

FCC RF Test Report

Report No.: FCC_RF_SL21022601-HAR-284_R1 INT ER 3B_5G

FCC ID: 2AHPN-BE2861

Model: R1 INT ER 3B MY22

Received Date: 3/15/2021

Test Date: 4/15/202-7/8/2021

Issued Date: 8/11/2021

Applicant: HARMAN INTERNATIONAL

Address: 30001 Cabot Drive, Novi, MI 48377, USA

Manufacturer: HARMAN INTERNATIONAL

Address: 30001 Cabot Drive, Novi, MI 48377, USA

Issued By: Bureau Veritas Consumer Products Services, Inc.

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FCC Test Site Reg No.: 540430



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Release Control Record

| Issue No. | Description | Date Issued |
|---|--------------------|-------------|
| FCC_RF_SL21022601-HAR-284_5G | Original release | 7/9/2021 |
| FCC_RF_SL21022601-HAR-284_R1 INT ER 3B_5G | Update Section 4.4 | 8/11/2021 |

1 Certificate of Conformity

Product: Automotive Infotainment Unit

Brand: HARMAN

Model: R1 INT ER 3B MY22


Sample Status: Final Product

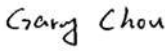
Applicant: HARMAN INTERNATIONAL

Test Date: 4/15/2021-7/8/2021

Standard: 47 CFR FCC Part 15, Subpart E (Section 15.407)
789033 D02 General UNII Test Procedures New Rules v02r01
ANSI C63.10:2013

The above equipment has been tested by **Bureau Veritas Consumer Products Services, Inc. Milpitas Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by : , **Date:** 08/11/2021
Jude Semana / Compliance Engineer

Approved by : , **Date:** 08/11/2021
Gary Chou/ Engineer Reviewer

2 Summary of Test Results

| 47 CFR FCC Part 15, Subpart E (Section 15.407) | | | |
|--|--|--------|---|
| Standard Section | Test Item | Result | Remarks |
| 15.203 | Antenna Requirement | Pass | Antenna connector is FAKRA. (The device is professionally installed) |
| 15.407 (b)(6) | AC Power Conducted Emissions | N/A | N/A |
| 15.407 (b)(1/2/3/4(i/ii)/6) | Radiated Emissions & Band Edge Measurement | Pass | Meet the requirement of limit. |
| 15.407 (a)(1/2/3) | Max Average Transmit Power | Pass | Meet the requirement of limit. |
| - | Occupied Bandwidth | Pass | Meet the requirement of limit. |
| 15.407 (e) | 6 dB Emission Bandwidth | Pass | Meet the requirement of limit. (U-NII-3 only) |
| 15.407 (a)(1/2/3) | Peak Power Spectral Density | Pass | Meet the requirement of limit. |
| 15.407(g) | Frequency Stability | Pass | Meet the requirement of limit. |

Note: The EUT is DC powered.

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

| Measurement | Frequency | Expanded Uncertainty (k=2) (±) |
|------------------------------------|----------------|--------------------------------|
| Conducted Emissions at mains ports | 150kHz ~ 30MHz | 3.51dB |
| Radiated Emissions up to 1 GHz | 30MHz ~ 1GHz | 3.73dB |
| Radiated Emissions above 1 GHz | 1GHz ~ 6GHz | 4.64dB |
| | 6GHz ~ 18GHz | 4.82dB |
| | 18GHz ~ 40GHz | 4.91dB |

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

| | |
|-----------------------|--|
| Product | Automotive Infotainment Unit |
| Brand | HARMAN |
| Test Model | R1 INT ER 3B MY22 |
| Status of EUT | Final Product |
| Power Supply Rating | 12Vdc |
| Modulation Type | 256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDM |
| Modulation Technology | DSSS, OFDM |
| Transfer Rate | 802.11a: up to 54Mbps 802.11n: up to 300Mbps 802.11ac: up to 433Mbps |
| Operating Frequency | 5180~5240MHz, 5745~5825MHz |
| Number of Channel | 5180~5240MHz: 4 channels for 802.11a, 802.11n,11ac (20MHz) 2 channels for 802.11n,11ac (40MHz) 1 channel for 802.11ac (80MHz) 5745~5825MHz: 5 channels for 802.11a, 802.11n,11ac (20MHz) 2 channels for 802.11n,11ac (40MHz) 1 channel for 802.11ac (80MHz) |
| Antenna Type | Internal PCB Antenna 5180~5240MHz: 2.65dBi 5745~5825MHz: 1.51dBi |
| Antenna Connector | U.FL |

Note:

1. The EUT provides one completed transmitter and one receiver.

| Modulation Mode | Tx Function |
|-----------------|-------------|
| 802.11a | 1TX |
| 802.11n | 1TX |
| 802.11ac | 1TX |

3.2 Description of Operation Modes

FOR 5180 ~ 5240MHz

4 channels are provided for 802.11a, 802.11n (20MHz), 802.11ac(20MHz):

| Channel | Frequency | Channel | Frequency |
|---------|-----------|---------|-----------|
| 36 | 5180 MHz | 44 | 5220 MHz |
| 40 | 5200 MHz | 48 | 5240 MHz |

2 channels are provided for, 802.11n (40MHz), 802.11 ac (40MHz):

| Channel | Frequency | Channel | Frequency |
|---------|-----------|---------|-----------|
| 38 | 5190 MHz | 46 | 5230 MHz |

1 channels are provided for, 802.11ac (80MHz):

| Channel | Frequency | Channel | Frequency |
|---------|-----------|---------|-----------|
| 38 | 5210 MHz | - | - |

FOR 5745 ~ 5825MHz:

5 channels are provided for 802.11a, 802.11n (20MHz), 802.11ac (20MHz):

| Channel | Frequency | Channel | Frequency |
|---------|-----------|---------|-----------|
| 149 | 5745MHz | 161 | 5805MHz |
| 153 | 5765MHz | 165 | 5825MHz |
| 157 | 5785MHz | | |

2 channels are provided for 802.11n (40MHz), 802.11ac(40MHz):

| Channel | Frequency | Channel | Frequency |
|---------|-----------|---------|-----------|
| 151 | 5755MHz | 159 | 5795MHz |

1 channels are provided for 802.11ac(80MHz):

| Channel | Frequency | Channel | Frequency |
|---------|-----------|---------|-----------|
| 155 | 5775MHz | -- | -- |

Power setting is as below:

| 802.11a | | 802.11n, ac(20MHz) | |
|--------------------|---------------|--------------------|---------------|
| Channel | Power Setting | Channel | Power Setting |
| 36 | 12 | 36 | 12 |
| 40 | 12 | 40 | 12 |
| 48 | 12 | 48 | 12 |
| 149 | 12 | 149 | 12 |
| 157 | 12 | 157 | 12 |
| 165 | 12 | 165 | 12 |
| 802.11n, ac(40MHz) | | 802.11ac(80MHz) | |
| Channel | Power Setting | Channel | Power Setting |
| 38 | 12 | 38 | 12 |
| 46 | 12 | 155 | 12 |
| 151 | 12 | 48 | 12 |
| 159 | 12 | - | - |

1. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2.1 Test Mode Applicability and Tested Channel Detail

| EUT Configure Mode | Applicable To | | | | Description |
|--------------------|---------------|-------|-----|------|-----------------------|
| | RE \geq 1G | RE<1G | PLC | APCM | |
| A | √ | √ | - | √ | Powered 12Vdc Battery |

Where **RE \geq 1G**: Radiated Emission above 1GHz **RE<1G**: Radiated Emission below 1GHz
PLC: Power Line Conducted Emission **APCM**: Antenna Port Conducted Measurement

NOTE:

1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane**.
2. "-" means no effect.

Radiated Emission Test (Above 1GHz):

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

| EUT Configure Mode | Mode | FREQ. Band (MHz) | Available Channel | Tested Channel | Modulation Technology | Modulation Type |
|--------------------|------------------|------------------|-------------------|----------------|-----------------------|-----------------|
| - | 802.11a | 5180-5240 | 36 to 48 | 36, 40, 48 | OFDM | BPSK |
| - | 802.11n (HT20) | | 36 to 48 | 36, 40, 48 | OFDM | BPSK |
| - | 802.11n (HT40) | | 38 to 46 | 38, 46 | OFDM | BPSK |
| - | 802.11ac (VHT80) | | 42 | 42 | OFDM | BPSK |
| - | 802.11a | 5745-5825 | 149 to 165 | 149, 157, 165 | OFDM | BPSK |
| - | 802.11n (HT20) | | 149 to 165 | 149, 157, 165 | OFDM | BPSK |
| - | 802.11n (HT40) | | 151 to 159 | 151, 159 | OFDM | BPSK |
| - | 802.11ac (VHT80) | | 155 | 155 | OFDM | BPSK |

Radiated Emission Test (Below 1GHz):

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

| EUT Configure Mode | Mode | FREQ. Band (MHz) | Available Channel | Tested Channel | Modulation Technology | Modulation Type |
|--------------------|---------|------------------|-------------------|----------------|-----------------------|-----------------|
| - | 802.11a | 5180-5320 | 36 to 64 | 40 | OFDM | BPSK |
| - | 802.11a | 5745-5825 | 149 to 165 | 157 | OFDM | BPSK |

Power Line Conducted Emission Test:

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

| EUT Configure Mode | Mode | FREQ. Band (MHz) | Available Channel | Tested Channel | Modulation Technology | Modulation Type |
|--------------------|---------|------------------|-------------------|----------------|-----------------------|-----------------|
| - | 802.11a | 5180-5320 | 36 to 64 | 62 | OFDM | BPSK |
| - | 802.11a | 5745-5825 | 149 to 165 | 149 | OFDM | BPSK |

Antenna Port Conducted Measurement:

- This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

| EUT Configure Mode | Mode | FREQ. Band (MHz) | Available Channel | Tested Channel | Modulation Technology | Modulation Type |
|--------------------|------------------|------------------|-------------------|----------------|-----------------------|-----------------|
| - | 802.11a | 5180-5240 | 36 to 48 | 36, 40, 48 | OFDM | BPSK |
| - | 802.11n (HT20) | | 36 to 48 | 36, 40, 48 | OFDM | BPSK |
| - | 802.11ac (VHT20) | | 36 to 48 | 36, 40, 48 | OFDM | BPSK |
| - | 802.11n (HT40) | | 38 to 46 | 38, 46 | OFDM | BPSK |
| - | 802.11ac (VHT40) | | 38 to 46 | 38, 46 | OFDM | BPSK |
| - | 802.11ac (VHT80) | | 42 | 42 | OFDM | BPSK |
| - | 802.11a | 5745-5825 | 149 to 165 | 149, 157, 165 | OFDM | BPSK |
| - | 802.11n (HT20) | | 149 to 165 | 149, 157, 165 | OFDM | BPSK |
| - | 802.11ac (VHT20) | | 149 to 165 | 149, 157, 165 | OFDM | BPSK |
| - | 802.11n (HT40) | | 151 to 159 | 151, 159 | OFDM | BPSK |
| - | 802.11ac (VHT40) | | 151 to 159 | 151, 159 | OFDM | BPSK |
| - | 802.11ac (VHT80) | | 155 | 155 | OFDM | BPSK |

Test Condition:

| Applicable To | Environmental Conditions | Input Power | Tested By |
|---------------|--------------------------|-------------|-------------|
| RE≥1G | 25deg. C, 65%RH | 12Vdc | Jude Semana |
| RE<1G | 25deg. C, 65%RH | 12Vdc | Jude Semana |
| APCM | 21deg. C, 60%RH | 12Vdc | Jude Semana |

3.3 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| ID | Product | Brand | Model No. | Serial No. | FCC ID | Remarks |
|----|---------|-------|-----------|------------|--------|-----------------|
| A. | Laptop | Acer | Aspire 3 | N/A | N/A | Provided by Lab |

| ID | Descriptions | Qty. | Length (m) | Shielding (Yes/No) | Cores (Qty.) | Remarks |
|----|--------------|------|------------|--------------------|--------------|----------------------------|
| 1. | USB | 1 | 1m | No | 0 | Connect from EUT to Laptop |

3.3.1 Duty Cycle of Test Signal

MODULATION TYPE: BPSK

If Duty cycle of test signal is < 98 %, duty factor is required.

802.11a: Duty cycle = 73.54%

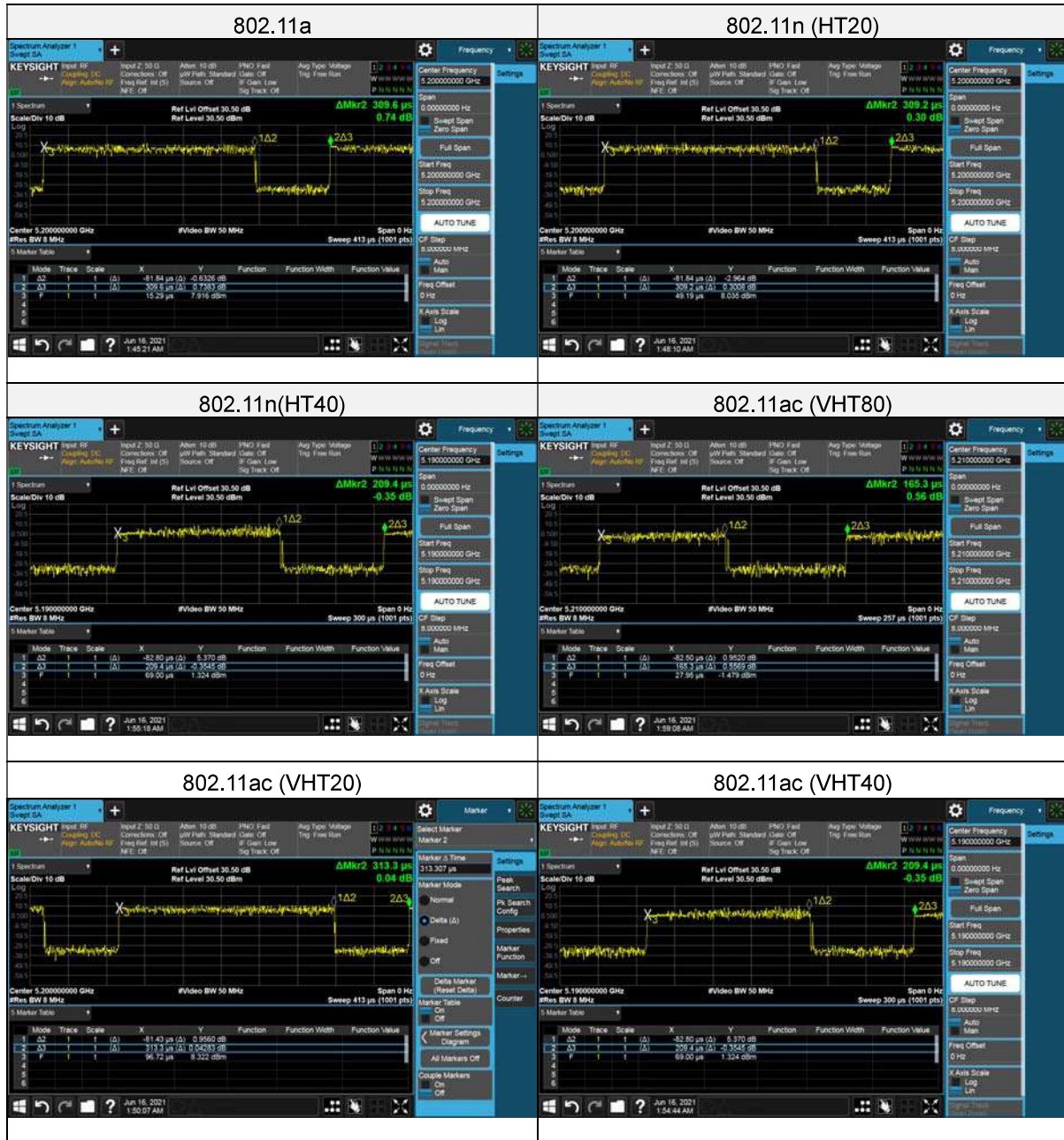
802.11n (HT20): Duty cycle = 73.51%

802.11n (HT40): Duty cycle = 60.45%

802.11ac (VHT20): Duty cycle = 74.01%

802.11ac (VHT40): Duty cycle = 61.83%

802.11ac (VHT80): Duty cycle = 50.06%



3.4 General Description of Applied Standard

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

47 CFR FCC Part 15, Subpart E (Section 15.407)

789033 D02 General UNII Test Procedures New Rules v02r01

ANSI C63.10:2013

All test items have been performed and recorded as per the above standards.

4 Test Types and Results

4.1 Antenna Requirement

| Spec | Requirement | Applicable |
|--------|---|-------------------------------------|
| 15.203 | <p>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.</p> <p>Antenna requirement must meet at least one of the following:</p> <ul style="list-style-type: none"> a) Antenna must be permanently attached to the device. b) The antenna must use a unique type of connector to attach to the device. c) Device must be professionally installed. The installer shall be responsible for ensuring that the correct antenna is employed by the device. | <input checked="" type="checkbox"/> |
| Remark | The EUT uses an Internal PCB antenna. | |
| Result | <input checked="" type="checkbox"/> PASS <input type="checkbox"/> FAIL | |

4.2 Radiated Emission and Bandedge Measurement

4.2.1 Limits of Radiated Emission Measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

| Frequencies (MHz) | Field Strength (microvolts/meter) | Measurement Distance (meters) |
|-------------------|-----------------------------------|-------------------------------|
| 0.009 ~ 0.490 | 2400/F(kHz) | 300 |
| 0.490 ~ 1.705 | 24000/F(kHz) | 30 |
| 1.705 ~ 30.0 | 30 | 30 |
| 30 ~ 88 | 100 | 3 |
| 88 ~ 216 | 150 | 3 |
| 216 ~ 960 | 200 | 3 |
| Above 960 | 500 | 3 |

NOTE:

- The lower limit shall apply at the transition frequencies.
- Emission level (dBuV/m) = 20 log Emission level (uV/m).
- For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

Limits of unwanted emission out of the restricted bands

| Applicable To | | Limit | |
|---|---|---|---|
| 789033 D02 General UNII Test Procedure New Rules v02r01 | | Field Strength at 3m | |
| | | PK:74 (dBµV/m) | AV:54 (dBµV/m) |
| Frequency Band | Applicable To | EIRP Limit | Equivalent Field Strength at 3m |
| 5150~5250 MHz | 15.407(b)(1) | PK:-27 (dBm/MHz) | PK:68.2(dBµV/m) |
| 5250~5350 MHz | 15.407(b)(2) | | |
| 5470~5725 MHz | 15.407(b)(3) | | |
| 5725~5850 MHz | <input checked="" type="checkbox"/> 15.407(b)(4)(i) | PK:-27 (dBm/MHz) ^{*1} PK:10 (dBm/MHz) ^{*2} PK:15.6 (dBm/MHz) ^{*3} PK:27 (dBm/MHz) ^{*4} | PK: 68.2(dBµV/m) ^{*1} PK:105.2 (dBµV/m) ^{*2} PK: 110.8(dBµV/m) ^{*3} PK:122.2 (dBµV/m) ^{*4} |
| | <input type="checkbox"/> 15.407(b)(4)(ii) | Emission limits in section 15.247(d) | |
| *1 beyond 75 MHz or more above of the band edge. | | *2 below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above. | |
| *3 below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above. | | *4 from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge. | |

Note:

The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3} \mu\text{V/m, where P is the eirp (Watts).}$$

4.2.2 Test Instruments

| DESCRIPTION & MANUFACTURER | MODEL NO. | SERIAL NO. | DATE OF CALIBRATION | DUE DATE OF CALIBRATION |
|--|-------------------|--------------------------|---------------------|-------------------------|
| EMI Receiver , Rohde and Schwarz | ESW44 | 1328.4100K-1016 62-MH | 10/23/2020 | 10/23/2021 |
| Biconilog Antenna , Sunol | JB6 | A111717 | 9/4/2020 | 9/4/2021 |
| Horn Antenna , ETS-Lindgren | 3117 | 218554 | 7/24/2020 | 7/24/2021 |
| Pre-Amplifier , RF-Lambda | RAMP00M50GA | 18040300055 | 10/1/2020 | 10/1/2021 |
| Spectrum Analyzer, Keysight | N9030B | MY57140100 | 07/22/2020 | 07/22/2022 |
| Environmental Chamber, Micro Precision | Test Equity 1007H | 61201 | 12/16/2020 | 12/16/2021 |

4.2.3 Test Procedure

For Radiated emission below 30MHz

- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

NOTE:

- The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

For Radiated emission above 30MHz

- The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- The test-receiver system was set to peak and average detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets

average limit, measurement with the average detector is unnecessary.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle $< 98\%$) or 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

For Band edge Measurement

789033 D02 General U-NII Test Procedures New Rules v02r01, II.F. Method SA-1

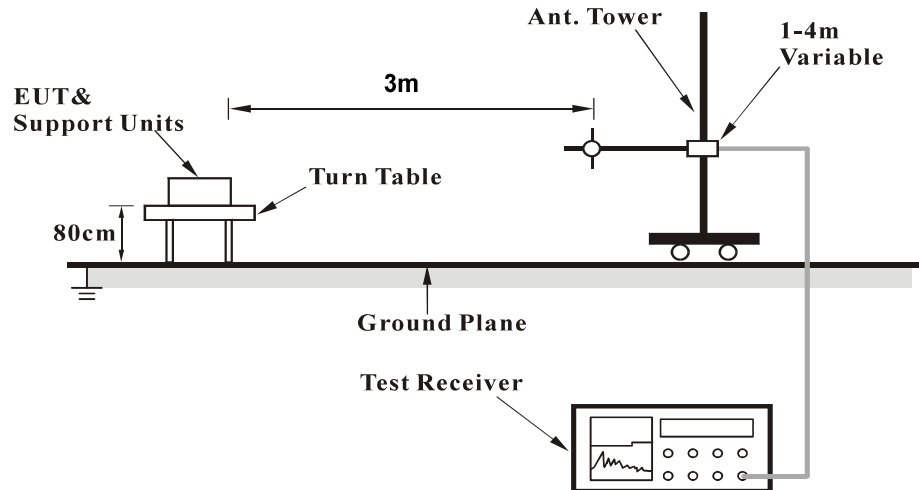
1. For average emissions measurements, follow the procedures described in section II.G.6., "Procedures for Average Unwanted Emissions Measurements above 1000 MHz", except for the following changes:
2. Set RBW=100 kHz
3. Set VBW=300 kHz
4. Perform a band-power integration across the 1 MHz bandwidth in which the band-edge emission level is to be measured.

4.2.4 Deviation from Test Standard

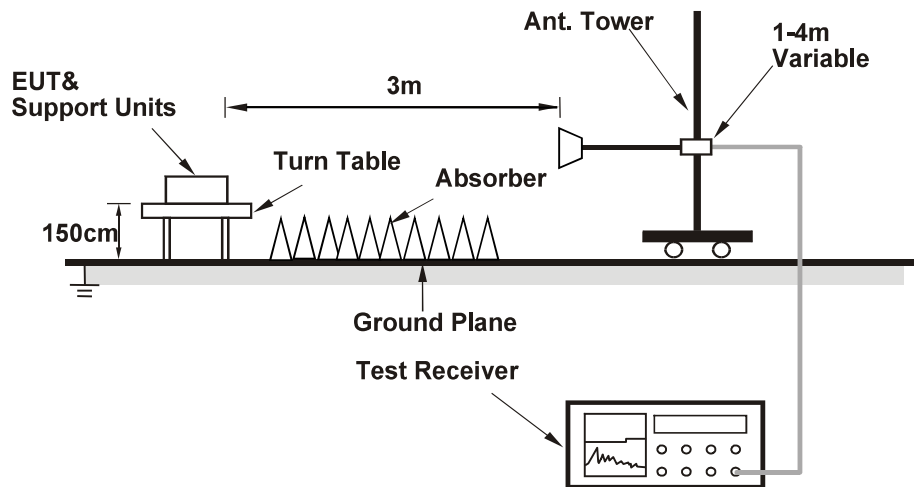
No deviation.

4.2.5 Test Setup

For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.2.6 EUT Operating Condition

- a. Placed the EUT on the testing table.
- b. Prepared notebooks to act as communication partner and placed it outside of testing area.
- c. The communication partner connected with EUT via a USB cable and ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
- d. The necessary accessories enable the system in full functions.

4.2.7 Test Results

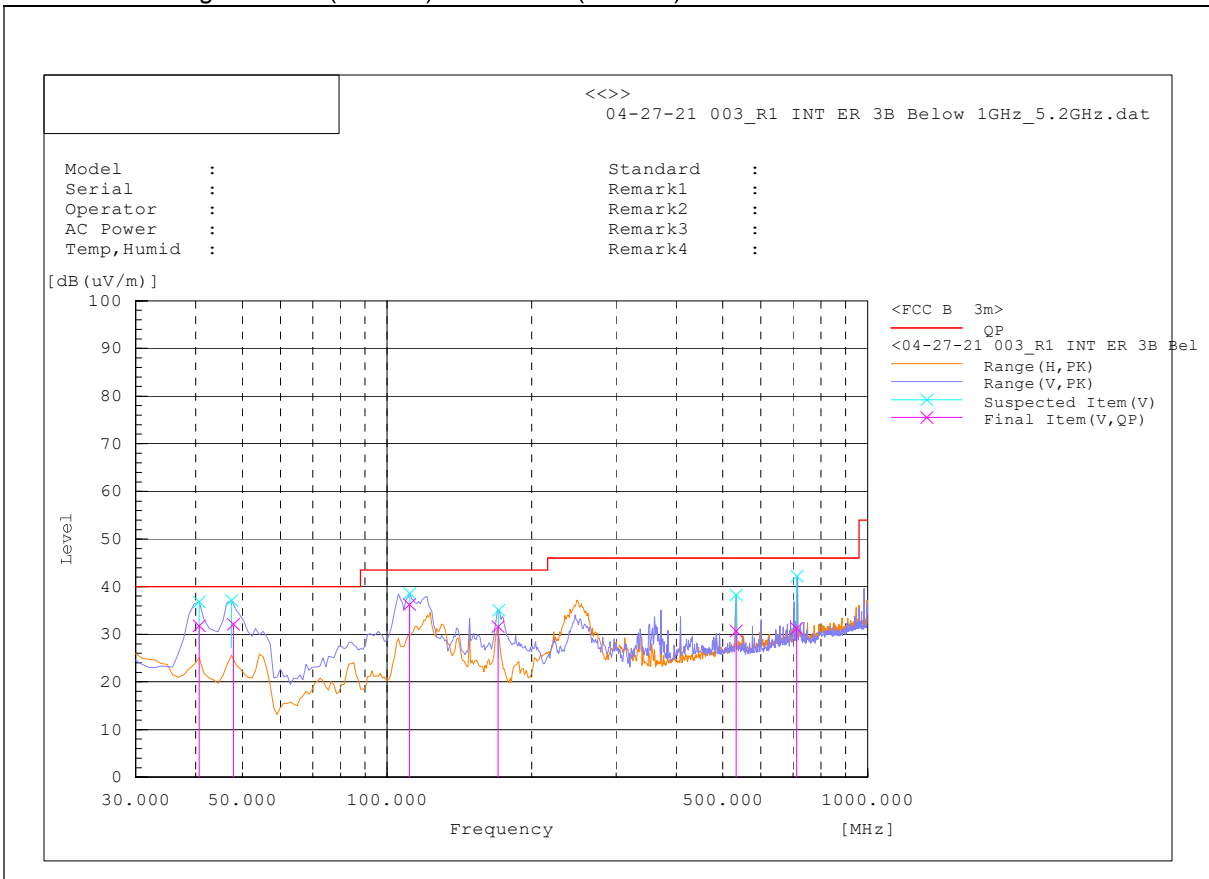
Below 1GHz Worst-Case Data:

| | | | |
|------------------------|--------------------|--------------------------|------------|
| CHANNEL | 802.11a Channel 40 | DETECTOR FUNCTION | Quasi Peak |
| FREQUENCY RANGE | 30MHz – 1GHz | | |

| Antenna Polarity & Test Distance: Vertical and Horizontal at 3m | | | | | | | | | | |
|---|-----------------|--------------------|---------------------|------------------|---------------------|-------------------|----------------|-------------|-------------|-----------|
| No. | Frequency (MHz) | Polarization (H/V) | Reading QP [dB(uV)] | Factor [dB(1/m)] | Level QP [dB(uV/m)] | Limit\QP dB(uV/m) | Margin QP [dB] | Height (cm) | Angle (Deg) | Pass/Fail |
| 1 | 47.904 | V | 18.2 | 13.9 | 32.1 | 40 | -7.9 | 114.1 | 209.5 | Pass |
| 2 | 111.37 | V | 17.6 | 18.7 | 36.3 | 43.5 | -7.2 | 101.1 | 140.1 | Pass |
| 3 | 170.198 | V | 13 | 18.6 | 31.6 | 43.5 | -11.9 | 100.6 | 338.7 | Pass |
| 4 | 711.89 | V | 3.1 | 28.1 | 31.2 | 46 | -14.8 | 102.9 | 87.3 | Pass |
| 5 | 532.959 | V | 5.6 | 25.1 | 30.7 | 46 | -15.3 | 103.1 | 60.8 | Pass |
| 6 | 40.675 | V | 13.8 | 18 | 31.8 | 40 | -8.2 | 101.4 | 25.9 | Pass |

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Cable Loss (dB) + AF (dB)
2. AF (dB/m) = Antenna Factor (dB/m) – Pre-amplifier Gain (dB).
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)



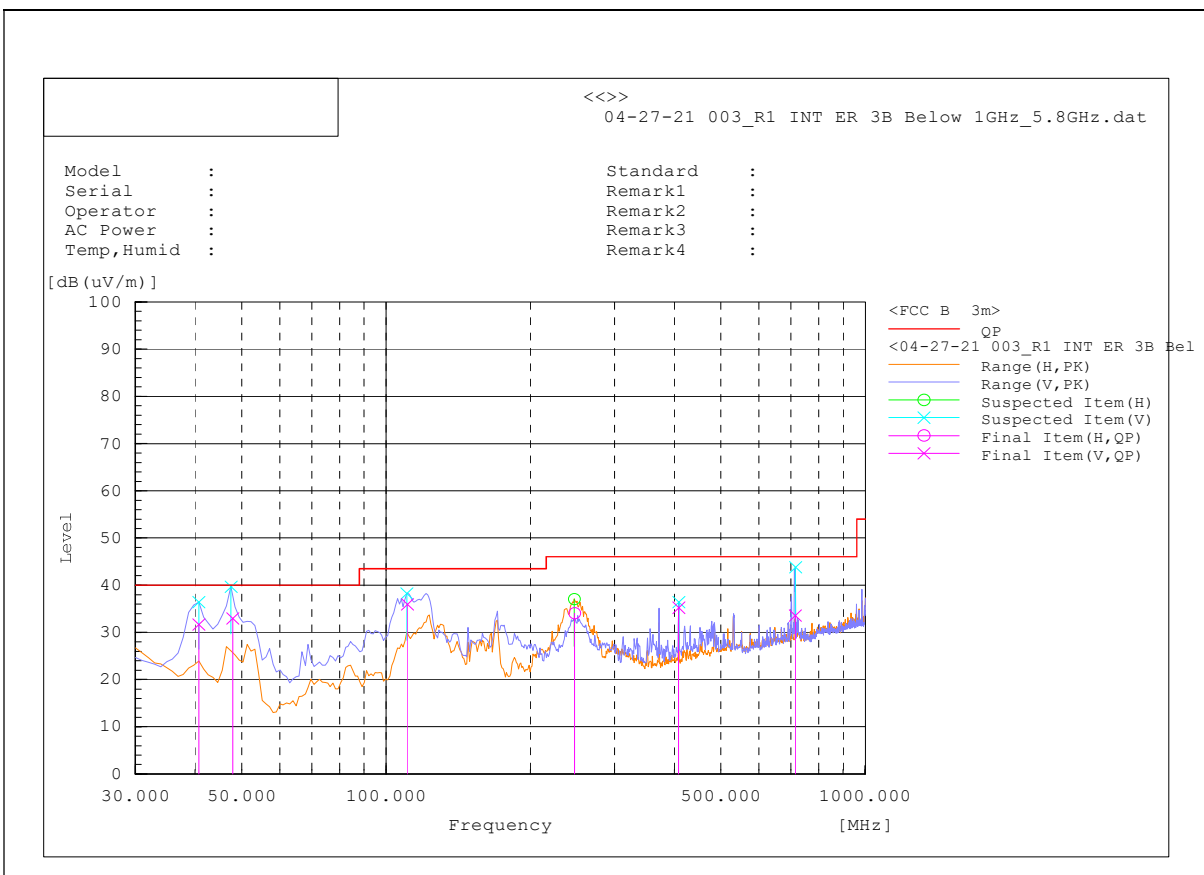
Below 1GHz Worst-Case Data:

| | | | |
|------------------------|---------------------|--------------------------|------------|
| CHANNEL | 802.11a Channel 157 | DETECTOR FUNCTION | Quasi Peak |
| FREQUENCY RANGE | 30MHz – 1GHz | | |

| Antenna Polarity & Test Distance: Vertical and Horizontal at 3m | | | | | | | | | | |
|---|-----------------|--------------------|---------------------|------------------|---------------------|-------------------|----------------|-------------|-------------|-----------|
| No. | Frequency (MHz) | Polarization (H/V) | Reading QP [dB(uV)] | Factor [dB(1/m)] | Level QP [dB(uV/m)] | Limit\QP dB(uV/m) | Margin QP [dB] | Height (cm) | Angle (Deg) | Pass/Fail |
| 1 | 47.867 | V | 19.1 | 13.9 | 33 | 40 | -7 | 100.8 | 180.7 | Pass |
| 2 | 40.679 | V | 13.7 | 18 | 31.7 | 40 | -8.3 | 112 | 7 | Pass |
| 3 | 110.816 | V | 17.4 | 18.6 | 36 | 43.5 | -7.5 | 100.5 | 145.7 | Pass |
| 4 | 714.353 | V | 5.4 | 28.2 | 33.6 | 46 | -12.4 | 104 | 0 | Pass |
| 5 | 247.678 | H | 15.7 | 18.3 | 34 | 46 | -12 | 130.1 | 49.2 | Pass |
| 6 | 408.005 | V | 12.5 | 22.8 | 35.3 | 46 | -10.7 | 100.3 | 357.1 | Pass |

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Cable Loss (dB) + AF (dB)
2. AF (dB/m) = Antenna Factor (dB/m) – Preamplifier Gain (dB).
3. Margin = Level (dBuV/m) - Limit value(dBuV/m)



Above 1GHz Test Data:

1GHz-40GHz – 802.11a – 5180MHz

| ANTENNA POLARITY & test distance: HORIZONTAL& Vertical at 3 m | | | | | | | | | |
|---|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | PoI | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 10361.97 | V | 41.9 | 5.1 | Average | 47 | 54 | -7 | 100.5 | 126.1 |
| 3187.561 | V | 38.5 | -9.4 | Average | 29.1 | 54 | -24.9 | 106 | 207.9 |
| 6994.373 | V | 31.7 | -1.3 | Average | 30.4 | 54 | -23.6 | 200 | 65.5 |
| 10361.97 | V | 57.1 | 5.1 | Peak | 62.2 | 74 | -11.8 | 100.5 | 126.1 |
| 3187.561 | V | 53 | -9.4 | Peak | 43.6 | 74 | -30.4 | 106 | 207.9 |
| 6994.373 | V | 43.5 | -1.3 | Peak | 42.2 | 74 | -31.8 | 200 | 65.5 |

1GHz-40GHz – 802.11a – 5200MHz

| ANTENNA POLARITY & test distance: HORIZONTAL& Vertical at 3 m | | | | | | | | | |
|---|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | PoI | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 10399.59 | H | 43.4 | 5.2 | Average | 48.6 | 54 | -5.4 | 200 | 96.2 |
| 3186.748 | V | 38.8 | -9.4 | Average | 29.4 | 54 | -24.6 | 109 | 189.6 |
| 6983.042 | V | 33 | -1.3 | Average | 31.7 | 54 | -22.3 | 127.1 | 38.2 |
| 10399.59 | H | 54.6 | 5.2 | Peak | 59.8 | 74 | -14.2 | 200 | 96.2 |
| 3186.748 | V | 53.4 | -9.4 | Peak | 44 | 74 | -30 | 109 | 189.6 |
| 6983.042 | V | 43.7 | -1.3 | Peak | 42.4 | 74 | -31.6 | 127.1 | 38.2 |

1GHz-40GHz – 802.11a – 5240MHz

| ANTENNA POLARITY & test distance: HORIZONTAL& Vertical at 3 m | | | | | | | | | |
|---|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | PoI | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 10482.02 | V | 45.3 | 5.3 | Average | 50.6 | 54 | -3.4 | 100.1 | 40.4 |
| 2986.997 | H | 38.5 | -10.3 | Average | 28.2 | 54 | -25.8 | 135.6 | 165.1 |
| 6987.978 | V | 32.6 | -1.3 | Average | 31.3 | 54 | -22.7 | 200 | 51.5 |
| 10482.02 | V | 58.1 | 5.3 | Peak | 63.4 | 74 | -10.6 | 100.1 | 40.4 |
| 2986.997 | H | 52.4 | -10.3 | Peak | 42.1 | 74 | -31.9 | 135.6 | 165.1 |
| 6987.978 | V | 43.5 | -1.3 | Peak | 42.2 | 74 | -31.8 | 200 | 51.5 |

1GHz-40GHz – 802.11n(HT20) – 5180MHz

| ANTENNA POLARITY & test distance: HORIZONTAL& Vertical at 3 m | | | | | | | | | |
|---|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | Pol | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 10361.35 | H | 42.1 | 5.1 | Average | 47.2 | 54 | -6.8 | 100.4 | 114.1 |
| 3193.364 | V | 39.1 | -9.4 | Average | 29.7 | 54 | -24.3 | 109.5 | 348.9 |
| 6969.093 | V | 32.5 | -1.3 | Average | 31.2 | 54 | -22.8 | 127 | 326.5 |
| 10361.35 | H | 54.8 | 5.1 | Peak | 59.9 | 74 | -14.1 | 100.4 | 114.1 |
| 3193.364 | V | 51.8 | -9.4 | Peak | 42.4 | 74 | -31.6 | 109.5 | 348.9 |
| 6969.093 | V | 44 | -1.3 | Peak | 42.7 | 74 | -31.3 | 127 | 326.5 |

1GHz-40GHz – 802.11n(HT20) – 5200MHz

| ANTENNA POLARITY & test distance: HORIZONTAL& Vertical at 3 m | | | | | | | | | |
|---|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | Pol | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 10395.85 | H | 42.6 | 5.2 | Average | 47.8 | 54 | -6.2 | 119.7 | 81 |
| 3195.896 | V | 38.9 | -9.4 | Average | 29.5 | 54 | -24.5 | 145.1 | 192.6 |
| 5205.156 | V | 47.1 | -5.6 | Average | 41.5 | 54 | -12.5 | 105.3 | 356.9 |
| 10395.85 | H | 56.5 | 5.2 | Peak | 61.7 | 74 | -12.3 | 119.7 | 81 |
| 3195.896 | V | 58.7 | -9.4 | Peak | 49.3 | 74 | -24.7 | 145.1 | 192.6 |
| 5205.156 | V | 57.8 | -5.6 | Peak | 52.2 | 74 | -21.8 | 105.3 | 356.9 |

1GHz-40GHz – 802.11n(HT20) – 5240MHz

| ANTENNA POLARITY & test distance: HORIZONTAL& Vertical at 3 m | | | | | | | | | |
|---|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | Pol | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 10484.49 | H | 42.4 | 5.3 | Average | 47.7 | 54 | -6.3 | 113.9 | 31.6 |
| 3199.715 | V | 38.6 | -9.4 | Average | 29.2 | 54 | -24.8 | 105.8 | 176.7 |
| 1757.838 | V | 43.2 | -14.4 | Average | 28.8 | 54 | -25.2 | 154.3 | 20.8 |
| 10484.49 | H | 56.6 | 5.3 | Peak | 61.9 | 74 | -12.1 | 113.9 | 31.6 |
| 3199.715 | V | 52.9 | -9.4 | Peak | 43.5 | 74 | -30.5 | 105.8 | 176.7 |
| 1757.838 | V | 61.7 | -14.4 | Peak | 47.3 | 74 | -26.7 | 154.3 | 20.8 |

1GHz-40GHz – 802.11ac(VHT20) – 5180MHz

| ANTENNA POLARITY & test distance: HORIZONTAL& Vertical at 3 m | | | | | | | | | |
|---|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | Pol | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 10366.09 | H | 39.2 | 5.1 | Average | 44.3 | 54 | -9.7 | 154.8 | 314.7 |
| 2989.319 | V | 38.4 | -10.3 | Average | 28.1 | 54 | -25.9 | 105.2 | 68.4 |
| 3197.645 | V | 39.7 | -9.4 | Average | 30.3 | 54 | -23.7 | 120.4 | 236.9 |
| 10366.09 | H | 53.1 | 5.1 | Peak | 58.2 | 74 | -15.8 | 154.8 | 314.7 |
| 2989.319 | V | 56 | -10.3 | Peak | 45.7 | 74 | -28.3 | 105.2 | 68.4 |
| 3197.645 | V | 53.3 | -9.4 | Peak | 43.9 | 74 | -30.1 | 120.4 | 236.9 |

1GHz-40GHz – 802.11ac(VHT20) – 5200MHz

| ANTENNA POLARITY & test distance: HORIZONTAL& Vertical at 3 m | | | | | | | | | |
|---|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | Pol | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 10398.59 | H | 43 | 5.2 | Average | 48.2 | 54 | -5.8 | 155.5 | 111.1 |
| 2997.422 | V | 39.7 | -10.3 | Average | 29.4 | 54 | -24.6 | 105.6 | 181.2 |
| 5201.332 | V | 43.6 | -5.6 | Average | 38 | 54 | -16 | 199 | 349.4 |
| 10398.59 | H | 56 | 5.2 | Peak | 61.2 | 74 | -12.8 | 155.5 | 111.1 |
| 2997.422 | V | 64 | -10.3 | Peak | 53.7 | 74 | -20.3 | 105.6 | 181.2 |
| 5201.332 | V | 56.3 | -5.6 | Peak | 50.7 | 74 | -23.3 | 199 | 349.4 |

1GHz-40GHz – 802.11ac(VHT20) – 5240MHz

| ANTENNA POLARITY & test distance: HORIZONTAL& Vertical at 3 m | | | | | | | | | |
|---|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | Pol | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 10476.74 | H | 42.6 | 5.3 | Average | 47.9 | 54 | -6.1 | 100.6 | 80.9 |
| 5232.662 | V | 50.7 | -5.5 | Average | 45.2 | 54 | -8.8 | 100 | 1.9 |
| 2988.36 | V | 39.7 | -10.3 | Average | 29.4 | 54 | -24.6 | 163.3 | 0 |
| 10476.74 | H | 57.3 | 5.3 | Peak | 62.6 | 74 | -11.4 | 100.6 | 80.9 |
| 5232.662 | V | 60.9 | -5.5 | Peak | 55.4 | 74 | -18.6 | 100 | 1.9 |
| 2988.36 | V | 59.5 | -10.3 | Peak | 49.2 | 74 | -24.8 | 163.3 | 0 |

1GHz-40GHz – 802.11n(HT40) – 5190MHz

| ANTENNA POLARITY & test distance: HORIZONTAL& Vertical at 3 m | | | | | | | | | |
|---|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | Pol | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 10387.46 | H | 37.5 | 5.1 | Average | 42.6 | 54 | -11.4 | 105.3 | 128.5 |
| 3191.437 | V | 39 | -9.4 | Average | 29.6 | 54 | -24.4 | 100 | 163.2 |
| 2131.22 | V | 41.4 | -12.5 | Average | 28.9 | 54 | -25.1 | 135.4 | 10.6 |
| 10387.46 | H | 50.1 | 5.1 | Peak | 55.2 | 74 | -18.8 | 105.3 | 128.5 |
| 3191.437 | V | 51.3 | -9.4 | Peak | 41.9 | 74 | -32.1 | 100 | 163.2 |
| 2131.22 | V | 59.9 | -12.5 | Peak | 47.4 | 74 | -26.6 | 135.4 | 10.6 |

1GHz-40GHz – 802.11n(HT40) – 5230MHz

| ANTENNA POLARITY & test distance: HORIZONTAL& Vertical at 3 m | | | | | | | | | |
|---|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | Pol | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 10467.5 | H | 37.3 | 5.3 | Average | 42.6 | 54 | -11.4 | 108.7 | 315.5 |
| 5227.493 | V | 36.2 | -5.5 | Average | 30.7 | 54 | -23.3 | 200 | 139.9 |
| 1757.102 | V | 41.5 | -14.4 | Average | 27.1 | 54 | -26.9 | 121.9 | 295.9 |
| 10467.5 | H | 52 | 5.3 | Peak | 57.3 | 74 | -16.7 | 108.7 | 315.5 |
| 5227.493 | V | 47.9 | -5.5 | Peak | 42.4 | 74 | -31.6 | 200 | 139.9 |
| 1757.102 | V | 57.8 | -14.4 | Peak | 43.4 | 74 | -30.6 | 121.9 | 295.9 |

1GHz-40GHz – 802.11ac(VHT40) – 5190MHz

| ANTENNA POLARITY & test distance: HORIZONTAL& Vertical at 3 m | | | | | | | | | |
|---|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | Pol | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 10378.7 | H | 40.1 | 5.1 | Average | 45.2 | 54 | -8.8 | 102.2 | 40.9 |
| 2988.238 | V | 38.6 | -10.3 | Average | 28.3 | 54 | -25.7 | 120.3 | 267.6 |
| 3200.157 | H | 37.7 | -9.4 | Average | 28.3 | 54 | -25.7 | 197.5 | 161.4 |
| 10378.7 | H | 51.6 | 5.1 | Peak | 56.7 | 74 | -17.3 | 102.2 | 40.9 |
| 2988.238 | V | 51.1 | -10.3 | Peak | 40.8 | 74 | -33.2 | 120.3 | 267.6 |
| 3200.157 | H | 56.2 | -9.4 | Peak | 46.8 | 74 | -27.2 | 197.5 | 161.4 |

1GHz-40GHz – 802.11ac(VHT40) – 5230MHz

| ANTENNA POLARITY & test distance: HORIZONTAL& Vertical at 3 m | | | | | | | | | |
|---|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | Pol | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 10458.33 | H | 38.7 | 5.3 | Average | 44 | 54 | -10 | 199 | 109.8 |
| 2988.217 | V | 38.8 | -10.3 | Average | 28.5 | 54 | -25.5 | 102.2 | 252 |
| 5226.132 | V | 42 | -5.5 | Average | 36.5 | 54 | -17.5 | 126.8 | 63.5 |
| 10458.33 | H | 49.3 | 5.3 | Peak | 54.6 | 74 | -19.4 | 199 | 109.8 |
| 2988.217 | V | 56.3 | -10.3 | Peak | 46 | 74 | -28 | 102.2 | 252 |
| 5226.132 | V | 55.7 | -5.5 | Peak | 50.2 | 74 | -23.8 | 126.8 | 63.5 |

1GHz-40GHz – 802.11ac(VHT80) – 5210MHz

| ANTENNA POLARITY & test distance: HORIZONTAL& Vertical at 3 m | | | | | | | | | |
|---|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | Pol | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 10436.15 | H | 35.6 | 5.3 | Average | 40.9 | 54 | -13.1 | 119.6 | 86.1 |
| 3192.624 | V | 39.3 | -9.4 | Average | 29.9 | 54 | -24.1 | 164 | 258.2 |
| 2124.851 | V | 43.8 | -12.5 | Average | 31.3 | 54 | -22.7 | 190 | 201.3 |
| 10436.15 | H | 50.8 | 5.3 | Peak | 56.1 | 74 | -17.9 | 119.6 | 86.1 |
| 3192.624 | V | 58.4 | -9.4 | Peak | 49 | 74 | -25 | 164 | 258.2 |
| 2124.851 | V | 61.6 | -12.5 | Peak | 49.1 | 74 | -24.9 | 190 | 201.3 |

1GHz-40GHz – 802.11a – 5745MHz

| ANTENNA POLARITY & test distance: HORIZONTAL& Vertical at 3 m | | | | | | | | | |
|---|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | Pol | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 11490.11 | H | 42.9 | 6.1 | Average | 49 | 54 | -5 | 102 | 80.7 |
| 5748.138 | H | 49.3 | -4.2 | Average | 45.1 | 54 | -8.9 | 102.1 | 64.4 |
| 2127.93 | V | 43.7 | -12.5 | Average | 31.2 | 54 | -22.8 | 174.1 | 4.2 |
| 11490.11 | H | 55.7 | 6.1 | Peak | 61.8 | 74 | -12.2 | 102 | 80.7 |
| 5748.138 | H | 59.1 | -4.2 | Peak | 54.9 | 74 | -19.1 | 102.1 | 64.4 |
| 2127.93 | V | 64.8 | -12.5 | Peak | 52.3 | 74 | -21.7 | 174.1 | 4.2 |

1GHz-40GHz – 802.11a – 5785MHz

| ANTENNA POLARITY & test distance: HORIZONTAL& Vertical at 3 m | | | | | | | | | |
|---|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | Pol | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 5782.769 | H | 53.6 | -4.1 | Average | 49.5 | 54 | -4.5 | 152.1 | 48.8 |
| 11572.21 | H | 41.3 | 6.2 | Average | 47.5 | 54 | -6.5 | 107.6 | 326.8 |
| 2987.946 | V | 39.6 | -10.3 | Average | 29.3 | 54 | -24.7 | 196.7 | 264.2 |
| 5782.769 | H | 63.5 | -4.1 | Peak | 59.4 | 74 | -14.6 | 152.1 | 48.8 |
| 11572.21 | H | 55.1 | 6.2 | Peak | 61.3 | 74 | -12.7 | 107.6 | 326.8 |
| 2987.946 | V | 53.6 | -10.3 | Peak | 43.3 | 74 | -30.7 | 196.7 | 264.2 |

1GHz-40GHz – 802.11a – 5825MHz

| ANTENNA POLARITY & test distance: HORIZONTAL& Vertical at 3 m | | | | | | | | | |
|---|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | Pol | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 11648.11 | H | 41.6 | 6.2 | Average | 47.8 | 54 | -6.2 | 104.3 | 77.2 |
| 5823.315 | H | 52.5 | -4 | Average | 48.5 | 54 | -5.5 | 144 | 49 |
| 2989.76 | H | 38.7 | -10.3 | Average | 28.4 | 54 | -25.6 | 152.4 | 63.8 |
| 11648.11 | H | 55.3 | 6.2 | Peak | 61.5 | 74 | -12.5 | 104.3 | 77.2 |
| 5823.315 | H | 62.3 | -4 | Peak | 58.3 | 74 | -15.7 | 144 | 49 |
| 2989.76 | H | 57.3 | -10.3 | Peak | 47 | 74 | -27 | 152.4 | 63.8 |

1GHz-40GHz – 802.11n(HT20) – 5745MHz

| ANTENNA POLARITY & test distance: HORIZONTAL& Vertical at 3 m | | | | | | | | | |
|---|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | Pol | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 2991.067 | H | 39 | -10.3 | Average | 28.7 | 54 | -25.3 | 153.8 | 264 |
| 5742.692 | H | 42.9 | -4.2 | Average | 38.7 | 54 | -15.3 | 200 | 0 |
| 11488.02 | H | 38.4 | 6.1 | Average | 44.5 | 54 | -9.5 | 116.4 | 324.2 |
| 2991.067 | H | 56 | -10.3 | Peak | 45.7 | 74 | -28.3 | 153.8 | 264 |
| 5742.692 | H | 54.8 | -4.2 | Peak | 50.6 | 74 | -23.4 | 200 | 0 |
| 11488.02 | H | 52.5 | 6.1 | Peak | 58.6 | 74 | -15.4 | 116.4 | 324.2 |

1GHz-40GHz – 802.11n(HT20) – 5785MHz

| ANTENNA POLARITY & test distance: HORIZONTAL& Vertical at 3 m | | | | | | | | | |
|---|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | Pol | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 11567.16 | H | 39.5 | 6.2 | Average | 45.7 | 54 | -8.3 | 100.7 | 319.6 |
| 1758.477 | V | 42.2 | -14.4 | Average | 27.8 | 54 | -26.2 | 107.7 | 0 |
| 2123.699 | V | 43.2 | -12.5 | Average | 30.7 | 54 | -23.3 | 154.7 | 347.7 |
| 11567.16 | H | 52.7 | 6.2 | Peak | 58.9 | 74 | -15.1 | 100.7 | 319.6 |
| 1758.477 | V | 63.5 | -14.4 | Peak | 49.1 | 74 | -24.9 | 107.7 | 0 |
| 2123.699 | V | 58.8 | -12.5 | Peak | 46.3 | 74 | -27.7 | 154.7 | 347.7 |

1GHz-40GHz – 802.11n(HT20) – 5825MHz

| ANTENNA POLARITY & test distance: HORIZONTAL& Vertical at 3 m | | | | | | | | | |
|---|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | Pol | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 11651.27 | V | 36.7 | 6.2 | Average | 42.9 | 54 | -11.1 | 128.8 | 11.8 |
| 2130.569 | V | 45.5 | -12.5 | Average | 33 | 54 | -21 | 173.3 | 217.7 |
| 2994.034 | V | 38 | -10.3 | Average | 27.7 | 54 | -26.3 | 195.6 | 338.5 |
| 11651.27 | V | 49.1 | 6.2 | Peak | 55.3 | 74 | -18.7 | 128.8 | 11.8 |
| 2130.569 | V | 62.7 | -12.5 | Peak | 50.2 | 74 | -23.8 | 173.3 | 217.7 |
| 2994.034 | V | 52.9 | -10.3 | Peak | 42.6 | 74 | -31.4 | 195.6 | 338.5 |

1GHz-40GHz – 802.11ac(VHT20) – 5745MHz

| ANTENNA POLARITY & test distance: HORIZONTAL& Vertical at 3 m | | | | | | | | | |
|---|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | Pol | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 11491.25 | V | 37.2 | 6.1 | Average | 43.3 | 54 | -10.7 | 128.9 | 47.5 |
| 2130.262 | V | 47.1 | -12.5 | Average | 34.6 | 54 | -19.4 | 195.4 | 176.1 |
| 1757.599 | V | 41.5 | -14.4 | Average | 27.1 | 54 | -26.9 | 112.4 | 321.8 |
| 11491.25 | V | 50 | 6.1 | Peak | 56.1 | 74 | -17.9 | 128.9 | 47.5 |
| 2130.262 | V | 66.7 | -12.5 | Peak | 54.2 | 74 | -19.8 | 195.4 | 176.1 |
| 1757.599 | V | 53.5 | -14.4 | Peak | 39.1 | 74 | -34.9 | 112.4 | 321.8 |

1GHz-40GHz – 802.11ac(VHT20) – 5785MHz

| ANTENNA POLARITY & test distance: HORIZONTAL& Vertical at 3 m | | | | | | | | | |
|---|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | Pol | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 11568.47 | V | 38 | 6.2 | Average | 44.2 | 54 | -9.8 | 107.6 | 40.3 |
| 1758.594 | V | 42 | -14.4 | Average | 27.6 | 54 | -26.4 | 102.1 | 0 |
| 2446.911 | H | 41.9 | -11.4 | Average | 30.5 | 54 | -23.5 | 116.4 | 341.2 |
| 11568.47 | V | 51.4 | 6.2 | Peak | 57.6 | 74 | -16.4 | 107.6 | 40.3 |
| 1758.594 | V | 65.5 | -14.4 | Peak | 51.1 | 74 | -22.9 | 102.1 | 0 |
| 2446.911 | H | 54 | -11.4 | Peak | 42.6 | 74 | -31.4 | 116.4 | 341.2 |

1GHz-40GHz – 802.11ac(VHT20) – 5825MHz

| ANTENNA POLARITY & test distance: HORIZONTAL& Vertical at 3 m | | | | | | | | | |
|---|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | Pol | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 11648.75 | H | 38.8 | 6.2 | Average | 45 | 54 | -9 | 116.5 | 323.5 |
| 2990.595 | V | 39.2 | -10.3 | Average | 28.9 | 54 | -25.1 | 170.5 | 11.9 |
| 2444.181 | H | 43.9 | -11.4 | Average | 32.5 | 54 | -21.5 | 138.3 | 174.2 |
| 11648.75 | H | 52.5 | 6.2 | Peak | 58.7 | 74 | -15.3 | 116.5 | 323.5 |
| 2990.595 | V | 59.6 | -10.3 | Peak | 49.3 | 74 | -24.7 | 170.5 | 11.9 |
| 2444.181 | H | 54 | -11.4 | Peak | 42.6 | 74 | -31.4 | 138.3 | 174.2 |

1GHz-40GHz – 802.11n(HT40) – 5755MHz

| ANTENNA POLARITY & test distance: HORIZONTAL& Vertical at 3 m | | | | | | | | | |
|---|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | Pol | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 11508.54 | H | 35 | 6.1 | Average | 41.1 | 54 | -12.9 | 104.4 | 298.7 |
| 1757.704 | V | 41.4 | -14.4 | Average | 27 | 54 | -27 | 111.8 | 41 |
| 2124.075 | V | 44.6 | -12.5 | Average | 32.1 | 54 | -21.9 | 102.3 | 194.2 |
| 11508.54 | H | 48.2 | 6.1 | Peak | 54.3 | 74 | -19.7 | 104.4 | 298.7 |
| 1757.704 | V | 64.2 | -14.4 | Peak | 49.8 | 74 | -24.2 | 111.8 | 41 |
| 2124.075 | V | 63.7 | -12.5 | Peak | 51.2 | 74 | -22.8 | 102.3 | 194.2 |

1GHz-40GHz – 802.11n(HT40)– 5795MHz

| ANTENNA POLARITY & test distance: HORIZONTAL& Vertical at 3 m | | | | | | | | | |
|---|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | Pol | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 11588.77 | H | 37.1 | 6.2 | Average | 43.3 | 54 | -10.7 | 136.1 | 81.5 |
| 1758.355 | V | 42.9 | -14.4 | Average | 28.5 | 54 | -25.5 | 122.3 | 26.3 |
| 2402.3 | H | 41.6 | -11.6 | Average | 30 | 54 | -24 | 192.2 | 0 |
| 11588.77 | H | 48 | 6.2 | Peak | 54.2 | 74 | -19.8 | 136.1 | 81.5 |
| 1758.355 | V | 66.8 | -14.4 | Peak | 52.4 | 74 | -21.6 | 122.3 | 26.3 |
| 2402.3 | H | 62.4 | -11.6 | Peak | 50.8 | 74 | -23.2 | 192.2 | 0 |

1GHz-40GHz – 802.11ac(VHT40) – 5755MHz

| ANTENNA POLARITY & test distance: HORIZONTAL& Vertical at 3 m | | | | | | | | | |
|---|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | Pol | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 11508.71 | V | 37 | 6.1 | Average | 43.1 | 54 | -10.9 | 100 | 42.3 |
| 2456.408 | H | 42.4 | -11.3 | Average | 31.1 | 54 | -22.9 | 194.8 | 287.1 |
| 2988.544 | H | 38.4 | -10.3 | Average | 28.1 | 54 | -25.9 | 107.9 | 123.2 |
| 11508.71 | V | 49.3 | 6.1 | Peak | 55.4 | 74 | -18.6 | 100 | 42.3 |
| 2456.408 | H | 71.2 | -11.3 | Peak | 59.9 | 74 | -14.1 | 194.8 | 287.1 |
| 2988.544 | H | 58 | -10.3 | Peak | 47.7 | 74 | -26.3 | 107.9 | 123.2 |

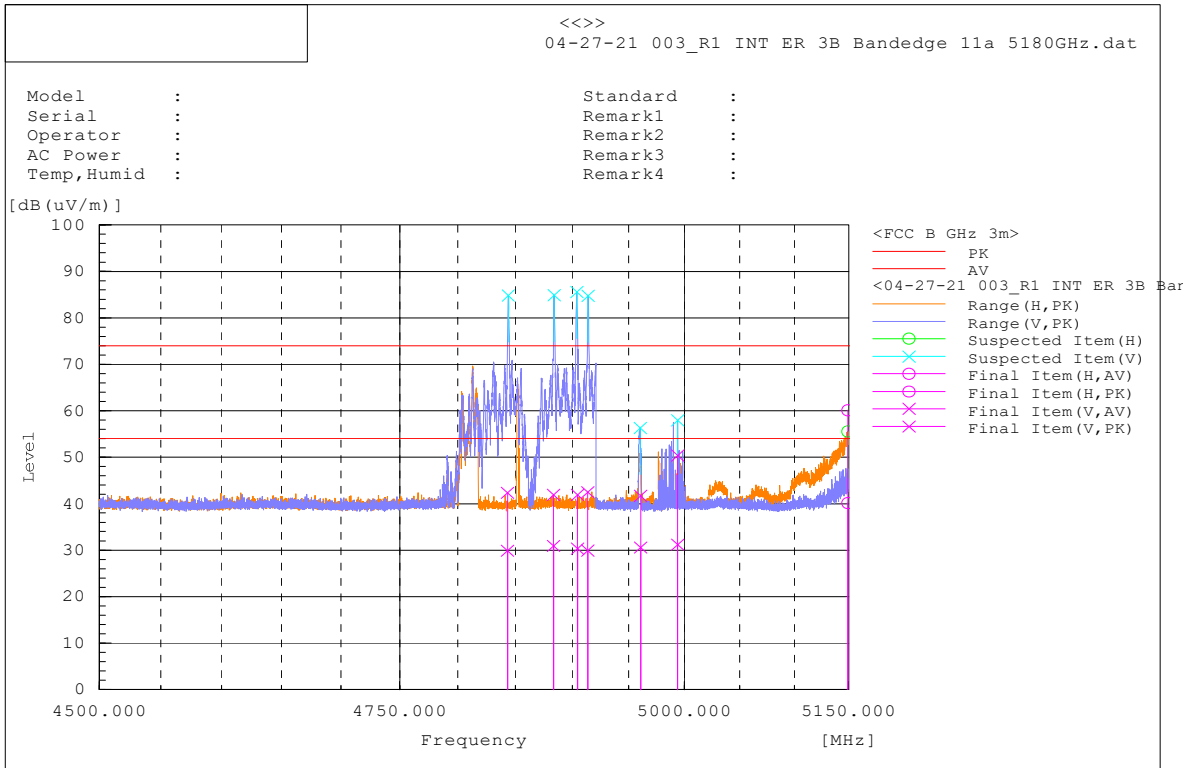
1GHz-40GHz – 802.11ac(VHT40) – 5795MHz

| ANTENNA POLARITY & test distance: HORIZONTAL& Vertical at 3 m | | | | | | | | | |
|---|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | Pol | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 11601.24 | V | 34.8 | 6.2 | Average | 41 | 54 | -13 | 100.1 | 57.1 |
| 1757.479 | V | 42.3 | -14.4 | Average | 27.9 | 54 | -26.1 | 104.3 | 138.8 |
| 2401.373 | H | 38.5 | -11.6 | Average | 26.9 | 54 | -27.1 | 108.5 | 232.7 |
| 11601.24 | V | 47.6 | 6.2 | Peak | 53.8 | 74 | -20.2 | 100.1 | 57.1 |
| 1757.479 | V | 62 | -14.4 | Peak | 47.6 | 74 | -26.4 | 104.3 | 138.8 |
| 2401.373 | H | 63.7 | -11.6 | Peak | 52.1 | 74 | -21.9 | 108.5 | 232.7 |

1GHz-40GHz – 802.11ac(VHT80) – 5775MHz

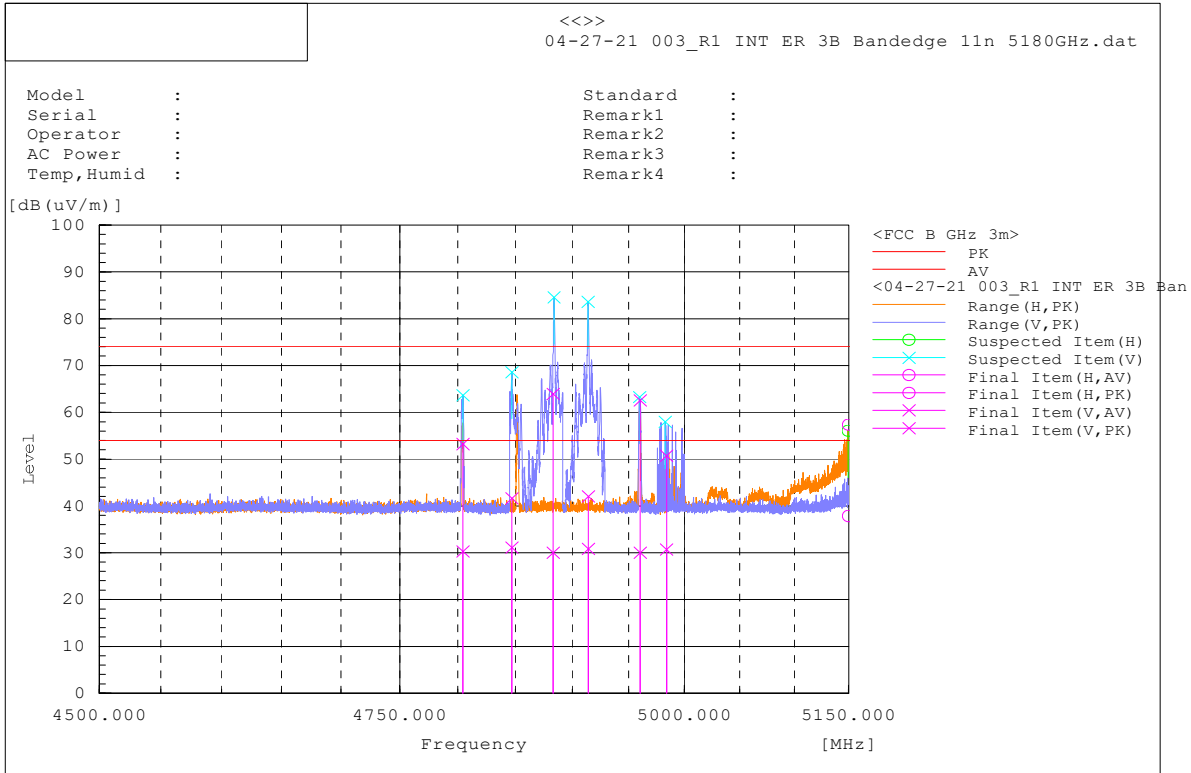
| ANTENNA POLARITY & test distance: HORIZONTAL& Vertical at 3 m | | | | | | | | | |
|---|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | Pol | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 11566.79 | H | 30.9 | 6.2 | Average | 37.1 | 54 | -16.9 | 107.3 | 36.5 |
| 2401.299 | H | 39.6 | -11.6 | Average | 28 | 54 | -26 | 100.4 | 146.8 |
| 2986.712 | H | 39.1 | -10.3 | Average | 28.8 | 54 | -25.2 | 104.5 | 31.8 |
| 11566.79 | H | 45.7 | 6.2 | Peak | 51.9 | 74 | -22.1 | 107.3 | 36.5 |
| 2401.299 | H | 51.6 | -11.6 | Peak | 40 | 74 | -34 | 100.4 | 146.8 |
| 2986.712 | H | 58.3 | -10.3 | Peak | 48 | 74 | -26 | 104.5 | 31.8 |

RESTRICTED BAND Test Plots
802.11a – 5180MHz



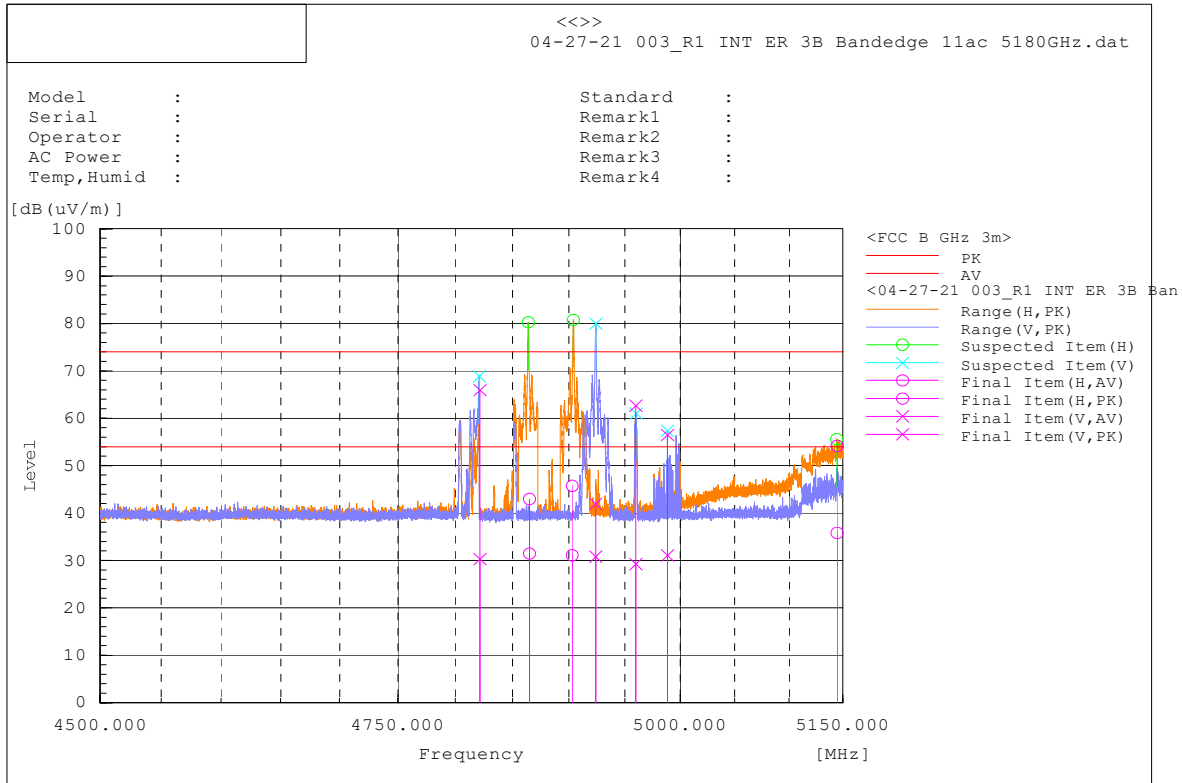
| ANTENNA POLARITY & test distance: HORIZONTAL& Vertical at 3 m | | | | | | | | | |
|---|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | Pol | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 4843.388 | V | 35.9 | -6 | Average | 29.9 | 54 | -24.1 | 100.5 | 342.1 |
| 4883.53 | V | 36.9 | -6 | Average | 30.9 | 54 | -23.1 | 138.5 | 204.2 |
| 4904.762 | V | 36.4 | -6 | Average | 30.4 | 54 | -23.6 | 115.7 | 348.3 |
| 4913.778 | V | 35.9 | -5.9 | Average | 30 | 54 | -24 | 195.2 | 186.5 |
| 5149.329 | H | 45.9 | -5.7 | Average | 40.2 | 54 | -13.8 | 143.8 | 20.7 |
| 4960.845 | V | 36.5 | -5.9 | Average | 30.6 | 54 | -23.4 | 137.6 | 297.8 |
| 4994.052 | V | 37.1 | -5.8 | Average | 31.3 | 54 | -22.7 | 128.9 | 154.5 |
| 4843.388 | V | 48.4 | -6 | Peak | 42.4 | 74 | -31.6 | 100.5 | 342.1 |
| 4883.53 | V | 47.9 | -6 | Peak | 41.9 | 74 | -32.1 | 138.5 | 204.2 |
| 4904.762 | V | 47.9 | -6 | Peak | 41.9 | 74 | -32.1 | 115.7 | 348.3 |
| 4913.778 | V | 48.4 | -5.9 | Peak | 42.5 | 74 | -31.5 | 195.2 | 186.5 |
| 5149.329 | H | 65.8 | -5.7 | Peak | 60.1 | 74 | -13.9 | 143.8 | 20.7 |
| 4960.845 | V | 47.6 | -5.9 | Peak | 41.7 | 74 | -32.3 | 137.6 | 297.8 |
| 4994.052 | V | 56.2 | -5.8 | Peak | 50.4 | 74 | -23.6 | 128.9 | 154.5 |

RESTRICTED BAND
802.11n(HT20) – 5180MHz



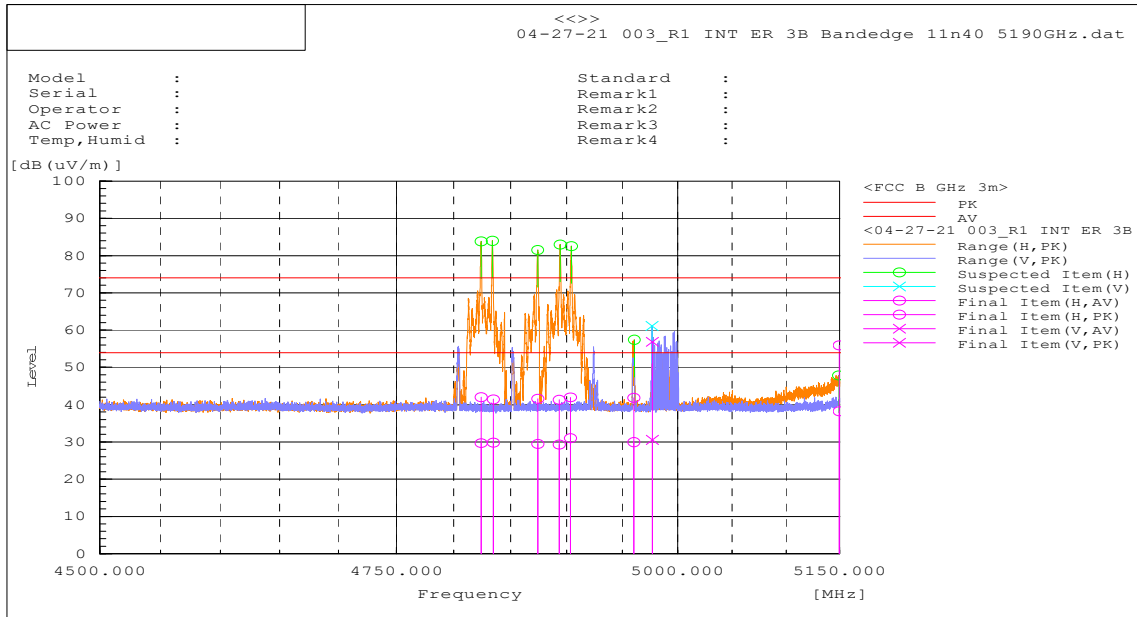
| ANTENNA POLARITY & test distance: HORIZONTAL & Vertical at 3 m | | | | | | | | | |
|--|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | Pol | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 5149.966 | H | 43.6 | -5.7 | Average | 37.9 | 54 | -16.1 | 118.3 | 358.2 |
| 4804.367 | V | 36.3 | -6 | Average | 30.3 | 54 | -23.7 | 195.2 | 33.1 |
| 4847.001 | V | 37.1 | -6 | Average | 31.1 | 54 | -22.9 | 128.5 | 332.5 |
| 4883.009 | V | 36 | -6 | Average | 30 | 54 | -24 | 130.9 | 158.5 |
| 4914.231 | V | 36.8 | -5.9 | Average | 30.9 | 54 | -23.1 | 112.9 | 173.6 |
| 4960.305 | V | 35.9 | -5.9 | Average | 30 | 54 | -24 | 146.9 | 288.4 |
| 4983.871 | V | 36.5 | -5.8 | Average | 30.7 | 54 | -23.3 | 195.1 | 128.1 |
| 5149.966 | H | 63.1 | -5.7 | Peak | 57.4 | 74 | -16.6 | 118.3 | 358.2 |
| 4804.367 | V | 59.3 | -6 | Peak | 53.3 | 74 | -20.7 | 195.2 | 33.1 |
| 4847.001 | V | 47.7 | -6 | Peak | 41.7 | 74 | -32.3 | 128.5 | 332.5 |
| 4883.009 | V | 70 | -6 | Peak | 64 | 74 | -10 | 130.9 | 158.5 |
| 4914.231 | V | 48 | -5.9 | Peak | 42.1 | 74 | -31.9 | 112.9 | 173.6 |
| 4960.305 | V | 68.5 | -5.9 | Peak | 62.6 | 74 | -11.4 | 146.9 | 288.4 |
| 4983.871 | V | 56.6 | -5.8 | Peak | 50.8 | 74 | -23.2 | 195.1 | 128.1 |

RESTRICTED BAND
802.11ac(VHT20) – 5180MHz



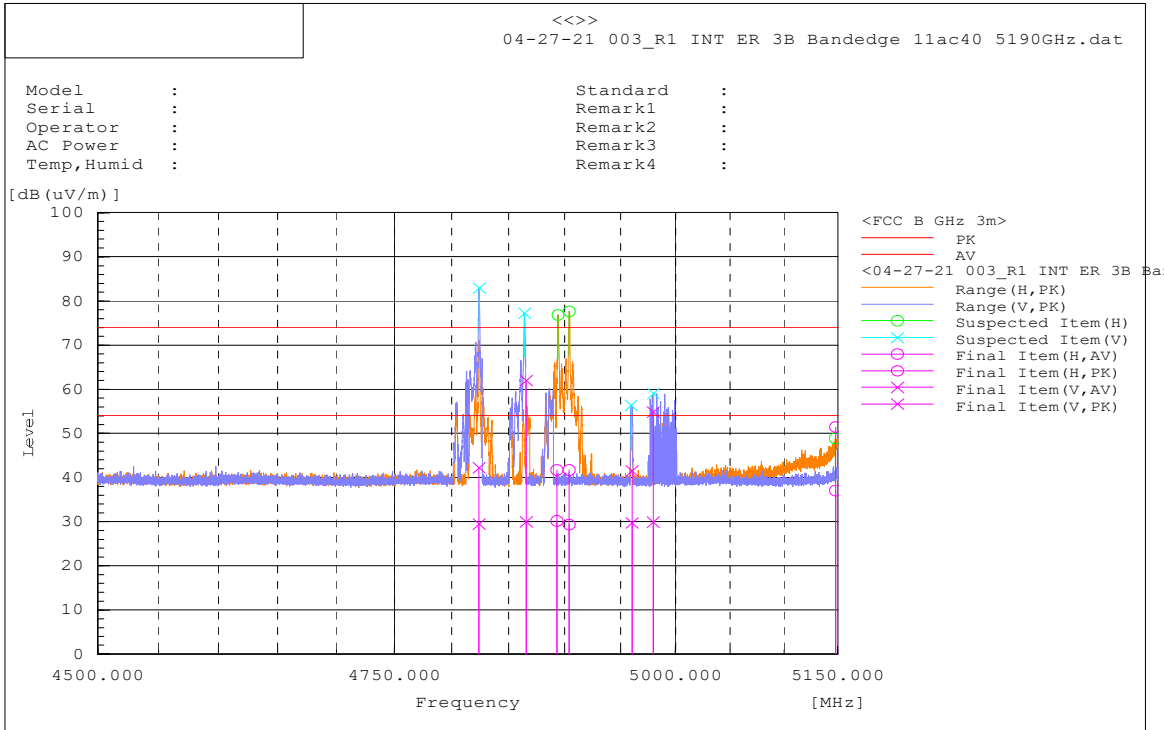
| ANTENNA POLARITY & test distance: HORIZONTAL & Vertical at 3 m | | | | | | | | | |
|--|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | Pol | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 4821.393 | V | 36.3 | -6 | Average | 30.3 | 54 | -23.7 | 144.1 | 317 |
| 4923.885 | V | 36.7 | -5.9 | Average | 30.8 | 54 | -23.2 | 214.9 | 140.5 |
| 4959.945 | V | 35.1 | -5.9 | Average | 29.2 | 54 | -24.8 | 192.3 | 262.8 |
| 4988.448 | V | 36.9 | -5.8 | Average | 31.1 | 54 | -22.9 | 116.4 | 193.4 |
| 4864.954 | H | 37.4 | -6 | Average | 31.4 | 54 | -22.6 | 105.1 | 326.7 |
| 4902.895 | H | 37.1 | -6 | Average | 31.1 | 54 | -22.9 | 195.3 | 348.5 |
| 5144.641 | H | 41.5 | -5.7 | Average | 35.8 | 54 | -18.2 | 135.9 | 326.8 |
| 4821.393 | V | 71.9 | -6 | Peak | 65.9 | 74 | -8.1 | 144.1 | 317 |
| 4923.885 | V | 47.8 | -5.9 | Peak | 41.9 | 74 | -32.1 | 214.9 | 140.5 |
| 4959.945 | V | 68.6 | -5.9 | Peak | 62.7 | 74 | -11.3 | 192.3 | 262.8 |
| 4988.448 | V | 62.3 | -5.8 | Peak | 56.5 | 74 | -17.5 | 116.4 | 193.4 |
| 4864.954 | H | 49 | -6 | Peak | 43 | 74 | -31 | 105.1 | 326.7 |
| 4902.895 | H | 51.7 | -6 | Peak | 45.7 | 74 | -28.3 | 195.3 | 348.5 |
| 5144.641 | H | 59.9 | -5.7 | Peak | 54.2 | 74 | -19.8 | 135.9 | 326.8 |

RESTRICTED BAND
802.11n(HT40) – 5190MHz



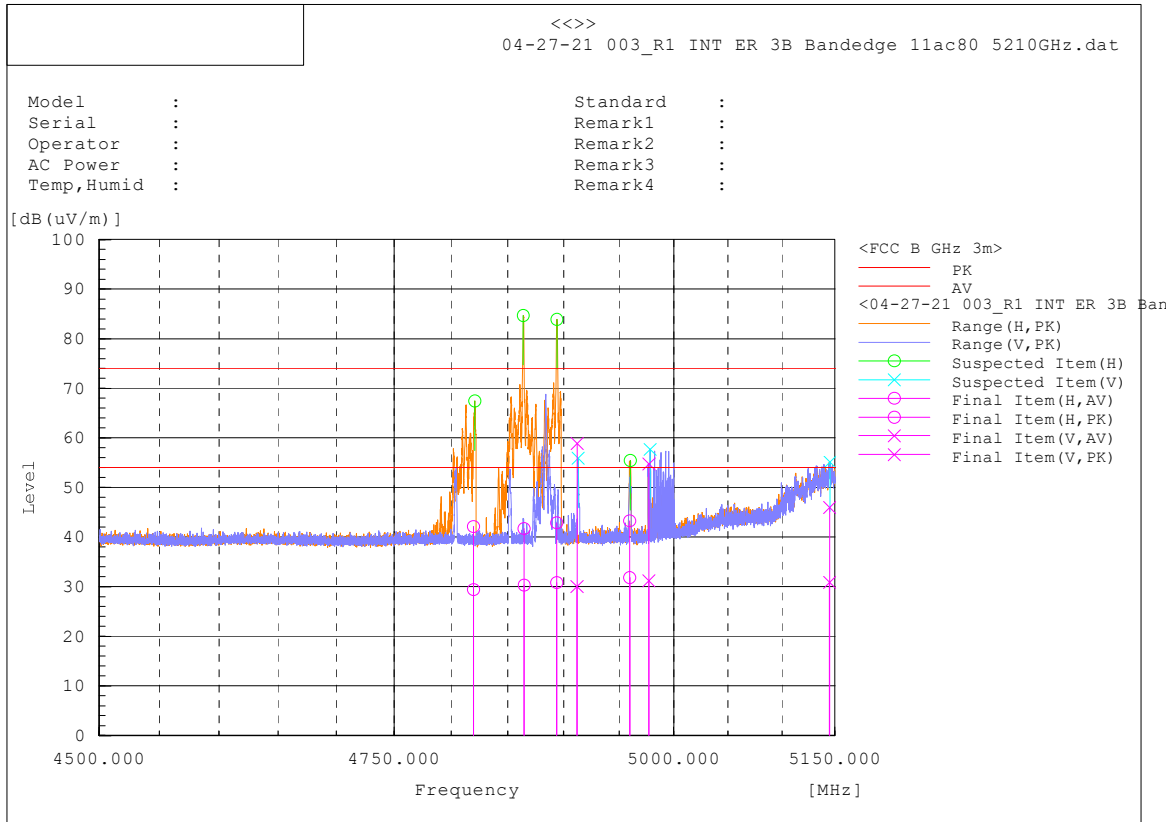
| ANTENNA POLARITY & test distance: HORIZONTAL& Vertical at 3 m | | | | | | | | | |
|---|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | Pol | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 4824.056 | H | 35.7 | -6 | Average | 29.7 | 54 | -24.3 | 100 | 10.6 |
| 4834.865 | H | 35.9 | -6 | Average | 29.9 | 54 | -24.1 | 184.7 | 311.3 |
| 4874.198 | H | 35.5 | -6 | Average | 29.5 | 54 | -24.5 | 163.3 | 353.3 |
| 4893.23 | H | 35.3 | -6 | Average | 29.3 | 54 | -24.7 | 214.9 | 85.9 |
| 4903.386 | H | 37 | -6 | Average | 31 | 54 | -23 | 111.5 | 158.4 |
| 4960.262 | H | 35.8 | -5.9 | Average | 29.9 | 54 | -24.1 | 155.2 | 271.6 |
| 4977.106 | V | 36.5 | -5.9 | Average | 30.6 | 54 | -23.4 | 100 | 289 |
| 5149.5 | H | 43.9 | -5.7 | Peak | 38.2 | 54 | -15.8 | 173.8 | 144.1 |
| 4824.056 | H | 48 | -6 | Peak | 42 | 74 | -32 | 100 | 10.6 |
| 4834.865 | H | 47.5 | -6 | Peak | 41.5 | 74 | -32.5 | 184.7 | 311.3 |
| 4874.198 | H | 47.6 | -6 | Peak | 41.6 | 74 | -32.4 | 163.3 | 353.3 |
| 4893.23 | H | 47.3 | -6 | Peak | 41.3 | 74 | -32.7 | 214.9 | 85.9 |
| 4903.386 | H | 48 | -6 | Peak | 42 | 74 | -32 | 111.5 | 158.4 |
| 4960.262 | H | 47.8 | -5.9 | Peak | 41.9 | 74 | -32.1 | 155.2 | 271.6 |

RESTRICTED BAND
802.11ac(VHT40) – 5190MHz



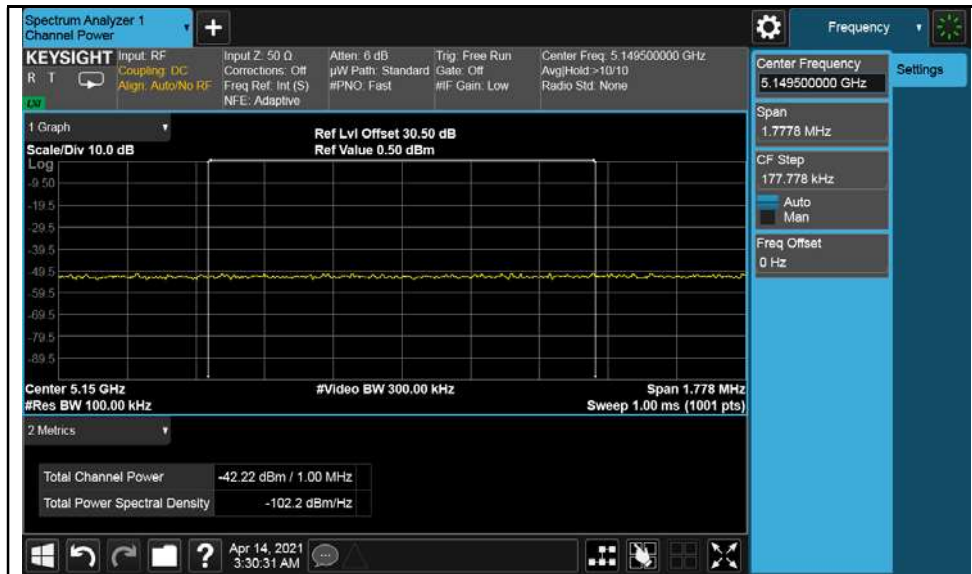
| ANTENNA POLARITY & test distance: HORIZONTAL & Vertical at 3 m | | | | | | | | | |
|--|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | Pol | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 4893.007 | H | 36.2 | -6 | Average | 30.2 | 54 | -23.8 | 146 | 294.1 |
| 4904.035 | H | 35.3 | -6 | Average | 29.3 | 54 | -24.7 | 137.9 | 0 |
| 5148.001 | H | 42.7 | -5.7 | Average | 37 | 54 | -17 | 100 | 181.4 |
| 4823.763 | V | 35.4 | -6 | Average | 29.4 | 54 | -24.6 | 162.3 | 278.2 |
| 4865.593 | V | 36 | -6 | Average | 30 | 54 | -24 | 188.3 | 260.2 |
| 4960.283 | V | 35.6 | -5.9 | Average | 29.7 | 54 | -24.3 | 400 | 14.6 |
| 4979.464 | V | 35.8 | -5.9 | Average | 29.9 | 54 | -24.1 | 113.1 | 91.3 |
| 4893.007 | H | 47.7 | -6 | Peak | 41.7 | 74 | -32.3 | 146 | 294.1 |
| 4904.035 | H | 47.7 | -6 | Peak | 41.7 | 74 | -32.3 | 137.9 | 0 |
| 5148.001 | H | 57.1 | -5.7 | Peak | 51.4 | 74 | -22.6 | 100 | 181.4 |
| 4823.763 | V | 48.2 | -6 | Peak | 42.2 | 74 | -31.8 | 162.3 | 278.2 |
| 4865.593 | V | 68 | -6 | Peak | 62 | 74 | -12 | 188.3 | 260.2 |
| 4960.283 | V | 47.4 | -5.9 | Peak | 41.5 | 74 | -32.5 | 400 | 14.6 |
| 4979.464 | V | 60.8 | -5.9 | Peak | 54.9 | 74 | -19.1 | 113.1 | 91.3 |

RESTRICTED BAND
802.11n(VHT80) – 5210MHz

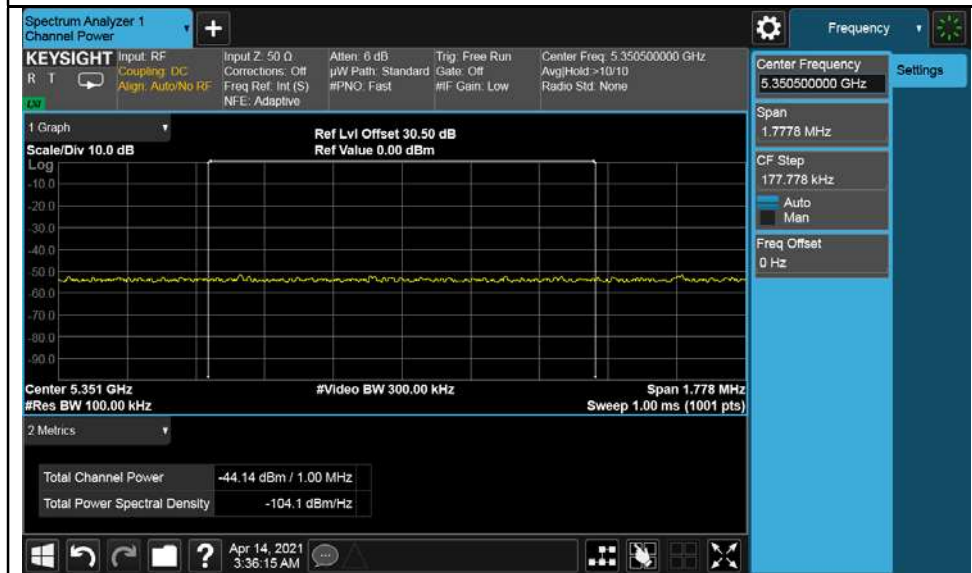


| ANTENNA POLARITY & test distance: HORIZONTAL & Vertical at 3 m | | | | | | | | | |
|--|-----|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| Frequency [MHz] | Pol | Reading [dB(uV)] | Factor [dB(1/m)] | Measurement Type | Level [dB(uV/m)] | Limit [dB(uV/m)] | Margin [dB] | Height [cm] | Angle [deg] |
| 4819.637 | H | 35.4 | -6 | Average | 29.4 | 54 | -24.6 | 107.7 | 313.7 |
| 4864.653 | H | 36.3 | -6 | Average | 30.3 | 54 | -23.7 | 102 | 60.7 |
| 4893.849 | H | 36.8 | -6 | Average | 30.8 | 54 | -23.2 | 114.5 | 167.4 |
| 4959.7 | H | 37.7 | -5.9 | Average | 31.8 | 54 | -22.2 | 143.9 | 153.5 |
| 4912.009 | V | 35.9 | -5.9 | Average | 30 | 54 | -24 | 213.6 | 224.6 |
| 4977.081 | V | 37.1 | -5.9 | Average | 31.2 | 54 | -22.8 | 111.4 | 329 |
| 5144.819 | V | 36.6 | -5.7 | Average | 30.9 | 54 | -23.1 | 214.2 | 218 |
| 4819.637 | H | 48.1 | -6 | Peak | 42.1 | 74 | -31.9 | 107.7 | 313.7 |
| 4864.653 | H | 47.7 | -6 | Peak | 41.7 | 74 | -32.3 | 102 | 60.7 |
| 4893.849 | H | 48.9 | -6 | Peak | 42.9 | 74 | -31.1 | 114.5 | 167.4 |
| 4959.7 | H | 49.1 | -5.9 | Peak | 43.2 | 74 | -30.8 | 143.9 | 153.5 |
| 4912.009 | V | 64.7 | -5.9 | Peak | 58.8 | 74 | -15.2 | 213.6 | 224.6 |
| 4977.081 | V | 60.6 | -5.9 | Peak | 54.7 | 74 | -19.3 | 111.4 | 329 |
| 5144.819 | V | 51.7 | -5.7 | Peak | 46 | 74 | -28 | 214.2 | 218 |

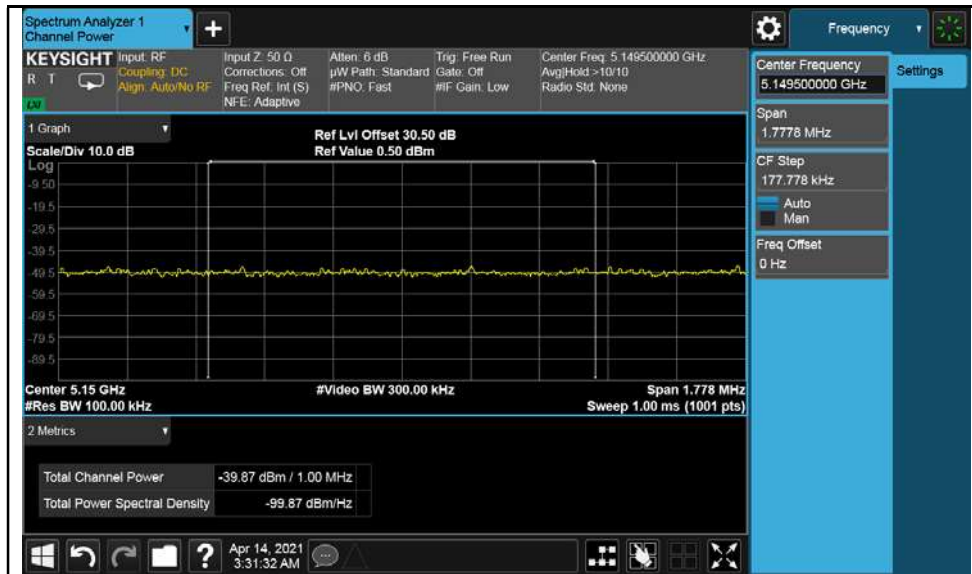
Band Edge Test Plots for U-NII-1 Band:



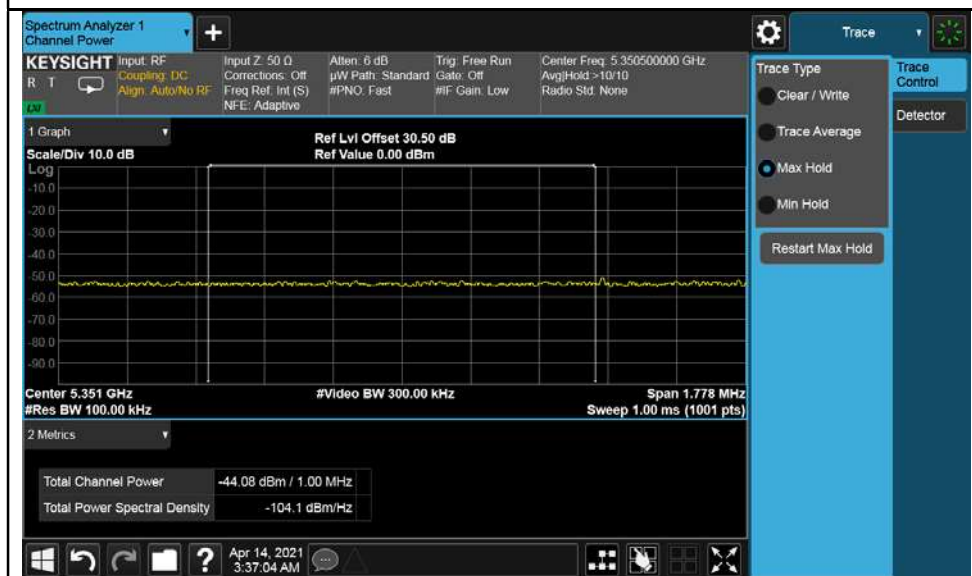
802.11a-5180MHz



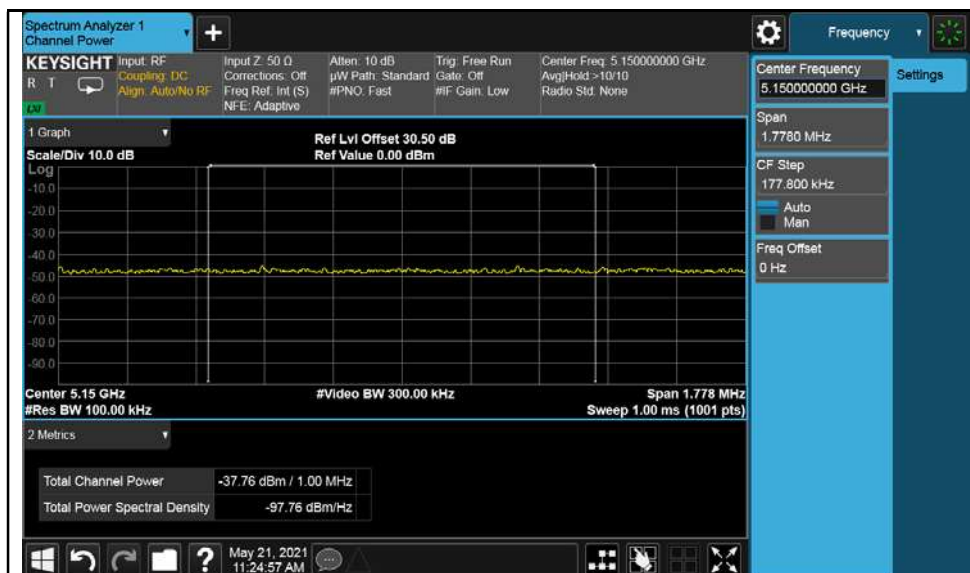
802.11a-5240MHz



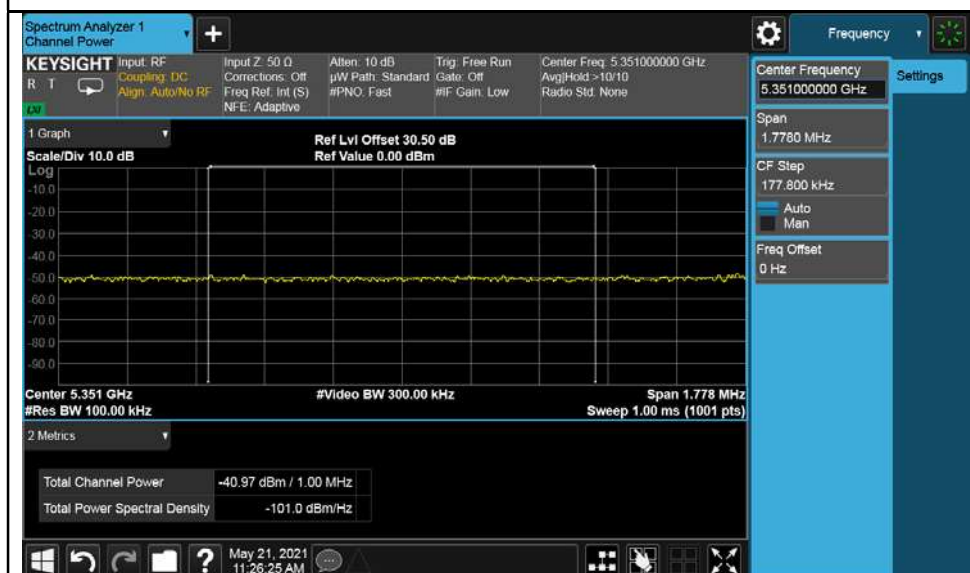
802.11n(HT20)-5180MHz



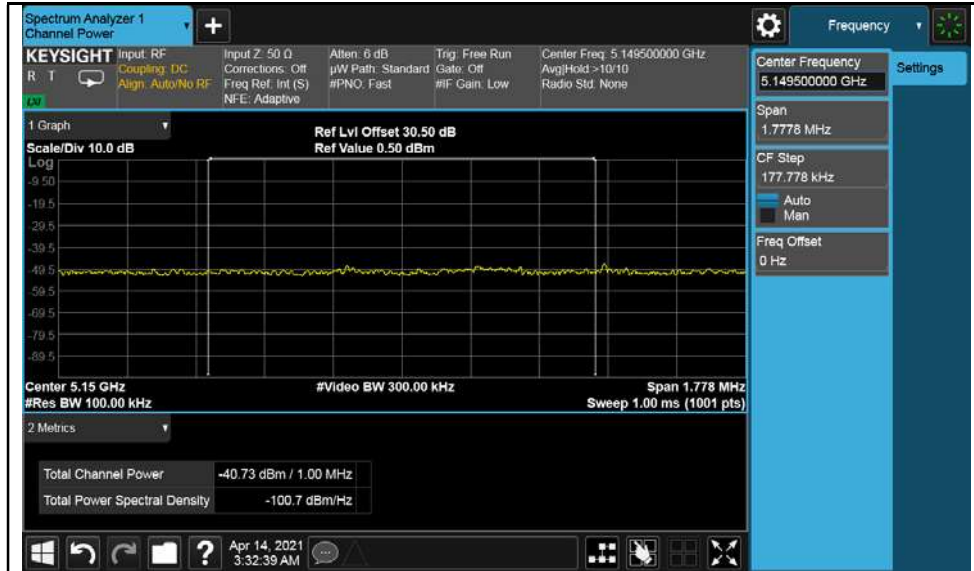
802.11n(HT20)-5240MHz



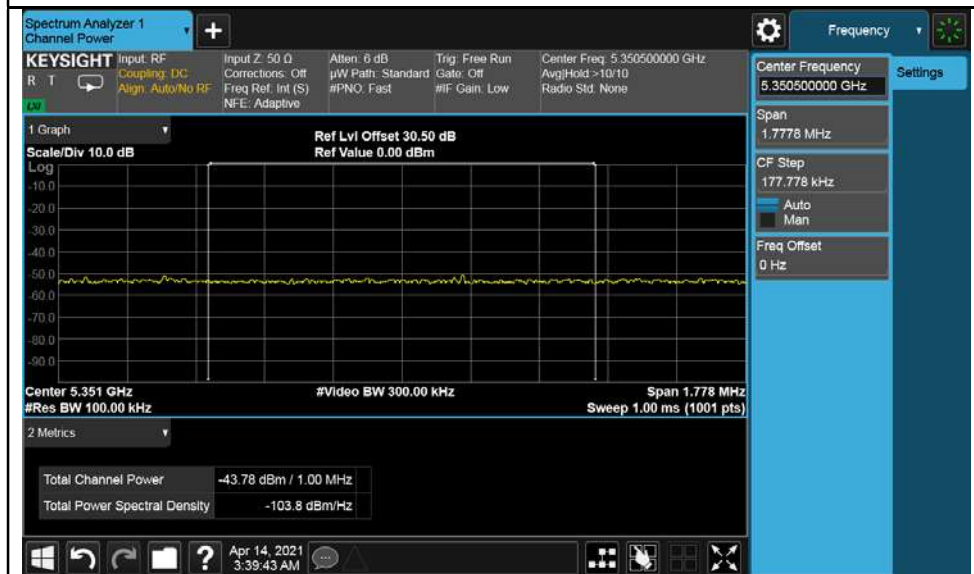
802.11ac(VHT20)-5180MHz



802.11ac(VHT20)-5240MHz



802.11n(HT40)-5190MHz



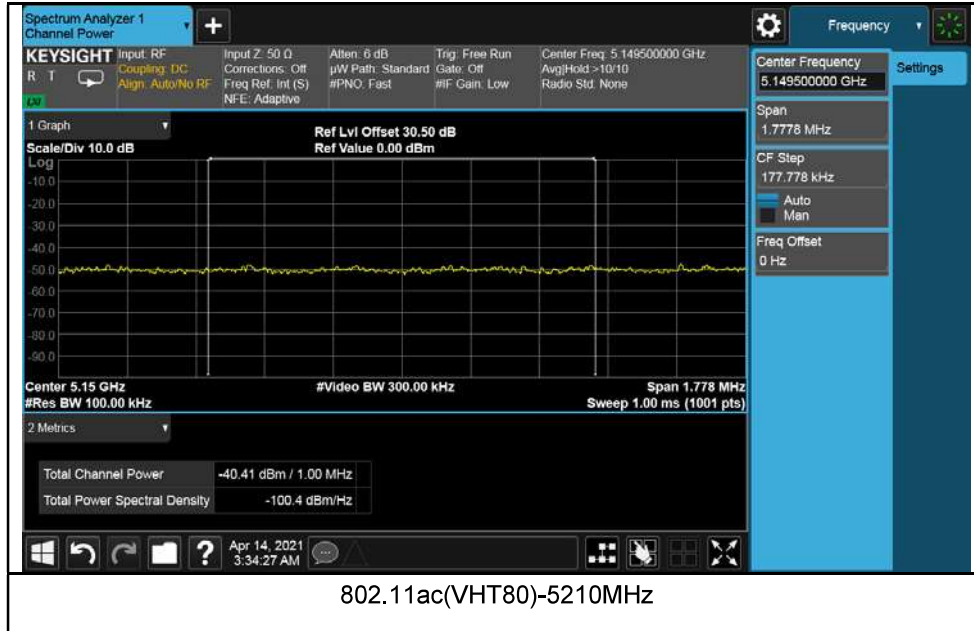
802.11n(HT40)-5230MHz



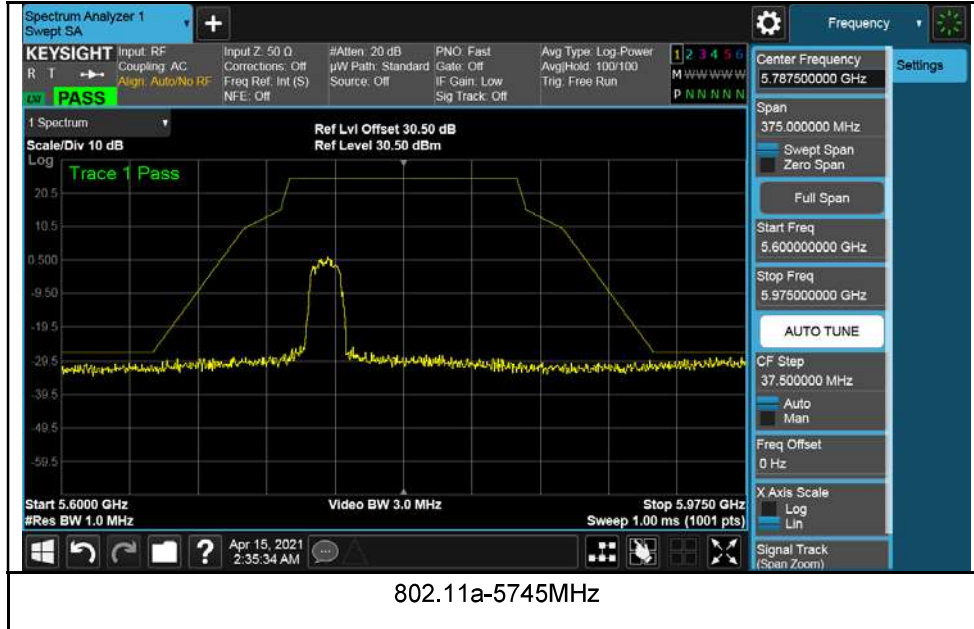
802.11ac(VHT40)-5190MHz

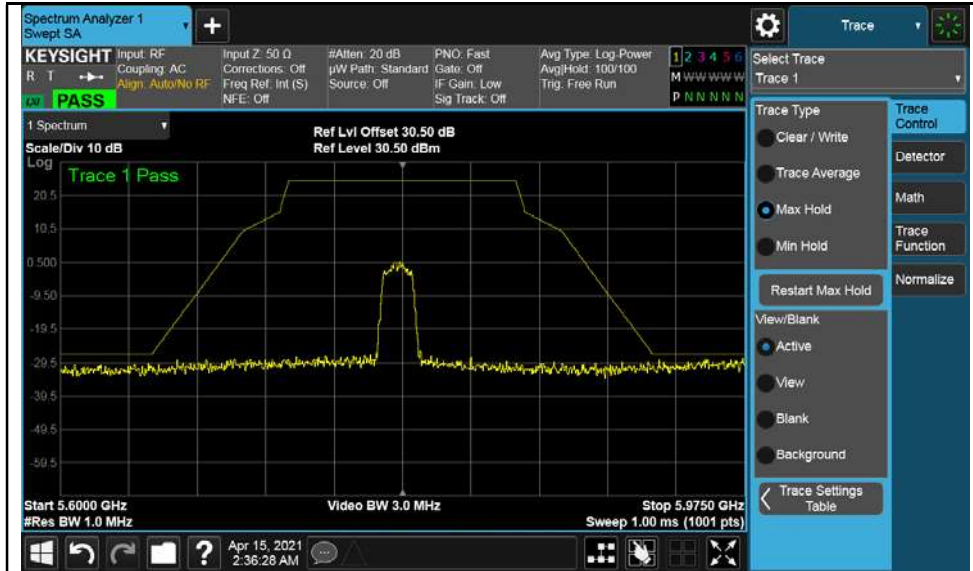


802.11ac(VHT40)-5230MHz

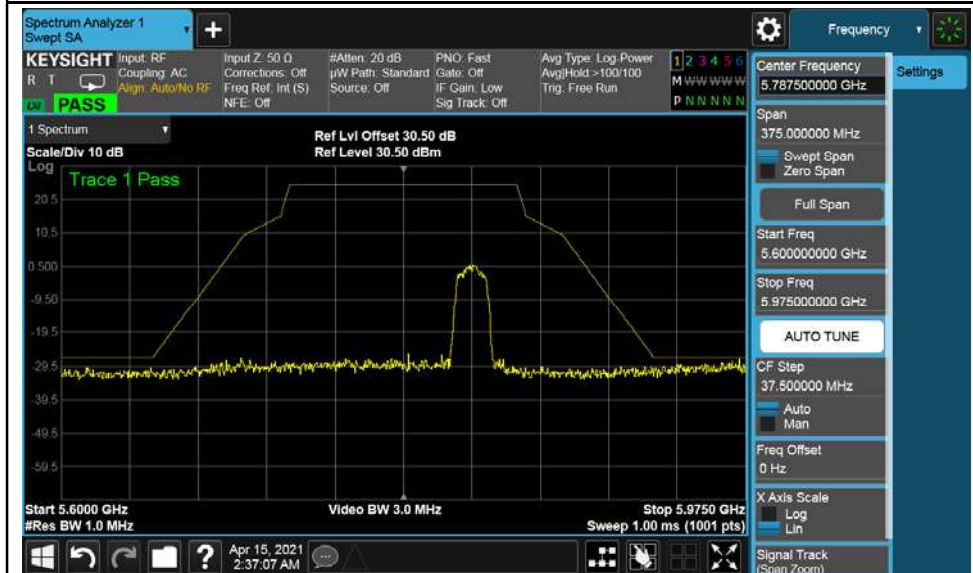


Test Plots for U-NII-3 Band:

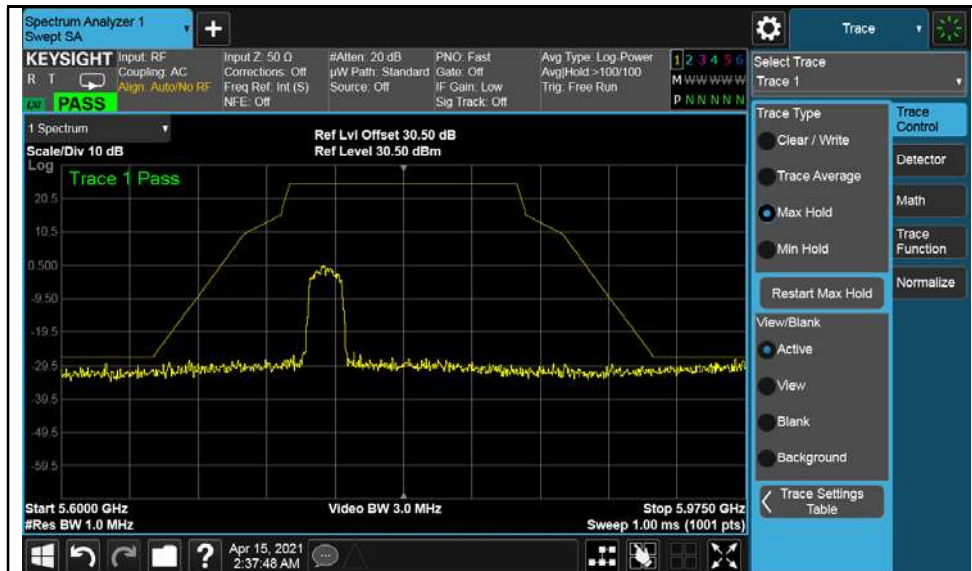




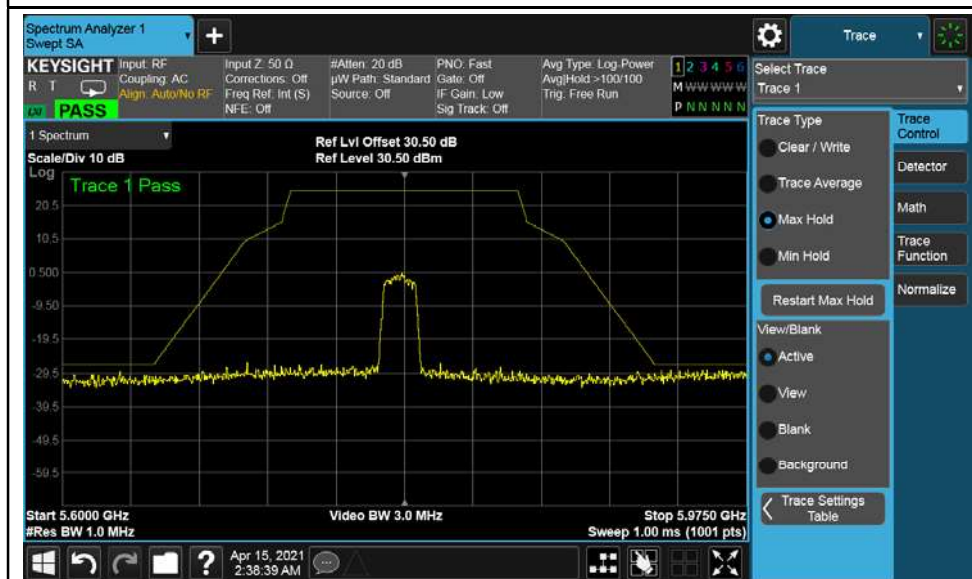
802.11a-5785MHz



802.11a-5825MHz



802.11n(HT20)-5745MHz



802.11n(HT20)-5785MHz