



## Shenzhen Huaxia Testing Technology Co., Ltd.

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Report Template Version: V05

Report Template Revision Date: 2021-11-03

# TEST REPORT

**Report No.:** CQASZ20220200254E-01  
**Applicant:** shandong xiangzi kejifazhan youxiangongsi  
**Address of Applicant:** xijinshidaidasha Bzuo 1207 jinanshi huaiyinqu shandongsheng  
**Equipment Under Test (EUT):**  
**Product:** Video Game Console  
**Model No.:** Super Console X PRO, Super Console X  
**Test Model No.:** Super Console X PRO  
**Brand Name:** Kinhank  
**FCC ID:** 2A44C-XPRO  
**Standards:** 47 CFR Part 15, Subpart C  
**Date of Receipt:** 2022-2-24  
**Date of Test:** 2022-2-24 to 2022-3-1  
**Date of Issue:** 2022-3-9  
**Test Result :** **PASS\***

\*In the configuration tested, the EUT complied with the standards specified above

**Tested By:** Lewis Zhou  
( Lewis Zhou )

**Reviewed By:** Rock Huang  
( Rock Huang )

**Approved By:** Jack Ai  
( Jack Ai )



---

## 1 Version

### Revision History Of Report

| Report No.           | Version | Description    | Issue Date |
|----------------------|---------|----------------|------------|
| CQASZ20220200254E-01 | Rev.01  | Initial report | 2022-3-9   |

## 2 Test Summary

| Test Item                                                         | Test Requirement                                    | Test method      | Result |
|-------------------------------------------------------------------|-----------------------------------------------------|------------------|--------|
| Antenna Requirement                                               | 47 CFR Part 15, Subpart C Section 15.203/15.247 (c) | ANSI C63.10 2013 | PASS   |
| AC Power Line Conducted Emission                                  | 47 CFR Part 15, Subpart C Section 15.207            | ANSI C63.10 2013 | PASS   |
| Conducted Peak & Average Output Power                             | 47 CFR Part 15, Subpart C Section 15.247 (b)(3)     | ANSI C63.10 2013 | PASS   |
| 6dB Occupied Bandwidth                                            | 47 CFR Part 15, Subpart C Section 15.247 (a)(2)     | ANSI C63.10 2013 | PASS   |
| Power Spectral Density                                            | 47 CFR Part 15, Subpart C Section 15.247 (e)        | ANSI C63.10 2013 | PASS   |
| Band-edge for RF Conducted Emissions                              | 47 CFR Part 15, Subpart C Section 15.247(d)         | ANSI C63.10 2013 | PASS   |
| RF Conducted Spurious Emissions                                   | 47 CFR Part 15, Subpart C Section 15.247(d)         | ANSI C63.10 2013 | PASS   |
| Radiated Spurious Emissions                                       | 47 CFR Part 15, Subpart C Section 15.205/15.209     | ANSI C63.10 2013 | PASS   |
| Restricted bands around fundamental frequency (Radiated Emission) | 47 CFR Part 15, Subpart C Section 15.205/15.209     | ANSI C63.10 2013 | PASS   |

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## 4 General Information

### 4.1 Client Information

|                          |                                                             |
|--------------------------|-------------------------------------------------------------|
| Applicant:               | shandong xiangzi kejifazhan youxiangongsi                   |
| Address of Applicant:    | xijinshidaidasha Bzuo 1207 jinanshi huaiyinqu shandongsheng |
| Manufacturer:            | shandong xiangzi kejifazhan youxiangongsi                   |
| Address of Manufacturer: | xijinshidaidasha Bzuo 1207 jinanshi huaiyinqu shandongsheng |
| Factory:                 | shandong xiangzi kejifazhan youxiangongsi                   |
| Address of Factory:      | xijinshidaidasha Bzuo 1207 jinanshi huaiyinqu shandongsheng |

### 4.2 General Description of EUT

|                                  |                                                                                      |
|----------------------------------|--------------------------------------------------------------------------------------|
| Product Name:                    | Video Game Console                                                                   |
| Model No.:                       | Super Console X PRO, Super Console X                                                 |
| Test Model No.:                  | Super Console X PRO                                                                  |
| Trade Mark:                      | Kinhank                                                                              |
| Software Version:                | V1                                                                                   |
| Hardware Version:                | V1                                                                                   |
| EUT Power Supply:                | INPUT:100-240V~ 50/60Hz 12W<br>OUTPUT:12V= 1A                                        |
| EUT Supports Radios application: | 2.4GHz: Wi-Fi: 802.11b/g/n(HT20): 2412MHz~2462MHz;<br>802.11n(HT40): 2422MHz~2452MHz |

### 4.3 Product Specification subjective to this standard

|                       |                                                                                                                                                                                                                                                                                                                            |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operation Frequency:  | IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz<br>IEEE 802.11n(HT40): 2422MHz to 2452MHz                                                                                                                                                                                                                                       |
| Channel Numbers:      | IEEE 802.11b/g, IEEE 802.11n HT20: 11 Channels<br>IEEE 802.11n HT40: 7 Channels                                                                                                                                                                                                                                            |
| Channel Separation:   | 5MHz                                                                                                                                                                                                                                                                                                                       |
| Type of Modulation:   | IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK)<br>IEEE for 802.11g : OFDM(64QAM, 16QAM, QPSK, BPSK)<br>IEEE for 802.11n(HT20 and HT40) : OFDM (64QAM, 16QAM, QPSK, BPSK)                                                                                                                                                          |
| Transfer Rate:        | IEEE for 802.11b:<br>1Mbps/2Mbps/5.5Mbps/11Mbps<br>IEEE for 802.11g :<br>6Mbps/9Mbps/12Mbps/18Mbps/24Mbps/36Mbps/48Mbps/54Mbps<br>IEEE for 802.11n(HT20) :<br>6.5Mbps/13Mbps/19.5Mbps/26Mbps/39Mbps/52Mbps/58.5Mbps/65Mbps<br>IEEE for 802.11n(HT40) :<br>13.5Mbps/27Mbps/40.5Mbps/54Mbps/81Mbps/108Mbps/121.5Mbps/135Mbps |
| Product Type:         | <input type="checkbox"/> Mobile <input type="checkbox"/> Portable <input checked="" type="checkbox"/> Fix Location                                                                                                                                                                                                         |
| Test Software of EUT: | MPTool                                                                                                                                                                                                                                                                                                                     |
| Antenna Type:         | PCB antenna                                                                                                                                                                                                                                                                                                                |
| Antenna Gain:         | 0 dBi                                                                                                                                                                                                                                                                                                                      |

| Operation Frequency each of channel(802.11b/g/n HT20) |           |         |           |         |           |         |           |
|-------------------------------------------------------|-----------|---------|-----------|---------|-----------|---------|-----------|
| Channel                                               | Frequency | Channel | Frequency | Channel | Frequency | Channel | Frequency |
| 1                                                     | 2412MHz   | 4       | 2427MHz   | 7       | 2442MHz   | 10      | 2457MHz   |
| 2                                                     | 2417MHz   | 5       | 2432MHz   | 8       | 2447MHz   | 11      | 2462MHz   |
| 3                                                     | 2422MHz   | 6       | 2437MHz   | 9       | 2452MHz   |         |           |
| Operation Frequency each of channel(802.11n HT40)     |           |         |           |         |           |         |           |
| Channel                                               | Frequency | Channel | Frequency | Channel | Frequency | Channel | Frequency |
| 3                                                     | 2422MHz   | 6       | 2437MHz   | 9       | 2452MHz   |         |           |
| 4                                                     | 2427MHz   | 7       | 2442MHz   |         |           |         |           |
| 5                                                     | 2432MHz   | 8       | 2447MHz   |         |           |         |           |

Note:

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

For 802.11b/g/n (HT20):

| Channel             | Frequency |
|---------------------|-----------|
| The Lowest channel  | 2412MHz   |
| The Middle channel  | 2437MHz   |
| The Highest channel | 2462MHz   |

For 802.11n (HT40):

| Channel             | Frequency |
|---------------------|-----------|
| The Lowest channel  | 2422MHz   |
| The Middle channel  | 2437MHz   |
| The Highest channel | 2452MHz   |

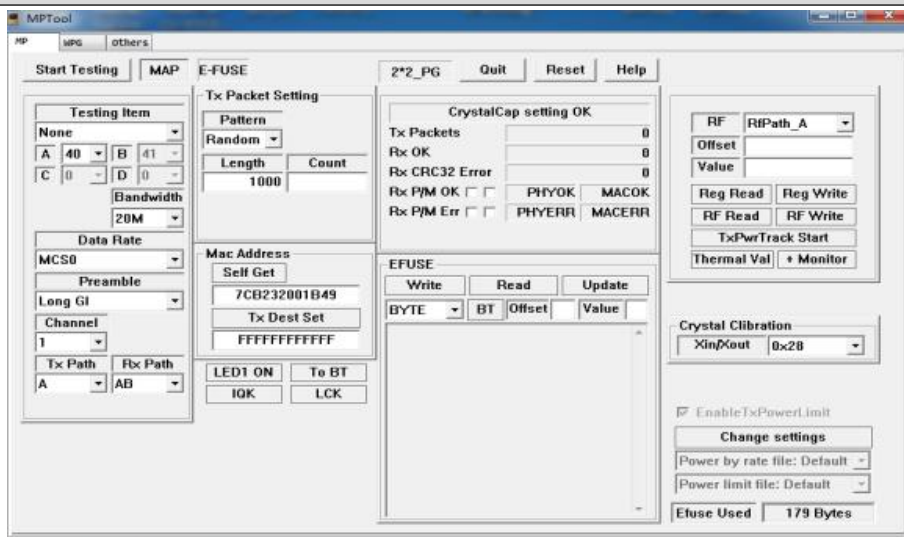
Note:

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

## 4.4 Test Environment and Mode

|                                                            |                                                                                          |
|------------------------------------------------------------|------------------------------------------------------------------------------------------|
| <b>Operating Environment:</b>                              |                                                                                          |
| <b>Radiated Emissions:</b>                                 |                                                                                          |
| Temperature:                                               | 21.3 °C                                                                                  |
| Humidity:                                                  | 54% RH                                                                                   |
| Atmospheric Pressure:                                      | 1009 mbar                                                                                |
| <b>Conducted Emissions:</b>                                |                                                                                          |
| Temperature:                                               | 21.6 °C                                                                                  |
| Humidity:                                                  | 59 % RH                                                                                  |
| Atmospheric Pressure:                                      | 1009 mbar                                                                                |
| <b>Radio conducted item test (RF Conducted test room):</b> |                                                                                          |
| Temperature:                                               | 25.5 °C                                                                                  |
| Humidity:                                                  | 52 % RH                                                                                  |
| Atmospheric Pressure:                                      | 1009 mbar                                                                                |
| <b>Test mode:</b>                                          |                                                                                          |
| Transmitting mode:                                         | Keep the EUT in transmitting mode with all kind of modulation and all kind of data rate. |

### Run Software:



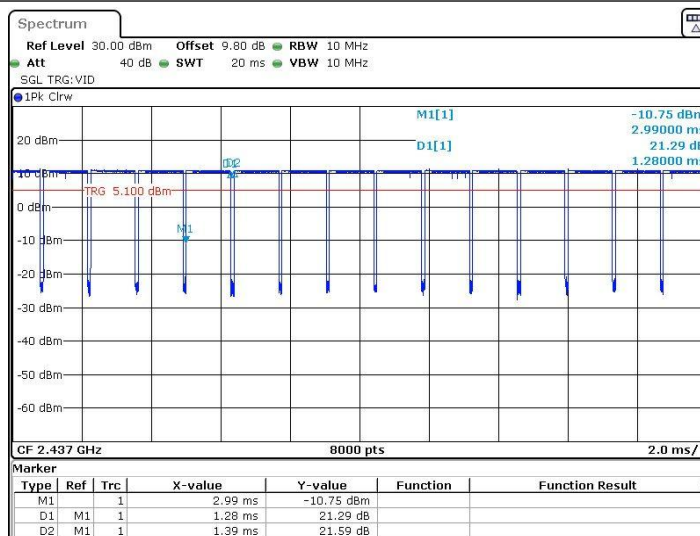
| Operated Mode for Worst Duty Cycle: |               |                               |
|-------------------------------------|---------------|-------------------------------|
| Test Mode                           | Duty Cycle(%) | Average correction factor(dB) |
| IEEE802.11b                         | 92.09         | 0.36                          |
| IEEE802.11g                         | 85.71         | 0.67                          |
| IEEE802.11n (HT20)                  | 88.46         | 0.53                          |
| IEEE802.11n (HT40)                  | 70.59         | 1.51                          |

**Remark:**

- 1) Duty cycle= On Time/ Period;
- 2) Duty Cycle factor =  $10 * \log(1/ \text{Duty cycle})$ ;

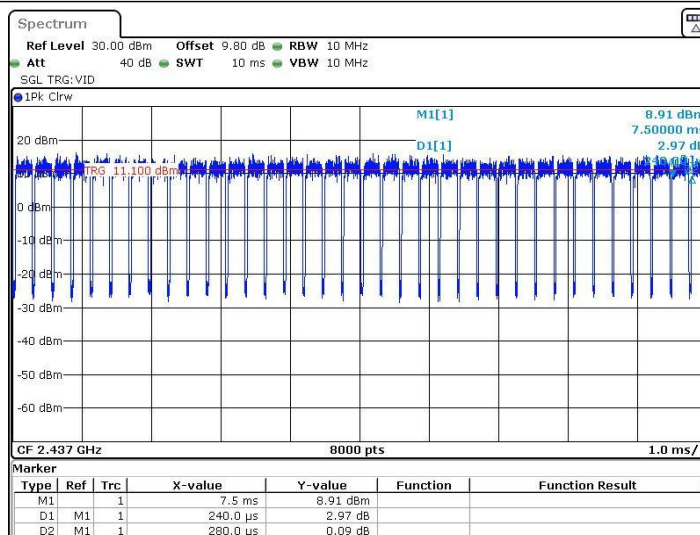


Test Graph\_IEEE802.11b Duty Cycle:



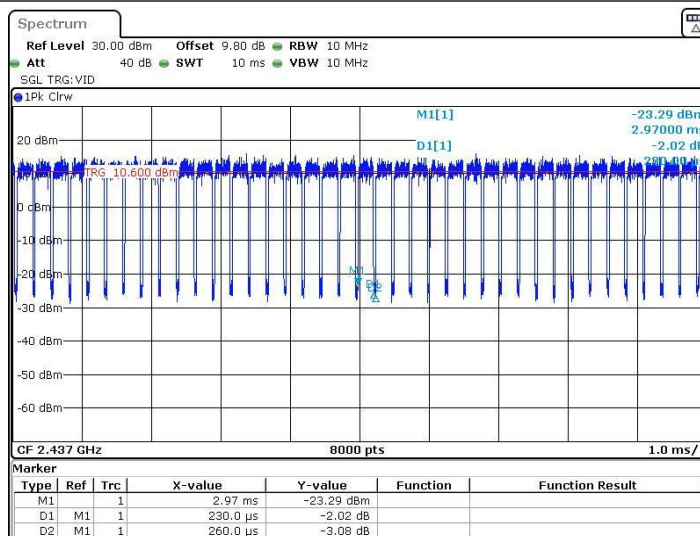
Date: 1.MAR.2022 01:31:24

Test Graph\_IEEE802.11g Duty Cycle:



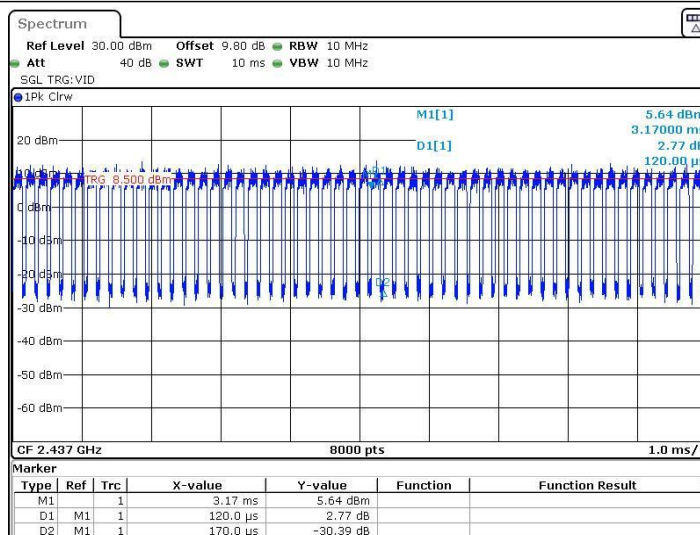
Date: 1.MAR.2022 01:38:39

Test Graph\_IEEE802.11 n (HT20) Duty Cycle:



Date: 1.MAR.2022 01:47:57

Test Graph\_IEEE802.11 n (HT40) Duty Cycle:



Date: 1.MAR.2022 02:07:28

## 4.5 Description of Support Units

The EUT has been tested with associated equipment below.

### 1) Support equipment

| Description | Manufacturer | Model No. | Certification | Supplied by |
|-------------|--------------|-----------|---------------|-------------|
| /           | /            | /         | /             | /           |

### 2) Cable

| Cable No. | Description | Manufacturer | Cable Type/Length | Supplied by |
|-----------|-------------|--------------|-------------------|-------------|
| /         | /           | /            | /                 | /           |

## 4.6 Test Location

All tests were performed at:

Shenzhen Huaxia Testing Technology Co., Ltd.

1F., Block A of Tongsheng Technology Building, Huahui Road, Dalang Street, Longhua New District, Shenzhen, Guangdong, China

## 4.7 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

### • A2LA (Certificate No. 4742.01)

Shenzhen Huaxia Testing Technology Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 4742.01.

### • FCC Registration No.: 522263

Shenzhen Huaxia Testing Technology Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No.:522263

## 4.8 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate.

The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities.

The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the **Shenzhen Huaxia Testing Technology Co., Ltd.** quality system acc. to DIN EN ISO/IEC 17025.

Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for CQA laboratory is reported:

| No. | Item                               | Uncertainty        | Notes |
|-----|------------------------------------|--------------------|-------|
| 1   | Radiated Emission (Below 1GHz)     | 5.12dB             | (1)   |
| 2   | Radiated Emission (Above 1GHz)     | 4.60dB             | (1)   |
| 3   | Conducted Disturbance (0.15~30MHz) | 3.34dB             | (1)   |
| 4   | Radio Frequency                    | $3 \times 10^{-8}$ | (1)   |
| 5   | Duty cycle                         | 0.6 %.             | (1)   |
| 6   | Occupied Bandwidth                 | 1.1%               | (1)   |
| 7   | RF conducted power                 | 0.86dB             | (1)   |
| 8   | RF power density                   | 0.74               | (1)   |
| 9   | Conducted Spurious emissions       | 0.86dB             | (1)   |
| 10  | Temperature test                   | 0.8℃               | (1)   |
| 11  | Humidity test                      | 2.0%               | (1)   |
| 12  | Supply voltages                    | 0.5 %.             | (1)   |
| 13  | Frequency Error                    | 5.5 Hz             | (1)   |

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=2$ .

## 4.9 Deviation from Standards

None.

## 4.10 Abnormalities from Standard Conditions

None.

## 4.11 Other Information Requested by the Customer

None.

## 4.12 Equipment List

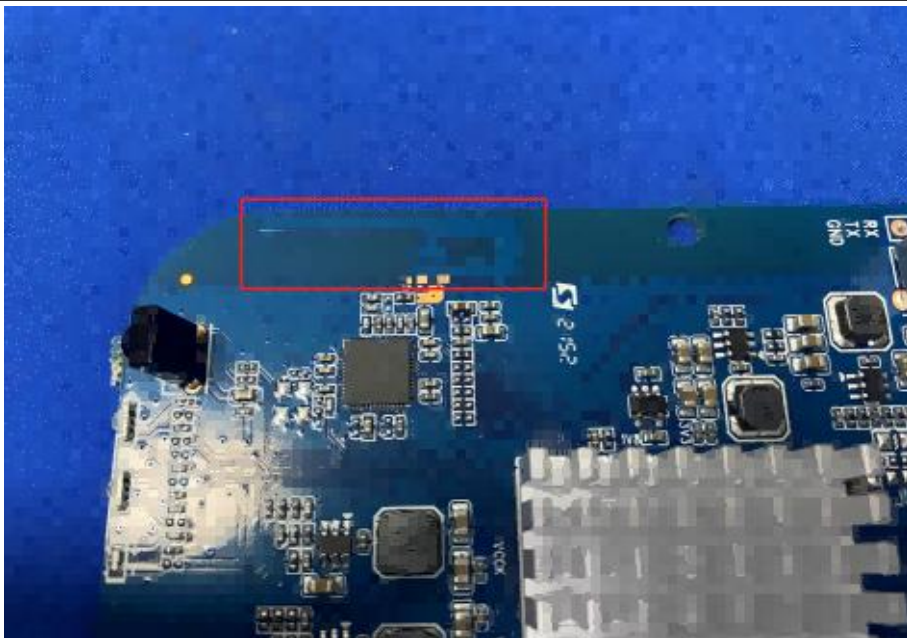
| Test Equipment                            | Manufacturer | Model No.              | Instrument No. | Calibration Date | Calibration Due Date |
|-------------------------------------------|--------------|------------------------|----------------|------------------|----------------------|
| EMI Test Receiver                         | R&S          | ESR7                   | CQA-005        | 2021/09/10       | 2022/09/09           |
| Spectrum analyzer                         | R&S          | FSU26                  | CQA-038        | 2021/09/10       | 2022/09/09           |
| Spectrum analyzer                         | R&S          | FSU40                  | CQA-075        | 2021/09/10       | 2022/09/09           |
| Preamplifier                              | MITEQ        | AFS4-00010300-18-10P-4 | CQA-035        | 2021/09/10       | 2022/09/09           |
| Preamplifier                              | MITEQ        | AMF-6D-02001800-29-20P | CQA-036        | 2021/09/10       | 2022/09/09           |
| Preamplifier                              | EMCI         | EMC184055SE            | CQA-089        | 2021/09/10       | 2022/09/09           |
| Loop antenna                              | Schwarzbeck  | FMZB1516               | CQA-060        | 2021/09/16       | 2024/09/15           |
| Bilog Antenna                             | R&S          | HL562                  | CQA-011        | 2021/09/16       | 2024/09/15           |
| Horn Antenna                              | R&S          | HF906                  | CQA-012        | 2021/09/16       | 2024/09/15           |
| Horn Antenna                              | Schwarzbeck  | BBHA 9170              | CQA-088        | 2021/09/16       | 2024/09/15           |
| Coaxial Cable (Above 1GHz)                | CQA          | N/A                    | C007           | 2021/09/10       | 2022/09/09           |
| Coaxial Cable (Below 1GHz)                | CQA          | N/A                    | C013           | 2021/09/10       | 2022/09/09           |
| RF cable(9KHz~40GHz)                      | CQA          | RF-01                  | CQA-079        | 2021/09/10       | 2022/09/09           |
| Antenna Connector                         | CQA          | RFC-01                 | CQA-080        | 2021/09/10       | 2022/09/09           |
| Power Sensor                              | KEYSIGHT     | U2021XA                | CQA-30         | 2021/09/10       | 2022/09/09           |
| N1918A Power Analysis Manager Power Panel | Agilent      | N1918A                 | CQA-074        | 2021/09/10       | 2022/09/09           |
| Power meter                               | R&S          | NRVD                   | CQA-029        | 2021/09/10       | 2022/09/09           |
| Power divider                             | MIDWEST      | PWD-2533-02-SMA-79     | CQA-067        | 2021/09/10       | 2022/09/09           |
| EMI Test Receiver                         | R&S          | ESR7                   | CQA-005        | 2021/09/10       | 2022/09/09           |
| LISN                                      | R&S          | ENV216                 | CQA-003        | 2021/09/10       | 2022/09/09           |
| Coaxial cable                             | CQA          | N/A                    | CQA-C009       | 2021/09/10       | 2022/09/09           |
| DC power                                  | KEYSIGHT     | E3631A                 | CQA-028        | 2021/09/10       | 2022/09/09           |

Test software:

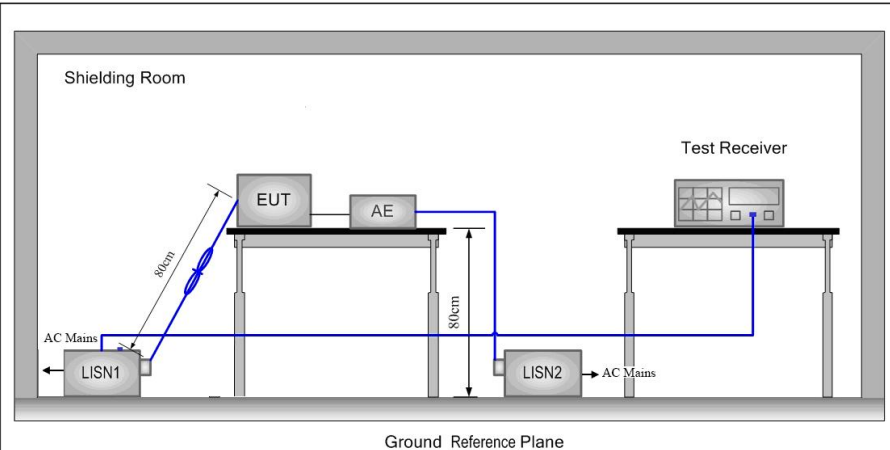
|                                   | Manufacturer | Software brand |
|-----------------------------------|--------------|----------------|
| Radiated Emissions test software  | Tonscend     | JS1120-3       |
| Conducted Emissions test software | Audix        | e3             |
| RF Conducted test software        | Audix        | e3             |

## 5 Test results and Measurement Data

### 5.1 Antenna Requirement

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| <b>Standard requirement:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 47 CFR Part 15C Section 15.203 /247(c)                                               |
| <p>15.203 requirement:<br/> An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.</p> <p>15.247(b) (4) requirement:<br/> The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.</p> |                                                                                      |
| <b>EUT Antenna:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |
| The antenna is PCB antenna. The best case gain of the antenna is 0 dBi.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                      |

## 5.2 Conducted Emissions

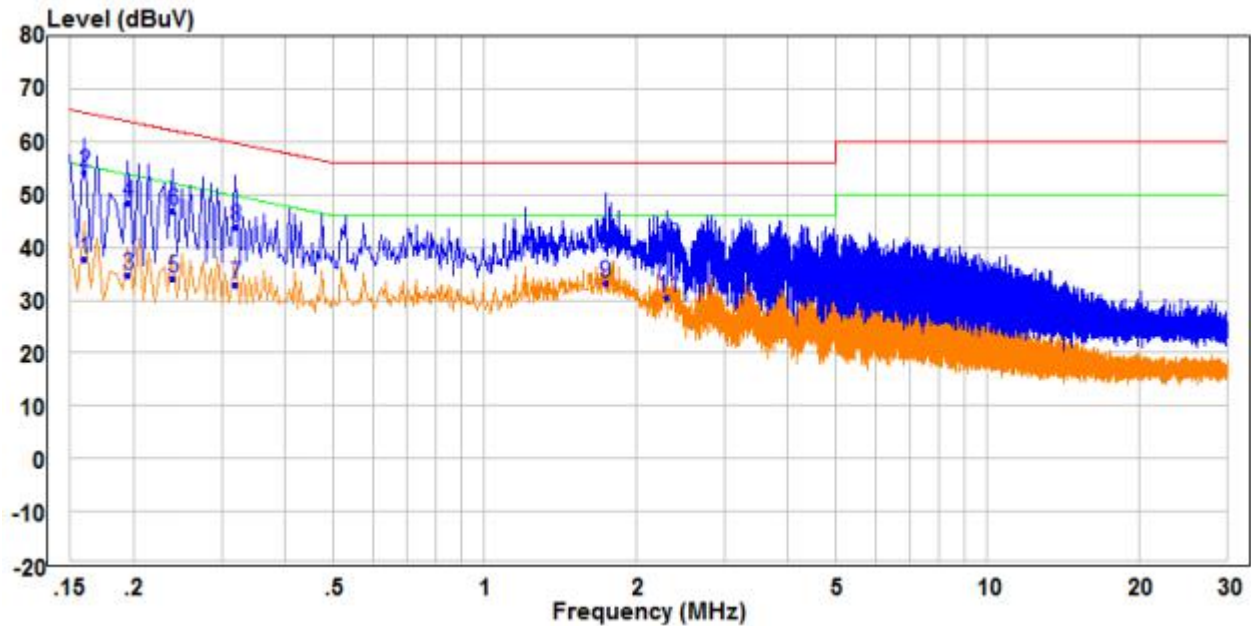
|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |              |           |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------|
| Test Requirement:     | 47 CFR Part 15C Section 15.207                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              |           |
| Test Method:          | ANSI C63.10: 2013                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |              |           |
| Test Frequency Range: | 150kHz to 30MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |              |           |
| Limit:                | Frequency range (MHz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Limit (dBuV) |           |
|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Quasi-peak   | Average   |
|                       | 0.15-0.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 66 to 56*    | 56 to 46* |
|                       | 0.5-5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 56           | 46        |
|                       | 5-30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 60           | 50        |
|                       | * Decreases with the logarithm of the frequency.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |              |           |
| Test Procedure:       | <ol style="list-style-type: none"> <li>1) The mains terminal disturbance voltage test was conducted in a shielded room.</li> <li>2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a <math>50\Omega/50\mu\text{H} + 5\Omega</math> linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.</li> <li>3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,</li> <li>4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.</li> <li>5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement.</li> </ol> |              |           |
| Test Setup:           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |           |

|                        |                                                                                                                                            |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Exploratory Test Mode: | Transmitting with all kind of modulations, data rates at lowest, middle and highest channel.                                               |
| Final Test Mode:       | Through Pre-scan, find the 1Mbps of rate of 802.11b at middle channel is the worst case.<br>Only the worst case is recorded in the report. |
| Test Voltage:          | AC120V/60Hz                                                                                                                                |
| Test Results:          | Pass                                                                                                                                       |



## Measurement Data

Live Line:

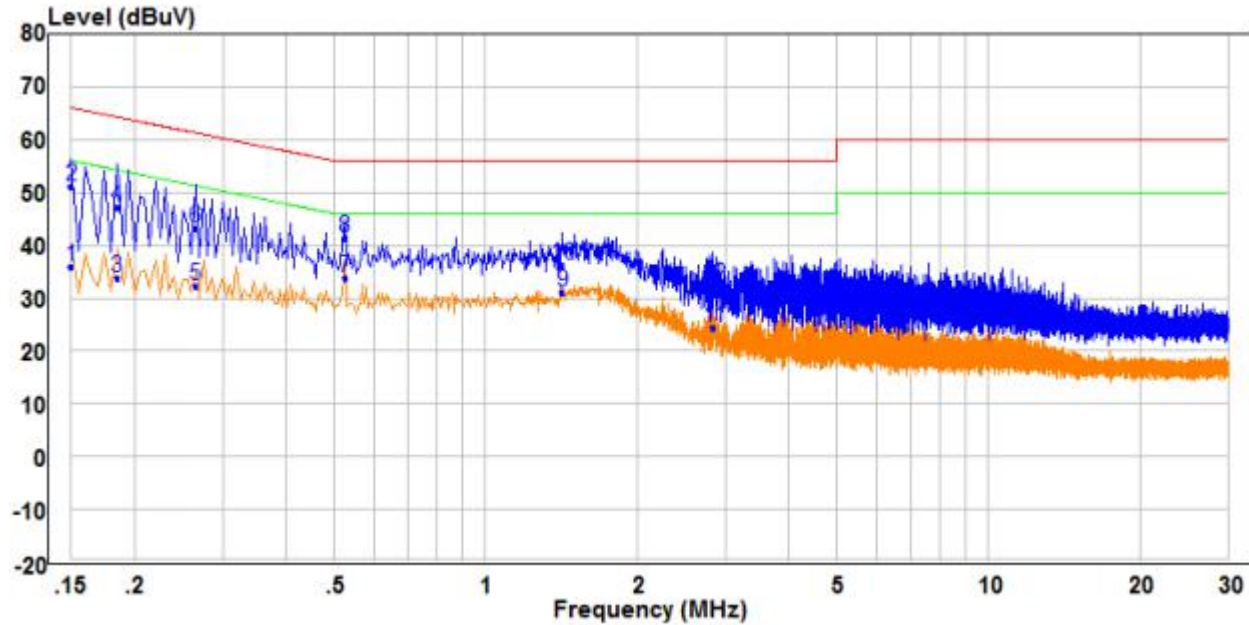


|    | Freq  | Read Level | Factor | Level | Limit | Over Limit | Remark  | Pol/Phase |
|----|-------|------------|--------|-------|-------|------------|---------|-----------|
|    | MHz   | dBuV       | dB     | dBuV  | dBuV  | dB         |         |           |
| 1  | 0.160 | 28.02      | 9.68   | 37.70 | 55.46 | -17.76     | Average | Line      |
| 2  | 0.160 | 44.45      | 9.68   | 54.13 | 65.46 | -11.33     | QP      | Line      |
| 3  | 0.195 | 25.25      | 9.62   | 34.87 | 53.82 | -18.95     | Average | Line      |
| 4  | 0.195 | 38.75      | 9.62   | 48.37 | 63.82 | -15.45     | QP      | Line      |
| 5  | 0.240 | 24.50      | 9.56   | 34.06 | 52.10 | -18.04     | Average | Line      |
| 6  | 0.240 | 37.27      | 9.56   | 46.83 | 62.10 | -15.27     | QP      | Line      |
| 7  | 0.320 | 23.50      | 9.52   | 33.02 | 49.71 | -16.69     | Average | Line      |
| 8  | 0.320 | 34.29      | 9.52   | 43.81 | 59.71 | -15.90     | QP      | Line      |
| 9  | 1.740 | 21.96      | 11.26  | 33.22 | 46.00 | -12.78     | Average | Line      |
| 10 | 1.740 | 28.56      | 11.26  | 39.82 | 56.00 | -16.18     | QP      | Line      |
| 11 | 2.315 | 19.00      | 11.34  | 30.34 | 46.00 | -15.66     | Average | Line      |
| 12 | 2.315 | 28.95      | 11.34  | 40.29 | 56.00 | -15.71     | QP      | Line      |

Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.

Neutral Line:

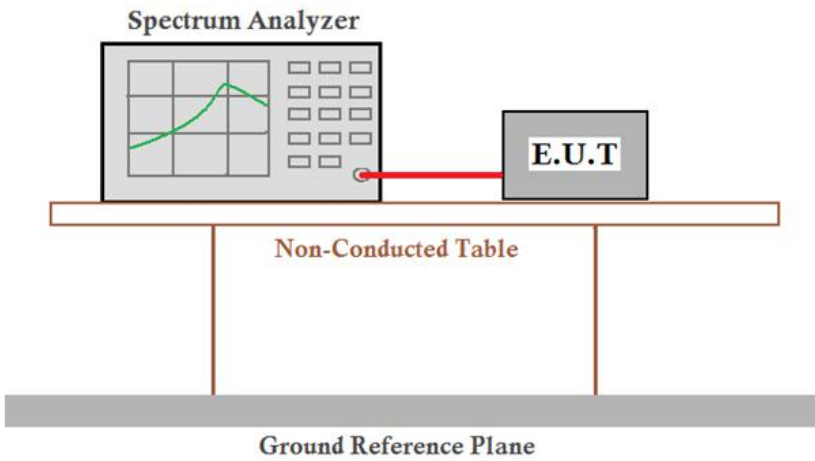


|      | Freq  | Read Level | Factor | Level | Limit Line | Over Limit | Remark  | Pol/Phase |
|------|-------|------------|--------|-------|------------|------------|---------|-----------|
|      | MHz   | dBuV       | dB     | dBuV  | dBuV       | dB         |         |           |
| 1    | 0.150 | 26.13      | 9.70   | 35.83 | 56.00      | -20.17     | Average | Neutral   |
| 2    | 0.150 | 41.31      | 9.70   | 51.01 | 66.00      | -14.99     | QP      | Neutral   |
| 3    | 0.185 | 24.26      | 9.63   | 33.89 | 54.26      | -20.37     | Average | Neutral   |
| 4    | 0.185 | 37.52      | 9.63   | 47.15 | 64.26      | -17.11     | QP      | Neutral   |
| 5    | 0.265 | 22.86      | 9.52   | 32.38 | 51.27      | -18.89     | Average | Neutral   |
| 6    | 0.265 | 33.75      | 9.52   | 43.27 | 61.27      | -18.00     | QP      | Neutral   |
| 7 PP | 0.525 | 23.95      | 9.72   | 33.67 | 46.00      | -12.33     | Average | Neutral   |
| 8 QP | 0.525 | 31.78      | 9.72   | 41.50 | 56.00      | -14.50     | QP      | Neutral   |
| 9    | 1.420 | 21.28      | 9.72   | 31.00 | 46.00      | -15.00     | Average | Neutral   |
| 10   | 1.420 | 26.38      | 9.72   | 36.10 | 56.00      | -19.90     | QP      | Neutral   |
| 11   | 2.840 | 14.71      | 9.76   | 24.47 | 46.00      | -21.53     | Average | Neutral   |
| 12   | 2.840 | 22.39      | 9.76   | 32.15 | 56.00      | -23.85     | QP      | Neutral   |

Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.

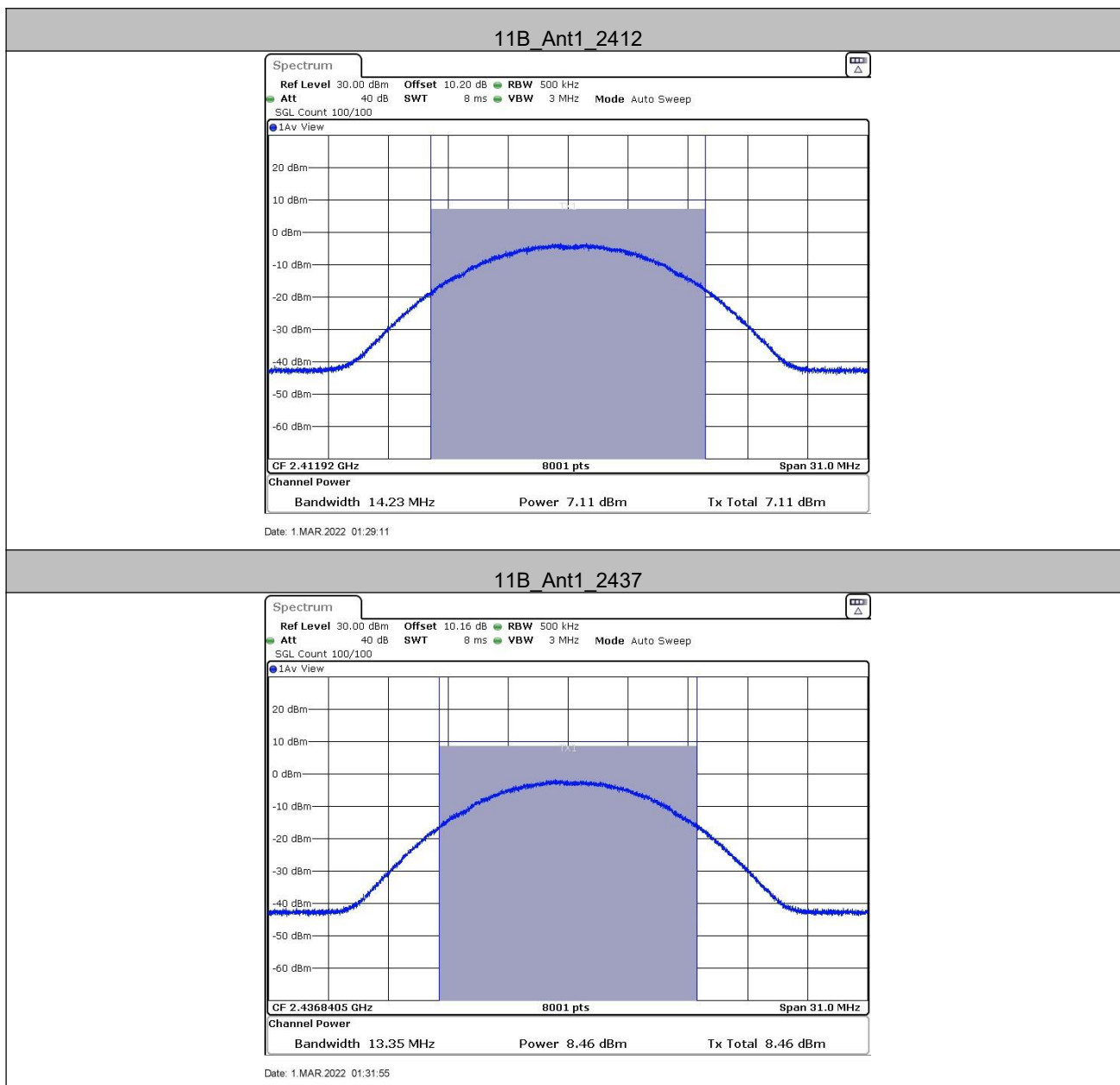
### 5.3 Conducted Peak & Average Output Power

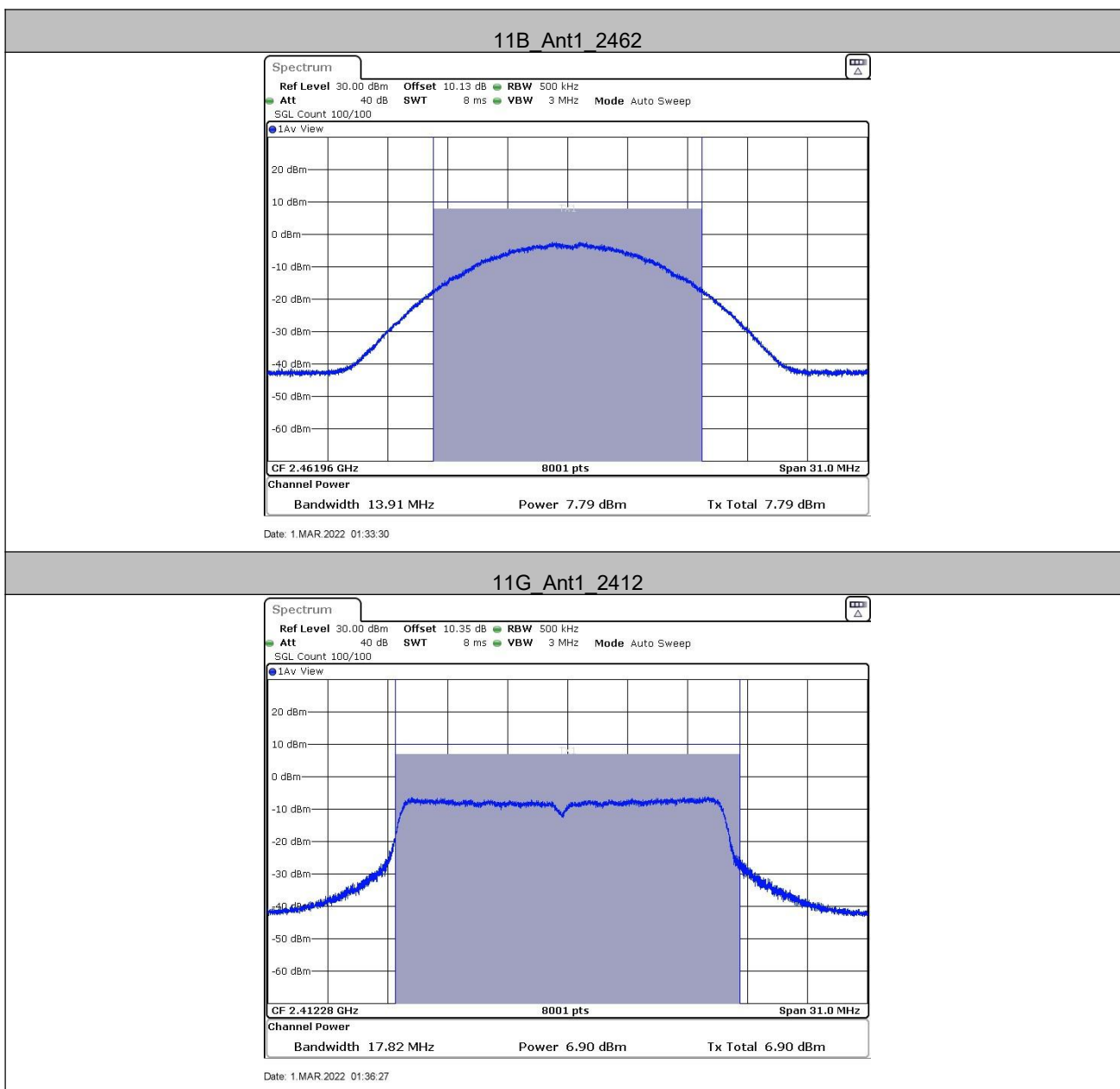
|                        |                                                                                                                                                                                                                                                                            |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement:      | 47 CFR Part 15C Section 15.247 (b)(3)                                                                                                                                                                                                                                      |
| Test Method:           | ANSI C63.10: 2013                                                                                                                                                                                                                                                          |
| Test Setup:            |  <p><i>Remark: Offset=Cable loss+ attenuation factor.</i></p>                                                                                                                            |
| Exploratory Test Mode: | Transmitting with all kind of modulations, data rates                                                                                                                                                                                                                      |
| Final Test Mode:       | Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20); 13.5Mbps of rate is the worst case of 802.11n(HT40). Only the worst case is recorded in the report. |
| Limit:                 | 30dBm                                                                                                                                                                                                                                                                      |
| Test Results:          | Pass                                                                                                                                                                                                                                                                       |

## Test Result

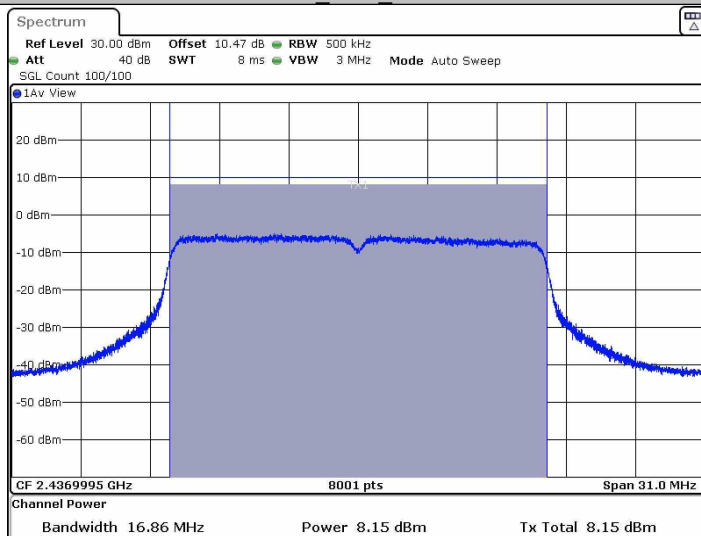
| TestMode  | Antenna | Channel | Result[dBm] | Limit[dBm] | Verdict |
|-----------|---------|---------|-------------|------------|---------|
| 11B       | Ant1    | 2412    | 7.11        | ≤30        | PASS    |
|           |         | 2437    | 8.46        | ≤30        | PASS    |
|           |         | 2462    | 7.79        | ≤30        | PASS    |
| 11G       | Ant1    | 2412    | 6.90        | ≤30        | PASS    |
|           |         | 2437    | 8.15        | ≤30        | PASS    |
|           |         | 2462    | 7.43        | ≤30        | PASS    |
| 11N20SISO | Ant1    | 2412    | 7.11        | ≤30        | PASS    |
|           |         | 2437    | 7.93        | ≤30        | PASS    |
|           |         | 2462    | 7.61        | ≤30        | PASS    |
| 11N40SISO | Ant1    | 2422    | 7.41        | ≤30        | PASS    |
|           |         | 2437    | 7.70        | ≤30        | PASS    |
|           |         | 2452    | 7.59        | ≤30        | PASS    |

## Test Graphs



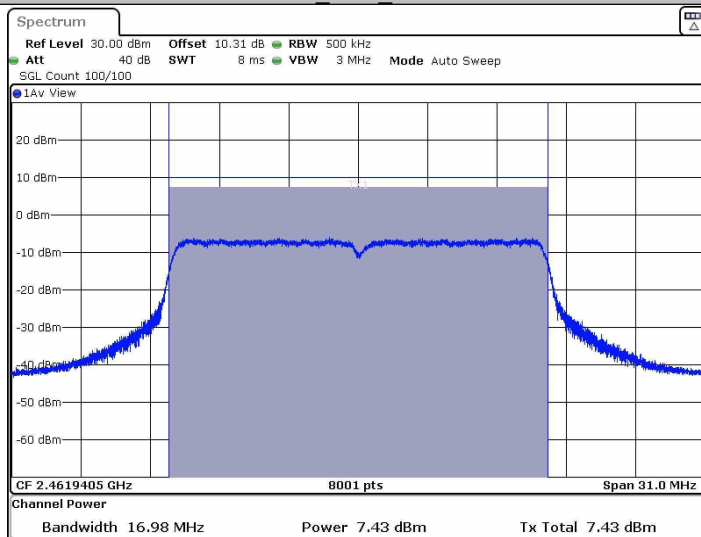


11G\_Ant1\_2437



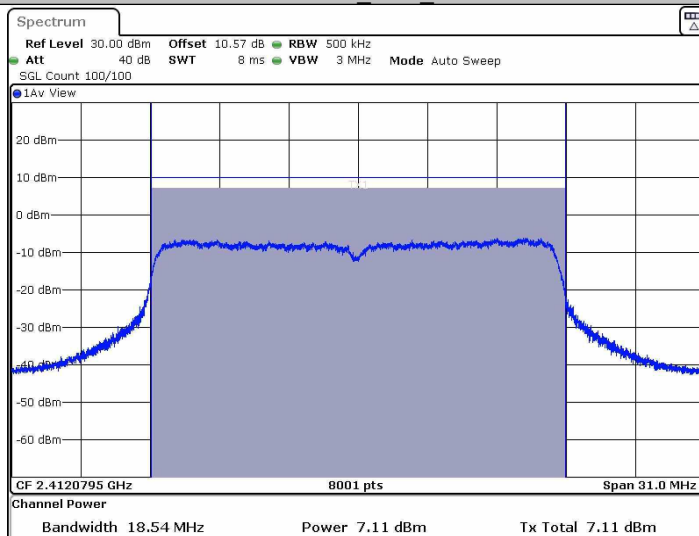
Date: 1.MAR.2022 01:39:09

11G\_Ant1\_2462



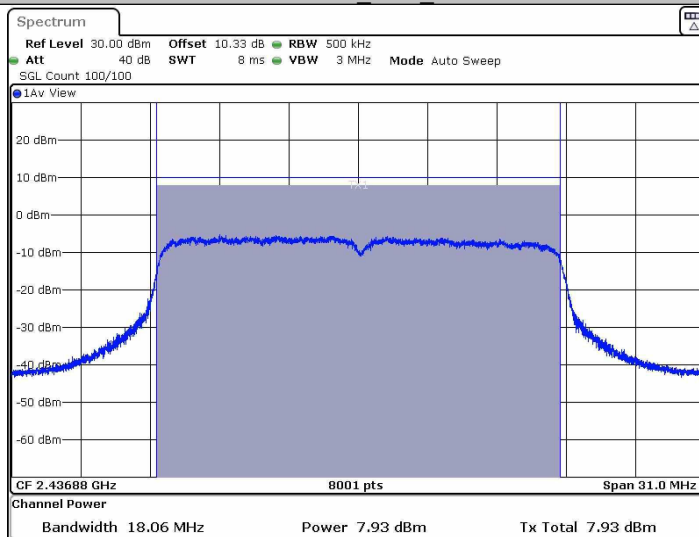
Date: 1.MAR.2022 01:41:49

11N20SISO\_Ant1\_2412



Date: 1.MAR.2022 01:45:24

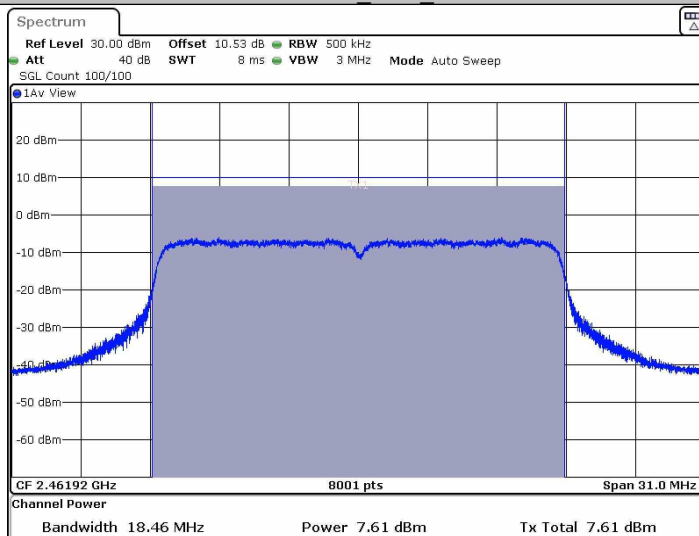
11N20SISO\_Ant1\_2437



Date: 1.MAR.2022 01:48:28

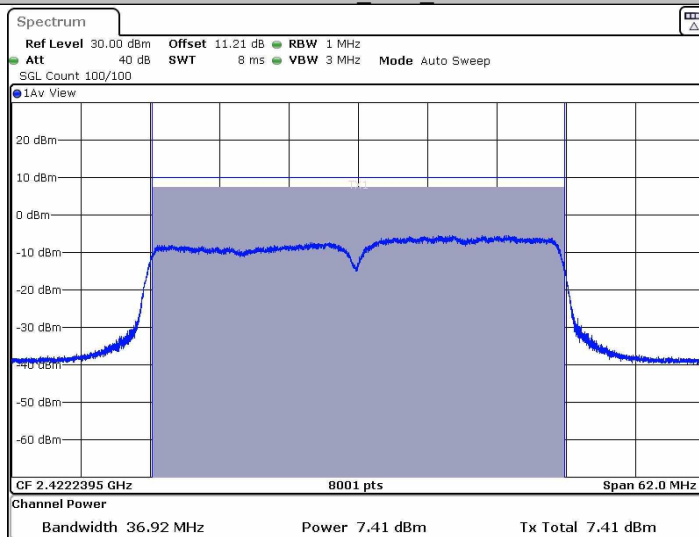


11N20SISO\_Ant1\_2462



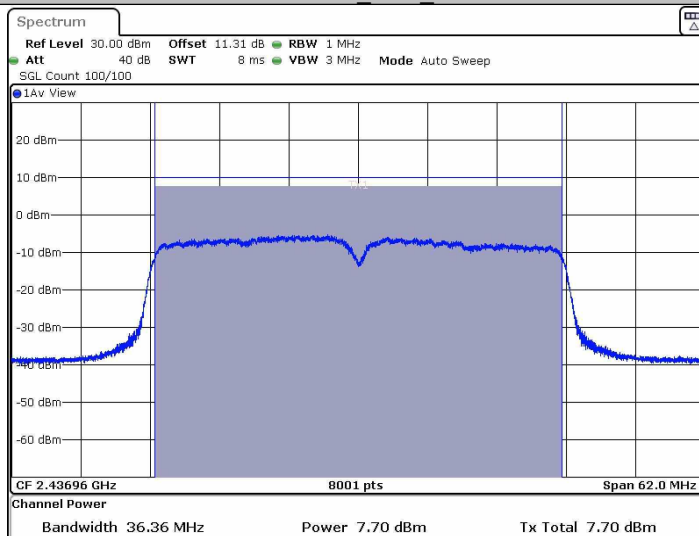
Date: 1.MAR.2022 01:52:37

11N40SISO\_Ant1\_2422



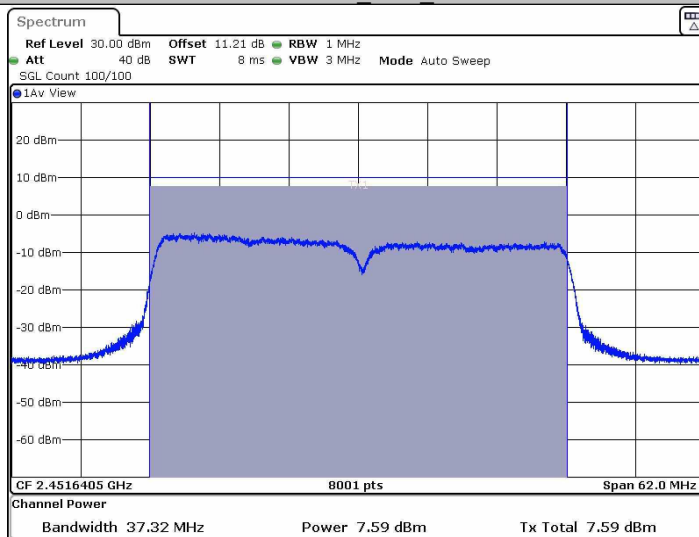
Date: 1.MAR.2022 02:04:57

11N40SISO\_Ant1\_2437



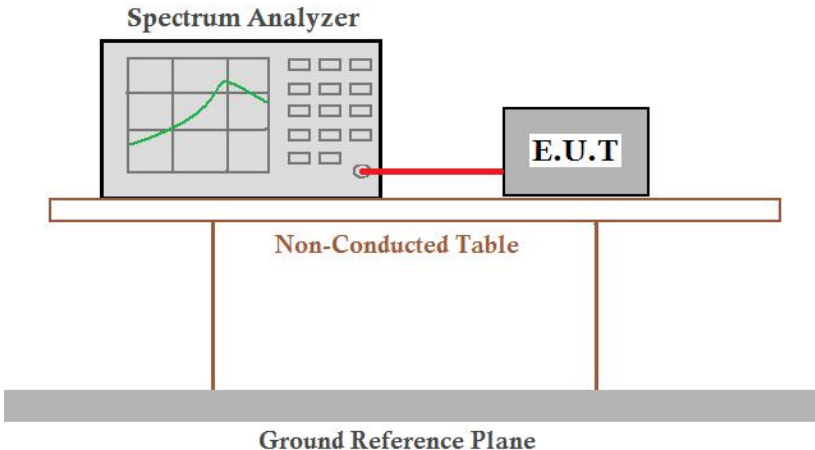
Date: 1.MAR.2022 02:07:58

11N40SISO\_Ant1\_2452



Date: 1.MAR.2022 02:09:35

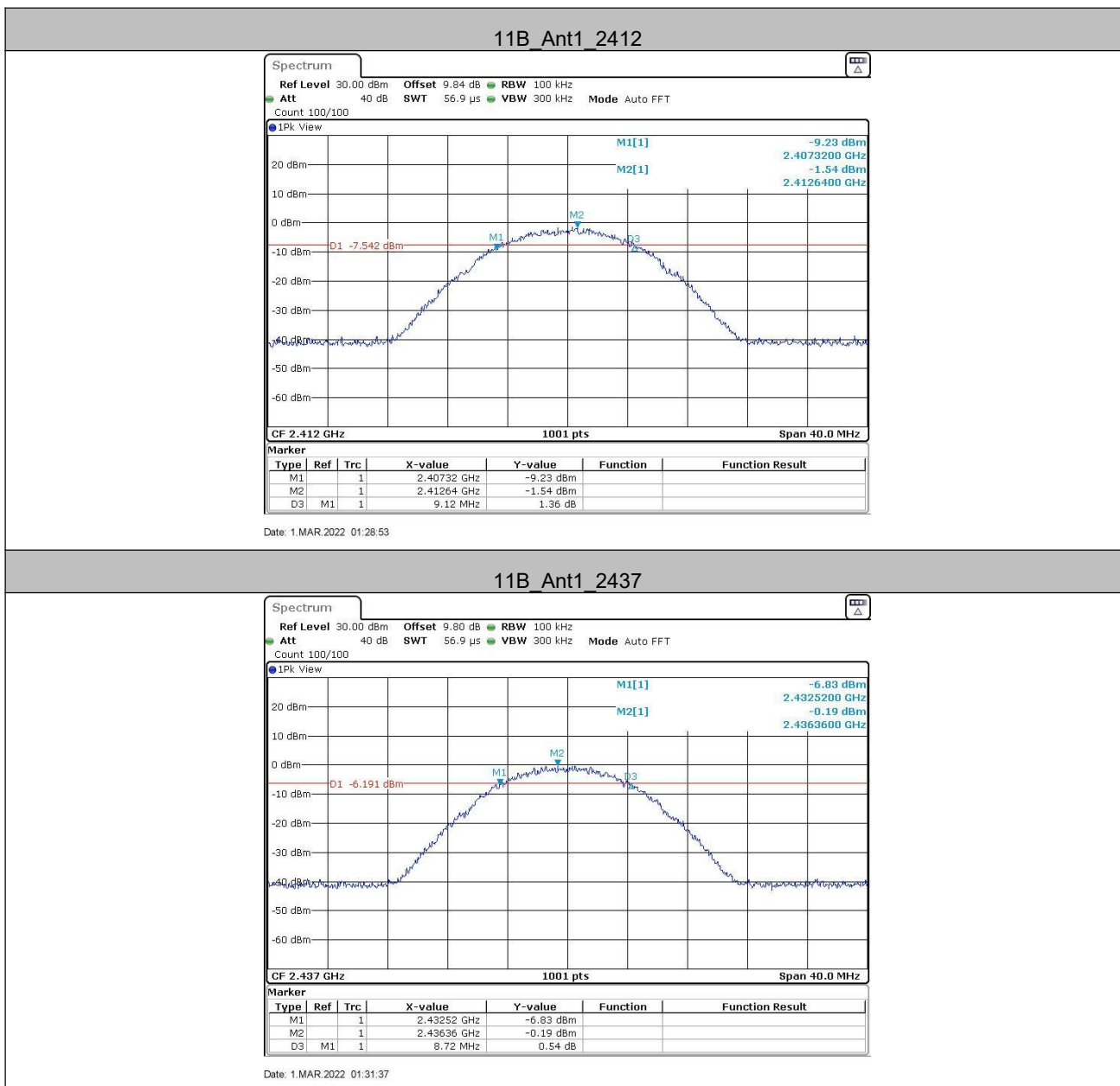
## 5.4 6dB Occupy Bandwidth

|                        |                                                                                                                                                                                                                                                                               |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement:      | 47 CFR Part 15C Section 15.247 (a)(2)                                                                                                                                                                                                                                         |
| Test Method:           | ANSI C63.10: 2013                                                                                                                                                                                                                                                             |
| Test Setup:            |  <p>Offset=cable loss+ attenuation factor</p>                                                                                                                                               |
| Exploratory Test Mode: | Transmitting with all kind of modulations, data rates                                                                                                                                                                                                                         |
| Final Test Mode:       | Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20); 13.5Mbps of rate is the worst case of 802.11n(HT40).<br>Only the worst case is recorded in the report. |
| Limit:                 | $\geq 500$ kHz                                                                                                                                                                                                                                                                |
| Test Results:          | Pass                                                                                                                                                                                                                                                                          |

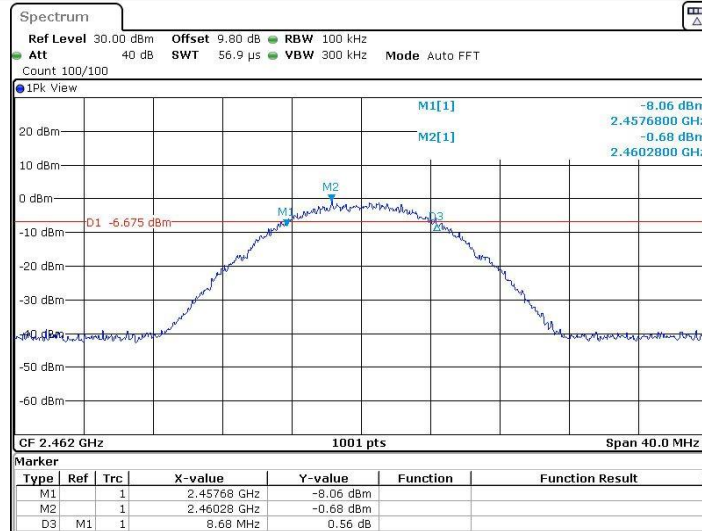
## Test Result

| TestMode  | Antenna | Channel | DTS BW<br>[MHz] | FL[MHz]  | FH[MHz]  | Limit[MHz] | Verdict |
|-----------|---------|---------|-----------------|----------|----------|------------|---------|
| 11B       | Ant1    | 2412    | 9.120           | 2407.320 | 2416.440 | 0.5        | PASS    |
|           |         | 2437    | 8.720           | 2432.520 | 2441.240 | 0.5        | PASS    |
|           |         | 2462    | 8.680           | 2457.680 | 2466.360 | 0.5        | PASS    |
| 11G       | Ant1    | 2412    | 16.600          | 2403.680 | 2420.280 | 0.5        | PASS    |
|           |         | 2437    | 16.560          | 2428.680 | 2445.240 | 0.5        | PASS    |
|           |         | 2462    | 16.560          | 2453.720 | 2470.280 | 0.5        | PASS    |
| 11N20SISO | Ant1    | 2412    | 17.880          | 2403.040 | 2420.920 | 0.5        | PASS    |
|           |         | 2437    | 17.760          | 2428.080 | 2445.840 | 0.5        | PASS    |
|           |         | 2462    | 17.800          | 2453.080 | 2470.880 | 0.5        | PASS    |
| 11N40SISO | Ant1    | 2422    | 36.640          | 2403.680 | 2440.320 | 0.5        | PASS    |
|           |         | 2437    | 35.920          | 2418.680 | 2454.600 | 0.5        | PASS    |
|           |         | 2452    | 36.560          | 2433.680 | 2470.240 | 0.5        | PASS    |

## Test Graphs

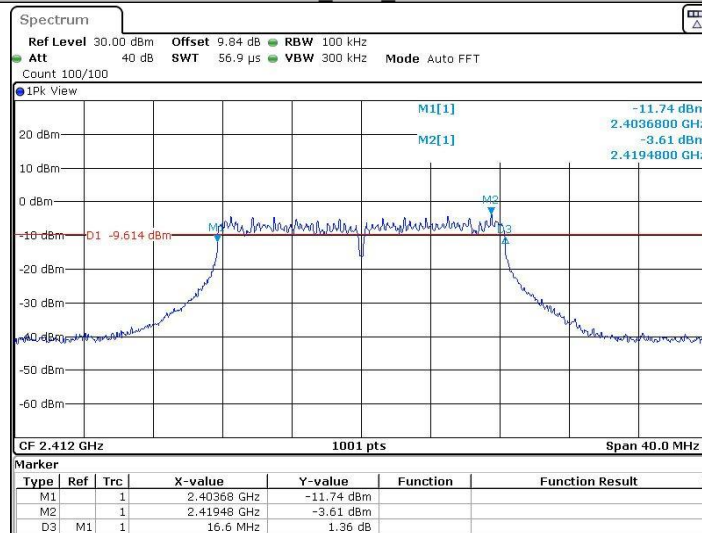


11B Ant1\_2462



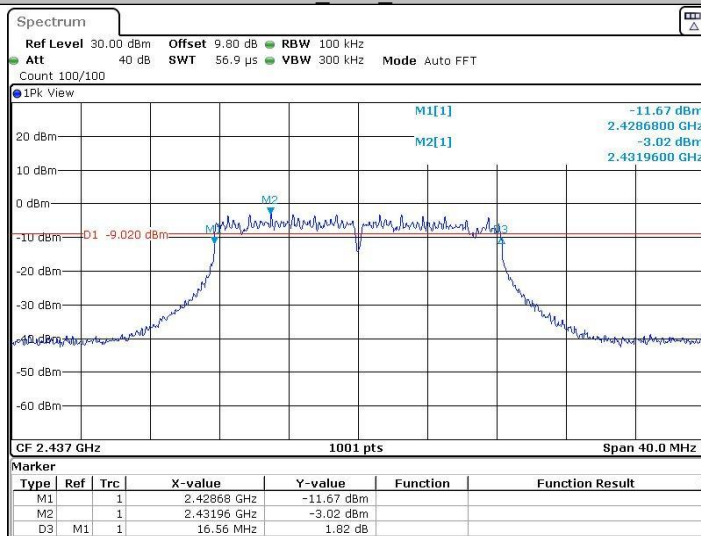
Date: 1.MAR.2022 01:33:13

11G Ant1\_2412



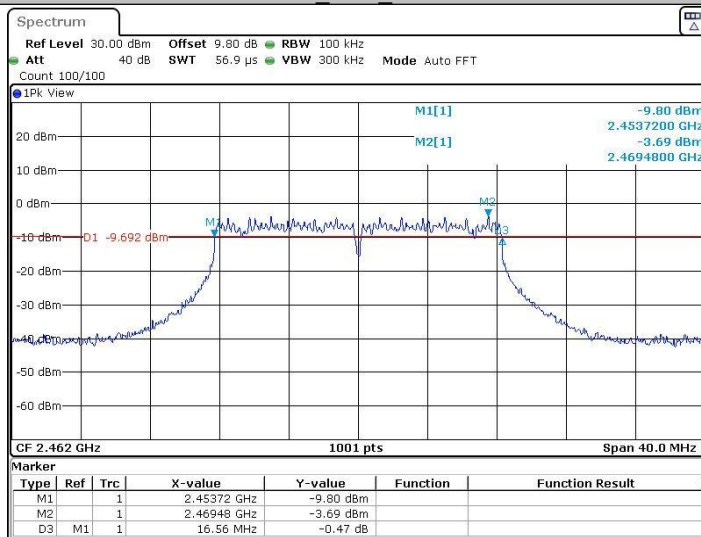
Date: 1.MAR.2022 01:36:10

11G\_Ant1\_2437



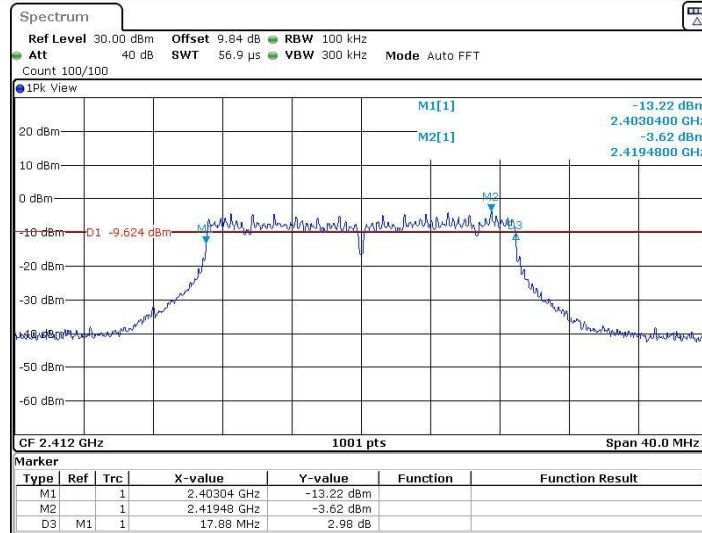
Date: 1.MAR.2022 01:38:52

11G\_Ant1\_2462



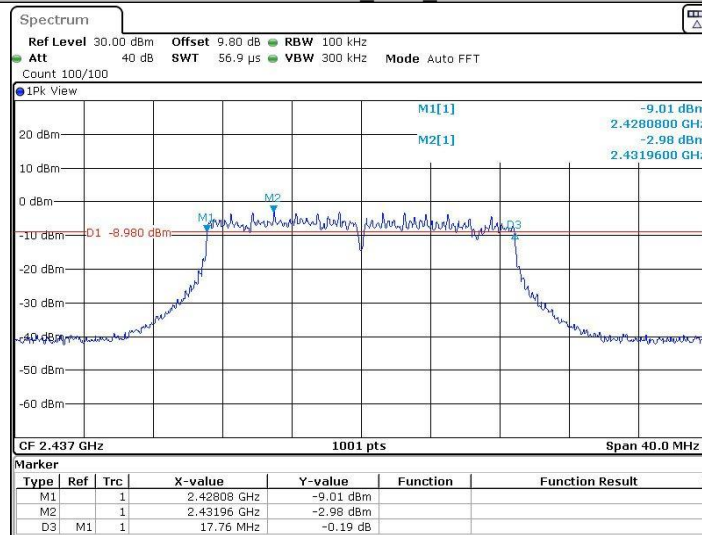
Date: 1.MAR.2022 01:41:31

11N20SISO\_Ant1\_2412



Date: 1.MAR.2022 01:45:06

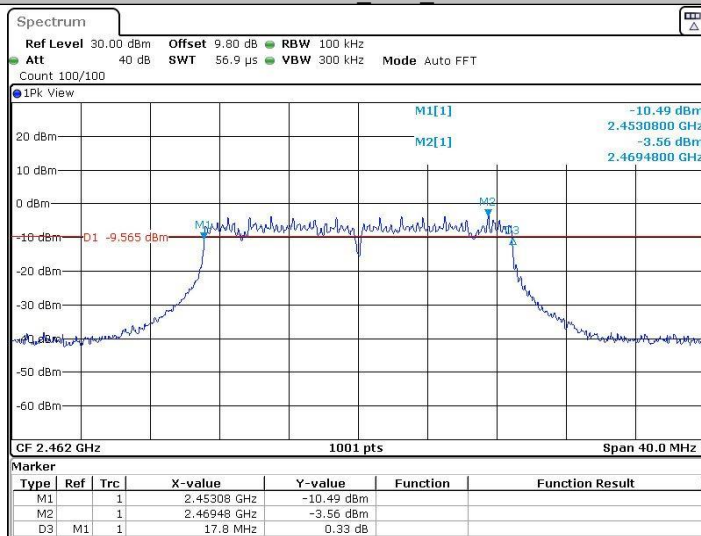
11N20SISO\_Ant1\_2437



Date: 1.MAR.2022 01:48:10

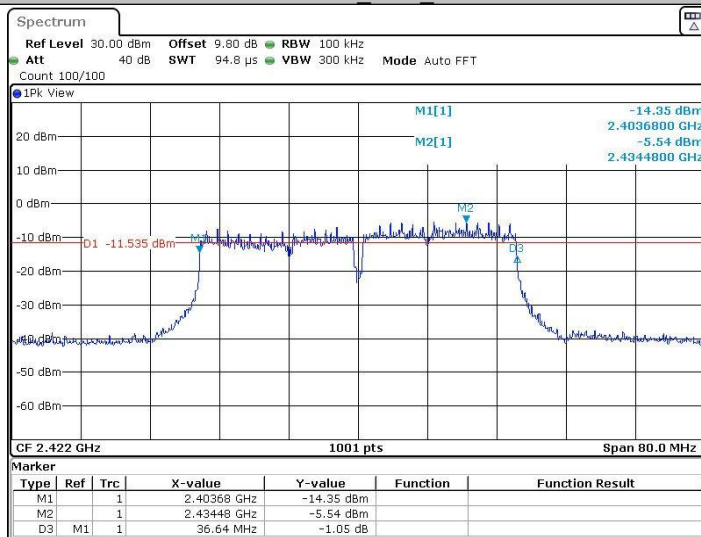


11N20SISO\_Ant1\_2462



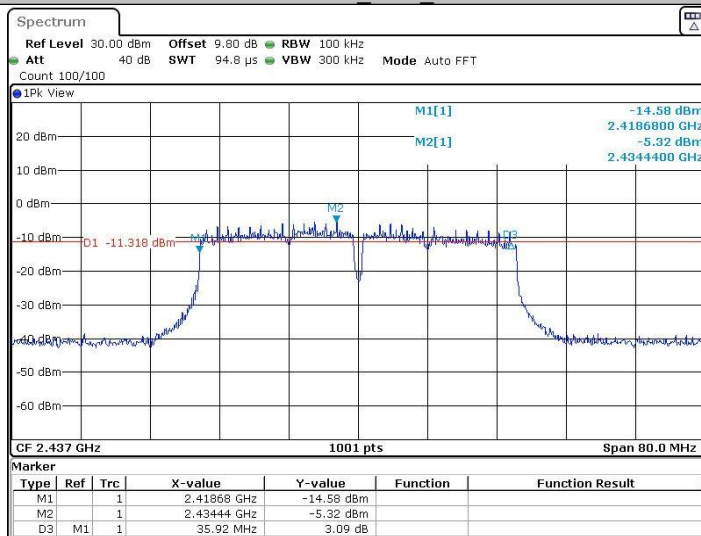
Date: 1.MAR.2022 01:52:19

11N40SISO\_Ant1\_2422



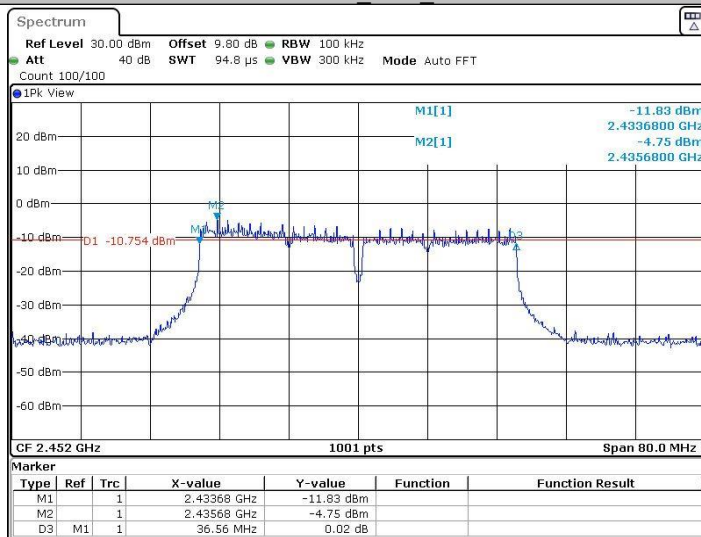
Date: 1.MAR.2022 02:04:40

11N40SISO\_Ant1\_2437



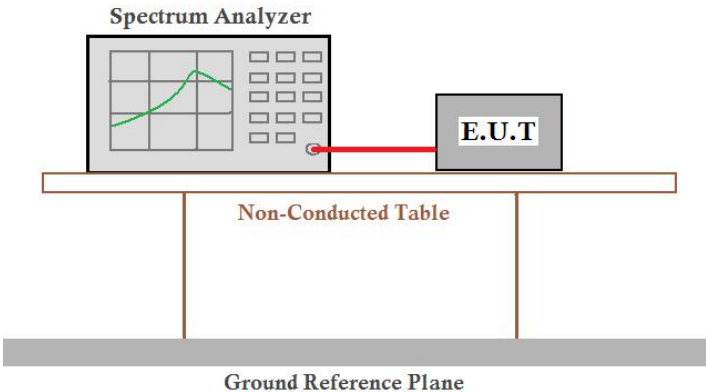
Date: 1.MAR.2022 02:07:41

11N40SISO\_Ant1\_2452



Date: 1.MAR.2022 02:09:17

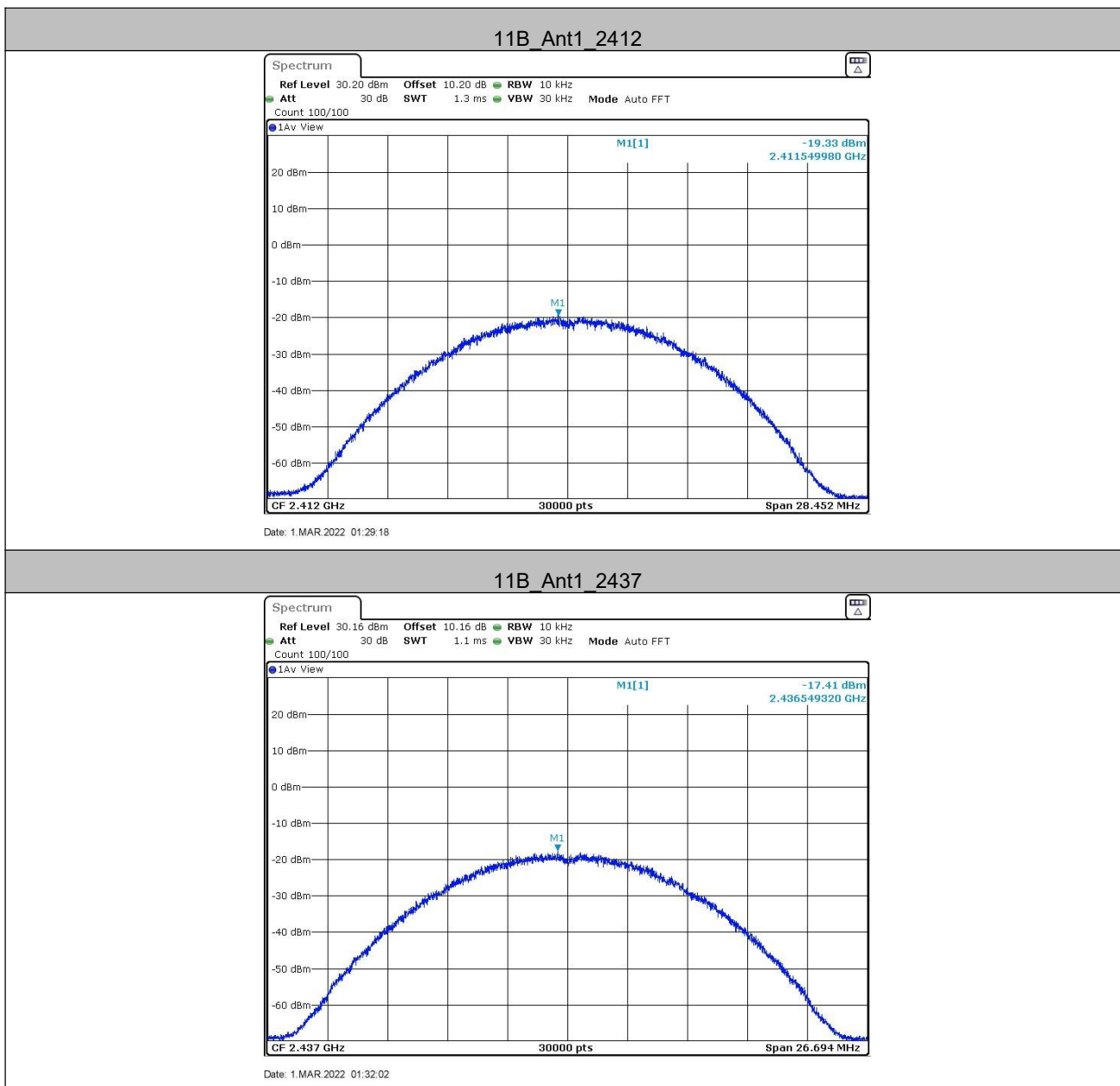
## 5.5 Power Spectral Density

|                        |                                                                                                                                                                                                                                                                            |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement:      | 47 CFR Part 15C Section 15.247 (e)                                                                                                                                                                                                                                         |
| Test Method:           | ANSI C63.10: 2013                                                                                                                                                                                                                                                          |
| Test Setup:            |  <p>Offset=cable loss+ attenuation factor</p>                                                                                                                                            |
| Exploratory Test Mode: | Transmitting with all kind of modulations, data rates                                                                                                                                                                                                                      |
| Final Test Mode:       | Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20); 13.5Mbps of rate is the worst case of 802.11n(HT40). Only the worst case is recorded in the report. |
| Limit:                 | $\leq 8.00\text{dBm}/3\text{kHz}$                                                                                                                                                                                                                                          |
| Test Results:          | Pass                                                                                                                                                                                                                                                                       |

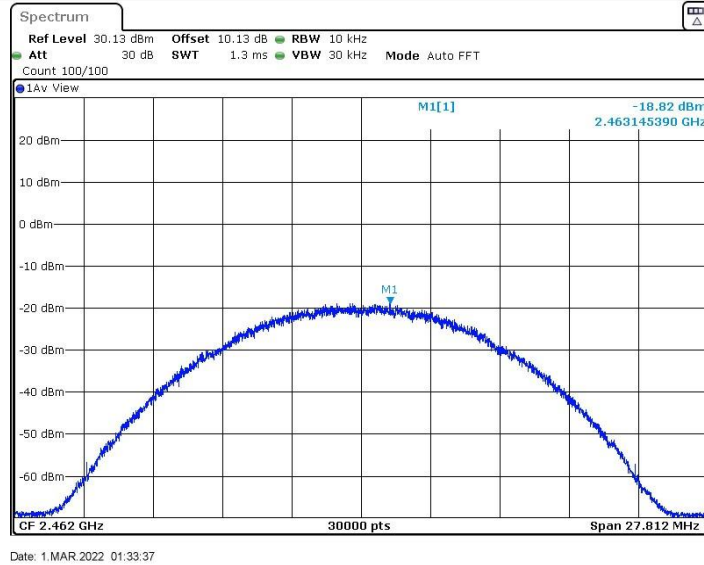
### Test Result

| TestMode  | Antenna | Channel | Result[dBm/3-100kHz] | Limit[dBm/3kHz] | Verdict |
|-----------|---------|---------|----------------------|-----------------|---------|
| 11B       | Ant1    | 2412    | -19.33               | ≤8              | PASS    |
|           |         | 2437    | -17.41               | ≤8              | PASS    |
|           |         | 2462    | -18.82               | ≤8              | PASS    |
| 11G       | Ant1    | 2412    | -20.09               | ≤8              | PASS    |
|           |         | 2437    | -18.86               | ≤8              | PASS    |
|           |         | 2462    | -19.46               | ≤8              | PASS    |
| 11N20SISO | Ant1    | 2412    | -18.04               | ≤8              | PASS    |
|           |         | 2437    | -17.84               | ≤8              | PASS    |
|           |         | 2462    | -17.8                | ≤8              | PASS    |
| 11N40SISO | Ant1    | 2422    | -18.6                | ≤8              | PASS    |
|           |         | 2437    | -18.34               | ≤8              | PASS    |
|           |         | 2452    | -18.39               | ≤8              | PASS    |

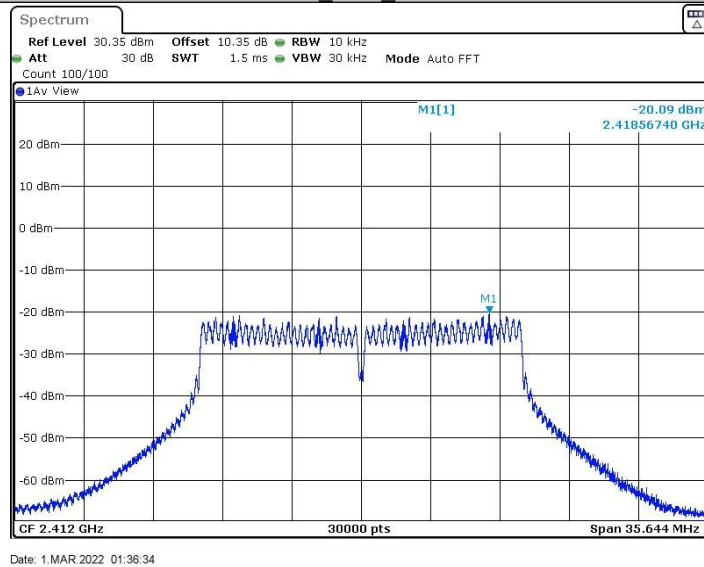
## Test Graphs



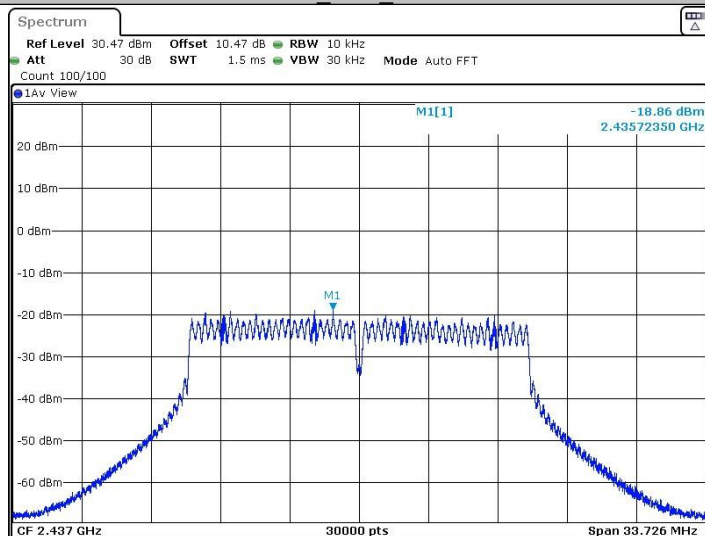
11B\_Ant1\_2462



11G\_Ant1\_2412

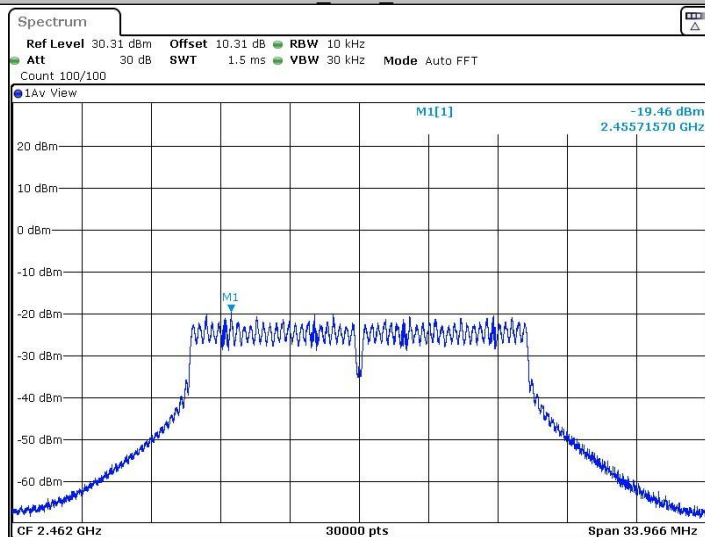


11G\_Ant1\_2437



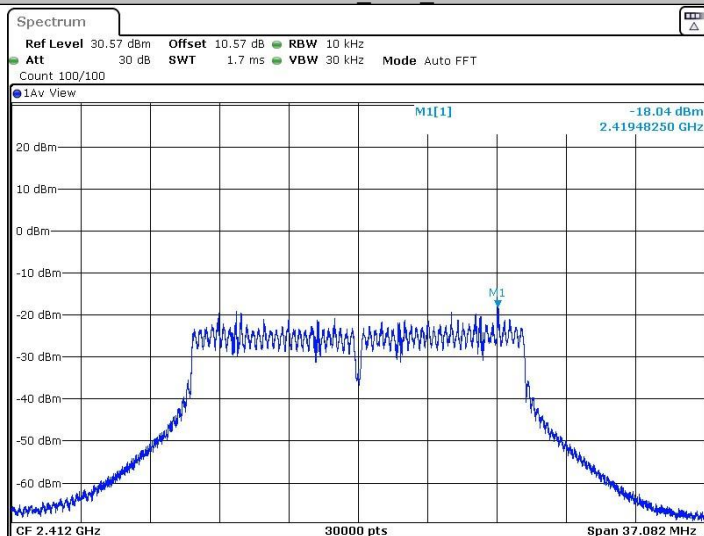
Date: 1.MAR.2022 01:39:16

11G\_Ant1\_2462



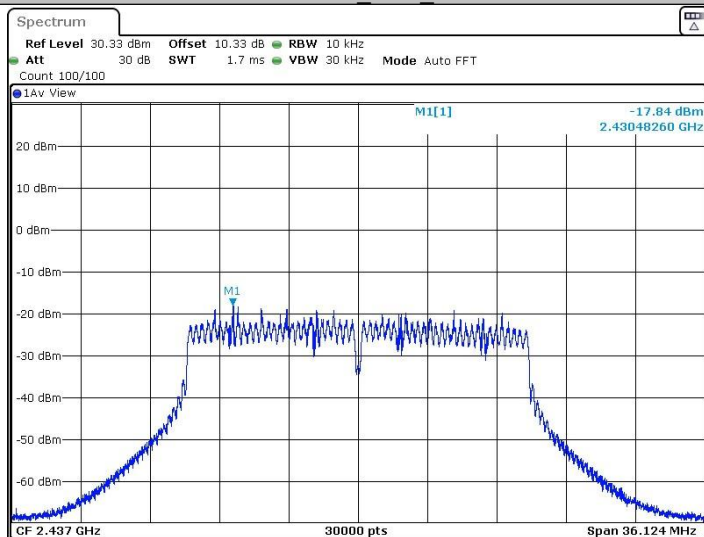
Date: 1.MAR.2022 01:41:55

11N20SISO\_Ant1\_2412



Date: 1.MAR.2022 01:45:31

11N20SISO\_Ant1\_2437



Date: 1.MAR.2022 01:48:35