdong Road, Wujiang, Suzhou, Jiangsu, People’s Republic of 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	ACCESS POINT
Model No.	APIN0725
Serial No.	CNT4MPP016 (Conducted) CNT4MPP00W (Radiated)
Software Version	BCM4711A0 fcbga_bu [Baseline: 0057]
Wi-Fi Specification	802.11a/b/g/n/ac/ax/be
Bluetooth Specification	BLE only
Antenna Information	Refer to Section 1.5
Power Type	PoE Input
Operating Temperature	0 ~ 50 °C
Operating Environment	Indoor Use
Accessory	
PoE Inject	Model: ADH-30CR BB Input: 100-240V ~ 1.0A, 50-60Hz Output: 55.0V, 0.55A 30.25W
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

ZigBee Specification	802.15.4
Frequency Range	2405 ~ 2480MHz
Channel Number	16
Type of Modulation	O-QPSK
Antenna Type	PIFA Antenna
Antenna Gain	3.58dBi

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	--	--	--	--

2. Test Configuration

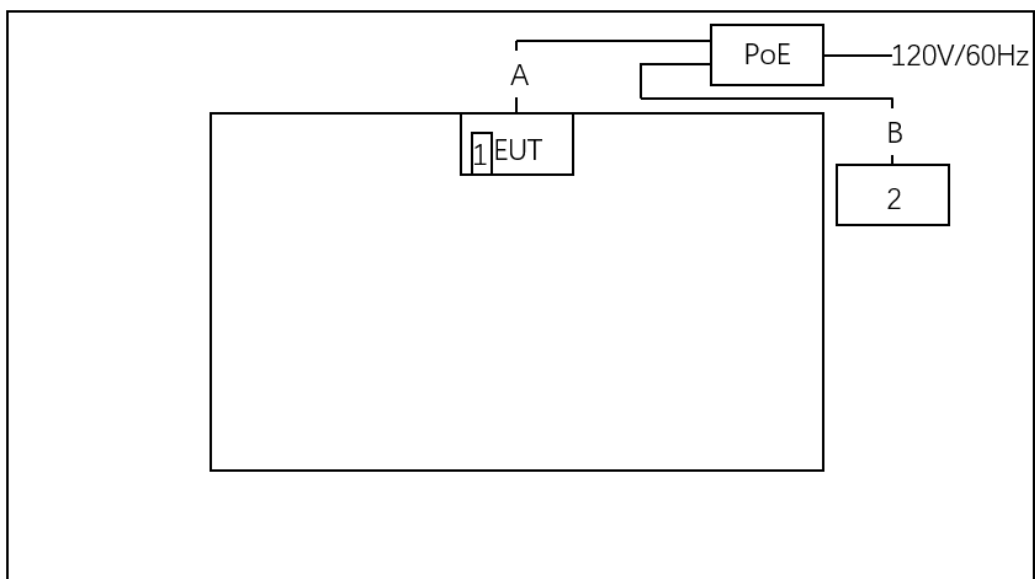
2.1. Test Mode

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.

Connection Diagram



No.	Cable Type	Cable Spec.	Length
A	Ethernet Cable	Non-Shielded, Cat 6	>10.0m
B	Ethernet Cable	Non-Shielded, Cat 6	1.2m
No.	Product	Manufacturer	Model No.
1	USB Flash	SanDisk	16G
2	Notebook	DELL	Latitude 5491

2.3. Test Software

The test utility software used during testing was “BlueTool”, and the version was 102.2.0.6.

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
Thermohygrometer	testo	608-H1	MRTSUE11330	1 year	2025-06-24	WJ-SR2
Shielding Room	TDK	WJ-SR2	MRTSUE07124	N/A	N/A	WJ-SR2
Signal Analyzer	Keysight	N9020B	MRTSUE07037	1 year	2025-09-03	WJ-SR2
USB Power Sensor	Keysight	U2021XA	MRTSUE07141	1 year	2025-03-23	WJ-SR2
Attenuator	MVE	MVE2213	MRTSUE11086	1 year	2025-06-05	WJ-SR2
TRILOG Broad Band Antenna	Schwarzbeck	VULB 9163	MRTSUE07097	1 year	2025-04-24	WJ-AC2
Preamplifier	EMCI	EMC118A45SE	MRTSUE07102	1 year	2025-04-11	WJ-AC2
Preamplifier	EMCI	EMC184045SE	MRTSUE07103	1 year	2025-04-14	WJ-AC2
Horn Antenna	RFSPIN	DRH18-E	MRTSUE07105	1 year	2025-05-12	WJ-AC2
Anechoic Chamber	TDK	WJ-AC2	MRTSUE07117	1 year	2025-05-14	WJ-AC2
Thermohygrometer	testo	608-H1	MRTSUE11315	1 year	2025-06-24	WJ-AC2
Thermohygrometer	testo	608-H1	MRTSUE11332	1 year	2025-06-24	WJ-AC2
Active Loop Antenna	Schwarzbeck	FMZB 1519-60 D	MRTSUE07076	1 year	2025-11-19	WJ-AC2
Broadband Horn Antenna	Schwarzbeck	BBHA 9170	MRTSUE07100	1 year	2025-04-24	WJ-AC2
EMI Test Receiver	R&S	ESR3	MRTSUE07112	1 year	2025-04-21	WJ-SR5
Shielding Room	TDK	WJ-SR5	MRTSUE07127	N/A	N/A	WJ-SR5
Thermohygrometer	testo	608-H1	MRTSUE11317	1 year	2025-06-24	WJ-SR5
Two-Line V-Network	R&S	ENV216	MRTSUE07202	1 year	2025-05-26	WJ-SR5

Software	Version	Function
e3	230711	RE & CE
CONTROLLER CO3000	v 1.03.02	RE Antenna & Turntable
BenchVue Power Meter	2018.1	Power

5. Decision Rules and Measurement Uncertainty

5.1. Decision Rules

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4: 2012 Clause 8.2.
(Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

5.2. Measurement Uncertainty

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

AC Conducted Emission Measurement
The maximum measurement uncertainty is evaluated as: 9kHz~150kHz: 3.02dB 150kHz~30MHz: 2.56dB
Radiated Emission Measurement
The maximum measurement uncertainty is evaluated as: Coaxial: 9kHz~30MHz: 2.35dB Coplanar: 9kHz~30MHz: 2.37dB Horizontal: 30MHz~200MHz: 3.46dB 200MHz~1GHz: 3.78dB 1GHz~40GHz: 4.97dB Vertical: 30MHz~200MHz: 4.07dB 200MHz~1GHz: 5.28dB 1GHz~40GHz: 4.78dB
Spurious Emissions, Conducted
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 2.5dB
Output Power
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 1.3dB
Power Spectrum Density
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 2.5dB
Occupied Bandwidth
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 2.6%

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 captured using a correction table to account for cable and attenuator losses in the system connecting the EUT to the analyzer across relevant frequencies.
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.

6.2. 6dB Bandwidth Measurement

6.2.1. Test Limit

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

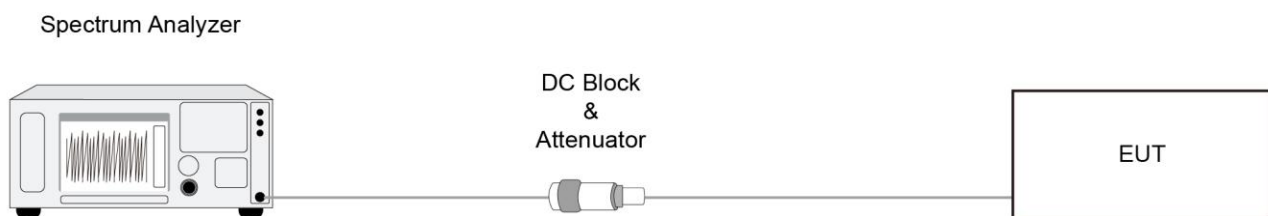
6.2.2. Test Procedure

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. $VBW \geq 3 \times RBW$
4. Detector = Peak
5. Trace mode = Max hold
6. Sweep = Auto couple
7. Allow the trace to stabilize

6.2.4. Test Setup



6.2.5. Test Result

Refer to Appendix A.2.

6.3. Output Power Measurement

6.3.1. Test Limit

The maximum output power shall be less 1 Watt (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

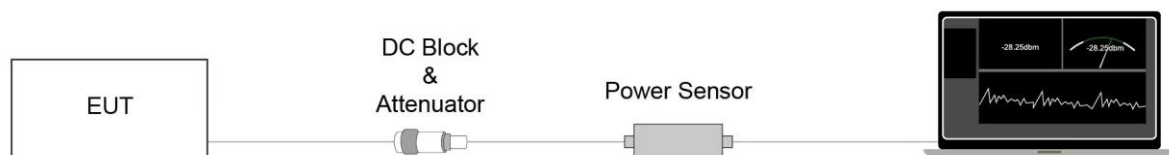
Method PKPM1 (Peak Power Measurement of Signals with DTS BW $\leq$ 50MHz)

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.

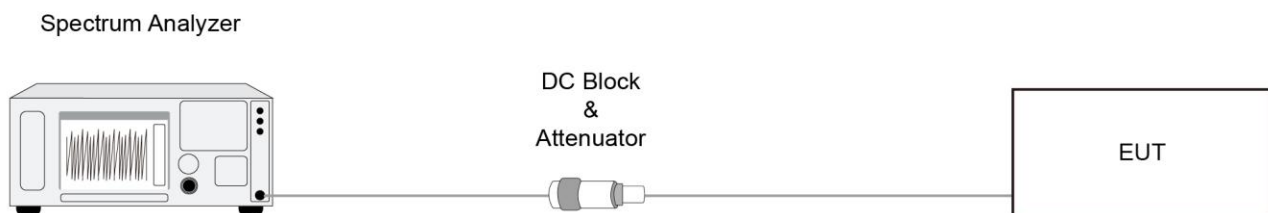
6.4.2. Test Procedure

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 Setting

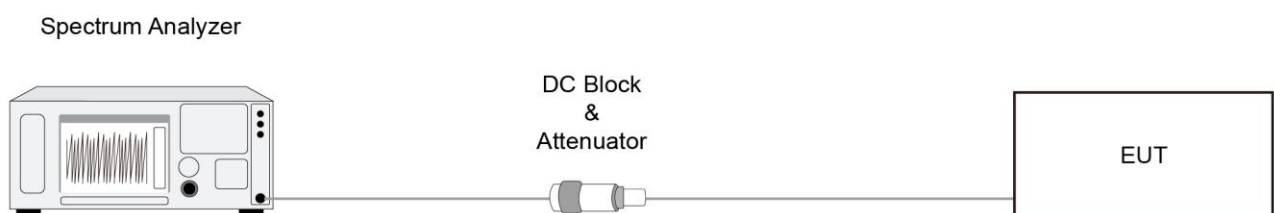
Reference level measurement

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

Emission level measurement

1. Set the center frequency and span to encompass frequency range to be measured
2. RBW = 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 [$\mu\text{V/m}$]	Measured Distance [Meters]
0.009 - 0.490	2400/F (kHz)	300
0.490 - 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

6.6.2. Test Procedure

ANSI C63.10 - 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

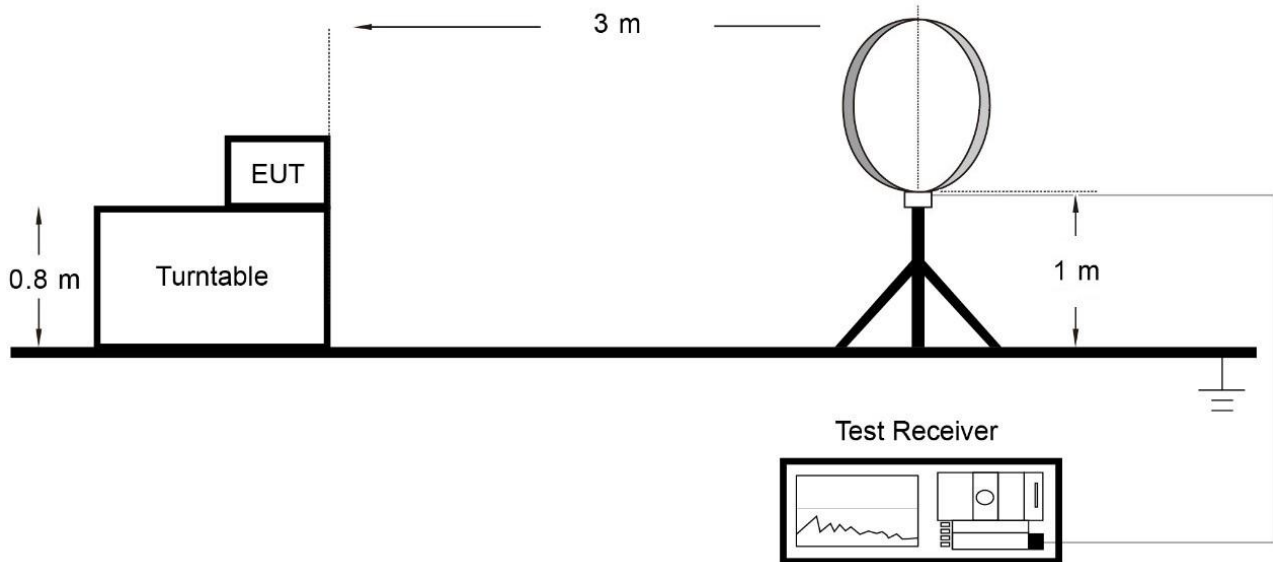
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = Peak
5. Sweep time = Auto couple
6. Trace mode = Max hold
7. Trace was allowed to stabilize

Average Measurements above 1GHz

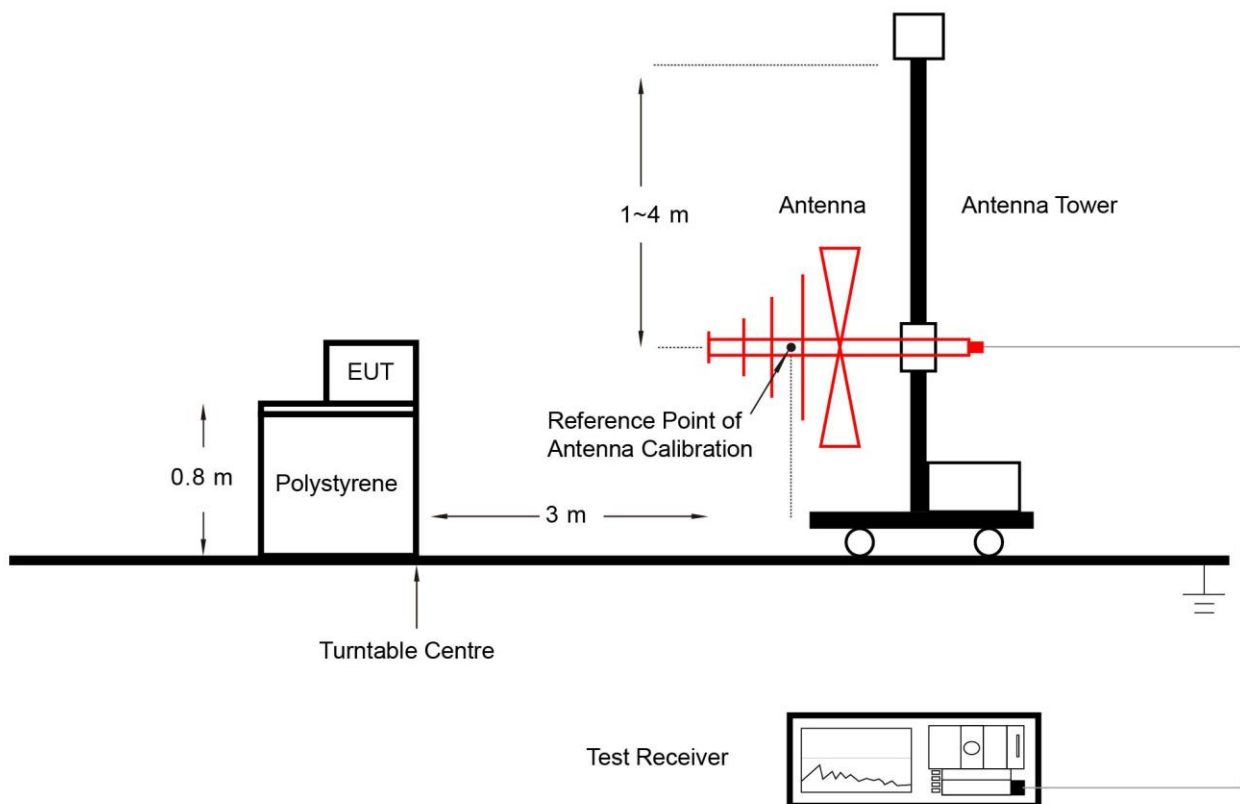
1. Average Measurement Level = Peak Measurement Level - $20 * \text{Log}(\text{Duty Cycle}) = -20$
2. Duty Cycle = 10%

6.6.4. Test Setup

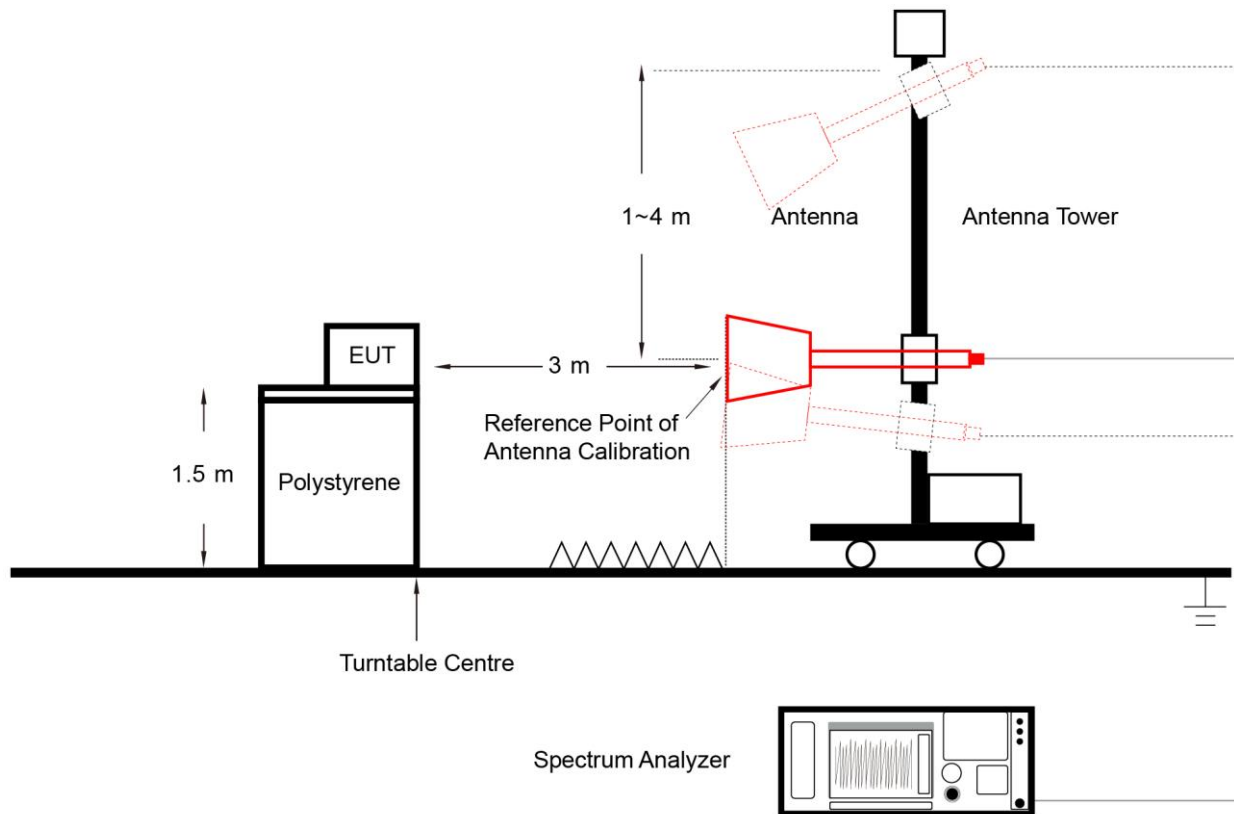
Below 30MHz Test Setup:



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 [μ V/m]	Measured Distance [Meters]
0.009 - 0.490	2400/F (kHz)	300
0.490 - 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

6.7.2. Test Procedure

ANSI C63.10-2013 Section 6.3 & 6.6 & 11.13

6.7.3. Test Setting

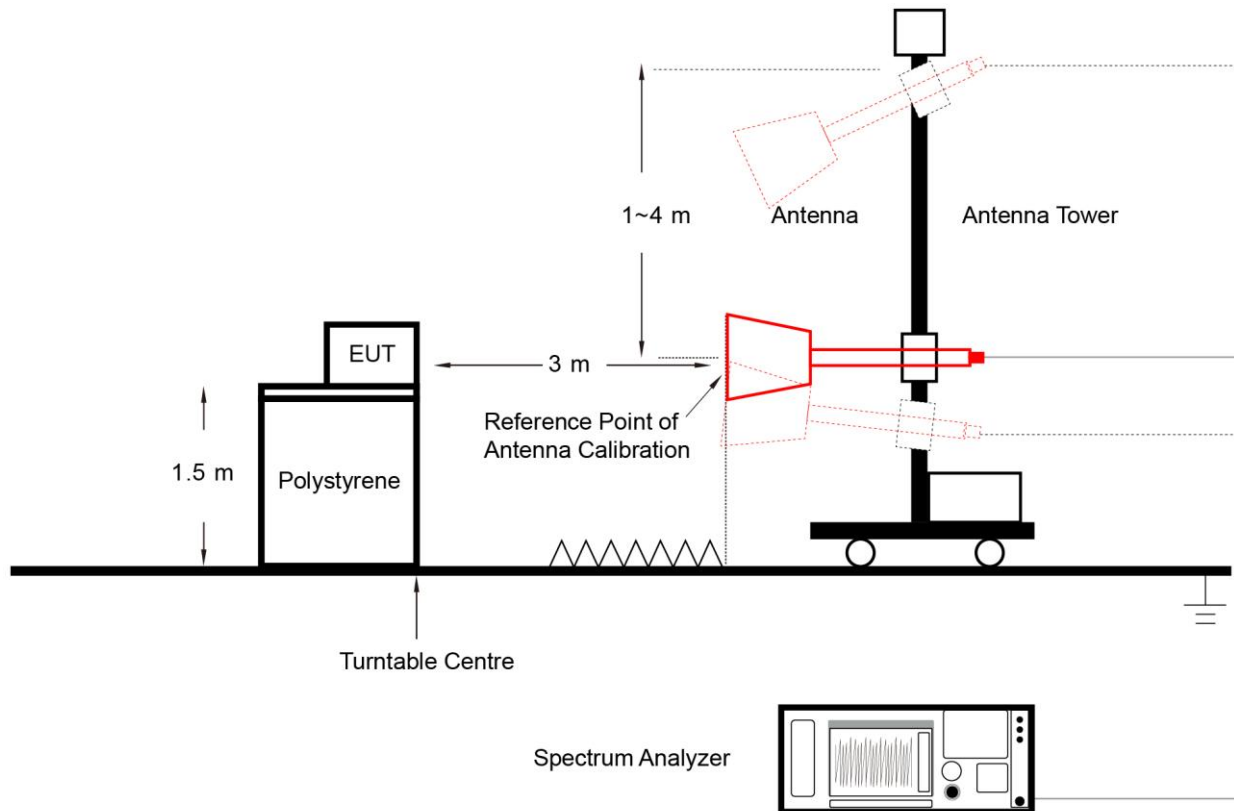
Peak Field Strength Measurements

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 Measurements above 1GHz

1. Average Measurement Level = Peak Measurement Level - 20 * Log(Duty Cycle) = -20
2. Duty Cycle = 10%

6.7.4. Test Setup



6.7.5. Test Result

Refer to Appendix A.7.

6.8. AC Conducted Emissions Measurement

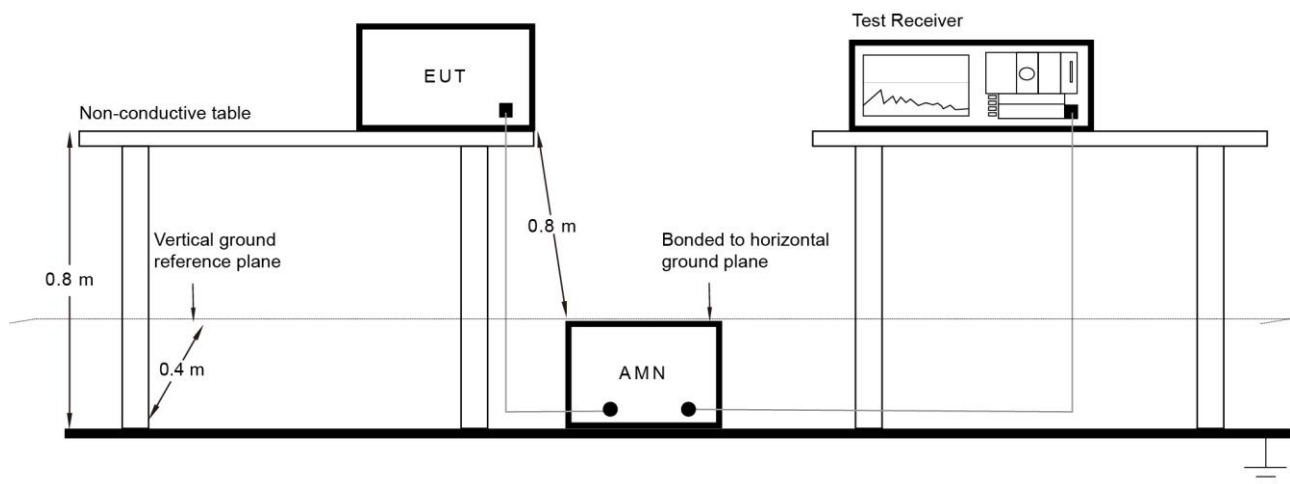
6.8.1. Test Limit

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

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

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

6.8.2. Test Setup



6.8.3. Test Result

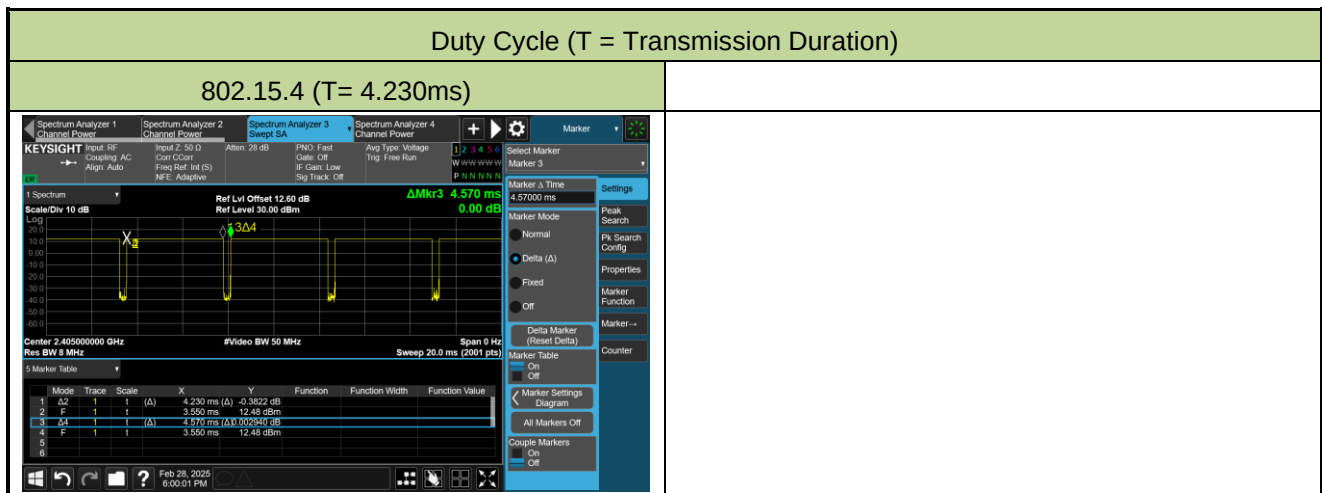
Refer to Appendix A.8.

Appendix A – Test Result

A.1 Duty Cycle Test Result

Test Site	WJ-SR2	Test Engineer	Jake Lan
Test Date	2025-02-28		

Test Mode	Duty Cycle
802.15.4	92.56%



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	WJ-SR2	Test Engineer	Jake Lan
Test Date	2025-02-21		

Test Mode	Modulation Mode	Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	Result
802.15.4	O-QPSK	11	2405	1.596	≥ 0.5	Pass
802.15.4	O-QPSK	18	2440	1.552	≥ 0.5	Pass
802.15.4	O-QPSK	26	2480	1.557	≥ 0.5	Pass



A.3 Output Power Test Result

Test Site	WJ-SR2	Test Engineer	Jake Lan
Test Date	2025-02-25		

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	10.83	≤ 30.00	Pass
802.15.4	O-QPSK	18	2440	11.59	≤ 30.00	Pass
802.15.4	O-QPSK	26	2480	10.51	≤ 30.00	Pass

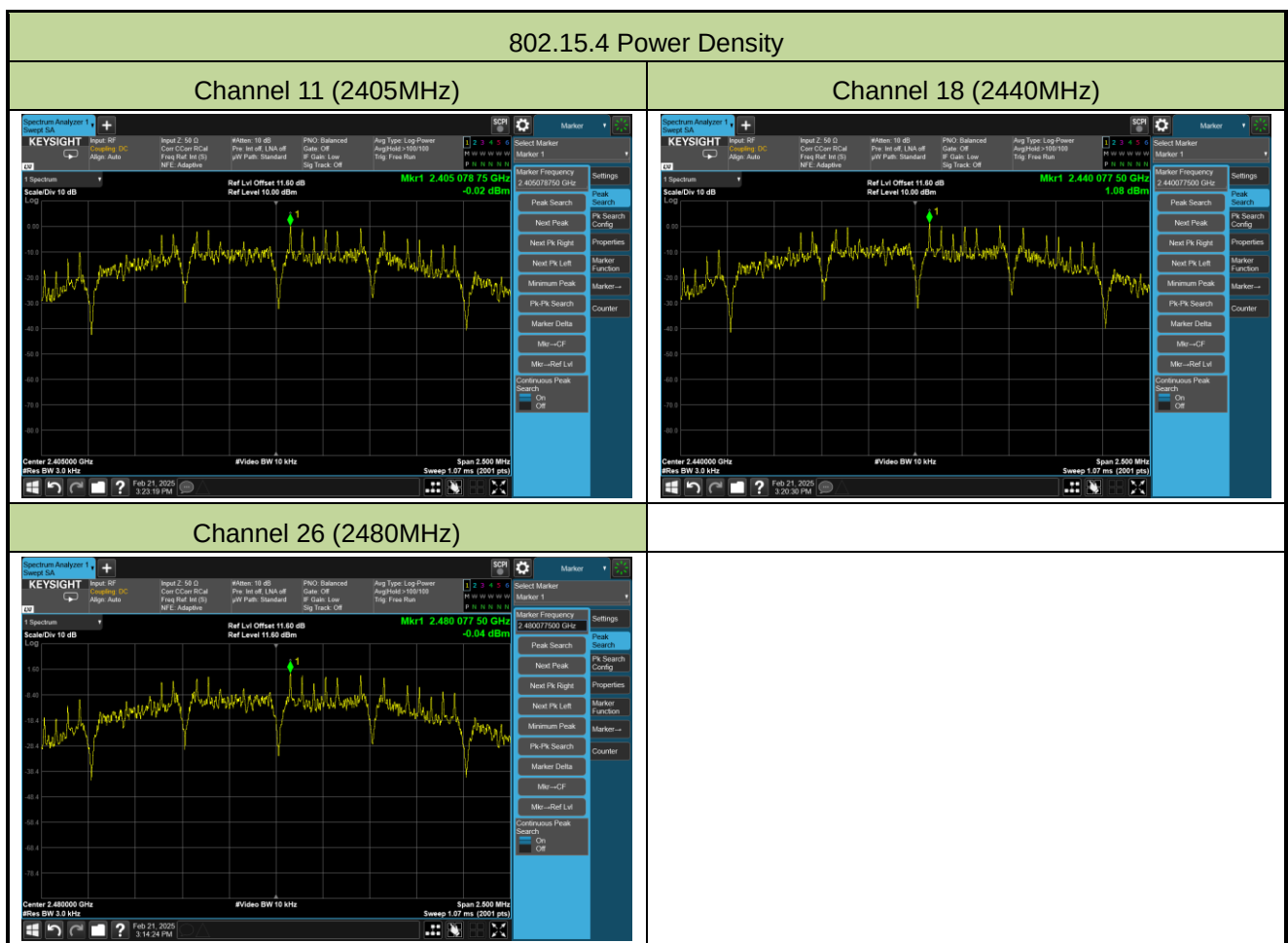
Test Result of Average Output Power (Reporting Only)

Test Mode	Modulation Mode	Channel No.	Freq. (MHz)	Average Power (dBm)	Limit (dBm)	Result
802.15.4	O-QPSK	11	2405	10.12	≤ 30.00	Pass
802.15.4	O-QPSK	18	2440	10.99	≤ 30.00	Pass
802.15.4	O-QPSK	26	2480	9.87	≤ 30.00	Pass

A.4 Power Spectral Density Test Result

Test Site	WJ-SR2	Test Engineer	Jake Lan
Test Date	2025-02-21		

Test Mode	Modulation Mode	Channel No.	Frequency (MHz)	PK PSD (dBm / 3kHz)	Limit (dBm / 3kHz)	Result
802.15.4	O-QPSK	11	2405	-0.02	≤ 8.00	Pass
802.15.4	O-QPSK	18	2440	1.08	≤ 8.00	Pass
802.15.4	O-QPSK	26	2480	-0.04	≤ 8.00	Pass



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

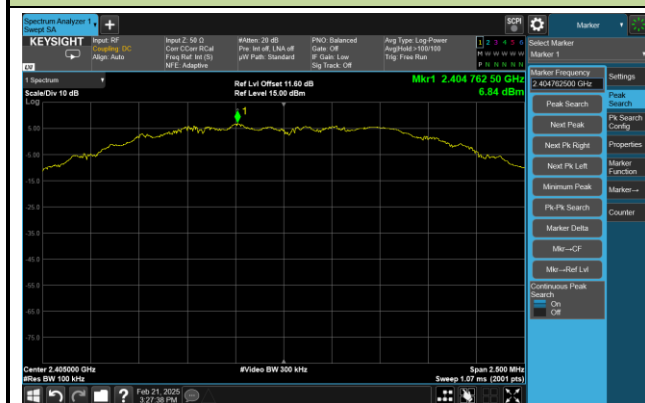
Test Site	WJ-SR2	Test Engineer	Jake Lan
Test Date	2025-02-21		

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

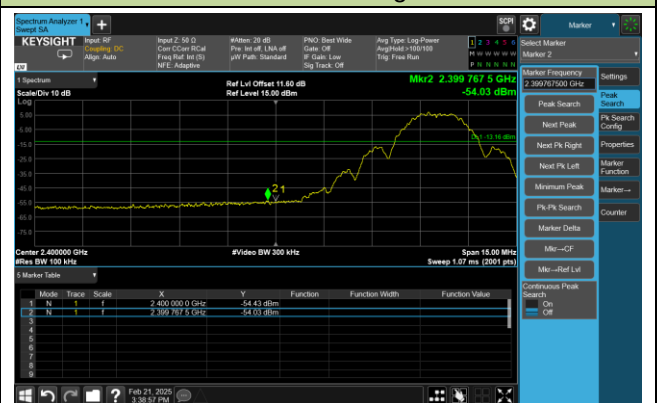
802.15.4 Out-of-Band Emissions

Channel 11 (2405MHz)

100kHz PSD Reference Level



Low Band Edge

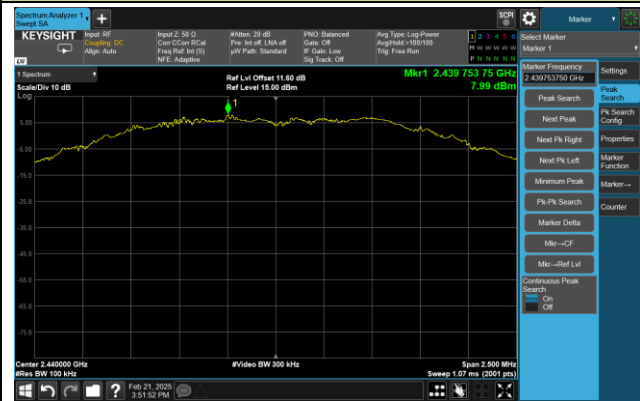


Spurious Emission

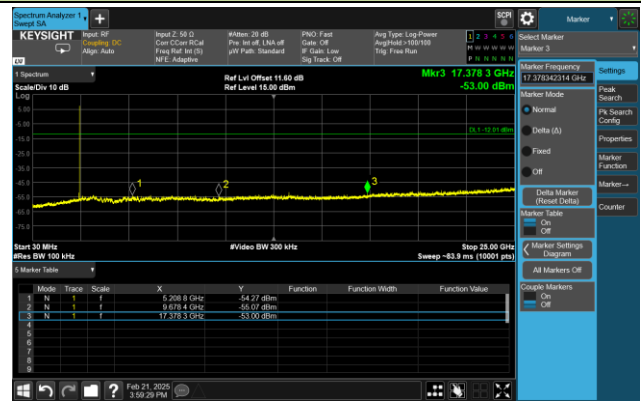


Channel 18 (2440MHz)

100kHz PSD Reference Level



Spurious Emission



Channel 26 (2480MHz)

100kHz PSD Reference Level



High Band Edge



Spurious Emission



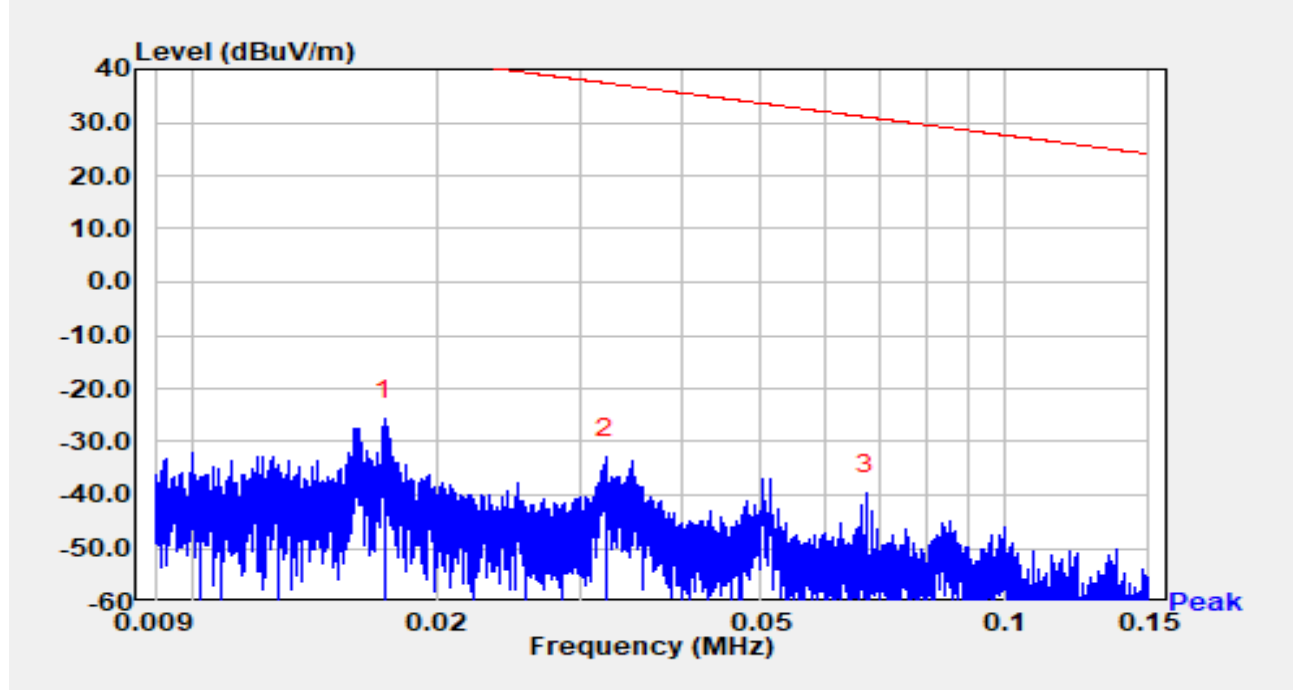
A.6 Radiated Spurious Emission Test Result

Test Site	WJ-AC2	Test Engineer	Bob Zhang
Test Date	2025-02-16		
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	4112.700	41.8	-1.8	40.0	74.0	-34.0	Peak	Horizontal
	4729.800	41.4	-0.1	41.3	74.0	-32.7	Peak	Horizontal
	12172.400	43.4	5.1	48.5	74.0	-25.5	Peak	Horizontal
	4005.600	40.4	-1.3	39.1	74.0	-34.9	Peak	Vertical
	4816.500	40.9	0.0	40.9	74.0	-33.1	Peak	Vertical
	11407.400	42.0	5.5	47.5	74.0	-26.5	Peak	Vertical
18	4009.000	41.6	-1.2	40.4	74.0	-33.6	Peak	Horizontal
	4774.000	42.1	0.0	42.1	74.0	-31.9	Peak	Horizontal
	11657.300	43.9	4.9	48.8	74.0	-25.2	Peak	Horizontal
	3954.600	41.4	-1.5	39.9	74.0	-34.1	Peak	Vertical
	4746.800	41.3	-0.2	41.1	74.0	-32.9	Peak	Vertical
	11907.200	42.8	4.9	47.7	74.0	-26.3	Peak	Vertical
26	3776.100	41.8	-1.5	40.3	74.0	-33.7	Peak	Horizontal
	4983.100	41.9	0.2	42.1	74.0	-31.9	Peak	Horizontal
	11380.200	43.4	5.5	48.9	74.0	-25.1	Peak	Horizontal
	4043.000	40.9	-1.6	39.3	74.0	-34.7	Peak	Vertical
	4937.200	41.8	0.1	41.9	74.0	-32.1	Peak	Vertical
	11463.500	42.2	5.3	47.5	74.0	-26.5	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 30MHz:

Site	WJ-AC2	Test Date	2025-02-14
Temperature	15.1 °C	Humidity	29.7 %
Limit	FCC_Part 15.209_RSE (3m)	Test Engineer	Bob Zhang
Factor	FMZB 1519-60 D_07076_00031	Polarity	Coaxial
EUT	ACCESS POINT	Test Voltage	By PoE
Test Mode	Transmit by ZigBee at 2405MHz		

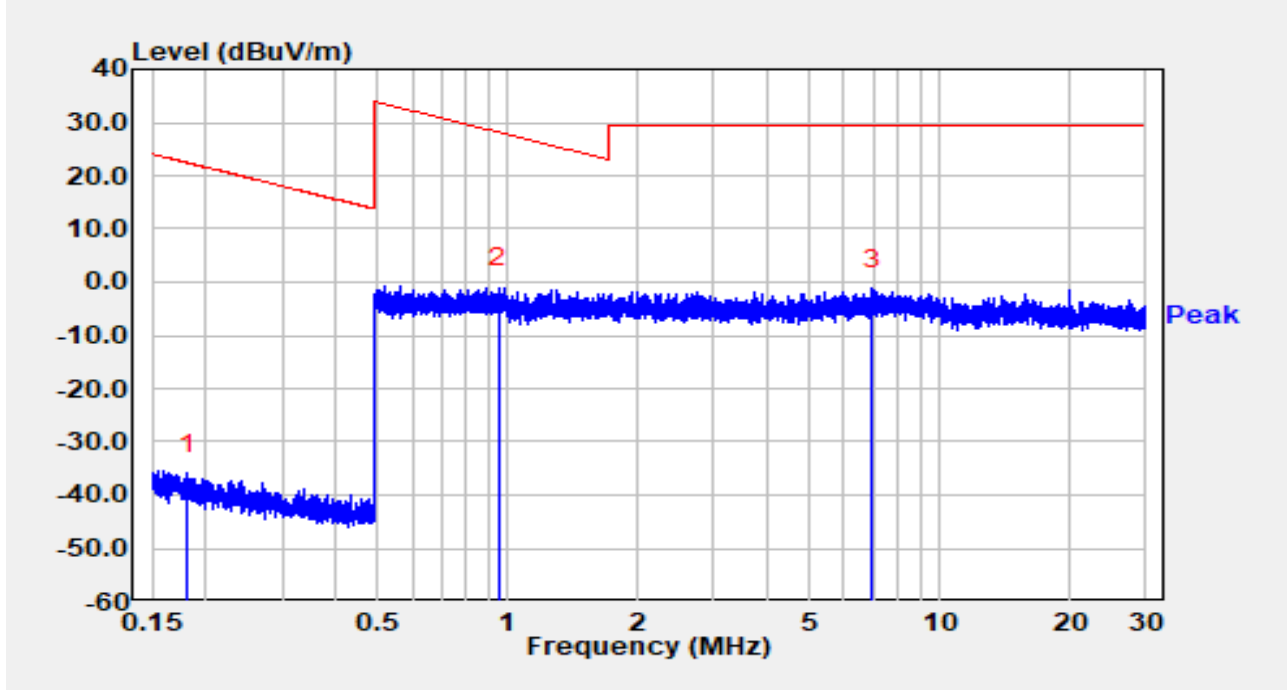


No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1	*	0.017	33.98	-59.75	-25.77	-68.63	42.86	Peak
2		0.032	27.14	-60.09	-32.95	-70.37	37.41	Peak
3		0.067	20.48	-60.19	-39.72	-70.73	31.01	Peak

Notes:

1. " * ", means this data is the worst emission level.
2. C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB) + 40log(d1/d2) (dB), d1 = 3m, d2 = 300m (9kHz-490kHz) or 30m (490kHz-30MHz).
3. Measurement (dBμV/m) = Reading (dBμV) + C.F (dB/m).
4. Quasi-Peak measurement was not performed when peak measure level was lower than the quasi-peak limit.

Site	WJ-AC2	Test Date	2025-02-14
Temperature	15.1 °C	Humidity	29.7 %
Limit	FCC_Part 15.209_RSE (3m)	Test Engineer	Bob Zhang
Factor	FMZB 1519-60 D_07076_00031	Polarity	Coaxial
EUT	ACCESS POINT	Test Voltage	By PoE
Test Mode	Transmit by ZigBee at 2405MHz		

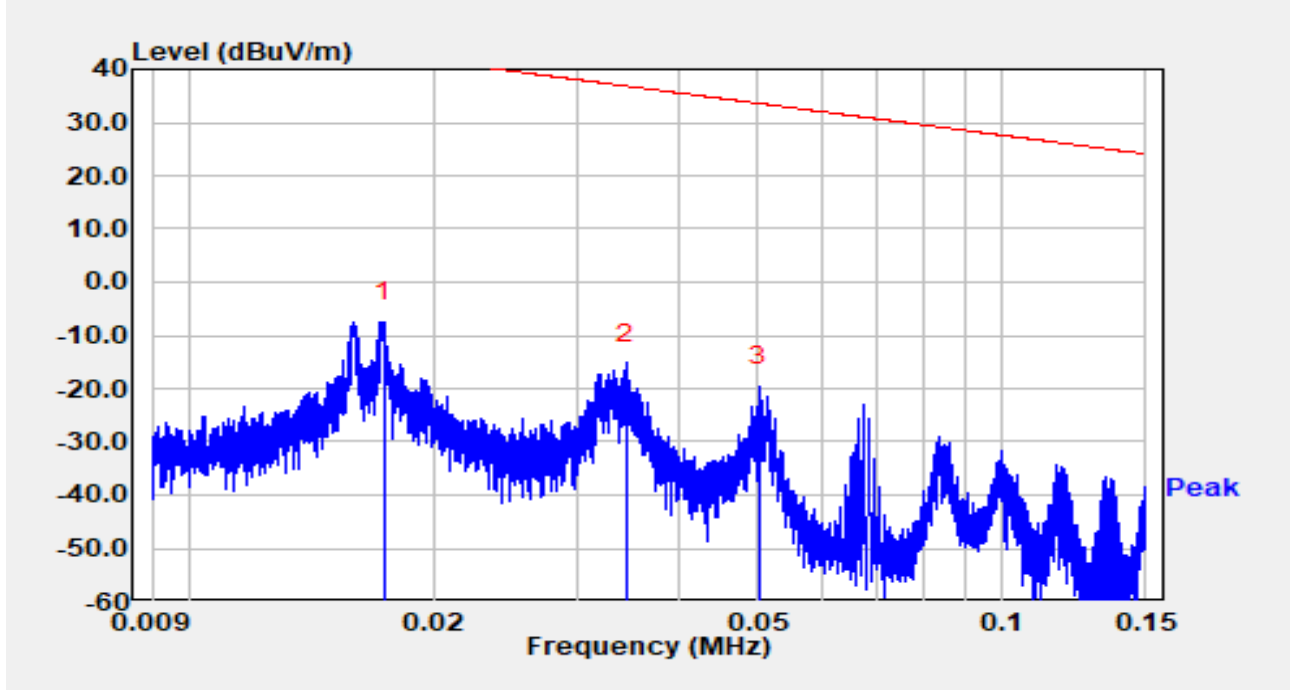


No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1		0.181	24.30	-60.28	-35.98	-58.41	22.43	Peak
2	*	0.952	19.45	-20.41	-0.96	-29.00	28.05	Peak
3		6.991	19.30	-20.49	-1.19	-30.69	29.50	Peak

Notes:

1. " * ", means this data is the worst emission level.
2. C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB) + 40log(d1/d2) (dB), d1 = 3m, d2 = 300m (9kHz-490kHz) or 30m (490kHz-30MHz).
3. Measurement (dBμV/m) = Reading (dBμV) + C.F (dB/m).
4. Quasi-Peak measurement was not performed when peak measure level was lower than the quasi-peak limit.

Site	WJ-AC2	Test Date	2025-02-14
Temperature	15.1 °C	Humidity	29.7 %
Limit	FCC_Part 15.209_RSE (3m)	Test Engineer	Bob Zhang
Factor	FMZB 1519-60 D_07076_00031	Polarity	Coplanar
EUT	ACCESS POINT	Test Voltage	By PoE
Test Mode	Transmit by ZigBee at 2405MHz		

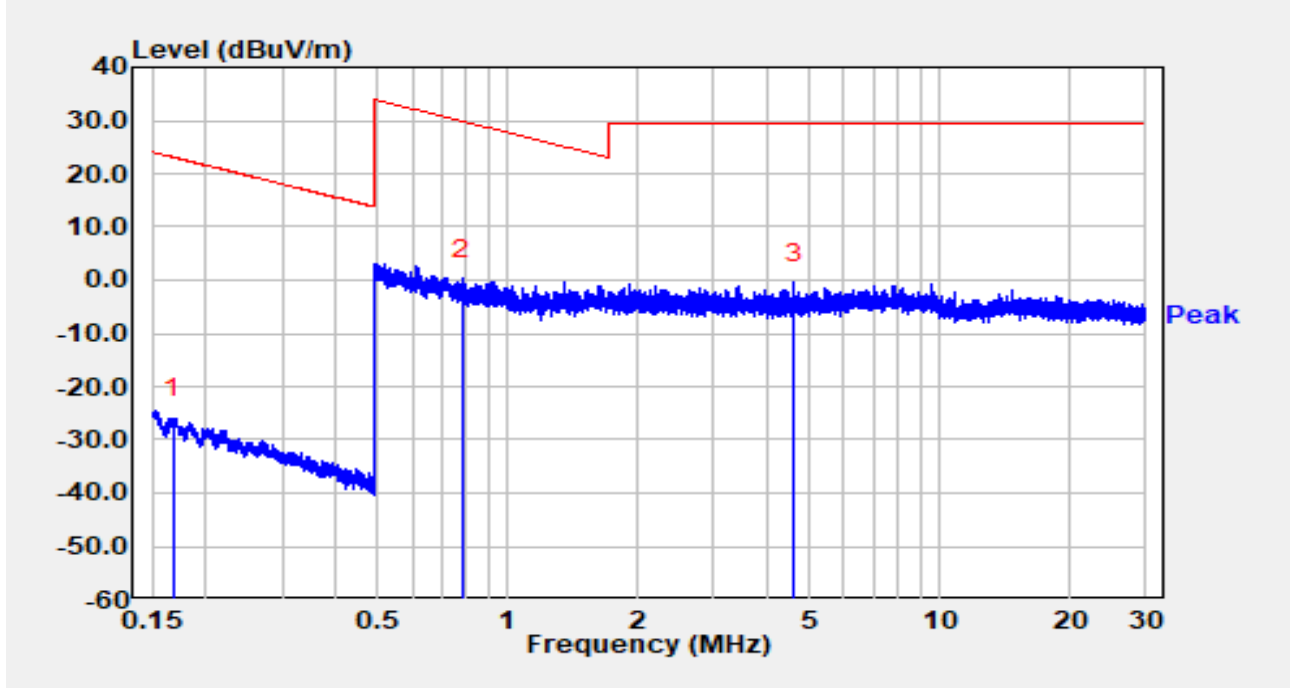


No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1	*	0.017	52.29	-59.76	-7.47	-50.26	42.79	Peak
2		0.034	45.00	-60.11	-15.11	-51.96	36.85	Peak
3		0.050	40.71	-60.17	-19.47	-53.04	33.57	Peak

Notes:

1. " * ", means this data is the worst emission level.
2. C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB) + $40\log(d1/d2)$ (dB), $d1 = 3m$, $d2 = 300m$ (9kHz-490kHz) or 30m (490kHz-30MHz).
3. Measurement (dBμV/m) = Reading (dBμV) + C.F (dB/m).
4. Quasi-Peak measurement was not performed when peak measure level was lower than the quasi-peak limit.

Site	WJ-AC2	Test Date	2025-02-14
Temperature	15.1 °C	Humidity	29.7 %
Limit	FCC_Part 15.209_RSE (3m)	Test Engineer	Bob Zhang
Factor	FMZB 1519-60 D_07076_00031	Polarity	Coplanar
EUT	ACCESS POINT	Test Voltage	By PoE
Test Mode	Transmit by ZigBee at 2405MHz		



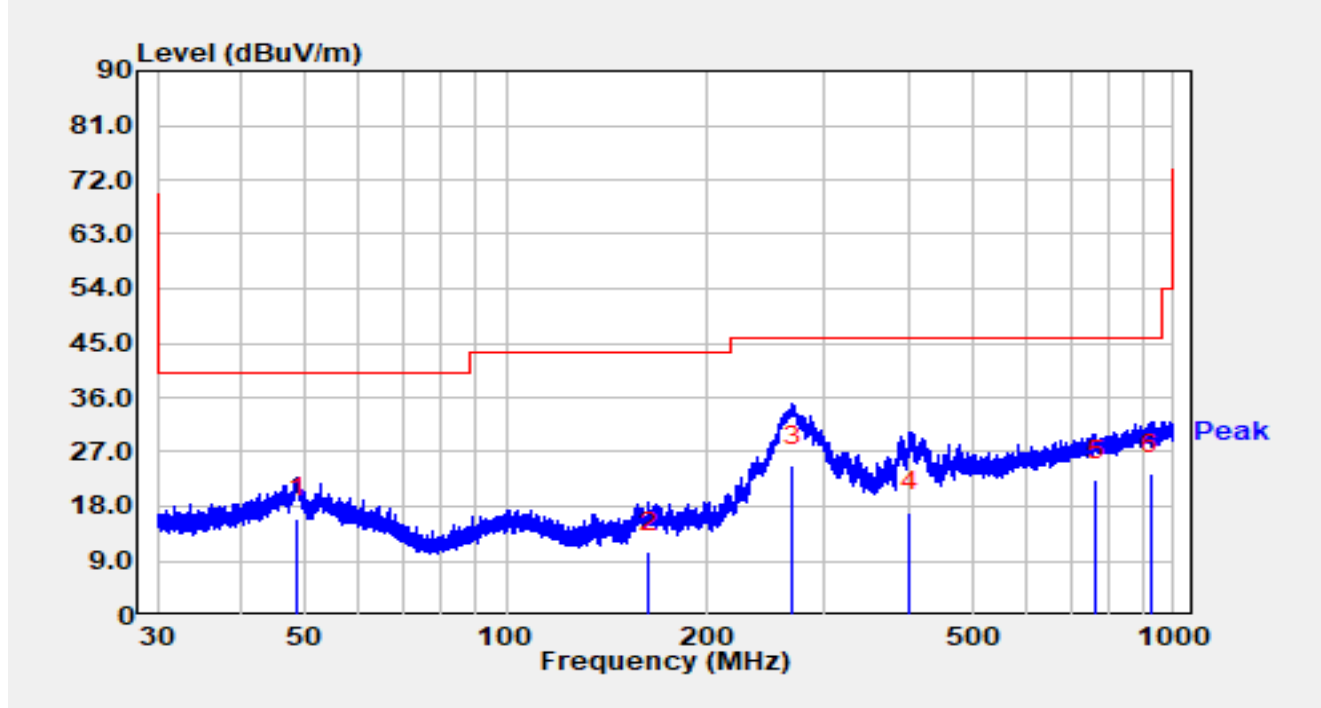
No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1		0.168	34.37	-60.27	-25.90	-49.00	23.10	Peak
2	*	0.782	20.76	-20.40	0.36	-29.40	29.75	Peak
3		4.598	19.96	-20.52	-0.56	-30.06	29.50	Peak

Notes:

1. " * ", means this data is the worst emission level.
2. C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB) + $40\log(d1/d2)$ (dB), $d1 = 3m$, $d2 = 300m$ (9kHz-490kHz) or 30m (490kHz-30MHz).
3. Measurement (dBμV/m) = Reading (dBμV) + C.F (dB/m).
4. Quasi-Peak measurement was not performed when peak measure level was lower than the quasi-peak limit.

The Result of Radiated Emission below 1GHz:

Site	WJ-AC2	Test Date	2025-02-14
Temperature	15.1 °C	Humidity	29.7 %
Limit	FCC_Part 15.209_RSE(3m)	Test Engineer	Bob Zhang
Factor	VULB 9163_07097	Polarity	Horizontal
EUT	ACCESS POINT	Test Voltage	By PoE
Test Mode	Transmit by ZigBee at 2405MHz		

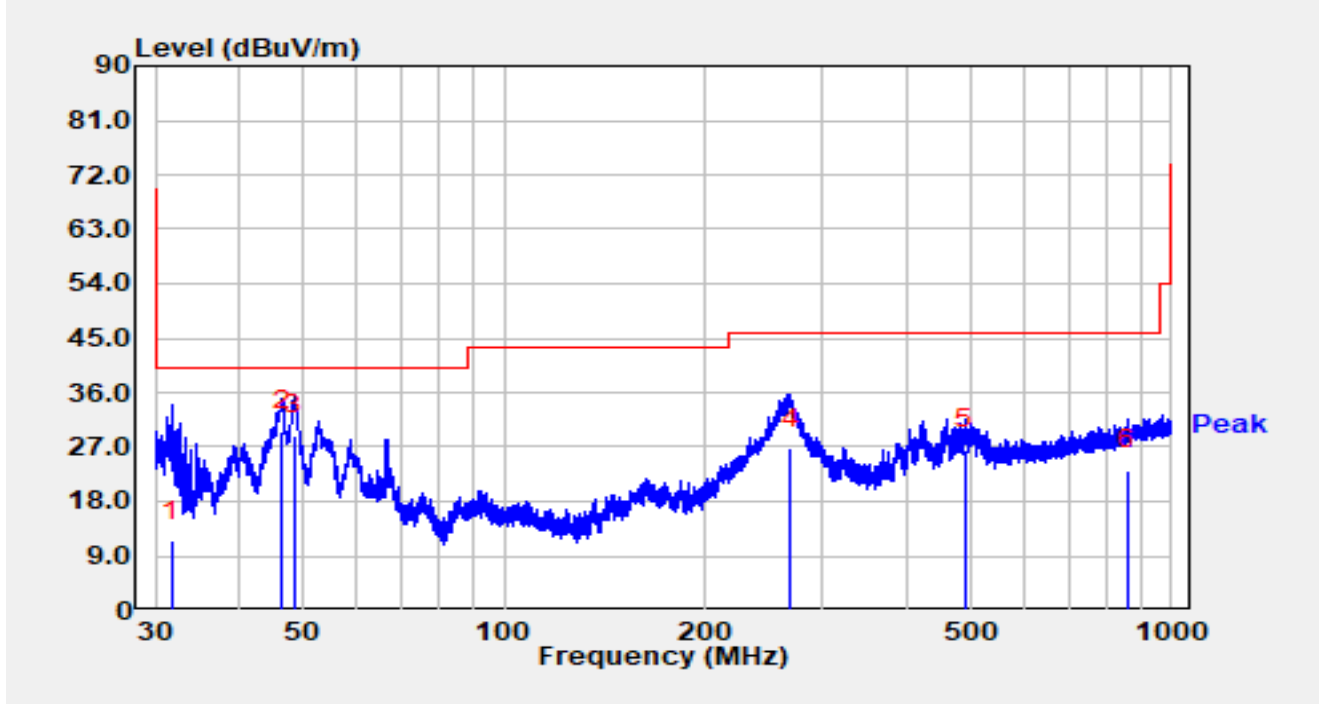


No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1		48.587	-3.50	19.51	16.01	-23.99	40.00	QP
2		163.411	-4.20	14.64	10.44	-33.06	43.50	QP
3	*	269.145	5.40	19.29	24.69	-21.31	46.00	QP
4		402.544	-5.40	22.49	17.09	-28.91	46.00	QP
5		766.595	-5.90	28.24	22.34	-23.66	46.00	QP
6		922.516	-6.40	29.75	23.35	-22.65	46.00	QP

Notes:

1. " * ", means this data is the worst emission level.
2. C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBμV/m) = Reading (dBμV) + C.F (dB/m).

Site	WJ-AC2	Test Date	2025-02-14
Temperature	15.1 °C	Humidity	29.7 %
Limit	FCC_Part 15.209_RSE(3m)	Test Engineer	Bob Zhang
Factor	VULB 9163_07097	Polarity	Vertical
EUT	ACCESS POINT	Test Voltage	By PoE
Test Mode	Transmit by ZigBee at 2405MHz		



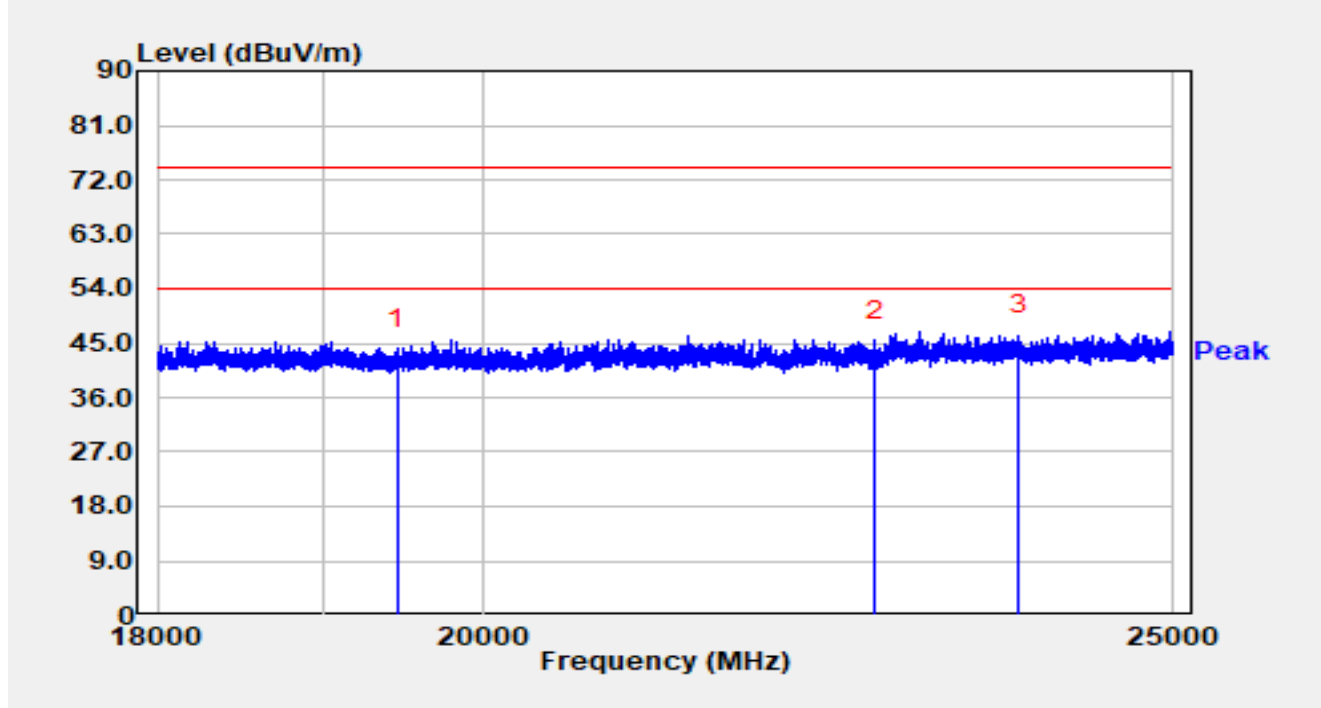
No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1		31.742	-4.80	16.31	11.51	-28.49	40.00	QP
2	*	46.454	10.20	19.45	29.65	-10.35	40.00	QP
3		48.383	9.50	19.51	29.01	-10.99	40.00	QP
4		269.145	7.40	19.29	26.69	-19.31	46.00	QP
5		491.261	2.60	23.98	26.58	-19.42	46.00	QP
6		857.325	-5.90	29.09	23.19	-22.81	46.00	QP

Notes:

1. " * ", means this data is the worst emission level.
2. C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBμV/m) = Reading (dBμV) + C.F (dB/m).

The Result of Radiated Emission above 18GHz:

Site	WJ-AC2	Test Date	2025-02-15
Temperature	20.3 °C	Humidity	39.3 %
Limit	FCC_Part 15.209_RSE (3m)	Test Engineer	Carl Jiang
Factor	BBHA 9170_07100	Polarity	Horizontal
EUT	ACCESS POINT	Test Voltage	By PoE
Test Mode	Transmit by ZigBee at 2405MHz		

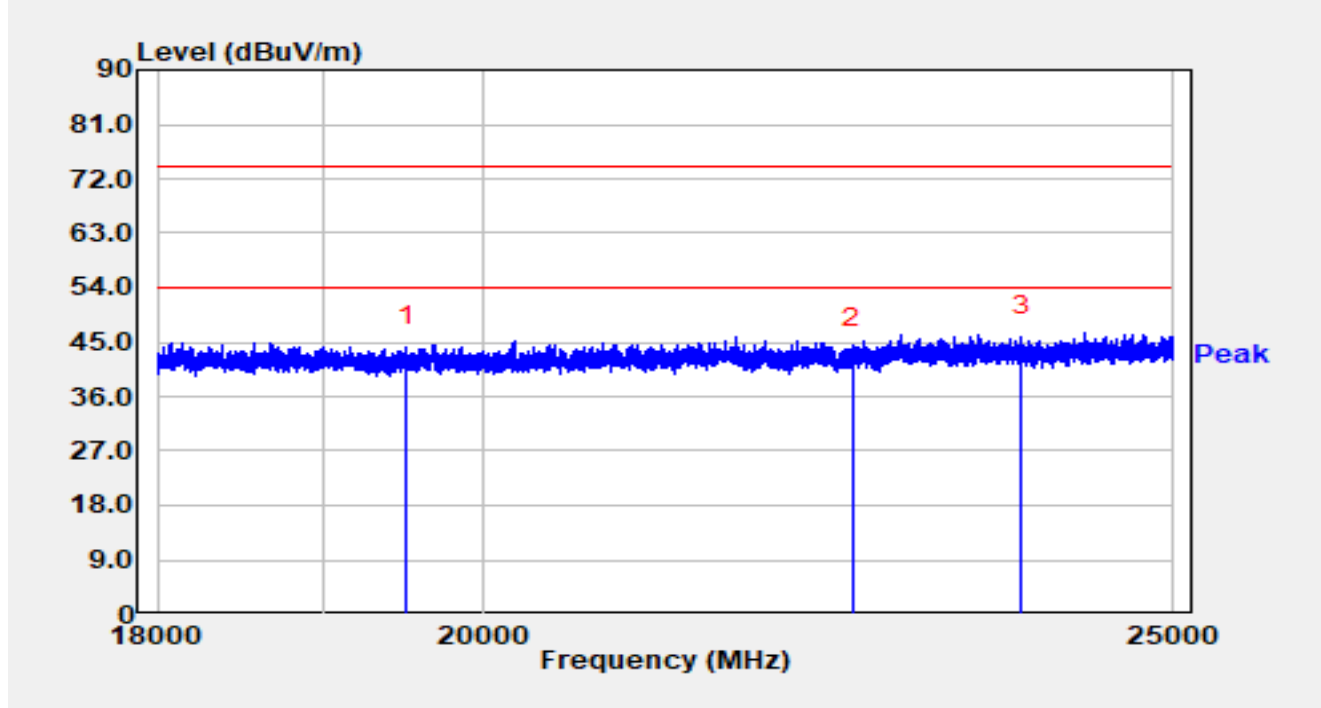


No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1		19455.300	52.13	-8.08	44.05	-29.95	74.00	Peak
2		22697.000	50.44	-5.09	45.35	-28.65	74.00	Peak
3	*	23785.500	50.08	-3.88	46.20	-27.80	74.00	Peak

Notes:

1. " * ", means this data is the worst emission level.
2. C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB)-AMP (dB).
3. Measurement(dBμV/m) = Reading(dBμV) + C.F (dB/m).

Site	WJ-AC2	Test Date	2025-02-15
Temperature	20.3 °C	Humidity	39.3 %
Limit	FCC_Part 15.209_RSE (3m)	Test Engineer	Carl Jiang
Factor	BBHA 9170_07100	Polarity	Vertical
EUT	ACCESS POINT	Test Voltage	By PoE
Test Mode	Transmit by ZigBee at 2405MHz		



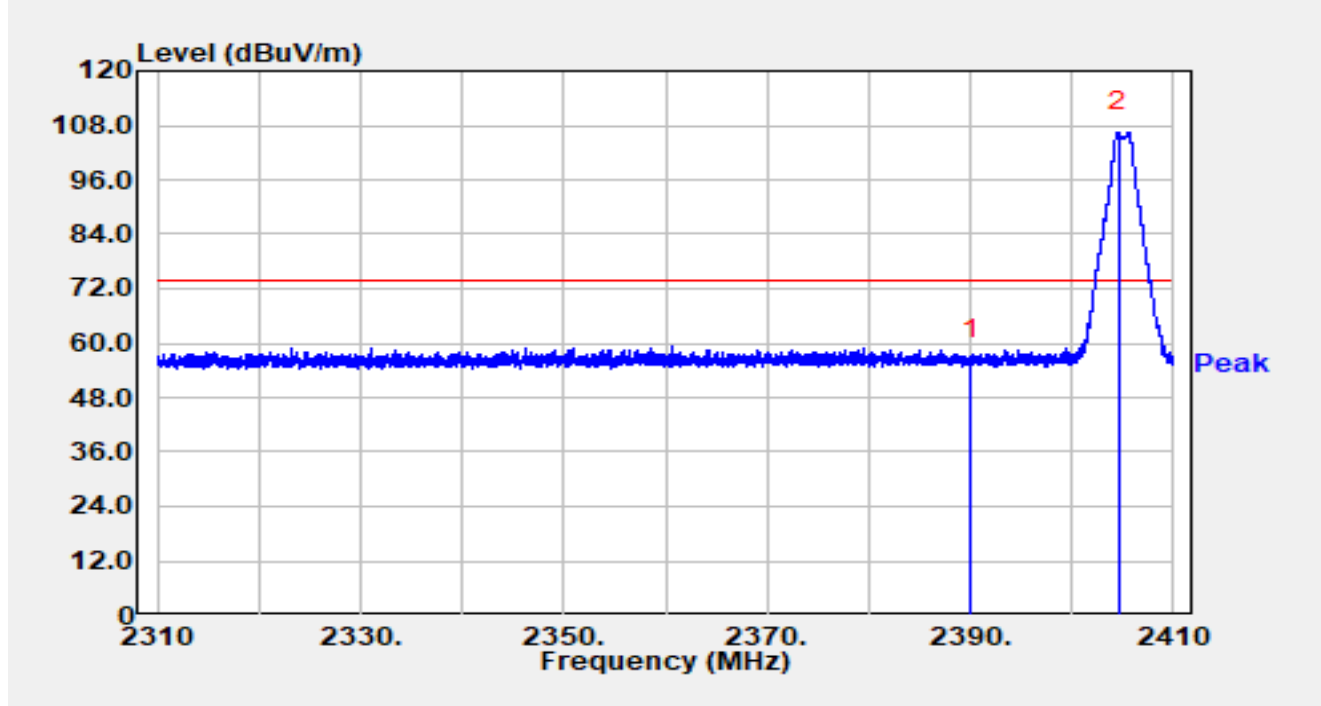
No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1		19507.100	52.50	-8.29	44.20	-29.80	74.00	Peak
2		22531.100	48.86	-4.91	43.95	-30.05	74.00	Peak
3	*	23804.400	49.90	-3.93	45.97	-28.03	74.00	Peak

Notes:

1. " * ", means this data is the worst emission level.
2. C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB)-AMP (dB).
3. Measurement(dBμV/m) = Reading(dBμV) + C.F (dB/m).

A.7 Radiated Restricted Band Edge Test Result

Site	WJ-AC2	Test Date	2025-02-16
Temperature	18.4 °C	Humidity	33.4 %
Limit	FCC_Part 15_Band Edge (3m)	Test Engineer	Carl Jiang
Factor	DRH18-E_07105	Polarity	Horizontal
EUT	ACCESS POINT	Test Voltage	By PoE
Test Mode	Transmit by ZigBee at 2405MHz		

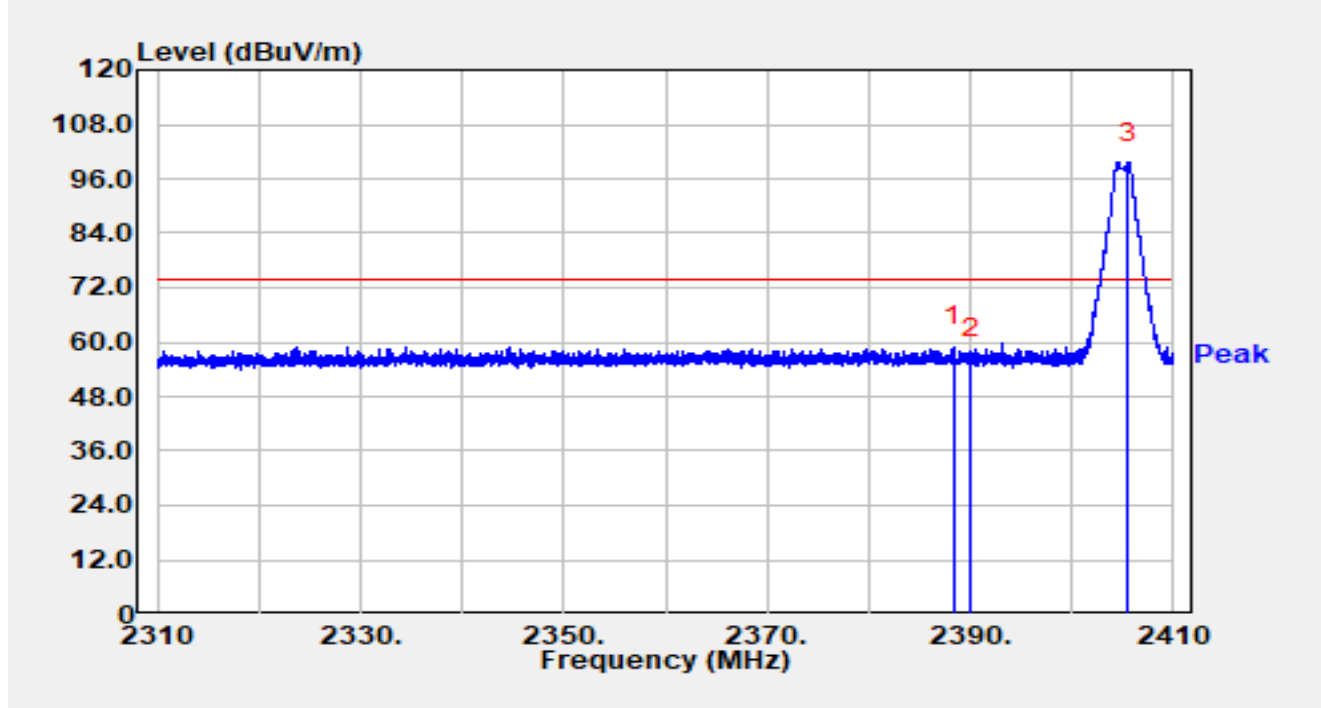


No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Duty Cycle Factor (dB)	Margin (dB)	Limit (dBμV/m)	Detector
1	*	2390.000	26.72	29.59	56.31	N/A	-17.69	74.00	Peak
	*	2390.000	26.72	29.59	36.31	-20.00	-17.69	54.00	Average
2		2404.560	76.86	29.64	106.50	N/A	N/A	N/A	Peak
		2404.560	76.86	29.64	86.50	-20.00	N/A	N/A	Average

Notes:

1. " * ", means this data is the worst emission level.
2. C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBμV/m) = Reading (dBμV) + C.F (dB/m).
4. Average Measurement (dBμV/m) = Peak Measurement (dBμV/m) + Duty Cycle Factor (dB).

Site	WJ-AC2	Test Date	2025-02-16
Temperature	18.4 °C	Humidity	33.4 %
Limit	FCC_Part 15_Band Edge (3m)	Test Engineer	Carl Jiang
Factor	DRH18-E_07105	Polarity	Vertical
EUT	ACCESS POINT	Test Voltage	By PoE
Test Mode	Transmit by ZigBee at 2405MHz		

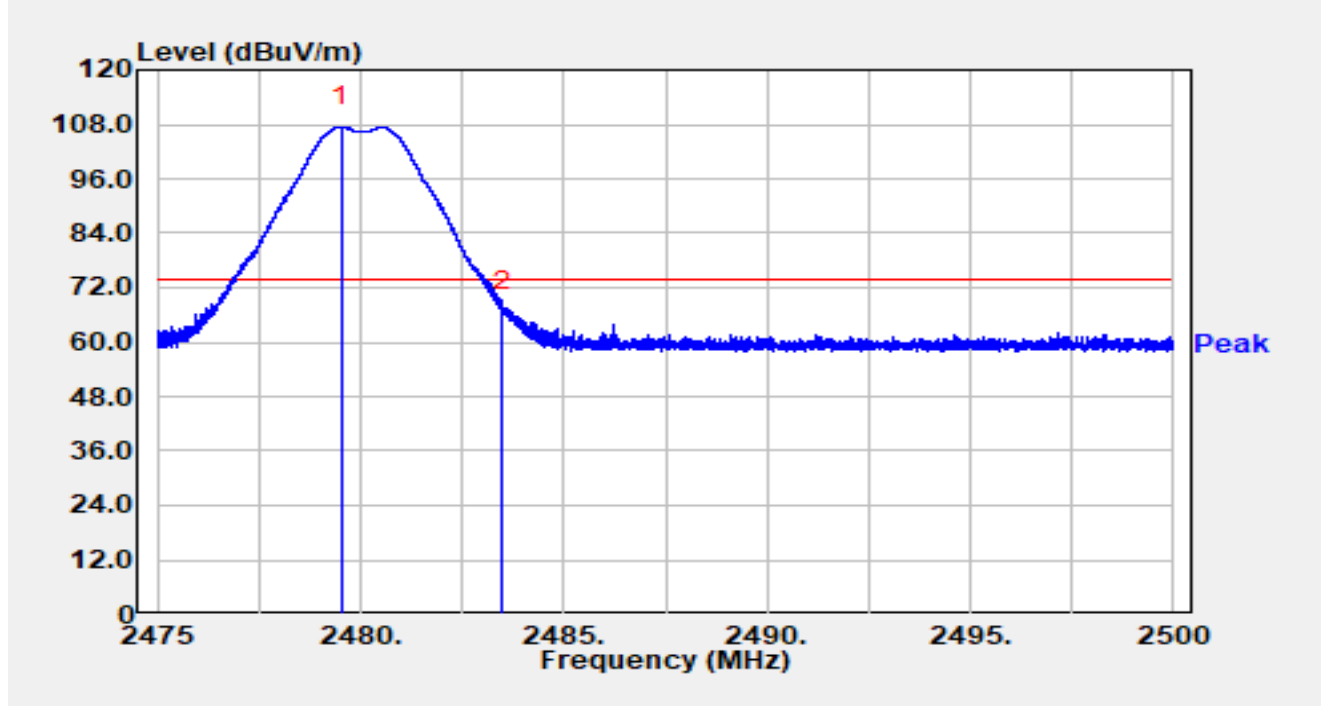


No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Duty Cycle Factor (dB)	Margin (dB)	Limit (dBμV/m)	Detector
1	*	2388.330	29.40	29.59	58.98	N/A	-15.02	74.00	Peak
	*	2388.330	29.40	29.59	38.98	-20.00	-15.02	54.00	Average
2		2390.000	26.67	29.59	56.26	N/A	-17.74	74.00	Peak
		2390.000	26.67	29.59	36.26	-20.00	-17.74	54.00	Average
3		2405.540	69.93	29.64	99.57	N/A	N/A	N/A	Peak
		2405.540	69.93	29.64	79.57	-20.00	N/A	N/A	Average

Notes:

1. " * ", means this data is the worst emission level.
2. C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBμV/m) = Reading (dBμV) + C.F (dB/m).
4. Average Measurement (dBμV/m) = Peak Measurement (dBμV/m) + Duty Cycle Factor (dB).

Site	WJ-AC2	Test Date	2025-02-16
Temperature	18.4 °C	Humidity	33.4 %
Limit	FCC_Part 15_Band Edge (3m)	Test Engineer	Carl Jiang
Factor	DRH18-E_07105	Polarity	Horizontal
EUT	ACCESS POINT	Test Voltage	By PoE
Test Mode	Transmit by ZigBee at 2480MHz		

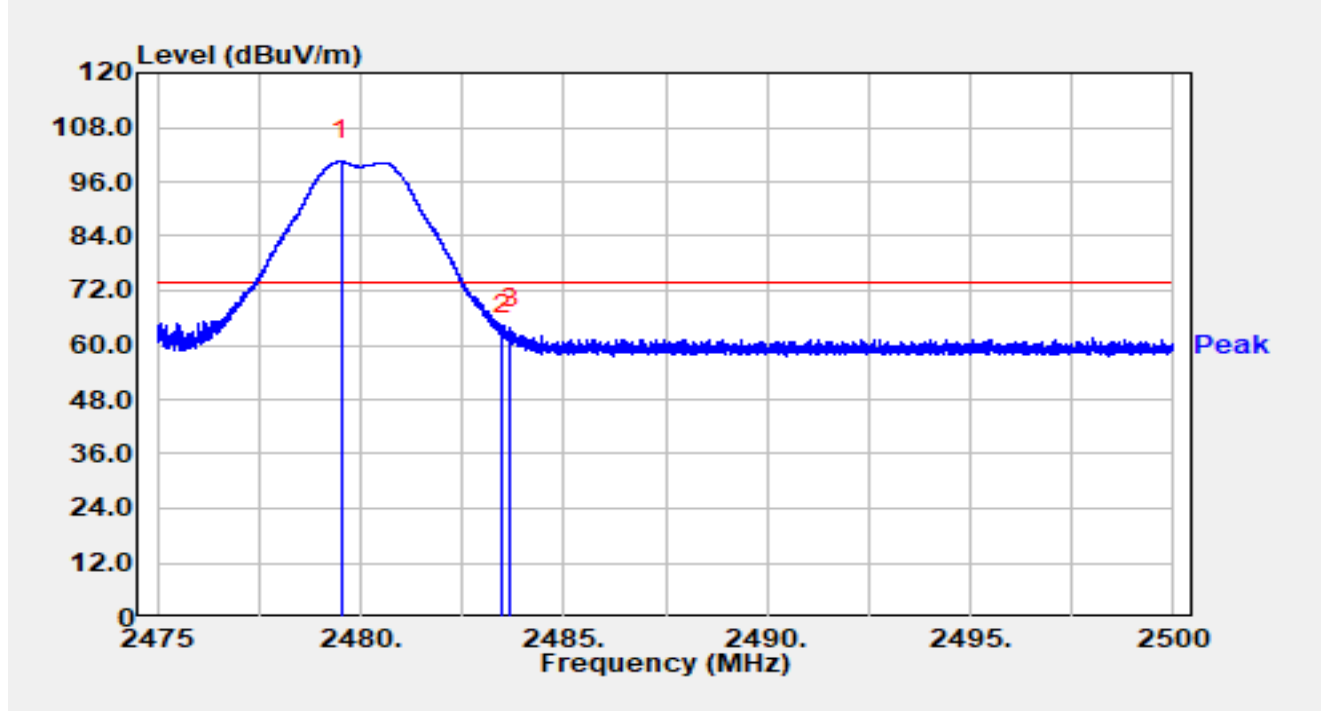


No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Duty Cycle Factor (dB)	Margin (dB)	Limit (dBμV/m)	Detector
1		2479.520	77.75	29.75	107.50	N/A	N/A	N/A	Peak
		2479.520	77.75	29.75	87.50	-20.00	N/A	N/A	Average
2	*	2483.500	37.02	29.76	66.78	N/A	-7.22	74.00	Peak
	*	2483.500	37.02	29.76	46.78	-20.00	-7.22	54.00	Average

Notes:

1. " * ", means this data is the worst emission level.
2. C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBμV/m) = Reading (dBμV) + C.F (dB/m).
4. Average Measurement (dBμV/m) = Peak Measurement (dBμV/m) + Duty Cycle Factor (dB).

Site	WJ-AC2	Test Date	2025-02-16
Temperature	18.4 °C	Humidity	33.4 %
Limit	FCC_Part 15_Band Edge (3m)	Test Engineer	Carl Jiang
Factor	DRH18-E_07105	Polarity	Vertical
EUT	ACCESS POINT	Test Voltage	By PoE
Test Mode	Transmit by ZigBee at 2480MHz		



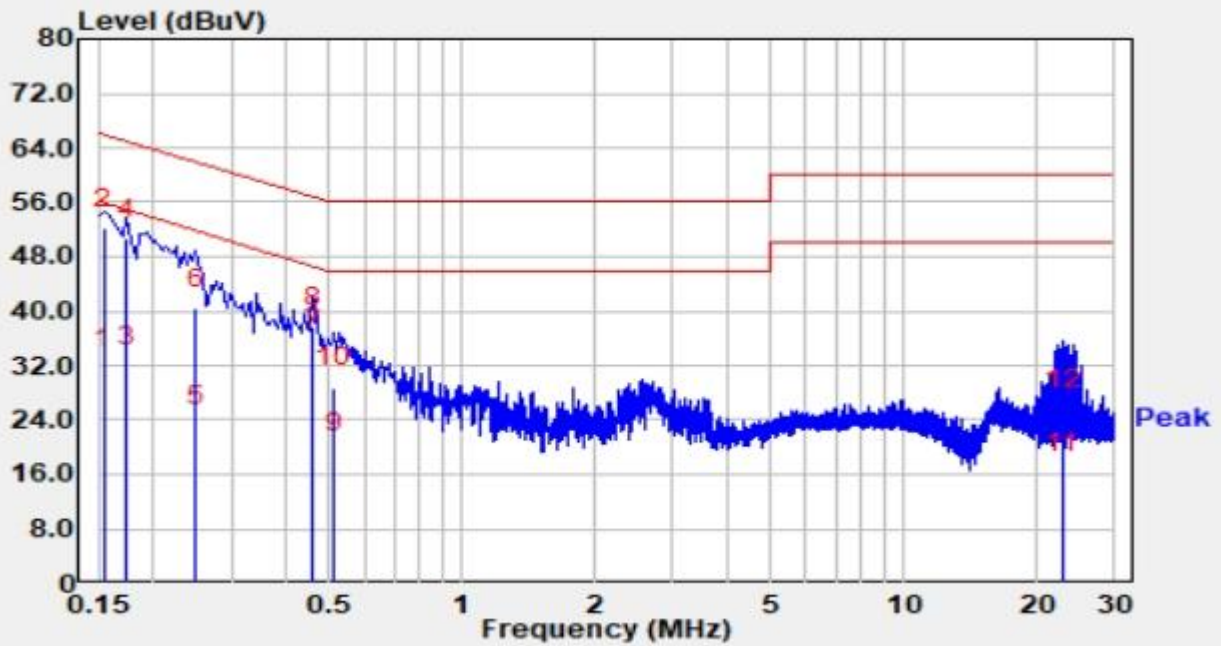
No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Duty Cycle Factor (dB)	Margin (dB)	Limit (dBμV/m)	Detector
1		2479.522	70.82	29.75	100.57	N/A	N/A	N/A	Peak
		2479.522	70.82	29.75	80.57	-20.00	N/A	N/A	Average
2		2483.500	32.57	29.76	62.34	N/A	-11.66	74.00	Peak
		2483.500	32.57	29.76	42.34	-20.00	-11.66	54.00	Average
3	*	2483.673	33.87	29.76	63.63	N/A	-10.37	74.00	Peak
	*	2483.673	33.87	29.76	43.63	-20.00	-10.37	54.00	Average

Notes:

1. " * ", means this data is the worst emission level.
2. C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB).
3. Measurement (dBμV/m) = Reading (dBμV) + C.F (dB/m).
4. Average Measurement (dBμV/m) = Peak Measurement (dBμV/m) + Duty Cycle Factor (dB).

A.8 AC Conducted Emissions Test Result

Site	WJ-SR5	Test Date	2025-02-18
Temperature	15.3 °C	Humidity	40.4 %
Limit	FCC Part 15.207_CE_QP	Test Engineer	Carl Jiang
Factor	ENV216-07202_L1_Filter Off	Polarity	Line1
EUT	ACCESS POINT	Test Voltage	AC 120V/60Hz
Test Mode	Transmit by ZigBee at 2405MHz		

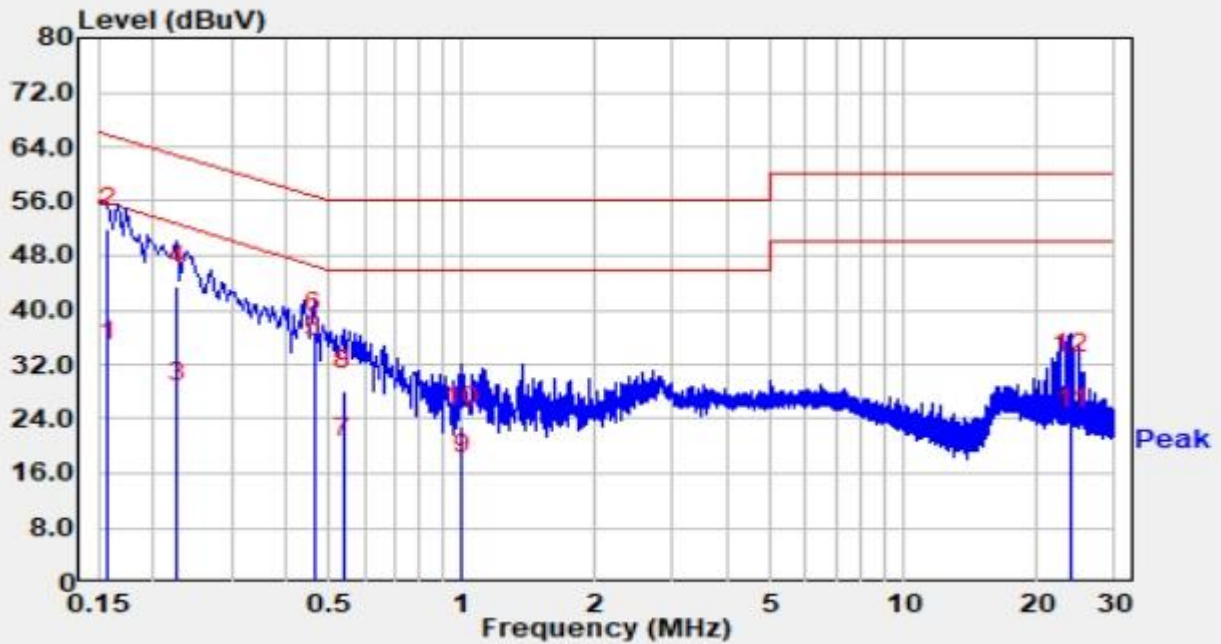


No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB)	Measurement (dBμV)	Margin (dB)	Limit (dBμV)	Detector
1		0.154	22.00	9.67	31.67	-24.11	55.78	Average
2		0.154	42.50	9.67	52.17	-13.61	65.78	QP
3		0.174	22.30	9.68	31.98	-22.79	54.77	Average
4		0.174	41.00	9.68	50.68	-14.09	64.77	QP
5		0.250	13.40	9.70	23.10	-28.66	51.76	Average
6		0.250	30.60	9.70	40.30	-21.46	61.76	QP
7	*	0.458	24.40	9.79	34.19	-12.54	46.73	Average
8		0.458	27.80	9.79	37.59	-19.14	56.73	QP
9		0.514	9.40	9.81	19.21	-26.79	46.00	Average
10		0.514	18.90	9.81	28.71	-27.29	56.00	QP
11		22.892	6.10	10.18	16.28	-33.72	50.00	Average
12		22.892	15.20	10.18	25.38	-34.62	60.00	QP

Notes:

1. " * ", means this data is the worst emission level.
2. C.F (dB) = LISN Factor (dB) + Cable Loss (dB).
3. Measurement (dB μ V) = Reading (dB μ V) + C.F (dB).

Site	WJ-SR5	Test Date	2025-02-18
Temperature	15.3 °C	Humidity	40.4 %
Limit	FCC Part 15.207_CE_QP	Test Engineer	Carl Jiang
Factor	ENV216-07202_N_Filter Off	Polarity	Neutral
EUT	ACCESS POINT	Test Voltage	AC 120V/60Hz
Test Mode	Transmit by ZigBee at 2405MHz		



No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB)	Measurement (dBμV)	Margin (dB)	Limit (dBμV)	Detector
1		0.158	22.80	9.67	32.47	-23.10	55.57	Average
2		0.158	42.30	9.67	51.97	-13.60	65.57	QP
3		0.226	16.80	9.70	26.50	-26.10	52.60	Average
4		0.226	33.80	9.70	43.50	-19.10	62.60	QP
5	*	0.462	23.30	9.79	33.09	-13.57	46.66	Average
6		0.462	27.00	9.79	36.79	-19.87	56.66	QP
7		0.538	8.50	9.82	18.32	-27.68	46.00	Average
8		0.538	18.40	9.82	28.22	-27.78	56.00	QP
9		0.998	5.90	10.03	15.93	-30.07	46.00	Average
10		0.998	12.90	10.03	22.93	-33.07	56.00	QP
11		23.964	12.30	10.25	22.55	-27.45	50.00	Average
12		23.964	20.40	10.25	30.65	-29.35	60.00	QP

Notes:

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

2. $C.F (dB) = LISN \text{ Factor } (dB) + \text{Cable Loss } (dB).$
3. $\text{Measurement } (dB\mu V) = \text{Reading } (dB\mu V) + C.F (dB).$

Appendix B – Test Setup Photograph

Refer to “2412RSU035-UT” file.

Appendix C – EUT Photograph

Refer to “2412RSU035-UE” file.

The End
