# Radio Test Report

Report No.:STS2606087W07

Issued for

THINKCAR TECH CO., LTD.

2606, building 4, phase II, TiananYungu, Gangtou community, Bantian, Longgang District, Shenzhen, China

| | |
|---|---|
| Product Name: | Automotive Diagnostic Device |
| Brand Name: | THINKCAR, MUCAR |
| Model Name: | GVCI |
| Series Model(s): | N/A |
| FCC ID: | 2AUARTKGVCI |
| Test Standards: | FCC Part15.247 |

# TEST REPORT

| | |
|---|---|
| **Applicant's Name** ..... : | THINKCAR TECH CO., LTD. |
| Address ..... : | 2606, building 4, phase II, TiananYungu, Gangtou community, Bantian, Longgang District, Shenzhen, China |
| **Manufacturer's Name** ..... : | THINKCAR TECH CO., LTD. |
| Address ..... : | 2606, building 4, phase II, TiananYungu, Gangtou community, Bantian, Longgang District, Shenzhen, China |

**Product Description**

| | |
|---|---|
| Product Name ..... : | Automotive Diagnostic Device |
| Brand Name ..... : | THINKCAR, MUCAR |
| Model Name ..... : | GVCI |
| Series Model(s) ..... : | N/A |
| **Standards** ..... : | FCC Part 15.247 |
| Test Procedure ..... : | ANSI C63.10-2020+Cor 1-2023 |

This device described above has been tested by STS, the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.
The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Shenzhen STS Test Services Co., Ltd.

**Date of Test**

| | |
|---|---|
| Date of receipt of test item ..... : | 12 June 2026 |
| Date (s) of performance of tests ..... : | 12 June 2026 ~ 16 July 2026 |
| Date of Issue ..... : | 16 July 2026 |
| Test Result ..... : | **Pass** |

Testing Engineer : Aaron Bu

(Aaron Bu)

Technical Manager : Skylar Li

(Skylar Li)

Authorized Signatory : Bovey Yang

(Bovey Yang)

SHENZHEN STS TEST SERVICES CO., LTD. TESTING APPROVAL

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## Revision History

| Rev. | Issue Date | Report No. | Effect Page | Contents |
|---|---|---|---|---|
| 00 | 16 July 2026 | STS2606087W07 | ALL | Initial Issue |
| | | | | |

## 1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

| FCC Part 15.247,Subpart C | | | |
|---|---|---|---|
| Standard Section | Test Item | Judgment | Remark |
| 15.207 | Conducted Emission | PASS | -- |
| 15.247 (a)(2) | 6dB Bandwidth | PASS | -- |
| 15.247 (b)(3) | Output Power | PASS | -- |
| 15.209 | Radiated Spurious Emission | PASS | -- |
| 15.247 (d) | Conducted Spurious & Band Edge Emission | PASS | -- |
| 15.247 (e) | Power Spectral Density | PASS | -- |
| 15.205 | Restricted Band Edge Emission | PASS | -- |
| Part 15.247(d)/ part 15.209(a) | Band Edge Emission | PASS | -- |
| 15.203 | Antenna Requirement | PASS | -- |

NOTE:

(1) 'N/A' denotes test is not applicable in this Test Report.

(2) All tests are according to ANSI C63.10-2020+Cor 1-2023.

## 1.1 TEST FACTORY

SHENZHEN STS TEST SERVICES CO., LTD
Add. : 101, Building B, Zhuoke Science Park, No.190 Chongqing Road, ZhanChengShequ, Fuhai Sub-District, Bao'an District, Shenzhen, Guang Dong, China

FCC test Firm Registration Number: 625569

IC test Firm Registration Number: 12108A

A2LA Certificate No.: 4338.01

## 1.2 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 | Uncertainty |
|---|---|---|
| 1 | RF output power, conducted | ±0.751dB |
| 2 | Unwanted Emissions, conducted | ±2.888dB |
| 3 | All emissions, radiated 9K-30MHz | ±2.48dB |
| 4 | All emissions, radiated 30M-1GHz | ±2.52dB |
| 5 | All emissions, radiated 1G-18GHz | ±3.48dB |
| 6 | All emissions, radiated>18GHz | ±4.18dB |
| 7 | Conducted Emission (9KHz-150KHz) | ±2.48dB |
| 8 | Conducted Emission (150KHz-30MHz) | ±2.52dB |
| 9 | Occupied Channel Bandwidth | ±3.6% |
| 10 | Power Spectral Density, conducted | ±1.214dB |
| 11 | Duty Cycle | ±3.2% |

## 2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF THE EUT

| | |
|---|---|
| Product Name | Automotive Diagnostic Device |
| Brand Name | THINKCAR, MUCAR |
| Model Name | GVCI |
| Series Model(s) | N/A |
| Model Difference | N/A |
| Product Description | Operation Frequency: 802.11b/g/n 20: 2412~2462 MHz<br>802.11n40:2422~2452MHz<br>Modulation Type: 802.11b(DSSS):CCK,DQPSK,DBPSK<br>802.11g(OFDM):BPSK,QPSK,16-QAM,64-QAM<br>802.11n(OFDM):BPSK,QPSK,16-QAM,64-QAM<br>Bit Rate of Transmitter: 802.11b:11/5.5/2/1 Mbps<br>802.11g:54/48/36/24/18/12/9/6Mbps<br>802.11n(20MHz):65/58.5/52/39/26/19.5/13/6.5Mbps<br>802.11n(40MHz):135/121.5/108/81/54/40.5/37/13.5Mbps<br>Number of Channel: 802.11b/g/n20: 11CH<br>802.11n 40: 7CH<br>Antenna Type: FPC<br>Antenna Gain: 0.48dBi |
| Channel List | Please refer to the Note 3. |
| Power Rating | Input: 9-18V 130mA |
| Adapter | N/A |
| Battery | N/A |
| Hardware version | V1.0 |
| Software version | V1.0 |
| Sample Number | 260612003-2 |
| Connecting I/O Port(s) | Please refer to the Note 1. |

Note:
1.For a more detailed features description, please refer to the manufacturer's specifications or the User Manual.
2.The antenna details in this report are based on the manufacturer provided antenna specification documents and apply only to the tested sample identified herein. Any discrepancies in the antenna information may affect the accuracy of the test results, and the customer assumes responsibility for any related issues

3.Channel List

| Operation Frequency of channel | | | |
|---|---|---|---|
| 802.11b/g/n(20MHz) | | Channel List for 802.11n(40MHz) | |
| Channel | Frequency | Channel | Frequency |
| 01 | 2412 | 03 | 2422 |
| 02 | 2417 | 04 | 2427 |
| 03 | 2422 | 05 | 2432 |
| 04 | 2427 | 06 | 2437 |
| 05 | 2432 | 07 | 2442 |
| 06 | 2437 | 08 | 2447 |
| 07 | 2442 | 09 | 2452 |
| 08 | 2447 | | |
| 09 | 2452 | | |
| 10 | 2457 | | |
| 11 | 2462 | | |

.

Note:
In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, themiddle frequency, and the highest frequency of channel were selected to perform the test, and the selectedchannel see below:
Carrier Frequency Channel

2.4GHz Test Frequency:

| For 802.11b/g/n (HT20) | | For 802.11n (HT40) | |
|---|---|---|---|
| Channel | Freq.(MHz) | Channel | Freq.(MHz) |
| 01 | 2412 | 03 | 2422 |
| 06 | 2437 | 06 | 2437 |
| 11 | 2462 | 09 | 2452 |

2.2 DESCRIPTION OF THE TEST MODES

| Worst Mode | Description | Data Rate |
|---|---|---|
| Mode 1 | TX IEEE 802.11b CH01 | 1 Mbps |
| Mode 2 | TX IEEE 802.11b CH06 | 1 Mbps |
| Mode 3 | TX IEEE 802.11 b CH11 | 1 Mbps |
| Mode 4 | TX IEEE 802.11g CH01 | 6 Mbps |
| Mode 5 | TX IEEE 802.11g CH06 | 6 Mbps |
| Mode 6 | TX IEEE 802.11g CH11 | 6 Mbps |
| Mode 7 | TX IEEE 802.11n HT20 CH01 | MCS 0 |
| Mode 8 | TX IEEE 802.11n HT20 CH06 | MCS 0 |
| Mode 9 | TX IEEE 802.11n HT20 CH11 | MCS 0 |
| Mode 10 | TX IEEE 802.11n HT40 CH03 | MCS 0 |
| Mode 11 | TX IEEE 802.11n HT40 CH06 | MCS 0 |
| Mode 12 | TX IEEE 802.11n HT40 CH09 | MCS 0 |

Note:
(1) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported.
(2) We have be tested for all avaiable U.S. voltage and frequencies(For 120V,50/60Hz and 240V, 50/60Hz) for which the device is capable of operation, and the worst case of 120V /60Hz is shown in the report.

AC Conducted Emission

| Test Case | |
|---|---|
| AC Conducted Emission | Mode13: Keeping TX + WLAN Link |

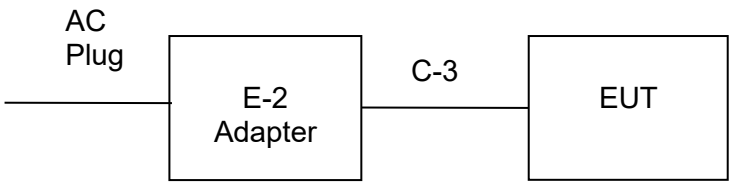
2.3 TEST SOFTWARE AND POWER LEVEL

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level.

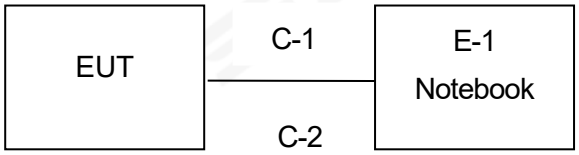
| RF Function | Type | Mode Or Modulation type | ANT Gain(dBi) | Power Class | Software For Testing |
|---|---|---|---|---|---|
| WIFI(2.4G) | 2.4G WIFI | 802.11b | 0.48 | 10 | SecureCRT |
| | | 802.11g | | 10 | |
| | | 802.11n(HT20) | | 10 | |
| | | 802.11n(HT40) | | 10 | |

2.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

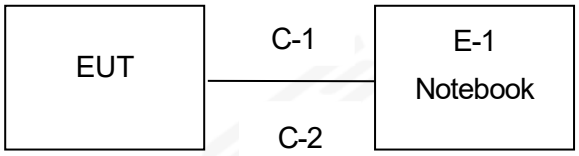
Conducted Emission Test




Radiated Spurious Emission Test




RF Conducted Test



2.5 DESCRIPTION OF NECESSARY ACCESSORIES AND 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.

| Item | Equipment | Mfr/Brand | Model/Type No. | Note |
|---|---|---|---|---|
| E-1 | Notebook | DELL | Inspiron 3501 | N/A |
| E-2 | Adapter | ZTC | NB-A515A | N/A |
| C-1 | Serial port board | XES | WTYZK | N/A |
| C-2 | USB Cable | MI | RYEW3A | N/A |
| C-3 | USB Cable | ZTC | NB-A515A | N/A |
| | | | | |

| Item | Equipment | Mfr/Brand | Length | Note |
|---|---|---|---|---|
| C-2 | Shielded | NO | 150cm | N/A |
| C-3 | Shielded | NO | 100cm | N/A |
| | | | | |
| | | | | |

Note:

(1) For detachable type I/O cable should be specified the length in cm in『Length』column.

(2) “YES” is means “with core”; “NO” is means “without core”.

## 2.6 EQUIPMENTS LIST FOR ALL TEST ITEMS

| RF Radiation Test Equipment | | | | | |
|---|---|---|---|---|---|
| Kind of Equipment | Manufacturer | Type No. | Serial No. | Last Calibration | Calibrated Until |
| 966 chamber | CHENYU | 966 Room | 966 | 2025.08.13 | 2028.08.12 |
| Temperature & Humidity | TORIE | TP502V4-P | 6700000124280 | 2025.10.13 | 2026.10.12 |
| Pre-Amplifier(0.1M-3GHz) | EM | EM330 | 060665 | 2026.02.05 | 2027.02.04 |
| Pre-Amplifier(1G-18GHz) | SKET | LNPA-01018G-45 | SK2018080901 | 2025.09.25 | 2026.09.24 |
| Pre-Amplifier(18G-40GHz) | SKET | LNPA_1840-50 | SK2018101801 | 2026.03.04 | 2027.03.03 |
| Active loop Antenna | ZHINAN | ZN30900C | 16035 | 2025.02.25 | 2027.02.24 |
| Bilog Antenna | TESEQ | CBL6111D | 34678 | 2025.09.27 | 2027.09.26 |
| Horn Antenna | SCHWARZBECK | BBHA 9120D | 02014 | 2025.09.27 | 2027.09.26 |
| Horn Antenna | A-INFOMW | LB-180400-KF | J211020657 | 2025.09.27 | 2027.09.26 |
| Positioning Controller | MF | MF-7802 | MF-780208587 | 2025.09.26 | 2026.09.25 |
| Signal Analyzer | R&S | FSV 40-N | 101823 | 2025.09.26 | 2026.09.25 |
| Switch Control Box | SKET | SU319E | 51409043 | 2025.09.26 | 2026.09.25 |
| Band 2.4G-2.5G Filter | HX MICROWAVE | HXLBQ-DZA61 | 5410025 | 2025.09.23 | 2026.09.22 |
| Antenna Mast | MF | MFA-440H | 1308023 | N/A | N/A |
| RF Coaxial Cable | LEITAI M-WAVE | CA360 | DC-18G | 2025.09.26 | 2026.09.25 |
| RF Coaxial Cable | LEITAI M-WAVE | CA360 | DC-18G | 2025.09.26 | 2026.09.25 |
| RF Coaxial Cable | LEITAI M-WAVE | CA3507 | DC-40G | 2025.09.26 | 2026.09.25 |
| RF Coaxial Cable | LEITAI M-WAVE | CA3507 | DC-40G | 2025.09.26 | 2026.09.25 |
| Turn Table | MF | SC100_1 | 60531 | N/A | N/A |
| AC Power Source | APC | KDF-11010G | F214050035 | N/A | N/A |
| DC power supply | HONGSHENGFENG | DPS-305AF | 17064939 | 2025.09.22 | 2026.09.21 |
| Test SW | EZ-EMC | Ver.STSLAB-03A1 RE | | | |
| AC Conduction Test Equipment | | | | | |
| Kind of Equipment | Manufacturer | Type No. | Serial No. | Last calibration | Calibrated until |
| Test Receiver | R&S | ESCI | 101427 | 2025.09.25 | 2026.09.24 |
| Limiter | CYBERTEK | EM5010 | N/A | 2025.09.25 | 2026.09.24 |
| LISN | R&S | ENV216 | 101242 | 2025.09.25 | 2026.09.24 |
| LISN | EMCO | 3810/2NM | 23625 | 2025.09.25 | 2026.09.24 |
| CE Cable | EASTSHEEP | C01 | 10057 | 2025.09.25 | 2026.09.24 |
| Temperature & Humidity | TORIE | TP502V4-P | 6700000422137 | 2025.08.26 | 2026.08.25 |
| Test SW | EZ-EMC | Ver.STSLAB-03A1 CE | | | |
| RF Conduction Test Equipment | | | | | |
| Kind of Equipment | Manufacturer | Type No. | Serial No. | Last calibration | Calibrated until |
| Signal Analyzer | Agilent | N9020A | MY51510623 | 2026.02.04 | 2027.02.03 |
| Pulse Power Sensor | Anritsu | MA2411B | 917389 | 2025.09.23 | 2026.09.22 |
| Power Meter | Anritsu | ML2480 | 1005127 | 2025.09.23 | 2026.09.22 |
| Switch control box | MW | MW100-RFCB | 052206001 | 2025.09.23 | 2026.09.22 |
| RF Coaxial Cable | XINQY | CT40PE | DC-40G | 2026.02.04 | 2027.02.03 |
| Temperature& Humidity test chamber | Safety test | AG80L | 171200018 | 2026.02.04 | 2027.02.03 |
| Temperature & Humidity | TORIE | TP502V4-P | 6700000124211 | 2025.10.09 | 2026.10.08 |
| Test SW | MW | MTS 8310_2.0.0.0 | | | |

# 3. EMC EMISSION TEST

## 3.1 CONDUCTED EMISSION MEASUREMENT

### 3.1.1 POWER LINE CONDUCTED EMISSION LIMITS

The radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table.

| FREQUENCY (MHz) | Conducted Emissionlimit (dBuV) | |
|---|---|---|
| | Quasi-peak | Average |
| 0.15 -0.5 | 66 - 56 * | 56 - 46 * |
| 0.50 -5.0 | 56.00 | 46.00 |
| 5.0 -30.0 | 60.00 | 50.00 |

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

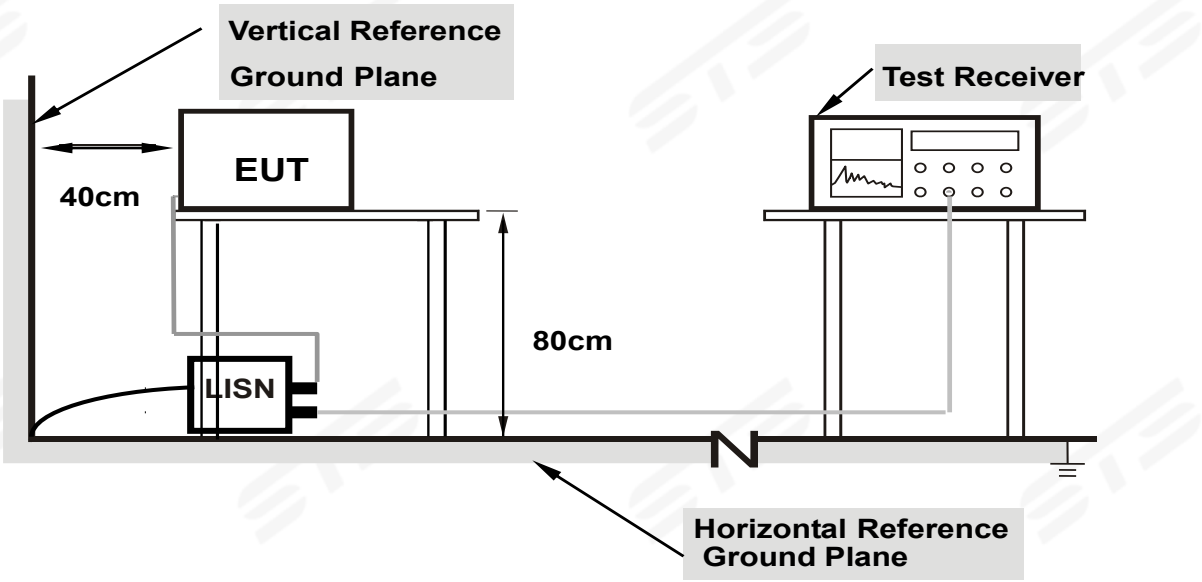
The following table is the setting of the receiver

| Receiver Parameters | Setting |
|---|---|
| Attenuation | 10 dB |
| Start Frequency | 0.15 MHz |
| Stop Frequency | 30 MHz |
| IF Bandwidth | 9 kHz |

3.1.2 TEST PROCEDURE

a. The EUT is 0.8 m from the horizontal ground plane and 0.4 m from the vertical ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments are powered from additional LISN(s). The LISN provides 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN is at least 80 cm from the nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 TEST SETUP




**Note: 1. Support units were connected to second LISN.**

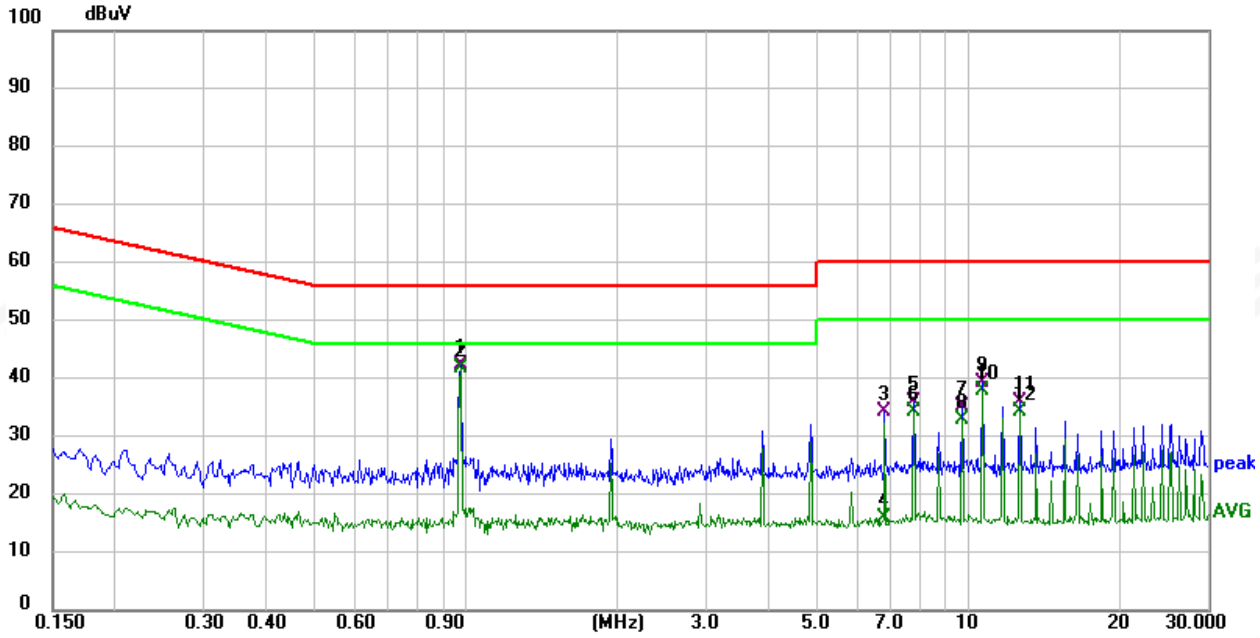
**2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes support units.**

3.1.4EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

3.1.5 TEST RESULT

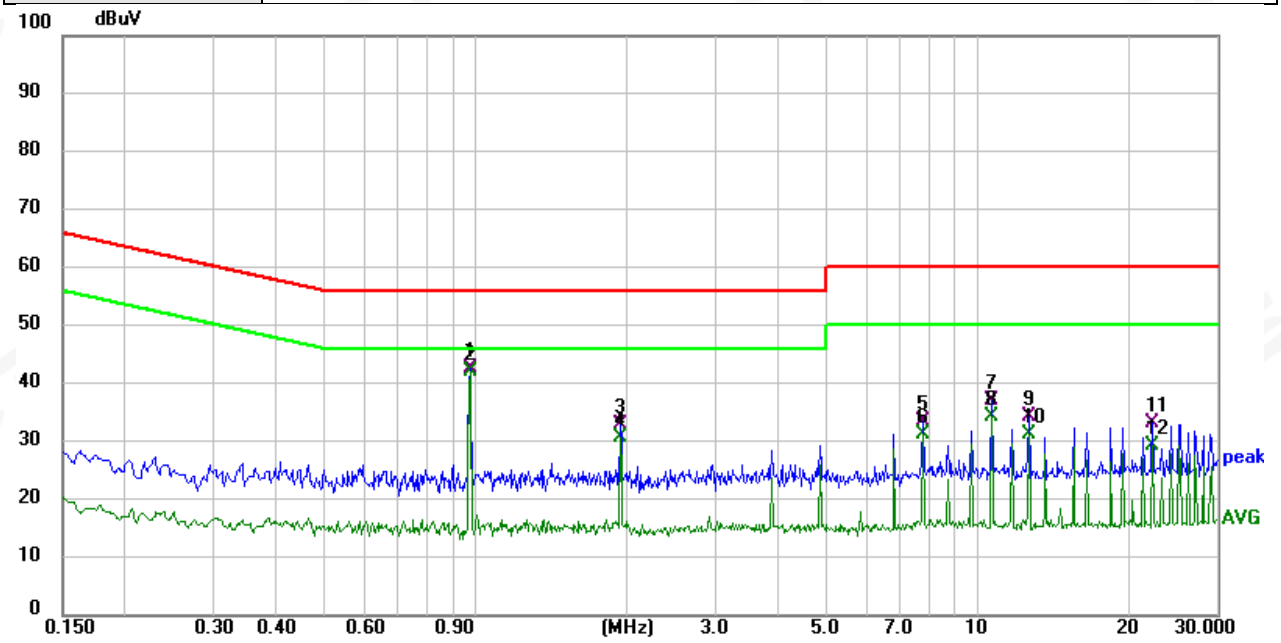
| Temperature: | 26℃ | Relative Humidity: | 54% |
|---|---|---|---|
| Test Voltage: | AC 120V/60Hz | Phase: | L |
| Test Mode: | Mode 13 | | |




| No. | Frequency (MHz) | Reading Level(dBuV) | Factor (dB) | Level (dBuV) | Limit (dBuV) | Over (dB) | Detector | Pass/Fail |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.9700 | 23.13 | 19.35 | 42.48 | 56.00 | -13.52 | QP | Pass |
| 2 * | 0.9700 | 22.39 | 19.35 | 41.74 | 46.00 | -4.26 | AVG | Pass |
| 3 | 6.7820 | 14.76 | 19.45 | 34.21 | 60.00 | -25.79 | QP | Pass |
| 4 | 6.7820 | -3.40 | 19.45 | 16.05 | 50.00 | -33.95 | AVG | Pass |
| 5 | 7.7540 | 16.52 | 19.50 | 36.02 | 60.00 | -23.98 | QP | Pass |
| 6 | 7.7540 | 14.70 | 19.50 | 34.20 | 50.00 | -15.80 | AVG | Pass |
| 7 | 9.6899 | 15.63 | 19.62 | 35.25 | 60.00 | -24.75 | QP | Pass |
| 8 | 9.6899 | 13.38 | 19.62 | 33.00 | 50.00 | -17.00 | AVG | Pass |
| 9 | 10.6580 | 19.52 | 19.65 | 39.17 | 60.00 | -20.83 | QP | Pass |
| 10 | 10.6580 | 18.16 | 19.65 | 37.81 | 50.00 | -12.19 | AVG | Pass |
| 11 | 12.5940 | 16.36 | 19.69 | 36.05 | 60.00 | -23.95 | QP | Pass |
| 12 | 12.5940 | 14.58 | 19.69 | 34.27 | 50.00 | -15.73 | AVG | Pass |

Remark:
1. All readings are Quasi-Peak and Average values
2. Margin = Result (Result =Reading + Factor )–Limit
3. Factor=LISN factor+Cable loss+Limiter (10dB)

| | | | |
|---|---|---|---|
| Temperature: | 26℃ | Relative Humidity: | 54% |
| Test Voltage: | AC 120V/60Hz | Phase: | N |
| Test Mode: | Mode 13 | | |




| No. | Frequency (MHz) | Reading Level(dBuV) | Factor (dB) | Level (dBuV) | Limit (dBuV) | Over (dB) | Detector | Pass/Fail |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.9700 | 23.36 | 19.39 | 42.75 | 56.00 | -13.25 | QP | Pass |
| 2 * | 0.9700 | 22.73 | 19.39 | 42.12 | 46.00 | -3.88 | AVG | Pass |
| 3 | 1.9380 | 13.40 | 19.38 | 32.78 | 56.00 | -23.22 | QP | Pass |
| 4 | 1.9380 | 11.41 | 19.38 | 30.79 | 46.00 | -15.21 | AVG | Pass |
| 5 | 7.7500 | 14.01 | 19.51 | 33.52 | 60.00 | -26.48 | QP | Pass |
| 6 | 7.7500 | 11.82 | 19.51 | 31.33 | 50.00 | -18.67 | AVG | Pass |
| 7 | 10.6540 | 17.47 | 19.70 | 37.17 | 60.00 | -22.83 | QP | Pass |
| 8 | 10.6540 | 14.48 | 19.70 | 34.18 | 50.00 | -15.82 | AVG | Pass |
| 9 | 12.5940 | 14.53 | 19.77 | 34.30 | 60.00 | -25.70 | QP | Pass |
| 10 | 12.5940 | 11.56 | 19.77 | 31.33 | 50.00 | -18.67 | AVG | Pass |
| 11 | 22.2820 | 13.45 | 19.83 | 33.28 | 60.00 | -26.72 | QP | Pass |
| 12 | 22.2820 | 9.53 | 19.83 | 29.36 | 50.00 | -20.64 | AVG | Pass |

Remark:
1. All readings are Quasi-Peak and Average values
2. Margin = Result (Result =Reading + Factor )–Limit
3. Factor=LISN factor+Cable loss+Limiter (10dB)

## 3.2 RADIATED EMISSION MEASUREMENT

### 3.2.1RADIATED EMISSION LIMITS

In any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the Restricted band specified on Part15.205(a)&209(a) limit in the table and according to ANSI C63.10-2020+Cor 1-2023 below has to be followed.

LIMITS OF RADIATED EMISSION MEASUREMENT (0.009MHz - 1000MHz)

| Frequencies (MHz) | Field Strength (micorvolts/meter) | Measurement Distance (meters) |
|---|---|---|
| 0.009~0.490 | 2400/F(KHz) | 300 |
| 0.490~1.705 | 24000/F(KHz) | 30 |
| 1.705~30.0 | 30 | 30 |
| 30~88 | 100 | 3 |
| 88~216 | 150 | 3 |
| 216~960 | 200 | 3 |
| Above 960 | 500 | 3 |

LIMITS OF RADIATED EMISSION MEASUREMENT (1000MHz-25GHz)

| FREQUENCY (MHz) | (dBuV/m) (at 3M) | |
|---|---|---|
| | PEAK | AVERAGE |
| Above 1000 | 74 | 54 |

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

### 3.2.2 TEST PROCEDURE

a. The measuring distance at 3 m shall be used for measurements at frequency 0.009MHz up to 1GHz, and above 1GHz.

b. The EUT was placed on the top of a rotating table 0.8 m (above 1GHz is 1.5 m) above the ground at a 3 m anechoic chamber test site. The table was rotated 360 degree to determine the position of the highest radiation.

c. The height of the equipment shall be 0.8 m (above 1GHz is 1.5 m); the height of the test antenna shall vary between 1 m to 4 m. Horizontal and vertical polarization of the antenna are set to make the measurement.

d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and QuasiPeak detector mode will be re-measured.

e. If the Peak Mode measured value is compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and no additional QP Mode measurement was performed.

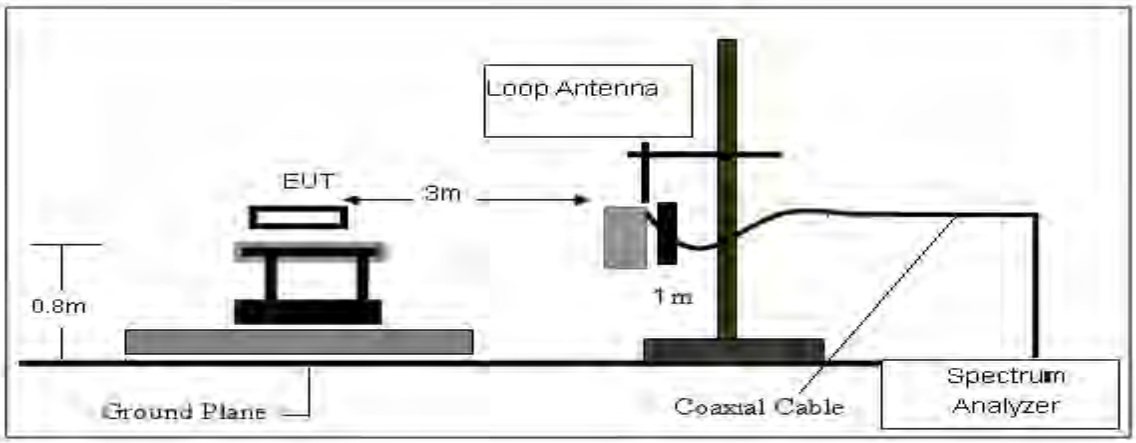
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

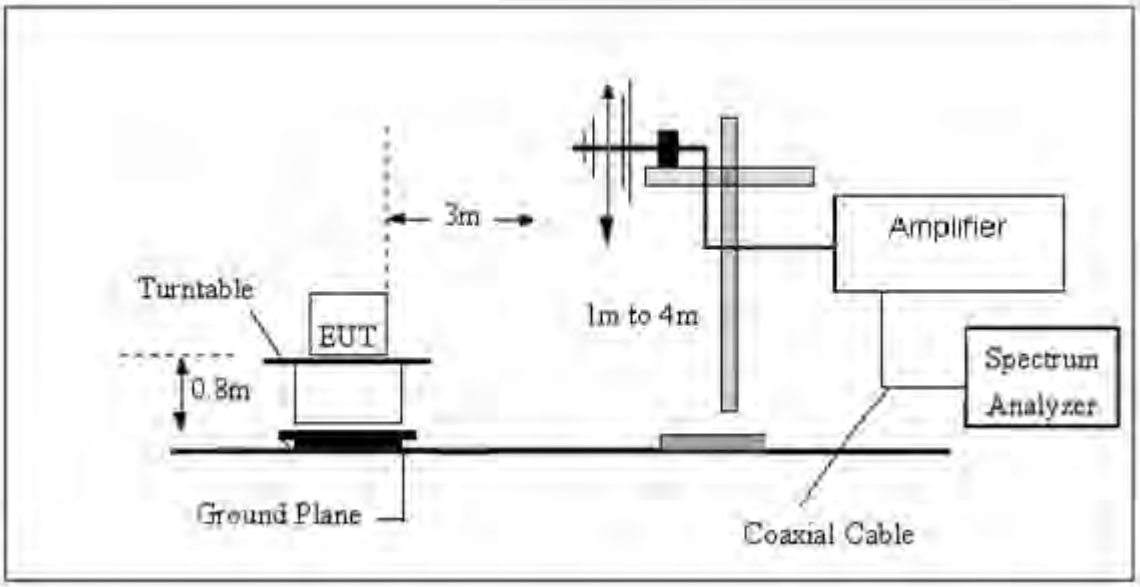
Both horizontal and vertical antenna polarities were tested with a band-stop filter and performed pretest to three orthogonal axis. The worst-case emissions were reported.

3.2.3 TEST SETUP

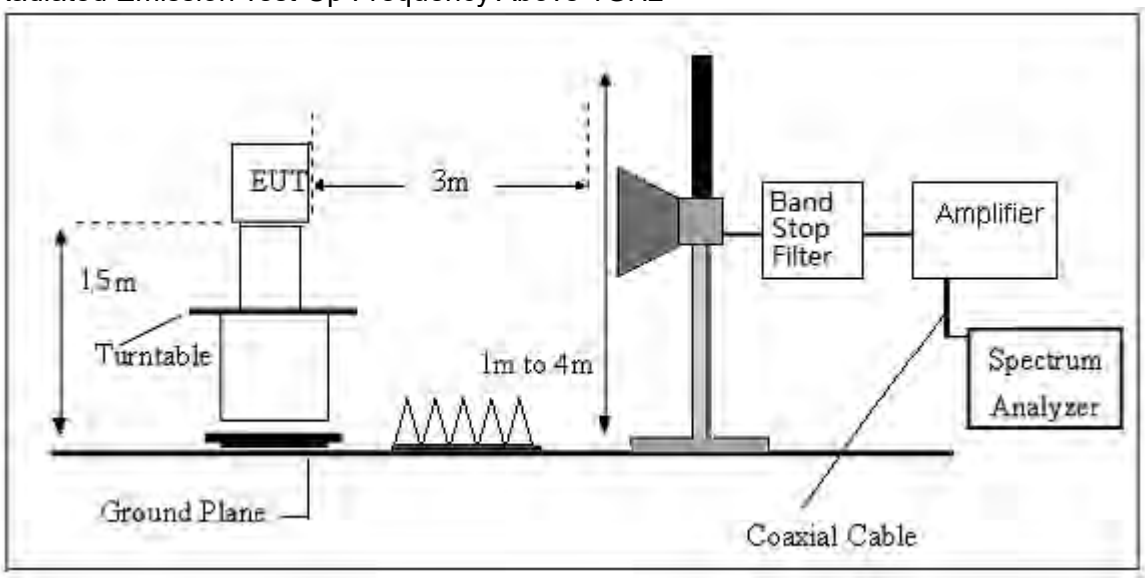
(A) Radiated Emission Test-Up Frequency Below 30MHz




(B) Radiated Emission Test-Up Frequency 30MHz~1GHz




(C) Radiated Emission Test-Up Frequency Above 1GHz




3.2.4 EUT OPERATING CONDITIONS

Please refer to section 3.1.4 of this report.

3.2.5 FIELD STRENGTH CALCULATION

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting theAmplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CL - AG

Where

FS = Field Strength

CL = Cable Attenuation Factor (Cable Loss)

RA = Reading Amplitude

AG = Amplifier Gain

AF = Antenna Factor

For example

| Frequency | FS | RA | AF | CL | AG | Factor |
|---|---|---|---|---|---|---|
| (MHz) | (dBμV/m) | (dBμV/m) | (dB) | (dB) | (dB) | (dB) |
| 300 | 40 | 58.1 | 12.2 | 1.6 | 31.9 | -18.1 |

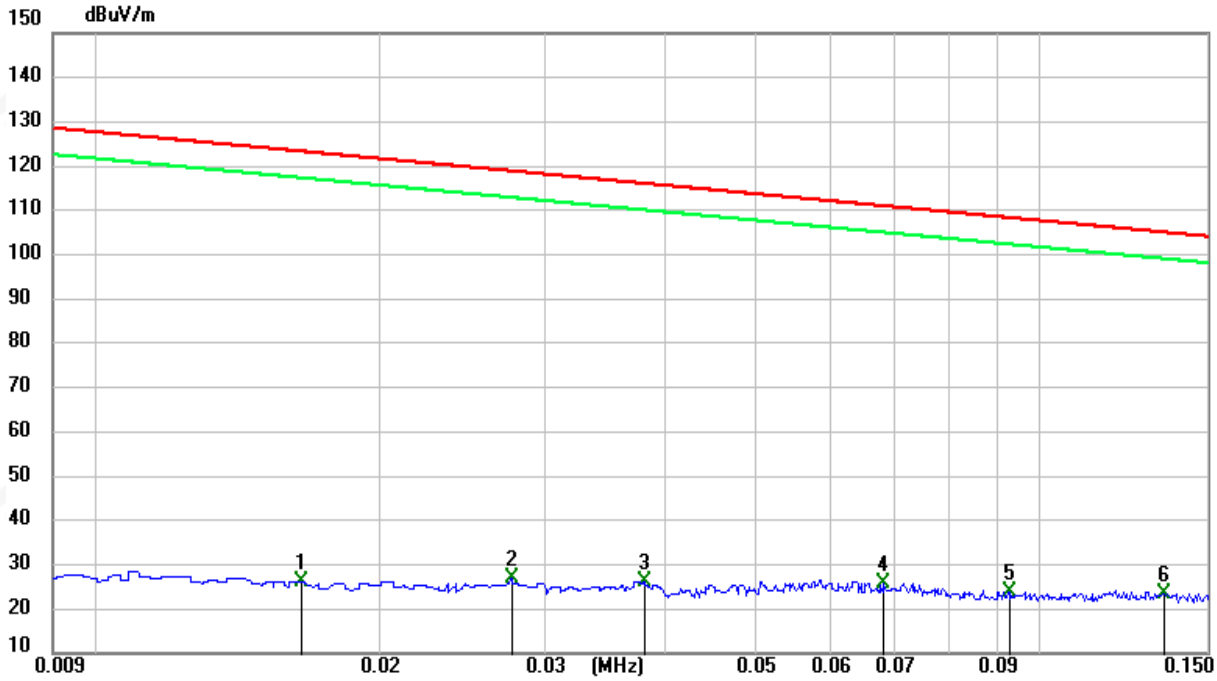
Factor=AF+CL-AG

3.2.6 TEST RESULT

9KHz-30MHz

9KHz-150KHz

| Temperature: | 24.1℃ | Relative Humidity: | 64% |
|---|---|---|---|
| Test Voltage: | DC 12V | Polarization: | Coaxial |
| Test Mode: | Mode 1/2/3/4/5/6/7/8/9/10/11/12 (Mode 3 worst mode) | | |



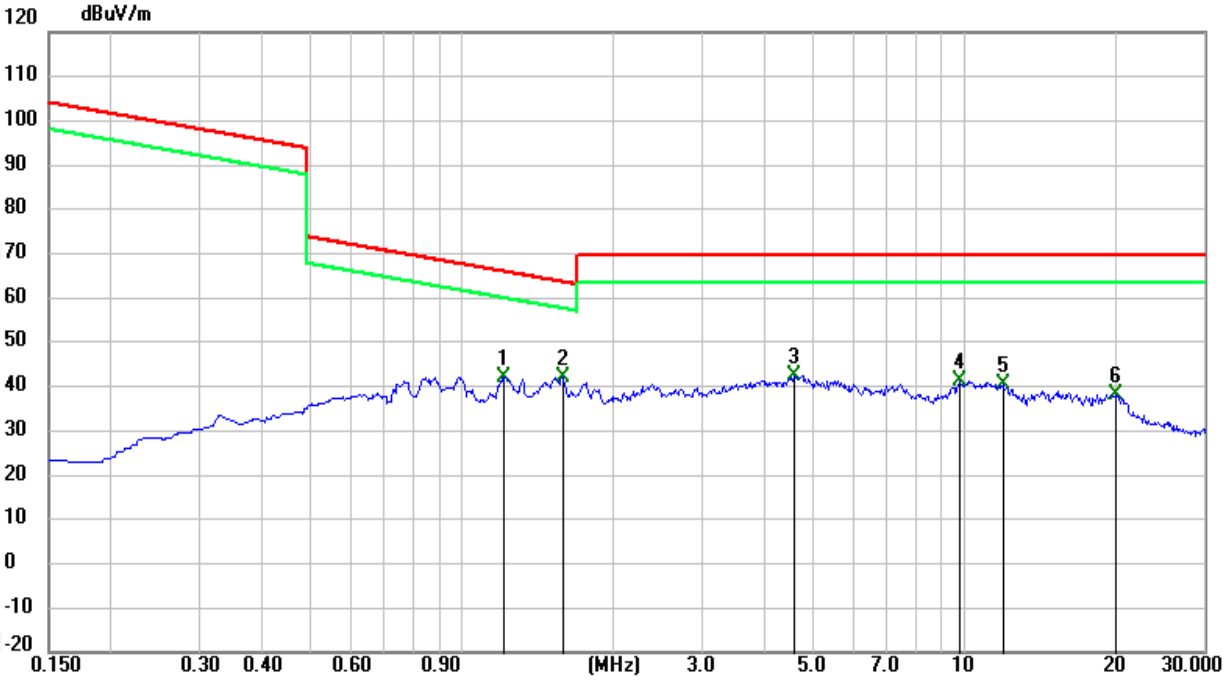

| No. | Frequency (MHz) | Reading Level(dBuV/m) | Factor (dB) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Pass/Fail |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.0165 | 6.39 | 19.85 | 26.24 | 123.26 | -97.02 | AVG | Pass |
| 2 | 0.0275 | 7.00 | 19.95 | 26.95 | 118.82 | -91.87 | AVG | Pass |
| 3 | 0.0381 | 6.56 | 19.74 | 26.30 | 115.99 | -89.69 | AVG | Pass |
| 4 | 0.0680 | 6.63 | 18.99 | 25.62 | 110.95 | -85.33 | AVG | Pass |
| 5 | 0.0926 | 5.92 | 17.95 | 23.87 | 108.27 | -84.40 | QP | Pass |
| 6 * | 0.1350 | 5.98 | 17.53 | 23.51 | 105.00 | -81.49 | AVG | Pass |

Remark:

1. Margin = Result (Result =Reading + Factor )–Limit
2. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain
3. The coaxial and coplanar directions of all modes have been tested, only show the worst data in this report.

150KHz-30MHz

| | | | |
|---|---|---|---|
| Temperature: | 24.1°C | Relative Humidity: | 64% |
| Test Voltage: | DC 12V | Polarization: | Coaxial |
| Test Mode: | Mode 1/2/3/4/5/6/7/8/9/10/11/12 (Mode 3 worst mode) | | |



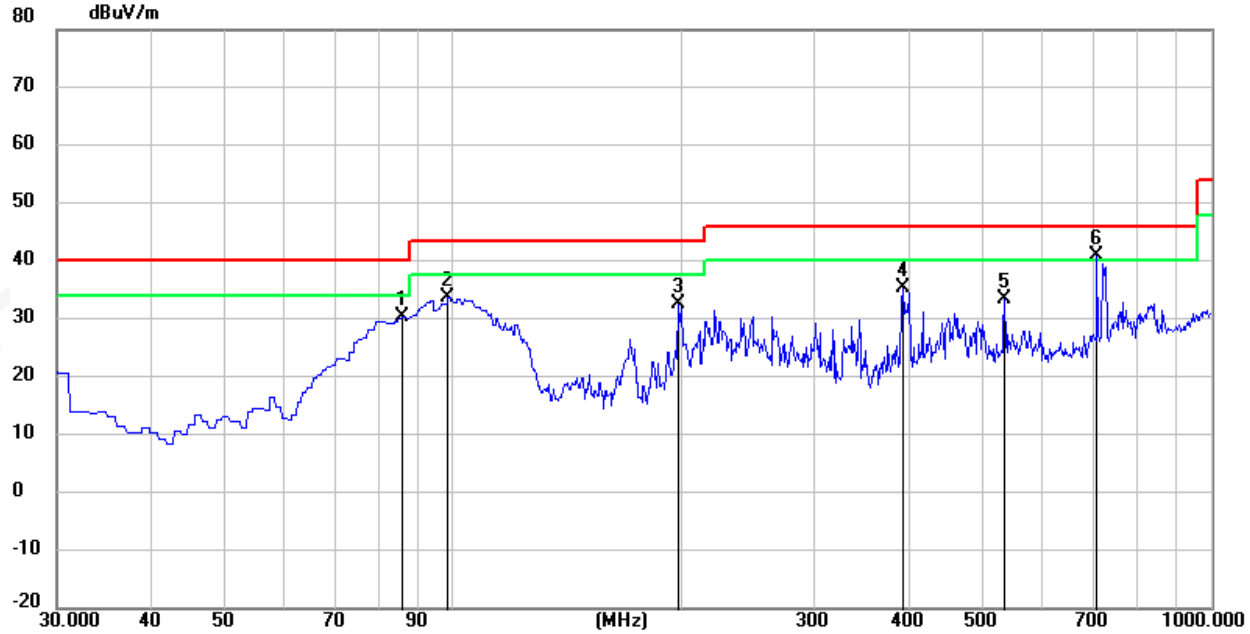

| No. | Frequency (MHz) | Reading Level(dBuV/m) | Factor (dB) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Pass/Fail |
|---|---|---|---|---|---|---|---|---|
| 1 | 1.2096 | 21.80 | 20.24 | 42.04 | 65.95 | -23.91 | QP | Pass |
| 2 | 1.5826 | 21.78 | 20.32 | 42.10 | 63.62 | -21.52 | QP | Pass |
| 3 | 4.5678 | 22.00 | 20.46 | 42.46 | 69.50 | -27.04 | QP | Pass |
| 4 | 9.7916 | 21.23 | 20.21 | 41.44 | 69.50 | -28.06 | QP | Pass |
| 5 | 11.9108 | 19.94 | 20.62 | 40.56 | 69.50 | -28.94 | QP | Pass |
| 6 * | 19.9404 | 15.82 | 22.49 | 38.31 | 69.50 | -31.19 | QP | Pass |

Remark:

1. Margin = Result (Result =Reading + Factor )–Limit
2. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain
3. The coaxial and coplanar directions of all modes have been tested, only show the worst data in this report.

(30MHz - 1000MHz)

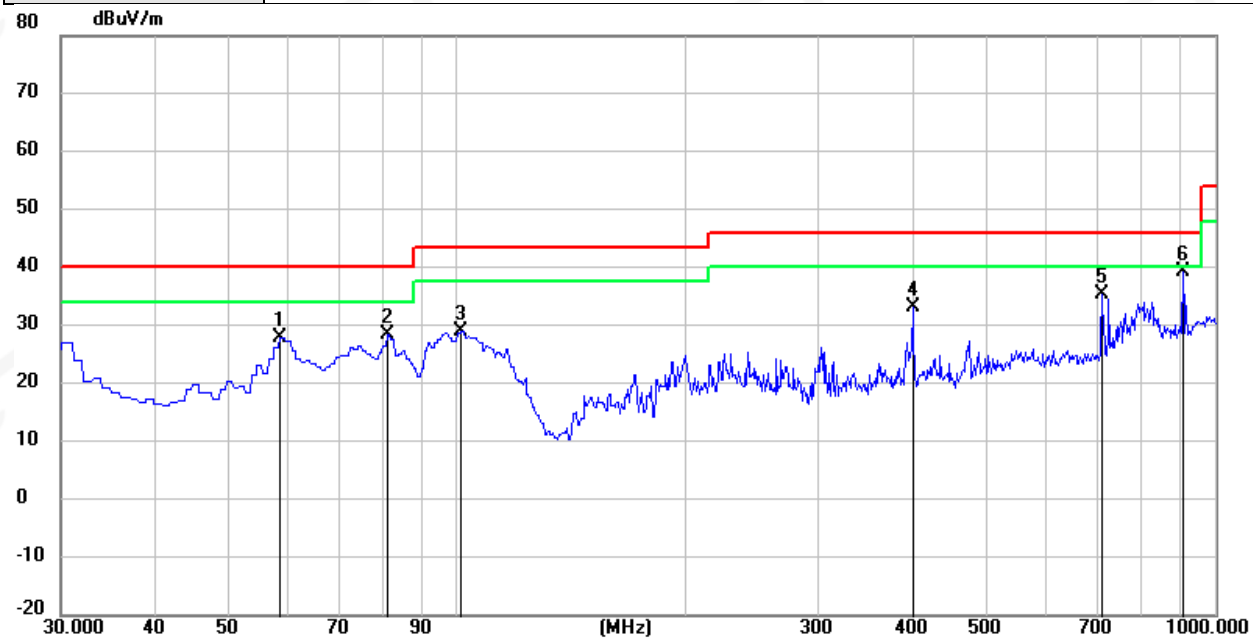
| | | | |
|---|---|---|---|
| Temperature: | 23.4°C | Relative Humidity: | 56% |
| Test Voltage: | DC 12V | Phase: | Horizontal |
| Test Mode: | Mode 1/2/3/4/5/6/7/8/9/10/11/12 (Mode 3 worst mode) | | |




| No. | Frequency (MHz) | Reading Level(dBuV/m) | Factor (dB) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Pass/Fail |
|---|---|---|---|---|---|---|---|---|
| 1 | 85.5977 | 52.50 | -22.07 | 30.43 | 40.00 | -9.57 | QP | Pass |
| 2 | 98.4866 | 54.13 | -20.37 | 33.76 | 43.50 | -9.74 | QP | Pass |
| 3 | 197.8100 | 53.69 | -21.12 | 32.57 | 43.50 | -10.93 | QP | Pass |
| 4 | 390.8400 | 46.84 | -11.54 | 35.30 | 46.00 | -10.70 | QP | Pass |
| 5 | 533.4300 | 40.72 | -7.25 | 33.47 | 46.00 | -12.53 | QP | Pass |
| 6 * | 706.0900 | 44.87 | -3.98 | 40.89 | 46.00 | -5.11 | QP | Pass |

Remark:
1. Margin = Result (Result =Reading + Factor )–Limit
2. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain
3. All modes have been tested,only show the worst case.

| | | | |
|---|---|---|---|
| Temperature: | 23.4°C | Relative Humidity: | 56% |
| Test Voltage: | DC 12V | Phase: | Vertical |
| Test Mode: | Mode 1/2/3/4/5/6/7/8/9/10/11/12 (Mode 3 worst mode) | | |

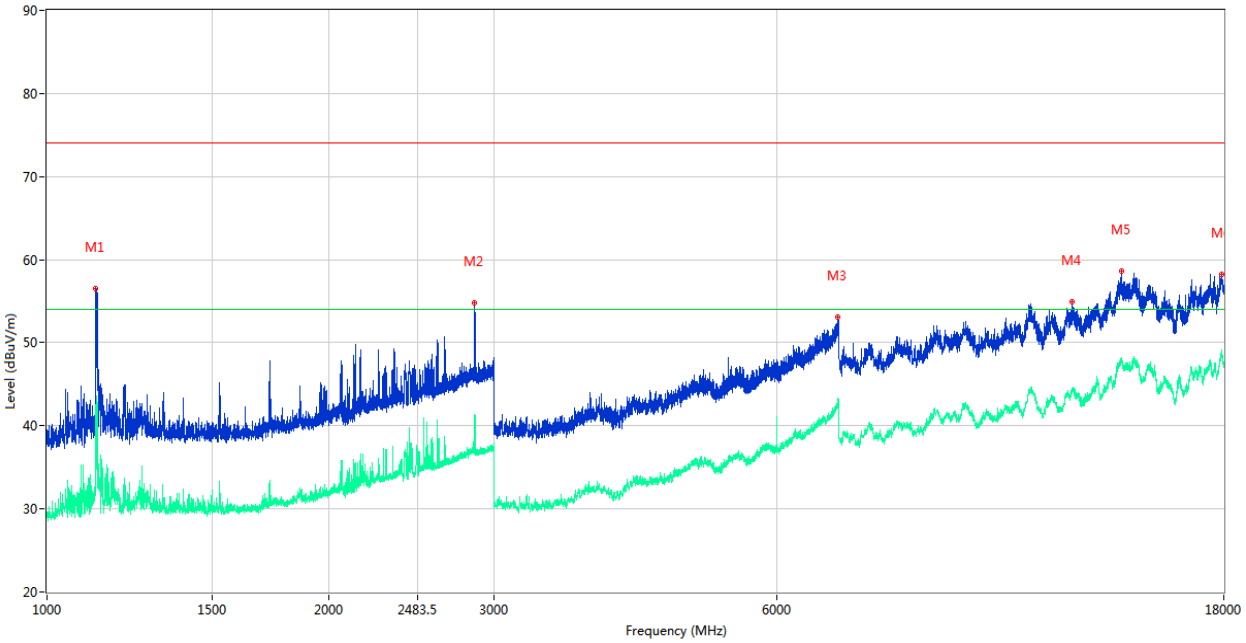



| No. | Frequency (MHz) | Reading Level(dBuV/m) | Factor (dB) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Pass/Fail |
|---|---|---|---|---|---|---|---|---|
| 1 | 58.4074 | 53.47 | -25.63 | 27.84 | 40.00 | -12.16 | QP | Pass |
| 2 | 80.9275 | 51.21 | -22.87 | 28.34 | 40.00 | -11.66 | QP | Pass |
| 3 | 101.2885 | 48.93 | -20.00 | 28.93 | 43.50 | -14.57 | QP | Pass |
| 4 | 398.6000 | 44.49 | -11.20 | 33.29 | 46.00 | -12.71 | QP | Pass |
| 5 | 707.0600 | 39.38 | -3.94 | 35.44 | 46.00 | -10.56 | QP | Pass |
| 6 * | 904.9400 | 39.54 | -0.32 | 39.22 | 46.00 | -6.78 | QP | Pass |

Remark:.
1. Margin = Result (Result =Reading + Factor )–Limit
2. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain
3. All modes have been tested,only show the worst case.

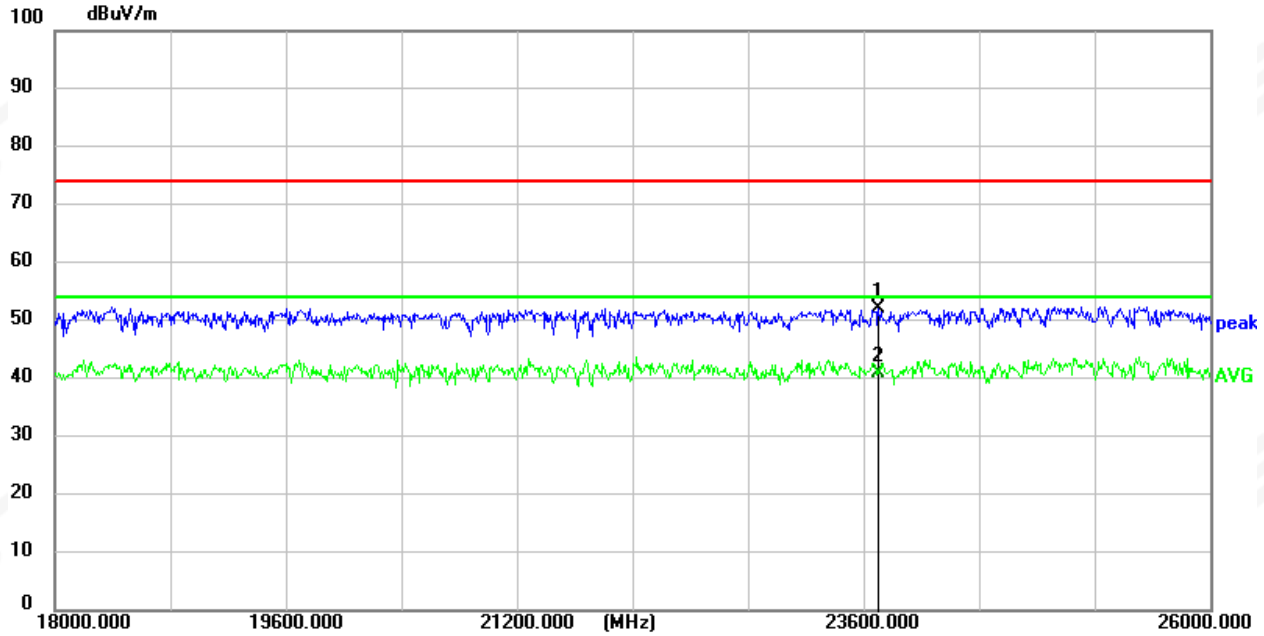
(1000MHz-25GHz) Spurious emission Requirements

Worst mode (802.11 b)
Low Channel
Horizontal



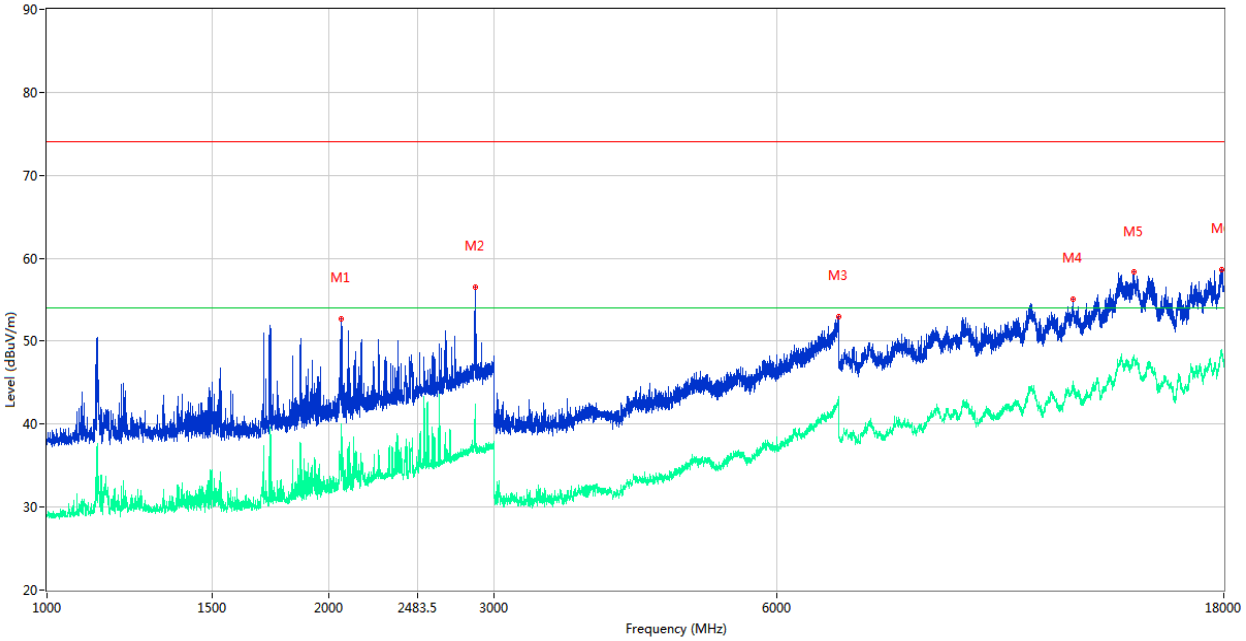

| No. | Frequency (MHz) | Results (dBuV/m) | Factor (dB/m) | Limit (dBuV/m) | Margin- (dB) | Detector | Table (Degree) | Antenna | Verdict |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1127.500 | 56.50 | -1.71 | 74.0 | -17.50 | Peak | 92.50 | Horizontal | Pass |
| 1** | 1127.500 | 42.59 | -1.71 | 54.0 | -11.41 | AV | 92.50 | Horizontal | Pass |
| 2 | 2854.500 | 54.77 | 4.99 | 74.0 | -19.23 | Peak | 102.90 | Horizontal | Pass |
| 2** | 2854.500 | 41.42 | 4.99 | 54.0 | -12.58 | AV | 102.90 | Horizontal | Pass |
| 3 | 6975.000 | 53.12 | 1.12 | 74.0 | -20.88 | Peak | 311.60 | Horizontal | Pass |
| 3** | 6975.000 | 42.63 | 1.12 | 54.0 | -11.37 | AV | 311.60 | Horizontal | Pass |
| 4 | 12406.500 | 54.95 | 3.11 | 74.0 | -19.05 | Peak | 91.40 | Horizontal | Pass |
| 4** | 12406.500 | 44.55 | 3.11 | 54.0 | -9.45 | AV | 91.40 | Horizontal | Pass |
| 5 | 14009.750 | 58.57 | 8.29 | 74.0 | -15.43 | Peak | 27.40 | Horizontal | Pass |
| 5** | 14009.750 | 47.67 | 8.29 | 54.0 | -6.33 | AV | 27.40 | Horizontal | Pass |
| 6 | 17920.250 | 58.29 | 7.08 | 74.0 | -15.71 | Peak | 358.50 | Horizontal | Pass |
| 6** | 17920.250 | 49.10 | 7.08 | 54.0 | -4.90 | AV | 358.50 | Horizontal | Pass |

18GHz-26GHz



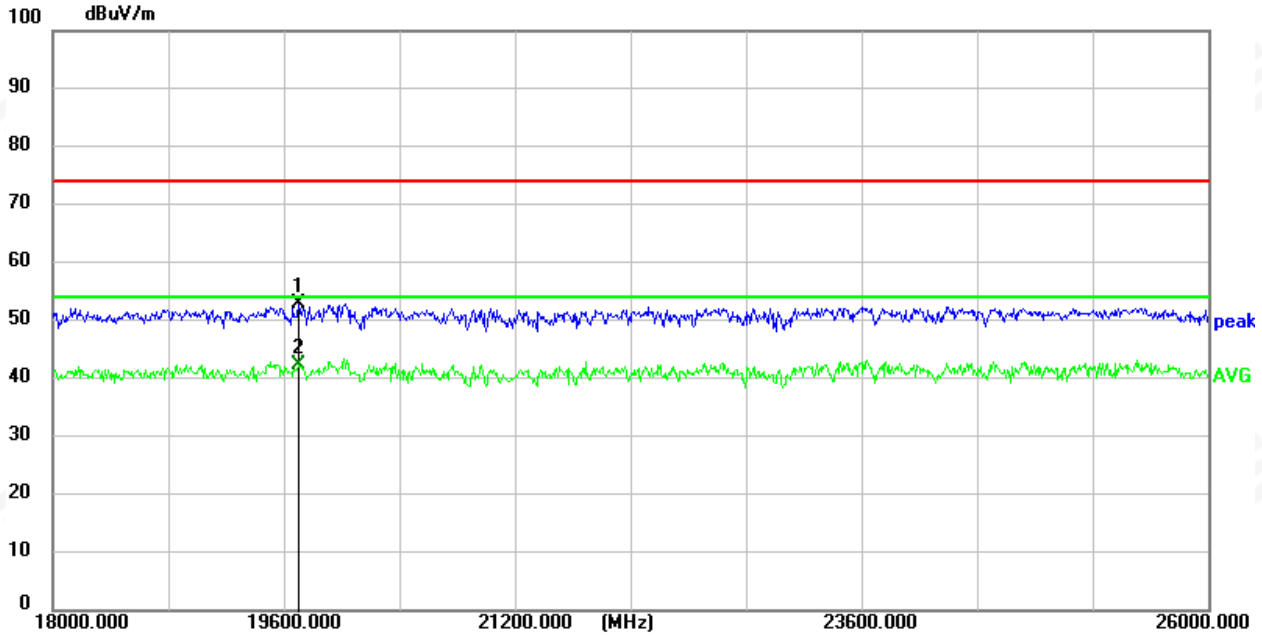

| No. | Frequency (MHz) | Reading Level(dBuV/m) | Factor (dB) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Pass/Fail |
|---|---|---|---|---|---|---|---|---|
| 1 | 23704.0000 | 47.66 | 4.33 | 51.99 | 74.00 | -22.01 | peak | Pass |
| 2 * | 23704.0000 | 36.72 | 4.33 | 41.05 | 54.00 | -12.95 | AVG | Pass |

Vertical
1GHz-18GHz



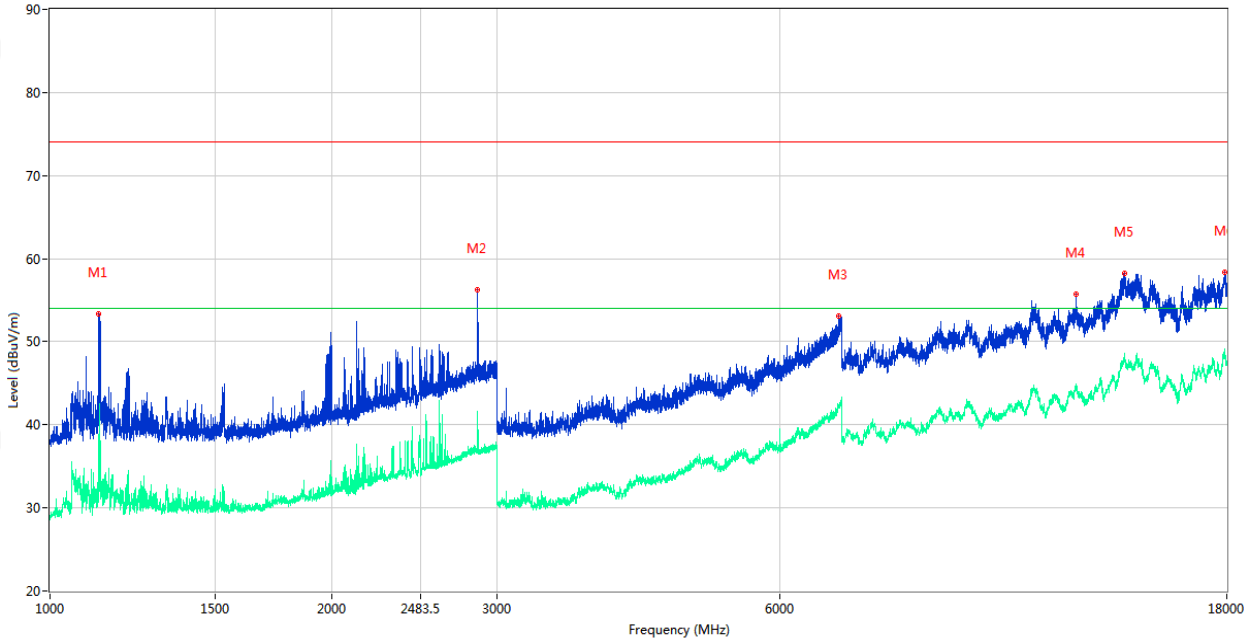

| No. | Frequency (MHz) | Results (dBuV/m) | Factor (dB/m) | Limit (dBuV/m) | Margin-(dB) | Detector | Table (Degree) | Antenna | Verdict |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2062.000 | 52.66 | 0.83 | 74.0 | -21.34 | Peak | 103.60 | Vertical | Pass |
| 1** | 2062.000 | 39.98 | 0.83 | 54.0 | -14.02 | AV | 103.60 | Vertical | Pass |
| 2 | 2865.000 | 56.51 | 4.97 | 74.0 | -17.49 | Peak | 134.10 | Vertical | Pass |
| 2** | 2865.000 | 42.35 | 4.97 | 54.0 | -11.65 | AV | 134.10 | Vertical | Pass |
| 3 | 6989.000 | 52.92 | 1.23 | 74.0 | -21.08 | Peak | 234.20 | Vertical | Pass |
| 3** | 6989.000 | 42.75 | 1.23 | 54.0 | -11.25 | AV | 234.20 | Vertical | Pass |
| 4 | 12417.500 | 55.05 | 3.00 | 74.0 | -18.95 | Peak | 130.40 | Vertical | Pass |
| 4** | 12417.500 | 45.20 | 3.00 | 54.0 | -8.80 | AV | 130.40 | Vertical | Pass |
| 5 | 14447.000 | 58.30 | 6.66 | 74.0 | -15.70 | Peak | 287.70 | Vertical | Pass |
| 5** | 14447.000 | 47.73 | 6.66 | 54.0 | -6.27 | AV | 287.70 | Vertical | Pass |
| 6 | 17903.749 | 58.63 | 7.21 | 74.0 | -15.37 | Peak | 277.30 | Vertical | Pass |
| 6** | 17903.749 | 49.03 | 7.21 | 54.0 | -4.97 | AV | 277.30 | Vertical | Pass |

18GHz-26GHz



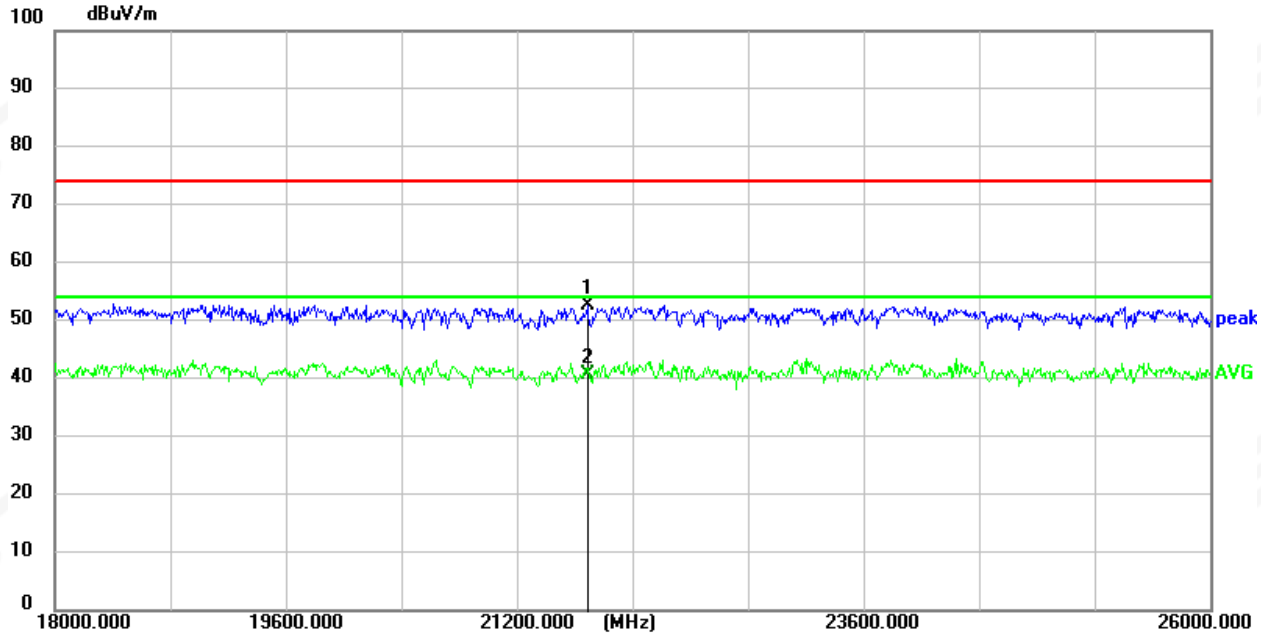

| No. | Frequency (MHz) | Reading Level(dBuV/m) | Factor (dB) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Pass/Fail |
|---|---|---|---|---|---|---|---|---|
| 1 | 19704.0000 | 51.30 | 1.60 | 52.90 | 74.00 | -21.10 | peak | Pass |
| 2 * | 19704.0000 | 40.74 | 1.60 | 42.34 | 54.00 | -11.66 | AVG | Pass |

Mid Channel
Horizontal
1GHz-18GHz



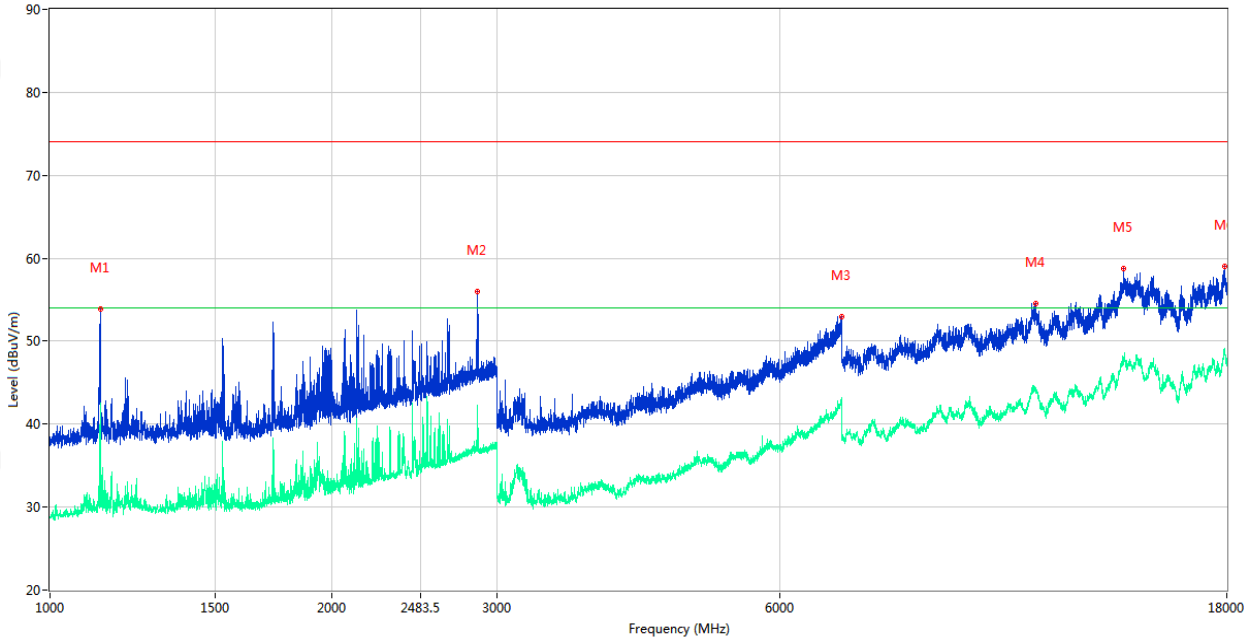

| No. | Frequency (MHz) | Results (dBuV/m) | Factor (dB/m) | Limit (dBuV/m) | Margin-(dB) | Detector | Table (Degree) | Antenna | Verdict |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1127.000 | 53.40 | -1.72 | 74.0 | -20.60 | Peak | 94.20 | Horizontal | Pass |
| 1** | 1127.000 | 38.67 | -1.72 | 54.0 | -15.33 | AV | 94.20 | Horizontal | Pass |
| 2 | 2858.000 | 56.31 | 4.98 | 74.0 | -17.69 | Peak | 110.90 | Horizontal | Pass |
| 2** | 2858.000 | 41.59 | 4.98 | 54.0 | -12.41 | AV | 110.90 | Horizontal | Pass |
| 3 | 6940.000 | 53.08 | 0.83 | 74.0 | -20.92 | Peak | 12.50 | Horizontal | Pass |
| 3** | 6940.000 | 42.13 | 0.83 | 54.0 | -11.87 | AV | 12.50 | Horizontal | Pass |
| 4 | 12436.750 | 55.68 | 2.81 | 74.0 | -18.32 | Peak | 64.00 | Horizontal | Pass |
| 4** | 12436.750 | 44.87 | 2.81 | 54.0 | -9.13 | AV | 64.00 | Horizontal | Pass |
| 5 | 13987.750 | 58.23 | 8.30 | 74.0 | -15.77 | Peak | 70.70 | Horizontal | Pass |
| 5** | 13987.750 | 48.61 | 8.30 | 54.0 | -5.39 | AV | 70.70 | Horizontal | Pass |
| 6 | 17901.001 | 58.43 | 7.23 | 74.0 | -15.57 | Peak | 357.80 | Horizontal | Pass |
| 6** | 17901.001 | 48.90 | 7.23 | 54.0 | -5.10 | AV | 357.80 | Horizontal | Pass |

18GHz-26GHz



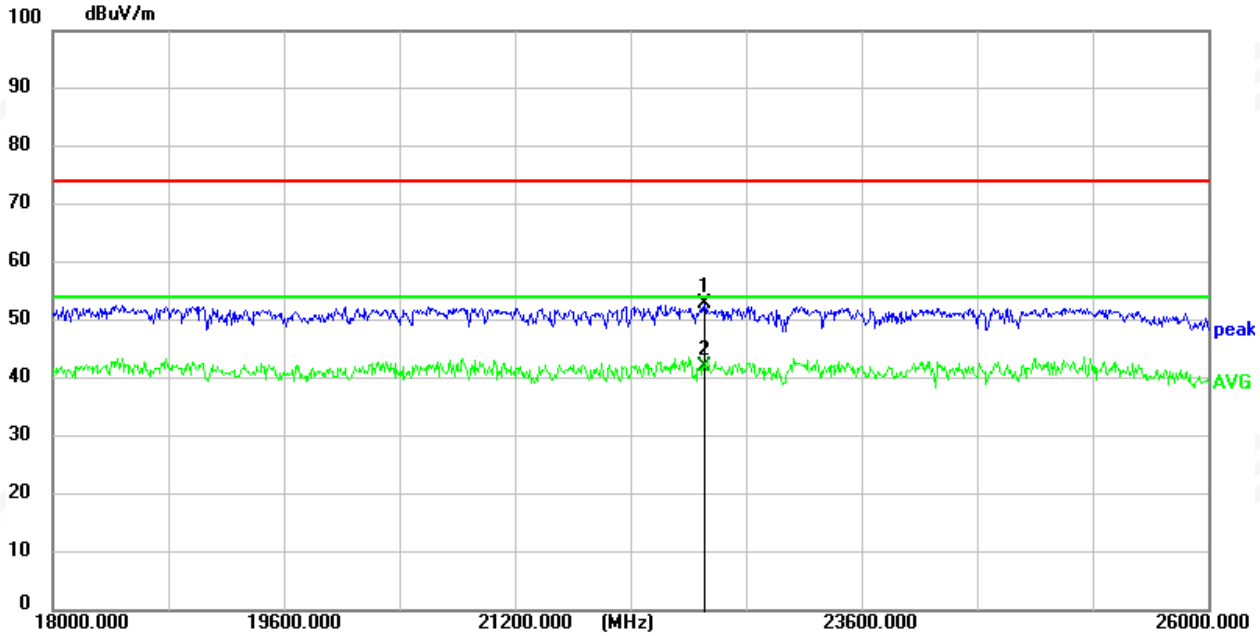

| No. | Frequency (MHz) | Reading Level(dBuV/m) | Factor (dB) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Pass/Fail |
|---|---|---|---|---|---|---|---|---|
| 1 | 21688.0000 | 49.53 | 3.12 | 52.65 | 74.00 | -21.35 | peak | Pass |
| 2 * | 21688.0000 | 37.69 | 3.12 | 40.81 | 54.00 | -13.19 | AVG | Pass |

Vertical
1GHz-18GHz



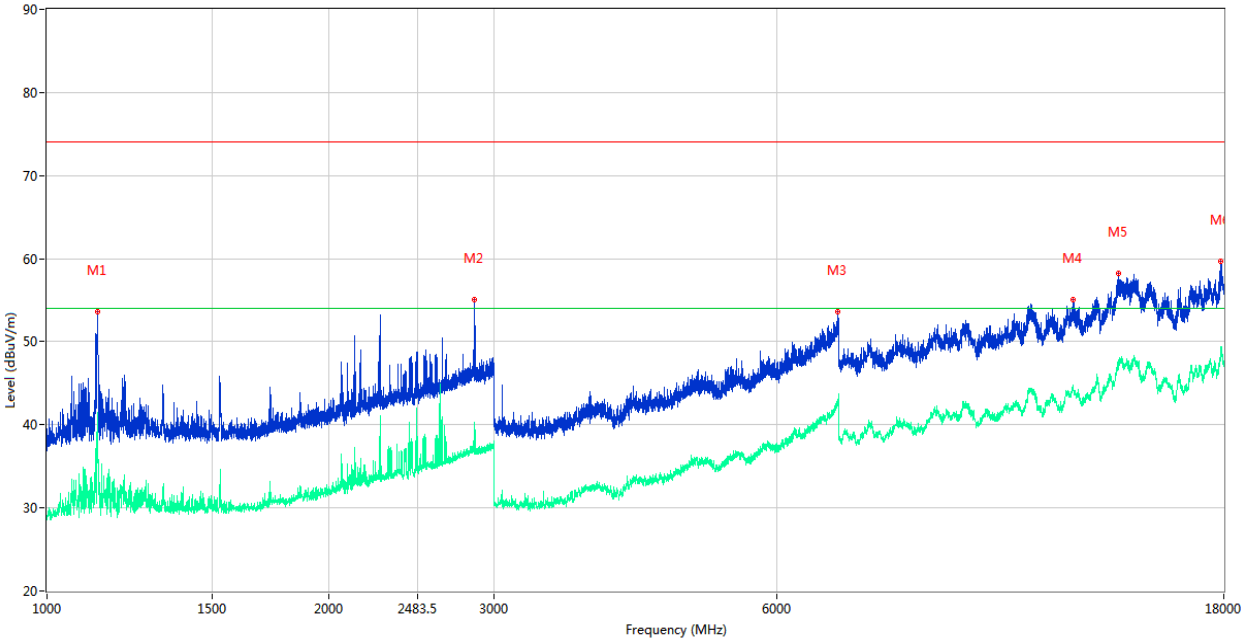

| No. | Frequency (MHz) | Results (dBuV/m) | Factor (dB/m) | Limit (dBuV/m) | Margin-(dB) | Detector | Table (Degree) | Antenna | Verdict |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1131.500 | 53.93 | -1.71 | 74.0 | -20.07 | Peak | 135.20 | Vertical | Pass |
| 1** | 1131.500 | 42.52 | -1.71 | 54.0 | -11.48 | AV | 135.20 | Vertical | Pass |
| 2 | 2858.000 | 55.94 | 4.98 | 74.0 | -18.06 | Peak | 145.60 | Vertical | Pass |
| 2** | 2858.000 | 41.84 | 4.98 | 54.0 | -12.16 | AV | 145.60 | Vertical | Pass |
| 3 | 6994.000 | 52.92 | 1.27 | 74.0 | -21.08 | Peak | 175.50 | Vertical | Pass |
| 3** | 6994.000 | 42.74 | 1.27 | 54.0 | -11.26 | AV | 175.50 | Vertical | Pass |
| 4 | 11270.750 | 54.60 | 2.38 | 74.0 | -19.40 | Peak | 110.00 | Vertical | Pass |
| 4** | 11270.750 | 44.25 | 2.38 | 54.0 | -9.75 | AV | 110.00 | Vertical | Pass |
| 5 | 13965.750 | 58.78 | 8.02 | 74.0 | -15.22 | Peak | 24.40 | Vertical | Pass |
| 5** | 13965.750 | 47.28 | 8.02 | 54.0 | -6.72 | AV | 24.40 | Vertical | Pass |
| 6 | 17906.500 | 58.98 | 7.19 | 74.0 | -15.02 | Peak | 258.00 | Vertical | Pass |
| 6** | 17906.500 | 48.99 | 7.19 | 54.0 | -5.01 | AV | 258.00 | Vertical | Pass |

18GHz-26GHz



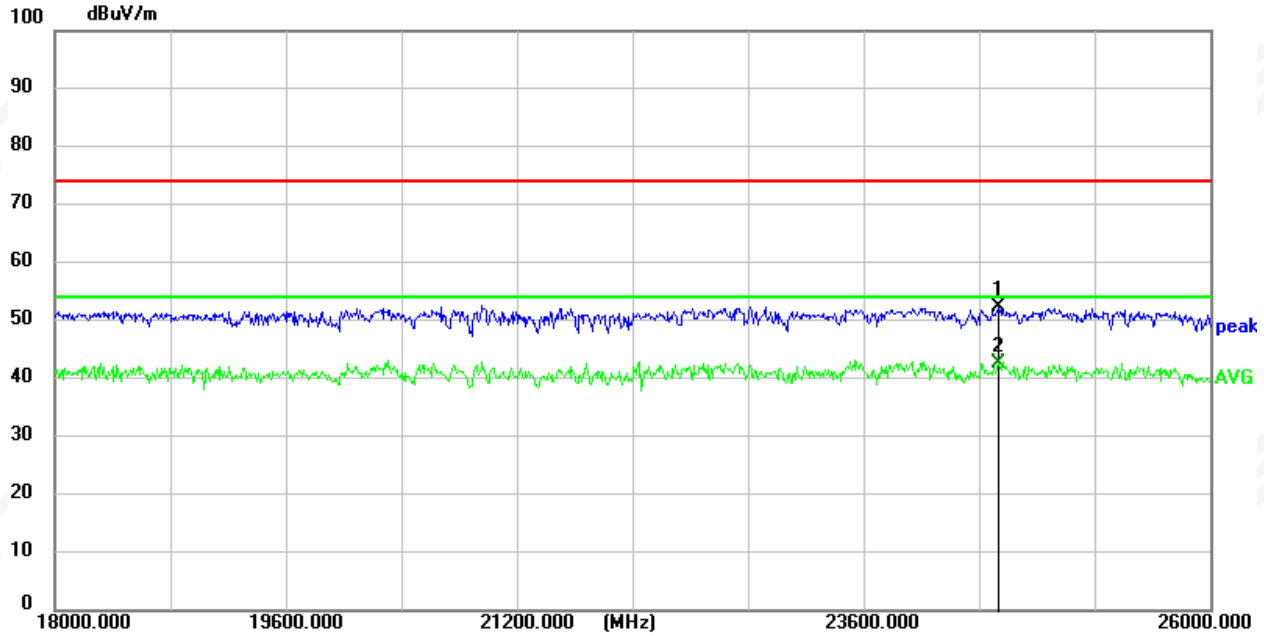

| No. | Frequency (MHz) | Reading Level(dBuV/m) | Factor (dB) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Pass/Fail |
|---|---|---|---|---|---|---|---|---|
| 1 | 22512.0000 | 48.93 | 3.91 | 52.84 | 74.00 | -21.16 | peak | Pass |
| 2 * | 22512.0000 | 38.25 | 3.91 | 42.16 | 54.00 | -11.84 | AVG | Pass |

High Channel
Horizontal
1GHz-18GHz



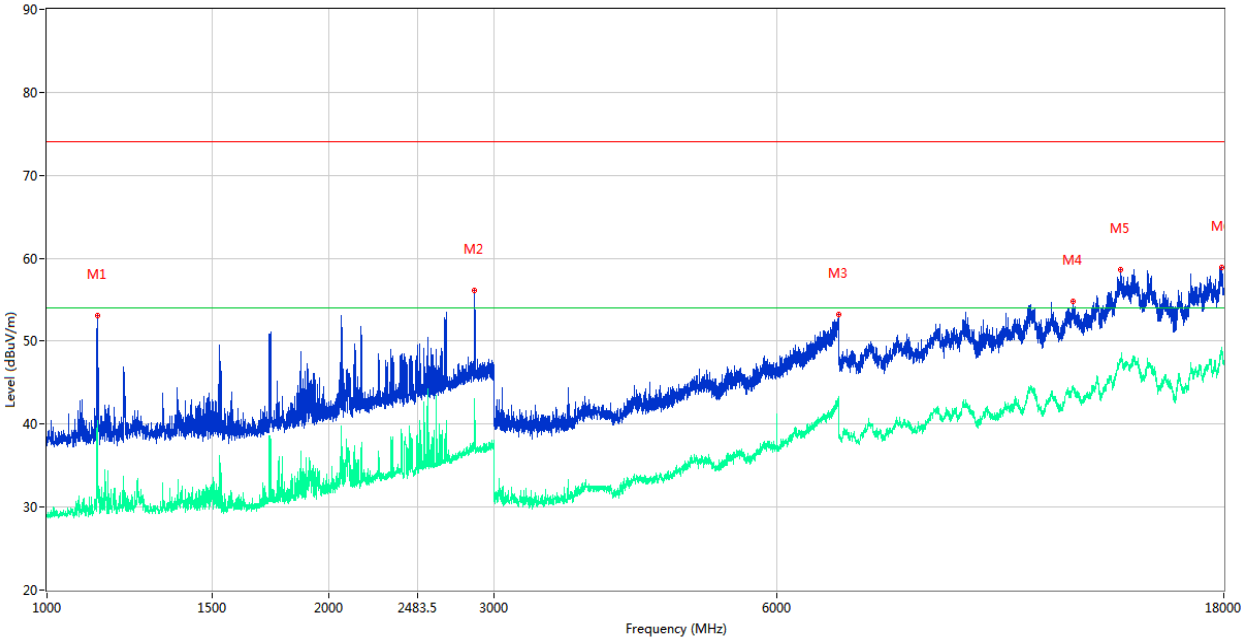

| No. | Frequency (MHz) | Results (dBuV/m) | Factor (dB/m) | Limit (dBuV/m) | Margin-(dB) | Detector | Table (Degree) | Antenna | Verdict |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1132.000 | 53.58 | -1.71 | 74.0 | -20.42 | Peak | 225.30 | Horizontal | Pass |
| 1** | 1132.000 | 38.51 | -1.71 | 54.0 | -15.49 | AV | 225.30 | Horizontal | Pass |
| 2 | 2856.000 | 55.02 | 4.98 | 74.0 | -18.98 | Peak | 322.00 | Horizontal | Pass |
| 2** | 2856.000 | 40.29 | 4.98 | 54.0 | -13.71 | AV | 322.00 | Horizontal | Pass |
| 3 | 6975.000 | 53.58 | 1.12 | 74.0 | -20.42 | Peak | 181.80 | Horizontal | Pass |
| 3** | 6975.000 | 42.85 | 1.12 | 54.0 | -11.15 | AV | 181.80 | Horizontal | Pass |
| 4 | 12434.000 | 55.10 | 2.84 | 74.0 | -18.90 | Peak | 131.90 | Horizontal | Pass |
| 4** | 12434.000 | 44.75 | 2.84 | 54.0 | -9.25 | AV | 131.90 | Horizontal | Pass |
| 5 | 13886.000 | 58.25 | 6.99 | 74.0 | -15.75 | Peak | 299.30 | Horizontal | Pass |
| 5** | 13886.000 | 46.95 | 6.99 | 54.0 | -7.05 | AV | 299.30 | Horizontal | Pass |
| 6 | 17865.251 | 59.67 | 6.94 | 74.0 | -14.33 | Peak | 272.50 | Horizontal | Pass |
| 6** | 17865.251 | 48.30 | 6.94 | 54.0 | -5.70 | AV | 272.50 | Horizontal | Pass |

18GHz-26GHz



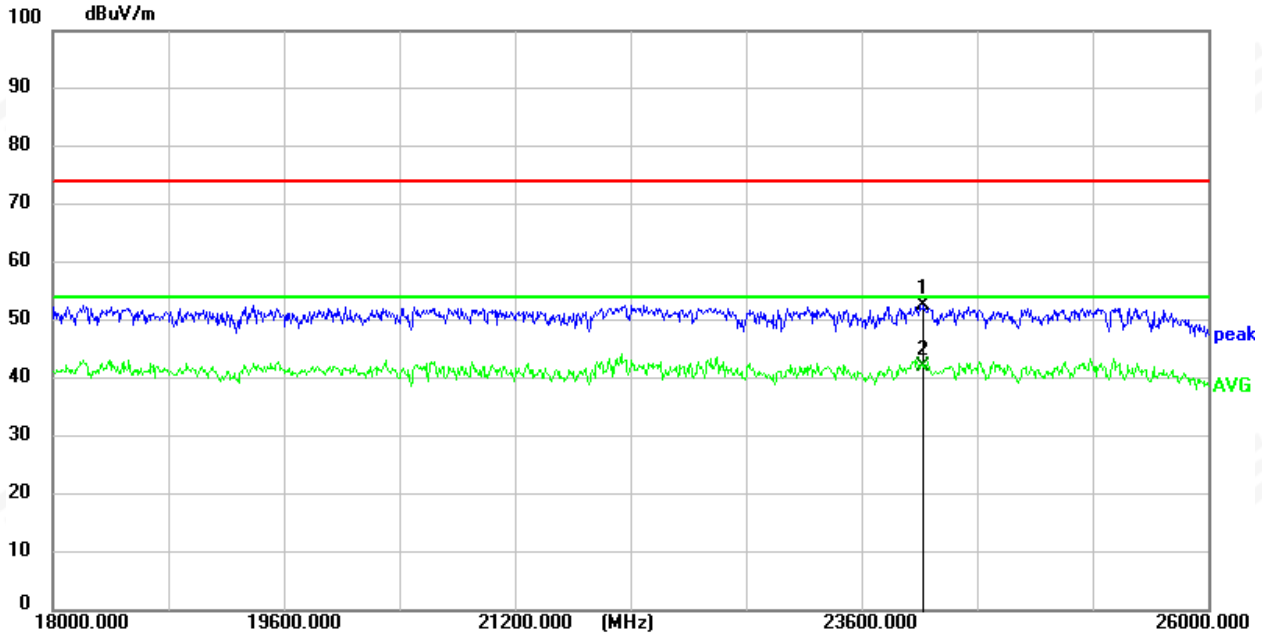

| No. | Frequency (MHz) | Reading Level(dBuV/m) | Factor (dB) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Pass/Fail |
|---|---|---|---|---|---|---|---|---|
| 1 | 24536.0000 | 47.72 | 4.76 | 52.48 | 74.00 | -21.52 | peak | Pass |
| 2 * | 24536.0000 | 37.80 | 4.76 | 42.56 | 54.00 | -11.44 | AVG | Pass |

Vertical
1GHz-18GHz




| No. | Frequency (MHz) | Results (dBuV/m) | Factor (dB/m) | Limit (dBuV/m) | Margin-(dB) | Detector | Table (Degree) | Antenna | Verdict |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1131.500 | 53.05 | -1.71 | 74.0 | -20.95 | Peak | 136.80 | Vertical | Pass |
| 1** | 1131.500 | 40.42 | -1.71 | 54.0 | -13.58 | AV | 136.80 | Vertical | Pass |
| 2 | 2855.500 | 56.13 | 4.98 | 74.0 | -17.87 | Peak | 134.60 | Vertical | Pass |
| 2** | 2855.500 | 43.01 | 4.98 | 54.0 | -10.99 | AV | 134.60 | Vertical | Pass |
| 3 | 6988.000 | 53.18 | 1.22 | 74.0 | -20.82 | Peak | 79.80 | Vertical | Pass |
| 3** | 6988.000 | 43.14 | 1.22 | 54.0 | -10.86 | AV | 79.80 | Vertical | Pass |
| 4 | 12442.250 | 54.76 | 2.75 | 74.0 | -19.24 | Peak | 88.10 | Vertical | Pass |
| 4** | 12442.250 | 44.30 | 2.75 | 54.0 | -9.70 | AV | 88.10 | Vertical | Pass |
| 5 | 13968.500 | 58.58 | 8.06 | 74.0 | -15.42 | Peak | 346.80 | Vertical | Pass |
| 5** | 13968.500 | 47.52 | 8.06 | 54.0 | -6.48 | AV | 346.80 | Vertical | Pass |
| 6 | 17895.500 | 58.89 | 7.20 | 74.0 | -15.11 | Peak | 259.80 | Vertical | Pass |
| 6** | 17895.500 | 48.90 | 7.20 | 54.0 | -5.10 | AV | 259.80 | Vertical | Pass |

18GHz-26GHz

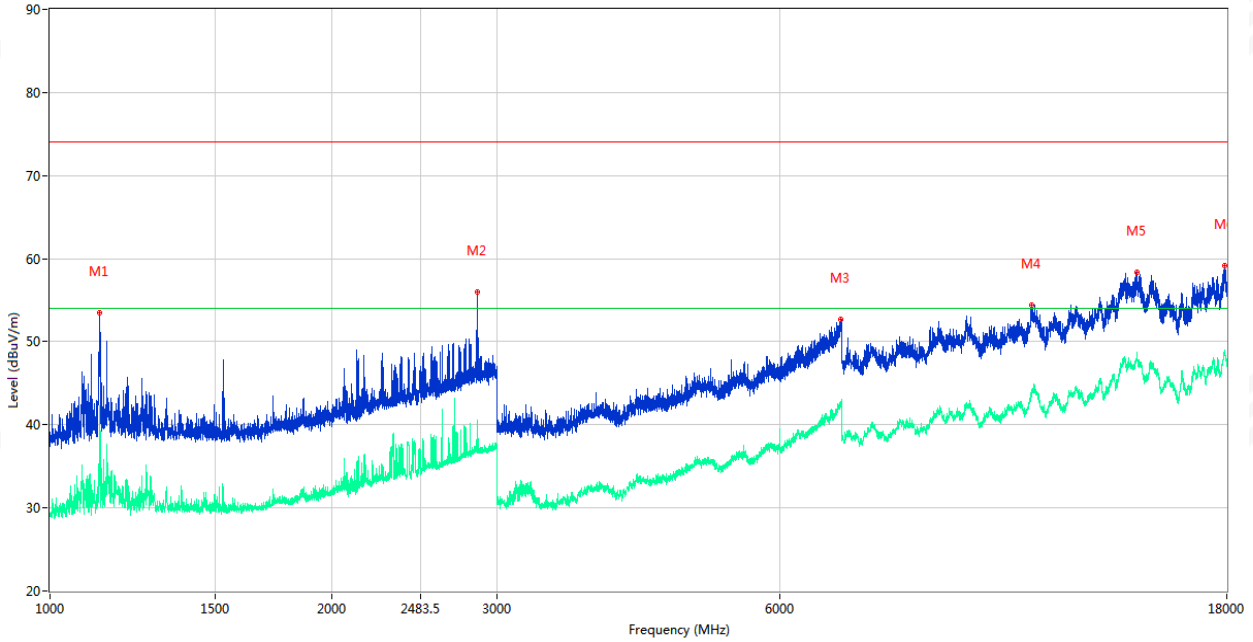



| No. | Frequency (MHz) | Reading Level(dBuV/m) | Factor (dB) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Pass/Fail |
|---|---|---|---|---|---|---|---|---|
| 1 | 24032.0000 | 48.07 | 4.64 | 52.71 | 74.00 | -21.29 | peak | Pass |
| 2 * | 24032.0000 | 37.47 | 4.64 | 42.11 | 54.00 | -11.89 | AVG | Pass |

Note:

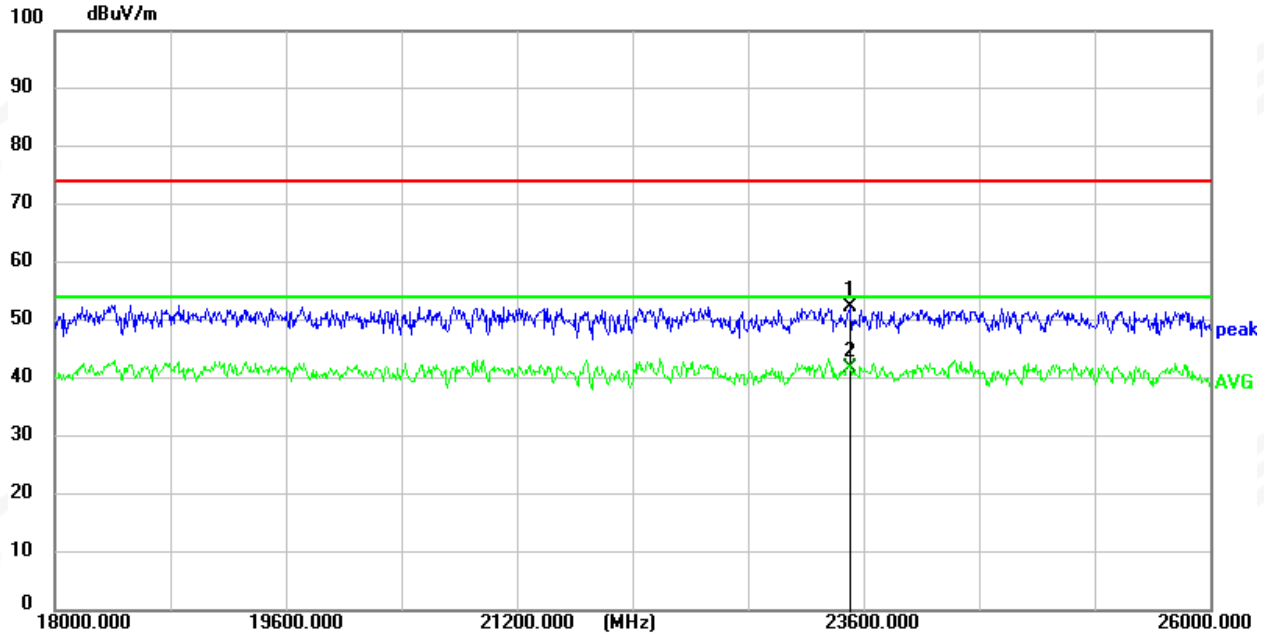
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
   Emission Level = Reading + Factor.
2. The frequency emission of peak points that did not show above the forms are at least 20dB below the limit, the frequency emission is mainly from the environment noise.
3. All 20MHz bandwidth modes have been tested,only show the worst mode of 802.11b in the report.

Worst mode (802.11 n40)
Low Channel
Horizontal



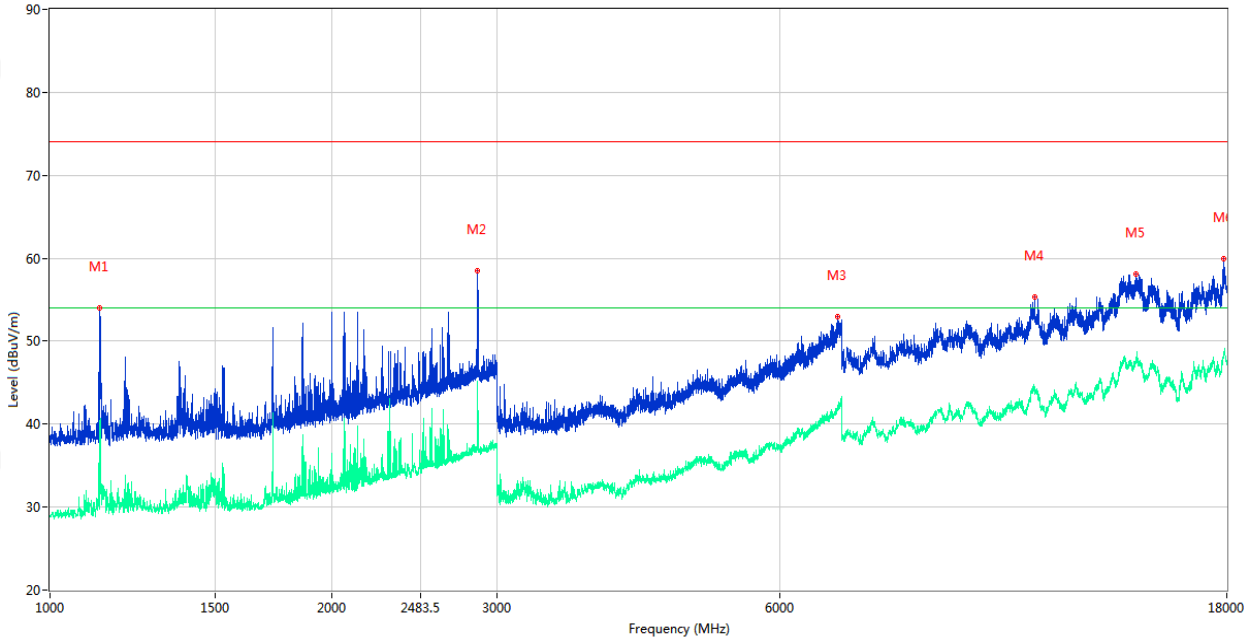

| No. | Frequency (MHz) | Results (dBuV/m) | Factor (dB/m) | Limit (dBuV/m) | Margin-(dB) | Detector | Table (Degree) | Antenna | Verdict |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1128.500 | 53.47 | -1.71 | 74.0 | -20.53 | Peak | 73.20 | Horizontal | Pass |
| 1** | 1128.500 | 41.55 | -1.71 | 54.0 | -12.45 | AV | 73.20 | Horizontal | Pass |
| 2 | 2858.000 | 55.99 | 4.98 | 74.0 | -18.01 | Peak | 129.00 | Horizontal | Pass |
| 2** | 2858.000 | 40.61 | 4.98 | 54.0 | -13.39 | AV | 129.00 | Horizontal | Pass |
| 3 | 6982.000 | 52.70 | 1.17 | 74.0 | -21.30 | Peak | 244.30 | Horizontal | Pass |
| 3** | 6982.000 | 42.65 | 1.17 | 54.0 | -11.35 | AV | 244.30 | Horizontal | Pass |
| 4 | 11147.000 | 54.39 | 2.33 | 74.0 | -19.61 | Peak | 142.80 | Horizontal | Pass |
| 4** | 11147.000 | 44.17 | 2.33 | 54.0 | -9.83 | AV | 142.80 | Horizontal | Pass |
| 5 | 14449.750 | 58.31 | 6.64 | 74.0 | -15.69 | Peak | 194.50 | Horizontal | Pass |
| 5** | 14449.750 | 47.89 | 6.64 | 54.0 | -6.11 | AV | 194.50 | Horizontal | Pass |
| 6 | 17903.749 | 59.17 | 7.21 | 74.0 | -14.83 | Peak | 81.80 | Horizontal | Pass |
| 6** | 17903.749 | 48.89 | 7.21 | 54.0 | -5.11 | AV | 81.80 | Horizontal | Pass |

18GHz-26GHz



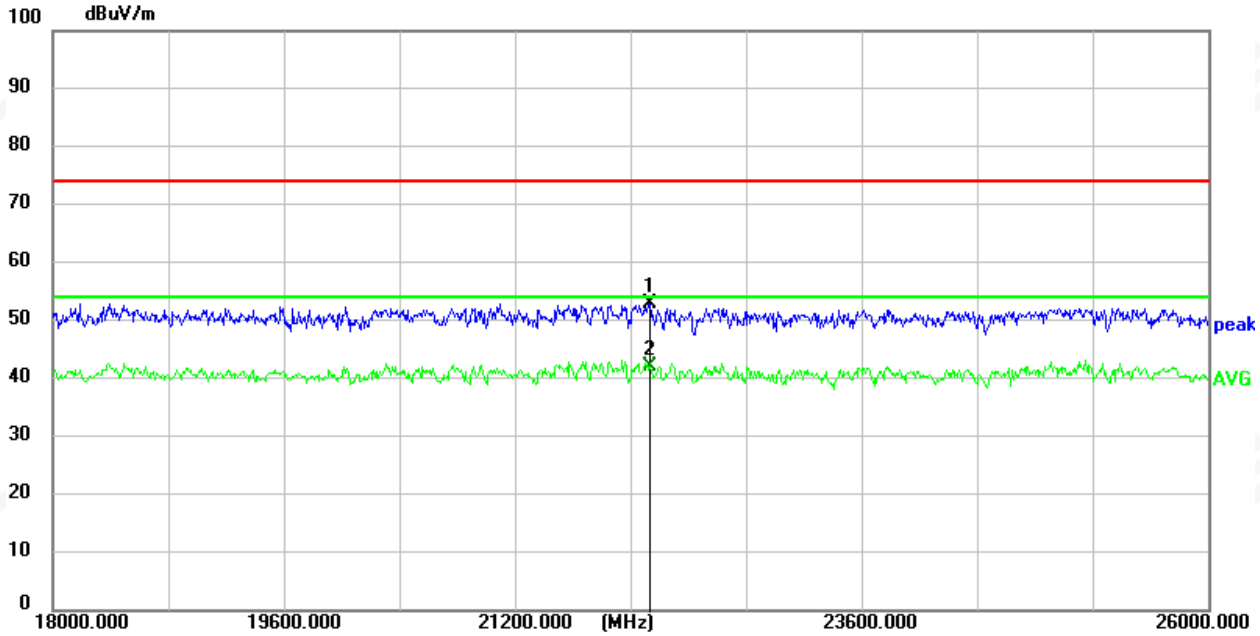

| No. | Frequency (MHz) | Reading Level(dBuV/m) | Factor (dB) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Pass/Fail |
|---|---|---|---|---|---|---|---|---|
| 1 | 23504.0000 | 48.26 | 4.13 | 52.39 | 74.00 | -21.61 | peak | Pass |
| 2 * | 23504.0000 | 37.63 | 4.13 | 41.76 | 54.00 | -12.24 | AVG | Pass |

Vertical
1GHz-18GHz



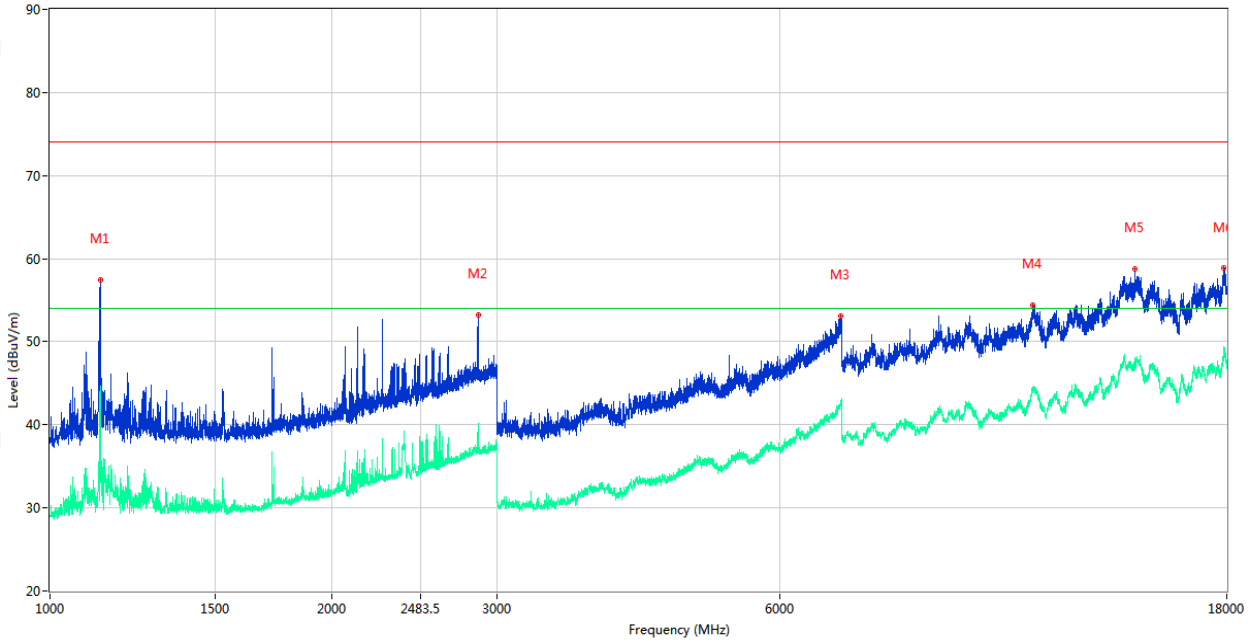

| No. | Frequency (MHz) | Results (dBuV/m) | Factor (dB/m) | Limit (dBuV/m) | Margin-(dB) | Detector | Table (Degree) | Antenna | Verdict |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1128.000 | 54.02 | -1.71 | 74.0 | -19.98 | Peak | 132.70 | Vertical | Pass |
| 1** | 1128.000 | 40.40 | -1.71 | 54.0 | -13.60 | AV | 132.70 | Vertical | Pass |
| 2 | 2855.500 | 58.53 | 4.98 | 74.0 | -15.47 | Peak | 141.60 | Vertical | Pass |
| 2** | 2855.500 | 45.23 | 4.98 | 54.0 | -8.77 | AV | 141.60 | Vertical | Pass |
| 3 | 6920.000 | 52.98 | 0.67 | 74.0 | -21.02 | Peak | 312.90 | Vertical | Pass |
| 3** | 6920.000 | 42.21 | 0.67 | 54.0 | -11.79 | AV | 312.90 | Vertical | Pass |
| 4 | 11237.750 | 55.35 | 2.49 | 74.0 | -18.65 | Peak | 186.60 | Vertical | Pass |
| 4** | 11237.750 | 43.93 | 2.49 | 54.0 | -10.07 | AV | 186.60 | Vertical | Pass |
| 5 | 14416.750 | 58.14 | 6.87 | 74.0 | -15.86 | Peak | 197.00 | Vertical | Pass |
| 5** | 14416.750 | 47.90 | 6.87 | 54.0 | -6.10 | AV | 197.00 | Vertical | Pass |
| 6 | 17878.999 | 59.89 | 7.06 | 74.0 | -14.11 | Peak | 297.10 | Vertical | Pass |
| 6** | 17878.999 | 48.38 | 7.06 | 54.0 | -5.62 | AV | 297.10 | Vertical | Pass |

18GHz-26GHz



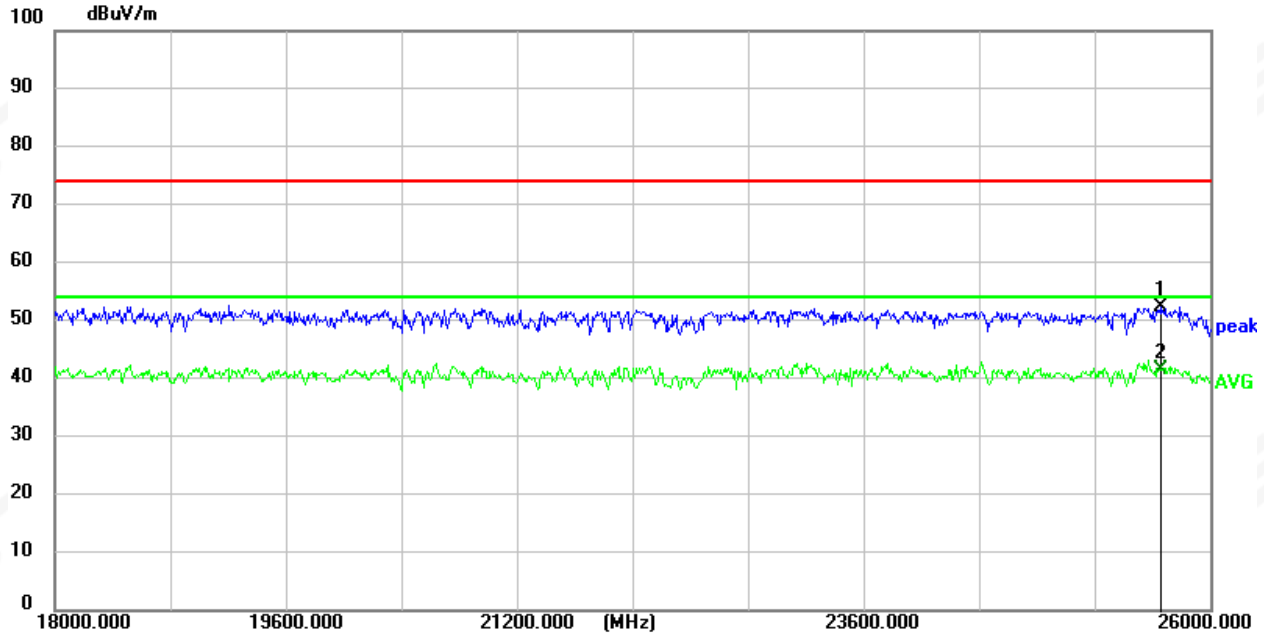

| No. | Frequency (MHz) | Reading Level(dBuV/m) | Factor (dB) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Pass/Fail |
|---|---|---|---|---|---|---|---|---|
| 1 | 22136.0000 | 49.35 | 3.56 | 52.91 | 74.00 | -21.09 | peak | Pass |
| 2 * | 22136.0000 | 38.60 | 3.56 | 42.16 | 54.00 | -11.84 | AVG | Pass |

Mid Channel
Horizontal
1GHz-18GHz



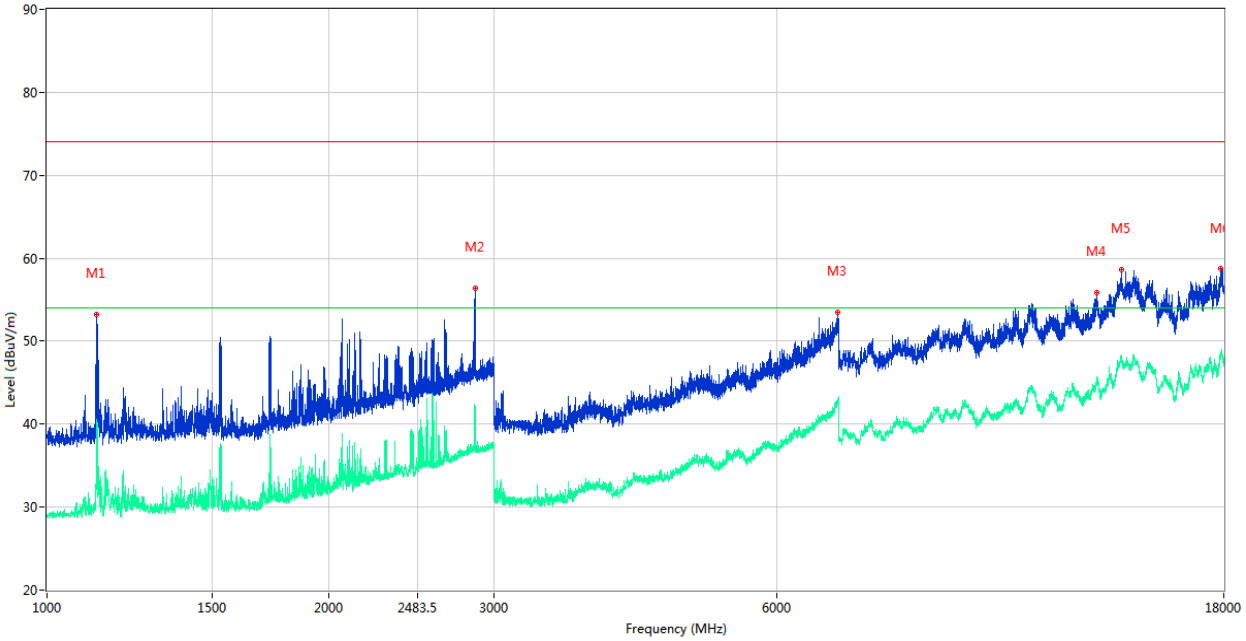

| No. | Frequency (MHz) | Results (dBuV/m) | Factor (dB/m) | Limit (dBuV/m) | Margin-(dB) | Detector | Table (Degree) | Antenna | Verdict |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1131.000 | 57.45 | -1.71 | 74.0 | -16.55 | Peak | 149.40 | Horizontal | Pass |
| 1** | 1131.000 | 44.66 | -1.71 | 54.0 | -9.34 | AV | 149.40 | Horizontal | Pass |
| 2 | 2860.500 | 53.28 | 4.98 | 74.0 | -20.72 | Peak | 119.30 | Horizontal | Pass |
| 2** | 2860.500 | 40.18 | 4.98 | 54.0 | -13.82 | AV | 119.30 | Horizontal | Pass |
| 3 | 6974.000 | 53.05 | 1.11 | 74.0 | -20.95 | Peak | 34.00 | Horizontal | Pass |
| 3** | 6974.000 | 42.60 | 1.11 | 54.0 | -11.40 | AV | 34.00 | Horizontal | Pass |
| 4 | 11180.000 | 54.37 | 2.51 | 74.0 | -19.63 | Peak | 85.40 | Horizontal | Pass |
| 4** | 11180.000 | 43.86 | 2.51 | 54.0 | -10.14 | AV | 85.40 | Horizontal | Pass |
| 5 | 14375.500 | 58.76 | 6.96 | 74.0 | -15.24 | Peak | 249.50 | Horizontal | Pass |
| 5** | 14375.500 | 47.70 | 6.96 | 54.0 | -6.30 | AV | 249.50 | Horizontal | Pass |
| 6 | 17876.251 | 58.89 | 7.04 | 74.0 | -15.11 | Peak | 127.00 | Horizontal | Pass |
| 6** | 17876.251 | 48.38 | 7.04 | 54.0 | -5.62 | AV | 127.00 | Horizontal | Pass |

18GHz-26GHz



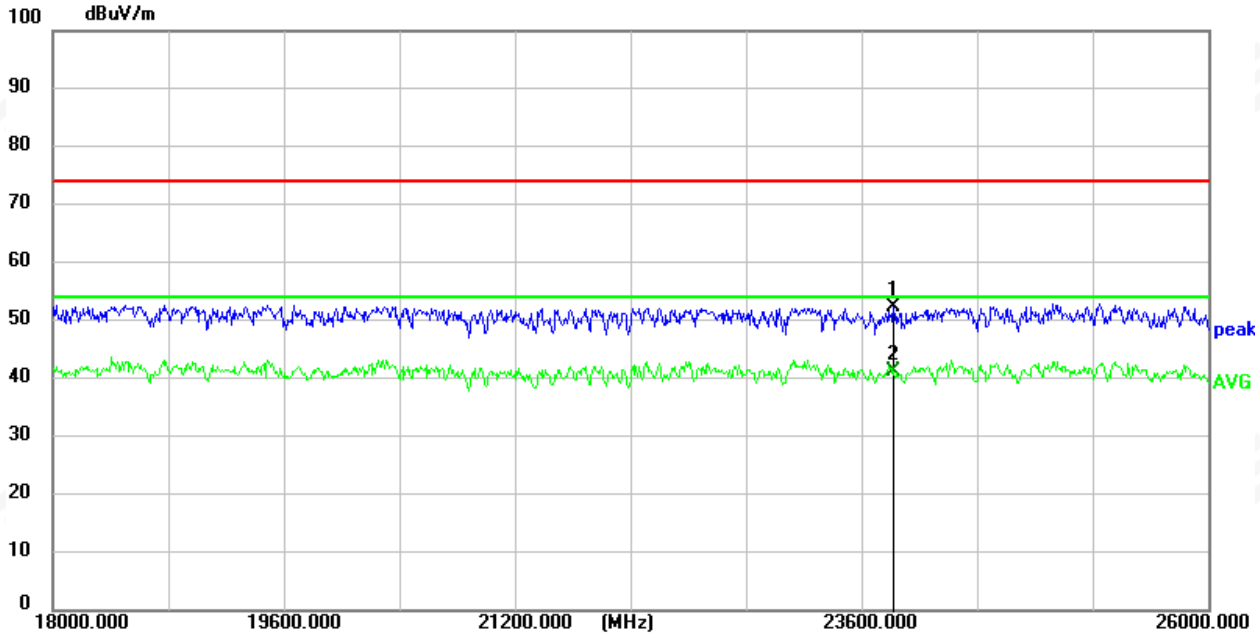

| No. | Frequency (MHz) | Reading Level(dBuV/m) | Factor (dB) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Pass/Fail |
|---|---|---|---|---|---|---|---|---|
| 1 | 25664.0000 | 46.75 | 5.71 | 52.46 | 74.00 | -21.54 | peak | Pass |
| 2 * | 25664.0000 | 35.74 | 5.71 | 41.45 | 54.00 | -12.55 | AVG | Pass |

Vertical
1GHz-18GHz



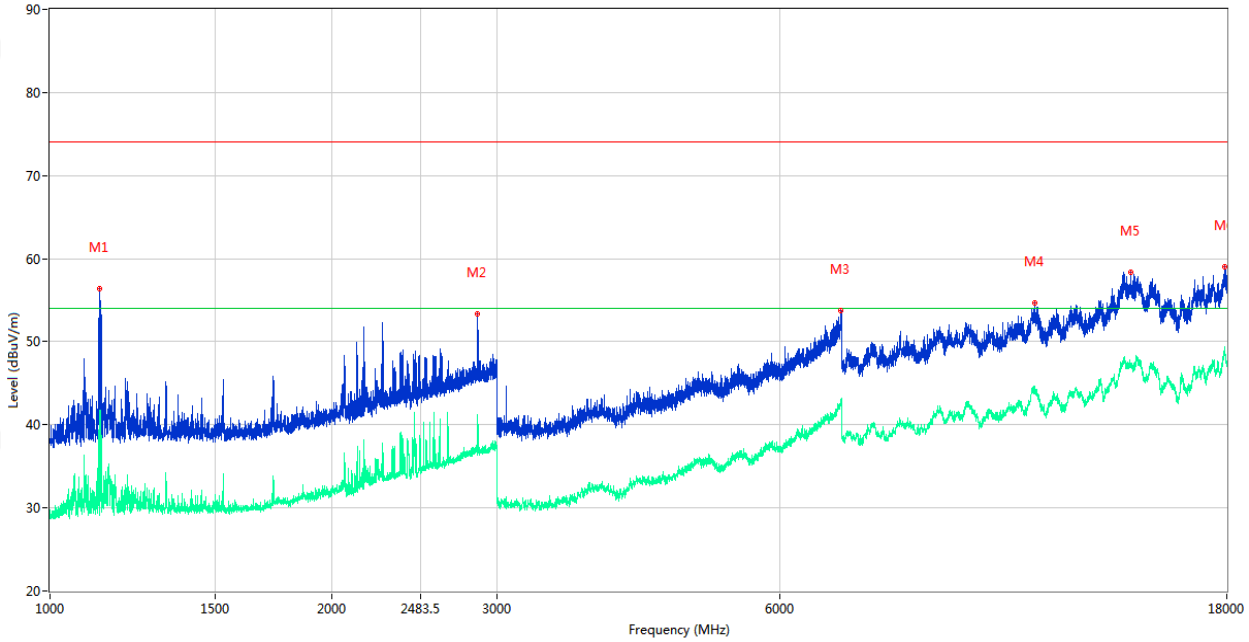

| No. | Frequency (MHz) | Results (dBuV/m) | Factor (dB/m) | Limit (dBuV/m) | Margin-(dB) | Detector | Table (Degree) | Antenna | Verdict |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1130.000 | 53.18 | -1.71 | 74.0 | -20.82 | Peak | 133.70 | Vertical | Pass |
| 1** | 1130.000 | 40.55 | -1.71 | 54.0 | -13.45 | AV | 133.70 | Vertical | Pass |
| 2 | 2864.000 | 56.39 | 4.97 | 74.0 | -17.61 | Peak | 153.50 | Vertical | Pass |
| 2** | 2864.000 | 42.16 | 4.97 | 54.0 | -11.84 | AV | 153.50 | Vertical | Pass |
| 3 | 6981.000 | 53.46 | 1.17 | 74.0 | -20.54 | Peak | 39.30 | Vertical | Pass |
| 3** | 6981.000 | 43.07 | 1.17 | 54.0 | -10.93 | AV | 39.30 | Vertical | Pass |
| 4 | 13193.000 | 55.88 | 5.37 | 74.0 | -18.12 | Peak | 221.90 | Vertical | Pass |
| 4** | 13193.000 | 45.16 | 5.37 | 54.0 | -8.84 | AV | 221.90 | Vertical | Pass |
| 5 | 14001.500 | 58.68 | 8.43 | 74.0 | -15.32 | Peak | 234.20 | Vertical | Pass |
| 5** | 14001.500 | 48.38 | 8.43 | 54.0 | -5.62 | AV | 234.20 | Vertical | Pass |
| 6 | 17854.251 | 58.70 | 6.85 | 74.0 | -15.30 | Peak | 178.80 | Vertical | Pass |
| 6** | 17854.251 | 48.06 | 6.85 | 54.0 | -5.94 | AV | 178.80 | Vertical | Pass |

18GHz-26GHz



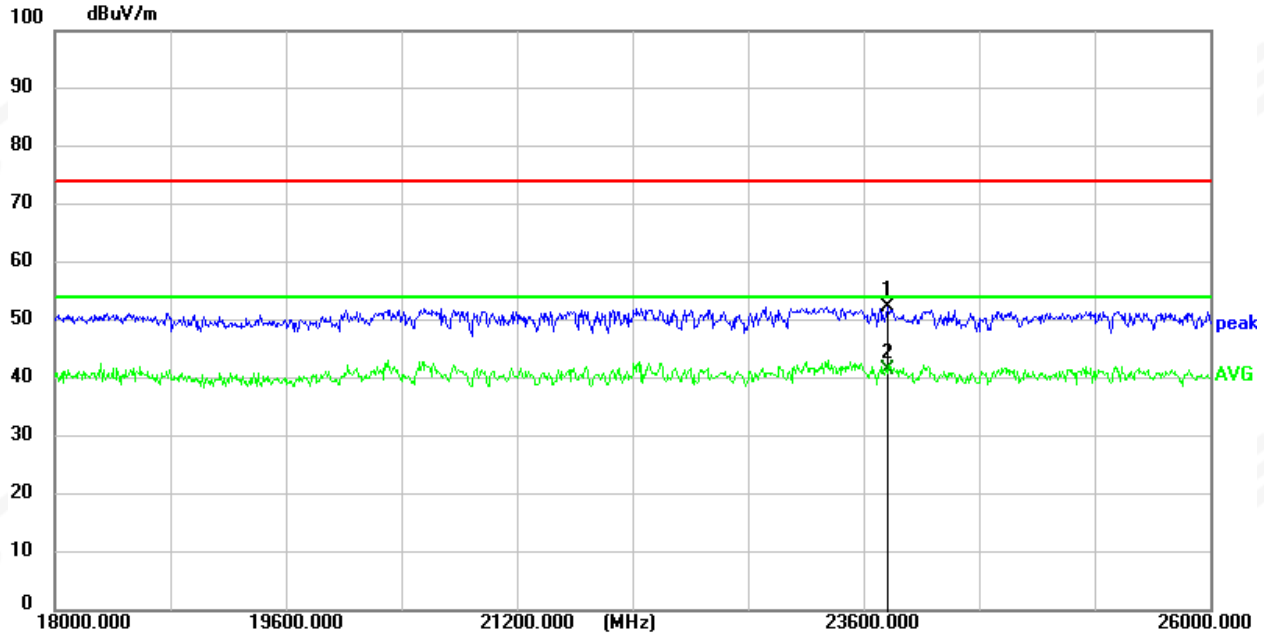

| No. | Frequency (MHz) | Reading Level(dBuV/m) | Factor (dB) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Pass/Fail |
|---|---|---|---|---|---|---|---|---|
| 1 | 23824.0000 | 47.84 | 4.46 | 52.30 | 74.00 | -21.70 | peak | Pass |
| 2 * | 23824.0000 | 36.72 | 4.46 | 41.18 | 54.00 | -12.82 | AVG | Pass |

High Channel
Horizontal
1GHz-18GHz



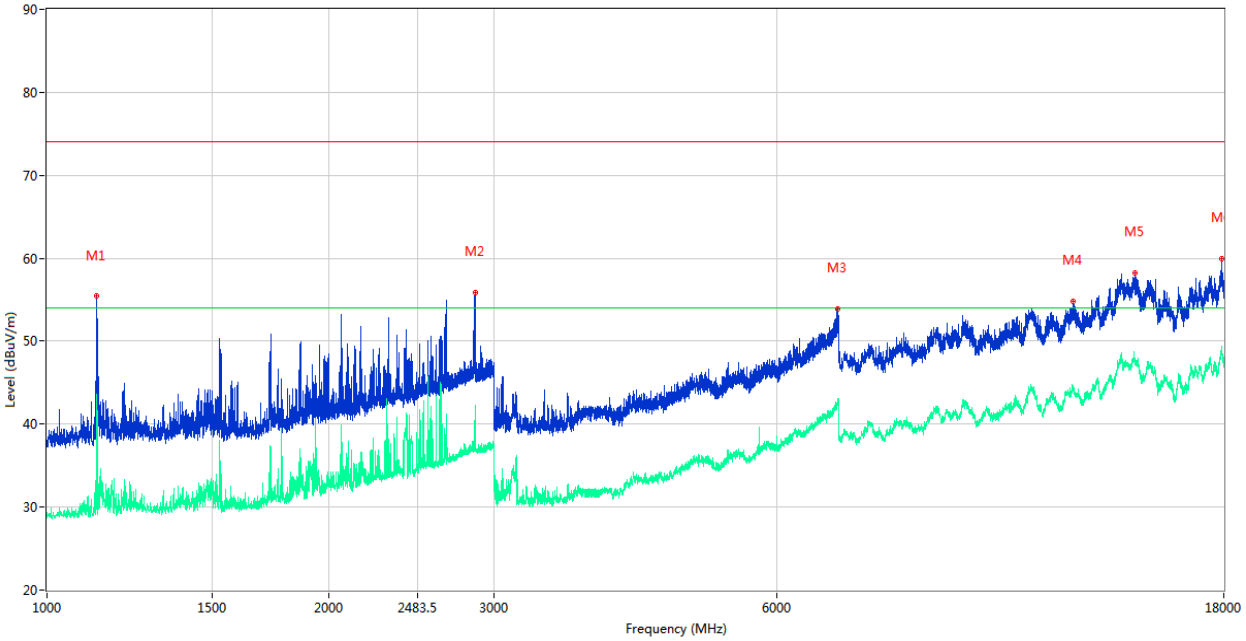

| No. | Frequency (MHz) | Results (dBuV/m) | Factor (dB/m) | Limit (dBuV/m) | Margin-(dB) | Detector | Table (Degree) | Antenna | Verdict |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1129.000 | 56.44 | -1.71 | 74.0 | -17.56 | Peak | 84.40 | Horizontal | Pass |
| 1** | 1129.000 | 41.75 | -1.71 | 54.0 | -12.25 | AV | 84.40 | Horizontal | Pass |
| 2 | 2855.500 | 53.40 | 4.98 | 74.0 | -20.60 | Peak | 131.00 | Horizontal | Pass |
| 2** | 2855.500 | 41.23 | 4.98 | 54.0 | -12.77 | AV | 131.00 | Horizontal | Pass |
| 3 | 6980.000 | 53.76 | 1.16 | 74.0 | -20.24 | Peak | 360.10 | Horizontal | Pass |
| 3** | 6980.000 | 43.03 | 1.16 | 54.0 | -10.97 | AV | 360.10 | Horizontal | Pass |
| 4 | 11218.500 | 54.71 | 2.56 | 74.0 | -19.29 | Peak | 213.30 | Horizontal | Pass |
| 4** | 11218.500 | 44.16 | 2.56 | 54.0 | -9.84 | AV | 213.30 | Horizontal | Pass |
| 5 | 14218.750 | 58.42 | 6.95 | 74.0 | -15.58 | Peak | 29.00 | Horizontal | Pass |
| 5** | 14218.750 | 47.30 | 6.95 | 54.0 | -6.70 | AV | 29.00 | Horizontal | Pass |
| 6 | 17912.001 | 59.05 | 7.15 | 74.0 | -14.95 | Peak | 172.00 | Horizontal | Pass |
| 6** | 17912.001 | 48.50 | 7.15 | 54.0 | -5.50 | AV | 172.00 | Horizontal | Pass |

18GHz-26GHz



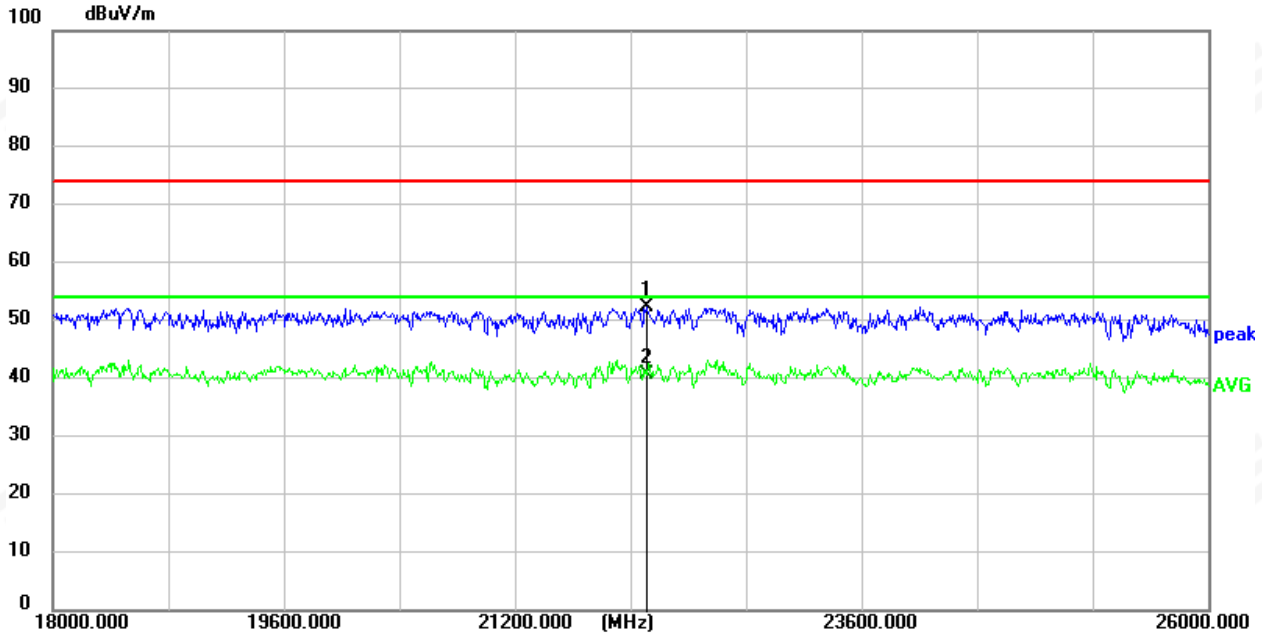

| No. | Frequency (MHz) | Reading Level(dBuV/m) | Factor (dB) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Pass/Fail |
|---|---|---|---|---|---|---|---|---|
| 1 | 23768.0000 | 48.04 | 4.39 | 52.43 | 74.00 | -21.57 | peak | Pass |
| 2 * | 23768.0000 | 37.04 | 4.39 | 41.43 | 54.00 | -12.57 | AVG | Pass |

Vertical
1GHz-18GHz




| No. | Frequency (MHz) | Results (dBuV/m) | Factor (dB/m) | Limit (dBuV/m) | Margin-(dB) | Detector | Table (Degree) | Antenna | Verdict |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1129.500 | 55.40 | -1.71 | 74.0 | -18.60 | Peak | 133.00 | Vertical | Pass |
| 1** | 1129.500 | 43.65 | -1.71 | 54.0 | -10.35 | AV | 133.00 | Vertical | Pass |
| 2 | 2861.000 | 55.81 | 4.97 | 74.0 | -18.19 | Peak | 135.30 | Vertical | Pass |
| 2** | 2861.000 | 39.86 | 4.97 | 54.0 | -14.14 | AV | 135.30 | Vertical | Pass |
| 3 | 6979.000 | 53.84 | 1.15 | 74.0 | -20.16 | Peak | 243.70 | Vertical | Pass |
| 3** | 6979.000 | 42.92 | 1.15 | 54.0 | -11.08 | AV | 243.70 | Vertical | Pass |
| 4 | 12420.250 | 54.77 | 2.98 | 74.0 | -19.23 | Peak | 69.70 | Vertical | Pass |
| 4** | 12420.250 | 44.01 | 2.98 | 54.0 | -9.99 | AV | 69.70 | Vertical | Pass |
| 5 | 14491.000 | 58.25 | 6.34 | 74.0 | -15.75 | Peak | 358.50 | Vertical | Pass |
| 5** | 14491.000 | 47.77 | 6.34 | 54.0 | -6.23 | AV | 358.50 | Vertical | Pass |
| 6 | 17898.250 | 59.89 | 7.22 | 74.0 | -14.11 | Peak | 339.50 | Vertical | Pass |
| 6** | 17898.250 | 48.87 | 7.22 | 54.0 | -5.13 | AV | 339.50 | Vertical | Pass |

18GHz-26GHz




| No. | Frequency (MHz) | Reading Level(dBuV/m) | Factor (dB) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Pass/Fail |
|---|---|---|---|---|---|---|---|---|
| 1 | 22112.0000 | 48.82 | 3.52 | 52.34 | 74.00 | -21.66 | peak | Pass |
| 2 * | 22112.0000 | 37.08 | 3.52 | 40.60 | 54.00 | -13.40 | AVG | Pass |

Note:

1) Factor = Antenna Factor + Cable Loss – Pre-amplifier.
   Emission Level = Reading + Factor.
2) The frequency emission of peak points that did not show above the forms are at least 20dB below the limit, the frequency emission is mainly from the environment noise.
3) All 40MHz bandwidth modes have been tested,only show the worst mode of 802.11n40 in the report.

# 4. EMISSIONS AT RESTRICTED BAND

## 4.1 LIMITS OF RESTRICTED FREQUENCY BANDS

| FREQUENCY (MHz) | FREQUENCY (MHz) | FREQUENCY (MHz) | FREQUENCY (GHz) |
|---|---|---|---|
| 0.090-0.110 | 16.42-16.423 | 399.9-410 | 4.5-5.15 |
| 0.495-0.505 | 16.69475-16.69525 | 608-614 | 5.35-5.46 |
| 2.1735-2.1905 | 16.80425-16.80475 | 960-1240 | 7.25-7.75 |
| 4.125-4.128 | 25.5-25.67 | 1300-1427 | 8.025-8.5 |
| 4.17725-4.17775 | 37.5-38.25 | 1435-1626.5 | 9.0-9.2 |
| 4.20725-4.20775 | 73-74.6 | 1645.5-1646.5 | 9.3-9.5 |
| 6.215-6.218 | 74.8-75.2 | 1660-1710 | 10.6-12.7 |
| 6.26775-6.26825 | 108-121.94 | 1718.8-1722.2 | 13.25-13.4 |
| 6.31175-6.31225 | 123-138 | 2200-2300 | 14.47-14.5 |
| 8.291-8.294 | 149.9-150.05 | 2310-2390 | 15.35-16.2 |
| 8.362-8.366 | 156.52475-156.52525 | 2483.5-2500 | 17.7-21.4 |
| 8.37625-8.38675 | 156.7-156.9 | 2690-2900 | 22.01-23.12 |
| 8.41425-8.41475 | 162.0125-167.17 | 3260-3267 | 23.6-24.0 |
| 12.29-12.293 | 167.72-173.2 | 3332-3339 | 31.2-31.8 |
| 12.51975-12.52025 | 240-285 | 3345.8-3358 | 36.43-36.5 |
| 12.57675-12.57725 | 322-335.4 | 3600-4400 | Above 38.6 |
| 13.36-13.41 | | | |

## 4.2 TEST PROCEDURE

According to ANSI C63.10 Field Strength Approach (linear terms):

$$E = EIRP - 20 \log d + 104.8$$

Where:
E is the electric field strength in dBuV/m
EIRP is the equivalent isotropically radiated power in dBm
d is the specified measurement distance in m
f) Compare the resultant electric field strength level with the applicable regulatory limit.
g) Perform the radiated spurious emission test.

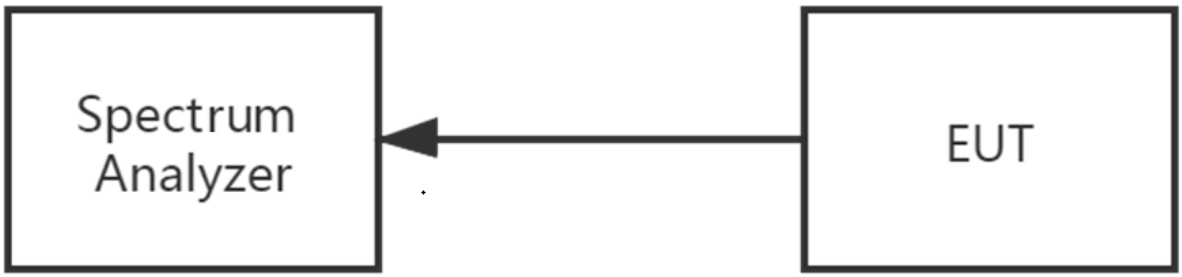
Where all terms are as previously defined.

1). Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2). Remove the antenna from the EUT and then connect to a low loss RF cable from the antenna port to an EMI test receiver, then turn on the EUT and make it operate in transmitting mode. Then set it to Low Channel and High Channel within its operating range, and make sure the instrument is operated in its linear range.
3). Set both RBW and VBW of spectrum analyzer to 100 kHz with a convenient frequency span including 100kHz bandwidth from band edge, for Radiated emissions restricted band RBW=1MHz, VBW=3MHz for peak detector and RBW=1MHz, VBW=3 MHz for AVG detector, Max Hold=Average, Trace=100times for AV test.
4). Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5). Repeat above procedures until all measured frequencies were complete.
6). Measure the conducted output power (in dBm) using the detector specified by the appropriate regulatory agency for guidance regarding measurement procedures for determining quasi-peak, peak, and average conducted output power, respectively).
7). Add the maximum transmit antenna gain (in dBi) to the measured output power level to determine the EIRP level (see 12.2.5 for guidance on determining the applicable antenna gain)
8). Add the appropriate maximum ground reflection factor to the EIRP level (6 dB for frequencies

≤ 30 MHz, 4.7 dB for frequencies between 30 MHz and 1000 MHz, inclusive and 0 dB for frequencies > 1000 MHz).
9). For devices with multiple antenna-ports, measure the power of each individual chain and sum the EIRP of all chains in linear terms (e.g., Watts, mW).
10). Compare the resultant electric field strength level to the applicable regulatory limit.
11). Perform radiated spurious emission test duress until all measured frequencies were complete.

4.3 DEVIATION FROM STANDARD
No deviation.

4.4 TEST SETUP




4.5 EUT OPERATION CONDITIONS
Please refer to section 3.1.4 of this report.

4.6 TEST RESULTS
Note: The test data please refer to APPENDIX 1.
Remark:
1). Test results including cable loss;
2). Measured at difference Packet Type for each mode and recorded worst case for each mode.
3). “---“means that the fundamental frequency not for 15.209 limits requirement.
4). Measured at Hopping and Non-Hopping mode, recorded worst at Non-Hopping mode.
5). The other emission levels were very low against the limit.
6). The average measurement was not performed when the peak measured data under the limit of average detection.
7). Detector AV is setting spectrum/receiver. RBW=1MHz/VBW=3MHz/Sweep time=Auto/Detector=RMS, Max Hold=Average,Trace=100times.
8). Since the out-of-band characteristics of the EUT transmit antenna will often be unknown, the use of a conservative antenna gain value is necessary. Thus, when determining the EIRP based on the measured conducted power, the upper bound on antenna gain for a device with a single RF output shall be selected as the maximum in-band gain of the antenna across all operating bands, or 2 dBi, whichever is greater. However, for devices that operate in multiple frequency bands while using the same transmit antenna, the highest gain of the antenna within the operating band nearest in frequency to the restricted band emission being measured may be used in lieu of the overall highest gain when the emission is at a frequency that is within 20 percent of the nearest band edge frequency, but in no case shall a value less than 2 dBi be used.

# 5. DUTY CYCLE

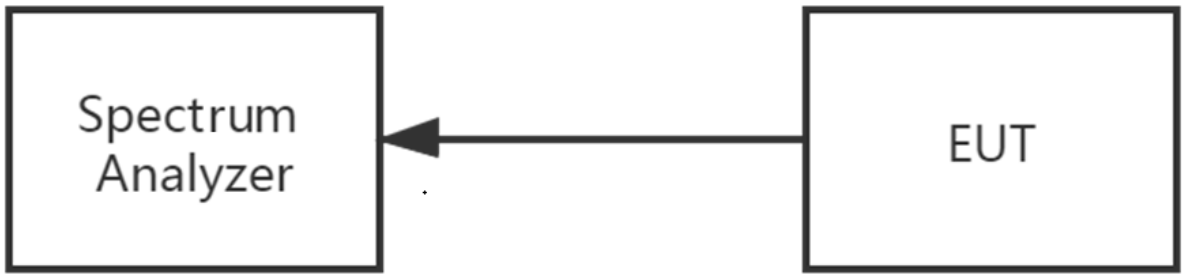
5.1 TEST STANDARD
Please refer to ANSI C63.10-2020+Cor 1-2023 Section 11.6

5.2 TEST PROCEDURE

| Spectrum Parameter | Setting |
|---|---|
| Attenuation | Auto |
| Span Frequency | Zero |
| RB | set RBW to the largest available value |
| VB | VBW ⩾ RBW. |
| Detector | Peak |
| Trace | Clear Write |
| Sweep Time | Auto |

5.3 DEVIATION FROM STANDARD
No deviation.

5.4 TEST SETUP




5.5 EUT OPERATION CONDITIONS
Please refer to section 3.1.4 of this report.

5.6 TEST RESULTS
Note: The test data please refer to APPENDIX 1.

# 6. CONDUCTED SPURIOUS & BAND EDGE EMISSION

## 6.1 LIMIT

According to FCC section 15.247(d), in any 100kHz 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 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

## 6.2 TEST PROCEDURE

| Spectrum Parameter | Setting |
|---|---|
| Detector | Peak |
| Start/Stop Frequency | 30 MHz to 10th carrier harmonic |
| RB / VB (emission in restricted band) | 100 KHz/300 KHz |
| Trace-Mode: | Max hold |

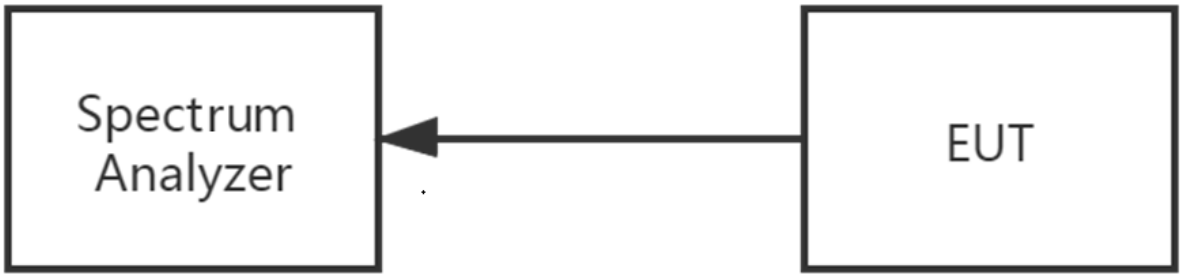
For Band edge

| Spectrum Parameter | Setting |
|---|---|
| Detector | Peak |
| RB / VB (emission in restricted band) | 100 KHz/300 KHz |
| Trace-Mode: | Max hold |

## 6.3 DEVIATION FROM STANDARD

No deviation.

## 6.4 TEST SETUP




The EUT is connected to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading.
Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW.

## 6.5 EUT OPERATION CONDITIONS

Please refer to section 3.1.4 of this report.

## 6.6 TEST RESULTS

Note:

1. The test data please refer to APPENDIX 1.
2. Input compensation coefficient (dB) = Cable Loss (dB)
   For Conducted spurious emissions plots from 30MHz to 26.5GHz, the worst cable loss and attenuator factors have been set in the 'Input Correction' of the Spectrum Analyzer during the test.

# 7. POWER SPECTRAL DENSITY TEST

## 7.1 LIMIT

| FCC Part15.247 , Subpart C | | | | |
|---|---|---|---|---|
| Section | Test Item | Limit | Frequency Range (MHz) | Result |
| 15.247(e) | Power Spectral Density | ≤8 dBm (RBW ≥3KHz) | 2400-2483.5 | PASS |

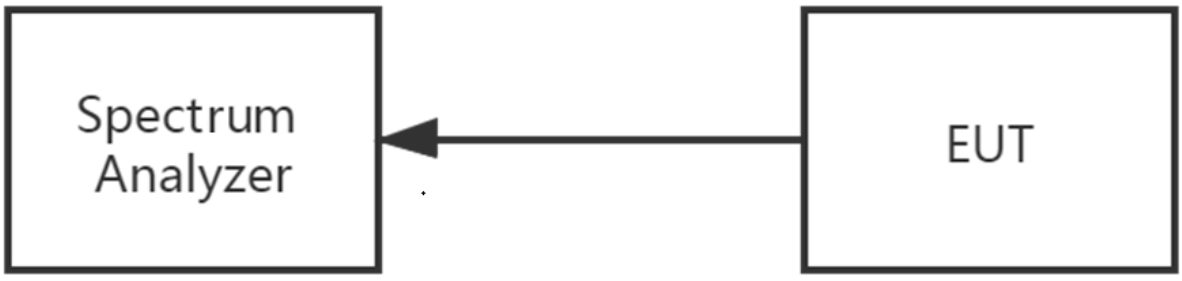
## 7.2 TEST PROCEDURE

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS channel bandwidth.
3. Set the 100 kHz ≥ RBW ≥3 kHz.
4. Set the VBW ≥ 3 x RBW.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

## 7.3 DEVIATION FROM STANDARD

No deviation.

## 7.4 TEST SETUP




## 7.5 EUT OPERATION CONDITIONS

Please refer to section 3.1.4 of this report.

## 7.6 TEST RESULTS

Note: The test data please refer to APPENDIX 1.

# 8. BANDWIDTH TEST

8.1 LIMIT

| FCC Part15.247,Subpart C | | | | |
|---|---|---|---|---|
| Section | Test Item | Limit | Frequency Range (MHz) | Result |
| 15.247(a)(2) | Bandwidth | ≥500KHz (6dB bandwidth) | 2400-2483.5 | PASS |

8.2 TEST PROCEDURE

The automatic bandwidth measurement capability of an instrument may be employed using the X dB bandwidth mode with X set to 6 dB, if the functionality described above (i.e., RBW = 1% to 5% of the OBW but not less than 100 kHz., VBW≥3RBW, peak detector with maximum hold) is implemented by the instrumentation function. When using this capability, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be≥6 dB.

8.3 DEVIATION FROM STANDARD

No deviation.

8.4 TEST SETUP


8.5 EUT OPERATION CONDITIONS

Please refer to section 3.1.4 of this report.

8.6 TEST RESULTS

Note: The test data please refer to APPENDIX 1.

# 9. PEAK OUTPUT POWER TEST

9.1 LIMIT

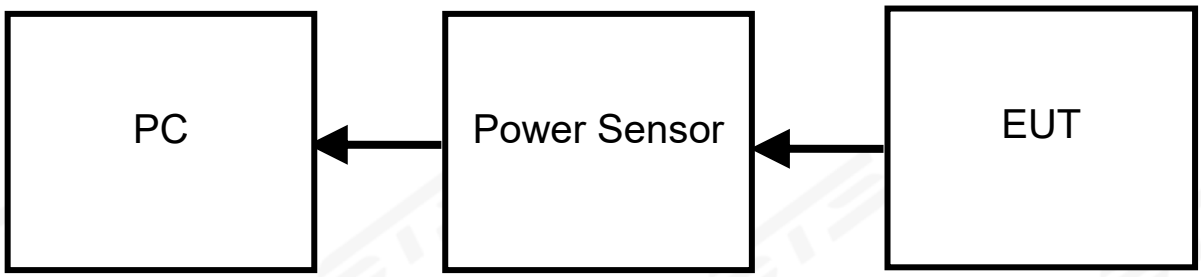
| FCC Part15.247,Subpart C | | | | |
|---|---|---|---|---|
| Section | Test Item | Limit | Frequency Range (MHz) | Result |
| 15.247(b)(3) | Output Power | 1 watt or 30dBm | 2400-2483.5 | PASS |

9.2 TEST PROCEDURE

PKPM1 Peak power meter method:
The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall use a fast-responding diode detector.

9.3 DEVIATION FROM STANDARD
No deviation.

9.4 TEST SETUP




9.5 EUT OPERATION CONDITIONS
Please refer to section 3.1.4 of this report.

9.6 TEST RESULTS
Note: The test data please refer to APPENDIX 1.

# 10. ANTENNA REQUIREMENT

10.1 STANDARD REQUIREMENT

15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible partyshall be used with the device.

10.2 EUT ANTENNA

The EUT antenna is FPC Antenna. It comply with the standard requirement.

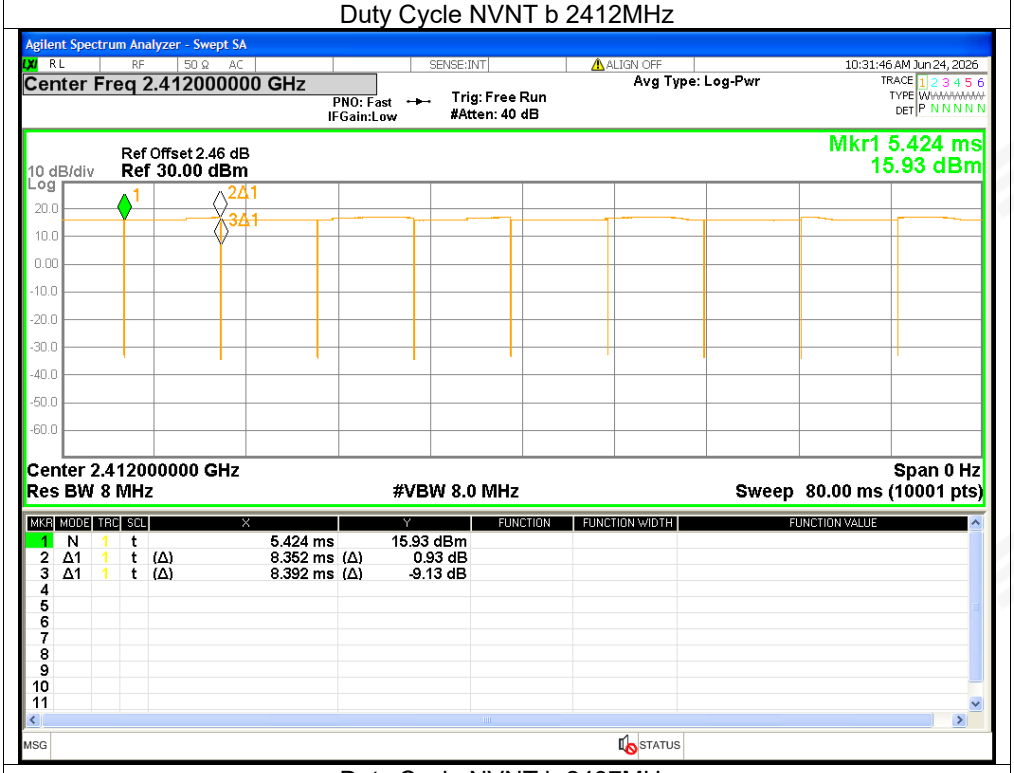
## APPENDIX 1-TEST DATA

# Duty Cycle

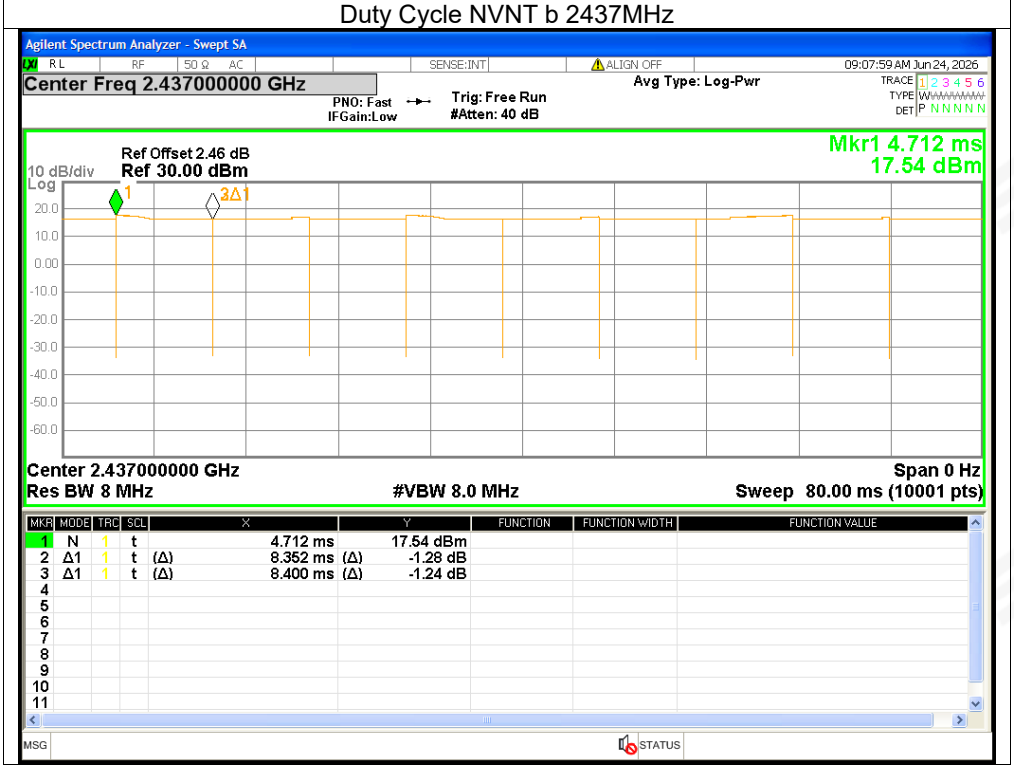
| Condition | Mode | Frequency (MHz) | On Time (ms) | Period (ms) | Duty Cycle (%) | Correction Factor (dB) | 1/T (kHz) |
|---|---|---|---|---|---|---|---|
| NVNT | b | 2412 | 8.352 | 8.392 | 99.52 | 0.02 | 0.12 |
| NVNT | b | 2437 | 8.352 | 8.4 | 99.43 | 0.02 | 0.12 |
| NVNT | b | 2462 | 8.352 | 8.4 | 99.43 | 0.02 | 0.12 |
| NVNT | g | 2412 | 0.148 | 0.195 | 75.9 | 1.2 | 6.73 |
| NVNT | g | 2437 | 0.148 | 0.195 | 75.9 | 1.2 | 6.75 |
| NVNT | g | 2462 | 0.148 | 0.196 | 75.51 | 1.22 | 6.73 |
| NVNT | n20 | 2412 | 0.176 | 0.223 | 78.92 | 1.03 | 5.67 |
| NVNT | n20 | 2437 | 0.176 | 0.223 | 78.92 | 1.03 | 5.68 |
| NVNT | n20 | 2462 | 0.176 | 0.224 | 78.57 | 1.05 | 5.68 |
| NVNT | n40 | 2422 | 0.18 | 0.228 | 78.95 | 1.03 | 5.55 |
| NVNT | n40 | 2437 | 0.18 | 0.228 | 78.95 | 1.03 | 5.55 |
| NVNT | n40 | 2452 | 0.181 | 0.227 | 79.74 | 0.98 | 5.54 |

Test Graphs

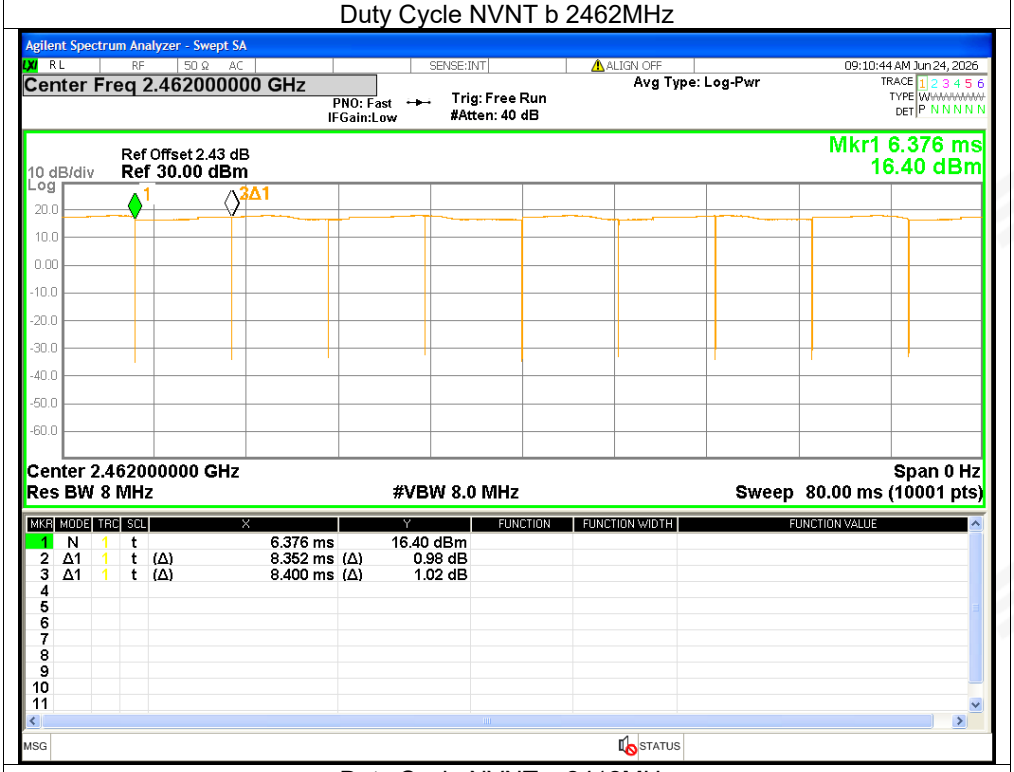
Duty Cycle NVNT b 2412MHz



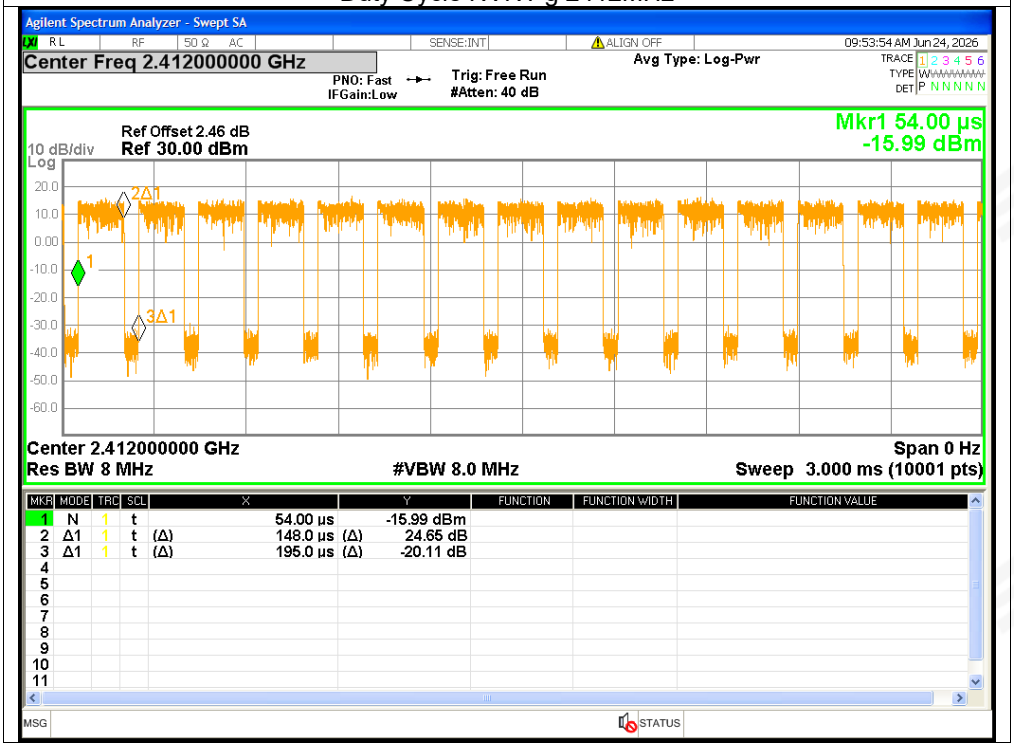

Duty Cycle NVNT b 2437MHz



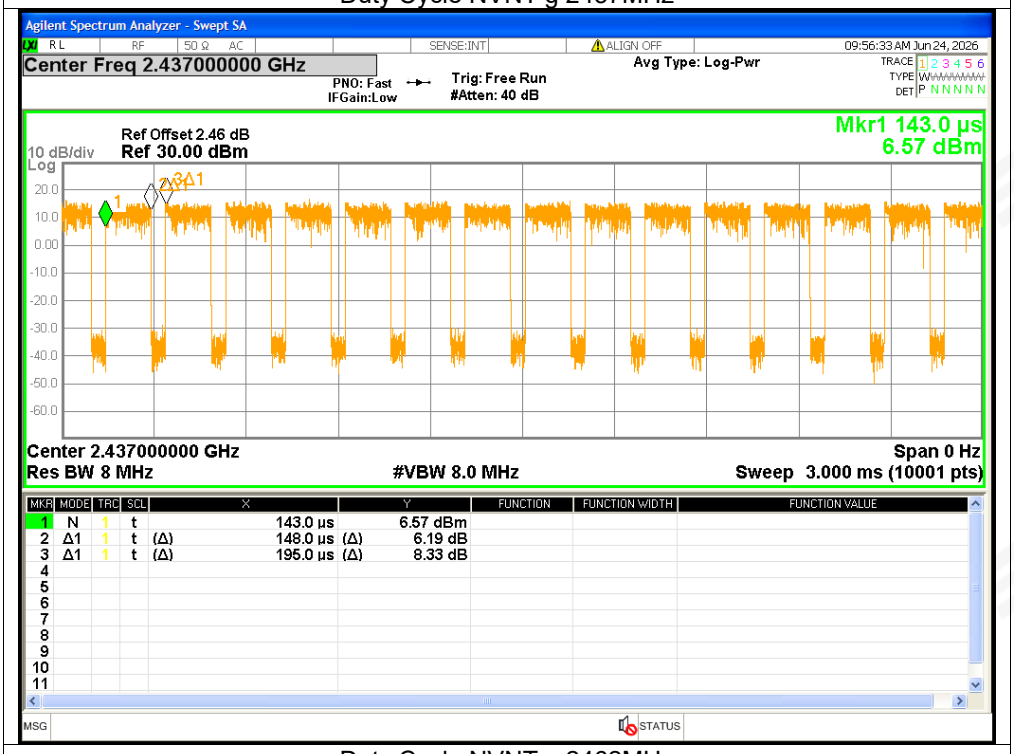
Duty Cycle NVNT b 2462MHz



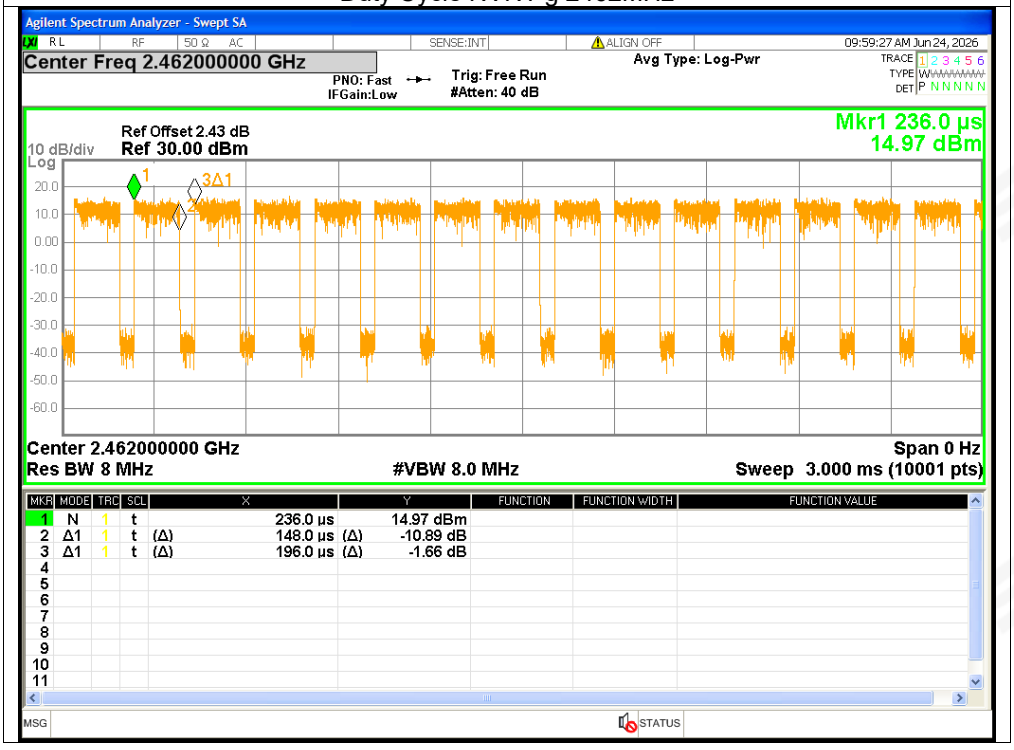

Duty Cycle NVNT g 2412MHz



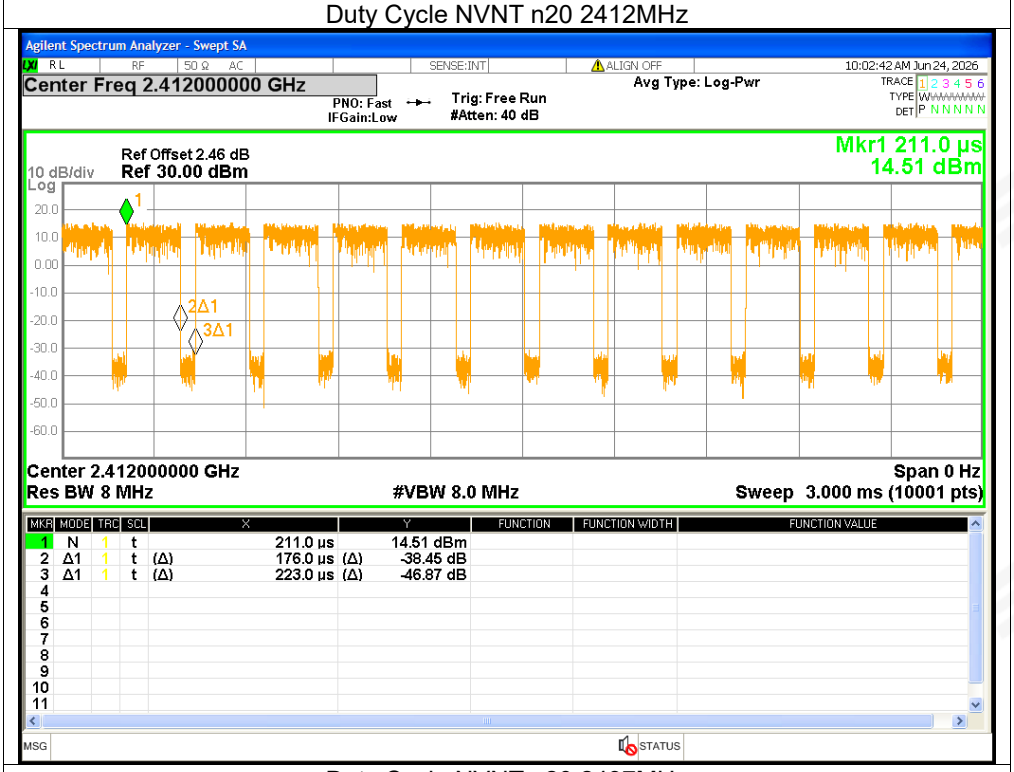
Duty Cycle NVNT g 2437MHz



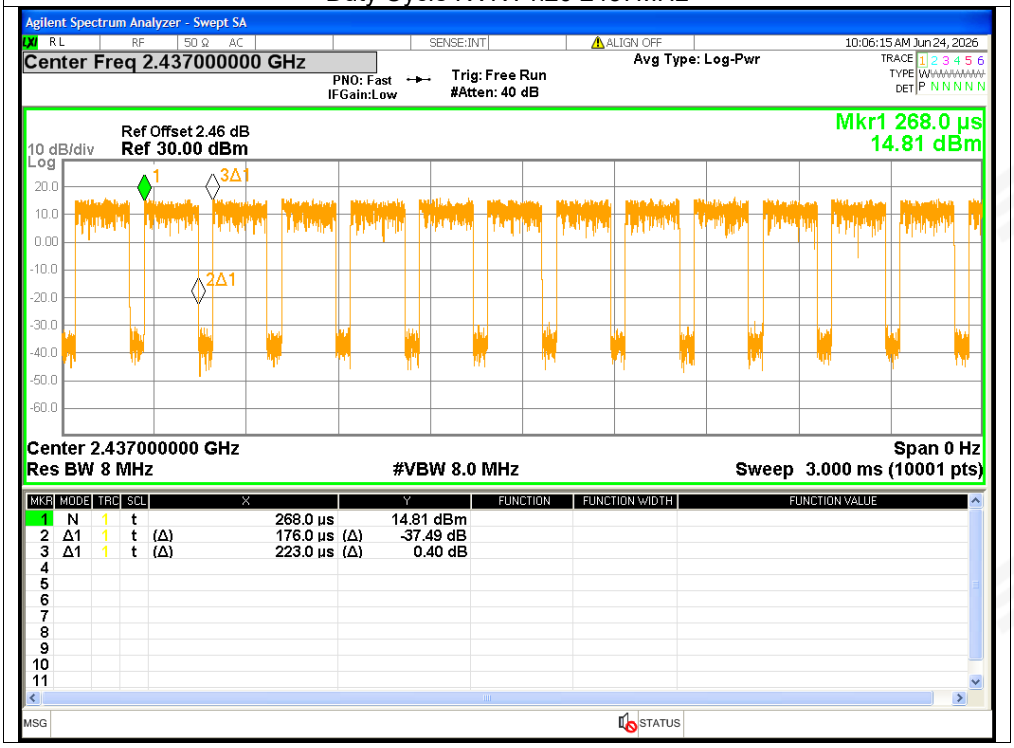

Duty Cycle NVNT g 2462MHz



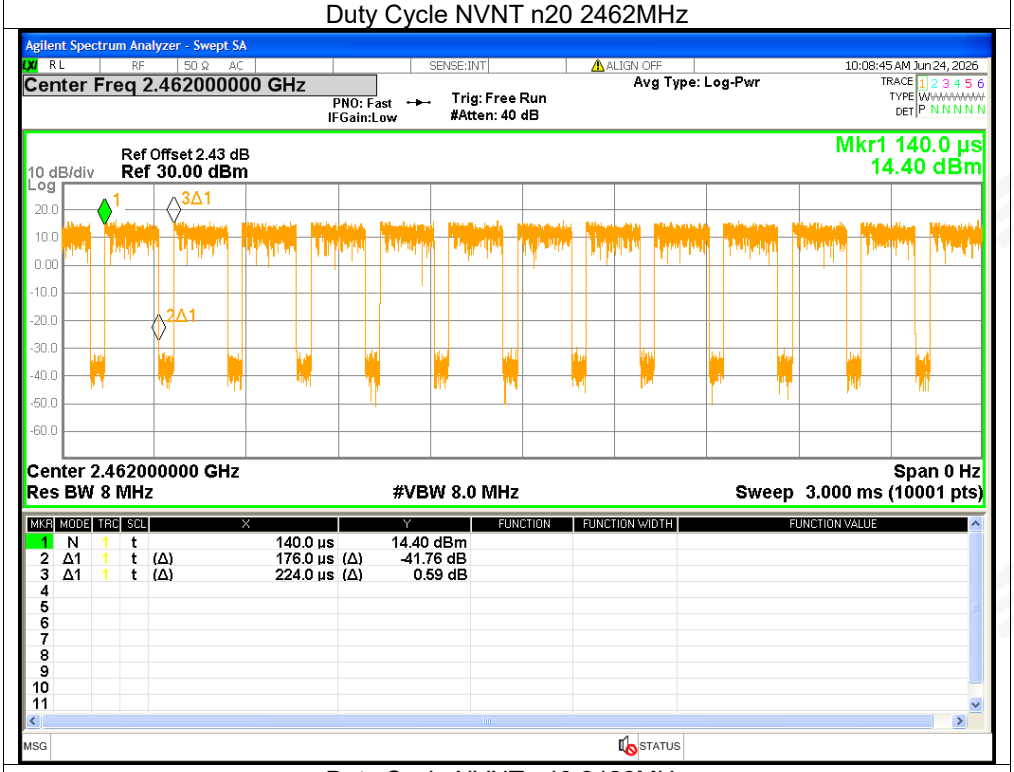
Duty Cycle NVNT n20 2412MHz



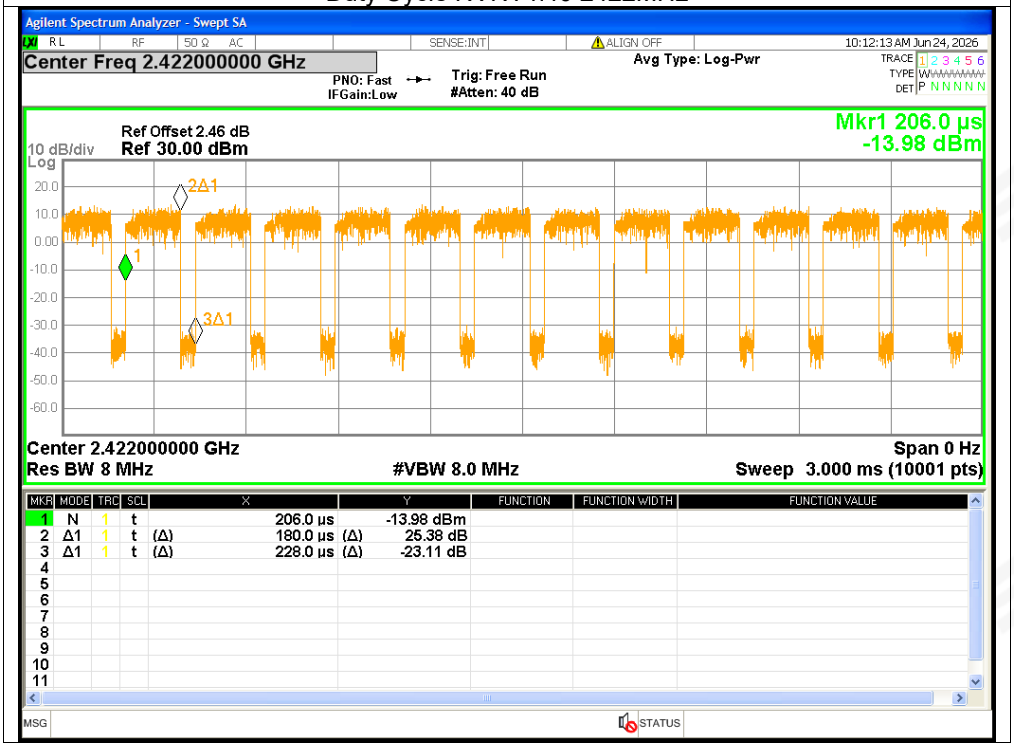

Duty Cycle NVNT n20 2437MHz



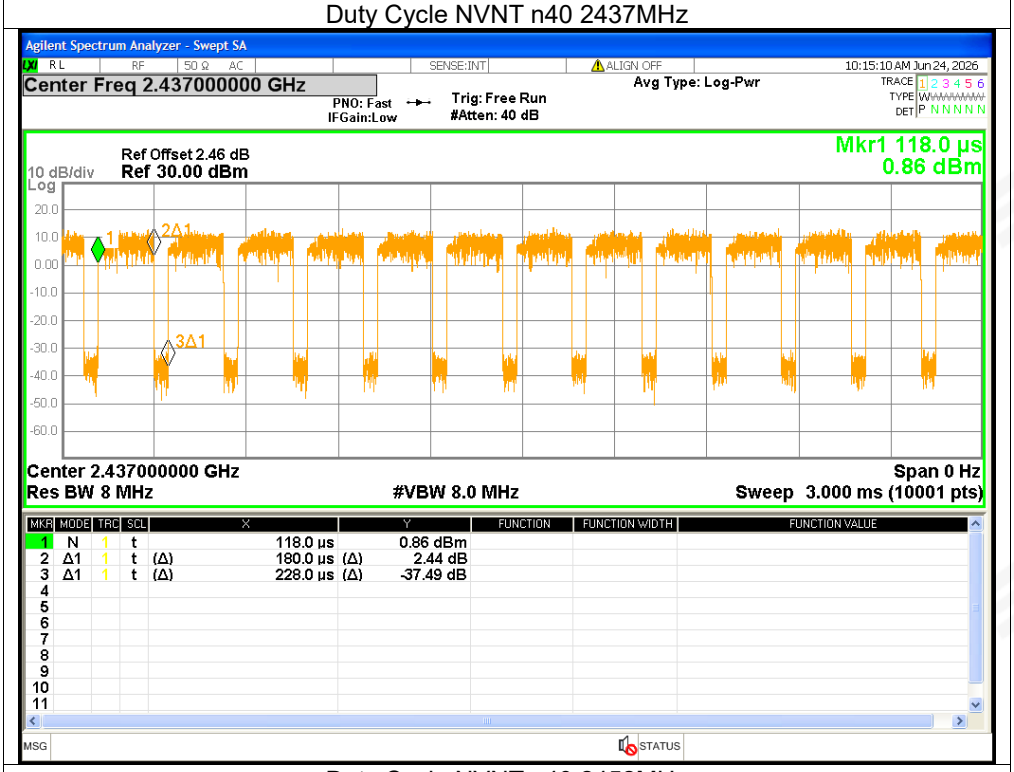
Duty Cycle NVNT n20 2462MHz



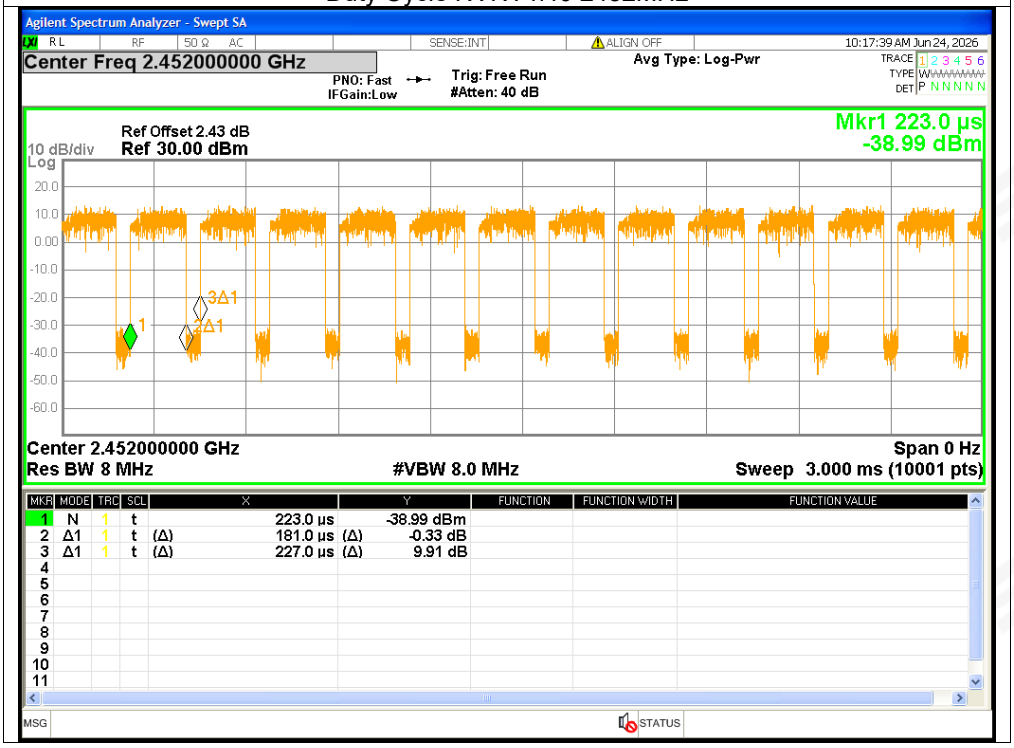

Duty Cycle NVNT n40 2422MHz



Duty Cycle NVNT n40 2437MHz




Duty Cycle NVNT n40 2452MHz



# Maximum Peak Conducted Output Power

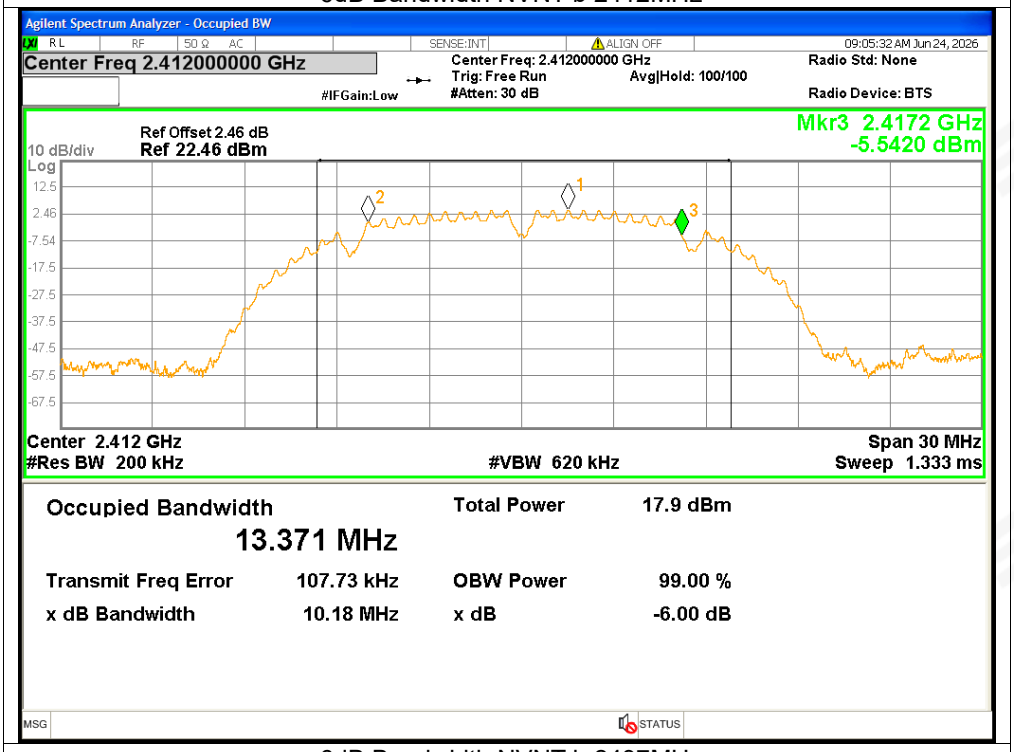
| Condition | Mode | Frequency (MHz) | Conducted Power (dBm) | Limit (dBm) | Verdict |
|---|---|---|---|---|---|
| NVNT | b | 2412 | 18.13 | <=30 | Pass |
| NVNT | b | 2437 | 18.54 | <=30 | Pass |
| NVNT | b | 2462 | 18.76 | <=30 | Pass |
| NVNT | g | 2412 | 17.55 | <=30 | Pass |
| NVNT | g | 2437 | 17.72 | <=30 | Pass |
| NVNT | g | 2462 | 17.9 | <=30 | Pass |
| NVNT | n20 | 2412 | 17.63 | <=30 | Pass |
| NVNT | n20 | 2437 | 17.71 | <=30 | Pass |
| NVNT | n20 | 2462 | 17.9 | <=30 | Pass |
| NVNT | n40 | 2422 | 17.25 | <=30 | Pass |
| NVNT | n40 | 2437 | 17.47 | <=30 | Pass |
| NVNT | n40 | 2452 | 17.59 | <=30 | Pass |

# -6dB Bandwidth

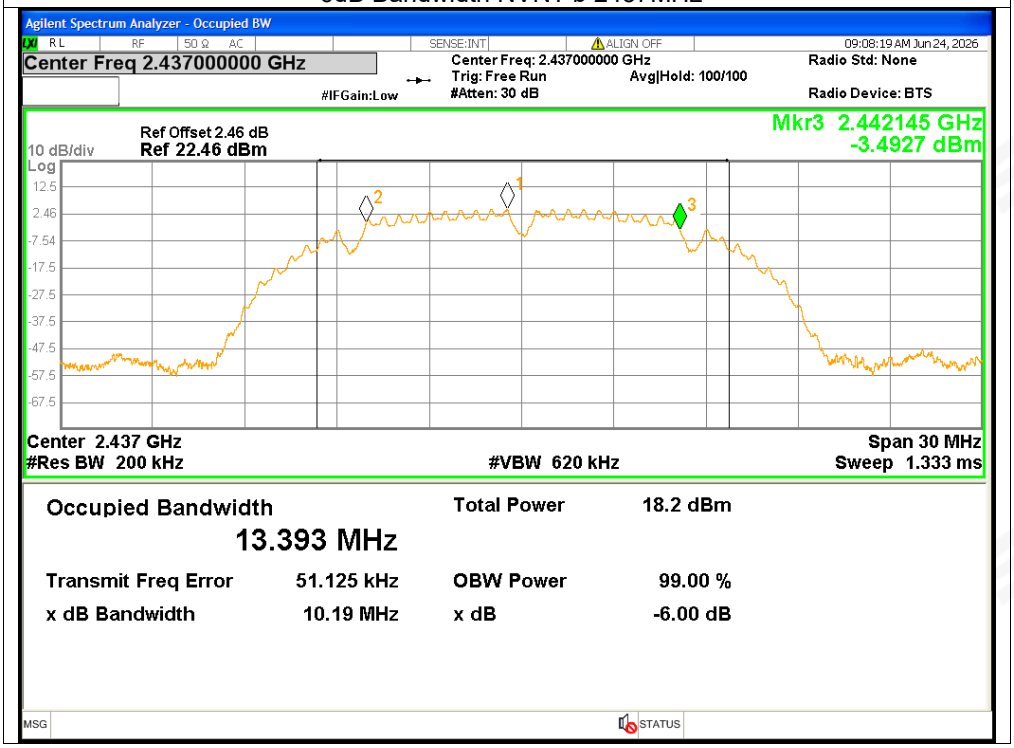
| Condition | Mode | Frequency (MHz) | -6 dB Bandwidth (MHz) | Limit -6 dB Bandwidth (MHz) | Verdict |
|---|---|---|---|---|---|
| NVNT | b | 2412 | 10.18 | >=0.5 | Pass |
| NVNT | b | 2437 | 10.19 | >=0.5 | Pass |
| NVNT | b | 2462 | 10.18 | >=0.5 | Pass |
| NVNT | g | 2412 | 15.52 | >=0.5 | Pass |
| NVNT | g | 2437 | 15.86 | >=0.5 | Pass |
| NVNT | g | 2462 | 15.95 | >=0.5 | Pass |
| NVNT | n20 | 2412 | 15.98 | >=0.5 | Pass |
| NVNT | n20 | 2437 | 15.68 | >=0.5 | Pass |
| NVNT | n20 | 2462 | 16.69 | >=0.5 | Pass |
| NVNT | n40 | 2422 | 35.61 | >=0.5 | Pass |
| NVNT | n40 | 2437 | 35.71 | >=0.5 | Pass |
| NVNT | n40 | 2452 | 35.8 | >=0.5 | Pass |

Test Graphs

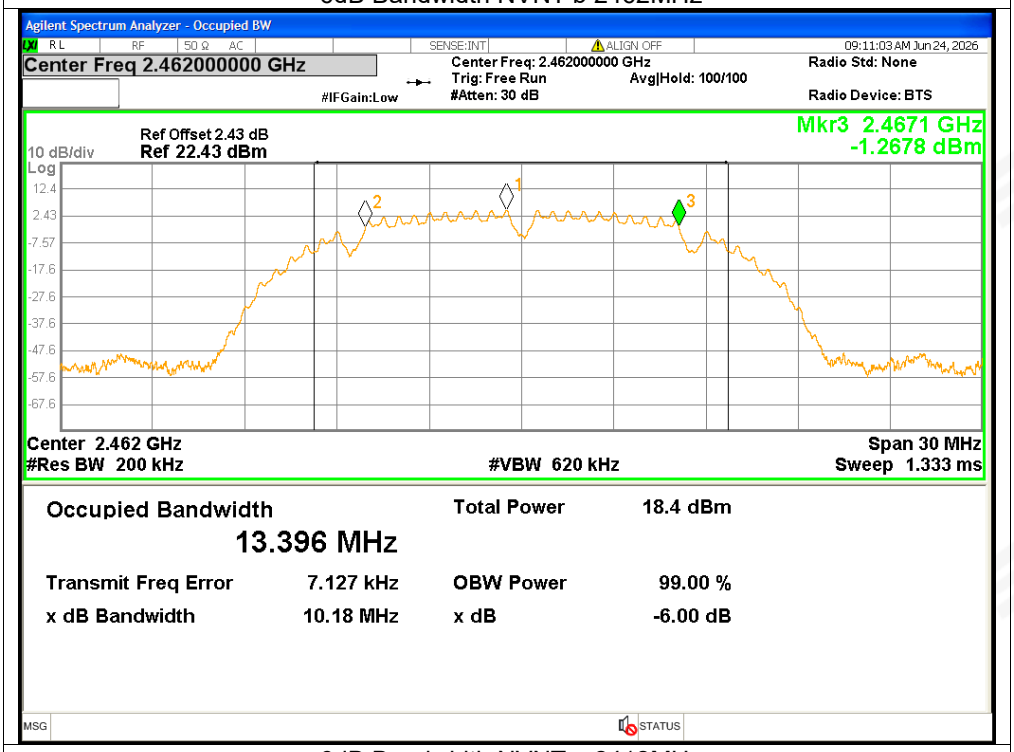
-6dB Bandwidth NVNT b 2412MHz



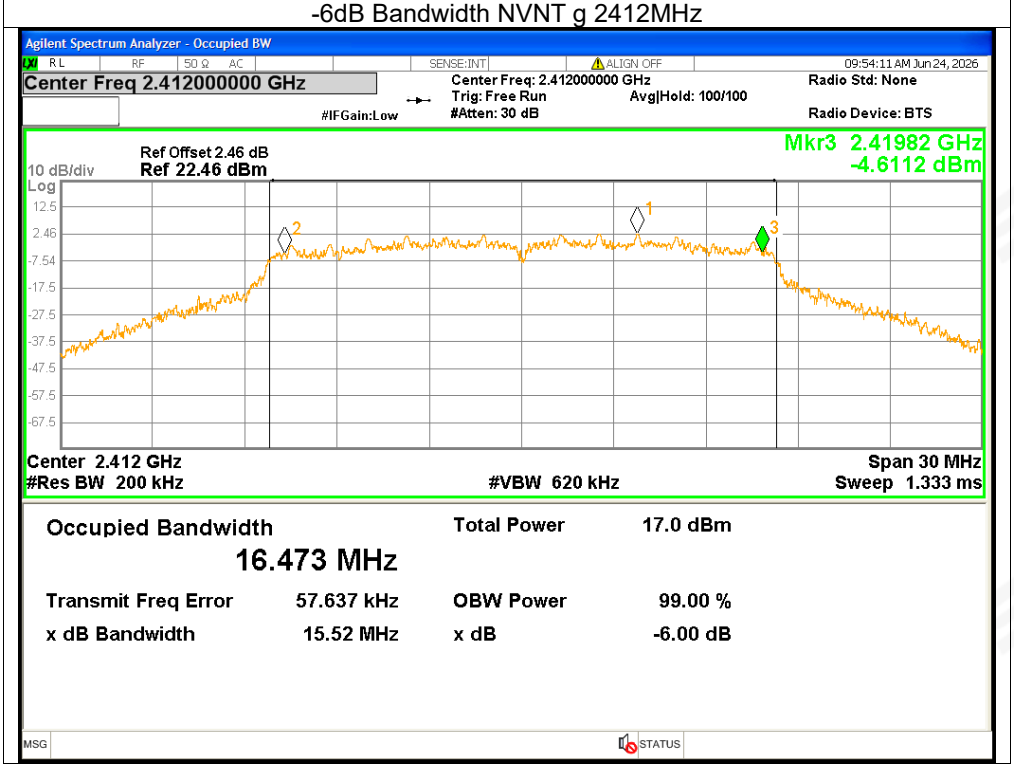

-6dB Bandwidth NVNT b 2437MHz



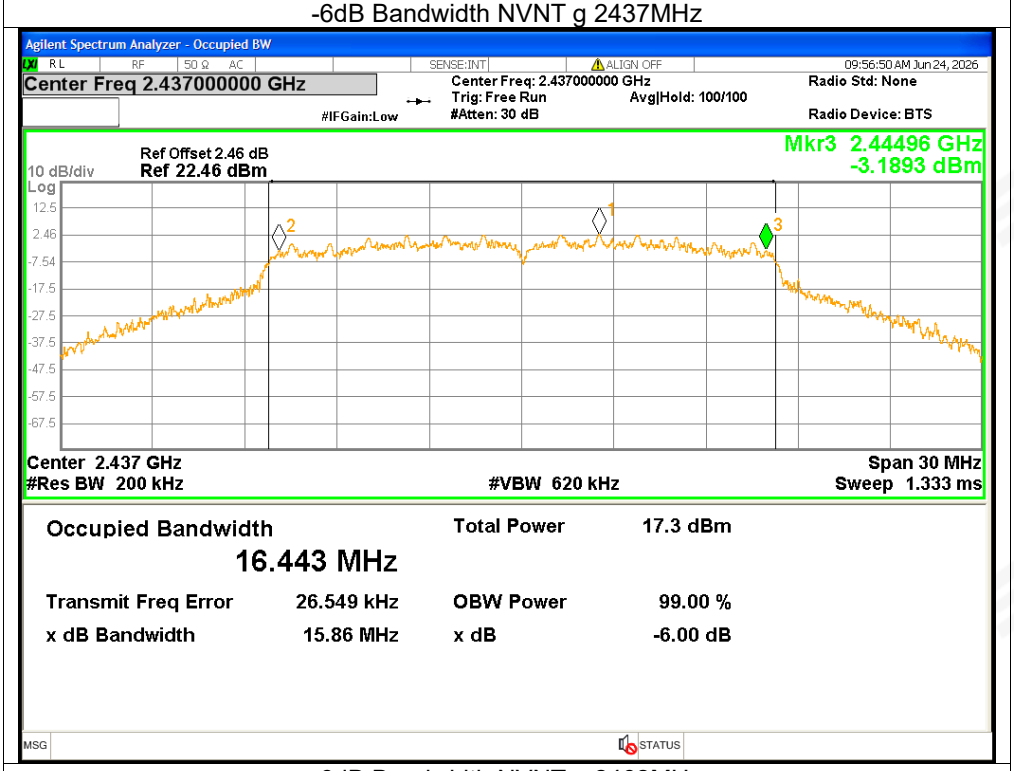
-6dB Bandwidth NVNT b 2462MHz



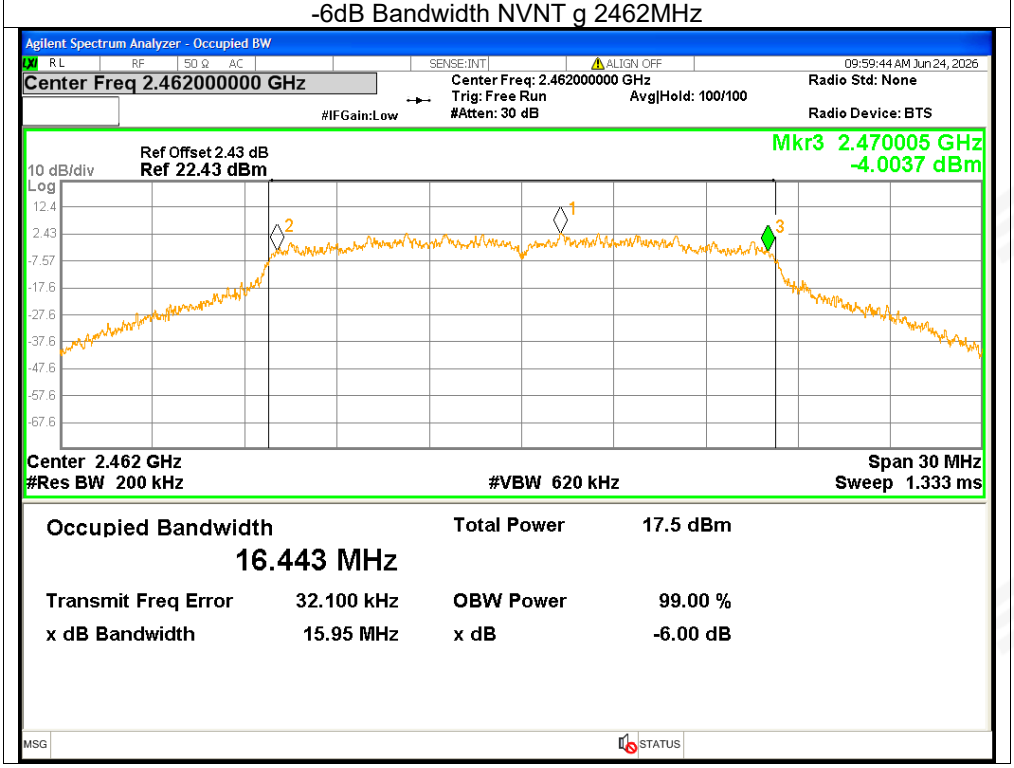

-6dB Bandwidth NVNT g 2412MHz



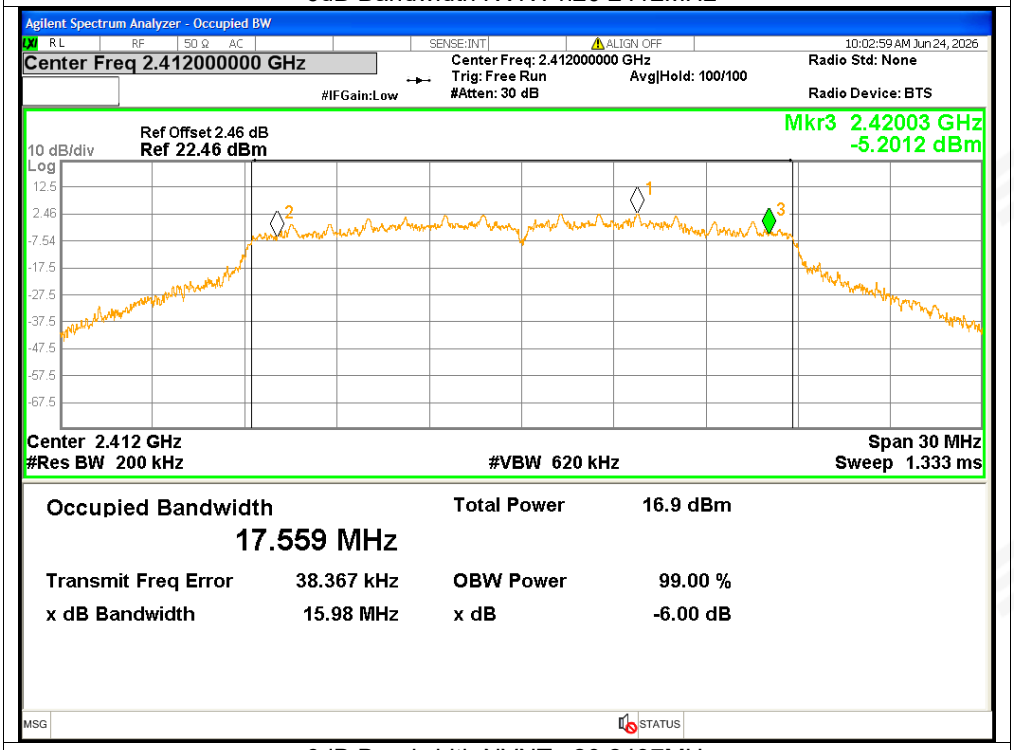
-6dB Bandwidth NVNT g 2437MHz



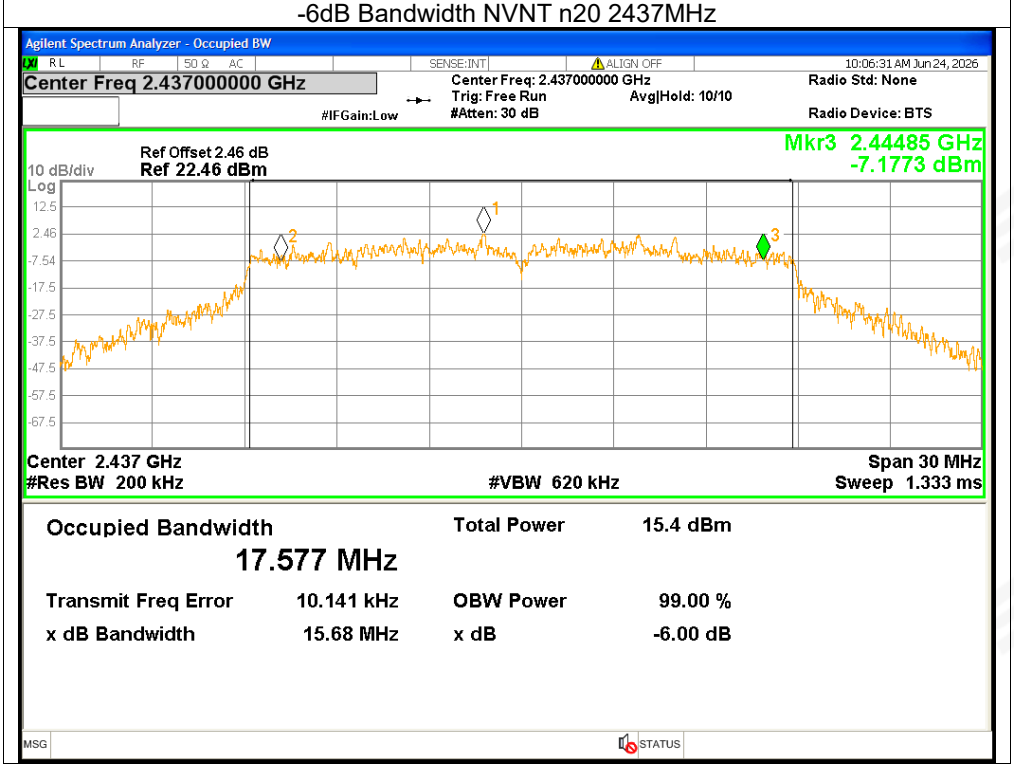

-6dB Bandwidth NVNT g 2462MHz



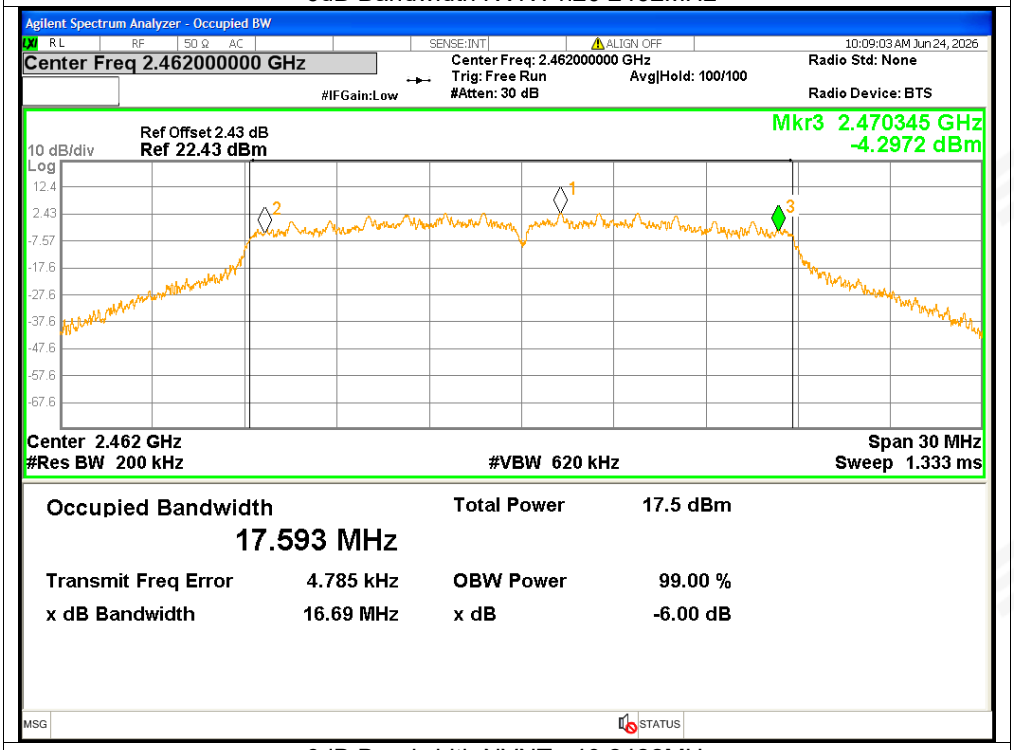
-6dB Bandwidth NVNT n20 2412MHz



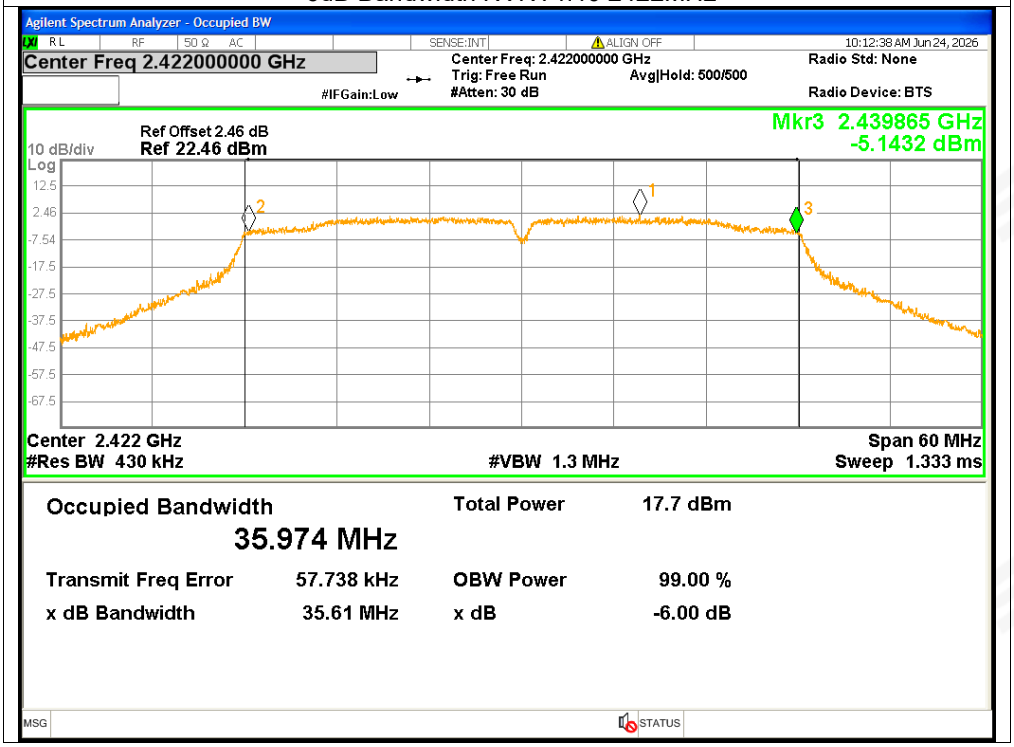

-6dB Bandwidth NVNT n20 2437MHz



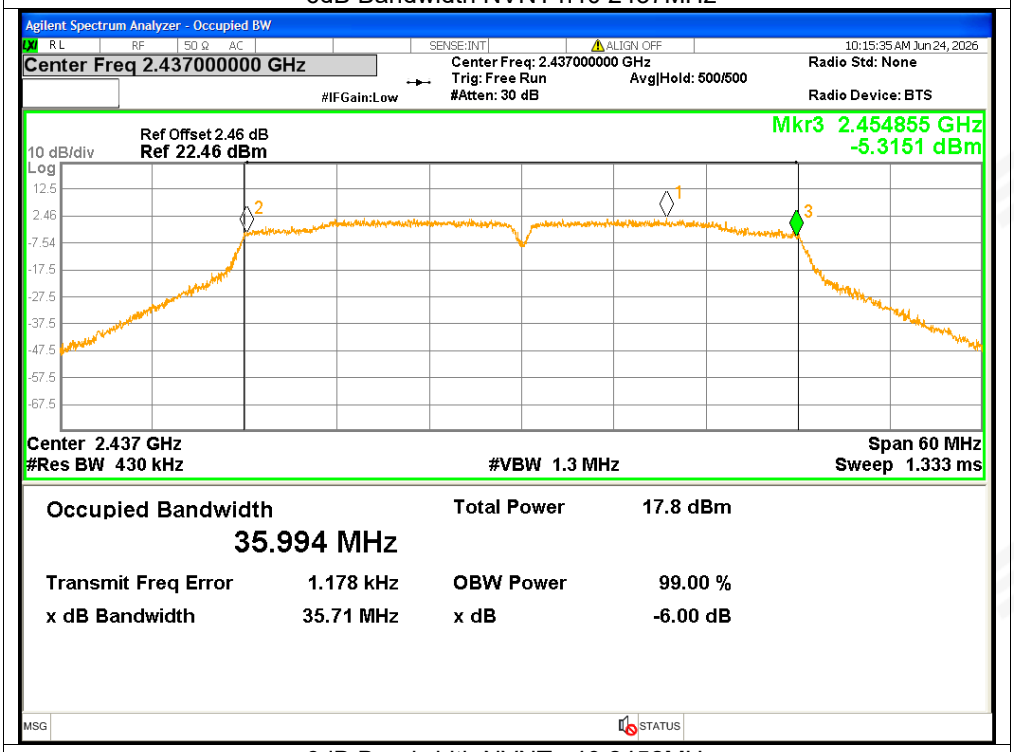
-6dB Bandwidth NVNT n20 2462MHz



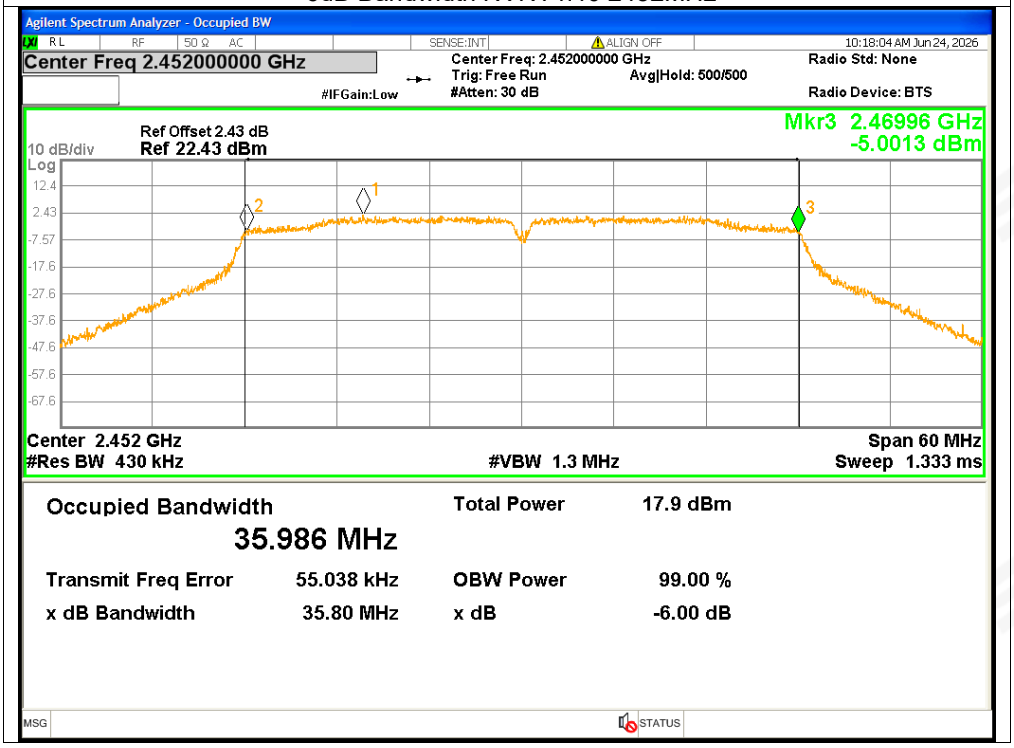

-6dB Bandwidth NVNT n40 2422MHz



-6dB Bandwidth NVNT n40 2437MHz




-6dB Bandwidth NVNT n40 2452MHz

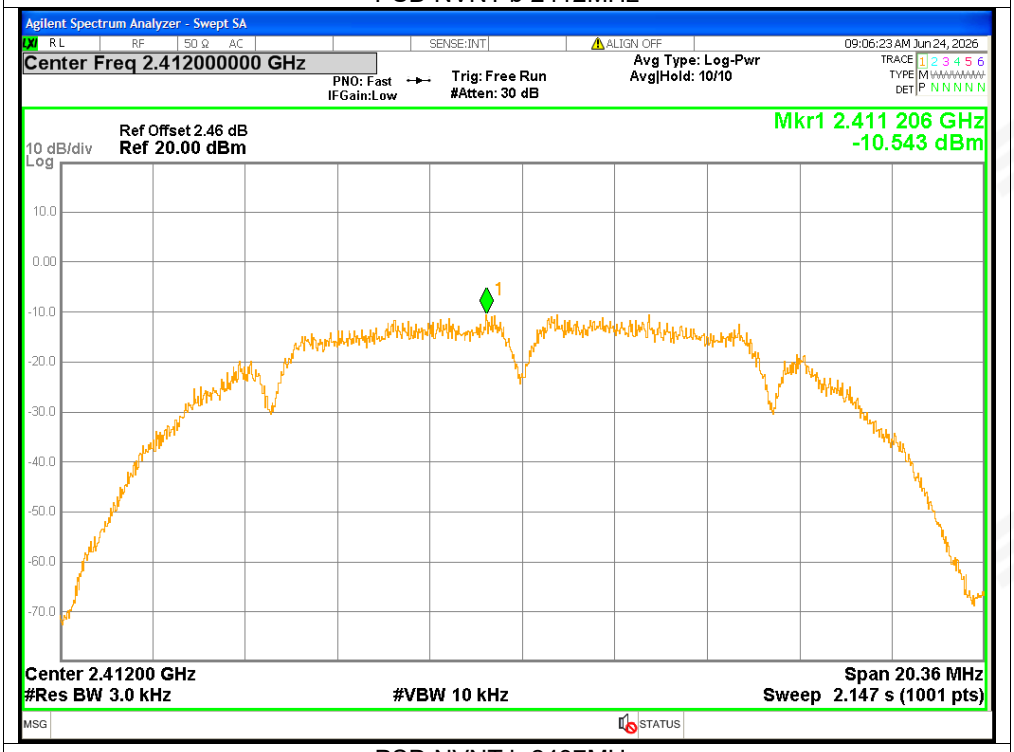


# Maximum Power Spectral Density Level

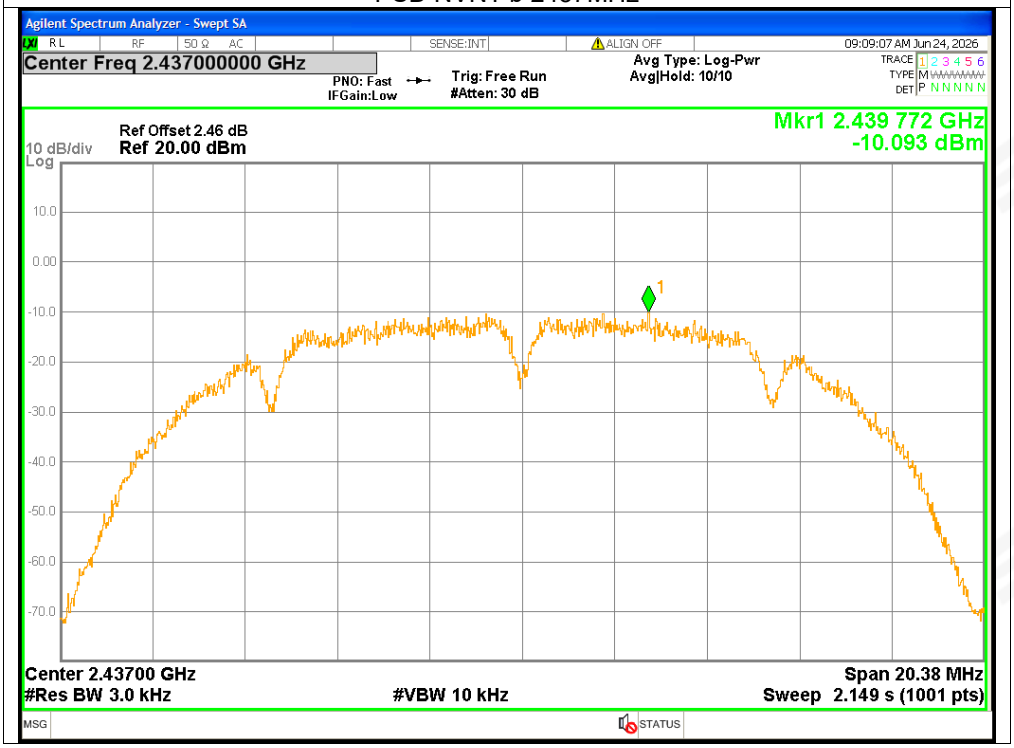
| Condition | Mode | Frequency (MHz) | PSD (dBm/3kHz) | Limit (dBm/3kHz) | Verdict |
|---|---|---|---|---|---|
| NVNT | b | 2412 | -10.54 | <=8 | Pass |
| NVNT | b | 2437 | -10.09 | <=8 | Pass |
| NVNT | b | 2462 | -9.05 | <=8 | Pass |
| NVNT | g | 2412 | -13.64 | <=8 | Pass |
| NVNT | g | 2437 | -14.46 | <=8 | Pass |
| NVNT | g | 2462 | -13.25 | <=8 | Pass |
| NVNT | n20 | 2412 | -12.72 | <=8 | Pass |
| NVNT | n20 | 2437 | -13.03 | <=8 | Pass |
| NVNT | n20 | 2462 | -12.95 | <=8 | Pass |
| NVNT | n40 | 2422 | -16.39 | <=8 | Pass |
| NVNT | n40 | 2437 | -16.8 | <=8 | Pass |
| NVNT | n40 | 2452 | -16.35 | <=8 | Pass |

Test Graphs

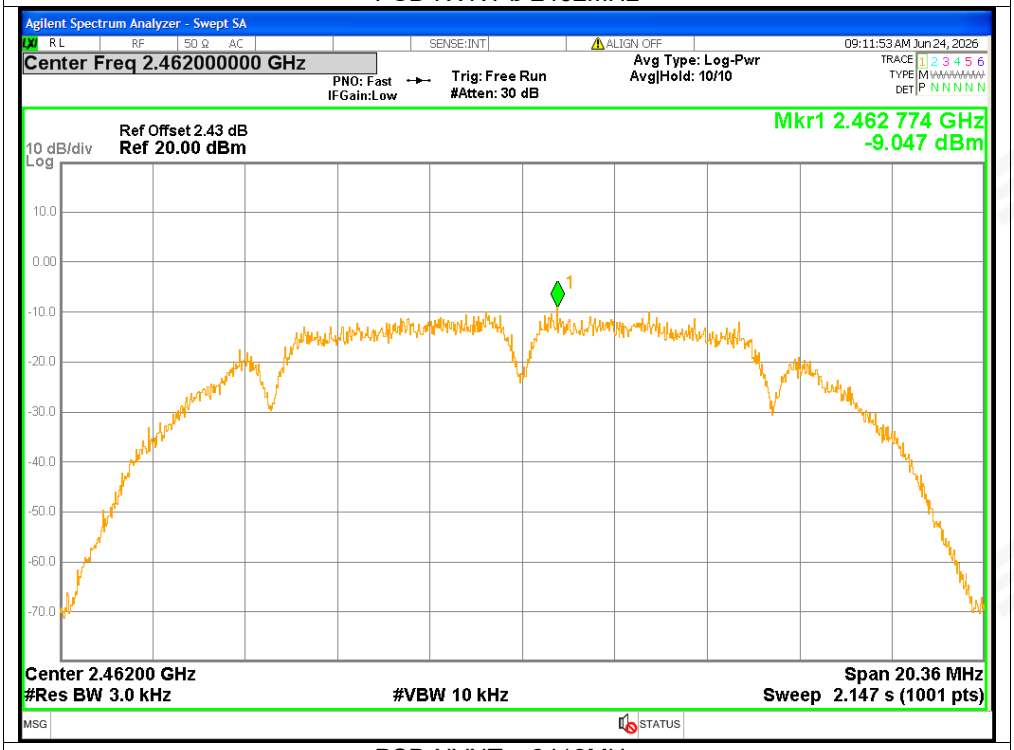
PSD NVNT b 2412MHz



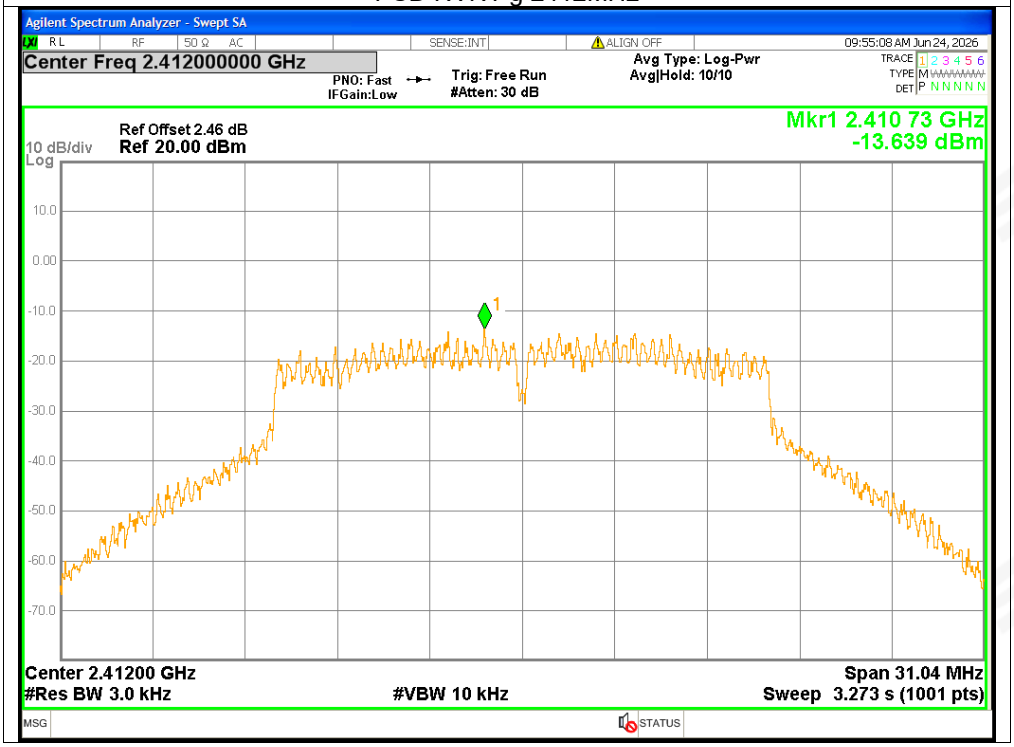

PSD NVNT b 2437MHz



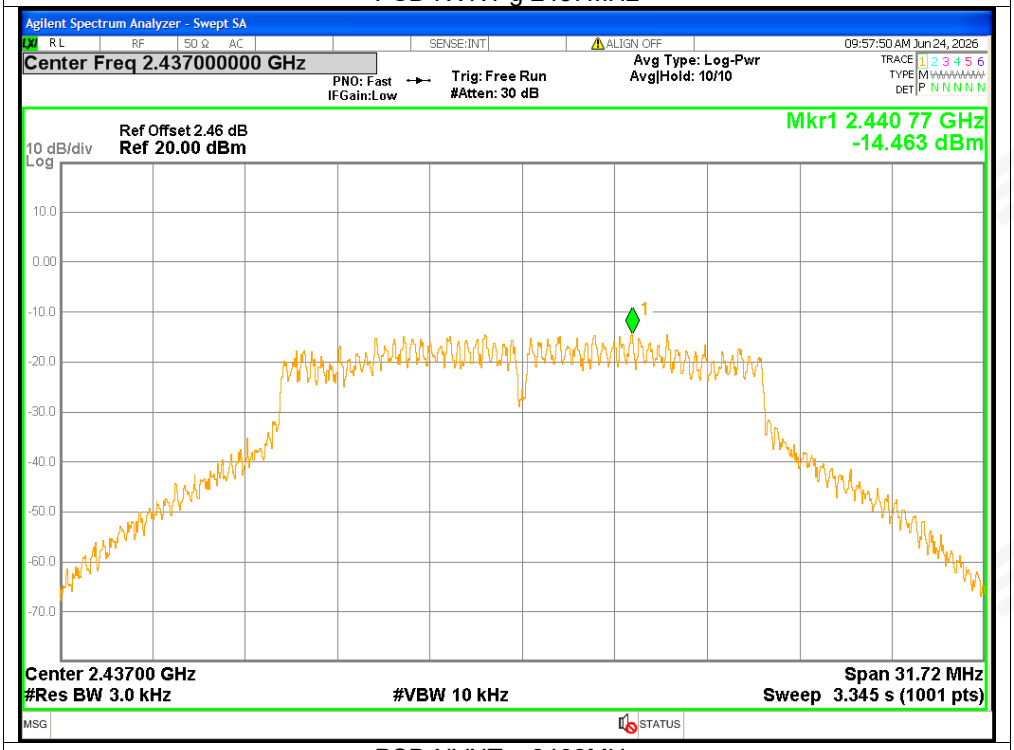
PSD NVNT b 2462MHz



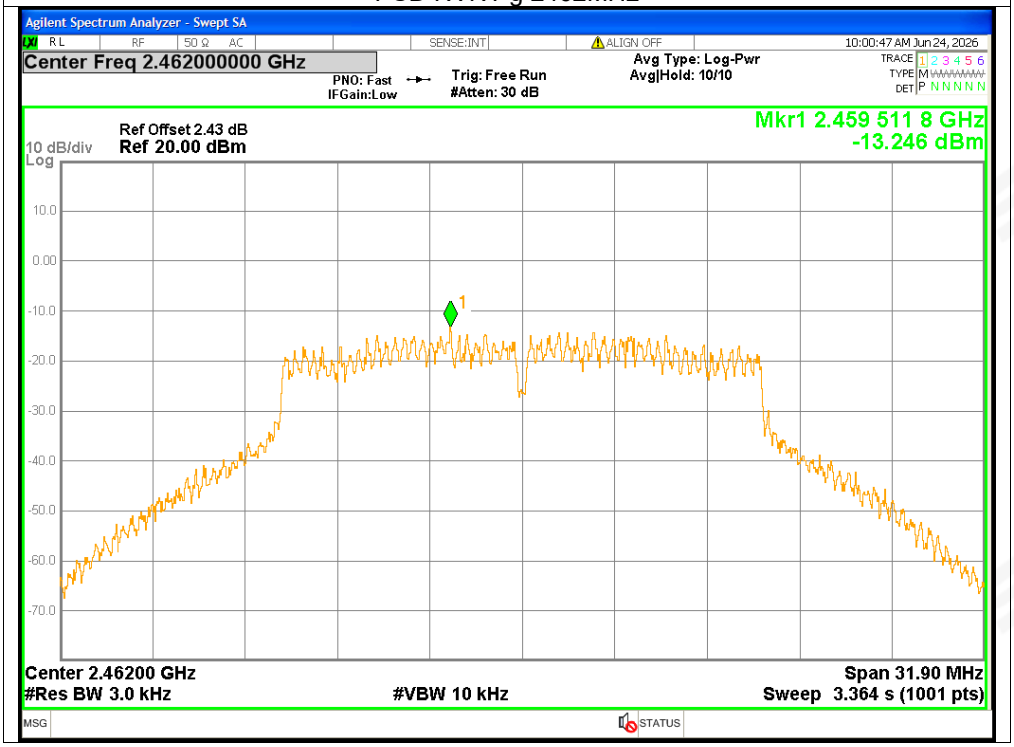

PSD NVNT g 2412MHz



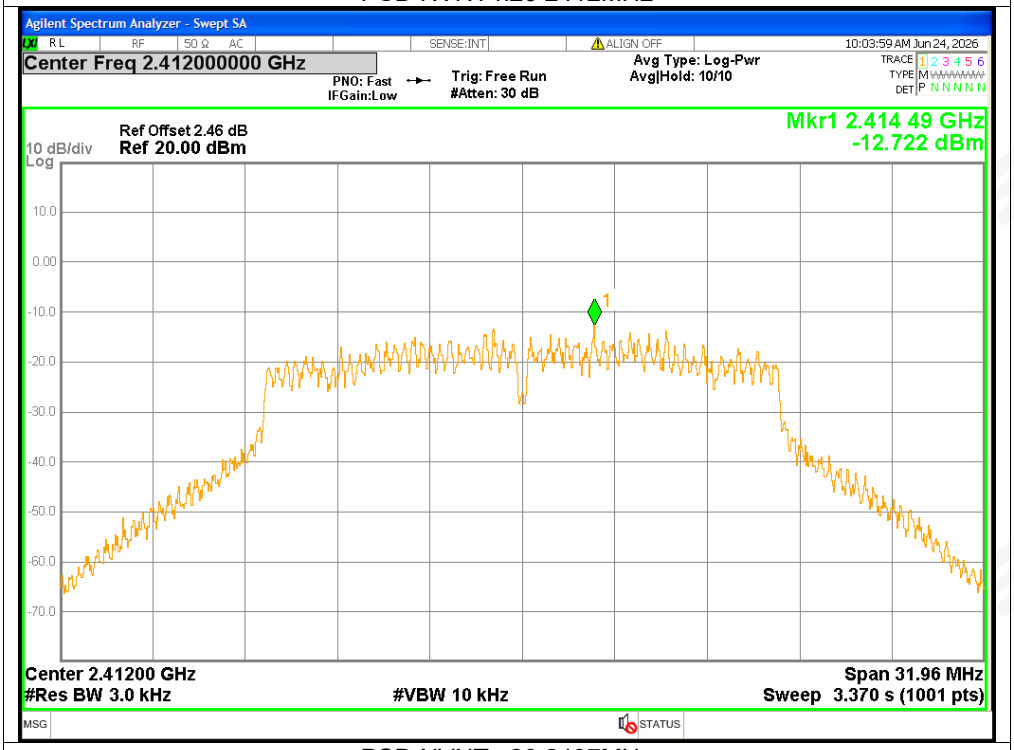
PSD NVNT g 2437MHz



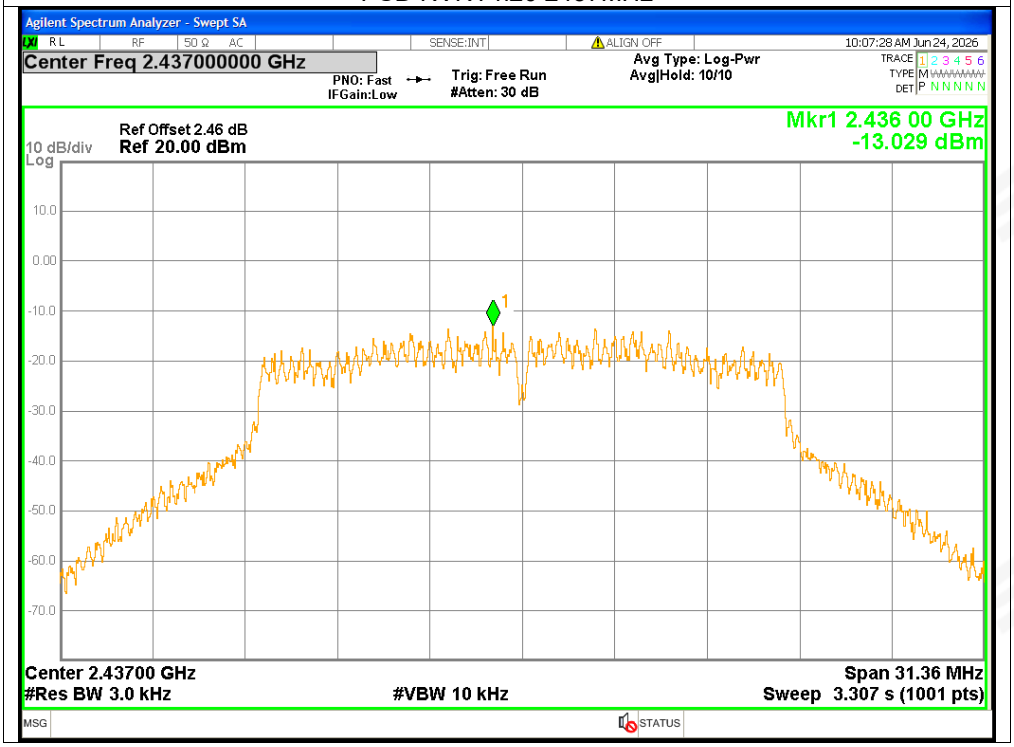

PSD NVNT g 2462MHz



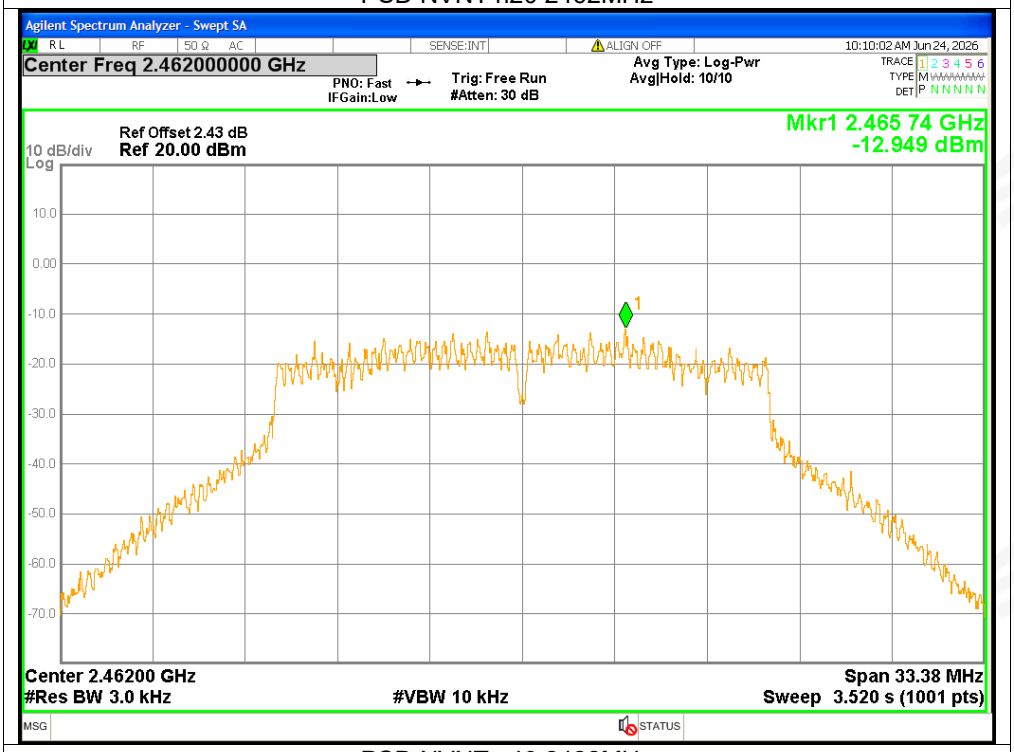
PSD NVNT n20 2412MHz



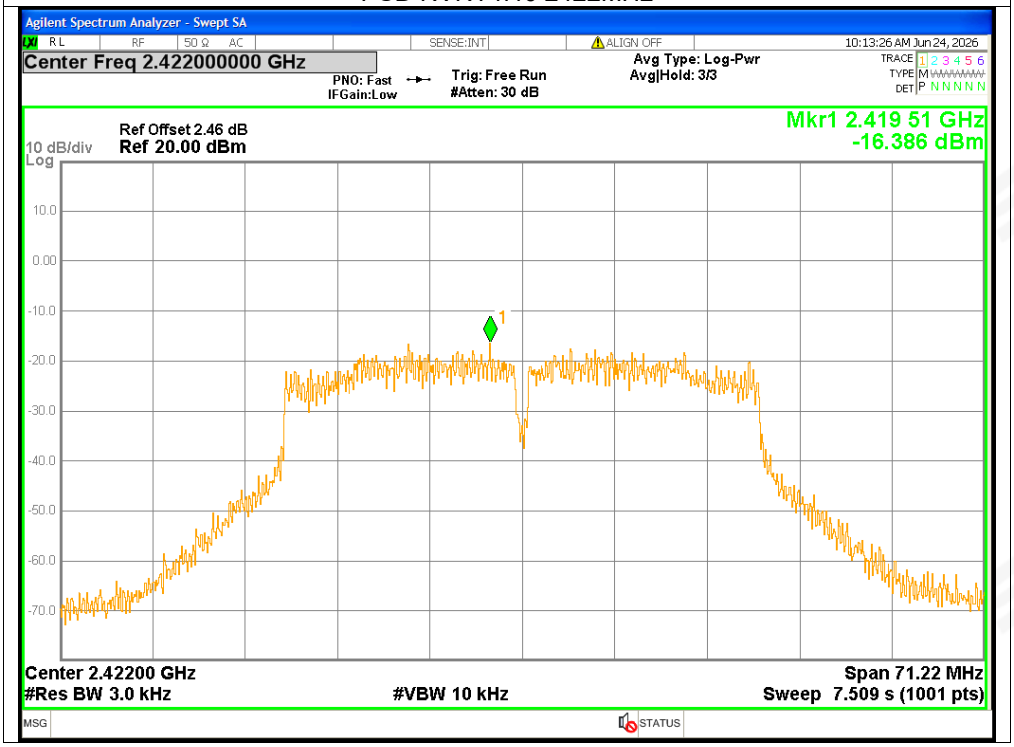

PSD NVNT n20 2437MHz



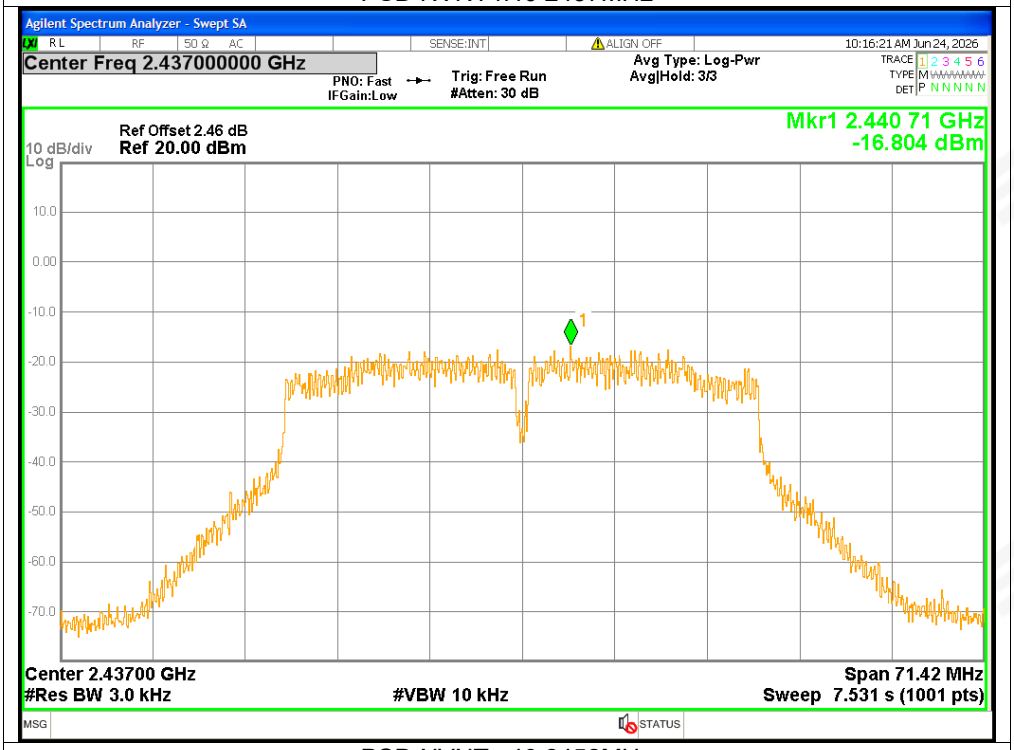
PSD NVNT n20 2462MHz



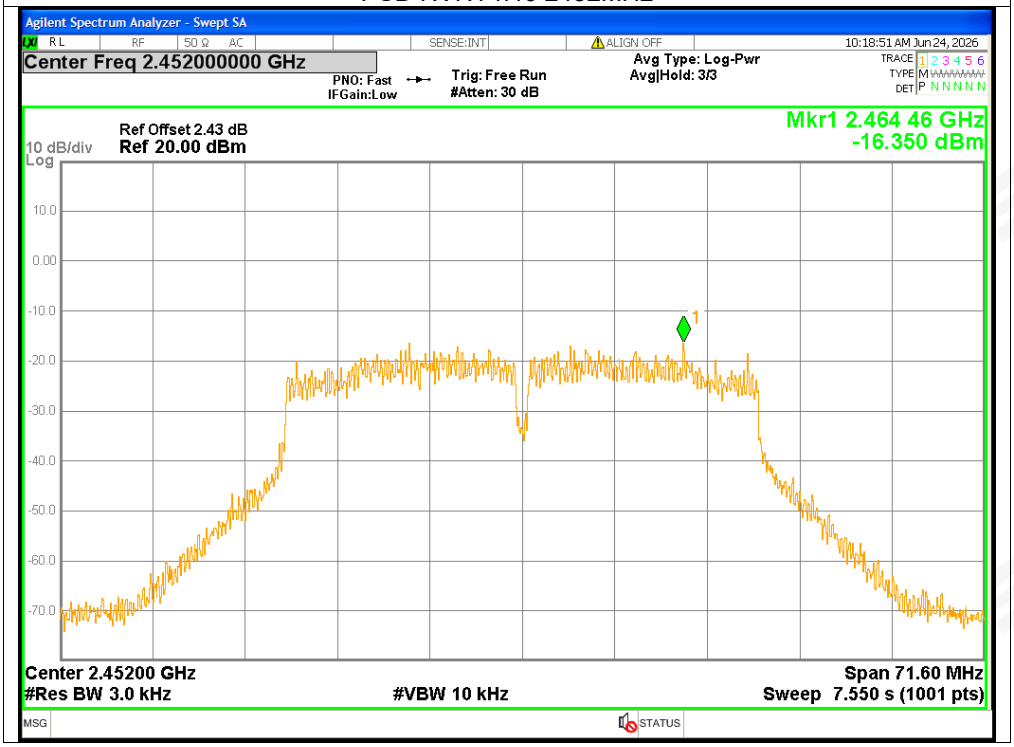

PSD NVNT n40 2422MHz



PSD NVNT n40 2437MHz




PSD NVNT n40 2452MHz

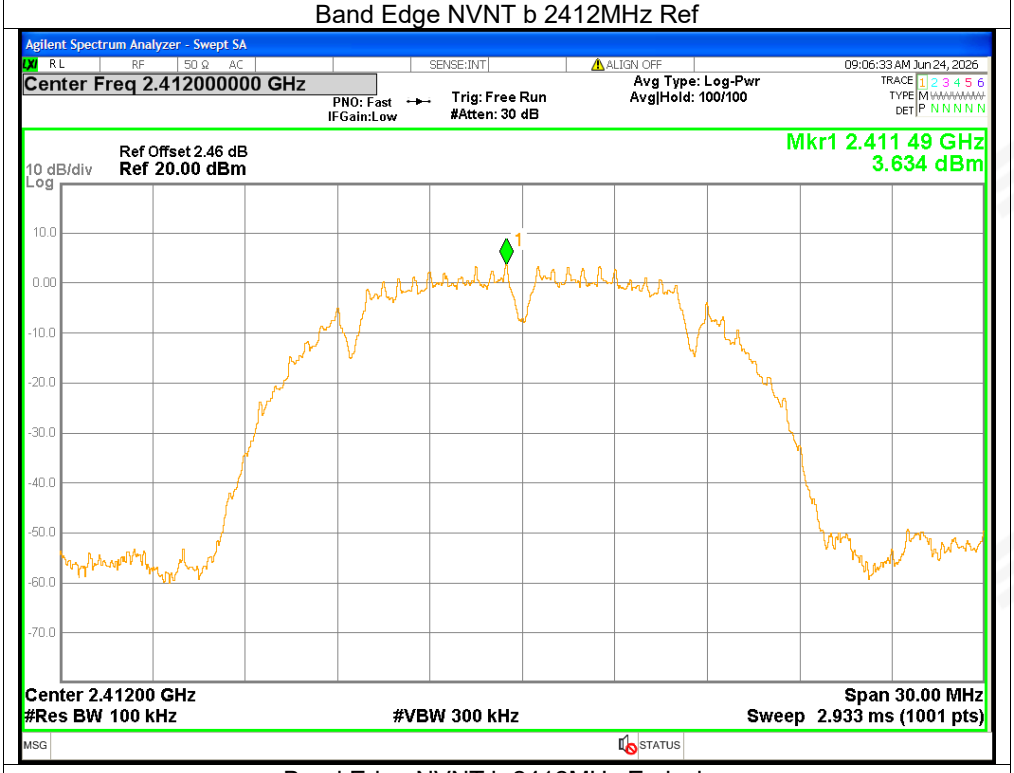


# Band Edge

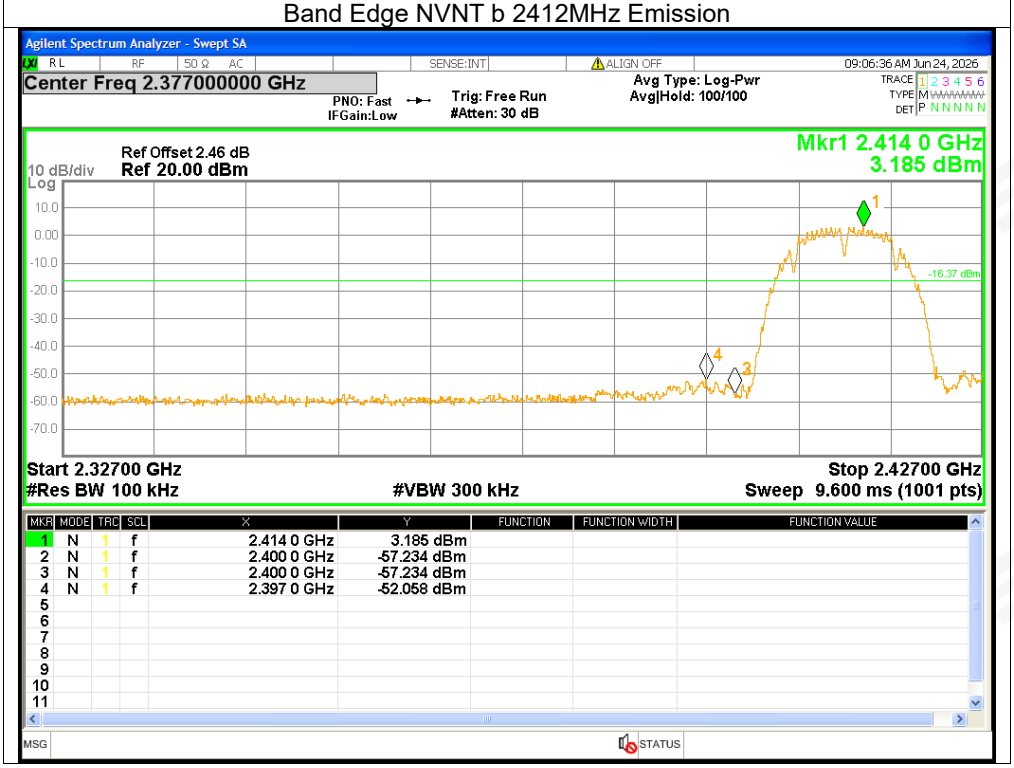
| Condition | Mode | Frequency (MHz) | Max Value (dBc) | Limit (dBc) | Verdict |
|---|---|---|---|---|---|
| NVNT | b | 2412 | -55.68 | <=-20 | Pass |
| NVNT | b | 2462 | -58.21 | <=-20 | Pass |
| NVNT | g | 2412 | -33.85 | <=-20 | Pass |
| NVNT | g | 2462 | -57.43 | <=-20 | Pass |
| NVNT | n20 | 2412 | -31.29 | <=-20 | Pass |
| NVNT | n20 | 2462 | -56.89 | <=-20 | Pass |
| NVNT | n40 | 2422 | -28.05 | <=-20 | Pass |
| NVNT | n40 | 2452 | -45.95 | <=-20 | Pass |

Test Graphs

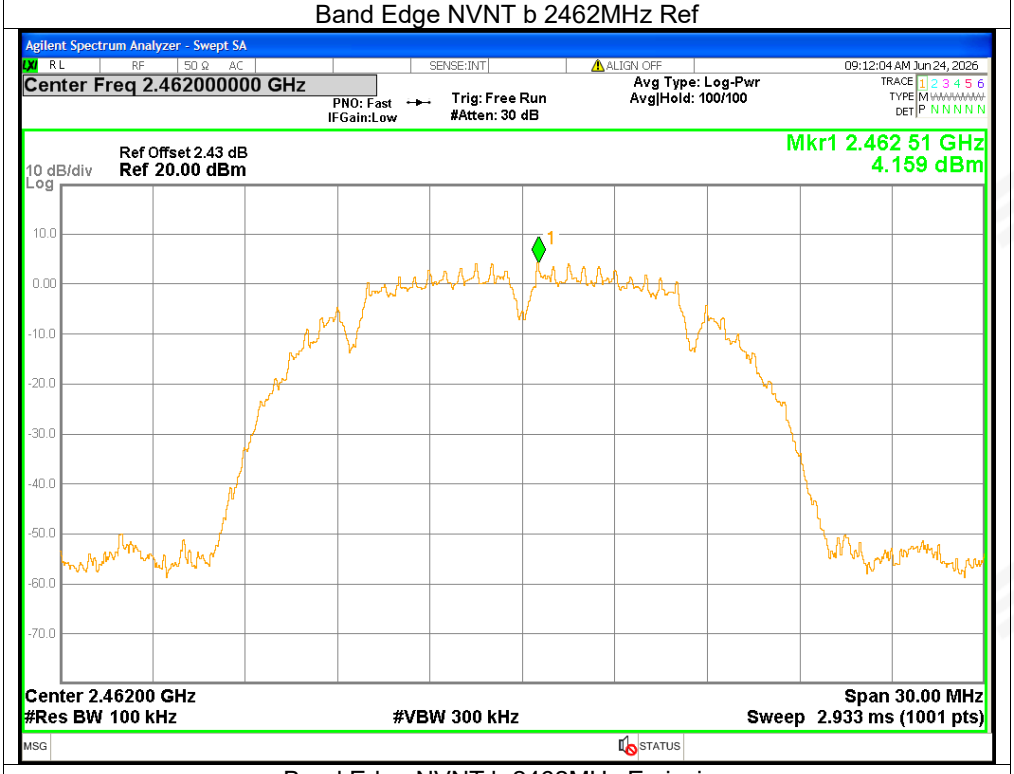
Band Edge NVNT b 2412MHz Ref



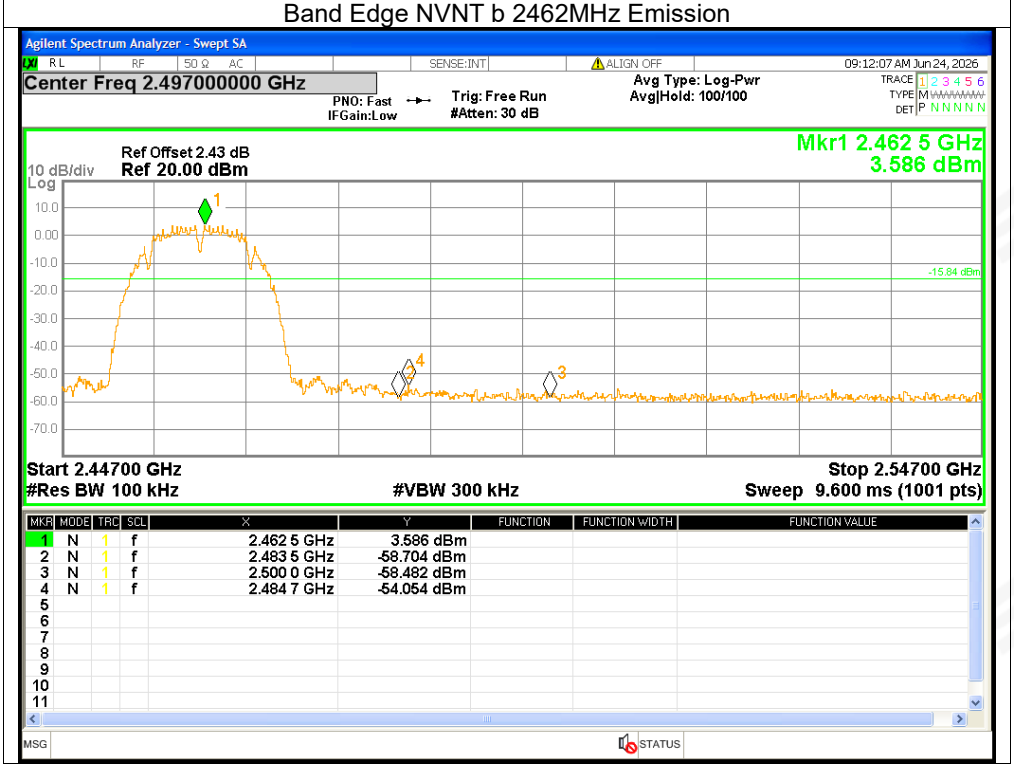

Band Edge NVNT b 2412MHz Emission



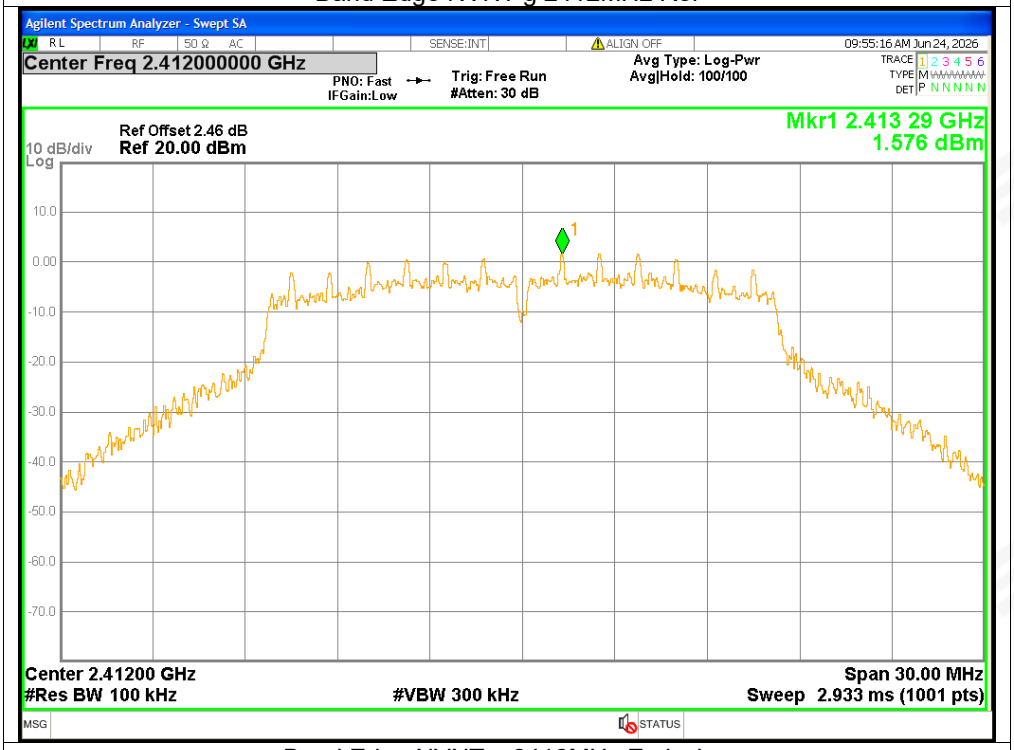
Band Edge NVNT b 2462MHz Ref



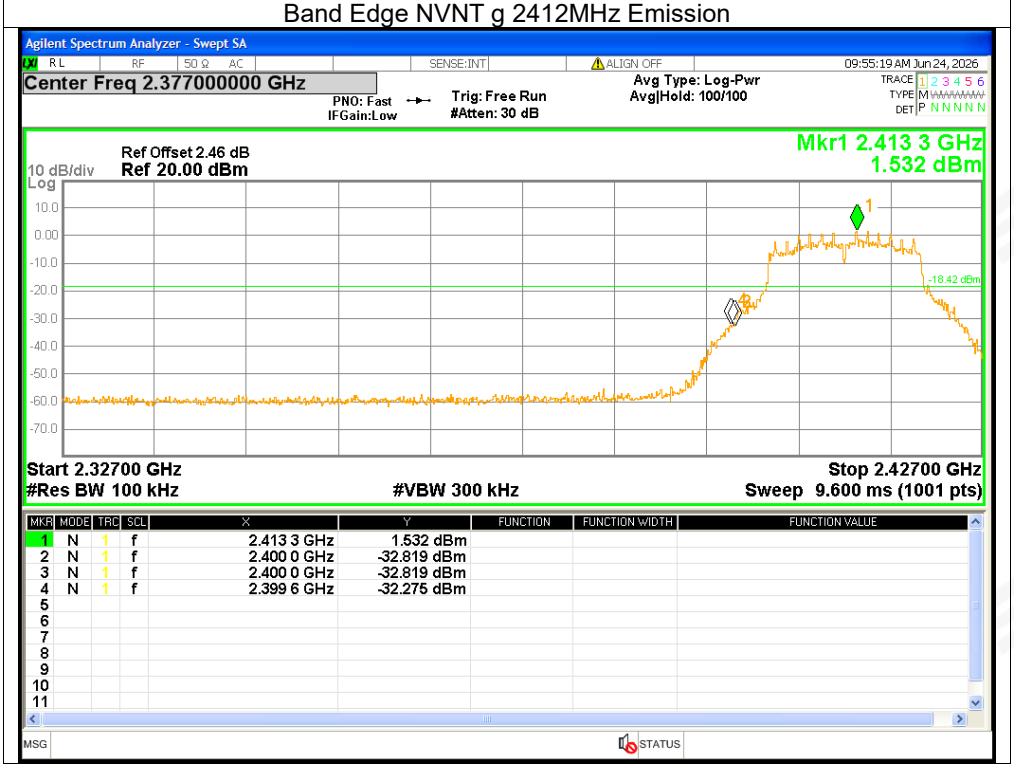

Band Edge NVNT b 2462MHz Emission



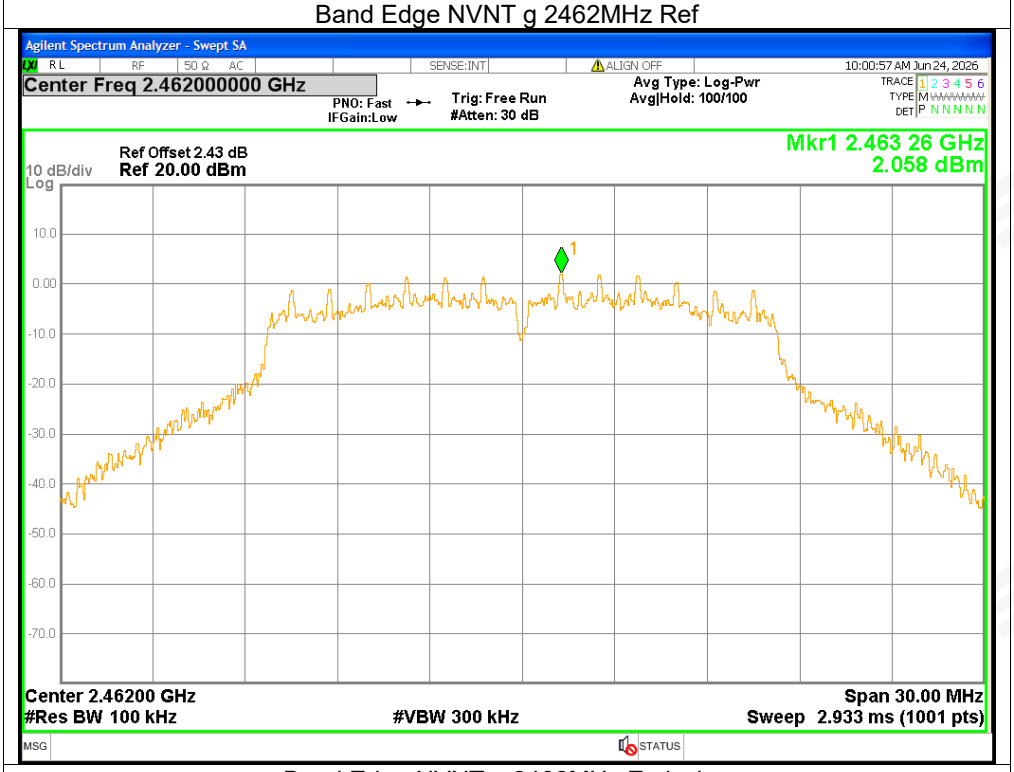
Band Edge NVNT g 2412MHz Ref



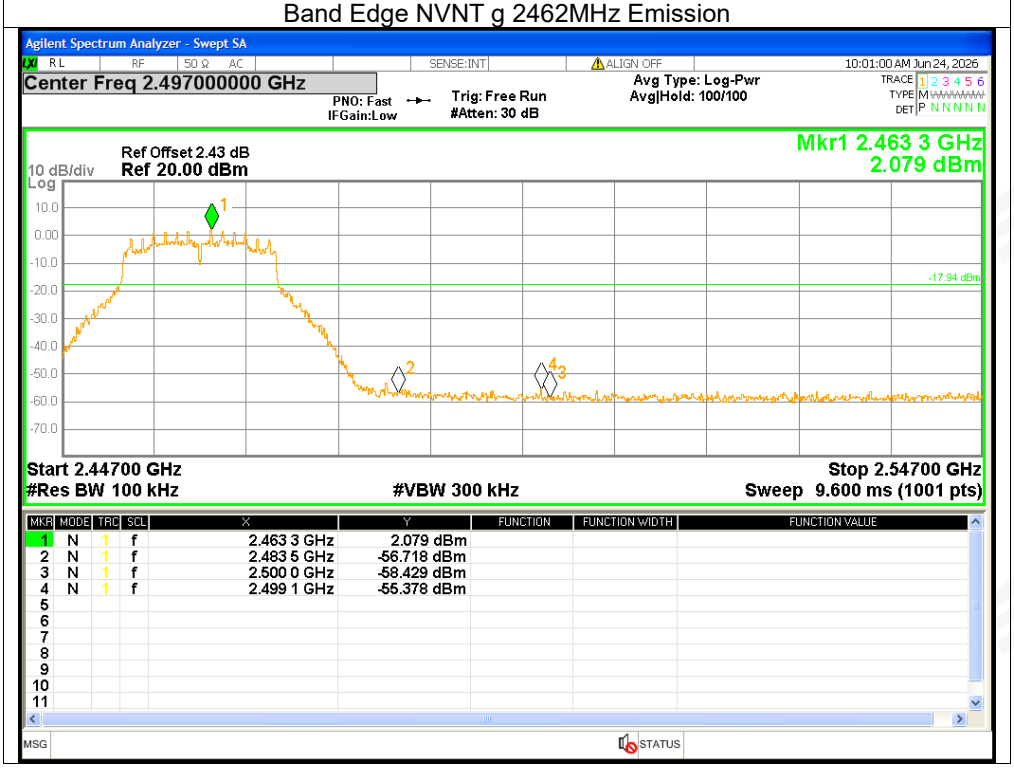

Band Edge NVNT g 2412MHz Emission



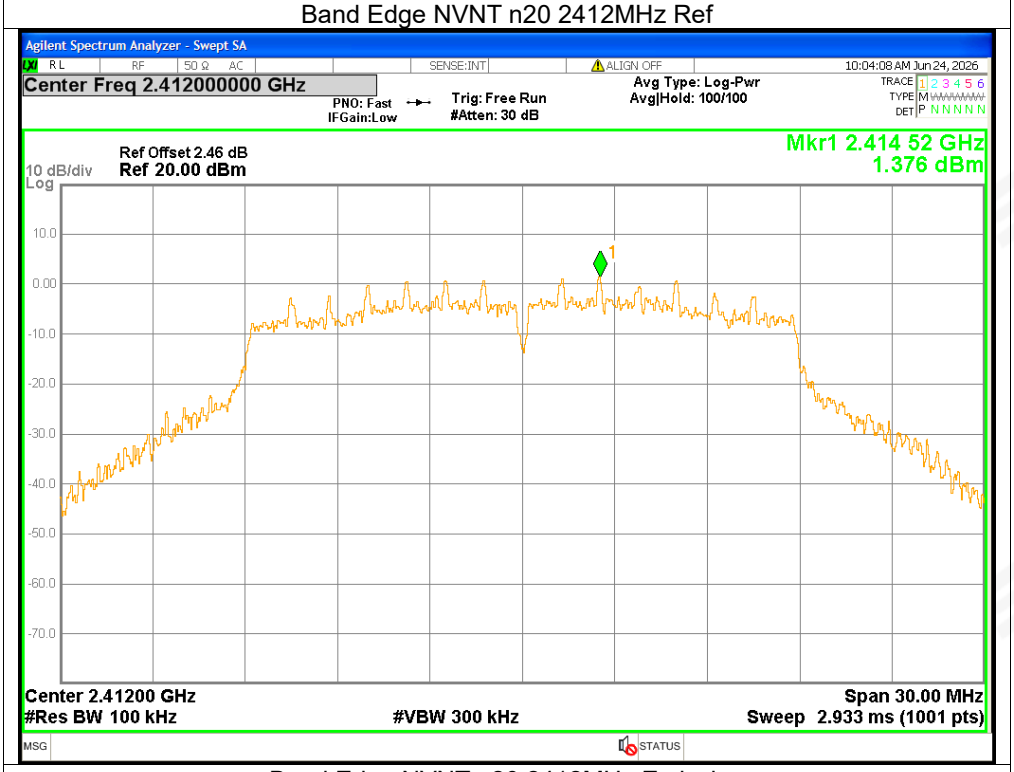
Band Edge NVNT g 2462MHz Ref



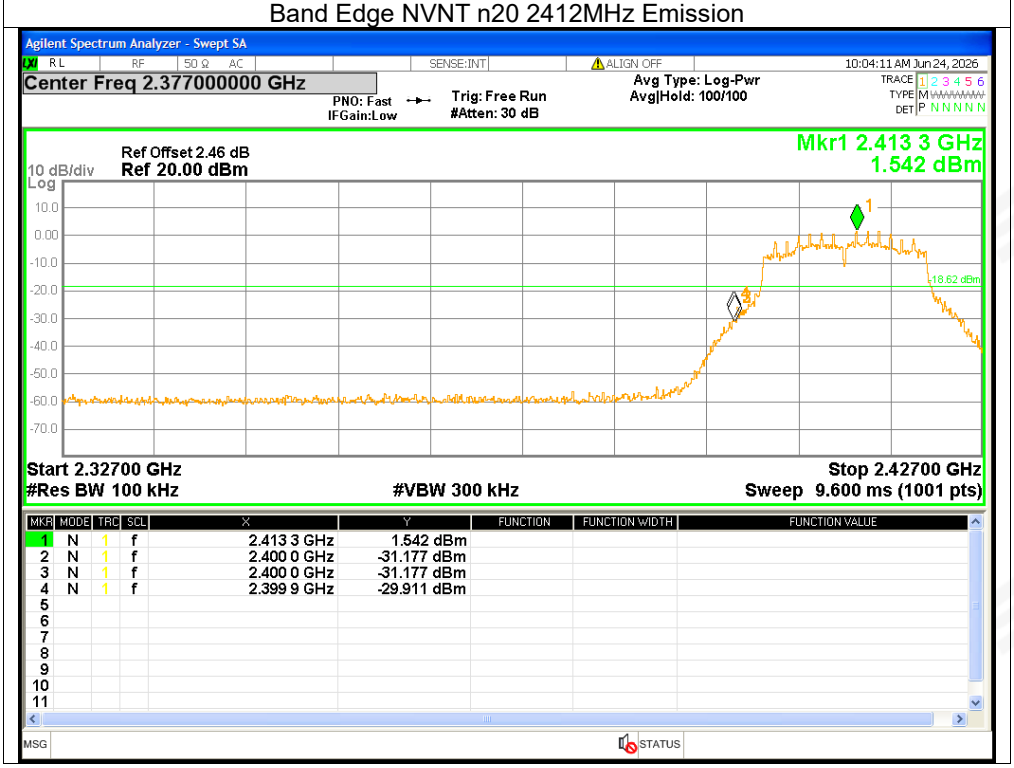

Band Edge NVNT g 2462MHz Emission



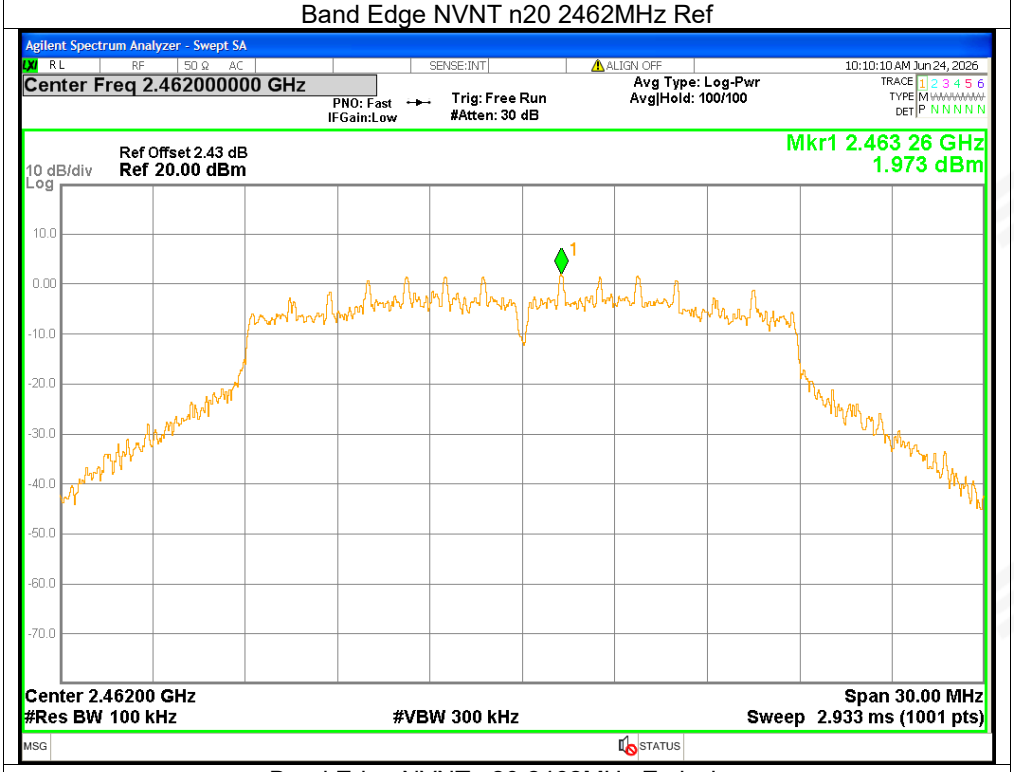
Band Edge NVNT n20 2412MHz Ref



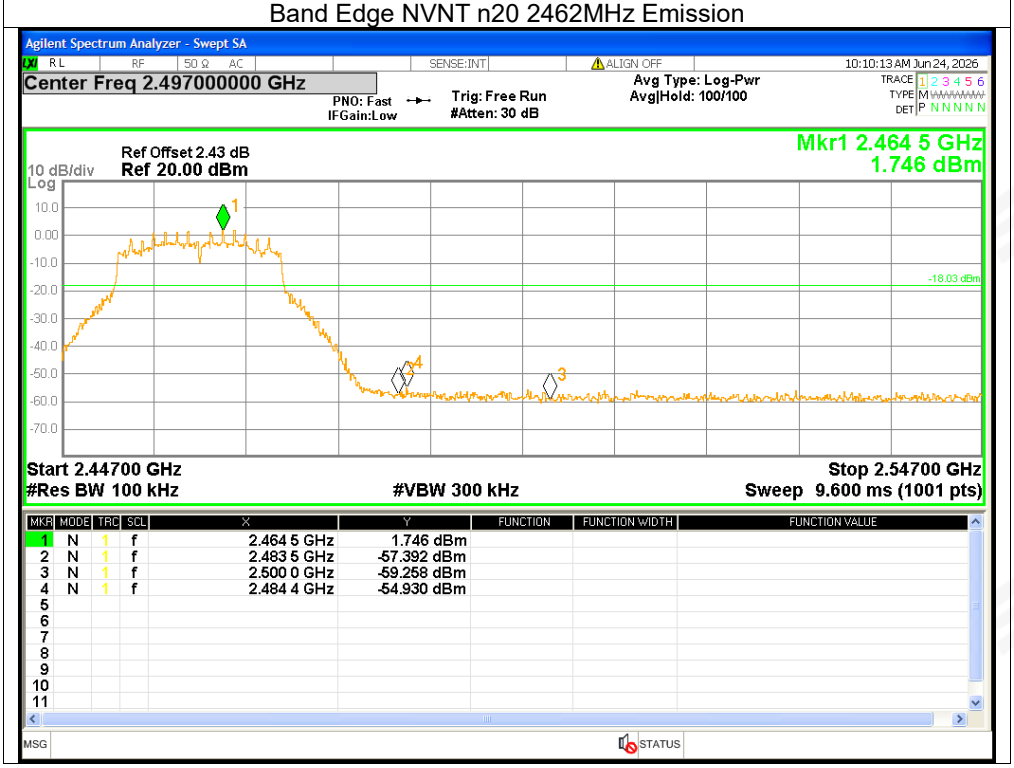

Band Edge NVNT n20 2412MHz Emission



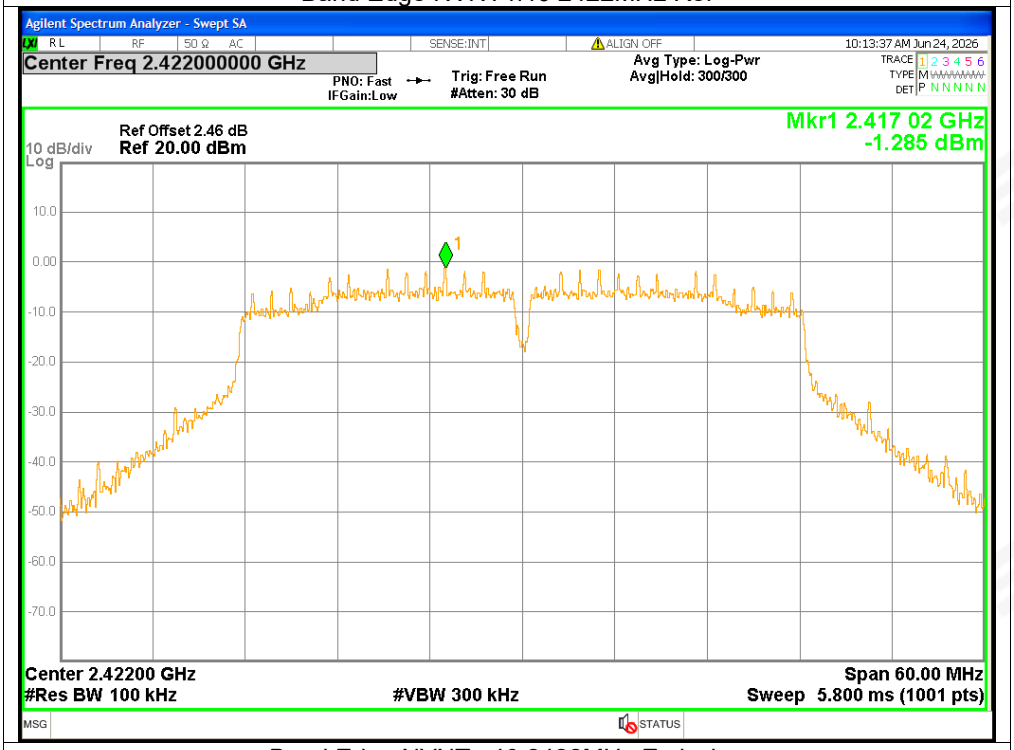
Band Edge NVNT n20 2462MHz Ref



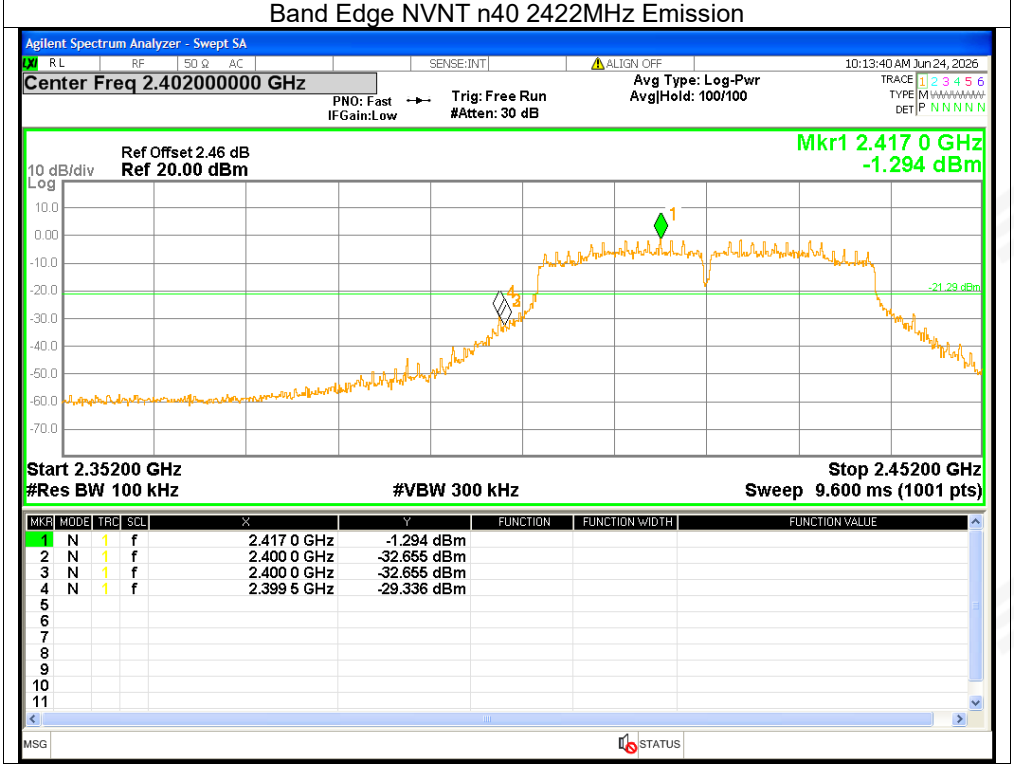

Band Edge NVNT n20 2462MHz Emission



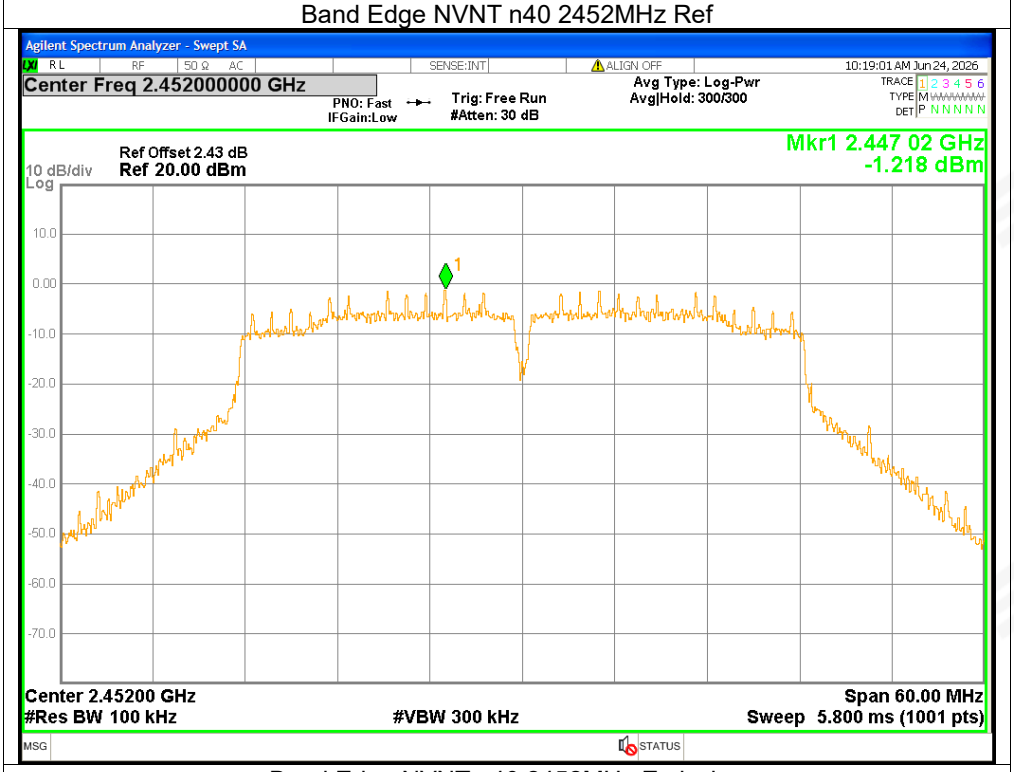
Band Edge NVNT n40 2422MHz Ref



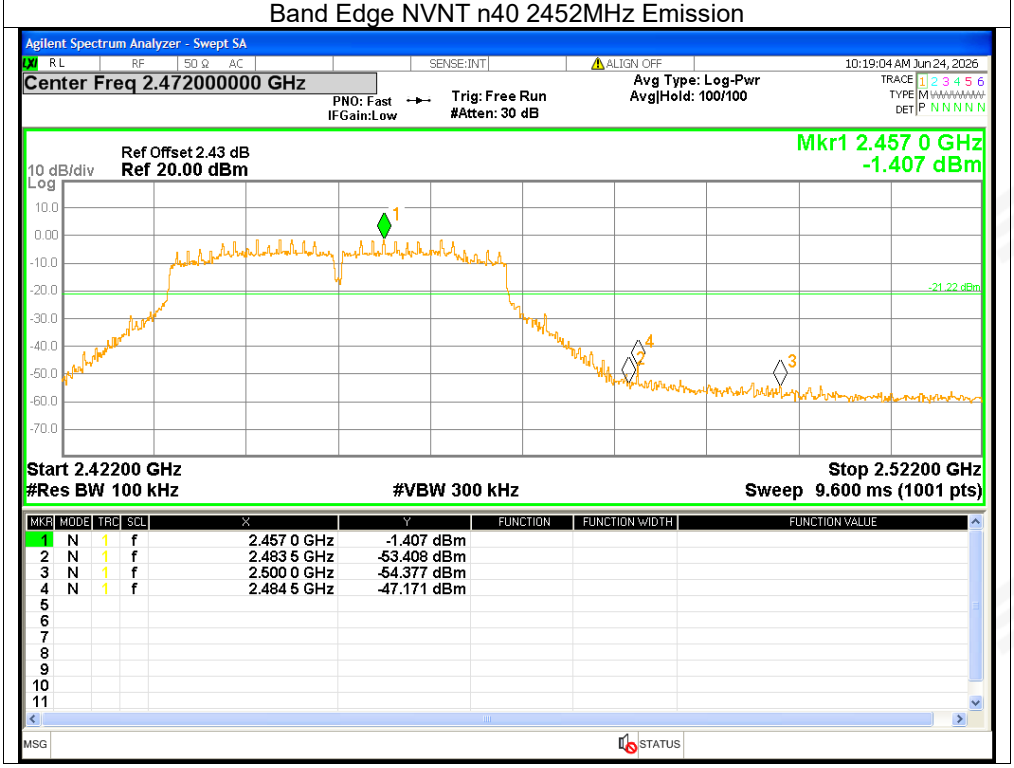

Band Edge NVNT n40 2422MHz Emission



Band Edge NVNT n40 2452MHz Ref




Band Edge NVNT n40 2452MHz Emission

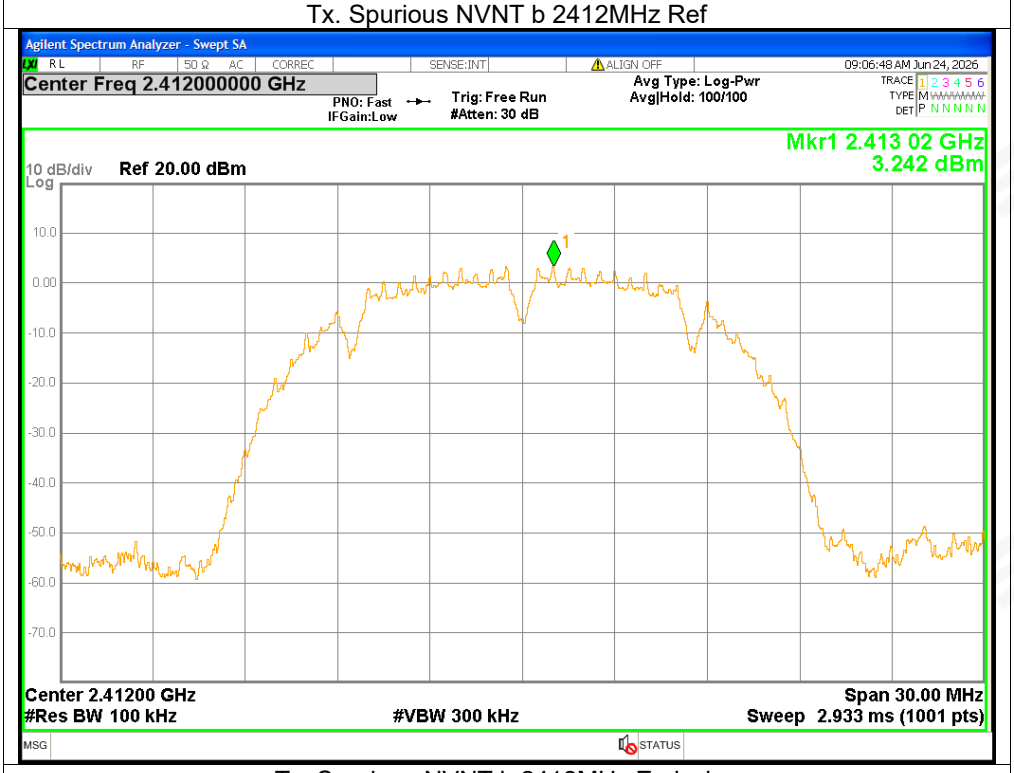


# Conducted RF Spurious Emission

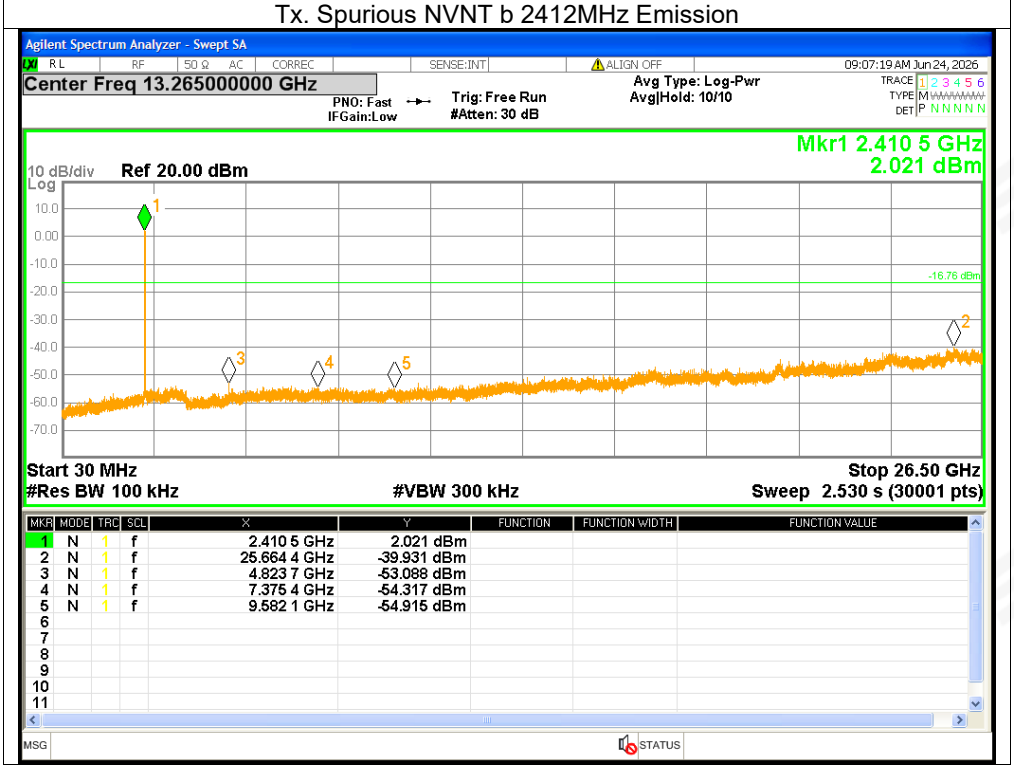
| Condition | Mode | Frequency (MHz) | Max Value (dBc) | Limit (dBc) | Verdict |
|---|---|---|---|---|---|
| NVNT | b | 2412 | -43.17 | <=-20 | Pass |
| NVNT | b | 2437 | -42.79 | <=-20 | Pass |
| NVNT | b | 2462 | -43.9 | <=-20 | Pass |
| NVNT | g | 2412 | -42.07 | <=-20 | Pass |
| NVNT | g | 2437 | -41.58 | <=-20 | Pass |
| NVNT | g | 2462 | -41.53 | <=-20 | Pass |
| NVNT | n20 | 2412 | -41.72 | <=-20 | Pass |
| NVNT | n20 | 2437 | -41.86 | <=-20 | Pass |
| NVNT | n20 | 2462 | -42.09 | <=-20 | Pass |
| NVNT | n40 | 2422 | -37.77 | <=-20 | Pass |
| NVNT | n40 | 2437 | -38.72 | <=-20 | Pass |
| NVNT | n40 | 2452 | -38.64 | <=-20 | Pass |

Test Graphs

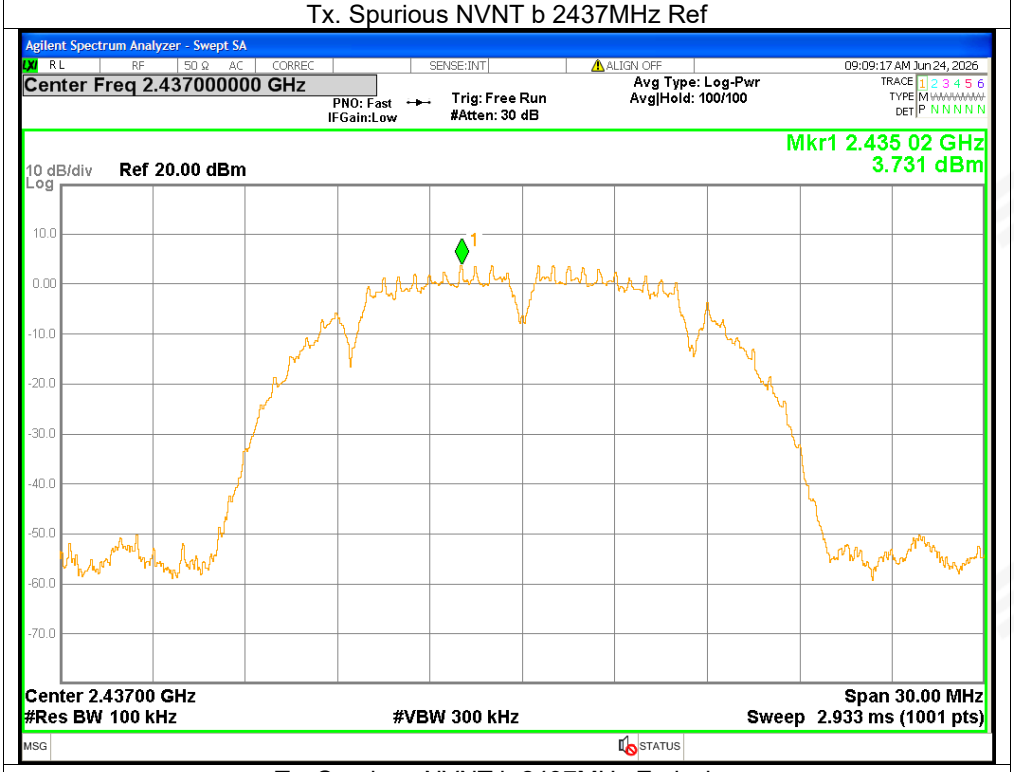
Tx. Spurious NVNT b 2412MHz Ref



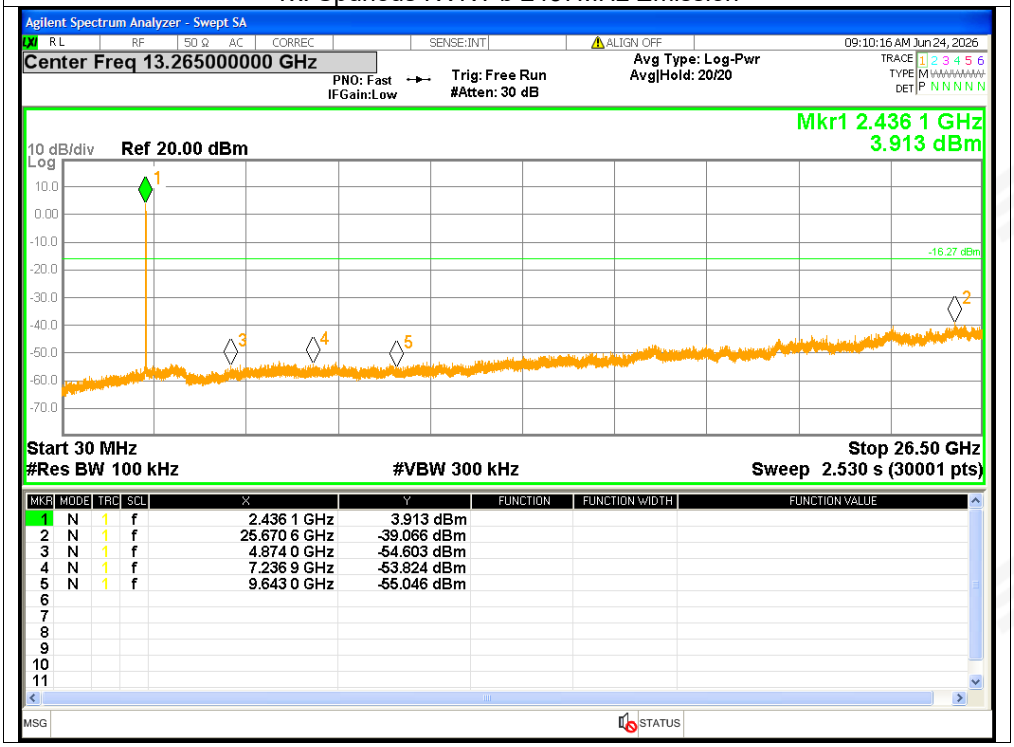

Tx. Spurious NVNT b 2412MHz Emission



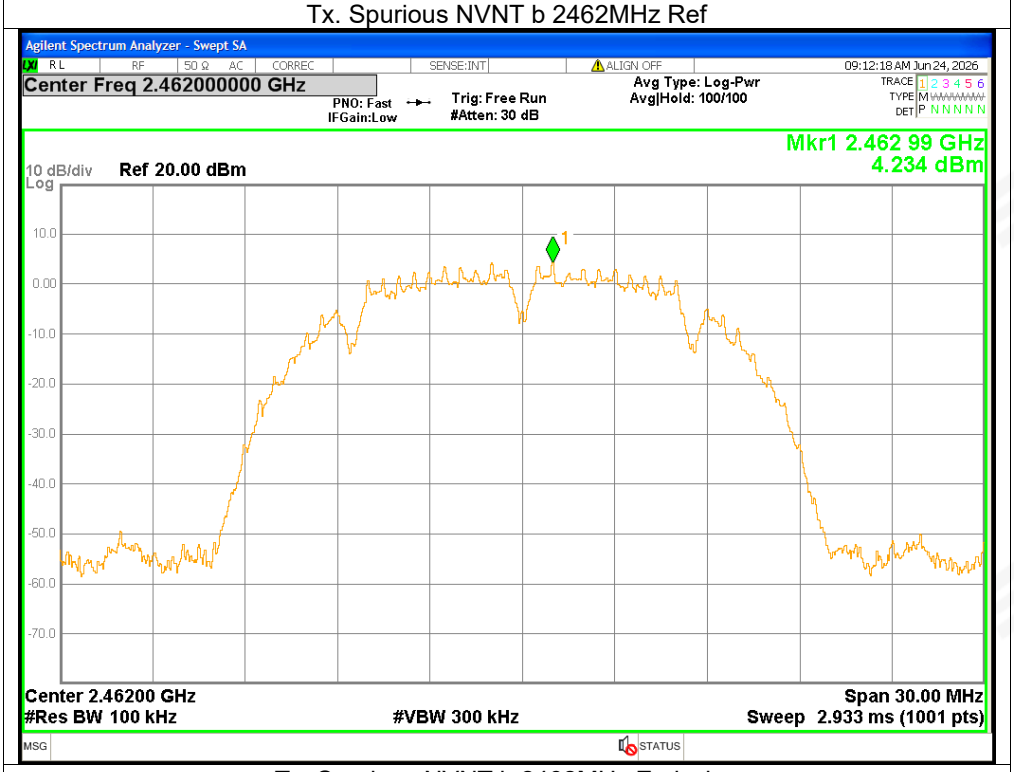
Tx. Spurious NVNT b 2437MHz Ref



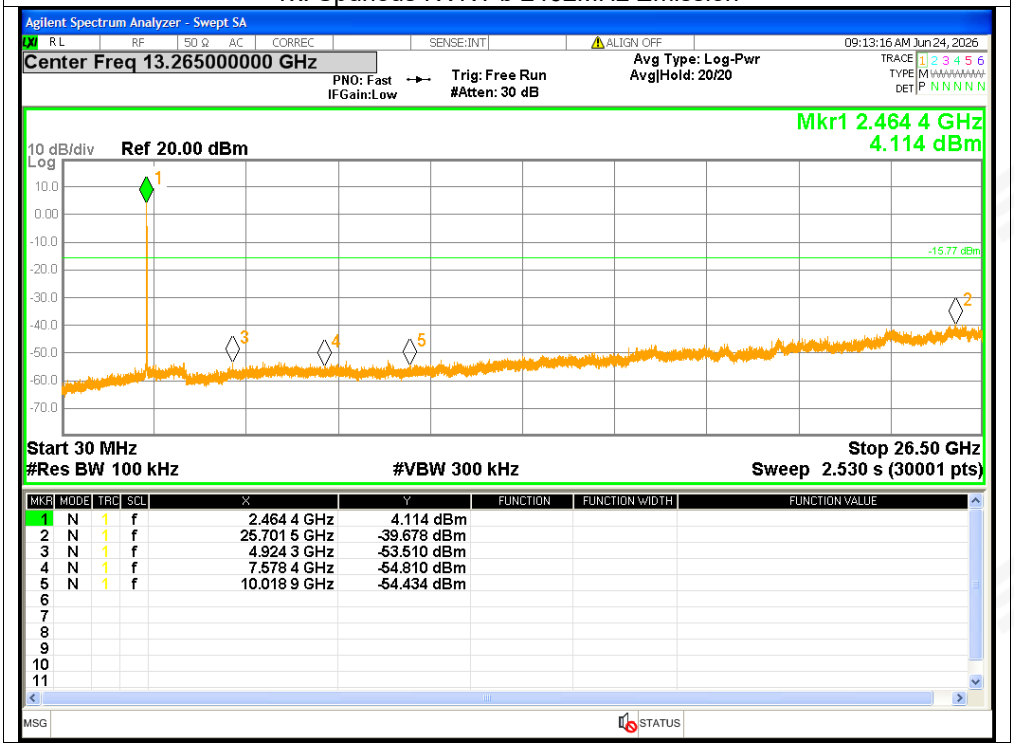

Tx. Spurious NVNT b 2437MHz Emission



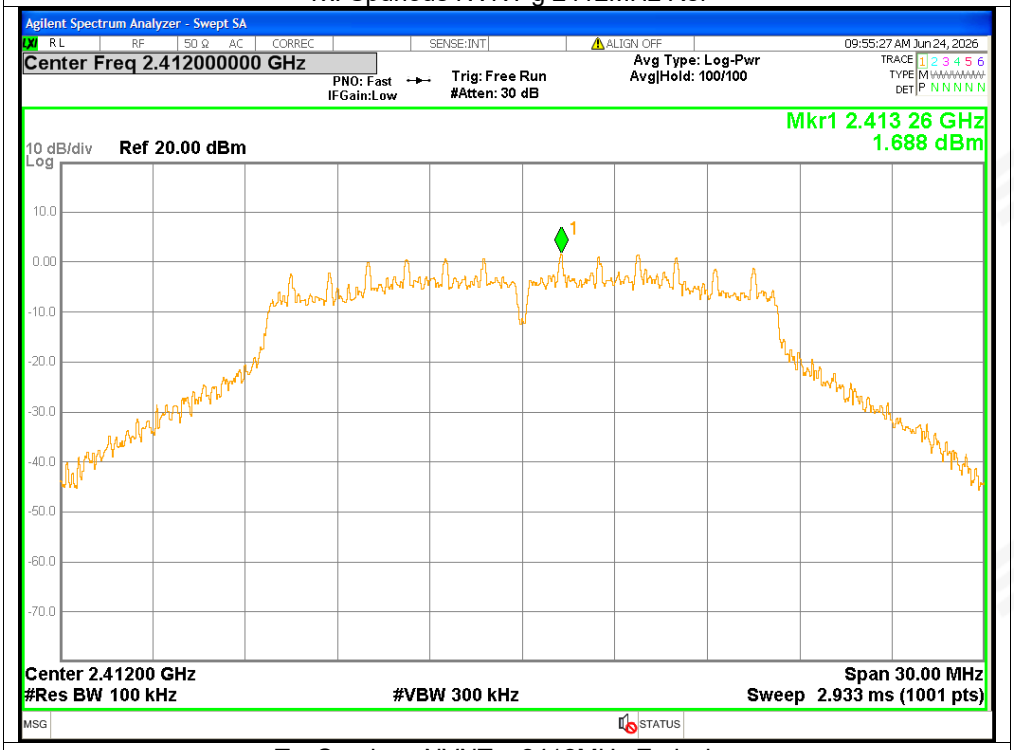
Tx. Spurious NVNT b 2462MHz Ref



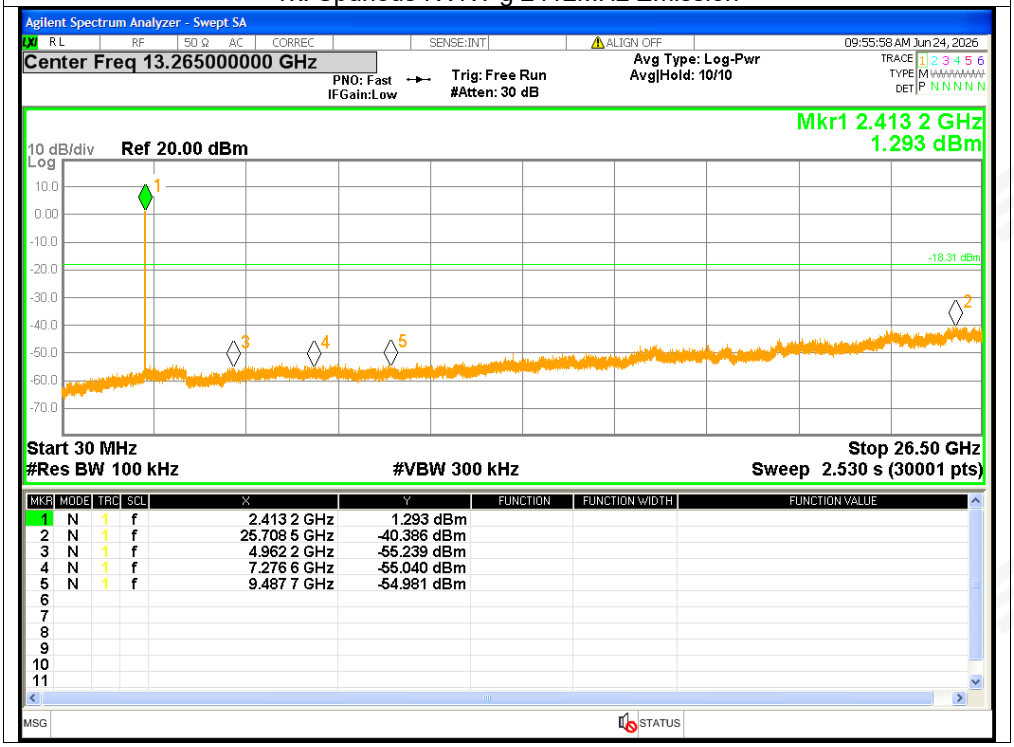

Tx. Spurious NVNT b 2462MHz Emission



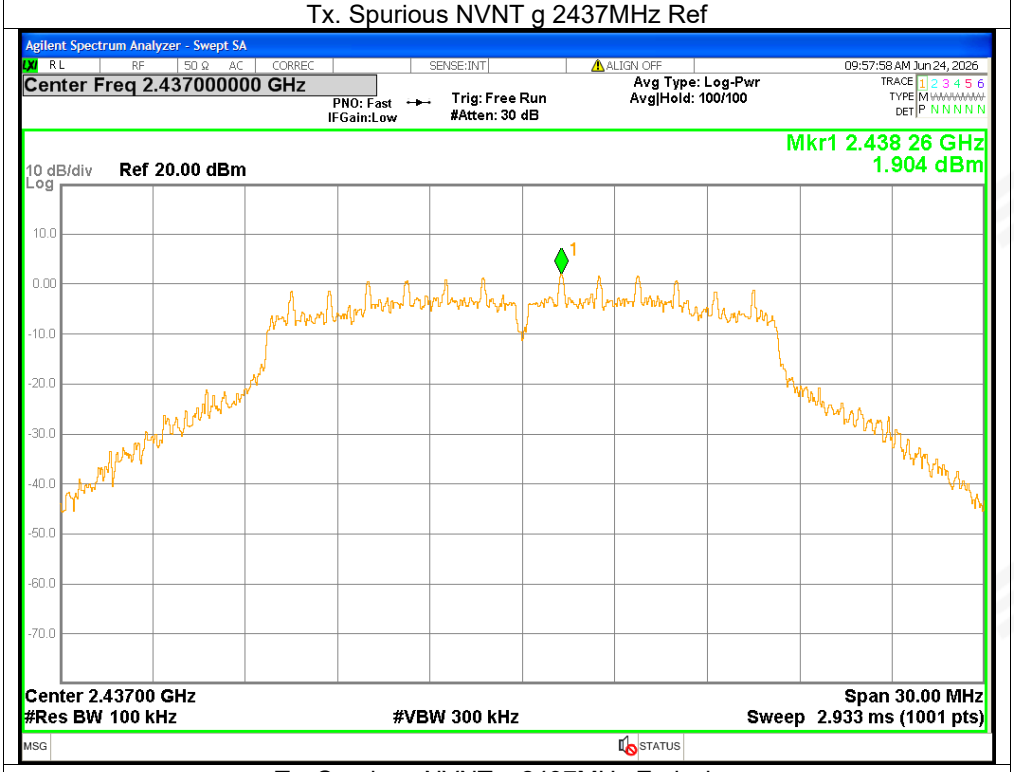
Tx. Spurious NVNT g 2412MHz Ref



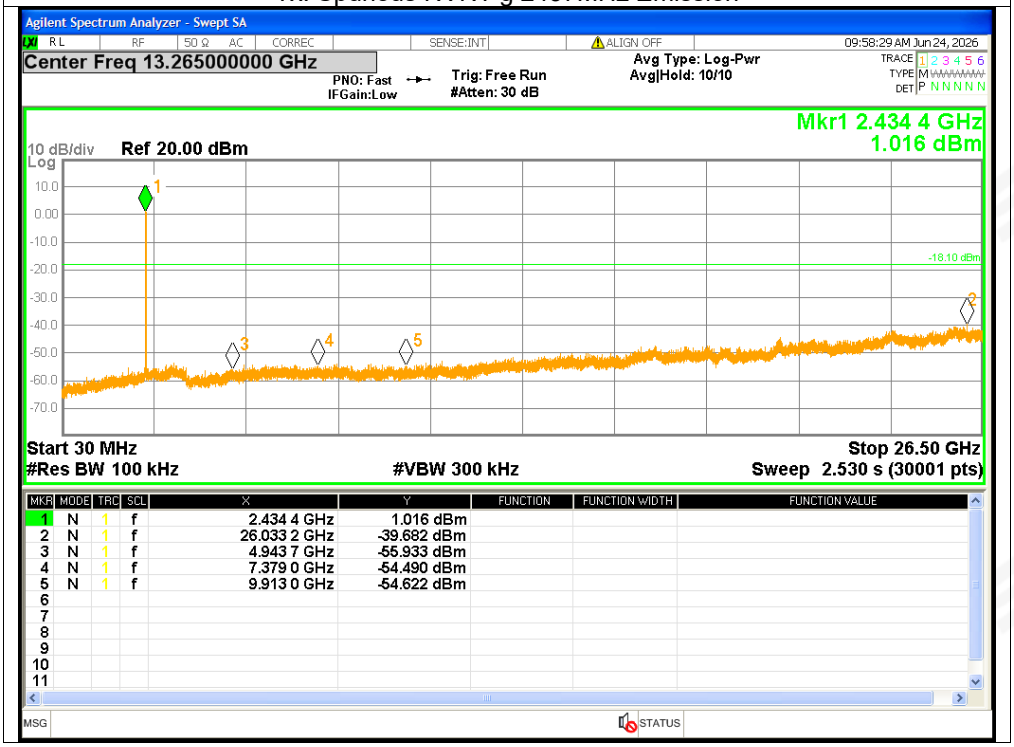

Tx. Spurious NVNT g 2412MHz Emission



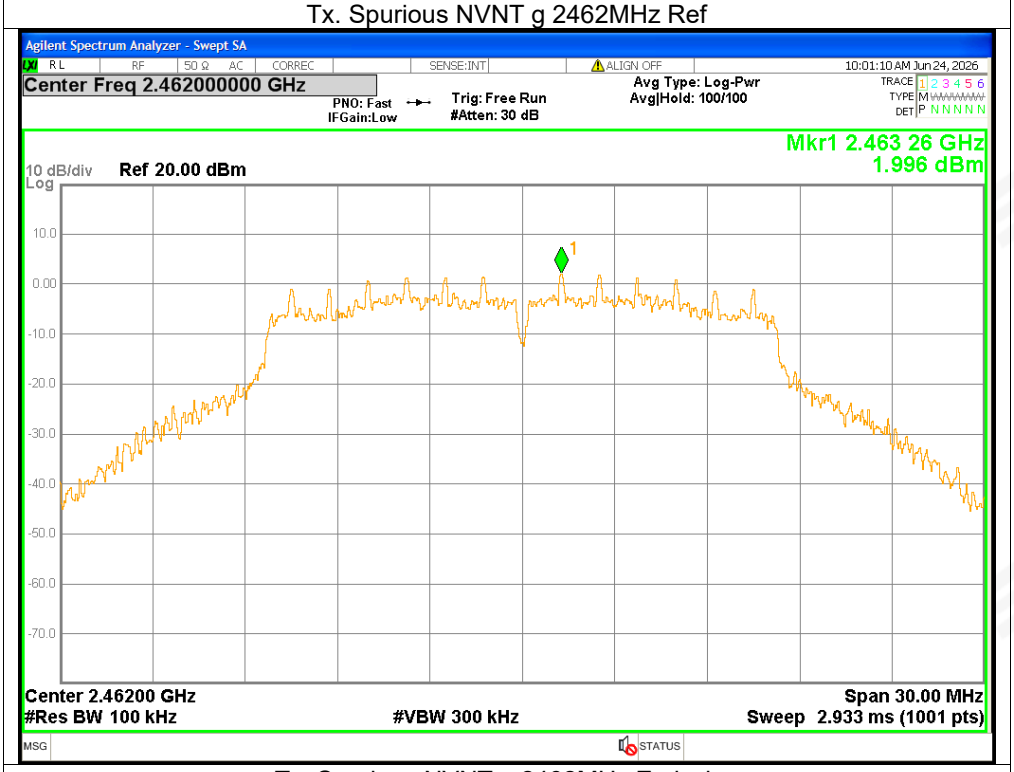
Tx. Spurious NVNT g 2437MHz Ref



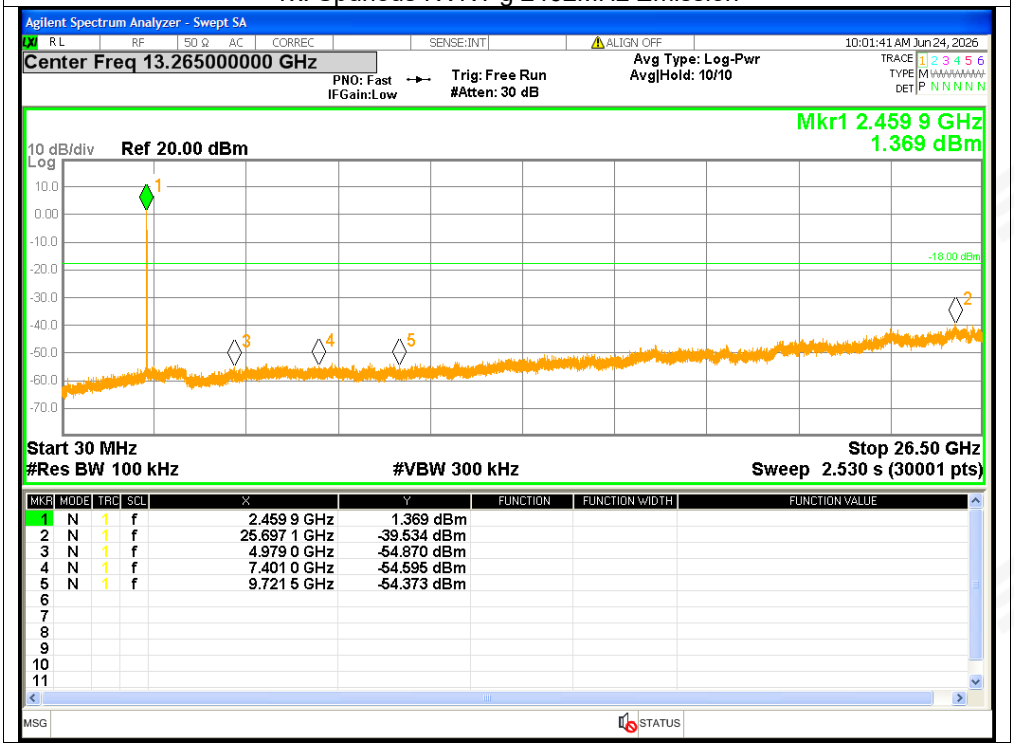

Tx. Spurious NVNT g 2437MHz Emission



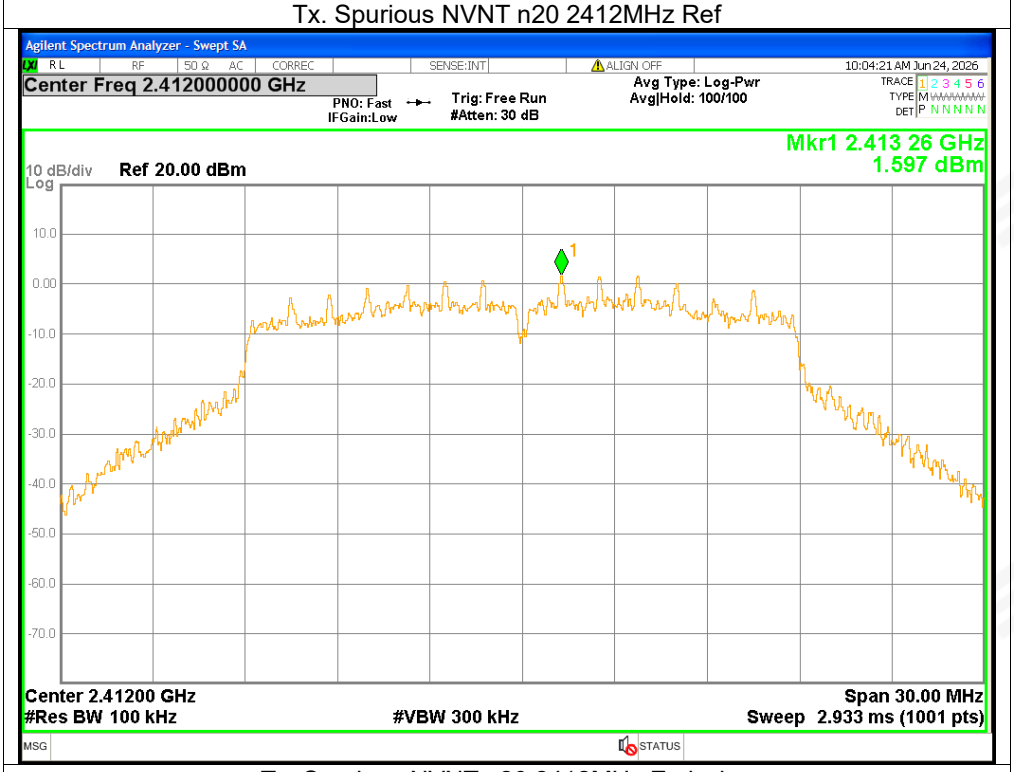
Tx. Spurious NVNT g 2462MHz Ref



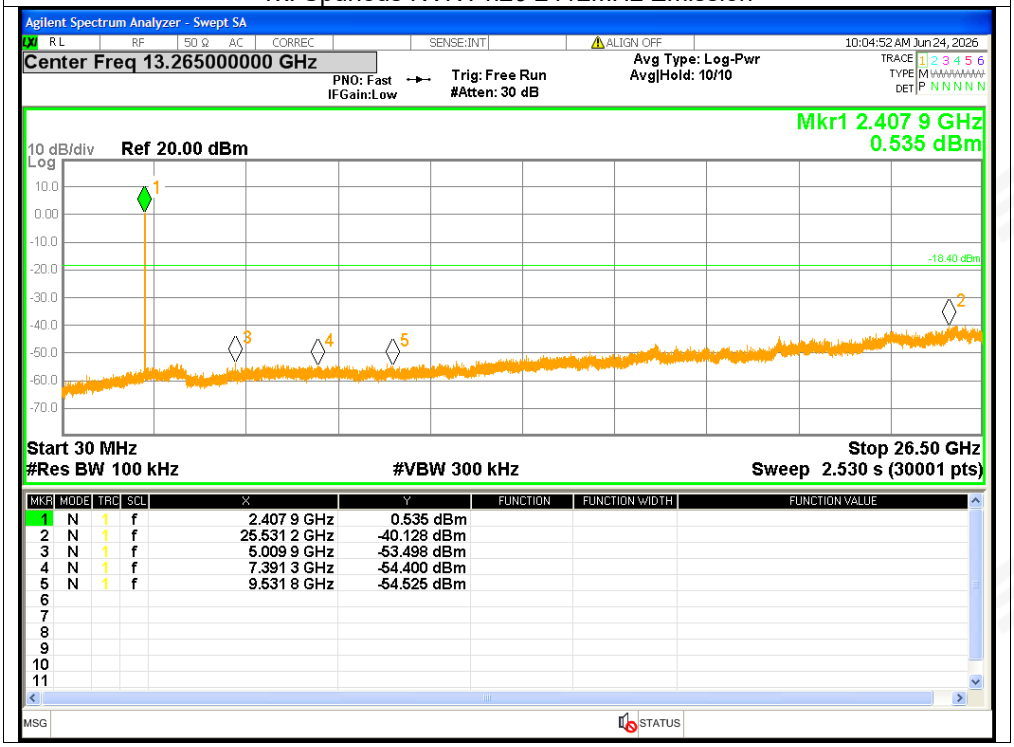

Tx. Spurious NVNT g 2462MHz Emission



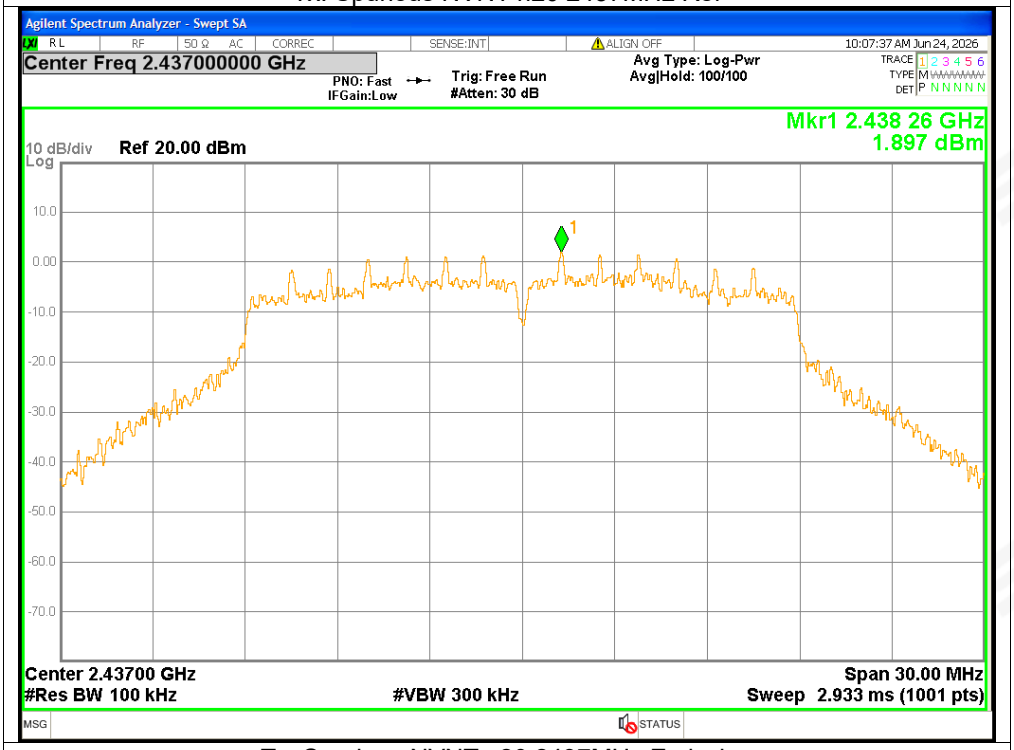
Tx. Spurious NVNT n20 2412MHz Ref



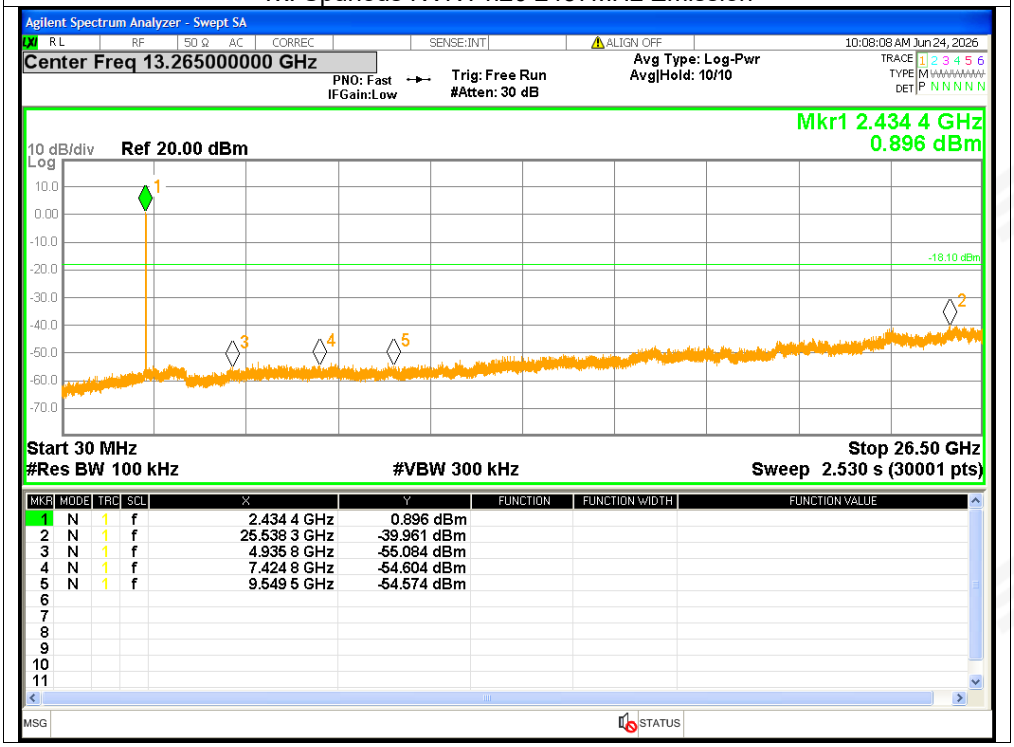

Tx. Spurious NVNT n20 2412MHz Emission



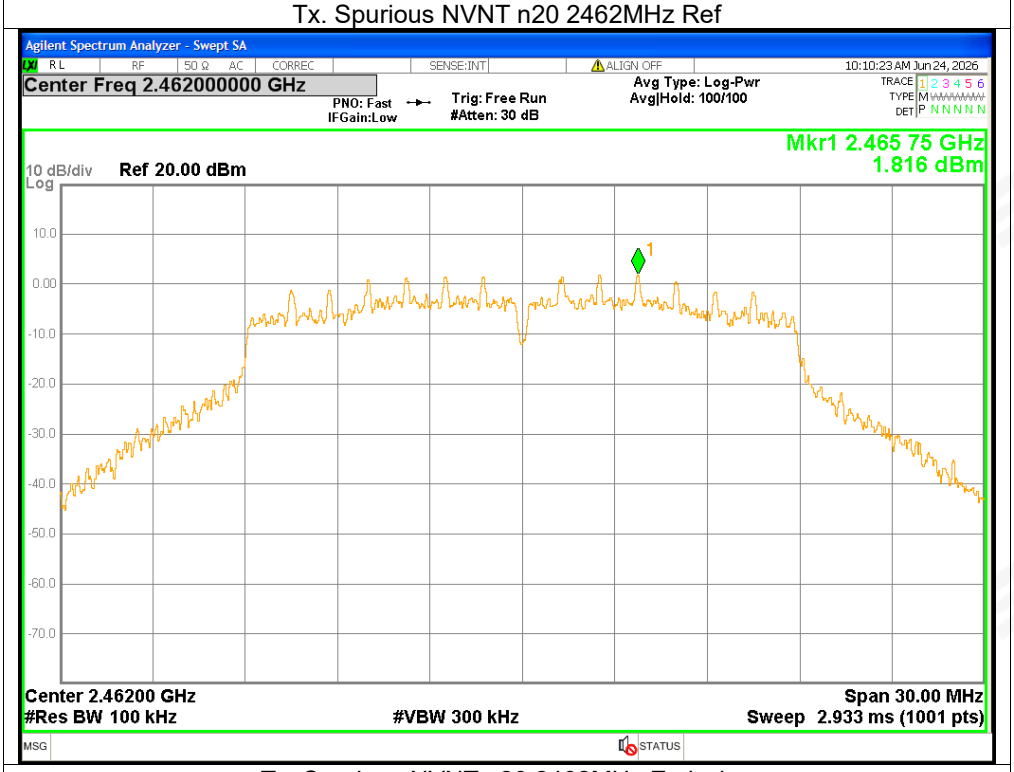
Tx. Spurious NVNT n20 2437MHz Ref



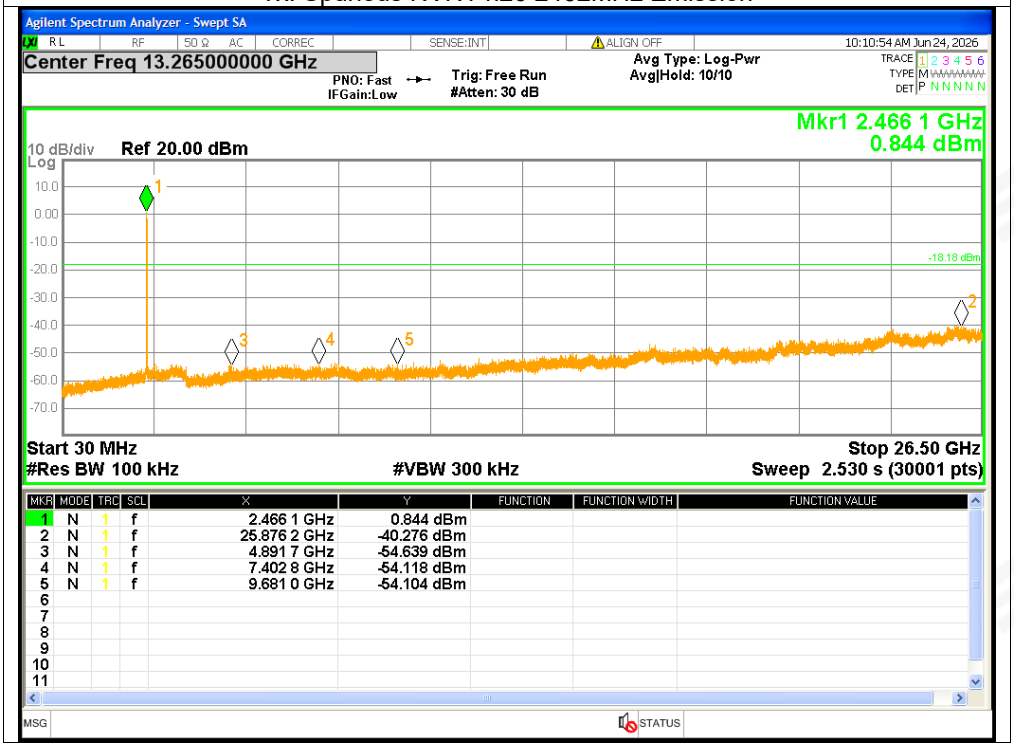

Tx. Spurious NVNT n20 2437MHz Emission



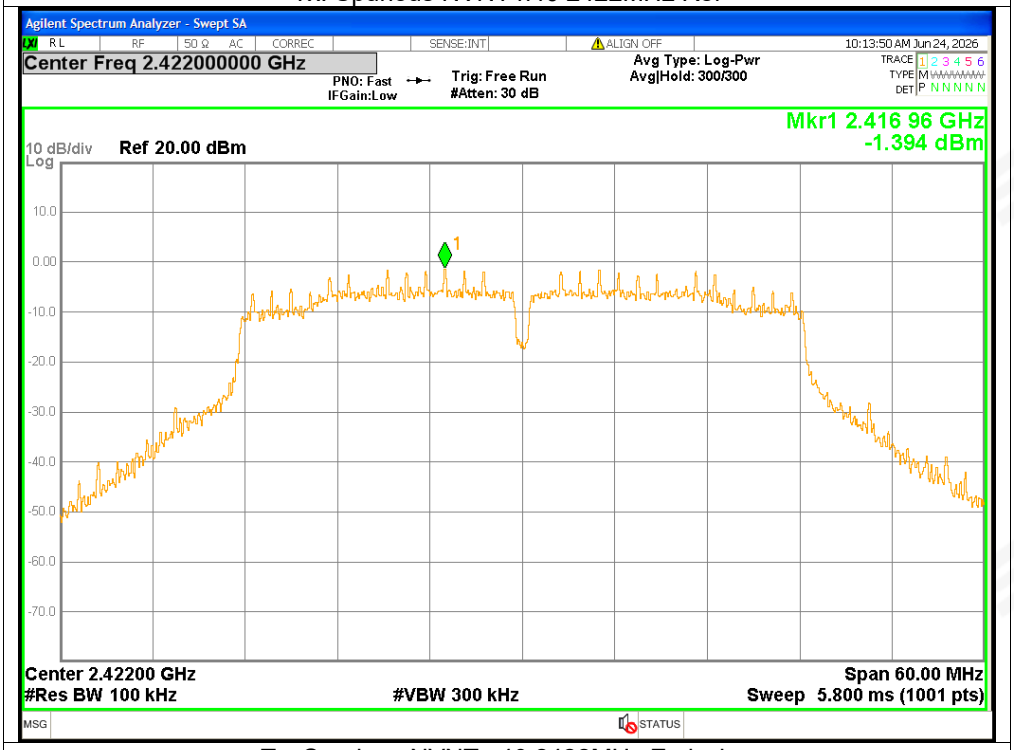
Tx. Spurious NVNT n20 2462MHz Ref



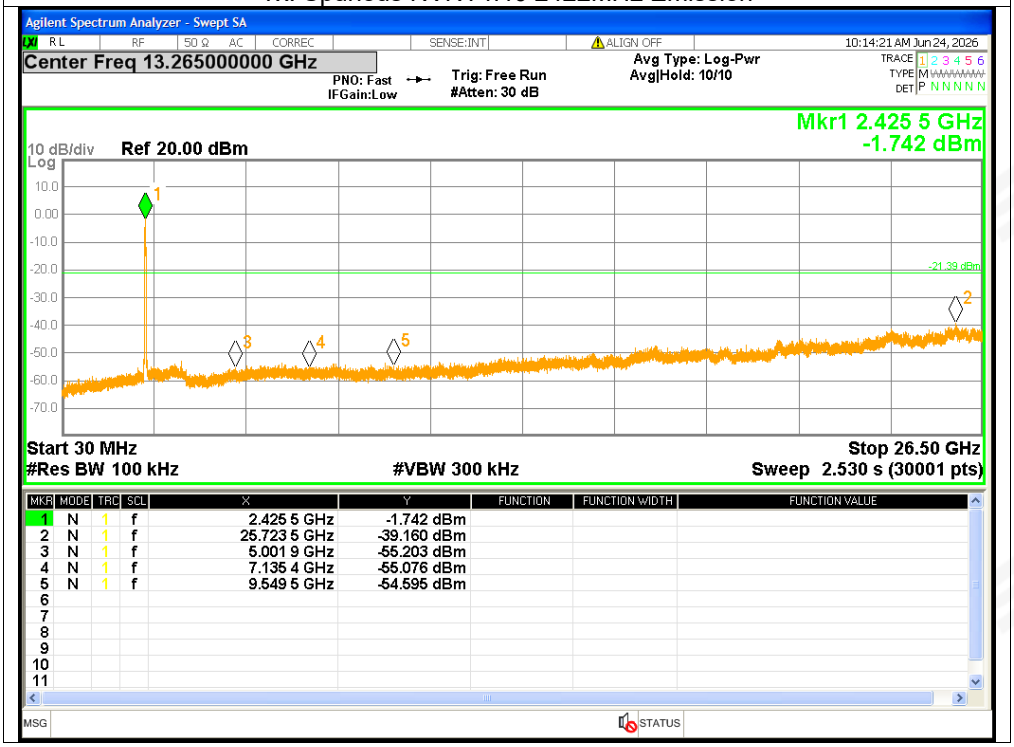

Tx. Spurious NVNT n20 2462MHz Emission



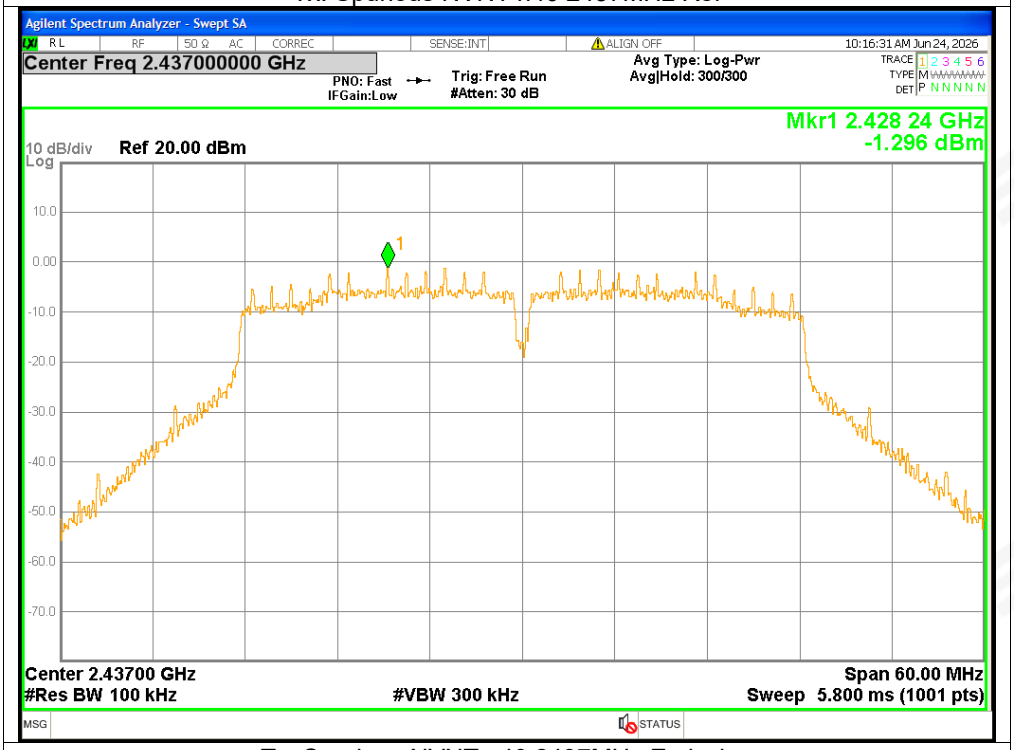
Tx. Spurious NVNT n40 2422MHz Ref



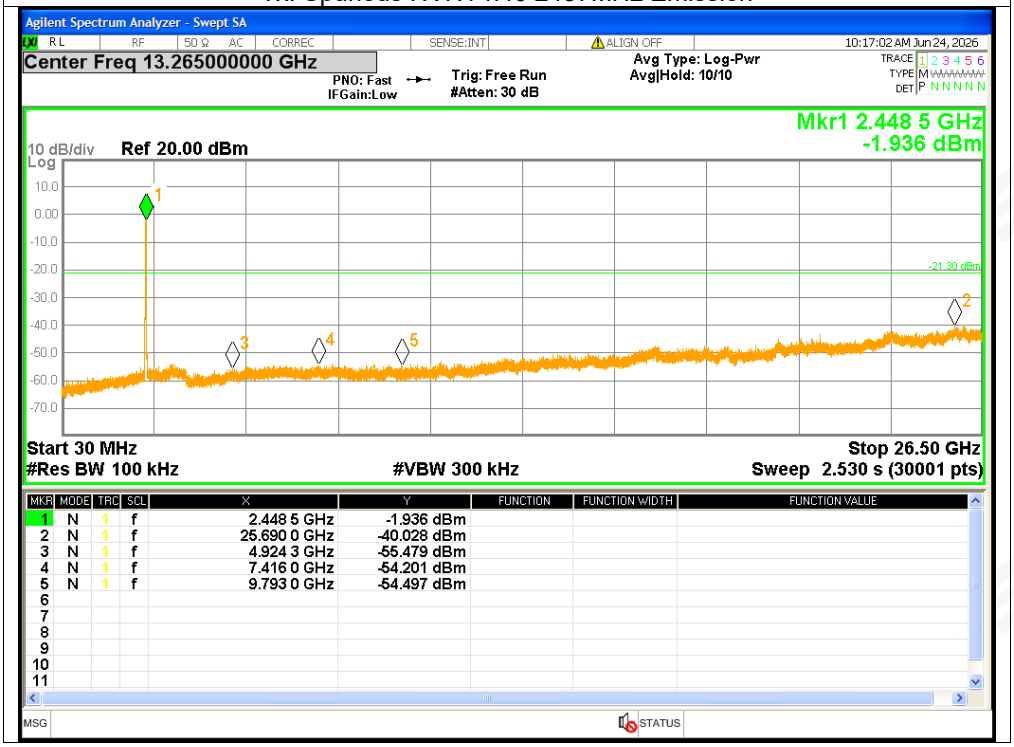

Tx. Spurious NVNT n40 2422MHz Emission



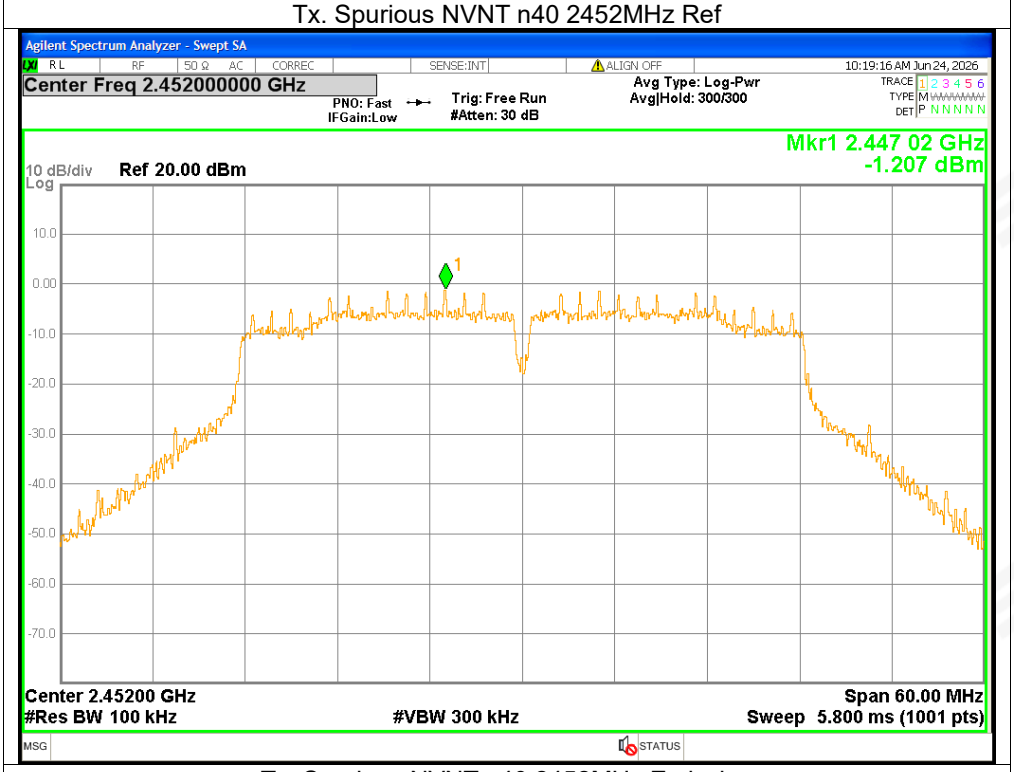
Tx. Spurious NVNT n40 2437MHz Ref



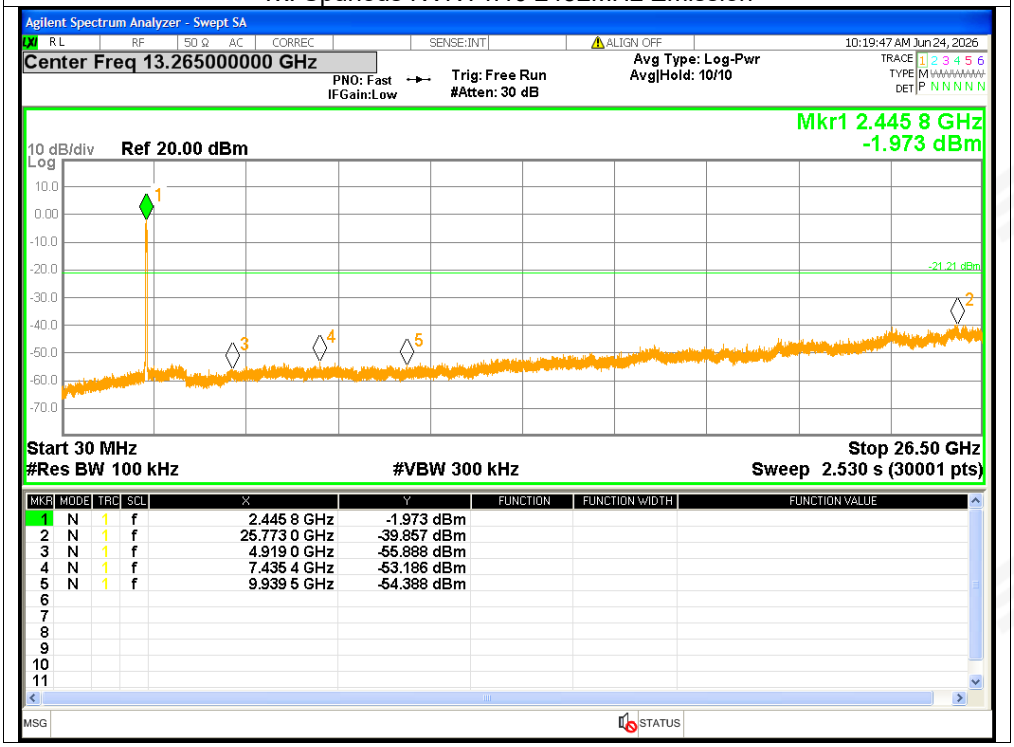

Tx. Spurious NVNT n40 2437MHz Emission



Tx. Spurious NVNT n40 2452MHz Ref




Tx. Spurious NVNT n40 2452MHz Emission

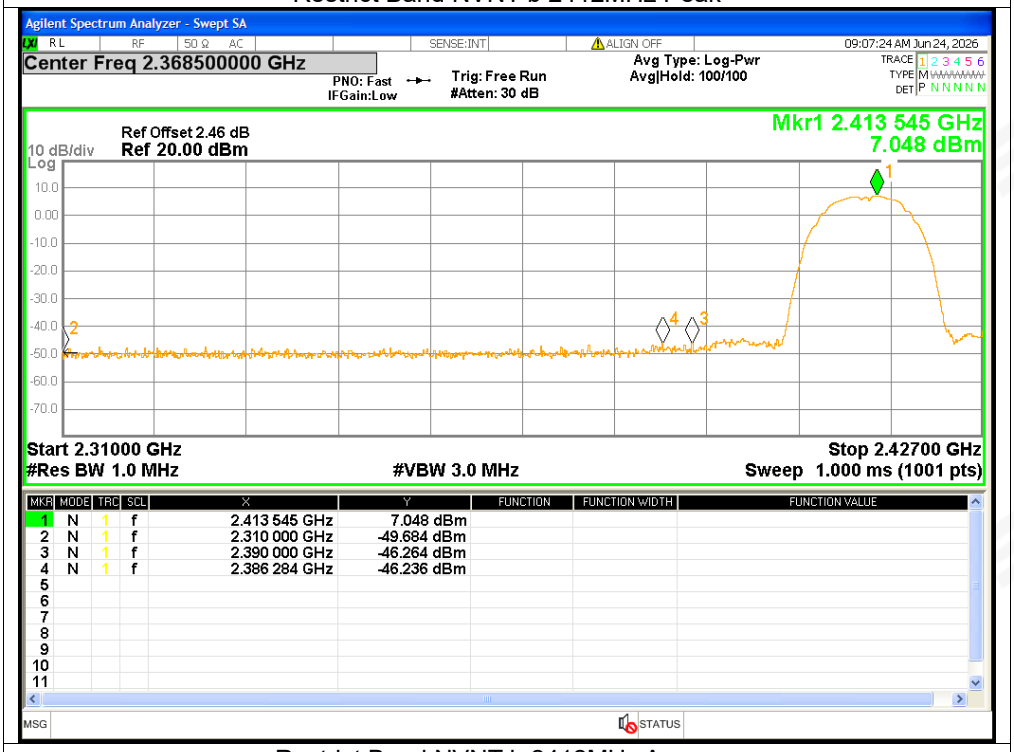


# Restrict Band

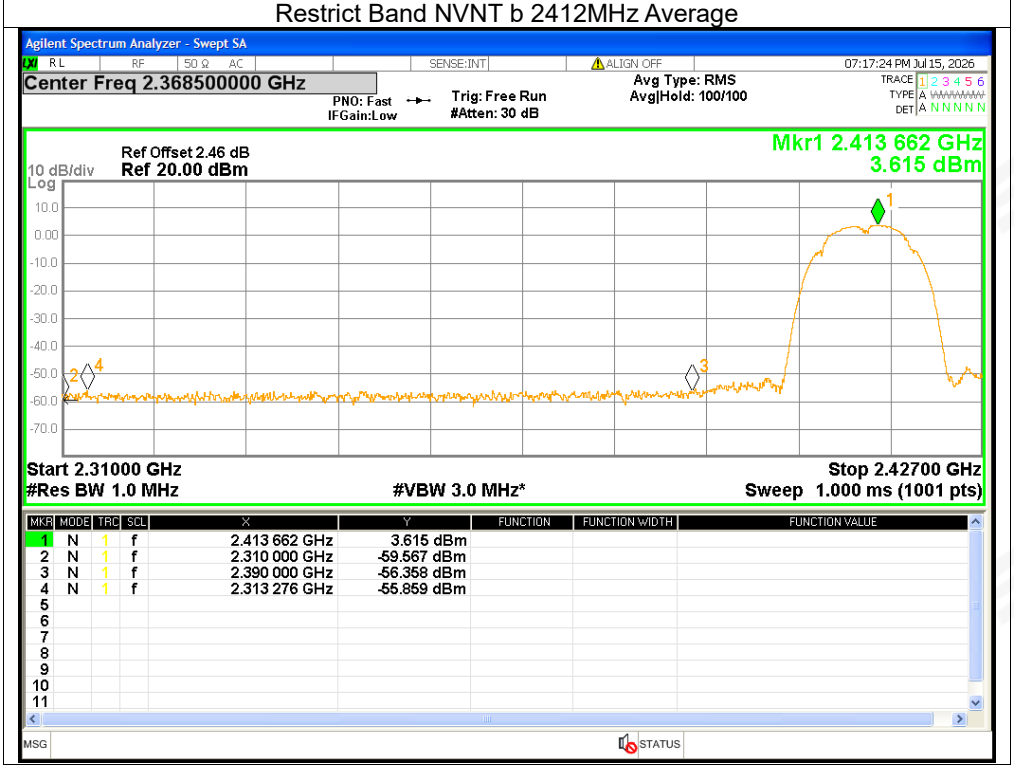
| Condition | Mode | Frequency (MHz) | Spur Freq (MHz) | Power (dBm) | Gain (dBi) | E (dBuV/m) | Detector | Limit (dBuV/m) | Verdict |
|---|---|---|---|---|---|---|---|---|---|
| NVNT | b | 2412 | 2310 | -49.68 | 2 | 47.58 | Peak | <=74 | Pass |
| NVNT | b | 2412 | 2310 | -60.08 | 2 | 37.18 | Average | <=54 | Pass |
| NVNT | b | 2412 | 2386.284 | -46.23 | 2 | 51.03 | Peak | <=74 | Pass |
| NVNT | b | 2412 | 2385.816 | -57.09 | 2 | 40.17 | Average | <=54 | Pass |
| NVNT | b | 2412 | 2390 | -46.26 | 2 | 51 | Peak | <=74 | Pass |
| NVNT | b | 2412 | 2390 | -58.51 | 2 | 38.75 | Average | <=54 | Pass |
| NVNT | b | 2462 | 2483.5 | -47.86 | 2 | 49.4 | Peak | <=74 | Pass |
| NVNT | b | 2462 | 2483.5 | -57.64 | 2 | 39.62 | Average | <=54 | Pass |
| NVNT | b | 2462 | 2484.63 | -45.21 | 2 | 52.05 | Peak | <=74 | Pass |
| NVNT | b | 2462 | 2485.107 | -56.72 | 2 | 40.54 | Average | <=54 | Pass |
| NVNT | b | 2462 | 2500 | -48.21 | 2 | 49.05 | Peak | <=74 | Pass |
| NVNT | b | 2462 | 2500 | -58.53 | 2 | 38.73 | Average | <=54 | Pass |
| NVNT | g | 2412 | 2310 | -50.25 | 2 | 47.01 | Peak | <=74 | Pass |
| NVNT | g | 2412 | 2310 | -58.64 | 2 | 38.62 | Average | <=54 | Pass |
| NVNT | g | 2412 | 2370.021 | -46.84 | 2 | 50.42 | Peak | <=74 | Pass |
| NVNT | g | 2412 | 2388.273 | -56.64 | 2 | 40.62 | Average | <=54 | Pass |
| NVNT | g | 2412 | 2390 | -49.47 | 2 | 47.79 | Peak | <=74 | Pass |
| NVNT | g | 2412 | 2390 | -57.05 | 2 | 40.21 | Average | <=54 | Pass |
| NVNT | g | 2462 | 2483.5 | -47.55 | 2 | 49.71 | Peak | <=74 | Pass |
| NVNT | g | 2462 | 2483.5 | -56.32 | 2 | 40.94 | Average | <=54 | Pass |
| NVNT | g | 2462 | 2488.393 | -45.9 | 2 | 51.36 | Peak | <=74 | Pass |
| NVNT | g | 2462 | 2484.047 | -55.99 | 2 | 41.27 | Average | <=54 | Pass |
| NVNT | g | 2462 | 2500 | -50.68 | 2 | 46.58 | Peak | <=74 | Pass |
| NVNT | g | 2462 | 2500 | -57.3 | 2 | 39.96 | Average | <=54 | Pass |
| NVNT | n20 | 2412 | 2310 | -49.39 | 2 | 47.87 | Peak | <=74 | Pass |
| NVNT | n20 | 2412 | 2310 | -58.31 | 2 | 38.95 | Average | <=54 | Pass |
| NVNT | n20 | 2412 | 2389.209 | -46.75 | 2 | 50.51 | Peak | <=74 | Pass |
| NVNT | n20 | 2412 | 2389.443 | -56.63 | 2 | 40.63 | Average | <=54 | Pass |
| NVNT | n20 | 2412 | 2390 | -49.29 | 2 | 47.97 | Peak | <=74 | Pass |
| NVNT | n20 | 2412 | 2390 | -56.99 | 2 | 40.27 | Average | <=54 | Pass |
| NVNT | n20 | 2462 | 2483.5 | -45.53 | 2 | 51.73 | Peak | <=74 | Pass |
| NVNT | n20 | 2462 | 2483.5 | -56.31 | 2 | 40.95 | Average | <=54 | Pass |
| NVNT | n20 | 2462 | 2483.835 | -45.41 | 2 | 51.85 | Peak | <=74 | Pass |
| NVNT | n20 | 2462 | 2483.623 | -55.89 | 2 | 41.37 | Average | <=54 | Pass |
| NVNT | n20 | 2462 | 2500 | -49.19 | 2 | 48.07 | Peak | <=74 | Pass |
| NVNT | n20 | 2462 | 2500 | -57.27 | 2 | 39.99 | Average | <=54 | Pass |
| NVNT | n40 | 2422 | 2310 | -50.37 | 2 | 46.89 | Peak | <=74 | Pass |
| NVNT | n40 | 2422 | 2310 | -58.32 | 2 | 38.94 | Average | <=54 | Pass |
| NVNT | n40 | 2422 | 2385.118 | -41.69 | 2 | 55.57 | Peak | <=74 | Pass |
| NVNT | n40 | 2422 | 2389.804 | -50.55 | 2 | 46.71 | Average | <=54 | Pass |
| NVNT | n40 | 2422 | 2390 | -41.98 | 2 | 55.28 | Peak | <=74 | Pass |
| NVNT | n40 | 2422 | 2390 | -50.99 | 2 | 46.27 | Average | <=54 | Pass |
| NVNT | n40 | 2452 | 2483.5 | -43.92 | 2 | 53.34 | Peak | <=74 | Pass |
| NVNT | n40 | 2452 | 2483.5 | -51.81 | 2 | 45.45 | Average | <=54 | Pass |
| NVNT | n40 | 2452 | 2486.74 | -42.45 | 2 | 54.81 | Peak | <=74 | Pass |
| NVNT | n40 | 2452 | 2483.698 | -51.77 | 2 | 45.49 | Average | <=54 | Pass |
| NVNT | n40 | 2452 | 2500 | -47.3 | 2 | 49.96 | Peak | <=74 | Pass |
| NVNT | n40 | 2452 | 2500 | -56.07 | 2 | 40.91 | Average | <=54 | Pass |

Test Graphs

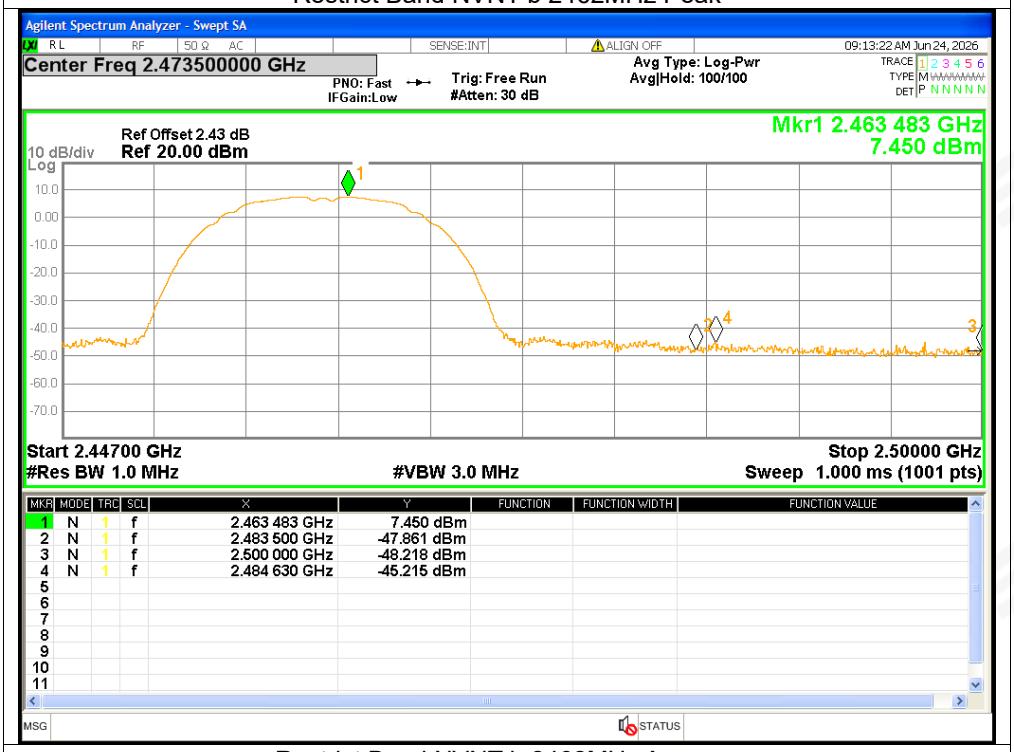
Restrict Band NVNT b 2412MHz Peak



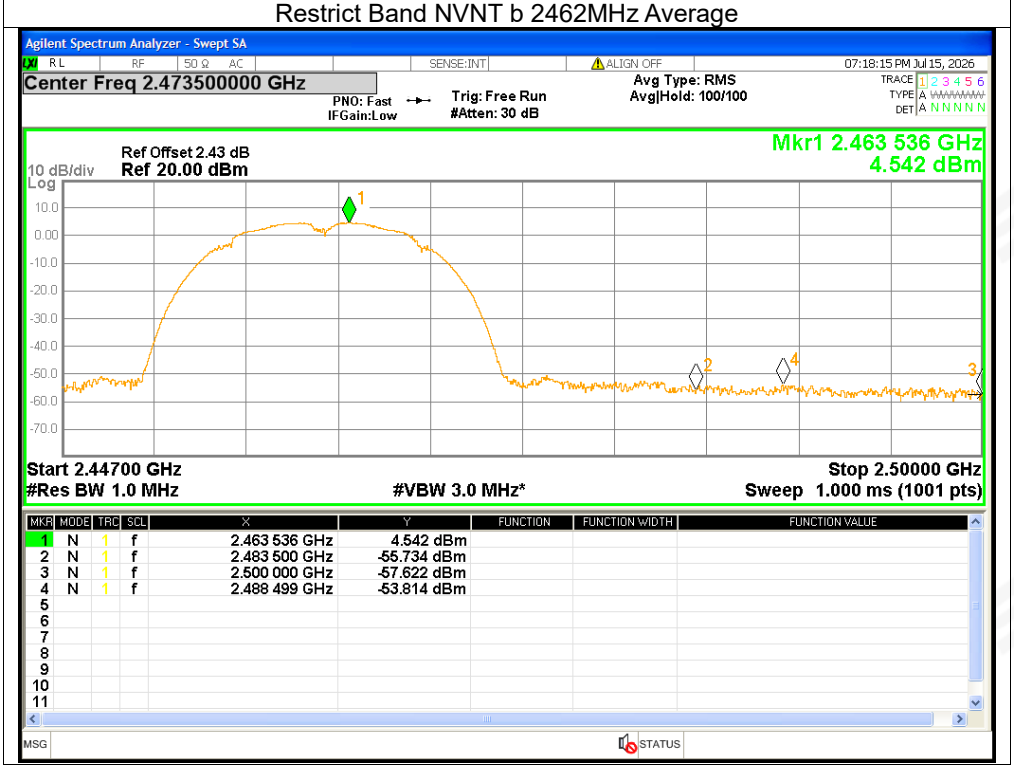

Restrict Band NVNT b 2412MHz Average



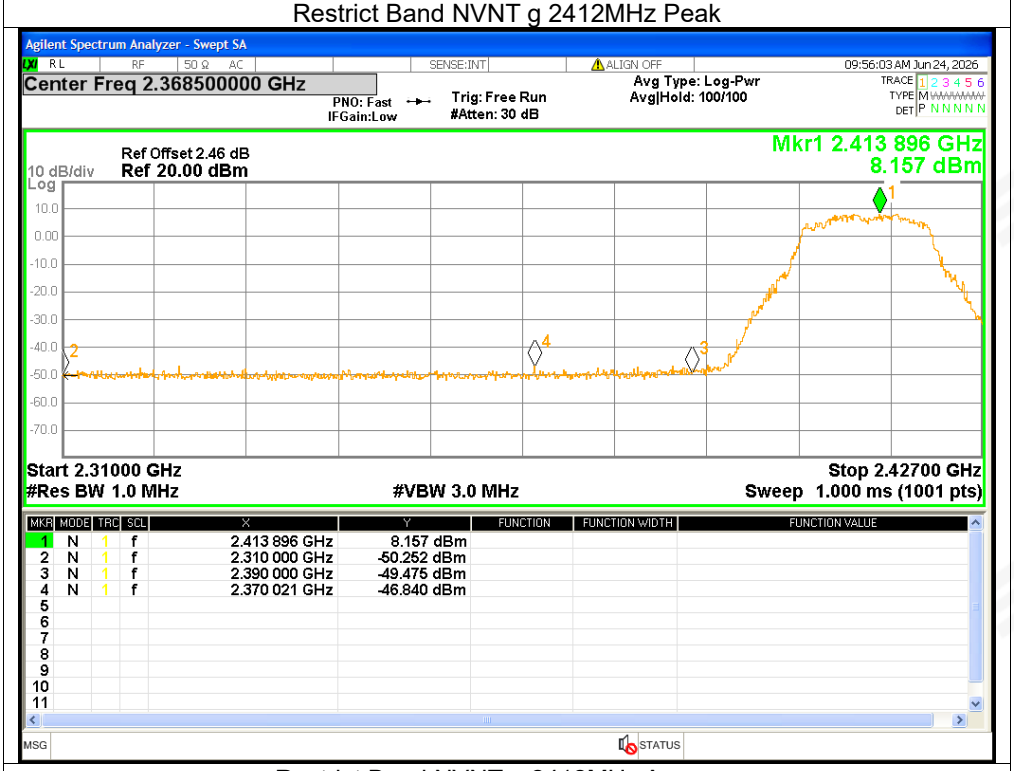
Restrict Band NVNT b 2462MHz Peak



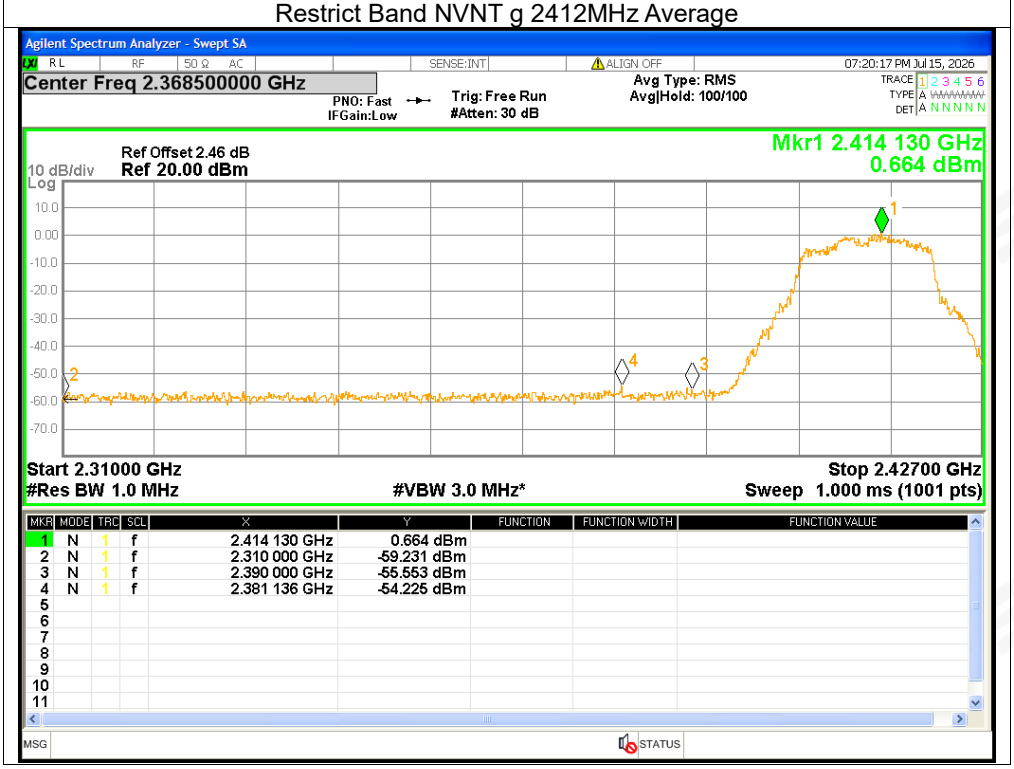

Restrict Band NVNT b 2462MHz Average



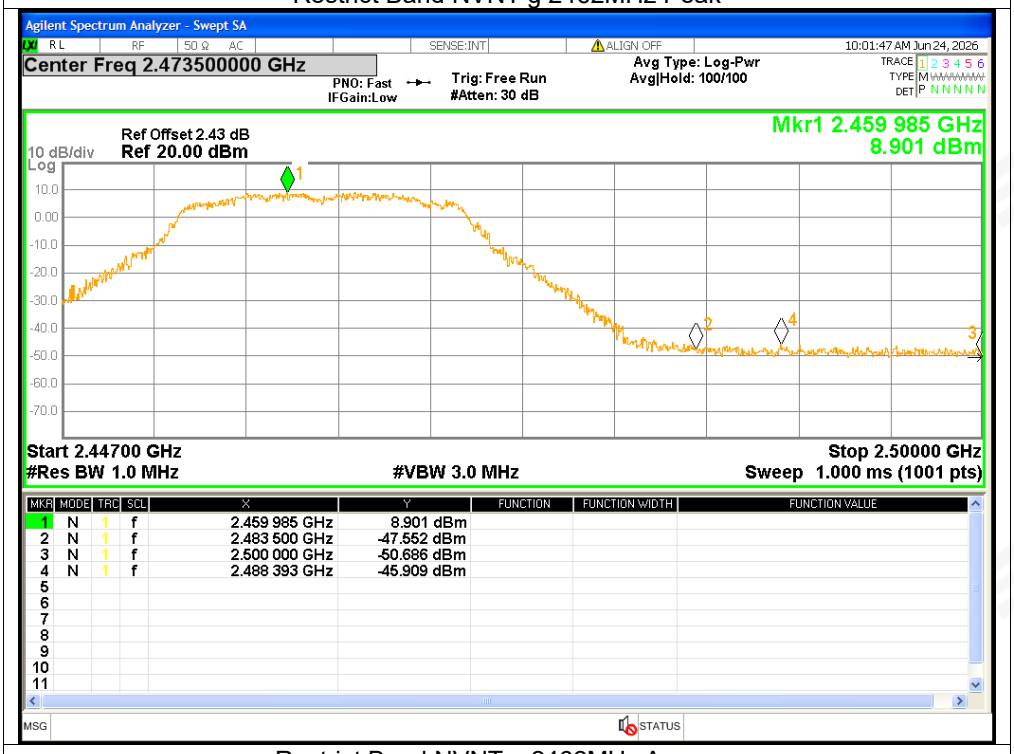
Restrict Band NVNT g 2412MHz Peak



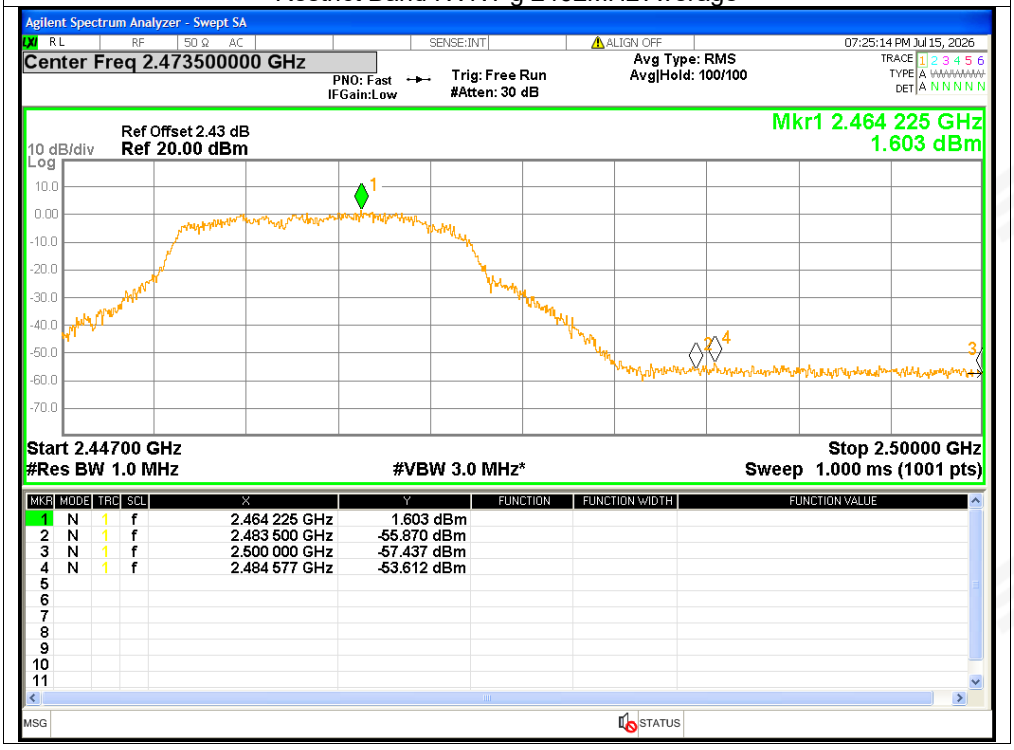

Restrict Band NVNT g 2412MHz Average



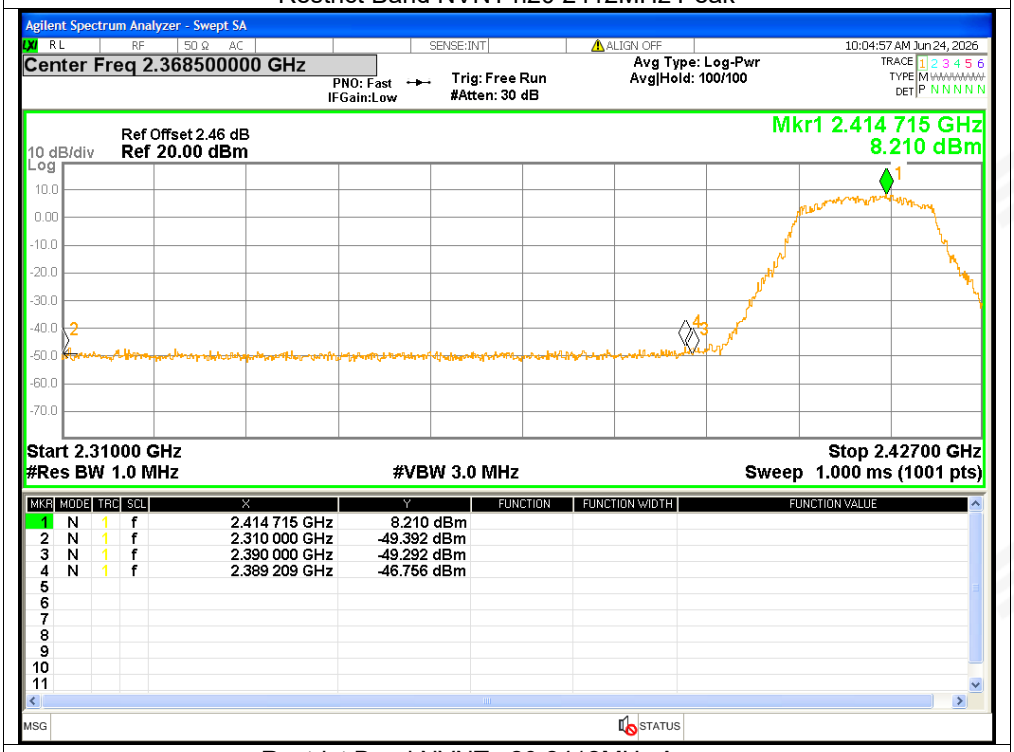
Restrict Band NVNT g 2462MHz Peak



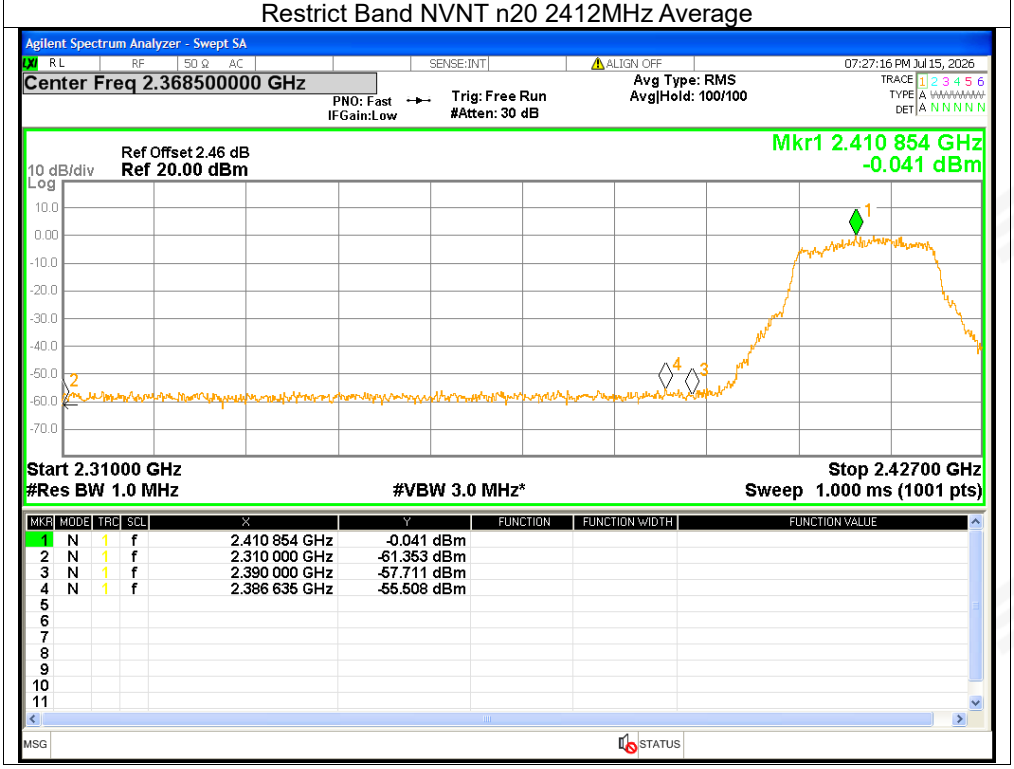

Restrict Band NVNT g 2462MHz Average



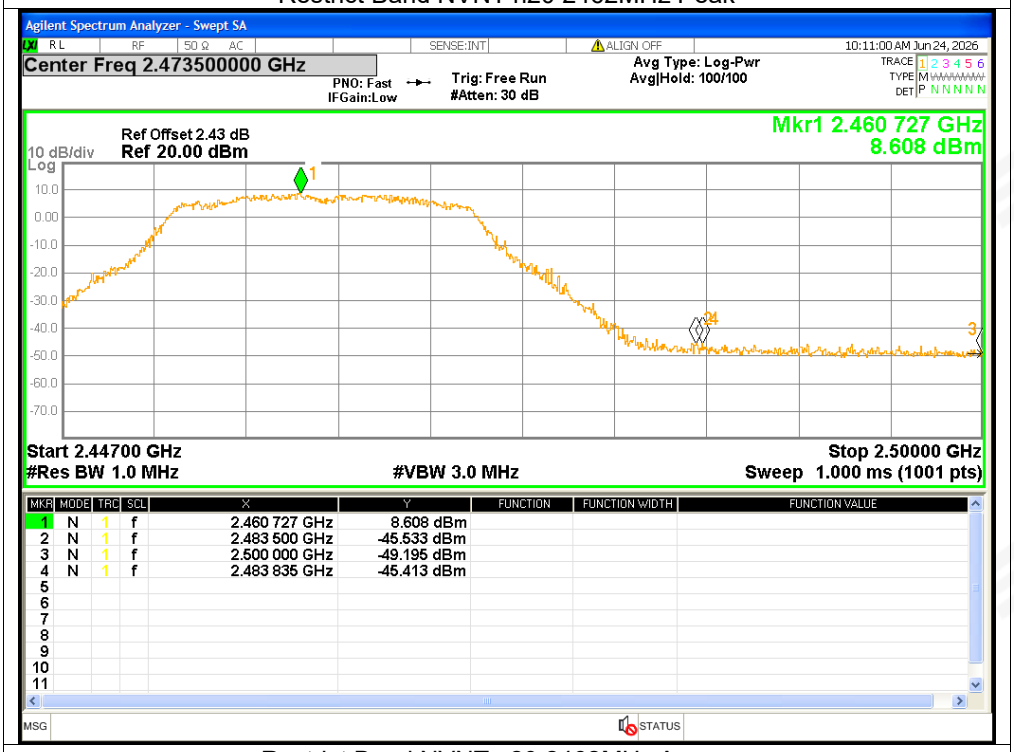
Restrict Band NVNT n20 2412MHz Peak



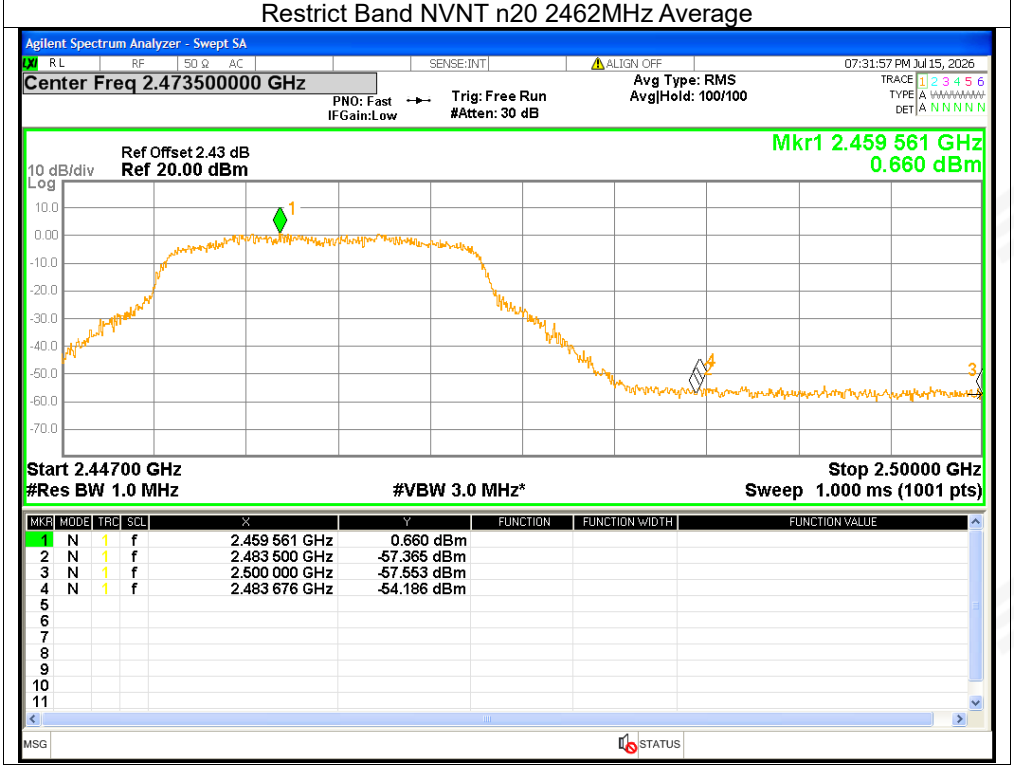

Restrict Band NVNT n20 2412MHz Average



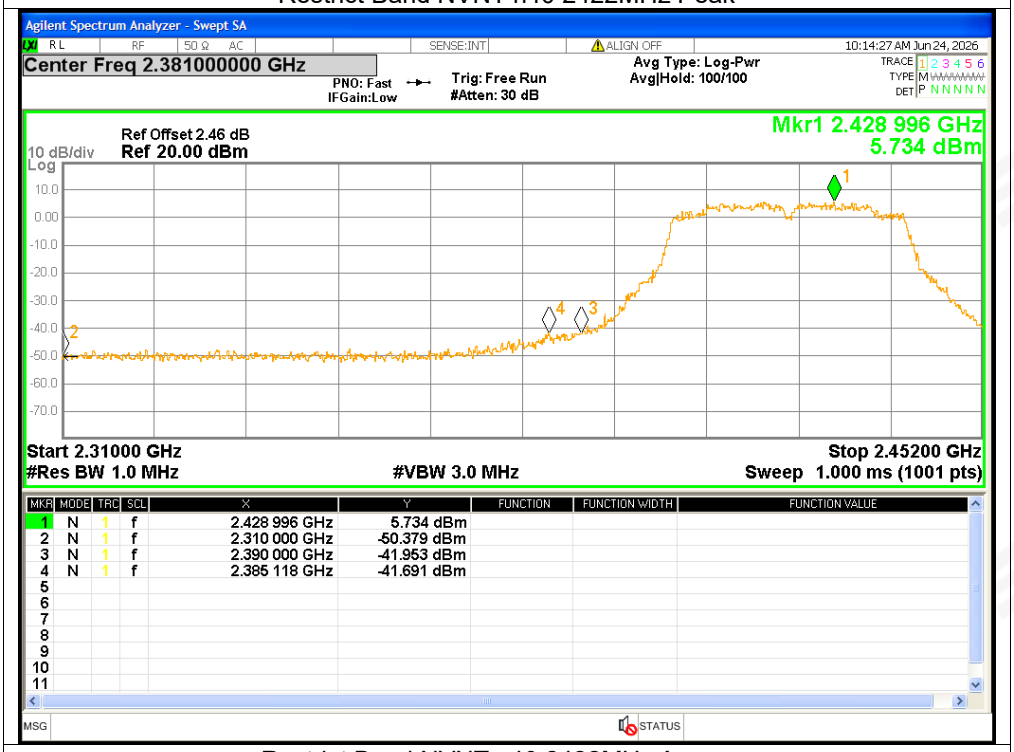
Restrict Band NVNT n20 2462MHz Peak



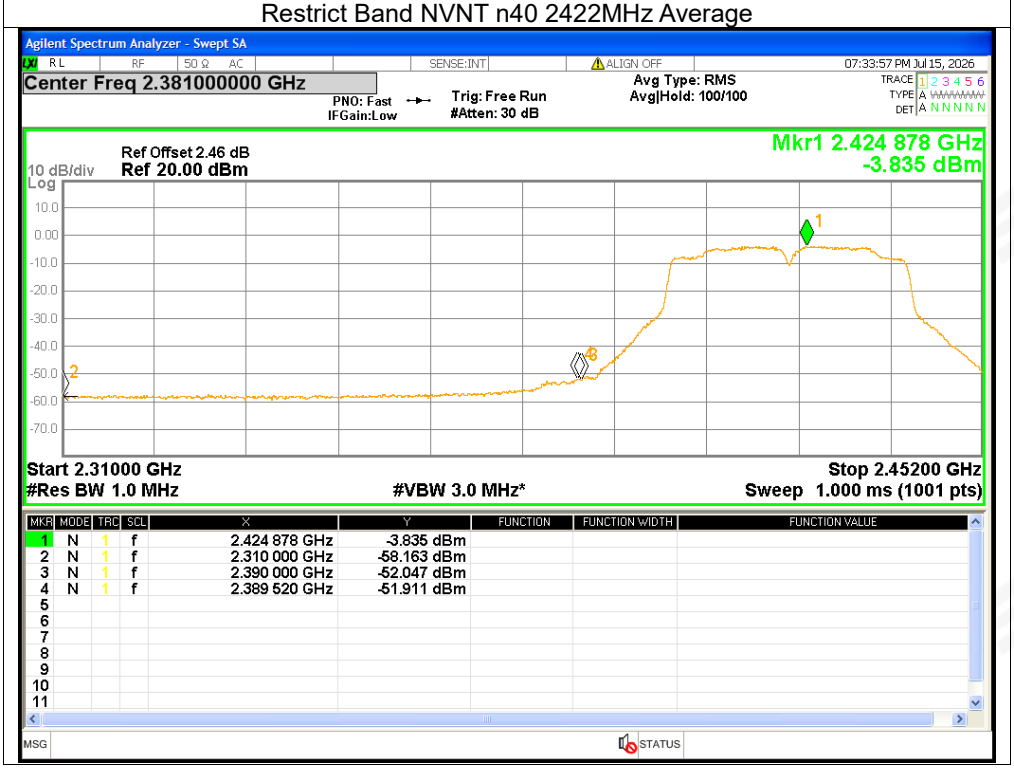

Restrict Band NVNT n20 2462MHz Average



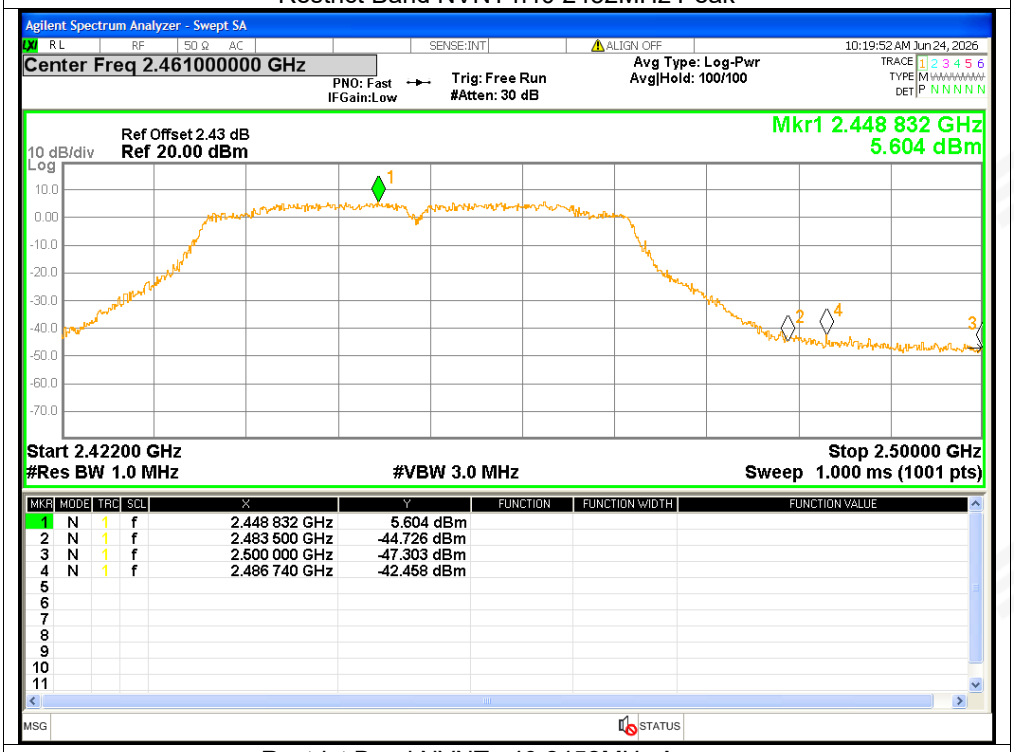
Restrict Band NVNT n40 2422MHz Peak



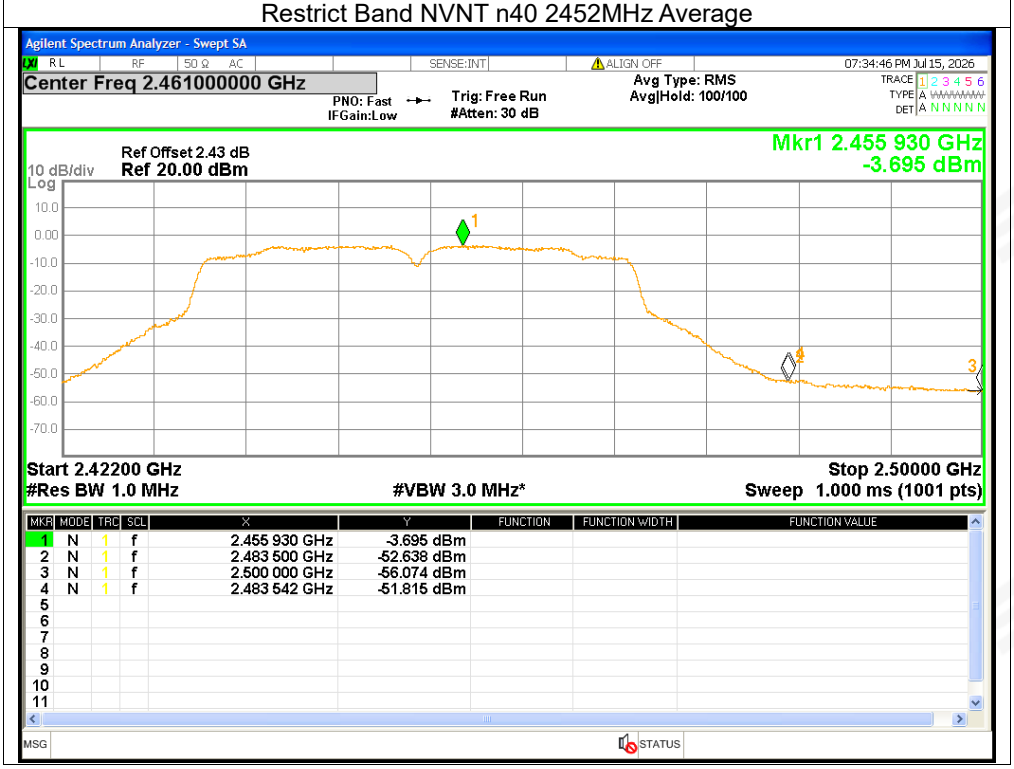

Restrict Band NVNT n40 2422MHz Average



Restrict Band NVNT n40 2452MHz Peak




Restrict Band NVNT n40 2452MHz Average



# APPENDIX 2-PHOTOS OF TEST SETUP

Note: See test photos in setup photo document for the actual connections between Product and support equipment.

※※※※※END OF THE REPORT※※※※※