Test Report No:
23B0423R-RFUSV01S-A

# TEST REPORT
## FCC Rules&Regulations

| | |
|---|---|
| Product Name | Wi-Fi 6 Access Point |
| Brand Name | Edge-corE |
| Model No. | EAP111 (XXXXX), EAP111e (XXXXX)<br>(Please refer to the section 1.1 for detail.) |
| FCC ID | HEDEAP111 |
| Applicant´s Name / Address | Accton Technology Corporation<br>No. 1, Creation Rd. III, Science-based Industrial Park, Hsinchu 300, Taiwan, R.O.C. |
| Manufacturer's Name / Address (1) | Accton Technology Corporation Zhunan Factory<br>1F & 4F & 5F, No. 1, Keyi St., Zhunan Townhsip, Miaoli County 350, Taiwan, R.O.C. |
| Manufacturer's Name / Address (2) | Accton Technology Corporation<br>No. 1, Creation Rd. III, Science-based Industrial Park, Hsinchu 300, Taiwan, R.O.C. |
| Manufacturer's Name / Address (3) | VIETNAM ACCTON TECHNOLOGY COMPANY LIMITED<br>Lot F1-2-3 Thang Long Industrial Park (Vinh Phuc), Tam Hop Commune Binh Xuyen District,Vinh Phuc Province, Vietnam |
| Test Method Requested, Standard | FCC CFR Title 47 Part 15 Subpart C Section 15.247<br>ANSI C63.10-2013 |
| Verdict Summary | IN COMPLIANCE |
| Documented By | Amelia Wu |
| Approved By | Rueyyan Lin |
| Date of Receipt | Nov. 14, 2023 |
| Date of Issue | Mar. 12, 2024 |
| Report Version | V1.0 |

# INDEX

## Competences and Guarantees

DEKRA is a testing laboratory competent to carry out the tests described in this report.
In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

DEKRA is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

**IMPORTANT:** No parts of this report may be reproduced or quoted out of context, in any form or by any means, except in full, without the previous written permission of DEKRA.

## General Conditions

1. The test results relate only to the samples tested.
2. The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.
3. This report must not be used to claim product endorsement by TAF or any agency of the government.
4. The test report shall not be reproduced without the written approval of DEKRA Testing and Certification Co., Ltd.
5. Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

## Revision History

| Version | Description | Issued Date |
|---|---|---|
| V1.0 | Initial issue of report | Mar. 12, 2024 |
| | | |
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| | | |

## Summary of Test Result

| Report Clause | Test Items | Result (PASS/FAIL) | Remark |
|---|---|---|---|
| 3 | AC Power Line Conducted Emission | PASS | - |
| 4 | Occupied Bandwidth & DTS Bandwidth | PASS | - |
| 5 | Maximum Conducted Output Power | PASS | - |
| 6 | Maximum Power Spectral Density | PASS | - |
| 7 | Antenna Port Conducted Emission | PASS | - |
| 8 | Transmitter Radiated Spurious Emission | PASS | - |

| Comments and Explanations |
|---|
| The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification. |

## Comments and Remarks

The product specification and testing instructions for the EUT declared in the report are provided by the manufacturer who will take all responsibilities for the accuracy.

# 1. General Information

## 1.1. EUT Description

| | | |
|---|---|---|
| Frequency Range | 2400 ~ 2483.5 MHz | |
| Operating Frequency | IEEE 802.11b/g<br>IEEE 802.11n/ac/ax (20 MHz) | 2412 ~ 2462 MHz |
| | IEEE 802.11n/ac/ax (40 MHz) | 2422 ~ 2452 MHz |
| Channel Number | IEEE 802.11b/g<br>IEEE 802.11n/ac/ax (20 MHz) | 11 Channels |
| | IEEE 802.11n/ac/ax (40 MHz) | 7 Channels |
| Type of Modulation | IEEE 802.11b | DSSS-DBPSK, DQPSK, CCK |
| | IEEE 802.11g/n | OFDM-BPSK, QPSK, 16QAM, 64QAM |
| | IEEE 802.11ac | OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM |
| | IEEE 802.11ax | OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM |

| Accessories Information | | | | | |
|---|---|---|---|---|---|
| No. | Equipment Name | Brand Name | Model No. | Rating | Remark |
| 1 | Adapter (Removable plug) | APD | WB-24J12R | INPUT:100-240V, 50-60Hz, 0.7A Max<br>OUTPUT:12V, 2.0A, 24.0W | With power cable : Non-Shielded, 1.5m |
| 2 | PoE Injector | PHIHONG | POE29U-560 | INPUT:100-240V, 50-60Hz, 0.8A<br>OUTPUT:56V, 0.536A | -- |
| No. | Equipment Name | Description | | | |
| 3 | Plug Power Cord | Non-Shielded, 1m (For PoE Injector use) | | | |
| 4 | Plug*3 | US, EU, UK | | | |
| 5 | Wall Mount (Metal) | -- | | | |
| 6 | Wall Mount (Plastic) | -- | | | |
| 7 | Pole-mount kit | -- | | | |

The difference for each model is shown as below:

| EUT | Model No. | Antenna | | |
|---|---|---|---|---|
| | | Ant. | Model No. | Remark |
| 1 | EAP111 (XXXXX) | 1 | KG568-T4-175B17U7S | Internal Antenna |
| | | 2 | KG568-T4-105W17U7S | Internal Antenna |
| | | 3 | KG568-T4-175G17U7S | Internal Antenna |
| 2 | EAP111e (XXXXX) | 1 | 98623PRSX001 | External Antenna |
| | | 2 | 98623PRSX001 | External Antenna |
| | | 3 | KG568-T4-175G17U7S | Internal Antenna |
| The difference of "XXXXX" would be marketing strategy X can be symbol “A~Z, a~z, 1~9 or blank. | | | | |

| Antenna Information for EUT 1 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Ant. | Manufacturer | Model No. | Type | Ant. Gain (dBi) | | Directional Gain (dBi) | | Function | Remark |
| | | | | 2.4GHz | 5GHz | 2.4GHz | 5GHz | | |
| 1 | ACCTON Technology Corporation | KG568-T4-175B17U7S | Dipole | 4.90 | 5.53 | 7.87 | 10.4 | WiFi 2.4GHz / WiFi 5GHz | Internal Antenna |
| 2 | ACCTON Technology Corporation | KG568-T4-105W17U7S | Dipole | 4.81 | 5.53 | | | WiFi 2.4GHz / WiFi 5GHz | Internal Antenna |
| 3 | ACCTON Technology Corporation | KG568-T4-175G17U7S | Dipole | 5.21 | 5.82 | | | Bluetooth LE / WiFi 5GHz | Internal Antenna |

| Antenna Information for EUT 2 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Ant. | Manufacturer | Model No. | Type | Ant. Gain (dBi) | | Function | Remark |
| | | | | 2.4GHz | 5GHz | | |
| 1 | ACCTON Technology Corporation | 98623PRSX001 | Dipole | 4.67 | 5.08 | WiFi 2.4GHz / WiFi 5GHz | External Antenna |
| 2 | ACCTON Technology Corporation | 98623PRSX001 | Dipole | 4.20 | 5.02 | WiFi 2.4GHz / WiFi 5GHz | External Antenna |
| 3 | ACCTON Technology Corporation | KG568-T4-175G17U7S | Dipole | 5.21 | 5.82 | Bluetooth LE / WiFi 5GHz | Internal Antenna |

Directional Gain = 10log [(10G1/20 + 10G2/20 + … + 10GN/20)2 / NAnt]

**<WiFi 2.4GHz Function>**

**For IEEE 802.11b/g/n/ac/ax Mode: (2TX, 2RX)**

Both Ant. 1~Ant. 2 can be used as transmitting/receiving antennas, and they can transmit/receive signal simultaneously.

**<WiFi 5GHz Function>**

**For IEEE 802.11a/n/ac/ax Mode: (3TX, 3RX)**

Both Ant. 1~Ant. 3 can be used as transmitting/receiving antennas, and they can transmit/receive signal simultaneously.

**<Bluetooth LE Function>**

Only Ant. 3 can be use as transmit and receive antenna.

Note: Antenna gain of EUT 1 is higher than that of EUT 2, only EUT 1 was selected as representative model for RF Conducted Emission test and its data was recorded in this report.

## 1.2. EUT Information

| | | | | |
|---|---|---|---|---|
| EUT Power Type | From Adapter / PoE Injector | | | |
| EUT Function | ☒ | Point-to-multipoint | ☐ | Point-to-point |
| Beamforming Function | ☒ | With beamforming | ☐ | Without beamforming |
| Resource Unit of 802.11ax | ☒ | Full RU | ☐ | Partial RU |

## 1.3. Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR FCC Part 15
- ANSI C63.10-2013

The following reference test guidance is not within the scope of accreditation of TAF:

- KDB 558074 D01 v05r02
- KDB 662911 D01 v02r01
- KDB 414788 D01 v01r01

## 1.4. Testing Location Information

| Testing Location Information | | |
|---|---|---|
| Test Laboratory：DEKRA Testing and Certification Co., Ltd. | | |
| | 1<br>(TAF: 3024) | ADD: No.372-2, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C.<br>TEL: +886-3-582-8001 FAX: +886-3-582-8958 |
| | 2<br>(TAF: 3024) | ADD: No.372, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C.<br>TEL: +886-3-582-8001 FAX: +886-3-582-8958 |
| Test site number for address 1 includes HC-SR02. Test site number for address 2 includes HC-CB02, HC-CB03, HC-CB04, HC-SR10 and HC-SR12. | | |

| Test Condition | Test Site No. | Test Engineer | Test Environment (°C / %) | Test Date |
|---|---|---|---|---|
| AC Conduction Emission | HC-SR02 | Igor Tseng | 20.6 / 57 | 2024/01/05 |
| RF Conducted Emission | HC-SR12 | Scott Chang | 22.3~23.8 / 56.5~61.5 | 2023/12/08~2023/12/15 |
| Radiated Emission | HC-CB02 | Gary Lioa<br>Nelson Teng | 20.9~23.5 / 56.3~60.7 | 2023/11/29~2024/01/25 |

## 1.5. Measurement Uncertainty

Uncertainties have been calculated according to the DEKRA internal document with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2).

| Test Item | Uncertainty |
|---|---|
| AC Power Line Conducted Emission | ± 2.34 dB |
| Occupied Bandwidth & DTS Bandwidth | ± 282.55 Hz |
| Maximum Conducted Output Power | ± 1.16 dB |
| Maximum Power Spectral Density | ± 2.47 dB |
| Antenna Port Conducted Emission | ± 2.47 dB |
| Transmitter Radiated Spurious Emission | ± 3.52 dB below 1 GHz<br>± 3.56 dB above 1 GHz |

## 1.6. List of Test Equipment

HC-SR02

| Instrument | Manufacturer | Model No. | Serial No. | Characteristics | Cal. Date | Next Cal. Date |
|---|---|---|---|---|---|---|
| Artificial Mains Network | R&S | ENV4200 | 848411/010 | 9kHz-30MHz, 4line/100A | 2023/12/15 | 2024/12/14 |
| EMI Test Receiver | R&S | ESR3 | 102608 | 9 kHz - 3.6 GHz | 2023/09/19 | 2024/09/18 |
| Two-Line V-Network | R&S | ENV216 | 100096 | 9kHz-30MHz | 2023/06/02 | 2024/06/01 |
| Coaxial Cable(9 m) | Harbour | RG-400 | HC-SR02 | 9 kHz–2500 MHz | 2023/08/04 | 2024/08/03 |
| EMI Testing System | AUDIX | e3 210616 dekra V9 | HC-SR02 | N/A | N/A | N/A |

HC-SR12

| Instrument | Manufacturer | Model No. | Serial No. | Characteristics | Cal. Date | Next Cal. Date |
|---|---|---|---|---|---|---|
| High Speed Peak Power Meter Dual Input | Anritsu | ML2496A | 1602004 | 0.3-40 GHz | 2023/10/25 | 2024/10/24 |
| Pulse Power Sensor | Anritsu | MA2411B | 1531043 | 0.3-40 GHz | 2023/10/25 | 2024/10/24 |
| Pulse Power Sensor | Anritsu | MA2411B | 1531044 | 0.3-40 GHz | 2023/10/25 | 2024/10/24 |
| Signal & Spectrum Analyzer | R&S | FSV40 | 101869 | 10Hz-40GHz | 2023/07/03 | 2024/07/02 |

HC-CB02

| Instrument | Manufacturer | Model No. | Serial No. | Characteristics | Cal. Date | Next Cal. Date |
|---|---|---|---|---|---|---|
| Signal and Spectrum Analyzer | R&S | FSVA40 | 101435 | 10 Hz-40 GHz | 2023/05/29 | 2024/05/28 |
| Trilog Broadband Antenna | Schwarzbeck | VULB 9168 | 1272 | 30 MHz-2 GHz | 2023/04/13 | 2024/04/12 |
| Double Ridged Horn Antenna | RF SPIN | DRH18-E | 211211A18EN | 1G-18GHz | 2023/11/09 | 2024/11/08 |
| Horn Antenna | Schwarzbeck | BBHA 9170 | 203 | 18G-40GHz | 2023/02/13 | 2024/02/12 |
| Pre-Amplifier | EMCI | EMC01820I | 980365 | 30M-8 GHz,20 dB | 2023/04/07 | 2024/04/06 |
| Pre-Amplifier | EMEC | EM01G18GA | 060741 | 1G-18 GHz,50 dB | 2023/05/05 | 2024/05/04 |
| Pre-Amplifier | DEKRA | AP-400C | 201801231 | 18G-40 GHz,48 dB | 2023/10/03 | 2024/10/02 |
| EMI Test Receiver | R&S | ESR7 | 102260 | 10 Hz-7 GHz | 2023/11/27 | 2024/11/26 |
| Magnetic Loop Antenna | Teseq | HLA 6121 | 44287 | 0.01-30 MHz | 2023/10/13 | 2024/10/12 |
| Coaxial Cable(13m) | Suhner | SF104 | HC-CB02 | 30M-18 GHz | 2023/08/14 | 2024/08/13 |
| Coaxial Cable(3m) | Suhner,Rosnol | SF102_UP0264 | HC-CB02-1 | 18G-40 GHz 3 m | 2023/08/14 | 2024/08/13 |
| Radiated Software | AUDIX | e3 V9 | HC-CB02_1 | N/A | N/A | N/A |

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

# 2. Test Configuration of EUT

## 2.1. Test Condition

| EUT Operational Condition | |
|---|---|
| Testing Voltage | AC 120V/60Hz |

## 2.2. Test Frequency Mode

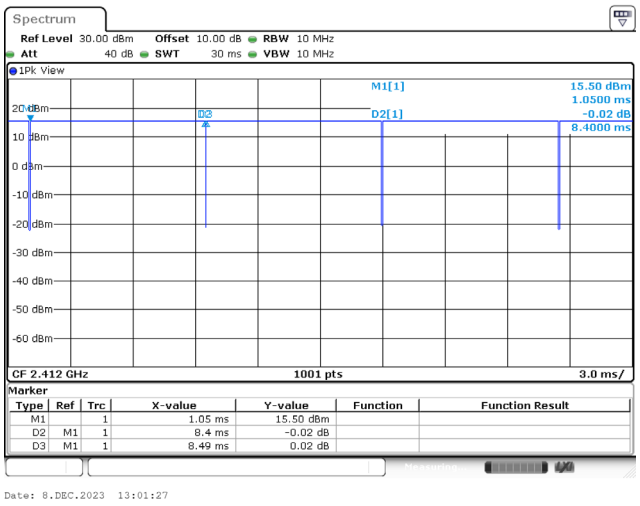
| Test Software Version | QATool v0.0.2.78 |
|---|---|

| Modulation | Frequency (MHz) | Power Setting |
|---|---|---|
| 802.11b | 2412 | 13.0 |
| | 2437 | 13.5 |
| | 2462 | 12.5 |
| 802.11g | 2412 | 17.0 |
| | 2437 | 20.0 |
| | 2462 | 17.5 |
| 802.11ax (20 MHz) | 2412 | 18.0 |
| | 2437 | 21.0 |
| | 2462 | 19.0 |
| 802.11ax (40 MHz) | 2422 | 16.5 |
| | 2437 | 19.0 |
| | 2452 | 17.5 |

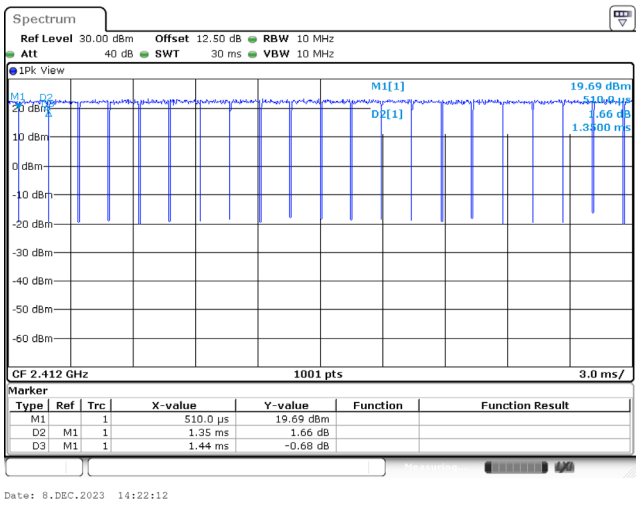
## 2.3. Duty Cycle

| Modulation | On Times (ms) | On+Off Times (ms) | Duty Cycle (%) | Duty Factor (dB) | 1/T Minimum VBW (kHz) |
|---|---|---|---|---|---|
| 802.11b | 8.400 | 8.490 | 98.94 | 0.046 | 0.010 |
| 802.11g | 1.350 | 1.440 | 93.75 | 0.280 | 0.741 |
| 802.11ax (20 MHz) | 1.020 | 1.090 | 93.58 | 0.288 | 0.980 |
| 802.11ax (40 MHz) | 0.540 | 0.605 | 89.26 | 0.494 | 1.852 |

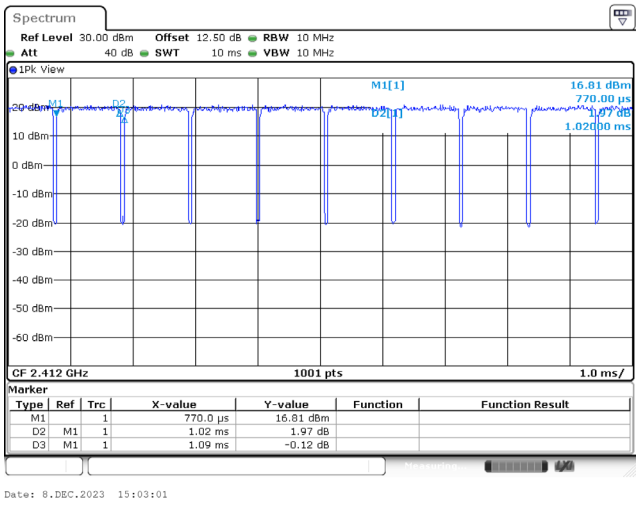
**802.11b**



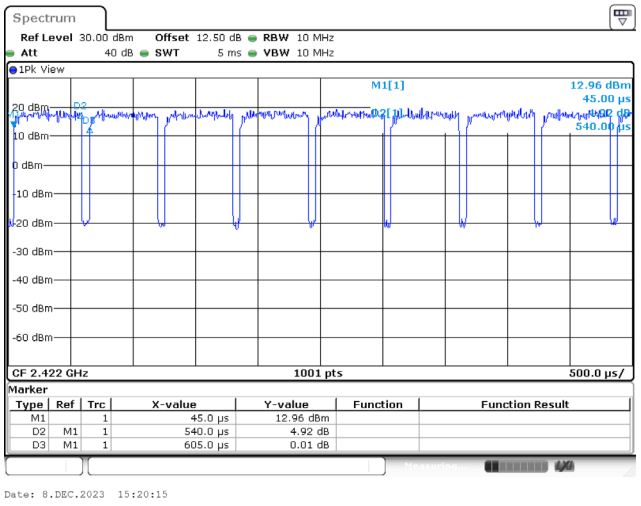

**802.11g**




**802.11ax (20 MHz)**




**802.11ax (40 MHz)**



## 2.4. The Worst Case Measurement Configuration

| Tests Item | AC Power Line Conducted Emission |
|---|---|
| Test Condition | AC power line conducted measurement for line and neutral |
| Operating Mode | Transmit |
| 1 | EUT 1 + Adapter |
| 2 | EUT 1 + PoE |
| 3 | EUT 2 + Adapter |
| 4 | EUT 2 + PoE |

| Tests Item | Occupied Bandwidth & DTS Bandwidth<br>Maximum Conducted Output Power<br>Maximum Power Spectral Density<br>Antenna Port Conducted Emission |
|---|---|
| Test Condition | Conducted measurement at transmit chains |
| Operating Mode | Transmit |
| 1 | EUT 1 |

| Tests Item | Transmitter Radiated Spurious Emission |
|---|---|
| Test Condition | Radiated measurement<br>If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type. |
| Operating Mode < 1GHz | Transmit |
| 1 | EUT 1 + Adapter |
| 2 | EUT 1 + PoE |
| 3 | EUT 2 + Adapter |
| 4 | EUT 2 + PoE |
| Operating Mode > 1GHz | Transmit |
| 1 | EUT 1 |
| 2 | EUT 2 |
| The EUT was performed at X axis, Y axis and Z axis position for radiated spurious emission test.<br>The worst case was found at Y axis, so the measurement will follow this same test configuration. | |

| Tests Item | Simultaneous Transmission Analysis - Radiated Emission Co-location |
|---|---|
| Test Condition | Radiated measurement |
| Operating Mode < 1GHz | Transmit |
| 1 | EUT 1 + Adapter: WiFi 2.4 GHz + WiFi 5 GHz + Bluetooth LE function |
| 2 | EUT 1 + PoE: WiFi 2.4 GHz + WiFi 5 GHz + Bluetooth LE function |
| 3 | EUT 2 + PoE: WiFi 2.4 GHz + WiFi 5 GHz + Bluetooth LE function |
| Operating Mode > 1GHz | Transmit |
| 1 | EUT 1: WiFi 2.4 GHz + WiFi 5 GHz + Bluetooth LE function |
| 2 | EUT 2: WiFi 2.4 GHz + WiFi 5 GHz + Bluetooth LE function |
| Refer to Appendix G for Radiated Emission Co-location. | |

| Tests Item | Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation |
|---|---|
| Operating Mode | Transmit |
| 1 | WiFi 2.4 GHz + WiFi 5 GHz + Bluetooth LE function |
| Refer to DEKRA Test Report No.: 23B0423R-RFUSV17S-A for Co-location RF Exposure Evaluation. | |

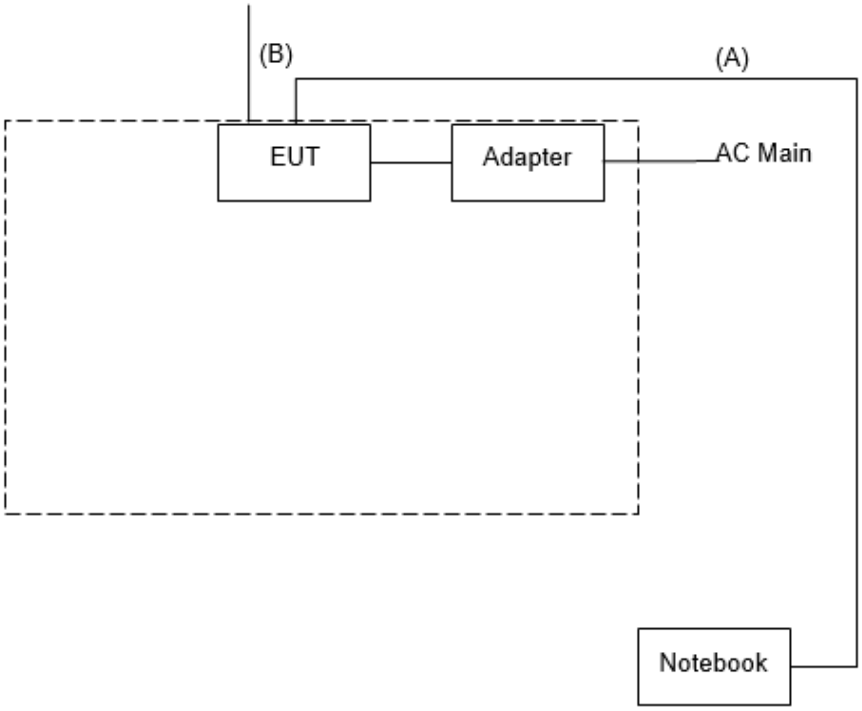
Note:
1. Determining compliance shall be based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. For radiated spurious emission below 1 GHz and AC power line conducted emission have performed all modes of operation were investigated and the worst-case emissions are reported.
3. The modulation and bandwidth are similar for 802.11n mode for HT20/HT40, 802.11ac mode for VHT20/VHT40 and 802.11ax mode for HEW20/HEW40, therefore investigated worst case to representative mode in test report.

## 2.5. Tested System Details

| No. | Equipment | Brand Name | Model No. | Serial No. |
|---|---|---|---|---|
| 1 | Notebook | Lenovo | Lenovo Ideapad 320 | PF0SXXY1 |

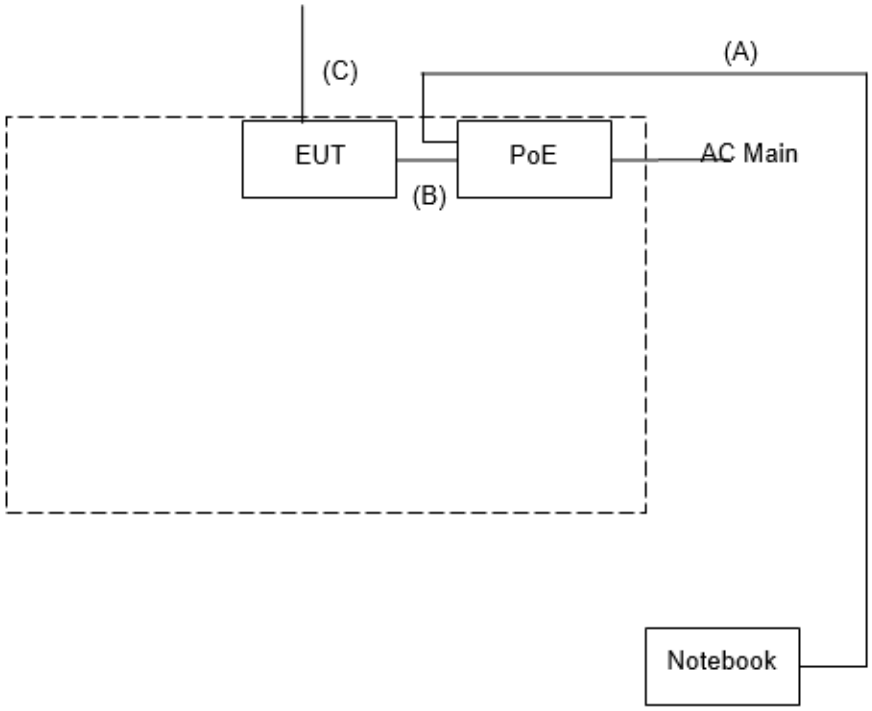
## 2.6. Configuration of Tested System

Connection Diagram (EUT 1 / EUT 2 + Adapter)




| Signal Cable Type | | Signal cable Description |
|---|---|---|
| A | Ethernet Cable | Non-Shielded, 10m |
| B | GND Cable | Non-Shielded, 2.5m |

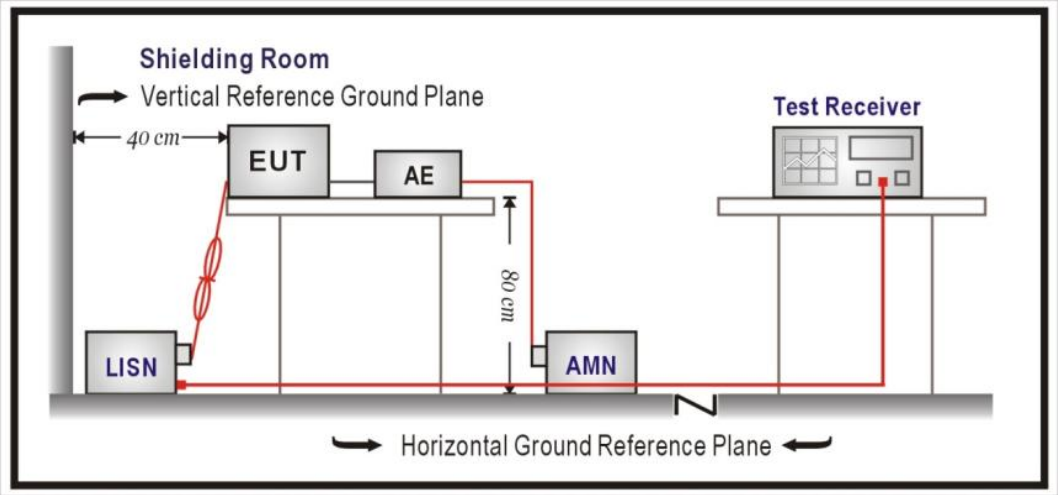
Connection Diagram (EUT 1 / EUT 2 + PoE)




| Signal Cable Type | | Signal cable Description |
|---|---|---|
| A | Ethernet Cable | Non-Shielded, 10m |
| B | Ethernet Cable | Non-Shielded, 1.5m |
| C | GND Cable | Non-Shielded, 2.5m |

# 3. AC Power Line Conducted Emission

## 3.1. Test Setup




## 3.2. Test Limit

| Frequency (MHz) | QP (dBuV) | AV (dBuV) |
|---|---|---|
| 0.15 - 0.50 | 66 - 56 | 56 - 46 |
| 0.50 - 5.0 | 56 | 46 |
| 5.0 - 30 | 60 | 50 |

Remarks: In the above table, the tighter limit applies at the band edges.

## 3.3. Test Procedure

The EUT was setup according to ANSI C63.10: 2013. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs.)

Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.

The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.

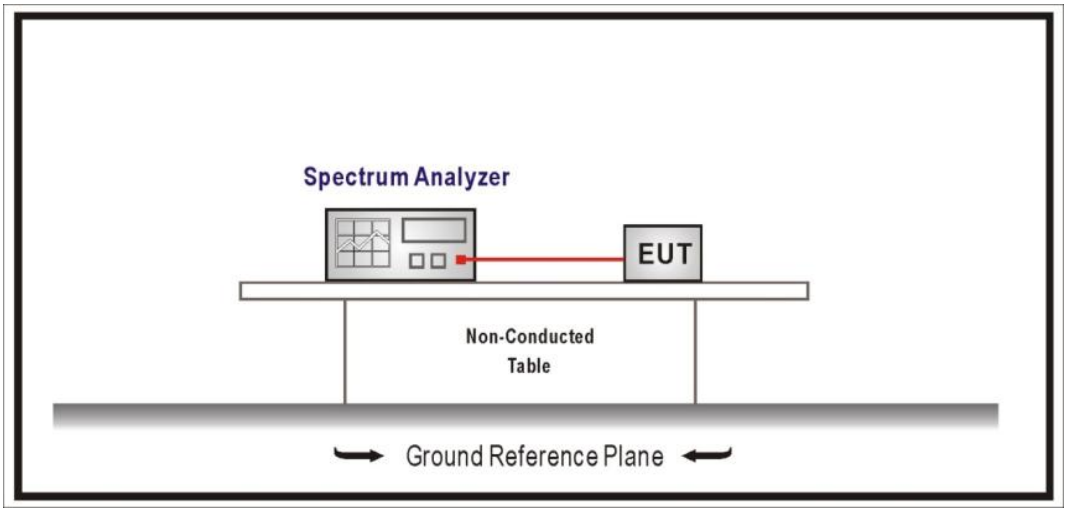
Conducted emissions were investigated over the frequency range from 0.15 MHz to 30 MHz using a receiver bandwidth of 9 kHz.

## 3.4. Test Result of AC Power Line Conducted Emission

Refer as Appendix A

# 4. Occupied Bandwidth & DTS Bandwidth

## 4.1. Test Setup




## 4.2. Test Limit

The 6 dB bandwidth: ≧ 0.50 MHz.

Occupied Bandwidth: N/A

## 4.3. Test Procedures

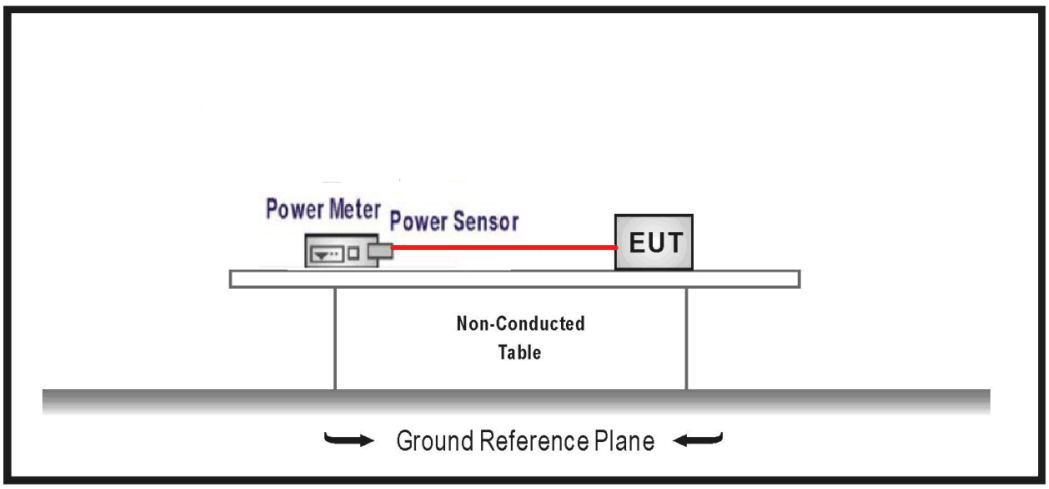
The EUT was setup according to ANSI C63.10: 2013; tested according to DTS test procedure of KDB 558074.

## 4.4. Test Result of Occupied Bandwidth & DTS Bandwidth

Refer as Appendix B

# 5. Maximum Conducted Output Power

## 5.1. Test Setup




## 5.2. Test Limit

The maximum conducted output power shall be less 30 dBm (1 Watt).

## 5.3. Test Procedures

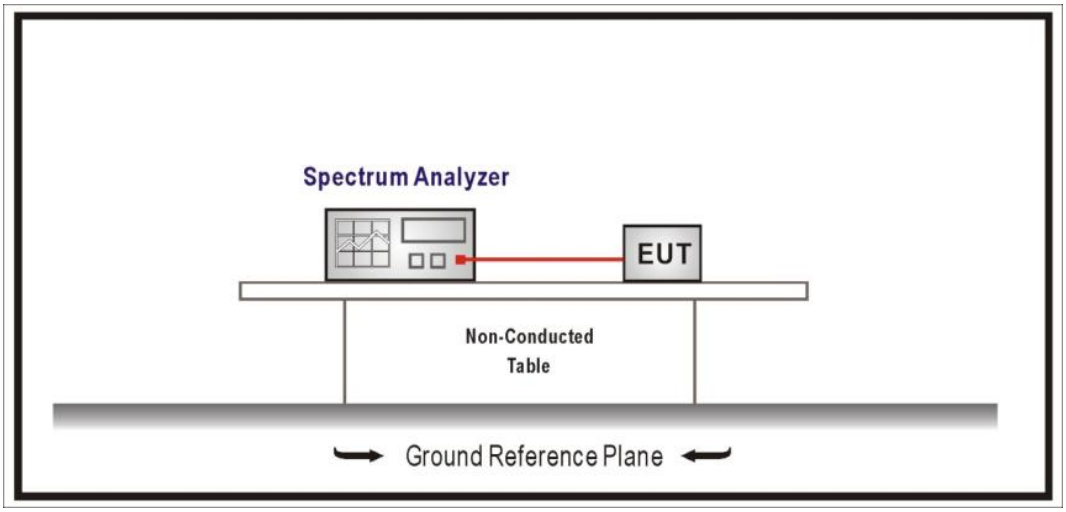
The EUT was setup according to ANSI C63.10: 2013; tested according to DTS test procedure of KDB 558074.

## 5.4. Test Result of Maximum Conducted Output Power

Refer as Appendix C

# 6. Maximum Power Spectral Density

## 6.1. Test Setup




## 6.2. Test Limit

The peak power spectral density conducted from the intentional radiated to the antenna shall not be greater than +8 dBm in any 3 kHz band during any time interval of continuous transmission.

## 6.3. Test Procedures

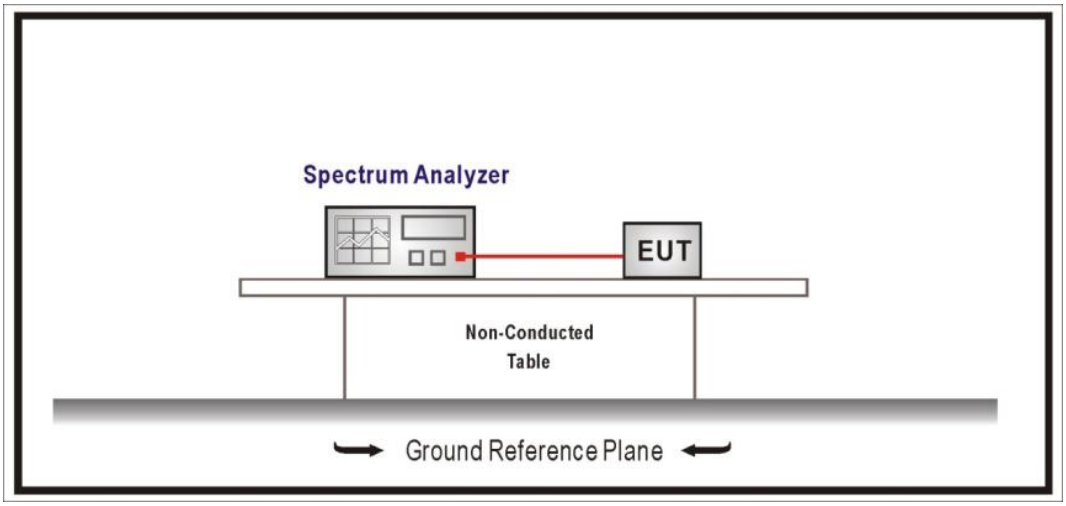
The EUT was setup according to ANSI C63.10: 2013; tested according to DTS test procedure of KDB 558074.

## 6.4. Test Result of Maximum Power Spectral Density

Refer as Appendix D

# 7. Antenna Port Conducted Emission

## 7.1. Test Setup




## 7.2. Test Limit

| RF output power procedure | Limit (dBc) |
|---|---|
| Peak output power procedure | 20 |
| Average output power procedure | 30 |

Remarks:

1. In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limit.
2. If the transmitter complies with the conducted power limit based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

## 7.3. Test Procedure

The EUT was setup according to ANSI C63.10: 2013 and tested according to DTS test procedure of KDB 558074.

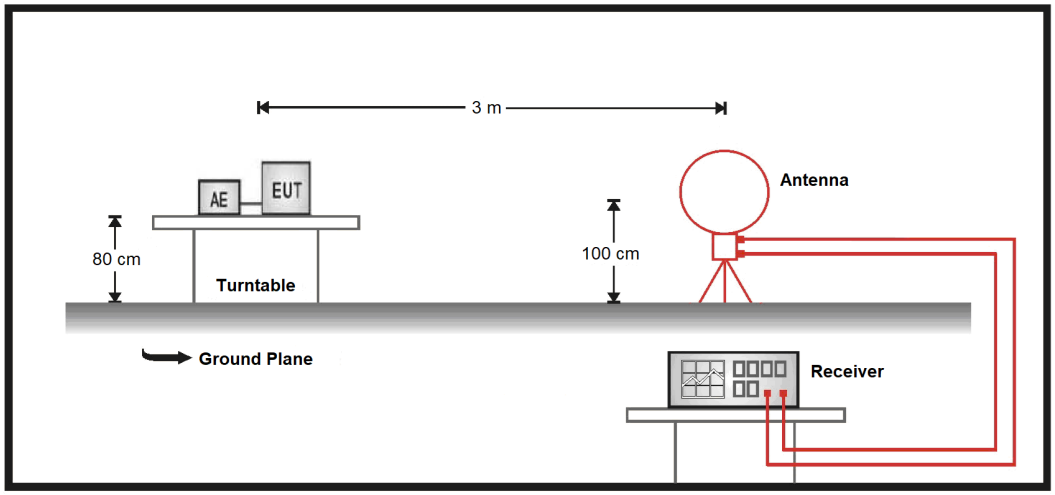
## 7.4. Test Result of Antenna Port Conducted Emission

Refer as Appendix E

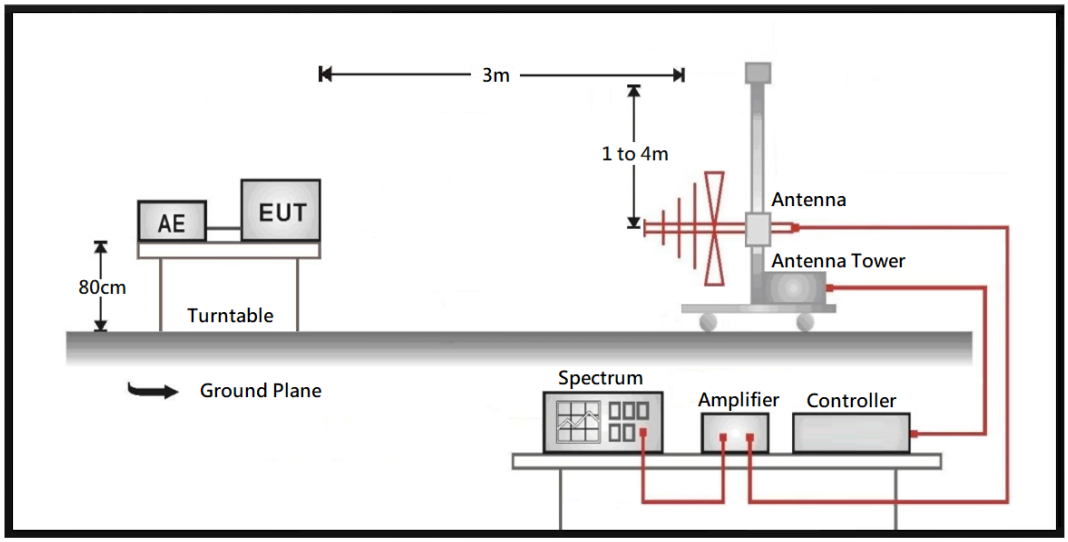
# 8. Transmitter Radiated Spurious Emission

## 8.1. Test Setup

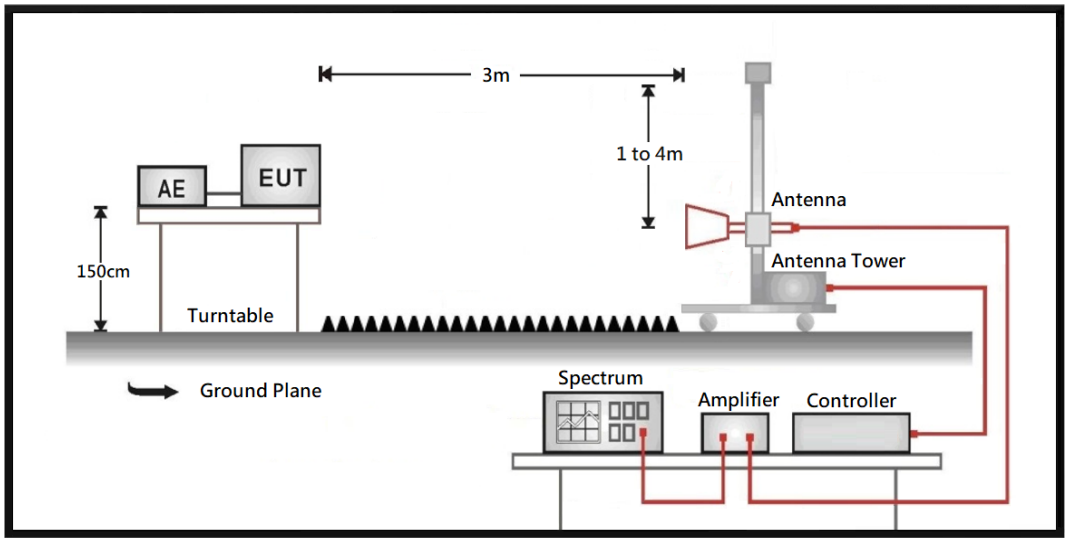
9 kHz ~ 30 MHz




30 MHz ~ 1 GHz




Above 1 GHz



## 8.2. Test Limit

| Frequency (MHz) | Field strength (uV/m) | Field strength (dBuV/m) | Measurement distance (m) |
|---|---|---|---|
| 0.009 – 0.490 | 2400/F(kHz) | 20 log (2400/F(kHz)) | 300 |
| 0.490 – 1.705 | 24000/F(kHz) | 20 log (24000/F(kHz)) | 30 |
| 1.705 - 30 | 30 | 29.5 | 30 |
| 30 - 88 | 100 | 40 | 3 |
| 88 - 216 | 150 | 43.5 | 3 |
| 216 - 960 | 200 | 46 | 3 |
| Above 960 | 500 | 54 | 3 |

Remarks:

1. Field strength (dBuV/m) = 20 log Field strength (uV/m)
2. In the Above Table, the tighter limit applies at the band edges.
3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

## 8.3. Test Procedure

The EUT was setup according to ANSI C63.10: 2013 and tested according to DTS test procedure of KDB 558074.

The EUT and its simulators are placed on a turn table which is 0.8 or 1.5 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10: 2013 on radiated measurement.

On any frequency or frequencies form 9 kHz(inculde The the lowest oscillator frequency generated within the device up to the 10th harmonic) to 1000 MHz, the limit shown are based on measuring equipment employing a quasi-peak detector function and on any frequency or frequencies above 1000 MHz the radiated limit shown are based upon the use of measurement instrumentation employing an average detector function. When average radiated emission measurement are included emission measurement below 1000 MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

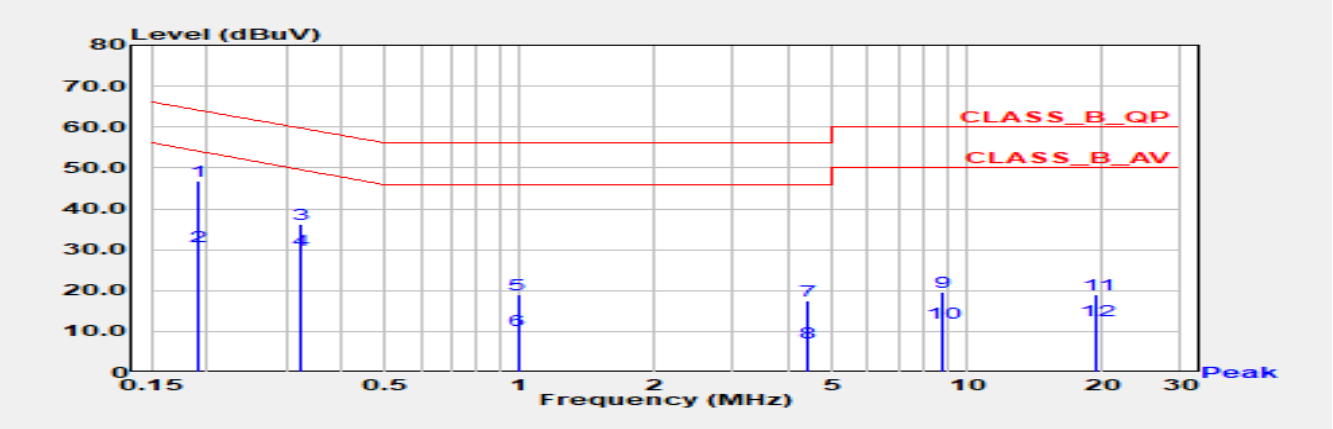
The bandwidth below 1 GHz setting on the field strength meter is 120 kHz and above 1 GHz is 1 MHz.

## 8.4. Test Result of Transmitter Radiated Spurious Emission

Refer as Appendix F

## Appendix A. Test Result of AC Power Line Conducted Emission

| Test Mode | Mode 1: EUT 1 + Adapter | Phase | Line |
|---|---|---|---|
| Test Condition | 802.11ax (40 MHz) / Ant. 1 + Ant. 2 / 2422 MHz | | |

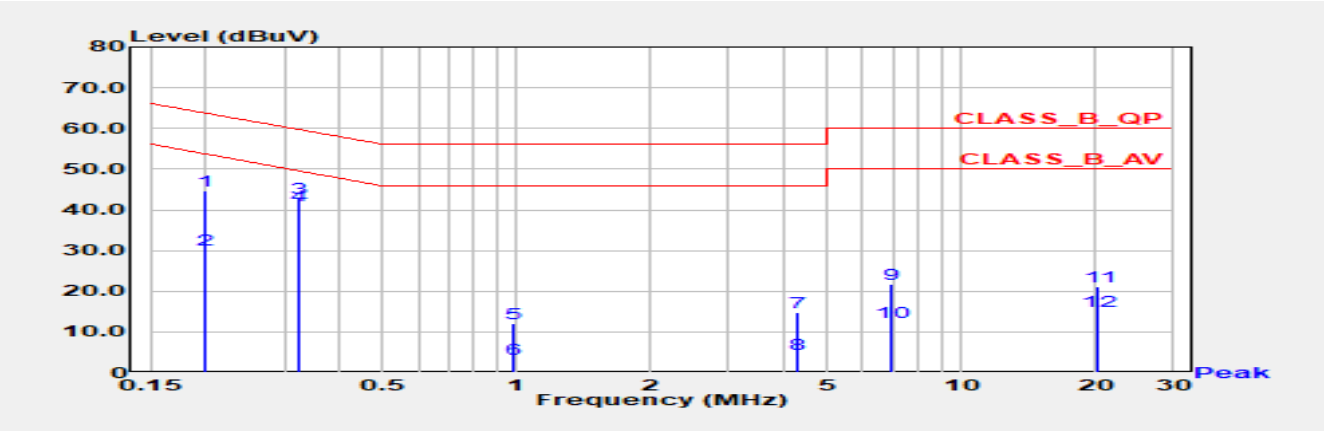



| No | Frequency (MHz) | Emission Level (dBuV) | Limit (dBuV) | Margin (dB) | Reading Level (dBuV) | Correct Factor (dB) | Detector Type |
|---|---|---|---|---|---|---|---|
| *1 | 0.190 | 46.92 | 64.01 | -17.10 | 37.05 | 9.87 | QP |
| 2 | 0.190 | 30.67 | 54.01 | -23.34 | 20.81 | 9.87 | AV |
| 3 | 0.325 | 36.11 | 59.57 | -23.45 | 26.23 | 9.88 | QP |
| 4 | 0.325 | 29.82 | 49.57 | -19.74 | 19.95 | 9.88 | AV |
| 5 | 0.989 | 19.05 | 56.00 | -36.95 | 9.12 | 9.93 | QP |
| 6 | 0.989 | 10.25 | 46.00 | -35.75 | 0.32 | 9.93 | AV |
| 7 | 4.396 | 17.51 | 56.00 | -38.49 | 7.43 | 10.09 | QP |
| 8 | 4.396 | 7.37 | 46.00 | -38.63 | -2.72 | 10.09 | AV |
| 9 | 8.821 | 19.68 | 60.00 | -40.32 | 9.45 | 10.23 | QP |
| 10 | 8.821 | 12.16 | 50.00 | -37.84 | 1.94 | 10.23 | AV |
| 11 | 19.511 | 19.00 | 60.00 | -41.00 | 8.58 | 10.42 | QP |
| 12 | 19.511 | 12.69 | 50.00 | -37.31 | 2.27 | 10.42 | AV |

Remark:

1. "*" means this data is the worst emission level.
2. Emission Level = Reading Level + Correct Factor (Correct Factor = LISN Insertion Loss + Cable Loss).
3. Margin = Emission Level - Limit.

| Test Mode | Mode 1: EUT 1 + Adapter | Phase | Neutral |
|---|---|---|---|
| Test Condition | 802.11ax (40 MHz) / Ant. 1 + Ant. 2 / 2422 MHz | | |

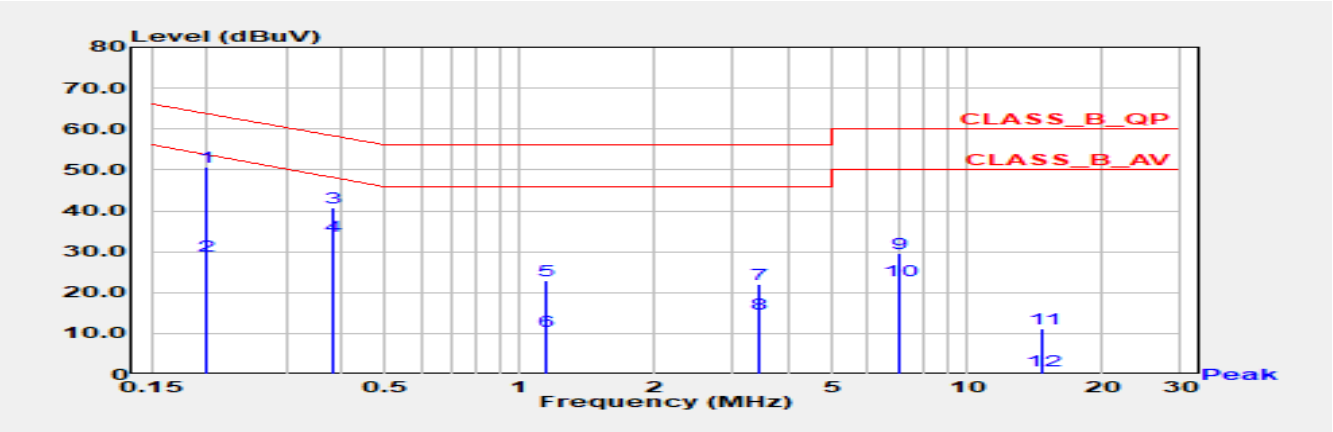



| No | Frequency (MHz) | Emission Level (dBuV) | Limit (dBuV) | Margin (dB) | Reading Level (dBuV) | Correct Factor (dB) | Detector Type |
|---|---|---|---|---|---|---|---|
| 1 | 0.199 | 44.58 | 63.63 | -19.05 | 34.72 | 9.85 | QP |
| 2 | 0.199 | 30.27 | 53.63 | -23.37 | 20.41 | 9.85 | AV |
| 3 | 0.325 | 42.98 | 59.57 | -16.58 | 33.12 | 9.87 | QP |
| *4 | 0.325 | 40.97 | 49.57 | -8.59 | 31.11 | 9.87 | AV |
| 5 | 0.985 | 12.16 | 56.00 | -43.84 | 2.24 | 9.92 | QP |
| 6 | 0.985 | 3.18 | 46.00 | -42.82 | -6.74 | 9.92 | AV |
| 7 | 4.288 | 14.70 | 56.00 | -41.30 | 4.64 | 10.05 | QP |
| 8 | 4.288 | 4.62 | 46.00 | -41.38 | -5.43 | 10.05 | AV |
| 9 | 6.922 | 21.66 | 60.00 | -38.34 | 11.53 | 10.13 | QP |
| 10 | 6.922 | 12.51 | 50.00 | -37.49 | 2.38 | 10.13 | AV |
| 11 | 20.323 | 21.03 | 60.00 | -38.97 | 10.72 | 10.31 | QP |
| 12 | 20.323 | 15.06 | 50.00 | -34.94 | 4.75 | 10.31 | AV |

Remark:

1. "*" means this data is the worst emission level.
2. Emission Level = Reading Level + Correct Factor (Correct Factor = LISN Insertion Loss + Cable Loss).
3. Margin = Emission Level - Limit.

| Test Mode | Mode 2: EUT 1 + PoE | Phase | Line |
|---|---|---|---|
| Test Condition | 802.11ax (40 MHz) / Ant. 1 + Ant. 2 / 2422 MHz | | |




| No | Frequency (MHz) | Emission Level (dBuV) | Limit (dBuV) | Margin (dB) | Reading Level (dBuV) | Correct Factor (dB) | Detector Type |
|---|---|---|---|---|---|---|---|
| *1 | 0.199 | 50.69 | 63.63 | -12.94 | 40.82 | 9.87 | QP |
| 2 | 0.199 | 28.95 | 53.63 | -24.68 | 19.08 | 9.87 | AV |
| 3 | 0.384 | 40.67 | 58.19 | -17.52 | 30.79 | 9.88 | QP |
| 4 | 0.384 | 33.69 | 48.19 | -14.50 | 23.81 | 9.88 | AV |
| 5 | 1.149 | 22.85 | 56.00 | -33.15 | 12.91 | 9.94 | QP |
| 6 | 1.149 | 10.69 | 46.00 | -35.31 | 0.75 | 9.94 | AV |
| 7 | 3.408 | 22.13 | 56.00 | -33.87 | 12.09 | 10.05 | QP |
| 8 | 3.408 | 14.83 | 46.00 | -31.17 | 4.79 | 10.05 | AV |
| 9 | 7.033 | 29.56 | 60.00 | -30.44 | 19.38 | 10.17 | QP |
| 10 | 7.033 | 22.91 | 50.00 | -27.09 | 12.74 | 10.17 | AV |
| 11 | 14.754 | 11.13 | 60.00 | -48.87 | 0.79 | 10.35 | QP |
| 12 | 14.754 | 0.81 | 50.00 | -49.19 | -9.53 | 10.35 | AV |

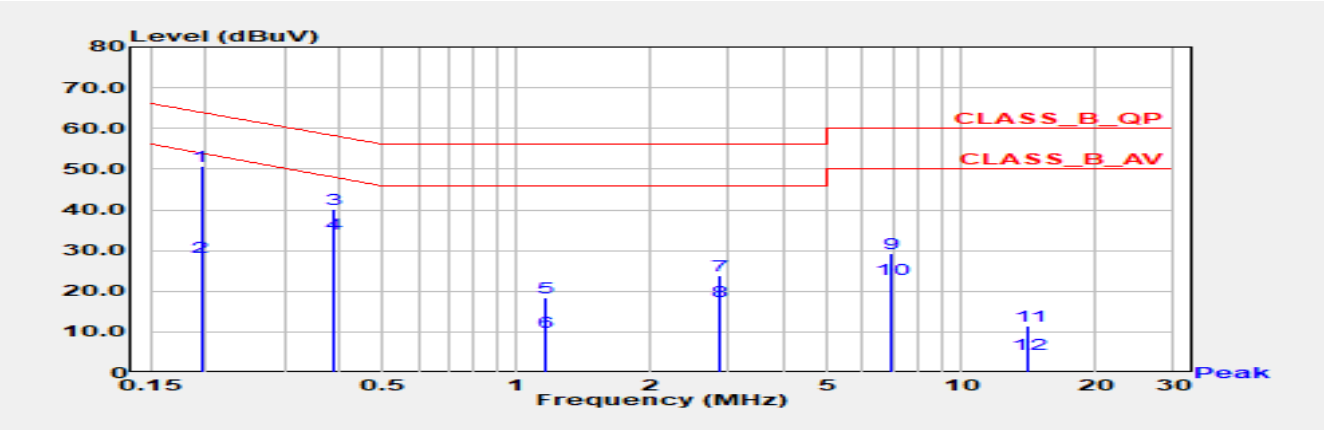
Remark:

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

2. Emission Level = Reading Level + Correct Factor (Correct Factor = LISN Insertion Loss + Cable Loss).

3. Margin = Emission Level - Limit.

| Test Mode | Mode 2: EUT 1 + PoE | Phase | Neutral |
|---|---|---|---|
| Test Condition | 802.11ax (40 MHz) / Ant. 1 + Ant. 2 / 2422 MHz | | |

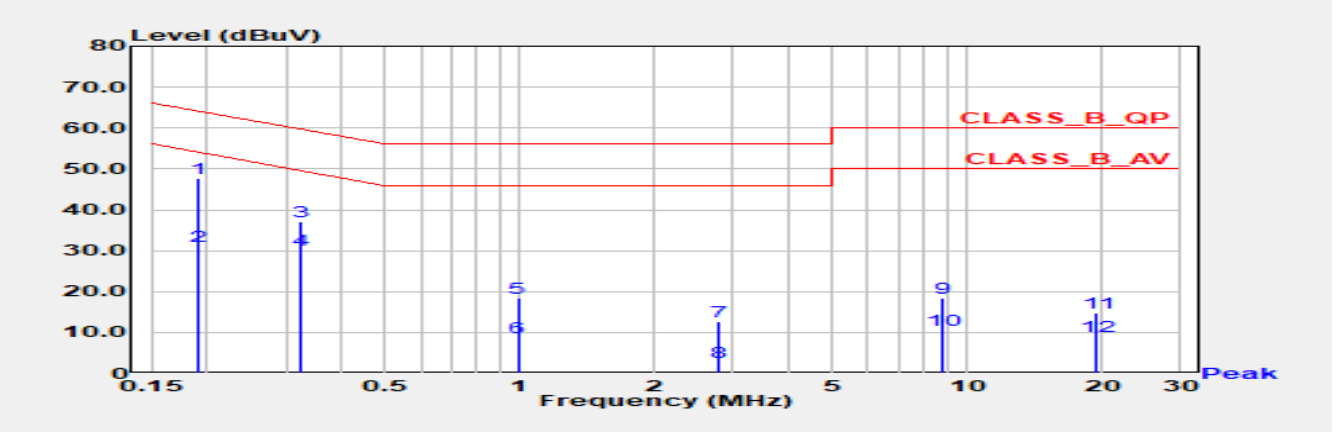



| No | Frequency (MHz) | Emission Level (dBuV) | Limit (dBuV) | Margin (dB) | Reading Level (dBuV) | Correct Factor (dB) | Detector Type |
|---|---|---|---|---|---|---|---|
| *1 | 0.195 | 50.77 | 63.82 | -13.05 | 40.93 | 9.85 | QP |
| 2 | 0.195 | 28.29 | 53.82 | -25.53 | 18.44 | 9.85 | AV |
| 3 | 0.388 | 40.21 | 58.10 | -17.88 | 30.34 | 9.87 | QP |
| 4 | 0.388 | 33.97 | 48.10 | -14.13 | 24.10 | 9.87 | AV |
| 5 | 1.160 | 18.45 | 56.00 | -37.55 | 8.52 | 9.93 | QP |
| 6 | 1.160 | 9.94 | 46.00 | -36.06 | 0.01 | 9.93 | AV |
| 7 | 2.870 | 23.86 | 56.00 | -32.14 | 13.85 | 10.00 | QP |
| 8 | 2.870 | 17.56 | 46.00 | -28.44 | 7.56 | 10.00 | AV |
| 9 | 6.990 | 29.34 | 60.00 | -30.66 | 19.21 | 10.13 | QP |
| 10 | 6.990 | 22.87 | 50.00 | -27.13 | 12.74 | 10.13 | AV |
| 11 | 14.138 | 11.57 | 60.00 | -48.43 | 1.32 | 10.25 | QP |
| 12 | 14.138 | 4.56 | 50.00 | -45.44 | -5.69 | 10.25 | AV |

Remark:

1. "*" means this data is the worst emission level.
2. Emission Level = Reading Level + Correct Factor (Correct Factor = LISN Insertion Loss + Cable Loss).
3. Margin = Emission Level - Limit.

| Test Mode | Mode 3: EUT 2 + Adapter | Phase | Line |
|---|---|---|---|
| Test Condition | 802.11ax (40 MHz) / Ant. 1 + Ant. 2 / 2437 MHz | | |




| No | Frequency (MHz) | Emission Level (dBuV) | Limit (dBuV) | Margin (dB) | Reading Level (dBuV) | Correct Factor (dB) | Detector Type |
|---|---|---|---|---|---|---|---|
| *1 | 0.190 | 47.74 | 64.01 | -16.28 | 37.87 | 9.87 | QP |
| 2 | 0.190 | 31.10 | 54.01 | -22.91 | 21.23 | 9.87 | AV |
| 3 | 0.325 | 37.17 | 59.57 | -22.40 | 27.29 | 9.88 | QP |
| 4 | 0.325 | 30.04 | 49.57 | -19.52 | 20.17 | 9.88 | AV |
| 5 | 0.989 | 18.40 | 56.00 | -37.60 | 8.48 | 9.93 | QP |
| 6 | 0.989 | 8.65 | 46.00 | -37.35 | -1.28 | 9.93 | AV |
| 7 | 2.791 | 12.60 | 56.00 | -43.40 | 2.59 | 10.02 | QP |
| 8 | 2.791 | 2.66 | 46.00 | -43.34 | -7.35 | 10.02 | AV |
| 9 | 8.821 | 18.36 | 60.00 | -41.64 | 8.13 | 10.23 | QP |
| 10 | 8.821 | 10.60 | 50.00 | -39.40 | 0.37 | 10.23 | AV |
| 11 | 19.511 | 14.71 | 60.00 | -45.29 | 4.29 | 10.42 | QP |
| 12 | 19.511 | 9.02 | 50.00 | -40.98 | -1.41 | 10.42 | AV |

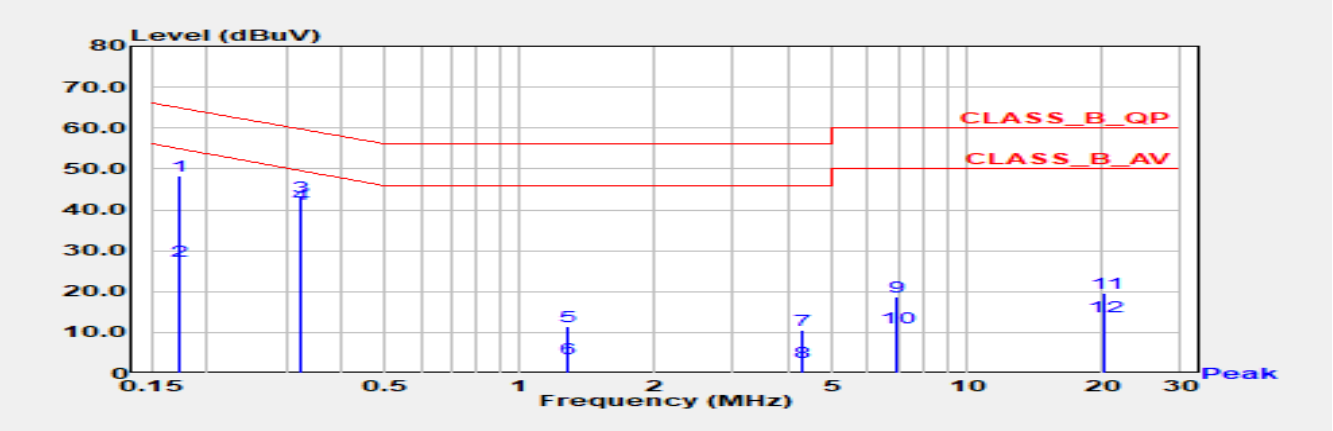
Remark:

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

2. Emission Level = Reading Level + Correct Factor (Correct Factor = LISN Insertion Loss + Cable Loss).

3. Margin = Emission Level - Limi

| Test Mode | Mode 3: EUT 2 + Adapter | Phase | Neutral |
|---|---|---|---|
| Test Condition | 802.11ax (40 MHz) / Ant. 1 + Ant. 2 / 2437 MHz | | |

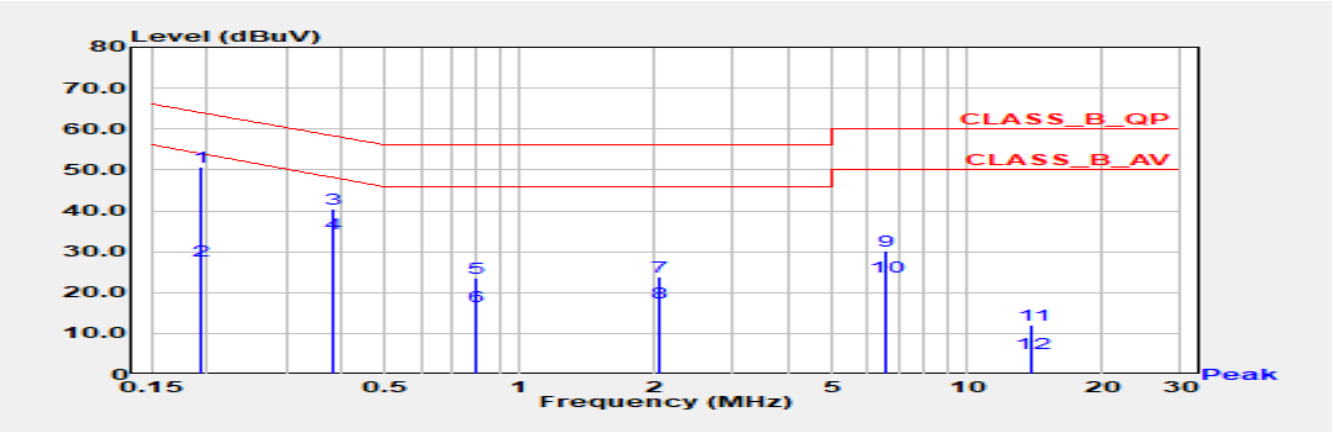



| No | Frequency (MHz) | Emission Level (dBuV) | Limit (dBuV) | Margin (dB) | Reading Level (dBuV) | Correct Factor (dB) | Detector Type |
|---|---|---|---|---|---|---|---|
| 1 | 0.172 | 48.36 | 64.84 | -16.48 | 38.54 | 9.82 | QP |
| 2 | 0.172 | 27.62 | 54.84 | -27.22 | 17.79 | 9.82 | AV |
| 3 | 0.325 | 43.21 | 59.57 | -16.36 | 33.34 | 9.87 | QP |
| *4 | 0.325 | 41.44 | 49.57 | -8.12 | 31.58 | 9.87 | AV |
| 5 | 1.284 | 11.48 | 56.00 | -44.52 | 1.55 | 9.93 | QP |
| 6 | 1.284 | 3.53 | 46.00 | -42.47 | -6.40 | 9.93 | AV |
| 7 | 4.288 | 10.59 | 56.00 | -45.41 | 0.54 | 10.05 | QP |
| 8 | 4.288 | 2.62 | 46.00 | -43.38 | -7.44 | 10.05 | AV |
| 9 | 6.922 | 18.64 | 60.00 | -41.36 | 8.51 | 10.13 | QP |
| 10 | 6.922 | 11.07 | 50.00 | -38.93 | 0.94 | 10.13 | AV |
| 11 | 20.323 | 19.77 | 60.00 | -40.23 | 9.46 | 10.31 | QP |
| 12 | 20.323 | 13.75 | 50.00 | -36.25 | 3.44 | 10.31 | AV |

Remark:

1. "*" means this data is the worst emission level.
2. Emission Level = Reading Level + Correct Factor (Correct Factor = LISN Insertion Loss + Cable Loss).
3. Margin = Emission Level - Limit.

| Test Mode | Mode 4: EUT 2 + PoE | Phase | Line |
|---|---|---|---|
| Test Condition | 802.11ax (40 MHz) / Ant. 1 + Ant. 2 / 2437 MHz | | |




| No | Frequency (MHz) | Emission Level (dBuV) | Limit (dBuV) | Margin (dB) | Reading Level (dBuV) | Correct Factor (dB) | Detector Type |
|---|---|---|---|---|---|---|---|
| *1 | 0.193 | 50.75 | 63.92 | -13.17 | 40.88 | 9.87 | QP |
| 2 | 0.193 | 27.92 | 53.92 | -26.00 | 18.05 | 9.87 | AV |
| 3 | 0.384 | 40.47 | 58.19 | -17.72 | 30.59 | 9.88 | QP |
| 4 | 0.384 | 34.38 | 48.19 | -13.82 | 24.49 | 9.88 | AV |
| 5 | 0.798 | 23.41 | 56.00 | -32.59 | 13.50 | 9.91 | QP |
| 6 | 0.798 | 16.53 | 46.00 | -29.47 | 6.62 | 9.91 | AV |
| 7 | 2.047 | 23.79 | 56.00 | -32.21 | 13.81 | 9.98 | QP |
| 8 | 2.047 | 17.57 | 46.00 | -28.43 | 7.58 | 9.98 | AV |
| 9 | 6.616 | 30.13 | 60.00 | -29.87 | 19.97 | 10.16 | QP |
| 10 | 6.616 | 23.74 | 50.00 | -26.26 | 13.58 | 10.16 | AV |
| 11 | 13.996 | 11.97 | 60.00 | -48.03 | 1.64 | 10.33 | QP |
| 12 | 13.996 | 5.24 | 50.00 | -44.76 | -5.09 | 10.33 | AV |

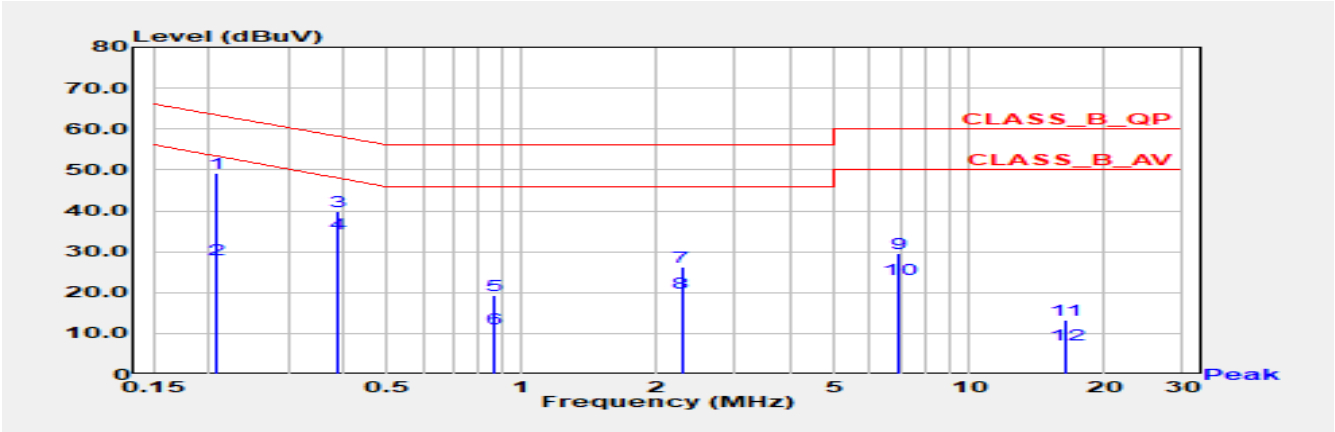
Remark:

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

2. Emission Level = Reading Level + Correct Factor (Correct Factor = LISN Insertion Loss + Cable Loss).

3. Margin = Emission Level - Limit.

| Test Mode | Mode 4: EUT 2 + PoE | Phase | Neutral |
|---|---|---|---|
| Test Condition | 802.11ax (40 MHz) / Ant. 1 + Ant. 2 / 2437 MHz | | |




| No | Frequency (MHz) | Emission Level (dBuV) | Limit (dBuV) | Margin (dB) | Reading Level (dBuV) | Correct Factor (dB) | Detector Type |
|---|---|---|---|---|---|---|---|
| 1 | 0.206 | 49.17 | 63.36 | -14.19 | 39.31 | 9.85 | QP |
| 2 | 0.206 | 27.95 | 53.36 | -25.40 | 18.10 | 9.85 | AV |
| 3 | 0.388 | 39.91 | 58.10 | -18.19 | 30.04 | 9.87 | QP |
| *4 | 0.388 | 34.37 | 48.10 | -13.73 | 24.50 | 9.87 | AV |
| 5 | 0.865 | 19.27 | 56.00 | -36.73 | 9.36 | 9.91 | QP |
| 6 | 0.865 | 11.07 | 46.00 | -34.93 | 1.16 | 9.91 | AV |
| 7 | 2.274 | 26.25 | 56.00 | -29.75 | 16.27 | 9.98 | QP |
| 8 | 2.274 | 19.87 | 46.00 | -26.13 | 9.89 | 9.98 | AV |
| 9 | 6.925 | 29.59 | 60.00 | -30.41 | 19.46 | 10.13 | QP |
| 10 | 6.925 | 23.36 | 50.00 | -26.64 | 13.23 | 10.13 | AV |
| 11 | 16.401 | 13.20 | 60.00 | -46.80 | 2.93 | 10.27 | QP |
| 12 | 16.401 | 7.33 | 50.00 | -42.67 | -2.94 | 10.27 | AV |

Remark:

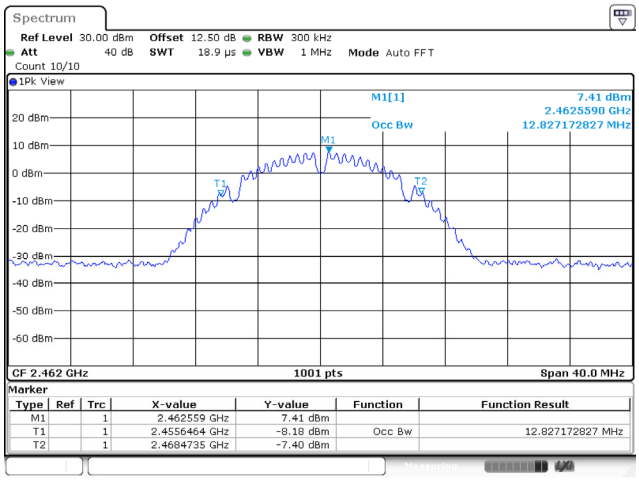
1. "*" means this data is the worst emission level.
2. Emission Level = Reading Level + Correct Factor (Correct Factor = LISN Insertion Loss + Cable Loss).
3. Margin = Emission Level - Limit.

## Appendix B.1 Test Result of Occupied Bandwidth

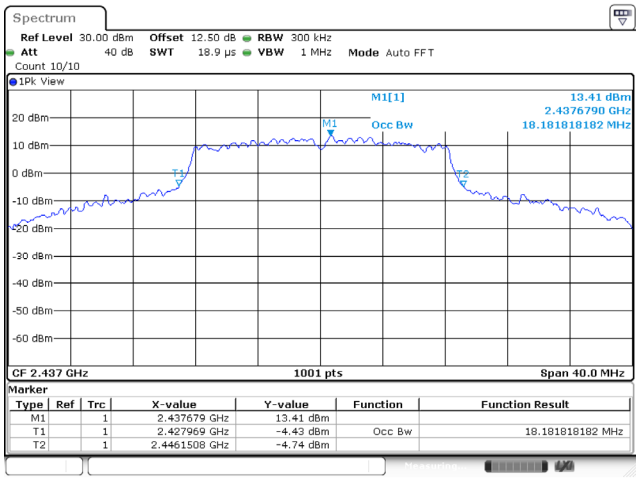
| Modulation | Frequency (MHz) | Occupied Bandwidth (MHz) | | Limit (MHz) |
|---|---|---|---|---|
| | | Ant. 1 | Ant. 2 | |
| 802.11b | 2412 | 12.867 | 12.867 | - |
| | 2437 | 12.827 | 12.867 | - |
| | 2462 | 12.907 | 12.827 | - |
| 802.11g | 2412 | 17.022 | 17.182 | - |
| | 2437 | 18.101 | 18.181 | - |
| | 2462 | 16.903 | 16.983 | - |
| 802.11ax (20 MHz) | 2412 | 18.901 | 18.981 | - |
| | 2437 | 19.140 | 19.140 | - |
| | 2462 | 19.140 | 19.100 | - |
| 802.11ax (40 MHz) | 2422 | 38.041 | 37.882 | - |
| | 2437 | 38.041 | 38.121 | - |
| | 2452 | 38.201 | 38.281 | - |

## Spectrum plot of maximum value

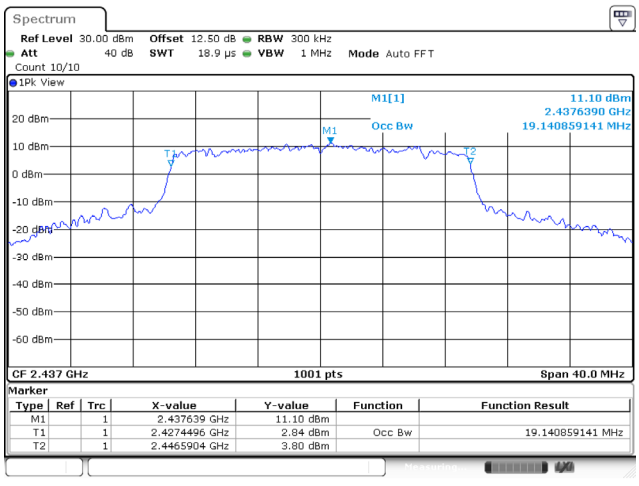
### 802.11b / Ant. 1 / 2462 MHz



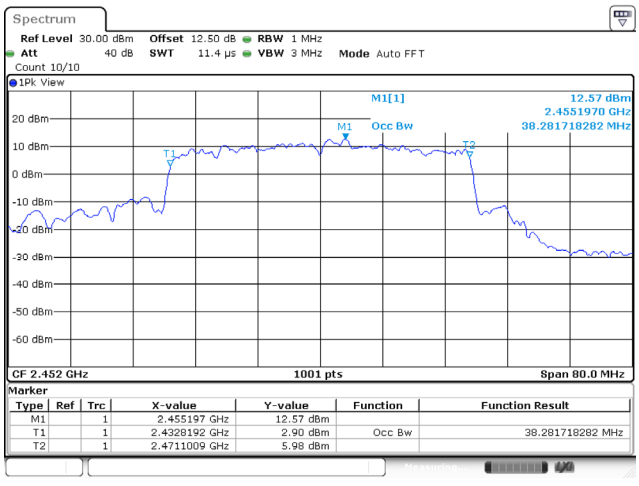

### 802.11g / Ant. 2 / 2437 MHz




### 802.11ax (20 MHz) / Ant.1 / 2437 MHz




### 802.11ax (40 MHz) / Ant. 2 / 2452 MHz

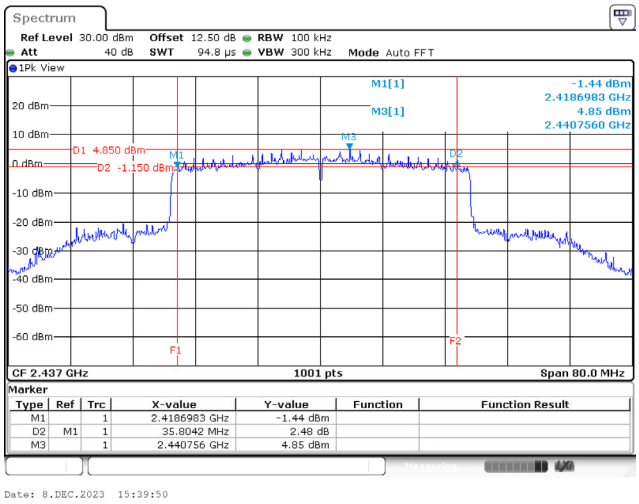


## Appendix B.2 Test Result of DTS Bandwidth

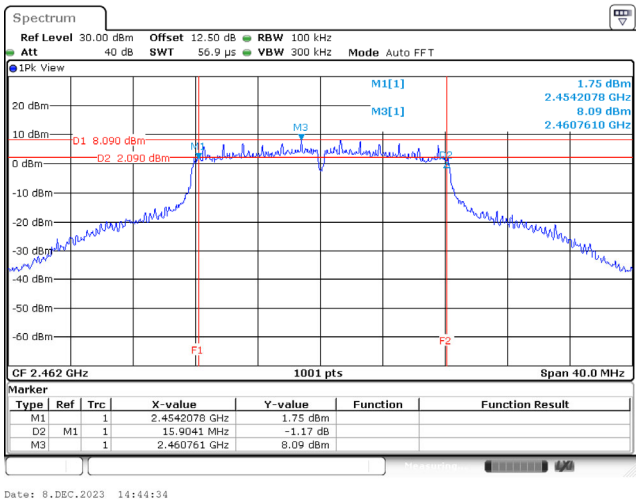
| Modulation | Frequency (MHz) | DTS Bandwidth (MHz) | | Limit (MHz) | Result |
|---|---|---|---|---|---|
| | | Ant. 1 | Ant. 2 | | |
| 802.11b | 2412 | 8.071 | 8.032 | 0.50 | Pass |
| | 2437 | 8.032 | 8.071 | 0.50 | Pass |
| | 2462 | 8.071 | 8.071 | 0.50 | Pass |
| 802.11g | 2412 | 16.024 | 16.303 | 0.50 | Pass |
| | 2437 | 16.024 | 16.303 | 0.50 | Pass |
| | 2462 | 15.904 | 16.303 | 0.50 | Pass |
| 802.11ax (20 MHz) | 2412 | 18.581 | 18.741 | 0.50 | Pass |
| | 2437 | 18.301 | 18.061 | 0.50 | Pass |
| | 2462 | 18.381 | 18.581 | 0.50 | Pass |
| 802.11ax (40 MHz) | 2422 | 37.402 | 35.084 | 0.50 | Pass |
| | 2437 | 35.804 | 35.084 | 0.50 | Pass |
| | 2452 | 35.084 | 36.044 | 0.50 | Pass |

## Spectrum plot of worst value

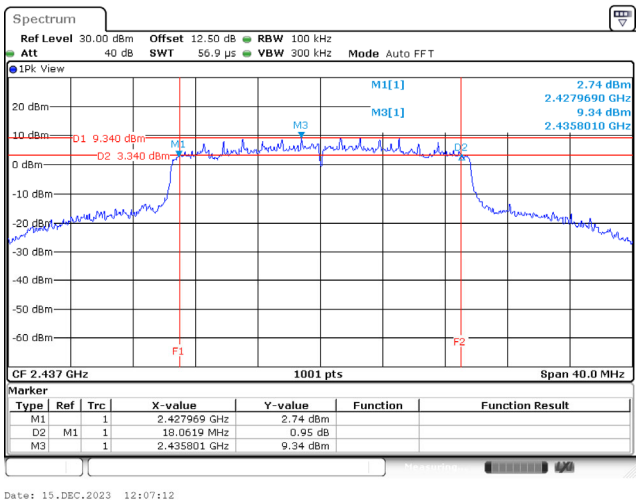
### 802.11b / Ant. 1 / 2437 MHz



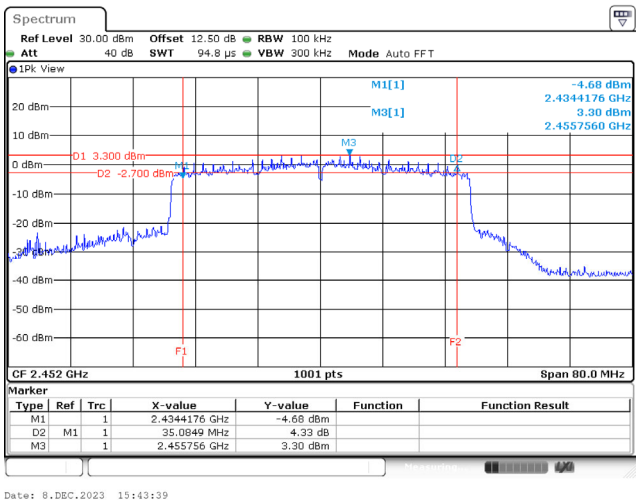

### 802.11g / Ant. 1 / 2462 MHz




### 802.11ax (20 MHz) / Ant. 2 / 2437 MHz




### 802.11ax (40 MHz) / Ant. 1 / 2452 MHz



## Appendix C. Test Result of Maximum Conducted Output Power

<Non-beamforming function>

| Modulation | Frequency (MHz) | Maximum Conducted Average Output Power (dBm) | | | | Antenna Gain (dBi) | E.I.R.P Power (dBm) | E.I.R.P Limit (dBm) |
|---|---|---|---|---|---|---|---|---|
| | | Ant. 1 | Ant. 2 | Total | Limit | | | |
| 802.11b | 2412 | 15.66 | 15.77 | 18.73 | 30.00 | 4.90 | 23.63 | 36.00 |
| | 2437 | 16.19 | 16.41 | 19.31 | 30.00 | 4.90 | 24.21 | 36.00 |
| | 2462 | 15.03 | 15.33 | 18.19 | 30.00 | 4.90 | 23.09 | 36.00 |
| 802.11g | 2412 | 18.26 | 18.31 | 21.30 | 30.00 | 4.90 | 26.20 | 36.00 |
| | 2437 | 21.01 | 21.04 | 24.04 | 30.00 | 4.90 | 28.94 | 36.00 |
| | 2462 | 18.63 | 18.71 | 21.68 | 30.00 | 4.90 | 26.58 | 36.00 |
| 802.11ax (20 MHz) | 2412 | 17.31 | 17.43 | 20.38 | 30.00 | 4.90 | 25.28 | 36.00 |
| | 2437 | 20.26 | 20.36 | 23.32 | 30.00 | 4.90 | 28.22 | 36.00 |
| | 2462 | 18.05 | 18.42 | 21.25 | 30.00 | 4.90 | 26.15 | 36.00 |
| 802.11ax (40 MHz) | 2422 | 15.78 | 15.91 | 18.86 | 30.00 | 4.90 | 23.76 | 36.00 |
| | 2437 | 18.23 | 18.33 | 21.29 | 30.00 | 4.90 | 26.19 | 36.00 |
| | 2452 | 16.66 | 16.85 | 19.77 | 30.00 | 4.90 | 24.67 | 36.00 |

Note: E.I.R.P. = Maximum Conducted Output Power + Antenna Gain.

<Beamforming function>

| Modulation | Frequency (MHz) | Maximum Conducted Average Output Power (dBm) | | | | Directional Gain (dBi) | E.I.R.P Power (dBm) | E.I.R.P Limit (dBm) |
|---|---|---|---|---|---|---|---|---|
| | | Ant. 1 | Ant. 2 | Total | Limit | | | |
| 802.11ax (20 MHz) | 2412 | 14.23 | 14.39 | 17.32 | 28.13 | 7.87 | 25.19 | 36.00 |
| | 2437 | 17.18 | 17.27 | 20.24 | 28.13 | 7.87 | 28.11 | 36.00 |
| | 2462 | 15.01 | 15.34 | 18.19 | 28.13 | 7.87 | 26.06 | 36.00 |
| 802.11ax (40 MHz) | 2422 | 12.68 | 12.77 | 15.74 | 28.13 | 7.87 | 23.61 | 36.00 |
| | 2437 | 15.14 | 15.37 | 18.27 | 28.13 | 7.87 | 26.14 | 36.00 |
| | 2452 | 13.66 | 13.69 | 16.69 | 28.13 | 7.87 | 24.56 | 36.00 |

Note:

1. E.I.R.P. = Maximum Conducted Output Power + Directional Gain.
2. Directional Gain = 10log $[(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2 / N_{Ant}]$ = 7.87 dBi > 6 dBi, so power limit = 30 - (7.87 - 6) = 28.13 dBm.

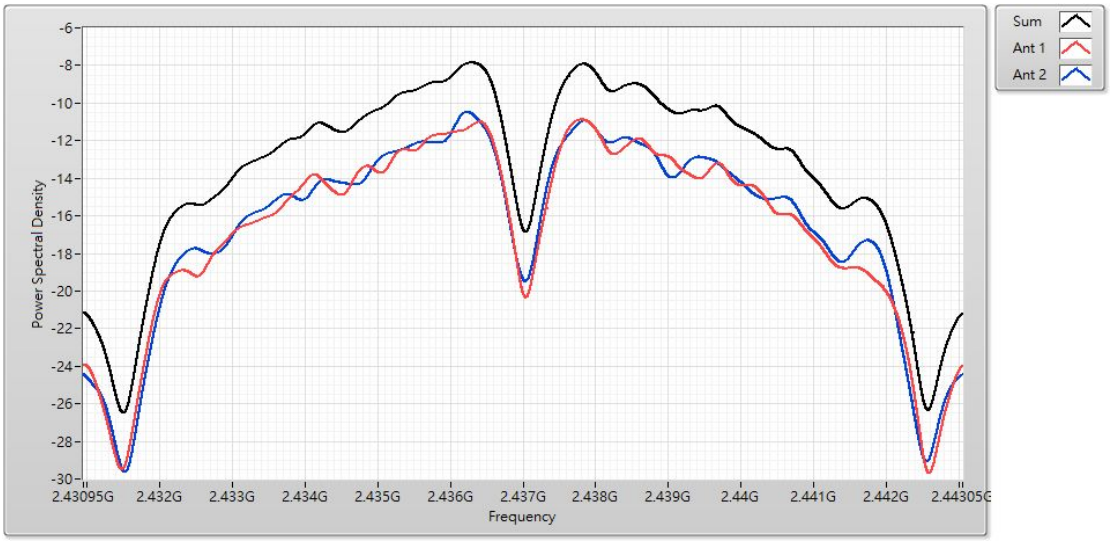
## Appendix D. Test Result of Maximum Power Spectral Density

| Modulation | Frequency (MHz) | Power Spectral Density (dBm/3kHz) | | Limit (dBm/3kHz) | Result |
|---|---|---|---|---|---|
| | | Ant. 1 + Ant. 2 | Total | | |
| 802.11b | 2412 | -8.860 | -8.814 | 6.13 | Pass |
| | 2437 | -7.860 | -7.814 | 6.13 | Pass |
| | 2462 | -8.880 | -8.834 | 6.13 | Pass |
| 802.11g | 2412 | -10.150 | -9.870 | 6.13 | Pass |
| | 2437 | -6.790 | -6.510 | 6.13 | Pass |
| | 2462 | -8.910 | -8.630 | 6.13 | Pass |
| 802.11ax (20 MHz) | 2412 | -10.660 | -10.372 | 6.13 | Pass |
| | 2437 | -7.680 | -7.392 | 6.13 | Pass |
| | 2462 | -9.630 | -9.342 | 6.13 | Pass |
| 802.11ax (40 MHz) | 2422 | -15.940 | -15.446 | 6.13 | Pass |
| | 2437 | -13.550 | -13.056 | 6.13 | Pass |
| | 2452 | -14.490 | -13.996 | 6.13 | Pass |

Note:

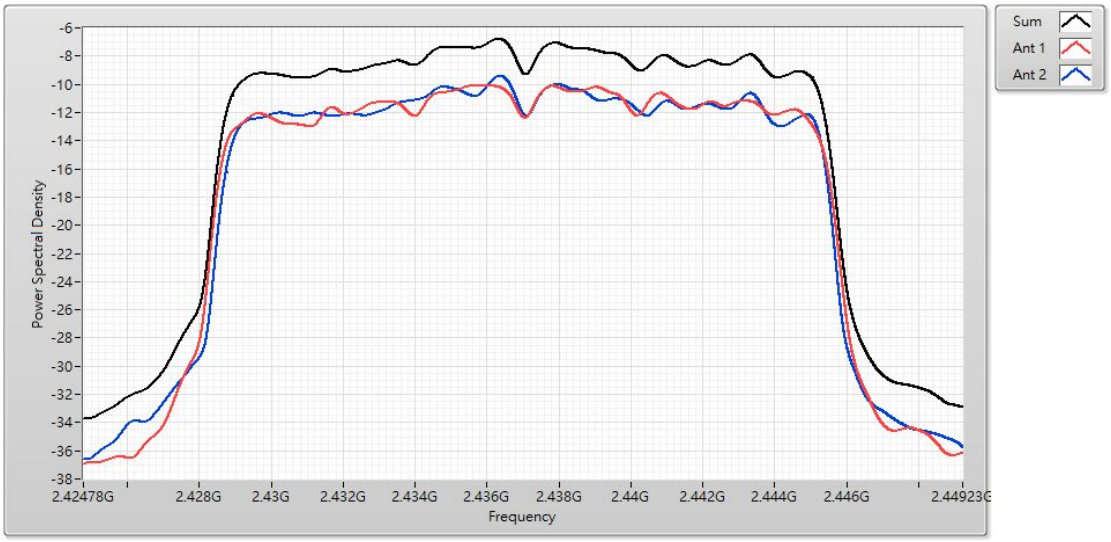
1. Total power spectral density = power spectral density + duty factor, and the duty factor refer to section 2.3.
2. Directional Gain = 10log $[(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2 / N_{Ant}]$ = 7.87dBi >6dBi, so the limit = 8 – (7.87 – 6) = 6.13dBm/3kHz.

| Spectrum plot of worst value |
|---|
| 802.11b / Ant. 1 + Ant. 2 / 2437 MHz |



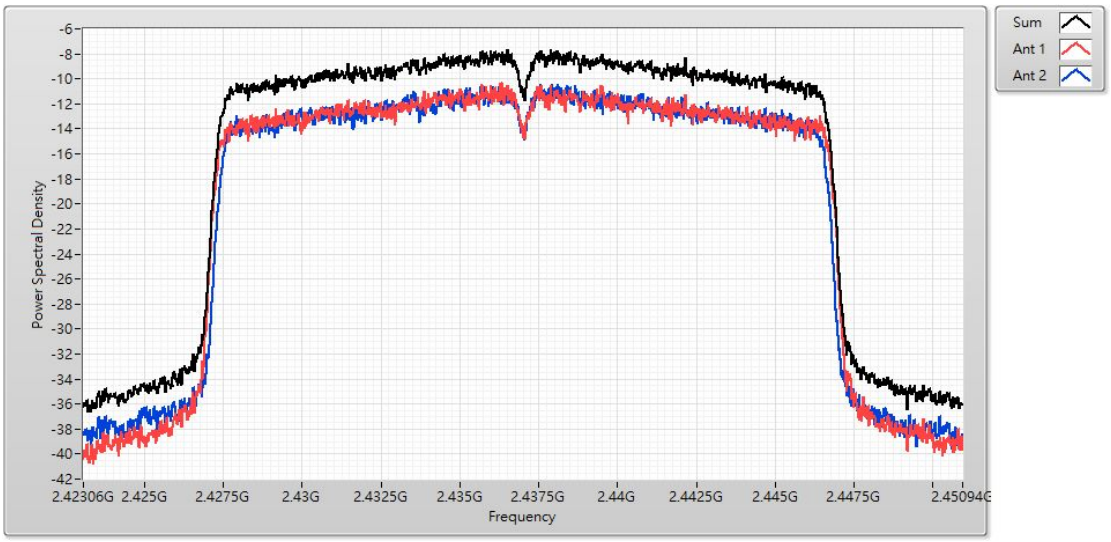

| Sum (dBm/RBW) | Ant 1 (dBm/RBW) | Ant 2 (dBm/RBW) |
|---|---|---|
| -7.86 | -10.89 | -10.47 |

| 802.11g / Ant. 1 + Ant. 2 / 2437 MHz |
|---|



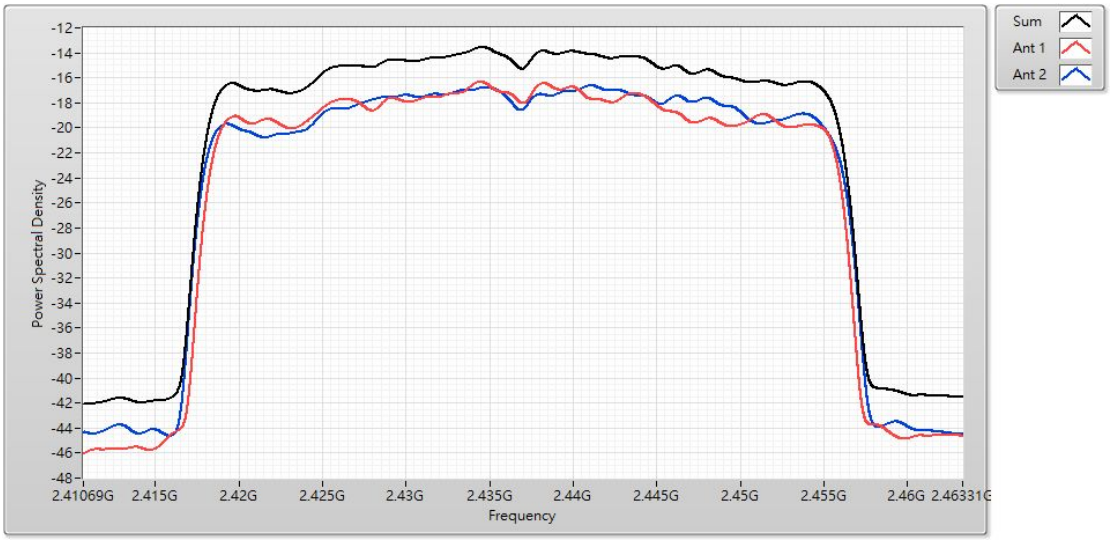

| Sum (dBm/RBW) | Ant 1 (dBm/RBW) | Ant 2 (dBm/RBW) |
|---|---|---|
| -6.79 | -10.09 | -9.42 |

| Spectrum plot of worst value |
|---|
| 802.11ax (20 MHz) / Ant. 1 + Ant. 2 / 2437 MHz |




| Sum (dBm/RBW) | Ant 1 (dBm/RBW) | Ant 2 (dBm/RBW) |
|---|---|---|
| -7.68 | -10.33 | -10.43 |

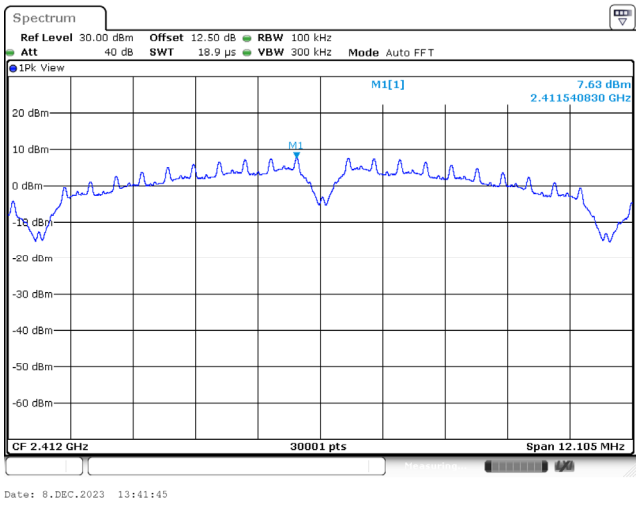
802.11ax (40 MHz) / Ant. 1 + Ant. 2 / 2437 MHz

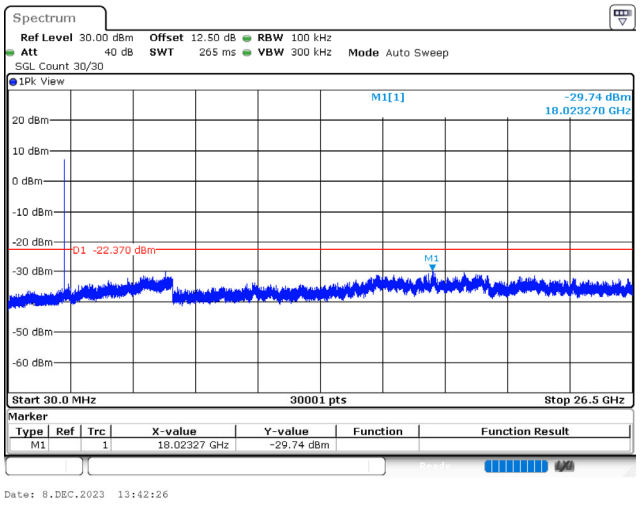



| Sum (dBm/RBW) | Ant 1 (dBm/RBW) | Ant 2 (dBm/RBW) |
|---|---|---|
| -13.55 | -16.32 | -16.62 |

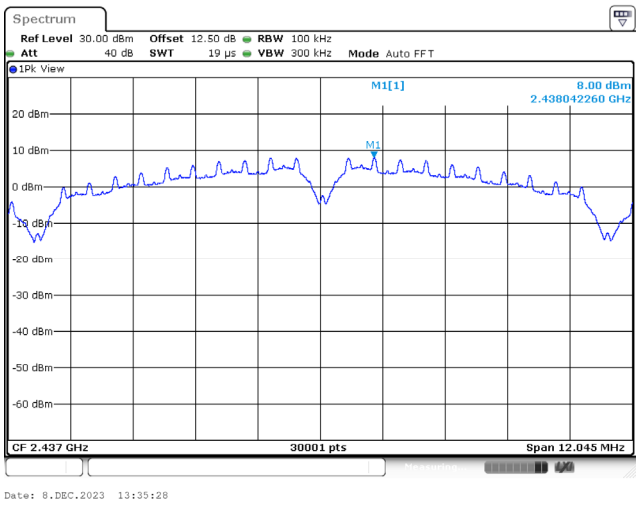
## Appendix E. Test Result of Antenna Port Conducted Emission

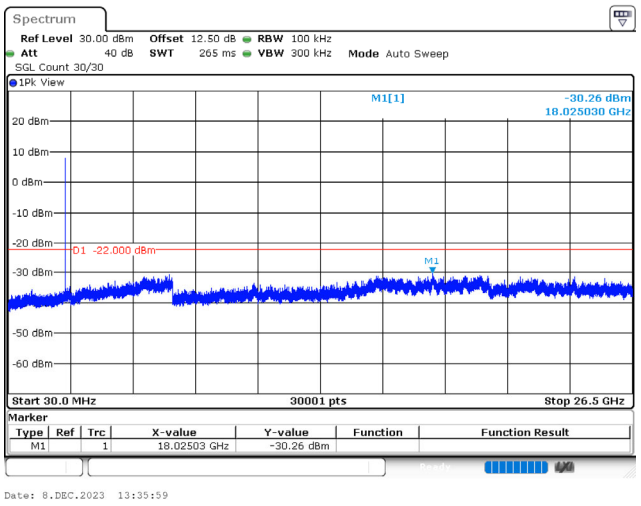
### 802.11b / Ant. 1 / 2412 MHz



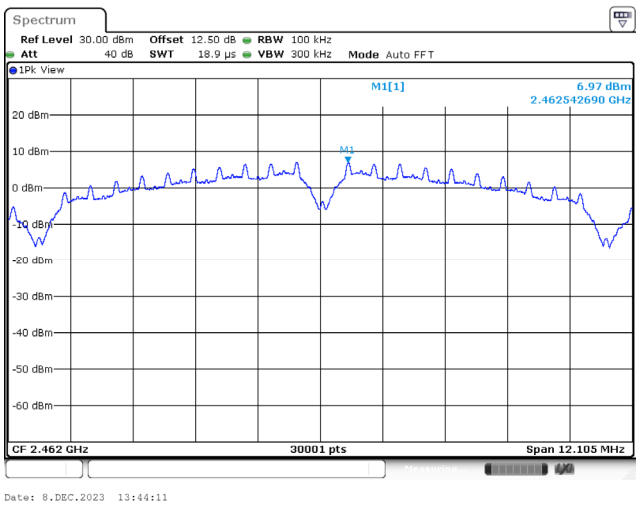



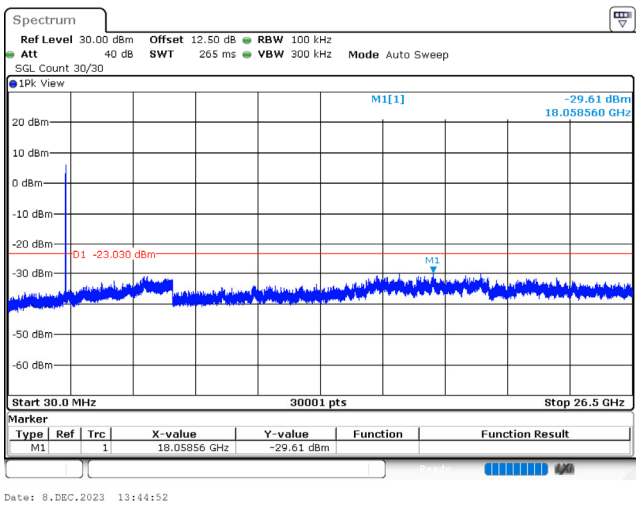

### 802.11b / Ant. 1 / 2437 MHz



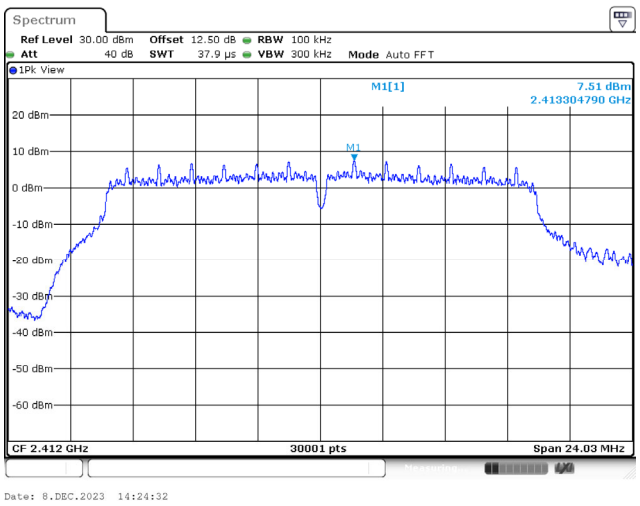



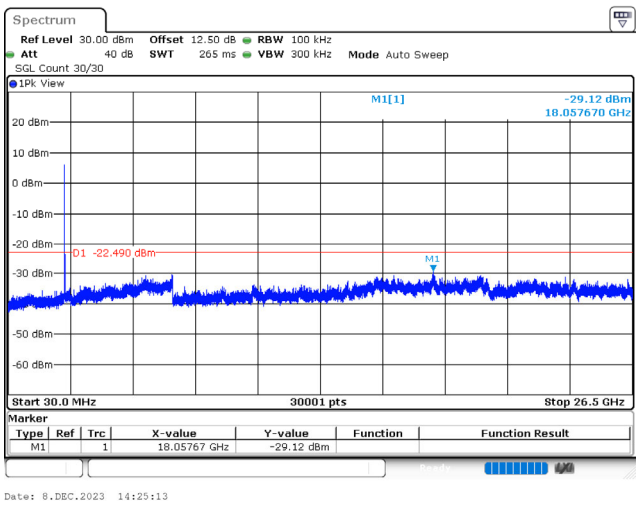

### 802.11b / Ant. 1 / 2462 MHz



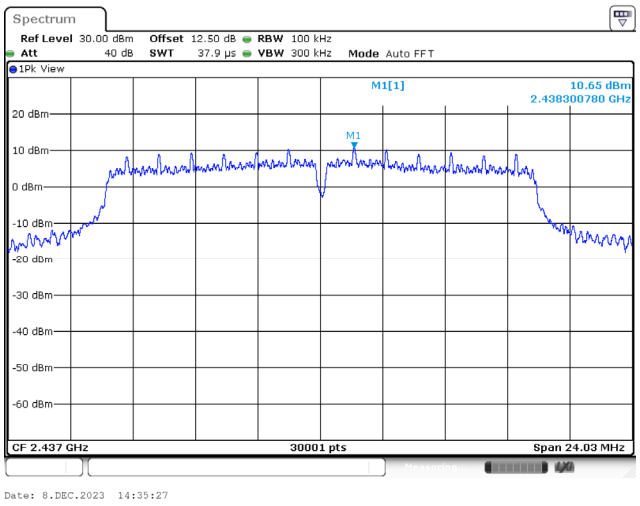



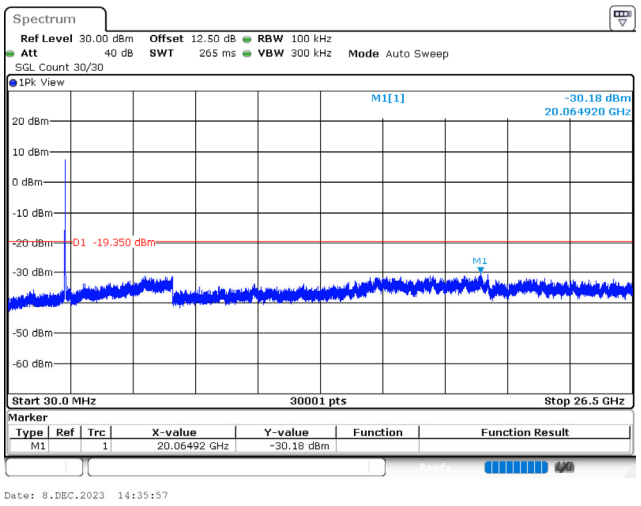
## 802.11g / Ant. 1 / 2412 MHz



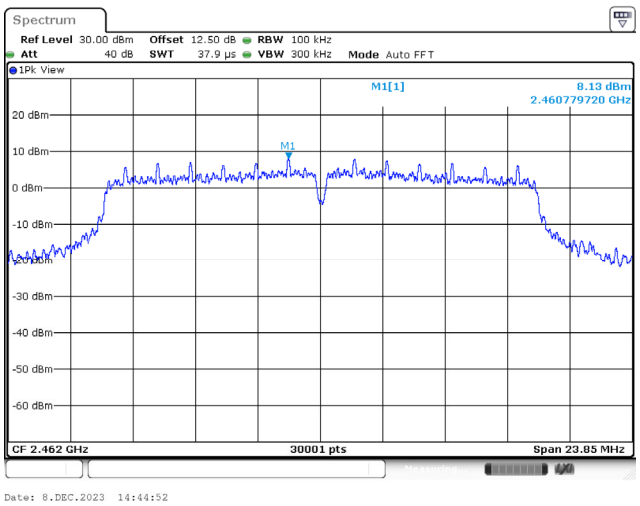



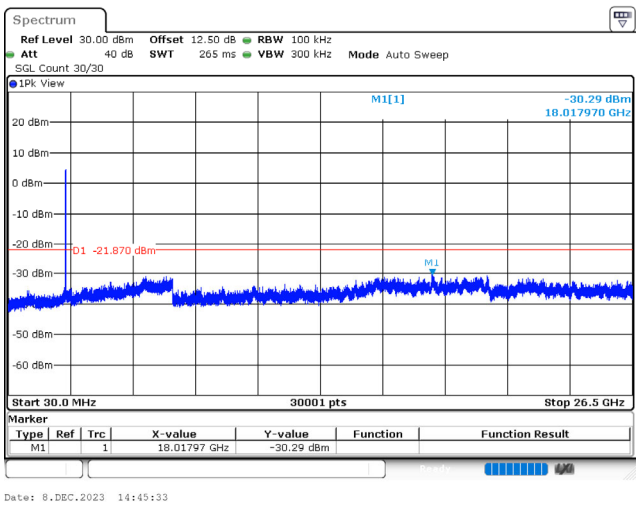

## 802.11g / Ant. 1 / 2437 MHz



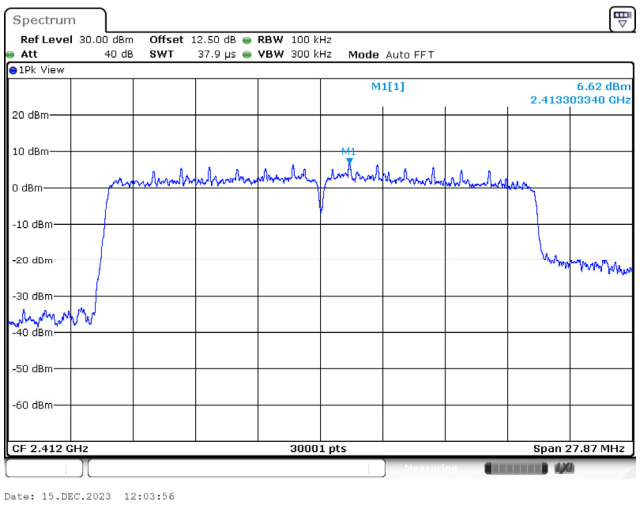



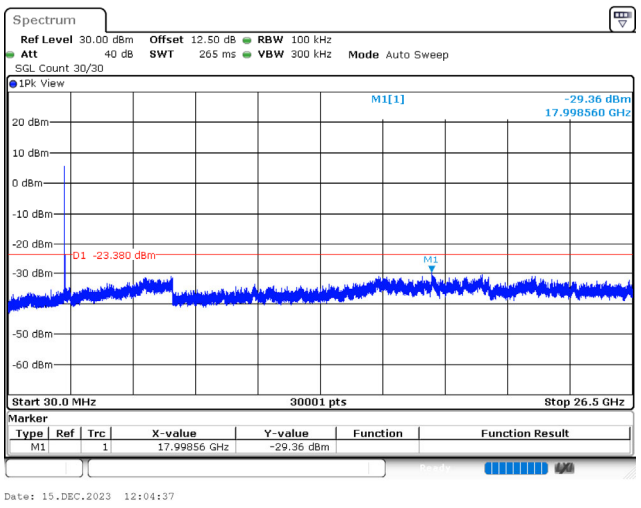

## 802.11g / Ant. 1 / 2462 MHz



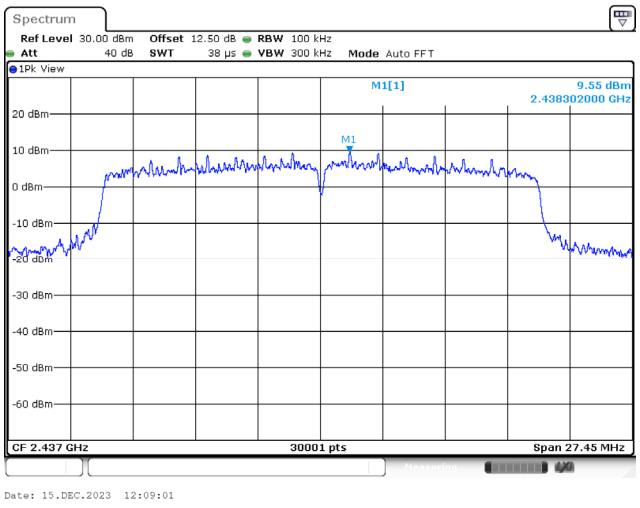



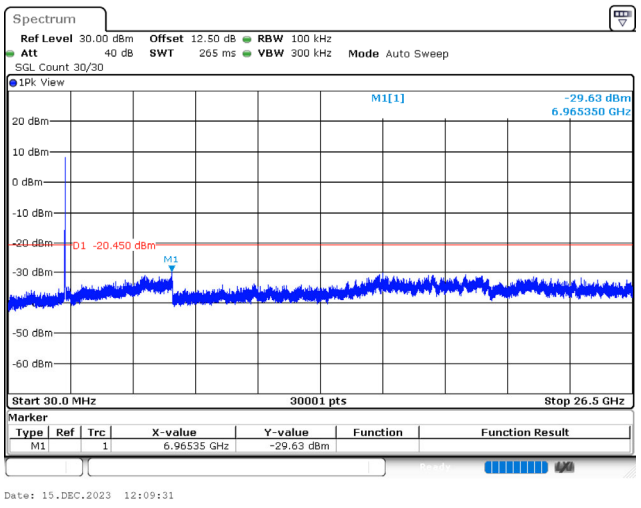
## 802.11ax (20 MHz) / Ant. 1 / 2412 MHz



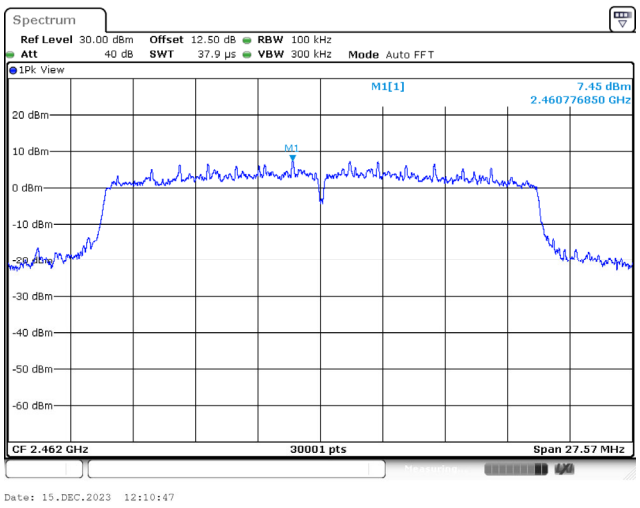



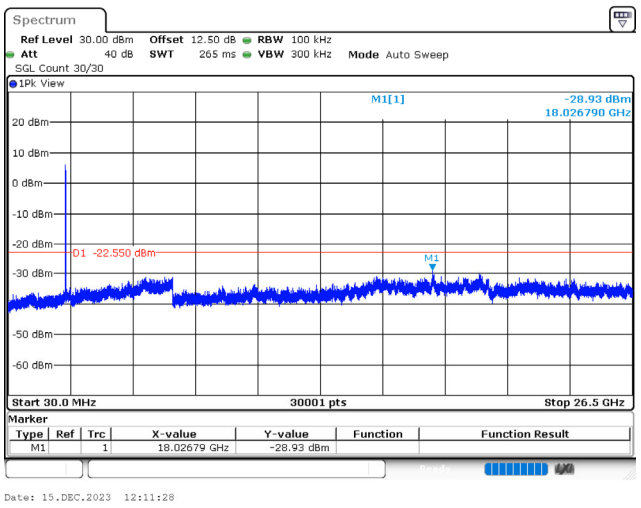

## 802.11ax (20 MHz) / Ant. 1 / 2437 MHz



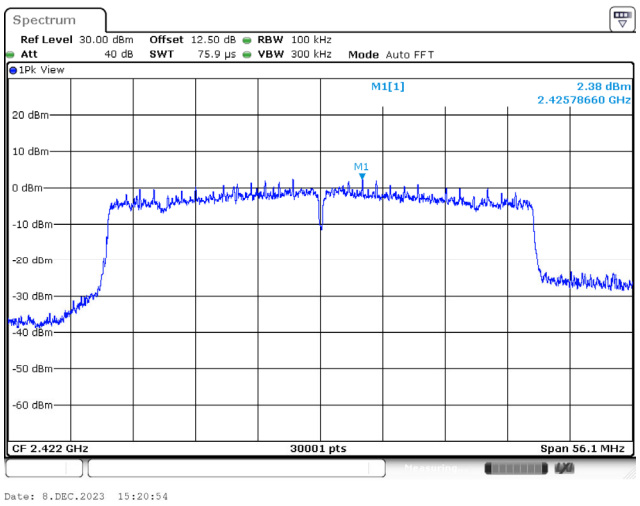



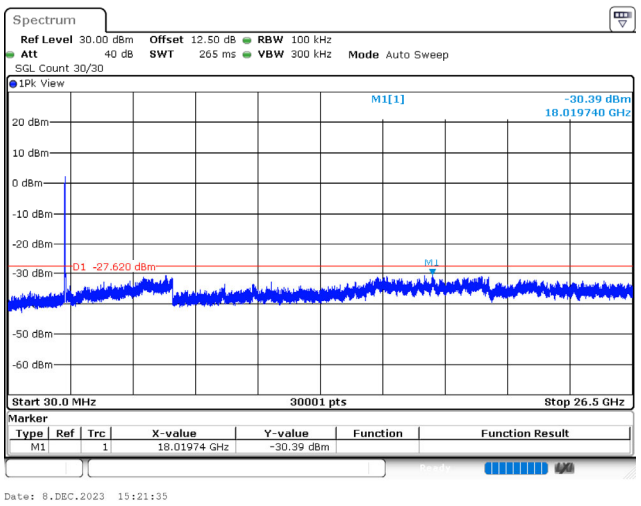

## 802.11ax (20 MHz) / Ant. 1 / 2462 MHz



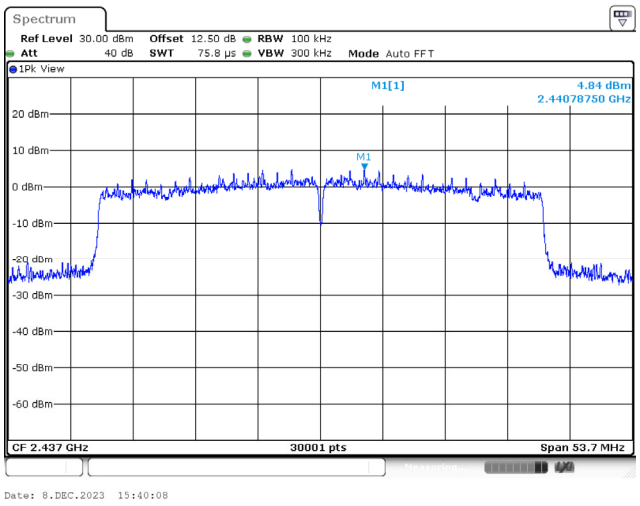



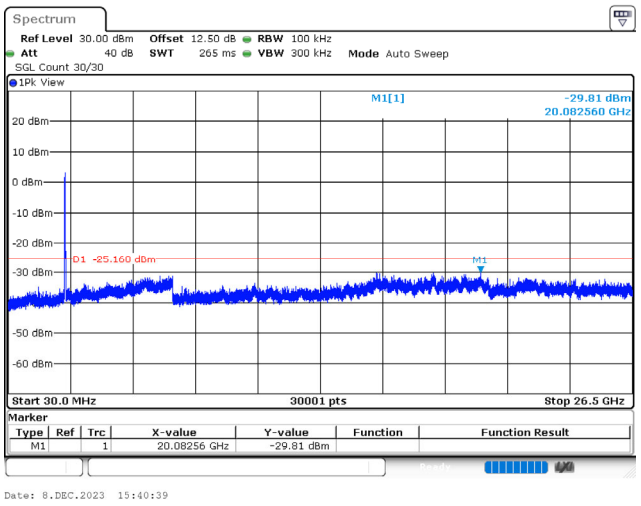
## 802.11ax (40 MHz) / Ant. 1 / 2422 MHz



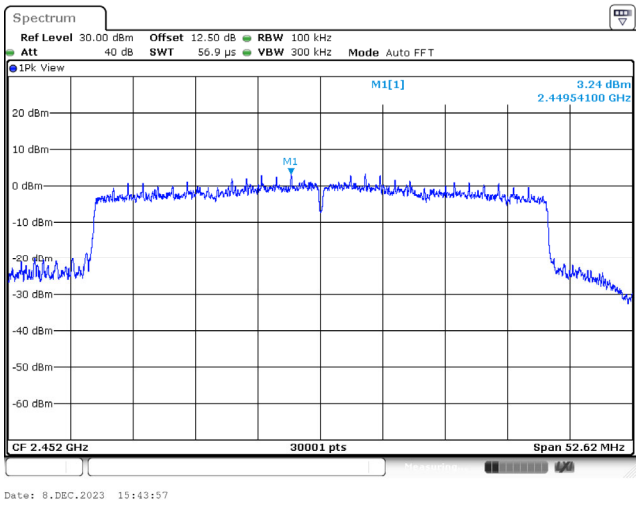



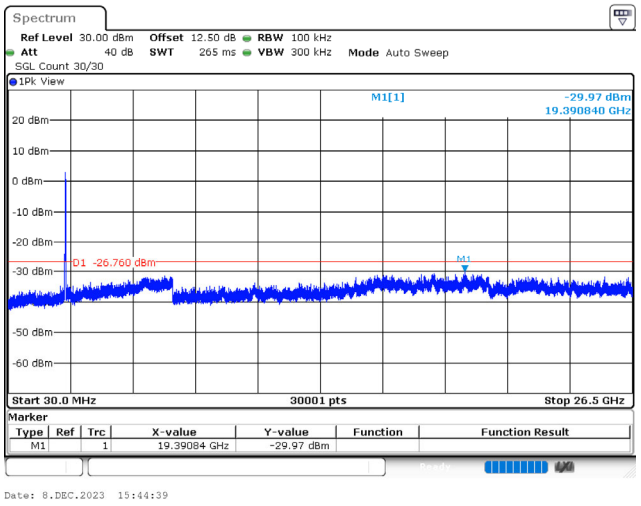

## 802.11ax (40 MHz) / Ant. 1 / 2437 MHz



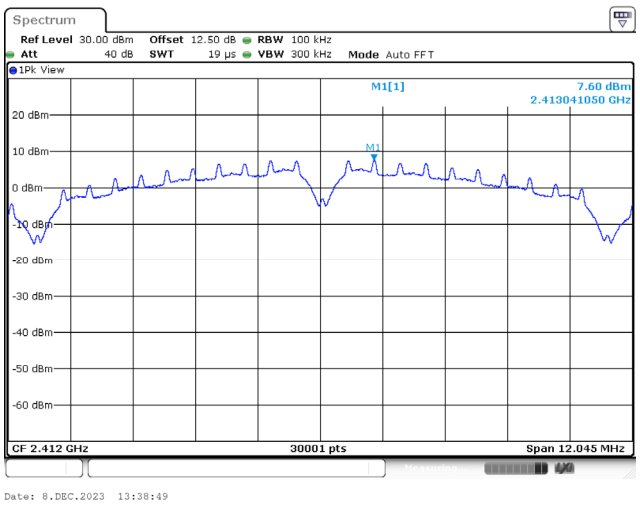



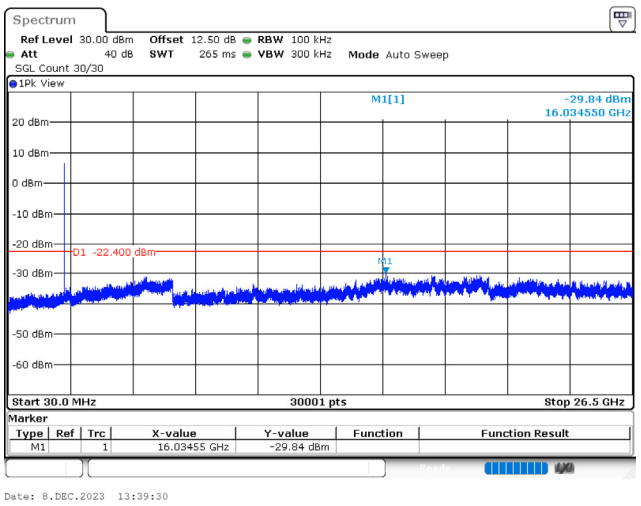

## 802.11ax (40 MHz) / Ant. 1 / 2452 MHz



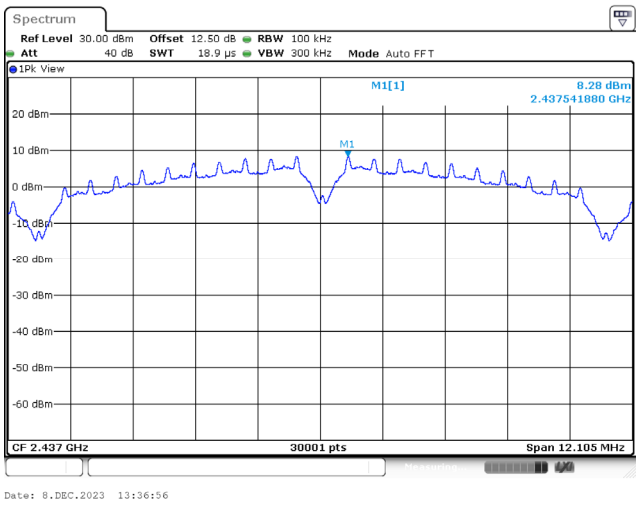



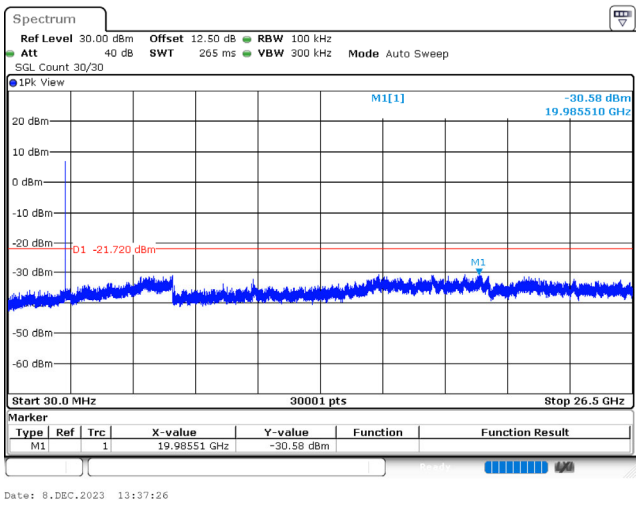
## 802.11b / Ant. 2 / 2412 MHz




## 802.11b / Ant. 2 / 2437 MHz




## 802.11b / Ant. 2 / 2462 MHz