# TEST REPORT

**FCC ID: 2ADYY-T15FA**

**Product: Laptop Computer**

**Model No.: T15FA**

**Trade Mark: TECNO**

**Report No.: WSCT-ANAB-R&E241100065A-Wi-Fi1**

**Issued Date: 03 January 2025**

Issued for:

**TECNO MOBILE LIMITED**

**FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE 19-25 SHAN MEI STREET FOTAN NT HONGKONG**

Issued By:

**World Standardization Certification & Testing Group(Shenzhen) Co.,Ltd.**

**Building A-B,Baoli'an Industrial Park,No.58 and 60,Tangtou Avenue, Shiyan Street, Bao'an District, Shenzhen City, Guangdong Province, China**

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# 1. Test Certification

| | |
|---|---|
| **Product:** | Laptop Computer |
| **Model No.:** | T15FA |
| **Trade Mark:** | TECNO |
| **Applicant:** | **TECNO MOBILE LIMITED** |
| **Address:** | FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE 19-25 SHAN MEI STREET FOTAN NT HONGKONG |
| **Manufacturer:** | **TECNO MOBILE LIMITED** |
| **Address:** | FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE 19-25 SHAN MEI STREET FOTAN NT HONGKONG |
| **Date of Test:** | 04 November 2024 to 02 January 2025 |
| **Applicable Standards:** | FCC CFR Title 47 Part 15 Subpart C Section 15.247 |

*The above equipment has been tested by World Standardization Certification & Testing Group(Shenzhen)Co., Ltd. and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.*

**Tested By:** Wang Xiang **(Wang Xiang)**

**Checked By:** Qin Shuiquan **( Qin Shuiquan)**

**Approved By:** Li Huaibi **(Li Huaibi)**

**Date:** 03 January 2025

## 2. Test Result Summary

| Requirement | CFR 47 Section | Result |
|---|---|---|
| Antenna requirement | §15.203/§15.247 (c) | PASS |
| AC Power Line Conducted Emission | §15.207 | PASS |
| Conducted Peak Output Power | §15.247 (b)(3)<br>§2.1046 | PASS |
| 6dB Emission Bandwidth | §15.247 (a)(2)<br>§2.1049 | PASS |
| Power Spectral Density | §15.247 (e) | PASS |
| Band Edge | 1§5.247(d)<br>§2.1051, §2.1057 | PASS |
| Spurious Emission | §15.205/§15.209<br>§2.1053, §2.1057 | PASS |

***Note:***

*1. PASS: Test item meets the requirement.*

*2. Fail: Test item does not meet the requirement.*

*3. N/A: Test case does not apply to the test object.*

*4. The test result judgment is decided by the limit of test standard.*

# 3. EUT Description

| | |
|---|---|
| **Product:** | Laptop Computer |
| **Model No.:** | T15FA |
| **Trade Mark:** | TECNO |
| **Software version:** | Windows 11 |
| **Hardware version:** | N156ERB01_MB_V11 |
| **Operation Frequency:** | 2412MHz~2462MHz (802.11b/g/n/ax(HT20))<br>2422MHz~2452MHz (802.11n/ax(HT40)) |
| **Channel Separation:** | 5MHz |
| **Modulation type:** | DSSS (DBPSK, DQPSK, CCK) for IEEE 802.11b<br>OFDM/OFDMA(BPSK,QPSK,16QAM,64QAM,256QAM,1024QAM) for IEEE 802.11g/n/ax |
| **Antenna Type:** | Integral Antenna |
| **Antenna Gain** | MAIN:1.93dBi ,AUX:1.94 dBi |
| **EUT Power Rating** | Adapter: FC498U<br>INPUT: 100-240V~50/60Hz 1.5A MAX<br>OUTPUT: PD:5V⎓3A 9V⎓3A<br>12V⎓3A 20V⎓3.25A<br>PPS:3.3—11V⎓5A MAX<br>Rechargeable Li-ion Polymer Battery: 156<br>Nominal Voltage: 11.55V<br>Rated Capacity:6060mAh/70Wh<br>Typical Capacity: 6160mAh/71.14Wh<br>Limited Charge Voltage: 13.2V |
| **Remark:** | N/A. |

Configuration differences

| Configuration/ Processor | Memory |
|---|---|
| T15FA (R5-7640HS) | 16GB |
| T15FA (R7-7840H) | 32GB |
| Note: The two models have different running memory sizes, and the main test model is T15FA (R7-7840H) | |

**Operation Frequency each of channel For 802.11b/g/n/ax(HT20)**

| Channel | Frequency | Channel | Frequency | Channel | Frequency | Channel | Frequency |
|---|---|---|---|---|---|---|---|
| 1 | 2412MHz | 4 | 2427MHz | 7 | 2442MHz | 10 | 2457MHz |
| 2 | 2417MHz | 5 | 2432MHz | 8 | 2447MHz | 11 | 2462MHz |
| 3 | 2422MHz | 6 | 2437MHz | 9 | 2452MHz | | |

**Operation Frequency each of channel For 802.11n/ax (HT40)**

| Channel | Frequency | Channel | Frequency | Channel | Frequency | Channel | Frequency |
|---|---|---|---|---|---|---|---|
| -- | -- | 4 | 2427MHz | 7 | 2442MHz | -- | -- |
| -- | -- | 5 | 2432MHz | 8 | 2447MHz | -- | -- |
| 3 | 2422MHz | 6 | 2437MHz | 9 | 2452MHz | | |

***Note:***

*In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:*

**802.11b/g/n/ax (HT20)**

| Channel | Frequency |
|---|---|
| The lowest channel | 2412MHz |
| The middle channel | 2437MHz |
| The Highest channel | 2462MHz |

**802.11n/ax (HT40)**

| Channel | Frequency |
|---|---|
| The lowest channel | 2422MHz |
| The middle channel | 2437MHz |
| The Highest channel | 2452MHz |

# 4. Genera Information

## 4.1. Test environment and mode

| | |
|---|---|
| **Operating Environment:** | |
| Temperature: | 25.0 °C |
| Humidity: | 56 % RH |
| Atmospheric Pressure: | 1010 mbar |
| **Test Mode:** | |
| Engineering mode: | Keep the EUT in continuous transmitting by select channel and modulations(The value of duty cycle is 98.46%) |
| The sample was placed (0.8m below 1GHz, 1.5m above 1GHz) above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages. For the full battery state and The output power to the maximum state. | |

| |
|---|
| We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows: |
| **Per-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.** |
| Mode |
| 802.11b |
| 802.11g |
| 802.11n/ax(H20) |
| 802.11n/ax(H40) |

| | |
|---|---|
| **Final Test Mode:** | |
| Operation mode: | Keep the EUT in continuous transmitting with modulation |
| 1. For WIFI function, the engineering test program was provided and enabled to make EUT continuous transmit/receive.2.According to ANSI C63.10 standards, the test results are both the “worst case” and “worst setup” 1Mbps for 802.11b, 6Mbps for 802.11g, 6.5Mbps for 802.11n(H20).Duty cycle setting during the transmission is 98.5% with maximum power setting for all modulations. | |

## 4.2. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| Equipment | Model No. | Serial No. | FCC ID | Trade Name |
|---|---|---|---|---|
| Adapter | FC498U | | / | TECNO |

***Note:***

*1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.*

*2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.*

*3. For conducted measurements (Output Power, 6dB Emission Bandwidth, Power Spectral Density, Spurious Emissions), the antenna of EUT is connected to the test equipment via temporary antenna connector, the antenna connector is soldered on the antenna port of EUT, and the temporary antenna connector is listed in the Test Instruments.*

# 5. Facilities and Accreditations

## 5.1. Facilities

All measurement facilities used to collect the measurement data are located at **Building A-B,Baoli'an Industrial Park,No.58 and 60,Tangtou Avenue, Shiyan Street, Bao'an District, Shenzhen City, Guangdong Province, China of the World Standardization Certification & Testing Group (Shenzhen) Co., Ltd.**
The sites are constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22. All receiving equipment conforms to CISPR Publication 16-1, “Radio Interference Measuring Apparatus and Measurement Methods.”

## 5.2. ACCREDITATIONS

**CNAS - Registration Number: L3732**

China National Accreditation Service for Conformity Assessment, The test firm Registration Number: L3732

**FCC - Designation Number: CN1303**

World Standardization Certification & Testing Group(Shenzhen) CO., LTD. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Designation Number: CN1303.

**ANAB - Certificate Number: AT-3951**

The EMC Laboratory has been accredited by the American Association for Laboratory Accreditation (ANAB).Certification Number: AT-3951

## 5.3. Measurement Uncertainty

The reported uncertainty of measurement y ± U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

| No. | Item | MU |
|---|---|---|
| 1 | Conducted Emission Test | ±3.2dB |
| 2 | RF power, conducted | ±0.16dB |
| 3 | Spurious emissions, conducted | ±0.21dB |
| 4 | All emissions, radiated(<1GHz) | ±4.7dB |
| 5 | All emissions, radiated(>1GHz) | ±4.7dB |
| 6 | Temperature | ±0.5°C |
| 7 | Humidity | ±2.0% |

## 5.4.MEASUREMENT INSTRUMENTS

| NAME OF EQUIPMENT | MANUFACTURER | MODEL | SERIAL NUMBER | Calibration Date | Calibration Due. |
|---|---|---|---|---|---|
| Test software | -- | EZ-EMC | CON-03A | - | - |
| Test software | -- | MTS8310 | - | - | - |
| EMI Test Receiver | R&S | ESCI | 100005 | 11/05/2024 | 11/04/2025 |
| LISN | AFJ | LS16 | 16010222119 | 11/05/2024 | 11/04/2025 |
| LISN(EUT) | Mestec | AN3016 | 04/10040 | 11/05/2024 | 11/04/2025 |
| Universal Radio Communication Tester | R&S | CMU 200 | 1100.0008.02 | 11/05/2024 | 11/04/2025 |
| Coaxial cable | Megalon | LMR400 | N/A | 11/05/2024 | 11/04/2025 |
| GPIB cable | Megalon | GPIB | N/A | 11/05/2024 | 11/04/2025 |
| Spectrum Analyzer | R&S | FSU | 100114 | 11/05/2024 | 11/04/2025 |
| Pre Amplifier | H.P. | HP8447E | 2945A02715 | 11/05/2024 | 11/04/2025 |
| Pre-Amplifier | CDSI | PAP-1G18-38 | -- | 11/05/2024 | 11/04/2025 |
| Bi-log Antenna | SCHWARZBECK | VULB9168 | 01488 | 11/05/2024 | 11/04/2025 |
| 9*6*6 Anechoic | -- | -- | -- | 11/05/2024 | 11/04/2025 |
| Horn Antenna | COMPLIANCE ENGINEERING | CE18000 | -- | 11/05/2024 | 11/04/2025 |
| Horn Antenna | SCHWARZBECK | BBHA9120D | 9120D-631 | 11/05/2024 | 11/04/2025 |
| Cable | TIME MICROWAVE | LMR-400 | N-TYPE04 | 11/05/2024 | 11/04/2025 |
| System-Controller | CCS | N/A | N/A | N.C.R | N.C.R |
| Turn Table | CCS | N/A | N/A | N.C.R | N.C.R |
| Antenna Tower | CCS | N/A | N/A | N.C.R | N.C.R |
| RF cable | Murata | MXHQ87WA3000 | - | 11/05/2024 | 11/04/2025 |
| Loop Antenna | EMCO | 6502 | 00042960 | 11/05/2024 | 11/04/2025 |
| Horn Antenna | SCHWARZBECK | BBHA 9170 | 1123 | 11/05/2024 | 11/04/2025 |
| Power meter | Anritsu | ML2487A | 6K00003613 | 11/05/2024 | 11/04/2025 |
| Power sensor | Anritsu | MX248XD | -- | 11/05/2024 | 11/04/2025 |
| Spectrum Analyzer | Keysight | N9010B | MY60241089 | 11/05/2024 | 11/04/2025 |

# 6. Test Results and Measurement Data

## 6.1. Antenna requirement

| **Standard requirement:** | FCC Part15 C Section 15.203 /247(c) |
|---|---|

15.203 requirement:
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall 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, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.
15.247(c) (1)(i) requirement:
(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

| **E.U.T Antenna:** | |
|---|---|

The Wi-Fi antenna is a Integral Antenna. it meets the standards, and the best case gain of the antenna is “MAIN:1.93dBi ,AUX:1.70dBi”

<CDD Modes >
FCC KDB 662911 D01 Multiple Transmitter Output v02r01
For CDD transmissions, directional gain is calculated as
Directional gain = GANT + Array Gain, where Array Gain is as follows.
For power spectral density (PSD) measurements on all devices,
Array Gain = 10 log(NANT/NSS=1) dB.
For power measurements on IEEE 802.11 devices,
Array Gain = 0 dB (i.e., no array gain) for NANT ≤ 4.
Directional gain may be calculated by using the formulas applicable to equal gain antennas with
GANT set equal to the gain of the antenna having the highest gain;
The EUT supports CDD mode.
For power, the directional gain GANT is set equal to the antenna having the highest gain, i.e.,
F)2)f)i).
For PSD, the directional gain calculation is following F)2)f)ii) of KDB 662911 D01 v02r01.

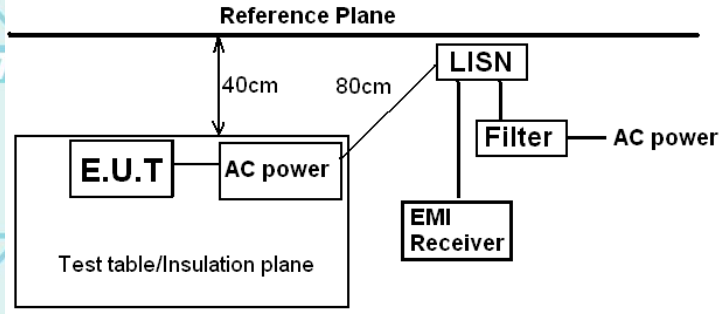
**The directional gain “DG” is calculated as following table.**

| <CDD Modes> | Ant1 (dBi) | Ant2 (dBi) | DG for power (dBi) | DG for PSD (dBi) |
|---|---|---|---|---|
| 2412~2462MHz | 1.93 | 1.94 | 1.94 | 4.95 |

Power limit reduction = Composite gain – 6dBi, ( min = 0 )
PSD limit reduction = Composite gain + PSD Array gain – 6dBi, ( min = 0 )

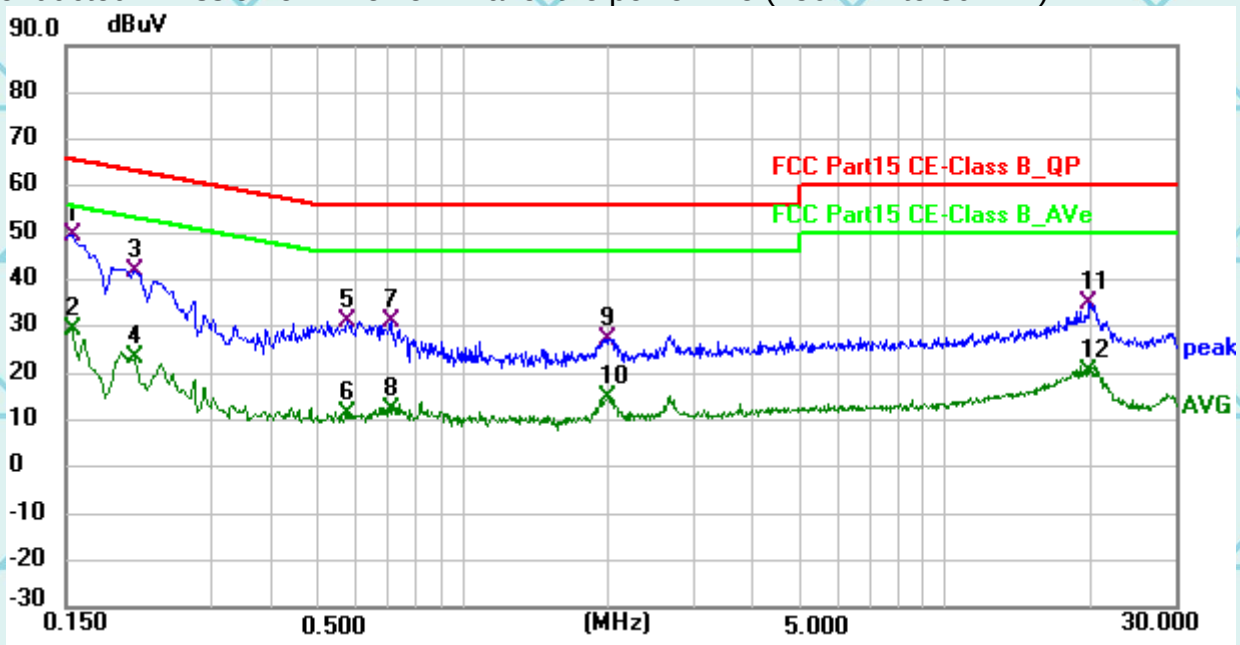
## 6.2. Conducted Emission

### 6.2.1. Test Specification

| | |
|---|---|
| **Test Requirement:** | FCC Part15 C Section 15.207 |
| **Test Method:** | ANSI C63.10:2014 |
| **Frequency Range:** | 150 kHz to 30 MHz |
| **Receiver setup:** | RBW=9 kHz, VBW=30 kHz, Sweep time=auto |
| **Limits:** | Frequency range (MHz) / Limit (dBuV): Quasi-peak / Average<br>0.15-0.5: 66 to 56* / 56 to 46*<br>0.5-5: 56 / 46<br>5-30: 60 / 50 |
| **Test Setup:** |  <br>*Remark:*<br>*E.U.T: Equipment Under Test*<br>*LISN: Line Impedence Stabilization Network*<br>*Test table height=0.8m* |
| **Test Mode:** | Charging + transmitting with modulation |
| **Test Procedure:** | 1. The E.U.T is connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment.<br>2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).<br>3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2014 on conducted measurement. |
| **Test Result:** | PASS |

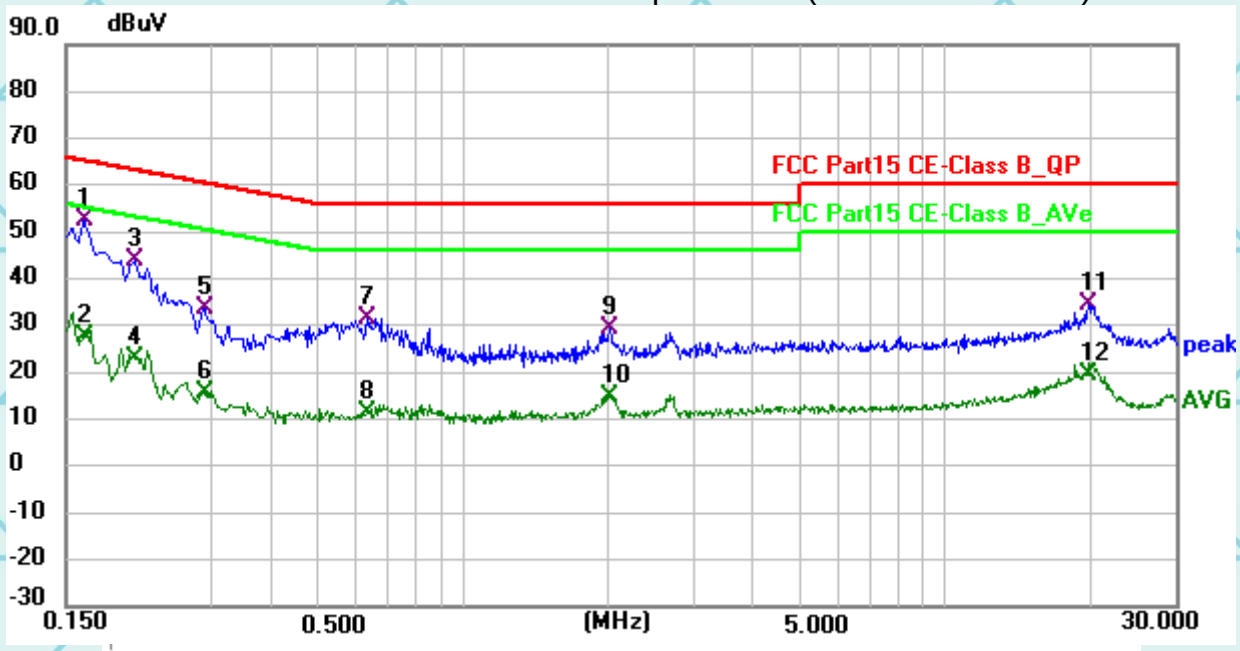
### 6.2.2. Test data(worst case)

Please refer to following diagram for individual
The worst mode is 11b
Conducted Emission on Line Terminal of the power line (150 kHz to 30MHz)




| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|
| 1 * | 0.1545 | 28.97 | 20.73 | 49.70 | 65.75 | -16.05 | QP |
| 2 | 0.1545 | 8.69 | 20.73 | 29.42 | 55.75 | -26.33 | AVG |
| 3 | 0.2085 | 21.26 | 20.68 | 41.94 | 63.26 | -21.32 | QP |
| 4 | 0.2085 | 2.48 | 20.68 | 23.16 | 53.26 | -30.10 | AVG |
| 5 | 0.5730 | 10.39 | 20.52 | 30.91 | 56.00 | -25.09 | QP |
| 6 | 0.5730 | -9.37 | 20.52 | 11.15 | 46.00 | -34.85 | AVG |
| 7 | 0.7080 | 10.73 | 20.54 | 31.27 | 56.00 | -24.73 | QP |
| 8 | 0.7080 | -8.44 | 20.54 | 12.10 | 46.00 | -33.90 | AVG |
| 9 | 1.9995 | 6.69 | 20.61 | 27.30 | 56.00 | -28.70 | QP |
| 10 | 1.9995 | -5.99 | 20.61 | 14.62 | 46.00 | -31.38 | AVG |
| 11 | 19.9050 | 14.74 | 20.26 | 35.00 | 60.00 | -25.00 | QP |
| 12 | 19.9050 | 0.05 | 20.26 | 20.31 | 50.00 | -29.69 | AVG |

Conducted Emission on Neutral Terminal of the power line (150 kHz to 30MHz)




| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|
| 1 * | 0.1635 | 31.97 | 20.72 | 52.69 | 65.28 | -12.59 | QP |
| 2 | 0.1635 | 6.88 | 20.72 | 27.60 | 55.28 | -27.68 | AVG |
| 3 | 0.2085 | 23.27 | 20.68 | 43.95 | 63.26 | -19.31 | QP |
| 4 | 0.2085 | 2.41 | 20.68 | 23.09 | 53.26 | -30.17 | AVG |
| 5 | 0.2895 | 12.92 | 20.64 | 33.56 | 60.54 | -26.98 | QP |
| 6 | 0.2895 | -4.79 | 20.64 | 15.85 | 50.54 | -34.69 | AVG |
| 7 | 0.6360 | 11.18 | 20.53 | 31.71 | 56.00 | -24.29 | QP |
| 8 | 0.6360 | -9.13 | 20.53 | 11.40 | 46.00 | -34.60 | AVG |
| 9 | 2.0220 | 8.57 | 20.61 | 29.18 | 56.00 | -26.82 | QP |
| 10 | 2.0220 | -5.74 | 20.61 | 14.87 | 46.00 | -31.13 | AVG |
| 11 | 19.7475 | 14.32 | 20.26 | 34.58 | 60.00 | -25.42 | QP |
| 12 | 19.7475 | -0.68 | 20.26 | 19.58 | 50.00 | -30.42 | AVG |

***Note1:***

*Freq. = Emission frequency in MHz*

*Reading level (dBμV) = Receiver reading*

*Corr. Factor (dB) = LISN factor + Cable loss*

*Measurement (dBμV) = Reading level (dBμV) + Corr. Factor (dB)*

*Limit (dBμV) = Limit stated in standard*

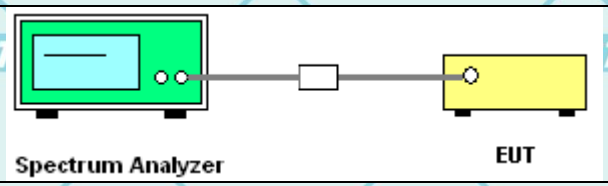
*Margin (dB) = Measurement (dBμV) – Limits (dBμV)*

*Q.P. =Quasi-Peak AVG =average*

** is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz.*

## 6.3. Maximum Conducted (Average) Output Power

### 6.3.1. Test Specification

| | |
|---|---|
| **Test Requirement:** | FCC Part15 C Section 15.247 (b)(3) |
| **Test Method:** | KDB 558074 |
| **Limit:** | 30dBm |
| **Test Setup:** |  |
| **Test Mode:** | Transmitting mode with modulation |
| **Test Procedure:** | 1. The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v04.<br>2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.<br>3. Set to the maximum power setting and enable the EUT transmit continuously.<br>4. Measure the conducted output power and record the results in the test report. |

## Test Data

### MAIN Ant1

| Mode | Frequency (MHz) | Total Power (dBm) | Limit (dBm) | Verdict |
|---|---|---|---|---|
| b | 2412 | 22.56 | 30 | Pass |
| b | 2437 | 22.79 | 30 | Pass |
| b | 2462 | 22.29 | 30 | Pass |
| g | 2412 | 25.68 | 30 | Pass |
| g | 2437 | **26.19** | 30 | Pass |
| g | 2462 | 25.59 | 30 | Pass |
| n20 | 2412 | 24.63 | 30 | Pass |
| n20 | 2437 | 25.06 | 30 | Pass |
| n20 | 2462 | 24.47 | 30 | Pass |
| n40 | 2422 | 25.32 | 30 | Pass |
| n40 | 2437 | 25.33 | 30 | Pass |
| n40 | 2452 | 25.01 | 30 | Pass |
| ax20 | 2412 | 24.63 | 30 | Pass |
| ax20 | 2437 | 24.71 | 30 | Pass |
| ax20 | 2462 | 24.41 | 30 | Pass |
| ax40 | 2422 | 25.12 | 30 | Pass |
| ax40 | 2437 | 25.17 | 30 | Pass |
| ax40 | 2452 | 24.84 | 30 | Pass |

### AUX Ant2

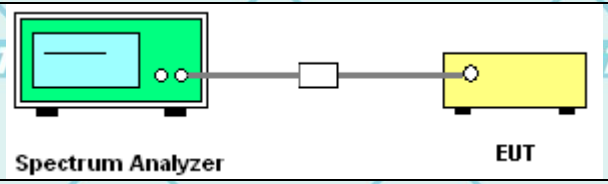
| Mode | Frequency (MHz) | Total Power (dBm) | Limit (dBm) | Verdict |
|---|---|---|---|---|
| b | 2412 | 21.83 | 30 | Pass |
| b | 2437 | 21.80 | 30 | Pass |
| b | 2462 | 21.28 | 30 | Pass |
| g | 2412 | 24.50 | 30 | Pass |
| g | 2437 | **24.88** | 30 | Pass |
| g | 2462 | 24.46 | 30 | Pass |
| n20 | 2412 | 23.72 | 30 | Pass |
| n20 | 2437 | 24.03 | 30 | Pass |
| n20 | 2462 | 23.39 | 30 | Pass |
| n40 | 2422 | 24.04 | 30 | Pass |
| n40 | 2437 | 24.16 | 30 | Pass |
| n40 | 2452 | 23.69 | 30 | Pass |
| ax20 | 2412 | 23.63 | 30 | Pass |
| ax20 | 2437 | 23.72 | 30 | Pass |
| ax20 | 2462 | 23.43 | 30 | Pass |
| ax40 | 2422 | 24.21 | 30 | Pass |
| ax40 | 2437 | 24.27 | 30 | Pass |
| ax40 | 2452 | 23.70 | 30 | Pass |

**MiMO Mode**

| Mode | Frequency (MHz) | Total Power (dBm) | Limit (dBm) | Verdict |
|---|---|---|---|---|
| n20 | 2412 | 27.21 | 30 | Pass |
| n20 | 2437 | 27.59 | 30 | Pass |
| n20 | 2462 | 26.97 | 30 | Pass |
| n40 | 2422 | 27.74 | 30 | Pass |
| n40 | 2437 | **27.79** | 30 | Pass |
| n40 | 2452 | 27.41 | 30 | Pass |
| ax20 | 2412 | 27.17 | 30 | Pass |
| ax20 | 2437 | 27.25 | 30 | Pass |
| ax20 | 2462 | 26.96 | 30 | Pass |
| ax40 | 2422 | 27.70 | 30 | Pass |
| ax40 | 2437 | 27.75 | 30 | Pass |
| ax40 | 2452 | 27.32 | 30 | Pass |

## 6.4. Emission Bandwidth

### 6.4.1. Test Specification

| | |
|---|---|
| **Test Requirement:** | FCC Part15 C Section 15.247 (a)(2) |
| **Test Method:** | KDB 558074 |
| **Limit:** | >500kHz |
| **Test Setup:** |  |
| **Test Mode:** | Transmitting mode with modulation |
| **Test Procedure:** | 1. The testing follows FCC KDB Publication No. 558074 DTS D01 Meas. Guidance v04.<br>2. Set to the maximum power setting and enable the EUT transmit continuously.<br>3. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6dB bandwidth must be greater than 500 kHz.<br>4. Measure and record the results in the test report. |
| **Test Result:** | PASS |

### 6.4.2. Test data

| Mode | Frequency (MHz) | -6 dB Bandwidth (MHz) | Limit -6 dB Bandwidth (MHz) | Verdict |
|---|---|---|---|---|
| b | 2412 | 7.558 | 0.5 | Pass |
| b | 2437 | 8.053 | 0.5 | Pass |
| b | 2462 | 8.541 | 0.5 | Pass |
| g | 2412 | 16.00 | 0.5 | Pass |
| g | 2437 | 15.85 | 0.5 | Pass |
| g | 2462 | 16.29 | 0.5 | Pass |
| n20 | 2412 | 17.53 | 0.5 | Pass |
| n20 | 2437 | 17.54 | 0.5 | Pass |
| n20 | 2462 | 17.54 | 0.5 | Pass |
| n40 | 2422 | 33.87 | 0.5 | Pass |
| n40 | 2437 | 35.06 | 0.5 | Pass |
| n40 | 2452 | 33.87 | 0.5 | Pass |
| ax20 | 2412 | 18.31 | 0.5 | Pass |
| ax20 | 2437 | 16.58 | 0.5 | Pass |
| ax20 | 2462 | 16.61 | 0.5 | Pass |
| ax40 | 2422 | 33.82 | 0.5 | Pass |
| ax40 | 2437 | 35.08 | 0.5 | Pass |
| ax40 | 2452 | 35.09 | 0.5 | Pass |

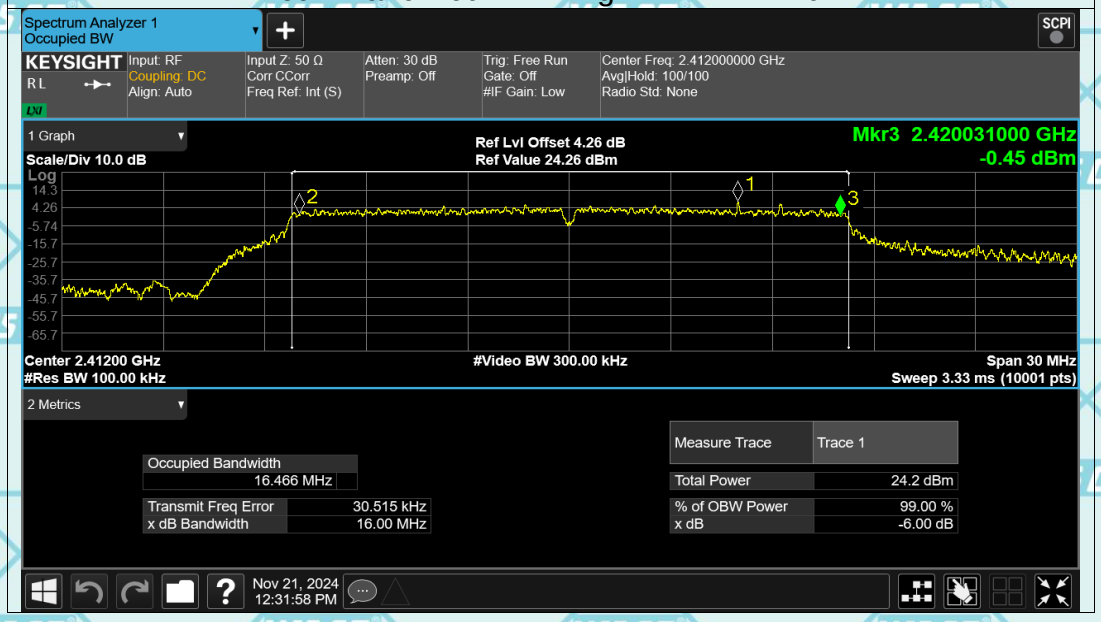
# Test Graphs

## -6dB Bandwidth NVNT b 2412MHz Ant1

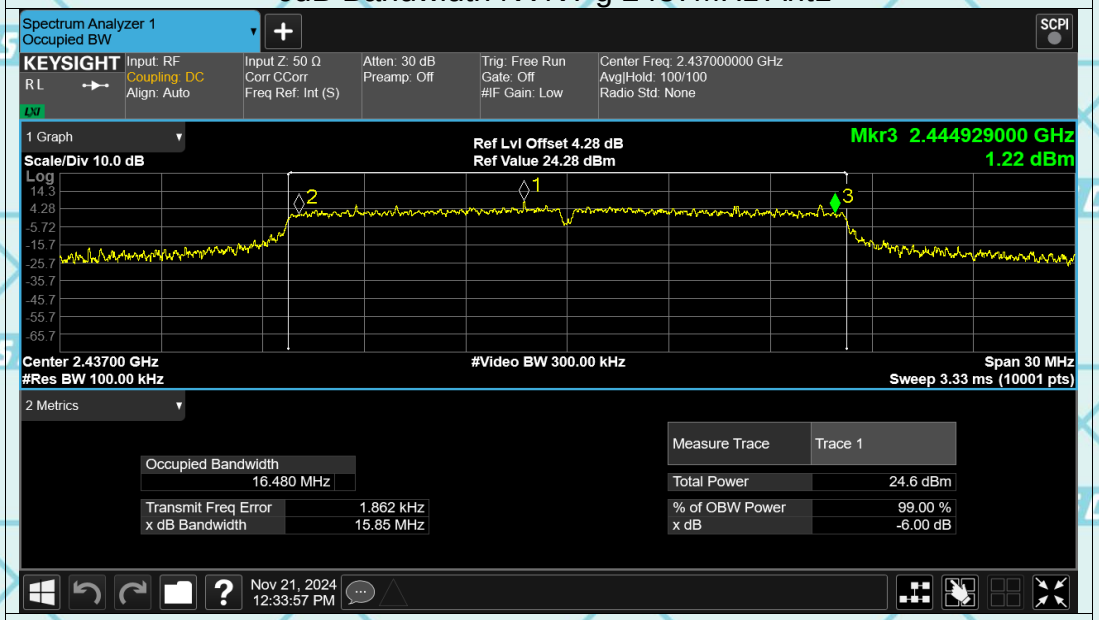

## -6dB Bandwidth NVNT b 2437MHz Ant1

## -6dB Bandwidth NVNT b 2462MHz Ant1

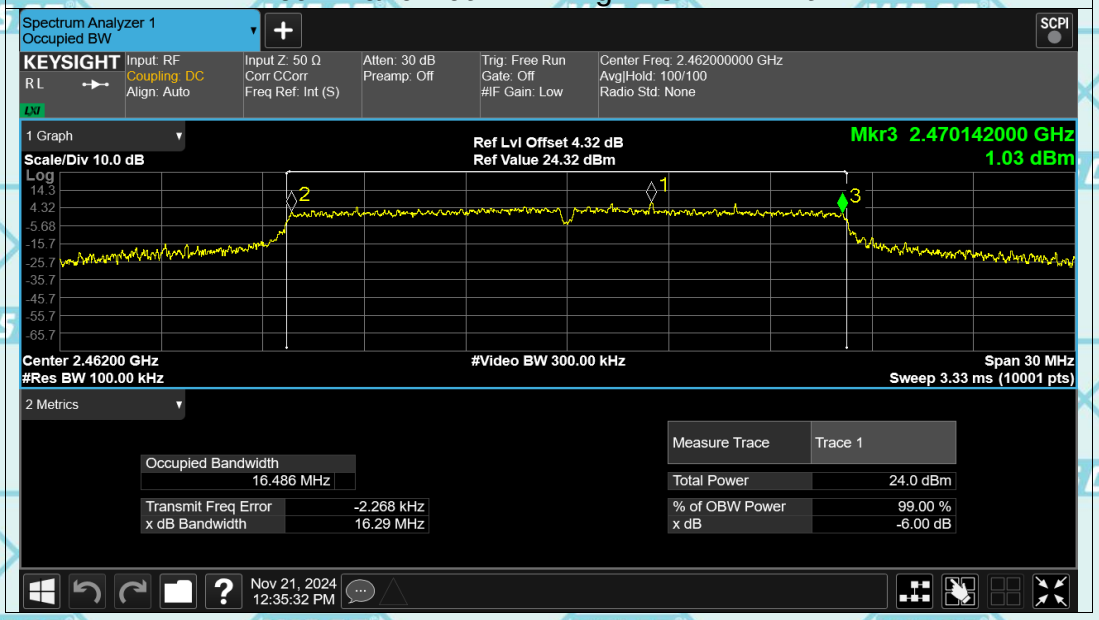

## -6dB Bandwidth NVNT g 2412MHz Ant1



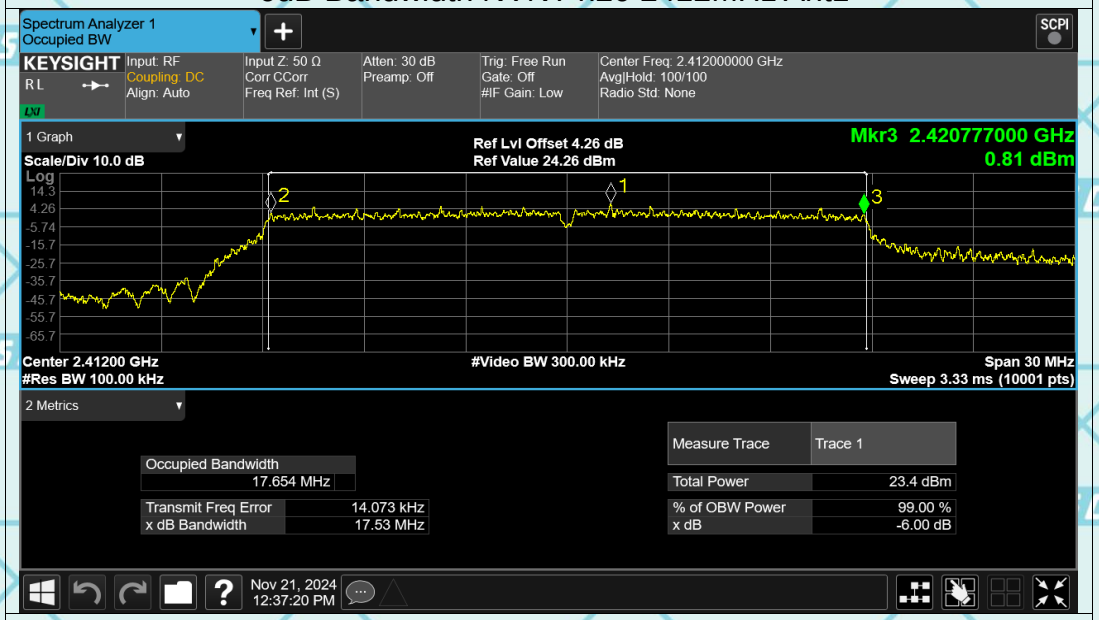
-6dB Bandwidth NVNT g 2437MHz Ant1



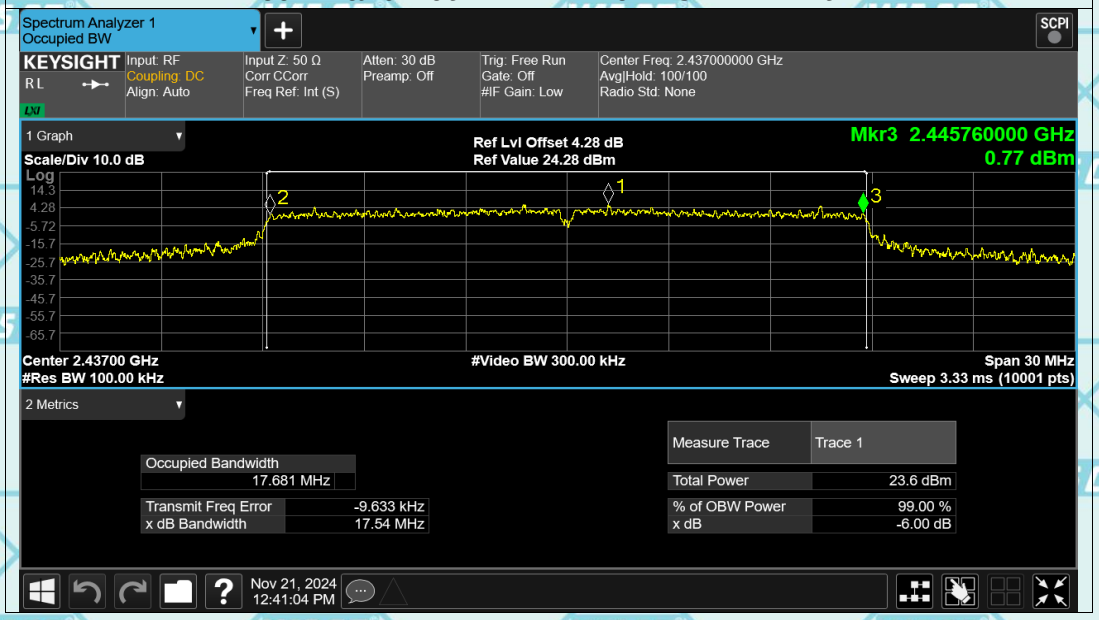

-6dB Bandwidth NVNT g 2462MHz Ant1



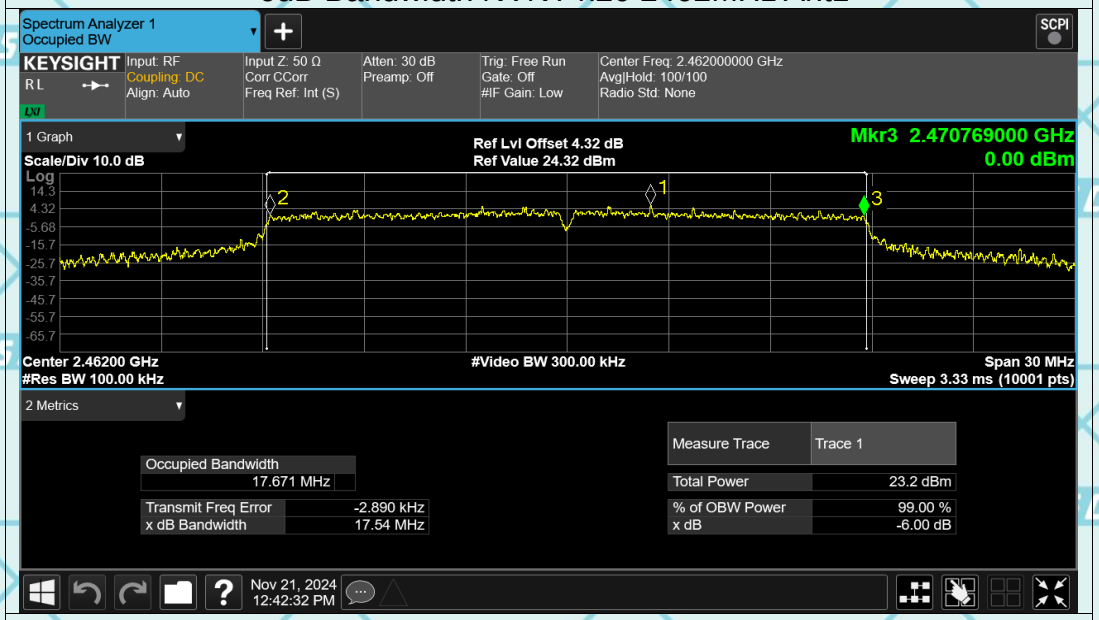
## -6dB Bandwidth NVNT n20 2412MHz Ant1



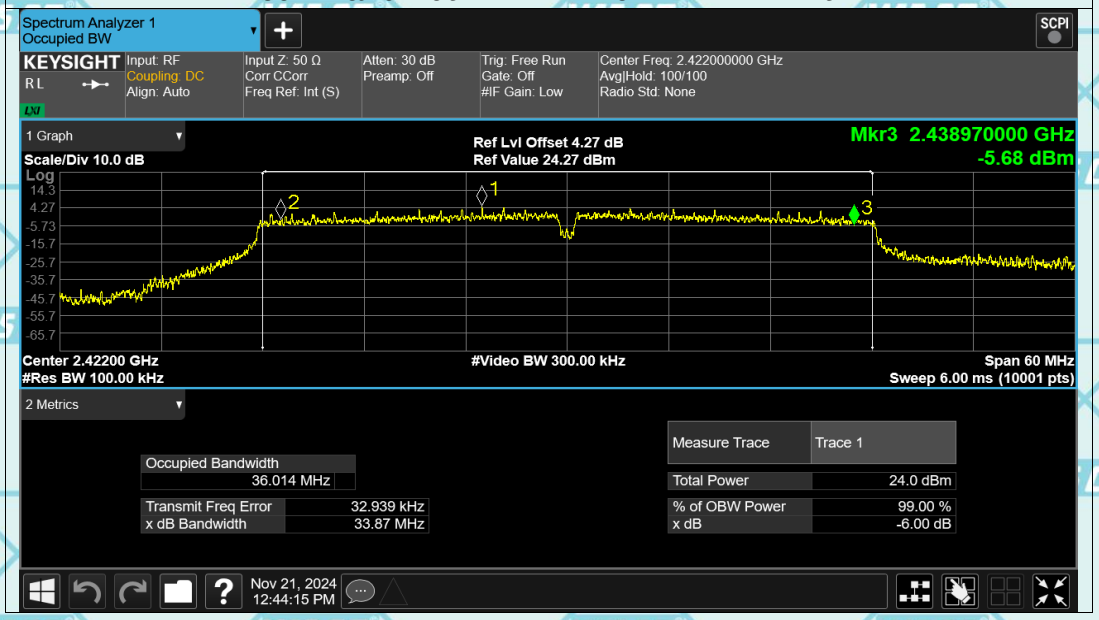

## -6dB Bandwidth NVNT n20 2437MHz Ant1



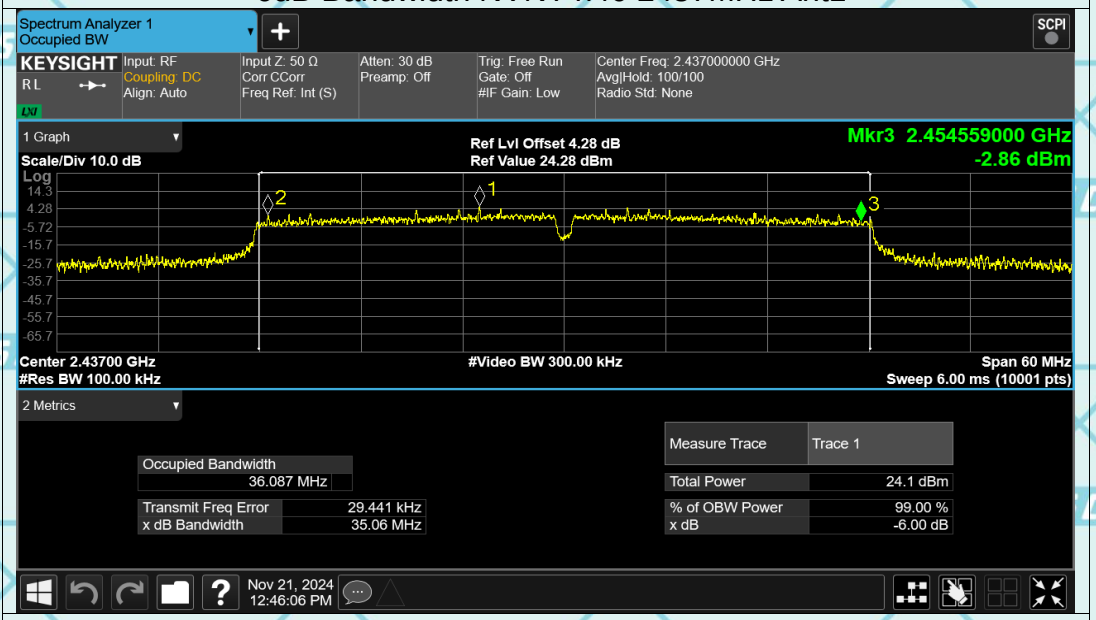
## -6dB Bandwidth NVNT n20 2462MHz Ant1



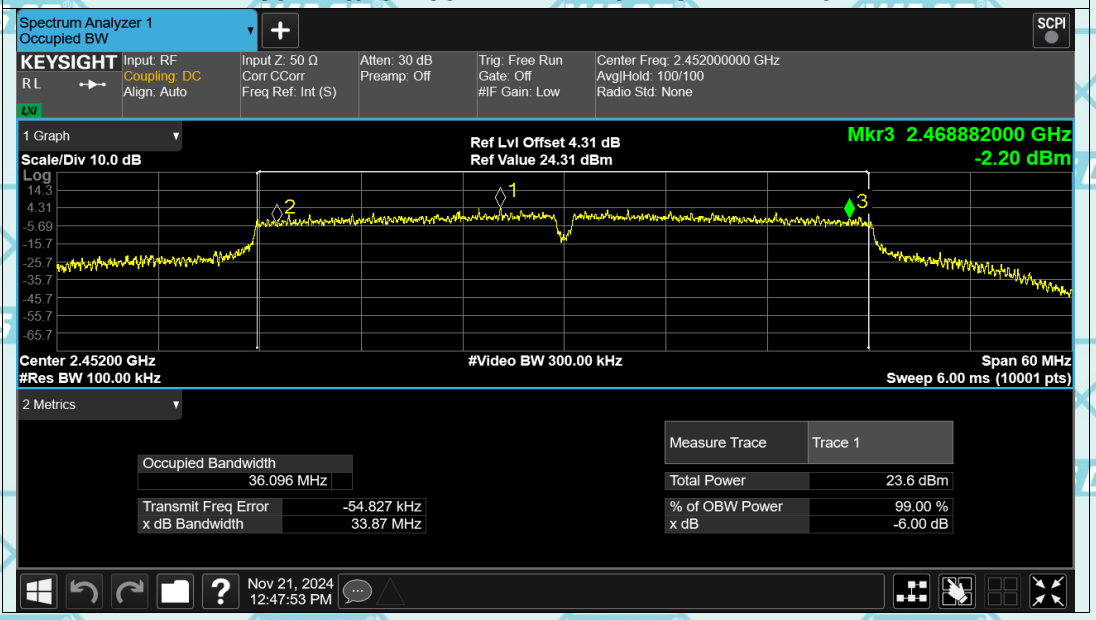

## -6dB Bandwidth NVNT n40 2422MHz Ant1



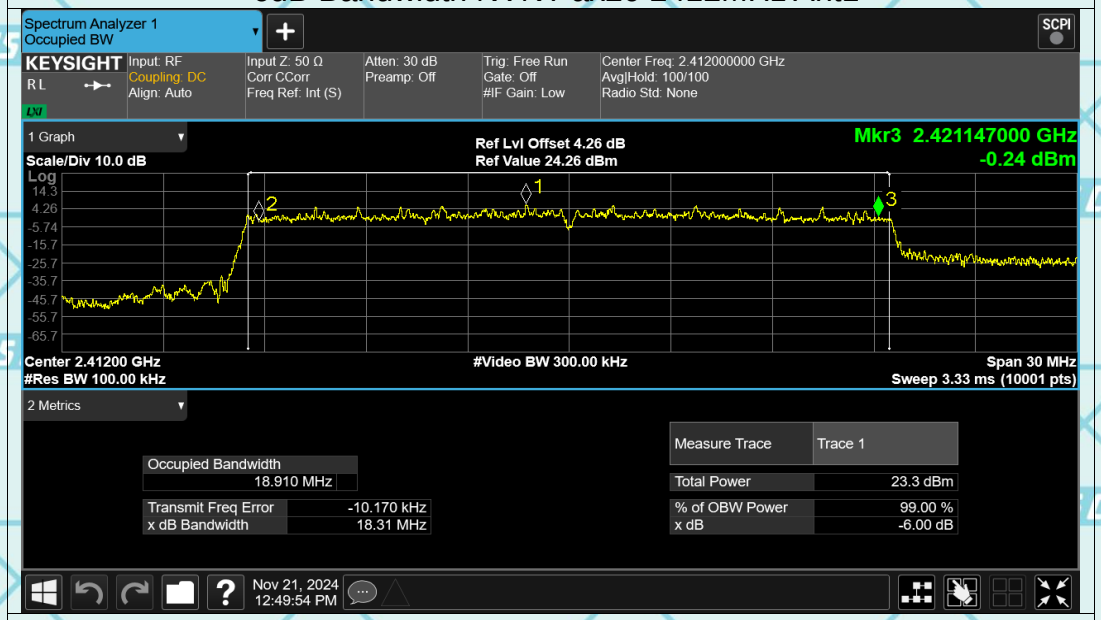
## -6dB Bandwidth NVNT n40 2437MHz Ant1



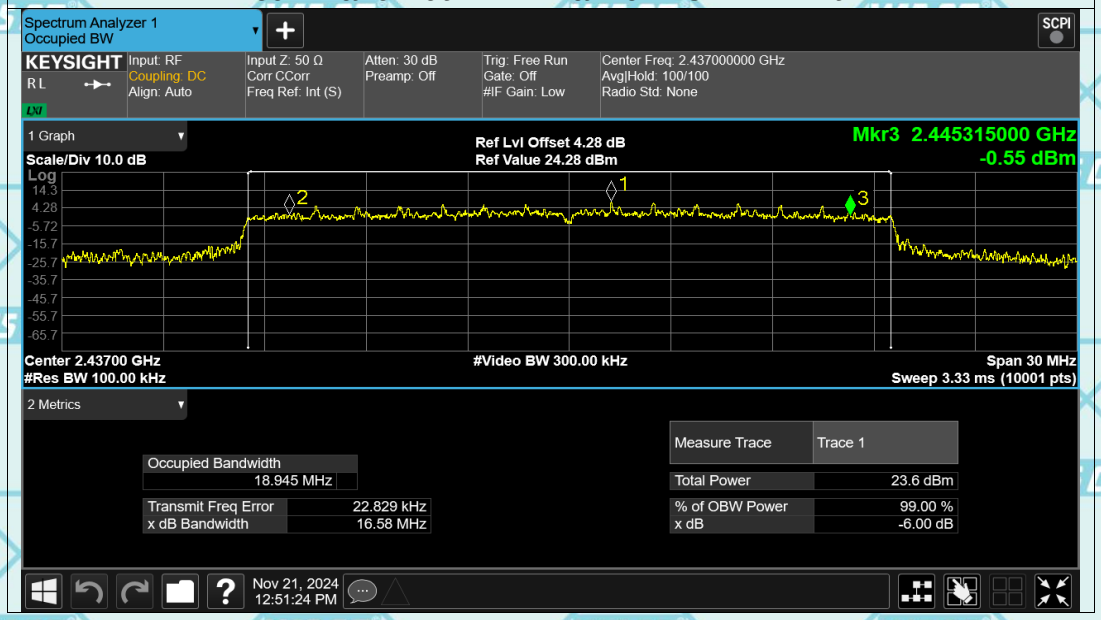

## -6dB Bandwidth NVNT n40 2452MHz Ant1



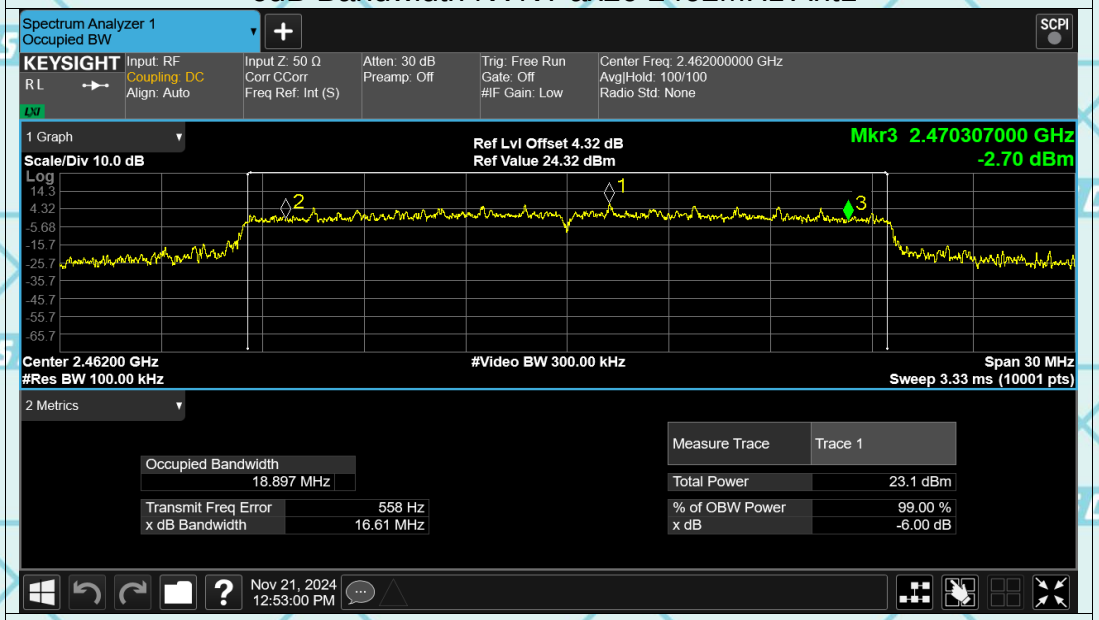
## -6dB Bandwidth NVNT ax20 2412MHz Ant1



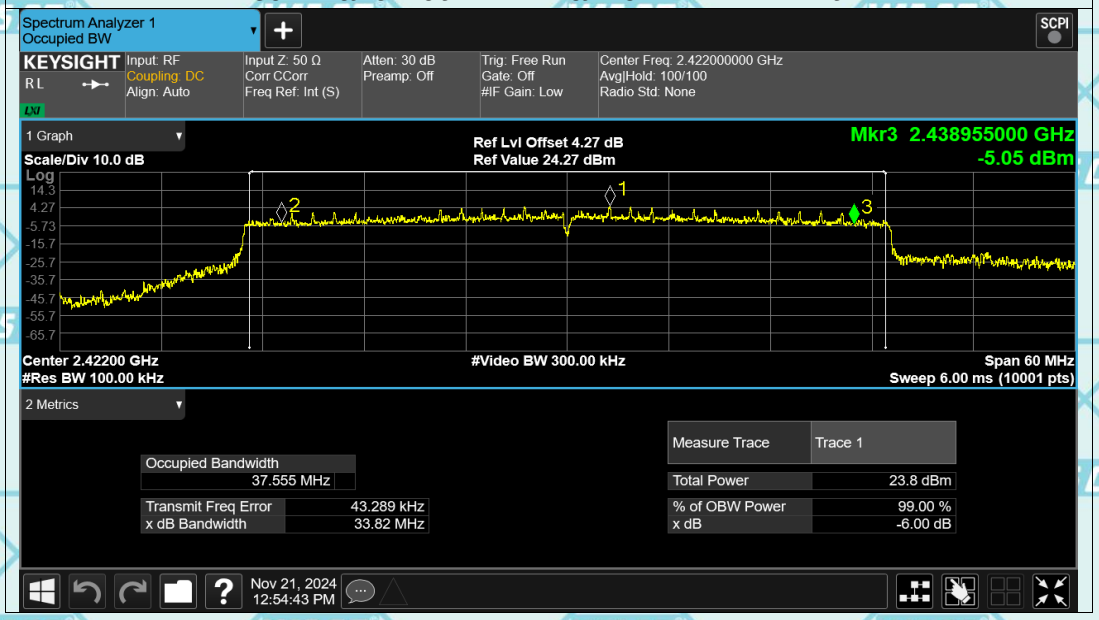

## -6dB Bandwidth NVNT ax20 2437MHz Ant1



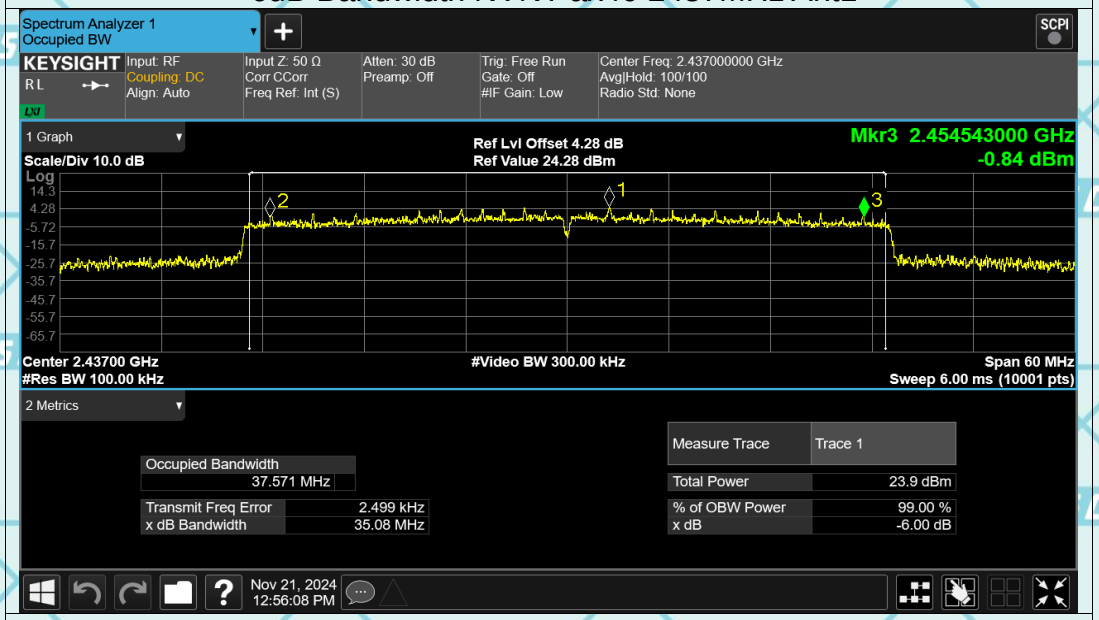
## -6dB Bandwidth NVNT ax20 2462MHz Ant1



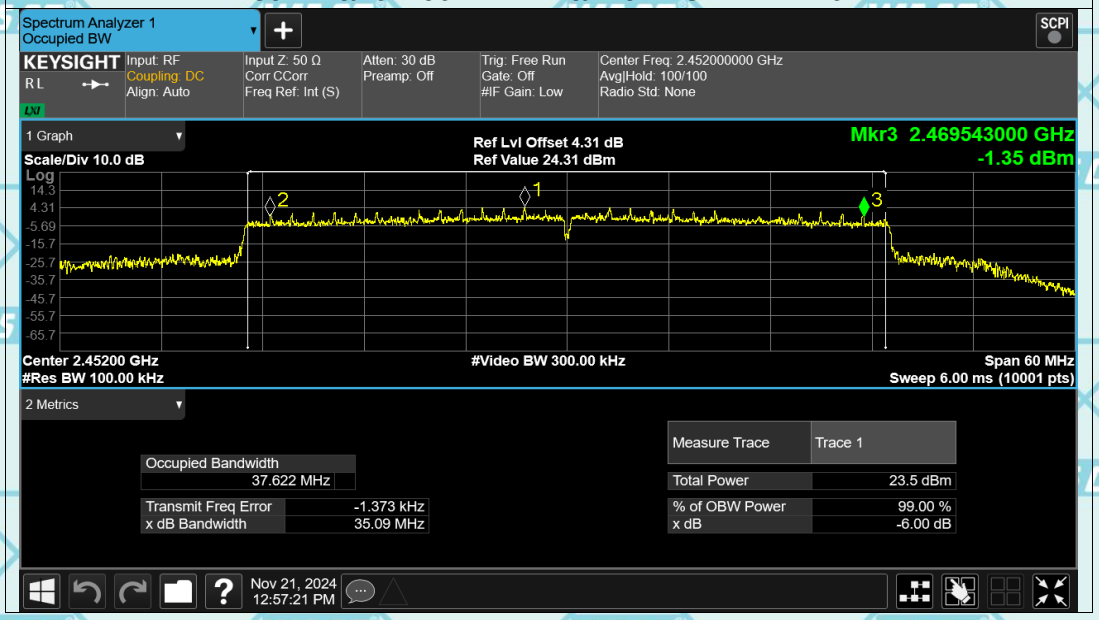

## -6dB Bandwidth NVNT ax40 2422MHz Ant1



## -6dB Bandwidth NVNT ax40 2437MHz Ant1

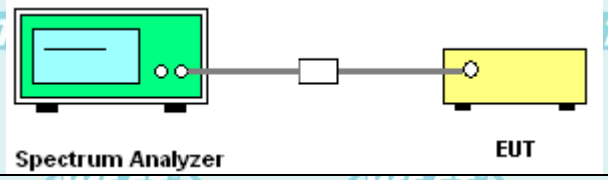



## -6dB Bandwidth NVNT ax40 2452MHz Ant1



## 6.5. Power Spectral Density

### 6.5.1. Test Specification

| | |
|---|---|
| **Test Requirement:** | FCC Part15 C Section 15.247 (e) |
| **Test Method:** | KDB 558074 |
| **Limit:** | The average power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission. |
| **Test Setup:** |  |
| **Test Mode:** | Transmitting mode with modulation |
| **Test Procedure:** | 1. The testing follows Measurement Procedure 10.3 Method AVGPSD of FCC KDB Publication No.558074 D01 DTS Meas. Guidance v04<br>2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.<br>3. Set to the maximum power setting and enable the EUT transmit continuously.<br>4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW): 3 kHz ≤ RBW ≤ 100 kHz. Video bandwidth VBW ≥ 3 x RBW. Set the span to at least 1.5 times the OBW.<br>5. Detector = RMS, Sweep time = auto couple.<br>6. Employ trace averaging (RMS) mode over a minimum of 100 traces. Use the peak marker function to determine the maximum power level.<br>6. Measure and record the results in the test report. |
| **Test Result:** | PASS |

### 6.5.2. Test data

**MAIN Ant1**

| Mode | Frequency (MHz) | Total PSD (dBm/3kHz) | Limit (dBm/3kHz) | Verdict |
|---|---|---|---|---|
| b | 2412 | 6.99 | 8 | Pass |
| b | 2437 | **7.46** | 8 | Pass |
| b | 2462 | 7.10 | 8 | Pass |
| g | 2412 | 3.48 | 8 | Pass |
| g | 2437 | 3.38 | 8 | Pass |
| g | 2462 | 2.78 | 8 | Pass |
| n20 | 2412 | 2.93 | 8 | Pass |
| n20 | 2437 | 2.33 | 8 | Pass |
| n20 | 2462 | 2.01 | 8 | Pass |
| n40 | 2422 | 0.70 | 8 | Pass |
| n40 | 2437 | 0.72 | 8 | Pass |
| n40 | 2452 | 0.38 | 8 | Pass |
| ax20 | 2412 | 2.08 | 8 | Pass |
| ax20 | 2437 | 2.67 | 8 | Pass |
| ax20 | 2462 | 1.87 | 8 | Pass |
| ax40 | 2422 | 1.12 | 8 | Pass |
| ax40 | 2437 | 1.05 | 8 | Pass |
| ax40 | 2452 | 0.86 | 8 | Pass |

**AUX Ant2**

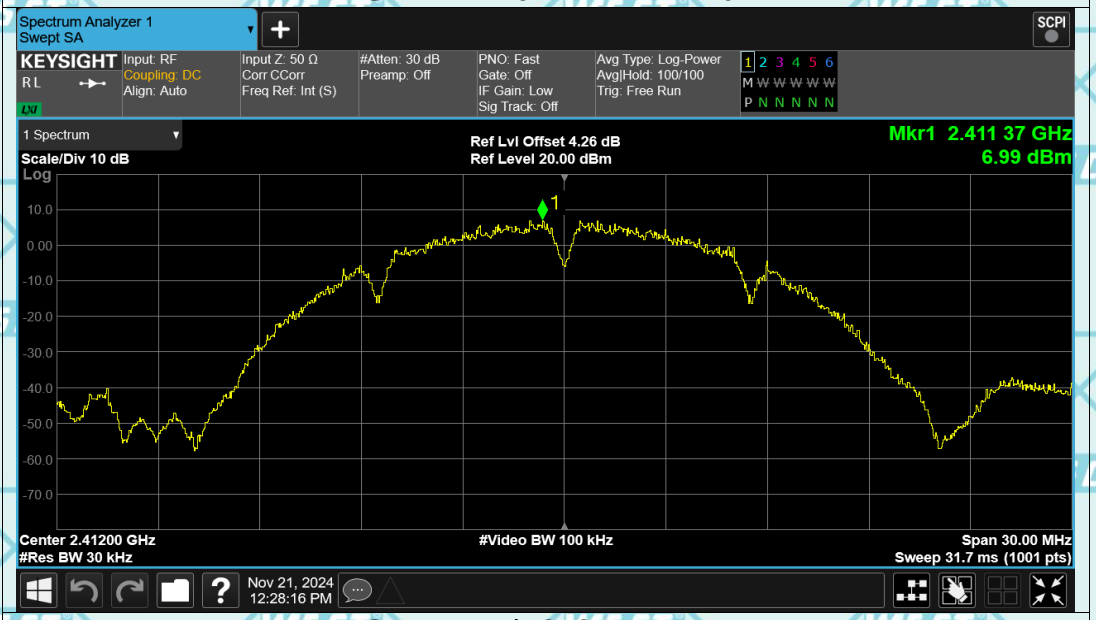
| Mode | Frequency (MHz) | Total PSD (dBm/3kHz) | Limit (dBm/3kHz) | Verdict |
|---|---|---|---|---|
| b | 2412 | **7.35** | 8 | Pass |
| b | 2437 | 7.02 | 8 | Pass |
| b | 2462 | 5.83 | 8 | Pass |
| g | 2412 | 2.19 | 8 | Pass |
| g | 2437 | 2.53 | 8 | Pass |
| g | 2462 | 2.52 | 8 | Pass |
| n20 | 2412 | 1.22 | 8 | Pass |
| n20 | 2437 | 2.53 | 8 | Pass |
| n20 | 2462 | 0.96 | 8 | Pass |
| n40 | 2422 | -0.74 | 8 | Pass |
| n40 | 2437 | -0.72 | 8 | Pass |
| n40 | 2452 | -1.40 | 8 | Pass |
| ax20 | 2412 | 0.40 | 8 | Pass |
| ax20 | 2437 | 0.69 | 8 | Pass |
| ax20 | 2462 | 0.03 | 8 | Pass |
| ax40 | 2422 | -0.02 | 8 | Pass |
| ax40 | 2437 | -0.22 | 8 | Pass |
| ax40 | 2452 | -0.82 | 8 | Pass |

**MIMO**

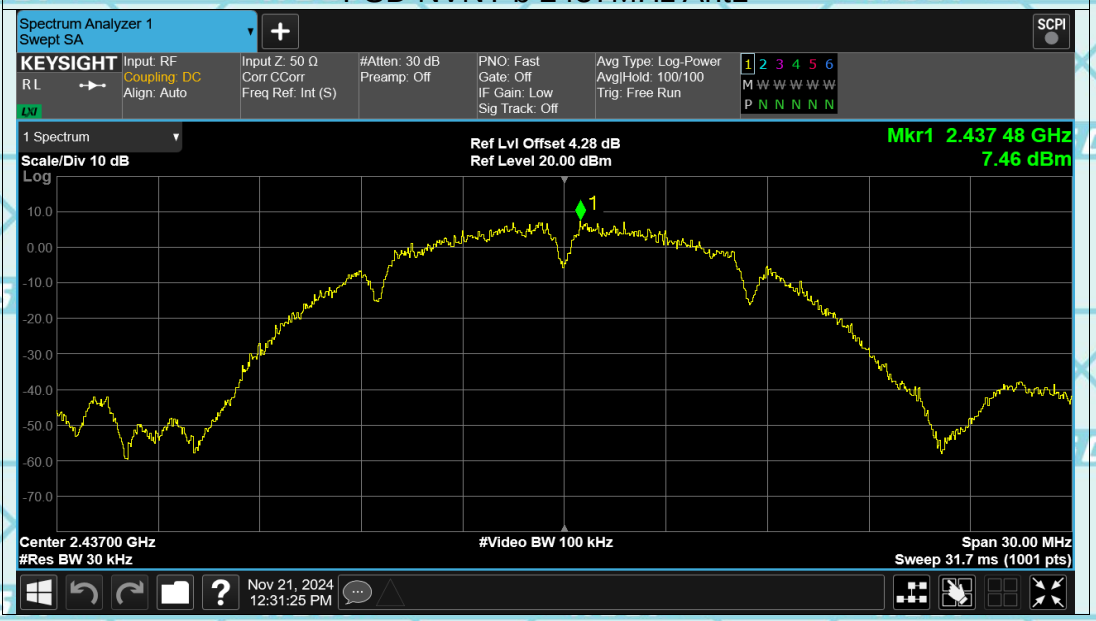
| Mode | Frequency (MHz) | Total PSD (dBm/3kHz) | Limit (dBm/3kHz) | Verdict |
|---|---|---|---|---|
| n20 | 2412 | 5.17 | 8 | Pass |
| n20 | 2437 | **5.44** | 8 | Pass |
| n20 | 2462 | 4.53 | 8 | Pass |
| n40 | 2422 | 3.05 | 8 | Pass |
| n40 | 2437 | 3.07 | 8 | Pass |
| n40 | 2452 | 2.59 | 8 | Pass |
| ax20 | 2412 | 4.33 | 8 | Pass |
| ax20 | 2437 | 4.80 | 8 | Pass |
| ax20 | 2462 | 4.06 | 8 | Pass |
| ax40 | 2422 | 3.60 | 8 | Pass |
| ax40 | 2437 | 3.47 | 8 | Pass |
| ax40 | 2452 | 3.11 | 8 | Pass |

# Test Graphs

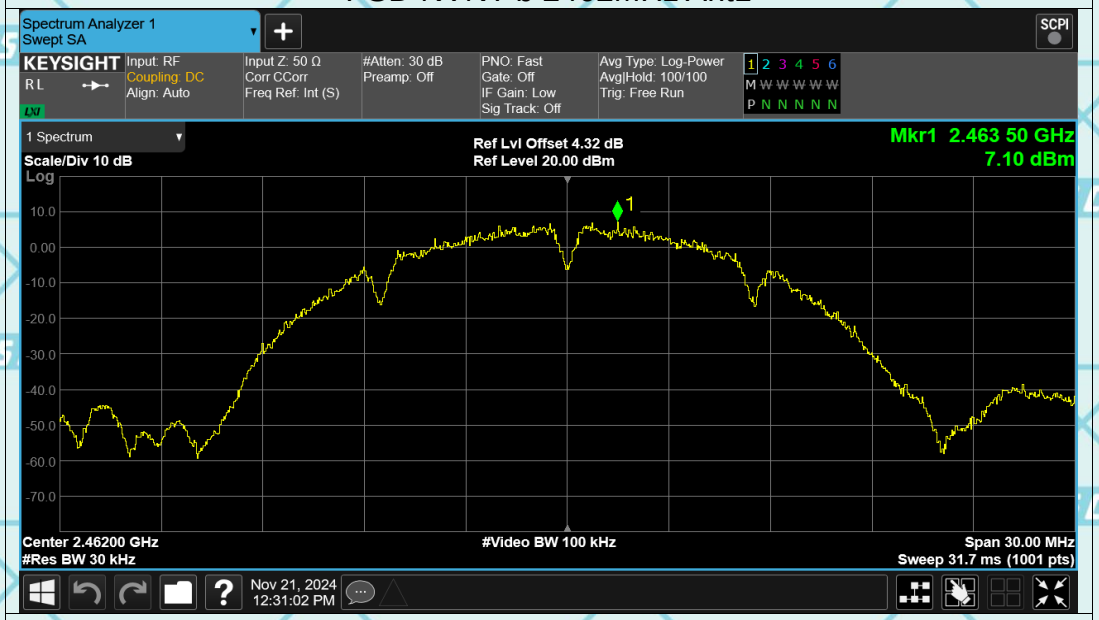
## PSD NVNT b 2412MHz Ant1



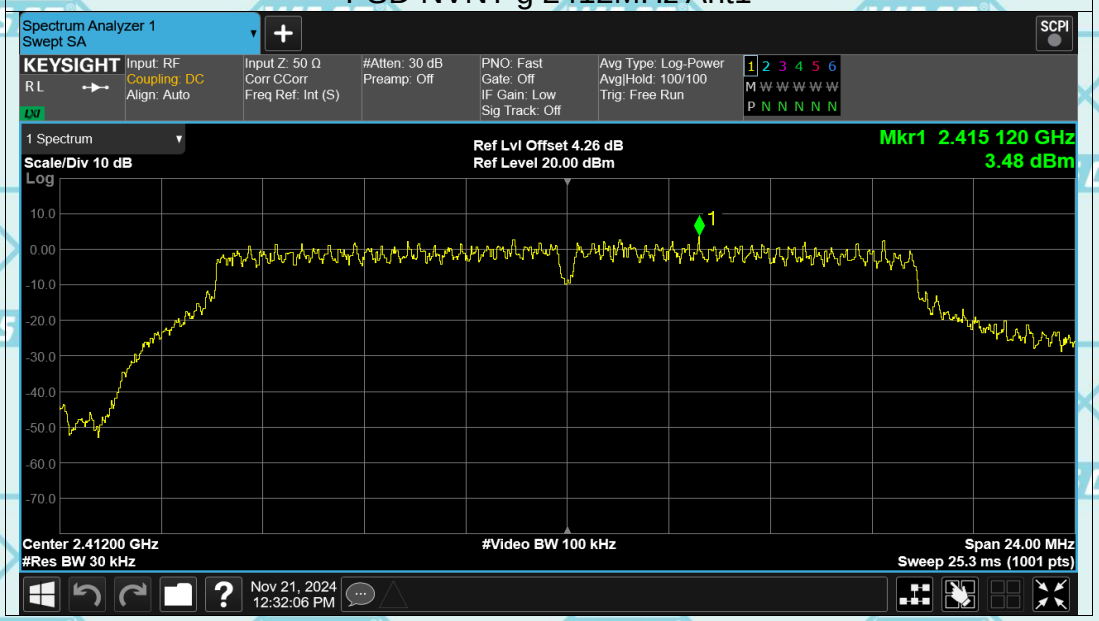

## PSD NVNT b 2437MHz Ant1



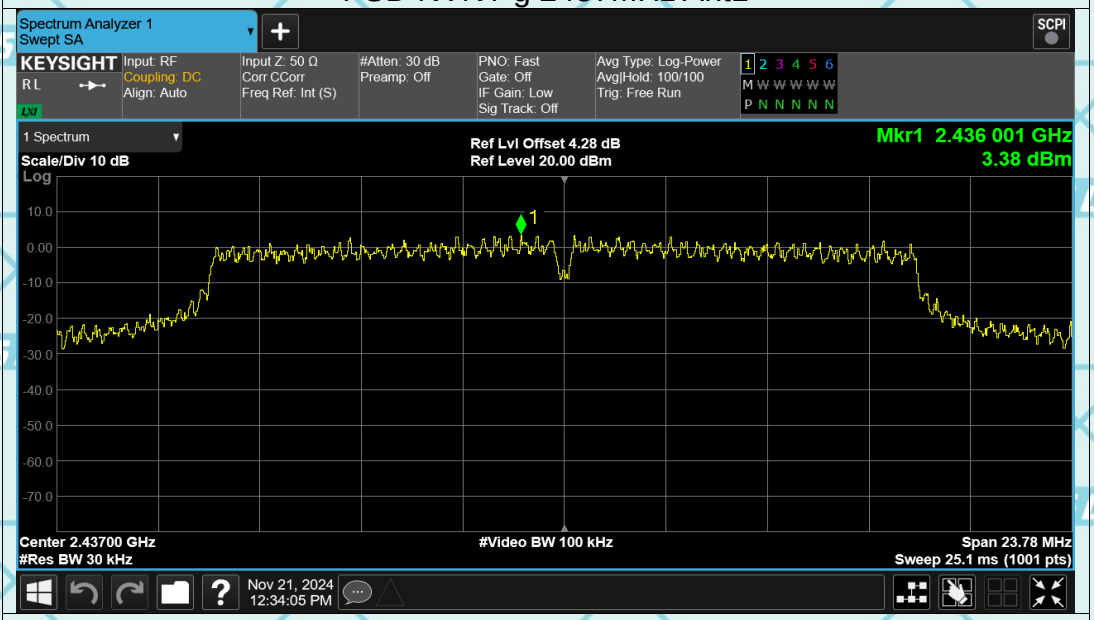
PSD NVNT b 2462MHz Ant1



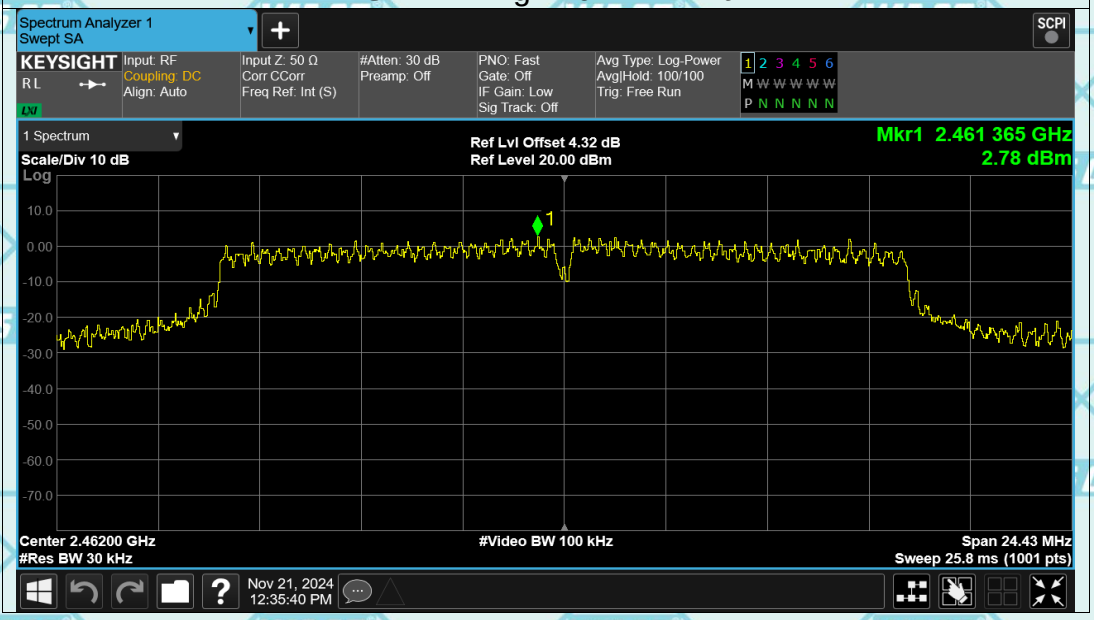

PSD NVNT g 2412MHz Ant1



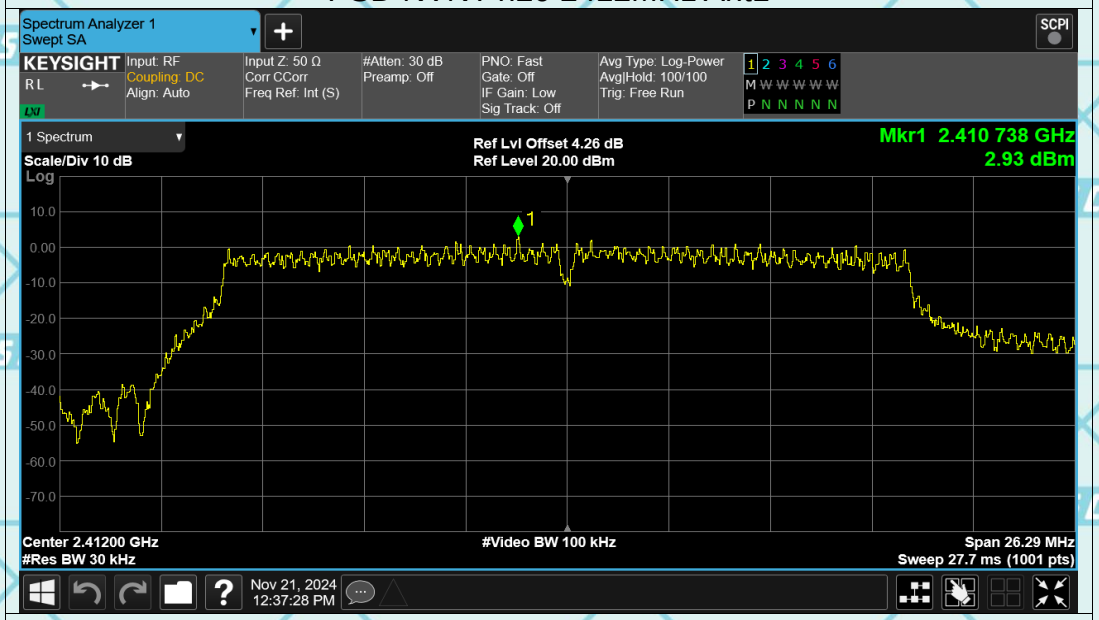
PSD NVNT g 2437MHz Ant1



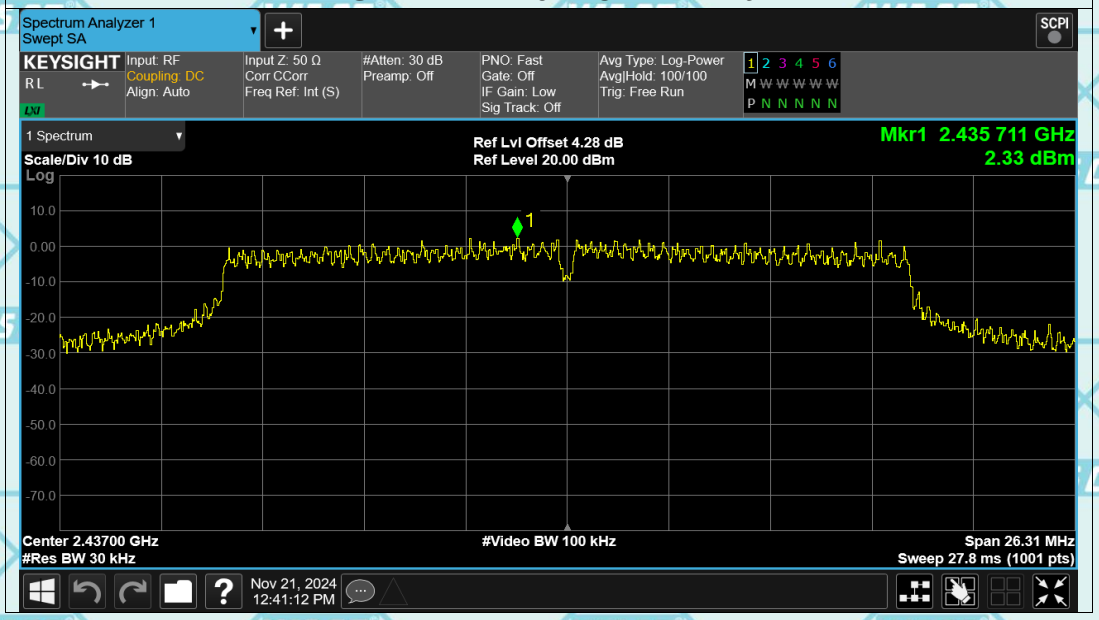

PSD NVNT g 2462MHz Ant1



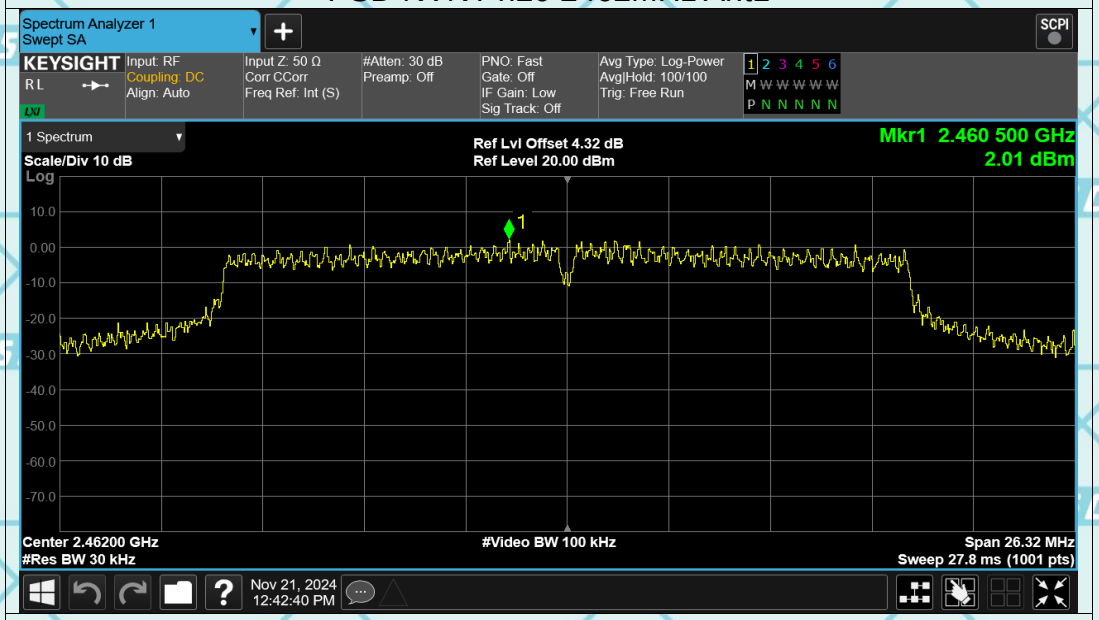
PSD NVNT n20 2412MHz Ant1



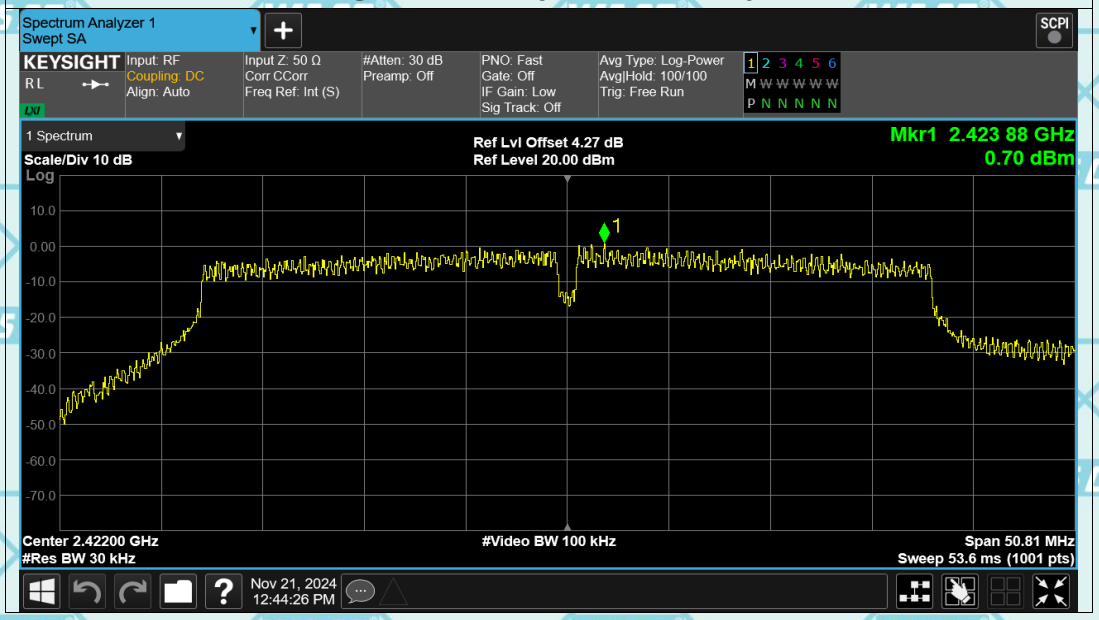

PSD NVNT n20 2437MHz Ant1



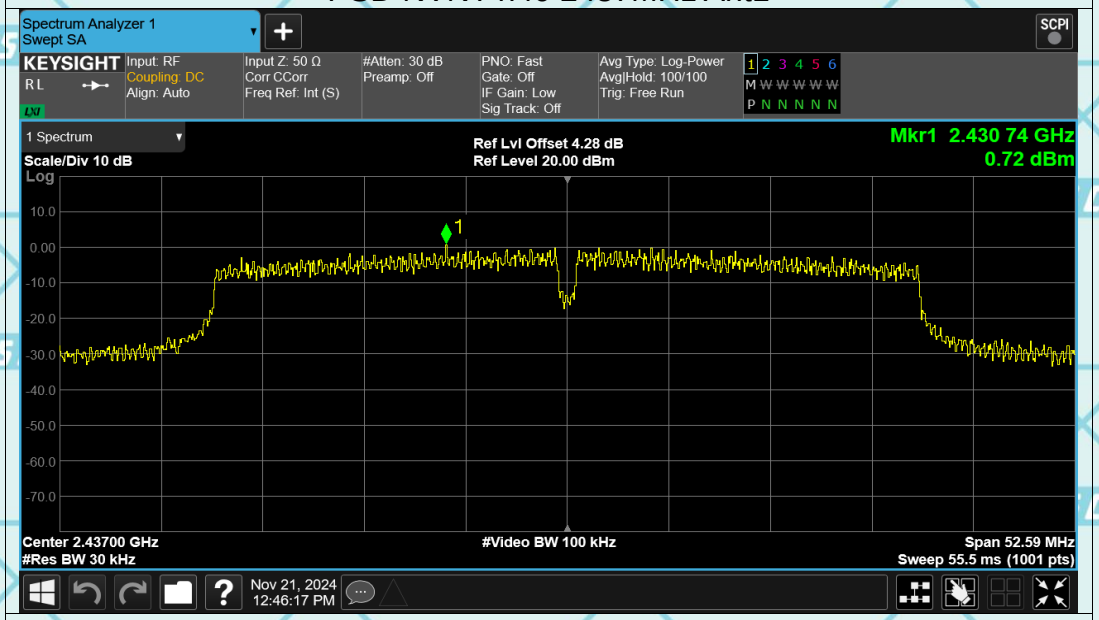
PSD NVNT n20 2462MHz Ant1



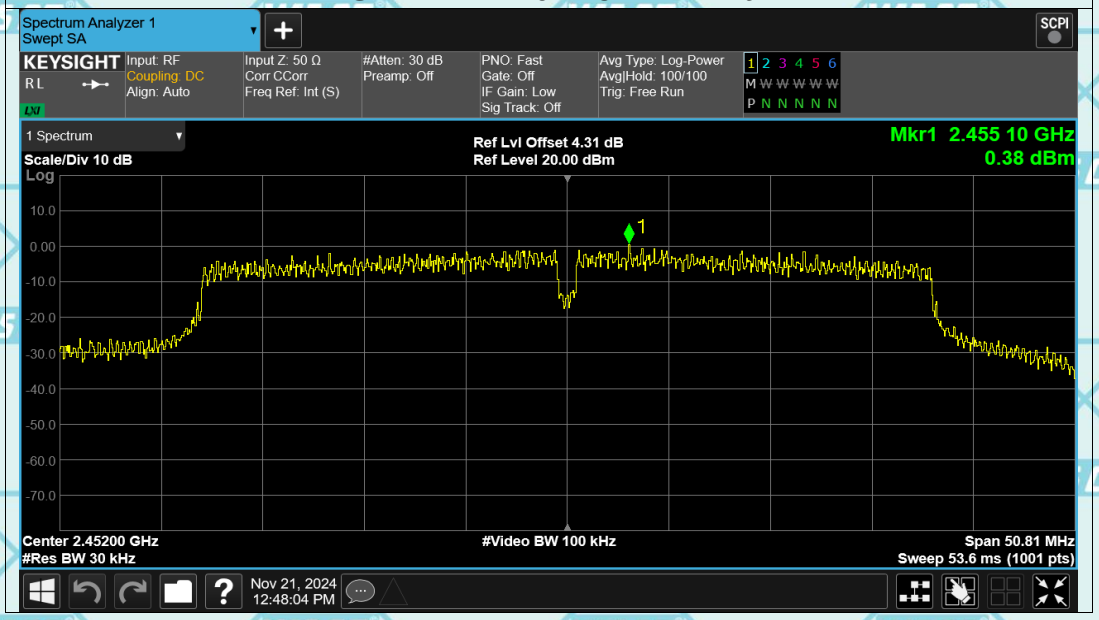

PSD NVNT n40 2422MHz Ant1



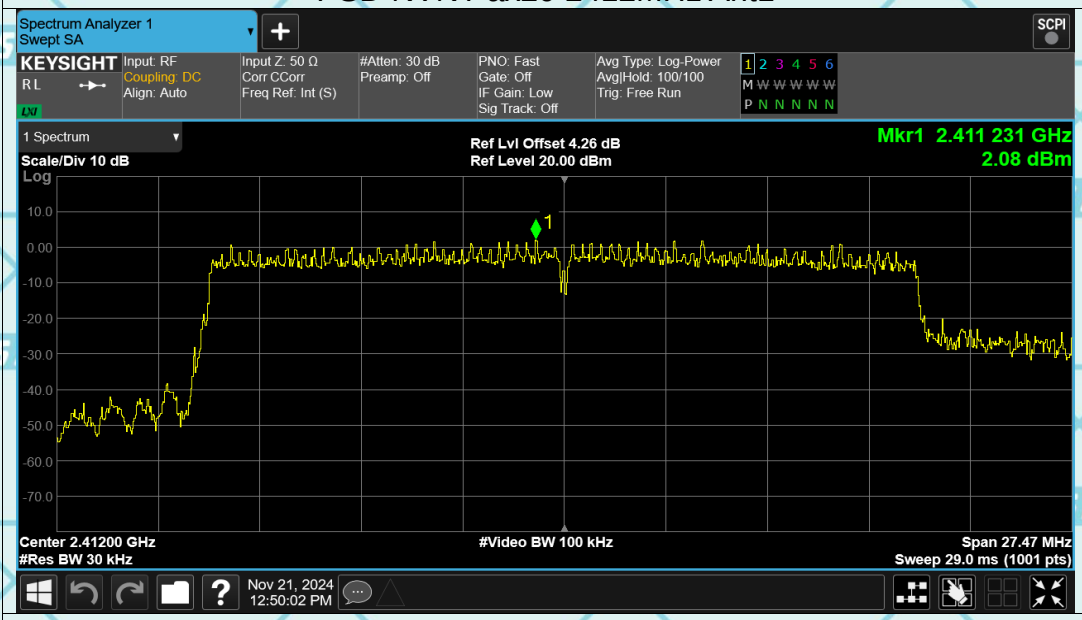
PSD NVNT n40 2437MHz Ant1




PSD NVNT n40 2452MHz Ant1



PSD NVNT ax20 2412MHz Ant1




PSD NVNT ax20 2437MHz Ant1