



# RADIO TEST REPORT

**FCC ID** : Z8H89FT0072  
**Equipment** : XE5-8  
**Brand Name** : Cambium Networks  
**Model Name** : XE5-8  
**Applicant** : Cambium Networks Inc.  
3800 Golf Road, Suite 360 Rolling Meadows, IL  
60008, USA  
**Manufacturer** : Cambium Networks, Ltd.  
Ashburton, TQ13 7UP, UK  
**Standard** : 47 CFR FCC Part 15.407

The product was received on Dec. 07, 2021, and testing was started from Dec. 21, 2021 and completed on Nov. 22, 2022. We, Sporton International Inc. Hsinchu 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. Hsinchu Laboratory, the test report shall not be reproduced except in full.

Approved by: Sam Chen

**Sporton International Inc. Hsinchu Laboratory**

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### Photographs of EUT v01

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## History of this test report

| Report No.    | Version | Description                                                                                                                                                                                   | Issued Date   |
|---------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| FR142255-01AC | 01      | Initial issue of report                                                                                                                                                                       | Apr. 29, 2022 |
| FR142255-01AC | 02      | Revising AC Power-line Conducted Emissions, Emissions in Non-restricted Frequency Bands below 1GHz, and Simultaneous Transmission test mode, because Radio 2 and 3 can't work simultaneously. | Jun. 16, 2022 |
| FR142255-01AC | 03      | Revising AC Power-line Conducted Emissions, Emissions in Non-restricted Frequency Bands below 1GHz, and Simultaneous Transmission test mode, because Radio 2 and 3 can work simultaneously.   | Jul. 22, 2022 |
| FR142255-01AC | 04      | Adding Radio 3 Pine 2 test results.                                                                                                                                                           | Dec. 13, 2022 |
| FR142255-01AC | 05      | Adding the test results of EIRP of Multi Radio.                                                                                                                                               | Jan. 12, 2023 |
|               |         |                                                                                                                                                                                               |               |
|               |         |                                                                                                                                                                                               |               |
|               |         |                                                                                                                                                                                               |               |
|               |         |                                                                                                                                                                                               |               |
|               |         |                                                                                                                                                                                               |               |
|               |         |                                                                                                                                                                                               |               |
|               |         |                                                                                                                                                                                               |               |
|               |         |                                                                                                                                                                                               |               |
|               |         |                                                                                                                                                                                               |               |
|               |         |                                                                                                                                                                                               |               |
|               |         |                                                                                                                                                                                               |               |
|               |         |                                                                                                                                                                                               |               |
|               |         |                                                                                                                                                                                               |               |
|               |         |                                                                                                                                                                                               |               |
|               |         |                                                                                                                                                                                               |               |
|               |         |                                                                                                                                                                                               |               |



## Summary of Test Result

| Report Clause | Ref Std. Clause | Test Items                                                 | Result (PASS/FAIL) | Remark |
|---------------|-----------------|------------------------------------------------------------|--------------------|--------|
| 1.1.2         | 15.203          | Antenna Requirement                                        | PASS               | -      |
| 3.1           | 15.207          | AC Power-line Conducted Emissions                          | PASS               | -      |
| 3.2           | 15.407(a)       | Emission Bandwidth                                         | PASS               | -      |
| 3.3           | 15.407(a)       | Maximum Equivalent Isotropically Radiated Power (E.I.R.P.) | PASS               | -      |
| 3.4           | 15.407(a)       | Peak Power Spectral Density (E.I.R.P.)                     | PASS               | -      |
| 3.5           | 15.407(b)       | Unwanted Emissions                                         | PASS               | -      |
| 3.6           | 15.407(d)       | Contention-Based Protocol                                  | PASS               | -      |

**Declaration of Conformity:**

1. The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers. It's means measurement values may risk exceeding the limit of regulation standards, if measurement uncertainty is include in test results.
2. The measurement uncertainty please refer to report "Measurement Uncertainty".

**Comments and Explanations:**

1. The test configuration, test mode and test software were written in this test report are declared by the manufacturer.
2. 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: Viola Huang**



# 1 General Description

## 1.1 Information

### 1.1.1 RF General Information

| Frequency Range (MHz) | IEEE Std. 802.11 | Ch. Frequency (MHz) | Channel Number |
|-----------------------|------------------|---------------------|----------------|
| 5925-7125             | ax (HEW20)       | 5955-7115           | 1-233 [59]     |
| 5925-7125             | ax (HEW40)       | 5965-7085           | 3-227 [29]     |
| 5925-7125             | ax (HEW80)       | 5985-7025           | 7-215 [14]     |
| 5925-7125             | ax (HEW160)      | 6025-6985           | 15-207 [7]     |

#### For Radio 2 and Radio 3

| Band     | Mode           | BWch (MHz) | Nant |
|----------|----------------|------------|------|
| UNII 5-8 | ax (HEW20)     | 20         | 4    |
| UNII 5-8 | ax (HEW20)-BF  | 20         | 4    |
| UNII 5-8 | ax (HEW40)     | 40         | 4    |
| UNII 5-8 | ax (HEW40)-BF  | 40         | 4    |
| UNII 5-8 | ax (HEW80)     | 80         | 4    |
| UNII 5-8 | ax (HEW80)-BF  | 80         | 4    |
| UNII 5-8 | ax (HEW160)    | 160        | 4    |
| UNII 5-8 | ax (HEW160)-BF | 160        | 4    |

#### Note:

- ♦ HEW20, HEW40, HEW80 and HEW160 use a combination of OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM modulation.
- ♦ BWch is the nominal channel bandwidth.
- ♦ The channel defined in the IEEE Standard P802.11ax™/D6.1.


**1.1.2 Antenna Information**

| Radio | Ant. | 2.4GHz port | 5GHz port        | 5GHz port        | 6E port | Bluetooth | Brand  | Model Name           | Antenna Type  | Connector | Gain (dBi) |
|-------|------|-------------|------------------|------------------|---------|-----------|--------|----------------------|---------------|-----------|------------|
| 1     | 1    | 4           | 4<br>(High band) | 4<br>(Full band) | -       | -         | ACCTON | EAP9819A-6E-1120-CAM | PCB antenna   | I-PEX     | Note 1     |
|       | 2    | 3           | 3<br>(High band) | 3<br>(Full band) | -       | -         | ACCTON | EAP9819A-6E-1120-CAM | PCB antenna   | I-PEX     |            |
|       | 3    | 2           | 2<br>(High band) | 2<br>(Full band) | -       | -         | ACCTON | EAP9819A-6E-1120-CAM | PCB antenna   | I-PEX     |            |
|       | 4    | 1           | 1<br>(High band) | 1<br>(Full band) | -       | -         | ACCTON | EAP9819A-6E-1120-CAM | PCB antenna   | I-PEX     |            |
| 1     | 5    | -           | 4<br>(Low band)  | 8<br>(Full band) | -       | -         | ACCTON | EAP9819A-6E-1120-CAM | PCB antenna   | I-PEX     |            |
|       | 6    | -           | 3<br>(Low band)  | 7<br>(Full band) | -       | -         | ACCTON | EAP9819A-6E-1120-CAM | PCB antenna   | I-PEX     |            |
|       | 7    | -           | 2<br>(Low band)  | 6<br>(Full band) | -       | -         | ACCTON | EAP9819A-6E-1120-CAM | PCB antenna   | I-PEX     |            |
|       | 8    | -           | 1<br>(Low band)  | 5<br>(Full band) | -       | -         | ACCTON | EAP9819A-6E-1120-CAM | PCB antenna   | I-PEX     |            |
| 2     | 9    | -           | 4                |                  | 4       | -         | ACCTON | EAP9819A-6E-1120-CAM | Metal antenna | I-PEX     |            |
|       | 10   | -           | 2                |                  | 2       | -         | ACCTON | EAP9819A-6E-1120-CAM | Metal antenna | I-PEX     |            |
|       | 11   | -           | 3                |                  | 3       | -         | ACCTON | EAP9819A-6E-1120-CAM | Metal antenna | I-PEX     |            |
|       | 12   | -           | 1                |                  | 1       | -         | ACCTON | EAP9819A-6E-1120-CAM | Metal antenna | I-PEX     |            |
| 3     | 13   | -           | 4                |                  | 4       | -         | ACCTON | EAP9819A-6E-1120-CAM | Metal antenna | I-PEX     |            |
|       | 14   | -           | 2                |                  | 2       | -         | ACCTON | EAP9819A-6E-1120-CAM | Metal antenna | I-PEX     |            |
|       | 15   | -           | 3                |                  | 3       | -         | ACCTON | EAP9819A-6E-1120-CAM | Metal antenna | I-PEX     |            |
|       | 16   | -           | 1                |                  | 1       | -         | ACCTON | EAP9819A-6E-1120-CAM | Metal antenna | I-PEX     |            |
| 4     | 17   | -           | -                | -                | -       | 1         | ACCTON | GT128V007S-001       | Chip antenna  | N/A       |            |

**Note 1:**
**Radio 1 and Radio 4**

| Ant. | Antenna Gain (dBi) |           |         |         |        |           |
|------|--------------------|-----------|---------|---------|--------|-----------|
|      | WLAN 2.4GHz        | WLAN 5GHz |         |         |        | Bluetooth |
|      |                    | UNII 1    | UNII 2A | UNII 2C | UNII 3 |           |
| 1    | 4.51               | 4.09      | 3.06    | 3.82    | 3.60   | -         |
| 2    | 4.97               | 4.40      | 5.70    | 3.79    | 2.99   | -         |
| 3    | 4.66               | 5.17      | 5.99    | 4.38    | 3.52   | -         |
| 4    | 5.95               | 4.64      | 4.09    | 4.19    | 3.36   | -         |
| 5    | -                  | 3.39      | 3.58    | 3.34    | 2.01   | -         |
| 6    | -                  | 3.70      | 3.39    | 2.52    | 3.03   | -         |
| 7    | -                  | 3.10      | 3.68    | 2.83    | 2.84   | -         |
| 8    | -                  | 2.82      | 3.13    | 2.19    | 2.61   | -         |
| 17   | -                  | -         | -       | -       | -      | 3.24      |


**Mode 1: 2.4GHz 4TX and 5GHz UNII 1~UNII 3 8TX**

| Ant. | Directional Gain (dBi) |      |      |           |      |      |      |         |      |      |      |         |      |      |      |        |      |      |       |
|------|------------------------|------|------|-----------|------|------|------|---------|------|------|------|---------|------|------|------|--------|------|------|-------|
|      | WLAN 2.4GHz            |      |      | WLAN 5GHz |      |      |      |         |      |      |      |         |      |      |      |        |      |      |       |
|      |                        |      |      | UNII 1    |      |      |      | UNII 2A |      |      |      | UNII 2C |      |      |      | UNII 3 |      |      |       |
|      | 4T1S                   | 4T2S | 4T4S | 8T1S      | 8T2S | 8T4S | 8T8S | 8T1S    | 8T2S | 8T4S | 8T8S | 8T1S    | 8T2S | 8T4S | 8T8S | 8T1S   | 8T2S | 8T4S | 8T8S  |
| 1    | 9.91                   | 6.91 | 3.96 | 8.39      | 5.39 | 5.17 | 0.57 | 8.65    | 5.99 | 5.99 | 0.76 | 7.37    | 4.38 | 4.38 | 0.01 | 7.13   | 4.13 | 3.60 | -0.40 |
| 2    |                        |      |      |           |      |      |      |         |      |      |      |         |      |      |      |        |      |      |       |
| 3    |                        |      |      |           |      |      |      |         |      |      |      |         |      |      |      |        |      |      |       |
| 4    |                        |      |      |           |      |      |      |         |      |      |      |         |      |      |      |        |      |      |       |
| 5    | -                      | -    | -    |           |      |      |      |         |      |      |      |         |      |      |      |        |      |      |       |
| 6    | -                      | -    | -    |           |      |      |      |         |      |      |      |         |      |      |      |        |      |      |       |
| 7    | -                      | -    | -    |           |      |      |      |         |      |      |      |         |      |      |      |        |      |      |       |
| 8    | -                      | -    | -    |           |      |      |      |         |      |      |      |         |      |      |      |        |      |      |       |

**Mode 2: 2.4GHz, 5GHz UNII 1~UNII 2A and 5GHz UNII 2C~UNII 3 4TX**

| Ant. | Directional Gain (dBi) |      |      |           |      |      |         |      |      |         |      |      |        |      |      |
|------|------------------------|------|------|-----------|------|------|---------|------|------|---------|------|------|--------|------|------|
|      | WLAN 2.4GHz            |      |      | WLAN 5GHz |      |      |         |      |      |         |      |      |        |      |      |
|      |                        |      |      | UNII 1    |      |      | UNII 2A |      |      | UNII 2C |      |      | UNII 3 |      |      |
|      | 4T1S                   | 4T2S | 4T4S | 4T1S      | 4T2S | 4T4S | 4T1S    | 4T2S | 4T4S | 4T1S    | 4T2S | 4T4S | 4T1S   | 4T2S | 4T4S |
| 1    | 9.91                   | 6.91 | 3.96 | -         | -    | -    | -       | -    | -    | 8.67    | 5.67 | 2.75 | 8.15   | 5.15 | 2.27 |
| 2    |                        |      |      |           |      |      |         |      |      |         |      |      |        |      |      |
| 3    |                        |      |      |           |      |      |         |      |      |         |      |      |        |      |      |
| 4    |                        |      |      |           |      |      |         |      |      |         |      |      |        |      |      |
| 5    | -                      | -    | -    | 7.35      | 4.35 | 1.38 | 7.38    | 4.38 | 1.47 | -       | -    | -    | -      | -    | -    |
| 6    | -                      | -    | -    |           |      |      |         |      |      |         |      |      |        |      |      |
| 7    | -                      | -    | -    |           |      |      |         |      |      |         |      |      |        |      |      |
| 8    | -                      | -    | -    |           |      |      |         |      |      |         |      |      |        |      |      |


**For Radio 2~Radio 3**

| Ant. | Antenna Gain (dBi) |         |         |        |         |        |        |        |
|------|--------------------|---------|---------|--------|---------|--------|--------|--------|
|      | WLAN 5GHz          |         |         |        | WLAN 6E |        |        |        |
|      | UNII 1             | UNII 2A | UNII 2C | UNII 3 | UNII 5  | UNII 6 | UNII 7 | UNII 8 |
| 9    | 3.56               | 4.37    | 3.82    | 4.70   | 4.96    | 3.57   | 3.72   | 4.44   |
| 10   | 1.25               | 3.18    | 3.45    | 1.86   | 4.40    | 3.52   | 3.12   | 3.31   |
| 11   | 4.27               | 4.24    | 2.25    | 3.64   | 4.14    | 2.03   | 3.08   | 4.86   |
| 12   | 1.94               | 2.59    | 2.08    | 3.11   | 4.85    | 2.60   | 3.43   | 3.41   |
| 13   | 3.25               | 3.68    | 3.74    | 2.90   | 4.16    | 2.52   | 0.71   | 2.03   |
| 14   | 2.35               | 4.20    | 2.48    | 3.96   | 4.72    | 2.06   | 1.91   | 2.03   |
| 15   | 3.07               | 3.84    | 2.89    | 2.61   | 2.24    | 1.61   | 2.74   | 2.45   |
| 16   | 3.41               | 3.65    | 1.81    | 3.31   | 3.43    | 3.56   | 2.35   | 1.93   |

**For 5GHz UNII 1~UNII 3**

| Ant. | Directional Gain (dBi) |      |      |         |      |      |         |      |       |        |      |      |
|------|------------------------|------|------|---------|------|------|---------|------|-------|--------|------|------|
|      | WLAN 5GHz              |      |      |         |      |      |         |      |       |        |      |      |
|      | UNII 1                 |      |      | UNII 2A |      |      | UNII 2C |      |       | UNII 3 |      |      |
|      | 4T1S                   | 4T2S | 4T4S | 4T1S    | 4T2S | 4T4S | 4T1S    | 4T2S | 4T4S  | 4T1S   | 4T2S | 4T4S |
| 9    | 6.84                   | 4.27 | 0.94 | 7.38    | 4.38 | 1.63 | 5.12    | 3.82 | -0.67 | 5.70   | 4.70 | 0.08 |
| 10   |                        |      |      |         |      |      |         |      |       |        |      |      |
| 11   |                        |      |      |         |      |      |         |      |       |        |      |      |
| 12   |                        |      |      |         |      |      |         |      |       |        |      |      |
| 13   | 6.79                   | 3.79 | 0.92 | 6.16    | 4.20 | 0.76 | 4.51    | 3.74 | -0.79 | 5.60   | 3.96 | 0.29 |
| 14   |                        |      |      |         |      |      |         |      |       |        |      |      |
| 15   |                        |      |      |         |      |      |         |      |       |        |      |      |
| 16   |                        |      |      |         |      |      |         |      |       |        |      |      |



**For 6GHz UNII 5~8**

| Ant. | Directional Gain (dBi) |      |      |        |      |      |        |      |       |        |      |       |
|------|------------------------|------|------|--------|------|------|--------|------|-------|--------|------|-------|
|      | WLAN 6E                |      |      |        |      |      |        |      |       |        |      |       |
|      | UNII 5                 |      |      | UNII 6 |      |      | UNII 7 |      |       | UNII 8 |      |       |
|      | 4T1S                   | 4T2S | 4T4S | 4T1S   | 4T2S | 4T4S | 4T1S   | 4T2S | 4T4S  | 4T1S   | 4T2S | 4T4S  |
| 9    | 7.11                   | 4.96 | 1.27 | 6.27   | 3.57 | 0.39 | 6.05   | 3.72 | 0.36  | 7.06   | 4.86 | 1.54  |
| 10   |                        |      |      |        |      |      |        |      |       |        |      |       |
| 11   |                        |      |      |        |      |      |        |      |       |        |      |       |
| 12   |                        |      |      |        |      |      |        |      |       |        |      |       |
| 13   | 7.06                   | 4.72 | 1.39 | 6.25   | 3.56 | 0.34 | 4.86   | 2.74 | -0.72 | 5.56   | 2.56 | -0.38 |
| 14   |                        |      |      |        |      |      |        |      |       |        |      |       |
| 15   |                        |      |      |        |      |      |        |      |       |        |      |       |
| 16   |                        |      |      |        |      |      |        |      |       |        |      |       |

Note 2: The EUT has seventeen antennas.

Note 3: The brand/model/antenna type information was declared by manufacturer.

Note 4: Maximum Directional Gain following KDB662911 D03.

The antenna report is provided in the operational description for this application.

Note 5: The EUT doesn't enable the DFS band.

**For Radio 1****For 2.4GHz:****For IEEE 802.11b/g/n/VHT/ax mode (4TX/4RX):**

Port 1, Port 2, Port 3 and Port 4 can be used as transmitting/receiving antenna.

Port 1, Port 2, Port 3 and Port 4 could transmit/receive simultaneously.

**For 5GHz UNII 1 and UNII 3 (SBS Mode):****For IEEE 802.11a/n/ac/ax mode (4TX/4RX):**

Port 1, Port 2, Port 3 and Port 4 can be used as transmitting/receiving antenna.

Port 1, Port 2, Port 3 and Port 4 could transmit/receive simultaneously.

**For 5GHz UNII 1 and UNII 3 (DBS Mode):****For IEEE 802.11a/n/ac/ax mode (8TX/8RX):**

Port 1, Port 2, Port 3, Port 4, Port 5, Port 6, Port 7, Port 8 can be used as transmitting/receiving antenna.

Port 1, Port 2, Port 3, Port 4, Port 5, Port 6, Port 7, Port 8 could transmit/receive simultaneously.

**For Radio 2 and Radio 3****For 5GHz UNII 1 and UNII 3:****For IEEE 802.11a/n/ac/ax mode (4TX/4RX):**

Port 1, Port 2, Port 3 and Port 4 can be used as transmitting/receiving antenna.

Port 1, Port 2, Port 3 and Port 4 could transmit/receive simultaneously.

**For 6GHz UNII 5~8:****For IEEE 802.11ax mode (4TX/4RX):**

Port 1, Port 2, Port 3 and Port 4 can be used as transmitting/receiving antenna.

Port 1, Port 2, Port 3 and Port 4 could transmit/receive simultaneously.

**For Radio 4****For Bluetooth:**

Only Port 1 can be used as transmitting/receiving antenna.



### 1.1.3 Mode Test Duty Cycle

#### For Radio 2 Pine 1

| Mode               | DC    | DCF(dB) | T(s)   | VBW(Hz) $\geq 1/T$ |
|--------------------|-------|---------|--------|--------------------|
| 802.11ax HEW20     | 0.868 | 0.61    | 5.445m | 300                |
| 802.11ax HEW20-BF  | 0.764 | 1.17    | 1.765m | 1k                 |
| 802.11ax HEW40     | 0.821 | 0.86    | 5.444m | 300                |
| 802.11ax HEW40-BF  | 0.843 | 0.74    | 1.764m | 1k                 |
| 802.11ax HEW80     | 0.865 | 0.63    | 5.444m | 300                |
| 802.11ax HEW80-BF  | 0.921 | 0.36    | 1.689m | 1k                 |
| 802.11ax HEW160    | 0.915 | 0.39    | 5.444m | 300                |
| 802.11ax HEW160-BF | 0.963 | 0.16    | 1.888m | 1k                 |

#### For Radio 3 Pine 2

| Mode               | DC    | DCF(dB) | T(s)   | VBW(Hz) $\geq 1/T$ |
|--------------------|-------|---------|--------|--------------------|
| 802.11ax HEW20     | 0.861 | 0.65    | 5.447m | 300                |
| 802.11ax HEW20-BF  | 0.821 | 0.86    | 1.764m | 1k                 |
| 802.11ax HEW40     | 0.866 | 0.62    | 5.445m | 300                |
| 802.11ax HEW40-BF  | 0.833 | 0.79    | 1.764m | 1k                 |
| 802.11ax HEW80     | 0.865 | 0.63    | 5.448m | 300                |
| 802.11ax HEW80-BF  | 0.846 | 0.73    | 1.688m | 1k                 |
| 802.11ax HEW160    | 0.942 | 0.26    | 5.448m | 300                |
| 802.11ax HEW160-BF | 0.843 | 0.74    | 1.888m | 1k                 |

**Note:**

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

**1.1.4 EUT Operational Condition**

|                                            |                                                                                                                           |                     |                          |                             |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------------|-----------------------------|
| <b>EUT Power Type</b>                      | From PoE                                                                                                                  |                     |                          |                             |
| <b>Beamforming Function</b>                | <input checked="" type="checkbox"/>                                                                                       | With beamforming    | <input type="checkbox"/> | Without beamforming         |
|                                            | The product has beamforming function for n/VHT/ax in 2.4GHz, n/ac/ax in 5GHz UNII 1, UNII 3 and ax in 6GHz UNII 5~UNII 8. |                     |                          |                             |
| <b>Device Type</b>                         | <input checked="" type="checkbox"/>                                                                                       | Indoor Access Point | <input type="checkbox"/> | Subordinate                 |
|                                            | <input type="checkbox"/>                                                                                                  | Indoor Client       | <input type="checkbox"/> | Standard Power Access Point |
|                                            | <input type="checkbox"/>                                                                                                  | Dual Client         | <input type="checkbox"/> | Standard Client             |
|                                            | <input type="checkbox"/>                                                                                                  | Fixed Client        |                          |                             |
| <b>Test Software Version</b>               | QSPR Version 5.0-00197                                                                                                    |                     |                          |                             |
| <b>Software / Firmware Version for CBP</b> | OpenWrt Chaos Calmer 15.05.1 eea552a14b+r49254 / LuCI branch (git-21.019.43130-95d7e469c)                                 |                     |                          |                             |

Note: The above information was declared by manufacturer.

**1.1.5 Table of Radio Function**

| Radio (R)     | 2.4GHz | 5GHz | 6E | Bluetooth |
|---------------|--------|------|----|-----------|
| 1             | V      | V    | -  | -         |
| 2<br>(Pine 1) | -      | V    | V  | -         |
| 3<br>(Pine 2) | -      | V    | V  | -         |
| 4             | -      | -    | -  | V         |

**1.1.6 Table for EUT Operation Function**

| Mode | Operation Function                                                                                             |
|------|----------------------------------------------------------------------------------------------------------------|
| 1    | DBS Mode: R1: 2.4GHz/5GHz UNII 1,UNII 3 in 8TX +R2: 5GHz UNII 1,UNII 3/6GHz+R3: 5GHz UNII 1,UNII 3/6GHz+R4: BT |
| 2    | SBS Mode: R1: 2.4GHz/5GHz UNII 1,UNII 3 in 4TX +R2: 5GHz UNII 1,UNII 3/6GHz+R3: 5GHz UNII 1,UNII 3/6GHz+R4: BT |

Note1: Only the 5GHz mode of radio 2, and 3 has been performed in the testing, because the output power is larger than 6GHz.

Note2: Radio 2 and Radio 3 can transmit simultaneously but they can't be configured to the same frequency.



## 1.2 Applicable Standards

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

- ♦ 47 CFR FCC Part 15.407
- ♦ ANSI C63.10-2013
- ♦ FCC KDB 789033 D02 v02r01

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

- ♦ FCC KDB 987594 D02 v01r01
- ♦ FCC KDB 662911 D03 v01
- ♦ FCC KDB 412172 D01 v01r01
- ♦ FCC KDB 414788 D01 v01r01

## 1.3 Testing Location Information

| Testing Location Information                              |                                                                                    |
|-----------------------------------------------------------|------------------------------------------------------------------------------------|
| Test Lab. : Sporton International Inc. Hsinchu Laboratory |                                                                                    |
| Hsinchu                                                   | ADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.) |
| (TAF: 3787)                                               | TEL: 886-3-656-9065 FAX: 886-3-656-9085                                            |
|                                                           | Test site Designation No. TW3787 with FCC.                                         |
|                                                           | Conformity Assessment Body Identifier (CABID) TW3787 with ISCED.                   |

| Test Condition                                   | Test Site No. | Test Engineer | Test Environment (°C / %) | Test Date                   |
|--------------------------------------------------|---------------|---------------|---------------------------|-----------------------------|
| RF Conducted                                     | TH01-CB       | Serway Lee    | 23.6-24.3 / 63-65         | Jan. 03, 2022~Apr. 08, 2022 |
|                                                  |               | Serway Lee    | 22.1-22.7 / 67-71         | Nov. 21, 2022~Nov. 22, 2022 |
| Radiated below 1GHz                              | 03CH03-CB     | Kevin Huang   | 24-25.1 / 56-59           | Dec. 21, 2021               |
| Radiated above 1GHz                              | 03CH01-CB     | Bruce Yang    | 24.2-26.1 / 55-58         | Dec. 25, 2021~Apr. 14, 2022 |
|                                                  | 03CH02-CB     | Bruce Yang    | 23.1-23.8 / 52-55         | Nov. 11, 2022~Nov. 22, 2022 |
|                                                  | 03CH03-CB     | Bruce Yang    | 23.1-24.2 / 57-60         |                             |
| AC Conduction                                    | CO01-CB       | Peter Wu      | 21-22 / 50-51             | Jan. 07, 2022               |
| RF Conducted<br>(Contention-Based Protocol test) | DF02-CB       | Jay Lo        | 24.2-25.4 / 65-69         | Mar. 25, 2022               |

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

### For test data before Jun. 01, 2022

| Test Items                           | Uncertainty | Remark                   |
|--------------------------------------|-------------|--------------------------|
| Conducted Emission (150kHz ~ 30MHz)  | 3.4 dB      | Confidence levels of 95% |
| Radiated Emission (9kHz ~ 30MHz)     | 3.4 dB      | Confidence levels of 95% |
| Radiated Emission (30MHz ~ 1,000MHz) | 5.6 dB      | Confidence levels of 95% |
| Radiated Emission (1GHz ~ 18GHz)     | 4.7 dB      | Confidence levels of 95% |
| Radiated Emission (18GHz ~ 40GHz)    | 4.2 dB      | Confidence levels of 95% |
| Conducted Emission                   | 2.5 dB      | Confidence levels of 95% |
| Output Power Measurement             | 1.3 dB      | Confidence levels of 95% |
| Power Density Measurement            | 2.5 dB      | Confidence levels of 95% |
| Bandwidth Measurement                | 0.9%        | Confidence levels of 95% |

### For test data after May 31, 2022

| Test Items                        | Uncertainty | Remark                   |
|-----------------------------------|-------------|--------------------------|
| Radiated Emission (1GHz ~ 18GHz)  | 5.2 dB      | Confidence levels of 95% |
| Radiated Emission (18GHz ~ 40GHz) | 4.7 dB      | Confidence levels of 95% |
| Conducted Emission                | 3.2 dB      | Confidence levels of 95% |
| Output Power Measurement          | 0.8 dB      | Confidence levels of 95% |
| Power Density Measurement         | 3.2 dB      | Confidence levels of 95% |
| Bandwidth Measurement             | 2.0 %       | Confidence levels of 95% |



## 2 Test Configuration of EUT

### 2.1 Test Channel Mode

For Radio 2 Pine 1

Non beamforming mode

| Mode                            | Power Setting |
|---------------------------------|---------------|
| 802.11ax HEW20_Nss1,(MCS0)_4TX  | -             |
| 5955MHz                         | 7             |
| 6175MHz                         | 7.5           |
| 6415MHz                         | 7.5           |
| 6435MHz                         | 7             |
| 6475MHz                         | 7             |
| 6515MHz                         | 4.5           |
| 6535MHz                         | 5.5           |
| 6695MHz                         | 5.5           |
| 6855MHz                         | 5             |
| 6875MHz Straddle 6.525-6.875GHz | 5             |
| 6895MHz                         | 4.5           |
| 6995MHz                         | 5             |
| 7095MHz                         | 5.5           |
| 7115MHz                         | 5             |
| 802.11ax HEW40_Nss1,(MCS0)_4TX  | -             |
| 5965MHz                         | 9.5           |
| 6165MHz                         | 9.5           |
| 6405MHz                         | 9             |
| 6445MHz                         | 9             |
| 6485MHz                         | 8.5           |
| 6525MHz Straddle 6.425-6.525GHz | 8             |
| 6565MHz                         | 8             |
| 6685MHz                         | 7.5           |
| 6845MHz                         | 8             |
| 6885MHz Straddle 6.525-6.875GHz | 8             |
| 6925MHz                         | 7.5           |
| 7005MHz                         | 7.5           |
| 7085MHz                         | 7.5           |
| 802.11ax HEW80_Nss1,(MCS0)_4TX  | -             |
| 5985MHz                         | 11.5          |
| 6145MHz                         | 12.5          |
| 6385MHz                         | 11.5          |



| Mode                            | Power Setting |
|---------------------------------|---------------|
| 6465MHz                         | 12            |
| 6545MHz Straddle 6.425-6.525GHz | 11            |
| 6625MHz                         | 11.5          |
| 6705MHz                         | 11            |
| 6785MHz                         | 11            |
| 6865MHz Straddle 6.525-6.875GHz | 11            |
| 6945MHz                         | 10            |
| 7025MHz                         | 10            |
| 802.11ax HEW160_Nss1,(MCS0)_4TX | -             |
| 6025MHz                         | 15.5          |
| 6185MHz                         | 15            |
| 6345MHz                         | 15            |
| 6505MHz Straddle 6.425-6.525GHz | 14            |
| 6665MHz                         | 14            |
| 6825MHz Straddle 6.525-6.875GHz | 13.5          |
| 6985MHz                         | 13            |

**Beamforming mode**

| Mode                              | Power Setting |
|-----------------------------------|---------------|
| 802.11ax HEW20-BF_Nss1,(MCS0)_4TX | -             |
| 5955MHz                           | 12            |
| 6175MHz                           | 13            |
| 6415MHz                           | 13            |
| 6435MHz                           | 12            |
| 6475MHz                           | 13            |
| 6515MHz                           | 13            |
| 6535MHz                           | 12            |
| 6695MHz                           | 13            |
| 6855MHz                           | 11            |
| 6875MHz Straddle 6.525-6.875GHz   | 11            |
| 6895MHz                           | 12            |
| 6995MHz                           | 11            |
| 7095MHz                           | 13            |
| 7115MHz                           | 12            |
| 802.11ax HEW40-BF_Nss1,(MCS0)_4TX | -             |
| 5965MHz                           | 15            |
| 6165MHz                           | 15            |
| 6405MHz                           | 15            |
| 6445MHz                           | 15            |
| 6485MHz                           | 14            |
| 6525MHz Straddle 6.425-6.525GHz   | 14            |
| 6565MHz                           | 14            |
| 6685MHz                           | 15            |
| 6845MHz                           | 15            |
| 6885MHz Straddle 6.525-6.875GHz   | 14            |
| 6925MHz                           | 14            |
| 7005MHz                           | 14            |
| 7085MHz                           | 14            |
| 802.11ax HEW80-BF_Nss1,(MCS0)_4TX | -             |
| 5985MHz                           | 19            |
| 6145MHz                           | 19            |
| 6385MHz                           | 17            |
| 6465MHz                           | 17            |
| 6545MHz Straddle 6.425-6.525GHz   | 18            |
| 6625MHz                           | 18            |
| 6705MHz                           | 18            |
| 6785MHz                           | 19            |





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| Mode                               | Power Setting |
|------------------------------------|---------------|
| 6865MHz Straddle 6.525-6.875GHz    | 16            |
| 6945MHz                            | 19            |
| 7025MHz                            | 18            |
| 802.11ax HEW160-BF_Nss1,(MCS0)_4TX | -             |
| 6025MHz                            | 21            |
| 6185MHz                            | 22            |
| 6345MHz                            | 21            |
| 6505MHz Straddle 6.425-6.525GHz    | 22            |
| 6665MHz                            | 22            |
| 6825MHz Straddle 6.525-6.875GHz    | 22            |
| 6985MHz                            | 21            |

**For Radio 3 Pine 2  
Non beamforming mode**

| Mode                            | Power Setting |
|---------------------------------|---------------|
| 802.11ax HEW20_Nss1,(MCS0)_4TX  | -             |
| 5955MHz                         | 7.5           |
| 6175MHz                         | 7             |
| 6415MHz                         | 8.5           |
| 6435MHz                         | 8.5           |
| 6475MHz                         | 8.5           |
| 6515MHz                         | 7.5           |
| 6535MHz                         | 7.5           |
| 6695MHz                         | 7.5           |
| 6855MHz                         | 7.5           |
| 6875MHz Straddle 6.525-6.875GHz | 7.5           |
| 6895MHz                         | 7.5           |
| 6995MHz                         | 8             |
| 7095MHz                         | 8             |
| 7115MHz                         | 7.5           |
| 802.11ax HEW40_Nss1,(MCS0)_4TX  | -             |
| 5965MHz                         | 10            |
| 6165MHz                         | 9.5           |
| 6405MHz                         | 10.5          |
| 6445MHz                         | 11            |
| 6485MHz                         | 10            |
| 6525MHz Straddle 6.425-6.525GHz | 10            |
| 6565MHz                         | 9.5           |
| 6685MHz                         | 10            |
| 6845MHz                         | 10.5          |
| 6885MHz Straddle 6.525-6.875GHz | 10.5          |
| 6925MHz                         | 12            |
| 7005MHz                         | 10.5          |
| 7085MHz                         | 11.5          |
| 802.11ax HEW80_Nss1,(MCS0)_4TX  | -             |
| 5985MHz                         | 13            |
| 6145MHz                         | 12            |
| 6385MHz                         | 13            |
| 6465MHz                         | 14            |
| 6545MHz Straddle 6.425-6.525GHz | 13            |
| 6625MHz                         | 13.5          |
| 6705MHz                         | 13            |
| 6785MHz                         | 13            |



| Mode                            | Power Setting |
|---------------------------------|---------------|
| 6865MHz Straddle 6.525-6.875GHz | 13.5          |
| 6945MHz                         | 12            |
| 7025MHz                         | 14            |
| 802.11ax HEW160_Nss1,(MCS0)_4TX | -             |
| 6025MHz                         | 15            |
| 6185MHz                         | 14            |
| 6345MHz                         | 15            |
| 6505MHz Straddle 6.425-6.525GHz | 16.5          |
| 6665MHz                         | 15            |
| 6825MHz Straddle 6.525-6.875GHz | 16            |
| 6985MHz                         | 14.5          |

**Beamforming mode**

| Mode                              | Power Setting |
|-----------------------------------|---------------|
| 802.11ax HEW20-BF_Nss1,(MCS0)_4TX | -             |
| 5955MHz                           | 12            |
| 6175MHz                           | 14            |
| 6415MHz                           | 14            |
| 6435MHz                           | 14            |
| 6475MHz                           | 14            |
| 6515MHz                           | 14            |
| 6535MHz                           | 14            |
| 6695MHz                           | 14            |
| 6855MHz                           | 12            |
| 6875MHz Straddle 6.525-6.875GHz   | 13            |
| 6895MHz                           | 13            |
| 6995MHz                           | 13            |
| 7095MHz                           | 12            |
| 7115MHz                           | 14            |
| 802.11ax HEW40-BF_Nss1,(MCS0)_4TX | -             |
| 5965MHz                           | 16            |
| 6165MHz                           | 16            |
| 6405MHz                           | 16            |
| 6445MHz                           | 16            |
| 6485MHz                           | 18            |
| 6525MHz Straddle 6.425-6.525GHz   | 18            |
| 6565MHz                           | 16            |
| 6685MHz                           | 16            |
| 6845MHz                           | 15            |
| 6885MHz Straddle 6.525-6.875GHz   | 16            |
| 6925MHz                           | 16            |
| 7005MHz                           | 16            |
| 7085MHz                           | 16            |
| 802.11ax HEW80-BF_Nss1,(MCS0)_4TX | -             |
| 5985MHz                           | 19            |
| 6145MHz                           | 18            |
| 6385MHz                           | 17            |
| 6465MHz                           | 17            |
| 6545MHz Straddle 6.425-6.525GHz   | 19            |
| 6625MHz                           | 18            |
| 6705MHz                           | 18            |
| 6785MHz                           | 20            |



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| Mode                               | Power Setting |
|------------------------------------|---------------|
| 6865MHz Straddle 6.525-6.875GHz    | 19            |
| 6945MHz                            | 20            |
| 7025MHz                            | 18            |
| 802.11ax HEW160-BF_Nss1,(MCS0)_4TX | -             |
| 6025MHz                            | 22            |
| 6185MHz                            | 22            |
| 6345MHz                            | 22            |
| 6505MHz Straddle 6.425-6.525GHz    | 22            |
| 6665MHz                            | 22            |
| 6825MHz Straddle 6.525-6.875GHz    | 22            |
| 6985MHz                            | 22            |

## 2.2 The Worst Case Measurement Configuration

| The Worst Case Mode for Following Conformance Tests                           |                                                                                                      |
|-------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| <b>Tests Item</b>                                                             | AC power-line conducted emissions                                                                    |
| <b>Condition</b>                                                              | AC power-line conducted measurement for line and neutral<br>Test Voltage: 120Vac / 60Hz              |
| <b>Operating Mode</b>                                                         | Normal Link                                                                                          |
| 1                                                                             | DBS Mode:R1: 2.4GHz/5GHz UNII 1,UNII 3 in 8TX +R2: 5GHz UNII 1,UNII 3+R3: 5GHz UNII 1,UNII 3 +R4: BT |
| 2                                                                             | SBS Mode:R1: 2.4GHz/5GHz UNII 1,UNII 3 in 4TX +R2: 5GHz UNII 1,UNII 3+R3: 5GHz UNII 1,UNII 3+R4: BT  |
| For operating mode 1 is the worst case and it was record in this test report. |                                                                                                      |

| The Worst Case Mode for Following Conformance Tests |                                          |
|-----------------------------------------------------|------------------------------------------|
| <b>Tests Item</b>                                   | Contention Based Protocol                |
| <b>Test Condition</b>                               | Conducted measurement at transmit chains |

| The Worst Case Mode for Following Conformance Tests |                                           |
|-----------------------------------------------------|-------------------------------------------|
| <b>Tests Item</b>                                   | Emission Bandwidth<br>Frequency Stability |
| <b>Test Condition</b>                               | Conducted measurement at transmit chains  |
| 1                                                   | EUT_Radio 2 Pine 1                        |
| 2                                                   | EUT_Radio 3 Pine 2                        |

| The Worst Case Mode for Following Conformance Tests |                                                                                                      |
|-----------------------------------------------------|------------------------------------------------------------------------------------------------------|
| <b>Tests Item</b>                                   | Maximum Equivalent Isotropically Radiated Power (E.I.R.P.)<br>Peak Power Spectral Density (E.I.R.P.) |
| <b>Test Condition</b>                               | Conducted measurement at transmit chains                                                             |
| 1                                                   | EUT_Radio 2 Pine 1 UNII 6 (6505, 6515, 6525, 6545MHz), UNII 7~UNII 8_non beamforming mode            |

| <b>The Worst Case Mode for Following Conformance Tests</b> |                                                                                                                                                                  |
|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Tests Item</b>                                          | Maximum Equivalent Isotropically Radiated Power (E.I.R.P.)<br>Peak Power Spectral Density (E.I.R.P.)                                                             |
| <b>Test Condition</b>                                      | Radiated measurement                                                                                                                                             |
|                                                            | The EUT was performed at X axis, Y axis and Z axis position, and the worst case was found as below. So the measurement will follow this same test configuration. |
| 1                                                          | EUT in X axis_Radio 2 Pine 1 UNII 5, UNII 6(Other than 6505, 6515, 6525, 6545MHz)_non beamforming mode                                                           |
| 2                                                          | EUT in X axis_Radio 2 Pine 1 UNII 5~UNII 8_beamforming mode                                                                                                      |
| 3                                                          | EUT in Y axis_Radio 3 Pine 2 UNII 5~UNII 8_non beamforming mode                                                                                                  |
| 4                                                          | EUT in Y axis_Radio 3 Pine 2 UNII 5~UNII 8_beamforming mode                                                                                                      |

| <b>The Worst Case Mode for Following Conformance Tests</b>                                                                  |                                                                                                                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Tests Item</b>                                                                                                           | Unwanted Emissions                                                                                                                                                                                                          |
| <b>Test Condition</b>                                                                                                       | Radiated measurement                                                                                                                                                                                                        |
|                                                                                                                             | If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type. |
| <b>Operating Mode &lt; 1GHz</b>                                                                                             | Normal Link                                                                                                                                                                                                                 |
| 1                                                                                                                           | DBS Mode: EUT in Z axis-<br>R1: 2.4GHz/5GHz UNII 1,UNII 3 in 8TX +R2: 5GHz UNII 1,UNII 3+R3: 5GHz UNII 1,UNII 3 +R4: BT                                                                                                     |
| 2                                                                                                                           | DBS Mode: EUT in Y axis-<br>R1: 2.4GHz/5GHz UNII 1,UNII 3 in 8TX +R2: 5GHz UNII 1,UNII 3+R3: 5GHz UNII 1,UNII 3 +R4: BT                                                                                                     |
| 3                                                                                                                           | DBS Mode: EUT in X axis-<br>R1: 2.4GHz/5GHz UNII 1,UNII 3 in 8TX +R2: 5GHz UNII 1,UNII 3+R3: 5GHz UNII 1,UNII 3 +R4: BT                                                                                                     |
| Mode 2 has been evaluated to be the worst case among Mode 1~3, thus measurement for Mode 4 will follow this same test mode. |                                                                                                                                                                                                                             |
| 4                                                                                                                           | SBS Mode: EUT in Y axis-<br>R1: 2.4GHz/5GHz UNII 1,UNII 3 in 4TX +R2: 5GHz UNII 1,UNII 3+R3: 5GHz UNII 1,UNII 3+R4: BT                                                                                                      |
| For operating mode 2 is the worst case and it was record in this test report.                                               |                                                                                                                                                                                                                             |
| <b>Operating Mode &gt; 1GHz</b>                                                                                             | CTX                                                                                                                                                                                                                         |
|                                                                                                                             | The EUT was performed at X axis, Y axis and Z axis position, and the worst case was found as below. So the measurement will follow this same test configuration.                                                            |
| 1                                                                                                                           | EUT in X axis_Radio 2 Pine 1 UNII 5~UNII 8 4TX                                                                                                                                                                              |
| 2                                                                                                                           | EUT in Y axis_Radio 3 Pine 2 UNII 5~UNII 8 4TX                                                                                                                                                                              |



| The Worst Case Mode for Following Conformance Tests |                                          |
|-----------------------------------------------------|------------------------------------------|
| <b>Tests Item</b>                                   | Emission MASK                            |
| <b>Test Condition</b>                               | Conducted measurement at transmit chains |
| 1                                                   | EUT_Radio 2 Pine 1                       |
| 2                                                   | EUT_Radio 3 Pine 2                       |

| The Worst Case Mode for Following Conformance Tests                                   |                                                                                                                 |
|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>Tests Item</b>                                                                     | Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation                                         |
| <b>Operating Mode</b>                                                                 |                                                                                                                 |
| 1                                                                                     | DBS Mode:R1: 2.4GHz/5GHz UNII 1,UNII 3 in 8TX +R2: 5GHz UNII 1,UNII 3+R3: 5GHz UNII 1,UNII 3 +R4: BT            |
| 2                                                                                     | DBS Mode:R1: 2.4GHz/5GHz UNII 1,UNII 3 in 8TX +R2: 5GHz UNII 1,UNII 3+R3: 6GHz UNII 5~UNII 8 +R4: BT            |
| 3                                                                                     | DBS Mode:R1: 2.4GHz/5GHz UNII 1,UNII 3 in 8TX +R2: 6GHz UNII 5~UNII 8+R3: 5GHz UNII 1,UNII 3 +R4: BT            |
| 4                                                                                     | DBS Mode:R1: 2.4GHz/5GHz UNII 1,UNII 3 in 8TX +R2: 6GHz UNII 5~UNII 8+R3: 6GHz UNII 5~UNII 8 +R4: BT            |
| 5                                                                                     | DBS Mode:R1: 2.4GHz/ SBS Mode:5GHz UNII 1+UNII 3 in 4TX +R2: 5GHz UNII 1,UNII 3+R3: 5GHz UNII 1,UNII 3 +R4: BT  |
| 6                                                                                     | DBS Mode:R1: 2.4GHz/ SBS Mode:5GHz UNII 1+UNII 3 in 4TX +R2: 5GHz UNII 1,UNII 3+R3: 6GHz UNII 5~UNII 8 +R4: BT  |
| 7                                                                                     | DBS Mode:R1: 2.4GHz/ SBS Mode:5GHz UNII 1+UNII 3 in 4TX +R2: 6GHz UNII 5~UNII 8+R3: 5GHz UNII 1, UNII 3 +R4: BT |
| 8                                                                                     | DBS Mode:R1: 2.4GHz/ SBS Mode:5GHz UNII 1+UNII 3 in 4TX +R2: 6GHz UNII 5~UNII 8+R3: 6GHz UNII 5~UNII 8 +R4: BT  |
| Refer to Sporton Test Report No.: FA142255-01 for Co-location RF Exposure Evaluation. |                                                                                                                 |

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

The PoE information is below:

| Support Unit | Brand   | Model        |
|--------------|---------|--------------|
| PoE          | Cambium | NET-P60-56IN |





## 2.3 EUT Operation during Test

For CTX Mode:

non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

beamforming mode:

For Conducted Mode:

The EUT was programmed to be in continuously transmitting mode.

For Radiated Mode:

During the test, the following programs under WIN 10 were executed.

The program was executed as follows:

1. During the test, the EUT operation to normal function.
2. Executed command fixed test channel under telnet.
3. Executed "Lantest.exe" to link with the remote workstation to transmit and receive packet by RX Device and transmit duty cycle no less than 98%.

For Normal Link:

During the test, the EUT operation to normal function.

## 2.4 Accessories

| Accessories |
|-------------|
| Cradle*1    |



## 2.5 Support Equipment

**For AC Conduction:**

| Support Equipment |               |            |              |            |
|-------------------|---------------|------------|--------------|------------|
| No.               | Equipment     | Brand Name | Model Name   | FCC ID     |
| A                 | PoE           | Cambium    | NET-P60-56IN | N/A        |
| B                 | PoE PC        | DELL       | T3400        | N/A        |
| C                 | Smart Phone   | Apple      | Iphone 12    | BCG-E3544A |
| D                 | 2.4G NB       | DELL       | E6430        | N/A        |
| E                 | 5G LOW NB     | DELL       | E6430        | N/A        |
| F                 | 5G HIGH NB    | DELL       | E6430        | N/A        |
| G                 | 5G NB         | DELL       | E6430        | N/A        |
| H                 | Flash disk3.0 | Transcend  | JetFlash-700 | N/A        |

**For Radiated (below 1GHz):**

| Support Equipment |                |            |              |            |
|-------------------|----------------|------------|--------------|------------|
| No.               | Equipment      | Brand Name | Model Name   | FCC ID     |
| A                 | PoE            | Cambium    | NET-P60-56IN | N/A        |
| B                 | PC             | HP         | SGH8190LP1   | N/A        |
| C                 | Smart Phone    | Apple      | Iphone 12    | BCG-E3544A |
| D                 | Notebook(2.4G) | DELL       | E4300        | N/A        |
| E                 | Notebook(5G)   | DELL       | E4300        | N/A        |
| F                 | Notebook(5G)   | DELL       | E4300        | N/A        |
| G                 | Notebook(5G)   | DELL       | E4300        | N/A        |
| H                 | Flash disk3.0  | Transcend  | JetFlash-700 | N/A        |

**For Radiated (above 1GHz):**

**For non beamforming mode**

| Support Equipment |           |            |              |        |
|-------------------|-----------|------------|--------------|--------|
| No.               | Equipment | Brand Name | Model Name   | FCC ID |
| A                 | Notebook  | DELL       | E4300        | N/A    |
| B                 | PoE       | Cambium    | NET-P60-56IN | N/A    |

**For beamforming mode**

| Support Equipment |           |            |              |        |
|-------------------|-----------|------------|--------------|--------|
| No.               | Equipment | Brand Name | Model Name   | FCC ID |
| A                 | Notebook  | DELL       | E4300        | N/A    |
| B                 | PoE       | Cambium    | NET-P60-56IN | N/A    |
| C                 | RX Device | Cambium    | Puma         | N/A    |
| D                 | Notebook  | DELL       | E4300        | N/A    |

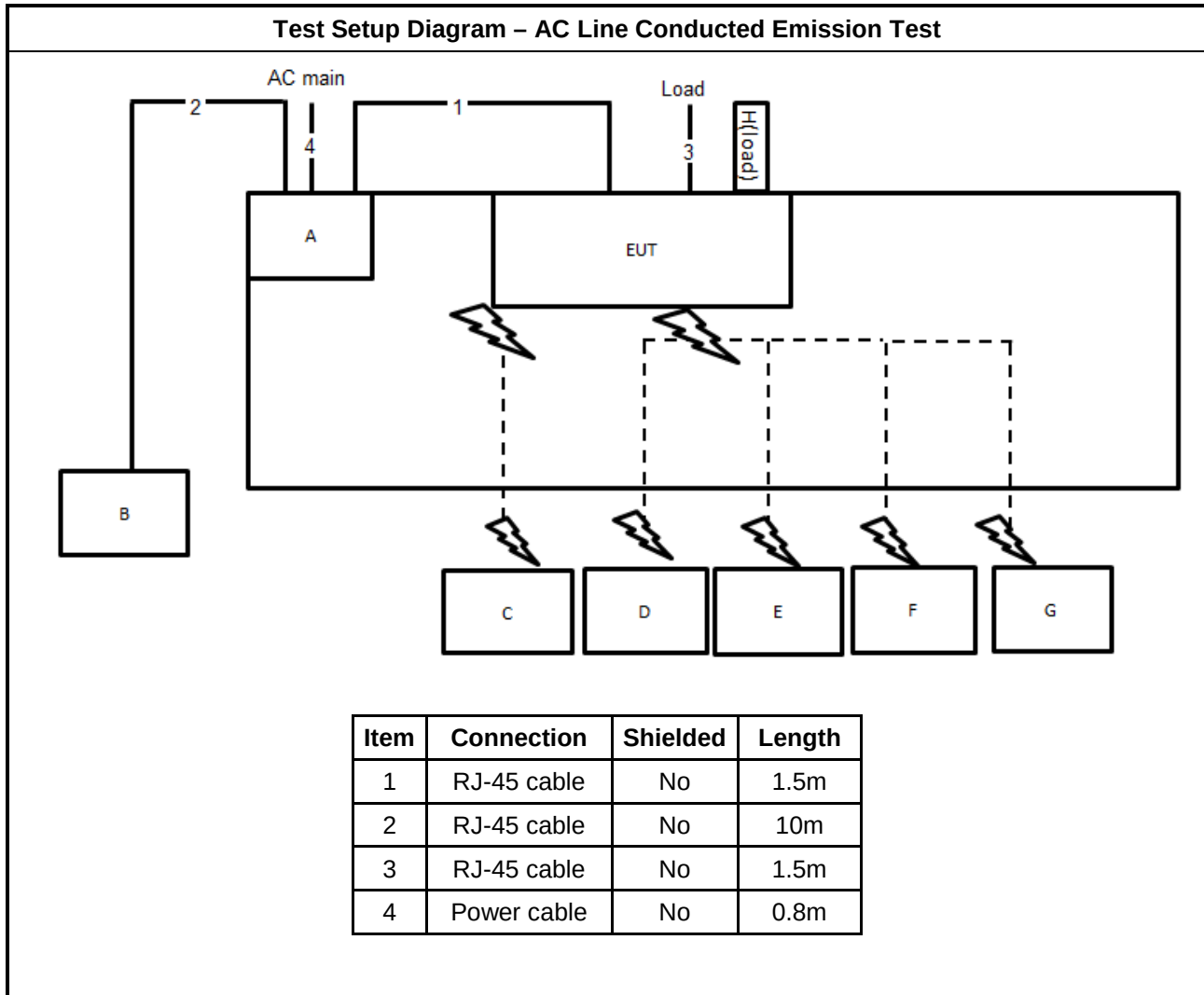
**For RF Conducted (other tests):**

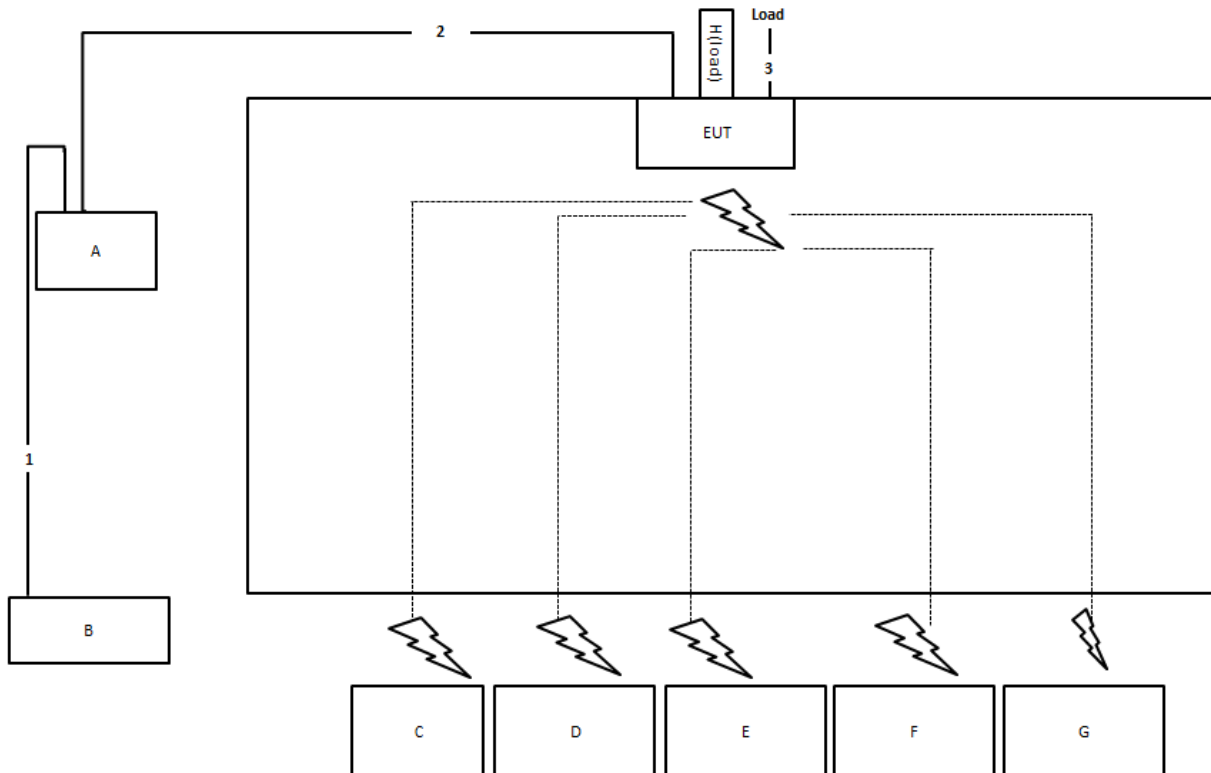
| Support Equipment |           |            |              |        |
|-------------------|-----------|------------|--------------|--------|
| No.               | Equipment | Brand Name | Model Name   | FCC ID |
| A                 | Notebook  | DELL       | E4300        | N/A    |
| B                 | PoE       | Cambium    | NET-P60-56IN | N/A    |

**For RF Conducted (Contention-Based Protocol test):**

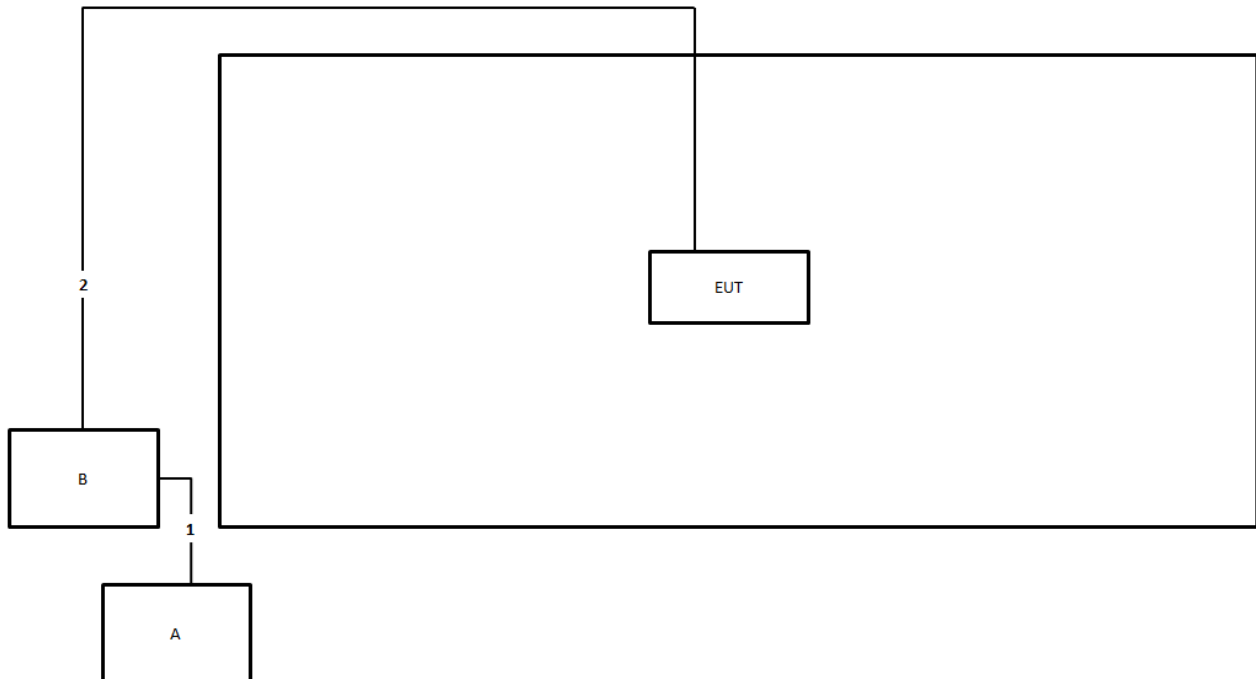
| Support Equipment |           |            |            |        |
|-------------------|-----------|------------|------------|--------|
| No.               | Equipment | Brand Name | Model Name | FCC ID |
| A                 | Notebook  | DELL       | E4300      | N/A    |
| B                 | Notebook  | DELL       | E4300      | N/A    |
| C                 | RX Device | Cambium    | Puma       | N/A    |

## 2.6 Test Setup Diagram

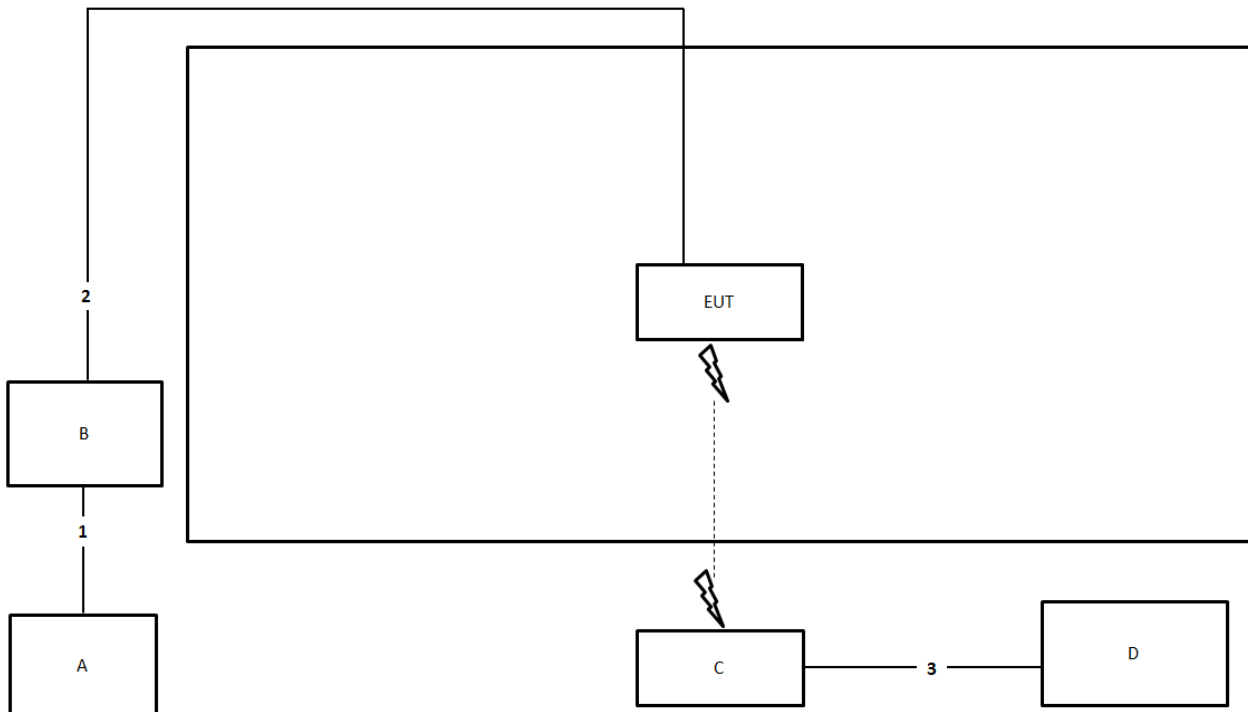


**Test Setup Diagram - Radiated Test < 1GHz**


| Item | Connection  | Shielded | Length |
|------|-------------|----------|--------|
| 1    | RJ-45 cable | No       | 1.5m   |
| 2    | RJ-45 cable | No       | 10m    |
| 3    | RJ-45 cable | No       | 1.5m   |

**Test Setup Diagram - Radiated Test > 1GHz / For non beamforming mode**


| Item | Connection  | Shielded | Length |
|------|-------------|----------|--------|
| 1    | RJ-45 cable | No       | 1.5m   |
| 2    | RJ-45 cable | No       | 10m    |

**Test Setup Diagram - Radiated Test > 1GHz / For beamforming mode**


| Item | Connection  | Shielded | Length |
|------|-------------|----------|--------|
| 1    | RJ-45 cable | No       | 1.5m   |
| 2    | RJ-45 cable | No       | 10m    |
| 3    | RJ-45 cable | No       | 10m    |



### 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 | Average   |
| 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. |            |           |

##### 3.1.2 Measuring Instruments

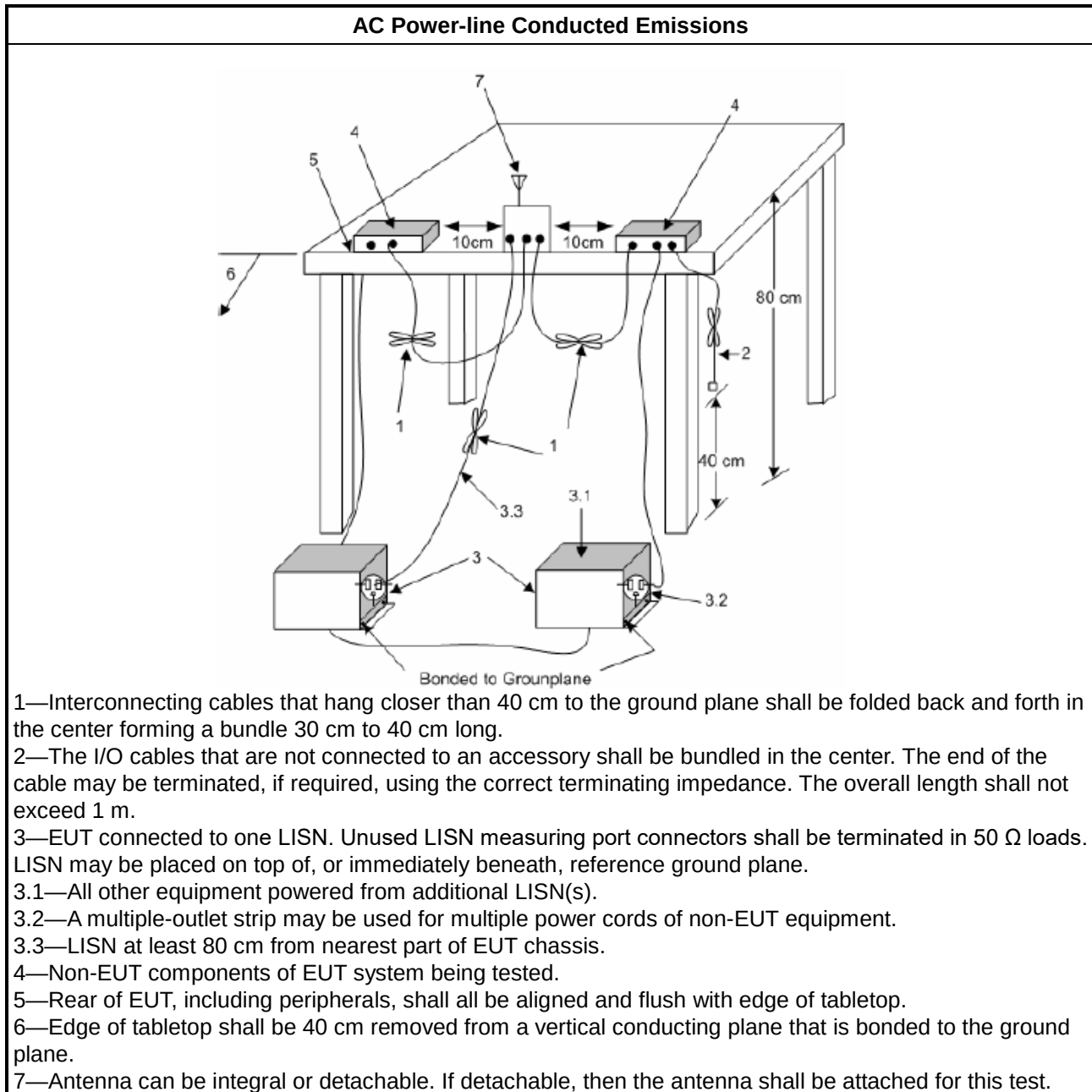
Refer a test equipment and calibration data table in this test report.

##### 3.1.3 Test Procedures

| Test Method                                                                                                      |
|------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions. |



### 3.1.4 Test Setup



### 3.1.5 Measurement Results Calculation

The measured Level is calculated using:

- Corrected Reading (dBuV) = LISN Factor + Cable Loss + Read Level = Level
- Margin = - Limit + (Read Level + LISN Factor + Cable Loss)

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

Refer as Appendix A

## 3.2 Emission Bandwidth

### 3.2.1 Emission Bandwidth Limit

| Emission Bandwidth Limit            |                                 |
|-------------------------------------|---------------------------------|
| <b>UNII Devices</b>                 |                                 |
| <input checked="" type="checkbox"/> | For the 5925-6425 GHz band, N/A |
| <input checked="" type="checkbox"/> | For the 6425-6525 GHz band, N/A |
| <input checked="" type="checkbox"/> | For the 6525-6875 GHz band, N/A |
| <input checked="" type="checkbox"/> | For the 6875-7125 GHz band, N/A |
| <b>RLAN Devices</b>                 |                                 |
| <input type="checkbox"/>            | For the 5925-6425 GHz band, N/A |
| <input type="checkbox"/>            | For the 6425-6525 GHz band, N/A |
| <input type="checkbox"/>            | For the 6525-6875 GHz band, N/A |
| <input type="checkbox"/>            | For the 6875-7125 GHz band, N/A |

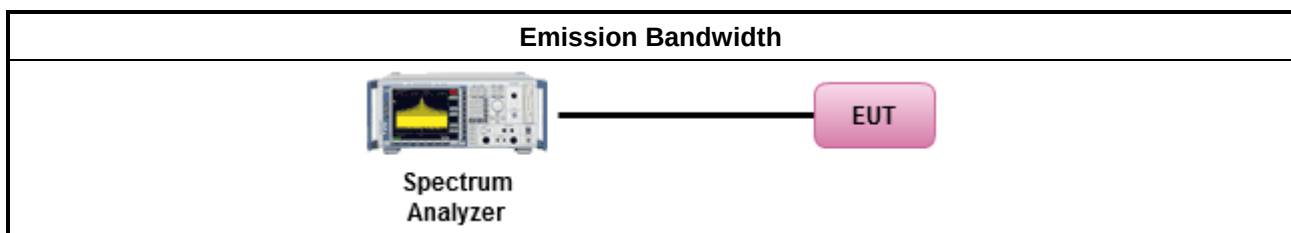
### 3.2.2 Measuring Instruments

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

### 3.2.3 Test Procedures

| Test Method                                                                                                                    |                                                                                                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>For the emission bandwidth shall be measured using one of the options below:</li> </ul> |                                                                                                                                                      |
| <input checked="" type="checkbox"/>                                                                                            | According to KDB 987594 D02 clause II.C, measurement procedure shall refer to FCC KDB 789033 D02, clause C for EBW and clause D for OBW measurement. |
| <input type="checkbox"/>                                                                                                       | Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.                                                                                   |
| <input type="checkbox"/>                                                                                                       | Refer as IC RSS-Gen, clause 4.6 for bandwidth testing.                                                                                               |

### 3.2.4 Test Setup



### 3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B



### 3.3 Maximum Equivalent Isotropically Radiated Power (E.I.R.P.)

#### 3.3.1 Maximum Equivalent Isotropically Radiated Power (E.I.R.P.) Limit

| Maximum Equivalent Isotropically Radiated Power (E.I.R.P.) Limit    |                                                                                                                                                                                              |
|---------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>UNII Devices</b>                                                 |                                                                                                                                                                                              |
| <input checked="" type="checkbox"/> For the 5.925 ~ 6.425 GHz band: |                                                                                                                                                                                              |
|                                                                     | ■ For standard power access point and fixed client device : e.i.r.p < 36 dBm , For outdoor devices, the maximum e.i.r.p. at any elevation angle above 30 degrees not exceed 125 mW (21 dBm). |
|                                                                     | ■ For indoor access point : e.i.r.p < 30 dBm.                                                                                                                                                |
|                                                                     | ■ For subordinate device control of an indoor access point : e.i.r.p < 30 dBm.                                                                                                               |
|                                                                     | ■ For client device control of a standard power access point : e.i.r.p < 30 dBm.                                                                                                             |
|                                                                     | ■ For client device control of an indoor access point : e.i.r.p < 24 dBm.                                                                                                                    |
| <input checked="" type="checkbox"/> For the 6.425 ~ 6.525 GHz band: |                                                                                                                                                                                              |
|                                                                     | ■ For indoor access point : e.i.r.p < 30 dBm.                                                                                                                                                |
|                                                                     | ■ For client device control of an indoor access point : e.i.r.p < 24 dBm.                                                                                                                    |
| <input checked="" type="checkbox"/> For the 6.525 ~ 6.875 GHz band: |                                                                                                                                                                                              |
|                                                                     | ■ For standard power access point and fixed client device : e.i.r.p < 36 dBm , For outdoor devices, the maximum e.i.r.p. at any elevation angle above 30 degrees not exceed 125 mW (21 dBm). |
|                                                                     | ■ For indoor access point : e.i.r.p < 30 dBm.                                                                                                                                                |
|                                                                     | ■ For subordinate device control of an indoor access point : e.i.r.p < 30 dBm.                                                                                                               |
|                                                                     | ■ For client device control of a standard power access point : e.i.r.p < 30 dBm.                                                                                                             |
|                                                                     | ■ For client device control of an indoor access point : e.i.r.p < 24 dBm.                                                                                                                    |
| <input checked="" type="checkbox"/> For the 6.875 ~ 7.125 GHz band: |                                                                                                                                                                                              |
|                                                                     | ■ For indoor access point : e.i.r.p < 30 dBm.                                                                                                                                                |
|                                                                     | ■ For client device control of an indoor access point : e.i.r.p < 24 dBm.                                                                                                                    |
| <b>RLAN Devices</b>                                                 |                                                                                                                                                                                              |
| <input type="checkbox"/> For the 5.925 ~ 7.125 GHz band:            |                                                                                                                                                                                              |
|                                                                     | ■ For RLAN devices(Indoor) other than client devices < 30 dBm / occupied bandwidth.                                                                                                          |
|                                                                     | ■ For client devices(Indoor) < 24 dBm / occupied bandwidth.                                                                                                                                  |



### 3.3.2 Measuring Instruments

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

### 3.3.3 Test Procedures

| Test Method                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>According to FCC KDB 987594 D02 clause II.E, the test measurement procedure shall refer to KDB 789033.</li> </ul>                                                                                                                                                                                                               |                                                                                                                                                                                         |
| Average over on/off periods with duty factor                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                         |
| <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                    | Refer as FCC KDB 789033 D02, clause E Method SA-2 (spectral trace averaging).<br>Spectrum analyzer setting: RBW/VBW : 1/3MHz ; Detector : RMS ; Trace mode : Average ; Sweep Count 100. |
| <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                               | Refer as FCC KDB 789033 D02, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)                                                                                            |
| Wideband RF power meter and average over on/off periods with duty factor                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                         |
| <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                    | Refer as FCC KDB 789033 D02, clause E Method PM-G (using an RF average power meter).                                                                                                    |
| <input checked="" type="checkbox"/> For conducted measurement.                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                         |
| <ul style="list-style-type: none"> <li>If the EUT supports multiple transmit chains using options given below:<br/>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.</li> </ul> |                                                                                                                                                                                         |
| <ul style="list-style-type: none"> <li>If multiple transmit chains, EIRP calculation could be following as methods:<br/> <math>P_{total} = P_1 + P_2 + \dots + P_n</math><br/>                     (calculated in linear unit [mW] and transfer to log unit [dBm])<br/> <math>EIRP_{total} = P_{total} + DG</math> </li> </ul>                                         |                                                                                                                                                                                         |
| <input checked="" type="checkbox"/> For radiated measurement.                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                         |
| <ul style="list-style-type: none"> <li>Refer as FCC KDB 789033 D02 clause II A.1.F "Antenna-port Conducted versus Radiated Testing"</li> </ul>                                                                                                                                                                                                                         |                                                                                                                                                                                         |
| <ul style="list-style-type: none"> <li>Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.</li> </ul>                                                                                                                                                                                                                                                  |                                                                                                                                                                                         |
| <ul style="list-style-type: none"> <li>Refer as FCC KDB 412172 D01 clause 2.2 for EIRP calculation.</li> </ul>                                                                                                                                                                                                                                                         |                                                                                                                                                                                         |

**For Radio 2 Pine 1 UNII 5, UNII 6(Other than 6505, 6515, 6525, 6545MHz)\_non beamforming mode and Radio 2 Pine 1 UNII 5~UNII 8\_beamforming mode**

Note :

The test is the final test result, It includes antenna /cable loss factor & FSL factor.

The EIRP calculation refer to "KDB 412172 D01 Determining ERP and EIRP v01r01"

EIRP Formula :

$$EIRP(dBm) = PR(dBm) + LP(FSL \text{ factor})$$

where;

PR(dBm) : Power measurement level include antenna/cable loss

LP : Free Space Loss(dB)

PR Formula :

$$PR(dBm) = P \text{ Meas}(dBm) - GR(dBi) + LC(dB)$$

where;

P Meas(dBm) : Power measurement level

GR(dBi) : Gain of the receive(measurement) antenna (dBi)



LC(dB) : Measurement cable loss (dB)

LP(FSL factor) Formula :

$$LP(dB) = 20 \log F + 20 \log D - 27.54$$

where;

F(MHz) : EUT center frequency

D(m) : Measurement distance

For Example:

Test mode HEW20 4T1S 5955MHz Non beamforming mode EIRP measurement

PR Formula :

$$PR(dBm) = -37.49 - 10.59 + 5.32 = -42.76$$

LP(FSL factor) Formula :

$$LP(dB) = 20 \log(5955) + 20 \log(3) - 27.5 = 57.54$$

EIRP Formula :

$$EIRP(dBm) = -42.76 + 57.54 = 14.78$$

### **For Radio 3 Pine 2 UNII 5~UNII 8\_non beamforming mode and beamforming mode**

Note :

The test is the final test result, It includes antenna /cable loss factor & FSL factor.

The EIRP calculation refer to "KDB 412172 D01 Determining ERP and EIRP v01r01"

EIRP Formula :

$$EIRP(dBm) = PR(dBm) + LP(FSL factor)$$

where;

PR(dBm) : Power measurement level include antenna/cable loss

LP : Free Space Loss(dB)

PR Formula :

$$PR(dBm) = P \text{ Meas}(dBm) - GR(dBi) + LC(dB)$$

where;

P Meas(dBm) : Power measurement level

GR(dBi) : Gain of the receive(measurement) antenna (dBi)

LC(dB) : Measurement cable loss (dB)

LP(FSL factor) Formula :

$$LP(dB) = 20 \log F + 20 \log D - 27.54$$

where;

F(MHz) : EUT center frequency

D(m) : Measurement distance

For Example:

Test mode HEW20 4T1S 5955MHz Non beamforming mode EIRP measurement

PR Formula :

$$PR(dBm) = -39.01 - 10.59 + 5.05 = -44.46$$

LP(FSL factor) Formula :

$$LP(dB) = 20 \log(5955) + 20 \log(3) - 27.5 = 57.54$$

EIRP Formula :

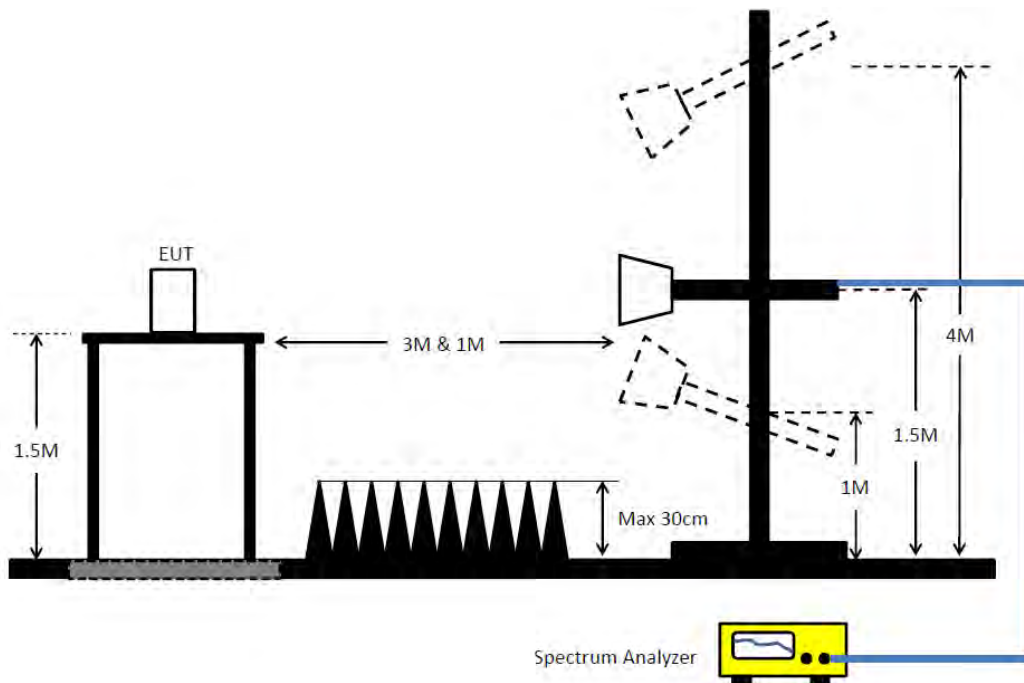
$$EIRP(dBm) = -44.46 + 57.54 = 13.08$$

### 3.3.4 Test Setup

### Conducted Measurement (Power Meter)



## Radiated Measurement



### 3.3.5 Test Result of Maximum Equivalent Isotopically Radiated Power (E.I.R.P)

Refer as Appendix C

### 3.4 Peak Power Spectral Density (E.I.R.P.)

#### 3.4.1 Peak Power Spectral Density (E.I.R.P.) Limit

| Peak Power Spectral Density (E.I.R.P.) Limit |                                                                                        |
|----------------------------------------------|----------------------------------------------------------------------------------------|
| <b>UNII Devices</b>                          |                                                                                        |
| <input checked="" type="checkbox"/>          | For the 5.925 ~ 6.425 GHz band:                                                        |
| <input type="checkbox"/>                     | For standard power access point and fixed client device : e.i.r.p PSD < 23 dBm/MHz.    |
| <input type="checkbox"/>                     | For indoor access point : e.i.r.p PSD < 5 dBm/MHz.                                     |
| <input type="checkbox"/>                     | For subordinate device control of an indoor access point : e.i.r.p PSD < 5 dBm/MHz.    |
| <input type="checkbox"/>                     | For client device control of a standard power access point : e.i.r.p PSD < 17 dBm/MHz. |
| <input type="checkbox"/>                     | For client device control of an indoor access point : e.i.r.p PSD < -1 dBm/MHz.        |
| <input checked="" type="checkbox"/>          | For the 6.425 ~ 6.525 GHz band:                                                        |
| <input type="checkbox"/>                     | For indoor access point : e.i.r.p PSD < 5 dBm/MHz.                                     |
| <input type="checkbox"/>                     | For client device control of an indoor access point : e.i.r.p PSD < -1 dBm/MHz.        |
| <input checked="" type="checkbox"/>          | For the 6.525 ~ 6.875 GHz band:                                                        |
| <input type="checkbox"/>                     | For standard power access point and fixed client device : e.i.r.p PSD < 23 dBm/MHz.    |
| <input type="checkbox"/>                     | For indoor access point : e.i.r.p PSD < 5 dBm/MHz.                                     |
| <input type="checkbox"/>                     | For subordinate device control of an indoor access point : e.i.r.p PSD < 5 dBm/MHz.    |
| <input type="checkbox"/>                     | For client device control of a standard power access point : e.i.r.p PSD < 17 dBm/MHz. |
| <input type="checkbox"/>                     | For client device control of an indoor access point : e.i.r.p PSD < -1 dBm/MHz.        |
| <input checked="" type="checkbox"/>          | For the 6.875 ~ 7.125 GHz band:                                                        |
| <input type="checkbox"/>                     | For indoor access point : e.i.r.p PSD < 5 dBm/MHz.                                     |
| <input type="checkbox"/>                     | For client device control of an indoor access point : e.i.r.p PSD < -1 dBm/MHz.        |
| <b>RLAN Devices</b>                          |                                                                                        |
| <input type="checkbox"/>                     | For the 5.925 ~ 7.125 GHz band:                                                        |
| <input type="checkbox"/>                     | For RLAN devices(Indoor) other than client devices < 5 dBm / MHz.                      |
| <input type="checkbox"/>                     | For client devices(Indoor) < -1 dBm / MHz.                                             |

#### 3.4.2 Measuring Instruments

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



### 3.4.3 Test Procedures

| Test Method                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>According to KDB 987594 D02 clause II.F, the measurement procedure shall refer to KDB 789033. Peak power spectral density procedures that the same method as used to determine the conducted output power shall be used to determine the peak power spectral density and use the peak search function on the spectrum analyzer to find the peak of the spectrum. For the peak power spectral density shall be measured using below options:</li></ul> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Refer as FCC KDB 789033 D02, F)5) power spectral density can be measured using resolution bandwidths < 1 MHz provided that the results are integrated over 1 MHz bandwidth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| [duty cycle ≥ 98% or external video / power trigger]                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Refer as FCC KDB 789033 D02, clause E Method SA-1 (spectral trace averaging).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Refer as FCC KDB 789033 D02, clause E Method SA-1 Alt. (RMS detection with slow sweep speed)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| duty cycle < 98% and average over on/off periods with duty factor                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Refer as FCC KDB 789033 D02, clause E Method SA-2 (spectral trace averaging).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Refer as FCC KDB 789033 D02, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <input checked="" type="checkbox"/> For conducted measurement.                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <ul style="list-style-type: none"><li>If the EUT supports multiple transmit chains using options given below:</li></ul>                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 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. |
| <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 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,                                                                                                                                                                                                         |
| <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 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.                                                                                                                                                                                                                                                                                                                  |
| <ul style="list-style-type: none"><li>If multiple transmit chains, EIRP PPSD calculation could be following as methods:<br/><math display="block">PPSD_{total} = PPSD_1 + PPSD_2 + \dots + PPSD_n</math><br/>(calculated in linear unit [mW] and transfer to log unit [dBm])<br/><math display="block">EIRP_{total} = PPSD_{total} + DG</math></li></ul>                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <input checked="" type="checkbox"/> For radiated measurement.                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <ul style="list-style-type: none"><li>Refer as FCC KDB 789033 D02 clause II A.1.F "Antenna-port Conducted versus Radiated Testing"</li></ul>                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <ul style="list-style-type: none"><li>Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.</li></ul>                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |



**Test Method**

- Refer as FCC KDB 412172 D01 clause 2.2 for EIRP calculation.

**For Radio 2 Pine 1 UNII 5, UNII 6(Other than 6505, 6515, 6525, 6545MHz)\_non beamforming mode and Radio 2 Pine 1 UNII 5~UNII 8\_beamforming mode**

Note :

The test is the final test result, It includes antenna /cable loss factor & FSL factor.

The EIRP PSD calculation refer to "KDB 412172 D01 Determining ERP and EIRP v01r01"

EIRP PSD Formula :

$EIRP\ PSD(dBm/MHz) = PR(dBm/MHz) + LP(FSL\ factor)$

where;

PR(dBm/MHz) : Power measurement level include antenna/cable loss

LP : Free Space Loss(dB)

PR Formula :

$PR(dBm/MHz) = P\ Meas(dBm/MHz) - GR(dBi) + LC(dB)$

where;

P Meas(dBm/MHz) : PSD measurement level

GR(dBi) : Gain of the receive(measurement) antenna (dBi)

LC(dB) : Measurement cable loss (dB)

LP(FSL factor) Formula :

$LP(dB) = 20\ logF + 20\ logD - 27.54$

where;

F(MHz) : EUT center frequency

D(m) : Measurement distance

For Example:

Test mode HEW20 4T1S 5955MHz Non beamforming mode EIRP PSD measurement

PR Formula :

$PR(dBm/MHz) = -47.40 - 10.59 + 5.32 = -52.68$

LP(FSL factor) Formula :

$LP(dB) = 20\ log(5952.42) + 20\ log(3) - 27.5 = 57.54$

EIRP PSD Formula

$EIRP\ PSD(dBm/MHz) = -52.68 + 57.54 = 4.86$

**For Radio 3 Pine 2 UNII 5~UNII 8\_non beamforming mode and beamforming mode**

Note :

The test is the final test result, It includes antenna /cable loss factor & FSL factor.

The EIRP PSD calculation refer to "KDB 412172 D01 Determining ERP and EIRP v01r01"

EIRP PSD Formula :

$EIRP\ PSD(dBm/MHz) = PR(dBm/MHz) + LP(FSL\ factor)$

where;

PR(dBm/MHz) : Power measurement level include antenna/cable loss

LP : Free Space Loss(dB)

PR Formula :

$PR(dBm/MHz) = P\ Meas(dBm/MHz) - GR(dBi) + LC(dB)$

where;

P Meas(dBm/MHz) : PSD measurement level

GR(dBi) : Gain of the receive(measurement) antenna (dBi)

LC(dB) : Measurement cable loss (dB)

LP(FSL factor) Formula :

$LP(dB) = 20\ logF + 20\ logD - 27.54$

where;

F(MHz) : EUT center frequency

D(m) : Measurement distance

For Example:

Test mode HEW20 4T1S 5955MHz Non beamforming mode EIRP PSD measurement

PR Formula :

$PR(dBm/MHz) = -47.39 - 10.49 + 5.06 = -52.83$

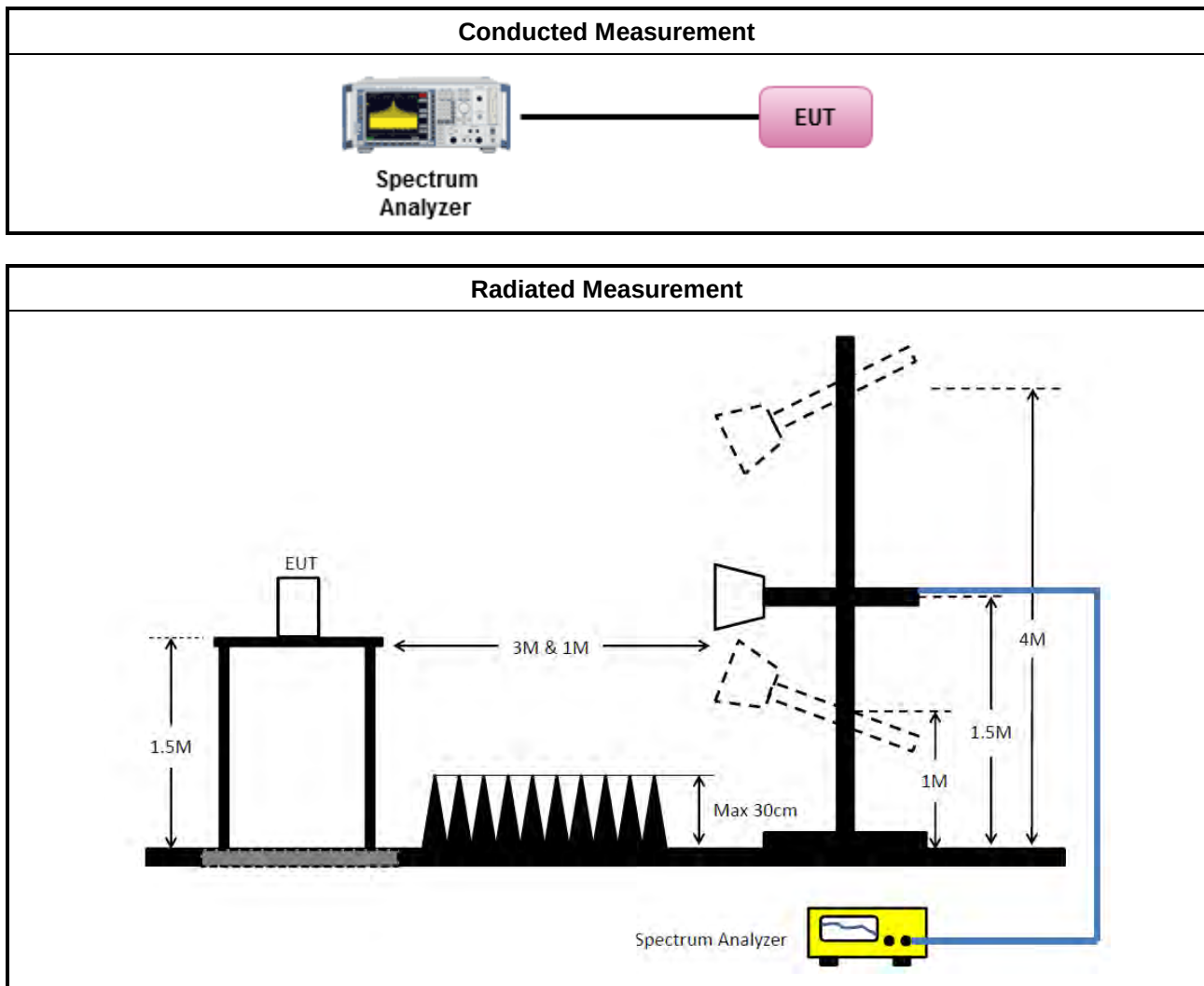
LP(FSL factor) Formula :

$LP(dB) = 20\log(5952.42) + 20\log(3) - 27.5 = 57.55$

EIRP PSD Formula

$EIRP\ PSD(dBm/MHz) = -52.83 + 57.55 = 4.72$

### 3.4.4 Test Setup



### 3.4.5 Test Result of Peak Power Spectral Density (E.I.R.P.)

Refer as Appendix D



### 3.5 Unwanted Emissions

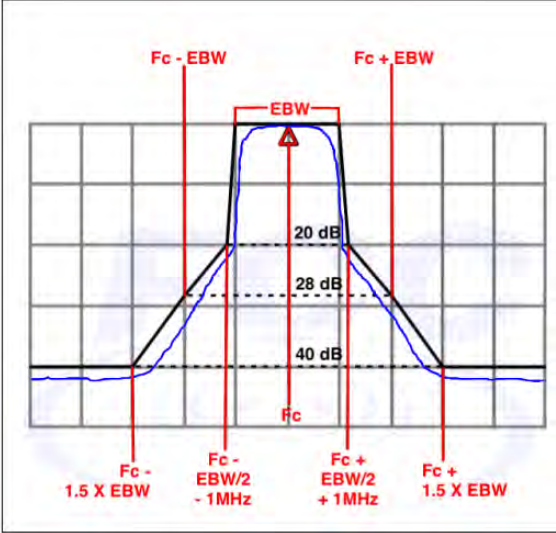
#### 3.5.1 Transmitter Unwanted Emissions Limit

| Unwanted emissions below 1 GHz and restricted band emissions above 1GHz 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                    |

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( $20 \times \log(\text{standard distance}/\text{test distance}) = 20\log(3/1) = 9.54\text{dB}$ ).  
EX. Above 18GHz emission limit calculation (3m to 1m) = 54dBuV/m at 3m + 9.54dB = 63.54 dBuV/m at 1m.

| Un-restricted band emissions above 1GHz Limit |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Frequency                                     | Limit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Any outside the 5.945 – 7.125 GHz emission    | <p>e.i.r.p. -27 dBm [68.2 dBuV/m@3m]</p> <p>Note 1: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m(<math>20 \times \log(\text{standard distance}/\text{test distance}) = 20\log(3/1) = 9.54\text{dB}</math>.<br/>EX. Above 18GHz emission limit calculation (3m to 1m) = 68.2dBuV/m at 3m + 9.54dB = 77.74 dBuV/m at 1m.</p> <p>Note 2:-27 dBm EIRP OOBE is measured RMS which is a deviation from the current 15E rules for 5 GHz bands. In addition, 15.35(b) applies where the peak emissions must be limited to no more than 20 dB above the average limit.</p>                                                                                                                                                                                                                                                |
| Frequency                                     | Emission MASK Limit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 5.945 – 7.125 GHz                             | <p>Power spectral density must be suppressed by 20 dB at 1 MHz outside of channel edge, by 28 dB at one channel bandwidth from the channel center, and by 40 dB at one- and one-half times the channel bandwidth away from channel center. At frequencies between one megahertz outside an unlicensed device's channel edge and one channel bandwidth from the center of the channel, the limits must be linearly interpolated between 20 dB and 28 dB suppression, and at frequencies between one and one- and one-half times an unlicensed device's channel bandwidth, the limits must be linearly interpolated between 28 dB and 40 dB suppression. Emissions removed from the channel center by more than one- and one-half times the channel bandwidth must be suppressed by at least 40 dB.</p>  |



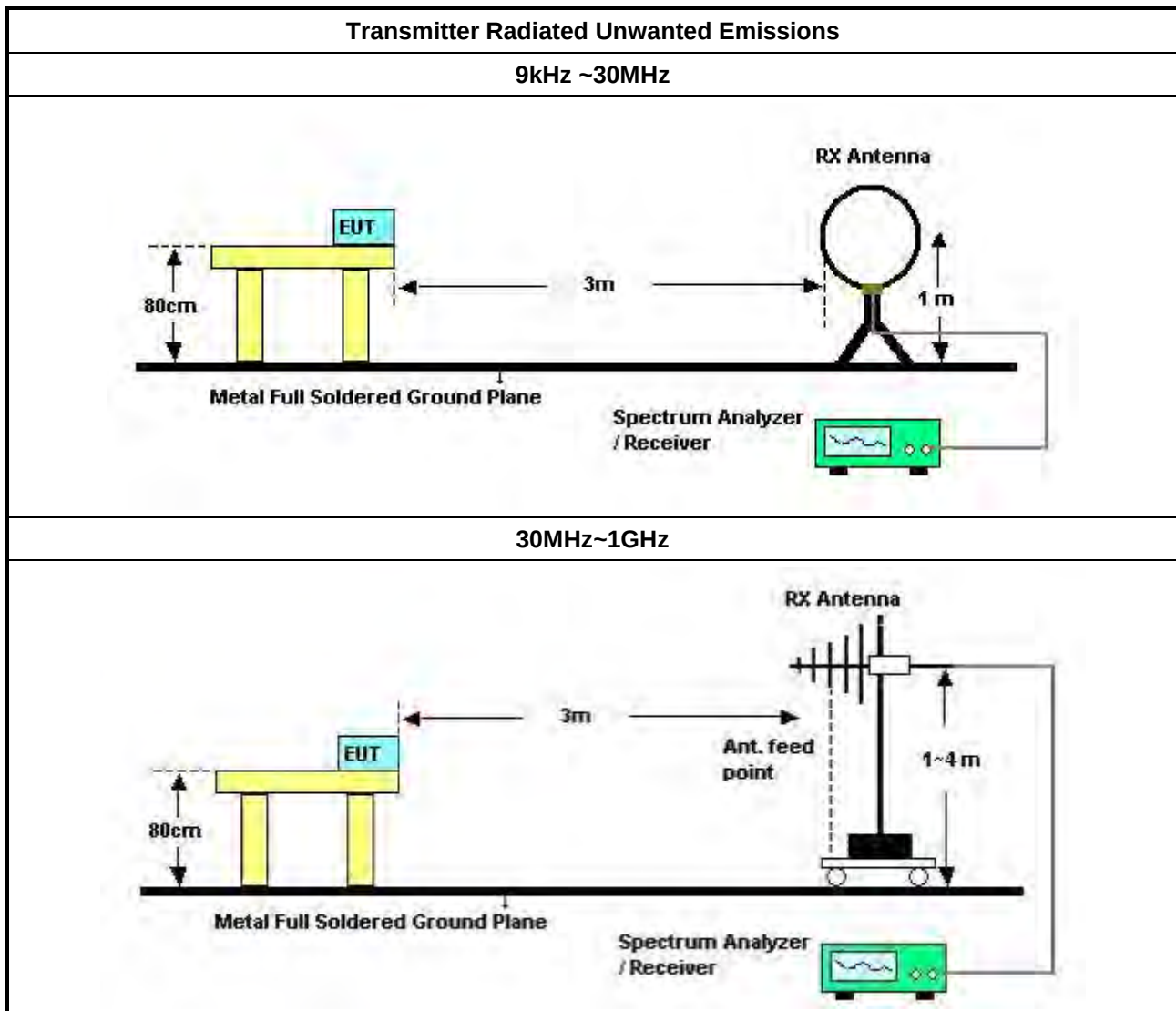
### 3.5.2 Measuring Instruments

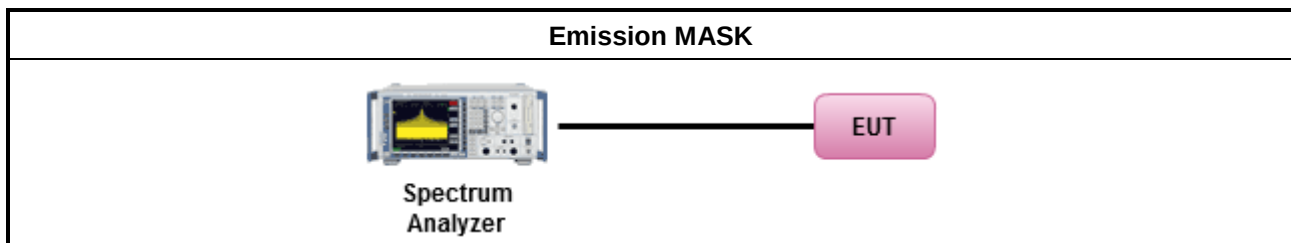
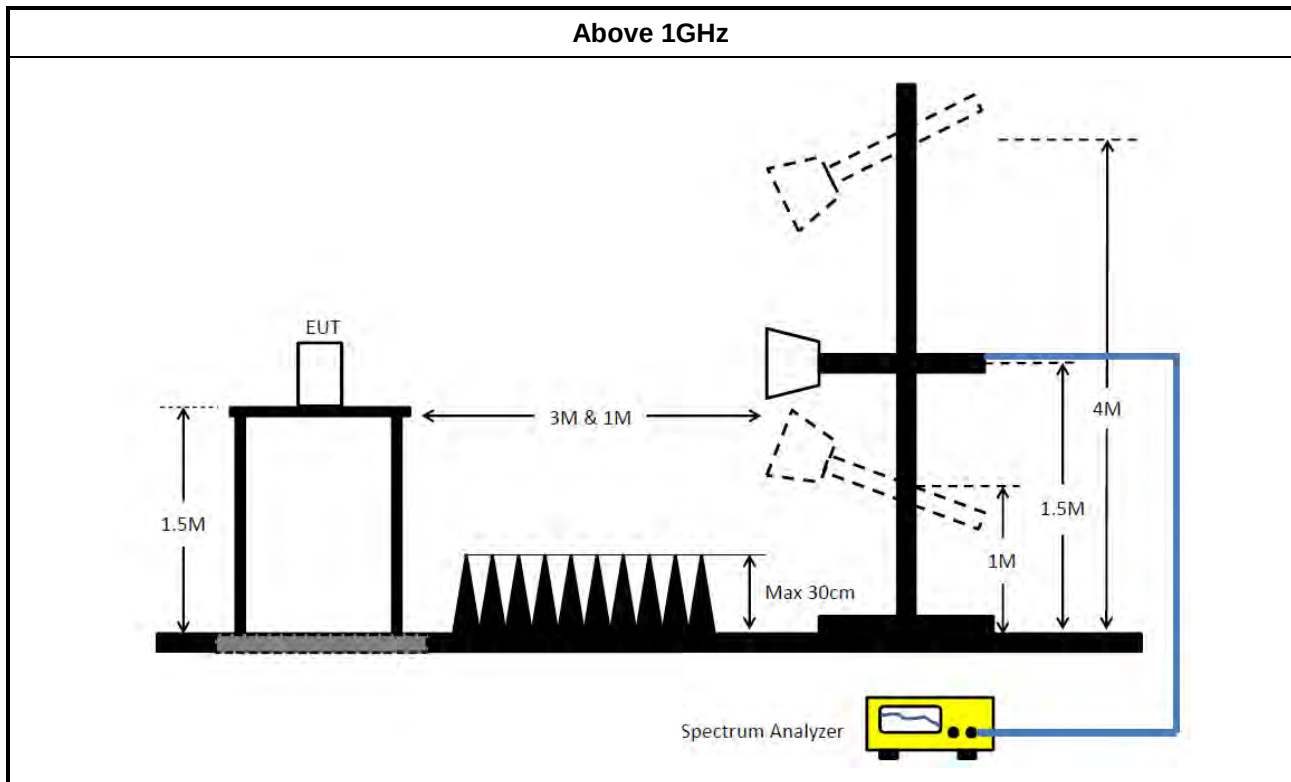
Refer a test equipment and calibration data table in this test report.

### 3.5.3 Test Procedures

| Test Method                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>According to KDB 987594 D02 II.G. the unwanted emission measurement procedure shall refer to KDB 789300(except emission MASK).<br/>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. Measurements shall not be performed at a distance greater than 30 m for frequencies above 30 MHz, unless it can be further demonstrated that measurements at a distance of 30 m or less are impractical. 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).</li></ul> |                                                                                                                                                                              |
| <ul style="list-style-type: none"><li>The average emission levels shall be measured in [duty cycle <math>\geq</math> 98 or duty factor].</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                              |
| <ul style="list-style-type: none"><li>For the transmitter unwanted emissions shall be measured using following options below:</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <ul style="list-style-type: none"><li>Refer as FCC KDB 789033 D02, clause G)2) for unwanted emissions into non-restricted bands.</li></ul>                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <ul style="list-style-type: none"><li>Refer as FCC KDB 789033 D02, clause G)1) for unwanted emissions into restricted bands.</li></ul>                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <input checked="" type="checkbox"/> Refer as FCC KDB 789033 D02, G)6) Method AD (Trace Averaging).<br>(For unrestricted band measurement)                                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <input type="checkbox"/> Refer as FCC KDB 789033 D02, G)6) Method VB (Reduced VBW).                                                                                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <input checked="" type="checkbox"/> Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW $\geq$ 1/T, where T is pulse time.( For restricted band average measurement) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <input type="checkbox"/> Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.                                                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <input checked="" type="checkbox"/> Refer as FCC KDB 789033 D02, clause G)5) measurement procedure peak limit.                                                               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <input type="checkbox"/> Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit.                                                                            |
| <ul style="list-style-type: none"><li>Refer as FCC KDB 789033 D02, clause G)3)d)ii) for Band edge Integration measurements.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                              |
| <ul style="list-style-type: none"><li>For emission MASK shall be measured using following options below:</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <input checked="" type="checkbox"/> Refer as FCC draft KDB 987594 D02, J) In-Band Emissions                                                                                  |
| <ul style="list-style-type: none"><li>For radiated measurement.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <ul style="list-style-type: none"><li>Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.</li></ul>                                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <ul style="list-style-type: none"><li>Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.</li></ul>                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <ul style="list-style-type: none"><li>Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.</li></ul>                                                          |
| <ul style="list-style-type: none"><li>The any unwanted emissions level shall not exceed the fundamental emission level.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                              |
| <ul style="list-style-type: none"><li>All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                              |

### 3.5.4 Test Setup





### 3.5.5 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

### 3.5.6 Transmitter Unwanted Emissions (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.

### 3.5.7 Test Result of Transmitter Unwanted Emissions

Refer as Appendix E



### 3.6 Contention Based Protocol

#### 3.6.1 Contention Based Protocol Limit

EUT can detect an AWGN signal with 90% (or better) level of certainty.

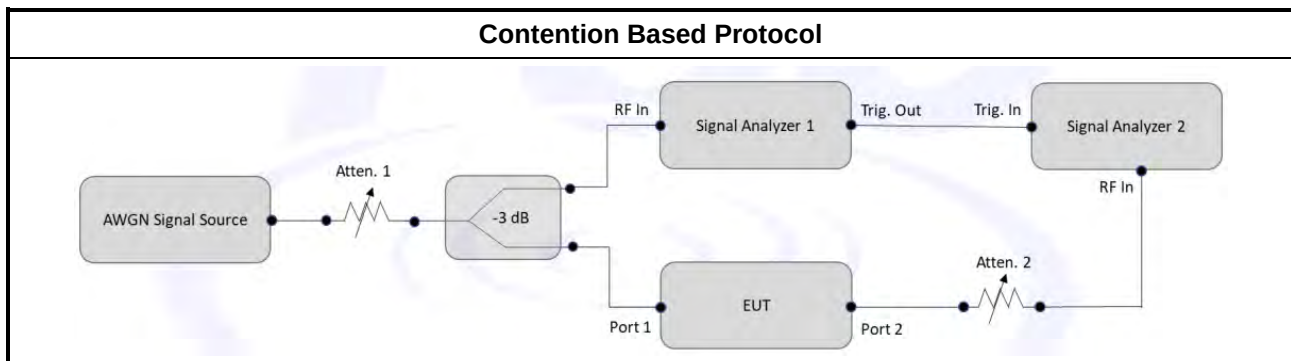
#### 3.6.2 Measuring Instruments

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

#### 3.6.3 Test Procedures

| Test Method                         |                                                                                |
|-------------------------------------|--------------------------------------------------------------------------------|
| ■                                   | For Contention Based Protocol shall be measured using following options below: |
| <input checked="" type="checkbox"/> | Refer as FCC draft KDB 987594 D02, I) In-Band Emissions                        |

#### 3.6.4 Test Setup



#### 3.6.5 Test Result of Contention Based Protocol

Refer as Appendix F



## 4 Test Equipment and Calibration Data

| Instrument                         | Brand            | Model No.         | Serial No.       | Characteristics | Calibration Date | Calibration Due Date | Remark                |
|------------------------------------|------------------|-------------------|------------------|-----------------|------------------|----------------------|-----------------------|
| EMI Receiver                       | Agilent          | N9038A            | My52260123       | 9kHz ~ 8.4GHz   | Mar. 03, 2021    | Mar. 02, 2022        | Conduction (CO01-CB)  |
| LISN                               | Schwarzbeck      | NSLK 8127         | 8127478          | 9kHz ~ 30MHz    | Dec. 22, 2021    | Dec. 21, 2022        | Conduction (CO01-CB)  |
| LISN                               | Schwarzbeck      | NSLK 8127         | 8127647          | 9kHz ~ 30MHz    | Mar. 07, 2021    | Mar. 06, 2022        | Conduction (CO01-CB)  |
| Pulse Limiter                      | Rohde&Schwarz    | ESH3-Z2           | 100430           | 9kHz ~ 30MHz    | Jan. 30, 2021    | Jan. 29, 2022        | Conduction (CO01-CB)  |
| COND Cable                         | Woken            | Cable             | Low cable-CO01   | 9kHz ~ 30MHz    | May 19, 2021     | May 18, 2022         | Conduction (CO01-CB)  |
| Software                           | SPORTON          | SENSE             | V5.10            | -               | N.C.R.           | N.C.R.               | Conduction (CO01-CB)  |
| Loop Antenna                       | Teseq            | HLA 6120          | 24155            | 9kHz - 30 MHz   | Apr. 14, 2021    | Apr. 13, 2022        | Radiation (03CH03-CB) |
| 3m Semi Anechoic Chamber NSA       | TDK              | SAC-3M            | 03CH03-CB        | 30 MHz ~ 1 GHz  | Jan. 27, 2021    | Jan. 26, 2022        | Radiation (03CH03-CB) |
| 3m Semi Anechoic Chamber VSWR      | TDK              | SAC-3M            | 03CH03-CB        | 1GHz ~18GHz 3m  | May 05, 2022     | May 04, 2023         | Radiation (03CH03-CB) |
| Bilog Antenna with 6 dB attenuator | Schaffner & EMCi | CBL6112B & N-6-06 | 2928 & AT-N0608  | 20MHz ~ 2GHz    | Feb. 22, 2021    | Feb. 21, 2022        | Radiation (03CH03-CB) |
| Horn Antenna                       | ETS • Lindgren   | 3115              | 6821             | 750MHz~18GHz    | Jan. 21, 2022    | Jan. 20, 2023        | Radiation (03CH03-CB) |
| Horn Antenna                       | Schwarzbeck      | BBHA 9170         | BBHA9170252      | 15GHz ~ 40GHz   | Aug. 22, 2022    | Aug. 21, 2023        | Radiation (03CH03-CB) |
| Pre-Amplifier                      | Agilent          | 8447D             | 2944A10259       | 9kHz ~ 1.3GHz   | Jan. 11, 2021    | Jan. 10, 2022        | Radiation (03CH03-CB) |
| Pre-Amplifier                      | Agilent          | 8447D             | 2944A10259       | 9kHz ~ 1.3GHz   | Jan. 10, 2022    | Jan. 09, 2023        | Radiation (03CH03-CB) |
| Pre-Amplifier                      | Agilent          | 8449B             | 3008A02097       | 1GHz ~ 26.5GHz  | Jul. 01, 2022    | Jun. 30, 2023        | Radiation (03CH03-CB) |
| Pre-Amplifier                      | MITEQ            | TTA1840-35-H G    | 1864479          | 18GHz ~ 40GHz   | Jul. 20, 2022    | Jul. 19, 2023        | Radiation (03CH03-CB) |
| Spectrum Analyzer                  | R&S              | FSP40             | 100019           | 9kHz ~ 40GHz    | Jun. 04, 2021    | Jun. 03, 2022        | Radiation (03CH03-CB) |
| Signal Analyzer                    | R&S              | FSV40             | 101904           | 9kHz ~ 40GHz    | Apr. 26, 2022    | Apr. 25, 2023        | Radiation (03CH03-CB) |
| EMI Test Receiver                  | R&S              | ESCS              | 826547/017       | 9kHz ~ 2.75GHz  | Jun. 21, 2021    | Jun. 20, 2022        | Radiation (03CH03-CB) |
| RF Cable-low                       | Woken            | RG402             | Low Cable-02+29  | 30MHz ~ 1GHz    | Oct. 04, 2021    | Oct. 03, 2022        | Radiation (03CH03-CB) |
| RF Cable-high                      | Woken            | RG402             | High Cable-20+29 | 1GHz ~ 18GHz    | Oct. 03, 2022    | Oct. 02, 2023        | Radiation (03CH03-CB) |



| Instrument                    | Brand        | Model No.      | Serial No.       | Characteristics | Calibration Date | Calibration Due Date | Remark                |
|-------------------------------|--------------|----------------|------------------|-----------------|------------------|----------------------|-----------------------|
| RF Cable-high                 | Woken        | RG402          | High Cable-29    | 1GHz ~ 18GHz    | Oct. 03, 2022    | Oct. 02, 2023        | Radiation (03CH03-CB) |
| High Cable                    | Woken        | WCA0929M       | 40G#5+7          | 1GHz ~ 40 GHz   | Dec. 14, 2021    | Dec. 13, 2022        | Radiation (03CH03-CB) |
| High Cable                    | Woken        | WCA0929M       | 40G#5            | 1GHz ~ 40 GHz   | Dec. 08, 2021    | Dec. 07, 2022        | Radiation (03CH03-CB) |
| High Cable                    | Woken        | WCA0929M       | 40G#7            | 1GHz ~ 40 GHz   | Dec. 14, 2021    | Dec. 13, 2022        | Radiation (03CH03-CB) |
| Test Software                 | SPORTON      | SENSE          | V5.10            | -               | N.C.R.           | N.C.R.               | Radiation (03CH03-CB) |
| 3m Semi Anechoic Chamber VSWR | TDK          | SAC-3M         | 03CH01-CB        | 1GHz ~18GHz 3m  | May 07, 2021     | May 06, 2022         | Radiation (03CH01-CB) |
| Horn Antenna                  | ETS-LINDGREN | 3115           | 00075790         | 750MHz ~ 18GHz  | Nov. 06, 2021    | Nov. 05, 2022        | Radiation (03CH01-CB) |
| Horn Antenna                  | Schwarzbeck  | BBHA 9170      | BBHA9170252      | 15GHz ~ 40GHz   | Aug. 05, 2021    | Aug. 04, 2022        | Radiation (03CH01-CB) |
| Pre-Amplifier                 | Agilent      | 8449B          | 3008A02121       | 1GHz ~ 26.5GHz  | May 20, 2021     | May 19, 2022         | Radiation (03CH01-CB) |
| Pre-Amplifier                 | MITEQ        | TTA1840-35-H G | 1864479          | 18GHz ~ 40GHz   | Jul. 13, 2021    | Jul. 12, 2022        | Radiation (03CH01-CB) |
| Spectrum Analyzer             | R&S          | FSP40          | 100056           | 9kHz ~ 40GHz    | May 03, 2021     | May 02, 2022         | Radiation (03CH01-CB) |
| RF Cable-high                 | Woken        | RG402          | High Cable-16    | 1 GHz ~ 18 GHz  | Oct. 04, 2021    | Oct. 03, 2022        | Radiation (03CH01-CB) |
| RF Cable-high                 | Woken        | RG402          | High Cable-16+17 | 1 GHz ~ 18 GHz  | Oct. 04, 2021    | Oct. 03, 2022        | Radiation (03CH01-CB) |
| High Cable                    | Woken        | WCA0929M       | 40G#5+7          | 1GHz ~ 40 GHz   | Dec. 14, 2021    | Dec. 13, 2022        | Radiation (03CH01-CB) |
| High Cable                    | Woken        | WCA0929M       | 40G#5            | 1GHz ~ 40 GHz   | Dec. 08, 2021    | Dec. 07, 2022        | Radiation (03CH01-CB) |
| High Cable                    | Woken        | WCA0929M       | 40G#7            | 1GHz ~ 40 GHz   | Dec. 14, 2021    | Dec. 13, 2022        | Radiation (03CH01-CB) |
| Test Software                 | SPORTON      | SENSE          | V5.10            | -               | N.C.R.           | N.C.R.               | Radiation (03CH01-CB) |
| 3m Semi Anechoic Chamber VSWR | RIKEN        | SAC-3M         | 03CH02-CB        | 1GHz ~18GHz     | Mar. 26, 2022    | Mar. 25, 2023        | Radiation (03CH02-CB) |
| Horn Antenna                  | EMCO         | 3115           | 9610-4976        | 1GHz ~ 18GHz    | Apr. 19, 2022    | Apr. 18, 2023        | Radiation (03CH02-CB) |
| Horn Antenna                  | Schwarzbeck  | BBHA 9170      | BBHA9170252      | 15GHz ~ 40GHz   | Aug. 22, 2022    | Aug. 21, 2023        | Radiation (03CH02-CB) |
| Pre-Amplifier                 | Agilent      | 83017A         | MY39501305       | 1GHz ~ 26.5GHz  | Jul. 01, 2022    | Jun. 30, 2023        | Radiation (03CH02-CB) |
| Pre-Amplifier                 | MITEQ        | TTA1840-35-H G | 1864479          | 18GHz ~ 40GHz   | Jul. 20, 2022    | Jul. 19, 2023        | Radiation (03CH02-CB) |



| Instrument        | Brand   | Model No. | Serial No.       | Characteristics  | Calibration Date | Calibration Due Date | Remark                |
|-------------------|---------|-----------|------------------|------------------|------------------|----------------------|-----------------------|
| Spectrum analyzer | R&S     | FSP       | 100593           | 9kHz~40GHz       | Apr. 08, 2022    | Apr. 07, 2023        | Radiation (03CH02-CB) |
| RF Cable-high     | Woken   | RG402     | High Cable-18    | 1GHz ~ 18GHz     | Oct. 03, 2022    | Oct. 02, 2023        | Radiation (03CH02-CB) |
| RF Cable-high     | Woken   | RG402     | High Cable-18+19 | 1GHz ~ 18GHz     | Oct. 03, 2022    | Oct. 02, 2023        | Radiation (03CH02-CB) |
| High Cable        | Woken   | WCA0929M  | 40G#5+7          | 1GHz ~ 40 GHz    | Dec. 14, 2021    | Dec. 13, 2022        | Radiation (03CH02-CB) |
| High Cable        | Woken   | WCA0929M  | 40G#5            | 1GHz ~ 40 GHz    | Dec. 08, 2021    | Dec. 07, 2022        | Radiation (03CH02-CB) |
| High Cable        | Woken   | WCA0929M  | 40G#7            | 1GHz ~ 40 GHz    | Dec. 14, 2021    | Dec. 13, 2022        | Radiation (03CH02-CB) |
| Test Software     | SPORTON | SENSE     | V5.10            | -                | N.C.R.           | N.C.R.               | Radiation (03CH02-CB) |
| Spectrum analyzer | R&S     | FSV40     | 100979           | 9kHz~40GHz       | May 21, 2021     | May 20, 2022         | Conducted (TH01-CB)   |
| Signal Analyzer   | R&S     | FSV3044   | 101320           | 9kHz ~ 44GHz     | May 20, 2022     | May 19, 2023         | Conducted (TH01-CB)   |
| RF Cable-high     | Woken   | RG402     | High Cable-06    | 1 GHz ~ 26.5 GHz | Oct. 04, 2021    | Oct. 03, 2022        | Conducted (TH01-CB)   |
| RF Cable-high     | Woken   | RG402     | High Cable-06    | 1 GHz ~ 26.5 GHz | Oct. 03, 2022    | Oct. 02, 2023        | Conducted (TH01-CB)   |
| RF Cable-high     | Woken   | RG402     | High Cable-07    | 1 GHz ~ 26.5 GHz | Oct. 04, 2021    | Oct. 03, 2022        | Conducted (TH01-CB)   |
| RF Cable-high     | Woken   | RG402     | High Cable-07    | 1 GHz ~ 26.5 GHz | Oct. 03, 2022    | Oct. 02, 2023        | Conducted (TH01-CB)   |
| RF Cable-high     | Woken   | RG402     | High Cable-08    | 1 GHz ~ 26.5 GHz | Oct. 04, 2021    | Oct. 03, 2022        | Conducted (TH01-CB)   |
| RF Cable-high     | Woken   | RG402     | High Cable-08    | 1 GHz ~ 26.5 GHz | Oct. 03, 2022    | Oct. 02, 2023        | Conducted (TH01-CB)   |
| RF Cable-high     | Woken   | RG402     | High Cable-09    | 1 GHz ~ 26.5 GHz | Oct. 04, 2021    | Oct. 03, 2022        | Conducted (TH01-CB)   |
| RF Cable-high     | Woken   | RG402     | High Cable-09    | 1 GHz ~ 26.5 GHz | Oct. 03, 2022    | Oct. 02, 2023        | Conducted (TH01-CB)   |
| RF Cable-high     | Woken   | RG402     | High Cable-10    | 1 GHz ~ 26.5 GHz | Oct. 04, 2021    | Oct. 03, 2022        | Conducted (TH01-CB)   |
| RF Cable-high     | Woken   | RG402     | High Cable-10    | 1 GHz ~ 26.5 GHz | Oct. 03, 2022    | Oct. 02, 2023        | Conducted (TH01-CB)   |
| RF Cable-high     | Woken   | RG402     | High Cable-30    | 1 GHz ~ 26.5 GHz | Oct. 04, 2021    | Oct. 03, 2022        | Conducted (TH01-CB)   |
| RF Cable-high     | Woken   | RG402     | High Cable-30    | 1 GHz ~ 26.5 GHz | Oct. 03, 2022    | Oct. 02, 2023        | Conducted (TH01-CB)   |
| Switch            | SPTCB   | SP-SWI    | SWI-01           | 1 GHz ~ 26.5 GHz | Dec. 13, 2021    | Dec. 12, 2022        | Conducted (TH01-CB)   |
| RF Cable-high     | Woken   | RG402     | SWI-01-P1        | 1 GHz ~ 26.5 GHz | Dec. 13, 2021    | Dec. 12, 2022        | Conducted (TH01-CB)   |
| RF Cable-high     | Woken   | RG402     | SWI-01-P2        | 1 GHz ~ 26.5 GHz | Dec. 13, 2021    | Dec. 12, 2022        | Conducted (TH01-CB)   |



| Instrument              | Brand   | Model No. | Serial No.    | Characteristics | Calibration Date | Calibration Due Date | Remark              |
|-------------------------|---------|-----------|---------------|-----------------|------------------|----------------------|---------------------|
| RF Cable-high           | Woken   | RG402     | SWI-01-P3     | 1 GHz –26.5 GHz | Dec. 13, 2021    | Dec. 12, 2022        | Conducted (TH01-CB) |
| RF Cable-high           | Woken   | RG402     | SWI-01-P4     | 1 GHz –26.5 GHz | Dec. 13, 2021    | Dec. 12, 2022        | Conducted (TH01-CB) |
| RF Cable-high           | Woken   | RG402     | SWI-01-P5     | 1 GHz –26.5 GHz | Dec. 13, 2021    | Dec. 12, 2022        | Conducted (TH01-CB) |
| Power Sensor            | Anritsu | MA2411B   | 1339408       | 300MHz~40GHz    | Sep. 06, 2021    | Sep. 05, 2022        | Conducted (TH01-CB) |
| Power Sensor            | Agilent | E9327A    | US40442088    | 50MHz~18GHz     | Feb. 21, 2022    | Feb. 20, 2023        | Conducted (TH01-CB) |
| Power Meter             | Anritsu | ML2495A   | 1517009       | 300MHz~40GHz    | Sep. 06, 2021    | Sep. 05, 2022        | Conducted (TH01-CB) |
| Power Meter             | Agilent | E4416A    | GB41291199    | 50MHz~18GHz     | Feb. 21, 2022    | Feb. 20, 2023        | Conducted (TH01-CB) |
| Test Software           | SPORTON | SENSE     | V5.10         | -               | N.C.R.           | N.C.R.               | Conducted (TH01-CB) |
| Spectrum Analyzer       | R&S     | FSV40     | 101025        | 9kHz ~ 40GHz    | Nov. 06, 2021    | Nov. 05, 2022        | Conducted (DF02-CB) |
| VEKTOR SIGNAL GENERATOR | R&S     | SMW200A   | 109426        | 100KHz- 7.5GHz  | Dec. 28, 2021    | Dec. 27, 2022        | Conducted (DF02-CB) |
| RF Power Divider        | STI     | 2 Way     | DV-2way -07   | 1GHz ~ 8GHz     | Oct. 04, 2021    | Oct. 03, 2022        | Conducted (DF02-CB) |
| RF Power Divider        | STI     | 2 Way     | DV-2way -08   | 1GHz ~ 8GHz     | Oct. 04, 2021    | Oct. 03, 2022        | Conducted (DF02-CB) |
| RF Cable-high           | Woken   | RG402     | High Cable-61 | 1 GHz – 18 GHz  | Oct. 04, 2021    | Oct. 03, 2022        | Conducted (DF02-CB) |
| RF Cable-high           | Woken   | RG402     | High Cable-62 | 1 GHz – 18 GHz  | Oct. 04, 2021    | Oct. 03, 2022        | Conducted (DF02-CB) |
| RF Cable-high           | Woken   | RG402     | High Cable-63 | 1 GHz – 18 GHz  | Oct. 04, 2021    | Oct. 03, 2022        | Conducted (DF02-CB) |
| RF Cable-high           | Woken   | RG402     | High Cable-66 | 1 GHz – 18 GHz  | Oct. 04, 2021    | Oct. 03, 2022        | Conducted (DF02-CB) |
| 100MS/s Digitizer       | N.I     | USB-5133  | F65206        | N/A             | Nov. 25, 2021    | Nov. 24, 2022        | Conducted (DF02-CB) |

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

N.C.R. means Non-Calibration required.



## Conducted Emissions at Powerline

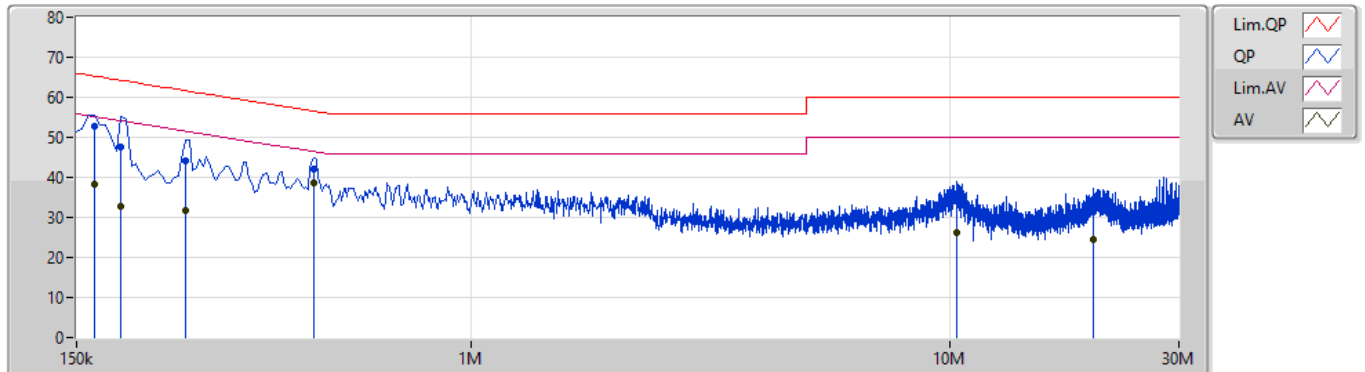
## Appendix A

### Summary

| Mode   | Result | Type | Freq<br>(Hz) | Level<br>(dBuV) | Limit<br>(dBuV) | Margin<br>(dB) | Condition |
|--------|--------|------|--------------|-----------------|-----------------|----------------|-----------|
| Mode 1 | Pass   | AV   | 469.5k       | 38.59           | 46.52           | -7.93          | Line      |

### Mode 1

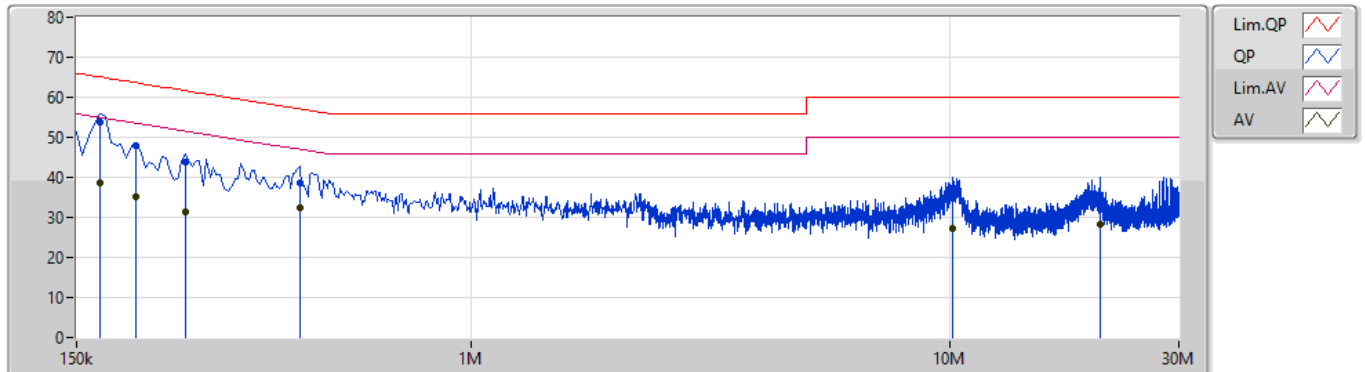
07/01/2022



| Type | Freq<br>(Hz) | Level<br>(dBuV) | Limit<br>(dBuV) | Margin<br>(dB) | Factor<br>(dB) | Condition | Comment | Raw<br>(dBuV) | LISN<br>(dB) | CL<br>(dB) | AT<br>(dB) |  |  |  |
|------|--------------|-----------------|-----------------|----------------|----------------|-----------|---------|---------------|--------------|------------|------------|--|--|--|
| QP   | 163.5k       | 52.84           | 65.27           | -12.43         | 9.89           | Line      | -       | 42.95         | 0.04         | 0.04       | 9.81       |  |  |  |
| AV   | 163.5k       | 38.22           | 55.27           | -17.05         | 9.89           | Line      | -       | 28.33         | 0.04         | 0.04       | 9.81       |  |  |  |
| QP   | 186k         | 47.73           | 64.20           | -16.47         | 9.89           | Line      | -       | 37.84         | 0.04         | 0.04       | 9.81       |  |  |  |
| AV   | 186k         | 32.61           | 54.20           | -21.59         | 9.89           | Line      | -       | 22.72         | 0.04         | 0.04       | 9.81       |  |  |  |
| QP   | 253.5k       | 44.30           | 61.64           | -17.34         | 9.89           | Line      | -       | 34.41         | 0.04         | 0.04       | 9.81       |  |  |  |
| AV   | 253.5k       | 31.57           | 51.64           | -20.07         | 9.89           | Line      | -       | 21.68         | 0.04         | 0.04       | 9.81       |  |  |  |
| QP   | 469.5k       | 42.01           | 56.52           | -14.51         | 9.90           | Line      | -       | 32.11         | 0.04         | 0.04       | 9.82       |  |  |  |
| AV   | 469.5k       | 38.59           | 46.52           | -7.93          | 9.90           | Line      | "Worst" | 28.69         | 0.04         | 0.04       | 9.82       |  |  |  |
| QP   | 10.302M      | 34.26           | 60.00           | -25.74         | 10.28          | Line      | -       | 23.98         | 0.22         | 0.16       | 9.90       |  |  |  |
| AV   | 10.302M      | 26.20           | 50.00           | -23.80         | 10.28          | Line      | -       | 15.92         | 0.22         | 0.16       | 9.90       |  |  |  |
| QP   | 19.86M       | 31.31           | 60.00           | -28.69         | 10.54          | Line      | -       | 20.77         | 0.32         | 0.22       | 10.00      |  |  |  |
| AV   | 19.86M       | 24.38           | 50.00           | -25.62         | 10.54          | Line      | -       | 13.84         | 0.32         | 0.22       | 10.00      |  |  |  |

### Mode 1

07/01/2022



| Type | Freq<br>(Hz) | Level<br>(dBuV) | Limit<br>(dBuV) | Margin<br>(dB) | Factor<br>(dB) | Condition | Comment | Raw<br>(dBuV) | LISN<br>(dB) | CL<br>(dB) | AT<br>(dB) |  |  |  |
|------|--------------|-----------------|-----------------|----------------|----------------|-----------|---------|---------------|--------------|------------|------------|--|--|--|
| QP   | 168k         | 53.88           | 65.06           | -11.18         | 9.88           | Neutral   | "Worst" | 44.00         | 0.03         | 0.04       | 9.81       |  |  |  |
| AV   | 168k         | 38.72           | 55.06           | -16.34         | 9.88           | Neutral   | -       | 28.84         | 0.03         | 0.04       | 9.81       |  |  |  |
| QP   | 199.5k       | 47.79           | 63.63           | -15.84         | 9.88           | Neutral   | -       | 37.91         | 0.03         | 0.04       | 9.81       |  |  |  |
| AV   | 199.5k       | 35.03           | 53.63           | -18.60         | 9.88           | Neutral   | -       | 25.15         | 0.03         | 0.04       | 9.81       |  |  |  |
| QP   | 253.5k       | 43.77           | 61.64           | -17.87         | 9.88           | Neutral   | -       | 33.89         | 0.03         | 0.04       | 9.81       |  |  |  |
| AV   | 253.5k       | 31.44           | 51.64           | -20.20         | 9.88           | Neutral   | -       | 21.56         | 0.03         | 0.04       | 9.81       |  |  |  |
| QP   | 438k         | 38.51           | 57.11           | -18.60         | 9.89           | Neutral   | -       | 28.62         | 0.03         | 0.04       | 9.82       |  |  |  |
| AV   | 438k         | 32.50           | 47.11           | -14.61         | 9.89           | Neutral   | -       | 22.61         | 0.03         | 0.04       | 9.82       |  |  |  |
| QP   | 10.104M      | 35.16           | 60.00           | -24.84         | 10.26          | Neutral   | -       | 24.90         | 0.20         | 0.16       | 9.90       |  |  |  |
| AV   | 10.104M      | 27.08           | 50.00           | -22.92         | 10.26          | Neutral   | -       | 16.82         | 0.20         | 0.16       | 9.90       |  |  |  |
| QP   | 20.589M      | 34.03           | 60.00           | -25.97         | 10.53          | Neutral   | -       | 23.50         | 0.30         | 0.23       | 10.00      |  |  |  |
| AV   | 20.589M      | 28.32           | 50.00           | -21.68         | 10.53          | Neutral   | -       | 17.79         | 0.30         | 0.23       | 10.00      |  |  |  |



**Summary**

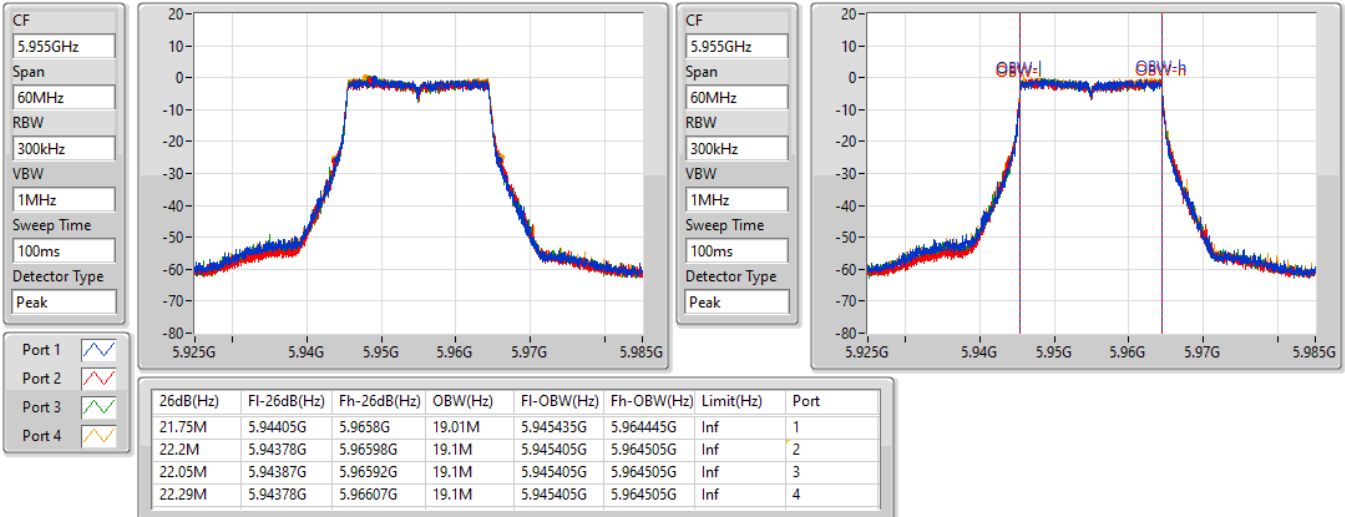
| Mode                            | Max-N dB<br>(Hz) | Max-OBW<br>(Hz) | ITU-Code | Min-N dB<br>(Hz) | Min-OBW<br>(Hz) |
|---------------------------------|------------------|-----------------|----------|------------------|-----------------|
| 5.925-6.425GHz                  | -                | -               | -        | -                | -               |
| 802.11ax HEW20_Nss1,(MCS0)_4TX  | 22.5M            | 19.1M           | 19M1D1D  | 21.75M           | 19.01M          |
| 802.11ax HEW40_Nss1,(MCS0)_4TX  | 40.62M           | 37.901M         | 37M9D1D  | 40.2M            | 37.721M         |
| 802.11ax HEW80_Nss1,(MCS0)_4TX  | 82.44M           | 77.481M         | 77M5D1D  | 81.6M            | 77.001M         |
| 802.11ax HEW160_Nss1,(MCS0)_4TX | 165.6M           | 155.202M        | 155MD1D  | 164.16M          | 154.483M        |
| 6.425-6.525GHz                  | -                | -               | -        | -                | -               |
| 802.11ax HEW20_Nss1,(MCS0)_4TX  | 22.5M            | 19.13M          | 19M1D1D  | 21.84M           | 19.07M          |
| 802.11ax HEW40_Nss1,(MCS0)_4TX  | 40.56M           | 37.841M         | 37M8D1D  | 39.96M           | 37.601M         |
| 802.11ax HEW80_Nss1,(MCS0)_4TX  | 82.56M           | 77.241M         | 77M2D1D  | 81.72M           | 77.001M         |
| 802.11ax HEW160_Nss1,(MCS0)_4TX | 165.36M          | 154.963M        | 155MD1D  | 163.92M          | 154.243M        |
| 6.525-6.875GHz                  | -                | -               | -        | -                | -               |
| 802.11ax HEW20_Nss1,(MCS0)_4TX  | 22.5M            | 19.16M          | 19M2D1D  | 21.81M           | 19.1M           |
| 802.11ax HEW40_Nss1,(MCS0)_4TX  | 40.74M           | 37.841M         | 37M8D1D  | 40.08M           | 37.541M         |
| 802.11ax HEW80_Nss1,(MCS0)_4TX  | 82.68M           | 77.241M         | 77M2D1D  | 81.84M           | 76.762M         |
| 802.11ax HEW160_Nss1,(MCS0)_4TX | 165.12M          | 154.723M        | 155MD1D  | 163.44M          | 154.243M        |
| 6.875-7.125GHz                  | -                | -               | -        | -                | -               |
| 802.11ax HEW20_Nss1,(MCS0)_4TX  | 22.77M           | 19.19M          | 19M2D1D  | 21.48M           | 19.04M          |
| 802.11ax HEW40_Nss1,(MCS0)_4TX  | 40.5M            | 37.841M         | 37M8D1D  | 40.14M           | 37.661M         |
| 802.11ax HEW80_Nss1,(MCS0)_4TX  | 82.56M           | 77.481M         | 77M5D1D  | 82.08M           | 76.882M         |
| 802.11ax HEW160_Nss1,(MCS0)_4TX | 165.12M          | 154.963M        | 155MD1D  | 164.16M          | 154.483M        |

Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;  
Max-OBW = Maximum 99% occupied bandwidth;  
Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;  
Min-OBW = Minimum 99% occupied bandwidth

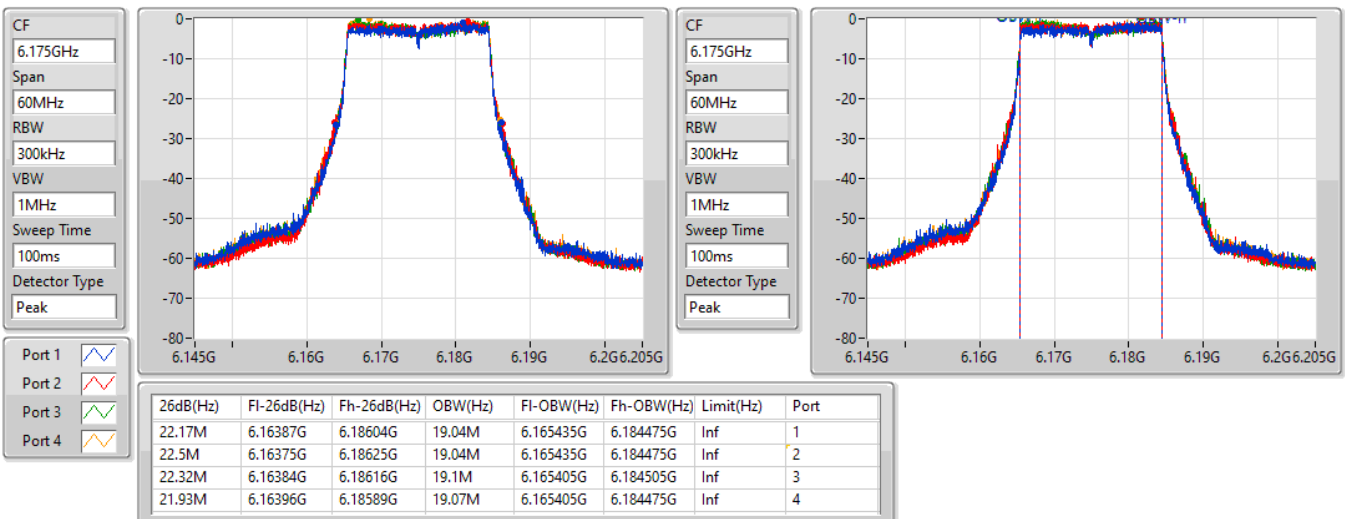
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band  
Port X-OBW = Port X 99% occupied bandwidth

**802.11ax HEW20\_Nss1,(MCS0)\_4TX**
**EBW**
**5955MHz**

20/01/2022

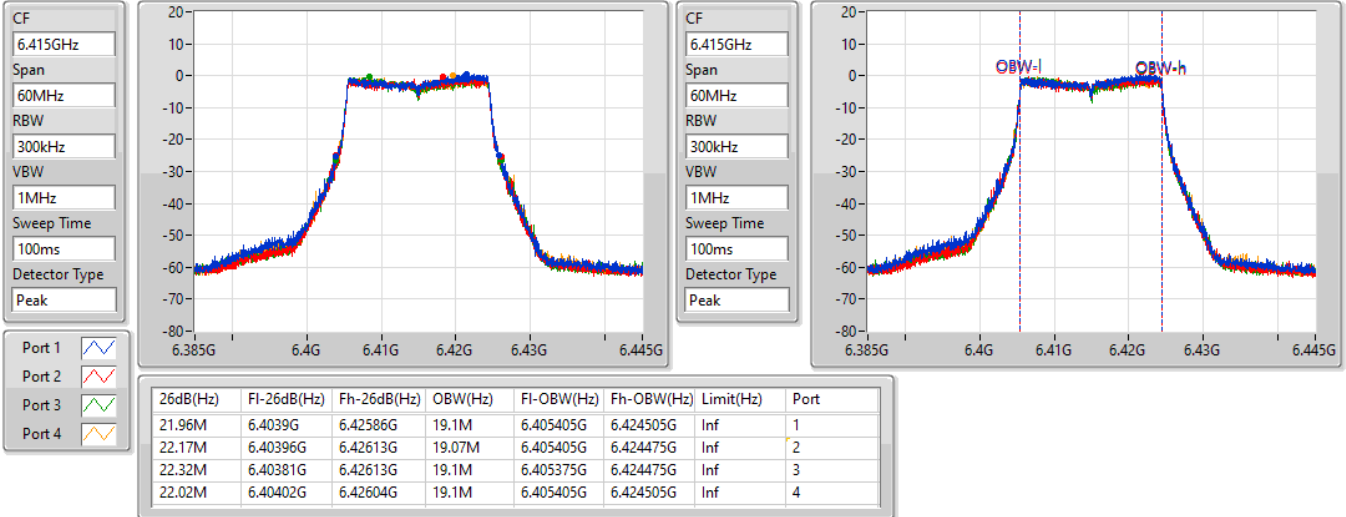

**802.11ax HEW20\_Nss1,(MCS0)\_4TX**
**EBW**
**6175MHz**

20/01/2022

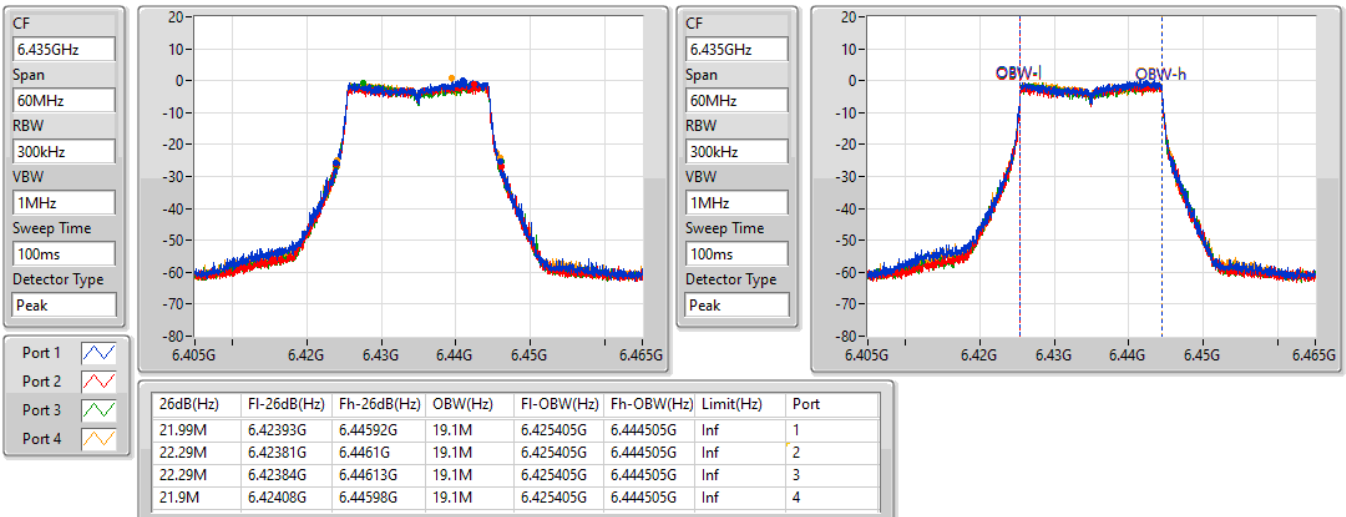


**802.11ax HEW20\_Nss1,(MCS0)\_4TX**
**EBW**
**6415MHz**

20/01/2022

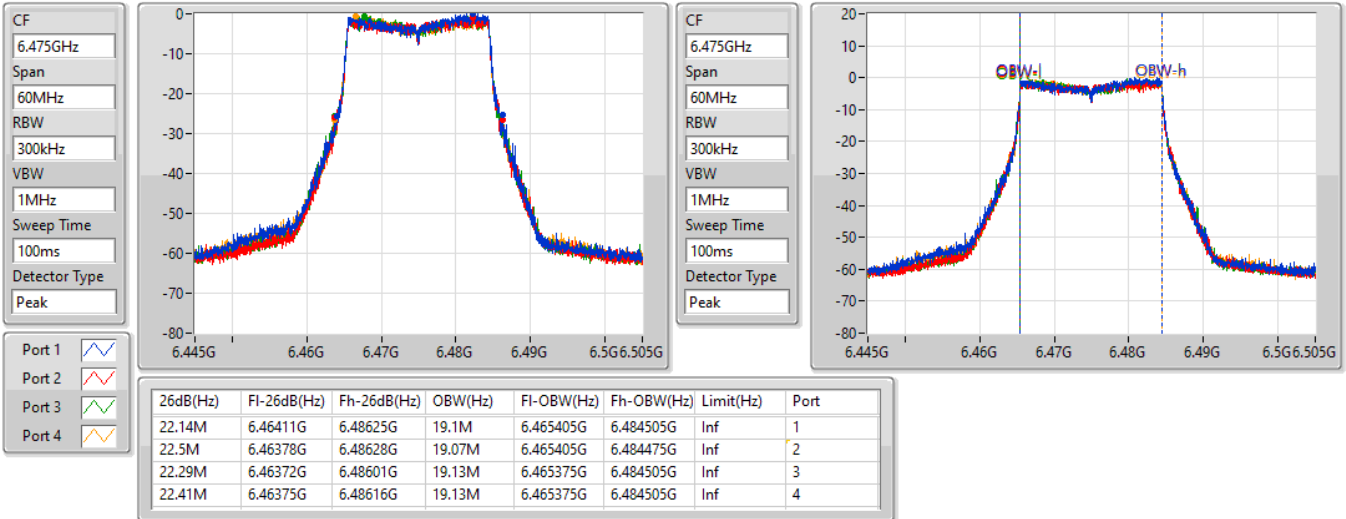

**802.11ax HEW20\_Nss1,(MCS0)\_4TX**
**EBW**
**6435MHz**

20/01/2022

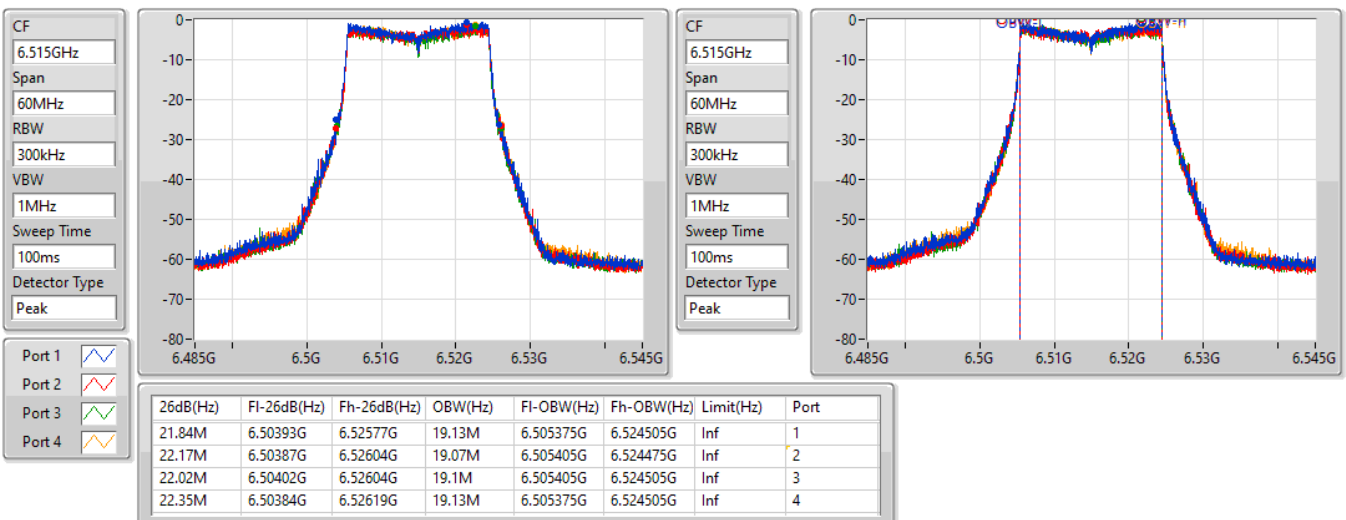


**802.11ax HEW20\_Nss1,(MCS0)\_4TX**
**EBW**
**6475MHz**

20/01/2022

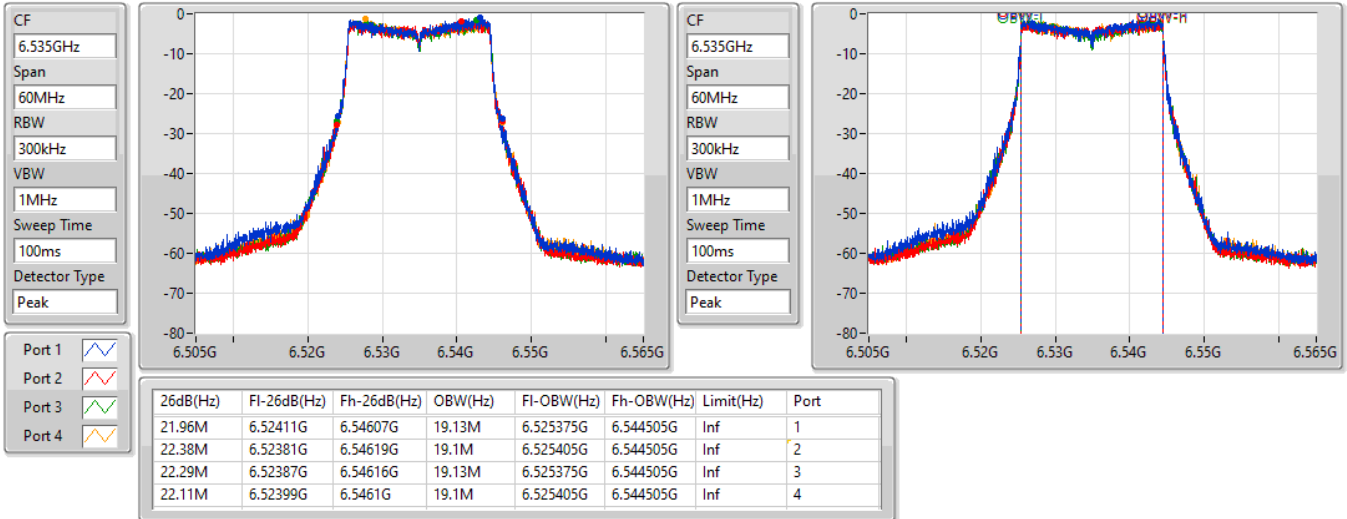

**802.11ax HEW20\_Nss1,(MCS0)\_4TX**
**EBW**
**6515MHz**

20/01/2022

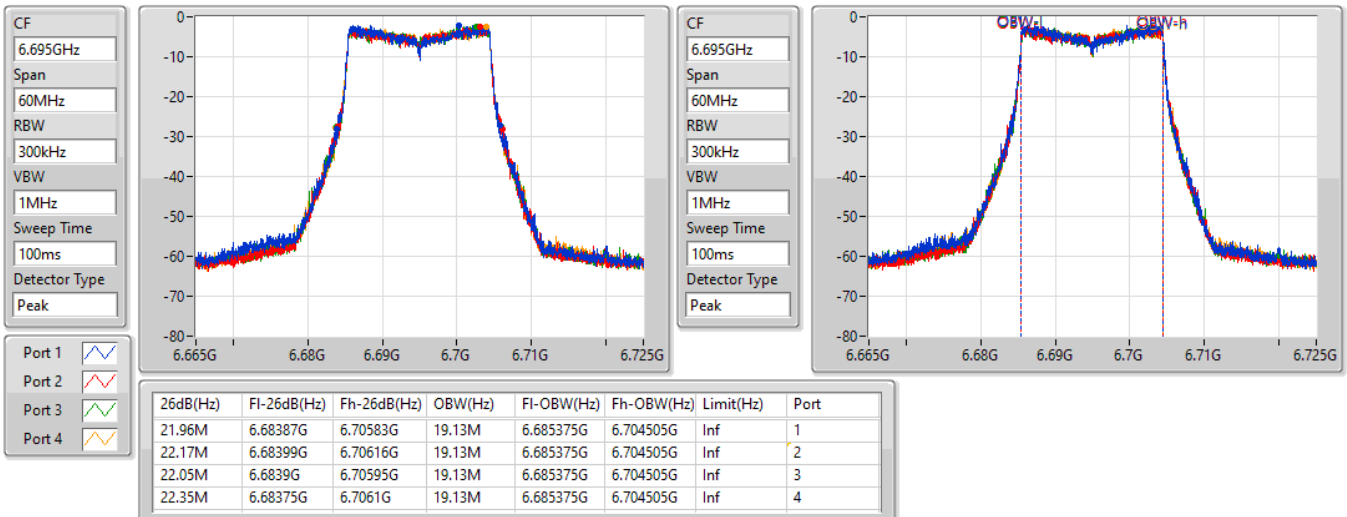


**802.11ax HEW20\_Nss1,(MCS0)\_4TX**
**EBW**
**6535MHz**

20/01/2022

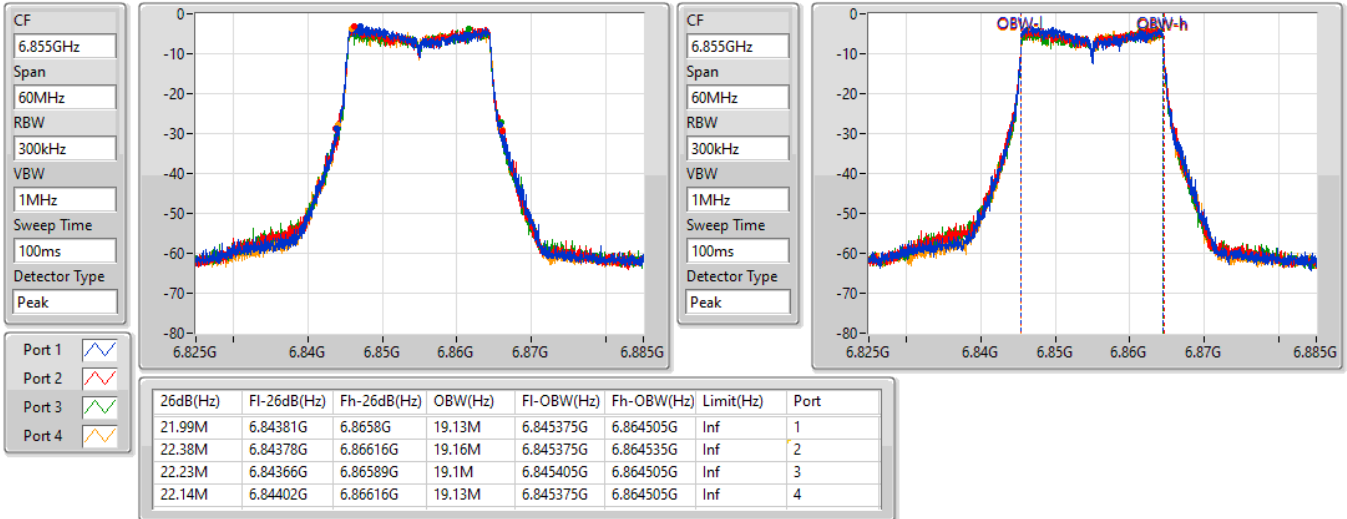

**802.11ax HEW20\_Nss1,(MCS0)\_4TX**
**EBW**
**6695MHz**

20/01/2022

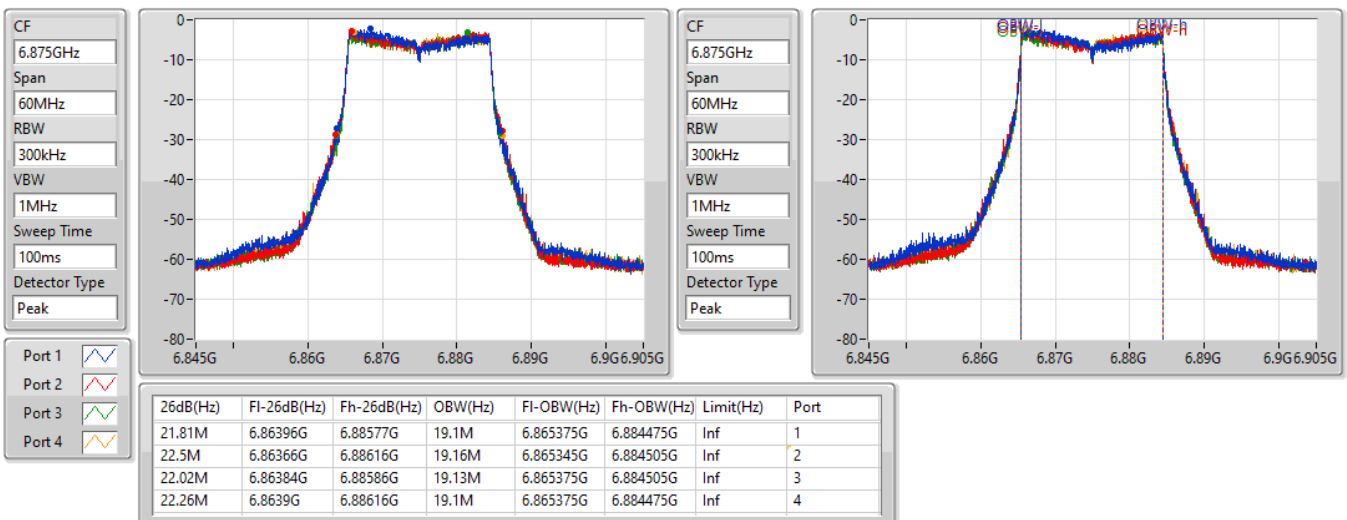


**802.11ax HEW20\_Nss1,(MCS0)\_4TX**
**EBW**
**6855MHz**

20/01/2022

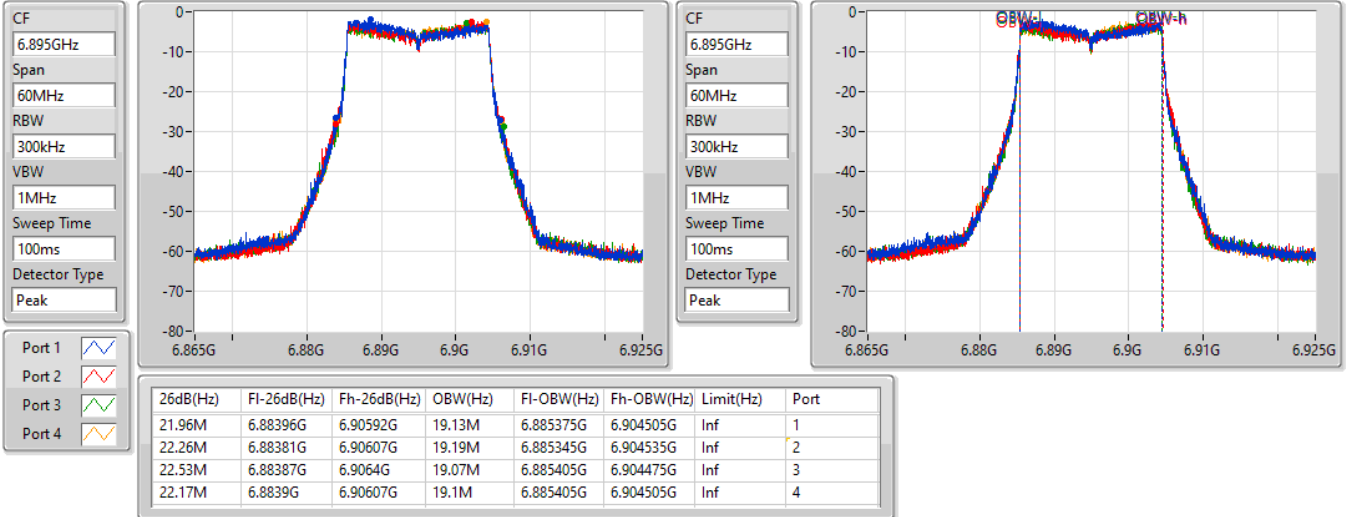

**802.11ax HEW20\_Nss1,(MCS0)\_4TX**
**EBW**
**6875MHz Straddle 6.525-6.875GHz**

20/01/2022

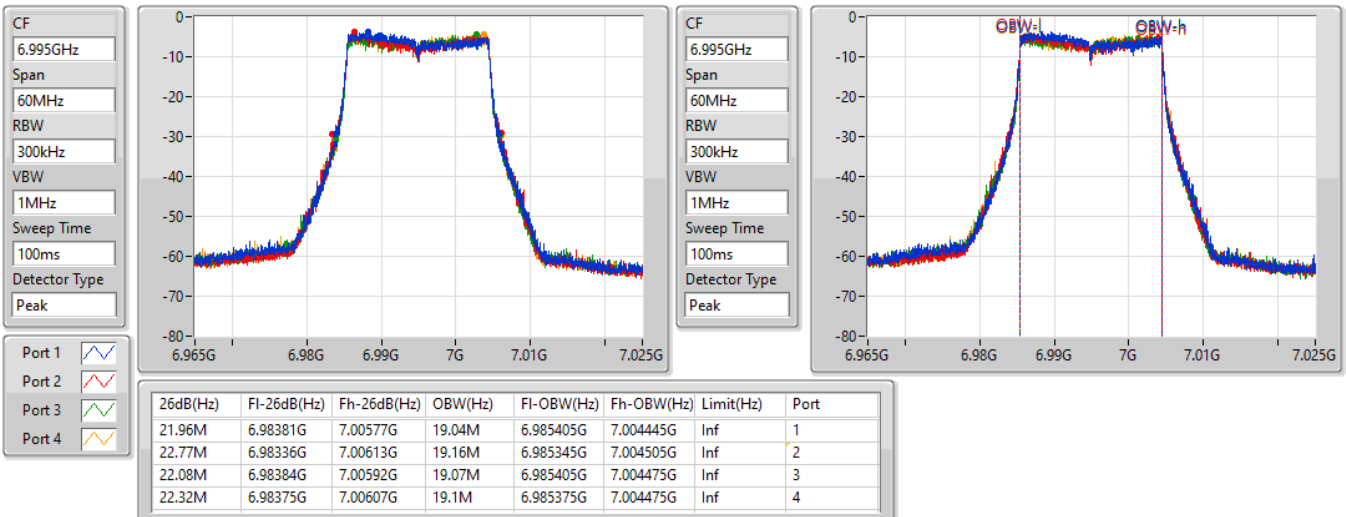


**802.11ax HEW20\_Nss1,(MCS0)\_4TX**
**EBW**
**6895MHz**

20/01/2022

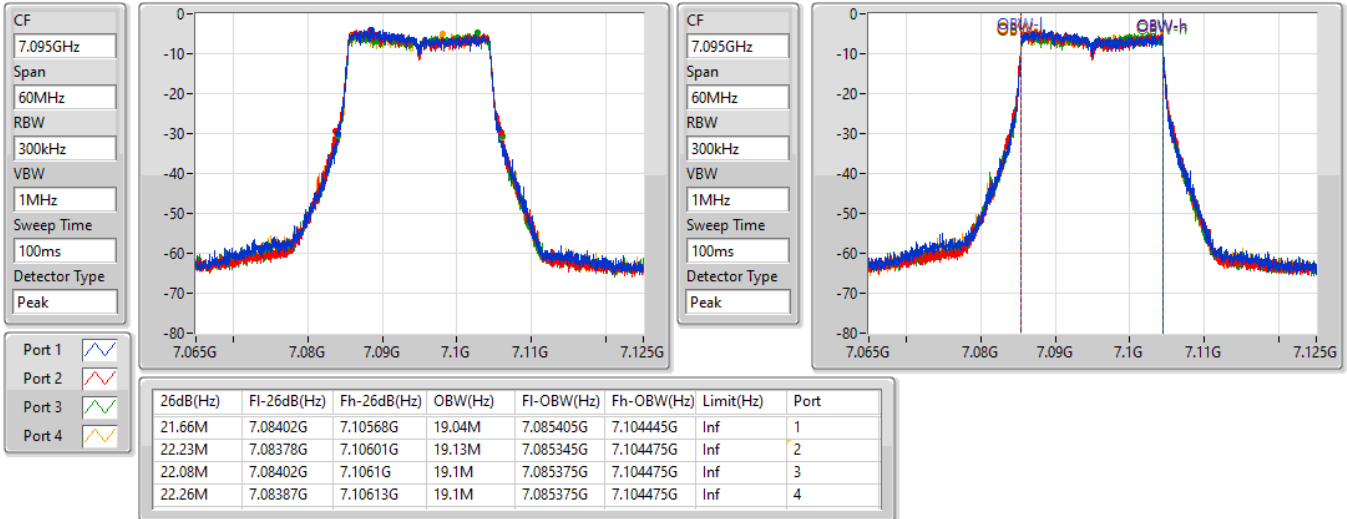

**802.11ax HEW20\_Nss1,(MCS0)\_4TX**
**EBW**
**6995MHz**

20/01/2022

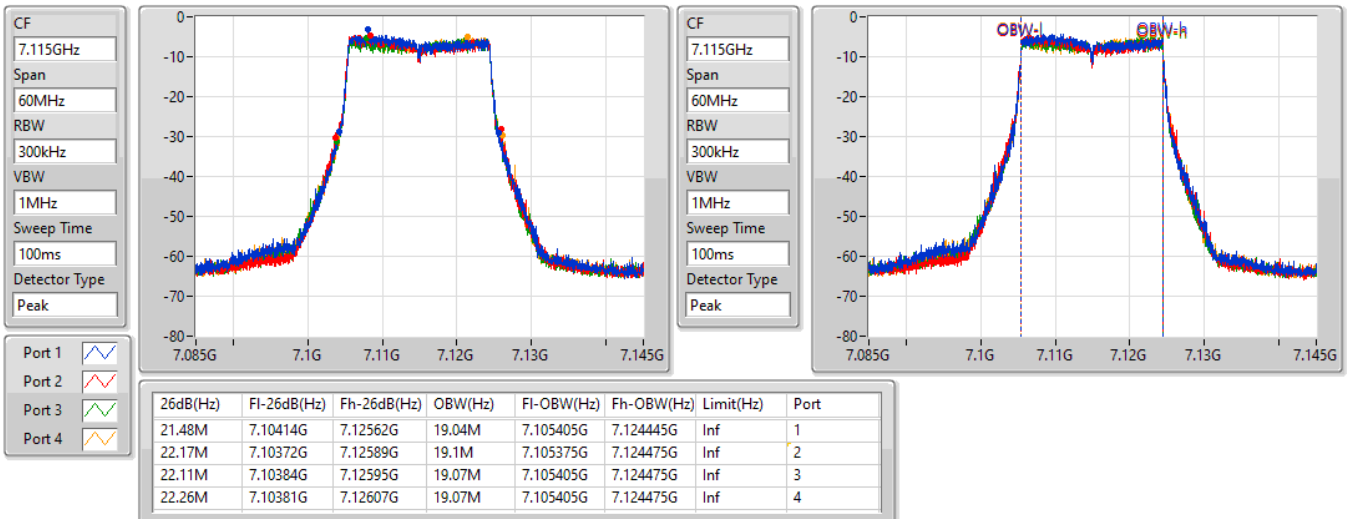


**802.11ax HEW20\_Nss1,(MCS0)\_4TX**
**EBW**
**7095MHz**

20/01/2022


**802.11ax HEW20\_Nss1,(MCS0)\_4TX**
**EBW**
**7115MHz**

20/01/2022



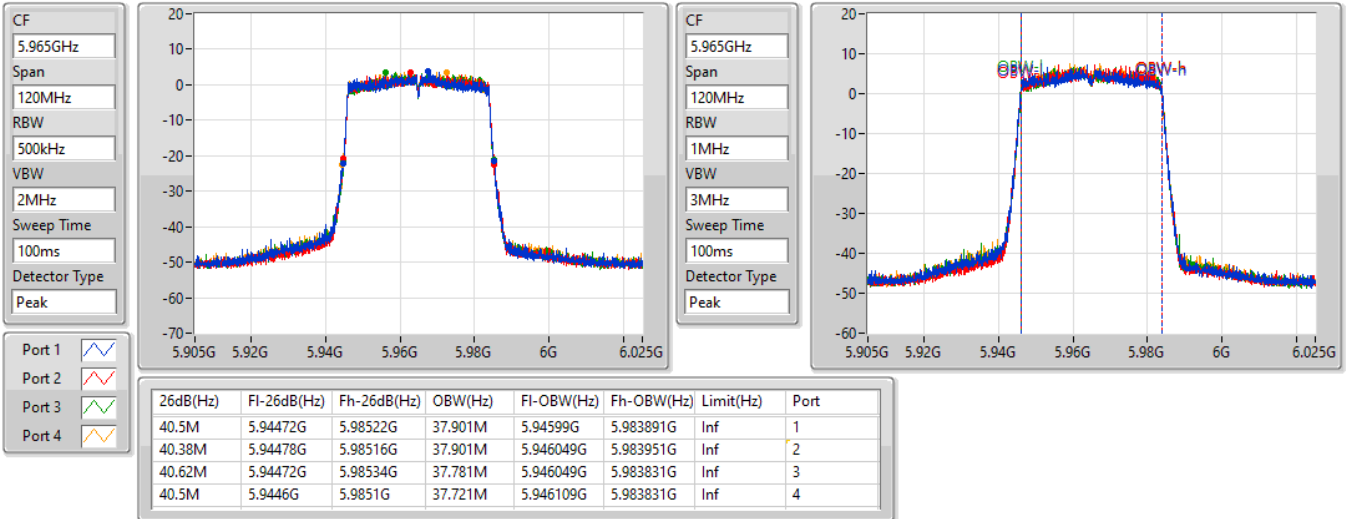


## 802.11ax HEW40\_Nss1,(MCS0)\_4TX

EBW

5965MHz

20/01/2022

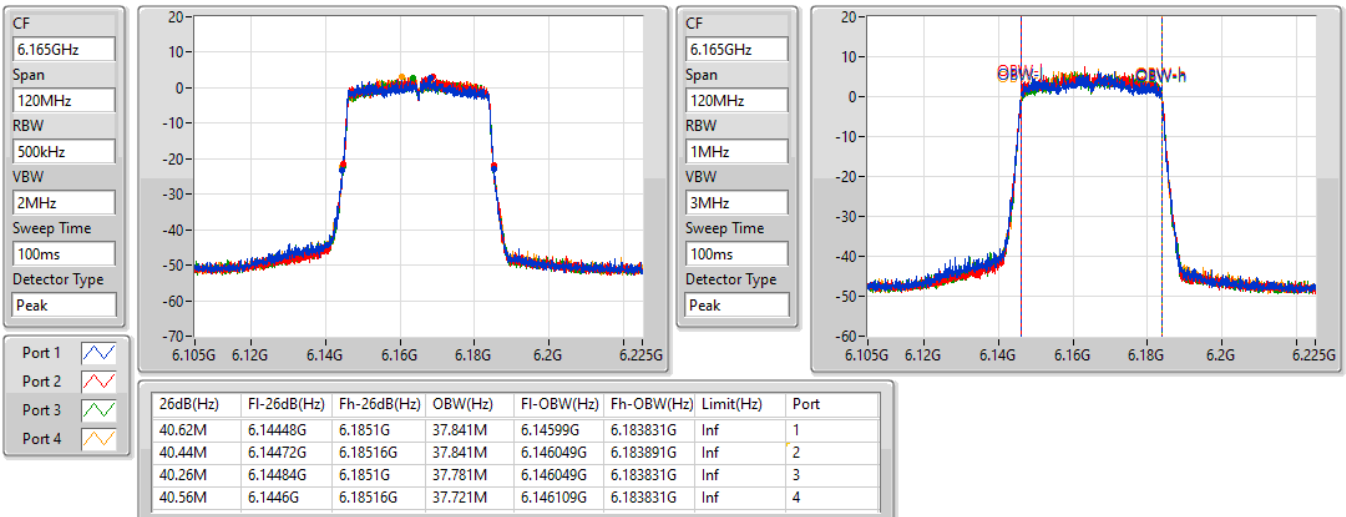


## 802.11ax HEW40\_Nss1,(MCS0)\_4TX

EBW

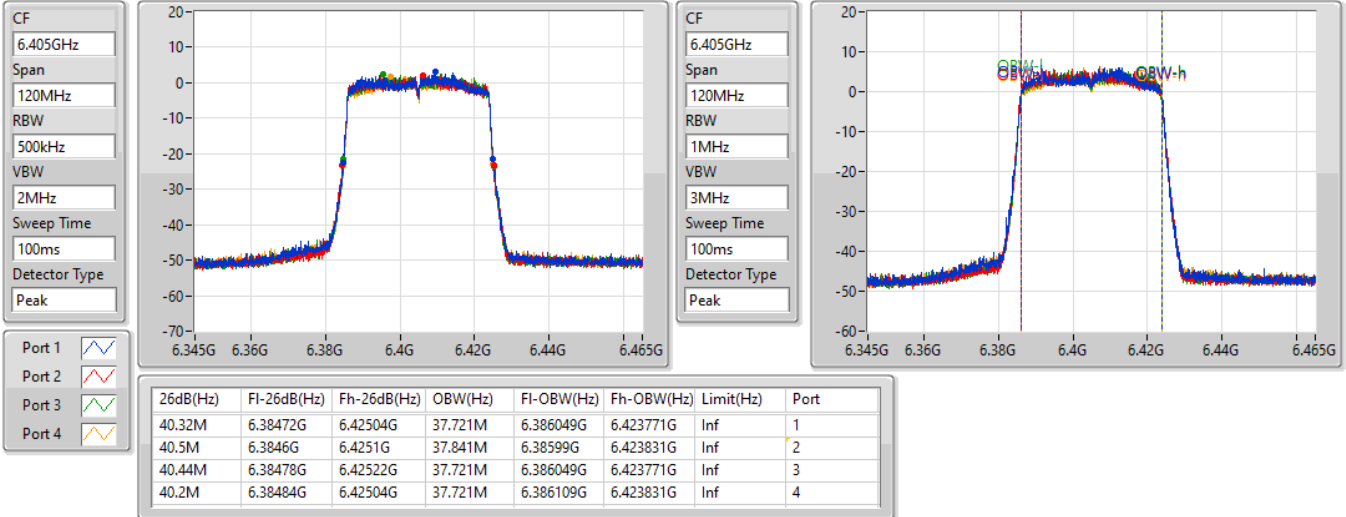
6165MHz

20/01/2022

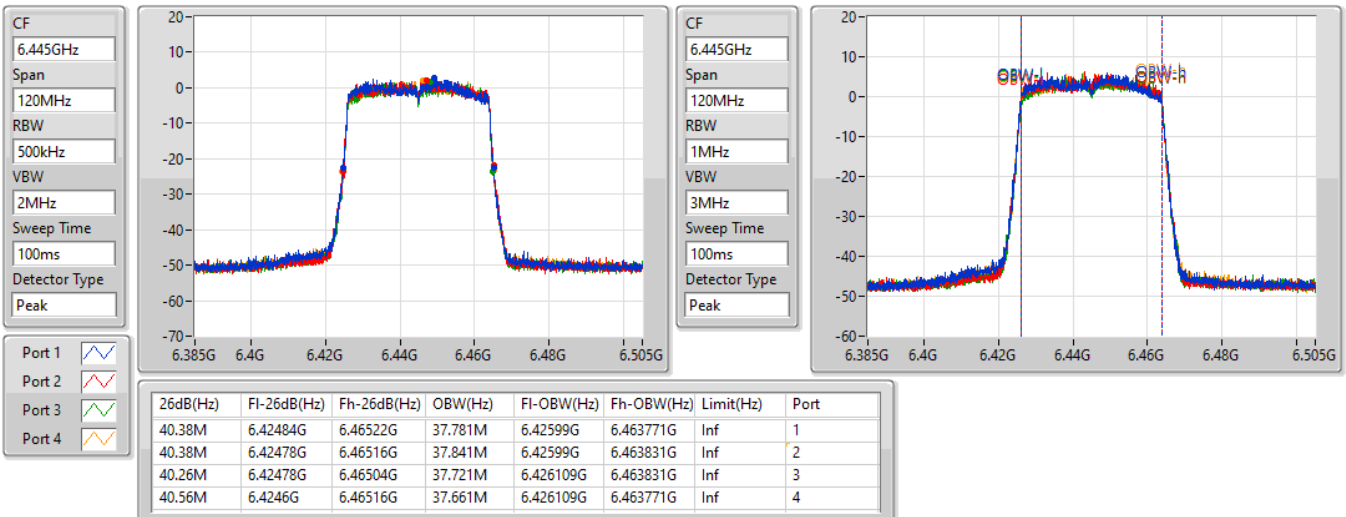


**802.11ax HEW40\_Nss1,(MCS0)\_4TX**
**EBW**
**6405MHz**

20/01/2022

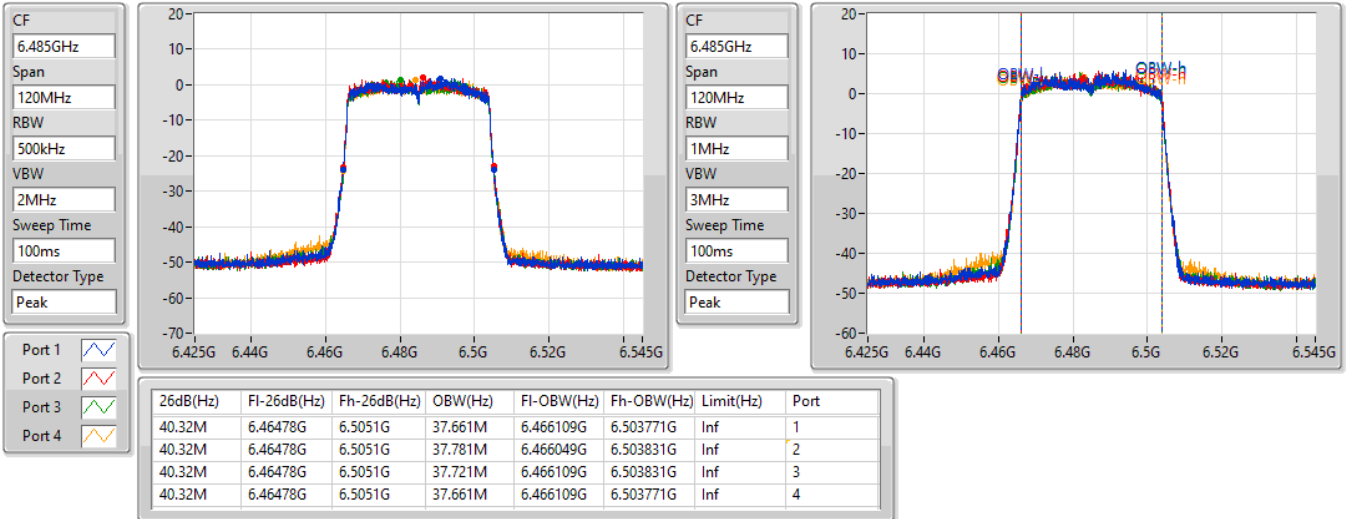

**802.11ax HEW40\_Nss1,(MCS0)\_4TX**
**EBW**
**6445MHz**

20/01/2022

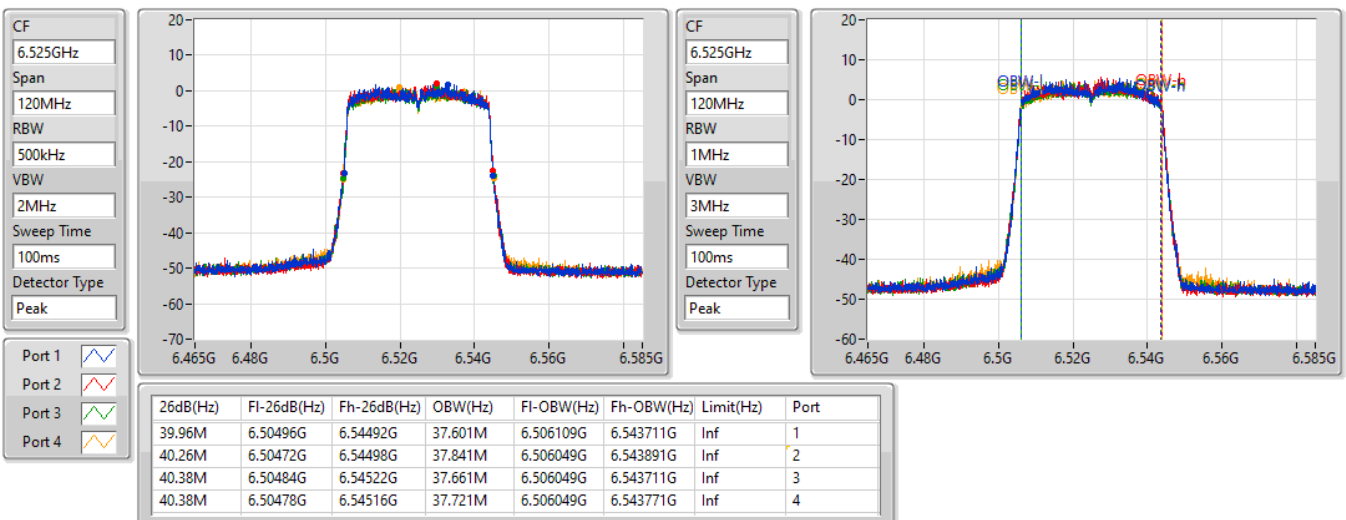


**802.11ax HEW40\_Nss1,(MCS0)\_4TX**
**EBW**
**6485MHz**

20/01/2022

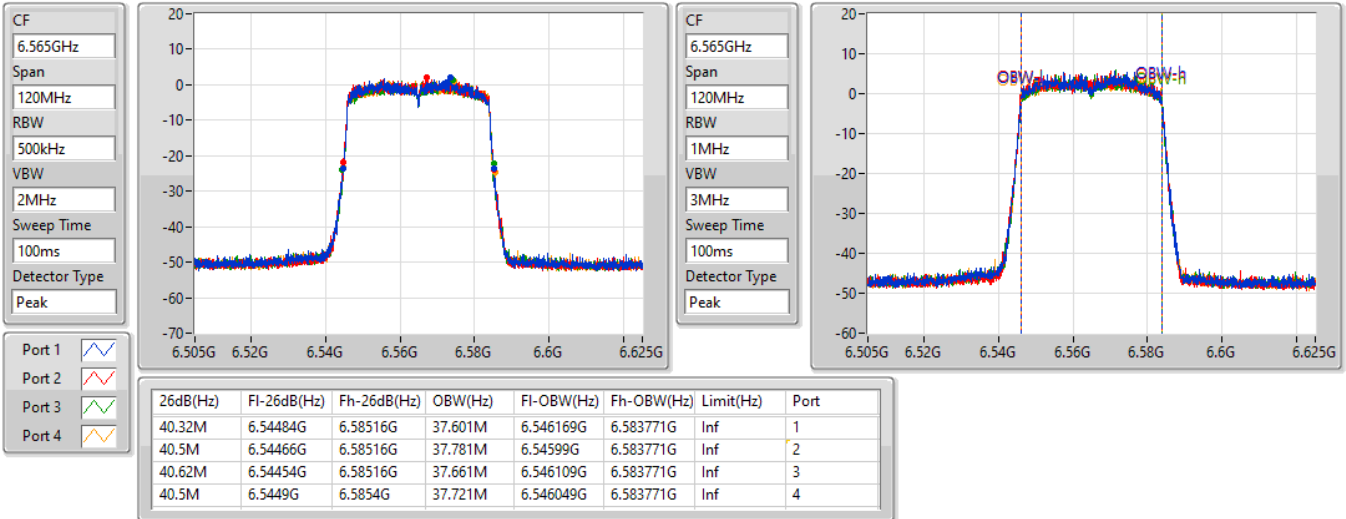

**802.11ax HEW40\_Nss1,(MCS0)\_4TX**
**EBW**
**6525MHz Straddle 6.425-6.525GHz**

20/01/2022

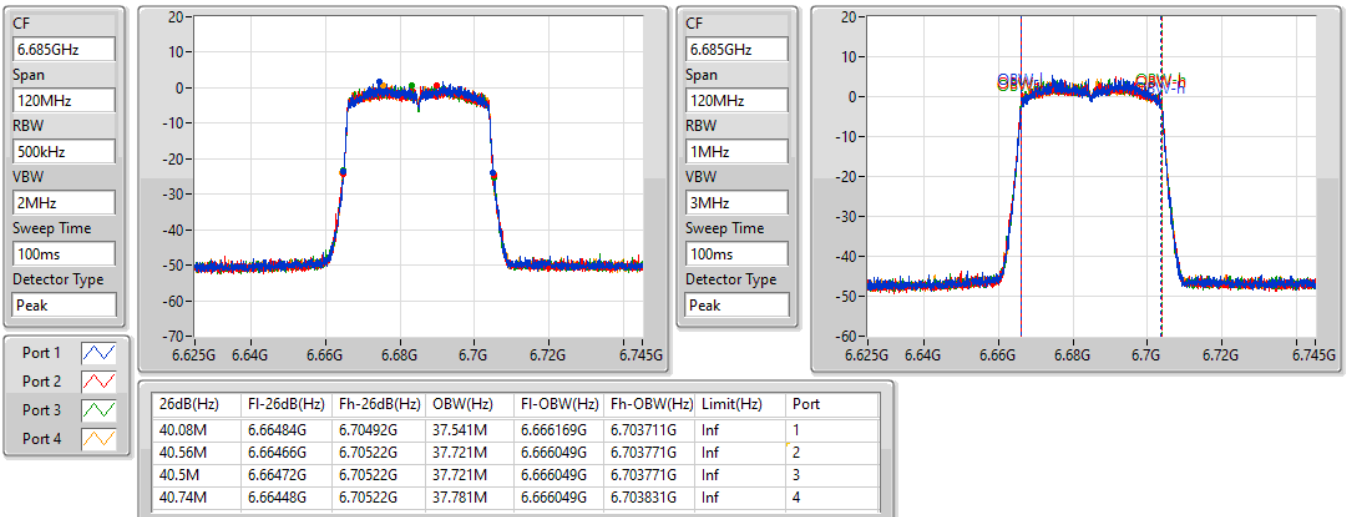


**802.11ax HEW40\_Nss1,(MCS0)\_4TX**
**EBW**
**6565MHz**

20/01/2022

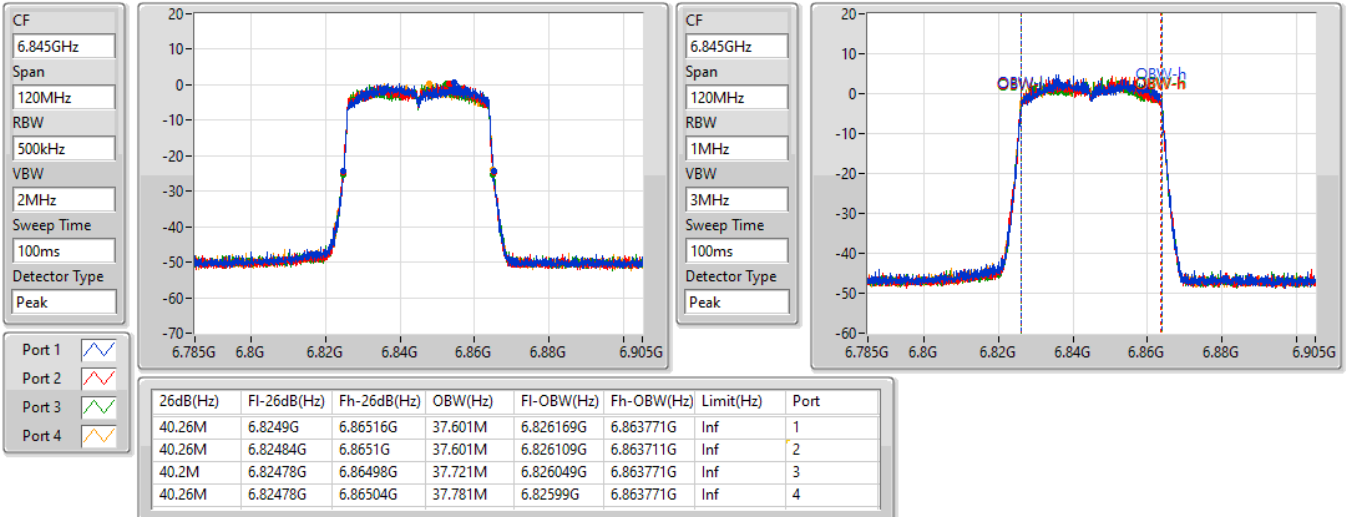

**802.11ax HEW40\_Nss1,(MCS0)\_4TX**
**EBW**
**6685MHz**

20/01/2022

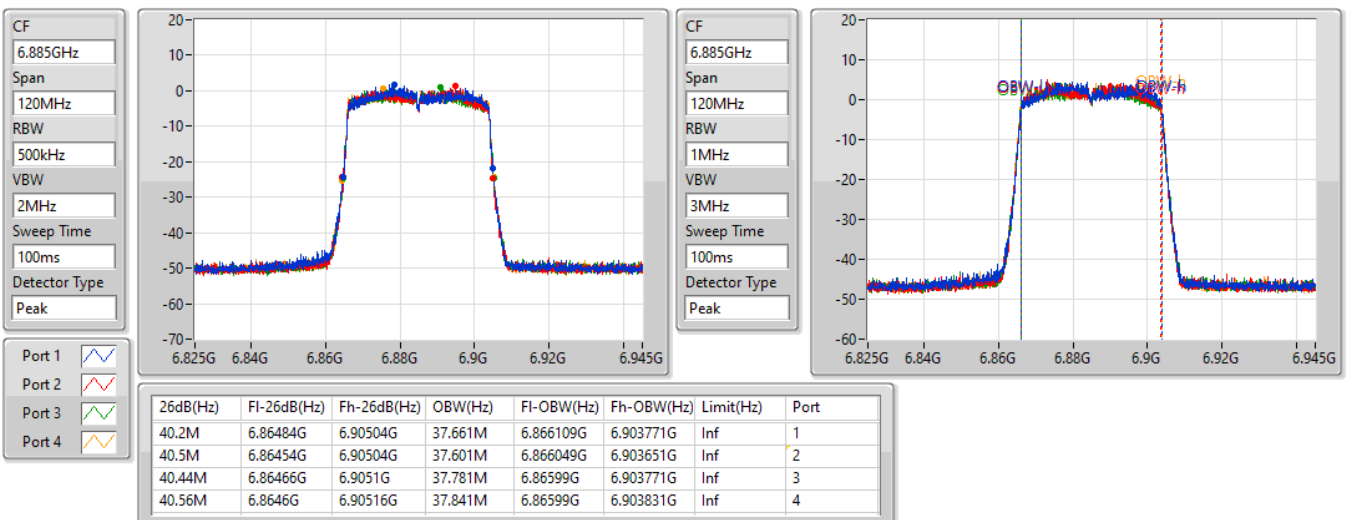


**802.11ax HEW40\_Nss1,(MCS0)\_4TX**
**EBW**
**6845MHz**

20/01/2022


**802.11ax HEW40\_Nss1,(MCS0)\_4TX**
**EBW**
**6885MHz Straddle 6.525-6.875GHz**

20/01/2022

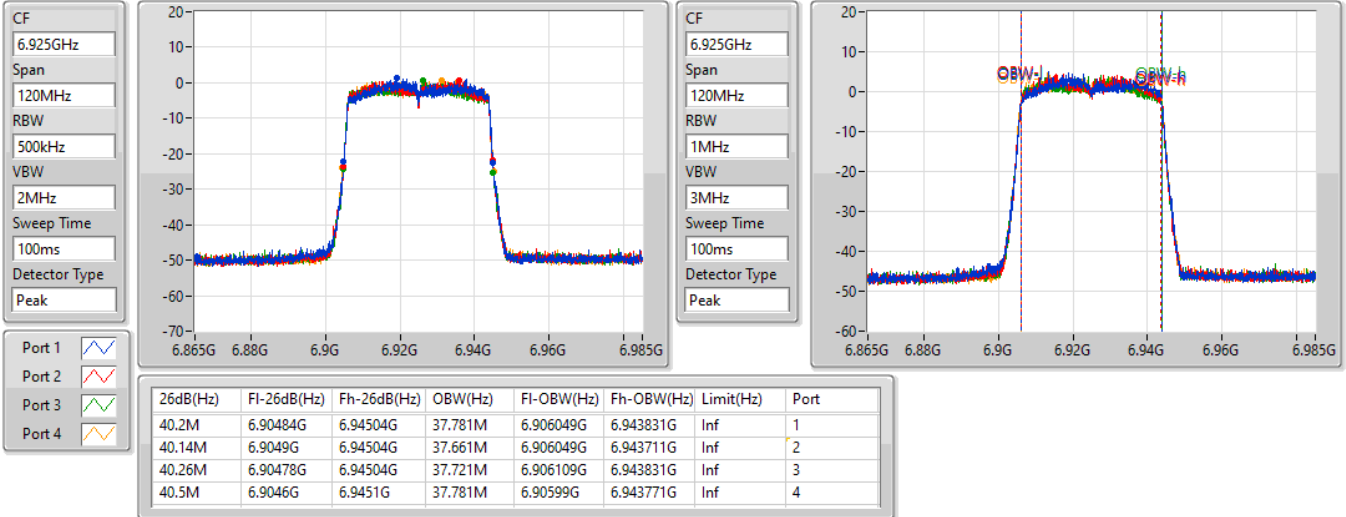


## 802.11ax HEW40\_Nss1,(MCS0)\_4TX

EBW

6925MHz

20/01/2022

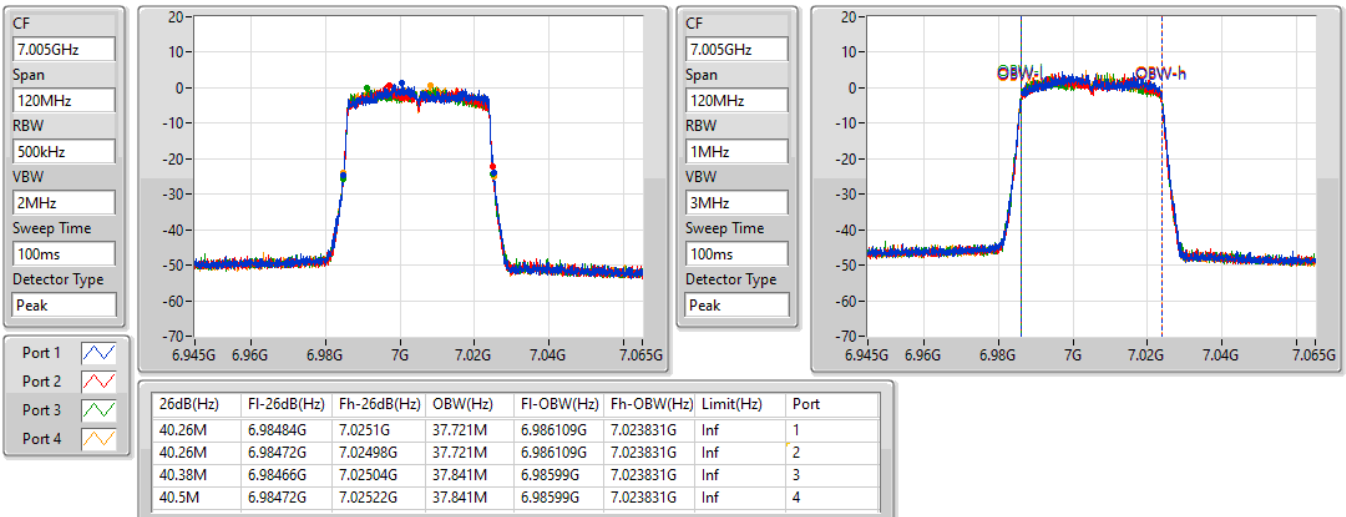


## 802.11ax HEW40\_Nss1,(MCS0)\_4TX

EBW

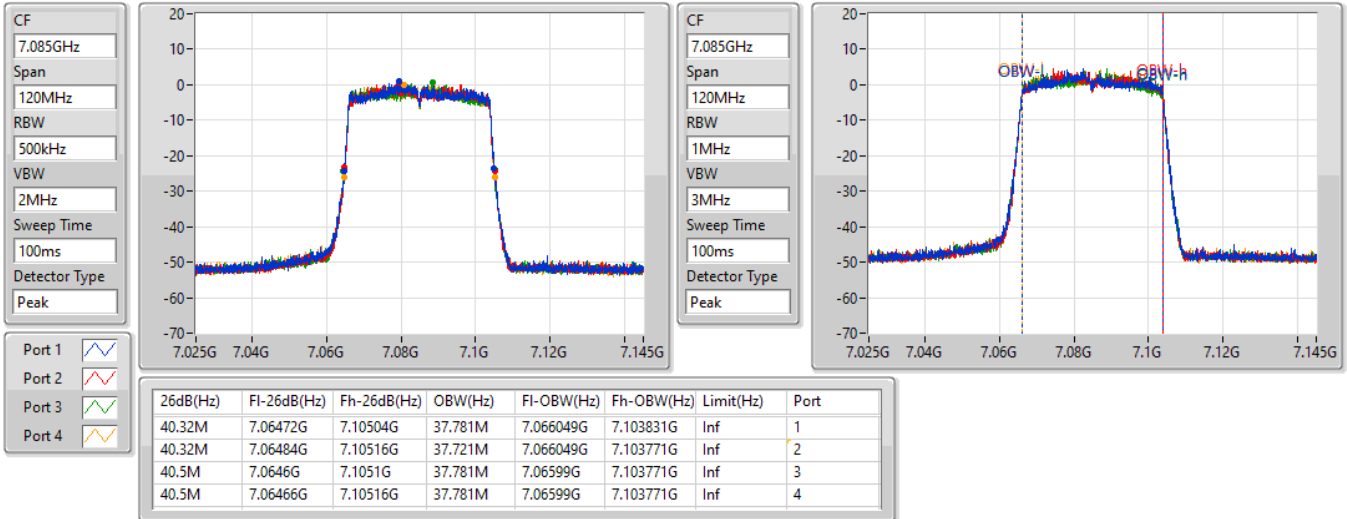
7005MHz

20/01/2022

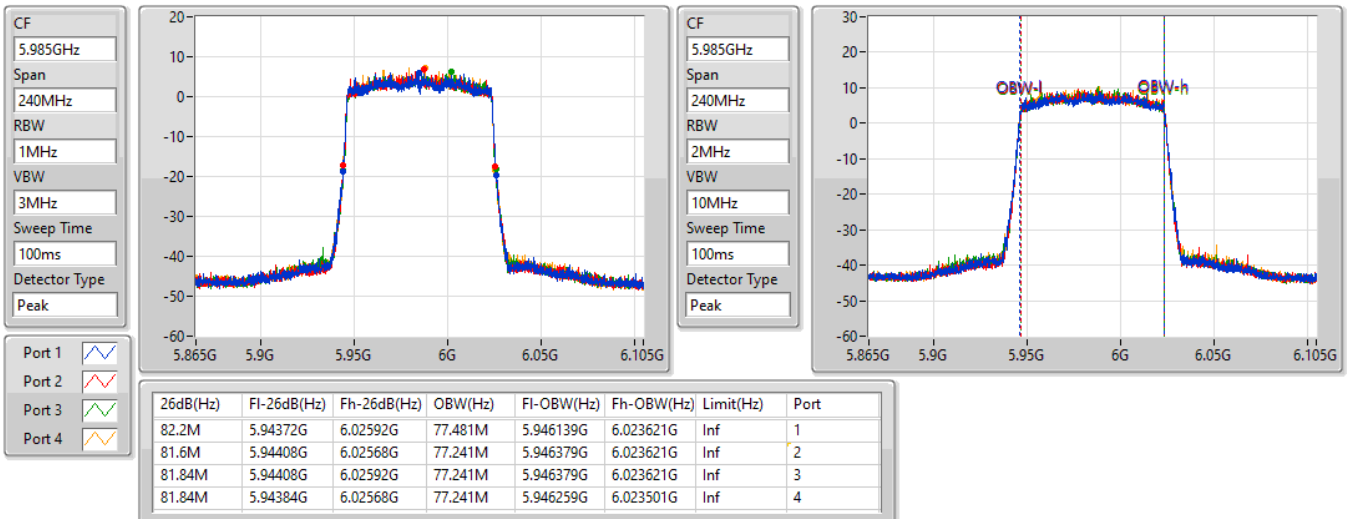


**802.11ax HEW40\_Nss1,(MCS0)\_4TX**
**EBW**
**7085MHz**

20/01/2022

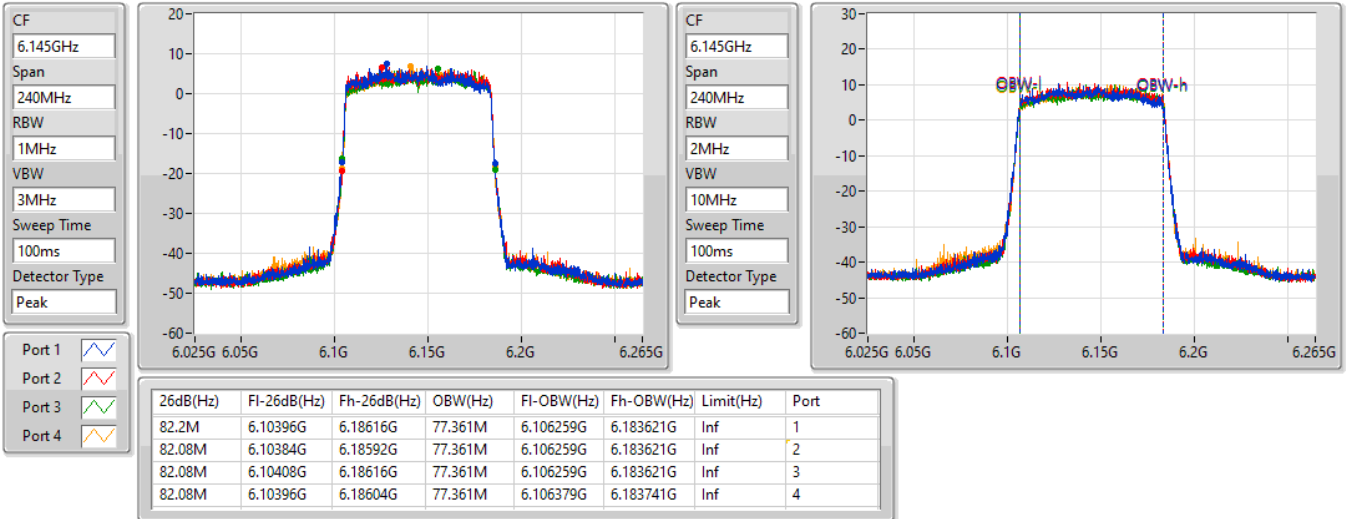

**802.11ax HEW80\_Nss1,(MCS0)\_4TX**
**EBW**
**5985MHz**

20/01/2022

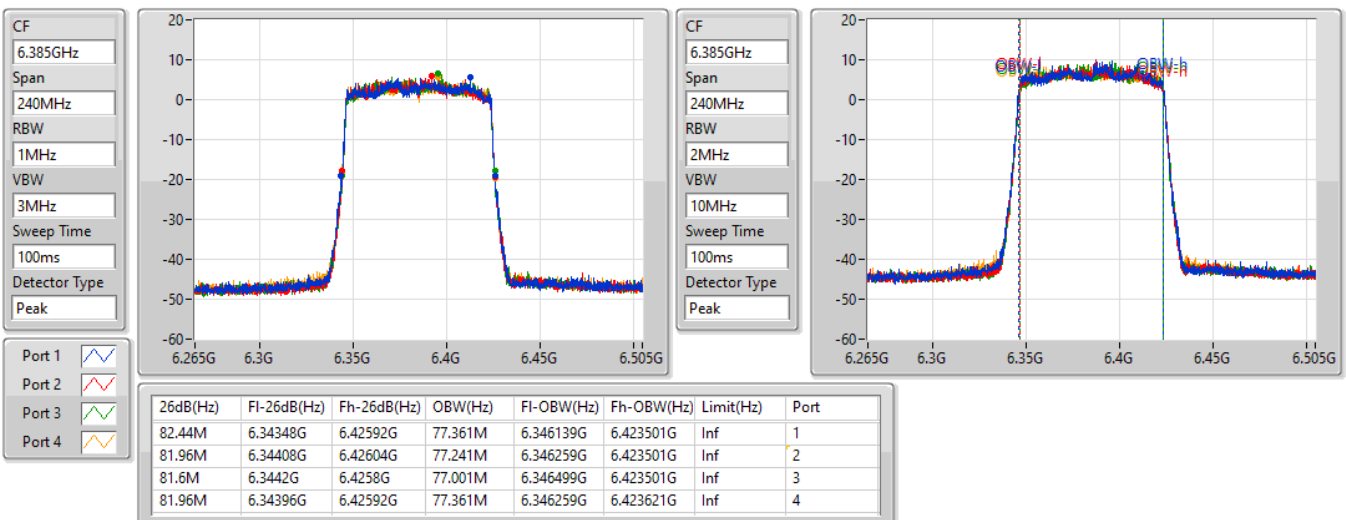


**802.11ax HEW80\_Nss1,(MCS0)\_4TX**
**EBW**
**6145MHz**

20/01/2022


**802.11ax HEW80\_Nss1,(MCS0)\_4TX**
**EBW**
**6385MHz**

20/01/2022



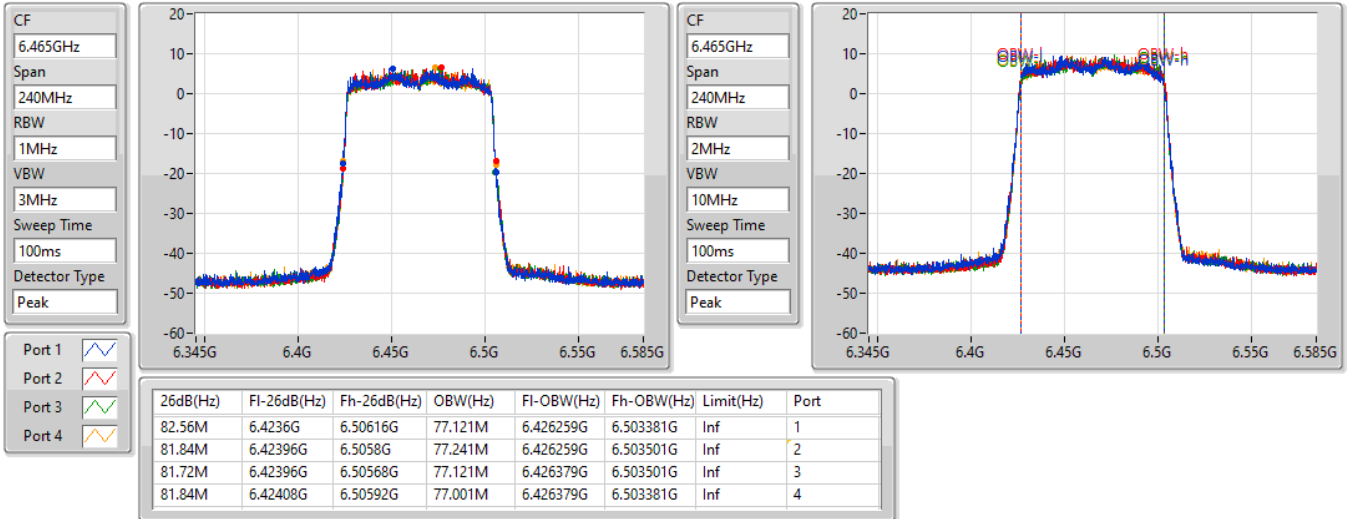


## 802.11ax HEW80\_Nss1,(MCS0)\_4TX

EBW

6465MHz

20/01/2022

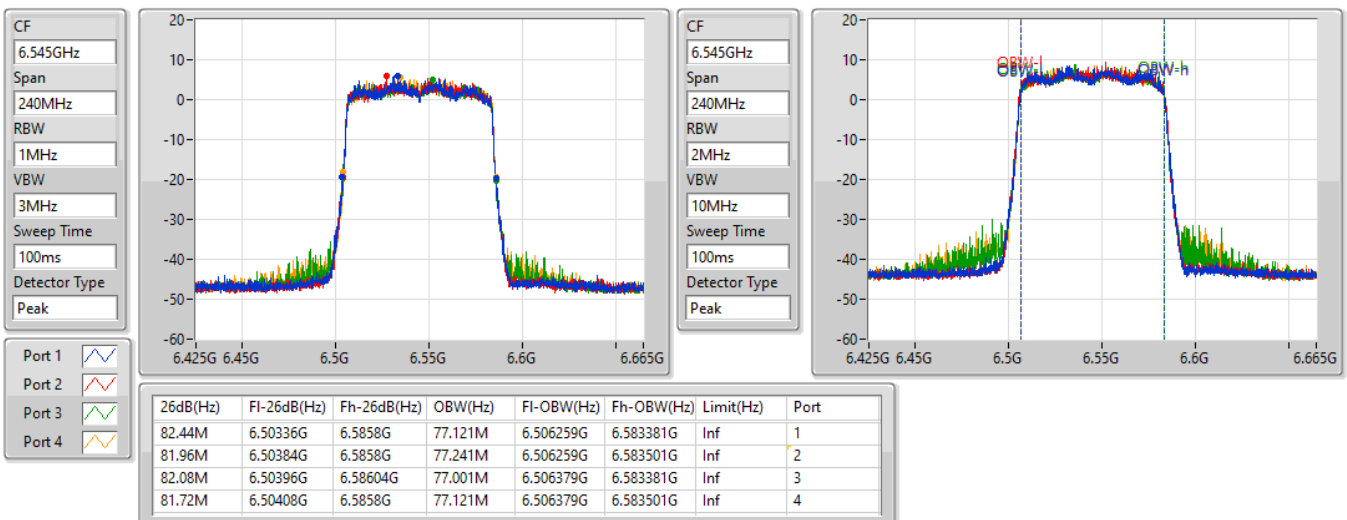


## 802.11ax HEW80\_Nss1,(MCS0)\_4TX

EBW

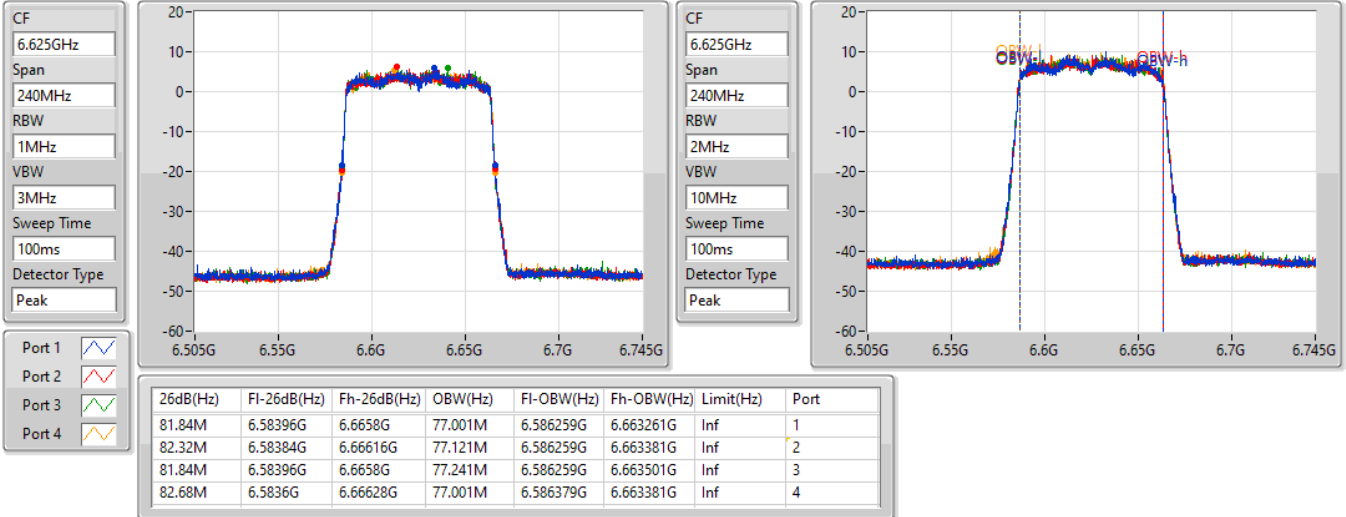
6545MHz Straddle 6.425-6.525GHz

20/01/2022

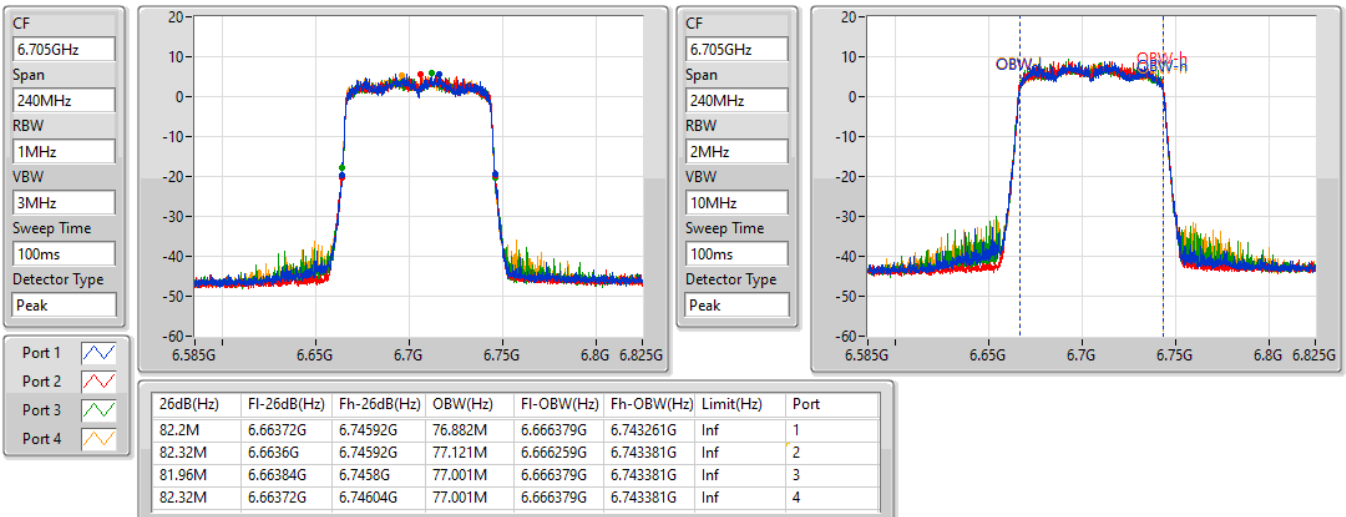


**802.11ax HEW80\_Nss1,(MCS0)\_4TX**
**EBW**
**6625MHz**

20/01/2022


**802.11ax HEW80\_Nss1,(MCS0)\_4TX**
**EBW**
**6705MHz**

20/01/2022

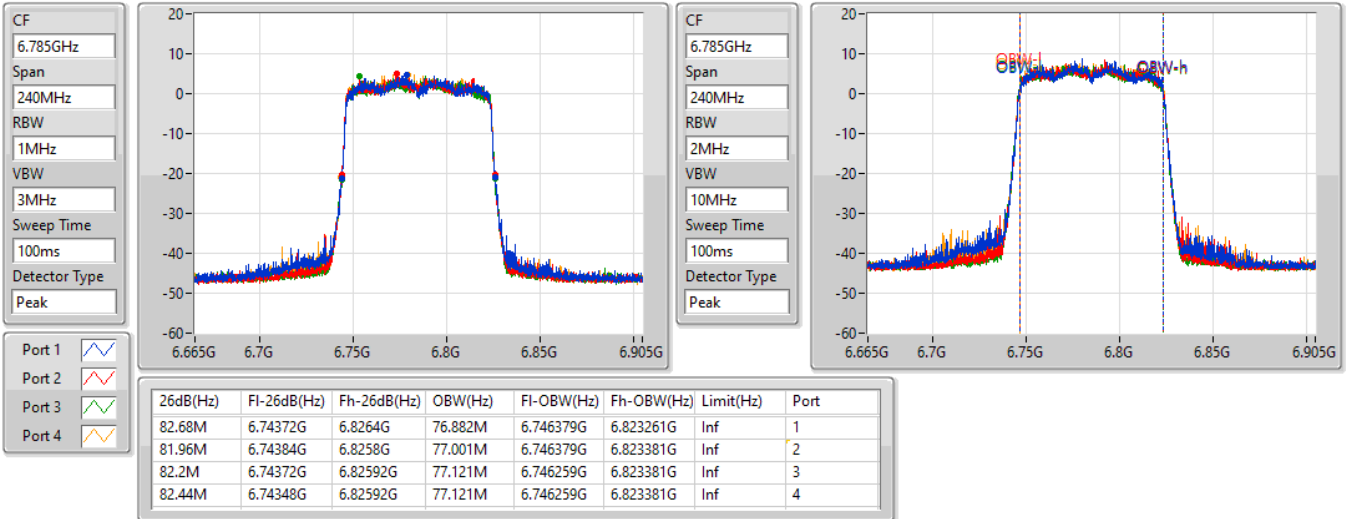


## 802.11ax HEW80\_Nss1,(MCS0)\_4TX

EBW

6785MHz

20/01/2022

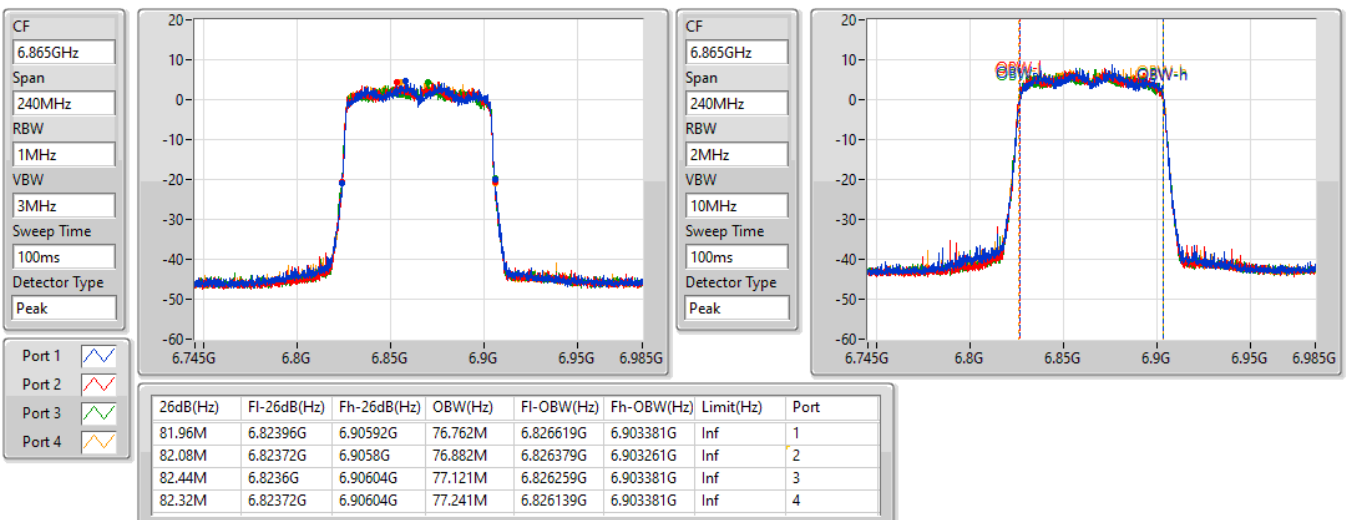


## 802.11ax HEW80\_Nss1,(MCS0)\_4TX

EBW

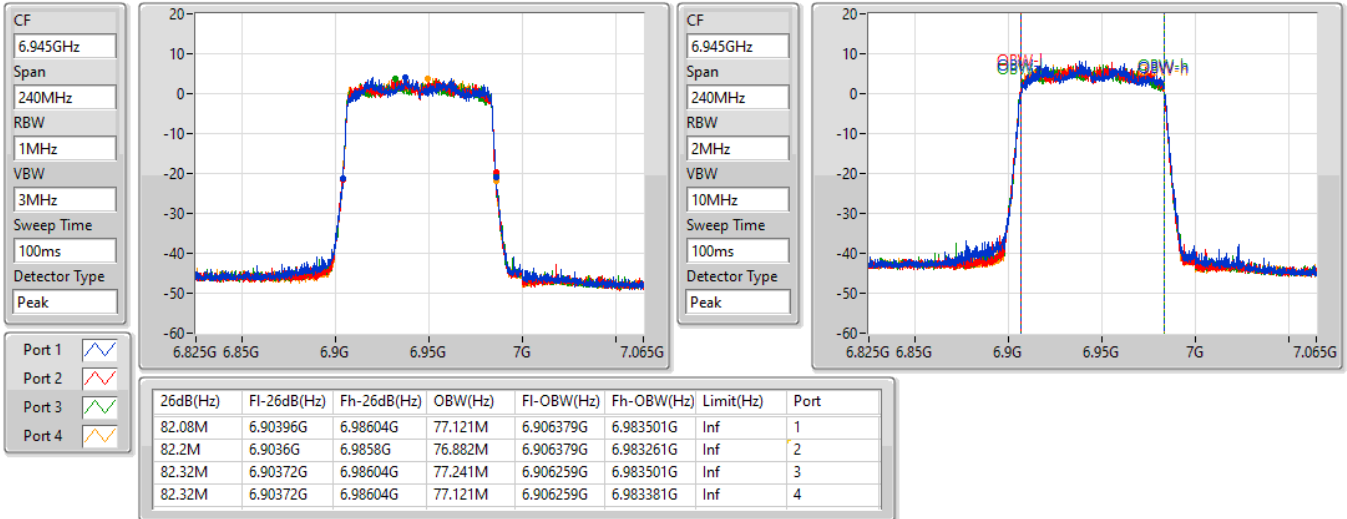
6865MHz Straddle 6.525-6.875GHz

20/01/2022

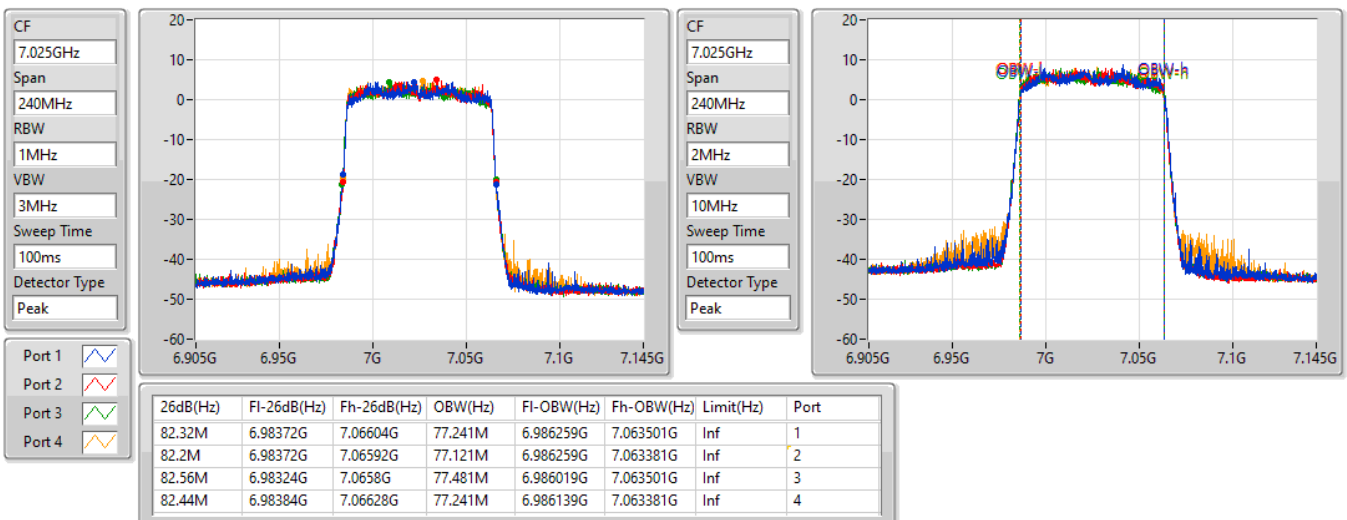


**802.11ax HEW80\_Nss1,(MCS0)\_4TX**
**EBW**
**6945MHz**

20/01/2022

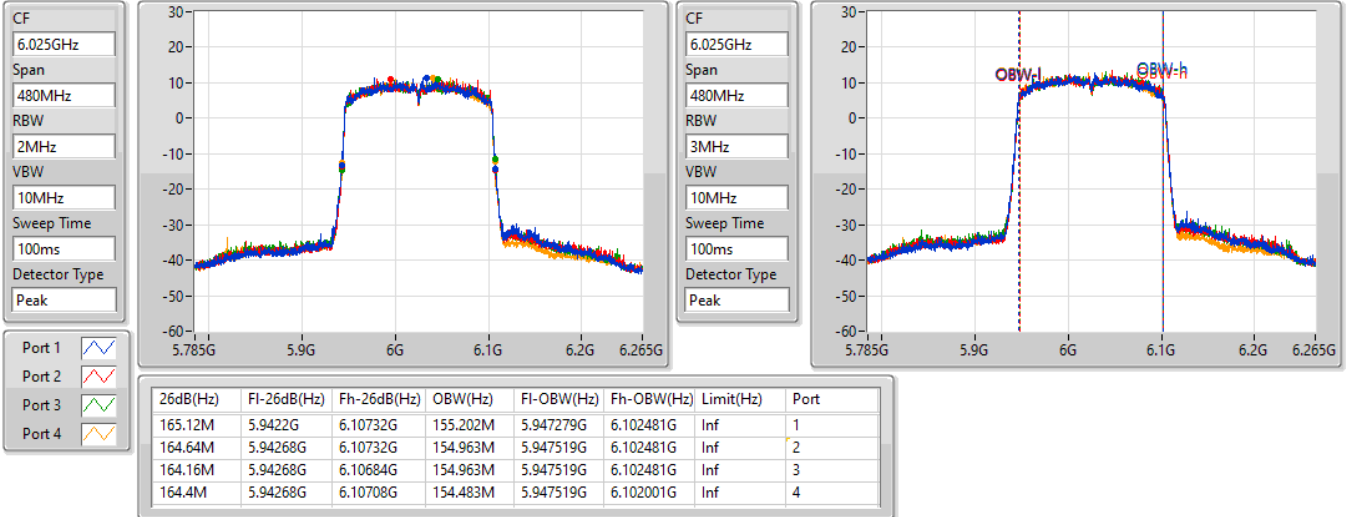

**802.11ax HEW80\_Nss1,(MCS0)\_4TX**
**EBW**
**7025MHz**

20/01/2022

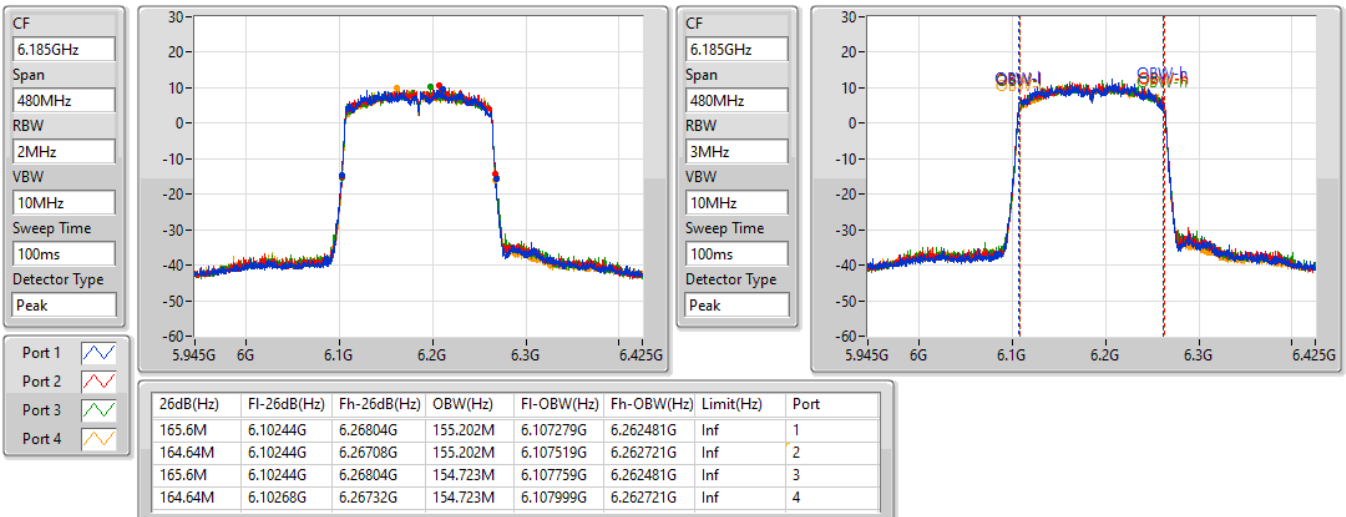


**802.11ax HEW160\_Nss1,(MCS0)\_4TX**
**EBW**
**6025MHz**

20/01/2022

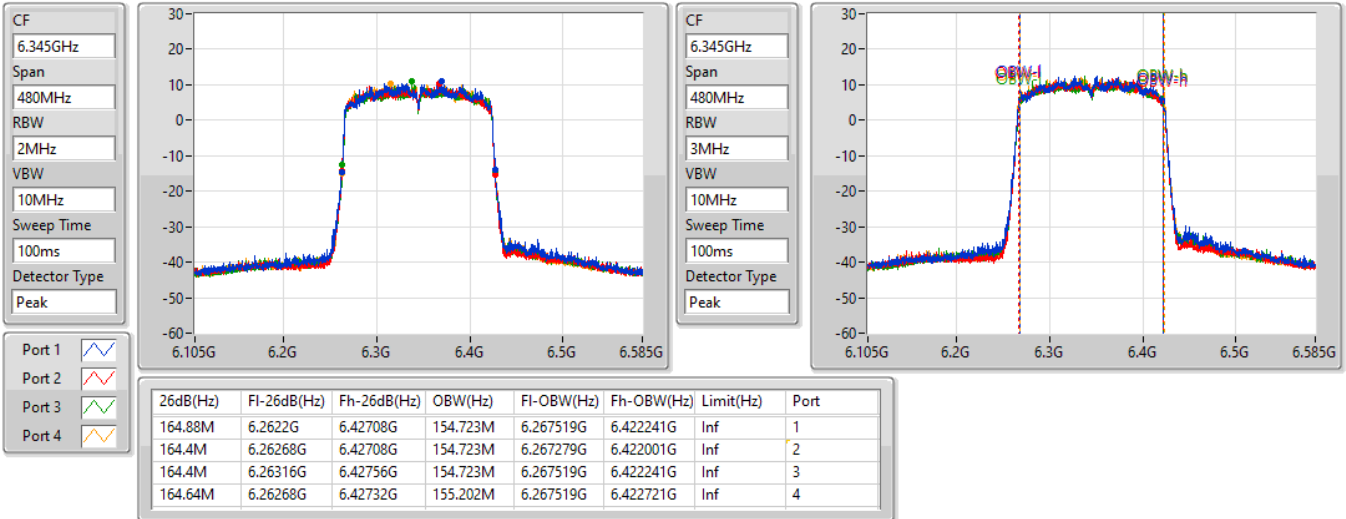

**802.11ax HEW160\_Nss1,(MCS0)\_4TX**
**EBW**
**6185MHz**

20/01/2022

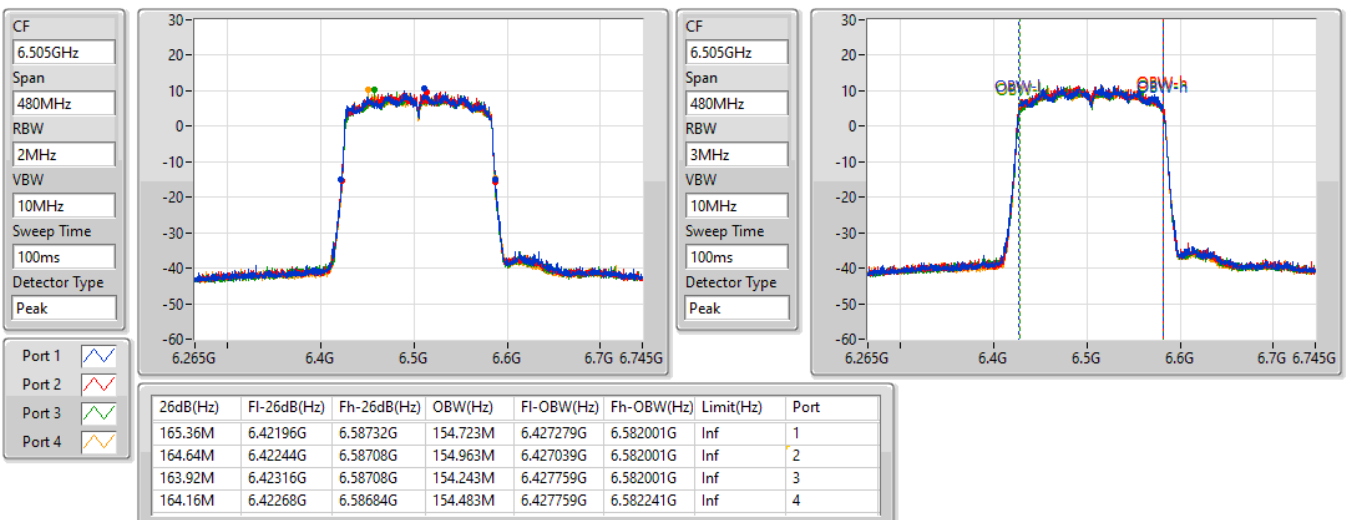


**802.11ax HEW160\_Nss1,(MCS0)\_4TX**
**EBW**
**6345MHz**

20/01/2022

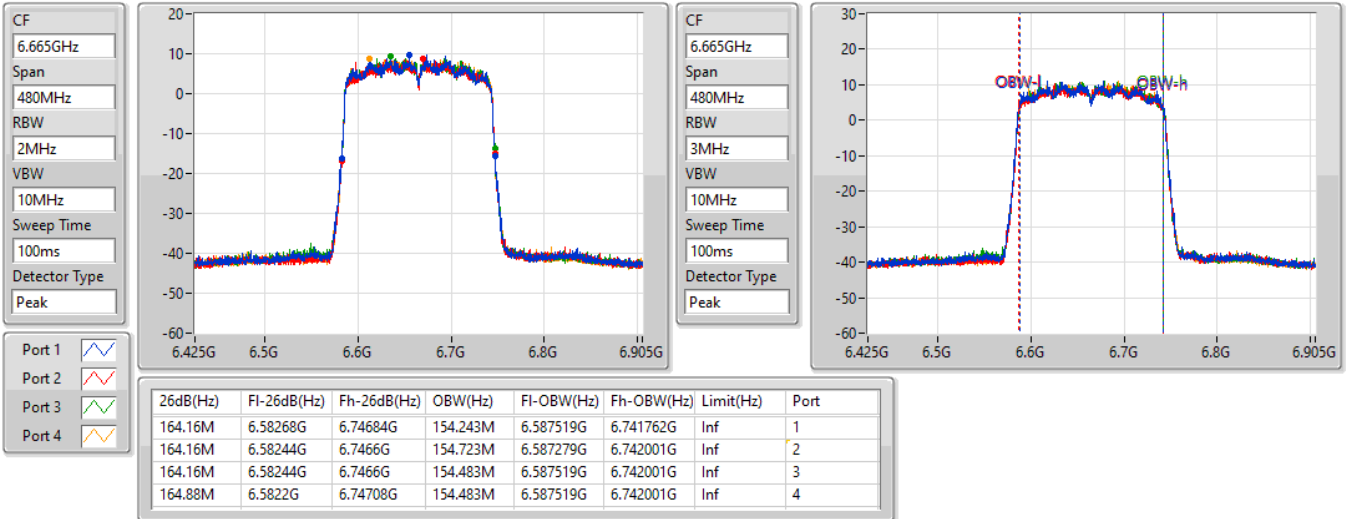

**802.11ax HEW160\_Nss1,(MCS0)\_4TX**
**EBW**
**6505MHz Straddle 6.425-6.525GHz**

20/01/2022

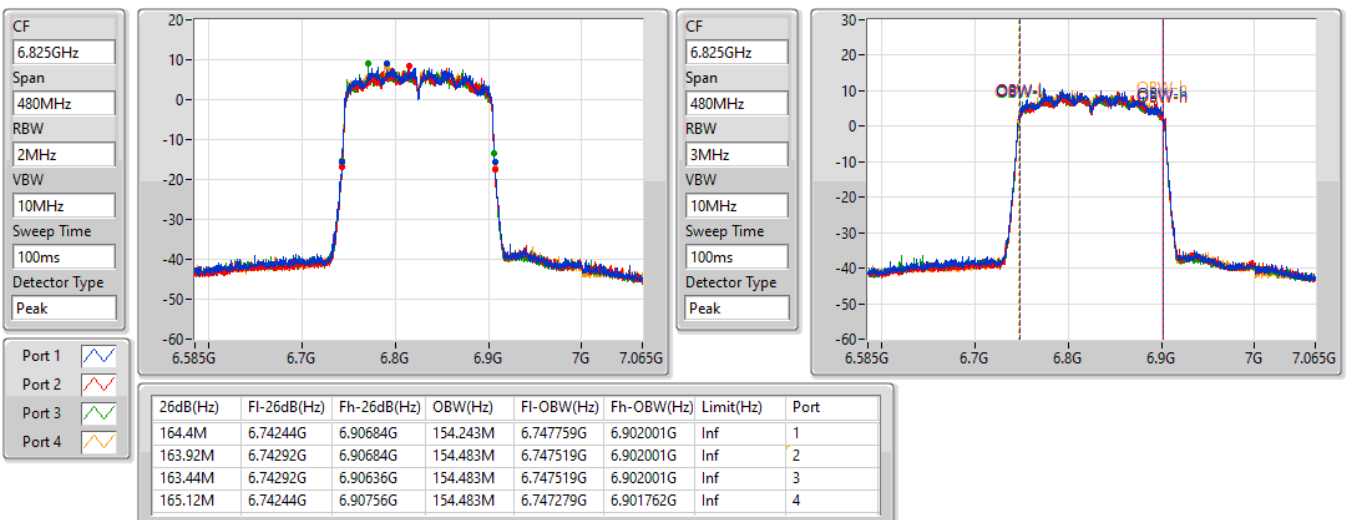


**802.11ax HEW160\_Nss1,(MCS0)\_4TX**
**EBW**
**6665MHz**

20/01/2022


**802.11ax HEW160\_Nss1,(MCS0)\_4TX**
**EBW**
**6825MHz Straddle 6.525-6.875GHz**

20/01/2022

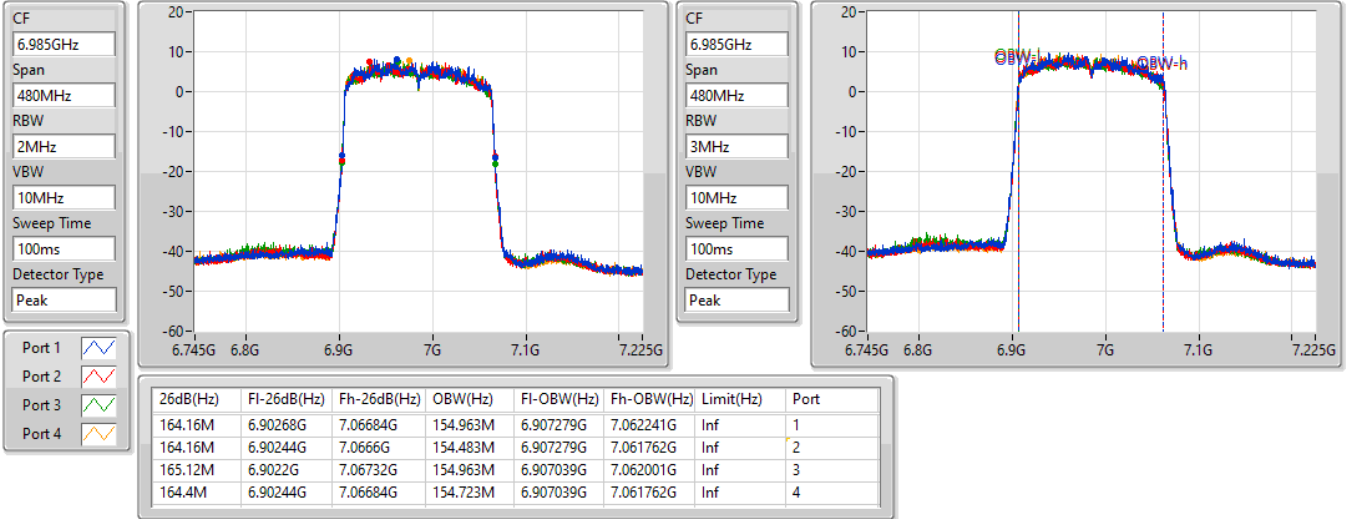


## 802.11ax HEW160\_Nss1,(MCS0)\_4TX

EBW

6985MHz

20/01/2022





**Summary**

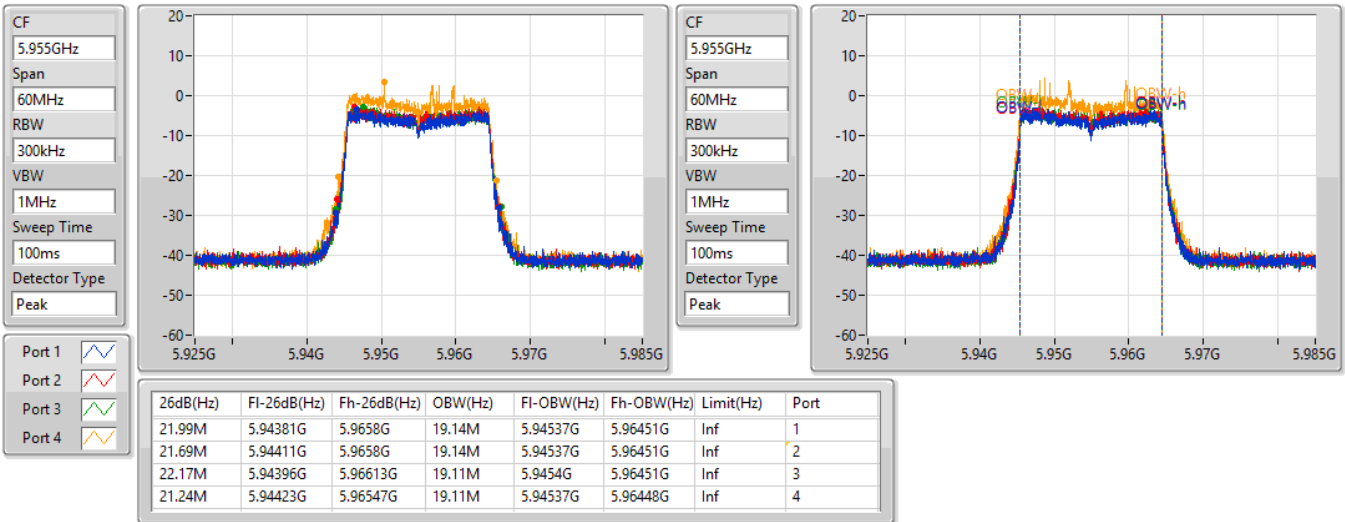
| Mode                               | Max-N dB<br>(Hz) | Max-OBW<br>(Hz) | ITU-Code | Min-N dB<br>(Hz) | Min-OBW<br>(Hz) |
|------------------------------------|------------------|-----------------|----------|------------------|-----------------|
| 5.925-6.425GHz                     | -                | -               | -        | -                | -               |
| 802.11ax HEW20-BF_Nss1,(MCS0)_4TX  | 22.17M           | 19.2M           | 19M2D1D  | 20.97M           | 19.05M          |
| 802.11ax HEW40-BF_Nss1,(MCS0)_4TX  | 43.62M           | 38.04M          | 38M0D1D  | 40.5M            | 37.74M          |
| 802.11ax HEW80-BF_Nss1,(MCS0)_4TX  | 97.08M           | 78.6M           | 78M6D1D  | 82.44M           | 77.52M          |
| 802.11ax HEW160-BF_Nss1,(MCS0)_4TX | 269.04M          | 155.76M         | 156MD1D  | 166.56M          | 154.56M         |
| 6.425-6.525GHz                     | -                | -               | -        | -                | -               |
| 802.11ax HEW20-BF_Nss1,(MCS0)_4TX  | 22.11M           | 19.2M           | 19M2D1D  | 20.88M           | 19.08M          |
| 802.11ax HEW40-BF_Nss1,(MCS0)_4TX  | 42.6M            | 38.04M          | 38M0D1D  | 40.56M           | 37.74M          |
| 802.11ax HEW80-BF_Nss1,(MCS0)_4TX  | 93.72M           | 78M             | 78M0D1D  | 81.24M           | 77.52M          |
| 802.11ax HEW160-BF_Nss1,(MCS0)_4TX | 202.56M          | 156.72M         | 157MD1D  | 165.84M          | 154.32M         |
| 6.525-6.875GHz                     | -                | -               | -        | -                | -               |
| 802.11ax HEW20-BF_Nss1,(MCS0)_4TX  | 22.11M           | 19.17M          | 19M2D1D  | 20.52M           | 19.05M          |
| 802.11ax HEW40-BF_Nss1,(MCS0)_4TX  | 43.38M           | 38.04M          | 38M0D1D  | 40.44M           | 37.38M          |
| 802.11ax HEW80-BF_Nss1,(MCS0)_4TX  | 96.6M            | 79.2M           | 79M2D1D  | 81.24M           | 76.32M          |
| 802.11ax HEW160-BF_Nss1,(MCS0)_4TX | 234.96M          | 156.24M         | 156MD1D  | 166.32M          | 154.8M          |
| 6.875-7.125GHz                     | -                | -               | -        | -                | -               |
| 802.11ax HEW20-BF_Nss1,(MCS0)_4TX  | 22.2M            | 19.2M           | 19M2D1D  | 20.82M           | 19.05M          |
| 802.11ax HEW40-BF_Nss1,(MCS0)_4TX  | 42.9M            | 38.04M          | 38M0D1D  | 40.92M           | 37.56M          |
| 802.11ax HEW80-BF_Nss1,(MCS0)_4TX  | 84.72M           | 79.92M          | 79M9D1D  | 82.2M            | 77.52M          |
| 802.11ax HEW160-BF_Nss1,(MCS0)_4TX | 169.44M          | 156.24M         | 156MD1D  | 166.32M          | 155.52M         |

Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;  
Max-OBW = Maximum 99% occupied bandwidth;  
Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;  
Min-OBW = Minimum 99% occupied bandwidth

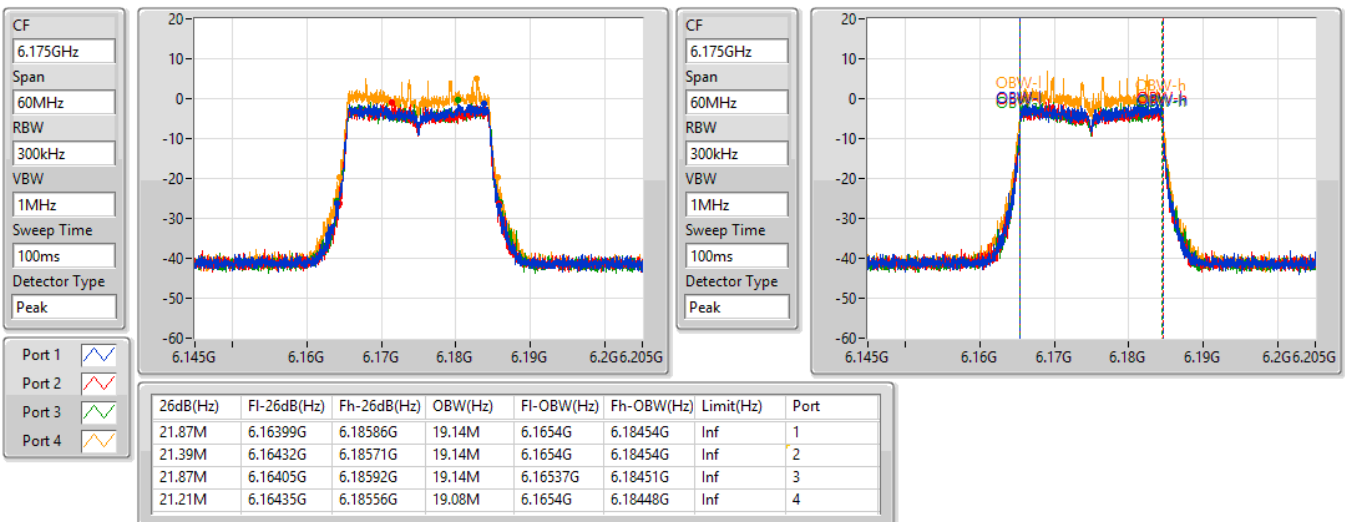
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band  
Port X-OBW = Port X 99% occupied bandwidth

**802.11ax HEW20-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**5955MHz**

16/03/2022

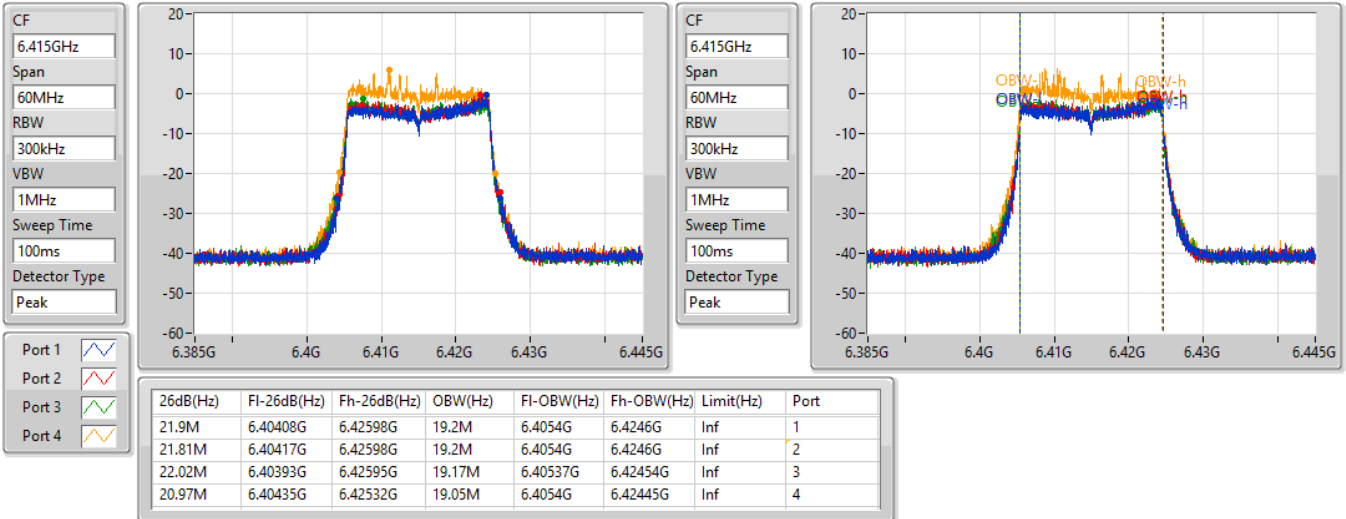

**802.11ax HEW20-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6175MHz**

16/03/2022

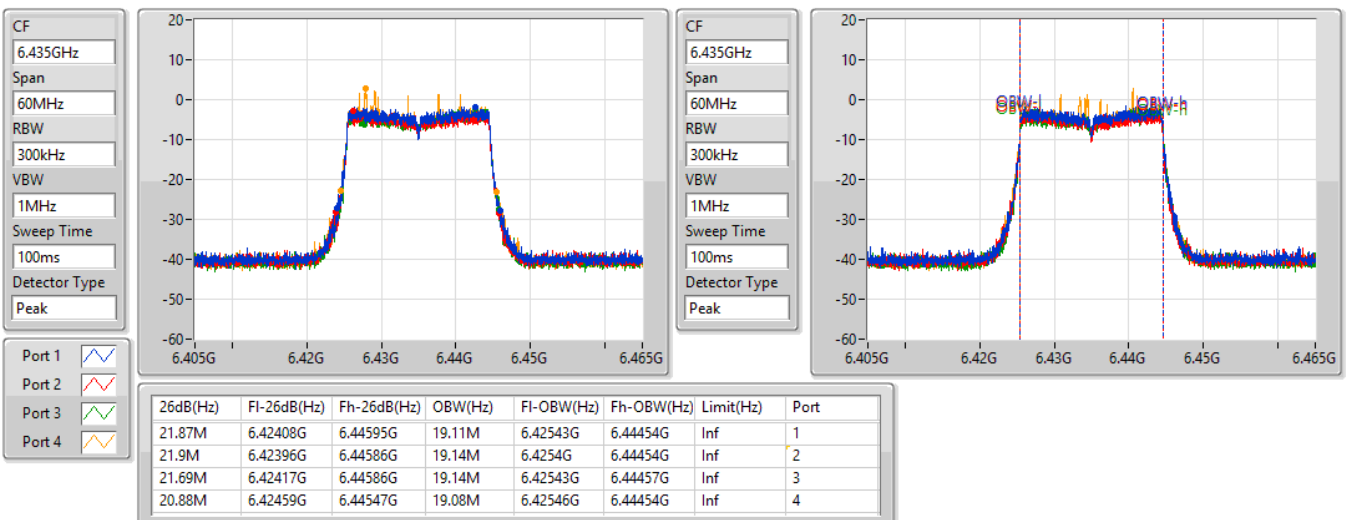


**802.11ax HEW20-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6415MHz**

16/03/2022

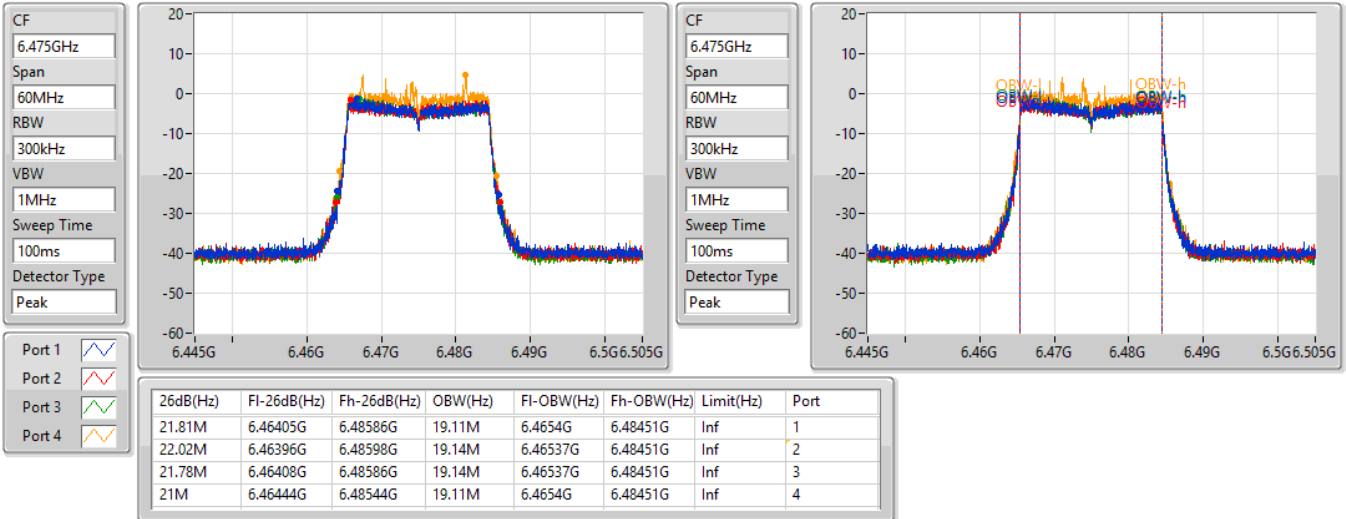

**802.11ax HEW20-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6435MHz**

16/03/2022

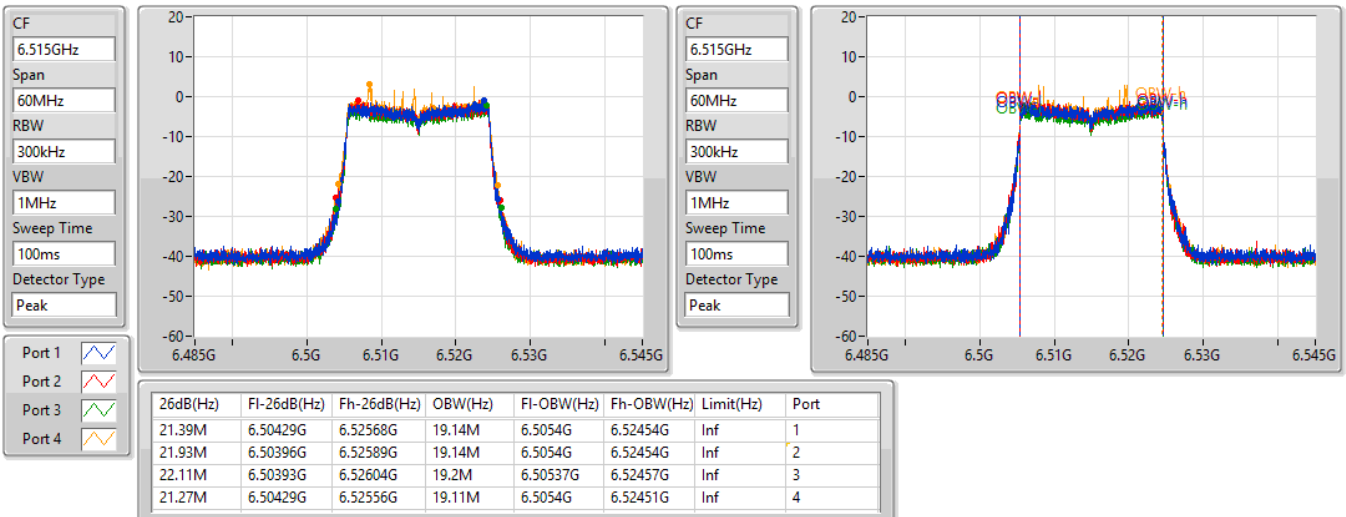


**802.11ax HEW20-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6475MHz**

16/03/2022

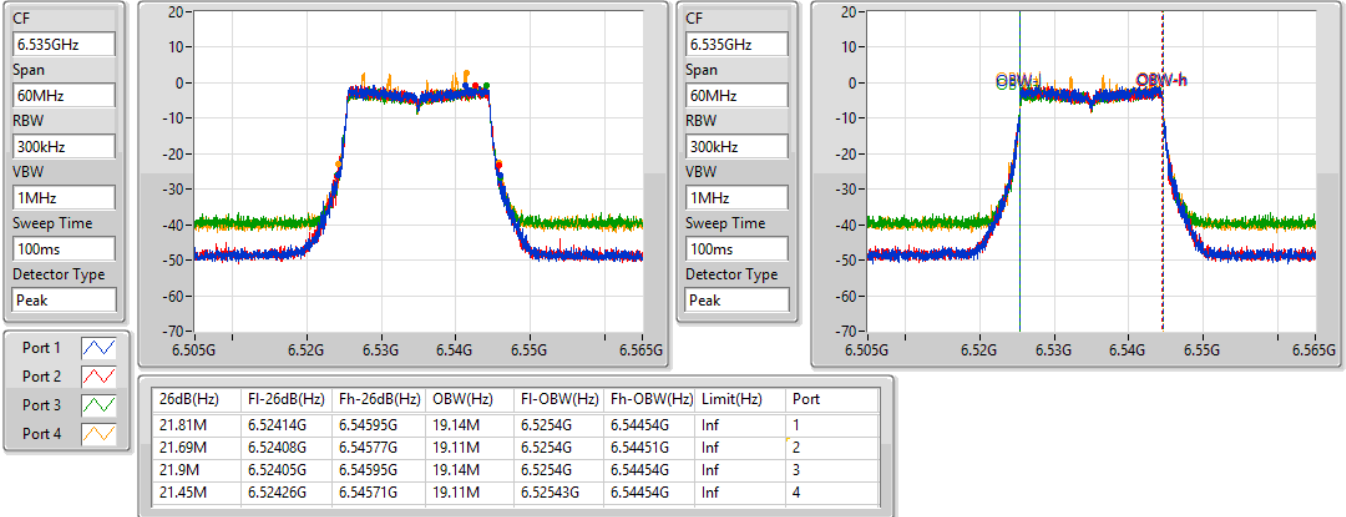

**802.11ax HEW20-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6515MHz**

16/03/2022

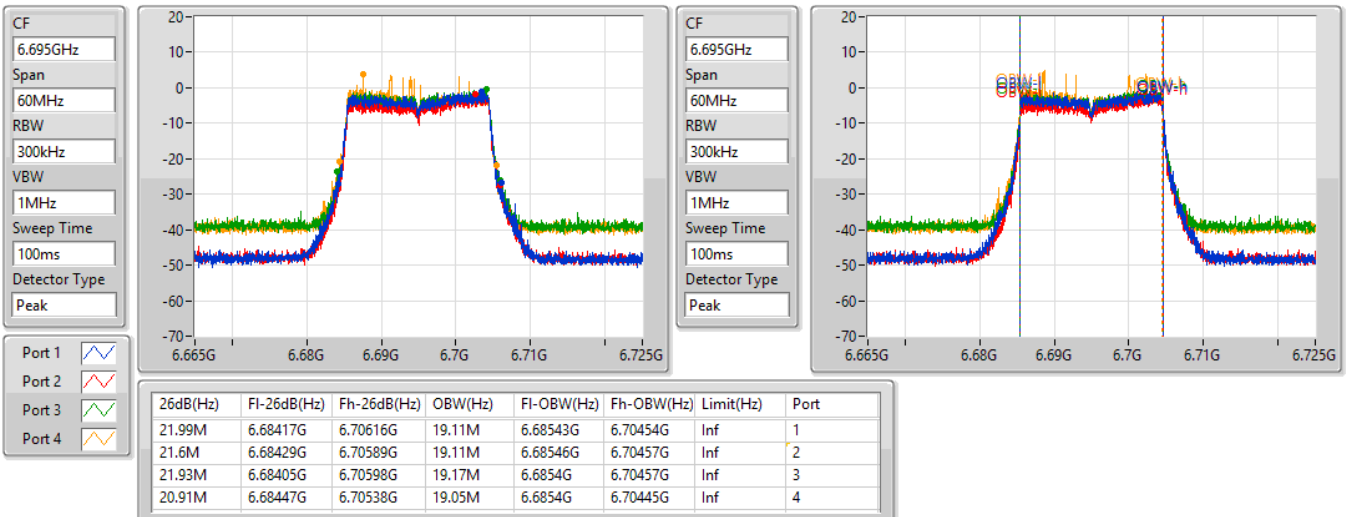


**802.11ax HEW20-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6535MHz**

16/03/2022

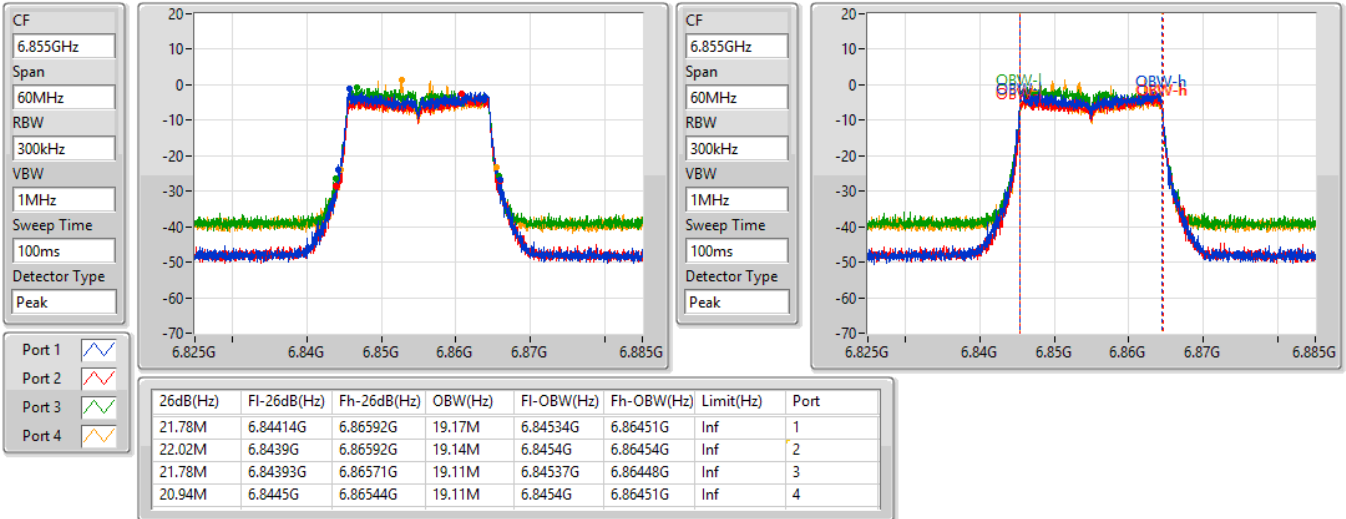

**802.11ax HEW20-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6695MHz**

16/03/2022

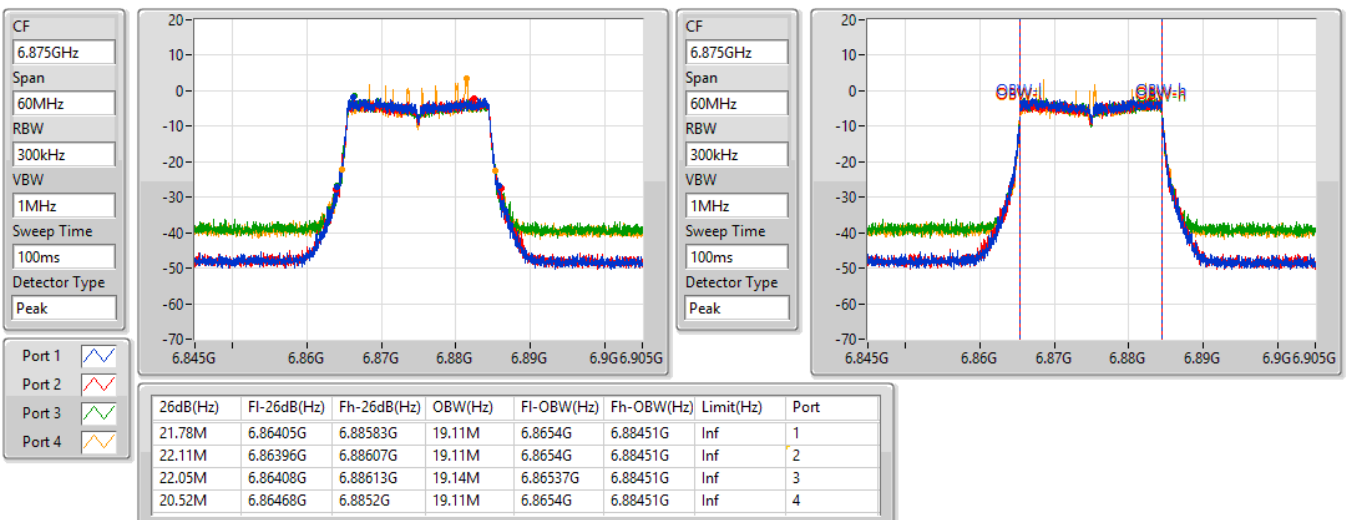


**802.11ax HEW20-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6855MHz**

16/03/2022

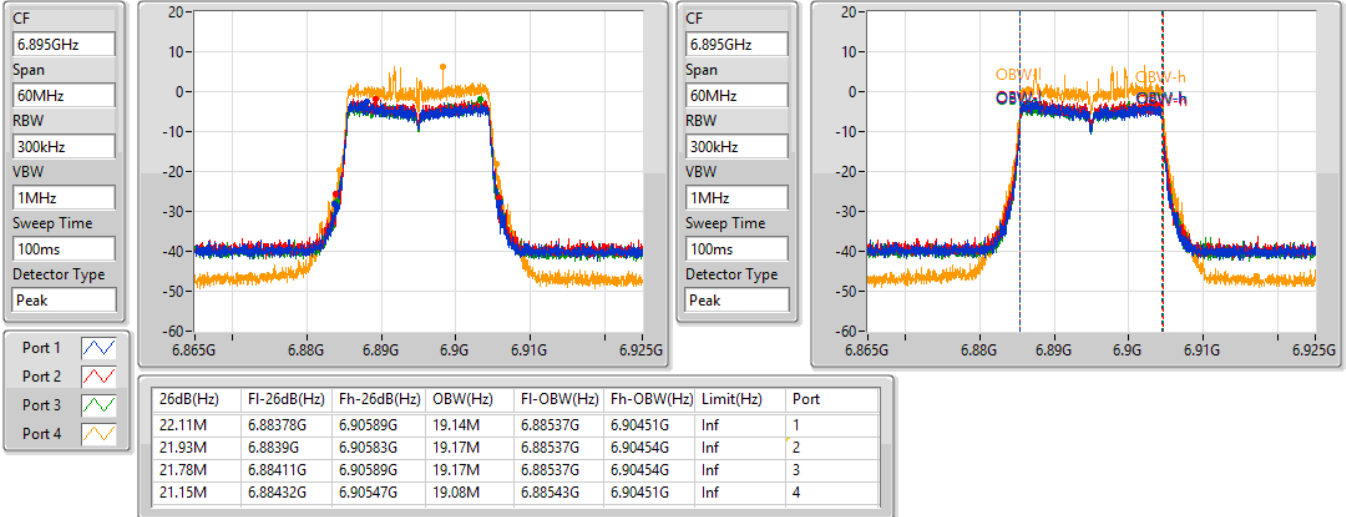

**802.11ax HEW20-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6875MHz Straddle 6.525-6.875GHz**

16/03/2022

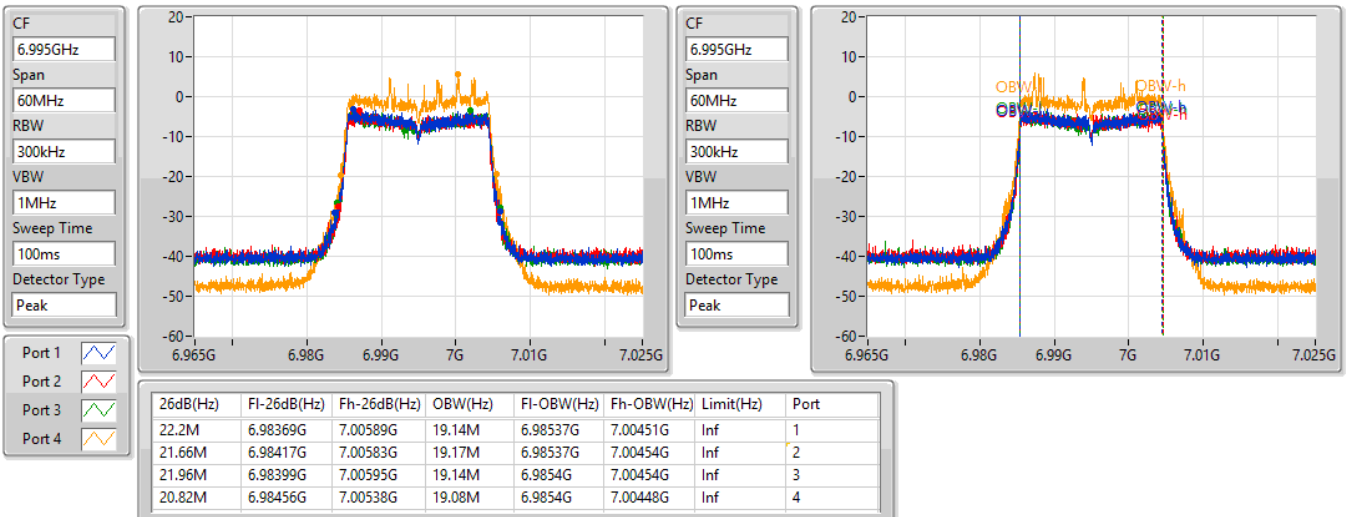


**802.11ax HEW20-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6895MHz**

16/03/2022

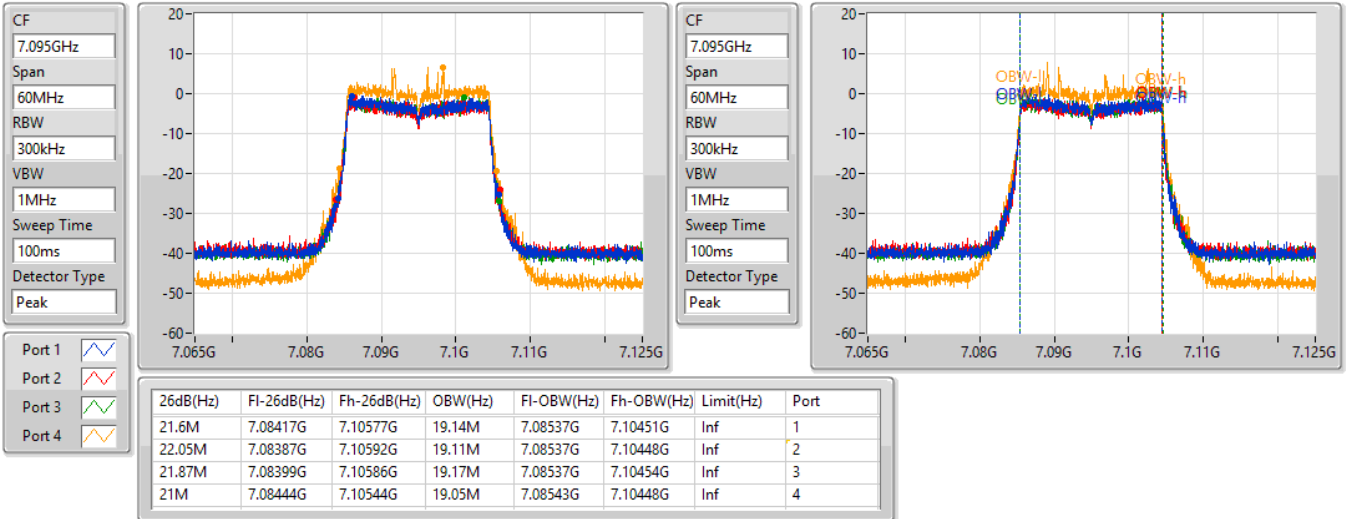

**802.11ax HEW20-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6995MHz**

16/03/2022

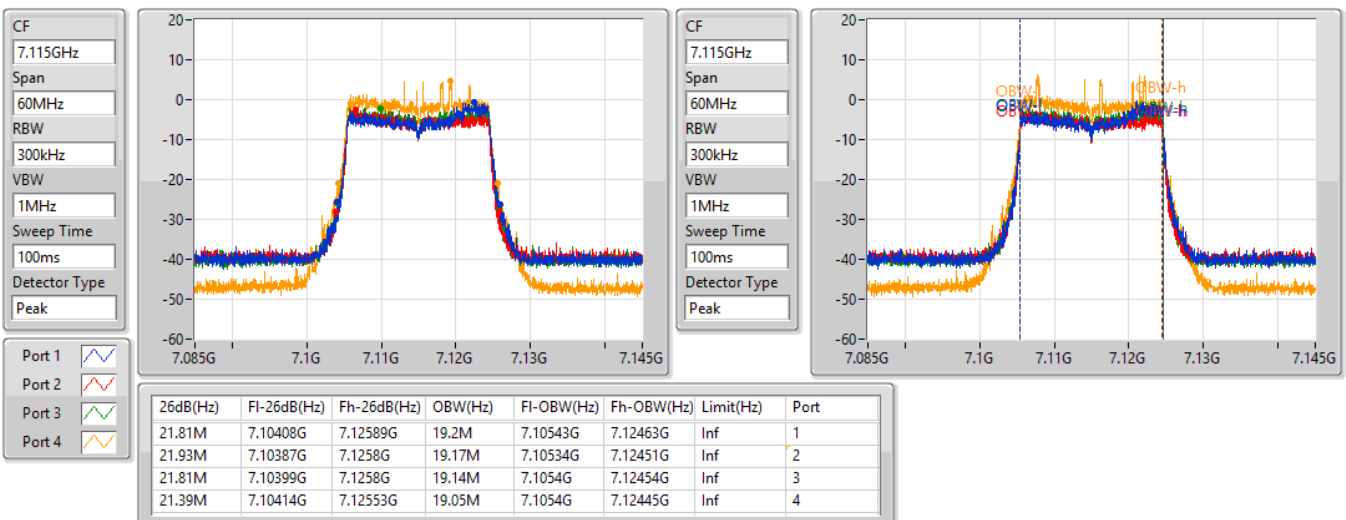


**802.11ax HEW20-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**7095MHz**

16/03/2022


**802.11ax HEW20-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**7115MHz**

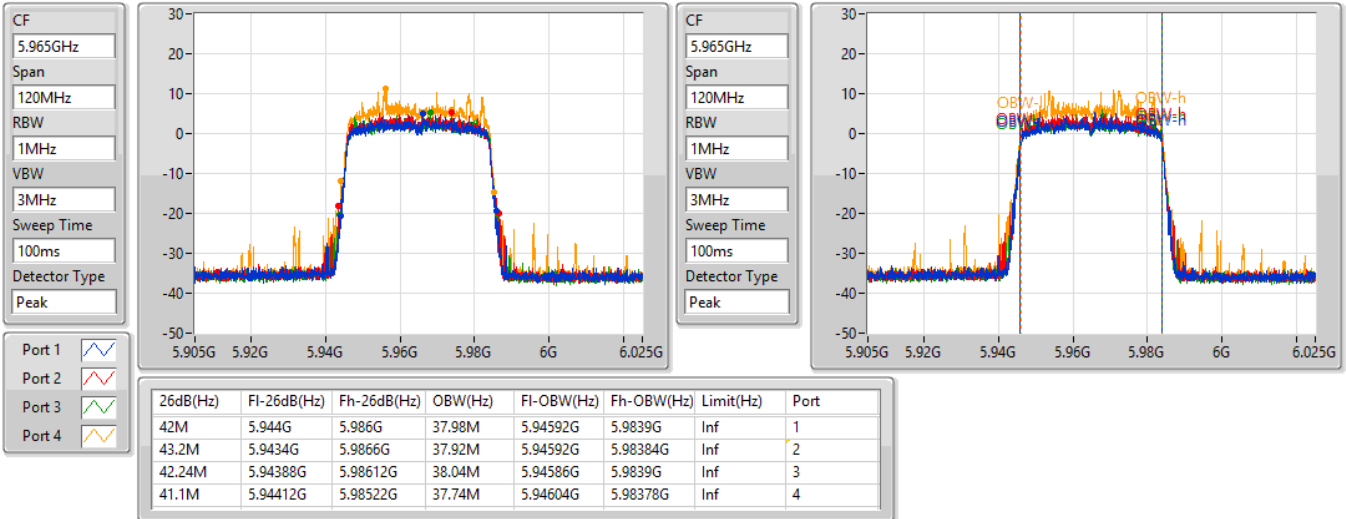
16/03/2022



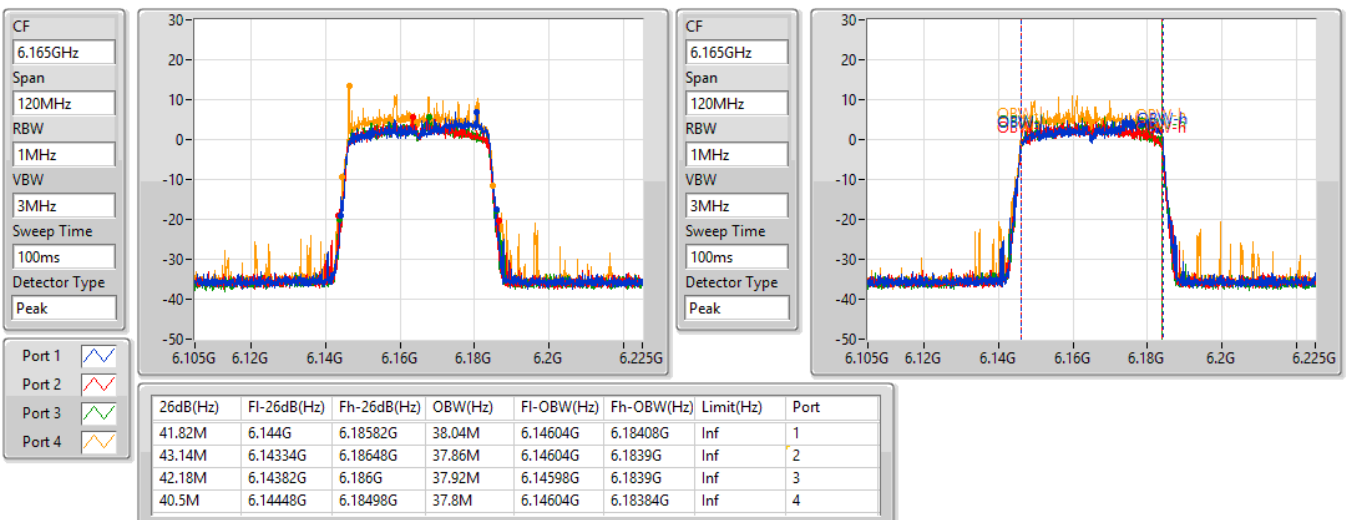


**802.11ax HEW40-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**5965MHz**

16/03/2022

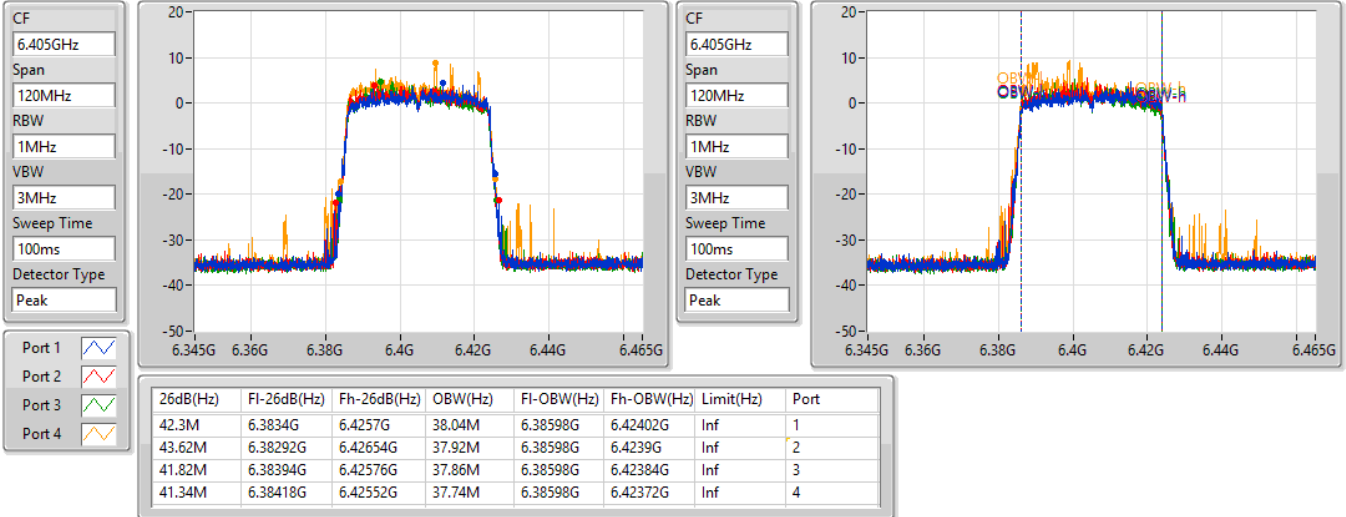

**802.11ax HEW40-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6165MHz**

16/03/2022

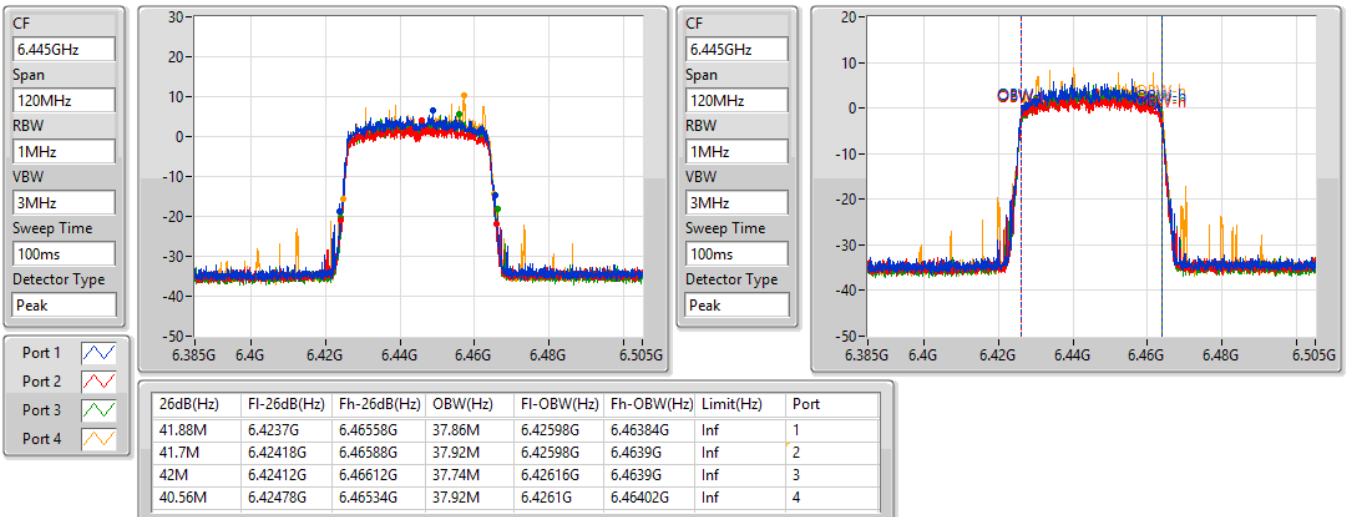


**802.11ax HEW40-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6405MHz**

16/03/2022

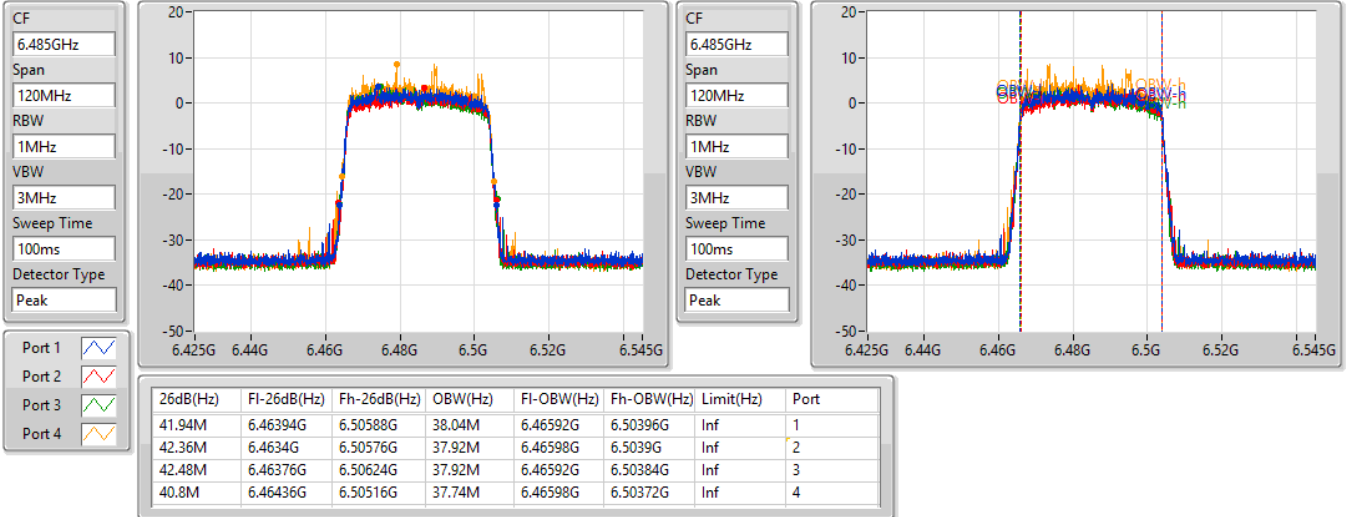

**802.11ax HEW40-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6445MHz**

16/03/2022



**802.11ax HEW40-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6485MHz**

16/03/2022

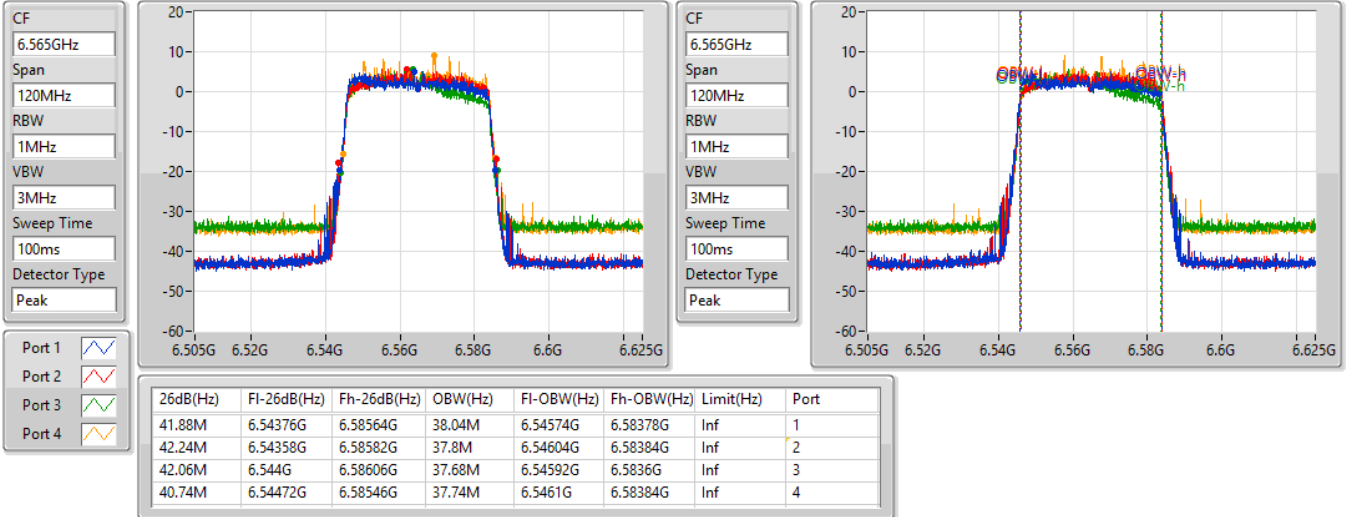

**802.11ax HEW40-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6525MHz Straddle 6.425-6.525GHz**

16/03/2022

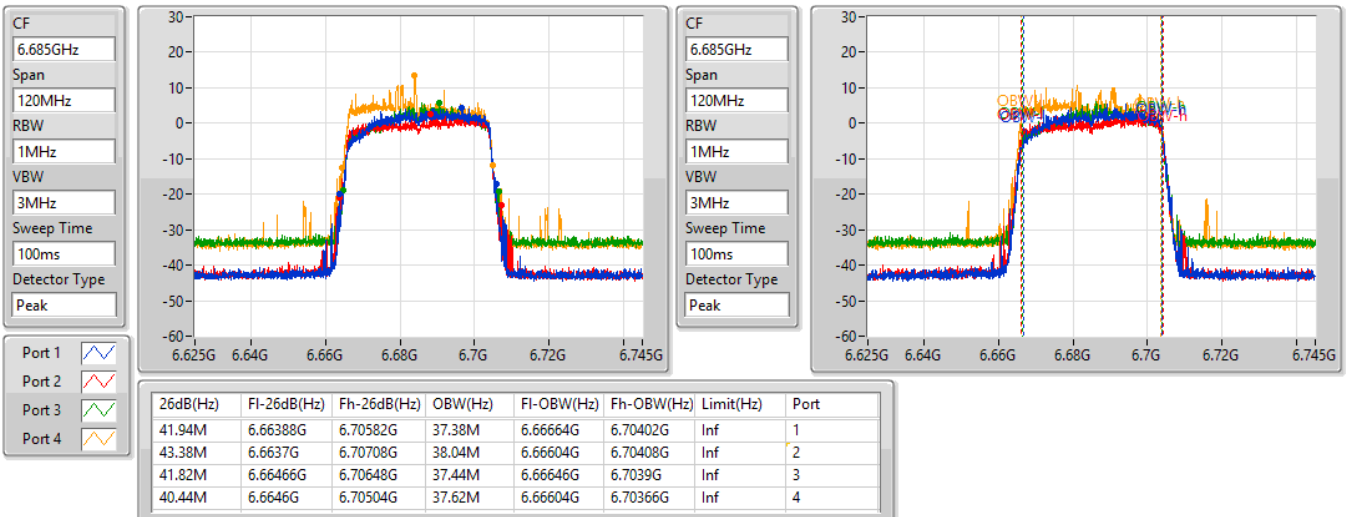


**802.11ax HEW40-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6565MHz**

16/03/2022

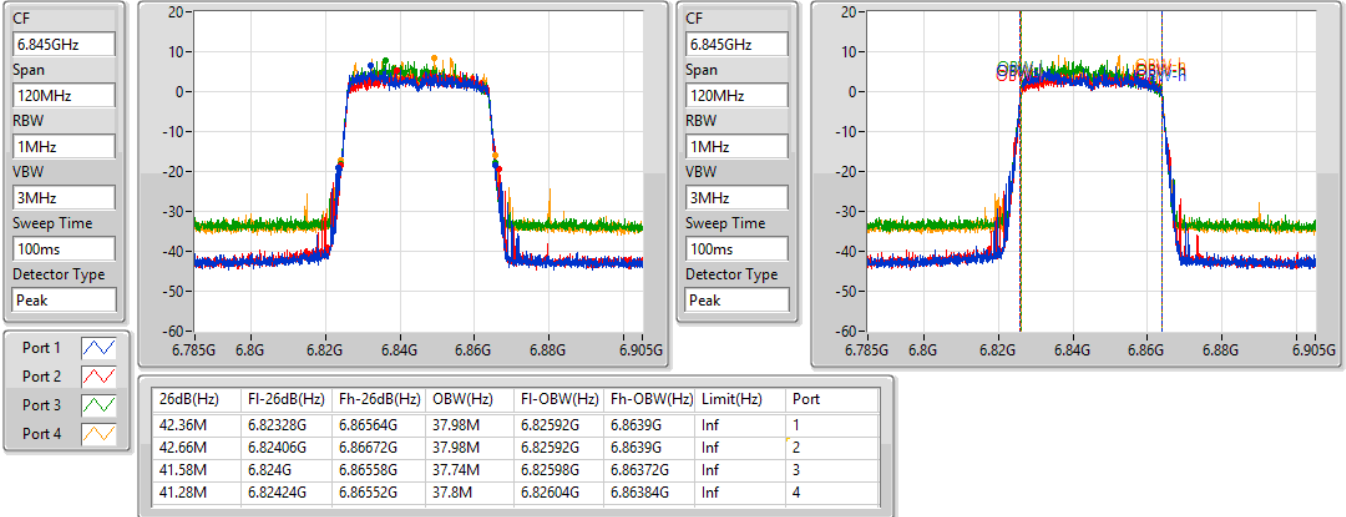

**802.11ax HEW40-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6685MHz**

16/03/2022

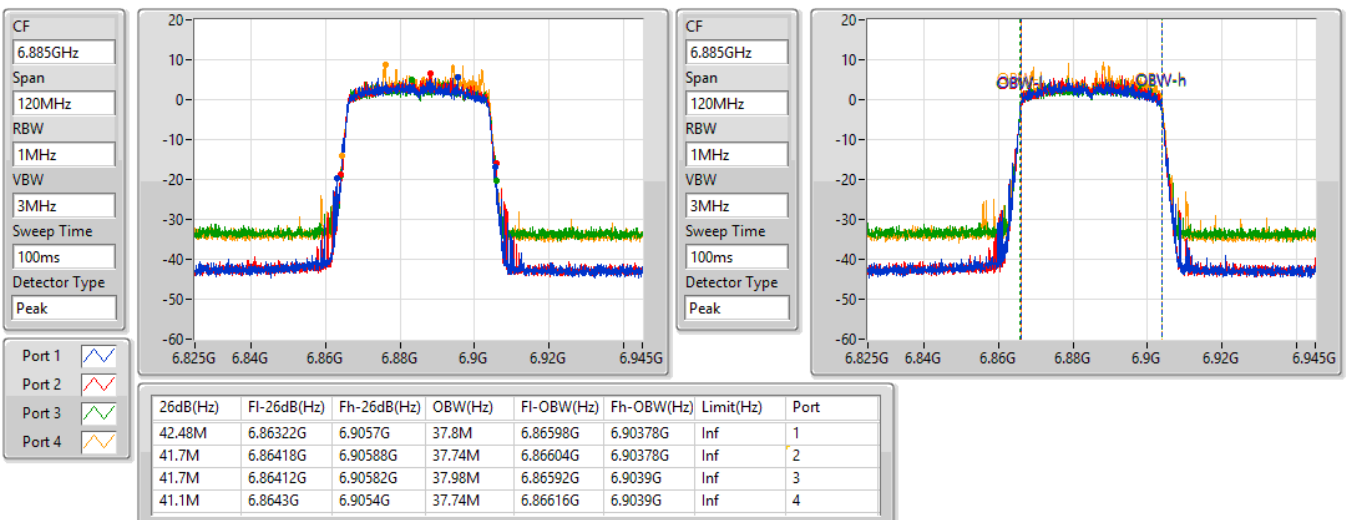


**802.11ax HEW40-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6845MHz**

16/03/2022

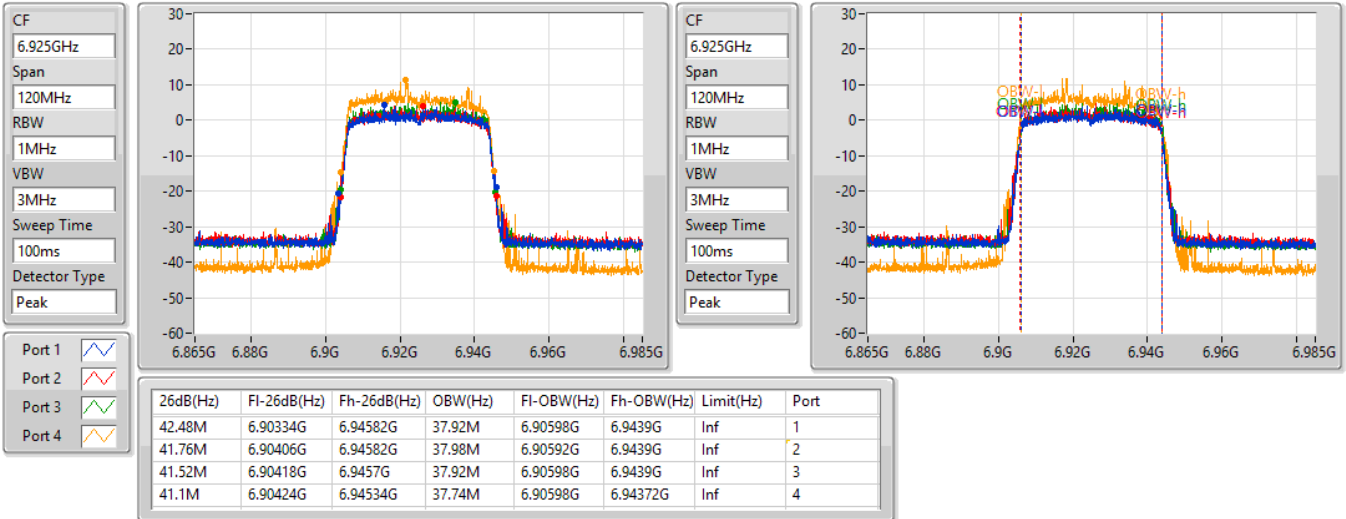

**802.11ax HEW40-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6885MHz Straddle 6.525-6.875GHz**

16/03/2022

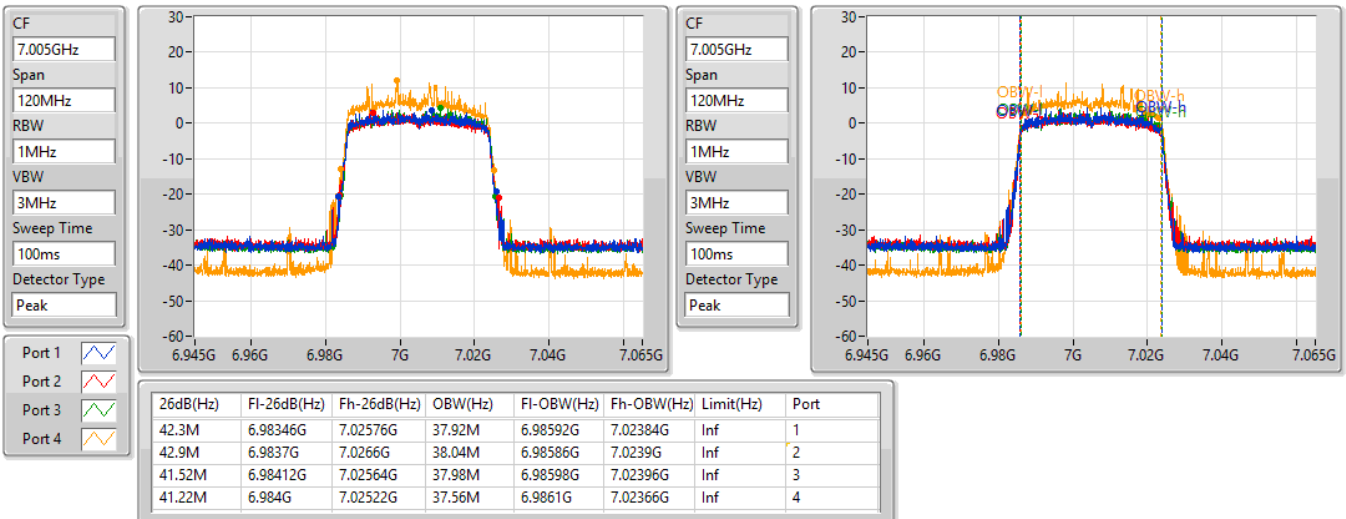


**802.11ax HEW40-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6925MHz**

16/03/2022

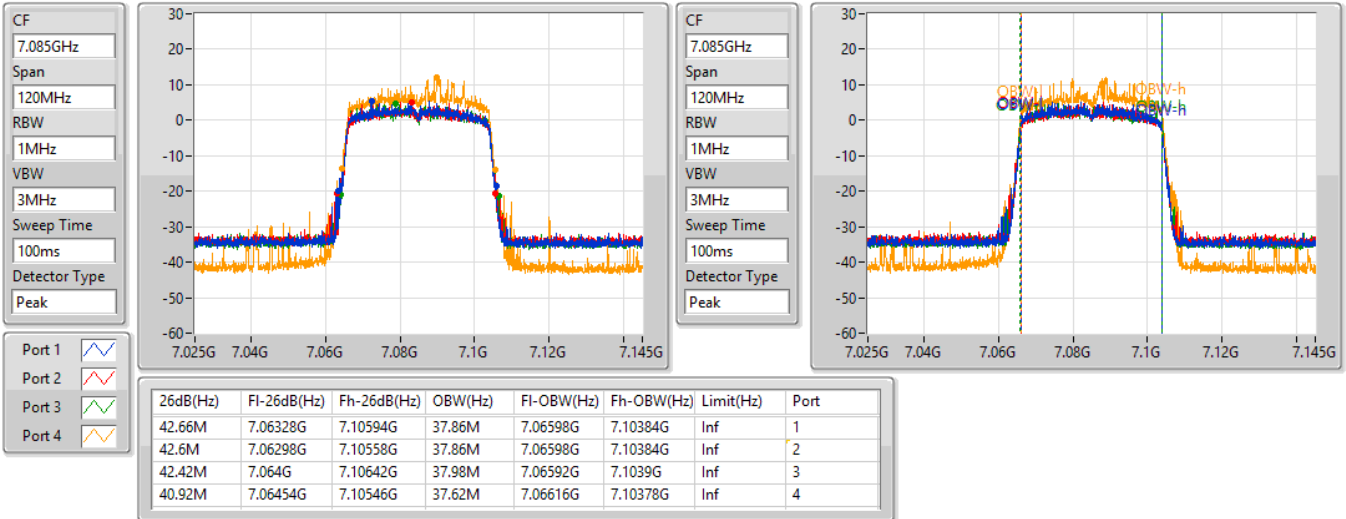

**802.11ax HEW40-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**7005MHz**

16/03/2022

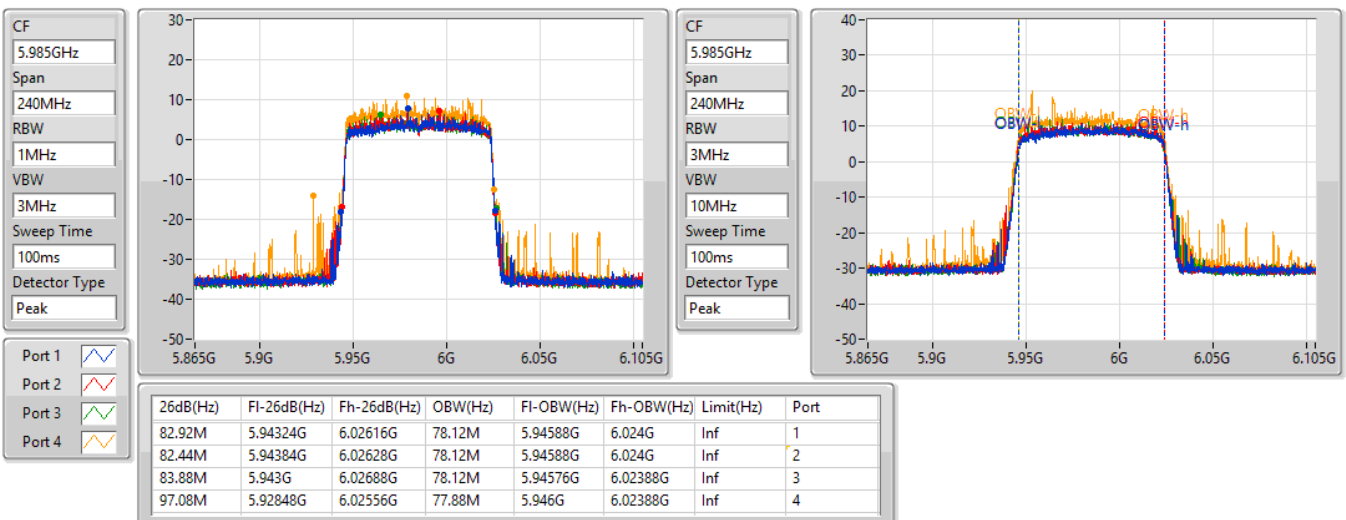


**802.11ax HEW40-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**7085MHz**

16/03/2022

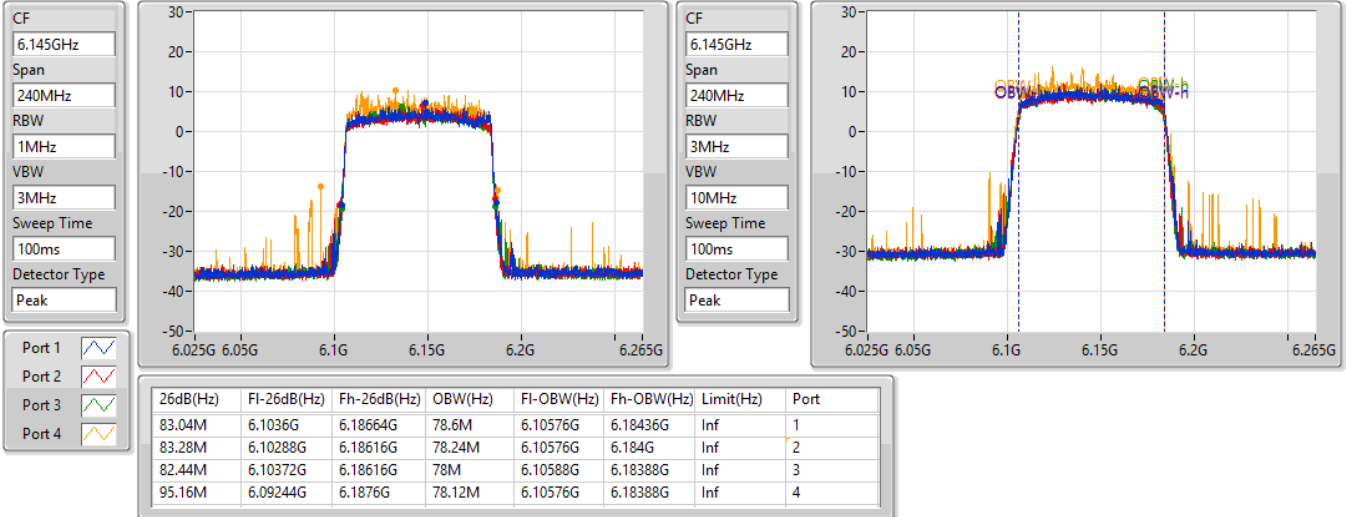

**802.11ax HEW80-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**5985MHz**

16/03/2022

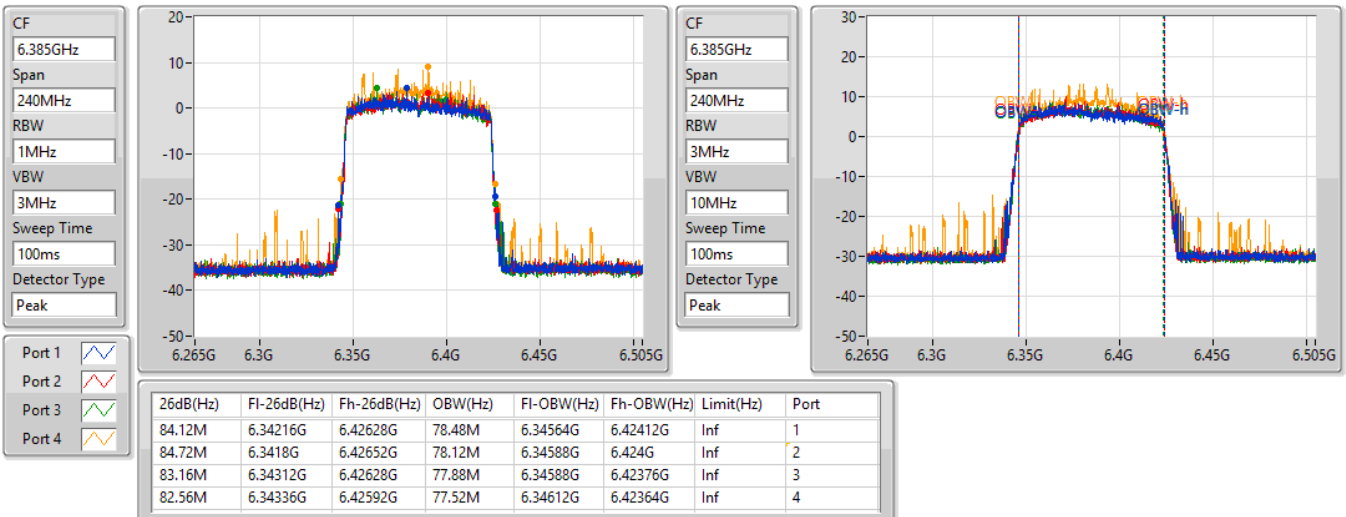


**802.11ax HEW80-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6145MHz**

16/03/2022


**802.11ax HEW80-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6385MHz**

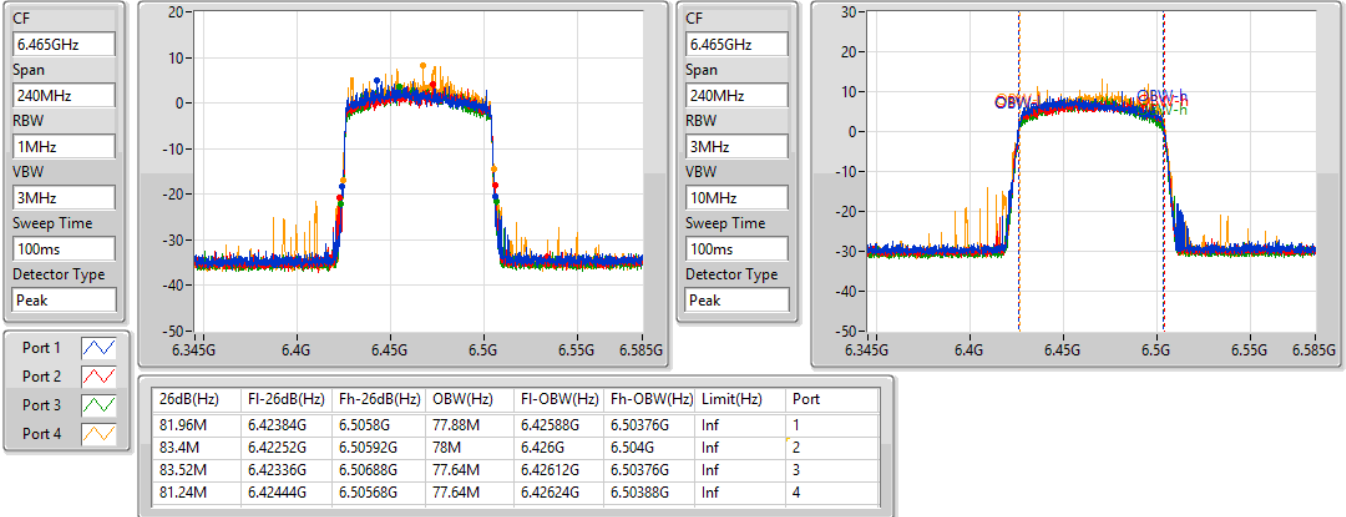
16/03/2022



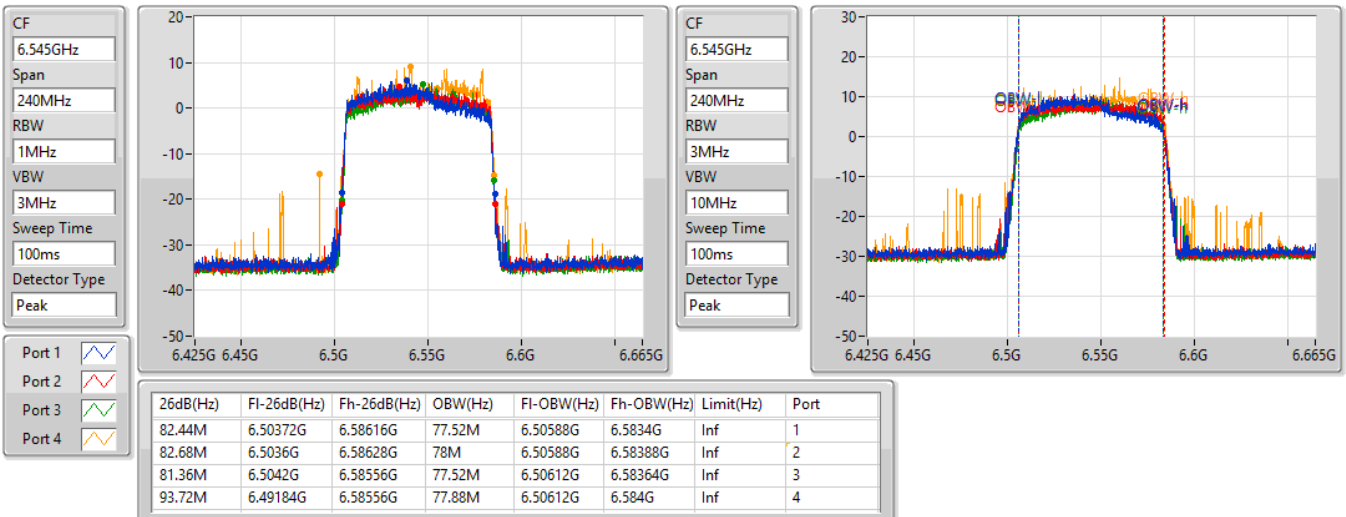


**802.11ax HEW80-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6465MHz**

16/03/2022

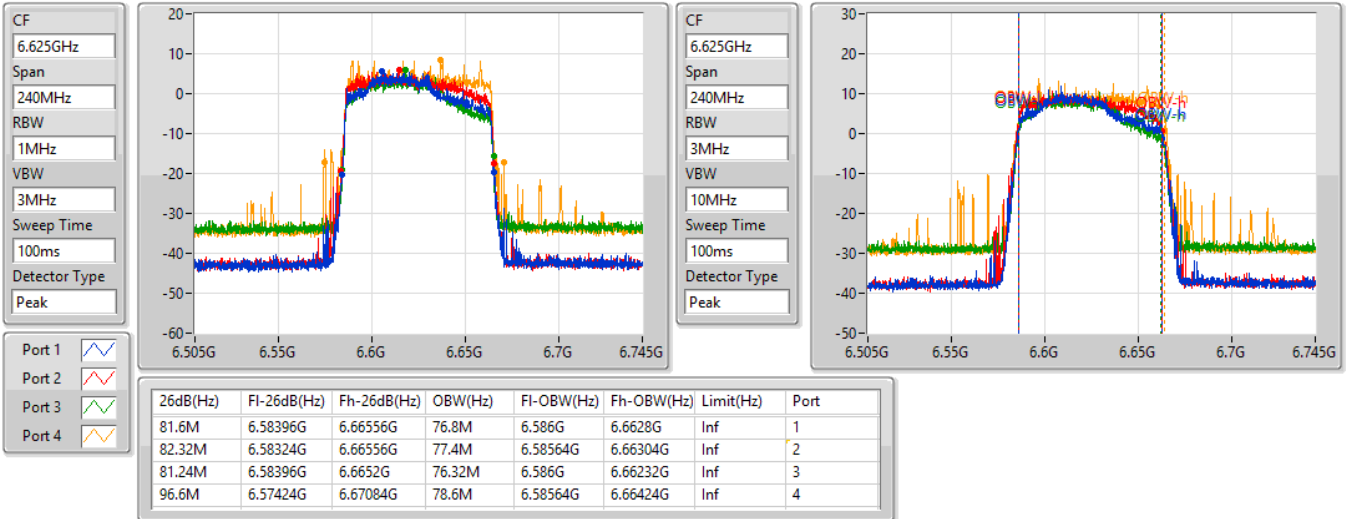

**802.11ax HEW80-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6545MHz Straddle 6.425-6.525GHz**

16/03/2022

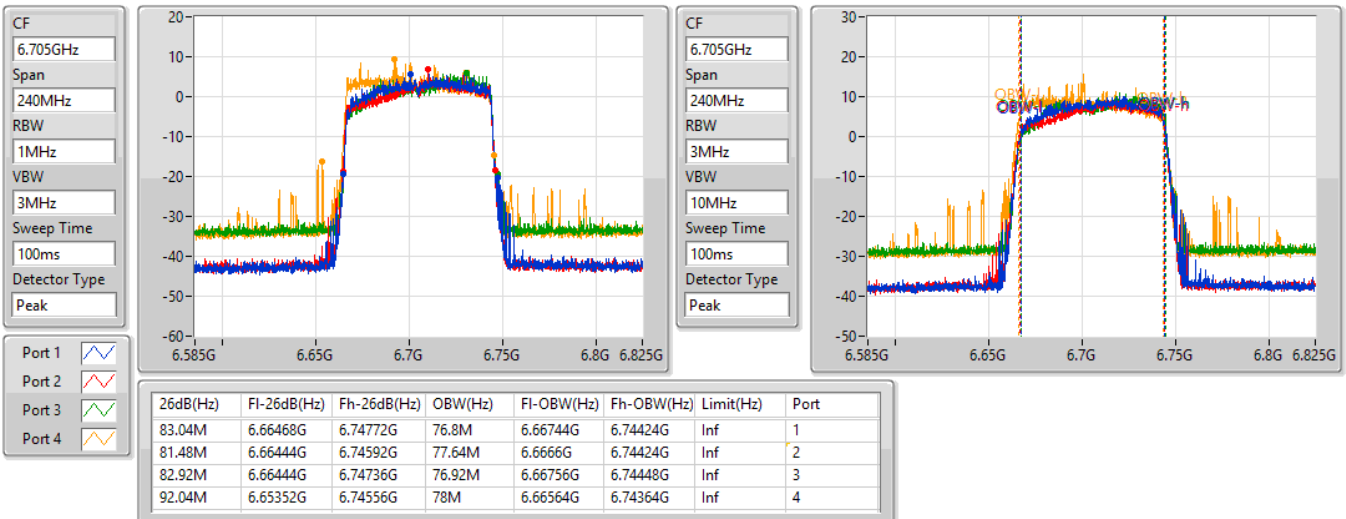


**802.11ax HEW80-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6625MHz**

16/03/2022

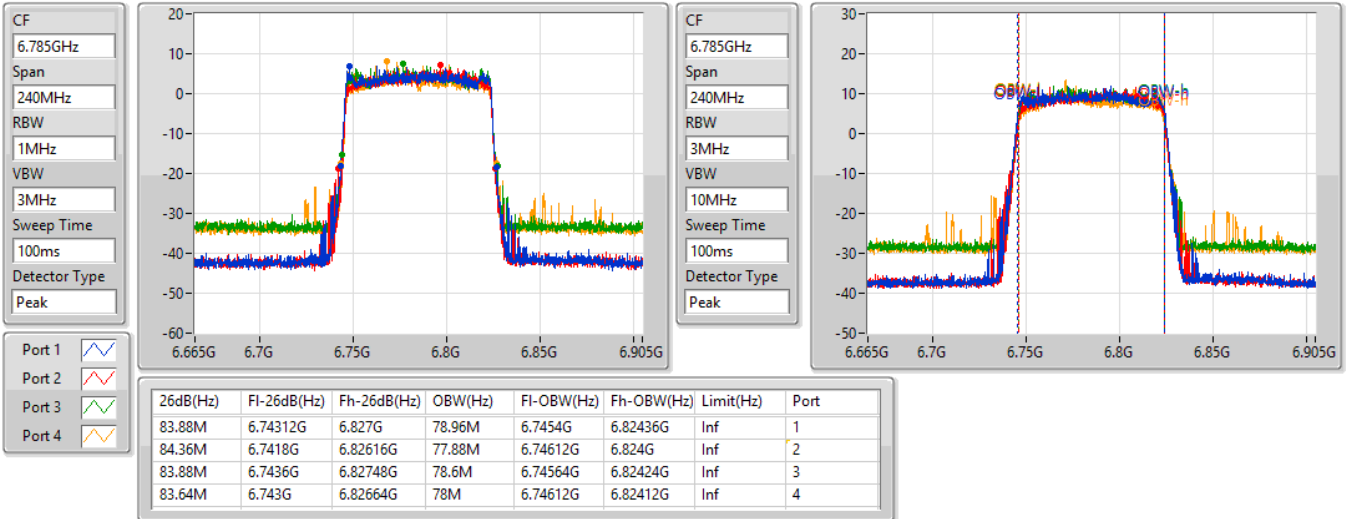

**802.11ax HEW80-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6705MHz**

16/03/2022

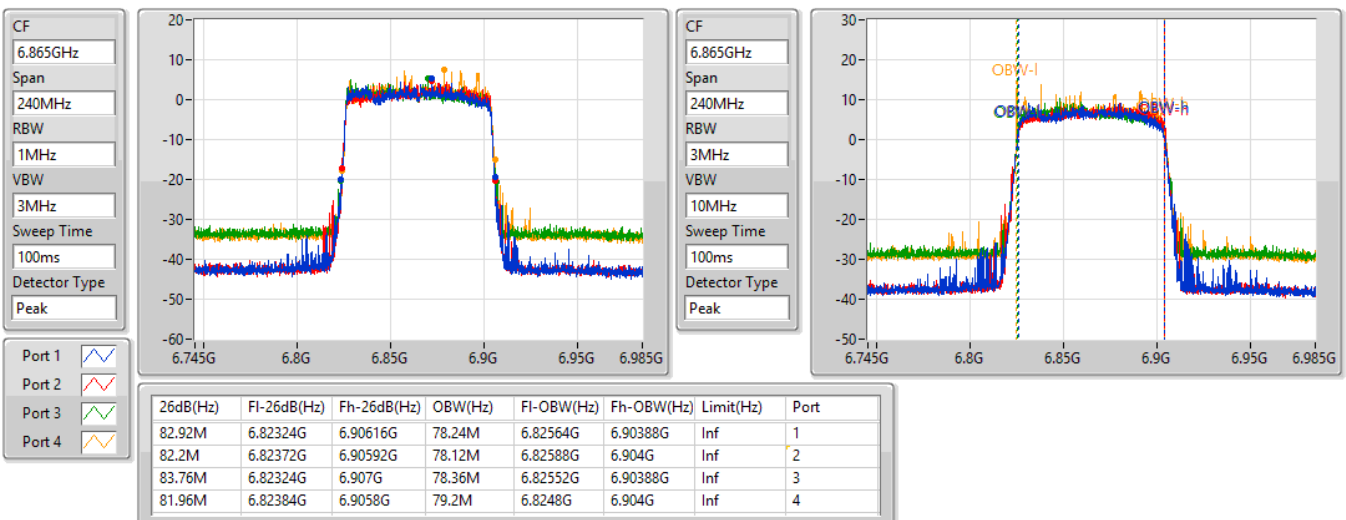


**802.11ax HEW80-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6785MHz**

16/03/2022

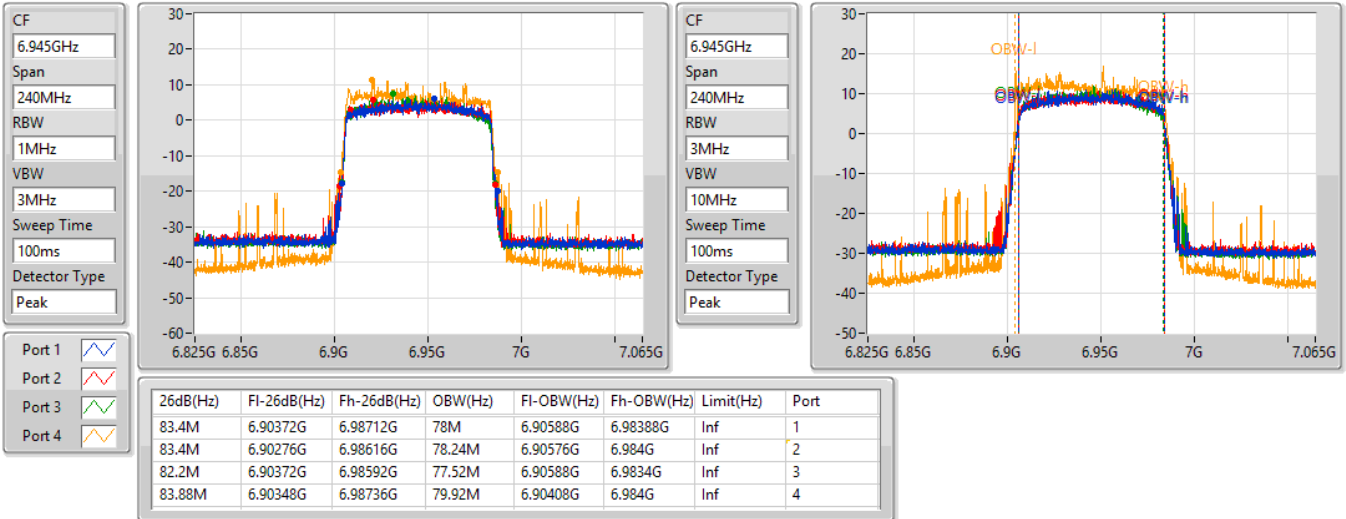

**802.11ax HEW80-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6865MHz Straddle 6.525-6.875GHz**

16/03/2022

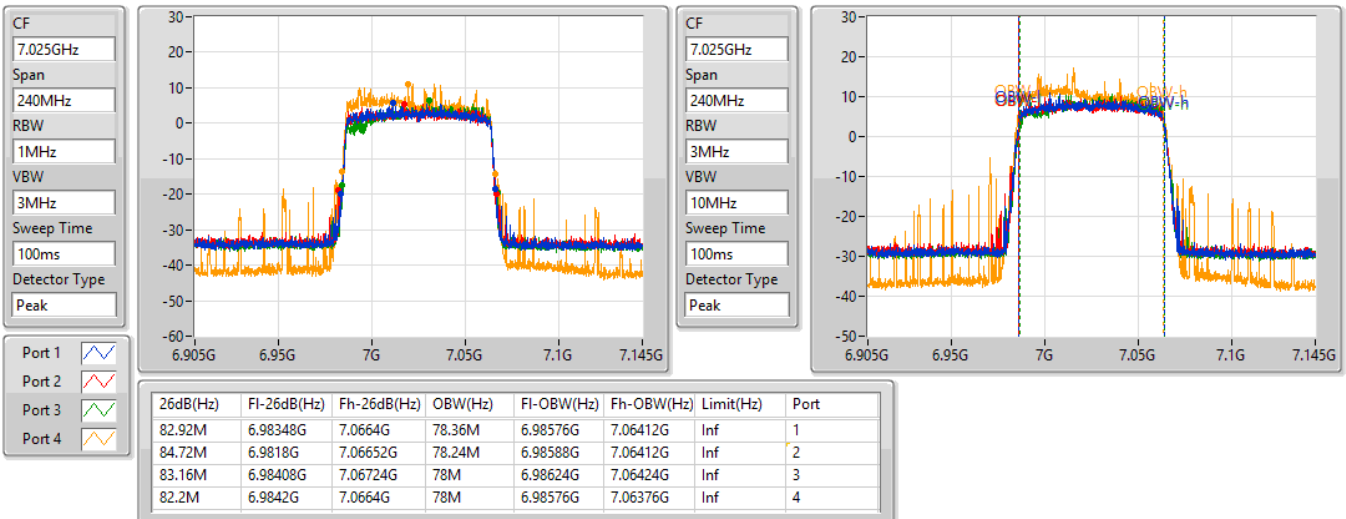


**802.11ax HEW80-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6945MHz**

16/03/2022

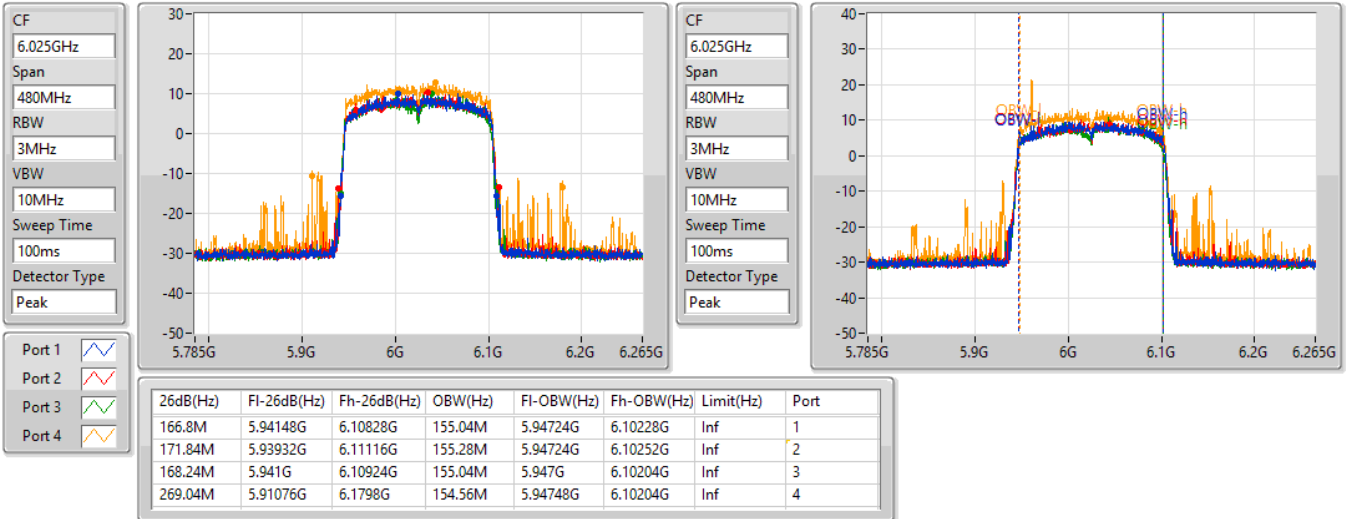

**802.11ax HEW80-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**7025MHz**

16/03/2022

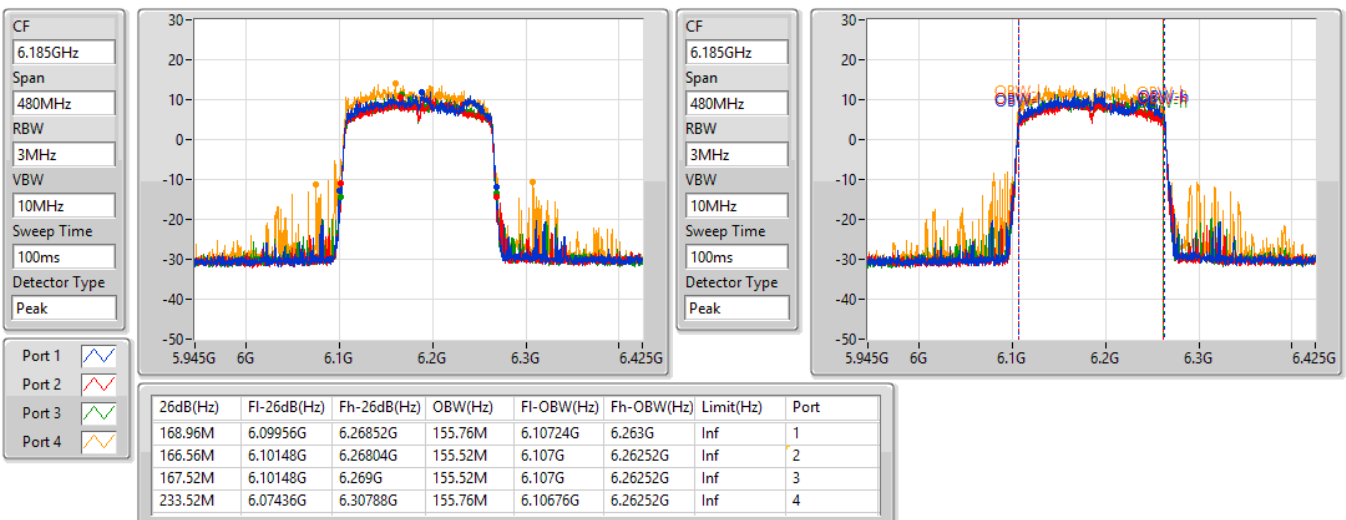


**802.11ax HEW160-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6025MHz**

16/03/2022

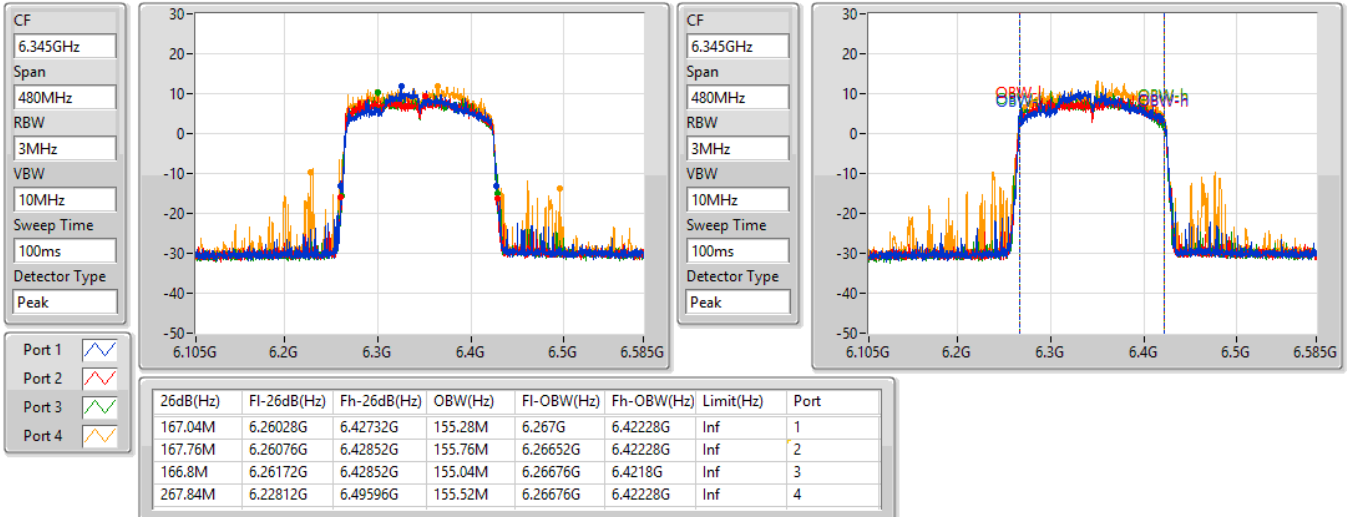

**802.11ax HEW160-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6185MHz**

16/03/2022

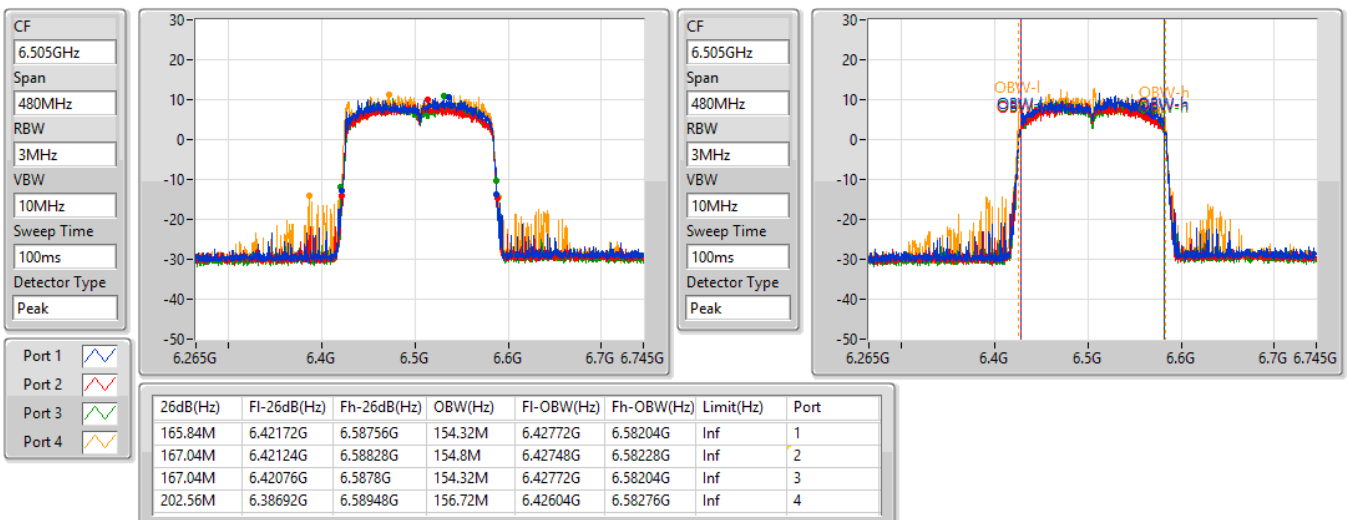


**802.11ax HEW160-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6345MHz**

16/03/2022


**802.11ax HEW160-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6505MHz Straddle 6.425-6.525GHz**

16/03/2022

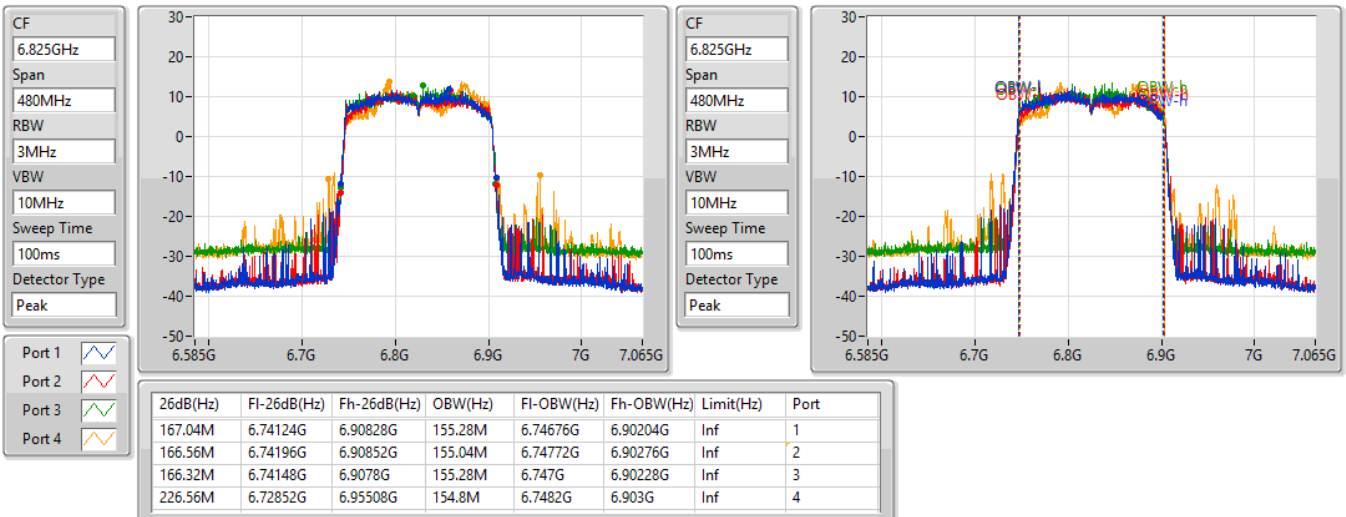


**802.11ax HEW160-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6665MHz**

16/03/2022


**802.11ax HEW160-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6825MHz Straddle 6.525-6.875GHz**

16/03/2022

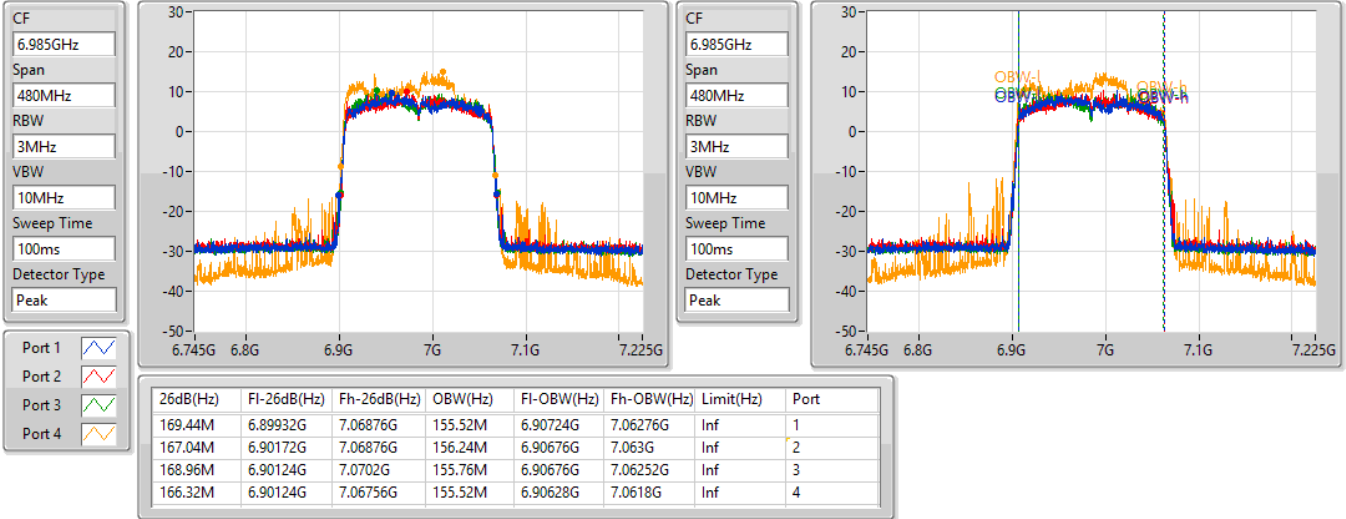


# 802.11ax HEW160-BF\_Nss1,(MCS0)\_4TX

EBW

6985MHz

16/03/2022





**Summary**

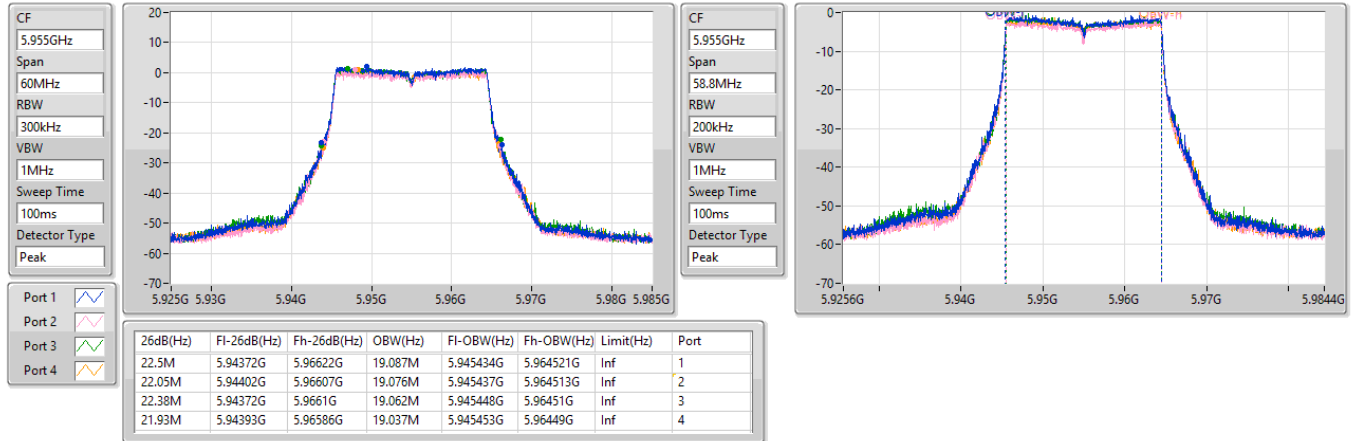
| Mode                            | Max-N dB<br>(Hz) | Max-OBW<br>(Hz) | ITU-Code | Min-N dB<br>(Hz) | Min-OBW<br>(Hz) |
|---------------------------------|------------------|-----------------|----------|------------------|-----------------|
| 5.925-6.425GHz                  | -                | -               | -        | -                | -               |
| 802.11ax HEW20_Nss1,(MCS0)_4TX  | 22.5M            | 19.089M         | 19M1D1D  | 21.93M           | 19.032M         |
| 802.11ax HEW40_Nss1,(MCS0)_4TX  | 40.68M           | 37.711M         | 37M7D1D  | 40.26M           | 37.571M         |
| 802.11ax HEW80_Nss1,(MCS0)_4TX  | 82.68M           | 77.205M         | 77M2D1D  | 82.08M           | 76.97M          |
| 802.11ax HEW160_Nss1,(MCS0)_4TX | 167.52M          | 155.169M        | 155MD1D  | 165.36M          | 154.654M        |
| 6.425-6.525GHz                  | -                | -               | -        | -                | -               |
| 802.11ax HEW20_Nss1,(MCS0)_4TX  | 22.77M           | 19.103M         | 19M1D1D  | 21.75M           | 19.052M         |
| 802.11ax HEW40_Nss1,(MCS0)_4TX  | 40.74M           | 37.675M         | 37M7D1D  | 40.32M           | 37.583M         |
| 802.11ax HEW80_Nss1,(MCS0)_4TX  | 82.68M           | 77.123M         | 77M1D1D  | 81.96M           | 76.981M         |
| 802.11ax HEW160_Nss1,(MCS0)_4TX | 166.8M           | 154.766M        | 155MD1D  | 166.08M          | 154.472M        |
| 6.525-6.875GHz                  | -                | -               | -        | -                | -               |
| 802.11ax HEW20_Nss1,(MCS0)_4TX  | 22.5M            | 19.121M         | 19M1D1D  | 21.96M           | 19.061M         |
| 802.11ax HEW40_Nss1,(MCS0)_4TX  | 40.74M           | 37.651M         | 37M7D1D  | 40.2M            | 37.535M         |
| 802.11ax HEW80_Nss1,(MCS0)_4TX  | 82.68M           | 77.081M         | 77M1D1D  | 81.6M            | 76.825M         |
| 802.11ax HEW160_Nss1,(MCS0)_4TX | 168M             | 154.717M        | 155MD1D  | 165.12M          | 154.341M        |
| 6.875-7.125GHz                  | -                | -               | -        | -                | -               |
| 802.11ax HEW20_Nss1,(MCS0)_4TX  | 22.56M           | 19.116M         | 19M1D1D  | 21.72M           | 19.037M         |
| 802.11ax HEW40_Nss1,(MCS0)_4TX  | 40.86M           | 37.688M         | 37M7D1D  | 40.14M           | 37.57M          |
| 802.11ax HEW80_Nss1,(MCS0)_4TX  | 82.56M           | 77.134M         | 77M1D1D  | 81.84M           | 76.935M         |
| 802.11ax HEW160_Nss1,(MCS0)_4TX | 166.8M           | 154.913M        | 155MD1D  | 166.32M          | 154.71M         |

Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;  
Max-OBW = Maximum 99% occupied bandwidth;  
Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;  
Min-OBW = Minimum 99% occupied bandwidth

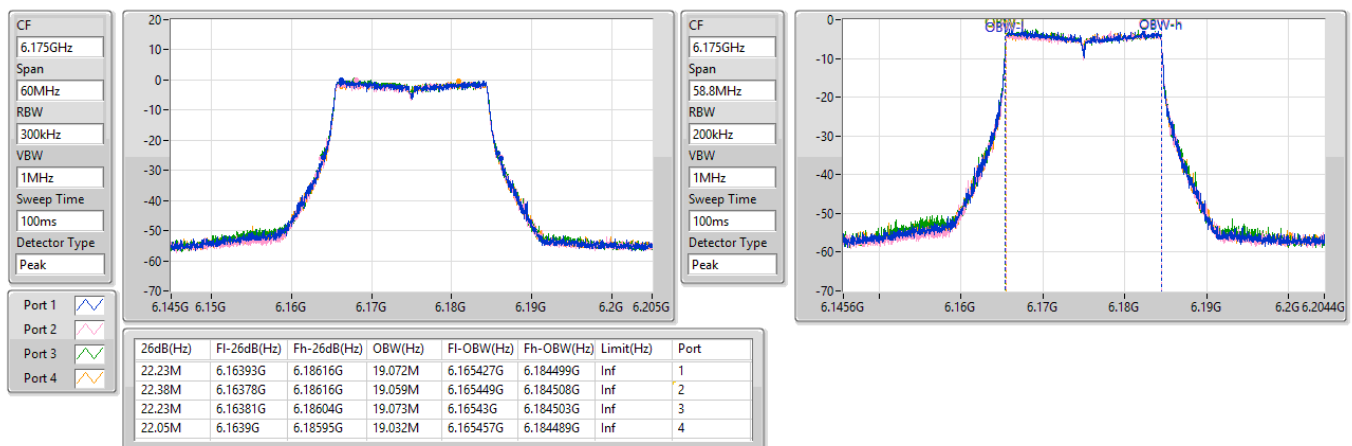
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band  
Port X-OBW = Port X 99% occupied bandwidth

**5.925-6.425GHz\_802.11ax HEW20\_Nss1,(MCS0)\_4TX**
**EBW**
**5955MHz**

21/11/2022

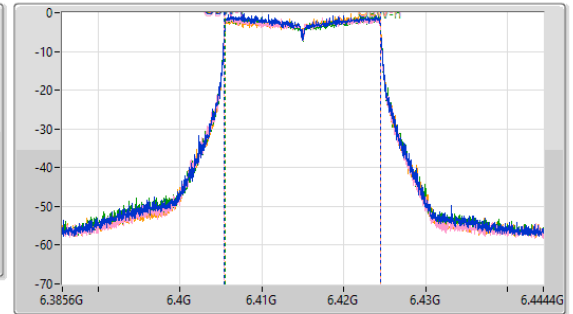
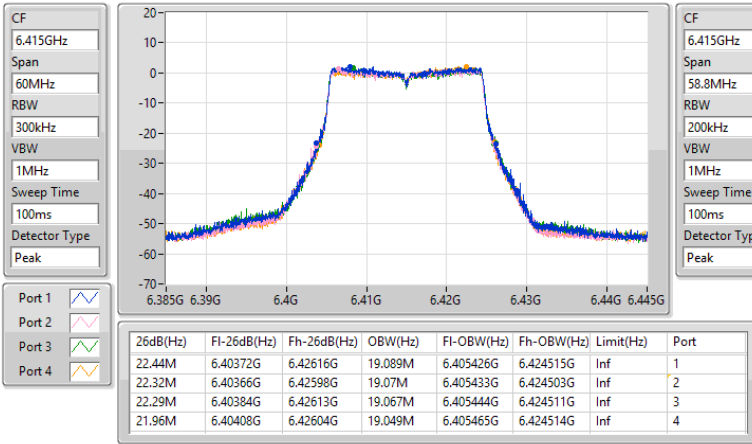

**5.925-6.425GHz\_802.11ax HEW20\_Nss1,(MCS0)\_4TX**
**EBW**
**6175MHz**

21/11/2022

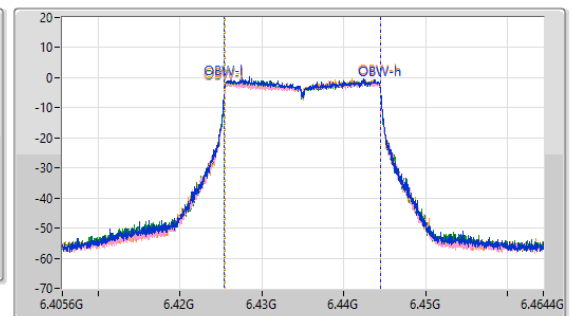
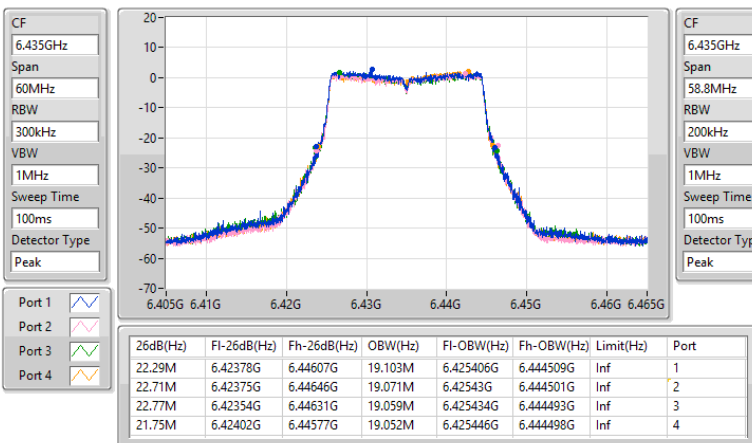


**5.925-6.425GHz\_802.11ax HEW20\_Nss1,(MCS0)\_4TX**
**EBW**
**6415MHz**

21/11/2022

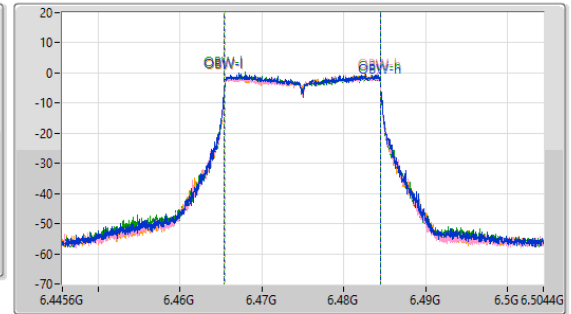
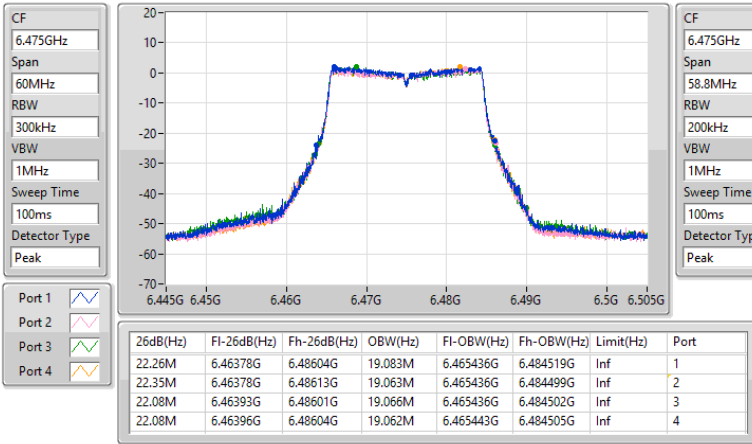

**6.425-6.525GHz\_802.11ax HEW20\_Nss1,(MCS0)\_4TX**
**EBW**
**6435MHz**

21/11/2022

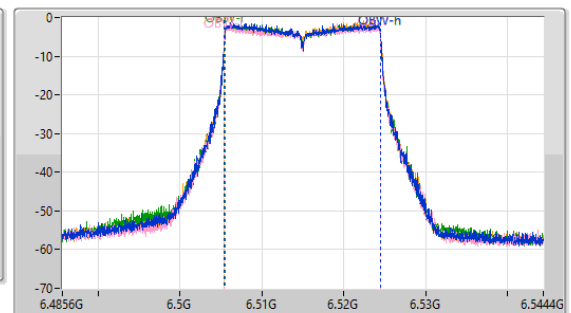
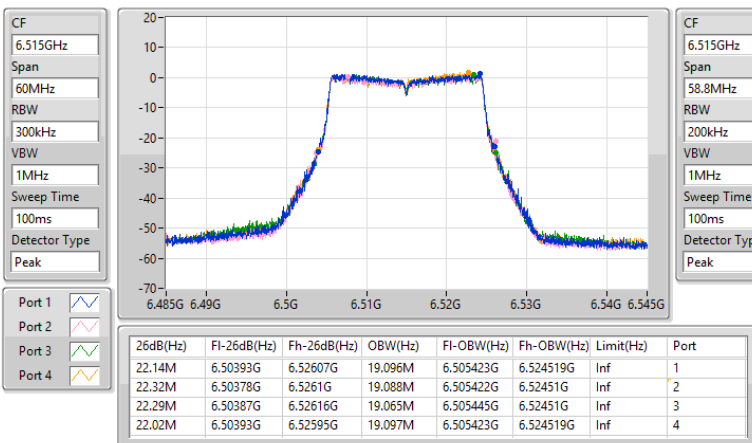


**6.425-6.525GHz\_802.11ax HEW20\_Nss1,(MCS0)\_4TX**
**EBW**
**6475MHz**

21/11/2022


**6.425-6.525GHz\_802.11ax HEW20\_Nss1,(MCS0)\_4TX**
**EBW**
**6515MHz**

21/11/2022

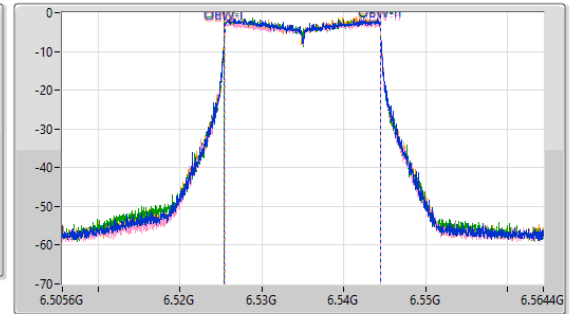
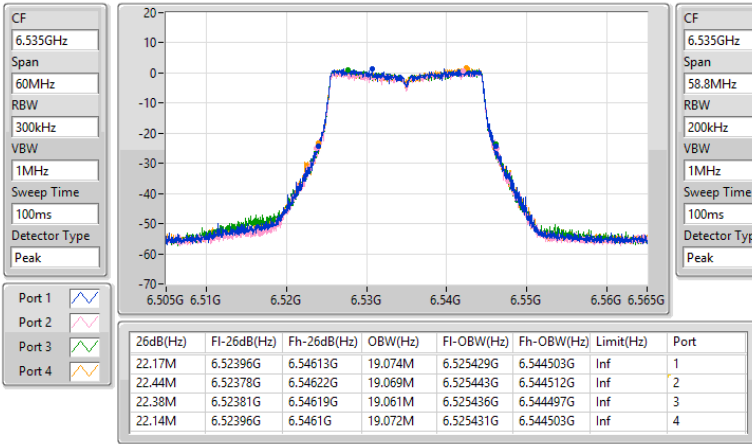


6.525-6.875GHz\_802.11ax HEW20\_Nss1,(MCS0)\_4TX

EBW

6535MHz

21/11/2022

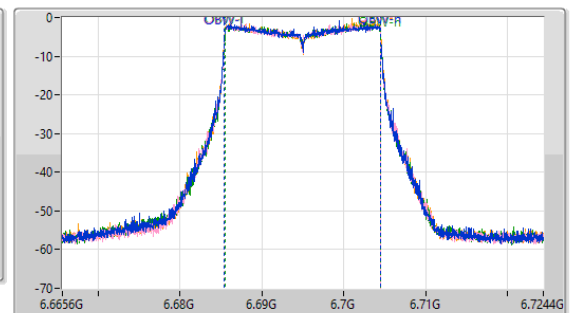
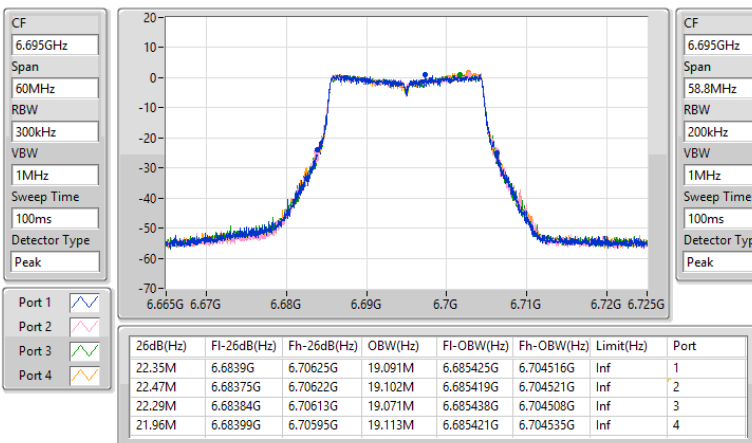


6.525-6.875GHz\_802.11ax HEW20\_Nss1,(MCS0)\_4TX

EBW

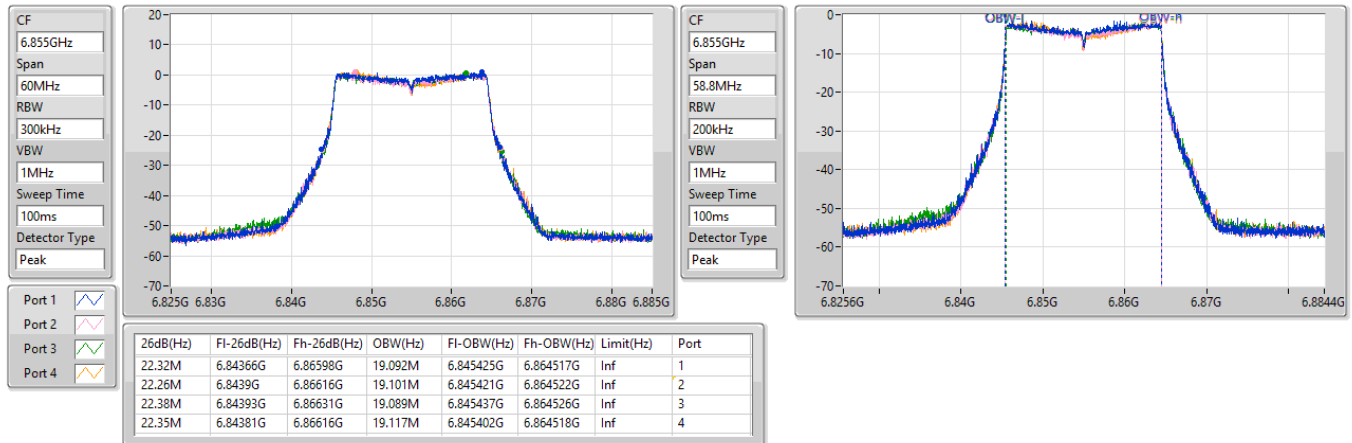
6695MHz

21/11/2022

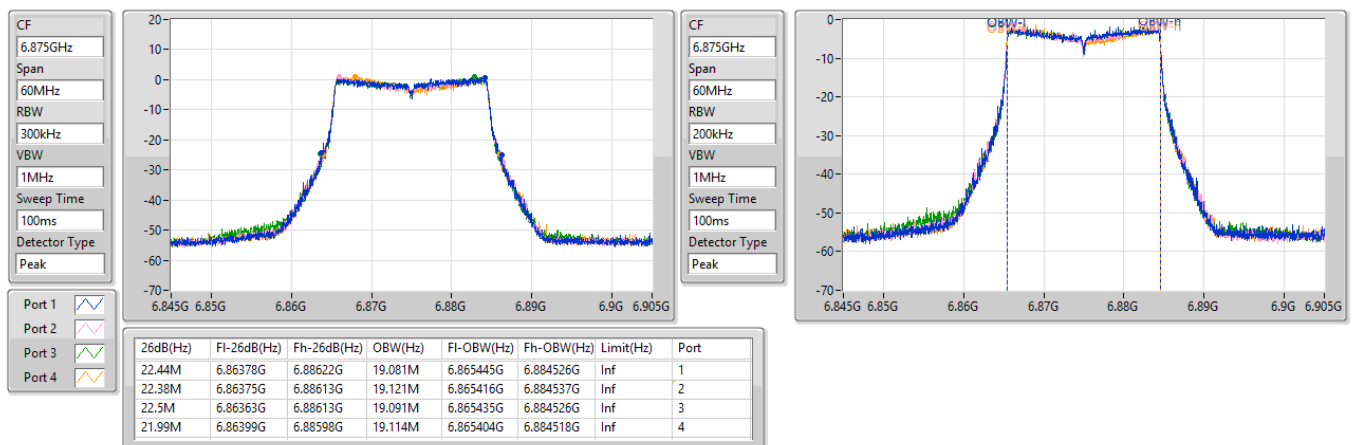


**6.525-6.875GHz\_802.11ax HEW20\_Nss1,(MCS0)\_4TX  
6855MHz**
**EBW**

21/11/2022


**6.525-6.875GHz\_802.11ax HEW20\_Nss1,(MCS0)\_4TX  
6875MHz Straddle 6.525-6.875GHz**
**EBW**

21/11/2022

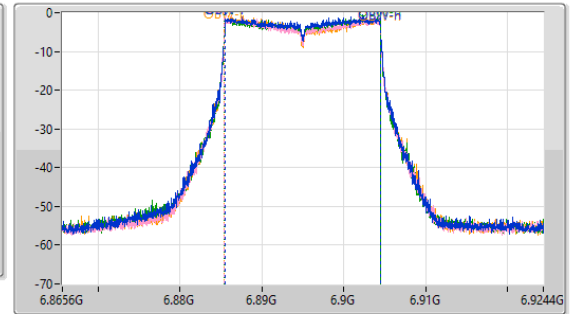
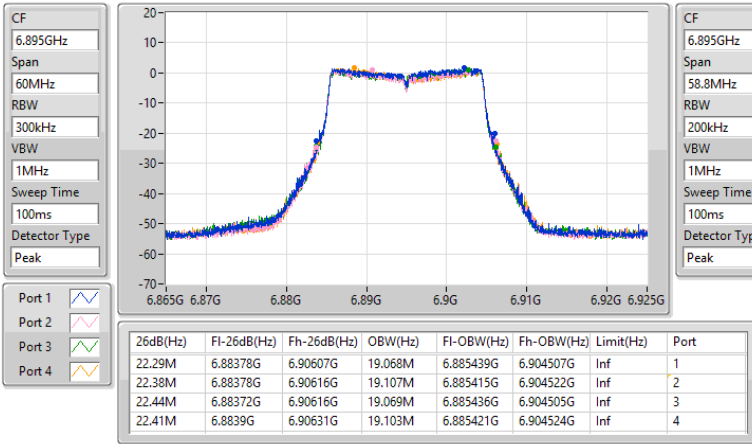


6.875-7.125GHz\_802.11ax HEW20\_Nss1,(MCS0)\_4TX

6895MHz

EBW

21/11/2022

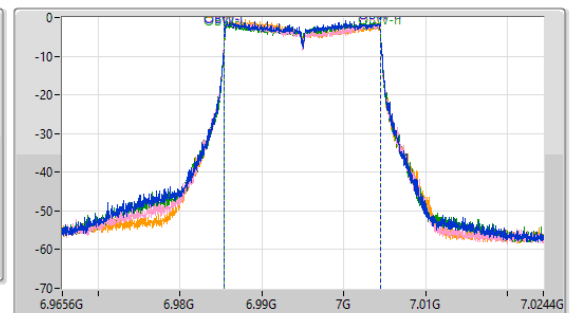
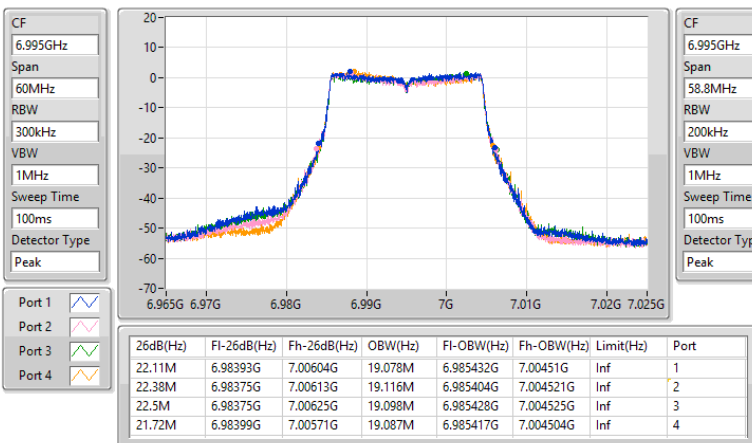


6.875-7.125GHz\_802.11ax HEW20\_Nss1,(MCS0)\_4TX

6995MHz

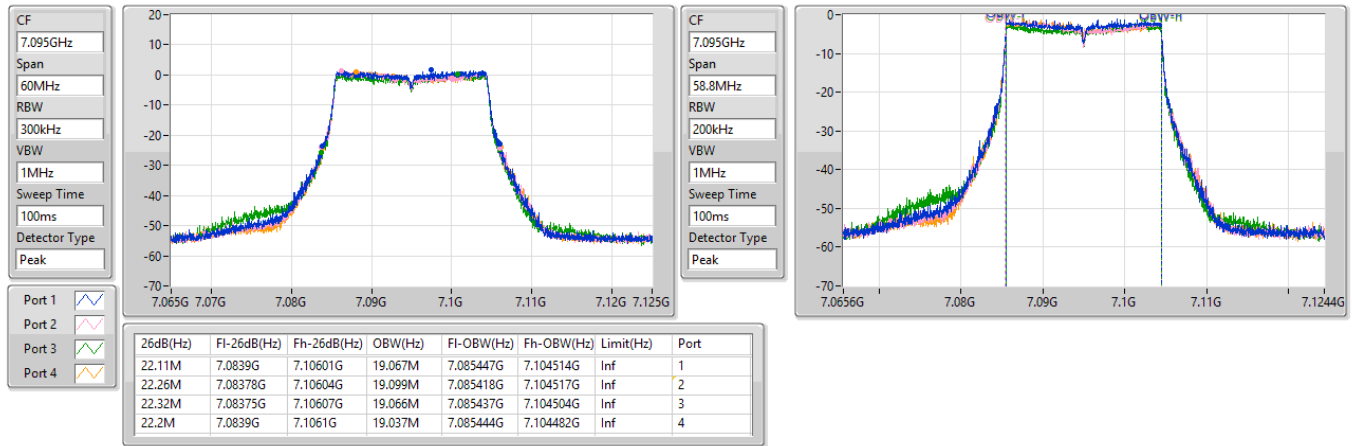
EBW

21/11/2022

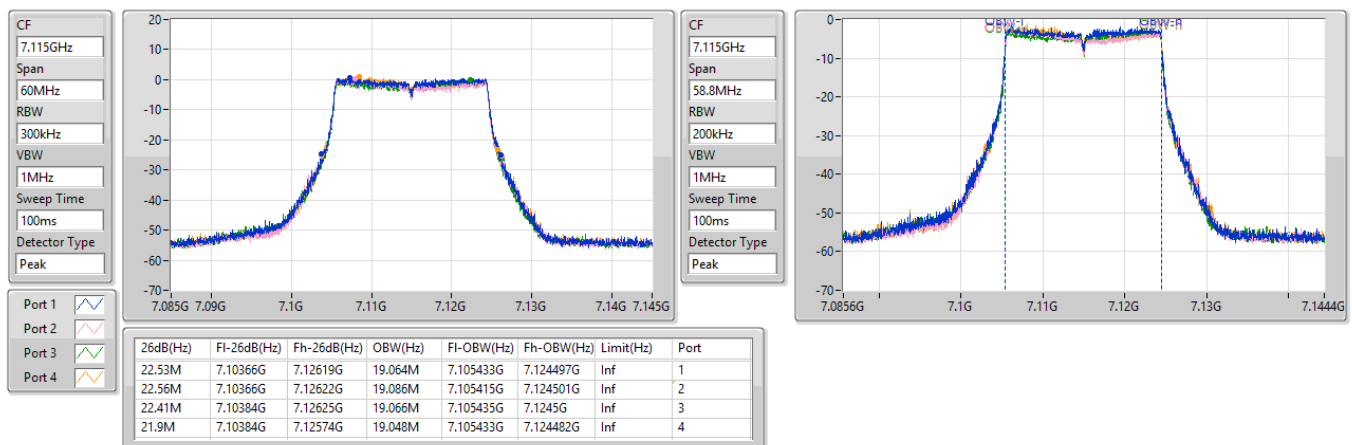


**6.875-7.125GHz\_802.11ax HEW20\_Nss1,(MCS0)\_4TX  
7095MHz**
**EBW**

21/11/2022


**6.875-7.125GHz\_802.11ax HEW20\_Nss1,(MCS0)\_4TX  
7115MHz**
**EBW**

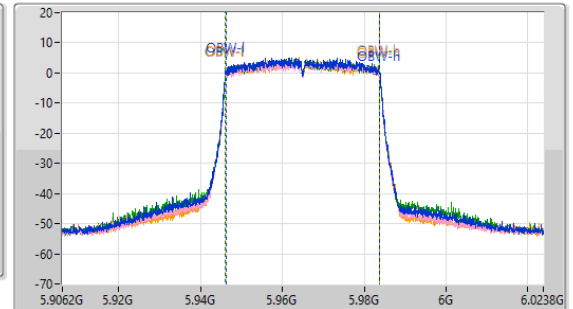
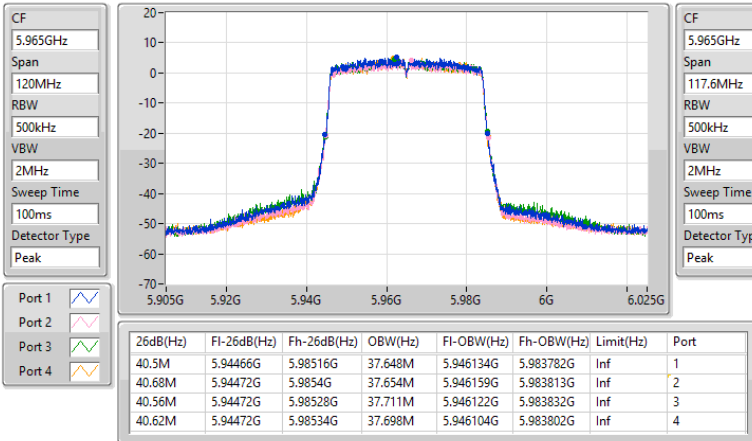
21/11/2022



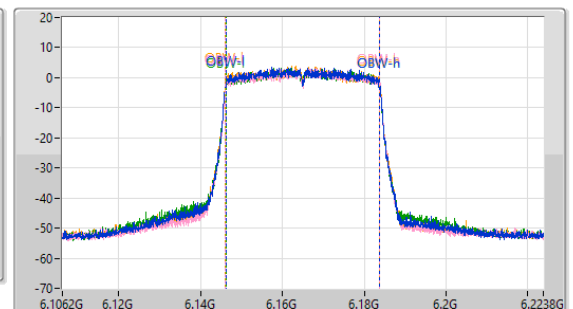
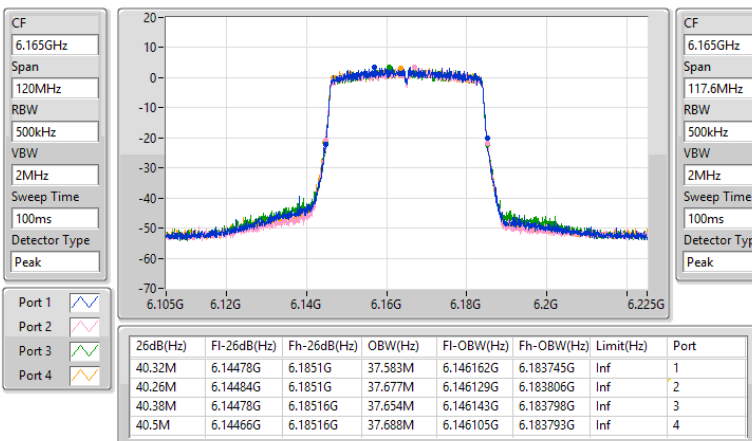


**5.925-6.425GHz\_802.11ax HEW40\_Nss1,(MCS0)\_4TX**
**EBW**
**5965MHz**

21/11/2022

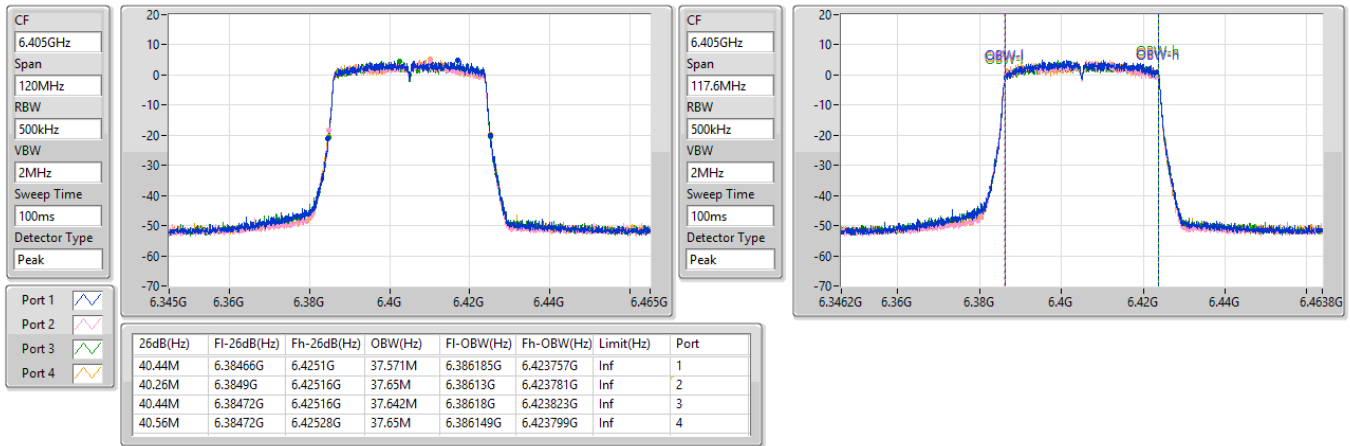

**5.925-6.425GHz\_802.11ax HEW40\_Nss1,(MCS0)\_4TX**
**EBW**
**6165MHz**

21/11/2022

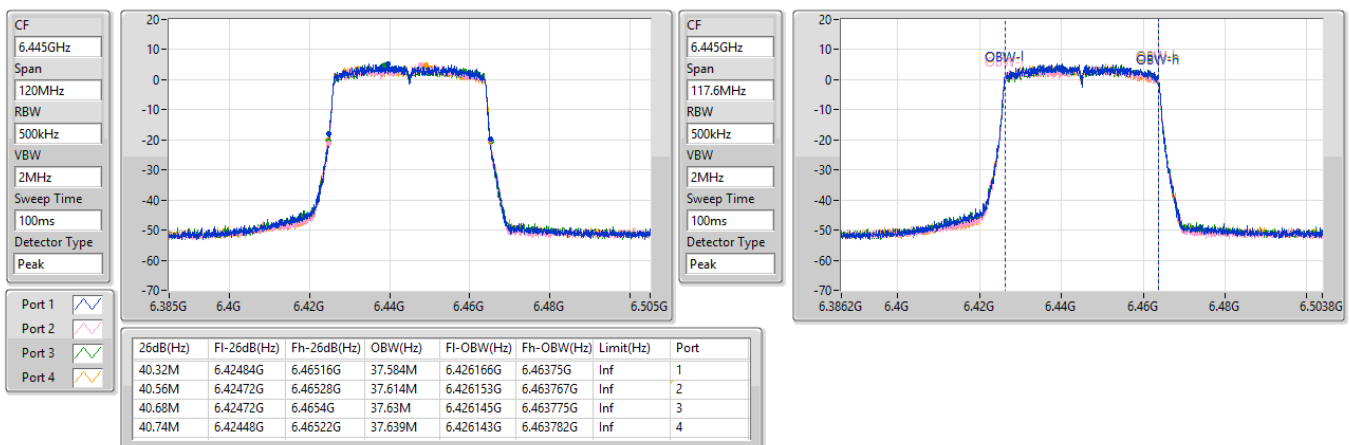


**5.925-6.425GHz\_802.11ax HEW40\_Nss1,(MCS0)\_4TX**
**EBW**
**6405MHz**

21/11/2022

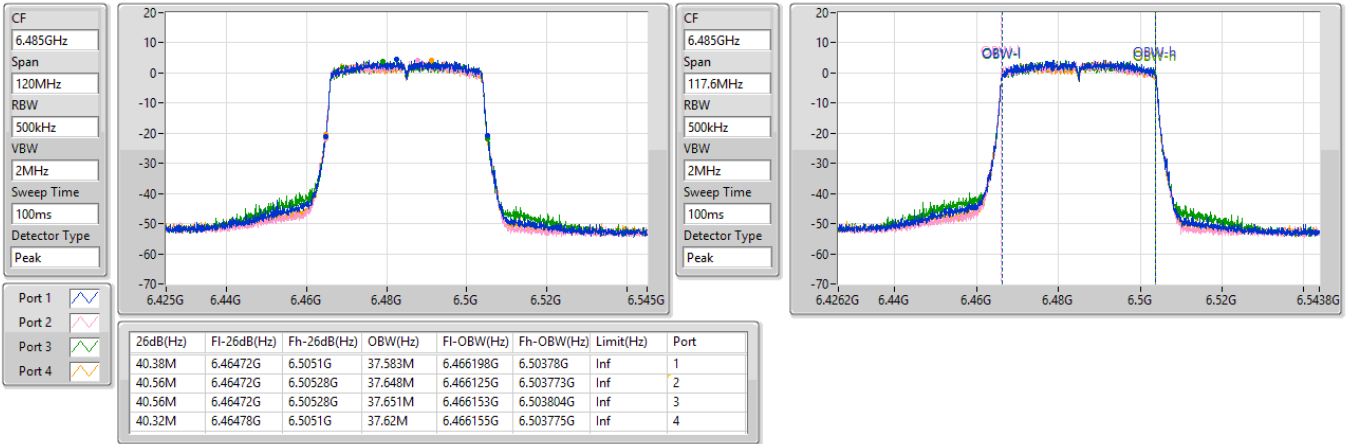

**6.425-6.525GHz\_802.11ax HEW40\_Nss1,(MCS0)\_4TX**
**EBW**
**6445MHz**

21/11/2022

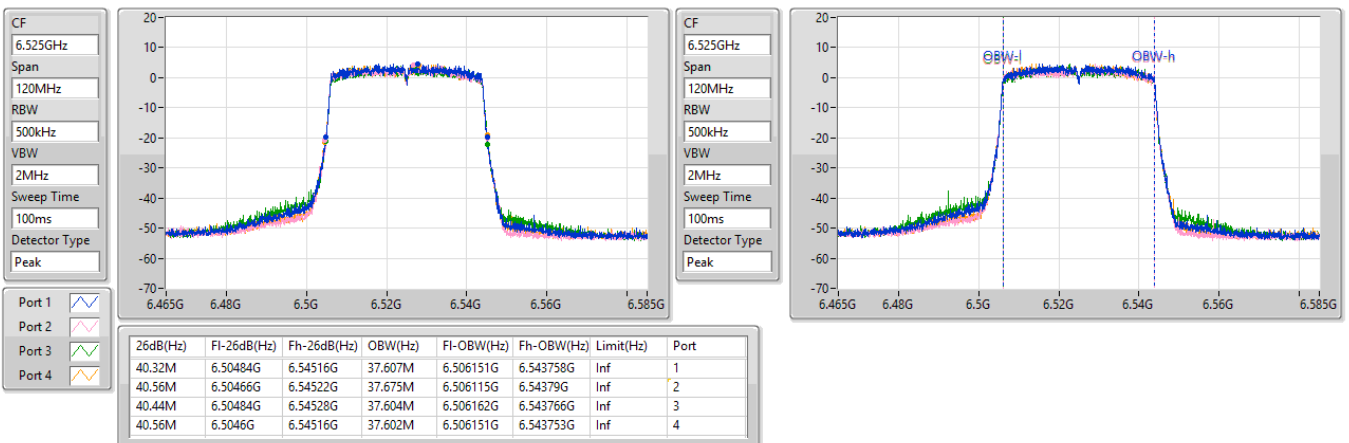


**6.425-6.525GHz\_802.11ax HEW40\_Nss1,(MCS0)\_4TX**
**EBW**
**6485MHz**

21/11/2022

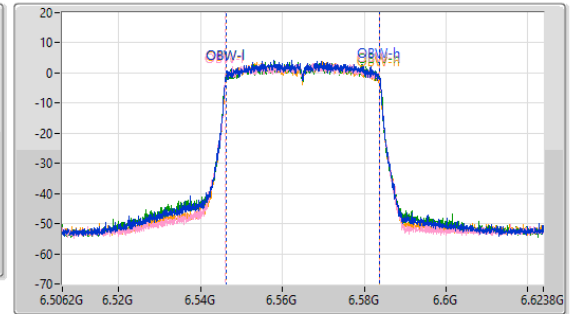
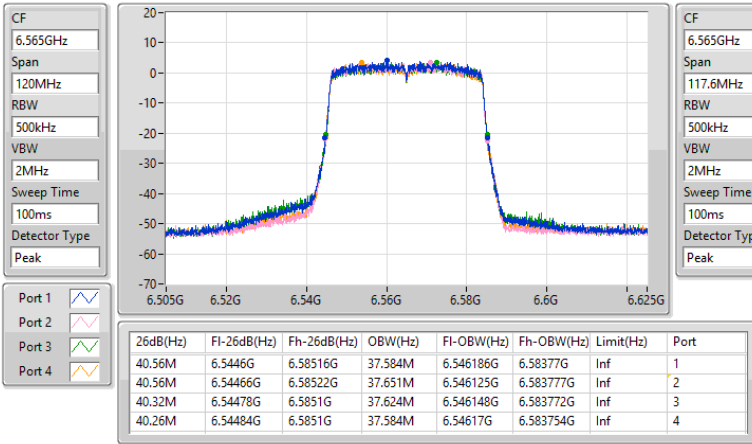

**6.425-6.525GHz\_802.11ax HEW40\_Nss1,(MCS0)\_4TX**
**EBW**
**6525MHz Straddle 6.425-6.525GHz**

21/11/2022

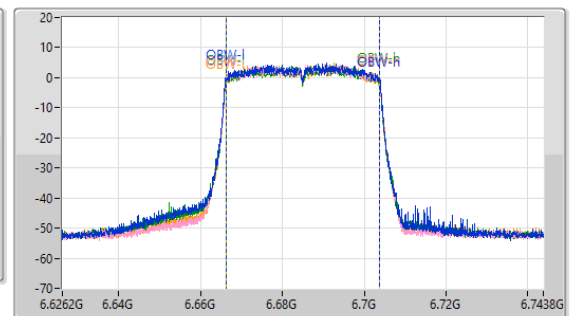
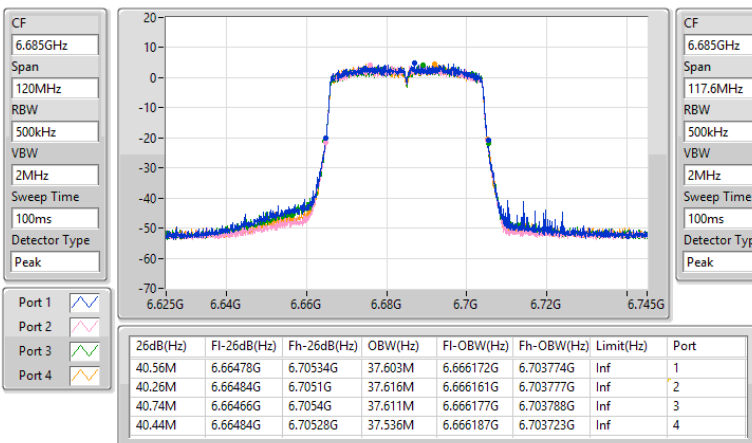


**6.525-6.875GHz\_802.11ax HEW40\_Nss1,(MCS0)\_4TX**
**EBW**
**6565MHz**

21/11/2022

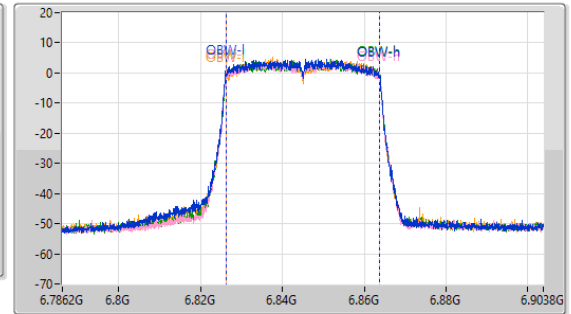
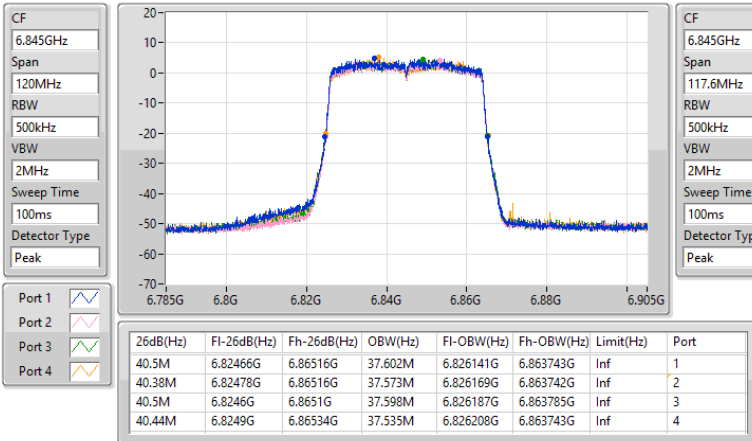

**6.525-6.875GHz\_802.11ax HEW40\_Nss1,(MCS0)\_4TX**
**EBW**
**6685MHz**

21/11/2022

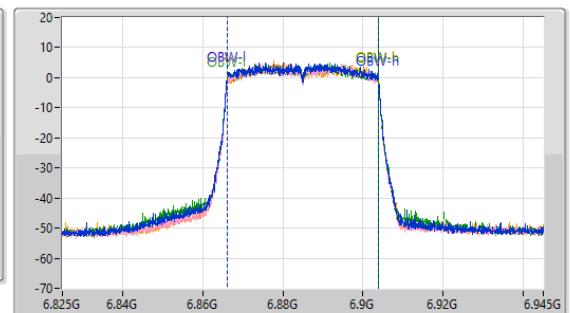
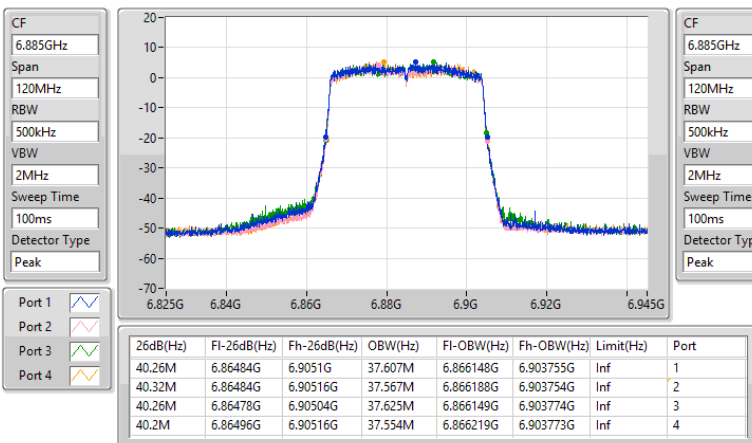


**6.525-6.875GHz\_802.11ax HEW40\_Nss1,(MCS0)\_4TX**
**EBW**
**6845MHz**

21/11/2022

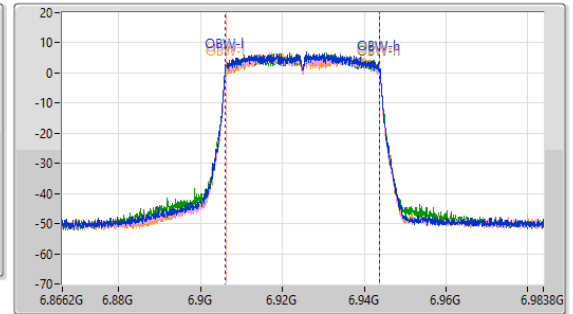
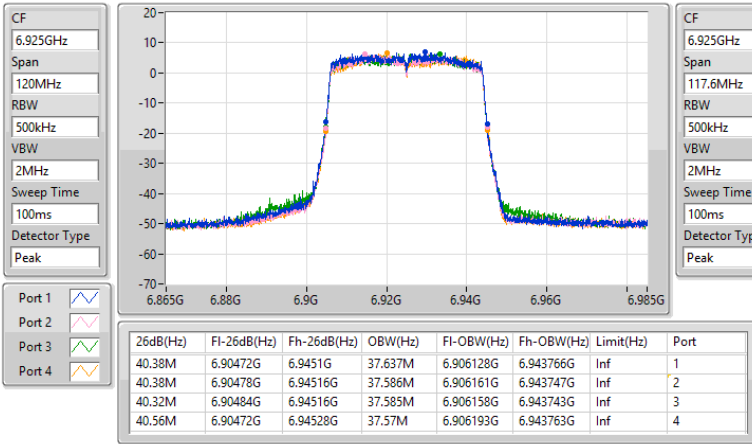

**6.525-6.875GHz\_802.11ax HEW40\_Nss1,(MCS0)\_4TX**
**EBW**
**6885MHz Straddle 6.525-6.875GHz**

21/11/2022

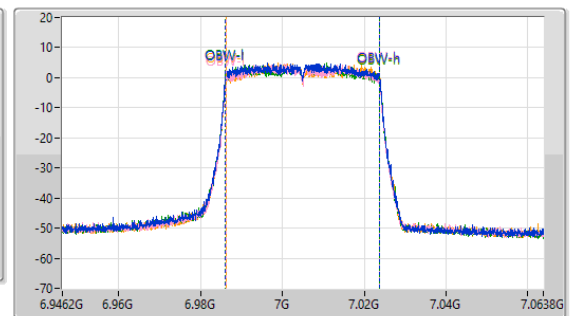
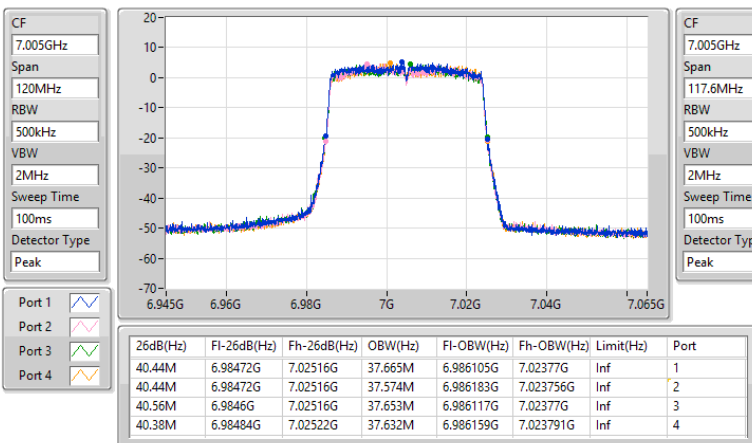


**6.875-7.125GHz\_802.11ax HEW40\_Nss1,(MCS0)\_4TX**
**EBW**
**6925MHz**

21/11/2022

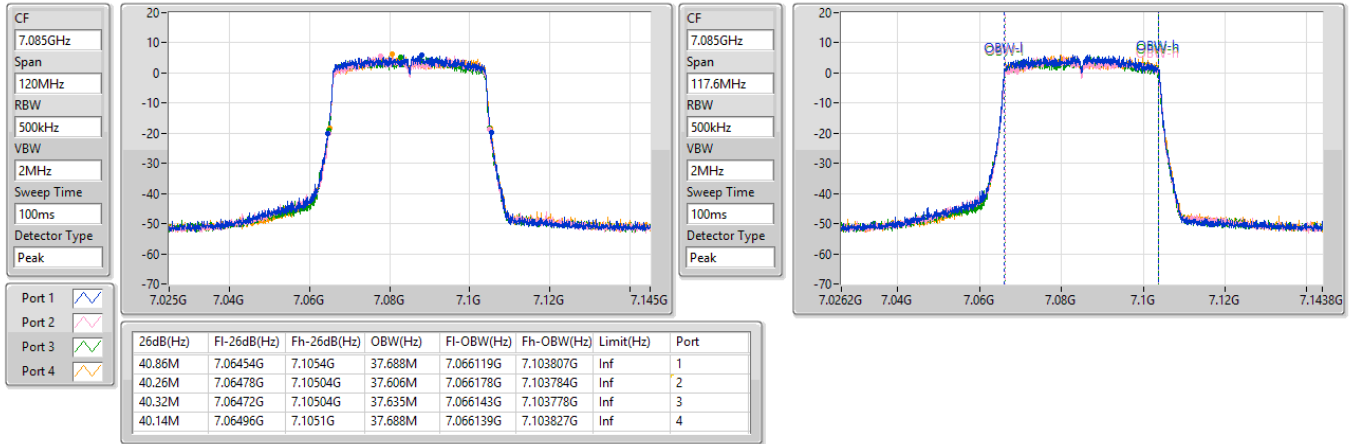

**6.875-7.125GHz\_802.11ax HEW40\_Nss1,(MCS0)\_4TX**
**EBW**
**7005MHz**

21/11/2022

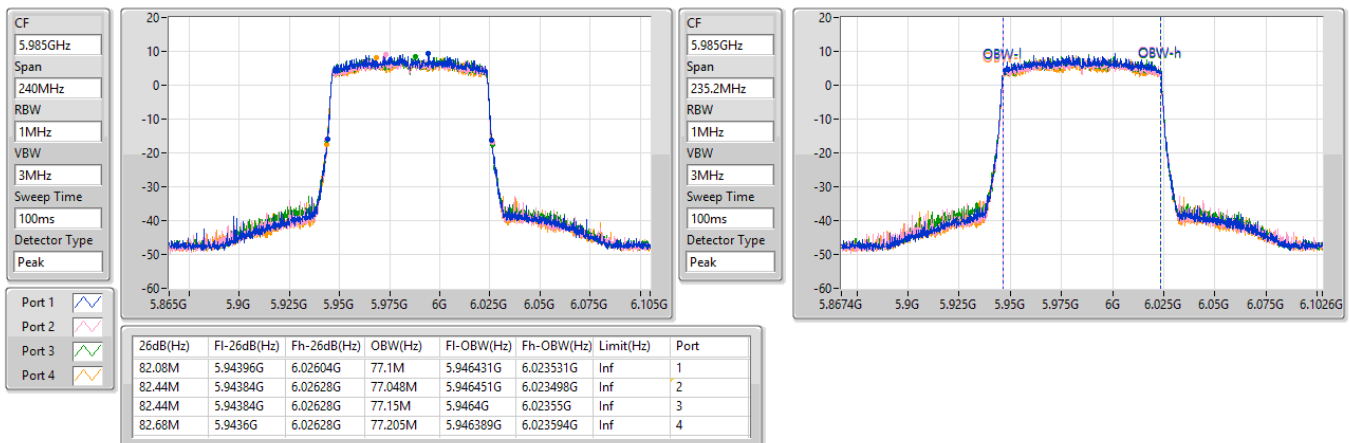


**6.875-7.125GHz\_802.11ax HEW40\_Nss1,(MCS0)\_4TX**  
**7085MHz**
**EBW**

21/11/2022

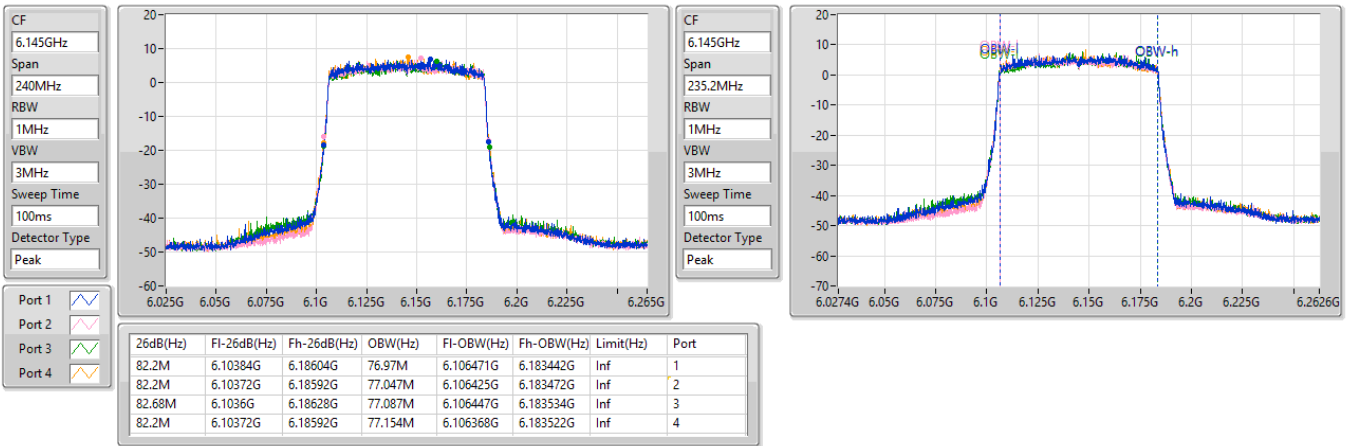

**5.925-6.425GHz\_802.11ax HEW80\_Nss1,(MCS0)\_4TX**  
**5985MHz**
**EBW**

21/11/2022

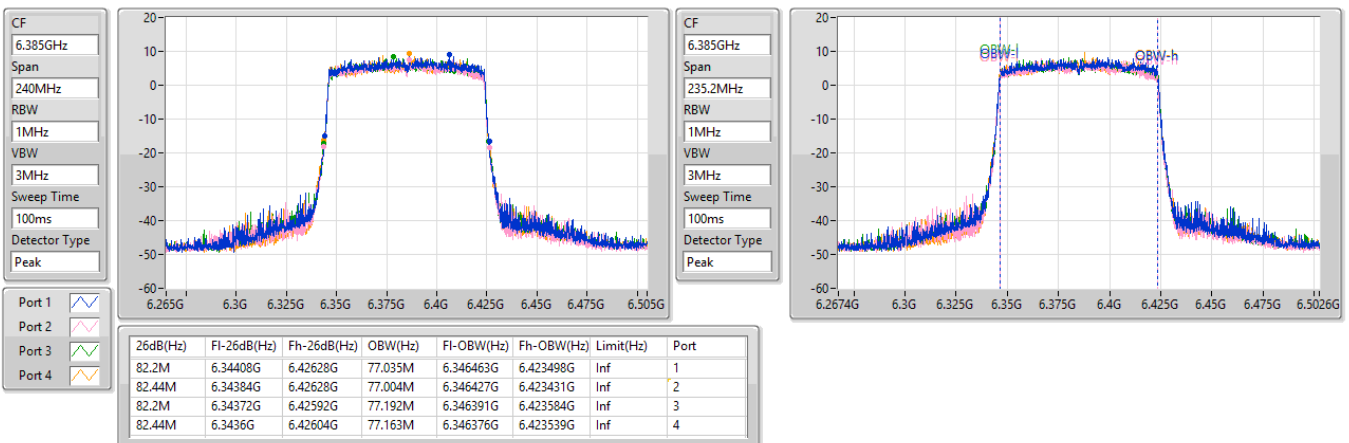


**5.925-6.425GHz\_802.11ax HEW80\_Nss1,(MCS0)\_4TX**
**EBW**
**6145MHz**

21/11/2022


**5.925-6.425GHz\_802.11ax HEW80\_Nss1,(MCS0)\_4TX**
**EBW**
**6385MHz**

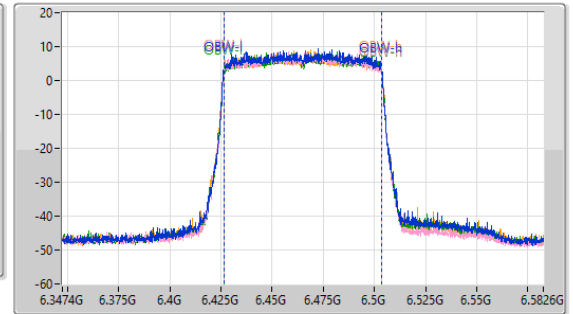
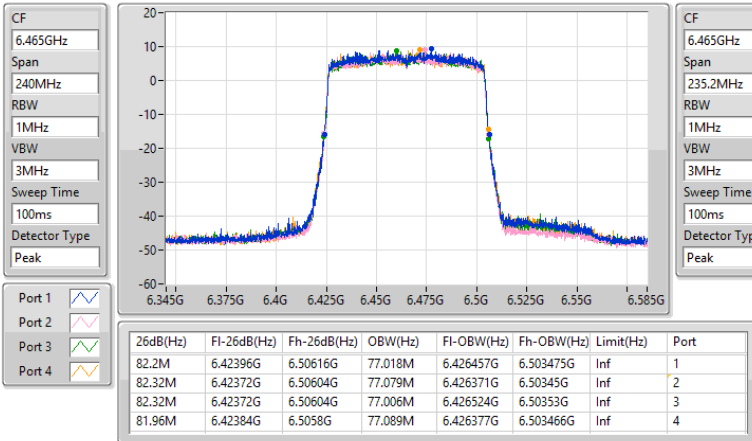
21/11/2022



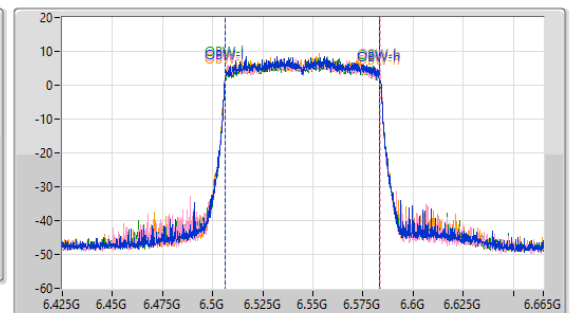
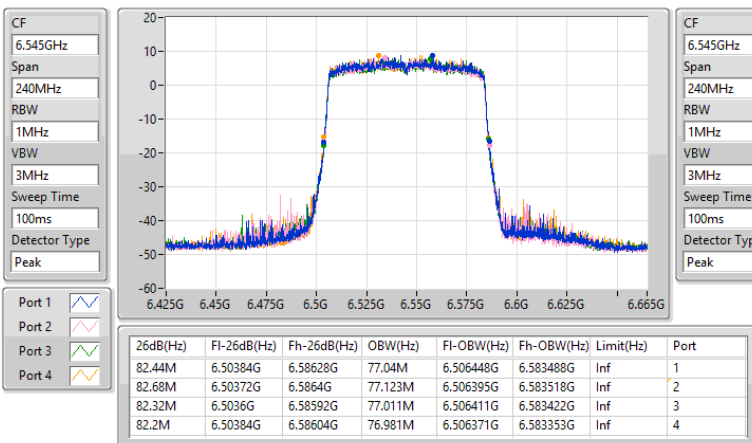


**6.425-6.525GHz\_802.11ax HEW80\_Nss1,(MCS0)\_4TX**
**EBW**
**6465MHz**

21/11/2022

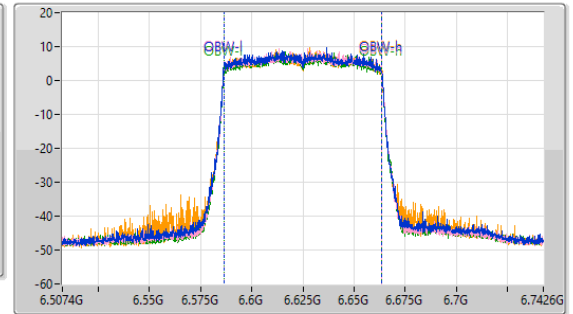
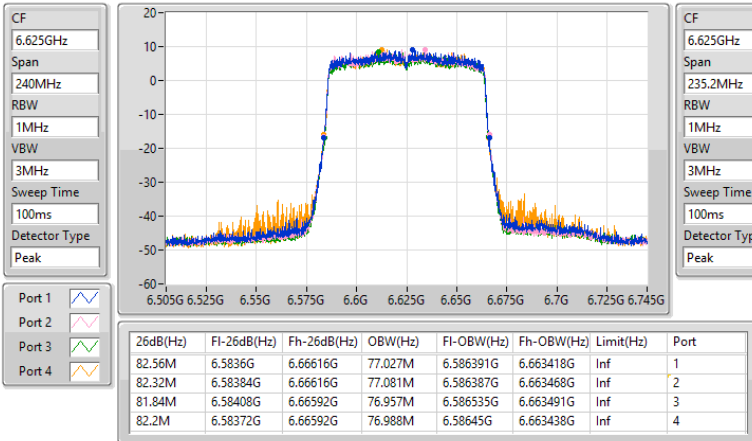

**6.425-6.525GHz\_802.11ax HEW80\_Nss1,(MCS0)\_4TX**
**EBW**
**6545MHz Straddle 6.425-6.525GHz**

21/11/2022

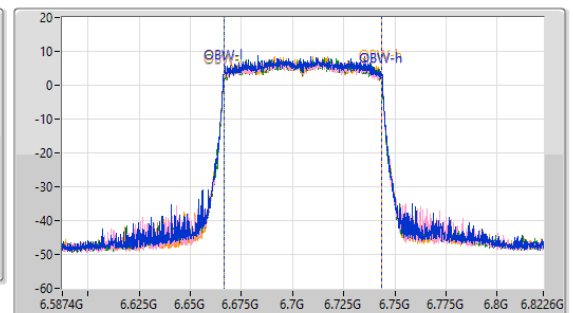
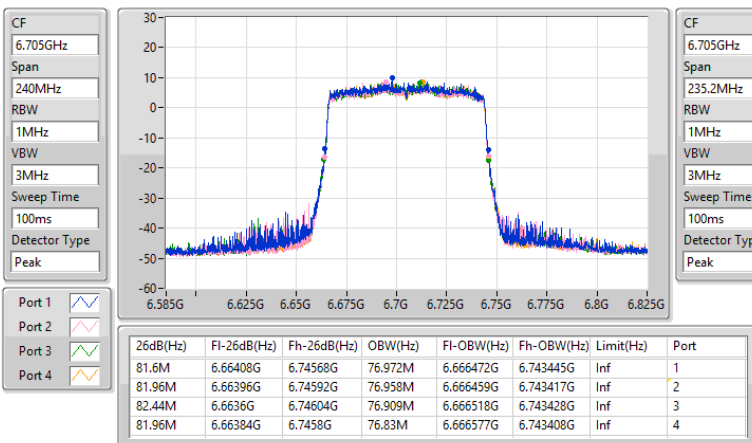


**6.525-6.875GHz\_802.11ax HEW80\_Nss1,(MCS0)\_4TX**
**EBW**
**6625MHz**

21/11/2022

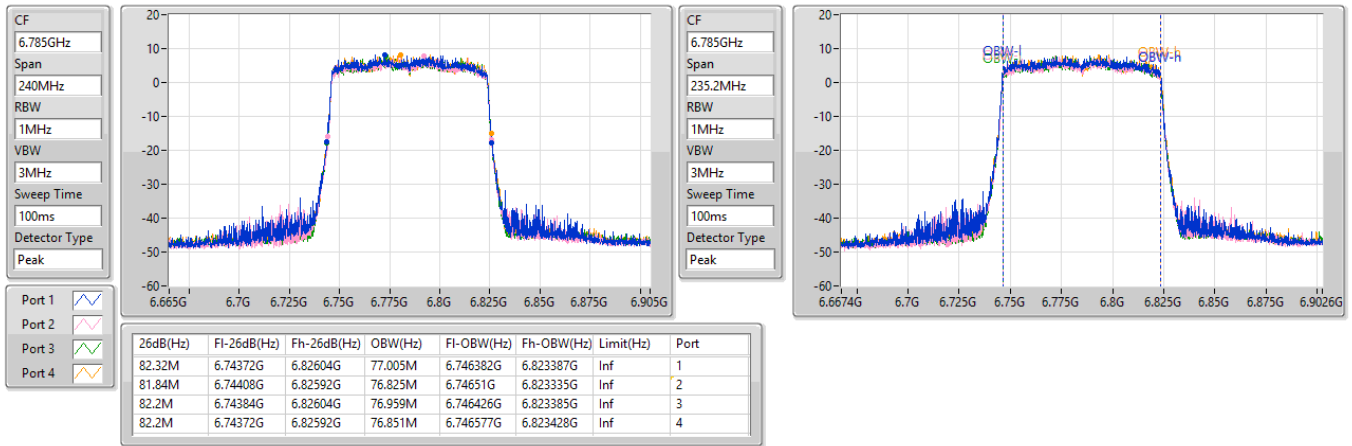

**6.525-6.875GHz\_802.11ax HEW80\_Nss1,(MCS0)\_4TX**
**EBW**
**6705MHz**

21/11/2022

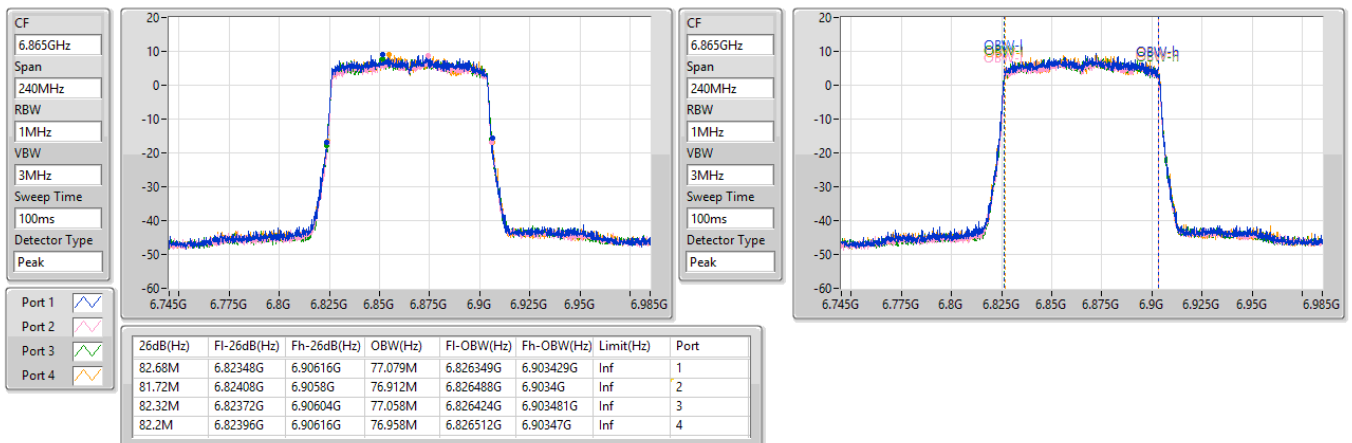


**6.525-6.875GHz\_802.11ax HEW80\_Nss1,(MCS0)\_4TX  
6785MHz**
**EBW**

21/11/2022

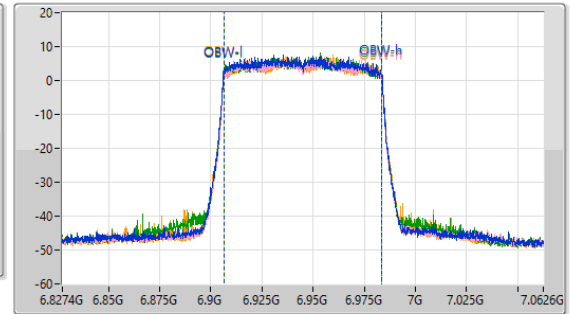
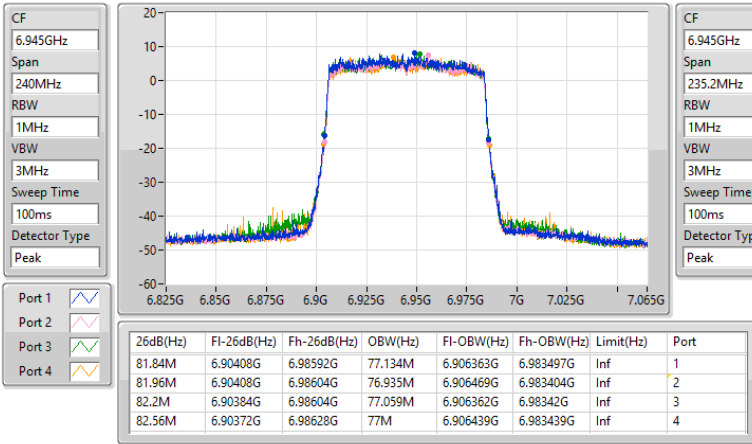

**6.525-6.875GHz\_802.11ax HEW80\_Nss1,(MCS0)\_4TX  
6865MHz Straddle 6.525-6.875GHz**
**EBW**

21/11/2022

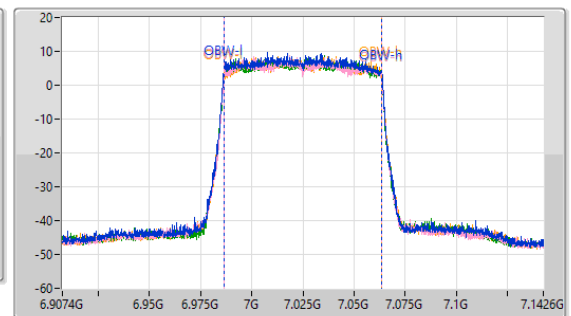
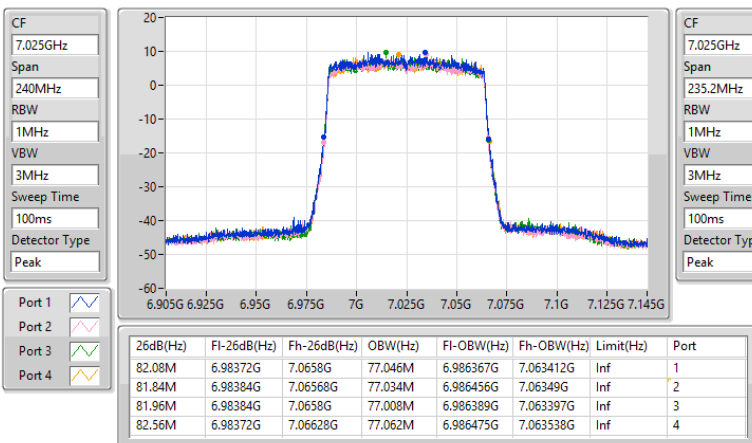


**6.875-7.125GHz\_802.11ax HEW80\_Nss1,(MCS0)\_4TX**
**EBW**
**6945MHz**

21/11/2022

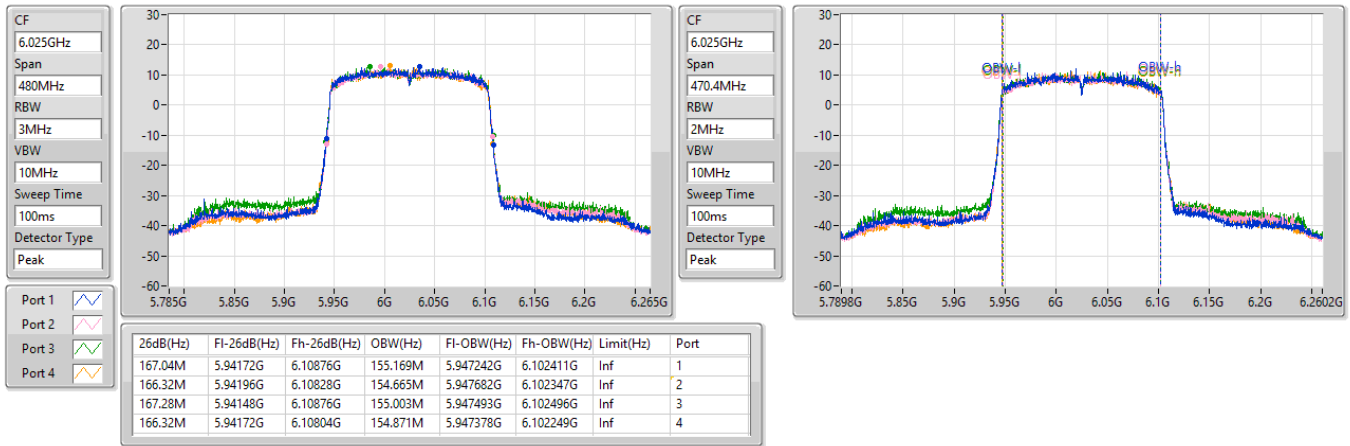

**6.875-7.125GHz\_802.11ax HEW80\_Nss1,(MCS0)\_4TX**
**EBW**
**7025MHz**

21/11/2022

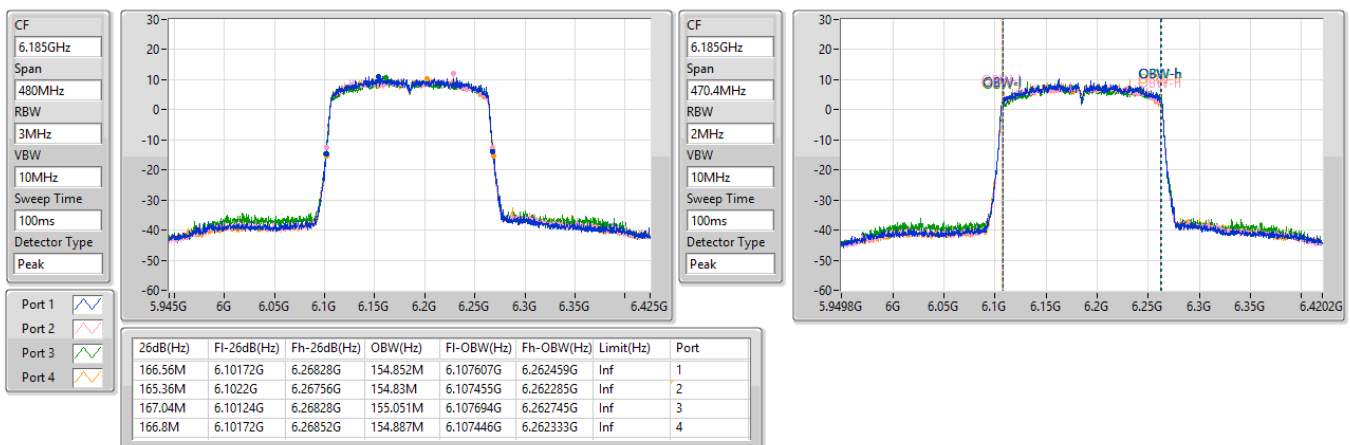


**5.925-6.425GHz\_802.11ax HEW160\_Nss1,(MCS0)\_4TX  
6025MHz**
**EBW**

21/11/2022

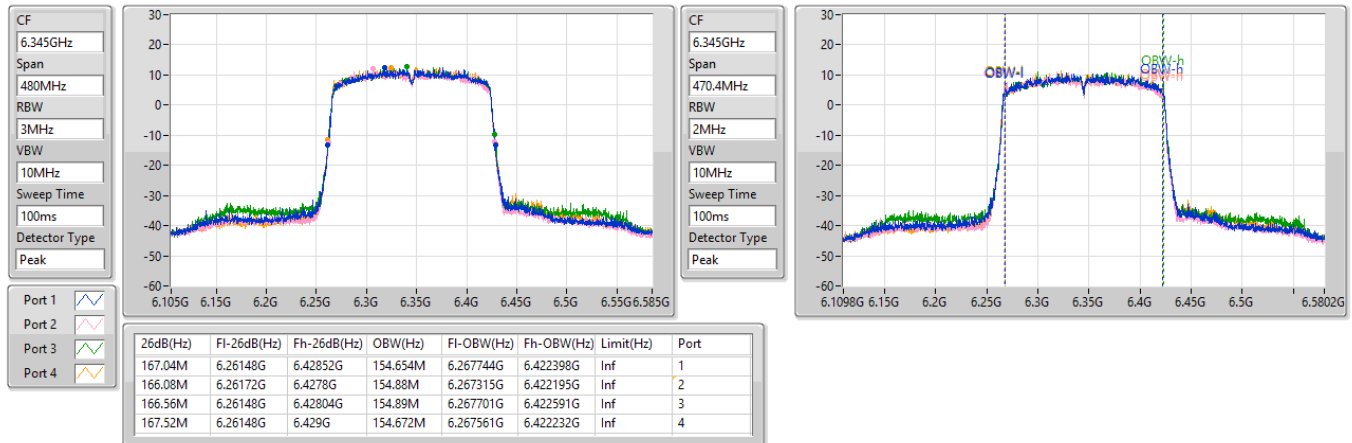

**5.925-6.425GHz\_802.11ax HEW160\_Nss1,(MCS0)\_4TX  
6185MHz**
**EBW**

21/11/2022

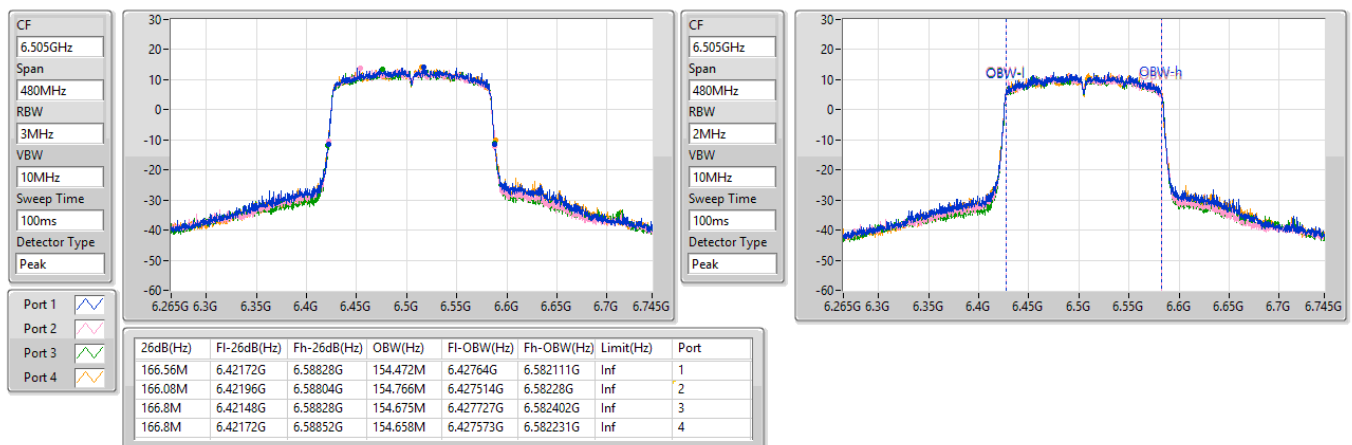


**5.925-6.425GHz\_802.11ax HEW160\_Nss1,(MCS0)\_4TX  
6345MHz**
**EBW**

21/11/2022

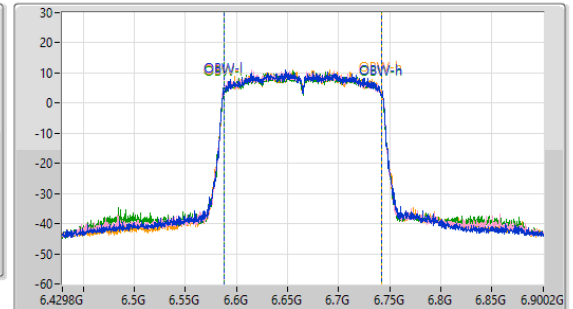
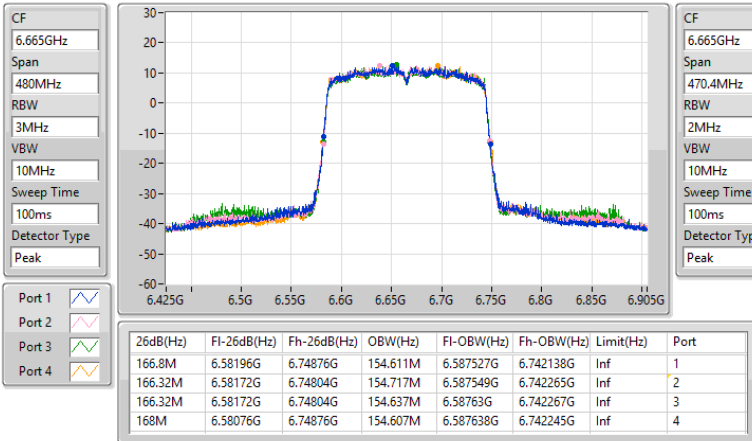

**6.425-6.525GHz\_802.11ax HEW160\_Nss1,(MCS0)\_4TX  
6505MHz Straddle 6.425-6.525GHz**
**EBW**

21/11/2022

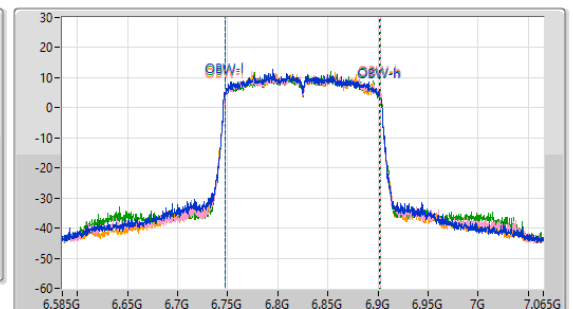
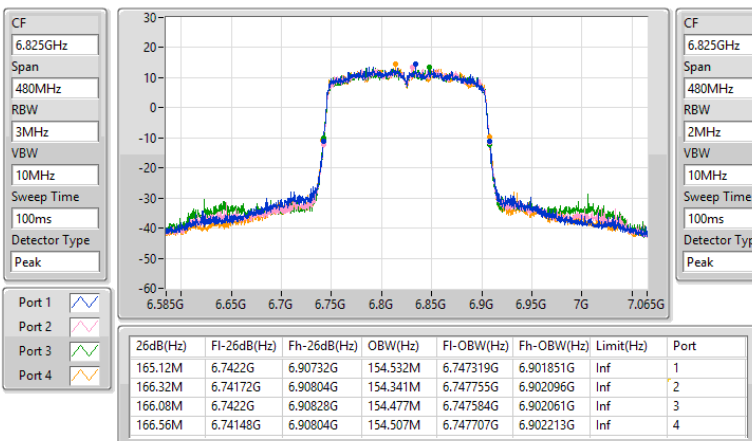


**6.525-6.875GHz\_802.11ax HEW160\_Nss1,(MCS0)\_4TX  
6665MHz**
**EBW**

21/11/2022

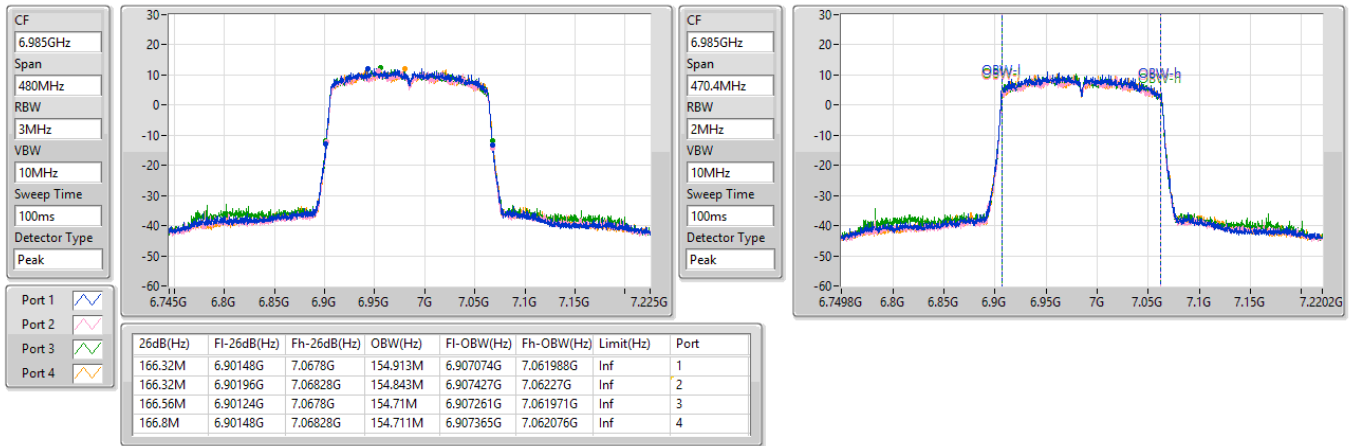

**6.525-6.875GHz\_802.11ax HEW160\_Nss1,(MCS0)\_4TX  
6825MHz Straddle 6.525-6.875GHz**
**EBW**

21/11/2022



**6.875-7.125GHz\_802.11ax HEW160\_Nss1,(MCS0)\_4TX  
6985MHz****EBW**

21/11/2022





**Summary**

| Mode                               | Max-N dB<br>(Hz) | Max-OBW<br>(Hz) | ITU-Code | Min-N dB<br>(Hz) | Min-OBW<br>(Hz) |
|------------------------------------|------------------|-----------------|----------|------------------|-----------------|
| 5.925-6.425GHz                     | -                | -               | -        | -                | -               |
| 802.11ax HEW20-BF_Nss1,(MCS0)_4TX  | 22.23M           | 19.061M         | 19M1D1D  | 20.73M           | 18.919M         |
| 802.11ax HEW40-BF_Nss1,(MCS0)_4TX  | 57.3M            | 37.691M         | 37M7D1D  | 40.56M           | 37.474M         |
| 802.11ax HEW80-BF_Nss1,(MCS0)_4TX  | 84.12M           | 77.135M         | 77M1D1D  | 80.4M            | 76.24M          |
| 802.11ax HEW160-BF_Nss1,(MCS0)_4TX | 272.16M          | 155.512M        | 156MD1D  | 166.08M          | 154.257M        |
| 6.425-6.525GHz                     | -                | -               | -        | -                | -               |
| 802.11ax HEW20-BF_Nss1,(MCS0)_4TX  | 22.23M           | 19.132M         | 19M1D1D  | 20.7M            | 18.841M         |
| 802.11ax HEW40-BF_Nss1,(MCS0)_4TX  | 60.72M           | 37.703M         | 37M7D1D  | 40.14M           | 37.597M         |
| 802.11ax HEW80-BF_Nss1,(MCS0)_4TX  | 84.6M            | 77.14M          | 77M1D1D  | 81.36M           | 76.795M         |
| 802.11ax HEW160-BF_Nss1,(MCS0)_4TX | 252.48M          | 154.851M        | 155MD1D  | 183.36M          | 154.766M        |
| 6.525-6.875GHz                     | -                | -               | -        | -                | -               |
| 802.11ax HEW20-BF_Nss1,(MCS0)_4TX  | 22.26M           | 19.051M         | 19M1D1D  | 20.91M           | 19.006M         |
| 802.11ax HEW40-BF_Nss1,(MCS0)_4TX  | 49.62M           | 37.875M         | 37M9D1D  | 40.08M           | 37.268M         |
| 802.11ax HEW80-BF_Nss1,(MCS0)_4TX  | 154.2M           | 77.154M         | 77M2D1D  | 81.96M           | 76.341M         |
| 802.11ax HEW160-BF_Nss1,(MCS0)_4TX | 302.4M           | 155.7M          | 156MD1D  | 170.64M          | 154.53M         |
| 6.875-7.125GHz                     | -                | -               | -        | -                | -               |
| 802.11ax HEW20-BF_Nss1,(MCS0)_4TX  | 22.56M           | 19.053M         | 19M1D1D  | 20.34M           | 18.949M         |
| 802.11ax HEW40-BF_Nss1,(MCS0)_4TX  | 56.52M           | 37.671M         | 37M7D1D  | 40.14M           | 37.261M         |
| 802.11ax HEW80-BF_Nss1,(MCS0)_4TX  | 129.48M          | 77.25M          | 77M2D1D  | 82.44M           | 76.77M          |
| 802.11ax HEW160-BF_Nss1,(MCS0)_4TX | 314.16M          | 154.962M        | 155MD1D  | 239.04M          | 154.421M        |

Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;  
Max-OBW = Maximum 99% occupied bandwidth;  
Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;  
Min-OBW = Minimum 99% occupied bandwidth

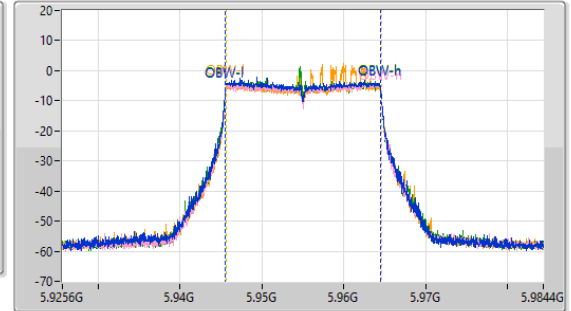
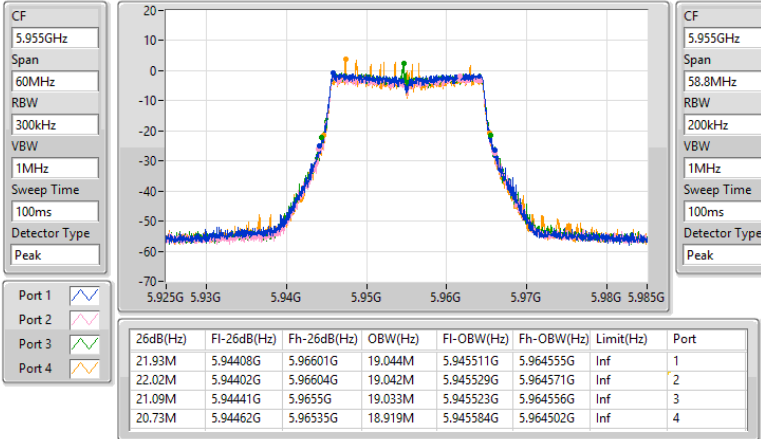
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band  
Port X-OBW = Port X 99% occupied bandwidth

## 5.925-6.425GHz\_802.11ax HEW20-BF\_Nss1,(MCS0)\_4TX

EBW

5955MHz

21/11/2022

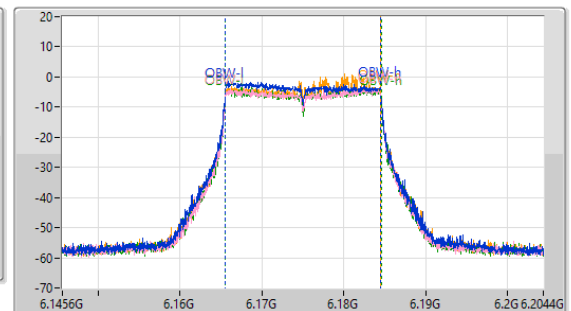
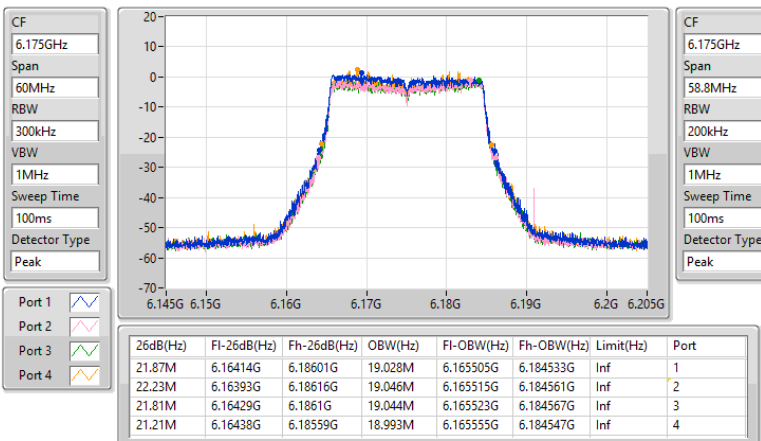


## 5.925-6.425GHz\_802.11ax HEW20-BF\_Nss1,(MCS0)\_4TX

EBW

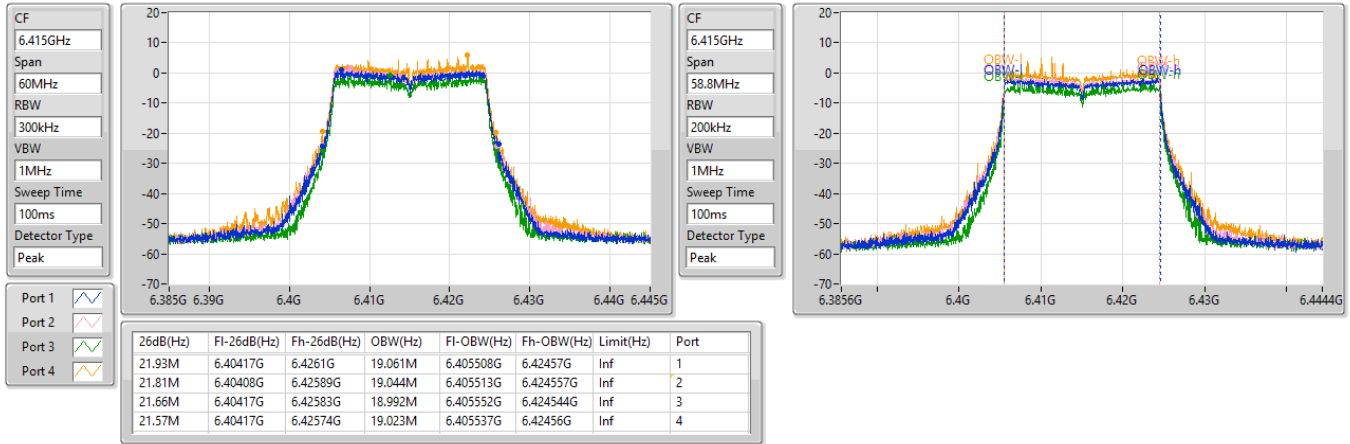
6175MHz

21/11/2022

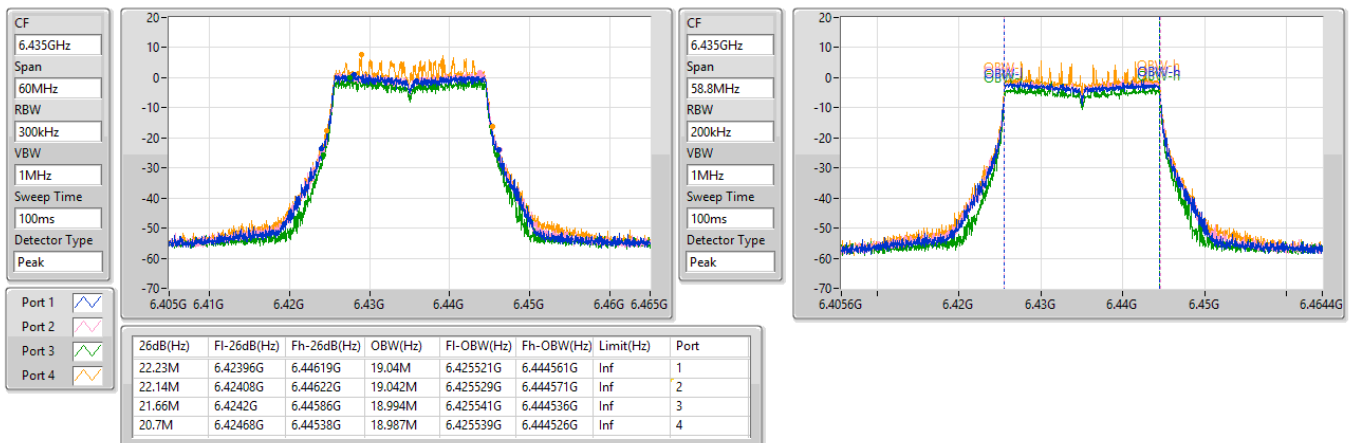


**5.925-6.425GHz\_802.11ax HEW20-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6415MHz**

21/11/2022


**6.425-6.525GHz\_802.11ax HEW20-BF\_Nss1,(MCS0)\_4TX**
**EBW**
**6435MHz**

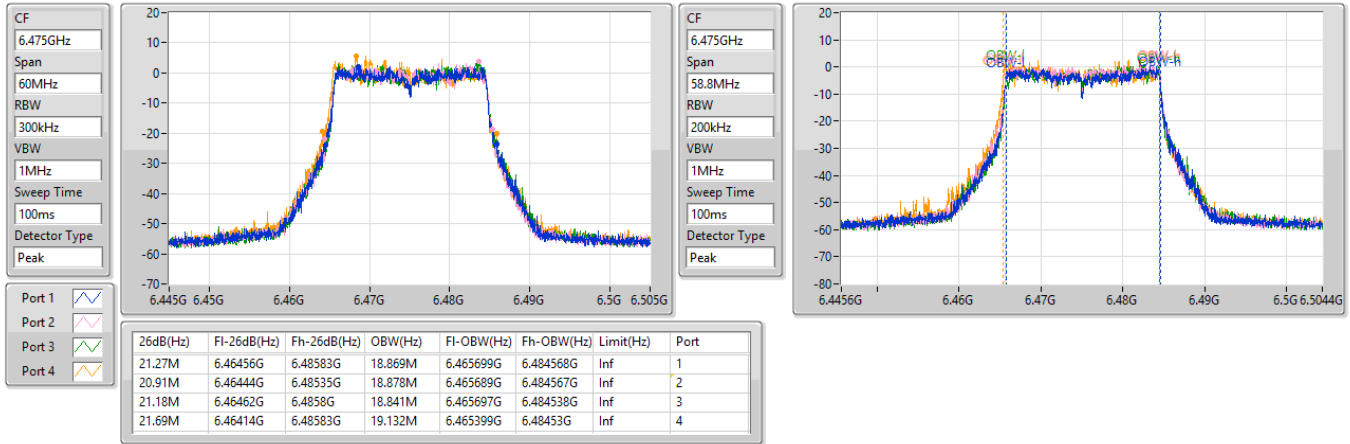
21/11/2022



## 6.425-6.525GHz\_802.11ax HEW20-BF\_Nss1,(MCS0)\_4TX 6475MHz

EBW

22/11/2022



## 6.425-6.525GHz\_802.11ax HEW20-BF\_Nss1,(MCS0)\_4TX 6515MHz

EBW

21/11/2022

