# TEST REPORT

| | |
|---|---|
| **Applicant:** | MeLE Technologies (Shenzhen) Co., LTD. |
| **Address of Applicant:** | 3FW Mele Building, No.28 Cuijing Rd., Pingshan District, Shenzhen,Guangdong Province, (518118),P.R.China |
| **Manufacturer/Factory :** | MeLE Technologies (Shenzhen) Co., LTD. |
| **Address of Manufacturer/Factory :** | 3FW Mele Building, No.28 Cuijing Rd., Pingshan District, Shenzhen,Guangdong Province, (518118),P.R.China |

**Equipment Under Test (EUT)**

| | |
|---|---|
| Product Name: | Fanless Mini PC |
| Model No.: | PCG02 APL, PCG02 APO |
| Trade Mark: | MeLE |
| **FCC ID:** | WF7PCG02202001 |
| **Applicable standards:** | FCC CFR Title 47 Part 15 Subpart C Section 15.247 |
| **Date of sample receipt:** | Dec. 01, 2020 |
| **Date of Test:** | Dec. 01 - Dec. 15, 2020 |
| **Date of report issued:** | Dec. 18, 2020 |
| **Test Result :** | PASS * |

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

Authorized Signature:

**Robinson Lo**
**Laboratory Manager**

# 2 Version

| Version No. | Date | Description |
|---|---|---|
| *00* | *Dec. 18, 2020* | *Original* |
| | | |
| | | |
| | | |
| | | |

***Prepared By:***  ***Date:*** *Dec. 18, 2020*

***Project Engineer***

***Check By:***  ***Date:*** *Dec. 18, 2020*

***Reviewer***

# 3 Contents

Page

# 4 Test Summary

| Test Item | Section | Result |
|---|---|---|
| Antenna requirement | FCC part 15.203/15.247 (c) | Pass |
| AC Power Line Conducted Emission | FCC part 15.207 | Pass |
| Conducted Peak Output Power | FCC part 15.247 (b)(3) | Pass |
| Channel Bandwidth | FCC part 15.247 (a)(2) | Pass |
| Power Spectral Density | FCC part 15.247 (e) | Pass |
| Band Edge | FCC part 15.247(d) | Pass |
| Spurious Emission | FCC part 15.205/15.209 | Pass |

*Remark: Test according to ANSI C63.10:2013 and RSS-Gen*

*Pass: The EUT complies with the essential requirements in the standard.*

**Measurement Uncertainty**

| Test Item | Frequency Range | Measurement Uncertainty | Notes |
|---|---|---|---|
| Radiated Emission | 30MHz-200MHz | 3.8039dB | (1) |
| Radiated Emission | 200MHz-1GHz | 3.9679dB | (1) |
| Radiated Emission | 1GHz-18GHz | 4.29dB | (1) |
| Radiated Emission | 18GHz-40GHz | 3.30dB | (1) |
| AC Power Line Conducted Emission | 0.15MHz ~ 30MHz | 3.44dB | (1) |
| Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%. | | | |

# 5 General Information

## 5.1 General Description of EUT

| | |
|---|---|
| Product Name: | Fanless Mini PC |
| Model No.: | PCG02 APL, PCG02 APO |
| Test Model No.: | PCG02 APL |
| Remark: All above models are identical in the same interior structure and electrical circuits. Both PCG02 APL and PCG02 APO will have two different PCB layout to support different DDR, and each PCB layout will have different configurations. The differences between different configurations should be the appearance, RAM, Storage, and operating system. The highest configuration of both PCB version was used for testing. Only show the worst test data on the report. | |
| Serial No.: | N/A |
| Hardware Version: | N/A |
| Software Version: | N/A |
| Test sample(s) ID: | GTS202012000016 |
| Sample(s) Status: | Engineer sample |
| Sample(s) Status | Engineer sample |
| Channel numbers: | 802.11b/802.11g /802.11n(HT20): 11<br>802.11n(HT40):7 |
| Channel separation: | 5MHz |
| Modulation technology: | 802.11b: Direct Sequence Spread Spectrum (DSSS)<br>802.11g/802.11n(H20)/802.11n(HT40):<br>Orthogonal Frequency Division Multiplexing (OFDM) |
| Antenna Type: | Antenna 1:Integral Antenna<br>Antenna 2: FPC Antenna |
| Antenna gain: | Antenna 1: 2.0dBi<br>Antenna 2: 2.0dBi |
| Power supply: | Switching Adaptor<br>Model: FJ-SW0503000N<br>Input: AC 100-240V, 50/60Hz, 0.6A Max<br>Output: DC 5.0V, 3.0A |

Directional gain of MIMO = $G_{ANT}$ + 10 log($N_{ANT}$) dBi=5.00dBi

| Operation Frequency each of channel | | | | | | | |
|---|---|---|---|---|---|---|---|
| Channel | Frequency | Channel | Frequency | Channel | Frequency | Channel | Frequency |
| 1 | 2412MHz | 4 | 2427MHz | 7 | 2442MHz | 10 | 2457MHz |
| 2 | 2417MHz | 5 | 2432MHz | 8 | 2447MHz | 11 | 2462MHz |
| 3 | 2422MHz | 6 | 2437MHz | 9 | 2452MHz | | |

Note:

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

| Test channel | Frequency (MHz) | |
|---|---|---|
| | 802.11b/802.11g/802.11n(HT20) | 802.11n(HT40) |
| Lowest channel | 2412MHz | 2422MHz |
| Middle channel | 2437MHz | 2437MHz |
| Highest channel | 2462MHz | 2452MHz |

## 5.2 Test mode

| | |
|---|---|
| Transmitting mode | Keep the EUT in continuously transmitting mode |

*Remark: During the test, the dutycycle >98%, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.*

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

Pre-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.

| Mode | 802.11b | 802.11g | 802.11n(HT20) | 802.11n(HT40) |
|---|---|---|---|---|
| Data rate | 1Mbps | 6Mbps | 6.5Mbps | 13Mbps |

## 5.3 Description of Support Units

None.

## 5.4 Deviation from Standards

None.

## 5.5 Abnormalities from Standard Conditions

None.

## 5.6 Test Facility

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

● **FCC —Registration No.: 381383**

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 381383.

● **IC —Registration No.: 9079A**

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A

● **NVLAP (LAB CODE:600179-0)**

Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). LAB CODE:600179-0

## 5.7 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.
Address: No. 123-128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102
Tel: 0755-27798480
Fax: 0755-27798960

## 5.8 Additional Instructions

| | |
|---|---|
| Test Software | Special test command provided by manufacturer |
| Power level setup | Default |

# 6 Test Instruments list

| Radiated Emission: | | | | | | |
|---|---|---|---|---|---|---|
| **Item** | **Test Equipment** | **Manufacturer** | **Model No.** | **Inventory No.** | **Cal.Date (mm-dd-yy)** | **Cal.Due date (mm-dd-yy)** |
| 1 | 3m Semi- Anechoic Chamber | ZhongYu Electron | 9.2(L)*6.2(W)* 6.4(H) | GTS250 | July. 02 2020 | July. 01 2025 |
| 2 | Control Room | ZhongYu Electron | 6.2(L)*2.5(W)* 2.4(H) | GTS251 | N/A | N/A |
| 3 | EMI Test Receiver | Rohde & Schwarz | ESU26 | GTS203 | June. 25 2020 | June. 24 2021 |
| 4 | BiConiLog Antenna | SCHWARZBECK MESS-ELEKTRONIK | VULB9163 | GTS214 | June. 25 2020 | June. 24 2021 |
| 5 | Double -ridged waveguide horn | SCHWARZBECK MESS-ELEKTRONIK | BBHA 9120 D | GTS208 | June. 25 2020 | June. 24 2021 |
| 6 | Horn Antenna | ETS-LINDGREN | 3160 | GTS217 | June. 25 2020 | June. 24 2021 |
| 7 | EMI Test Software | AUDIX | E3 | N/A | N/A | N/A |
| 8 | Coaxial Cable | GTS | N/A | GTS213 | June. 25 2020 | June. 24 2021 |
| 9 | Coaxial Cable | GTS | N/A | GTS211 | June. 25 2020 | June. 24 2021 |
| 10 | Coaxial cable | GTS | N/A | GTS210 | June. 25 2020 | June. 24 2021 |
| 11 | Coaxial Cable | GTS | N/A | GTS212 | June. 25 2020 | June. 24 2021 |
| 12 | Amplifier(100kHz-3GHz) | HP | 8347A | GTS204 | June. 25 2020 | June. 24 2021 |
| 13 | Amplifier(2GHz-20GHz) | HP | 84722A | GTS206 | June. 25 2020 | June. 24 2021 |
| 14 | Amplifier (18-26GHz) | Rohde & Schwarz | AFS33-18002 650-30-8P-44 | GTS218 | June. 25 2020 | June. 24 2021 |
| 15 | Band filter | Amindeon | 82346 | GTS219 | June. 25 2020 | June. 24 2021 |
| 16 | Power Meter | Anritsu | ML2495A | GTS540 | June. 25 2020 | June. 24 2021 |
| 17 | Power Sensor | Anritsu | MA2411B | GTS541 | June. 25 2020 | June. 24 2021 |
| 18 | Wideband Radio Communication Tester | Rohde & Schwarz | CMW500 | GTS575 | June. 25 2020 | June. 24 2021 |
| 19 | Splitter | Agilent | 11636B | GTS237 | June. 25 2020 | June. 24 2021 |
| 20 | Loop Antenna | ZHINAN | ZN30900A | GTS534 | June. 25 2020 | June. 24 2021 |
| 21 | Breitband hornantenne | SCHWARZBECK | BBHA 9170 | GTS579 | Oct. 18 2020 | Oct. 17 2021 |
| 22 | Amplifier | TDK | PA-02-02 | GTS574 | Oct. 18 2020 | Oct. 17 2021 |
| 23 | Amplifier | TDK | PA-02-03 | GTS576 | Oct. 18 2020 | Oct. 17 2021 |
| 24 | PSA Series Spectrum Analyzer | Rohde & Schwarz | FSP | GTS578 | June. 25 2020 | June. 24 2021 |

| Conducted Emission | | | | | | |
|---|---|---|---|---|---|---|
| **Item** | **Test Equipment** | **Manufacturer** | **Model No.** | **Inventory No.** | **Cal.Date (mm-dd-yy)** | **Cal.Due date (mm-dd-yy)** |
| 1 | Shielding Room | ZhongYu Electron | 7.3(L)x3.1(W)x2.9(H) | GTS252 | May.15 2019 | May.14 2022 |
| 2 | EMI Test Receiver | R&S | ESCI 7 | GTS552 | June. 25 2020 | June. 24 2021 |
| 3 | Coaxial Switch | ANRITSU CORP | MP59B | GTS225 | June. 25 2020 | June. 24 2021 |
| 4 | ENV216 2-L-V-NETZNACHB.DE | ROHDE&SCHWARZ | ENV216 | GTS226 | June. 25 2020 | June. 24 2021 |
| 5 | Coaxial Cable | GTS | N/A | GTS227 | N/A | N/A |
| 6 | EMI Test Software | AUDIX | E3 | N/A | N/A | N/A |
| 7 | Thermo meter | KTJ | TA328 | GTS233 | June. 25 2020 | June. 24 2021 |
| 8 | Absorbing clamp | Elektronik-Feinmechanik | MDS21 | GTS229 | June. 25 2020 | June. 24 2021 |
| 9 | ISN | SCHWARZBECK | NTFM 8158 | GTD565 | June. 25 2020 | June. 24 2021 |

| RF Conducted Test: | | | | | | |
|---|---|---|---|---|---|---|
| **Item** | **Test Equipment** | **Manufacturer** | **Model No.** | **Serial No.** | **Cal.Date (mm-dd-yy)** | **Cal.Due date (mm-dd-yy)** |
| 1 | MXA Signal Analyzer | Agilent | N9020A | GTS566 | June. 25 2020 | June. 24 2021 |
| 2 | EMI Test Receiver | R&S | ESCI 7 | GTS552 | June. 25 2020 | June. 24 2021 |
| 3 | Spectrum Analyzer | Agilent | E4440A | GTS533 | June. 25 2020 | June. 24 2021 |
| 4 | MXG vector Signal Generator | Agilent | N5182A | GTS567 | June. 25 2020 | June. 24 2021 |
| 5 | ESG Analog Signal Generator | Agilent | E4428C | GTS568 | June. 25 2020 | June. 24 2021 |
| 6 | USB RF Power Sensor | DARE | RPR3006W | GTS569 | June. 25 2020 | June. 24 2021 |
| 7 | RF Switch Box | Shongyi | RFSW3003328 | GTS571 | June. 25 2020 | June. 24 2021 |
| 8 | Programmable Constant Temp & Humi Test Chamber | WEWON | WHTH-150L-40-880 | GTS572 | June. 25 2020 | June. 24 2021 |

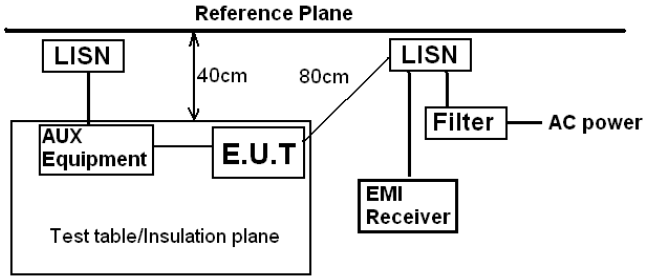
| General used equipment: | | | | | | |
|---|---|---|---|---|---|---|
| **Item** | **Test Equipment** | **Manufacturer** | **Model No.** | **Inventory No.** | **Cal.Date (mm-dd-yy)** | **Cal.Due date (mm-dd-yy)** |
| 1 | Humidity/ Temperature Indicator | KTJ | TA328 | GTS243 | June. 25 2020 | June. 24 2021 |
| 2 | Barometer | ChangChun | DYM3 | GTS255 | June. 25 2020 | June. 24 2021 |

# 7 Test results and Measurement Data

## 7.1 Antenna requirement

| | |
|---|---|
| **Standard requirement:** | FCC Part15 C Section 15.203 /247(c) |
| **15.203 requirement:**<br>An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.<br>**15.247(c) (1)(i) requirement:**<br>(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi. | |
| **EUT Antenna:** | |
| *The antennas are integral antenna and FPC antenna, the best case gain of the antennas are 2.0dBi, reference to the appendix II for details* | |

## 7.2 Conducted Emissions

<table>
<tr><td>Test Requirement:</td><td colspan="5">FCC Part15 C Section 15.207</td></tr>
<tr><td>Test Method:</td><td colspan="5">ANSI C63.10:2013</td></tr>
<tr><td>Test Frequency Range:</td><td colspan="5">150KHz to 30MHz</td></tr>
<tr><td>Receiver setup:</td><td colspan="5">RBW=9KHz, VBW=30KHz, Sweep time=auto</td></tr>
<tr><td>Limit:</td><td colspan="5"><table><tr><td rowspan="2">Frequency range (MHz)</td><td colspan="2">Limit (dBuV)</td></tr><tr><td>Quasi-peak</td><td>Average</td></tr><tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr><tr><td>0.5-5</td><td>56</td><td>46</td></tr><tr><td>5-30</td><td>60</td><td>50</td></tr></table>* Decreases with the logarithm of the frequency.</td></tr>
<tr><td>Test setup:</td><td colspan="5"> 

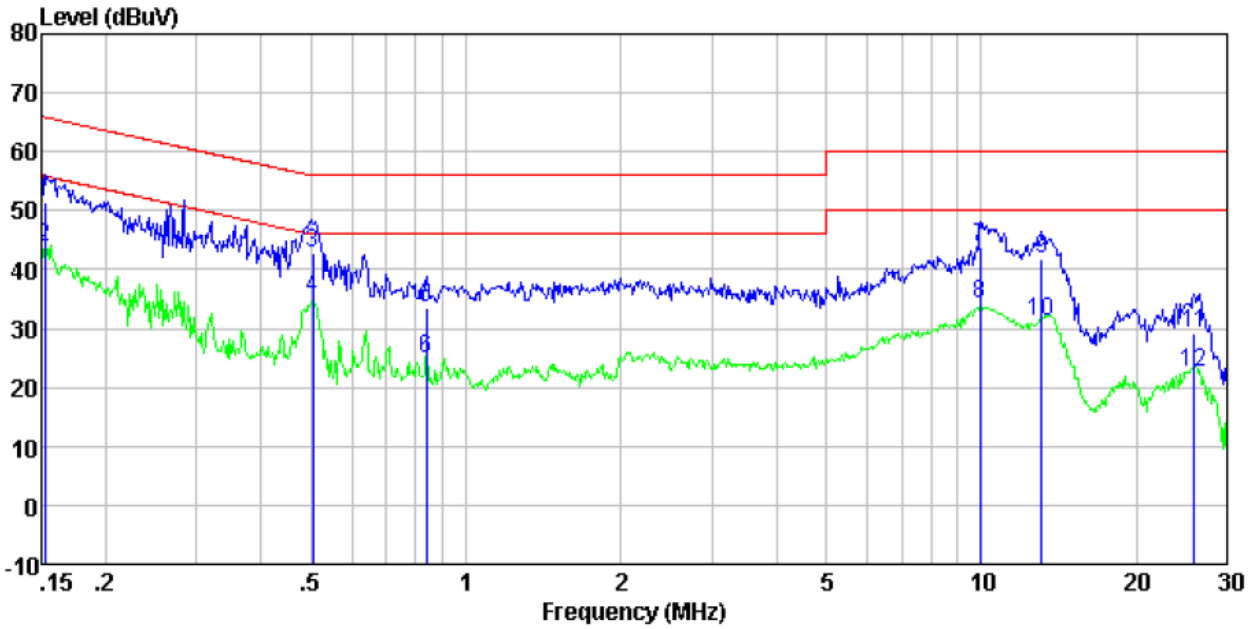
Remark:<br>E.U.T: Equipment Under Test<br>LISN: Line Impedence Stabilization Network<br>Test table height=0.8m</td></tr>
<tr><td>Test procedure:</td><td colspan="5">1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment.<br>2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).<br>3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10:2013 on conducted measurement.</td></tr>
<tr><td>Test Instruments:</td><td colspan="5">Refer to section 6.0 for details</td></tr>
<tr><td>Test mode:</td><td colspan="5">Refer to section 5.2 for details</td></tr>
<tr><td>Test environment:</td><td>Temp.:</td><td>25 °C</td><td>Humid.:</td><td>52%</td><td>Press.:</td><td>1012mbar</td></tr>
<tr><td>Test voltage:</td><td colspan="5">AC 120V, 60Hz</td></tr>
<tr><td>Test results:</td><td colspan="5">Pass</td></tr>
</table>

Remark: Both high and low voltages have been tested to show only the worst low voltage test data.

**Measurement data**

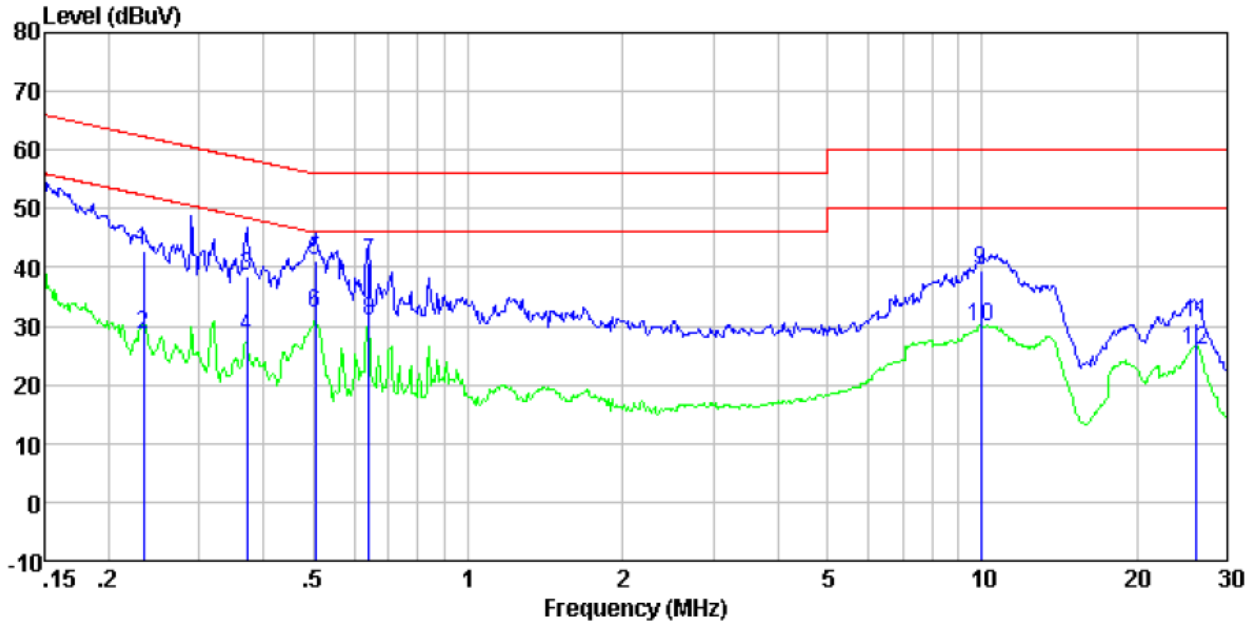
Pre-scan all test modes, found worst case is MIMO mode of 802.11n (HT20) 2437MHz, so only show the worst case at MIMO mode of 802.11n (HT20) 2437MHz on the report.

**Line:**




| Freq MHz | Reading level dBuV | LISN/ISN factor dB/m | Cable loss dB | Level dBuV | Limit level dBuV | Over limit dB | Remark |
|---|---|---|---|---|---|---|---|
| 0.15 | 31.00 | 20.40 | 0.01 | 51.41 | 65.87 | -14.46 | QP |
| 0.15 | 23.35 | 20.40 | 0.01 | 43.76 | 55.87 | -12.11 | Average |
| 0.50 | 22.50 | 20.31 | 0.01 | 42.82 | 56.00 | -13.18 | QP |
| 0.50 | 14.82 | 20.31 | 0.01 | 35.14 | 46.00 | -10.86 | Average |
| 0.84 | 13.37 | 20.23 | 0.03 | 33.63 | 56.00 | -22.37 | QP |
| 0.84 | 4.59 | 20.23 | 0.03 | 24.85 | 46.00 | -21.15 | Average |
| 9.97 | 23.61 | 20.20 | 0.11 | 43.92 | 60.00 | -16.08 | QP |
| 9.97 | 13.72 | 20.20 | 0.11 | 34.03 | 50.00 | -15.97 | Average |
| 13.13 | 21.39 | 20.20 | 0.14 | 41.73 | 60.00 | -18.27 | QP |
| 13.13 | 10.83 | 20.20 | 0.14 | 31.17 | 50.00 | -18.83 | Average |
| 25.86 | 8.59 | 20.36 | 0.20 | 29.15 | 60.00 | -30.85 | QP |
| 25.86 | 2.03 | 20.36 | 0.20 | 22.59 | 50.00 | -27.41 | Average |

**Neutral:**

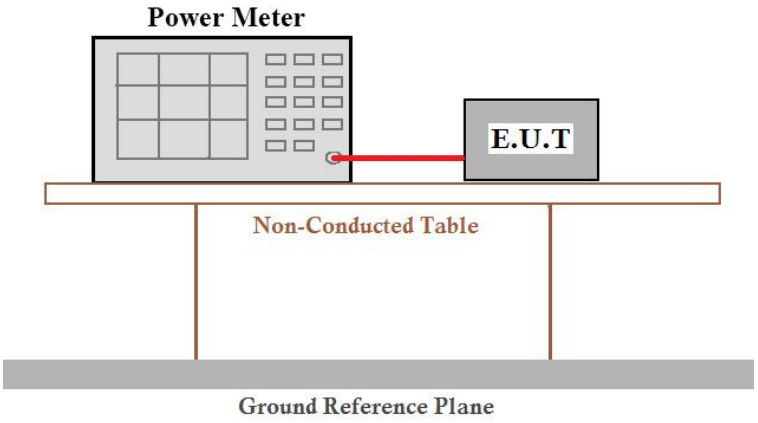



| Freq MHz | Reading level dBuV | LISN/ISN factor dB/m | Cable loss dB | Level dBuV | Limit level dBuV | Over limit dB | Remark |
|---|---|---|---|---|---|---|---|
| 0.23 | 22.43 | 20.40 | 0.01 | 42.84 | 62.30 | -19.46 | QP |
| 0.23 | 8.11 | 20.40 | 0.01 | 28.52 | 52.30 | -23.78 | Average |
| 0.37 | 18.13 | 20.36 | 0.01 | 38.50 | 58.47 | -19.97 | QP |
| 0.37 | 7.96 | 20.36 | 0.01 | 28.33 | 48.47 | -20.14 | Average |
| 0.50 | 20.66 | 20.31 | 0.01 | 40.98 | 56.00 | -15.02 | QP |
| 0.50 | 11.88 | 20.31 | 0.01 | 32.20 | 46.00 | -13.80 | Average |
| 0.64 | 20.44 | 20.27 | 0.02 | 40.73 | 56.00 | -15.27 | QP |
| 0.64 | 10.39 | 20.27 | 0.02 | 30.68 | 46.00 | -15.32 | Average |
| 9.97 | 19.10 | 20.20 | 0.11 | 39.41 | 60.00 | -20.59 | QP |
| 9.97 | 9.60 | 20.20 | 0.11 | 29.91 | 50.00 | -20.09 | Average |
| 26.14 | 9.84 | 20.37 | 0.20 | 30.41 | 60.00 | -29.59 | QP |
| 26.14 | 5.19 | 20.37 | 0.20 | 25.76 | 50.00 | -24.24 | Average |

*Notes:*

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level =Receiver Read level + LISN Factor + Cable Loss
4. *If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.*

## 7.3 Conducted Peak Output Power

| | |
|---|---|
| Test Requirement : | FCC Part15 C Section 15.247 (b)(3) |
| Test Method : | KDB558074 D01 15.247 Meas Guidance v05or02<br>KDB 662911 D01 Multiple Transmitter Output v02r01 |
| Limit: | 30dBm |
| Test setup: |  |
| Test Instruments: | Refer to section 6.0 for details |
| Test mode: | Refer to section 5.2 for details |
| Test results: | Pass |

**Measurement Data**

**Antenna 1:**

| Test CH | Peak Output Power (dBm) | | | | Limit(dBm) | Result |
|---|---|---|---|---|---|---|
| | 802.11b | 802.11g | 802.11n(HT20) | 802.11n(HT40) | | |
| Lowest | 17.29 | 19.62 | 20.21 | 19.14 | 30.00 | Pass |
| Middle | 17.33 | 20.44 | 20.37 | 19.30 | | |
| Highest | 17.43 | 20.42 | 20.25 | 19.33 | | |

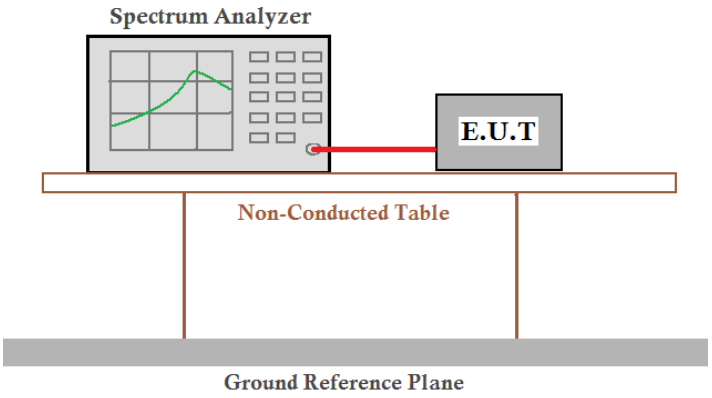
**Antenna 2:**

| Test CH | Peak Output Power (dBm) | | | | Limit(dBm) | Result |
|---|---|---|---|---|---|---|
| | 802.11b | 802.11g | 802.11n(HT20) | 802.11n(HT40) | | |
| Lowest | 16.97 | 18.30 | 18.16 | 18.09 | 30.00 | Pass |
| Middle | 17.02 | 18.32 | 18.22 | 17.92 | | |
| Highest | 17.12 | 18.39 | 18.27 | 18.46 | | |

**MIMO:**

| Test Mode | Test CH | Peak Output Power (dBm) | | | Limit(dBm) | Result |
|---|---|---|---|---|---|---|
| | | Antenna 1 | Antenna 2 | Total | | |
| 802.11n(HT20) | Lowest | 20.21 | 18.16 | 22.32 | 30.00 | Pass |
| | Middle | 20.37 | 18.22 | 22.44 | | |
| | Highest | 20.25 | 18.27 | 22.38 | | |
| 802.11n(HT40) | Lowest | 19.14 | 18.09 | 21.66 | | |
| | Middle | 19.30 | 17.92 | 21.67 | | |
| | Highest | 19.33 | 18.46 | 21.93 | | |

## 7.4 Channel Bandwidth

| | |
|---|---|
| Test Requirement : | FCC Part15 C Section 15.247 (a)(2) |
| Test Method : | KDB558074 D01 15.247 Meas Guidance v05or02 |
| Limit: | >500KHz |
| Test setup: |  |
| Test Instruments: | Refer to section 6.0 for details |
| Test mode: | Refer to section 5.2 for details |
| Test results: | Pass |

**Measurement Data**

**Antenna 1:**

| Test CH | Channel Bandwidth (MHz) | | | | Limit(KHz) | Result |
|---|---|---|---|---|---|---|
| | 802.11b | 802.11g | 802.11n(HT20) | 802.11n(HT40) | | |
| Lowest | 8.063 | 15.14 | 15.13 | 35.09 | >500 | Pass |
| Middle | 8.062 | 15.10 | 15.13 | 35.11 | | |
| Highest | 8.063 | 15.13 | 15.14 | 35.11 | | |

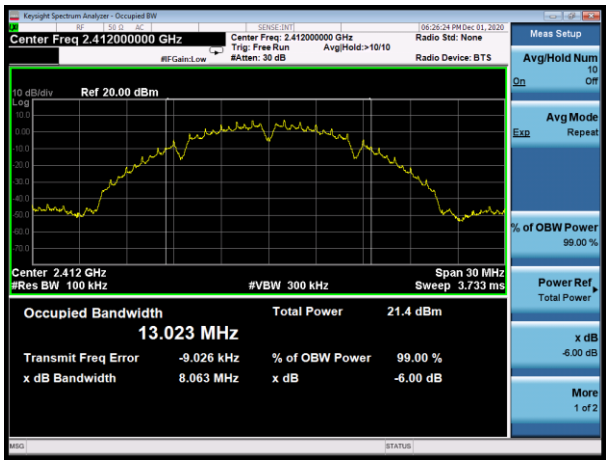
**Antenna 2:**

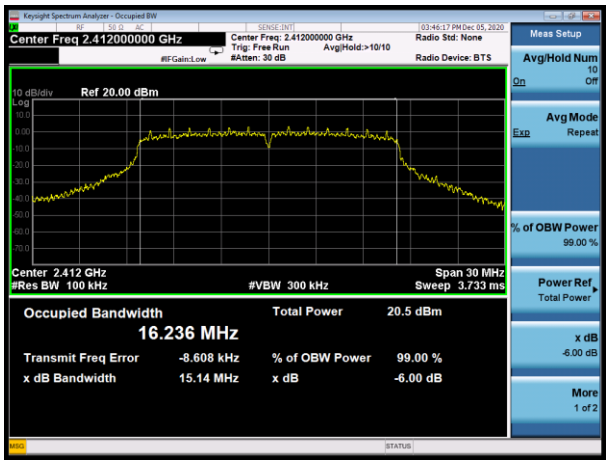
| Test CH | Channel Bandwidth (MHz) | | | | Limit(KHz) | Result |
|---|---|---|---|---|---|---|
| | 802.11b | 802.11g | 802.11n(HT20) | 802.11n(HT40) | | |
| Lowest | 8.063 | 15.14 | 15.13 | 35.05 | >500 | Pass |
| Middle | 8.062 | 15.10 | 15.10 | 35.10 | | |
| Highest | 8.062 | 15.13 | 15.03 | 35.12 | | |

**Test plot as follows:**

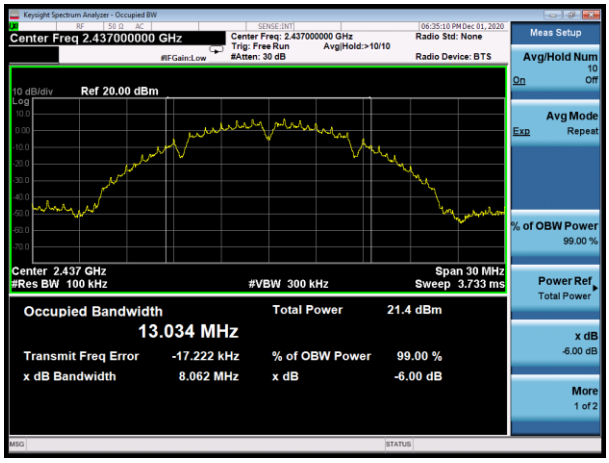
**Antenna 1:**

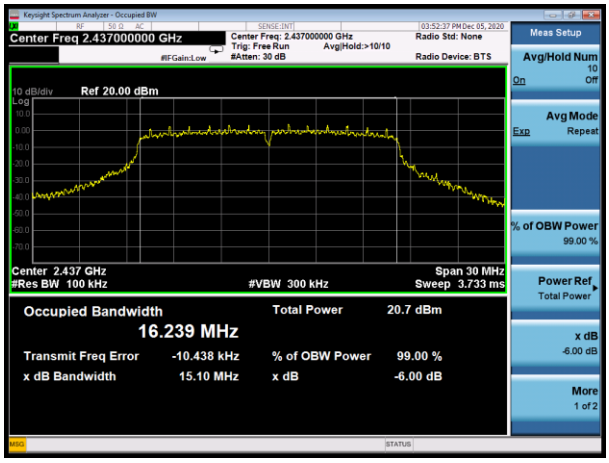
| 802.11b | | 802.11g | |
|---|---|---|---|



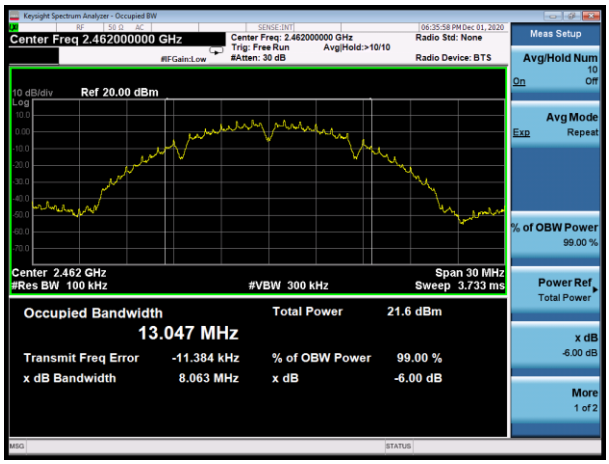




Lowest channel



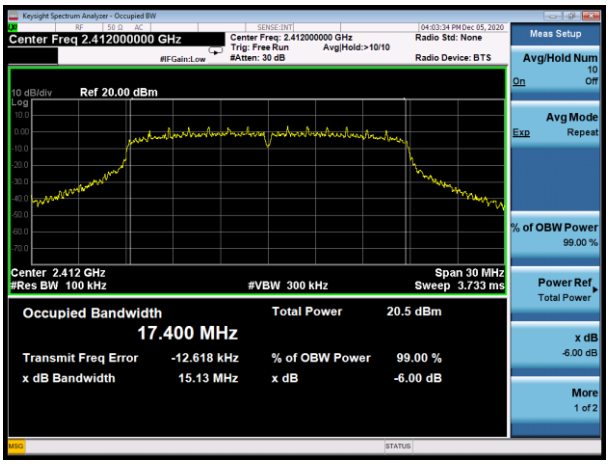

Middle channel

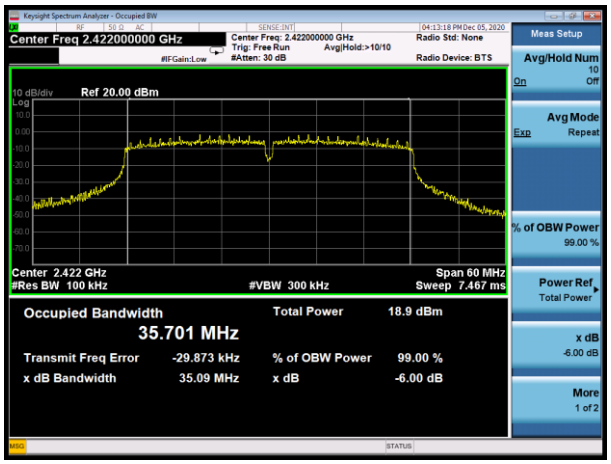




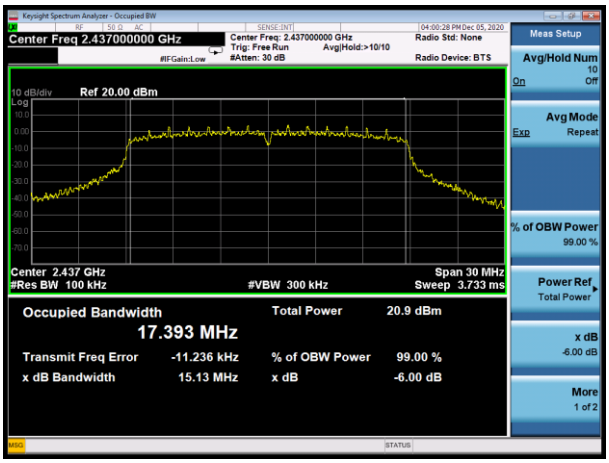
Highest channel

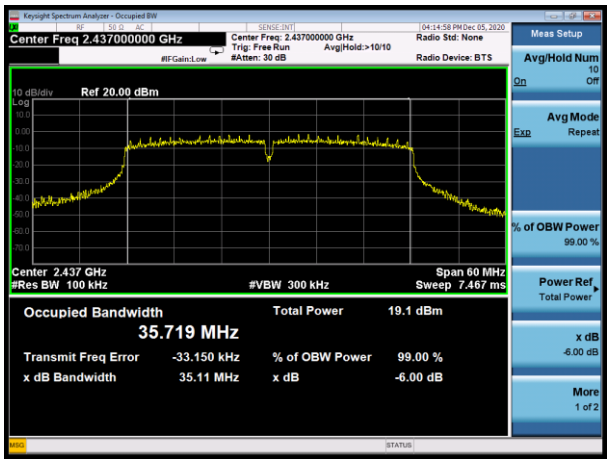
| 802.11n(HT20) | | 802.11n(HT40) | |
|---|---|---|---|



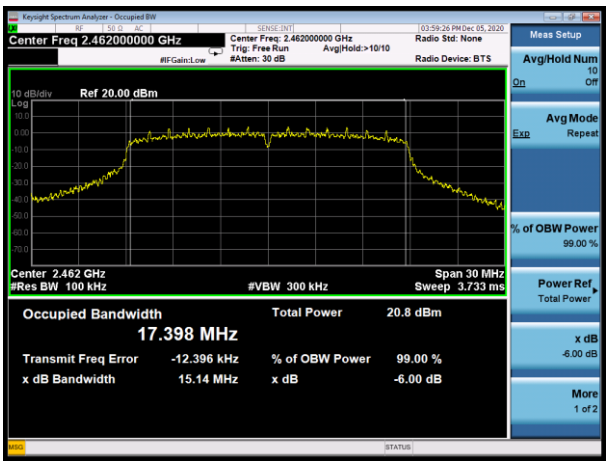



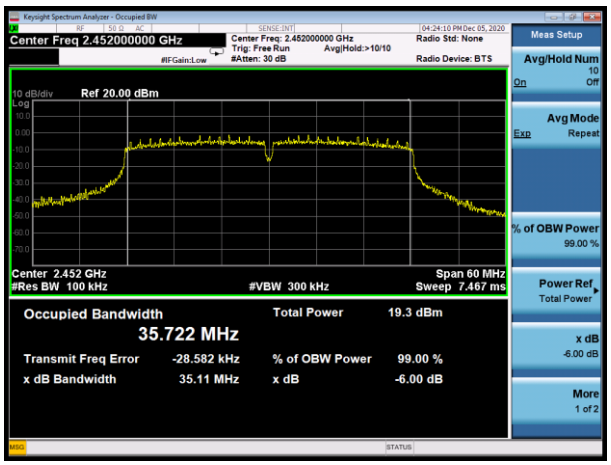

Lowest channel




Middle channel

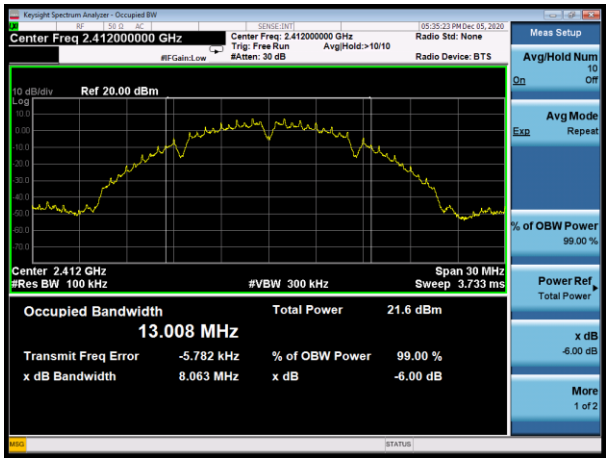


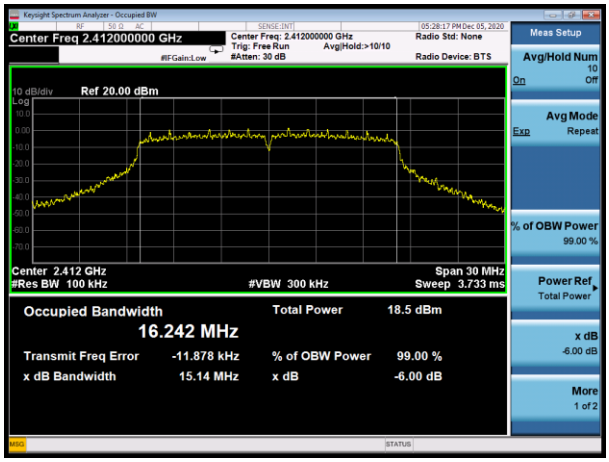




Highest channel

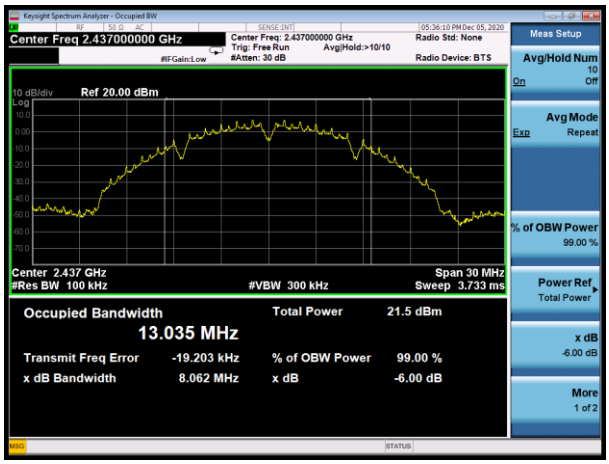
**Antenna 2:**

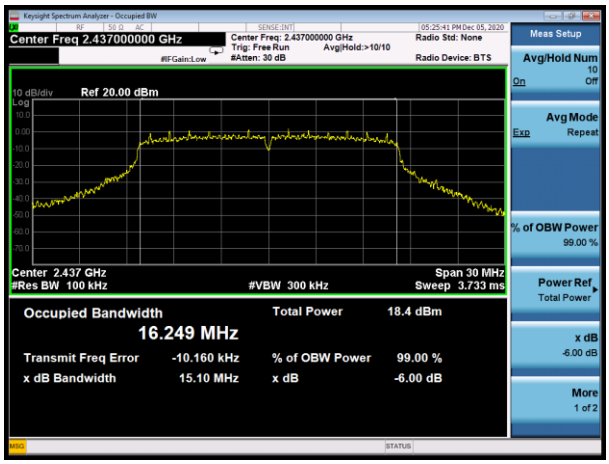
| 802.11b | | 802.11g | |
|---|---|---|---|



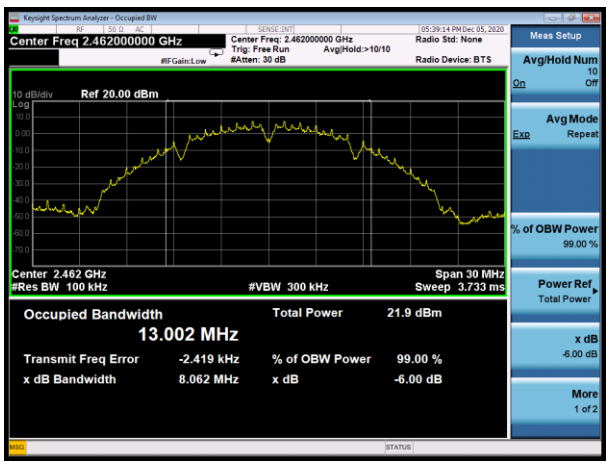



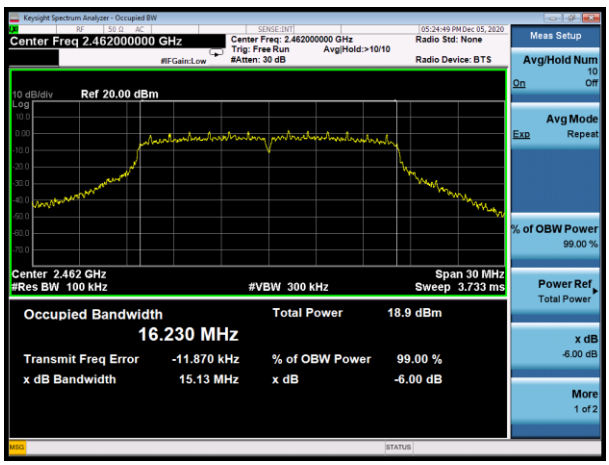

Lowest channel



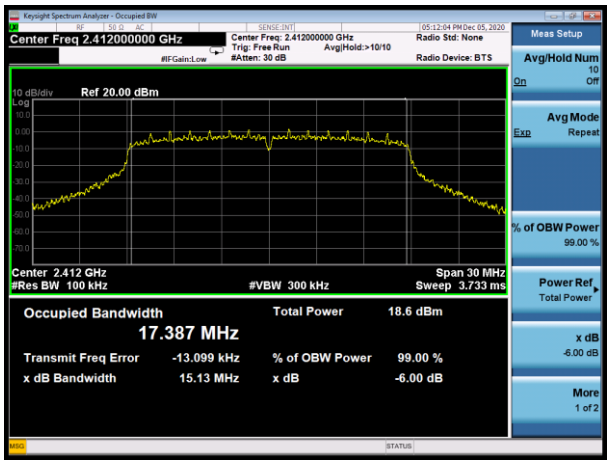

Middle channel

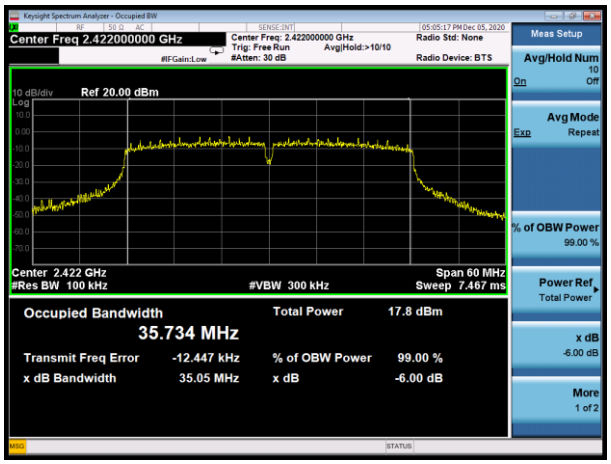


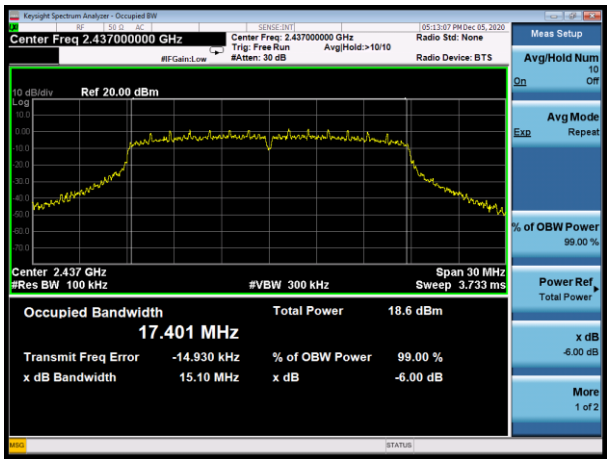

Highest channel

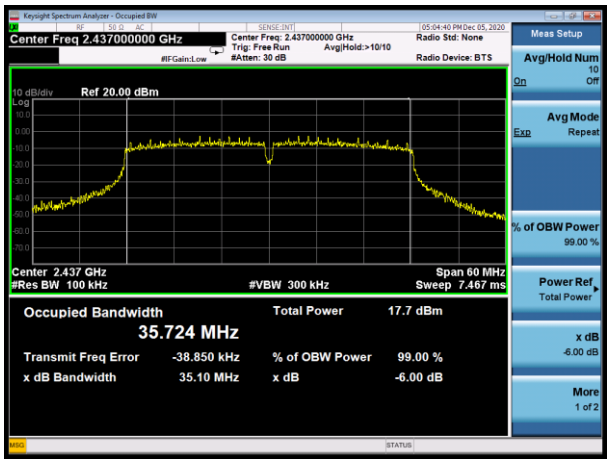
| 802.11n(HT20) | | 802.11n(HT40) | |
|---|---|---|---|



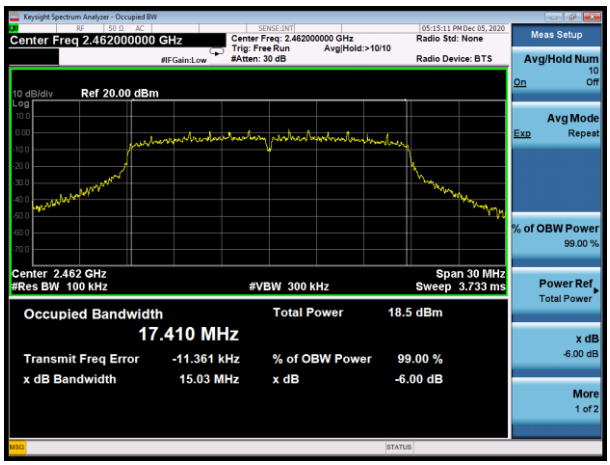



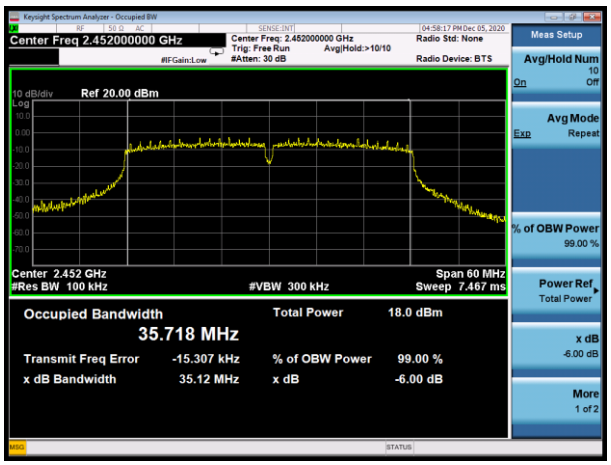

Lowest channel



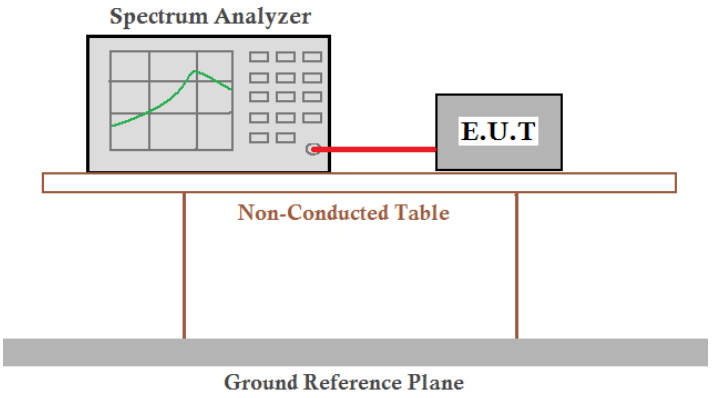

Middle channel




Highest channel

## 7.5 Power Spectral Density

| | |
|---|---|
| Test Requirement: | FCC Part15 C Section 15.247 (e) |
| Test Method: | KDB558074 D01 15.247 Meas Guidance v05or02 |
| Limit: | 8dBm/3kHz |
| Test setup: |  |
| Test Instruments: | Refer to section 6.0 for details |
| Test mode: | Refer to section 5.2 for details |
| Test results: | Pass |

**Measurement Data**

**Antenna 1:**

| Test CH | Power Spectral Density (dBm/3kHz) | | | | Limit (dBm/3kHz) | Result |
|---|---|---|---|---|---|---|
| | 802.11b | 802.11g | 802.11n(HT20) | 802.11n(HT40) | | |
| Lowest | -9.223 | -11.838 | -12.129 | -15.008 | 8.00 | Pass |
| Middle | -9.021 | -11.229 | -10.080 | -15.079 | | |
| Highest | -8.974 | -11.481 | -11.181 | -14.895 | | |

**Antenna 2:**

| Test CH | Power Spectral Density (dBm/3kHz) | | | | Limit (dBm/3kHz) | Result |
|---|---|---|---|---|---|---|
| | 802.11b | 802.11g | 802.11n(HT20) | 802.11n(HT40) | | |
| Lowest | -10.000 | -13.551 | -13.670 | -15.930 | 8.00 | Pass |
| Middle | -9.329 | -13.806 | -13.792 | -16.127 | | |
| Highest | -7.953 | -13.310 | -11.530 | -16.073 | | |

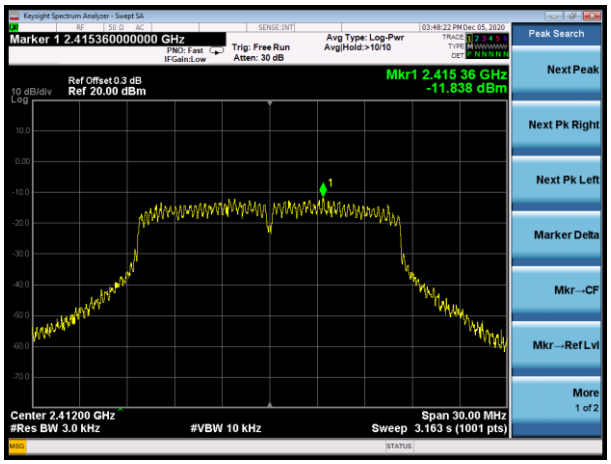
**MIMO:**

| Test Mode | Test CH | Power Spectral Density (dBm/3kHz) | | | Limit (dBm/3kHz) | Result |
|---|---|---|---|---|---|---|
| | | Antenna 1 | Antenna 2 | Total | | |
| 802.11n (HT20) | Lowest | -12.129 | -13.670 | -9.82 | 8.00 | Pass |
| | Middle | -10.080 | -13.792 | -8.54 | | |
| | Highest | -11.181 | -11.530 | -8.34 | | |
| 802.11n (HT40) | Lowest | -15.008 | -15.930 | -12.43 | 8.00 | Pass |
| | Middle | -15.079 | -16.127 | -12.56 | | |
| | Highest | -14.895 | -16.073 | -12.43 | | |

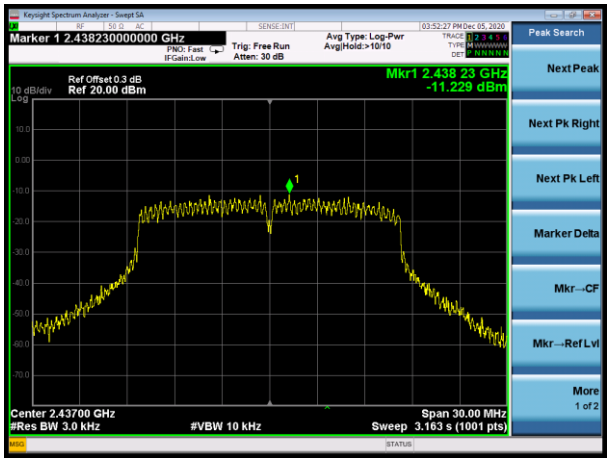
**Test plot as follows:**

**Antenna 1:**

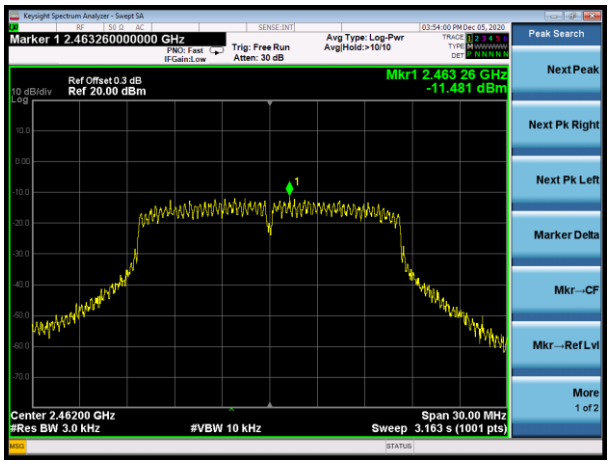
| 802.11b | | 802.11g | |
|---|---|---|---|


Lowest channel

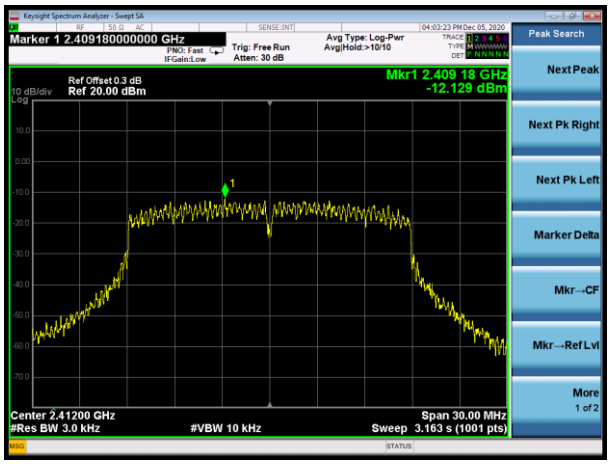




Middle channel

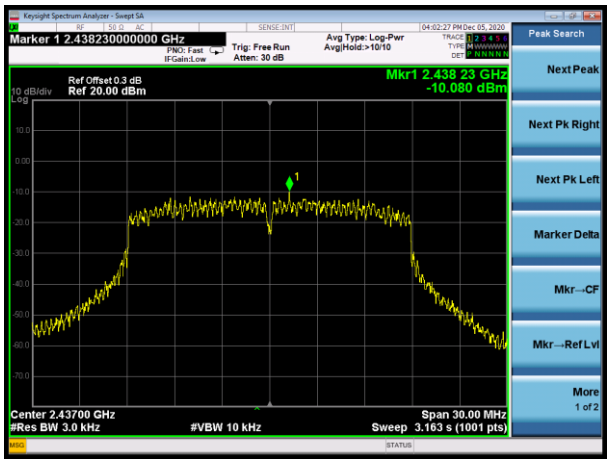

Highest channel

| 802.11n(HT20) | | 802.11n(HT40) | |
|---|---|---|---|



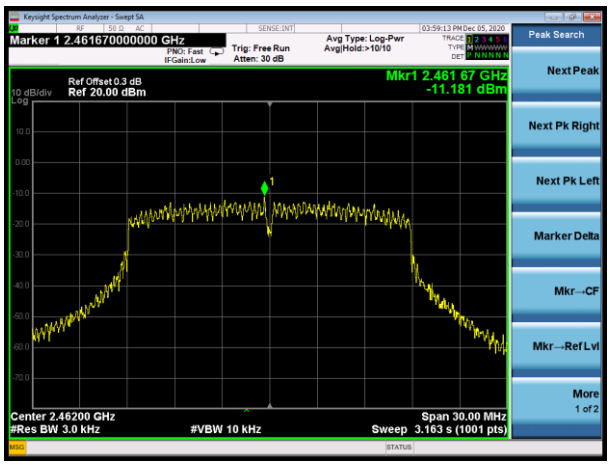


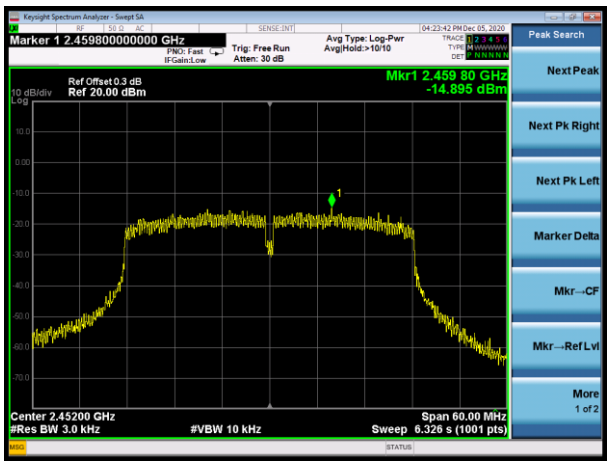
Lowest channel





Middle channel




Highest channel