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## **Appendix for 5G WIFI**

**Applicant: Launch Tech Co., Ltd.**

**Address: Launch Industrial Park, North of Wuhe Avenue,  
Banxuegang, Longgang, Shenzhen, Guangdong, P.R. China**

**Product Name: AUTO Smart Diagnostic Tool**

**Model: OADD-PO0805A, OADD-PO1005A, X-431 PRO3 APEX,  
X-431 V+ SmartLink HD, X-431 PRO3S+ SmartLink HD, X-431  
PRO3 ACE, X-431 PRO3(PRO3S+ V5.0), X-431 PRO3(PRO3S+ V5),  
X-431 PRO5, X-431 PRO3(PRO3S+ ELITE), X-431 PRO3 V+ ELITE,  
X-431 PRO3 LINK HD, X-431 PRO(PRO3S V5.0), X-431 PRO(PRO3S  
V5), X-431 PRO DYNO, X-431 PRO TT, X-431 PRO(IMMO ELITE),  
X-431 PRO(IMMO PLUS)**

**FCC ID: XUJX431PROV5**

## TABLE OF CONTENTS

|                                                  |    |
|--------------------------------------------------|----|
| Appendix A1: Emission Bandwidth .....            | 3  |
| Appendix A2: Occupied channel bandwidth .....    | 14 |
| Appendix A3: Min emission bandwidth .....        | 25 |
| Appendix B: Maximum conducted output power ..... | 31 |
| Appendix C: Maximum power spectral density ..... | 33 |
| Appendix D: Frequency Stability .....            | 49 |
| Appendix E: Duty Cycle .....                     | 53 |

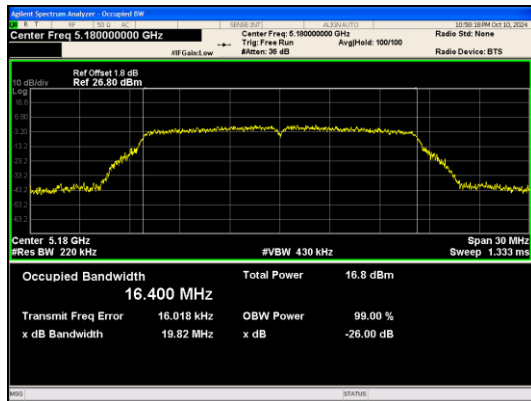
## Appendix A1: Emission Bandwidth

### Test Result

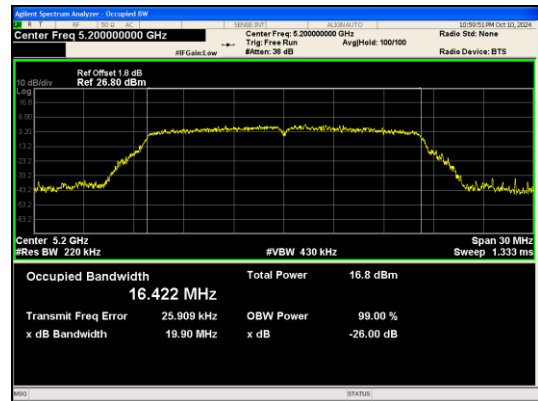
| Test Mode       | Antenna | Channel | 26dB EBW [MHz] | Verdict |
|-----------------|---------|---------|----------------|---------|
| 802.11a         | Ant1    | 5180    | 19.82          | PASS    |
|                 |         | 5200    | 19.90          | PASS    |
|                 |         | 5240    | 19.75          | PASS    |
|                 |         | 5260    | 19.63          | PASS    |
|                 |         | 5280    | 19.52          | PASS    |
|                 |         | 5320    | 19.81          | PASS    |
|                 |         | 5745    | 19.760         | PASS    |
|                 |         | 5785    | 19.800         | PASS    |
|                 |         | 5825    | 19.800         | PASS    |
| 802.11n(HT20)   | Ant1    | 5180    | 20.08          | PASS    |
|                 |         | 5200    | 20.10          | PASS    |
|                 |         | 5240    | 20.00          | PASS    |
|                 |         | 5260    | 20.25          | PASS    |
|                 |         | 5280    | 20.14          | PASS    |
|                 |         | 5320    | 20.23          | PASS    |
|                 |         | 5745    | 20.680         | PASS    |
|                 |         | 5785    | 20.080         | PASS    |
|                 |         | 5825    | 20.720         | PASS    |
| 802.11n(HT40)   | Ant1    | 5190    | 40.57          | PASS    |
|                 |         | 5230    | 40.37          | PASS    |
|                 |         | 5270    | 39.83          | PASS    |
|                 |         | 5310    | 40.30          | PASS    |
|                 |         | 5755    | 40.880         | PASS    |
|                 |         | 5795    | 40.640         | PASS    |
| 802.11ac(VHT20) | Ant1    | 5180    | 20.15          | PASS    |
|                 |         | 5200    | 20.32          | PASS    |
|                 |         | 5240    | 20.06          | PASS    |
|                 |         | 5260    | 20.07          | PASS    |
|                 |         | 5280    | 19.99          | PASS    |
|                 |         | 5320    | 20.14          | PASS    |
|                 |         | 5745    | 20.360         | PASS    |
|                 |         | 5785    | 20.160         | PASS    |
|                 |         | 5825    | 20.040         | PASS    |
| 802.11ac(VHT40) | Ant1    | 5190    | 40.32          | PASS    |
|                 |         | 5230    | 40.17          | PASS    |
|                 |         | 5270    | 40.18          | PASS    |
|                 |         | 5310    | 39.96          | PASS    |
|                 |         | 5755    | 40.320         | PASS    |
|                 |         | 5795    | 40.320         | PASS    |
| 802.11ac(VHT80) | Ant1    | 5210    | 80.39          | PASS    |
|                 |         | 5290    | 80.84          | PASS    |

|  |  |      |        |      |
|--|--|------|--------|------|
|  |  | 5775 | 80.800 | PASS |
|--|--|------|--------|------|

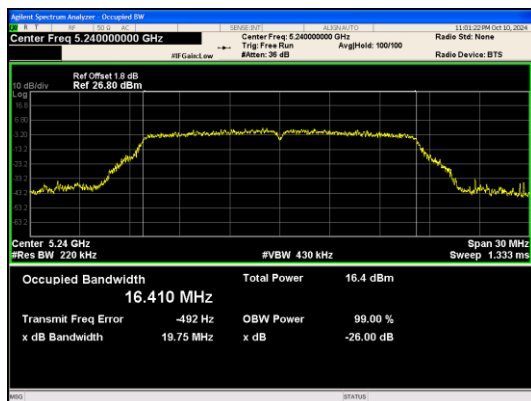
## Test Graphs



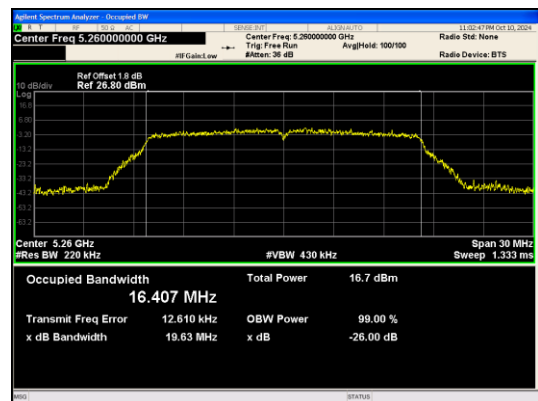
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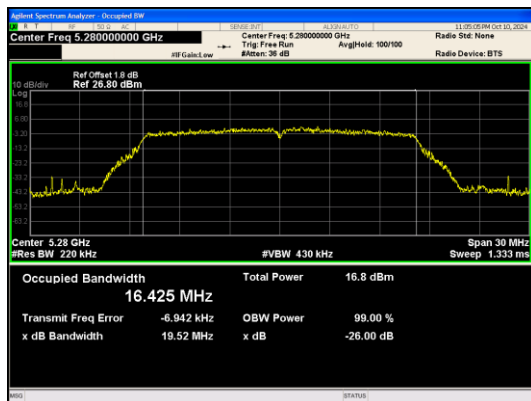
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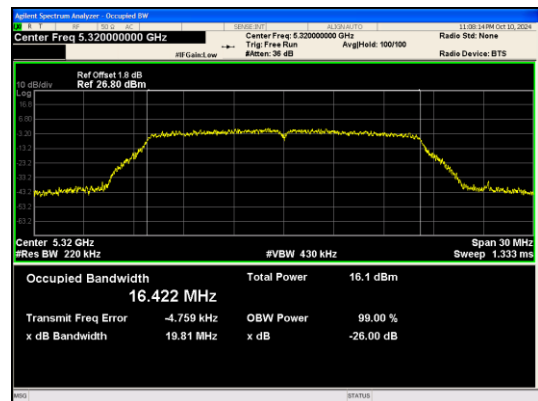
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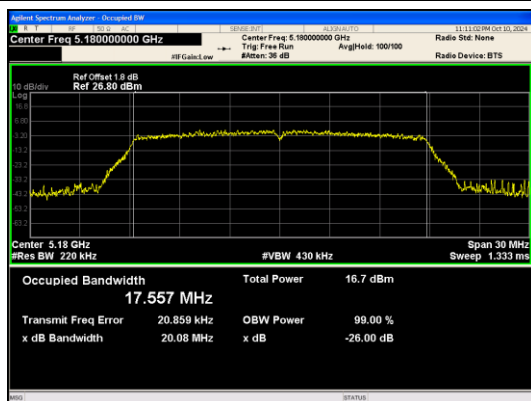
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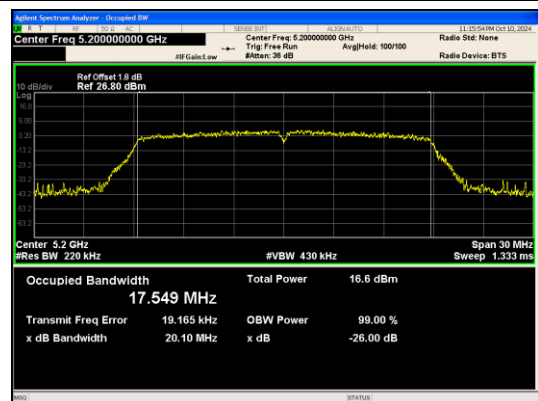
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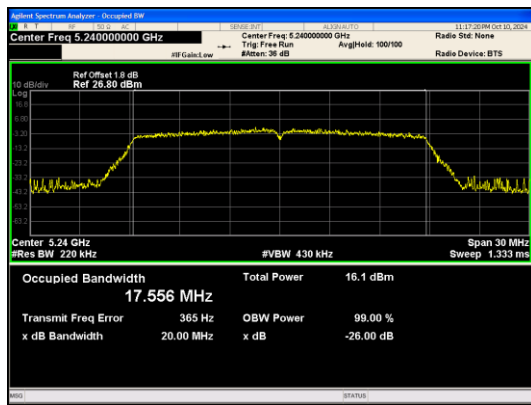
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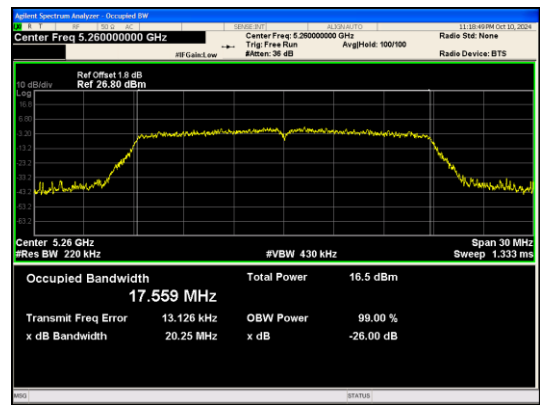
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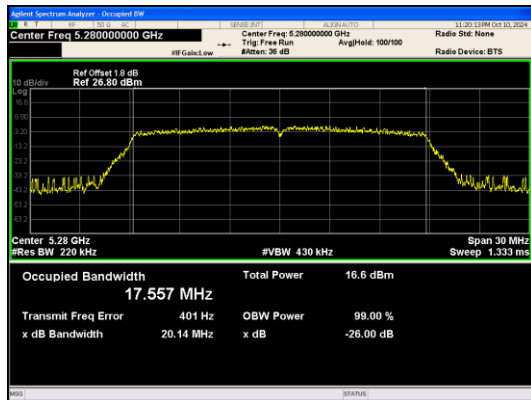
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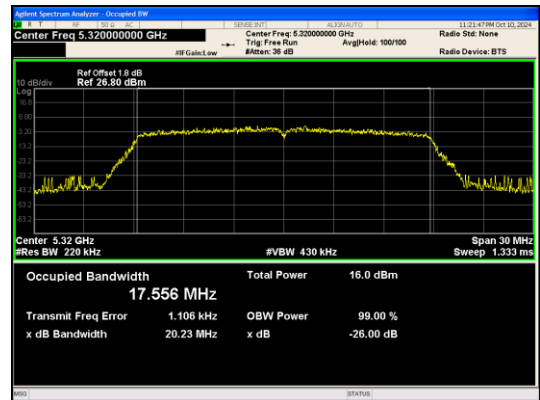
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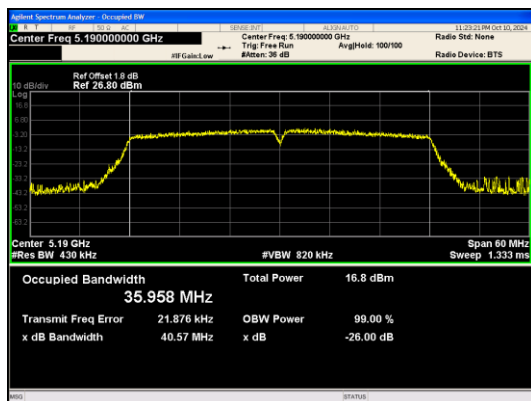
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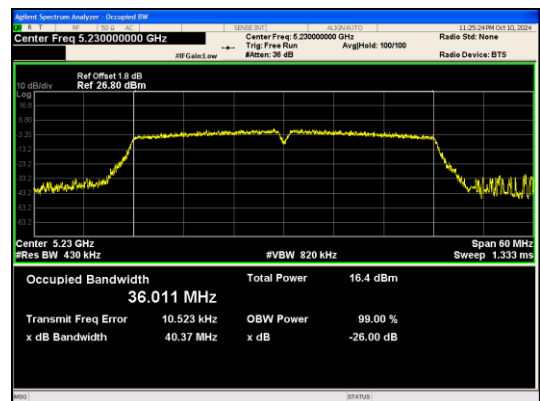
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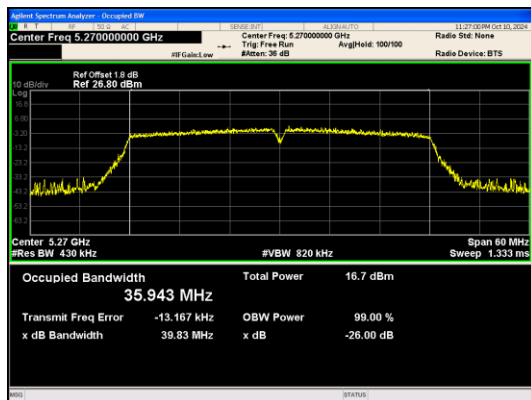
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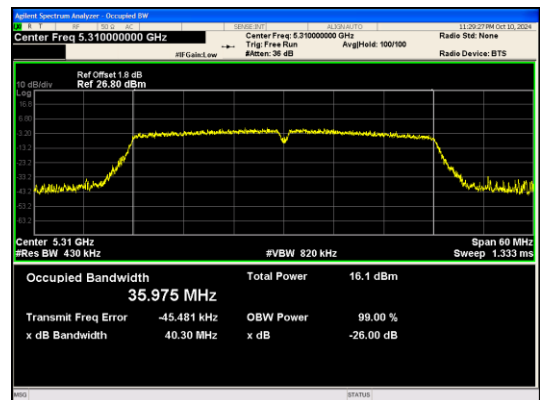
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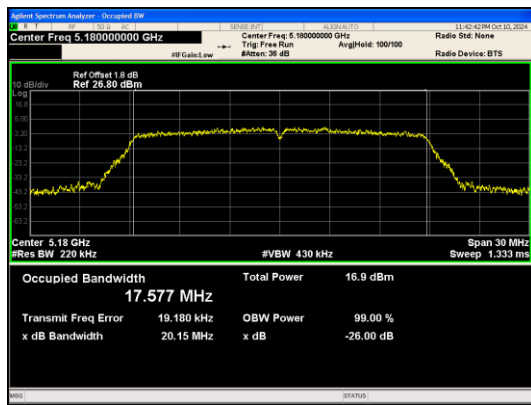
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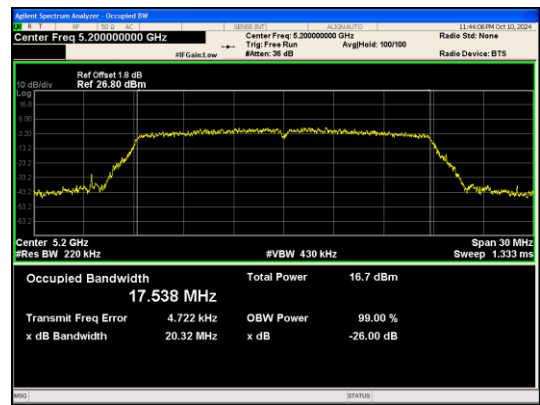
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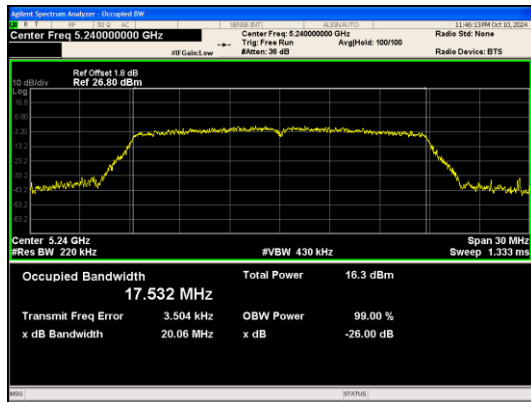
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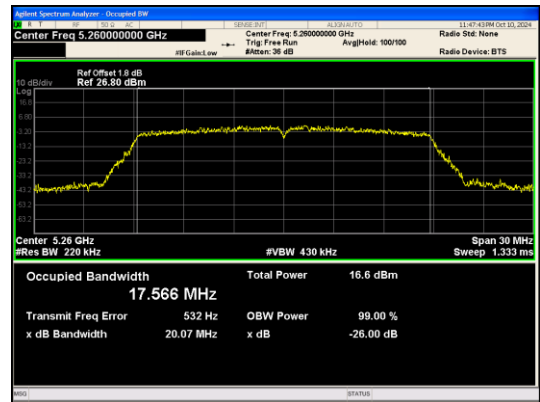
IEEE 802.11ac\_Channel 36\_20MHz\_Antenna 1



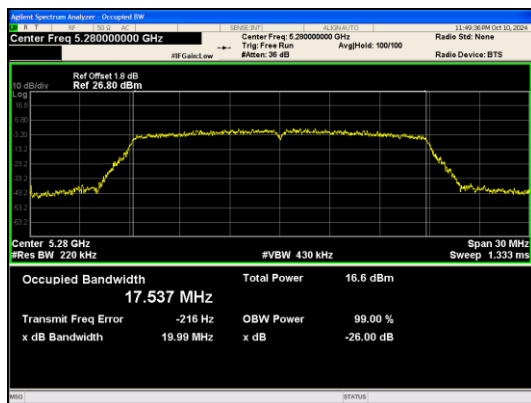
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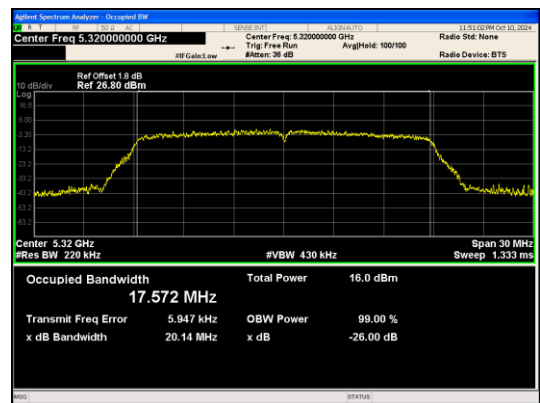
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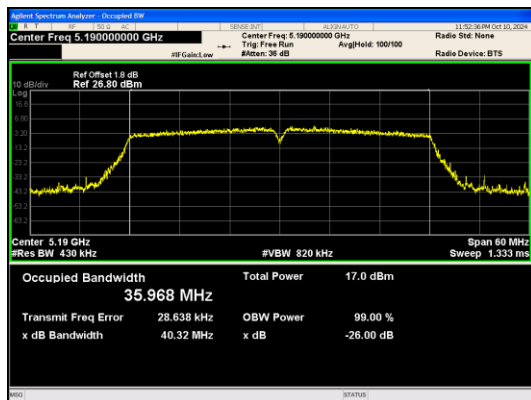
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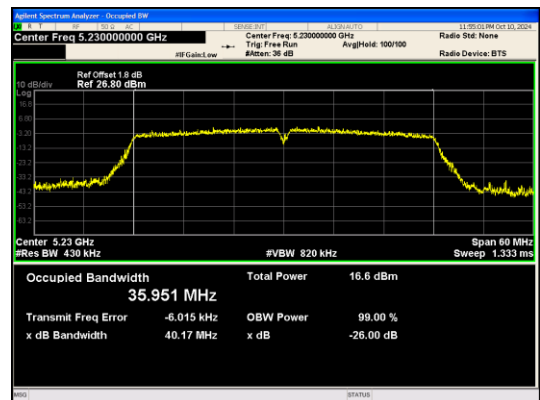
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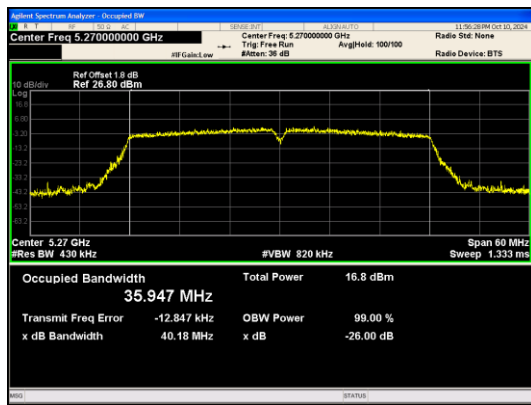
IEEE 802.11ac\_Channel 64\_20MHz\_Antenna 1



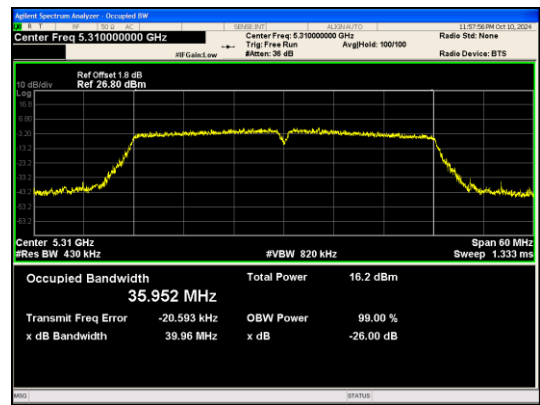
IEEE 802.11ac\_Channel 38\_40MHz\_Antenna 1



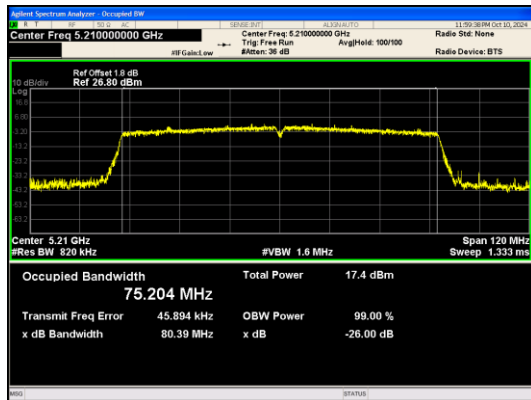
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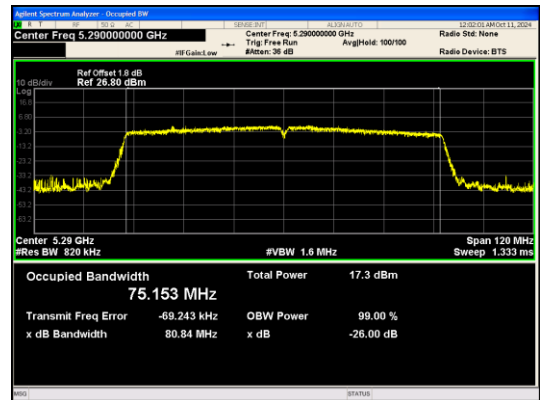
IEEE 802.11ac\_Channel 54\_40MHz\_Antenna 1



IEEE 802.11ac\_Channel 62\_40MHz\_Antenna 1

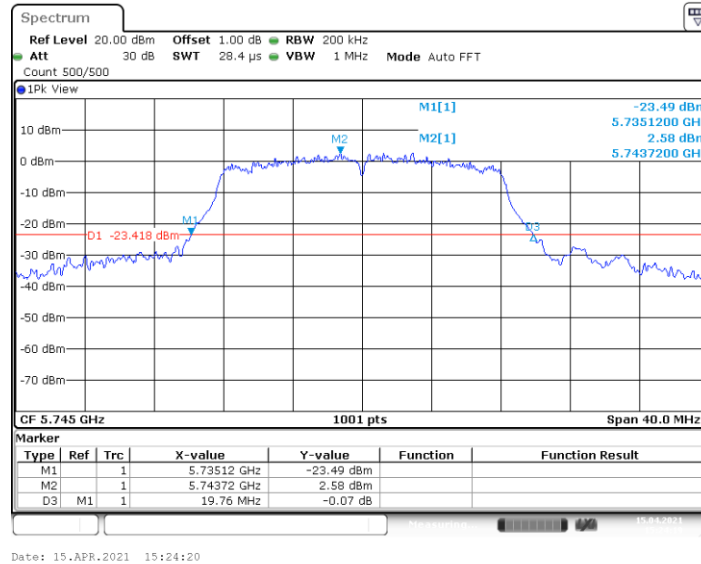


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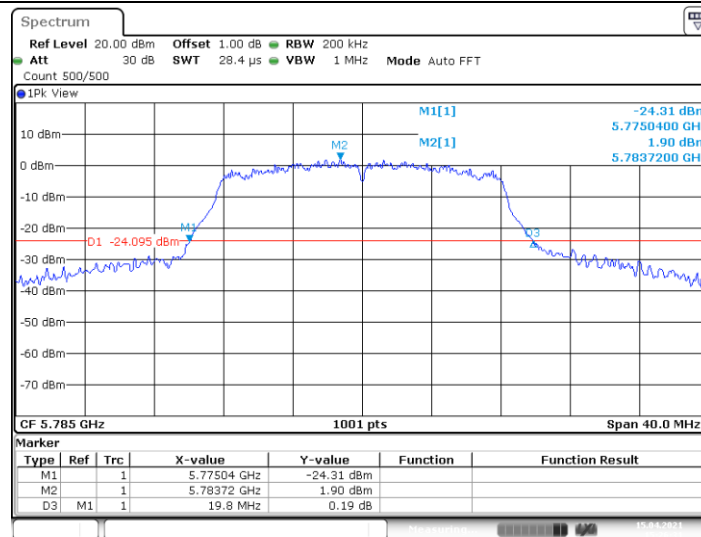


IEEE 802.11ac\_Channel 58\_80MHz\_Antenna 1

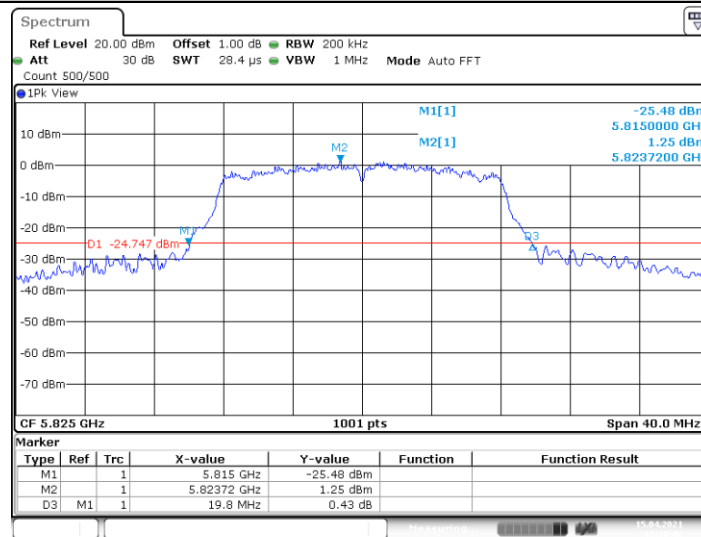
## 802.11a\_Ant1\_5745



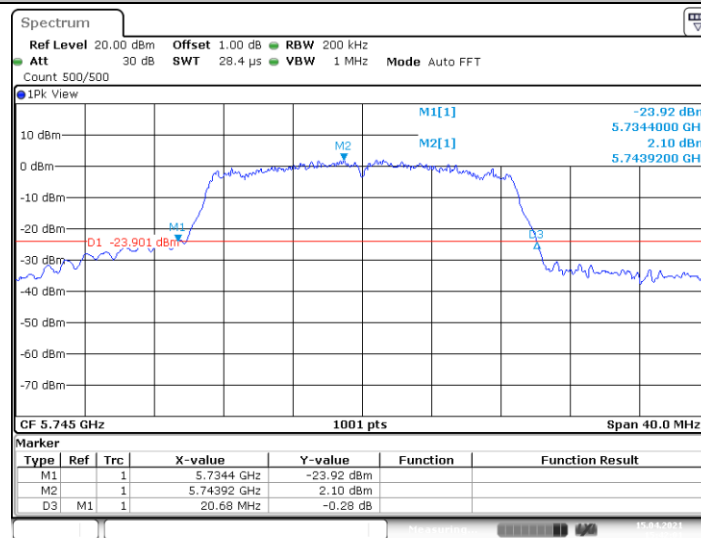
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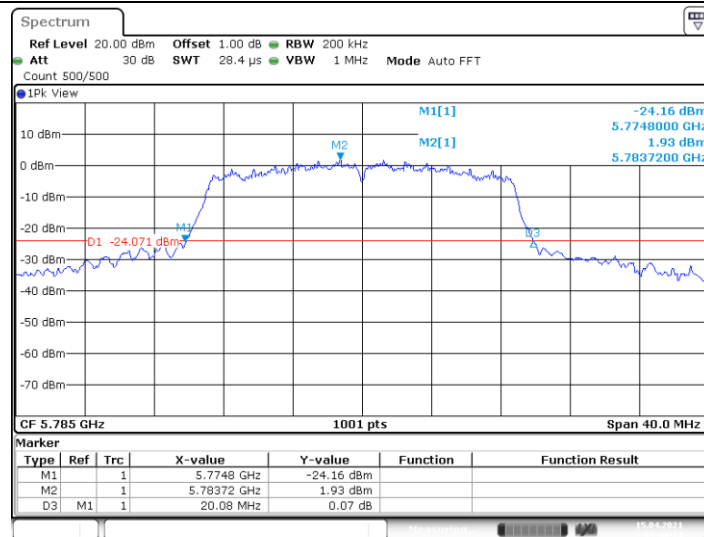
## 802.11a\_Ant1\_5825



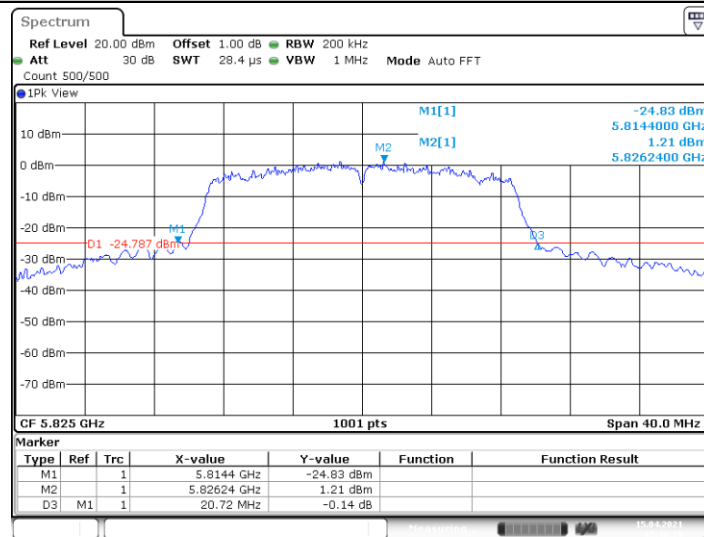
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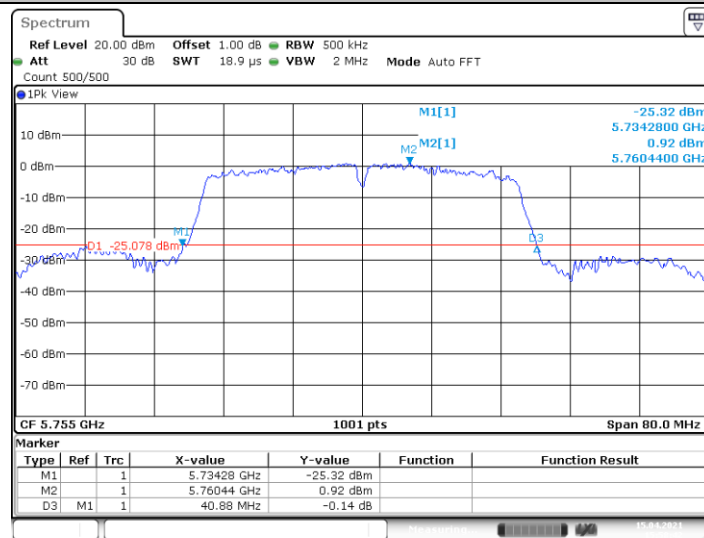
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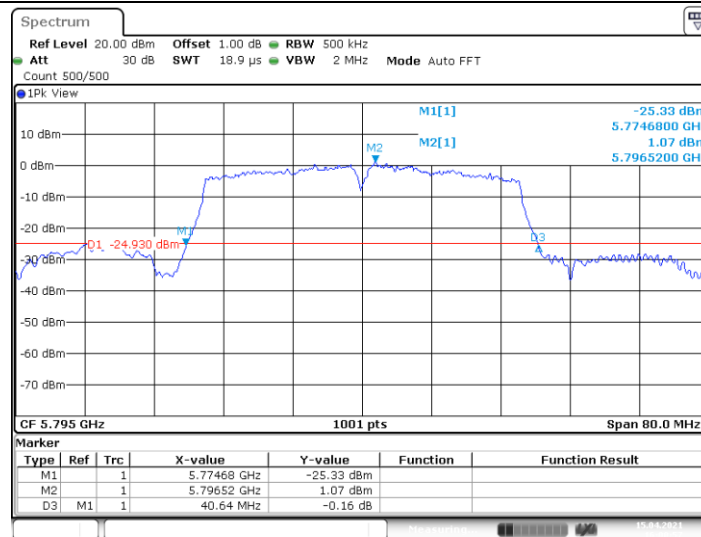
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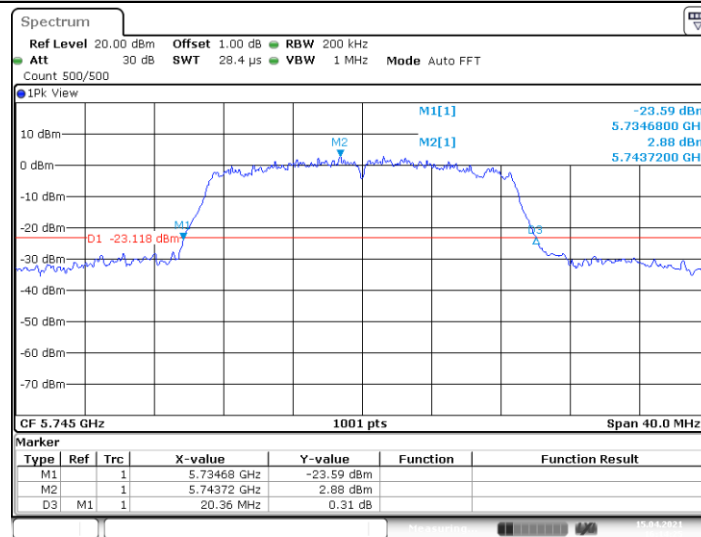
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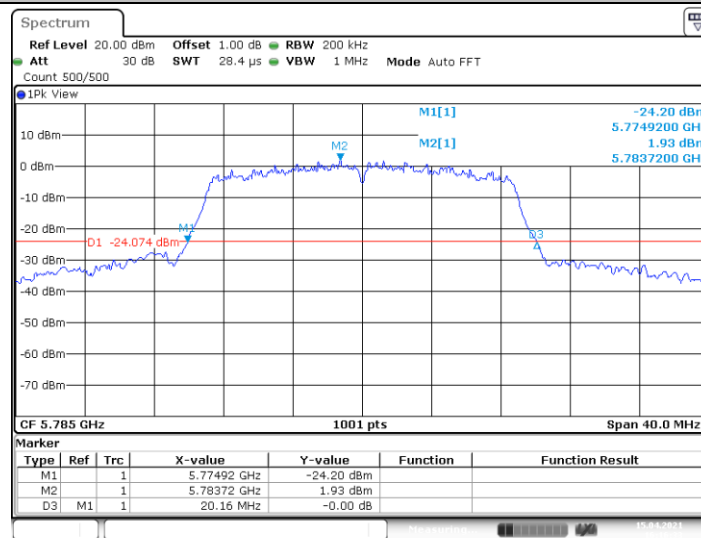
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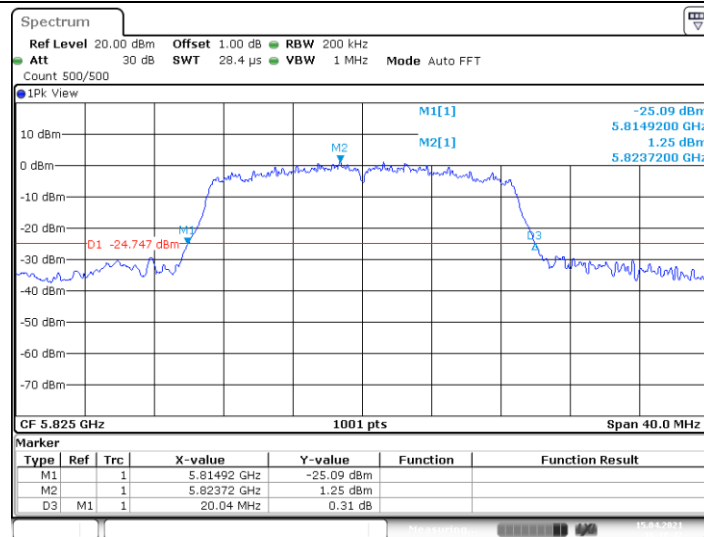
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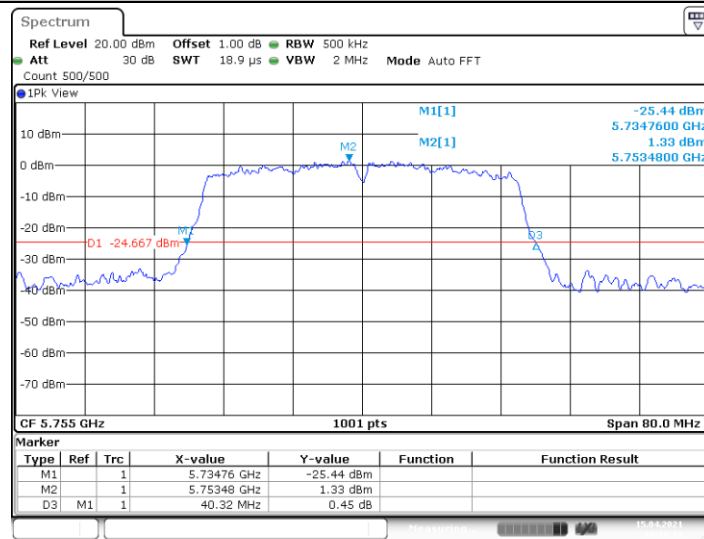
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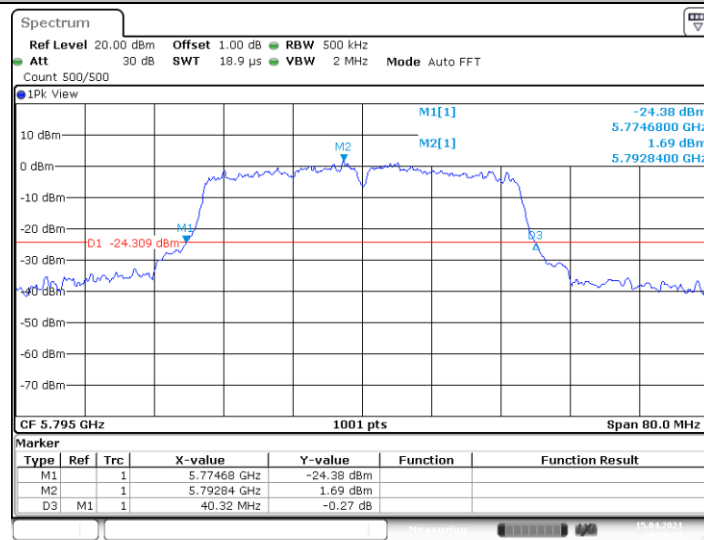
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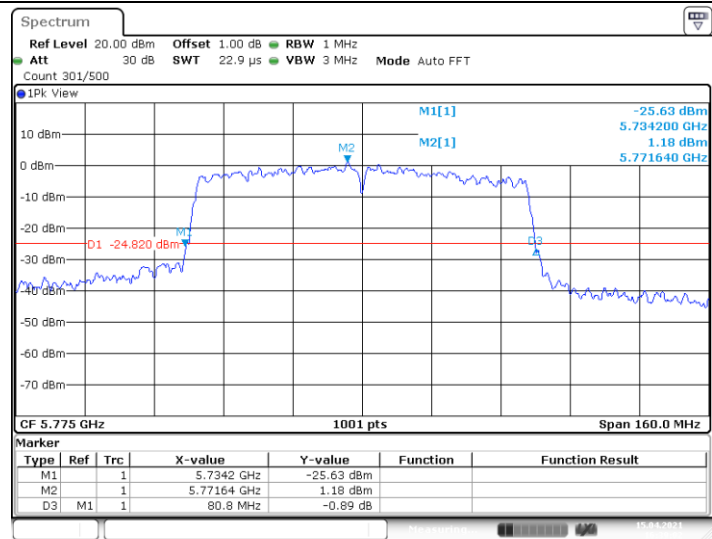
### 802.11ac(VHT40)\_Ant1\_5755



### 802.11ac(VHT40)\_Ant1\_5795



### 802.11ac(VHT80)\_Ant1\_5775



Date: 15.APR.2021 16:39:02

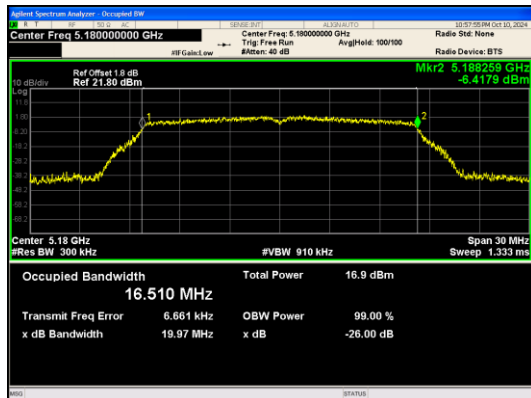
## Appendix A2: Occupied channel bandwidth

### Test Result

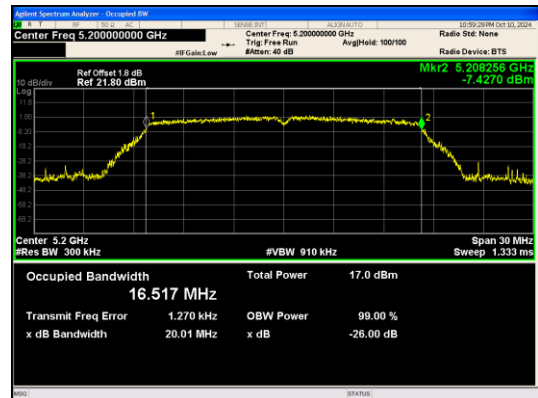
| Test Mode       | Antenna | Channel | OCB [MHz] | Verdict |
|-----------------|---------|---------|-----------|---------|
| 802.11a         | Ant1    | 5180    | 16.510    | PASS    |
|                 |         | 5200    | 16.517    | PASS    |
|                 |         | 5240    | 16.535    | PASS    |
|                 |         | 5260    | 16.515    | PASS    |
|                 |         | 5280    | 16.470    | PASS    |
|                 |         | 5320    | 16.540    | PASS    |
|                 |         | 5745    | 16.943    | PASS    |
|                 |         | 5785    | 16.783    | PASS    |
|                 |         | 5825    | 17.103    | PASS    |
| 802.11n(HT20)   | Ant1    | 5180    | 17.597    | PASS    |
|                 |         | 5200    | 17.603    | PASS    |
|                 |         | 5240    | 17.615    | PASS    |
|                 |         | 5260    | 17.617    | PASS    |
|                 |         | 5280    | 17.640    | PASS    |
|                 |         | 5320    | 17.605    | PASS    |
|                 |         | 5745    | 17.982    | PASS    |
|                 |         | 5785    | 18.142    | PASS    |
|                 |         | 5825    | 18.022    | PASS    |
| 802.11n(HT40)   | Ant1    | 5190    | 35.984    | PASS    |
|                 |         | 5230    | 35.956    | PASS    |
|                 |         | 5270    | 36.007    | PASS    |
|                 |         | 5310    | 36.048    | PASS    |
|                 |         | 5755    | 36.204    | PASS    |
|                 |         | 5795    | 36.204    | PASS    |
| 802.11ac(VHT20) | Ant1    | 5180    | 17.612    | PASS    |
|                 |         | 5200    | 17.619    | PASS    |
|                 |         | 5240    | 17.620    | PASS    |
|                 |         | 5260    | 17.612    | PASS    |
|                 |         | 5280    | 17.638    | PASS    |
|                 |         | 5320    | 17.594    | PASS    |
|                 |         | 5745    | 17.862    | PASS    |
|                 |         | 5785    | 17.982    | PASS    |
|                 |         | 5825    | 17.982    | PASS    |
| 802.11ac(VHT40) | Ant1    | 5190    | 35.986    | PASS    |
|                 |         | 5230    | 35.997    | PASS    |
|                 |         | 5270    | 35.917    | PASS    |
|                 |         | 5310    | 35.948    | PASS    |
|                 |         | 5755    | 36.044    | PASS    |
|                 |         | 5795    | 36.523    | PASS    |
| 802.11ac(VHT80) | Ant1    | 5210    | 75.204    | PASS    |
|                 |         | 5290    | 75.158    | PASS    |

|  |  |      |        |      |
|--|--|------|--------|------|
|  |  | 5775 | 75.604 | PASS |
|--|--|------|--------|------|

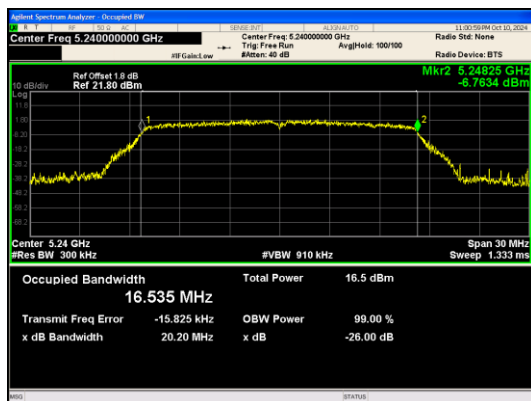
## Test Graphs



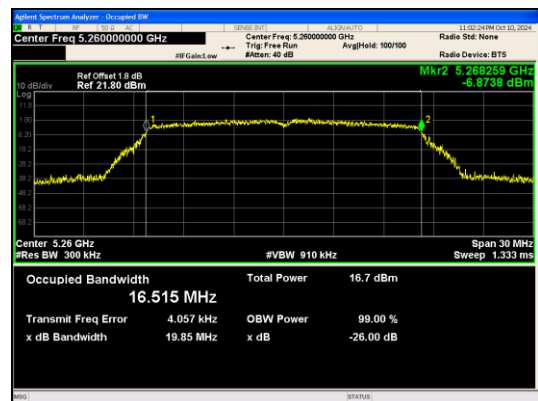
IEEE 802.11a\_Channel 36\_20MHz\_Antenna 1



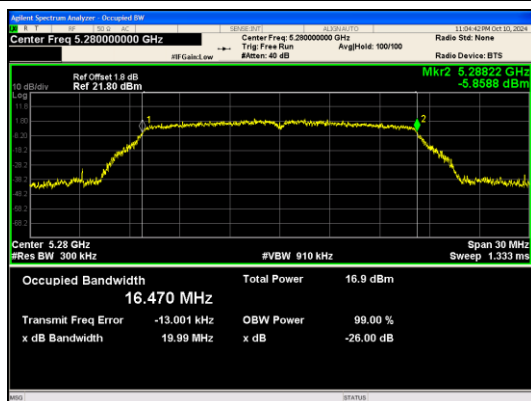
IEEE 802.11a\_Channel 40\_20MHz\_Antenna 1



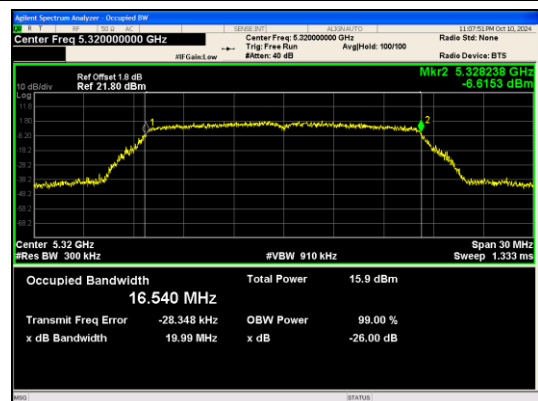
IEEE 802.11a\_Channel 48\_20MHz\_Antenna 1



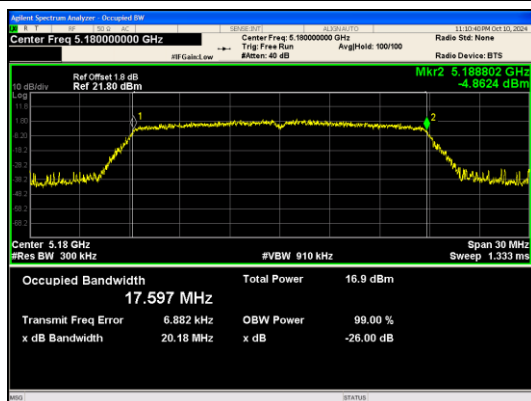
IEEE 802.11a\_Channel 52\_20MHz\_Antenna 1



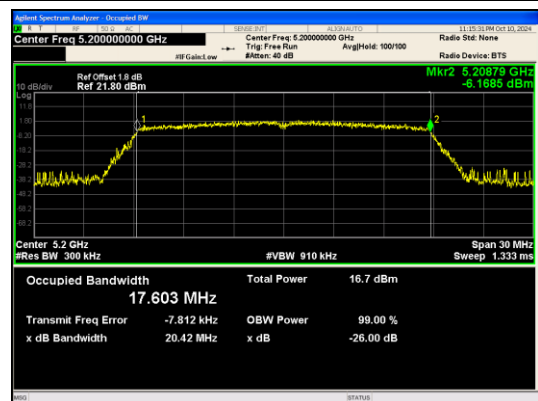
IEEE 802.11a\_Channel 56\_20MHz\_Antenna 1



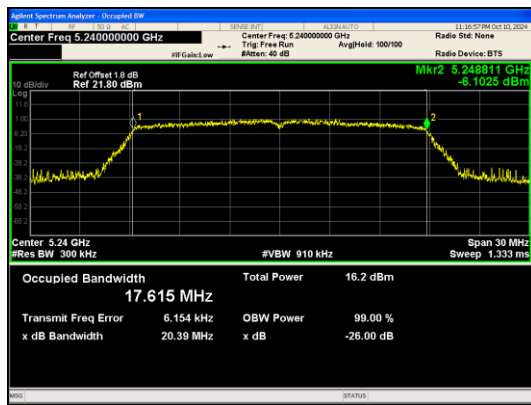
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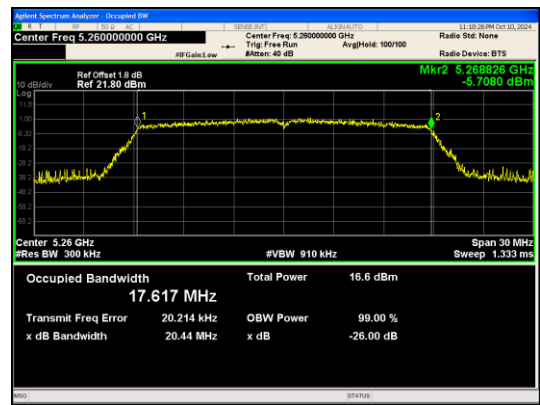
IEEE 802.11n\_Channel 36\_20MHz\_Antenna 1



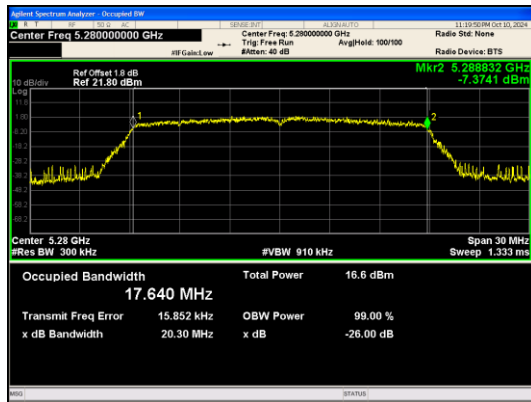
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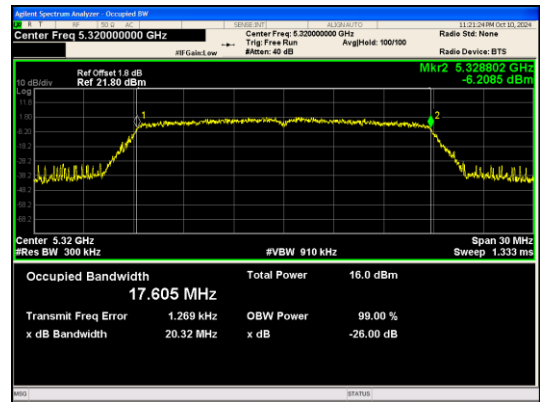
IEEE 802.11n\_Channel 48\_20MHz\_Antenna 1



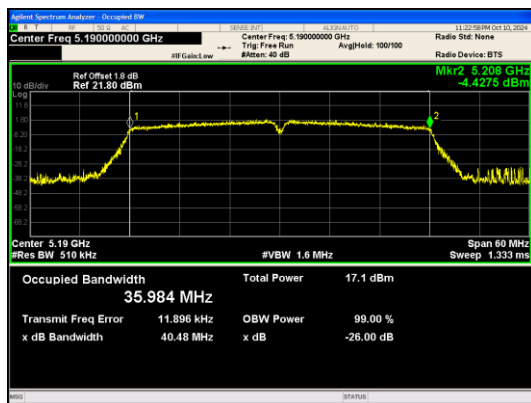
IEEE 802.11n\_Channel 52\_20MHz\_Antenna 1



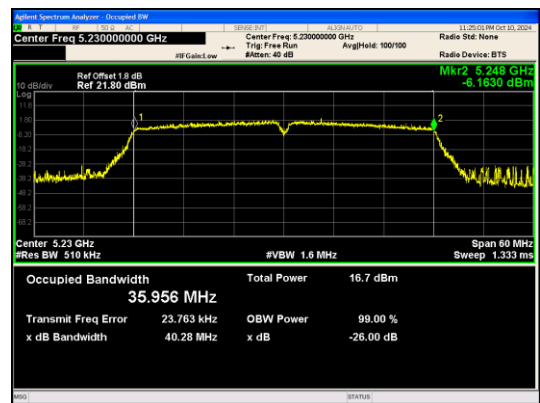
IEEE 802.11n\_Channel 56\_20MHz\_Antenna 1



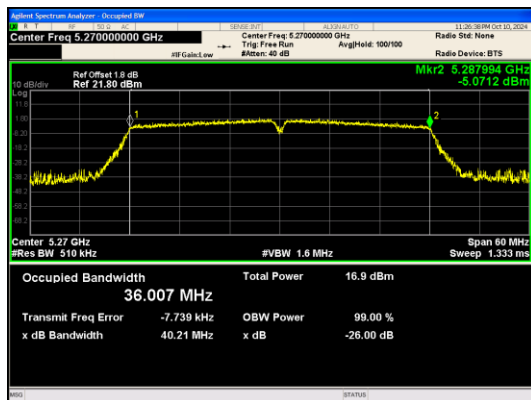
IEEE 802.11n\_Channel 64\_20MHz\_Antenna 1



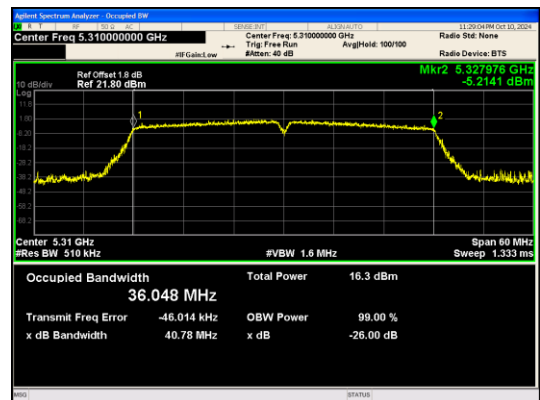
IEEE 802.11n\_Channel 38\_40MHz\_Antenna 1



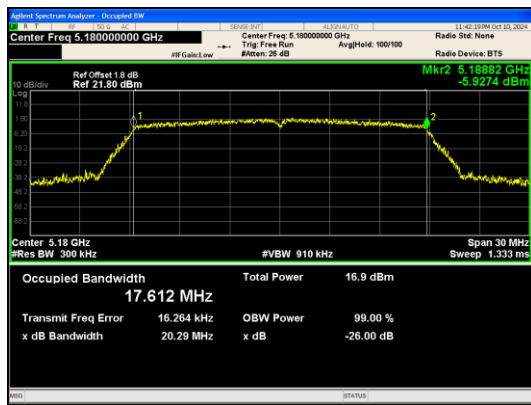
IEEE 802.11n\_Channel 46\_40MHz\_Antenna 1



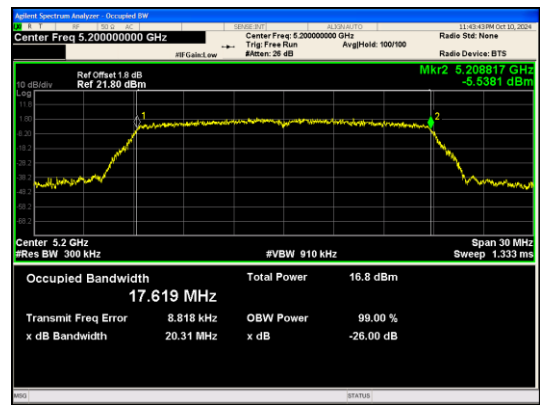
IEEE 802.11n\_Channel 54\_40MHz\_Antenna 1



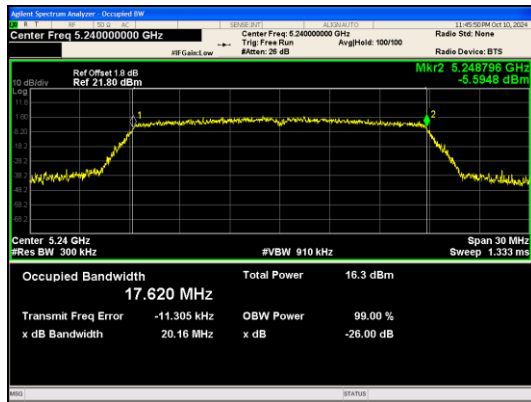
IEEE 802.11n\_Channel 62\_40MHz\_Antenna 1



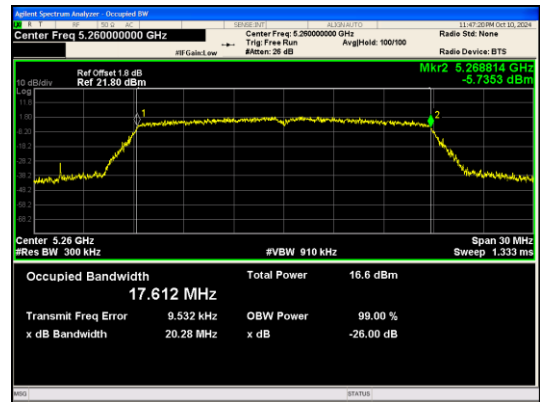
IEEE 802.11ac\_Channel 36\_20MHz\_Antenna 1



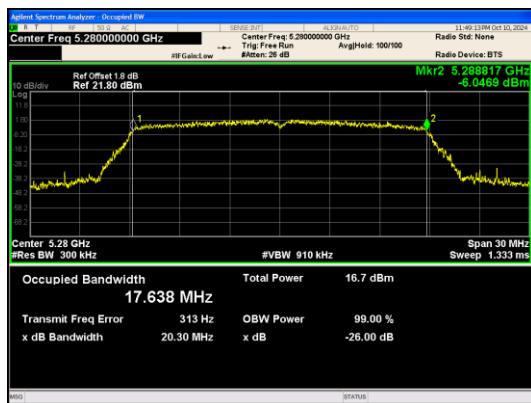
IEEE 802.11ac\_Channel 40\_20MHz\_Antenna 1



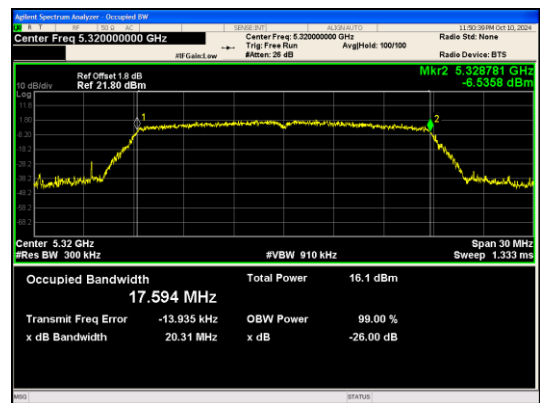
IEEE 802.11ac\_Channel 48\_20MHz\_Antenna 1



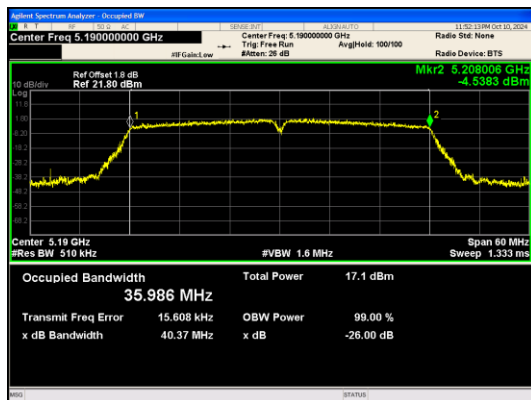
IEEE 802.11ac\_Channel 52\_20MHz\_Antenna 1



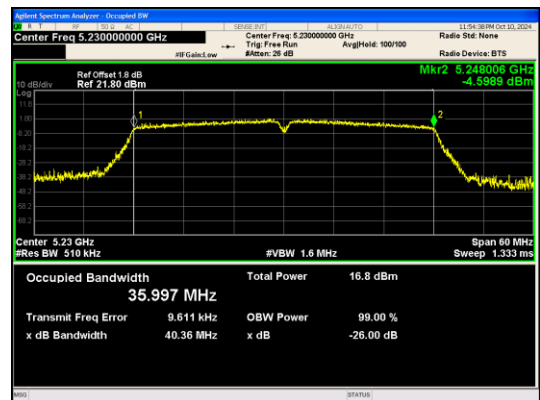
IEEE 802.11ac\_Channel 56\_20MHz\_Antenna 1



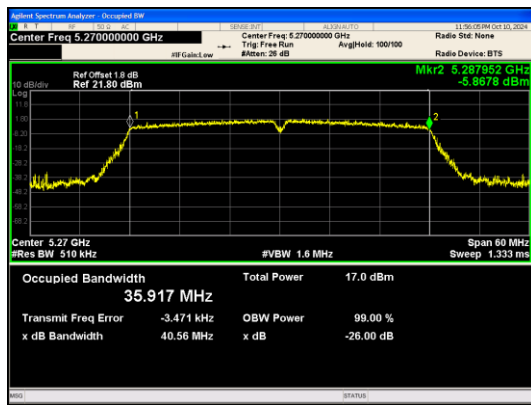
IEEE 802.11ac\_Channel 64\_20MHz\_Antenna 1



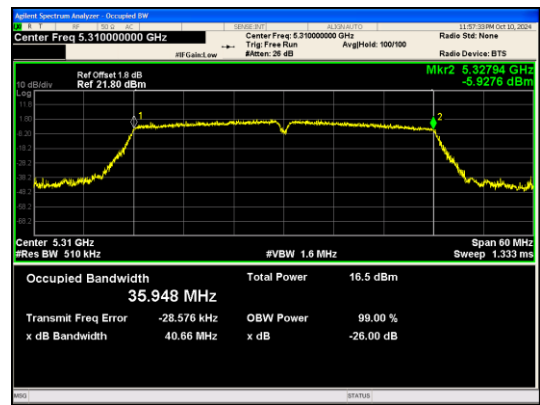
IEEE 802.11ac\_Channel 38\_40MHz\_Antenna 1



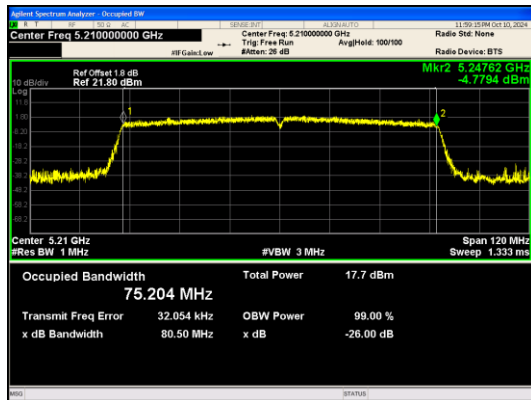
IEEE 802.11ac\_Channel 46\_40MHz\_Antenna 1



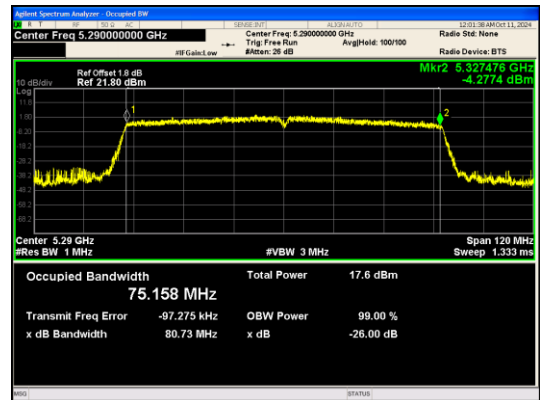
IEEE 802.11ac\_Channel 54\_40MHz\_Antenna 1



IEEE 802.11ac\_Channel 62\_40MHz\_Antenna 1

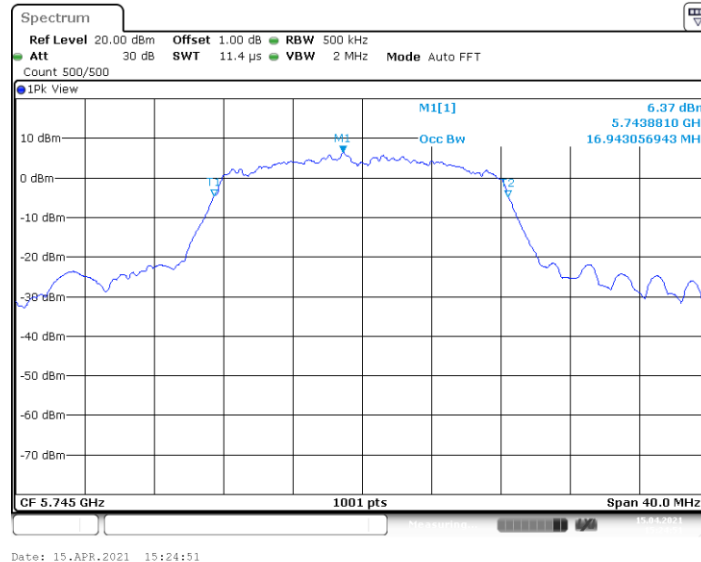


IEEE 802.11ac\_Channel 42\_80MHz\_Antenna 1



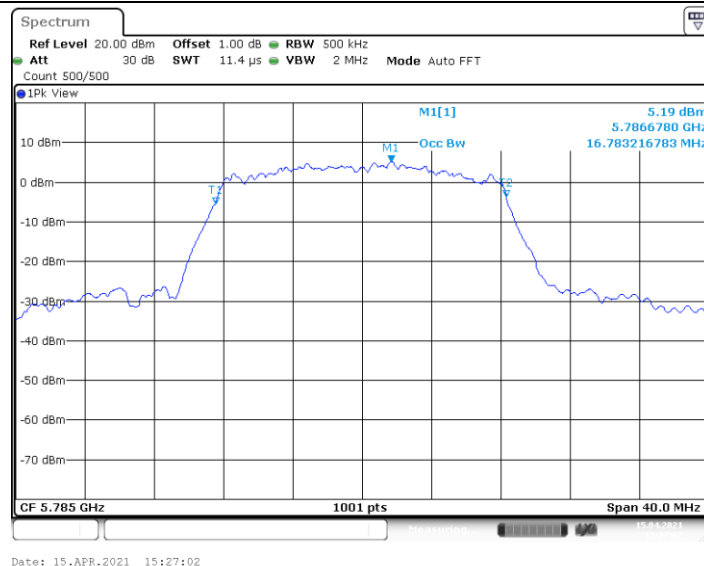
IEEE 802.11ac\_Channel 58\_80MHz\_Antenna 1

802.11a\_Ant1\_5745



Date: 15.APR.2021 15:24:51

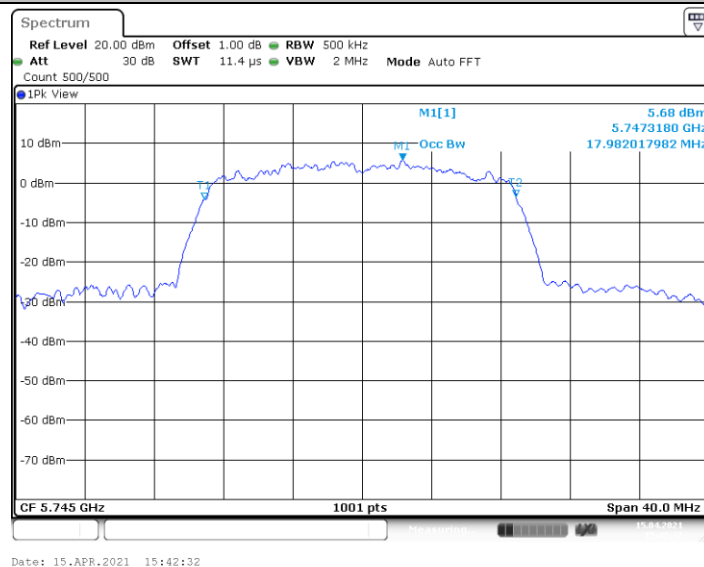
802.11a\_Ant1\_5785



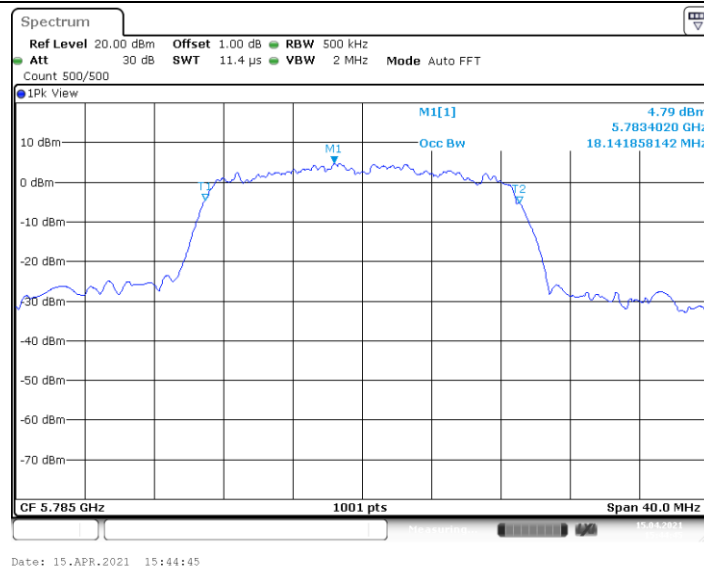
802.11a\_Ant1\_5825



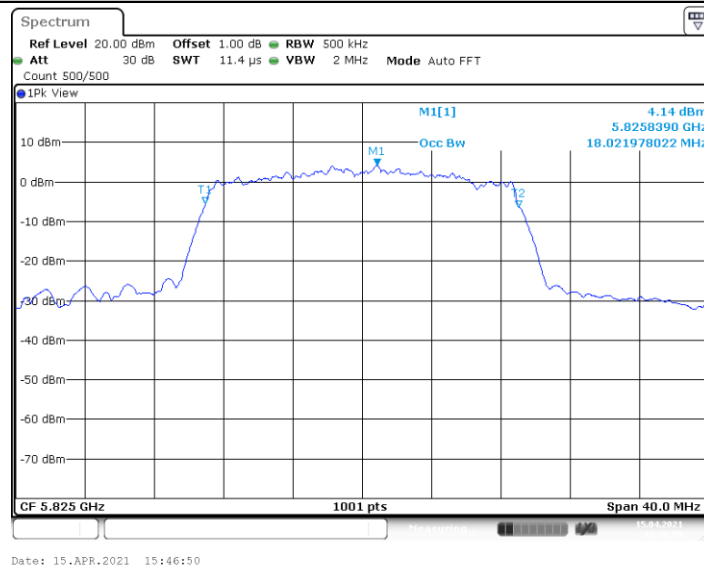
802.11n(HT20)\_Ant1\_5745



802.11n(HT20)\_Ant1\_5785



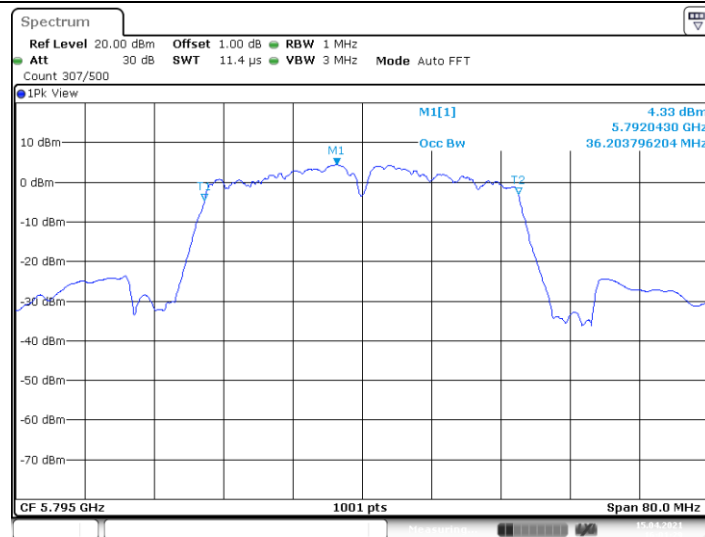
### 802.11n(HT20)\_Ant1\_5825



### 802.11n(HT40)\_Ant1\_5755

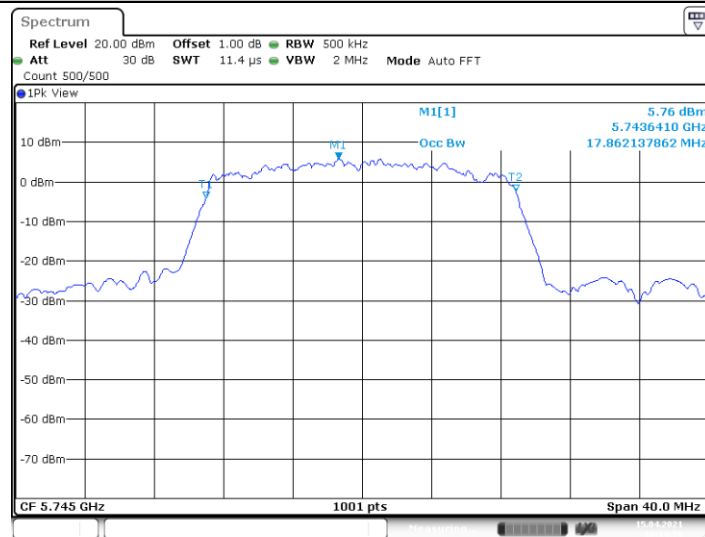


### 802.11n(HT40)\_Ant1\_5795



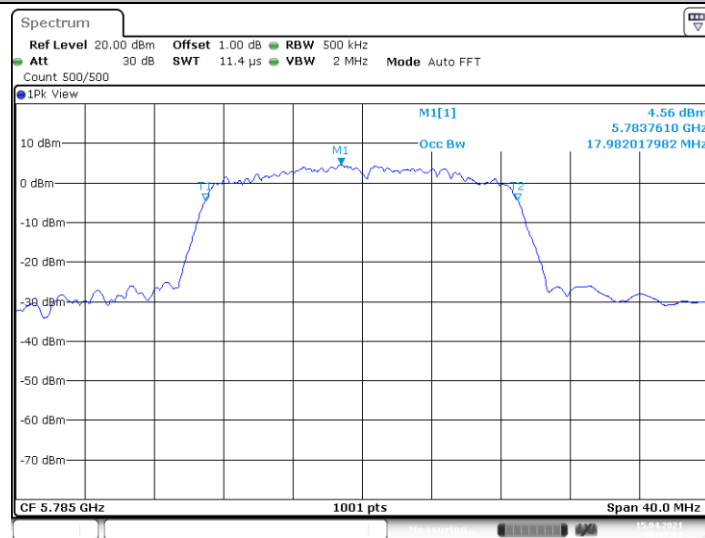
Date: 15.APR.2021 16:01:28

### 802.11ac(VHT20)\_Ant1\_5745



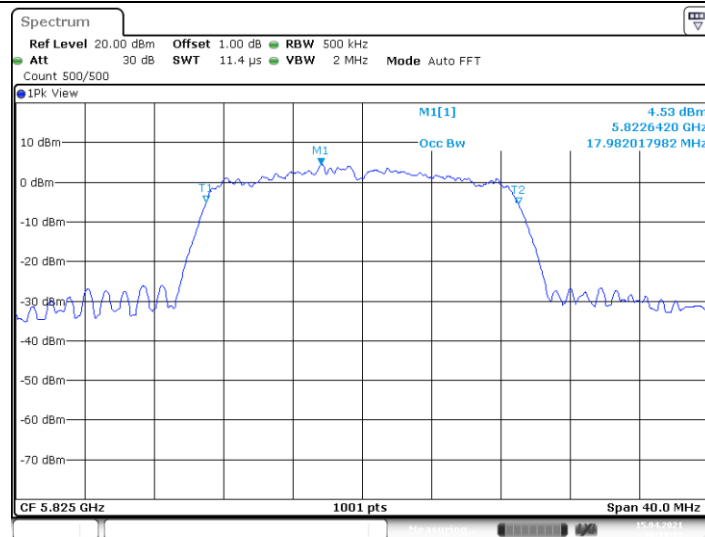
Date: 15.APR.2021 16:14:56

### 802.11ac(VHT20)\_Ant1\_5785



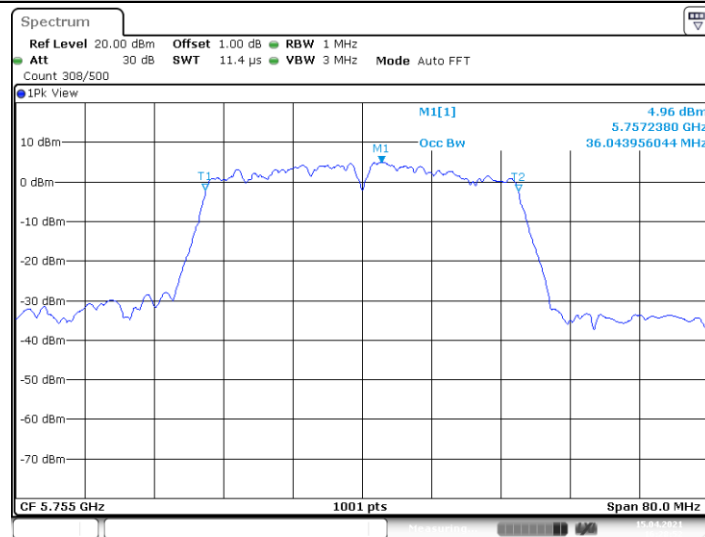
Date: 15.APR.2021 16:17:03

### 802.11ac(VHT20)\_Ant1\_5825



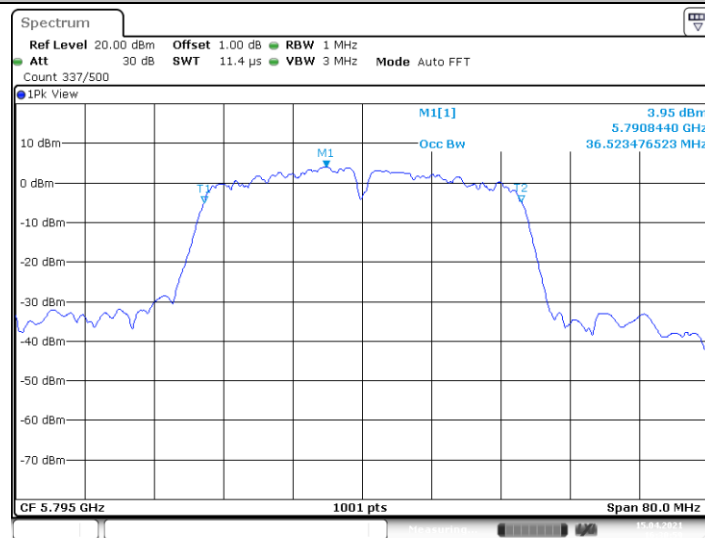
Date: 15.APR.2021 16:19:12

### 802.11ac(VHT40)\_Ant1\_5755



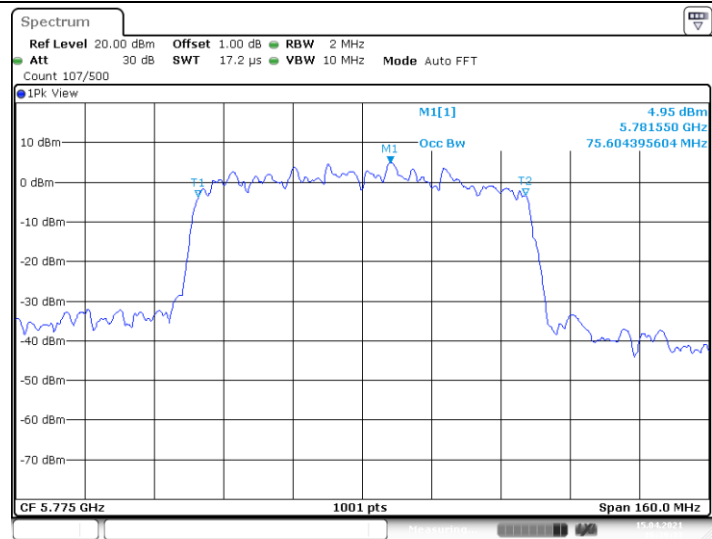
Date: 15.APR.2021 16:28:52

### 802.11ac(VHT40)\_Ant1\_5795



Date: 15.APR.2021 16:30:58

### 802.11ac(VHT80)\_Ant1\_5775



Date: 15.APR.2021 16:39:33

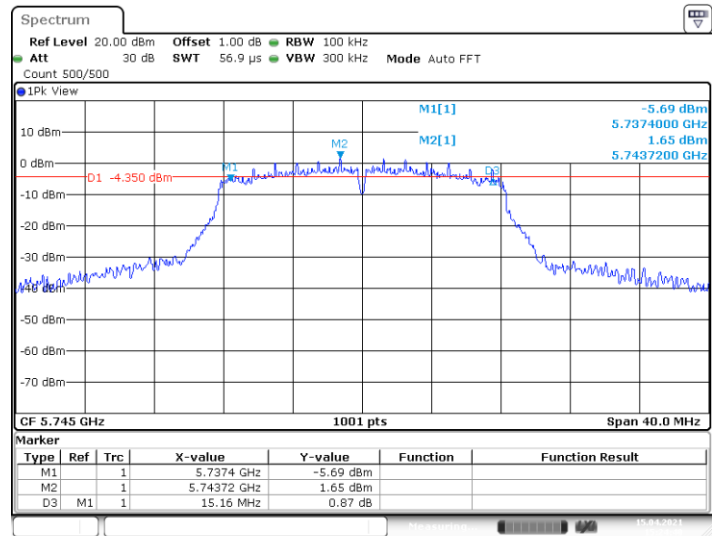
## Appendix A3: Min emission bandwidth

### Test Result

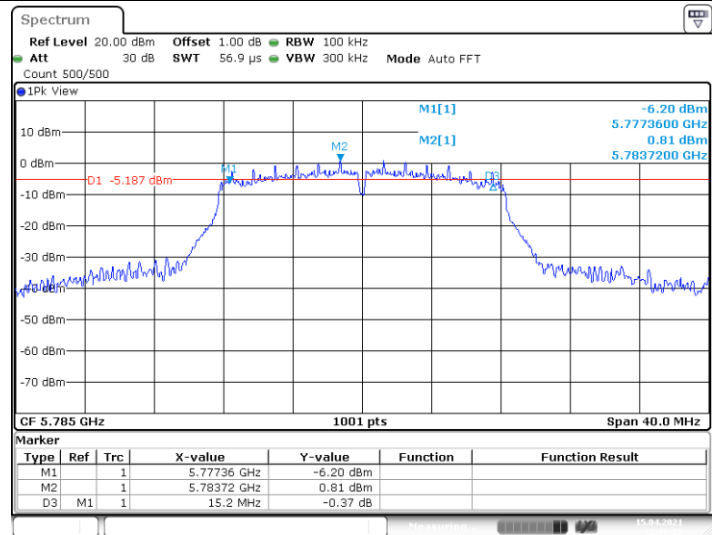
| Test Mode       | Antenna | Channel | 6db EBW [MHz] | FL[MHz]  | FH[MHz]  | Limit[MHz] | Verdict |
|-----------------|---------|---------|---------------|----------|----------|------------|---------|
| 802.11a         | Ant1    | 5745    | 15.160        | 5737.400 | 5752.560 | $\geq 0.5$ | PASS    |
|                 |         | 5785    | 15.200        | 5777.360 | 5792.560 | $\geq 0.5$ | PASS    |
|                 |         | 5825    | 15.200        | 5817.360 | 5832.560 | $\geq 0.5$ | PASS    |
| 802.11n(HT20)   | Ant1    | 5745    | 15.480        | 5737.080 | 5752.560 | $\geq 0.5$ | PASS    |
|                 |         | 5785    | 15.200        | 5777.360 | 5792.560 | $\geq 0.5$ | PASS    |
|                 |         | 5825    | 15.200        | 5817.360 | 5832.560 | $\geq 0.5$ | PASS    |
| 802.11n(HT40)   | Ant1    | 5755    | 35.280        | 5737.320 | 5772.600 | $\geq 0.5$ | PASS    |
|                 |         | 5795    | 35.280        | 5777.320 | 5812.600 | $\geq 0.5$ | PASS    |
| 802.11ac(VHT20) | Ant1    | 5745    | 15.200        | 5737.360 | 5752.560 | $\geq 0.5$ | PASS    |
|                 |         | 5785    | 15.200        | 5777.360 | 5792.560 | $\geq 0.5$ | PASS    |
|                 |         | 5825    | 15.160        | 5817.360 | 5832.520 | $\geq 0.5$ | PASS    |
| 802.11ac(VHT40) | Ant1    | 5755    | 35.280        | 5737.320 | 5772.600 | $\geq 0.5$ | PASS    |
|                 |         | 5795    | 35.280        | 5777.320 | 5812.600 | $\geq 0.5$ | PASS    |
| 802.11ac(VHT80) | Ant1    | 5775    | 75.520        | 5737.240 | 5812.760 | $\geq 0.5$ | PASS    |

Test Graphs

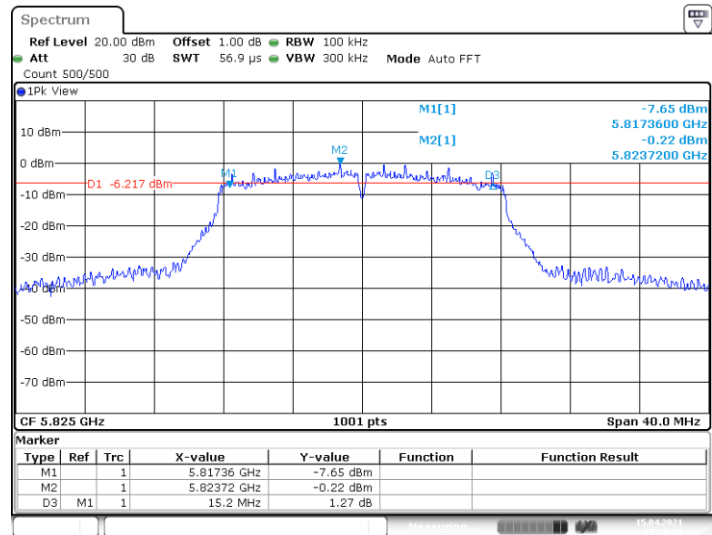
802.11a\_Ant1\_5745



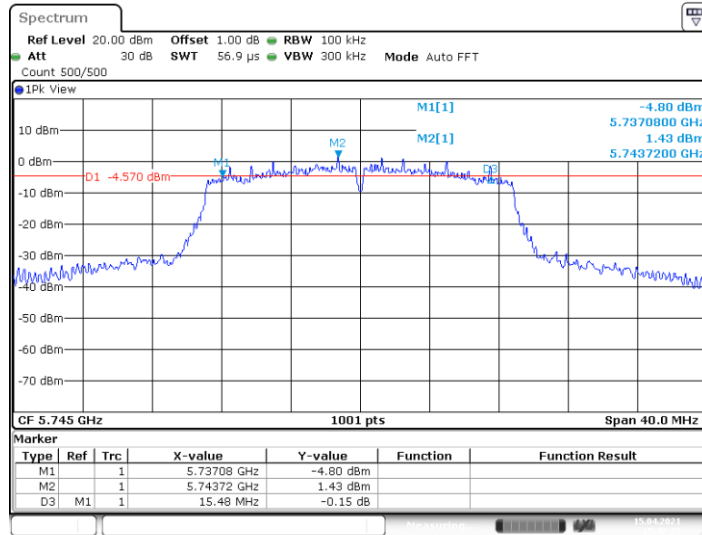
802.11a\_Ant1\_5785



802.11a\_Ant1\_5825

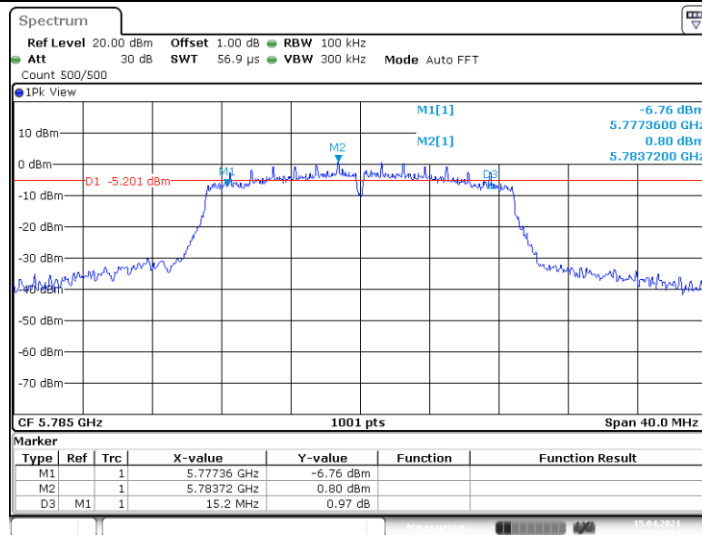


## 802.11n(HT20)\_Ant1\_5745



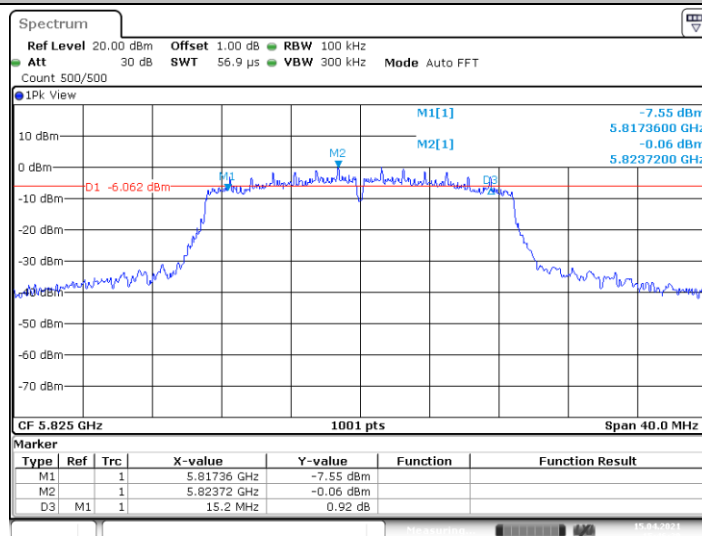
Date: 15.APR.2021 15:42:21

## 802.11n(HT20)\_Ant1\_5785



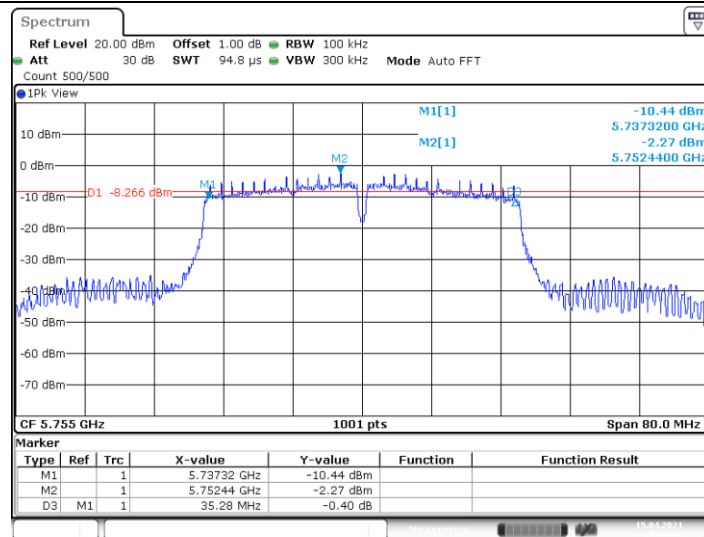
Date: 15.APR.2021 15:44:34

## 802.11n(HT20)\_Ant1\_5825

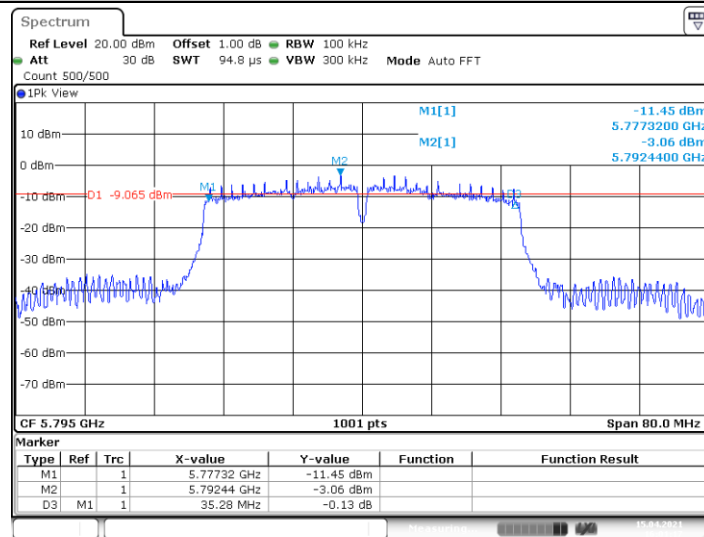


Date: 15.APR.2021 15:46:39

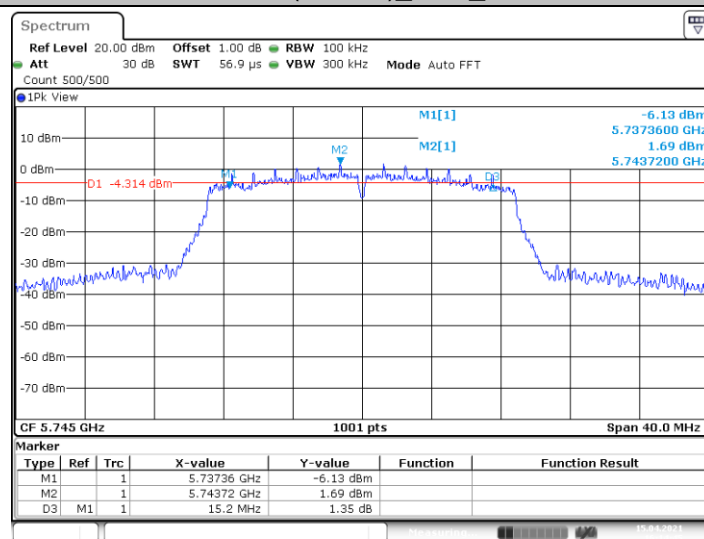
## 802.11n(HT40)\_Ant1\_5755



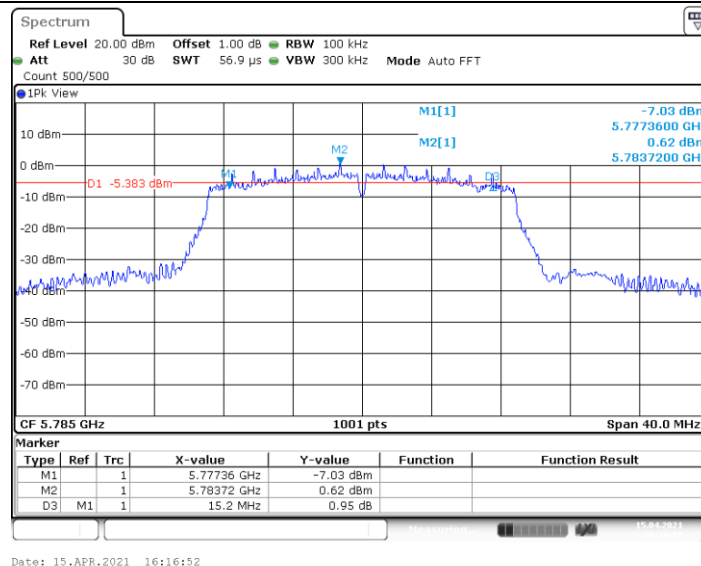
### 802.11n(HT40)\_Ant1\_5795



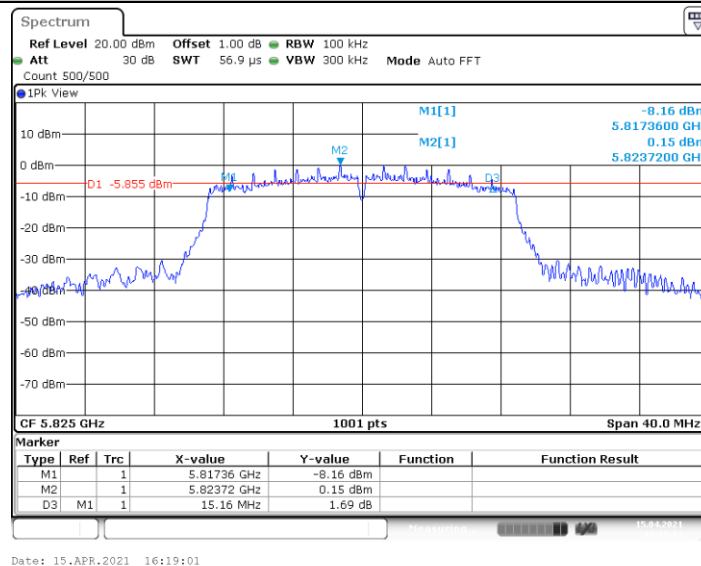
### 802.11ac(VHT20)\_Ant1\_5745



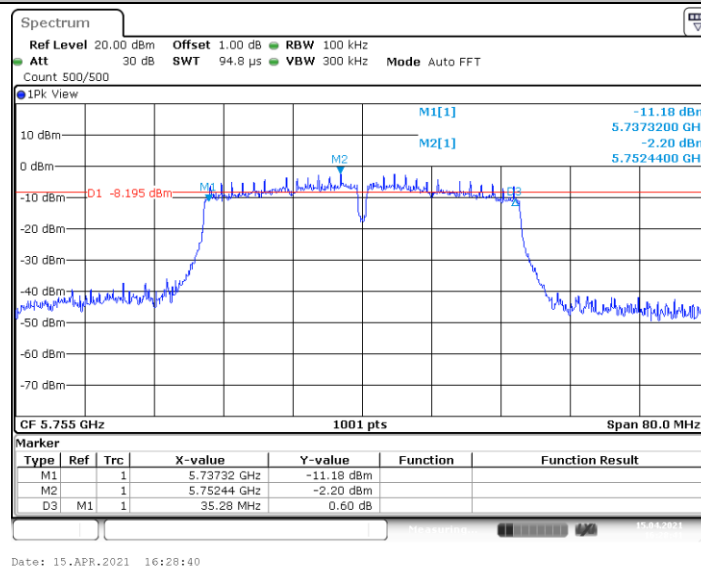
### 802.11ac(VHT20)\_Ant1\_5785



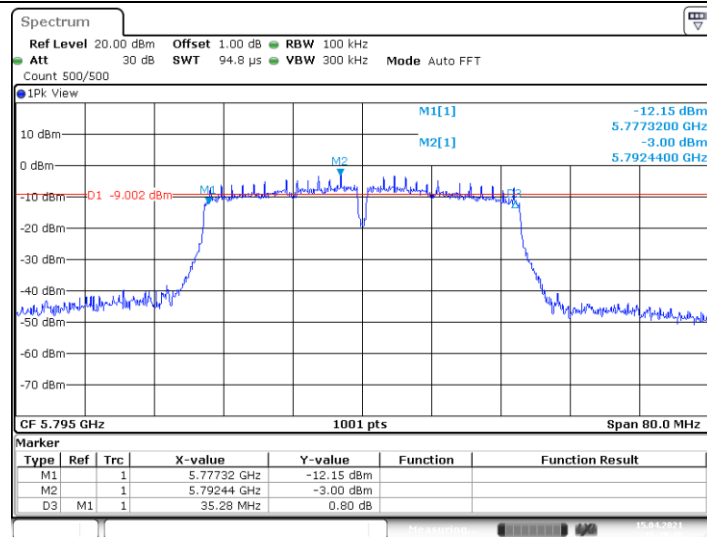
### 802.11ac(VHT20)\_Ant1\_5825



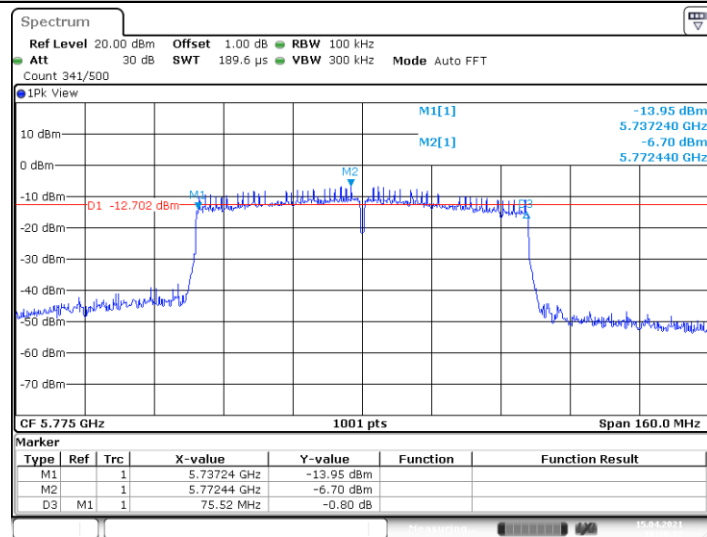
### 802.11ac(VHT40)\_Ant1\_5755



### 802.11ac(VHT40)\_Ant1\_5795



## 802.11ac(VHT80)\_Ant1\_5775



## Appendix B: Maximum conducted output power

### Test Result

| Test Mode       | Antenna | Channel | Result[dBm] | Limit[dBm] | Verdict |
|-----------------|---------|---------|-------------|------------|---------|
| 802.11a         | Ant1    | 5180    | 11.49       | <=24       | PASS    |
|                 |         | 5200    | 11.06       | <=24       | PASS    |
|                 |         | 5240    | 10.75       | <=24       | PASS    |
|                 |         | 5260    | 11.17       | <=24       | PASS    |
|                 |         | 5280    | 10.90       | <=24       | PASS    |
|                 |         | 5320    | 10.46       | <=24       | PASS    |
|                 |         | 5745    | 11.95       | <=30       | PASS    |
|                 |         | 5785    | 11.01       | <=30       | PASS    |
|                 |         | 5825    | 10.38       | <=30       | PASS    |
| 802.11n(HT20)   | Ant1    | 5180    | 11.41       | <=24       | PASS    |
|                 |         | 5200    | 10.79       | <=24       | PASS    |
|                 |         | 5240    | 10.71       | <=24       | PASS    |
|                 |         | 5260    | 11.02       | <=24       | PASS    |
|                 |         | 5280    | 10.73       | <=24       | PASS    |
|                 |         | 5320    | 10.27       | <=24       | PASS    |
|                 |         | 5745    | 11.80       | <=30       | PASS    |
|                 |         | 5785    | 10.92       | <=30       | PASS    |
|                 |         | 5825    | 10.25       | <=30       | PASS    |
| 802.11n(HT40)   | Ant1    | 5190    | 11.13       | <=24       | PASS    |
|                 |         | 5230    | 10.71       | <=24       | PASS    |
|                 |         | 5270    | 11.12       | <=24       | PASS    |
|                 |         | 5310    | 10.31       | <=24       | PASS    |
|                 |         | 5755    | 10.70       | <=30       | PASS    |
|                 |         | 5795    | 9.85        | <=30       | PASS    |
| 802.11ac(VHT20) | Ant1    | 5180    | 11.33       | <=24       | PASS    |
|                 |         | 5200    | 10.89       | <=24       | PASS    |
|                 |         | 5240    | 10.82       | <=24       | PASS    |
|                 |         | 5260    | 11.04       | <=24       | PASS    |
|                 |         | 5280    | 10.97       | <=24       | PASS    |
|                 |         | 5320    | 10.37       | <=24       | PASS    |
|                 |         | 5745    | 11.89       | <=30       | PASS    |
|                 |         | 5785    | 10.91       | <=30       | PASS    |
|                 |         | 5825    | 10.17       | <=30       | PASS    |
| 802.11ac(VHT40) | Ant1    | 5190    | 11.18       | <=24       | PASS    |
|                 |         | 5230    | 10.79       | <=24       | PASS    |
|                 |         | 5270    | 11.19       | <=24       | PASS    |
|                 |         | 5310    | 10.41       | <=24       | PASS    |
|                 |         | 5755    | 10.78       | <=30       | PASS    |
|                 |         | 5795    | 9.84        | <=30       | PASS    |
| 802.11ac(VHT80) | Ant1    | 5210    | 10.97       | <=24       | PASS    |
|                 |         | 5290    | 10.94       | <=24       | PASS    |
|                 |         | 5775    | 9.51        | <=30       | PASS    |

*Note: Test results increased RF cable loss by 0.5dB.*

*The Duty Cycle Factor is compensated in the graph.*