

Shenzhen 3Nod Digital Technology Co., Ltd.

TEST REPORT

SCOPE OF WORK

FCC TESTING-100004118

REPORT NUMBER

190118045SZN-003

ISSUE DATE

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Shenzhen 3Nod Digital Technology Co., Ltd.

Application
For
Certification

FCC ID: 2AA3H-S3049**ONN 32" 2.1 Soundbar****Model: 100004118****Brand name: ONN****2.4GHz Wi-Fi Transceiver**

Report No.: 190118045SZN-003

We hereby certify that the sample of the above item is considered to comply with the requirements of FCC Part 15, Subpart C for Intentional Radiator, mention 47 CFR [10-1-17]

Prepared and Checked by:**Approved by:**

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Date: May 8, 2019

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Intertek Testing Service Shenzhen Ltd. Longhua Branch

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LIST OF EXHIBITS

INTRODUCTION

| | |
|--------------------|---------------------------|
| <i>EXHIBIT 1:</i> | Summary of Tests |
| <i>EXHIBIT 2:</i> | General Description |
| <i>EXHIBIT 3:</i> | System Test Configuration |
| <i>EXHIBIT 4:</i> | Measurement Results |
| <i>EXHIBIT 5:</i> | Equipment Photographs |
| <i>EXHIBIT 6:</i> | Product Labeling |
| <i>EXHIBIT 7:</i> | Technical Specifications |
| <i>EXHIBIT 8:</i> | Instruction Manual |
| <i>EXHIBIT 9:</i> | Confidentiality Request |
| <i>EXHIBIT 10:</i> | Miscellaneous Information |
| <i>EXHIBIT 11:</i> | Test Equipment List |

MEASUREMENT/TECHNICAL REPORT

ONN 32" 2.1 Soundbar

Model: 100004118

FCC ID: 2AA3H-S3049

This report concerns (check one) Original Grant ☒ Class II Change ☐

Equipment Type: DTS - Part 15 Digital Transmission Systems (Wi-Fi transmitter portion)

Deferred grant requested per 47 CFR 0.457(d)(1)(ii)? Yes ☐ No ☒

If yes, defer until :
date

Company Name agrees to notify the Commission by:
date

of the intended date of announcement of the product so that the grant can be issued on that date.

Transition Rules Request per 15.37? Yes ☐ No ☒

If no, assumed Part 15, Subpart C for intentional radiator - the new 47 CFR [10-01-17] Edition] provision.

Report prepared by:

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Table of Contents

| | | |
|-------------|---|-----------|
| 1.0 | Summary of Test results | 8 |
| 2.0 | <u>General Description</u> | 10 |
| 2.1 | Product Description | 10 |
| 2.2 | Related Submittal(s) Grants | 10 |
| 2.3 | Test Methodology..... | 11 |
| 2.4 | Test Facility | 11 |
| 3.0 | <u>System Test Configuration</u>..... | 13 |
| 3.1 | Justification | 13 |
| 3.2 | EUT Exercising Software | 13 |
| 3.3 | Special Accessories | 13 |
| 3.4 | Measurement Uncertainty | 14 |
| 3.5 | Equipment Modification | 14 |
| 3.6 | Support Equipment List and Description | 14 |
| 4.0 | <u>Measurement Results</u> | 16 |
| 4.1 | Maximum Conducted Output Power at Antenna Terminals..... | 16 |
| 4.2 | Minimum 6 dB RF Bandwidth | 18 |
| 4.3 | Maximum Power Density Reading | 27 |
| 4.4 | Out of Band Conducted Emissions..... | 36 |
| 4.5 | Out of Band Radiated Emissions..... | 59 |
| 4.6 | Transmitter Radiated Emissions in Restricted Bands | 60 |
| 4.7 | Field Strength Calculation | 61 |
| 4.8 | Radiated Spurious Emission | 62 |
| 4.9 | Conducted Emission | 77 |
| 4.10 | Radiated Emissions from Digital Section of Transceiver..... | 80 |
| 4.11 | Transmitter Duty Cycle Calculation and Measurements | 81 |
| 5.0 | <u>Equipment Photographs</u> | 83 |
| 6.0 | <u>Product Labelling</u>..... | 85 |
| 7.0 | <u>Technical Specifications</u> | 87 |
| 8.0 | <u>Instruction Manual</u> | 89 |
| 9.0 | <u>Confidentiality Request</u> | 91 |
| 10.0 | <u>Discussion of Pulse Desensitization</u> | 93 |
| 11.0 | <u>Test Equipment List</u>..... | 95 |

List of attached file

| Exhibit type | File Description | Filename |
|-----------------------|----------------------------|----------------------|
| Test Report | Test Report | report.pdf |
| Test Setup Photo | Conducted Emission | conducted photos.pdf |
| Test Setup Photo | Radiated Emission | radiated photos.pdf |
| External Photo | External Photo | external photos.pdf |
| Internal Photo | Internal Photo | internal photos.pdf |
| Block Diagram | Block Diagram | block.pdf |
| Schematics | Circuit Diagram | circuit.pdf |
| Operation Description | Technical Description | descri.pdf |
| ID Label/Location | Label Artwork and Location | label.pdf |
| User Manual | User Manual | manual.pdf |
| Cover Letter | Confidentiality Letter | request.pdf |
| Cover Letter | Letter of Agency | agency.pdf |

EXHIBIT 1

SUMMARY OF TEST RESULTS

1.0 Summary of Test results

ONN 32" 2.1 Soundbar

Model: 100004118

FCC ID: 2AA3H-S3049

| TEST ITEM | REFERENCE | RESULTS |
|--|--------------|---------------------|
| Max. Output power | 15.247(b)(3) | Pass |
| 6 dB Bandwidth | 15.247(a)(2) | Pass |
| Max. Power Density | 15.247(e) | Pass |
| Out of Band Antenna Conducted Emission | 15.247(d) | Pass |
| Radiated Emission in Restricted Bands | 15.247(d) | Pass |
| AC Conducted Emission | 15.207 | Pass |
| Antenna Requirement | 15.203 | Pass (See Notes) |

Notes: The EUT uses an Integral Antenna which in accordance to Section 15.203 is considered sufficient to comply with the provisions of this section.

EXHIBIT 2

GENERAL DESCRIPTION

2.0 General Description

2.1 Product Description

The equipment under test (EUT) is a ONN 32" 2.1 Soundbar with Bluetooth 4.2 (dual-mode) function operating in 2402-2480MHz, 2.4G SRD function operating in 2403.35-2477.35MHz, 2.4G WIFI function operating in 2412-2462MHz and 5G WIFI function operating in 5180-5240& 5747-5825MHz. The EUT is powered by DC 18V/2A through an adapter. Bluetooth and Wi-Fi transmitters are share one antenna while they cannot transmit simultaneously. For more detail information pls. refer to the user manual.

Antenna Type: Integral Antenna

Antenna Gain: 5.5 dBi Max

Type of Modulation: CCK, BPSK, QPSK, 16QAM, 64QAM,DQPSK, DBPSK.

The ONN 32" 2.1 Soundbar, Model: 100004118 has two designing schemes. It would be placed on the market with two different adapters and two different HDMI cable, Power Model: BI36-180200-AdU or Power Model: MAUH-1802004200, HDMI cable Model: CFA10B08SN183 or HDMI cable Model: KFH119041303. All tests are required to both designing schemes after evaluation, but only worst-case is reflected in the report.

| Adapter | Model | Electrical parameters |
|-----------|-----------------|--|
| Adapter 1 | BI36-180200-AdU | Input: AC 100-240V, 50/60Hz Output: DC 18V/2A |
| Adapter 2 | MAUH-1802004200 | Input: AC 100-240V, 50/60Hz Output: DC 18V/2A |

| HDMI cable | Model | Manufacturer |
|--------------|---------------|--------------|
| HDMI cable 1 | CFA10B08SN183 | GuangXinKe |
| HDMI cable 2 | KFH119041303 | LianJi |

For electronic filing, the brief circuit description is saved with filename: circuit.pdf.

2.2 Related Submittal(s) Grants

This is an application for certification of transceiver for the 2.1 Smart soundbar which has DTS- Part 15 Digital Transmission Systems (2.4GHz Wi-Fi transmitter portion).

For the BT 4.2 EDR mode was tested and demonstrated in report 190118045SZN-001.

For the BT 4.2 BLE mode was tested and demonstrated in report 190118045SZN-002.

For the 5GHz WIFI function was tested and demonstrated in report 190118045SZN-004.

For the 2.4GHz SRD function was tested and demonstrated in report 190118045SZN-005.

For other functions were reported in the SDOC report: 190118043SZN-001.

2.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.10 (2013) and KDB 558074 D01 v05r02. Radiated emission measurement was performed in Semi-anechoic chamber and conducted emission measurement was performed in shielded room. For radiated emission measurement, preliminary scans were performed in the semi-anechoic chamber only to determine the worst case modes. All radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the "**Justification Section**" of this Application. All other measurements were made in accordance with the procedures in part 2 of CFR 47.

2.4 Test Facility

The Semi-anechoic chamber and shielded room used to collect the radiated data and conducted data are **Intertek Testing Services Shenzhen Ltd. Longhua Branch** and located at 101, 201, Building B, No. 308 Wuhe Avenue, Zhangkengjing Community, GuanHu Subdistrict, LongHua District, Shenzhen, P.R. China. This test facility and site measurement data have been fully placed on file with File Number: CN1188.

EXHIBIT 3

SYSTEM TEST CONFIGURATION

3.0 System Test Configuration

3.1 Justification

For emissions testing, the equipment under test (EUT) setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, all cables were manipulated to produce worst case emissions. The EUT was powered by AC 120V/60Hz during the test. Both designing schemes have been considered, only the worst-case data is shown in the report.

On 802.11b/g/n-HT20/n-HT40 mode, only one antenna is used, and all data rate were tested and only the worst-case data is shown in the report.

For maximizing emissions, the EUT was rotated through 360°, the EUT was placed on the styrene turntable with 0.8m up to 1GHz and 1.5 m above 1GHz. The antenna height and polarization are varied during the search for maximum signal level. The antenna height is varied from 1 to 4 meters. Radiated emissions are taken at three meters unless the signal level is too low for measurement at that distance. If necessary, a pre-amplifier is used and/or the test is conducted at a closer distance.

All readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance. Analyzer resolution is 100 kHz or greater for frequencies below 1000 MHz. The resolution is 1 MHz or greater for frequencies above 1000 MHz. The spurious emissions more than 20 Db below the permissible value are not reported.

The rear of unit was flushed with the rear of the table.

Radiated emission measurement were performed the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

3.2 EUT Exercising Software

The EUT exercise program (provided by client) used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. The worst-case configuration is used in all specified testing.

The parameters of test software setting:

During the test, Channel and power controlling software provided by the applicant was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the application and is going to be fixed on the firmware of the end product.

Test Software: PuTTY release 0.63

3.3 Special Accessories

DC cable of adapter (with core)
HDMI cable (Shielded)

3.4 Measurement Uncertainty

When determining of the test conclusion, the Measurement Uncertainty of test has been considered.

Uncertainty and Compliance – Unless the standard specifically states that measured values are to be extended by the measurement uncertainty in determining compliance, all compliance determinations are based on the actual measured value.

3.5 Equipment Modification

Any modifications installed previous to testing by Shenzhen 3Nod Digital Technology Co., Ltd. will be incorporated in each production model sold / leased in the United States.

No modifications were installed by Intertek Testing Services Shenzhen Ltd. Longhua Branch.

3.6 Support Equipment List and Description

| Description | Manufacturer | Model No. |
|------------------------------------|-----------------------|---|
| iPod | Apple | A1367 |
| iPhone | Apple | A1303 |
| Dummy load | provided by Intertek | / |
| DC adapter | provided by applicant | BI36-180200-AdU (Cable length 1.5m, unshielded, with core) |
| DC adapter | provided by applicant | MAUH-1802004200 (Cable length 1.45m, unshielded, with core) |
| 3.5mm to 3.5mm audio in cable | provided by Intertek | unshielded, length 110cm |
| 3.5mm to RCA stereo audio in cable | provided by applicant | unshielded, length 147cm |
| Optical cable | provided by applicant | unshielded, Length 115cm |
| HDMI cable 1 | GuangXinKe | Shielded, Length 175cm |
| HDMI cable 2 | LianJi | Shielded, Length 175cm |
| HDMI right angle adapter | provided by applicant | / |
| Subwoofer | provided by applicant | / |
| Remove control | provided by applicant | / |

EXHIBIT 4

MEASUREMENT RESULTS

Applicant: Shenzhen 3Nod Digital Technology Co., Ltd.

Date of Test: April 4, 2019

Model: 100004118

4.0 Measurement Results

4.1 Maximum Conducted Output Power at Antenna Terminals, FCC Rules 15.247(b)(3):

The antenna power of the EUT was connected to the input of a broadband peak RF power meter. The power meter has a video bandwidth that is greater than DTS bandwidth and utilize a fast-responding diode detector. Power was read directly at the EUT antenna terminals with cable loss added.

For antennas with gains of 6 dBi or less, maximum allowed Transmitter output is 1 watt (+30 dBm).

| IEEE 802.11b (Antenna Gain = 5.5dBi) (CCK, 1Mbps) | | |
|---|---------------------------------|-----------------|
| Frequency (MHz) | Output in dBm (Peak Reading) | Output in mWatt |
| Low Channel: 2412 | 19.95 | 98.9 |
| Middle Channel: 2437 | 20.20 | 104.7 |
| High Channel: 2462 | 20.15 | 103.5 |

| IEEE 802.11g (Antenna Gain = 5.5dBi) (16QAM, 6Mbps) | | |
|---|---------------------------------|-----------------|
| Frequency (MHz) | Output in dBm (Peak Reading) | Output in mWatt |
| Low Channel: 2412 | 24.64 | 291.1 |
| Middle Channel: 2437 | 24.82 | 303.4 |
| High Channel: 2462 | 25.03 | 318.4 |

| IEEE 802.11n-HT20 (Antenna Gain = 5.5dBi) (64QAM, 6Mbps) | | |
|--|---------------------------------|-----------------|
| Frequency (MHz) | Output in dBm (Peak Reading) | Output in mWatt |
| Low Channel: 2412 | 24.21 | 263.6 |
| Middle Channel: 2437 | 24.50 | 281.8 |
| High Channel: 2462 | 24.19 | 262.4 |

| IEEE 802.11n-HT40 (Antenna Gain = 5.5dBi) (64QAM, 13.5Mbps) | | |
|---|---------------------------------|-----------------|
| Frequency (MHz) | Output in dBm (Peak Reading) | Output in mWatt |
| Low Channel: 2422 | 23.79 | 239.3 |
| Middle Channel: 2437 | 23.88 | 244.3 |
| High Channel: 2452 | 23.73 | 236.0 |

Cable loss: 2.5 dB External Attenuation: 0 dB

Cable loss, external attenuation has been included in OFFSET function

EUT max. conducted output level = 25.03dBm

EUT max. E.I.R.P = 25.03dBm + 5.5dBi = 30.53dBm = 1129.8mW

For RF Exposure, the information is saved with filename: RF exposure.pdf.

Applicant: Shenzhen 3Nod Digital Technology Co., Ltd.

Date of Test: April 4, 2019

Model: 100004118

4.2 Minimum 6 dB RF Bandwidth, FCC Rule 15.247(a) (2):

The antenna port of the EUT was connected to the input of a spectrum analyzer. Analyzer RES BW was set to 100 KHz according to FCC KDB 558074 D01 v05r02. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. A PEAK output reading was taken, a DISPLAY line was drawn 6 dB lower than PEAK level. The 6dB bandwidth was determined from where the channel output spectrum intersected the display line.

Limit: The 6 dB Bandwidth is at least 500 kHz.

| IEEE 802.11b (CCK, 1Mbps) | |
|---------------------------|----------------------|
| Frequency (MHz) | 6 dB Bandwidth (MHz) |
| 2412 | 9.03 |
| 2437 | 9.03 |
| 2462 | 9.03 |

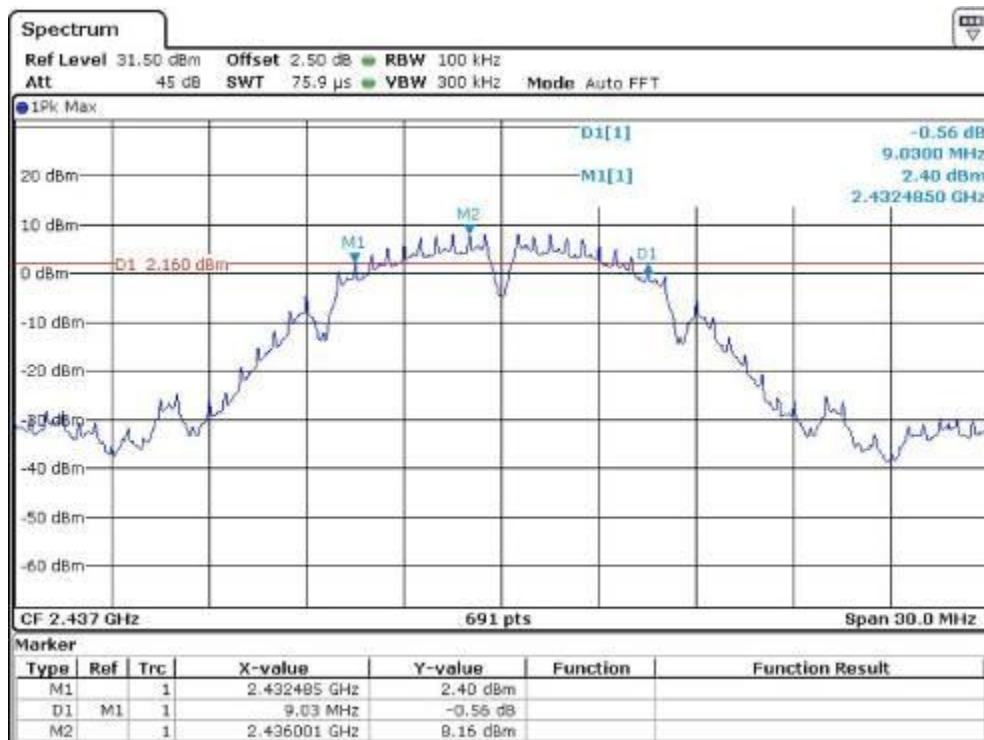
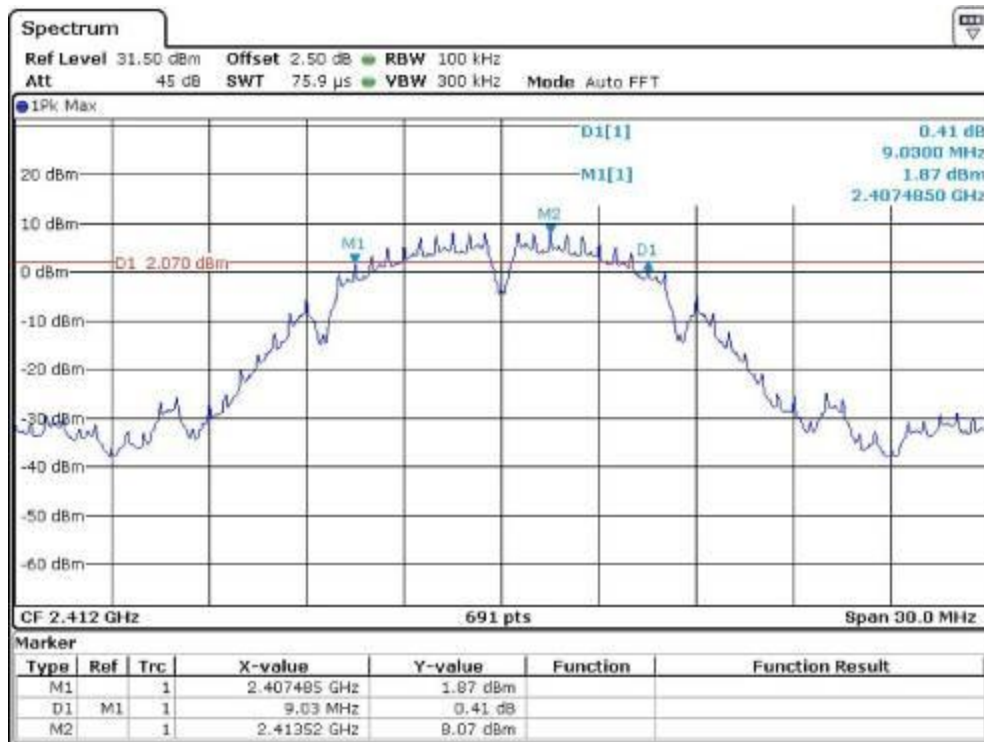
| IEEE 802.11g (16QAM, 6Mbps) | |
|-----------------------------|----------------------|
| Frequency (MHz) | 6 dB Bandwidth (MHz) |
| 2412 | 15.499 |
| 2437 | 16.368 |
| 2462 | 15.499 |

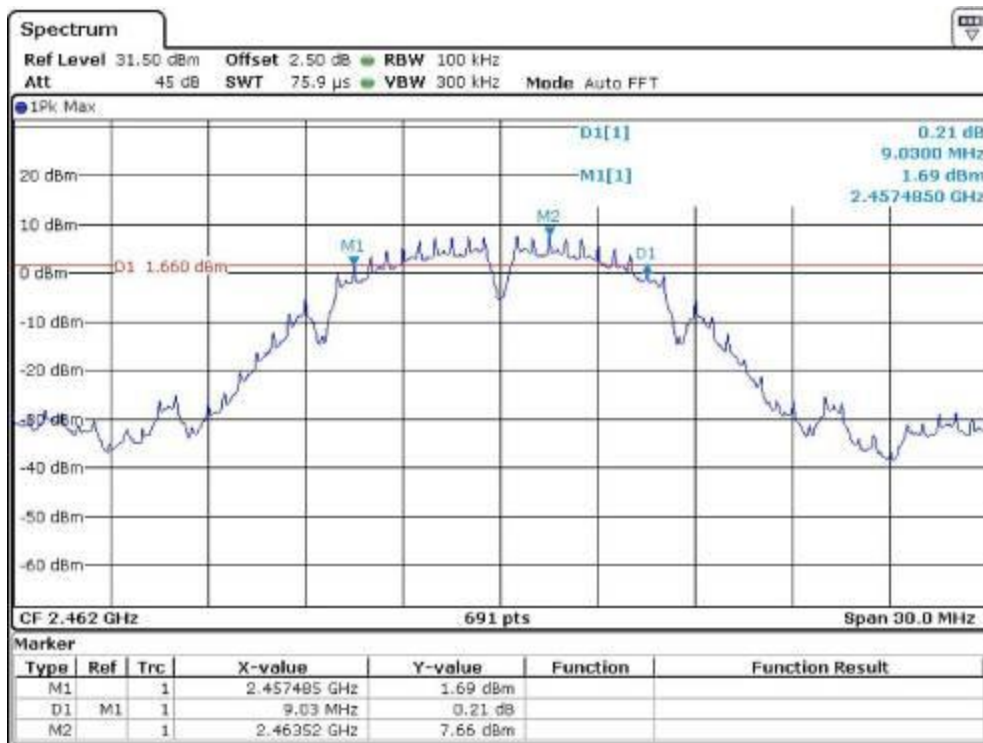
| IEEE 802.11n-HT20 (64QAM, 6Mbps) | |
|----------------------------------|----------------------|
| Frequency (MHz) | 6 dB Bandwidth (MHz) |
| 2412 | 16.368 |
| 2437 | 17.540 |
| 2462 | 16.628 |

| IEEE 802.11n-HT40 (64QAM, 13.5Mbps) | |
|-------------------------------------|----------------------|
| Frequency (MHz) | 6 dB Bandwidth (MHz) |
| 2422 | 36.078 |
| 2437 | 36.382 |
| 2452 | 36.469 |

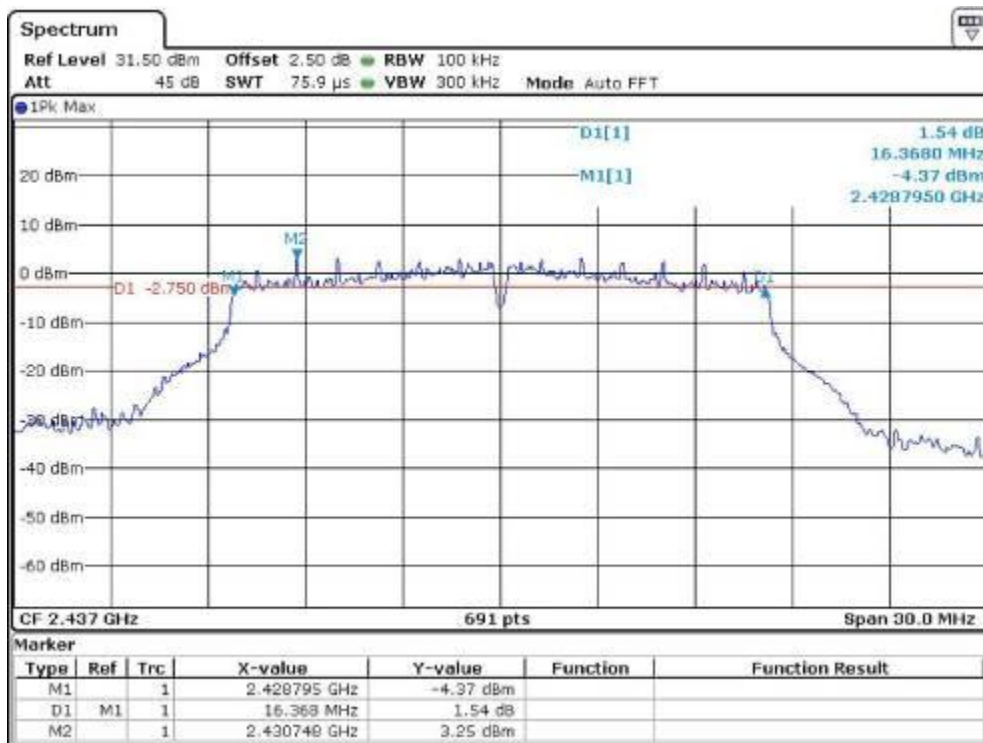
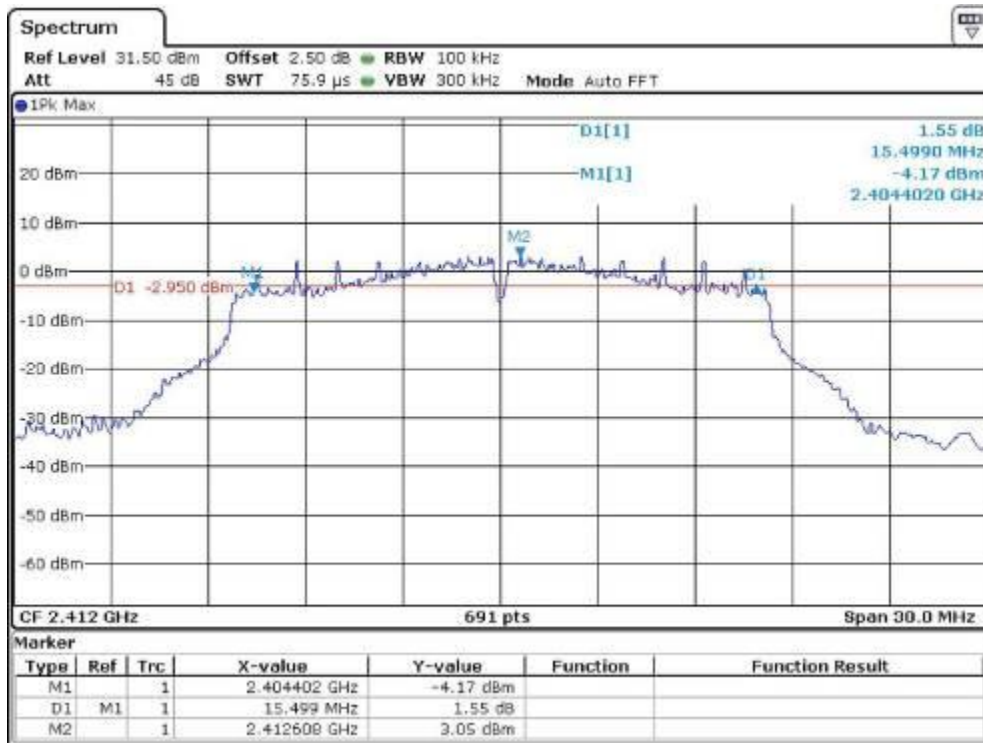
The test plots are attached as below.

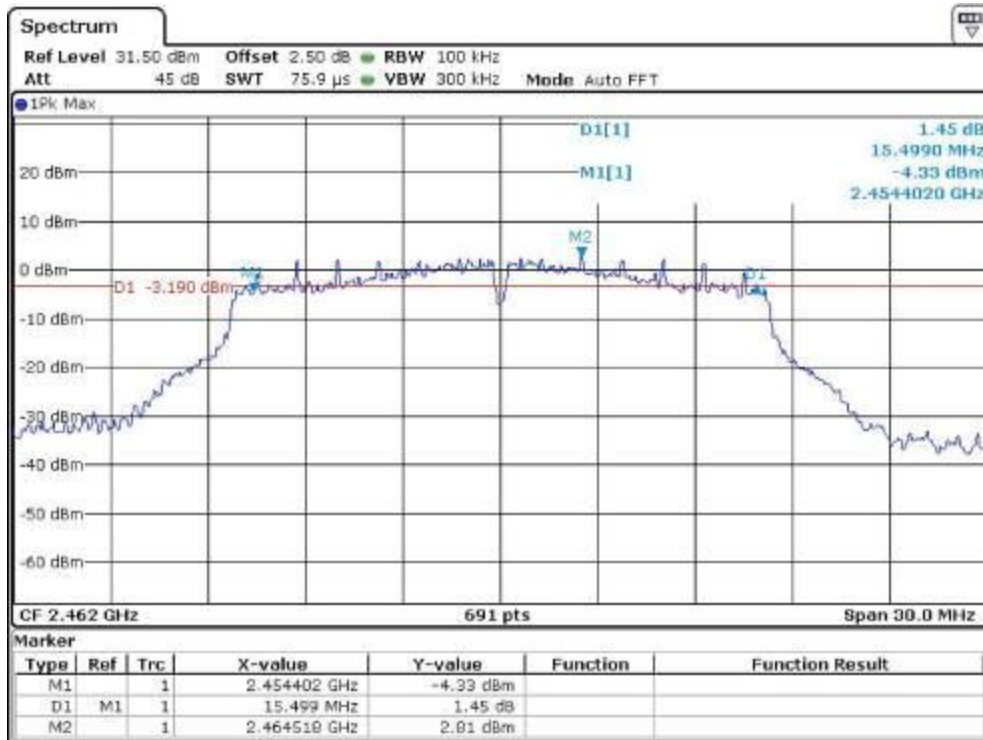
802.11b



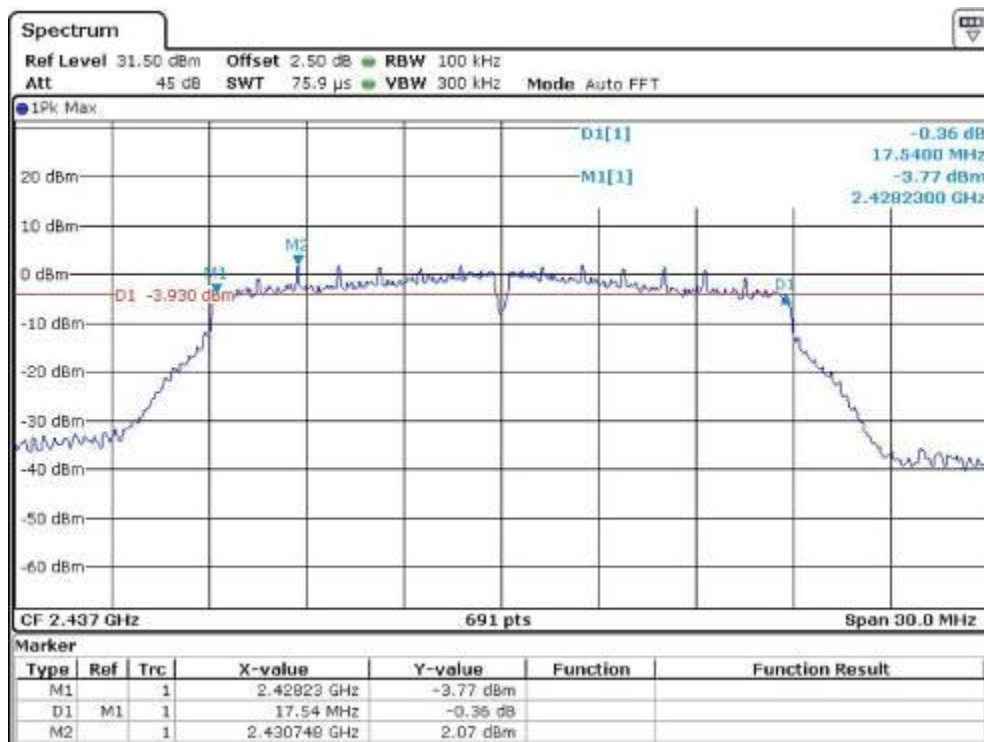
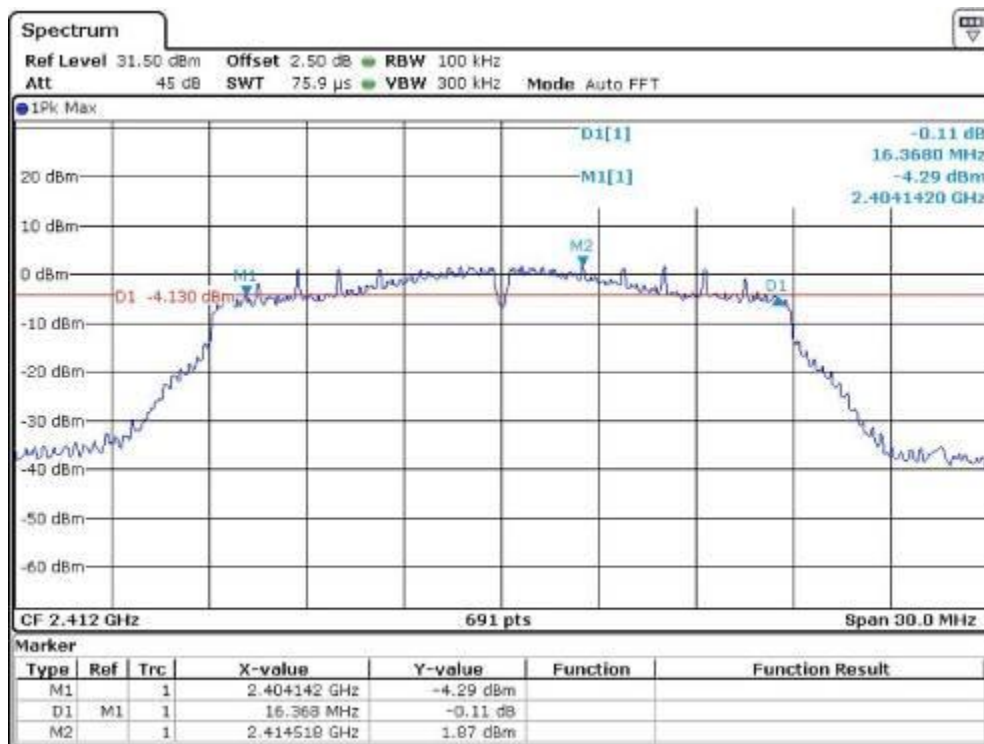


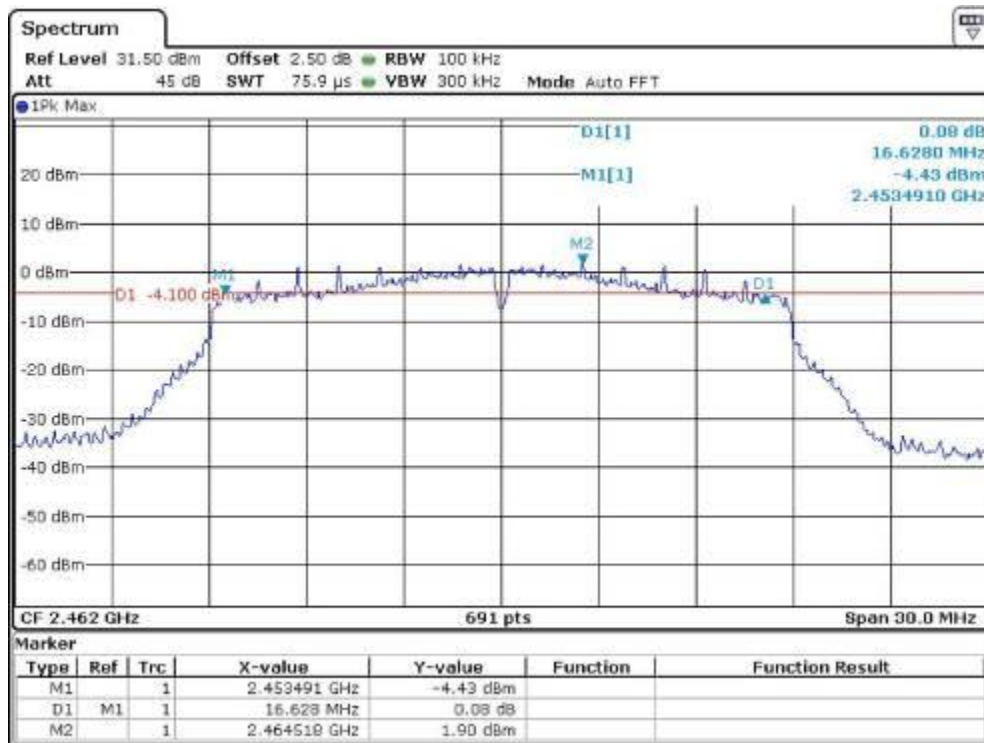
802.11g



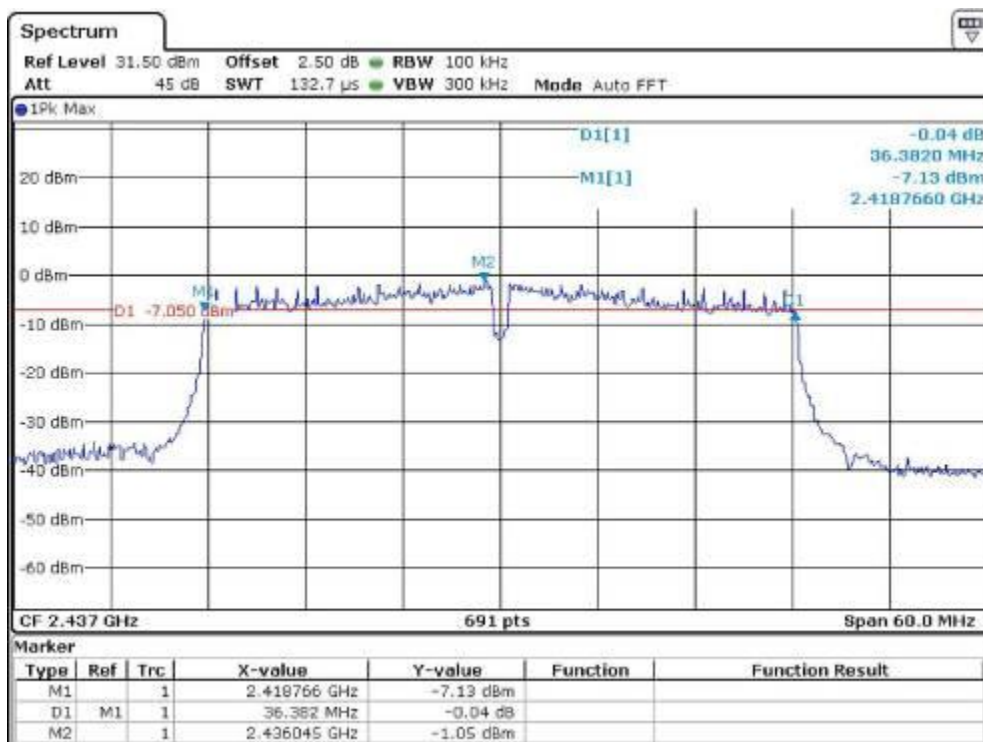
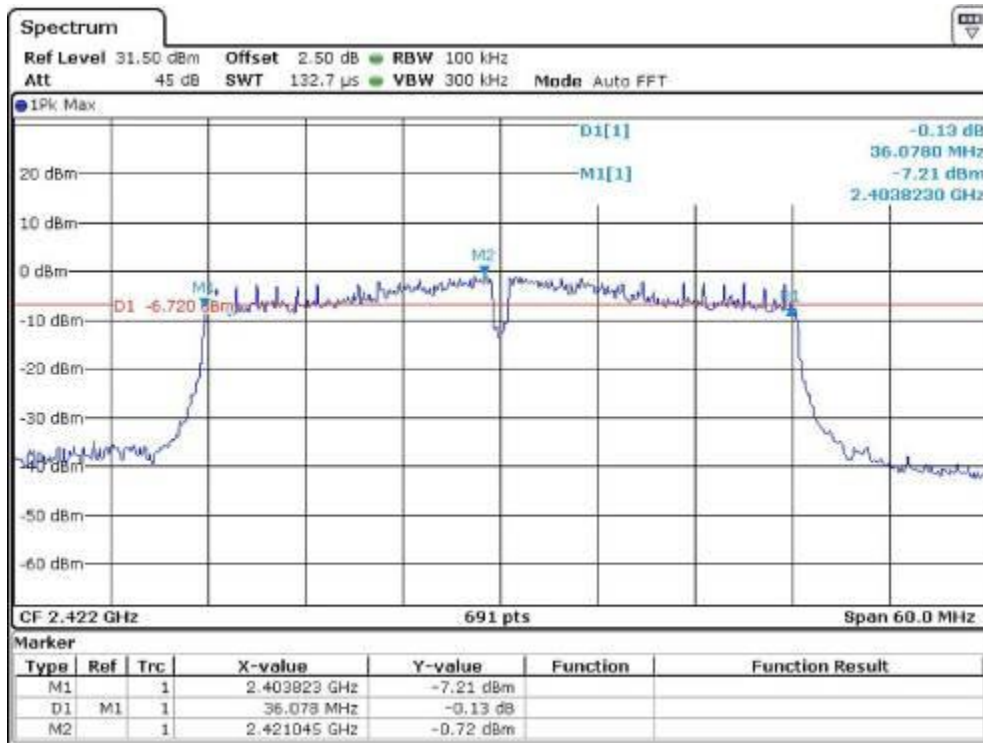


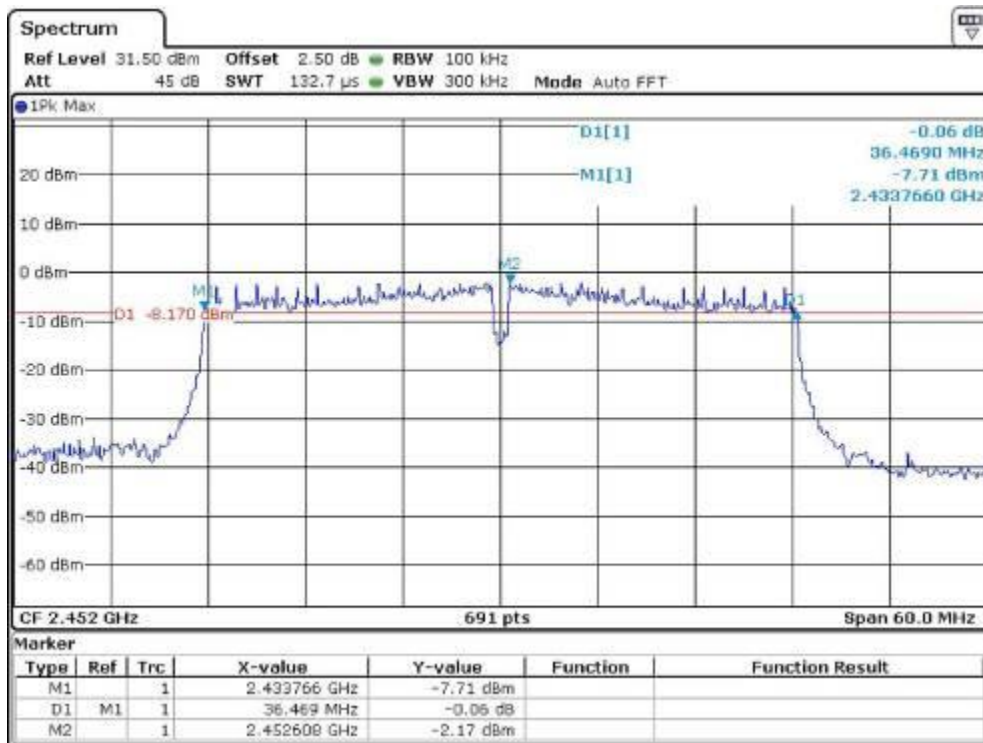
802.11n-HT20





802.11n-HT40





Applicant: Shenzhen 3Nod Digital Technology Co., Ltd.

Date of Test: April 4, 2019

Model: 100004118

4.3 Maximum Power Density Reading, FCC Rule 15.247(e):

The Measurement Procedure PKPSD was set according to the FCC KDB 558074 D01 v05r02.

Antenna output of the EUT was coupled directly to spectrum analyzer; if an external attenuator and/or cable was used, these losses are compensated for with the analyzer OFFSET function.

Limit: The Power Density does not exceed 8dBm/3 kHz.

| IEEE 802.11b (CCK, 1Mbps) | |
|---------------------------|-----------------------------|
| Frequency (MHz) | Power Density with RBW 3KHz |
| 2412 | -4.42 |
| 2437 | -4.09 |
| 2462 | -4.69 |

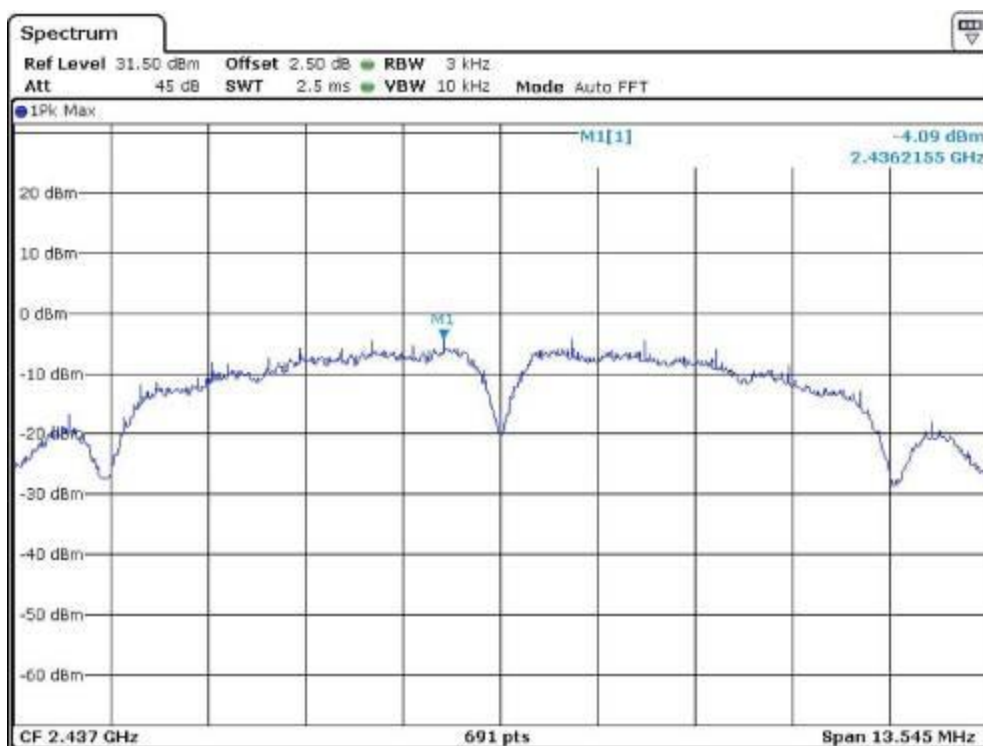
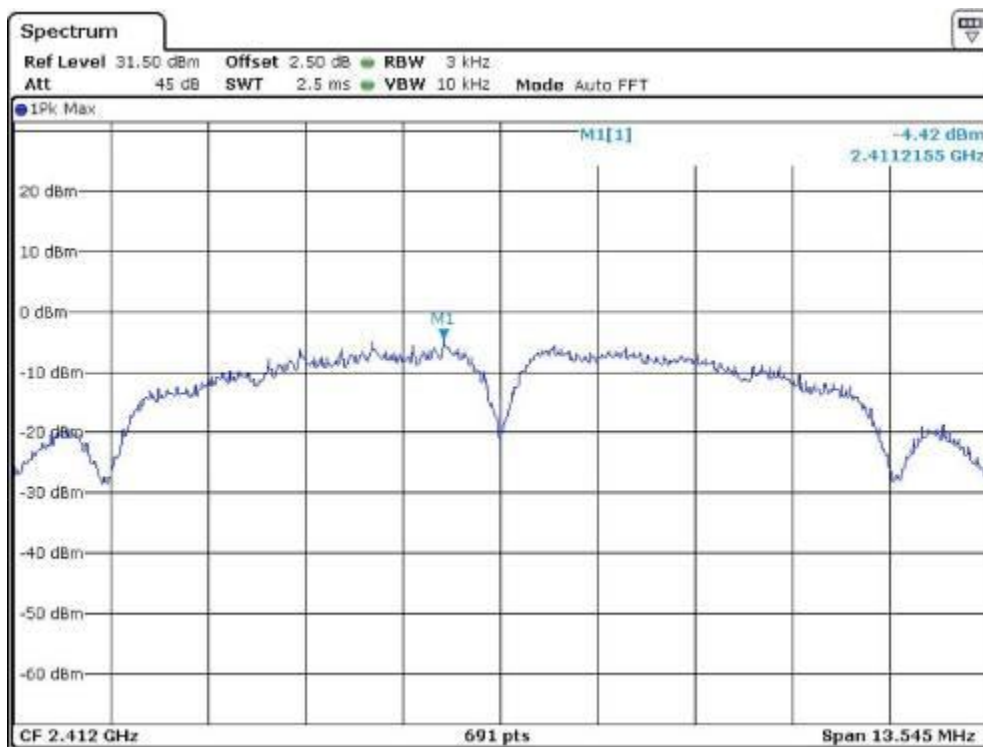
| IEEE 802.11g (16QAM, 6Mbps) | |
|-----------------------------|-----------------------------|
| Frequency (MHz) | Power Density with RBW 3KHz |
| 2412 | -8.02 |
| 2437 | -8.67 |
| 2462 | -8.78 |

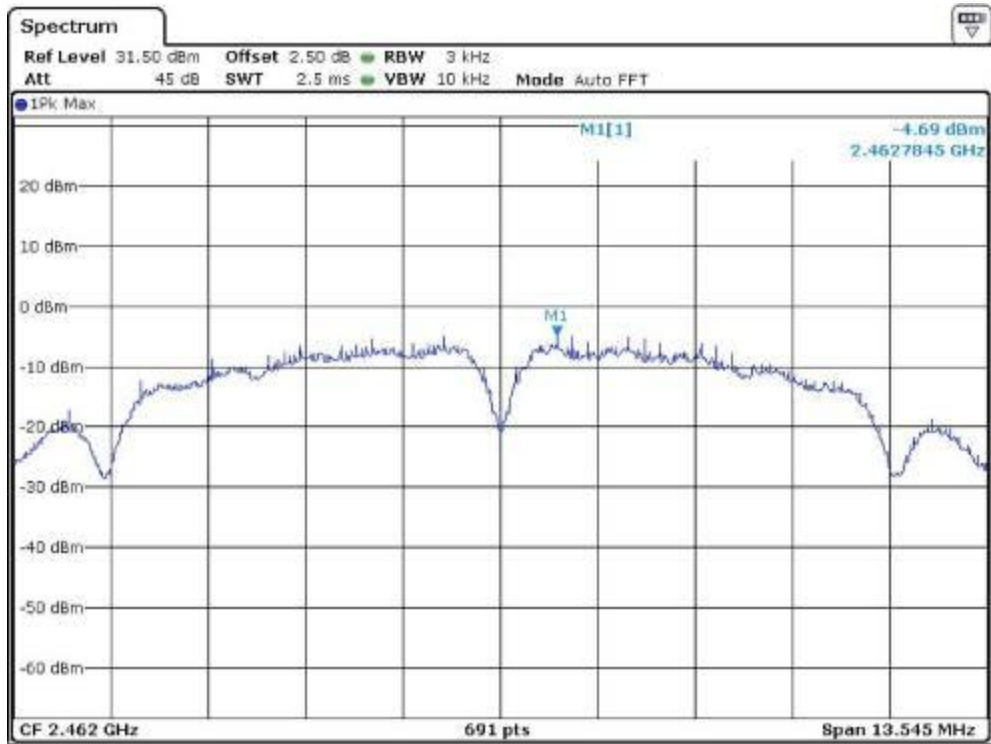
| IEEE 802.11n-HT20 (64QAM, 6Mbps) | |
|----------------------------------|-----------------------------|
| Frequency (MHz) | Power Density with RBW 3KHz |
| 2412 | -9.19 |
| 2437 | -9.95 |
| 2462 | -10.26 |

| IEEE 802.11n-HT40 (64QAM, 13.5Mbps) | |
|-------------------------------------|-----------------------------|
| Frequency (MHz) | Power Density with RBW 3KHz |
| 2422 | -15.57 |
| 2437 | -16.07 |
| 2452 | -16.13 |

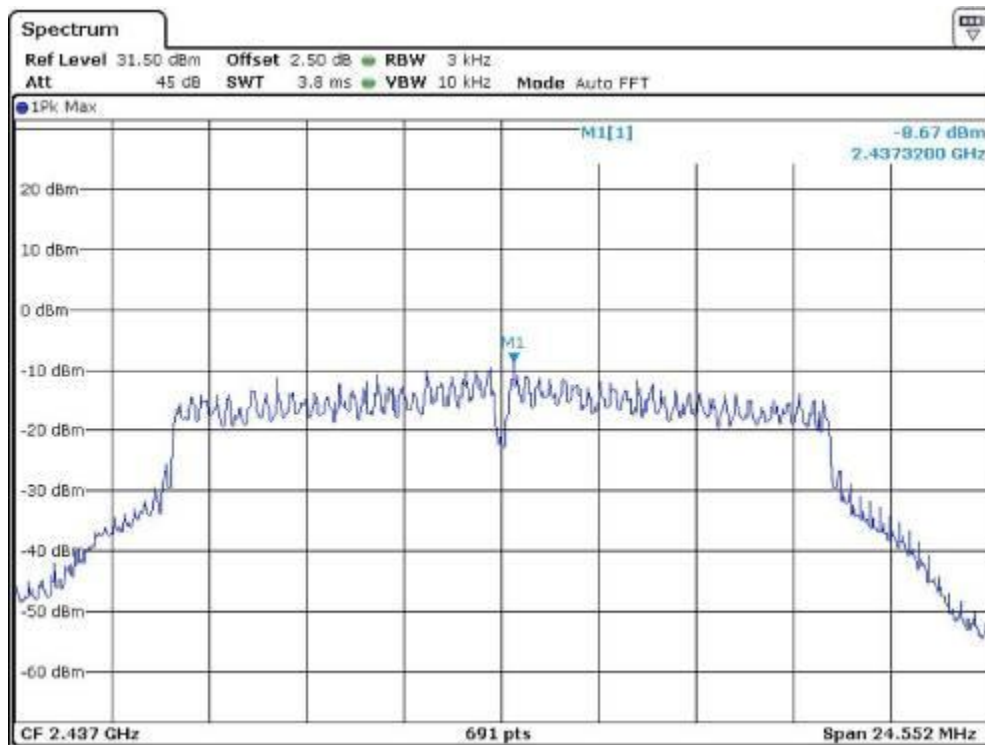
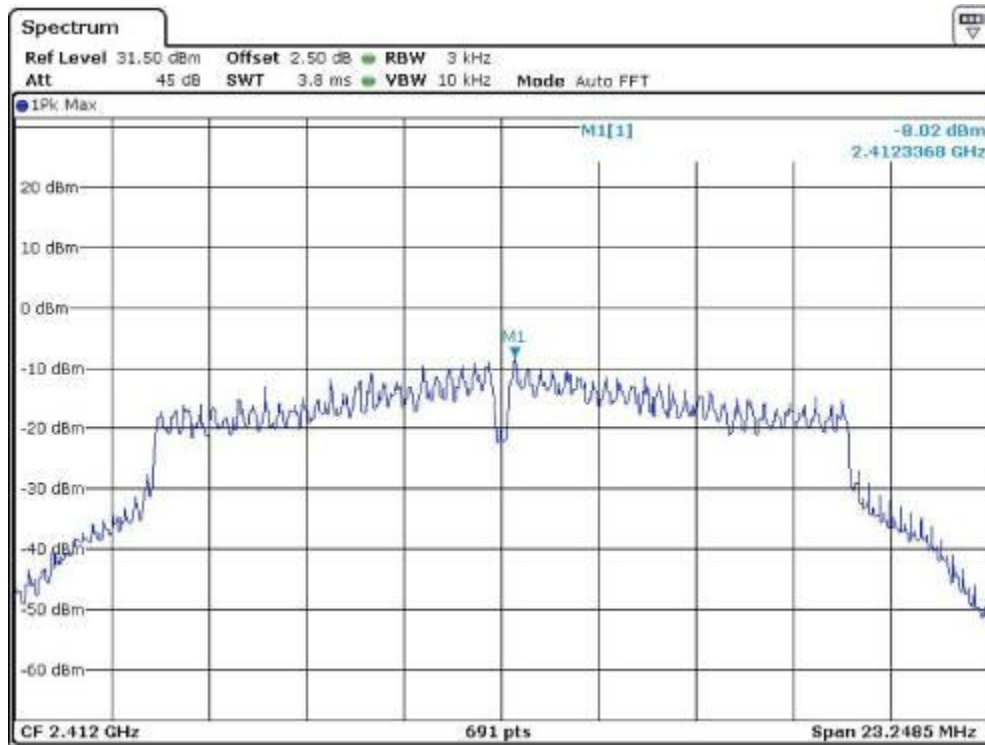
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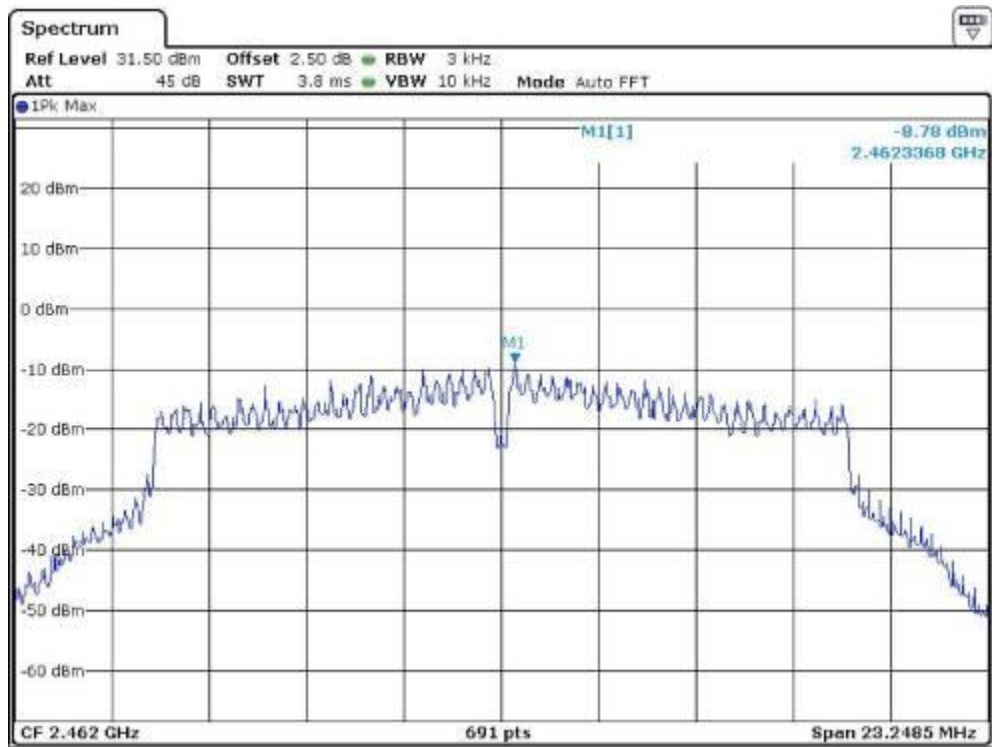
802.11b



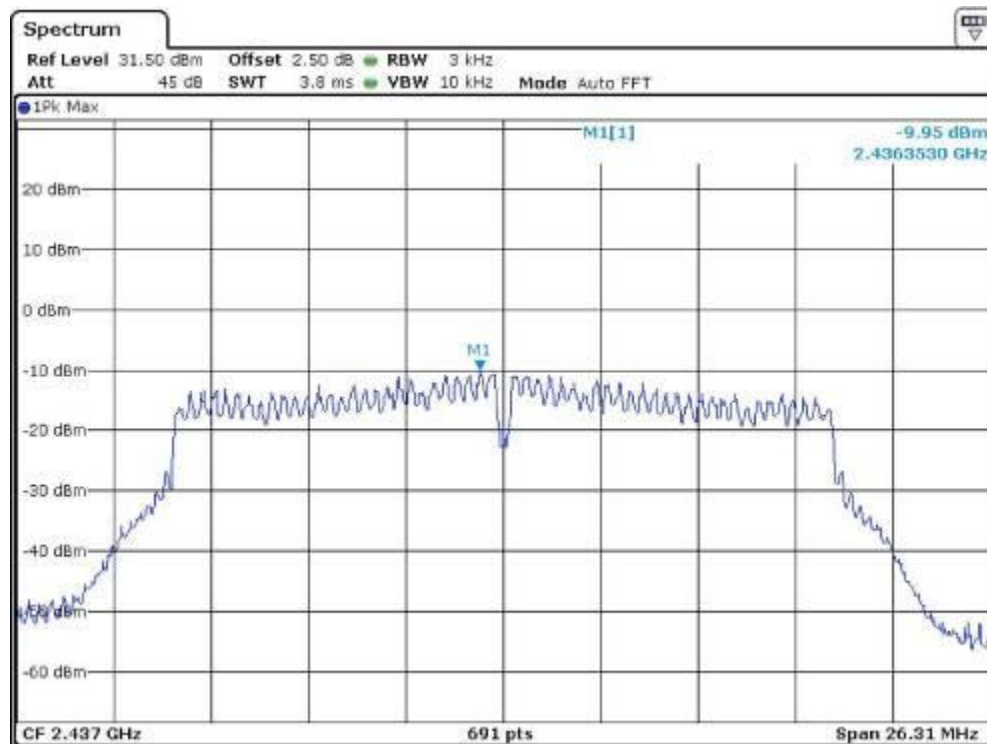
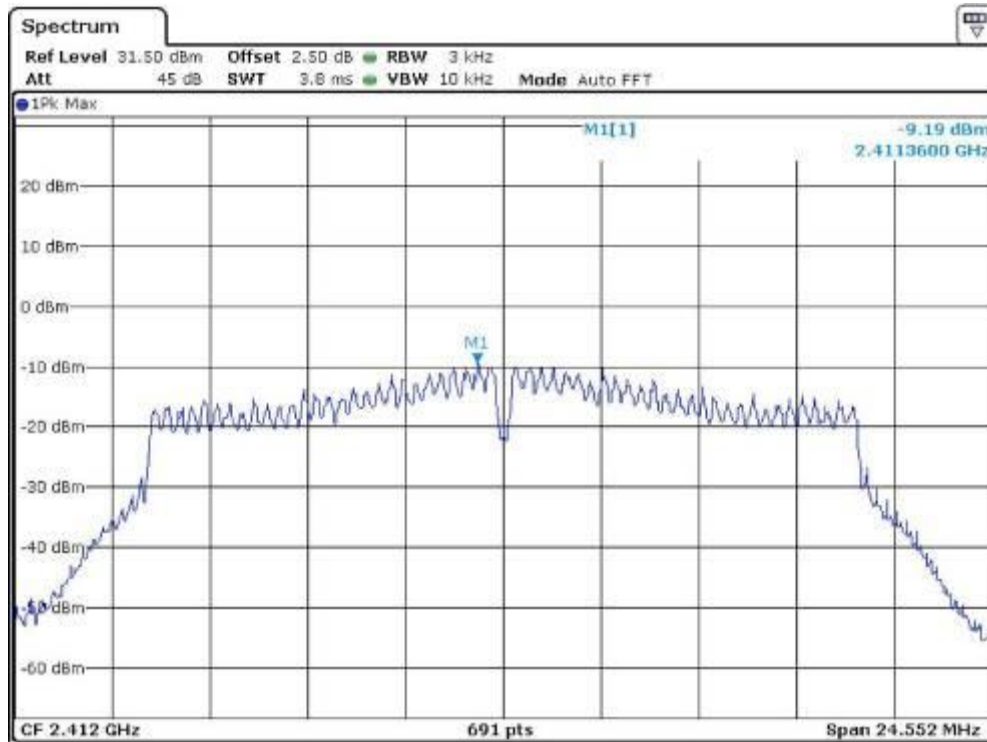


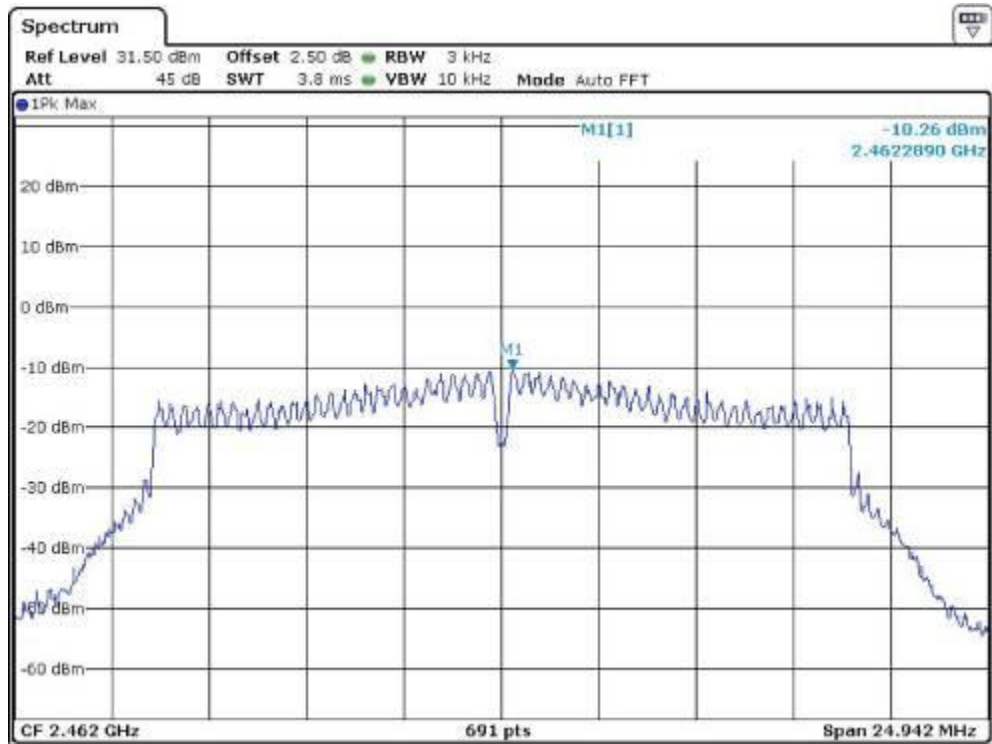
802.11g



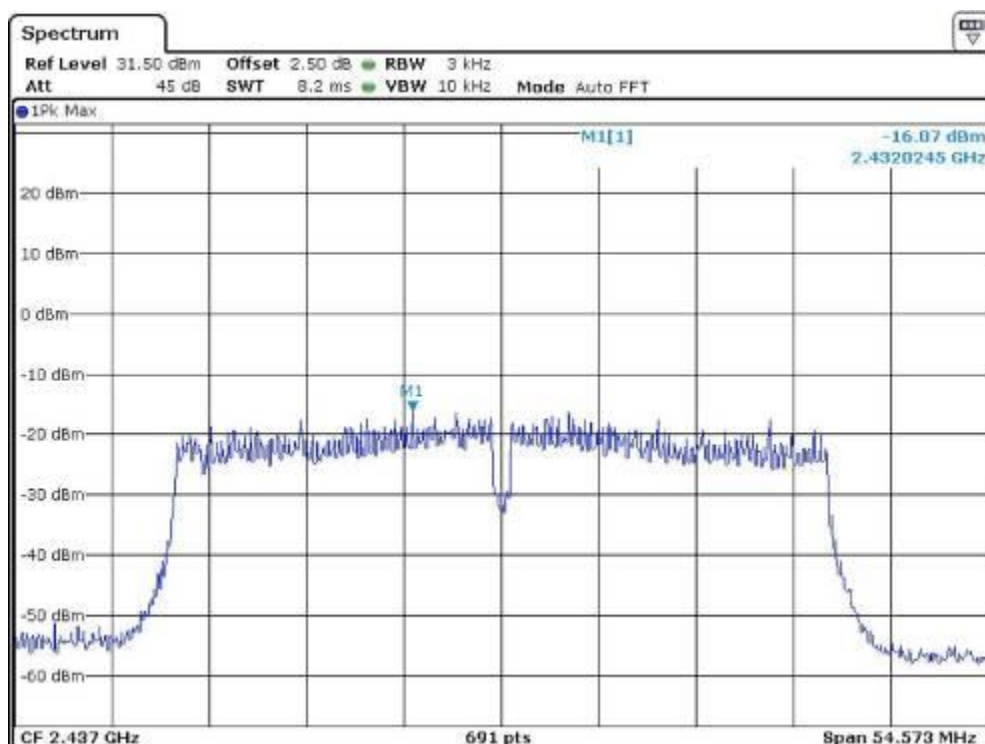
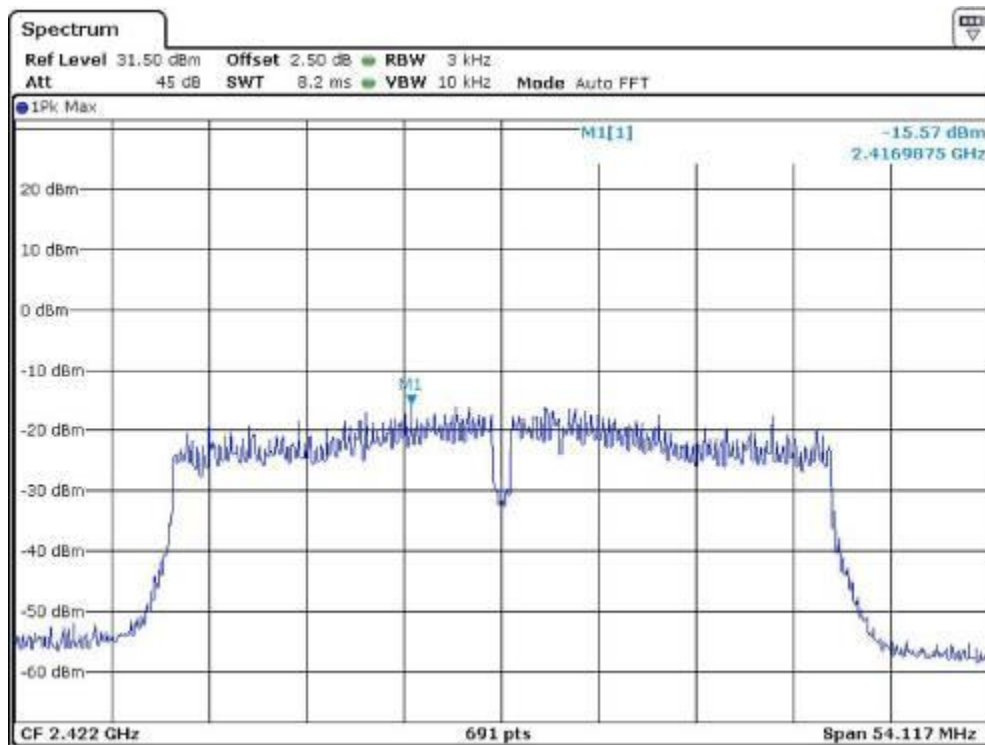


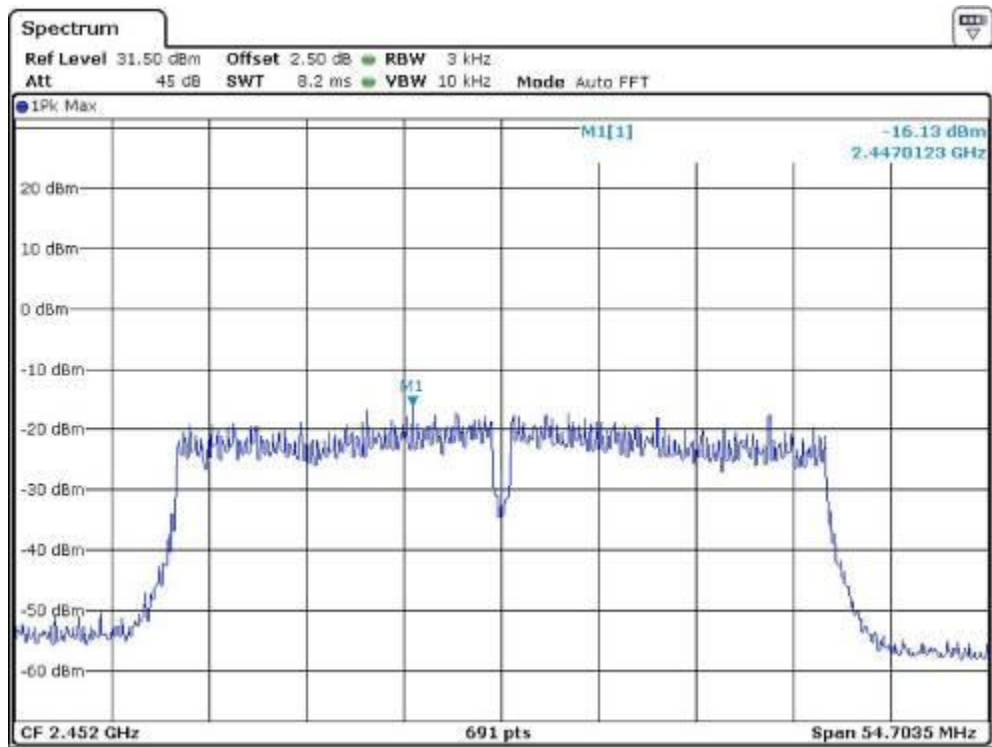
802.11n-HT20





802.11n-HT40





Applicant: Shenzhen 3Nod Digital Technology Co., Ltd.

Date of Test: April 4, 2019

Model: 100004118

4.4 Out of Band Conducted Emissions, FCC Rule 15.247(d)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. The Measurement Procedure was set according to the FCC KDB 558074 D01 v05r02.

All other types of emissions from the EUT shall meet the general limits for radiated frequencies outside the passband.

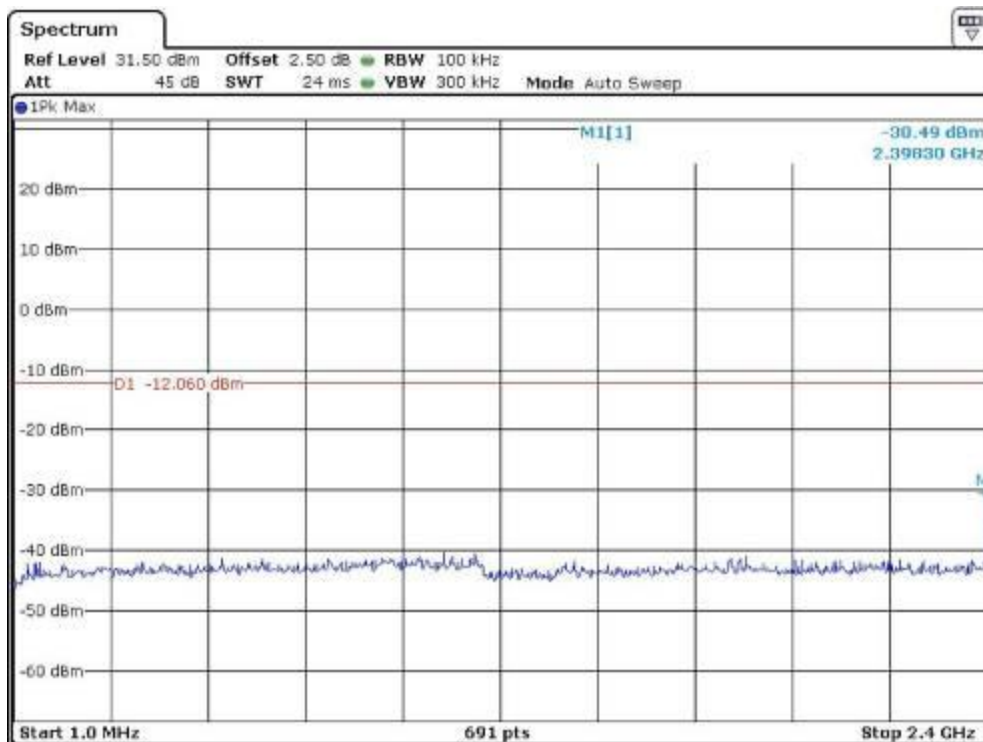
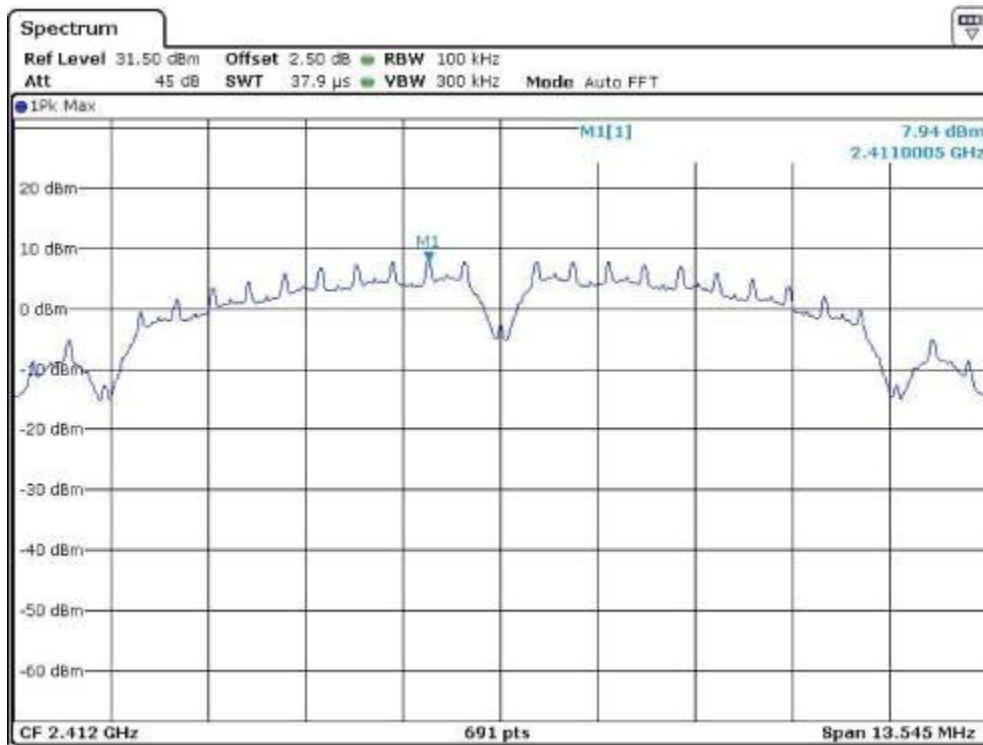
Refer to the attached test plots for out of band conducted emissions data with rate of 1Mbps for 802.11b, 6Mbps for 802.11g, 6Mbps for 802.11n-HT20 and 13.5Mbps for 802.11n-HT40.

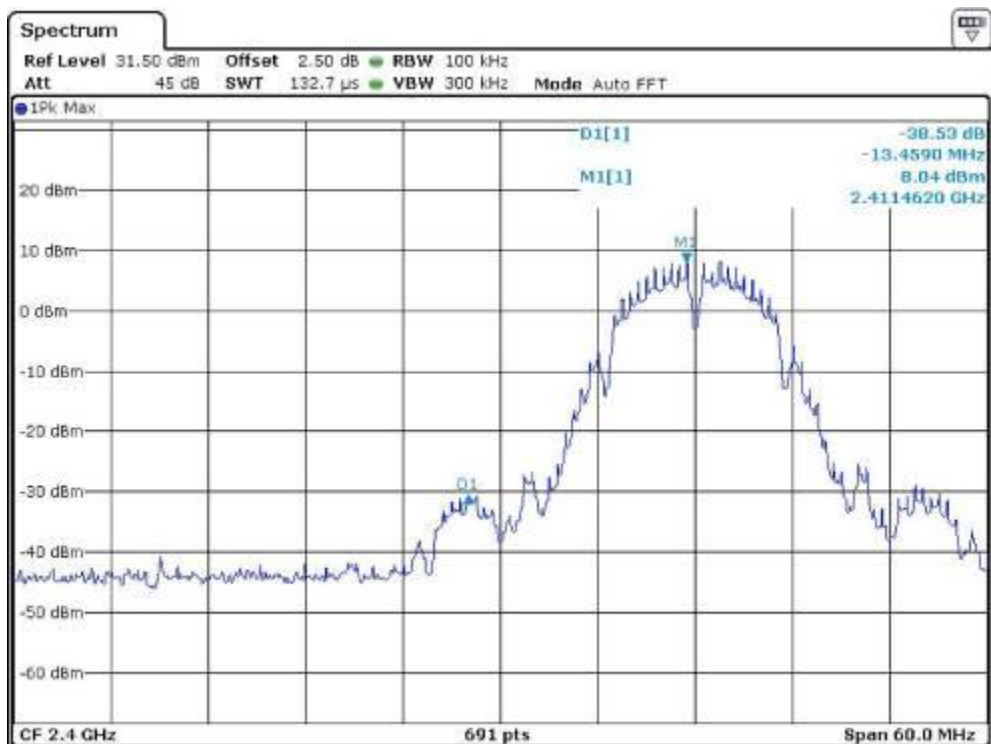
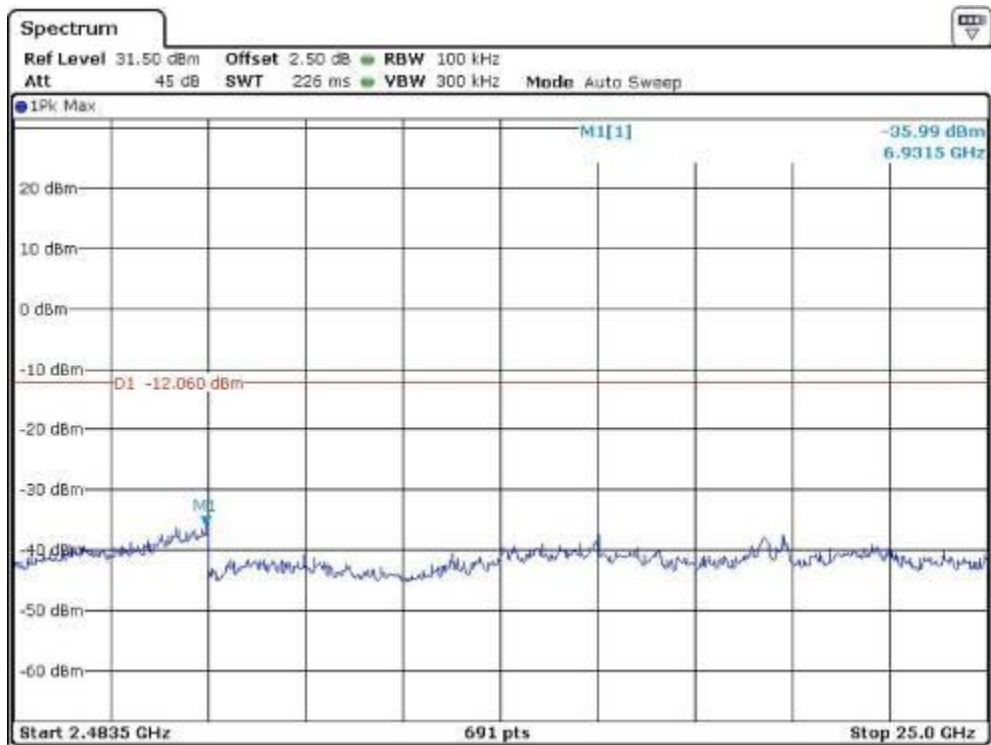
The test plots showed all spurious emission up to the tenth harmonic were measured and they were found to be at least 20 dB below the highest level of the desired power in the passband.

The test plots are attached as below.

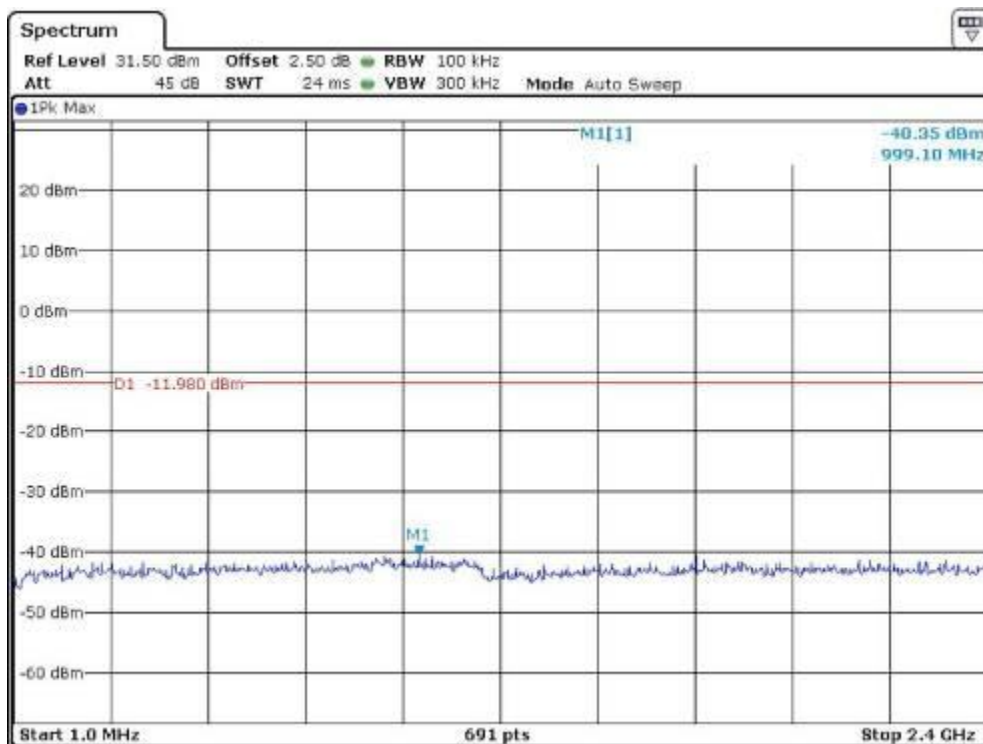
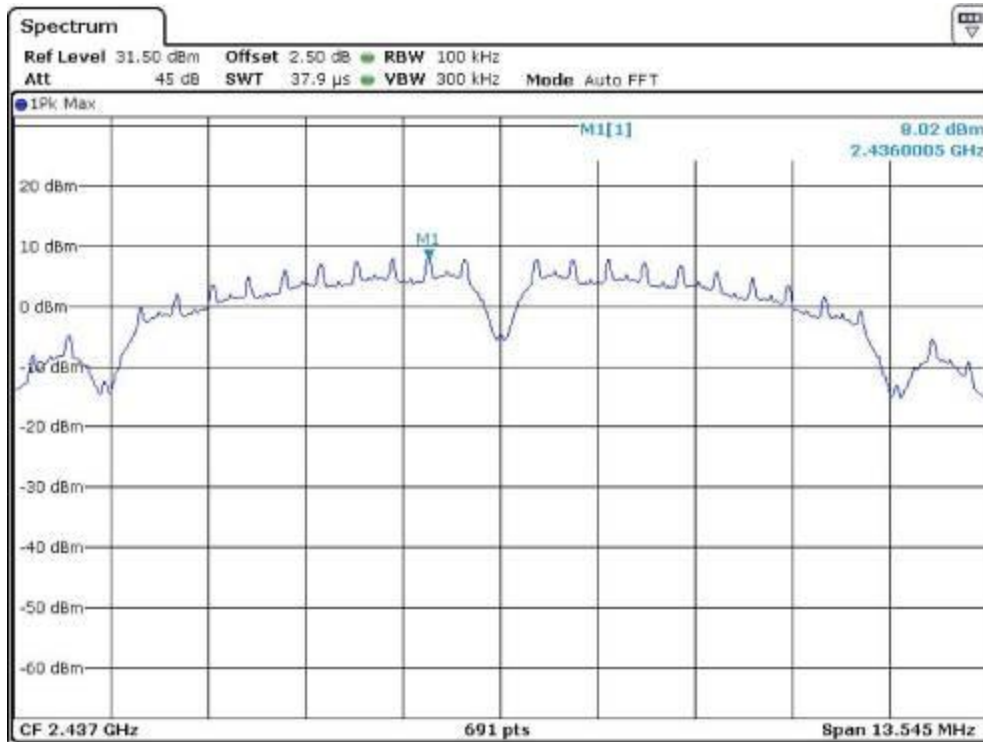
802.11b

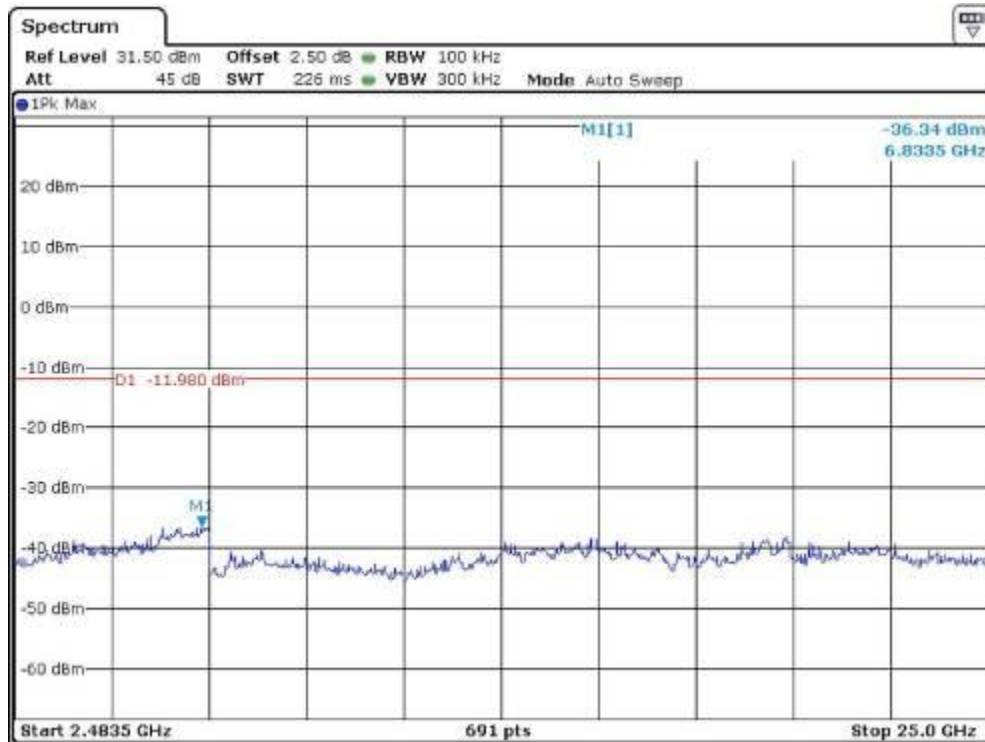
Channel 01 (2412MHz) Reference Level: 7.94dBm



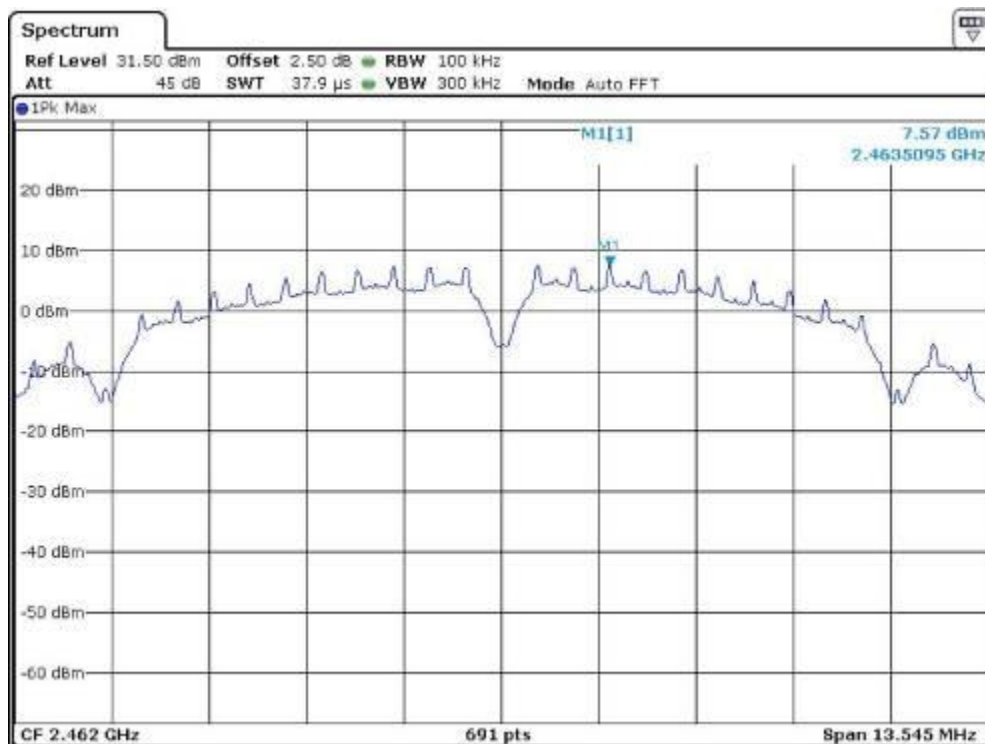


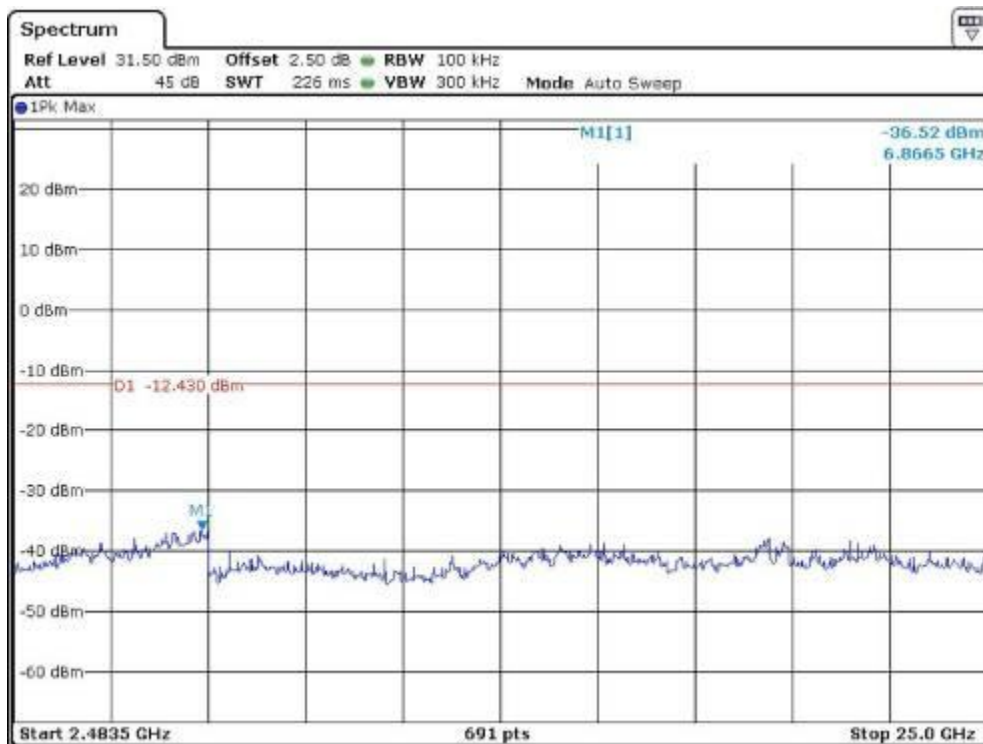
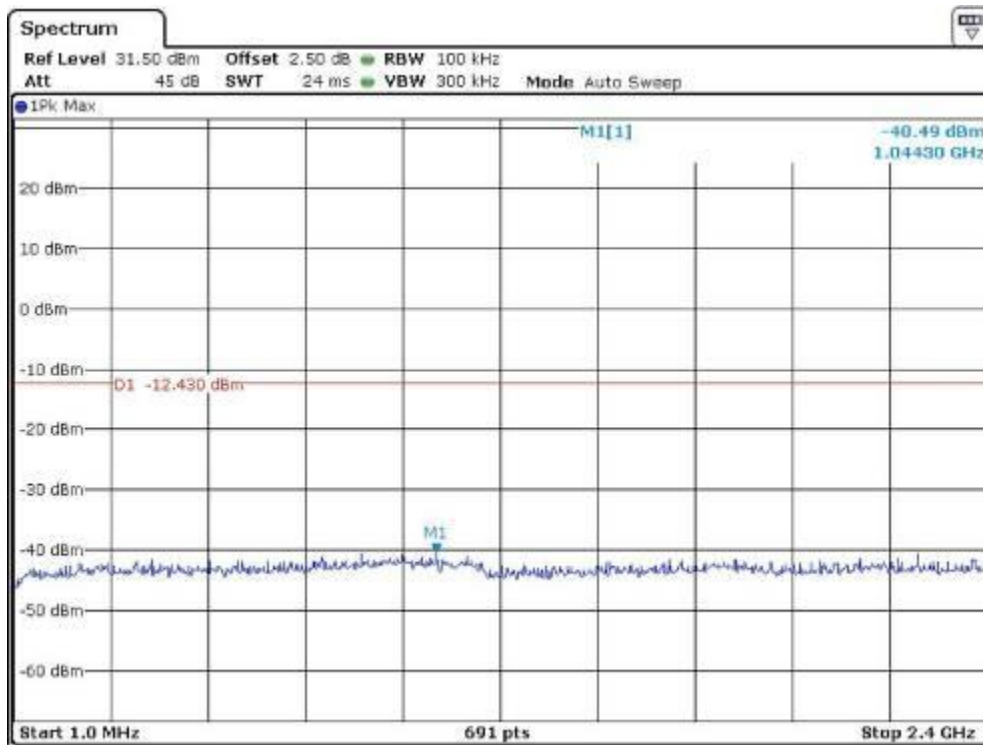
Channel 06 (2437MHz) Reference Level: 8.02dBm

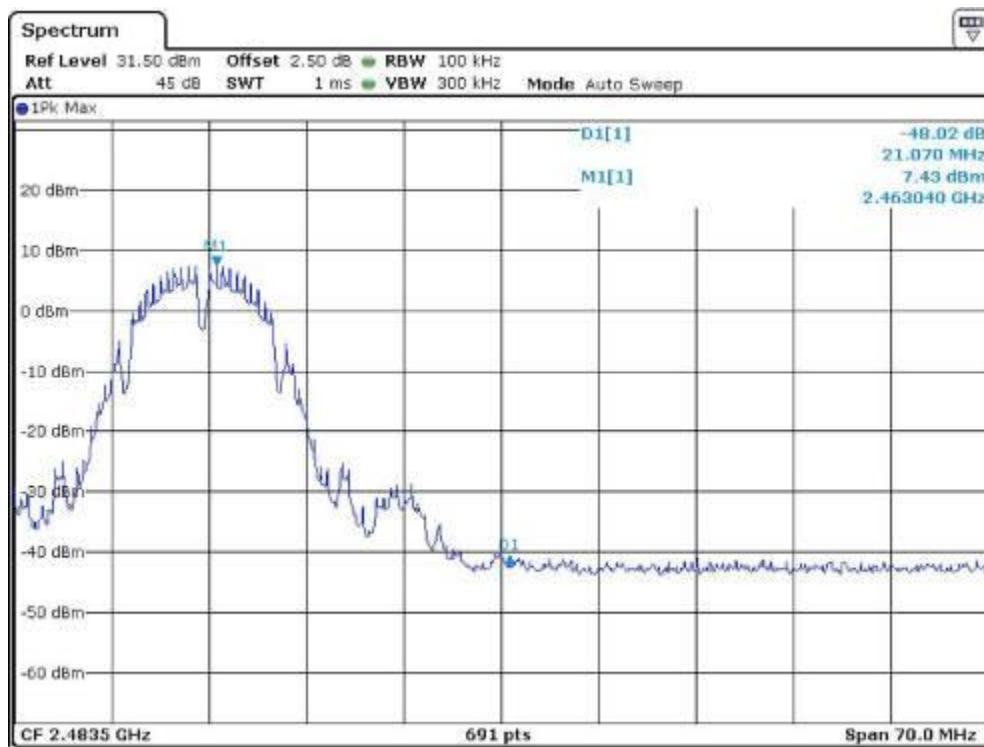




Channel 11 (2462MHz) Reference Level: 7.57dBm

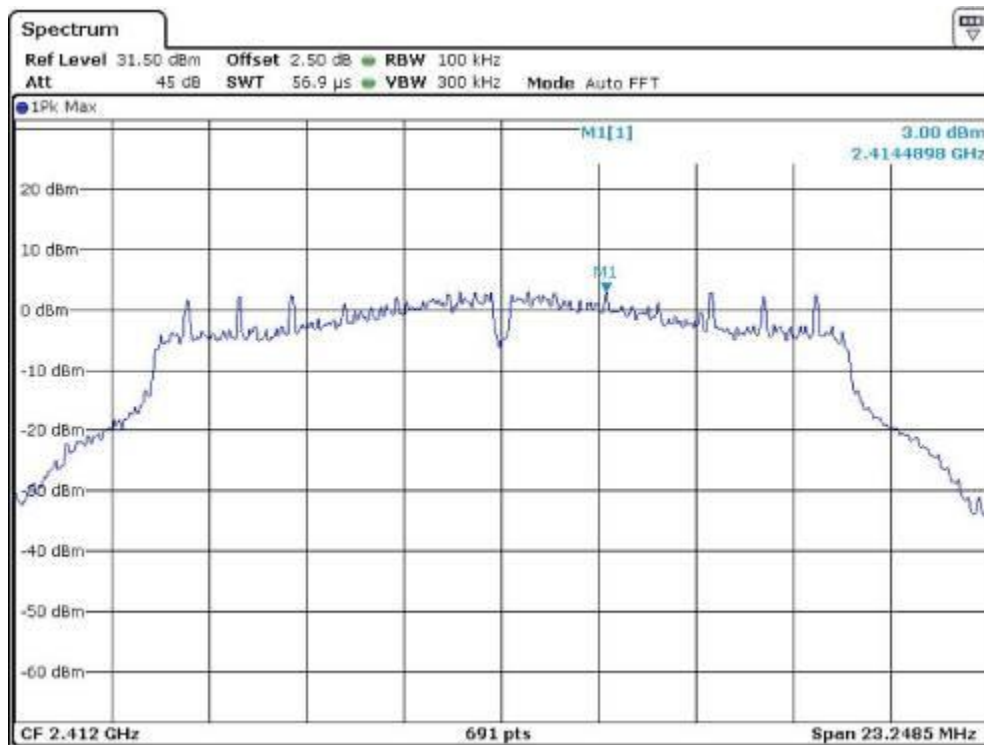


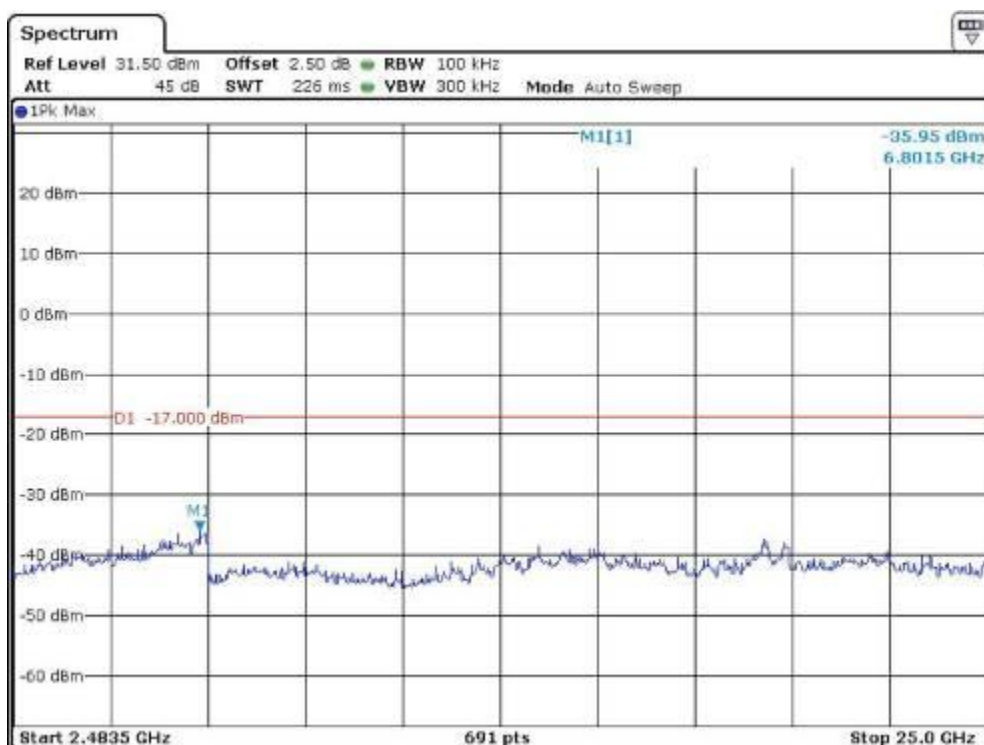
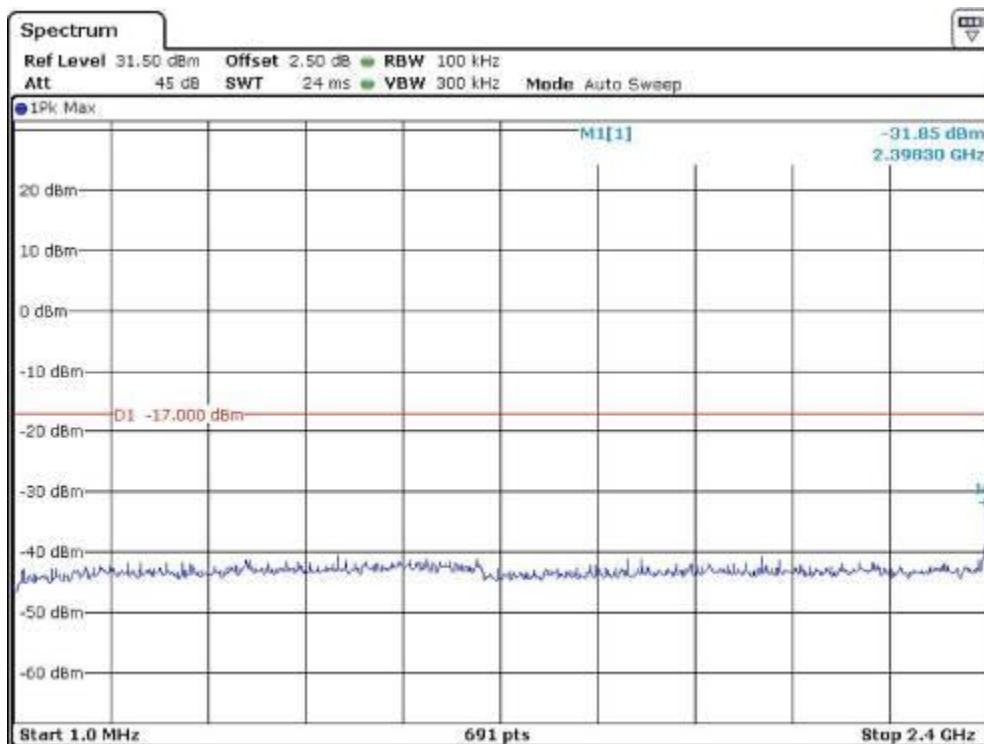


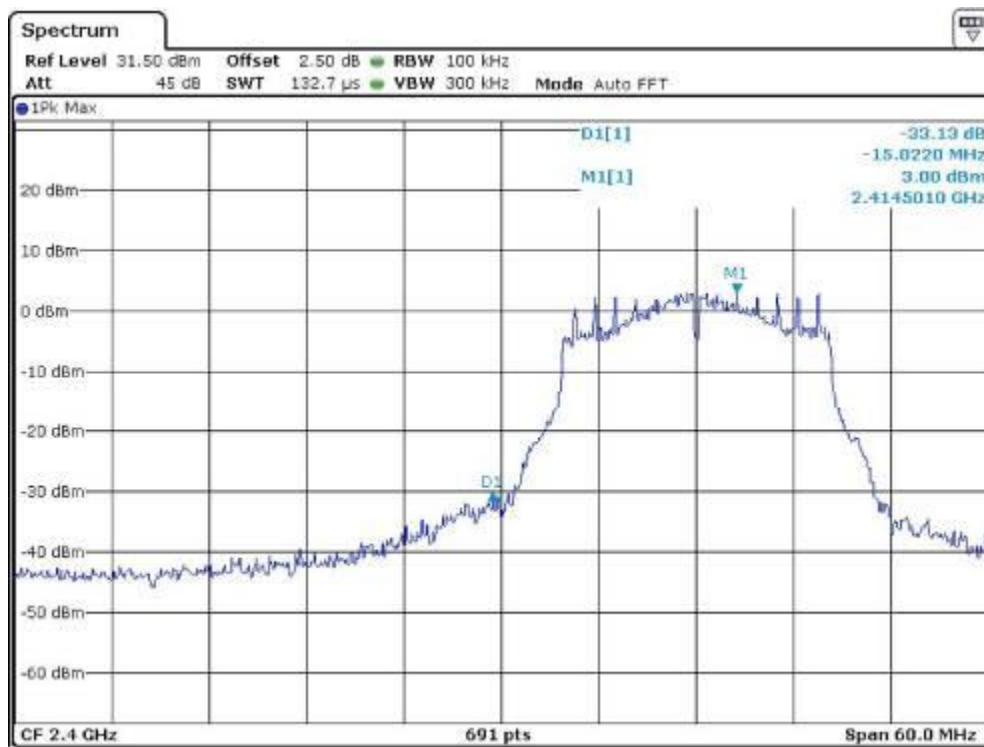


802.11g

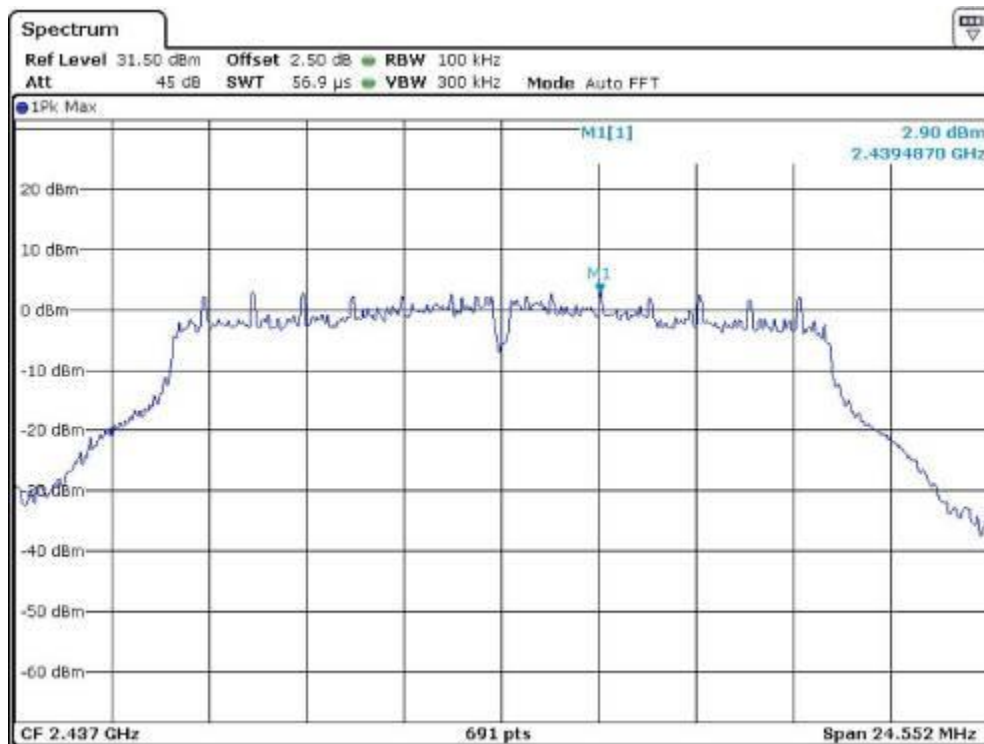
Channel 01 (2412MHz) Reference Level: 3.00dBm

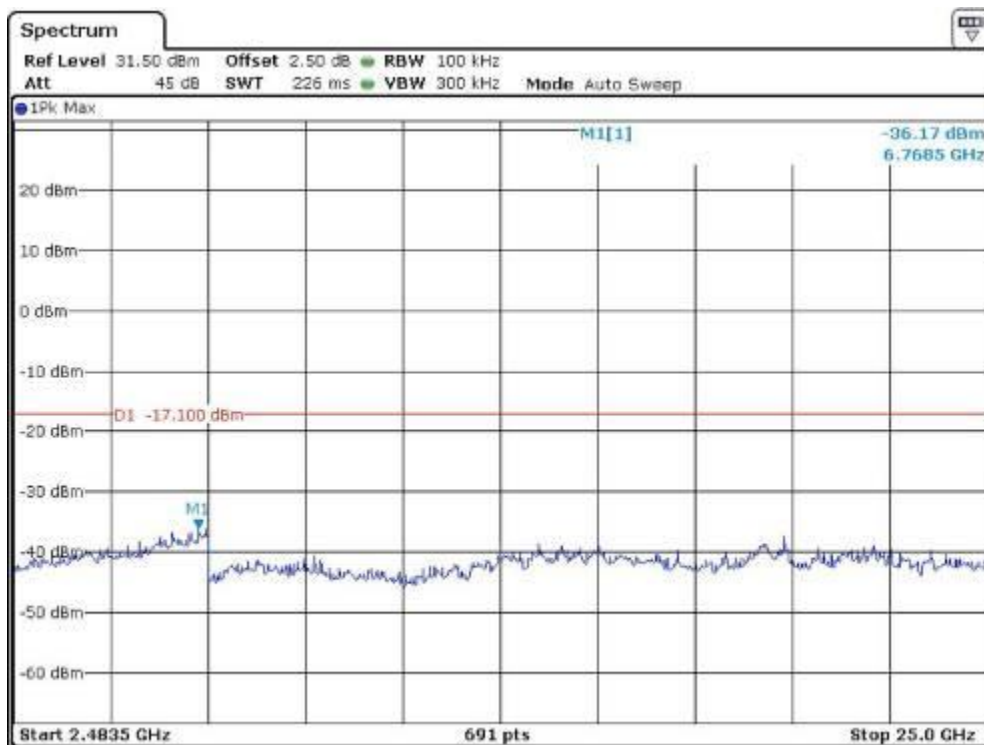
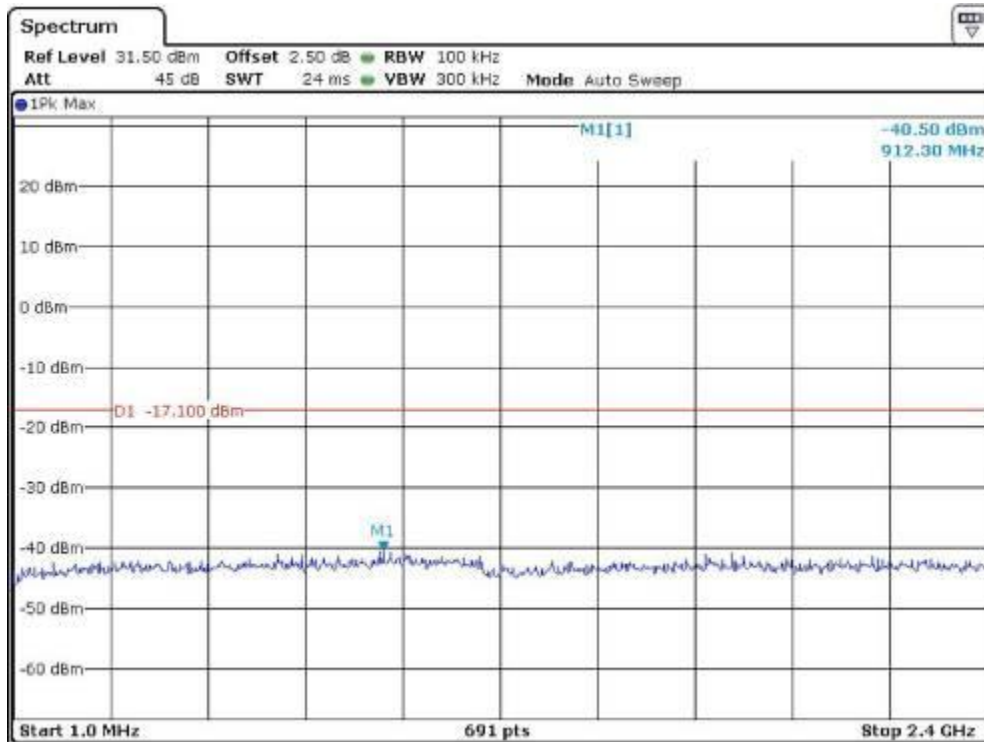




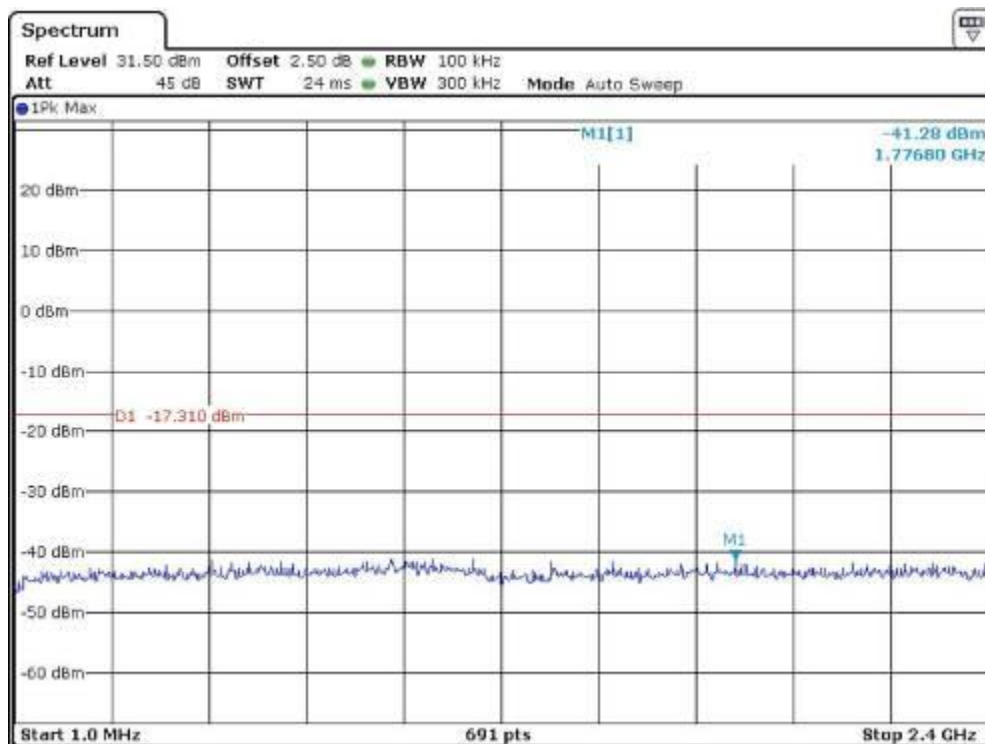
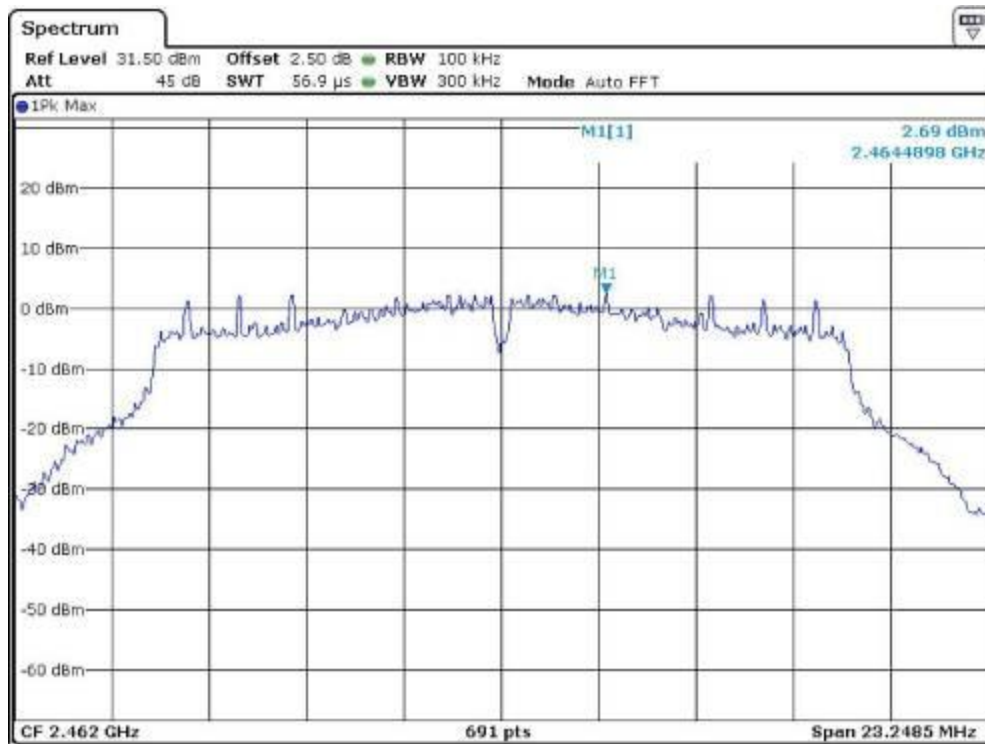


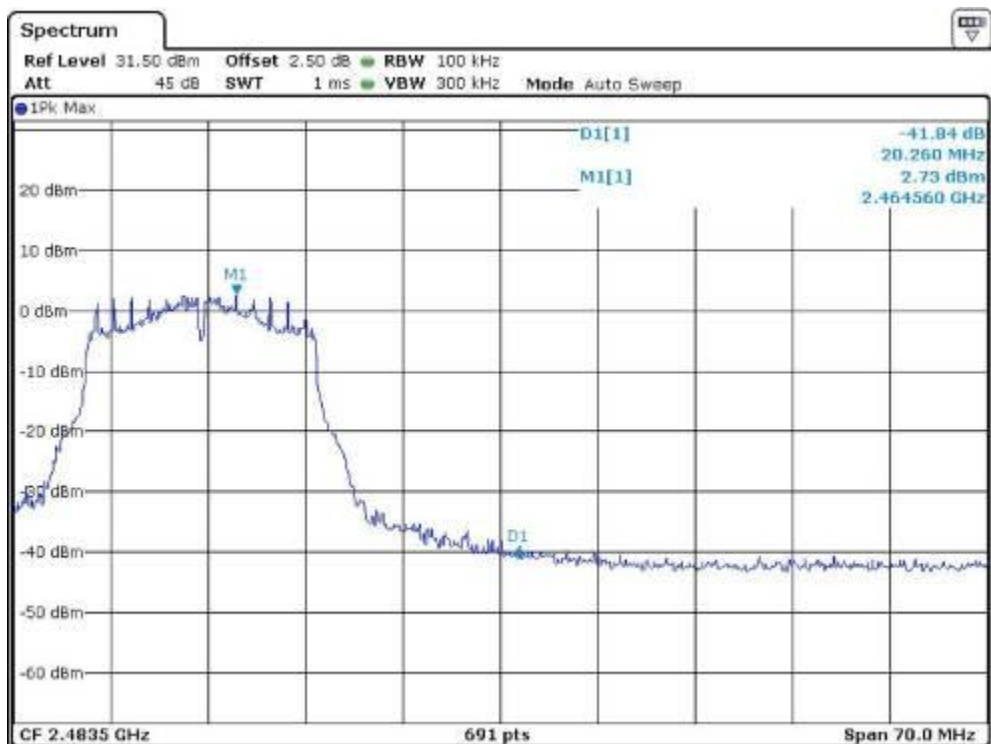
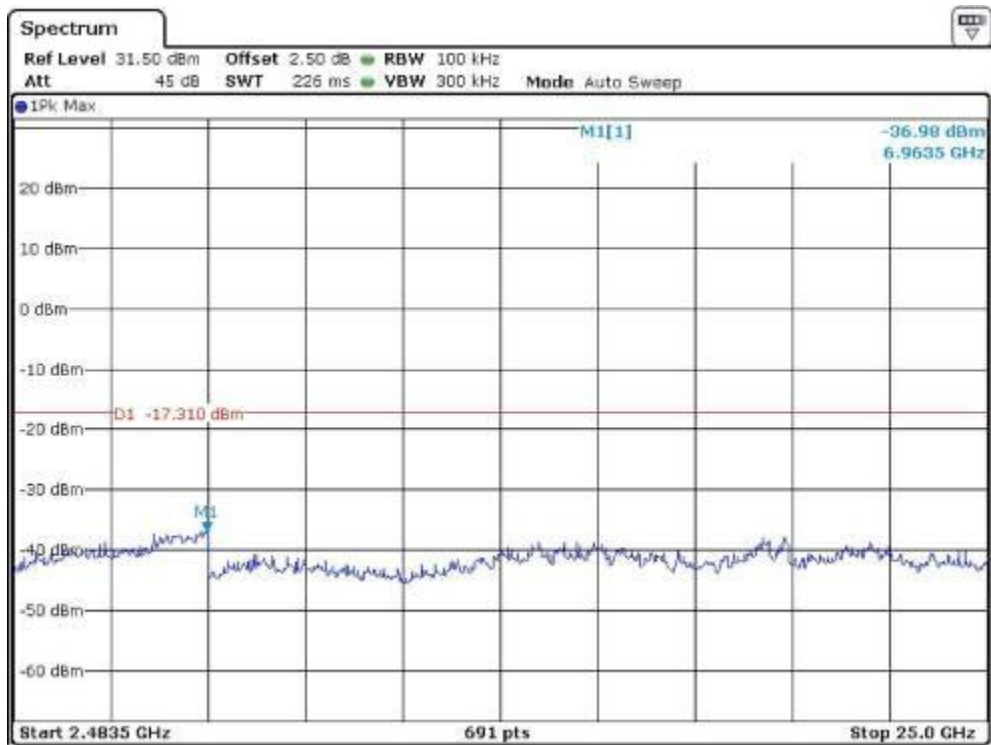
Channel 06 (2437MHz) Reference Level: 2.90dBm





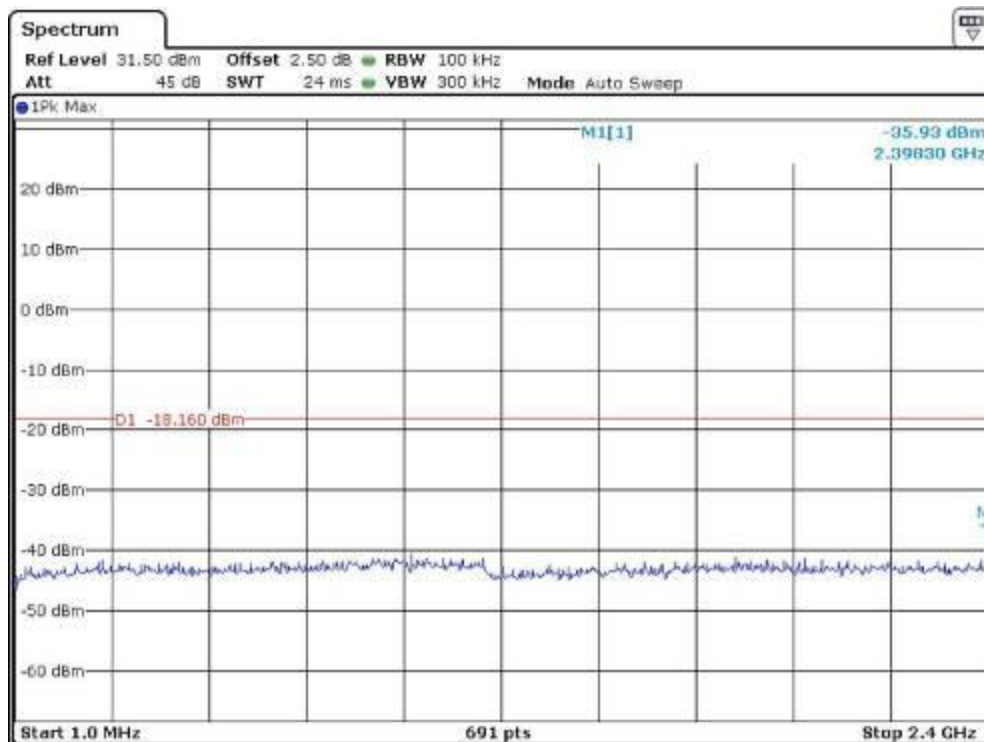
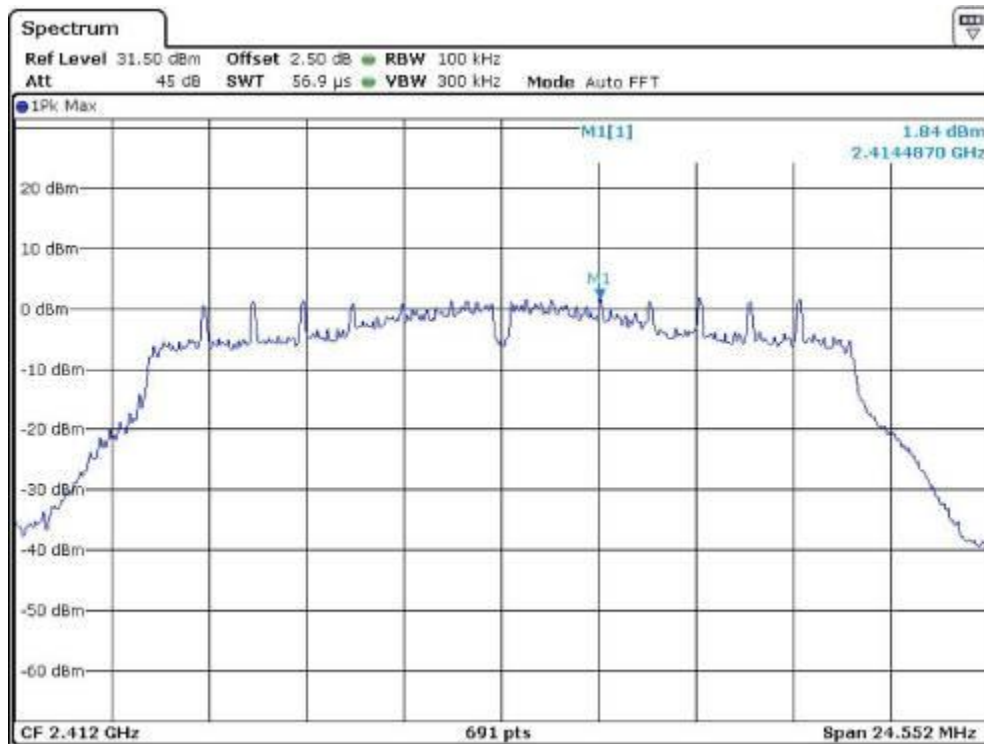
Channel 11 (2462MHz) Reference Level: 2.69dBm

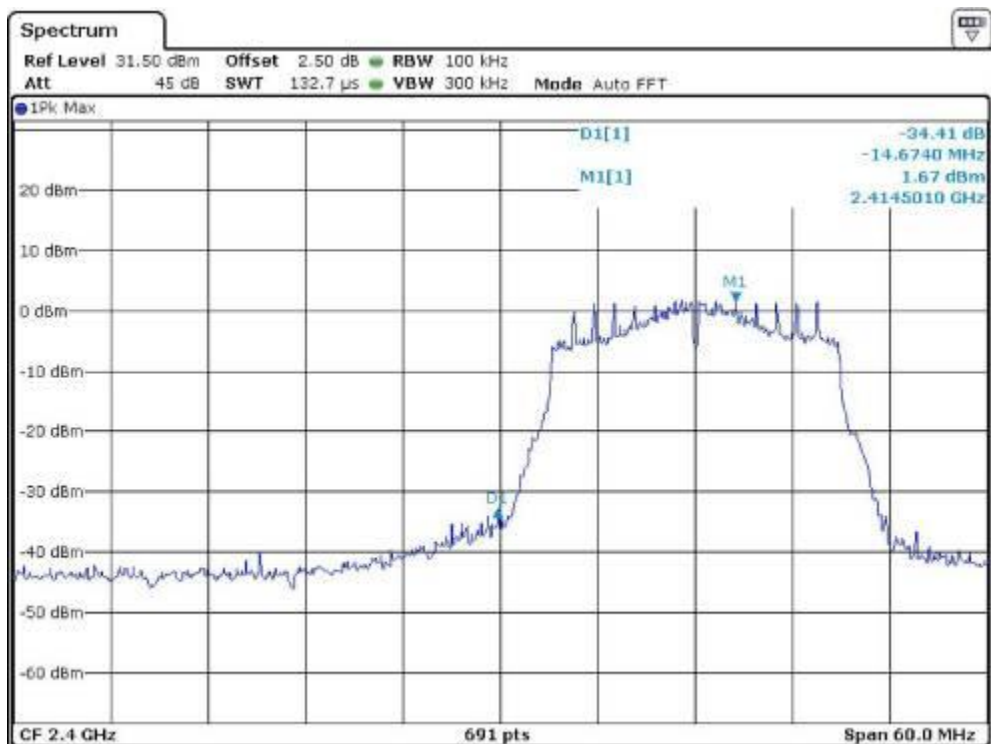
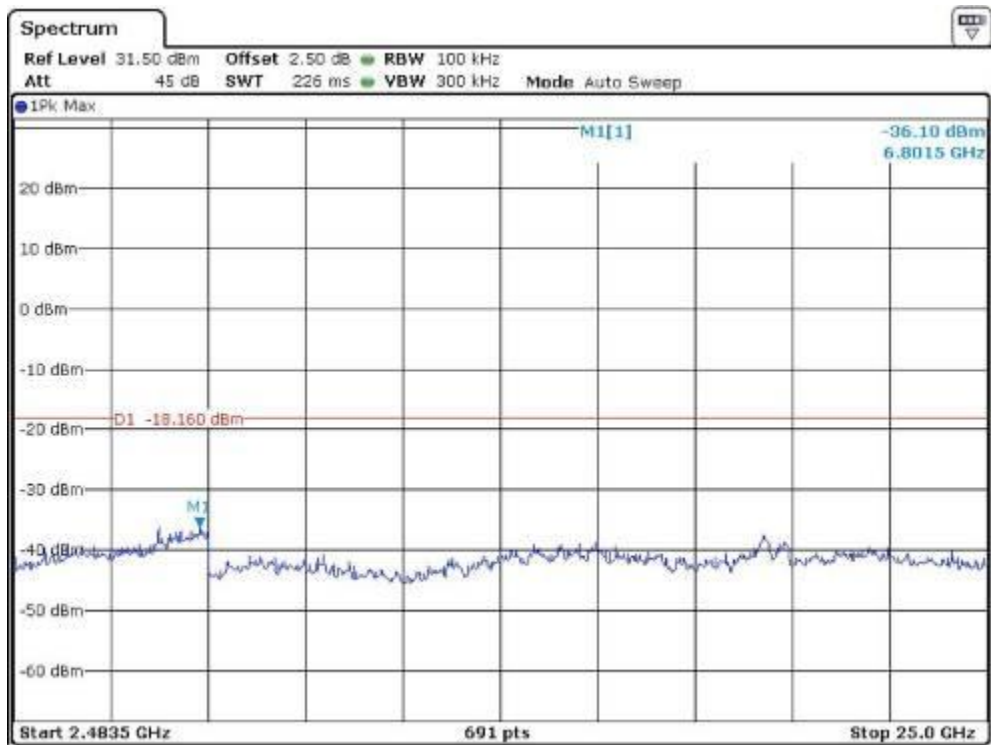




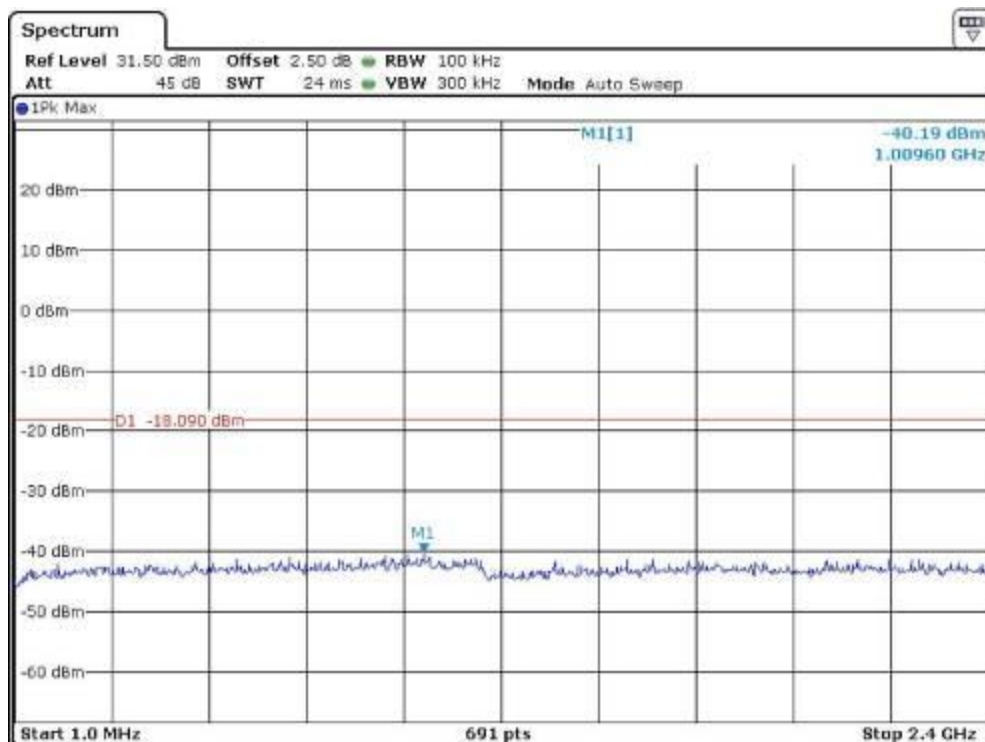
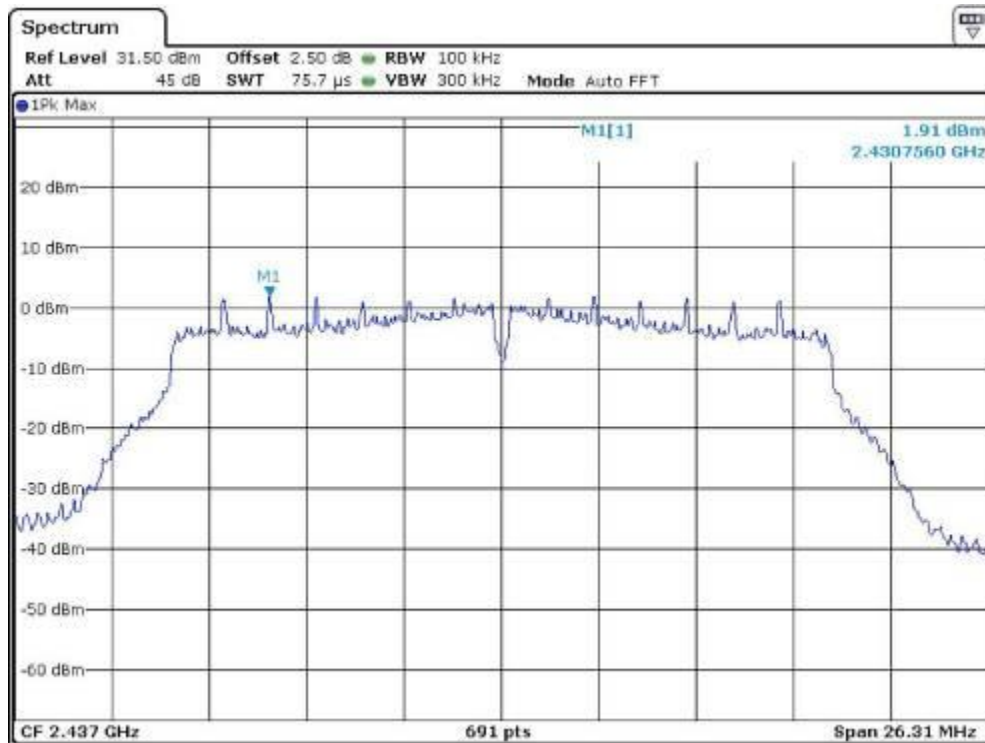
802.11n-HT20

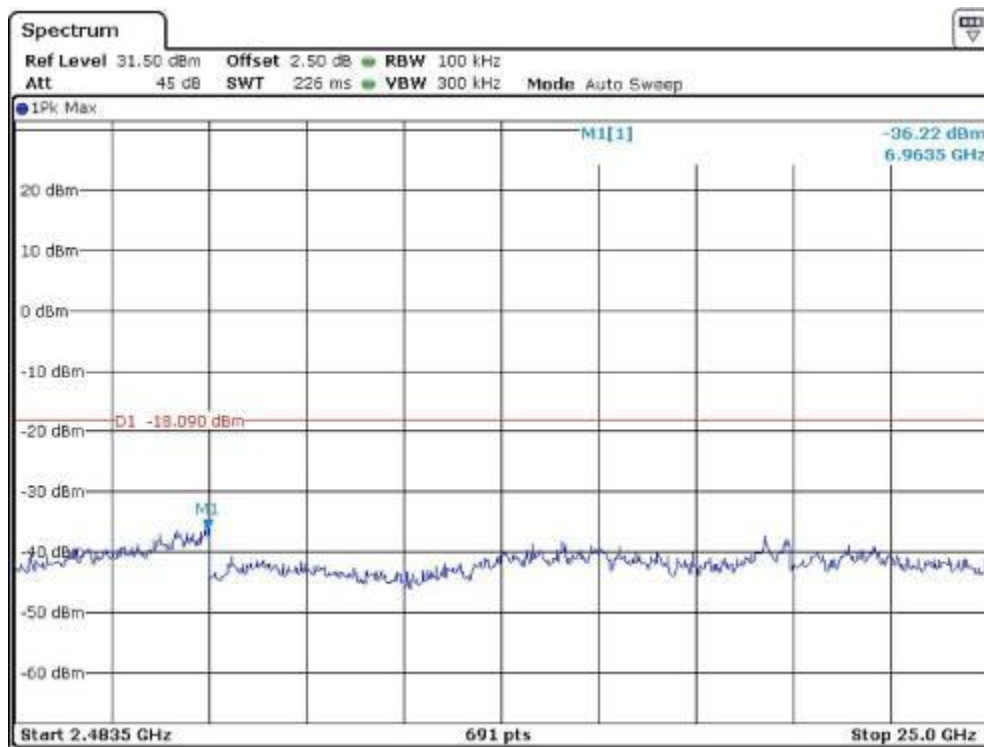
Channel 01 (2412MHz) Reference Level: 1.84dBm



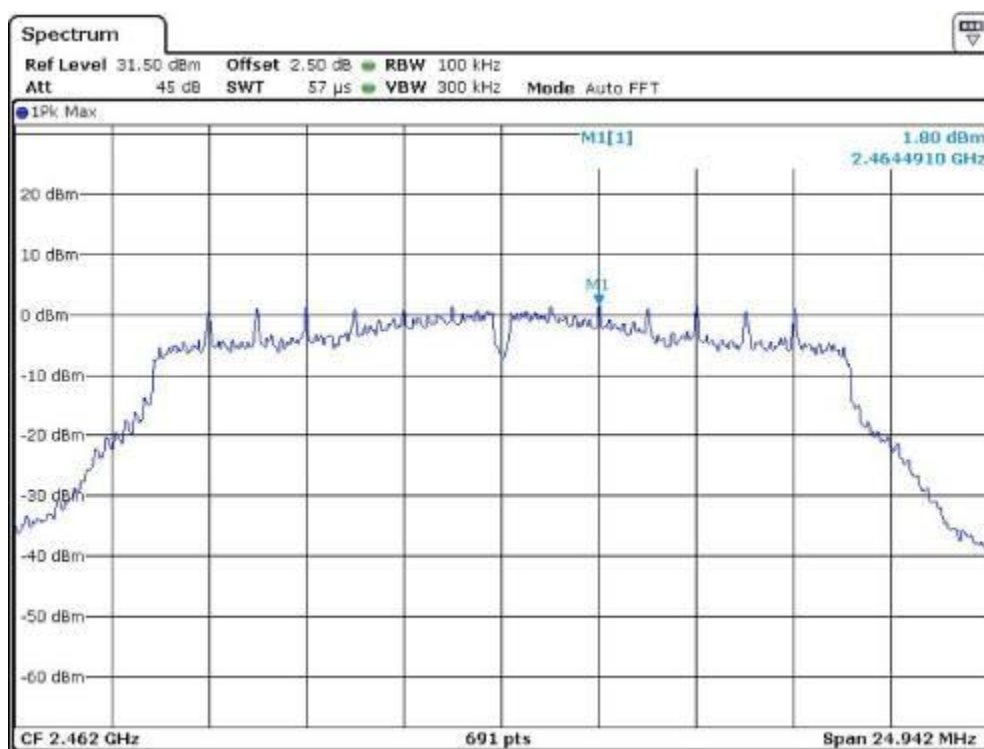


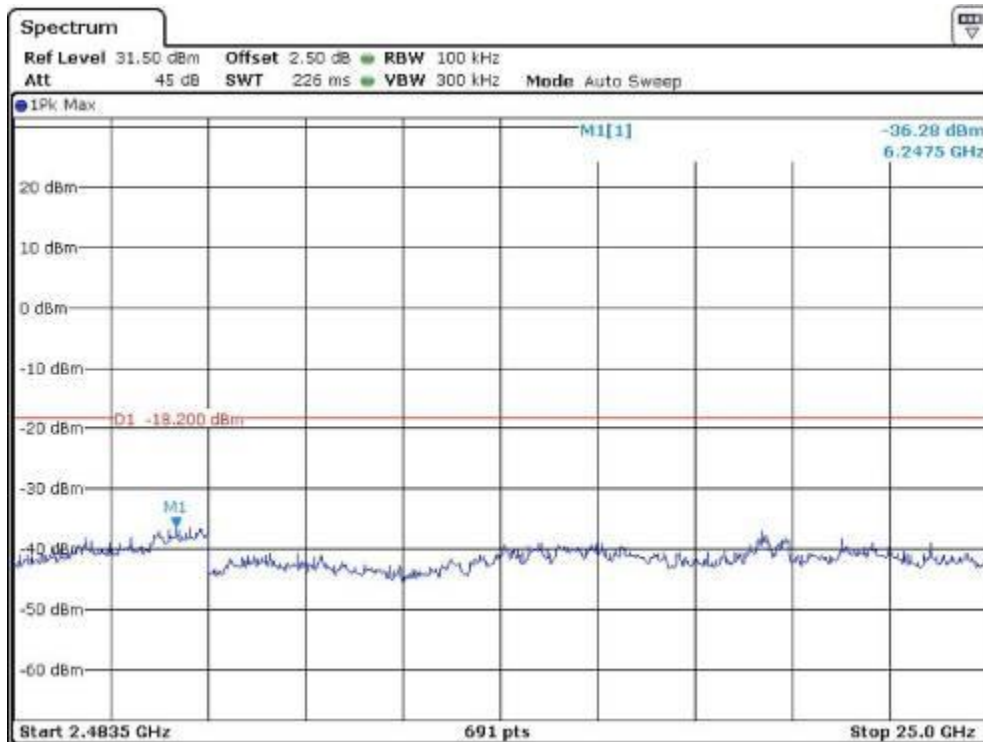
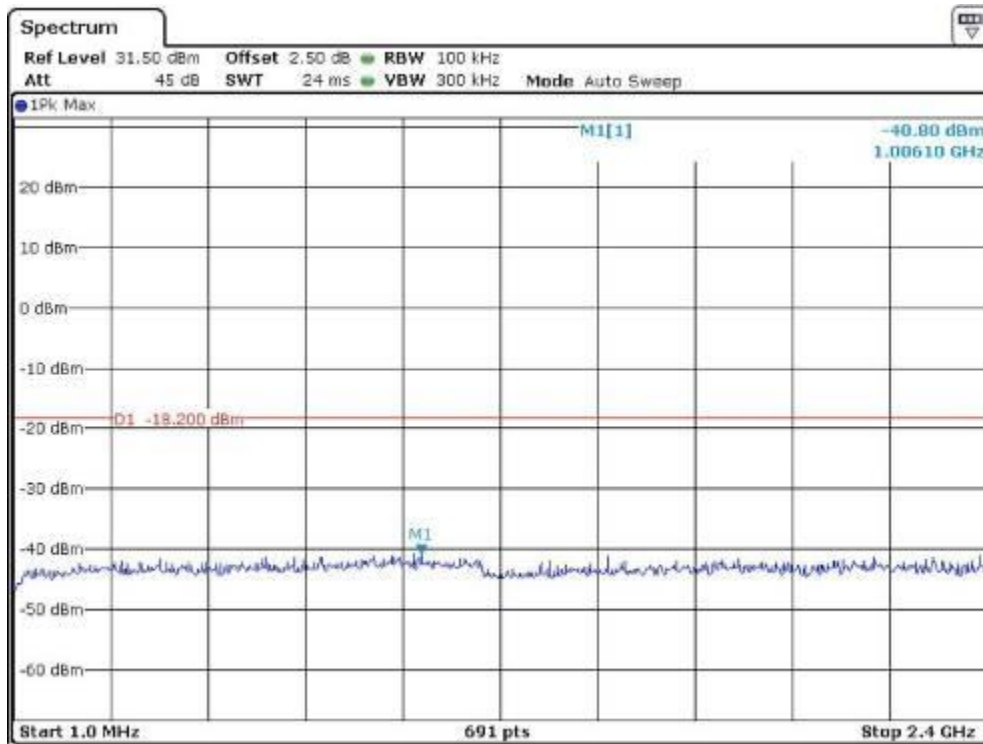
Channel 06 (2437MHz) Reference Level: 1.91dBm

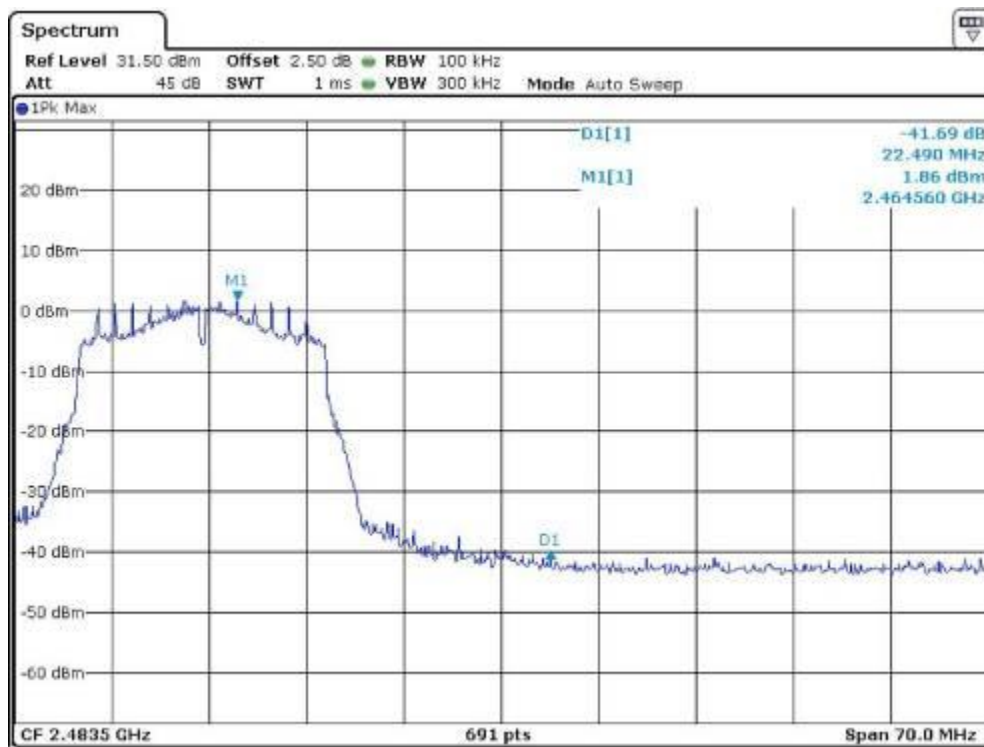




Channel 11 (2462MHz) Reference Level: 1.80dBm

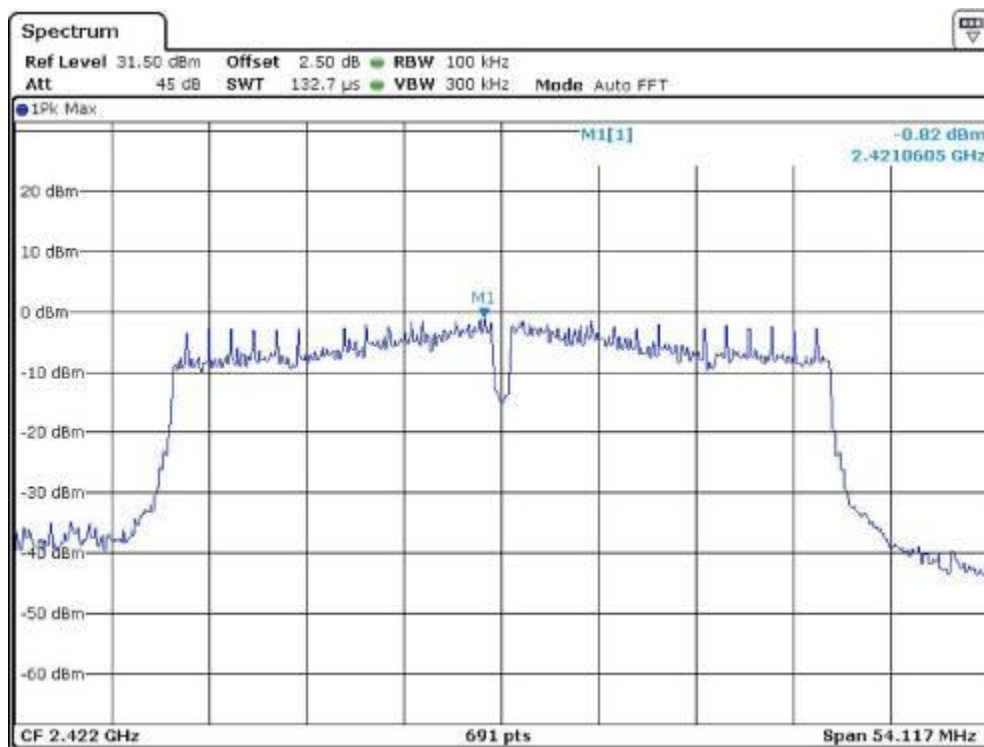


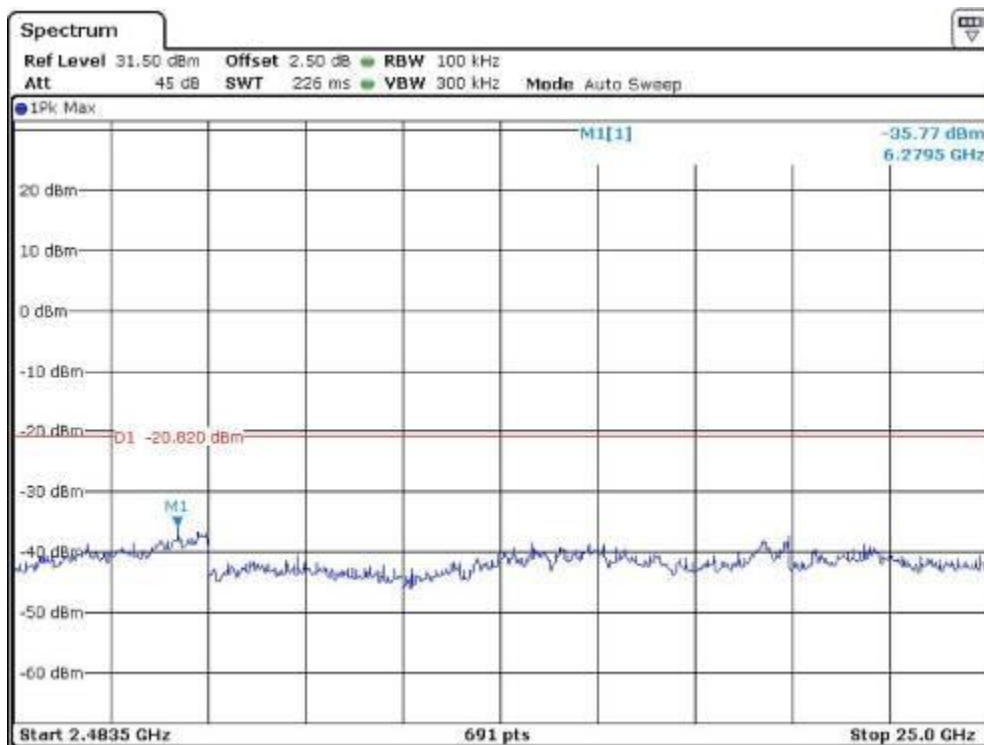
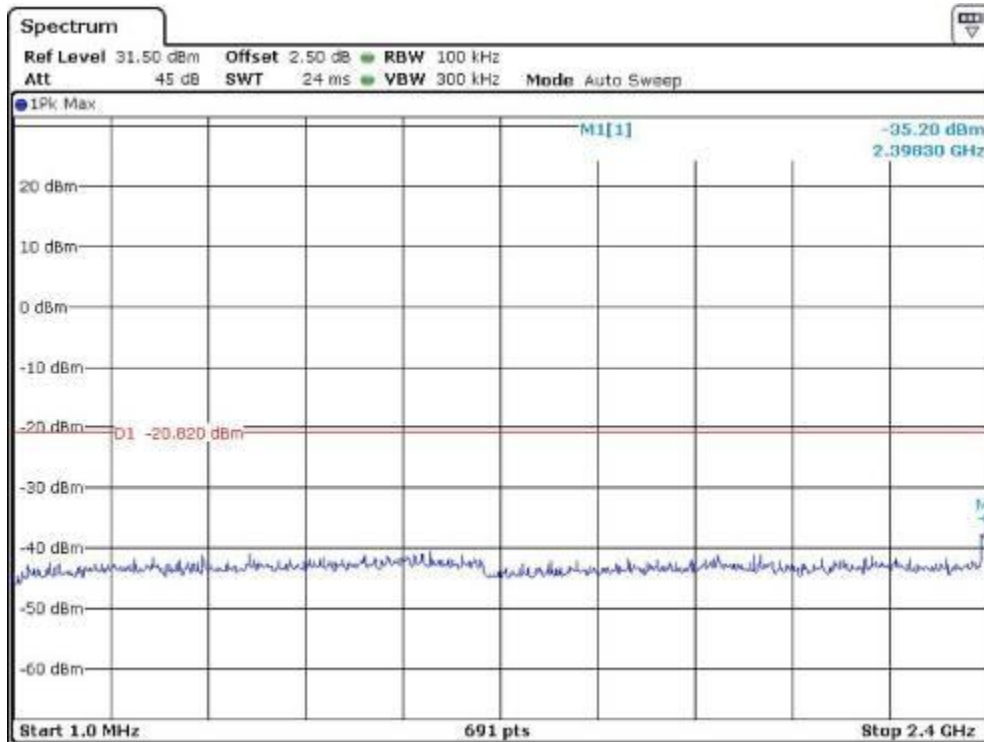


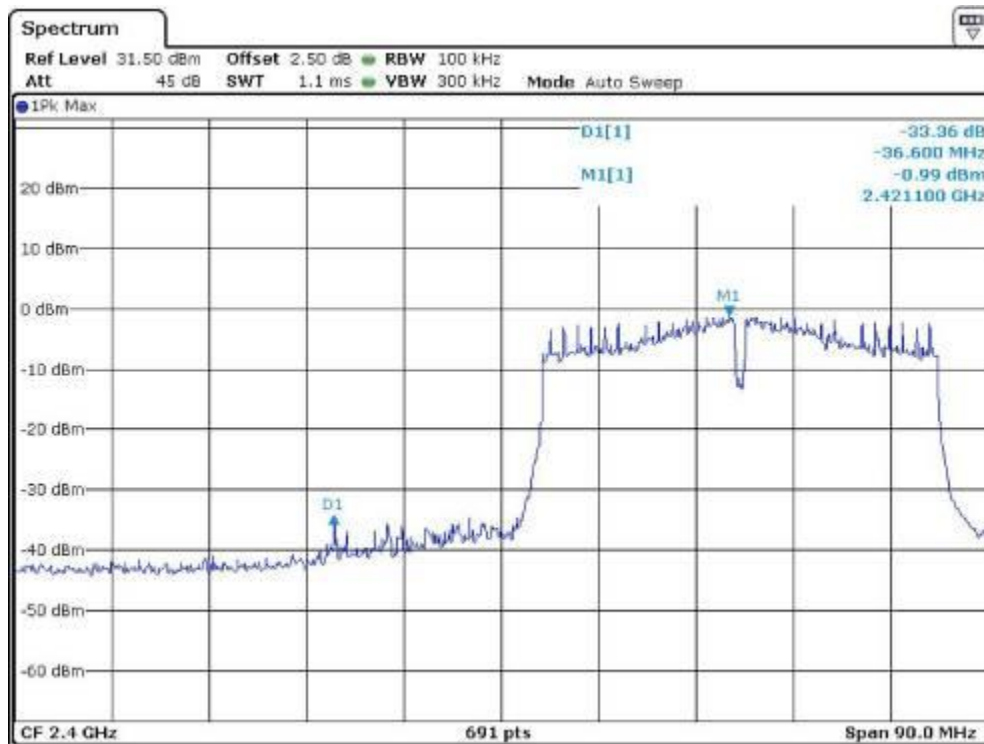


802.11n-HT40

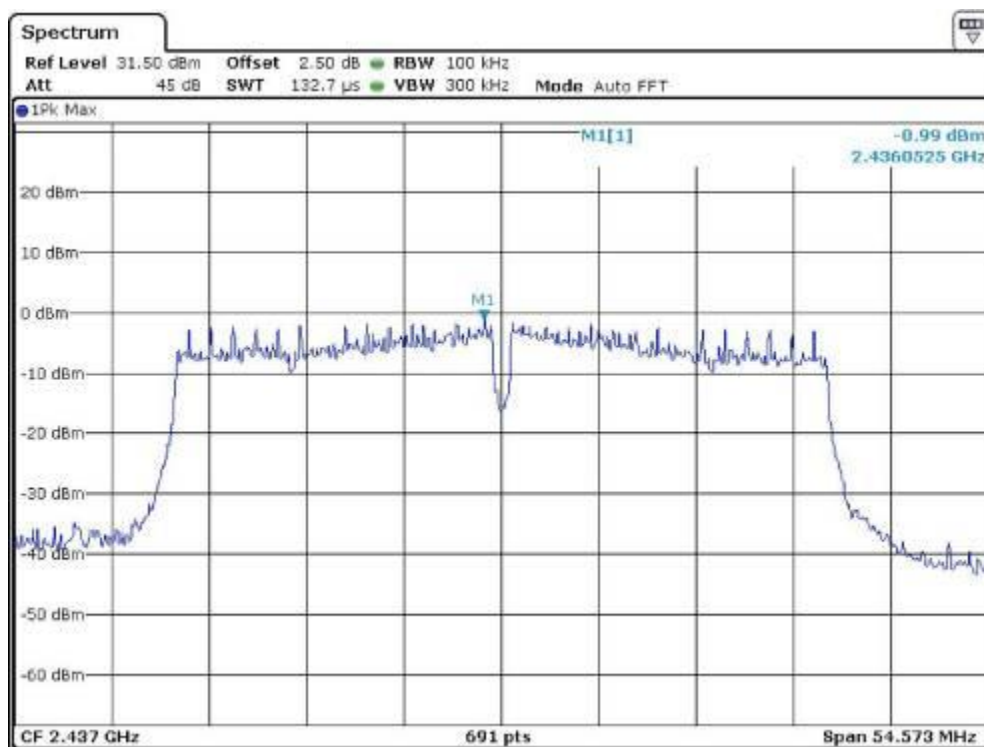
Channel 03 (2422MHz) Reference Level: -0.82dBm

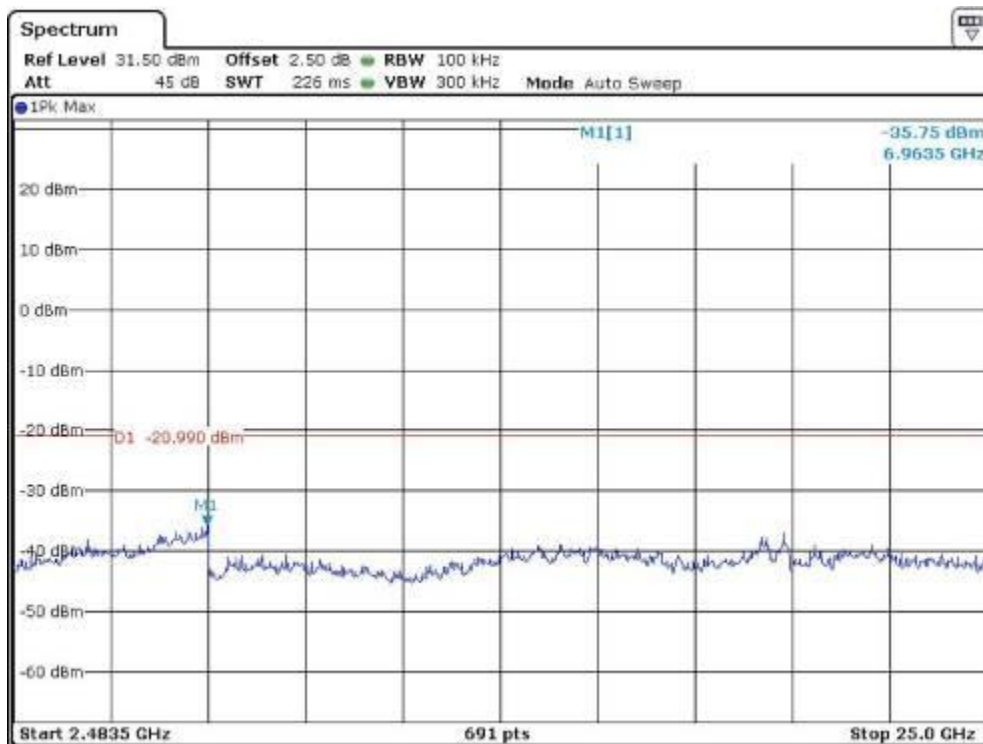
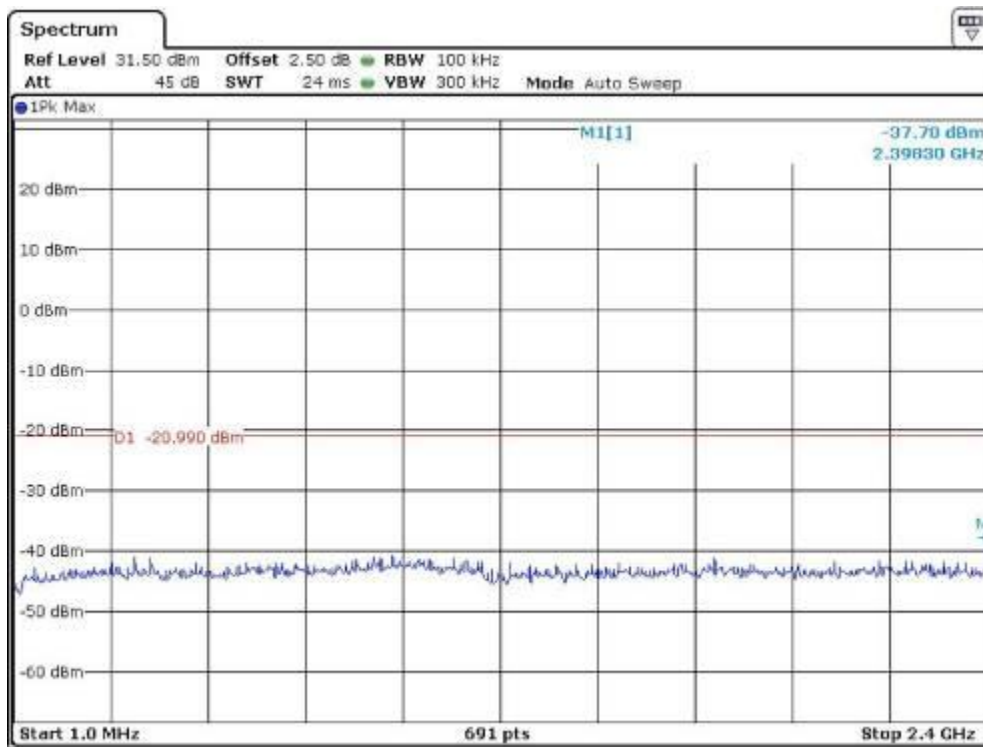




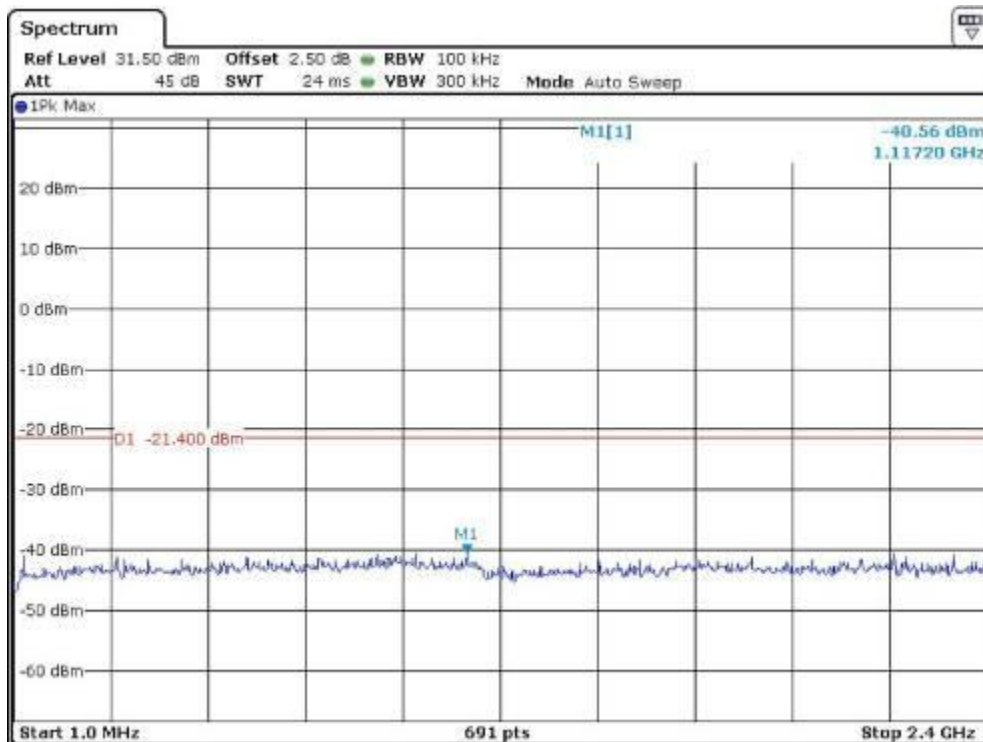
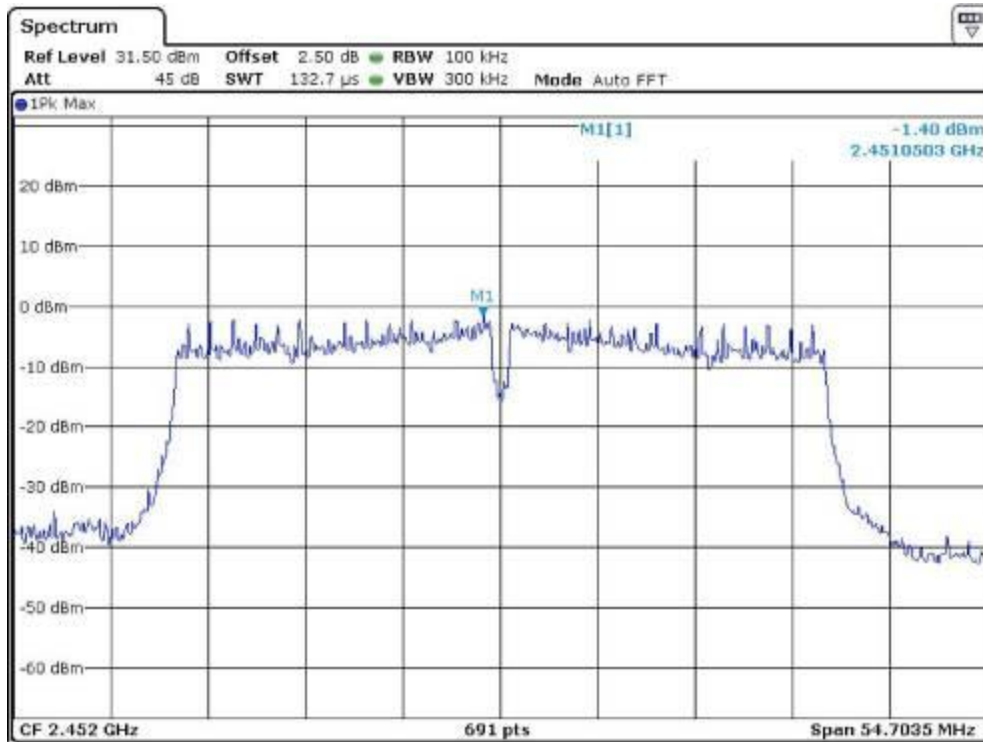


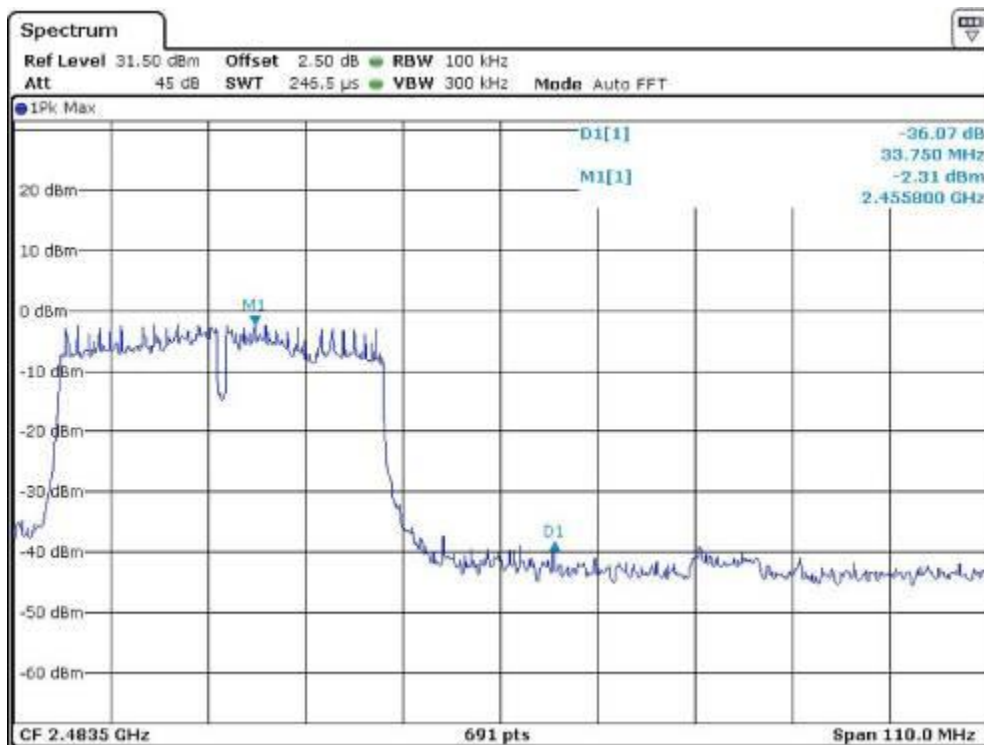
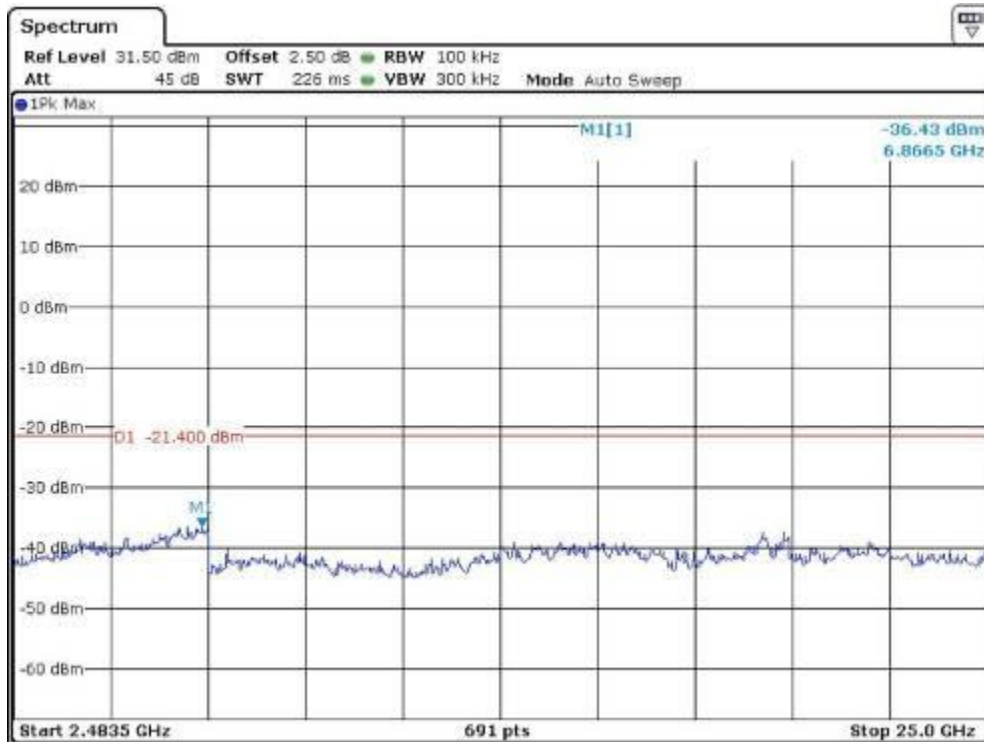
Channel 06 (2437MHz) Reference Level: -0.99dBm





Channel 09 (2452MHz) Reference Level: -1.40dBm





Applicant: Shenzhen 3Nod Digital Technology Co., Ltd.

Date of Test: April 4, 2019

Model: 100004118

4.5 Out of Band Radiated Emissions (for emissions in 4.4 above that are less than 20dB below carrier), FCC Rule 15.247(d):

For out of band emissions that are close to or that exceed the 20dB attenuation requirement described in the specification, radiated measurements were performed at a 3m separation distance to determine whether these emissions complied with the general radiated emission requirement.

- ☒ Not required, since all emissions are more than 20dB below fundamental
☐ See attached data sheet

Applicant: Shenzhen 3Nod Digital Technology Co., Ltd.

Date of Test: April 4, 2019

Model: 100004118

4.6 Transmitter Radiated Emissions in Restricted Bands, FCC Rule 15.35(b) (c):

Data is included of the worst-case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included. All measurements were performed with peak detection unless otherwise specified.

The data on the following pages list the significant emission frequencies, the limit and the margin of compliance.

Applicant: Shenzhen 3Nod Digital Technology Co., Ltd.

Date of Test: May 6, 2019

Model: 100004118

4.7 Field Strength Calculation

The field strength is calculated by adding the reading on the Spectrum Analyzer to the factors associated with preamplifiers (if any), antennas, cables, pulse desensitization and average factors (when specified limit is in average and measurements are made with peak detectors). A sample calculation is included below.

$$FS = RA + AF + CF - AG + PD$$

Where FS = Field Strength in dB μ V/m
 RA = Receiver Amplitude (including preamplifier) in dB μ V
 CF = Cable Attenuation Factor in dB
 AF = Antenna Factor in dB
 AG = Amplifier Gain in dB
 PD = Pulse Desensitization in dB

In the radiated emission table which follows, the reading shown on the data table may reflect the preamplifier gain. An example of the calculations, where the reading does not reflect the preamplifier gain, follows:

$$FS = RA + AF + CF - AG + PD$$

Example

Assume a receiver reading of 62.0 dB μ V is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted. The pulse desensitization factor of the spectrum analyzer was 0 dB. The net field strength for comparison to the appropriate emission limit is 42 dB μ V/m. This value in dB μ V/m was converted to its corresponding level in μ V/m.

$$\begin{aligned} RA &= 62.0 \text{ dB}\mu\text{V} \\ AF &= 7.4 \text{ dB} \\ CF &= 1.6 \text{ dB} \\ AG &= 29.0 \text{ dB} \\ PD &= 0 \text{ dB} \\ FS &= 62 + 7.4 + 1.6 - 29 + 0 = 42 \text{ dB}\mu\text{V/m} \end{aligned}$$

$$\text{Level in mV/m} = \text{Common Antilogarithm} [(42 \text{ dB}\mu\text{V/m})/20] = 125.9 \mu\text{V/m}$$

Applicant: Shenzhen 3Nod Digital Technology Co., Ltd.

Date of Test: May 6, 2019

Model: 100004118

4.8 Radiated Spurious Emission

Worst Case Radiated Spurious Emission (802.11b-Channel 01)
at 150.280MHz
is passed by 6.6dB margin.

For the electronic filing, the worst case radiated emission configuration photographs are saved with filename: radiated photos.pdf.

Applicant: Shenzhen 3Nod Digital Technology Co., Ltd.

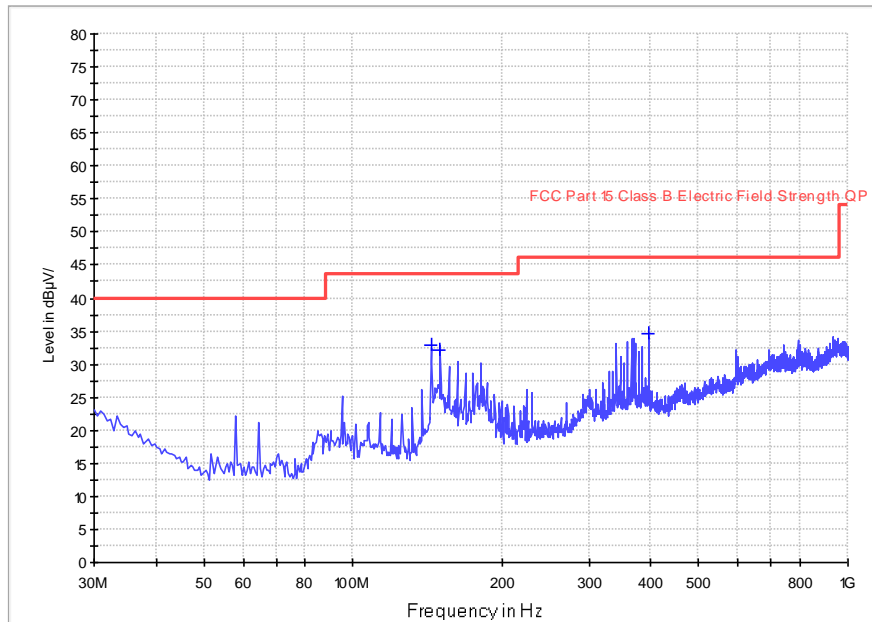
Date of Test: May 6, 2019

Worst Case: 100004118 (Carry with adapter 2 and HDMI cable 1)

Worst Case Operating Mode: Transmitting (802.11b-Channel 1)

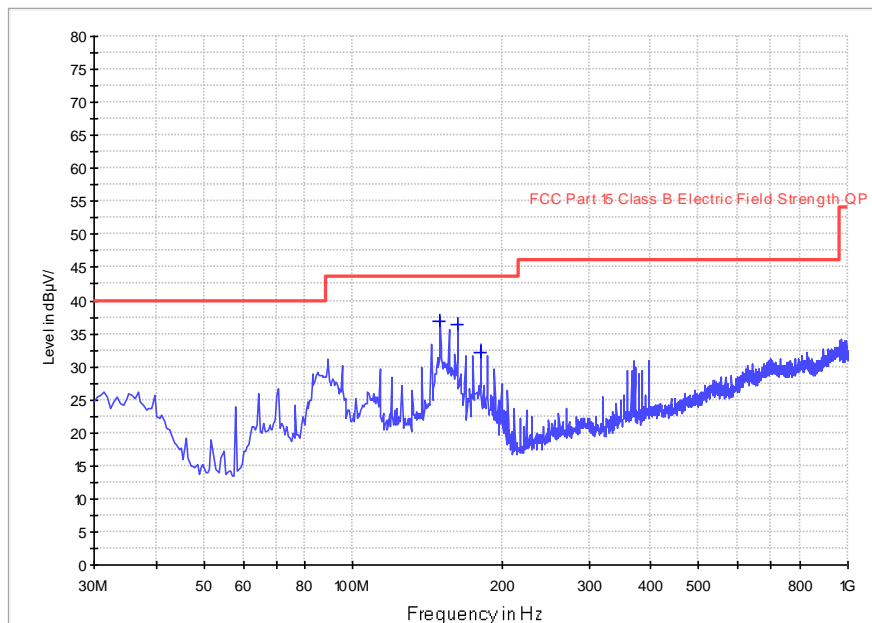
ANT Polarity: Horizontal

FCC Part 15



ANT Polarity: Vertical

FCC Part 15



Applicant: Shenzhen 3Nod Digital Technology Co., Ltd.

Date of Test: May 6, 2019

Worst Case: 100004118 (Carry with adapter 2 and HDMI cable 1)

Worst Case Operating Mode: Transmitting (802.11b-Channel 1)

Radiated Emissions

| Polarization | Frequency (MHz) | Reading (dBμV) | Pre-Amp Gain (dB) | Antenna Factor (dB) | Net at 3m (dBμV/m) | Limit at 3m (dBμV/m) | Margin (dB) |
|--------------|-----------------|----------------|-------------------|---------------------|--------------------|----------------------|-------------|
| Horizontal | 143.975 | 43.8 | 20.0 | 9.0 | 32.8 | 43.5 | -10.7 |
| Horizontal | 150.280 | 42.6 | 20.0 | 9.5 | 32.1 | 43.5 | -11.4 |
| Horizontal | 396.175 | 37.3 | 20.0 | 17.3 | 34.6 | 46.0 | -11.4 |
| Vertical | 150.280 | 47.4 | 20.0 | 9.5 | 36.9 | 43.5 | -6.6 |
| Vertical | 162.890 | 46.2 | 20.0 | 10.1 | 36.3 | 43.5 | -7.2 |
| Vertical | 181.320 | 41.9 | 20.0 | 10.2 | 32.1 | 43.5 | -11.4 |

NOTES: 1. Quasi-Peak detector is used for frequency below 1GHz.

2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distances were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

Applicant: Shenzhen 3Nod Digital Technology Co., Ltd.

Date of Test: April 4, 2019

Model: 100004118

Worst Case Operating Mode:

Transmitting (802.11b-Channel 01)

Radiated Emissions

| Polarization | Frequency (MHz) | Reading (dBμV) | Pre-Amp Gain (dB) | Antenna Factor (dB) | Net at 3m (dBμV/m) | Peak Limit at 3m (dBμV/m) | Margin (dB) |
|--------------|-----------------|----------------|-------------------|---------------------|--------------------|---------------------------|-------------|
| Horizontal | *4824.000 | 52.1 | 36.8 | 33.5 | 48.8 | 74.0 | -25.2 |
| Horizontal | *2389.330 | 59.4 | 36.4 | 29.1 | 52.1 | 74.0 | -21.9 |

| Polarization | Frequency (MHz) | Reading (dBμV) | Pre-Amp Gain (dB) | Antenna Factor (dB) | Net at 3m (dBμV/m) | Average Limit at 3m (dBμV/m) | Margin (dB) |
|--------------|-----------------|----------------|-------------------|---------------------|--------------------|------------------------------|-------------|
| Horizontal | *4824.000 | 41.4 | 36.8 | 33.5 | 38.1 | 54.0 | -15.9 |
| Horizontal | *2389.330 | 50.6 | 36.4 | 29.1 | 43.3 | 54.0 | -10.7 |

- NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz/VBW=10Hz for average value.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Shenzhen 3Nod Digital Technology Co., Ltd.

Date of Test: April 4, 2019

Model: 100004118

Worst Case Operating Mode:

Transmitting (802.11b-Channel 06)

Radiated Emissions

| Polarization | Frequency (MHz) | Reading (dBμV) | Pre-Amp Gain (dB) | Antenna Factor (dB) | Net at 3m (dBμV/m) | Peak Limit at 3m (dBμV/m) | Margin (dB) |
|--------------|-----------------|----------------|-------------------|---------------------|--------------------|---------------------------|-------------|
| Horizontal | *4874.000 | 51.8 | 36.7 | 33.4 | 48.5 | 74.0 | -25.5 |
| Horizontal | *7311.000 | 55.9 | 36.6 | 35.8 | 55.1 | 74.0 | -18.9 |

| Polarization | Frequency (MHz) | Reading (dBμV) | Pre-Amp Gain (dB) | Antenna Factor (dB) | Net at 3m (dBμV/m) | Average Limit at 3m (dBμV/m) | Margin (dB) |
|--------------|-----------------|----------------|-------------------|---------------------|--------------------|------------------------------|-------------|
| Horizontal | *4874.000 | 42.1 | 36.7 | 33.4 | 38.8 | 54.0 | -15.2 |
| Horizontal | *7311.000 | 46.4 | 36.6 | 35.8 | 45.6 | 54.0 | -8.4 |

- NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Shenzhen 3Nod Digital Technology Co., Ltd.

Date of Test: April 4, 2019

Model: 100004118

Worst Case Operating Mode:

Transmitting (802.11b-Channel 11)

Radiated Emissions

| Polarization | Frequency (MHz) | Reading (dBμV) | Pre-Amp Gain (dB) | Antenna Factor (dB) | Net at 3m (dBμV/m) | Peak Limit at 3m (dBμV/m) | Margin (dB) |
|--------------|-----------------|----------------|-------------------|---------------------|--------------------|---------------------------|-------------|
| Horizontal | *4924.000 | 50.7 | 36.8 | 33.3 | 47.2 | 74.0 | -26.8 |
| Horizontal | *2484.250 | 59.1 | 36.5 | 29.3 | 51.9 | 74.0 | -22.1 |

| Polarization | Frequency (MHz) | Reading (dBμV) | Pre-Amp Gain (dB) | Antenna Factor (dB) | Net at 3m (dBμV/m) | Average Limit at 3m (dBμV/m) | Margin (dB) |
|--------------|-----------------|----------------|-------------------|---------------------|--------------------|------------------------------|-------------|
| Horizontal | *4924.000 | 40.8 | 36.8 | 33.3 | 37.3 | 54.0 | -16.7 |
| Horizontal | *2484.250 | 49.3 | 36.5 | 29.3 | 42.1 | 54.0 | -11.9 |

- NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Shenzhen 3Nod Digital Technology Co., Ltd.

Date of Test: April 4, 2019

Model: 100004118

Worst Case Operating Mode:

Transmitting (802.11g-Channel 01)

Radiated Emissions

| Polarization | Frequency (MHz) | Reading (dBμV) | Pre-Amp Gain (dB) | Antenna Factor (dB) | Net at 3m (dBμV/m) | Peak Limit at 3m (dBμV/m) | Margin (dB) |
|--------------|-----------------|----------------|-------------------|---------------------|--------------------|---------------------------|-------------|
| Horizontal | *4824.000 | 53.3 | 36.8 | 33.5 | 50.0 | 74.0 | -24.0 |
| Horizontal | *2390.000 | 60.2 | 36.4 | 29.1 | 52.9 | 74.0 | -21.1 |

| Polarization | Frequency (MHz) | Reading (dBμV) | Pre-Amp Gain (dB) | Antenna Factor (dB) | Net at 3m (dBμV/m) | Average Limit at 3m (dBμV/m) | Margin (dB) |
|--------------|-----------------|----------------|-------------------|---------------------|--------------------|------------------------------|-------------|
| Horizontal | *4824.000 | 41.3 | 36.8 | 33.5 | 38.0 | 54.0 | -16.0 |
| Horizontal | *2390.000 | 49.0 | 36.4 | 29.1 | 41.7 | 54.0 | -12.3 |

- NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz/VBW=10Hz for average value.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Shenzhen 3Nod Digital Technology Co., Ltd.

Date of Test: April 4, 2019

Model: 100004118

Worst Case Operating Mode:

Transmitting (802.11g-Channel 06)

Radiated Emissions

| Polarization | Frequency (MHz) | Reading (dBμV) | Pre-Amp Gain (dB) | Antenna Factor (dB) | Net at 3m (dBμV/m) | Peak Limit at 3m (dBμV/m) | Margin (dB) |
|--------------|-----------------|----------------|-------------------|---------------------|--------------------|---------------------------|-------------|
| Horizontal | *4874.000 | 52.0 | 36.7 | 33.4 | 48.7 | 74.0 | -25.3 |
| Horizontal | *7311.000 | 54.8 | 36.6 | 35.8 | 54.0 | 74.0 | -20.0 |

| Polarization | Frequency (MHz) | Reading (dBμV) | Pre-Amp Gain (dB) | Antenna Factor (dB) | Net at 3m (dBμV/m) | Average Limit at 3m (dBμV/m) | Margin (dB) |
|--------------|-----------------|----------------|-------------------|---------------------|--------------------|------------------------------|-------------|
| Horizontal | *4874.000 | 41.1 | 36.7 | 33.4 | 37.8 | 54.0 | -16.2 |
| Horizontal | *7311.000 | 45.9 | 36.6 | 35.8 | 45.1 | 54.0 | -8.9 |

- NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Shenzhen 3Nod Digital Technology Co., Ltd.

Date of Test: April 4, 2019

Model: 100004118

Worst Case Operating Mode:

Transmitting (802.11g-Channel 11)

Radiated Emissions

| Polarization | Frequency (MHz) | Reading (dBμV) | Pre-Amp Gain (dB) | Antenna Factor (dB) | Net at 3m (dBμV/m) | Peak Limit at 3m (dBμV/m) | Margin (dB) |
|--------------|-----------------|----------------|-------------------|---------------------|--------------------|---------------------------|-------------|
| Horizontal | *4924.000 | 50.3 | 36.8 | 33.3 | 46.8 | 74.0 | -27.2 |
| Horizontal | *2484.720 | 57.4 | 36.5 | 29.3 | 50.2 | 74.0 | -23.8 |

| Polarization | Frequency (MHz) | Reading (dBμV) | Pre-Amp Gain (dB) | Antenna Factor (dB) | Net at 3m (dBμV/m) | Average Limit at 3m (dBμV/m) | Margin (dB) |
|--------------|-----------------|----------------|-------------------|---------------------|--------------------|------------------------------|-------------|
| Horizontal | *4924.000 | 40.7 | 36.8 | 33.3 | 37.2 | 54.0 | -16.8 |
| Horizontal | *2484.720 | 48.6 | 36.5 | 29.3 | 41.4 | 54.0 | -12.6 |

- NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Shenzhen 3Nod Digital Technology Co., Ltd.

Date of Test: April 4, 2019

Model: 100004118

Worst Case Operating Mode:

Transmitting (802.11n20-Channel 01)

Radiated Emissions

| Polarization | Frequency (MHz) | Reading (dBμV) | Pre-Amp Gain (dB) | Antenna Factor (dB) | Net at 3m (dBμV/m) | Peak Limit at 3m (dBμV/m) | Margin (dB) |
|--------------|-----------------|----------------|-------------------|---------------------|--------------------|---------------------------|-------------|
| Horizontal | *4824.000 | 50.8 | 36.8 | 33.5 | 47.5 | 74.0 | -26.5 |
| Horizontal | *2389.840 | 57.1 | 36.4 | 29.1 | 49.8 | 74.0 | -24.2 |

| Polarization | Frequency (MHz) | Reading (dBμV) | Pre-Amp Gain (dB) | Antenna Factor (dB) | Net at 3m (dBμV/m) | Average Limit at 3m (dBμV/m) | Margin (dB) |
|--------------|-----------------|----------------|-------------------|---------------------|--------------------|------------------------------|-------------|
| Horizontal | *4824.000 | 40.9 | 36.8 | 33.5 | 37.6 | 54.0 | -16.4 |
| Horizontal | *2389.840 | 48.6 | 36.4 | 29.1 | 41.3 | 54.0 | -12.7 |

- NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz/VBW=10Hz for average value.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Shenzhen 3Nod Digital Technology Co., Ltd.

Date of Test: April 4, 2019

Model: 100004118

Worst Case Operating Mode:

Transmitting (802.11n20-Channel 06)

Radiated Emissions

| Polarization | Frequency (MHz) | Reading (dBμV) | Pre-Amp Gain (dB) | Antenna Factor (dB) | Net at 3m (dBμV/m) | Peak Limit at 3m (dBμV/m) | Margin (dB) |
|--------------|-----------------|----------------|-------------------|---------------------|--------------------|---------------------------|-------------|
| Horizontal | *4874.000 | 51.5 | 36.7 | 33.4 | 48.2 | 74.0 | -25.8 |
| Horizontal | *7311.000 | 54.9 | 36.6 | 35.8 | 54.1 | 74.0 | -19.9 |

| Polarization | Frequency (MHz) | Reading (dBμV) | Pre-Amp Gain (dB) | Antenna Factor (dB) | Net at 3m (dBμV/m) | Average Limit at 3m (dBμV/m) | Margin (dB) |
|--------------|-----------------|----------------|-------------------|---------------------|--------------------|------------------------------|-------------|
| Horizontal | *4874.000 | 41.2 | 36.7 | 33.4 | 37.9 | 54.0 | -16.1 |
| Horizontal | *7311.000 | 45.0 | 36.6 | 35.8 | 44.2 | 54.0 | -9.8 |

- NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Shenzhen 3Nod Digital Technology Co., Ltd.

Date of Test: April 4, 2019

Model: 100004118

Worst Case Operating Mode:

Transmitting (802.11n20-Channel 11)

Radiated Emissions

| Polarization | Frequency (MHz) | Reading (dBμV) | Pre-Amp Gain (dB) | Antenna Factor (dB) | Net at 3m (dBμV/m) | Peak Limit at 3m (dBμV/m) | Margin (dB) |
|--------------|-----------------|----------------|-------------------|---------------------|--------------------|---------------------------|-------------|
| Horizontal | *4924.000 | 50.7 | 36.8 | 33.3 | 47.2 | 74.0 | -26.8 |
| Horizontal | *2484.350 | 58.5 | 36.5 | 29.3 | 51.3 | 74.0 | -22.7 |

| Polarization | Frequency (MHz) | Reading (dBμV) | Pre-Amp Gain (dB) | Antenna Factor (dB) | Net at 3m (dBμV/m) | Average Limit at 3m (dBμV/m) | Margin (dB) |
|--------------|-----------------|----------------|-------------------|---------------------|--------------------|------------------------------|-------------|
| Horizontal | *4924.000 | 40.4 | 36.8 | 33.3 | 36.9 | 54.0 | -17.1 |
| Horizontal | *2484.350 | 48.1 | 36.5 | 29.3 | 40.9 | 54.0 | -13.1 |

- NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Shenzhen 3Nod Digital Technology Co., Ltd.

Date of Test: April 4, 2019

Model: 100004118

Worst Case Operating Mode:

Transmitting (802.11n40-Channel 03)

Radiated Emissions

| Polarization | Frequency (MHz) | Reading (dBμV) | Pre-Amp Gain (dB) | Antenna Factor (dB) | Net at 3m (dBμV/m) | Peak Limit at 3m (dBμV/m) | Margin (dB) |
|--------------|-----------------|----------------|-------------------|---------------------|--------------------|---------------------------|-------------|
| Horizontal | *4844.000 | 50.3 | 36.8 | 33.5 | 47.0 | 74.0 | -27.0 |
| Horizontal | *2389.510 | 58.9 | 36.4 | 29.1 | 51.6 | 74.0 | -22.4 |

| Polarization | Frequency (MHz) | Reading (dBμV) | Pre-Amp Gain (dB) | Antenna Factor (dB) | Net at 3m (dBμV/m) | Average Limit at 3m (dBμV/m) | Margin (dB) |
|--------------|-----------------|----------------|-------------------|---------------------|--------------------|------------------------------|-------------|
| Horizontal | *4844.000 | 40.8 | 36.8 | 33.5 | 37.5 | 54.0 | -16.5 |
| Horizontal | *2389.510 | 49.1 | 36.4 | 29.1 | 41.8 | 54.0 | -12.2 |

- NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz/VBW=10Hz for average value.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Shenzhen 3Nod Digital Technology Co., Ltd.

Date of Test: April 4, 2019

Model: 100004118

Worst Case Operating Mode:

Transmitting (802.11n40-Channel 06)

Radiated Emissions

| Polarization | Frequency (MHz) | Reading (dBμV) | Pre-Amp Gain (dB) | Antenna Factor (dB) | Net at 3m (dBμV/m) | Peak Limit at 3m (dBμV/m) | Margin (dB) |
|--------------|-----------------|----------------|-------------------|---------------------|--------------------|---------------------------|-------------|
| Horizontal | *4874.000 | 51.0 | 36.7 | 33.4 | 47.7 | 74.0 | -26.3 |
| Horizontal | *7311.000 | 53.3 | 36.6 | 35.8 | 52.5 | 74.0 | -21.5 |

| Polarization | Frequency (MHz) | Reading (dBμV) | Pre-Amp Gain (dB) | Antenna Factor (dB) | Net at 3m (dBμV/m) | Average Limit at 3m (dBμV/m) | Margin (dB) |
|--------------|-----------------|----------------|-------------------|---------------------|--------------------|------------------------------|-------------|
| Horizontal | *4874.000 | 41.5 | 36.7 | 33.4 | 38.2 | 54.0 | -15.8 |
| Horizontal | *7311.000 | 42.2 | 36.6 | 35.8 | 41.4 | 54.0 | -12.6 |

- NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Shenzhen 3Nod Digital Technology Co., Ltd.

Date of Test: April 4, 2019

Model: 100004118

Worst Case Operating Mode:

Transmitting (802.11n40-Channel 09)

Radiated Emissions

| Polarization | Frequency (MHz) | Reading (dBμV) | Pre-Amp Gain (dB) | Antenna Factor (dB) | Net at 3m (dBμV/m) | Peak Limit at 3m (dBμV/m) | Margin (dB) |
|--------------|-----------------|----------------|-------------------|---------------------|--------------------|---------------------------|-------------|
| Horizontal | *4904.000 | 51.2 | 36.8 | 33.3 | 47.7 | 74.0 | -26.3 |
| Horizontal | *2484.320 | 57.8 | 36.5 | 29.3 | 50.6 | 74.0 | -23.4 |

| Polarization | Frequency (MHz) | Reading (dBμV) | Pre-Amp Gain (dB) | Antenna Factor (dB) | Net at 3m (dBμV/m) | Average Limit at 3m (dBμV/m) | Margin (dB) |
|--------------|-----------------|----------------|-------------------|---------------------|--------------------|------------------------------|-------------|
| Horizontal | *4904.000 | 40.3 | 36.8 | 33.3 | 36.8 | 54.0 | -17.2 |
| Horizontal | *2484.320 | 49.1 | 36.5 | 29.3 | 41.9 | 54.0 | -12.1 |

- NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.
2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna used for the emission over 1000MHz.
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Shenzhen 3Nod Digital Technology Co., Ltd.

Date of Test: April 4, 2019

Model: 100004118

4.9 Conducted Emission at Mains Terminal

For electronic filing, the worst case conducted emission configuration photograph is saved with filename: conducted photos.pdf.

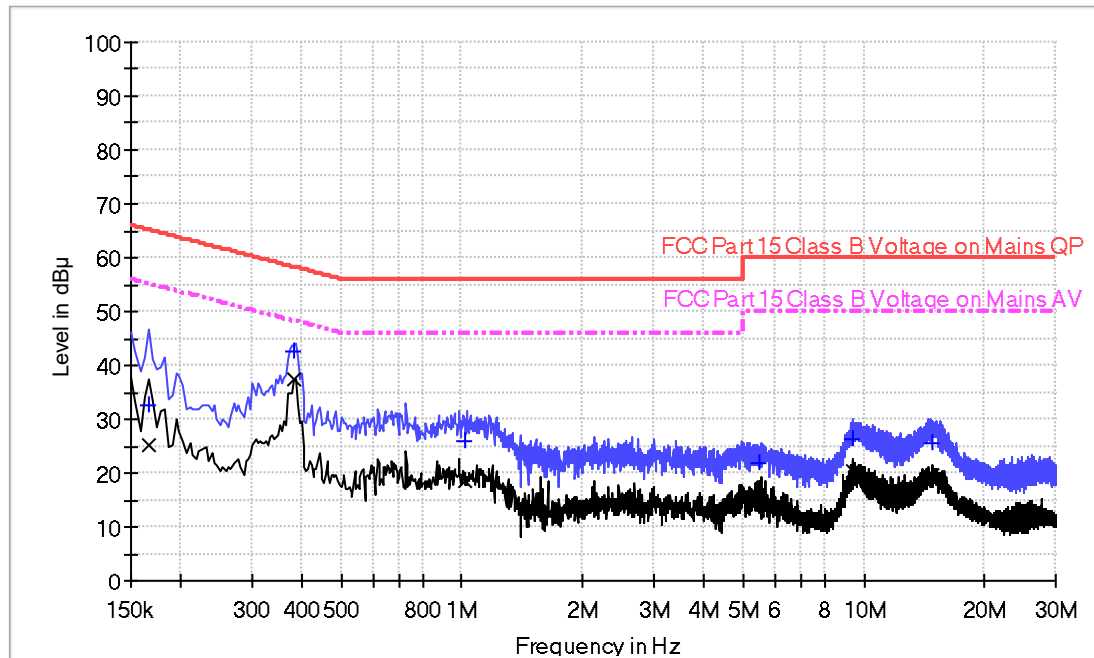
Worst Case Conducted Configuration

at 0.382 MHz

Judgement: Passed by 10.7 dB margin

Applicant: Shenzhen 3Nod Digital Technology Co., Ltd.
 Model: 100004118 (Carry with adapter 1 and HDMI cable 1)
 Worst Case Operating Mode: WIFI Link
 Phase: Live

Conducted Emission Test - FCC



Result Table QP

| Frequency (MHz) | QuasiPeak (dB μ V) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dB μ V) |
|-----------------|------------------------|-----------------|------|------------|-------------|--------------------|
| 0.166000 | 32.8 | 9.000 | L1 | 9.6 | 32.4 | 65.2 |
| 0.382000 | 42.6 | 9.000 | L1 | 9.6 | 15.6 | 58.2 |
| 1.014000 | 26.0 | 9.000 | L1 | 9.7 | 30.0 | 56.0 |
| 5.478000 | 21.7 | 9.000 | L1 | 9.8 | 38.3 | 60.0 |
| 9.382000 | 26.4 | 9.000 | L1 | 9.9 | 33.6 | 60.0 |
| 14.874000 | 25.6 | 9.000 | L1 | 10.0 | 34.4 | 60.0 |

Result Table AV

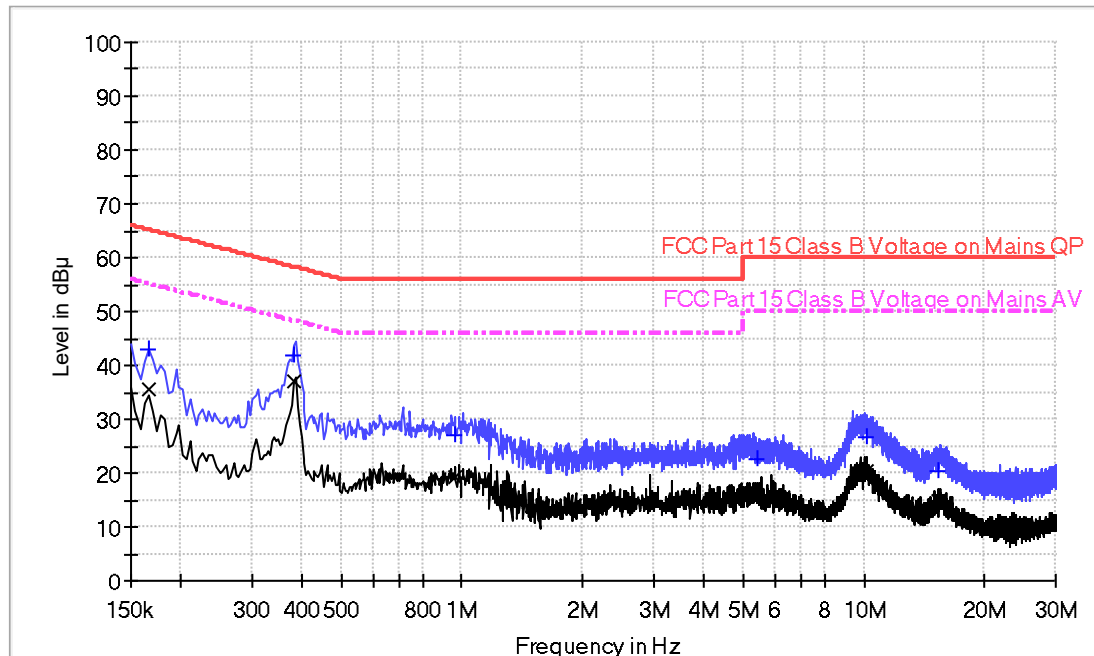
| Frequency (MHz) | Average (dB μ V) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dB μ V) |
|-----------------|----------------------|-----------------|------|------------|-------------|--------------------|
| 0.166000 | 25.2 | 9.000 | L1 | 9.6 | 30.0 | 55.2 |
| 0.382000 | 37.5 | 9.000 | L1 | 9.6 | 10.7 | 48.2 |
| 1.014000 | 18.6 | 9.000 | L1 | 9.7 | 27.4 | 46.0 |
| 5.478000 | 15.1 | 9.000 | L1 | 9.8 | 34.9 | 50.0 |
| 9.382000 | 20.4 | 9.000 | L1 | 9.9 | 29.6 | 50.0 |
| 14.874000 | 19.5 | 9.000 | L1 | 10.0 | 30.5 | 50.0 |

Remark:

1. Corr. Factor (dB) = LISN Factor (dB) + Cable Loss (dB)
2. Margin (dB) = Limit (dB μ V) – Level (dB μ V)

Applicant: Shenzhen 3Nod Digital Technology Co., Ltd.
 Model: 100004118 (Carry with adapter 1 and HDMI cable 1)
 Worst Case Operating Mode: WIFI Link
 Phase: Neutral

Conducted Emission Test - FCC



Result Table QP

| Frequency (MHz) | QuasiPeak (dB μ V) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dB μ V) |
|-----------------|------------------------|-----------------|------|------------|-------------|--------------------|
| 0.166000 | 42.9 | 9.000 | N | 9.6 | 22.3 | 65.2 |
| 0.382000 | 41.8 | 9.000 | N | 9.6 | 16.4 | 58.2 |
| 0.962000 | 26.9 | 9.000 | N | 9.7 | 29.1 | 56.0 |
| 5.450000 | 22.6 | 9.000 | N | 9.8 | 37.4 | 60.0 |
| 10.138000 | 26.6 | 9.000 | N | 9.9 | 33.4 | 60.0 |
| 15.250000 | 20.5 | 9.000 | N | 10.0 | 39.5 | 60.0 |

Result Table AV

| Frequency (MHz) | Average (dB μ V) | Bandwidth (kHz) | Line | Corr. (dB) | Margin (dB) | Limit (dB μ V) |
|-----------------|----------------------|-----------------|------|------------|-------------|--------------------|
| 0.166000 | 35.5 | 9.000 | N | 9.6 | 19.7 | 55.2 |
| 0.382000 | 37.1 | 9.000 | N | 9.6 | 11.1 | 48.2 |
| 0.962000 | 19.3 | 9.000 | N | 9.7 | 26.7 | 46.0 |
| 5.450000 | 15.8 | 9.000 | N | 9.8 | 34.2 | 50.0 |
| 10.138000 | 20.4 | 9.000 | N | 9.9 | 29.6 | 50.0 |
| 15.250000 | 14.6 | 9.000 | N | 10.0 | 35.4 | 50.0 |

Remark:

1. Corr. Factor (dB) = LISN Factor (dB) + Cable Loss (dB)
2. Margin (dB) = Limit (dB μ V) – Level (dB μ V)

Applicant: Shenzhen 3Nod Digital Technology Co., Ltd.

Date of Test: 4 April, 2019

Model: 100004118

4.10 Radiated Emissions from Digital Section of Transceiver, FCC Ref: 15.109

☐ Not required - No digital part

☐ Test results are attached

☒ Included in the separated report.

Applicant: Shenzhen 3Nod Digital Technology Co., Ltd.

Date of Test: 4 April, 2019

Model: 100004118

4.11 Transmitter Duty Cycle Calculation and Measurements, FCC Rule 15.35(b), (c)

The EUT antenna output port was connected to the input of the spectrum analyzer. The analyzer center frequency was set to EUT RF channel carrier. The SWEP function on the analyzer was set to ZERO SPAN. The Transmitter ON time was determined from the resultant time-amplitude display:

| | |
|---|---|
| | See attached spectrum analyzer chart (s) for Transmitter timing |
| | See Transmitter timing diagram provided by manufacturer |
| x | Not applicable, duty cycle was not used. |

EXHIBIT 5

EQUIPMENT PHOTOGRAPHS

5.0 Equipment Photographs

For electronic filing, the photographs are saved with filename: external photos.pdf & internal photos.pdf.

EXHIBIT 6

PRODUCT LABELLING

6.0 **Product Labeling**

For electronic filing, the FCC ID label artwork and location is saved with filename: label.pdf.

EXHIBIT 7

TECHNICAL SPECIFICATIONS

7.0 Technical Specifications

For electronic filing, the block diagram and circuit diagram are saved with filename: block.pdf and circuit.pdf respectively.

EXHIBIT 8

INSTRUCTION MANUAL

8.0 Instruction Manual

For electronic filing, a preliminary copy of the Instruction Manual is saved with filename: manual.pdf.

This manual will be provided to the end-user with each unit sold/leased in the United States.

EXHIBIT 9

CONFIDENTIALITY REQUEST

9.0 **Confidentiality Request**

For electronic filing, the confidentiality request of the tested EUT is saved with filename: request.pdf.

EXHIBIT 10

MISCELLANEOUS INFORMATION

10.0 Discussion of Pulse Desensitization

The determination of pulse desensitivity was made in accordance with Hewlett Packard Application Note 150-2, *Spectrum Analysis ... Pulsed RF*.

Pulse desensitivity is not applicable for this device since the transmitter transmits the RF signal continuously.

EXHIBIT 11

TEST EQUIPMENT LIST

11.0 Test Equipment List

| Equipment No. | Equipment | Manufacturer | Model No. | Serial No. | Cal. Date | Due Date |
|---------------|------------------------|-----------------|--------------|----------------|-------------|-------------|
| SZ182-02 | RF Power Meter | Anritsu | ML2496A | 1302005 | 5-Jun-2018 | 5-Jun-2019 |
| SZ182-02-01 | Power Sensor | Anritsu | MA2411B | 1207429 | 5-Jun-2018 | 5-Jun-2019 |
| SZ061-04 | Biconilog Antenna | ETS | 3142C | 00078828 | 16-Oct-2018 | 16-Oct-2019 |
| SZ185-01 | EMI Receiver | R & S | ESCI | 100547 | 4-Jan-2019 | 4-Jan-2020 |
| SZ061-08 | Horn Antenna | ETS | 3115 | 00092346 | 14-Sep-2018 | 14-Sep-2019 |
| SZ061-07 | Pyramidal Horn Antenna | ETS | 3160-09 | 00083067 | 10-Mar-2019 | 10-Mar-2020 |
| SZ061-06 | Active Loop Antenna | Electro-Metrics | EM-6876 | 217 | 11-May-2018 | 11-May-2019 |
| SZ056-03 | Spectrum Analyzer | R&S | FSP 30 | 101148 | 05-Jun-2018 | 05-Jun-2019 |
| SZ056-06 | Signal Analyzer | R&S | FSV 40 | 101101 | 05-Jun-2018 | 05-Jun-2019 |
| SZ181-04 | Preamplifier | Agilent | 8449B | 3008A02474 | 15-Jan-2019 | 15-Jan-2020 |
| SZ188-01 | Anechoic Chamber | ETS | RFD-F/A-100 | 4102 | 15-Dec-2018 | 15-Dec-2020 |
| SZ062-02 | RF Cable | RADIAL | RG 213U | -- | 16 Jan 2019 | 16 Jul 2019 |
| SZ062-05 | RF Cable | RADIAL | 0.04-26.5GHz | -- | 16 Jan 2019 | 16 Jul 2019 |
| SZ062-12 | RF Cable | RADIAL | 0.04-26.5GHz | -- | 16 Jan 2019 | 16 Jul 2019 |
| SZ067-04 | Notch Filter | Micro-Tronics | BRM5070 2-02 | -- | 5-Jun-2018 | 5-Jun-2019 |
| SZ185-02 | EMI Test Receiver | R&S | ESCI | 100692 | 26-Oct-2018 | 26-Oct-2019 |
| SZ187-01 | Two-Line V-Network | R&S | ENV216 | 100072 | 26-Oct-2018 | 26-Oct-2019 |
| SZ187-02 | Two-Line V-Network | R&S | ENV216 | 100073 | 04-Jul-2018 | 04-Jul-2019 |
| SZ188-03 | Shielding Room | ETS | RFD-100 | 4100 | 16-Jan-2017 | 16-Jan-2020 |
| SZ062-16 | RF Cable | HUBER+SUHNER | CBL2-BN-1m | 110127-2231000 | 29-Oct-2018 | 29-Oct-2019 |

***** End of Report *****