

# Test Report

|                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Product</b>                                                                                                                                                                                                                                                                                                                                                                                     | Collaboration end-point                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Name and address of the applicant</b>                                                                                                                                                                                                                                                                                                                                                           | Cisco Systems Norway AS<br>Philip Pedersens vei 1<br>1366 Lysaker, Norway                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Name and address of the manufacturer</b>                                                                                                                                                                                                                                                                                                                                                        | Cisco Systems, Inc.<br>170 West Tasman Drive San Jose<br>CA 95134, USA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Model Number</b>                                                                                                                                                                                                                                                                                                                                                                                | TTC60-31<br>TTC60-32                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Rating</b>                                                                                                                                                                                                                                                                                                                                                                                      | 3.5 - 2.5A 100-240V AC 50/60Hz<br>4.5 - 3.5A 100-240V AC 50/60Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Trademark</b>                                                                                                                                                                                                                                                                                                                                                                                   | Cisco                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Serial number</b>                                                                                                                                                                                                                                                                                                                                                                               | WZS2442J006 (for TTC60-31)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Additional information</b>                                                                                                                                                                                                                                                                                                                                                                      | WiFi, Bluetooth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Tested according to</b>                                                                                                                                                                                                                                                                                                                                                                         | <b>FCC Part 15.407</b><br>Unlicensed National Information Infrastructure Devices (U-NII)<br><b>Industry Canada RSS-247, Issue 2</b><br>Licence-Exempt Local Area Network (LE-LAN) Devices                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Order number</b>                                                                                                                                                                                                                                                                                                                                                                                | 406072                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Tested in period</b>                                                                                                                                                                                                                                                                                                                                                                            | 2020-11-20 to 2020-11-25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Issue date</b>                                                                                                                                                                                                                                                                                                                                                                                  | 2021-09-03                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Name and address of the testing laboratory</b>                                                                                                                                                                                                                                                                                                                                                  | <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="text-align: center;"> <br/> Instituttveien 6<br/>Kjeller, Norway<br/>www.nemko.com </div> <div style="text-align: center;"> CAB Number<br/>FCC: NO0001<br/>ISED: NO0470<br/><br/> TEL: +47 22 96 03 30<br/>FAX: +47 22 96 05 50 </div> <div style="text-align: center;"> <br/>  </div> </div> <p style="text-align: center; color: red;">An accredited technical test executed under the Norwegian accreditation scheme</p> |
| <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <br/> Prepared by [Frode Sveinsen] </div> <div style="text-align: center;"> <br/> Approved by [G.Suhanthakumar] </div> </div> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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# 1 INFORMATION

## 1.1 Test Item

|                                  |                                                                                                                                                                     |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name                             | Cisco                                                                                                                                                               |
| Marketing Name                   | Webex Board Pro 55<br>Webex Board Pro 75                                                                                                                            |
| Model Number                     | TTC60-31<br>TTC60-32                                                                                                                                                |
| FCC ID                           | LDKNVTX21737                                                                                                                                                        |
| ISED ID                          | 2461N-NVTX21737                                                                                                                                                     |
| Serial number                    | WZS2442J006                                                                                                                                                         |
| Hardware identity and/or version | DV1                                                                                                                                                                 |
| Software identity and/or version | S01845-1.23.0                                                                                                                                                       |
| Frequency Ranges                 | U-NII 1 : 5180 – 5240 MHz: 4 channels<br>U-NII 2A : 5260 – 5320 MHz: 4 channels<br>U-NII 2C : 5500 – 5720 MHz: 12 channels<br>U-NII 3 : 5745 – 5825 MHz: 5 channels |
| Operating Modes                  | 802.11a<br>802.11n (20/40/80 MHz BW)                                                                                                                                |
| Type of Modulation               | Digital (OFDM - Orthogonal frequency-division multiplexing)                                                                                                         |
| Conducted Output Power           | 5180 – 5240 MHz: 39.9 mW<br>5260 – 5320 MHz: 83.2 mW<br>5500 – 5720 MHz: 85.3 mW<br>5745 – 5825 MHz: 83.4 mW                                                        |
| Antenna Connector                | None                                                                                                                                                                |
| Number of Antennas               | 2                                                                                                                                                                   |
| Antenna Diversity Supported      | Yes                                                                                                                                                                 |
| Smart Antennas Supported         | Yes                                                                                                                                                                 |
| TPC Supported                    | Not implemented. Not required when EIRP is below 500 mW                                                                                                             |
| DFS Supported                    | Client Device without Radar Detection                                                                                                                               |
| Ad-hoc Mode                      | EUT does not support Ad-hoc mode in the DFS bands*                                                                                                                  |
| Hotspot Mode                     | EUT does not support Hotspot Mode*                                                                                                                                  |
| Power Supply                     | Mains Powered                                                                                                                                                       |

\* EUTs that support Ad-hoc or Hotspot mode in the DFS Bands are considered Master Devices

### Description of Test Item

The EUT is a radio module with WiFi and BT/BLE module in a collaboration end-point system.

This 5 GHz WiFi part has been tested as a U-NII system.

The radio is a certified module NVIDIA P3310 (Cisco FCC ID: LDKNVTX21737, Nvidia FCC ID: VOB-P3310).

The module is identical, but the antennas are changed, and power levels are reduced for some channels.

All tests were performed on a TTC60-31.

### 1.3 Normal test conditions

Temperature: 20 - 24 °C  
Relative humidity: 20 - 50 %  
Normal test voltage: 120V 60Hz

The EUT was powered from a regulated Power Source during all tests.

The values are the limit registered during the test period.

### 1.4 Test Engineer(s)

Frode Sveinsen

### 1.5 Antenna Requirement

Is the antenna detachable?

☐ Yes ☒ No

If detachable, is the antenna connector non-standard?

☐ Yes ☐ No

Type of antenna connector: N/A, Integral Antenna

### 1.6 Worst-Case Configuration

Radiated Emissions and Power Line Conducted Emissions were performed with the EUT set to transmit at the channel with the highest output power as worst-case scenario.

The worst case data rates were:

802.11a mode: 6 Mbps  
802.11n HT20 mode: MCS0, MIMO  
802.11n HT40 mode : MCS0, MIMO  
802.11n HT80 mode : MCS0, MIMO

### 1.7 EUT Operating Modes

|                                |                                                                                 |
|--------------------------------|---------------------------------------------------------------------------------|
| Description of operating modes | Continuous TX, 5 GHz 20/40/80 MHz Mode                                          |
| Additional information         | EUT was controlled from a computer and programmed with test scripts from Putty. |

### 1.8 Comments

It was checked that power variations between 85% and 115% did not have any influence on the measurements.

All ports were populated during spurious emission measurements.

This report covers only radiated emissions tests, all other tests are covered by UL test report no: 11526345-E4V3.

## 1.9 EUT Power Levels

| Channel | Freq (MHz) | 11a  | 11n<br>HT20 | 11n<br>HT40 | 11ac<br>HT80 | 11ac<br>HT160 |
|---------|------------|------|-------------|-------------|--------------|---------------|
| 36      | 5180       | 12.5 | 6.5         |             |              |               |
| 40      | 5200       | 12.0 | 6.5         |             |              |               |
| 44      | 5220       | 12.0 | 6.5         |             |              |               |
| 48      | 5240       | 12.0 | 6.5         |             |              |               |
| 52      | 5260       | 15.5 | 14.0        |             |              |               |
| 56      | 5280       | 15.5 | 14.0        |             |              |               |
| 60      | 5300       | 15.5 | 14.0        |             |              |               |
| 64      | 5320       | 15.5 | 14.0        |             |              |               |
| 100     | 5500       | 15.0 | 14.0        |             |              |               |
| 104     | 5520       | 15.0 | 14.0        |             |              |               |
| 108     | 5540       | 15.0 | 14.0        |             |              |               |
| 112     | 5560       | 15.0 | 14.0        |             |              |               |
| 116     | 5580       | 15.0 | 14.0        |             |              |               |
| 120     | 5600       | D    | D           |             |              |               |
| 124     | 5620       | D    | D           |             |              |               |
| 128     | 5640       | D    | D           |             |              |               |
| 132     | 5660       | 14.0 | 12.5        |             |              |               |
| 136     | 5680       | 13.5 | 12.5        |             |              |               |
| 140     | 5700       | 10.5 | 9.0         |             |              |               |
| 144     | 5720       | D    | D           |             |              |               |
| 149     | 5745       | 14.0 | 12.5        |             |              |               |
| 153     | 5765       | 14.5 | 12.5        |             |              |               |
| 157     | 5785       | 15.5 | 14.0        |             |              |               |
| 161     | 5805       | 15.5 | 14.0        |             |              |               |
| 165     | 5825       | 15.5 | 14.0        |             |              |               |
| 38      | 5190       |      |             | 8.5         |              |               |
| 46      | 5230       |      |             | 9.0         |              |               |
| 54      | 5270       |      |             | 13.0        |              |               |
| 62      | 5310       |      |             | 6.0         |              |               |
| 102     | 5510       |      |             | 6.0         |              |               |
| 110     | 5550       |      |             | 12.0        |              |               |
| 118     | 5590       |      |             | D           |              |               |
| 126     | 5630       |      |             | D           |              |               |
| 134     | 5670       |      |             | 11.5        |              |               |
| 142     | 5710       |      |             | D           |              |               |
| 151     | 5755       |      |             | 9.0         |              |               |
| 159     | 5795       |      |             | 13.5        |              |               |
| 42      | 5210       |      |             |             | 6.5          |               |
| 58      | 5290       |      |             |             | 5.5          |               |
| 106     | 5530       |      |             |             | 9.0          |               |
| 122     | 5610       |      |             |             | D            |               |
| 138     | 5690       |      |             |             | D            |               |
| 155     | 5775       |      |             |             | 10.5         |               |
| 50      | 5250       |      |             |             |              | D             |
| 114     | 5550       |      |             |             |              | D             |

D = Disabled/ Not Used

ISED Canada require that all channels in the TDWR Band (5.60-5.65 GHz) are disabled, also on client devices

## 2 TEST REPORT SUMMARY

### 2.1 General

All measurements are traceable to national standards.

The tests were conducted for demonstrating compliance with FCC CFR 47 Part 15, paragraph 15.407 and ISSED RSS-247 Issue 2.

Tests were performed in accordance with ANSI C63.4-2014 and ANSI C63.10-2013.

Radiated tests were performed in a semi-anechoic chamber at measuring distances of 1m and 3m.

☐ New Submission

☒ Production Unit

☒ Class II Permissive Change

☐ Pre-production Unit

**NII** Equipment Code

☐ Family Listing



#### THIS TEST REPORT APPLIES ONLY TO THE ITEM(S) AND CONFIGURATIONS TESTED.

Deviations from, additions to, or exclusions from the test specifications are described in "Summary of Test Data".

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## 2.2 Test Summary

| Name of test                    | FCC Part 15 reference  | RSS-247 Issue 2<br>RSS-GEN Issue 5 reference | Result           |
|---------------------------------|------------------------|----------------------------------------------|------------------|
| Supply Voltage Variations       | 15.31(e)               | 6.11 (RSS-GEN)                               | Complies         |
| Antenna Requirement             | 15.203                 | 6.8 (RSS-GEN)                                | Complies         |
| Power Line Conducted Emission   | 15.107(a)<br>15.207(a) | 7.2 / 8.8 (RSS-GEN)                          | N/T              |
| Maximum Output Power            | 15.407(a)              | 6.2                                          | Complies         |
| Power Spectral Density          | 15.407(a)              | 6.2                                          | N/T              |
| Emission Bandwidth              | 15.407(a)(2)           | 6.2                                          | N/T              |
| Unwanted Emissions              | 15.407(b)              | 6.2                                          | Complies         |
| Discontinuation of Transmission | 15.407(c)              | 6.3                                          | N/T <sup>1</sup> |
| 6 dB Bandwidth                  | 15.407(e)              | 6.2.4                                        | N/T              |
| Transmit Power Control          | 15.407(h)              | 6.2.3                                        | N/A <sup>2</sup> |
| Dynamic Frequency Selection     | 15.407(h)              | 6.3                                          | N/T <sup>3</sup> |
| Radiated Emissions              | 15.205<br>15.209       | 7.3 (RSS-GEN)<br>8.9 (RSS-GEN)               | Complies         |

<sup>1</sup> See manufacturers declaration

<sup>2</sup> Transmit Power Control is not required when Max EIRP is below 500 mW

<sup>3</sup> The EUT is a Client Device without Radar Detection.

## Revision history

| Revision | Date       | Comment               | Sign |
|----------|------------|-----------------------|------|
| 00       | 2021-03-26 | First edition         | FS   |
| 01       | 2021-09-03 | Updated model numbers | FS   |
|          |            |                       |      |

### 3 TEST RESULTS

#### 3.1 Maximum Output Power, EIRP

FCC 15.407 (a)

ISED RSS-247, Issue 2, Clause 6.2

Measurement procedure: ANSI C63.10-2013 Clause 12.3, method SA-1

Test Results: Complies

Measurement Data:

| Ch. No. | Nominal Frequency (MHz) | Maximum Field Strength (dBµV/m) |               | Maximum e.i.r.p. (dBm) |               |
|---------|-------------------------|---------------------------------|---------------|------------------------|---------------|
|         |                         | 802.11a 6M                      | 802.11n MCS0  | 802.11a 6M             | 802.11n MCS0  |
| 36      | 5180                    | 118.1                           | 111.7         | 22.9                   | 16.5          |
| 64      | 5320                    | 112.0                           | 110.6         | 16.8                   | 15.4          |
| 100     | 5500                    | 121.9                           | 111.6         | 26.7                   | 16.4          |
| 140     | 5700                    | 101.7                           | 101.4         | 6.5                    | 6.2           |
| 149     | 5745                    | 106.0                           | 104.6         | 10.8                   | 9.4           |
| 165     | 5825                    | 106.0                           | 104.7         | 10.8                   | 9.5           |
|         |                         | 802.11n HT40                    | 802.11ac HT80 | 802.11n HT40           | 802.11ac HT80 |
| 38      | 5190                    | 104.0                           |               | 8.8                    |               |
| 62      | 5310                    | 104.2                           |               | 9.0                    |               |
| 102     | 5510                    | 102.3                           |               | 7.1                    |               |
| 134     | 5670                    | 105.6                           |               | 10.4                   |               |
| 149     | 5755                    | 100.7                           |               | 5.5                    |               |
| 159     | 5795                    | 106.3                           |               | 11.1                   |               |
| 42      | 5210                    |                                 | 101.0         |                        | 5.8           |
| 58      | 5290                    |                                 | 100.4         |                        | 5.2           |
| 155     | 5775                    |                                 | 102.2         |                        | 7.0           |

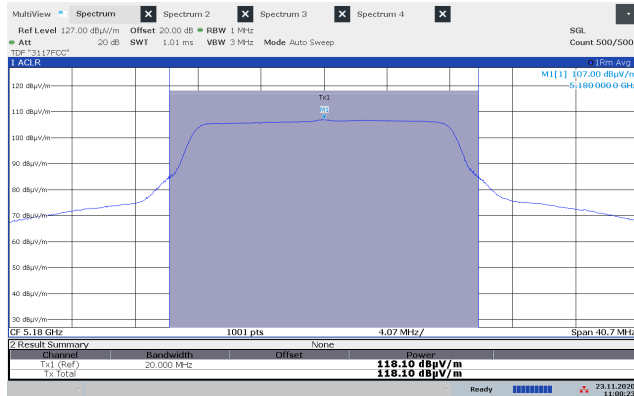
The EUT operates continuously; therefore, method SA-1 of ANSI C63.10-2013 clause 12.3 was used.

EIRP values were calculated from Field Strength values using the method described in KDB 412172 D01.

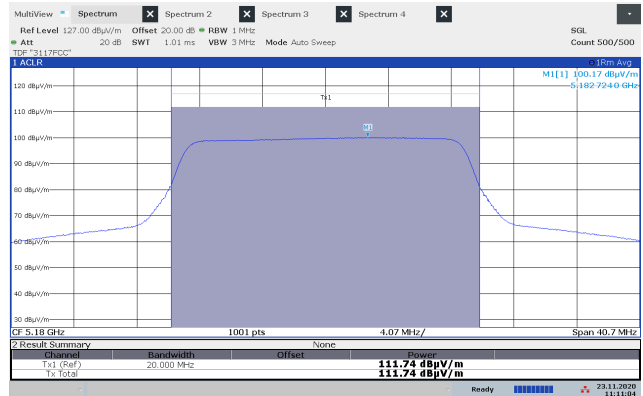
This is an indoor device with directional Antenna Gain less than 6 dBi.

Limits for Indoor Device:

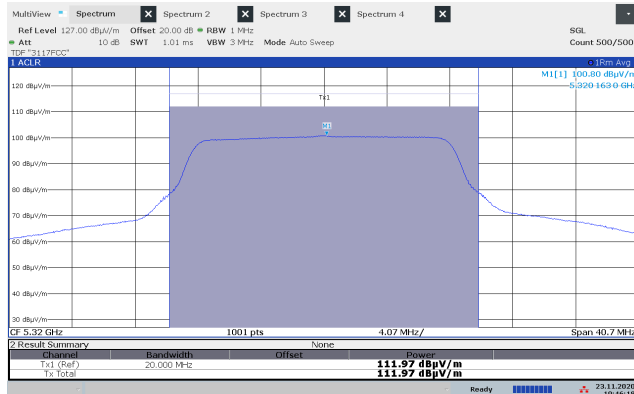
| Frequency Band  | FCC 15.407(a)                                                                                  | ISED RSS-247 Issue 2                                                                                                                                                                                                                                          |
|-----------------|------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5150 – 5250 MHz | Less than 250 mW (24 dBm) for client device<br>Less than 1 W (30 dBm) for master device        | Less than the lesser of 200 mW e.i.r.p. or<br>$10 + 10 \log_{10} B$ dBm e.i.r.p.                                                                                                                                                                              |
| 5250 – 5350 MHz | Less than the lesser of 250 mW (24 dBm) or<br>$11 + 10 \log_{10} B$ dBm                        | Less than the lesser of 250 mW or<br>$11 + 10 \log_{10} B$ dBm, and                                                                                                                                                                                           |
| 5470 – 5725 MHz |                                                                                                | Less than the lesser of 1 W e.i.r.p. or<br>$17 + 10 \log_{10} B$ dBm e.i.r.p.<br><br>Devices with e.i.r.p. greater than 500 mW shall implement<br>TPC in order to have the capability to operate at least 6 dB<br>below the maximum permitted e.i.r.p. of 1 W |
| 5725 – 5825 MHz | Less than 1 Watt                                                                               | Less than 1 Watt<br><br>If Antenna Gain is more than 6 dBi the Power Limit is<br>reduced by the amount exceeding 6 dBi                                                                                                                                        |
|                 | If Antenna Gain is more than 6 dBi the Power Limit<br>is reduced by the amount exceeding 6 dBi |                                                                                                                                                                                                                                                               |
|                 | $B$ is the 26dB emission bandwidth in MHz                                                      | $B$ is the 99% emission bandwidth in MHz                                                                                                                                                                                                                      |



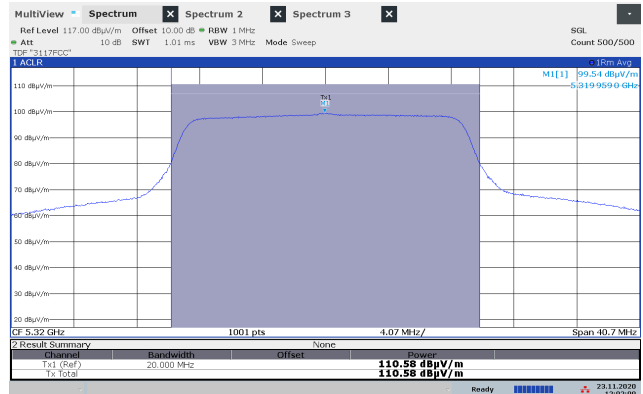
EIRP, 5180 MHz, 802.11a, 6Mb



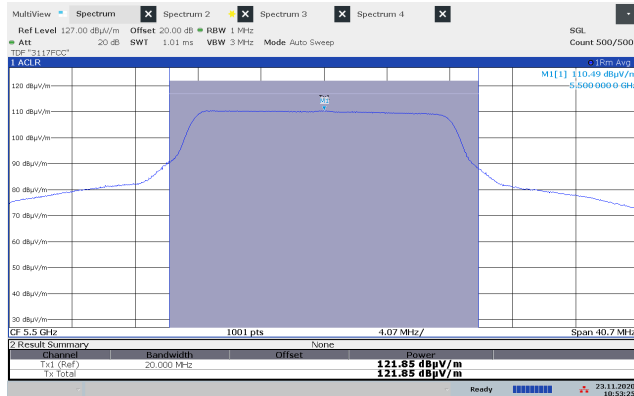
EIRP, 5180 MHz, 802.11n, HT20



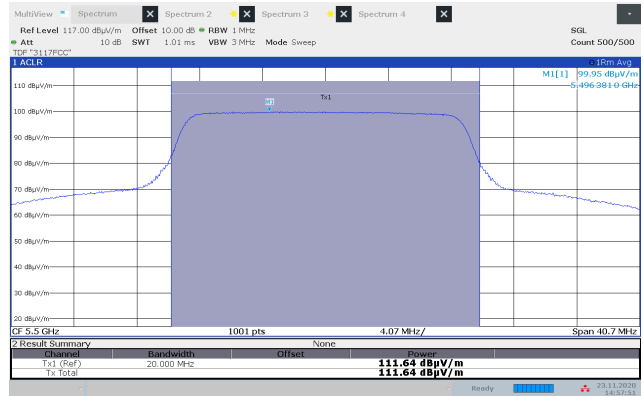
EIRP, 5320 MHz, 802.11a, 6Mb



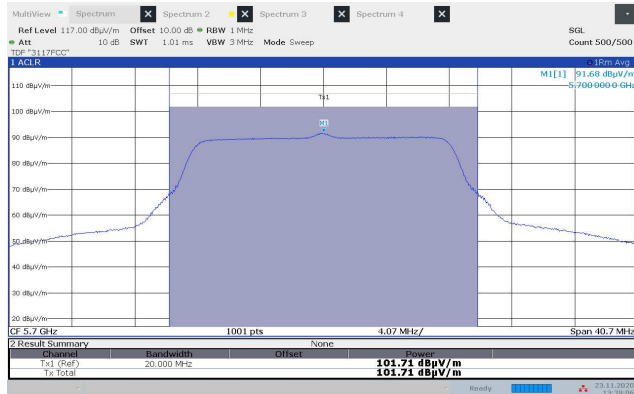
EIRP, 5320 MHz, 802.11n, HT20



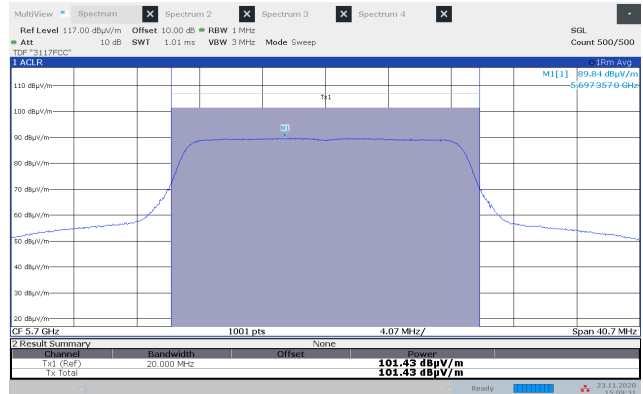
EIRP, 5500 MHz, 802.11a, 6Mb



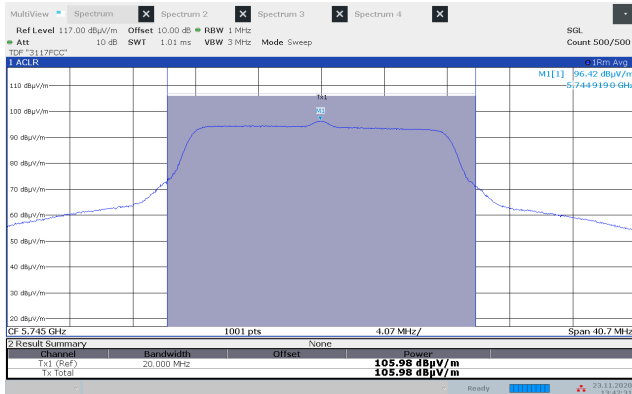
EIRP, 5500 MHz, 802.11n, HT20



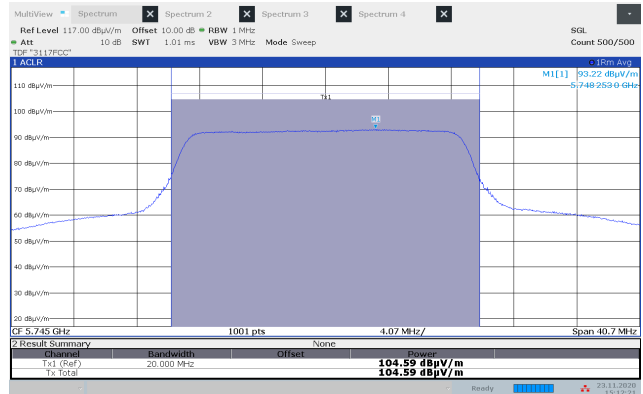
EIRP, 5700 MHz, 802.11a, 6Mb



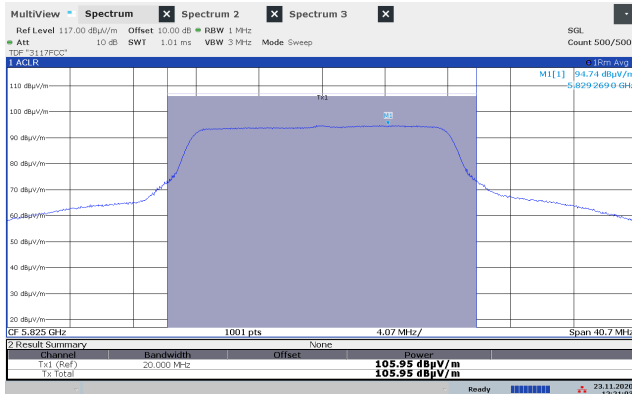
EIRP, 5700 MHz, 802.11n, HT20



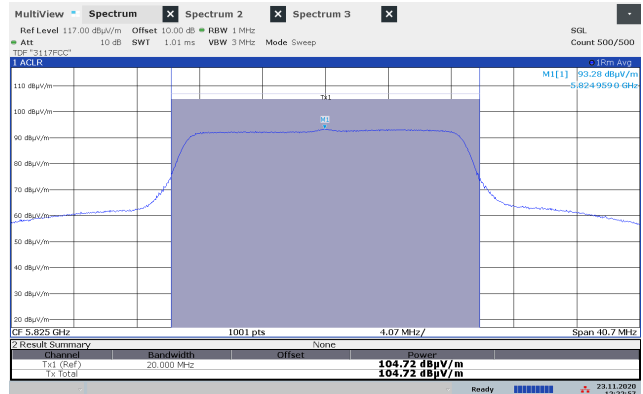
**EIRP, 5745 MHz, 802.11a, 6Mb**



**EIRP, 5745 MHz, 802.11n, HT20**



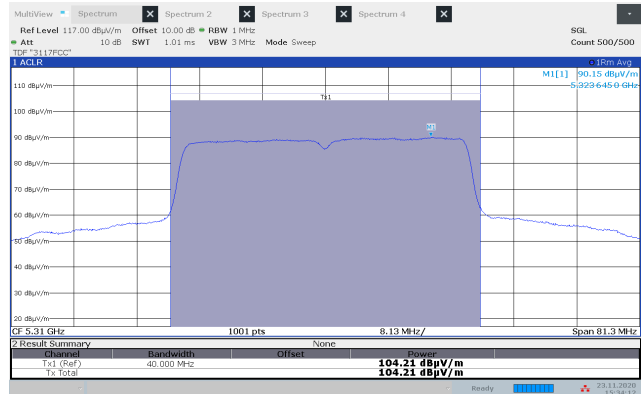
**EIRP, 5825 MHz, 802.11a, 6Mb**



**EIRP, 5825 MHz, 802.11n, HT20**



**EIRP, 5190 MHz, 802.11n, HT40**



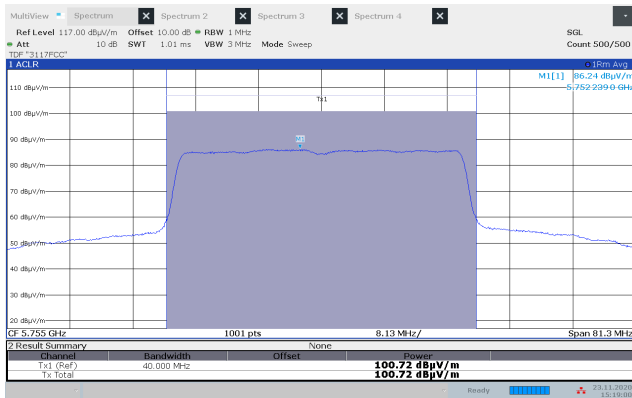
**EIRP, 5310 MHz, 802.11n, HT40**



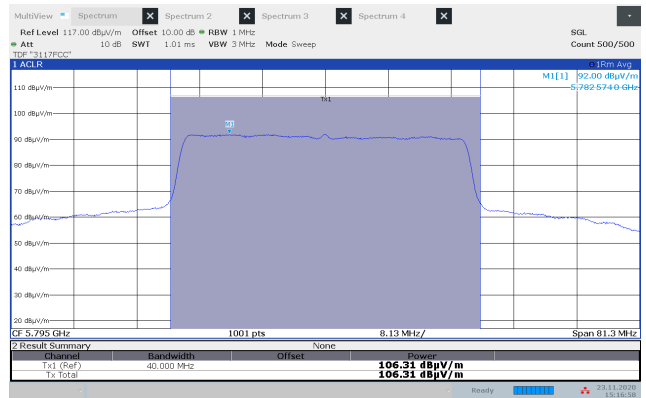
**EIRP, 5510 MHz, 802.11n, HT40**



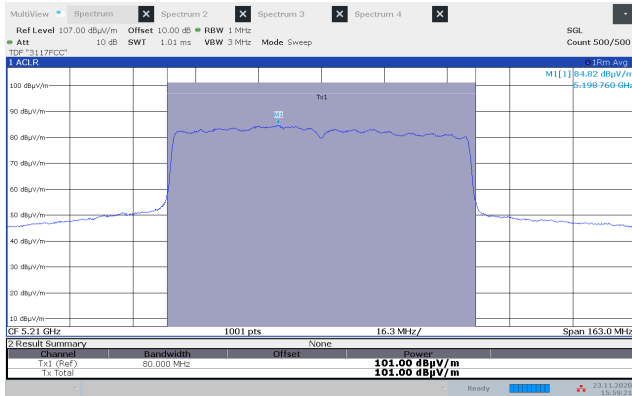
**EIRP, 5670 MHz, 802.11n, HT40**



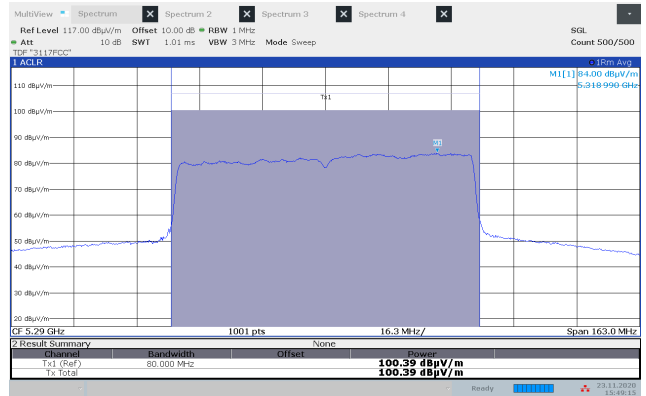
EIRP, 5755 MHz, 802.11n, HT40



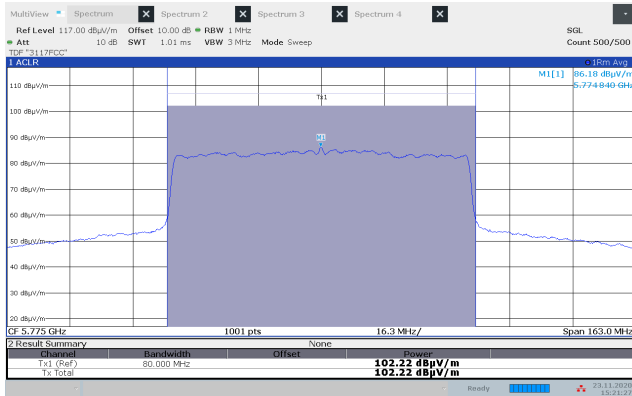
EIRP, 5795 MHz, 802.11n, HT40



EIRP, 5210 MHz, 802.11ac, HT80



EIRP, 5290 MHz, 802.11ac, HT80



EIRP, 5775 MHz, 802.11ac, HT80

## 3.2 Unwanted Emissions

FCC 15.407 (b)

ISED RSS-247, Issue 2, clause 6.2

Measurement procedure: ANSI C63.10-2013 Clause 12.7

Test Results: Complies

Measurement Data:

Band Edge Emissions:

| Ch. No. | Carrier Frequency (MHz) | Band Edge Frequency (MHz) | Measured Values (dBm/MHz e.i.r.p.) |              |              |               |
|---------|-------------------------|---------------------------|------------------------------------|--------------|--------------|---------------|
|         |                         |                           | 802.11a 6Mb                        | 802.11n HT20 | 802.11n HT40 | 802.11ac HT80 |
| 36      | 5180                    | 5150                      | 60.8                               | 54.0         |              |               |
| 64      | 5320                    | 5350                      | 65.1                               | 65.6         |              |               |
| 100     | 5500                    | 5470                      | 66.3                               | 67.1         |              |               |
| 140     | 5700                    | 5725                      | 55.9                               | 56.9         |              |               |
| 149     | 5745                    | 5650                      | < -40                              | < -40        |              |               |
| 149     | 5745                    | 5700                      | < -45                              | < -45        |              |               |
| 165     | 5825                    | 5875                      | < -45                              | < -45        |              |               |
| 165     | 5825                    | 5925                      | < -40                              | < -40        |              |               |
| 38      | 5190                    | 5150                      |                                    |              | 65.3         |               |
| 62      | 5310                    | 5350                      |                                    |              | 66.5         |               |
| 102     | 5510                    | 5470                      |                                    |              | 67.2         |               |
| 134     | 5670                    | 5725                      |                                    |              | 58.6         |               |
| 151     | 5755                    | 5650                      |                                    |              | < -40        |               |
| 151     | 5755                    | 5700                      |                                    |              | < -45        |               |
| 159     | 5795                    | 5875                      |                                    |              | < -45        |               |
| 159     | 5795                    | 5925                      |                                    |              | < -40        |               |
| 42      | 5210                    | 5150                      |                                    |              |              | 61.9          |
| 58      | 5290                    | 5350                      |                                    |              |              | 62.9          |
| 106     | 5530                    | 5470                      |                                    |              |              | 65.0          |
| 155     | 5775                    | 5650                      |                                    |              |              | < -40         |
| 155     | 5775                    | 5700                      |                                    |              |              | < -45         |
| 155     | 5775                    | 5875                      |                                    |              |              | < -45         |
| 155     | 5775                    | 5925                      |                                    |              |              | < -40         |

The measurement was performed radiated.

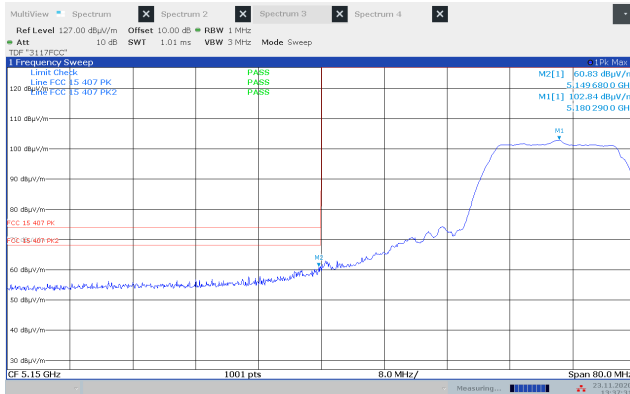
EIRP values were calculated from field strength using the method in KDB 412172 D01.

The tested equipment is for indoor use only, no band-edge requirements apply at 5250 MHz.

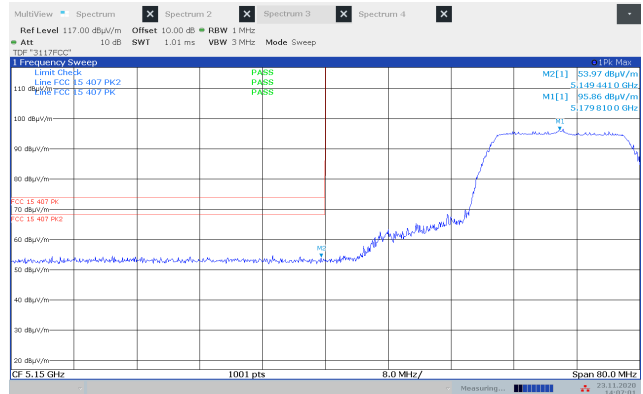
Limits:

| Operating Frequency band | Limit for Emissions Outside Operating Frequency Band |
|--------------------------|------------------------------------------------------|
| 5150 – 5250 MHz          | -27 dBm/MHz e.i.r.p.                                 |
| 5250 – 5350 MHz          | -27 dBm/MHz e.i.r.p.                                 |
| 5470 – 5725 MHz          | -27 dBm/MHz e.i.r.p.                                 |
| 5725 – 5825 MHz          | See FCC 15.407(b)(4)(i) or 15.407(b)(4)(ii)          |

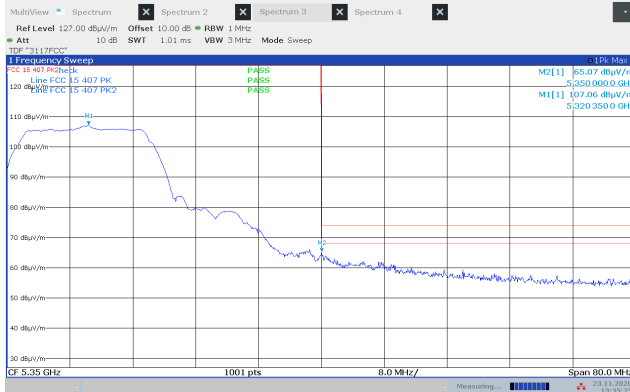
Devices operating in the 5.25-5.35 GHz band that generate emissions in the 5.15-5.25 GHz band must meet all applicable technical requirements for operation in the 5.15-5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5.15-5.25 GHz band.



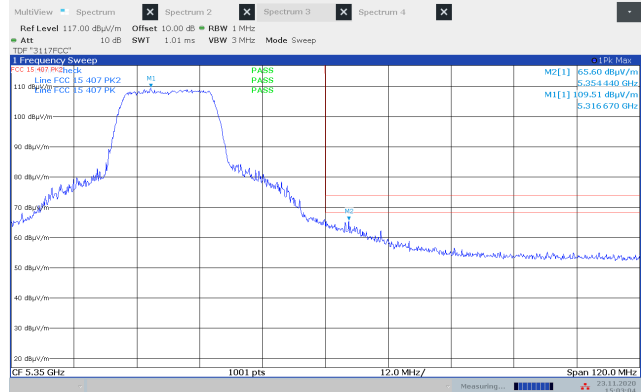
**Band Edge 5150 MHz, ch036, 802.11a 6Mb, Radiated, Max**



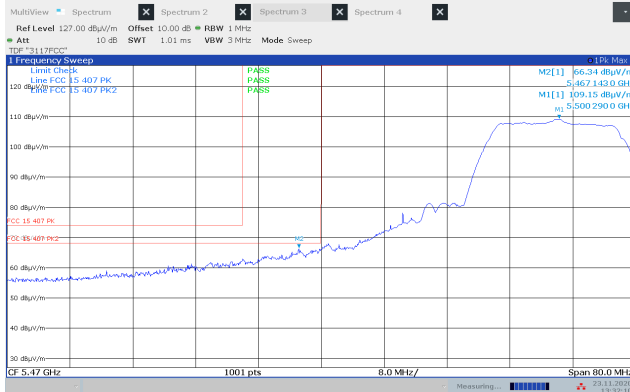
**Band Edge 5150 MHz, ch036, 802.11n HT20, Radiated, Max**



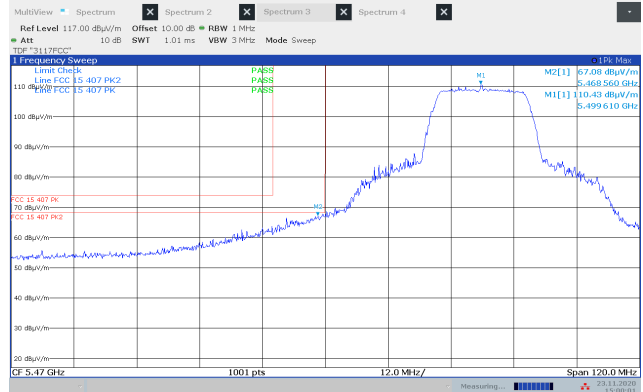
**Band Edge 5350 MHz, ch064, 802.11a 6Mb, Radiated, Max**



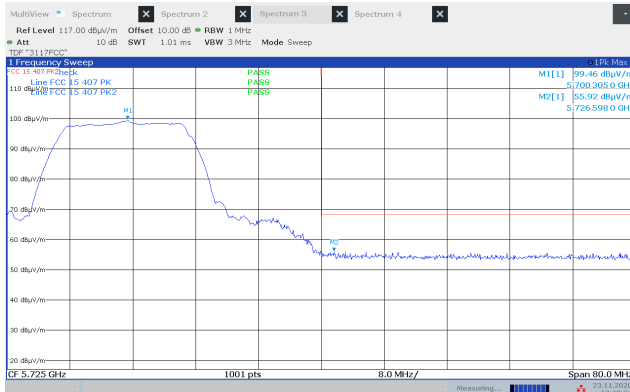
**Band Edge 5350 MHz, ch064, 802.11n HT20, Radiated, Max**



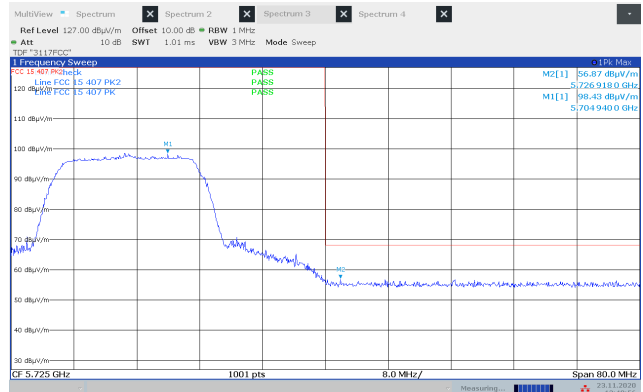
**Band Edge 5470 MHz, ch100, 802.11a 6Mb, Radiated, Max**



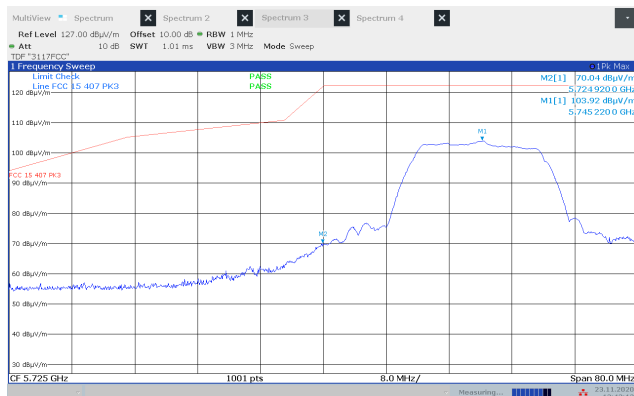
**Band Edge 5470 MHz, ch100, 802.11n HT20, Radiated, Max**



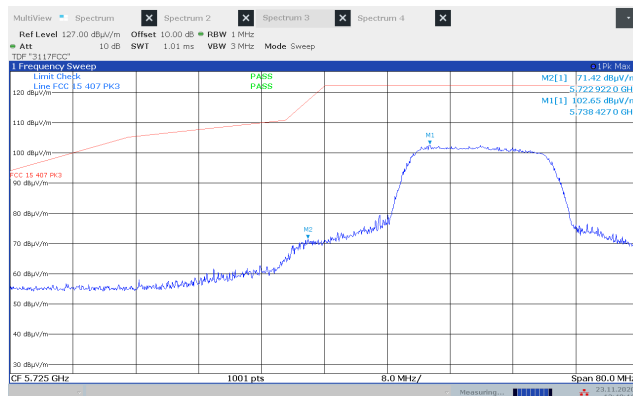
**Band Edge 5725 MHz, ch140, 802.11a 6Mb, Radiated, Max**



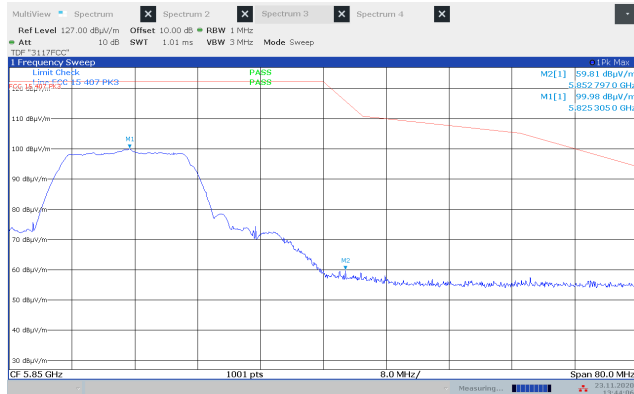
**Band Edge 5725 MHz, ch140, 802.11n HT20, Radiated, Max**



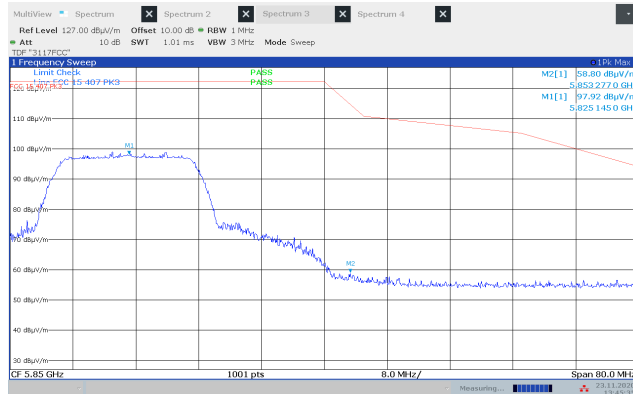
**Band Edge 5725 MHz, ch149, 802.11a 6Mb, Radiated, Max**



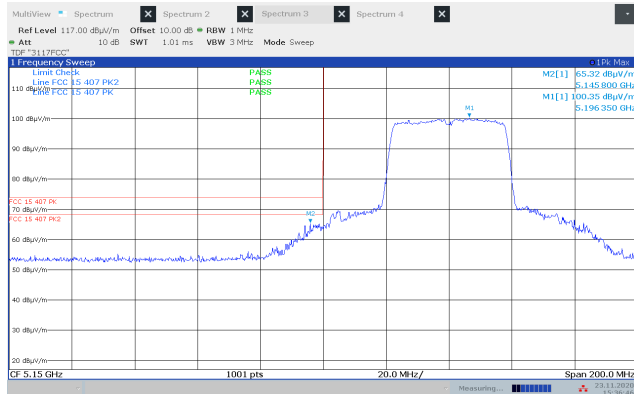
**Band Edge 5725 MHz, ch149, 802.11n HT20, Radiated, Max**



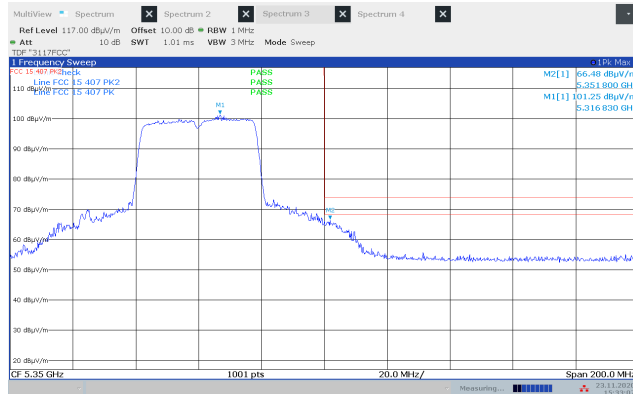
**Band Edge 5850 MHz, ch165, 802.11a 6Mb, Radiated, Max**



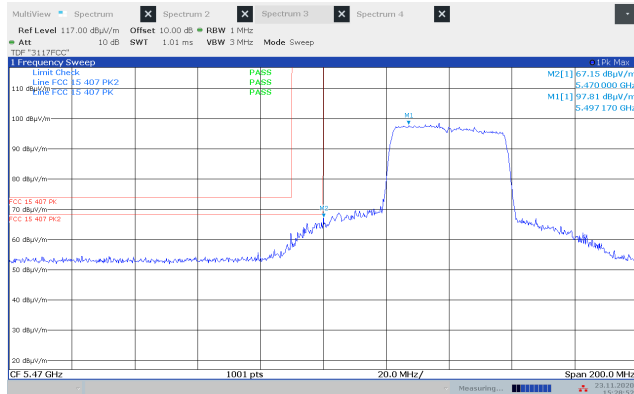
**Band Edge 5850 MHz, ch165, 802.11n HT20, Radiated, Max**



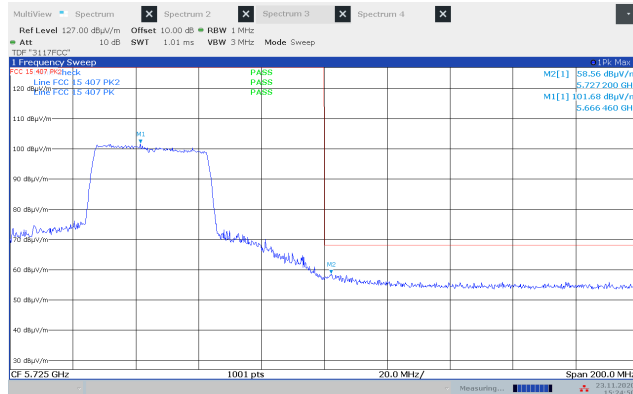
**Band Edge 5150 MHz, ch038, 802.11n HT40, Radiated, Max**



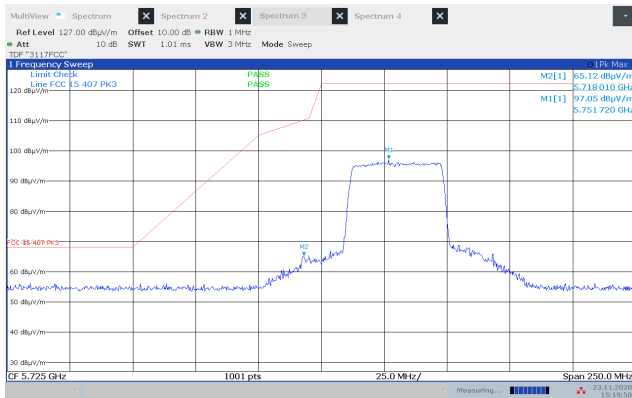
**Band Edge 5350 MHz, ch062, 802.11n HT40, Radiated, Max**



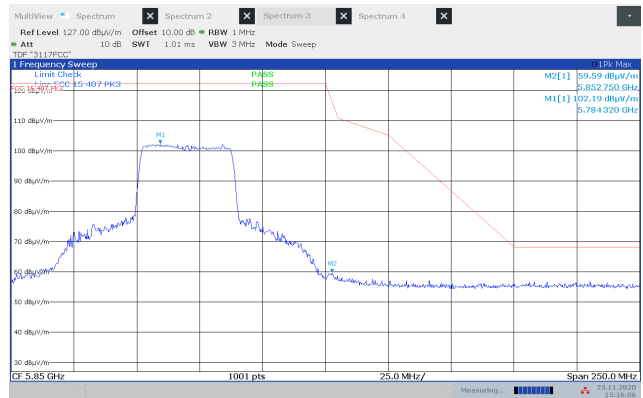
**Band Edge 5470 MHz, ch102, 802.11n HT40, Radiated, Max**



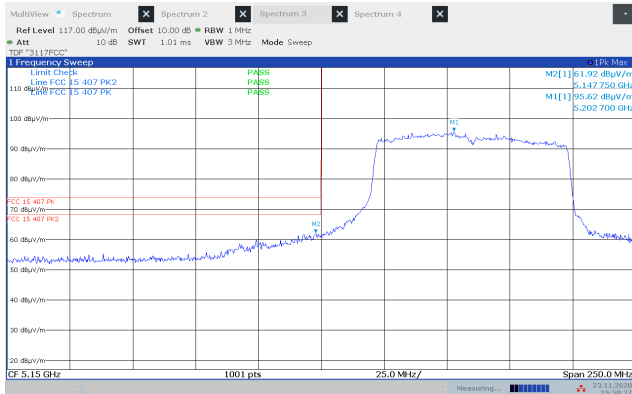
**Band Edge 5725 MHz, ch134, 802.11n HT40, Radiated, Max**



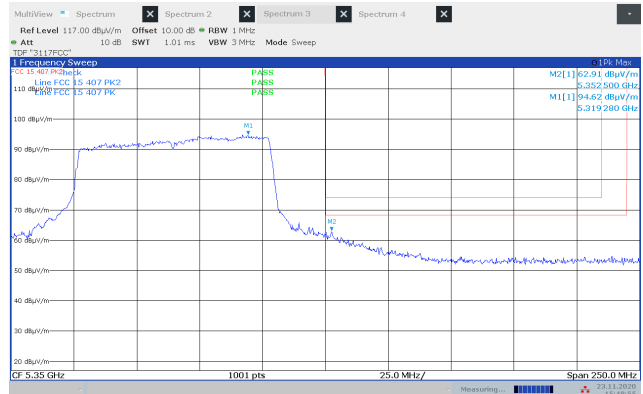
**Band Edge 5725 MHz, ch151, 802.11n HT40, Radiated, Max**



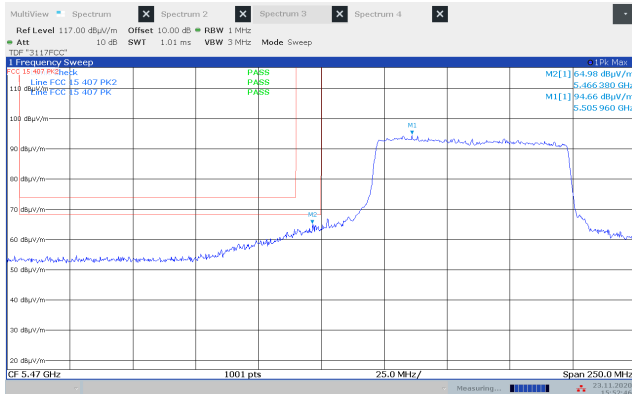
**Band Edge 5850 MHz, ch159, 802.11n HT40, Radiated, Max**



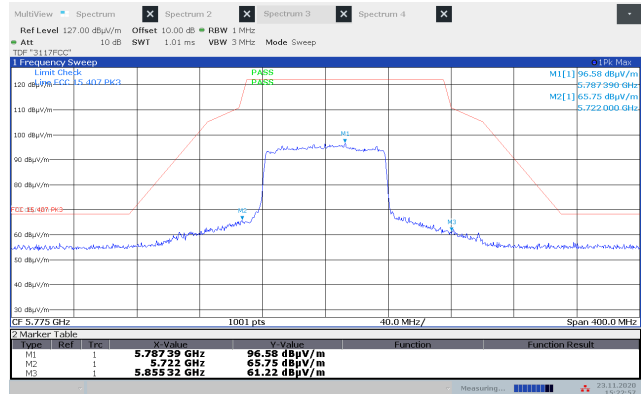
**Band Edge 5150 MHz, ch042, 802.11ac HT80, Radiated, Max**



**Band Edge 5350 MHz, ch058, 802.11ac HT80, Radiated, Max**



**Band Edge 5470 MHz, ch106, 802.11ac HT80, Radiated, Max**



**Band Edge 5725/5850 MHz, ch155, 802.11ac HT80, Radiated, Max**

### 3.3 Restricted Bands of operation

Restricted Bands of operation for FCC and ISSED are defined in FCC Part 15.205 and ISSED RSS-GEN, Issue 5 clause 8.10.

Generally, no fundamentals are allowed in the restricted bands and all emissions must comply with the limits in FCC 15.209 or RSS-GEN, Issue 5, clause 8.9.

| FCC (MHz)                           | ISED (MHz)         | FCC (GHz)                            | ISED (GHz)        |
|-------------------------------------|--------------------|--------------------------------------|-------------------|
| 0.090-0.110                         |                    | <b>0.96-1.24</b><br><b>1.3-1.427</b> | <b>0.96-1.427</b> |
| 0.495-0.505                         |                    | 1.435-1.6265                         |                   |
| 2.1735-2.1905                       |                    | 1.6455-1.6465                        |                   |
|                                     | <b>3.020-3.026</b> | 1.660-1.710                          |                   |
| 4.125-4.128                         |                    | 1.7188-1.7222                        |                   |
| 4.17725-4.17775                     |                    | 2.2-2.3                              |                   |
| 4.20725-4.20775                     |                    | 2.31-2.39                            |                   |
|                                     | <b>5.677-5.683</b> | 2.4835-2.5                           |                   |
| 6.215-6.218                         |                    | <b>2.69-2.9</b>                      | <b>2.655-2.9</b>  |
| 6.26775-6.26825                     |                    | 3.26-3.267                           |                   |
| 6.31175-6.31225                     |                    | 3.332-3.339                          |                   |
| 8.291-8.294                         |                    | 3.3458-3.358                         |                   |
| 8.362-8.366                         |                    | <b>3.6-4.4</b>                       | <b>3.5-4.4</b>    |
| 8.37625-8.38675                     |                    | 4.5-5.15                             |                   |
| 8.41425-8.41475                     |                    | 5.35-5.46                            |                   |
| 12.29-12.293                        |                    | 7.25-7.75                            |                   |
| 12.51975-12.52025                   |                    | 8.025-8.5                            |                   |
| 12.57675-12.57725                   |                    | 9.0-9.2                              |                   |
| 13.36-13.41                         |                    | 9.3-9.5                              |                   |
| 16.42-16.423                        |                    | 10.6-12.7                            |                   |
| 16.69475-16.69525                   |                    | 13.25-13.4                           |                   |
| 16.80425-16.80475                   |                    | 14.47-14.5                           |                   |
| 25.5-25.67                          |                    | 15.35-16.2                           |                   |
| 37.5-38.25                          |                    | 17.7-21.4                            |                   |
| 73-74.6                             |                    | 22.01-23.12                          |                   |
| 74.8-75.2                           |                    | 23.6-24.0                            |                   |
| <b>108-121.94</b><br><b>123-138</b> | <b>108-138</b>     | 31.2-31.8                            |                   |
| 149.9-150.05                        |                    | 36.43-36.5                           |                   |
| 156.52475-156.52525                 |                    | Above 38.6                           |                   |
| 156.7-156.9                         |                    |                                      |                   |
| 162.0125-167.17                     |                    |                                      |                   |
| 167.72-173.2                        |                    |                                      |                   |
| 240-285                             |                    |                                      |                   |
| 322-335.4                           |                    |                                      |                   |
| 399.9-410                           |                    |                                      |                   |
| 608-614                             |                    |                                      |                   |

Frequencies in **Bold** text are specific for FCC or ISSED, all other frequencies are common.

### 3.4 Radiated Emissions, 30 – 1000 MHz

FCC 15.205, 15.209, 15.407

ISED RSS-GEN, Issue 5, Clause 8.9

Measurement procedure: ANSI C63.10-2013 Clause 12.7

Test Results: Complies

#### Measurement Data:

Detector: QuasiPeak (Peak for Pre-Scan)

Measuring distance 3m

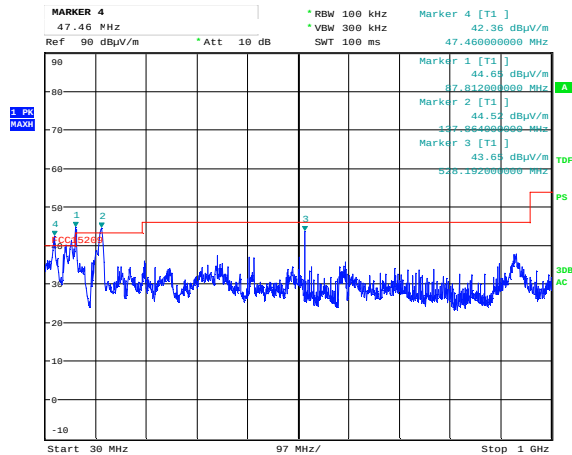
Tested in test mode with EUT transmitting on Ch 60.

| Measured Frequency (MHz) | Carrier Frequency (MHz) | Modulation    | Measured Emission (dBμV/m) | Limit (dBμV/m) | Margin (dB) |
|--------------------------|-------------------------|---------------|----------------------------|----------------|-------------|
| 30 – 88                  | 5300                    | 802.11a 6Mbps | ≤ 36.2                     | 40.0           | ≥ 3.8       |
| 88 – 216                 | 5300                    | 802.11a 6Mbps | ≤ 42.0                     | 43.5           | ≥ 1.5       |
| 216 – 960                | 5300                    | 802.11a 6Mbps | ≤ 39.2                     | 46.0           | ≥ 6.8       |
| 960 – 1000               | 5300                    | 802.11a 6Mbps | < 40                       | 54.0           | > 14        |
| 47.5                     | 5300                    | 802.11a 6Mbps | 36.2                       | 40.0           | 3.8         |
| 88.8                     | 5300                    | 802.11a 6Mbps | 42.0                       | 43.5           | 1.5         |
| 135.5                    | 5300                    | 802.11a 6Mbps | 41.8                       | 43.5           | 1.7         |
| 528.0                    | 5300                    | 802.11a 6Mbps | 39.2                       | 46.0           | 6.8         |
| 694.3                    | 5300                    | 802.11a 6Mbps | 38.7                       | 46.0           | 7.3         |
| 893.2                    | 5300                    | 802.11a 6Mbps | 38.8                       | 46.0           | 7.2         |

See attached plots.

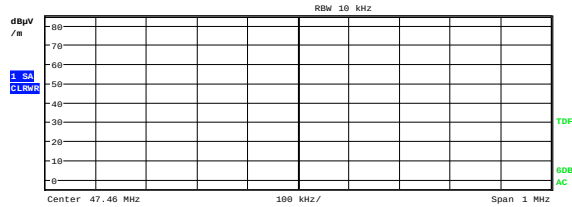
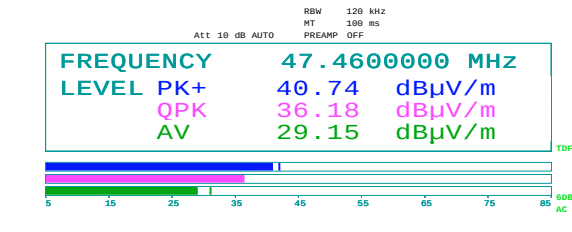
#### Requirements/Limit

|                |                                                                  |             |
|----------------|------------------------------------------------------------------|-------------|
| FCC            | Part 15.209 @ frequencies defined in §15.205                     |             |
| ISED           | RSS-GEN Issue 5, Clause 8.9 @ frequencies defined in clause 8.10 |             |
| Frequency      | Radiated emission limit @3 meters                                |             |
| 30 – 88 MHz    | 100 μV/m                                                         | 40.0 dBμV/m |
| 88 – 216 MHz   | 150 μV/m                                                         | 43.5 dBμV/m |
| 216 – 960 MHz  | 200 μV/m                                                         | 46.0 dBμV/m |
| 960 – 1000 MHz | 500 μV/m                                                         | 54.0 dBμV/m |
|                | Limits above are with Quasi Peak Detector                        |             |



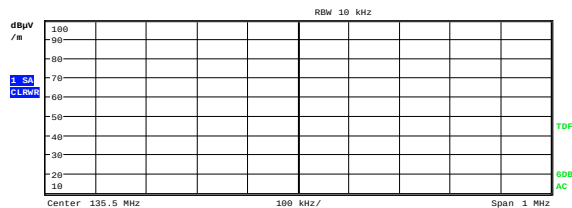
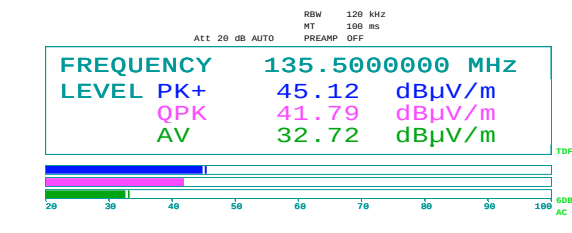
Date: 24.NOV.2020 15:16:51

### Radiated Emissions 30-1000 MHz, Ch60, VP



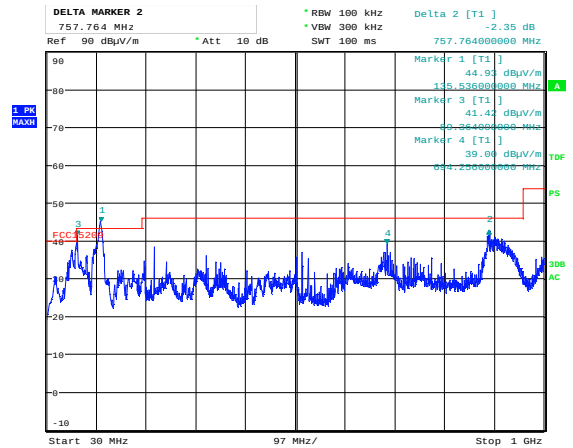
Date: 24.NOV.2020 15:32:50

### Radiated Emissions 47.46 MHz, VP



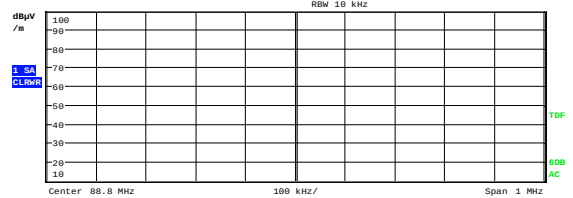
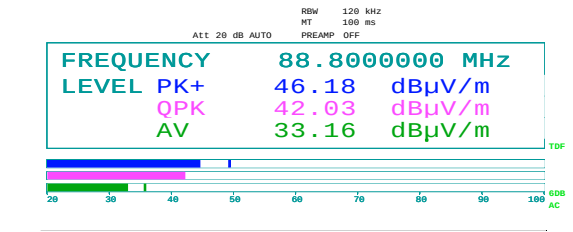
Date: 24.NOV.2020 16:03:44

### Radiated Emissions 135.5 MHz, HP



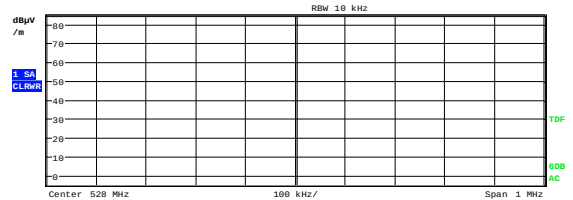
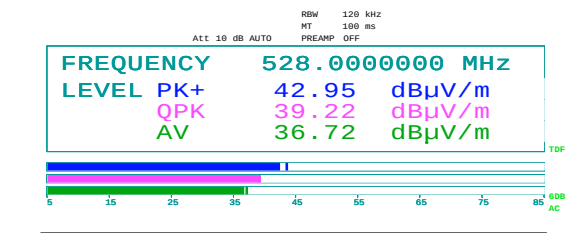
Date: 24.NOV.2020 15:08:39

### Radiated Emissions 30-1000 MHz, Ch60, HP



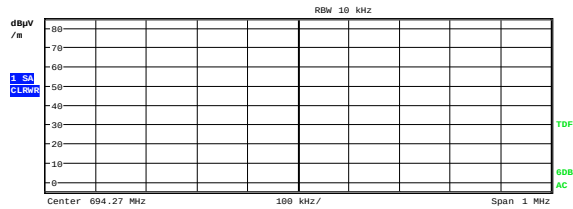
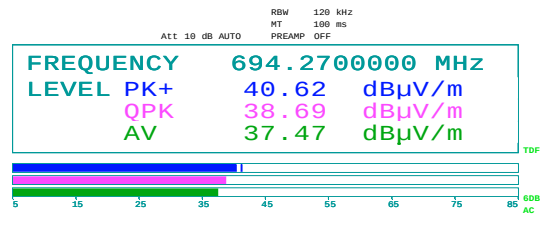
Date: 24.NOV.2020 15:47:57

### Radiated Emissions 88.8 MHz, VP



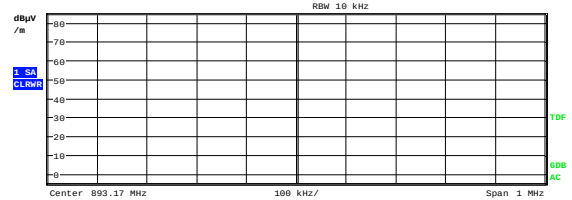
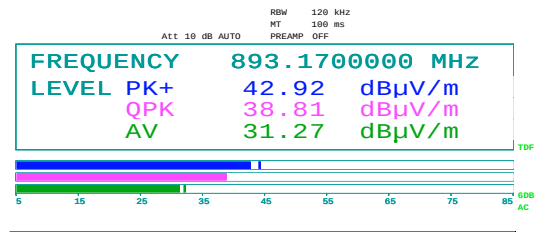
Date: 24.NOV.2020 16:18:37

### Radiated Emissions 528.0 MHz, HP



Date: 24.NOV.2020 16:29:39

Radiated Emissions 694.27 MHz, HP



Date: 24.NOV.2020 16:47:02

Radiated Emissions 893.17 MHz, HP

### 3.5 Radiated Emissions, 1 – 40 GHz

FCC 15.205, 15.209, 15.407

ISED RSS-GEN, Issue 5, Clause 8.9

Measurement procedure: ANSI C63.10-2013 Clause 12.7

Test Results: Complies

Measurement Data:

Measuring distance 3m up to 18 GHz, 1m above 18 GHz.

RBW/VBW = 1MHz/3MHz

| Carrier Frequency (MHz) | Measured Frequency (GHz) | Modulation    | Measured Emissions (dBμV/m) |         | Limit (dBμV/m) |         | Margin (dB) |         |
|-------------------------|--------------------------|---------------|-----------------------------|---------|----------------|---------|-------------|---------|
|                         |                          |               | Peak                        | Average | Peak           | Average | Peak        | Average |
| 5180                    | 5150                     | 802.11a 6Mbps | 60.8                        | 48.2    | 74             | 54      | 13.2        | 5.8     |
| 5180                    | 5150                     | 802.11n MCS0  | 54.0                        | 45.6    | 74             | 54      | 20.0        | 8.4     |
| 5190                    | 5150                     | 802.11n HT40  | 65.3                        | 50.6    | 74             | 54      | 8.7         | 3.4     |
| 5210                    | 5150                     | 802.11n HT80  | 61.9                        | 48.4    | 74             | 54      | 12.1        | 5.6     |
| 5320                    | 5350                     | 802.11a 6Mbps | 65.1                        | 51.2    | 74             | 54      | 8.9         | 2.8     |
| 5320                    | 5350                     | 802.11n MCS0  | 65.6                        | 52.6    | 74             | 54      | 8.4         | 1.4     |
| 5310                    | 5350                     | 802.11n HT40  | 66.5                        | 51.8    | 74             | 54      | 7.5         | 2.2     |
| 5290                    | 5350                     | 802.11n HT80  | 62.9                        | 49.7    | 74             | 54      | 11.1        | 4.3     |
| 5500                    | 5470/5460                | 802.11a 6Mbps | 66.3                        | 49.6    | 74             | 54      | 7.7         | 4.4     |
| 5500                    | 5470/5460                | 802.11n MCS0  | 67.1                        | 50.1    | 74             | 54      | 6.9         | 3.9     |
| 5510                    | 5470/5460                | 802.11n HT40  | 67.2                        | 46.7    | 74             | 54      | 6.8         | 7.3     |
| 5530                    | 5470/5460                | 802.11n HT80  | 65.0                        | 49.7    | 74             | 54      | 9.0         | 4.3     |
| Any                     | 1350                     | Any           | 59.4                        | 56.3    | 74             | 54      | 14.6        | -2.3    |
| Any                     | 2971                     | Any           | 65.8                        | 45.1    | 74             | 54      | 8.2         | 8.9     |
| Any                     | 4050                     | Any           | 59.0                        | 56.8    | 74             | 54      | 15.0        | -2.8    |
| Any                     | 5942                     | Any           | 66.9                        | 52.6    | 74             | 54      | 7.1         | 1.4     |
| Any                     | 8911                     | Any           | 54.6                        | 44.6    | 74             | 54      | 19.4        | 9.4     |
| Any                     | 15660                    | Any           | 61.7                        | 48.3    | 74             | 54      | 12.3        | 5.7     |
| Any                     | 15900                    | Any           | 61.1                        | 48.4    | 74             | 54      | 12.9        | 5.6     |
| Any                     | Any other                | Any           | <60                         | <40     | 74             | 54      | > 10        | > 10    |

A High Pass Filter was used for measurements from 6.5 to 18 GHz.

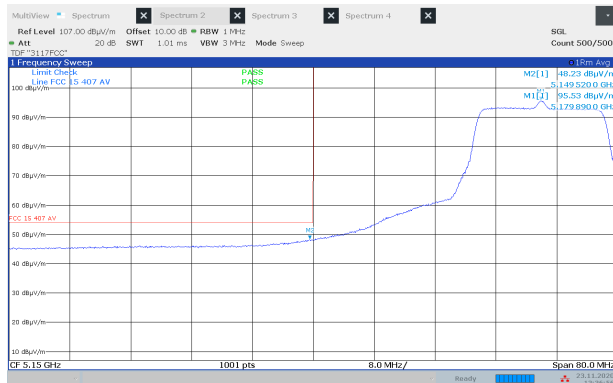
Only harmonics that fall in the restricted bands (ref. §15.205) have been measured.

Antenna factor, amplifier gain and cable loss are included in Spectrum Analyzer "Transducer factor".

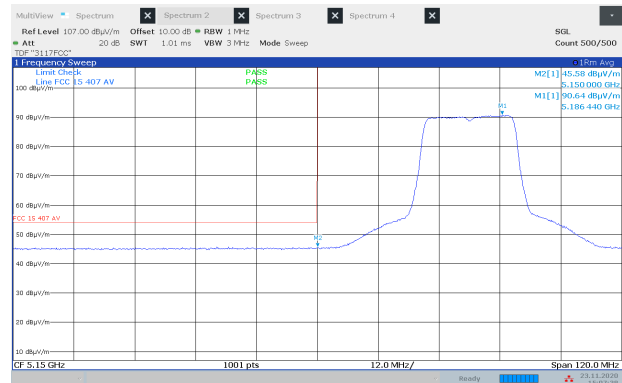
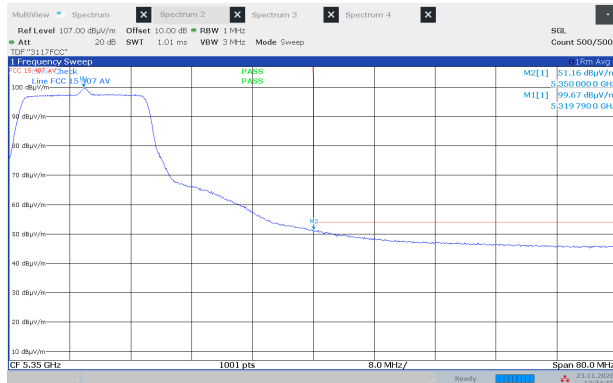
See attached plots.

#### Requirements/Limit

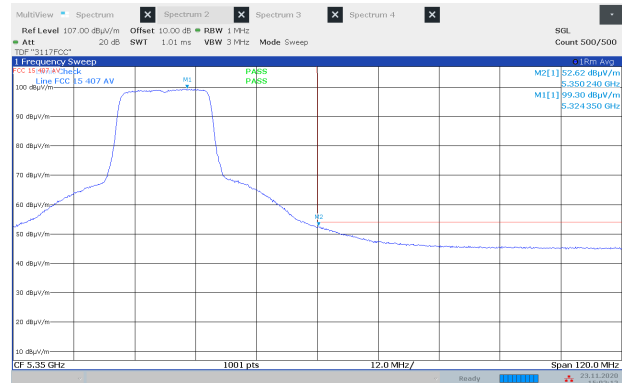
|            |                                                                  |                        |
|------------|------------------------------------------------------------------|------------------------|
| FCC        | Part 15.209 @ frequencies defined in §15.205                     |                        |
| ISED       | RSS-GEN Issue 5, Clause 8.9 @ frequencies defined in clause 8.10 |                        |
|            | Radiated emission limit @3 meters                                |                        |
| Frequency  | Average Detector (dBμV/m)                                        | Peak Detector (dBμV/m) |
| 1 – 40 GHz | 54.0                                                             | 74.0                   |



Band Edge, 5150 MHz, Ch036, 802.11a 6M, AV, Max

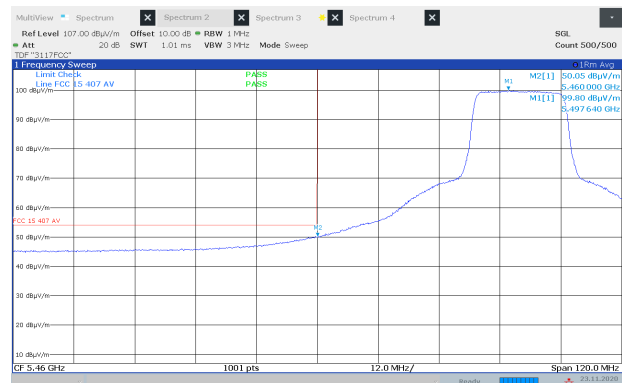
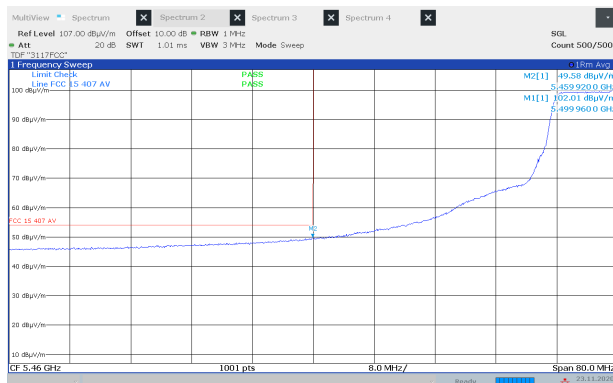


Band Edge, 5150 MHz, Ch036, 802.11n HT20, AV, Max



Band Edge, 5350 MHz, Ch064, 802.11a 6M, AV, Max

Band Edge, 5350 MHz, Ch064, 802.11n HT20, AV, Max

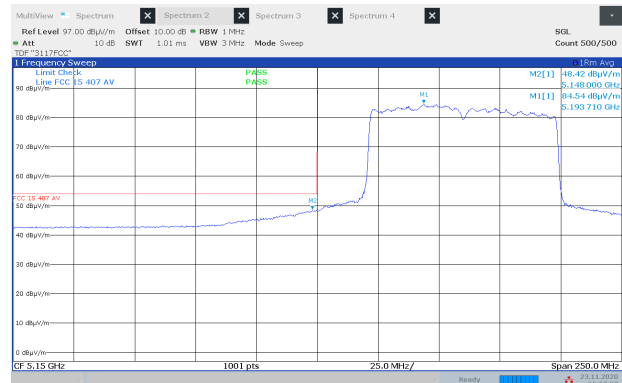


Band Edge, 5460 MHz, Ch100, 802.11a 6M, AV, Max

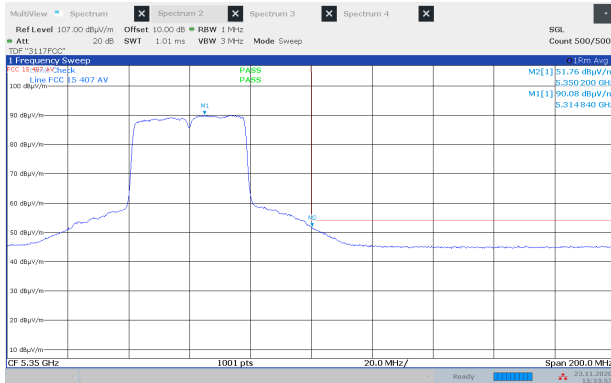
Band Edge, 5460 MHz, Ch100, 802.11n HT20, AV, Max



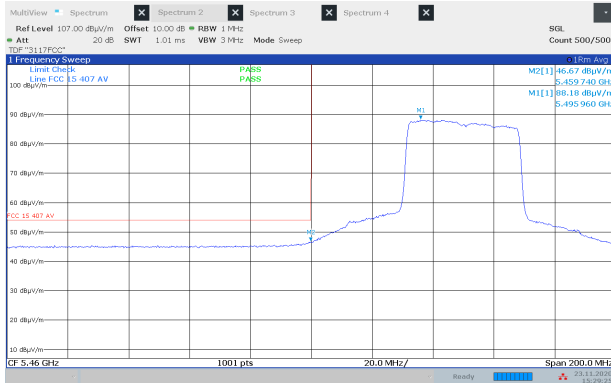
Band Edge, 5150 MHz, Ch038, 802.11n HT40, AV, Max



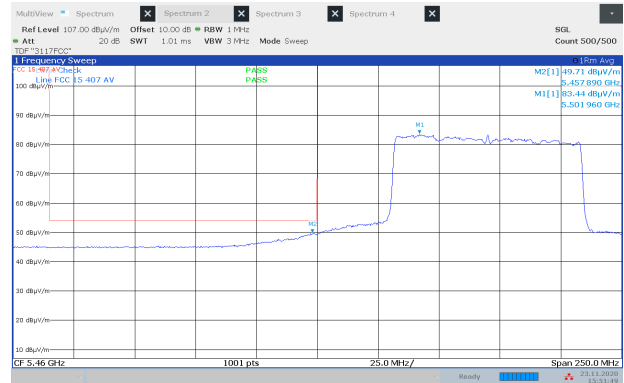
Band Edge, 5150 MHz, Ch042, 802.11ac HT80, AV, Max



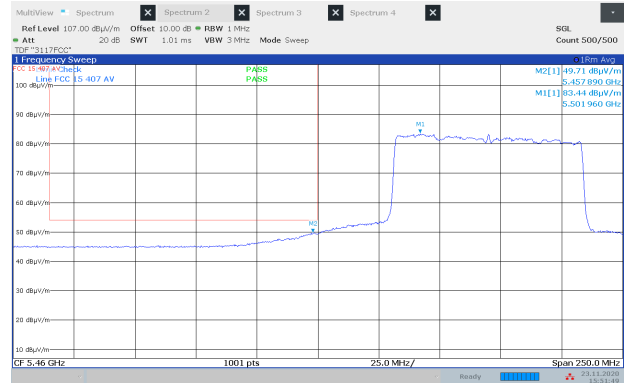
Band Edge, 5350 MHz, Ch062, 802.11n HT40, AV, Max



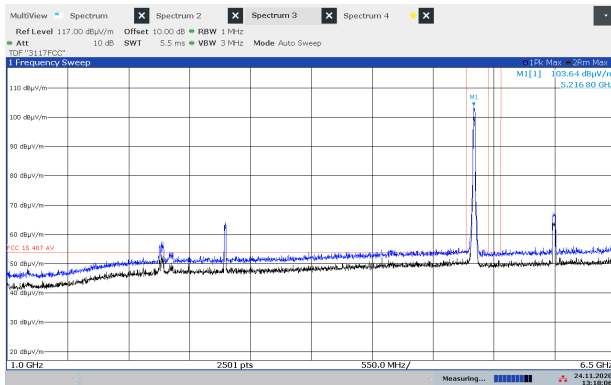
Band Edge, 5460 MHz, Ch102, 802.11n HT40, AV, Max



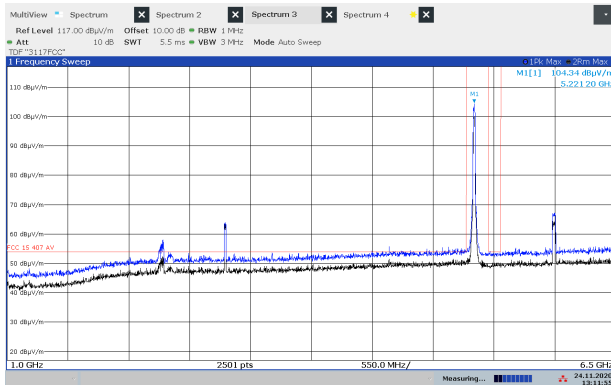
Band Edge, 5350 MHz, Ch058, 802.11ac HT80, AV, Max



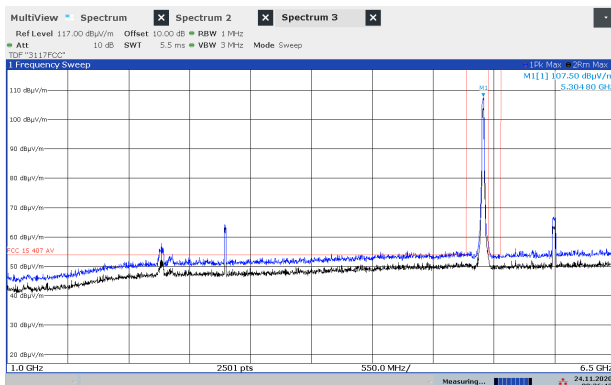
Band Edge, 5460 MHz, Ch106, 802.11n HT80, AV, Max



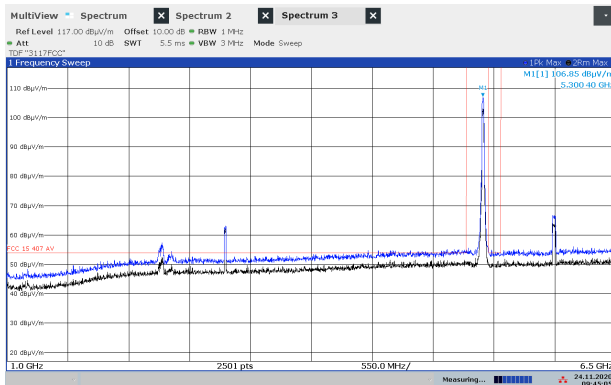
Radiated Emissions 1-6.5 GHz, Ch44, 802.11a 6M, Ant 0, HP



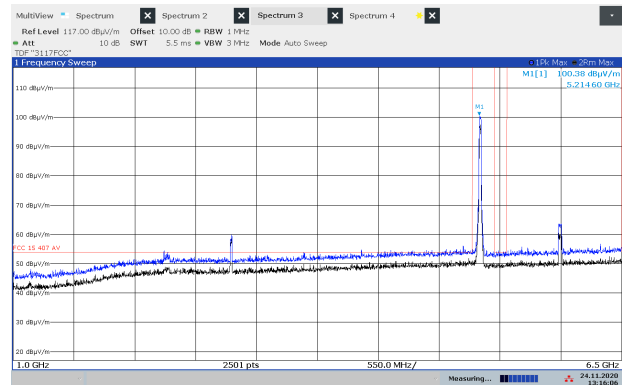
Radiated Emissions 1-6.5 GHz, Ch44, 802.11a 6M, Ant 1, HP



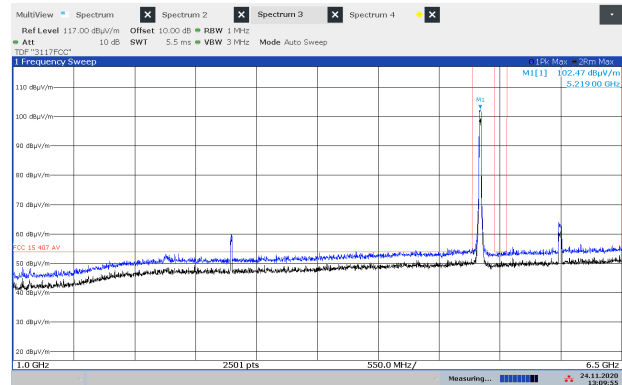
Radiated Emissions 1-6.5 GHz, Ch60, 802.11a 6M, Ant 0, HP



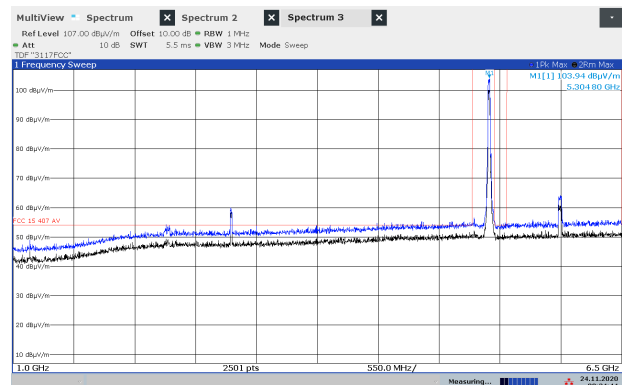
Radiated Emissions 1-6.5 GHz, Ch60, 802.11a 6M, Ant 1, HP



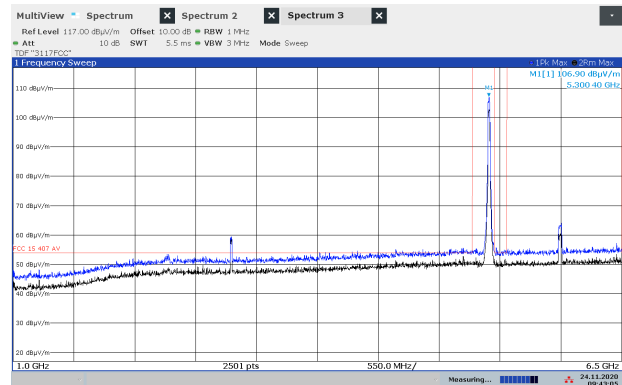
Radiated Emissions 1-6.5 GHz, Ch36, 802.11a 6M, Ant 0, VP



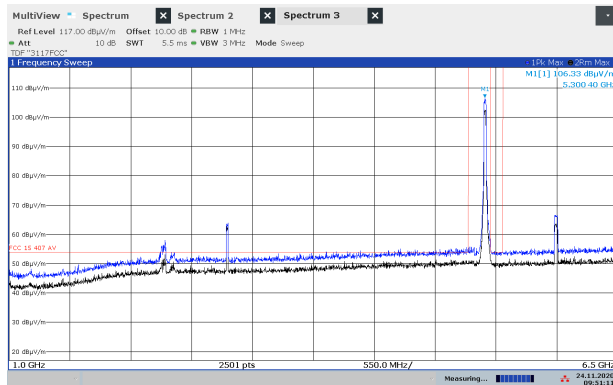
Radiated Emissions 1-6.5 GHz, Ch48, 802.11a 6M, Ant 1, VP



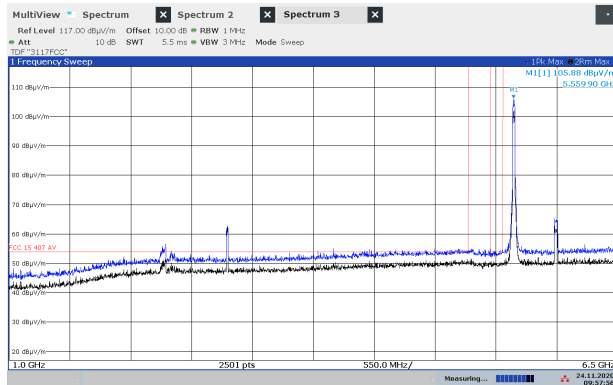
Radiated Emissions 1-6.5 GHz, Ch60, 802.11a 6M, Ant 0, VP



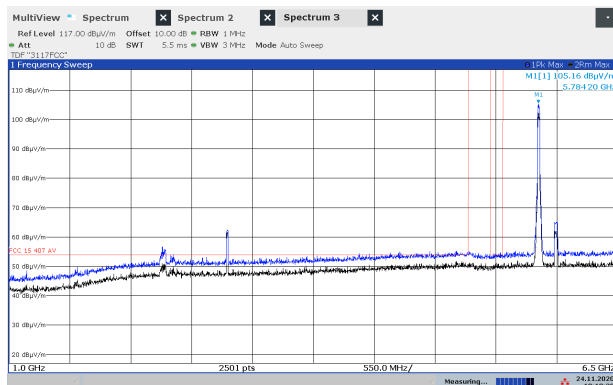
Radiated Emissions 1-6.5 GHz, Ch60, 802.11a 6M, Ant 1, VP



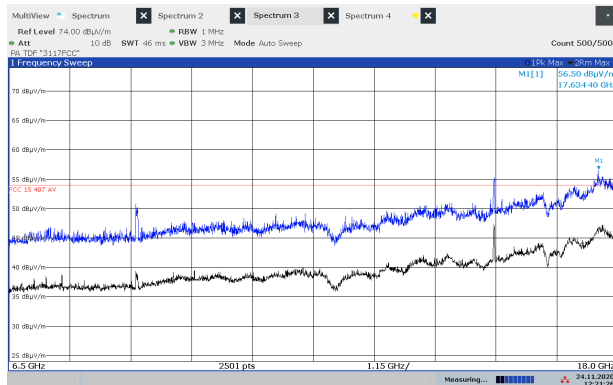
Radiated Emissions 1-6.5 GHz, Ch60, 802.11n MCS0, MIMO, HP



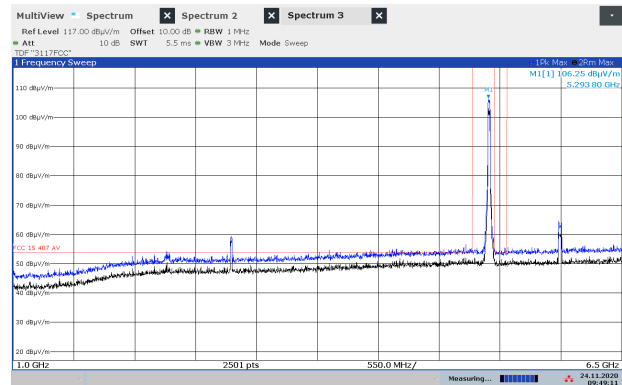
Radiated Emissions 1-6.5 GHz, Ch112, 802.11n MCS0, MIMO, HP



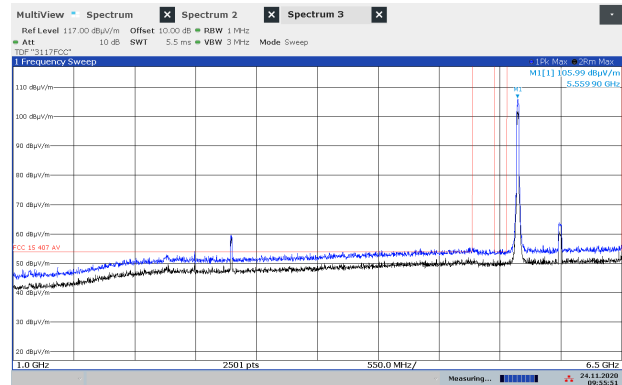
Radiated Emissions 1-6.5 GHz, Ch157, 802.11n MCS0, MIMO, HP



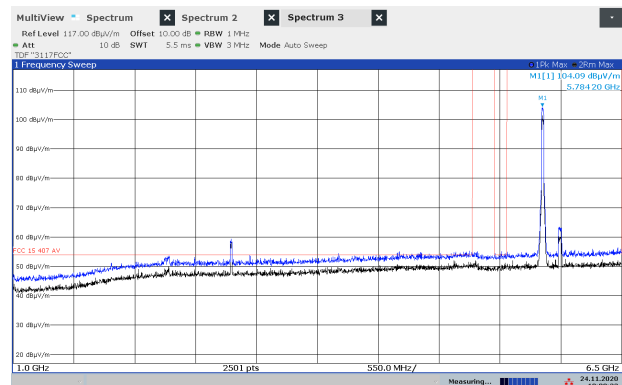
Radiated Emissions 6.5-18 GHz, Ch44, 802.11a 6M, Ant 0, HP



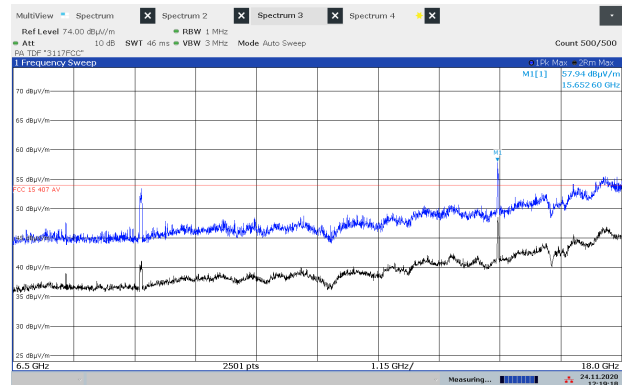
Radiated Emissions 1-6.5 GHz, Ch60, 802.11n MCS0, MIMO, VP



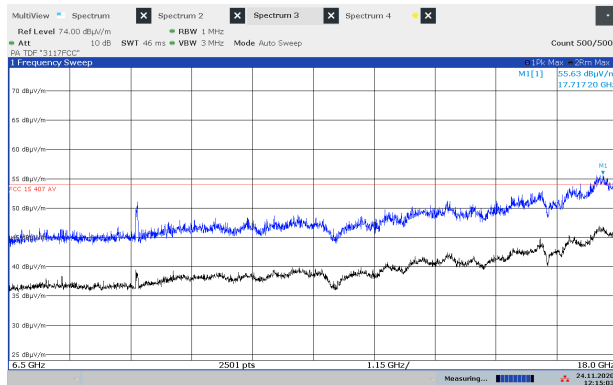
Radiated Emissions 1-6.5 GHz, Ch112, 802.11n MCS0, MIMO, VP



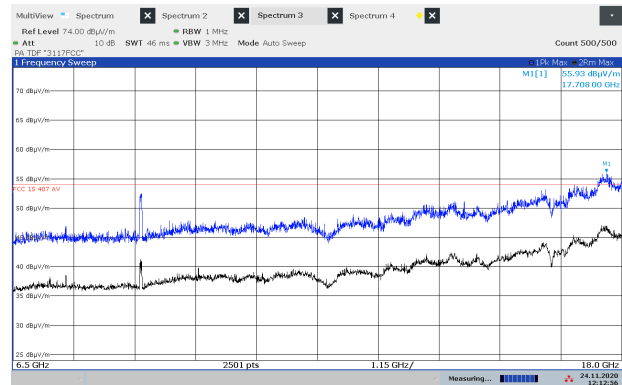
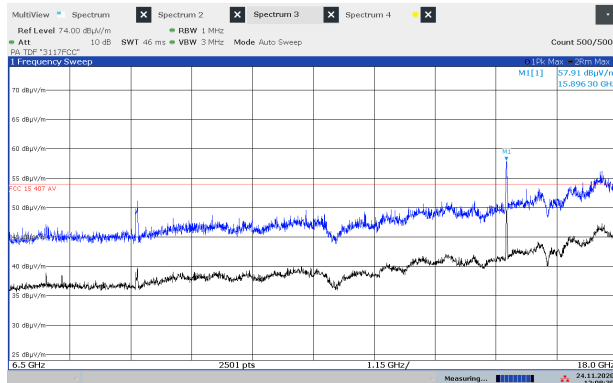
Radiated Emissions 1-6.5 GHz, Ch157, 802.11n MCS0, MIMO, VP



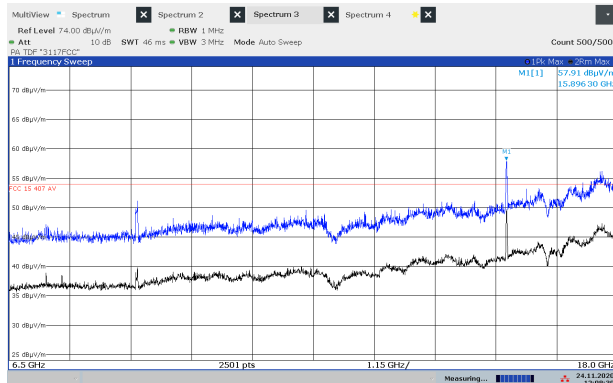
Radiated Emissions 6.5-18 GHz, Ch44, 802.11a 6M, Ant 0, VP



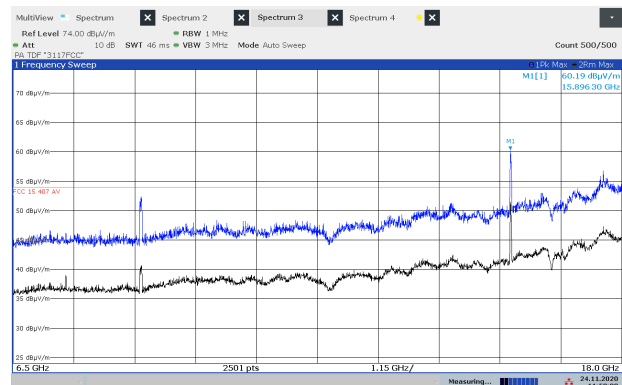
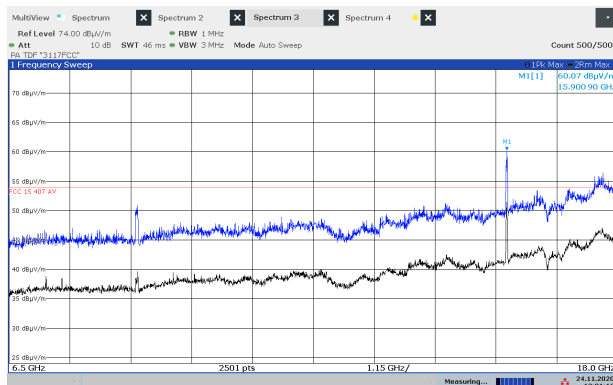
Radiated Emissions 6.5-18 GHz, Ch44, 802.11n MCS0, MIMO, HP



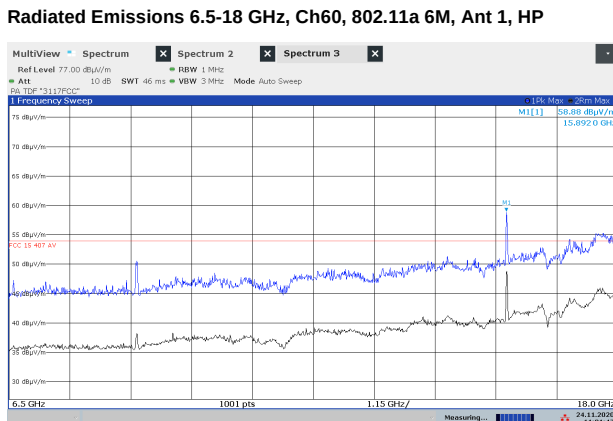
Radiated Emissions 6.5-18 GHz, Ch44, 802.11n MCS0, MIMO, VP



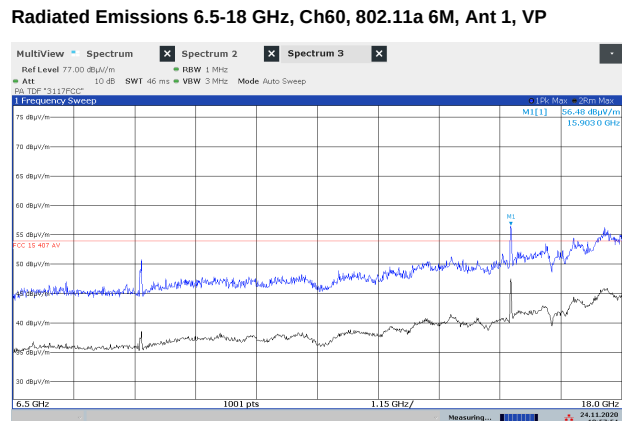
Radiated Emissions 6.5-18 GHz, Ch60, 802.11a 6M, Ant 0, HP



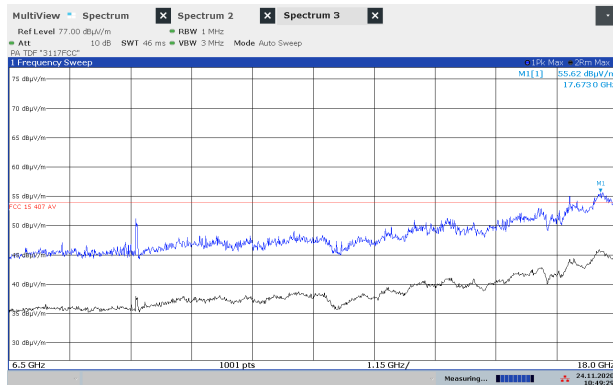
Radiated Emissions 6.5-18 GHz, Ch60, 802.11a 6M, Ant 0, VP



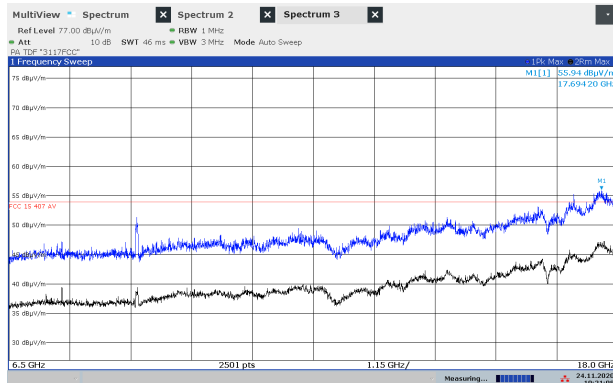
Radiated Emissions 6.5-18 GHz, Ch60, 802.11a 6M, Ant 1, HP



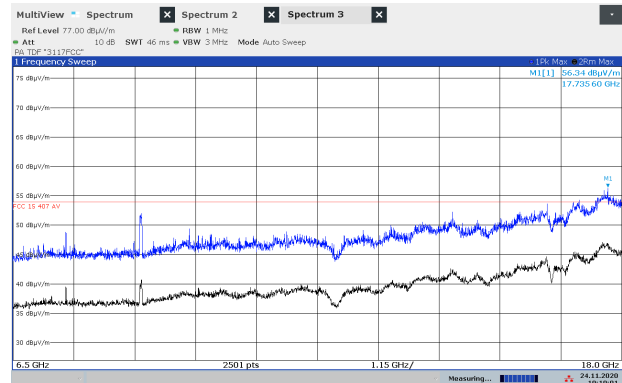
Radiated Emissions 6.5-18 GHz, Ch60, 802.11a 6M, Ant 1, VP



Radiated Emissions 6.5-18 GHz, Ch112, 802.11n MCS0, MIMO, HP

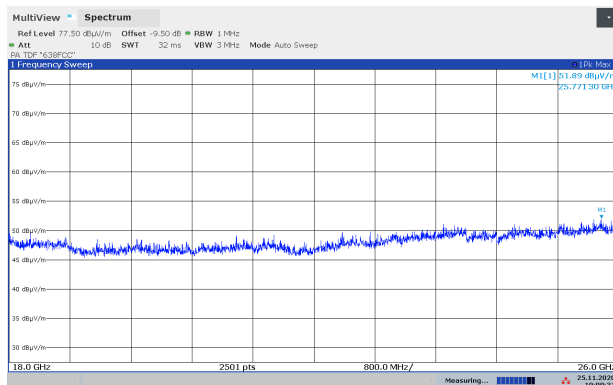


Radiated Emissions 6.5-18 GHz, Ch112, 802.11n HT40, MIMO, VP

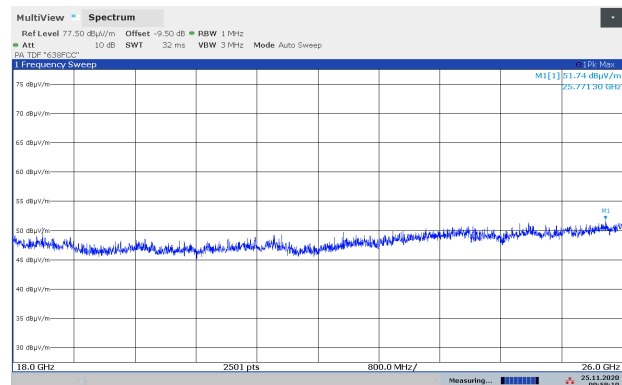


Radiated Emissions 6.5-18 GHz, Ch157, 802.11n MCS0, MIMO, HP

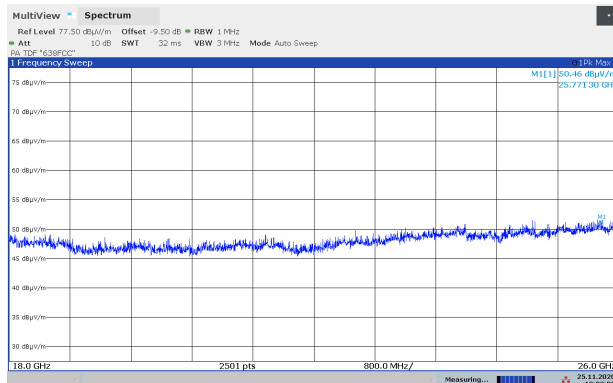
Radiated Emissions 6.5-18 GHz, Ch157, 802.11n MCS0, MIMO, VP



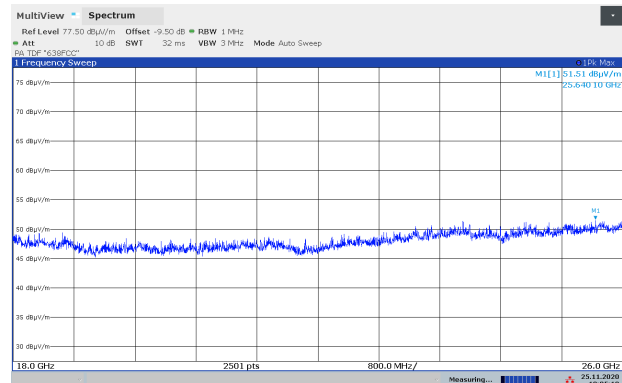
Emissions 18-26 GHz, Ch060, 802.11n MCS0, MIMO, HP, @1m



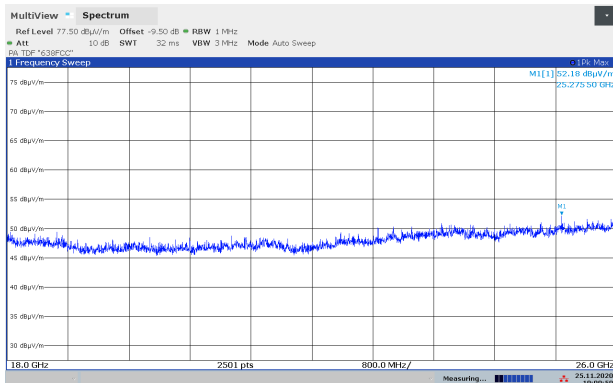
Emissions 18-26 GHz, Ch060, 802.11n MCS0, MIMO, VP, @1m



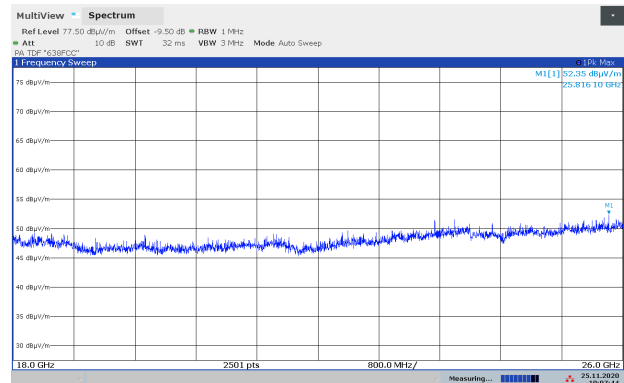
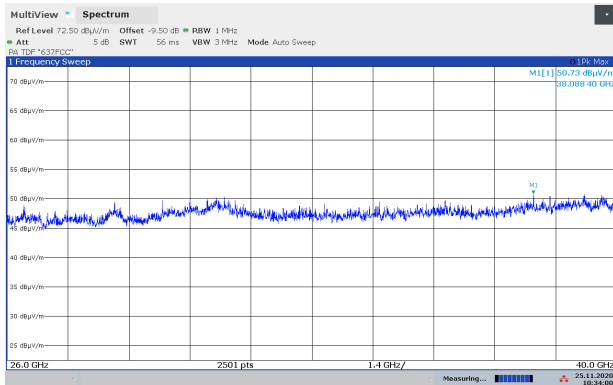
Emissions 18-26 GHz, Ch112, 802.11n MCS0, MIMO, HP, @1m



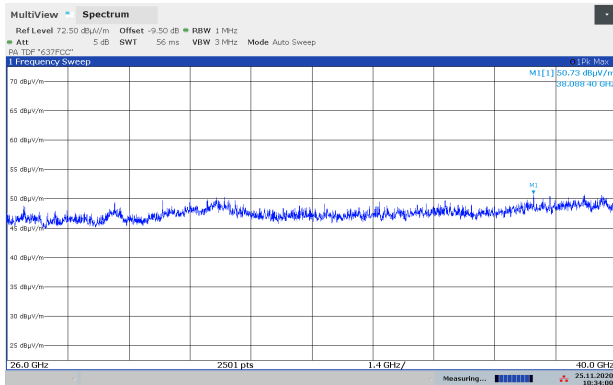
Emissions 18-26 GHz, Ch112, 802.11n MCS0, MIMO, VP, @1m



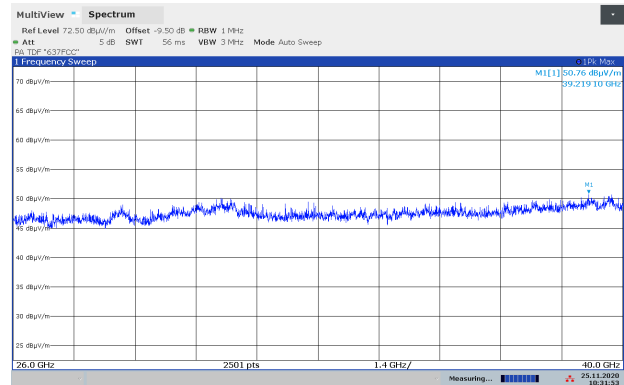
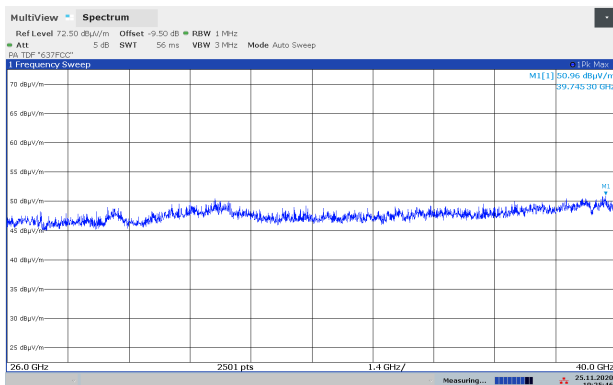
Emissions 18-26 GHz, Ch157, 802.11n MCS0, MIMO, HP, @1m



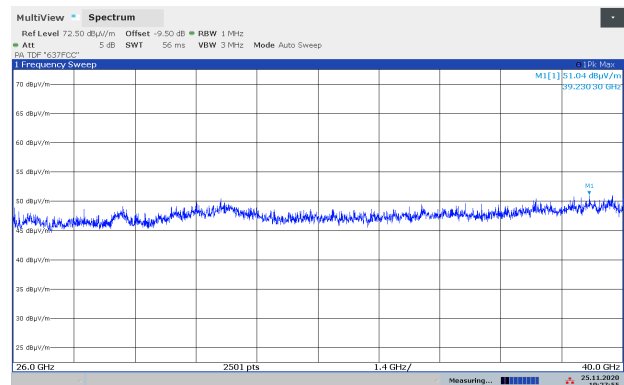
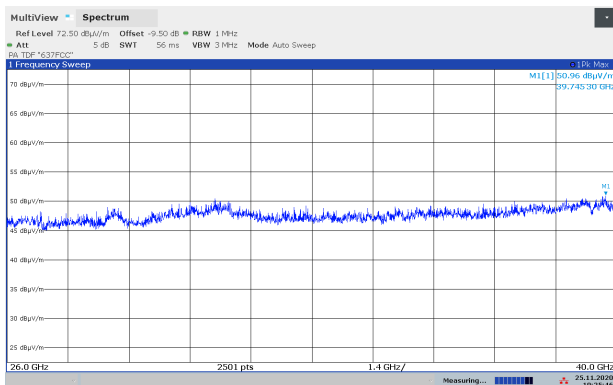
Emissions 18-26 GHz, Ch157, 802.11n MCS0, MIMO, VP, @1m



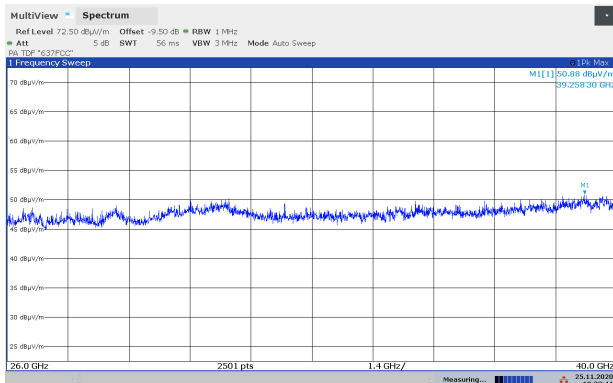
Emissions 26-40 GHz, Ch060, 802.11n MCS0, MIMO, HP, @1m



Emissions 26-40 GHz, Ch060, 802.11n MCS0, MIMO, VP, @1m

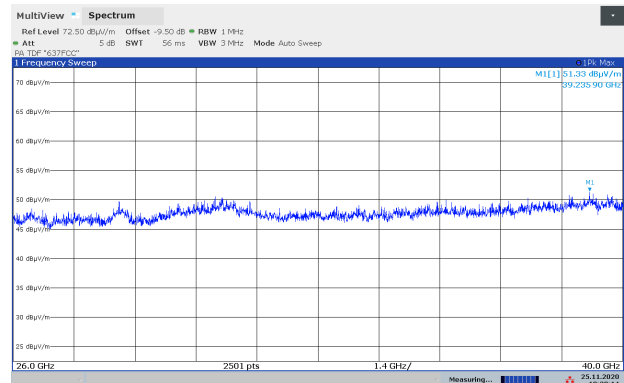


Emissions 18-26 GHz, Ch112, 802.11n MCS0, MIMO, HP, @1m

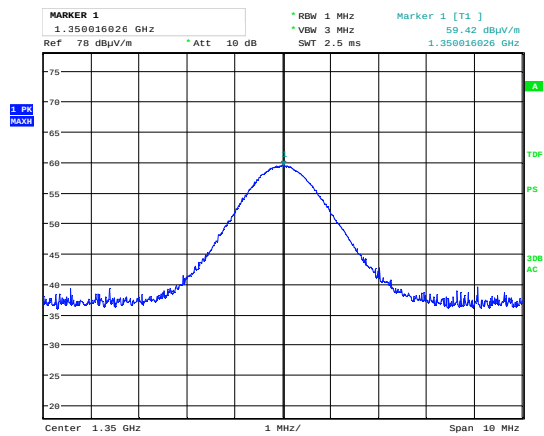


Emissions 18-26 GHz, Ch157, 802.11n MCS0, MIMO, HP, @1m

Emissions 18-26 GHz, Ch112, 802.11n MCS0, MIMO, VP, @1m

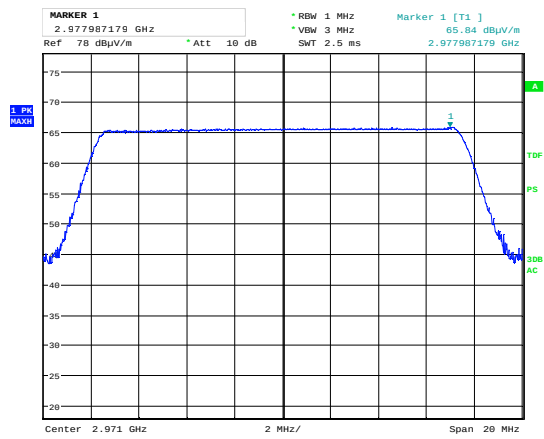


Emissions 18-26 GHz, Ch157, 802.11n MCS0, MIMO, VP, @1m



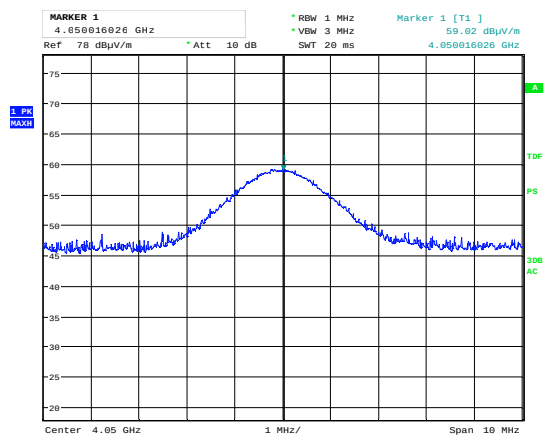
Date: 20.NOV.2020 10:26:54

#### Radiated Emissions 1350 MHz, Peak



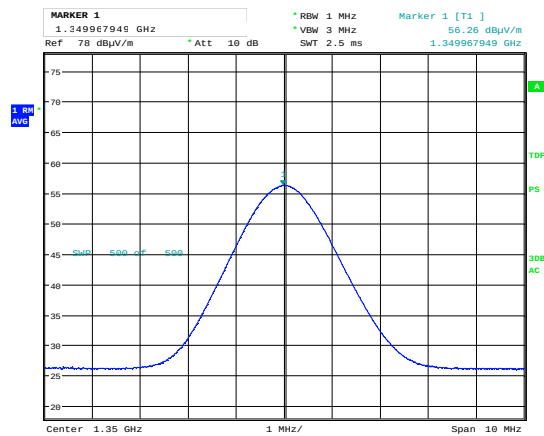
Date: 20.NOV.2020 10:42:02

#### Radiated Emissions 2971 MHz, Peak



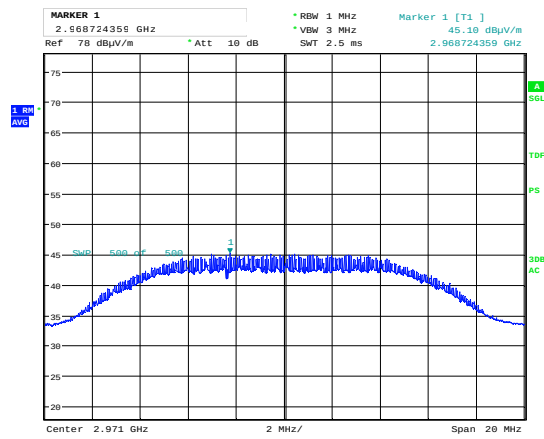
Date: 20.NOV.2020 10:58:26

#### Radiated Emissions 4050 MHz, Peak



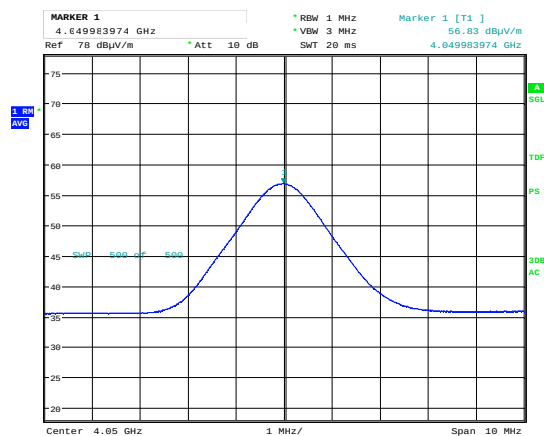
Date: 20.NOV.2020 10:26:24

#### Radiated Emissions 1350 MHz, Av



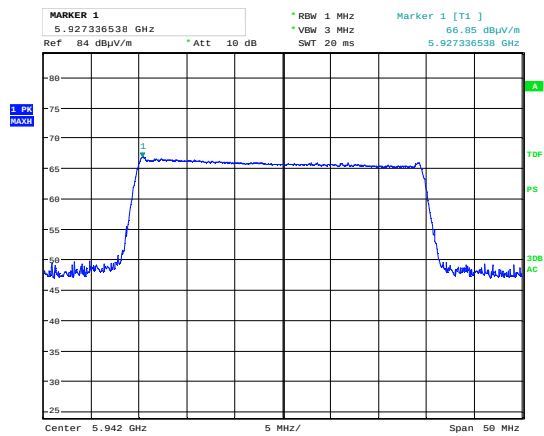
Date: 20.NOV.2020 10:43:12

#### Radiated Emissions 2971 MHz, Av



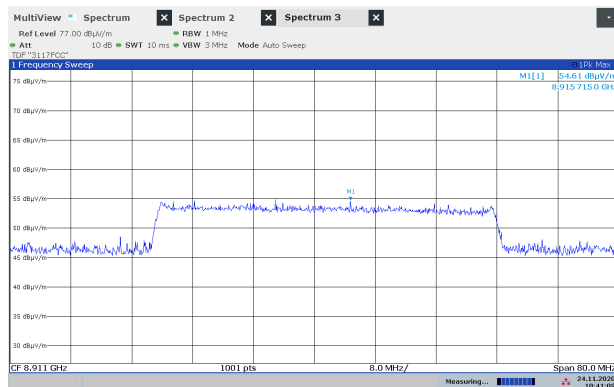
Date: 20.NOV.2020 10:59:22

#### Radiated Emissions 4050 MHz, Av

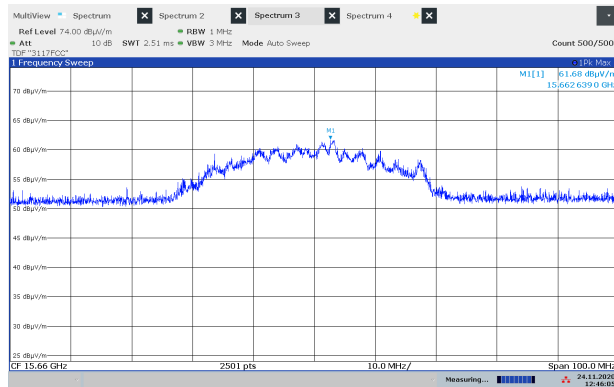


Date: 20.NOV.2020 11:13:13

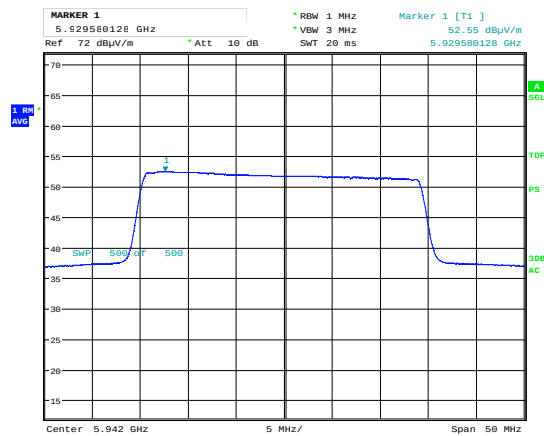
### Radiated Emissions 5942 MHz, Peak



### Radiated Emissions 8911 MHz, Ch157, 802.11n MCS0, MIMO, Peak

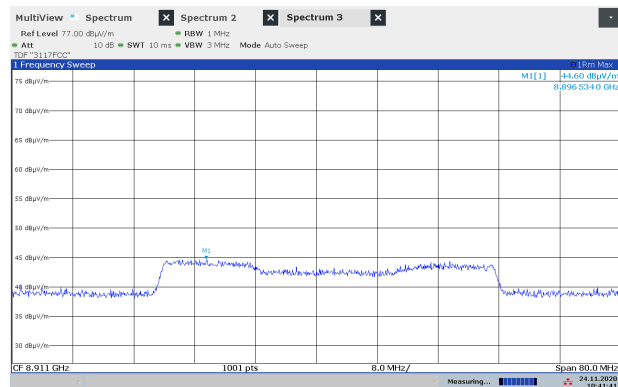


### Radiated Emissions 15.66 GHz, Ch44, 802.11a, 6M, Ant 0, Peak

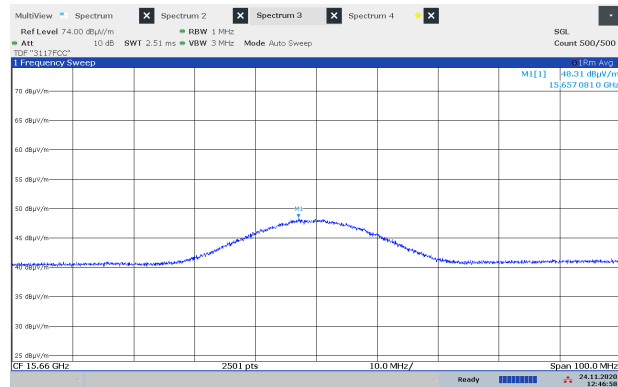


Date: 20.NOV.2020 11:14:29

### Radiated Emissions 5942 MHz, Av

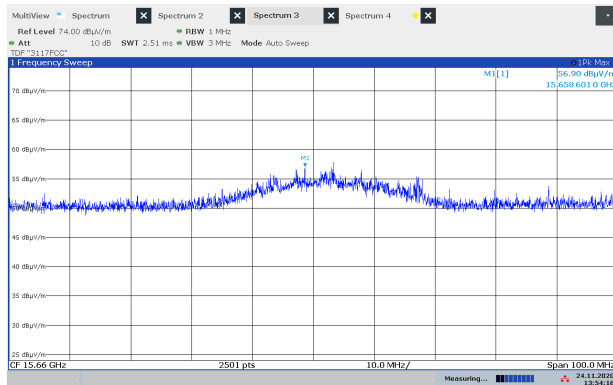


### Radiated Emissions 8911 MHz, Ch157, 802.11n MCS0, MIMO, AV

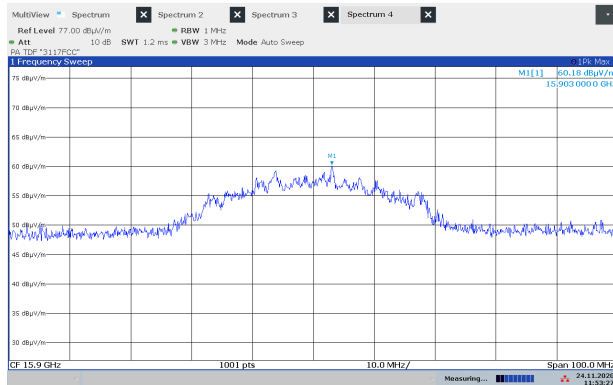


### Radiated Emissions 15.66 GHz, Ch44, 802.11a, 6M, Ant 0, AV

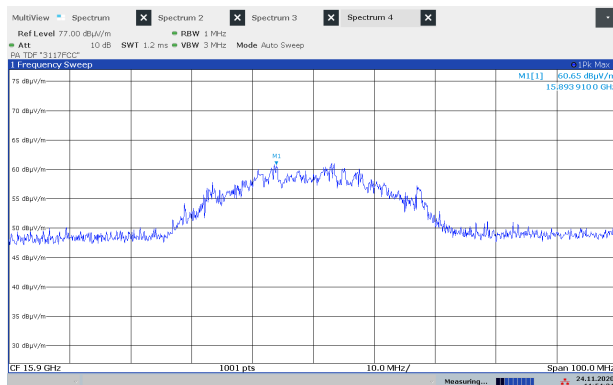




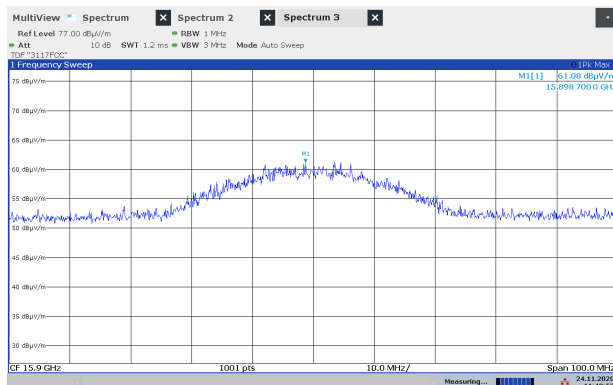
Radiated Emissions 15.66 GHz, Ch44, 802.11a, 6M, Ant 1, Peak



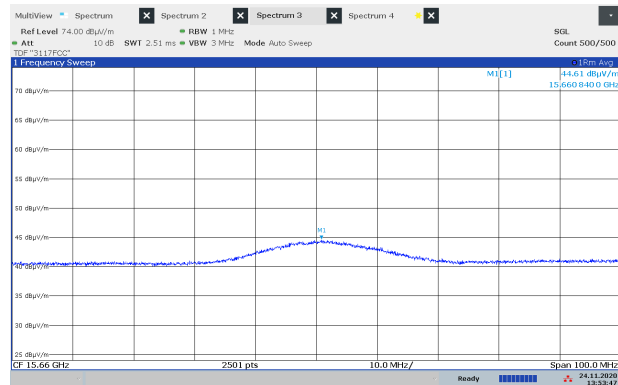
Radiated Emissions 15.90 GHz, Ch60, 802.11a, 6M, Ant 0, Peak



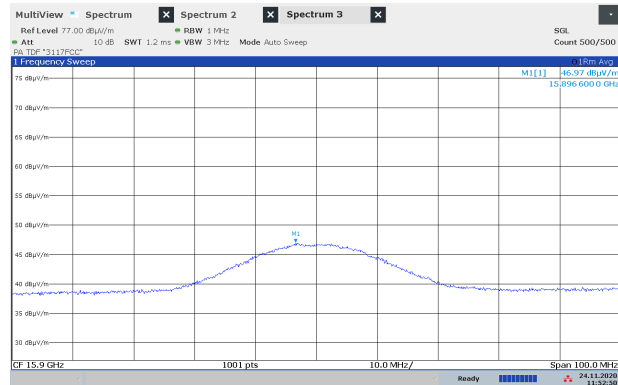
Radiated Emissions 15.90 GHz, Ch60, 802.11a, 6M, Ant 1, Peak



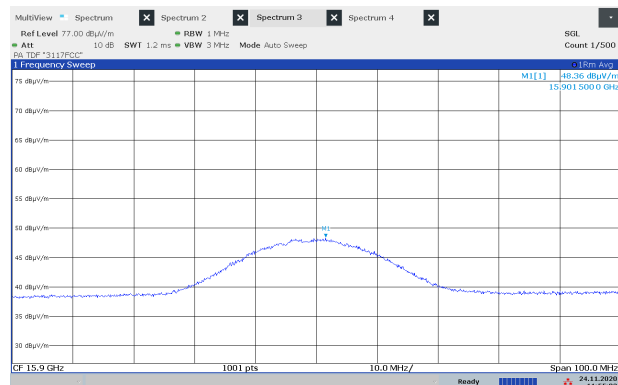
Radiated Emissions 15.90 GHz, Ch60, 802.11n MCS0, MIMO, Peak



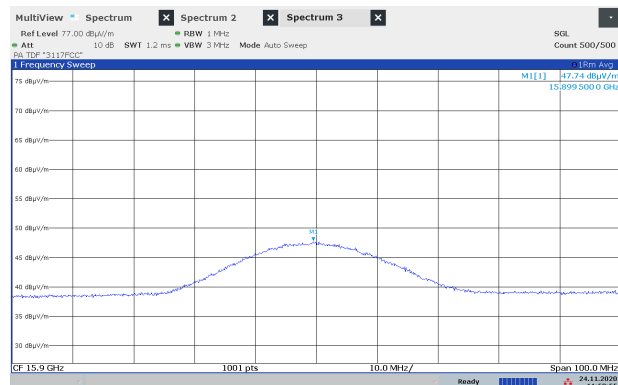
Radiated Emissions 15.66 GHz, Ch44, 802.11a, 6M, Ant 1, AV



Radiated Emissions 15.90 GHz, Ch60, 802.11a, 6M, Ant 0, AV



Radiated Emissions 15.90 GHz, Ch60, 802.11a, 6M, Ant 1, AV



Radiated Emissions 15.90 GHz, Ch60, 802.11n MCS0, MIMO, AV

## 4 Measurement Uncertainty

| Measurement Uncertainty Values   |           |                |
|----------------------------------|-----------|----------------|
| Test Item                        |           | Uncertainty    |
| Output Power                     |           | ±0.5 dB        |
| Power Spectral Density           |           | ±0.5 dB        |
| Out of Band Emissions, Conducted | < 3.6 GHz | ±0.6 dB        |
|                                  | > 3.6 GHz | ±0.9 dB        |
| Spurious Emissions, Radiated     | < 1 GHz   | ±2.5 dB        |
|                                  | > 1 GHz   | ±2.2 dB        |
| Emission Bandwidth               |           | ±4 %           |
| Power Line Conducted Emissions   |           | +2.9 / -4.1 dB |
| Spectrum Mask Measurements       | Frequency | ±5 %           |
|                                  | Amplitude | ±1.0 dB        |
| Frequency Error                  |           | ±0.6 ppm       |
| Temperature Uncertainty          |           | ±1 °C          |

All uncertainty values are expanded standard uncertainty to give a confidence level of 95%, based on coverage factor k=2

## 5 LIST OF TEST EQUIPMENT

To facilitate inclusion on each page of the test equipment used for related tests, each item of test equipment and ancillaries are identified (numbered) by the Test Laboratory.

| No. | Model number             | Description          | Manufacturer       | Ref. no.    | Cal. date | Cal. Due |
|-----|--------------------------|----------------------|--------------------|-------------|-----------|----------|
| 1   | FSW43                    | Spectrum Analyzer    | Rohde & Schwarz    | LR 1690     | 2020-10   | 2021-10  |
| 2   | ESU40                    | Measuring Receiver   | Rohde & Schwarz    | LR 1639     | 2020-03   | 2021-03  |
| 3   | 6810-17B                 | Attenuator           | Suhner             | LR 1669     | 2020-08   | 2021-08  |
| 4   | N0324415                 | BandStop Filter      | Microwave Circuits | LR 1760     | COU       |          |
| 5   | WLK5-1100-1485-7000-40SS | Low Pass Filter      | Wainwright Inst.   | LR 1761     | COU       |          |
| 6   | VULB 9163                | BiLog Antenna        | Schwarzbeck        | LR 1616     | 2020-01   | 2023-01  |
| 7   | 317                      | Preamplifier         | Sonoma Inst.       | LR 1687     | 2020-08   | 2021-08  |
| 8   | 8449A                    | Pre-amplifier        | Hewlett Packard    | LR 1322     | 2020-08   | 2021-08  |
| 9   | 3115                     | Horn Antenna         | EMCO               | LR 1330     | 2016-10   | 2021-10  |
| 10  | 3117-PA                  | Horn Antenna +PreAmp | EMCO               | LR 1717     | 2020-08   | 2021-08  |
| 11  | Model 638                | Antenna Horn         | Narda              | LR 1480     | N/A       |          |
| 12  | Model 87 V               | Multimeter           | Fluke              | LR 1599     | 2019-02   | 2021-02  |
| 14  | 6812B                    | AC Power Source      | Agilent            | LR 1515     | COU       |          |
| 15  | ENV216                   | Two Line V-Network   | Rohde & Schwarz    | LR 1665     | 2019-11   | 2021-11  |
| 16  | ESCI3                    | Measuring Receiver   | Rohde & Schwarz    | N-4259      | 2019-10   | 2021-10  |
| 17  | Model V637               | Horn Antenna         | Narda              | LR 099      | N/A       |          |
| 18  | JS4-20004000             | Preamplifier         | Miteq              | LR 1591     | 2020-08   | 2021-08  |
| 19  | ST18/SMA/N/36            | RF Cable             | Suhner             | LR 1627     | COU       |          |
| 20  | SF102/1000MM             | RF Cable             | Suhner             | SN 50113/2  | COU       |          |
| 21  | SF102/2000MM             | RF Cable             | Suhner             | SN 500100/2 | COU       |          |

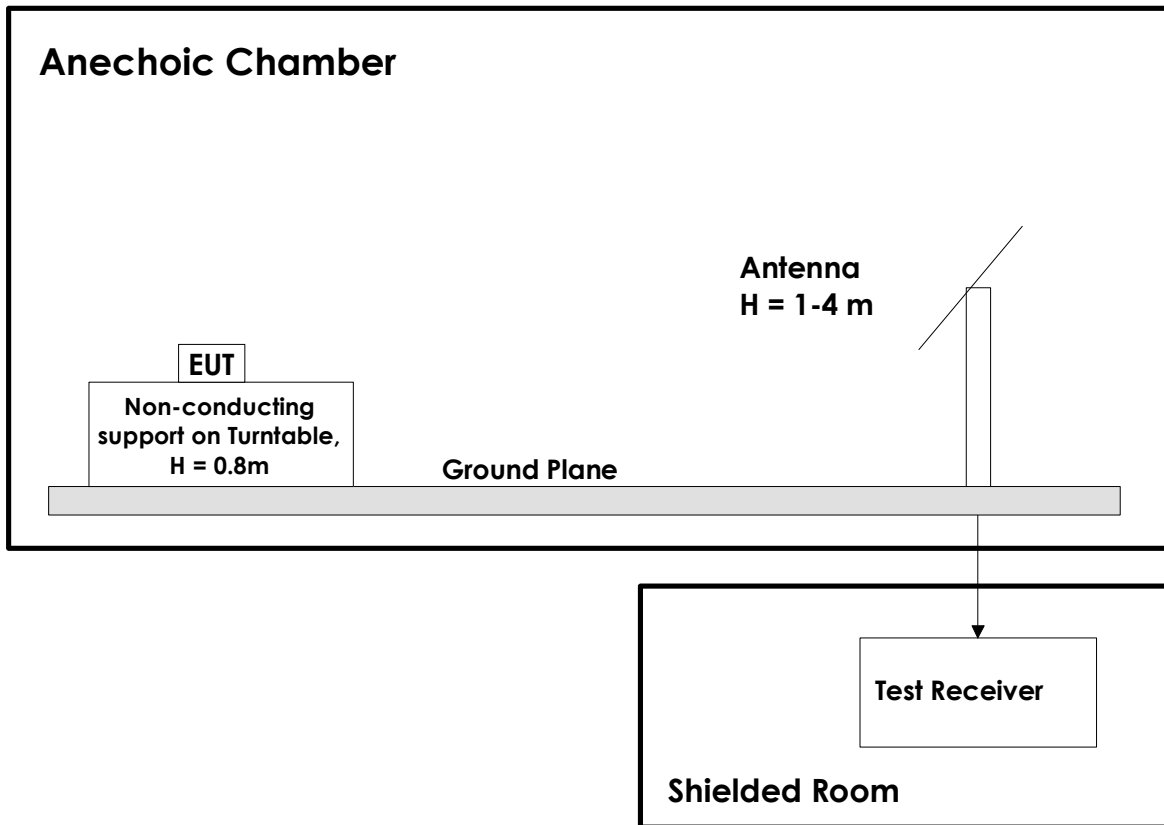
Note: COU – calibrate on use; N/A – Not Applicable

The software listed below has been used for one or more tests.

| No. | Manufacturer    | Name   | Version  | Comment                                 |
|-----|-----------------|--------|----------|-----------------------------------------|
| 1   | Rohde & Schwarz | EMC32  | 10.40.10 | Power Line Conducted test software      |
| 2   | Nemko AS        | RSPlot | 1.0.8.0  | Screenshots from R&S Spectrum Analyzers |
|     |                 |        |          |                                         |

## 6 BLOCK DIAGRAM

### 6.1 Test Site Radiated Emission



This test setup is used for all radiated emissions tests. Measuring distance is 3m for all frequencies.

Emissions above 1 GHz are measured with a Spectrum Analyzer and Horn Antenna.

All measurements at 1GHz and above were performed with turntable height 1.5m and with the ground plane covered by absorbers.

A pre-amplifier is used for all measurements, and High-Pass filter is used for all harmonics.