

# TEST REPORT

For WiFi-2.4GHz Band

Report No. .... : CHTEW23090037 Report Verification: 

Project No..... : SHT2308036106EW

FCC ID..... : 2AN9S-ABX00087

Applicant's name ..... : Arduino S.r.l.

Address..... : Via Andrea Appiani, 25, 20900 MONZA (Italy)

Product Name ..... : Arduino UNO R4 WiFi

Trade Mark ..... : Arduino

Model No. .... : ABX00087

Listed Model(s) ..... : -

Standard ..... : FCC CFR Title 47 Part 15 Subpart C § 15.247

Date of receipt of test sample..... : Aug.30, 2023

Date of testing ..... : Aug.30, 2023- Sep.21, 2023

Date of issue..... : Sep.22, 2023

Result..... : PASS

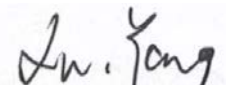
Compiled by  
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(Position+Printed name+Signature): Project Engineer Kiki Kong



Approved by  
(Position+Printed name+Signature): RF Manager Xu yang



Testing Laboratory Name ..... : Shenzhen Huatongwei International Inspection Co., Ltd.

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## 1. TEST STANDARDS AND REPORT VERSION

### 1.1. Test Standards

The tests were performed according to following standards:

- [FCC CFR Title 47 Part 15 Subpart C § 15.247](#): Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz
- [ANSI C63.10:2020](#): American National Standard for Testing Unlicensed Wireless Devices
- [KDB 558074 D01 15.247 Meas Guidance v05r02](#): Guidance for Compliance Measurements on Digital Transmission System, Frequency Hopping Spread Spectrum System, and Hybrid System Devices Operating under Section 15.247 of The FCC Rules

### 1.2. Report version

| Revision No. | Date of issue | Description |
|--------------|---------------|-------------|
| N/A          | 2023-09-22    | Original    |
|              |               |             |
|              |               |             |
|              |               |             |
|              |               |             |

## 2. TEST DESCRIPTION

| Report clause | Test Items                                | Standard Requirement    | Result             | Test Engineer |
|---------------|-------------------------------------------|-------------------------|--------------------|---------------|
| 5.1           | Antenna Requirement                       | 15.203/15.247(c)        | PASS               | kongyongshu   |
| 5.2           | AC Conducted Emission                     | 15.207                  | PASS               | Junman wang   |
| 5.3           | Peak Output Power                         | 15.247(b)(3)            | PASS               | kongyongshu   |
| 5.4           | Power Spectral Density                    | 15.247(e)               | PASS               | kongyongshu   |
| 5.5           | 6dB Bandwidth                             | 15.247(a)(2)            | PASS               | kongyongshu   |
| 5.6           | 99% Occupied Bandwidth                    | -                       | PASS <sup>*1</sup> | kongyongshu   |
| 5.7           | Duty cycle                                | -                       | PASS <sup>*1</sup> | kongyongshu   |
| 5.8           | Conducted Band Edge and Spurious Emission | 15.247(d)/15.205        | PASS               | kongyongshu   |
| 5.9           | Radiated Band Edge Emission               | 15.205/15.209           | PASS               | Yifan Wang    |
| 5.10          | Radiated Spurious Emission                | 15.247(d)/15.205/15.209 | PASS               | Yifan Wang    |

Note:

- The measurement uncertainty is not included in the test result.
- <sup>\*1</sup>: No requirement on standard, only report these test data.

### 3. SUMMARY

#### 3.1. Client Information

|               |                                             |
|---------------|---------------------------------------------|
| Applicant:    | Arduino S.r.l.                              |
| Address:      | Via Andrea Appiani, 25, 20900 MONZA (Italy) |
| Manufacturer: | Arduino S.r.l.                              |
| Address:      | Via Andrea Appiani, 25, 20900 MONZA (Italy) |

#### 3.2. Product Description

| Main unit information: |                     |
|------------------------|---------------------|
| Product Name:          | Arduino UNO R4 WiFi |
| Trade Mark:            | Arduino             |
| Model No.:             | ABX00087            |
| Listed Model(s):       | -                   |
| Power supply:          | DC 5V               |
| Hardware version:      | 0.3                 |
| Software version:      | 1.0.2               |

#### 3.3. Radio Specification Description

|                      |                                                                          |                                             |                                             |
|----------------------|--------------------------------------------------------------------------|---------------------------------------------|---------------------------------------------|
| Support type:        | <input checked="" type="checkbox"/> 802.11b                              | <input checked="" type="checkbox"/> 802.11g | <input checked="" type="checkbox"/> 802.11n |
| Support bandwidth:   | <input checked="" type="checkbox"/> 20MHz                                | <input checked="" type="checkbox"/> 40MHz   |                                             |
| Modulation:          | 802.11b: DBPSK, DQPSK, BPSK, QPSK<br>802.11g/n: BPSK, QPSK, 16QAM, 64QAM |                                             |                                             |
| Operation frequency: | 802.11b/g/n(HT20): 2412MHz~2462MHz<br>802.11n(HT40) 2422MHz~2452MHz      |                                             |                                             |
| Channel number:      | 802.11b/g/n(HT20): 11<br>802.11n(HT40) 7                                 |                                             |                                             |
| Channel separation:  | 5MHz                                                                     |                                             |                                             |
| Antenna technology:  | <input checked="" type="checkbox"/> SISO                                 | <input type="checkbox"/> MIMO               |                                             |
| Antenna type:        | PCB Antenna                                                              |                                             |                                             |
| Antenna gain:        | 4.54dBi                                                                  |                                             |                                             |

### 3.4. Testing Laboratory Information

|                      |                                                                                                                                                         |                      |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| Laboratory Name      | Shenzhen Huatongwei International Inspection Co., Ltd.                                                                                                  |                      |
| Laboratory Location  | 1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China                                                            |                      |
| Contact information: | Phone: 86-755-26715499<br>E-mail: <a href="mailto:cs@szhtw.com.cn">cs@szhtw.com.cn</a><br><a href="http://www.szhtw.com.cn">http://www.szhtw.com.cn</a> |                      |
| Qualifications       | Type                                                                                                                                                    | Accreditation Number |
|                      | FCC                                                                                                                                                     | 762235               |

## 4. TEST CONFIGURATION

### 4.1. Test frequency list

According to section 15.31(m), regards to the operating frequency range over 10 MHz, must select three channels which were tested. The Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, please see the below blue front.

| 802.11b/g/n(HT20) |                 | 802.11n(HT40) |                 |
|-------------------|-----------------|---------------|-----------------|
| Channel           | Frequency (MHz) | Channel       | Frequency (MHz) |
| 01                | 2412            | 03            | 2422            |
| 02                | 2417            | 04            | 2427            |
| · :               | · :             | · :           | · :             |
| 06                | 2437            | 06            | 2437            |
| · :               | · :             | · :           | · :             |
| 10                | 2457            | 08            | 2447            |
| 11                | 2462            | 09            | 2452            |

### 4.2. Test mode

|                                                                                                                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| For RF test items                                                                                                                                                                                                           |
| The engineering test program was provided and enabled to make EUT continuous transmit.                                                                                                                                      |
| For AC power line conducted emissions:                                                                                                                                                                                      |
| The EUT was set to connect with the WLAN AP under large package sizes transmission.                                                                                                                                         |
| For Radiated spurious emissions                                                                                                                                                                                             |
| The engineering test program was provided and enabled to make EUT continuous transmit.<br>The EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data Recorded in the report. |

Preliminary tests were performed in different data rates, final test modes are considering the modulation and worse data rates as below table.

| Modulation    | Data rate |
|---------------|-----------|
| 802.11b       | 1Mbps     |
| 802.11g       | 6Mbps     |
| 802.11n(HT20) | MCS0      |
| 802.11n(HT40) | MCS0      |

### 4.3. Test sample information

| Test item               | HTW sample no.                                         |
|-------------------------|--------------------------------------------------------|
| RF Conducted test items | Please refer to the description in the appendix report |
| RF Radiated test items  | YPHT23080361008                                        |
| EMI test items          | YPHT23080361006                                        |

Note:

RF Conducted test items: Peak Output Power, Power Spectral Density, 6dB Bandwidth, 99% Occupied Bandwidth, Duty cycle, Conducted Band Edge and Spurious Emission

RF Radiated test items: Radiated Band Edge Emission, Radiated Spurious Emission

EMI test items: AC Conducted Emission

### 4.4. Support unit used in test configuration and system

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

The following peripheral devices and interface cables were connected during the measurement:

| Whether support unit is used? |           |            |                  |       |
|-------------------------------|-----------|------------|------------------|-------|
| ✓ Yes                         |           |            |                  |       |
| Item                          | Equipment | Trade Name | Model No.        | Other |
| 1                             | Laptop    | ThinkPad   | ThinkPad S3-S440 | -     |
| 2                             |           |            |                  |       |

### 4.5. Testing environmental condition

| Type               | Requirement  | Actual   |
|--------------------|--------------|----------|
| Temperature:       | 15~35°C      | 25°C     |
| Relative Humidity: | 25~75%       | 50%      |
| Air Pressure:      | 860~1060mbar | 1000mbar |
|                    |              |          |



#### 4.6. Statement of the measurement uncertainty

| No. | Test Items                                | Measurement Uncertainty                        |
|-----|-------------------------------------------|------------------------------------------------|
| 1   | AC Conducted Emission                     | 3.21dB                                         |
| 2   | Peak Output Power                         | 1.07                                           |
| 3   | Power Spectral Density                    | 1.07                                           |
| 4   | 6dB Bandwidth                             | 0.002%                                         |
| 5   | 99% Occupied Bandwidth                    | 0.002%                                         |
| 6   | Duty cycle                                | -                                              |
| 7   | Conducted Band Edge and Spurious Emission | 1.68dB                                         |
| 8   | Radiated Band Edge Emission               | 4.54dB for 30MHz-1GHz<br>5.10dB for above 1GHz |
| 9   | Radiated Spurious Emission                | 4.54dB for 30MHz-1GHz<br>5.10dB for above 1GHz |

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

#### 4.7. Equipment Used during the Test

| ● RF Conducted test item |                              |              |               |           |            |                           |                           |
|--------------------------|------------------------------|--------------|---------------|-----------|------------|---------------------------|---------------------------|
| Used                     | Test Equipment               | Manufacturer | Equipment No. | Model No. | Serial No. | Last Cal. Date (YY-MM-DD) | Next Cal. Date (YY-MM-DD) |
| ●                        | Signal and spectrum Analyzer | R&S          | HTWE0242      | FSV40     | 100048     | 2023/08/22                | 2024/08/21                |
| ●                        | Signal & Spectrum Analyzer   | R&S          | HTWE0262      | FSW26     | 103440     | 2023/08/22                | 2024/08/21                |
| ●                        | Vector signal generator      | R&S          | HTWE0244      | SMBV100A  | 260790     | 2023/05/23                | 2024/05/22                |
| ●                        | Test software                | Tonscend     | N/A           | JS1120    | N/A        | N/A                       | N/A                       |

| ● Conducted Emission |                    |              |               |                 |            |                           |                           |
|----------------------|--------------------|--------------|---------------|-----------------|------------|---------------------------|---------------------------|
| Used                 | Test Equipment     | Manufacturer | Equipment No. | Model No.       | Serial No. | Last Cal. Date (YY-MM-DD) | Next Cal. Date (YY-MM-DD) |
| ●                    | EMI Test Receiver  | R&S          | HTWE0111      | ESCI            | 101247     | 2023/8/22                 | 2024/8/21                 |
| ●                    | Artificial Mains   | SCHWARZBECK  | HTWE0113      | NNLK 8121       | 573        | 2023/8/18                 | 2024/8/17                 |
| ●                    | Protection Network | SCHWARZBECK  | HTWE0567      | VTSD9561FN      | 00899      | 2023/8/18                 | 2024/8/17                 |
| ●                    | ISN                | FCC          | HTWE0148      | FCC-TLISN-T2-02 | 20371      | 2023/8/18                 | 2024/8/17                 |
| ●                    | ISN                | FCC          | HTWE0150      | FCC-TLISN-T8-02 | 20375      | 2023/8/18                 | 2024/8/17                 |
| ●                    | Test Software      | R&S          | N/A           | EMC32           | N/A        | N/A                       | N/A                       |

| ● Radiated Emission – 9kHz~30MHz |                       |                    |               |           |            |                           |                           |
|----------------------------------|-----------------------|--------------------|---------------|-----------|------------|---------------------------|---------------------------|
| Used                             | Test Equipment        | Manufacturer       | Equipment No. | Model No. | Serial No. | Last Cal. Date (YY-MM-DD) | Next Cal. Date (YY-MM-DD) |
| ●                                | Semi-Anechoic Chamber | Albatross projects | HTWE0127      | SAC-3m-02 | C11121     | 2023/4/6                  | 2026/4/5                  |
| ●                                | EMI Test Receiver     | R&S                | HTWE0099      | ESCI 7    | 100900     | 2023/8/22                 | 2024/8/21                 |
| ●                                | Loop Antenna          | R&S                | HTWE0170      | HFH2-Z2   | 100020     | 2021/4/6                  | 2024/4/5                  |
| ●                                | Test Software         | R&S                | N/A           | EMC32     | N/A        | N/A                       | N/A                       |

| ● Radiated Emission - 30MHz~1GHz |                         |                    |               |           |            |                           |                           |
|----------------------------------|-------------------------|--------------------|---------------|-----------|------------|---------------------------|---------------------------|
| Used                             | Test Equipment          | Manufacturer       | Equipment No. | Model No. | Serial No. | Last Cal. Date (YY-MM-DD) | Next Cal. Date (YY-MM-DD) |
| ●                                | Semi-Anechoic Chamber   | Albatross projects | HTWE0127      | SAC-3m-02 | C11121     | 2023/4/6                  | 2026/4/5                  |
| ●                                | EMI Test Receiver       | R&S                | HTWE0099      | ESCI 7    | 100900     | 2023/8/22                 | 2024/8/21                 |
| ●                                | Ultra-Broadband Antenna | SCHWARZBECK        | HTWE0119      | VULB9163  | 546        | 2023/2/22                 | 2026/2/21                 |
| ●                                | Pre-Amplifier           | SCHWARZBECK        | HTWE0295      | BBV 9742  | /          | 2023/5/25                 | 2024/5/24                 |
| ●                                | Test Software           | R&S                | N/A           | EMC32     | N/A        | N/A                       | N/A                       |

## ● Radiated emission-Above 1GHz

| Used | Test Equipment          | Manufacturer       | Equipment No. | Model No.  | Serial No.  | Last Cal. Date<br>(YY-MM-DD) | Next Cal. Date<br>(YY-MM-DD) |
|------|-------------------------|--------------------|---------------|------------|-------------|------------------------------|------------------------------|
| ●    | Semi-Anechoic Chamber   | Albatross projects | HTWE0122      | SAC-3m-01  | C11121      | 2023/4/17                    | 2026/4/16                    |
| ●    | Spectrum Analyzer       | R&S                | HTWE0098      | FSP40      | 100597      | 2023/8/22                    | 2024/8/21                    |
| ●    | Horn Antenna            | SCHWARZBECK        | HTWE0126      | BBHA 9120D | 1011        | 2023/2/14                    | 2026/2/13                    |
| ●    | Horn Antenna            | SCHWARZBECK        | HTWE0103      | BBHA9170   | BBHA9170472 | 2023/2/20                    | 2026/2/19                    |
| ●    | Broadband Pre-amplifier | SCHWARZBECK        | HTWE0201      | BBV 9718   | 9718-248    | 2023/5/25                    | 2024/5/24                    |
| ●    | Test Software           | R&S                | N/A           | EMC32      | N/A         | N/A                          | N/A                          |

## 5. TEST CONDITIONS AND RESULTS

### 5.1. Antenna Requirement

#### REQUIREMENT

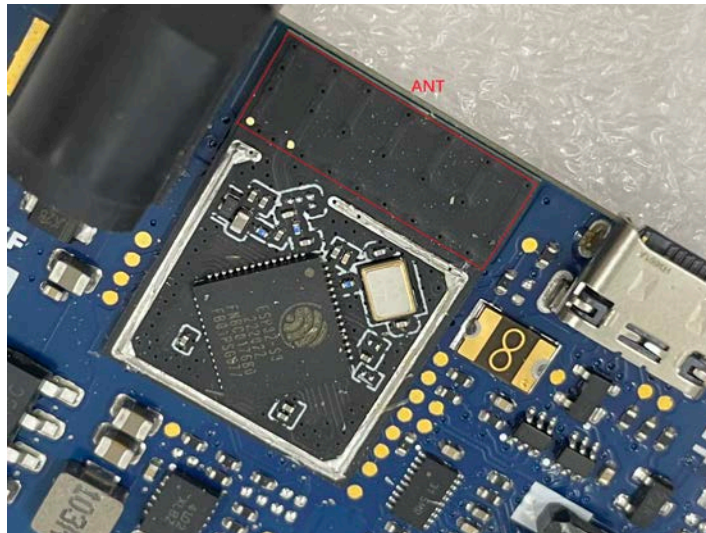
##### **FCC CFR Title 47 Part 15 Subpart C Section 15.203:**

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.

#### TEST RESULT

☒ **Passed**      ☐ **Not Applicable**

The antenna type is a PCB antenna, please refer to the below antenna photo.



## 5.2. AC Conducted Emission

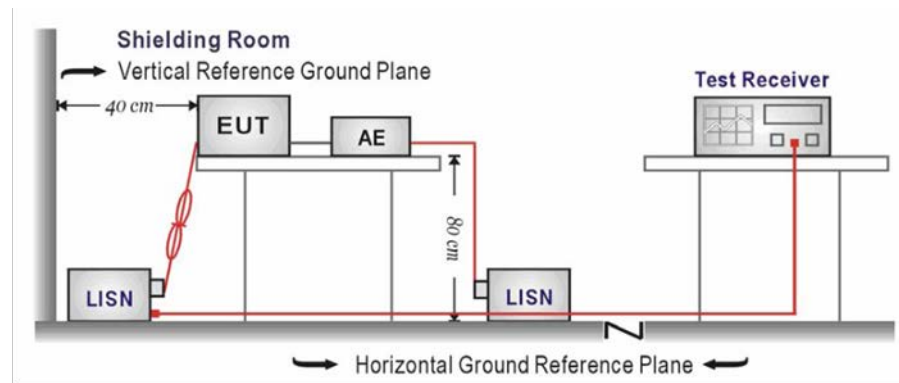
### LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.207

| 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 CONFIGURATION



### TEST PROCEDURE

1. The EUT was setup according to ANSI C63.10 requirements.
2. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface.
3. The EUT and simulators are connected to the main power through a line impedances stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment.
4. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs)
5. Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.
6. The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.
7. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.
8. During the above scans, the emissions were maximized by cable manipulation.

### TEST MODE

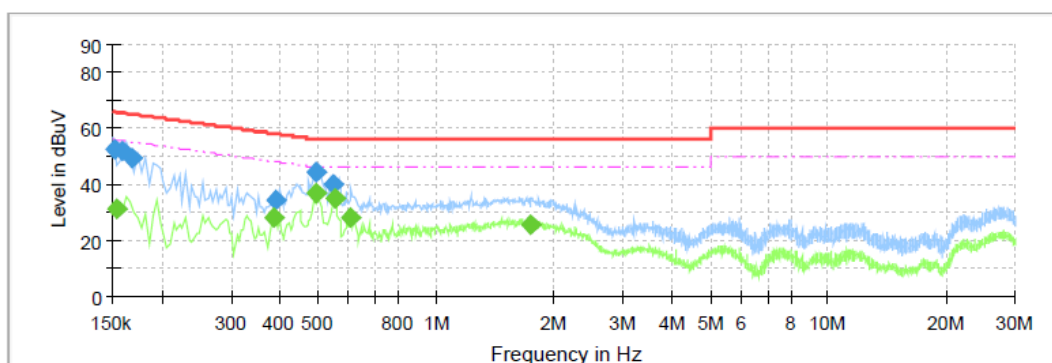
Refer to the clause 4.2

### TEST RESULT

☒ Passed ☐ Not Applicable

Test Line:

L

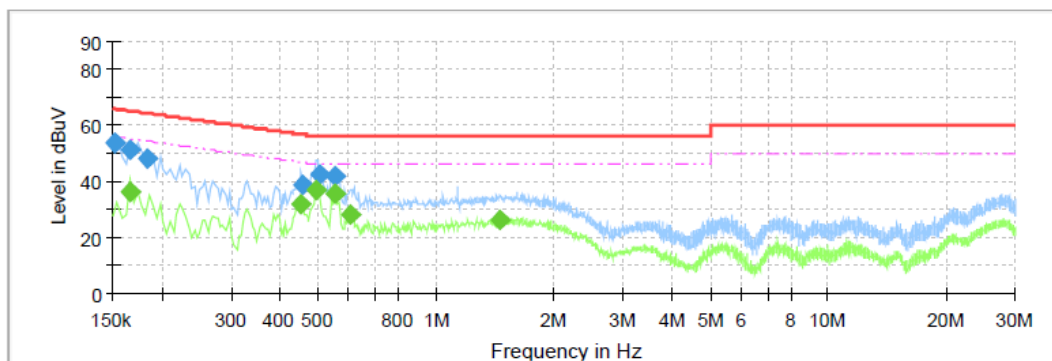


### Final Result

| Frequency (MHz) | QuasiPeak (dBuV) | CAverage (dBuV) | Limit (dBuV) | Margin (dB) | Line | Corr. (dB) |
|-----------------|------------------|-----------------|--------------|-------------|------|------------|
| 0.1515          | 52.22            | ---             | 65.92        | 13.69       | L1   | 10.0       |
| 0.1540          | ---              | 31.37           | 55.78        | 24.41       | L1   | 10.0       |
| 0.1580          | 51.63            | ---             | 65.57        | 13.94       | L1   | 10.0       |
| 0.1675          | 49.30            | ---             | 65.08        | 15.79       | L1   | 10.0       |
| 0.3875          | ---              | 28.19           | 48.12        | 19.93       | L1   | 10.0       |
| 0.3915          | 34.30            | ---             | 58.03        | 23.73       | L1   | 10.0       |
| 0.4955          | 44.31            | ---             | 56.08        | 11.77       | L1   | 10.0       |
| 0.4955          | ---              | 36.77           | 46.08        | 9.31        | L1   | 10.0       |
| 0.5475          | 39.77            | ---             | 56.00        | 16.23       | L1   | 10.0       |
| 0.5515          | ---              | 34.96           | 46.00        | 11.04       | L1   | 10.0       |
| 0.6075          | ---              | 28.14           | 46.00        | 17.86       | L1   | 10.0       |
| 1.7395          | ---              | 25.90           | 46.00        | 20.10       | L1   | 10.0       |

Test Line:

N



### Final Result

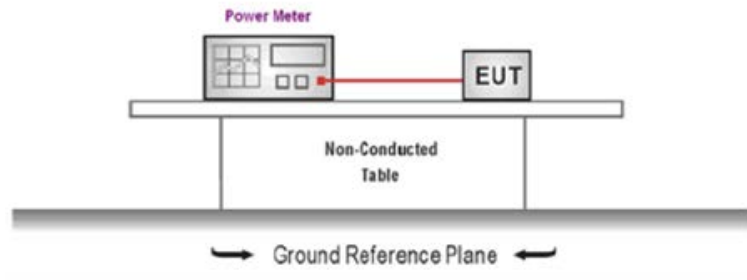
| Frequency (MHz) | QuasiPeak (dBuV) | CAverage (dBuV) | Limit (dBuV) | Margin (dB) | Line | Corr. (dB) |
|-----------------|------------------|-----------------|--------------|-------------|------|------------|
| 0.1515          | 53.83            | ---             | 65.92        | 12.09       | N    | 10.0       |
| 0.1660          | ---              | 36.07           | 55.16        | 19.08       | N    | 10.0       |
| 0.1660          | 51.19            | ---             | 65.16        | 13.97       | N    | 10.0       |
| 0.1835          | 48.44            | ---             | 64.33        | 15.89       | N    | 10.0       |
| 0.4515          | ---              | 32.03           | 46.85        | 14.82       | N    | 10.0       |
| 0.4555          | 38.46            | ---             | 56.77        | 18.31       | N    | 10.0       |
| 0.4955          | ---              | 37.10           | 46.08        | 8.98        | N    | 10.0       |
| 0.5035          | 42.31            | ---             | 56.00        | 13.69       | N    | 10.0       |
| 0.5515          | ---              | 35.56           | 46.00        | 10.44       | N    | 10.0       |
| 0.5515          | 41.64            | ---             | 56.00        | 14.36       | N    | 10.0       |
| 0.6075          | ---              | 28.37           | 46.00        | 17.63       | N    | 10.0       |
| 1.4475          | ---              | 26.47           | 46.00        | 19.53       | N    | 10.0       |

### 5.3. Peak Output Power

#### LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (b)(3): 30dBm

#### TEST CONFIGURATION



#### TEST PROCEDURE

1. The EUT was tested according to ANSI C63.10 and KDB 558074 D01 requirements.
2. The maximum peak conducted output power may be measured using a broadband peak RF power meter.
3. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall utilize a fast-responding diode detector.
4. Record the measurement data.

#### TEST MODE

Refer to the clause 4.2

#### TEST RESULT

☒ Passed      ☐ Not Applicable

#### TEST DATA

Refer to the appendix report

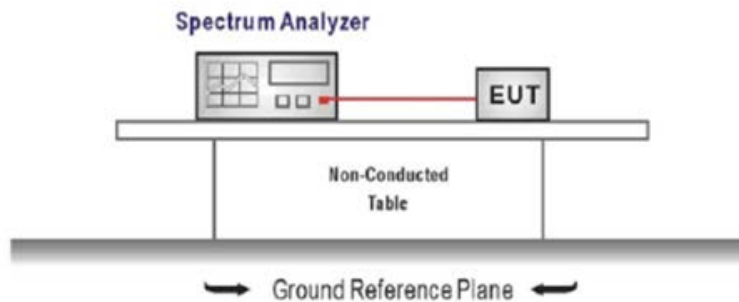
## 5.4. Power Spectral Density

### LIMIT

#### FCC CFR Title 47 Part 15 Subpart C Section 15.247 (e):

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

### TEST CONFIGURATION



### TEST PROCEDURE

1. Connect the antenna port(s) to the spectrum analyzer input,
2. Configure the spectrum analyzer as shown below:  
Center frequency=DTS channel center frequency  
Span =1.5 times the DTS bandwidth  
 $RBW = 3 \text{ kHz} \leq RBW \leq 100 \text{ kHz}$ ,  $VBW \geq 3 \times RBW$   
Sweep time = auto couple  
Detector = peak  
Trace mode = max hold
3. Place the radio in continuous transmit mode, allow the trace to stabilize, view the transmitter wave form on the spectrum analyzer.
4. Use the peak marker function to determine the maximum amplitude level within the RBW.
5. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

### TEST MODE

Refer to the clause 4.2

### TEST RESULT

☒ Passed      ☐ Not Applicable

### TEST DATA

Refer to the appendix report



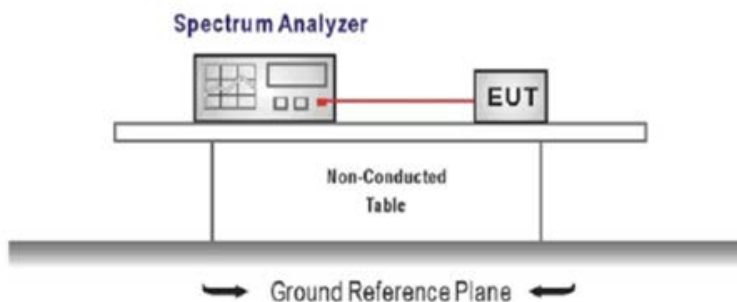
## 5.5. 6dB bandwidth

### LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (a)(2):

For digital modulation systems, the minimum 6 dB bandwidth shall be at least 500 kHz.

### TEST CONFIGURATION



### TEST PROCEDURE

1. Connect the antenna port(s) to the spectrum analyzer input.
2. Configure the spectrum analyzer as shown below (enter all losses between the transmitter output and the spectrum analyzer).  
Center Frequency = DTS channel center frequency  
Span = 2 x DTS bandwidth  
RBW = 100 kHz, VBW  $\geq 3 \times$  RBW  
Sweep time = auto couple  
Detector = Peak  
Trace mode = max hold
3. Place the radio in continuous transmit mode, allow the trace to stabilize, view the transmitter waveform on the spectrum analyzer.
4. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission, and record the pertinent measurements.

### TEST MODE

Refer to the clause 4.2

### TEST RESULT

☒ Passed ☐ Not Applicable

### TEST DATA

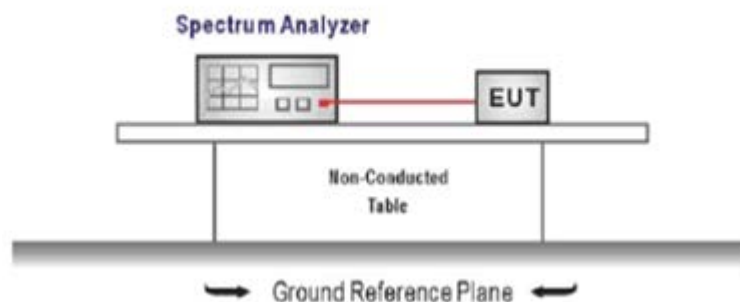
Refer to the appendix report

## 5.6. 99% Occupied Bandwidth

### LIMIT

N/A

### TEST CONFIGURATION



### TEST PROCEDURE

1. Connect the antenna port(s) to the spectrum analyzer input.
2. Configure the spectrum analyzer as shown below (enter all losses between the transmitter output and the spectrum analyzer).  
Center Frequency = channel center frequency  
Span  $\geq 1.5 \times \text{OBW}$   
RBW = 1%~5%OBW  
VBW  $\geq 3 \times \text{RBW}$   
Sweep time = auto couple  
Detector = Peak  
Trace mode = max hold
3. Place the radio in continuous transmit mode, allow the trace to stabilize, view the transmitter waveform on the spectrum analyzer.

### TEST MODE

Refer to the clause 4.2

### TEST RESULT

☒ Passed ☐ Not Applicable

### TEST DATA

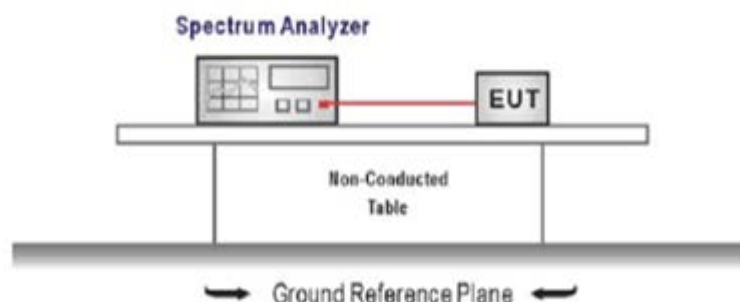
Refer to the appendix report

## 5.7. Duty Cycle

### LIMIT

N/A

### TEST CONFIGURATION



### TEST PROCEDURE

1. The transmitter output was connected to the spectrum analyzer through an attenuator, the path loss was compensated to the results for each measurement.
2. Set to the maximum power setting and enable the EUT transmit continuously
3. Use the following spectrum analyzer settings:  
Span=zero span, Frequency=centered channel, RBW= 1 MHz, VBW  $\geq$  RBW  
Sweep=as necessary to capture the entire dwell time,  
Detector function = peak, Trigger mode
4. Measure and record the duty cycle data

### TEST MODE

Refer to the clause 4.2

### TEST DATA

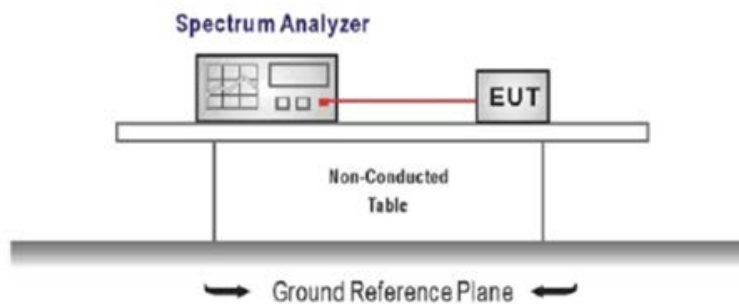
Refer to the appendix report

## 5.8. Conducted Band edge and Spurious Emission

### LIMIT

**FCC CFR Title 47 Part 15 Subpart C Section 15.247 (d):** In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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.

### TEST CONFIGURATION



### TEST PROCEDURE

1. Connect the antenna port(s) to the spectrum analyzer input.
2. Establish a reference level by using the following procedure  
Center frequency=DTS channel center frequency  
The span = 1.5 times the DTS bandwidth.  
RBW = 100 kHz, VBW  $\geq 3 \times$  RBW  
Detector = peak, Sweep time = auto couple, Trace mode = max hold  
Allow trace to fully stabilize  
Use the peak marker function to determine the maximum PSD level

Note that the channel found to contain the maximum PSD level can be used to establish the reference level.

3. Emission level measurement  
Set the center frequency and span to encompass frequency range to be measured  
RBW = 100 kHz, VBW  $\geq 3 \times$  RBW  
Detector = peak, Sweep time = auto couple, Trace mode = max hold  
Allow trace to fully stabilize  
Use the peak marker function to determine the maximum amplitude level.
4. Place the radio in continuous transmit mode, allow the trace to stabilize, view the transmitter waveform on the spectrum analyzer.
5. Ensure that the amplitude of all unwanted emission outside of the authorized frequency band excluding restricted frequency bands) are attenuated by at least the minimum requirements specified (at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz). Report the three highest emission relative to the limit.

### TEST MODE

Refer to the clause 4.2

**TEST RESULT**

☒ **Passed**      ☐ **Not Applicable**

**TEST DATA**

Refer to the appendix report

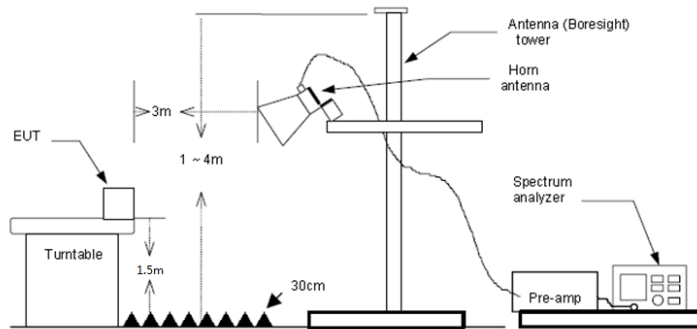
## 5.9. Radiated Band edge Emission

### LIMIT

#### FCC CFR Title 47 Part 15 Subpart C Section 15.247 (d):

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, Radiated Emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the Radiated Emissions limits specified in §15.209(a) (see §15.205(c)).

### TEST CONFIGURATION



### TEST PROCEDURE

1. The EUT was setup and tested according to ANSI C63.10 .
2. The EUT is placed on a turn table which is 1.5 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
3. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
4. The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10 on radiated measurement.
5. Use the following spectrum analyzer settings:
  - a) Span shall wide enough to fully capture the emission being measured
  - b) Set RBW=100kHz for <1GHz, VBW=3\*RBW, Sweep time=auto, Detector=peak, Trace=max hold
  - c) Set RBW=1MHz, VBW=3MHz for >1GHz, Sweep time=auto, Detector=peak, Trace=max hold for Peak measurement

For average measurement:

  - VBW=10Hz, When duty cycle is no less than 98 percent
  - VBW $\geq 1/T$ , when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation, so refer to this clause 5.7 duty cycle.

### TEST MODE

Refer to the clause 4.2

### TEST RESULT

☒ Passed ☐ Not Applicable

Note:

- 1) Level= Reading + Factor; Factor =Antenna Factor+ Cable Loss- Preamp Factor
- 2) Over Limit = Level– Limit
- 3) Average measurement was not performed if peak level is lower than average limit(54 dBuV/m).

| Type | 802.11b          |                   | Test channel  |             | CH01         |           | Polarity        |                 | Horizontal    |         |
|------|------------------|-------------------|---------------|-------------|--------------|-----------|-----------------|-----------------|---------------|---------|
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Aux<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark  |
| 1    | 2310.00          | 38.68             | 27.86         | 4.01        | 37.55        | 20.00     | 53.00           | 74.00           | -21.00        | Peak    |
| 2    | 2390.01          | 39.03             | 27.54         | 4.31        | 37.55        | 20.00     | 53.33           | 74.00           | -20.67        | Peak    |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Aux<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark  |
| 1    | 2310.00          | 31.80             | 27.86         | 4.01        | 37.55        | 20.00     | 46.12           | 54.00           | -7.88         | Average |
| 2    | 2390.01          | 32.88             | 27.54         | 4.31        | 37.55        | 20.00     | 47.18           | 54.00           | -6.82         | Average |
| Type | 802.11b          |                   | Test channel  |             | CH01         |           | Polarity        |                 | Vertical      |         |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Aux<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark  |
| 1    | 2310.00          | 38.23             | 27.86         | 4.01        | 37.55        | 20.00     | 52.55           | 74.00           | -21.45        | Peak    |
| 2    | 2390.01          | 38.99             | 27.54         | 4.31        | 37.55        | 20.00     | 53.29           | 74.00           | -20.71        | Peak    |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Aux<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark  |
| 1    | 2310.00          | 31.66             | 27.86         | 4.01        | 37.55        | 20.00     | 45.98           | 54.00           | -8.02         | Average |
| 2    | 2390.01          | 31.94             | 27.54         | 4.31        | 37.55        | 20.00     | 46.24           | 54.00           | -7.76         | Average |

| Type | 802.11b          |                   | Test channel  |             | CH11         |           | Polarity        |                 | Horizontal    |         |
|------|------------------|-------------------|---------------|-------------|--------------|-----------|-----------------|-----------------|---------------|---------|
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Aux<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark  |
| 1    | 2483.49          | 39.62             | 27.33         | 4.18        | 37.64        | 20.00     | 53.49           | 74.00           | -20.51        | Peak    |
| 2    | 2500.00          | 38.30             | 27.30         | 4.19        | 37.67        | 20.00     | 52.12           | 74.00           | -21.88        | Peak    |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Aux<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark  |
| 1    | 2483.49          | 31.98             | 27.33         | 4.18        | 37.64        | 20.00     | 45.85           | 54.00           | -8.15         | Average |
| 2    | 2500.00          | 31.72             | 27.30         | 4.19        | 37.67        | 20.00     | 45.54           | 54.00           | -8.46         | Average |
| Type | 802.11b          |                   | Test channel  |             | CH11         |           | Polarity        |                 | Vertical      |         |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Aux<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark  |
| 1    | 2483.49          | 38.74             | 27.33         | 4.18        | 37.64        | 20.00     | 52.61           | 74.00           | -21.39        | Peak    |
| 2    | 2500.00          | 38.95             | 27.30         | 4.19        | 37.67        | 20.00     | 52.77           | 74.00           | -21.23        | Peak    |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Aux<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark  |
| 1    | 2483.49          | 31.73             | 27.33         | 4.18        | 37.64        | 20.00     | 45.60           | 54.00           | -8.40         | Average |
| 2    | 2500.00          | 31.37             | 27.30         | 4.19        | 37.67        | 20.00     | 45.19           | 54.00           | -8.81         | Average |

| Type | 802.11g          |                   | Test channel  |             | CH01         |           | Polarity        |                 | Horizontal    |         |
|------|------------------|-------------------|---------------|-------------|--------------|-----------|-----------------|-----------------|---------------|---------|
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Aux<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark  |
| 1    | 2310.00          | 38.93             | 27.86         | 4.01        | 37.55        | 20.00     | 53.25           | 74.00           | -20.75        | Peak    |
| 2    | 2390.01          | 56.31             | 27.54         | 4.31        | 37.55        | 20.00     | 70.61           | 74.00           | -3.39         | Peak    |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Aux<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark  |
| 1    | 2310.00          | 31.65             | 27.86         | 4.01        | 37.55        | 20.00     | 45.97           | 54.00           | -8.03         | Average |
| 2    | 2390.01          | 35.28             | 27.54         | 4.31        | 37.55        | 20.00     | 49.58           | 54.00           | -4.42         | Average |
| Type | 802.11g          |                   | Test channel  |             | CH01         |           | Polarity        |                 | Vertical      |         |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Aux<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark  |
| 1    | 2310.00          | 40.65             | 27.86         | 4.01        | 37.55        | 20.00     | 54.97           | 74.00           | -19.03        | Peak    |
| 2    | 2390.01          | 45.18             | 27.54         | 4.31        | 37.55        | 20.00     | 59.48           | 74.00           | -14.52        | Peak    |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Aux<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark  |
| 1    | 2310.00          | 31.56             | 27.86         | 4.01        | 37.55        | 20.00     | 45.88           | 54.00           | -8.12         | Average |
| 2    | 2390.01          | 33.82             | 27.54         | 4.31        | 37.55        | 20.00     | 48.12           | 54.00           | -5.88         | Average |

| Type | 802.11g          |                   | Test channel  |             | CH11         |           | Polarity        |                 | Horizontal    |         |
|------|------------------|-------------------|---------------|-------------|--------------|-----------|-----------------|-----------------|---------------|---------|
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Aux<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark  |
| 1    | 2483.49          | 53.31             | 27.33         | 4.18        | 37.64        | 20.00     | 67.18           | 74.00           | -6.82         | Peak    |
| 2    | 2483.96          | 55.86             | 27.33         | 4.18        | 37.64        | 20.00     | 69.73           | 74.00           | -4.27         | Peak    |
| 3    | 2500.00          | 42.50             | 27.30         | 4.19        | 37.67        | 20.00     | 56.32           | 74.00           | -17.68        | Peak    |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Aux<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark  |
| 1    | 2483.49          | 36.35             | 27.33         | 4.18        | 37.64        | 20.00     | 50.22           | 54.00           | -3.78         | Average |
| 2    | 2500.00          | 32.91             | 27.30         | 4.19        | 37.67        | 20.00     | 46.73           | 54.00           | -7.27         | Average |
| Type | 802.11g          |                   | Test channel  |             | CH11         |           | Polarity        |                 | Vertical      |         |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Aux<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark  |
| 1    | 2483.49          | 42.64             | 27.33         | 4.18        | 37.64        | 20.00     | 56.51           | 74.00           | -17.49        | Peak    |
| 2    | 2500.00          | 37.88             | 27.30         | 4.19        | 37.67        | 20.00     | 51.70           | 74.00           | -22.30        | Peak    |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Aux<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark  |
| 1    | 2483.49          | 33.15             | 27.33         | 4.18        | 37.64        | 20.00     | 47.02           | 54.00           | -6.98         | Average |
| 2    | 2500.00          | 31.67             | 27.30         | 4.19        | 37.67        | 20.00     | 45.49           | 54.00           | -8.51         | Average |



| Type | 802.11n(HT20)    |                   | Test channel  | CH01        | Polarity     |           | Horizontal      |                 |               |         |
|------|------------------|-------------------|---------------|-------------|--------------|-----------|-----------------|-----------------|---------------|---------|
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Aux<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark  |
| 1    | 2310.00          | 40.32             | 27.86         | 4.01        | 37.55        | 20.00     | 54.64           | 74.00           | -19.36        | Peak    |
| 2    | 2390.01          | 46.20             | 27.54         | 4.31        | 37.55        | 20.00     | 60.50           | 74.00           | -13.50        | Peak    |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Aux<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark  |
| 1    | 2310.00          | 31.49             | 27.86         | 4.01        | 37.55        | 20.00     | 45.81           | 54.00           | -8.19         | Average |
| 2    | 2390.01          | 35.31             | 27.54         | 4.31        | 37.55        | 20.00     | 49.61           | 54.00           | -4.39         | Average |
| Type | 802.11n(HT20)    |                   | Test channel  | CH01        | Polarity     |           | Vertical        |                 |               |         |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Aux<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark  |
| 1    | 2310.00          | 40.38             | 27.86         | 4.01        | 37.55        | 20.00     | 54.70           | 74.00           | -19.30        | Peak    |
| 2    | 2390.01          | 42.32             | 27.54         | 4.31        | 37.55        | 20.00     | 56.62           | 74.00           | -17.38        | Peak    |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Aux<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark  |
| 1    | 2310.00          | 31.46             | 27.86         | 4.01        | 37.55        | 20.00     | 45.78           | 54.00           | -8.22         | Average |
| 2    | 2390.01          | 32.65             | 27.54         | 4.31        | 37.55        | 20.00     | 46.95           | 54.00           | -7.05         | Average |

| Type | 802.11n(HT20)    |                   | Test channel  | CH11        | Polarity     |           | Horizontal      |                 |               |         |
|------|------------------|-------------------|---------------|-------------|--------------|-----------|-----------------|-----------------|---------------|---------|
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Aux<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark  |
| 1    | 2483.49          | 43.76             | 27.33         | 4.18        | 37.64        | 20.00     | 57.63           | 74.00           | -16.37        | Peak    |
| 2    | 2500.00          | 40.85             | 27.30         | 4.19        | 37.67        | 20.00     | 54.67           | 74.00           | -19.33        | Peak    |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Aux<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark  |
| 1    | 2483.49          | 33.77             | 27.33         | 4.18        | 37.64        | 20.00     | 47.64           | 54.00           | -6.36         | Average |
| 2    | 2500.00          | 31.64             | 27.30         | 4.19        | 37.67        | 20.00     | 45.46           | 54.00           | -8.54         | Average |
| Type | 802.11n(HT20)    |                   | Test channel  | CH11        | Polarity     |           | Vertical        |                 |               |         |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Aux<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark  |
| 1    | 2483.49          | 40.89             | 27.33         | 4.18        | 37.64        | 20.00     | 54.76           | 74.00           | -19.24        | Peak    |
| 2    | 2500.00          | 39.97             | 27.30         | 4.19        | 37.67        | 20.00     | 53.79           | 74.00           | -20.21        | Peak    |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Aux<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark  |
| 1    | 2483.49          | 31.88             | 27.33         | 4.18        | 37.64        | 20.00     | 45.75           | 54.00           | -8.25         | Average |
| 2    | 2500.00          | 31.31             | 27.30         | 4.19        | 37.67        | 20.00     | 45.13           | 54.00           | -8.87         | Average |

| Type | 802.11n(HT40)    |                   | Test channel  |             | CH03         |           | Polarity        |                 | Horizontal    |         |
|------|------------------|-------------------|---------------|-------------|--------------|-----------|-----------------|-----------------|---------------|---------|
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Aux<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark  |
| 1    | 2310.00          | 41.08             | 27.86         | 4.01        | 37.55        | 20.00     | 55.40           | 74.00           | -18.60        | Peak    |
| 2    | 2389.99          | 47.34             | 27.54         | 4.31        | 37.55        | 20.00     | 61.64           | 74.00           | -12.36        | Peak    |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Aux<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark  |
| 1    | 2310.00          | 28.65             | 27.86         | 4.01        | 37.55        | 20.00     | 42.97           | 54.00           | -11.03        | Average |
| 2    | 2389.99          | 36.41             | 27.54         | 4.31        | 37.55        | 20.00     | 50.71           | 54.00           | -3.29         | Average |
| Type | 802.11n(HT40)    |                   | Test channel  |             | CH03         |           | Polarity        |                 | Vertical      |         |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Aux<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark  |
| 1    | 2310.00          | 39.48             | 27.86         | 4.01        | 37.55        | 20.00     | 53.80           | 74.00           | -20.20        | Peak    |
| 2    | 2389.99          | 41.43             | 27.54         | 4.31        | 37.55        | 20.00     | 55.73           | 74.00           | -18.27        | Peak    |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Aux<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark  |
| 1    | 2310.00          | 28.46             | 27.86         | 4.01        | 37.55        | 20.00     | 42.78           | 54.00           | -11.22        | Average |
| 2    | 2389.99          | 30.48             | 27.54         | 4.31        | 37.55        | 20.00     | 44.78           | 54.00           | -9.22         | Average |

| Type | 802.11n(HT40)    |                   | Test channel  |             | CH09         |           | Polarity        |                 | Horizontal    |         |
|------|------------------|-------------------|---------------|-------------|--------------|-----------|-----------------|-----------------|---------------|---------|
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Aux<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark  |
| 1    | 2483.50          | 42.95             | 27.33         | 4.18        | 37.64        | 20.00     | 56.82           | 74.00           | -17.18        | Peak    |
| 2    | 2500.00          | 41.37             | 27.30         | 4.19        | 37.67        | 20.00     | 55.19           | 74.00           | -18.81        | Peak    |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Aux<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark  |
| 1    | 2483.50          | 33.05             | 27.33         | 4.18        | 37.64        | 20.00     | 46.92           | 54.00           | -7.08         | Average |
| 2    | 2500.00          | 30.20             | 27.30         | 4.19        | 37.67        | 20.00     | 44.02           | 54.00           | -9.98         | Average |
| Type | 802.11n(HT40)    |                   | Test channel  |             | CH09         |           | Polarity        |                 | Vertical      |         |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Aux<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark  |
| 1    | 2483.50          | 41.16             | 27.33         | 4.18        | 37.64        | 20.00     | 55.03           | 74.00           | -18.97        | Peak    |
| 2    | 2500.00          | 40.13             | 27.30         | 4.19        | 37.67        | 20.00     | 53.95           | 74.00           | -20.05        | Peak    |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Aux<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark  |
| 1    | 2483.50          | 29.11             | 27.33         | 4.18        | 37.64        | 20.00     | 42.98           | 54.00           | -11.02        | Average |
| 2    | 2500.00          | 28.63             | 27.30         | 4.19        | 37.67        | 20.00     | 42.45           | 54.00           | -11.55        | Average |

## 5.10. Radiated Spurious Emission

### LIMIT

#### FCC CFR Title 47 Part 15 Subpart C Section 15.209

| Frequency            | Limit (dBuV/m)    | Value      |
|----------------------|-------------------|------------|
| 0.009 MHz ~0.49 MHz  | 2400/F(kHz) @300m | Quasi-peak |
| 0.49 MHz ~ 1.705 MHz | 24000/F(kHz) @30m | Quasi-peak |
| 1.705 MHz ~30 MHz    | 30 @30m           | Quasi-peak |

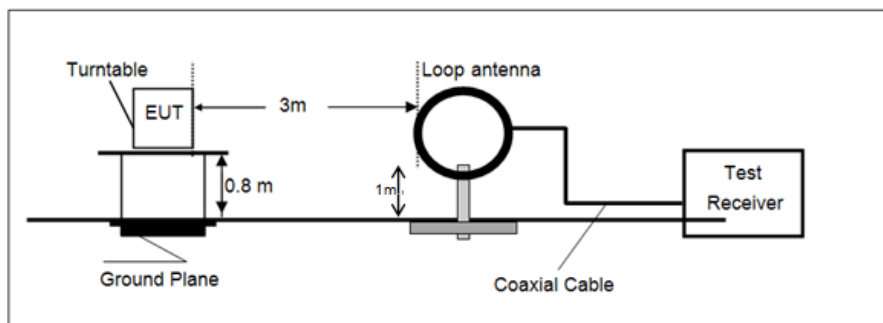
Note: Limit dBuV/m @3m = Limit dBuV/m @300m +  $40 \cdot \log(300/3)$  = Limit dBuV/m @300m +80,

Limit dBuV/m @3m = Limit dBuV/m @30m +  $40 \cdot \log(30/3)$  = Limit dBuV/m @30m + 40.

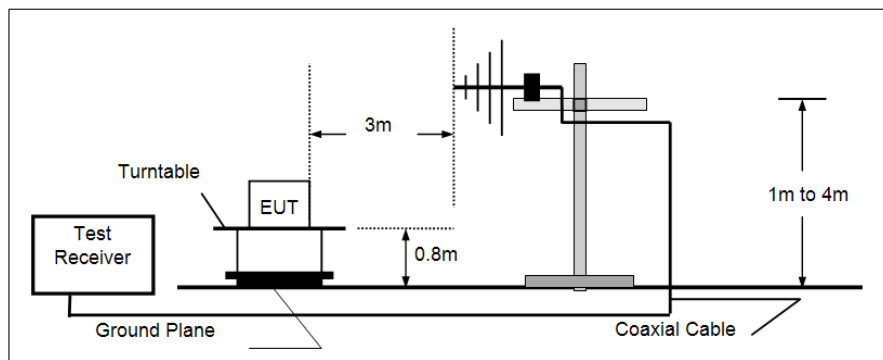
| Frequency     | Limit (dBuV/m @3m) | Value      |
|---------------|--------------------|------------|
| 30MHz~88MHz   | 40.00              | Quasi-peak |
| 88MHz~216MHz  | 43.50              | Quasi-peak |
| 216MHz~960MHz | 46.00              | Quasi-peak |
| 960MHz~1GHz   | 54.00              | Quasi-peak |
| Above 1GHz    | 54.00              | Average    |
|               | 74.00              | Peak       |

### TEST CONFIGURATION

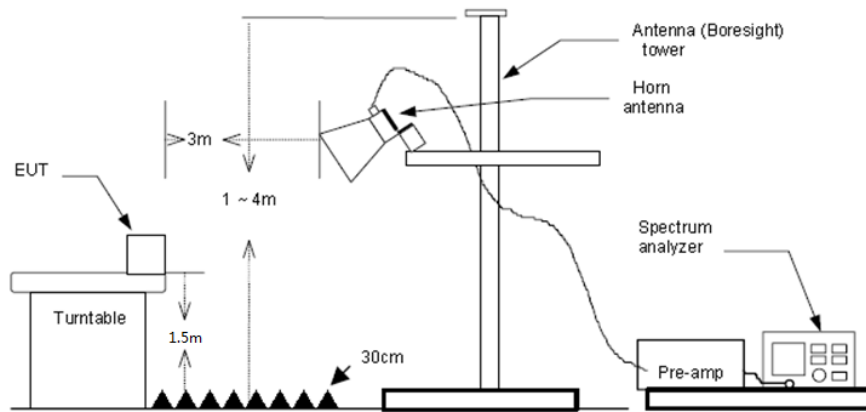
- 9 kHz ~ 30 MHz



- 30 MHz ~ 1 GHz



- Above 1 GHz



### TEST PROCEDURE

1. The EUT was setup and tested according to ANSI C63.10 .
2. The EUT is placed on a turn table which is 0.8 meter above ground for below 1 GHz, and 1.5 m for above 1 GHz. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
3. The EUT was set 3 meters from the receiving antenna, which was mounted on the top of a variable height antenna tower.
4. For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines.
5. Set to the maximum power setting and enable the EUT transmit continuously.
6. Use the following spectrum analyzer settings
  - a) Span shall wide enough to fully capture the emission being measured;
  - b) Below 1 GHz:
 

RBW=120 kHz, VBW=300 kHz, Sweep=auto, Detector function=peak, Trace=max hold;

If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
  - c) Set RBW=1MHz, VBW=3MHz for >1GHz, Sweep time=auto, Detector=peak, Trace=max hold for Peak measurement

For average measurement:

  - VBW=10Hz, When duty cycle is no less than 98 percent
  - VBW $\geq 1/T$ , when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation, so refer to this clause 5.7 duty cycle.

### TEST MODE

Refer to the clause 4.2

### TEST RESULT

☒ Passed ☐ Not Applicable

Note:

- 1) Level= Reading + Factor/Transd; Factor/Transd =Antenna Factor+ Cable Loss- Preamp Factor
- 2) Over Limit = Level– Limit
- 3) Average measurement was not performed if peak level is lower than average limit(54 dBuV/m) for above 1GHz.

**For 9 kHz ~ 30 MHz**

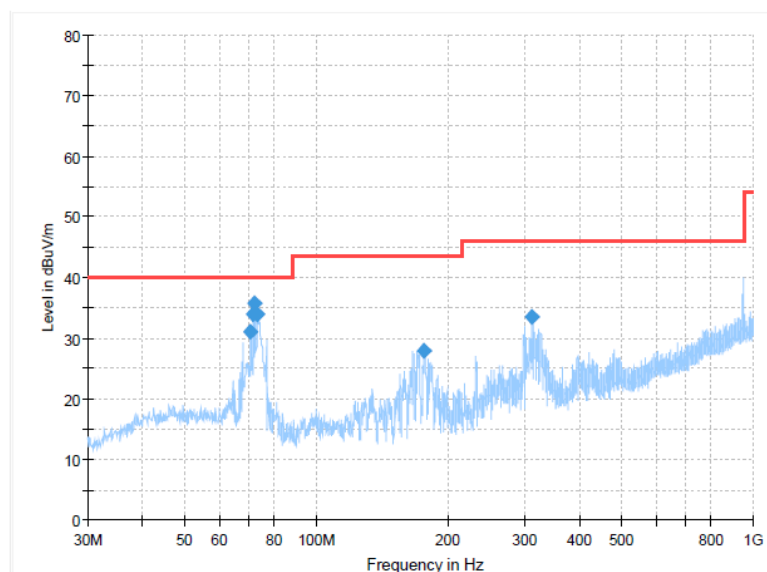
The EUT was pre-scanned this frequency band, found the radiated level 20dB lower than the limit, so don't show data on this report.

**For 30 MHz ~ 1000 MHz**

Have pre-scan all test channel, found CH06 of 802.11B which it was worst case, so only show the worst case's data on this report.

Polarization:

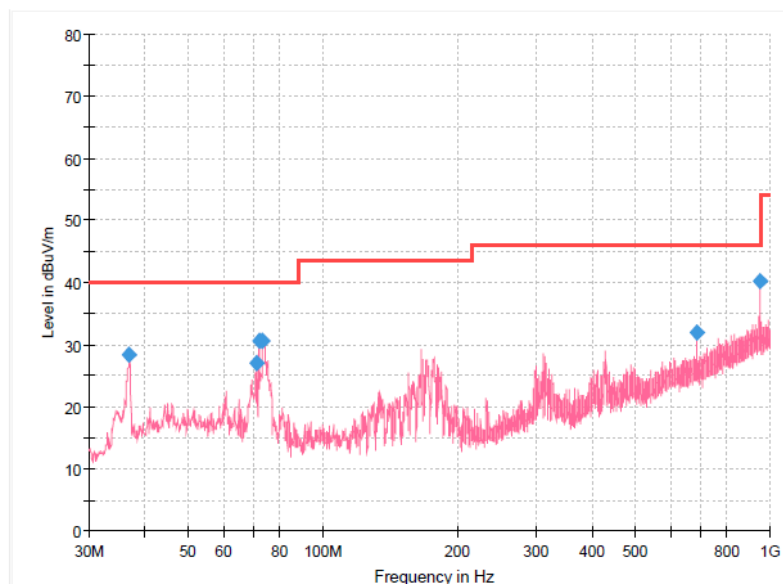
Horizontal

**Final Result**

| Frequency (MHz) | MaxPeak (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 70.4975         | 31.03            | 40.00          | 8.97        | 300.0       | H   | 199.0         | -13.3        |
| 71.8313         | 33.99            | 40.00          | 6.01        | 300.0       | H   | 199.0         | -13.8        |
| 72.4375         | 35.75            | 40.00          | 4.25        | 300.0       | H   | 242.0         | -14.1        |
| 73.2863         | 34.07            | 40.00          | 5.93        | 300.0       | H   | 199.0         | -14.5        |
| 176.3488        | 28.01            | 43.50          | 15.49       | 100.0       | H   | 232.0         | -12.8        |
| 312.0275        | 33.51            | 46.00          | 12.49       | 100.0       | H   | 294.0         | -7.3         |

Polarization:

Vertical

**Final Result**

| Frequency (MHz) | MaxPeak (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 36.9113         | 28.34            | 40.00          | 11.66       | 100.0       | V   | 206.0         | -11.0        |
| 71.2250         | 27.00            | 40.00          | 13.00       | 100.0       | V   | 194.0         | -13.6        |
| 71.9525         | 30.62            | 40.00          | 9.38        | 100.0       | V   | 277.0         | -13.8        |
| 73.4075         | 30.68            | 40.00          | 9.32        | 100.0       | V   | 277.0         | -14.5        |
| 687.5388        | 32.04            | 46.00          | 13.96       | 100.0       | V   | 0.0           | 2.1          |
| 948.4688        | 40.18            | 46.00          | 5.82        | 100.0       | V   | 0.0           | 7.1          |

**For 1 GHz ~ 25 GHz**

| Type | 802.11b          |                   | Test channel  | CH01        |              |                 | Polarity        |               | Horizontal |  |
|------|------------------|-------------------|---------------|-------------|--------------|-----------------|-----------------|---------------|------------|--|
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark     |  |
| 1    | 1353.80          | 38.37             | 25.99         | 3.95        | 37.43        | 30.88           | 74.00           | -43.12        | Peak       |  |
| 2    | 3534.54          | 40.22             | 29.14         | 5.17        | 37.43        | 37.10           | 74.00           | -36.90        | Peak       |  |
| 3    | 7009.96          | 38.69             | 35.14         | 7.35        | 34.24        | 46.94           | 74.00           | -27.06        | Peak       |  |
| 4    | 9884.60          | 35.96             | 39.33         | 9.50        | 35.33        | 49.46           | 74.00           | -24.54        | Peak       |  |
| Type | 802.11b          |                   | Test channel  | CH01        |              |                 | Polarity        |               | Vertical   |  |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark     |  |
| 1    | 1350.36          | 38.58             | 26.00         | 4.09        | 37.45        | 31.22           | 74.00           | -42.78        | Peak       |  |
| 2    | 3192.37          | 40.81             | 28.90         | 4.80        | 37.43        | 37.08           | 74.00           | -36.92        | Peak       |  |
| 3    | 6868.65          | 39.06             | 34.44         | 7.34        | 34.20        | 46.64           | 74.00           | -27.36        | Peak       |  |
| 4    | 9759.59          | 34.36             | 39.30         | 9.46        | 33.66        | 49.46           | 74.00           | -24.54        | Peak       |  |
| Type | 802.11b          |                   | Test channel  | CH06        |              |                 | Polarity        |               | Horizontal |  |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark     |  |
| 1    | 1800.42          | 39.68             | 25.30         | 3.56        | 37.84        | 30.70           | 74.00           | -43.30        | Peak       |  |
| 2    | 3033.91          | 40.49             | 28.57         | 4.66        | 37.32        | 36.40           | 74.00           | -37.60        | Peak       |  |
| 3    | 6992.14          | 38.01             | 35.07         | 7.34        | 34.22        | 46.20           | 74.00           | -27.80        | Peak       |  |
| 4    | 9784.47          | 34.51             | 39.30         | 9.48        | 33.44        | 49.85           | 74.00           | -24.15        | Peak       |  |
| Type | 802.11b          |                   | Test channel  | CH06        |              |                 | Polarity        |               | Vertical   |  |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark     |  |
| 1    | 1350.36          | 37.55             | 26.00         | 4.09        | 37.45        | 30.19           | 74.00           | -43.81        | Peak       |  |
| 2    | 3151.99          | 40.19             | 28.90         | 4.70        | 37.27        | 36.52           | 74.00           | -37.48        | Peak       |  |
| 3    | 6992.14          | 37.74             | 35.07         | 7.34        | 34.22        | 45.93           | 74.00           | -28.07        | Peak       |  |
| 4    | 9784.47          | 34.28             | 39.30         | 9.48        | 33.44        | 49.62           | 74.00           | -24.38        | Peak       |  |
| Type | 802.11b          |                   | Test channel  | CH11        |              |                 | Polarity        |               | Horizontal |  |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark     |  |
| 1    | 1367.66          | 39.24             | 25.96         | 3.37        | 37.34        | 31.23           | 74.00           | -42.77        | Peak       |  |
| 2    | 3283.02          | 40.64             | 28.40         | 4.83        | 37.49        | 36.38           | 74.00           | -37.62        | Peak       |  |
| 3    | 6851.19          | 38.79             | 34.40         | 7.29        | 34.05        | 46.43           | 74.00           | -27.57        | Peak       |  |
| 4    | 9784.47          | 33.48             | 39.30         | 9.48        | 33.44        | 48.82           | 74.00           | -25.18        | Peak       |  |
| Type | 802.11b          |                   | Test channel  | CH11        |              |                 | Polarity        |               | Vertical   |  |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark     |  |
| 1    | 1141.53          | 39.89             | 25.35         | 2.76        | 37.71        | 30.29           | 74.00           | -43.71        | Peak       |  |
| 2    | 3507.65          | 40.44             | 29.03         | 5.11        | 37.47        | 37.11           | 74.00           | -36.89        | Peak       |  |
| 3    | 6903.71          | 38.48             | 34.53         | 7.39        | 34.39        | 46.01           | 74.00           | -27.99        | Peak       |  |
| 4    | 9834.41          | 34.90             | 39.37         | 9.50        | 34.13        | 49.64           | 74.00           | -24.36        | Peak       |  |



| Type | 802.11g          |                   | Test channel  | CH01        |              | Polarity        |                 | Horizontal    |        |
|------|------------------|-------------------|---------------|-------------|--------------|-----------------|-----------------|---------------|--------|
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark |
| 1    | 2168.08          | 40.62             | 27.75         | 3.95        | 37.65        | 34.67           | 74.00           | -39.33        | Peak   |
| 2    | 3176.16          | 40.54             | 28.90         | 4.73        | 37.24        | 36.93           | 74.00           | -37.07        | Peak   |
| 3    | 6851.19          | 38.43             | 34.40         | 7.29        | 34.05        | 46.07           | 74.00           | -27.93        | Peak   |
| 4    | 9809.40          | 34.50             | 39.32         | 9.50        | 33.53        | 49.79           | 74.00           | -24.21        | Peak   |
| Type | 802.11g          |                   | Test channel  | CH01        |              | Polarity        |                 | Vertical      |        |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark |
| 1    | 1476.19          | 39.19             | 25.79         | 3.18        | 37.34        | 30.82           | 74.00           | -43.18        | Peak   |
| 2    | 3200.50          | 40.92             | 28.90         | 4.84        | 37.52        | 37.14           | 74.00           | -36.86        | Peak   |
| 3    | 6992.14          | 38.39             | 35.07         | 7.34        | 34.22        | 46.58           | 74.00           | -27.42        | Peak   |
| 4    | 9759.59          | 33.83             | 39.30         | 9.46        | 33.66        | 48.93           | 74.00           | -25.07        | Peak   |
| Type | 802.11g          |                   | Test channel  | CH06        |              | Polarity        |                 | Horizontal    |        |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark |
| 1    | 1410.08          | 38.67             | 25.90         | 3.09        | 37.35        | 30.31           | 74.00           | -43.69        | Peak   |
| 2    | 3728.63          | 39.40             | 29.31         | 5.20        | 36.95        | 36.96           | 74.00           | -37.04        | Peak   |
| 3    | 6974.36          | 38.29             | 35.00         | 7.34        | 34.15        | 46.48           | 74.00           | -27.52        | Peak   |
| 4    | 9251.58          | 34.20             | 39.10         | 9.26        | 34.37        | 48.19           | 74.00           | -25.81        | Peak   |
| Type | 802.11g          |                   | Test channel  | CH06        |              | Polarity        |                 | Vertical      |        |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark |
| 1    | 1487.51          | 39.10             | 25.75         | 3.20        | 37.33        | 30.72           | 74.00           | -43.28        | Peak   |
| 2    | 3738.13          | 39.74             | 29.35         | 5.20        | 36.92        | 37.37           | 74.00           | -36.63        | Peak   |
| 3    | 6833.77          | 38.93             | 34.34         | 7.27        | 34.22        | 46.32           | 74.00           | -27.68        | Peak   |
| 4    | 9784.47          | 32.94             | 39.30         | 9.48        | 33.44        | 48.28           | 74.00           | -25.72        | Peak   |
| Type | 802.11g          |                   | Test channel  | CH11        |              | Polarity        |                 | Horizontal    |        |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark |
| 1    | 1350.36          | 38.66             | 26.00         | 4.09        | 37.45        | 31.30           | 74.00           | -42.70        | Peak   |
| 2    | 3080.60          | 42.20             | 28.72         | 4.64        | 37.38        | 38.18           | 74.00           | -35.82        | Peak   |
| 3    | 6851.19          | 39.65             | 34.40         | 7.29        | 34.05        | 47.29           | 74.00           | -26.71        | Peak   |
| 4    | 10614.84         | 35.42             | 40.00         | 9.81        | 36.01        | 49.22           | 74.00           | -24.78        | Peak   |
| Type | 802.11g          |                   | Test channel  | CH11        |              | Polarity        |                 | Vertical      |        |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark |
| 1    | 1446.44          | 40.15             | 25.90         | 3.14        | 37.37        | 31.82           | 74.00           | -42.18        | Peak   |
| 2    | 3766.79          | 40.54             | 29.40         | 5.17        | 37.08        | 38.03           | 74.00           | -35.97        | Peak   |
| 3    | 6992.14          | 39.24             | 35.07         | 7.34        | 34.22        | 47.43           | 74.00           | -26.57        | Peak   |
| 4    | 9759.59          | 34.51             | 39.30         | 9.46        | 33.66        | 49.61           | 74.00           | -24.39        | Peak   |

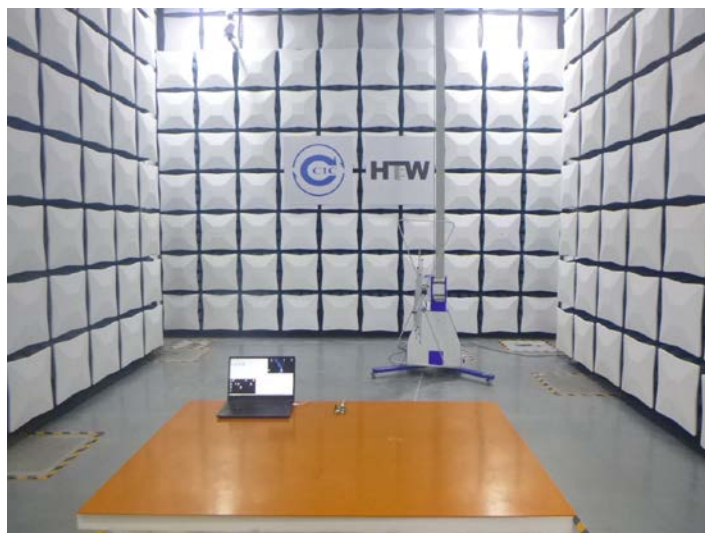
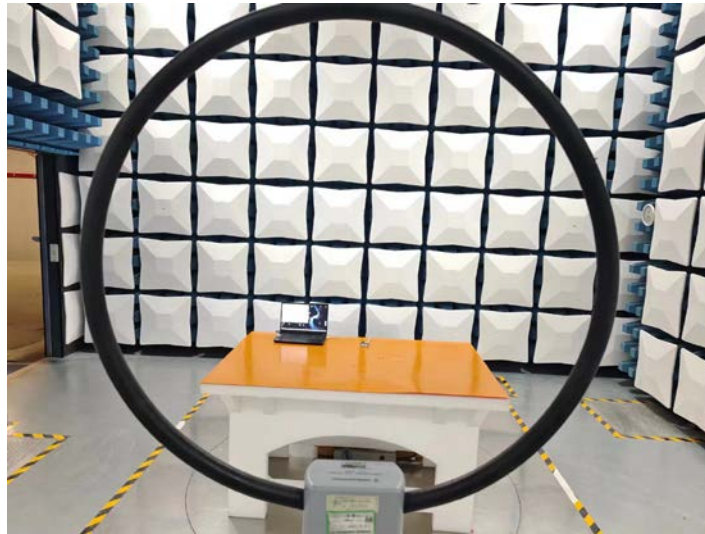


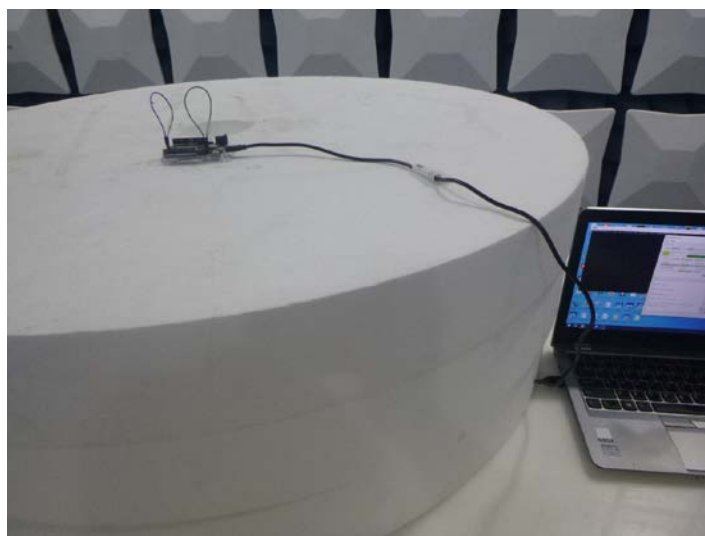
| Type | 802.11n(HT20) |                  | Test channel      | CH01          |             | Polarity     |                 | Horizontal      |               |        |
|------|---------------|------------------|-------------------|---------------|-------------|--------------|-----------------|-----------------|---------------|--------|
|      | Mark          | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark |
|      | 1             | 1350.36          | 39.93             | 26.00         | 4.09        | 37.45        | 32.57           | 74.00           | -41.43        | Peak   |
|      | 2             | 3135.99          | 41.82             | 28.87         | 4.68        | 37.31        | 38.06           | 74.00           | -35.94        | Peak   |
|      | 3             | 6921.30          | 39.25             | 34.67         | 7.39        | 34.41        | 46.90           | 74.00           | -27.10        | Peak   |
|      | 4             | 10217.17         | 36.95             | 39.35         | 9.61        | 36.13        | 49.78           | 74.00           | -24.22        | Peak   |
| Type | 802.11n(HT20) |                  | Test channel      | CH01          |             | Polarity     |                 | Vertical        |               |        |
|      | Mark          | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark |
|      | 1             | 1228.98          | 40.42             | 25.62         | 2.92        | 37.52        | 31.44           | 74.00           | -42.56        | Peak   |
|      | 2             | 3625.67          | 40.75             | 29.25         | 5.07        | 37.27        | 37.80           | 74.00           | -36.20        | Peak   |
|      | 3             | 6974.36          | 39.41             | 35.00         | 7.34        | 34.15        | 47.60           | 74.00           | -26.40        | Peak   |
|      | 4             | 9784.47          | 34.68             | 39.30         | 9.48        | 33.44        | 50.02           | 74.00           | -23.98        | Peak   |
| Type | 802.11n(HT20) |                  | Test channel      | CH06          |             | Polarity     |                 | Horizontal      |               |        |
|      | Mark          | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark |
|      | 1             | 1483.73          | 40.74             | 25.76         | 3.19        | 37.33        | 32.36           | 74.00           | -41.64        | Peak   |
|      | 2             | 3672.11          | 40.14             | 29.20         | 5.12        | 37.06        | 37.40           | 74.00           | -36.60        | Peak   |
|      | 3             | 6974.36          | 39.43             | 35.00         | 7.34        | 34.15        | 47.62           | 74.00           | -26.38        | Peak   |
|      | 4             | 9809.40          | 34.18             | 39.32         | 9.50        | 33.53        | 49.47           | 74.00           | -24.53        | Peak   |
| Type | 802.11n(HT20) |                  | Test channel      | CH06          |             | Polarity     |                 | Vertical        |               |        |
|      | Mark          | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark |
|      | 1             | 1367.66          | 39.45             | 25.96         | 3.37        | 37.34        | 31.44           | 74.00           | -42.56        | Peak   |
|      | 2             | 3104.22          | 41.31             | 28.81         | 4.65        | 37.42        | 37.35           | 74.00           | -36.65        | Peak   |
|      | 3             | 6992.14          | 38.62             | 35.07         | 7.34        | 34.22        | 46.81           | 74.00           | -27.19        | Peak   |
|      | 4             | 9784.47          | 33.82             | 39.30         | 9.48        | 33.44        | 49.16           | 74.00           | -24.84        | Peak   |
| Type | 802.11n(HT20) |                  | Test channel      | CH11          |             | Polarity     |                 | Horizontal      |               |        |
|      | Mark          | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark |
|      | 1             | 1329.89          | 39.15             | 25.96         | 2.95        | 37.47        | 30.59           | 74.00           | -43.41        | Peak   |
|      | 2             | 3507.65          | 40.18             | 29.03         | 5.11        | 37.47        | 36.85           | 74.00           | -37.15        | Peak   |
|      | 3             | 6956.63          | 38.04             | 34.93         | 7.35        | 34.16        | 46.16           | 74.00           | -27.84        | Peak   |
|      | 4             | 9834.41          | 33.76             | 39.37         | 9.50        | 34.13        | 48.50           | 74.00           | -25.50        | Peak   |
| Type | 802.11n(HT20) |                  | Test channel      | CH11          |             | Polarity     |                 | Vertical        |               |        |
|      | Mark          | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark |
|      | 1             | 1350.36          | 38.82             | 26.00         | 4.09        | 37.45        | 31.46           | 74.00           | -42.54        | Peak   |
|      | 2             | 3072.77          | 40.48             | 28.69         | 4.64        | 37.36        | 36.45           | 74.00           | -37.55        | Peak   |
|      | 3             | 6921.30          | 38.53             | 34.67         | 7.39        | 34.41        | 46.18           | 74.00           | -27.82        | Peak   |
|      | 4             | 9710.03          | 34.19             | 39.30         | 9.41        | 34.11        | 48.79           | 74.00           | -25.21        | Peak   |

| Type | 802.11n(HT40)    | Test channel      | CH03          | Polarity    | Horizontal   |                 |                 |               |        |
|------|------------------|-------------------|---------------|-------------|--------------|-----------------|-----------------|---------------|--------|
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark |
| 1    | 1417.28          | 38.85             | 25.90         | 3.10        | 37.35        | 30.50           | 74.00           | -43.50        | Peak   |
| 2    | 3498.74          | 40.76             | 28.99         | 5.08        | 37.48        | 37.35           | 74.00           | -36.65        | Peak   |
| 3    | 6851.19          | 38.58             | 34.40         | 7.29        | 34.05        | 46.22           | 74.00           | -27.78        | Peak   |
| 4    | 9809.40          | 33.79             | 39.32         | 9.50        | 33.53        | 49.08           | 74.00           | -24.92        | Peak   |
| Type | 802.11n(HT40)    | Test channel      | CH03          | Polarity    | Vertical     |                 |                 |               |        |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark |
| 1    | 1350.36          | 39.35             | 26.00         | 4.09        | 37.45        | 31.99           | 74.00           | -42.01        | Peak   |
| 2    | 3151.99          | 41.05             | 28.90         | 4.70        | 37.27        | 37.38           | 74.00           | -36.62        | Peak   |
| 3    | 6886.15          | 39.28             | 34.47         | 7.39        | 34.35        | 46.79           | 74.00           | -27.21        | Peak   |
| 4    | 9809.40          | 33.94             | 39.32         | 9.50        | 33.53        | 49.23           | 74.00           | -24.77        | Peak   |
| Type | 802.11n(HT40)    | Test channel      | CH06          | Polarity    | Horizontal   |                 |                 |               |        |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark |
| 1    | 1353.80          | 39.90             | 25.99         | 3.95        | 37.43        | 32.41           | 74.00           | -41.59        | Peak   |
| 2    | 3096.33          | 41.52             | 28.79         | 4.65        | 37.42        | 37.54           | 74.00           | -36.46        | Peak   |
| 3    | 6921.30          | 39.55             | 34.67         | 7.39        | 34.41        | 47.20           | 74.00           | -26.80        | Peak   |
| 4    | 9960.38          | 37.29             | 39.28         | 9.50        | 36.00        | 50.07           | 74.00           | -23.93        | Peak   |
| Type | 802.11n(HT40)    | Test channel      | CH06          | Polarity    | Vertical     |                 |                 |               |        |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark |
| 1    | 1350.36          | 40.08             | 26.00         | 4.09        | 37.45        | 32.72           | 74.00           | -41.28        | Peak   |
| 2    | 3176.16          | 41.29             | 28.90         | 4.73        | 37.24        | 37.68           | 74.00           | -36.32        | Peak   |
| 3    | 6974.36          | 39.59             | 35.00         | 7.34        | 34.15        | 47.78           | 74.00           | -26.22        | Peak   |
| 4    | 9759.59          | 35.72             | 39.30         | 9.46        | 33.66        | 50.82           | 74.00           | -23.18        | Peak   |
| Type | 802.11n(HT40)    | Test channel      | CH09          | Polarity    | Horizontal   |                 |                 |               |        |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark |
| 1    | 1464.96          | 39.86             | 25.84         | 3.16        | 37.35        | 31.51           | 74.00           | -42.49        | Peak   |
| 2    | 3096.33          | 41.63             | 28.79         | 4.65        | 37.42        | 37.65           | 74.00           | -36.35        | Peak   |
| 3    | 6956.63          | 39.35             | 34.93         | 7.35        | 34.16        | 47.47           | 74.00           | -26.53        | Peak   |
| 4    | 9784.47          | 35.20             | 39.30         | 9.48        | 33.44        | 50.54           | 74.00           | -23.46        | Peak   |
| Type | 802.11n(HT40)    | Test channel      | CH09          | Polarity    | Vertical     |                 |                 |               |        |
| Mark | Frequency<br>MHz | Reading<br>dBuV/m | Antenna<br>dB | Cable<br>dB | Preamp<br>dB | Level<br>dBuV/m | Limit<br>dBuV/m | Over<br>limit | Remark |
| 1    | 1860.99          | 39.77             | 25.54         | 3.60        | 37.79        | 31.12           | 74.00           | -42.88        | Peak   |
| 2    | 3151.99          | 41.48             | 28.90         | 4.70        | 37.27        | 37.81           | 74.00           | -36.19        | Peak   |
| 3    | 6974.36          | 39.92             | 35.00         | 7.34        | 34.15        | 48.11           | 74.00           | -25.89        | Peak   |
| 4    | 9909.80          | 36.61             | 39.30         | 9.50        | 35.75        | 49.66           | 74.00           | -24.34        | Peak   |

## 6. TEST SETUP PHOTOS

### Radiated Emission







AC Conducted Emission



## **7. EXTERNAL AND INTERNAL PHOTOS**

Refer to the test report No. CHTEW23090036

## **8. APPENDIX REPORT**

# APPENDIX REPORT

|                 |                 |                     |               |
|-----------------|-----------------|---------------------|---------------|
| Project No.     | SHT2308036106EW | Radio Specification | WIFI 2.4G     |
| Test sample No. | YPHT23080361007 | Model No.           | ABX00087      |
| Start test date | 2023-09-14      | Finish date         | 202-09-14     |
| Temperature     | 25.2℃           | Humidity            | 52%           |
| Test Engineer   | Kongyongshu     | Auditor             | Xiaodong Zheo |

| Appendix clause | Test item                                    | Result |
|-----------------|----------------------------------------------|--------|
| A               | Conducted Peak Output Power                  | Pass   |
| B               | Power Spectral Density                       | Pass   |
| C               | 6 dB Bandwidth                               | Pass   |
| D               | 99% Occupied Bandwidth                       | Pass   |
| E               | Duty Cycle                                   | Pass   |
| F               | Band edge and Spurious Emissions (conducted) | Pass   |

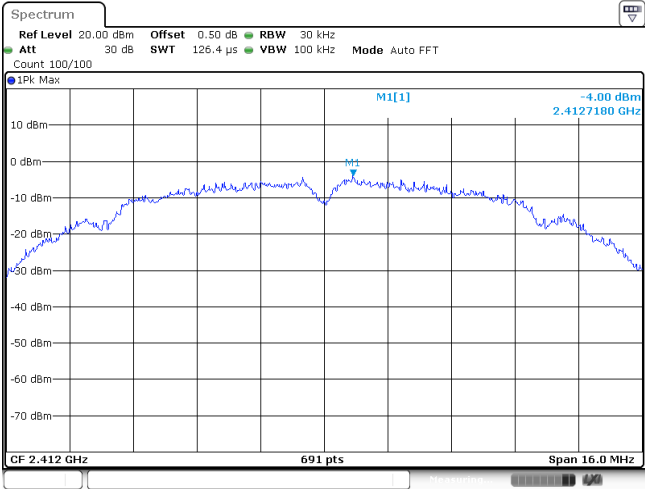
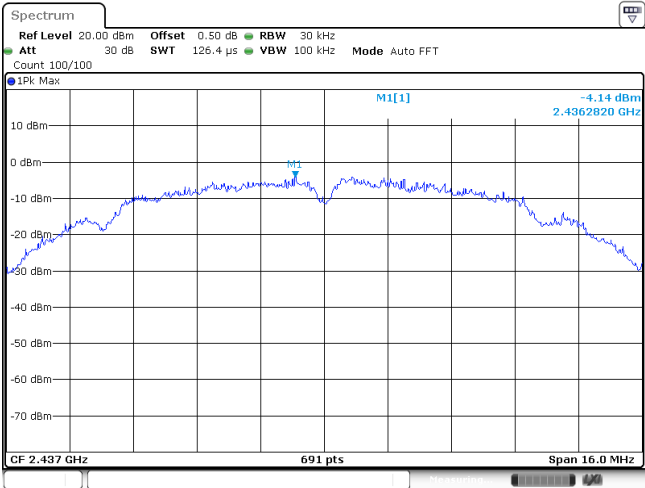
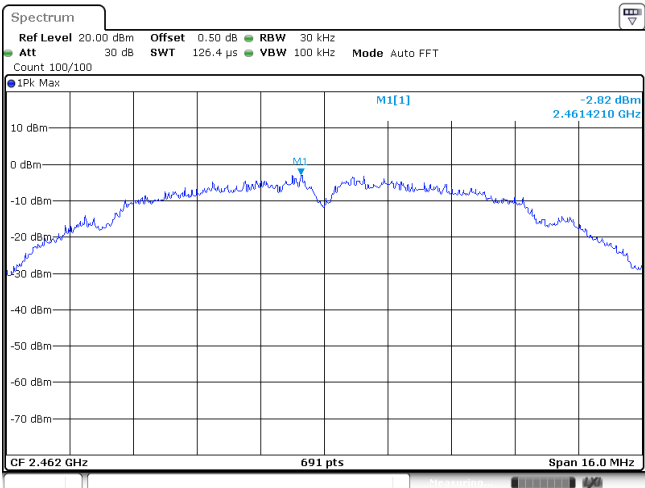
**Appendix A: Conducted Peak Output Power**

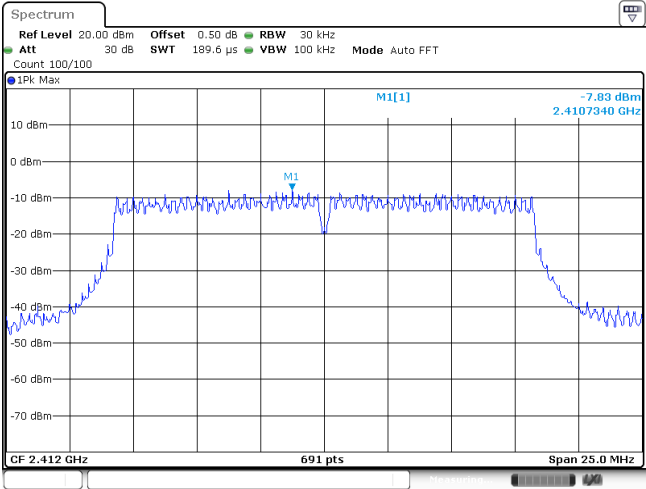
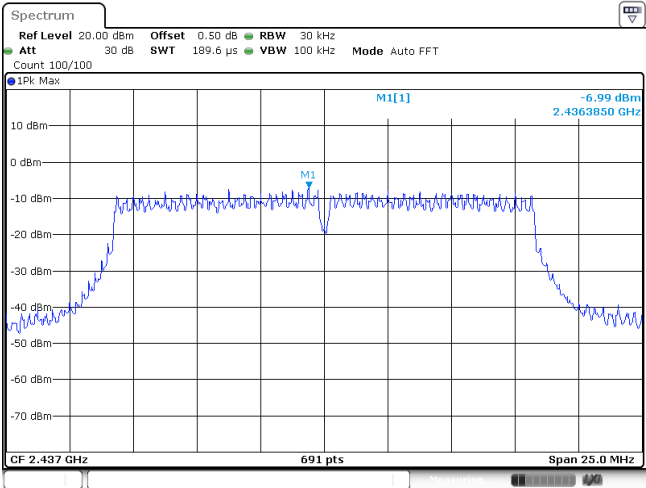
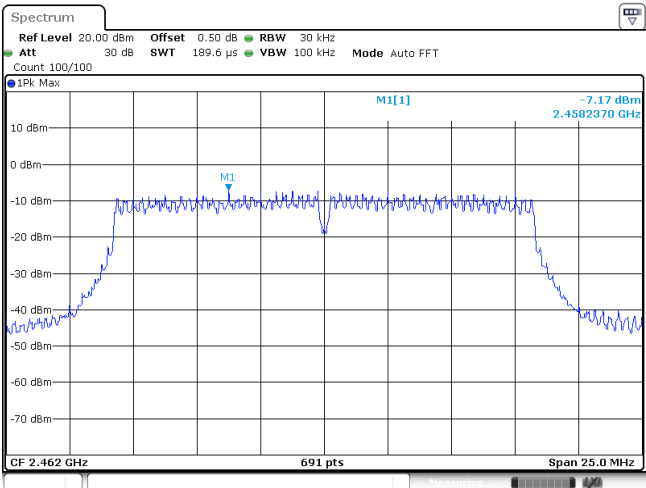
| Type              | Channel | Peak Output power (dBm) | Average Output power (dBm) | Limit (dBm)  | Result |
|-------------------|---------|-------------------------|----------------------------|--------------|--------|
| 802.11b           | 01      | 15.12                   | 12.98                      | $\leq 30.00$ | Pass   |
|                   | 06      | 15.78                   | 13.15                      |              |        |
|                   | 11      | 16.13                   | 13.97                      |              |        |
| 802.11g           | 01      | 15.97                   | 12.84                      | $\leq 30.00$ | Pass   |
|                   | 06      | 16.59                   | 13.29                      |              |        |
|                   | 11      | 17.01                   | 13.99                      |              |        |
| 802.11n<br>(HT20) | 01      | 14.75                   | 12.01                      | $\leq 30.00$ | Pass   |
|                   | 06      | 15.43                   | 13.16                      |              |        |
|                   | 11      | 15.79                   | 13.47                      |              |        |
| 802.11n(HT40)     | 03      | 15.35                   | 13.01                      | $\leq 30.00$ | Pass   |
|                   | 06      | 15.46                   | 13.14                      |              |        |
|                   | 09      | 15.86                   | 13.36                      |              |        |

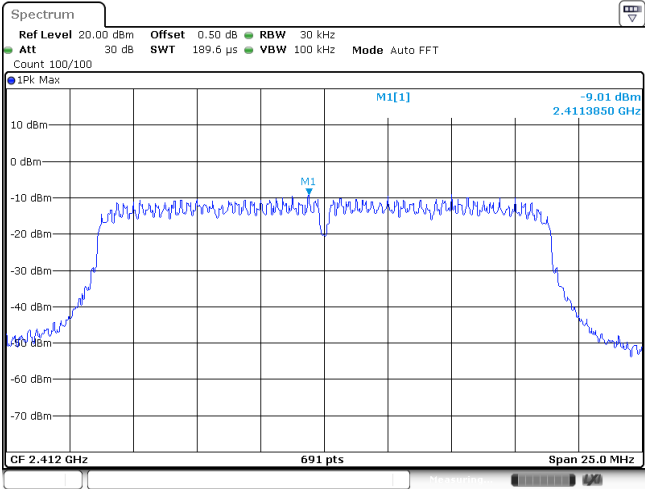
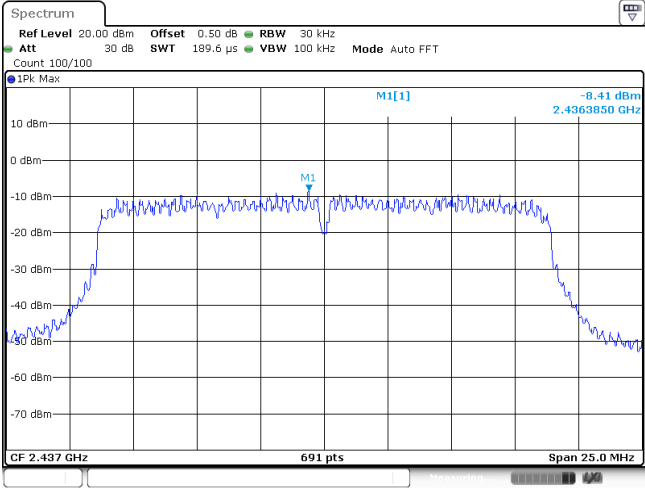
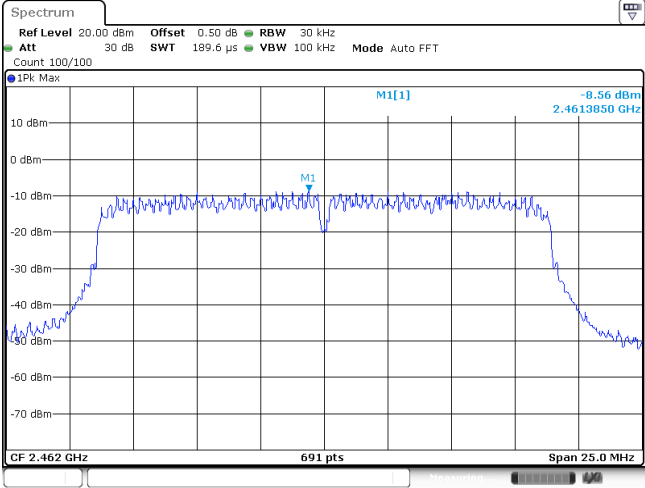
**Appendix B: Power Spectral Density**

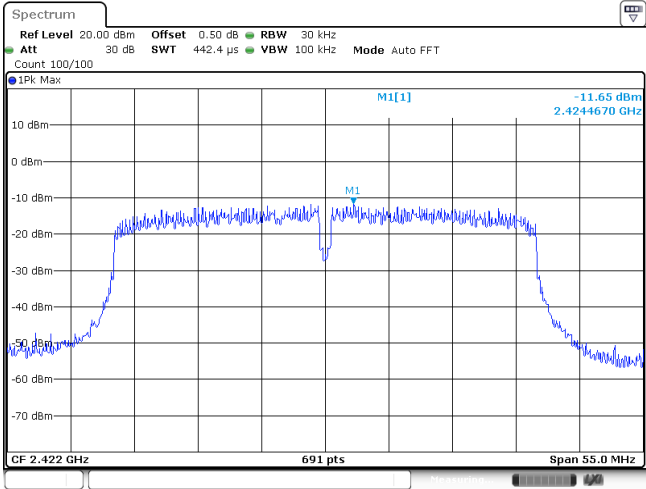
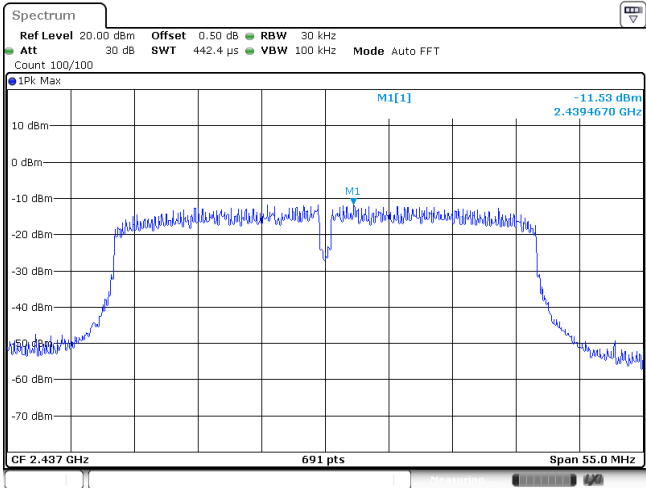
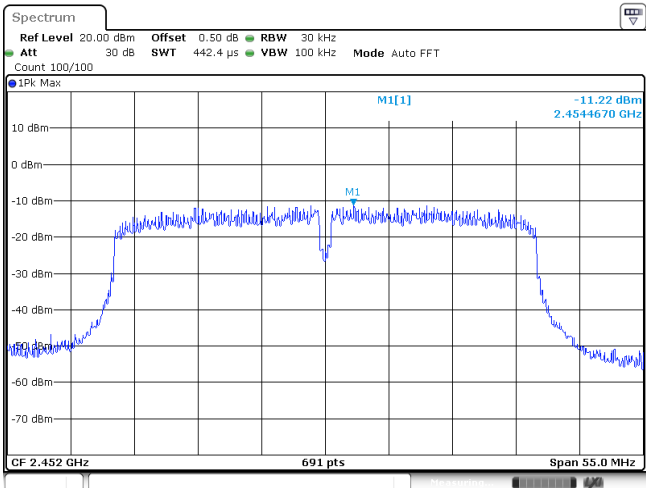
| Type          | Channel | Power Spectral Density (dBm/30KHz) | Limit (dBm/3KHz) | Result |
|---------------|---------|------------------------------------|------------------|--------|
| 802.11b       | 01      | -4.00                              | ≤8.00            | Pass   |
|               | 06      | -4.14                              |                  |        |
|               | 11      | -2.82                              |                  |        |
| 802.11g       | 01      | -7.83                              | ≤8.00            | Pass   |
|               | 06      | -6.99                              |                  |        |
|               | 11      | -7.17                              |                  |        |
| 802.11n(HT20) | 01      | -9.01                              | ≤8.00            | Pass   |
|               | 06      | -8.41                              |                  |        |
|               | 11      | -8.56                              |                  |        |
| 802.11n(HT40) | 03      | -11.65                             | ≤8.00            | Pass   |
|               | 06      | -11.53                             |                  |        |
|               | 09      | -11.22                             |                  |        |



|       |                                                                                      |          |
|-------|--------------------------------------------------------------------------------------|----------|
| Type: |                                                                                      | 802.11 b |
| CH01  |    |          |
| CH06  |   |          |
| CH11  |  |          |

|       |                                                                                      |          |
|-------|--------------------------------------------------------------------------------------|----------|
| Type: |                                                                                      | 802.11 g |
| CH01  |    |          |
| CH06  |   |          |
| CH11  |  |          |

| Type: 802.11n(HT20) |                                                                                      |
|---------------------|--------------------------------------------------------------------------------------|
| CH01                |    |
| CH06                |   |
| CH11                |  |

| Type: 802.11n(HT40) |                                                                                      |
|---------------------|--------------------------------------------------------------------------------------|
| CH03                |    |
| CH06                |   |
| CH09                |  |

**Appendix C: 6dB bandwidth**

| Type          | Channel | 6dB Bandwidth (MHz) | Limit (MHz) | Result |
|---------------|---------|---------------------|-------------|--------|
| 802.11b       | 01      | 9.15                | ≥0.5        | Pass   |
|               | 06      | 8.25                |             |        |
|               | 11      | 9.15                |             |        |
| 802.11g       | 01      | 16.38               | ≥0.5        | Pass   |
|               | 06      | 16.50               |             |        |
|               | 11      | 16.50               |             |        |
| 802.11n(HT20) | 01      | 16.86               | ≥0.5        | Pass   |
|               | 06      | 17.19               |             |        |
|               | 11      | 17.16               |             |        |
| 802.11n(HT40) | 03      | 32.40               | ≥0.5        | Pass   |
|               | 06      | 34.62               |             |        |
|               | 09      | 34.56               |             |        |

Appendix report page: 9 of 35

**Spectrum**

**Ref Level** 20.50 dBm **Offset** 0.50 dB **RBW** 100 kHz  
**Att** 30 dB **SWT** 75.9  $\mu$ s **VBW** 300 kHz **Mode** Auto FFT

Count 500/500

**1Pk View**

10 dBm  
0 dBm  
-10 dBm  
-20 dBm  
-30 dBm  
-40 dBm  
-50 dBm  
-60 dBm  
-70 dBm

M1[1] -10.20 dBm 2.4038100 GHz  
M2[1] -3.19 dBm 2.4170100 GHz  
M3 -0.04 dBm 16.38 MHz

D1 -9.190 dBm

CF 2.412 GHz 1001 pts Span 30.0 MHz

**Marker**

| Type | Ref | Trc | X-value     | Y-value    | Function | Function Result |
|------|-----|-----|-------------|------------|----------|-----------------|
| M1   |     | 1   | 2.40381 GHz | -10.20 dBm |          |                 |
| M2   |     | 1   | 2.41701 GHz | -3.19 dBm  |          |                 |
| D3   | M1  | 1   | 16.38 MHz   | -0.04 dB   |          |                 |

Spectrum

Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz  
Att 30 dB SWT 75.9  $\mu$ s VBW 300 kHz Mode Auto FFT

Count 500/500

1Pk View

10 dBm  
0 dBm  
-10 dBm  
-20 dBm  
-30 dBm  
-40 dBm  
-50 dBm  
-60 dBm  
-70 dBm

M1[1] -11.66 dBm  
2.4287500 GHz  
M2[1] -5.27 dBm  
2.4379900 GHz

CF 2.437 GHz 1001 pts Span 30.0 MHz

Marker

| Type | Ref | Trc | X-value     | Y-value    | Function | Function Result |
|------|-----|-----|-------------|------------|----------|-----------------|
| M1   |     | 1   | 2.42875 GHz | -11.66 dBm |          |                 |
| M2   |     | 1   | 2.43799 GHz | -5.27 dBm  |          |                 |
| D3   | M1  | 1   | 16.5 MHz    | 0.02 dB    |          |                 |

**Spectrum**

|           |           |        |              |     |         |
|-----------|-----------|--------|--------------|-----|---------|
| Ref Level | 20.50 dBm | Offset | 0.50 dB      | RBW | 100 kHz |
| Att       | 30 dB     | SWT    | 75.9 $\mu$ s | VBW | 300 kHz |
| Count     | 500/500   | Mode   | Auto FFT     |     |         |

● 1Pk View

10 dBm  
0 dBm  
-10 dBm  
-20 dBm  
-30 dBm  
-40 dBm  
-50 dBm  
-60 dBm  
-70 dBm

M1[1] -10.79 dBm  
2.4537800 GHz  
M2[1] -4.75 dBm  
2.4661400 GHz

-10.755 dBm

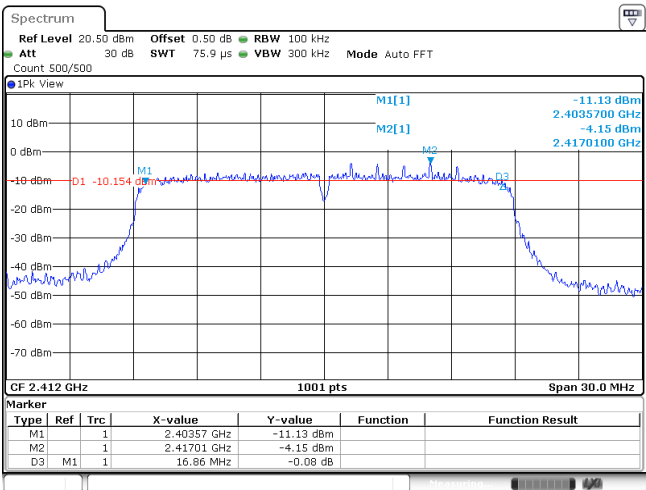
CF 2.462 GHz 1001 pts Span 30.0 MHz

| Type | Ref | Trc | X-value     | Y-value    | Function | Function Result |
|------|-----|-----|-------------|------------|----------|-----------------|
| M1   |     | 1   | 2.45378 GHz | -10.79 dBm |          |                 |
| M2   |     | 1   | 2.46614 GHz | -4.75 dBm  |          |                 |
| D3   | M1  | 1   | 16.5 MHz    | -0.20 dB   |          |                 |

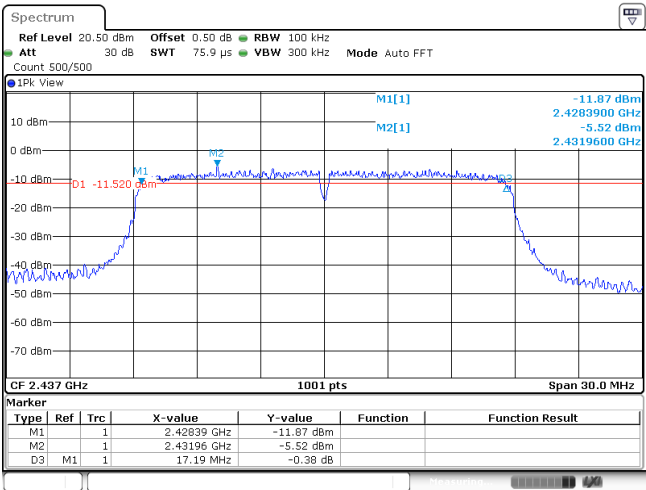
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802.11n(HT20)

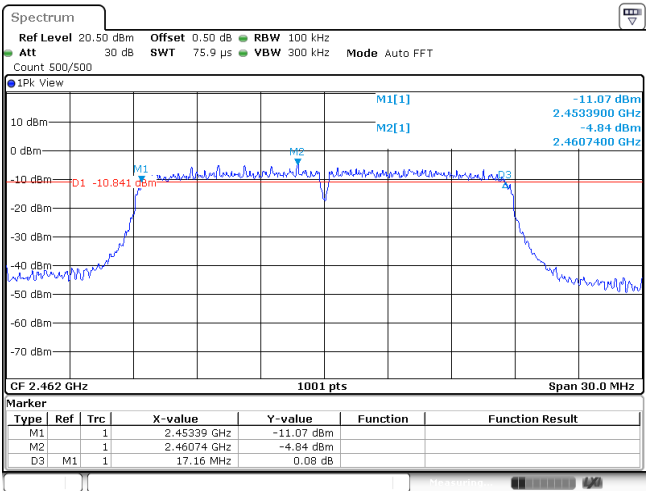
CH01



CH06



CH11





Spectrum

Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz  
Att 30 dB SWT 132.7  $\mu$ s VBW 300 kHz Mode Auto FFT  
Count 500/500

1Pk View

10 dBm  
0 dBm  
-10 dBm  
-20 dBm  
-30 dBm  
-40 dBm  
-50 dBm  
-60 dBm  
-70 dBm

M1[1] -13.30 dBm  
M2[1] -7.11 dBm  
2.4056800 GHz  
2.4169600 GHz

D1 -13.110 dBm

CF 2.422 GHz 1001 pts Span 60.0 MHz

Marker

| Type | Ref | Trc | X-value     | Y-value    | Function | Function Result |
|------|-----|-----|-------------|------------|----------|-----------------|
| M1   |     | 1   | 2.40568 GHz | -13.30 dBm |          |                 |
| M2   |     | 1   | 2.41696 GHz | -7.11 dBm  |          |                 |
| D3   | M1  | 1   | 32.4 MHz    | -0.32 dB   |          |                 |

**Spectrum**

Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz  
Att 30 dB SWT 132.7  $\mu$ s VBW 300 kHz Mode Auto FFT  
Count 500/500

1Pk View

10 dBm  
0 dBm  
-10 dBm  
-20 dBm  
-30 dBm  
-40 dBm  
-50 dBm  
-60 dBm  
-70 dBm

M1[1] -16.55 dBm  
2.4193600 GHz  
M2[1] -7.23 dBm  
2.4407200 GHz

D1 -13.23 dBm

CF 2.437 GHz 1001 pts Span 60.0 MHz

Marker

| Type | Ref | Trc | X-value     | Y-value    | Function | Function Result |
|------|-----|-----|-------------|------------|----------|-----------------|
| M1   |     | 1   | 2.41936 GHz | -16.55 dBm |          |                 |
| M2   |     | 1   | 2.44072 GHz | -7.23 dBm  |          |                 |
| D3   | M1  | 1   | 34.62 MHz   | 2.09 dB    |          |                 |

**Spectrum**

Ref Level 20.50 dBm   Offset 0.50 dB   RBW 100 kHz  
Att 30 dB   SWT 132.7 μs   VBW 300 kHz   Mode Auto FFT  
Count 500/500

1Pk View

10 dBm  
0 dBm  
-10 dBm  
-20 dBm  
-30 dBm  
-40 dBm  
-50 dBm  
-60 dBm  
-70 dBm

M1[1] -15.16 dBm 2.4350200 GHz  
M2[1] -7.82 dBm 2.4494800 GHz  
D1 -13.821 dBm

CF 2.452 GHz   1001 pts   Span 60.0 MHz

**Marker**

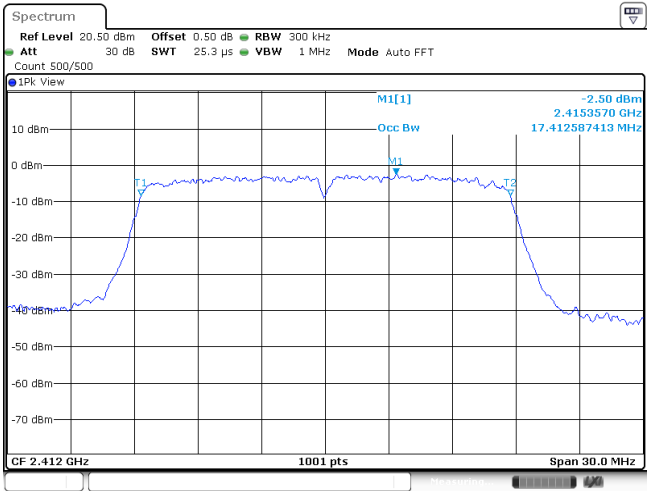
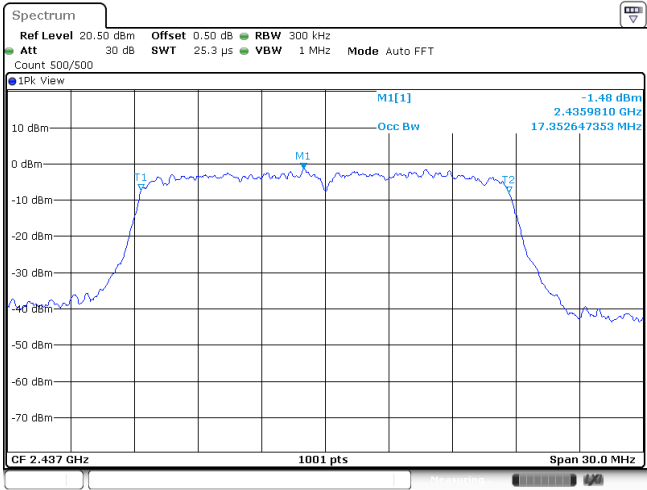
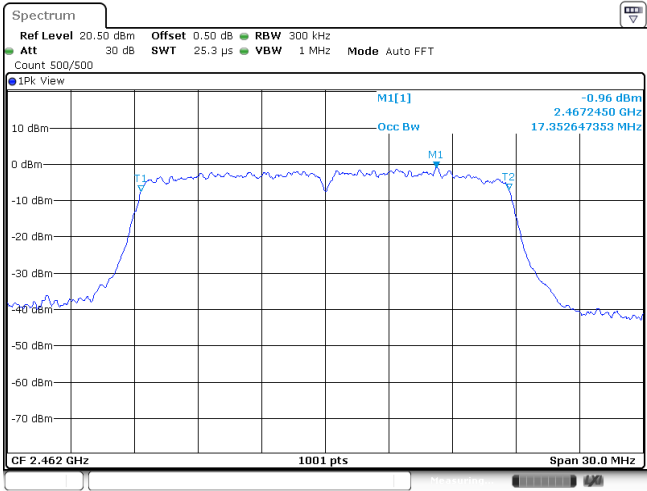
| Type | Ref | Trc | X-value     | Y-value    | Function | Function Result |
|------|-----|-----|-------------|------------|----------|-----------------|
| M1   |     | 1   | 2.43502 GHz | -15.16 dBm |          |                 |
| M2   |     | 1   | 2.44948 GHz | -7.82 dBm  |          |                 |
| D3   | M1  | 1   | 34.56 MHz   | 0.22 dB    |          |                 |

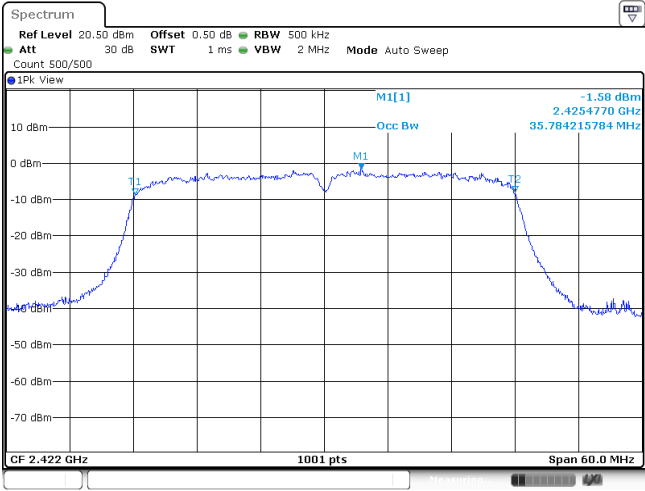
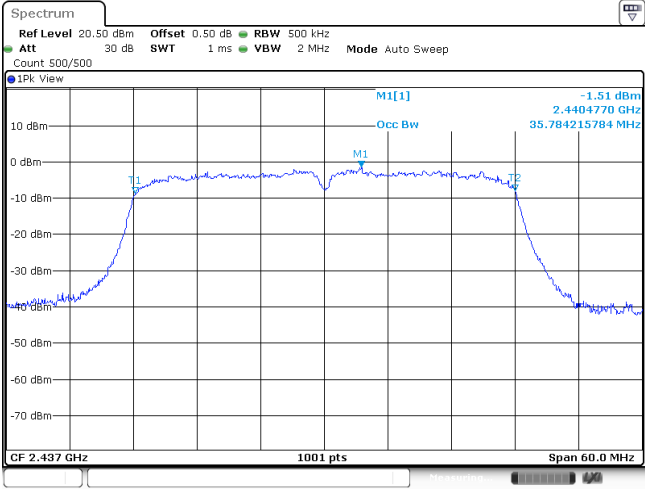
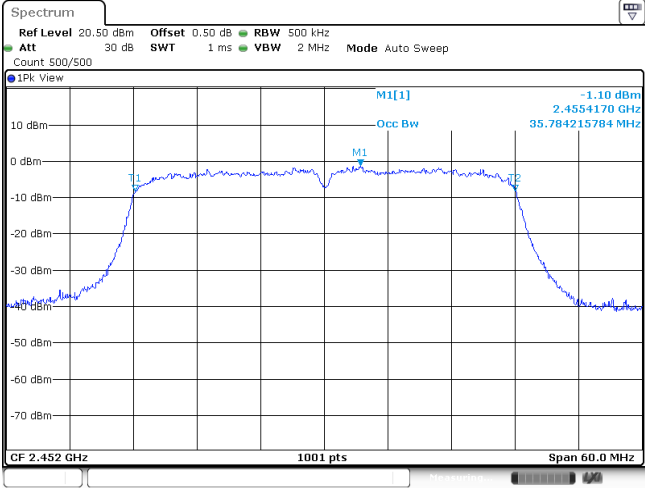
**Appendix D: 99% Occupied Bandwidth**

| Type          | Channel | 99% Bandwidth (MHz) | Limit (kHz) | Result |
|---------------|---------|---------------------|-------------|--------|
| 802.11b       | 01      | 12.83               | -           | Pass   |
|               | 06      | 12.83               |             |        |
|               | 11      | 12.71               |             |        |
| 802.11g       | 01      | 16.54               | -           | Pass   |
|               | 06      | 16.51               |             |        |
|               | 11      | 16.54               |             |        |
| 802.11n(HT20) | 01      | 17.41               | -           | Pass   |
|               | 06      | 17.35               |             |        |
|               | 11      | 17.35               |             |        |
| 802.11n(HT40) | 03      | 35.78               | -           | Pass   |
|               | 06      | 35.78               |             |        |
|               | 09      | 35.78               |             |        |

| Type: | 802.11 b                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CH01  | <div><div><div><div><div>Spectrum</div><div><div>Ref Level 20.50 dBm</div><div>Att 30 dB</div><div>Count 500/500</div></div><div><div>Offset 0.50 dB</div><div>SWT 25.3 <math>\mu</math>s</div><div>RBW 300 kHz</div><div>VBW 1 MHz</div><div>Mode Auto FFT</div></div></div></div><div><div>1Pk View</div><div><div><div><div><div>10 dBm</div><div>0 dBm</div><div>-10 dBm</div><div>-20 dBm</div><div>-30 dBm</div><div>-40 dBm</div><div>-50 dBm</div><div>-60 dBm</div><div>-70 dBm</div></div><div><div><div><div>M1[1]</div><div>4.04 dBm</div><div>2.4125090 GHz</div><div>12.827172827 MHz</div></div><div><div>Occ Bw</div><div>T1</div><div>T2</div></div></div></div><div><div>CF 2.412 GHz</div><div>1001 pts</div><div>Span 30.0 MHz</div></div></div></div></div></div></div></div> |
| CH06  | <div><div><div><div><div>Spectrum</div><div><div>Ref Level 20.50 dBm</div><div>Att 30 dB</div><div>Count 500/500</div></div><div><div>Offset 0.50 dB</div><div>SWT 25.3 <math>\mu</math>s</div><div>RBW 300 kHz</div><div>VBW 1 MHz</div><div>Mode Auto FFT</div></div></div></div><div><div>1Pk View</div><div><div><div><div><div>10 dBm</div><div>0 dBm</div><div>-10 dBm</div><div>-20 dBm</div><div>-30 dBm</div><div>-40 dBm</div><div>-50 dBm</div><div>-60 dBm</div><div>-70 dBm</div></div><div><div><div><div>M1[1]</div><div>4.14 dBm</div><div>2.4379890 GHz</div><div>12.827172827 MHz</div></div><div><div>Occ Bw</div><div>T1</div><div>T2</div></div></div></div><div><div>CF 2.437 GHz</div><div>1001 pts</div><div>Span 30.0 MHz</div></div></div></div></div></div></div></div> |
| CH11  | <div><div><div><div><div>Spectrum</div><div><div>Ref Level 20.50 dBm</div><div>Att 30 dB</div><div>Count 500/500</div></div><div><div>Offset 0.50 dB</div><div>SWT 25.3 <math>\mu</math>s</div><div>RBW 300 kHz</div><div>VBW 1 MHz</div><div>Mode Auto FFT</div></div></div></div><div><div>1Pk View</div><div><div><div><div><div>10 dBm</div><div>0 dBm</div><div>-10 dBm</div><div>-20 dBm</div><div>-30 dBm</div><div>-40 dBm</div><div>-50 dBm</div><div>-60 dBm</div><div>-70 dBm</div></div><div><div><div><div>M1[1]</div><div>4.75 dBm</div><div>2.4625090 GHz</div><div>12.707292707 MHz</div></div><div><div>Occ Bw</div><div>T1</div><div>T2</div></div></div></div><div><div>CF 2.462 GHz</div><div>1001 pts</div><div>Span 30.0 MHz</div></div></div></div></div></div></div></div> |

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type: | 802.11 g                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| CH01  | <div><div><div><div>Spectrum</div><div><div>Ref Level 20.50 dBm</div><div>Att 30 dB</div><div>Count 500/500</div></div><div><div>Offset 0.50 dB</div><div>SWT 25.3 <math>\mu</math>s</div><div>RBW 300 kHz</div><div>VBW 1 MHz</div><div>Mode Auto FFT</div></div></div><div><div>1Pk View</div><div><div><div><div>M1[1]</div><div>-0.55 dBm</div><div>2.4134090 GHz</div></div><div><div>Occ Bw</div><div>16.543456543 MHz</div></div></div><div><div>M1</div><div>M2</div></div></div><div><div>CF 2.412 GHz</div><div>1001 pts</div><div>Span 30.0 MHz</div></div></div></div></div> |
| CH06  | <div><div><div><div>Spectrum</div><div><div>Ref Level 20.50 dBm</div><div>Att 30 dB</div><div>Count 500/500</div></div><div><div>Offset 0.50 dB</div><div>SWT 25.3 <math>\mu</math>s</div><div>RBW 300 kHz</div><div>VBW 1 MHz</div><div>Mode Auto FFT</div></div></div><div><div>1Pk View</div><div><div><div><div>M1[1]</div><div>-0.34 dBm</div><div>2.4411360 GHz</div></div><div><div>Occ Bw</div><div>16.513486513 MHz</div></div></div><div><div>M1</div><div>M2</div></div></div><div><div>CF 2.437 GHz</div><div>1001 pts</div><div>Span 30.0 MHz</div></div></div></div></div> |
| CH11  | <div><div><div><div>Spectrum</div><div><div>Ref Level 20.50 dBm</div><div>Att 30 dB</div><div>Count 500/500</div></div><div><div>Offset 0.50 dB</div><div>SWT 25.3 <math>\mu</math>s</div><div>RBW 300 kHz</div><div>VBW 1 MHz</div><div>Mode Auto FFT</div></div></div><div><div>1Pk View</div><div><div><div><div>M1[1]</div><div>-0.05 dBm</div><div>2.4628690 GHz</div></div><div><div>Occ Bw</div><div>16.543456543 MHz</div></div></div><div><div>M1</div><div>M2</div></div></div><div><div>CF 2.462 GHz</div><div>1001 pts</div><div>Span 30.0 MHz</div></div></div></div></div> |

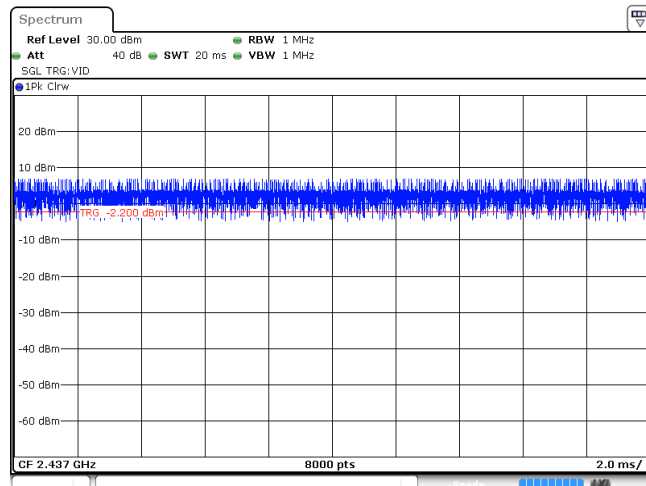
| Type: 802.11n(HT20) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CH01                |  <p>Spectrum plot for CH01. The plot shows a signal centered at 2.412 GHz. The peak level is -2.50 dBm. The bandwidth is 17.412587413 MHz. The plot includes a 10 dBm reference level and a 30 dB offset. The RBW is 300 kHz and the VBW is 1 MHz. The mode is Auto FFT. The plot shows a signal with a peak level of -2.50 dBm at 2.412587413 GHz. The bandwidth is 17.412587413 MHz. The plot includes a 10 dBm reference level and a 30 dB offset. The RBW is 300 kHz and the VBW is 1 MHz. The mode is Auto FFT. The plot shows a signal with a peak level of -2.50 dBm at 2.412587413 GHz. The bandwidth is 17.412587413 MHz. The plot includes a 10 dBm reference level and a 30 dB offset. The RBW is 300 kHz and the VBW is 1 MHz. The mode is Auto FFT.</p> |
| CH06                |  <p>Spectrum plot for CH06. The plot shows a signal centered at 2.437 GHz. The peak level is -1.48 dBm. The bandwidth is 17.352647353 MHz. The plot includes a 10 dBm reference level and a 30 dB offset. The RBW is 300 kHz and the VBW is 1 MHz. The mode is Auto FFT. The plot shows a signal with a peak level of -1.48 dBm at 2.4359810 GHz. The bandwidth is 17.352647353 MHz. The plot includes a 10 dBm reference level and a 30 dB offset. The RBW is 300 kHz and the VBW is 1 MHz. The mode is Auto FFT.</p>                                                                                                                                                                                                                                              |
| CH11                |  <p>Spectrum plot for CH11. The plot shows a signal centered at 2.462 GHz. The peak level is -0.96 dBm. The bandwidth is 17.352647353 MHz. The plot includes a 10 dBm reference level and a 30 dB offset. The RBW is 300 kHz and the VBW is 1 MHz. The mode is Auto FFT. The plot shows a signal with a peak level of -0.96 dBm at 2.4672450 GHz. The bandwidth is 17.352647353 MHz. The plot includes a 10 dBm reference level and a 30 dB offset. The RBW is 300 kHz and the VBW is 1 MHz. The mode is Auto FFT.</p>                                                                                                                                                                                                                                             |

| Type: 802.11n(HT40) |                                                                                      |
|---------------------|--------------------------------------------------------------------------------------|
| CH03                |    |
| CH06                |   |
| CH09                |  |

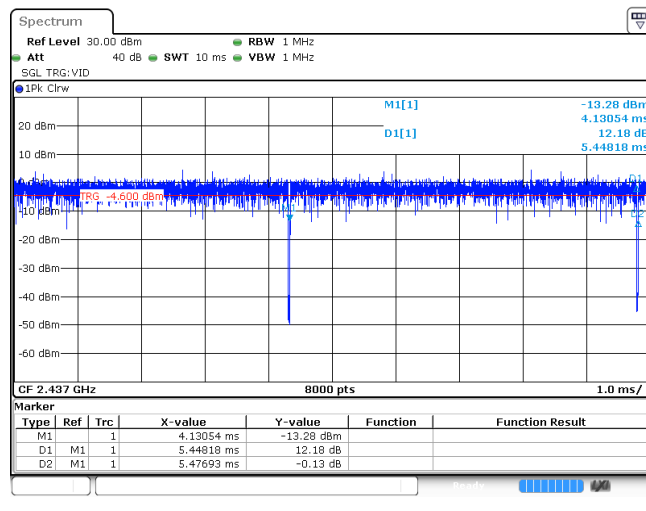
**Appendix E: Duty Cycle**

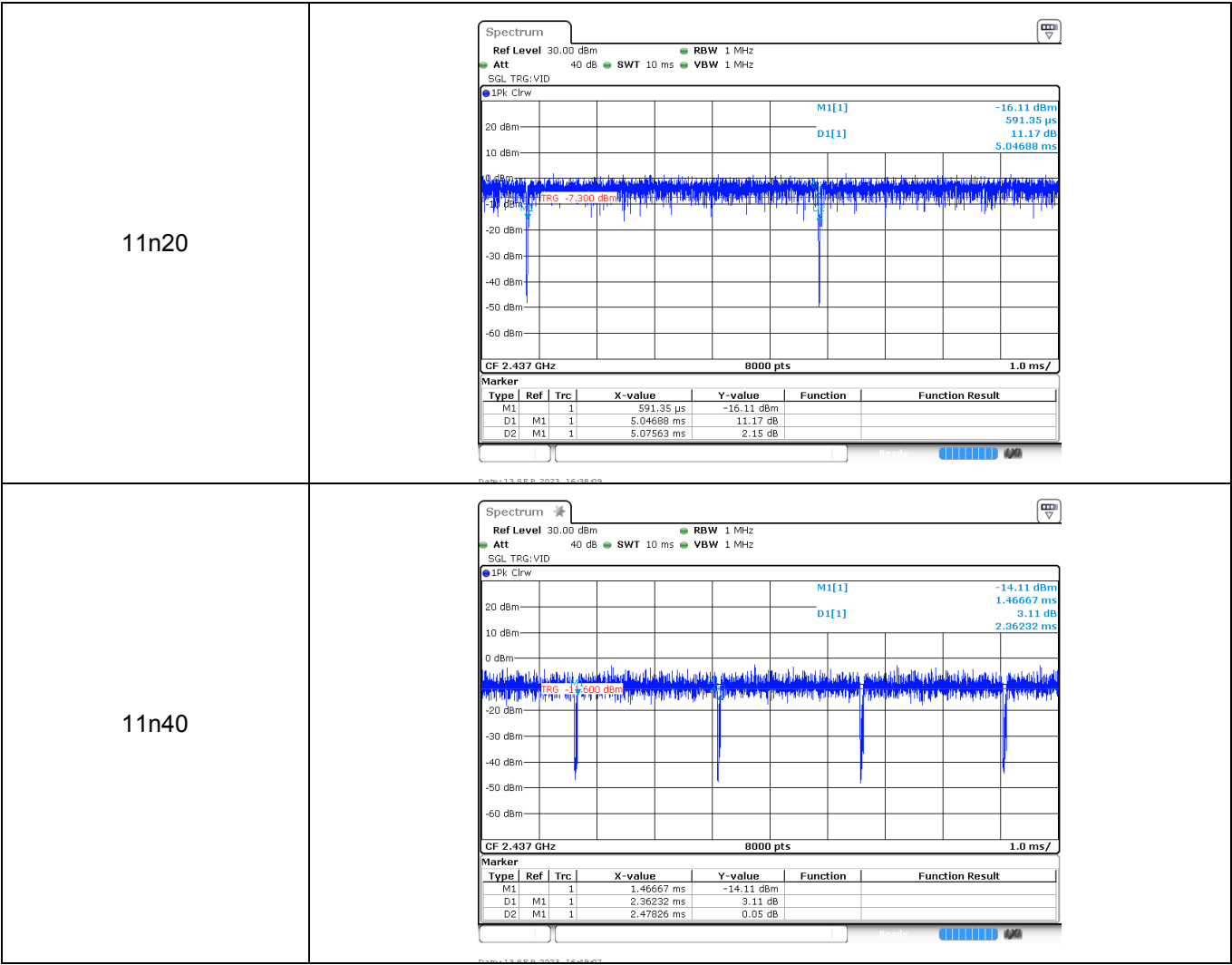
| Modulation Type | Test Frequency (MHz) | T <sub>on time</sub> for single burst (ms) | T <sub>period</sub> (ms) | Duty cycle | 1/T <sub>on time</sub> (kHz) |
|-----------------|----------------------|--------------------------------------------|--------------------------|------------|------------------------------|
| 11b             | 2437                 | 1.00                                       | 1.00                     | 100%       | 1                            |
| 11g             | 2437                 | 5.45                                       | 5.48                     | 99.5%      | 0.18                         |
| 11n20           | 2437                 | 5.05                                       | 5.08                     | 99.4%      | 0.20                         |
| 11n40           | 2437                 | 2.36                                       | 2.48                     | 95.2%      | 0.42                         |

11b



11g







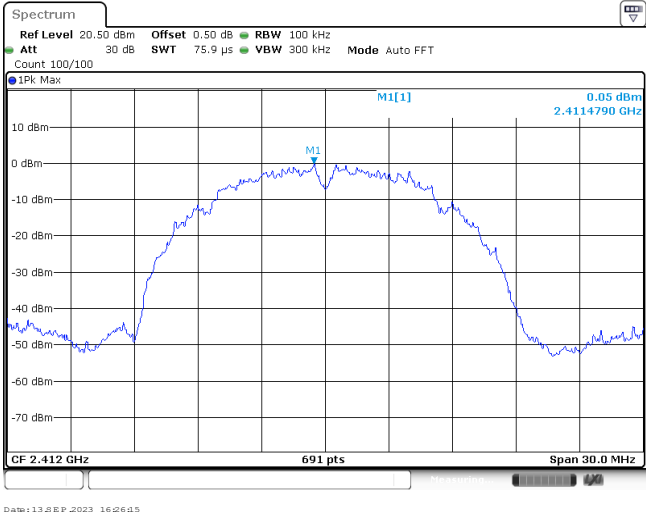
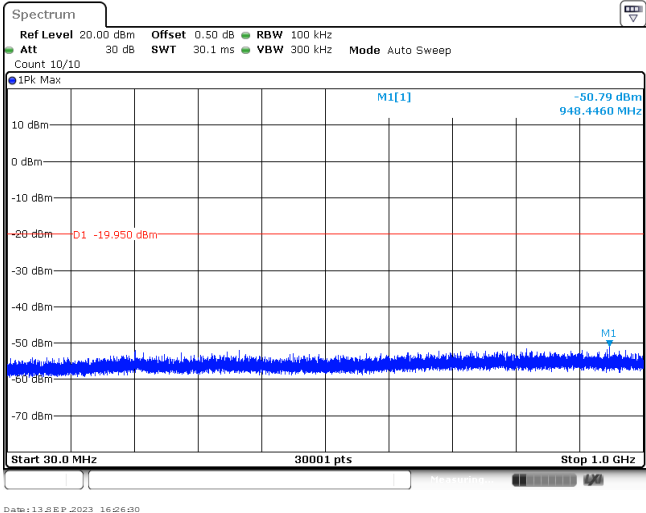
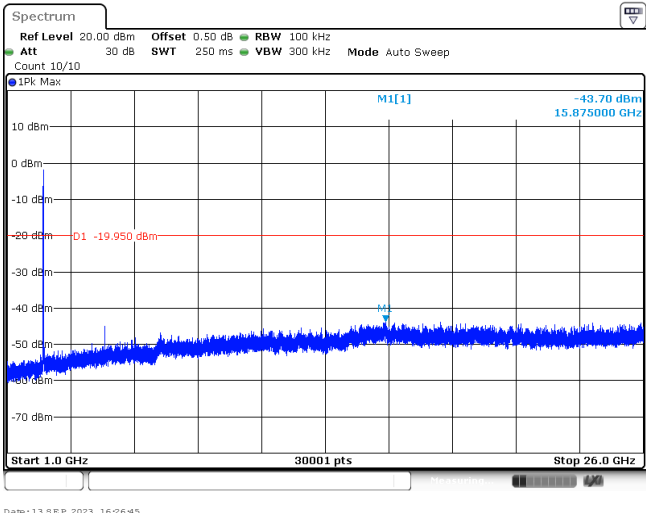
Appendix F: Band edge and Spurious Emissions (conducted)

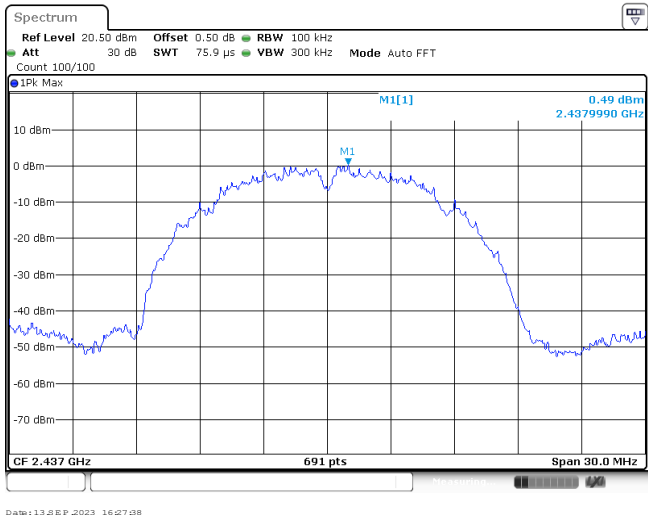
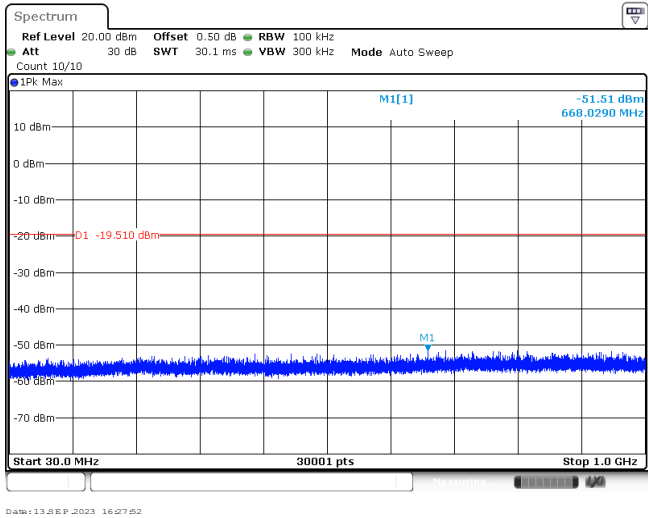
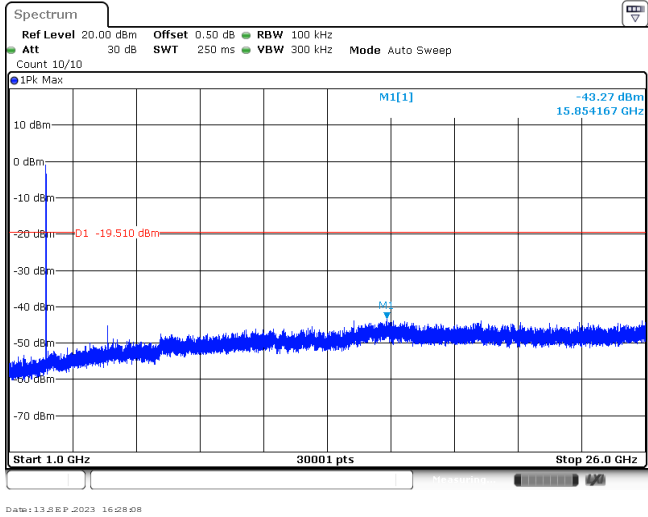
| Test Item: | Bandedge                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Type: | 802.11 b      |            |          |                 |         |         |          |                 |    |   |  |              |           |  |  |    |   |  |            |            |  |  |    |   |  |          |            |  |  |    |   |  |               |            |  |  |    |   |  |              |            |  |  |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|---------------|------------|----------|-----------------|---------|---------|----------|-----------------|----|---|--|--------------|-----------|--|--|----|---|--|------------|------------|--|--|----|---|--|----------|------------|--|--|----|---|--|---------------|------------|--|--|----|---|--|--------------|------------|--|--|
| CH01       | <div><div><div>Spectrum</div><div><div>Ref Level 20.00 dBm</div><div>Offset 0.50 dB</div><div>RBW 100 kHz</div><div>Att 30 dB</div><div>SWT 246.5 <math>\mu</math>s</div><div>VBW 300 kHz</div><div>Mode Auto FFT</div><div>Count 300/300</div></div><div><div>1Pk Max</div><div><div>10 dBm</div><div>0 dBm</div><div>-10 dBm</div><div>-20 dBm</div><div>-30 dBm</div><div>-40 dBm</div><div>-50 dBm</div><div>-60 dBm</div><div>-70 dBm</div></div><div><div>M1[1]</div><div>M2[1]</div><div>M3</div><div>M4</div><div>M5</div></div><div><div>-0.07 dBm</div><div>2.412520 GHz</div><div>-49.18 dBm</div><div>2.412500 GHz</div><div>-57.12 dBm</div><div>2.397003 GHz</div><div>-42.50 dBm</div><div>2.397003 GHz</div></div><div><div>D1 -20.070 dBm</div></div><div><div>Start 2.31 GHz</div><div>691 pts</div><div>Stop 2.422 GHz</div></div><div><div>Marker</div><table><tr><th>Type</th><th>Ref</th><th>Trc</th><th>X-value</th><th>Y-value</th><th>Function</th><th>Function Result</th></tr><tr><td>M1</td><td>1</td><td></td><td>2.41252 GHz</td><td>-0.07 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4 GHz</td><td>-49.18 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.39 GHz</td><td>-57.12 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.31 GHz</td><td>-58.62 dBm</td><td></td><td></td></tr><tr><td>M5</td><td>1</td><td></td><td>2.397003 GHz</td><td>-42.50 dBm</td><td></td><td></td></tr></table></div></div></div></div> |       |               | Type       | Ref      | Trc             | X-value | Y-value | Function | Function Result | M1 | 1 |  | 2.41252 GHz  | -0.07 dBm |  |  | M2 | 1 |  | 2.4 GHz    | -49.18 dBm |  |  | M3 | 1 |  | 2.39 GHz | -57.12 dBm |  |  | M4 | 1 |  | 2.31 GHz      | -58.62 dBm |  |  | M5 | 1 |  | 2.397003 GHz | -42.50 dBm |  |  |
| Type       | Ref                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Trc   | X-value       | Y-value    | Function | Function Result |         |         |          |                 |    |   |  |              |           |  |  |    |   |  |            |            |  |  |    |   |  |          |            |  |  |    |   |  |               |            |  |  |    |   |  |              |            |  |  |
| M1         | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |       | 2.41252 GHz   | -0.07 dBm  |          |                 |         |         |          |                 |    |   |  |              |           |  |  |    |   |  |            |            |  |  |    |   |  |          |            |  |  |    |   |  |               |            |  |  |    |   |  |              |            |  |  |
| M2         | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |       | 2.4 GHz       | -49.18 dBm |          |                 |         |         |          |                 |    |   |  |              |           |  |  |    |   |  |            |            |  |  |    |   |  |          |            |  |  |    |   |  |               |            |  |  |    |   |  |              |            |  |  |
| M3         | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |       | 2.39 GHz      | -57.12 dBm |          |                 |         |         |          |                 |    |   |  |              |           |  |  |    |   |  |            |            |  |  |    |   |  |          |            |  |  |    |   |  |               |            |  |  |    |   |  |              |            |  |  |
| M4         | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |       | 2.31 GHz      | -58.62 dBm |          |                 |         |         |          |                 |    |   |  |              |           |  |  |    |   |  |            |            |  |  |    |   |  |          |            |  |  |    |   |  |               |            |  |  |    |   |  |              |            |  |  |
| M5         | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |       | 2.397003 GHz  | -42.50 dBm |          |                 |         |         |          |                 |    |   |  |              |           |  |  |    |   |  |            |            |  |  |    |   |  |          |            |  |  |    |   |  |               |            |  |  |    |   |  |              |            |  |  |
| CH11       | <div><div><div>Spectrum</div><div><div>Ref Level 20.00 dBm</div><div>Offset 0.50 dB</div><div>RBW 100 kHz</div><div>Att 30 dB</div><div>SWT 113.8 <math>\mu</math>s</div><div>VBW 300 kHz</div><div>Mode Auto FFT</div><div>Count 300/300</div></div><div><div>1Pk Max</div><div><div>10 dBm</div><div>0 dBm</div><div>-10 dBm</div><div>-20 dBm</div><div>-30 dBm</div><div>-40 dBm</div><div>-50 dBm</div><div>-60 dBm</div><div>-70 dBm</div></div><div><div>M1[1]</div><div>M2[1]</div><div>M3</div><div>M4</div></div><div><div>0.89 dBm</div><div>2.4614820 GHz</div><div>-55.42 dBm</div><div>2.4835000 GHz</div><div>-52.53 dBm</div><div>2.4881043 GHz</div></div><div><div>D1 -19.110 dBm</div></div><div><div>Start 2.452 GHz</div><div>691 pts</div><div>Stop 2.5 GHz</div></div><div><div>Marker</div><table><tr><th>Type</th><th>Ref</th><th>Trc</th><th>X-value</th><th>Y-value</th><th>Function</th><th>Function Result</th></tr><tr><td>M1</td><td>1</td><td></td><td>2.461482 GHz</td><td>0.89 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4835 GHz</td><td>-55.42 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.5 GHz</td><td>-57.01 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.4881043 GHz</td><td>-52.53 dBm</td><td></td><td></td></tr></table></div></div></div></div>                                                                                                                                                   |       |               | Type       | Ref      | Trc             | X-value | Y-value | Function | Function Result | M1 | 1 |  | 2.461482 GHz | 0.89 dBm  |  |  | M2 | 1 |  | 2.4835 GHz | -55.42 dBm |  |  | M3 | 1 |  | 2.5 GHz  | -57.01 dBm |  |  | M4 | 1 |  | 2.4881043 GHz | -52.53 dBm |  |  |    |   |  |              |            |  |  |
| Type       | Ref                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Trc   | X-value       | Y-value    | Function | Function Result |         |         |          |                 |    |   |  |              |           |  |  |    |   |  |            |            |  |  |    |   |  |          |            |  |  |    |   |  |               |            |  |  |    |   |  |              |            |  |  |
| M1         | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |       | 2.461482 GHz  | 0.89 dBm   |          |                 |         |         |          |                 |    |   |  |              |           |  |  |    |   |  |            |            |  |  |    |   |  |          |            |  |  |    |   |  |               |            |  |  |    |   |  |              |            |  |  |
| M2         | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |       | 2.4835 GHz    | -55.42 dBm |          |                 |         |         |          |                 |    |   |  |              |           |  |  |    |   |  |            |            |  |  |    |   |  |          |            |  |  |    |   |  |               |            |  |  |    |   |  |              |            |  |  |
| M3         | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |       | 2.5 GHz       | -57.01 dBm |          |                 |         |         |          |                 |    |   |  |              |           |  |  |    |   |  |            |            |  |  |    |   |  |          |            |  |  |    |   |  |               |            |  |  |    |   |  |              |            |  |  |
| M4         | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |       | 2.4881043 GHz | -52.53 dBm |          |                 |         |         |          |                 |    |   |  |              |           |  |  |    |   |  |            |            |  |  |    |   |  |          |            |  |  |    |   |  |               |            |  |  |    |   |  |              |            |  |  |

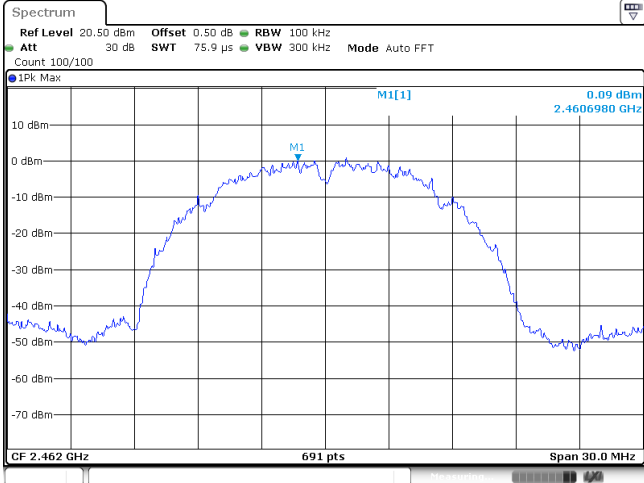
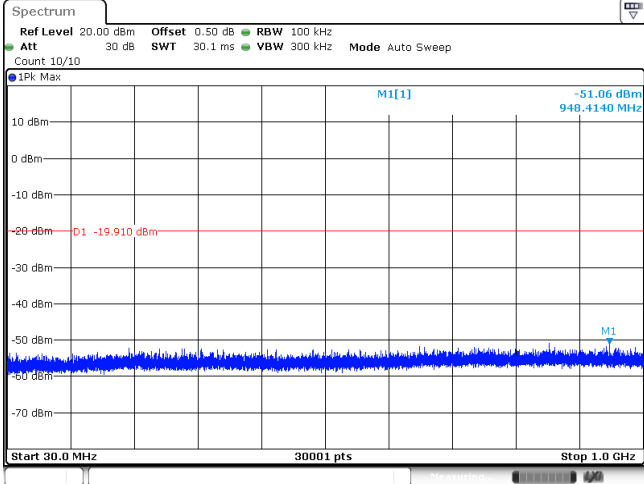
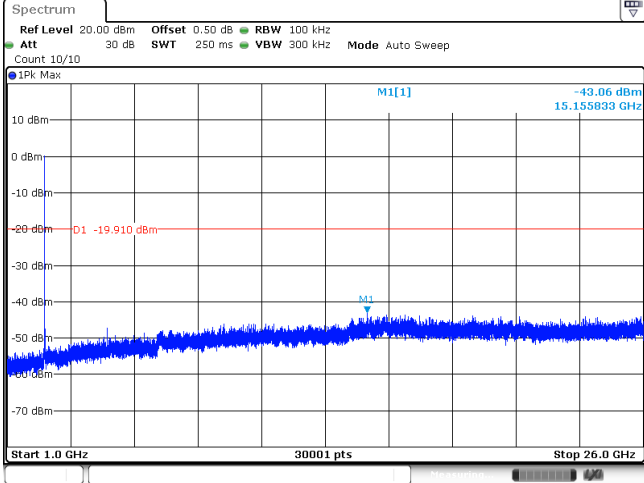
| Test Item: | Bandedge                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Type: | 802.11 g      |            |          |                 |         |         |          |                 |    |   |  |             |           |  |  |    |   |  |            |            |  |  |    |   |  |          |            |  |  |    |   |  |               |            |  |  |    |   |  |              |            |  |  |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|---------------|------------|----------|-----------------|---------|---------|----------|-----------------|----|---|--|-------------|-----------|--|--|----|---|--|------------|------------|--|--|----|---|--|----------|------------|--|--|----|---|--|---------------|------------|--|--|----|---|--|--------------|------------|--|--|
| CH01       | <div><div>Spectrum</div><div>Ref Level 20.00 dBm Offset 0.50 dB RBW 100 kHz<br/>Att 30 dB SWT 246.5 <math>\mu</math>s VBW 300 kHz Mode Auto FFT<br/>Count 300/300</div><div><div>1Pk Max</div><div><div><div>M1[1]</div><div>-6.14 dBm</div><div>2.412680 GHz</div></div><div><div>M2[1]</div><div>-38.04 dBm</div><div>2.400000 GHz</div></div></div><div><div>D1</div><div>-26.140 dBm</div></div></div><div><div>Start 2.31 GHz</div><div>691 pts</div><div>Stop 2.422 GHz</div></div><div><div>Marker</div><table><thead><tr><th>Type</th><th>Ref</th><th>Trc</th><th>X-value</th><th>Y-value</th><th>Function</th><th>Function Result</th></tr></thead><tbody><tr><td>M1</td><td>1</td><td></td><td>2.41268 GHz</td><td>-6.14 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4 GHz</td><td>-38.04 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.39 GHz</td><td>-46.18 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.31 GHz</td><td>-59.73 dBm</td><td></td><td></td></tr><tr><td>M5</td><td>1</td><td></td><td>2.398951 GHz</td><td>-34.82 dBm</td><td></td><td></td></tr></tbody></table></div></div> |       |               | Type       | Ref      | Trc             | X-value | Y-value | Function | Function Result | M1 | 1 |  | 2.41268 GHz | -6.14 dBm |  |  | M2 | 1 |  | 2.4 GHz    | -38.04 dBm |  |  | M3 | 1 |  | 2.39 GHz | -46.18 dBm |  |  | M4 | 1 |  | 2.31 GHz      | -59.73 dBm |  |  | M5 | 1 |  | 2.398951 GHz | -34.82 dBm |  |  |
| Type       | Ref                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Trc   | X-value       | Y-value    | Function | Function Result |         |         |          |                 |    |   |  |             |           |  |  |    |   |  |            |            |  |  |    |   |  |          |            |  |  |    |   |  |               |            |  |  |    |   |  |              |            |  |  |
| M1         | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       | 2.41268 GHz   | -6.14 dBm  |          |                 |         |         |          |                 |    |   |  |             |           |  |  |    |   |  |            |            |  |  |    |   |  |          |            |  |  |    |   |  |               |            |  |  |    |   |  |              |            |  |  |
| M2         | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       | 2.4 GHz       | -38.04 dBm |          |                 |         |         |          |                 |    |   |  |             |           |  |  |    |   |  |            |            |  |  |    |   |  |          |            |  |  |    |   |  |               |            |  |  |    |   |  |              |            |  |  |
| M3         | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       | 2.39 GHz      | -46.18 dBm |          |                 |         |         |          |                 |    |   |  |             |           |  |  |    |   |  |            |            |  |  |    |   |  |          |            |  |  |    |   |  |               |            |  |  |    |   |  |              |            |  |  |
| M4         | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       | 2.31 GHz      | -59.73 dBm |          |                 |         |         |          |                 |    |   |  |             |           |  |  |    |   |  |            |            |  |  |    |   |  |          |            |  |  |    |   |  |               |            |  |  |    |   |  |              |            |  |  |
| M5         | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       | 2.398951 GHz  | -34.82 dBm |          |                 |         |         |          |                 |    |   |  |             |           |  |  |    |   |  |            |            |  |  |    |   |  |          |            |  |  |    |   |  |               |            |  |  |    |   |  |              |            |  |  |
| CH11       | <div><div>Spectrum</div><div>Ref Level 20.00 dBm Offset 0.50 dB RBW 100 kHz<br/>Att 30 dB SWI 113.8 <math>\mu</math>s VBW 300 kHz Mode Auto FFT<br/>Count 300/300</div><div><div>1Pk Max</div><div><div><div>M1[1]</div><div>-4.66 dBm</div><div>2.4694700 GHz</div></div><div><div>M2[1]</div><div>-44.88 dBm</div><div>2.4835000 GHz</div></div></div><div><div>D1</div><div>-24.660 dBm</div></div></div><div><div>Start 2.452 GHz</div><div>691 pts</div><div>Stop 2.5 GHz</div></div><div><div>Marker</div><table><thead><tr><th>Type</th><th>Ref</th><th>Trc</th><th>X-value</th><th>Y-value</th><th>Function</th><th>Function Result</th></tr></thead><tbody><tr><td>M1</td><td>1</td><td></td><td>2.46947 GHz</td><td>-4.66 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4835 GHz</td><td>-44.88 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.5 GHz</td><td>-56.24 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.4847652 GHz</td><td>-43.77 dBm</td><td></td><td></td></tr></tbody></table></div></div>                                                                                          |       |               | Type       | Ref      | Trc             | X-value | Y-value | Function | Function Result | M1 | 1 |  | 2.46947 GHz | -4.66 dBm |  |  | M2 | 1 |  | 2.4835 GHz | -44.88 dBm |  |  | M3 | 1 |  | 2.5 GHz  | -56.24 dBm |  |  | M4 | 1 |  | 2.4847652 GHz | -43.77 dBm |  |  |    |   |  |              |            |  |  |
| Type       | Ref                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Trc   | X-value       | Y-value    | Function | Function Result |         |         |          |                 |    |   |  |             |           |  |  |    |   |  |            |            |  |  |    |   |  |          |            |  |  |    |   |  |               |            |  |  |    |   |  |              |            |  |  |
| M1         | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       | 2.46947 GHz   | -4.66 dBm  |          |                 |         |         |          |                 |    |   |  |             |           |  |  |    |   |  |            |            |  |  |    |   |  |          |            |  |  |    |   |  |               |            |  |  |    |   |  |              |            |  |  |
| M2         | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       | 2.4835 GHz    | -44.88 dBm |          |                 |         |         |          |                 |    |   |  |             |           |  |  |    |   |  |            |            |  |  |    |   |  |          |            |  |  |    |   |  |               |            |  |  |    |   |  |              |            |  |  |
| M3         | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       | 2.5 GHz       | -56.24 dBm |          |                 |         |         |          |                 |    |   |  |             |           |  |  |    |   |  |            |            |  |  |    |   |  |          |            |  |  |    |   |  |               |            |  |  |    |   |  |              |            |  |  |
| M4         | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       | 2.4847652 GHz | -43.77 dBm |          |                 |         |         |          |                 |    |   |  |             |           |  |  |    |   |  |            |            |  |  |    |   |  |          |            |  |  |    |   |  |               |            |  |  |    |   |  |              |            |  |  |

| Test Item: | Bandedge                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Type: | 802.11 n(HT20) |            |          |                 |         |         |          |                 |    |  |   |              |           |  |  |    |  |   |            |            |  |  |    |  |   |          |            |  |  |    |  |   |               |            |  |  |    |  |   |              |            |  |  |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----------------|------------|----------|-----------------|---------|---------|----------|-----------------|----|--|---|--------------|-----------|--|--|----|--|---|------------|------------|--|--|----|--|---|----------|------------|--|--|----|--|---|---------------|------------|--|--|----|--|---|--------------|------------|--|--|
| CH01       | <div><div>Spectrum</div><div><div>Ref Level 20.00 dBm</div><div>Att 30 dB</div><div>Offset 0.50 dB</div><div>RBW 100 kHz</div><div>SWT 246.5 <math>\mu</math>s</div><div>VBW 300 kHz</div><div>Mode Auto FFT</div><div>Count 300/300</div></div><div><div>1Pk Max</div><div><div>10 dBm</div><div>0 dBm</div><div>-10 dBm</div><div>-20 dBm</div><div>-30 dBm</div><div>-40 dBm</div><div>-50 dBm</div><div>-60 dBm</div><div>-70 dBm</div></div><div><div>M1[1]</div><div>M2[1]</div><div>M3</div><div>M4</div></div><div><div>-7.35 dBm</div><div>2.411380 GHz</div><div>-42.55 dBm</div><div>2.400000 GHz</div></div><div><div>D1 -27.350 dBm</div></div></div><div><div>Start 2.31 GHz</div><div>691 pts</div><div>Stop 2.422 GHz</div></div><div><div>Marker</div><table><tr><th>Type</th><th>Ref</th><th>Trc</th><th>X-value</th><th>Y-value</th><th>Function</th><th>Function Result</th></tr><tr><td>M1</td><td></td><td>1</td><td>2.41138 GHz</td><td>-7.35 dBm</td><td></td><td></td></tr><tr><td>M2</td><td></td><td>1</td><td>2.4 GHz</td><td>-42.55 dBm</td><td></td><td></td></tr><tr><td>M3</td><td></td><td>1</td><td>2.39 GHz</td><td>-51.10 dBm</td><td></td><td></td></tr><tr><td>M4</td><td></td><td>1</td><td>2.31 GHz</td><td>-58.90 dBm</td><td></td><td></td></tr><tr><td>M5</td><td></td><td>1</td><td>2.399762 GHz</td><td>-42.07 dBm</td><td></td><td></td></tr></table></div></div> |       |                | Type       | Ref      | Trc             | X-value | Y-value | Function | Function Result | M1 |  | 1 | 2.41138 GHz  | -7.35 dBm |  |  | M2 |  | 1 | 2.4 GHz    | -42.55 dBm |  |  | M3 |  | 1 | 2.39 GHz | -51.10 dBm |  |  | M4 |  | 1 | 2.31 GHz      | -58.90 dBm |  |  | M5 |  | 1 | 2.399762 GHz | -42.07 dBm |  |  |
| Type       | Ref                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Trc   | X-value        | Y-value    | Function | Function Result |         |         |          |                 |    |  |   |              |           |  |  |    |  |   |            |            |  |  |    |  |   |          |            |  |  |    |  |   |               |            |  |  |    |  |   |              |            |  |  |
| M1         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1     | 2.41138 GHz    | -7.35 dBm  |          |                 |         |         |          |                 |    |  |   |              |           |  |  |    |  |   |            |            |  |  |    |  |   |          |            |  |  |    |  |   |               |            |  |  |    |  |   |              |            |  |  |
| M2         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1     | 2.4 GHz        | -42.55 dBm |          |                 |         |         |          |                 |    |  |   |              |           |  |  |    |  |   |            |            |  |  |    |  |   |          |            |  |  |    |  |   |               |            |  |  |    |  |   |              |            |  |  |
| M3         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1     | 2.39 GHz       | -51.10 dBm |          |                 |         |         |          |                 |    |  |   |              |           |  |  |    |  |   |            |            |  |  |    |  |   |          |            |  |  |    |  |   |               |            |  |  |    |  |   |              |            |  |  |
| M4         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1     | 2.31 GHz       | -58.90 dBm |          |                 |         |         |          |                 |    |  |   |              |           |  |  |    |  |   |            |            |  |  |    |  |   |          |            |  |  |    |  |   |               |            |  |  |    |  |   |              |            |  |  |
| M5         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1     | 2.399762 GHz   | -42.07 dBm |          |                 |         |         |          |                 |    |  |   |              |           |  |  |    |  |   |            |            |  |  |    |  |   |          |            |  |  |    |  |   |               |            |  |  |    |  |   |              |            |  |  |
| CH11       | <div><div>Spectrum</div><div><div>Ref Level 20.00 dBm</div><div>Att 30 dB</div><div>Offset 0.50 dB</div><div>RBW 100 kHz</div><div>SWT 113.8 <math>\mu</math>s</div><div>VBW 300 kHz</div><div>Mode Auto FFT</div><div>Count 300/300</div></div><div><div>1Pk Max</div><div><div>10 dBm</div><div>0 dBm</div><div>-10 dBm</div><div>-20 dBm</div><div>-30 dBm</div><div>-40 dBm</div><div>-50 dBm</div><div>-60 dBm</div><div>-70 dBm</div></div><div><div>M1[1]</div><div>M2[1]</div></div><div><div>-3.50 dBm</div><div>2.4569670 GHz</div><div>-50.00 dBm</div><div>2.4835000 GHz</div></div><div><div>D1 -23.500 dBm</div></div></div><div><div>Start 2.452 GHz</div><div>691 pts</div><div>Stop 2.5 GHz</div></div><div><div>Marker</div><table><tr><th>Type</th><th>Ref</th><th>Trc</th><th>X-value</th><th>Y-value</th><th>Function</th><th>Function Result</th></tr><tr><td>M1</td><td></td><td>1</td><td>2.456967 GHz</td><td>-3.50 dBm</td><td></td><td></td></tr><tr><td>M2</td><td></td><td>1</td><td>2.4835 GHz</td><td>-50.00 dBm</td><td></td><td></td></tr><tr><td>M3</td><td></td><td>1</td><td>2.5 GHz</td><td>-57.86 dBm</td><td></td><td></td></tr><tr><td>M4</td><td></td><td>1</td><td>2.4836522 GHz</td><td>-48.85 dBm</td><td></td><td></td></tr></table></div></div>                                                                                                                   |       |                | Type       | Ref      | Trc             | X-value | Y-value | Function | Function Result | M1 |  | 1 | 2.456967 GHz | -3.50 dBm |  |  | M2 |  | 1 | 2.4835 GHz | -50.00 dBm |  |  | M3 |  | 1 | 2.5 GHz  | -57.86 dBm |  |  | M4 |  | 1 | 2.4836522 GHz | -48.85 dBm |  |  |    |  |   |              |            |  |  |
| Type       | Ref                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Trc   | X-value        | Y-value    | Function | Function Result |         |         |          |                 |    |  |   |              |           |  |  |    |  |   |            |            |  |  |    |  |   |          |            |  |  |    |  |   |               |            |  |  |    |  |   |              |            |  |  |
| M1         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1     | 2.456967 GHz   | -3.50 dBm  |          |                 |         |         |          |                 |    |  |   |              |           |  |  |    |  |   |            |            |  |  |    |  |   |          |            |  |  |    |  |   |               |            |  |  |    |  |   |              |            |  |  |
| M2         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1     | 2.4835 GHz     | -50.00 dBm |          |                 |         |         |          |                 |    |  |   |              |           |  |  |    |  |   |            |            |  |  |    |  |   |          |            |  |  |    |  |   |               |            |  |  |    |  |   |              |            |  |  |
| M3         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1     | 2.5 GHz        | -57.86 dBm |          |                 |         |         |          |                 |    |  |   |              |           |  |  |    |  |   |            |            |  |  |    |  |   |          |            |  |  |    |  |   |               |            |  |  |    |  |   |              |            |  |  |
| M4         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1     | 2.4836522 GHz  | -48.85 dBm |          |                 |         |         |          |                 |    |  |   |              |           |  |  |    |  |   |            |            |  |  |    |  |   |          |            |  |  |    |  |   |               |            |  |  |    |  |   |              |            |  |  |

| Test Item: | Bandedge                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Type: | 802.11 n(HT40) |            |          |                 |         |         |          |                 |    |  |   |              |           |  |  |    |  |   |            |            |  |  |    |  |   |          |            |  |  |    |  |   |               |            |  |  |    |  |   |             |            |  |  |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----------------|------------|----------|-----------------|---------|---------|----------|-----------------|----|--|---|--------------|-----------|--|--|----|--|---|------------|------------|--|--|----|--|---|----------|------------|--|--|----|--|---|---------------|------------|--|--|----|--|---|-------------|------------|--|--|
| CH03       | <div><div>Spectrum</div><div><div>Ref Level 20.00 dBm</div><div>Offset 0.50 dB</div><div>RBW 100 kHz</div><div>Att 30 dB</div><div>SWT 303.4 <math>\mu</math>s</div><div>VBW 300 kHz</div><div>Mode Auto FFT</div><div>Count 263/300</div></div><div><div>1Pk Max</div><div><div><div>10 dBm</div><div>0 dBm</div><div>-10 dBm</div><div>-20 dBm</div><div>-30 dBm</div><div>-40 dBm</div><div>-50 dBm</div><div>-60 dBm</div><div>-70 dBm</div></div><div><div>M1[1]</div><div>M2[1]</div><div>M3</div><div>M4</div><div>M5</div></div><div><div>-6.94 dBm</div><div>2.427000 GHz</div><div>-45.29 dBm</div><div>2.400000 GHz</div><div>-26.940 dBm</div></div></div><div><div>Start 2.31 GHz</div><div>691 pts</div><div>Stop 2.442 GHz</div></div><div><div>Marker</div><table><tr><th>Type</th><th>Ref</th><th>Trc</th><th>X-value</th><th>Y-value</th><th>Function</th><th>Function Result</th></tr><tr><td>M1</td><td></td><td>1</td><td>2.427 GHz</td><td>-6.94 dBm</td><td></td><td></td></tr><tr><td>M2</td><td></td><td>1</td><td>2.4 GHz</td><td>-45.29 dBm</td><td></td><td></td></tr><tr><td>M3</td><td></td><td>1</td><td>2.39 GHz</td><td>-49.65 dBm</td><td></td><td></td></tr><tr><td>M4</td><td></td><td>1</td><td>2.31 GHz</td><td>-58.16 dBm</td><td></td><td></td></tr><tr><td>M5</td><td></td><td>1</td><td>2.39073 GHz</td><td>-42.94 dBm</td><td></td><td></td></tr></table></div></div></div> <div>Date: 13 SEP 2023 16:46:47</div> |       |                | Type       | Ref      | Trc             | X-value | Y-value | Function | Function Result | M1 |  | 1 | 2.427 GHz    | -6.94 dBm |  |  | M2 |  | 1 | 2.4 GHz    | -45.29 dBm |  |  | M3 |  | 1 | 2.39 GHz | -49.65 dBm |  |  | M4 |  | 1 | 2.31 GHz      | -58.16 dBm |  |  | M5 |  | 1 | 2.39073 GHz | -42.94 dBm |  |  |
| Type       | Ref                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Trc   | X-value        | Y-value    | Function | Function Result |         |         |          |                 |    |  |   |              |           |  |  |    |  |   |            |            |  |  |    |  |   |          |            |  |  |    |  |   |               |            |  |  |    |  |   |             |            |  |  |
| M1         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1     | 2.427 GHz      | -6.94 dBm  |          |                 |         |         |          |                 |    |  |   |              |           |  |  |    |  |   |            |            |  |  |    |  |   |          |            |  |  |    |  |   |               |            |  |  |    |  |   |             |            |  |  |
| M2         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1     | 2.4 GHz        | -45.29 dBm |          |                 |         |         |          |                 |    |  |   |              |           |  |  |    |  |   |            |            |  |  |    |  |   |          |            |  |  |    |  |   |               |            |  |  |    |  |   |             |            |  |  |
| M3         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1     | 2.39 GHz       | -49.65 dBm |          |                 |         |         |          |                 |    |  |   |              |           |  |  |    |  |   |            |            |  |  |    |  |   |          |            |  |  |    |  |   |               |            |  |  |    |  |   |             |            |  |  |
| M4         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1     | 2.31 GHz       | -58.16 dBm |          |                 |         |         |          |                 |    |  |   |              |           |  |  |    |  |   |            |            |  |  |    |  |   |          |            |  |  |    |  |   |               |            |  |  |    |  |   |             |            |  |  |
| M5         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1     | 2.39073 GHz    | -42.94 dBm |          |                 |         |         |          |                 |    |  |   |              |           |  |  |    |  |   |            |            |  |  |    |  |   |          |            |  |  |    |  |   |               |            |  |  |    |  |   |             |            |  |  |
| CH09       | <div><div>Spectrum</div><div><div>Ref Level 20.00 dBm</div><div>Offset 0.50 dB</div><div>RBW 100 kHz</div><div>Att 30 dB</div><div>SWT 1.1 ms</div><div>VBW 300 kHz</div><div>Mode Auto Sweep</div><div>Count 300/300</div></div><div><div>1Pk Max</div><div><div><div>10 dBm</div><div>0 dBm</div><div>-10 dBm</div><div>-20 dBm</div><div>-30 dBm</div><div>-40 dBm</div><div>-50 dBm</div><div>-60 dBm</div><div>-70 dBm</div></div><div><div>M1[1]</div><div>M2[1]</div><div>M3</div><div>M4</div></div><div><div>-5.97 dBm</div><div>2.4557660 GHz</div><div>-48.07 dBm</div><div>2.4835000 GHz</div><div>-25.970 dBm</div></div></div><div><div>Start 2.432 GHz</div><div>691 pts</div><div>Stop 2.5 GHz</div></div><div><div>Marker</div><table><tr><th>Type</th><th>Ref</th><th>Trc</th><th>X-value</th><th>Y-value</th><th>Function</th><th>Function Result</th></tr><tr><td>M1</td><td></td><td>1</td><td>2.455766 GHz</td><td>-5.97 dBm</td><td></td><td></td></tr><tr><td>M2</td><td></td><td>1</td><td>2.4835 GHz</td><td>-48.07 dBm</td><td></td><td></td></tr><tr><td>M3</td><td></td><td>1</td><td>2.5 GHz</td><td>-50.75 dBm</td><td></td><td></td></tr><tr><td>M4</td><td></td><td>1</td><td>2.4845275 GHz</td><td>-44.93 dBm</td><td></td><td></td></tr></table></div></div></div> <div>Date: 13 SEP 2023 16:45:01</div>                                                                                                                  |       |                | Type       | Ref      | Trc             | X-value | Y-value | Function | Function Result | M1 |  | 1 | 2.455766 GHz | -5.97 dBm |  |  | M2 |  | 1 | 2.4835 GHz | -48.07 dBm |  |  | M3 |  | 1 | 2.5 GHz  | -50.75 dBm |  |  | M4 |  | 1 | 2.4845275 GHz | -44.93 dBm |  |  |    |  |   |             |            |  |  |
| Type       | Ref                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Trc   | X-value        | Y-value    | Function | Function Result |         |         |          |                 |    |  |   |              |           |  |  |    |  |   |            |            |  |  |    |  |   |          |            |  |  |    |  |   |               |            |  |  |    |  |   |             |            |  |  |
| M1         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1     | 2.455766 GHz   | -5.97 dBm  |          |                 |         |         |          |                 |    |  |   |              |           |  |  |    |  |   |            |            |  |  |    |  |   |          |            |  |  |    |  |   |               |            |  |  |    |  |   |             |            |  |  |
| M2         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1     | 2.4835 GHz     | -48.07 dBm |          |                 |         |         |          |                 |    |  |   |              |           |  |  |    |  |   |            |            |  |  |    |  |   |          |            |  |  |    |  |   |               |            |  |  |    |  |   |             |            |  |  |
| M3         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1     | 2.5 GHz        | -50.75 dBm |          |                 |         |         |          |                 |    |  |   |              |           |  |  |    |  |   |            |            |  |  |    |  |   |          |            |  |  |    |  |   |               |            |  |  |    |  |   |             |            |  |  |
| M4         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1     | 2.4845275 GHz  | -44.93 dBm |          |                 |         |         |          |                 |    |  |   |              |           |  |  |    |  |   |            |            |  |  |    |  |   |          |            |  |  |    |  |   |               |            |  |  |    |  |   |             |            |  |  |

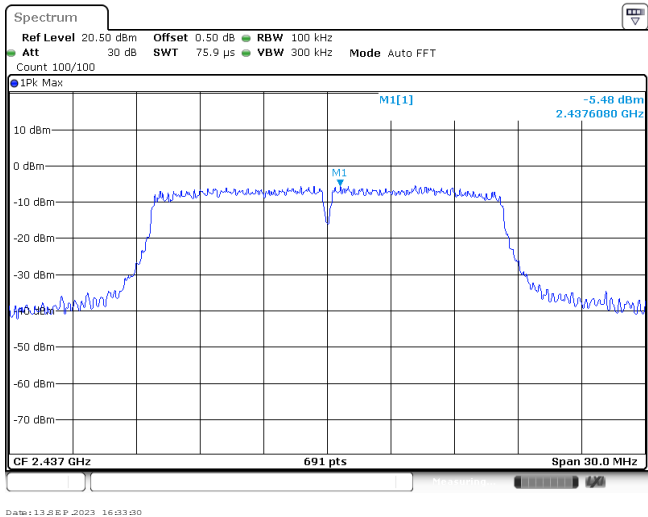
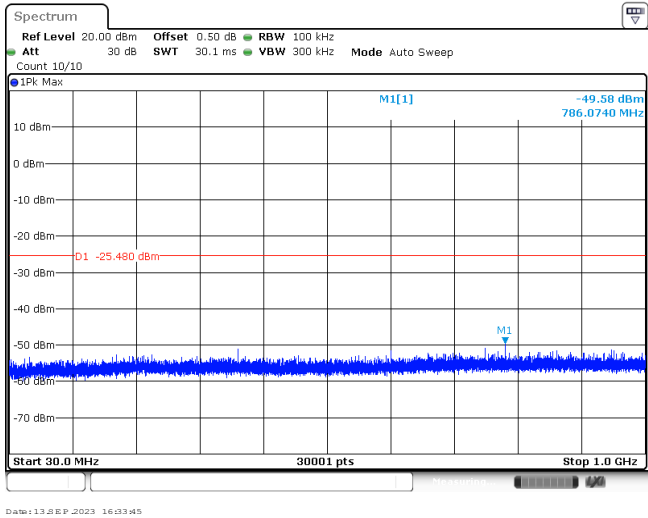
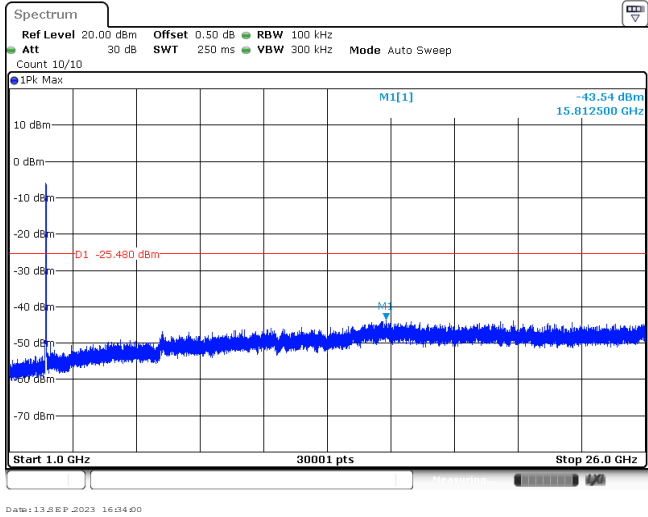
| Test Item:              | SE                                                                                   | Type: | 802.11b |
|-------------------------|--------------------------------------------------------------------------------------|-------|---------|
| CH01<br>Reference level |    |       |         |
| CH01<br>30MHz~1000MHz   |   |       |         |
| CH01<br>1GHz~26GHz      |  |       |         |

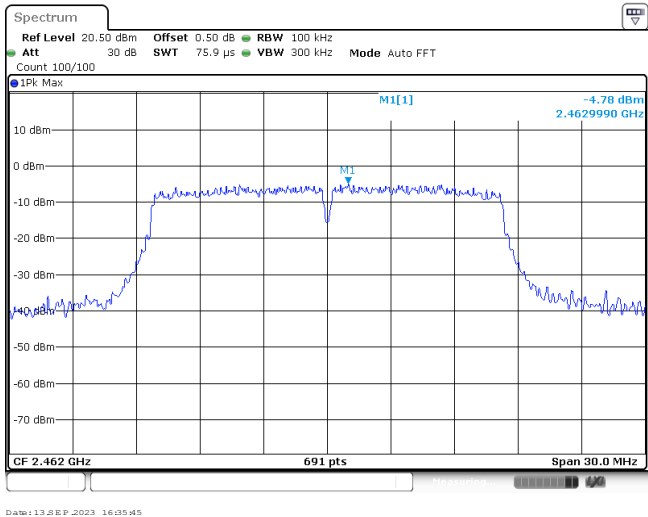
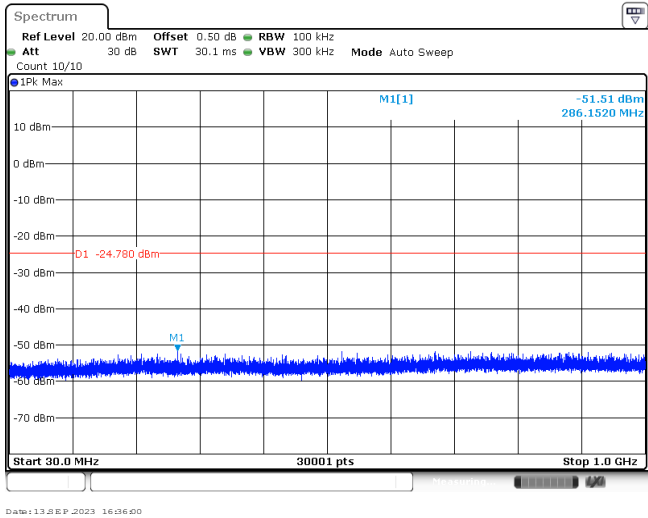
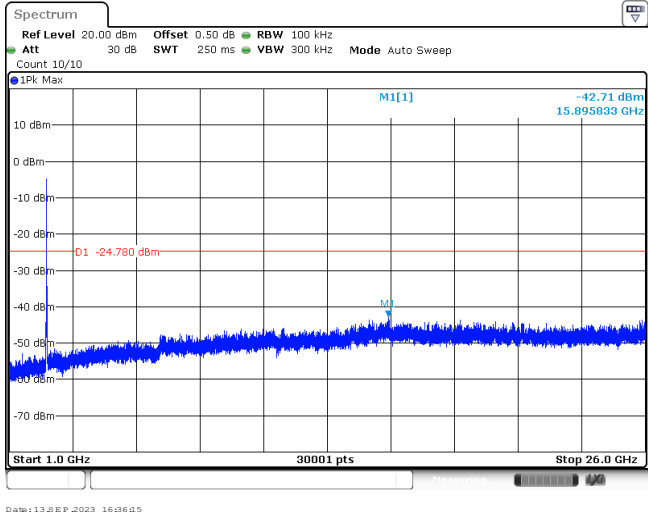
|                         |                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CH06<br>Reference level |  <p>Spectrum</p> <p>Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz<br/>Att 30 dB SWT 75.9 <math>\mu</math>s VBW 300 kHz Mode Auto FFT<br/>Count 100/100</p> <p>1Pk Max</p> <p>M1[1] 0.49 dBm 2.4379990 GHz</p> <p>CF 2.437 GHz 691 pts Span 30.0 MHz</p> <p>Date: 13 SEP 2023 16:27:08</p>              |
| CH06<br>30MHz~1000MHz   |  <p>Spectrum</p> <p>Ref Level 20.00 dBm Offset 0.50 dB RBW 100 kHz<br/>Att 30 dB SWT 30.1 ms VBW 300 kHz Mode Auto Sweep<br/>Count 10/10</p> <p>1Pk Max</p> <p>M1[1] -51.51 dBm 668.0290 MHz</p> <p>D1 -19.510 dBm</p> <p>Start 30.0 MHz 30001 pts Stop 1.0 GHz</p> <p>Date: 13 SEP 2023 16:27:02</p>  |
| CH06<br>1GHz~26GHz      |  <p>Spectrum</p> <p>Ref Level 20.00 dBm Offset 0.50 dB RBW 100 kHz<br/>Att 30 dB SWT 250 ms VBW 300 kHz Mode Auto Sweep<br/>Count 10/10</p> <p>1Pk Max</p> <p>M1[1] -43.27 dBm 15.854167 GHz</p> <p>D1 -19.510 dBm</p> <p>Start 1.0 GHz 30001 pts Stop 26.0 GHz</p> <p>Date: 13 SEP 2023 16:28:08</p> |

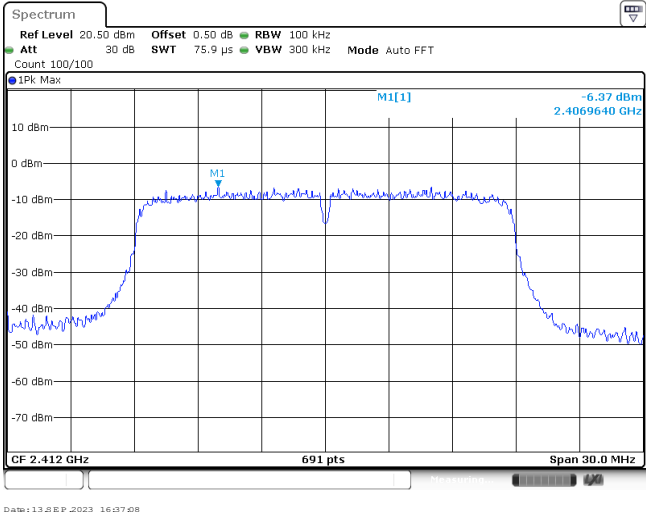
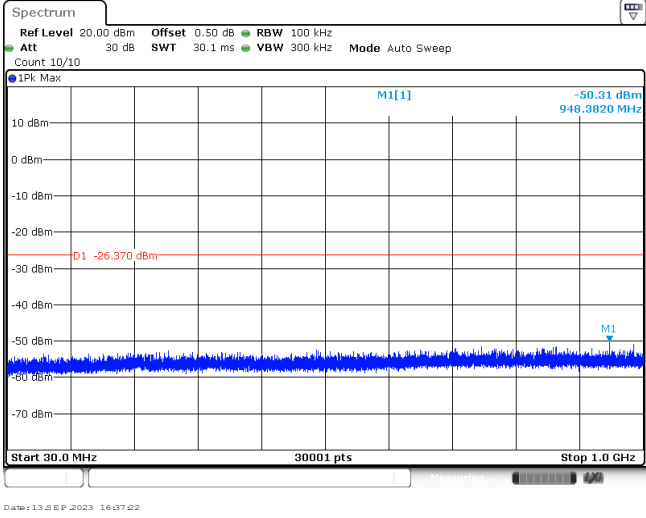
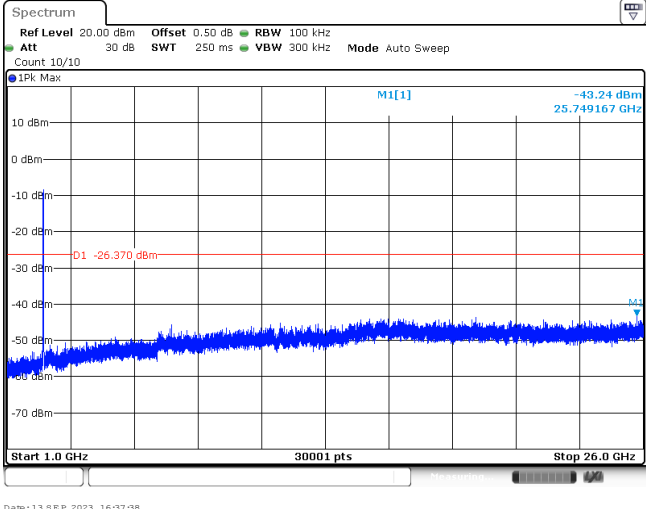
|                                 |                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>CH11<br/>Reference level</p> |  <p>Spectrum<br/>Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz<br/>Att 30 dB SWT 75.9 <math>\mu</math>s VBW 300 kHz Mode Auto FFT<br/>Count 100/100<br/>1Pk Max<br/>M1[1] 0.09 dBm 2.4606980 GHz<br/>M1<br/>CF 2.462 GHz 691 pts Span 30.0 MHz<br/>Date: 13 SEP 2023 16:29:11</p>           |
| <p>CH11<br/>30MHz~1000MHz</p>   |  <p>Spectrum<br/>Ref Level 20.00 dBm Offset 0.50 dB RBW 100 kHz<br/>Att 30 dB SWT 30.1 ms VBW 300 kHz Mode Auto Sweep<br/>Count 10/10<br/>1Pk Max<br/>M1[1] -51.06 dBm 948.4140 MHz<br/>M1<br/>D1 -19.910 dBm<br/>Start 30.0 MHz 30001 pts Stop 1.0 GHz<br/>Date: 13 SEP 2023 16:29:26</p>  |
| <p>CH11<br/>1GHz~26GHz</p>      |  <p>Spectrum<br/>Ref Level 20.00 dBm Offset 0.50 dB RBW 100 kHz<br/>Att 30 dB SWT 250 ms VBW 300 kHz Mode Auto Sweep<br/>Count 10/10<br/>1Pk Max<br/>M1[1] -43.06 dBm 15.155833 GHz<br/>M1<br/>D1 -19.910 dBm<br/>Start 1.0 GHz 30001 pts Stop 26.0 GHz<br/>Date: 13 SEP 2023 16:29:41</p> |

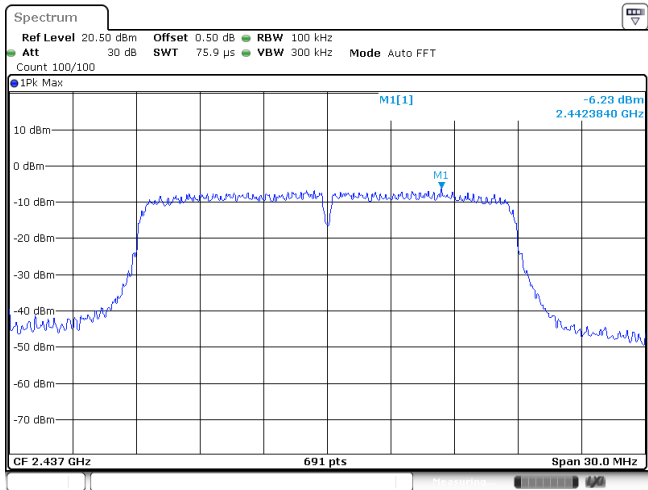
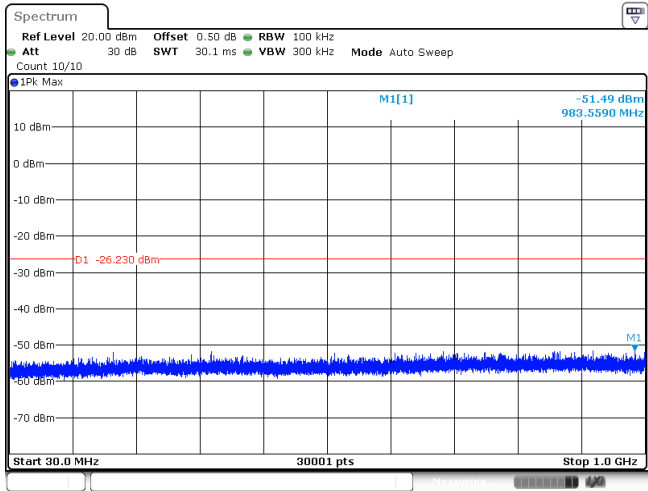
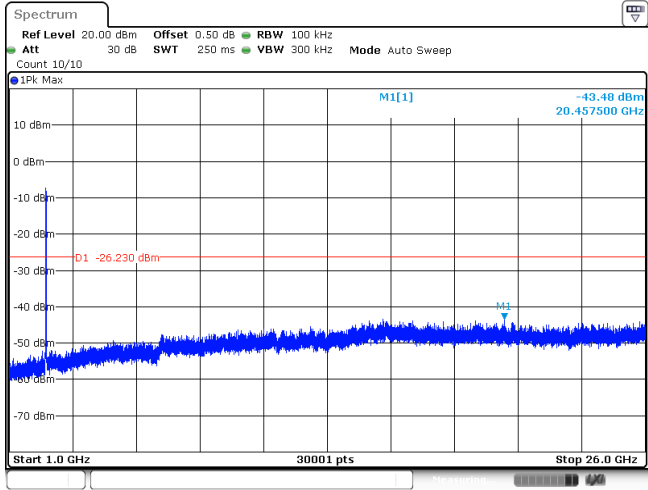
| Test Item:              | SE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Type: | 802.11g |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|---------|
| CH01<br>Reference level | <div><div>Spectrum</div><div><div>Ref Level 20.50 dBm</div><div>Att 30 dB</div><div>Count 100/100</div></div><div><div>Offset 0.50 dB</div><div>SWT 75.9 <math>\mu</math>s</div><div>RBW 100 kHz</div><div>VBW 300 kHz</div><div>Mode Auto FFT</div></div></div> <div><div>1Pk Max</div><div><div>M1[1]</div><div>-9.37 dBm</div><div>2.4132590 GHz</div></div><div></div><div><div>CF 2.412 GHz</div><div>691 pts</div><div>Span 30.0 MHz</div></div><div><div>Date: 13 SEP 2023 16:31:54</div></div></div>                         |       |         |
| CH01<br>30MHz~1000MHz   | <div><div>Spectrum</div><div><div>Ref Level 20.00 dBm</div><div>Att 30 dB</div><div>Count 10/10</div></div><div><div>Offset 0.50 dB</div><div>SWT 30.1 ms</div><div>RBW 100 kHz</div><div>VBW 300 kHz</div><div>Mode Auto Sweep</div></div></div> <div><div>1Pk Max</div><div><div>M1[1]</div><div>-51.47 dBm</div><div>661.4970 MHz</div></div><div><div>D1 -23.370 dBm</div></div><div></div><div><div>Start 30.0 MHz</div><div>30001 pts</div><div>Stop 1.0 GHz</div></div><div><div>Date: 13 SEP 2023 16:32:09</div></div></div> |       |         |
| CH01<br>1GHz~26GHz      | <div><div>Spectrum</div><div><div>Ref Level 20.00 dBm</div><div>Att 30 dB</div><div>Count 10/10</div></div><div><div>Offset 0.50 dB</div><div>SWT 250 ms</div><div>RBW 100 kHz</div><div>VBW 300 kHz</div><div>Mode Auto Sweep</div></div></div> <div><div>1Pk Max</div><div><div>M1[1]</div><div>-43.68 dBm</div><div>20.103333 GHz</div></div><div><div>D1 -23.370 dBm</div></div><div></div><div><div>Start 1.0 GHz</div><div>30001 pts</div><div>Stop 26.0 GHz</div></div><div><div>Date: 13 SEP 2023 16:32:05</div></div></div> |       |         |

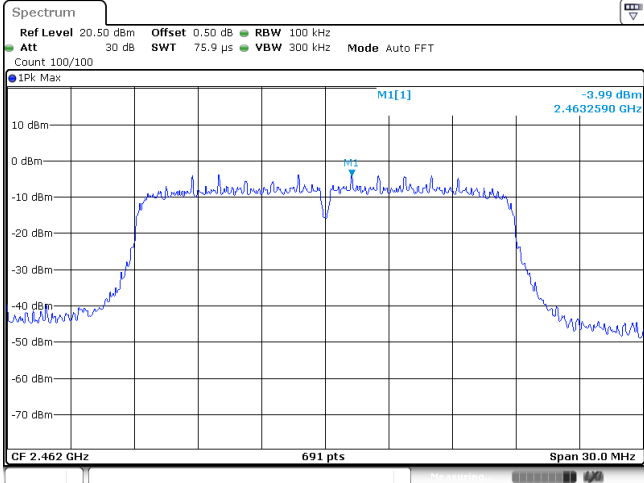
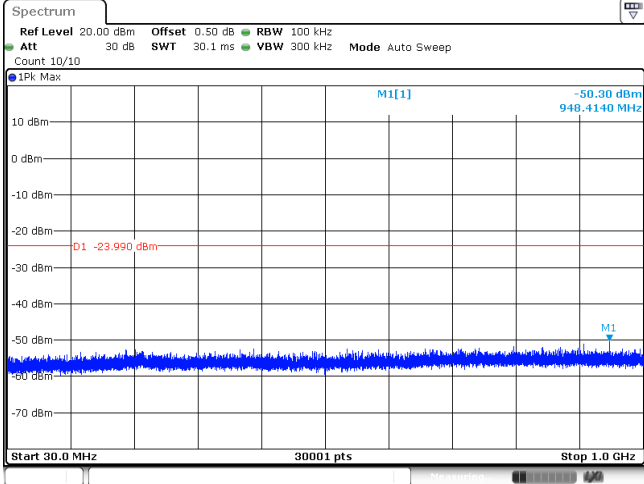
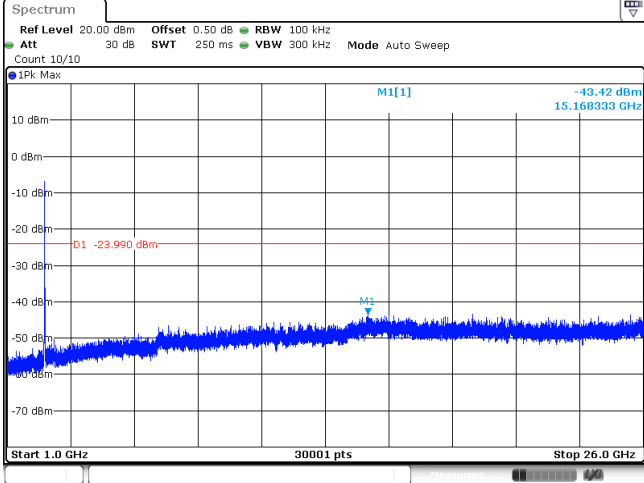


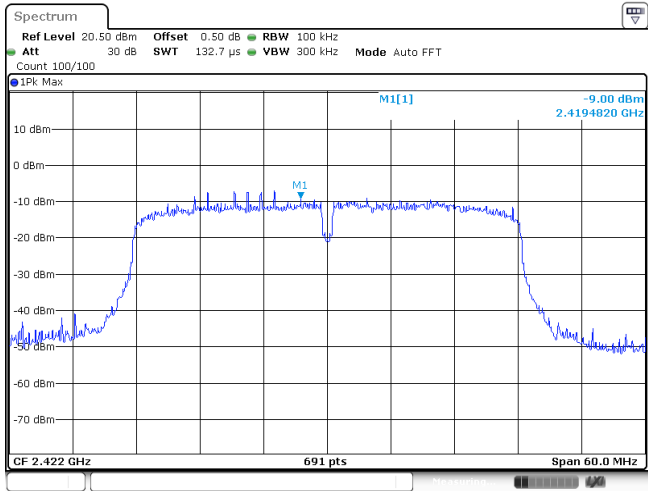
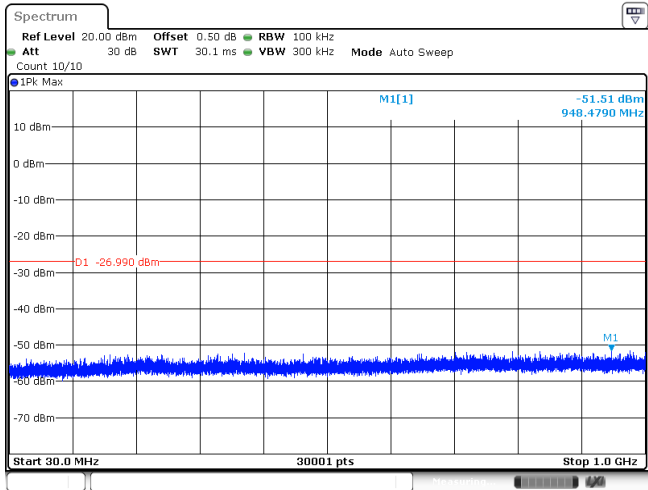
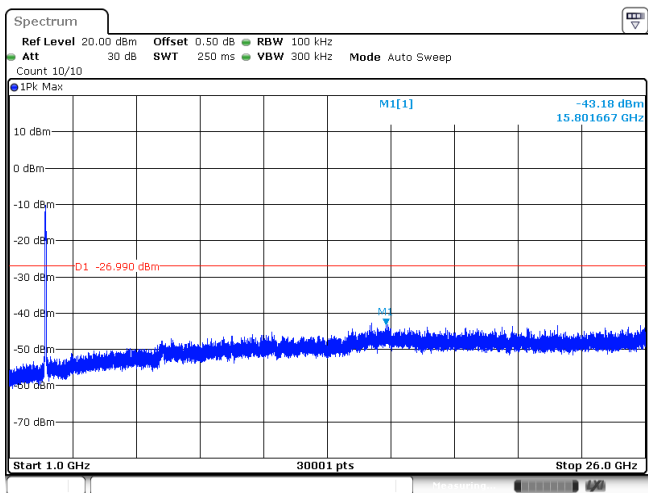
|                         |                                                                                      |
|-------------------------|--------------------------------------------------------------------------------------|
| CH06<br>Reference level |    |
| CH06<br>30MHz~1000MHz   |   |
| CH06<br>1GHz~26GHz      |  |

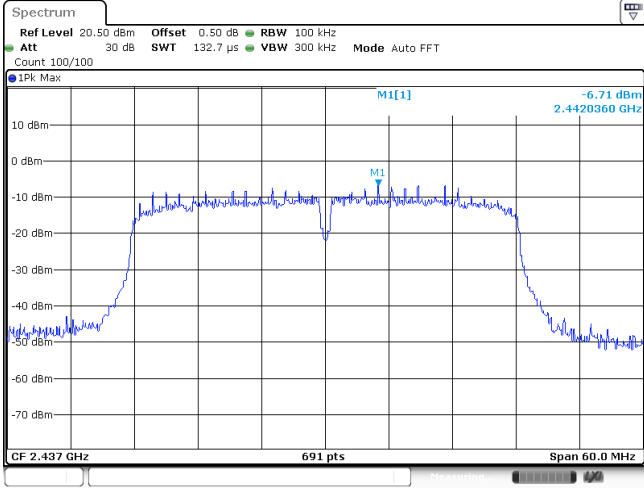
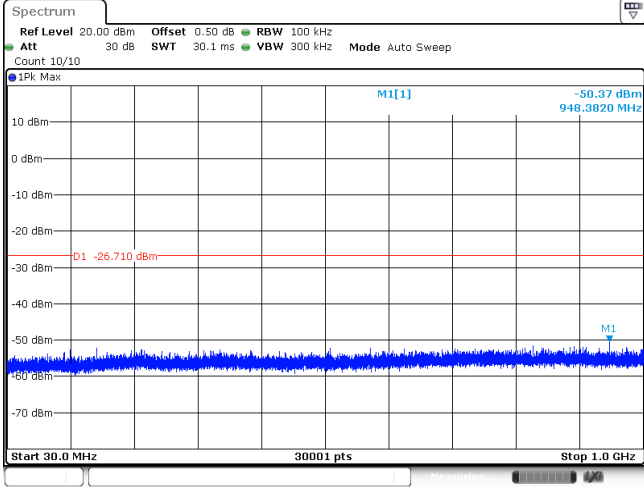
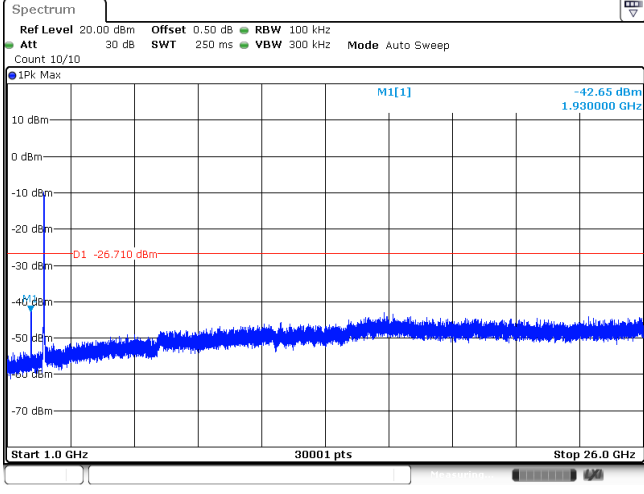
|                         |                                                                                      |
|-------------------------|--------------------------------------------------------------------------------------|
| CH11<br>Reference level |    |
| CH11<br>30MHz~1000MHz   |   |
| CH11<br>1GHz~26GHz      |  |

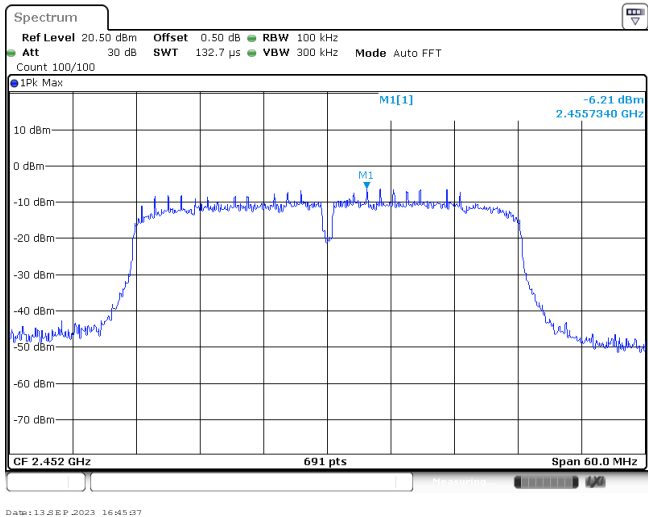
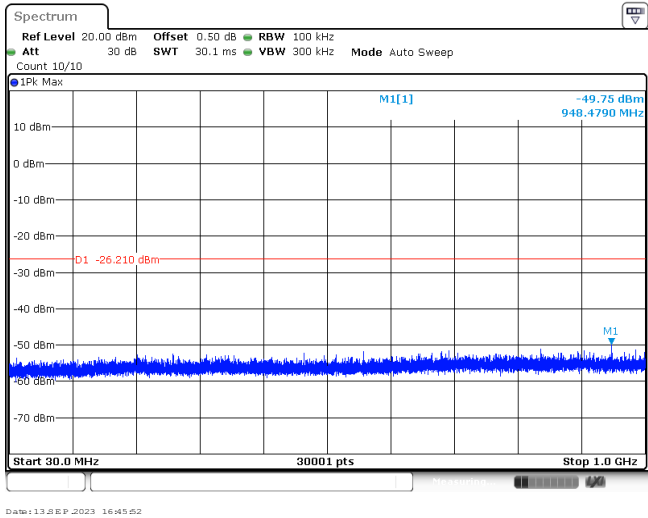
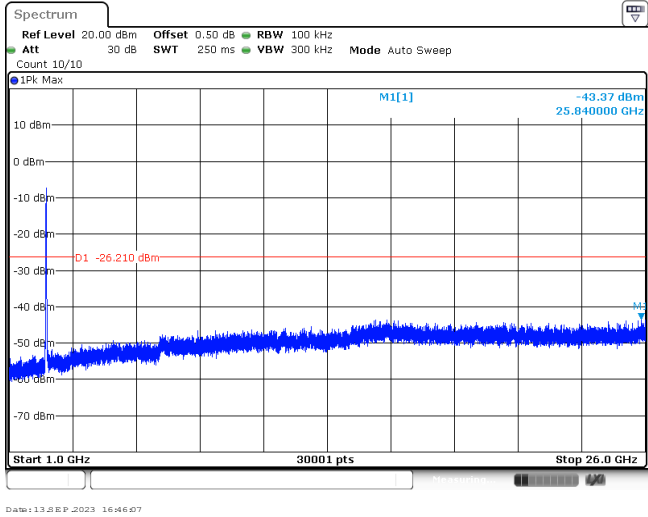
| Test Item:              | SE                                                                                   | Type: | 802.11n(HT20) |
|-------------------------|--------------------------------------------------------------------------------------|-------|---------------|
| CH01<br>Reference level |    |       |               |
| CH01<br>30MHz~1000MHz   |   |       |               |
| CH01<br>1GHz~26GHz      |  |       |               |

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CH06<br>Reference level |  <p>Spectrum plot showing a reference signal at 2.437 GHz. The peak level is -6.23 dBm. The plot shows a signal spanning 30.0 MHz with 691 points. The y-axis ranges from -70 dBm to 10 dBm. The x-axis shows the frequency range from 2.437 GHz to 2.467 GHz. The plot includes a peak marker M1[1] at -6.23 dBm and a noise floor marker M1 at -26.230 dBm. The plot also shows a reference level of 20.50 dBm and a noise floor of -40 dBm.</p> |
| CH06<br>30MHz~1000MHz   |  <p>Spectrum plot showing a signal at 983.5590 MHz. The peak level is -51.49 dBm. The plot shows a signal spanning 1.0 GHz with 30001 points. The y-axis ranges from -70 dBm to 10 dBm. The x-axis shows the frequency range from 30.0 MHz to 1000 MHz. The plot includes a peak marker M1[1] at -51.49 dBm and a noise floor marker M1 at -26.230 dBm. The plot also shows a reference level of 20.00 dBm and a noise floor of -40 dBm.</p>      |
| CH06<br>1GHz~26GHz      |  <p>Spectrum plot showing a signal at 20.457500 GHz. The peak level is -43.48 dBm. The plot shows a signal spanning 26.0 GHz with 30001 points. The y-axis ranges from -70 dBm to 10 dBm. The x-axis shows the frequency range from 1.0 GHz to 26.0 GHz. The plot includes a peak marker M1[1] at -43.48 dBm and a noise floor marker M1 at -26.230 dBm. The plot also shows a reference level of 20.00 dBm and a noise floor of -40 dBm.</p>    |

|                                 |                                                                                      |
|---------------------------------|--------------------------------------------------------------------------------------|
| <p>CH11<br/>Reference level</p> |    |
| <p>CH11<br/>30MHz~1000MHz</p>   |   |
| <p>CH11<br/>1GHz~26GHz</p>      |  |

| Test Item:              | SE                                                                                                                                                                                                                                                                                                                                                                                                      | Type: | 802.11n(HT40) |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|---------------|
| CH03<br>Reference level |  <p>Spectrum</p> <p>Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz<br/>Att 30 dB SWT 132.7 μs VBW 300 kHz Mode Auto FFT<br/>Count 100/100</p> <p>1Pk Max</p> <p>M1[1] -9.00 dBm<br/>2.4194820 GHz</p> <p>M1</p> <p>CF 2.422 GHz 691 pts Span 60.0 MHz</p> <p>Date: 13 SEP 2023 16:42:53</p>                           |       |               |
| CH03<br>30MHz~1000MHz   |  <p>Spectrum</p> <p>Ref Level 20.00 dBm Offset 0.50 dB RBW 100 kHz<br/>Att 30 dB SWT 30.1 ms VBW 300 kHz Mode Auto Sweep<br/>Count 10/10</p> <p>1Pk Max</p> <p>M1[1] -51.51 dBm<br/>948.4790 MHz</p> <p>D1 -26.990 dBm</p> <p>M1</p> <p>Start 30.0 MHz 30001 pts Stop 1.0 GHz</p> <p>Date: 13 SEP 2023 16:43:08</p>  |       |               |
| CH03<br>1GHz~26GHz      |  <p>Spectrum</p> <p>Ref Level 20.00 dBm Offset 0.50 dB RBW 100 kHz<br/>Att 30 dB SWT 250 ms VBW 300 kHz Mode Auto Sweep<br/>Count 10/10</p> <p>1Pk Max</p> <p>M1[1] -43.18 dBm<br/>15.801667 GHz</p> <p>D1 -26.990 dBm</p> <p>M1</p> <p>Start 1.0 GHz 30001 pts Stop 26.0 GHz</p> <p>Date: 13 SEP 2023 16:43:03</p> |       |               |

|                         |                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CH06<br>Reference level |  <p>Spectrum</p> <p>Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz<br/>Att 30 dB SWT 132.7 <math>\mu</math>s VBW 300 kHz Mode Auto FFT<br/>Count 100/100</p> <p>1Pk Max</p> <p>M1[1] -6.71 dBm<br/>2.420360 GHz</p> <p>CF 2.437 GHz 691 pts Span 60.0 MHz</p> <p>Date: 13 SEP 2023 16:44:16</p>            |
| CH06<br>30MHz~1000MHz   |  <p>Spectrum</p> <p>Ref Level 20.00 dBm Offset 0.50 dB RBW 100 kHz<br/>Att 30 dB SWT 30.1 ms VBW 300 kHz Mode Auto Sweep<br/>Count 10/10</p> <p>1Pk Max</p> <p>M1[1] -50.37 dBm<br/>948.3820 MHz</p> <p>D1 -26.710 dBm</p> <p>Start 30.0 MHz 30001 pts Stop 1.0 GHz</p> <p>Date: 13 SEP 2023 16:44:31</p> |
| CH06<br>1GHz~26GHz      |  <p>Spectrum</p> <p>Ref Level 20.00 dBm Offset 0.50 dB RBW 100 kHz<br/>Att 30 dB SWT 250 ms VBW 300 kHz Mode Auto Sweep<br/>Count 10/10</p> <p>1Pk Max</p> <p>M1[1] -42.65 dBm<br/>1.930000 GHz</p> <p>D1 -26.710 dBm</p> <p>Start 1.0 GHz 30001 pts Stop 26.0 GHz</p> <p>Date: 13 SEP 2023 16:44:47</p> |

|                         |                                                                                      |
|-------------------------|--------------------------------------------------------------------------------------|
| CH09<br>Reference level |    |
| CH09<br>30MHz~1000MHz   |   |
| CH09<br>1GHz~26GHz      |  |

-----End of Report-----