



## MEASUREMENT REPORT

### FCC PART 15C

### (WLAN 802.11b/g/n/ax)

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**FCC ID** : 2ALJ3AP35X

**APPLICANT** : HAN Networks Co., Ltd.

**Product** : HAN Access Point

**Model No.** : AP351

**Brand Name** : HANNETWORKS, HAN NETWORKS

**FCC Classification** : Digital Transmission System (DTS)

**FCC Rule Part(s)** : Part 15 Subpart C (Section 15.247)

**Test Procedure(s)** : ANSI C63.10-2013

**Result** : Complies

**Received Date** : March 17,2021

**Test Date** : April 12~ June 12,2021

**Tested By** : Fran Chen

( Fran Chen )

**Reviewed By** : Paddy Chen

( Paddy Chen )

**Approved By** : Chenz Ker

( Chenz Ker )



The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.10-2013. Test results reported herein relate only to the item(s) tested.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Taiwan) Co., Ltd.

## Revision History

| Report No.    | Version | Description     | Issue Date | Note  |
|---------------|---------|-----------------|------------|-------|
| 2107TW0105-U1 | 1.0     | Original Report | 2021-08-01 | Valid |
|               |         |                 |            |       |

Note: This is a copy report based on MRT original report (report No.: 2105TW0102-U1). It only changed the information of the applicant and the product. The hardware and software of the product are the same.

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### 1.1. Applicant

101-A16, 1st Floor, Building 3, No.9 compound, Yongfeng Road, Haidian District, Beijing, P.R. China

101-A16, 1st Floor, Building 3, No.9 compound, Yongfeng Road, Haidian District, Beijing, P.R. China

|                                     |                                                                                                                                           |                              |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| <input type="checkbox"/>            | <b>Test Site - MRT Suzhou Laboratory</b>                                                                                                  |                              |
|                                     | <b>Laboratory Location (Suzhou - Wuzhong)</b><br>D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China       |                              |
|                                     | <b>Laboratory Location (Suzhou - SIP)</b><br>4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China |                              |
|                                     | <b>Laboratory Accreditations</b>                                                                                                          |                              |
|                                     | A2LA: 3628.01<br>FCC: CN1166<br>VCCI: R-20025, G-20034, C-20020, T-20020                                                                  | CNAS: L10551<br>ISED: CN0001 |
| <input type="checkbox"/>            | <b>Test Site - MRT Shenzhen Laboratory</b>                                                                                                |                              |
|                                     | <b>Laboratory Location (Shenzhen)</b><br>1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen, China  |                              |
|                                     | <b>Laboratory Accreditations</b>                                                                                                          |                              |
|                                     | A2LA: 3628.02<br>FCC: CN1284                                                                                                              | CNAS: L10551<br>ISED: CN0105 |
|                                     |                                                                                                                                           |                              |
| <input checked="" type="checkbox"/> | <b>Test Site - MRT Taiwan Laboratory</b>                                                                                                  |                              |
|                                     | <b>Laboratory Location (Taiwan)</b><br>No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)                           |                              |
|                                     | <b>Laboratory Accreditations</b>                                                                                                          |                              |
|                                     | TAF: L3261-190725<br>FCC: 291082, TW3261                                                                                                  | ISED: TW3261                 |

## 2. PRODUCT INFORMATION

### 2.1. Equipment Description

|                       |                                                                                                                                                           |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Name          | HAN Access Point                                                                                                                                          |
| Model No.             | AP351                                                                                                                                                     |
| Brand Name            | HANNETWORKS, HAN NETWORKS                                                                                                                                 |
| Operating Temperature | 0 ~ 45 °C                                                                                                                                                 |
| Wi-Fi Specification   | 802.11a/b/g/n/ac/ax                                                                                                                                       |
| Accessories           |                                                                                                                                                           |
| AC/DC Adapter         | Model: ADP-50GR B<br>Input: 100-240V ~ 50/60Hz, 1.3A<br>Output: 48.0V, 1.042A, 50.1W MAX                                                                  |
| PoE Injector          | Model: POE60U-1BT-X<br>Input: 100-240V ~ 1.5A, 50/60Hz<br>Output: 56.0V, 0.535A, (Pin 3,6+ to pin 1,2 Return); 56V dc, 0.535A(pin 4,5+ to Pin 7,8 Return) |

Note: The AC/DC adapter and PoE Injector are not sold with product.

### 2.2. Product Specification Subjective to this Report

|                     |                                                                                                                       |
|---------------------|-----------------------------------------------------------------------------------------------------------------------|
| Frequency Range     | 802.11b/g/n-HT20/ax-HE20: 2412 ~ 2462MHz<br>802.11n-HT40/ax-HE40: 2422 ~ 2452MHz                                      |
| Channel Number      | 802.11b/g/n-HT20/ax-HE20: 11<br>802.11n-HT40/ax-HE40: 7                                                               |
| Type of Modulation  | 802.11b: DSSS<br>802.11g/n: OFDM<br>802.11ax: OFDMA                                                                   |
| Data Rate           | 802.11b: 1/2/5.5/11Mbps<br>802.11g: 6/9/12/18/24/36/48/54Mbps<br>802.11n: up to 600Mbps<br>802.11ax: up to 1147.2Mbps |
| Scan Antenna        |                                                                                                                       |
| Frequency Range:    | 802.11b/g/n-HT20:2412 ~ 2462 MHz<br>802.11n-HT40: 2422 ~ 2452MHz                                                      |
| Type of Modulation: | 802.11b: DSSS; 802.11g/n: OFDM                                                                                        |
| Data Rate:          | 802.11b: 1/2/5.5/11Mbps; 802.11g: 6/9/12/18/24/36/48/54Mbps<br>802.11n: up to 150Mbps                                 |

Note

1. For other features of this EUT, test report will be issued separately.

2.The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.

### 2.3. Working Frequencies for this report

802.11b/g/n-HT20/ax-HE20

| Channel | Frequency | Channel | Frequency | Channel | Frequency |
|---------|-----------|---------|-----------|---------|-----------|
| 01      | 2412 MHz  | 02      | 2417 MHz  | 03      | 2422 MHz  |
| 04      | 2427 MHz  | 05      | 2432 MHz  | 06      | 2437 MHz  |
| 07      | 2442 MHz  | 08      | 2447 MHz  | 09      | 2452 MHz  |
| 10      | 2457 MHz  | 11      | 2462 MHz  | --      | --        |

802.11n-HT40/ax-HE40

| Channel | Frequency | Channel | Frequency | Channel | Frequency |
|---------|-----------|---------|-----------|---------|-----------|
| 03      | 2422 MHz  | 04      | 2427 MHz  | 05      | 2432 MHz  |
| 06      | 2437 MHz  | 07      | 2442 MHz  | 08      | 2447 MHz  |
| 09      | 2452 MHz  | --      | --        | --      | --        |

### 2.4. Description of Available Antennas

| Antenna Type          | Frequency Band (MHz)     | Tx Paths | Max Antenna Gain (dBi) | Directional Gain (dBi)            |         | Beamforming Directional Gain (dBi) |
|-----------------------|--------------------------|----------|------------------------|-----------------------------------|---------|------------------------------------|
|                       |                          |          |                        | For Power                         | For PSD |                                    |
| PIFA Antenna          | 2400 ~ 2483.5            | 4        | 3.9                    | 3.9                               | 9.92    | 9.92                               |
| Dipole Antenna        | 5150 ~ 5350              | 4        | 3.8                    | 3.8                               | 9.82    | 9.82                               |
| PIFA & Dipole Antenna | 5470 ~ 5850              | 8        | 3.9                    | BW $\geq$ 40M, 3.9<br>BW=20M, 6.9 | 12.93   | 12.93                              |
| Scanning              |                          |          |                        |                                   |         |                                    |
| Dipole Antenna        | 2400 ~ 2483.5            | 1        | 3.5                    | 3.5                               | 3.5     | --                                 |
| Dipole Antenna        | 5150 ~ 5250 & 5725 ~5850 | 1        | 3.9                    | 3.9                               | 3.9     | --                                 |
| Bluetooth             |                          |          |                        |                                   |         |                                    |
| Dipole                | 2400 ~ 2483.5            | 1        | 3.5                    | 3.5                               | 3.5     | --                                 |

|                                                                                                                                                                                                                                                                                                                                                                             |  |  |  |  |  |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|
| Antenna                                                                                                                                                                                                                                                                                                                                                                     |  |  |  |  |  |  |
| <p>Remark:</p> <ol style="list-style-type: none"><li>1. The EUT supports Cyclic Delay Diversity (CDD) mode and beamforming mode.</li><li>2. All antenna information (Antenna type and Peak Gain) is provided by the manufacturer.</li><li>3. High gain antenna power setting will be reduced according to difference value of antenna gain declared by applicant.</li></ol> |  |  |  |  |  |  |

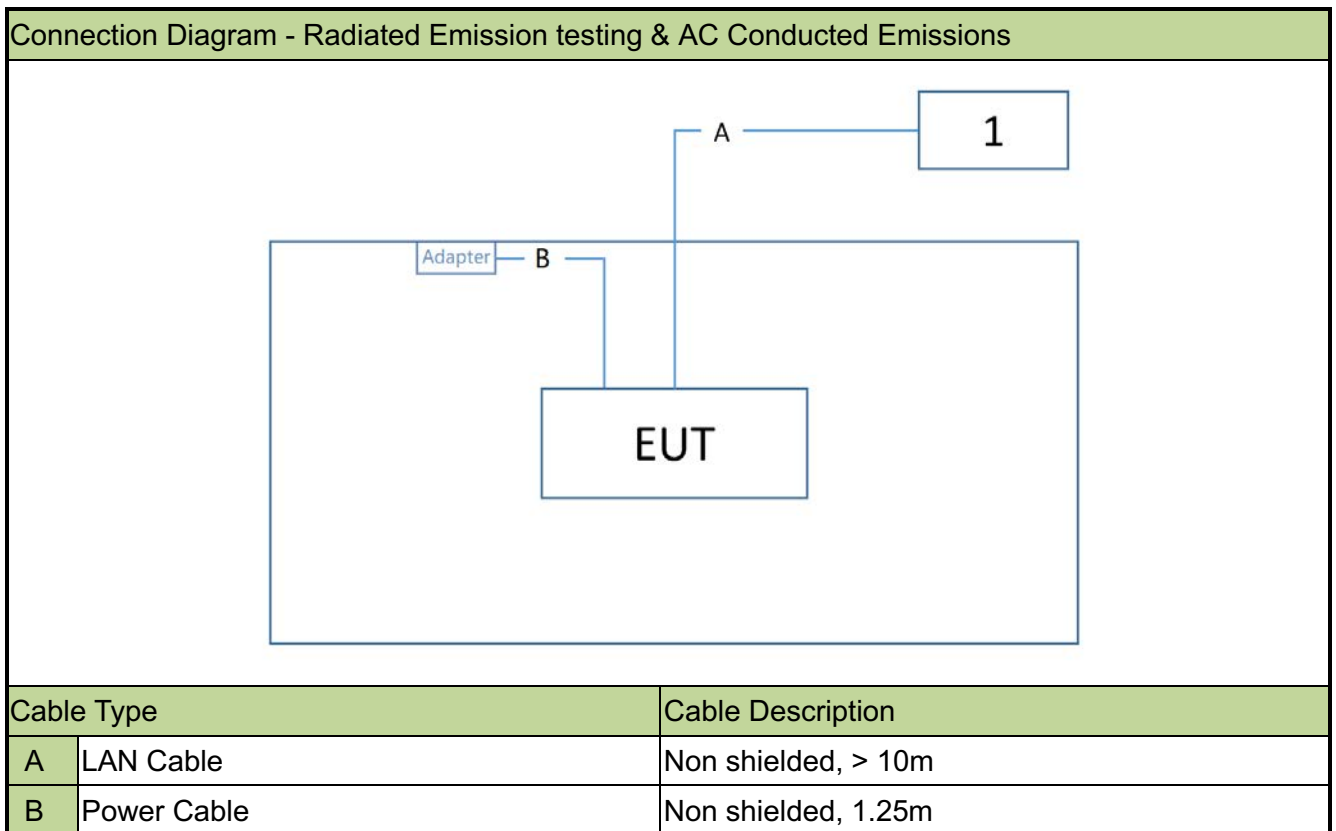
## 2.5. Test Mode

|           |                                                         |
|-----------|---------------------------------------------------------|
| Test Mode | Mode 1: Transmit by 802.11b (1Mbps)                     |
|           | Mode 2: Transmit by 802.11g (6Mbps)                     |
|           | Mode 3: Transmit by 802.11n-HT20 (MCS0)                 |
|           | Mode 4: Transmit by 802.11n-HT40 (MCS0)                 |
|           | Mode 5: Transmit by 802.11ax-HE20 (MCS0)                |
|           | Mode 6: Transmit by 802.11ax-HE40 (MCS0)                |
|           | Mode 7: Transmit by 802.11b (1Mbps) - Scan Antenna      |
|           | Mode 8: Transmit by 802.11g (6Mbps) - Scan Antenna      |
|           | Mode 9: Transmit by 802.11n-HT20 (MCS0) - Scan Antenna  |
|           | Mode 10: Transmit by 802.11n-HT40 (MCS0) - Scan Antenna |

Note: The EUT can't operate in the same frequency band at the same time.

## 2.6. Configuration of Test System

The device was tested per the guidance ANSI C63.10-2013 was used to reference the appropriate EUT setup for radiated emissions testing and AC line conducted testing.



## 2.7. Test System Details

| Product |          | Manufacturer | Model No. |
|---------|----------|--------------|-----------|
| 1       | Notebook | Dell         | P62G      |

## 2.8. Description of Test Software

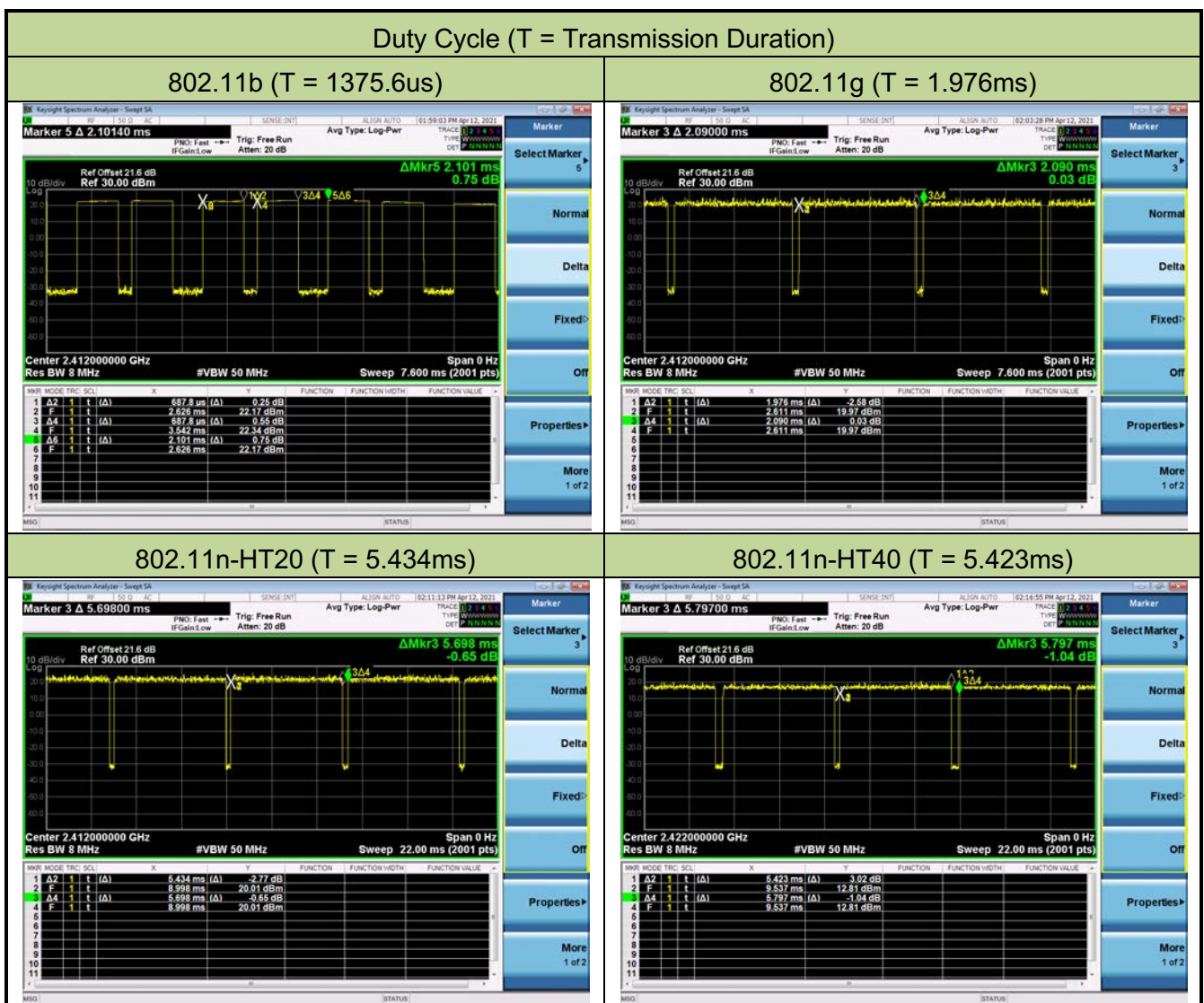
The test utility software used during testing was “QSPR”, and the version was 5.0-00099.

Note: Final power setting please refer to operational description.

## 2.9. Duty Cycle

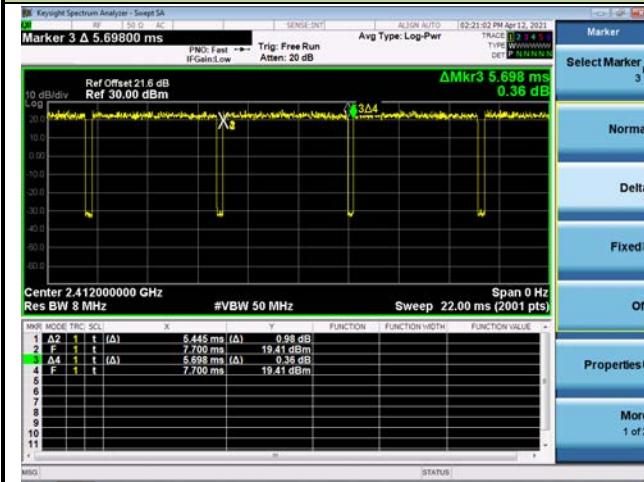
The maximum achievable duty cycles for all modes were determined based on measurements performed on a spectrum analyzer in zero-span mode with RBW = 8MHz, VBW = 50MHz. The RBW and VBW were both greater than 50/T, where T is the minimum transmission duration, and the number of sweep points across T was greater than 100. The duty cycles are as follows:

| Test Mode     | Duty Cycle | Test Mode<br>– Scan Antenna | Duty Cycle |
|---------------|------------|-----------------------------|------------|
| 802.11b       | 65.47%     | 802.11b                     | 99.51%     |
| 802.11g       | 94.55%     | 802.11g                     | 96.11%     |
| 802.11n-HT20  | 95.37%     | 802.11n-HT20                | 95.83%     |
| 802.11n-HT40  | 93.55%     | 802.11n-HT40                | 92.52%     |
| 802.11ax-HE20 | 95.56%     | --                          | --         |
| 802.11ax-HE40 | 95.38%     | --                          | --         |

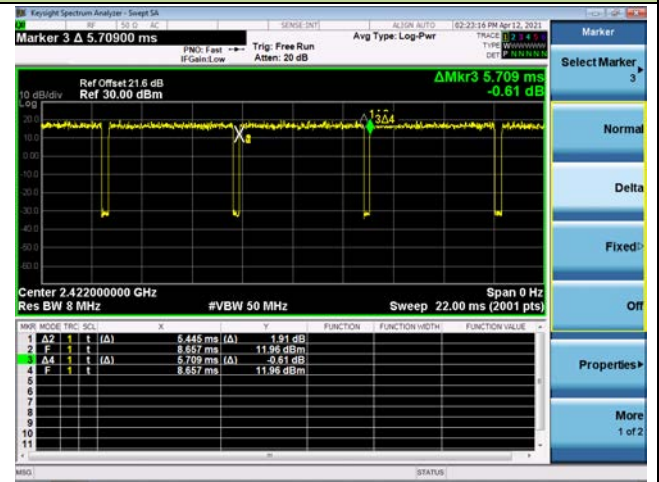


## Duty Cycle (T = Transmission Duration)

802.11ax-HE20 (T = 5.445ms)



802.11ax-HE40 (T = 5.445us)

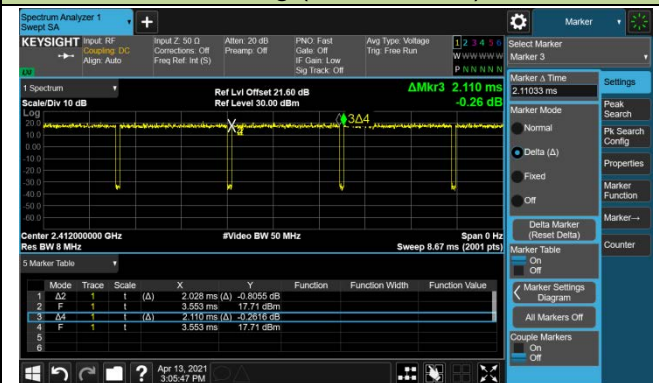


## Duty Cycle (T = Transmission Duration) – Scan Antenna

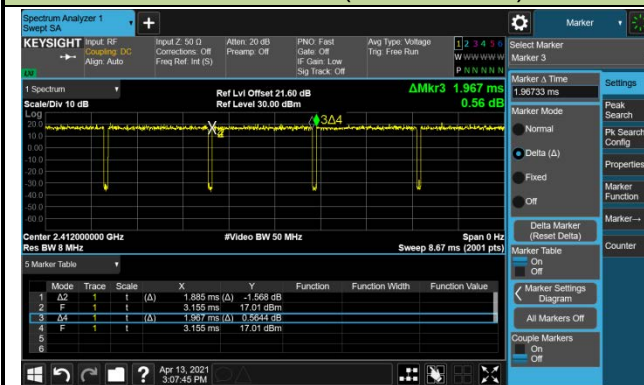
802.11b (T = 12.22ms)



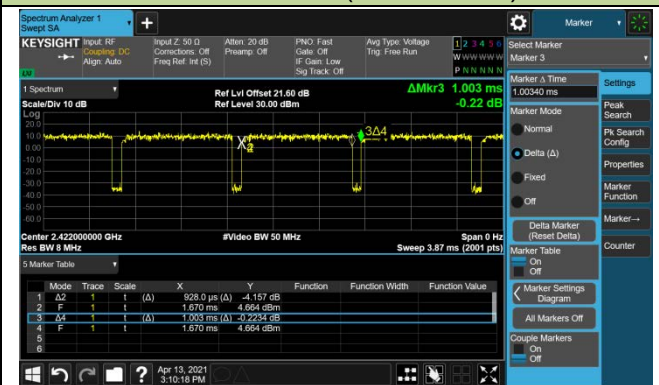
802.11g (T = 2.028ms)



802.11n-HT20 (T = 1.885ms)



802.11n-HT40 (T = 928.0us)



**2.10. EMI Suppression Device(s)/Modifications**

No EMI suppression device(s) were added and/or no modifications were made during testing.

**2.11. Test Environment Condition**

|                   |            |
|-------------------|------------|
| Ambient Temp.     | 15 ~ 35°C  |
| Relative Humidity | 20 ~ 75%RH |

### 3. ANTENNA REQUIREMENTS

#### **Excerpt from §15.203 of the FCC Rules/Regulations:**

“An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.”

- The antenna of the device is **permanently attached**.
- There are no provisions for connection to an external antenna.

#### **Conclusion:**

The unit complies with the requirement of §15.203.

#### 4. TEST EQUIPMENT CALIBRATION DATE

##### Conducted Emissions – SR2

| Instrument         | Manufacturer | Type No.                    | Asset No.   | Cali. Interval | Cali. Due Date |
|--------------------|--------------|-----------------------------|-------------|----------------|----------------|
| Two-Line V-Network | R&S          | ENV216                      | MRTTWA00019 | 1 year         | 2022/3/23      |
| Cable              | Rosnol       | N1C50-RG400-B<br>1C50-500CM | MRTTWE00013 | 1 year         | 2022/6/20      |
| EMI Test Receiver  | R&S          | ESR3                        | MRTTWA00009 | 1 year         | 2022/3/24      |

##### Radiated Emissions – AC1

| Instrument               | Manufacturer | Type No.                  | Asset No.   | Cali. Interval | Cali. Due Date |
|--------------------------|--------------|---------------------------|-------------|----------------|----------------|
| Broadband TRILOG Antenna | Schwarzbeck  | VULB 9162                 | MRTTWA00001 | 1 year         | 2021/10/5      |
| EMI Test Receiver        | R&S          | ESR3                      | MRTTWA00009 | 1 year         | 2022/3/24      |
| Active Loop Antenna      | Schwarzbeck  | FMZB 1519B                | MRTTWA00002 | 1 year         | 2022/5/6       |
| Broadband Horn antenna   | Schwarzbeck  | BBHA 9120D                | MRTTWA00003 | 1 year         | 2022/4/21      |
| Breitband Hornantenna    | Schwarzbeck  | BBHA 9170                 | MRTTWA00004 | 1 year         | 2022/4/28      |
| Broadband Amplifier      | Schwarzbeck  | BBV 9721                  | MRTTWA00006 | 1 year         | 2022/4/26      |
| Broadband Preamplifier   | Schwarzbeck  | BBV 9718                  | MRTTWA00005 | 1 year         | 2022/4/21      |
| Cable                    | HUBERSUHNER  | SF106                     | MRTTWE00010 | 1 year         | 2022/6/15      |
| Cable                    | Rosnol       | K1K50-UP0264-<br>K1K50-4M | MRTTWE00012 | 1 year         | 2022/6/20      |

##### Conducted Test Equipment – SR2

| Instrument                | Manufacturer | Type No. | Asset No.   | Cali. Interval | Cali. Due Date |
|---------------------------|--------------|----------|-------------|----------------|----------------|
| EXA Signal Analyzer       | KEYSIGHT     | N9010A   | MRTTWA00012 | 1 year         | 2021/10/14     |
| EXA Signal Analyzer       | KEYSIGHT     | N9010B   | MRTTWA00074 | 1 year         | 2021/7/14      |
| USB Wideband Power Sensor | KEYSIGHT     | U2021XA  | MRTTWA00015 | 1 year         | 2022/3/24      |

##### Test Software

| Software | Version   | Function          |
|----------|-----------|-------------------|
| e3       | 9.160520a | EMI Test Software |
| EMI      | V3        | EMI Test Software |

## 5. MEASUREMENT UNCERTAINTY

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k = 2$ .

|                                                                                                                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Conducted Emission- Power Line</b>                                                                                                                                                                               |
| Measuring Uncertainty for a Level of Confidence of 95% ( $U=2Uc(y)$ ):<br>0.15MHz~30MHz: $\pm 2.53\text{dB}$                                                                                                        |
| <b>Radiated Spurious Emission</b>                                                                                                                                                                                   |
| Measuring Uncertainty for a Level of Confidence of 95% ( $U=2Uc(y)$ ):<br>9kHz~30MHz: $\pm 3.92\text{dB}$<br>30MHz~1GHz: $\pm 4.25\text{dB}$<br>1GHz~18GHz: $\pm 4.40\text{dB}$<br>18GHz~40GHz: $\pm 4.45\text{dB}$ |
| <b>Frequency Error</b>                                                                                                                                                                                              |
| Measuring Uncertainty for a Level of Confidence of 95% ( $U=2Uc(y)$ ): $\pm 78.4\text{Hz}$                                                                                                                          |
| <b>Conducted Power</b>                                                                                                                                                                                              |
| Measuring Uncertainty for a Level of Confidence of 95% ( $U=2Uc(y)$ ): $\pm 0.84\text{dB}$                                                                                                                          |
| <b>Conducted Spurious Emission</b>                                                                                                                                                                                  |
| Measuring Uncertainty for a Level of Confidence of 95% ( $U=2Uc(y)$ ): $\pm 2.65\text{ dB}$                                                                                                                         |
| <b>Occupied Bandwidth</b>                                                                                                                                                                                           |
| Measuring Uncertainty for a Level of Confidence of 95% ( $U=2Uc(y)$ ): 3.3%                                                                                                                                         |
| <b>Temp. / Humidity</b>                                                                                                                                                                                             |
| Measuring Uncertainty for a Level of Confidence of 95% ( $U=2Uc(y)$ ): $\pm 0.82^{\circ}\text{C}/ \pm 3\%$                                                                                                          |
| <b>DC Voltage</b>                                                                                                                                                                                                   |
| Measuring Uncertainty for a Level of Confidence of 95% ( $U=2Uc(y)$ ): $\pm 0.3\%$                                                                                                                                  |

## 6. TEST RESULT

### 6.1. Summary

| FCC Section(s)   | Test Description                                                | Test Limit                                                                     | Test Condition | Test Result | Reference         |
|------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------------|----------------|-------------|-------------------|
| 15.247(a)(2)     | 6dB Bandwidth                                                   | $\geq 500\text{kHz}$                                                           | Conducted      | Pass        | Section 6.2       |
| 15.247(b)(3)     | Output Power                                                    | $\leq 30\text{dBm}$                                                            |                | Pass        | Section 6.3       |
| 15.247(e)        | Power Spectral Density                                          | $\leq 8\text{dBm}/3\text{kHz}$                                                 |                | Pass        | Section 6.4       |
| 15.247(d)        | Band Edge / Out-of-Band Emissions                               | $\geq 30\text{dBc}$ (Average)                                                  |                | Pass        | Section 6.5       |
| 15.205<br>15.209 | General Field Strength (Restricted Bands and Radiated Emission) | Emissions in restricted bands must meet the radiated limits detailed in 15.209 | Radiated       | Pass        | Section 6.6 & 6.7 |
| 15.207           | AC Conducted Emissions<br>150kHz - 30MHz                        | < FCC 15.207 limits                                                            | Line Conducted | Pass        | Section 6.8       |

#### Notes:

- 1) The analyzer plots shown in this section were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables and attenuators used as part of the system to connect the EUT to the analyzer at all frequencies of interest.
- 2) Output power test was verified over all data rates of each mode (data refers to operational description), and then choose the maximum power output (low data rate) for the final test of each channel.
- 3) Test Items "6dB Bandwidth" showed the worst test data in this report.
- 4) 802.11 ax Support Full RB mode.

## 6.2. 6dB Bandwidth Measurement

### 6.2.1. Test Limit

The minimum 6dB bandwidth shall be at least 500 kHz.

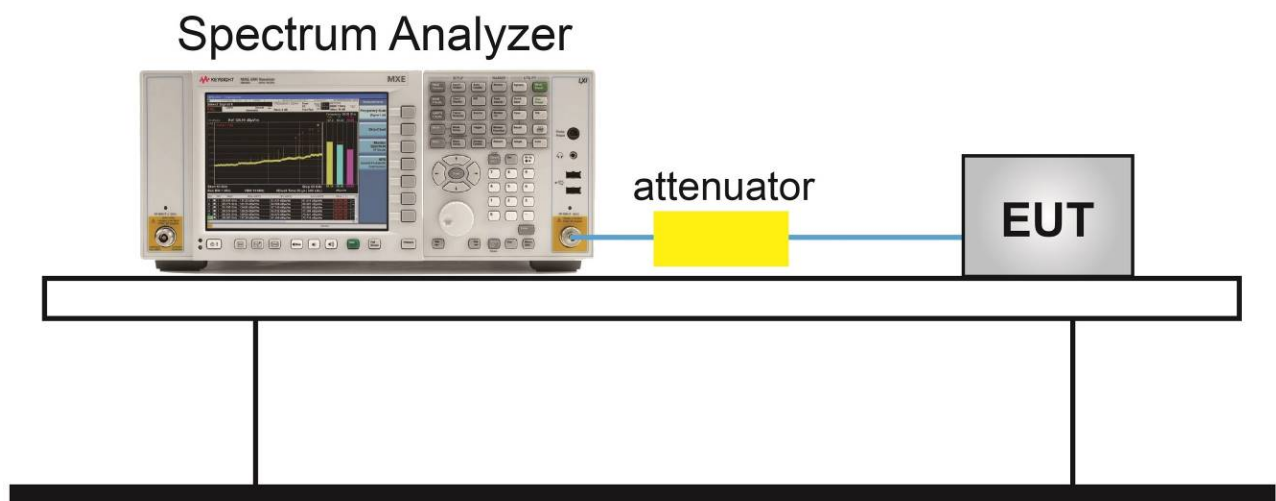
### 6.2.2. Test Procedure used

ANSI C63.10 - 2013 - Section 11.8

### 6.2.3. Test Setting

1. The Spectrum's automatic bandwidth measurement capability was used to perform the 6dB bandwidth measurement. The "X" dB bandwidth parameter was set to  $X = 6$ . The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. Set RBW = 100 kHz
3.  $VBW \geq 3 \times RBW$
4. Detector = Peak
5. Trace mode = Max hold
6. Sweep = Auto couple
7. Allow the trace to stabilize

### 6.2.4. Test Setup



### 6.2.5. Test Result

|           |            |               |       |
|-----------|------------|---------------|-------|
| Test Site | SR2        | Test Engineer | Peter |
| Test Date | 2021/04/12 |               |       |

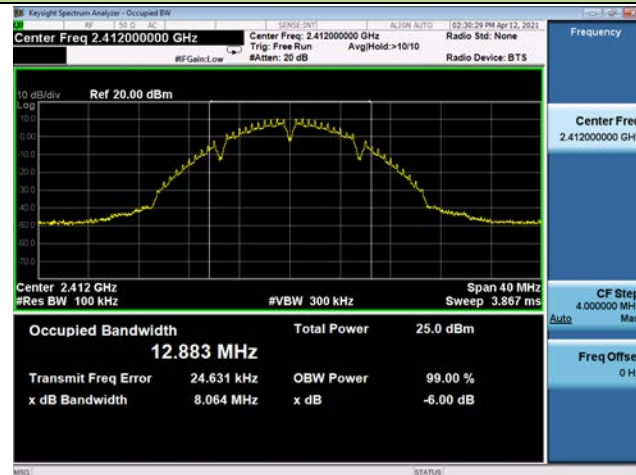
| Test Mode     | Data Rate / MCS | Channel No. | Frequency (MHz) | 6dB Bandwidth (MHz) | Limit (MHz) | Result |
|---------------|-----------------|-------------|-----------------|---------------------|-------------|--------|
| 802.11b       | 1Mbps           | 01          | 2412            | 8.064               | $\geq 0.5$  | Pass   |
| 802.11b       | 1Mbps           | 06          | 2437            | 8.055               | $\geq 0.5$  | Pass   |
| 802.11b       | 1Mbps           | 11          | 2462            | 8.061               | $\geq 0.5$  | Pass   |
| 802.11g       | 6Mbps           | 01          | 2412            | 16.32               | $\geq 0.5$  | Pass   |
| 802.11g       | 6Mbps           | 06          | 2437            | 16.31               | $\geq 0.5$  | Pass   |
| 802.11g       | 6Mbps           | 11          | 2462            | 16.06               | $\geq 0.5$  | Pass   |
| 802.11n-HT20  | MCS0            | 01          | 2412            | 17.55               | $\geq 0.5$  | Pass   |
| 802.11n-HT20  | MCS0            | 06          | 2437            | 17.20               | $\geq 0.5$  | Pass   |
| 802.11n-HT20  | MCS0            | 11          | 2462            | 17.20               | $\geq 0.5$  | Pass   |
| 802.11n-HT40  | MCS0            | 03          | 2422            | 35.93               | $\geq 0.5$  | Pass   |
| 802.11n-HT40  | MCS0            | 06          | 2437            | 35.94               | $\geq 0.5$  | Pass   |
| 802.11n-HT40  | MCS0            | 09          | 2452            | 36.32               | $\geq 0.5$  | Pass   |
| 802.11ax-HE20 | MCS0            | 01          | 2412            | 18.71               | $\geq 0.5$  | Pass   |
| 802.11ax-HE20 | MCS0            | 06          | 2437            | 18.81               | $\geq 0.5$  | Pass   |
| 802.11ax-HE20 | MCS0            | 11          | 2462            | 18.77               | $\geq 0.5$  | Pass   |
| 802.11ax-HE40 | MCS0            | 03          | 2422            | 37.97               | $\geq 0.5$  | Pass   |
| 802.11ax-HE40 | MCS0            | 06          | 2437            | 37.96               | $\geq 0.5$  | Pass   |
| 802.11ax-HE40 | MCS0            | 09          | 2452            | 37.85               | $\geq 0.5$  | Pass   |

|           |              |               |            |
|-----------|--------------|---------------|------------|
| Test Site | SR2          | Test Engineer | Peter      |
| Test Mode | Scan Antenna | Test Date     | 2021/04/13 |

| Test Mode    | Data Rate / MCS | Channel No. | Frequency (MHz) | 6dB Bandwidth (MHz) | Limit (MHz) | Result |
|--------------|-----------------|-------------|-----------------|---------------------|-------------|--------|
| 802.11b      | 1Mbps           | 01          | 2412            | 7.101               | $\geq 0.5$  | Pass   |
| 802.11b      | 1Mbps           | 06          | 2437            | 7.107               | $\geq 0.5$  | Pass   |
| 802.11b      | 1Mbps           | 11          | 2462            | 7.105               | $\geq 0.5$  | Pass   |
| 802.11g      | 6Mbps           | 01          | 2412            | 16.33               | $\geq 0.5$  | Pass   |
| 802.11g      | 6Mbps           | 06          | 2437            | 16.33               | $\geq 0.5$  | Pass   |
| 802.11g      | 6Mbps           | 11          | 2462            | 16.34               | $\geq 0.5$  | Pass   |
| 802.11n-HT20 | MCS0            | 01          | 2412            | 16.94               | $\geq 0.5$  | Pass   |
| 802.11n-HT20 | MCS0            | 06          | 2437            | 17.31               | $\geq 0.5$  | Pass   |
| 802.11n-HT20 | MCS0            | 11          | 2462            | 17.04               | $\geq 0.5$  | Pass   |
| 802.11n-HT40 | MCS0            | 03          | 2422            | 35.46               | $\geq 0.5$  | Pass   |
| 802.11n-HT40 | MCS0            | 06          | 2437            | 35.40               | $\geq 0.5$  | Pass   |
| 802.11n-HT40 | MCS0            | 09          | 2452            | 35.36               | $\geq 0.5$  | Pass   |

## 802.11b 6dB Bandwidth

## Channel 01 (2412MHz)



## Channel 06 (2437MHz)

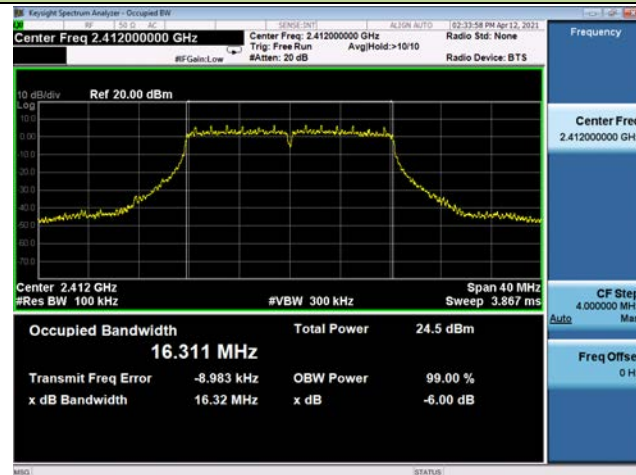


## Channel 11 (2462MHz)

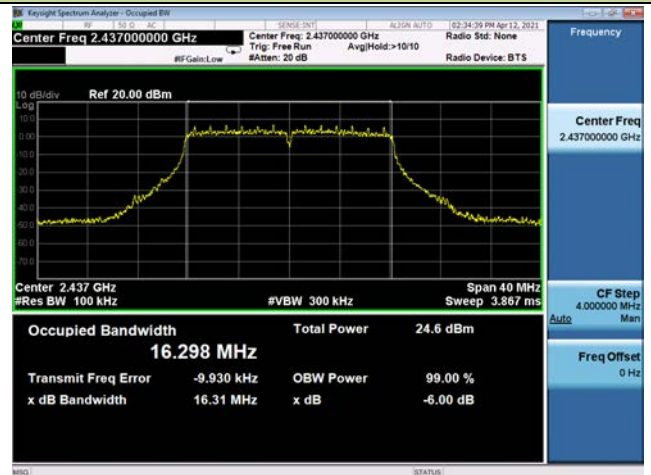


## 802.11g 6dB Bandwidth

## Channel 01 (2412MHz)



## Channel 06 (2437MHz)

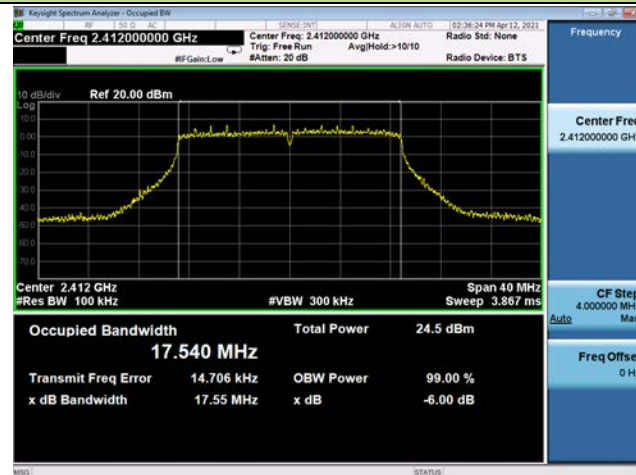


## Channel 11 (2462MHz)

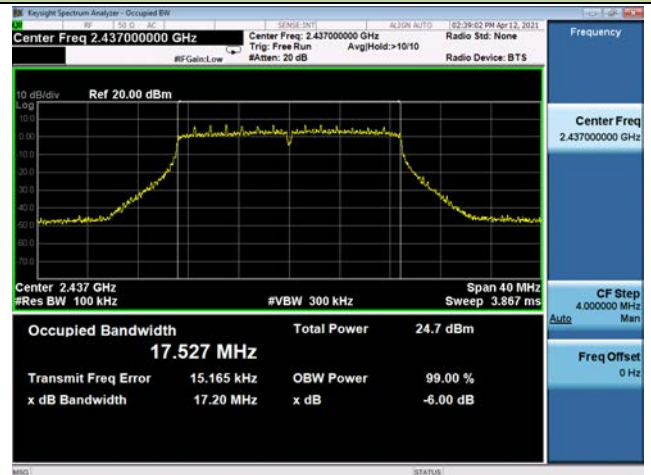


## 802.11n-HT20 6dB Bandwidth

## Channel 01 (2412MHz)



## Channel 06 (2437MHz)

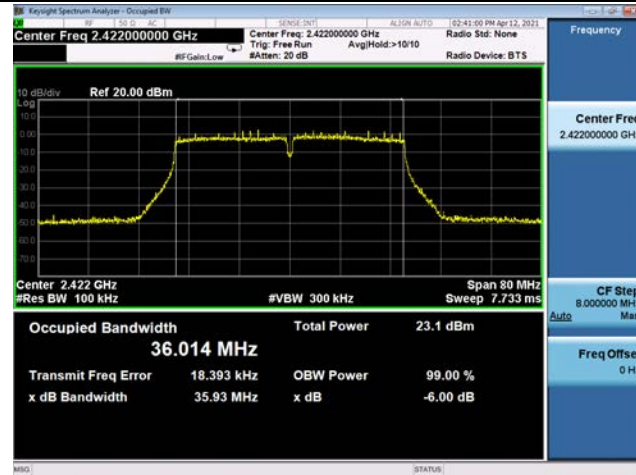


## Channel 11 (2462MHz)

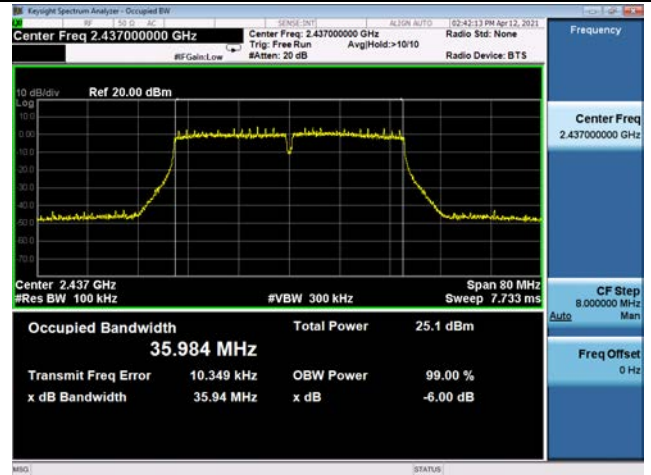


## 802.11n-HT40 6dB Bandwidth

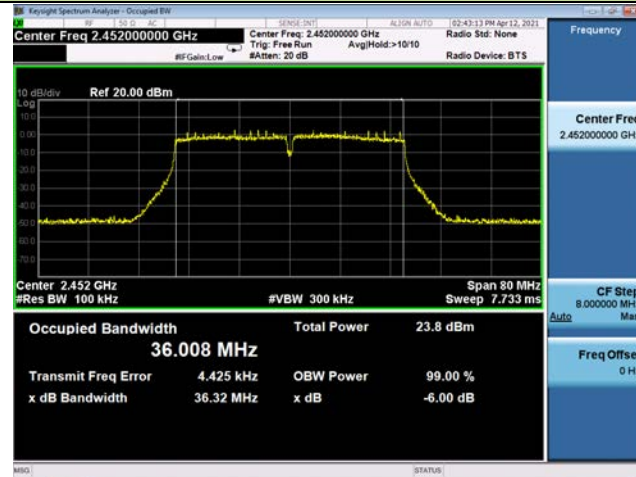
## Channel 03 (2422MHz)



## Channel 06 (2437MHz)

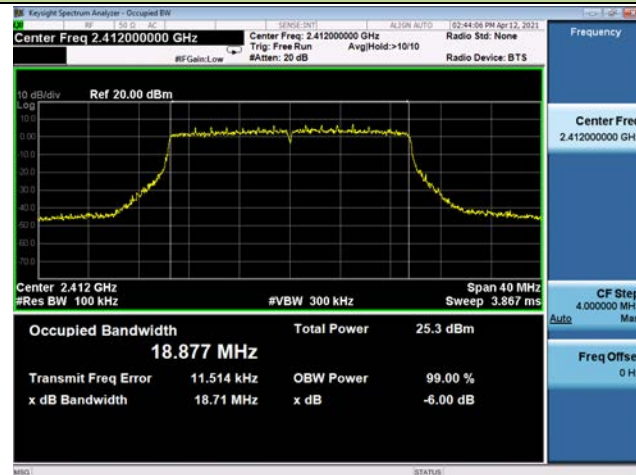


## Channel 09 (2452MHz)

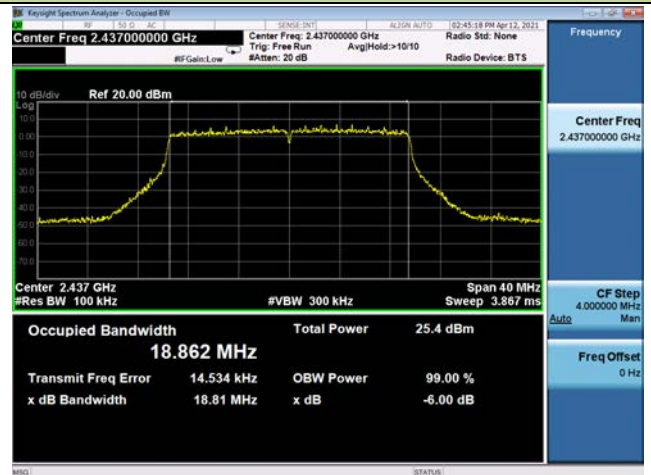


## 802.11ax-HE20 6dB Bandwidth

## Channel 01 (2412MHz)



## Channel 06 (2437MHz)

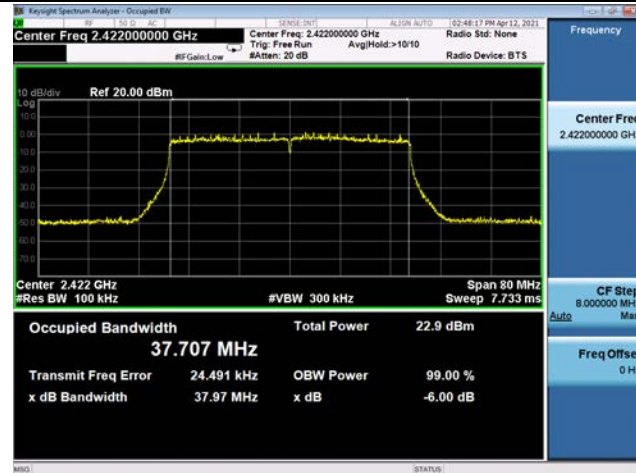


## Channel 11 (2462MHz)

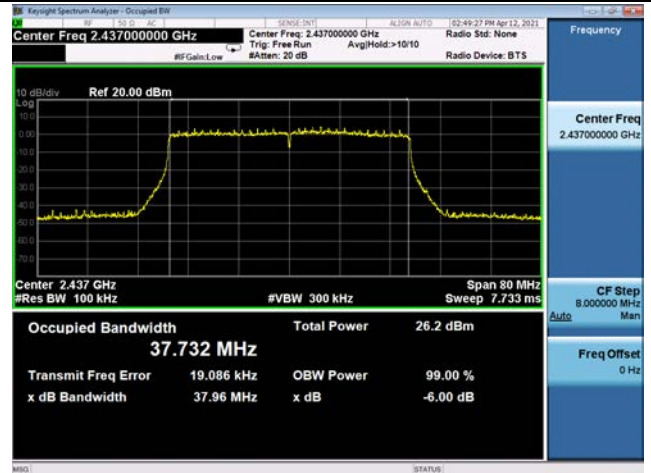


## 802.11ax-HE40 6dB Bandwidth

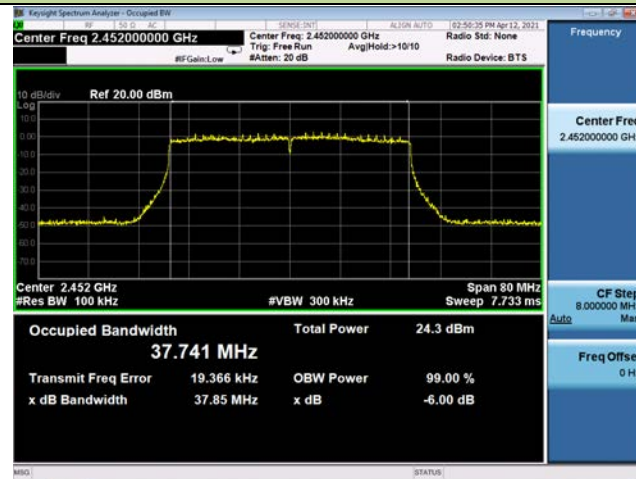
## Channel 03 (2422MHz)



## Channel 06 (2437MHz)



## Channel 09 (2452MHz)



## 802.11b 6dB Bandwidth - Scan Antenna

## Channel 01 (2412MHz)



## Channel 06 (2437MHz)

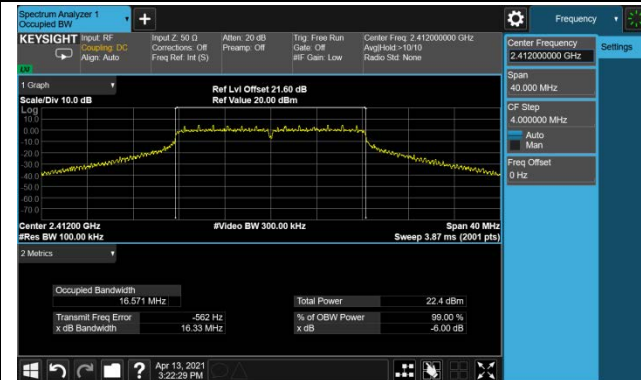


## Channel 11 (2462MHz)



## 802.11g 6dB Bandwidth - Scan Antenna

## Channel 01 (2412MHz)



## Channel 06 (2437MHz)



## Channel 11 (2462MHz)



## 802.11n-HT20 6dB Bandwidth - Scan Antenna

## Channel 01 (2412MHz)



## Channel 06 (2437MHz)

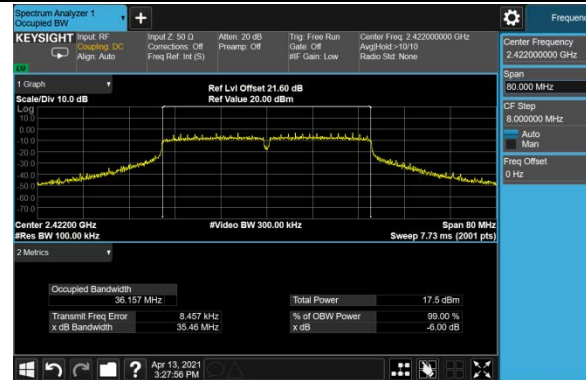


## Channel 11 (2462MHz)



## 802.11n-HT40 6dB Bandwidth - Scan Antenna

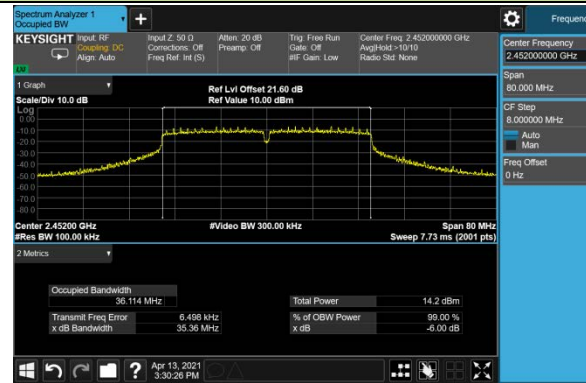
## Channel 03 (2422MHz)



## Channel 06 (2437MHz)



## Channel 09 (2452MHz)



### **6.3. Output Power Measurement**

#### **6.3.1. Test Limit**

The maximum output power shall be less 1 Watt (30dBm).

The conducted output power limit specified in paragraph FCC Part 15.247(b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs FCC Part 15.247(b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### **6.3.2. Test Procedure Used**

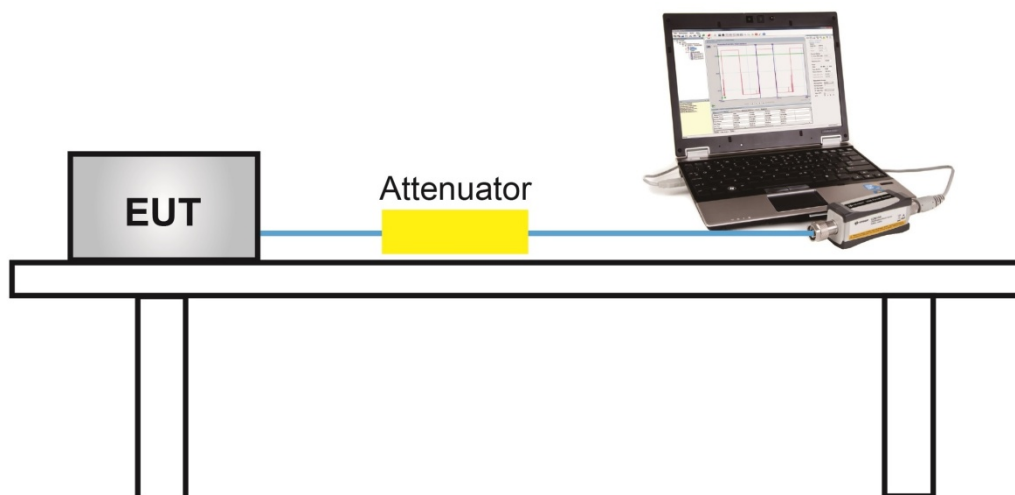
ANSI C63.10 - 2013 - Section 11.9.2.3.2

#### **6.3.3. Test Setting**

##### **Average Power Measurement**

Average power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter.

#### **6.3.4. Test Setup**



### 6.3.5. Test Result

|           |            |               |       |
|-----------|------------|---------------|-------|
| Test Site | SR2        | Test Engineer | Peter |
| Test Date | 2021/04/22 |               |       |

| Test Mode     | Data Rate/<br>MCS | Channel<br>No. | Freq.<br>(MHz) | Average Power (dBm) |       |       |       | Total Average<br>Power (dBm) | Limit<br>(dBm) | Result |
|---------------|-------------------|----------------|----------------|---------------------|-------|-------|-------|------------------------------|----------------|--------|
|               |                   |                |                | Ant 0               | Ant 1 | Ant 2 | Ant 3 |                              |                |        |
| 802.11b       | 1Mbps             | 01             | 2412           | 17.60               | 17.90 | 17.85 | 17.41 | 23.72                        | ≤ 30.00        | Pass   |
| 802.11b       | 1Mbps             | 06             | 2437           | 17.70               | 18.00 | 17.94 | 17.40 | 23.79                        | ≤ 30.00        | Pass   |
| 802.11b       | 1Mbps             | 11             | 2462           | 17.89               | 18.02 | 17.99 | 17.33 | 23.84                        | ≤ 30.00        | Pass   |
| 802.11g       | 1Mbps             | 01             | 2412           | 17.64               | 17.88 | 17.81 | 17.34 | 23.69                        | ≤ 30.00        | Pass   |
| 802.11g       | 1Mbps             | 06             | 2437           | 17.53               | 17.92 | 17.76 | 17.33 | 23.66                        | ≤ 30.00        | Pass   |
| 802.11g       | 1Mbps             | 11             | 2462           | 17.69               | 18.03 | 17.82 | 17.40 | 23.76                        | ≤ 30.00        | Pass   |
| 802.11n-HT20  | 1Mbps             | 01             | 2412           | 17.63               | 17.88 | 17.67 | 17.35 | 23.66                        | ≤ 30.00        | Pass   |
| 802.11n-HT20  | 1Mbps             | 06             | 2437           | 17.53               | 17.83 | 17.70 | 17.31 | 23.62                        | ≤ 30.00        | Pass   |
| 802.11n-HT20  | 1Mbps             | 11             | 2462           | 17.84               | 17.69 | 17.69 | 17.30 | 23.66                        | ≤ 30.00        | Pass   |
| 802.11n-HT40  | 1Mbps             | 03             | 2422           | 16.20               | 16.37 | 16.31 | 15.84 | 22.21                        | ≤ 30.00        | Pass   |
| 802.11n-HT40  | 1Mbps             | 06             | 2437           | 17.76               | 17.90 | 17.78 | 17.36 | 23.73                        | ≤ 30.00        | Pass   |
| 802.11n-HT40  | 1Mbps             | 09             | 2452           | 16.83               | 17.00 | 16.79 | 16.50 | 22.80                        | ≤ 30.00        | Pass   |
| 802.11ax-HE20 | 1Mbps             | 01             | 2412           | 17.77               | 17.96 | 18.01 | 17.55 | 23.85                        | ≤ 30.00        | Pass   |
| 802.11ax-HE20 | 1Mbps             | 06             | 2437           | 17.70               | 18.02 | 17.95 | 17.57 | 23.83                        | ≤ 30.00        | Pass   |
| 802.11ax-HE20 | 1Mbps             | 11             | 2462           | 16.45               | 16.68 | 16.35 | 16.10 | 22.42                        | ≤ 30.00        | Pass   |
| 802.11ax-HE40 | 1Mbps             | 03             | 2422           | 15.36               | 15.44 | 15.54 | 15.01 | 21.36                        | ≤ 30.00        | Pass   |
| 802.11ax-HE40 | 1Mbps             | 06             | 2437           | 17.81               | 18.05 | 17.91 | 17.52 | 23.85                        | ≤ 30.00        | Pass   |
| 802.11ax-HE40 | 1Mbps             | 09             | 2452           | 16.44               | 16.69 | 16.41 | 16.15 | 22.45                        | ≤ 30.00        | Pass   |

Note: Total Average Power (dBm) =  $10 \cdot \log \{ 10^{(\text{Ant 0 Average Power} / 10)} + 10^{(\text{Ant 1 Average Power} / 10)} + 10^{(\text{Ant 2 Average Power} / 10)} + 10^{(\text{Ant 3 Average Power} / 10)} \}$  (dBm).

|           |              |               |            |
|-----------|--------------|---------------|------------|
| Test Site | SR2          | Test Engineer | Peter      |
| Test Mode | Scan Antenna | Test Date     | 2021/04/22 |

| Test Mode    | Data Rate/<br>MCS | Channel<br>No. | Freq.<br>(MHz) | Peak Power<br>(dBm) | Average Power<br>(dBm) | Limit<br>(dBm) | Result |
|--------------|-------------------|----------------|----------------|---------------------|------------------------|----------------|--------|
| 802.11b      | 1Mbps             | 01             | 2412           | 20.88               | 18.04                  | ≤ 30.00        | Pass   |
| 802.11b      | 1Mbps             | 06             | 2437           | 19.05               | 16.15                  | ≤ 30.00        | Pass   |
| 802.11b      | 1Mbps             | 11             | 2462           | 19.11               | 16.21                  | ≤ 30.00        | Pass   |
| 802.11g      | 1Mbps             | 01             | 2412           | 19.22               | 14.95                  | ≤ 30.00        | Pass   |
| 802.11g      | 1Mbps             | 06             | 2437           | 21.52               | 17.63                  | ≤ 30.00        | Pass   |
| 802.11g      | 1Mbps             | 11             | 2462           | 14.47               | 9.79                   | ≤ 30.00        | Pass   |
| 802.11n-HT20 | 1Mbps             | 01             | 2412           | 18.66               | 14.18                  | ≤ 30.00        | Pass   |
| 802.11n-HT20 | 1Mbps             | 06             | 2437           | 22.01               | 18.05                  | ≤ 30.00        | Pass   |
| 802.11n-HT20 | 1Mbps             | 11             | 2462           | 13.98               | 9.15                   | ≤ 30.00        | Pass   |
| 802.11n-HT40 | 1Mbps             | 03             | 2422           | 15.31               | 10.11                  | ≤ 30.00        | Pass   |
| 802.11n-HT40 | 1Mbps             | 06             | 2437           | 22.18               | 18.05                  | ≤ 30.00        | Pass   |
| 802.11n-HT40 | 1Mbps             | 09             | 2452           | 11.94               | 6.87                   | ≤ 30.00        | Pass   |

## **6.4. Power Spectral Density Measurement**

### **6.4.1. Test Limit**

The maximum permissible power spectral density is 8dBm in any 3 kHz band.

The same method of determining the conducted output power shall be used to determine the power spectral density.

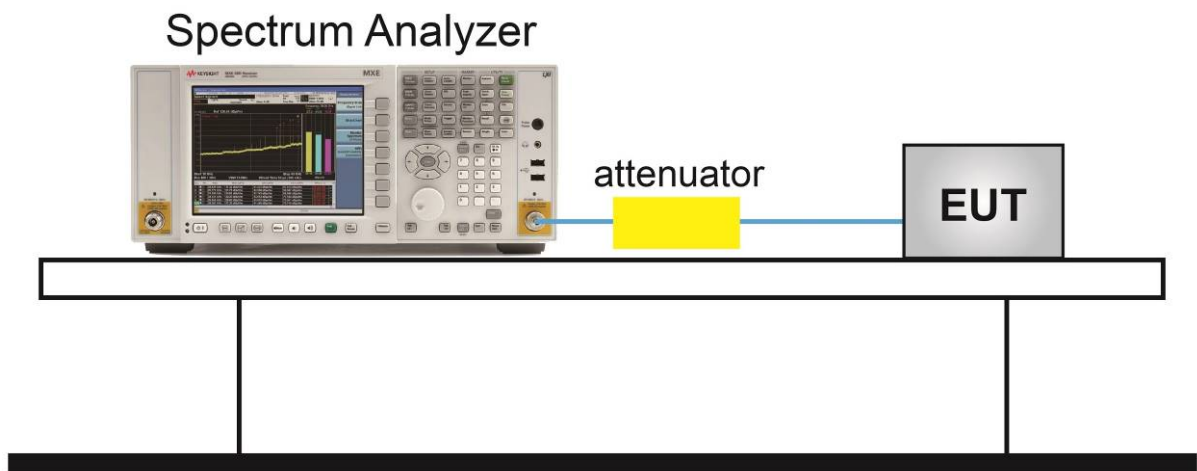
### **6.4.2. Test Procedure Used**

ANSI C63.10 - 2013 - Section 11.10.5

### **6.4.3. Test Setting**

1. Measure the duty cycle (x) of the transmitter output signal.
2. Set instrument center frequency to DTS channel center frequency.
3. Set span to at least 1.5 times the OBW.
4. RBW = 10 kHz.
5. VBW = 30 kHz.
6. Detector = RMS.
7. Ensure that the number of measurement points in the sweep  $\geq 2 \times \text{span}/\text{RBW}$ .
8. Sweep time = auto couple.
9. Don't use sweep triggering. Allow sweep to "free run".
10. Employ trace averaging (RMS) mode over a minimum of 100 traces.
11. Use the peak marker function to determine the maximum amplitude level.
12. Add  $10 \log (1/x)$ , where x is the duty cycle measured in step (a), to the measured PSD to compute the average PSD during the actual transmission time. If measured value exceeds requirement specified by regulatory agency, then reduce RBW (but no less than 3 kHz) and repeat (note that this may require zooming in on the emission of interest and reducing the span to meet the minimum measurement point requirement as the RBW is reduced).

#### 6.4.4. Test Setup



### 6.4.5. Test Result

|           |            |               |       |
|-----------|------------|---------------|-------|
| Test Site | SR2        | Test Engineer | Peter |
| Test Date | 2021/04/12 |               |       |

| Test Mode     | Data Rate/<br>MCS | Channel No. | Freq. (MHz) | PSD (dBm/ 10kHz) |        |        |        | Duty Cycle (%) | Total PSD (dBm/ 10kHz) | Limit (dBm/ 3kHz) | Result |
|---------------|-------------------|-------------|-------------|------------------|--------|--------|--------|----------------|------------------------|-------------------|--------|
|               |                   |             |             | Ant 0            | Ant 1  | Ant 2  | Ant 3  |                |                        |                   |        |
| 802.11b       | 1Mbps             | 01          | 2412        | -9.06            | -8.73  | -8.31  | -8.97  | 65.47          | -0.90                  | ≤ 4.08            | Pass   |
| 802.11b       | 1Mbps             | 06          | 2437        | -9.00            | -8.60  | -8.62  | -9.29  | 65.47          | -1.01                  | ≤ 4.08            | Pass   |
| 802.11b       | 1Mbps             | 11          | 2462        | -8.30            | -8.52  | -8.34  | -9.04  | 65.47          | -0.68                  | ≤ 4.08            | Pass   |
| 802.11g       | 6Mbps             | 01          | 2412        | -11.37           | -10.95 | -10.66 | -11.26 | 94.55          | -4.79                  | ≤ 4.08            | Pass   |
| 802.11g       | 6Mbps             | 06          | 2437        | -11.22           | -11.34 | -10.98 | -11.56 | 94.55          | -5.01                  | ≤ 4.08            | Pass   |
| 802.11g       | 6Mbps             | 11          | 2462        | -11.06           | -10.76 | -10.48 | -11.05 | 94.55          | -4.57                  | ≤ 4.08            | Pass   |
| 802.11n-HT20  | MCS0              | 01          | 2412        | -11.88           | -11.24 | -11.48 | -11.93 | 95.37          | -5.39                  | ≤ 4.08            | Pass   |
| 802.11n-HT20  | MCS0              | 06          | 2437        | -11.76           | -11.20 | -11.52 | -11.74 | 95.37          | -5.32                  | ≤ 4.08            | Pass   |
| 802.11n-HT20  | MCS0              | 11          | 2462        | -11.56           | -10.81 | -11.36 | -11.56 | 95.37          | -5.08                  | ≤ 4.08            | Pass   |
| 802.11n-HT40  | MCS0              | 03          | 2422        | -16.11           | -15.78 | -15.47 | -16.27 | 93.55          | -9.58                  | ≤ 4.08            | Pass   |
| 802.11n-HT40  | MCS0              | 06          | 2437        | -14.57           | -14.13 | -14.28 | -14.66 | 93.55          | -8.10                  | ≤ 4.08            | Pass   |
| 802.11n-HT40  | MCS0              | 09          | 2452        | -15.33           | -14.89 | -14.81 | -15.94 | 93.55          | -8.91                  | ≤ 4.08            | Pass   |
| 802.11ax-HE20 | MCS0              | 01          | 2412        | -12.71           | -12.51 | -12.52 | -12.61 | 95.56          | -6.37                  | ≤ 4.08            | Pass   |
| 802.11ax-HE20 | MCS0              | 06          | 2437        | -12.87           | -12.52 | -12.62 | -13.02 | 95.56          | -6.54                  | ≤ 4.08            | Pass   |
| 802.11ax-HE20 | MCS0              | 11          | 2462        | -13.80           | -13.74 | -14.04 | -14.46 | 95.56          | -7.78                  | ≤ 4.08            | Pass   |
| 802.11ax-HE40 | MCS0              | 03          | 2422        | -18.02           | -17.68 | -17.63 | -18.07 | 95.38          | -11.62                 | ≤ 4.08            | Pass   |
| 802.11ax-HE40 | MCS0              | 06          | 2437        | -15.40           | -15.25 | -15.42 | -16.09 | 95.38          | -9.30                  | ≤ 4.08            | Pass   |
| 802.11ax-HE40 | MCS0              | 09          | 2452        | -16.60           | -16.61 | -16.34 | -16.97 | 95.38          | -10.40                 | ≤ 4.08            | Pass   |

Note:

- When EUT duty cycle ≤ 98%, Total AVGPSPD =  $10 \cdot \log \{ 10^{(\text{Ant 0 AVGPSPD}/10)} + 10^{(\text{Ant 1 AVGPSPD}/10)} + 10^{(\text{Ant 2 AVGPSPD}/10)} + 10^{(\text{Ant 3 AVGPSPD}/10)} \} + 10 \cdot \log (1/\text{Duty Cycle})$ .
- Total AVGPSPD (dBm / 10kHz) << Limit (dBm / 3kHz), so there is no necessary to conversion unit.

|           |            |               |       |
|-----------|------------|---------------|-------|
| Test Site | SR2        | Test Engineer | Peter |
| Test Date | 2021/04/13 |               |       |

#### Scan Antenna

| Test Mode    | Data Rate/<br>MCS | Channel<br>No. | Freq.<br>(MHz) | PK PSD<br>(dBm/10kHz) | Total PSD<br>(dBm/10kHz) | Limit<br>(dBm/3kHz) | Result |
|--------------|-------------------|----------------|----------------|-----------------------|--------------------------|---------------------|--------|
| 802.11b      | 1Mbps             | 01             | 2412           | -3.03                 | -3.03                    | $\leq 8$            | Pass   |
| 802.11b      | 1Mbps             | 06             | 2437           | -4.15                 | -4.15                    | $\leq 8$            | Pass   |
| 802.11b      | 1Mbps             | 11             | 2462           | -4.26                 | -4.26                    | $\leq 8$            | Pass   |
| 802.11g      | 6Mbps             | 01             | 2412           | -9.12                 | -9.12                    | $\leq 8$            | Pass   |
| 802.11g      | 6Mbps             | 06             | 2437           | -6.22                 | -6.22                    | $\leq 8$            | Pass   |
| 802.11g      | 6Mbps             | 11             | 2462           | -14.20                | -14.20                   | $\leq 8$            | Pass   |
| 802.11n-HT20 | MCS0              | 01             | 2412           | -10.70                | -10.70                   | $\leq 8$            | Pass   |
| 802.11n-HT20 | MCS0              | 06             | 2437           | -6.67                 | -6.67                    | $\leq 8$            | Pass   |
| 802.11n-HT20 | MCS0              | 11             | 2462           | -15.37                | -15.37                   | $\leq 8$            | Pass   |
| 802.11n-HT40 | MCS0              | 03             | 2422           | -17.20                | -17.20                   | $\leq 8$            | Pass   |
| 802.11n-HT40 | MCS0              | 06             | 2437           | -8.17                 | -8.17                    | $\leq 8$            | Pass   |
| 802.11n-HT40 | MCS0              | 09             | 2452           | -20.49                | -20.49                   | $\leq 8$            | Pass   |

Note: Total PKPSD (dBm / 10kHz) << Limit (dBm / 3kHz), so there is no necessary to conversion unit.

## 802.11b AVGPSD -Ant 0/ Ant 0+1+2+3

## Channel 01 (2412MHz)



## Channel 06 (2437MHz)

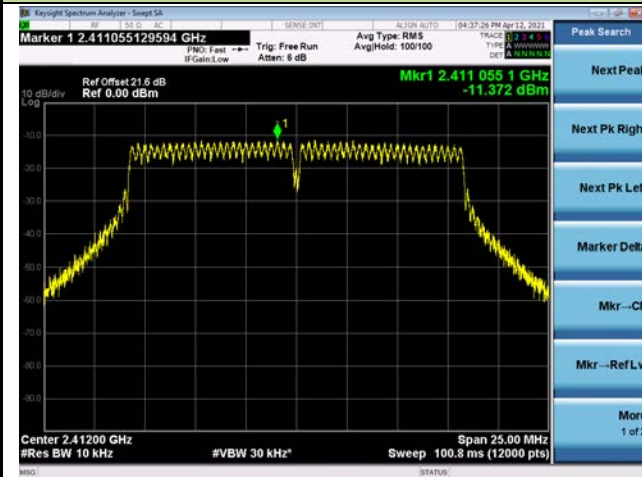


## Channel 11 (2462MHz)

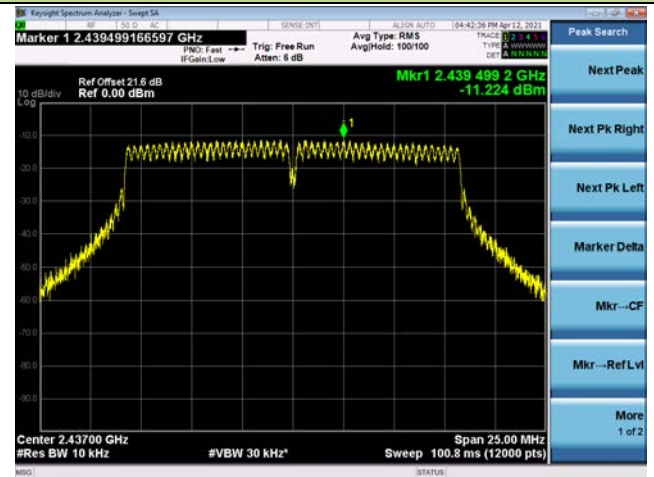


## 802.11g - AVGPSD -Ant 0/ Ant 0+1+2+3

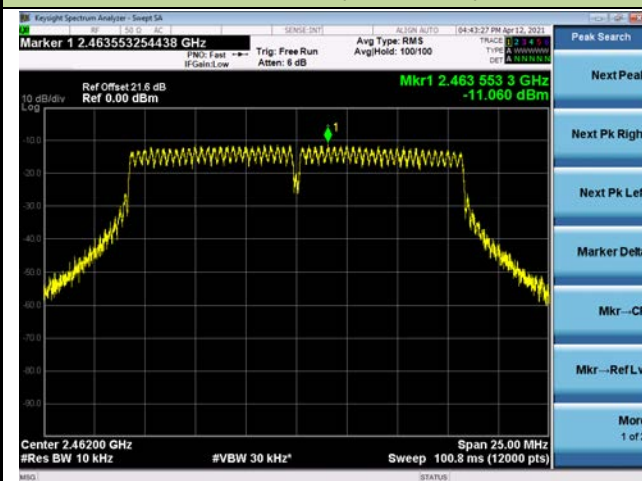
## Channel 01 (2412MHz)



## Channel 06 (2437MHz)

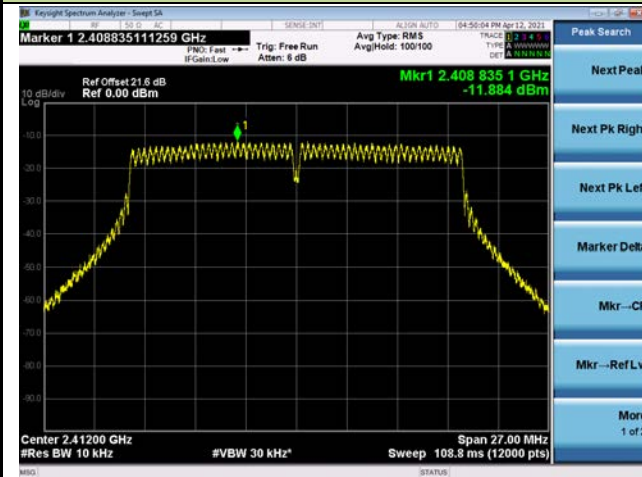


## Channel 11 (2462MHz)

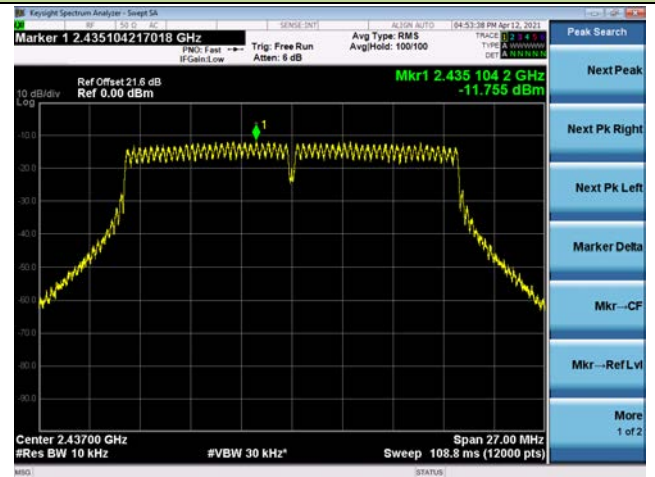


## 802.11n-HT20 - AVGPDS -Ant 0/ Ant 0+1+2+3

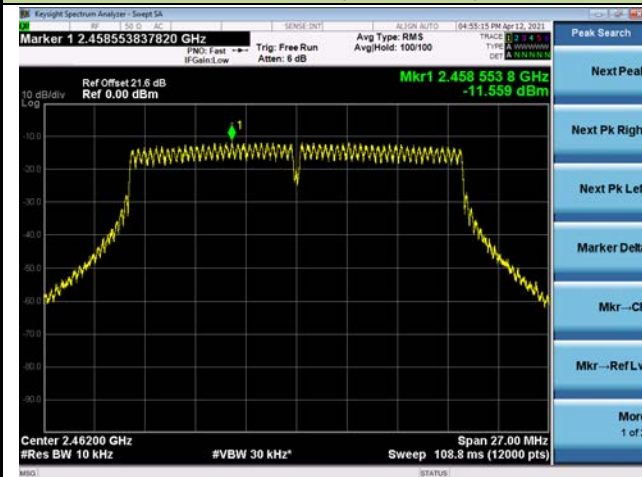
## Channel 01 (2412MHz)



## Channel 06 (2437MHz)

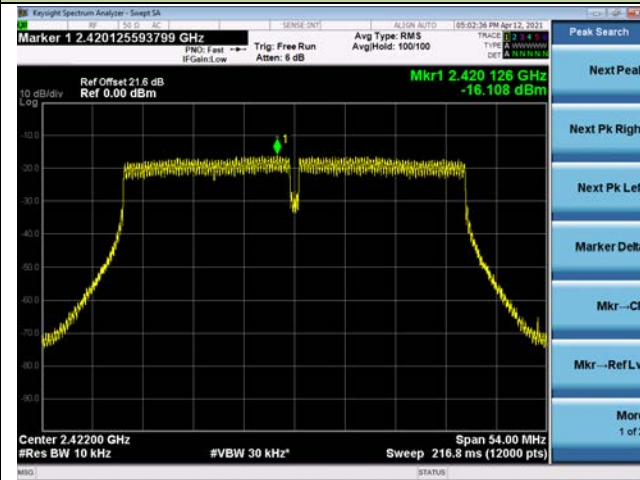


## Channel 11 (2462MHz)

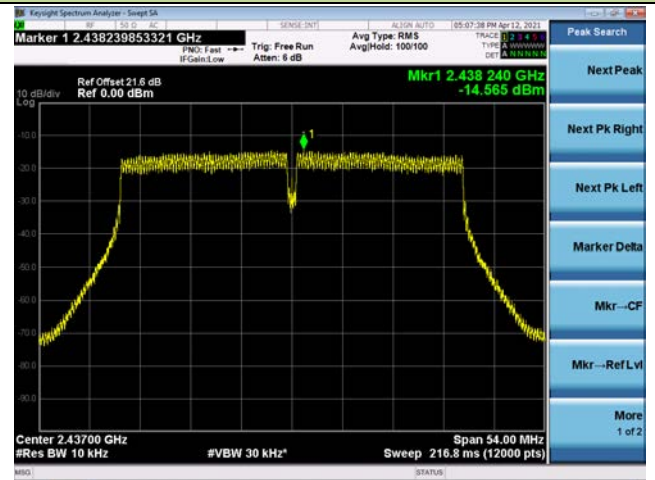


## 802.11n-HT40 - AVGPDS -Ant 0/ Ant 0+1+2+3

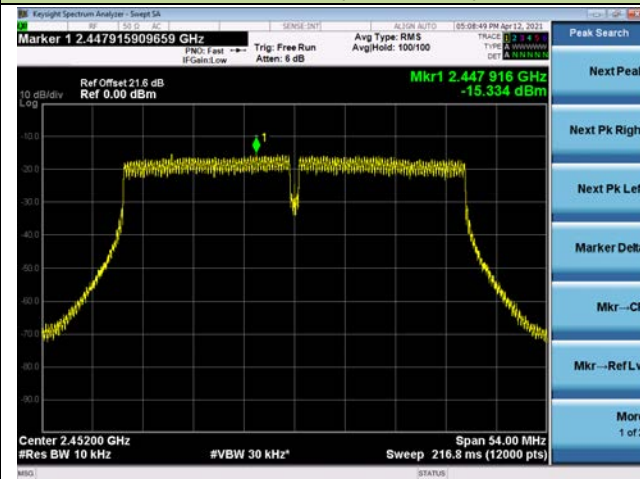
## Channel 03 (2422MHz)



## Channel 06 (2437MHz)

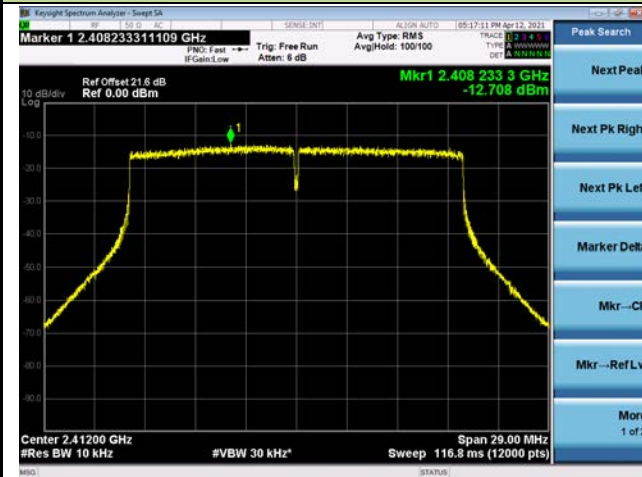


## Channel 09 (2452MHz)

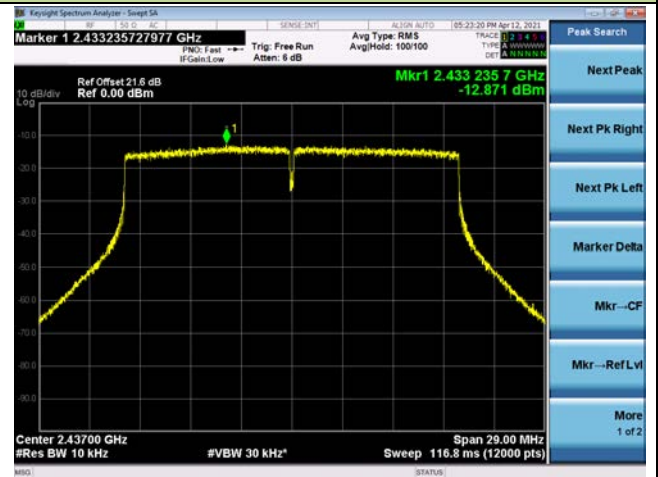


## 802.11ax-HE20 - AVGPDS -Ant 0/ Ant 0+1+2+3

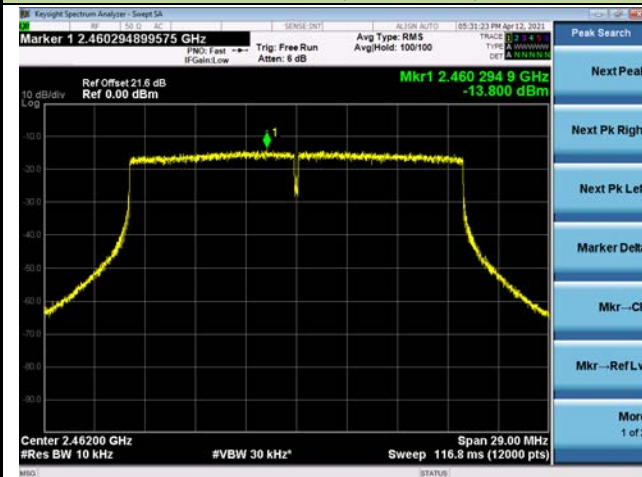
## Channel 01 (2412MHz)



## Channel 06 (2437MHz)

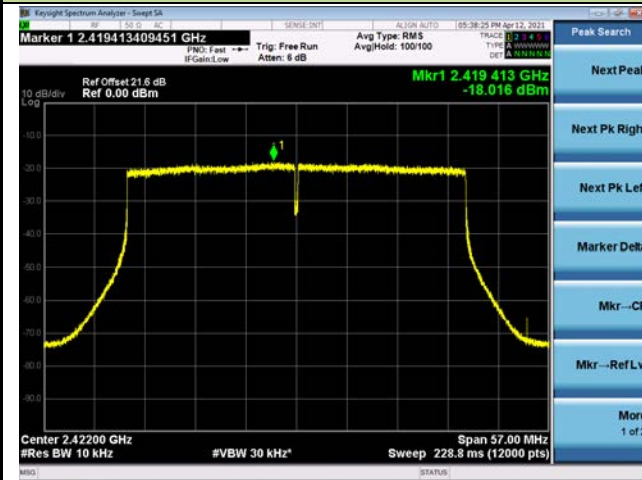


## Channel 11 (2462MHz)

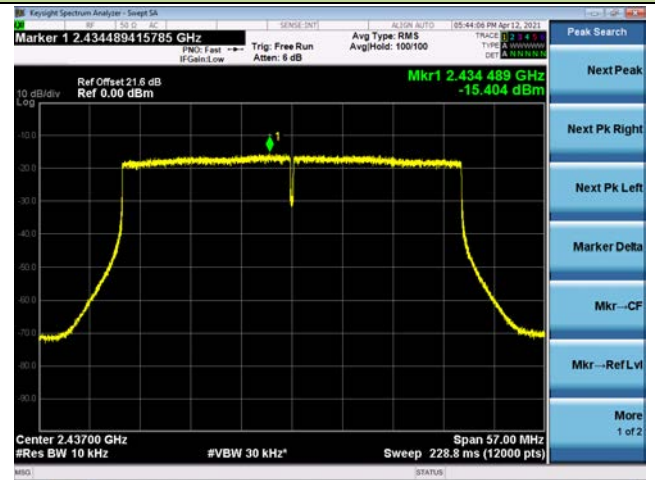


## 802.11ax-HE40 - AVGPSPD -Ant 0/ Ant 0+1+2+3

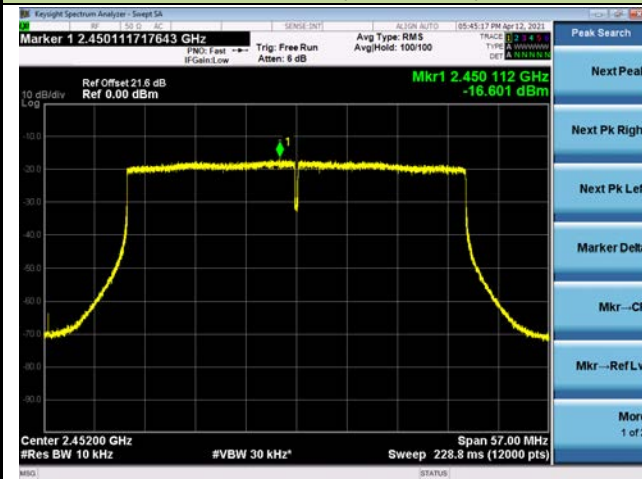
Channel 03 (2422MHz)



Channel 06 (2437MHz)



Channel 09 (2452MHz)



## 802.11b AVGPSD -Ant 1/ Ant 0+1+2+3

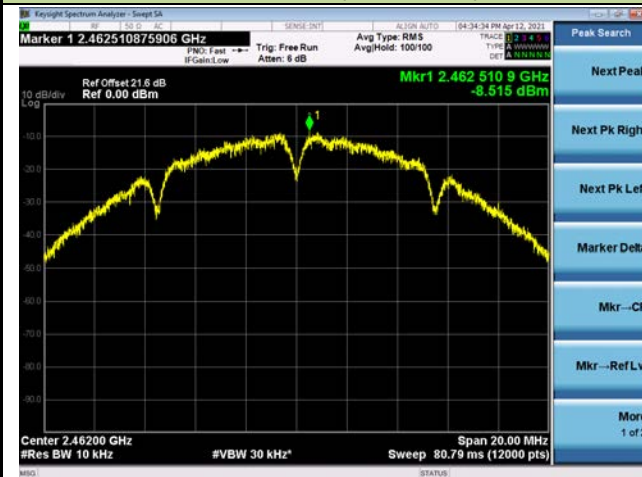
## Channel 01 (2412MHz)



## Channel 06 (2437MHz)

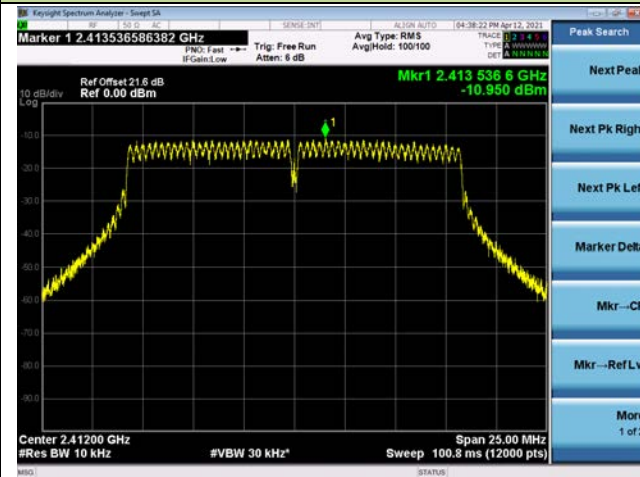


## Channel 11 (2462MHz)

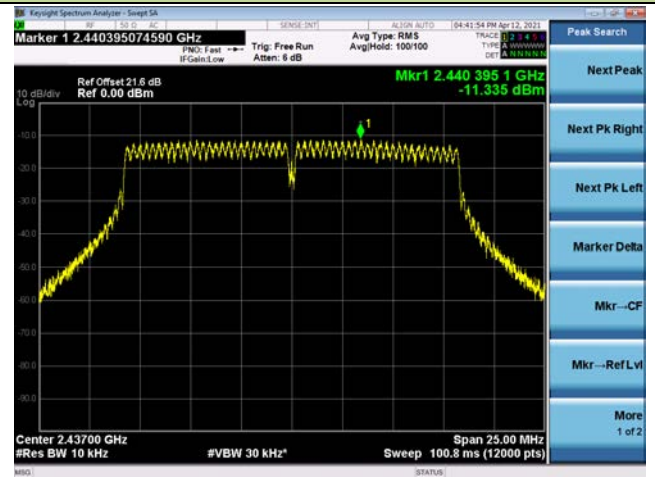


## 802.11g - AVGPSD -Ant 1/ Ant 0+1+2+3

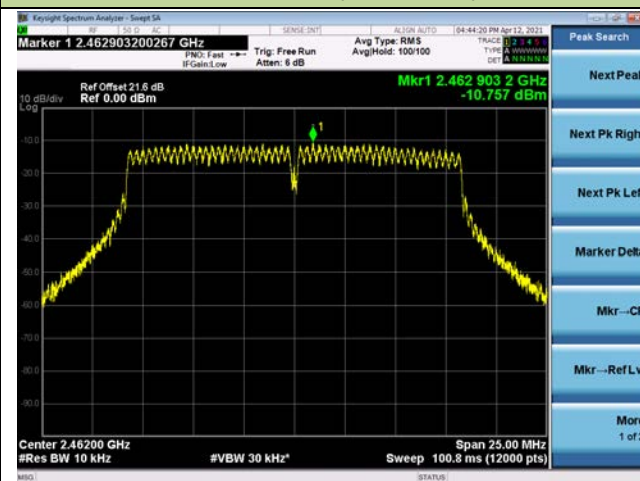
## Channel 01 (2412MHz)



## Channel 06 (2437MHz)

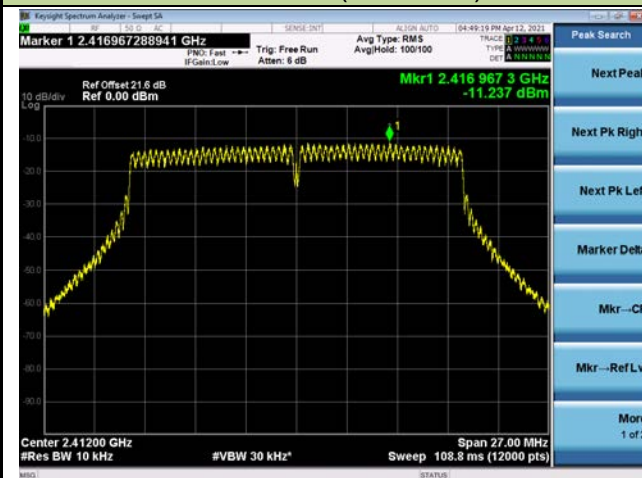


## Channel 11 (2462MHz)

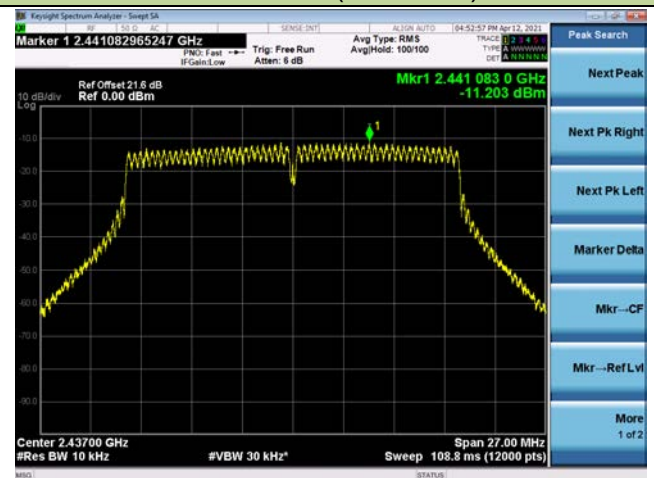


## 802.11n-HT20 - AVGPDS -Ant 1/ Ant 0+1+2+3

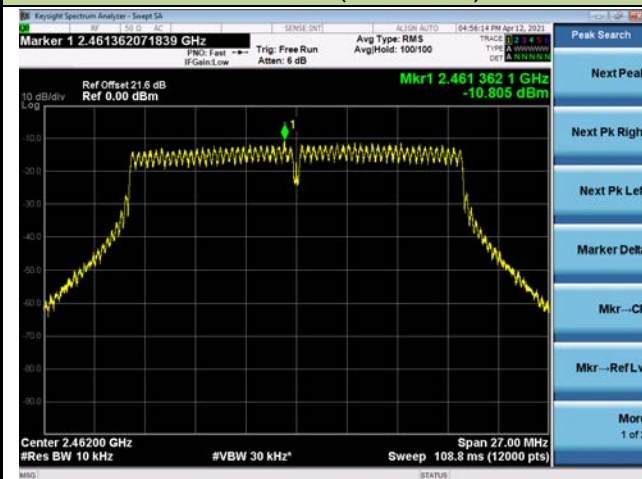
## Channel 01 (2412MHz)



## Channel 06 (2437MHz)

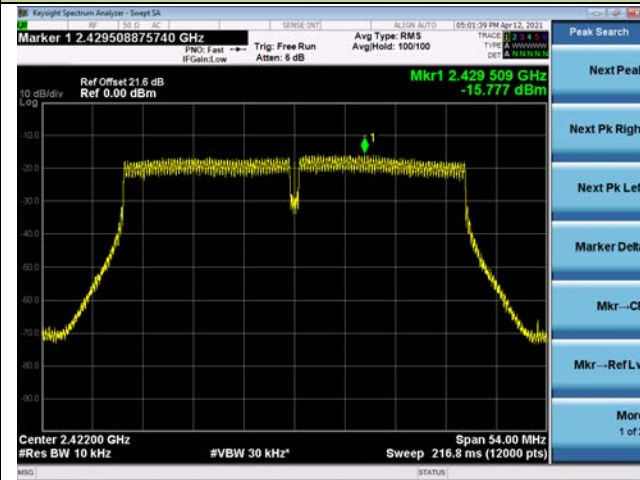


## Channel 11 (2462MHz)

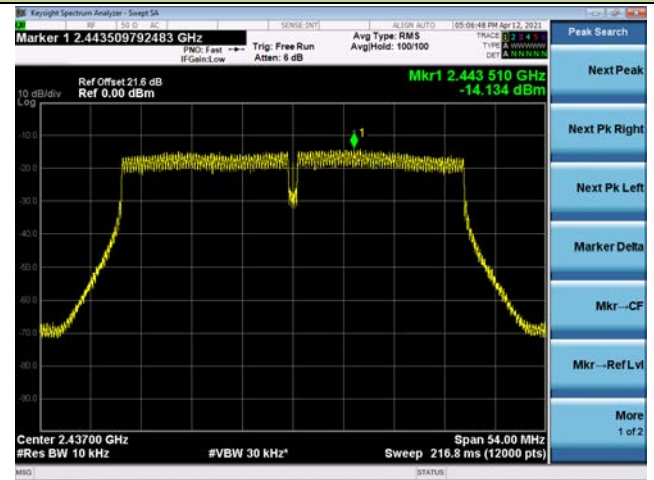


## 802.11n-HT40 - AVGPDS -Ant 1/ Ant 0+1+2+3

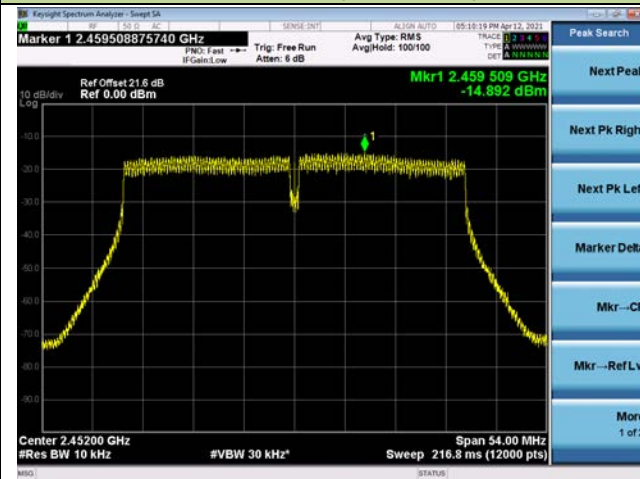
## Channel 03 (2422MHz)



## Channel 06 (2437MHz)

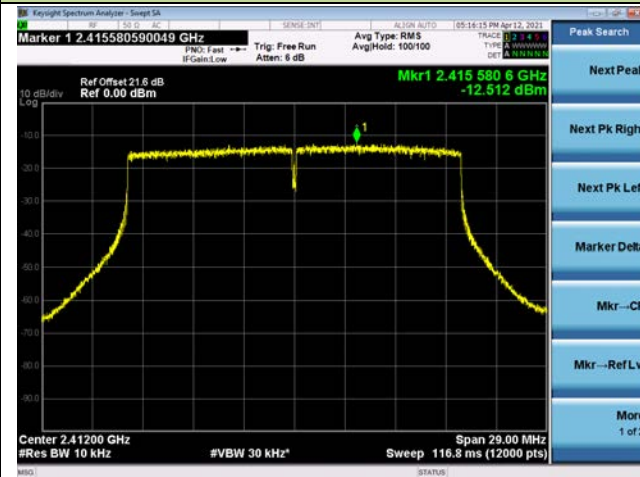


## Channel 09 (2452MHz)



## 802.11ax-HE20 - AVGPDS -Ant 1/ Ant 0+1+2+3

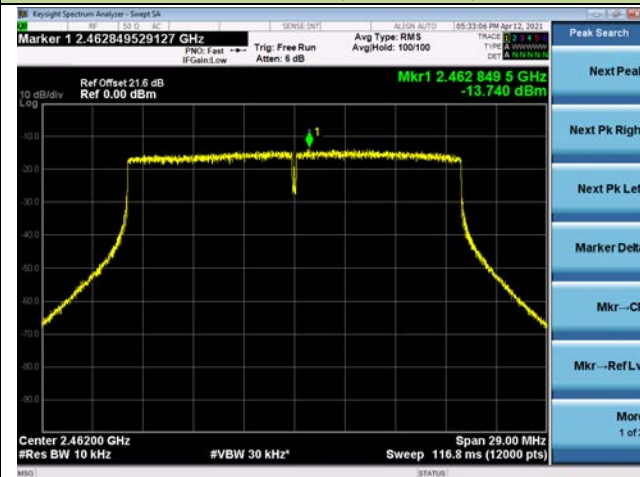
## Channel 01 (2412MHz)



## Channel 06 (2437MHz)



## Channel 11 (2462MHz)

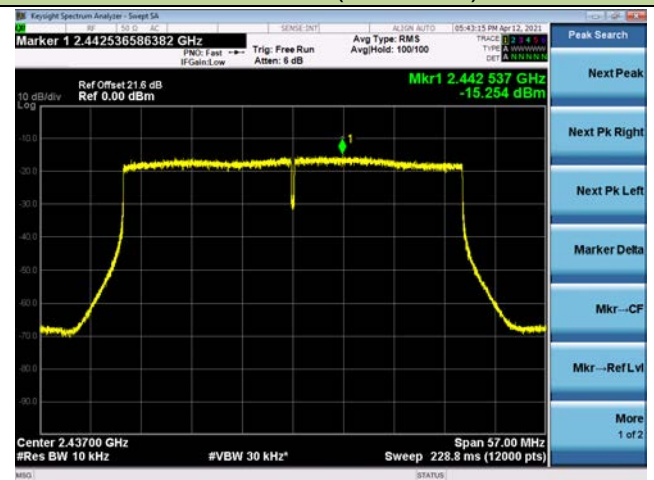


## 802.11ax-HE40 - AVGPSPD -Ant 1/ Ant 0+1+2+3

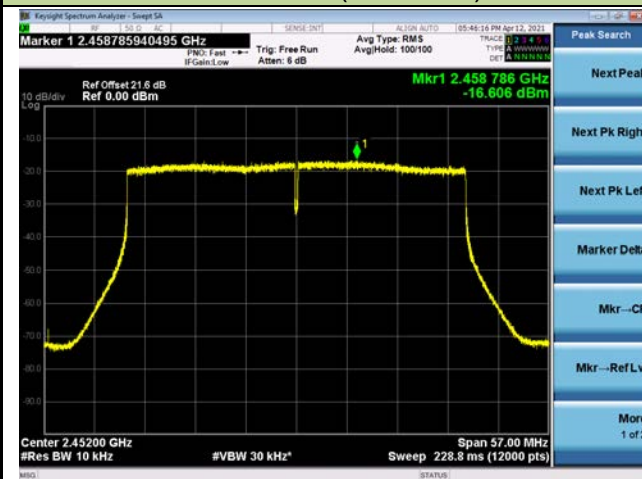
## Channel 03 (2422MHz)



## Channel 06 (2437MHz)



## Channel 09 (2452MHz)



## 802.11b AVGPSD -Ant 2/ Ant 0+1+2+3

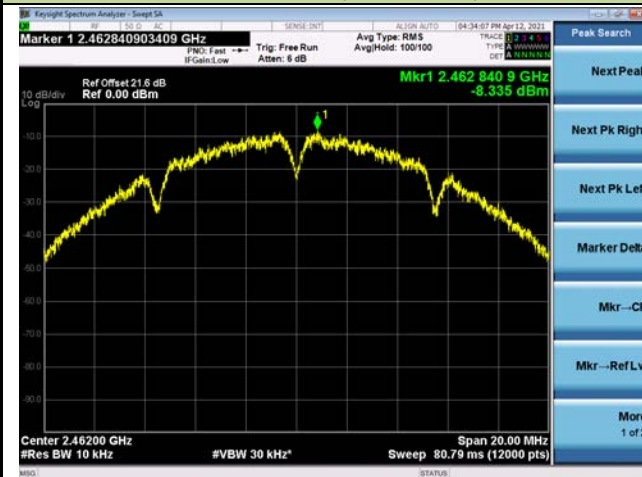
## Channel 01 (2412MHz)



## Channel 06 (2437MHz)

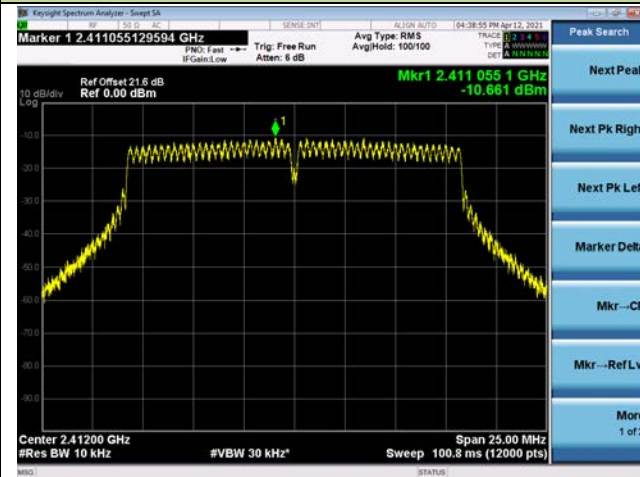


## Channel 11 (2462MHz)

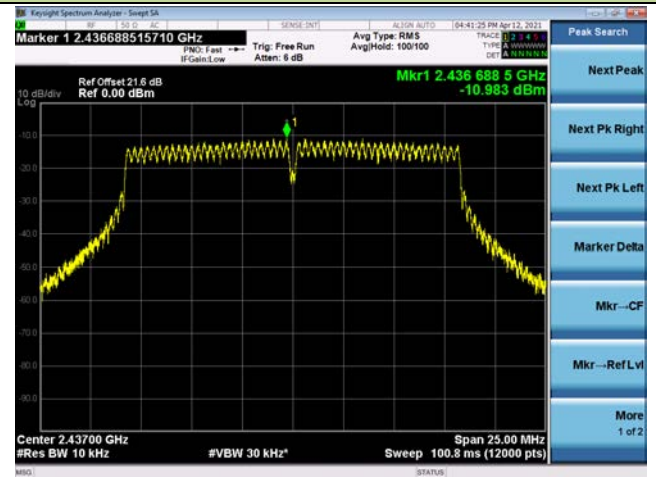


## 802.11g - AVGPSD -Ant 2/ Ant 0+1+2+3

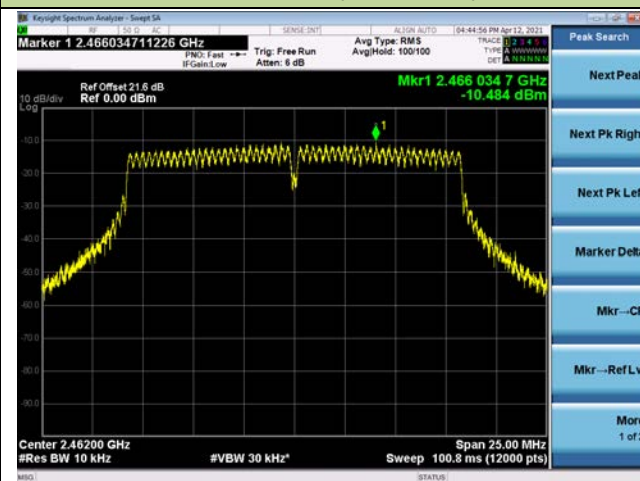
## Channel 01 (2412MHz)



## Channel 06 (2437MHz)

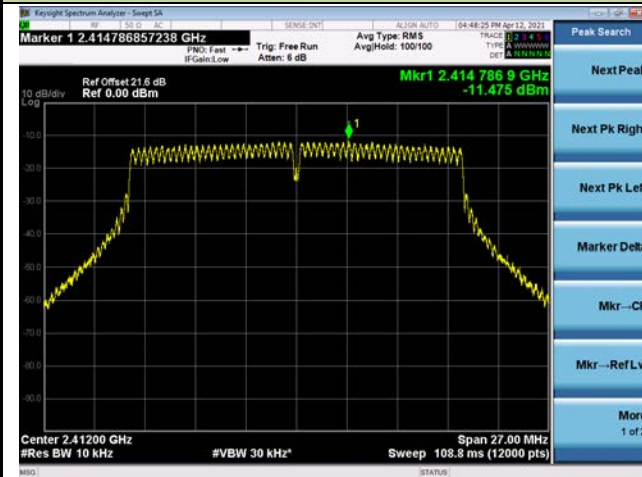


## Channel 11 (2462MHz)

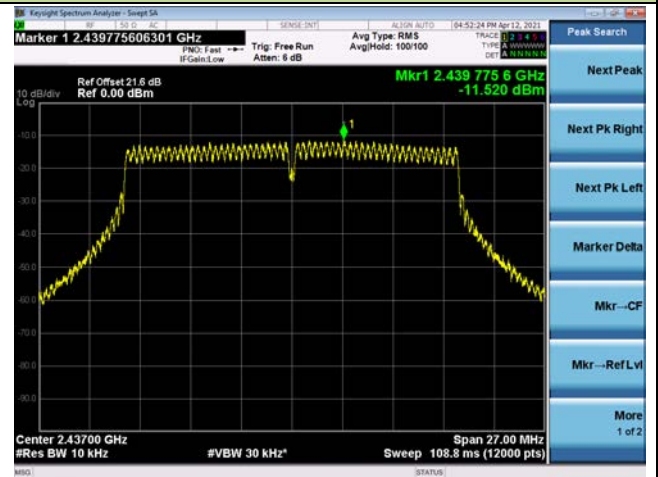


## 802.11n-HT20 - AVGPDS -Ant 2/ Ant 0+1+2+3

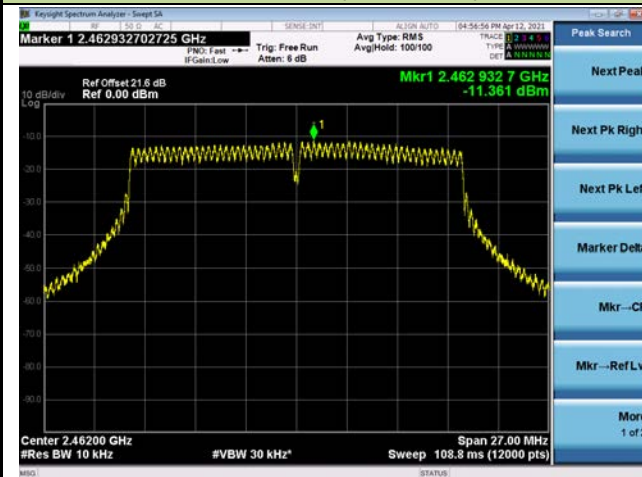
## Channel 01 (2412MHz)



## Channel 06 (2437MHz)

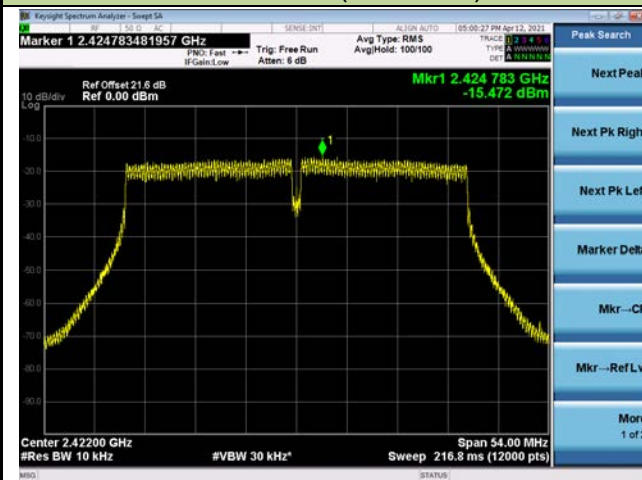


## Channel 11 (2462MHz)

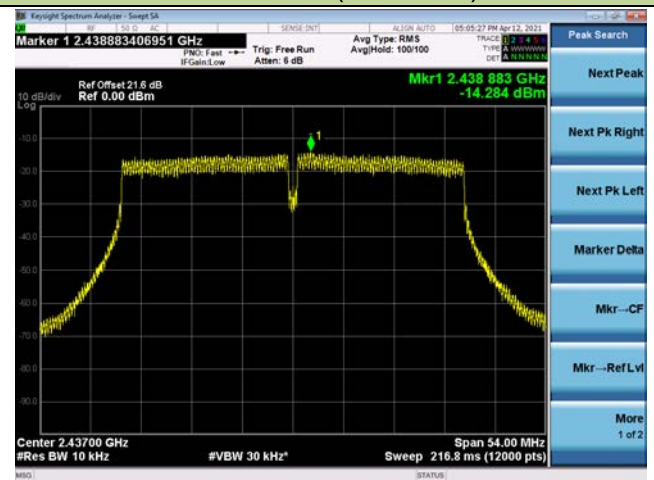


## 802.11n-HT40 - AVGPDS -Ant 2/ Ant 0+1+2+3

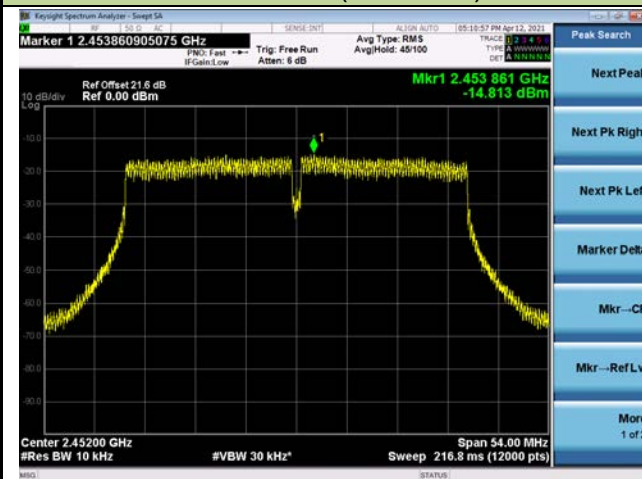
## Channel 03 (2422MHz)



## Channel 06 (2437MHz)

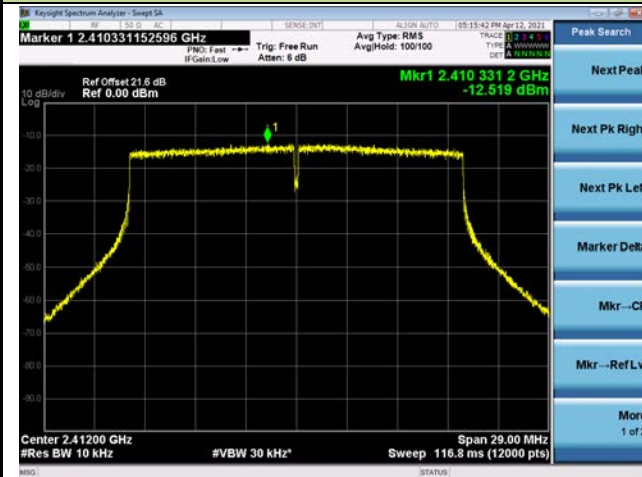


## Channel 09 (2452MHz)

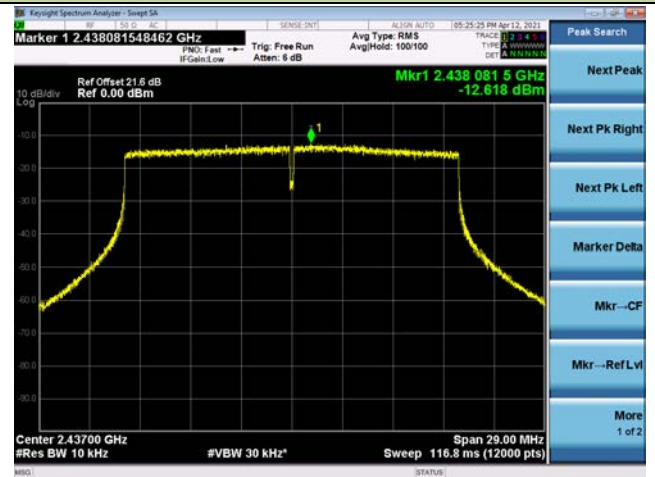


## 802.11ax-HE20 - AVGPSPD -Ant 2/ Ant 0+1+2+3

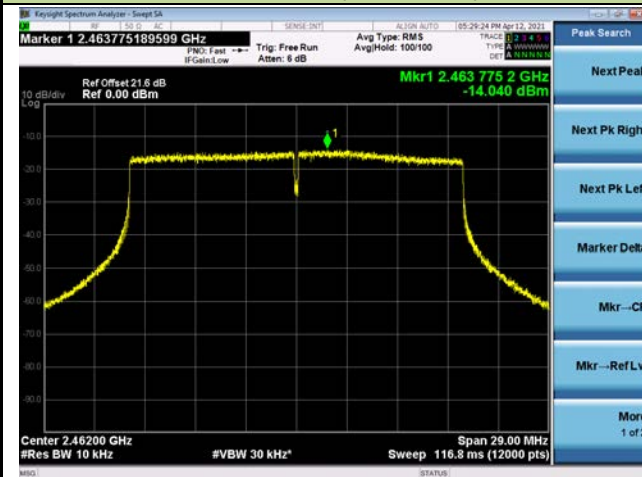
## Channel 01 (2412MHz)



## Channel 06 (2437MHz)

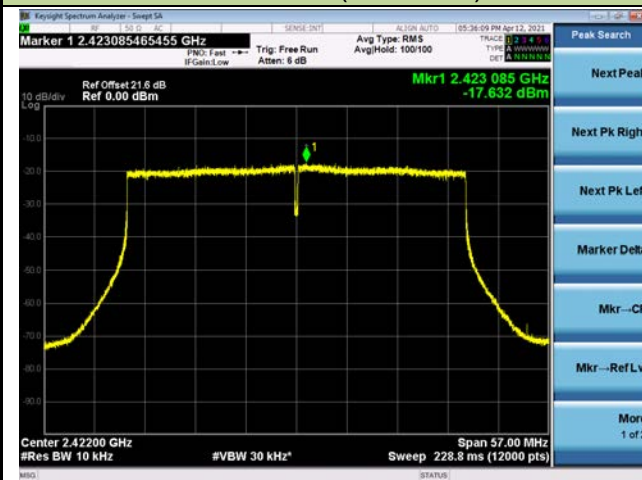


## Channel 11 (2462MHz)

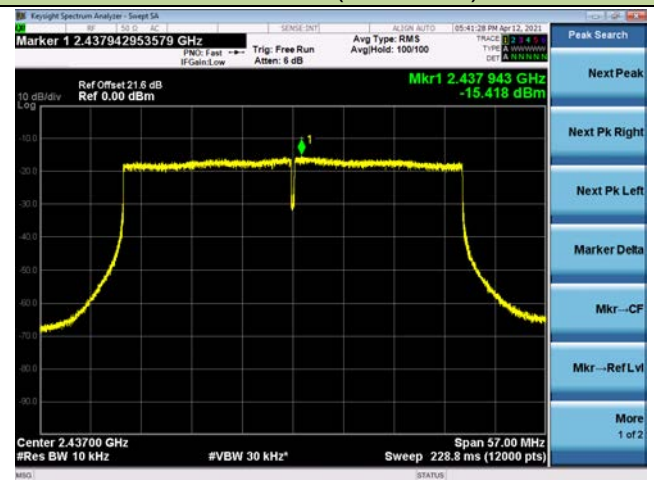


## 802.11ax-HE40 - AVGPSPD -Ant 2/ Ant 0+1+2+3

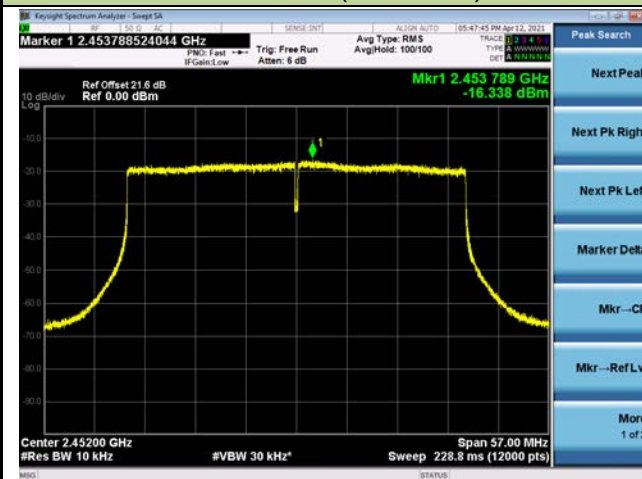
## Channel 03 (2422MHz)



## Channel 06 (2437MHz)



## Channel 09 (2452MHz)



## 802.11b AVGPSD -Ant 3/ Ant 0+1+2+3

## Channel 01 (2412MHz)



## Channel 06 (2437MHz)

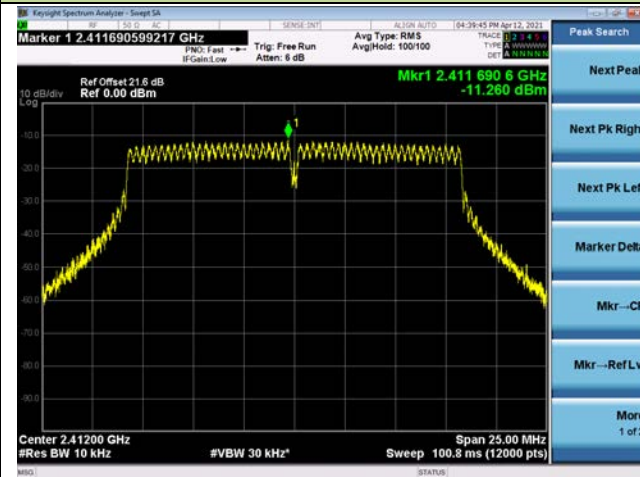


## Channel 11 (2462MHz)

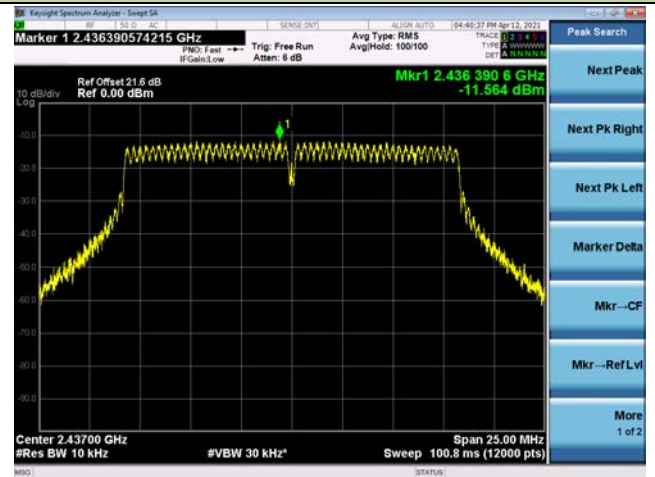


## 802.11g - AVGPSD -Ant 3/ Ant 0+1+2+3

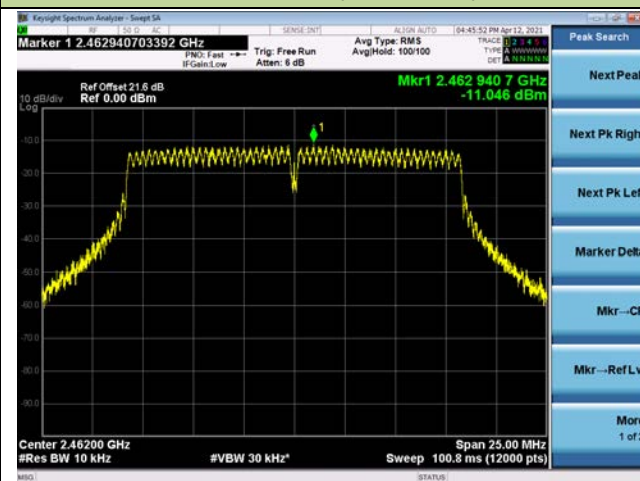
## Channel 01 (2412MHz)



## Channel 06 (2437MHz)

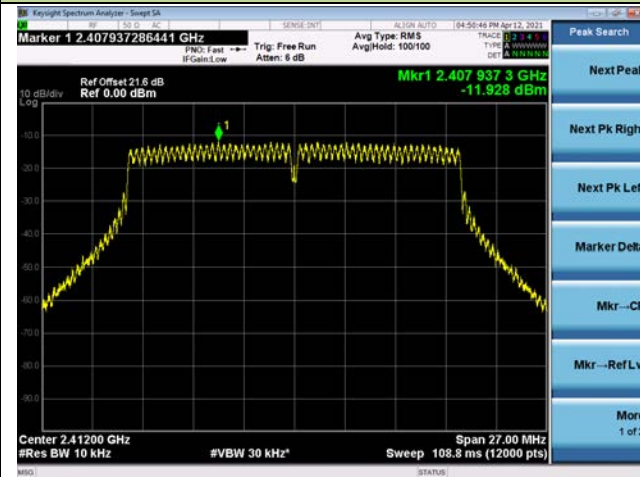


## Channel 11 (2462MHz)

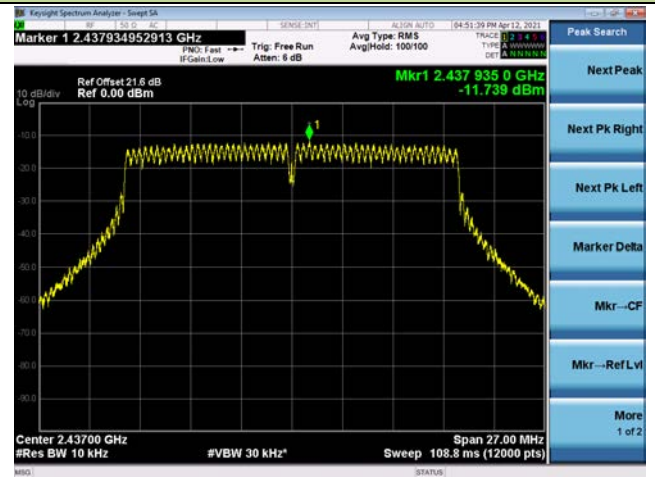


## 802.11n-HT20 - AVGPDS -Ant 3/ Ant 0+1+2+3

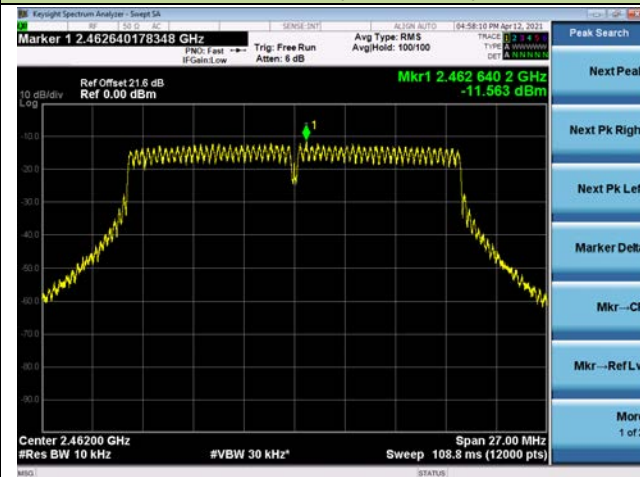
## Channel 01 (2412MHz)



## Channel 06 (2437MHz)

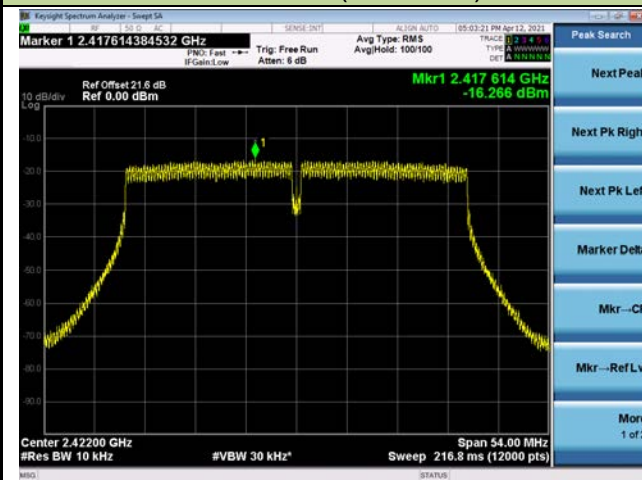


## Channel 11 (2462MHz)

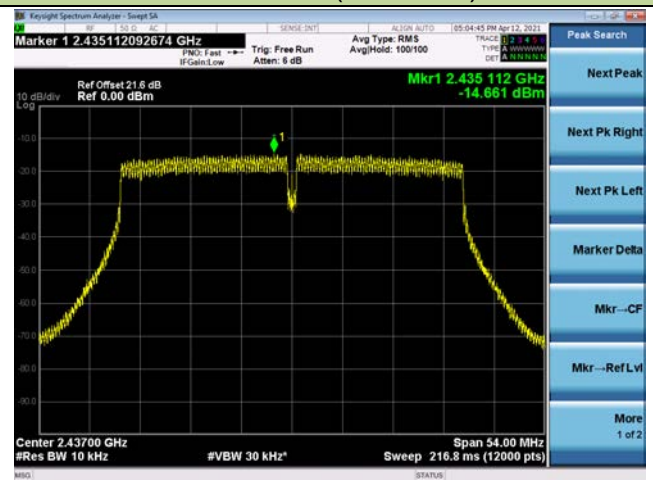


## 802.11n-HT40 - AVGPDS -Ant 3/ Ant 0+1+2+3

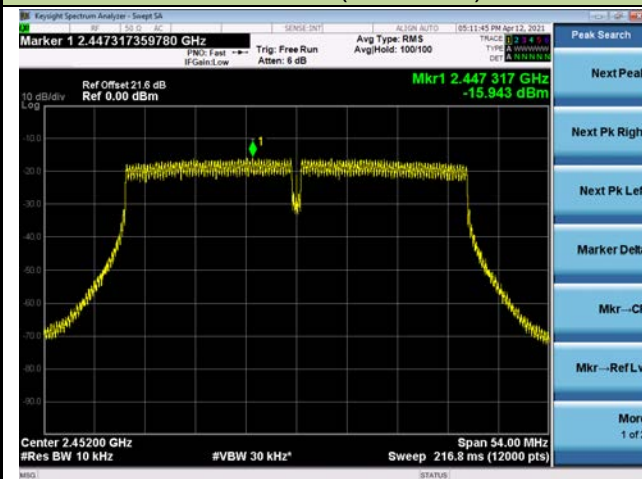
## Channel 03 (2422MHz)



## Channel 06 (2437MHz)

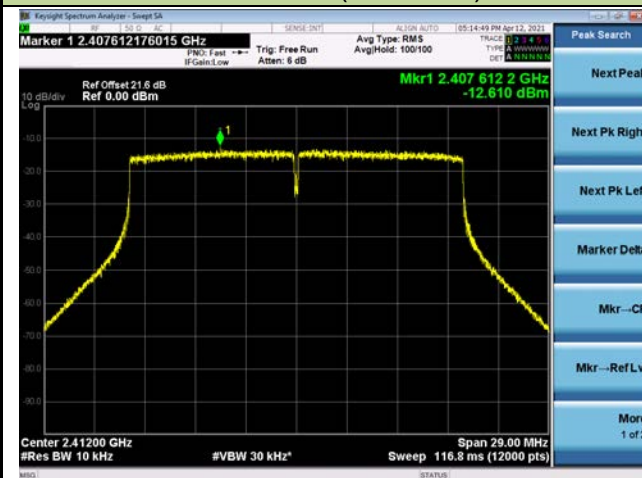


## Channel 09 (2452MHz)

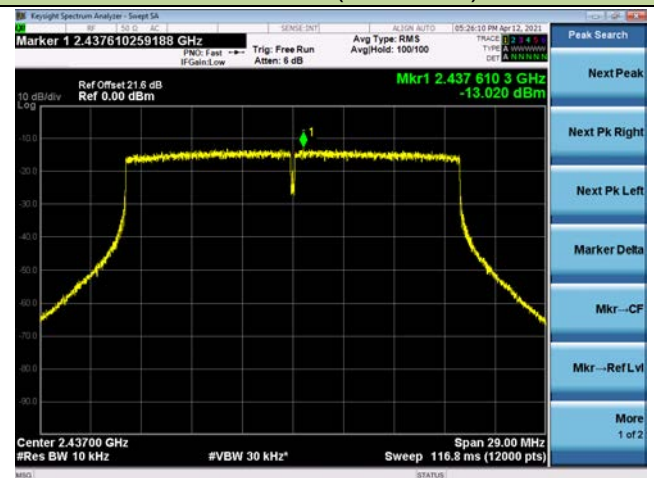


## 802.11ax-HE20 - AVGPDS -Ant 3/ Ant 0+1+2+3

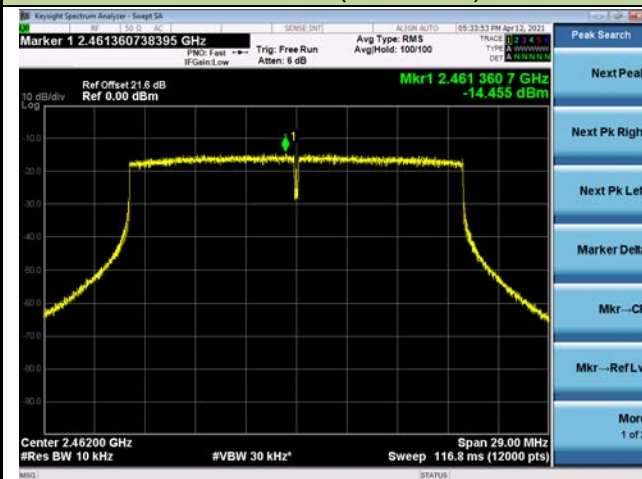
## Channel 01 (2412MHz)



## Channel 06 (2437MHz)



## Channel 11 (2462MHz)



## 802.11ax-HE40 - AVGPSPD -Ant 3/ Ant 0+1+2+3

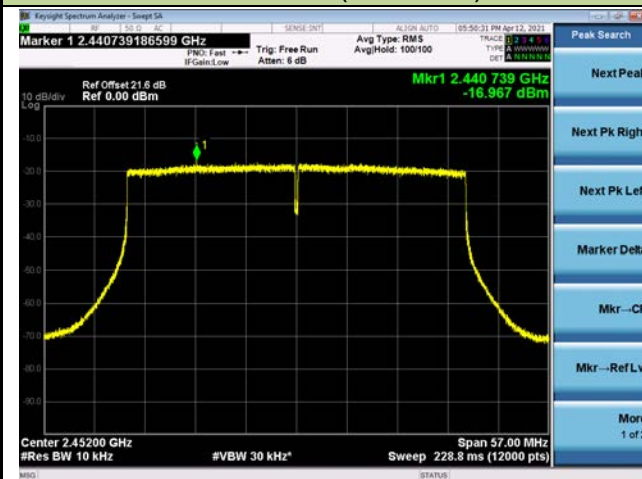
## Channel 03 (2422MHz)



## Channel 06 (2437MHz)



## Channel 09 (2452MHz)



## 802.11b PK PSD -Scan Antenna

## Channel 01 (2412MHz)



## Channel 06 (2437MHz)

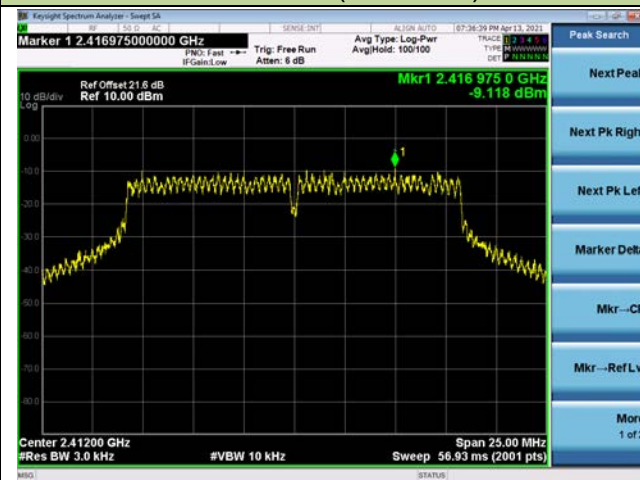


## Channel 11 (2462MHz)

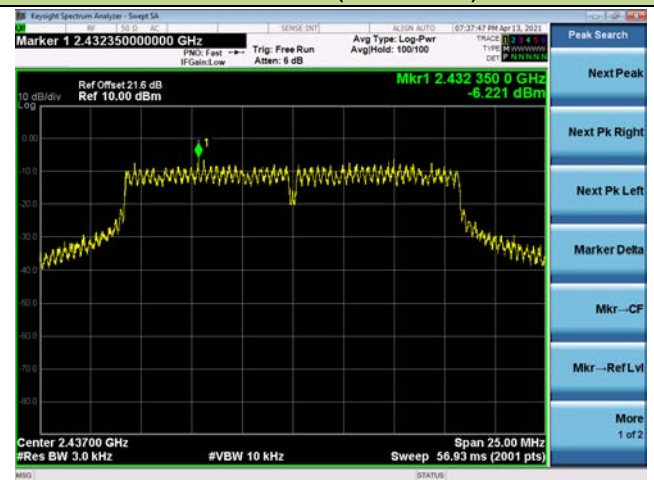


## 802.11g – PK PSD -Scan Antenna

## Channel 01 (2412MHz)



## Channel 06 (2437MHz)



## Channel 11 (2462MHz)

