





# **FCC RADIO TEST REPORT**

FCC ID : 2AQ68W6RT2230

Equipment : Outdoor Wireless Gateway

Brand Name : Hon Lin

Model Name : W6R-T223-001,W6B-T223-001,W6S-T223-001

Applicant : Hon Lin Technology Co., Ltd.

11F, No.32, Jihu Rd., Neihu Dist., Taipei City Taiwan

Manufacturer : Hon Lin Technology Co., Ltd.

11F. No.32, Jihu Rd., Neihu Dist., Taipei City Taiwan

Standard : 47 CFR FCC Part 15.247

The product was received on Dec. 31, 2020, and testing was started from Jan. 11, 2021 and completed on Jan. 27, 2021. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Approved by: Cliff Chang

Into Co

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)

TEL: 886-3-656-9065 FAX: 886-3-656-9085

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Issued Date

: Feb. 09, 2021

Report Version : 01

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Photographs of EUT v01

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# History of this test report

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| Report No. | Version | Description             | Issued Date   |
|------------|---------|-------------------------|---------------|
| FR0D3031AA | 01      | Initial issue of report | Feb. 09, 2021 |
|            |         |                         |               |
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# **Summary of Test Result**

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| Report<br>Clause | Ref Std.<br>Clause | Test Items                                  | Result<br>(PASS/FAIL) | Remark |
|------------------|--------------------|---|-----------------------|--------|
| 1.1.2            | 15.203             | Antenna Requirement                         | PASS                  | -      |
| 3.1              | 15.207             | AC Power-line Conducted Emissions           | PASS                  | -      |
| 3.2              | 15.247(a)          | DTS Bandwidth                               | PASS                  | -      |
| 3.3              | 15.247(b)          | Maximum Conducted Output Power              | PASS                  | -      |
| 3.4              | 15.247(e)          | Power Spectral Density                      | PASS                  | -      |
| 3.5              | 15.247(d)          | Emissions in Non-restricted Frequency Bands | PASS                  | -      |
| 3.6              | 15.247(d)          | Emissions in Restricted Frequency Bands     | PASS                  | -      |

## **Declaration of Conformity:**

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

#### **Comments and Explanations:**

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Sam Chen

Report Producer: Sandy Chuang

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# 1 General Description

## 1.1 Information

#### 1.1.1 RF General Information

| Frequency Range (MHz) | IEEE Std. 802.11                     | Ch. Frequency (MHz) | Channel Number |
|-----------------------|--------------------------------------|---------------------|----------------|
| 2400-2483.5           | b, g, n (HT20), VHT20,<br>ax (HEW20) | 2412-2462           | 1-11 [11]      |
| 2400-2483.5           | n (HT40), VHT40,<br>ax (HEW40)       | 2422-2452           | 3-9 [7]        |

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| Band          | Mode              | BWch (MHz) | Nant |
|---------------|-------------------|------------|------|
| 2.4-2.4835GHz | 802.11b           | 20         | 2TX  |
| 2.4-2.4835GHz | 802.11g           | 20         | 2TX  |
| 2.4-2.4835GHz | 802.11n HT20      | 20         | 2TX  |
| 2.4-2.4835GHz | VHT20             | 20         | 2TX  |
| 2.4-2.4835GHz | VHT20-BF          | 20         | 2TX  |
| 2.4-2.4835GHz | 802.11ax HEW20    | 20         | 2TX  |
| 2.4-2.4835GHz | 802.11ax HEW20-BF | 20         | 2TX  |
| 2.4-2.4835GHz | 802.11n HT40      | 40         | 2TX  |
| 2.4-2.4835GHz | VHT40             | 40         | 2TX  |
| 2.4-2.4835GHz | VHT40-BF          | 40         | 2TX  |
| 2.4-2.4835GHz | 802.11ax HEW40    | 40         | 2TX  |
| 2.4-2.4835GHz | 802.11ax HEW40-BF | 40         | 2TX  |

#### Note:

- ◆ 11b mode uses a combination of DSSS-DBPSK, DQPSK, CCK modulation.
- 11g, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- VHT20, VHT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.
- HEW20, HEW40 use a combination of OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM modulation.
- BWch is the nominal channel bandwidth.

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## 1.1.2 Antenna Information

|     |      |        | Port             |                  |                            |               |                 |           | Gain   |
|-----|------|--------|------------------|------------------|----------------------------|---------------|-----------------|-----------|--------|
| Set | Ant. | 2.4GHz | 5GHz<br>(Band 1) | 5GHz<br>(Band 4) | Brand                      | Model Name    | Antenna Type    | Connector | (dBi)  |
|     | 1    | 1      | 1                | -                | Shenzhen<br>AotianChuangke | AMXF-2458-5   | Omnidirectional | N Type    |        |
| 1   | 2    | 2      | 2                | -                | Shenzhen<br>AotianChuangke | AMXF-2458-5   | Omnidirectional | N Type    |        |
|     | 3    | -      | -                | 1                | Shenzhen<br>AotianChuangke | ATCK-5800-8   | Omnidirectional | N Type    |        |
| 2   | 4    | -      | -                | 2                | Shenzhen<br>AotianChuangke | ATCK-5800-8   | Omnidirectional | N Type    | Note 1 |
|     | 5    | -      | -                | 3                | Shenzhen<br>AotianChuangke | ATCK-5800-8   | Omnidirectional | N Type    |        |
| 3   | 1    | 1      | 1                | 1                | M.gear                     | C407-690902-A | Omnidirectional | N Type    |        |
| 3   | 2    | 2      | 2                | 1                | M.gear                     | C407-690902-A | Omnidirectional | N Type    |        |
|     | 3    | -      | -                | 1                | M.gear                     | C407-690851-A | Omnidirectional | N Type    |        |
| 4   | 4    | -      | -                | 2                | M.gear                     | C407-690851-A | Omnidirectional | N Type    |        |
|     | 5    | -      | -                | 3                | M.gear                     | C407-690851-A | Omnidirectional | N Type    |        |

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#### Note 1

|     | Ant. | Gain (dBi) |                  |                  |            | Gain (dBi) |                  |                  |
|-----|------|------------|------------------|------------------|------------|------------|------------------|------------------|
| Set |      | 2.4GHz     | 5GHz<br>(Band 1) | 5GHz<br>(Band 4) | Cable Loss | 2.4GHz     | 5GHz<br>(Band 1) | 5GHz<br>(Band 4) |
| 1   | 1    | 6          | 6                | 1                | 0.5        | 5.5        | 5.5              | -                |
| 1   | 2    | 6          | 6                | 1                | 0.5        | 5.5        | 5.5              | -                |
|     | 3    | -          | -                | 8                | 0.5        | 1          | -                | 7.5              |
| 2   | 4    | -          | -                | 8                | 0.5        | 1          | -                | 7.5              |
|     | 5    | -          | -                | 8                | 0.5        | -          | -                | 7.5              |
| •   | 1    | 3.5        | 6                | 1                | 0.5        | 3          | 5.5              | -                |
| 3   | 2    | 3.5        | 6                | 1                | 0.5        | 3          | 5.5              | -                |
|     | 3    | -          | -                | 7                | 0.5        | 1          | -                | 6.5              |
| 4   | 4    | -          | -                | 7                | 0.5        | -          | -                | 6.5              |
|     | 5    | -          | -                | 7                | 0.5        | -          | -                | 6.5              |

Note 1: The above information was declared by manufacturer.

Note 2: Antenna set 1 and set 3 are the same type of antennas, antenna set 1 has the higher gain than set 2, so antenna set 1 is chosen to test.

Antenna set 2 and set 4 are the same type of antennas, antenna set 2 has the higher gain than set 4, so antenna set 2 is chosen to test.

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#### For 2.4GHz function:

### For IEEE 802.11b/g/n/VHT/ax (2TX/2RX):

Port 1 and Port 2 can be used as transmitting/receiving antenna.

Port 1 and Port 2 could transmit/receive simultaneously.

#### For 5GHz function:

#### Band 1

#### For IEEE 802.11a/n/ac/ax (2TX/2RX):

Port 1 and Port 2 can be used as transmitting/receiving antenna.

Port 1 and Port 2 could transmit/receive simultaneously.

#### Band 4

## For IEEE 802.11a/n/ac/ax (3TX/3RX):

Port 1, Port 2 and Pot 3 can be used as transmitting/receiving antenna.

Port 1, Port 2 and Pot 3 could transmit/receive simultaneously

## 1.1.3 Mode Test Duty Cycle

| Mode           | DC    | DCF(dB) | T(s)    | VBW(Hz) ≥ 1/T |
|----------------|-------|---------|---------|---------------|
| 802.11b        | 0.949 | 0.23    | 12.425m | 100           |
| 802.11g        | 0.953 | 0.21    | 2.075m  | 1k            |
| 802.11ax HEW20 | 0.978 | 0.1     | 1.489m  | 1k            |
| 802.11ax HEW40 | 0.964 | 0.16    | 781.25u | 3k            |

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#### Note:

- DC is Duty Cycle.
- DCF is Duty Cycle Factor.

## 1.1.4 EUT Operational Condition

| EUT Power Type                 | From PoE                      |  |  |                     |  |
|--------------------------------|-------------------------------|--|--|---------------------|--|
| Beamforming Function           | $\boxtimes$                   | With beamforming   |  | Without beamforming |  |
| Beamforming Function           | The                           | The product has beamforming function for VHT/ax in 2.4GHz and ac/ax in 5GHz. |  |                     |  |
| Function   Point-to-multipoint |                               |  |  | Point-to-point      |  |
| Test Software Version          | ftware Version Mtool V3.2.1.2 |  |  |                     |  |

Note: The above information was declared by manufacturer.

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## 1.1.5 Table for Multiple Listing

The difference for each model name is shown as below:

| Model Name   | Support Function |
|--------------|------------------|
| W6R-T223-001 | AP               |
| W6B-T223-001 | Mesh AP          |
| W6S-T223-001 | Mesh AP-satelite |

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Note 1: From the above models, model: W6R-T223-001 was selected as representative model for the test and its data was recorded in this report.

Note 2: The above information was declared by manufacturer.

## 1.1.6 EUT Supports Type

The EUT supports AP, Mesh AP, Mesh AP-satelite functions, only the AP was performed for all the tests.

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# 1.2 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

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- 47 CFR FCC Part 15
- ANSI C63.10-2013

The following reference test guidance is not within the scope of accreditation of TAF.

- FCC KDB 558074 D01 v05r02
- FCC KDB 662911 D01 v02r01
- FCC KDB 414788 D01 v01r01

## 1.3 Testing Location Information

|             | Testing Location   |     |   |  |  |  |  |  |
|-------------|--|-----|---|--|--|--|--|--|
|             | HWA YA ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) |     |   |  |  |  |  |  |
|             |  | TEL | : | 886-3-327-3456 FAX : 886-3-327-0973  |  |  |  |  |
| $\boxtimes$ | JHUBEI   | ADD | : | No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302, Taiwan (R.O.C.) |  |  |  |  |
|             |  | TEL | : | 886-3-656-9065 FAX : 886-3-656-9085  |  |  |  |  |

| Test Condition           | Test Site No. | Test Engineer | Test Environment<br>(°C / %) | Test Date                       |
|--------------------------|---------------|---------------|------------------------------|---------------------------------|
| RF Conducted             | TH01-CB       | Owen Hsu      | 13.6-14.5 / 59-62            | Jan. 14, 2021~<br>Jan. 15, 2021 |
| Radiated (Co-location)   | 03CH06-CB     | JN Tu         | 22.7-23.2 / 56-58            | Jan. 11, 2021~<br>Jan. 13, 2021 |
| Radiated<br>(Below 1GHz) | 03CH06-CB     | Stim Sung     | 22.7-23.2 / 56-58            | Jan. 22, 2021                   |
| Radiated                 | 03CH03-CB     | JN Tu         | 21.5-22.5 / 54-57            | Jan. 11, 2021~                  |
| (Above 1GHz)             | 03CH06-CB     | JIN IU        | 22.7-23.2 / 56-58            | Jan. 13, 2021                   |
| AC Conduction            | CO01-CB       | Peter Wu      | 20~21 / 59~60                | Jan. 27, 2021                   |

Test site Designation No. TW0006 with FCC.

Test site registered number IC 4086D with Industry Canada.

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# 1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence

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level (based on a coverage factor (k=2)

| Test Items                           | Uncertainty | Remark                   |
|--------------------------------------|-------------|--------------------------|
| Conducted Emission (150kHz ~ 30MHz)  | 2.0 dB      | Confidence levels of 95% |
| Radiated Emission (9kHz ~ 30MHz)     | 3.8 dB      | Confidence levels of 95% |
| Radiated Emission (30MHz ~ 1,000MHz) | 5.6 dB      | Confidence levels of 95% |
| Radiated Emission (1GHz ~ 18GHz)     | 5.0 dB      | Confidence levels of 95% |
| Radiated Emission (18GHz ~ 40GHz)    | 4.9 dB      | Confidence levels of 95% |
| Conducted Emission                   | 2.8 dB      | Confidence levels of 95% |
| Output Power Measurement             | 1.4 dB      | Confidence levels of 95% |
| Power Density Measurement            | 2.8 dB      | Confidence levels of 95% |
| Bandwidth Measurement                | 0.4%        | Confidence levels of 95% |

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# 2 Test Configuration of EUT

# 2.1 Test Channel Mode

<Non-beamforming mode>

| Mode                           | Power Setting |
|--------------------------------|---------------|
| 802.11b_Nss1,(1Mbps)_2TX       | -             |
| 2412MHz                        | 99            |
| 2437MHz                        | 106           |
| 2462MHz                        | 106           |
| 802.11g_Nss1,(6Mbps)_2TX       | -             |
| 2412MHz                        | 80            |
| 2417MHz                        | 83            |
| 2437MHz                        | 102           |
| 2457MHz                        | 86            |
| 2462MHz                        | 80            |
| 802.11ax HEW20_Nss1,(MCS0)_2TX | -             |
| 2412MHz                        | 71            |
| 2417MHz                        | 79            |
| 2437MHz                        | 98            |
| 2457MHz                        | 75            |
| 2462MHz                        | 72            |
| 802.11ax HEW40_Nss1,(MCS0)_2TX | -             |
| 2422MHz                        | 69            |
| 2427MHz                        | 72            |
| 2437MHz                        | 83            |
| 2452MHz                        | 73            |

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| Mode                              | Power Setting |
|-----------------------------------|---------------|
| 802.11ax HEW20-BF_Nss1,(MCS0)_2TX | -             |
| 2412MHz                           | 71            |
| 2417MHz                           | 79            |
| 2437MHz                           | 94            |
| 2457MHz                           | 75            |
| 2462MHz                           | 72            |
| 802.11ax HEW40-BF_Nss1,(MCS0)_2TX | -             |
| 2422MHz                           | 69            |
| 2427MHz                           | 72            |
| 2437MHz                           | 83            |
| 2452MHz                           | 73            |

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#### Note:

- HEW20/HEW40 covers HT20/HT40/VHT20/VHT40, due to similar modulation. The power setting for 802.11n HT20/VHT20 and HT40/VHT40 are the same or lower than HEW20 and HEW40.
- The EUT supports non-beamforming and beamforming modes, after evaluating, the non-beamforming mode has been evaluated to be the worst case, so it was selected to test. The beamforming mode evaluates the output power only.

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# 2.2 The Worst Case Measurement Configuration

| The Worst Case Mode for Following Conformance Tests                |                     |  |
|--|---------------------|--|
| Tests Item AC power-line conducted emissions                       |                     |  |
| Condition AC power-line conducted measurement for line and neutral |                     |  |
| Operating Mode Normal Link   |                     |  |
| 1  | EUT + AP with PoE 1 |  |

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| Tł   | The Worst Case Mode for Following Conformance Tests |  |  |
|--|---|--|--|
| Tests Item  DTS Bandwidth  Maximum Conducted Output Power  Power Spectral Density  Emissions in Non-restricted Frequency Bands |   |  |  |
| Test Condition Conducted measurement at transmit chains  |   |  |  |
| 1 WLAN 2.4GHz + Antenna Set 1  |   |  |  |

| The Worst Case Mode for Following Conformance Tests  |   |  |  |
|--|---|--|--|
| Tests Item   | Emissions in Restricted Frequency Bands |  |  |
| Test Condition  Radiated measurement  If EUT consist of multiple antenna assembly (multiple antenna are used in regardless of spatial multiplexing MIMO configuration), the radiated test s be performed with highest antenna gain of each antenna type. |   |  |  |
| Operating Mode < 1GHz Normal Link  |   |  |  |
| 1  | EUT + AP with PoE 2                     |  |  |
| Operating Mode > 1GHz  | СТХ                                     |  |  |
| 1  | WLAN 2.4GHz + Antenna Set 1             |  |  |

| The Worst Case Mode for Following Conformance Tests                           |                            |  |  |
|---|----------------------------|--|--|
| Tests Item Simultaneous Transmission Analysis - Radiated Emission Co-location |                            |  |  |
| Test Condition Radiated measurement   |                            |  |  |
| Operating Mode  | Operating Mode Normal Link |  |  |
| 1 WLAN 2.4GHz + WLAN 5GHz Band 1 + Antenna Set 1                              |                            |  |  |
| Refer to Appendix G for Radiated Emission Co-location.                        |                            |  |  |

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| The Worst Case Mode for Following Conformance Tests  |  |  |  |
|--|--|--|--|
| Tests Item Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation               |  |  |  |
| Operating Mode   |  |  |  |
| 1 WLAN 2.4GHz (Antenna Set 1) + WLAN 5GHz Band 1 (Antenna Set 1) + V 5GHz Band 4 (Antenna Set 2) |  |  |  |
| Refer to Sporton Test Report No.: FA0D3031 for Co-location RF Exposure Evaluation.               |  |  |  |

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Note 1: The EUT can only be used in Y-axis position.

Note 2: The PoE below is for measurement only, would not be marketed.

The PoE information as below:

| Support Unit | Brand   | Model Number |  |
|--------------|---------|--------------|--|
| PoE 1        | Cisco   | MA-INJ4      |  |
| PoE 2        | T-STONE | TSD-PSE25    |  |

# 2.3 EUT Operation during Test

For CTX Mode:

The EUT was programmed to be in continuously transmitting mode.

For Normal Link:

During the test, the EUT operation to normal function.

## 2.4 Accessories

Sealing Collar\*1

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# 2.5 Support Equipment

## For AC Conduction:

|     | Support Equipment |            |            |        |  |
|-----|-------------------|------------|------------|--------|--|
| No. | Equipment         | Brand Name | Model Name | FCC ID |  |
| А   | PoE 1             | Cisco      | MA-INJ-4   | N/A    |  |
| В   | LAN NB            | DELL       | E6430      | N/A    |  |
| С   | 2.4G NB           | DELL       | E6430      | N/A    |  |
| D   | 5G-L NB           | DELL       | E6430      | N/A    |  |
| Е   | 5G-H NB           | DELL       | E6430      | N/A    |  |

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For Radiated (below 1GHz):

|     | Support Equipment |            |            |        |  |
|-----|-------------------|------------|------------|--------|--|
| No. | Equipment         | Brand Name | Model Name | FCC ID |  |
| Α   | PoE 2             | T-STONE    | TSD-PSE25  | N/A    |  |
| В   | LAN NB            | DELL       | E4300      | N/A    |  |
| С   | 2.4G NB           | DELL       | E4300      | N/A    |  |
| D   | 5G-L NB           | DELL       | E4300      | N/A    |  |
| Е   | 5G-H NB           | DELL       | E4300      | N/A    |  |

For Radiated (above 1GHz):

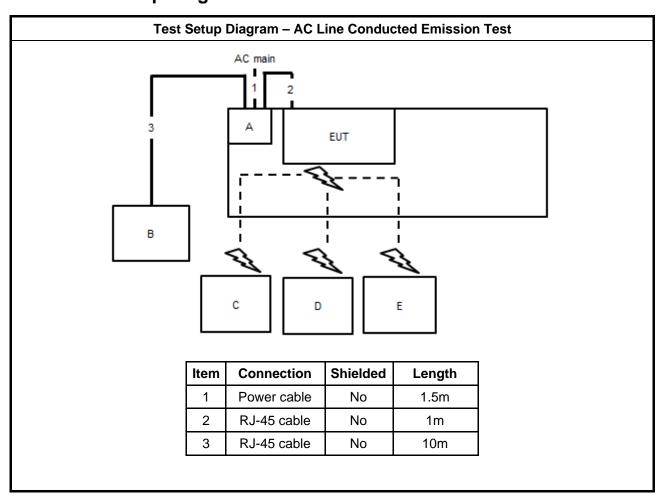
| To Nadiated (above 10112). |           |            |            |        |  |
|----------------------------|-----------|------------|------------|--------|--|
| Support Equipment          |           |            |            |        |  |
| No.                        | Equipment | Brand Name | Model Name | FCC ID |  |
| Α                          | NB        | DELL       | E4300      | N/A    |  |
| В                          | PoE 2     | T-STONE    | TSD-PSE25  | N/A    |  |

## For RF Conducted:

| Support Equipment |           |            |            |        |  |  |
|-------------------|-----------|------------|------------|--------|--|--|
| No.               | Equipment | Brand Name | Model Name | FCC ID |  |  |
| Α                 | NB        | DELL       | E4300      | N/A    |  |  |
| В                 | PoE 2     | T-STONE    | TSD-PSE25  | N/A    |  |  |

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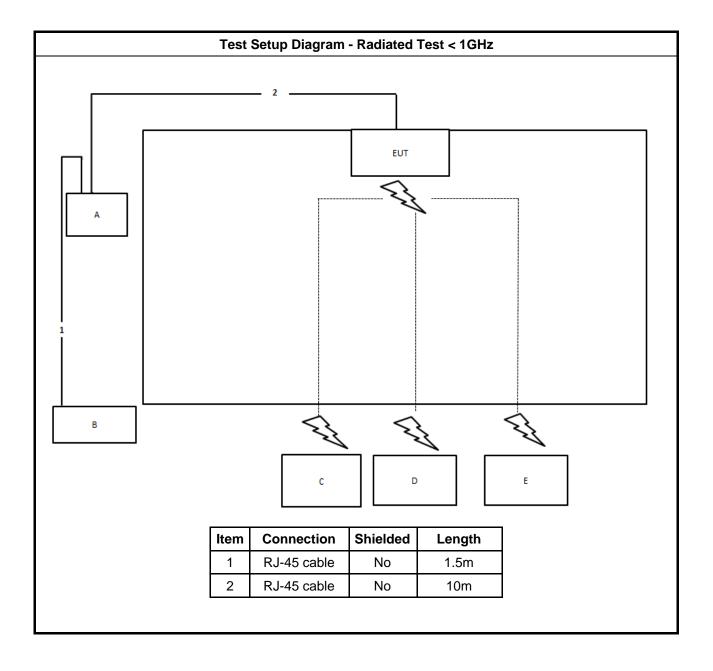
# 2.6 Test Setup Diagram



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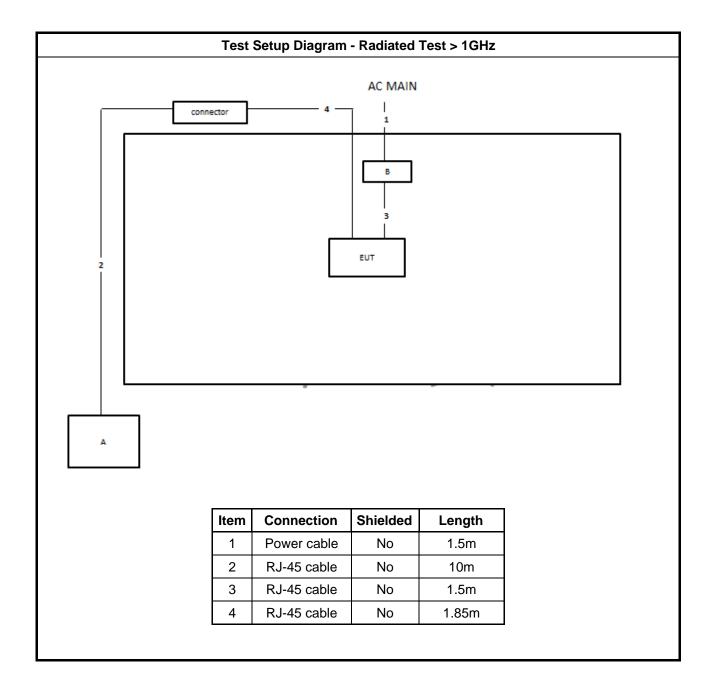
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## 3 Transmitter Test Result

## 3.1 AC Power-line Conducted Emissions

## 3.1.1 AC Power-line Conducted Emissions Limit

| AC Power-line Conducted Emissions Limit                  |           |           |  |  |  |
|--|-----------|-----------|--|--|--|
| Frequency Emission (MHz) Quasi-Peak Avera                |           |           |  |  |  |
| 0.15-0.5   | 66 - 56 * | 56 - 46 * |  |  |  |
| 0.5-5  | 56        | 46        |  |  |  |
| 5-30   | 60        | 50        |  |  |  |
| Note 1: * Decreases with the logarithm of the frequency. |           |           |  |  |  |

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## 3.1.2 Measuring Instruments

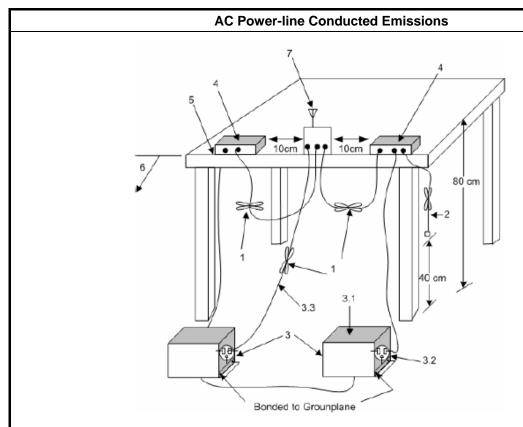
Refer a test equipment and calibration data table in this test report.

## 3.1.3 Test Procedures

| Test Method  |
|--|
| Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions. |

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## 3.1.4 Test Setup



1—Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 cm to 40 cm long.

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- 2—The I/O cables that are not connected to an accessory shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- 3—EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50  $\Omega$  loads. LISN may be placed on top of, or immediately beneath, reference ground plane.
- 3.1—All other equipment powered from additional LISN(s).
- 3.2—A multiple-outlet strip may be used for multiple power cords of non-EUT equipment.
- 3.3—LISN at least 80 cm from nearest part of EUT chassis.
- 4—Non-EUT components of EUT system being tested.
- 5—Rear of EUT, including peripherals, shall all be aligned and flush with edge of tabletop.
- 6—Edge of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.
- 7—Antenna can be integral or detachable. If detachable, then the antenna shall be attached for this test.

#### 3.1.5 Measurement Results Calculation

The measured Level is calculated using:

- a. Corrected Reading: LISN Factor (LISN) + Attenuator (AT/AUX) + Cable Loss (CL) + Read Level (Raw) = Level
- b. Margin = -Limit + Level

#### 3.1.6 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

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## 3.2 DTS Bandwidth

## 3.2.1 6dB Bandwidth Limit

| 6dB Bandwidth Limit                          |  |  |  |  |
|--|--|--|--|--|
| Systems using digital modulation techniques: |  |  |  |  |
| ■ 6 dB bandwidth ≥ 500 kHz.                  |  |  |  |  |

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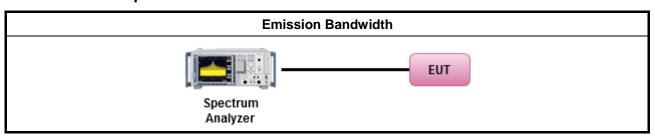
## 3.2.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

## 3.2.3 Test Procedures

|   | Test Method  |   |  |  |  |  |  |  |
|---|--|---|--|--|--|--|--|--|
| • | For the emission bandwidth shall be measured using one of the options below: |   |  |  |  |  |  |  |
|   |  | Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.1 Option 1 for 6 dB bandwidth measurement. |  |  |  |  |  |  |
|   |  | Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.2 Option 2 for 6 dB bandwidth measurement. |  |  |  |  |  |  |
|   |  | Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.                                  |  |  |  |  |  |  |

## 3.2.4 Test Setup



## 3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B

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## 3.3 Maximum Conducted Output Power

## 3.3.1 Maximum Conducted Output Power Limit

#### **Maximum Conducted Output Power Limit**

- If G<sub>TX</sub> ≤ 6 dBi, then P<sub>Out</sub> ≤ 30 dBm (1 W)
- Point-to-multipoint systems (P2M): If  $G_{TX} > 6$  dBi, then  $P_{Out} = 30 (G_{TX} 6)$  dBm
- Point-to-point systems (P2P): If  $G_{TX} > 6$  dBi, then  $P_{Out} = 30 (G_{TX} 6)/3$  dBm
- Smart antenna system (SAS):
  - Single beam: If  $G_{TX} > 6$  dBi, then  $P_{Out} = 30 (G_{TX} 6)/3$  dBm
  - Overlap beam: If  $G_{TX} > 6$  dBi, then  $P_{Out} = 30 (G_{TX} 6)/3$  dBm
  - Aggregate power on all beams: If  $G_{TX} > 6$  dBi, then  $P_{Out} = 30 (G_{TX} 6)/3 + 8$ dB dBm

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 $\mathbf{P}_{\text{Out}}$  = maximum peak conducted output power or maximum conducted output power in dBm,  $\mathbf{G}_{\text{TX}}$  = the maximum transmitting antenna directional gain in dBi.

## 3.3.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

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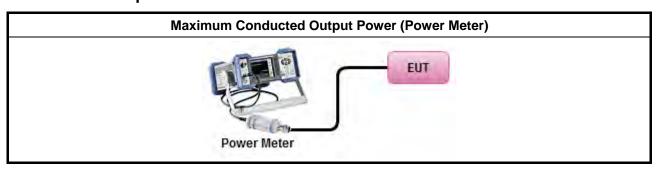
## 3.3.3 Test Procedures

|   |                                      | Test Method  |  |  |
|---|--------------------------------------|--|--|--|
| • | Max                                  | imum Peak Conducted Output Power   |  |  |
|   |                                      | Refer as FCC KDB 558074, clause 8.3.1.1 & C63.10 clause 11.9.1.1 (RBW ≥ EBW method).   |  |  |
|   |                                      | Refer as FCC KDB 558074, clause 8.3.1.3 & C63.10 clause 11.9.1.3 (peak power meter).   |  |  |
| • | Max                                  | imum Conducted Output Power  |  |  |
|   | [duty                                | / cycle ≥ 98% or external video / power trigger]   |  |  |
|   |                                      | Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.2 Method AVGSA-1.   |  |  |
|   |                                      | Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.3 Method AVGSA-1A. (alternative)  |  |  |
|   | duty                                 | cycle < 98% and average over on/off periods with duty factor   |  |  |
|   |                                      | Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.4 Method AVGSA-2.   |  |  |
|   |                                      | Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.5 Method AVGSA-2A (alternative)   |  |  |
|   |                                      | Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.6 Method AVGSA-3  |  |  |
|   |                                      | Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.7 Method AVGSA-3A (alternative)   |  |  |
|   | Measurement using a power meter (PM) |  |  |  |
|   |                                      | Refer as FCC KDB 558074, clause 8.3.2.3 & C63.10 clause 11.9.2.3.1 Method AVGPM (using an RF average power meter).   |  |  |
|   |                                      | Refer as FCC KDB 558074, clause 8.3.2.3 & C63.10 clause 11.9.2.3.2 Method AVGPM-G (using an gate RF average power meter).  |  |  |
| • | For                                  | conducted measurement.   |  |  |
|   | •                                    | If the EUT supports multiple transmit chains using options given below: Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them. |  |  |
|   | •                                    | If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \ldots + P_n \\ \text{(calculated in linear unit [mW] and transfer to log unit [dBm])} \\ \text{EIRP}_{total} = P_{total} + DG$  |  |  |

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## 3.3.4 Test Setup



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## 3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

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# 3.4 Power Spectral Density

## 3.4.1 Power Spectral Density Limit

# Power Spectral Density Limit

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Power Spectral Density (PSD) ≤ 8 dBm/3kHz

## 3.4.2 Measuring Instruments

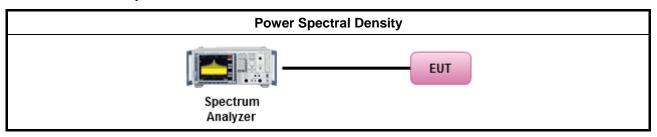
Refer a test equipment and calibration data table in this test report.

## 3.4.3 Test Procedures

|   | Test Method  |  |  |  |  |  |
|---|--|--|--|--|--|--|
| • | Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum conducted output power was measured to demonstrate compliance to the output power limit, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option). |  |  |  |  |  |
|   | ⊠ Ref  | fer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10 Method Max. PSD.   |  |  |  |  |
| • | For cond   | ducted measurement.  |  |  |  |  |
|   | ■ If T   | he EUT supports multiple transmit chains using options given below:  |  |  |  |  |
|   |  | Option 1: Measure and sum the spectra across the outputs. Refer as FCC KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace. |  |  |  |  |
|   |  | Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits,   |  |  |  |  |
|   |  | Option 3: Measure and add 10 log(N) dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with 10 log(N). Or each transmit chains shall be add 10 log(N) to compared with the limit.  |  |  |  |  |

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## 3.4.4 Test Setup



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## 3.4.5 Test Result of Power Spectral Density

Refer as Appendix D

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## 3.5 Emissions in Non-restricted Frequency Bands

## 3.5.1 Emissions in Non-restricted Frequency Bands Limit

| Un-restricted Band Emissions Limit |             |  |  |  |
|------------------------------------|-------------|--|--|--|
| RF output power procedure          | Limit (dBc) |  |  |  |
| Peak output power procedure        | 20          |  |  |  |
| Average output power procedure     | 30          |  |  |  |

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- Note 1: If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak PSD level.
- Note 2: If the average output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the power in any 100 kHz outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum measured in-band average PSD level.

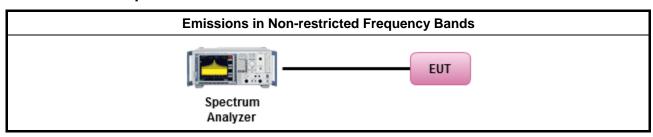
## 3.5.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

#### 3.5.3 Test Procedures

| Test Method   |  |
|---|--|
| <ul> <li>Refer as FCC KDB 558074, clause 8.5 for unwanted emissions into non-restricted bands.</li> </ul> |  |

### 3.5.4 Test Setup



## 3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix E

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## 3.6 Emissions in Restricted Frequency Bands

## 3.6.1 Emissions in Restricted Frequency Bands Limit

| Restricted Band Emissions Limit |                       |                         |                      |  |  |  |
|---------------------------------|-----------------------|-------------------------|----------------------|--|--|--|
| Frequency Range (MHz)           | Field Strength (uV/m) | Field Strength (dBuV/m) | Measure Distance (m) |  |  |  |
| 0.009~0.490                     | 2400/F(kHz)           | 48.5 - 13.8             | 300                  |  |  |  |
| 0.490~1.705                     | 24000/F(kHz)          | 33.8 - 23               | 30                   |  |  |  |
| 1.705~30.0                      | 30                    | 29                      | 30                   |  |  |  |
| 30~88                           | 100                   | 40                      | 3                    |  |  |  |
| 88~216 150                      |                       | 43.5                    | 3                    |  |  |  |
| 216~960                         | 200                   | 46                      | 3                    |  |  |  |
| Above 960 500                   |                       | 54                      | 3                    |  |  |  |

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- Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).
- Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.
- Note 3: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m.

#### 3.6.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

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## 3.6.3 Test Procedures

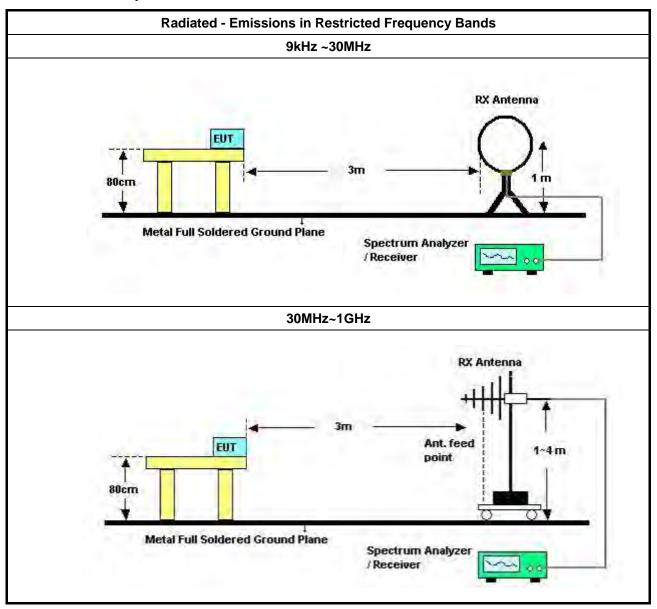
|   | Test Method   |  |  |  |  |  |  |
|---|---|--|--|--|--|--|--|
| • | The   | average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].   |  |  |  |  |  |
| • | Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band. |  |  |  |  |  |  |
| • | For   | the transmitter unwanted emissions shall be measured using following options below:  |  |  |  |  |  |
|   | •   | Refer as FCC KDB 558074, clause 8.6 for unwanted emissions into restricted bands.  |  |  |  |  |  |
|   | Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.1(trace averaging for cycle ≥98%).  |  |  |  |  |  |  |
|   |   | Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.2(trace averaging + duty factor).  |  |  |  |  |  |
|   |   | Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.3(Reduced VBW≥1/T).  |  |  |  |  |  |
|   |   | Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time.  |  |  |  |  |  |
|   |   | Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.  |  |  |  |  |  |
|   |   | Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.4 measurement procedure peak limit.  |  |  |  |  |  |
| • | For   | the transmitter band-edge emissions shall be measured using following options below:   |  |  |  |  |  |
|   | •   | Refer as FCC KDB 558074 clause 8.7 & C63.10 clause 11.13.1, When the performing peak or average radiated measurements, emissions within 2 MHz of the authorized band edge may be measured using the marker-delta method described below.   |  |  |  |  |  |
|   | <ul> <li>Refer as FCC KDB 558074, clause 8.7 (ANSI C63.10, clause 6.10.6) for marker-delta method<br/>band-edge measurements.</li> </ul>                                  |  |  |  |  |  |  |
|   | •   | Refer as FCC KDB 558074, clause 8.7 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz).   |  |  |  |  |  |
|   | •   | For conducted unwanted emissions into restricted bands (absolute emission limits).  Devices with multiple transmit chains using options given below:  (1) Measure and sum the spectra across the outputs or  (2) Measure and add 10 log(N) dB  |  |  |  |  |  |
|   | •   | For FCC KDB 662911 The methodology described here may overestimate array gain, thereby resulting in apparent failures to satisfy the out-of-band limits even if the device is actually compliant. In such cases, compliance may be demonstrated by performing radiated tests around the frequencies at which the apparent failures occurred. |  |  |  |  |  |

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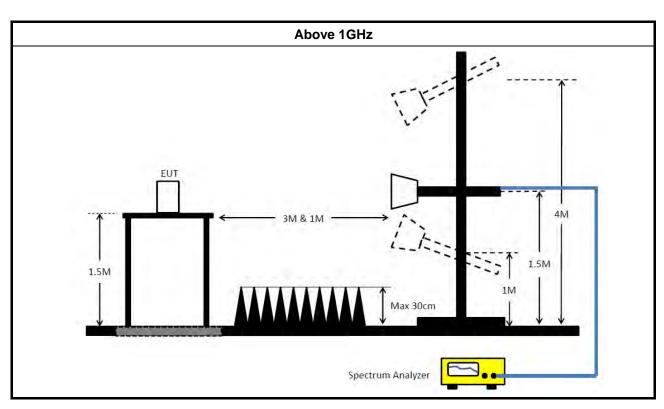
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## 3.6.4 Test Setup



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#### 3.6.5 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Antenna factor (AF) + Cable loss (CL) + Read level (Raw) - Preamp factor (PA)(if applicable) = Level.

## 3.6.6 Emissions in Restricted Frequency Bands (Below 30MHz)

There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to KDB414788 Radiated Test Site, and the result came out very similar.

All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

The radiated emissions were investigated from 9 kHz or the lowest frequency generated within the device, up to the 10th harmonic or 40 GHz, whichever is appropriate.

## 3.6.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F

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# 4 Test Equipment and Calibration Data

| Instrument                               | Brand           | Model No.            | Serial No.          | Characteristics     | Calibration<br>Date | Calibration<br>Due Date | Remark                   |
|--|-----------------|----------------------|---------------------|---------------------|---------------------|-------------------------|--------------------------|
| EMI Receiver                             | Agilent         | N9038A               | My52260123          | 9kHz ~ 8.4GHz       | Feb. 26, 2020       | Feb. 25, 2021           | Conduction<br>(CO01-CB)  |
| LISN                                     | Schwarzbeck     | NSLK 8127            | 8127478             | 9kHz ~ 30MHz        | Nov. 20, 2020       | Nov. 19, 2021           | Conduction<br>(CO01-CB)  |
| LISN                                     | Schwarzbeck     | NSLK 8127            | 8127647             | 9kHz ~ 30MHz        | Feb. 25, 2020       | Feb. 24, 2021           | Conduction<br>(CO01-CB)  |
| Pulse Limiter                            | Rohde&Schwa rz  | ESH3-Z2              | 100430              | 9kHz ~ 30MHz        | Jan. 31, 2020       | Jan. 30, 2021           | Conduction<br>(CO01-CB)  |
| COND Cable                               | Woken           | Cable                | Low<br>cable-CO01   | 9kHz ~ 30MHz        | May 20, 2020        | May 19, 2021            | Conduction<br>(CO01-CB)  |
| Software                                 | SPORTON         | SENSE                | V5.10               | -                   | N.C.R.              | N.C.R.                  | Conduction<br>(CO01-CB)  |
| Loop Antenna                             | Teseq           | HLA 6120             | 24155               | 9kHz - 30 MHz       | Apr. 13, 2020       | Apr. 12, 2021           | Radiation<br>(03CH06-CB) |
| 3m Semi Anechoic<br>Chamber NSA          | TDK             | SAC-3M               | 03CH06-CB           | 30 MHz ~ 1 GHz      | Aug. 10, 2020       | Aug. 09. 2021           | Radiation<br>(03CH06-CB) |
| 3m Semi Anechoic<br>Chamber VSWR         | TDK             | SAC-3M               | 03CH06-CB           | 1GHz ~18GHz<br>3m   | Oct. 02, 2020       | Oct. 01, 2021           | Radiation<br>(03CH06-CB) |
| Bilog Antenna<br>with 6 dB<br>attenuator | TESEQ &<br>EMCI | CBL6112D &<br>N-6-06 | 37878 &<br>AT-N0606 | 20MHz ~ 2GHz        | Aug. 02, 2020       | Aug. 01, 2021           | Radiation<br>(03CH06-CB) |
| Horn Antenna                             | SCHWARZBE<br>CK | BBHA9120D            | BBHA<br>9120D-1292  | 1GHz~18GHz          | Jul. 22, 2020       | Jul. 21, 2021           | Radiation<br>(03CH06-CB) |
| Horn Antenna                             | Schwarzbeck     | BBHA 9170            | BBHA9170252         | 15GHz ~ 40GHz       | Jul. 21, 2020       | Jul. 20, 2021           | Radiation<br>(03CH06-CB) |
| Pre-Amplifier                            | Agilent         | 310N                 | 187290              | 0.1MHz ~ 1GHz       | Nov. 05, 2020       | Nov. 04, 2021           | Radiation<br>(03CH06-CB) |
| Pre-Amplifier                            | Agilent         | 83017A               | MY53270064          | 0.5GHz ~<br>26.5GHz | May 07, 2020        | May 06, 2021            | Radiation<br>(03CH06-CB) |
| Pre-Amplifier                            | MITEQ           | TTA1840-35-H<br>G    | 1864479             | 18GHz ~ 40GHz       | Jul. 08, 2020       | Jul. 07, 2021           | Radiation<br>(03CH06-CB) |
| Spectrum analyzer                        | R&S             | FSP40                | 100080              | 9kHz~40GHz          | Dec. 15, 2020       | Dec. 14, 2021           | Radiation<br>(03CH06-CB) |
| EMI Test Receiver                        | R&S             | ESCS                 | 826547/017          | 9kHz ~ 2.75GHz      | May 13, 2020        | May 12, 2021            | Radiation<br>(03CH06-CB) |
| RF Cable-low                             | Woken           | RG402                | Low<br>Cable-05+24  | 30MHz~1GHz          | Oct. 05, 2020       | Oct. 04, 2021           | Radiation<br>(03CH06-CB) |

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Report Version : 01

| Instrument                       | Brand       | Model No.         | Serial No.          | Characteristics   | Calibration<br>Date        | Calibration<br>Due Date | Remark                   |
|----------------------------------|-------------|-------------------|---------------------|-------------------|----------------------------|-------------------------|--------------------------|
| RF Cable-high                    | Woken       | RG402             | High Cable-05       | 1GHz~18GHz        | Oct. 05, 2020              | Oct. 04, 2021           | Radiation<br>(03CH06-CB) |
| RF Cable-high                    | Woken       | RG402             | High<br>Cable-05+24 | 1GHz~18GHz        | Oct. 05, 2020 Oct. 04, 202 |                         | Radiation<br>(03CH06-CB) |
| RF Cable-high                    | Woken       | RG402             | High<br>Cable-40G#1 | 18GHz ~ 40 GHz    | Jul. 16, 2020              | Jul. 15, 2021           | Radiation<br>(03CH06-CB) |
| RF Cable-high                    | Woken       | RG402             | High<br>Cable-40G#2 | 18GHz ~ 40 GHz    | Jul. 16, 2020              | Jul. 15, 2021           | Radiation<br>(03CH06-CB) |
| Test Software                    | SPORTON     | SENSE             | V5.10               | -                 | N.C.R.                     | N.C.R.                  | Radiation<br>(03CH06-CB) |
| 3m Semi Anechoic<br>Chamber VSWR | TDK         | SAC-3M            | 03CH03-CB           | 1GHz ~18GHz<br>3m | May 28, 2020               | May 27, 2021            | Radiation<br>(03CH03-CB) |
| Horn Antenna                     | COM-POWER   | AH-118            | 071028              | 1GHz ~ 18GHz      | Jun. 09, 2020              | Jun. 08, 2021           | Radiation<br>(03CH03-CB) |
| Horn Antenna                     | Schwarzbeck | BBHA 9170         | BBHA9170252         | 15GHz ~ 40GHz     | Jul. 21, 2020              | Jul. 20, 2021           | Radiation<br>(03CH03-CB) |
| Pre-Amplifier                    | Agilent     | 8449B             | 3008A02097          | 1GHz ~ 26.5GHz    | Jul. 03, 2020              | Jun. 02, 2021           | Radiation<br>(03CH03-CB) |
| Pre-Amplifier                    | MITEQ       | TTA1840-35-H<br>G | 1864479             | 18GHz ~ 40GHz     | Jul. 08, 2020              | Jul. 07, 2021           | Radiation<br>(03CH03-CB) |
| Spectrum Analyzer                | R&S         | FSP40             | 100019              | 9kHz ~ 40GHz      | Jun. 09, 2020              | Jun. 08, 2021           | Radiation<br>(03CH03-CB) |
| RF Cable-high                    | Woken       | RG402             | High<br>Cable-20+29 | 1GHz ~ 18GHz      | Oct. 05, 2020              | Oct. 04, 2021           | Radiation<br>(03CH03-CB) |
| RF Cable-high                    | Woken       | RG402             | High Cable-29       | 1GHz ~ 18GHz      | Oct. 05, 2020 Oct. 04, 20  |                         | Radiation<br>(03CH03-CB) |
| RF Cable-high                    | Woken       | RG402             | High<br>Cable-40G#1 | 18GHz ~ 40 GHz    | Jul. 16, 2020              | Jul. 15, 2021           | Radiation<br>(03CH03-CB) |
| RF Cable-high                    | Woken       | RG402             | High<br>Cable-40G#2 | 18GHz ~ 40 GHz    | Jul. 16, 2020              | Jul. 15, 2021           | Radiation<br>(03CH03-CB) |
| Test Software                    | SPORTON     | SENSE             | V5.10               | -                 | N.C.R.                     | N.C.R.                  | Radiation<br>(03CH03-CB) |
| Spectrum analyzer                | R&S         | FSV40             | 100979              | 9kHz~40GHz        | May 05, 2020               | May 04, 2021            | Conducted<br>(TH01-CB)   |
| RF Cable-high                    | Woken       | RG402             | High Cable-06       | 1 GHz – 26.5 GHz  | Oct. 05, 2020              | Oct. 04, 2021           | Conducted<br>(TH01-CB)   |
| RF Cable-high                    | Woken       | RG402             | High Cable-07       | 1 GHz –26.5 GHz   | Oct. 05, 2020              | Oct. 04, 2021           | Conducted<br>(TH01-CB)   |
| RF Cable-high                    | Woken       | RG402             | High Cable-08       | 1 GHz –26.5 GHz   | Oct. 05, 2020              | Oct. 04, 2021           | Conducted<br>(TH01-CB)   |

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Report Version : 01

| Instrument    | Brand   | Model No. | Serial No.    | Characteristics | Calibration<br>Date         | Calibration<br>Due Date | Remark                 |
|---------------|---------|-----------|---------------|-----------------|-----------------------------|-------------------------|------------------------|
| RF Cable-high | Woken   | RG402     | High Cable-09 | 1 GHz –26.5 GHz | Oct. 05, 2020               | Oct. 04, 2021           | Conducted<br>(TH01-CB) |
| RF Cable-high | Woken   | RG402     | High Cable-10 | 1 GHz –26.5 GHz | Oct. 05, 2020               | Oct. 04, 2021           | Conducted<br>(TH01-CB) |
| RF Cable-high | Woken   | RG402     | High Cable-30 | 1 GHz –26.5 GHz | Oct. 05, 2020               | Oct. 04, 2021           | Conducted<br>(TH01-CB) |
| Power Sensor  | Agilent | E9327A    | US40442088    | 50MHz~18GHz     | Feb. 07, 2020               | Feb. 06, 2021           | Conducted<br>(TH01-CB) |
| Power Meter   | Agilent | E4416A    | GB41291199    | 50MHz~18GHz     | Feb. 07, 2020 Feb. 06, 2021 |                         | Conducted<br>(TH01-CB) |
| Test Software | SPORTON | SENSE     | V5.10         | -               | N.C.R.                      | N.C.R.                  | Conducted<br>(TH01-CB) |

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Note: Calibration Interval of instruments listed above is one year.

NCR means Non-Calibration required.

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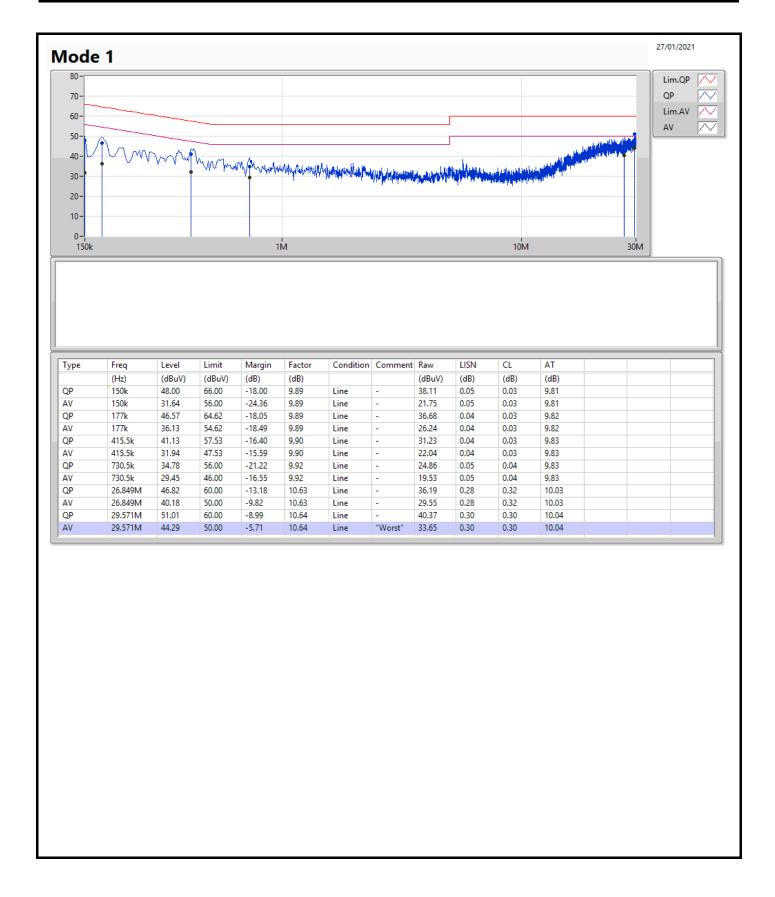
# Conducted Emissions at Powerline

Appendix A

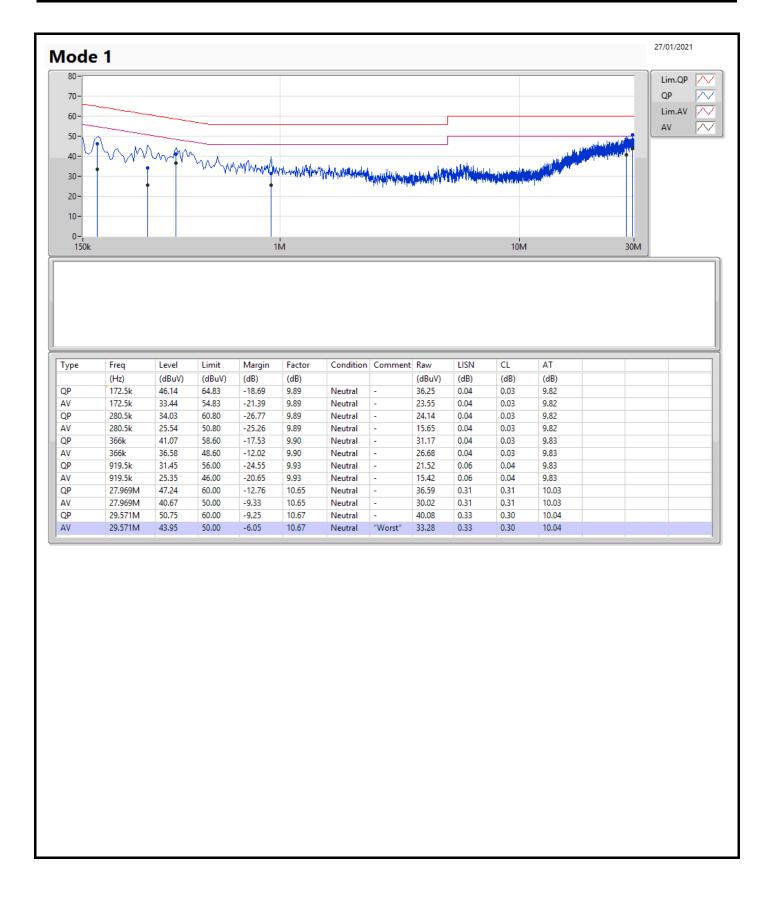
Summary

| Mode   | Result | Туре | Freq<br>(Hz) | Level<br>(dBuV) | Limit<br>(dBuV) | Margin<br>(dB) | Condition |
|--------|--------|------|--------------|-----------------|-----------------|----------------|-----------|
| Mode 1 | Pass   | AV   | 29.571M      | 44.29           | 50.00           | -5.71          | Line      |











**Summary** 

| Mode                           | Max-N dB | Max-OBW | ITU-Code | Min-N dB | Min-OBW |
|--------------------------------|----------|---------|----------|----------|---------|
|                                | (Hz)     | (Hz)    |          | (Hz)     | (Hz)    |
| 2.4-2.4835GHz                  | -        | -       | -        | -        | -       |
| 802.11b_Nss1,(1Mbps)_2TX       | 7.05M    | 10.295M | 10M3G1D  | 6.55M    | 10.22M  |
| 802.11g_Nss1,(6Mbps)_2TX       | 16.35M   | 16.817M | 16M8D1D  | 16.325M  | 16.642M |
| 802.11ax HEW20_Nss1,(MCS0)_2TX | 19M      | 19.065M | 19M1D1D  | 18.95M   | 18.991M |
| 802.11ax HEW40_Nss1,(MCS0)_2TX | 37.55M   | 37.531M | 37M5D1D  | 36.5M    | 37.481M |

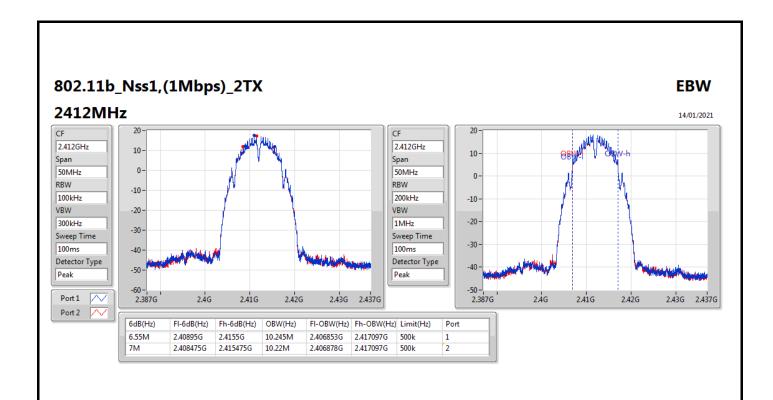
Max-N dB = Maximum 6dB down bandwidth; Max-OBW = Maximum 99% occupied bandwidth; Min-N dB = Minimum 6dB down bandwidth; Min-OBW = Minimum 99% occupied bandwidth;

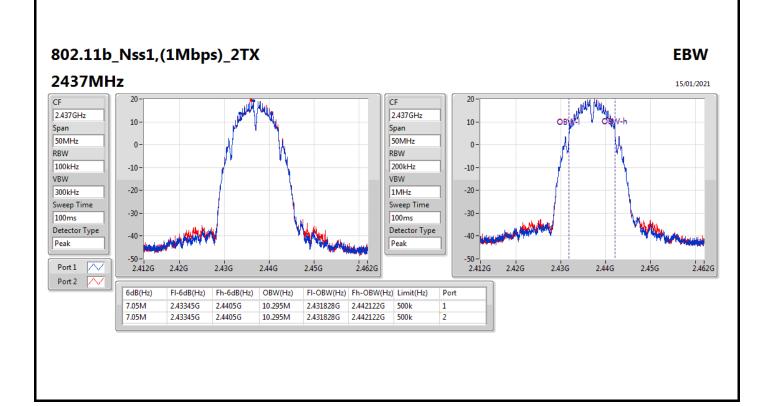


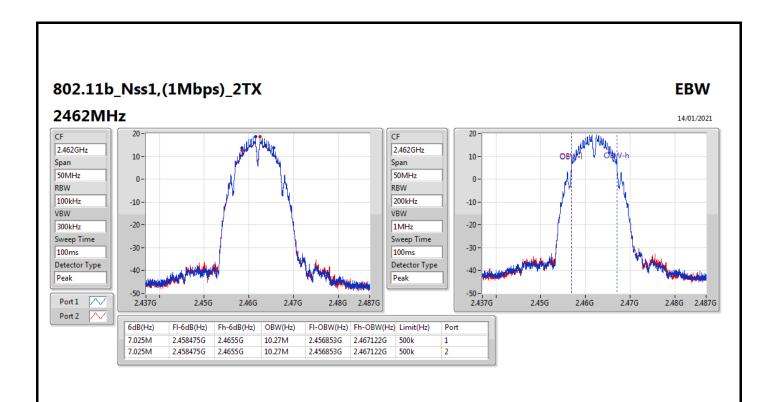
#### Result

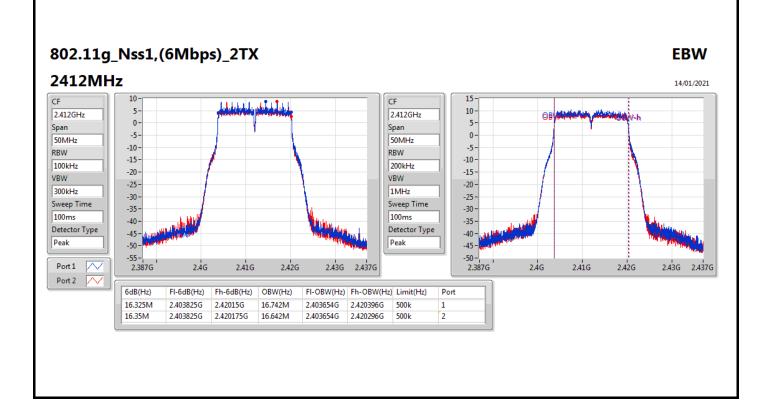
| Mode                           | Result | Limit | Port 1-N dB | Port 1-OBW | Port 2-N dB | Port 2-OBW |
|--------------------------------|--------|-------|-------------|------------|-------------|------------|
|                                |        | (Hz)  | (Hz)        | (Hz)       | (Hz)        | (Hz)       |
| 802.11b_Nss1,(1Mbps)_2TX       | -      | -     | -           | -          | -           | -          |
| 2412MHz                        | Pass   | 500k  | 6.55M       | 10.245M    | 7M          | 10.22M     |
| 2437MHz                        | Pass   | 500k  | 7.05M       | 10.295M    | 7.05M       | 10.295M    |
| 2462MHz                        | Pass   | 500k  | 7.025M      | 10.27M     | 7.025M      | 10.27M     |
| 802.11g_Nss1,(6Mbps)_2TX       | -      | -     | -           | -          | -           | -          |
| 2412MHz                        | Pass   | 500k  | 16.325M     | 16.742M    | 16.35M      | 16.642M    |
| 2437MHz                        | Pass   | 500k  | 16.325M     | 16.817M    | 16.325M     | 16.792M    |
| 2462MHz                        | Pass   | 500k  | 16.35M      | 16.742M    | 16.35M      | 16.667M    |
| 802.11ax HEW20_Nss1,(MCS0)_2TX | -      | -     | -           | -          | -           | -          |
| 2412MHz                        | Pass   | 500k  | 18.975M     | 18.991M    | 19M         | 19.065M    |
| 2437MHz                        | Pass   | 500k  | 18.95M      | 19.015M    | 18.95M      | 19.065M    |
| 2462MHz                        | Pass   | 500k  | 18.95M      | 18.991M    | 18.95M      | 19.065M    |
| 802.11ax HEW40_Nss1,(MCS0)_2TX | -      | -     | -           | -          | -           | -          |
| 2422MHz                        | Pass   | 500k  | 37.55M      | 37.481M    | 36.6M       | 37.481M    |
| 2437MHz                        | Pass   | 500k  | 37.45M      | 37.481M    | 36.5M       | 37.481M    |
| 2452MHz                        | Pass   | 500k  | 37.5M       | 37.531M    | 36.55M      | 37.481M    |

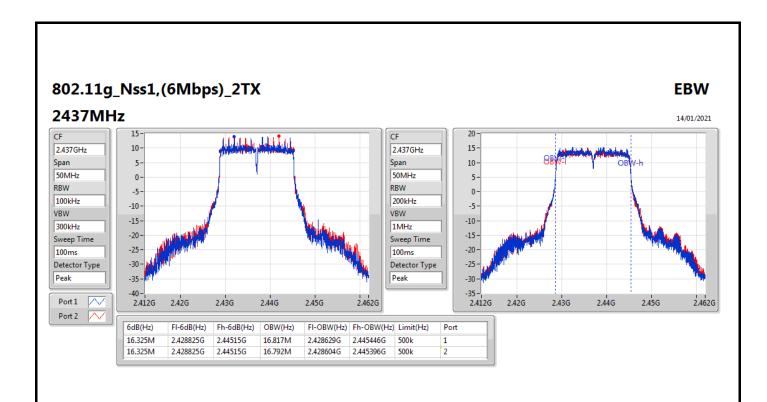
Port X-N dB = Port X 6dB down bandwidth; Port X-OBW = Port X 99% occupied bandwidth;

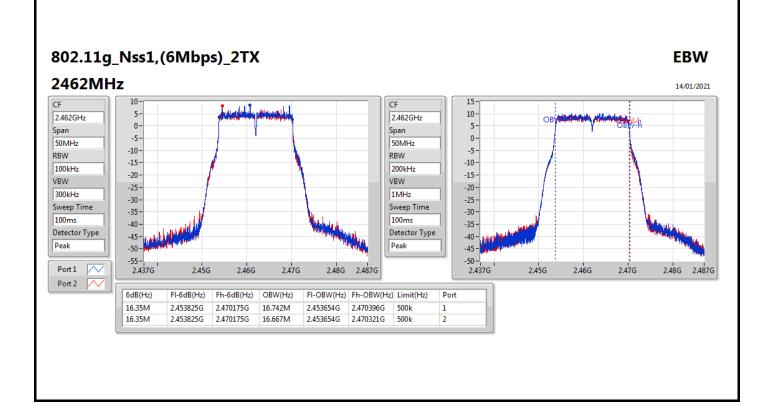


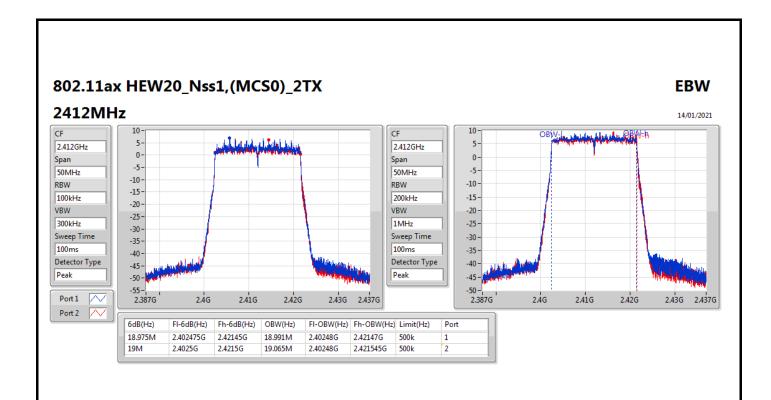


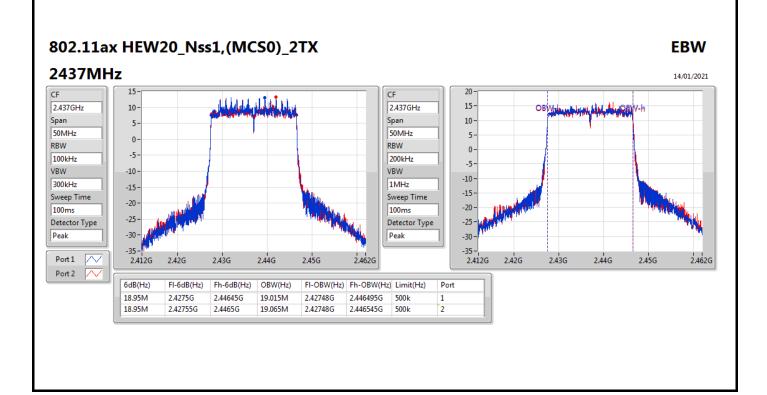


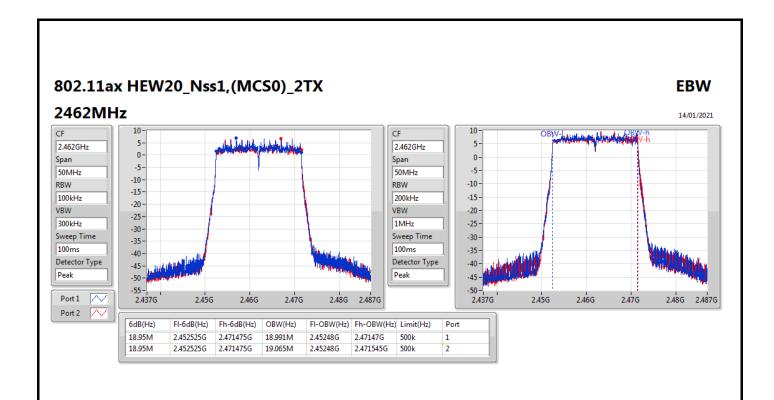


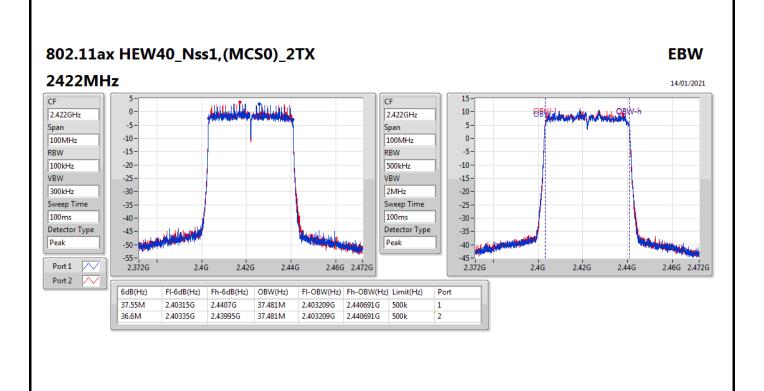


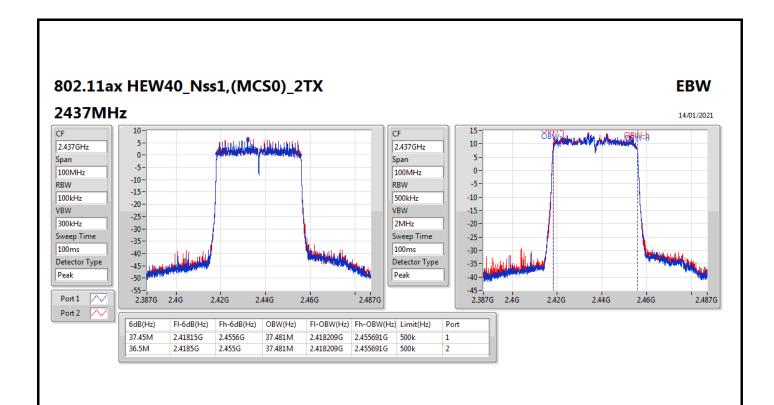


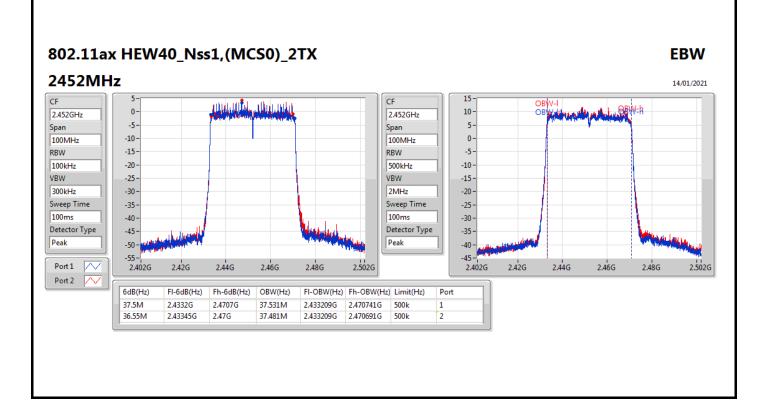














## Average Power\_Non-beamforming mode

Appendix C.1

| Mode                           | Total Power | Total Power |  |  |
|--------------------------------|-------------|-------------|--|--|
|                                | (dBm)       | (W)         |  |  |
| 2.4-2.4835GHz                  | -           | -           |  |  |
| 802.11b_Nss1,(1Mbps)_2TX       | 29.89       | 0.97499     |  |  |
| 802.11g_Nss1,(6Mbps)_2TX       | 28.85       | 0.76736     |  |  |
| 802.11ax HEW20_Nss1,(MCS0)_2TX | 28.32       | 0.67920     |  |  |
| 802.11ax HEW40_Nss1,(MCS0)_2TX | 24.14       | 0.25942     |  |  |

#### Result

| Mode                           | Result | DG    | Port 1 | Port 2 | Total Power | Power Limit |
|--------------------------------|--------|-------|--------|--------|-------------|-------------|
|                                |        | (dBi) | (dBm)  | (dBm)  | (dBm)       | (dBm)       |
| 802.11b_Nss1,(1Mbps)_2TX       | -      | -     | -      | -      | -           | -           |
| 2412MHz                        | Pass   | 5.50  | 25.08  | 25.16  | 28.13       | 30.00       |
| 2437MHz                        | Pass   | 5.50  | 26.85  | 26.91  | 29.89       | 30.00       |
| 2462MHz                        | Pass   | 5.50  | 26.85  | 26.74  | 29.81       | 30.00       |
| 802.11g_Nss1,(6Mbps)_2TX       | -      | -     | -      | -      | -           | -           |
| 2412MHz                        | Pass   | 5.50  | 20.98  | 20.61  | 23.81       | 30.00       |
| 2417MHz                        | Pass   | 5.50  | 21.74  | 21.30  | 24.54       | 30.00       |
| 2437MHz                        | Pass   | 5.50  | 25.81  | 25.87  | 28.85       | 30.00       |
| 2457MHz                        | Pass   | 5.50  | 22.18  | 22.27  | 25.24       | 30.00       |
| 2462MHz                        | Pass   | 5.50  | 20.75  | 20.75  | 23.76       | 30.00       |
| 802.11ax HEW20_Nss1,(MCS0)_2TX | -      | •     | -      | •      | -           | -           |
| 2412MHz                        | Pass   | 5.50  | 19.15  | 18.77  | 21.97       | 30.00       |
| 2417MHz                        | Pass   | 5.50  | 21.08  | 20.72  | 23.91       | 30.00       |
| 2437MHz                        | Pass   | 5.50  | 25.21  | 25.40  | 28.32       | 30.00       |
| 2457MHz                        | Pass   | 5.50  | 19.77  | 19.64  | 22.72       | 30.00       |
| 2462MHz                        | Pass   | 5.50  | 19.29  | 19.08  | 22.20       | 30.00       |
| 802.11ax HEW40_Nss1,(MCS0)_2TX | -      | •     | •      | •      | =           | -           |
| 2422MHz                        | Pass   | 5.50  | 17.58  | 17.83  | 20.72       | 30.00       |
| 2427MHz                        | Pass   | 5.50  | 18.23  | 18.69  | 21.48       | 30.00       |
| 2437MHz                        | Pass   | 5.50  | 20.88  | 21.36  | 24.14       | 30.00       |
| 2452MHz                        | Pass   | 5.50  | 18.40  | 18.93  | 21.68       | 30.00       |

**DG** = Directional Gain; **Port X** = Port X output power



## Average Power\_beamforming mode

Appendix C.2

| Mode                              | Total Power<br>(dBm) | Total Power<br>(W) |
|-----------------------------------|----------------------|--------------------|
| 2.4-2.4835GHz                     | -                    | -                  |
| 802.11ax HEW20-BF_Nss1,(MCS0)_2TX | 27.32                | 0.53951            |
| 802.11ax HEW40-BF_Nss1,(MCS0)_2TX | 24.14                | 0.25942            |

#### Result

| Mode                              | Result | DG    | Port 1 | Port 2 | Total Power | Power Limit |
|-----------------------------------|--------|-------|--------|--------|-------------|-------------|
|                                   |        | (dBi) | (dBm)  | (dBm)  | (dBm)       | (dBm)       |
| 802.11ax HEW20-BF_Nss1,(MCS0)_2TX | -      | -     | -      | -      | -           | -           |
| 2412MHz                           | Pass   | 8.51  | 19.15  | 18.77  | 21.97       | 27.49       |
| 2417MHz                           | Pass   | 8.51  | 21.08  | 20.72  | 23.91       | 27.49       |
| 2437MHz                           | Pass   | 8.51  | 24.21  | 24.40  | 27.32       | 27.49       |
| 2457MHz                           | Pass   | 8.51  | 19.77  | 19.64  | 22.72       | 27.49       |
| 2462MHz                           | Pass   | 8.51  | 19.29  | 19.08  | 22.20       | 27.49       |
| 802.11ax HEW40-BF_Nss1,(MCS0)_2TX | -      | -     | -      | -      | -           | -           |
| 2422MHz                           | Pass   | 8.51  | 17.58  | 17.83  | 20.72       | 27.49       |
| 2427MHz                           | Pass   | 8.51  | 18.23  | 18.69  | 21.48       | 27.49       |
| 2437MHz                           | Pass   | 8.51  | 20.88  | 21.36  | 24.14       | 27.49       |
| 2452MHz                           | Pass   | 8.51  | 18.40  | 18.93  | 21.68       | 27.49       |

**DG** = Directional Gain; **Port X** = Port X output power



**Summary** 

| Mode                           | PD        |  |  |  |  |  |
|--------------------------------|-----------|--|--|--|--|--|
|                                | (dBm/RBW) |  |  |  |  |  |
| 2.4-2.4835GHz                  | ·         |  |  |  |  |  |
| 802.11b_Nss1,(1Mbps)_2TX       | -0.69     |  |  |  |  |  |
| 802.11g_Nss1,(6Mbps)_2TX       | 3.48      |  |  |  |  |  |
| 802.11ax HEW20_Nss1,(MCS0)_2TX | 3.25      |  |  |  |  |  |
| 802.11ax HEW40_Nss1,(MCS0)_2TX | -5.53     |  |  |  |  |  |

**RBW** = 500 kHz for 5.725-5.85GHz band / 1MHz for other band;

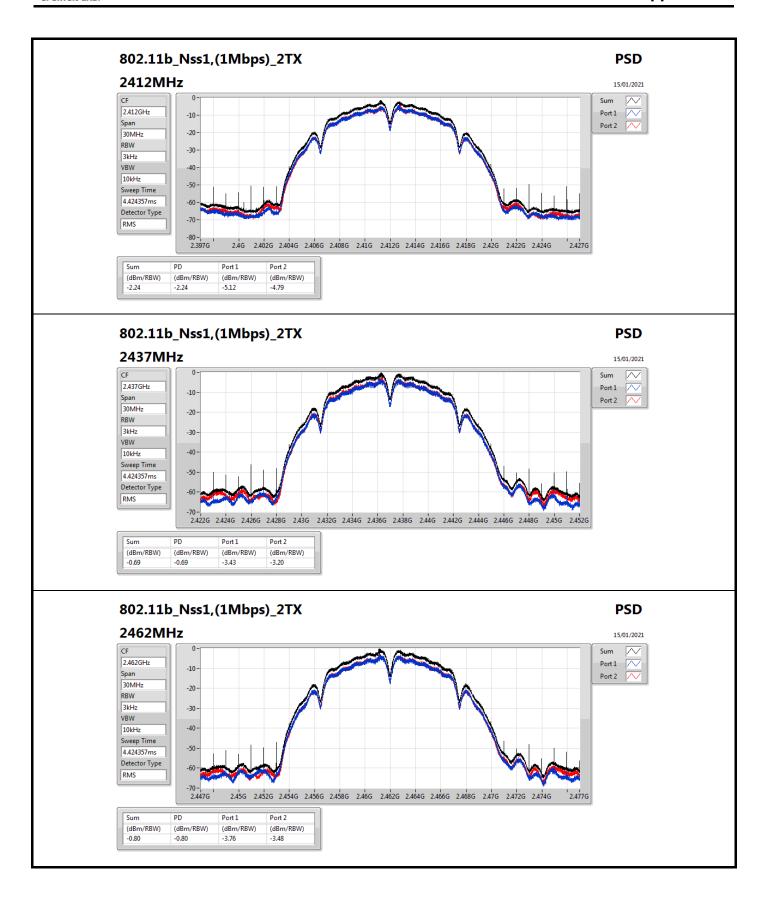


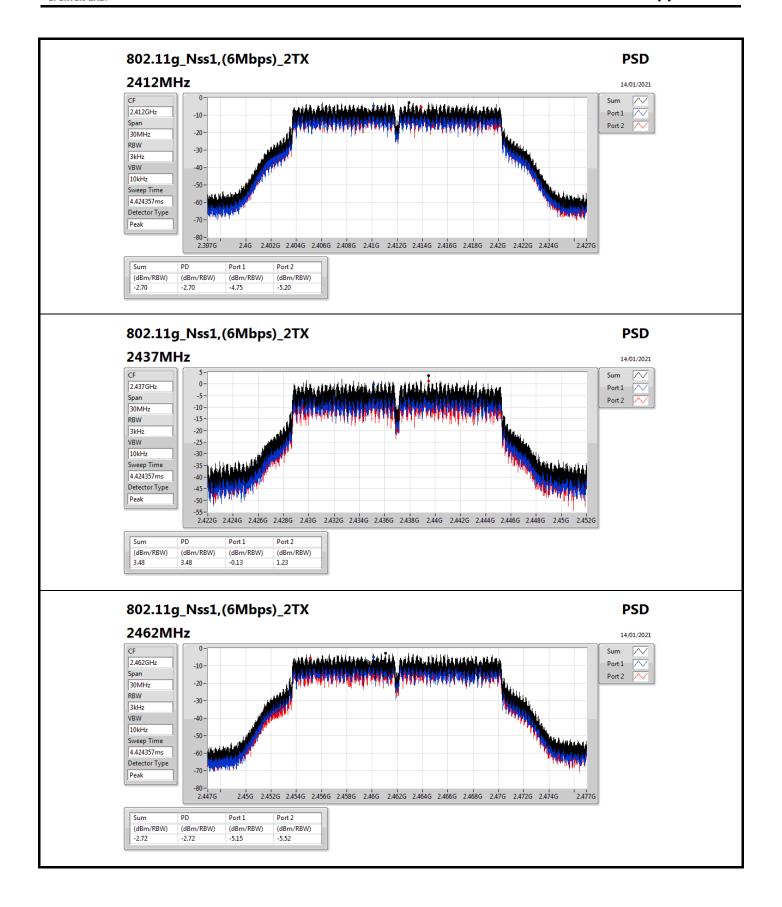
Appendix D **PSD** 

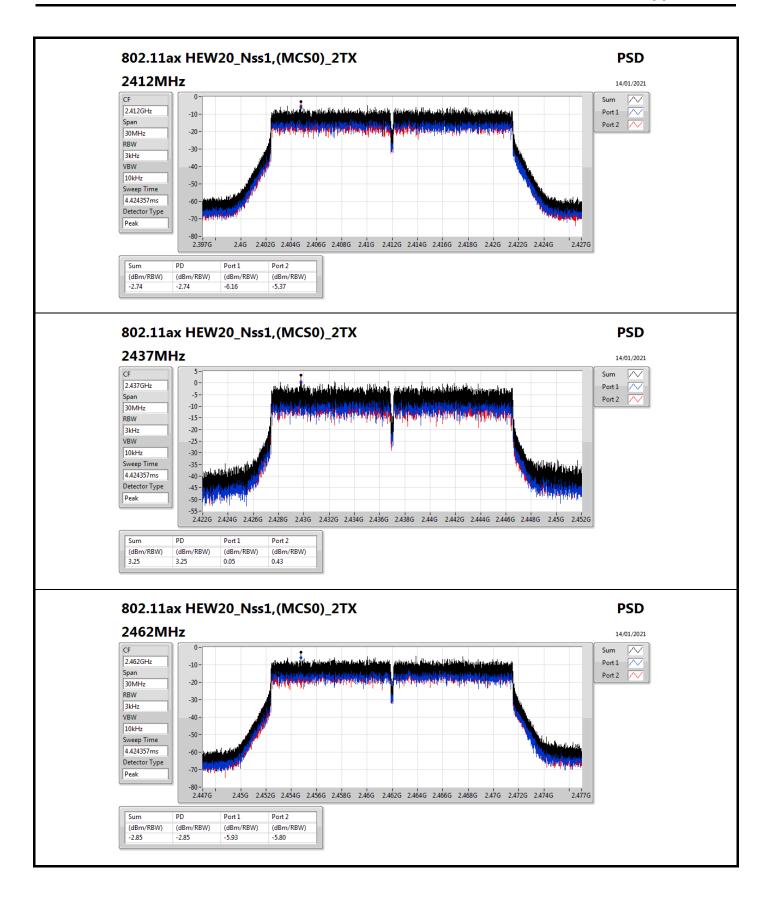
#### Result

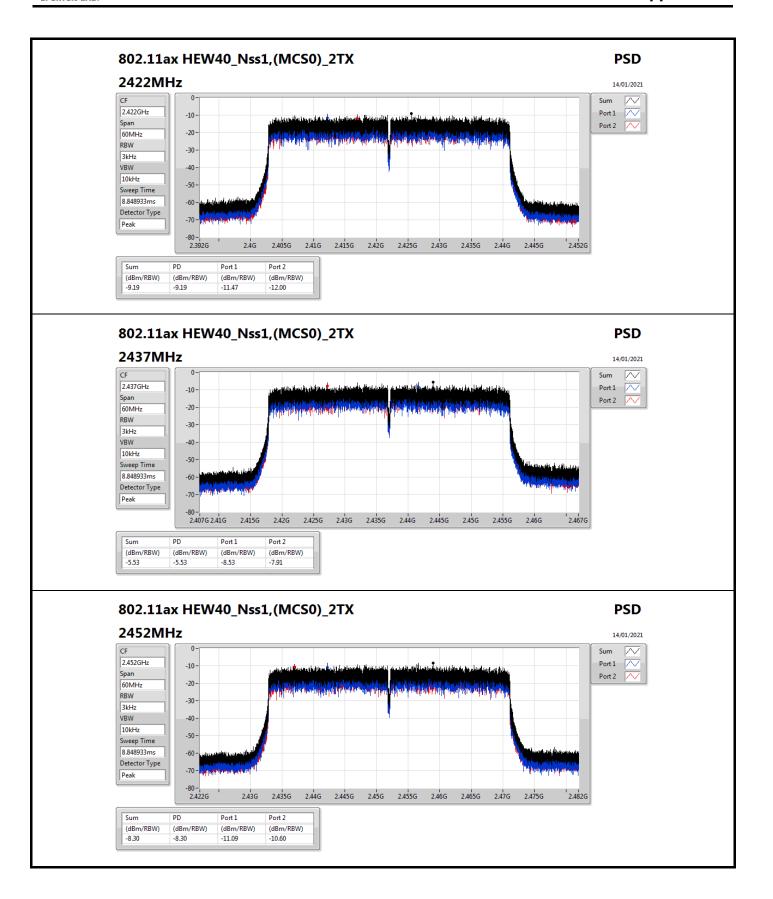
| Mode                           | Result | DG    | Port 1    | Port 2    | PD        | PD Limit  |
|--------------------------------|--------|-------|-----------|-----------|-----------|-----------|
|                                |        | (dBi) | (dBm/RBW) | (dBm/RBW) | (dBm/RBW) | (dBm/RBW) |
| 802.11b_Nss1,(1Mbps)_2TX       | -      | -     | -         | -         | -         | -         |
| 2412MHz                        | Pass   | 8.51  | -5.12     | -4.79     | -2.24     | 5.49      |
| 2437MHz                        | Pass   | 8.51  | -3.43     | -3.20     | -0.69     | 5.49      |
| 2462MHz                        | Pass   | 8.51  | -3.76     | -3.48     | -0.80     | 5.49      |
| 802.11g_Nss1,(6Mbps)_2TX       | -      | -     | -         | -         | -         | -         |
| 2412MHz                        | Pass   | 8.51  | -4.75     | -5.20     | -2.70     | 5.49      |
| 2437MHz                        | Pass   | 8.51  | -0.13     | 1.23      | 3.48      | 5.49      |
| 2462MHz                        | Pass   | 8.51  | -5.15     | -5.52     | -2.72     | 5.49      |
| 802.11ax HEW20_Nss1,(MCS0)_2TX | -      | -     | -         | -         | -         | -         |
| 2412MHz                        | Pass   | 8.51  | -6.16     | -5.37     | -2.74     | 5.49      |
| 2437MHz                        | Pass   | 8.51  | 0.05      | 0.43      | 3.25      | 5.49      |
| 2462MHz                        | Pass   | 8.51  | -5.93     | -5.80     | -2.85     | 5.49      |
| 802.11ax HEW40_Nss1,(MCS0)_2TX | -      | -     | -         | -         | -         | -         |
| 2422MHz                        | Pass   | 8.51  | -11.47    | -12.00    | -9.19     | 5.49      |
| 2437MHz                        | Pass   | 8.51  | -8.53     | -7.91     | -5.53     | 5.49      |
| 2452MHz                        | Pass   | 8.51  | -11.09    | -10.60    | -8.30     | 5.49      |

DG = Directional Gain; RBW = 500 kHz for 5.725-5.85GHz band / 1MHz for other band;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X power density;











## CSE(Non-restricted Band)

Appendix E

|                                |        |          |       |        |          |        | ı        |        |      |        | ı        |        |           |        |      |
|--------------------------------|--------|----------|-------|--------|----------|--------|----------|--------|------|--------|----------|--------|-----------|--------|------|
| Mode                           | Result | Ref      | Ref   | Limit  | Freq     | Level  | Freq     | Level  | Freq | Level  | Freq     | Level  | Freq      | Level  | Port |
|                                |        | (Hz)     | (dBm) | (dBm)  | (Hz)     | (dBm)  | (Hz)     | (dBm)  | (Hz) | (dBm)  | (Hz)     | (dBm)  | (Hz)      | (dBm)  |      |
| 2.4-2.4835GHz                  | -      |          |       | -      | +        |        | -        |        |      |        | -        | -      |           | ,      | -    |
| 802.11b_Nss1,(1Mbps)_2TX       | Pass   | 2.43749G | 19.33 | -10.67 | 2.30059G | -50.08 | 2.398G   | -38.94 | 2.4G | -44.66 | 2.48372G | -48.84 | 7.23514G  | -43.88 | 2    |
| 802.11g_Nss1,(6Mbps)_2TX       | Pass   | 2.44196G | 14.11 | -15.89 | 2.30641G | -51.36 | 2.4G     | -35.08 | 2.4G | -37.68 | 2.4877G  | -50.12 | 17.61647G | -46.34 | 2    |
| 802.11ax HEW20_Nss1,(MCS0)_2TX | Pass   | 2.43945G | 13.60 | -16.40 | 2.30525G | -52.19 | 2.39998G | -37.49 | 2.4G | -38.60 | 2.48932G | -49.94 | 16.45893G | -46.48 | 1    |
| 802.11ax HEW40_Nss1,(MCS0)_2TX | Pass   | 2.43198G | 7.02  | -22.98 | 2.30197G | -49.38 | 2.39952G | -40.47 | 2.4G | -45.12 | 2.48566G | -44.45 | 16.49657G | -46.23 | 2    |



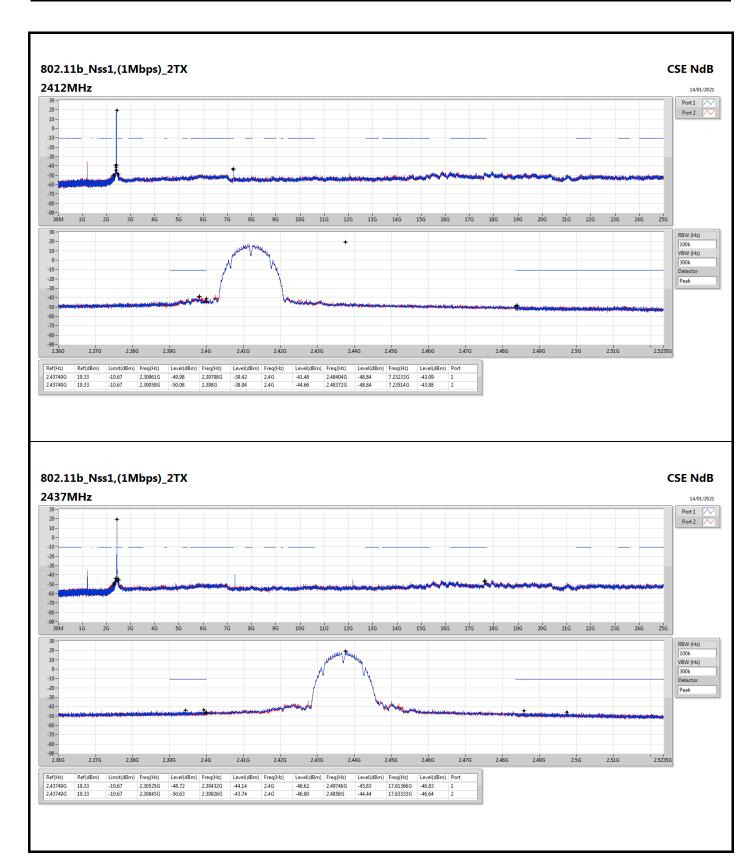
## CSE(Non-restricted Band)

# Appendix E

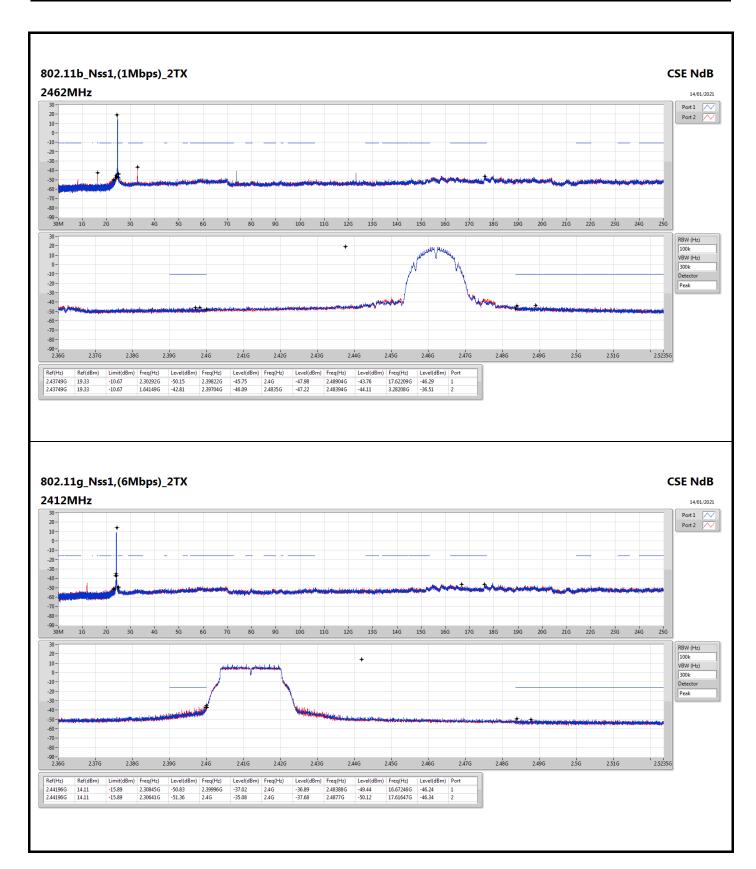
#### Result

| Mode                           | Result | Ref      | Ref   | Limit  | Freq     | Level  | Freq     | Level  | Freq    | Level  | Freq     | Level  | Freq      | Level  | Port |
|--------------------------------|--------|----------|-------|--------|----------|--------|----------|--------|---------|--------|----------|--------|-----------|--------|------|
|                                |        | (Hz)     | (dBm) | (dBm)  | (Hz)     | (dBm)  | (Hz)     | (dBm)  | (Hz)    | (dBm)  | (Hz)     | (dBm)  | (Hz)      | (dBm)  |      |
| 802.11b_Nss1,(1Mbps)_2TX       | -      | -        |       | -      | -        |        | -        | -      | -       | -      | -        |        | -         | -      | -    |
| 2412MHz                        | Pass   | 2.43749G | 19.33 | -10.67 | 2.30961G | -49.98 | 2.39798G | -39.42 | 2.4G    | -41.48 | 2.48404G | -48.84 | 7.23233G  | -43.09 | 1    |
| 2412MHz                        | Pass   | 2.43749G | 19.33 | -10.67 | 2.30059G | -50.08 | 2.398G   | -38.94 | 2.4G    | -44.66 | 2.48372G | -48.84 | 7.23514G  | -43.88 | 2    |
| 2437MHz                        | Pass   | 2.43749G | 19.33 | -10.67 | 2.30525G | -48.72 | 2.39432G | -44.14 | 2.4G    | -46.62 | 2.49746G | -45.83 | 17.61366G | -46.83 | 1    |
| 2437MHz                        | Pass   | 2.43749G | 19.33 | -10.67 | 2.30845G | -50.63 | 2.39926G | -43.74 | 2.4G    | -46.80 | 2.4858G  | -44.44 | 17.63333G | -46.64 | 2    |
| 2462MHz                        | Pass   | 2.43749G | 19.33 | -10.67 | 2.30292G | -50.15 | 2.39822G | -45.75 | 2.4G    | -47.98 | 2.48904G | -43.76 | 17.62209G | -46.29 | 1    |
| 2462MHz                        | Pass   | 2.43749G | 19.33 | -10.67 | 1.64149G | -42.81 | 2.39704G | -46.09 | 2.4835G | -47.22 | 2.48394G | -44.11 | 3.28208G  | -36.51 | 2    |
| 802.11g_Nss1,(6Mbps)_2TX       | -      | -        | -     | -      | -        | -      | -        | -      |         | -      | -        | -      | -         | -      | -    |
| 2412MHz                        | Pass   | 2.44196G | 14.11 | -15.89 | 2.30845G | -50.83 | 2.39996G | -37.02 | 2.4G    | -36.89 | 2.48388G | -49.44 | 16.67246G | -46.24 | 1    |
| 2412MHz                        | Pass   | 2.44196G | 14.11 | -15.89 | 2.30641G | -51.36 | 2.4G     | -35.08 | 2.4G    | -37.68 | 2.4877G  | -50.12 | 17.61647G | -46.34 | 2    |
| 2437MHz                        | Pass   | 2.44196G | 14.11 | -15.89 | 2.30495G | -50.33 | 2.395G   | -39.34 | 2.4G    | -44.29 | 2.48452G | -45.15 | 16.24821G | -46.33 | 1    |
| 2437MHz                        | Pass   | 2.44196G | 14.11 | -15.89 | 2.18001G | -50.60 | 2.39822G | -36.16 | 2.4G    | -39.75 | 2.48632G | -44.02 | 16.29878G | -46.62 | 2    |
| 2462MHz                        | Pass   | 2.44196G | 14.11 | -15.89 | 2.30088G | -53.42 | 2.3958G  | -48.38 | 2.4835G | -44.34 | 2.4841G  | -44.66 | 17.62771G | -46.70 | 1    |
| 2462MHz                        | Pass   | 2.44196G | 14.11 | -15.89 | 2.30641G | -51.82 | 2.39418G | -49.42 | 2.4835G | -47.18 | 2.4842G  | -42.84 | 3.28208G  | -33.98 | 2    |
| 802.11ax HEW20_Nss1,(MCS0)_2TX |        | -        | -     | -      | -        | -      | -        | -      | -       | -      | -        | -      | -         | -      | -    |
| 2412MHz                        | Pass   | 2.43945G | 13.60 | -16.40 | 2.30525G | -52.19 | 2.39998G | -37.49 | 2.4G    | -38.60 | 2.48932G | -49.94 | 16.45893G | -46.48 | 1    |
| 2412MHz                        | Pass   | 2.43945G | 13.60 | -16.40 | 2.30029G | -51.32 | 2.39996G | -39.33 | 2.4G    | -39.85 | 2.4975G  | -49.76 | 17.62209G | -45.37 | 2    |
| 2437MHz                        | Pass   | 2.43945G | 13.60 | -16.40 | 2.30466G | -49.77 | 2.39448G | -40.80 | 2.4G    | -43.22 | 2.48384G | -41.59 | 17.67828G | -46.70 | 1    |
| 2437MHz                        | Pass   | 2.43945G | 13.60 | -16.40 | 2.30816G | -49.43 | 2.39978G | -39.04 | 2.4G    | -39.78 | 2.48384G | -43.17 | 16.2145G  | -46.29 | 2    |
| 2462MHz                        | Pass   | 2.43945G | 13.60 | -16.40 | 2.30612G | -53.31 | 2.39976G | -49.08 | 2.4835G | -46.86 | 2.48382G | -42.68 | 17.61647G | -46.74 | 1    |
| 2462MHz                        | Pass   | 2.43945G | 13.60 | -16.40 | 2.30204G | -52.60 | 2.3962G  | -49.84 | 2.4835G | -47.22 | 2.4838G  | -43.03 | 3.28208G  | -34.23 | 2    |
| 802.11ax HEW40_Nss1,(MCS0)_2TX |        | -        | -     | -      | -        | -      | -        | -      | -       | -      | -        | -      | -         | -      | -    |
| 2422MHz                        | Pass   | 2.43198G | 7.02  | -22.98 | 2.30168G | -50.58 | 2.3958G  | -44.19 | 2.4G    | -46.11 | 2.48798G | -49.97 | 17.63802G | -46.45 | 1    |
| 2422MHz                        | Pass   | 2.43198G | 7.02  | -22.98 | 2.30798G | -51.09 | 2.39824G | -42.34 | 2.4G    | -45.35 | 2.49738G | -49.82 | 17.60156G | -46.68 | 2    |
| 2437MHz                        | Pass   | 2.43198G | 7.02  | -22.98 | 2.30741G | -50.28 | 2.39952G | -42.02 | 2.4G    | -44.87 | 2.48562G | -45.76 | 16.46572G | -46.65 | 1    |
| 2437MHz                        | Pass   | 2.43198G | 7.02  | -22.98 | 2.30197G | -49.38 | 2.39952G | -40.47 | 2.4G    | -45.12 | 2.48566G | -44.45 | 16.49657G | -46.23 | 2    |
| 2452MHz                        | Pass   | 2.43198G | 7.02  | -22.98 | 2.30197G | -52.49 | 2.39504G | -48.94 | 2.4835G | -46.03 | 2.48794G | -44.91 | 17.66887G | -46.23 | 1    |
| 2452MHz                        | Pass   | 2.43198G | 7.02  | -22.98 | 2.30054G | -50.60 | 2.39108G | -48.09 | 2.4835G | -45.73 | 2.48946G | -42.33 | 3.26745G  | -33.31 | 2    |

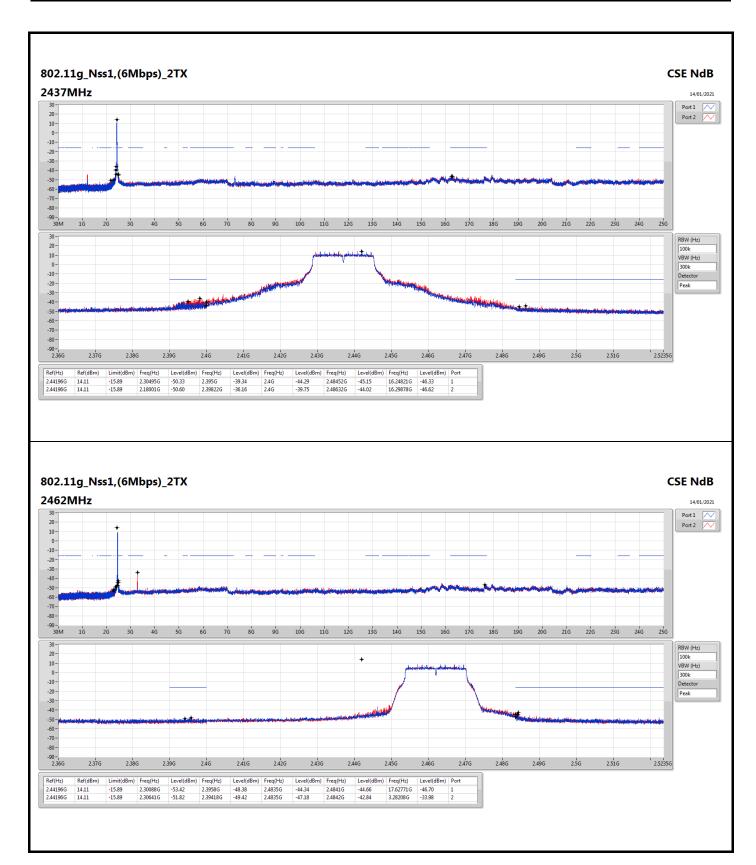




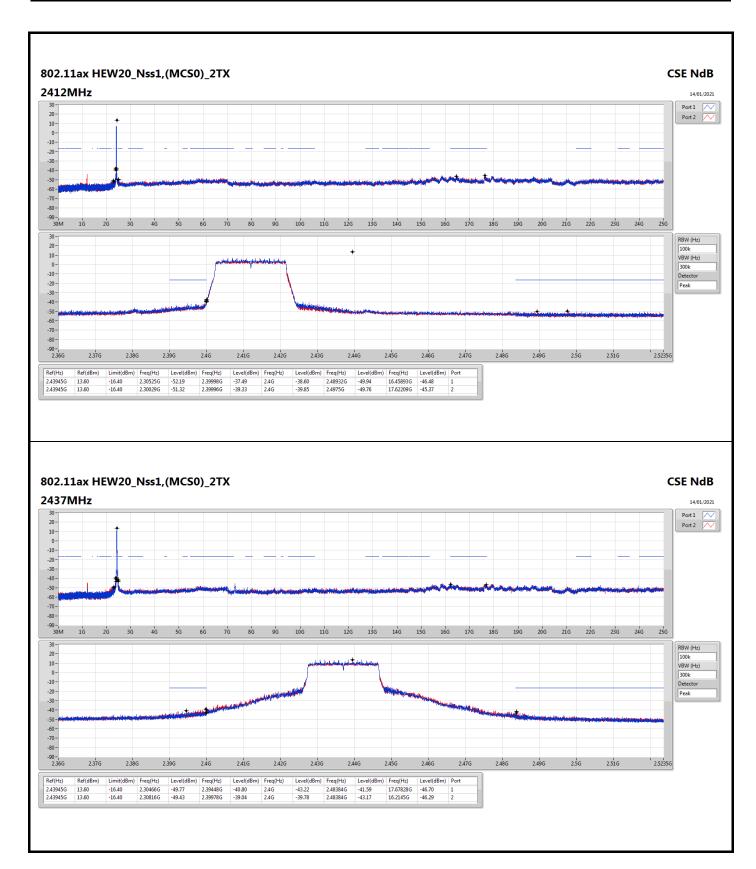




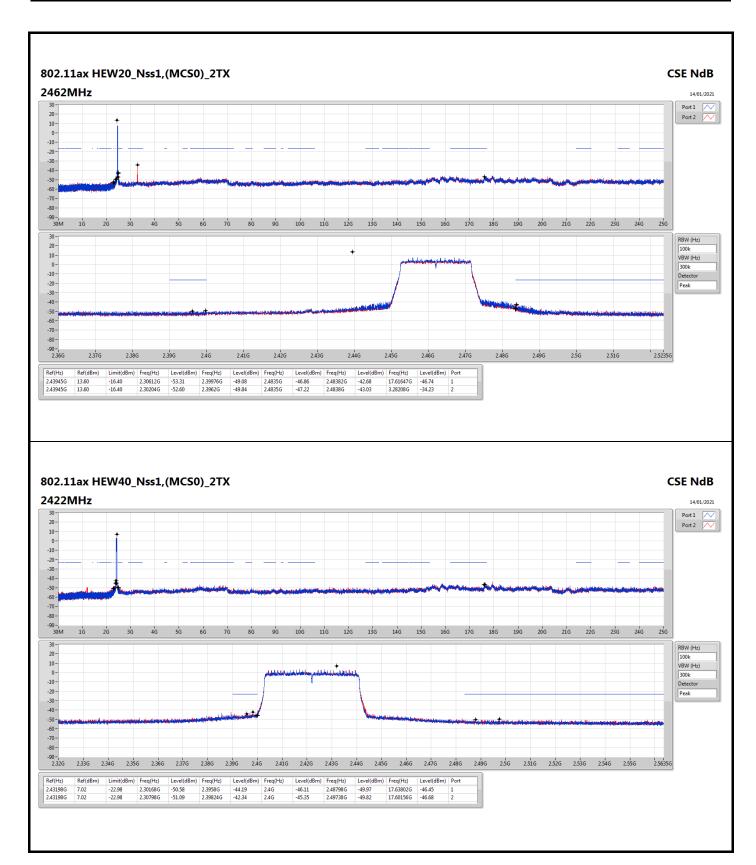




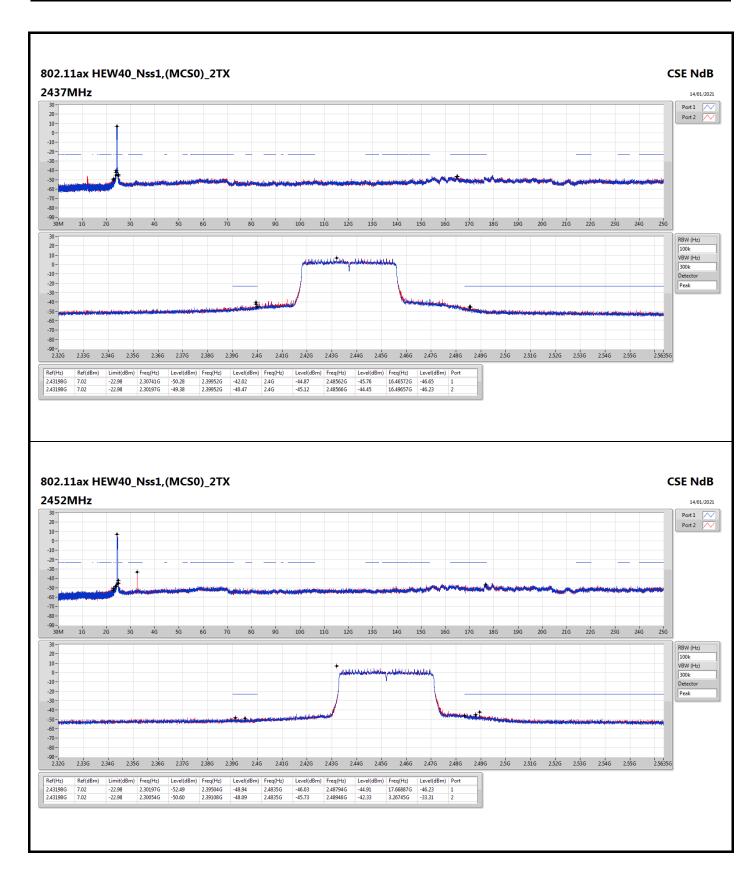












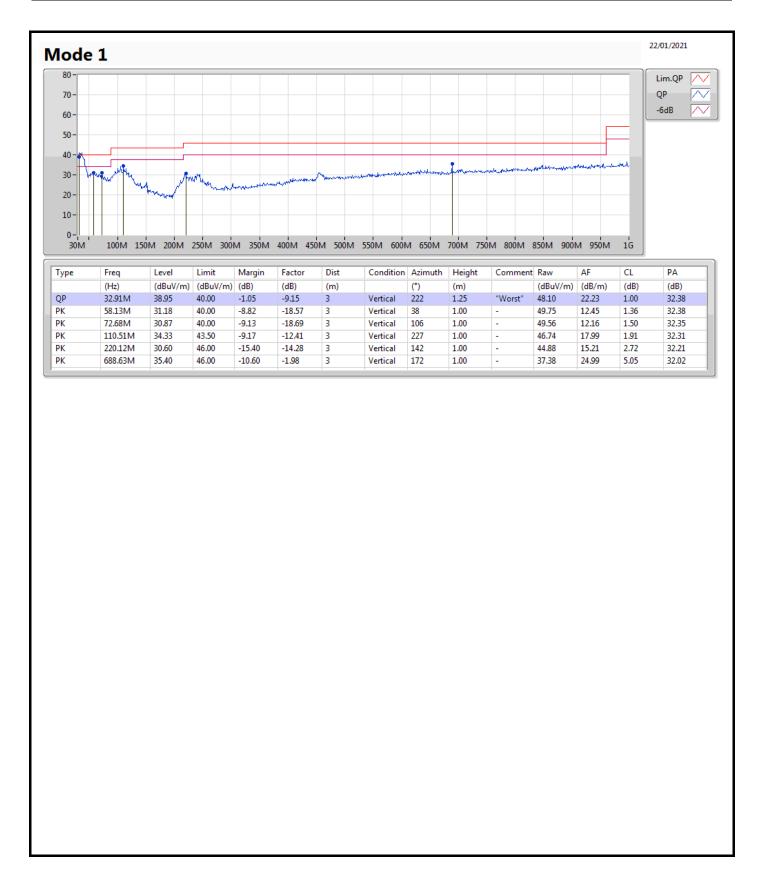


## Radiated Emissions below 1GHz

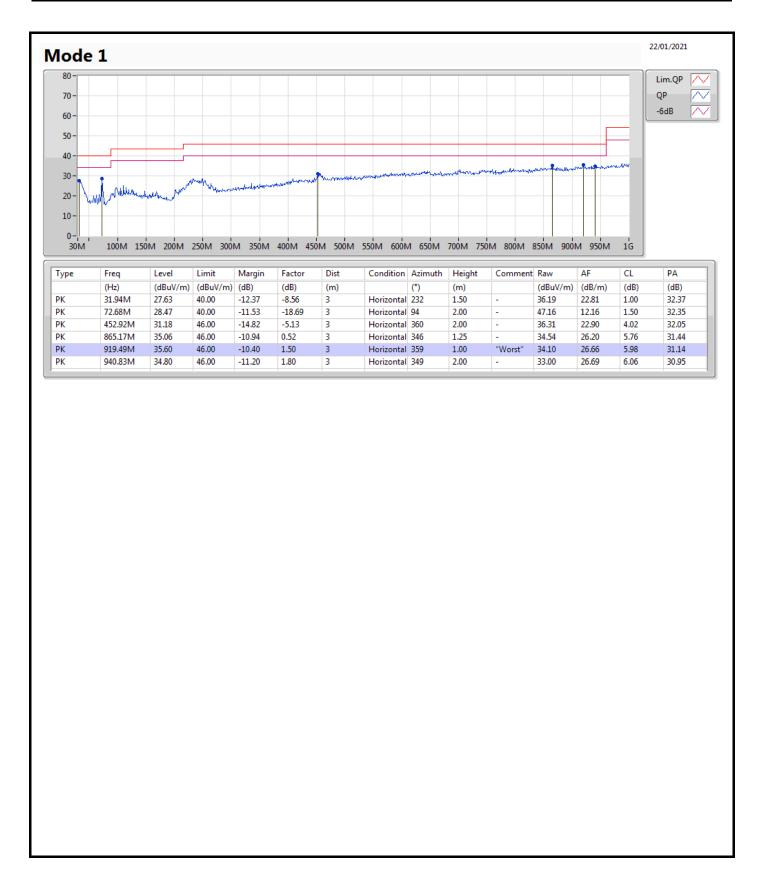
Appendix F.1

| Mode   | Result | Туре | Freq<br>(Hz) | Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Condition |
|--------|--------|------|--------------|-------------------|-------------------|----------------|-----------|
| Mode 1 | Pass   | QP   | 32.91M       | 38.95             | 40.00             | -1.05          | Vertical  |











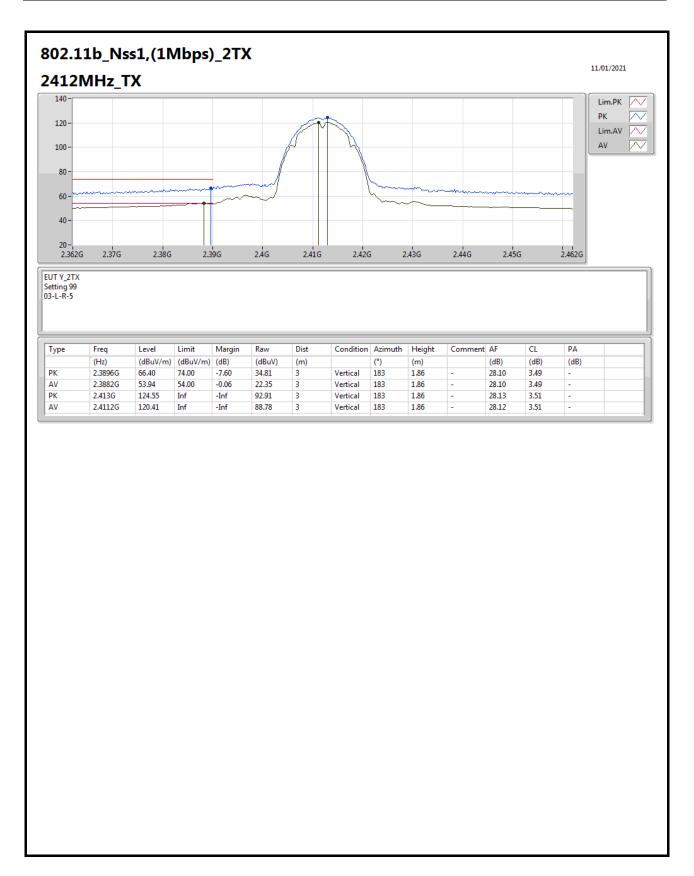
#### RSE TX above 1GHz

Appendix F.2

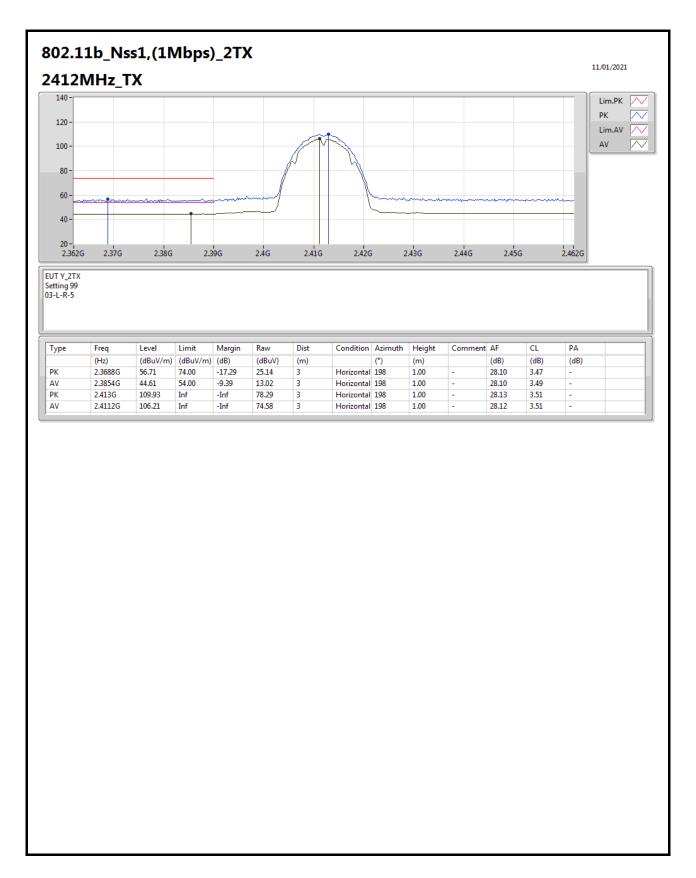
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| Mode                     | Result | Туре | Freq   | Level    | Limit    | Margin | Dist | Condition | Azimuth | Height | Comments |
|--------------------------|--------|------|--------|----------|----------|--------|------|-----------|---------|--------|----------|
|                          |        |      | (Hz)   | (dBuV/m) | (dBuV/m) | (dB)   | (m)  |           | (°)     | (m)    |          |
| 2.4-2.4835GHz            | -      | -    | -      | -        | -        | -      | -    | -         | -       | -      | -        |
| 802.11g_Nss1,(6Mbps)_2TX | Pass   | PK   | 2.389G | 73.99    | 74.00    | -0.01  | 3    | Vertical  | 180     | 1.95   | -        |

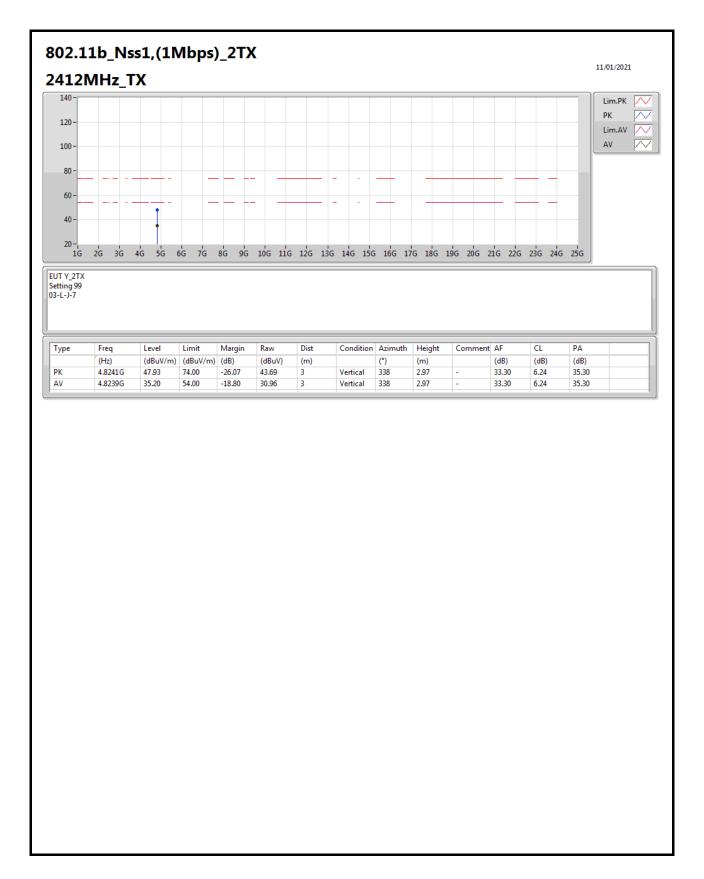




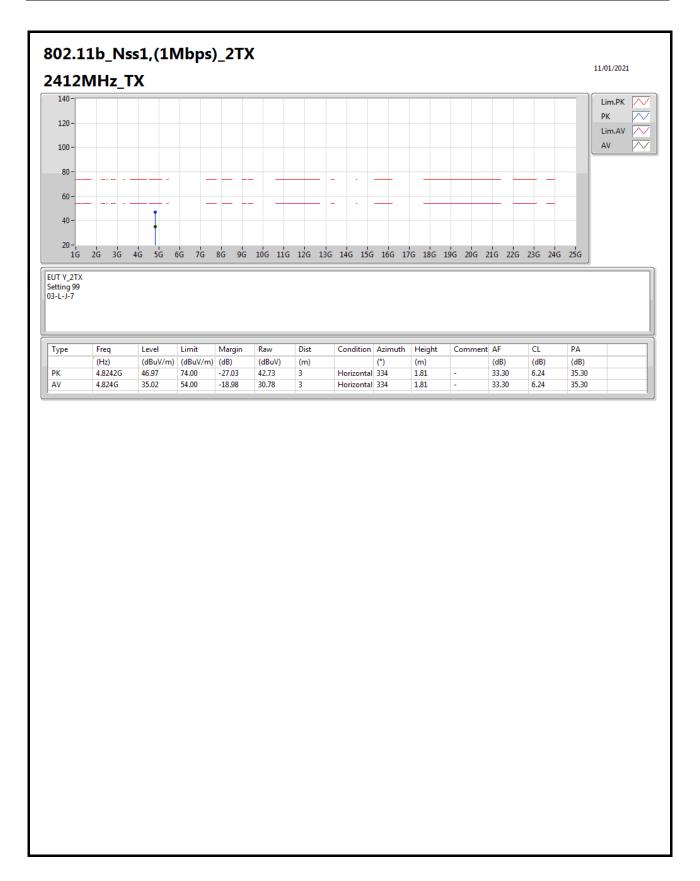




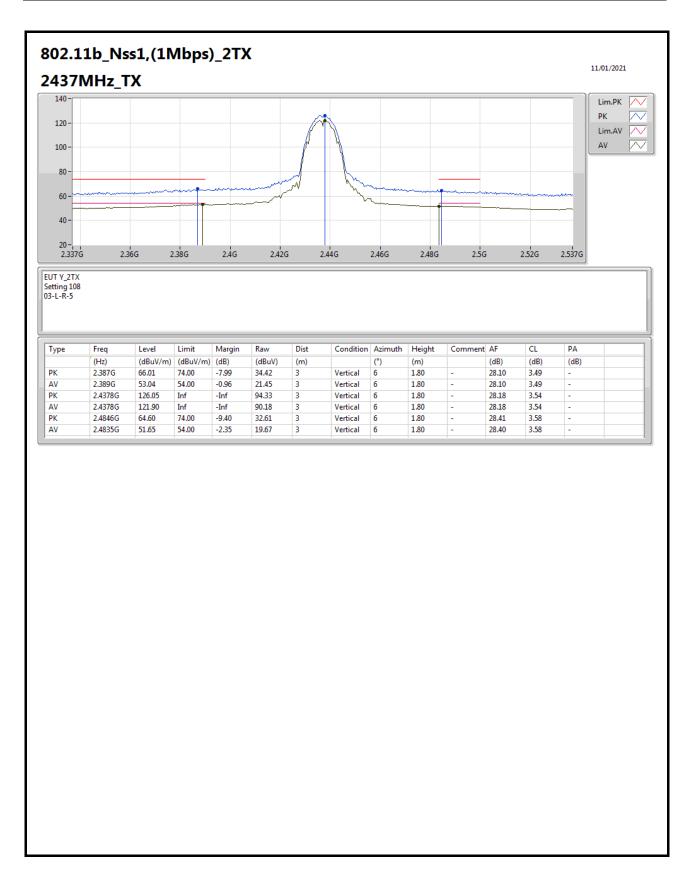


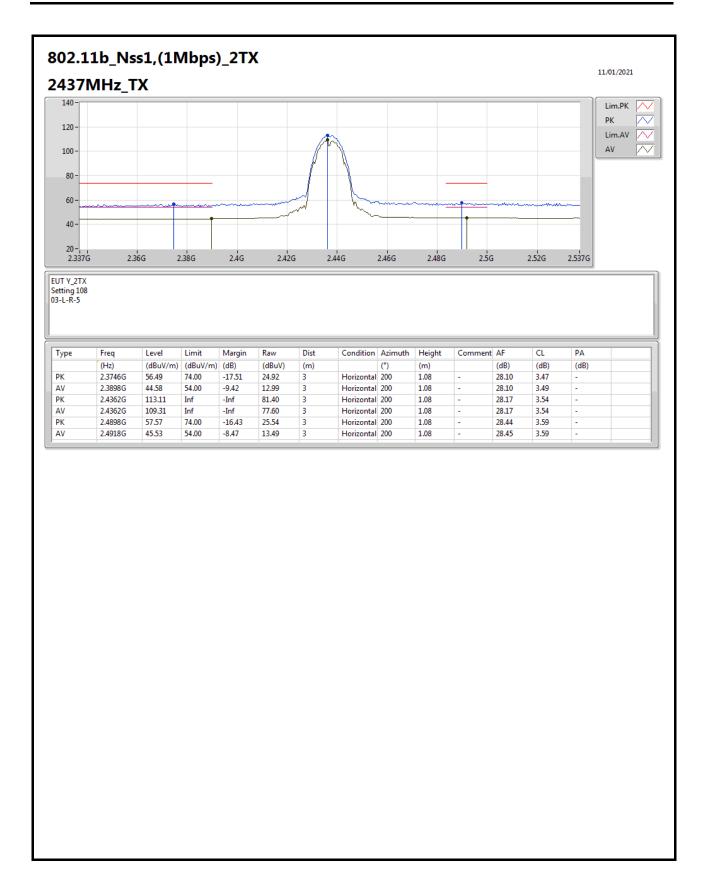




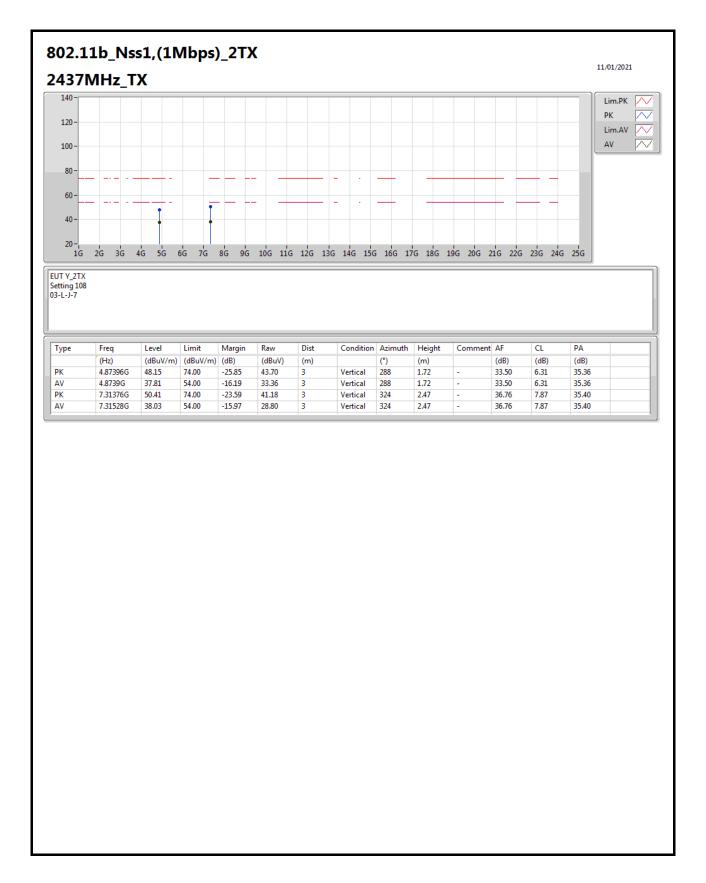




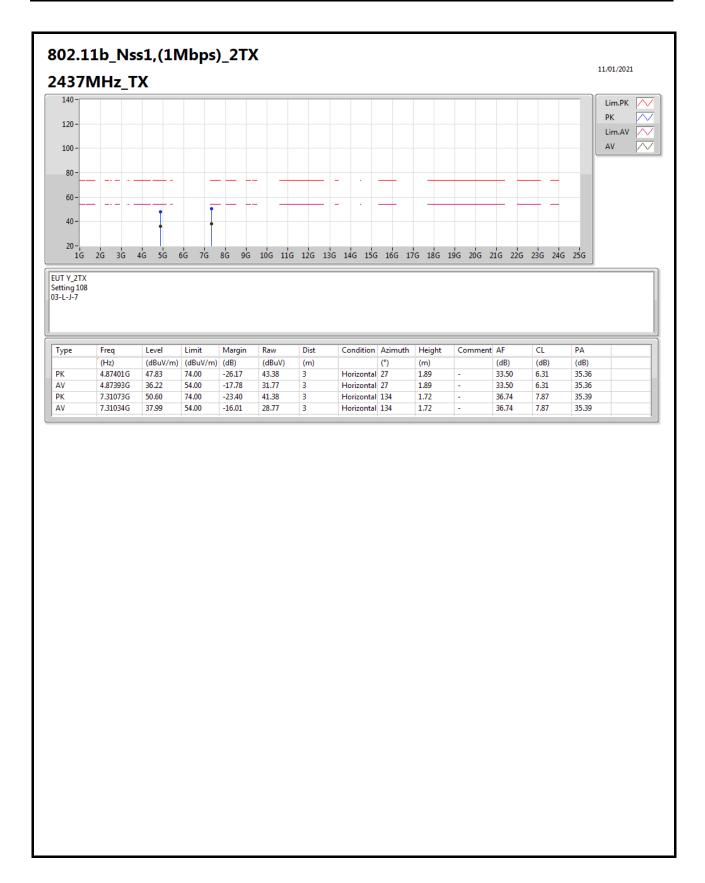




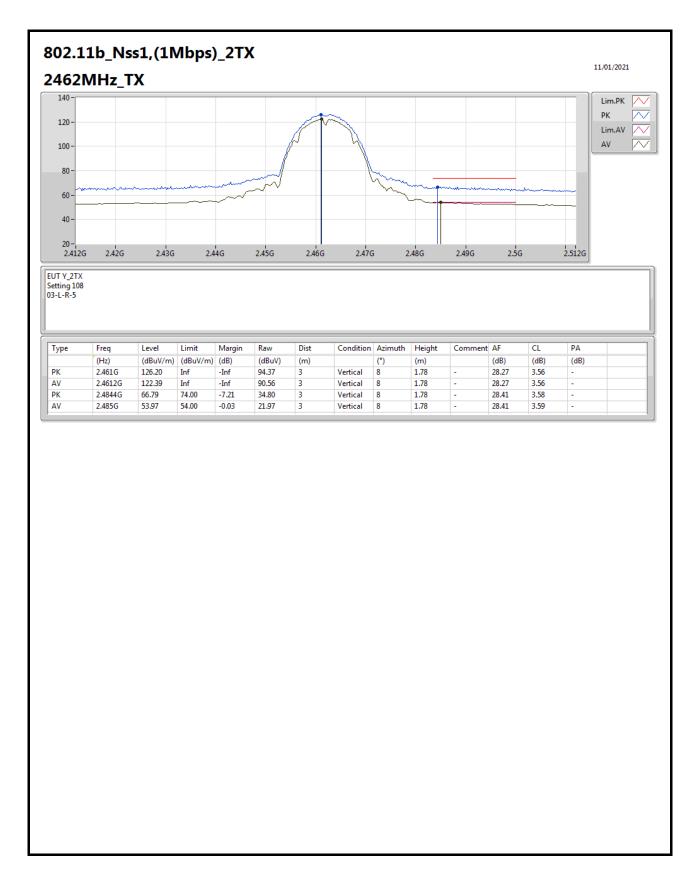




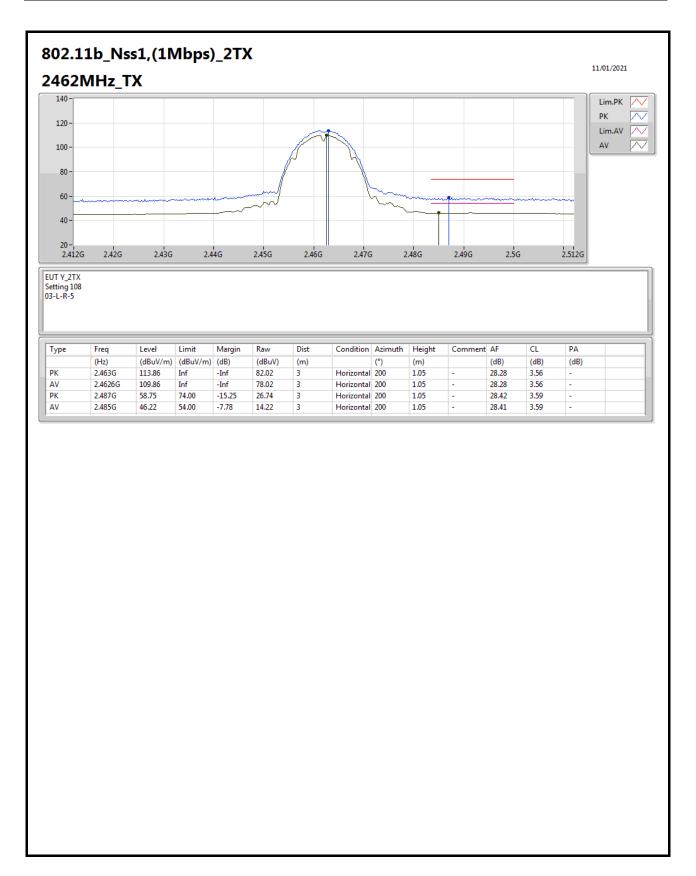






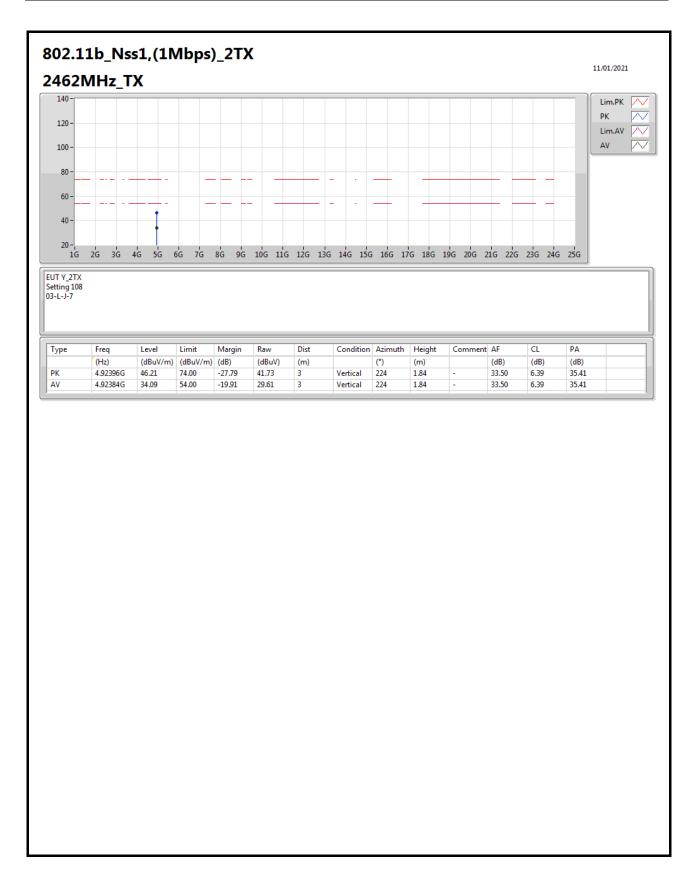




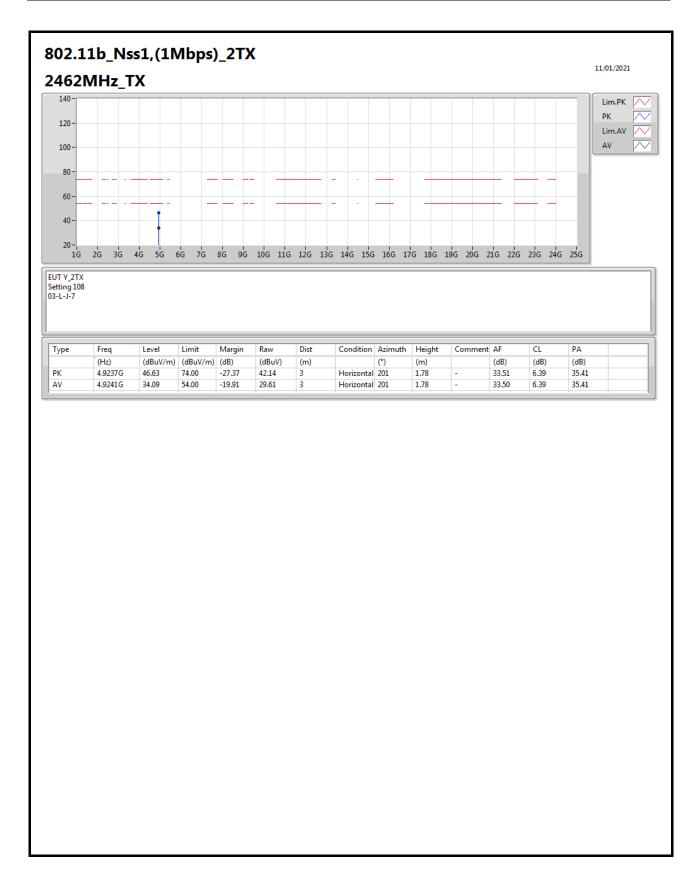


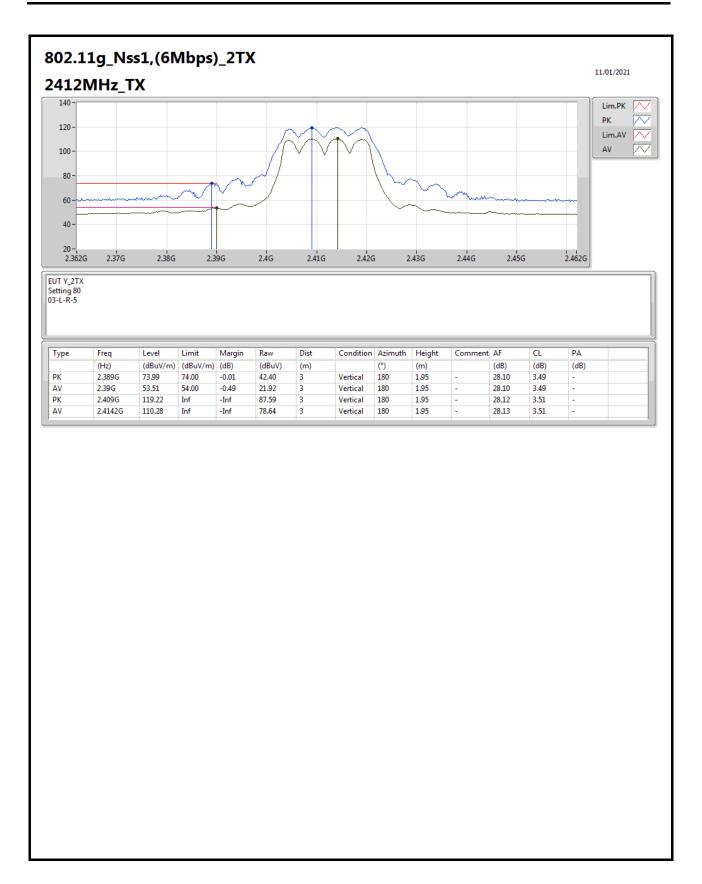
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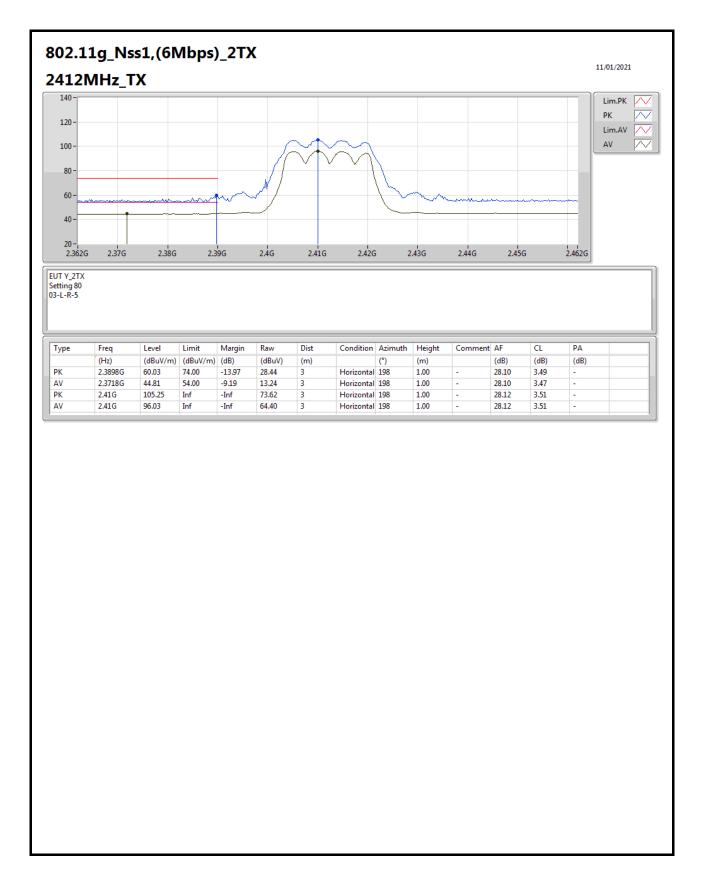




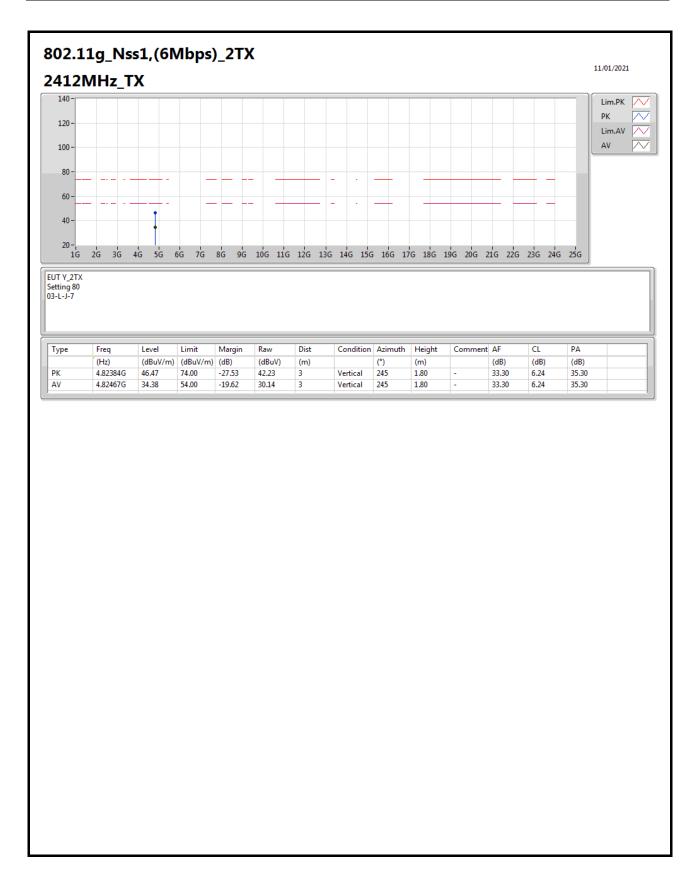






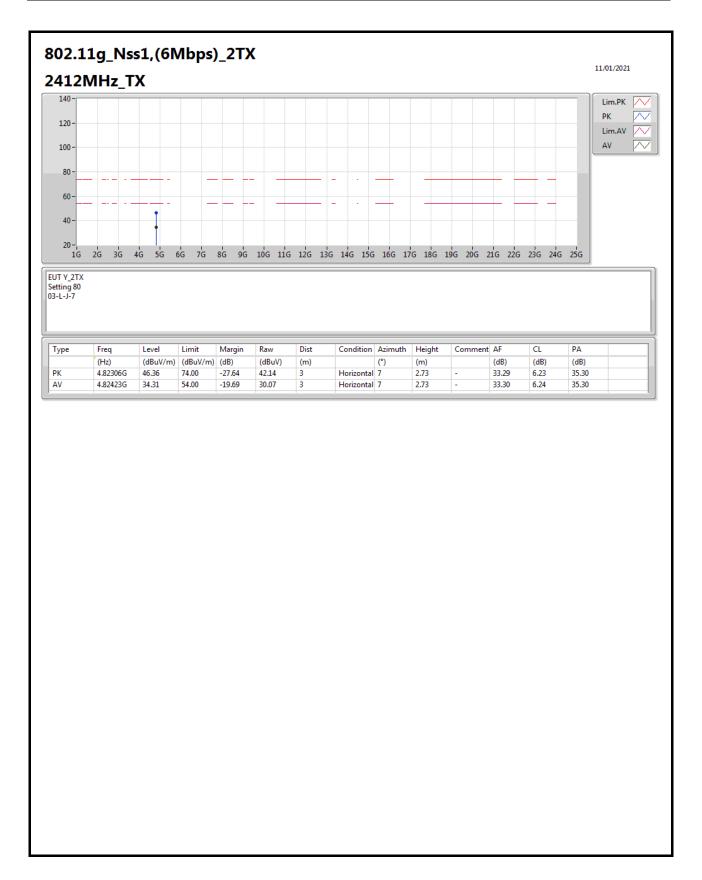




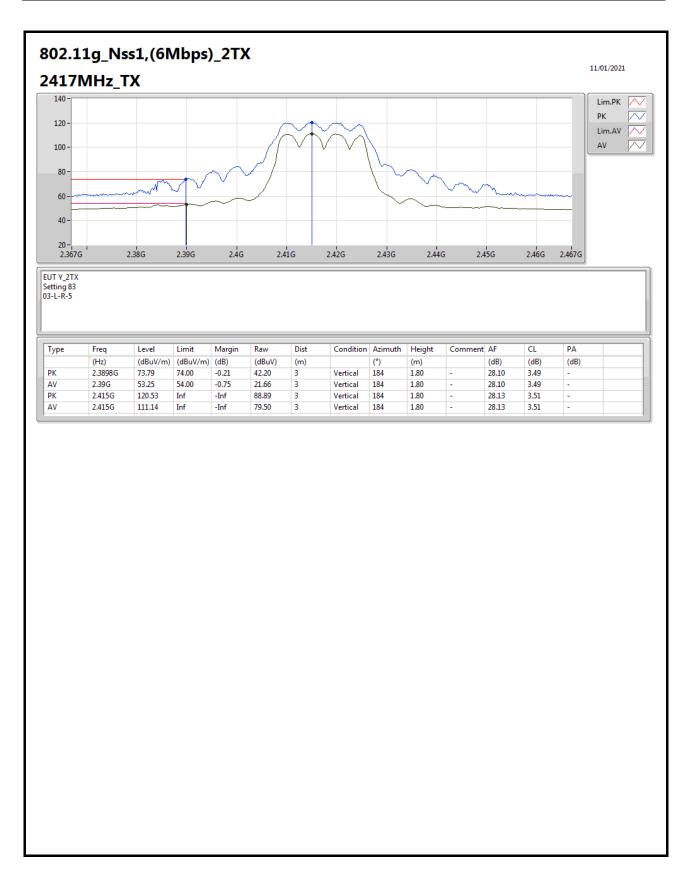


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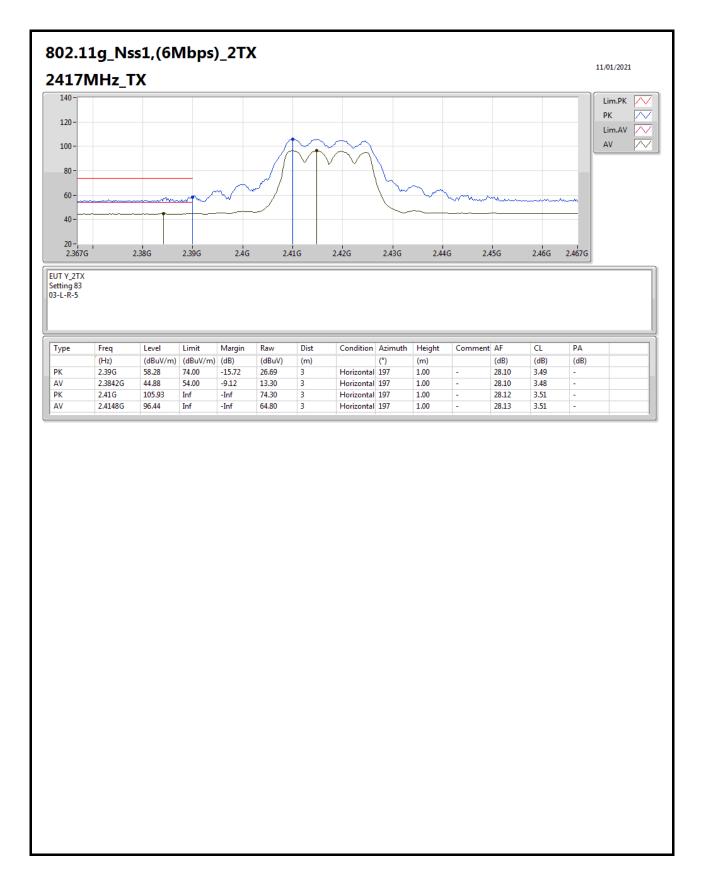




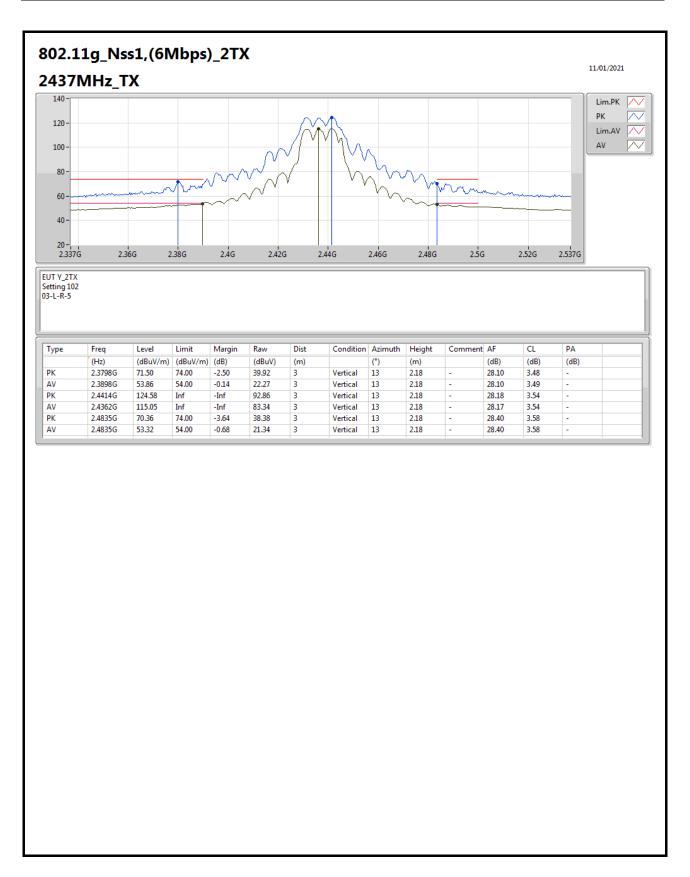




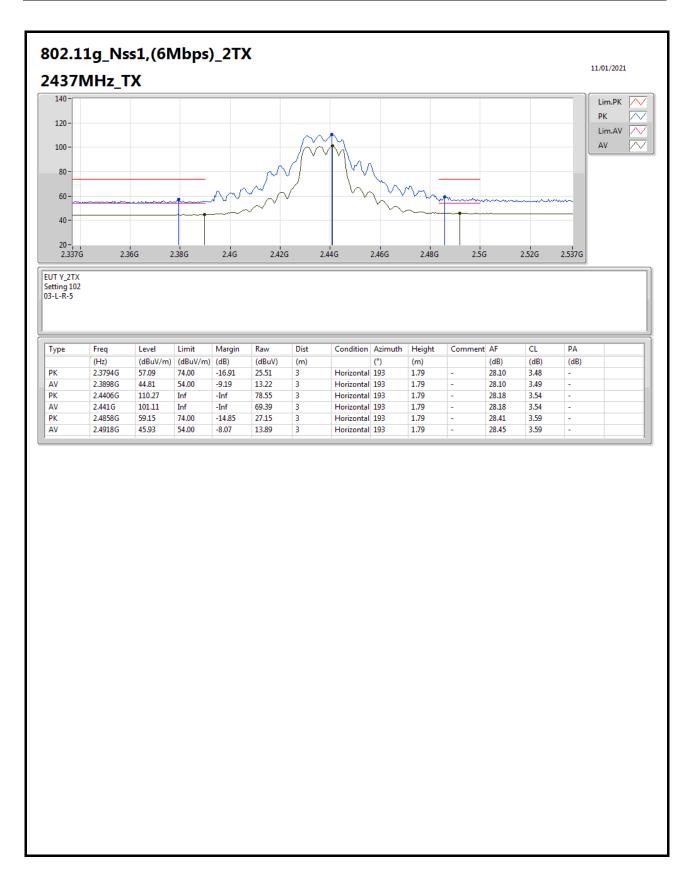




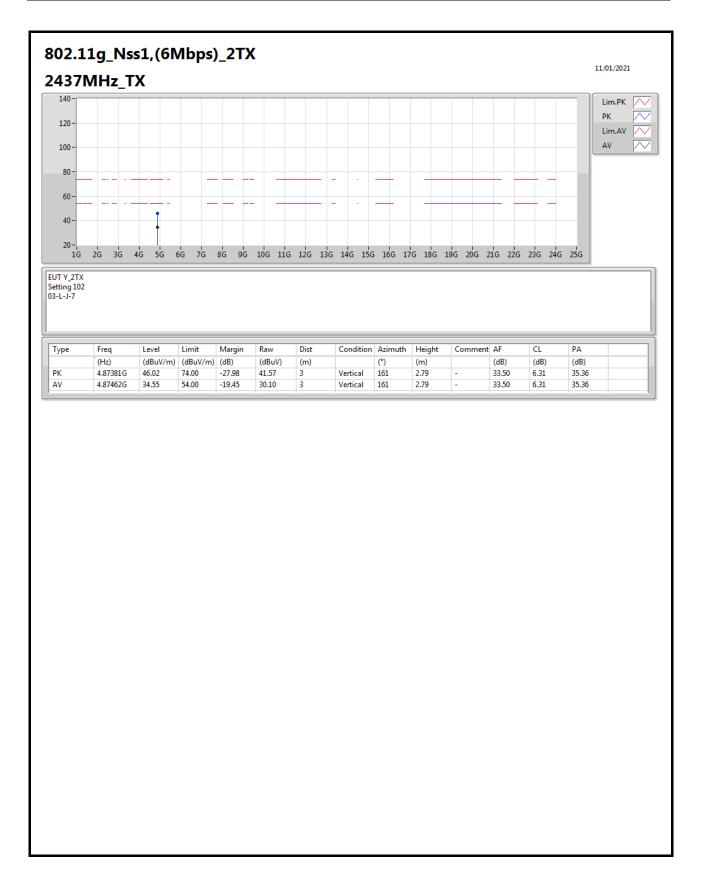




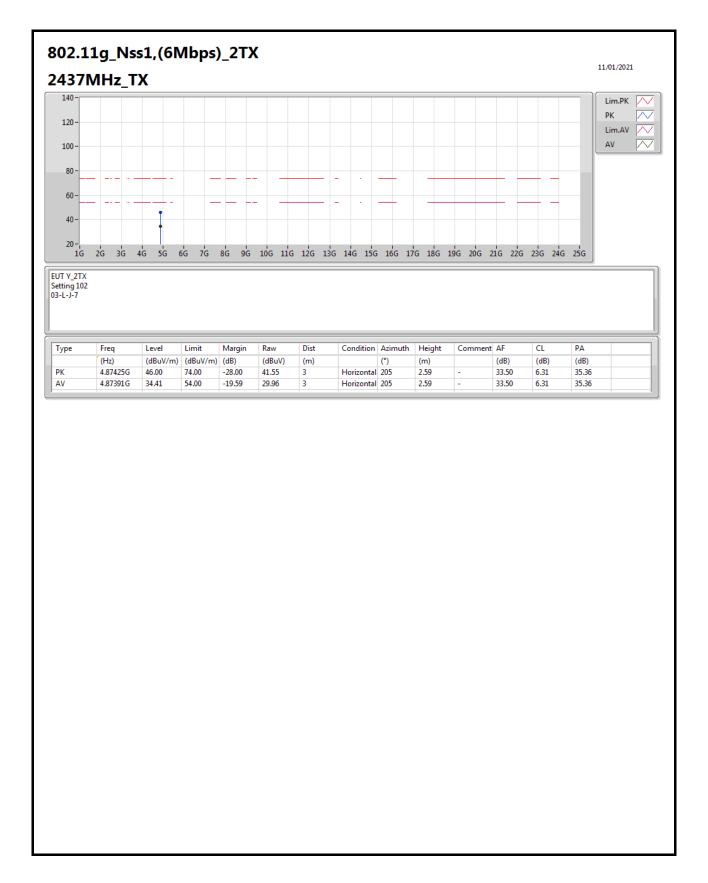




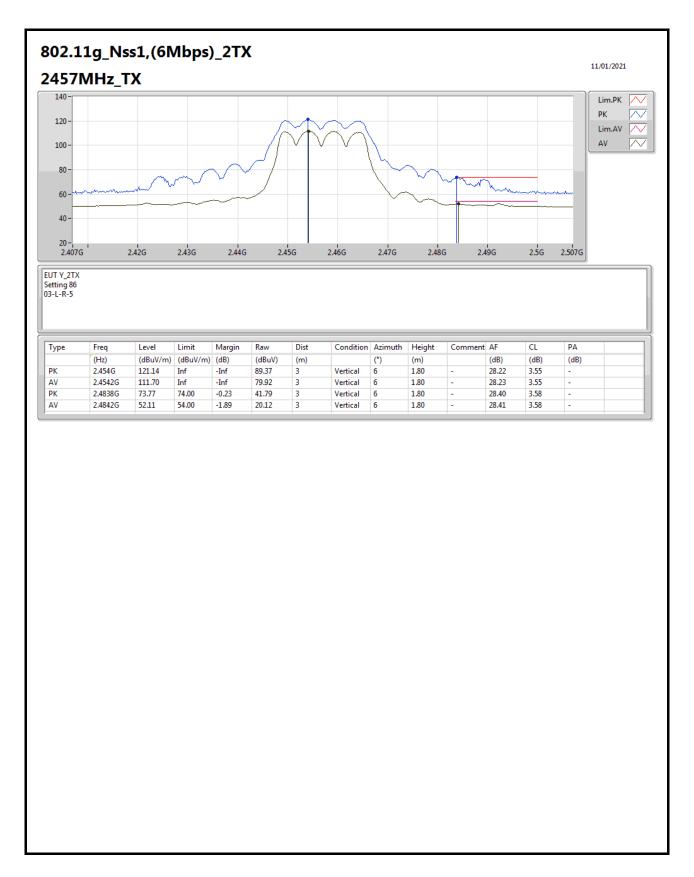




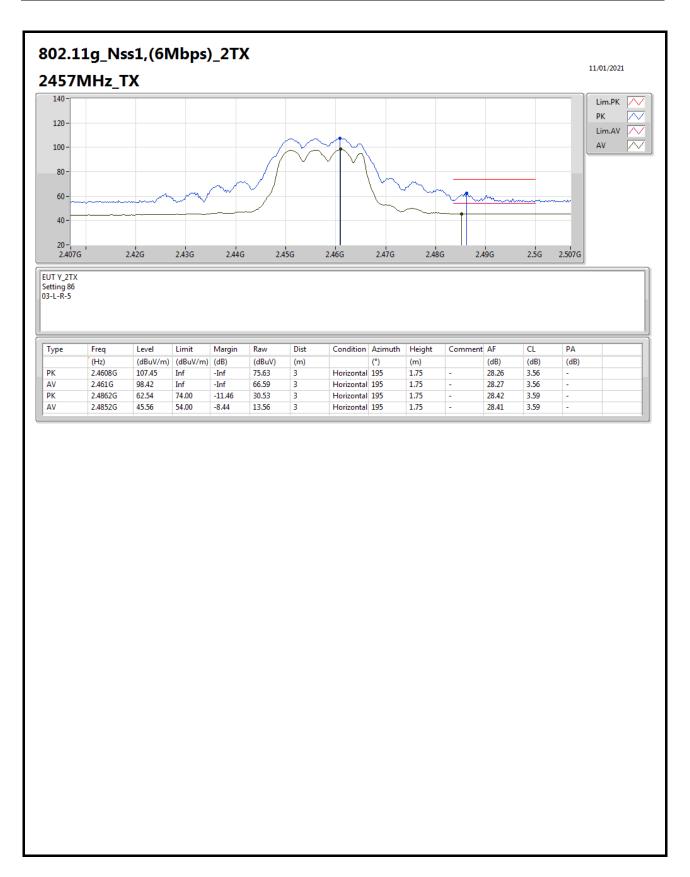




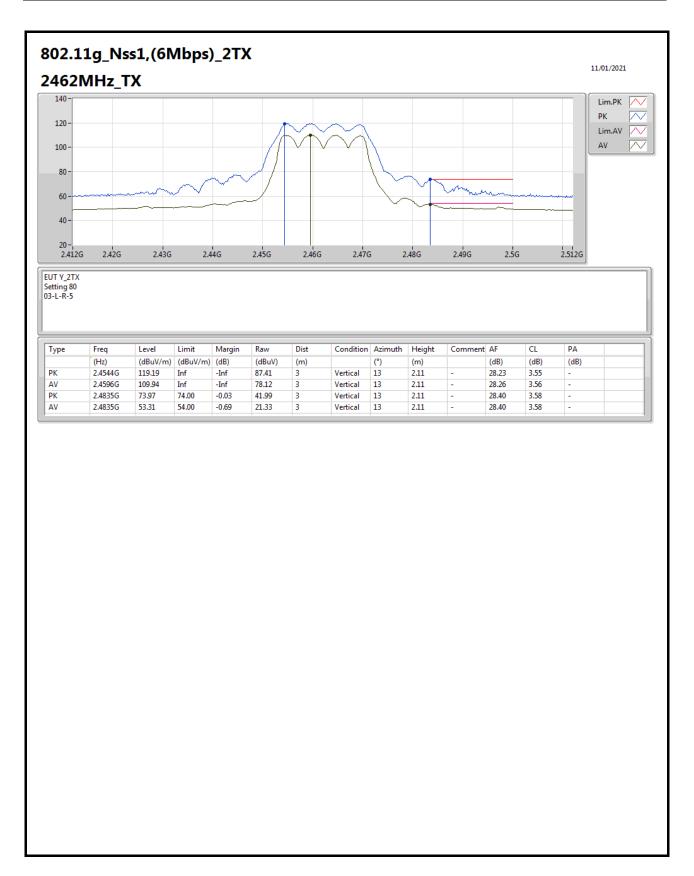




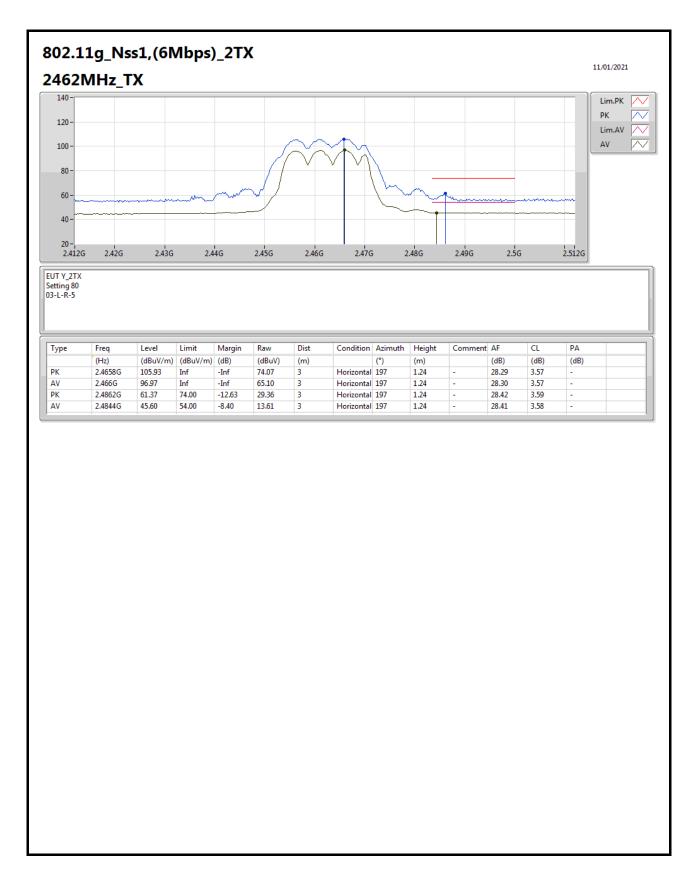




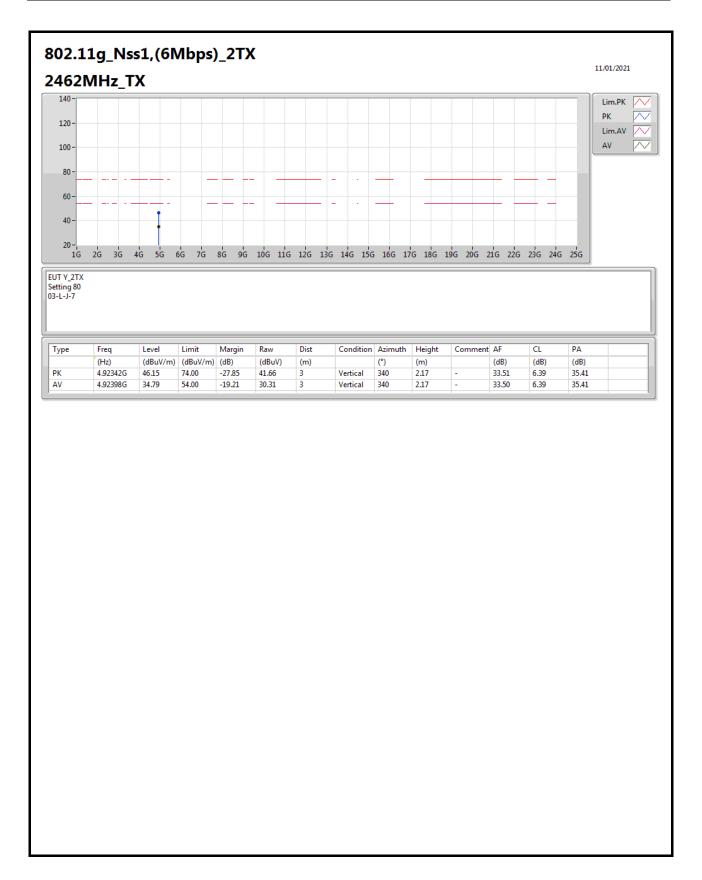




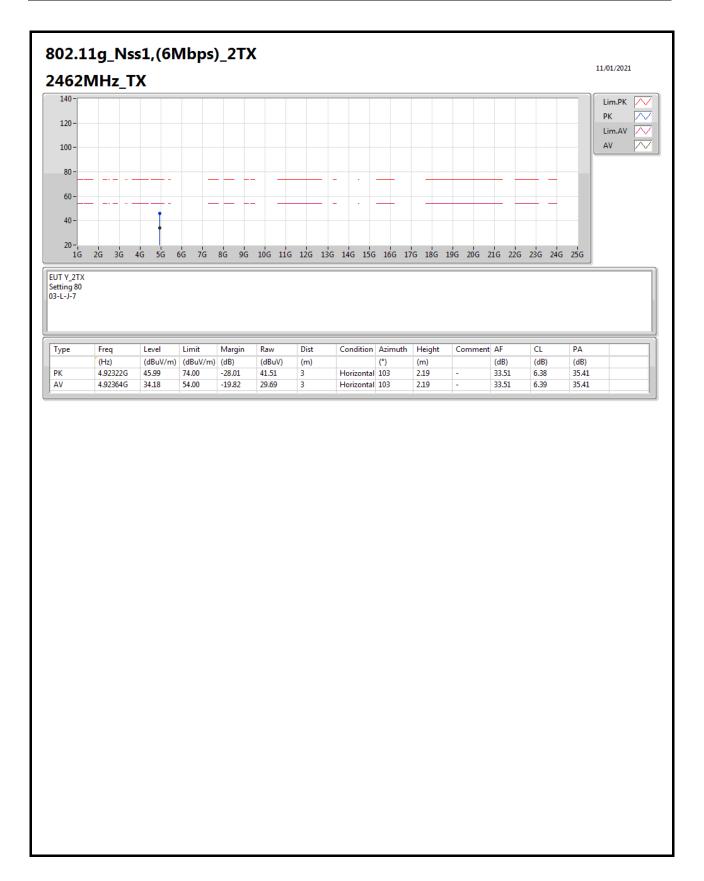




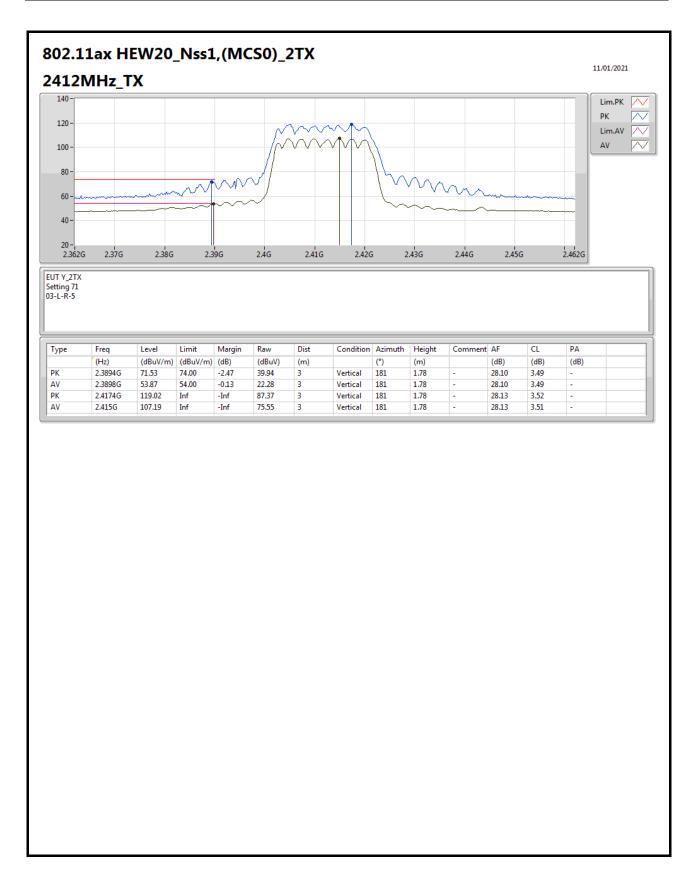




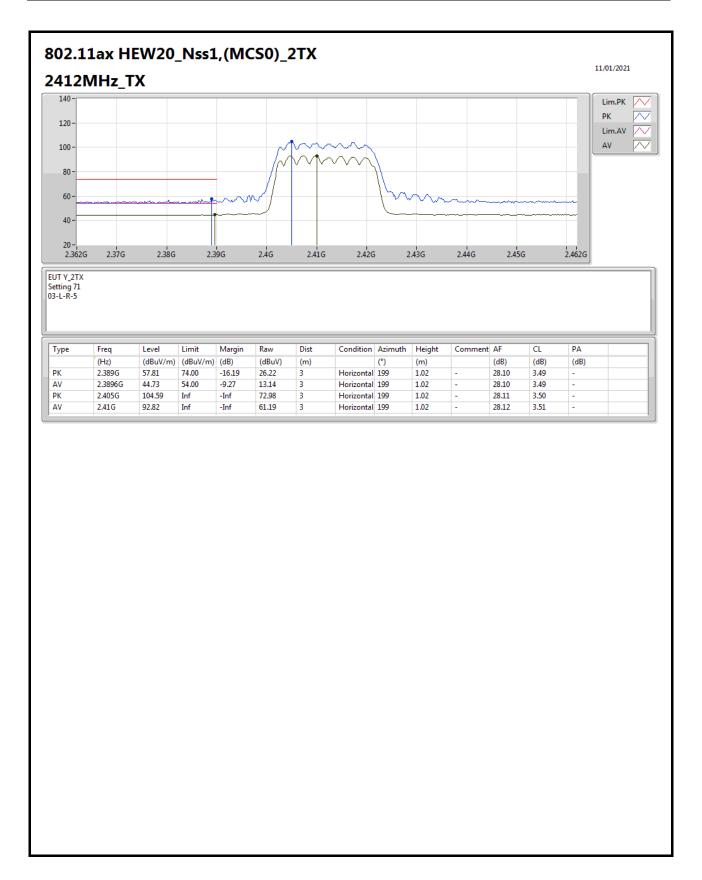




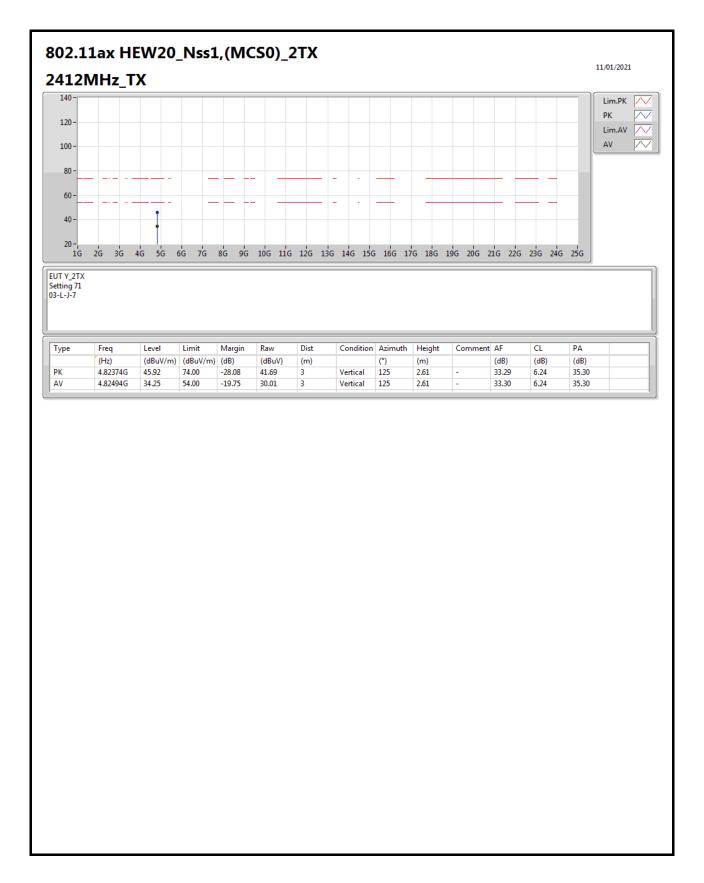




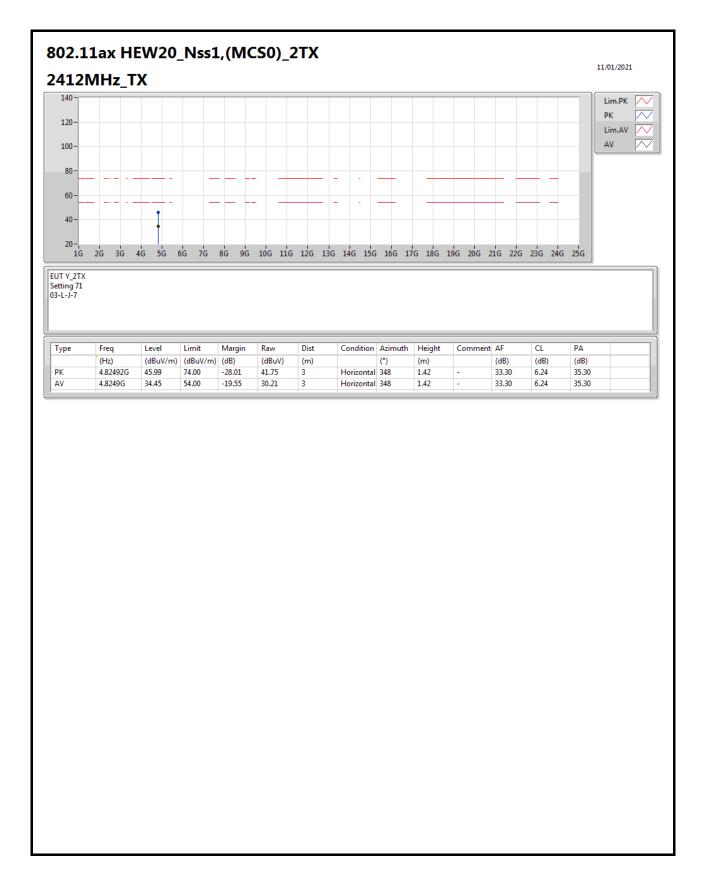




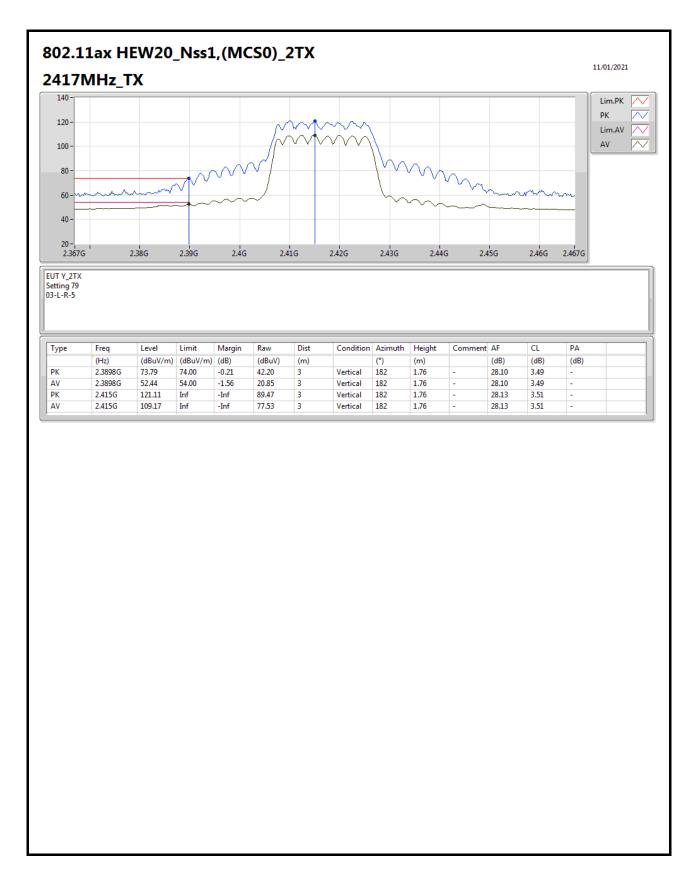




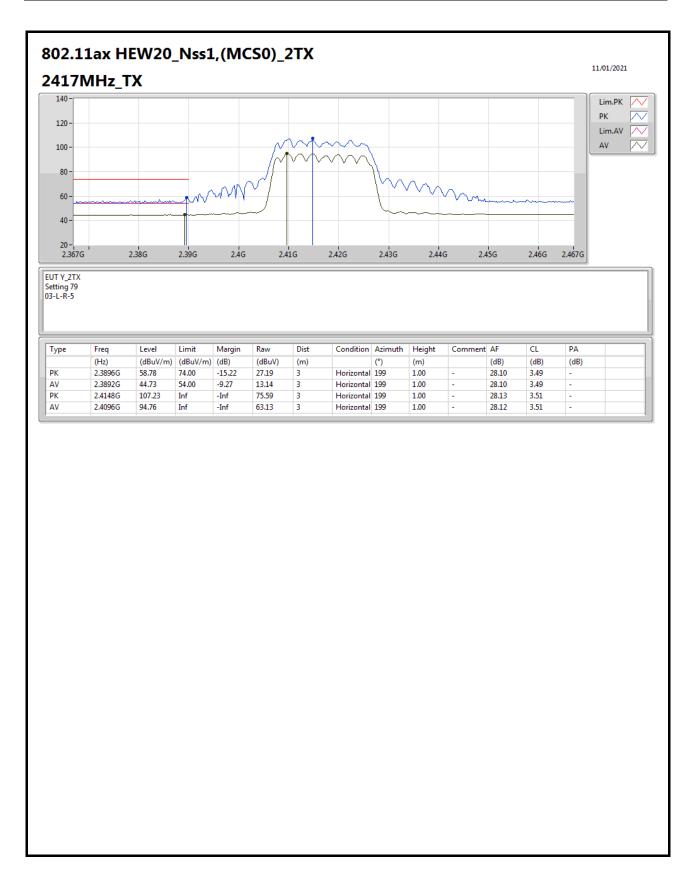




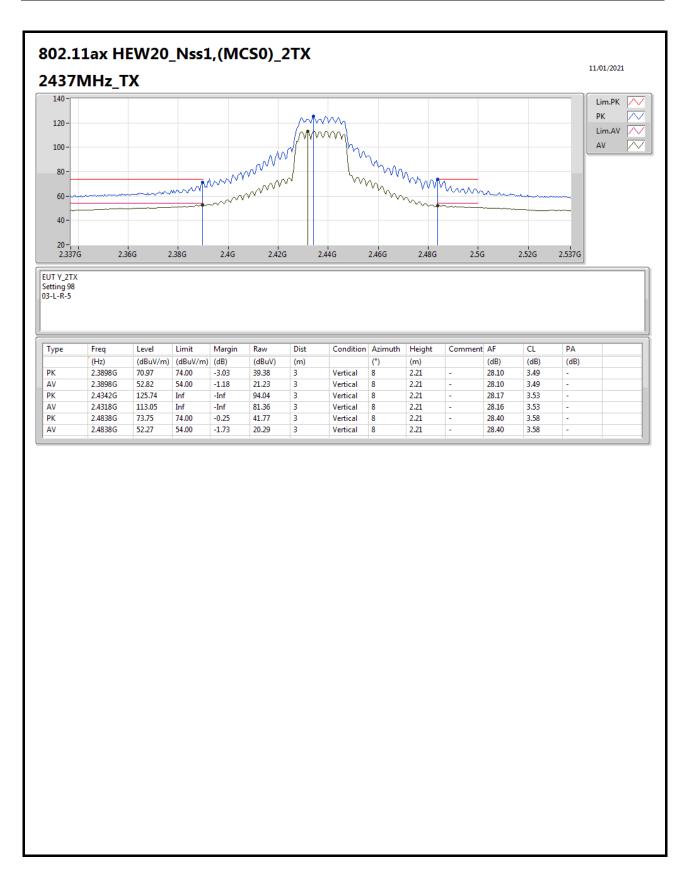




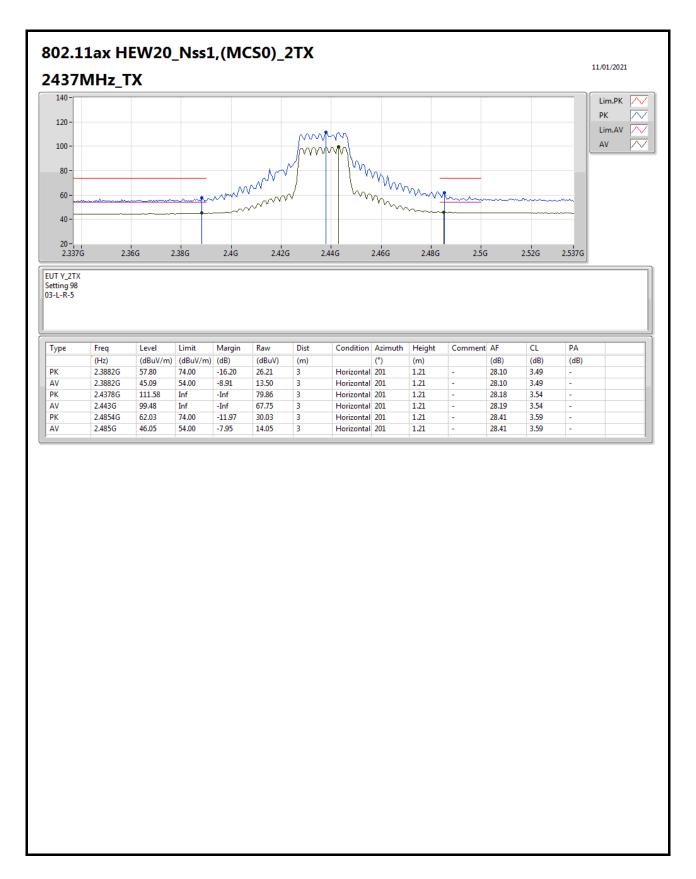




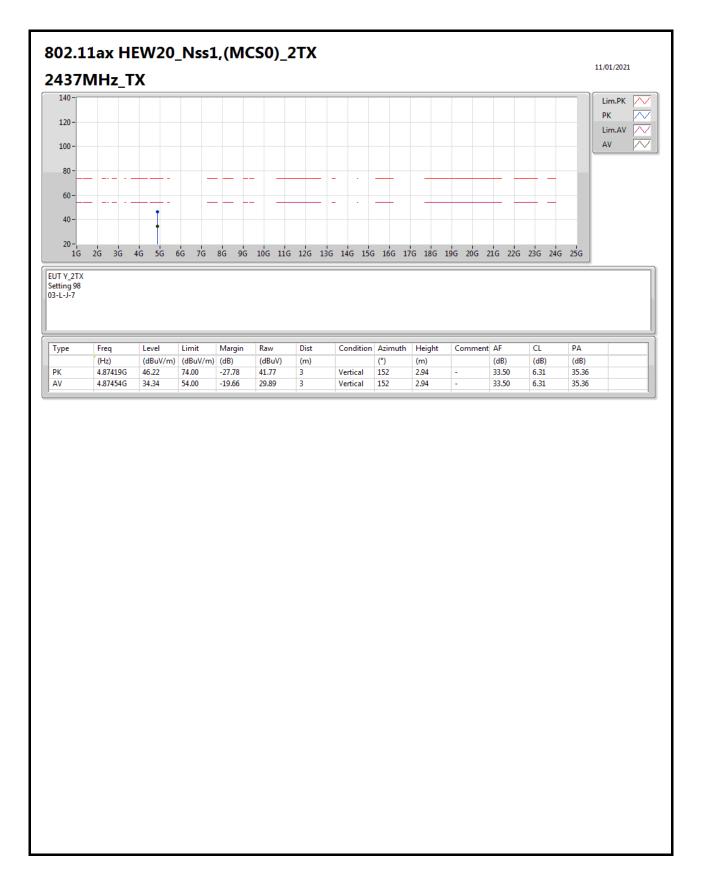




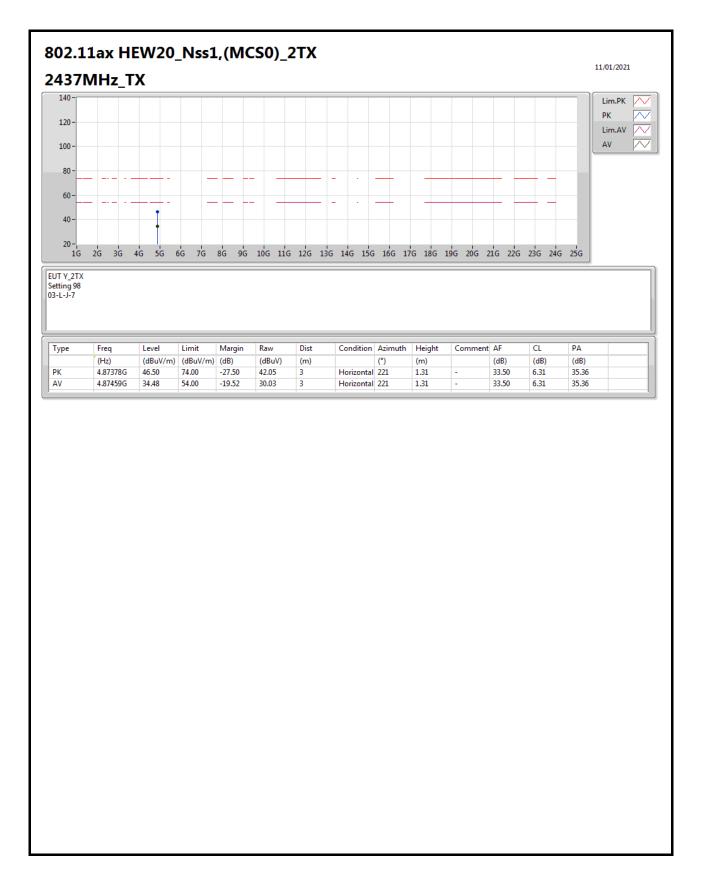




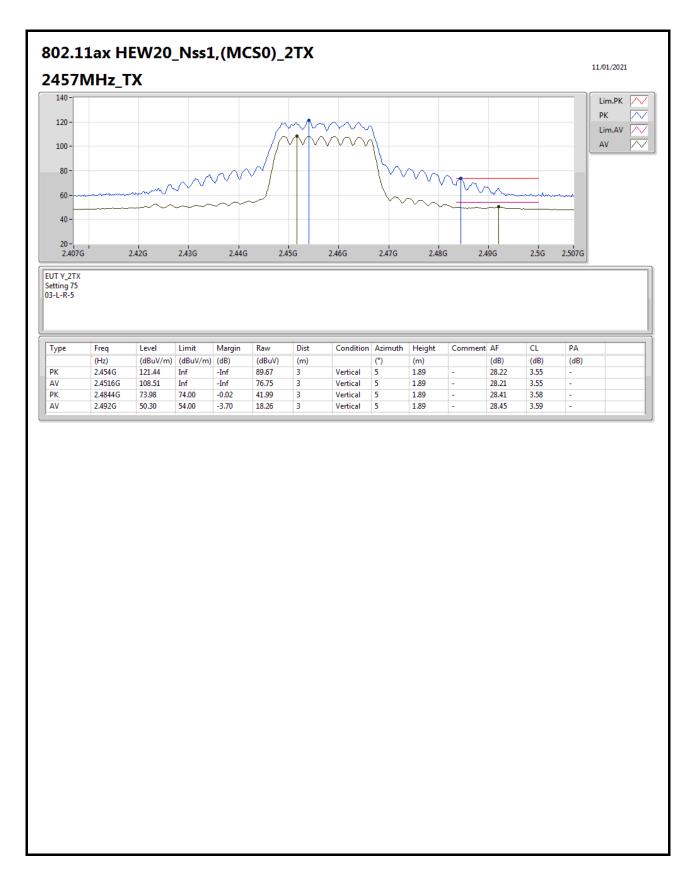




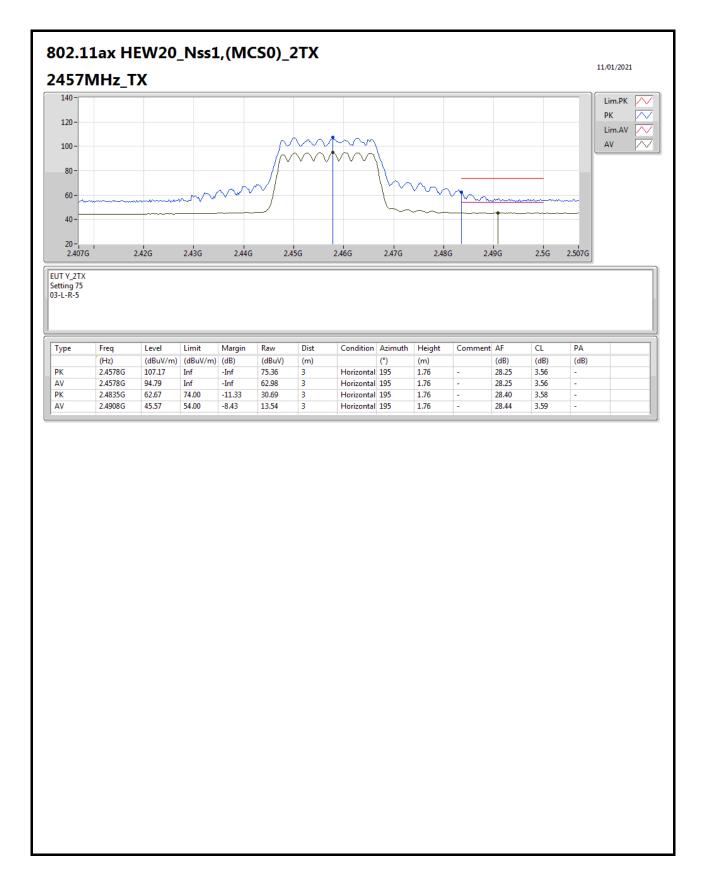






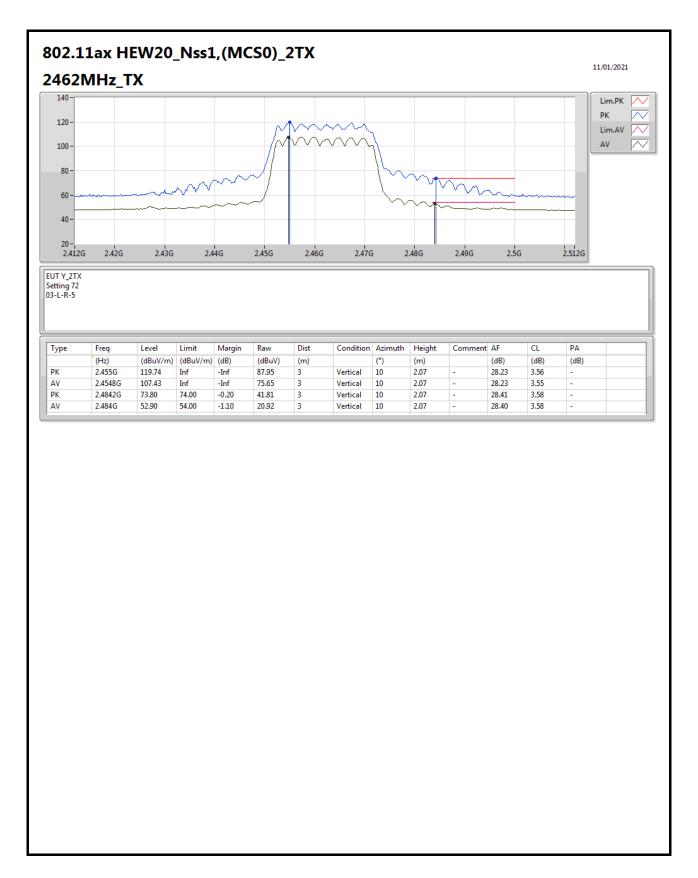




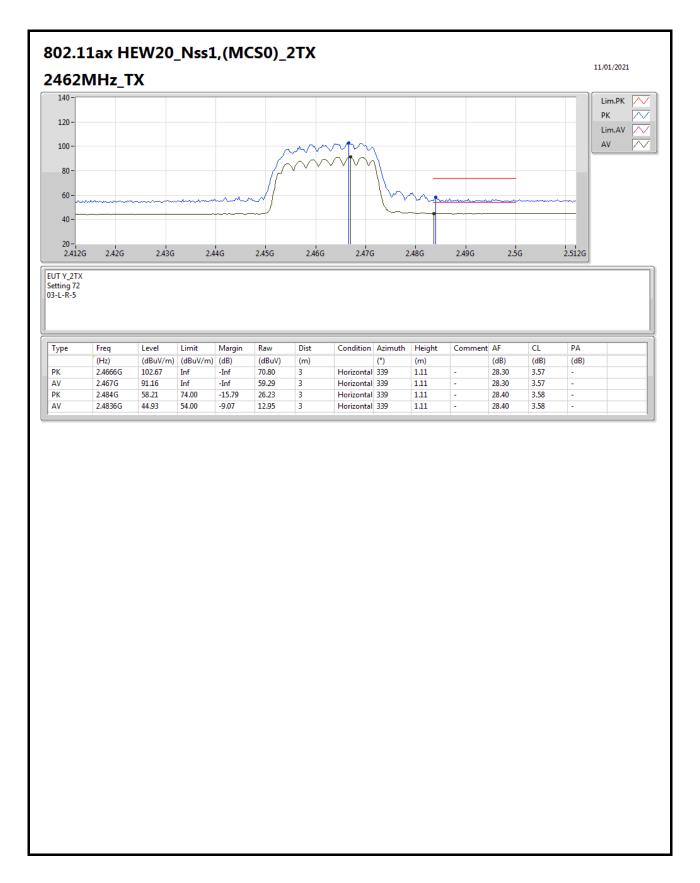


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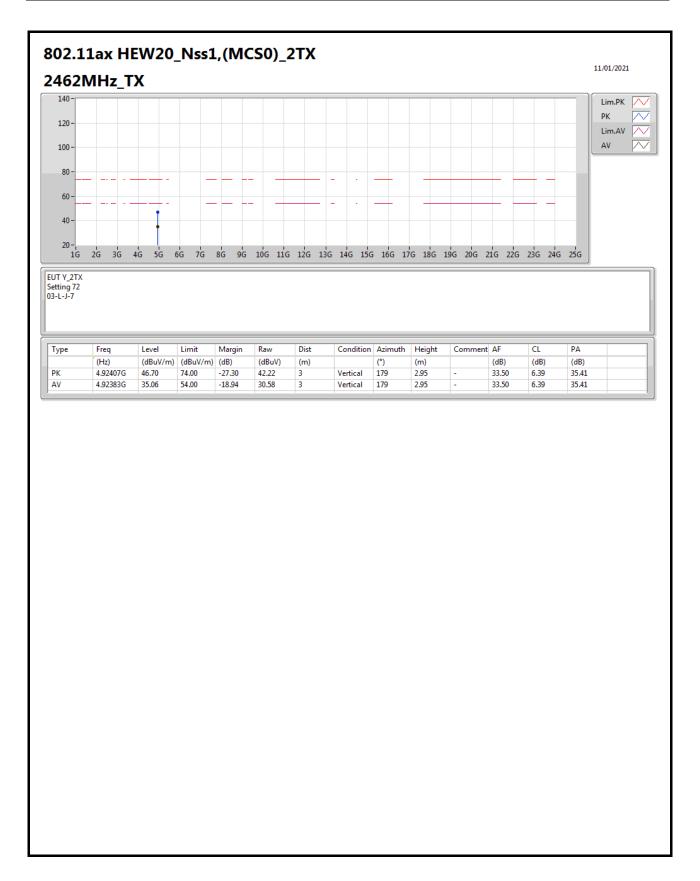




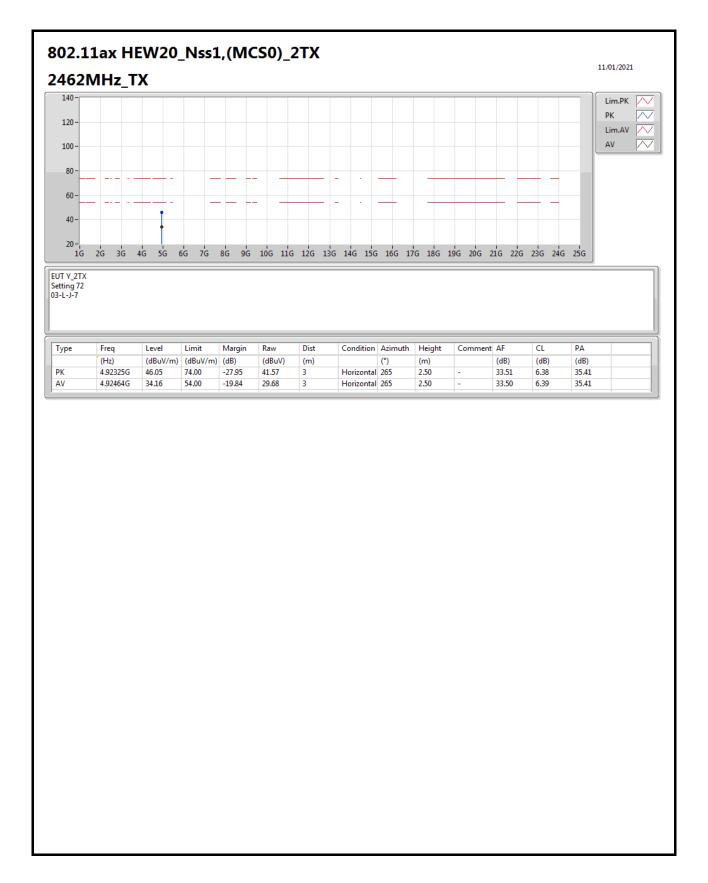




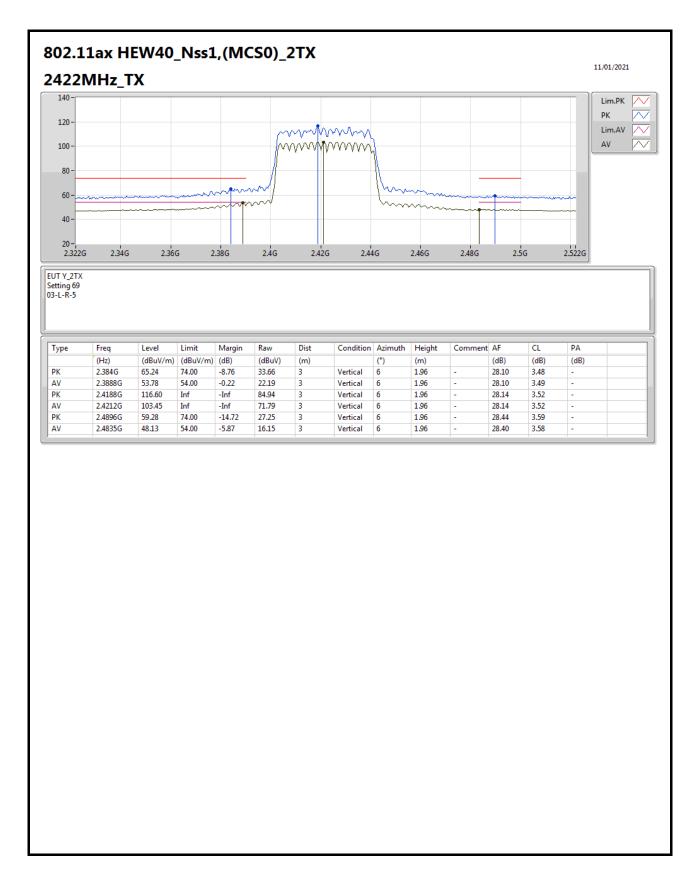




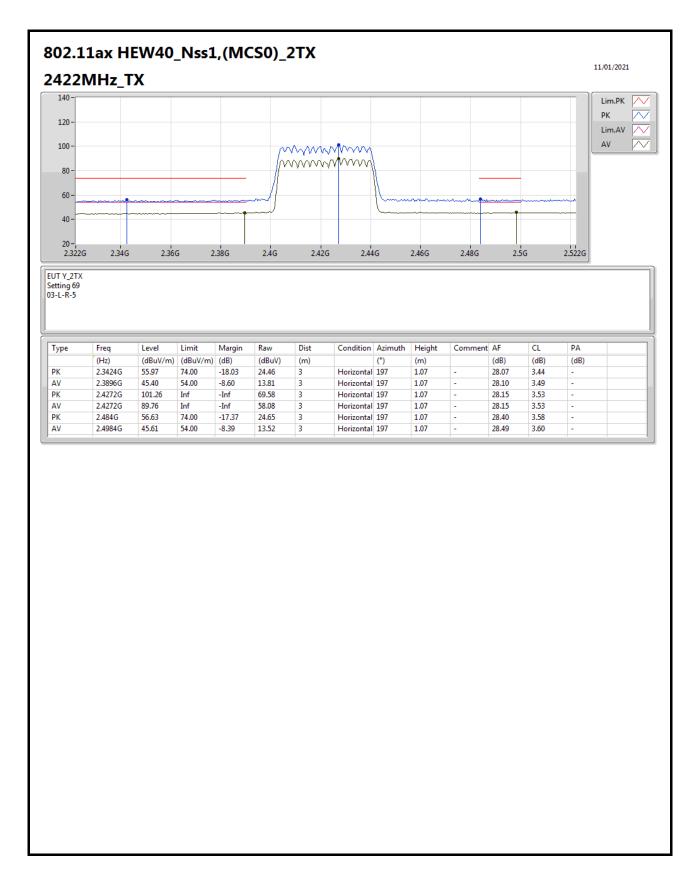




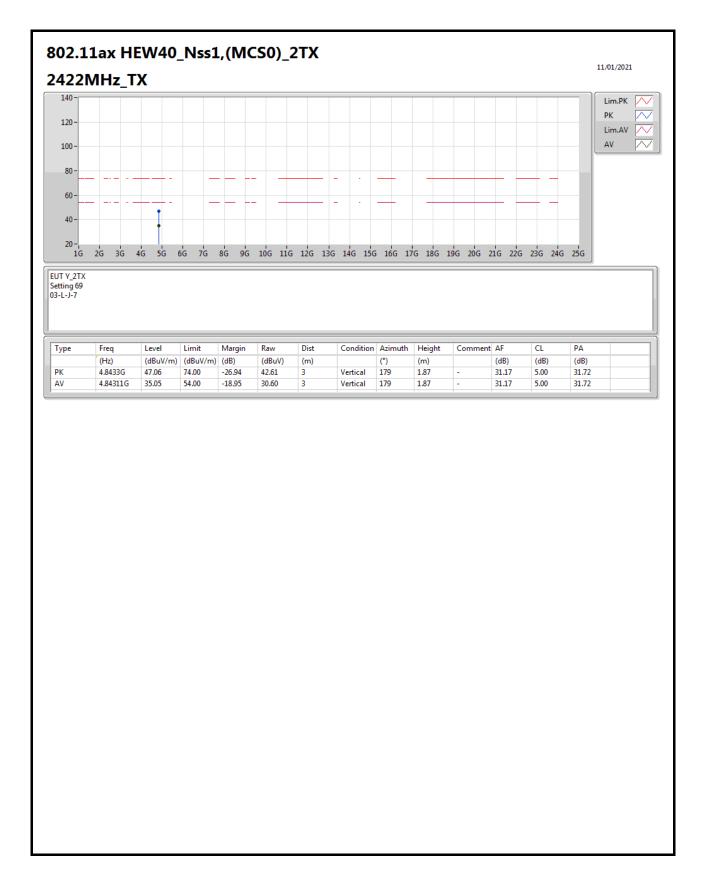




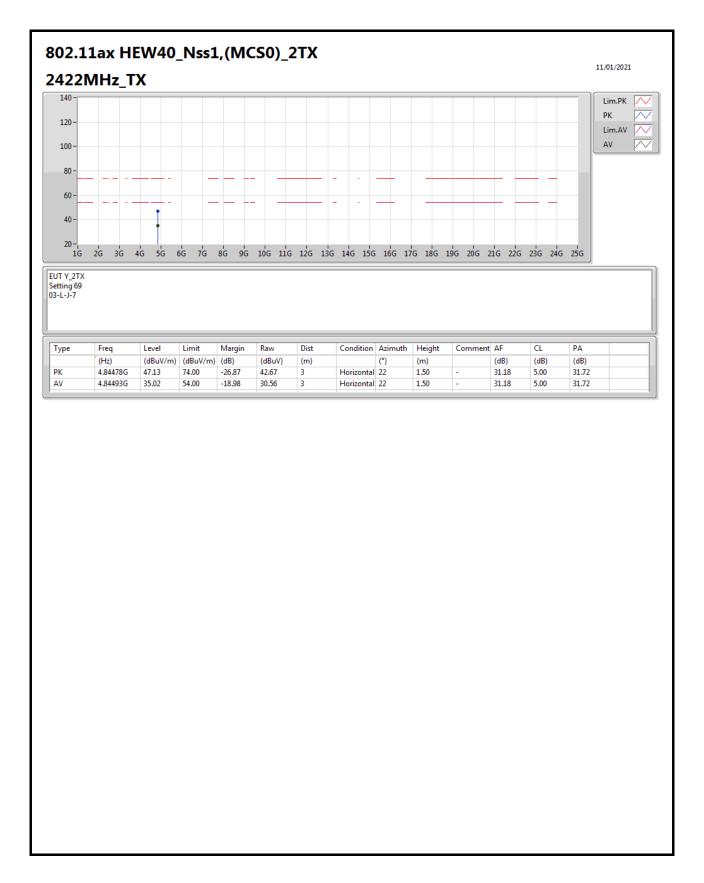




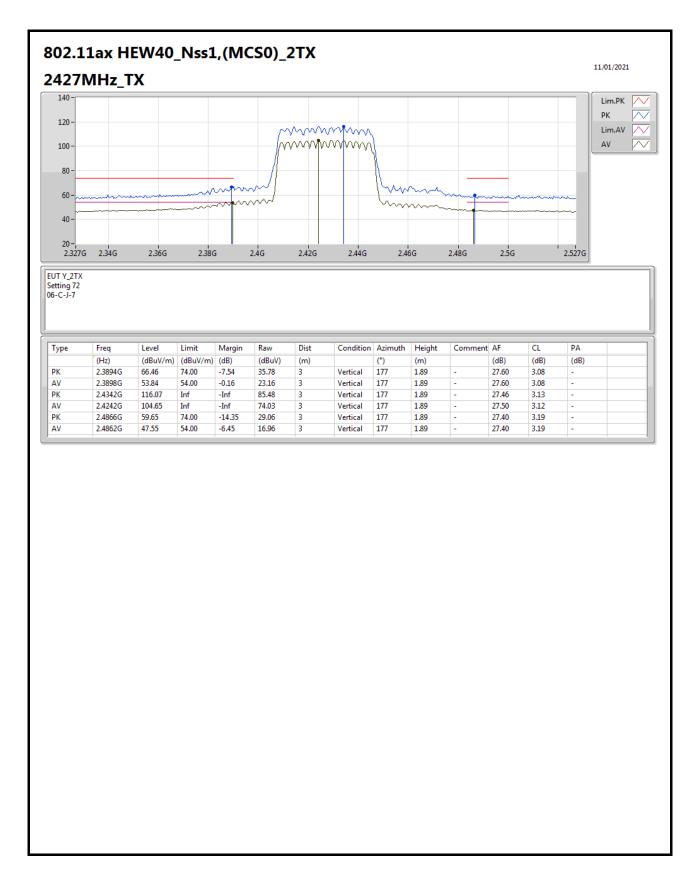




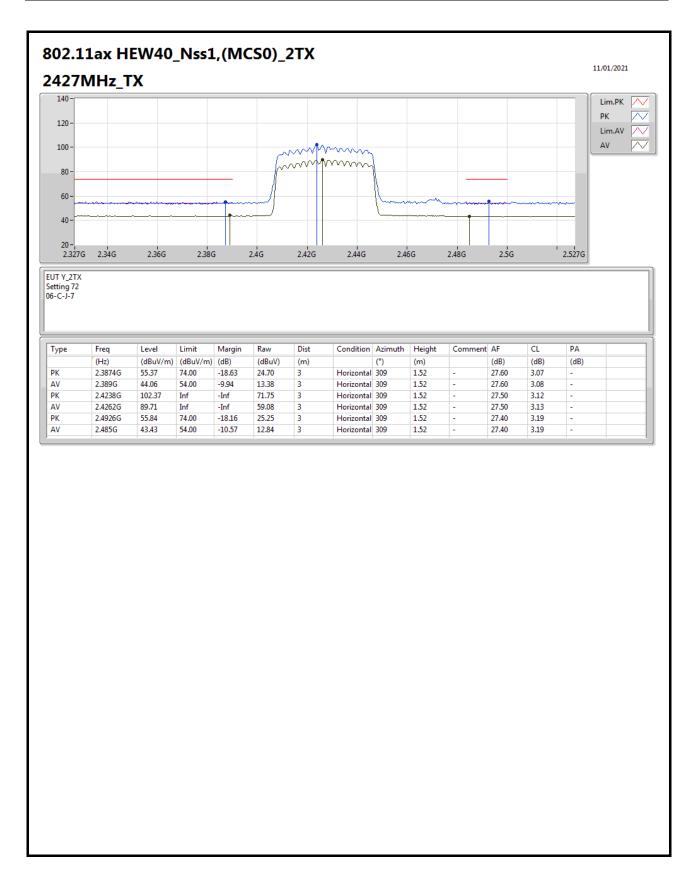




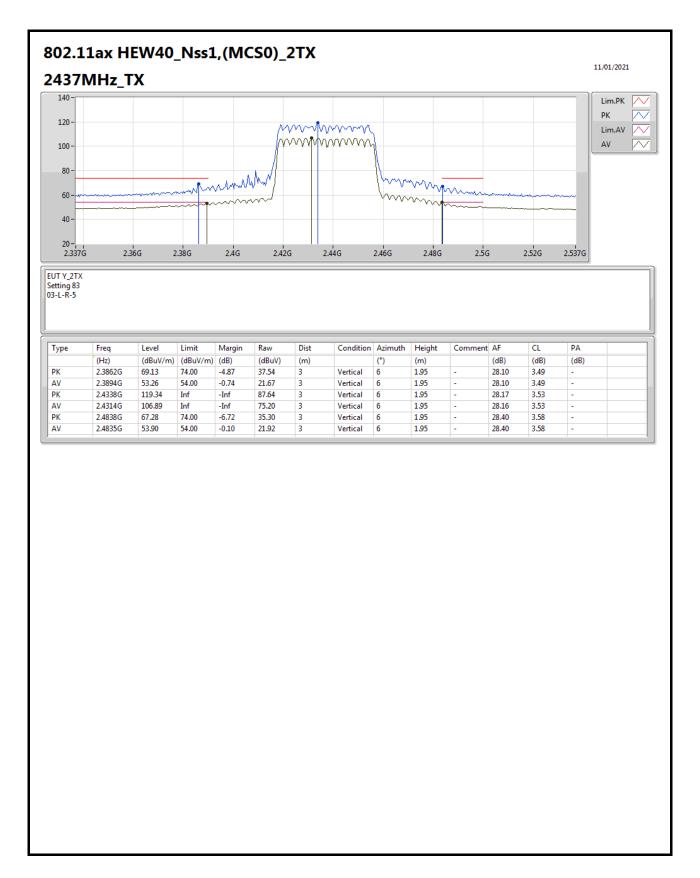






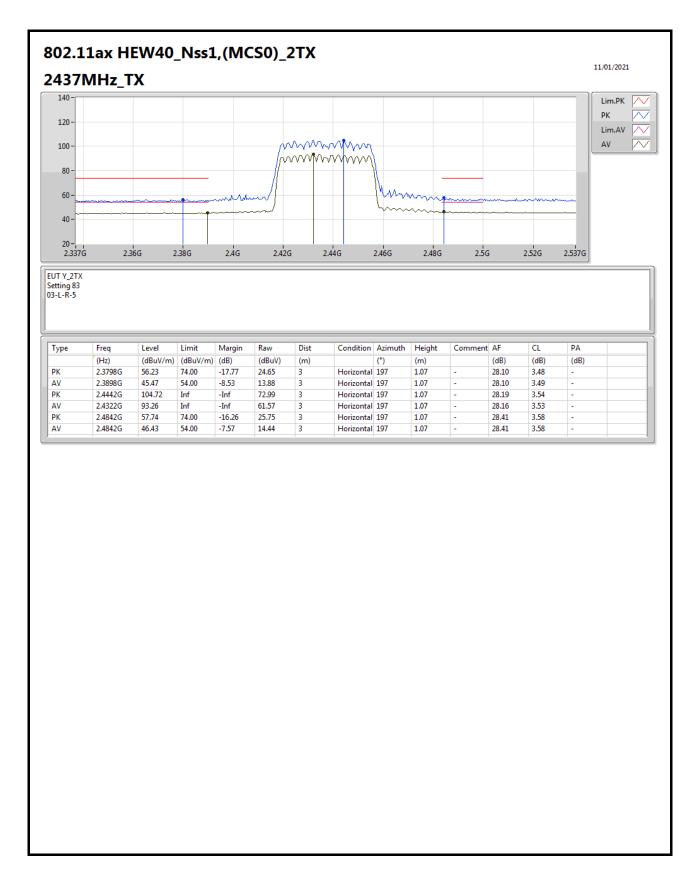




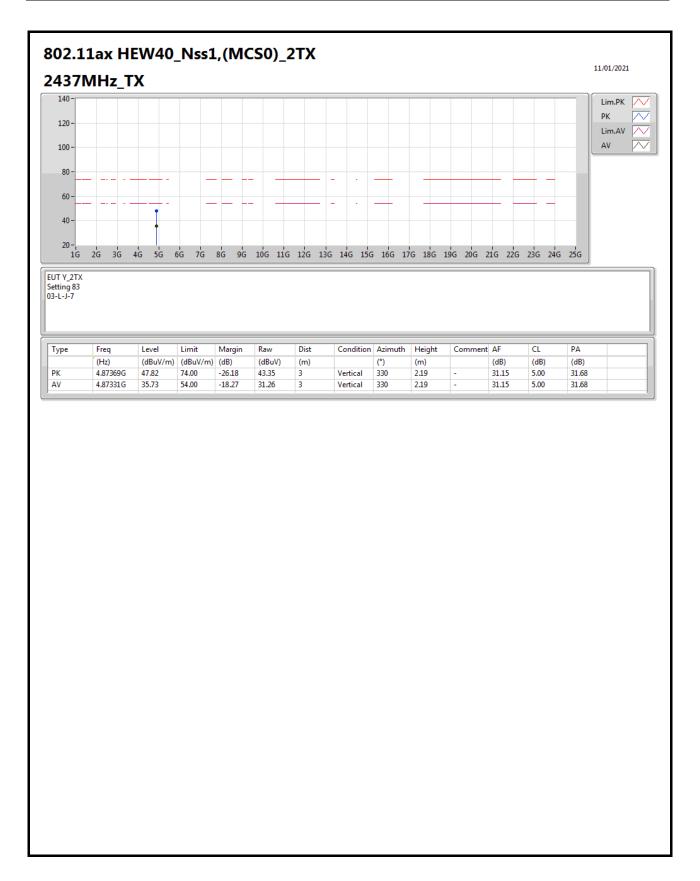


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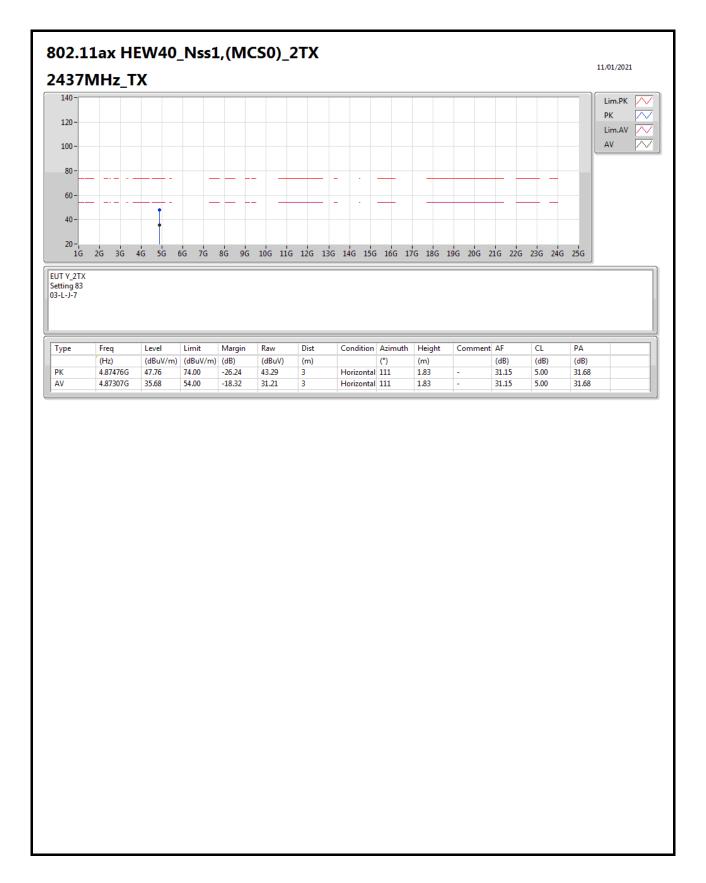




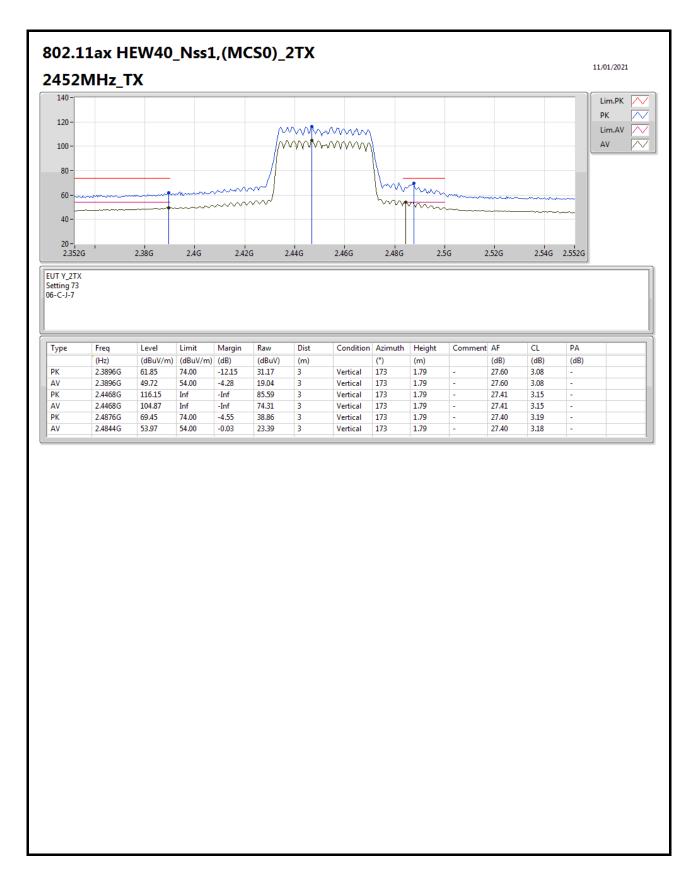


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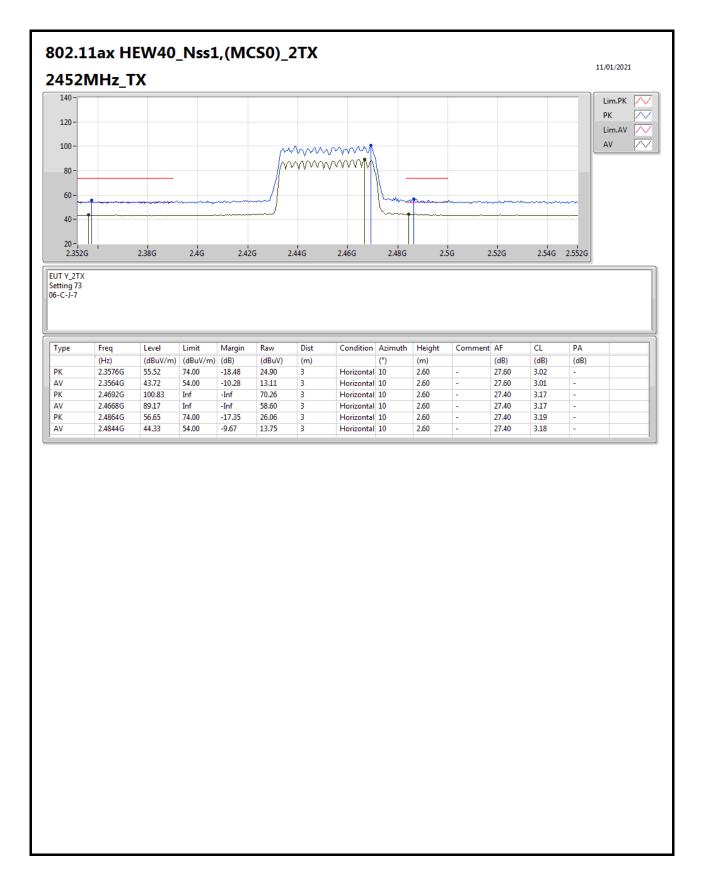






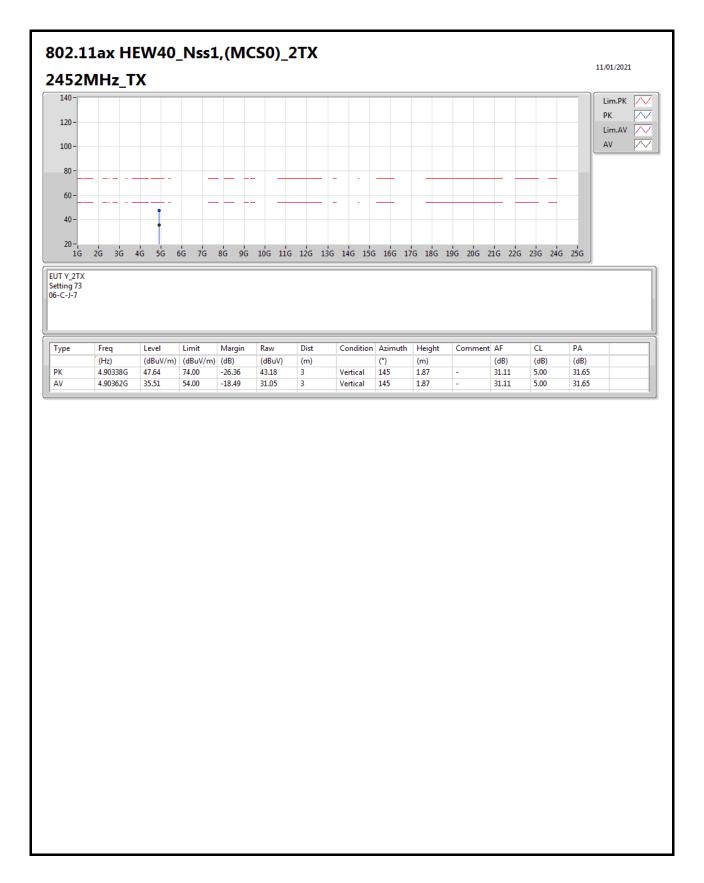




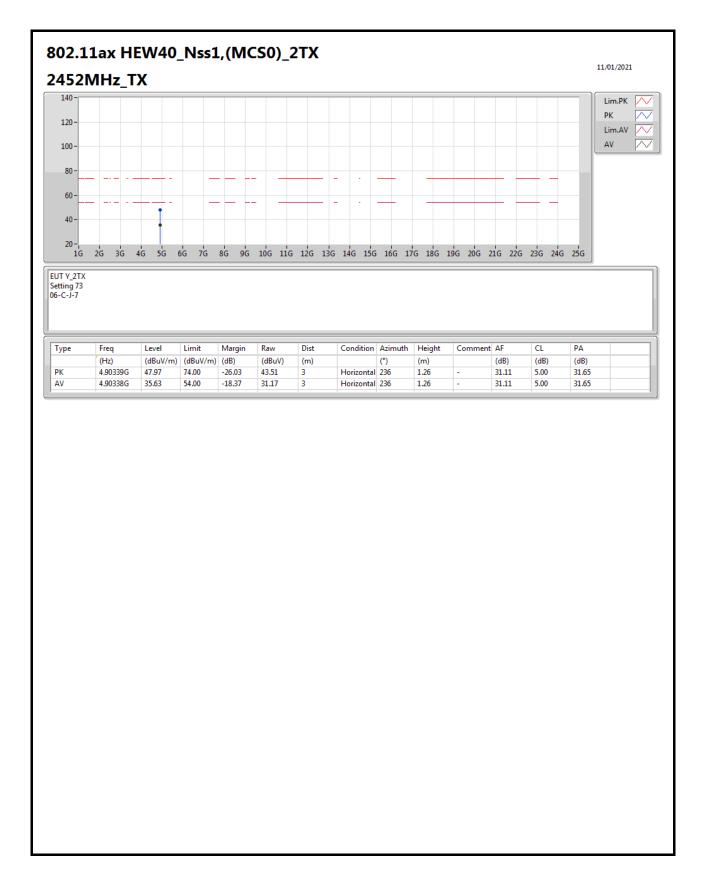


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## Radiated Emissions above 1GHz

Appendix G

Summary

| Mode   | Result | Туре | Freq<br>(Hz) | Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Condition  |
|--------|--------|------|--------------|-------------------|-------------------|----------------|------------|
| Mode 1 | Pass   | AV   | 1.38075G     | 29.10             | 54.00             | -24.90         | Horizontal |



