



RF MEASUREMENT REPORT

FCC ID: Q9DAPIN0734
Applicant: Hewlett Packard Enterprise Company
Product: ACCESS POINT
Model No.: APIN0734
Trademark:  , 
FCC Classification: Digital Transmission System (DTS)
FCC Rule Part(s): Part 15 Subpart C (Section 15.247)
Result: Complies
Received Date: 2023-11-09
Test Date: 2024-02-27 ~ 2024-03-15

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 |
|----------------|---------|----------------|------------|-------|
| 2311RSU031-U12 | V01 | Initial Report | 2024-04-17 | Valid |
| | | | | |

CONTENTS

| Description | Page |
|--|-----------|
| 1. General Information | 6 |
| 1.1. Applicant | 6 |
| 1.2. Manufacturer | 6 |
| 1.3. Testing Facility | 6 |
| 1.4. Product Information..... | 7 |
| 1.5. Radio Specification under Test | 7 |
| 1.6. Working Frequencies | 7 |
| 1.7. Description of Operating Paths | 8 |
| 1.8. Description of Antenna RF Port | 9 |
| 1.9. Antenna Details..... | 9 |
| 2. Test Configuration | 10 |
| 2.1. Test Mode..... | 10 |
| 2.2. Test System Connection Diagram..... | 10 |
| 2.3. Test Software | 11 |
| 2.4. Applied Standards..... | 11 |
| 2.5. Test Environment Condition | 11 |
| 3. Antenna Requirements | 12 |
| 4. Measuring Instrument | 13 |
| 5. Decision Rules and Measurement Uncertainty | 14 |
| 5.1. Decision Rules | 14 |
| 5.2. Measurement Uncertainty | 14 |
| 6. Test Result..... | 15 |
| 6.1. Summary..... | 15 |
| 6.2. 6dB Bandwidth Measurement..... | 16 |
| 6.2.1. Test Limit | 16 |
| 6.2.2. Test Procedure | 16 |
| 6.2.3. Test Setting | 16 |
| 6.2.4. Test Setup | 16 |
| 6.2.5. Test Result | 16 |
| 6.3. Output Power Measurement | 17 |
| 6.3.1. Test Limit | 17 |
| 6.3.2. Test Procedure | 17 |
| 6.3.3. Test Setting | 17 |
| 6.3.4. Test Setup | 17 |
| 6.3.5. Test Result | 17 |

| | | |
|---|---|------------|
| 6.4. | Power Spectral Density Measurement | 18 |
| 6.4.1. | Test Limit | 18 |
| 6.4.2. | Test Procedure | 18 |
| 6.4.3. | Test Setting | 18 |
| 6.4.4. | Test Setup | 18 |
| 6.4.5. | Test Result | 18 |
| 6.5. | Conducted Band Edge and Out-of-Band Emissions Measurement | 19 |
| 6.5.1. | Test Limit | 19 |
| 6.5.2. | Test Procedure | 19 |
| 6.5.3. | Test Setting | 19 |
| 6.5.4. | Test Setup | 19 |
| 6.5.5. | Test Result | 20 |
| 6.6. | Radiated Spurious Emission Measurement..... | 21 |
| 6.6.1. | Test Limit | 21 |
| 6.6.2. | Test Procedure | 21 |
| 6.6.3. | Test Setting | 21 |
| 6.6.4. | Test Setup | 23 |
| 6.6.5. | Test Result | 24 |
| 6.7. | Radiated Restricted Band Edge Measurement | 25 |
| 6.7.1. | Test Limit | 25 |
| 6.7.2. | Test Procedure | 26 |
| 6.7.3. | Test Setting | 26 |
| 6.7.4. | Test Setup | 27 |
| 6.7.5. | Test Result | 27 |
| 6.8. | AC Conducted Emissions Measurement | 28 |
| 6.8.1. | Test Limit | 28 |
| 6.8.2. | Test Setup | 28 |
| 6.8.3. | Test Result | 28 |
| Appendix A – Test Result | | 29 |
| A.1 | Duty Cycle Test Result | 29 |
| A.2 | 6dB Bandwidth Test Result | 32 |
| A.3 | Output Power Test Result | 35 |
| A.4 | Power Spectral Density Test Result | 41 |
| A.5 | Conducted Band Edge and Out-of-Band Emissions Test Result | 44 |
| A.6 | Radiated Spurious Emission Test Result | 56 |
| A.7 | Radiated Restricted Band Edge Test Result | 73 |
| A.8 | AC Conducted Emissions Test Result | 121 |
| Appendix B – Test Setup Photograph | | 123 |

Appendix C – EUT Photograph124

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

| | |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | 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 FCC: CN1166 VCCI: <input type="checkbox"/> R-20025 <input type="checkbox"/> G-20034 <input type="checkbox"/> C-20020 <input type="checkbox"/> T-20020 <input type="checkbox"/> R-20141 <input type="checkbox"/> G-20134 <input type="checkbox"/> C-20103 <input type="checkbox"/> T-20104 CNAS: L10551 ISED: CN0001 |
| <input type="checkbox"/> | Test Site – MRT Shenzhen Laboratory |
| | Laboratory Location (Shenzhen) 1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen, China |
| | Laboratory Accreditations |
| | A2LA: 3628.02 FCC: CN1284 CNAS: L10551 ISED: CN0105 |
| <input type="checkbox"/> | 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. | APIN0734 |
| Serial No. | CNRLM5102N |
| Software Version | BCM4711A0_11_02_2023 |
| Wi-Fi Specification | 802.11a/b/g/n/ac/ax/be |
| Bluetooth Specification | BLE only |
| ZigBee Specification | 802.15.4 |
| GNSS Specification | GPS, Galileo |
| Antenna Information | Refer to Section 1.9 |
| Power Type | AC Adapter Input or PoE Input |
| Operating Environment | Indoor Use |
| 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 |

1.6. Working Frequencies

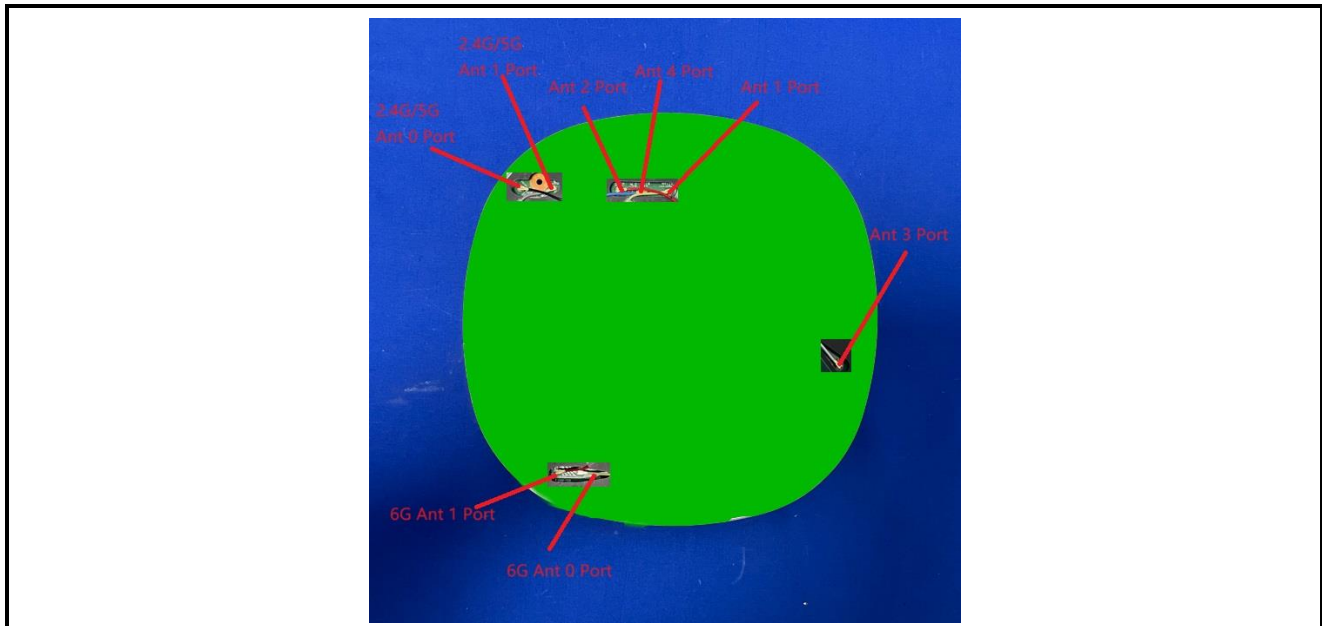
| Channel | Frequency | Channel | Frequency | Channel | Frequency |
|---------|-----------|---------|-----------|---------|-----------|
| 11 | 2405 MHz | 12 | 2410 MHz | 13 | 2415 MHz |
| 14 | 2420 MHz | 15 | 2425 MHz | 16 | 2430 MHz |
| 17 | 2435 MHz | 18 | 2440 MHz | 19 | 2445 MHz |
| 20 | 2450 MHz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

1.7. Description of Operating Paths

The EUT has two ZigBee/BLE radios, Core 0 and Core1, Core 0 was equipped with one antenna named Ant 2 and Core 1 was equipped with two antennas named Ant 4 and Ant 1, The front end of each antenna port corresponds to three AIC filters respectively, filter 1#, 2#, 3# for Ant 2, filter 4#, 5#, 6# for Ant 4, filter 7#, 8#, 9# for Ant 1, details are as follows.

| Filter | Specification | Remark |
|------------|--------------------------------|---|
| 1#, 4#, 7# | Band Pass Filter (2402 - 2480) | Allowing any transmission on all channels |
| 2#, 5#, 8# | Band Pass Filter (2402 - 2430) | Allowing transmission on BLE channels 37 (2402MHz) and 38 (2426MHz) and Zigbee channel 11 (2405MHz) |
| 3#, 6#, 9# | Band Pass Filter (2478-2482) | Allowing transmission on BLE channel 39 (2480MHz) and Zigbee channel 26(2480MHz) |

1.8. Description of Antenna RF Port



| Antenna Port | RF Spec. | | | |
|---------------|-------------|-------------|-------------|------------|
| | Wi-Fi 2.4G | Wi-Fi 5G | Wi-Fi 6G | BLE/ZigBee |
| 6G Ant 0 | -- | -- | ● (Radio 2) | -- |
| 6G Ant 1 | -- | -- | ● (Radio 2) | -- |
| 2.4G/5G Ant 0 | ● (Radio 0) | ● (Radio 1) | -- | -- |
| 2.4G/5G Ant 1 | ● (Radio 0) | ● (Radio 1) | -- | -- |
| Ant 4 | -- | -- | -- | ● (Core 1) |
| Ant 2 | -- | -- | -- | ● (Core 0) |
| Ant 1 | -- | -- | -- | ● (Core 1) |
| Ant 3 | GNSS | | | |

Note: Radio 2 6GHz will be disabled for application.

1.9. Antenna Details

| Antenna Type | Frequency Band (GHz) | Antenna Gain (dBi) | | |
|--------------|----------------------|--------------------|-------|-------|
| | | Ant 2 | Ant 4 | Ant 1 |
| PIFA | 2.4 ~ 2.5 | 4.20 | 4.10 | 4.70 |

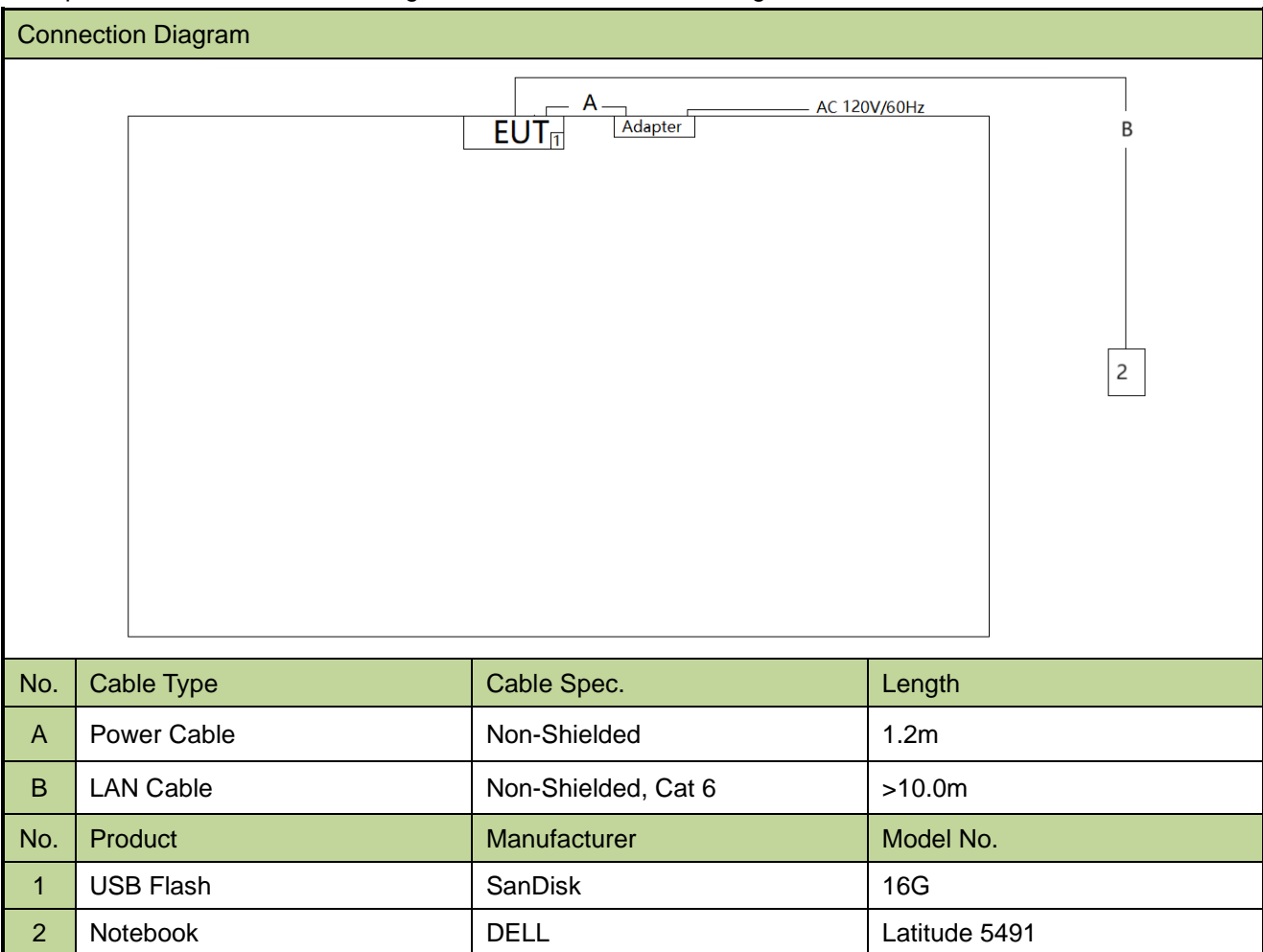
2. Test Configuration

2.1. Test Mode

| |
|--|
| Mode 1: Transmit at Core 0 on Ant 2 port |
| Mode 2: Transmit at Core 1 on Ant 4 port |
| Mode 3: Transmit at Core 1 on Ant 1 port |

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.



2.3. Test Software

The test utility software used during testing was “telnet”, and commands were 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 | 2024-12-17 | WZ-AC1 |
| Horn Antenna | Schwarzbeck | BBHA 9120D | MRTSUE06023 | 1 year | 2024-08-09 | WZ-AC1 |
| Horn Antenna | Schwarzbeck | BBHA 9170 | MRTSUE06024 | 1 year | 2024-10-11 | 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 |
| Signal Analyzer | Keysight | N9010B | MRTSUE06607 | 1 year | 2024-10-23 | WZ-AC1 |
| Thermohygrometer | testo | 608-H1 | MRTSUE11039 | 1 year | 2024-10-25 | 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 |
| Horn Antenna | Schwarzbeck | BBHA 9120D | MRTSUE06171 | 1 year | 2024-10-11 | 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 | MRTSUE11263 | 1 year | 2024-11-07 | WZ-AC2 |
| Horn Antenna | Schwarzbeck | BBHA 9170 | MRTSUE06597 | 1 year | 2024-11-04 | WZ-AC2 |
| Preamplifier | EMCI | EMC184045SE | MRTSUE06640 | 1 year | 2025-01-11 | WZ-AC2 |
| Active Loop Antenna | Schwarzbeck | FMZB 1519-60 D | MRTSUE07076 | 1 year | 2024-12-04 | WZ-AC2 |
| 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 |
| USB Power Sensor | Keysight | U2021XA | MRTSUE06446 | 1 year | 2024-05-23 | WZ-SR5 |
| Attenuator | MVE | MVE2213 | MRTSUE11092 | 1 year | 2024-06-08 | WZ-SR5 |
| 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 |
| Two-Line V-Network | R&S | ENV216 | MRTSUE06002 | 1 year | 2024-05-23 | WZ-SR2 |
| Four-Line V-Network | R&S | ENV432 | MRTSUE06615 | 1 year | 2024-09-27 | WZ-SR2 |
| EMI Test Receiver | R&S | ESR3 | MRTSUE06909 | 1 year | 2024-09-27 | WZ-SR2 |

| Software | Version | Function |
|----------------------|---------|------------------------|
| EMI Software | V3.0.0 | EMI Test Software |
| Controller_MF 7802 | 2.03C | RE Antenna & Turntable |
| Controller_MF 7802 | 1.02 | 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: 3.58dB 150kHz~30MHz: 3.20dB |
| Radiated Emission Measurement |
| The maximum measurement uncertainty is evaluated as: Coaxial: 9kHz~30MHz: 2.61dB Coplanar: 9kHz~30MHz: 2.62dB Horizontal: 30MHz~200MHz: 3.79dB 200MHz~1GHz: 3.91dB 1GHz~40GHz: 4.99dB Vertical: 30MHz~200MHz: 4.06dB 200MHz~1GHz: 5.21dB 1GHz~40GHz: 4.90dB |
| Spurious Emissions, Conducted |
| Measuring Uncertainty for a Level of Confidence of 95% ($U=2Uc(y)$): 2.2dB |
| Output Power |
| Measuring Uncertainty for a Level of Confidence of 95% ($U=2Uc(y)$): 1.4dB |
| Power Spectrum Density |
| Measuring Uncertainty for a Level of Confidence of 95% ($U=2Uc(y)$): 2.2dB |
| Occupied Bandwidth |
| Measuring Uncertainty for a Level of Confidence of 95% ($U=2Uc(y)$): 2.7% |

6. Test Result

6.1. Summary

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

Notes:

- 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.
- For radiated emission tests, every axis (X, Z) was also verified. The test results shown in the following sections represent the worst-case emissions.
- Two ZigBee radios can't transmit simultaneously.
- The test items of each filter are as follows.

| Test Items | Filter 1#&4#&7# | Filter 2#&5#&8# | Filter 3#&6#&9# |
|---------------------------------------|-----------------|-----------------|-----------------|
| 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.

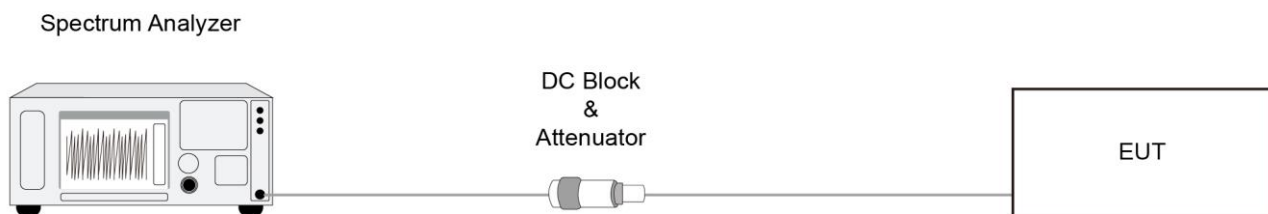
6.2.2. Test Procedure

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 $\geq 3 \times$ 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

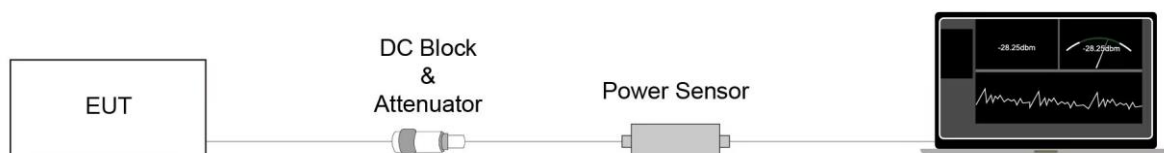
Method PKPM1 (Peak Power Measurement of Signals with DTS BW \leq 50MHz)

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.

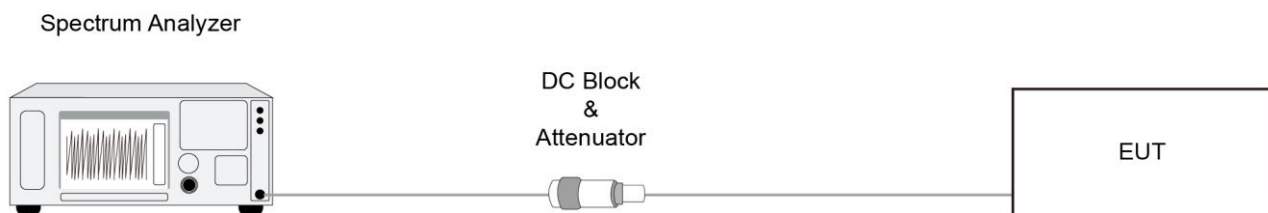
6.4.2. Test Procedure

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

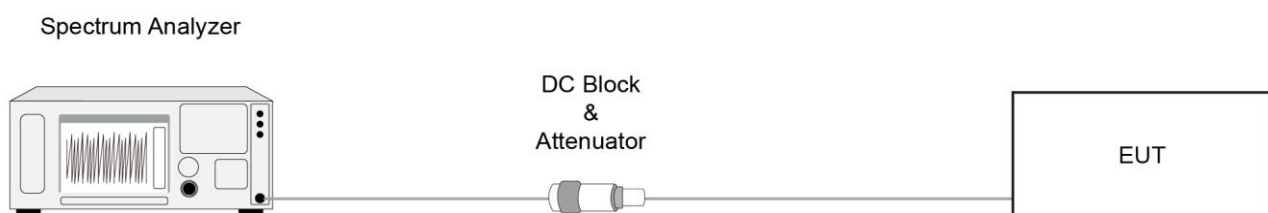
Reference level measurement

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 (Method VB)

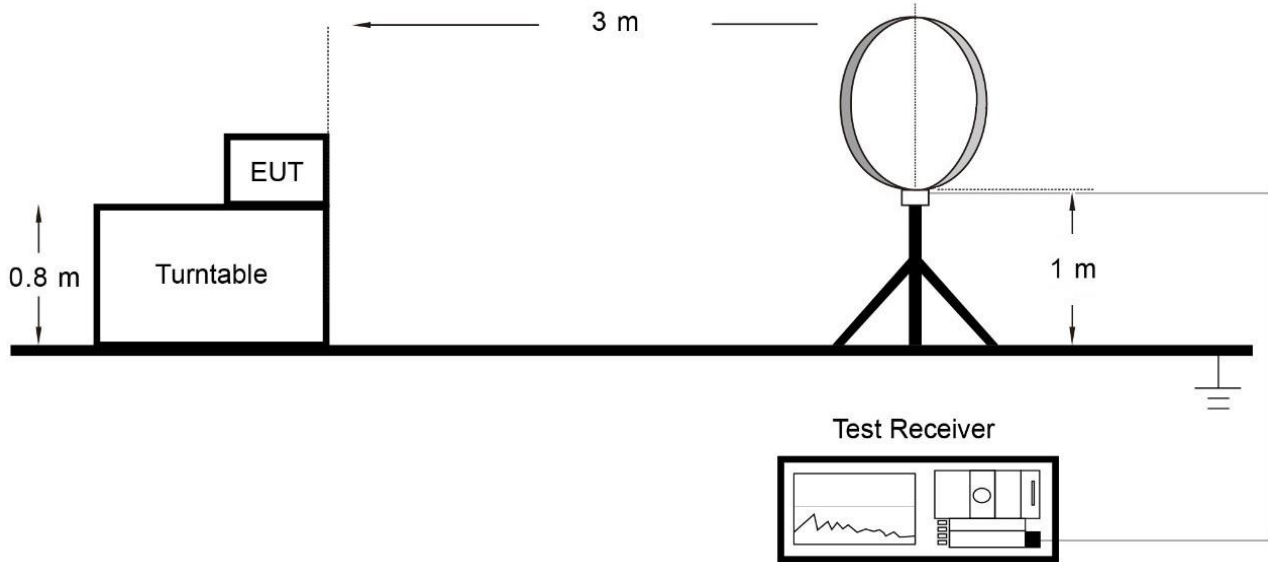
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW; If the EUT is configured to transmit with duty cycle $\geq 98\%$, set VBW = 10 Hz.
If the EUT duty cycle is $< 98\%$, set VBW $\geq 1/T$. T is the minimum transmission duration.

| | | | |
|--------|------------|----|----|
| ZigBee | VBW =240Hz | -- | -- |
|--------|------------|----|----|

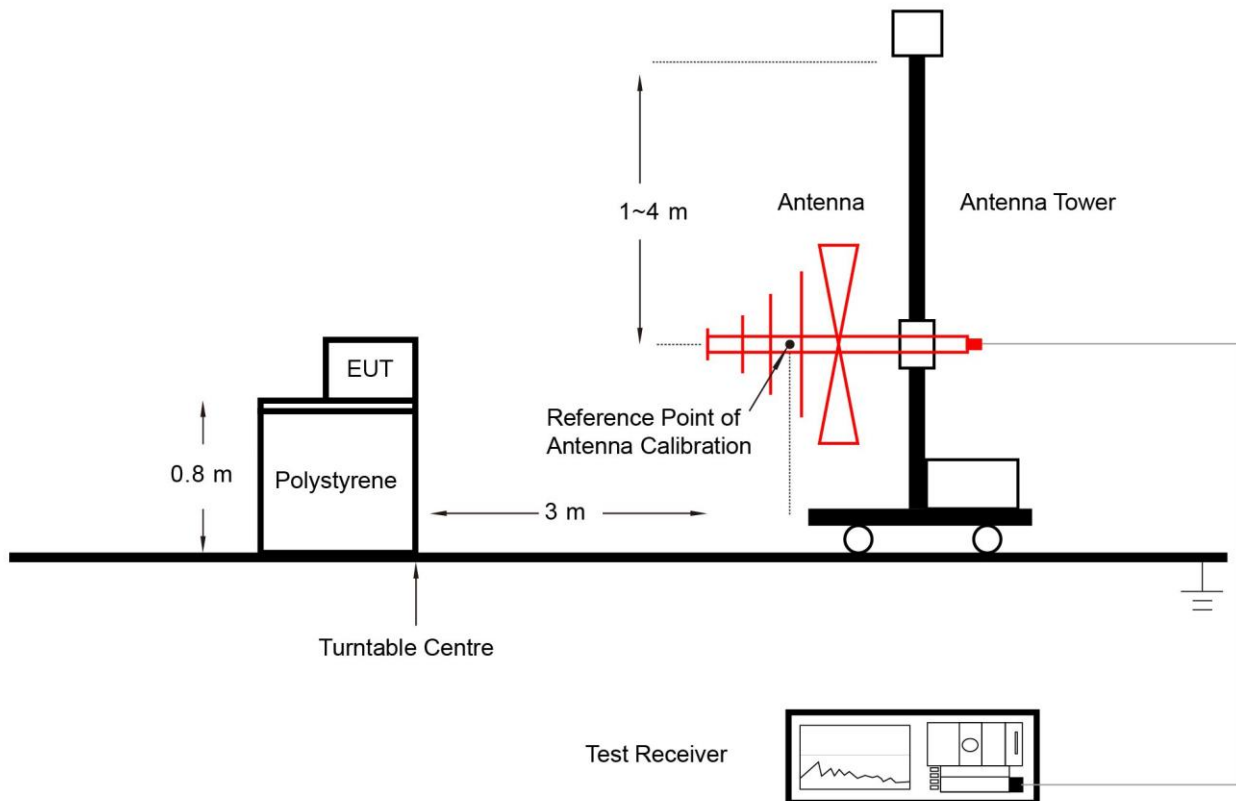
4. Detector = Peak
5. Sweep time = auto
6. Trace mode = max hold
7. Trace was allowed to stabilize

6.6.4. Test Setup

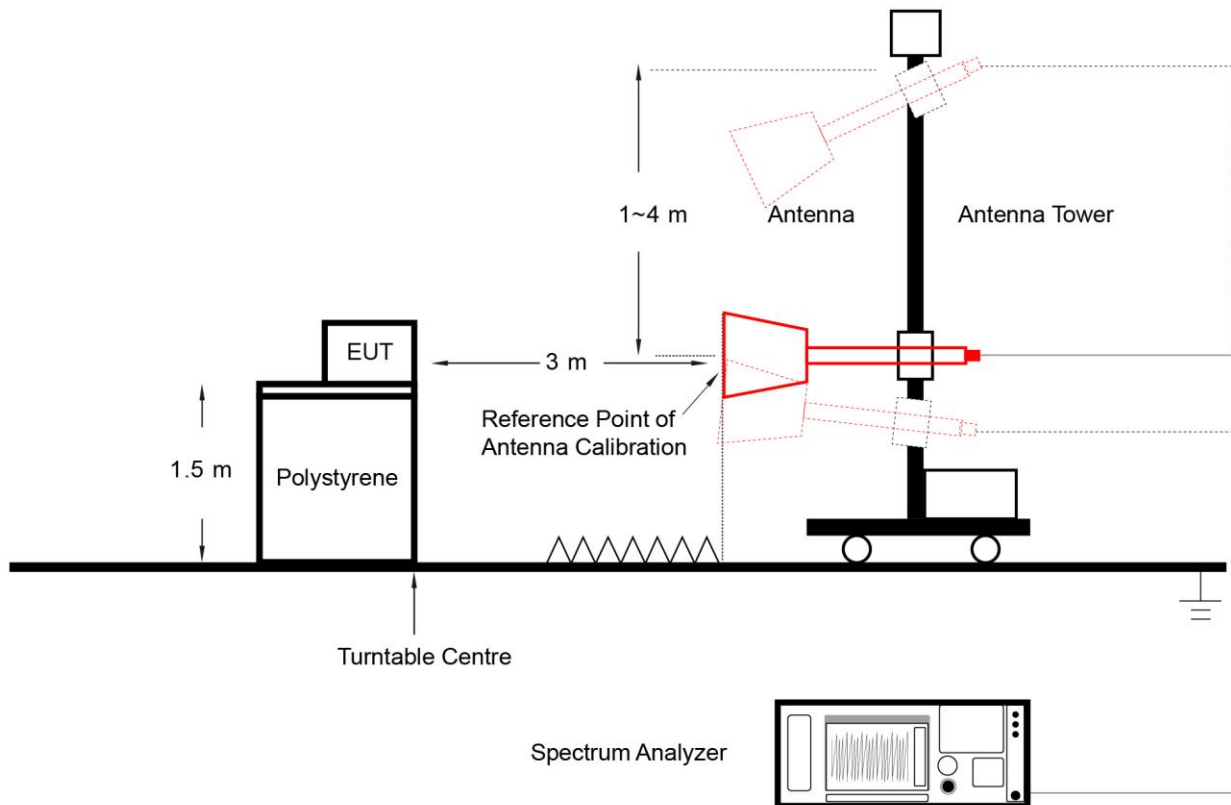
Below 30MHz Test Setup:



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 [$\mu\text{V/m}$] | 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 |

6.7.2. 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

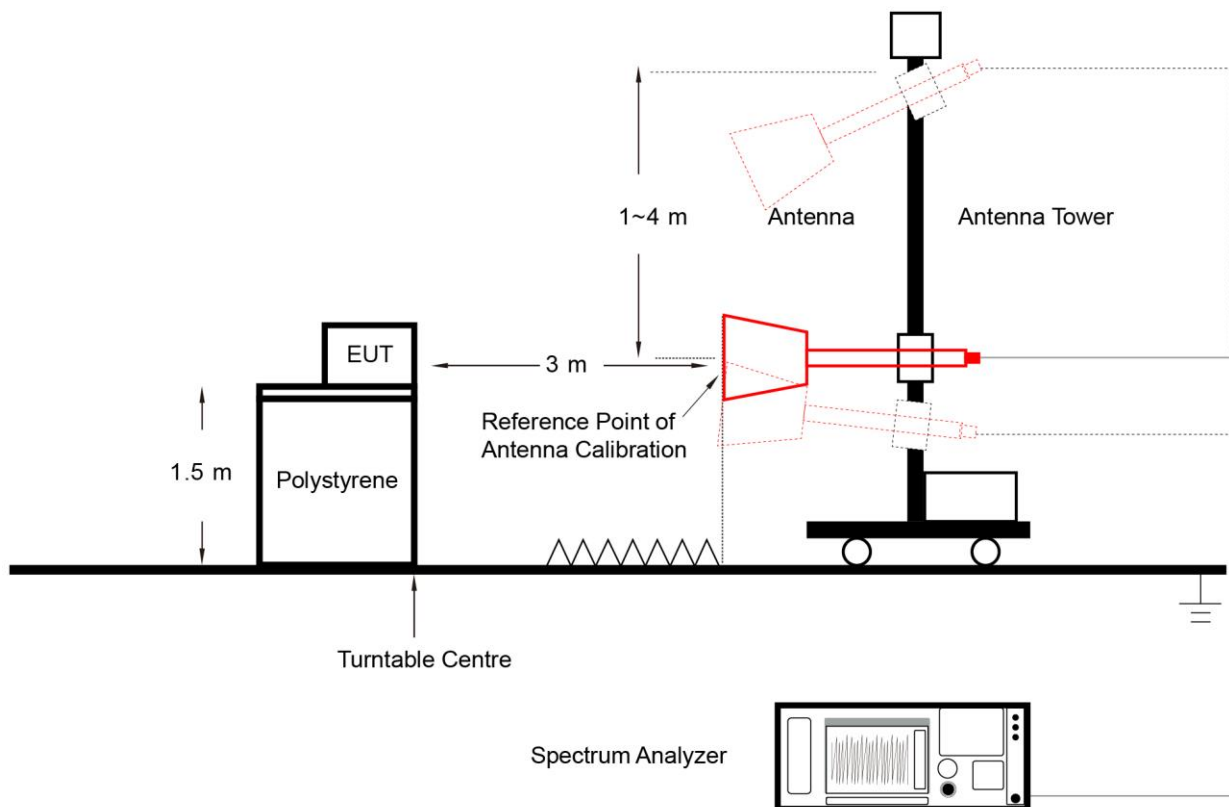
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW; If the EUT is configured to transmit with duty cycle $\geq 98\%$, set VBW = 10 Hz.

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

| | | | |
|--------|------------|----|----|
| ZigBee | VBW =240Hz | -- | -- |
|--------|------------|----|----|

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

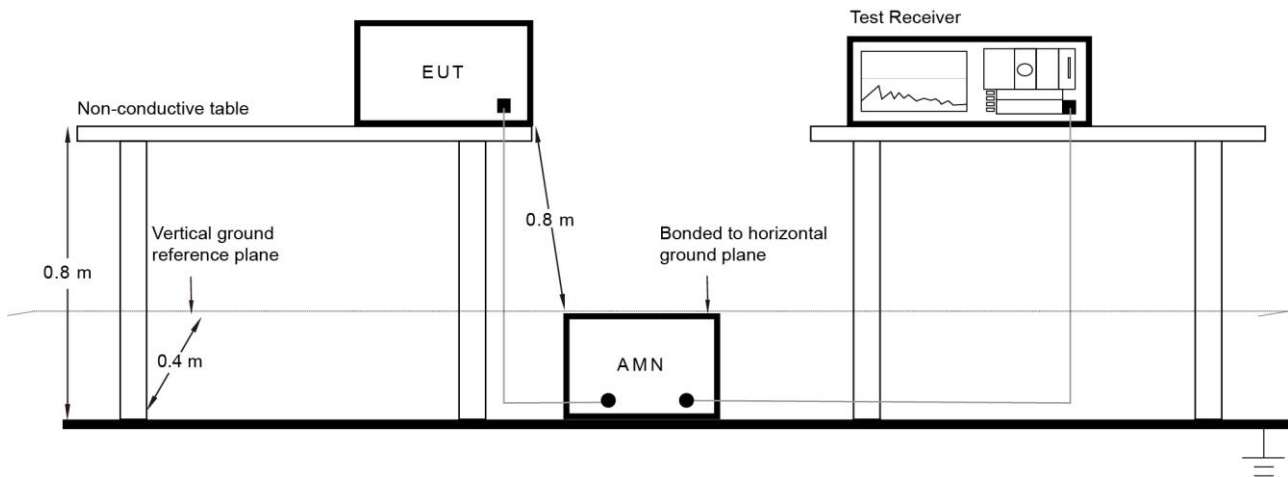
6.8.1. Test Limit

| FCC Part 15 Subpart C Paragraph 15.207 Limits | | |
|---|-----------------|-----------------|
| Frequency (MHz) | QP (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

Mode 1

| | | | |
|-----------|------------|---------------|-----------|
| Test Site | WZ-SR5 | Test Engineer | Lynn Yang |
| Test Date | 2024-03-05 | | |

| | |
|-----------|------------|
| Test Mode | Duty Cycle |
| 802.15.4 | 91.59% |

| Duty Cycle (T = Transmission Duration) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-------|-------|-------|--------------|-----------|----------------|----------------|----------------|---|---|---|---|--------------|----------|--|--|---|---|---|---|----------|-----------|--|--|---|---|---|---|--------------|-----------|--|--|---|---|---|---|----------|-----------|--|--|--|
| 802.15.4 (T= 4.245ms) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th>Mode</th> <th>Trace</th> <th>Scale</th> <th>X</th> <th>Y</th> <th>Function</th> <th>Function Width</th> <th>Function Value</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Δ</td> <td>1</td> <td>t</td> <td>4.245 ms (Δ)</td> <td>2.278 dB</td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>F</td> <td>1</td> <td>t</td> <td>15.00 ms</td> <td>4.440 dBm</td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>Δ</td> <td>1</td> <td>t</td> <td>4.635 ms (Δ)</td> <td>6.176 dBm</td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>F</td> <td>1</td> <td>t</td> <td>15.00 ms</td> <td>4.440 dBm</td> <td></td> <td></td> </tr> </tbody> </table> | Mode | Trace | Scale | X | Y | Function | Function Width | Function Value | 1 | Δ | 1 | t | 4.245 ms (Δ) | 2.278 dB | | | 2 | F | 1 | t | 15.00 ms | 4.440 dBm | | | 3 | Δ | 1 | t | 4.635 ms (Δ) | 6.176 dBm | | | 4 | F | 1 | t | 15.00 ms | 4.440 dBm | | | |
| Mode | Trace | Scale | X | Y | Function | Function Width | Function Value | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Δ | 1 | t | 4.245 ms (Δ) | 2.278 dB | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | F | 1 | t | 15.00 ms | 4.440 dBm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | Δ | 1 | t | 4.635 ms (Δ) | 6.176 dBm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | F | 1 | t | 15.00 ms | 4.440 dBm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Mode 2

| | | | |
|-----------|------------|---------------|-----------|
| Test Site | WZ-SR5 | Test Engineer | Lynn Yang |
| Test Date | 2024-03-06 | | |

| | |
|-----------|------------|
| Test Mode | Duty Cycle |
| 802.15.4 | 92.21% |

| Duty Cycle (T = Transmission Duration) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-------|-------|-------|-------|--------------|----------------|----------------|----------------|----------------|---|----|---|---|-----|--------------|------------|--|---|---|---|---|--|----------|-----------|--|---|----|---|---|-----|--------------|-----------|--|---|---|---|---|--|----------|-----------|--|
| 802.15.4 (T= 4.260ms) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>The screenshot shows a Keysight Spectrum Analyzer interface. The main display area shows a pulse train waveform. A marker is placed on one of the pulses, indicating a duration of 4.620 ms and a level of -5.41 dB. The reference level is 21.60 dB. The center frequency is 2.405000000 GHz, and the video bandwidth is 50 MHz. The sweep is 30.0 ms (2001 pts). The marker table at the bottom shows the following data:</p> <table border="1"> <thead> <tr> <th>Mode</th> <th>Trace</th> <th>Scale</th> <th>X</th> <th>Y</th> <th>Function</th> <th>Function Width</th> <th>Function Value</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Δ2</td> <td>1</td> <td>t</td> <td>(Δ)</td> <td>4.260 ms (Δ)</td> <td>-9.8047 dB</td> <td></td> </tr> <tr> <td>2</td> <td>F</td> <td>1</td> <td>t</td> <td></td> <td>11.06 ms</td> <td>5.602 dBm</td> <td></td> </tr> <tr> <td>3</td> <td>Δ4</td> <td>1</td> <td>t</td> <td>(Δ)</td> <td>4.620 ms (Δ)</td> <td>-5.412 dB</td> <td></td> </tr> <tr> <td>4</td> <td>F</td> <td>1</td> <td>t</td> <td></td> <td>11.06 ms</td> <td>5.602 dBm</td> <td></td> </tr> </tbody> </table> | | Mode | Trace | Scale | X | Y | Function | Function Width | Function Value | 1 | Δ2 | 1 | t | (Δ) | 4.260 ms (Δ) | -9.8047 dB | | 2 | F | 1 | t | | 11.06 ms | 5.602 dBm | | 3 | Δ4 | 1 | t | (Δ) | 4.620 ms (Δ) | -5.412 dB | | 4 | F | 1 | t | | 11.06 ms | 5.602 dBm | |
| Mode | Trace | Scale | X | Y | Function | Function Width | Function Value | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Δ2 | 1 | t | (Δ) | 4.260 ms (Δ) | -9.8047 dB | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | F | 1 | t | | 11.06 ms | 5.602 dBm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | Δ4 | 1 | t | (Δ) | 4.620 ms (Δ) | -5.412 dB | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | F | 1 | t | | 11.06 ms | 5.602 dBm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Mode 3

| | | | |
|-----------|------------|---------------|-----------|
| Test Site | WZ-SR5 | Test Engineer | Lynn Yang |
| Test Date | 2024-03-06 | | |

| | |
|-----------|------------|
| Test Mode | Duty Cycle |
| 802.15.4 | 91.91% |

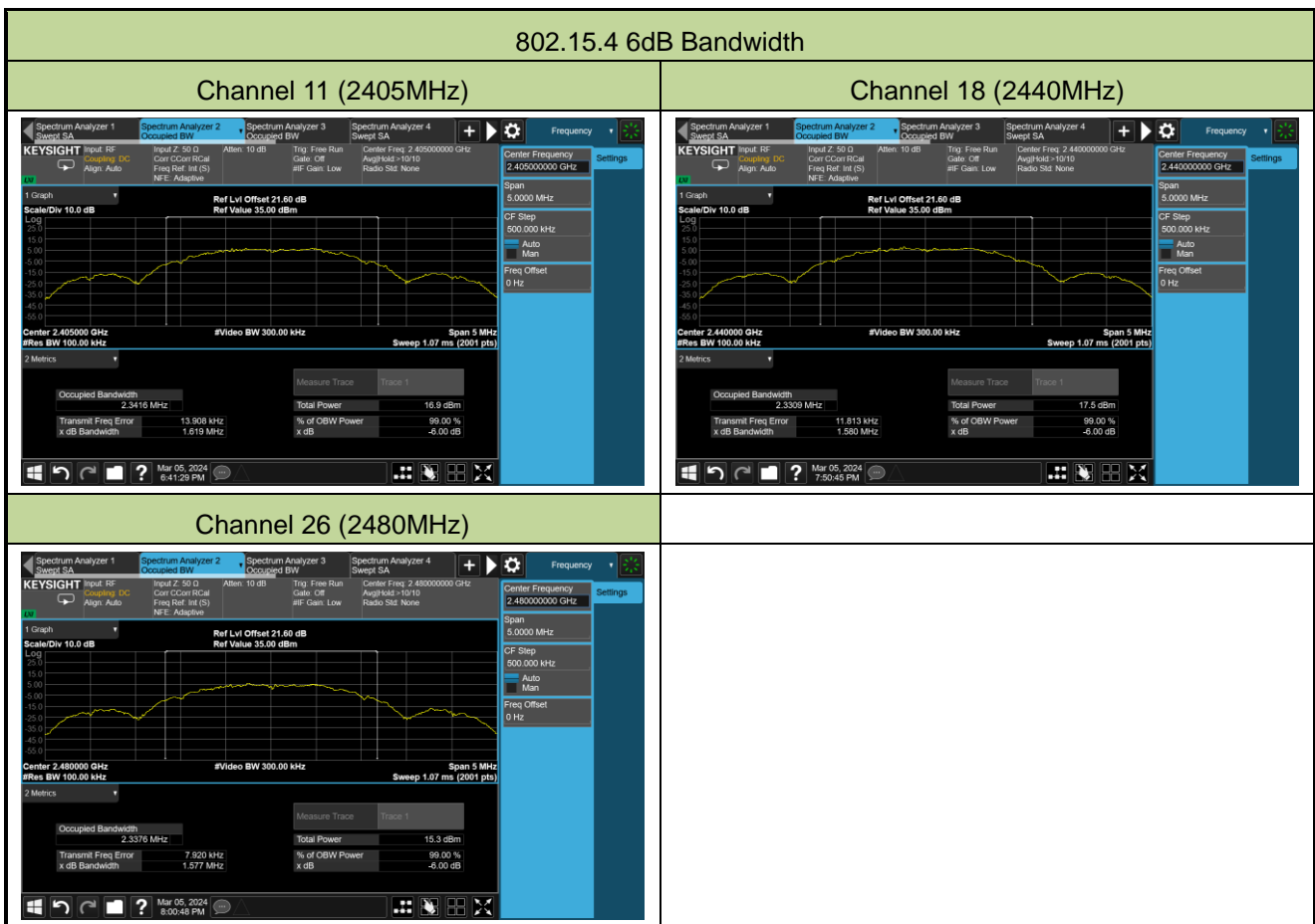
| Duty Cycle (T = Transmission Duration) | |
|--|--|
| 802.15.4 (T= 4.260ms) | |
| | |

A.2 6dB Bandwidth Test Result

Mode 1

| | | | |
|-----------|------------|---------------|-----------|
| Test Site | WZ-SR5 | Test Engineer | Lynn Yang |
| Test Date | 2024-03-05 | | |

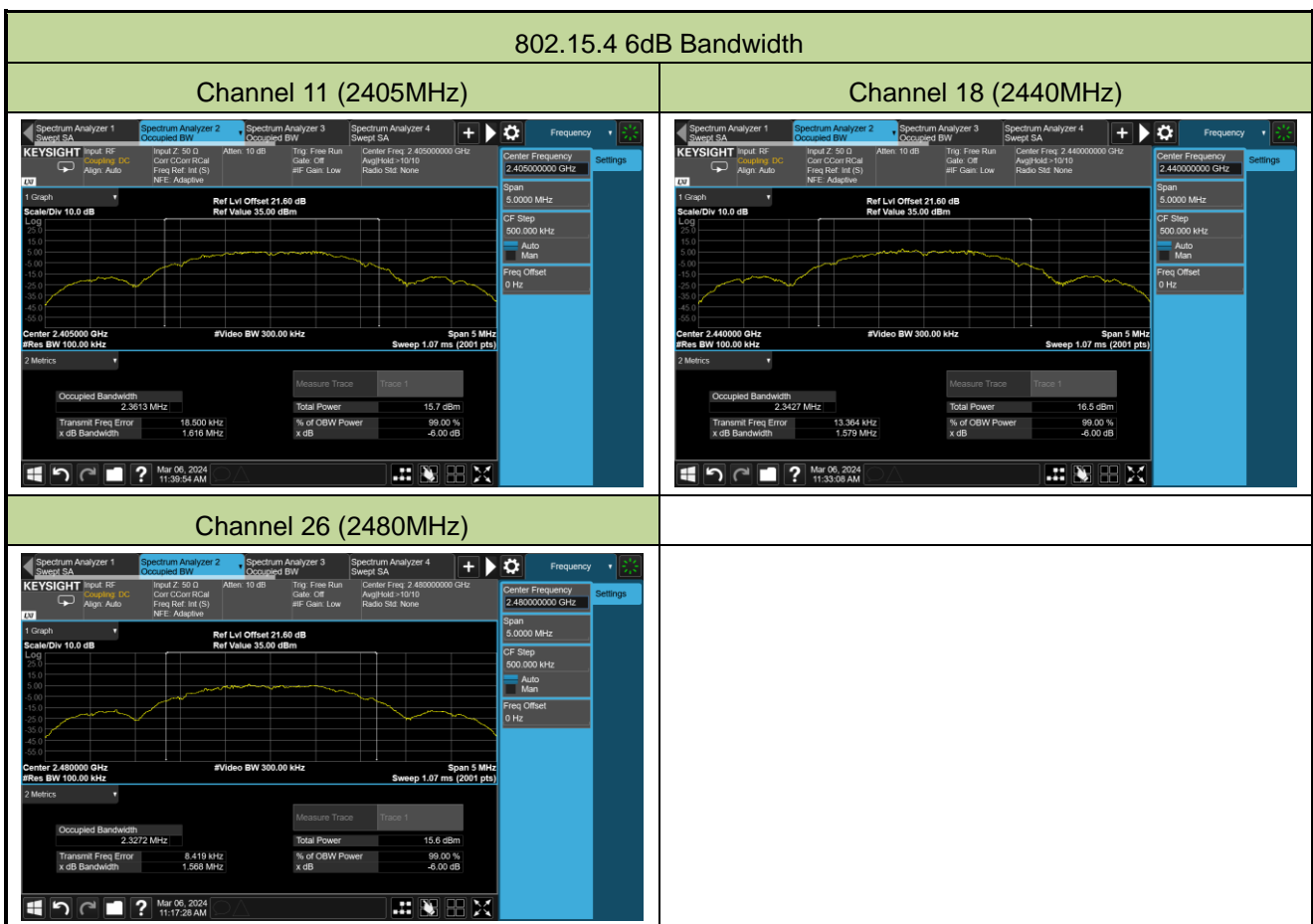
| Test Mode | Modulation Mode | Channel No. | Frequency (MHz) | 6dB Bandwidth (MHz) | Limit (MHz) | Result |
|-----------|-----------------|-------------|-----------------|---------------------|-------------|--------|
| 802.15.4 | O-QPSK | 11 | 2405 | 1.619 | ≥ 0.5 | Pass |
| 802.15.4 | O-QPSK | 18 | 2440 | 1.580 | ≥ 0.5 | Pass |
| 802.15.4 | O-QPSK | 26 | 2480 | 1.577 | ≥ 0.5 | Pass |



Mode 2

| | | | |
|-----------|------------|---------------|-----------|
| Test Site | WZ-SR5 | Test Engineer | Lynn Yang |
| Test Date | 2024-03-06 | | |

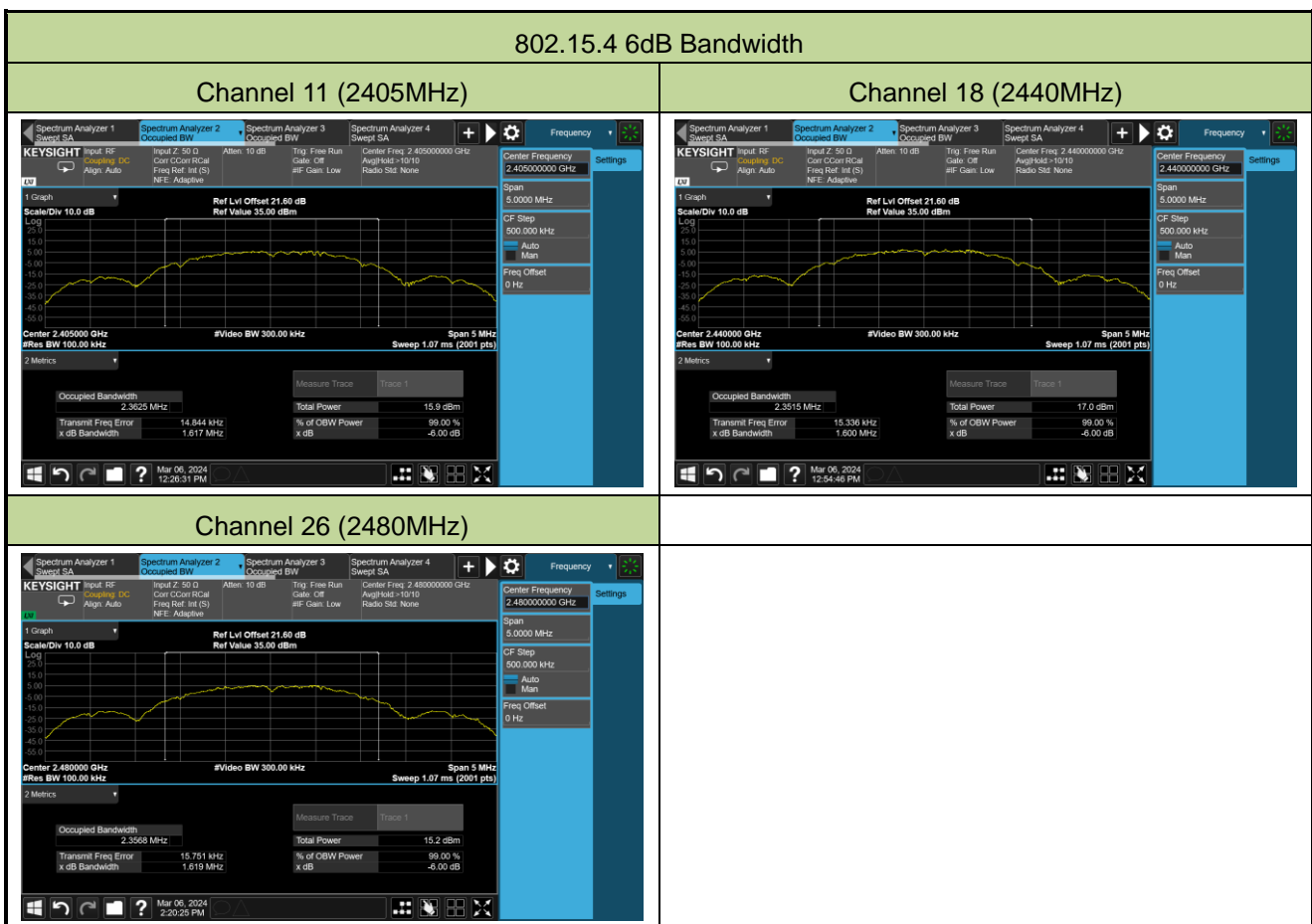
| Test Mode | Modulation Mode | Channel No. | Frequency (MHz) | 6dB Bandwidth (MHz) | Limit (MHz) | Result |
|-----------|-----------------|-------------|-----------------|---------------------|-------------|--------|
| 802.15.4 | O-QPSK | 11 | 2405 | 1.616 | ≥ 0.5 | Pass |
| 802.15.4 | O-QPSK | 18 | 2440 | 1.579 | ≥ 0.5 | Pass |
| 802.15.4 | O-QPSK | 26 | 2480 | 1.568 | ≥ 0.5 | Pass |



Mode 3

| | | | |
|-----------|------------|---------------|-----------|
| Test Site | WZ-SR5 | Test Engineer | Lynn Yang |
| Test Date | 2024-03-06 | | |

| Test Mode | Modulation Mode | Channel No. | Frequency (MHz) | 6dB Bandwidth (MHz) | Limit (MHz) | Result |
|-----------|-----------------|-------------|-----------------|---------------------|-------------|--------|
| 802.15.4 | O-QPSK | 11 | 2405 | 1.617 | ≥ 0.5 | Pass |
| 802.15.4 | O-QPSK | 18 | 2440 | 1.600 | ≥ 0.5 | Pass |
| 802.15.4 | O-QPSK | 26 | 2480 | 1.619 | ≥ 0.5 | Pass |



A.3 Output Power Test Result

Mode 1

| | | | |
|-----------|------------|---------------|-----------|
| Test Site | WZ-SR5 | Test Engineer | Lynn Yang |
| Test Date | 2024-03-03 | Filter | 1# |

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 | 11.25 | ≤ 30.00 | Pass |
| 802.15.4 | O-QPSK | 18 | 2440 | 11.61 | ≤ 30.00 | Pass |
| 802.15.4 | O-QPSK | 26 | 2480 | 9.91 | ≤ 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 | 10.68 | ≤ 30.00 | Pass |
| 802.15.4 | O-QPSK | 18 | 2440 | 11.14 | ≤ 30.00 | Pass |
| 802.15.4 | O-QPSK | 26 | 2480 | 9.38 | ≤ 30.00 | Pass |

| | | | |
|-----------|------------|---------------|-----------|
| Test Site | WZ-SR5 | Test Engineer | Lynn Yang |
| Test Date | 2024-03-03 | Filter | 2# |

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 | 11.22 | ≤ 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 | 10.63 | ≤ 30.00 | Pass |

| | | | |
|-----------|------------|---------------|-----------|
| Test Site | WZ-SR5 | Test Engineer | Lynn Yang |
| Test Date | 2024-03-03 | Filter | 3# |

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 | 8.49 | ≤ 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 | 7.89 | ≤ 30.00 | Pass |

Mode 2

| | | | |
|-----------|------------|---------------|-----------|
| Test Site | WZ-SR5 | Test Engineer | Lynn Yang |
| Test Date | 2024-03-03 | 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 | 10.77 | ≤ 30.00 | Pass |
| 802.15.4 | O-QPSK | 18 | 2440 | 11.52 | ≤ 30.00 | Pass |
| 802.15.4 | O-QPSK | 26 | 2480 | 9.52 | ≤ 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 | 9.97 | ≤ 30.00 | Pass |
| 802.15.4 | O-QPSK | 18 | 2440 | 10.76 | ≤ 30.00 | Pass |
| 802.15.4 | O-QPSK | 26 | 2480 | 9.04 | ≤ 30.00 | Pass |

| | | | |
|-----------|------------|---------------|-----------|
| Test Site | WZ-SR5 | Test Engineer | Lynn Yang |
| Test Date | 2024-03-03 | 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 | 10.67 | ≤ 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 | 9.87 | ≤ 30.00 | Pass |

| | | | |
|-----------|------------|---------------|-----------|
| Test Site | WZ-SR5 | Test Engineer | Lynn Yang |
| Test Date | 2024-03-03 | 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 | 9.11 | ≤ 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 | 8.65 | ≤ 30.00 | Pass |

Mode 3

| | | | |
|-----------|------------|---------------|-----------|
| Test Site | WZ-SR5 | Test Engineer | Lynn Yang |
| Test Date | 2024-03-03 | Filter | 7# |

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 | 11.25 | ≤ 30.00 | Pass |
| 802.15.4 | O-QPSK | 18 | 2440 | 11.80 | ≤ 30.00 | Pass |
| 802.15.4 | O-QPSK | 26 | 2480 | 9.71 | ≤ 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 | 10.54 | ≤ 30.00 | Pass |
| 802.15.4 | O-QPSK | 18 | 2440 | 11.10 | ≤ 30.00 | Pass |
| 802.15.4 | O-QPSK | 26 | 2480 | 9.15 | ≤ 30.00 | Pass |

| | | | |
|-----------|------------|---------------|-----------|
| Test Site | WZ-SR5 | Test Engineer | Lynn Yang |
| Test Date | 2024-03-03 | Filter | 8# |

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 | 11.23 | ≤ 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 | 10.39 | ≤ 30.00 | Pass |

| | | | |
|-----------|------------|---------------|-----------|
| Test Site | WZ-SR5 | Test Engineer | Lynn Yang |
| Test Date | 2024-03-03 | Filter | 9# |

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 | 9.25 | ≤ 30.00 | Pass |

Test Result of Average Output Power (Reporting Only)

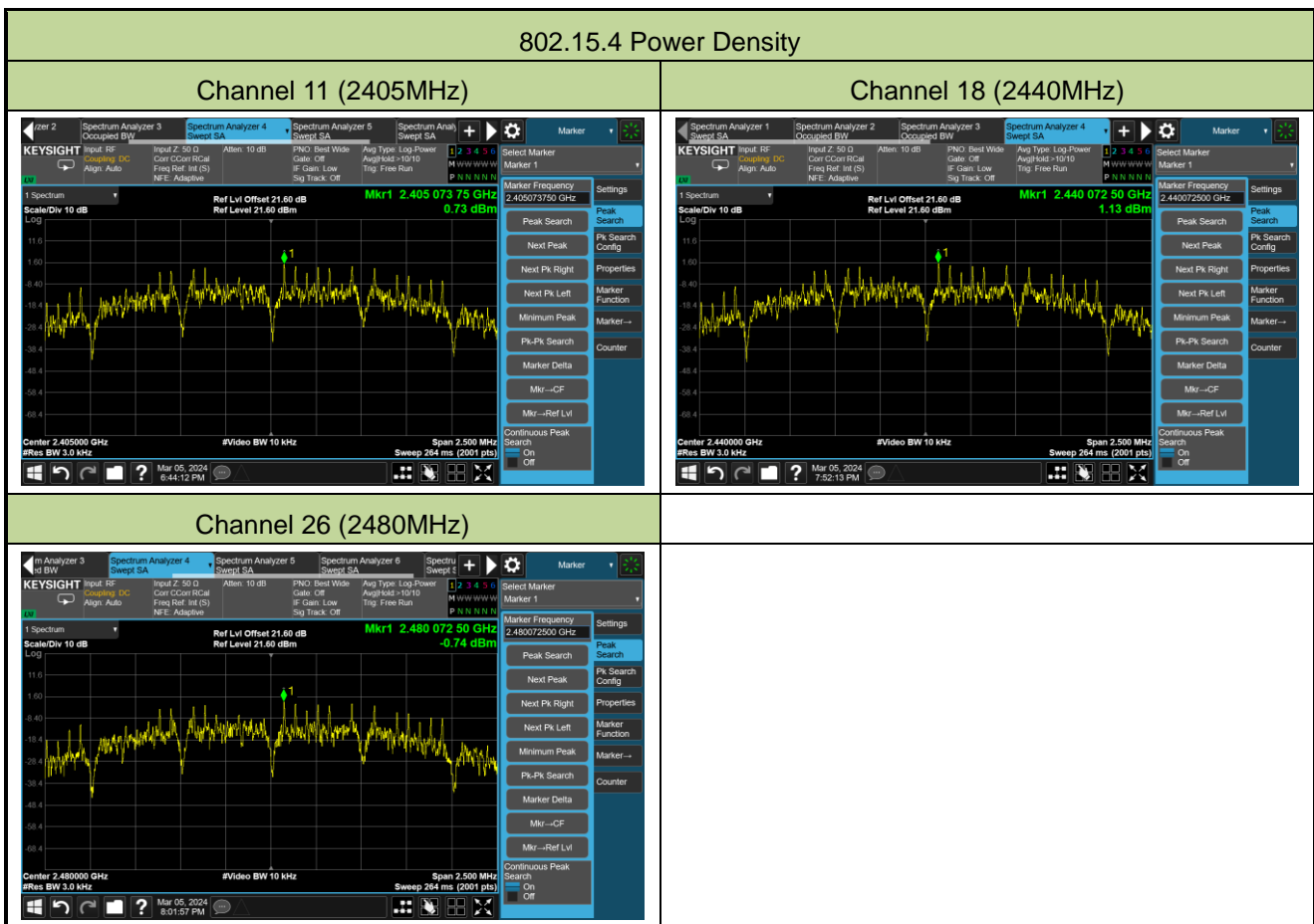
| Test Mode | Modulation Mode | Channel No. | Freq. (MHz) | Average Power (dBm) | Limit (dBm) | Result |
|-----------|-----------------|-------------|-------------|---------------------|-------------|--------|
| 802.15.4 | O-QPSK | 26 | 2480 | 8.84 | ≤ 30.00 | Pass |

A.4 Power Spectral Density Test Result

Mode 1

| | | | |
|-----------|------------|---------------|-----------|
| Test Site | WZ-SR5 | Test Engineer | Lynn Yang |
| Test Date | 2024-03-05 | | |

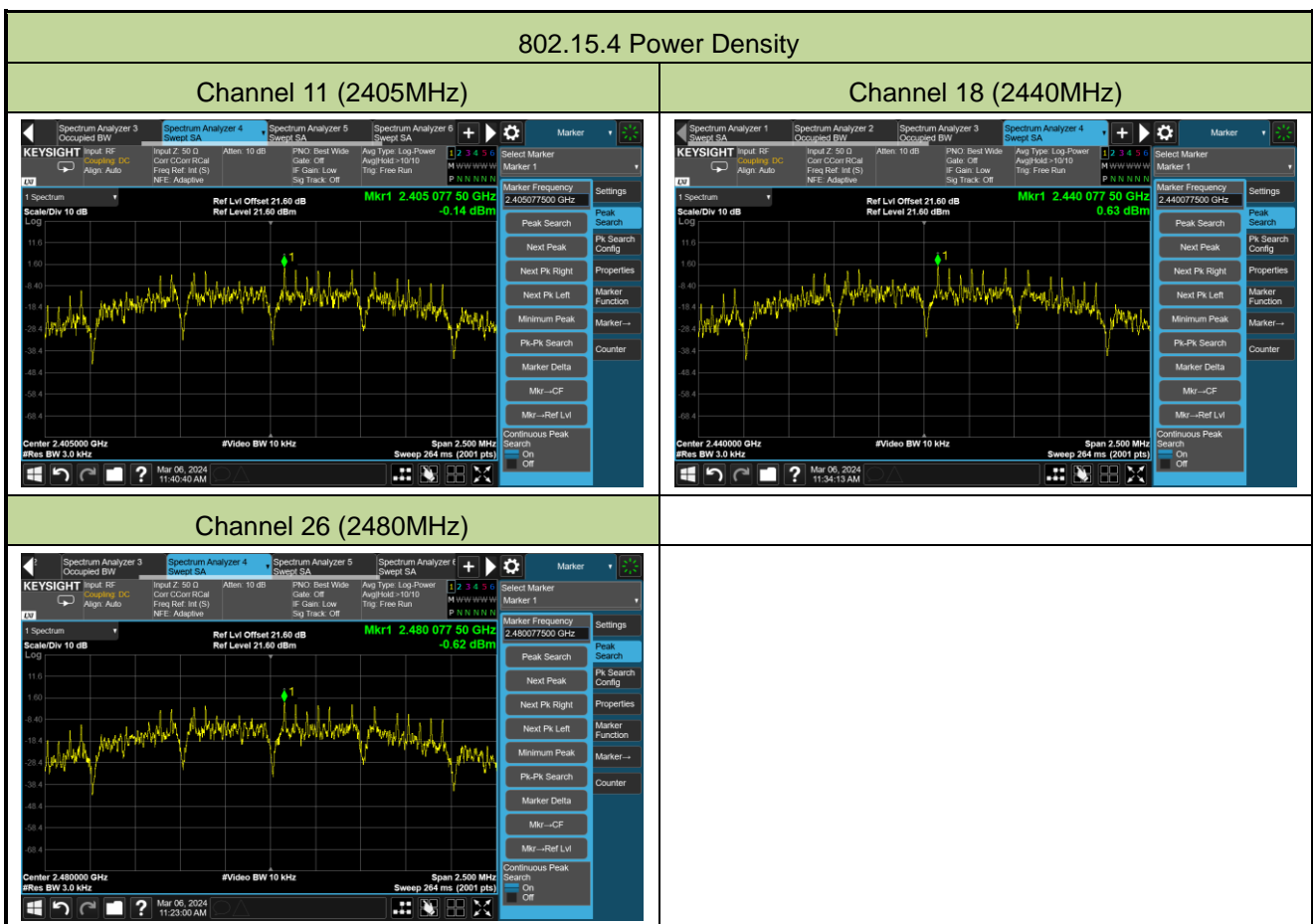
| Test Mode | Modulation Mode | Channel No. | Frequency (MHz) | PK PSD (dBm / 3kHz) | Limit (dBm / 3kHz) | Result |
|-----------|-----------------|-------------|-----------------|---------------------|--------------------|--------|
| 802.15.4 | O-QPSK | 11 | 2405 | 0.73 | ≤ 8.00 | Pass |
| 802.15.4 | O-QPSK | 18 | 2440 | 1.13 | ≤ 8.00 | Pass |
| 802.15.4 | O-QPSK | 26 | 2480 | -0.74 | ≤ 8.00 | Pass |



Mode 2

| | | | |
|-----------|------------|---------------|-----------|
| Test Site | WZ-SR5 | Test Engineer | Lynn Yang |
| Test Date | 2024-03-06 | | |

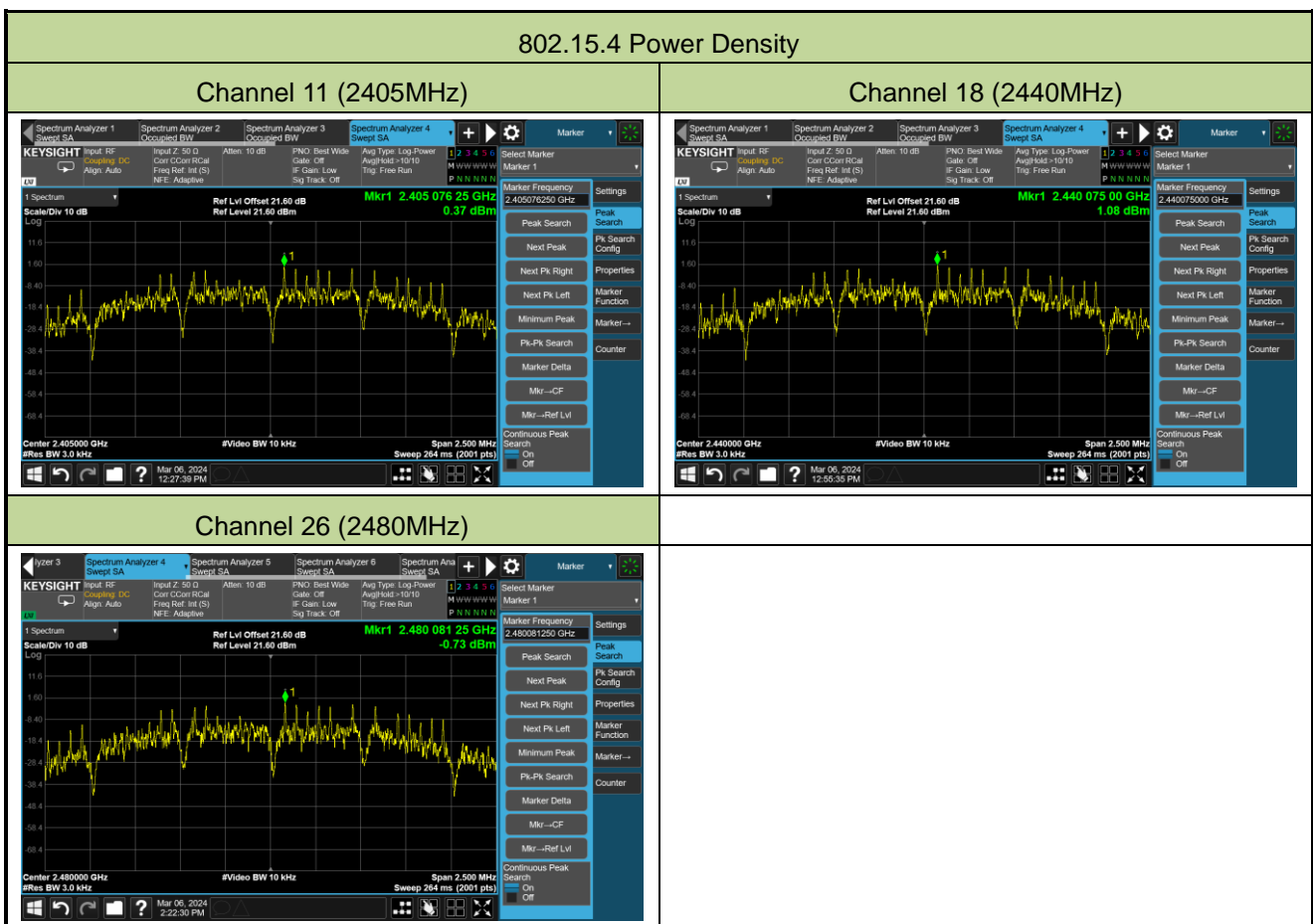
| Test Mode | Modulation Mode | Channel No. | Frequency (MHz) | PK PSD (dBm / 3kHz) | Limit (dBm / 3kHz) | Result |
|-----------|-----------------|-------------|-----------------|---------------------|--------------------|--------|
| 802.15.4 | O-QPSK | 11 | 2405 | -0.14 | ≤ 8.00 | Pass |
| 802.15.4 | O-QPSK | 18 | 2440 | 0.63 | ≤ 8.00 | Pass |
| 802.15.4 | O-QPSK | 26 | 2480 | -0.62 | ≤ 8.00 | Pass |



Mode 3

| | | | |
|-----------|------------|---------------|-----------|
| Test Site | WZ-SR5 | Test Engineer | Lynn Yang |
| Test Date | 2024-03-06 | | |

| Test Mode | Modulation Mode | Channel No. | Frequency (MHz) | PK PSD (dBm / 3kHz) | Limit (dBm / 3kHz) | Result |
|-----------|-----------------|-------------|-----------------|---------------------|--------------------|--------|
| 802.15.4 | O-QPSK | 11 | 2405 | 0.37 | ≤ 8.00 | Pass |
| 802.15.4 | O-QPSK | 18 | 2440 | 1.08 | ≤ 8.00 | Pass |
| 802.15.4 | O-QPSK | 26 | 2480 | -0.73 | ≤ 8.00 | Pass |

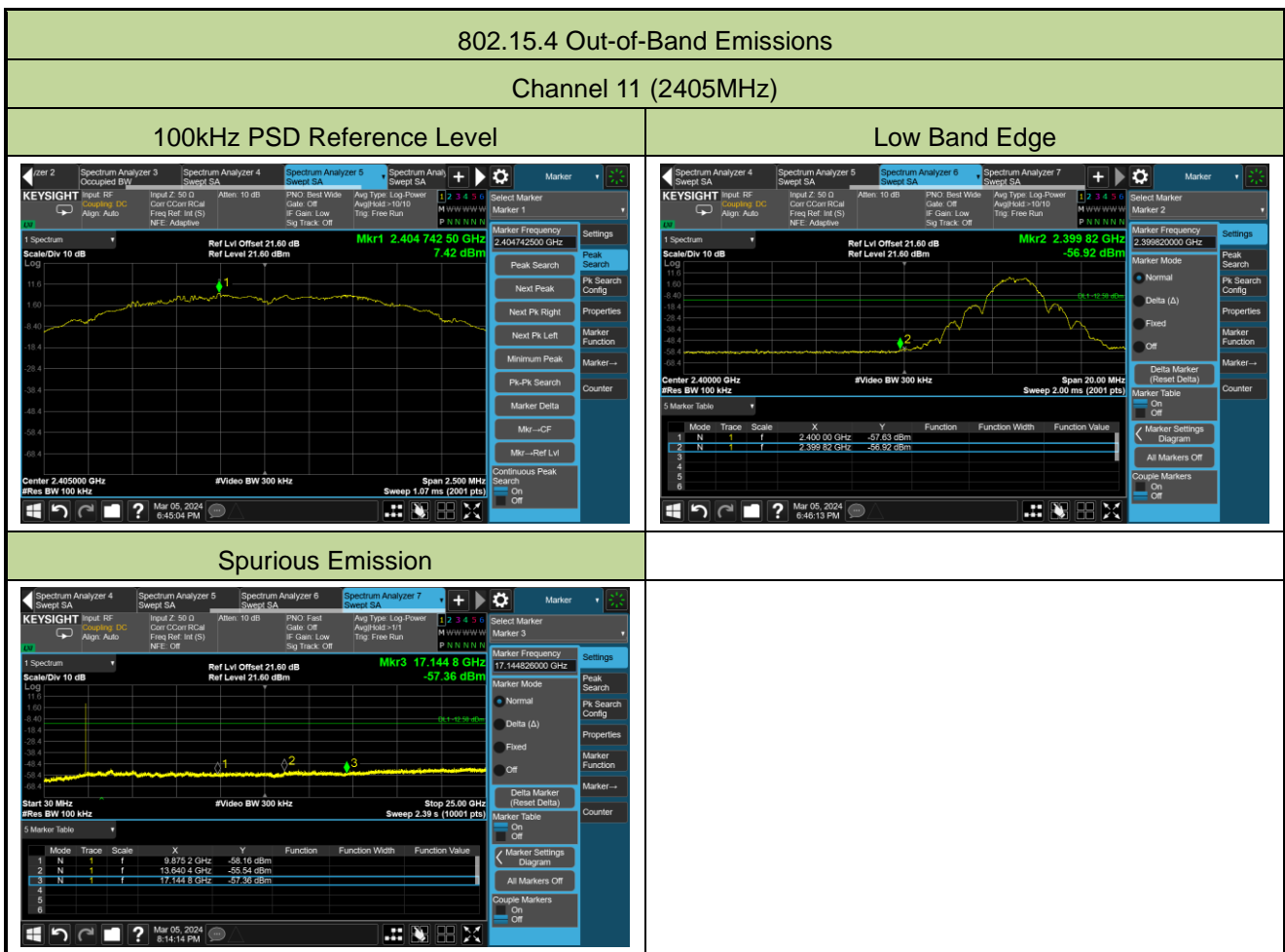


A.5 Conducted Band Edge and Out-of-Band Emissions Test Result

Mode 1

| | | | |
|-----------|------------|---------------|-----------|
| Test Site | WZ-SR5 | Test Engineer | Lynn Yang |
| Test Date | 2024-03-05 | Filter | 1# |

| 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 |

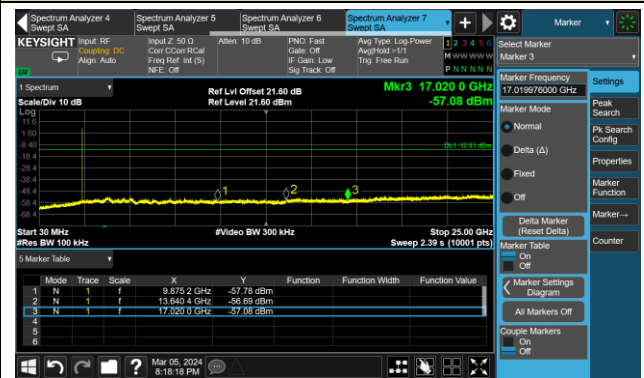


Channel 18 (2440MHz)

100kHz PSD Reference Level



Spurious Emission



Channel 26 (2480MHz)

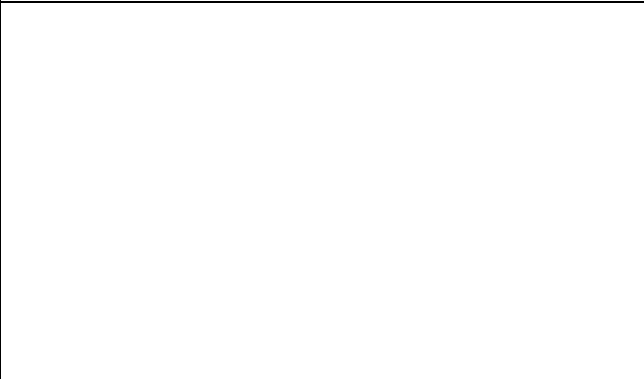
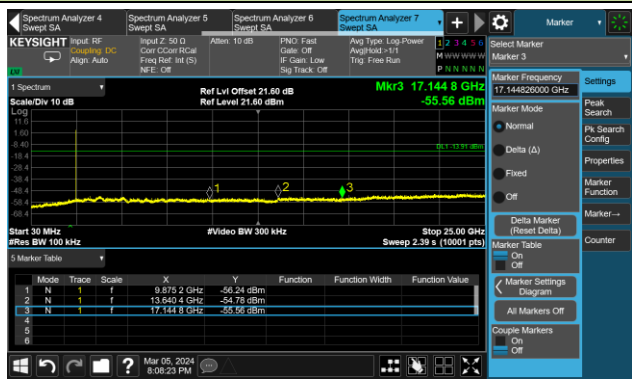
100kHz PSD Reference Level



High Band Edge



Spurious Emission



| | | | |
|-----------|------------|---------------|-----------|
| Test Site | WZ-SR5 | Test Engineer | Lynn Yang |
| Test Date | 2024-03-05 | Filter | 2# |

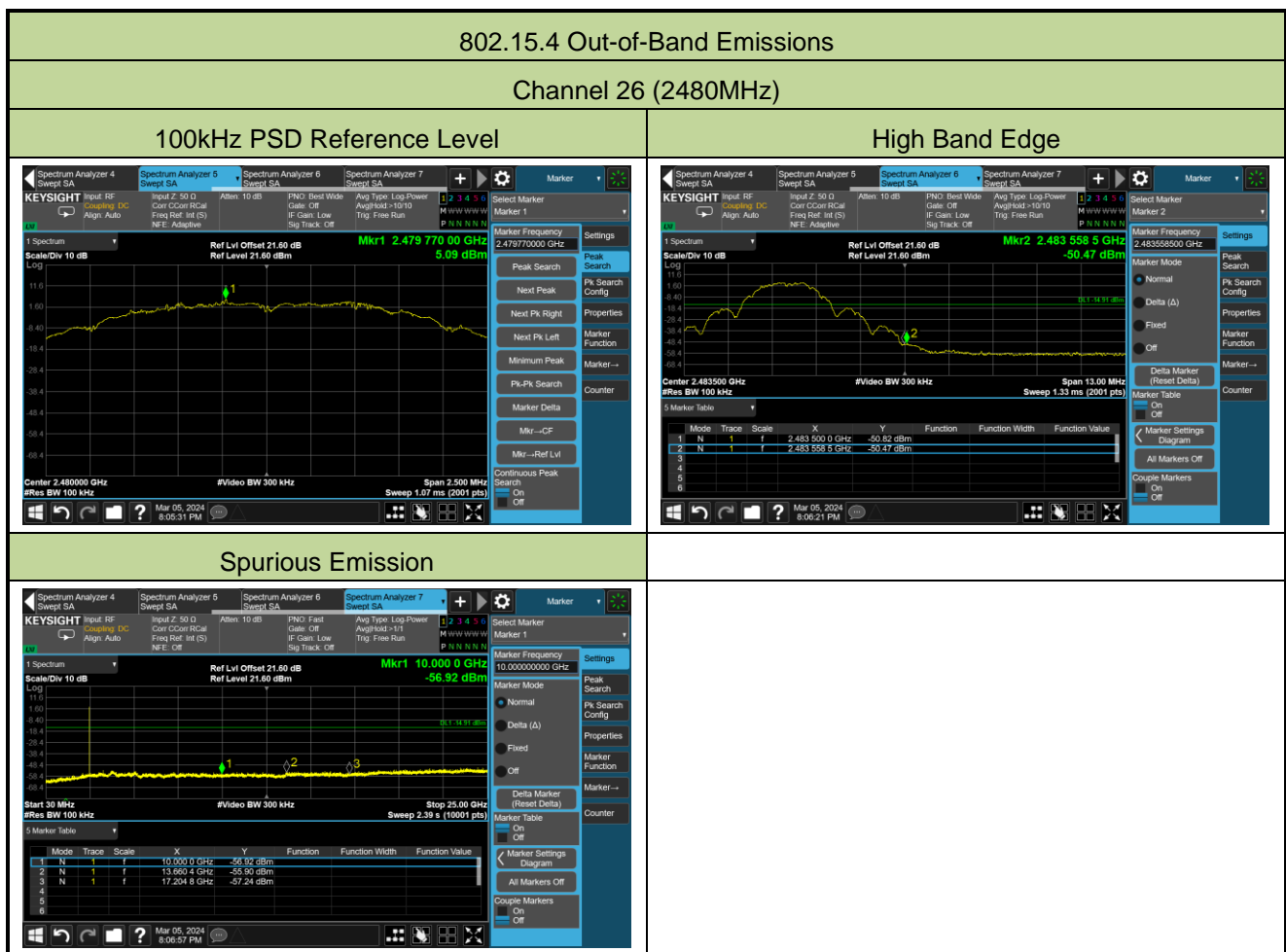
| Test Mode | Data Rate | Channel No. | Frequency (MHz) | Limit (dBc) | Result |
|-----------|--------------|-------------|-----------------|-------------|--------|
| 802.15.4 | O-QPSK / MCS | 11 | 2405 | 20 | Pass |

802.15.4 Out-of-Band Emissions
Channel 11 (2405MHz)

| 100kHz PSD Reference Level | Low Band Edge |
|----------------------------|---------------|
| | |
| | |

| | | | |
|-----------|------------|---------------|-----------|
| Test Site | WZ-SR5 | Test Engineer | Lynn Yang |
| Test Date | 2024-03-05 | Filter | 3# |

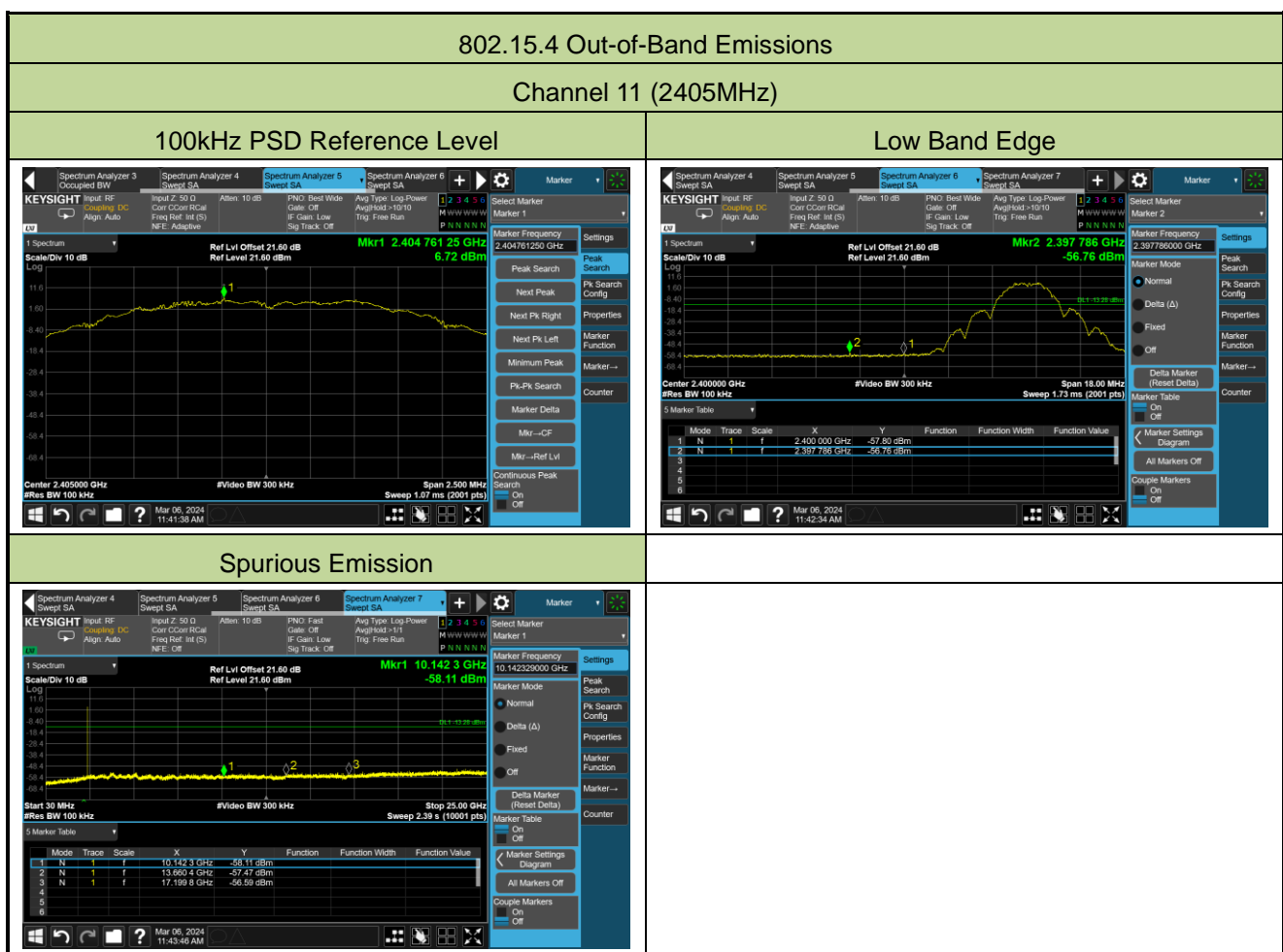
| Test Mode | Data Rate | Channel No. | Frequency | Limit | Result |
|-----------|-----------|-------------|-----------|-------|--------|
| 802.15.4 | O-QPSK | 26 | 2480 | 20 | Pass |



Mode 2

| | | | |
|-----------|------------|---------------|-----------|
| Test Site | WZ-SR5 | Test Engineer | Lynn Yang |
| Test Date | 2024-03-06 | 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 |

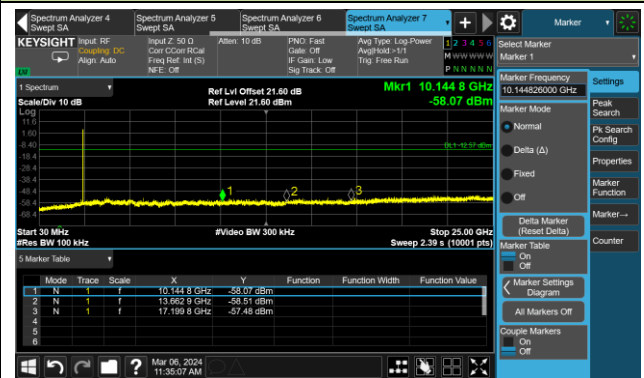


Channel 18 (2440MHz)

100kHz PSD Reference Level



Spurious Emission



Channel 26 (2480MHz)

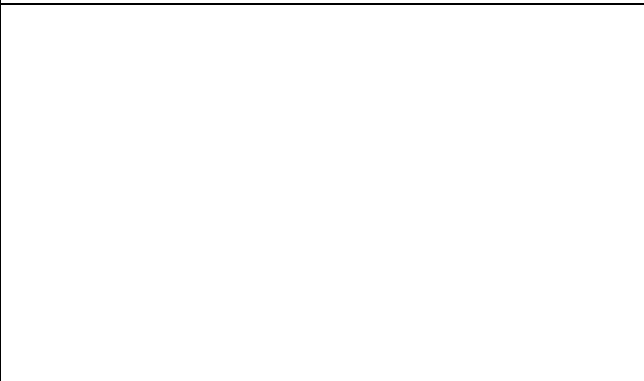
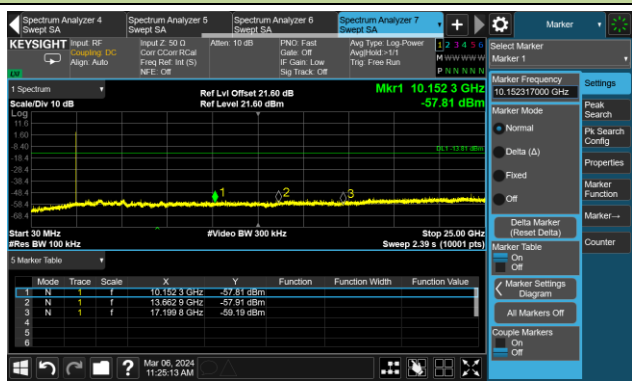
100kHz PSD Reference Level



High Band Edge

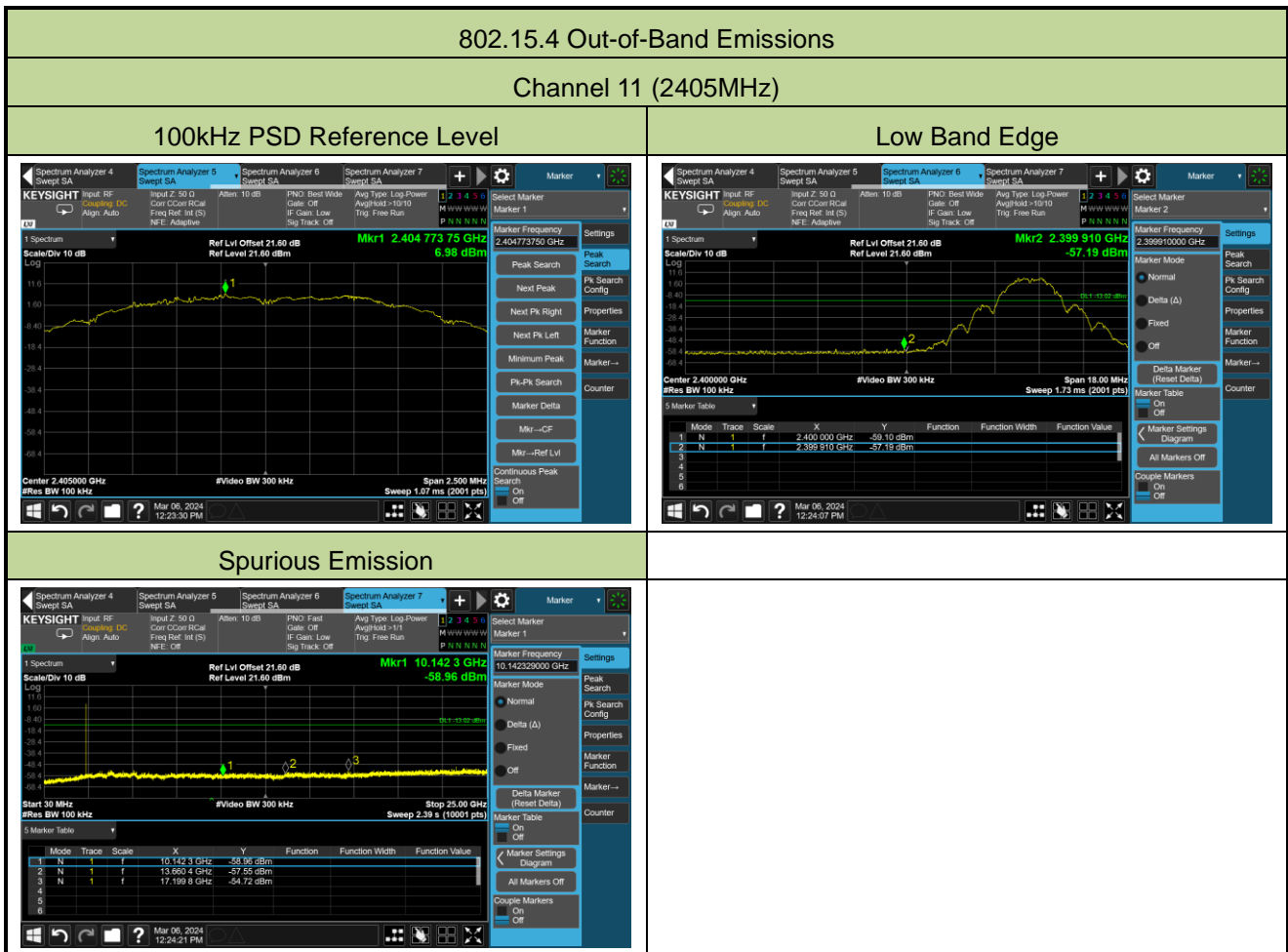


Spurious Emission



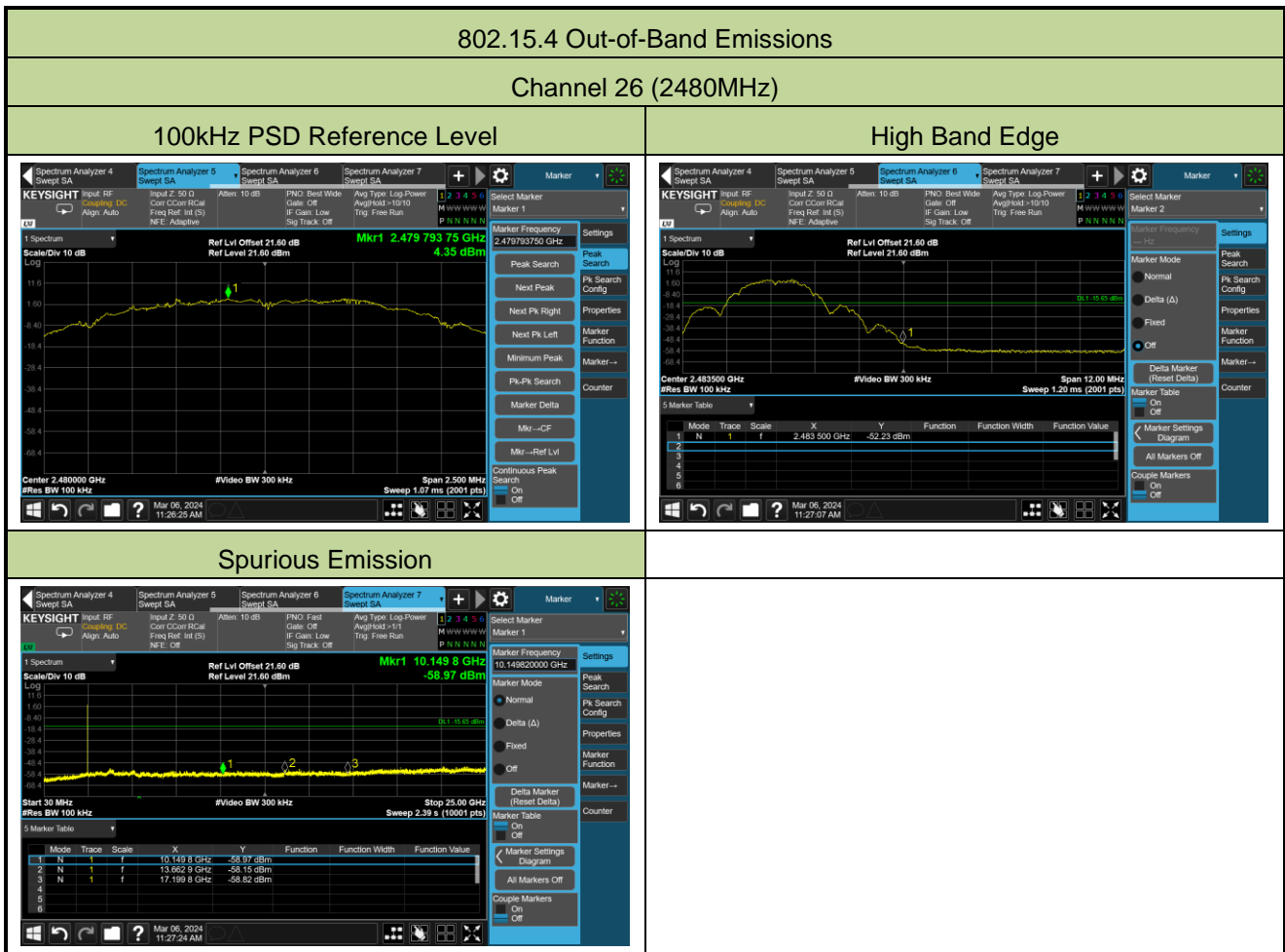
| | | | |
|-----------|------------|---------------|-----------|
| Test Site | WZ-SR5 | Test Engineer | Lynn Yang |
| Test Date | 2024-03-06 | Filter | 5# |

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



| | | | |
|-----------|------------|---------------|-----------|
| Test Site | WZ-SR5 | Test Engineer | Lynn Yang |
| Test Date | 2024-03-06 | Filter | 6# |

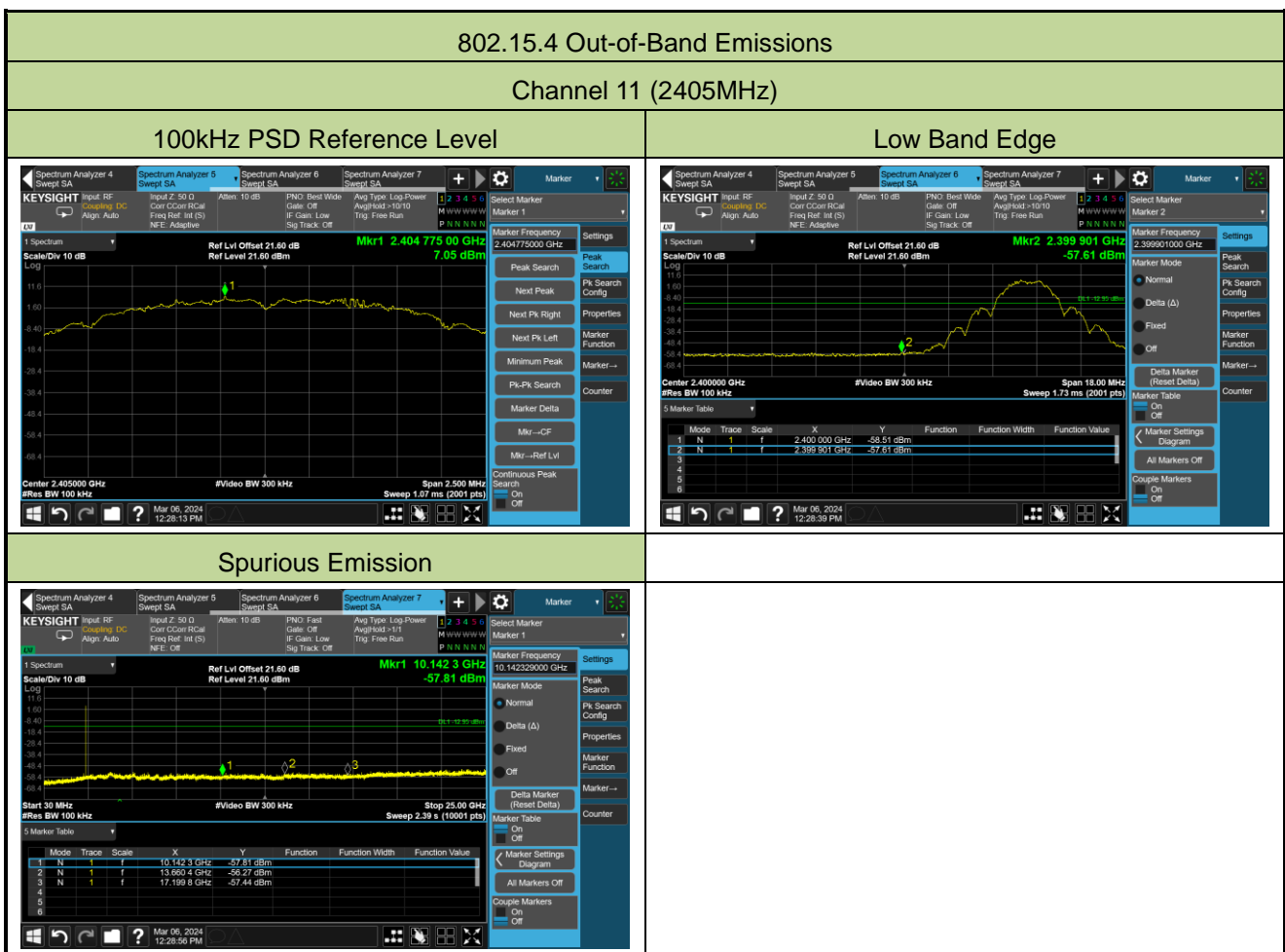
| Test Mode | Data Rate | Channel No. | Frequency | Limit | Result |
|-----------|-----------|-------------|-----------|-------|--------|
| 802.15.4 | O-QPSK | 26 | 2480 | 20 | Pass |



Mode 3

| | | | |
|-----------|------------|---------------|-----------|
| Test Site | WZ-SR5 | Test Engineer | Lynn Yang |
| Test Date | 2024-03-06 | Filter | 7# |

| 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 |

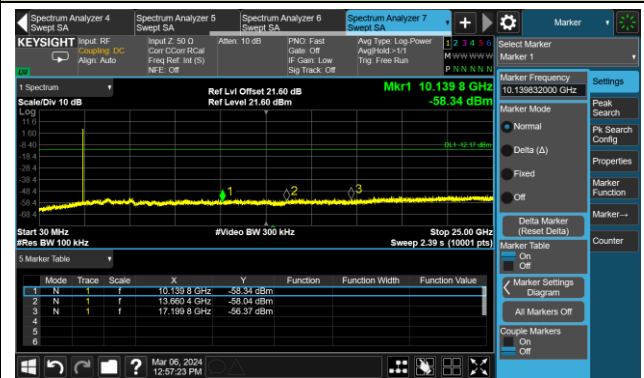


Channel 18 (2440MHz)

100kHz PSD Reference Level

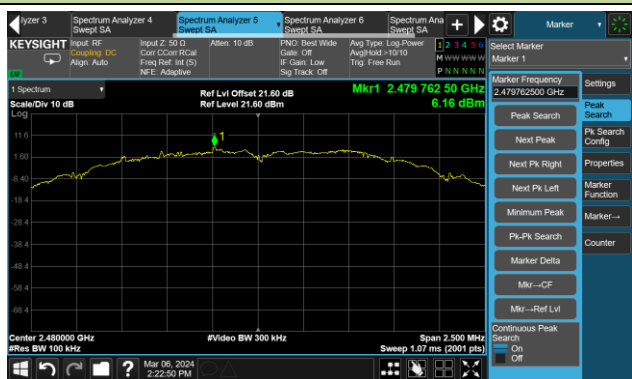


Spurious Emission



Channel 26 (2480MHz)

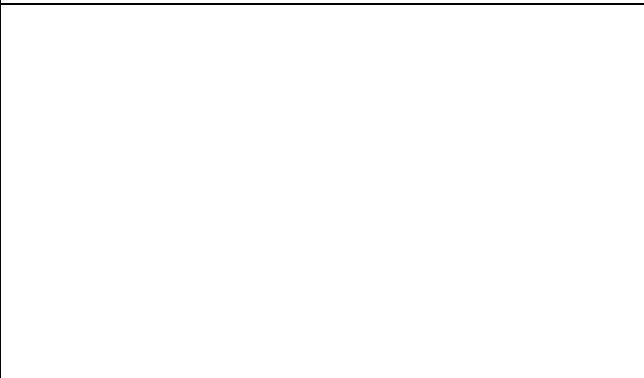
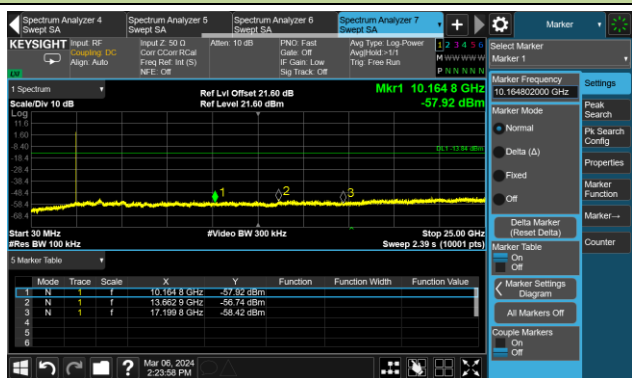
100kHz PSD Reference Level



High Band Edge

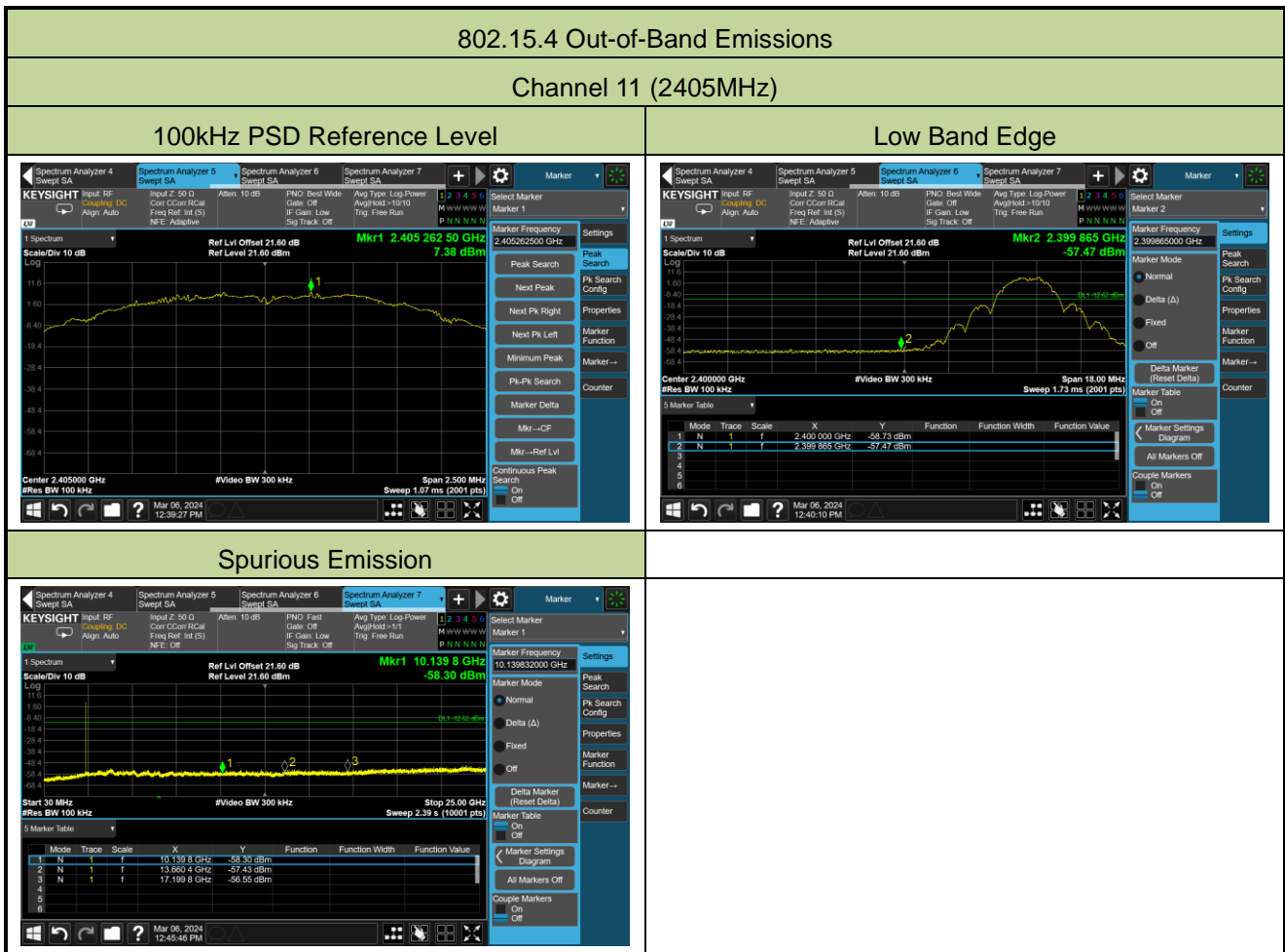


Spurious Emission



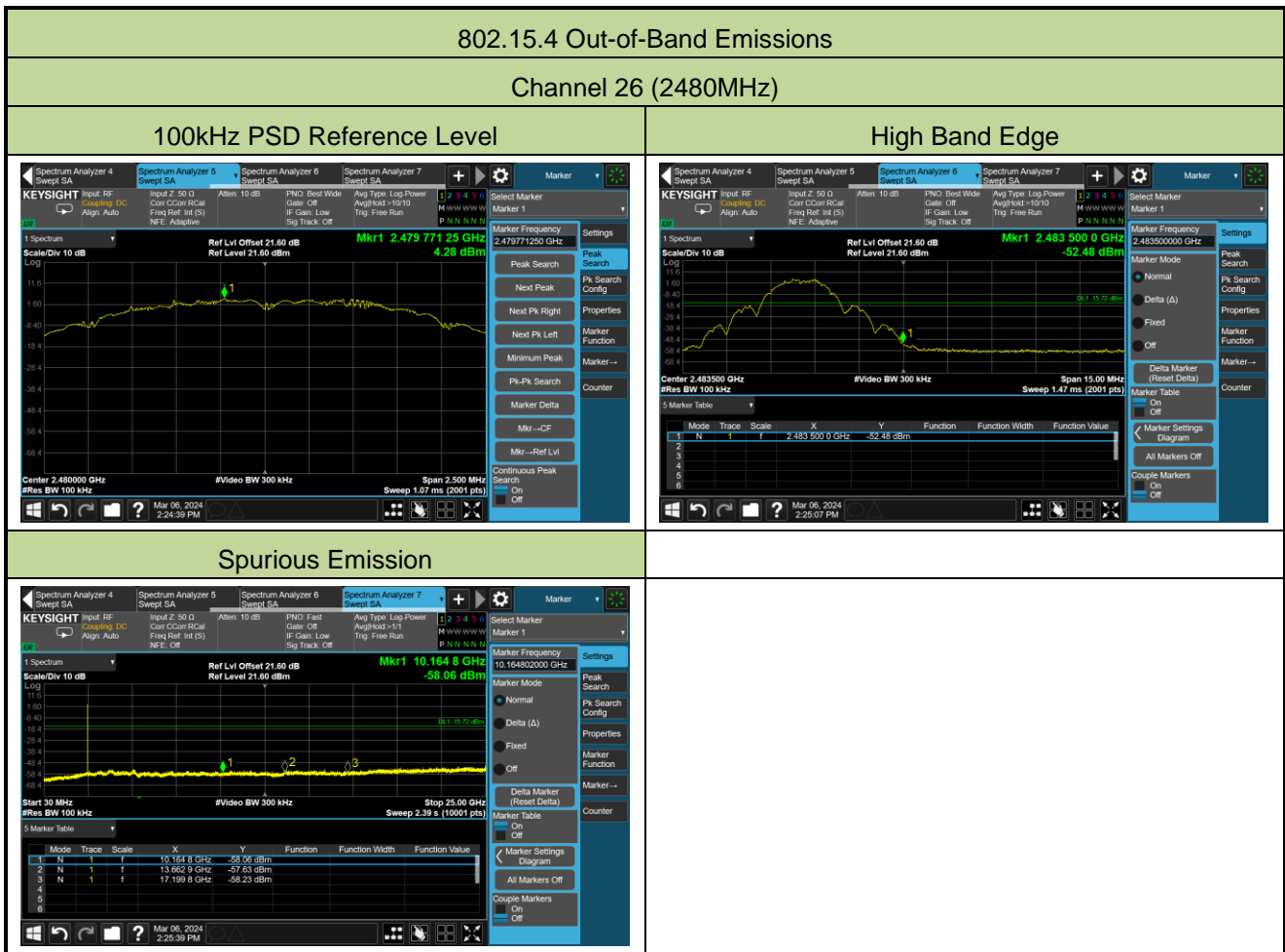
| | | | |
|-----------|------------|---------------|-----------|
| Test Site | WZ-SR5 | Test Engineer | Lynn Yang |
| Test Date | 2024-03-06 | Filter | 8# |

| Test Mode | Data Rate | Channel No. | Frequency | Limit | Result |
|-----------|-----------|-------------|-----------|-------|--------|
| 802.15.4 | O-QPSK | 11 | 2405 | 20 | Pass |



| | | | |
|-----------|------------|---------------|-----------|
| Test Site | WZ-SR5 | Test Engineer | Lynn Yang |
| Test Date | 2024-03-06 | Filter | 9# |

| Test Mode | Data Rate | Channel No. | Frequency | Limit | Result |
|-----------|-----------|-------------|-----------|-------|--------|
| 802.15.4 | O-QPSK | 26 | 2480 | 20 | Pass |



A.6 Radiated Spurious Emission Test Result
Mode 1

| | | | |
|-----------|---|---------------|-----------|
| Test Site | WZ-AC2 | Test Engineer | Bob Zhang |
| Test Date | 2024-02-28 | Filter | 1# |
| 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 | 4043.0 | 33.7 | 0.3 | 34.0 | 74.0 | -39.9 | Peak | Horizontal |
| | 4944.0 | 33.2 | 3.2 | 36.4 | 74.0 | -37.6 | Peak | Horizontal |
| | 12118.0 | 32.3 | 17.1 | 49.4 | 74.0 | -24.5 | Peak | Horizontal |
| | 4918.5 | 34.0 | 3.2 | 37.2 | 74.0 | -36.8 | Peak | Vertical |
| | 10826.0 | 30.1 | 16.4 | 46.5 | 74.0 | -27.5 | Peak | Vertical |
| | 11582.5 | 31.1 | 17.5 | 48.6 | 74.0 | -25.4 | Peak | Vertical |
| 18 | 4859.0 | 32.7 | 3.2 | 35.9 | 74.0 | -38.1 | Peak | Horizontal |
| | 11310.5 | 31.4 | 17.3 | 48.7 | 74.0 | -25.2 | Peak | Horizontal |
| | 11633.5 | 30.4 | 17.7 | 48.1 | 74.0 | -25.9 | Peak | Horizontal |
| | 4791.0 | 33.3 | 3.1 | 36.4 | 74.0 | -37.6 | Peak | Vertical |
| | 11106.5 | 31.1 | 16.7 | 47.8 | 74.0 | -26.2 | Peak | Vertical |
| | 12084.0 | 30.9 | 16.9 | 47.8 | 74.0 | -26.2 | Peak | Vertical |
| 26 | 4026.0 | 33.3 | 0.3 | 33.6 | 74.0 | -40.4 | Peak | Horizontal |
| | 4969.5 | 33.6 | 3.0 | 36.6 | 74.0 | -37.4 | Peak | Horizontal |
| | 11327.5 | 29.9 | 17.4 | 47.3 | 74.0 | -26.7 | Peak | Horizontal |
| | 4255.5 | 34.6 | 1.2 | 35.8 | 74.0 | -38.2 | Peak | Vertical |
| | 4893.0 | 33.6 | 3.0 | 36.6 | 74.0 | -37.4 | Peak | Vertical |
| | 11225.5 | 29.0 | 16.9 | 45.9 | 74.0 | -28.1 | 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-AC2 | Test Engineer | Bob Zhang |
| Test Date | 2024-02-28 | Filter | 2# |
| 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 | 4162.0 | 34.9 | 0.7 | 35.6 | 74.0 | -38.4 | Peak | Horizontal |
| | 4927.0 | 32.9 | 3.3 | 36.2 | 74.0 | -37.8 | Peak | Horizontal |
| | 11574.0 | 31.3 | 17.7 | 49.0 | 74.0 | -25.0 | Peak | Horizontal |
| | 3711.5 | 36.6 | -0.2 | 36.4 | 74.0 | -37.6 | Peak | Vertical |
| | 4859.0 | 32.7 | 3.2 | 35.9 | 74.0 | -38.1 | Peak | Vertical |
| | 11642.0 | 30.3 | 17.9 | 48.2 | 74.0 | -25.8 | Peak | Vertical |

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

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

| | | | |
|-----------|---|---------------|-----------|
| Test Site | WZ-AC2 | Test Engineer | Bob Zhang |
| Test Date | 2024-02-28 | Filter | 3# |
| 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 | 3890.0 | 35.7 | -0.1 | 35.6 | 74.0 | -38.5 | Peak | Horizontal |
| | 4944.0 | 33.6 | 3.2 | 36.8 | 74.0 | -37.2 | Peak | Horizontal |
| | 11616.5 | 31.6 | 17.4 | 49.0 | 74.0 | -25.1 | Peak | Horizontal |
| | 4187.5 | 34.6 | 1.0 | 35.6 | 74.0 | -38.4 | Peak | Vertical |
| | 4740.0 | 35.9 | 2.9 | 38.8 | 74.0 | -35.2 | Peak | Vertical |
| | 11506.0 | 31.9 | 17.4 | 49.3 | 74.0 | -24.6 | 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)

Mode 2

| | | | |
|-----------|---|---------------|-----------|
| Test Site | WZ-AC2 | Test Engineer | Bob Zhang |
| Test Date | 2024-02-28 | 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 | 4111.0 | 34.7 | 0.8 | 35.5 | 74.0 | -38.5 | Peak | Horizontal |
| | 4663.5 | 34.6 | 2.7 | 37.3 | 74.0 | -36.8 | Peak | Horizontal |
| | 11591.0 | 31.6 | 17.3 | 48.9 | 74.0 | -25.0 | Peak | Horizontal |
| | 4187.5 | 35.3 | 1.0 | 36.3 | 74.0 | -37.7 | Peak | Vertical |
| | 4910.0 | 34.3 | 3.2 | 37.5 | 74.0 | -36.5 | Peak | Vertical |
| | 11480.5 | 31.0 | 17.6 | 48.6 | 74.0 | -25.4 | Peak | Vertical |
| 18 | 3873.0 | 36.3 | 0.0 | 36.3 | 74.0 | -37.7 | Peak | Horizontal |
| | 4978.0 | 34.4 | 3.0 | 37.4 | 74.0 | -36.6 | Peak | Horizontal |
| | 11795.0 | 31.2 | 17.7 | 48.9 | 74.0 | -25.2 | Peak | Horizontal |
| | 4111.0 | 35.6 | 0.8 | 36.4 | 74.0 | -37.6 | Peak | Vertical |
| | 4842.0 | 33.7 | 3.2 | 36.9 | 74.0 | -37.1 | Peak | Vertical |
| | 11514.5 | 31.0 | 17.3 | 48.3 | 74.0 | -25.7 | Peak | Vertical |
| 26 | 3992.0 | 33.1 | 0.0 | 33.1 | 74.0 | -40.9 | Peak | Horizontal |
| | 4791.0 | 31.9 | 3.1 | 35.0 | 74.0 | -39.1 | Peak | Horizontal |
| | 11174.5 | 29.5 | 17.0 | 46.5 | 74.0 | -27.5 | Peak | Horizontal |
| | 3992.0 | 33.4 | 0.0 | 33.4 | 74.0 | -40.7 | Peak | Vertical |
| | 4816.5 | 32.5 | 3.0 | 35.5 | 74.0 | -38.5 | Peak | Vertical |
| | 11242.5 | 30.9 | 17.1 | 48.0 | 74.0 | -26.0 | 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-AC2 | Test Engineer | Bob Zhang |
| Test Date | 2024-02-28 | 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 (dB μ V) | Factor (dB/m) | Measure Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Detector | Polarization |
|--------------|-----------------|----------------------------|---------------|------------------------------|----------------------|-------------|----------|--------------|
| 11 | 3898.5 | 36.1 | -0.2 | 35.9 | 74.0 | -38.1 | Peak | Horizontal |
| | 4765.5 | 33.3 | 3.1 | 36.4 | 74.0 | -37.5 | Peak | Horizontal |
| | 11327.5 | 30.3 | 17.4 | 47.7 | 74.0 | -26.3 | Peak | Horizontal |
| | 3864.5 | 34.1 | 0.0 | 34.1 | 74.0 | -39.9 | Peak | Vertical |
| | 4621.0 | 34.2 | 2.5 | 36.7 | 74.0 | -37.2 | Peak | Vertical |
| | 11480.5 | 31.3 | 17.6 | 48.9 | 74.0 | -25.1 | Peak | Vertical |

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

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

| | | | |
|-----------|---|---------------|-----------|
| Test Site | WZ-AC2 | Test Engineer | Bob Zhang |
| Test Date | 2024-02-28 | 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 | 3873.0 | 35.9 | 0.0 | 35.9 | 74.0 | -38.1 | Peak | Horizontal |
| | 4884.5 | 34.2 | 3.0 | 37.2 | 74.0 | -36.8 | Peak | Horizontal |
| | 11047.0 | 31.9 | 16.2 | 48.1 | 74.0 | -25.9 | Peak | Horizontal |
| | 3949.5 | 34.1 | -0.1 | 34.0 | 74.0 | -40.0 | Peak | Vertical |
| | 4901.5 | 32.3 | 3.1 | 35.4 | 74.0 | -38.6 | Peak | Vertical |
| | 11123.5 | 29.3 | 16.4 | 45.7 | 74.0 | -28.3 | Peak | Vertical |

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

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

Mode 3

| | | | |
|-----------|---|---------------|-----------|
| Test Site | WZ-AC2 | Test Engineer | Bob Zhang |
| Test Date | 2024-02-28 | Filter | 7# |
| 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 | 4060.0 | 35.9 | 0.4 | 36.3 | 74.0 | -37.7 | Peak | Horizontal |
| | 4918.5 | 33.8 | 3.2 | 37.0 | 74.0 | -36.9 | Peak | Horizontal |
| | 11548.5 | 30.6 | 17.7 | 48.3 | 74.0 | -25.7 | Peak | Horizontal |
| | 3890.0 | 36.6 | -0.1 | 36.5 | 74.0 | -37.5 | Peak | Vertical |
| | 5080.0 | 34.8 | 3.5 | 38.3 | 74.0 | -35.7 | Peak | Vertical |
| | 11608.0 | 31.2 | 17.2 | 48.4 | 74.0 | -25.6 | Peak | Vertical |
| 18 | 3873.0 | 35.0 | 0.0 | 35.0 | 74.0 | -39.1 | Peak | Horizontal |
| | 4901.5 | 34.2 | 3.1 | 37.3 | 74.0 | -36.7 | Peak | Horizontal |
| | 11319.0 | 30.3 | 17.4 | 47.7 | 74.0 | -26.3 | Peak | Horizontal |
| | 4085.5 | 35.5 | 0.5 | 36.0 | 74.0 | -38.0 | Peak | Vertical |
| | 4808.0 | 34.2 | 2.9 | 37.1 | 74.0 | -36.9 | Peak | Vertical |
| | 11574.0 | 31.3 | 17.7 | 49.0 | 74.0 | -25.0 | Peak | Vertical |
| 26 | 4349.0 | 34.9 | 1.7 | 36.6 | 74.0 | -37.4 | Peak | Horizontal |
| | 4842.0 | 34.1 | 3.2 | 37.3 | 74.0 | -36.7 | Peak | Horizontal |
| | 11387.0 | 31.1 | 17.4 | 48.5 | 74.0 | -25.5 | Peak | Horizontal |
| | 3873.0 | 36.2 | 0.0 | 36.2 | 74.0 | -37.9 | Peak | Vertical |
| | 4884.5 | 33.9 | 3.0 | 36.9 | 74.0 | -37.1 | Peak | Vertical |
| | 11336.0 | 30.6 | 17.4 | 48.0 | 74.0 | -26.0 | 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-AC2 | Test Engineer | Bob Zhang |
| Test Date | 2024-02-28 | Filter | 8# |
| 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 | 4179.0 | 34.9 | 0.9 | 35.8 | 74.0 | -38.2 | Peak | Horizontal |
| | 4765.5 | 33.3 | 3.1 | 36.4 | 74.0 | -37.6 | Peak | Horizontal |
| | 11548.5 | 31.0 | 17.7 | 48.7 | 74.0 | -25.3 | Peak | Horizontal |
| | 4077.0 | 34.8 | 0.4 | 35.2 | 74.0 | -38.8 | Peak | Vertical |
| | 4689.0 | 31.7 | 2.9 | 34.6 | 74.0 | -39.4 | Peak | Vertical |
| | 11548.5 | 30.6 | 17.7 | 48.3 | 74.0 | -25.7 | 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-AC2 | Test Engineer | Bob Zhang |
| Test Date | 2024-02-28 | Filter | 9# |
| 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. | | |

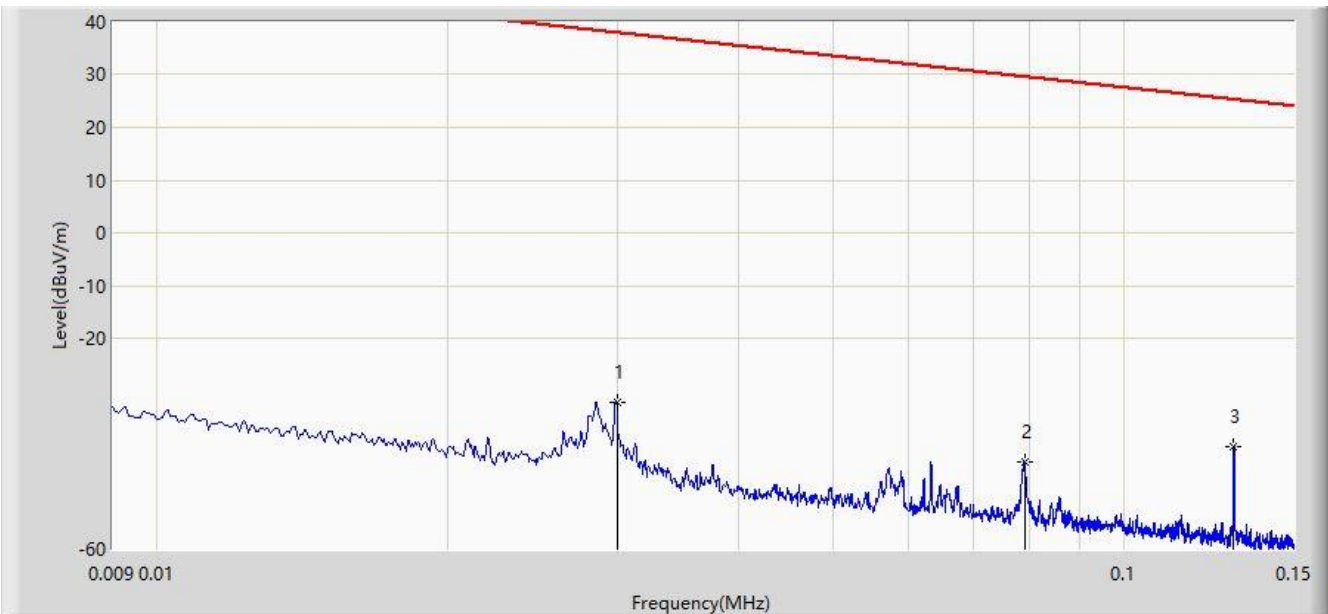
| Test Channel | Frequency (MHz) | Reading Level (dBμV) | Factor (dB/m) | Measure Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Detector | Polarization |
|--------------|-----------------|----------------------|---------------|------------------------|----------------|-------------|----------|--------------|
| 26 | 3898.5 | 35.2 | -0.2 | 35.0 | 74.0 | -39.0 | Peak | Horizontal |
| | 5088.5 | 34.2 | 3.5 | 37.7 | 74.0 | -36.3 | Peak | Horizontal |
| | 11608.0 | 31.6 | 17.2 | 48.8 | 74.0 | -25.3 | Peak | Horizontal |
| | 3881.5 | 36.6 | -0.1 | 36.5 | 74.0 | -37.5 | Peak | Vertical |
| | 4655.0 | 34.2 | 2.6 | 36.8 | 74.0 | -37.2 | Peak | Vertical |
| | 11582.5 | 31.5 | 17.5 | 49.0 | 74.0 | -25.0 | 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 for 9kHz ~ 30MHz:

| | |
|--|-----------------------|
| Site: WZ-AC2 | Test Date: 2024-03-10 |
| Limit: FCC_Part15.209_RSE | Engineer: Bob Zhang |
| Probe: FMZB1519_0.009-30MHz | Polarity: Coaxial |
| 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) | Limit (dBμV/m) | Factor (dB/m) | Type |
|----|------|-----------------|------------------------|----------------------|-------------|----------------|---------------|------|
| 1 | | 0.030 | -32.056 | 29.018 | -70.104 | 38.048 | -61.073 | PK |
| 2 | | 0.079 | -43.611 | 18.464 | -73.254 | 29.643 | -62.076 | PK |
| 3 | * | 0.130 | -40.590 | 21.557 | -65.908 | 25.319 | -62.147 | PK |

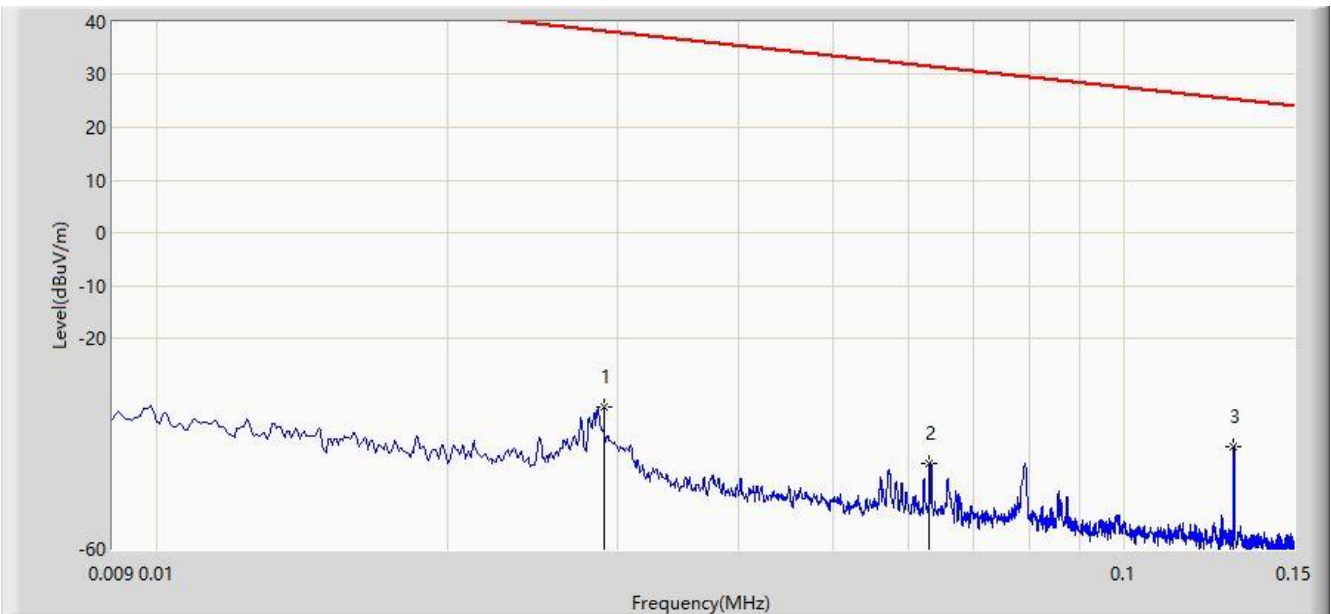
Note 1: " * ", means this data is the worst emission level.

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-AC2 | Test Date: 2024-03-10 |
| Limit: FCC_Part15.209_RSE | Engineer: Bob Zhang |
| Probe: FMZB1519_0.009-30MHz | Polarity: Coplanar |
| EUT: ACCESS POINT | Power: AC 120V/60Hz |
| Test Mode: Transmit by ZigBee at 2405MHz | |



| No | Mark | Frequency (MHz) | Measure Level (dB μ V/m) | Reading Level (dB μ V) | Margin (dB) | Limit (dB μ V/m) | Factor (dB/m) | Type |
|----|------|-----------------|------------------------------|----------------------------|-------------|----------------------|---------------|------|
| 1 | | 0.029 | -33.172 | 27.812 | -71.514 | 38.342 | -60.984 | PK |
| 2 | | 0.063 | -43.695 | 18.330 | -75.303 | 31.607 | -62.025 | PK |
| 3 | * | 0.130 | -40.520 | 21.627 | -65.838 | 25.319 | -62.147 | PK |

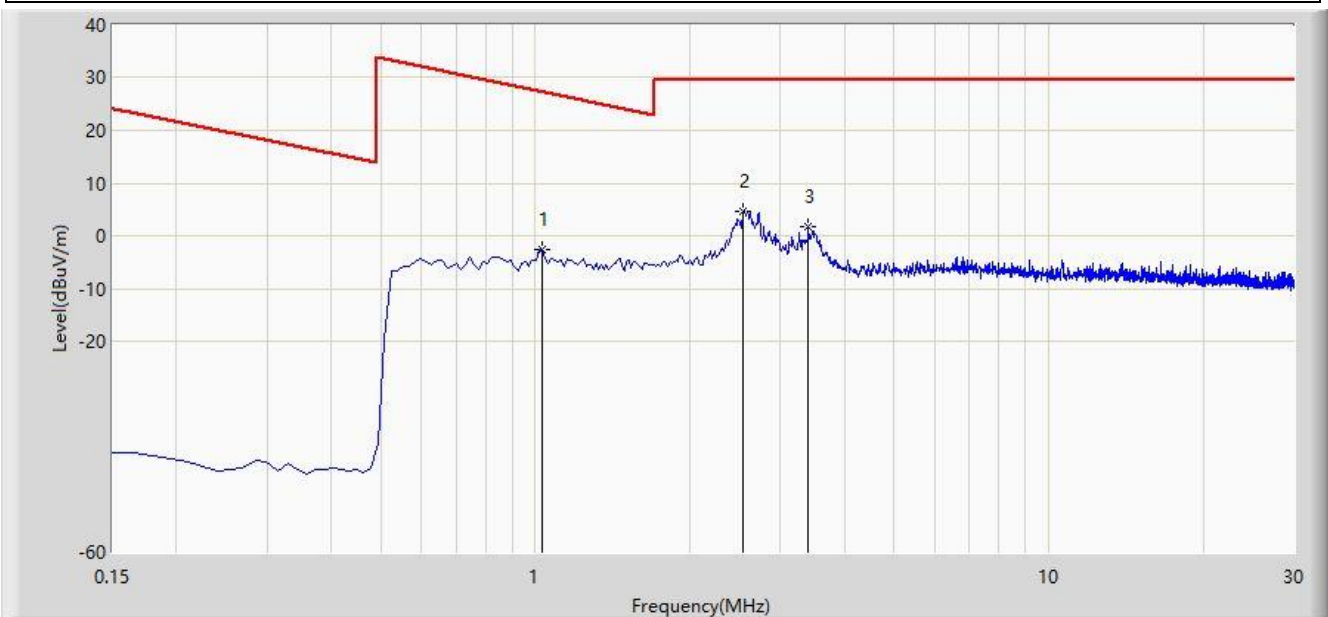
Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dB μ V/m) = Reading Level (dB μ V) + 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-AC2 | Test Date: 2024-03-10 |
| Limit: FCC_Part15.209_RSE | Engineer: Bob Zhang |
| Probe: FMZB1519_0.009-30MHz | Polarity: Coaxial |
| EUT: ACCESS POINT | Power: AC 120V/60Hz |
| Test Mode: Transmit by ZigBee at 2405MHz | |



| No | Mark | Frequency (MHz) | Measure Level (dB μ V/m) | Reading Level (dB μ V) | Margin (dB) | Limit (dB μ V/m) | Factor (dB/m) | Type |
|----|------|-----------------|------------------------------|----------------------------|-------------|----------------------|---------------|------|
| 1 | | 1.031 | -2.598 | 19.186 | -29.955 | 27.357 | -21.784 | PK |
| 2 | * | 2.538 | 4.754 | 26.563 | -24.746 | 29.500 | -21.810 | PK |
| 3 | | 3.404 | 1.607 | 23.377 | -27.893 | 29.500 | -21.770 | PK |

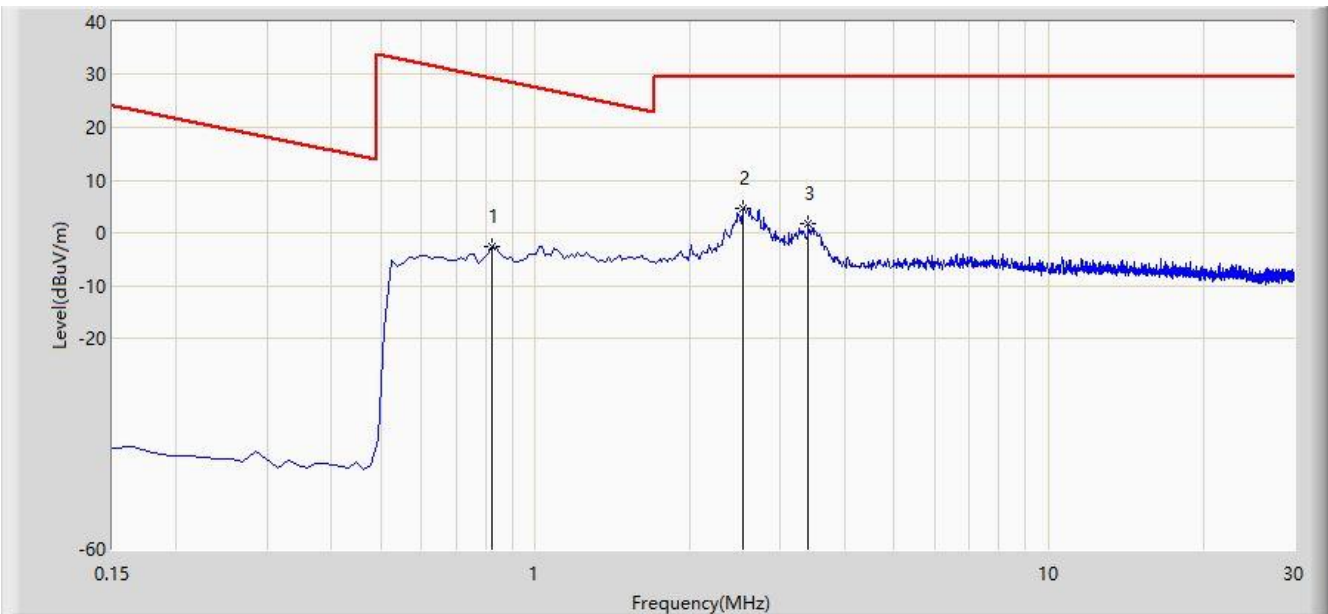
Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dB μ V/m) = Reading Level (dB μ V) + 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-AC2 | Test Date: 2024-03-10 |
| Limit: FCC_Part15.209_RSE | Engineer: Bob Zhang |
| Probe: FMZB1519_0.009-30MHz | Polarity: Coplanar |
| EUT: ACCESS POINT | Power: AC 120V/60Hz |
| Test Mode: Transmit by ZigBee at 2405MHz | |



| No | Mark | Frequency (MHz) | Measure Level (dB μ V/m) | Reading Level (dB μ V) | Margin (dB) | Limit (dB μ V/m) | Factor (dB/m) | Type |
|----|------|-----------------|------------------------------|----------------------------|-------------|----------------------|---------------|------|
| 1 | | 0.822 | -2.596 | 19.199 | -31.915 | 29.319 | -21.795 | PK |
| 2 | * | 2.538 | 4.754 | 26.563 | -24.746 | 29.500 | -21.810 | PK |
| 3 | | 3.404 | 1.607 | 23.377 | -27.893 | 29.500 | -21.770 | PK |

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

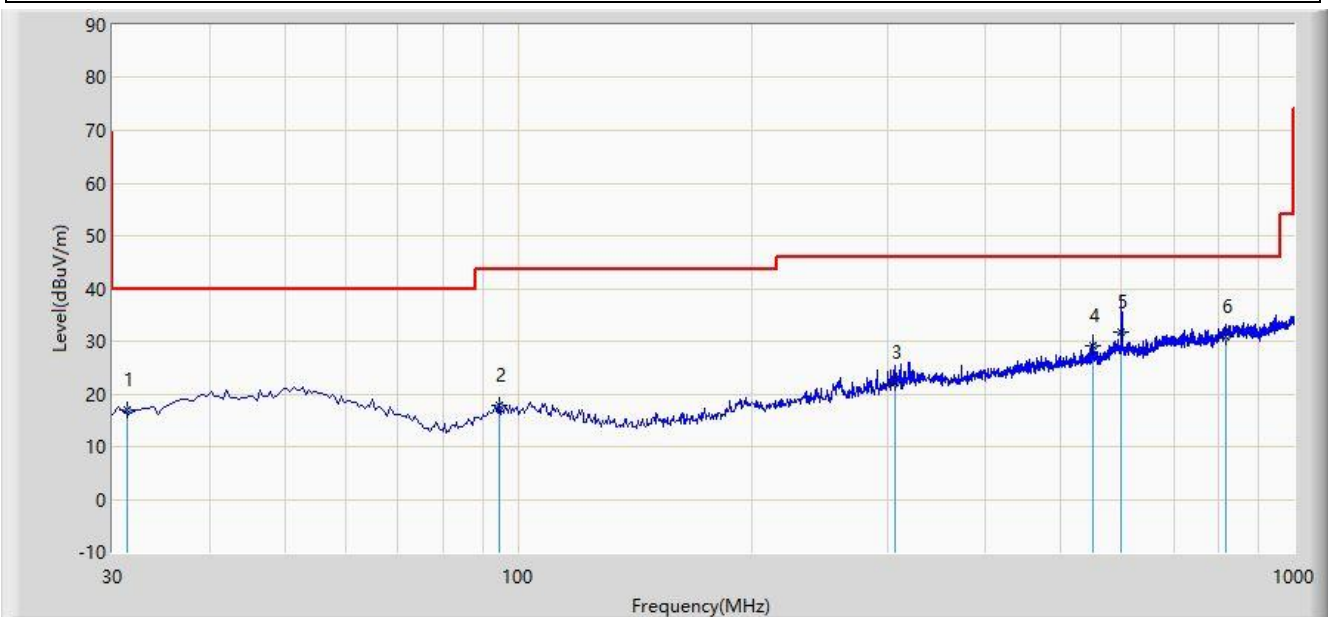
Note 2: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB/m).

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.

The Result of Radiated Emission for 30MHz ~ 1GHz:

| | |
|--|-----------------------|
| Site: WZ-AC2 | Test Date: 2024-03-15 |
| Limit: FCC_Part15.209_RSE(3m) | Engineer: Bob Zhang |
| Probe: VULB9162_30-7000MHz | Polarity: Horizontal |
| EUT: ACCESS POINT | Power: AC 120V/60Hz |
| Test Mode: Transmit by ZigBee at 2405MHz | |



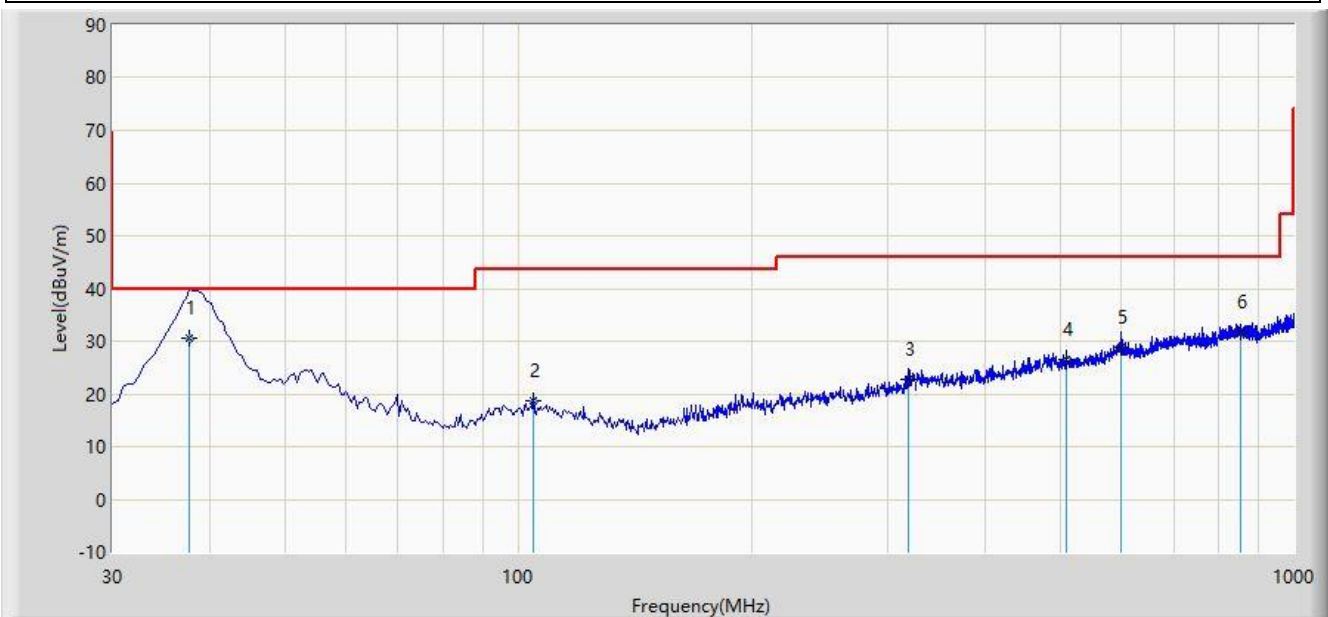
| No | Mark | Frequency (MHz) | Measure Level (dB μ V/m) | Reading Level (dB μ V) | Margin (dB) | Limit (dB μ V/m) | Factor (dB/m) | Type |
|----|------|-----------------|------------------------------|----------------------------|-------------|----------------------|---------------|------|
| 1 | | 31.370 | 17.088 | 0.100 | -22.912 | 40.000 | 16.988 | QP |
| 2 | | 94.505 | 17.768 | 0.200 | -25.732 | 43.500 | 17.568 | QP |
| 3 | | 305.950 | 22.232 | 1.100 | -23.768 | 46.000 | 21.133 | QP |
| 4 | | 549.920 | 29.173 | 3.100 | -16.827 | 46.000 | 26.073 | QP |
| 5 | * | 599.875 | 31.658 | 4.100 | -14.342 | 46.000 | 27.559 | QP |
| 6 | | 818.125 | 30.729 | 0.100 | -15.271 | 46.000 | 30.629 | QP |

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

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

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

| | |
|--|-----------------------|
| Site: WZ-AC2 | Test Date: 2024-03-15 |
| Limit: FCC_Part15.209_RSE(3m) | Engineer: Bob Zhang |
| Probe: VULB9162_30-7000MHz | Polarity: Vertical |
| EUT: ACCESS POINT | Power: AC 120V/60Hz |
| Test Mode: Transmit by ZigBee at 2405MHz | |



| No | Mark | Frequency (MHz) | Measure Level (dB μ V/m) | Reading Level (dB μ V) | Margin (dB) | Limit (dB μ V/m) | Factor (dB/m) | Type |
|----|------|-----------------|------------------------------|----------------------------|-------------|----------------------|---------------|------|
| 1 | * | 37.760 | 30.693 | 12.400 | -9.307 | 40.000 | 18.293 | QP |
| 2 | | 104.690 | 18.780 | 0.200 | -24.720 | 43.500 | 18.580 | QP |
| 3 | | 318.090 | 22.846 | 1.400 | -23.154 | 46.000 | 21.446 | QP |
| 4 | | 508.590 | 26.614 | 1.200 | -19.386 | 46.000 | 25.414 | QP |
| 5 | | 599.875 | 28.958 | 1.400 | -17.042 | 46.000 | 27.559 | QP |
| 6 | | 855.470 | 31.764 | 0.800 | -14.236 | 46.000 | 30.964 | QP |

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

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

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