

**FCC PART 15 SUBPART E TEST REPORT**

**for**

**Tablet**

**Model No.: Algiz RT10**

**FCC ID: YY3-182010**

**of**

**Applicant: Handheld Group AB**

**Address: Kinnegatan 17 A 531 33 Lidköping Sweden**

**Tested and Prepared**

**by**

**Worldwide Testing Services (Taiwan) Co., Ltd.**

**FCC Registration No.: TW1477, TW0020, TW1072**

**Industry Canada filed test laboratory Reg. No. TW1477**

**A2LA Accredited No.: 2732.01**



**Report No.: W6M21903-18857-C-54**

6F, NO. 58, LANE 188, RUEY-KUANG RD., NEIHU TAIPEI 114, TAIWAN, R.O.C.  
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## **1 General Information**

### **1.1 Notes**

The purpose of conformity testing is to increase the probability of adherence to the essential requirements or conformity specifications, as appropriate.

The complexity of the technical specifications, however, means that full and thorough testing is impractical for both technical and economic reasons.

Furthermore, there is no guarantee that a test sample which has passed all the relevant tests conforms to a specification.

Neither is there any guarantee that such a test sample will interwork with other genuinely open systems. The existence of the tests nevertheless provides the confidence that the test sample possesses the qualities as maintained and that its performance generally conforms to representative cases of communications equipment.

The test results of this test report relate exclusively to the item tested as specified in 1.5.

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#### **Specific Conditions:**

Usage of the hereunder tested device in combination with other integrated or external antennas requires at least additional output power measurements, spurious emission measurements, conducted emission measurements (AC supply lines) and radio frequency exposure evaluations for each individual configuration performed, for certification by FCC.

Tester:

June 11, 2019

Spencer Yang

Date

WTS-Lab.

Name

Signature

#### **Technical responsibility for area of testing:**

June 11, 2019

Kevin Wang

Date

WTS

Name

Signature



Registration number: W6M21903-18857-C-54

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## **1.2 Testing laboratory**

### **1.2.1 Location**

OATS

No.5-1, Lishui, Shuang Sing Village,

Wanli Dist., New Taipei City 207,

Taiwan (R.O.C.)

3 meter semi-anechoic chamber

No.35, Aly. 21, Ln. 228, Ankang Rd., Neihu Dist., Taipei City 114, Taiwan (R.O.C.)

TEL:886-2-6613-0228

FAX:886-2-2791-5046

Company

Worldwide Testing Services(Taiwan) Co., Ltd.

6F, NO. 58, LANE 188, RUEY-KUANG RD.

NEIHU, TAIPEI 114, TAIWAN R.O.C.

Tel : 886-2-66068877

Fax : 886-2-66068879

### **1.2.2 Details of accreditation status**

Accredited testing laboratory

A2LA accredited number: 2732.01

FCC filed test laboratory Reg. No. TW1477, TW0020, TW1072

Industry Canada filed test laboratory Reg. No. TW1477

**Test location, where different from Worldwide Testing Services (Taiwan) Co., Ltd. :**

Name: ./.

Accredited number: ./.

Street: ./.

Town: ./.

Country: ./.

Telephone: ./.

Fax: ./.

## **1.3 Details of approval holder**

Name: Handheld Group AB

Street: Kinnegatan 17 A 531 33

Town: Lidköping

Country: Sweden

Telephone: +46(0) 510-54 71 70

Fax: ./.

## **1.4 Application details**

Date of receipt of test item: March 22, 2019

Date of test: from March 22, 2019 to June 05, 2019



Registration number: W6M21903-18857-C-54

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## **1.5 General information of Test item**

|                             |              |
|-----------------------------|--------------|
| Type of test item:          | Tablet       |
| Model Number:               | Algiz RT10   |
| Brand Name:                 | Handheld     |
| Multi-listing model number: | ./.          |
| Photos:                     | see Appendix |

### **Technical data**

|                 |                                                                                                                      |
|-----------------|----------------------------------------------------------------------------------------------------------------------|
| Frequency band: | Band 1: 5.150 GHz-5.250 GHz, Band 2: 5.250 GHz-5.350 GHz<br>Band 3: 5.470 GHz-5.725 GHz, Band 4: 5.725 GHz-5.850 GHz |
|-----------------|----------------------------------------------------------------------------------------------------------------------|

#### **Band 1**

|          |                                                                                                  |
|----------|--------------------------------------------------------------------------------------------------|
| 802.11a: | Low Channel (CH36): 5180 MHz<br>Middle Channel (CH44): 5210 MHz<br>High Channel (CH48): 5240 MHz |
|----------|--------------------------------------------------------------------------------------------------|

|                |                                                                                                  |
|----------------|--------------------------------------------------------------------------------------------------|
| 802.11n 20MHz: | Low Channel (CH36): 5180 MHz<br>Middle Channel (CH44): 5210 MHz<br>High Channel (CH48): 5240 MHz |
|----------------|--------------------------------------------------------------------------------------------------|

|                |                                                               |
|----------------|---------------------------------------------------------------|
| 802.11n 40MHz: | Low Channel (CH38): 5190 MHz<br>High Channel (CH46): 5230 MHz |
|----------------|---------------------------------------------------------------|

|                 |                |
|-----------------|----------------|
| 802.11ac 80MHz: | CH42: 5210 MHz |
|-----------------|----------------|

#### **Band 2**

|          |                                                                                                  |
|----------|--------------------------------------------------------------------------------------------------|
| 802.11a: | Low Channel (CH52): 5260 MHz<br>Middle Channel (CH56): 5280 MHz<br>High Channel (CH64): 5320 MHz |
|----------|--------------------------------------------------------------------------------------------------|

|                |                                                                                                  |
|----------------|--------------------------------------------------------------------------------------------------|
| 802.11n 20MHz: | Low Channel (CH52): 5260 MHz<br>Middle Channel (CH56): 5280 MHz<br>High Channel (CH64): 5320 MHz |
|----------------|--------------------------------------------------------------------------------------------------|

|                |                                                               |
|----------------|---------------------------------------------------------------|
| 802.11n 40MHz: | Low Channel (CH54): 5270 MHz<br>High Channel (CH62): 5310 MHz |
|----------------|---------------------------------------------------------------|

|                 |                |
|-----------------|----------------|
| 802.11ac 80MHz: | CH58: 5290 MHz |
|-----------------|----------------|



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## **Band 3**

802.11a: Low Channel (CH100): 5500MHz  
Middle Channel (CH120): 5600 MHz  
High Channel (CH140): 5700 MHz

802.11n 20MHz: Low Channel (CH100): 5500 MHz  
Middle Channel (CH120): 5600 MHz  
High Channel (CH140): 5700 MHz

802.11n 40MHz: Low Channel (CH102): 5510 MHz  
Middle Channel (CH118): 5590 MHz  
High Channel (CH134): 5670 MHz

802.11ac 80MHz Low Channel (CH106): 5530 MHz  
High Channel (CH122): 5610 MHz

## **Band 4**

802.11a: Low Channel (CH149): 5745 MHz  
Middle Channel (CH157): 5785 MHz  
High Channel (CH165): 5825 MHz

802.11n 20MHz: Low Channel (CH149): 5745 MHz  
Middle Channel (CH157): 5785 MHz  
High Channel (CH165): 5825 MHz

802.11n 40MHz: Low Channel (CH151): 5755 MHz  
High Channel (CH159): 5795 MHz

802.11ac 80MHz CH155: 5775 MHz



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## **Band 1**

Numbers of channel: 802.11a: 4 channels  
802.11n 20 MHz: 4 channels  
802.11n 40 MHz: 2 channels  
802.11ac 80 MHz: 1 channel

## **Band 2**

Numbers of channel: 802.11a: 4 channels  
802.11n 20 MHz: 4 channels  
802.11n 40 MHz: 2 channels  
802.11ac 80 MHz: 1 channel

## **Band 3**

Numbers of channel: 802.11a: 11 channels  
802.11n 20 MHz: 11 channels  
802.11n 40 MHz: 5 channels  
802.11ac 80 MHz: 2 channel

## **Band 4**

Numbers of channel: 802.11a: 5 channels  
802.11n 20 MHz: 5 channels  
802.11n 40 MHz: 2 channels  
802.11ac 80 MHz: 1 channel

Operating modes: Duplex

Type of modulation: OFDM

Fixed point to point operation: Yes / No

Antenna: FPC Antenna

Antenna gain: WLAN & Bluetooth Low Energy ANT1: 1 dBi  
WLAN ANT2: 2 dBi

Directional gain: 4.52 dBi

Power supply: Adapter (I/P: 100-240V~50/60Hz, 0.5A  
O/P: 3.6-6V, 3A / 6-9V, 2A / 9-12V, 1.5A)  
Battery 3.7V, 7500mAh, Battery 3.7V, 1550mAh

## **Band 1**

Emission designator: 802.11a: 16M6D1D  
802.11n 20 MHz: 17M6D1D  
802.11n 40 MHz: 36M2D1D  
802.11ac 80 MHz: 75M0D1D

## **Band 2**

Emission designator: 802.11a: 16M4D1D  
802.11n 20 MHz: 17M6D1D  
802.11n 40 MHz: 36M2D1D  
802.11ac 80 MHz: 75M0D1D



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## **Band 3**

Emission designator:                      802.11a: 16M4D1D  
                                                      802.11n 20 MHz: 17M6D1D  
                                                      802.11n 40 MHz: 36M2D1D  
                                                      802.11ac 80 MHz: 75M3D1D

## **Band 4**

Emission designator:                      802.11a: 16M3D1D  
                                                      802.11n 20 MHz: 17M3D1D  
                                                      802.11n 40 MHz: 36M0D1D  
                                                      802.11ac 80 MHz: 75M0D1D

Note: Tests were performed under worst case mode 802.11a 6 Mbps, 802.11n 20MHz(MCS0), 802.11n 40MHz(MCS0) and 802.11ac 80MHz(MCS0).

Classification:

|                                              |                                     |
|----------------------------------------------|-------------------------------------|
| Fixed Device                                 | <input type="checkbox"/>            |
| Mobile Device (Human Body distance > 20cm)   | <input type="checkbox"/>            |
| Portable Device (Human Body distance < 20cm) | <input checked="" type="checkbox"/> |
| Modular Radio Device                         | <input type="checkbox"/>            |

Note: This device was functioned as a ☐ Master ☒ Slave device during the DFS

Manufacturer: (if applicable)

Name: ./.  
Street: ./.  
Town: ./.  
Country: ./.

|                   |                     | ANT A  | ANT B  |
|-------------------|---------------------|--------|--------|
|                   |                     | Mode A | Mode A |
| 5.15 GHz~5.25 GHz | IEEE 802.11 a       | Mode A | Mode A |
|                   | IEEE 802.11 n(20M)  | Mode B | Mode B |
|                   | IEEE 802.11 n(40M)  | Mode C | Mode C |
|                   | IEEE 802.11 ac(80M) | Mode D | Mode D |
|                   |                     |        |        |
| 5.25 GHz~5.35 GHz | IEEE 802.11 a       | Mode E | Mode E |
|                   | IEEE 802.11 n(20M)  | Mode F | Mode F |
|                   | IEEE 802.11 n(40M)  | Mode G | Mode G |
|                   | IEEE 802.11 ac(80M) | Mode H | Mode H |
|                   |                     |        |        |
| 5.47 GHz~5.725GHz | IEEE 802.11 a       | Mode I | Mode I |
|                   | IEEE 802.11 n(20M)  | Mode J | Mode J |
|                   | IEEE 802.11 n(40M)  | Mode K | Mode K |
|                   | IEEE 802.11 ac(80M) | Mode L | Mode L |
|                   |                     |        |        |
| 5.725 GHz~5.85GHz | IEEE 802.11 a       | Mode M | Mode M |
|                   | IEEE 802.11 n(20M)  | Mode N | Mode N |
|                   | IEEE 802.11 n(40M)  | Mode O | Mode O |
|                   | IEEE 802.11 ac(80M) | Mode P | Mode P |
|                   |                     |        |        |



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## **Transmitter**

## **Unom**

### **Antenna A**

### **Band 1**

#### **Mode A (OFDM)**

Power ( ch 36 or A):

Conducted: 11.68 dBm

Power ( ch 44 or B):

Conducted: 12.26 dBm

Power ( ch 48 or C):

Conducted: 11.13 dBm

#### **Mode B (OFDM)**

Power ( ch 36 or A):

Conducted: 12.96 dBm

Power ( ch 44 or B):

Conducted: 11.95 dBm

Power ( ch 48 or C):

Conducted: 13.53 dBm

#### **Mode C (OFDM)**

Power ( ch 38 or A):

Conducted: 10.34 dBm

Power ( ch 46 or B):

Conducted: 11.38 dBm

#### **Mode D (OFDM)**

Power ( ch 42 or A):

Conducted: 10.34 dBm

### **Band 2**

#### **Mode E (OFDM)**

Power ( ch 52 or A):

Conducted: 11.06 dBm

Power ( ch 56 or B):

Conducted: 11.34 dBm

Power ( ch 64 or C):

Conducted: 11.70 dBm

#### **Mode F (OFDM)**

Power ( ch 52 or A):

Conducted: 14.09 dBm

Power ( ch 56 or B):

Conducted: 11.99 dBm

Power ( ch 64 or C):

Conducted: 14.10 dBm

#### **Mode G (OFDM)**

Power ( ch 54 or A):

Conducted: 11.55 dBm

Power ( ch 62 or B):

Conducted: 11.81 dBm

#### **Mode H (OFDM)**

Power ( ch 58 or A):

Conducted: 11.42 dBm

### **Band 3**

#### **Mode I (OFDM)**

Power ( ch 100 or A):

Conducted: 11.98 dBm

Power ( ch 120 or B):

Conducted: 12.54 dBm

Power ( ch 140 or C):

Conducted: 12.75 dBm

#### **Mode J (OFDM)**

Power ( ch 100 or A):

Conducted: 12.39 dBm

Power ( ch 120 or B):

Conducted: 12.45 dBm

Power ( ch 140 or C):

Conducted: 12.73 dBm

#### **Mode K (OFDM)**

Power ( ch 102 or A):

Conducted: 10.07 dBm

Power ( ch 118 or B):

Conducted: 12.17 dBm

Power ( ch 134 or C):

Conducted: 12.37 dBm

#### **Mode L (OFDM)**

Power ( ch 106 or A):

Conducted: 9.05 dBm

Power ( ch 122 or B):

Conducted: 10.25 dBm



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## **Band 4**

### **Mode M (OFDM)**

|                       |                      |
|-----------------------|----------------------|
| Power ( ch 149 or A): | Conducted: 10.83 dBm |
| Power ( ch 157 or B): | Conducted: 10.12 dBm |
| Power ( ch 165 or C): | Conducted: 10.59 dBm |

### **Mode N (OFDM)**

|                       |                      |
|-----------------------|----------------------|
| Power ( ch 149 or A): | Conducted: 10.02 dBm |
| Power ( ch 157 or B): | Conducted: 10.11 dBm |
| Power ( ch 165 or C): | Conducted: 10.19 dBm |

### **Mode O (OFDM)**

|                       |                      |
|-----------------------|----------------------|
| Power ( ch 151 or A): | Conducted: 10.40 dBm |
| Power ( ch 159 or B): | Conducted: 10.26 dBm |

### **Mode P (OFDM)**

|                       |                      |
|-----------------------|----------------------|
| Power ( ch 155 or A): | Conducted: 10.05 dBm |
|-----------------------|----------------------|

## **Antenna B**

### **Band 1**

#### **Mode A (OFDM)**

|                      |                      |
|----------------------|----------------------|
| Power ( ch 36 or A): | Conducted: 11.35 dBm |
| Power ( ch 44 or B): | Conducted: 11.86 dBm |
| Power ( ch 48 or C): | Conducted: 10.46 dBm |

#### **Mode B (OFDM)**

|                      |                      |
|----------------------|----------------------|
| Power ( ch 36 or A): | Conducted: 13.13 dBm |
| Power ( ch 44 or B): | Conducted: 11.39 dBm |
| Power ( ch 48 or C): | Conducted: 13.53 dBm |

#### **Mode C (OFDM)**

|                      |                      |
|----------------------|----------------------|
| Power ( ch 38 or A): | Conducted: 10.33 dBm |
| Power ( ch 46 or B): | Conducted: 11.31 dBm |

#### **Mode D (OFDM)**

|                      |                      |
|----------------------|----------------------|
| Power ( ch 42 or A): | Conducted: 10.36 dBm |
|----------------------|----------------------|

## **Band 2**

### **Mode E (OFDM)**

|                      |                      |
|----------------------|----------------------|
| Power ( ch 52 or A): | Conducted: 10.19 dBm |
| Power ( ch 56 or B): | Conducted: 10.05 dBm |
| Power ( ch 64 or C): | Conducted: 9.65 dBm  |

### **Mode F (OFDM)**

|                      |                      |
|----------------------|----------------------|
| Power ( ch 52 or A): | Conducted: 13.93 dBm |
| Power ( ch 56 or B): | Conducted: 11.89 dBm |
| Power ( ch 64 or C): | Conducted: 14.04 dBm |

### **Mode G (OFDM)**

|                      |                      |
|----------------------|----------------------|
| Power ( ch 54 or A): | Conducted: 11.53 dBm |
| Power ( ch 62 or B): | Conducted: 11.83 dBm |

### **Mode H (OFDM)**

|                      |                      |
|----------------------|----------------------|
| Power ( ch 58 or A): | Conducted: 11.38 dBm |
|----------------------|----------------------|



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## **Band 3**

### **Mode I (OFDM)**

Power ( ch 100 or A): Conducted: 11.56 dBm  
Power ( ch 120 or B): Conducted: 8.23 dBm  
Power ( ch 140 or C): Conducted: 9.67 dBm

### **Mode J (OFDM)**

Power ( ch 100 or A): Conducted: 12.34 dBm  
Power ( ch 120 or B): Conducted: 12.49 dBm  
Power ( ch 140 or C): Conducted: 12.72 dBm

### **Mode K (OFDM)**

Power ( ch 102 or A): Conducted: 10.06 dBm  
Power ( ch 118 or B): Conducted: 12.15 dBm  
Power ( ch 134 or C): Conducted: 12.34 dBm

### **Mode L (OFDM)**

Power ( ch 106 or A): Conducted: 9.01 dBm  
Power ( ch 122 or B): Conducted: 10.19 dBm

## **Band 4**

### **Mode M (OFDM)**

Power ( ch 149 or A): Conducted: 9.53 dBm  
Power ( ch 157 or B): Conducted: 9.75 dBm  
Power ( ch 165 or C): Conducted: 9.49 dBm

### **Mode N (OFDM)**

Power ( ch 149 or A): Conducted: 9.42 dBm  
Power ( ch 157 or B): Conducted: 9.36 dBm  
Power ( ch 165 or C): Conducted: 9.16 dBm

### **Mode O (OFDM)**

Power ( ch 151 or A): Conducted: 9.41 dBm  
Power ( ch 159 or B): Conducted: 9.37 dBm

### **Mode P (OFDM)**

Power ( ch 155 or A): Conducted: 9.04 dBm

## **Band 1 (5.15GHz~5.25GHz)**

| Combine       | mW     |        |         | dBm    |        |         |
|---------------|--------|--------|---------|--------|--------|---------|
|               | Ch Low | Ch Mid | Ch High | Ch Low | Ch Mid | Ch High |
| 802.11n 20MHz | 40.33  | 29.44  | 45.08   | 16.06  | 14.69  | 16.54   |
| 802.11n 40MHz | 21.60  | --     | 27.26   | 13.34  | --     | 14.36   |
| 802.11ac      | 21.67  | --     | --      | 13.36  | --     | --      |

## **Band 2 (5.25GHz~5.35GHz)**

| Combine       | mW     |        |         | dBm    |        |         |
|---------------|--------|--------|---------|--------|--------|---------|
|               | Ch Low | Ch Mid | Ch High | Ch Low | Ch Mid | Ch High |
| 802.11n 20MHz | 50.36  | 31.26  | 51.05   | 17.02  | 14.95  | 17.08   |
| 802.11n 40MHz | 28.51  | --     | 30.41   | 14.55  | --     | 14.83   |
| 802.11ac      | 27.61  | --     | --      | 14.41  | --     | --      |



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Band 3 (5.47GHz~5.725GHz)

| Combine       | mW     |        |         | dBm    |        |         |
|---------------|--------|--------|---------|--------|--------|---------|
|               | Ch Low | Ch Mid | Ch High | Ch Low | Ch Mid | Ch High |
| 802.11n 20MHz | 34.48  | 35.32  | 37.46   | 15.38  | 15.48  | 15.74   |
| 802.11n 40MHz | 20.30  | 32.89  | 34.40   | 13.07  | 15.17  | 15.37   |
| 802.11ac      | 16.00  | --     | 21.04   | 12.04  | --     | 13.23   |

Band 4 (5.725GHz~5.85GHz)

| Combine       | mW     |        |         | dBm    |        |         |
|---------------|--------|--------|---------|--------|--------|---------|
|               | Ch Low | Ch Mid | Ch High | Ch Low | Ch Mid | Ch High |
| 802.11n 20MHz | 18.80  | 18.89  | 18.69   | 12.74  | 12.76  | 12.72   |
| 802.11n 40MHz | 19.69  | --     | 19.27   | 12.94  | --     | 12.85   |
| 802.11ac      | 18.14  | --     | --      | 12.59  | --     | --      |

## **1.6 Test standards**

Technical standard : 47 CFR FCC Part 15 Subpart E § 15.407(2018-10)



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## **2 Technical test**

### **2.1 Summary of test results**

No deviations from the technical specification(s) were ascertained in the course of the tests performed.



**or**

The deviations as specified in 3 were ascertained in the course of the tests performed.



### **2.2 Test environment**

Relative humidity content: 20 ... 75 %

Air pressure: 86 ... 103 kPa

Details of power supply: Adapter (I/P: 100-240V~50/60Hz, 0.5A  
O/P: 3.6-6V, 3A / 6-9V, 2A / 9-12V, 1.5A)  
Battery 3.7V, 7500mAh, Battery 3.7V, 1550mAh



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| Test item Name                                                                                                                                                             | Uncertainty                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Estimation Result of Uncertainty of Conducted Emission                                                                                                                     | Expanded Uncertainty :<br>AMN : 1.30 dB<br>Voltage probe : 1.36 dB                                                     |
| Estimation Result of Uncertainty of Radiated Emission(3M)                                                                                                                  | Expanded Uncertainty :<br>0.009-30 MHz : 2.02 dB<br>30-1000 MHz : 3.49 dB<br>1-18 GHz : 3.01 dB<br>18-40 GHz : 2.43 dB |
| Estimation Result of Uncertainty of Bandwidth Measurement<br>20 dB Bandwidth, Occupied bandwidth, Channel bandwidth,<br>Necessary Bandwidth                                | Expanded Uncertainty : 0.45 kHz                                                                                        |
| Estimation Result of Uncertainty of Conducted Output Power<br>Measurement Output power                                                                                     | Expanded Uncertainty : 1.72 dB                                                                                         |
| Estimation Result of Uncertainty of Power Density Measurement<br>Power density                                                                                             | Expanded Uncertainty : 1.73 dB                                                                                         |
| Estimation Result of Uncertainty of Band Edge Measurement                                                                                                                  | Expanded Uncertainty : 0.98 dBc                                                                                        |
| Estimation Result of Uncertainty of Conducted Spurious Emission<br>Measurement Conducted spurious emission                                                                 | Expanded Uncertainty : 1.726 dB                                                                                        |
| Estimation Result of Uncertainty of EIRP Measurement<br>EIRP 、 ERP 、 Output power(dBm) 、 Radiated spurious<br>emission(dBm), Receiver spurious radiations ( $\geq 30$ MHz) | Expanded Uncertainty :<br>30-200MHz : 2.50 dB<br>200-1000MHz : 2.50 dB<br>1-18GHz : 3.38 dB<br>18-40GHz : 3.04 dB      |
| Estimation Result of Uncertainty of DFS Timing                                                                                                                             | Expanded Uncertainty : 0.6 ms                                                                                          |
| Estimation Result of Uncertainty of DFS Threshold                                                                                                                          | Expanded Uncertainty : 1.71 dB                                                                                         |

The decision rule is : Measurement uncertainty is not taken into account.



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## 2.3 Test Equipment List

| No.          | Test equipment                                      | Type            | Serial No.  | Manufacturer          | Cal. Date     | Next Cal. Date |
|--------------|-----------------------------------------------------|-----------------|-------------|-----------------------|---------------|----------------|
| ETSTW-CE 001 | EMI TEST RECEIVER                                   | ESHS10          | 842121/013  | R&S                   | 2019/5/20     | 2020/5/19      |
| ETSTW-CE 003 | AC POWER SOURCE                                     | APS-9102        | D161137     | GW                    | Function Test |                |
| ETSTW-CE 004 | ZWEILEITER-V-NETZNACHBILDUNG<br>TWO-LINE V-NETWORK  | ESH3-Z5         | 840731/011  | R&S                   | 2018/11/1     | 2019/10/31     |
| ETSTW-CE 006 | IMPULSBEGRENZER<br>PULSE LIMITER                    | ESH3-Z2         | 100226      | R&S                   | 2018/8/21     | 2019/8/20      |
| ETSTW-CE 008 | HF-EICHLLEITUNG RF<br>STEP ATTENUATOR<br>139dB DPSP | 334.6010.02     | 844581/024  | R&S                   | Function Test |                |
| ETSTW-CE 009 | TEMP.&HUMIDITY<br>CHAMBER                           | GTH-225-40-1P-U | MAA0305-009 | GIANT FORCE           | 2018/7/13     | 2019/7/12      |
| ETSTW-CE 016 | TWO-LINE V-NETWORK                                  | ENV216          | 100050      | R&S                   | 2018/9/25     | 2019/9/24      |
| ETSTW-CE 028 | MXE EMI Receiver                                    | N9038A          | MY53220110  | Agilent               | 2018/7/16     | 2019/7/15      |
| ETSTW-RE 003 | EMI TEST RECEIVER                                   | ESI 26          | 831438/001  | R&S                   | 2019/5/20     | 2020/5/19      |
| ETSTW-RE 004 | EMI TEST RECEIVER                                   | ESI 40          | 832427/004  | R&S                   | 2019/5/29     | 2020/5/28      |
| ETSTW-RE 012 | TUNABLE BANDREJECT<br>FILTER                        | D.C 0309        | 146         | K&L                   | Function Test |                |
| ETSTW-RE 013 | TUNABLE BANDREJECT<br>FILTER                        | D.C 0336        | 397         | K&L                   | Function Test |                |
| ETSTW-RE 018 | MICROWAVE HORN<br>ANTENNA                           | AT4560          | 27212       | AR                    | 2018/7/13     | 2019/7/12      |
| ETSTW-RE 027 | Passive Loop Antenna                                | 6512            | 00034563    | ETS-Lindgren          | 2018/7/12     | 2019/7/11      |
| ETSTW-RE 030 | Double-Ridged Guide Horn<br>Antenna                 | 3117            | 00035224    | ETS-Lindgren          | 2019/4/2      | 2020/4/1       |
| ETSTW-RE 042 | Biconical Antenna                                   | HK116           | 100172      | R&S                   | 2019/1/29     | 2020/1/28      |
| ETSTW-RE 043 | Log-Periodic Dipole<br>Antenna                      | HL223           | 100166      | R&S                   | 2019/4/23     | 2020/4/22      |
| ETSTW-RE 044 | Log-Periodic Antenna                                | HL050           | 100094      | R&S                   | 2019/5/13     | 2020/5/12      |
| ETSTW-RE 045 | ESA-E SERIES<br>SPECTRUM ANALYZER                   | E4404B          | MY45111242  | Agilent               | Pre-test Use  |                |
| ETSTW-RE 050 | Attenuator 10dB                                     | 50HF-010-1      | None        | JFW                   | 2019/2/27     | 2020/2/26      |
| ETSTW-RE 051 | Attenuator 6dB                                      | 50HF-006-1      | None        | JFW                   | 2019/2/27     | 2020/2/26      |
| ETSTW-RE 053 | Attenuator 3dB                                      | 50HF-003-1      | None        | JFW                   | 2019/2/27     | 2020/2/26      |
| ETSTW-RE 055 | SPECTRUM ANALYZER                                   | FSU 26          | 200074      | R&S                   | 2019/3/5      | 2020/3/4       |
| ETSTW-RE 060 | Attenuator 30dB                                     | 5015-30         | F651012z-01 | ATM                   | 2019/2/27     | 2020/2/26      |
| ETSTW-RE 062 | Amplifier Module                                    | CHC 2           | None        | KMIC                  | 2019/5/16     | 2020/5/15      |
| ETSTW-RE 064 | Bluetooth Test Set                                  | MT8852B-042     | 6K00005709  | Anritsu               | Function Test |                |
| ETSTW-RE 069 | Double-Ridged Guide Horn<br>Antenna                 | 3117            | 00069377    | ETS-Lindgren          | Function Test |                |
| ETSTW-RE 072 | CELL SITE TEST SET                                  | 8921A           | 3339A00375  | HP                    | 2018/9/17     | 2019/9/16      |
| ETSTW-RE 088 | SOLID STATE<br>AMPLIFIER                            | KMA180265A01    | 99057       | KMIC                  | 2018/9/18     | 2019/9/17      |
| ETSTW-RE 091 | Match Pad                                           | MDCS1500        | None        | WOKEN                 | 2019/5/9      | 2020/5/8       |
| ETSTW-RE 099 | DC Block                                            | 50DB-007-1      | None        | JFW                   | 2019/2/22     | 2020/2/21      |
| ETSTW-RE 112 | AC POWER SOURCE                                     | TFC-1005        | T-0A023536  | T-Power               | Function test |                |
| ETSTW-RE 115 | 2.4GHz Notch Filter                                 | N0124411        | 473874      | MICROWAVE<br>CIRCUITS | 2019/1/15     | 2020/1/14      |



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| ETSTW-RE 120    | RF Player                            | MP9200                                 | MP9210-111022   | ADIVIC             | Function test    |            |
|-----------------|--------------------------------------|----------------------------------------|-----------------|--------------------|------------------|------------|
| ETSTW-RE 122    | SIGNAL GENERATOR                     | SMF100A                                | 102149          | R&S                | 2019/5/20        | 2020/5/19  |
| ETSTW-RE 125    | 5GHz Notch filter                    | 5NSL11-5200/E221.3-O/O                 | 1               | K&L Microwave      | 2018/8/8         | 2019/8/7   |
| ETSTW-RE 126    | 5GHz Notch filter                    | 5NSL12-5800/E221.3-O/O                 | 1               | K&L Microwave      | 2018/8/8         | 2019/8/7   |
| ETSTW-RE 127    | RF Switch Box                        | RFS-01                                 | None            | WTS                | 2019/2/26        | 2020/2/25  |
| ETSTW-RE 128    | 5.3GHz Notch filter                  | N0153001                               | SN487233        | Microwave Circuits | 2018/8/8         | 2019/8/7   |
| ETSTW-RE 129    | 5.5GHz Notch filter                  | N0555984                               | SN487234        | Microwave Circuits | 2018/8/8         | 2019/8/7   |
| ETSTW-RE 130    | Handheld RF Spectrum Analyzer        | N9340A                                 | CN0147000204    | Agilent            | Pre-test Use     |            |
| ETSTW-RE 142    | Amplifier                            | 8447D                                  | 2805A03378      | Agilent            | 2019/5/16        | 2020/5/15  |
| ETSTW-RE 147    | Bi-log Hybrid Antenna                | MCTD 2786B                             | BLB16M04005     | ETC                | 2019/4/2         | 2020/4/1   |
| ETSTW-RE 151    | Thermohygrometer                     | 608-h1                                 | 45104376        | TESTO              | 2018/8/17        | 2019/8/16  |
| ETSTW-EMI 011   | USB Compact Modulator                | SFC-U                                  | 101689          | R&S                | 2019/5/16        | 2020/5/15  |
| ETSTW-EMS 008   | Exposure Level Tester                | ELT-400                                | G-0009          | Narda              | 2018/7/17        | 2019/7/16  |
| ETSTW-GSM 002   | Universal Radio Communication Tester | CMU 200                                | 109439          | R&S                | 2019/3/5         | 2020/3/4   |
| ETSTW-GSM 003   | Radio Communication Analyzer         | MT8820C                                | 6201342073      | Anritsu            | 2019/3/26        | 2020/3/25  |
| ETSTW-GSM 004   | Wideband Radio Communication Tester  | CMW500                                 | 128092          | R&S                | 2018/10/19       | 2019/10/18 |
| ETSTW-GSM 019   | Band Reject Filter                   | WRCTF824/849-822/851-40/12+9SS         | 3               | WI                 | 2019/1/14        | 2020/1/13  |
| ETSTW-GSM 020   | Band Reject Filter                   | WRCD1747/1748-1743/1752-32/5SS         | 1               | WI                 | 2019/1/14        | 2020/1/13  |
| ETSTW-GSM 021   | Band Reject Filter                   | WRCD1879.5/1880.5-1875.5/1884.5-32/5SS | 3               | WI                 | 2019/1/14        | 2020/1/13  |
| ETSTW-GSM 022   | Band Reject Filter                   | WRCT901.9/903.1-904.25-50/8SS          | 1               | WI                 | 2019/1/14        | 2020/1/13  |
| ETSTW-GSM 023   | Power Divider                        | 4901.19.A                              | None            | SUHNER             | 2018/9/12        | 2019/9/11  |
| ETSTW-GSM 024   | Radio Communication Analyzer         | MT8821C                                | None            | Anritsu            | 2019/3/5         | 2020/3/4   |
| ETSTW-GSM 025   | Band Reject Filter                   | BRM19835                               | 001             | Micro-Tronics      | 2018/8/9         | 2019/8/8   |
| ETSTW-Cable 011 | SMA to N type Cable                  | RGU-400                                | None            | THERMAX            | Pre-test Use NCR |            |
| ETSTW-Cable 016 | BNC Cable                            | Switch Box                             | B Cable 1       | Schwarz beck       | 2019/2/21        | 2020/2/20  |
| ETSTW-Cable 017 | BNC Cable                            | X Cable                                | B Cable 2       | Schwarz beck       | 2019/2/21        | 2020/2/20  |
| ETSTW-Cable 018 | BNC Cable                            | Y Cable                                | B Cable 3       | Schwarz beck       | 2019/2/21        | 2020/2/20  |
| ETSTW-Cable 019 | BNC Cable                            | Z Cable                                | B Cable 4       | Schwarz beck       | 2019/2/21        | 2020/2/20  |
| ETSTW-Cable 020 | N TYPE Cable                         | OATS Cable 1                           | N30N30-L335-15M | JYE BAO CO.,LTD.   | 2018/7/2         | 2019/7/1   |
| ETSTW-Cable 026 | Microwave Cable                      | SUCOFLEX 104                           | 279075          | HUBER+SUHNER       | 2019/2/25        | 2020/2/24  |
| ETSTW-Cable 027 | Microwave Cable                      | SUCOFLEX 104                           | 279083          | HUBER+SUHNER       | 2019/5/10        | 2020/5/9   |
| ETSTW-Cable 028 | Microwave Cable                      | FA147A0015M2020                        | 30064-2         | UTIFLEX            | 2018/9/18        | 2019/9/17  |
| ETSTW-Cable 029 | Microwave Cable                      | FA147A0015M2020                        | 30064-3         | UTIFLEX            | 2018/9/18        | 2019/9/17  |
| ETSTW-Cable 030 | Microwave Cable                      | SUCOFLEX 104 (S Cable 9)               | 279067          | HUBER+SUHNER       | 2019/2/25        | 2020/2/24  |
| ETSTW-Cable 043 | Microwave Cable                      | SUCOFLEX 104                           | 317576          | HUBER+SUHNER       | 2019/5/16        | 2020/5/15  |
| ETSTW-Cable 058 | Microwave Cable                      | SUCOFLEX 104                           | none            | HUBER+SUHNER       | 2019/6/4         | 2020/6/3   |
| ETSTW-Cable 064 | Microwave Cable                      | SUCOFLEX 104                           | MY28891         | HUBER+SUHNER       | 2019/5/16        | 2020/5/15  |



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|                 |                     |                           |          |              |                  |           |
|-----------------|---------------------|---------------------------|----------|--------------|------------------|-----------|
| ETSTW-Cable 066 | SMA type cable      | 32022                     | None     | ASTROLAB     | 2019/3/15        | 2020/3/14 |
| ETSTW-Cable 071 | N TYPE CABLE        | EMCCFD400-NM-<br>NM-25000 | 170239   | EMCI         | 2019/6/4         | 2020/6/3  |
| ETSTW-Cable 072 | SMA type cable (8m) | SUCOFLEX 104              | 805800/4 | HUBER+SUHNER | 2019/5/16        | 2020/5/15 |
| ETSTW-Cable 074 | SMA type cable (2m) | SUCOFLEX 104              | 802563/4 | HUBER+SUHNER | 2019/5/16        | 2020/5/15 |
| WTSTW-SW 002    | EMI TEST SOFTWARE   | EZ EMC                    | None     | Farad        | Version ETS-03A1 |           |
| WTSTW-SW 006    | EMI TEST SOFTWARE   | e3                        | None     | AUDIX        | Version 9.161014 |           |
| WTSTW-SW 008    | Signal studio       | Agilent                   | None     | AUDIX        | Version 2.0.0.1  |           |



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## **2.4 Test Procedure**

The test procedures are performed following the test stands ANSI STANDARD C63.10 and FCC 789033 D02 General UNII Test Procedures New Rules v01r04.

### ■ Minimum Emission Bandwidth for the band 5.150-5.250 GHz, 5.725-5.850 GHz

Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for the band 5.715-5.85 GHz. The following procedure shall be used for measuring this bandwidth:

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW)  $\geq 3 \times$  RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Note: The automatic bandwidth measurement capability of a spectrum analyzer or EMI receiver may be employed if it implements the functionality described above.

### ■ 99 Percent Occupied Bandwidth

The 99-percent occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5 % of the total mean power of the given emission. Measurement of the 99-percent occupied bandwidth is required only as a condition for using the optional band-edge measurement techniques described in section H)3)d). Measurements of 99-percent occupied bandwidth may also optionally be used in lieu of the 6-dB emission bandwidth to define the minimum frequency range over which the spectrum is integrated when measuring maximum conducted output power as described in section E). However, the 6-dB bandwidth must be measured to determine bandwidth dependent limits on maximum conducted output power in accordance with 15.407(a).

The following procedure shall be used for measuring (99 %) power bandwidth.

1. Set center frequency to the nominal EUT channel center frequency.
2. Set span = 1.5 times to 5.0 times the OBW.
3. Set RBW = 1 % to 5 % of the OBW
4. Set VBW  $\geq 3 \cdot$  RBW
5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
6. Use the 99 % power bandwidth function of the instrument (if available).
7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.



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## ■ Maximum conducted output power

- (i) Set span to encompass the entire emission bandwidth (EBW) (or, alternatively, the entire 99% occupied bandwidth) of the signal.
- (ii) Set RBW = 1 MHz.
- (iii) Set VBW  $\geq$  3 MHz.
- (iv) Number of points in sweep  $\geq$  2 Span / RBW. (This ensures that bin-to-bin spacing is  $\leq$  RBW/2, so that narrowband signals are not lost between frequency bins.)
- (v) Sweep time = auto.
- (vi) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
- (vii) If transmit duty cycle  $<$  98 percent, use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle  $\geq$  98 percent, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to “free run”.
- (viii) Trace average at least 100 traces in power averaging (i.e., RMS) mode.
- (ix) Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument’s band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at 1 MHz intervals extending across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the spectrum.

## ■ Power Density

The rules requires “maximum power spectral density” measurements where the intent is to measure the maximum value of the time average of the power spectral density measured during a period of continuous transmission.

1. Create an average power spectrum for the EUT operating mode being tested by following the instructions in section II.E.2. for measuring maximum conducted output power using a spectrum analyzer or EMI receiver: select the appropriate test method (SA-1, SA-2, SA-3, or alternatives to each) and apply it up to, but not including, the step labeled, “Compute power...”. (This procedure is required even if the maximum conducted output power measurement was performed using a power meter, method PM.)
2. Use the peak search function on the instrument to find the peak of the spectrum and record its value.
3. Make the following adjustments to the peak value of the spectrum, if applicable:
  - a) If Method SA-2 or SA-2 Alternative was used, add  $10 \log(1/x)$ , where x is the duty cycle, to the peak of the spectrum.
  - b) If Method SA-3 Alternative was used and the linear mode was used in step II.E.2.g)(viii), add 1 dB to the final result to compensate for the difference between linear averaging and power averaging.
4. The result is the Maximum PSD over 1 MHz reference bandwidth.
5. For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or



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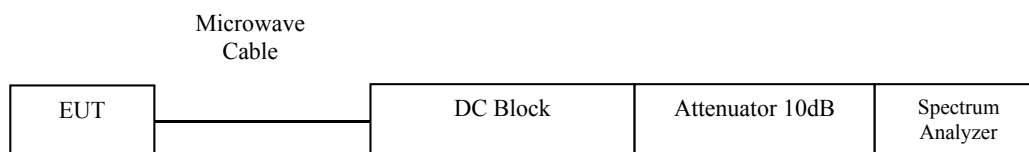
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500 kHz, “provided that the measured power is integrated over the full reference bandwidth” to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth ( $< 1$  MHz, or  $< 500$  kHz) and integrated over 1 MHz, or 500 KHz bandwidth, the following adjustments to the procedures apply:

- a) Set  $RBW \geq 1/T$ , where T is defined in section II.B.1.a).
- b) Set  $VBW \geq 3 RBW$ .
- c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add  $10\log(500\text{kHz}/RBW)$  to the measured result, whereas  $RBW (< 500 \text{ kHz})$  is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
- d) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add  $10\log(1\text{MHz}/RBW)$  to the measured result, whereas  $RBW (< 1 \text{ MHz})$  is the reduced resolution bandwidth of spectrum analyzer set during measurement.
- e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

Note: As a practical matter, it is recommended to use reduced RBW of 100 kHz for the sections 5.c) and 5.d) above, since  $RBW=100 \text{ kHz}$  is available on nearly all spectrum analyzers.

## Conducted measurement test setup





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### **3 Test results (enclosure)**

| Test case                                               | Para. Number                                                | Required                            | Test passed                         | Test failed              |
|---------------------------------------------------------|-------------------------------------------------------------|-------------------------------------|-------------------------------------|--------------------------|
| Peak Transmit Power                                     | 15.407(a)                                                   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 6-dB emission bandwidth                                 | 15.407(a)                                                   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 26-dB emission bandwidth                                | 15.407(a)                                                   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 99 % Occupied Bandwidth                                 | 789033 D02 General<br>UNII Test Procedures<br>New Rules v01 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Peak Power Spectral Density                             | 15.407(a)                                                   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Undesirable emission limits                             | 15.407(b)                                                   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Radio Frequency Exposure                                | 15.407(f)                                                   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Transmit Power Control                                  | 15.407(h)                                                   | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> |
| Dynamic Frequency Selection (DFS)                       | 15.407(h)                                                   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Channel Move Time, Channel Closing<br>Transmission Time | 15.407(i)                                                   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Radiated Emission from Receiver Part                    | 15.109                                                      | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> |
| AC Conducted Emissions                                  | 15.207                                                      | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

The following is intentionally left blank.

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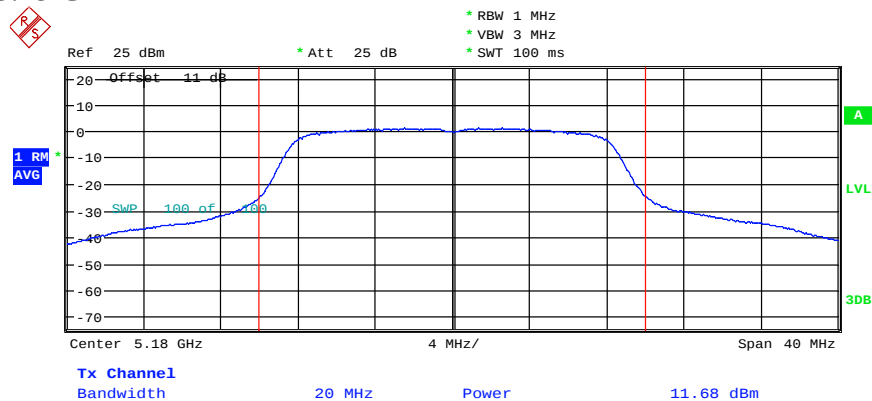
## 3.1 Peak Transmit Power, FCC 15.407 (a)

According to §15.407(a)

1. For the band 5.15-5.25 GHz, the maximum conducted power over the frequency of operation shall not exceed the lesser of 30 dBm (1 W) for master device and 24 dBm (250 mW) for mobile/portable client device.
2. For the band 5.25-5.35 GHz and 5.47-5.725 GHz, the maximum conducted power over the frequency of operation shall not exceed the lesser of 24 dBm (250 mW) or  $11\text{dBm} + 10 \log B$ , whichever is lower ( $B = 26\text{-dB emission BW}$ ).
3. For the band 5.725-5.850 GHz, the maximum conducted power over the frequency of operation shall not exceed the lesser of 30 dBm (1 W).

ANTA

5.15 GHz ~ 5.25 GHz



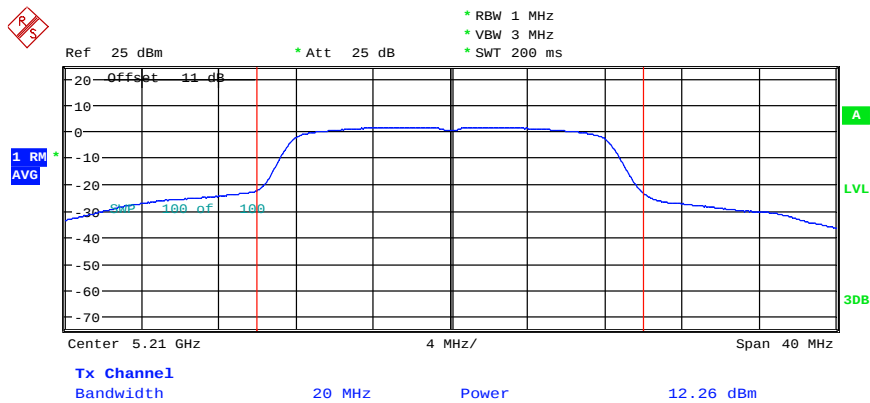
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Date: 22.APR.2019 10:34:50



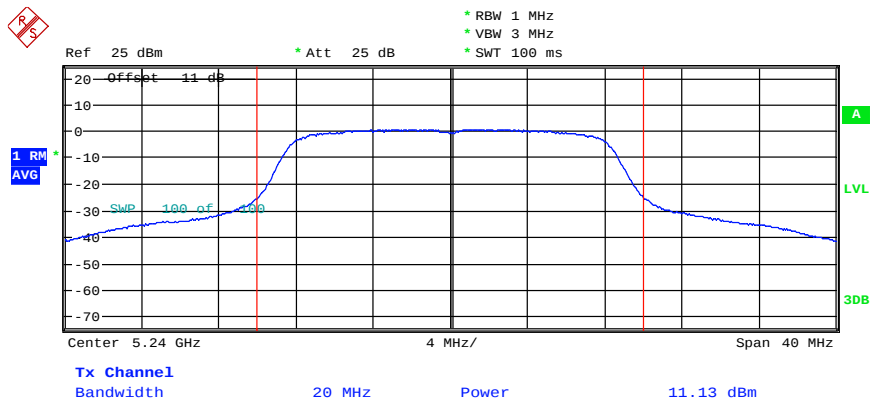
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



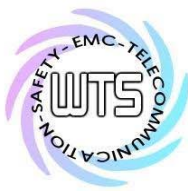
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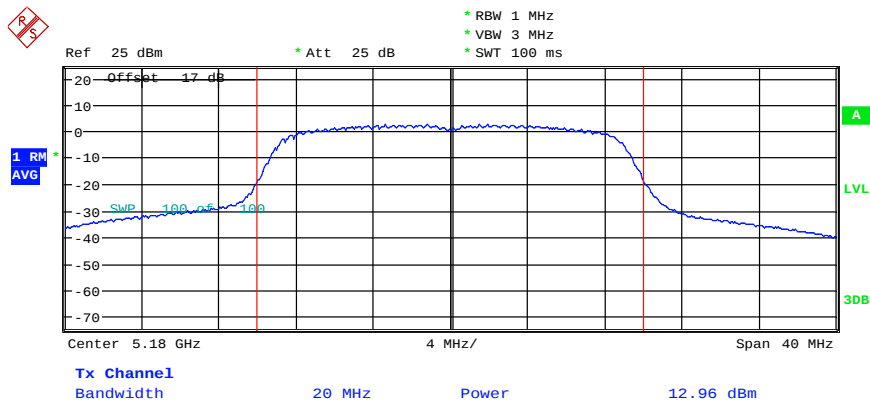
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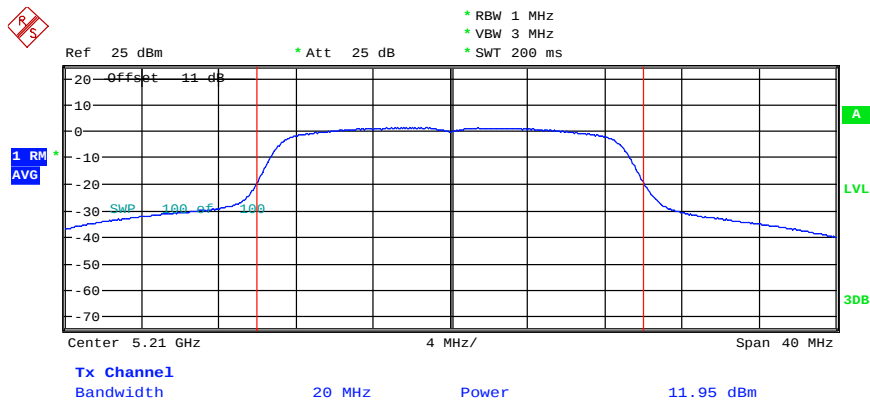
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FCC ID: YY3-182010



MAXIMUM CONDUCTED POWER ANT1\_11ac20CH36

Date: 22.APR.2019 11:48:55



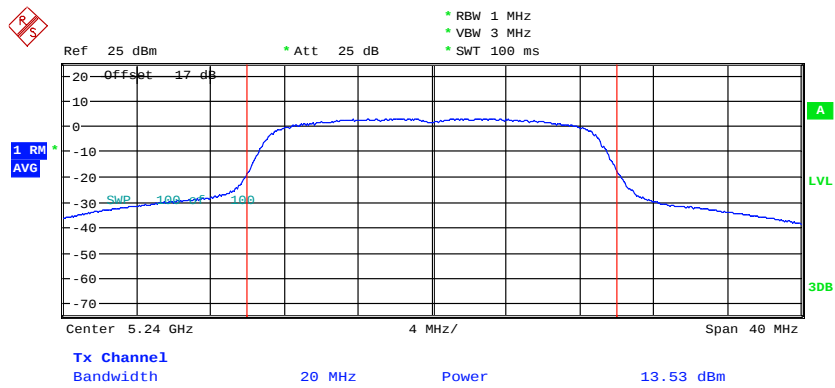
MAXIMUM CONDUCTED POWER ANT1\_11ac20CH44

Date: 3.JUN.2019 09:42:23



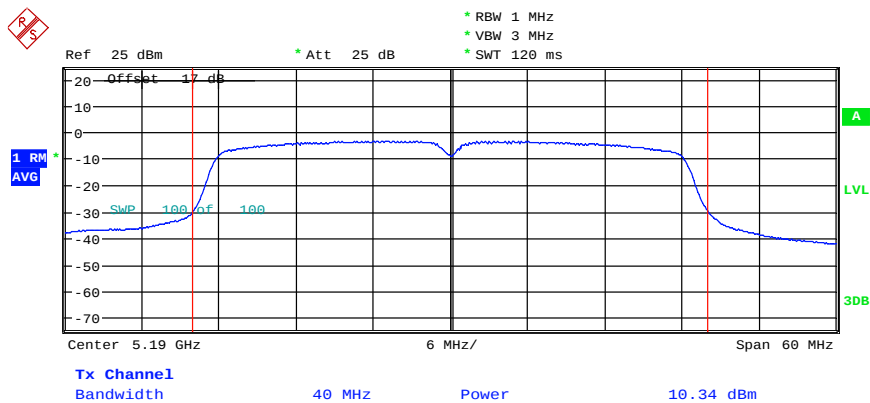
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



MAXIMUM CONDUCTED POWER ANT1\_11ac20CH48

Date: 22.APR.2019 11:58:29



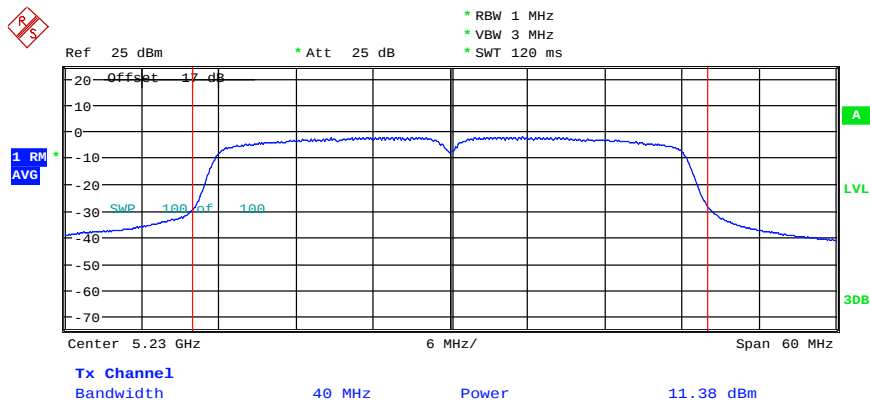
MAXIMUM CONDUCTED POWER ANT1\_11ac40CH38

Date: 22.APR.2019 13:23:40



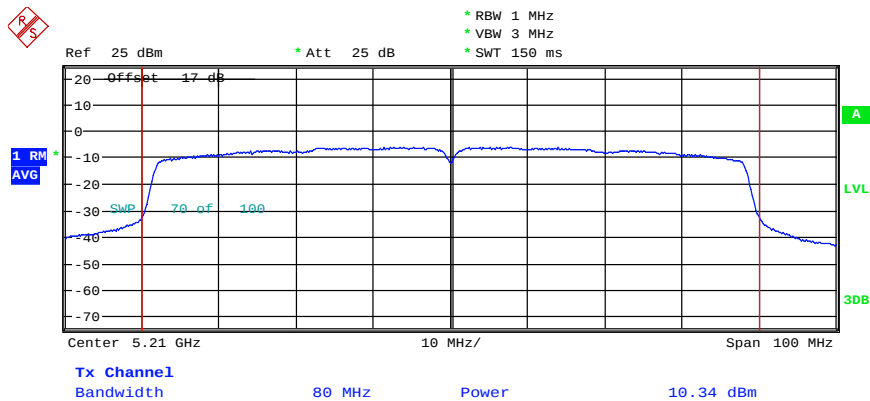
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



MAXIMUM CONDUCTED POWER ANT1\_11ac40CH46

Date: 22.APR.2019 13:30:05



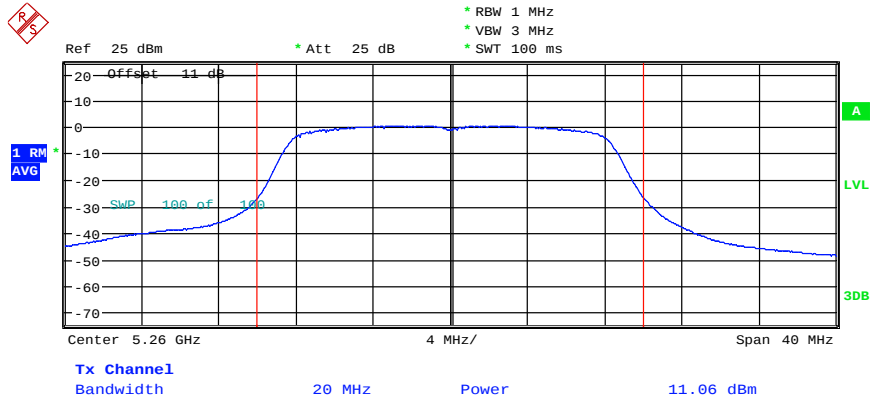
MAXIMUM CONDUCTED POWER ANT1\_11ac80CH42

Date: 22.APR.2019 13:42:48

Registration number: W6M21903-18857-C-54

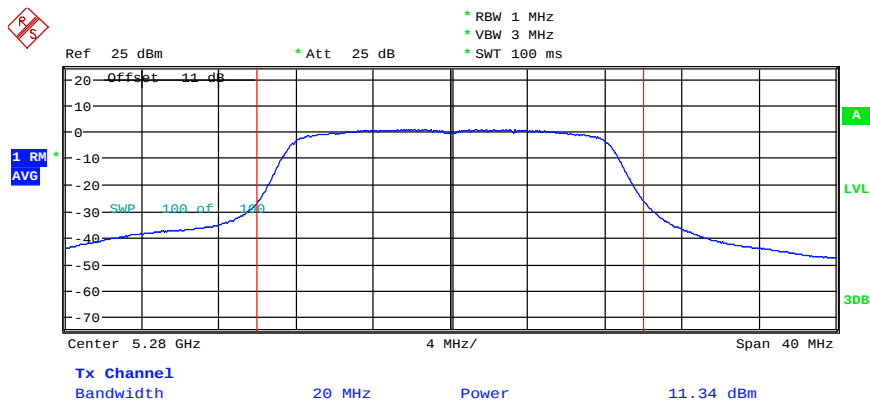
FCC ID: YY3-182010

## 5.25 GHz ~ 5.35 GHz



MAXIMUM CONDUCTED POWER ANT1\_11aCH52

Date: 22.APR.2019 11:00:16



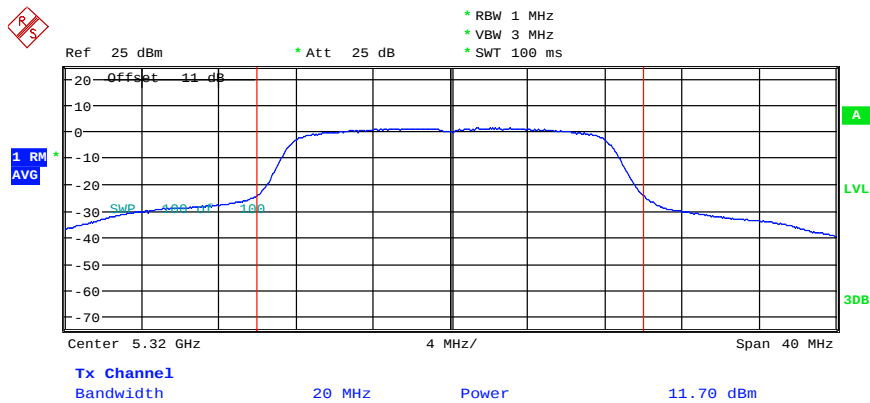
MAXIMUM CONDUCTED POWER ANT1\_11aCH56

Date: 22.APR.2019 11:04:14



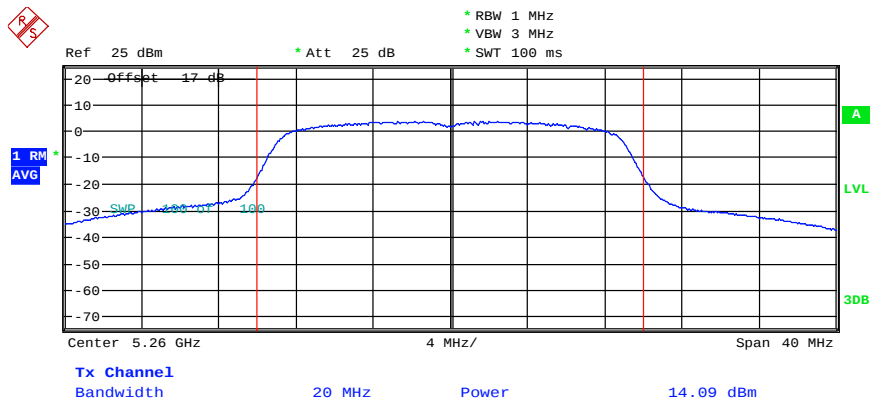
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



MAXIMUM CONDUCTED POWER ANT1\_11aCH64

Date: 22.APR.2019 11:07:30



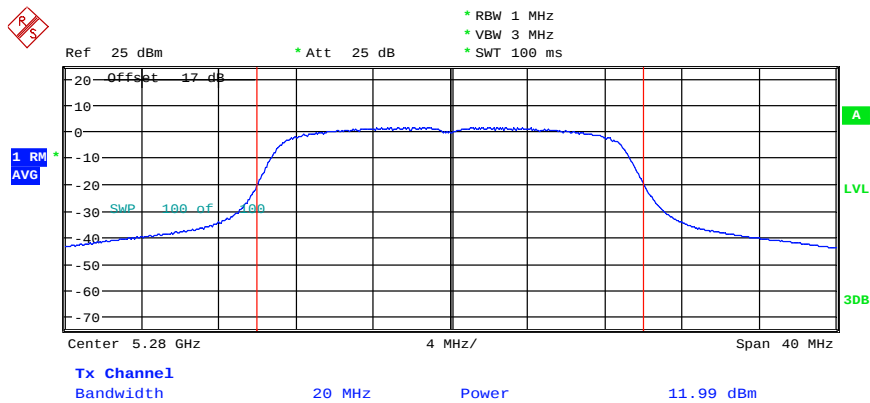
MAXIMUM CONDUCTED POWER ANT1\_11ac20CH52

Date: 22.APR.2019 13:09:40



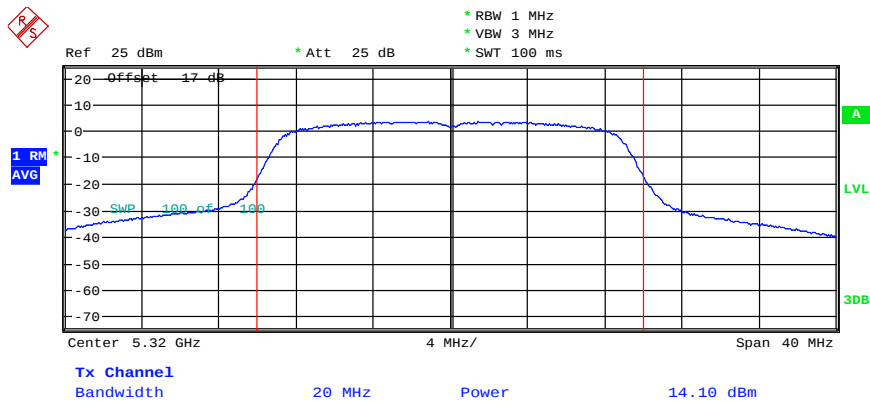
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



MAXIMUM CONDUCTED POWER ANT1\_11ac20CH56

Date: 22.APR.2019 13:13:17



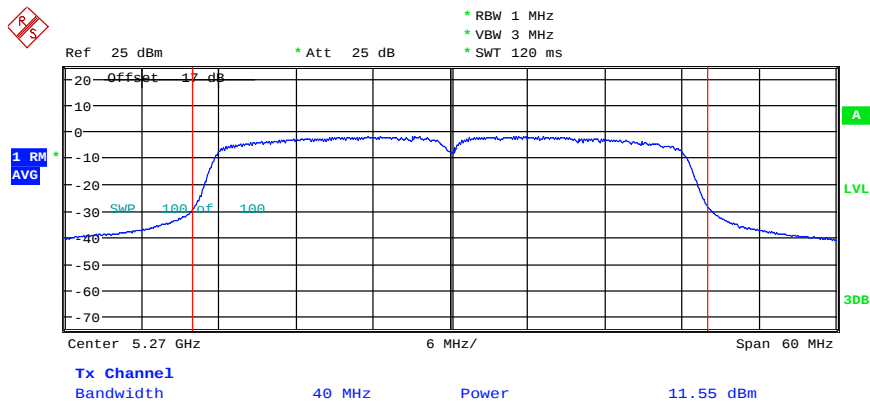
MAXIMUM CONDUCTED POWER ANT1\_11ac20CH64

Date: 22.APR.2019 13:17:22



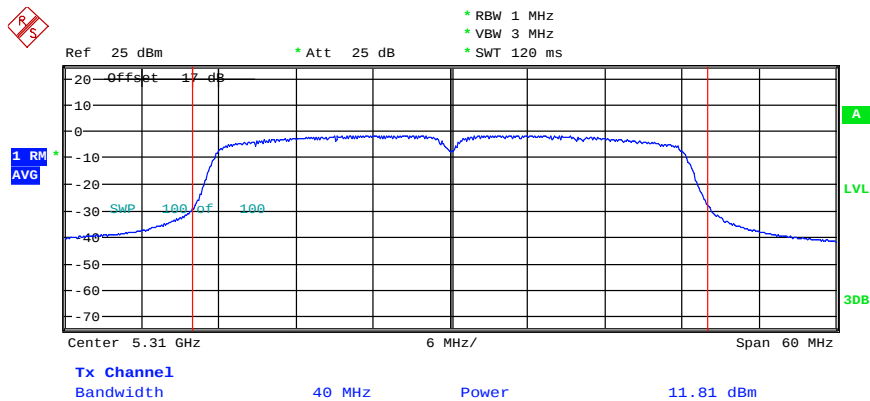
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



MAXIMUM CONDUCTED POWER ANT1\_11ac40CH54

Date: 22.APR.2019 13:34:03



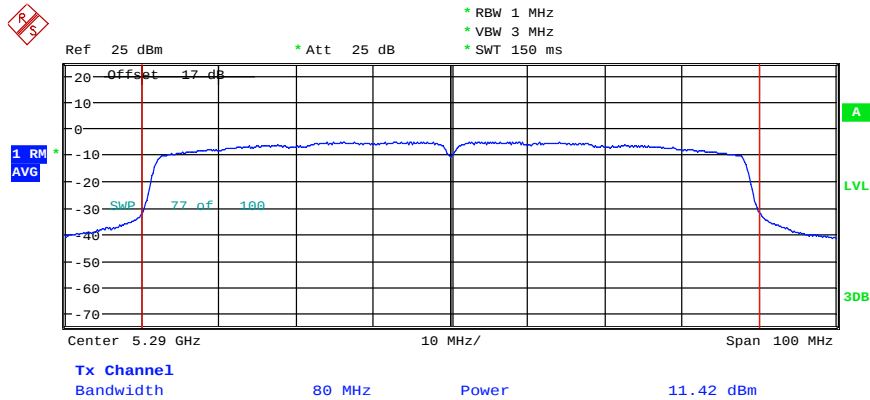
MAXIMUM CONDUCTED POWER ANT1\_11ac40CH62

Date: 22.APR.2019 13:37:47



Registration number: W6M21903-18857-C-54

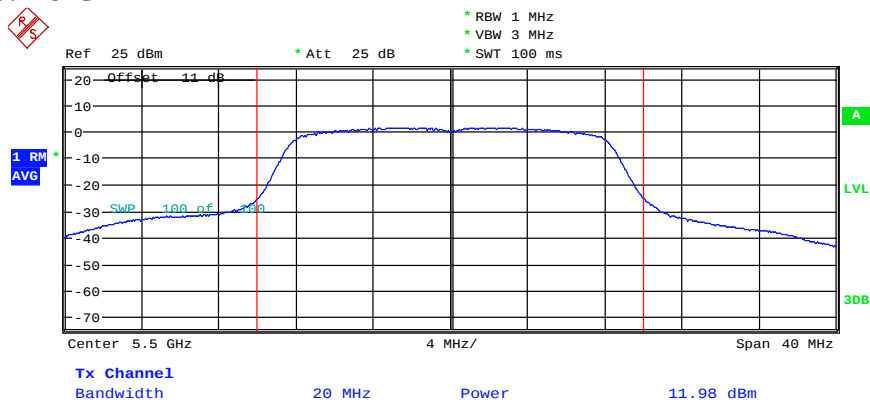
FCC ID: YY3-182010



MAXIMUM CONDUCTED POWER ANT1\_11ac80CH58

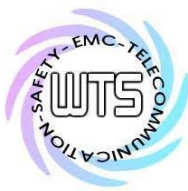
Date: 22.APR.2019 13:48:52

## 5.47 GHz ~ 5.725 GHz

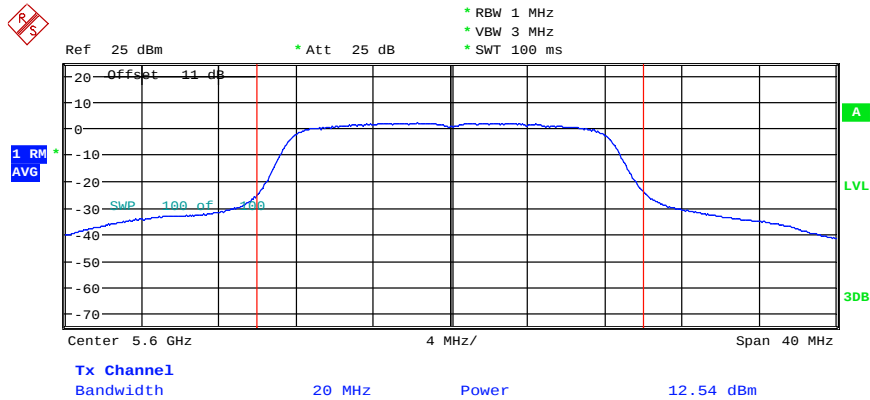


MAXIMUM CONDUCTED POWER ANT1\_11aCH100

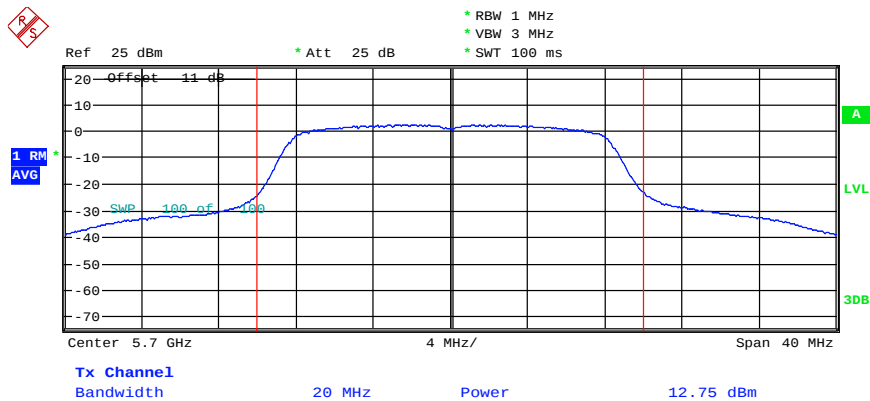
Date: 22.APR.2019 14:05:54



Registration number: W6M21903-18857-C-54  
FCC ID: YY3-182010



MAXIMUM CONDUCTED POWER ANT1\_11aCH120  
Date: 22.APR.2019 14:10:55

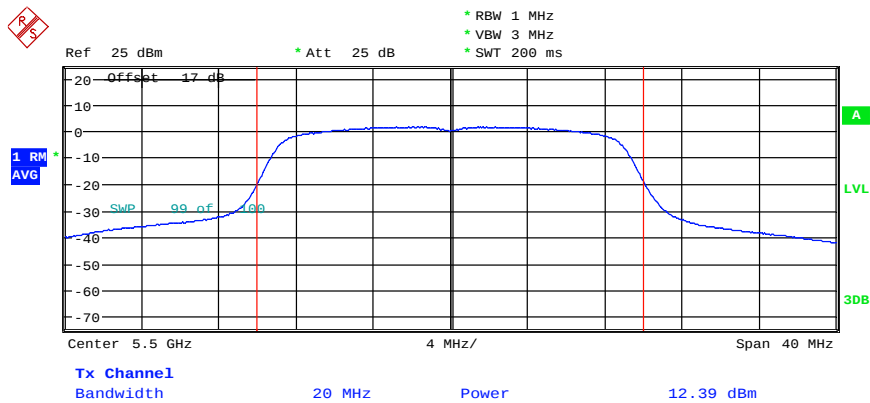


MAXIMUM CONDUCTED POWER ANT1\_11aCH140  
Date: 22.APR.2019 14:21:04



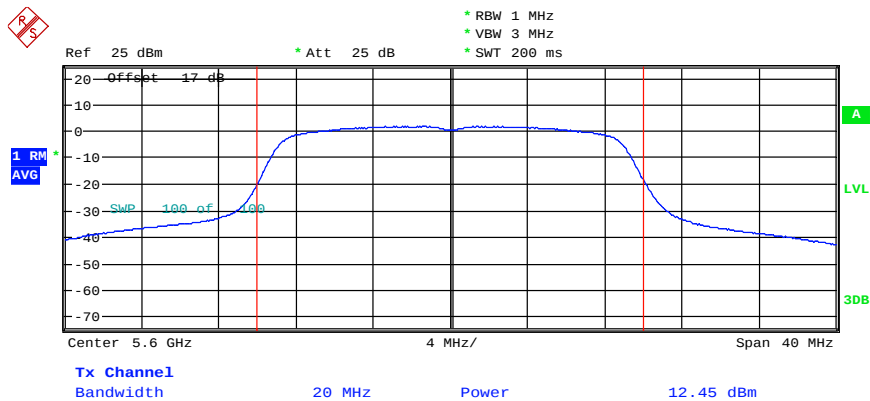
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



MAXIMUM CONDUCTED POWER ANT1\_11ac20CH100

Date: 23.APR.2019 09:23:59



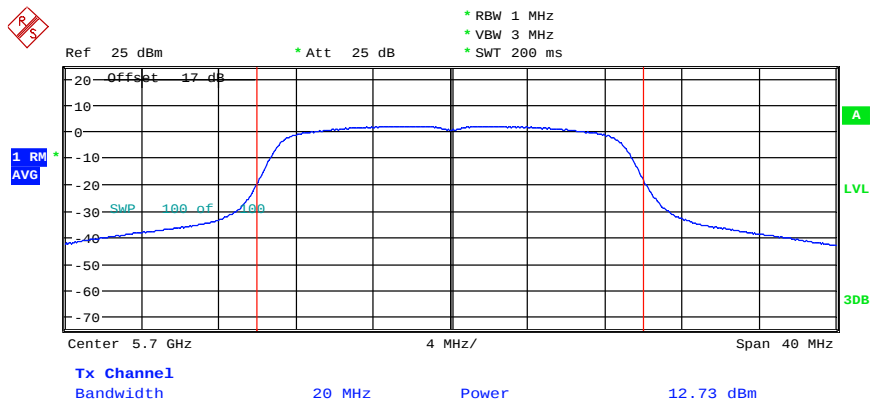
MAXIMUM CONDUCTED POWER ANT1\_11ac20CH120

Date: 23.APR.2019 09:32:39



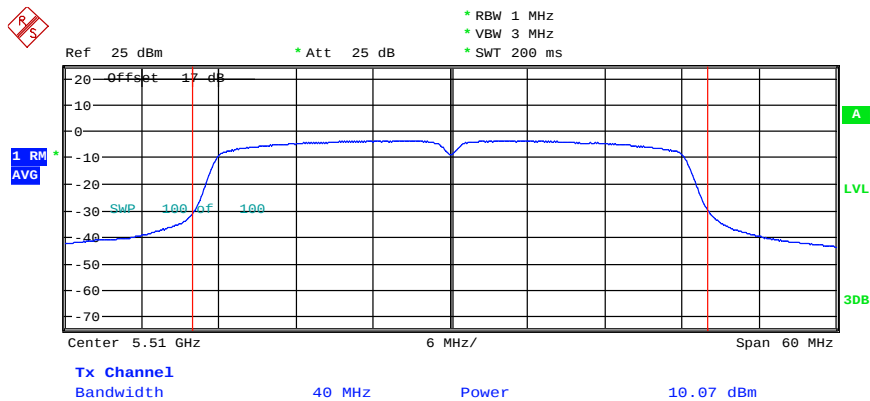
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



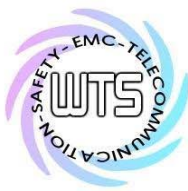
MAXIMUM CONDUCTED POWER ANT1\_11ac20CH140

Date: 23.APR.2019 09:35:39



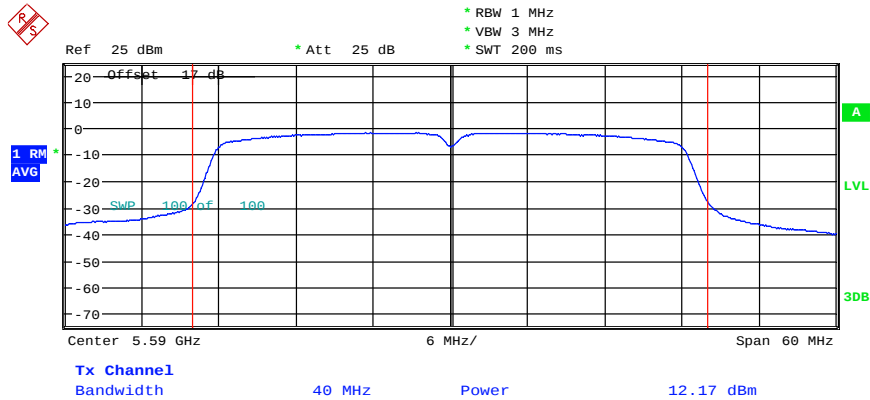
MAXIMUM CONDUCTED POWER ANT1\_11ac40CH102

Date: 23.APR.2019 09:40:59



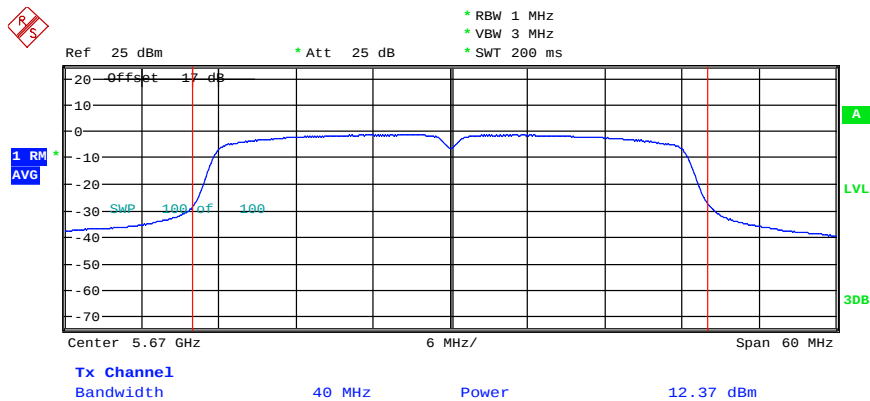
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



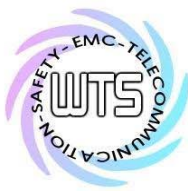
MAXIMUM CONDUCTED POWER ANT1\_11ac40CH118

Date: 23.APR.2019 09:44:19



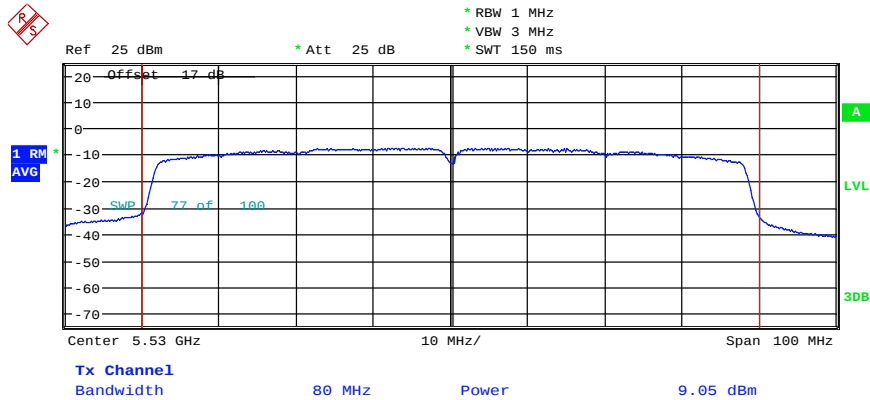
MAXIMUM CONDUCTED POWER ANT1\_11ac40CH134

Date: 23.APR.2019 09:49:19



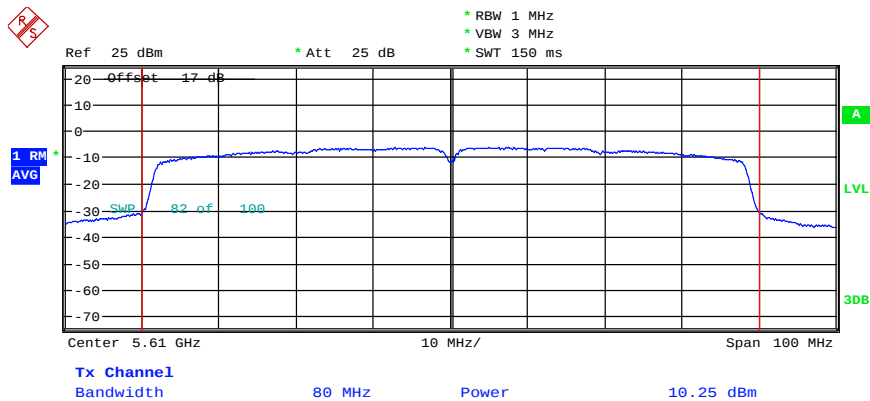
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



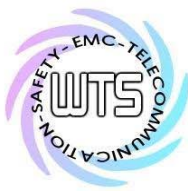
MAXIMUM CONDUCTED POWER ANT1\_11ac80CH106

Date: 22.APR.2019 15:18:56



MAXIMUM CONDUCTED POWER ANT1\_11ac80CH122

Date: 22.APR.2019 15:21:44



Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010

**5.725 GHz ~ 5.85 GHz**



MAXIMUM CONDUCTED POWER ANTI\_11aCH149

Date: 22.APR.2019 15:27:55



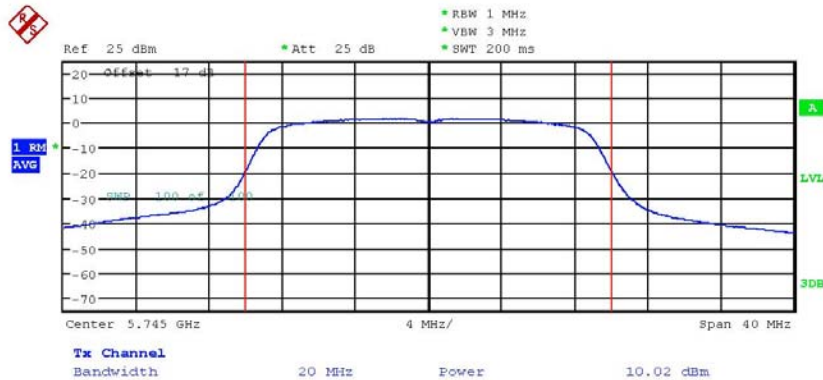
MAXIMUM CONDUCTED POWER ANTI\_11aCH157

Date: 22.APR.2019 15:33:10

Registration number: W6M21903-18857-C-54  
FCC ID: YY3-182010

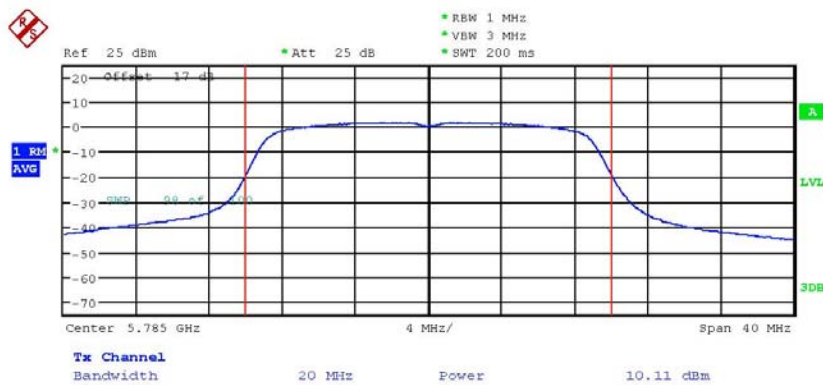


MAXIMUM CONDUCTED POWER ANT1\_11aCH165  
Date: 22.APR.2019 15:35:30

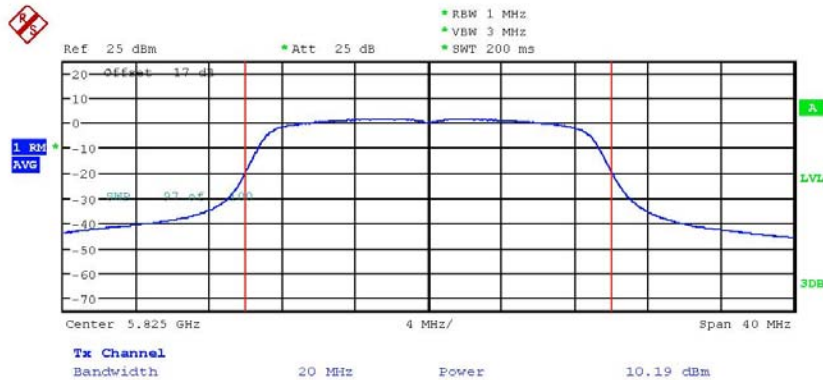


MAXIMUM CONDUCTED POWER ANT1\_11ac20CH149  
Date: 23.APR.2019 08:21:10

Registration number: W6M21903-18857-C-54  
FCC ID: YY3-182010



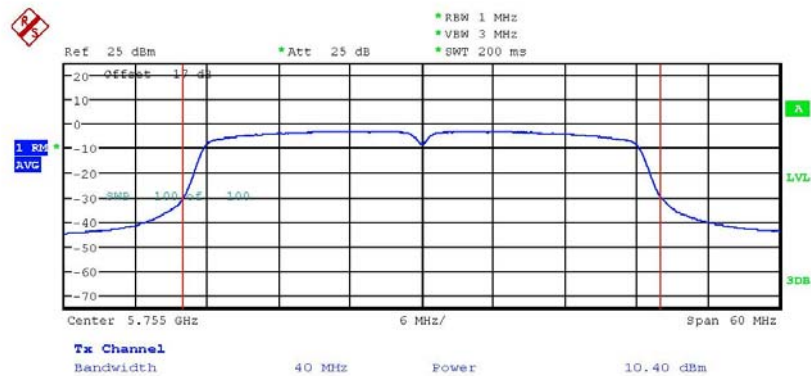
MAXIMUM CONDUCTED POWER ANT1\_11ac20CH157  
Date: 23.APR.2019 08:24:40



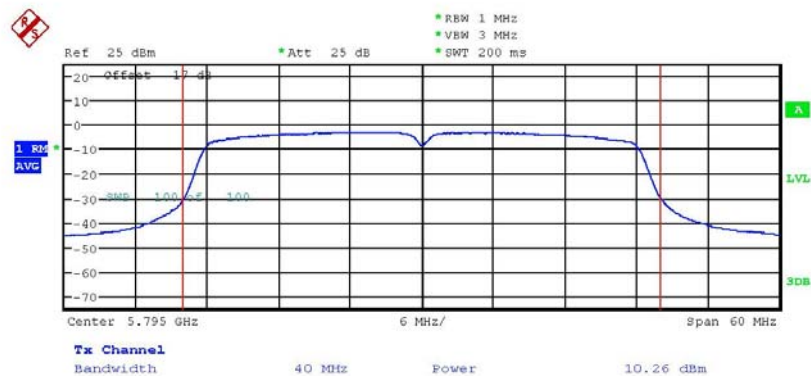
MAXIMUM CONDUCTED POWER ANT1\_11ac20CH165  
Date: 23.APR.2019 08:28:50



Registration number: W6M21903-18857-C-54  
FCC ID: YY3-182010

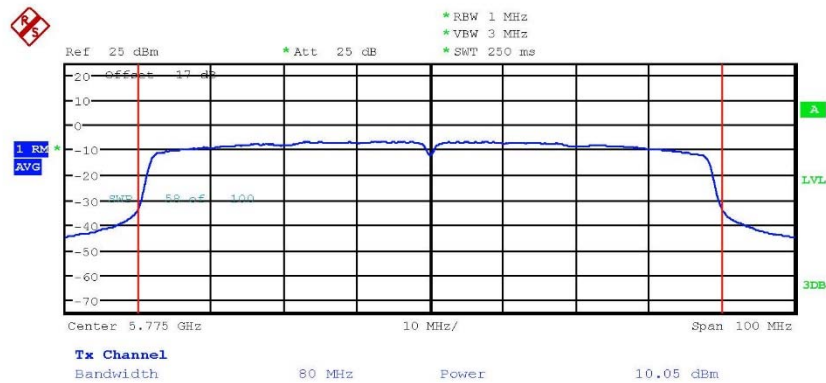


MAXIMUM CONDUCTED POWER ANT1\_11ac40CH151  
Date: 23.APR.2019 08:34:10



MAXIMUM CONDUCTED POWER ANT1\_11ac40CH159  
Date: 23.APR.2019 08:43:10

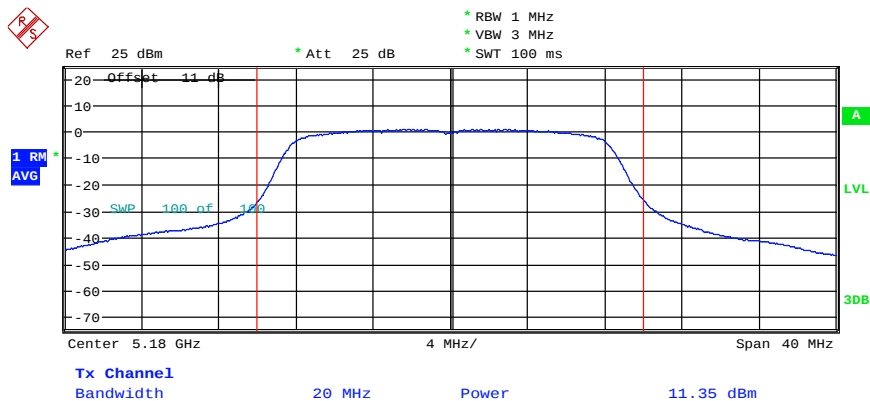
Registration number: W6M21903-18857-C-54  
FCC ID: YY3-182010



MAXIMUM CONDUCTED POWER ANT1\_11ac80CH155  
Date: 23.APR.2019 08:47:50

## ANTB

5.15 GHz ~ 5.25 GHz

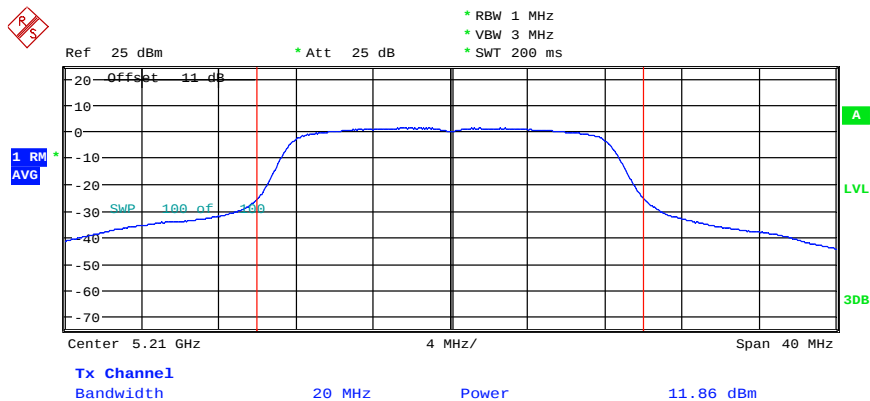


MAXIMUM CONDUCTED POWER ANT2\_11aCH36  
Date: 22.APR.2019 09:36:23



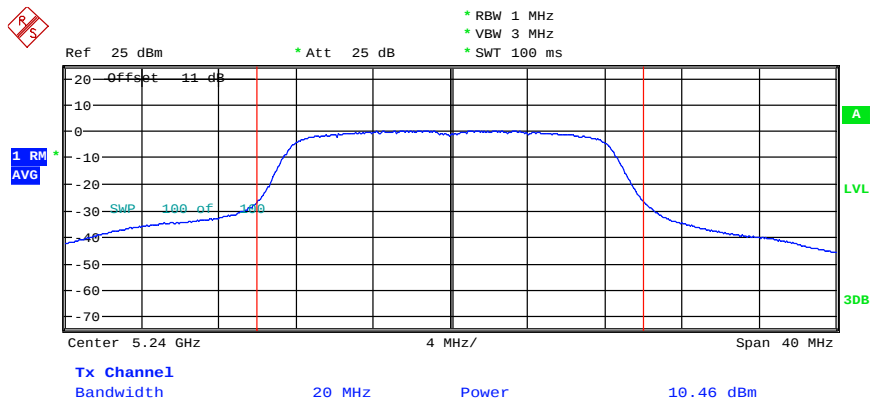
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



MAXIMUM CONDUCTED POWER ANT2\_11aCH44

Date: 3.JUN.2019 09:24:13



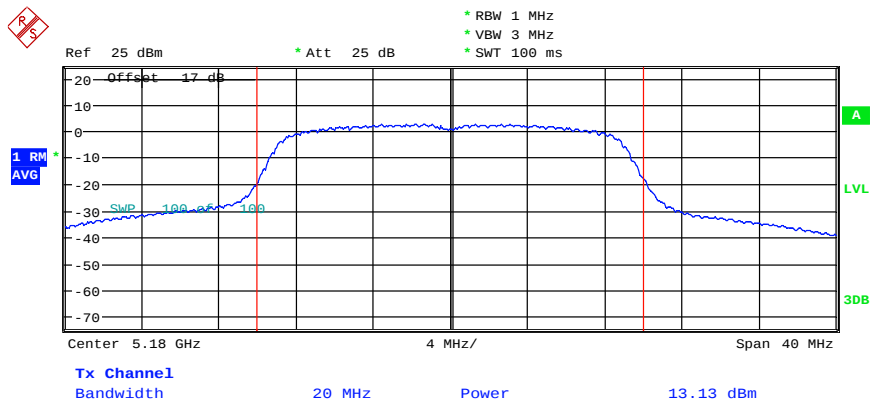
MAXIMUM CONDUCTED POWER ANT2\_11aCH48

Date: 22.APR.2019 10:56:25



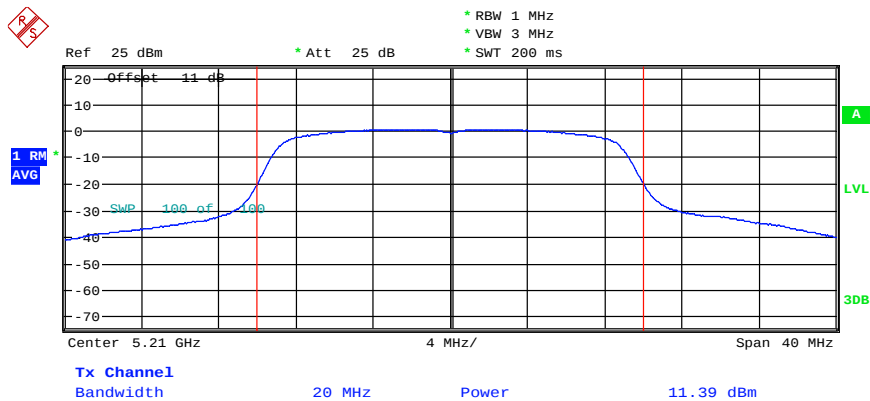
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



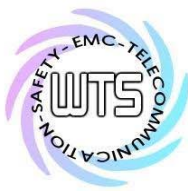
MAXIMUM CONDUCTED POWER ANT2\_11ac20CH36

Date: 22.APR.2019 11:50:47



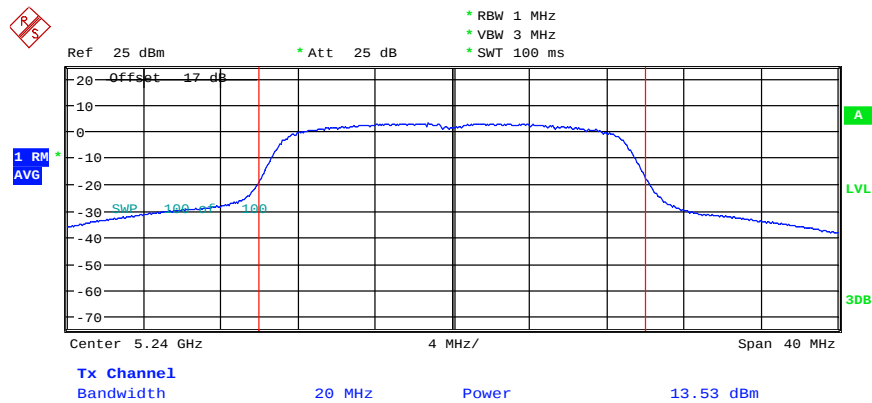
MAXIMUM CONDUCTED POWER ANT2\_11ac20CH44

Date: 3.JUN.2019 09:44:53



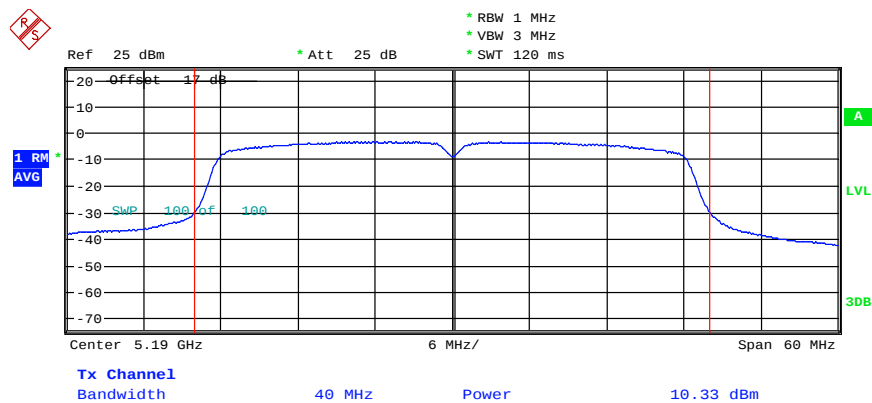
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



MAXIMUM CONDUCTED POWER ANT2\_11ac20CH48

Date: 22.APR.2019 12:00:00



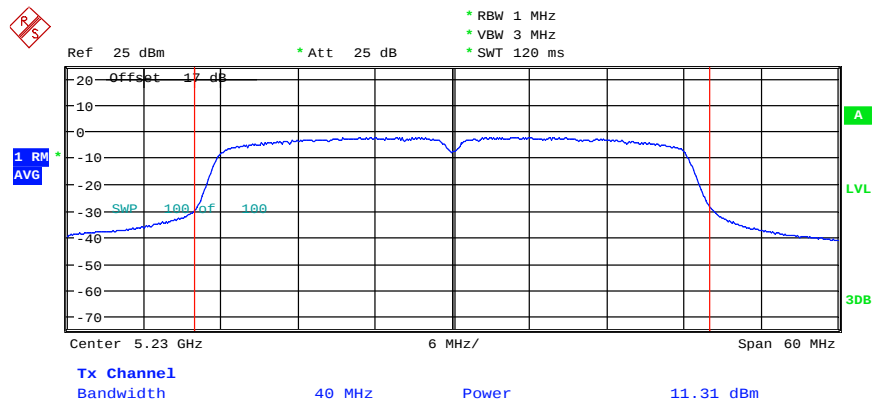
MAXIMUM CONDUCTED POWER ANT2\_11ac40CH38

Date: 22.APR.2019 13:25:53



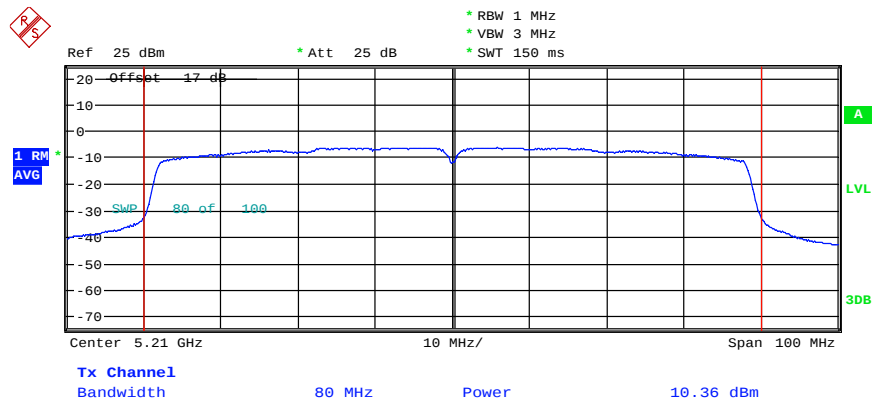
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



MAXIMUM CONDUCTED POWER ANT2\_11ac40CH46

Date: 22.APR.2019 13:31:22



MAXIMUM CONDUCTED POWER ANT2\_11ac80CH42

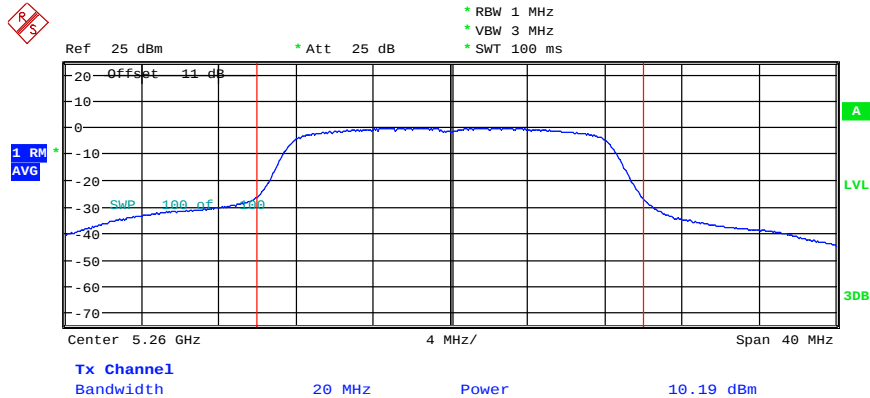
Date: 22.APR.2019 13:44:33



Registration number: W6M21903-18857-C-54

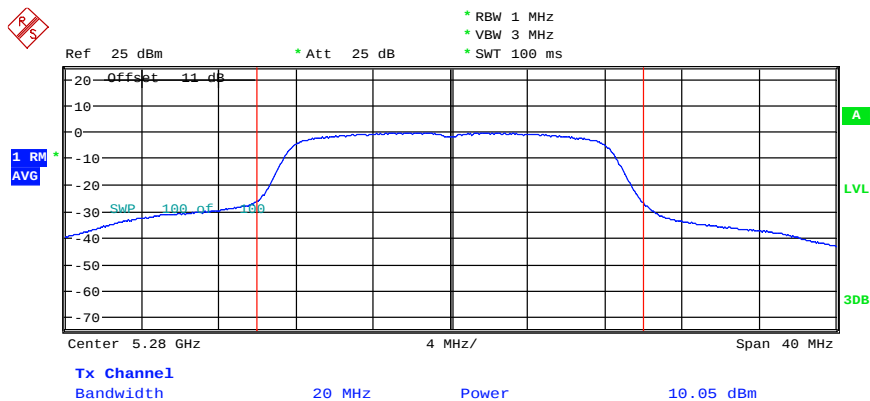
FCC ID: YY3-182010

## 5.25 GHz ~ 5.35 GHz



MAXIMUM CONDUCTED POWER ANT2\_11aCH52

Date: 22.APR.2019 11:01:40



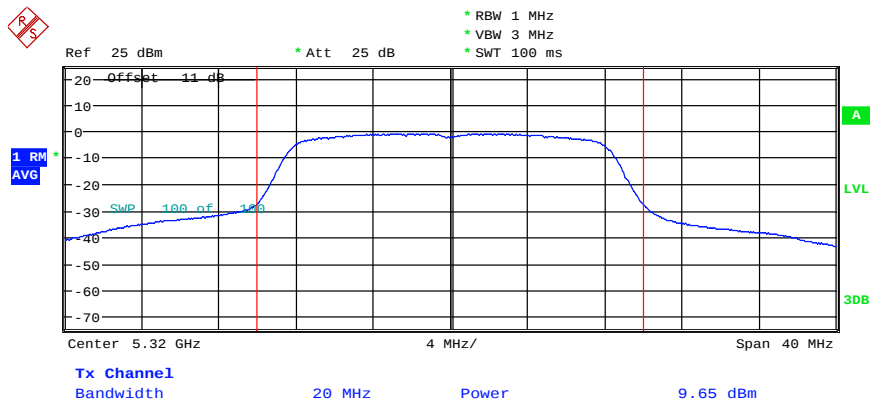
MAXIMUM CONDUCTED POWER ANT2\_11aCH56

Date: 22.APR.2019 11:05:45



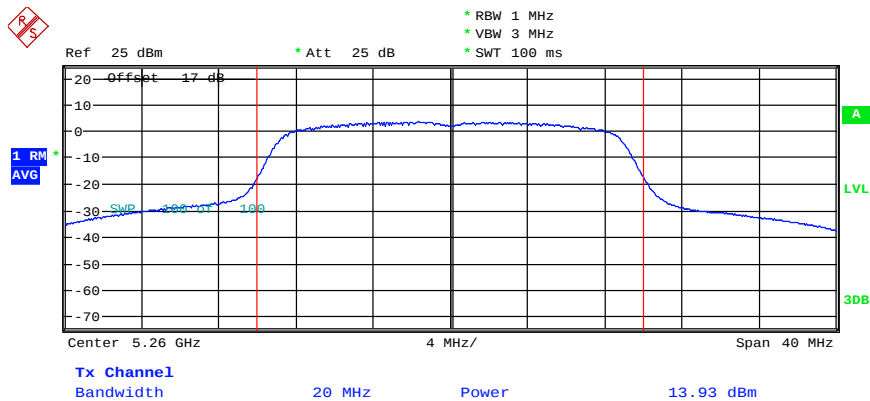
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



MAXIMUM CONDUCTED POWER ANT2\_11aCH64

Date: 22.APR.2019 11:09:15



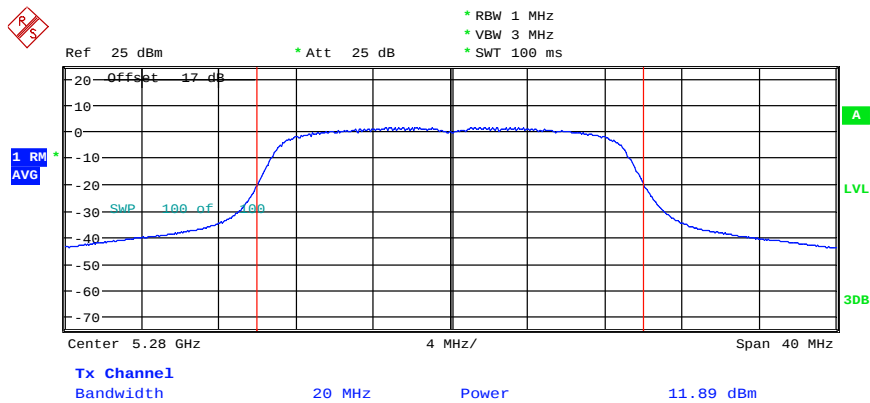
MAXIMUM CONDUCTED POWER ANT2\_11ac20CH52

Date: 22.APR.2019 13:10:50



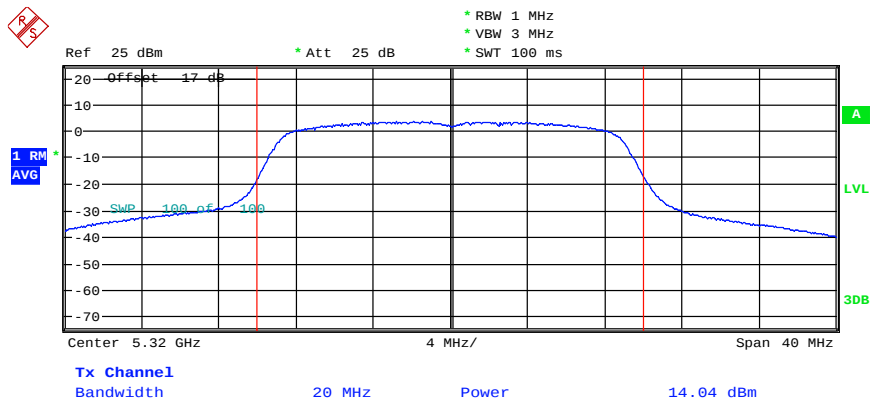
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



MAXIMUM CONDUCTED POWER ANT2\_11ac20CH56

Date: 22.APR.2019 13:14:34



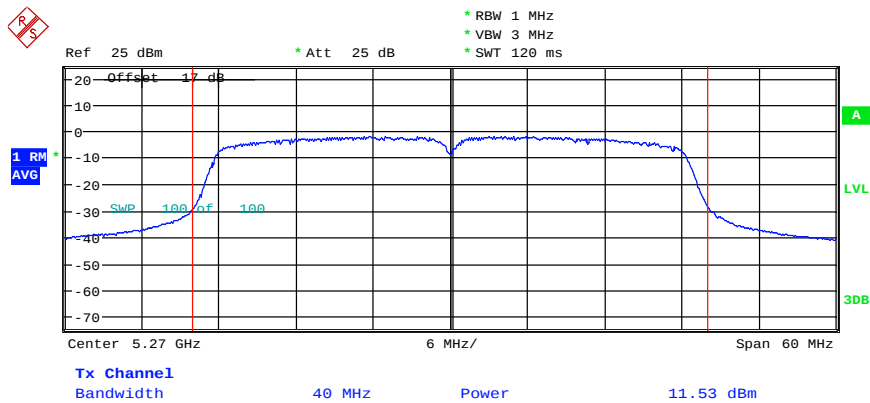
MAXIMUM CONDUCTED POWER ANT2\_11ac20CH64

Date: 22.APR.2019 13:19:42



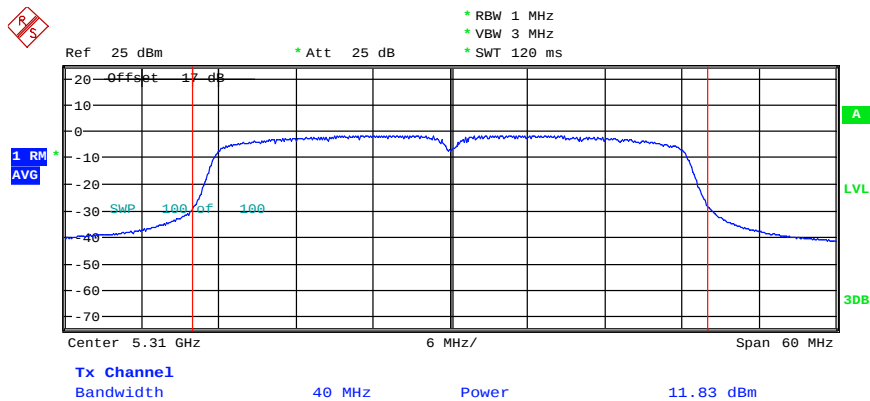
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



MAXIMUM CONDUCTED POWER ANT2\_11ac40CH54

Date: 22.APR.2019 13:35:20

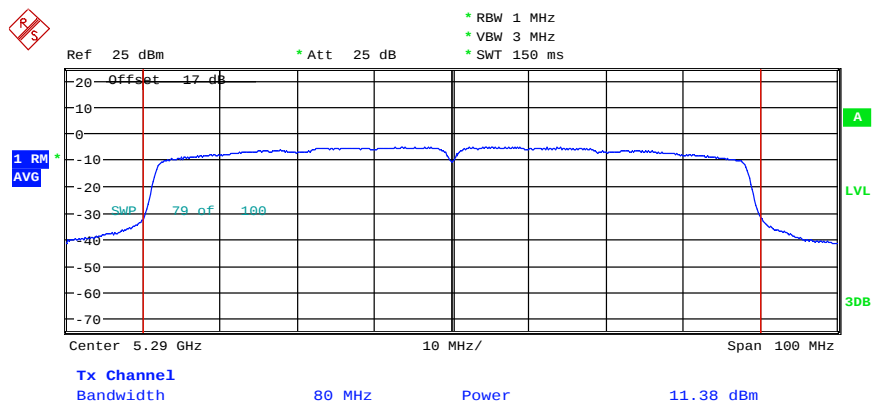


MAXIMUM CONDUCTED POWER ANT2\_11ac40CH62

Date: 22.APR.2019 13:38:57

Registration number: W6M21903-18857-C-54

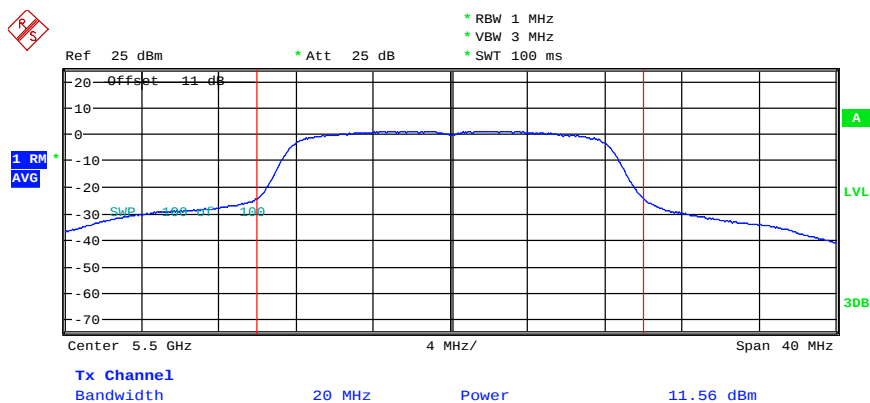
FCC ID: YY3-182010



MAXIMUM CONDUCTED POWER ANT2\_11ac80CH58

Date: 22.APR.2019 13:46:39

**5.47 GHz ~ 5.725 GHz**



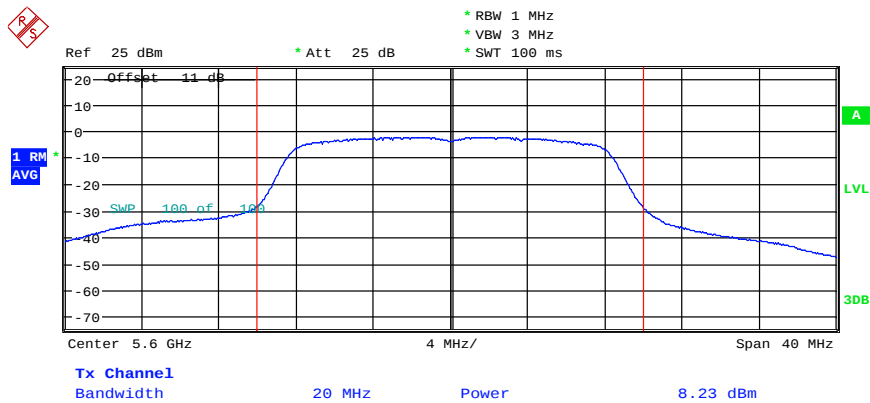
MAXIMUM CONDUCTED POWER ANT2\_11aCH100

Date: 22.APR.2019 14:08:35



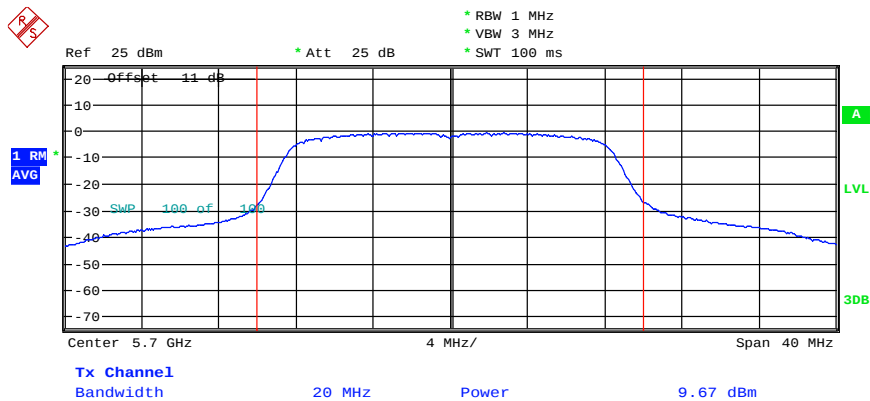
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



MAXIMUM CONDUCTED POWER ANT2\_11aCH120

Date: 22.APR.2019 14:16:03



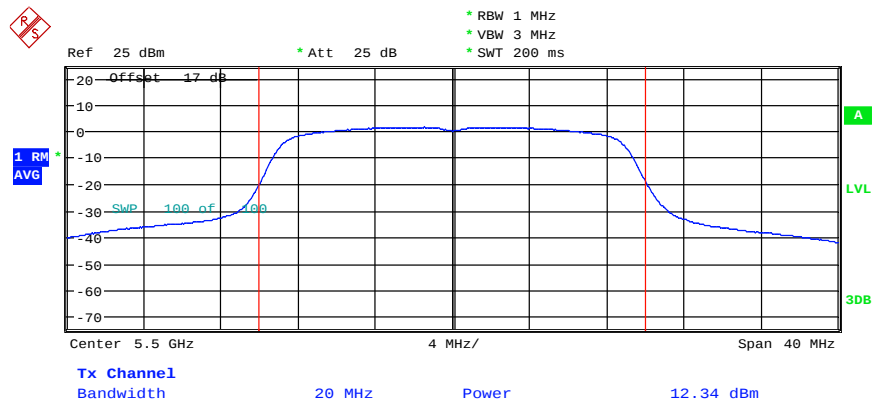
MAXIMUM CONDUCTED POWER ANT2\_11aCH140

Date: 22.APR.2019 14:18:44



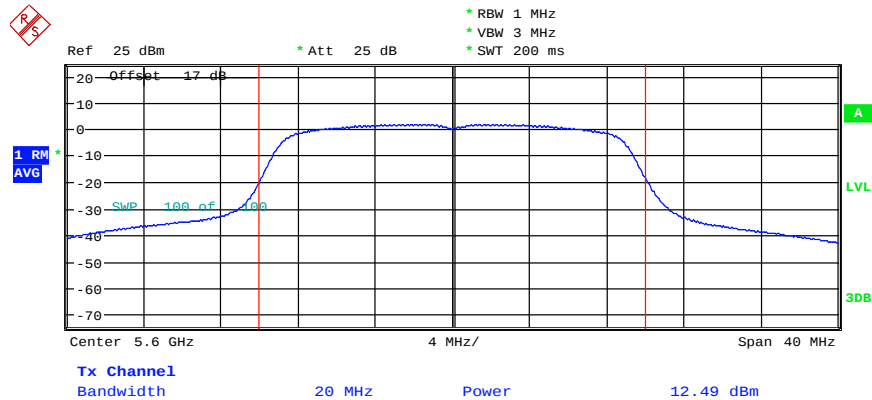
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



MAXIMUM CONDUCTED POWER ANT2\_11ac20CH100

Date: 23.APR.2019 09:25:59



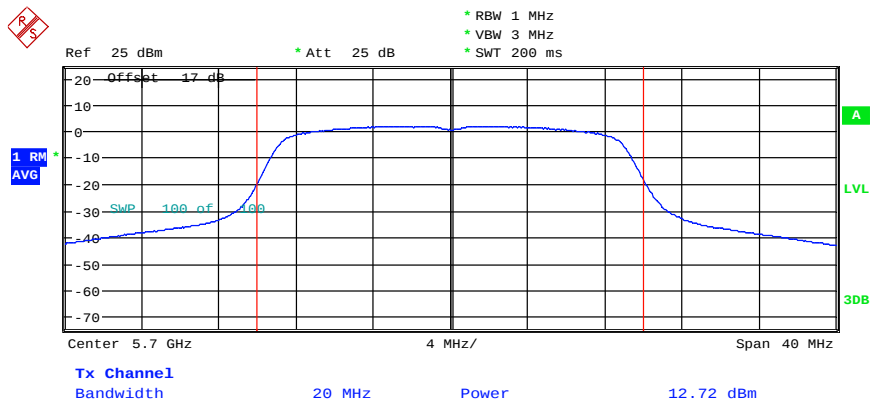
MAXIMUM CONDUCTED POWER ANT2\_11ac20CH120

Date: 23.APR.2019 09:31:29



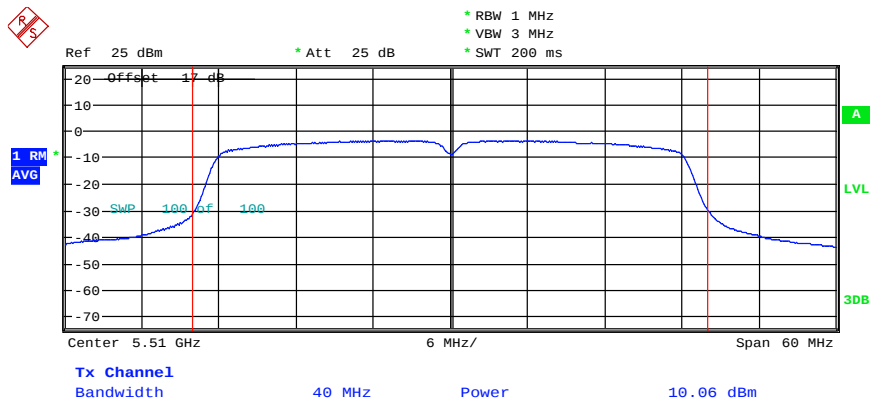
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



MAXIMUM CONDUCTED POWER ANT2\_11ac20CH140

Date: 23.APR.2019 09:37:29



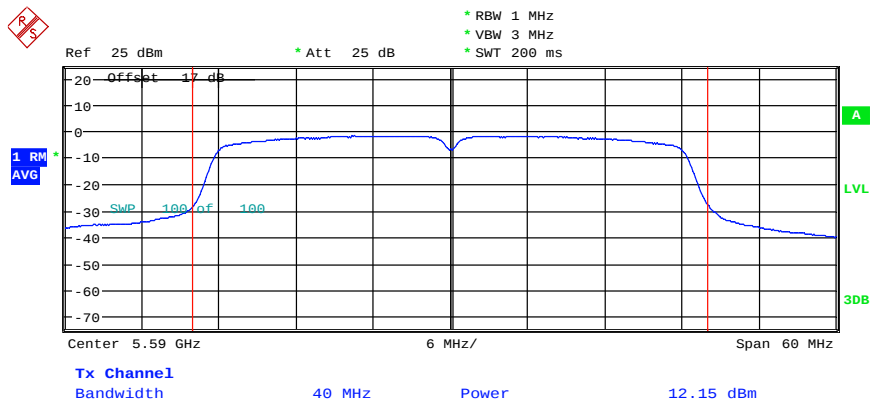
MAXIMUM CONDUCTED POWER ANT2\_11ac40CH102

Date: 23.APR.2019 09:42:19



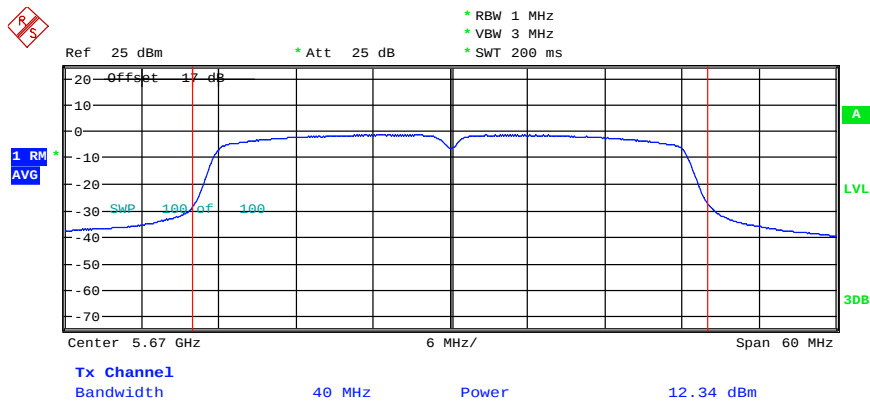
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



MAXIMUM CONDUCTED POWER ANT2\_11ac40CH118

Date: 23.APR.2019 09:45:39



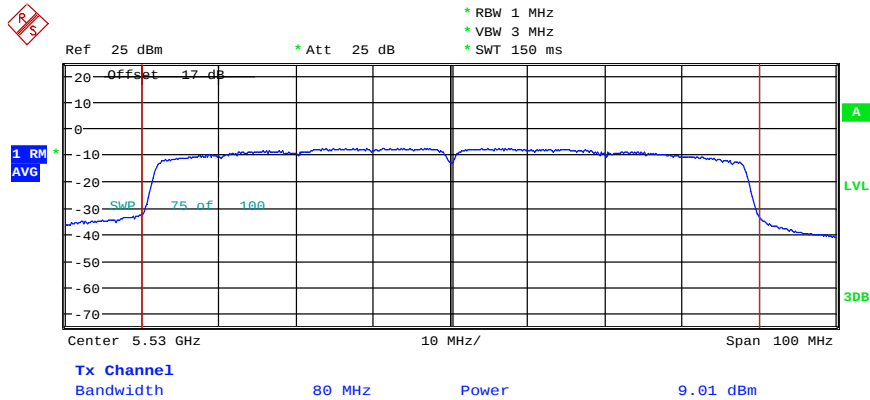
MAXIMUM CONDUCTED POWER ANT2\_11ac40CH134

Date: 23.APR.2019 09:47:49



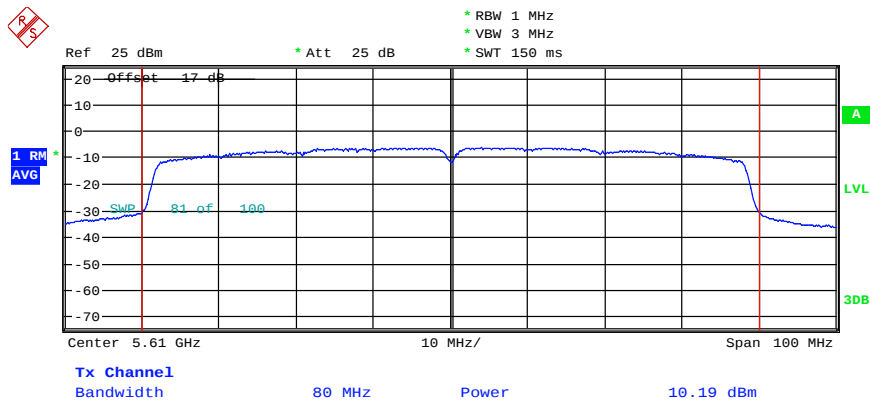
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



MAXIMUM CONDUCTED POWER ANT2\_11ac80CH106

Date: 22.APR.2019 15:16:08



MAXIMUM CONDUCTED POWER ANT2\_11ac80CH122

Date: 22.APR.2019 15:23:01



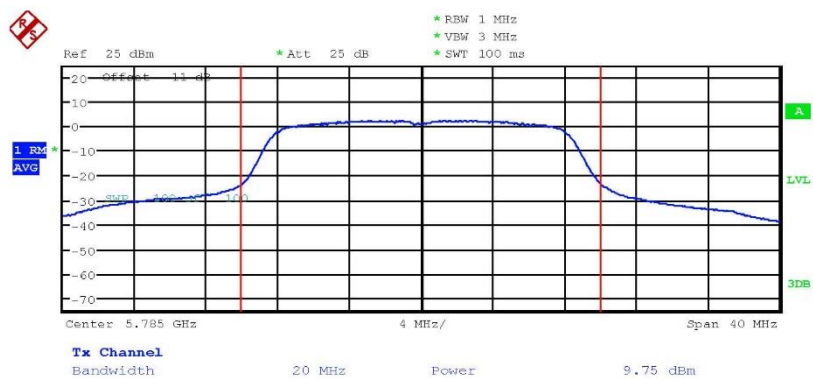
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010

**5.725 GHz ~ 5.85 GHz**



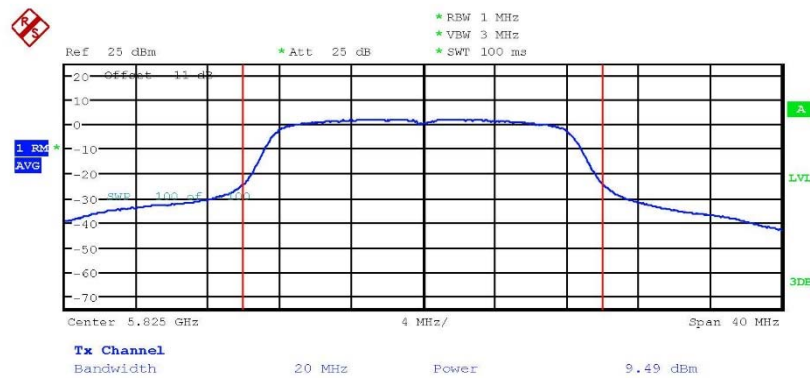
MAXIMUM CONDUCTED POWER ANT2\_11aCH149  
Date: 22.APR.2019 15:29:40



MAXIMUM CONDUCTED POWER ANT2\_11aCH157  
Date: 22.APR.2019 15:31:18



Registration number: W6M21903-18857-C-54  
FCC ID: YY3-182010



MAXIMUM CONDUCTED POWER ANT2\_11aCH165  
Date: 22.APR.2019 15:36:54



MAXIMUM CONDUCTED POWER ANT2\_11ac20CH149  
Date: 23.APR.2019 08:22:40



Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



MAXIMUM CONDUCTED POWER ANT2\_11ac20CH157

Date: 23.APR.2019 08:26:00



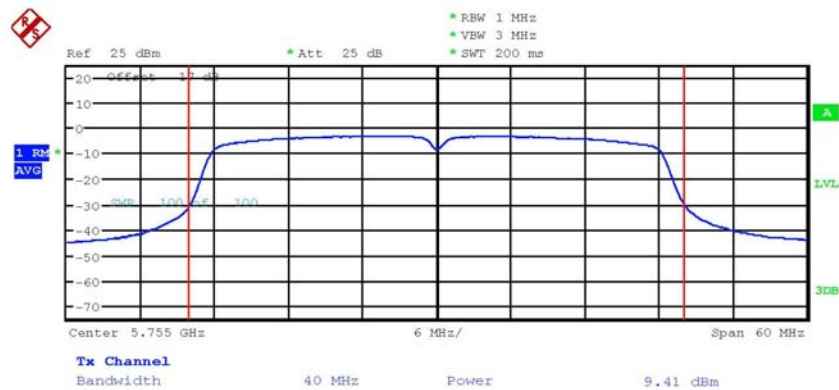
MAXIMUM CONDUCTED POWER ANT2\_11ac20CH165

Date: 23.APR.2019 08:30:10



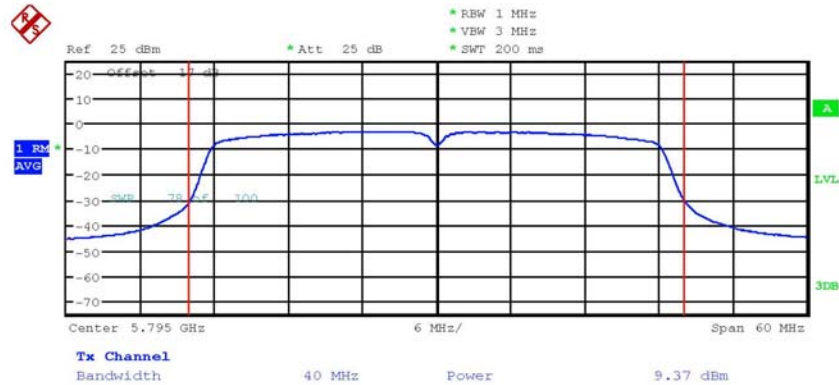
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



MAXIMUM CONDUCTED POWER ANT2\_11ac40CH151

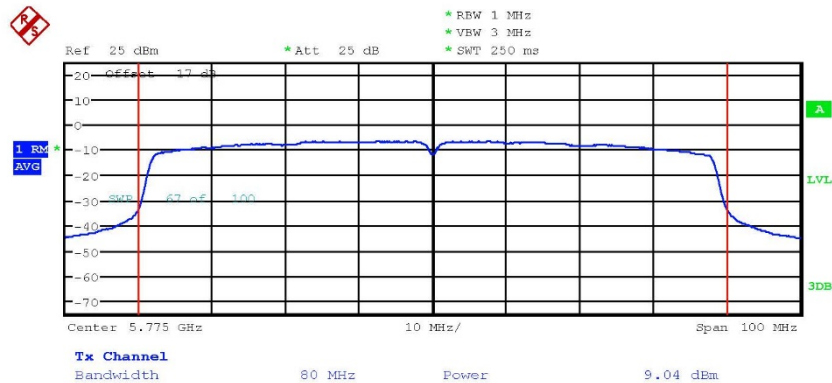
Date: 23.APR.2019 08:40:50



MAXIMUM CONDUCTED POWER ANT2\_11ac40CH159

Date: 23.APR.2019 08:44:30

Registration number: W6M21903-18857-C-54  
FCC ID: YY3-182010



MAXIMUM CONDUCTED POWER ANT2\_11ac80CH155  
Date: 23.APR.2019 09:02:20

## 5.15GHz~5.25GHz

| Antenna A     | mW     |        |         | dBm    |        |         |
|---------------|--------|--------|---------|--------|--------|---------|
|               | Ch Low | Ch Mid | Ch High | Ch Low | Ch Mid | Ch High |
| 802.11n 20MHz | 19.77  | 15.67  | 22.54   | 12.96  | 11.95  | 13.53   |
| 802.11n 40MHz | 10.81  | --     | 13.74   | 10.34  | --     | 11.38   |
| 802.11ac      | 10.81  | --     | --      | 10.34  | --     | --      |
| Antenna B     | mW     |        |         | dBm    |        |         |
|               | Ch Low | Ch Mid | Ch High | Ch Low | Ch Mid | Ch High |
| 802.11n 20MHz | 20.56  | 13.77  | 22.54   | 13.13  | 11.39  | 13.53   |
| 802.11n 40MHz | 10.79  | --     | 13.52   | 10.33  | --     | 11.31   |
| 802.11ac      | 10.86  | --     | --      | 10.36  | --     | --      |
| Combine       | mW     |        |         | dBm    |        |         |
|               | Ch Low | Ch Mid | Ch High | Ch Low | Ch Mid | Ch High |
| 802.11n 20MHz | 40.33  | 29.44  | 45.08   | 16.06  | 14.69  | 16.54   |
| 802.11n 40MHz | 21.6   | --     | 27.26   | 13.34  | --     | 14.36   |
| 802.11ac      | 21.67  | --     | --      | 13.36  | --     | --      |



Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010

5.25GHz~5.35GHz

| Antenna A     | mW     |        |         | dBm    |        |         |
|---------------|--------|--------|---------|--------|--------|---------|
|               | Ch Low | Ch Mid | Ch High | Ch Low | Ch Mid | Ch High |
| 802.11n 20MHz | 25.64  | 15.81  | 25.70   | 14.09  | 11.99  | 14.10   |
| 802.11n 40MHz | 14.29  | --     | 15.17   | 11.55  | --     | 11.81   |
| 802.11ac      | 13.87  | --     | --      | 11.42  | --     | --      |
| Antenna B     | mW     |        |         | dBm    |        |         |
|               | Ch Low | Ch Mid | Ch High | Ch Low | Ch Mid | Ch High |
| 802.11n 20MHz | 24.72  | 15.45  | 25.35   | 13.93  | 11.89  | 14.04   |
| 802.11n 40MHz | 14.22  | --     | 15.24   | 11.53  | --     | 11.83   |
| 802.11ac      | 13.74  | --     | --      | 11.38  | --     | --      |
| Combine       | mW     |        |         | dBm    |        |         |
|               | Ch Low | Ch Mid | Ch High | Ch Low | Ch Mid | Ch High |
| 802.11n 20MHz | 50.36  | 31.26  | 51.05   | 17.02  | 14.95  | 17.08   |
| 802.11n 40MHz | 28.51  | --     | 30.41   | 14.55  | --     | 14.83   |
| 802.11ac      | 27.61  | --     | --      | 14.41  | --     | --      |

5.47GHz~5.725GHz

| Antenna A     | mW     |        |         | dBm    |        |         |
|---------------|--------|--------|---------|--------|--------|---------|
|               | Ch Low | Ch Mid | Ch High | Ch Low | Ch Mid | Ch High |
| 802.11n 20MHz | 17.34  | 17.58  | 18.75   | 12.39  | 12.45  | 12.73   |
| 802.11n 40MHz | 10.16  | 16.48  | 17.26   | 10.07  | 12.17  | 12.37   |
| 802.11ac      | 8.04   | --     | 10.59   | 9.05   | --     | 10.25   |
| Antenna B     | mW     |        |         | dBm    |        |         |
|               | Ch Low | Ch Mid | Ch High | Ch Low | Ch Mid | Ch High |
| 802.11n 20MHz | 17.14  | 17.74  | 18.71   | 12.34  | 12.49  | 12.72   |
| 802.11n 40MHz | 10.14  | 16.41  | 17.14   | 10.06  | 12.15  | 12.34   |
| 802.11ac      | 7.96   | --     | 10.45   | 9.01   | --     | 10.19   |
| Combine       | mW     |        |         | dBm    |        |         |
|               | Ch Low | Ch Mid | Ch High | Ch Low | Ch Mid | Ch High |
| 802.11n 20MHz | 34.48  | 35.32  | 37.46   | 15.38  | 15.48  | 15.74   |
| 802.11n 40MHz | 20.3   | 32.89  | 34.4    | 13.07  | 15.17  | 15.37   |
| 802.11ac      | 16.00  | --     | 21.04   | 12.04  | --     | 13.23   |



Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010

5.725GHz~5.85GHz

| Antenna A     | mW     |        |         | dBm    |        |         |
|---------------|--------|--------|---------|--------|--------|---------|
|               | Ch Low | Ch Mid | Ch High | Ch Low | Ch Mid | Ch High |
| 802.11n 20MHz | 10.05  | 10.26  | 10.45   | 10.02  | 10.11  | 10.19   |
| 802.11n 40MHz | 10.96  | --     | 10.62   | 10.40  | --     | 10.26   |
| 802.11ac      | 10.12  | --     | --      | 10.05  | --     | --      |
| Antenna B     | mW     |        |         | dBm    |        |         |
|               | Ch Low | Ch Mid | Ch High | Ch Low | Ch Mid | Ch High |
| 802.11n 20MHz | 8.75   | 8.63   | 8.24    | 9.42   | 9.36   | 9.16    |
| 802.11n 40MHz | 8.73   | --     | 8.65    | 9.41   | --     | 9.37    |
| 802.11ac      | 8.02   | --     | --      | 9.04   | --     | --      |
| Combine       | mW     |        |         | dBm    |        |         |
|               | Ch Low | Ch Mid | Ch High | Ch Low | Ch Mid | Ch High |
| 802.11n 20MHz | 18.80  | 18.89  | 18.69   | 12.74  | 12.76  | 12.72   |
| 802.11n 40MHz | 19.69  | --     | 19.27   | 12.94  | --     | 12.85   |
| 802.11ac      | 18.14  | --     | --      | 12.59  | --     | --      |

Test equipment used: ETSTW-RE 055, ETSTW-RE 050



Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010

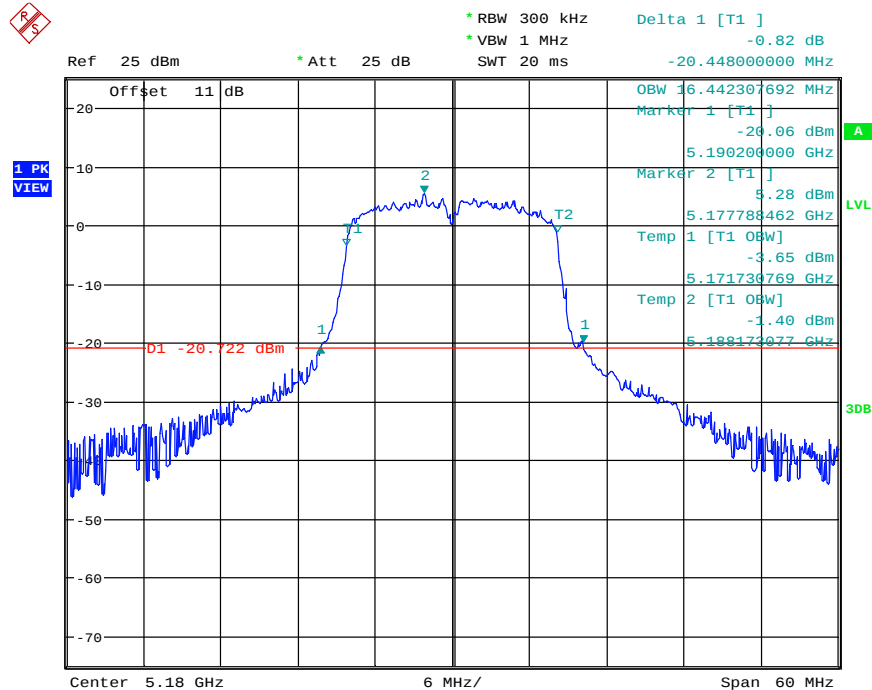
## 3.2 26dB emission bandwidth, 99% Occupied Bandwidth, FCC 15.407 (a)

According to §15.407(a). No Limit required.

Result:

ANTA

5.15 GHz ~ 5.25 GHz



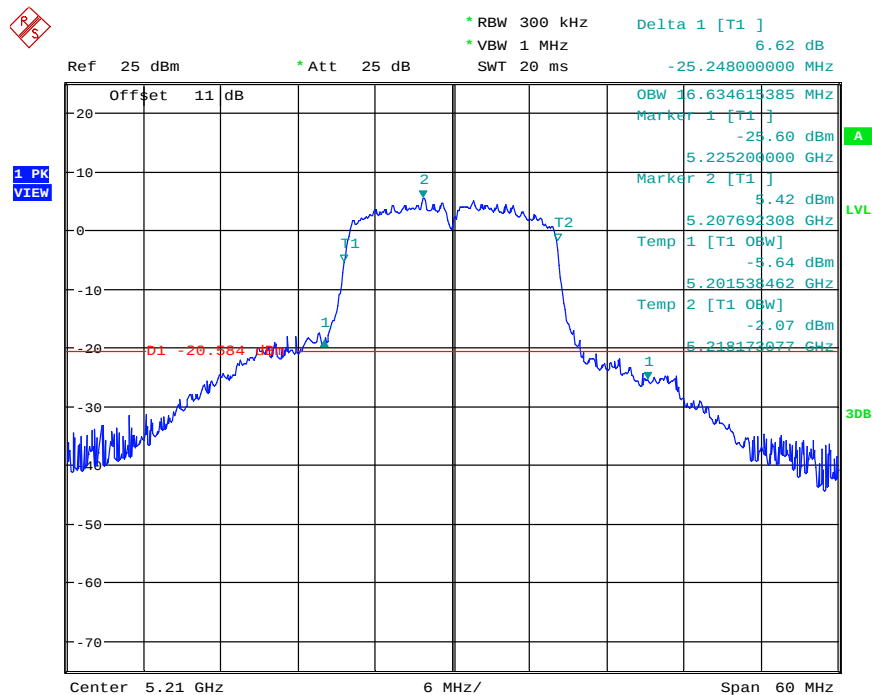
99% OBW & 26DB BANDWIDTH ANT1\_11a\_CH36

Date: 22.APR.2019 10:35:30



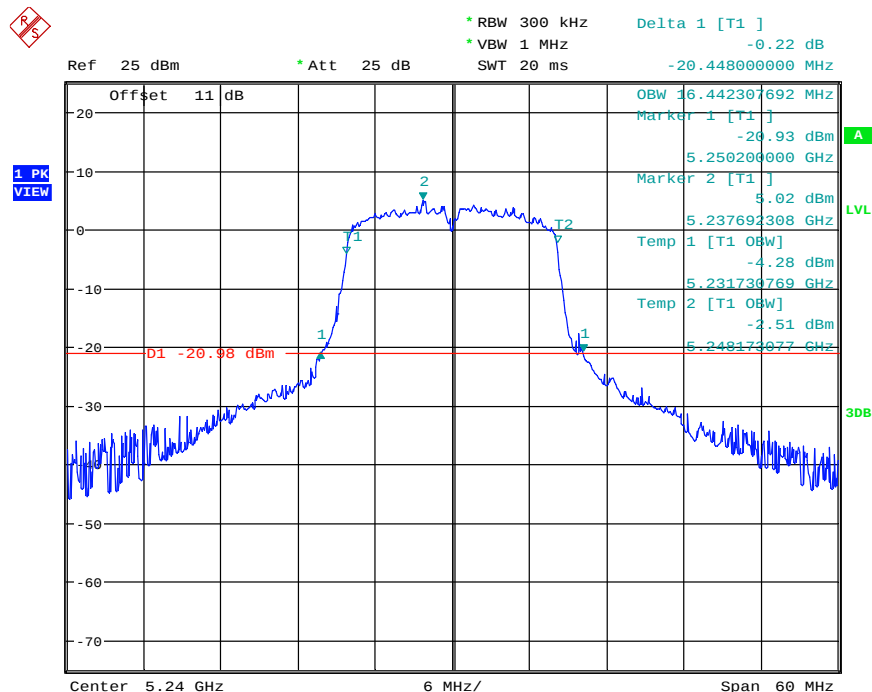
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



99% OBW & 26DB BANDWIDTH ANT1\_11a\_CH44

Date: 3.JUN.2019 09:21:05

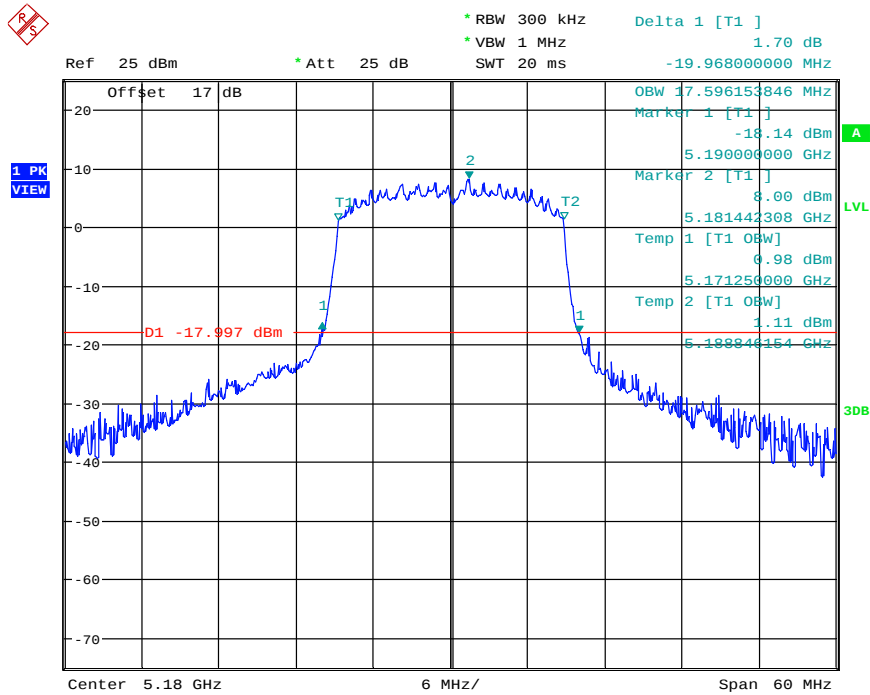


99% OBW & 26DB BANDWIDTH ANT1\_11a\_CH48

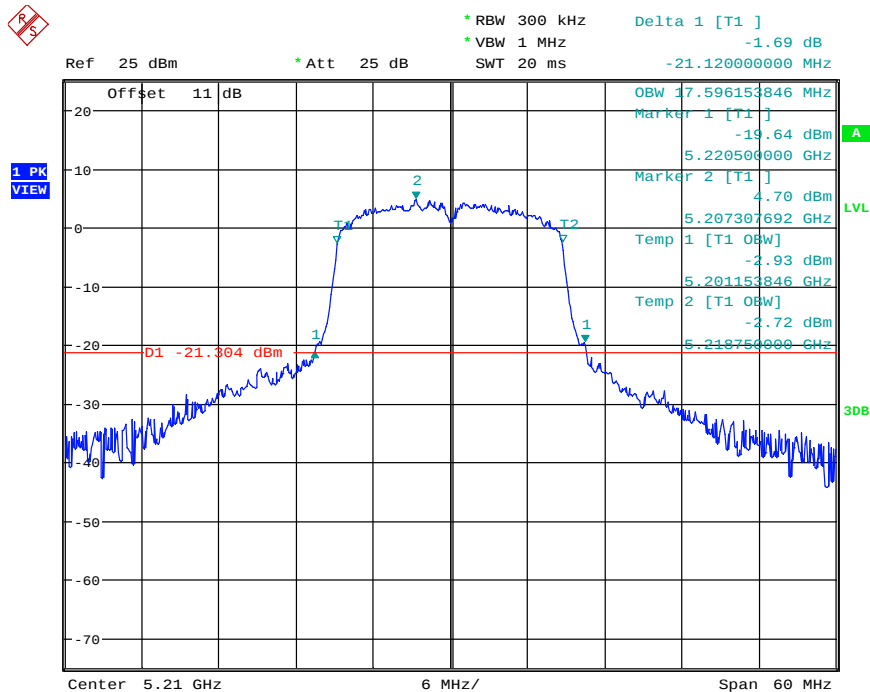
Date: 22.APR.2019 10:59:09



Registration number: W6M21903-18857-C-54  
FCC ID: YY3-182010



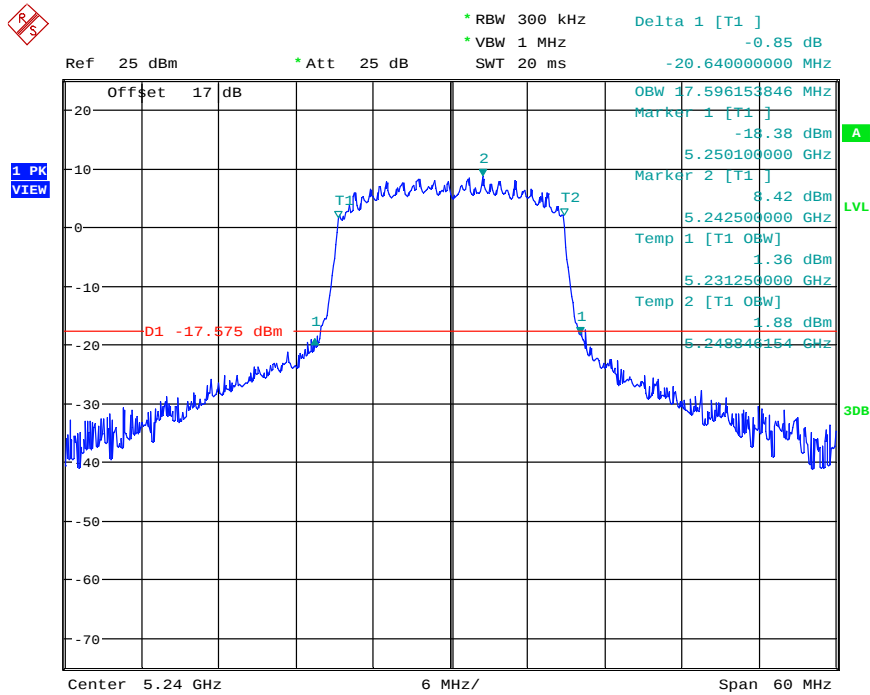
99% OBW & 26DB BANDWIDTH ANT1\_11ac20\_CH36  
Date: 22.APR.2019 11:50:02



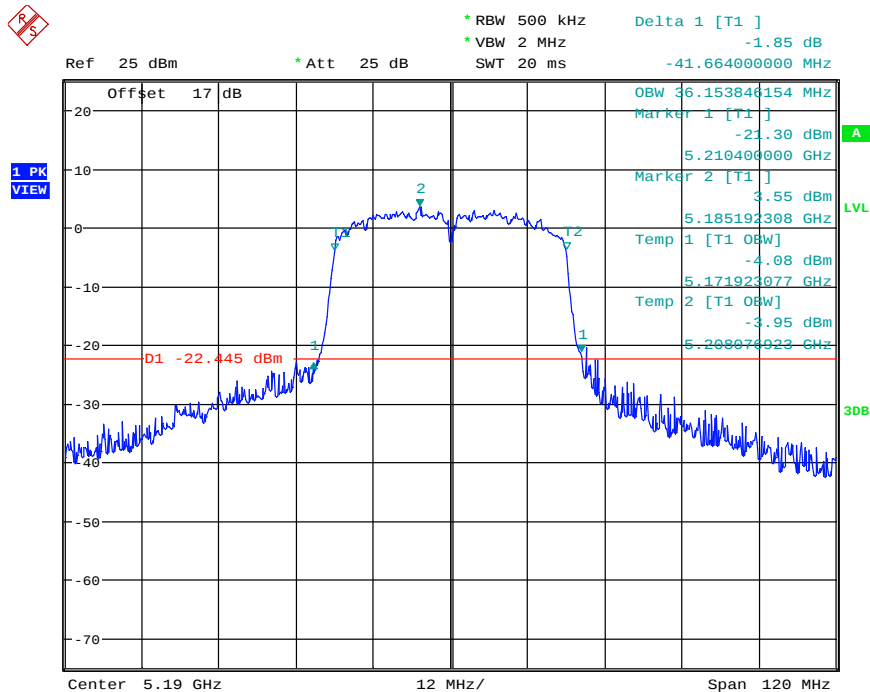
99% OBW & 26DB BANDWIDTH ANT1\_11ac20\_CH44  
Date: 3.JUN.2019 09:43:49



Registration number: W6M21903-18857-C-54  
FCC ID: YY3-182010



99% OBW & 26DB BANDWIDTH ANT1\_11ac20\_CH48  
Date: 22.APR.2019 11:59:28



99% OBW & 26DB BANDWIDTH ANT1\_11ac40\_CH38  
Date: 22.APR.2019 13:25:00

FCC ID: YY3-182010

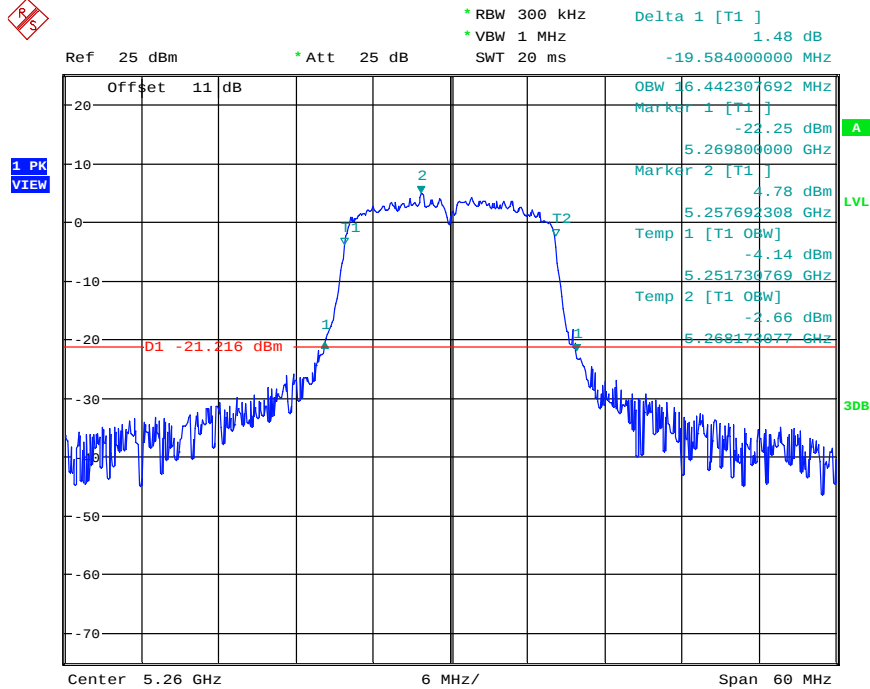
Date: 22.APR.2019 13:43:37



Registration number: W6M21903-18857-C-54

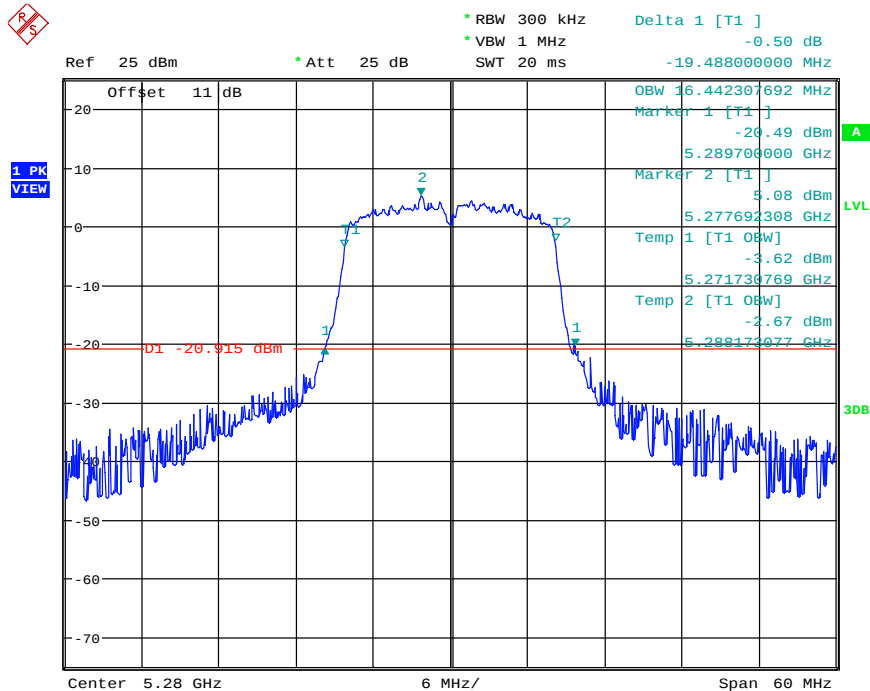
FCC ID: YY3-182010

## 5.25 GHz ~ 5.35 GHz



99% OBW & 26DB BANDWIDTH ANT1\_11a\_CH52

Date: 22.APR.2019 11:00:59

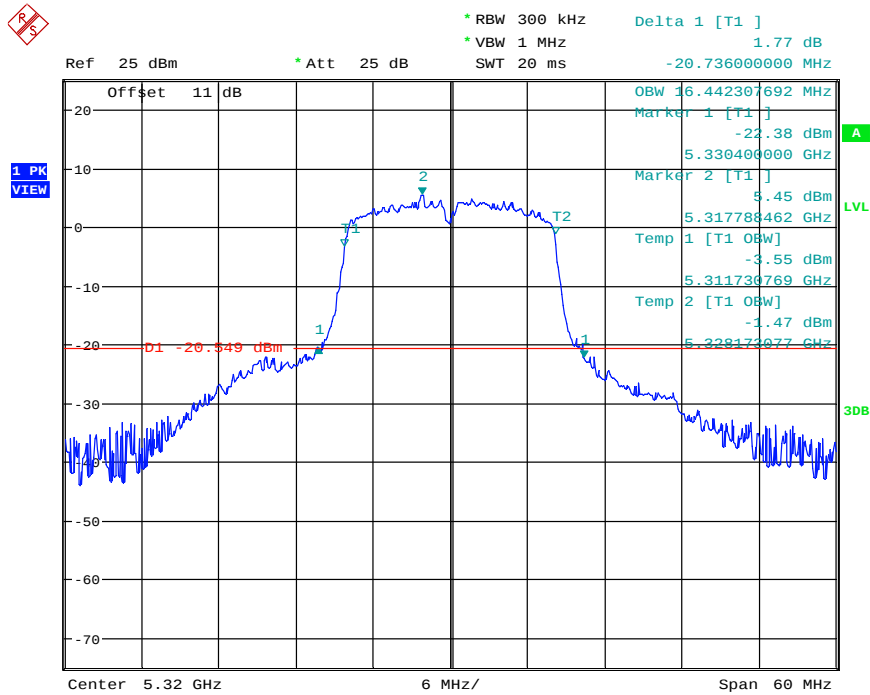


99% OBW & 26DB BANDWIDTH ANT1\_11a\_CH56

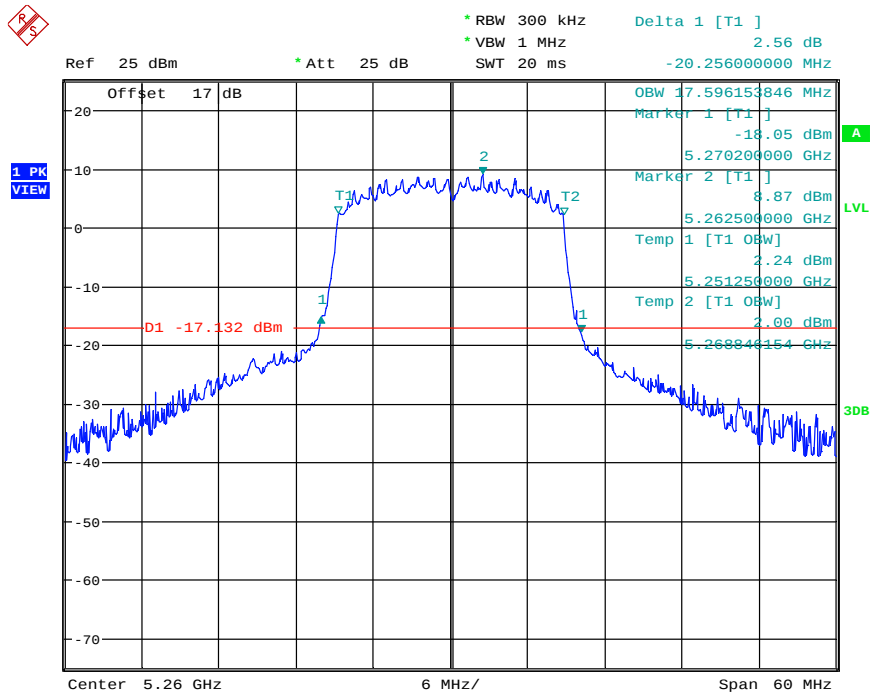
Date: 22.APR.2019 11:04:50



Registration number: W6M21903-18857-C-54  
FCC ID: YY3-182010



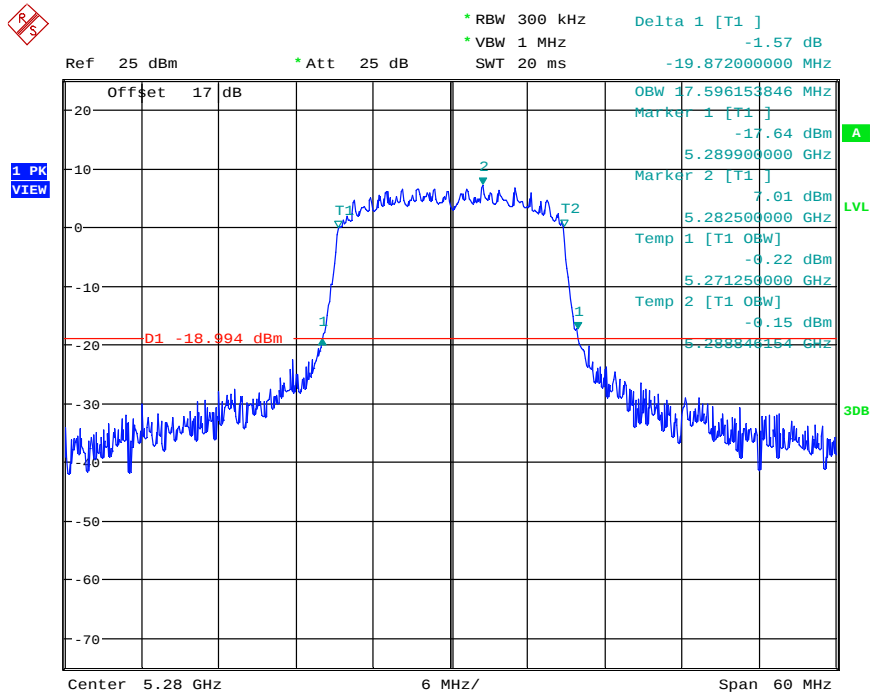
99% OBW & 26DB BANDWIDTH ANT1\_11a\_CH64  
Date: 22.APR.2019 11:08:14



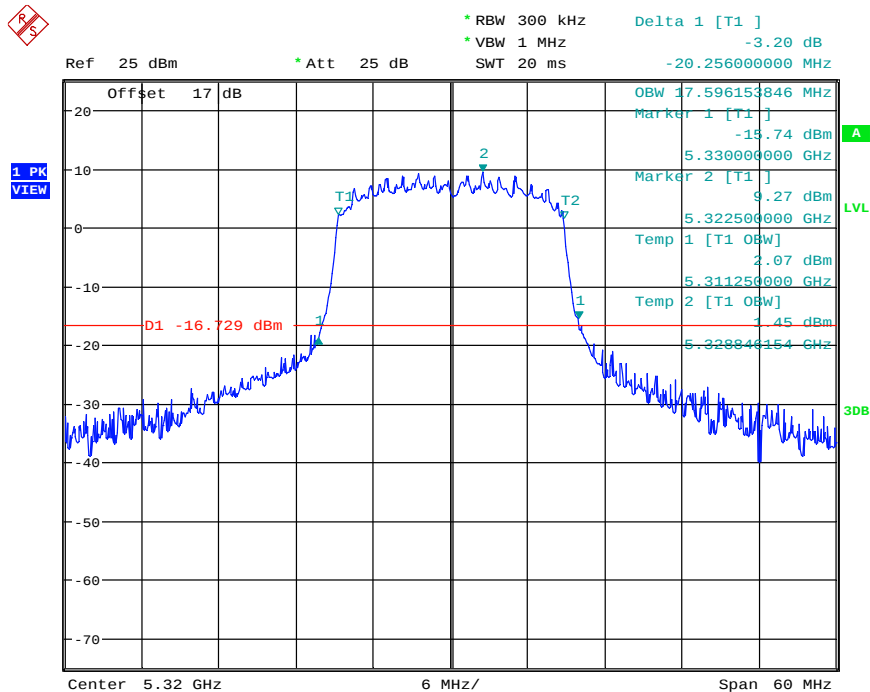
99% OBW & 26DB BANDWIDTH ANT1\_11ac20\_CH52  
Date: 22.APR.2019 13:10:26



Registration number: W6M21903-18857-C-54  
FCC ID: YY3-182010



99% OBW & 26DB BANDWIDTH ANT1\_11ac20\_CH56  
Date: 22.APR.2019 13:13:55

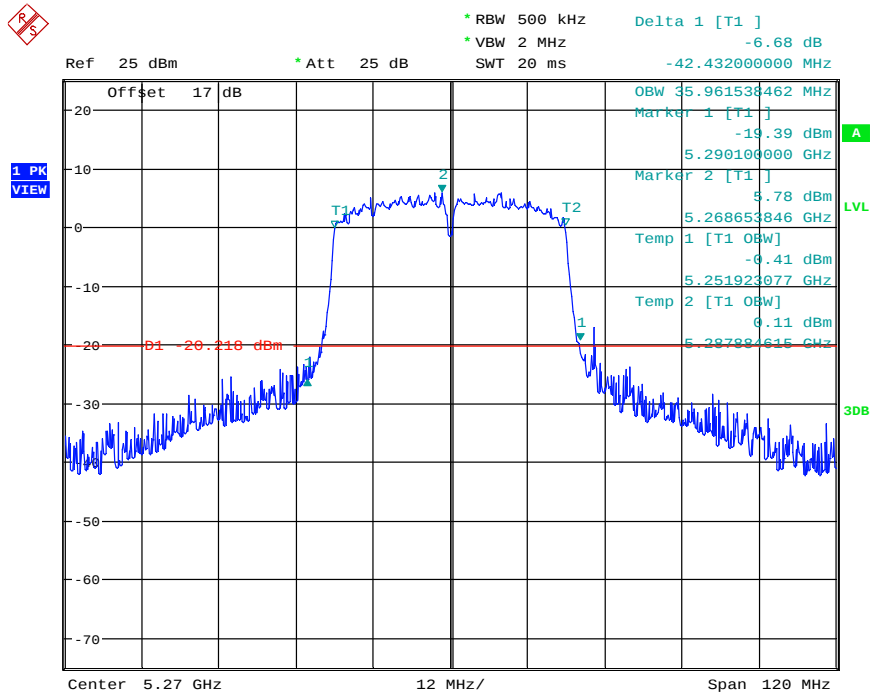


99% OBW & 26DB BANDWIDTH ANT1\_11ac20\_CH64  
Date: 22.APR.2019 13:18:08



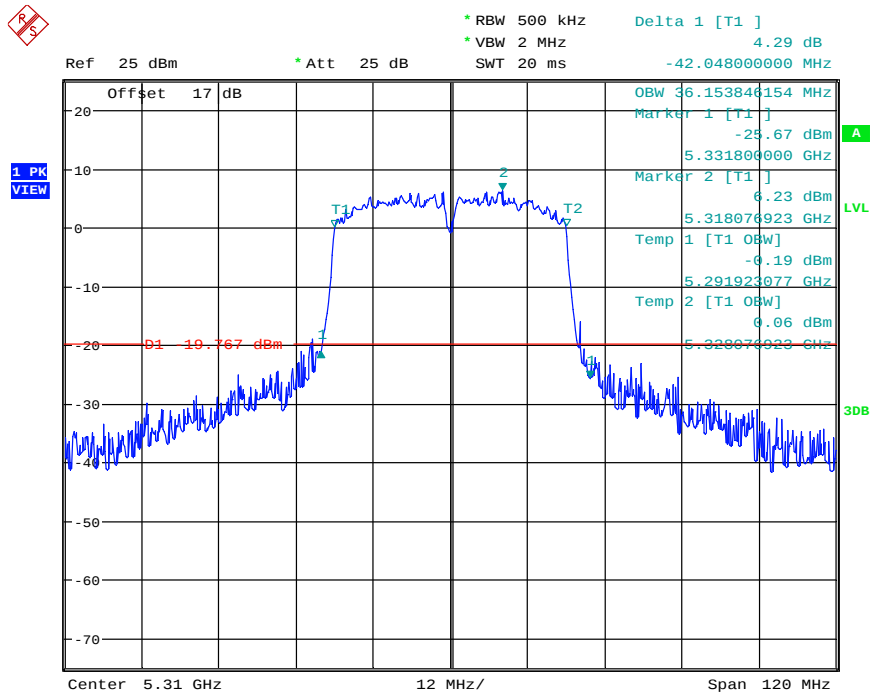
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



99% OBW & 26DB BANDWIDTH ANT1\_11ac40\_CH54

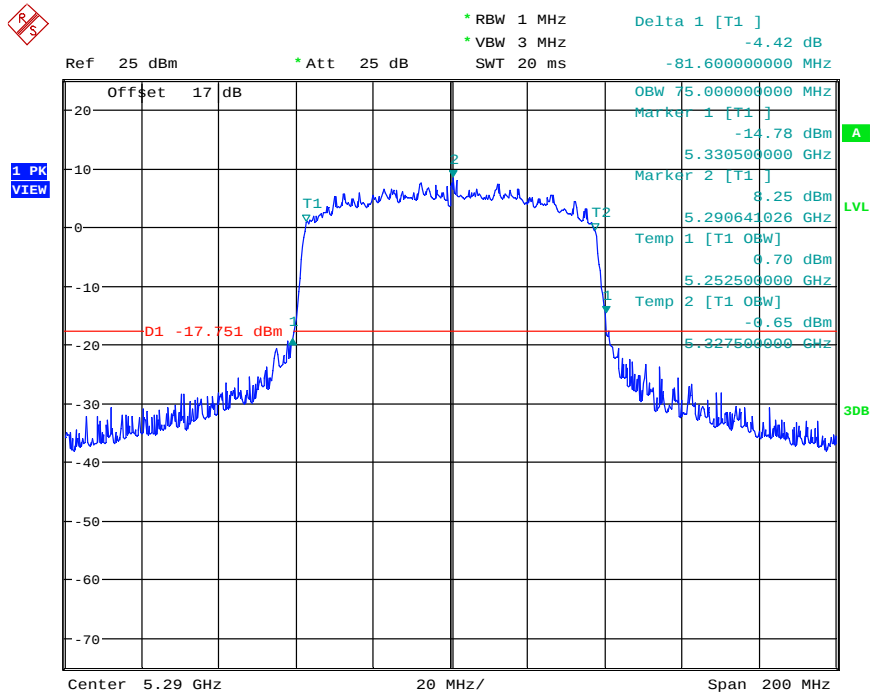
Date: 22.APR.2019 13:34:49



99% OBW & 26DB BANDWIDTH ANT1\_11ac40\_CH62

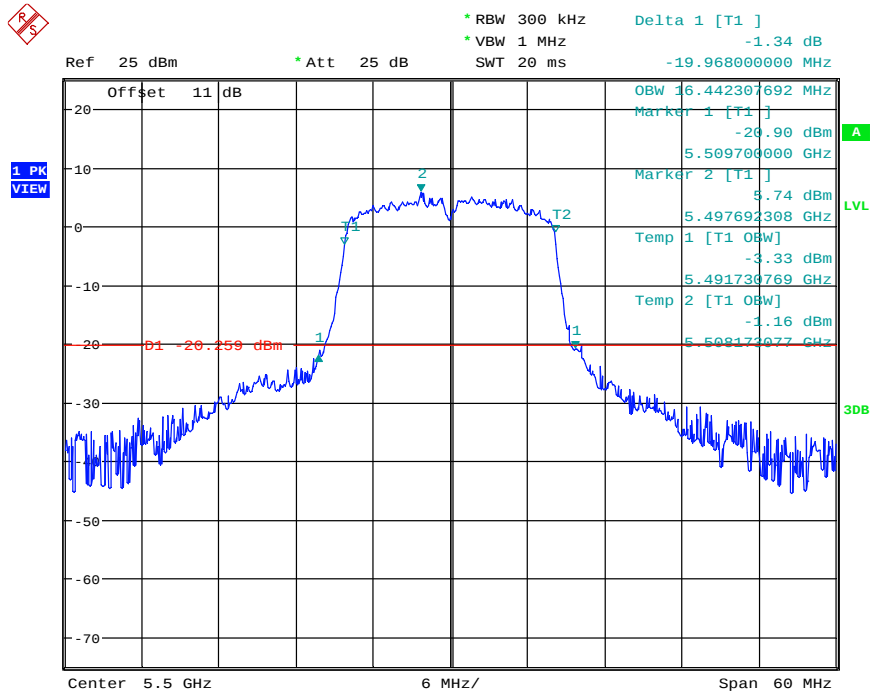
Date: 22.APR.2019 13:38:29

Registration number: W6M21903-18857-C-54  
FCC ID: YY3-182010



99% OBW & 26DB BANDWIDTH ANT1\_11ac80\_CH58  
Date: 22.APR.2019 13:49:40

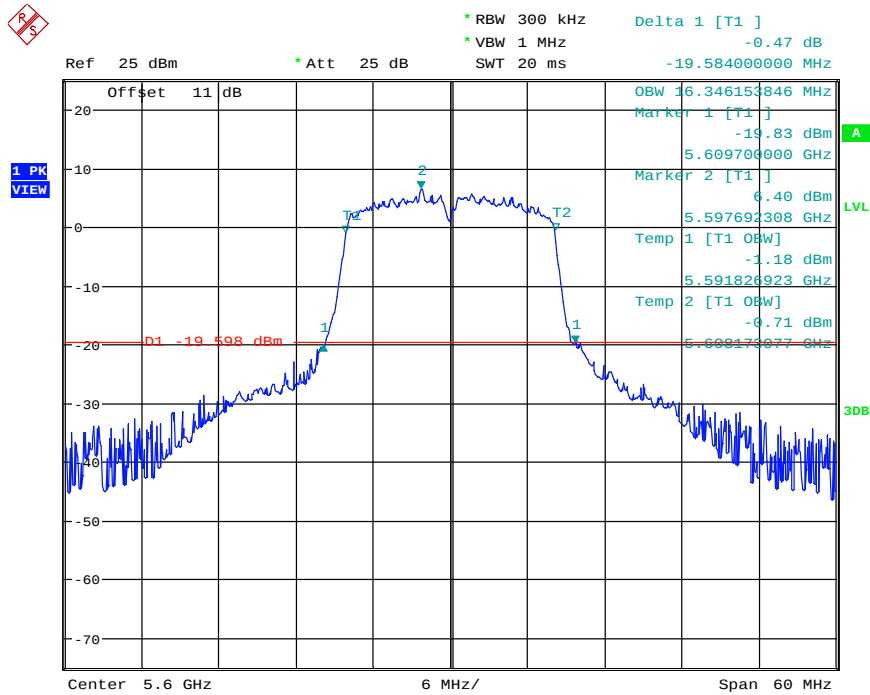
## 5.47 GHz ~ 5.725 GHz



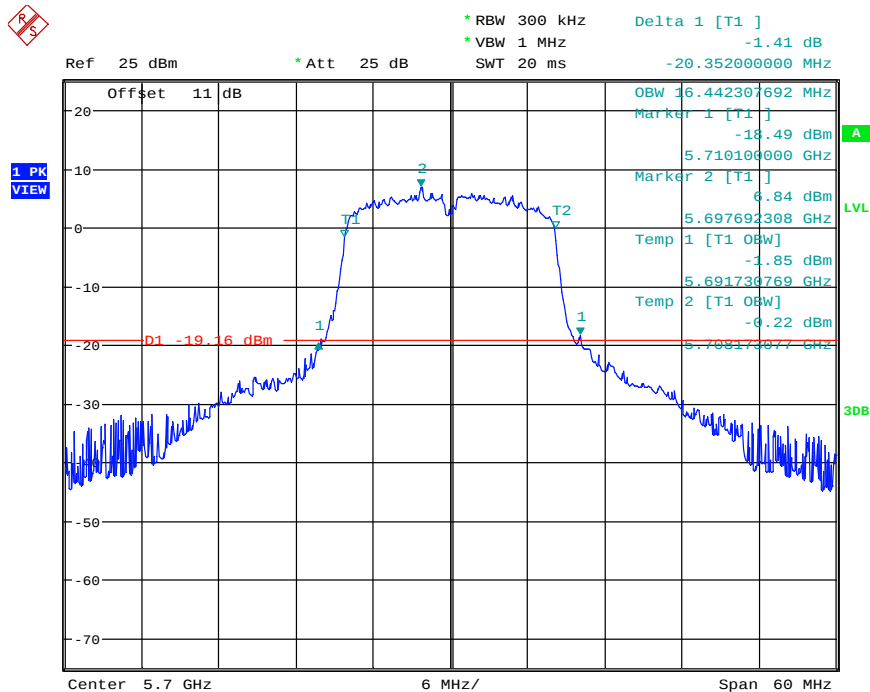
99% OBW & 26DB BANDWIDTH ANT1\_11a\_CH100  
Date: 22.APR.2019 14:06:32



Registration number: W6M21903-18857-C-54  
FCC ID: YY3-182010



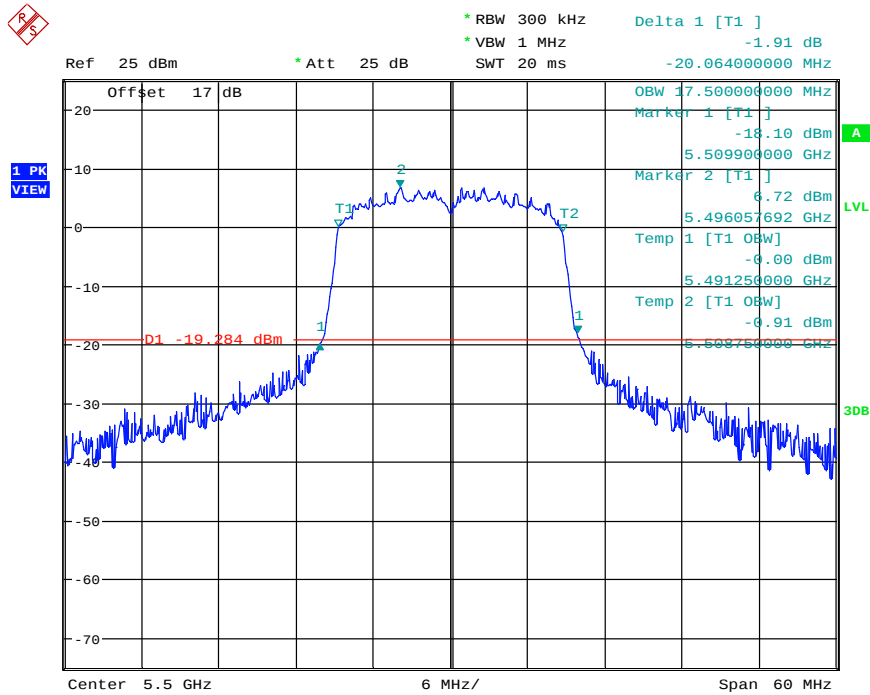
99% OBW & 26DB BANDWIDTH ANT1\_11a\_CH120  
Date: 22.APR.2019 14:11:29



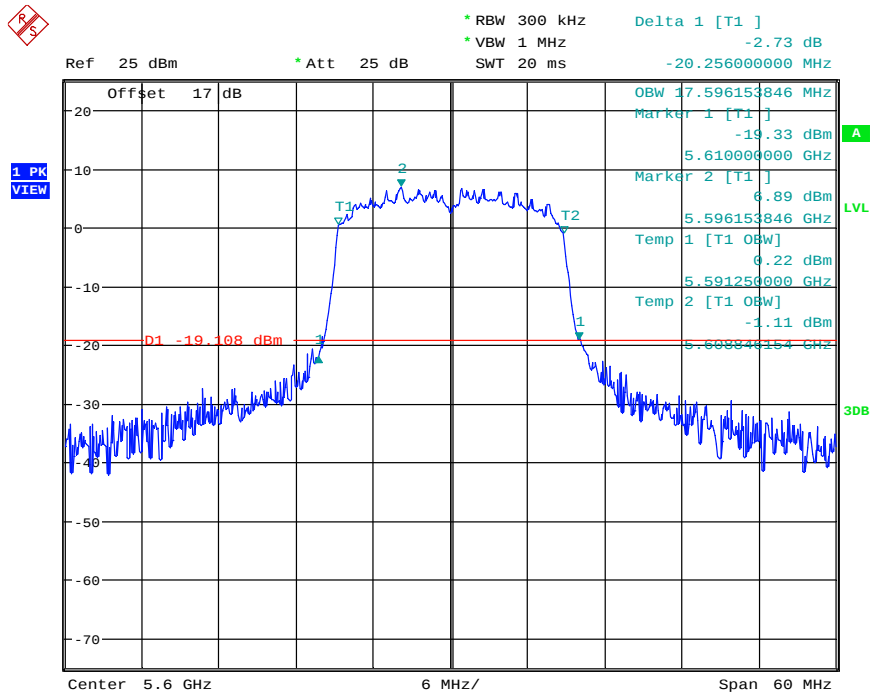
99% OBW & 26DB BANDWIDTH ANT1\_11a\_CH140  
Date: 22.APR.2019 14:22:12



Registration number: W6M21903-18857-C-54  
FCC ID: YY3-182010



99% OBW & 26DB BANDWIDTH ANT1\_11ac20\_CH100  
Date: 23.APR.2019 09:24:43

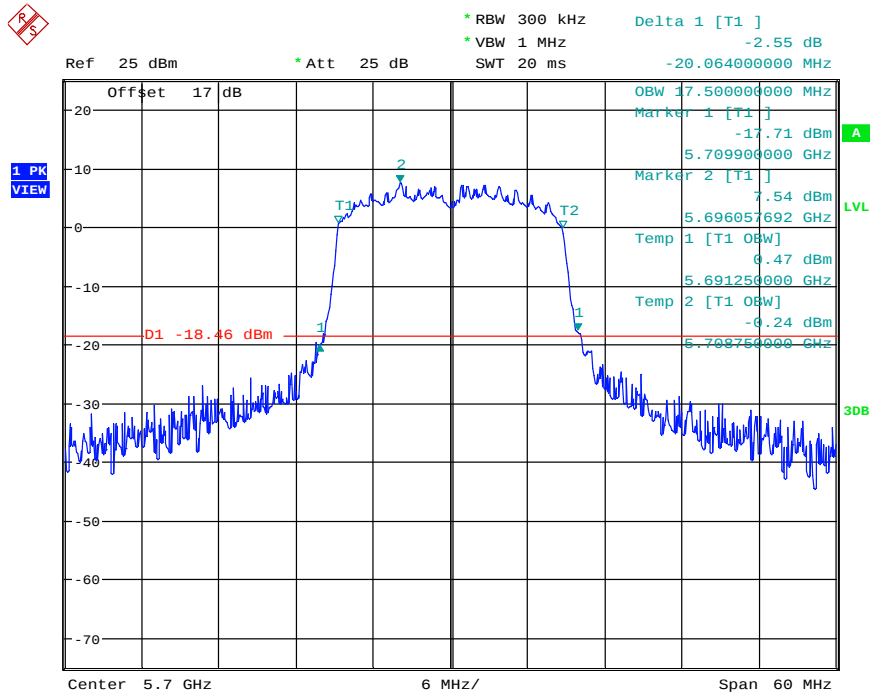


99% OBW & 26DB BANDWIDTH ANT1\_11ac20\_CH120  
Date: 23.APR.2019 09:34:20



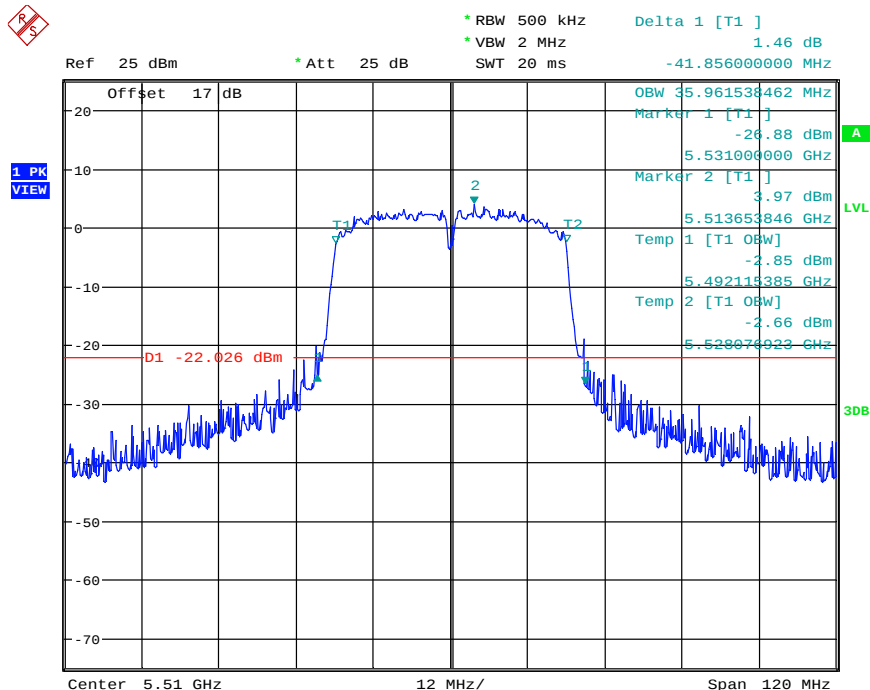
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



99% OBW & 26DB BANDWIDTH ANT1\_11ac20\_CH140

Date: 23.APR.2019 09:36:54



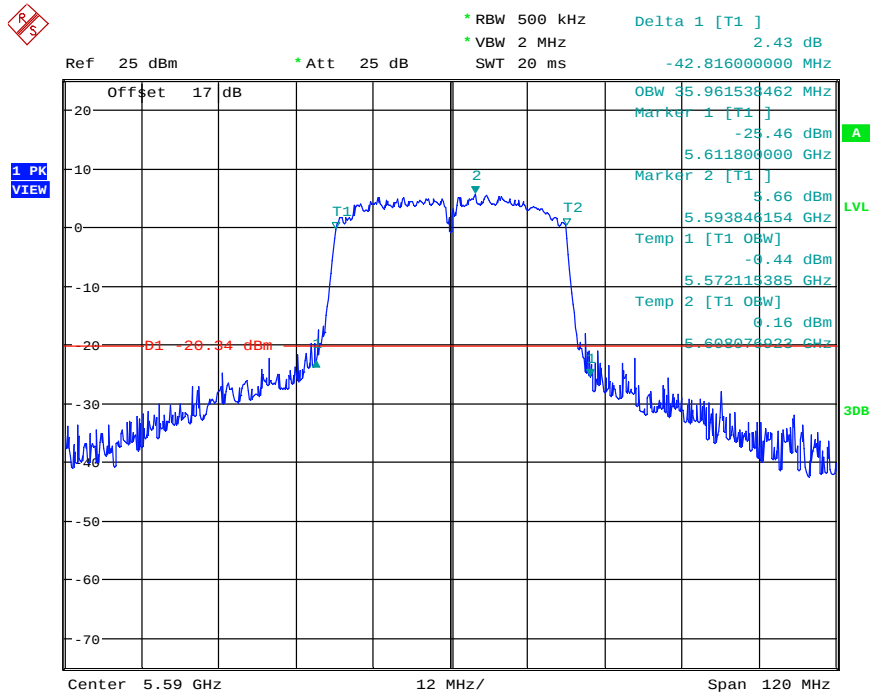
99% OBW & 26DB BANDWIDTH ANT1\_11ac40\_CH102

Date: 23.APR.2019 09:41:40



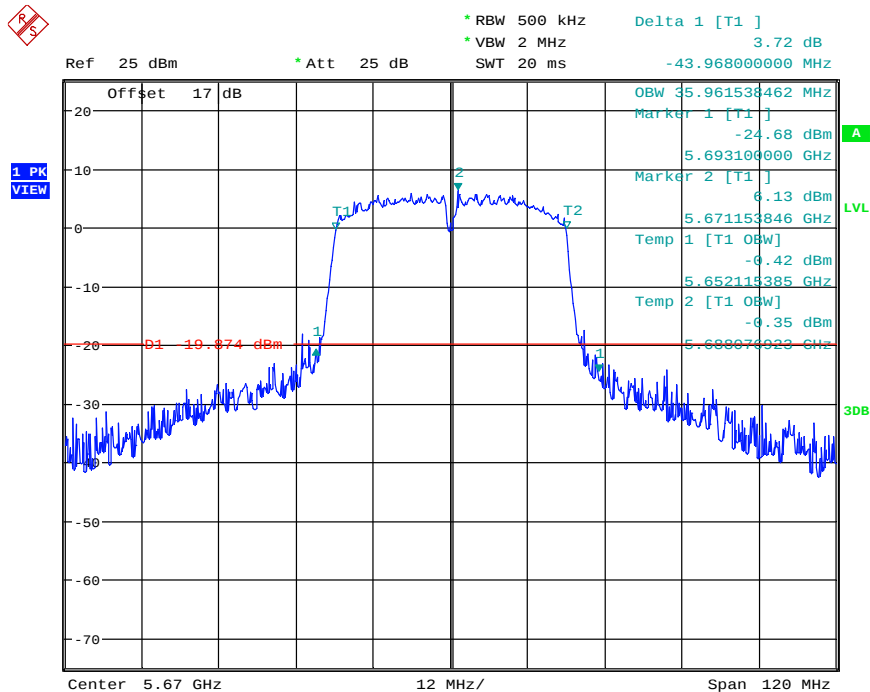
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



99% OBW & 26DB BANDWIDTH ANT1\_11ac40\_CH118

Date: 23.APR.2019 09:45:04

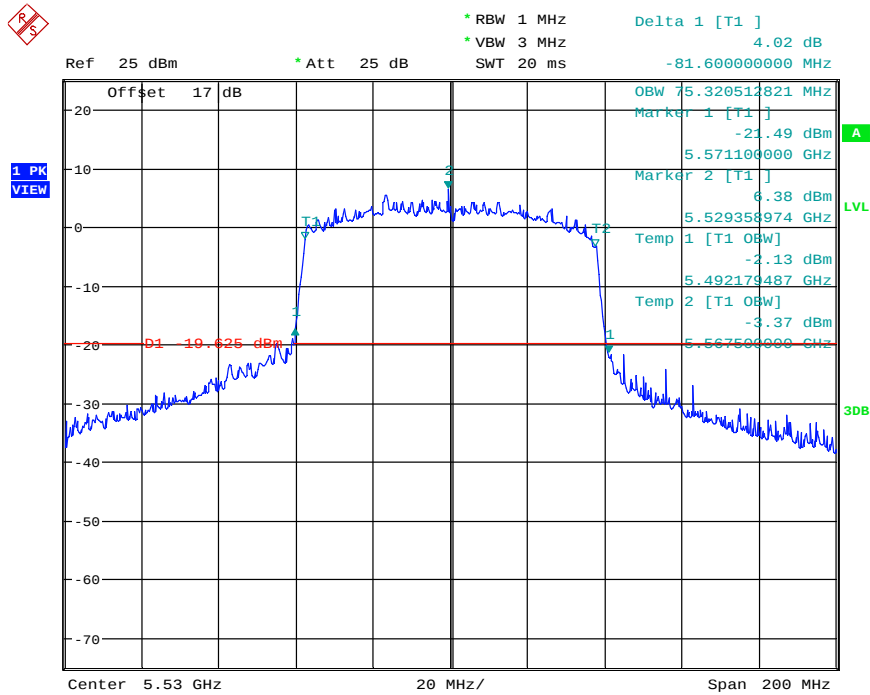


99% OBW & 26DB BANDWIDTH ANT1\_11ac40\_CH134

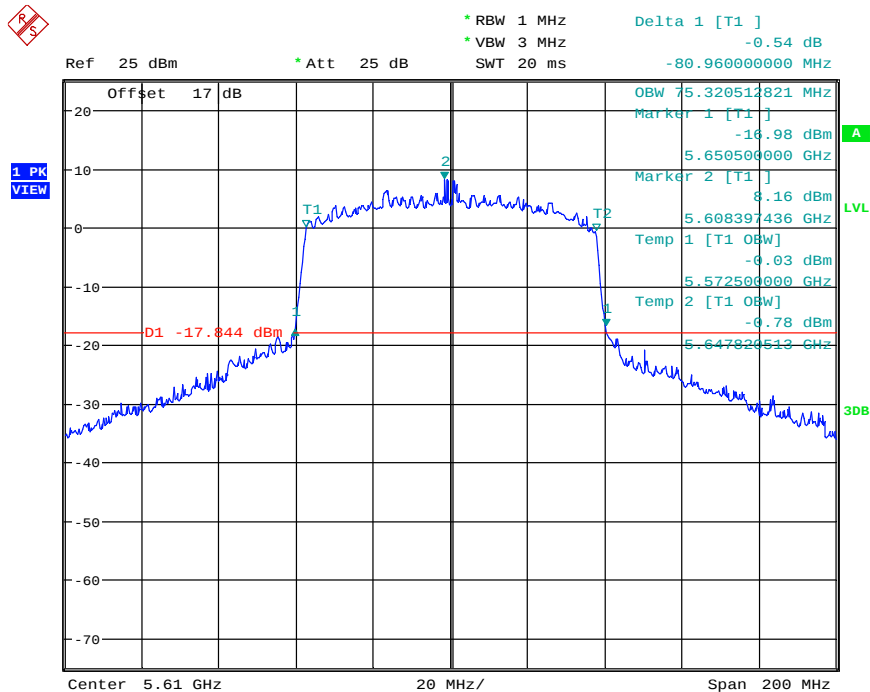
Date: 23.APR.2019 09:50:28



Registration number: W6M21903-18857-C-54  
FCC ID: YY3-182010



99% OBW & 26DB BANDWIDTH ANT1\_11ac80\_CH106  
Date: 22.APR.2019 15:20:03



99% OBW & 26DB BANDWIDTH ANT1\_11ac80\_CH122  
Date: 22.APR.2019 15:22:31

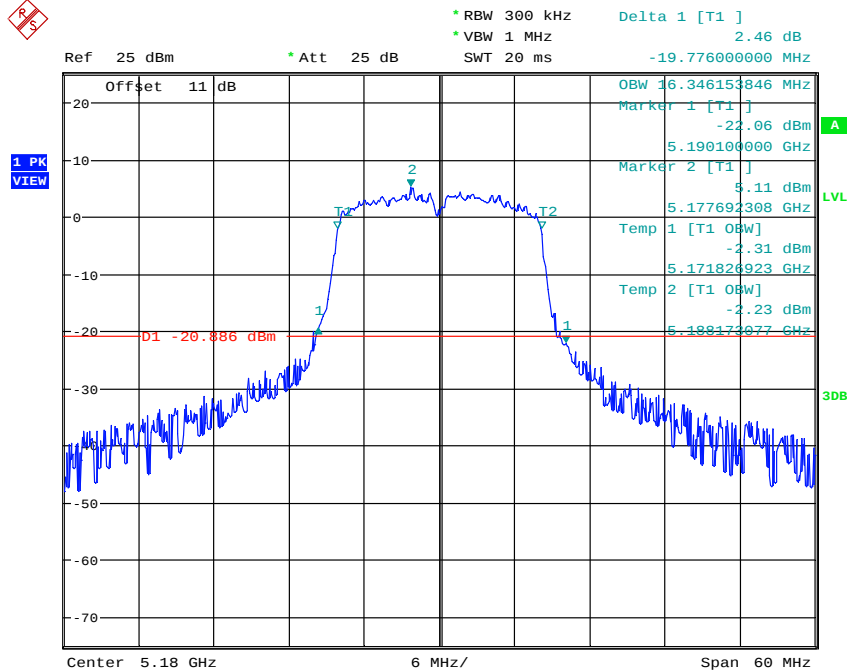


Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010

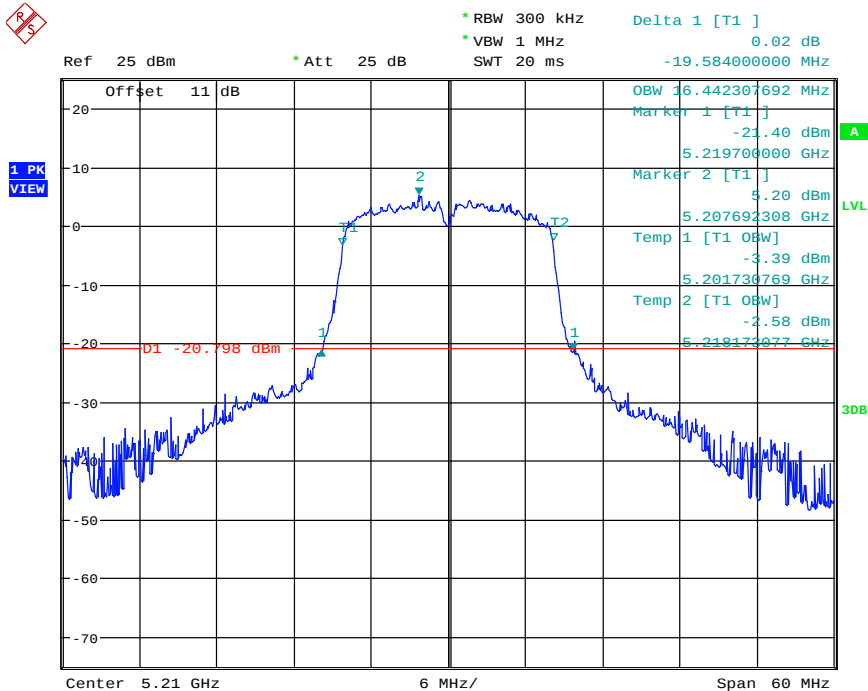
ANTB

5.15 GHz ~ 5.25 GHz



99% OBW & 26DB BANDWIDTH ANT2\_11a\_CH36

Date: 22.APR.2019 09:37:01



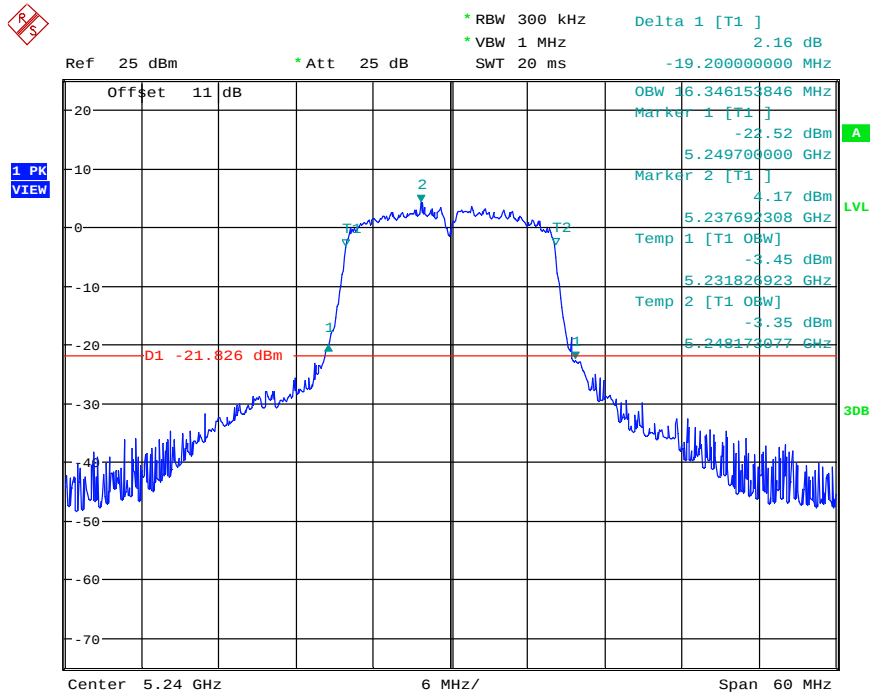
99% OBW & 26DB BANDWIDTH ANT2\_11a\_CH44

Date: 3.JUN.2019 09:25:29



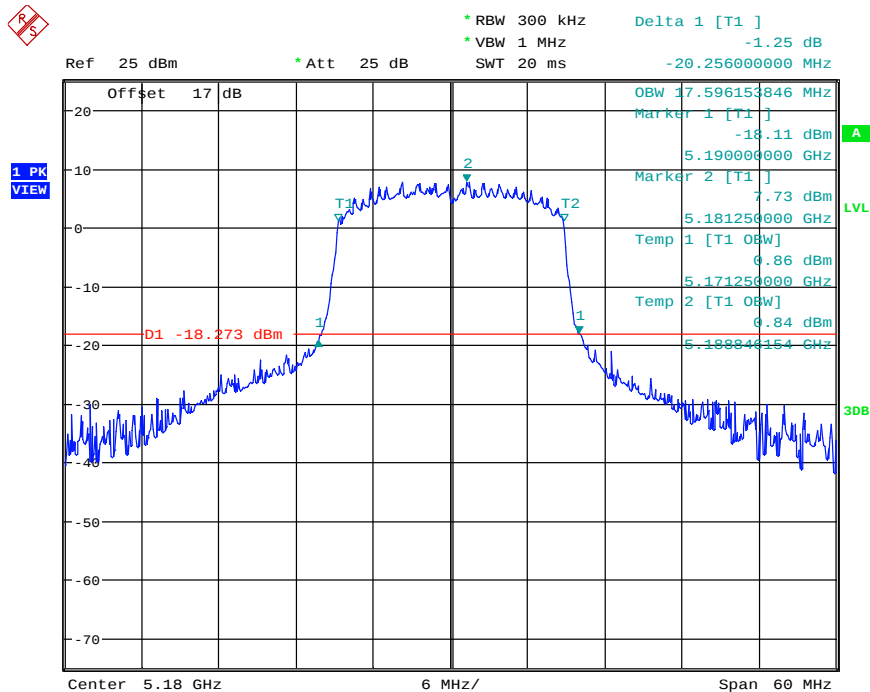
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



99% OBW & 26DB BANDWIDTH ANT2\_11a\_CH48

Date: 22.APR.2019 10:57:14

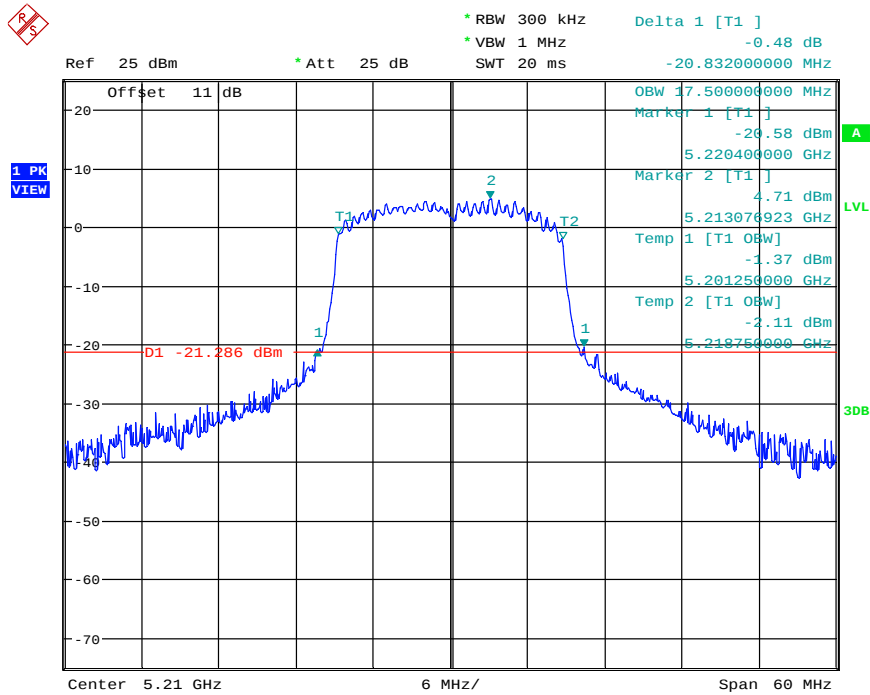


99% OBW & 26DB BANDWIDTH ANT2\_11ac20\_CH36

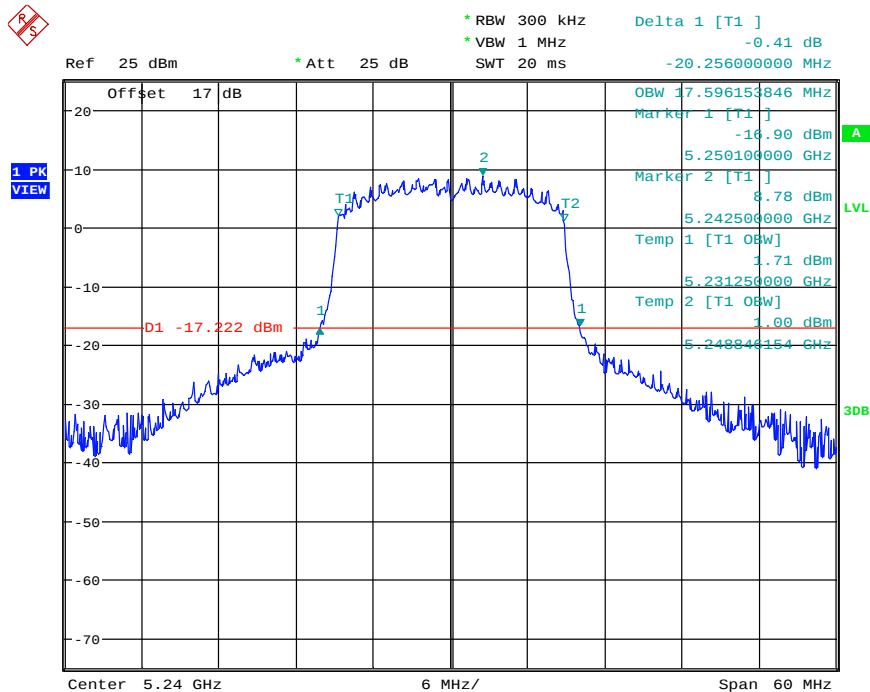
Date: 22.APR.2019 11:51:24



Registration number: W6M21903-18857-C-54  
FCC ID: YY3-182010



99% OBW & 26DB BANDWIDTH ANT2\_11ac20\_CH44  
Date: 3.JUN.2019 09:46:45

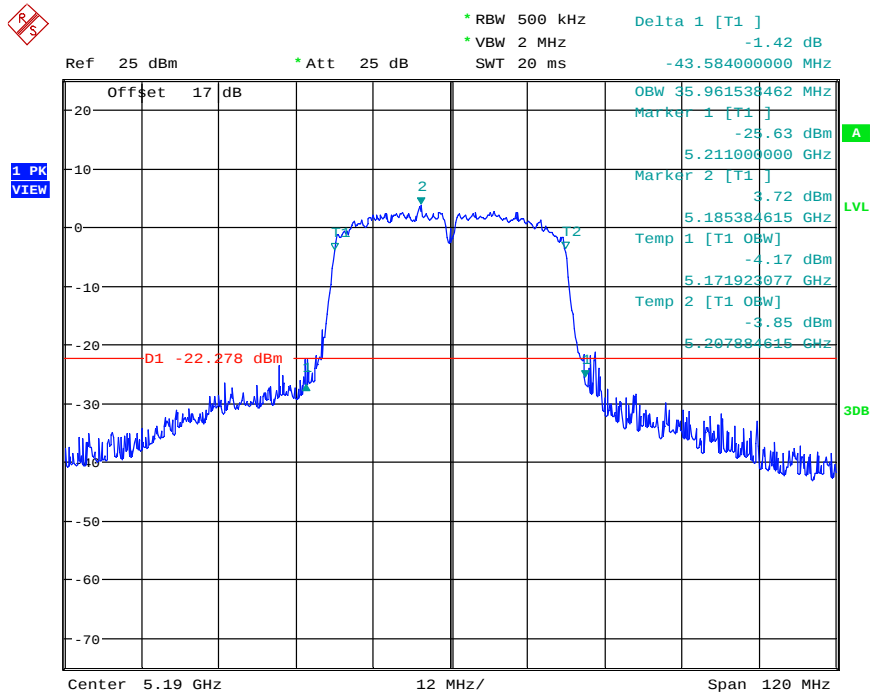


99% OBW & 26DB BANDWIDTH ANT2\_11ac20\_CH48  
Date: 22.APR.2019 12:00:45



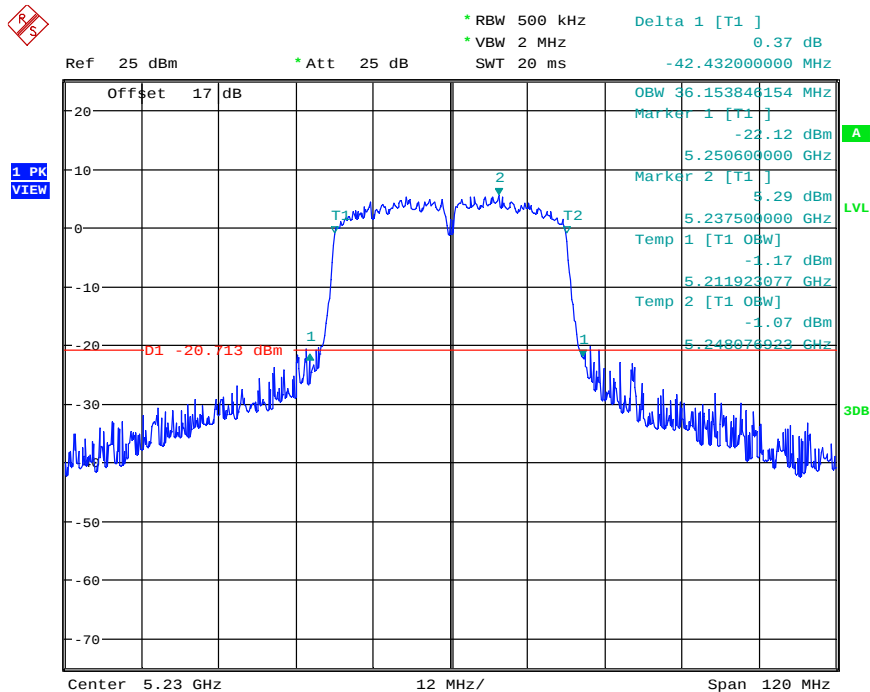
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



99% OBW & 26DB BANDWIDTH ANT2\_11ac40\_CH38

Date: 22.APR.2019 13:26:56

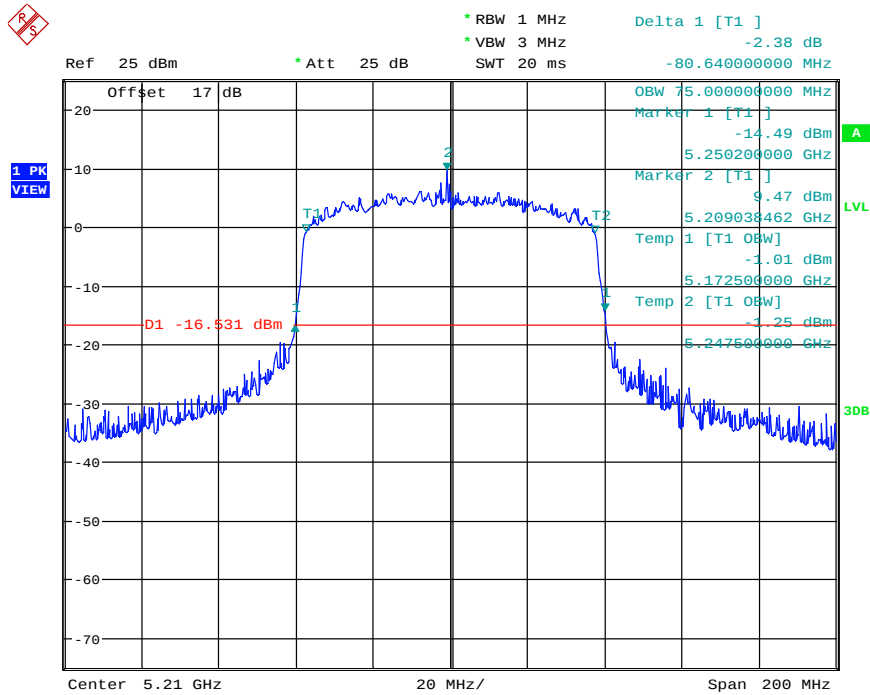


99% OBW & 26DB BANDWIDTH ANT2\_11ac40\_CH46

Date: 22.APR.2019 13:32:26

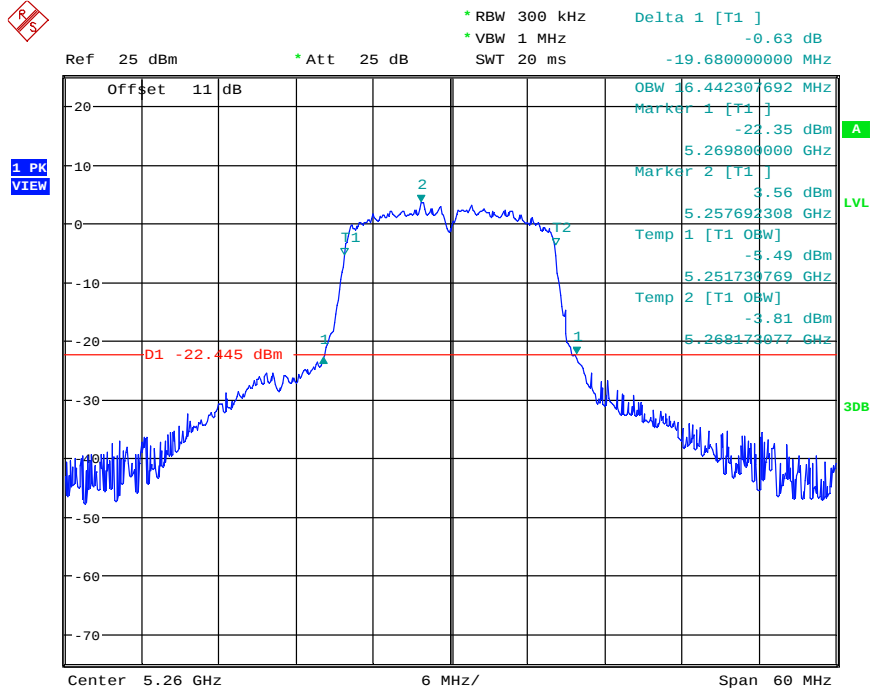


Registration number: W6M21903-18857-C-54  
FCC ID: YY3-182010



99% OBW & 26DB BANDWIDTH ANT2\_11ac80\_CH42  
Date: 22.APR.2019 13:45:38

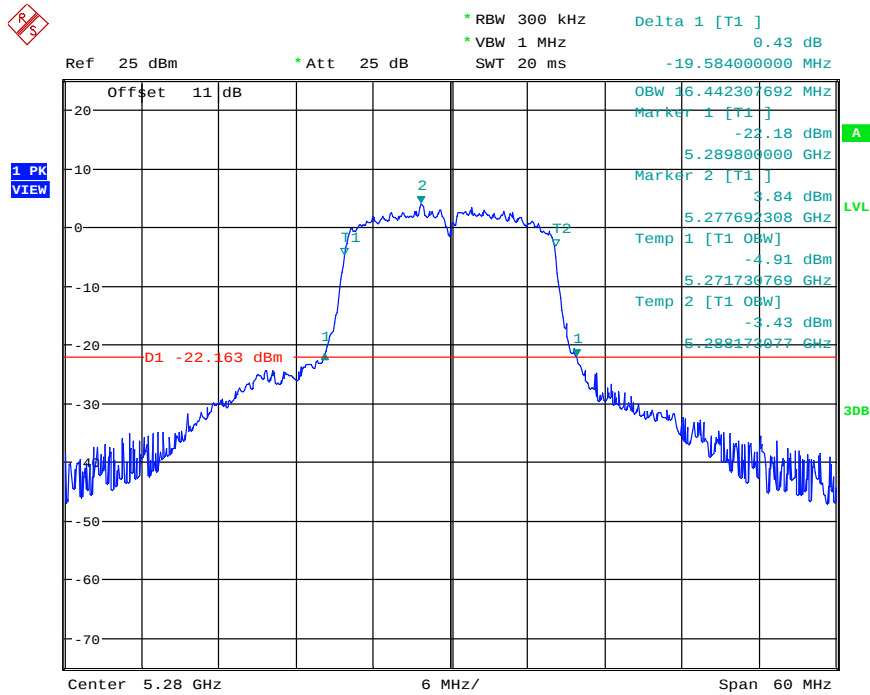
## 5.25 GHz ~ 5.35 GHz



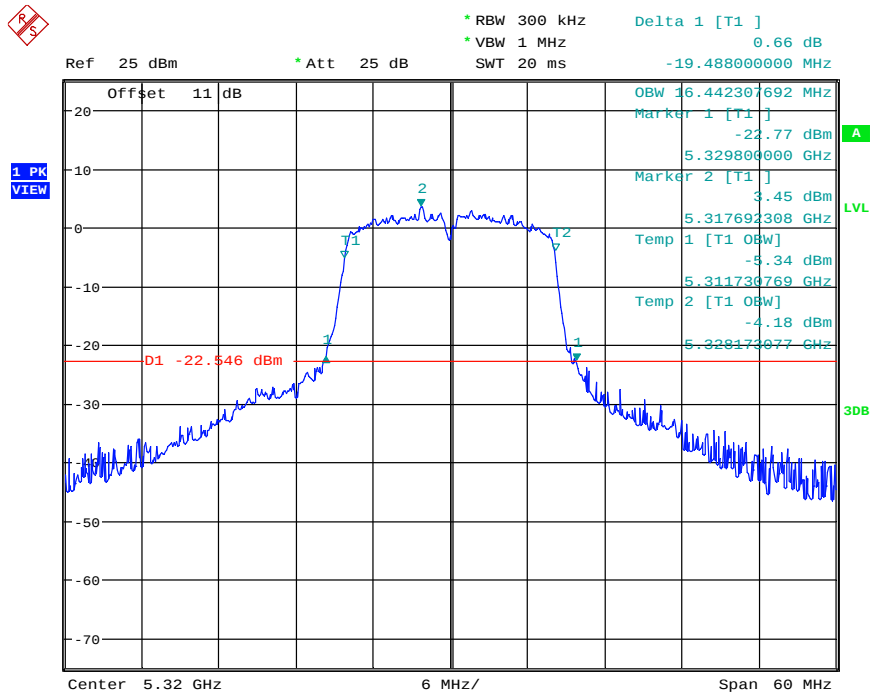
99% OBW & 26DB BANDWIDTH ANT2\_11a\_CH52  
Date: 22.APR.2019 11:02:27



Registration number: W6M21903-18857-C-54  
FCC ID: YY3-182010



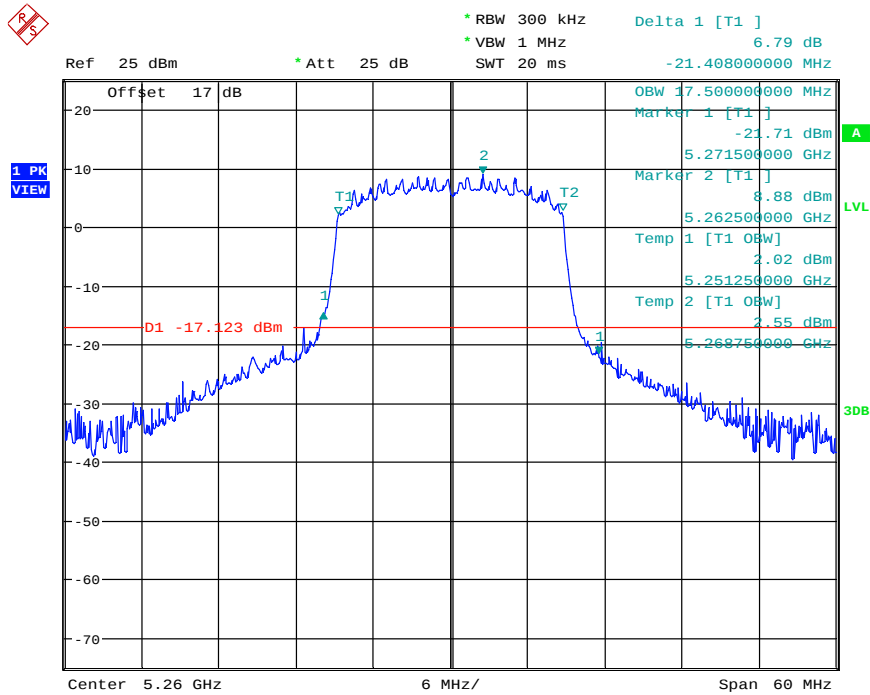
99% OBW & 26DB BANDWIDTH ANT2\_11a\_CH56  
Date: 22.APR.2019 11:06:24



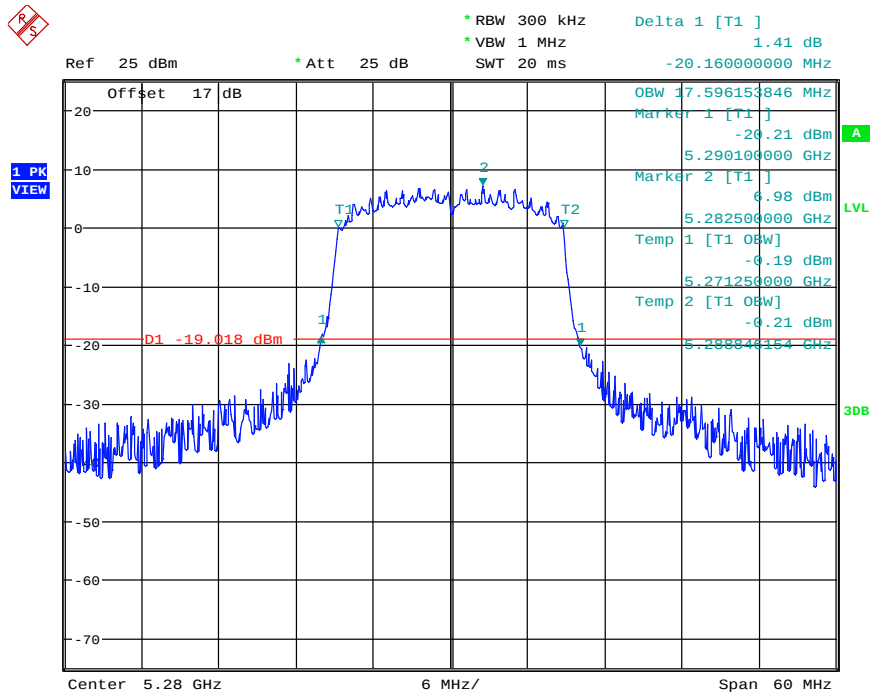
99% OBW & 26DB BANDWIDTH ANT2\_11a\_CH64  
Date: 22.APR.2019 11:10:10



Registration number: W6M21903-18857-C-54  
FCC ID: YY3-182010



99% OBW & 26DB BANDWIDTH ANT2\_11ac20\_CH52  
Date: 22.APR.2019 13:11:37

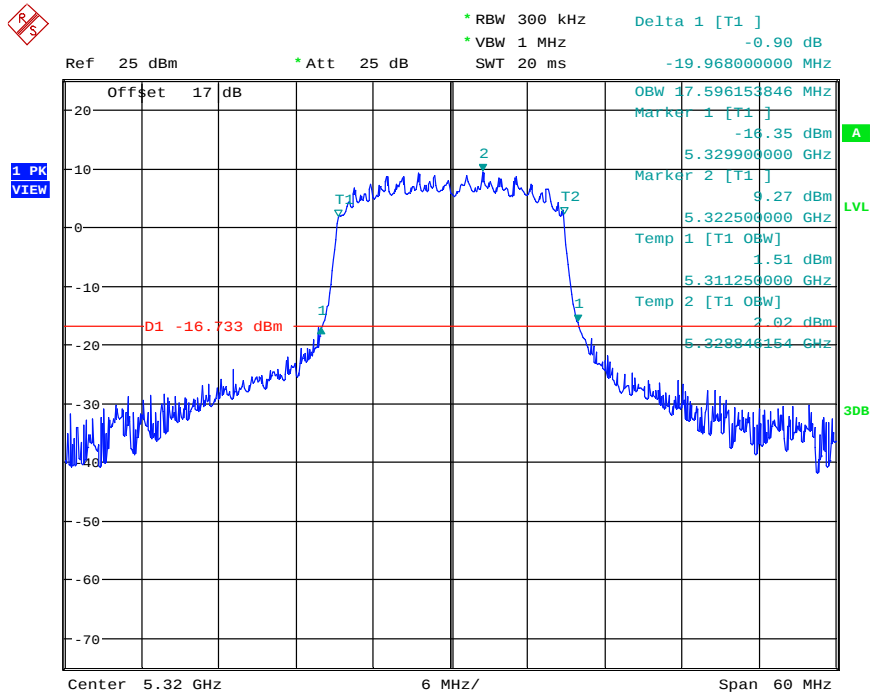


99% OBW & 26DB BANDWIDTH ANT2\_11ac20\_CH56  
Date: 22.APR.2019 13:15:28



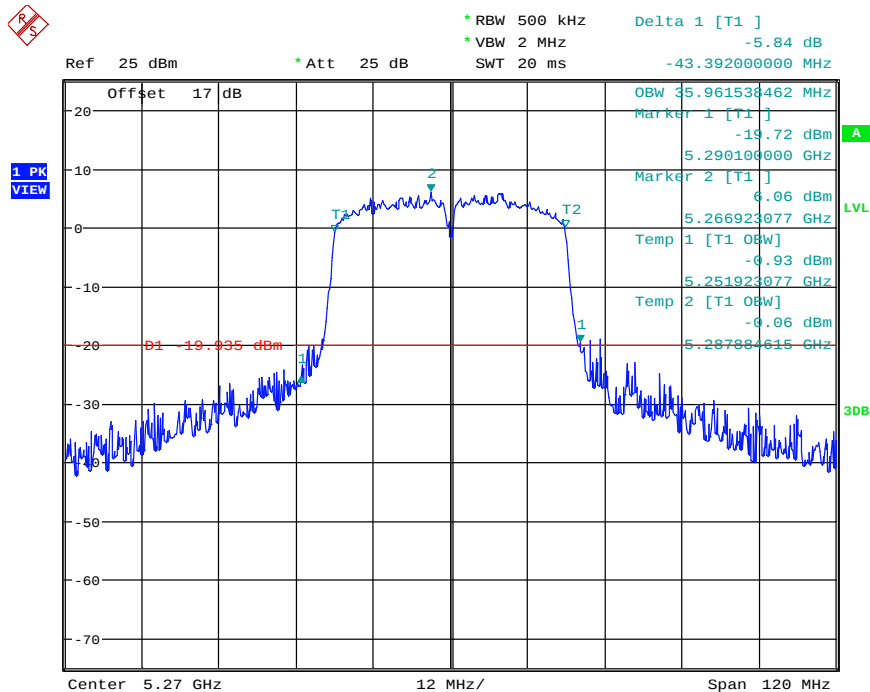
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



99% OBW & 26DB BANDWIDTH ANT2\_11ac20\_CH64

Date: 22.APR.2019 13:20:47



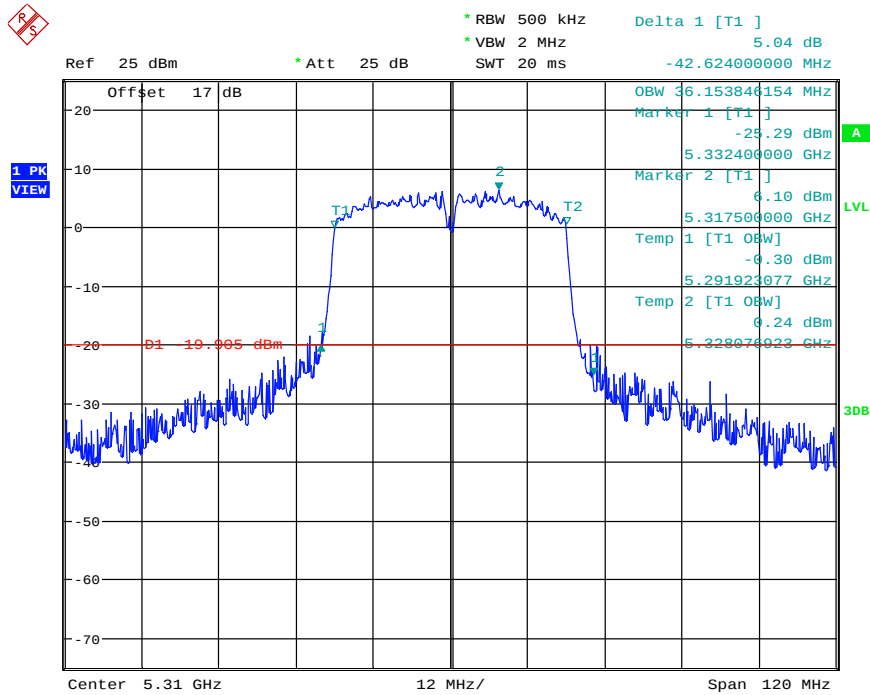
99% OBW & 26DB BANDWIDTH ANT2\_11ac40\_CH54

Date: 22.APR.2019 13:36:28



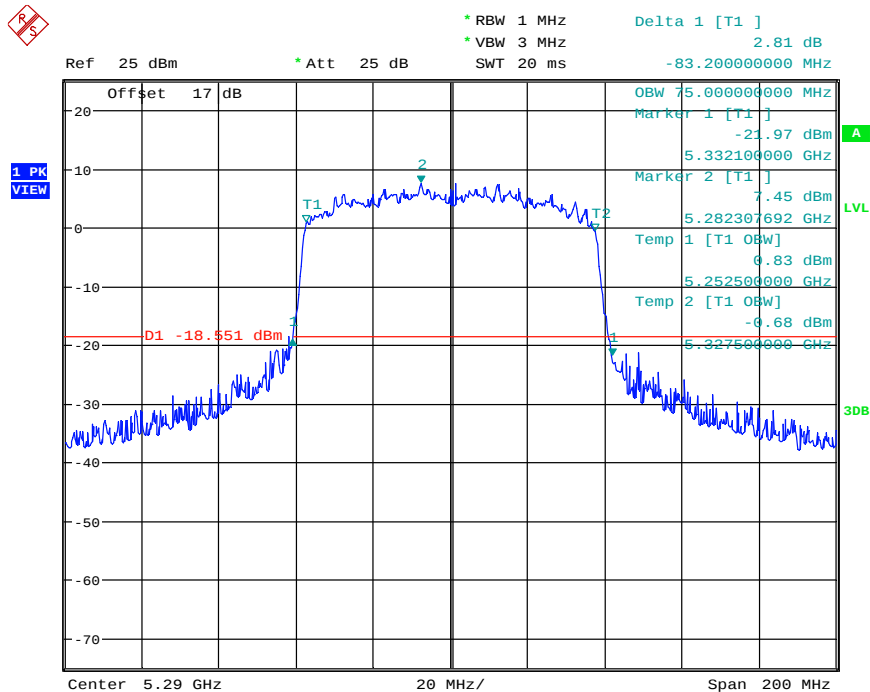
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



99% OBW & 26DB BANDWIDTH ANT2\_11ac40\_CH62

Date: 22.APR.2019 13:39:51



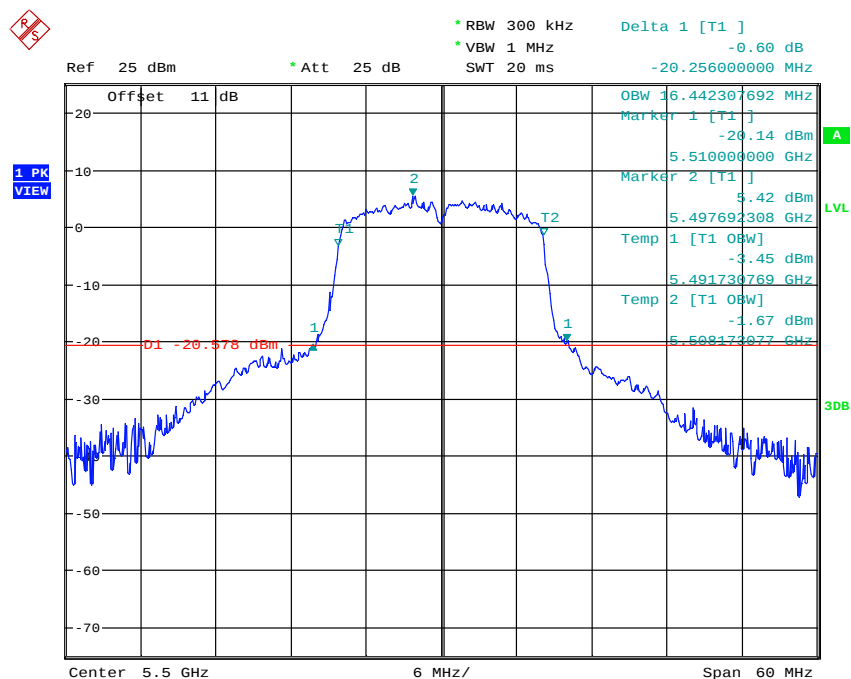
99% OBW & 26DB BANDWIDTH ANT2\_11ac80\_CH58

Date: 22.APR.2019 13:48:23

Registration number: W6M21903-18857-C-54

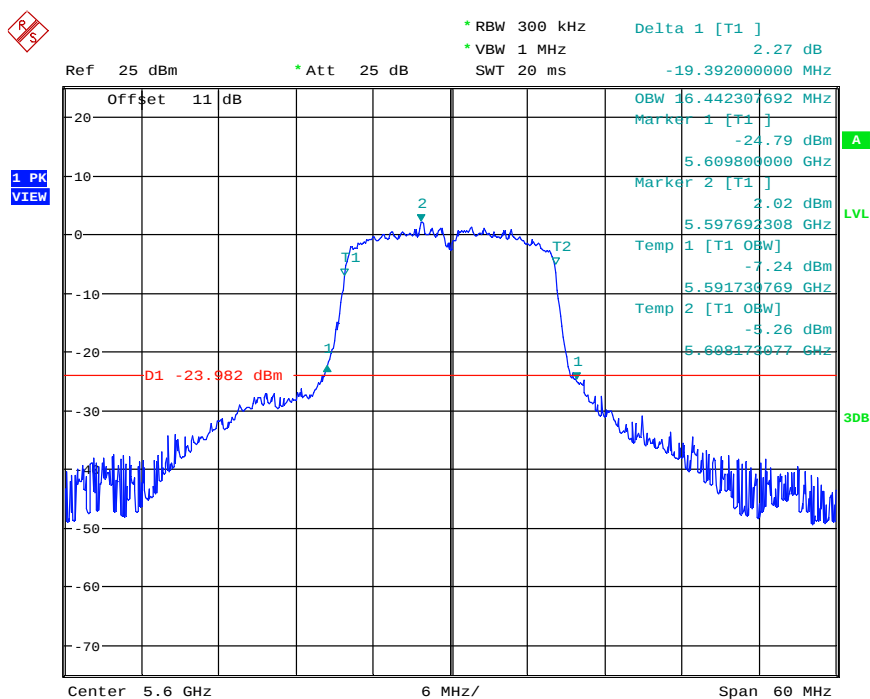
FCC ID: YY3-182010

**5.47 GHz ~ 5.725 GHz**



99% OBW & 26DB BANDWIDTH ANT2 11a CH100

Date: 22.APR.2019 14:09:17



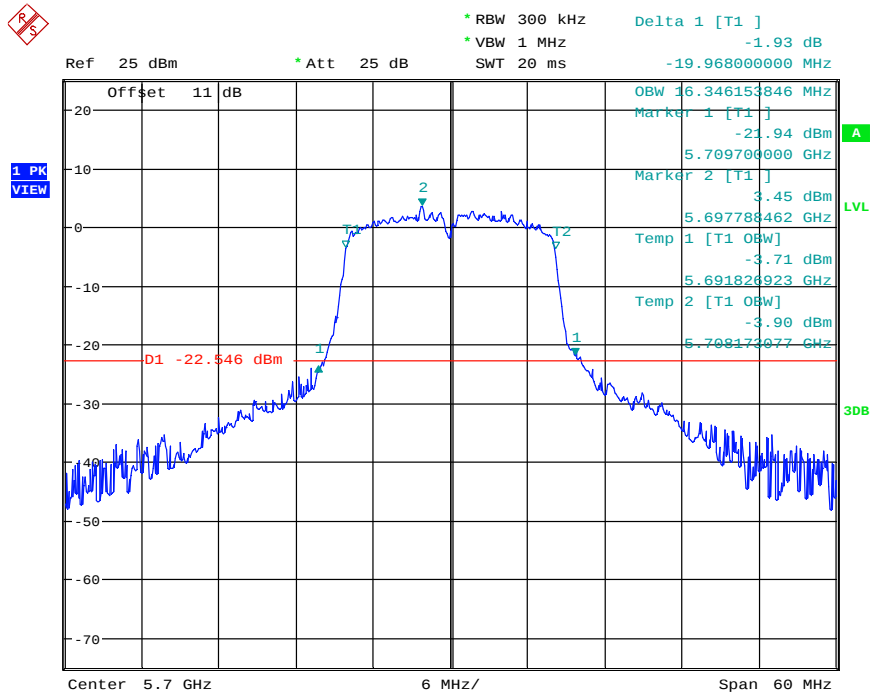
99% OBW & 26DB BANDWIDTH ANT2\_11a\_CH120

Date: 22.APR.2019 14:16:42



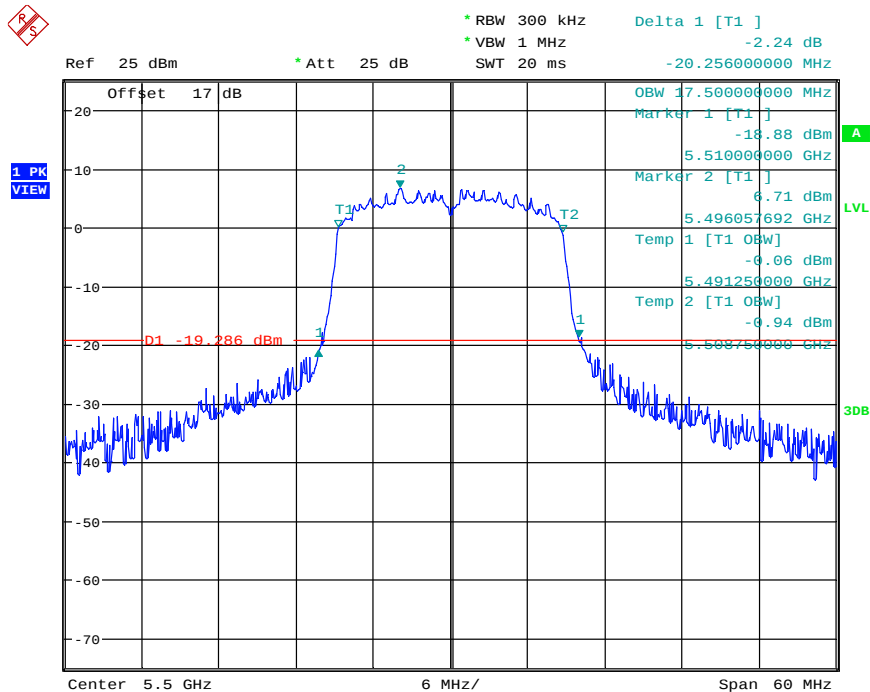
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



99% OBW & 26DB BANDWIDTH ANT2\_11a\_CH140

Date: 22.APR.2019 14:19:27



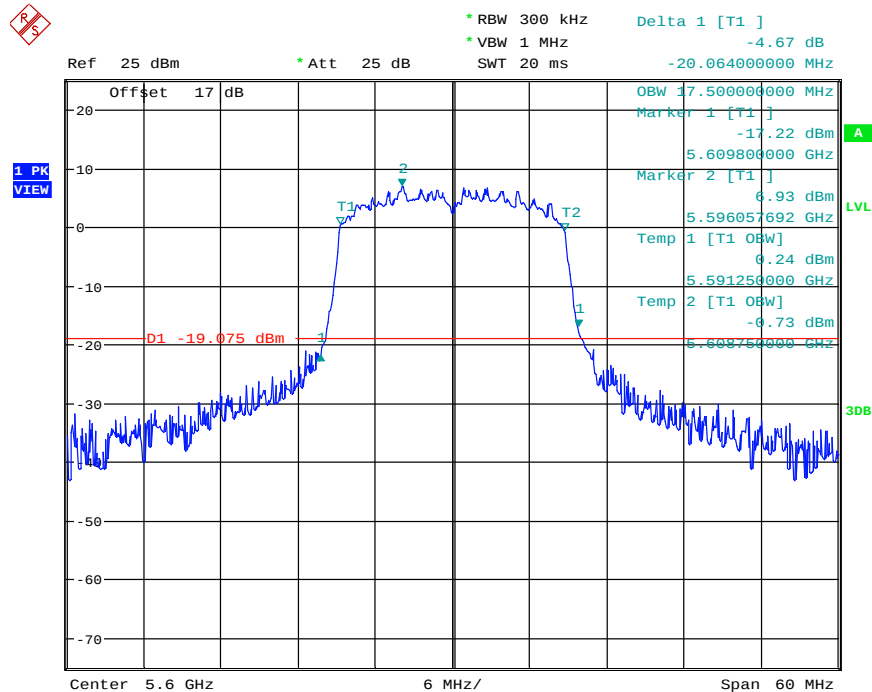
99% OBW & 26DB BANDWIDTH ANT2\_11ac20\_CH100

Date: 23.APR.2019 09:27:06



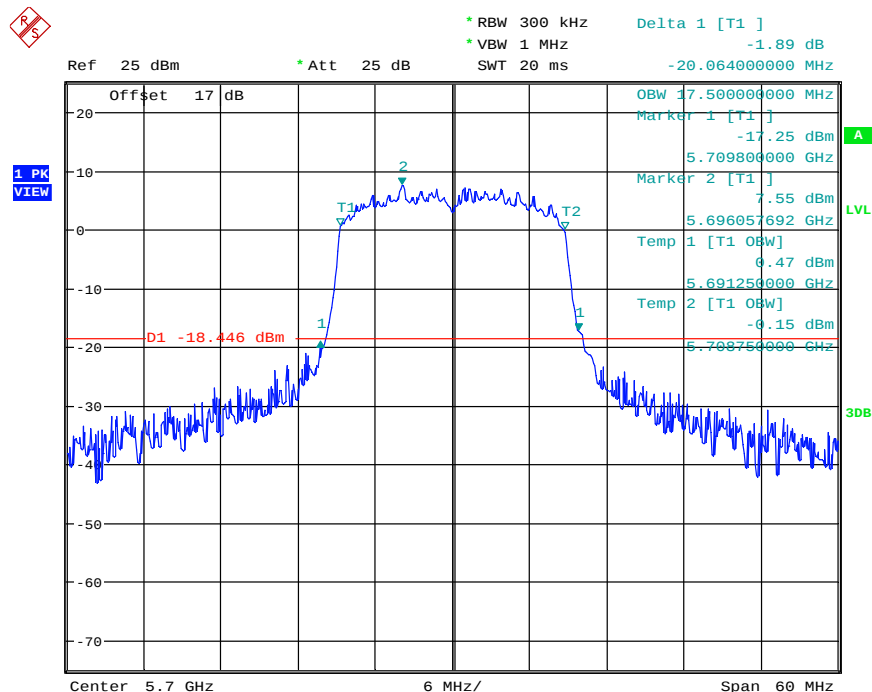
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



99% OBW & 26DB BANDWIDTH ANT2\_11ac20\_CH120

Date: 23.APR.2019 09:32:03



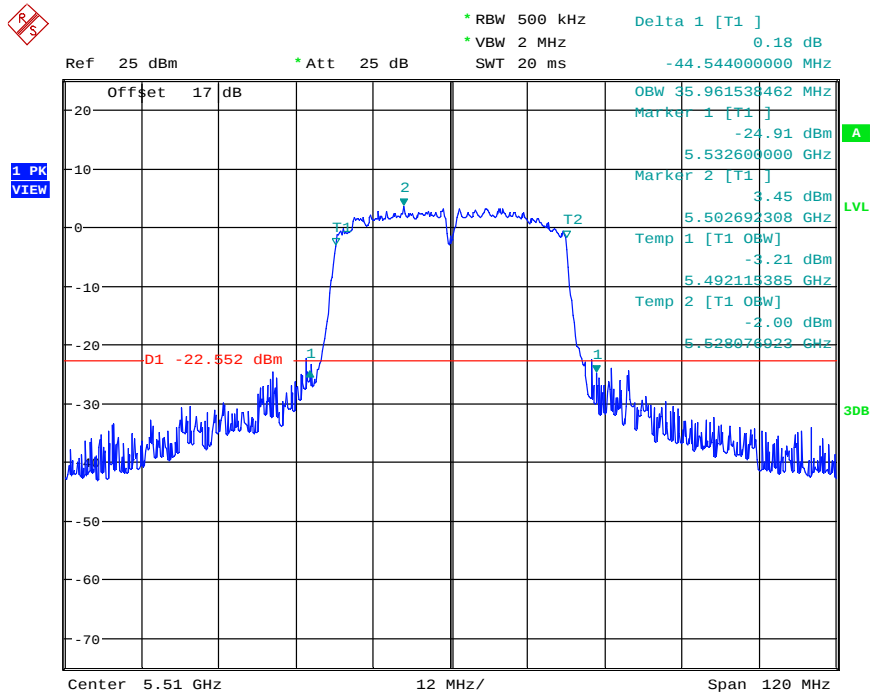
99% OBW & 26DB BANDWIDTH ANT2\_11ac20\_CH140

Date: 23.APR.2019 09:39:06



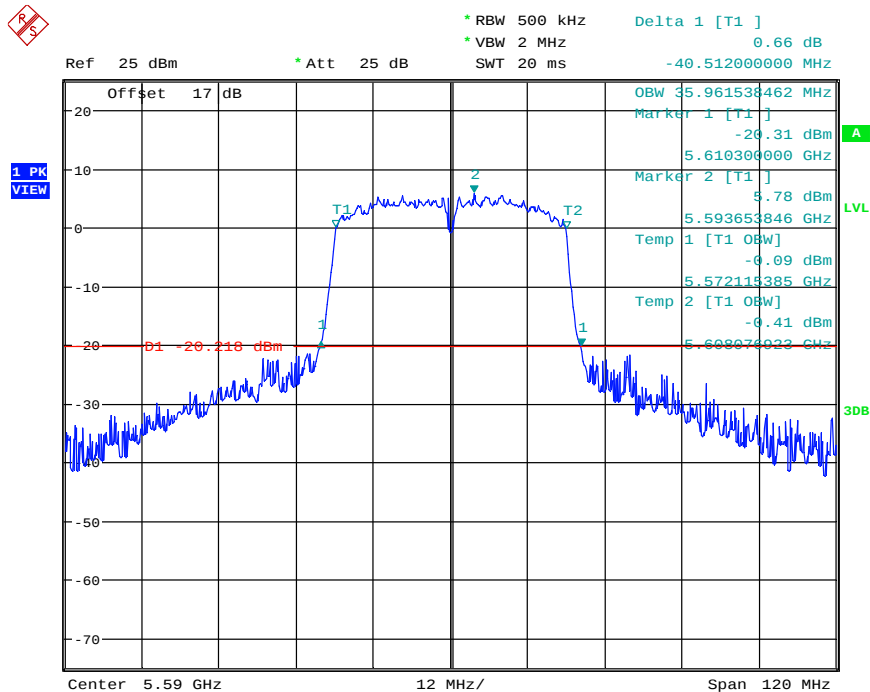
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



99% OBW & 26DB BANDWIDTH ANT2\_11ac40\_CH102

Date: 23.APR.2019 09:42:57

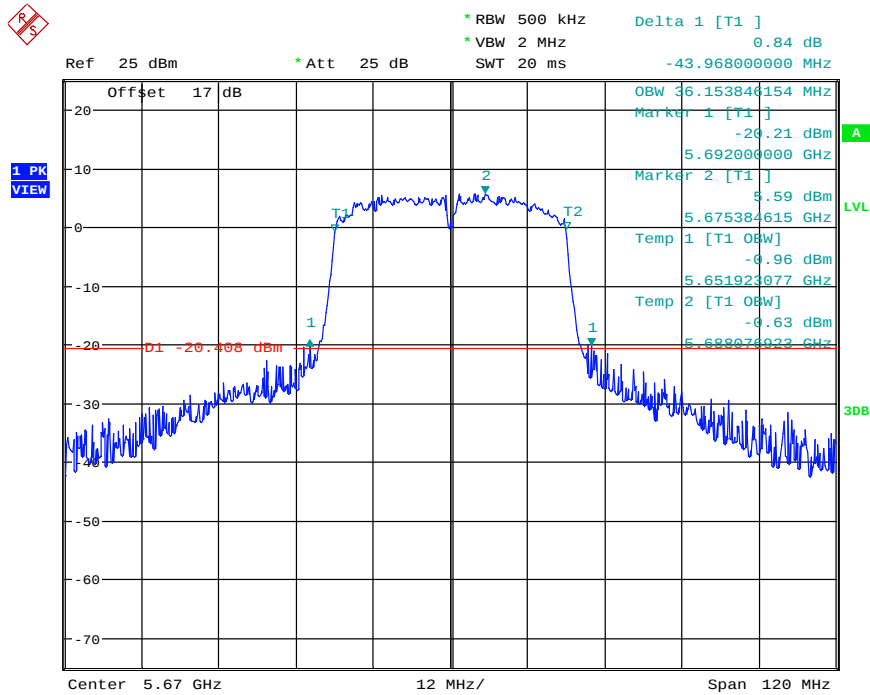


99% OBW & 26DB BANDWIDTH ANT2\_11ac40\_CH118

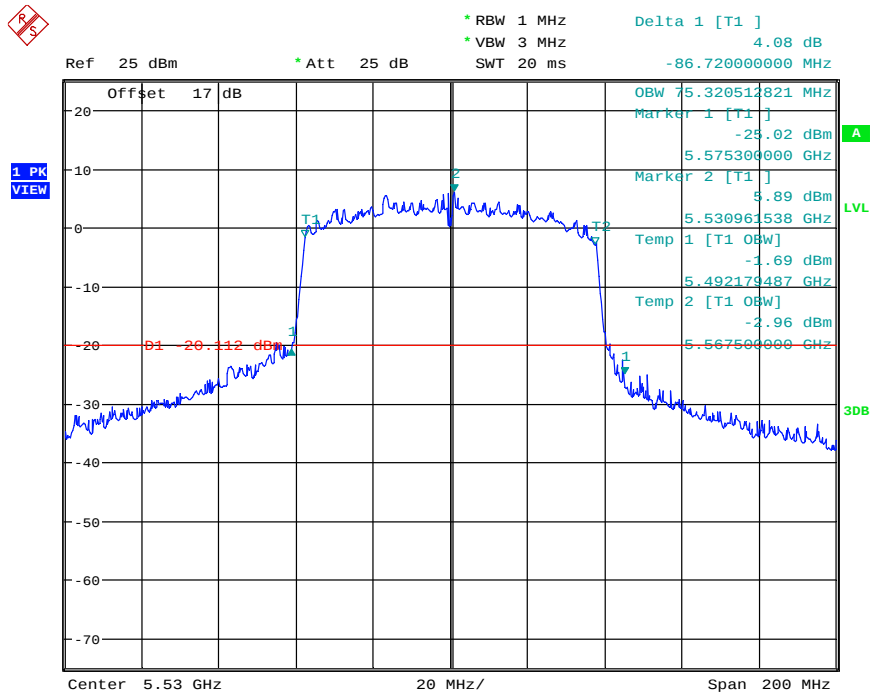
Date: 23.APR.2019 09:46:21



Registration number: W6M21903-18857-C-54  
FCC ID: YY3-182010



99% OBW & 26DB BANDWIDTH ANT2\_11ac40\_CH134  
Date: 23.APR.2019 09:48:27

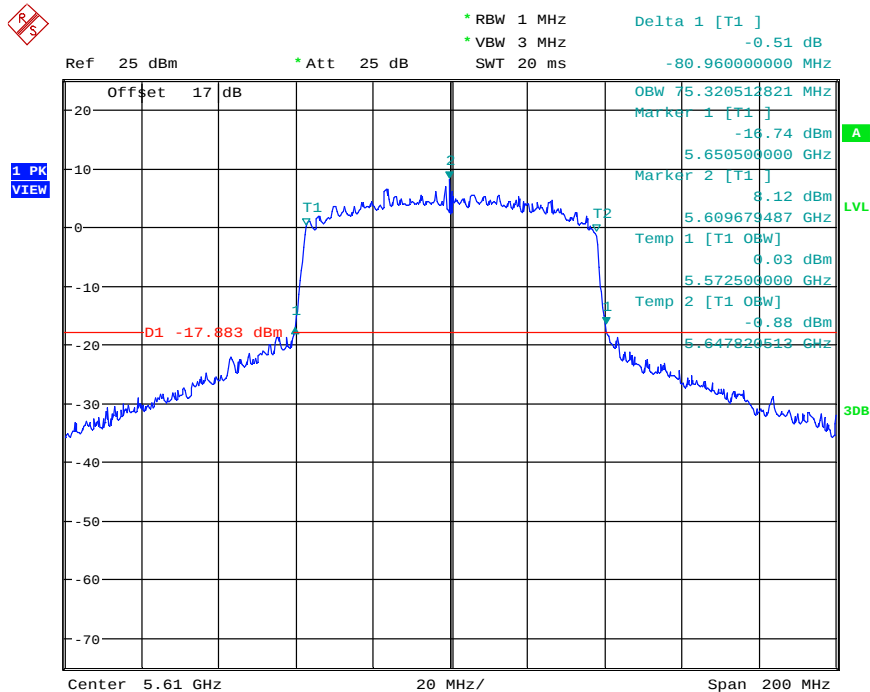


99% OBW & 26DB BANDWIDTH ANT2\_11ac80\_CH106  
Date: 22.APR.2019 15:17:56



Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



99% OBW & 26DB BANDWIDTH ANT2\_11ac80\_CH122

Date: 22.APR.2019 15:24:05

Test equipment used: ETSTW-RE 055, ETSTW-RE 050

Registration number: W6M21903-18857-C-54

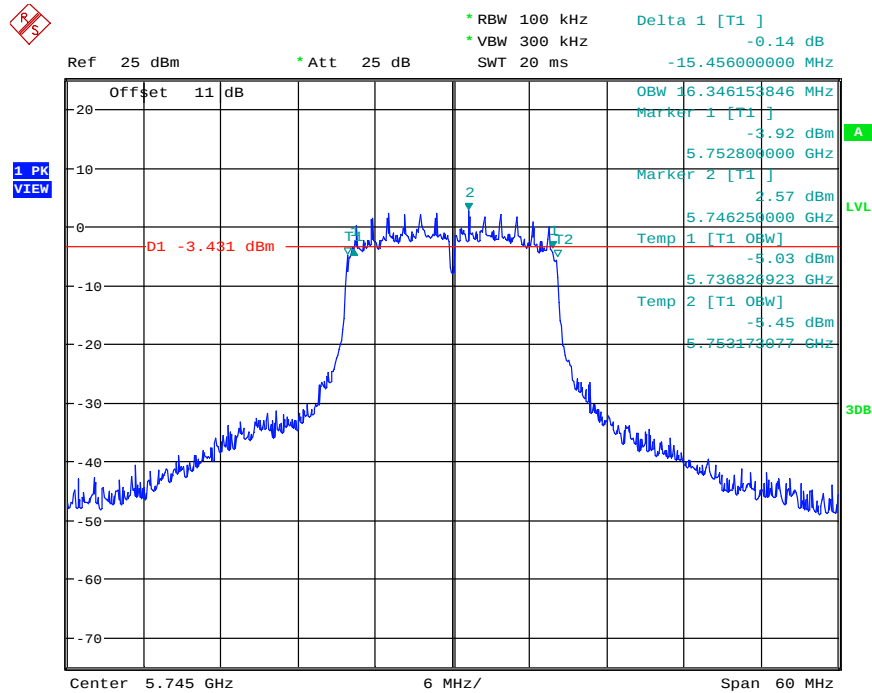
FCC ID: YY3-182010

## 3.3 6dB emission bandwidth, 99% Occupied Bandwidth, FCC 15.407 (a)

According to §15.407(a). No Limit required.

Result:

ANTA

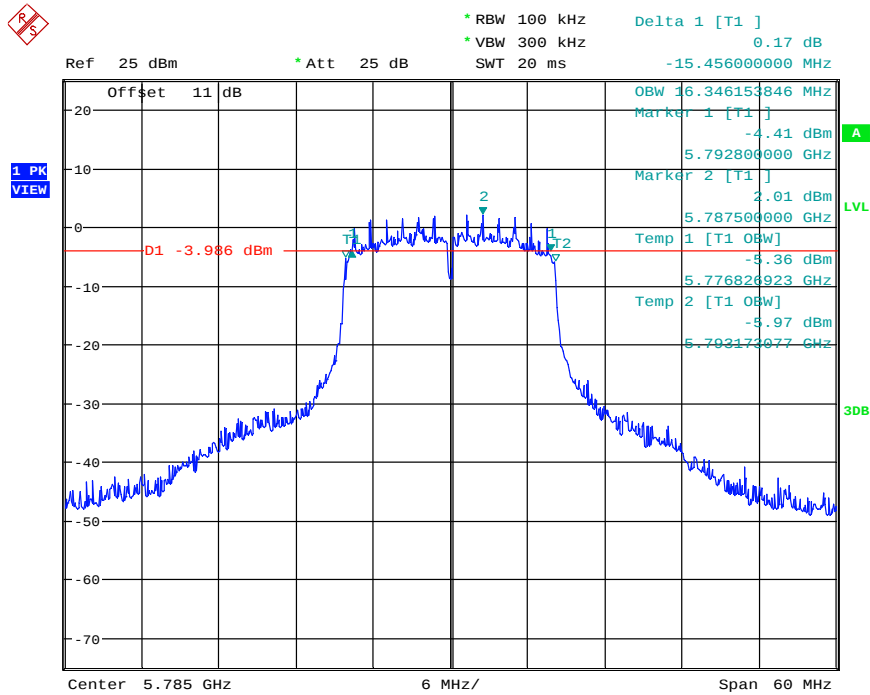


99% OBW & 6DB BANDWIDTH ANT1\_11a\_CH149

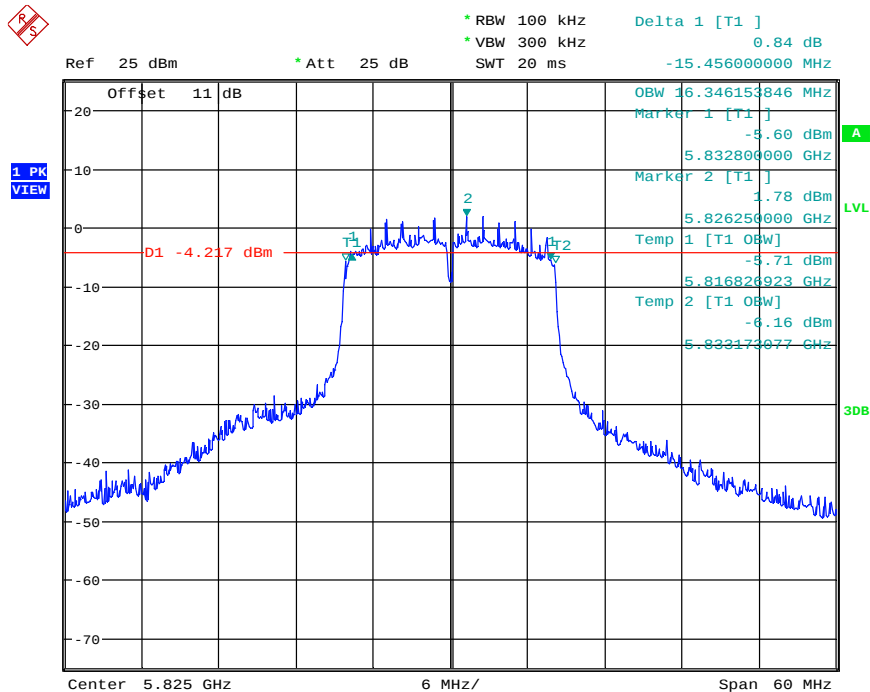
Date: 22.APR.2019 15:28:34



Registration number: W6M21903-18857-C-54  
FCC ID: YY3-182010



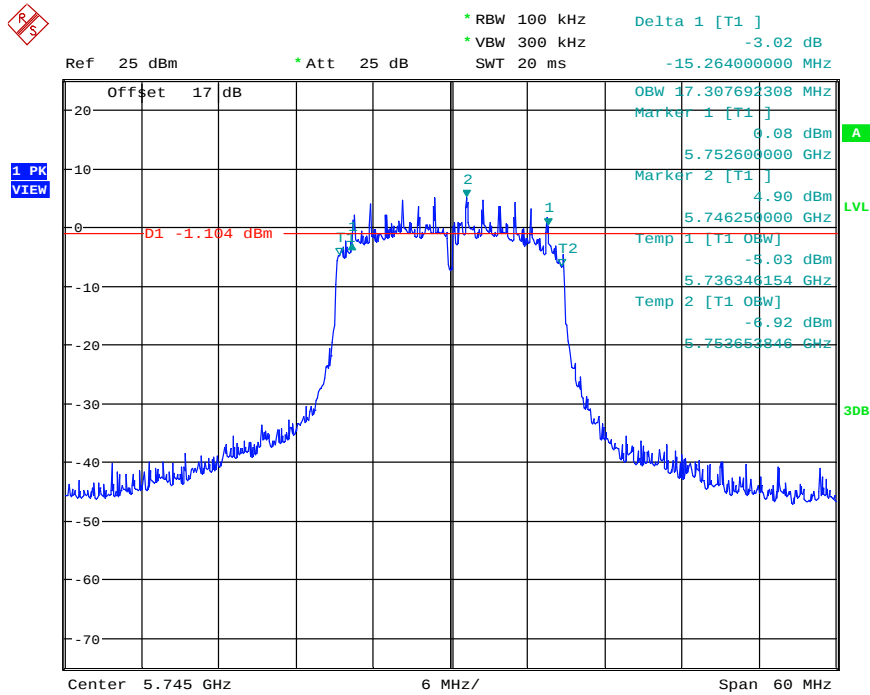
99% OBW & 6DB BANDWIDTH ANT1\_11a\_CH157  
Date: 22.APR.2019 15:33:53



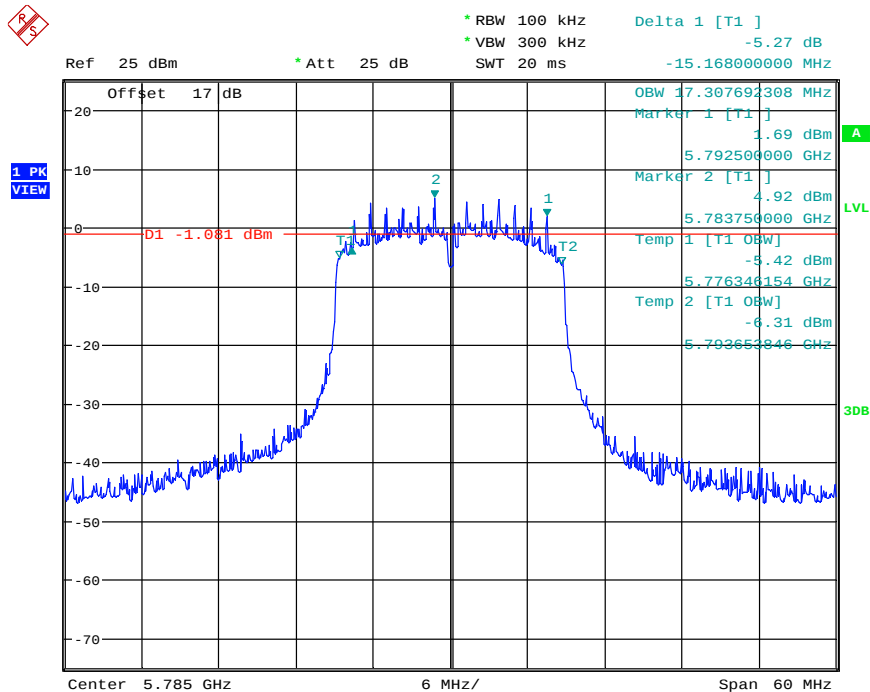
99% OBW & 6DB BANDWIDTH ANT1\_11a\_CH165  
Date: 22.APR.2019 15:36:05



Registration number: W6M21903-18857-C-54  
FCC ID: YY3-182010



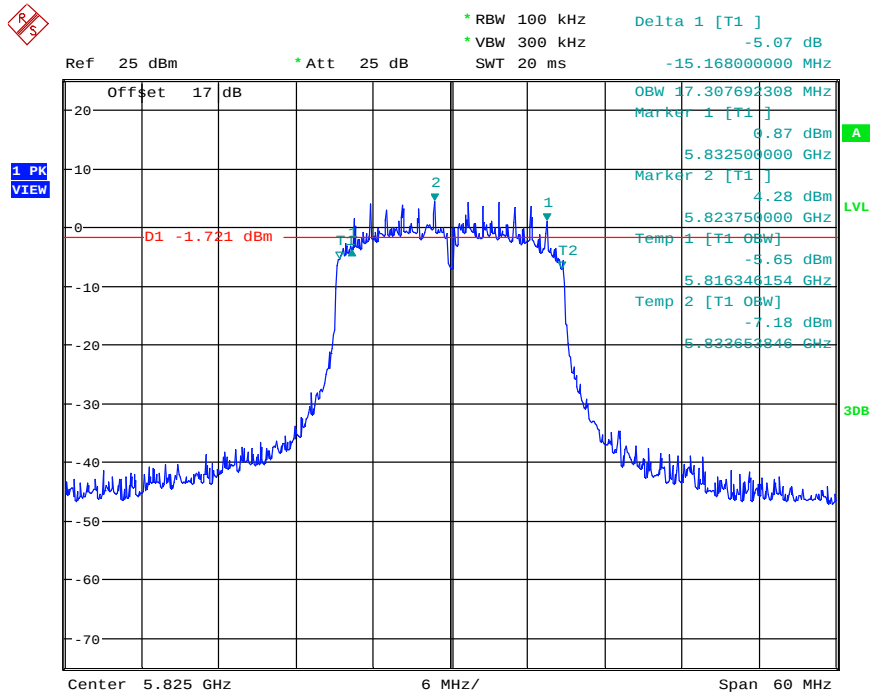
99% OBW & 6DB BANDWIDTH ANT1\_11ac20\_CH149  
Date: 23.APR.2019 08:21:50



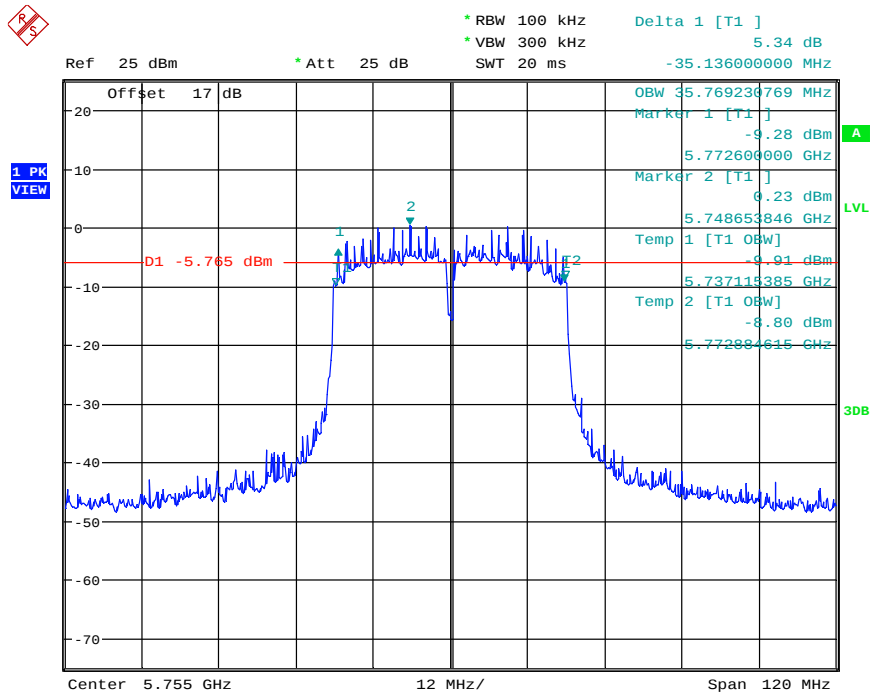
99% OBW & 6DB BANDWIDTH ANT1\_11ac20\_CH157  
Date: 23.APR.2019 08:25:19



Registration number: W6M21903-18857-C-54  
FCC ID: YY3-182010



99% OBW & 6DB BANDWIDTH ANT1\_11ac20\_CH165  
Date: 23.APR.2019 08:29:27

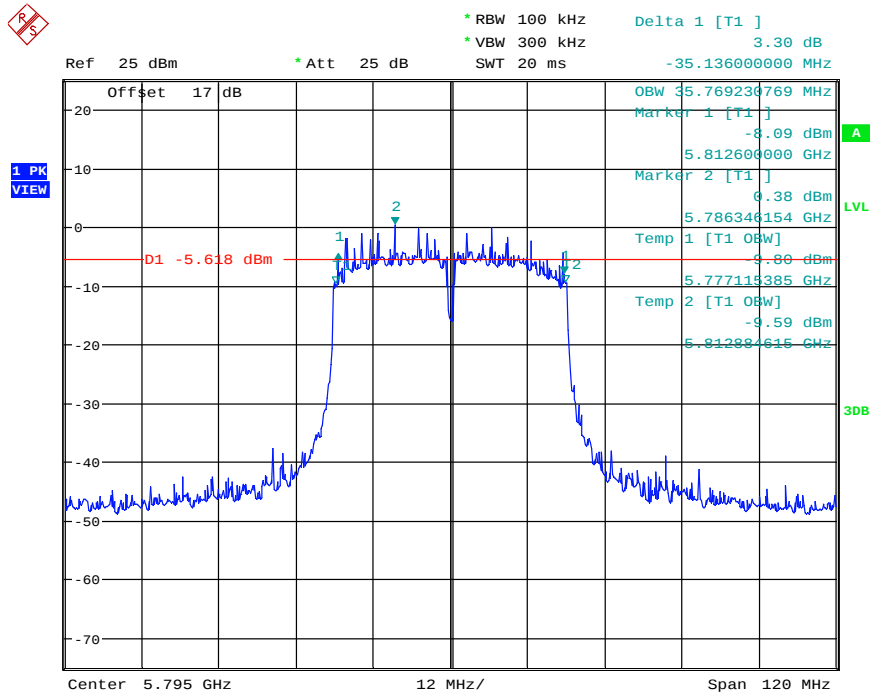


99% OBW & 6DB BANDWIDTH ANT1\_11ac40\_CH151  
Date: 23.APR.2019 08:39:59



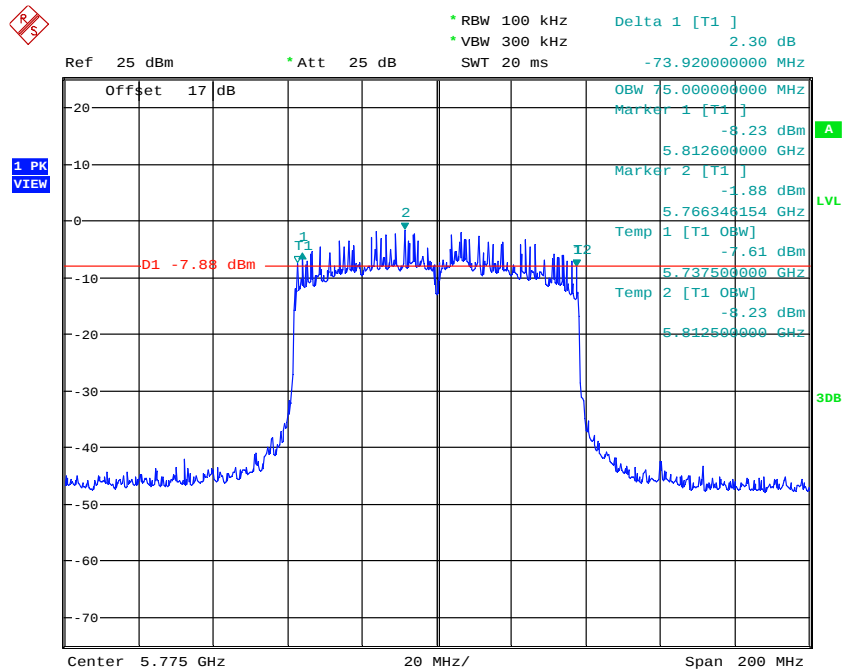
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



99% OBW & 6DB BANDWIDTH ANT1\_11ac40\_CH159

Date: 23.APR.2019 08:43:56



99% OBW & 6DB BANDWIDTH ANT1\_11ac80\_CH155

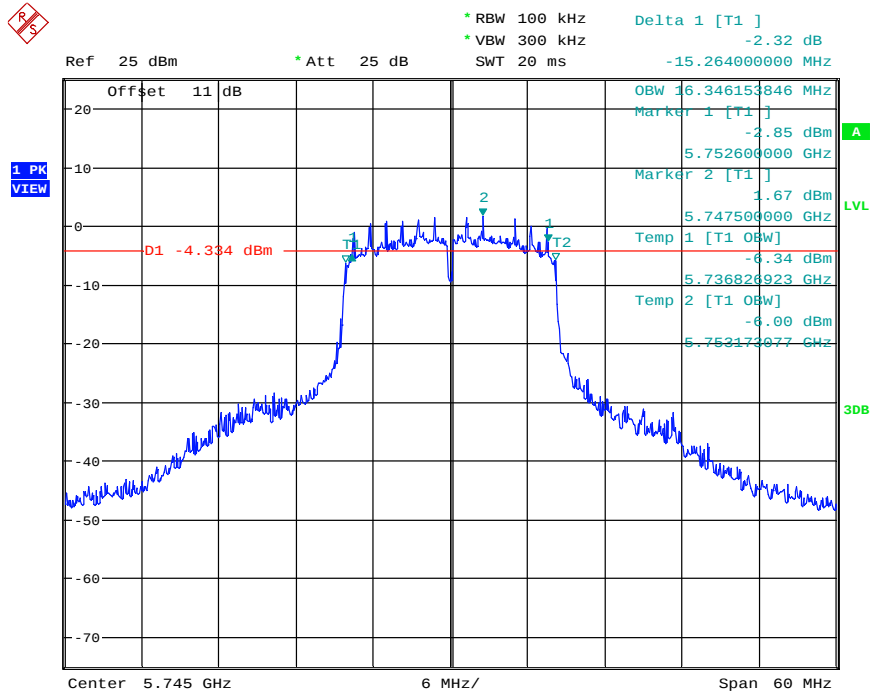
Date: 23.APR.2019 08:48:36



Registration number: W6M21903-18857-C-54

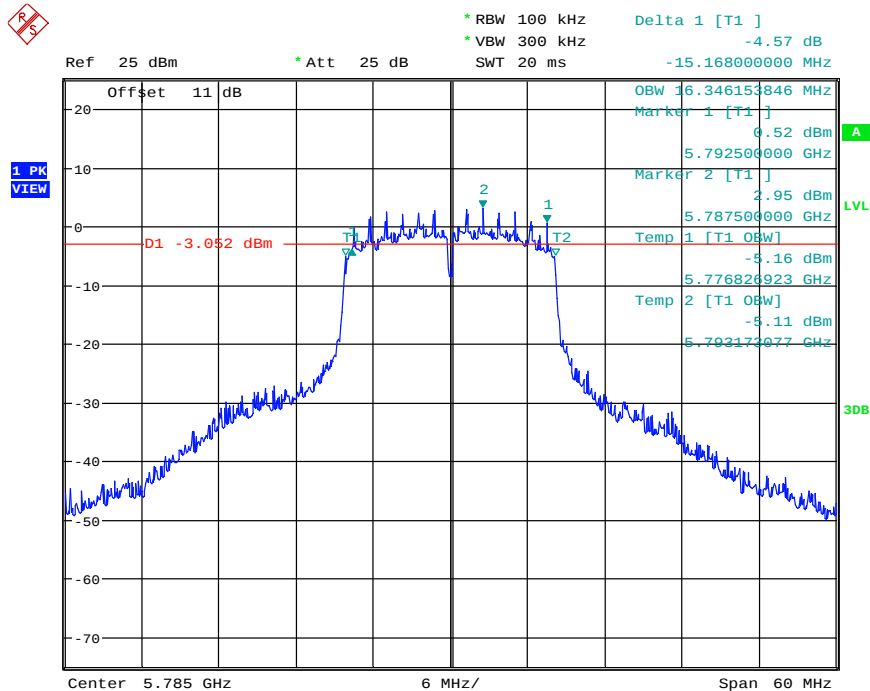
FCC ID: YY3-182010

ANTB



99% OBW & 6DB BANDWIDTH ANT2\_11a\_CH149

Date: 22.APR.2019 15:30:19

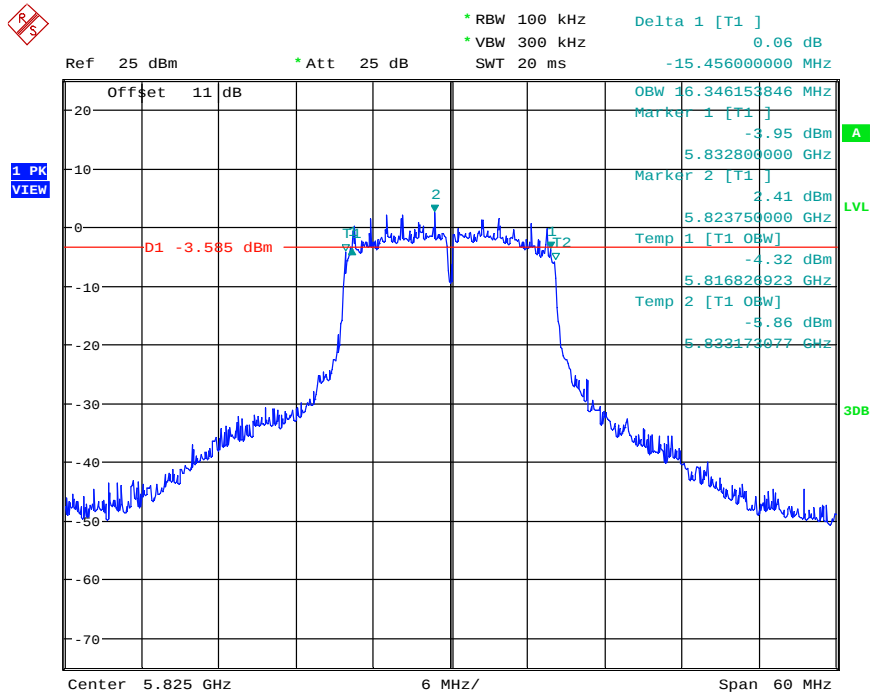


99% OBW & 6DB BANDWIDTH ANT2\_11a\_CH157

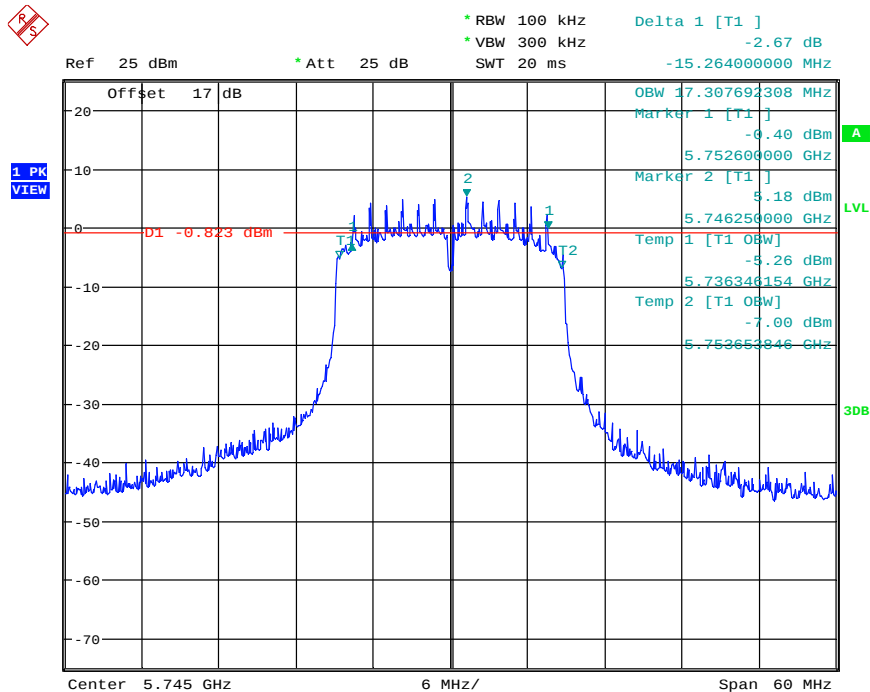
Date: 22.APR.2019 15:32:03



Registration number: W6M21903-18857-C-54  
FCC ID: YY3-182010



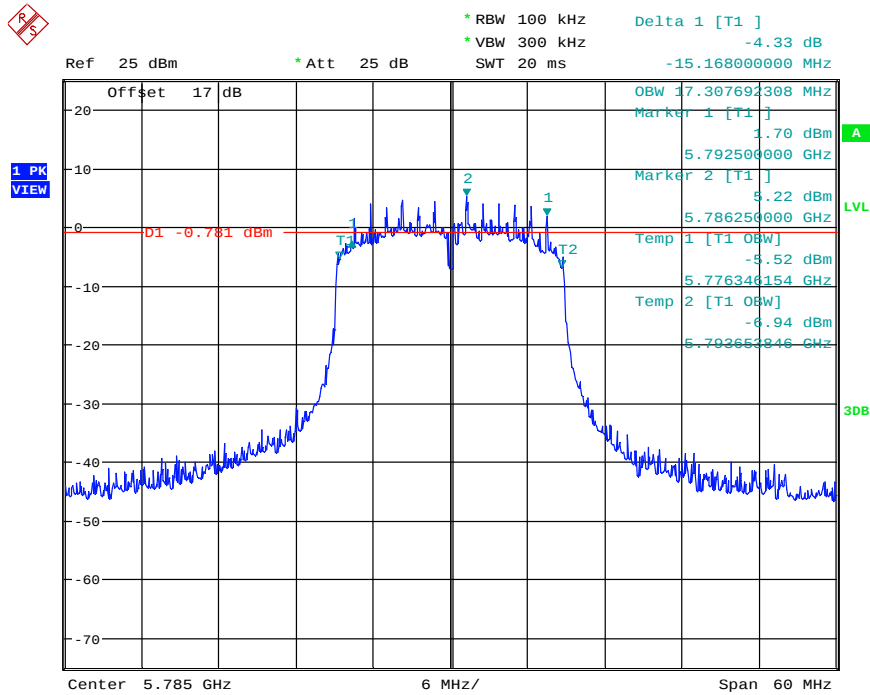
99% OBW & 6DB BANDWIDTH ANT2\_11a\_CH165  
Date: 22.APR.2019 15:37:44



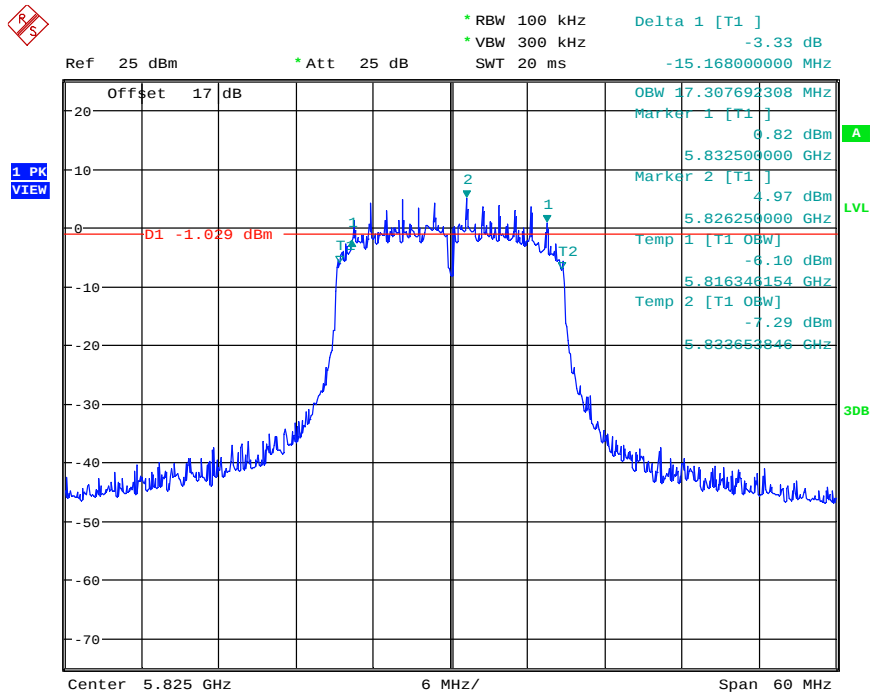
99% OBW & 6DB BANDWIDTH ANT2\_11ac20\_CH149  
Date: 23.APR.2019 08:23:18



Registration number: W6M21903-18857-C-54  
FCC ID: YY3-182010



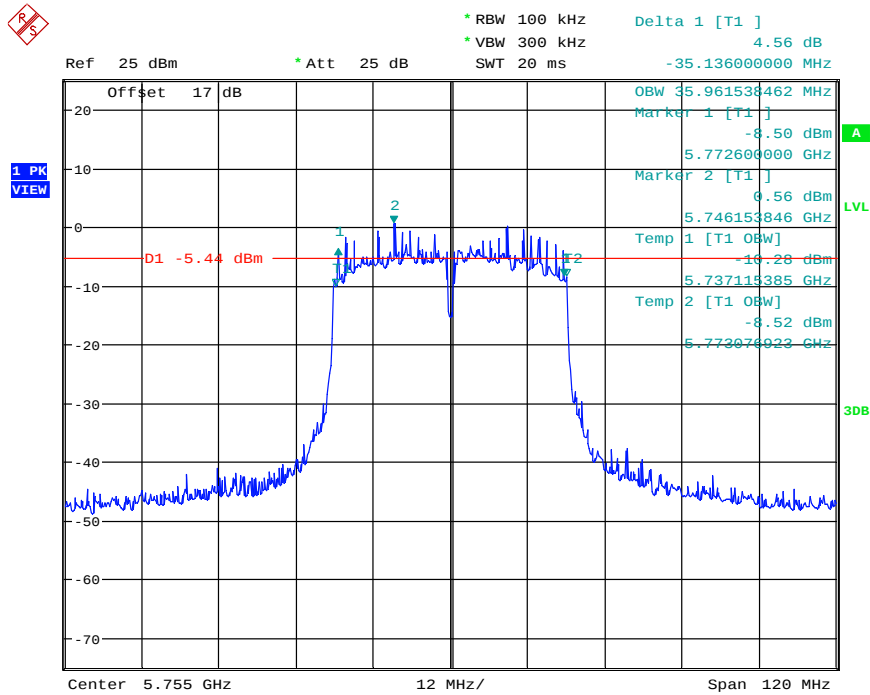
99% OBW & 6DB BANDWIDTH ANT2\_11ac20\_CH157  
Date: 23.APR.2019 08:26:47



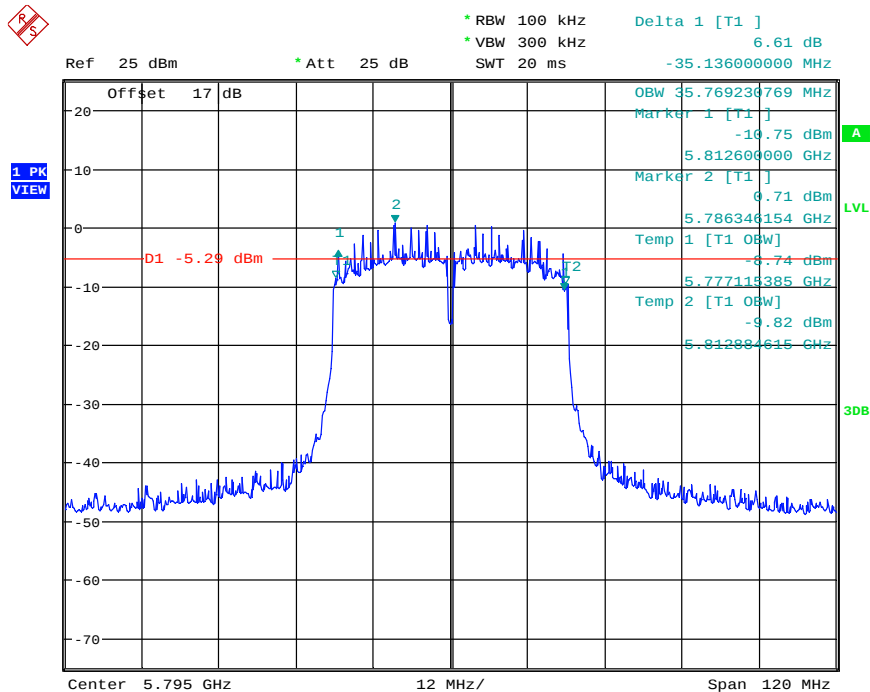
99% OBW & 6DB BANDWIDTH ANT2\_11ac20\_CH165  
Date: 23.APR.2019 08:31:00



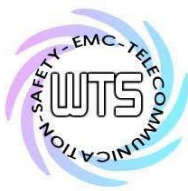
Registration number: W6M21903-18857-C-54  
FCC ID: YY3-182010



99% OBW & 6DB BANDWIDTH ANT2\_11ac40\_CH151  
Date: 23.APR.2019 08:41:27

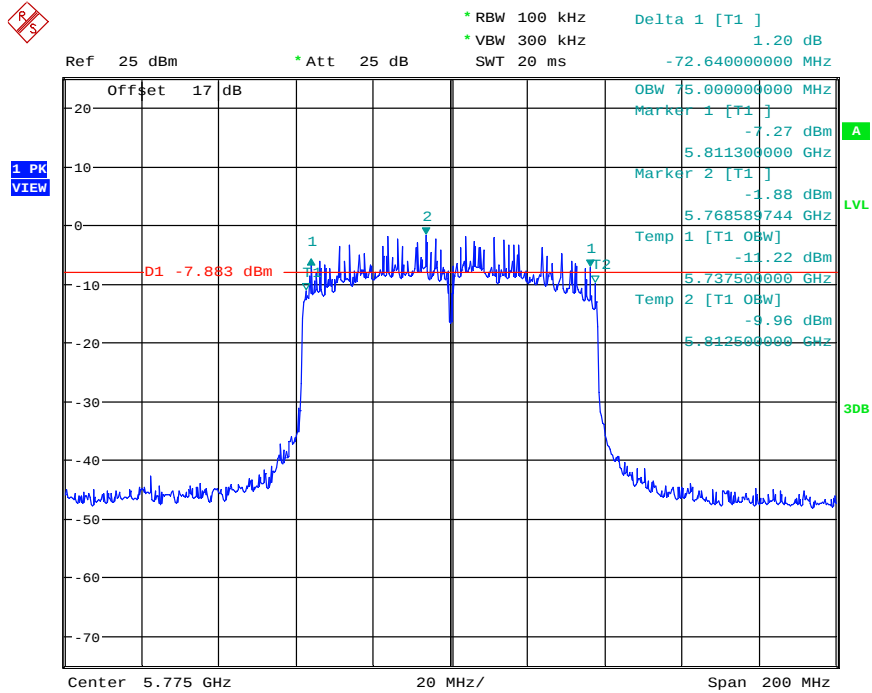


99% OBW & 6DB BANDWIDTH ANT2\_11ac40\_CH159  
Date: 23.APR.2019 08:45:18



Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



99% OBW & 6DB BANDWIDTH ANT2\_11ac80\_CH155

Date: 23.APR.2019 09:03:27

Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010

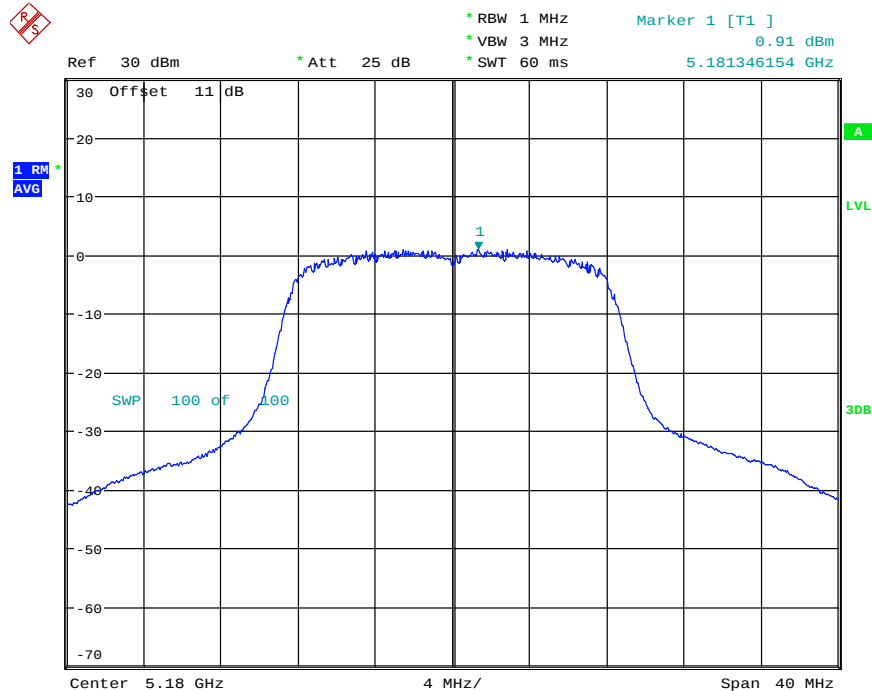
## 3.4 Peak Power Spectral Density, FCC 15.407 (a)

According to §15.407(a)

1. For the band 5.15-5.25 GHz, the peak power spectral density shall not exceed 17 dBm/MHz for master device and 11 dBm/MHz for mobile/portable client device.
2. For the band 5.25-5.35 GHz and 5.47-5.725 GHz, the peak power spectral density shall not exceed 11 dBm/MHz.
3. For the band 5.725-5.850 GHz, the peak power spectral density shall not exceed 30 dBm/500kHz.

ANTA

5.15 GHz ~ 5.25 GHz



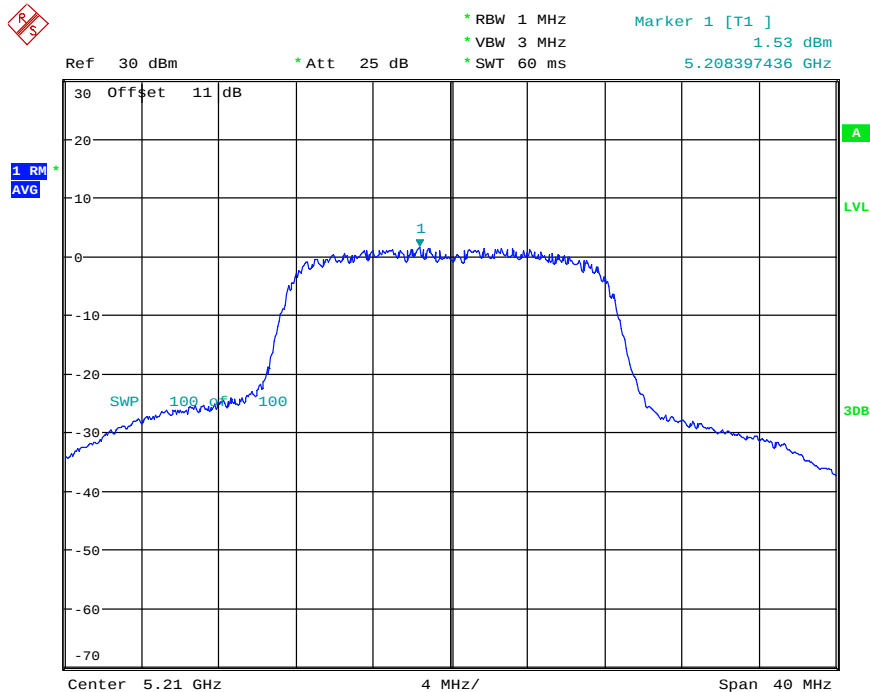
POWER DENSITY AV ANT111aCH36

Date: 22.APR.2019 10:35:14



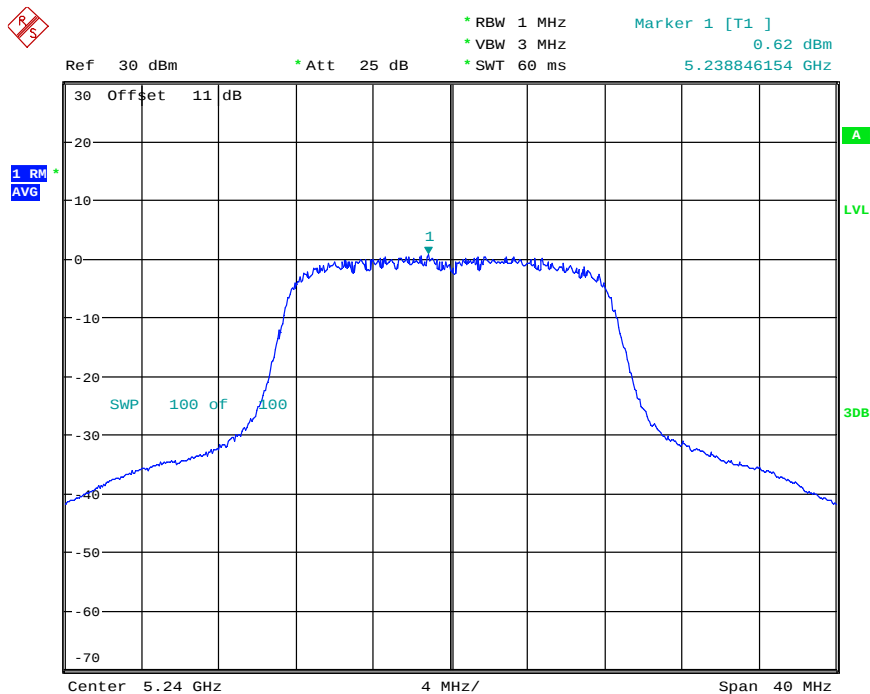
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



POWER DENSITY AV ANT111aCH44

Date: 3.JUN.2019 09:20:49



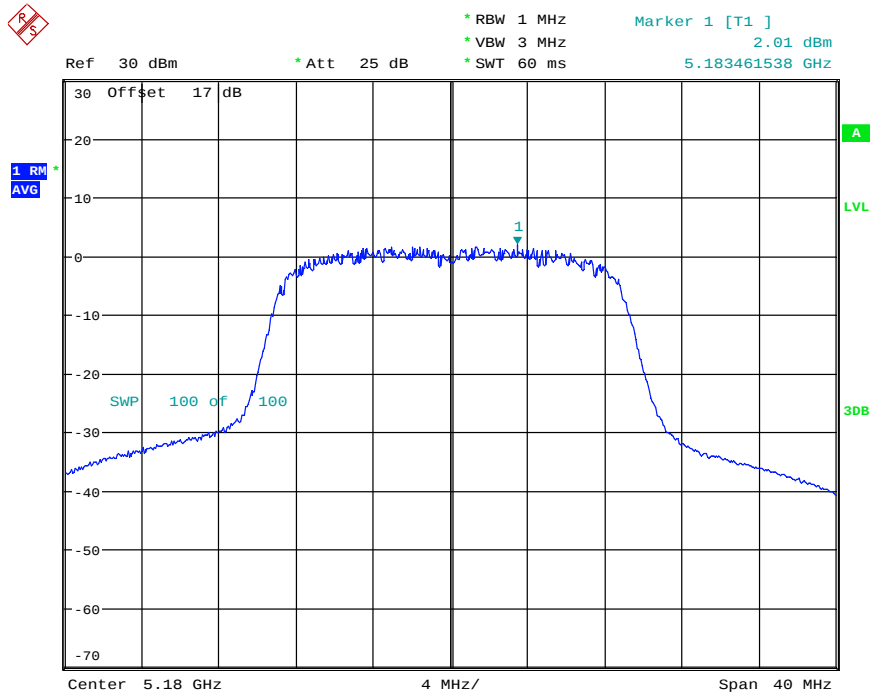
POWER DENSITY AV ANT111aCH48

Date: 22.APR.2019 10:58:51



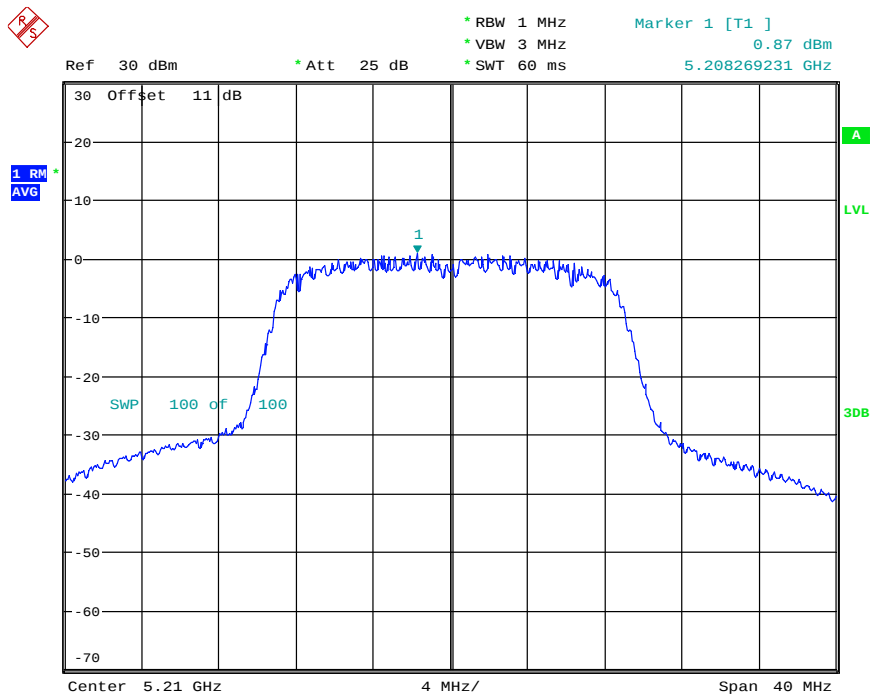
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



POWER DENSITY AV ANT1 11ac20CH36

Date: 22.APR.2019 11:49:46



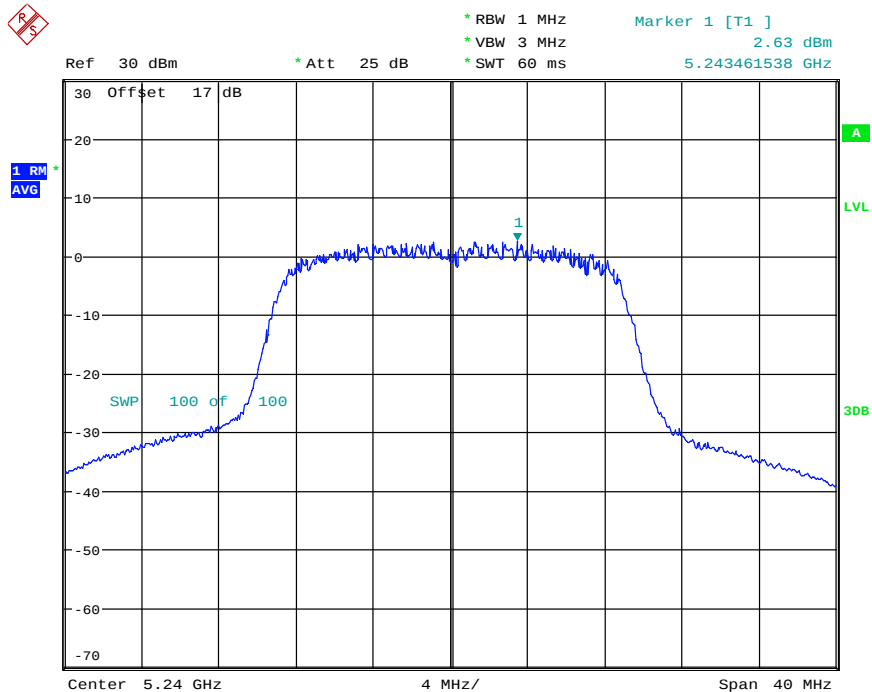
POWER DENSITY AV ANT1 11ac20CH44

Date: 3.JUN.2019 09:43:34



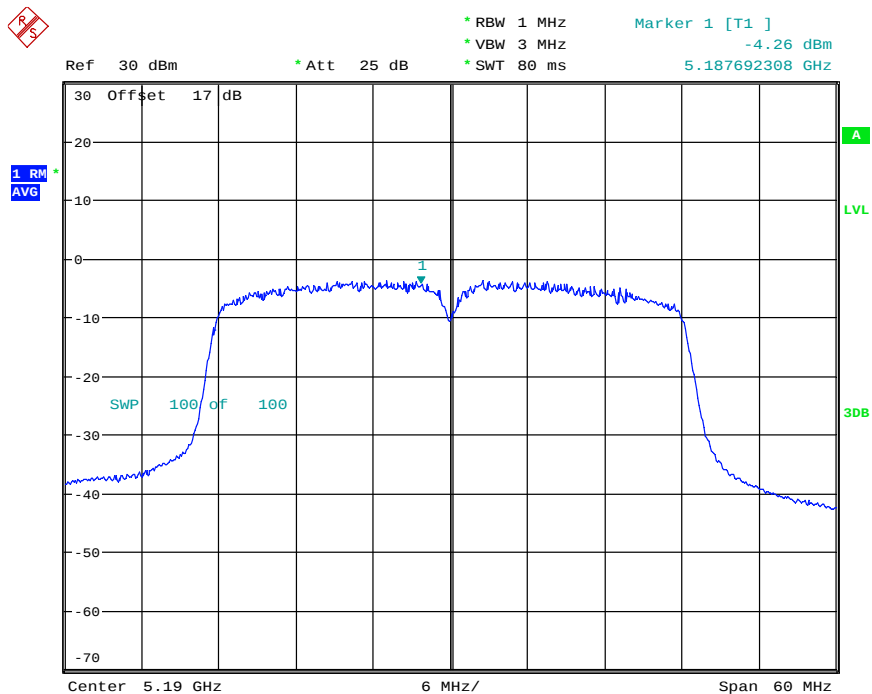
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



POWER DENSITY AV ANT1 11ac20CH48

Date: 22.APR.2019 11:59:12



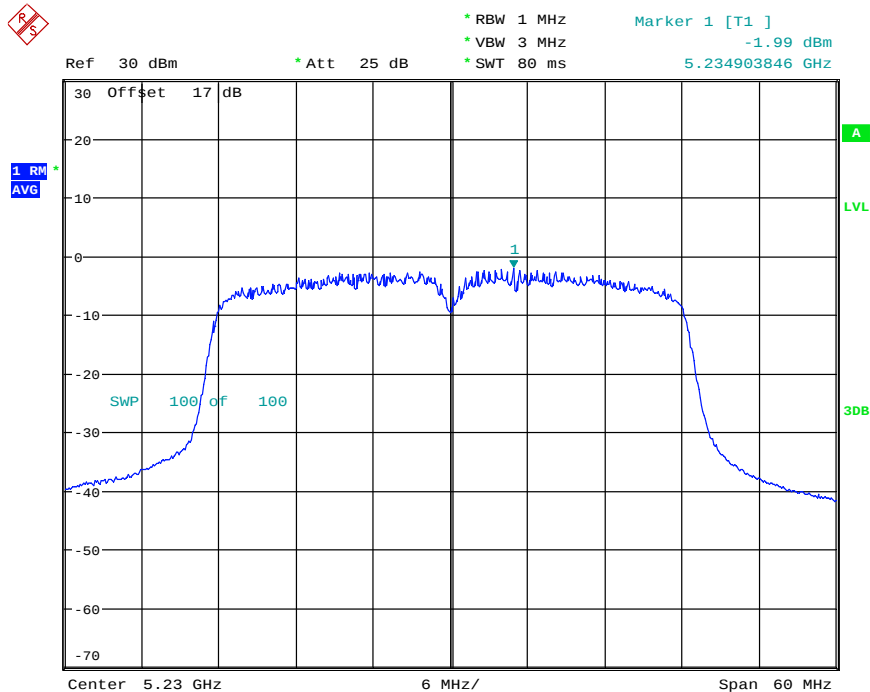
POWER DENSITY AV ANT11ac40CH38

Date: 22.APR.2019 13:24:42



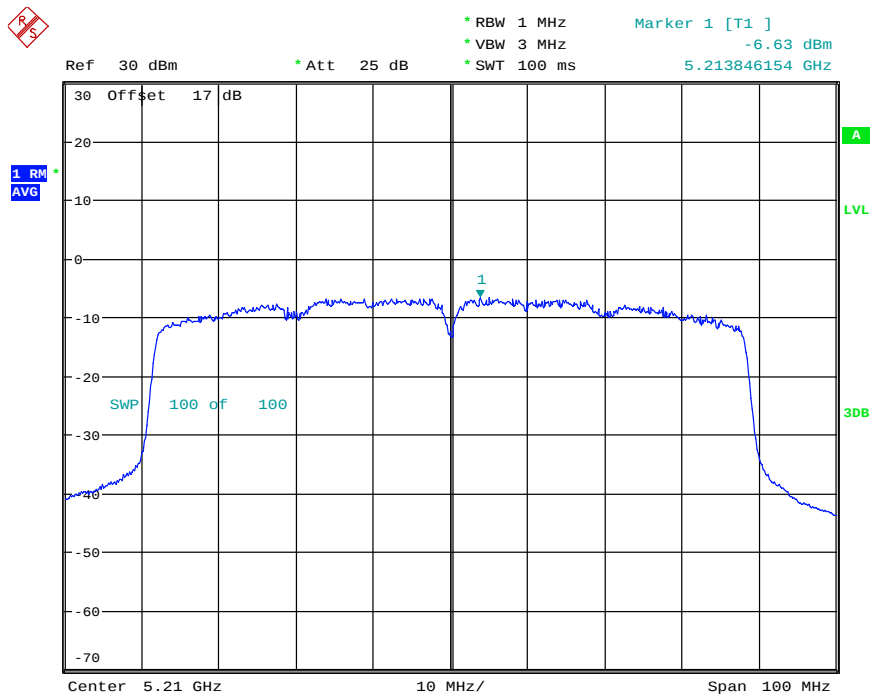
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



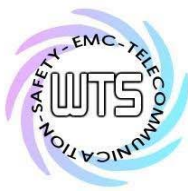
POWER DENSITY AV ANT111ac40CH46

Date: 22.APR.2019 13:30:34



POWER DENSITY AV ANT111ac80CH42

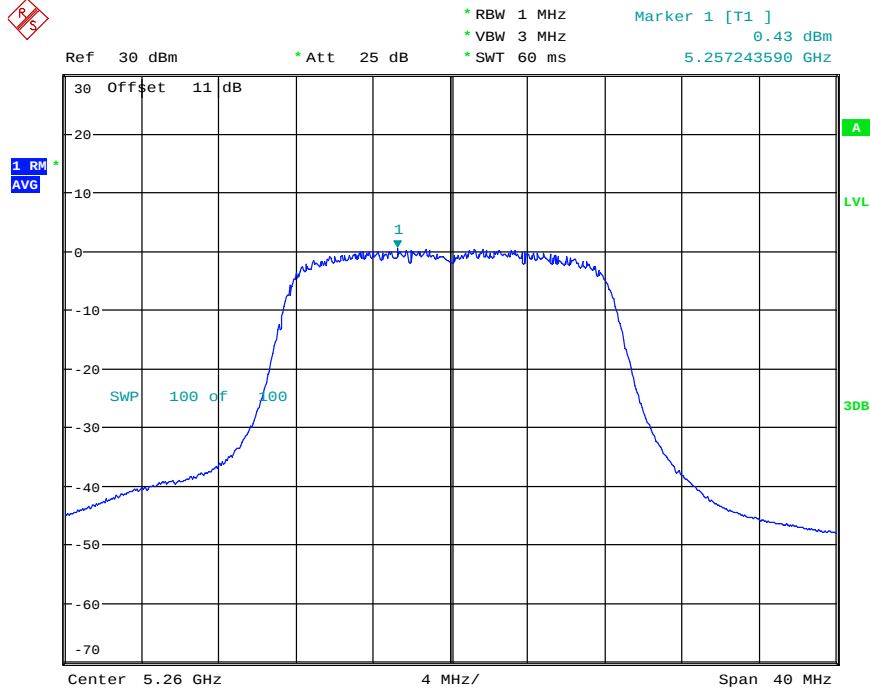
Date: 22.APR.2019 13:43:20



Registration number: W6M21903-18857-C-54

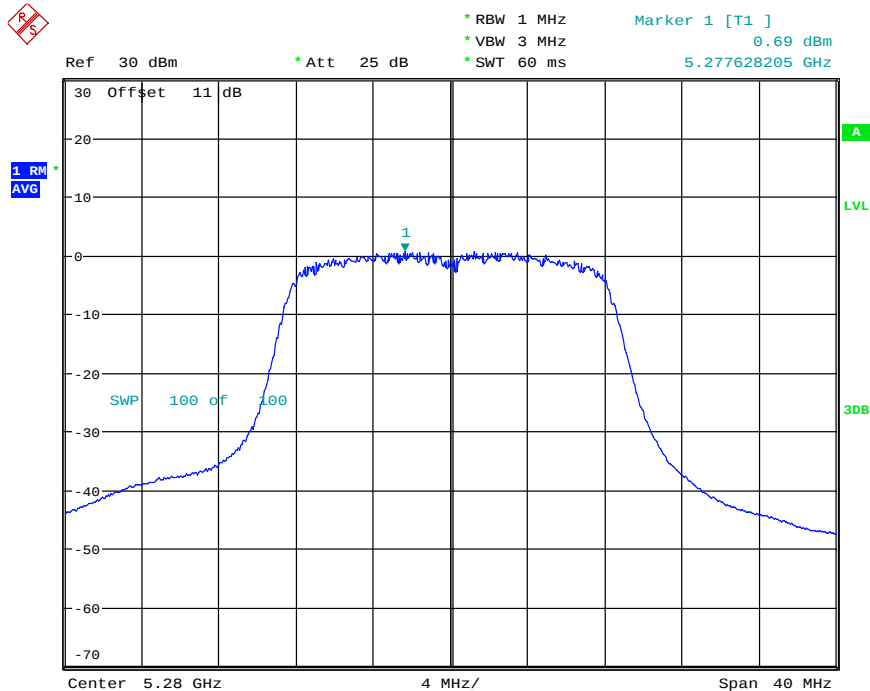
FCC ID: YY3-182010

**5.25 GHz ~ 5.35 GHz**



POWER DENSITY AV ANT111aCH52

Date: 22.APR.2019 11:00:41



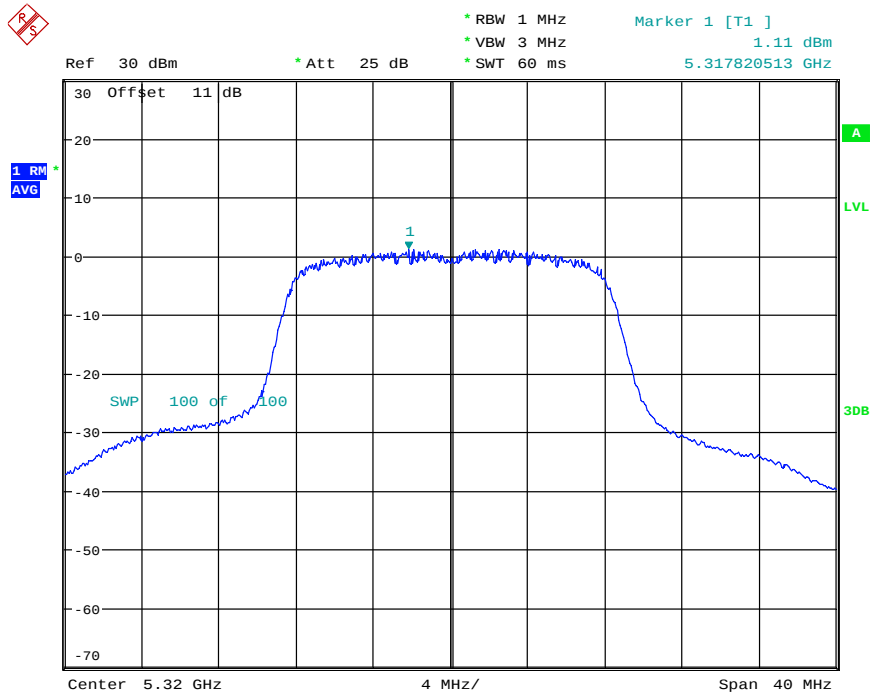
POWER DENSITY AV ANT111aCH56

Date: 22.APR.2019 11:04:35



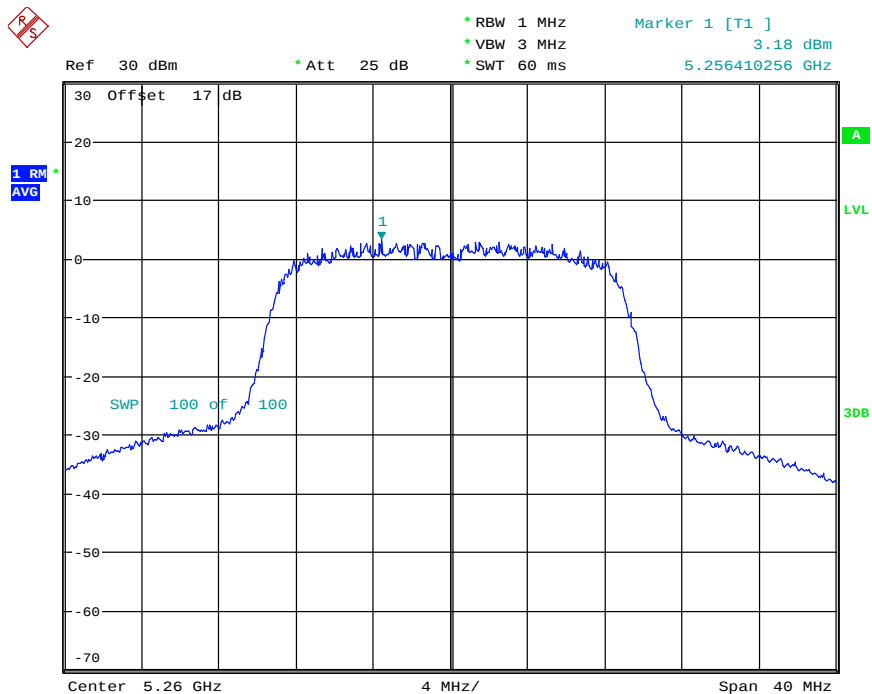
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



POWER DENSITY AV ANT111aCH64

Date: 22.APR.2019 11:07:57



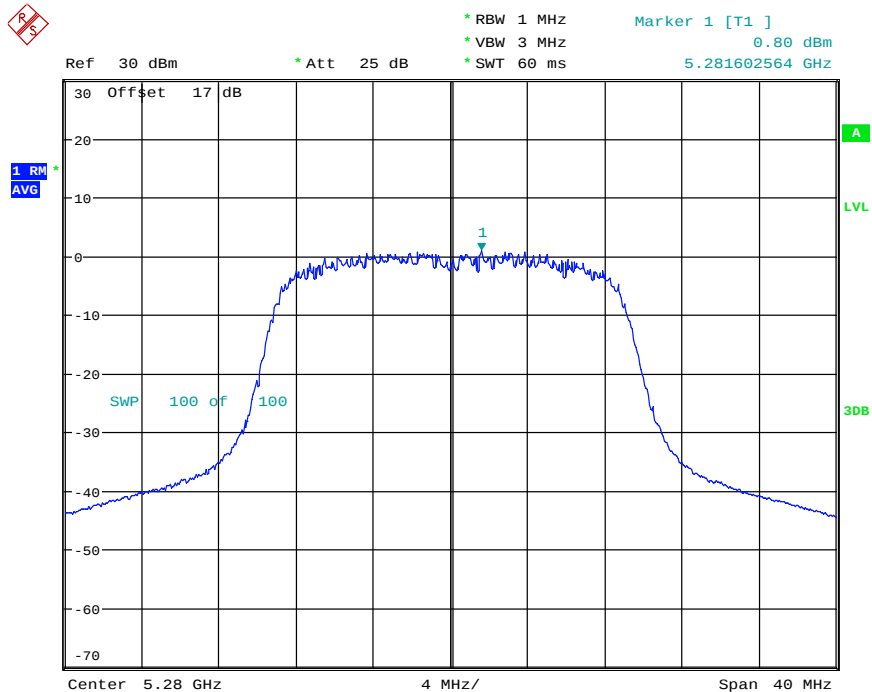
POWER DENSITY AV ANT1 11ac20CH52

Date: 22.APR.2019 13:10:09



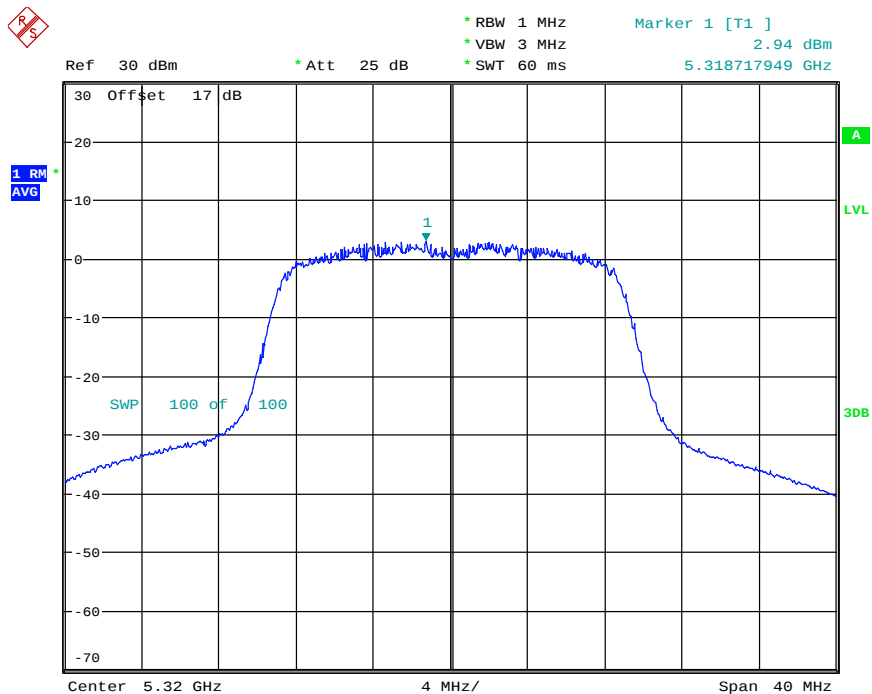
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



POWER DENSITY AV ANT1 11ac20CH56

Date: 22.APR.2019 13:13:37



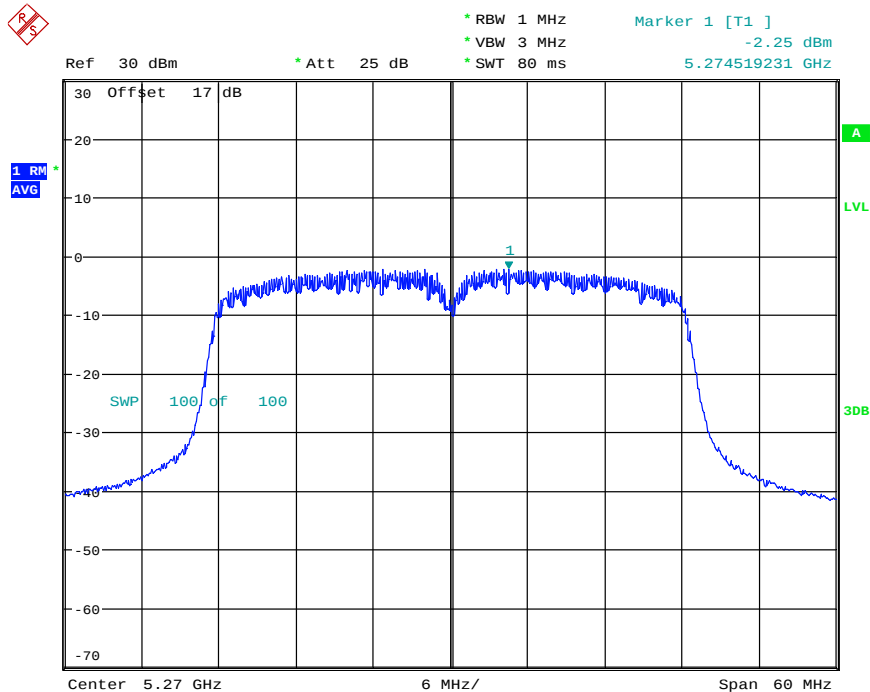
POWER DENSITY AV ANT1 11ac20CH64

Date: 22.APR.2019 13:17:51



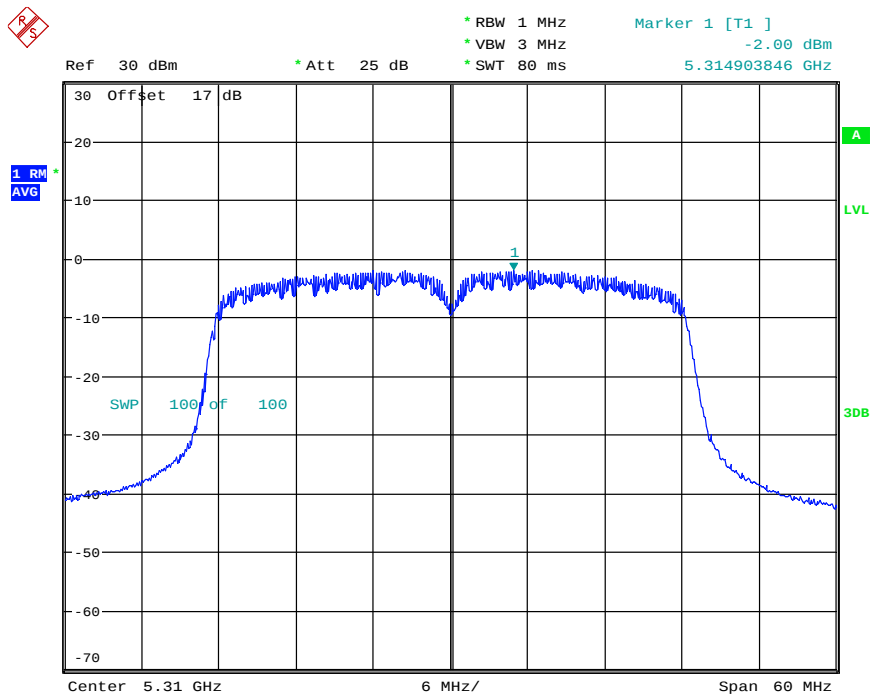
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



POWER DENSITY AV ANT111ac40CH54

Date: 22.APR.2019 13:34:34



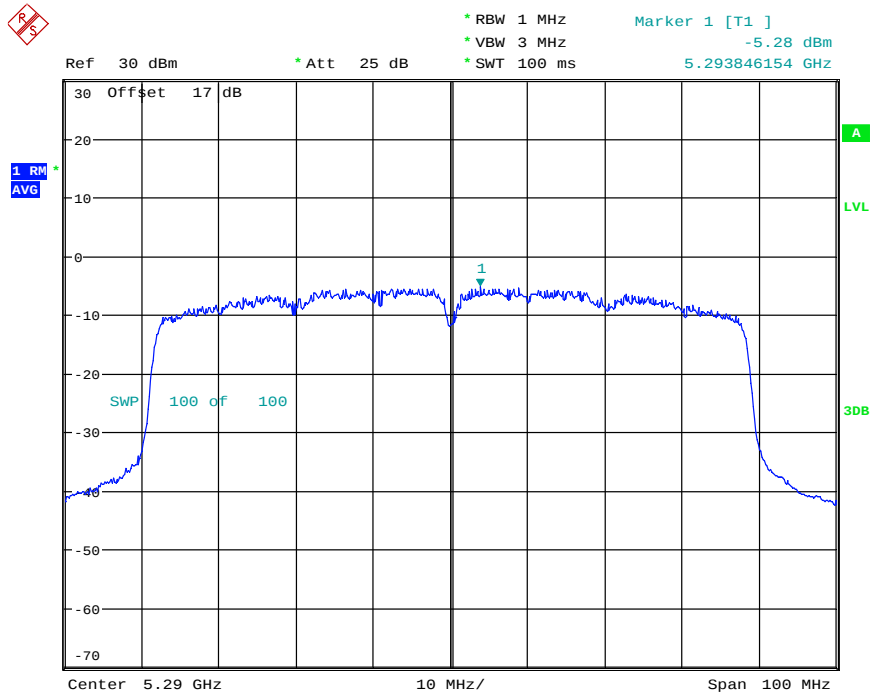
POWER DENSITY AV ANT111ac40CH62

Date: 22.APR.2019 13:38:12



Registration number: W6M21903-18857-C-54

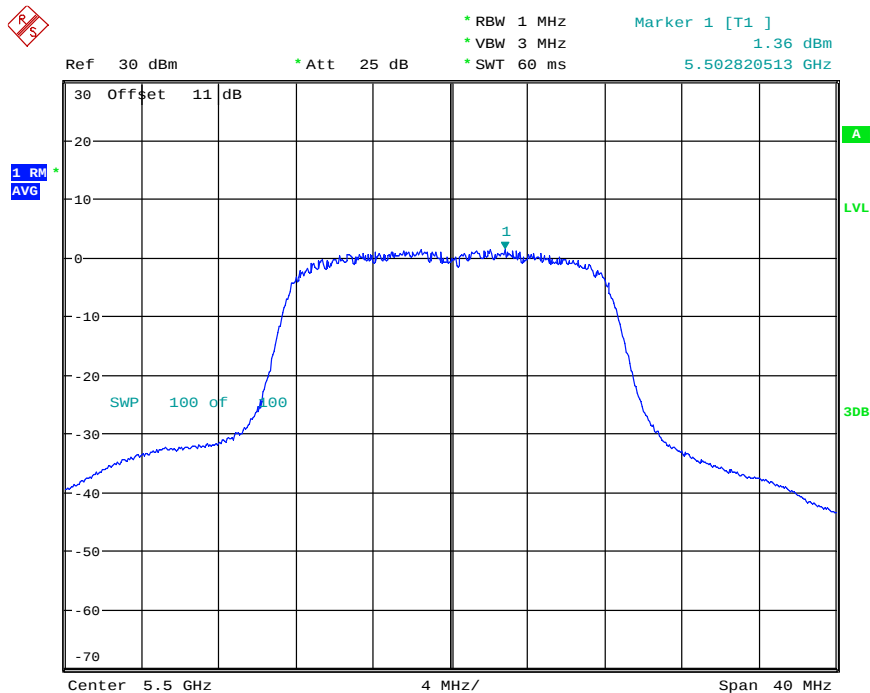
FCC ID: YY3-182010



POWER DENSITY AV ANT111ac80CH58

Date: 22.APR.2019 13:49:26

## 5.47 GHz ~ 5.725 GHz



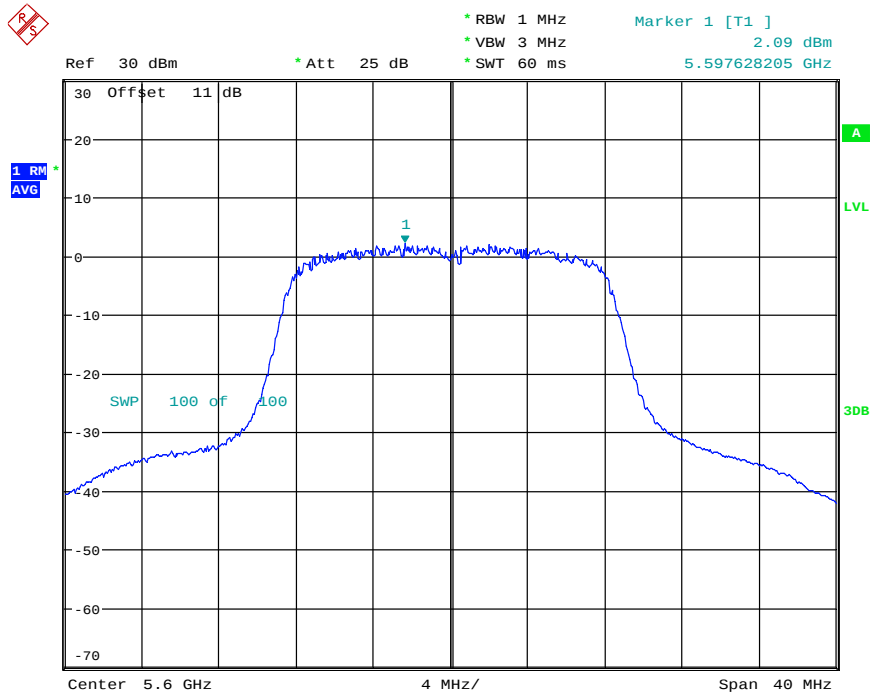
POWER DENSITY AV ANT111aCH100

Date: 22.APR.2019 14:06:16



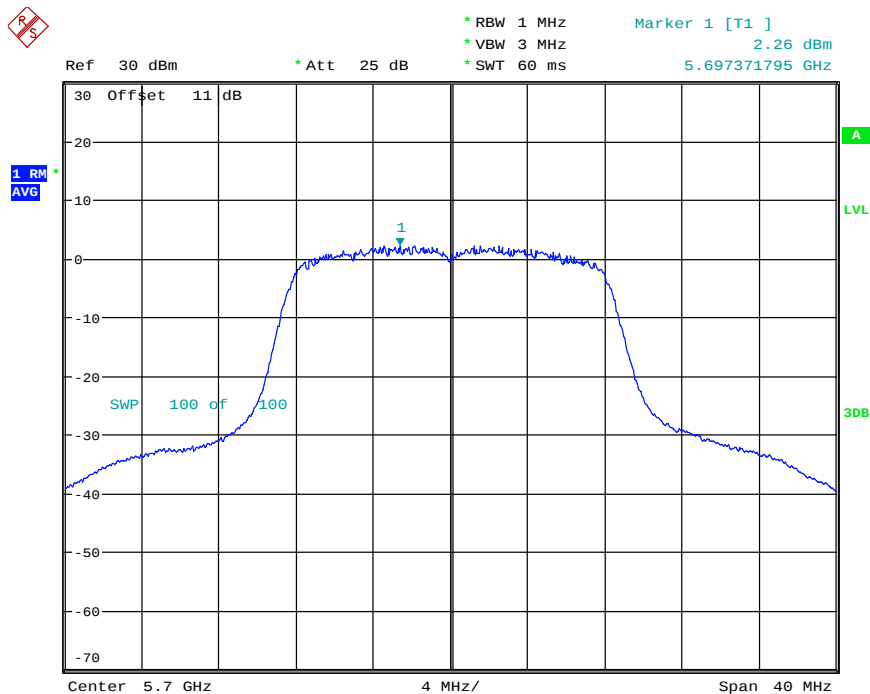
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



POWER DENSITY AV ANT111aCH120

Date: 22.APR.2019 14:11:15



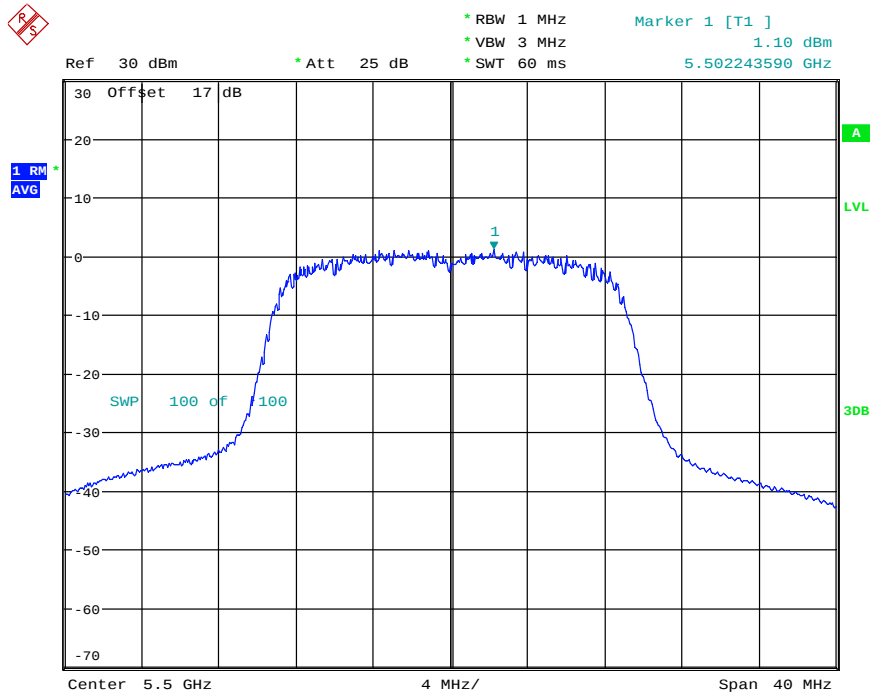
POWER DENSITY AV ANT111aCH140

Date: 22.APR.2019 14:21:59



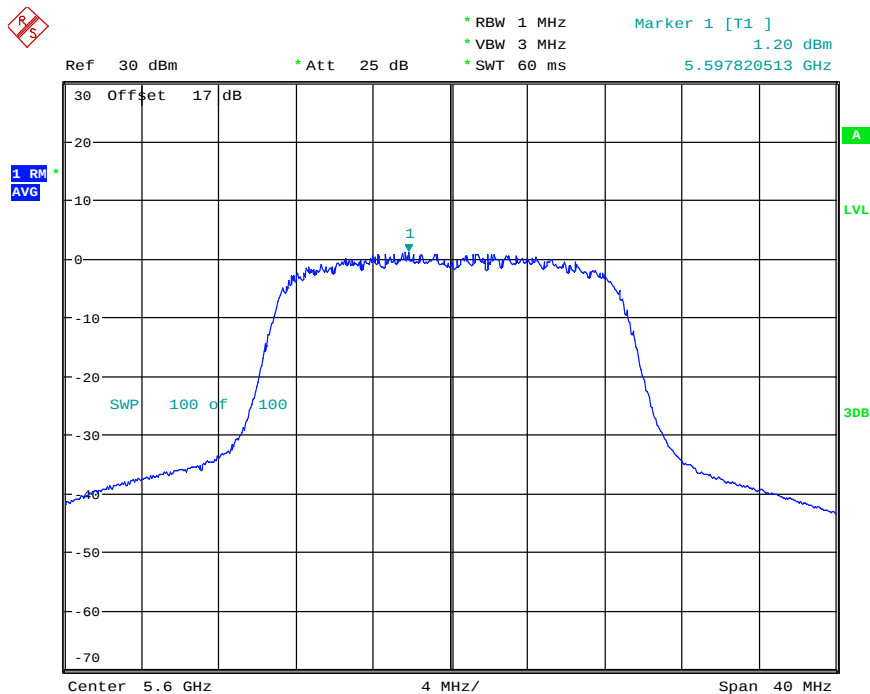
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



POWER DENSITY AV ANT1 11ac20CH100

Date: 23.APR.2019 09:24:26



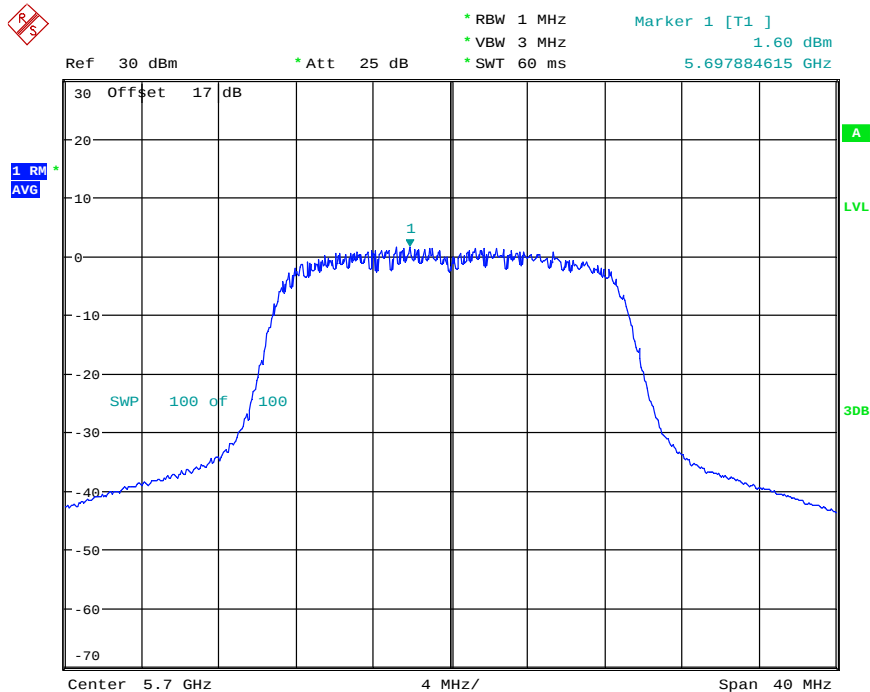
POWER DENSITY AV ANT1 11ac20CH120

Date: 23.APR.2019 09:34:04



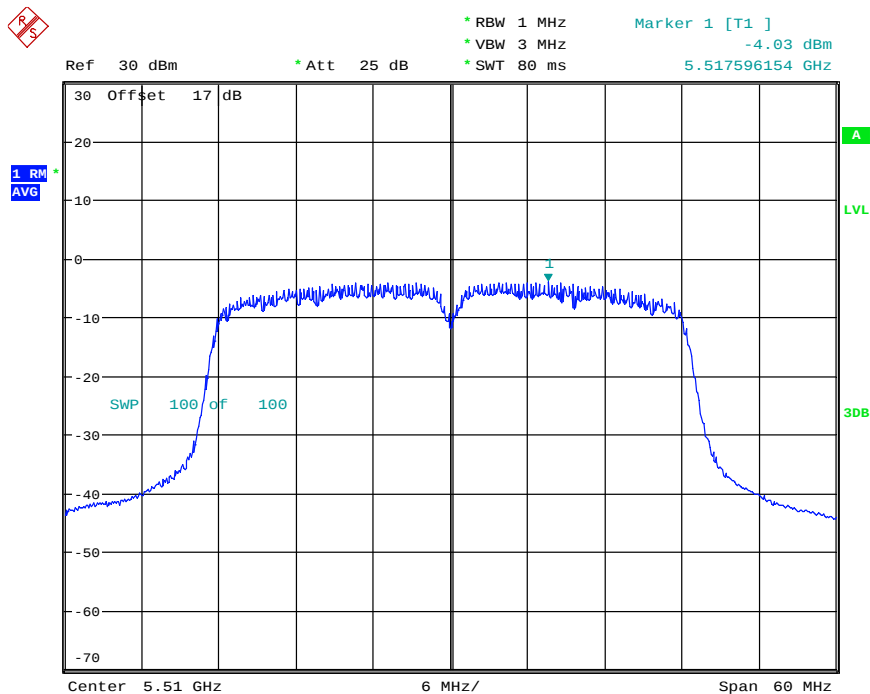
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



POWER DENSITY AV ANT1 11ac20CH140

Date: 23.APR.2019 09:36:40



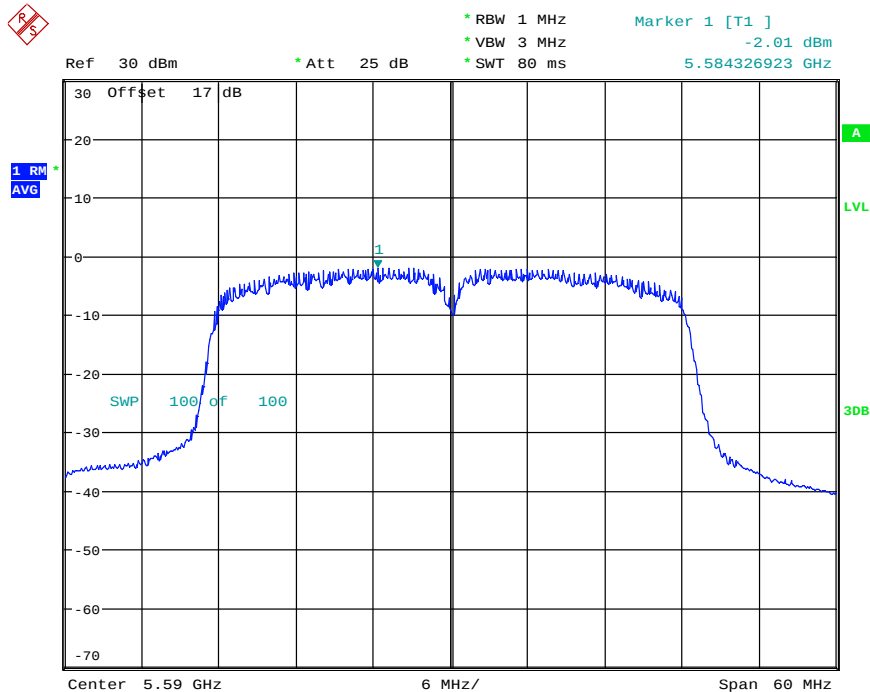
POWER DENSITY AV ANT11ac40CH102

Date: 23.APR.2019 09:41:27



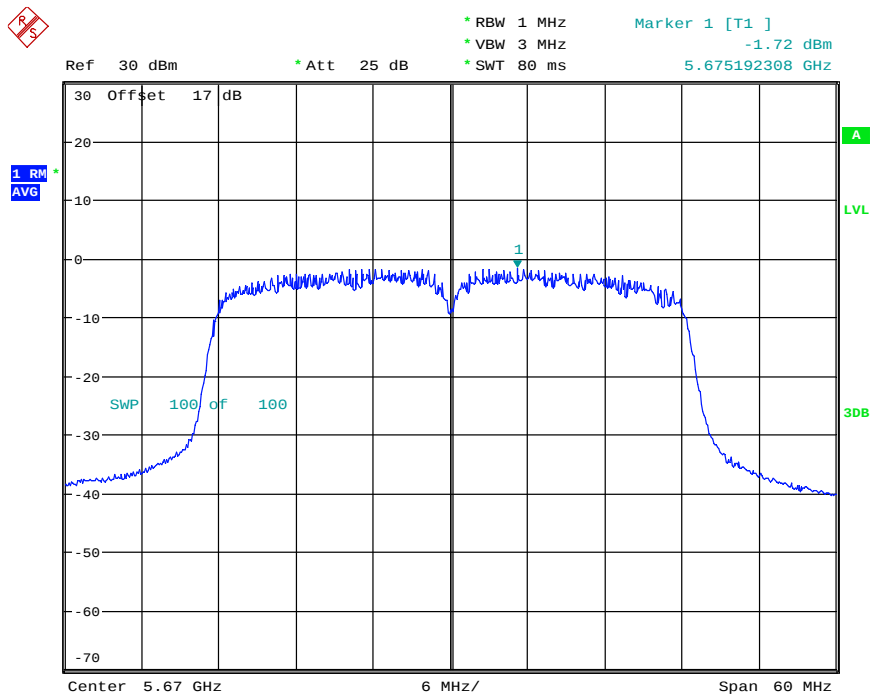
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



POWER DENSITY AV ANT111ac40CH118

Date: 23.APR.2019 09:44:49



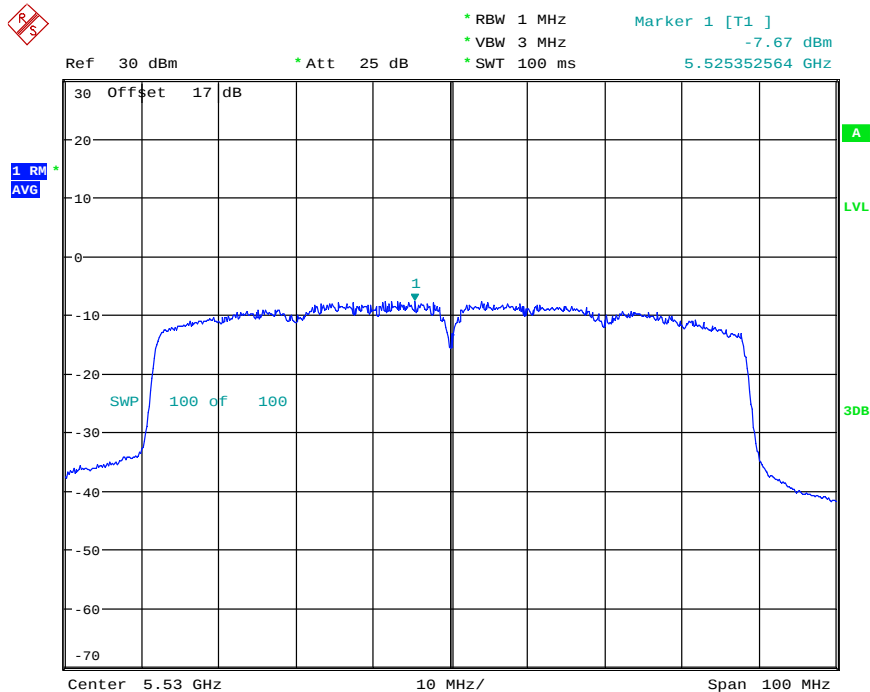
POWER DENSITY AV ANT111ac40CH134

Date: 23.APR.2019 09:50:12



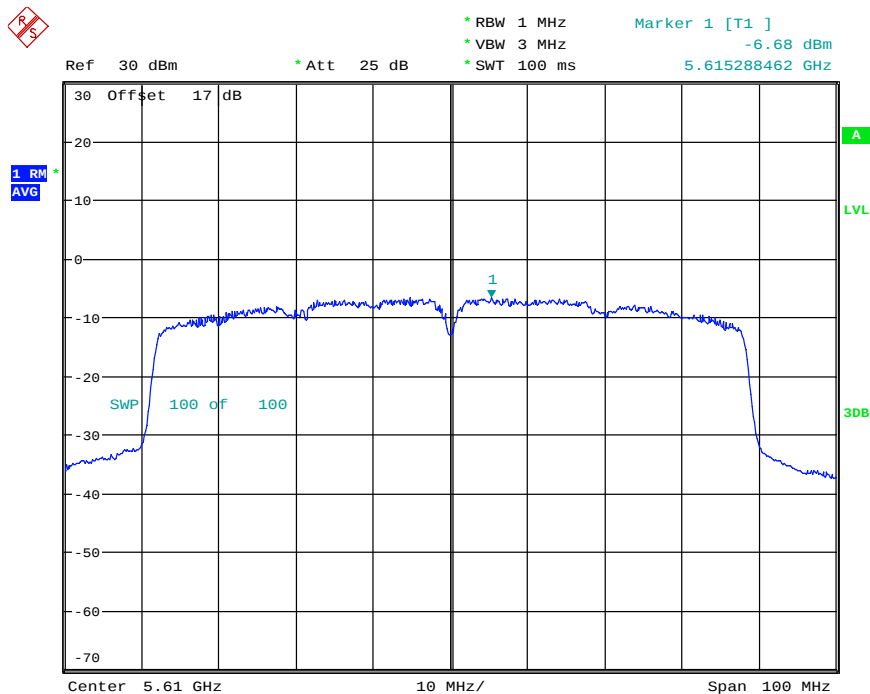
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



POWER DENSITY AV ANT111ac80CH106

Date: 22.APR.2019 15:19:49



POWER DENSITY AV ANT111ac80CH122

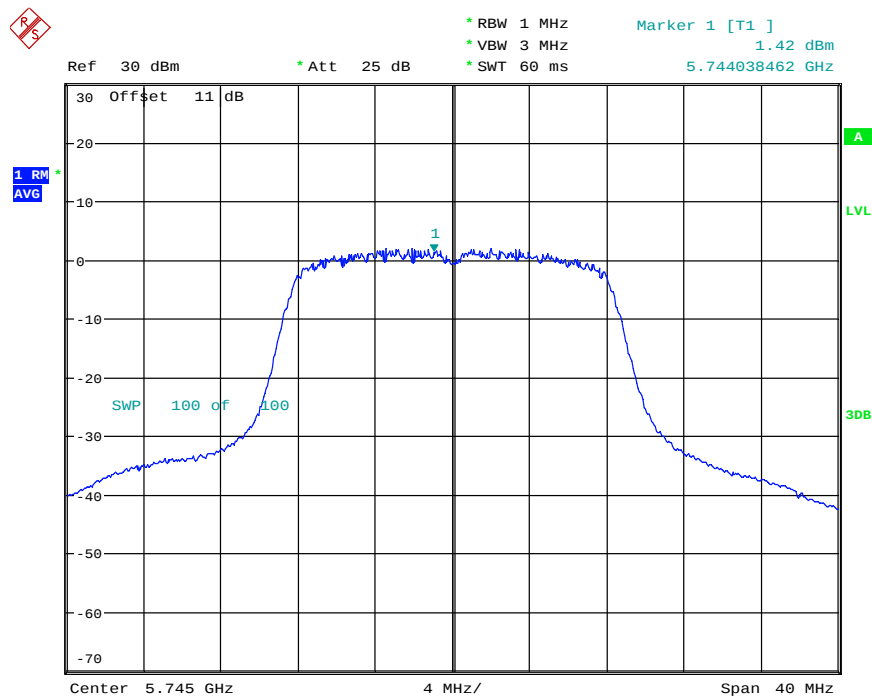
Date: 22.APR.2019 15:22:13



Registration number: W6M21903-18857-C-54

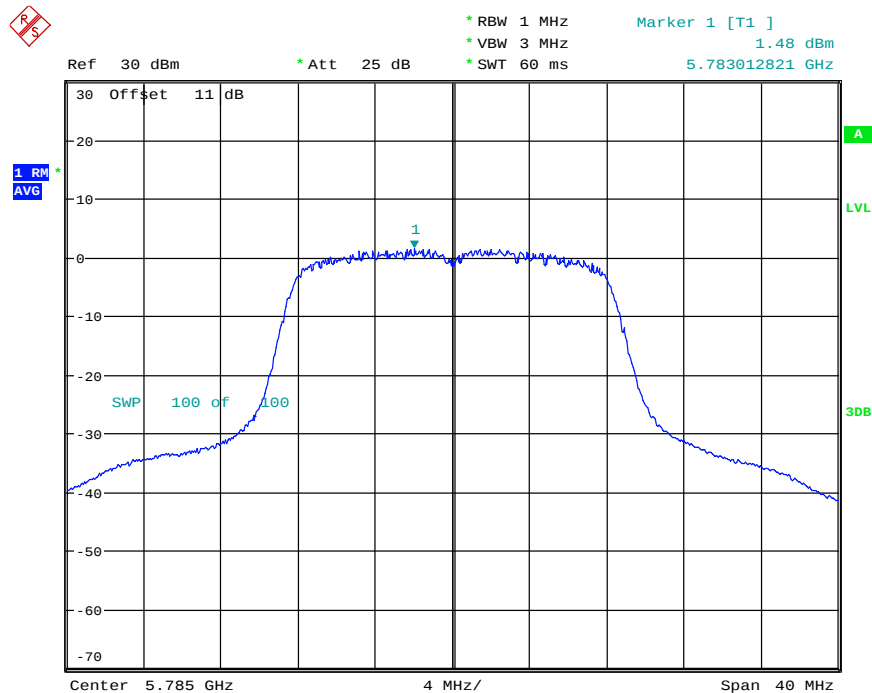
FCC ID: YY3-182010

## 5.725 GHz ~ 5.85 GHz



POWER DENSITY AV ANT111aCH149

Date: 22.APR.2019 15:28:17



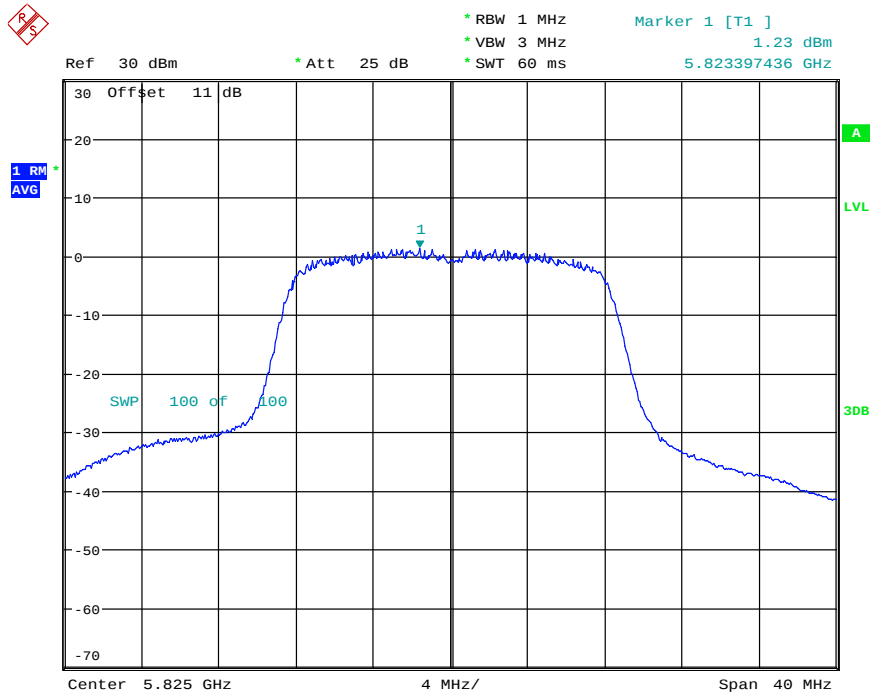
POWER DENSITY AV ANT111aCH157

Date: 22.APR.2019 15:33:35



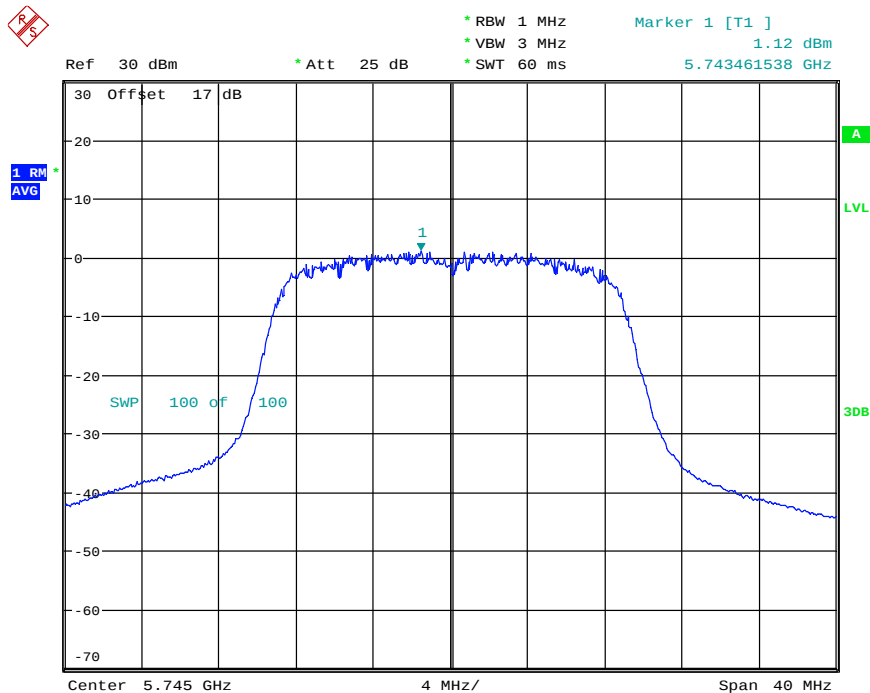
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



POWER DENSITY AV ANT111aCH165

Date: 22.APR.2019 15:35:52



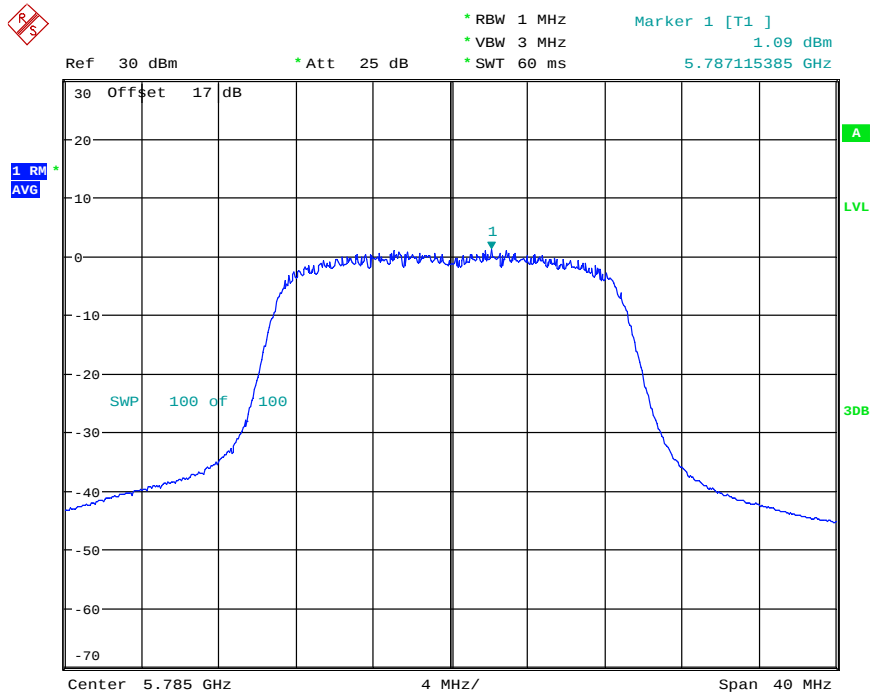
POWER DENSITY AV ANT1 11ac20CH149

Date: 23.APR.2019 08:21:36



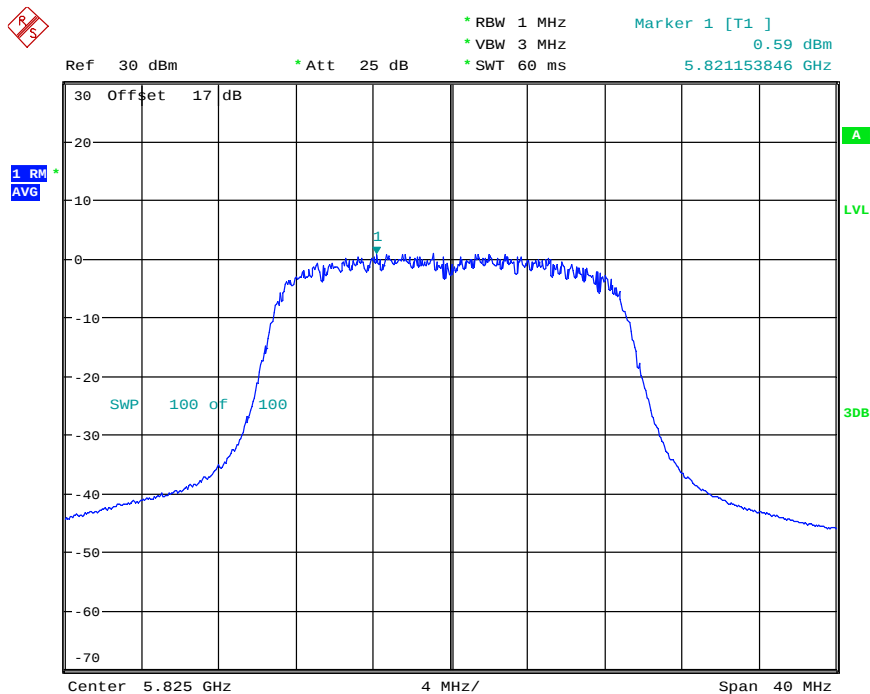
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



POWER DENSITY AV ANT1 11ac20CH157

Date: 23.APR.2019 08:25:04



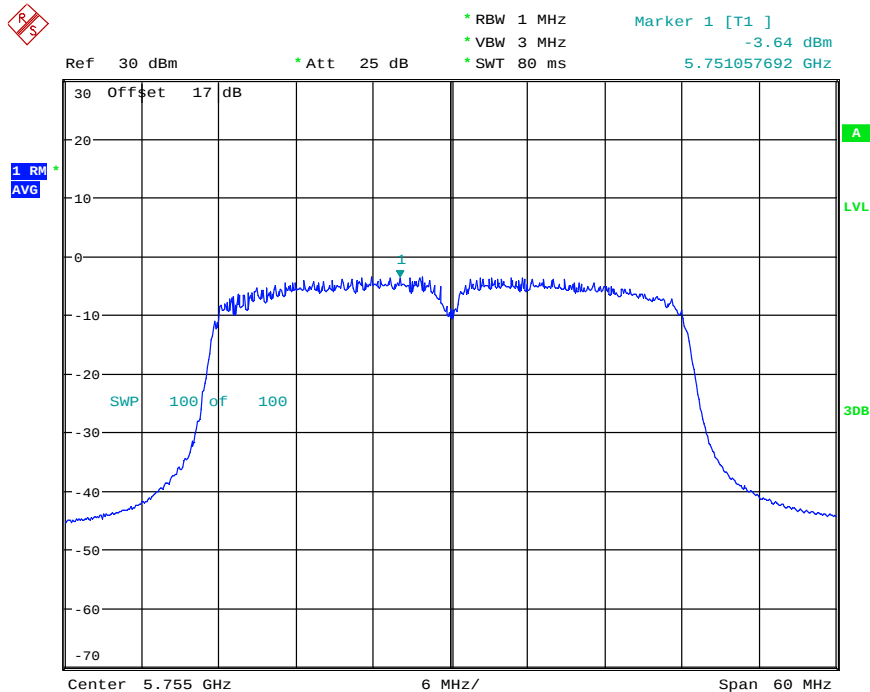
POWER DENSITY AV ANT1 11ac20CH165

Date: 23.APR.2019 08:29:11



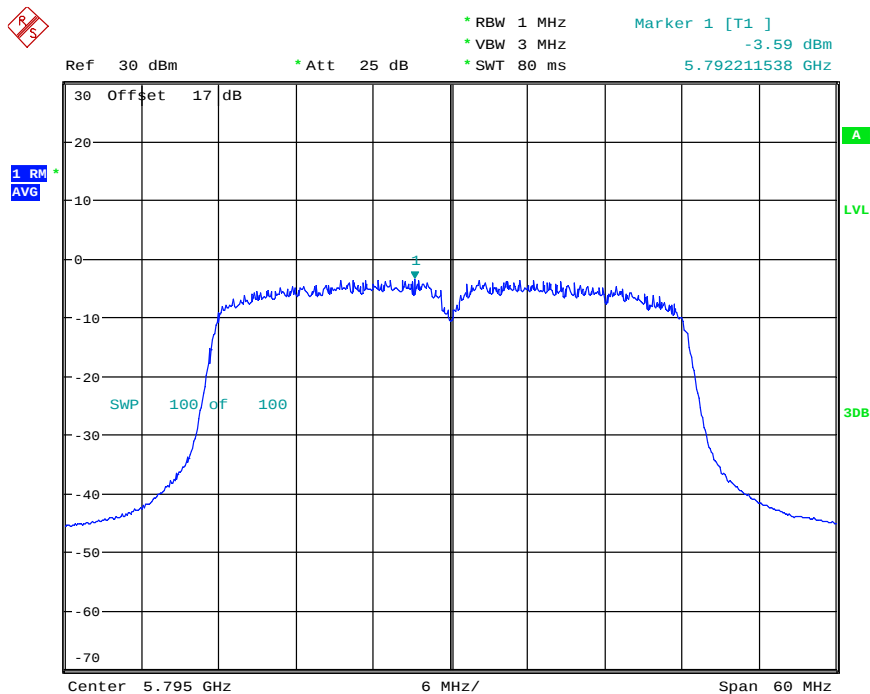
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



POWER DENSITY AV ANT111ac40CH151

Date: 23.APR.2019 08:39:42



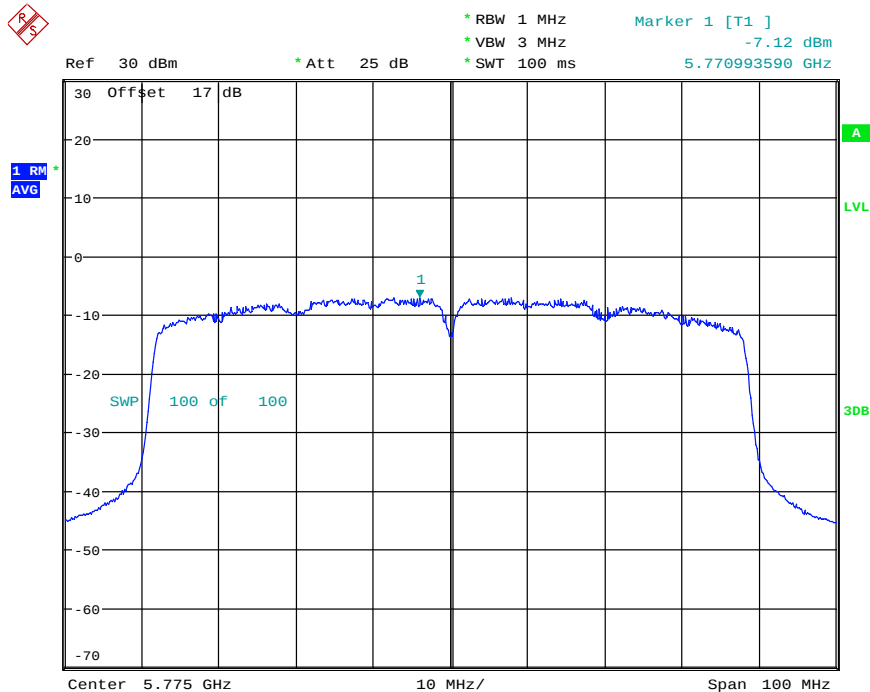
POWER DENSITY AV ANT111ac40CH159

Date: 23.APR.2019 08:43:42



Registration number: W6M21903-18857-C-54

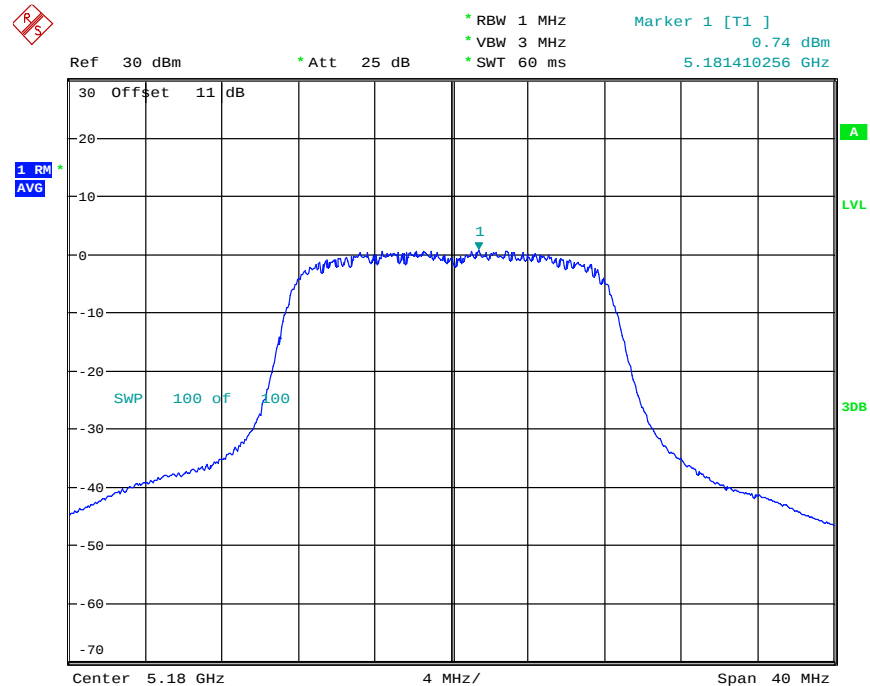
FCC ID: YY3-182010



POWER DENSITY AV ANT111ac80CH155

Date: 23.APR.2019 08:48:19

## ANTB 5.15 GHz ~ 5.25 GHz



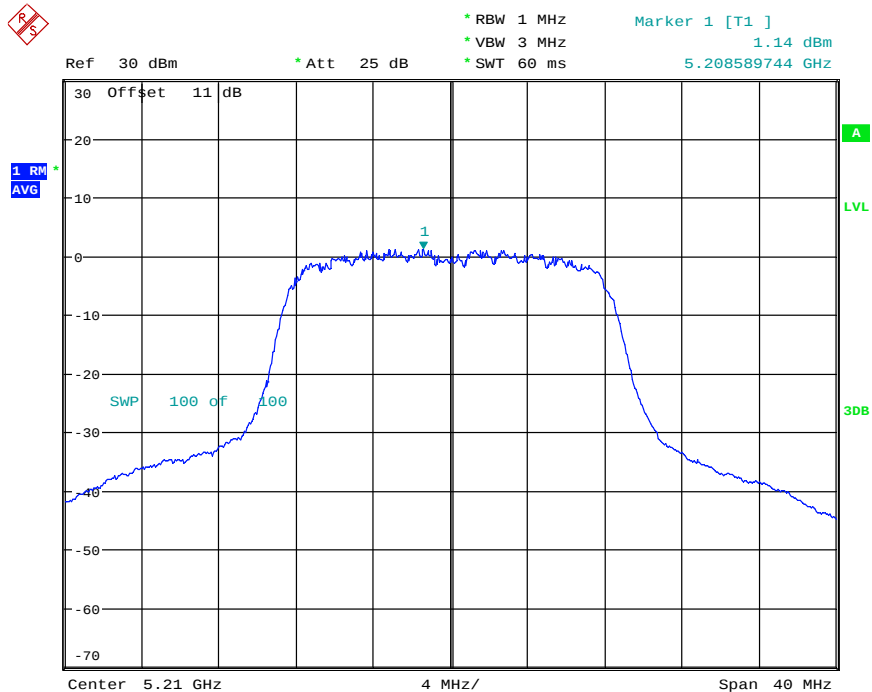
POWER DENSITY AV ANT211aCH36

Date: 22.APR.2019 09:36:44



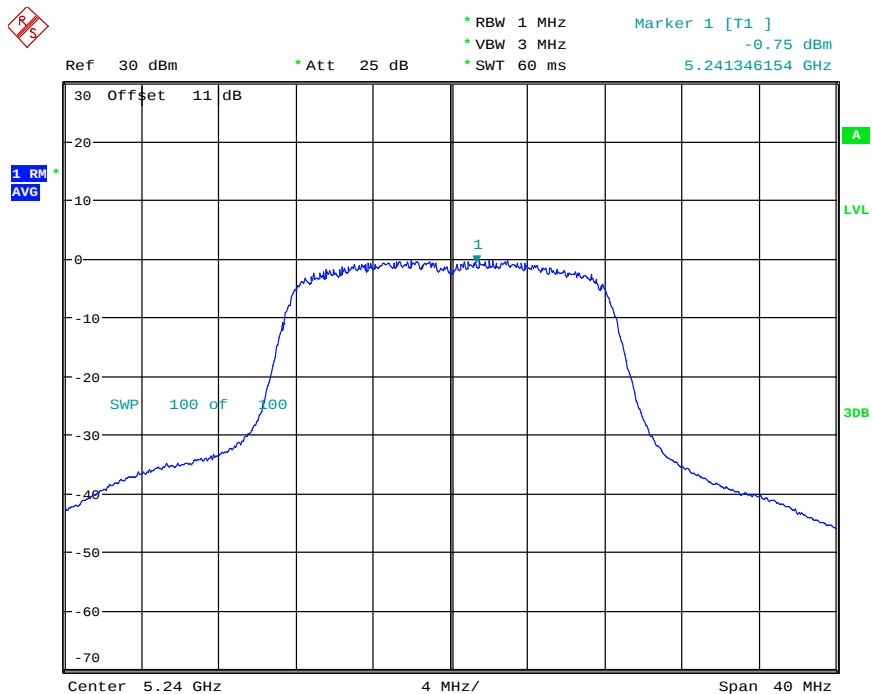
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



POWER DENSITY AV ANT211aCH44

Date: 3.JUN.2019 09:25:15



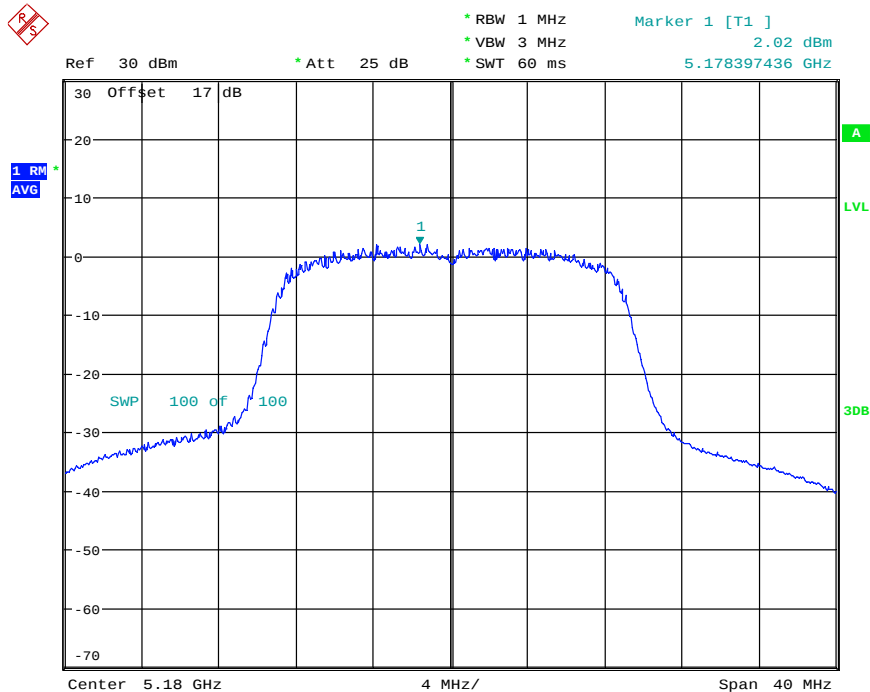
POWER DENSITY AV ANT211aCH48

Date: 22.APR.2019 10:57:00



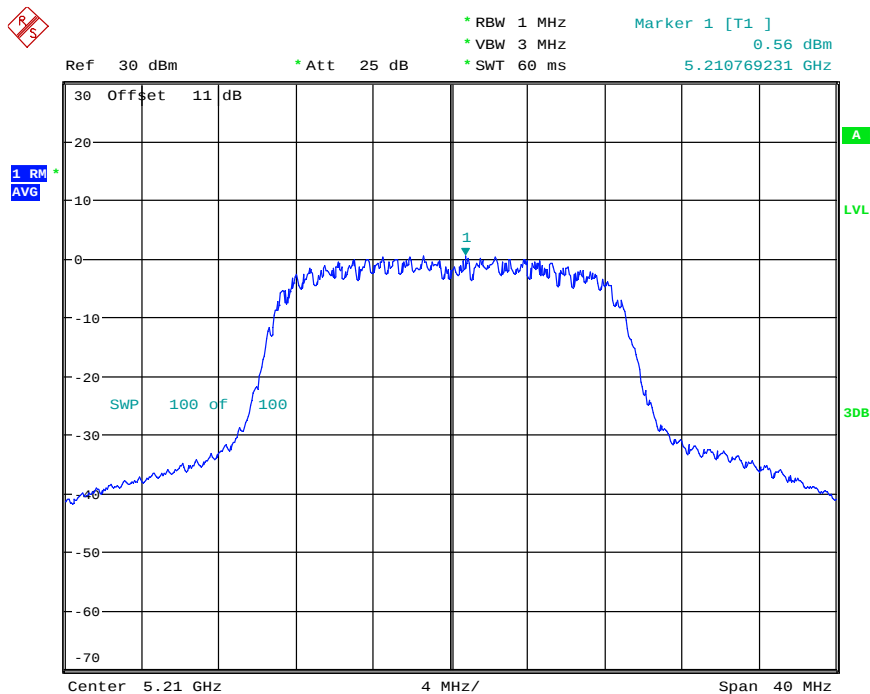
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



POWER DENSITY AV ANT2 11ac20CH36

Date: 22.APR.2019 11:51:10



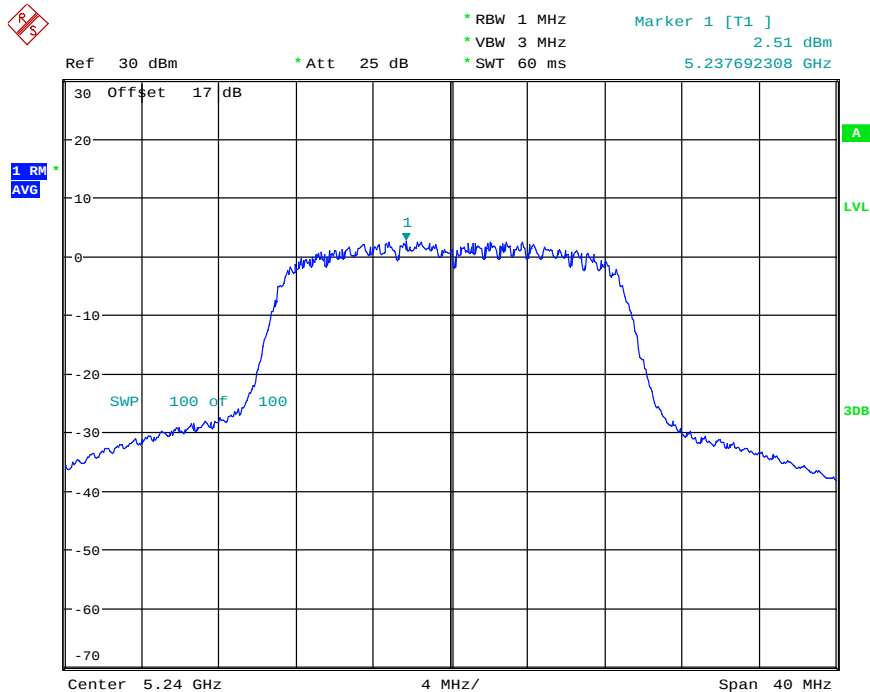
POWER DENSITY AV ANT2 11ac20CH44

Date: 3.JUN.2019 09:46:29



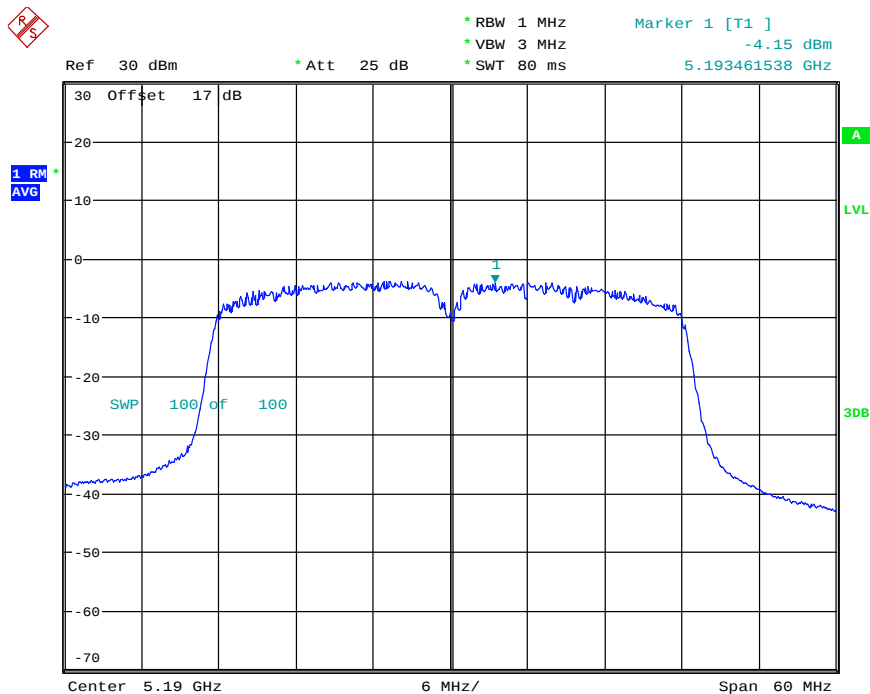
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



POWER DENSITY AV ANT2 11ac20CH48

Date: 22.APR.2019 12:00:30



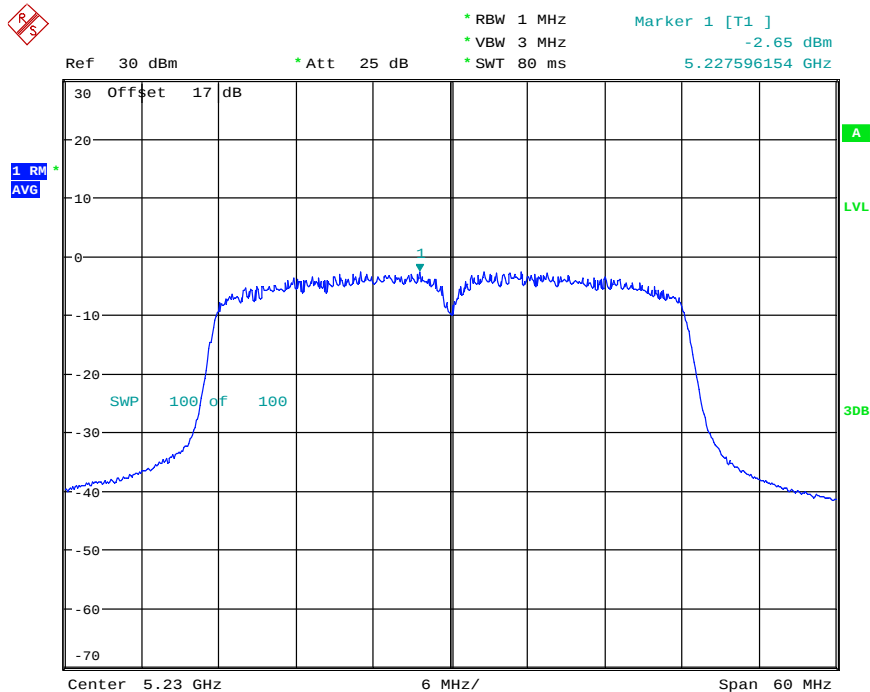
POWER DENSITY AV ANT211ac40CH38

Date: 22.APR.2019 13:26:42



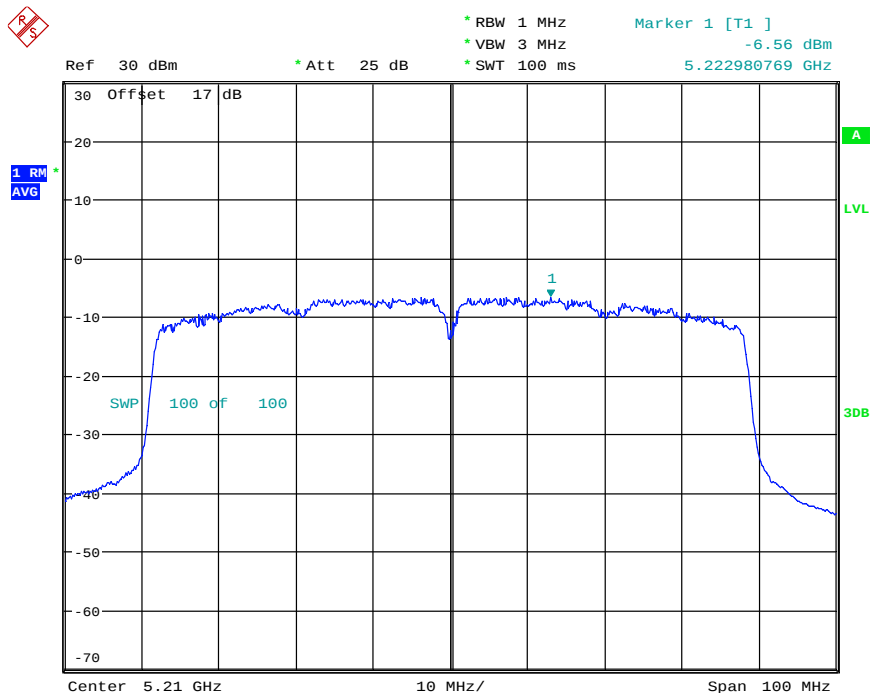
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



POWER DENSITY AV ANT211ac40CH46

Date: 22.APR.2019 13:32:12



POWER DENSITY AV ANT211ac80CH42

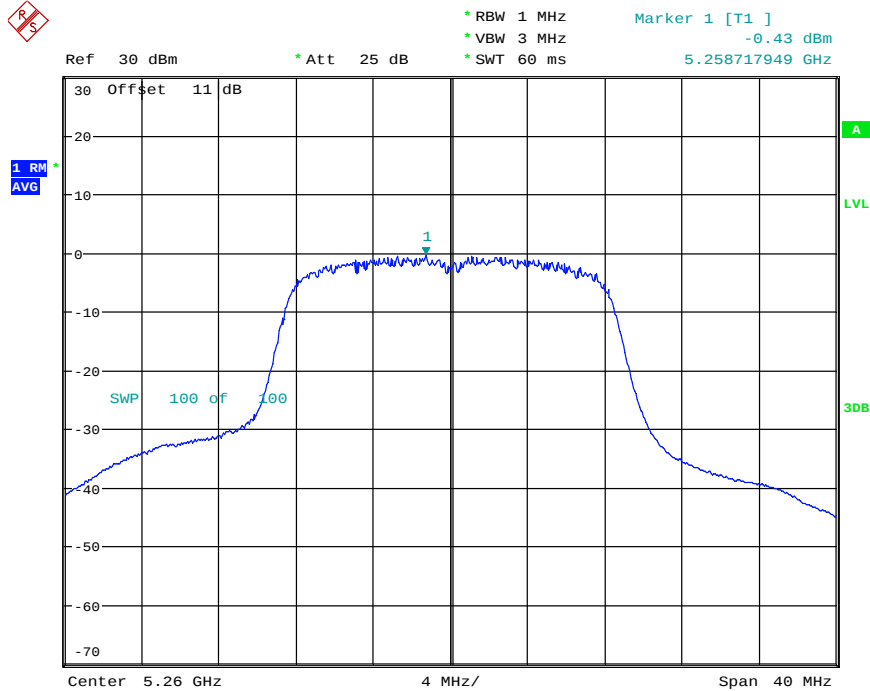
Date: 22.APR.2019 13:45:19



Registration number: W6M21903-18857-C-54

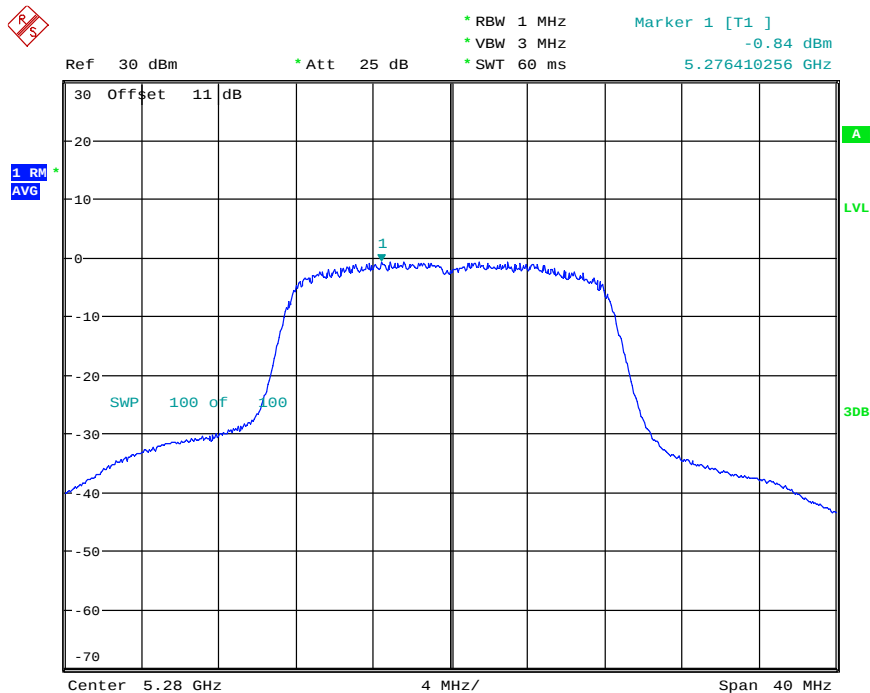
FCC ID: YY3-182010

## 5.25 GHz ~ 5.35 GHz



POWER DENSITY AV ANT211aCH52

Date: 22.APR.2019 11:02:12



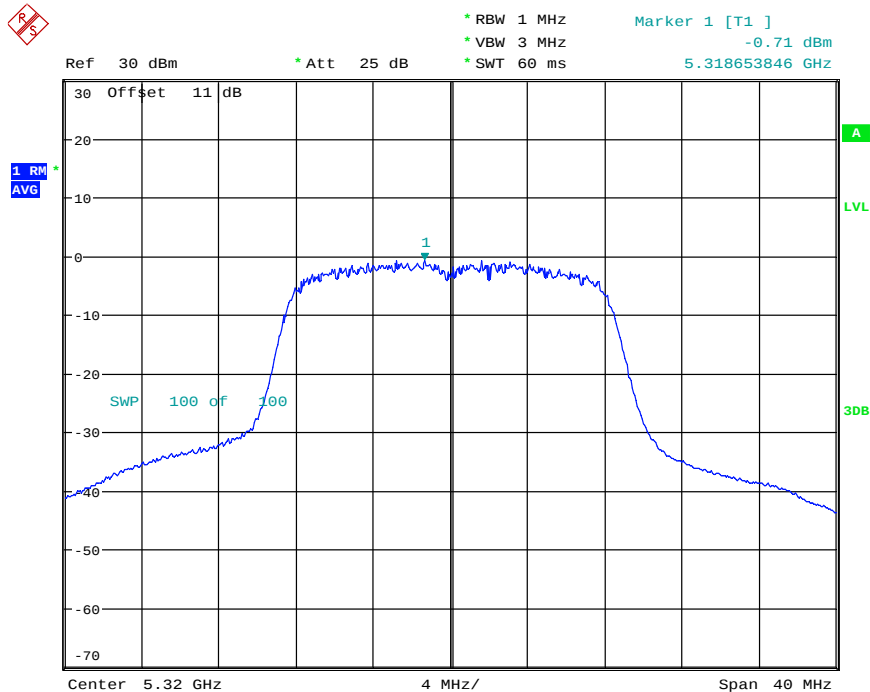
POWER DENSITY AV ANT211aCH56

Date: 22.APR.2019 11:06:06



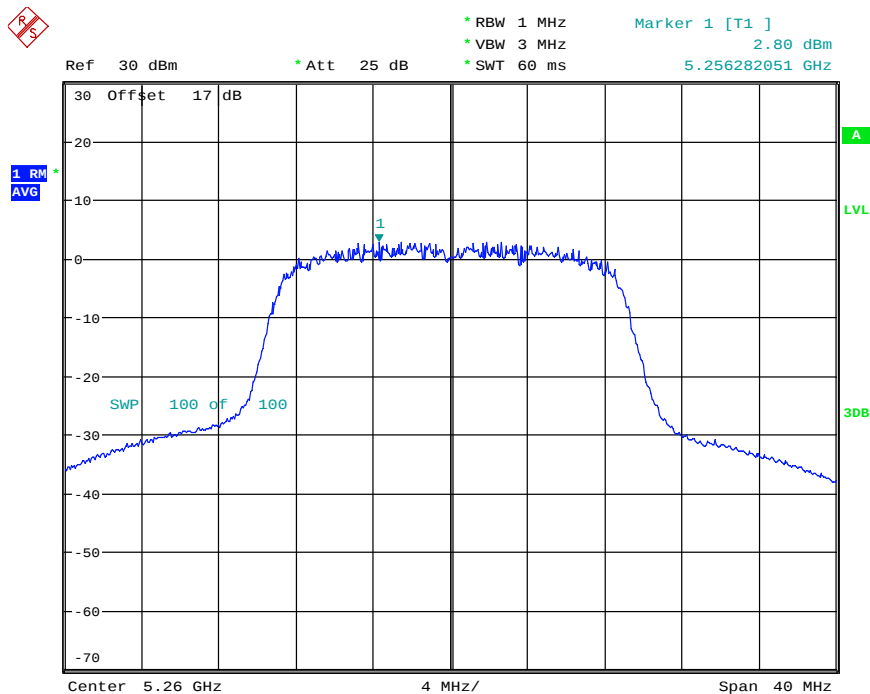
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



POWER DENSITY AV ANT211aCH64

Date: 22.APR.2019 11:09:54



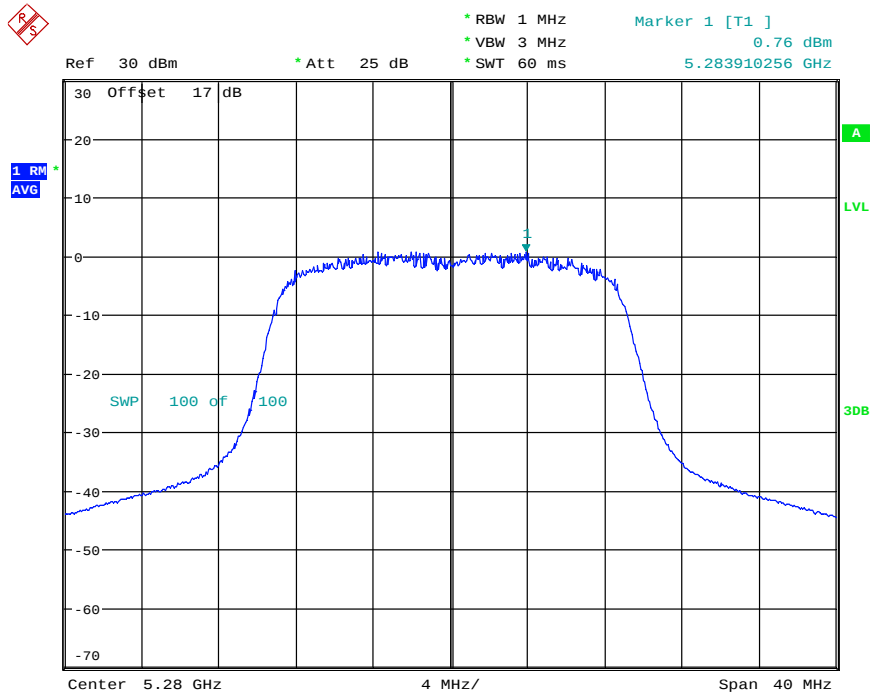
POWER DENSITY AV ANT2 11ac20CH52

Date: 22.APR.2019 13:11:21



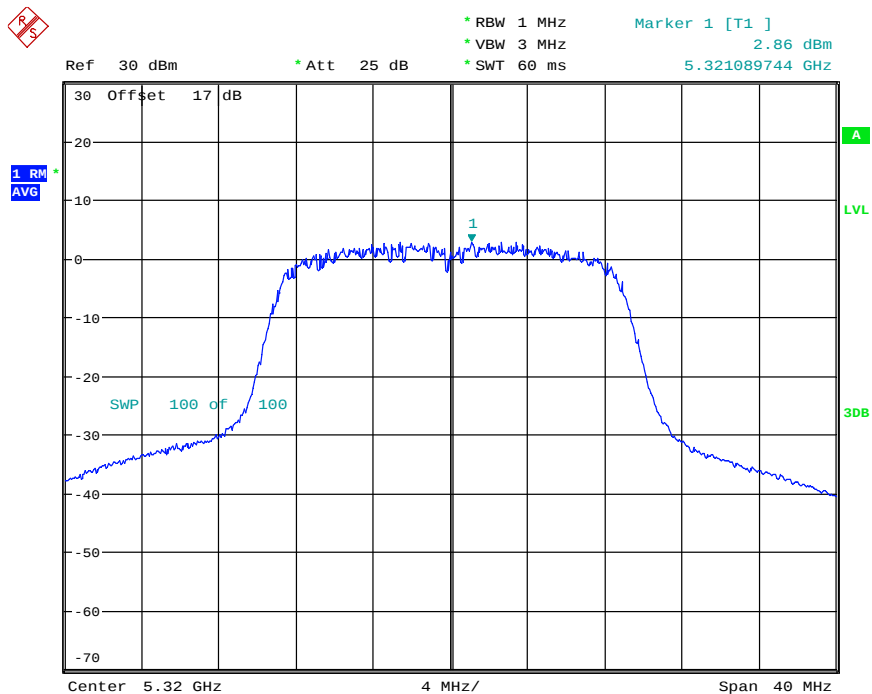
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



POWER DENSITY AV ANT2 11ac20CH56

Date: 22.APR.2019 13:15:15



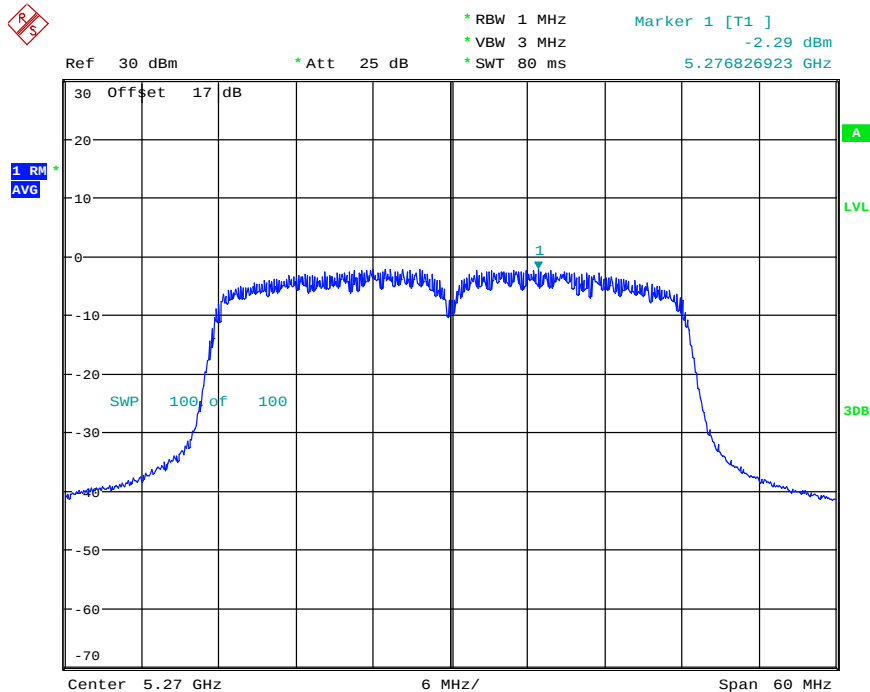
POWER DENSITY AV ANT2 11ac20CH64

Date: 22.APR.2019 13:20:33



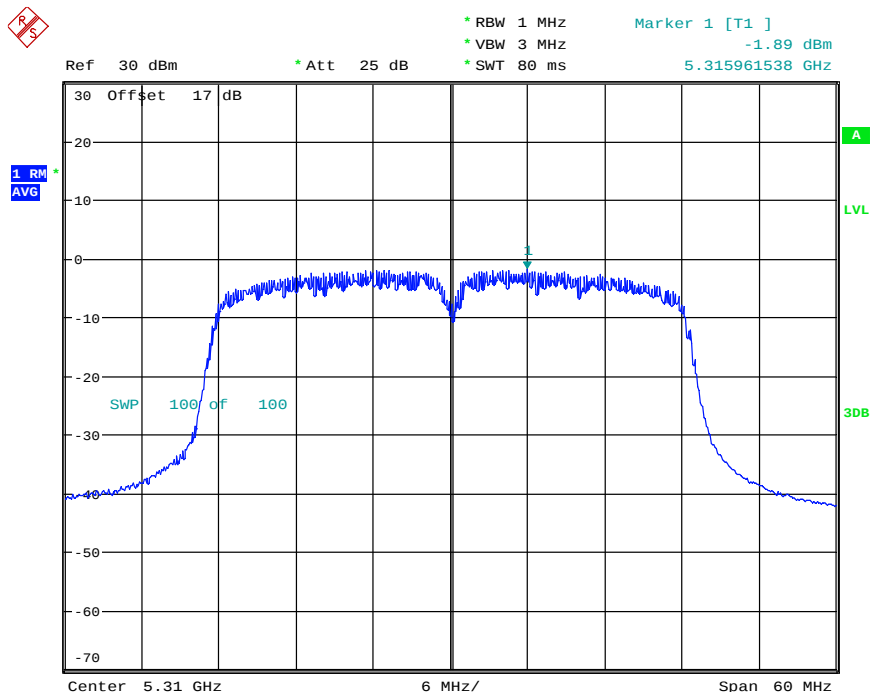
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



POWER DENSITY AV ANT211ac40CH54

Date: 22.APR.2019 13:36:12



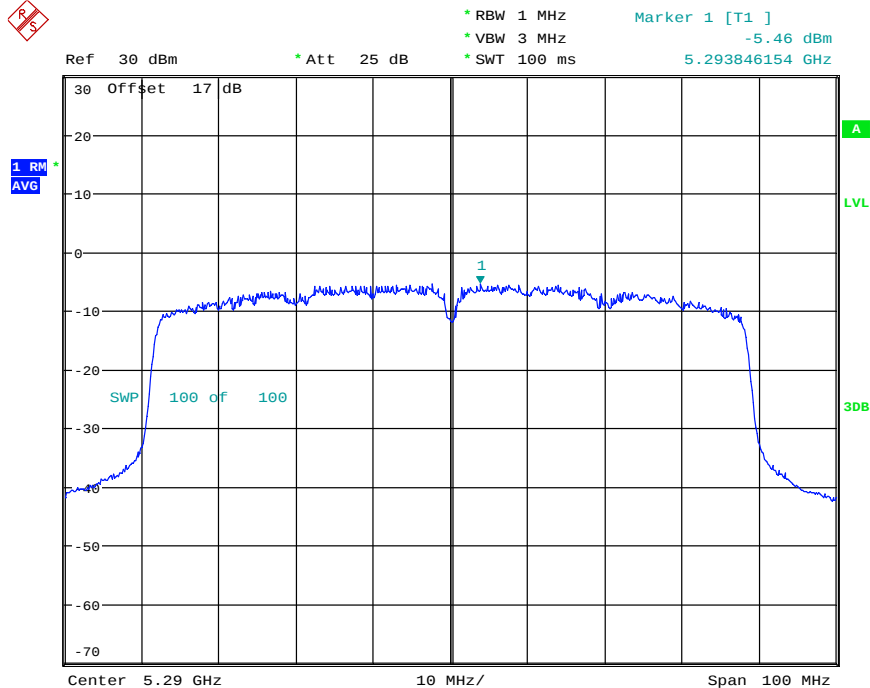
POWER DENSITY AV ANT211ac40CH62

Date: 22.APR.2019 13:39:34



Registration number: W6M21903-18857-C-54

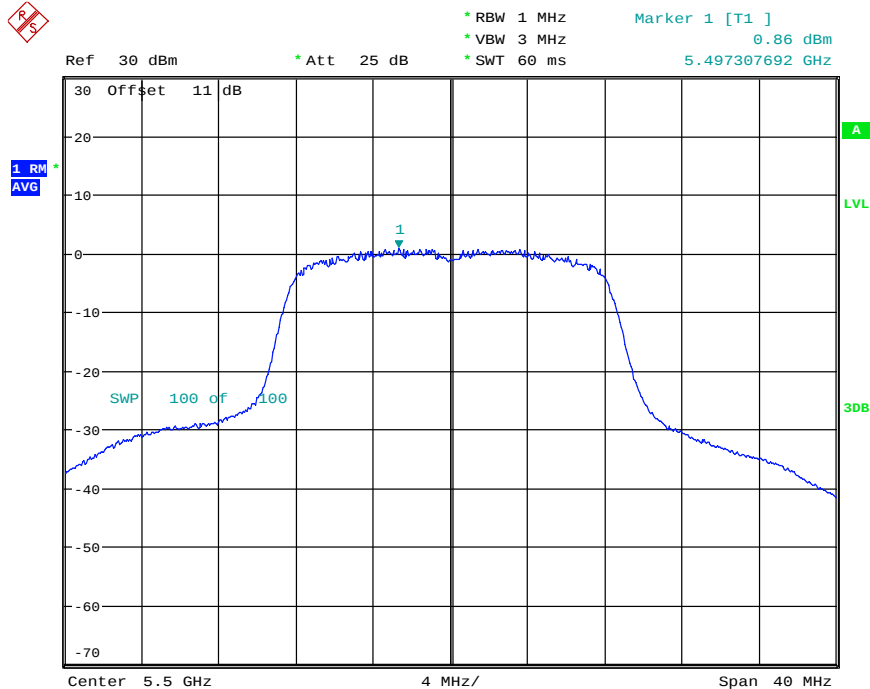
FCC ID: YY3-182010



POWER DENSITY AV ANT211ac80CH58

Date: 22.APR.2019 13:48:09

## 5.47 GHz ~ 5.725 GHz



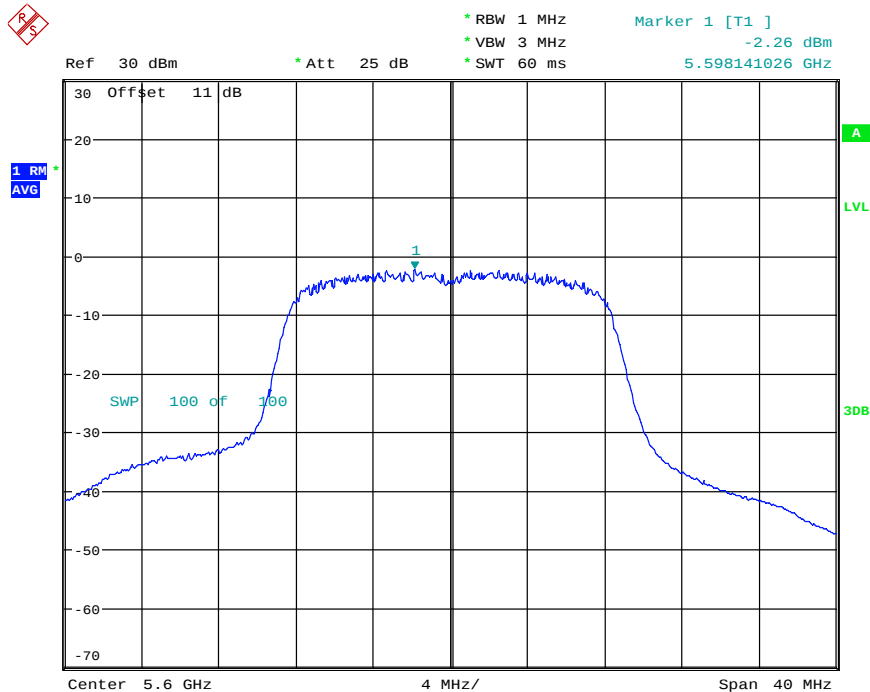
POWER DENSITY AV ANT211aCH100

Date: 22.APR.2019 14:08:59



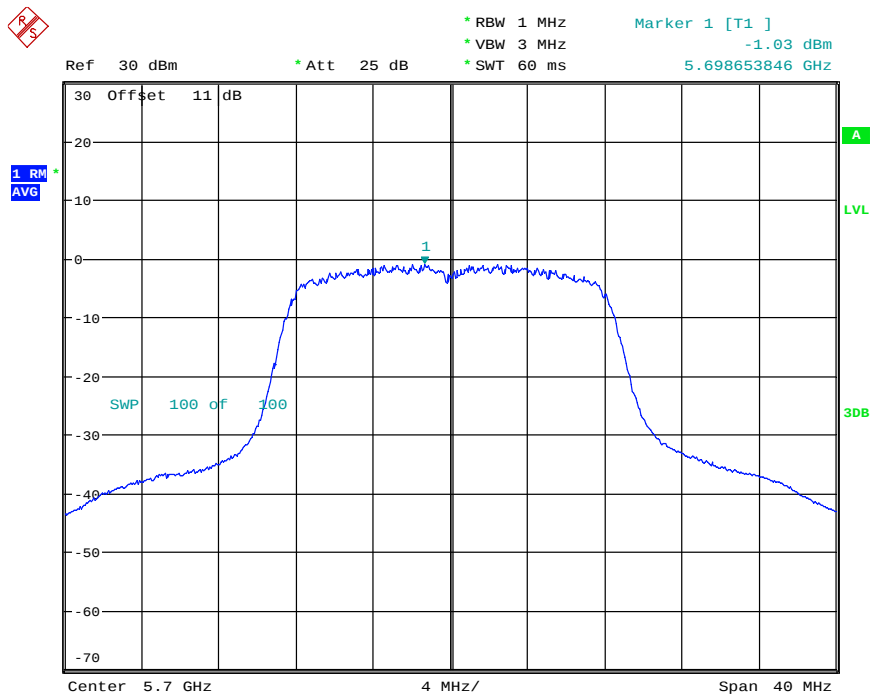
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



POWER DENSITY AV ANT211aCH120

Date: 22.APR.2019 14:16:27



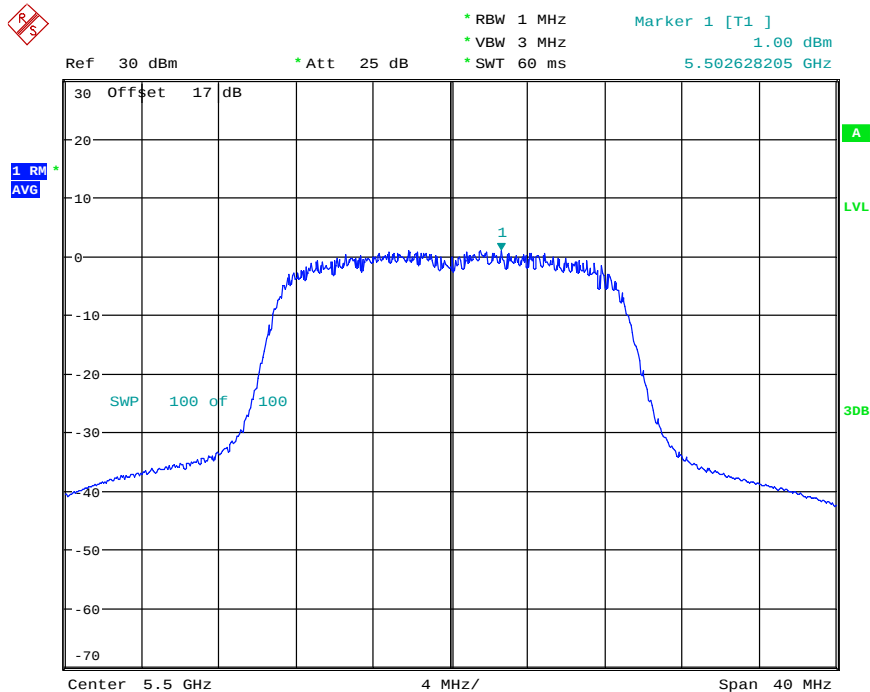
POWER DENSITY AV ANT211aCH140

Date: 22.APR.2019 14:19:10



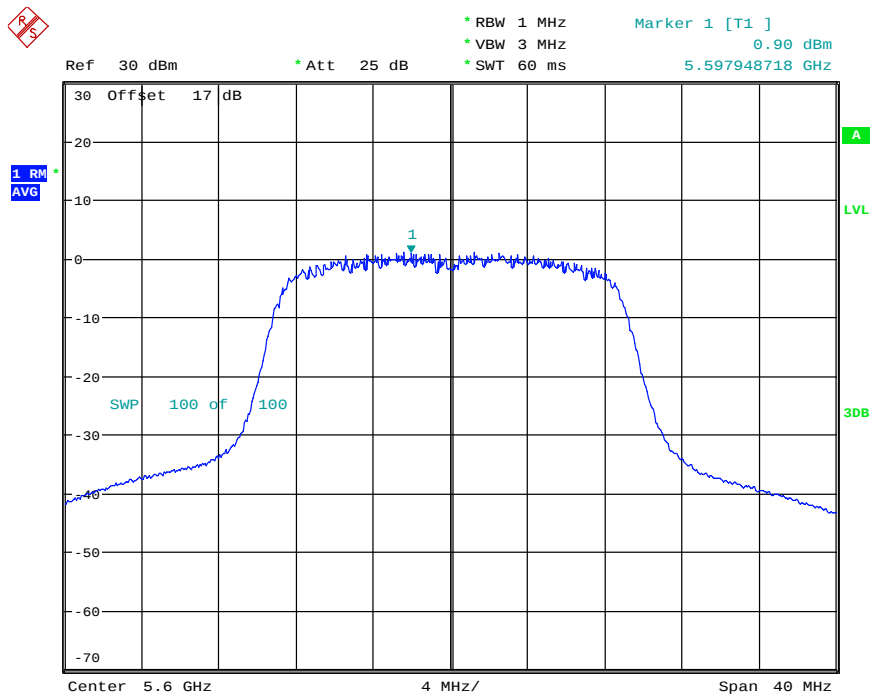
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



POWER DENSITY AV ANT2 11ac20CH100

Date: 23.APR.2019 09:26:49



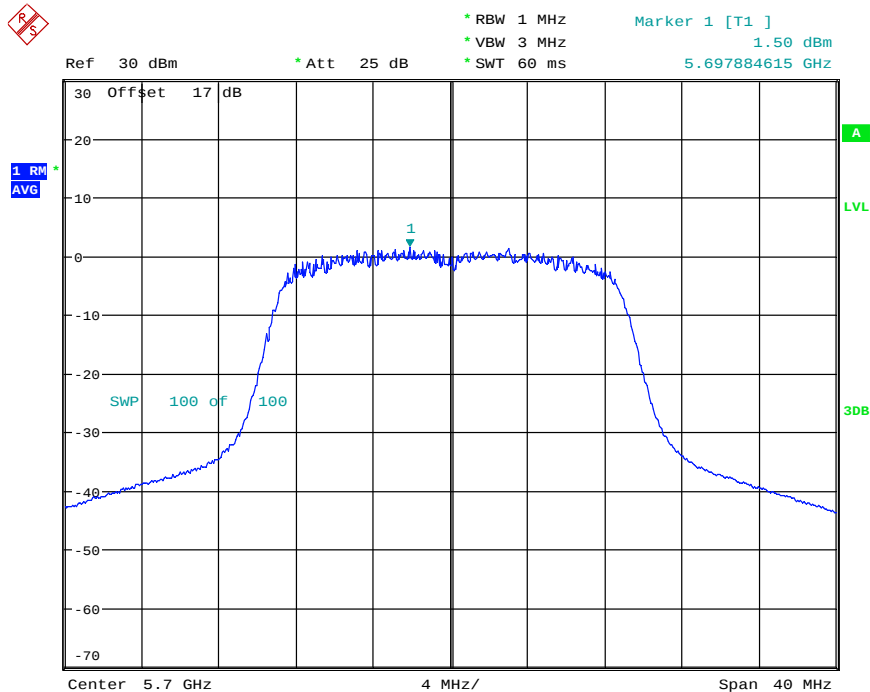
POWER DENSITY AV ANT2 11ac20CH120

Date: 23.APR.2019 09:31:48



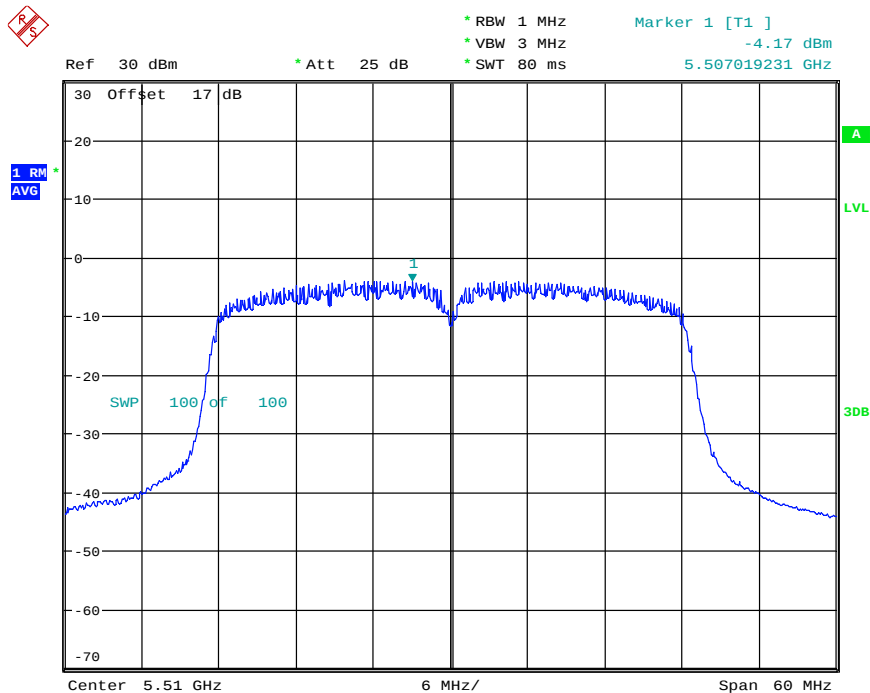
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



POWER DENSITY AV ANT2 11ac20CH140

Date: 23.APR.2019 09:38:50



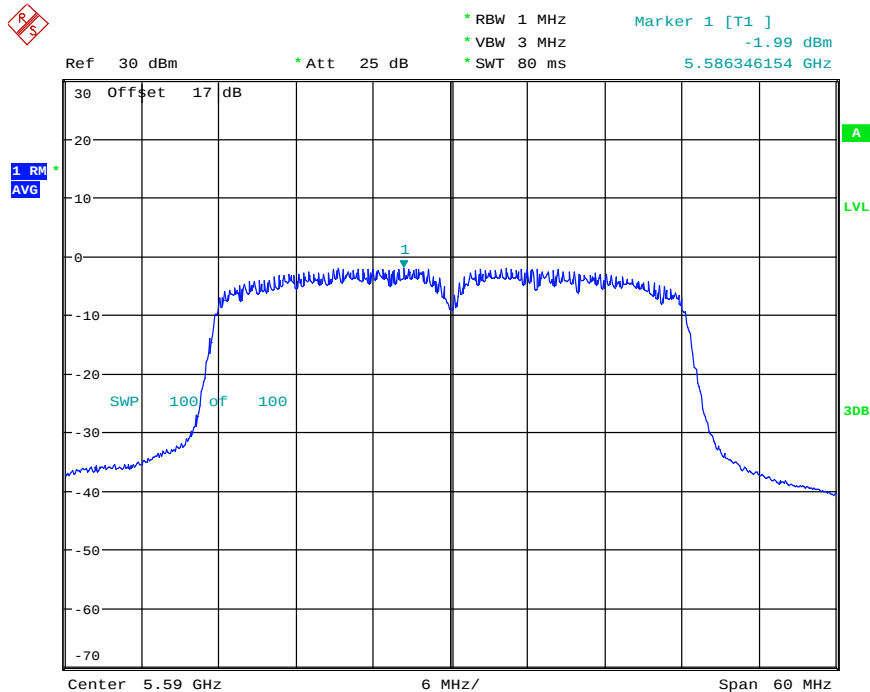
POWER DENSITY AV ANT211ac40CH102

Date: 23.APR.2019 09:42:42



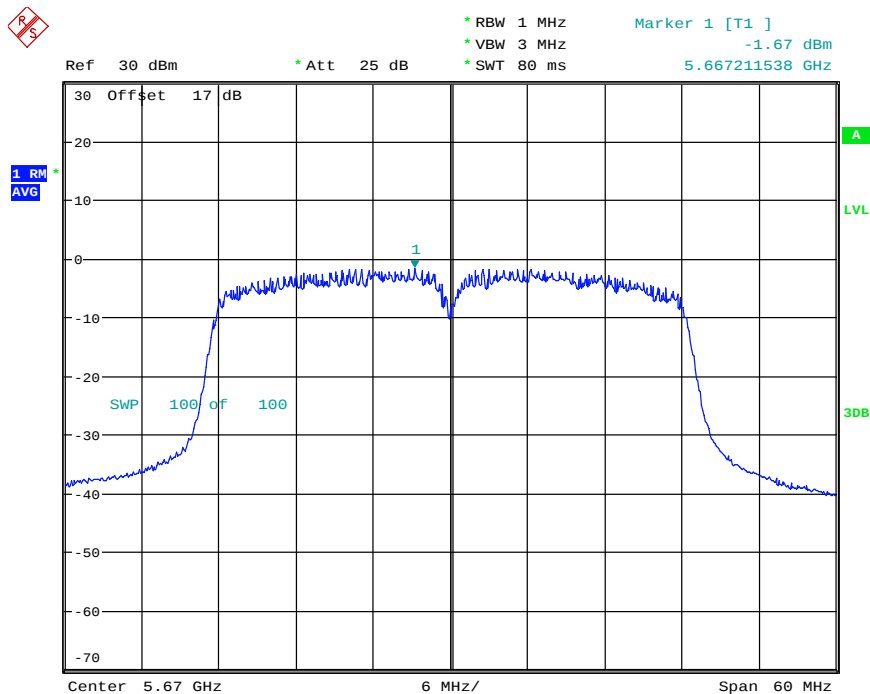
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



POWER DENSITY AV ANT211ac40CH118

Date: 23.APR.2019 09:46:04



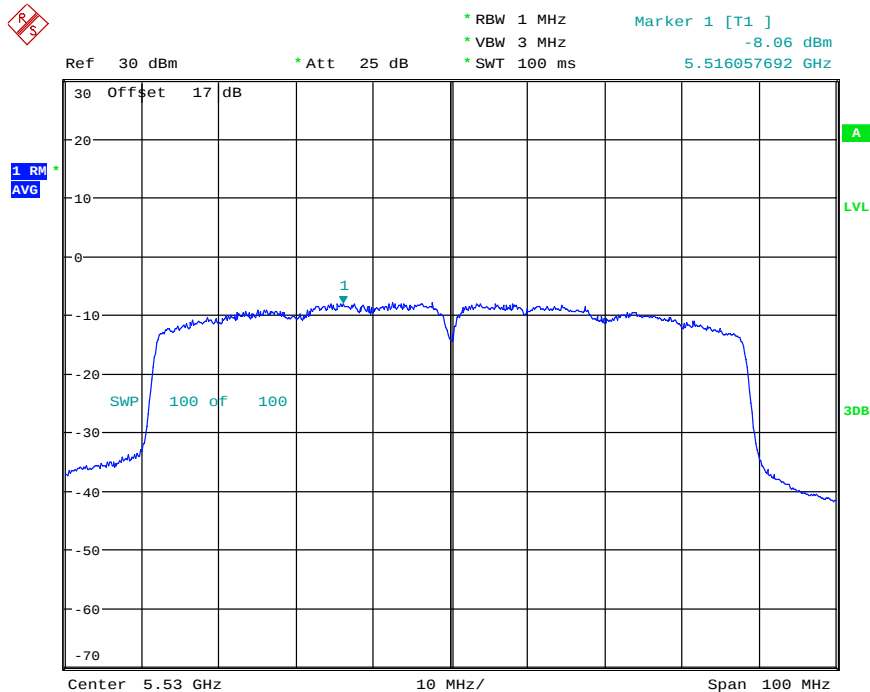
POWER DENSITY AV ANT211ac40CH134

Date: 23.APR.2019 09:48:12



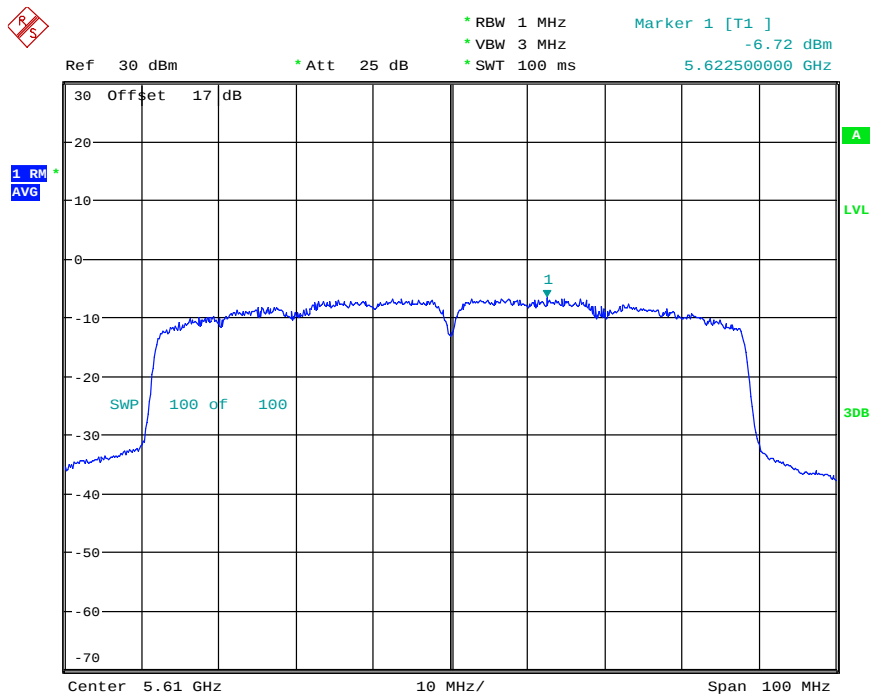
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



POWER DENSITY AV ANT211ac80CH106

Date: 22.APR.2019 15:17:41



POWER DENSITY AV ANT211ac80CH122

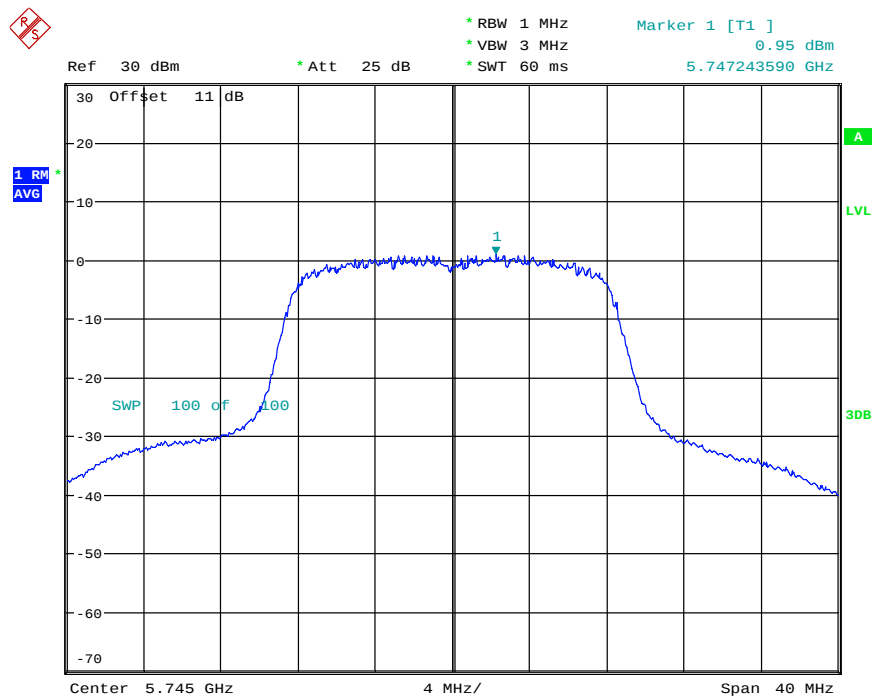
Date: 22.APR.2019 15:23:47



Registration number: W6M21903-18857-C-54

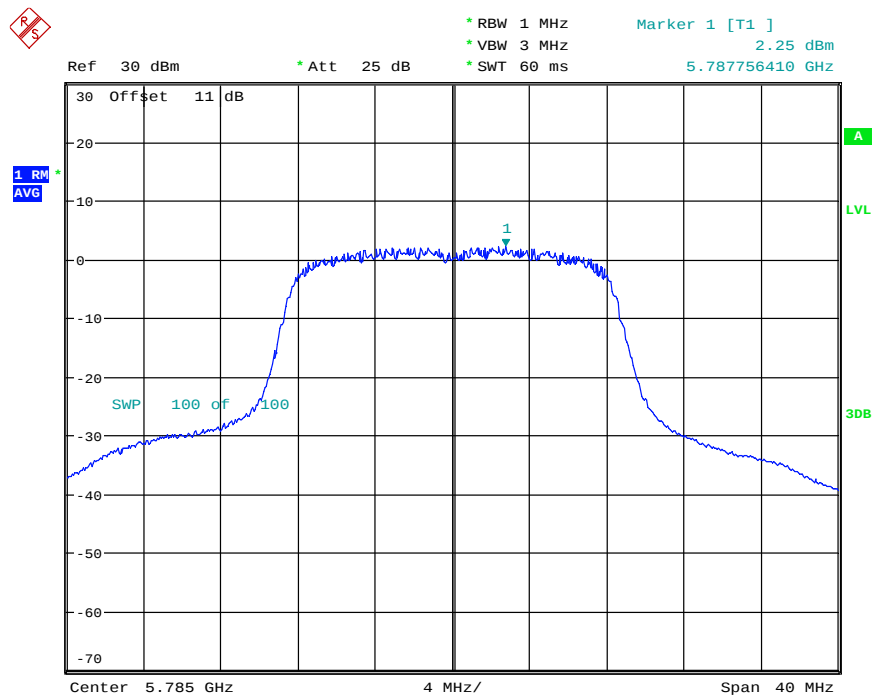
FCC ID: YY3-182010

## 5.725 GHz ~ 5.85 GHz



POWER DENSITY AV ANT211aCH149

Date: 22.APR.2019 15:30:01



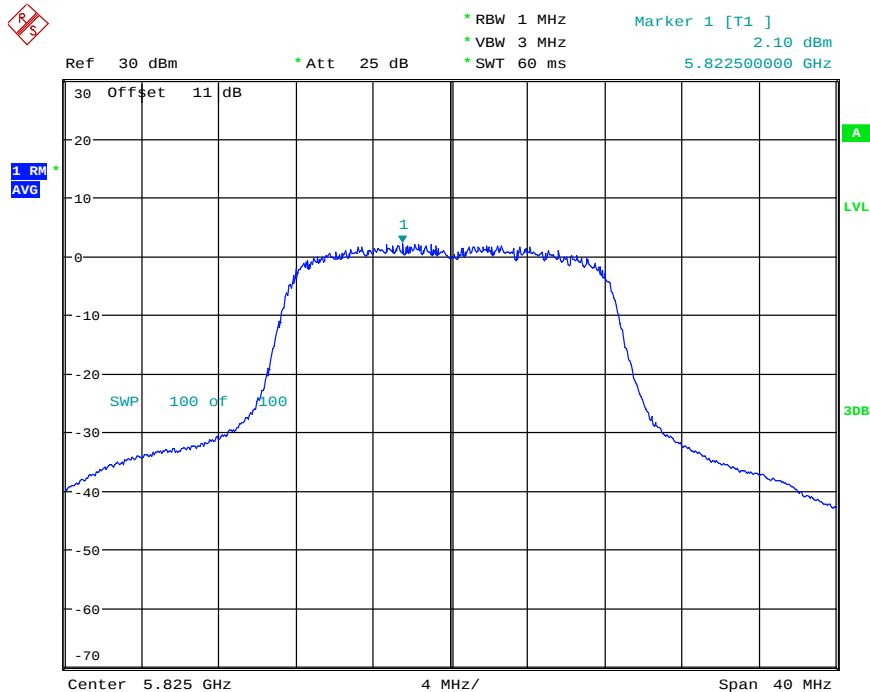
POWER DENSITY AV ANT211aCH157

Date: 22.APR.2019 15:31:45



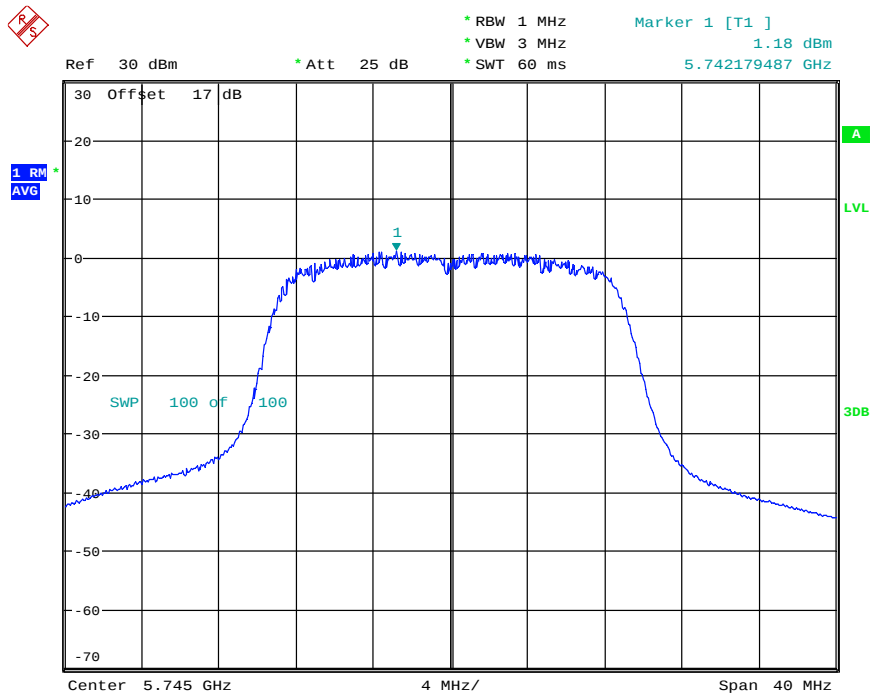
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



POWER DENSITY AV ANT211aCH165

Date: 22.APR.2019 15:37:29



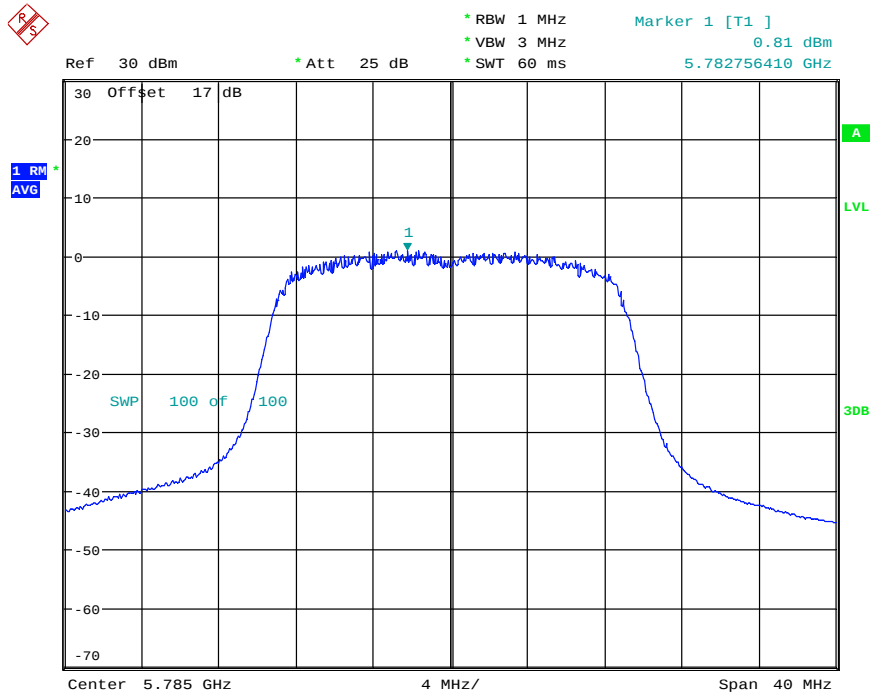
POWER DENSITY AV ANT2 11ac20CH149

Date: 23.APR.2019 08:23:01



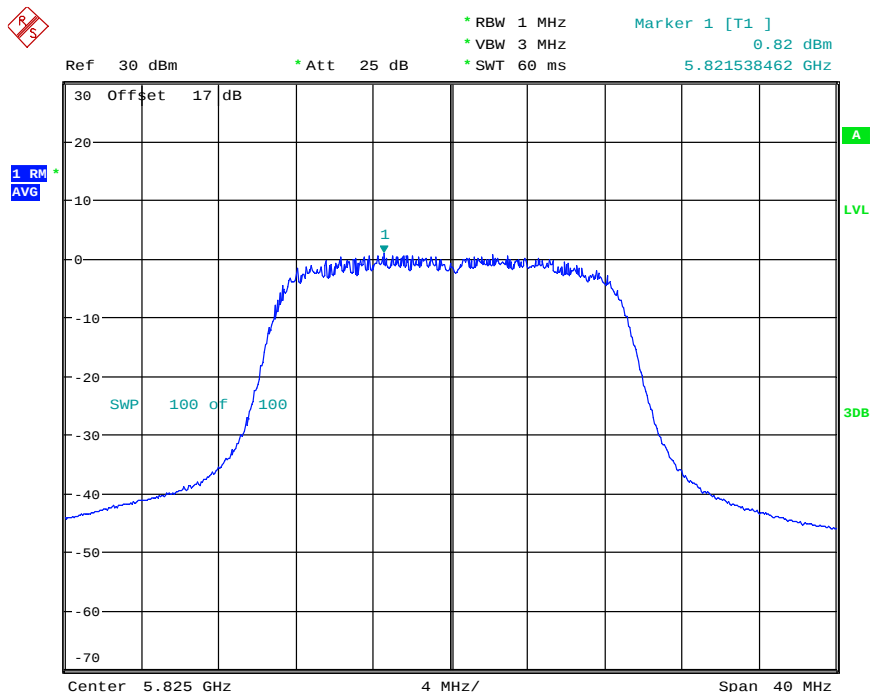
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



POWER DENSITY AV ANT2 11ac20CH157

Date: 23.APR.2019 08:26:29



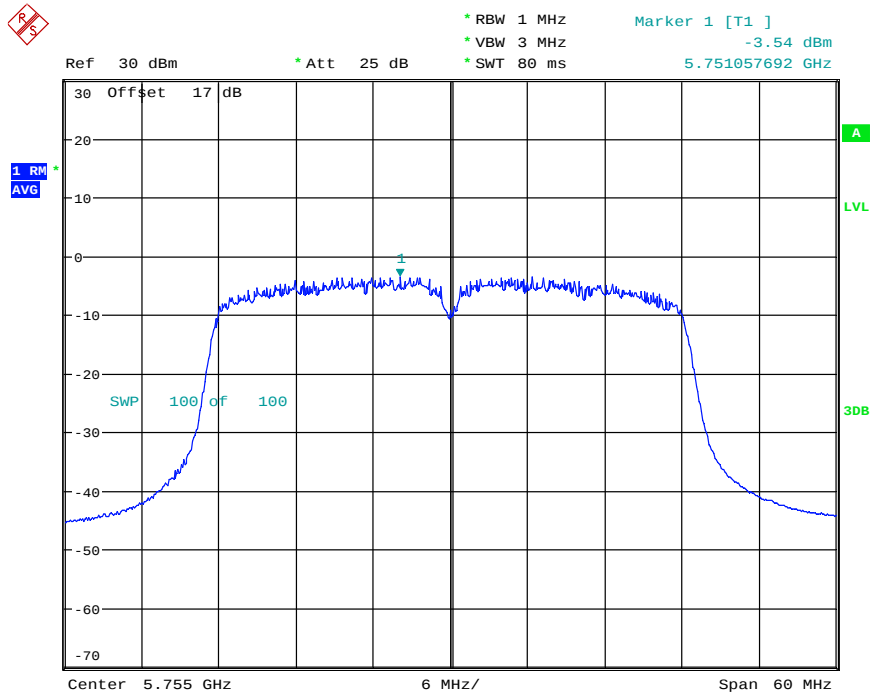
POWER DENSITY AV ANT2 11ac20CH165

Date: 23.APR.2019 08:30:42



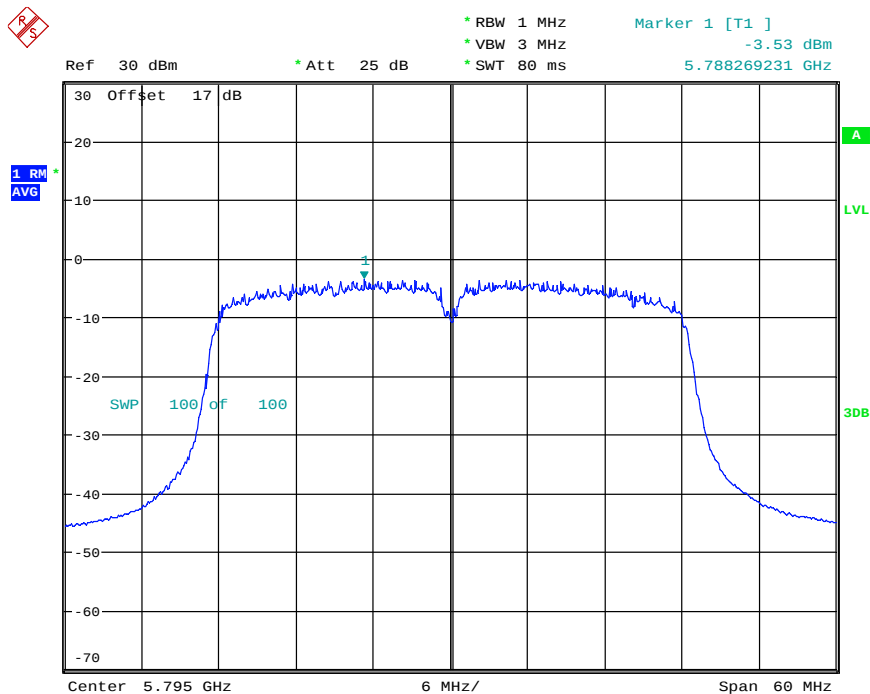
Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



POWER DENSITY AV ANT211ac40CH151

Date: 23.APR.2019 08:41:12

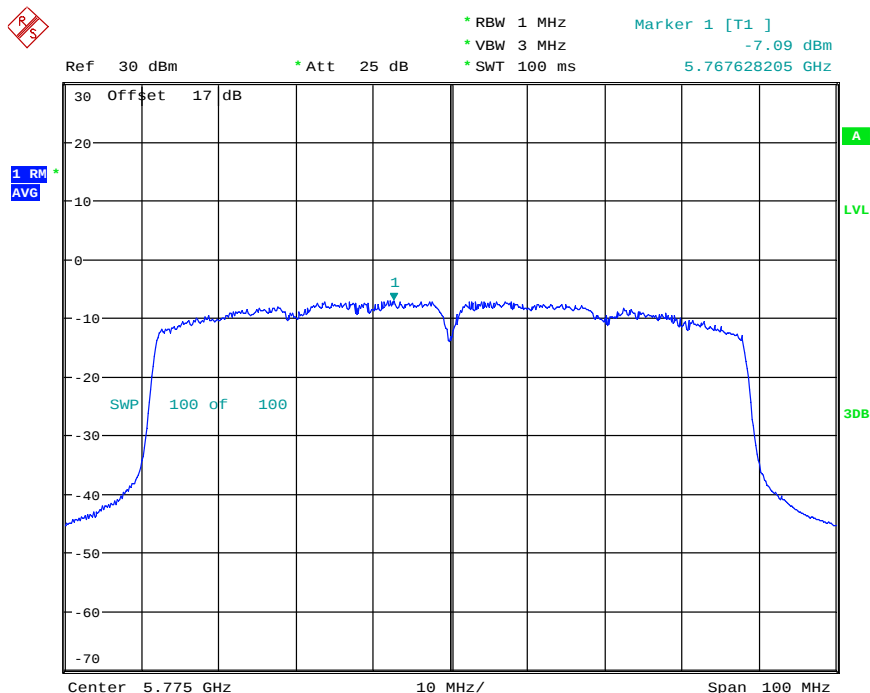


POWER DENSITY AV ANT211ac40CH159

Date: 23.APR.2019 08:45:05

Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010



POWER DENSITY AV ANT211ac80CH155

Date: 23.APR.2019 09:03:11

## 5.15GHz~5.25GHz

| Antenna A     | mW     |        |         | dBm    |        |         |
|---------------|--------|--------|---------|--------|--------|---------|
|               | Ch Low | Ch Mid | Ch High | Ch Low | Ch Mid | Ch High |
| 802.11n 20MHz | 1.589  | 1.222  | 1.832   | 2.01   | 0.87   | 2.63    |
| 802.11n 40MHz | 0.375  | --     | 0.632   | -4.26  | --     | -1.99   |
| 802.11ac      | 0.217  | --     | --      | -6.63  | --     | --      |
| Antenna B     | mW     |        |         | dBm    |        |         |
|               | Ch Low | Ch Mid | Ch High | Ch Low | Ch Mid | Ch High |
| 802.11n 20MHz | 1.592  | 1.138  | 1.782   | 2.02   | 0.56   | 2.51    |
| 802.11n 40MHz | 0.385  | --     | 0.543   | -4.15  | --     | -2.65   |
| 802.11ac      | 0.221  | --     | --      | -6.56  | --     | --      |
| Combine       | mW     |        |         | dBm    |        |         |
|               | Ch Low | Ch Mid | Ch High | Ch Low | Ch Mid | Ch High |
| 802.11n 20MHz | 3.181  | 2.36   | 3.614   | 5.026  | 3.729  | 5.58    |
| 802.11n 40MHz | 0.76   | --     | 1.175   | -1.192 | --     | 0.7     |
| 802.11ac      | 0.438  | --     | --      | -3.585 | --     | --      |



# **Worldwide Testing Services(Taiwan) Co., Ltd.**

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5.25GHz~5.35GHz

| Antenna A     | mW     |        |         | dBm    |        |         |
|---------------|--------|--------|---------|--------|--------|---------|
|               | Ch Low | Ch Mid | Ch High | Ch Low | Ch Mid | Ch High |
| 802.11n 20MHz | 2.08   | 1.202  | 1.968   | 3.18   | 0.80   | 2.94    |
| 802.11n 40MHz | 0.596  | --     | 0.631   | -2.25  | --     | -2.00   |
| 802.11ac      | 0.296  | --     | --      | -5.28  | --     | --      |
| Antenna B     | mW     |        |         | dBm    |        |         |
|               | Ch Low | Ch Mid | Ch High | Ch Low | Ch Mid | Ch High |
| 802.11n 20MHz | 1.905  | 1.191  | 1.932   | 2.8    | 0.76   | 2.86    |
| 802.11n 40MHz | 0.59   | --     | 0.647   | -2.29  | --     | -1.89   |
| 802.11ac      | 0.284  | --     | --      | -5.46  | --     | --      |
| Combine       | mW     |        |         | dBm    |        |         |
|               | Ch Low | Ch Mid | Ch High | Ch Low | Ch Mid | Ch High |
| 802.11n 20MHz | 3.985  | 2.393  | 3.9     | 6.004  | 3.789  | 5.911   |
| 802.11n 40MHz | 1.186  | --     | 1.278   | 0.741  | --     | 1.065   |
| 802.11ac      | 0.58   | --     | --      | -2.366 | --     | --      |

5.47GHz~5.725GHz

| Antenna A     | mW     |        |         | dBm    |        |         |
|---------------|--------|--------|---------|--------|--------|---------|
|               | Ch Low | Ch Mid | Ch High | Ch Low | Ch Mid | Ch High |
| 802.11n 20MHz | 1.288  | 1.318  | 1.445   | 1.10   | 1.20   | 1.60    |
| 802.11n 40MHz | 0.395  | 0.63   | 0.673   | -4.03  | -2.01  | -1.72   |
| 802.11ac      | 0.171  | --     | 0.215   | -7.67  | --     | -6.68   |
| Antenna B     | mW     |        |         | dBm    |        |         |
|               | Ch Low | Ch Mid | Ch High | Ch Low | Ch Mid | Ch High |
| 802.11n 20MHz | 1.259  | 1.23   | 1.413   | 1.00   | 0.90   | 1.50    |
| 802.11n 40MHz | 0.383  | 0.632  | 0.681   | -4.17  | -1.99  | -1.67   |
| 802.11ac      | 0.156  | --     | 0.213   | -8.06  | --     | -6.72   |
| Combine       | mW     |        |         | dBm    |        |         |
|               | Ch Low | Ch Mid | Ch High | Ch Low | Ch Mid | Ch High |
| 802.11n 20MHz | 2.547  | 2.548  | 2.858   | 4.06   | 4.062  | 4.561   |
| 802.11n 40MHz | 0.778  | 1.262  | 1.354   | -1.09  | 1.011  | 1.316   |
| 802.11ac      | 0.327  | --     | 0.428   | -4.855 | --     | -3.686  |



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5.725GHz~5.85GHz

| Antenna A     | mW     |        |         | dBm    |        |         |
|---------------|--------|--------|---------|--------|--------|---------|
|               | Ch Low | Ch Mid | Ch High | Ch Low | Ch Mid | Ch High |
| 802.11n 20MHz | 1.294  | 1.285  | 1.146   | 1.12   | 1.09   | 0.59    |
| 802.11n 40MHz | 0.433  | --     | 0.438   | -3.64  | --     | -3.59   |
| 802.11ac      | 0.194  | --     | --      | -7.12  | --     | --      |
| Antenna B     | mW     |        |         | dBm    |        |         |
|               | Ch Low | Ch Mid | Ch High | Ch Low | Ch Mid | Ch High |
| 802.11n 20MHz | 1.312  | 1.205  | 1.208   | 1.18   | 0.81   | 0.82    |
| 802.11n 40MHz | 0.443  | --     | 0.444   | -3.54  | --     | -3.53   |
| 802.11ac      | 0.195  | --     | --      | -7.09  | --     | --      |
| Combine       | mW     |        |         | dBm    |        |         |
|               | Ch Low | Ch Mid | Ch High | Ch Low | Ch Mid | Ch High |
| 802.11n 20MHz | 2.606  | 2.49   | 2.354   | 4.16   | 3.962  | 3.718   |
| 802.11n 40MHz | 0.876  | --     | 0.882   | -0.575 | --     | -0.545  |
| 802.11ac      | 0.389  | --     | --      | -4.101 | --     | --      |

Test equipment used: ETSTW-RE 055, ETSTW-RE 050



## 3.5 Undesirable emission limits, FCC 15.407 (b)

1. For transmitters operating in the 5.15–5.25 GHz band: all emissions out-side of the 5.15–5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz.
2. For transmitters operating in the 5.25–5.35 GHz band: all emissions out-side of the 5.15–5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz. De-vices operating in the 5.25–5.35 GHz band that generate emissions in the 5.15–5.25 GHz band must meet all appli-cable technical requirements for operation in the 5.15–5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5.15–5.25 GHz band.
3. For transmitters operating in the 5.47–5.725 GHz band: all emissions out-side of the 5.47–5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz.
4. For transmitters operating in the 5.725–5.850 GHz band: All emissions shall be limited to a level of –27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
5. The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.
6. Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209.
7. According to According to KDB 789033 D02 General UNII Test Procedures v01, as specified in 15.407(b), emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz (or -17 dBm/MHz as specified in 15.407(b)(4)). However, an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit.
8. If radiated measurements are performed, field strength is then converted to EIRP as follows:
  - (i)  $EIRP = ((E \cdot d)^2) / 30$ , where: E is the field strength in V/m; d is the measurement distance in meters. EIRP is the equivalent isotropically radiated power in watts.
  - (ii) Working in dB units, the above equation is equivalent to:  $EIRP[dBm] = E[dB\mu V/m] + 20 \log(d[meters]) - 104.77$ .
  - (iii) Or, if d is 3 meters:  $EIRP[dBm] = E[dB\mu V/m] - 95.2$ .

| Applicable to                       | Limit                         |                                          |
|-------------------------------------|-------------------------------|------------------------------------------|
| <input checked="" type="checkbox"/> | FIELD STRENGTH at 3m (dBμV/m) |                                          |
|                                     | PK                            | AV                                       |
|                                     | 74                            | 54                                       |
| <input type="checkbox"/>            | EIRP LIMIT (dBm)              | EQUIVALENT FIELD STRENGTH at 3m (dBμV/m) |
|                                     | PK                            | PK                                       |
|                                     | -27                           | 68.3                                     |

Model:

Algiz RT10

Date:

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# Worldwide Testing Services(Taiwan) Co., Ltd.

Registration number: W6M21903-18857-C-54

FCC ID: YY3-182010

Model: Algiz RT10

Temperature: -- °C Engineer: --

Polarization: Horizontal

Humidity: -- %

| Frequency (MHz) | Reading (dBuV) | Detector | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Table Degree (Deg.) | Ant. High (cm) |
|-----------------|----------------|----------|-------------|-----------------|----------------|-------------|---------------------|----------------|
| --              | --             | --       | --          | --              | --             | --          | --                  | --             |
| --              | --             | --       | --          | --              | --             | --          | --                  | --             |
| --              | --             | --       | --          | --              | --             | --          | --                  | --             |

| Frequency (MHz) | Reading (dBuV) |      | Factor (dB) Corr. | Result (dBuV/m) |      | Limit (dBuV/m) |      | Margin (dB) | Table Degree (Deg.) | Ant. High (cm) |
|-----------------|----------------|------|-------------------|-----------------|------|----------------|------|-------------|---------------------|----------------|
|                 | Peak           | Ave. |                   | Peak            | Ave. | Peak           | Ave. |             |                     |                |
| --              | --             | --   | --                | --              | --   | --             | --   | --          | --                  | --             |
| --              | --             | --   | --                | --              | --   | --             | --   | --          | --                  | --             |

Polarization: Vertical

| Frequency (MHz) | Reading (dBuV) | Detector | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Table Degree (Deg.) | Ant. High (cm) |
|-----------------|----------------|----------|-------------|-----------------|----------------|-------------|---------------------|----------------|
| --              | --             | --       | --          | --              | --             | --          | --                  | --             |
| --              | --             | --       | --          | --              | --             | --          | --                  | --             |
| --              | --             | --       | --          | --              | --             | --          | --                  | --             |

| Frequency (MHz) | Reading (dBuV) |      | Factor (dB) Corr. | Result (dBuV/m) |      | Limit (dBuV/m) |      | Margin (dB) | Table Degree (Deg.) | Ant. High (cm) |
|-----------------|----------------|------|-------------------|-----------------|------|----------------|------|-------------|---------------------|----------------|
|                 | Peak           | Ave. |                   | Peak            | Ave. | Peak           | Ave. |             |                     |                |
| --              | --             | --   | --                | --              | --   | --             | --   | --          | --                  | --             |
| --              | --             | --   | --                | --              | --   | --             | --   | --          | --                  | --             |

Test equipment used: ETSTW-RE 004, ETSTW-RE 030, ETSTW-RE 147,  
ETSTW-RE 088, ETSTW-RE 018

Explanation: After evaluated, the test result in this report adopt the worst case to measure,  
please see attached diagrams in appendix.



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### **3.6 Automatic Discontinuation of transmission, FCC 15.407 (c)**

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure.

This function will be declared by manufacturer.

### **3.7 Reserved, FCC 15.407 (d)**

### **3.8 Indoor Operation Restriction, FCC 15.407 (e)**

Within the 5.15–5.25 GHz band, U- NII devices will be restricted to indoor operations to reduce any potential for harmful interference to co-channel MSS operations. This equipment has to be declared by manufacturer of the final product as content of the user manual.

### **3.9 Equivalent isotropic radiated power, FCC 15.407 (f)**

FCC Rule: 15.407(b)(3)

Band 1

Test exclusion = max. conducted output power + adjusted for tune-up tolerance

Test exclusion = -- dBm

Test equipment used: ETSTW-RE 055

### **3.10 RF Exposure Compliance Requirements**

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.25 m normally can be maintained between the user and the device.

FCC OET Bulletin 65 Edition 97.01 determines the equations for predicting RF fields and applicable limits.

The prediction for power density in the far-field but will over-predict power density in the near field, where it could be used for walking a “worst case” or conservative prediction.

$$S = \frac{PG}{4 \pi R^2}$$

S – Power Density

P – Output power ERP

R – Distance

D – Cable Loss

AG – Antenna Gain

| Item | Unit               | Value   | Remarks          |
|------|--------------------|---------|------------------|
| P    | mW                 | 22.5424 | Peak value       |
| D    | dB                 | --      | --               |
| AG   | dB <sub>i</sub>    | 2       | --               |
| G    | --                 | 1.58    | Calculated Value |
| R    | cm                 | 20      | Assumed value    |
| S    | mW/cm <sup>2</sup> | 0.0071  | Calculated value |



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Limits:

| Limit for General Population / Uncontrolled Exposure |                                        |
|------------------------------------------------------|----------------------------------------|
| Frequency<br>(MHz)                                   | Power Density<br>(mW/cm <sup>2</sup> ) |
| 1500 – 100.000                                       | 1.0                                    |

Explanation: Please refer to SAR report.



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### **3.11 Transmit Power Control (TPC)**

Transmit power control (TPC). U-NII devices operating in the 5.25-5.35 GHz band and the 5.47-5.725 GHz band shall employ a TPC mechanism. The U-NII device is required to have the capability to operate at least 6 dB below the mean EIRP value of 30 dBm. A TPC mechanism is not required for systems with an e.i.r.p. of less than 500 mW.

Explanation: Max put power of the EUT is less than 500 mW (27dBm) so this test item is not required.