# FCC TEST REPORT

## FCC ID: 2AVBN-RD1009WF

On Behalf of

SHENZHEN REDLEAF TECHNOLOGY CO., LTD.

Trail Camera

Model No.: RD1009WF

| | | |
|---|---|---|
| Prepared for | : | SHENZHEN REDLEAF TECHNOLOGY CO., LTD. |
| Address | : | 3F, Building E, Huichao Industrial Park, Gushu Road 2, Xixiang Town, Bao’an District, Shenzhen, China |

| | | |
|---|---|---|
| Prepared By | : | Shenzhen Alpha Product Testing Co., Ltd. |
| Address | : | Building i, No.2, Lixin Road, Fuyong Street, Bao’an District, 518103, Shenzhen, Guangdong, China |

| | | |
|---|---|---|
| Report Number | : | A1909243-C01-R06 |
| Date of Receipt | : | October 10, 2019 |
| Date of Test | : | October 10, 2019- November 28, 2019 |
| Date of Report | : | November 28, 2019 |
| Version Number | : | V0 |

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# TEST REPORT DECLARATION

| | | |
|---|---|---|
| Applicant | : | SHENZHEN REDLEAF TECHNOLOGY CO., LTD. |
| Address | : | 3F, Building E, Huichao Industrial Park, Gushu Road 2, Xixiang Town, Bao'an District, Shenzhen, China |
| Manufacturer | : | SHENZHEN REDLEAF TECHNOLOGY CO., LTD. |
| Address | : | 3F, Building E, Huichao Industrial Park, Gushu Road 2, Xixiang Town, Bao'an District, Shenzhen, China |
| EUT Description | : | Trail Camera |
| | | (A) Model No. : RD1009WF |
| | | (B) Trademark : Trail Camera |

Measurement Standard Used:

**FCC Rules and Regulations Part 15 Subpart C Section 15.247**

**ANSI C63.10:2013**

The device described above is tested by Shenzhen Alpha Product Testing Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C limits both conducted and radiated emissions. The test results are contained in this test report and Shenzhen Alpha Product Testing Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

After the test, our opinion is that EUT compliance with the requirement of the above standards.

This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Shenzhen Alpha Product Testing Co., Ltd.

| | | |
|---|---|---|
| Tested by (name + signature).....…..: | Ella Liang<br>Project Engineer | Ella Liang |
| Approved by (name + signature)…....: | Simple Guan<br>Project Manager | |
| Date of issue…… ……..: | November 28, 2019 | |

## Revision History

| Revision | Issue Date | Revisions | Revised By |
|---|---|---|---|
| V0 | November 28, 2019 | Initial released Issue | Simple Guan |

# 1. SUMMARY OF STANDARDS AND RESULTS

## 1.1.Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below:

| Test Item | Test Requirement | Standards Paragraph | Result |
|---|---|---|---|
| Conducted Emission | FCC PART 15 | 15.207 | P |
| 6dB Bandwidth | FCC PART 15 | 15.247 (a)(2) | P |
| Output Power | FCC PART 15 | 15.247 (b)(3) | P |
| Radiated Spurious Emission | FCC PART 15 | 15.247 (d) | P |
| Conducted Spurious & Band Edge Emission | FCC PART 15 | 15.247 (d) | P |
| Power Spectral Density | FCC PART 15 | 15.247 (e) | P |
| Radiated Band Edge Emission | FCC PART 15 | 15.205<br>15.247(d) | P |
| Antenna Requirement | FCC PART 15 | 15.203 | P |
| Note: | 1. P is an abbreviation for Pass.<br>2. F is an abbreviation for Fail.<br>3. N/A is an abbreviation for Not Applicable. | | |

# 2. GENERAL INFORMATION

## 2.1.Description of Device (EUT)

| | | |
|---|---|---|
| Description | : | Trail Camera |
| Model Number | : | N/A |
| Diff | : | N/A |
| Trademark | : | N/A |
| Test Voltage | : | DC 6V by battery |
| Operation frequency | : | 2412MHz-2462MHz for IEEE 802.11 b, g.n/HT20,<br>2422MHz~2452MHz for IEEE802.11n/HT40 |
| Channel No. | : | 802.11b/802.11g /802.11n(HT20): 11CH<br>802.11(HT40): 7CH |
| Modulation type | : | IEEE 802.11b: DSSS(CCK,DQPSK,DBPSK)<br>IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK)<br>IEEE 802.11n :OFDM(64QAM, 16QAM, QPSK, BPSK) |
| Antenna Type | : | Internal Antenna, Maximum Gain is 0dBi |
| Software version | : | N/A |
| Hardware version | : | N/A |

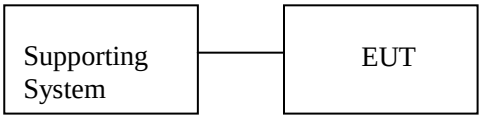
## 2.2.Accessories of Device (EUT)

| | | |
|---|---|---|
| Accessories1 | : | USB Cable |
| Manufacturer | : | SHENZHEN REDLEAF TECHNOLOGY CO., LTD. |
| Model | : | / |
| Input | : | 1m |
| Output | : | USB Cable |

## 2.3.Tested Supporting System Details

| No. | Description | Manufacturer | Model | Serial Number | Certification or DOC |
|---|---|---|---|---|---|
| -- | -- | -- | -- | -- | -- |

## 2.4.Block Diagram of connection between EUT and simulators



## 2.5.Test Mode Description

| Duty cycle :100%Keeping TX | | | |
|---|---|---|---|
| **Mode** | **data rate (Mbps)(see Note)** | **Channel** | **Frequency (MHz)** |
| IEEE 802.11b | 1 | Low :CH1 | 2412 |
| | 1 | Middle: CH6 | 2437 |
| | 1 | High: CH11 | 2462 |
| IEEE 802.11g | 6 | Low :CH1 | 2412 |
| | 6 | Middle: CH6 | 2437 |
| | 6 | High: CH11 | 2462 |
| IEEE 802.11 n/HT20 with 2.4G | 6.5 | Low :CH1 | 2412 |
| | 6.5 | Middle: CH6 | 2437 |
| | 6.5 | High: CH11 | 2462 |
| IEEE 802.11 n/HT40 with 2.4G | 13 | Low :CH3 | 2422 |
| | 13 | Middle: CH6 | 2437 |
| | 13 | High: CH9 | 2452 |
| Note: According exploratory test, EUT will have maximum output power in those data rate. so those data rate were used for all test. | | | |

| Channel list: | | | | | |
|---|---|---|---|---|---|
| For IEEE 802.11b, g, n/HT20 with 2.4G | | | | | |
| **Channel** | **Frequency (MHz)** | **Channel** | **Frequency (MHz)** | **Channel** | **Frequency (MHz)** |
| CH1 | 2412 | CH5 | 2432 | CH9 | 2452 |
| CH2 | 2417 | CH6 | 2437 | CH10 | 2457 |
| CH3 | 2422 | CH7 | 2442 | CH11 | 2462 |
| CH4 | 2427 | CH8 | 2447 | | |
| For IEEE 802.11 n/HT40 with 2.4G | | | | | |
| **Channel** | **Frequency (MHz)** | **Channel** | **Frequency (MHz)** | **Channel** | **Frequency (MHz)** |
| CH1 | 2422 | CH5 | 2442 | | |
| CH2 | 2427 | CH6 | 2447 | | |
| CH3 | 2432 | CH7 | 2452 | | |
| CH4 | 2437 | | | | |

| Setting output power (Max) | | | |
|---|---|---|---|
| **802.11b** | **802.11g** | **802.11n(HT20)** | **802.11n(HT40)** |
| 18±1dBm | 16±1dBm | 15±1dBm | 13±1dBm |

## 2.6.Test Conditions

| Items | Required | Actual |
|---|---|---|
| Temperature range: | 15-35℃ | 24℃ |
| Humidity range: | 25-75% | 56% |
| Pressure range: | 86-106kPa | 98kPa |

## 2.7.Test Facility

Shenzhen Alpha Product Testing Co., Ltd
Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103,
Shenzhen, Guangdong, China

June 21, 2018 File on Federal Communication Commission
Registration Number: 293961

July 15, 2019 Certificated by IC
Registration Number: CN0085

## 2.8.Measurement Uncertainty

(95% confidence levels, k=2)

| Item | Uncertainty |
|---|---|
| Uncertainty for Power point Conducted Emissions Test | 2.74dB |
| Uncertainty for Radiation Emission test in 3m chamber (below 30MHz) | 2.13 dB(Polarize: V) |
| | 2.57dB(Polarize: H) |
| Uncertainty for Radiation Emission test in 3m chamber (30MHz to 1GHz) | 3.77dB(Polarize: V) |
| | 3.80dB(Polarize: H) |
| Uncertainty for Radiation Emission test in 3m chamber (1GHz to 25GHz) | 4.16dB(Polarize: H) |
| | 4.13dB(Polarize: V) |
| Uncertainty for radio frequency | 5.4×10-8 |
| Uncertainty for conducted RF Power | 0.37dB |
| Uncertainty for temperature | 0.2℃ |
| Uncertainty for humidity | 1% |
| Uncertainty for DC and low frequency voltages | 0.06% |

## 2.9.Test Equipment List

| Equipment | Manufacture | Model No. | Serial No. | Last cal. | Cal Interval |
|---|---|---|---|---|---|
| 9*6*6 anechoic chamber | CHENYU | 9*6*6 | N/A | 2019.09.06 | 3Year |
| Power Sensor | DARE | RPR3006W | 15100041SNO91 | 2019.09.06 | 1Year |
| Power Sensor | DARE | RPR3006W | 15100041SNO92 | 2019.09.06 | 1Year |
| Spectrum analyzer | ROHDE&SCHWARZ | FSV40-N | 102137 | 2019.09.05 | 1Year |
| Spectrum analyzer | Agilent | N9020A | MY499100060 | 2019.09.05 | 1Year |
| Receiver | ROHDE&SCHWARZ | ESR | 1316.3003K03-102082-Wa | 2019.09.06 | 1Year |
| Receiver | R&S | ESCI | 101165 | 2019.09.05 | 1Year |
| Bilog Antenna | Schwarzbeck | VULB 9168 | VULB9168-438 | 2018.04.13 | 2Year |
| Horn Antenna | SCHWARZBECK | BBHA 9120 D | BBHA 9120 D(1201) | 2018.04.13 | 2Year |
| Active Loop Antenna | SCHWARZBECK | FMZB 1519B | 00059 | 2019.09.07 | 2Year |
| Cable | Resenberger | N/A | No.1 | 2019.09.05 | 1Year |
| Cable | Resenberger | N/A | No.2 | 2019.09.05 | 1Year |
| Cable | Resenberger | N/A | No.3 | 2019.09.05 | 1Year |
| Pre-amplifier | HP | HP8347A | 2834A00455 | 2019.09.05 | 1Year |
| Pre-amplifier | Agilent | 8449B | 3008A02664 | 2019.09.05 | 1Year |
| L.I.S.N.#1 | Schwarzbeck | NSLK8126 | 8126466 | 2019.09.05 | 1Year |
| L.I.S.N.#2 | ROHDE&SCHWARZ | ENV216 | 101043 | 2019.09.05 | 1 Year |
| 20db Attenuator | ICPROBING | IATS1 | 82347 | 2019.08.26 | 1 Year |
| Horn Antenna | A-INFOMW | BBHA9170 | 00946 | 2019.09.07 | 2 Year |
| Preamplifier | SKET | LNPA_1840-50 | SK2018101801 | 2019.09.06 | 1 Year |
| Power Meter | Agilent | E9300A | MY41496625 | 2019.09.06 | 1 Year |
| Temp. & Humid. Chamber | Weihuang | WHTH-1000-40-880 | 100631 | 2019.09.06 | 1 Year |

| | | | | | |
|---|---|---|---|---|---|
| Switching Mode Power Supply | JUNKE | JK12010S | 20140927-6 | 2019.09.05 | 1 Year |

# 3. SPURIOUS EMISSION

## 3.1.Test Limits

| 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 |

Harmonic emissions limits comply with below 54 dBuV/m at 3m. Other emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or comply with the radiated emissions limits specified in section 15.209(a) limit in the table below has to be followed.

**NOTE:**

a) The tighter limit applies at the band edges.
b) Emission Level(dB uV/m)=20log Emission Level(Uv/m)

## 3.2.Test Procedure

The measuring distance of 3m shall be used for measurements at frequency below 1GHz and above 1GHz, The EUT was placed on a rotating 80cm above the ground plane inside a semi-anechoic chamber for below 1GHz and 150cm above the ground plane inside a semi-anechoic chamber for above 1GHz, The table was rotated 360 degrees to determine the position of the highest radiation.

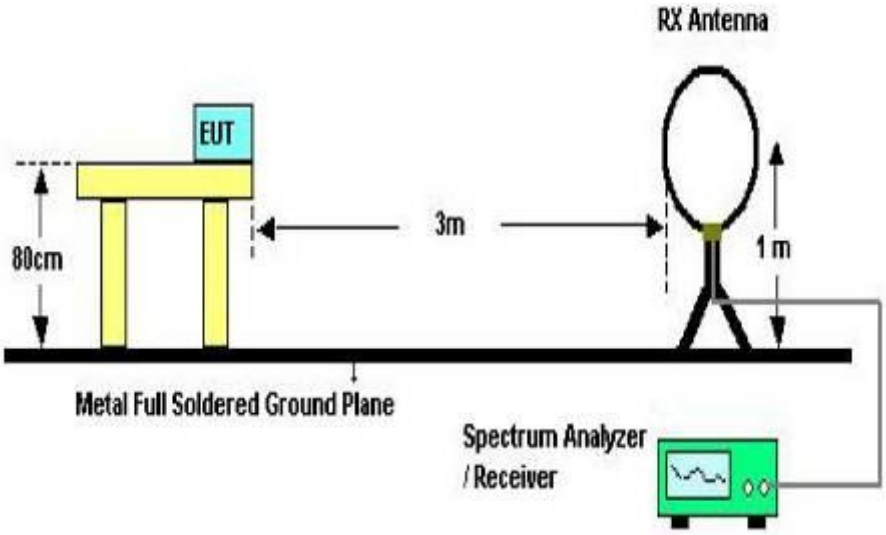
The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set of make measurement.

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 then Qusia Peak Detector mode premeasured.

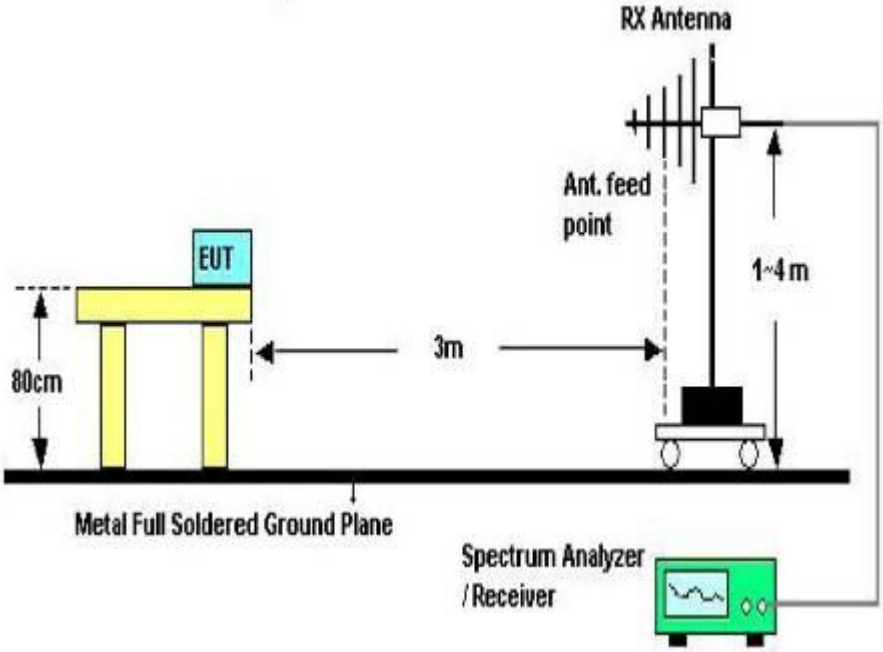
If Peak value comply with QP limit Below 1GHz.The EUT deemed to comply with QP limit. But the Peak value and average value both need to comply with applicable limit above 1GHz.

For the actual test configuration, please see the test setup photo.

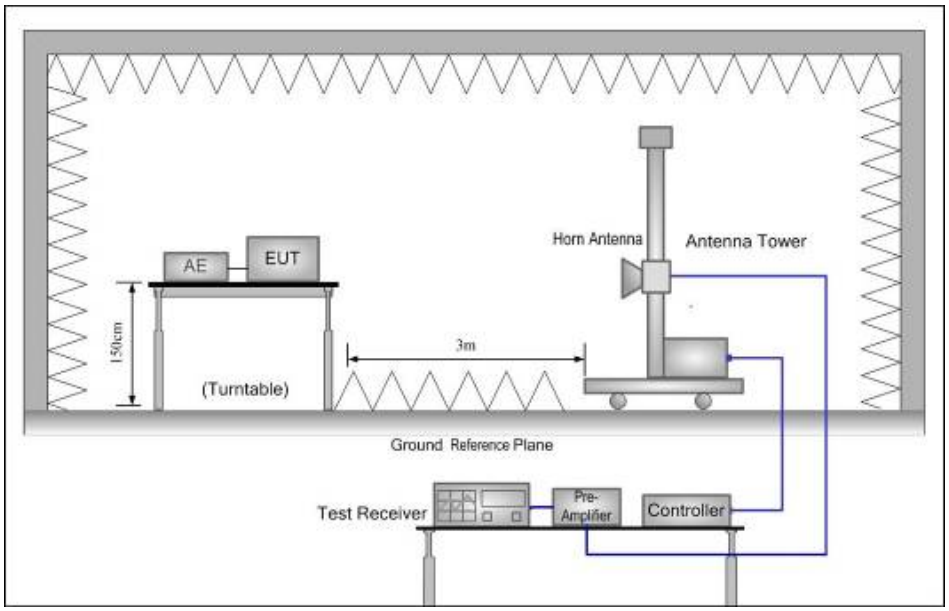
## 3.3.Test Setup




Below 30MHz Test Setup




Above 30MHz Test Setup




Above 1GHz Test Setup

## 3.4.Test Results

Test Condition
Continual Transmitting in maximum power.

| | | |
|---|---|---|
| 9KHz~150KHz | RBW200Hz | VBW1KHz |
| 150KHz~30MHz | RBW9KHz | VBW 30KHz |
| 30MHZ~1GHz | RBW120KHz | VBW 300KHz |
| Above1GHz | RBW1MHz | VBW 3MHz |

We have scanned the 10th harmonic from 9 kHz to the EUT.

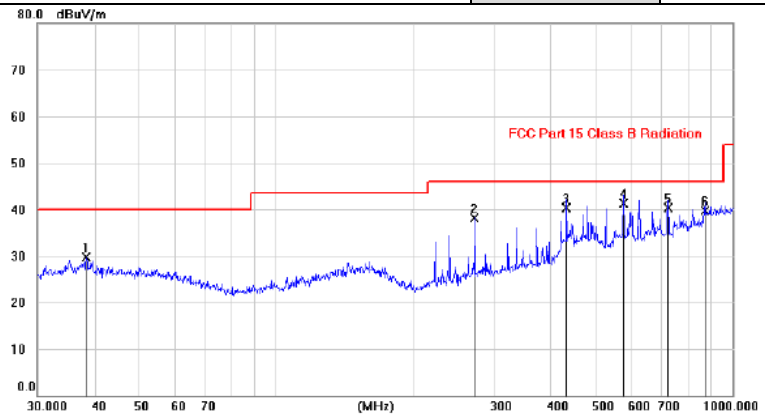
Detailed information please see the following page.

From 9KHz to 30MHz: Conclusion: PASS

Note:1.The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

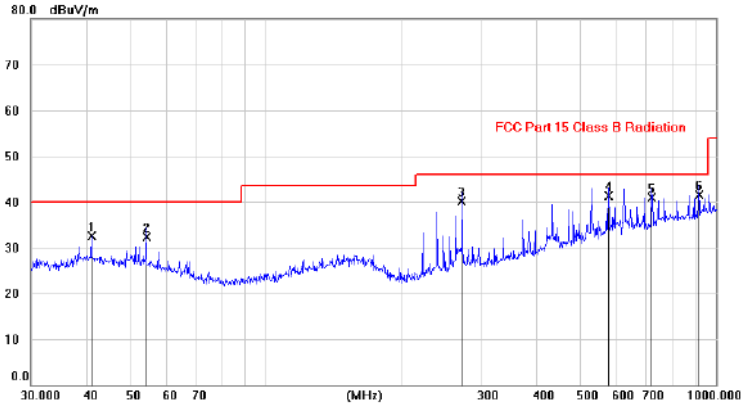
2.Only show the test data of the worst Channel in this report.

| EUT Description | Trail Camera | Model No. | RD1009WF |
|---|---|---|---|
| Temperature | 24℃ | Humidity | 56% |
| Pol | Vertical | Test date | 2019/11/22 |
| Test Voltage | DC 6V | Test mode | 802.11b (2412MHz) |




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Margin | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | | 38.3462 | 15.37 | 14.25 | 29.62 | 40.00 | -10.38 | peak | | | |
| 2 | | 272.2776 | 24.87 | 13.33 | 38.20 | 46.00 | -7.80 | peak | | | |
| 3 | | 434.0649 | 23.13 | 17.12 | 40.25 | 46.00 | -5.75 | QP | | | |
| 4 | * | 576.6443 | 21.64 | 19.72 | 41.36 | 46.00 | -4.64 | QP | | | |
| 5 | | 724.2607 | 18.21 | 22.14 | 40.35 | 46.00 | -5.65 | QP | | | |
| 6 | | 869.1300 | 15.84 | 23.77 | 39.61 | 46.00 | -6.39 | QP | | | |

| Pol | Horizontal |
|---|---|




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Margin | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | | 40.9879 | 18.17 | 14.34 | 32.51 | 40.00 | -7.49 | peak | | | |
| 2 | | 54.2608 | 18.68 | 13.65 | 32.33 | 40.00 | -7.67 | QP | | | |
| 3 | | 272.2776 | 26.83 | 13.33 | 40.16 | 46.00 | -5.84 | QP | | | |
| 4 | | 576.6443 | 21.54 | 19.72 | 41.26 | 46.00 | -4.74 | QP | | | |
| 5 | | 719.1992 | 18.87 | 22.06 | 40.93 | 46.00 | -5.07 | QP | | | |
| 6 | * | 919.2865 | 17.05 | 24.54 | 41.59 | 46.00 | -4.41 | QP | | | |

Note:1. *:Maximum data; x:Over limit; !:over margin.
2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

From 1G-25GHz

| Test Mode: IEEE 802.11b TX Low | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Freq (MHz) | Read Level (dBuV/m) | Polar (H/V) | Antenna Factor (dB/m) | Cable loss(dB) | Amp Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 4824 | 42.18 | V | 33.95 | 10.18 | 34.26 | 52.05 | 74 | 21.95 | PK |
| 4824 | 33.18 | V | 33.95 | 10.18 | 34.26 | 43.05 | 54 | 10.95 | AV |
| 7236 | / | / | / | / | / | / | / | / | |
| 9648 | / | / | / | / | / | / | / | / | |
| 4824 | 42.25 | H | 33.95 | 10.18 | 34.26 | 52.12 | 74 | 21.88 | PK |
| 4824 | 33.45 | H | 33.95 | 10.18 | 34.26 | 43.32 | 54 | 10.68 | AV |
| 7236 | | | | | | | | | |
| 9648 | | | | | | | | | |
| Test Mode: IEEE 802.11b TX Mid | | | | | | | | | |
| 4874 | 43.18 | V | 33.93 | 10.2 | 34.29 | 53.02 | 74 | 20.98 | PK |
| 4874 | 32.92 | V | 33.93 | 10.2 | 34.29 | 42.76 | 54 | 11.24 | AV |
| 7311 | / | / | / | / | / | / | / | / | |
| 9748 | / | / | / | / | / | / | / | / | |
| 4874 | 43.59 | H | 33.93 | 10.2 | 34.29 | 53.43 | 74 | 20.57 | PK |
| 4874 | 32.24 | H | 33.93 | 10.2 | 34.29 | 42.08 | 54 | 11.92 | AV |
| 7311 | | | | | | | | | |
| 9748 | | | | | | | | | |
| Test Mode: IEEE 802.11b TX High | | | | | | | | | |
| 4924 | 43.32 | V | 33.98 | 10.22 | 34.25 | 53.27 | 74 | 20.73 | PK |
| 4924 | 34.12 | V | 33.98 | 10.22 | 34.25 | 44.07 | 54 | 9.93 | AV |
| 7386 | / | / | / | / | / | / | / | / | |
| 9848 | / | / | / | / | / | / | / | / | |
| 4924 | 45.91 | H | 33.98 | 10.22 | 34.25 | 55.86 | 74 | 18.14 | PK |
| 4924 | 36.85 | H | 33.98 | 10.22 | 34.25 | 46.80 | 54 | 7.20 | AV |
| 7386 | | | | | | | | | |
| 9848 | | | | | | | | | |

Note:

1, Result = Read level + Antenna factor + cable loss-Amp factor

2, All the other emissions not reported were too low to read and deemed to comply with FCC limit.

| Test Mode: IEEE 802.11g TX Low | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Freq (MHz) | Read Level (dBuV/m) | Polar (H/V) | Antenna Factor (dB/m) | Cable loss(dB) | Amp Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 4824 | 45.25 | V | 33.95 | 10.18 | 34.26 | 55.12 | 74 | 18.88 | PK |
| 4824 | 36.08 | V | 33.95 | 10.18 | 34.26 | 45.95 | 54 | 8.05 | AV |
| 7236 | / | / | / | / | / | / | / | / | |
| 9648 | / | / | / | / | / | / | / | / | |
| 4824 | 42.68 | H | 33.95 | 10.18 | 34.26 | 52.55 | 74 | 21.45 | PK |
| 4824 | 34.72 | H | 33.95 | 10.18 | 34.26 | 44.59 | 54 | 9.41 | AV |
| 7236 | | | | | | | | | |
| 9648 | | | | | | | | | |
| Test Mode: IEEE 802.11g TX Mid | | | | | | | | | |
| 4874 | 43.22 | V | 33.93 | 10.2 | 34.29 | 34.29 | 53.06 | 74 | PK |
| 4874 | 34.76 | V | 33.93 | 10.2 | 34.29 | 34.29 | 44.60 | 54 | AV |
| 7311 | / | / | / | / | / | / | / | / | |
| 9748 | / | / | / | / | / | / | / | / | |
| 4874 | 32.22 | H | 33.93 | 10.2 | 34.29 | 54.16 | 74 | 19.84 | PK |
| 4874 | 32.22 | H | 33.93 | 10.2 | 34.29 | 42.06 | 54 | 11.94 | AV |
| 7311 | | | | | | | | | |
| 9748 | | | | | | | | | |
| Test Mode: IEEE 802.11g TX High | | | | | | | | | |
| 4924 | 42.97 | V | 33.98 | 10.22 | 34.25 | 52.92 | 74 | 21.08 | PK |
| 4924 | 34.59 | V | 33.98 | 10.22 | 34.25 | 44.54 | 54 | 9.46 | AV |
| 7386 | / | / | / | / | / | / | / | / | |
| 9848 | / | / | / | / | / | / | / | / | |
| 4924 | 47.04 | H | 33.98 | 10.22 | 34.25 | 56.99 | 74 | 17.01 | PK |
| 4924 | 33.81 | H | 33.98 | 10.22 | 34.25 | 43.76 | 54 | 10.24 | AV |
| 7386 | | | | | | | | | |
| 9848 | | | | | | | | | |

Note:

1, Result = Read level + Antenna factor + cable loss-Amp factor

2, All the other emissions not reported were too low to read and deemed to comply with FCC limit.

| Test ModeIEEE 802.11n HT20 TX Low | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Freq (MHz) | Read Level (dBuV/m) | Polar (H/V) | Antenna Factor (dB/m) | Cable loss(dB) | Amp Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 4824 | 44.61 | V | 33.95 | 10.18 | 34.26 | 54.48 | 74 | 19.52 | PK |
| 4824 | 34.40 | V | 33.95 | 10.18 | 34.26 | 44.27 | 54 | 9.73 | AV |
| 7236 | / | / | / | / | / | / | / | / | |
| 9648 | / | / | / | / | / | / | / | / | |
| 4824 | 44.25 | H | 33.95 | 10.18 | 34.26 | 34.26 | 54.12 | 74 | PK |
| 4824 | 33.50 | H | 33.95 | 10.18 | 34.26 | 34.26 | 43.37 | 54 | AV |
| 7236 | | | | | | | | | |
| 9648 | | | | | | | | | |
| Test Mode:IEEE 802.11n HT20 TX Mid | | | | | | | | | |
| 4874 | 44.42 | V | 33.93 | 10.2 | 34.29 | 54.26 | 74 | 19.74 | PK |
| 4874 | 33.07 | V | 33.93 | 10.2 | 34.29 | 42.91 | 54 | 11.09 | AV |
| 7311 | / | / | / | / | / | / | / | / | |
| 9748 | / | / | / | / | / | / | / | / | |
| 4874 | 45.47 | H | 33.93 | 10.2 | 34.29 | 55.31 | 74 | 18.69 | PK |
| 4874 | 32.30 | H | 33.93 | 10.2 | 34.29 | 42.14 | 54 | 11.86 | AV |
| 7311 | | | | | | | | | |
| 9748 | | | | | | | | | |
| Test Mode:IEEE 802.11n HT20 TX High | | | | | | | | | |
| 4924 | 45.20 | V | 33.98 | 10.22 | 34.25 | 55.07 | 74 | 18.93 | PK |
| 4924 | 34.55 | V | 33.98 | 10.22 | 34.25 | 44.42 | 54 | 9.58 | AV |
| 7386 | / | / | / | / | / | / | / | / | |
| 9848 | / | / | / | / | / | / | / | / | |
| 4924 | 43.17 | H | 33.98 | 10.22 | 34.25 | 54.74 | 53.04 | 74 | PK |
| 4924 | 35.47 | H | 33.98 | 10.22 | 34.25 | 43.79 | 45.34 | 54 | AV |
| 7386 | | | | | | | | | |
| 9848 | | | | | | | | | |

Note:

1, Result = Read level + Antenna factor + cable loss-Amp factor

2, All the other emissions not reported were too low to read and deemed to comply with FCC limit.

| Test ModeIEEE 802.11n HT40 TX Low | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Freq (MHz) | Read Level (dBuV/m) | Polar (H/V) | Antenna Factor (dB/m) | Cable loss(dB) | Amp Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
| 4844 | 42.35 | V | 33.95 | 10.18 | 34.26 | 52.22 | 74 | 21.78 | PK |
| 4844 | 36.58 | V | 33.95 | 10.18 | 34.26 | 46.45 | 54 | 7.55 | AV |
| 7266 | / | / | / | / | / | / | / | / | |
| 9688 | / | / | / | / | / | / | / | / | |
| 4844 | 44.18 | H | 33.95 | 10.18 | 34.26 | 54.05 | 74 | 19.95 | PK |
| 4844 | 35.84 | H | 33.95 | 10.18 | 34.26 | 45.71 | 54 | 8.29 | AV |
| 7266 | | | | | | | | | |
| 9688 | | | | | | | | | |
| Test Mode:IEEE 802.11n HT40 TX Mid | | | | | | | | | |
| 4874 | 43.11 | V | 33.93 | 10.2 | 34.29 | 52.95 | 74 | 21.05 | PK |
| 4874 | 34.74 | V | 33.93 | 10.2 | 34.29 | 44.58 | 54 | 9.42 | AV |
| 7311 | / | / | / | / | / | / | / | / | |
| 9748 | / | / | / | / | / | / | / | / | |
| 4874 | 44.65 | H | 33.93 | 10.2 | 34.29 | 54.49 | 74 | 19.51 | PK |
| 4874 | 32.80 | H | 33.93 | 10.2 | 34.29 | 42.64 | 54 | 11.36 | AV |
| 7311 | | | | | | | | | |
| 9748 | | | | | | | | | |
| Test Mode:IEEE 802.11n HT40 TX High | | | | | | | | | |
| 4904 | 46.51 | V | 33.98 | 10.22 | 34.25 | 56.46 | 74 | 17.54 | PK |
| 4904 | 34.91 | V | 33.98 | 10.22 | 34.25 | 44.86 | 54 | 9.14 | AV |
| 7356 | / | / | / | / | / | / | / | / | |
| 9808 | / | / | / | / | / | / | / | / | |
| 4904 | 44.50 | H | 33.98 | 10.22 | 34.25 | 54.45 | 74 | 19.55 | PK |
| 4904 | 34.72 | H | 33.98 | 10.22 | 34.25 | 44.67 | 54 | 9.33 | AV |
| 7356 | | | | | | | | | |
| 9808 | | | | | | | | | |

Note:

1, Result = Read level + Antenna factor + cable loss-Amp factor

2, All the other emissions not reported were too low to read and deemed to comply with FCC limit.

# 4. POWER LINE CONDUCTED EMISSION

## 4.1. Test Limits

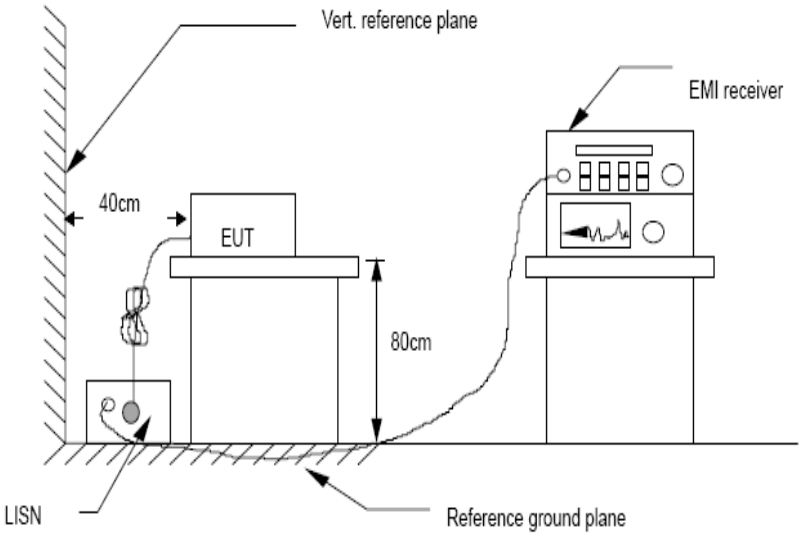
| Frequency | Limits dB(μV) | |
|---|---|---|
| MHz | Quasi-peak Level | Average Level |
| 0.15 -0.50 | 66 -56* | 56 - 46* |
| 0.50 -5.00 | 56 | 46 |
| 5.00 -30.00 | 60 | 50 |

Notes: 1. *Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.
3.The limit decreases in line with the logarithm of the frequency in the rang of 0.15 to 0.50 MHz.

## 4.2. Test Procedure

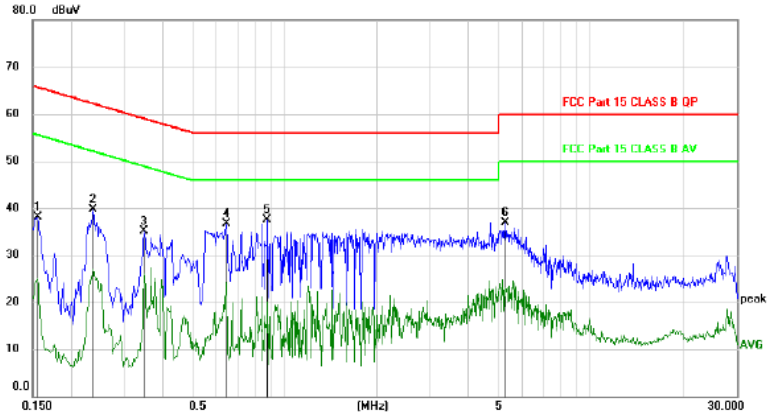
The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.10:2013 on Conducted Emission Measurement.
The bandwidth of test receiver is set at 9 kHz.

## 4.3.Test Setup



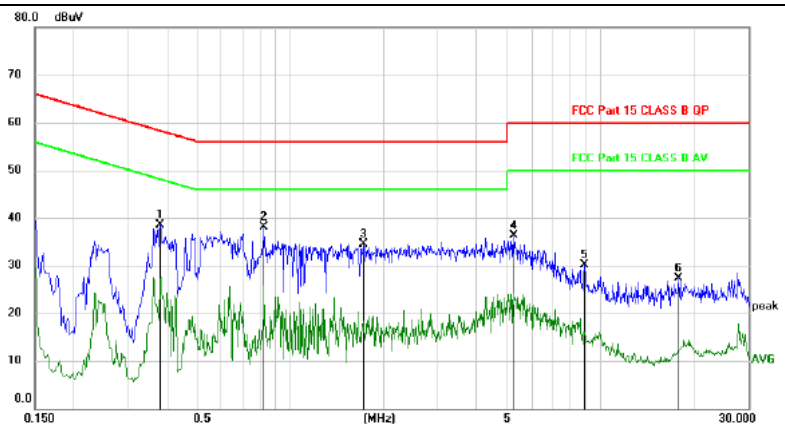
## 4.4.Test Results

| EUT Description | Trail Camera | Model No. | RD1009WF |
|---|---|---|---|
| Temperature | 24℃ | Humidity | 56% |
| Pol | Line | Test date | 2019/10/14 |
| Test Voltage | AC 120V/60Hz | Test mode | 802.11b (2412MHz) |




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | Comment |
| 1 | | 0.1560 | 28.22 | 9.80 | 38.02 | 65.67 | -27.65 | peak | |
| 2 | | 0.2370 | 29.81 | 9.80 | 39.61 | 62.20 | -22.59 | peak | |
| 3 | | 0.3480 | 25.32 | 9.80 | 35.12 | 59.01 | -23.89 | peak | |
| 4 | | 0.6450 | 26.94 | 9.80 | 36.74 | 56.00 | -19.26 | peak | |
| 5 | * | 0.8790 | 27.61 | 9.80 | 37.41 | 56.00 | -18.59 | peak | |
| 6 | | 5.2560 | 27.04 | 9.80 | 36.84 | 60.00 | -23.16 | peak | |

| Pol | Neutral |
|---|---|




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | Comment |
| 1 | | 0.3810 | 28.69 | 9.80 | 38.49 | 58.26 | -19.77 | peak | |
| 2 | * | 0.8220 | 28.27 | 9.80 | 38.07 | 56.00 | -17.93 | peak | |
| 3 | | 1.7190 | 24.83 | 9.73 | 34.56 | 56.00 | -21.44 | peak | |
| 4 | | 5.2590 | 26.49 | 9.80 | 36.29 | 60.00 | -23.71 | peak | |
| 5 | | 8.8950 | 20.29 | 9.80 | 30.09 | 60.00 | -29.91 | peak | |
| 6 | | 17.9040 | 17.41 | 9.80 | 27.21 | 60.00 | -32.79 | peak | |

Note:1. *:Maximum data; x:Over limit; !:over margin.
2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

# 5. CONDUCTED MAXIMUM OUTPUT POWER

## 5.1.Test limits

Please refer section15.247.

Regulation 15.247(b) The limit of Maximum PK Output Power Measurement is 1 W(30dBm)

## 5.2.Test Procedure

Details see the KDB558074 D01 Meas Guidance v05r02

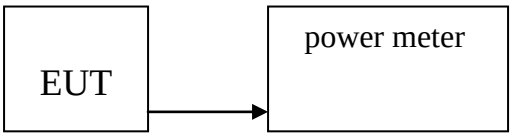
5.2.1 Place the EUT on the table and set it in transmitting mode.

5.2.2 Connected the EUT's antenna port to PK power meter by 20dB attenuator.

5.2.3 Measure out each mode and each bands PK output power of EUT.

Note: The cable loss and attenuator loss were offset into measure device as amplitude offset.

## 5.3.Test Setup




## 5.4.Test Results

PASS

Detailed information please see the following page.

| Mode | Frequency (MHz) | Meas. Peak Level [dBm] | Meas. Average Level [dBm] | Limit (dBm) | Verdict |
|---|---|---|---|---|---|
| 802.11b | 2412 | 17.493 | 15.34 | 30 | Pass |
| 802.11b | 2437 | 18.398 | 16.97 | 30 | Pass |
| 802.11b | 2462 | 18.146 | 15.22 | 30 | Pass |
| 802.11g | 2412 | 14.394 | 12.16 | 30 | Pass |
| 802.11g | 2437 | 15.215 | 13.64 | 30 | Pass |
| 802.11g | 2462 | 15.046 | 12.07 | 30 | Pass |
| 802.11n(HT20) | 2412 | 14.21 | 12.36 | 30 | Pass |
| 802.11n(HT20) | 2437 | 15.16 | 13.21 | 30 | Pass |
| 802.11n(HT20) | 2462 | 14.89 | 12.72 | 30 | Pass |
| 802.11n(HT40) | 2422 | 14.924 | 12.80 | 30 | Pass |
| 802.11n(HT40) | 2437 | 13.7 | 11.16 | 30 | Pass |
| 802.11n(HT40) | 2452 | 13.826 | 11.74 | 30 | Pass |

# 6. POWER SPECTRAL DENSITY

## 6.1.Test limits

6.1.1 Please refer section15.247.

6.1.2 For direct sequence systems, the Average power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.

6.1.3 The direct sequence operating of the hybrid system, with the frequency hopping operation turned off, shall comply with the power density requirements of paragraph (d) of this section.

## 6.2.Test Procedure

Details see the KDB558074 D01 Meas Guidance v05r02

6.2.1 Place the EUT on the table and set it in transmitting mode.

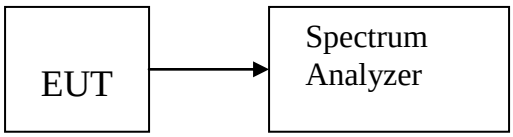
6.2.2 Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

6.2.3 Detector = RMS. Set the spectrum analyzer as RBW = 3kHz(Set the RBW to: 3 kHz≤RBW ≤100 kHz.), VBW = 10kHz(Set the VBW≥3×RBW), span=1.5×DTS bandwidth., detail see the test plot.

6.2.4 Record the max reading.

6.2.5 Repeat the above procedure until the measurements for all frequencies are completed.

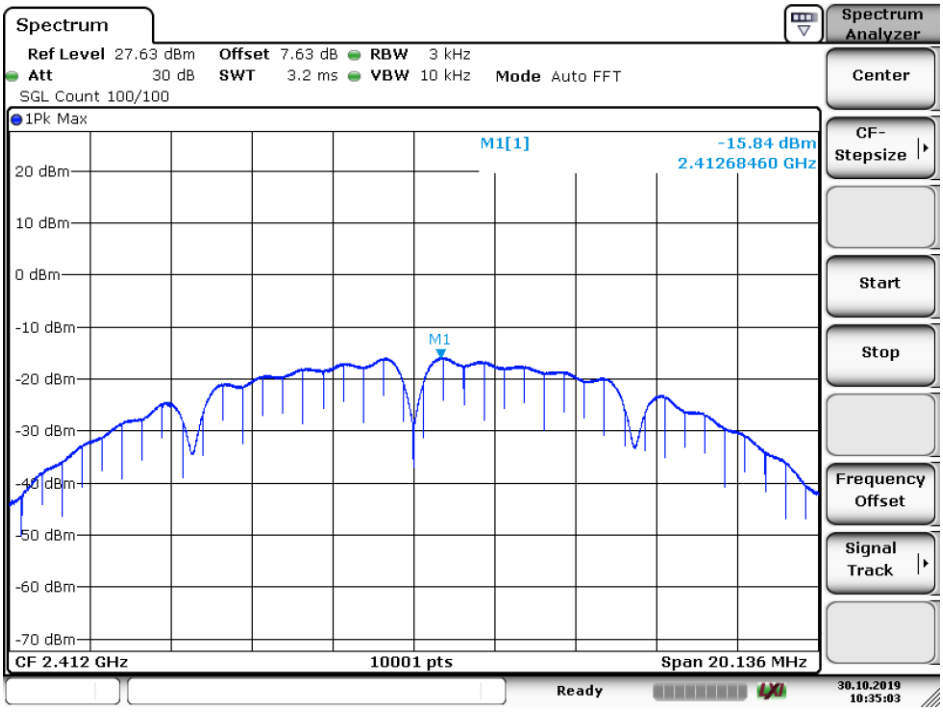
## 6.3.Test Setup



## 6.4.Test Results

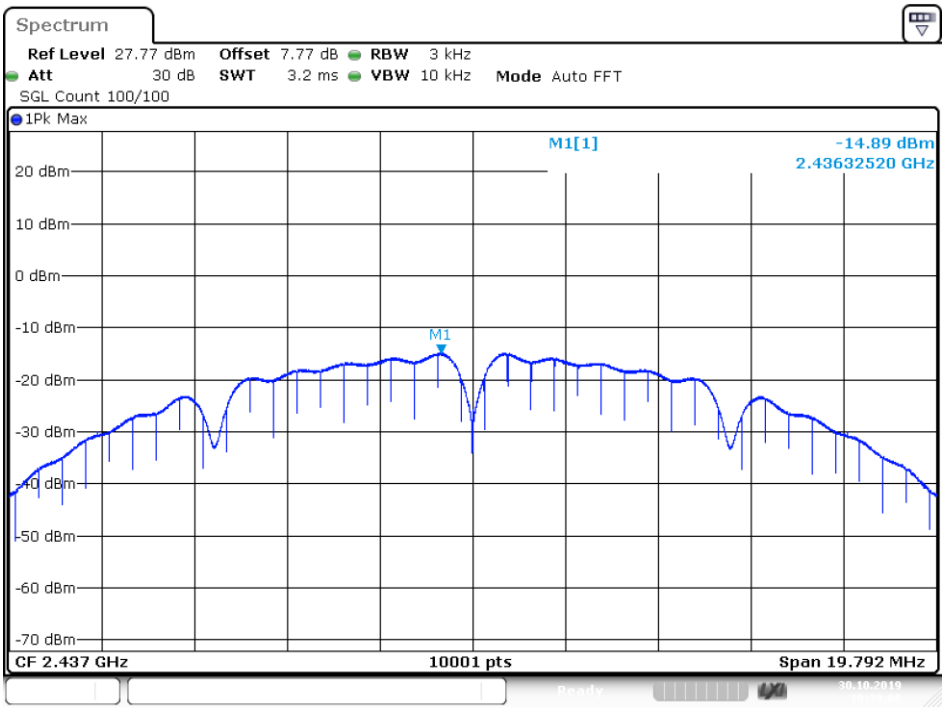
| Condition | Mode | Frequency (MHz) | Antenna | Max PSD (dBm/3kHz) | Limit (dBm/3kHz) | Verdict |
|---|---|---|---|---|---|---|
| NVNT | 802.11b | 2412 | Ant 1 | -15.844 | 8 | Pass |
| NVNT | 802.11b | 2437 | Ant 1 | -14.894 | 8 | Pass |
| NVNT | 802.11b | 2462 | Ant 1 | -15.214 | 8 | Pass |
| NVNT | 802.11g | 2412 | Ant 1 | -17.442 | 8 | Pass |
| NVNT | 802.11g | 2437 | Ant 1 | -16.837 | 8 | Pass |
| NVNT | 802.11g | 2462 | Ant 1 | -16.99 | 8 | Pass |
| NVNT | 802.11n(HT20) | 2412 | Ant 1 | -16.69 | 8 | Pass |
| NVNT | 802.11n(HT20) | 2437 | Ant 1 | -16.03 | 8 | Pass |
| NVNT | 802.11n(HT20) | 2462 | Ant 1 | -16.478 | 8 | Pass |
| NVNT | 802.11n(HT40) | 2422 | Ant 1 | -16.18 | 8 | Pass |
| NVNT | 802.11n(HT40) | 2437 | Ant 1 | -17.516 | 8 | Pass |
| NVNT | 802.11n(HT40) | 2452 | Ant 1 | -18.146 | 8 | Pass |

PSD NVNT 802.11b 2412MHz Ant1



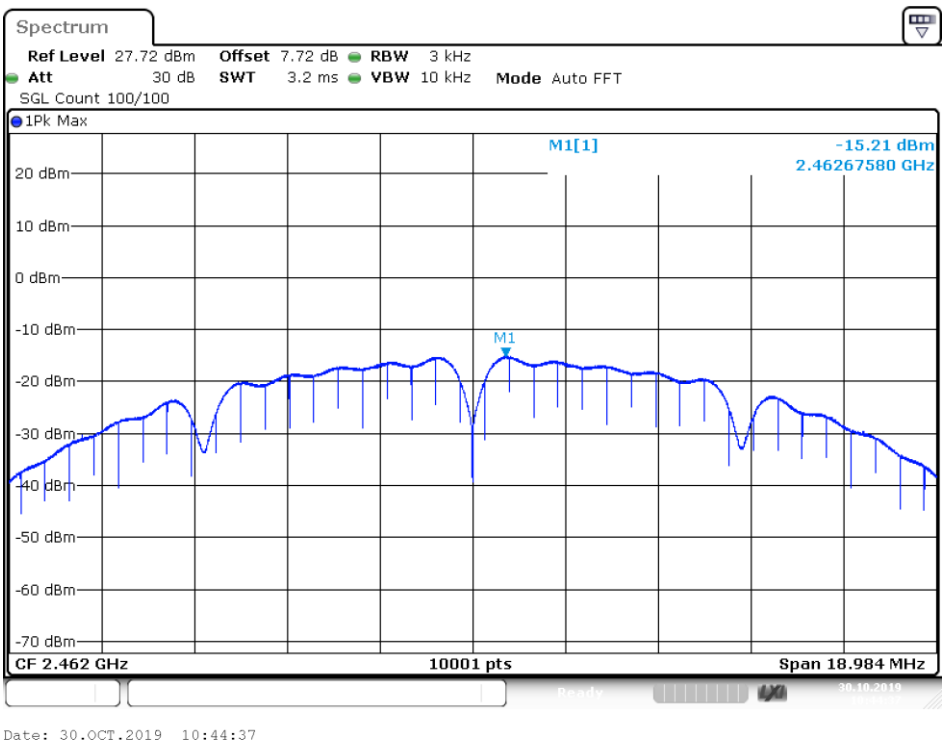

Date: 30.OCT.2019 10:35:03

PSD NVNT 802.11b 2437MHz Ant1



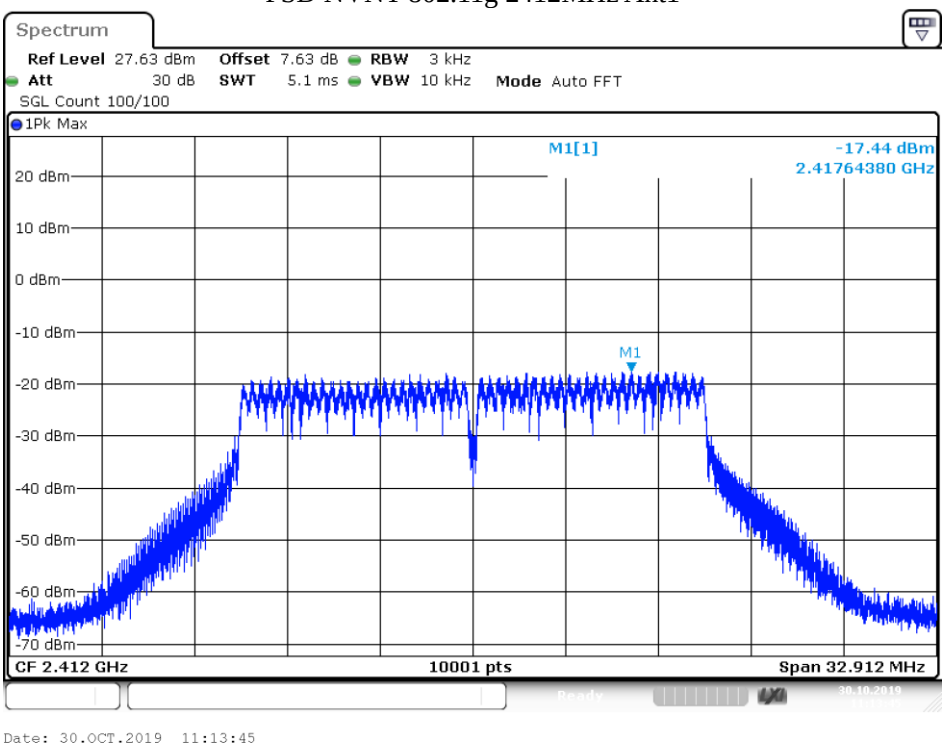

Date: 30.OCT.2019 10:39:08

PSD NVNT 802.11b 2462MHz Ant1



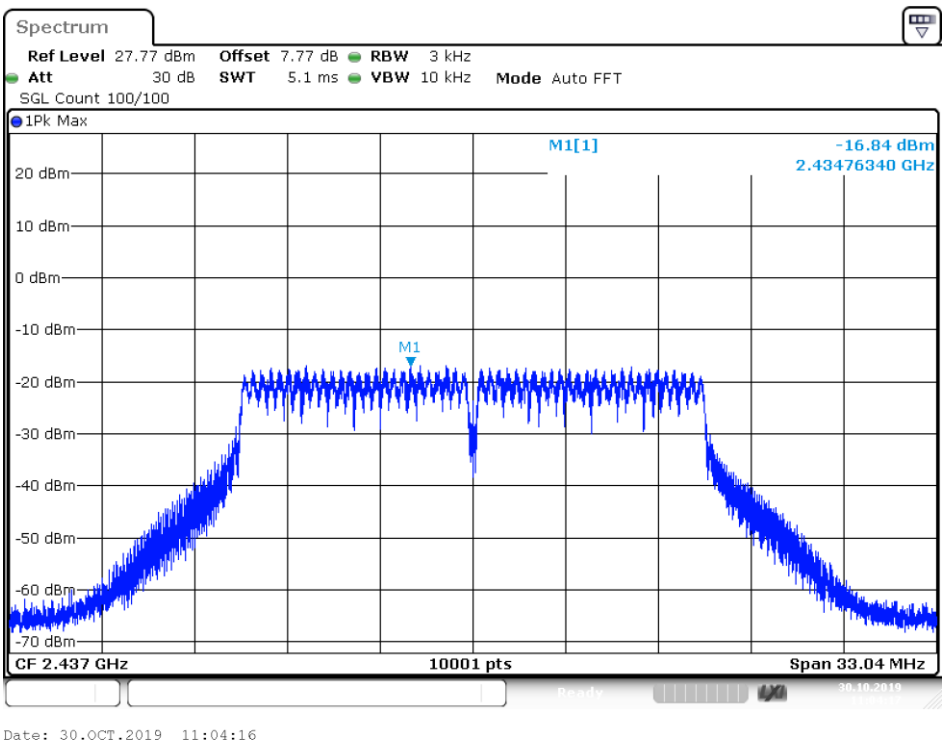

Date: 30.OCT.2019 10:44:37

PSD NVNT 802.11g 2412MHz Ant1

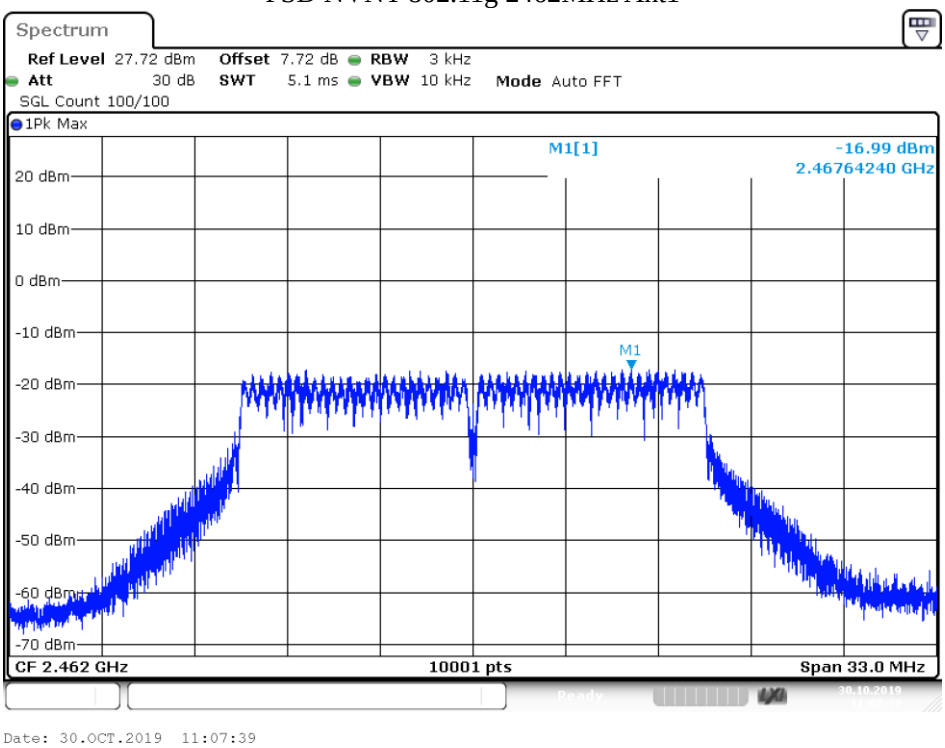



Date: 30.OCT.2019 11:13:45

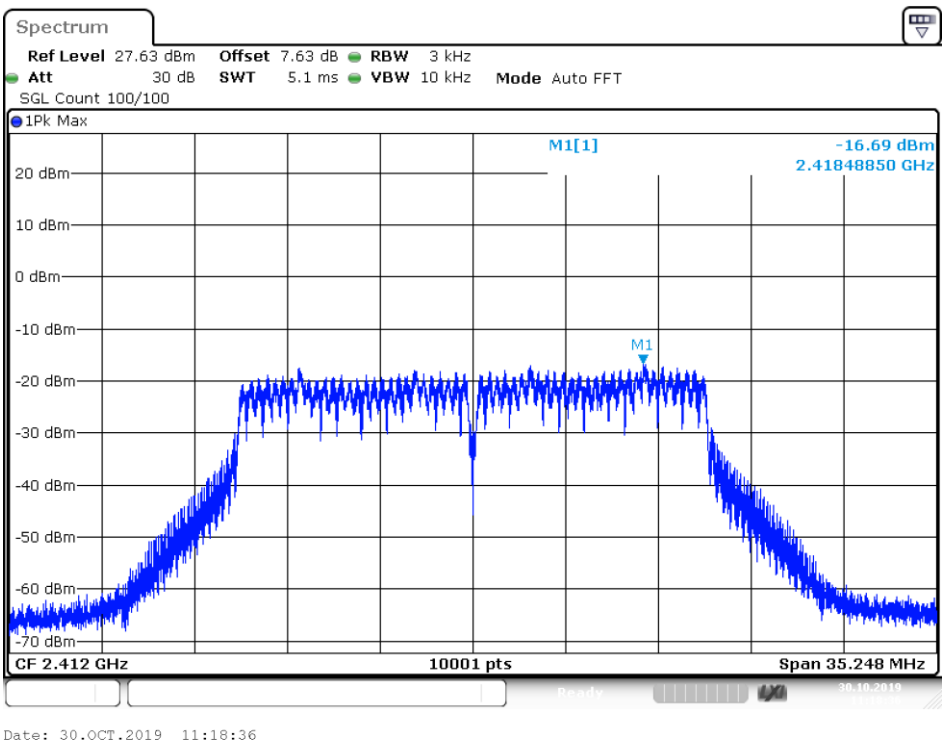
PSD NVNT 802.11g 2437MHz Ant1



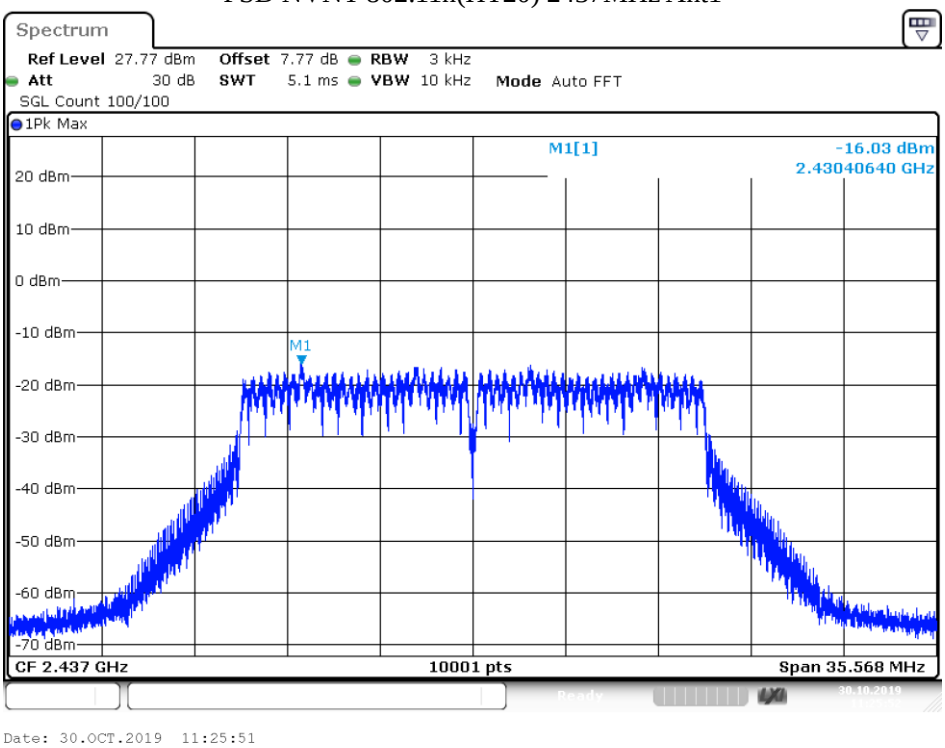

PSD NVNT 802.11g 2462MHz Ant1



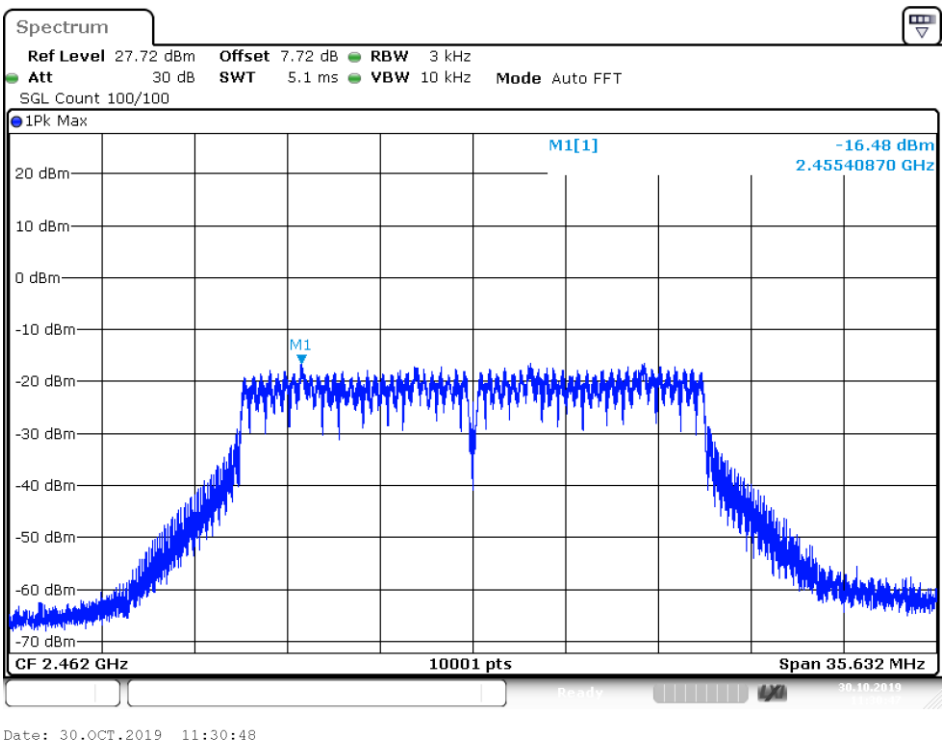

PSD NVNT 802.11n(HT20) 2412MHz Ant1




PSD NVNT 802.11n(HT20) 2437MHz Ant1

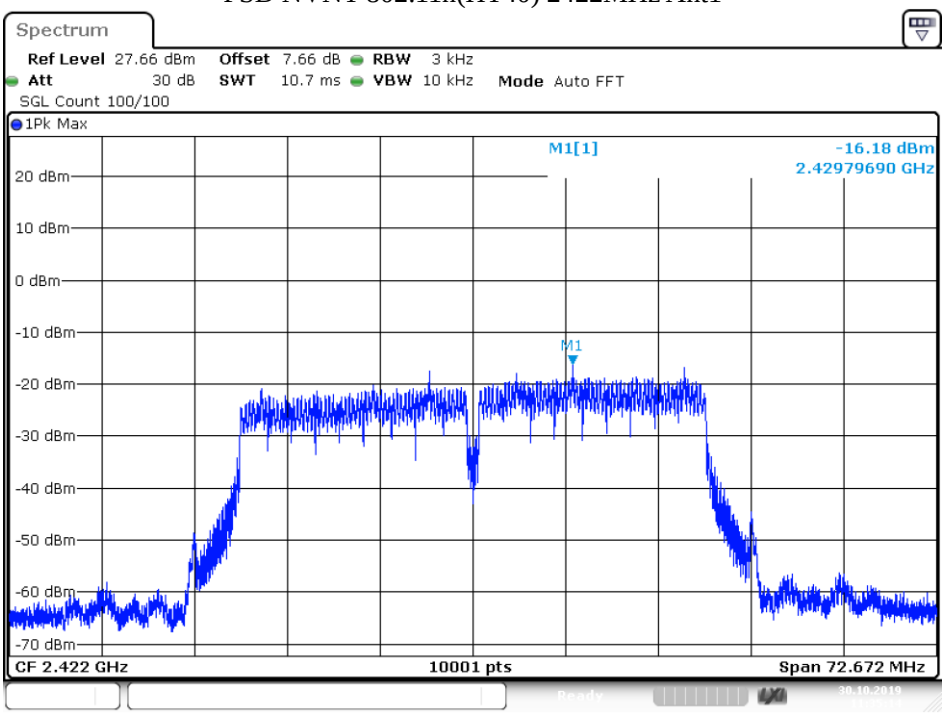



PSD NVNT 802.11n(HT20) 2462MHz Ant1



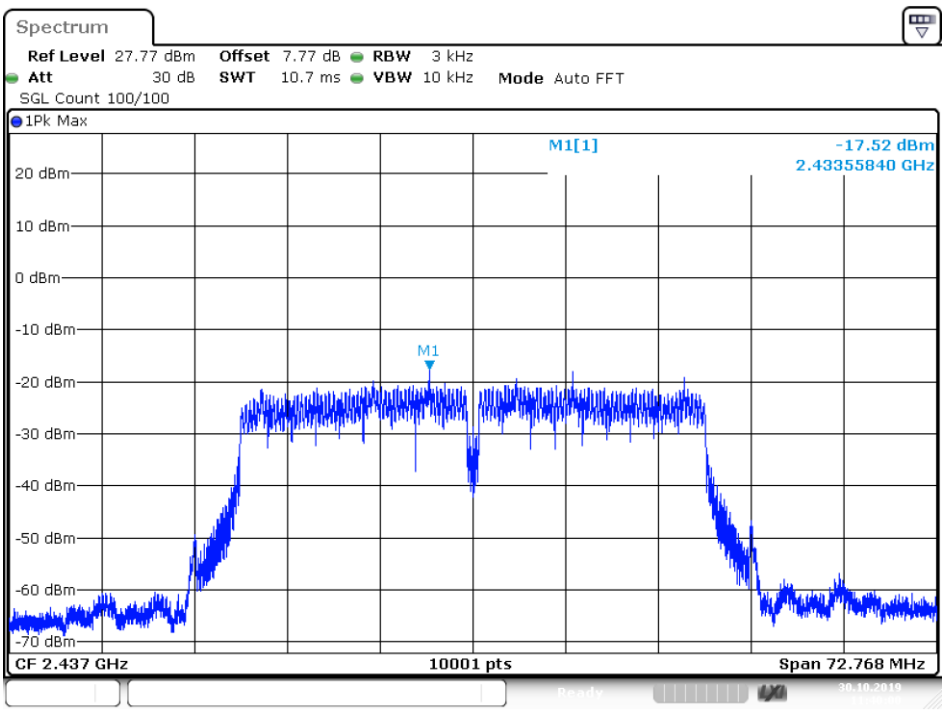

Date: 30.OCT.2019 11:30:48

PSD NVNT 802.11n(HT40) 2422MHz Ant1



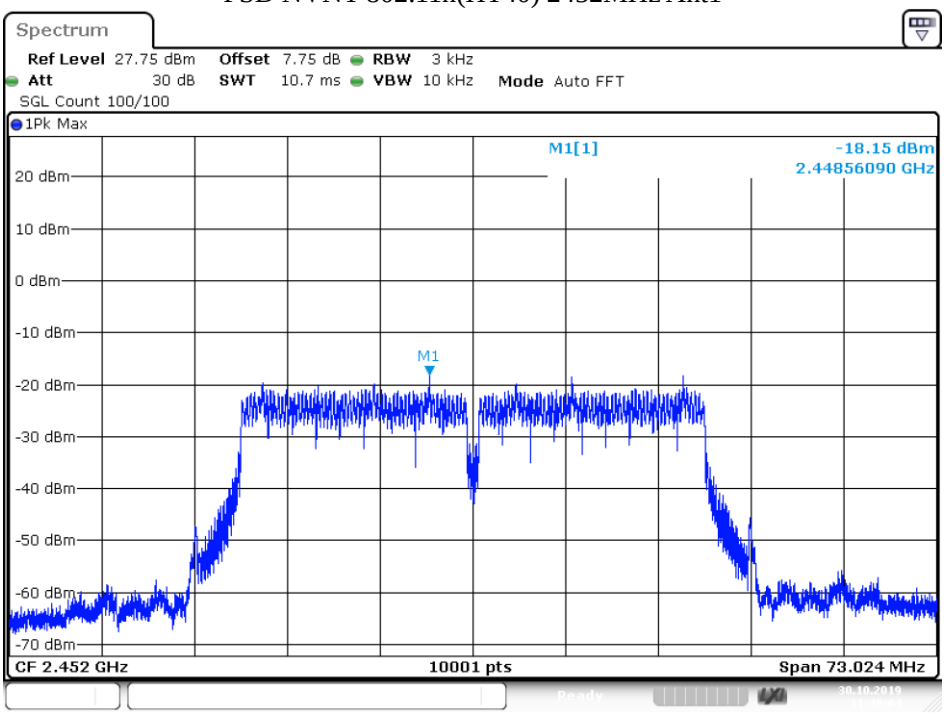

Date: 30.OCT.2019 11:35:14

PSD NVNT 802.11n(HT40) 2437MHz Ant1




Date: 30.OCT.2019 11:40:00

PSD NVNT 802.11n(HT40) 2452MHz Ant1




Date: 30.OCT.2019 11:49:03

# 7. BANDWIDTH

## 7.1.Test limits

Please refer section15.247
For direct sequence systems, the minimum 6dB bandwidth shall be at least 500 kHz.

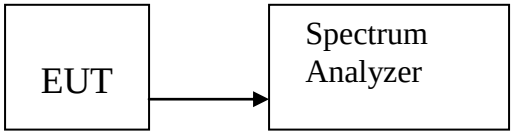
## 7.2.Test Procedure

Details see the KDB558074 D01 Meas Guidance v05r02

a) The bandwidth is measured at an amplitude level reduced 20dB from the reference level. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.

b) The test receiver set RBW = 100kHz, VBW⩾3*RBW =300kHz, Peak Detector, Sweep time set auto, detail see the test plot.

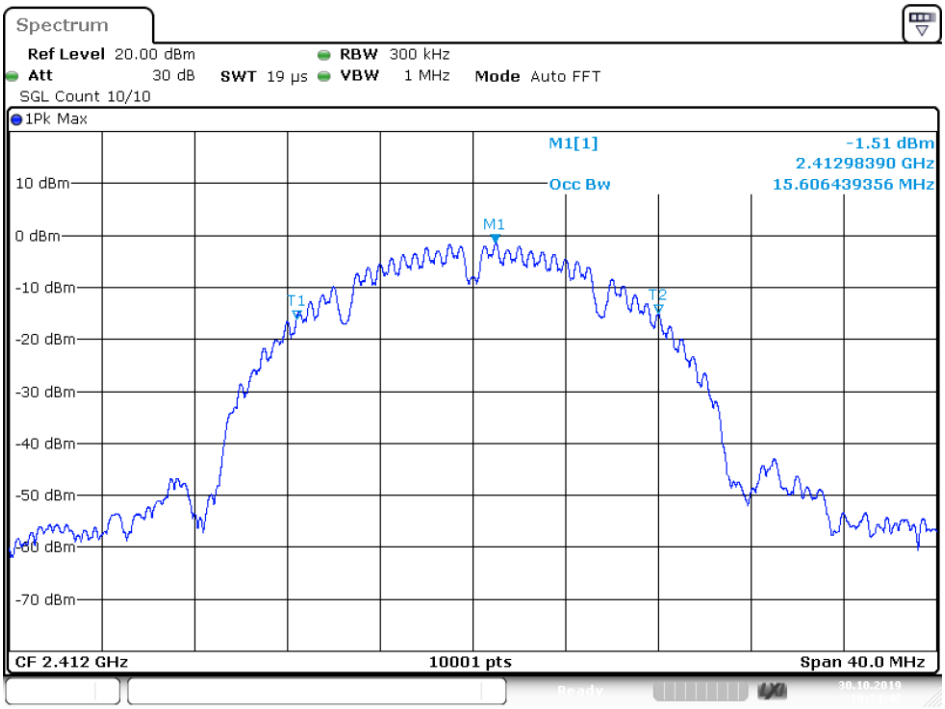
## 7.3.Test Setup




## 7.4.Test Results

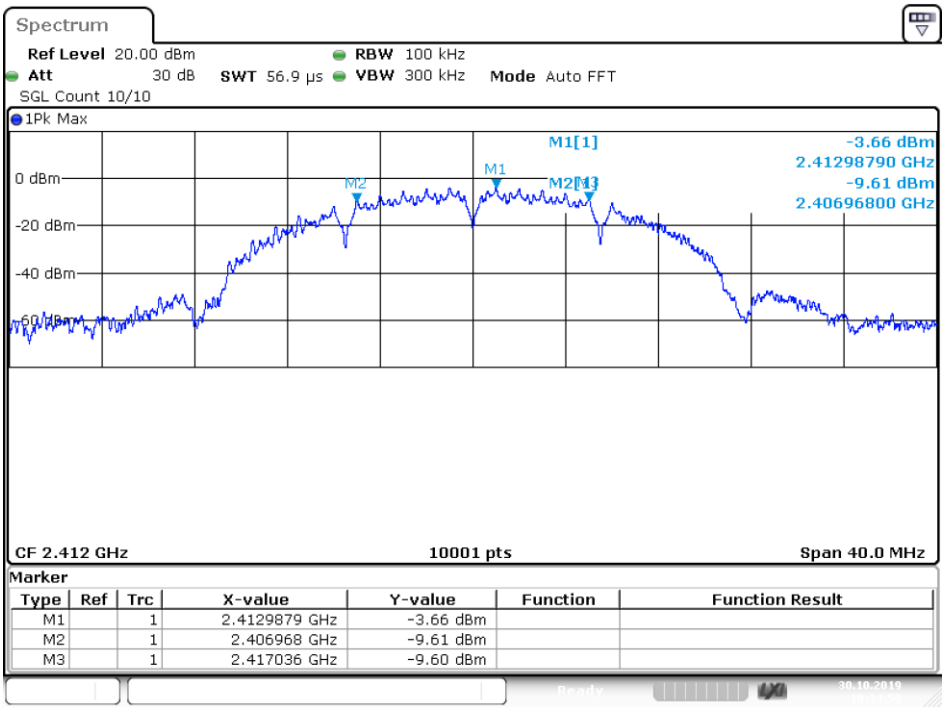
| Condition | Mode | Frequency (MHz) | 99% OBW (MHz) | -6 dB Bandwidth (MHz) | Limit -6 dB Bandwidth (MHz) | Verdict |
|---|---|---|---|---|---|---|
| NVNT | 802.11b | 2412 | 15.6064 | 10.068 | 0.5 | Pass |
| NVNT | 802.11b | 2437 | 15.2705 | 9.896 | 0.5 | Pass |
| NVNT | 802.11b | 2462 | 15.3265 | 9.492 | 0.5 | Pass |
| NVNT | 802.11g | 2412 | 16.4904 | 16.456 | 0.5 | Pass |
| NVNT | 802.11g | 2437 | 16.5223 | 16.52 | 0.5 | Pass |
| NVNT | 802.11g | 2462 | 16.6423 | 16.5 | 0.5 | Pass |
| NVNT | 802.11n(HT20) | 2412 | 17.7222 | 17.624 | 0.5 | Pass |
| NVNT | 802.11n(HT20) | 2437 | 17.6262 | 17.784 | 0.5 | Pass |
| NVNT | 802.11n(HT20) | 2462 | 17.8902 | 17.816 | 0.5 | Pass |
| NVNT | 802.11n(HT40) | 2422 | 35.9964 | 36.336 | 0.5 | Pass |
| NVNT | 802.11n(HT40) | 2437 | 36.1324 | 36.384 | 0.5 | Pass |
| NVNT | 802.11n(HT40) | 2452 | 36.3084 | 36.512 | 0.5 | Pass |

OBW NVNT 802.11b 2412MHz Ant1




Date: 30.OCT.2019 10:34:48

-6 dB BW NVNT 802.11b 2412MHz Ant1

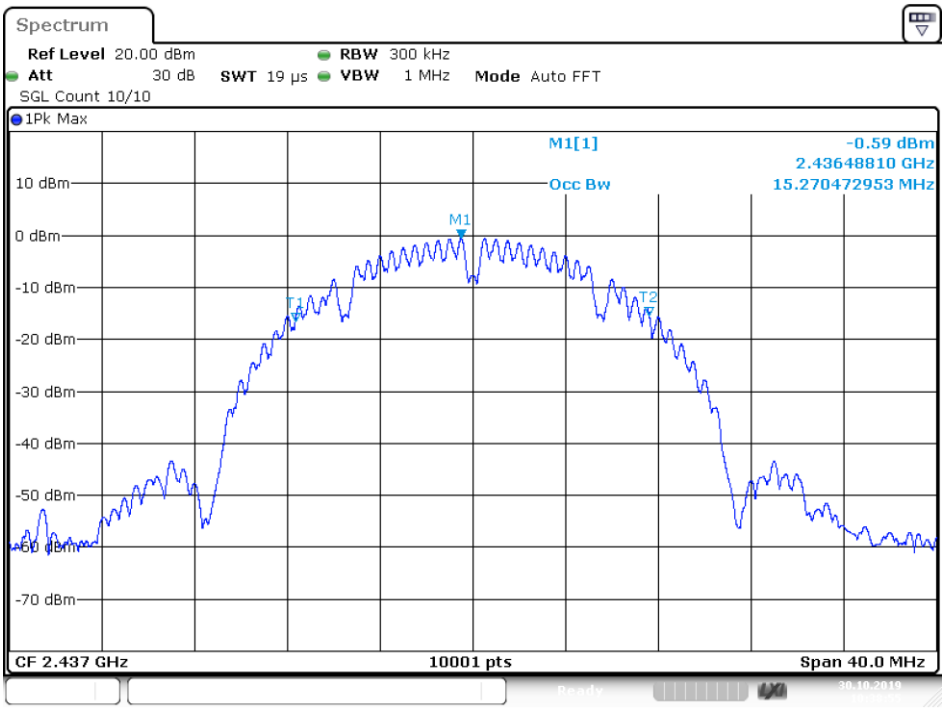



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.4129879 GHz | -3.66 dBm | | |
| M2 | | 1 | 2.406968 GHz | -9.61 dBm | | |
| M3 | | 1 | 2.417036 GHz | -9.60 dBm | | |

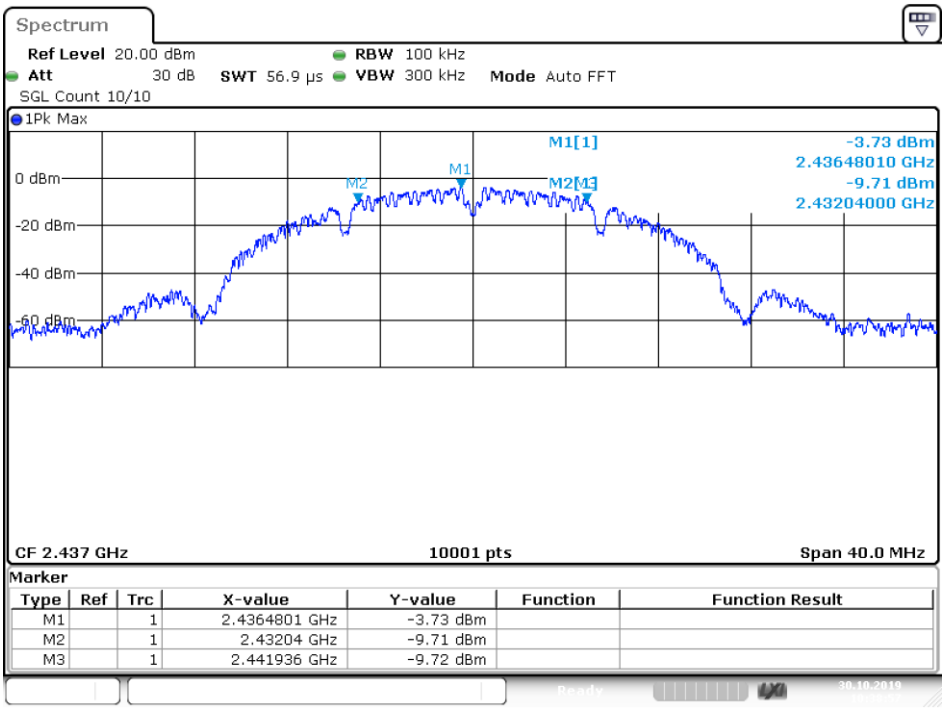
Date: 30.OCT.2019 10:34:50

OBW NVNT 802.11b 2437MHz Ant1



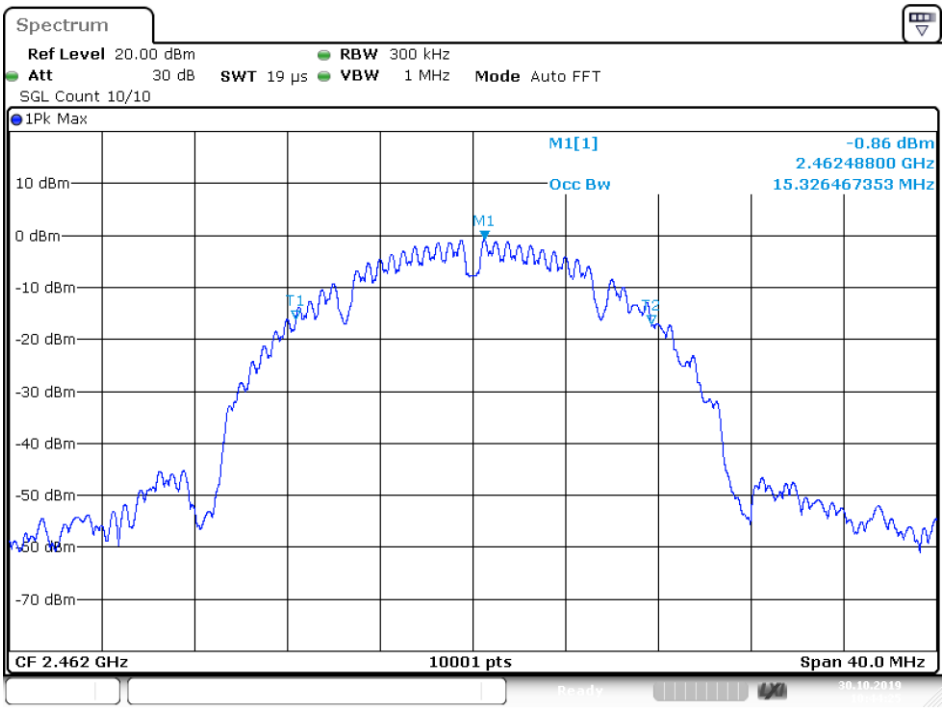

Date: 30.OCT.2019 10:38:55

-6 dB BW NVNT 802.11b 2437MHz Ant1



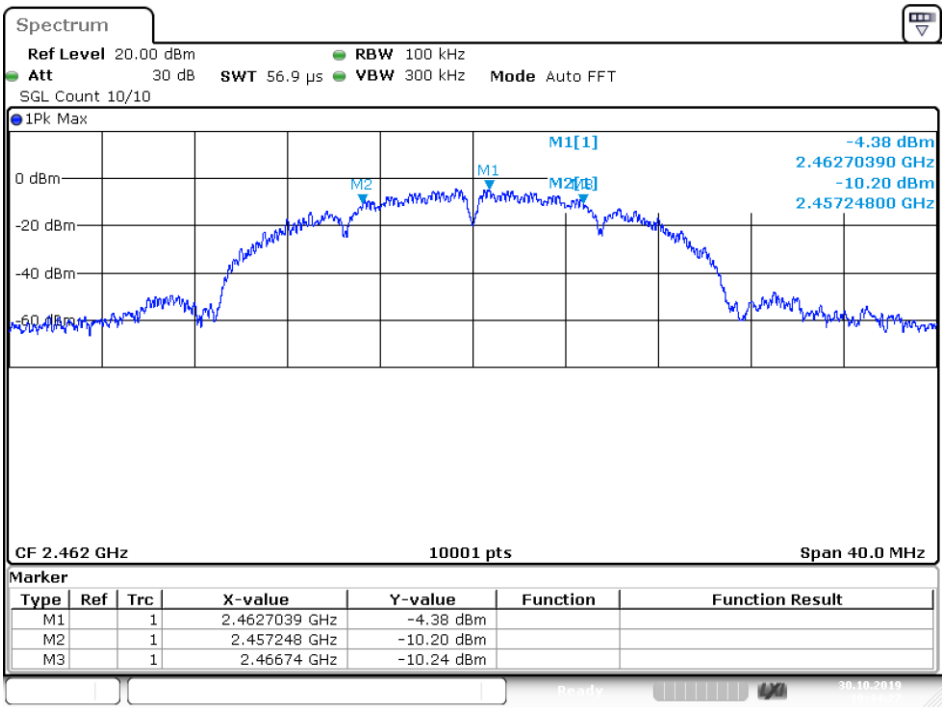

Date: 30.OCT.2019 10:38:57

OBW NVNT 802.11b 2462MHz Ant1



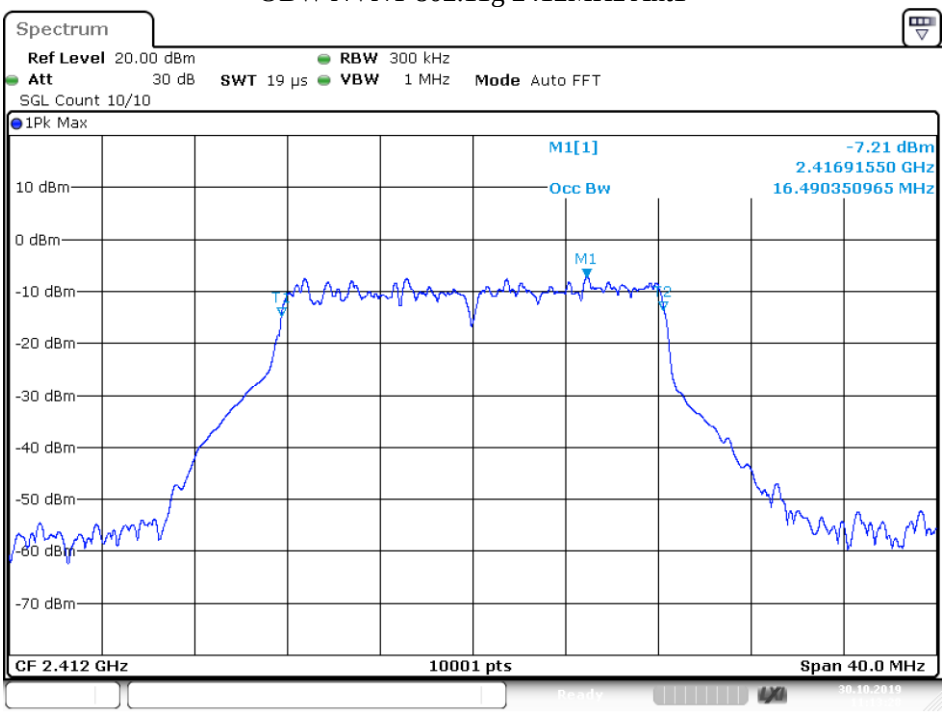

Date: 30.OCT.2019 10:44:25

-6 dB BW NVNT 802.11b 2462MHz Ant1



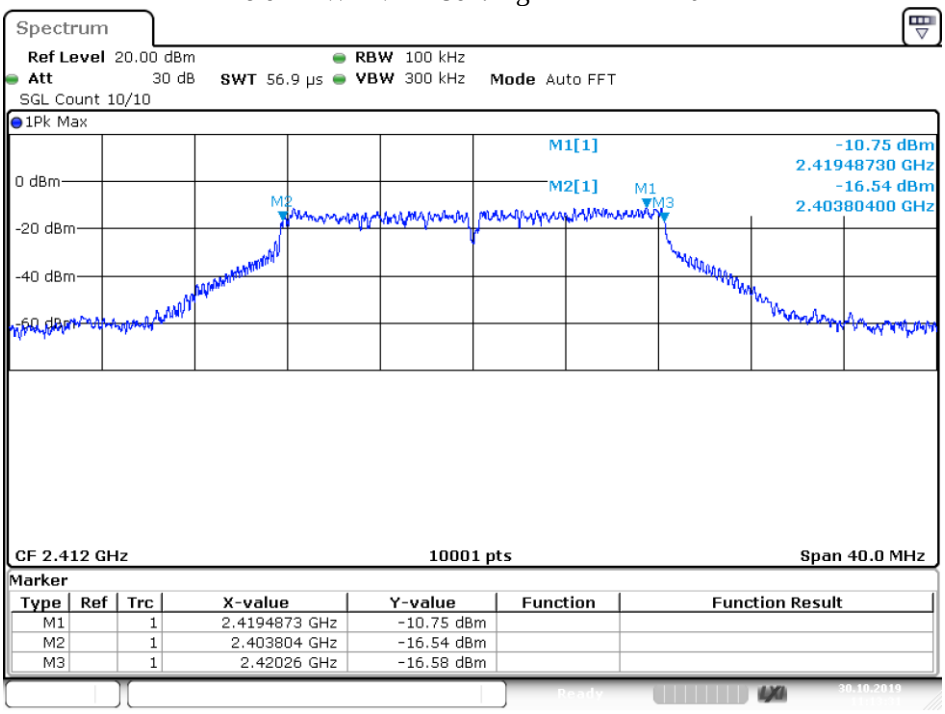

Date: 30.OCT.2019 10:44:27

OBW NVNT 802.11g 2412MHz Ant1



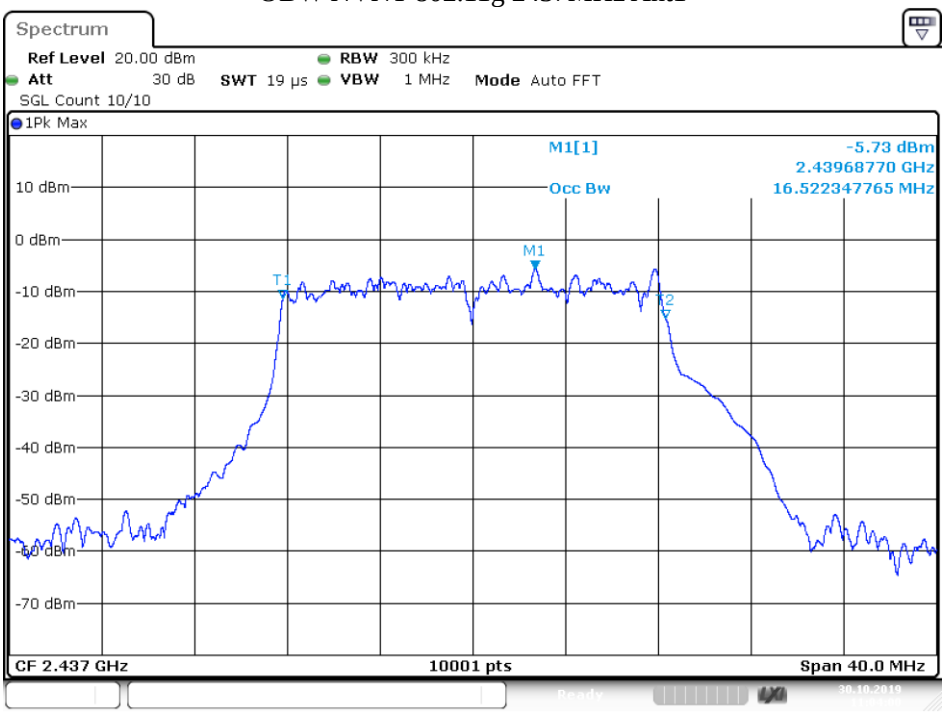

Date: 30.OCT.2019 11:13:28

-6 dB BW NVNT 802.11g 2412MHz Ant1



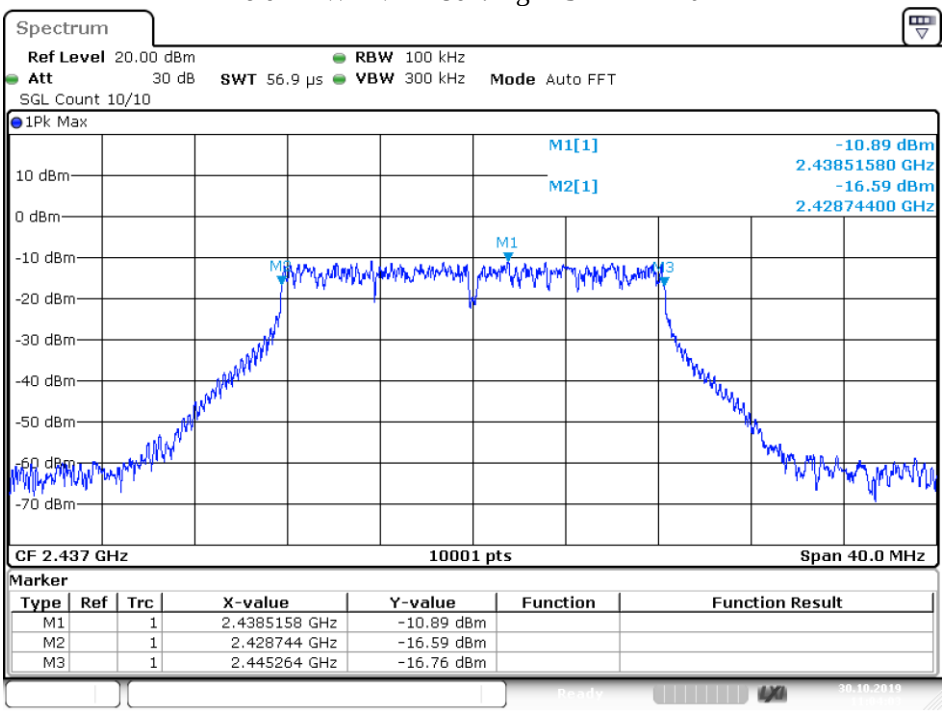

Date: 30.OCT.2019 11:13:31

OBW NVNT 802.11g 2437MHz Ant1



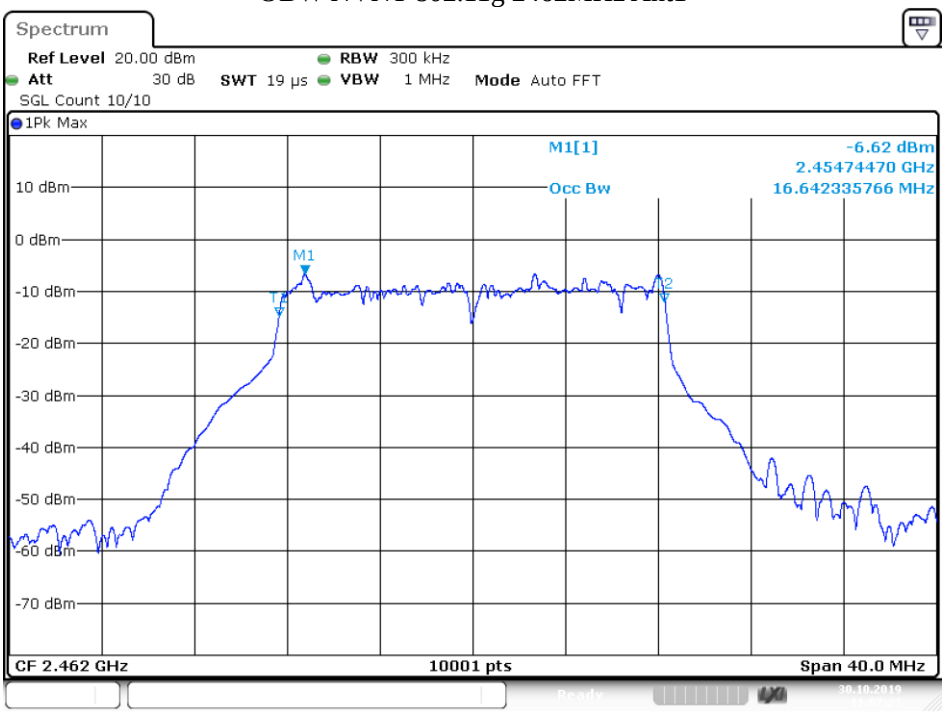

Date: 30.OCT.2019 11:04:00

-6 dB BW NVNT 802.11g 2437MHz Ant1



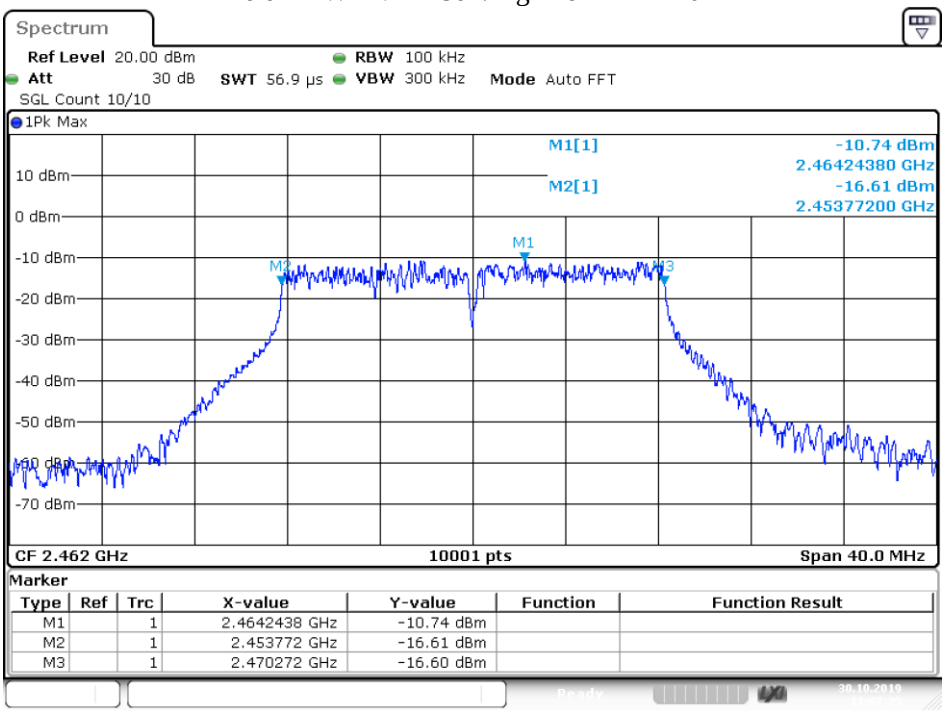

Date: 30.OCT.2019 11:04:03

OBW NVNT 802.11g 2462MHz Ant1




Date: 30.OCT.2019 11:07:23

-6 dB BW NVNT 802.11g 2462MHz Ant1

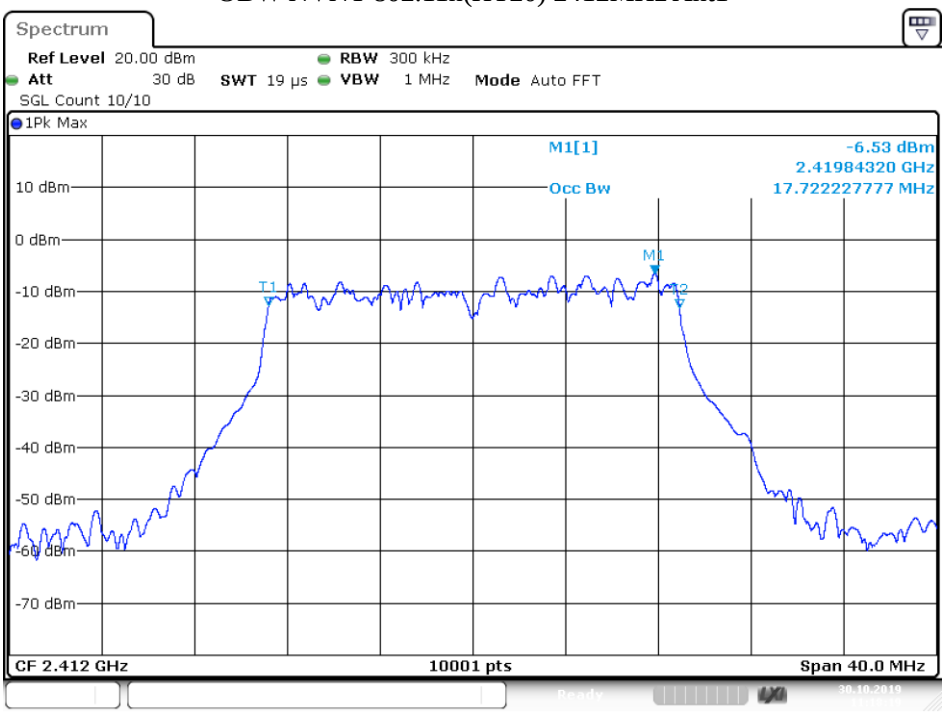



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.4642438 GHz | -10.74 dBm | | |
| M2 | | 1 | 2.453772 GHz | -16.61 dBm | | |
| M3 | | 1 | 2.470272 GHz | -16.60 dBm | | |

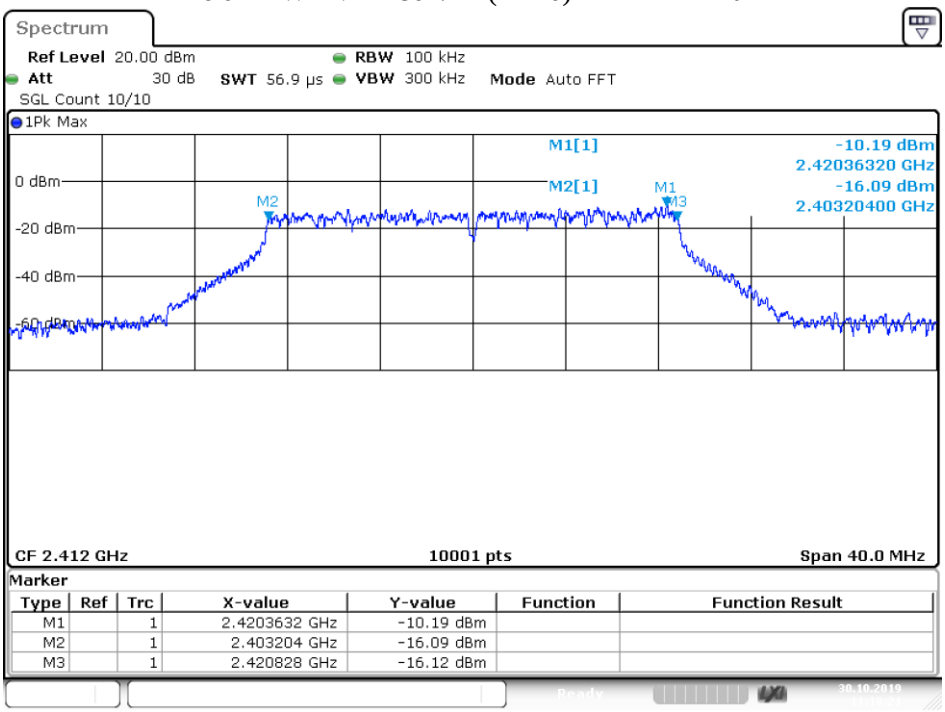
Date: 30.OCT.2019 11:07:25

OBW NVNT 802.11n(HT20) 2412MHz Ant1



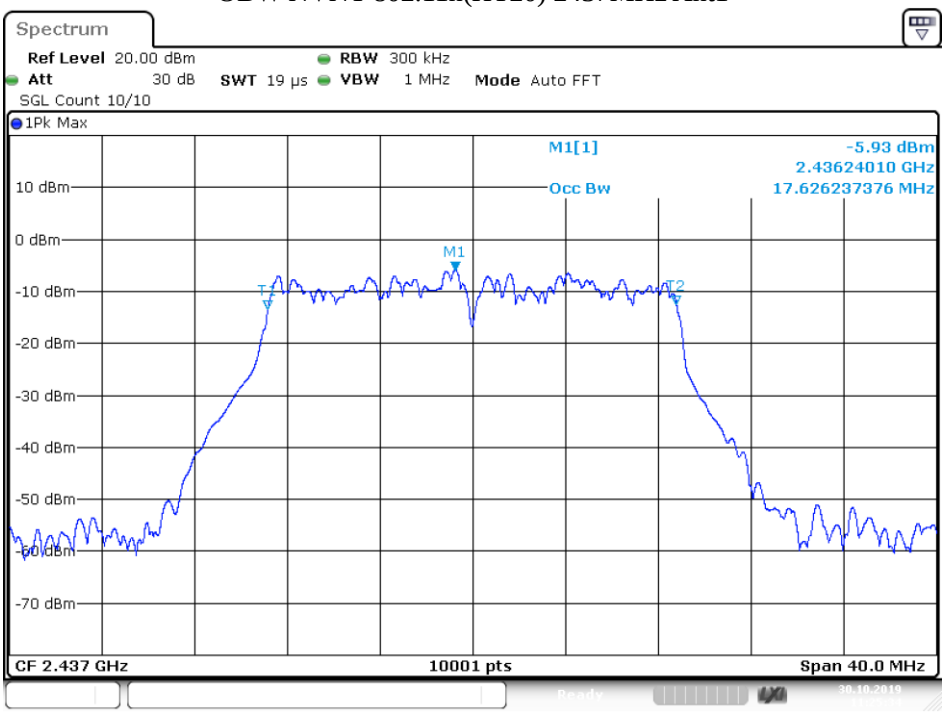

Date: 30.OCT.2019 11:18:19

-6 dB BW NVNT 802.11n(HT20) 2412MHz Ant1



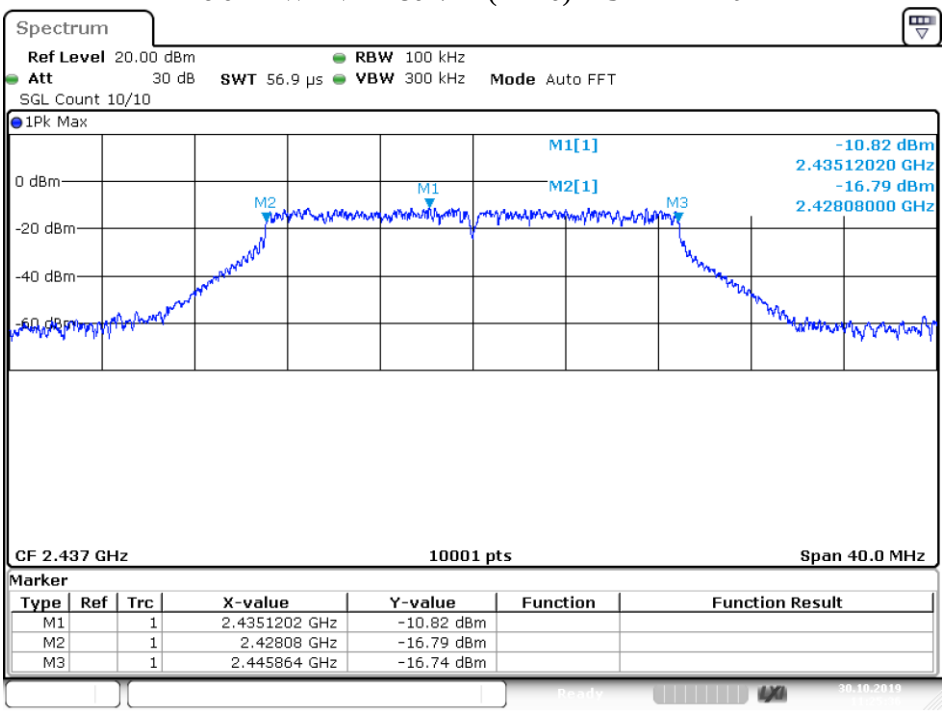

Date: 30.OCT.2019 11:18:21

OBW NVNT 802.11n(HT20) 2437MHz Ant1




Date: 30.OCT.2019 11:25:34

-6 dB BW NVNT 802.11n(HT20) 2437MHz Ant1

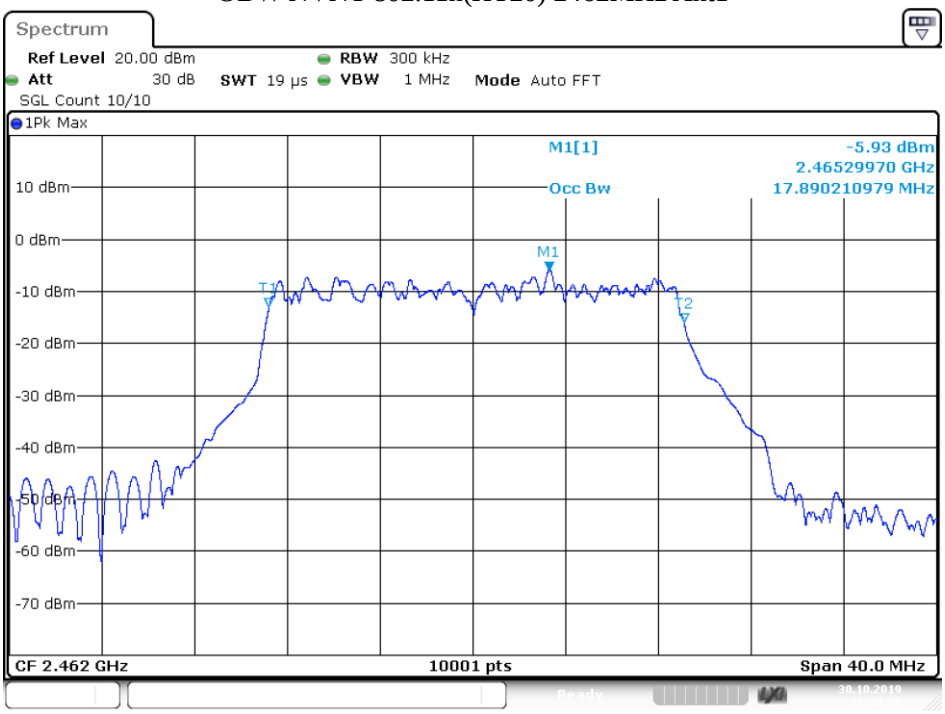



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.4351202 GHz | -10.82 dBm | | |
| M2 | | 1 | 2.42808 GHz | -16.79 dBm | | |
| M3 | | 1 | 2.445864 GHz | -16.74 dBm | | |

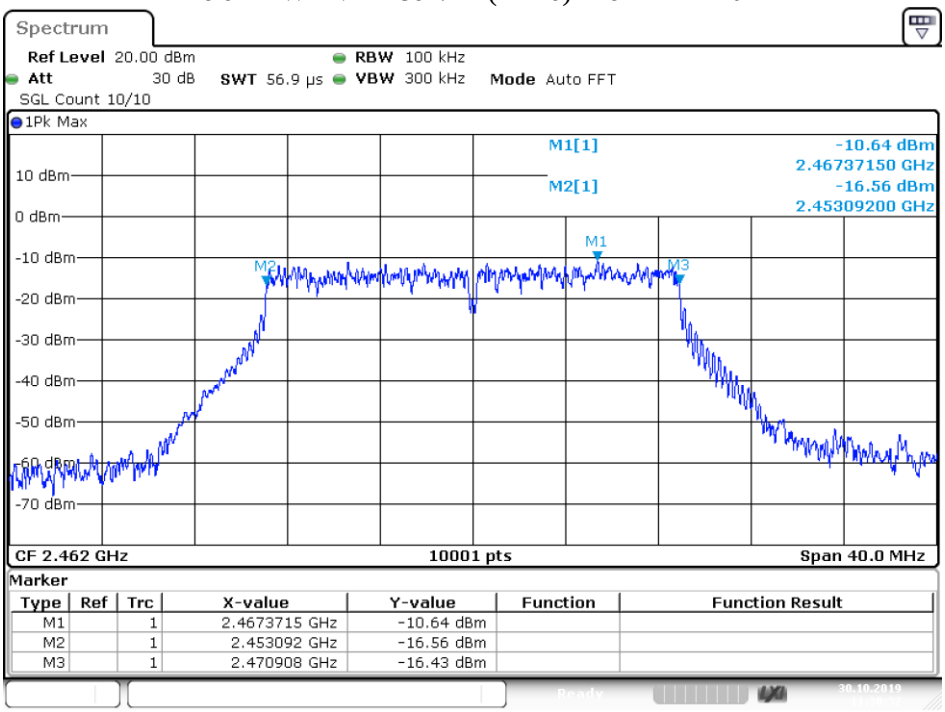
Date: 30.OCT.2019 11:25:36

OBW NVNT 802.11n(HT20) 2462MHz Ant1




Date: 30.OCT.2019 11:30:30

-6 dB BW NVNT 802.11n(HT20) 2462MHz Ant1

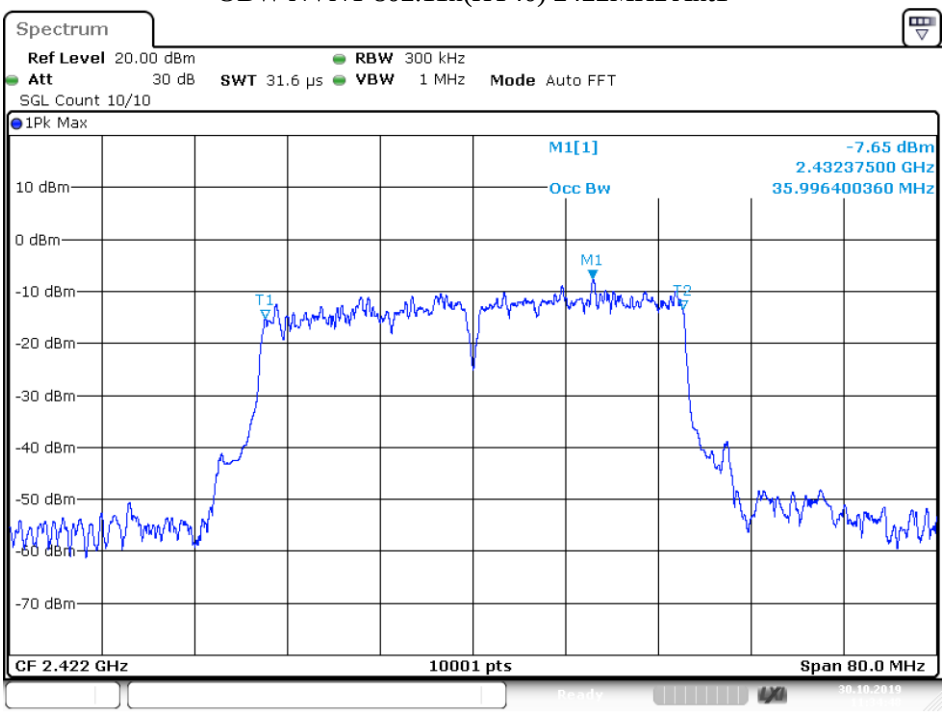



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.4673715 GHz | -10.64 dBm | | |
| M2 | | 1 | 2.453092 GHz | -16.56 dBm | | |
| M3 | | 1 | 2.470908 GHz | -16.43 dBm | | |

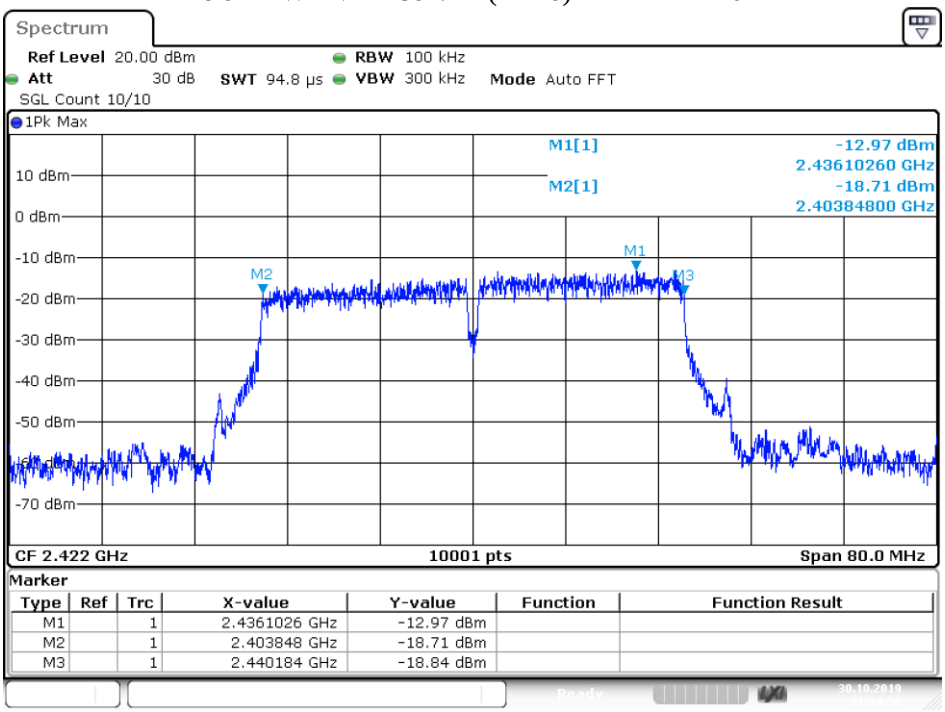
Date: 30.OCT.2019 11:30:32

OBW NVNT 802.11n(HT40) 2422MHz Ant1




Date: 30.OCT.2019 11:34:47

-6 dB BW NVNT 802.11n(HT40) 2422MHz Ant1

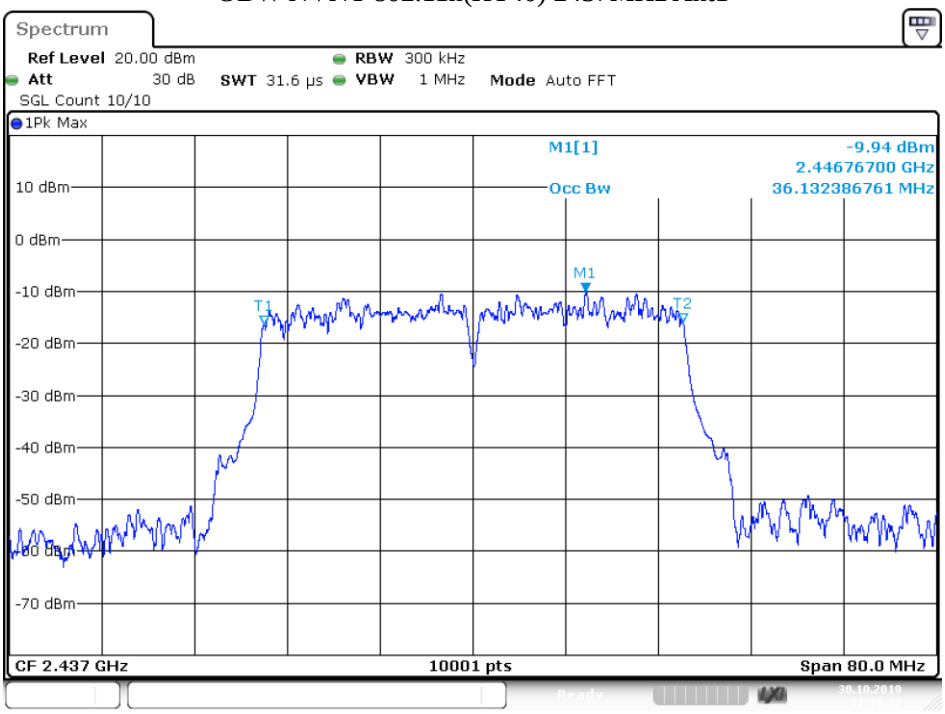



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.4361026 GHz | -12.97 dBm | | |
| M2 | | 1 | 2.403848 GHz | -18.71 dBm | | |
| M3 | | 1 | 2.440184 GHz | -18.84 dBm | | |

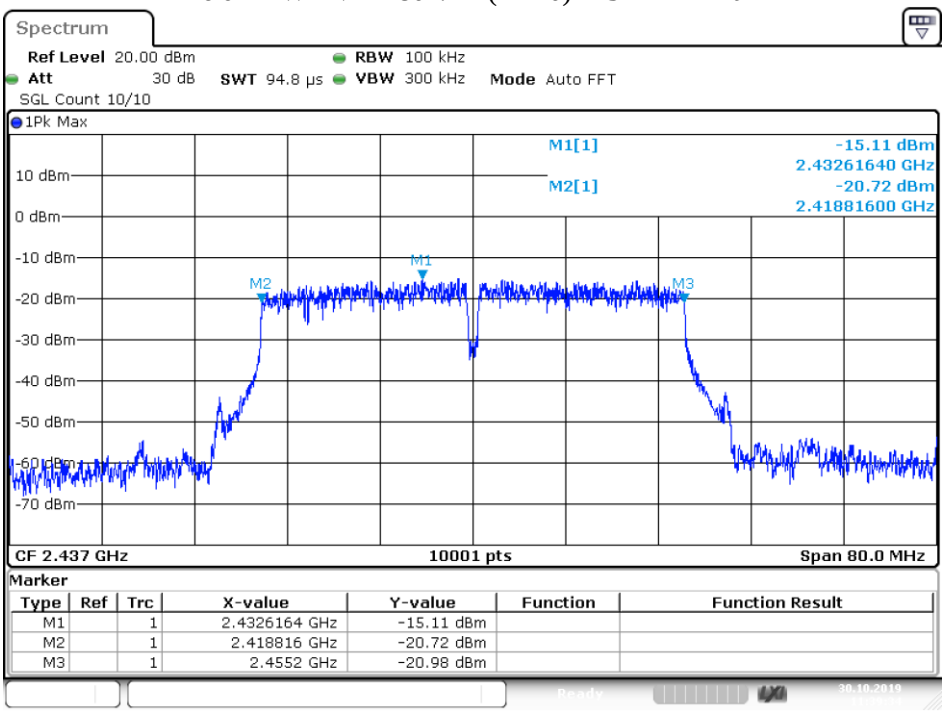
Date: 30.OCT.2019 11:34:50

OBW NVNT 802.11n(HT40) 2437MHz Ant1



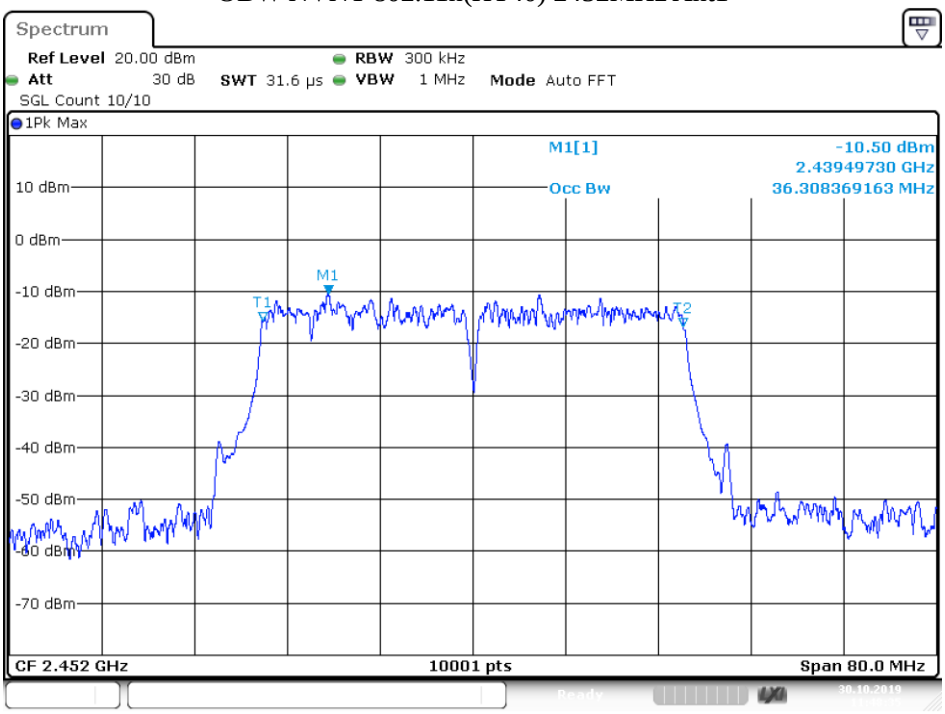

Date: 30.OCT.2019 11:39:31

-6 dB BW NVNT 802.11n(HT40) 2437MHz Ant1



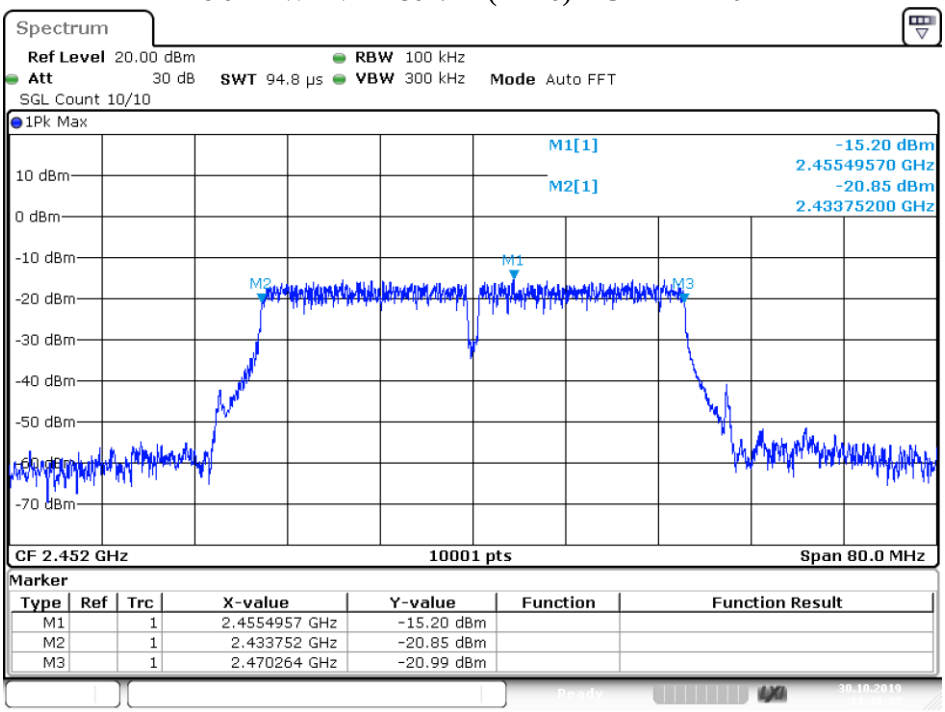

Date: 30.OCT.2019 11:39:34

OBW NVNT 802.11n(HT40) 2452MHz Ant1




Date: 30.OCT.2019 11:48:34

-6 dB BW NVNT 802.11n(HT40) 2452MHz Ant1




Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.4554957 GHz | -15.20 dBm | | |
| M2 | | 1 | 2.433752 GHz | -20.85 dBm | | |
| M3 | | 1 | 2.470264 GHz | -20.99 dBm | | |

Date: 30.OCT.2019 11:48:36

# 8. BAND EDGE CHECK

## 8.1.Test limits

Please refer section15.247

All the lower and upper band-edges emissions appearing within 2310MHz to 2390MHz and 2483.5MHz to 2500MHz restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions outside operation frequency band 2400MHz to 2483.5MHz and 5725MHz to 5850MHz shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

## 8.2.Test Procedure

Details see the KDB558074 D01 Meas Guidance v05r02

8.2.1 Put the EUT on a 1.5m high table, power on the EUT. Emissions were scanned and measured rotating the EUT to 360 degrees, Find the maximum Emission

8.2.2 Check the spurious emissions out of band.

8.2.3 RBW 1MHz, VBW 3MHz, peak detector for peak value , RBW 1MHz ,VBW 10Hz , RMS detector for AV value.

## 8.3.Test Setup

Same as 5.2.2.

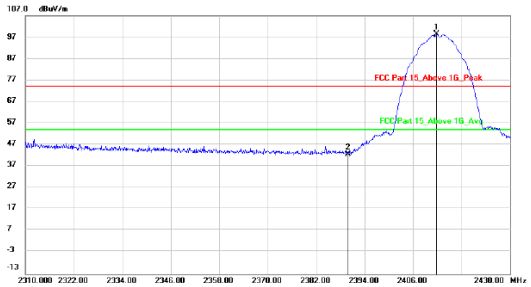
## 8.4.Test Results

PASS.

Detailed information please see the following page.

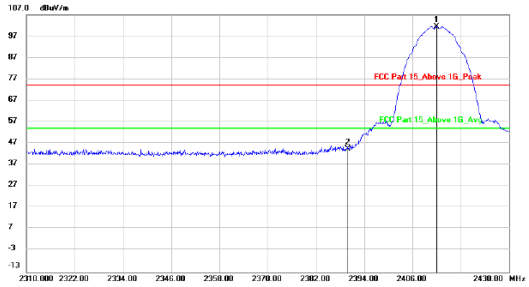
*Test Mode: IEEE 802.11b-Low*

*Polarization: Vertical*




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Margin | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | * | 2411.880 | 101.89 | -3.40 | 98.49 | 74.00 | 24.49 | peak | | | |
| 2 | | 2390.000 | 46.20 | -3.40 | 42.80 | 74.00 | -31.20 | peak | | | |

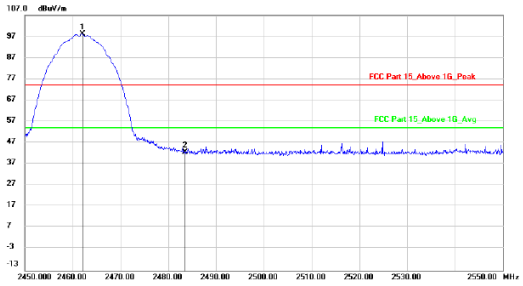
*Polarization: Horizontal*




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Margin | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | * | 2412.000 | 104.82 | -3.40 | 101.42 | 74.00 | 27.42 | peak | | | |
| 2 | | 2390.000 | 47.99 | -3.40 | 44.59 | 74.00 | -29.41 | peak | | | |

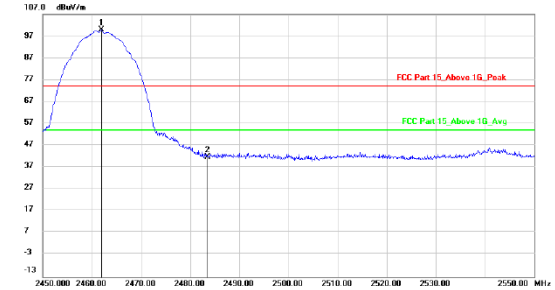
*Test Mode: IEEE 802.11b-High*

*Polarization: Vertical*




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Margin | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | * | 2462.000 | 101.52 | -3.39 | 98.13 | 74.00 | 24.13 | peak | | | |
| 2 | | 2483.500 | 45.93 | -3.38 | 42.55 | 74.00 | -31.45 | peak | | | |

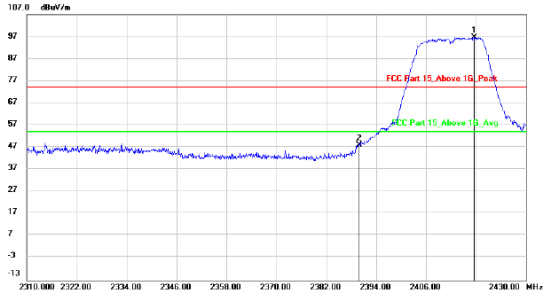
*Polarization: Horizontal*




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Margin | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | * | 2461.900 | 103.23 | -3.39 | 99.84 | 74.00 | 25.84 | peak | | | |
| 2 | | 2483.500 | 45.19 | -3.38 | 41.81 | 74.00 | -32.19 | peak | | | |

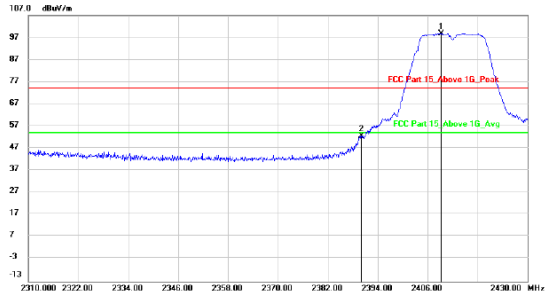
*Test Mode: IEEE 802.11g-Low*

*Polarization: Vertical*




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Margin | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | * | 2417.520 | 100.05 | -3.41 | 96.64 | 74.00 | 22.64 | peak | | | |
| 2 | | 2390.000 | 51.35 | -3.40 | 47.95 | 74.00 | -26.05 | peak | | | |

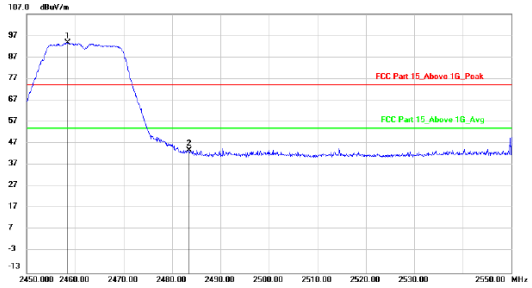
*Polarization: Horizontal*




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Margin | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | * | 2409.240 | 102.25 | -3.40 | 98.85 | 74.00 | 24.85 | peak | | | |
| 2 | | 2390.000 | 55.82 | -3.40 | 52.42 | 74.00 | -21.58 | peak | | | |

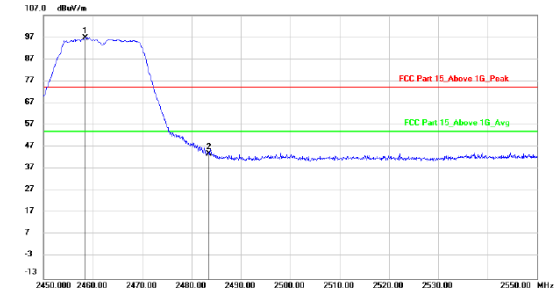
*Test Mode: IEEE 802.11g-High*

*Polarization: Vertical*




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Margin | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | * | 2458.500 | 96.92 | -3.39 | 93.53 | 74.00 | 19.53 | peak | | | |
| 2 | | 2483.500 | 47.10 | -3.38 | 43.72 | 74.00 | -30.28 | peak | | | |

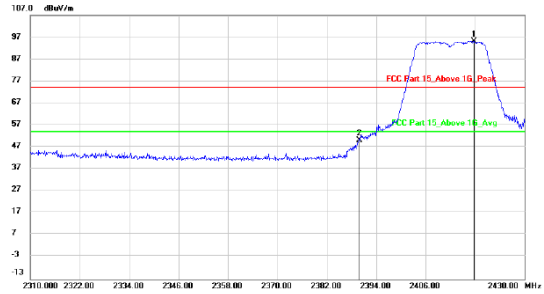
*Polarization: Horizontal*




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Margin | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | * | 2458.500 | 100.03 | -3.39 | 96.64 | 74.00 | 22.64 | peak | | | |
| 2 | | 2483.500 | 47.37 | -3.38 | 43.99 | 74.00 | -30.01 | peak | | | |

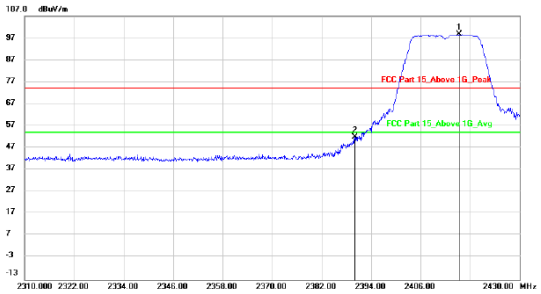
*Test Mode: IEEE 802.11n20-Low*

*Polarization: Vertical*




| No. | Mk. | Freq. MHz | Reading Level dBuV | Correct Factor dB | Measure-ment dBuV/m | Limit dBuV/m | Margin dB | Detector | Antenna Height cm | Table Degree degree | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * | 2417.760 | 98.59 | -3.41 | 95.18 | 74.00 | 21.18 | peak | | | |
| 2 | | 2390.000 | 53.56 | -3.40 | 50.16 | 74.00 | -23.84 | peak | | | |

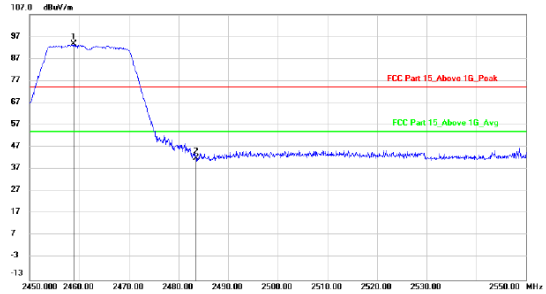
*Polarization: Horizontal*




| No. | Mk. | Freq. MHz | Reading Level dBuV | Correct Factor dB | Measure-ment dBuV/m | Limit dBuV/m | Margin dB | Detector | Antenna Height cm | Table Degree degree | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * | 2415.360 | 102.08 | -3.41 | 98.67 | 74.00 | 24.67 | peak | | | |
| 2 | | 2390.000 | 55.36 | -3.40 | 51.96 | 74.00 | -22.04 | peak | | | |

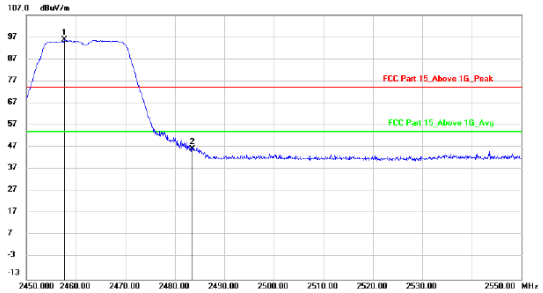
*Test Mode: IEEE 802.11n20-High*

*Polarization: Vertical*




| No. | Mk. | Freq. MHz | Reading Level dBuV | Correct Factor dB | Measure-ment dBuV/m | Limit dBuV/m | Margin dB | Detector | Antenna Height cm | Table Degree degree | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * | 2458.800 | 96.93 | -3.39 | 93.54 | 74.00 | 19.54 | peak | | | |
| 2 | | 2483.500 | 45.57 | -3.38 | 42.19 | 74.00 | -31.81 | peak | | | |

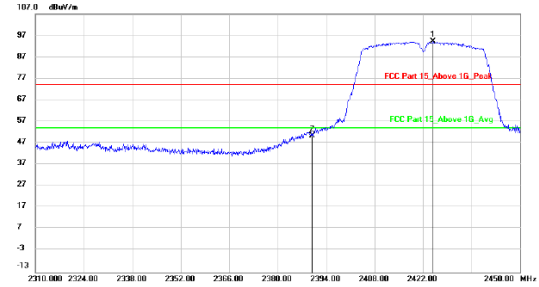
*Polarization: Horizontal*




| No. | Mk. | Freq. MHz | Reading Level dBuV | Correct Factor dB | Measure-ment dBuV/m | Limit dBuV/m | Margin dB | Detector | Antenna Height cm | Table Degree degree | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * | 2457.600 | 99.03 | -3.39 | 95.64 | 74.00 | 21.64 | peak | | | |
| 2 | | 2483.500 | 49.58 | -3.38 | 46.20 | 74.00 | -27.80 | peak | | | |

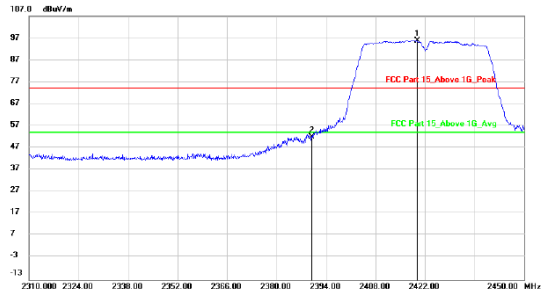
*Test Mode: IEEE 802.11n40-Low*

*Polarization: Vertical*




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Margin | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | * | 2424.940 | 97.53 | -3.40 | 94.13 | 74.00 | 20.13 | peak | | | |
| 2 | | 2390.000 | 53.78 | -3.40 | 50.38 | 74.00 | -23.62 | peak | | | |

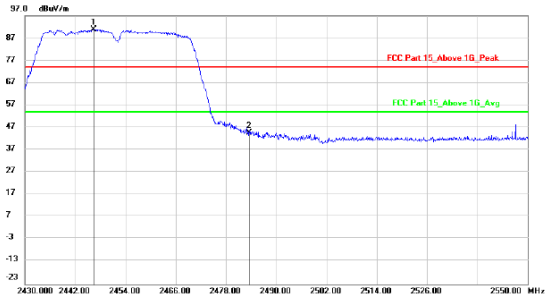
*Polarization: Horizontal*




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Margin | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | * | 2419.900 | 99.25 | -3.41 | 95.84 | 74.00 | 21.84 | peak | | | |
| 2 | | 2390.000 | 55.42 | -3.40 | 52.02 | 74.00 | -21.98 | peak | | | |

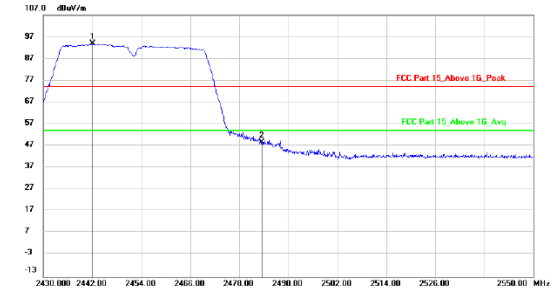
*Test Mode: IEEE 802.11n40-High*

*Polarization: Vertical*




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Margin | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | * | 2446.440 | 94.23 | -3.40 | 90.83 | 74.00 | 16.83 | peak | | | |
| 2 | | 2483.500 | 48.01 | -3.38 | 44.63 | 74.00 | -29.37 | peak | | | |

*Polarization: Horizontal*



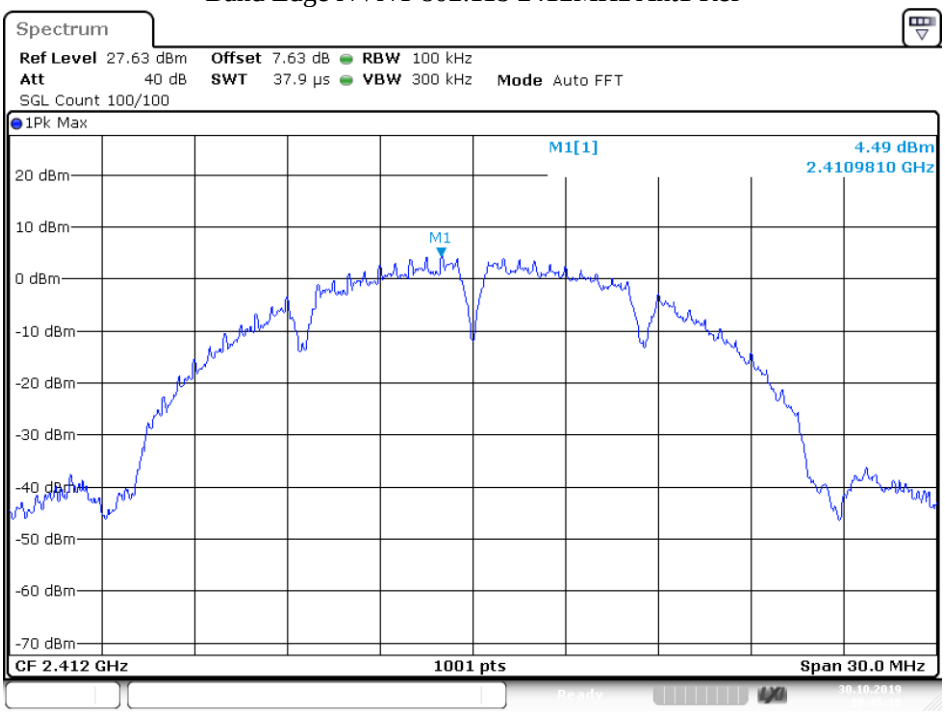

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Margin | | Antenna Height | Table Degree | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | cm | degree | Comment |
| 1 | * | 2442.120 | 97.21 | -3.40 | 93.81 | 74.00 | 19.81 | peak | | | |
| 2 | | 2483.500 | 52.03 | -3.38 | 48.65 | 74.00 | -25.35 | peak | | | |

Note:1. *:Maximum data; x:Over limit; !:over margin.
2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

Conduction Band Edge:

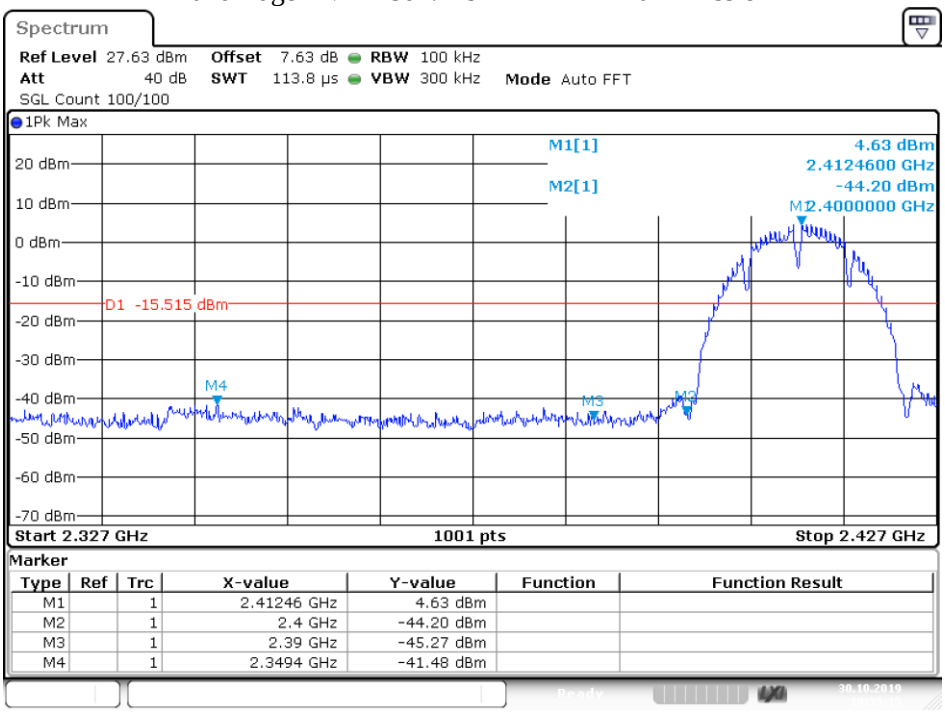
| Mode | Frequency (MHz) | Max Value (dBc) | Detector | Limit (dBc) | Verdict |
|---|---|---|---|---|---|
| 802.11b | 2412 | -45.95509025574 | PEAK | -20 | Pass |
| 802.11b | 2462 | -46.85903619766 | PEAK | -20 | Pass |
| 802.11g | 2412 | -38.71248070717 | PEAK | -20 | Pass |
| 802.11g | 2462 | -39.4790366745 | PEAK | -20 | Pass |
| 802.11n(HT20) | 2412 | -38.35098214149 | PEAK | -20 | Pass |
| 802.11n(HT20) | 2462 | -39.6167695713 | PEAK | -20 | Pass |
| 802.11n(HT40) | 2422 | -35.3280629921 | PEAK | -20 | Pass |
| 802.11n(HT40) | 2452 | -33.9492143631 | PEAK | -20 | Pass |

Band Edge NVNT 802.11b 2412MHz Ant1 Ref




Date: 30.OCT.2019 10:35:10

Band Edge NVNT 802.11b 2412MHz Ant1 Emission

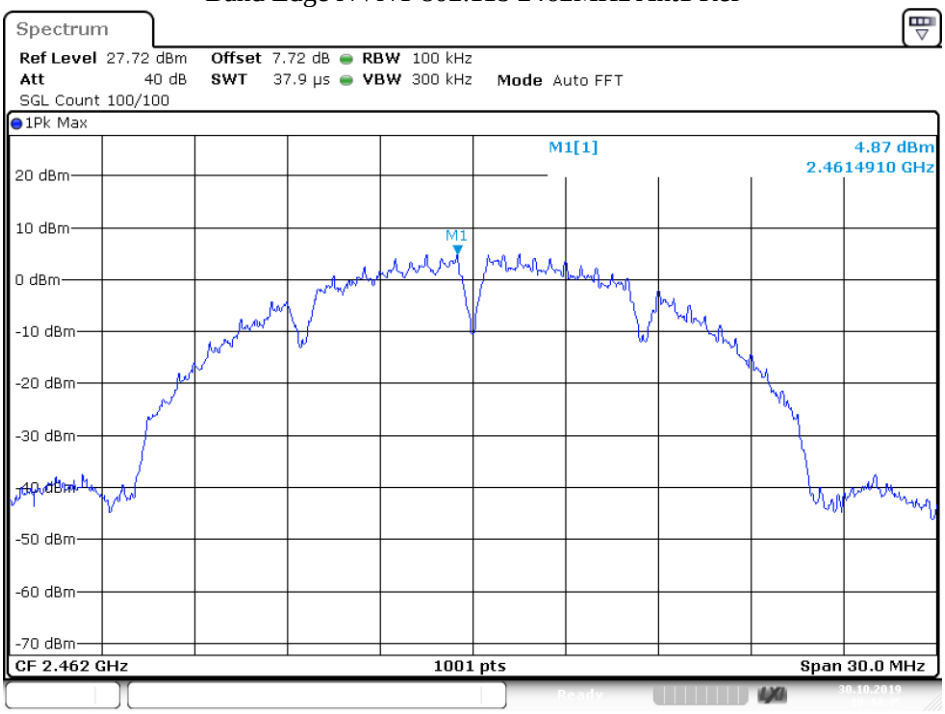



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.41246 GHz | 4.63 dBm | | |
| M2 | | 1 | 2.4 GHz | -44.20 dBm | | |
| M3 | | 1 | 2.39 GHz | -45.27 dBm | | |
| M4 | | 1 | 2.3494 GHz | -41.48 dBm | | |

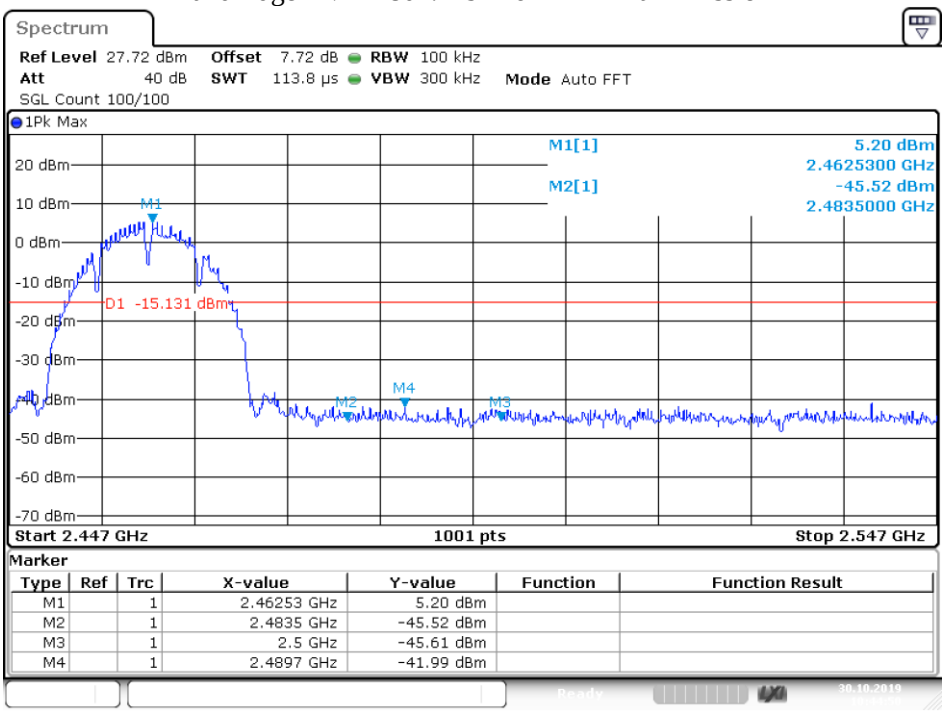
Date: 30.OCT.2019 10:35:15

Band Edge NVNT 802.11b 2462MHz Ant1 Ref




Date: 30.OCT.2019 10:44:45

Band Edge NVNT 802.11b 2462MHz Ant1 Emission

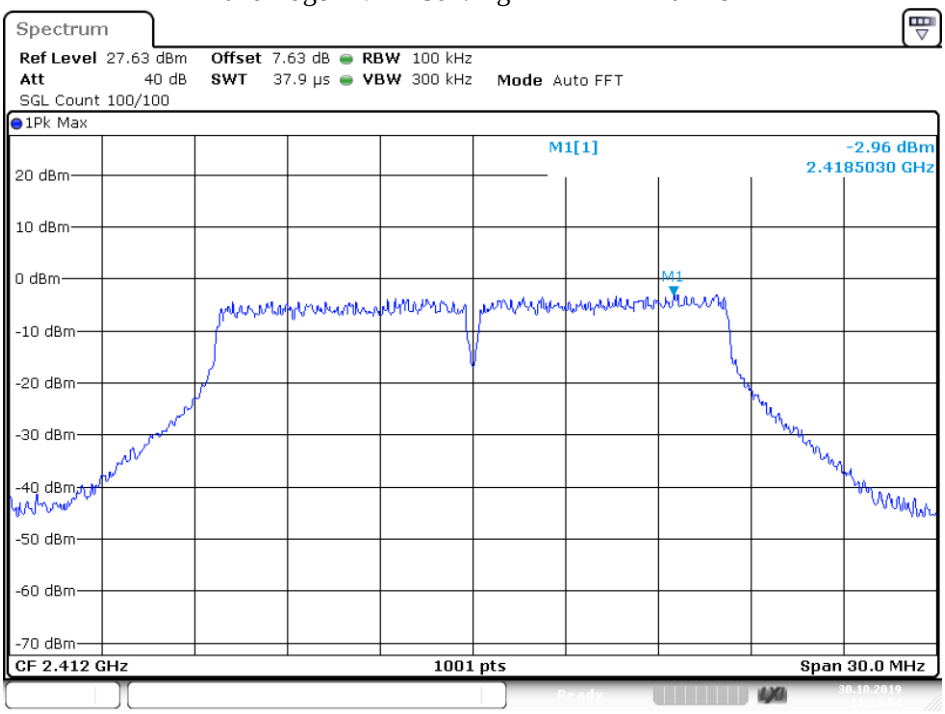



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.46253 GHz | 5.20 dBm | | |
| M2 | | 1 | 2.4835 GHz | -45.52 dBm | | |
| M3 | | 1 | 2.5 GHz | -45.61 dBm | | |
| M4 | | 1 | 2.4897 GHz | -41.99 dBm | | |

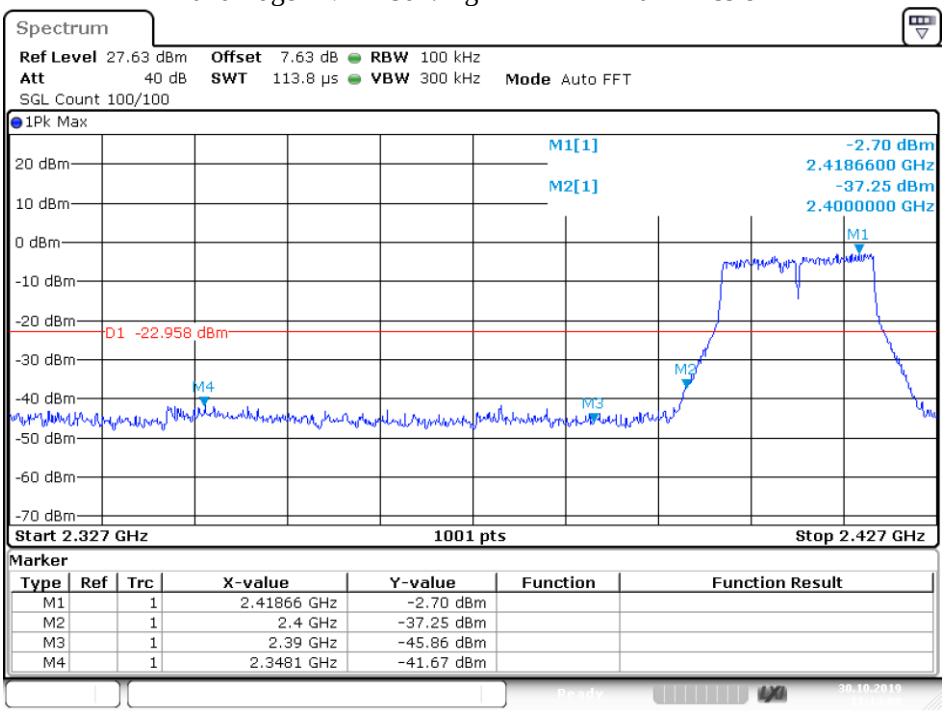
Date: 30.OCT.2019 10:44:50

Band Edge NVNT 802.11g 2412MHz Ant1 Ref




Date: 30.OCT.2019 11:13:54

Band Edge NVNT 802.11g 2412MHz Ant1 Emission

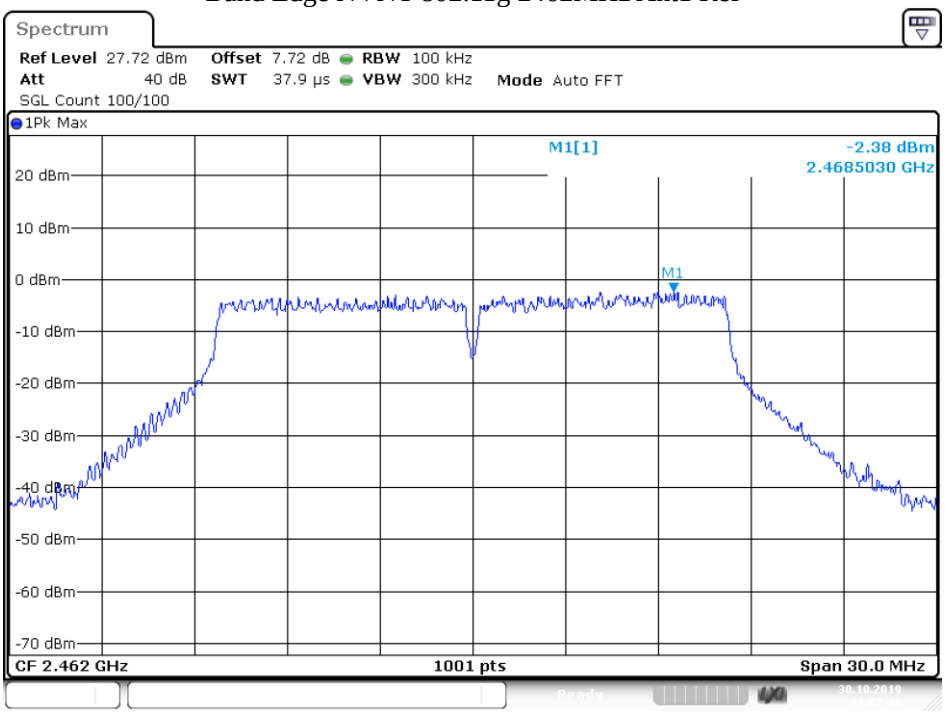



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.41866 GHz | -2.70 dBm | | |
| M2 | | 1 | 2.4 GHz | -37.25 dBm | | |
| M3 | | 1 | 2.39 GHz | -45.86 dBm | | |
| M4 | | 1 | 2.3481 GHz | -41.67 dBm | | |

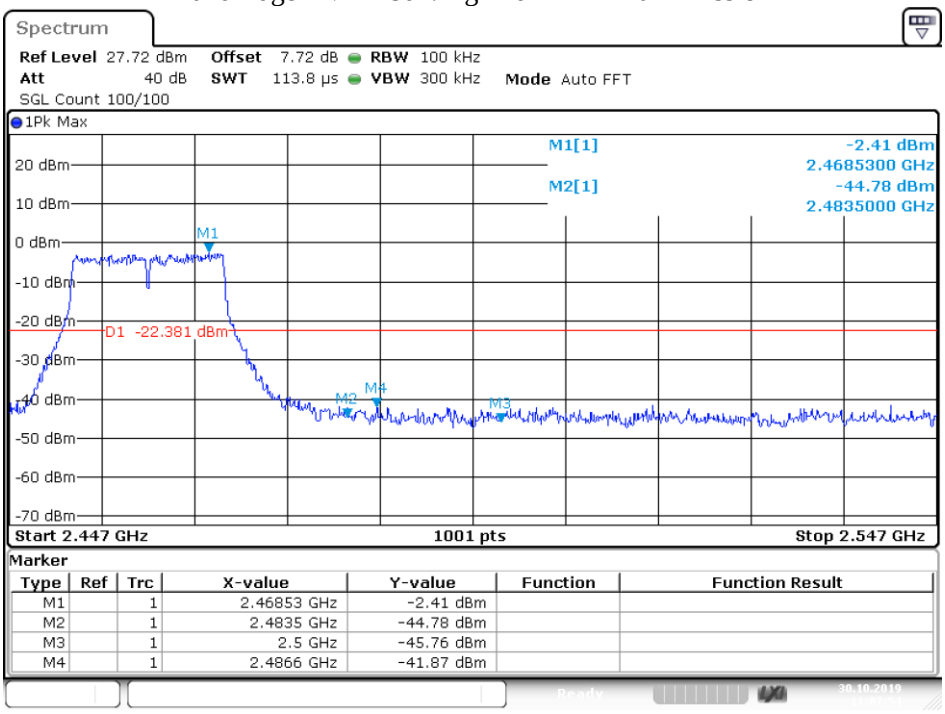
Date: 30.OCT.2019 11:13:59

Band Edge NVNT 802.11g 2462MHz Ant1 Ref




Date: 30.OCT.2019 11:07:48

Band Edge NVNT 802.11g 2462MHz Ant1 Emission

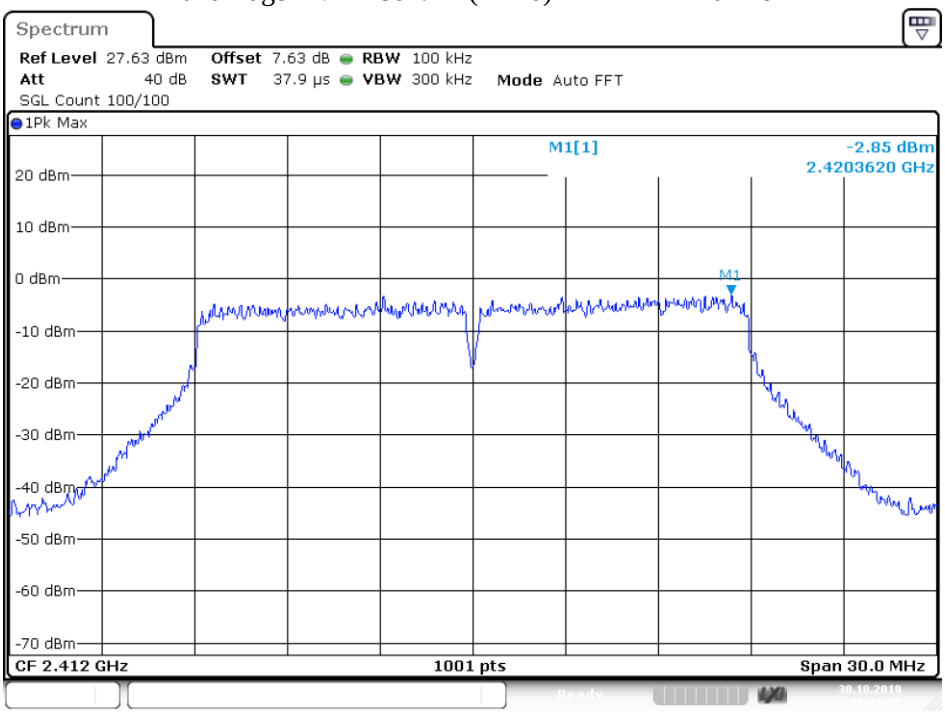



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.46853 GHz | -2.41 dBm | | |
| M2 | | 1 | 2.4835 GHz | -44.78 dBm | | |
| M3 | | 1 | 2.5 GHz | -45.76 dBm | | |
| M4 | | 1 | 2.4866 GHz | -41.87 dBm | | |

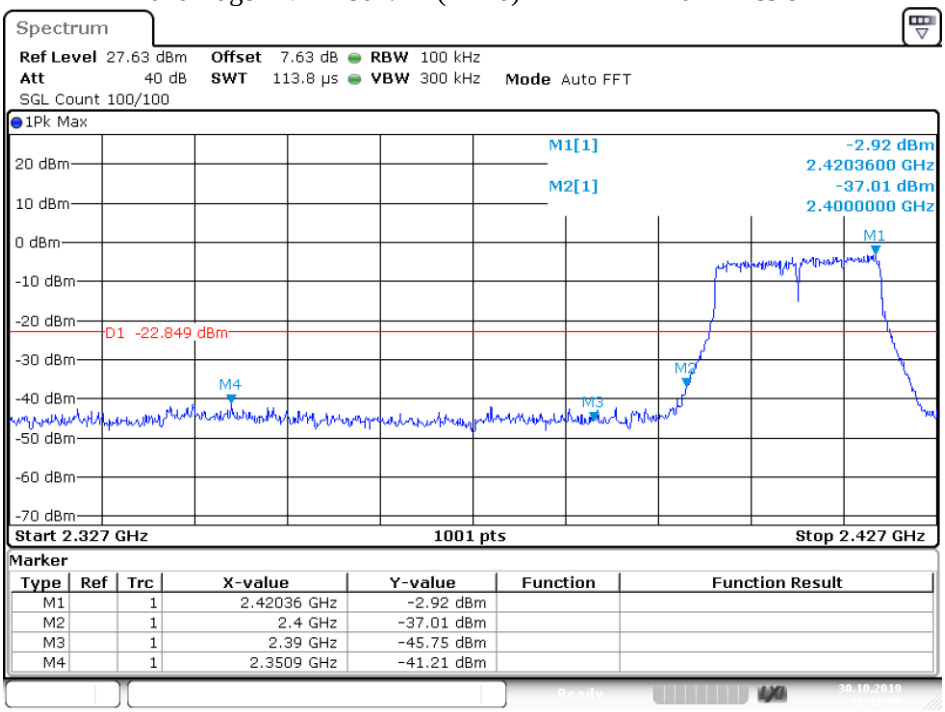
Date: 30.OCT.2019 11:07:53

Band Edge NVNT 802.11n(HT20) 2412MHz Ant1 Ref




Date: 30.OCT.2019 11:18:45

Band Edge NVNT 802.11n(HT20) 2412MHz Ant1 Emission

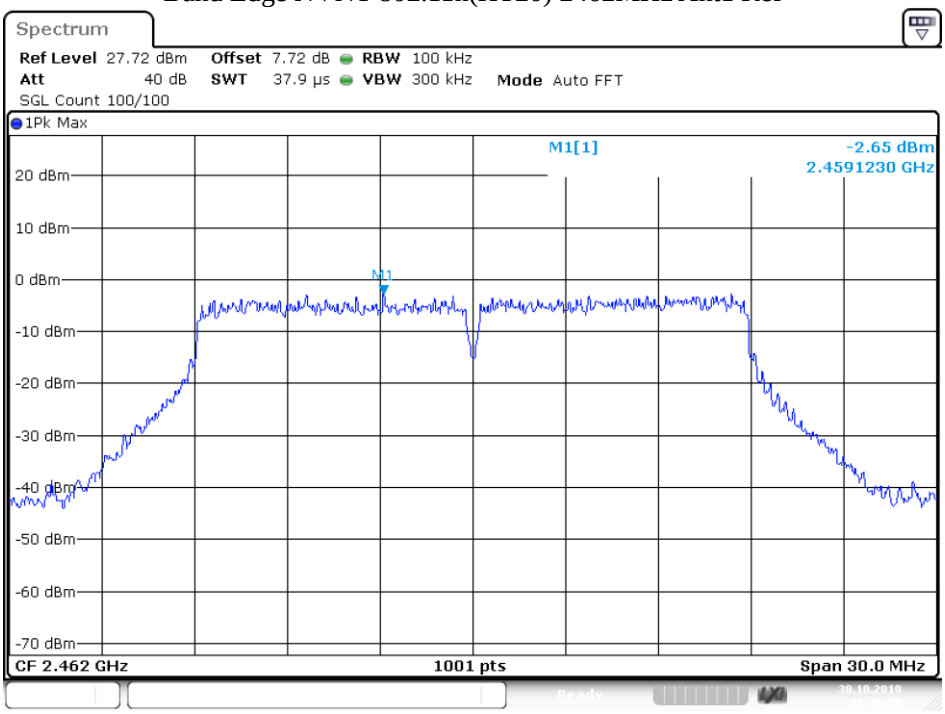



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.42036 GHz | -2.92 dBm | | |
| M2 | | 1 | 2.4 GHz | -37.01 dBm | | |
| M3 | | 1 | 2.39 GHz | -45.75 dBm | | |
| M4 | | 1 | 2.3509 GHz | -41.21 dBm | | |

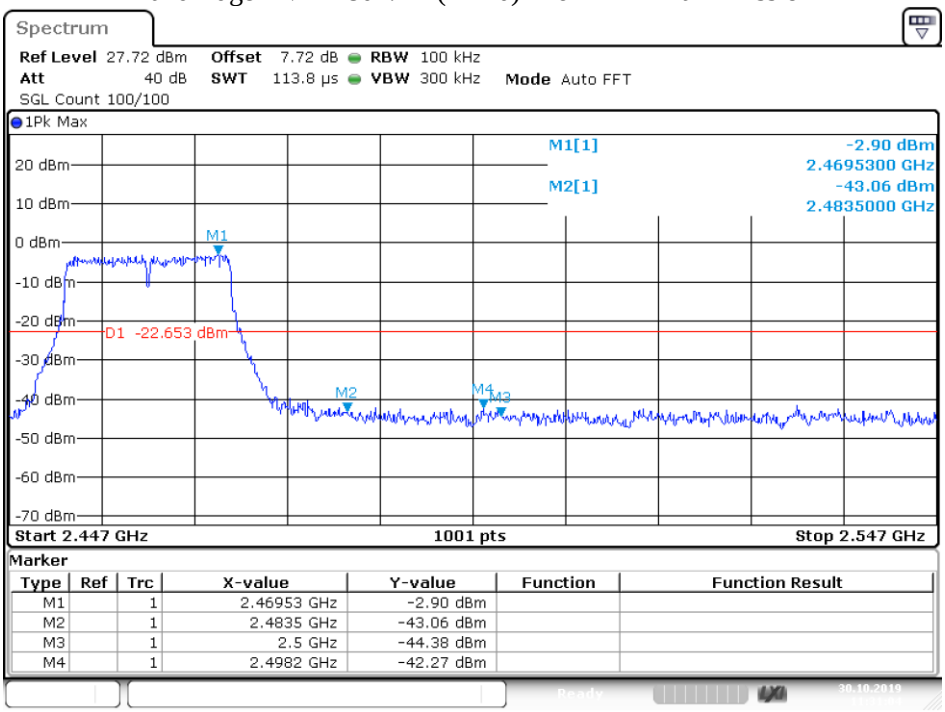
Date: 30.OCT.2019 11:18:51

Band Edge NVNT 802.11n(HT20) 2462MHz Ant1 Ref




Date: 30.OCT.2019 11:30:59

Band Edge NVNT 802.11n(HT20) 2462MHz Ant1 Emission

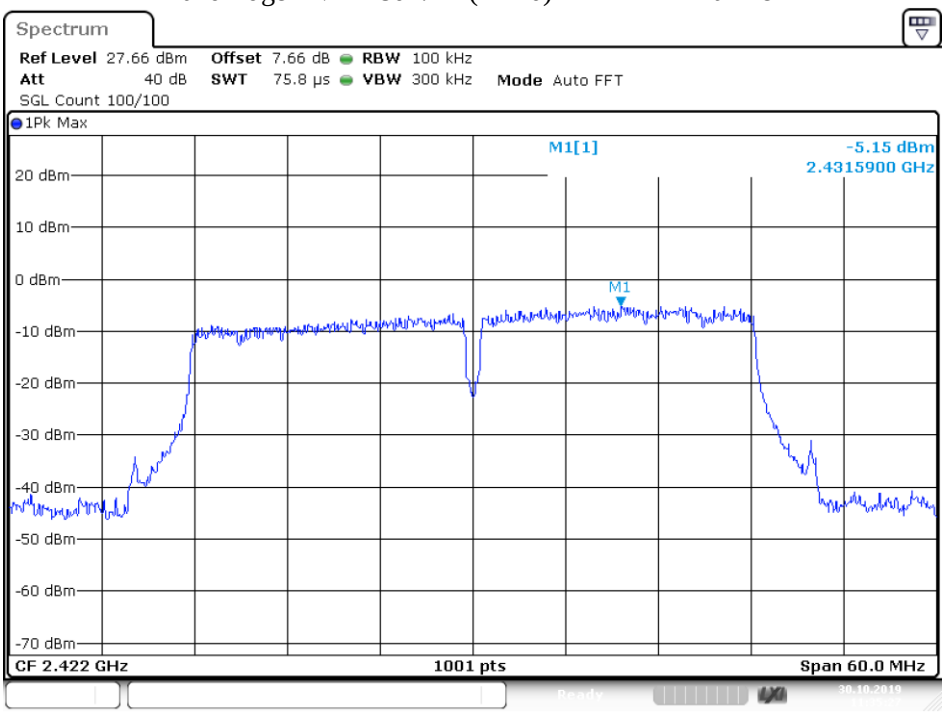



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.46953 GHz | -2.90 dBm | | |
| M2 | | 1 | 2.4835 GHz | -43.06 dBm | | |
| M3 | | 1 | 2.5 GHz | -44.38 dBm | | |
| M4 | | 1 | 2.4982 GHz | -42.27 dBm | | |

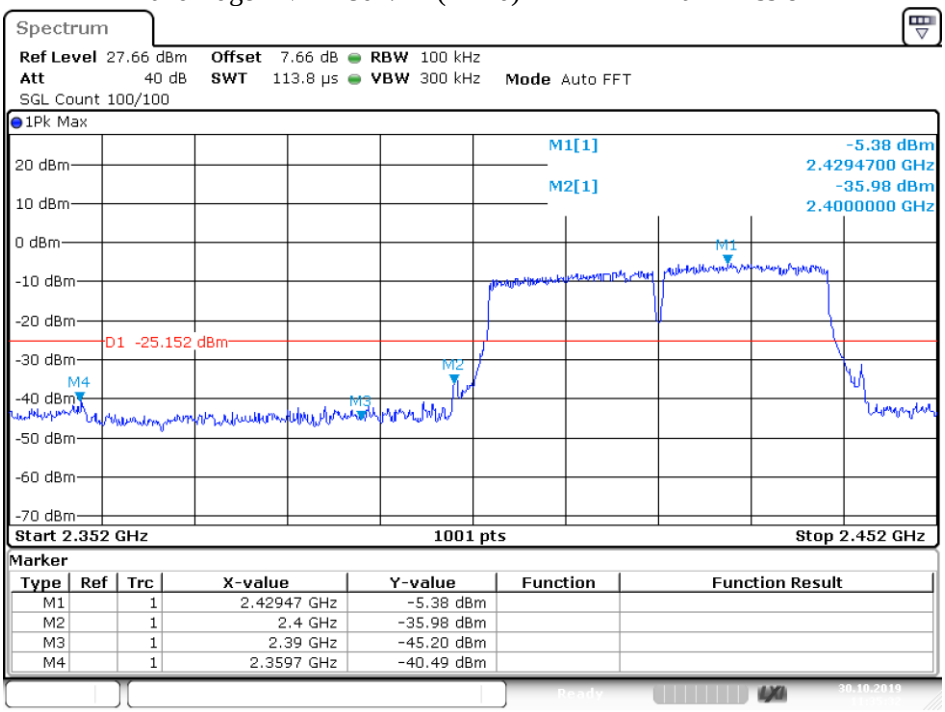
Date: 30.OCT.2019 11:31:04

Band Edge NVNT 802.11n(HT40) 2422MHz Ant1 Ref




Date: 30.OCT.2019 11:35:27

Band Edge NVNT 802.11n(HT40) 2422MHz Ant1 Emission

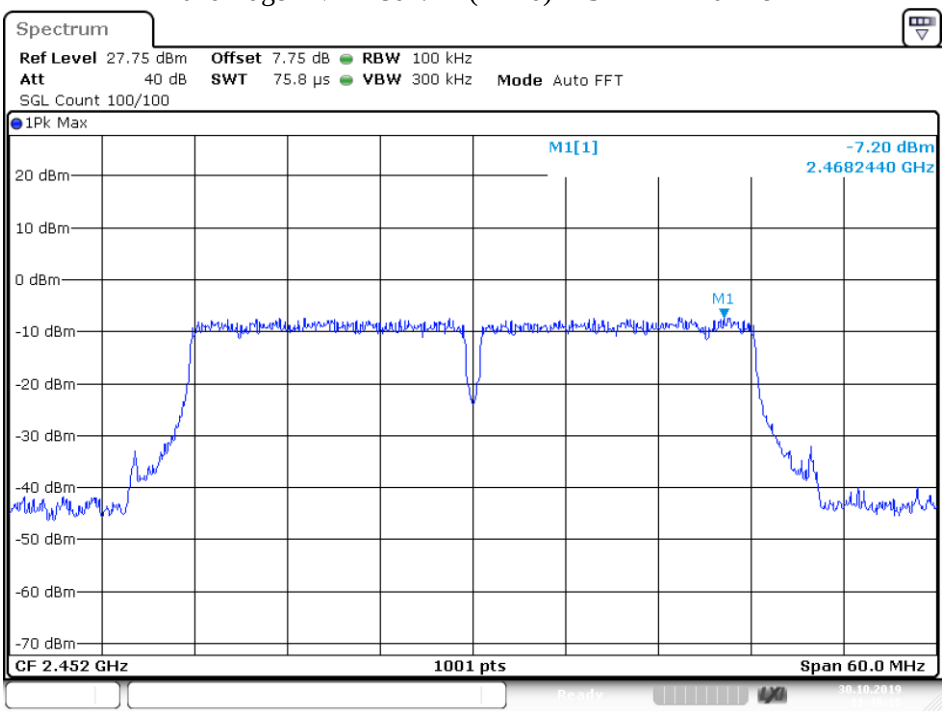



Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.42947 GHz | -5.38 dBm | | |
| M2 | | 1 | 2.4 GHz | -35.98 dBm | | |
| M3 | | 1 | 2.39 GHz | -45.20 dBm | | |
| M4 | | 1 | 2.3597 GHz | -40.49 dBm | | |

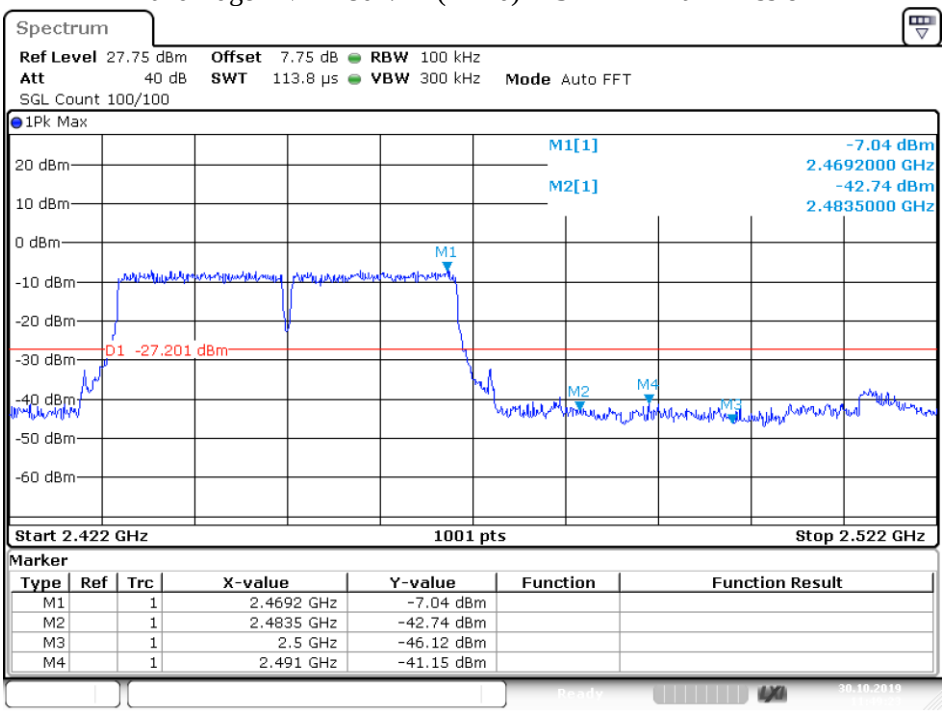
Date: 30.OCT.2019 11:35:32

Band Edge NVNT 802.11n(HT40) 2452MHz Ant1 Ref




Date: 30.OCT.2019 11:49:18

Band Edge NVNT 802.11n(HT40) 2452MHz Ant1 Emission




Marker

| Type | Ref | Trc | X-value | Y-value | Function | Function Result |
|---|---|---|---|---|---|---|
| M1 | | 1 | 2.4692 GHz | -7.04 dBm | | |
| M2 | | 1 | 2.4835 GHz | -42.74 dBm | | |
| M3 | | 1 | 2.5 GHz | -46.12 dBm | | |
| M4 | | 1 | 2.491 GHz | -41.15 dBm | | |

Date: 30.OCT.2019 11:49:23

# 9. ANTENNA REQUIREMENT

## 9.1.Standard Requirement

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

## 9.2.Antenna Connected Construction

The antenna connector is unique antenna and no consideration of replacement. Please see EUT photo for details.

## 9.3.Results

The EUT antenna is Internal antenna. It complies with the standard requirement.

# 10. TEST SETUP PHOTO

Please refer to separated files for Test Setup Photos of the EUT.

# 11. EXTERIOR PHOTOGRAPHS OF THE EUT

Please refer to separated files for External Photos of the EUT.

# 12. INTERIOR PHOTOGRAPHS OF THE EUT

Please refer to separated files for Internal Photos of the EUT.

**---------THE END OF REPORT-------**