# FCC 47 CFR PART 15 SUBPART C
# ISED RSS-247 ISSUE 3

# TEST REPORT

*For*

**Smart Cordless Floor Washer**

**FCC MODEL NUMBER: FW2B0100US**

**FCC SERIES MODEL NUMBER: FW2B******
("*" = 0-9, A-Z or blank used to denote different countries, customers, colors or minor cosmetic changes, or for indicate factory identification)**

**IC MODEL NUMBER: FW2B0100US**

**PROJECT NUMBER: 4791665986**

**REPORT NUMBER: 4791665986-2**

**FCC ID: 2AV7A-FW2B**

**IC: 26039-FW2B**

**ISSUE DATE: Mar. 07, 2025**

*Prepared for*

**Tineco Intelligent Technology Co., Ltd.**

*Prepared by*

**UL-CCIC COMPANY LIMITED**
**No. 2, Chengwan Road, Suzhou Industrial Park, Suzhou 215122, China**
**Tel: +86 512-6808 6400**
**Fax: +86 512-6808 4099**
**Website: www.ul.com**

## Revision History

| Rev. | Issue Date | Revisions | Revised By |
|---|---|---|---|
| V0 | 03/07/2025 | Initial Issue | |

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# 1. APPLICANT INFORMATION

**Applicant Information**

| | |
|---|---|
| Company Name: | Tineco Intelligent Technology Co., Ltd. |
| Address: | No. 108 Shihu Road West, Wuzhong Zone Suzhou, Jiangsu, China 215128 |

**Manufacturer Information**

| | |
|---|---|
| Company Name: | Tineco Intelligent Technology Co., Ltd. |
| Address: | No. 108 Shihu Road West, Wuzhong Zone Suzhou, Jiangsu, China 215128 |

**EUT Description**

| | |
|---|---|
| Product Name: | Smart Cordless Floor Washer |
| FCC Model Number: | FW2B0100US |
| FCC Series Model Number: | FW2B******<br>("*" = 0-9, A-Z or blank used to denote different countries, customers, colors or minor cosmetic changes, or for indicate factory identification) |
| IC Model Number: | FW2B0100US |
| Model Difference: | Their electrical circuit design, layout, components used and internal wiring are identical, only the color and model name is different. The model FW2B0100US was selected as the representative model for compliance test. |
| Sample Number: | 8058052 |
| Data of Receipt Sample: | Jan. 22, 2025 |
| Test Date: | Jan. 22, 2025~ Feb. 30, 2025 |

| APPLICABLE STANDARDS | |
|---|---|
| **STANDARD** | **TEST RESULTS** |
| FCC 47 CFR Part 15 Subpart C | PASS |
| ISED RSS-247 Issue 3 | PASS |
| ISED RSS-GEN Issue 5 | PASS |

| Summary of Test Results | | | |
|---|---|---|---|
| Clause | Test Items | FCC&ISED Rules | Test Results |
| 1 | 6 dB Bandwidth and 99% Occupied Bandwidth | FCC 15.247 (a) (2)<br>RSS-247 Clause 5.2 (a)<br>RSS-Gen Clause 6.7 | PASS |
| 2 | Conducted Power | FCC 15.247 (b) (3)<br>RSS-247 Clause 5.4 (d)<br>RSS-Gen Clause 6.12 | PASS |
| 3 | Power Spectral Density | FCC 15.247 (e)<br>RSS-247 Clause 5.2 (b) | PASS |
| 4 | Conducted Band edge And Spurious emission | FCC 15.247 (d)<br>RSS-247 Clause 5.5<br>RSS-GEN Clause 6.13 | PASS |
| 5 | Radiated Band edges and Spurious emission | FCC 15.247 (d)<br>FCC 15.209<br>FCC 15.205<br>RSS-247 Clause 5.5<br>RSS-GEN Clause 6.13<br>RSS-GEN Clause 8.9<br>RSS-GEN Clause 8.10 | PASS |
| 6 | Conducted Emission Test for AC Power Port | FCC 15.207<br>RSS-GEN Clause 8.8 | PASS |
| 7 | Antenna Requirement | FCC 15.203<br>RSS-GEN Clause 6.8 | PASS |
| Note:<br>The measurement result for the sample received is < Pass > according to < ANSI C63.10-2013, FCC 47 CFR Part 2, FCC 47 CFR Part 15C, ISED RSS-247, ISED RSS-Gen > when < Simple Acceptance > decision rule is applied. | | | |

Prepared By:

Tom Tang

Tom Tang

Reviewed By:

Emily Wang

Emily Wang

Authorized By:

Kevin Shen

Kevin Shen

# 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with KDB 558074 D01 15.247 Meas Guidance v05r02, 414788 D01 Radiated Test Site v01r01, FCC 47 CFR Part 2, FCC 47 CFR Part 15, ANSI C63.10-2013, ISED RSS-247 Issue 3 and ISED RSS-GEN Issue 5.

# 3. FACILITIES AND ACCREDITATION

| | |
|---|---|
| Accreditation Certificate | **A2LA (Certificate No.: 4829.01)**<br>**UL-CCIC COMPANY LIMITED has been assessed and proved to be in compliance with A2LA.**<br>**FCC (FCC Designation No.: CN1247)**<br>**UL-CCIC COMPANY LIMITED has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules.**<br>**IC (IC Designation No.: 25056; CAB No.: CN0073)**<br>**UL-CCIC COMPANY LIMITED has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules.** |

Note 1: All tests measurement facilities use to collect the measurement data are located at No. 2, Chengwan Road, Suzhou Industrial Park, Suzhou 215122, China.

Note 2: For below 30MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. These measurements below 30MHz had been correlated to measurements performed on an OFS.

Note 3: The test anechoic chamber in UL-CCIC COMPANY LIMITED had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.

# 4. CALIBRATION AND UNCERTAINTY

## 4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations and is traceable to recognized national standards.

## 4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

| Test Item | Uncertainty |
|---|---|
| Conduction emission | 3.1 dB |
| DTS Bandwidth | 1.9 % |
| Maximum Conducted Output Power | 1.3 dB |
| Maximum Power Spectral Density Level | 1.5 dB |
| Band-edge Compliance | 1.9% |
| Unwanted Emissions in Non-restricted Freq Bands | 9kHz-30MHz: ±0.90dB<br>30MHz-1GHz: ±1.5 dB<br>1GHz-12.75GHz: ±1.9dB<br>12.75GHz-26.5GHz: ±2.1dB |
| Radiation Emission test (include Fundamental emission)<br>(9kHz-30MHz) | 3.4dB |
| Radiation Emission test (include Fundamental emission)<br>(30MHz-1GHz) | 3.4dB |
| Radiation Emission test<br>(1GHz to 26GHz) (include Fundamental emission) | 3.5dB (1GHz-18GHz) |
| | 3.9dB (18GHz-26.5GHz) |
| Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2. | |

# 5. EQUIPMENT UNDER TEST

## 5.1. DESCRIPTION OF EUT

| | |
|---|---|
| Product Name: | Smart Cordless Floor Washer |
| Model No.: | FW2B0100US |
| Operating Frequency: | IEEE 802.11B/G/N(HT20): 2412MHz to 2462MHz |
| Type of Modulation: | IEEE for 802.11B: DSSS (CCK, DQPSK, DBPSK)<br>IEEE for 802.11G: OFDM (64QAM, 16QAM, QPSK, BPSK)<br>IEEE for 802.11N HT20: OFDM (64QAM, 16QAM, QPSK, BPSK) |
| Channels Step: | Channels with 5MHz step |
| Test software of EUT: | EspRFTestTool (manufacturer declare) |
| Antenna Type: | PCB Antenna |
| Antenna Gain: | 3.75 dBi |
| | Note: This data is provided by customer and our lab isn't responsible for this data. |

## 5.2. MAXIMUM OUTPUT POWER

| Number of Transmit Chains (NTX) | IEE Std. 802.11 | Channel Number | Max AVG Conducted Power (dBm) |
|---|---|---|---|
| 1 | IEEE 802.11B | 1-11[11] | 18.03 |
| 1 | IEEE 802.11G | 1-11[11] | 15.03 |
| 1 | IEEE 802.11N HT20 | 1-11[11] | 13.89 |

## 5.3. CHANNEL LIST

| Channel List for 802.11B/G/N(20 MHz) | | | | | | | |
|---|---|---|---|---|---|---|---|
| Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 1 | 2412 | 4 | 2427 | 7 | 2442 | 10 | 2457 |
| 2 | 2417 | 5 | 2432 | 8 | 2447 | 11 | 2462 |
| 3 | 2422 | 6 | 2437 | 9 | 2452 | | |

## 5.4. TEST CHANNEL CONFIGURATION

| Test Mode | Test Channel (MHz) |
|---|---|
| IEEE 802.11B | LCH: CH01 2412 |
| | MCH: CH06 2437 |
| | HCH: CH11 2462 |
| IEEE 802.11G | LCH: CH01 2412 |
| | MCH: CH06 2437 |
| | HCH: CH11 2462 |
| IEEE 802.11N HT20 | LCH: CH01 2412 |
| | MCH: CH06 2437 |
| | HCH: CH11 2462 |

## 5.5. THE WORSE CASE POWER SETTING PARAMETER

| The Worse Case Power Setting Parameter under 2400 ~ 2483.5MHz Band | | | | | | | |
|---|---|---|---|---|---|---|---|
| Test Software | | EspRFTestTool | | | | | |
| Modulation Mode | Transmit Antenna Number | Test Channel | | | | | |
| | | NCB: 20MHz | | | NCB: 40MHz | | |
| | | CH 1 | CH 6 | CH 11 | CH 3 | CH 6 | CH 9 |
| 802.11B | 1 | default | default | default | / | | |
| 802.11G | 1 | default | default | default | | | |
| 802.11N HT20 | 1 | default | default | default | | | |

## 5.6. DESCRIPTION OF AVAILABLE ANTENNAS

| Ant. | Frequency (MHz) | Antenna Type | Antenna Gain (dBi) |
|---|---|---|---|
| 1 | 2400-2483.5 | PCB Antenna | 3.75 |

Note: This data is provided by customer and our lab isn't responsible for this data.

| Test Mode | Transmit and Receive Mode | Description |
|---|---|---|
| IEEE 802.11B | ☒1TX, 1RX | Antenna1 can be used as transmitting/receiving antenna independently. |
| IEEE 802.11G | ☒1TX, 1RX | Antenna1 can be used as transmitting/receiving antenna independently. |
| IEEE 802.11N HT20 | ☒1TX, 1RX | Antenna1 can be used as transmitting/receiving antenna independently. |

## 5.7. THE WORSE CASE CONFIGURATIONS

For WIFI module, all the modes and data rates have been test, the worst-case data rates for every mode was recorded as below:
802.11B mode: 1 Mbps
802.11G mode: 6 Mbps
802.11N HT20 mode: MCS0

## 5.8. TEST ENVIRONMENT

| Environment Parameter | Selected Values During Tests | |
|---|---|---|
| Relative Humidity: | 55 ~ 65% | |
| Atmospheric Pressure: | 1025Pa | |
| Temperature: | TN | 23 ~ 28°C |
| Voltage: | VL | N/A |
| | VN | AC 120V |
| | VH | N/A |

Note: VL= Lower Extreme Test Voltage
VN= Nominal Voltage
VH= Upper Extreme Test Voltage
TN= Normal Temperature

## 5.9. DESCRIPTION OF TEST SETUP

**SUPPORT EQUIPMENT**

| Item | Equipment | Brand Name | Model Name | Description |
|---|---|---|---|---|
| 1 | Laptop | ThinkPad | E580 | / |

**I/O PORT**

| Cable No | Port | Connector Type | Cable Type | Cable Length(m) | Remarks |
|---|---|---|---|---|---|
| 1 | USB | USB | USB | 100cm Length | / |

**ACCESSORY**

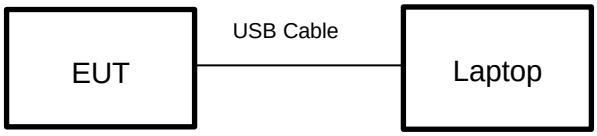
| Item | Accessory | Brand Name | Model Name | Description |
|---|---|---|---|---|
| 1 | Drying & Charging Dock | Tineco | AA2455 | Input(drying): 120V~ 60Hz 5.2A<br>Input(charging): 120V~ 60Hz 0.5A<br>Output: 30V⎓1A |

**TEST SETUP**

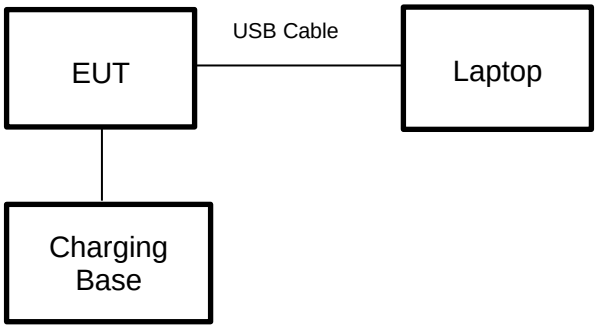
The EUT can work in an engineer mode with a software through a laptop.

**SETUP DIAGRAM FOR TESTS**

For Antenna Port test and Radiated Test:




For Conducted Emission Test:



## 5.10. MEASURING INSTRUMENT AND SOFTWARE USED

| Conducted Emissions Test (Instrument) | | | | | | | |
|---|---|---|---|---|---|---|---|
| Used | Equipment | Manufacturer | Model No. | Serial No. | Upper Last Cal. | Last Cal. | Next Cal. |
| ☑ | EMI Test Receiver | R&S | ESR3 | 126700 | 2023-11-25 | 2024-11-02 | 2025-11-01 |
| ☑ | Two-Line V-Network | R&S | ENV216 | 126701 | 2023-11-25 | 2024-11-02 | 2025-11-01 |
| **Conducted Emissions Test (Software)** | | | | | | | |
| Used | Description | | Manufacturer | | Name | Version | |
| ☑ | Software for Conducted Emissions Test | | R&S | | EMC32 | 9.25.00 | |
| **Radiated Emissions Test (Instrument)** | | | | | | | |
| Used | Equipment | Manufacturer | Model No. | Serial No. | Upper Last Cal. | Last Cal. | Next Cal. |
| ☑ | EMI test receiver | R&S | ESR7 | 222993 | 2023-04-08 | 2024-03-23 | 2025-03-22 |
| ☑ | EMI test receiver | R&S | ESR26 | 126703 | 2023-11-25 | 2024-11-02 | 2025-11-01 |
| ☑ | Spectrum Analyzer | R&S | FSV3044 | 222992 | 2023-04-08 | 2024-03-23 | 2025-03-22 |
| ☑ | Receiver Antenna (9kHz-30MHz) | Schwarzbeck | FMZB 1513 | 155456 | 2021-06-03 | 2024-05-27 | 2027-05-26 |
| ☑ | Receiver Antenna (30MHz-1GHz) | Schwarzbeck | VULB 9168 | 171952 | 2021-07-05 | 2024-07-04 | 2027-07-03 |
| ☑ | Receiver Antenna (1GHz-18GHz) | R&S | HF907 | 126705 | 2022-02-28 | 2025-02-17 | 2028-02-16 |
| ☑ | Receiver Antenna (18GHz-26.5GHz) | Schwarzbeck | BBHA9170 | 126706 | 2022-02-28 | 2025-02-17 | 2028-02-16 |
| ☑ | Pre-amplification (To 18GHz) | Tonscned | TAP01018050 | 224539 | 2023-10-10 | 2024-10-10 | 2025-10-09 |
| ☑ | Pre-amplification (To 18GHz) | R&S | SCU-18D | 134667 | 2023-11-25 | 2024-11-02 | 2025-11-01 |
| ☑ | Pre-amplification (To 26.5GHz) | R&S | SCU-26D | 135391 | 2023-11-25 | 2024-11-02 | 2025-11-01 |
| ☑ | Band Reject Filter | Wainwright | WRCGV12-2375-2400-2485-2510-40SS | 1 | 2023-12-18 | 2024-11-02 | 2025-11-01 |
| ☑ | High Pass Filter | COM-MW | ZBF13-3-18G-01 | 2 | 2023-12-18 | 2024-11-02 | 2025-11-01 |
| **Radiated Emissions Test (Software)** | | | | | | | |
| Used | Description | | Manufacturer | | Name | Version | |
| ☑ | Software for Radiated Emissions Test | | Tonscend | | JS32-RE | 5.0.0.2 | |
| **Antenna Port Test (Instrument)** | | | | | | | |
| Used | Equipment | Manufacturer | Model No. | Serial No. | Upper Last Cal. | Last Cal. | Next Cal. |
| ☑ | Spectrum Analyzer | Keysight | N9010B | 155368 | 2023-04-08 | 2024-03-23 | 2025-03-22 |
| ☑ | Power Meter | MWT | MW100-RFCB | 221694 | 2023-04-08 | 2024-03-23 | 2025-03-22 |
| ☑ | Power Meter | Anritsu | MA24406A | 12896 | 2023-04-08 | 2024-03-23 | 2025-03-22 |
| ☑ | Attenuator | PASTERNACK | PE7087-6 | 1624 | / | 2024-11-04 | 2025-11-03 |
| **Antenna Port Test (Software)** | | | | | | | |
| Used | Description | | Manufacturer | | Name | Version | |
| ☑ | Software for Antenna Port Test | | Tonscend | | JS1120-3 Test System | V3.2.22 | |

# 6. MEASUREMENT METHODS

| No. | Test Item | KDB Name | Section |
|---|---|---|---|
| 1 | 6 dB Bandwidth and 99% Occupied Bandwidth | KDB 558074 D01 15.247 Meas Guidance v05r02 | 8.2 |
| 2 | Output Power | KDB 558074 D01 15.247 Meas Guidance v05r02 | 8.3.2.3 (11.9.2.3.1 Method AVGPM of ANSI C63.10) |
| 3 | Power Spectral Density | KDB 558074 D01 15.247 Meas Guidance v05r02 | 8.4 (11.10.2 Method PKPSD of ANSI C63.10) |
| 4 | Out-of-band emissions in non-restricted bands | KDB 558074 D01 15.247 Meas Guidance v05r02 | 8.5 |
| 5 | Out-of-band emissions in restricted bands | KDB 558074 D01 15.247 Meas Guidance v05r02 | 8.6 |
| 6 | Band-edge | KDB 558074 D01 15.247 Meas Guidance v05r02 | 8.7 |
| 7 | Conducted Emission Test for AC Power Port | ANSI C63.10-2013 | 6.2 |

# 7. ANTENNA PORT TEST RESULTS

## 7.1. ON TIME AND DUTY CYCLE

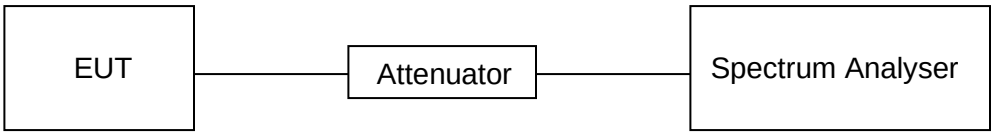
**LIMITS**

None; for reporting purposes only

**PROCEDURE**

FCC KDB 558074 Zero-Span Spectrum Analyzer Method

**TEST SETUP**




**TEST ENVIRONMENT**

| | | | |
|---|---|---|---|
| Temperature | 22°C | Relative Humidity | 56% |
| Atmosphere Pressure | 101kPa | Test Voltage | AC 120V |

**TEST RESULTS TABLE**

| Mode | On Time (msec) | Period (msec) | Duty Cycle x (Linear) | Duty Cycle (%) | Duty Cycle Correction Factor (db) | 1/T Minimum VBW (kHz) | Final VBW (kHz) |
|---|---|---|---|---|---|---|---|
| 11B | 100 | 100 | 1 | 100% | 0 | 0.01 | 0.01 |
| 11G | 100 | 100 | 1 | 100% | 0 | 0.01 | 0.01 |
| 802.11N HT20 | 100 | 100 | 1 | 100% | 0 | 0.01 | 0.01 |

Note: 1) Duty Cycle Correction Factor=10log(1/x).
2) Where: x is Duty Cycle (Linear)
3) Where: T is On Time (transmit duration)
4) If the duty cycle is above 98%, the Final VBW is 10Hz.

**TEST GRAPHS**

| 11B ON TIME AND DUTY CYCLE MID CH (WORSE CASE) |
|---|
|  |



| 11G ON TIME AND DUTY CYCLE MID CH (WORSE CASE) |
|---|
|  |

| 11N HT20 ON TIME AND DUTY CYCLE MID CH (WORSE CASE) |
|---|
|  |

## 7.2. 6 dB BANDWIDTH AND 99% OCCUPIED BANDWIDTH

**LIMITS**

| FCC Part15 (15.247), Subpart C | | | |
|---|---|---|---|
| Section | Test Item | Limit | Frequency Range (MHz) |
| FCC 47 CFR 15.247(a)(2)<br>ISED RSS-247 5.2 (a) | 6dB Bandwidth | >= 500kHz | 2400-2483.5 |
| ISED RSS-Gen Clause 6.7 | 99% Occupied Bandwidth | For reporting purposes only | 2400-2483.5 |

**TEST PROCEDURE**

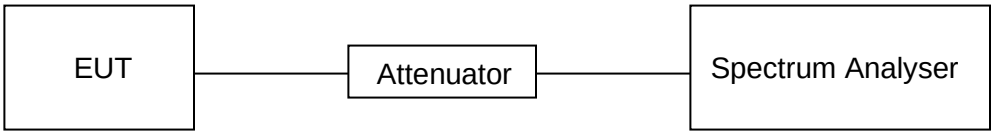
Refer to ANSI C63.10-2013 clause 11.8 for DTS bandwidth and clause 6.9 for Occupied Bandwidth.
Connect the EUT to the spectrum analyser and use the following settings:

| | |
|---|---|
| Center Frequency | The centre frequency of the channel under test |
| Detector | Peak |
| RBW | For 6 dB Bandwidth: 100 kHz<br>For 99% Occupied Bandwidth: 1% to 5% of the occupied bandwidth |
| VBW | For 6 dB Bandwidth: ≥3 × RBW<br>For 99% Occupied Bandwidth: ≥3 × RBW |
| Trace | Max hold |
| Sweep | Auto couple |

a) Use the 99% power bandwidth function of the instrument, allow the trace to stabilize and report the measured bandwidth.

b) Allow the trace to stabilize and measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

**TEST SETUP**




**TEST ENVIRONMENT**

| | | | |
|---|---|---|---|
| Temperature | 22°C | Relative Humidity | 56% |
| Atmosphere Pressure | 101kPa | Test Voltage | AC 120V |

**TEST RESULTS TABLE**

| Test Mode | Test Channel | 6dB bandwidth (MHz) | 99% bandwidth (MHz) | Result |
|---|---|---|---|---|
| 11B | LCH | 10.0547 | 12.908 | Pass |
| | MCH | 9.0587 | 12.913 | Pass |
| | HCH | 9.2280 | 12.908 | Pass |
| 11G | LCH | 16.1293 | 16.427 | Pass |
| | MCH | 16.2907 | 16.427 | Pass |
| | HCH | 16.2773 | 16.433 | Pass |
| 11N HT20 | LCH | 16.7773 | 17.293 | Pass |
| | MCH | 15.8893 | 17.287 | Pass |
| | HCH | 16.2787 | 17.289 | Pass |

## TEST GRAPHS

### 6dB Bandwdith

| Test Mode | Test Channel | Verdict |
|---|---|---|
| 11B | LCH | PASS |


| Test Mode | Test Channel | Verdict |
|---|---|---|
| 11B | MCH | PASS |

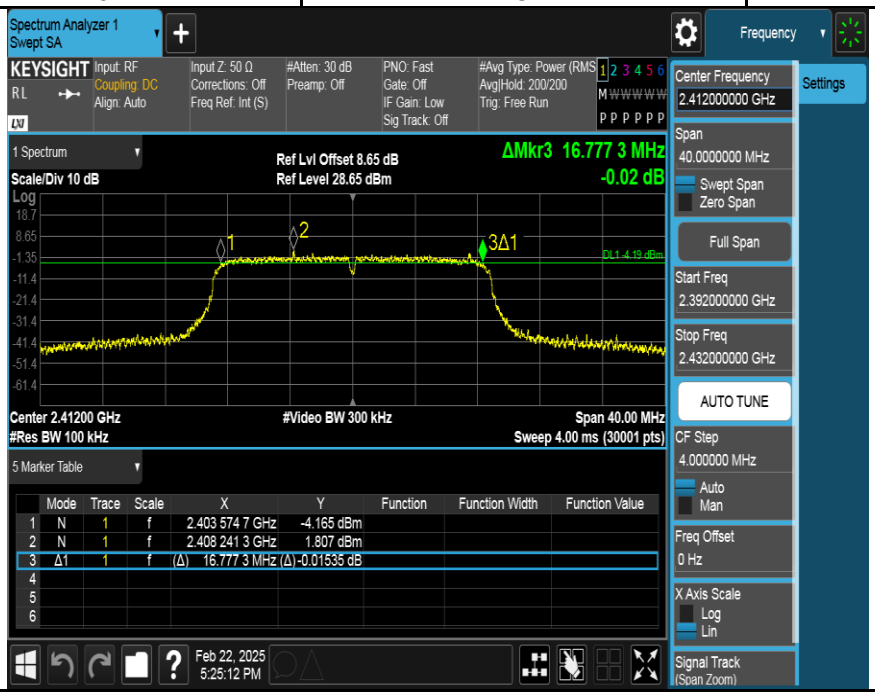
| Test Mode | Test Channel | Verdict |
|---|---|---|
| 11B | HCH | PASS |


| Test Mode | Test Channel | Verdict |
|---|---|---|
| 11G | LCH | PASS |

| Test Mode | Test Channel | Verdict |
|---|---|---|
| 11G | MCH | PASS |

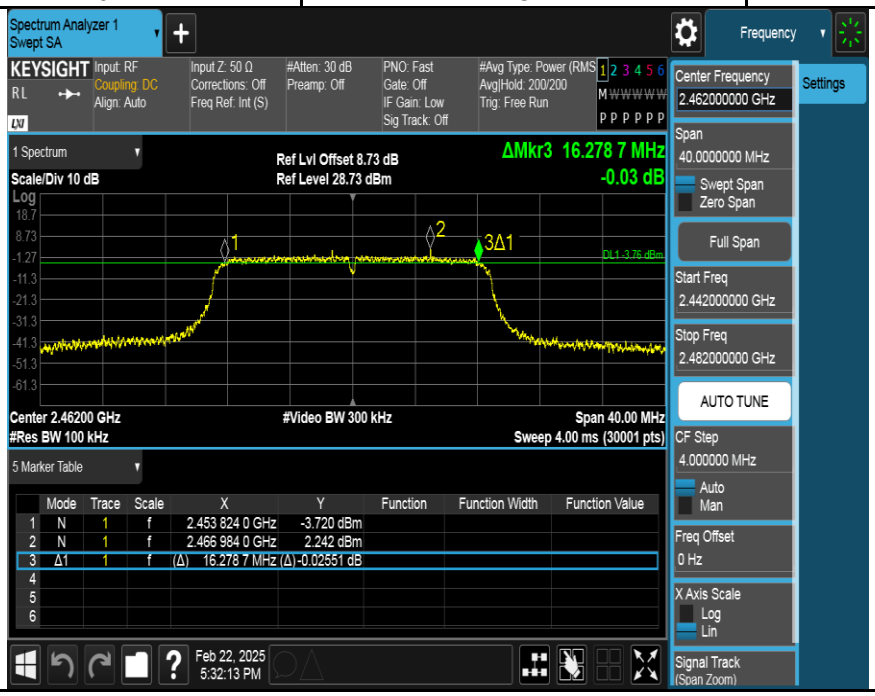

| Test Mode | Test Channel | Verdict |
|---|---|---|
| 11G | HCH | PASS |

| Test Mode | Test Channel | Verdict |
|---|---|---|
| 11N HT20 | LCH | PASS |



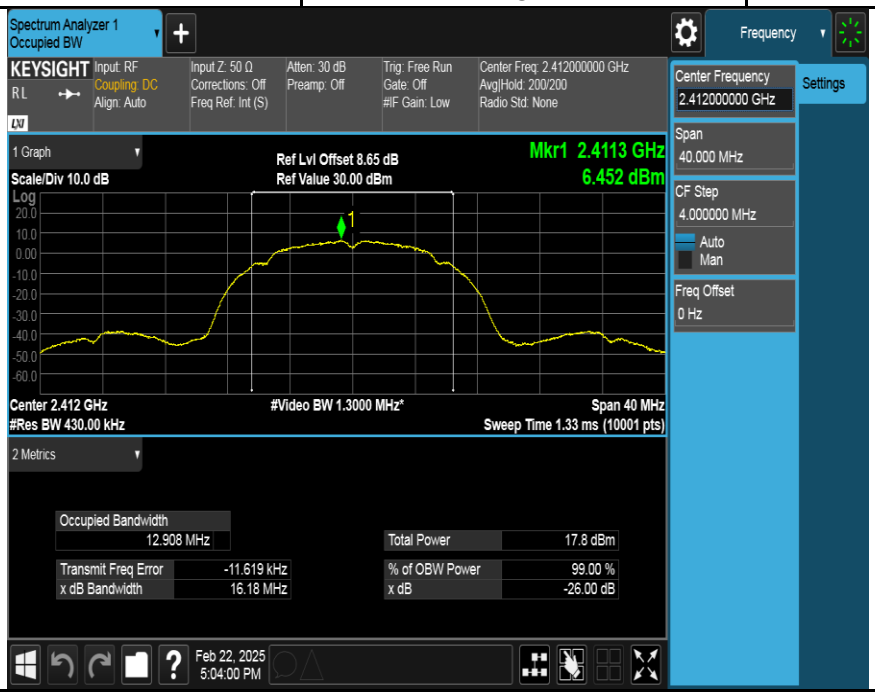

| Test Mode | Test Channel | Verdict |
|---|---|---|
| 11N HT20 | MCH | PASS |

| Test Mode | Test Channel | Verdict |
|---|---|---|
| 11N HT20 | HCH | PASS |

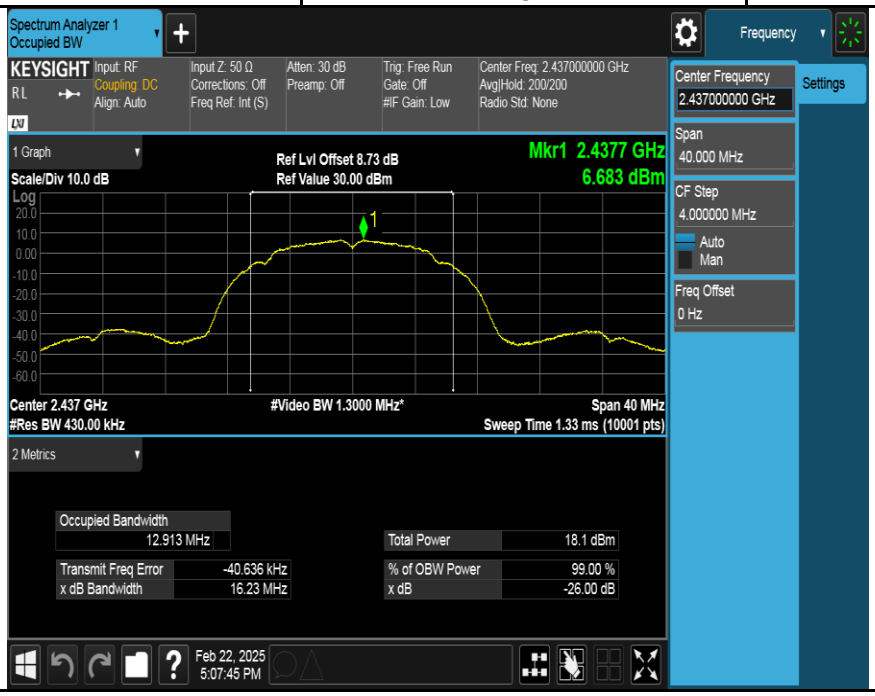


**99% Bandwidth**

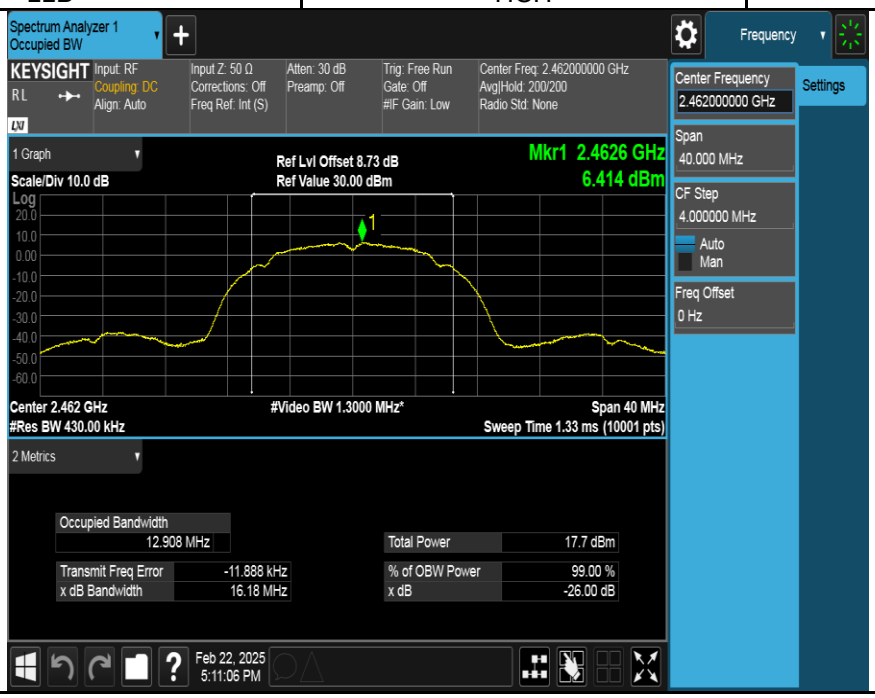
| Test Mode | Test Channel | Verdict |
|---|---|---|
| 11B | LCH | PASS |



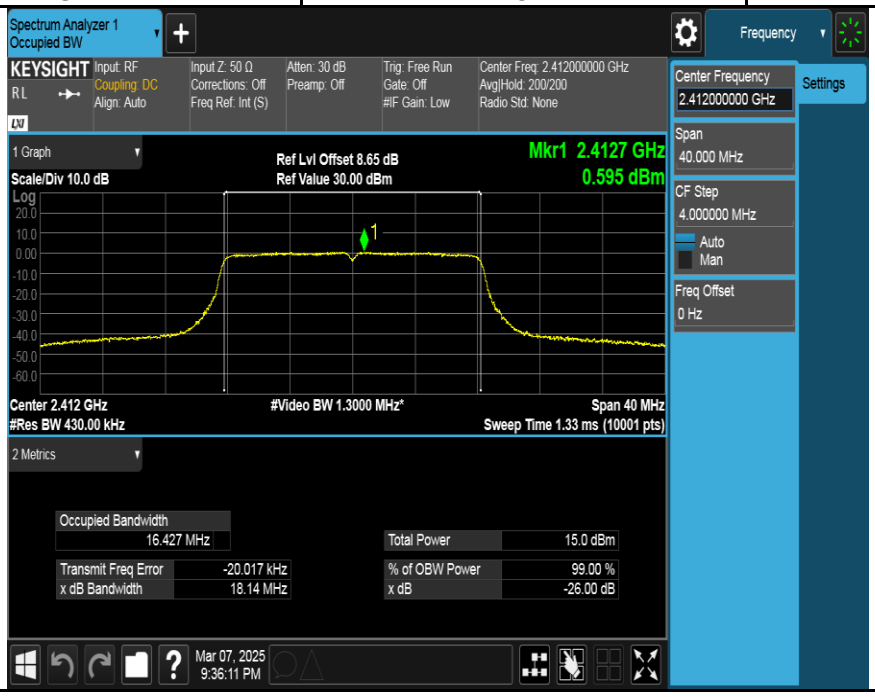

| Test Mode | Test Channel | Verdict |
|---|---|---|
| 11B | MCH | PASS |



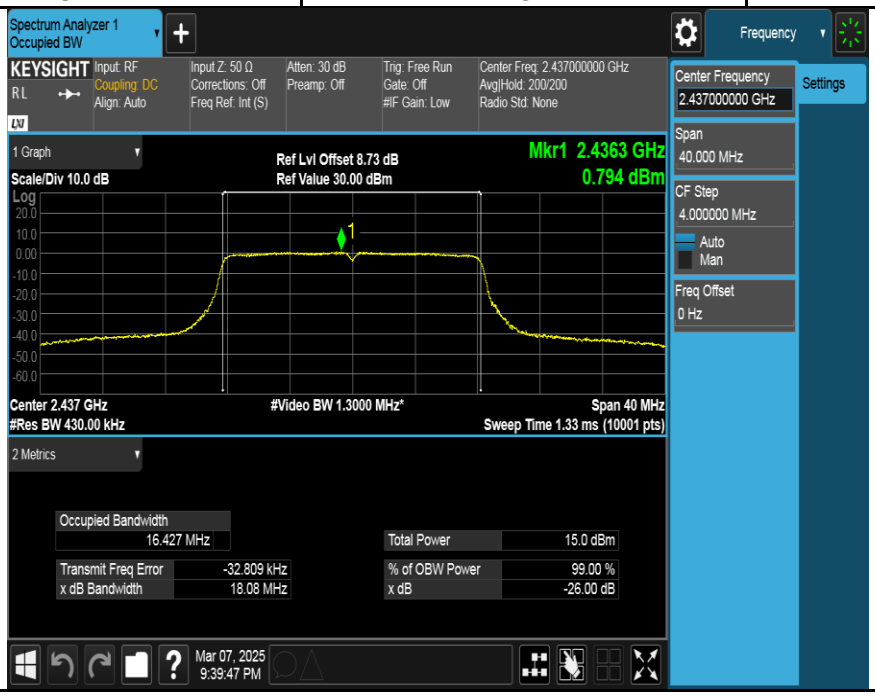
| Test Mode | Test Channel | Verdict |
|---|---|---|
| 11B | HCH | PASS |



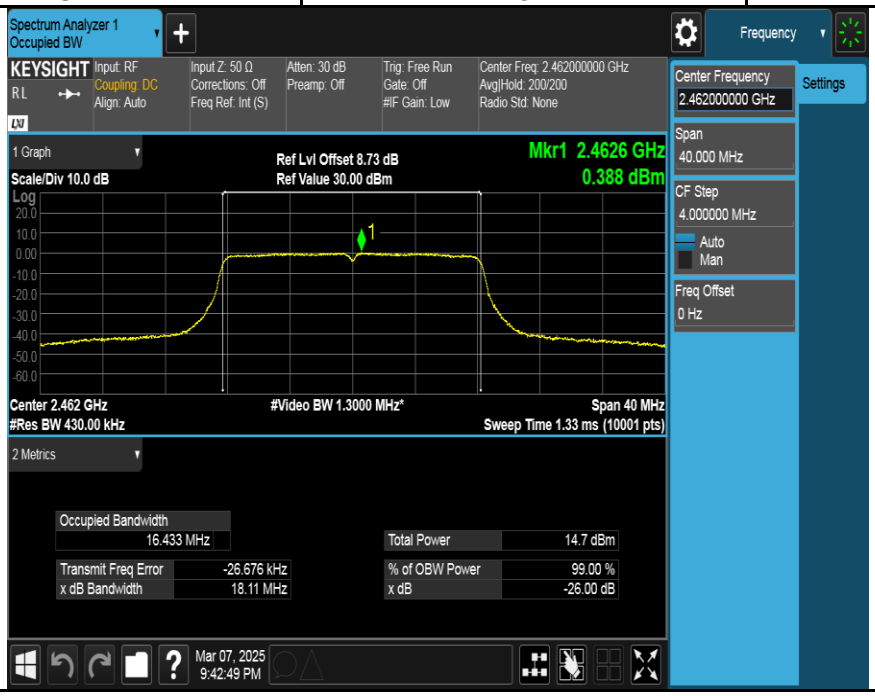

| Test Mode | Test Channel | Verdict |
|---|---|---|
| 11G | LCH | PASS |



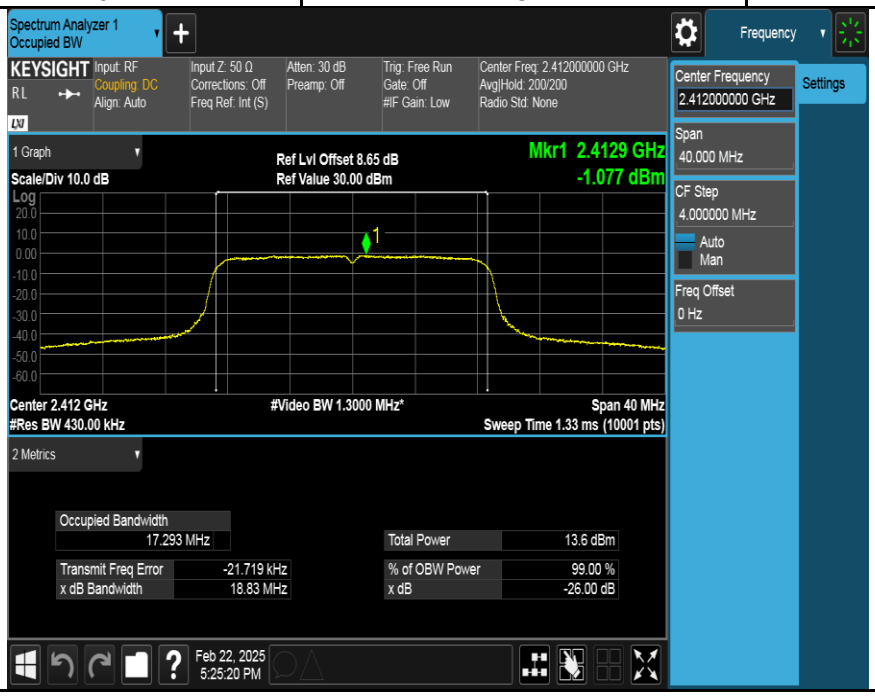
| Test Mode | Test Channel | Verdict |
|---|---|---|
| 11G | MCH | PASS |



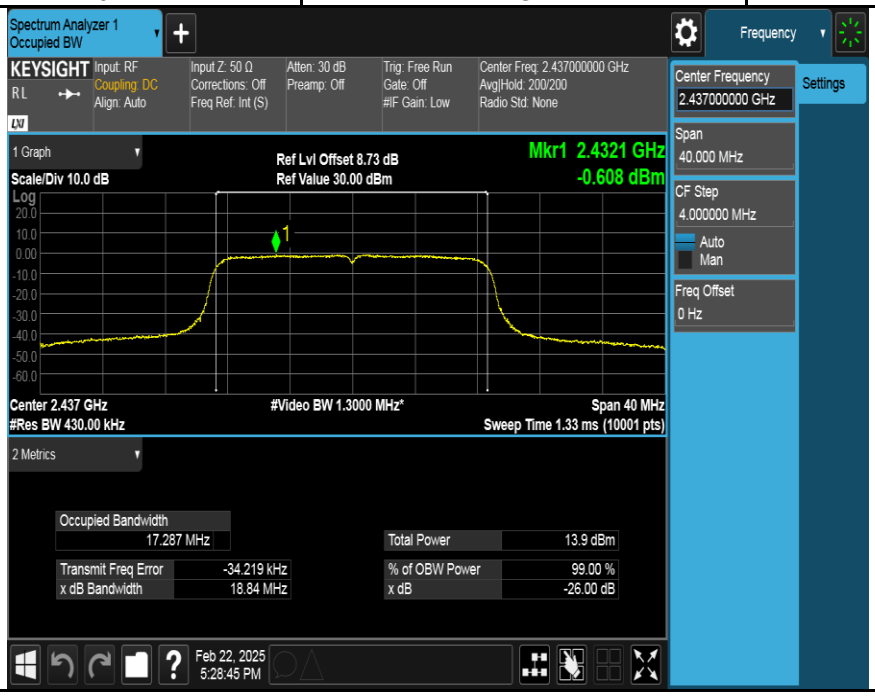

| Test Mode | Test Channel | Verdict |
|---|---|---|
| 11G | HCH | PASS |



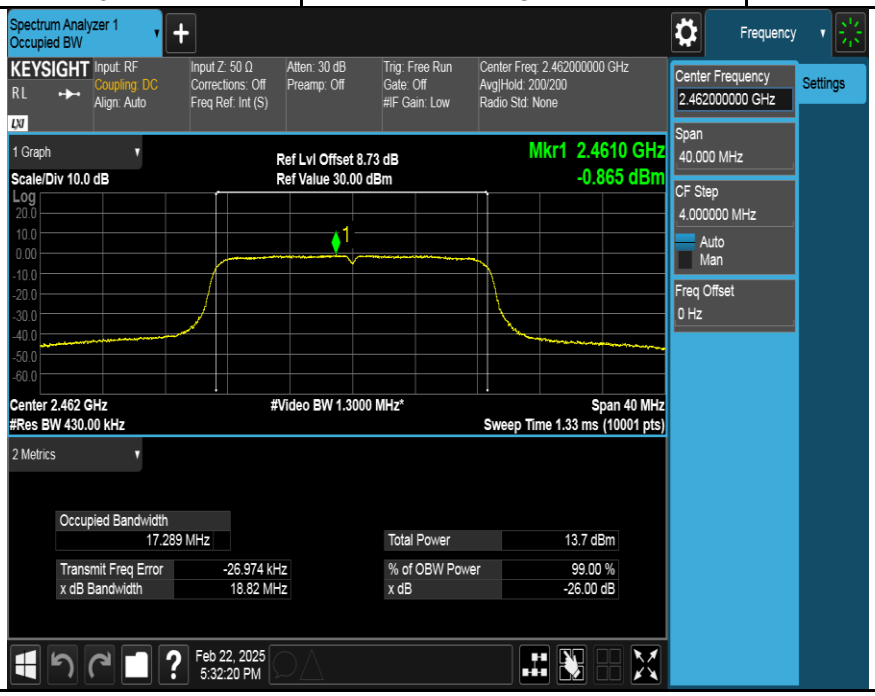
| Test Mode | Test Channel | Verdict |
|---|---|---|
| 11N HT20 | LCH | PASS |




| Test Mode | Test Channel | Verdict |
|---|---|---|
| 11N HT20 | MCH | PASS |



| Test Mode | Test Channel | Verdict |
|---|---|---|
| 11N HT20 | HCH | PASS |



## 7.3. CONDUCTED OUTPUT POWER

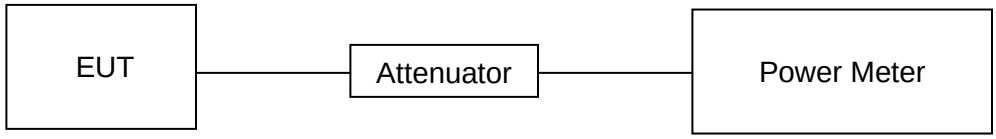
**LIMITS**

| FCC Part15 (15.247), Subpart C | | | |
|---|---|---|---|
| Section | Test Item | Limit | Frequency Range (MHz) |
| FCC 15.247(b)(3)<br>ISED RSS-247 5.4 (d)<br>RSS-Gen Clause 6.12 | Output Power | 1 watt or 30dBm | 2400-2483.5 |

**TEST PROCEDURE**

Place the EUT on the table and set it in the transmitting mode.
Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the Power sensor.
Measure the power of each channel.
AVG Detector used for AVG result.

**TEST SETUP**



**TEST ENVIRONMENT**

| | | | |
|---|---|---|---|
| Temperature | 22°C | Relative Humidity | 56% |
| Atmosphere Pressure | 101kPa | Test Voltage | AC 120V |

**TEST RESULTS TABLE**

| Test Mode | Test Channel | Measurement Output Power (AV) | 10log(1/x) Factor | Maximum Conducted Output Power (AV) | LIMIT |
|---|---|---|---|---|---|
| | | dBm | dB | dBm | dBm |
| 11B | LCH | 17.76 | 0 | 17.76 | 30 |
| | MCH | 18.03 | 0 | 18.03 | 30 |
| | HCH | 17.70 | 0 | 17.70 | 30 |
| 11G | LCH | 15.03 | 0 | 15.03 | 30 |
| | MCH | 15.03 | 0 | 15.03 | 30 |
| | HCH | 14.70 | 0 | 14.70 | 30 |
| 11N HT20 | LCH | 13.57 | 0 | 13.57 | 30 |
| | MCH | 13.89 | 0 | 13.89 | 30 |
| | HCH | 13.67 | 0 | 13.67 | 30 |

## 7.4. POWER SPECTRAL DENSITY

**LIMITS**

| FCC Part15 (15.247), Subpart C | | | |
|---|---|---|---|
| Section | Test Item | Limit | Frequency Range (MHz) |
| FCC §15.247 (e)<br>ISED RSS-247 5.2 (b) | Power Spectral Density | 8 dBm/3 kHz | 2400-2483.5 |

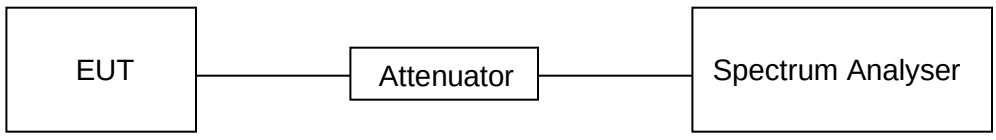
**TEST PROCEDURE**

Refer to FCC KDB 558074, connect the UUT to the spectrum analyser and use the following settings:

| | |
|---|---|
| Center Frequency | The centre frequency of the channel under test |
| Detector | Peak |
| RBW | 3 kHz ≤ RBW ≤100 kHz |
| VBW | ≥3 × RBW |
| Span | 1.5 x DTS bandwidth |
| Trace | Max hold |
| Sweep time | Auto couple. |

Allow trace to fully stabilize and use the peak marker function to determine the maximum amplitude level within the RBW.
If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

**TEST SETUP**



**TEST ENVIRONMENT**

| | | | |
|---|---|---|---|
| Temperature | 22°C | Relative Humidity | 56% |
| Atmosphere Pressure | 101kPa | Test Voltage | AC 120V |

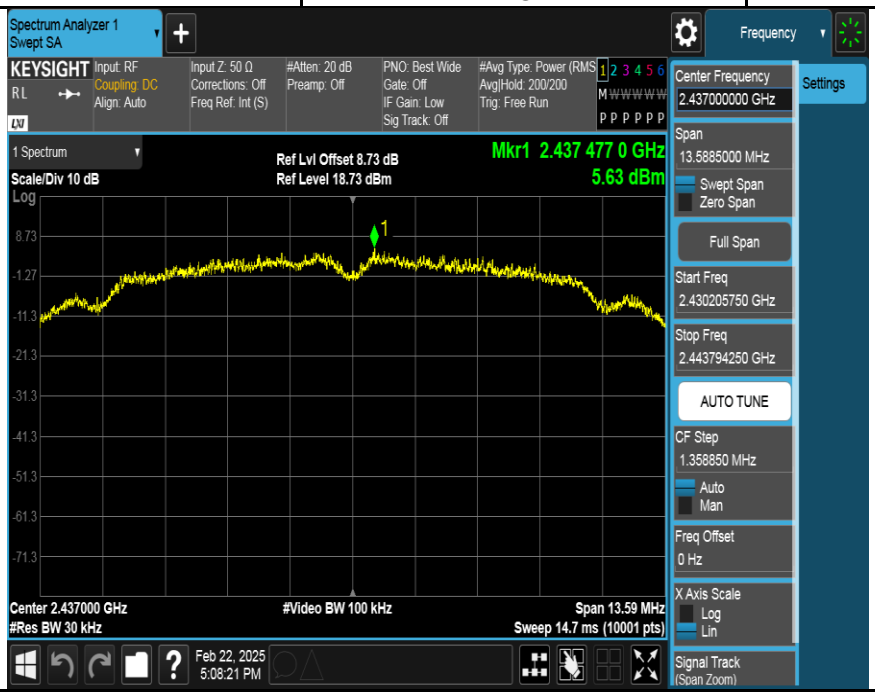
**TEST RESULTS TABLE**

| Test Mode | Test Channel | Maximum Peak power spectral density (dBm/30kHz) | Result |
|---|---|---|---|
| 11B | LCH | 5.72 | Pass |
| | MCH | 5.63 | Pass |
| | HCH | 5.86 | Pass |
| 11G | LCH | -0.56 | Pass |
| | MCH | -0.59 | Pass |
| | HCH | -0.88 | Pass |
| 11N HT20 | LCH | -2.41 | Pass |
| | MCH | -2.08 | Pass |
| | HCH | -2.31 | Pass |

## TEST GRAPHS

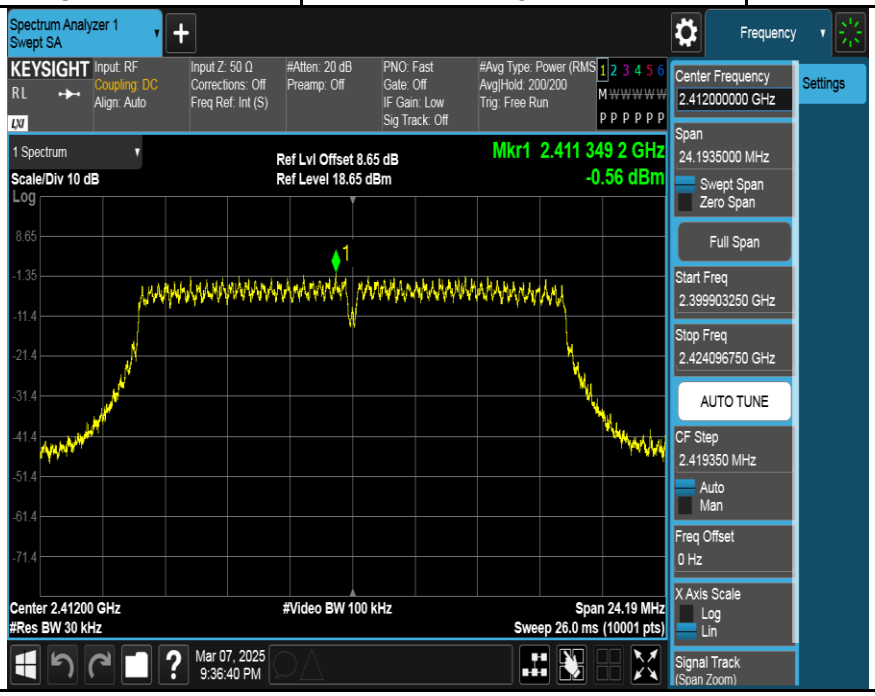
| Test Mode | Test Channel | Verdict |
|---|---|---|
| 11B | LCH | PASS |


| Test Mode | Test Channel | Verdict |
|---|---|---|
| 11B | MCH | PASS |

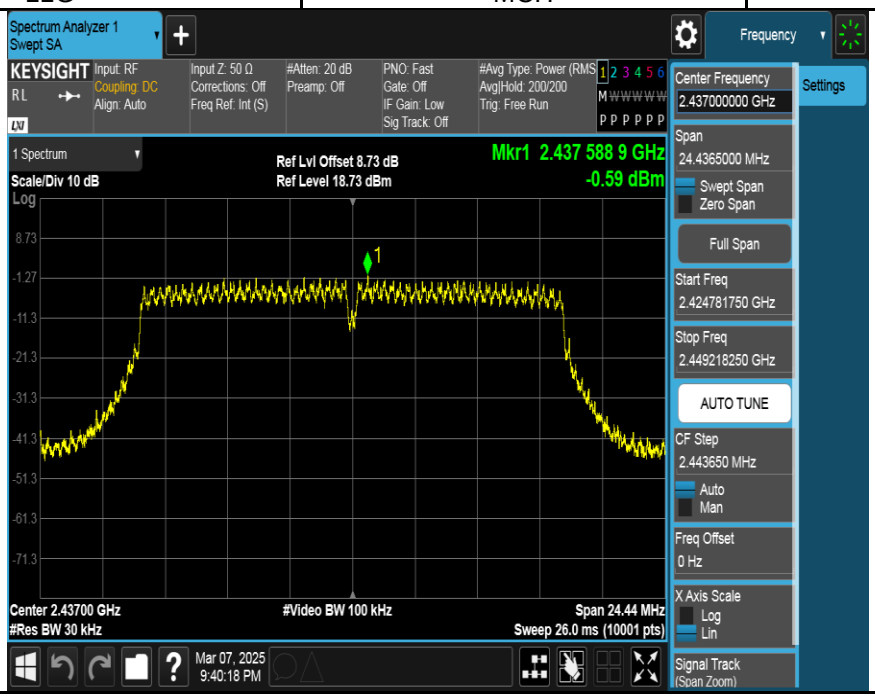


| Test Mode | Test Channel | Verdict |
|---|---|---|
| 11B | HCH | PASS |

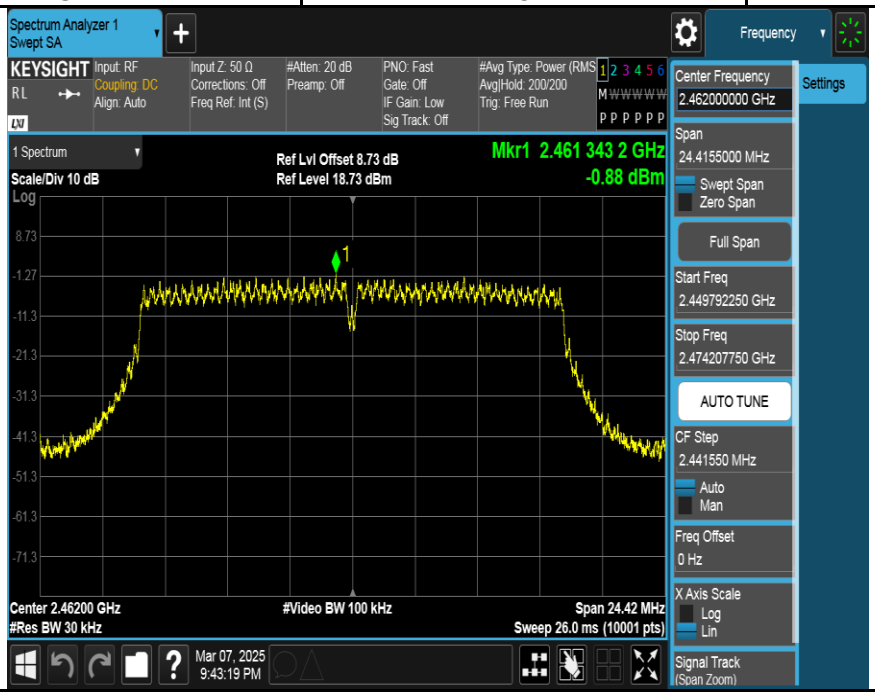

| Test Mode | Test Channel | Verdict |
|---|---|---|
| 11G | LCH | PASS |



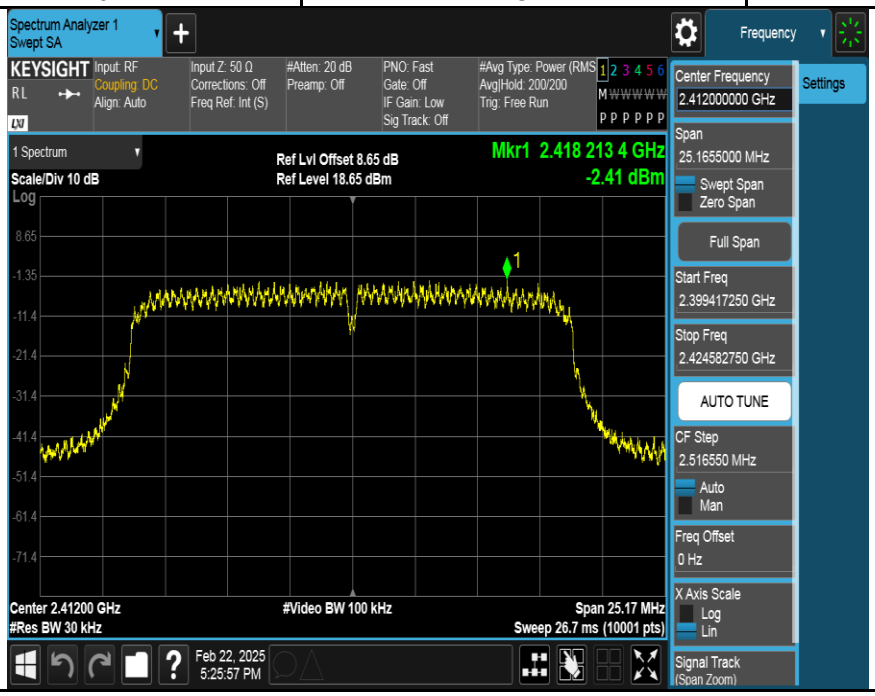
| Test Mode | Test Channel | Verdict |
|---|---|---|
| 11G | MCH | PASS |



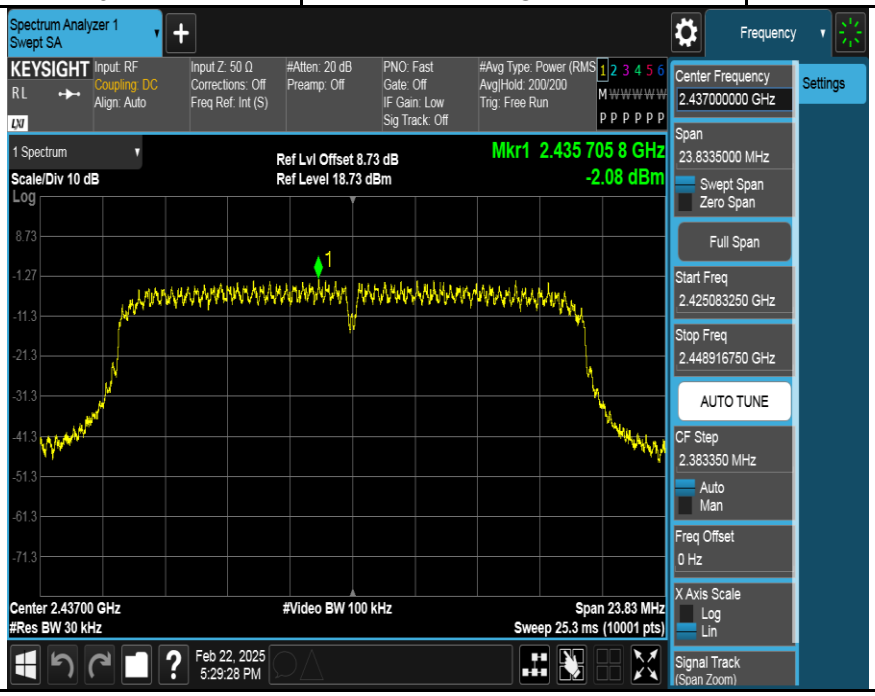

| Test Mode | Test Channel | Verdict |
|---|---|---|
| 11G | HCH | PASS |



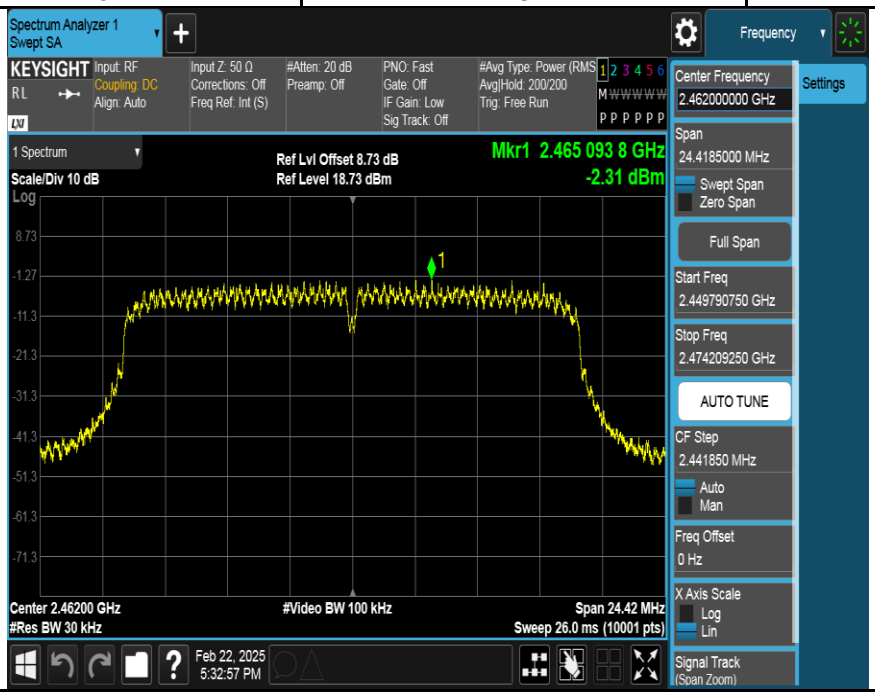
| Test Mode | Test Channel | Verdict |
|---|---|---|
| 11N HT20 | LCH | PASS |




| Test Mode | Test Channel | Verdict |
|---|---|---|
| 11N HT20 | MCH | PASS |



| Test Mode | Test Channel | Verdict |
|---|---|---|
| 11N HT20 | HCH | PASS |



## 7.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

**LIMITS**

| FCC Part15 (15.247), Subpart C | | |
|---|---|---|
| Section | Test Item | Limit |
| FCC §15.247 (d)<br>RSS-247 Clause 5.5<br>RSS-GEN Clause 6.13 | Conducted Bandedge and Spurious Emissions | 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power |

**TEST PROCEDURE**

Refer to FCC KDB 558074, connect the UUT to the spectrum analyser and use the following settings:

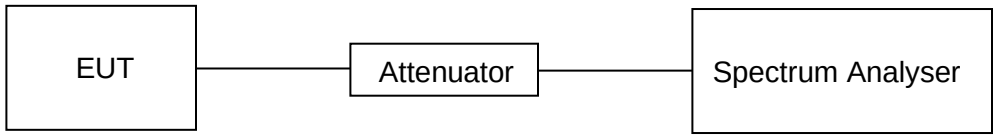
| | |
|---|---|
| Center Frequency | The centre frequency of the channel under test |
| Detector | Peak |
| RBW | 100K |
| VBW | ≥3 × RBW |
| Span | 1.5 x DTS bandwidth |
| Trace | Max hold |
| Sweep time | Auto couple. |

Use the peak marker function to determine the maximum PSD level.

| | |
|---|---|
| Span | Set the center frequency and span to encompass frequency range to be measured |
| Detector | Peak |
| RBW | 100K |
| VBW | ≥3 × RBW |
| measurement points | ≥span/RBW |
| Trace | Max hold |
| Sweep time | Auto couple. |

Use the peak marker function to determine the maximum amplitude level**.**

**TEST SETUP**



**TEST ENVIRONMENT**

| | | | |
|---|---|---|---|
| Temperature | 22°C | Relative Humidity | 56% |
| Atmosphere Pressure | 101kPa | Test Voltage | AC 120V |

**PART 1: REFERENCE LEVEL MEASUREMENT**

**TEST RESULTS TABLE**

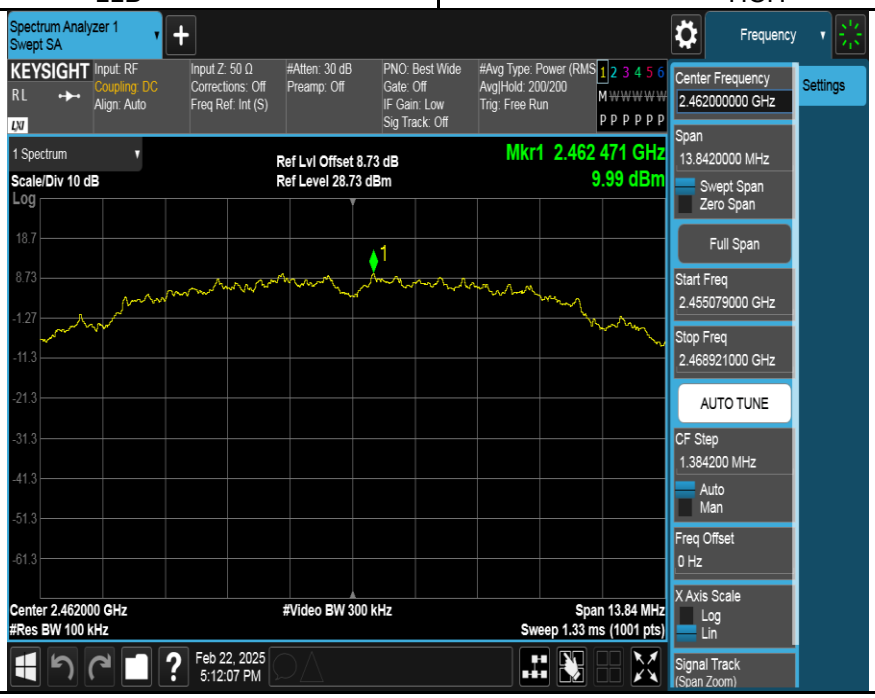
| Test Mode | Test Channel | Result[dBm] |
|---|---|---|
| 11B | LCH | 10.05 |
| | MCH | 10.19 |
| | HCH | 9.99 |
| 11G | LCH | 3.60 |
| | MCH | 3.73 |
| | HCH | 3.81 |
| 11N HT20 | LCH | 2.55 |
| | MCH | 3.40 |
| | HCH | 3.07 |

## TEST GRAPHS

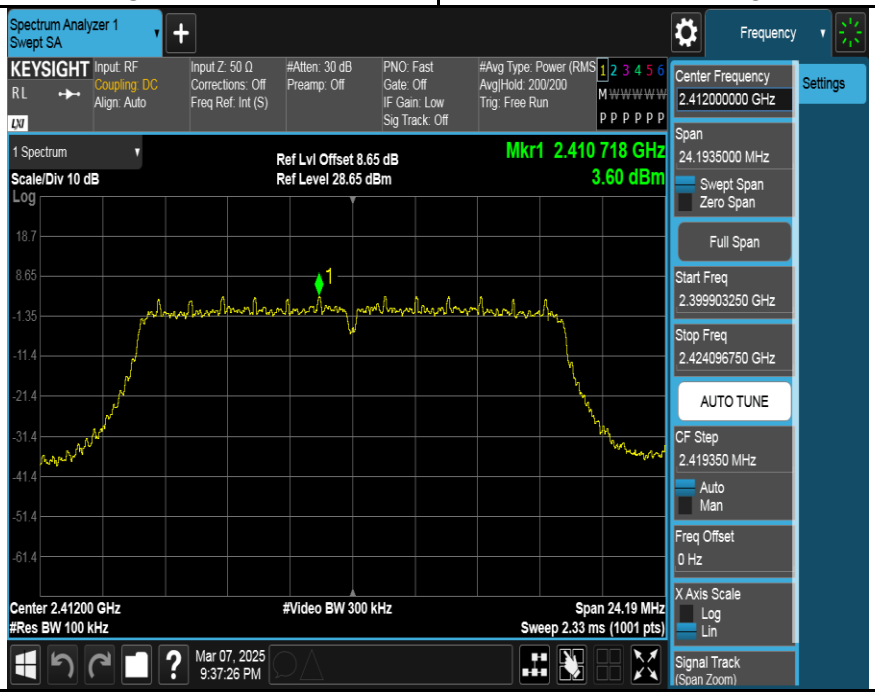
| Test Mode | Channel |
|---|---|
| 11B | LCH |


| Test Mode | Channel |
|---|---|
| 11B | MCH |

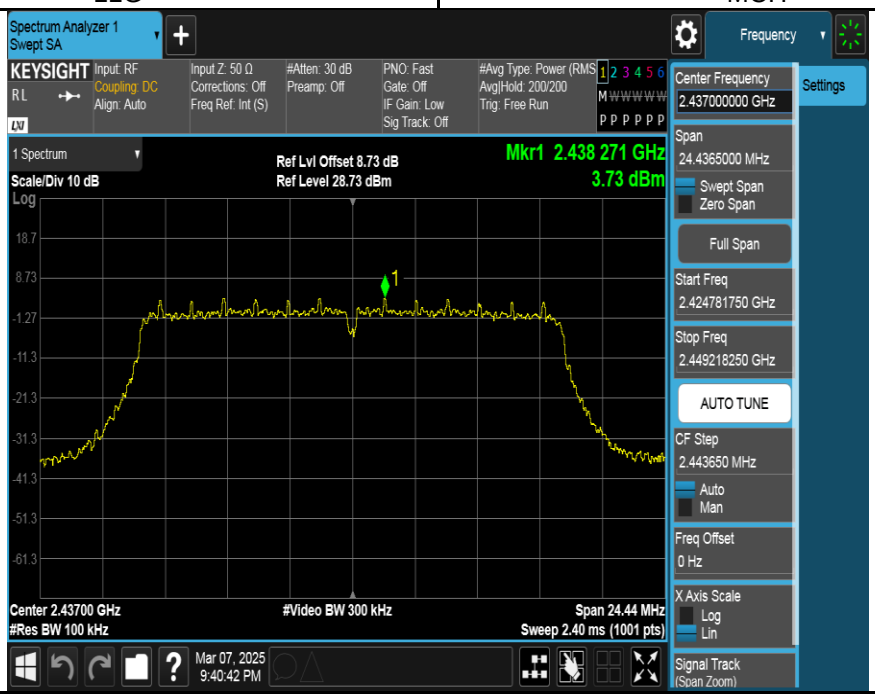
| Test Mode | Channel |
|---|---|
| 11B | HCH |



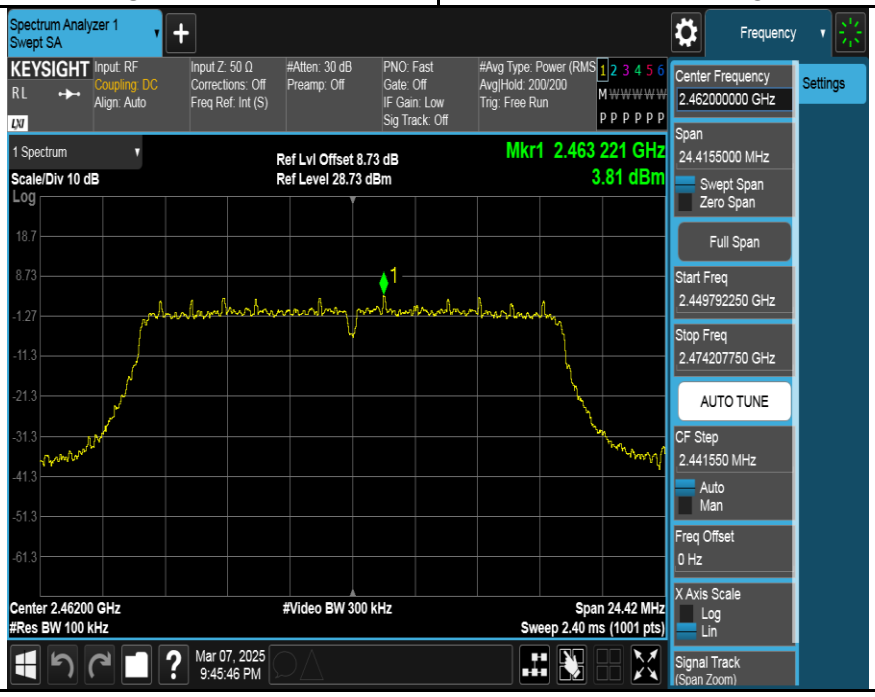

| Test Mode | Channel |
|---|---|
| 11G | LCH |



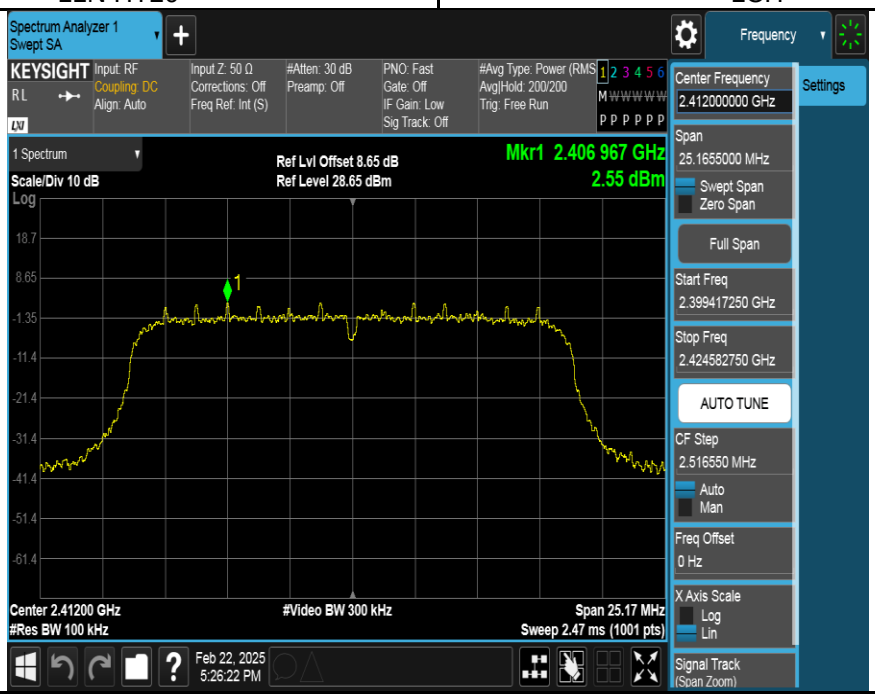
| Test Mode | Channel |
|---|---|
| 11G | MCH |




| Test Mode | Channel |
|---|---|
| 11G | HCH |



| Test Mode | Channel |
|---|---|
| 11N HT20 | LCH |




| Test Mode | Channel |
|---|---|
| 11N HT20 | MCH |

| Test Mode | Channel |
|---|---|
| 11N HT20 | HCH |

**PART 2: CONDUCTED BANDEDGE**

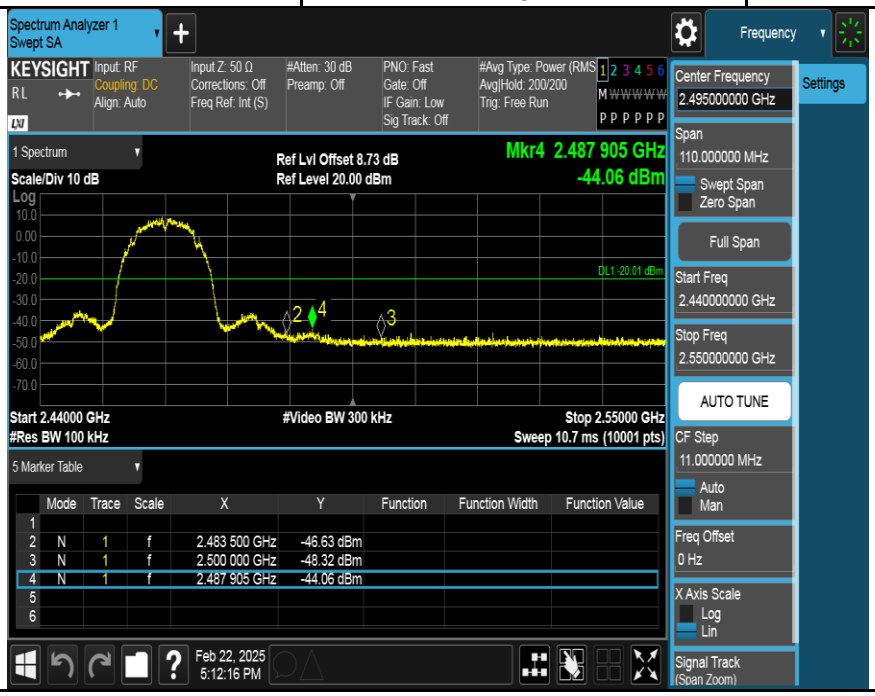
**TEST RESULTS TABLE**

| Test Mode | Test Channel | Result | Verdict |
|---|---|---|---|
| 11B | LCH | Refer to the Test Graph | PASS |
| | HCH | Refer to the Test Graph | PASS |
| 11G | LCH | Refer to the Test Graph | PASS |
| | HCH | Refer to the Test Graph | PASS |
| 11N HT20 | LCH | Refer to the Test Graph | PASS |
| | HCH | Refer to the Test Graph | PASS |

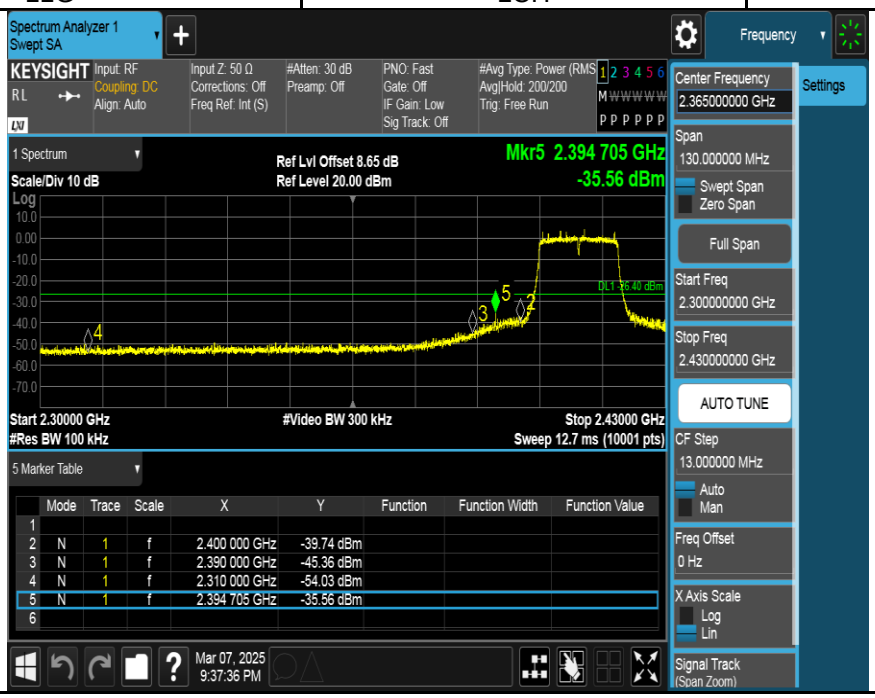
## TEST GRAPHS

| Test Mode | Test Channel | Verdict |
|---|---|---|
| 11B | LCH | PASS |

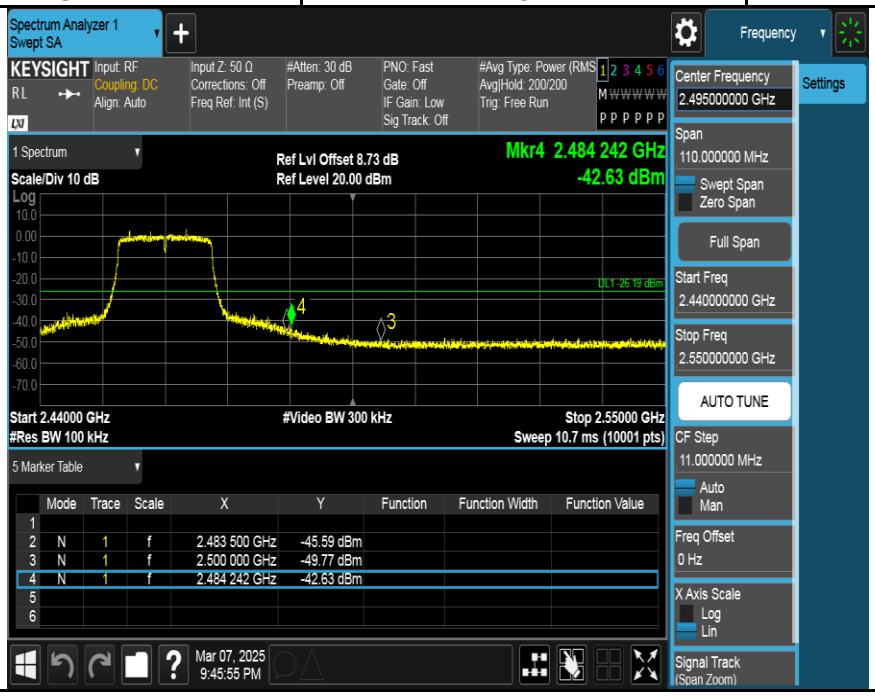

| Test Mode | Test Channel | Verdict |
|---|---|---|
| 11B | HCH | PASS |



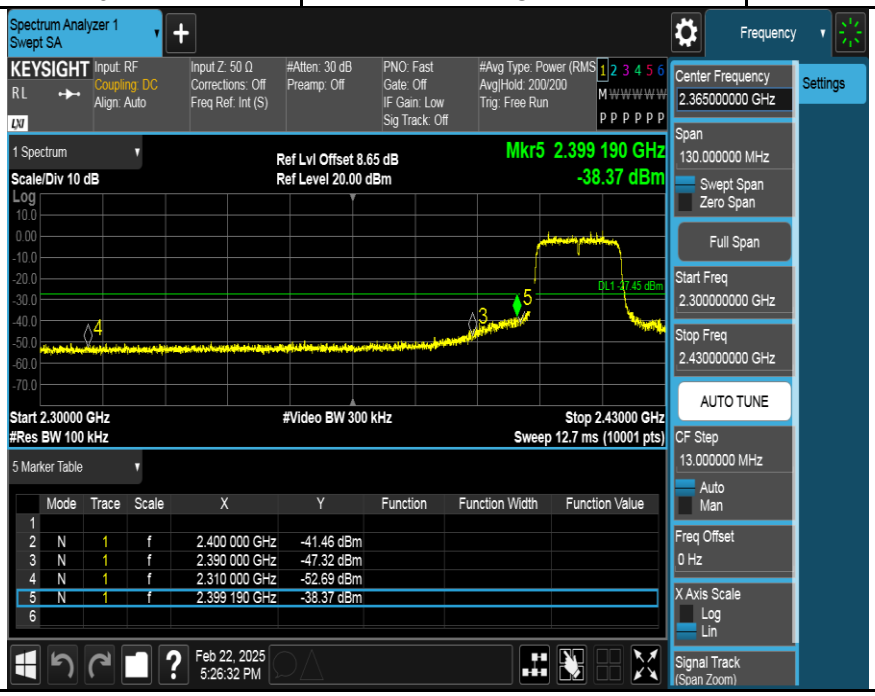
| Test Mode | Test Channel | Verdict |
|---|---|---|
| 11G | LCH | PASS |



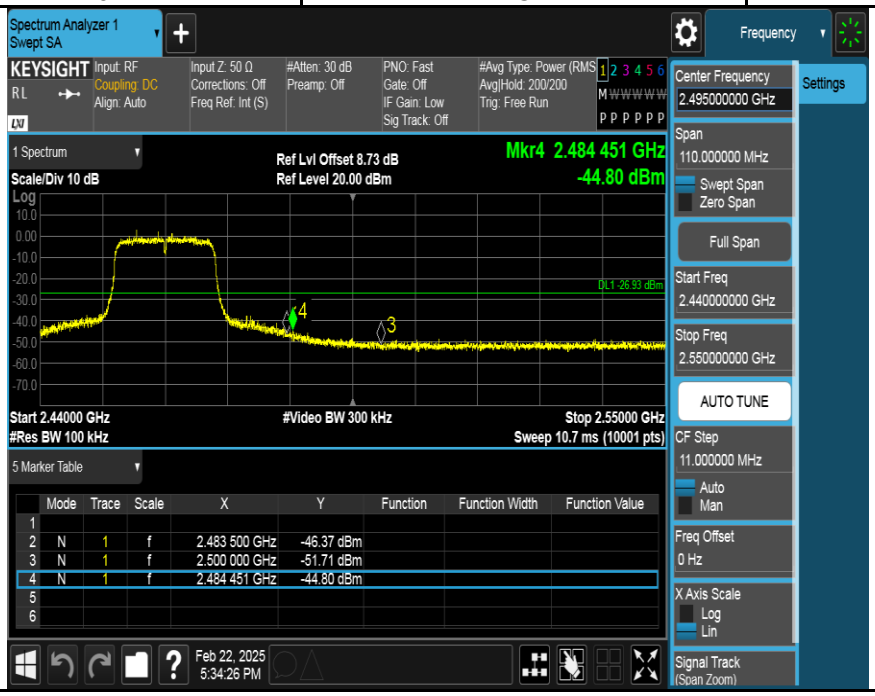

| Test Mode | Test Channel | Verdict |
|---|---|---|
| 11G | HCH | PASS |



| Test Mode | Test Channel | Verdict |
|---|---|---|
| 11N HT20 | LCH | PASS |




| Test Mode | Test Channel | Verdict |
|---|---|---|
| 11N HT20 | HCH | PASS |



**PART 3: CONDUCTED SPURIOUS EMISSION**

**TEST RESULTS TABLE**

| Test Mode | Test Channel | Result | Verdict |
|---|---|---|---|
| 11B | LCH | Refer to the Test Graph | PASS |
| | MCH | Refer to the Test Graph | PASS |
| | HCH | Refer to the Test Graph | PASS |
| 11G | LCH | Refer to the Test Graph | PASS |
| | MCH | Refer to the Test Graph | PASS |
| | HCH | Refer to the Test Graph | PASS |
| 11N HT20 | LCH | Refer to the Test Graph | PASS |
| | MCH | Refer to the Test Graph | PASS |
| | HCH | Refer to the Test Graph | PASS |