



Test report No:
 NIE: 61152RRF.002A1

Test report

USA FCC Part 15.407, 15.209

CANADA RSS-247, RSS-Gen

Unlicensed National Information Infrastructure (U-NII) Devices. General technical requirements.

Radiated emission limits; general requirements.

Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices.

General Requirements and Information for the Certification of Radio Apparatus.

| | |
|---|---|
| (*) Identification of item tested | Automotive Infotainment System |
| (*) Trademark | Mercedes-Benz |
| (*) Model and /or type reference | NTG7 HIGH LFT2 |
| Other identification of the product | HW version: D5 SW version: E17.100 FCC ID: 2AOUZNTG7HIGLFT2 IC: 23650-NTG7HIGLFT2 |
| (*) Features | FM/AM/DAB/DVBT, USB, Bluetooth, WLAN, GNSS. |
| Applicant | CONTINENTAL AUTOMOTIVE GMBH VDO-Strasse 1, 64832 Babenhausen, Germany |
| Test method requested, standard | - USA FCC Part 15.407 (10-1-19 Edition): Unlicensed National Information Infrastructure (U-NII) Devices. General technical requirements. - USA FCC Part 15.209 (10-1-19 Edition): Radiated emission limits; general requirements. - CANADA RSS-247 Issue 2 (February 2017). - CANADA RSS-Gen Issue 5 (March 2019). - Guidance for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices 789033 D02 General U-NII Test Procedures New Rules v02r01 dated Dec 14, 2017. - ANSI C63.10-2013: American National Standard for Testing Unlicensed Wireless Devices. |
| Summary | IN COMPLIANCE |
| Approved by (name / position & signature) | Jose Carlos Luque RF Lab. Supervisor 74841983Y JOSE CARLOS LUQUE LUQUE (C:A29507456) 6) |
| Date of issue | 2020-08-28 |
| Report template No | FDT08_22 (*) "Data provided by the client" |

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Competences and guarantees

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DEKRA Testing and Certification is a FCC-recognized accredited testing laboratory with appropriate scope of accreditation that include testing performed in this test report.

DEKRA Testing and Certification is an ISED-recognized accredited testing laboratory with appropriate scope of accreditation that include testing performed in this test report

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Uncertainty

Uncertainty (factor $k=2$) was calculated according to the DEKRA Testing and Certification internal document PODT000.

Data provided by the client

The following data has been provided by the client:

1. Information relating to the description of the sample ("Identification of the item tested", "Trademark", "Model and/or type reference tested").
2. The sample of NTG7 HIGH LFT2 is an automotive head unit to be installed in cars with the following features: FM/AM/DAB/DVBT, USB, Bluetooth, WLAN and GNSS.

DEKRA Testing and Certification S.A.U. declines any responsibility with respect to the information provided by the client and that may affect the validity of result.

Usage of samples

Samples undergoing test have been selected by: The client.

- Sample S/01 is composed of the following elements:

| Control N° | Description | Model | Serial N° | Date of reception |
|------------|--------------------------------|----------------|-----------------|-------------------|
| 61152E/040 | Automotive Infotainment System | NTG7 HIGH LFT2 | COM634LB0000001 | 2020/03/26 |
| 61152E/032 | Harness | -- | -- | 2020/03/24 |
| 60268/125 | RF Cable with 4 Antennas | -- | -- | 2019/09/30 |

Sample S/01 has undergone the following test(s): All RADIATED tests indicated in Appendixes B and C.

- Sample S/02 is composed of the following elements:

| Control N° | Description | Model | Serial N° | Date of reception |
|------------|--------------------------------|----------------|-----------------|-------------------|
| 61152E/030 | Automotive Infotainment System | NTG7 HIGH LFT2 | COM634LB0000004 | 2020/03/24 |
| 61152E/038 | Harness | -- | -- | 2020/03/24 |

Auxiliary elements used with the Sample S/02:

| Control N° | Description | Model | Serial N° | Date of reception |
|------------|-------------------|-------|-----------|-------------------|
| 61152E/039 | SMA Adapter Cable | -- | -- | 2020/03/24 |

Sample S/02 has undergone the following test(s): All CONDUCTED tests indicated in Appendixes A, B and C

Test sample description

| Ports..... : | Port name and description | Cable | | | | | |
|---|-------------------------------------|---|-------------------------------------|-------------------------------------|-----------------------------------|---|----|
| | | Specified max length [m] | Attached during test | Shielded | Coupled to patient ⁽³⁾ | | |
| | Car Connector A | >3m ^(x1) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | |
| | Car Connector B | >3m ^(x1) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | |
| | Display Connector CID/PIP / RVC | >3m ^(x1) | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | | |
| | USB Connector | <3m ^(x2) | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | | |
| | Eth Connector | >3m ^(x1) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | |
| | BT/WLAN-Antenna | >3m ^(x1) | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | | |
| | FM/AM, TV/SDARS Ant | >3m ^(x1) | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | | |
| | GNSS Antenna | >3m ^(x1) | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | | |
| Supplementary information to the ports..... : | - | | | | | | |
| Rated power supply | Voltage and Frequency | | Reference poles | | | | |
| | | | L1 | L2 | L3 | N | PE |
| | <input checked="" type="checkbox"/> | DC: 12V Car battery / attenuator (9,5-15,5V normal operation) | | | | | |
| Rated Power | 9,5-15,5V normal operation | | | | | | |
| Clock frequencies.....: | see schematics | | | | | | |
| Other parameters | See Technical Description | | | | | | |
| Software version | E17.100 | | | | | | |
| Hardware version | D5 | | | | | | |
| Dimensions in cm (W x H x D) | 182 x 78 x 160 mm | | | | | | |
| Mounting position | <input checked="" type="checkbox"/> | Other: automotive headunit | | | | | |
| Modules/parts.....: | Module/parts of test item | | Type | | Manufacturer | | |
| | n/a | | - | | | | |
| Accessories (not part of the test item) | Description | | Type | | Manufacturer | | |
| | Display | | - | | LG | | |

| | | | |
|--|----------------------------|---|------------|
| | HARMANeco RasPi / headless | - | HBAS |
| | Cable harness | - | HBAS |
| | BT/WLAN-Antenna | - | Hirschmann |
| Documents as provided by the applicant.....: | Description | File name | Issue date |
| | Technical Description | Technical Description NTG7_A16 200324 SOP2 AllVariant.doc | |
| | - | | |

Identification of the client

CONTIENTAL AUTOMOTIVE GMBH
 VDO-Strasse 1, 64832 Babenhausen, Germany

Testing period and place

| | |
|---------------|--|
| Test Location | DEKRA Testing and Certification S.A.U. |
| Date (start) | 2020-04-30 |
| Date (finish) | 2020-05-07 |

Document history

| Report number | Date | Description |
|----------------|------------|--|
| 61152RRF.002 | 2020-08-12 | First release |
| 61152RRF.002A1 | 2020-08-26 | First modification due to typo regarding FCC ID / IC code. The Graphs for Transmitter Duty Cycle in the appendix A was added. This modification test report cancels and replaces the test report 61152RRF.002. |

Environmental conditions

In the control chamber, the following limits were not exceeded during the test:

| | |
|-------------------|-------------------------------------|
| Temperature | Min. = 15 °C Max. = 35 °C |
| Relative humidity | Min. = 20 % Max. = 75 % |
| Air pressure | Min. = 860 mbar Max. = 1060 mbar |

In the semianechoic chamber, the following limits were not exceeded during the test.

| | |
|-------------------|-------------------------------------|
| Temperature | Min. = 15 °C Max. = 35 °C |
| Relative humidity | Min. = 20 % Max. = 75 % |
| Air pressure | Min. = 860 mbar Max. = 1060 mbar |

In the chamber for conducted measurements, the following limits were not exceeded during the test:

| | |
|-------------------|-------------------------------------|
| Temperature | Min. = 15 °C Max. = 35 °C |
| Relative humidity | Min. = 20 % Max. = 35 % |
| Air pressure | Min. = 860 mbar Max. = 1060 mbar |

Remarks and comments

The tests have been performed by the technical personnel: Miguel Ángel Torres, Javier Nadales and José Gabriel Pendón.

Used instrumentation:

Radiated Measurements:

| | Last Calibration | Due Calibration |
|---|------------------|-----------------|
| 1. Semianechoic Absorber Lined Chamber ETS LINDGREN FACT 3 200 STP | N.A. | N.A. |
| 2. Shielded Room ETS LINDGREN S101 | N.A. | N.A. |
| 3. RF Pre-amplifier, G>40 dB, 10 MHz-6 GHz BONN ELEKTRONIK BLNA 0160-01N | 2019/09 | 2020/09 |
| 4. Biconical/Log Antenna 30 MHz - 6 GHz ETS LINDGREN 3142E | 2018/07 | 2021/07 |
| 5. EMI Test Receiver 20 Hz-40 GHz ROHDE AND SCHWARZ ESU40 | 2019/09 | 2021/09 |
| 6. RF Pre-amplifier, 30 dB, 500 MHz-18 GHz NARDA AMF-3D-00501800-24-10P | 2019/12 | 2020/12 |
| 7. RF Pre-amplifier, G>55dB, 1-18GHz NARDA AMF-7D-01001800-22-10P | 2020/05 | 2021/05 |
| 8. Broadband Horn antenna 1-18 GHz SCHWARZBECK MESS-ELEKTRONIK BBHA 9120 D | 2018/06 | 2021/06 |
| 9. Broadband Horn antenna 18 - 40 GHz SCHWARZBECK MESS-ELEKTRONIK BBHA 9170 | 2018/07 | 2021/07 |
| 10. Pre-Amplifier G>30dB 18-40GHz, BONN ELEKTRONIK, BLMA 1840-1M | 2019/02 | 2021/02 |
| 11. DC Power Supply Keysight Technologies U8002A | N/A | N/A |
| 12. Digital multimeter FLUKE 179 | 2019/06 | 2020/06 |

Conducted Measurements

| | Last Calibration | Due Calibration |
|---|------------------|-----------------|
| 1. Shielded Room ETS LINDGREN S101 | N.A. | N.A. |
| 2. Signal and Spectrum Analyzer AGILENT TECHNOLOGIES E4440A | 2019/11 | 2021/11 |
| 3. DC Power Supply 30V/5A Rohde & Schwarz U8002A | N/A | N/A |
| 4. Signal and Spectrum Analyzer ROHDE AND SCHWARZ FSV40 | 2020/03 | 2022/03 |
| 5. Digital multimeter FLUKE 179 | 2019/06 | 2020/06 |

Testing verdicts

| | |
|-----------------|-----|
| Not applicable: | N/A |
| Pass: | P |
| Fail: | F |
| Not measured: | N/M |

Summary

A. Common requirements for all bands

| FCC PART 15 PARAGRAPH / RSS-247 | | Verdict | Remark |
|---|--|---------|--------|
| Requirement – Test case | | | |
| FCC 15.35 (c) / RSS-Gen 6.10 | Duty Cycle | P | |
| RSS-Gen 6.6 / RSS-247 6.2. | Transmitter 99% Occupied Bandwidth | P | |
| FCC 15.403 (i) | Transmitter 26 dB Emission Bandwidth (EBW) | P | |
| FCC 15.407 (g) / RSS-Gen 6.11 | Frequency Stability (Temperature & Voltage Variation) | N/M | (1) |
| <u>Supplementary information and remarks:</u> | | | |
| (1) The manufacturer is responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user manual. | | | |

B. 5.15 GHz – 5.25 GHz Band

| FCC PART 15 PARAGRAPH / RSS-247 | | | |
|--|--|---------|--------|
| Requirement – Test case | | Verdict | Remark |
| FCC 15.407 (a)(1)(iv) | Transmitter Maximum conducted Output Power | P | |
| RSS-247 6.2.1.1 | Transmitter Maximum Equivalent Isotropically Radiated Power EIRP | P | |
| FCC 15.407 (a)(1)(iv) | Transmitter Maximum Power Spectral Density | P | |
| RSS-247 6.2.1.1 | Transmitter EIRP Spectral Density | P | |
| FCC 15.407 (b)(1)(6) / RSS-247 6.2.1.2 | Transmitter Out of Band Radiated Emissions | P | |
| FCC 15.407 (b)(1) / RSS-247 6.2.1.2 | Transmitter Band Edge Radiated Emissions | P | |
| <u>Supplementary information and remarks:</u> None. | | | |

C. 5.725 GHz – 5.85 GHz Band

| FCC PART 15 PARAGRAPH / RSS-247 | | | |
|--|--|---------|--------|
| Requirement – Test case | | Verdict | Remark |
| FCC 15.407 (e) / RSS-247 Clause 6.2.4.1 | 6 dB Bandwidth. | P | |
| FCC 15.407 (a)(3) / RSS-247 6.2.4.1 | Transmitter Maximum conducted Output Power | P | |
| FCC 15.407 (a)(3) / RSS-247 Clause 6.2.4.1 | Transmitter Maximum Power Spectral Density | P | |
| FCC 15.407 (b) (4) / RSS-247 6.2.4.2 | Transmitter Band Edge Radiated Emissions | P | |
| FCC 15.407 (b) (4) (6) / RSS-247 6.2.4.2 | Transmitter Out of Band Radiated Emissions | P | |
| <u>Supplementary information and remarks:</u> None. | | | |

Appendix A: Test Common requirements for all bands

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| FCC 15.35 (c) / RSS-Gen 6.10. Duty Cycle | 12 |
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| FCC 15.403 (i) 26 dB Emission Bandwidth (EBW)..... | 29 |

FCC 15.35 (c) / RSS-Gen 6.10. Duty Cycle

SPECIFICATION:

When the radiated emission limits are expressed in terms of the average value of the emission, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.

RESULTS:

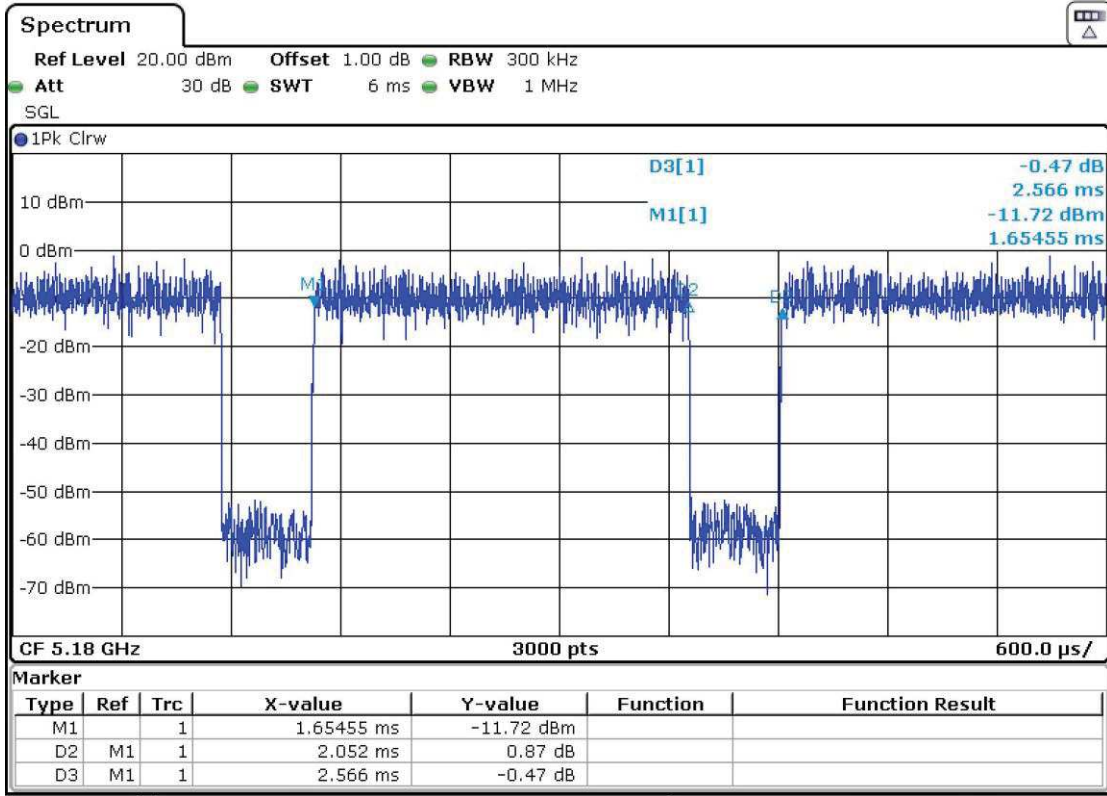
The results below are for data rates with a duty cycle less than 98%. The results for all rest of modes having a value > 98%.

Tests performed on the SISO mode CORE-0_Port3 Antenna.

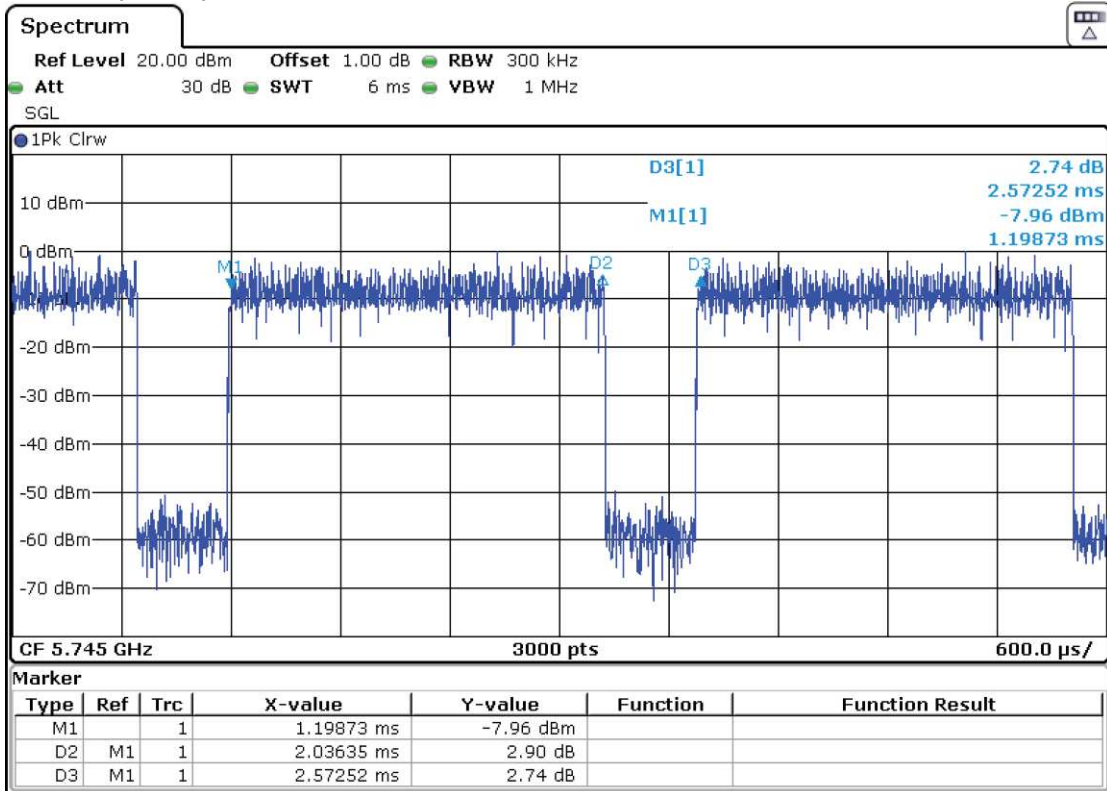
| Sub-band | Technique | Mode | Pulse Duration (us) | Period (us) | Duty Cycle correction (dB) |
|----------|-----------|-------------------|---------------------|-------------|----------------------------|
| U-NII-1 | SISO (*) | 802.11a / 20 MHz | 2052 | 2566 | 0.971 |
| U-NII-3 | SISO (*) | 802.11a / 20 MHz | 2036.35 | 2572.52 | 1.015 |
| U-NII-1 | SISO | 802.11n / 20 MHz | 1887.96 | 2422.14 | 1.082 |
| U-NII-3 | SISO | 802.11n / 20 MHz | 1882.29 | 2440.48 | 1.128 |
| U-NII-1 | SISO | 802.11n / 40 MHz | 923.64 | 1445.82 | 1.946 |
| U-NII-3 | SISO | 802.11ac / 40 MHz | 945.32 | 1461.15 | 1.891 |
| U-NII-1 | SISO | 802.11ac / 80 MHz | 422.47 | 961.99 | 3.574 |
| U-NII-3 | SISO | 802.11ac / 80 MHz | 435.83 | 961.84 | 3.438 |

SISO CORE0_Port3 Antenna:

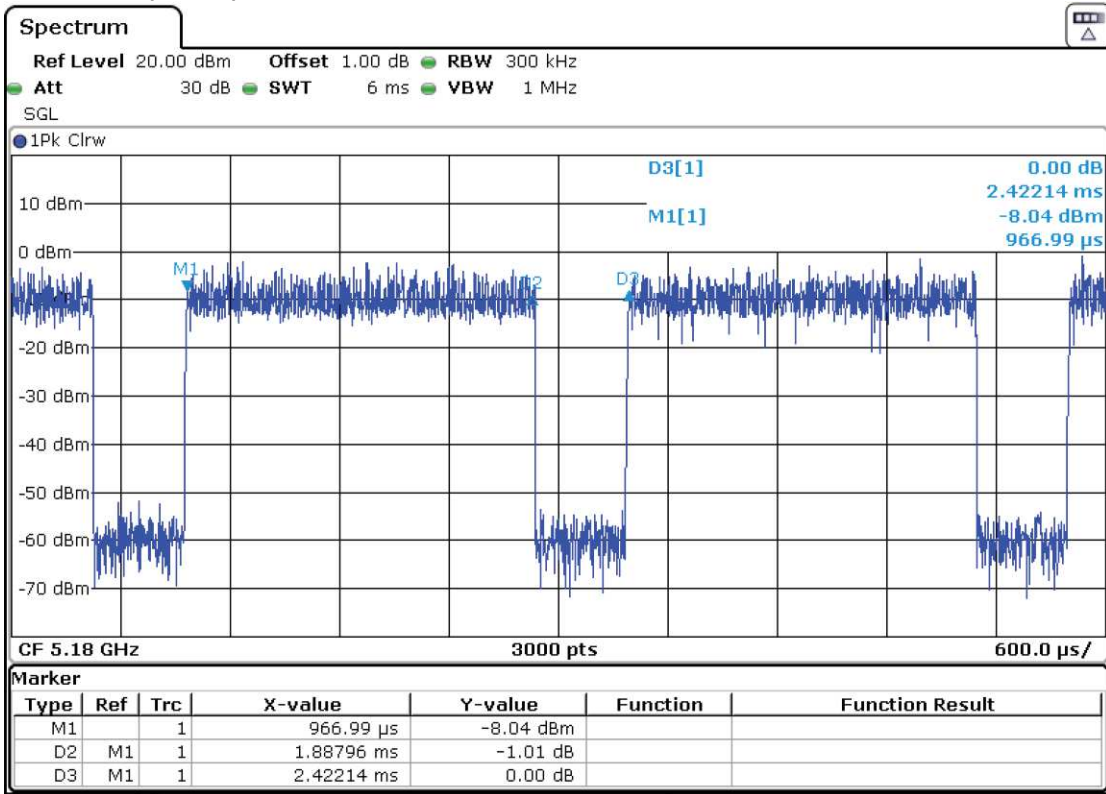
- Mode 802.11 a (UNII-1)



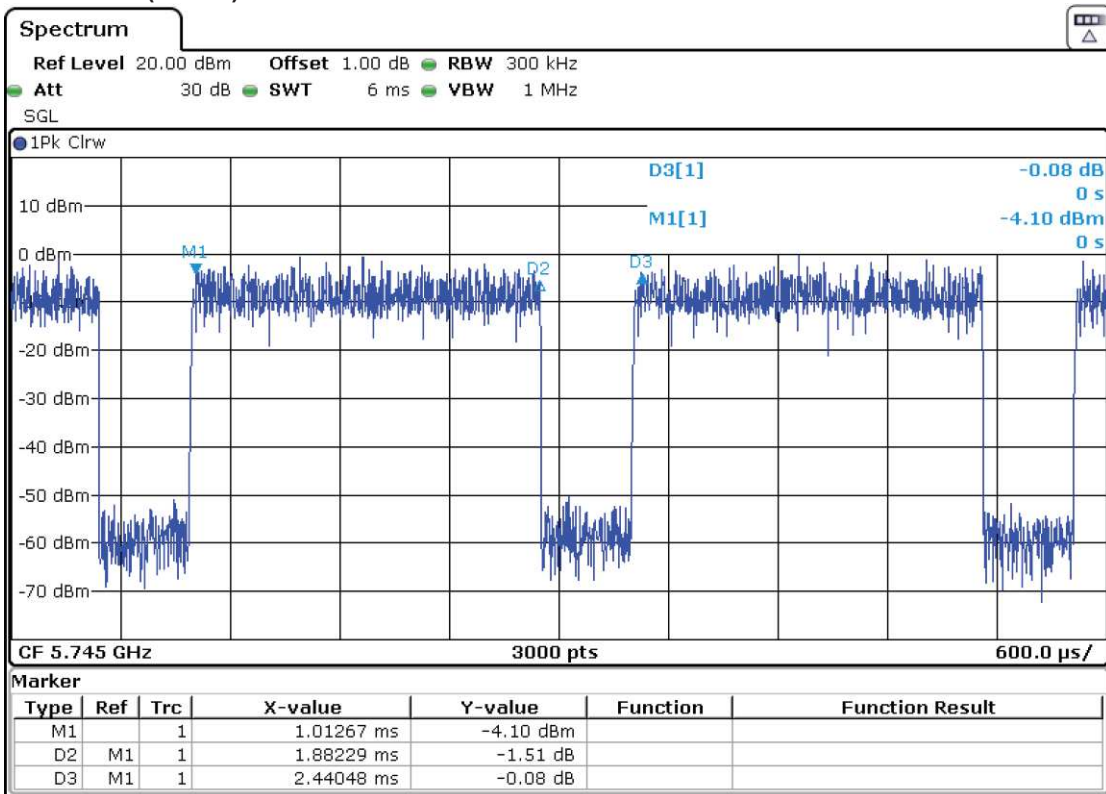
- Mode 802.11 a (UNII-3)



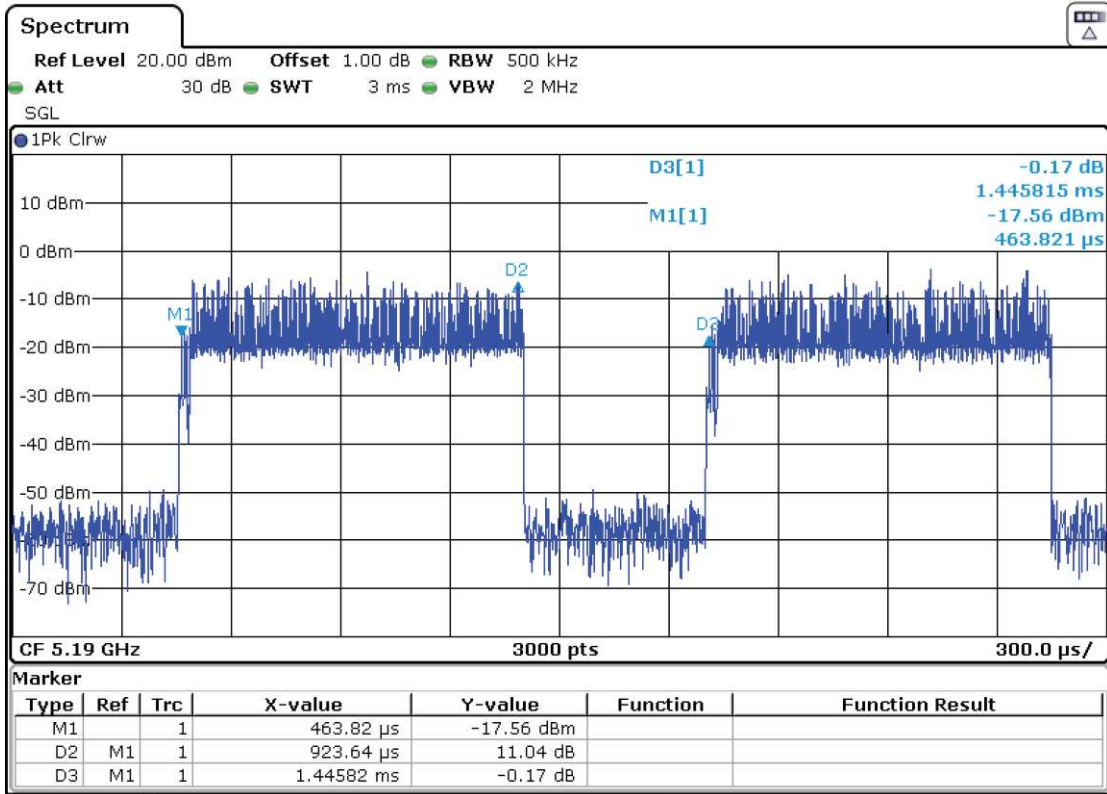
- Mode 802.11 n20 (UNII-1)



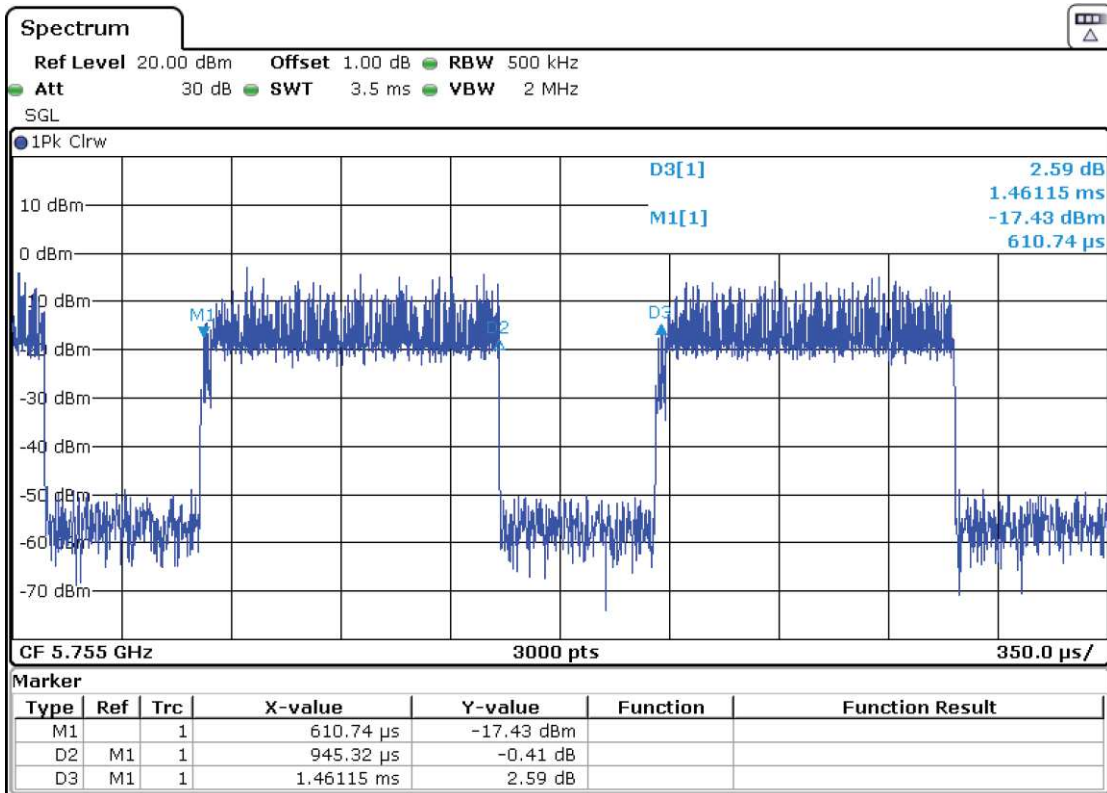
- Mode 802.11 n20 (UNII-3)



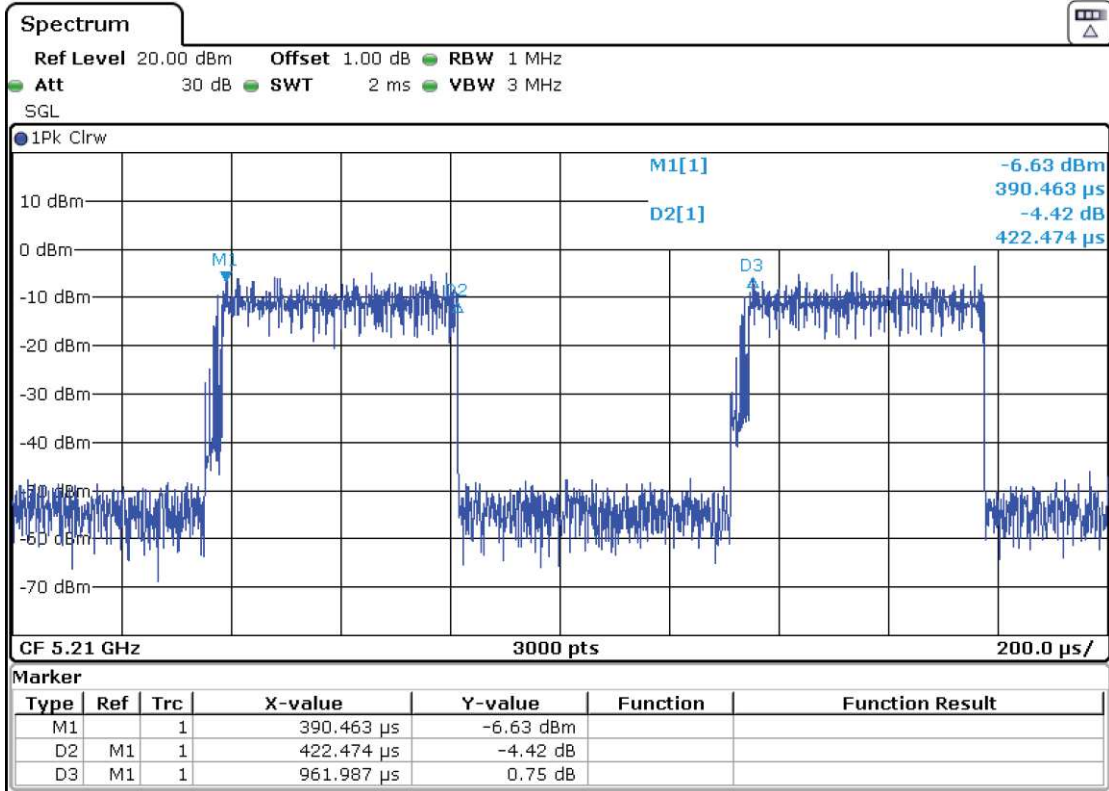
- Mode 802.11 n40 (UNII-1)



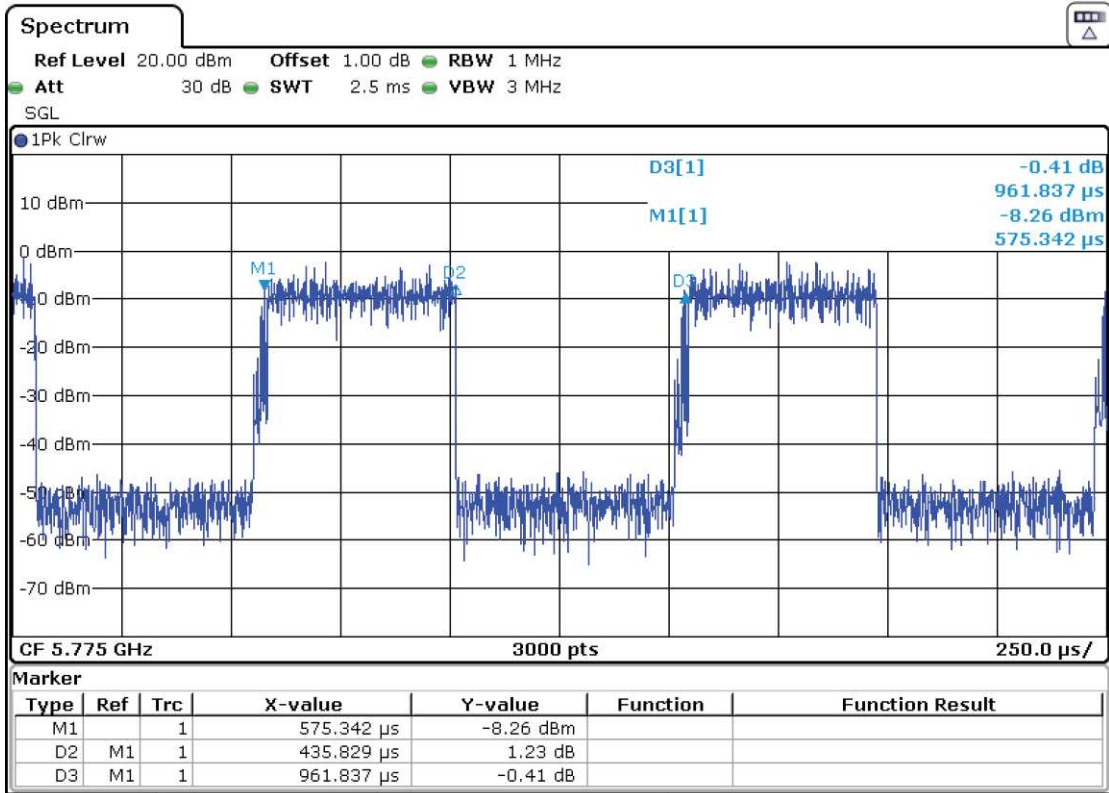
- Mode 802.11 ac40 (UNII-3)



- Mode 802.11 ac80 (UNII-1)



- Mode 802.11 ac80 (UNII-3)



RSS-Gen 6.6 / RSS-247 6.2. 99% Occupied Bandwidth

The following modes and data rates were selected based on preliminary testing that identified those corresponding to the worst cases:

- 802.11a: 6 Mbit/s.
- 802.11n HT20: MCS0.
- 802.11n HT40: MCS0.
- 802.11ac VHT40: MCS0.
- 802.11ac VHT80: MCS0

Tests performed on the SISO mode CORE-0_Port3 Antenna.

SISO CORE-0_Port3 Antenna:

Mode 802.11 a20:

U-NII-1 (5150-5250 MHz)

| Channels | Low Channel 36 (5180 MHz) | Middle Channel 40 (5200 MHz) | High Channel 48 (5240 MHz) |
|----------------------------------|------------------------------|---------------------------------|-------------------------------|
| 99% Occupied Bandwidth (MHz) | 16.84 | 16.90 | 17.97 |
| Measurement uncertainty (kHz) | <±140.51 | | |

U-NII-3 (5725-5850 MHz)

| Channels | Low Channel 149 (5745 MHz) | Middle Channel 157 (5785 MHz) | High Channel 165 (5825 MHz) |
|----------------------------------|-------------------------------|----------------------------------|--------------------------------|
| 99% Occupied Bandwidth (MHz) | 17.053333 | 17.053333 | 17.04 |
| Measurement uncertainty (kHz) | <±42.41 | | |

Mode 802.11 n20 (HT20):

U-NII-1 (5150-5250 MHz)

| Channels | Low Channel 36 (5180 MHz) | Middle Channel 40 (5200 MHz) | High Channel 48 (5240 MHz) |
|----------------------------------|------------------------------|---------------------------------|-------------------------------|
| 99% Occupied Bandwidth (MHz) | 18.16 | 18.186667 | 18.20 |
| Measurement uncertainty (kHz) | <±42.39 | | |

U-NII-3 (5725-5850 MHz)

| Channels | Low Channel 149 (5745 MHz) | Middle Channel 157 (5785 MHz) | High Channel 165 (5825 MHz) |
|----------------------------------|-------------------------------|----------------------------------|--------------------------------|
| 99% Occupied Bandwidth (MHz) | 18.226667 | 18.24 | 18.20 |
| Measurement uncertainty (kHz) | <±42.41 | | |

Mode 802.11 n40 (HT40):

U-NII-1 (5150-5250 MHz)

| Channels | Low Channel 38 (5190 MHz) | High Channel 46 (5230 MHz) |
|----------------------------------|------------------------------|-------------------------------|
| 99% Occupied Bandwidth (MHz) | 36.266667 | 36.293333 |
| Measurement uncertainty (kHz) | <±73.17 | |

Mode 802.11 ac40 (VHT40):

U-NII-3 (5725-5850 MHz)

| Channels | Low Channel 151 (5755 MHz) | High Channel 159 (5795 MHz) |
|----------------------------------|-------------------------------|--------------------------------|
| 99% Occupied Bandwidth (MHz) | 36.32 | 36.266667 |
| Measurement uncertainty (kHz) | <±73.18 | |

Mode 802.11 ac80 (VHT80):

U-NII-1 (5150-5250 MHz)

| Channel | Single Channel 42 (5210 MHz) |
|----------------------------------|---------------------------------|
| 99% Occupied Bandwidth (MHz) | 75.52 |
| Measurement uncertainty (kHz) | <±146.29 |

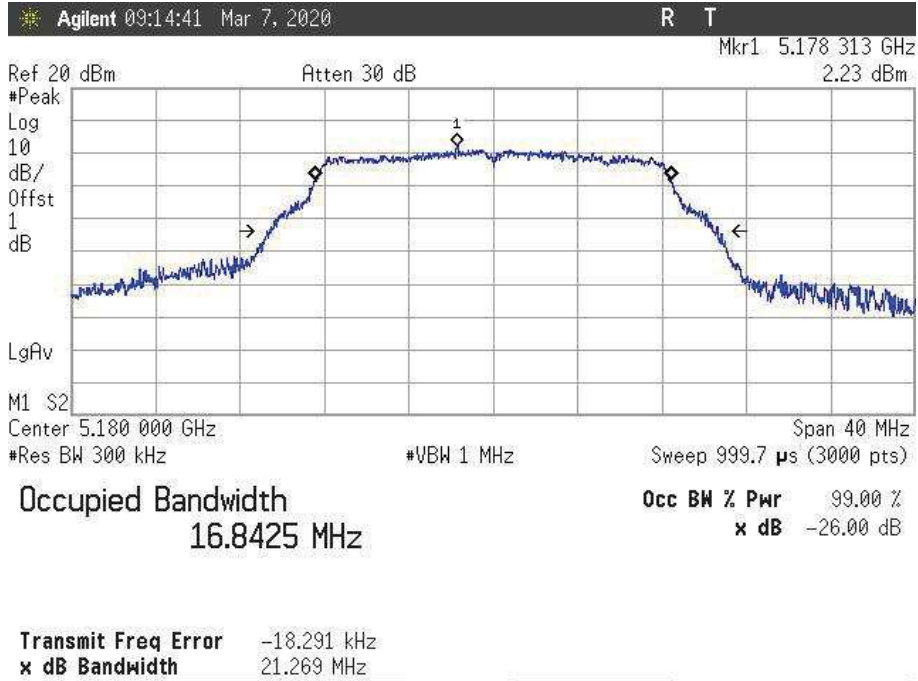
U-NII-3 (5725-5850 MHz)

| Channel | Single Channel 155 (5775 MHz) |
|----------------------------------|----------------------------------|
| 99% Occupied Bandwidth (MHz) | 75.84 |
| Measurement uncertainty (kHz) | <±146.30 |

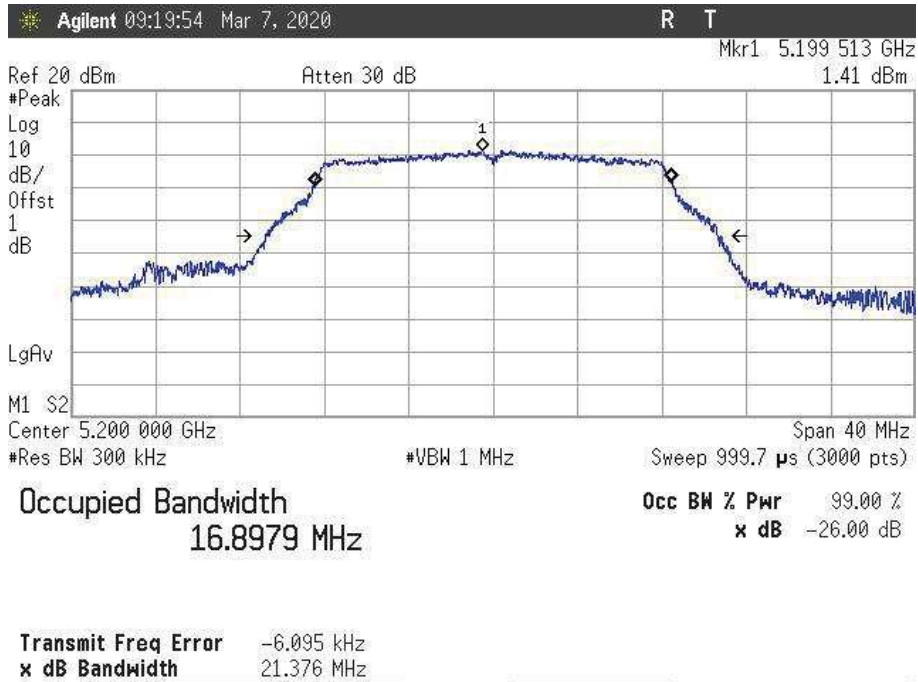
Mode 802.11 a20:

U-NII-1 (5150-5250 MHz)

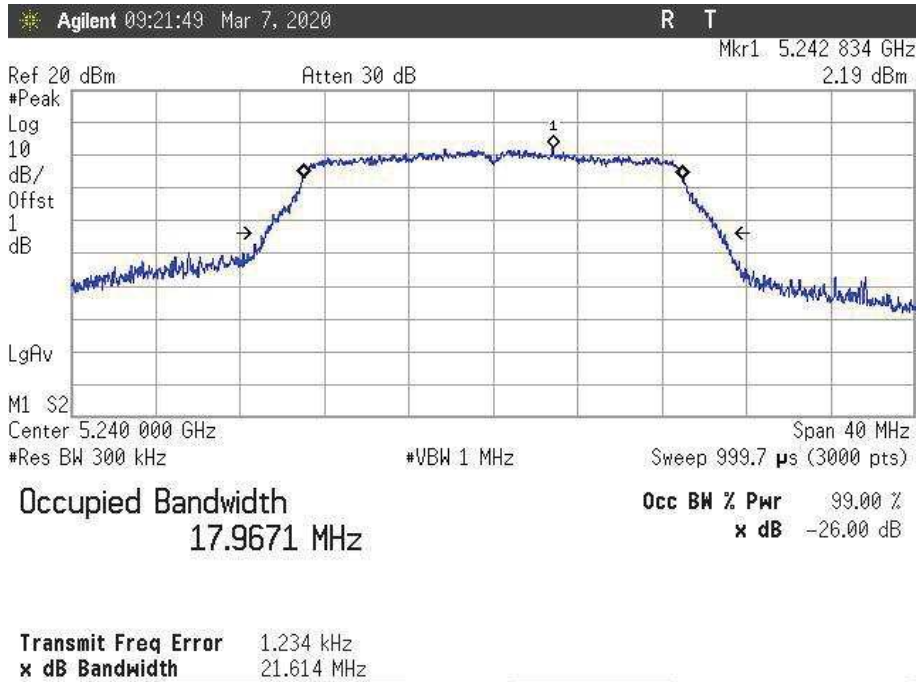
- Low Channel 36 (5180 MHz):



- Middle Channel 40 (5200 MHz):

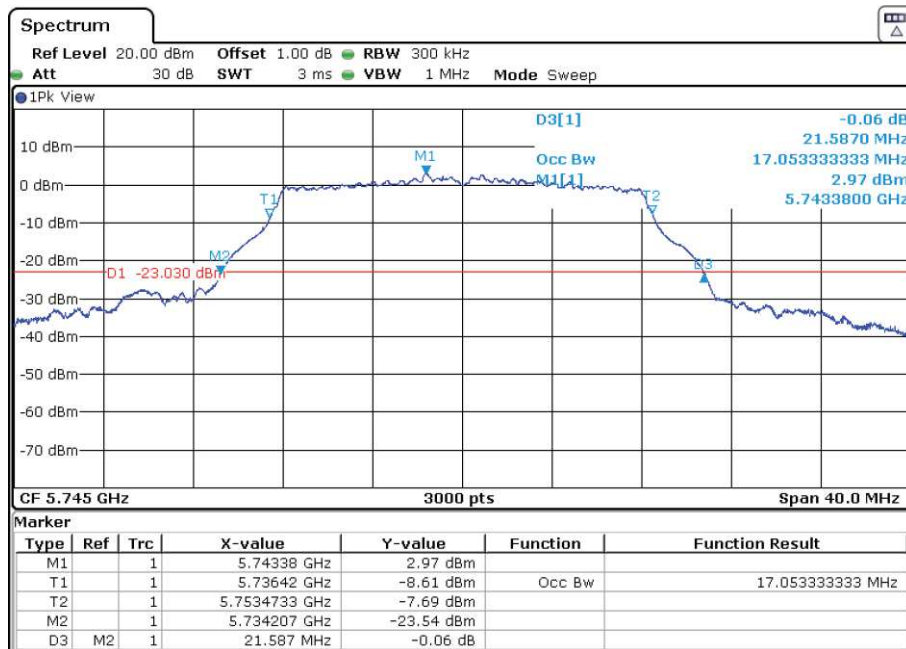


- High Channel 48 (5240 MHz):

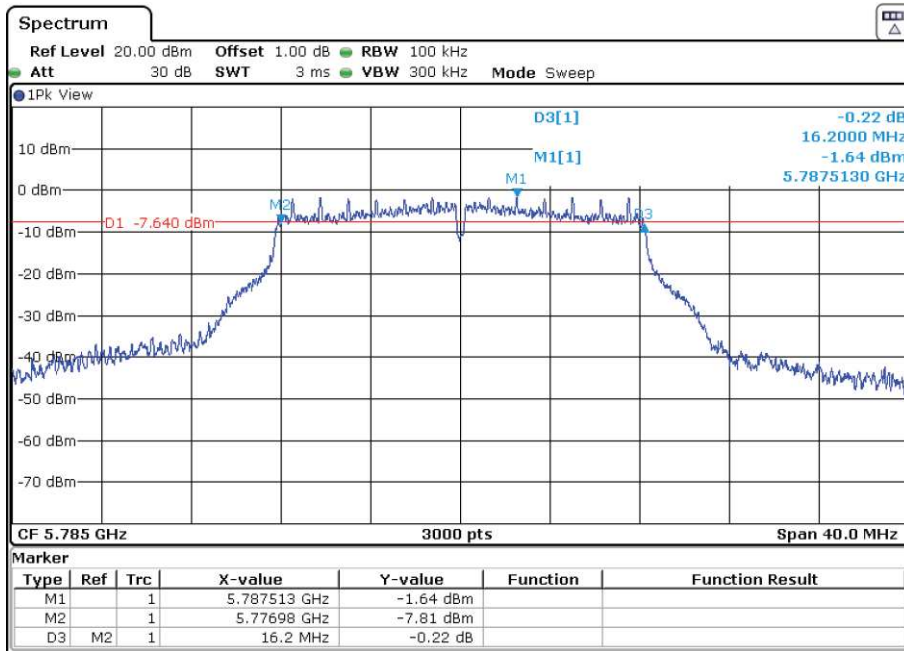


U-NII-3 (5725-5850 MHz)

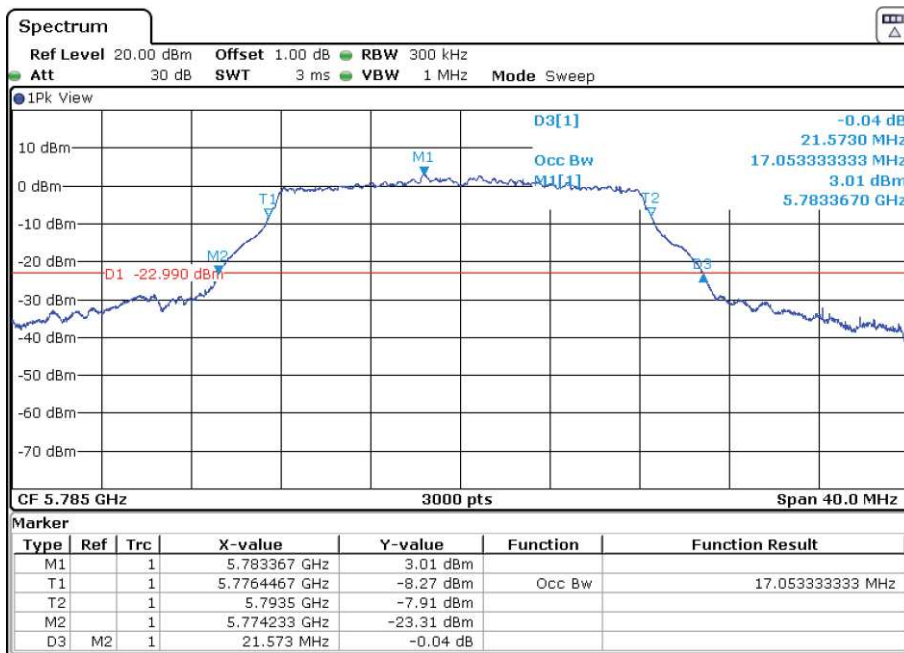
- Low Channel 149 (5745 MHz):



- Middle Channel 157 (5785 MHz):



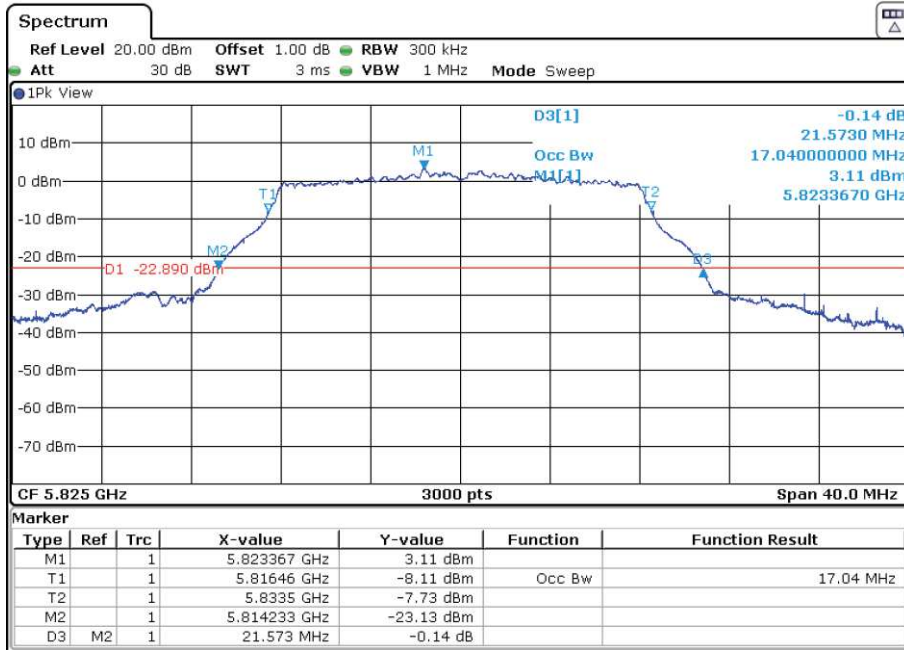
- High Channel 165 (5825 MHz):



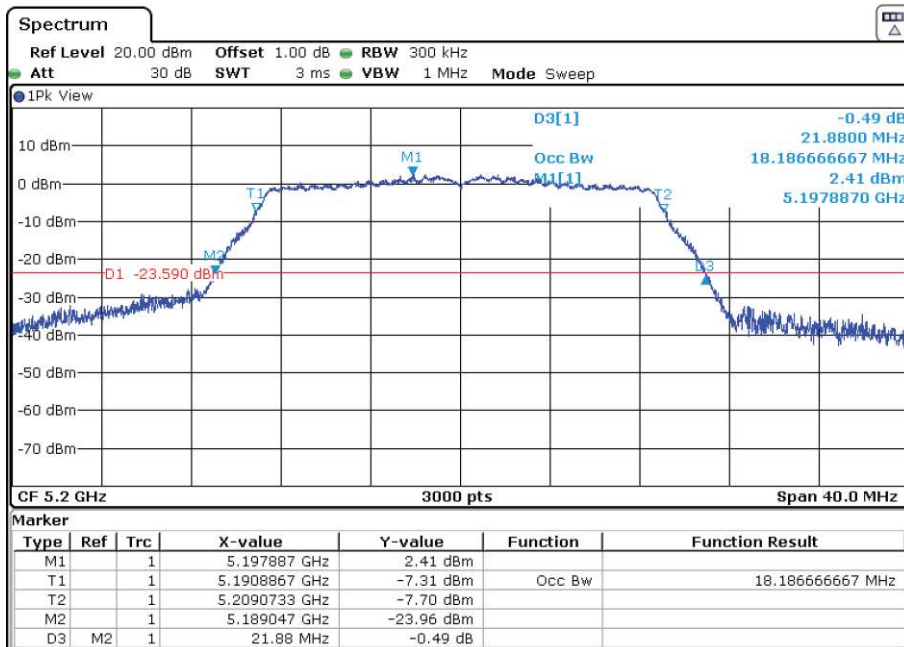
Mode 802.11 n20 HT20:

U-NII-1 (5150-5250 MHz)

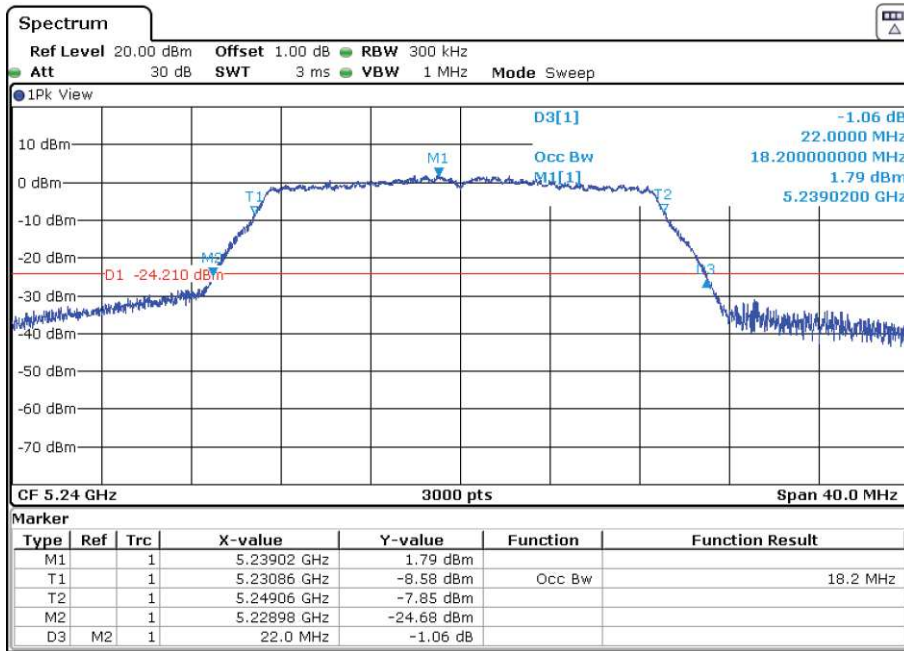
- Low Channel 36 (5180 MHz):



- Middle Channel 40 (5200 MHz):

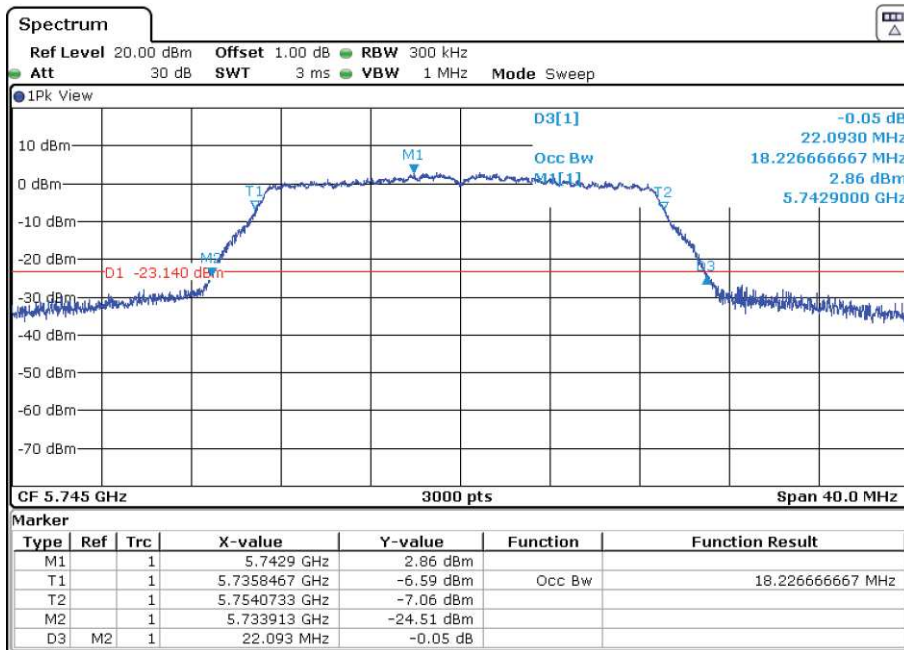


- High Channel 48 (5240 MHz):

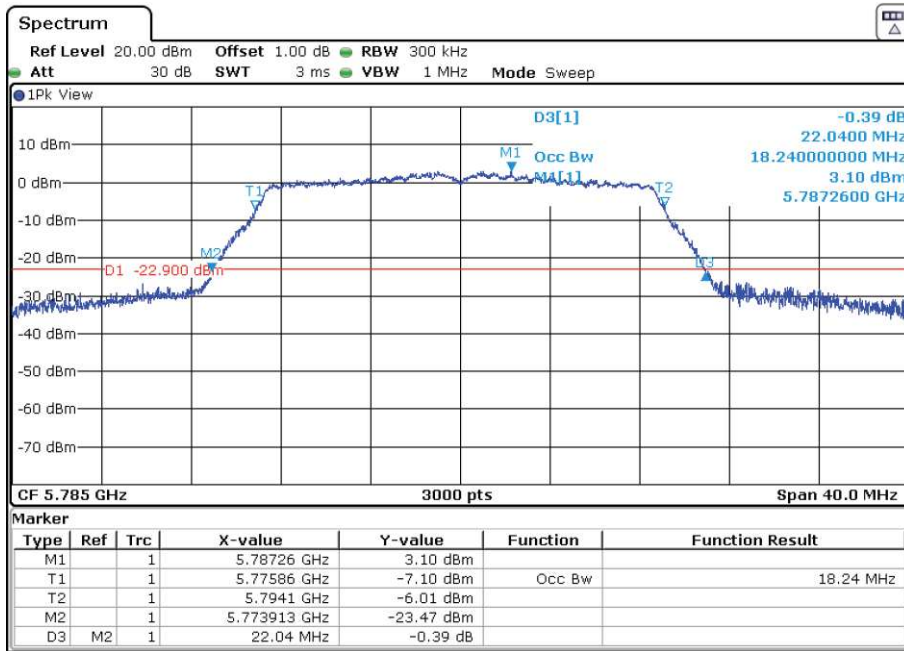


U-NII-3 (5725-5850 MHz)

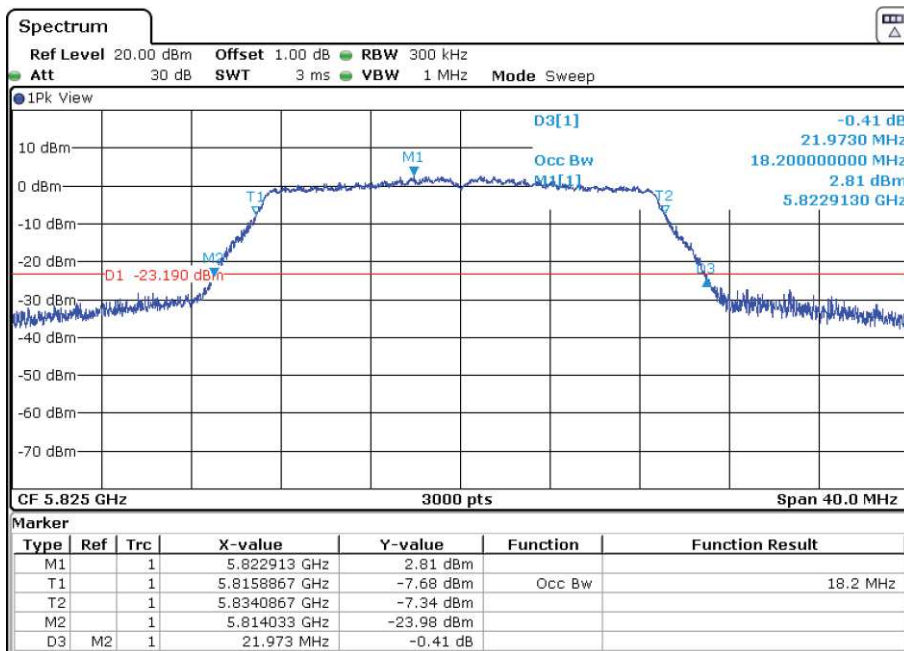
- Low Channel 149 (5745 MHz):



- Middle Channel 157 (5785 MHz):



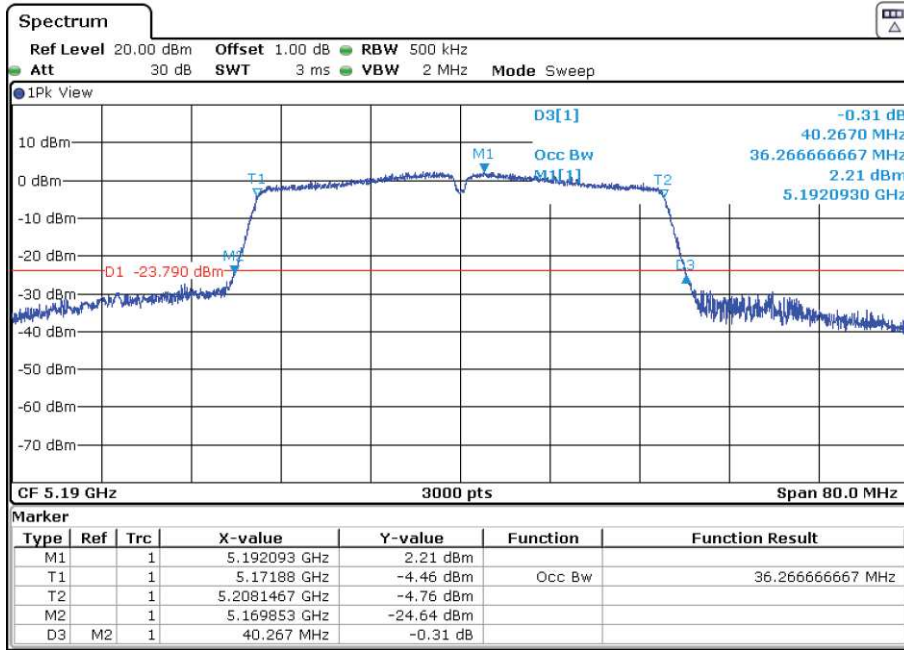
- High Channel 165 (5825 MHz):



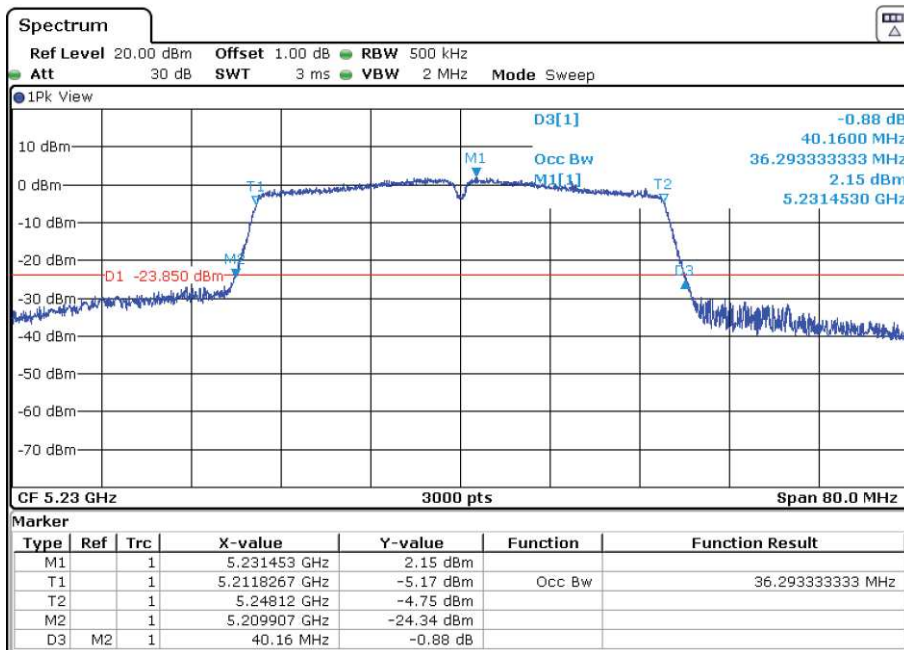
Mode 802.11 n40 (HT40):

U-NII-1 (5150-5250 MHz)

- Low Channel 38 (5190 MHz):



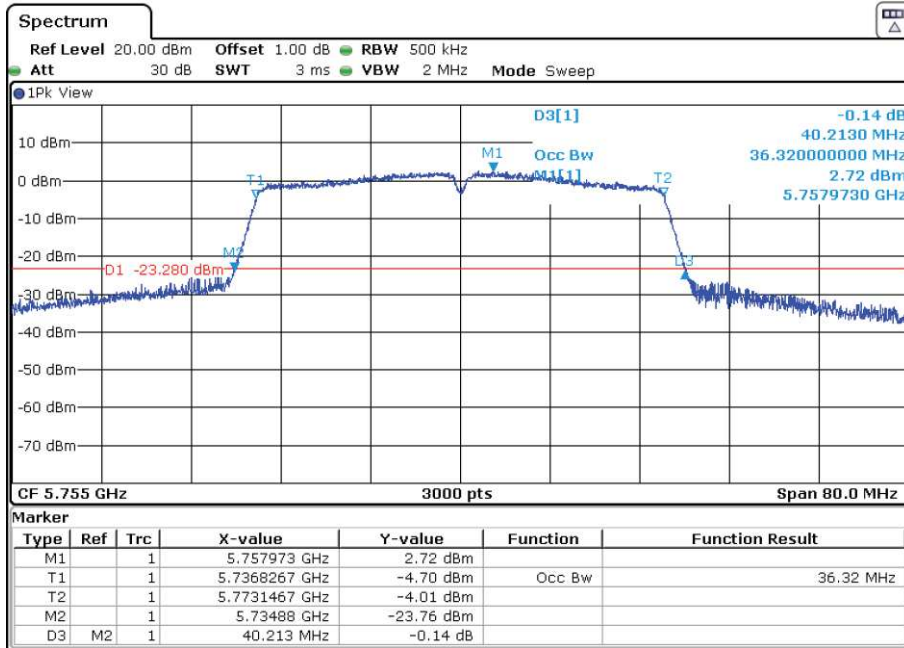
- High Channel 46 (5230 MHz):



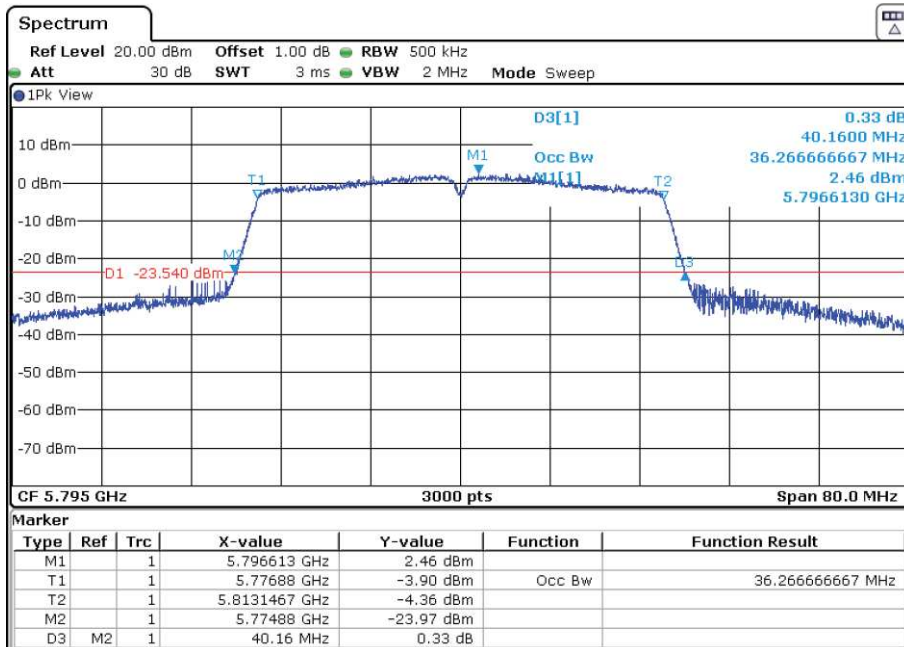
Mode 802.11 ac40 (VHT40):

U-NII-3 (5725-5850 MHz)

- Low Channel 151 (5755 MHz):



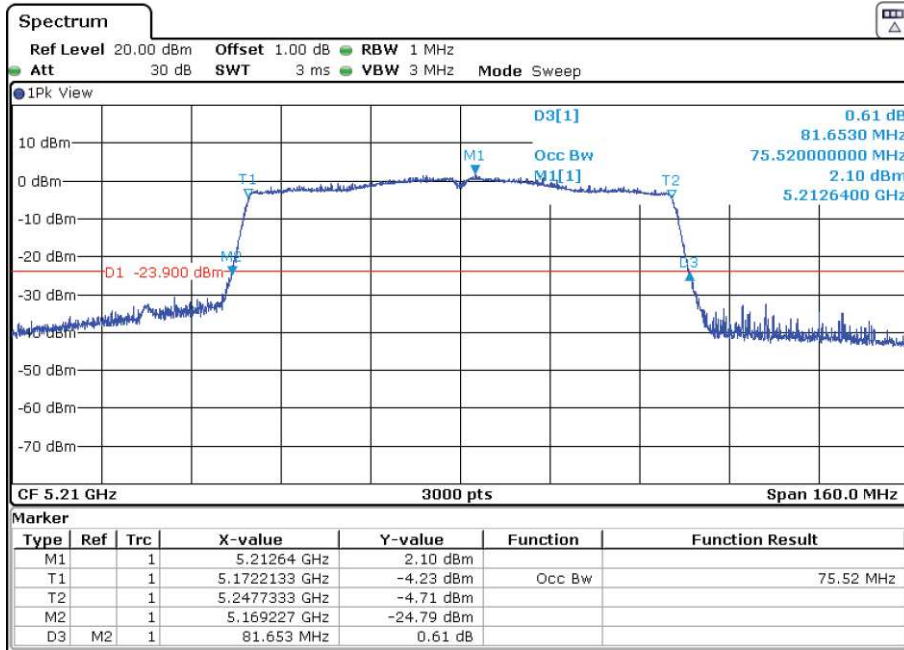
- High Channel 159 (5795 MHz):



Mode 802.11 ac80 (VHT80):

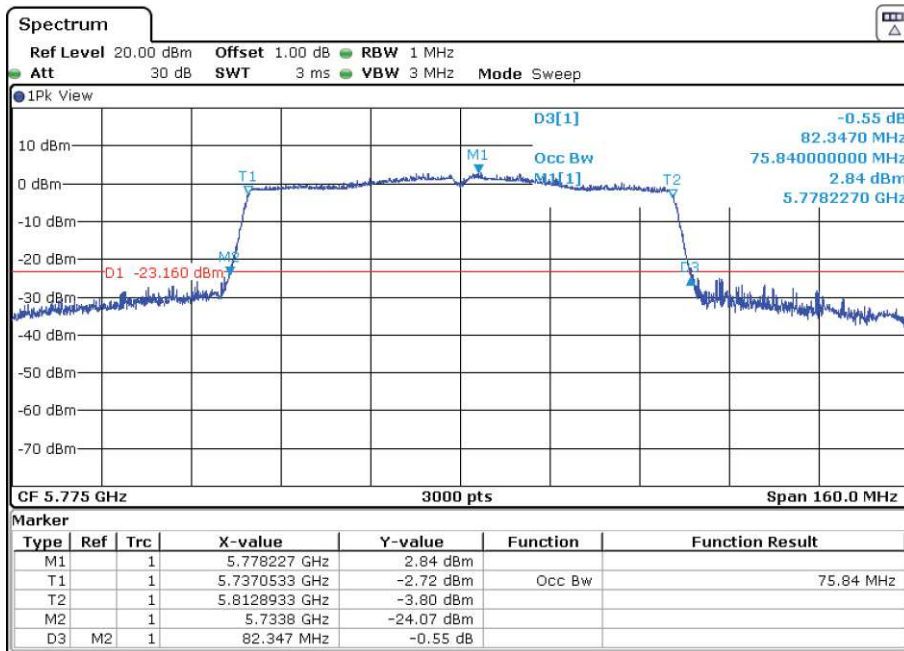
U-NII-1 (5150-5250 MHz)

- Single Channel 42 (5210 MHz):



U-NII-3 (5725-5850 MHz)

- Single Channel 155 (5775 MHz):



FCC 15.403 (j) 26 dB Emission Bandwidth (EBW)

RESULTS:

The 26 dB Emission Bandwidth was measured using the method according to point C) 1) of 789033 D02 General UNII Test Procedures New Rules v02r01.

The following modes and data rates were selected based on preliminary testing that identified those corresponding to the worst cases:

- 802.11a: 6 Mbit/s.
- 802.11n HT20: MCS0.
- 802.11n HT40: MCS0.
- 802.11ac VHT40: MCS0.
- 802.11ac VHT80: MCS0

Tests performed on the SISO mode CORE-0_Port3 Antenna.

SISO CORE-0_Port3 Antenna:

Mode 802.11 a20:

U-NII-1 (5150-5250 MHz)

| Channels | Low Channel 36 (5180 MHz) | Middle Channel 40 (5200 MHz) | High Channel 48 (5240 MHz) |
|-----------------------------------|------------------------------|---------------------------------|-------------------------------|
| 26 dB Emission Bandwidth (MHz) | 21.269 | 21.376 | 21.614 |
| Measurement uncertainty (kHz) | <±140.51 | | |

U-NII-3 (5725-5850 MHz)

| Channels | Low Channel 149 (5745 MHz) | Middle Channel 157 (5785 MHz) | High Channel 165 (5825 MHz) |
|-----------------------------------|-------------------------------|----------------------------------|--------------------------------|
| 26 dB Emission Bandwidth (MHz) | 21.587 | 21.573 | 21.573 |
| Measurement uncertainty (kHz) | <±42.41 | | |

Mode 802.11 n20 (HT20):

U-NII-1 (5150-5250 MHz)

| Channels | Low Channel 36 (5180 MHz) | Middle Channel 40 (5200 MHz) | High Channel 48 (5240 MHz) |
|-----------------------------------|------------------------------|---------------------------------|-------------------------------|
| 26 dB Emission Bandwidth (MHz) | 21.933 | 21.880 | 22.000 |
| Measurement uncertainty (kHz) | <±42.39 | | |

U-NII-3 (5725-5850 MHz)

| Channels | Low Channel 149 (5745 MHz) | Middle Channel 157 (5785 MHz) | High Channel 165 (5825 MHz) |
|-----------------------------------|-------------------------------|----------------------------------|--------------------------------|
| 26 dB Emission Bandwidth (MHz) | 22.093 | 22.040 | 21.973 |
| Measurement uncertainty (kHz) | <±42.41 | | |

Mode 802.11 n40 (HT40):

U-NII-1 (5150-5250 MHz)

| Channels | Low Channel 38 (5190 MHz) | High Channel 46 (5230 MHz) |
|-----------------------------------|------------------------------|-------------------------------|
| 26 dB Emission Bandwidth (MHz) | 40.267 | 40.160 |
| Measurement uncertainty (kHz) | <±73.17 | |

Mode 802.11 ac40 (VHT40):

U-NII-3 (5725-5850 MHz)

| Channels | Low Channel 151 (5755 MHz) | High Channel 159 (5795 MHz) |
|-----------------------------------|-------------------------------|--------------------------------|
| 26 dB Emission Bandwidth (MHz) | 40.213 | 40.160 |
| Measurement uncertainty (kHz) | <±73.18 | |

Mode 802.11 ac80 (VHT80):

U-NII-1 (5150-5250 MHz)

| Channel | Single Channel 42 (5210 MHz) |
|-----------------------------------|---------------------------------|
| 26 dB Emission Bandwidth (MHz) | 81.653 |
| Measurement uncertainty (kHz) | <±146.29 |

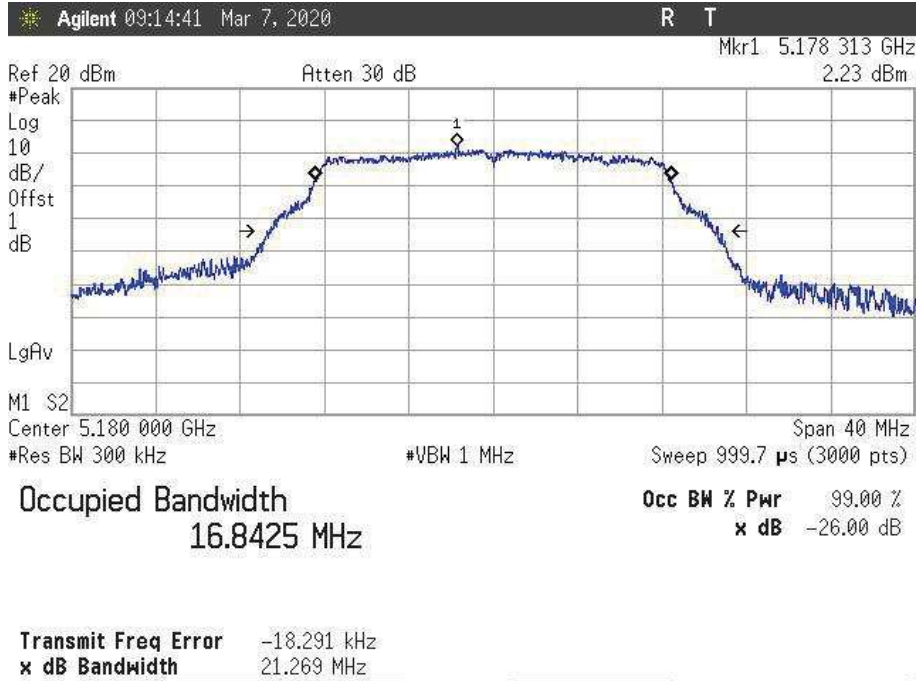
U-NII-3 (5725-5850 MHz)

| Channel | Single Channel 155 (5775 MHz) |
|-----------------------------------|----------------------------------|
| 26 dB Emission Bandwidth (MHz) | 82.347 |
| Measurement uncertainty (kHz) | <±146.30 |

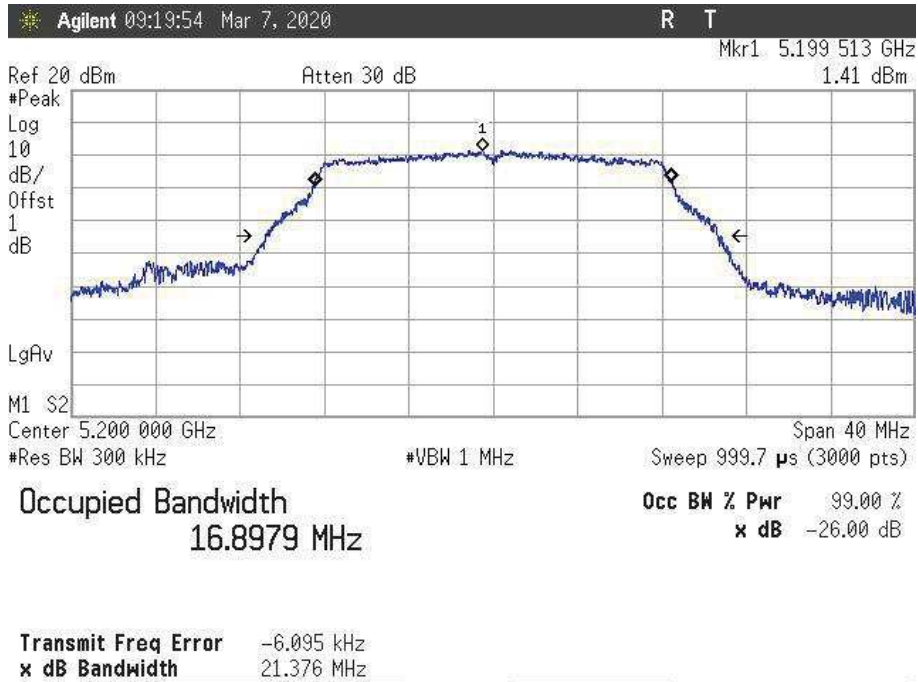
Mode 802.11 a20:

U-NII-1 (5150-5250 MHz)

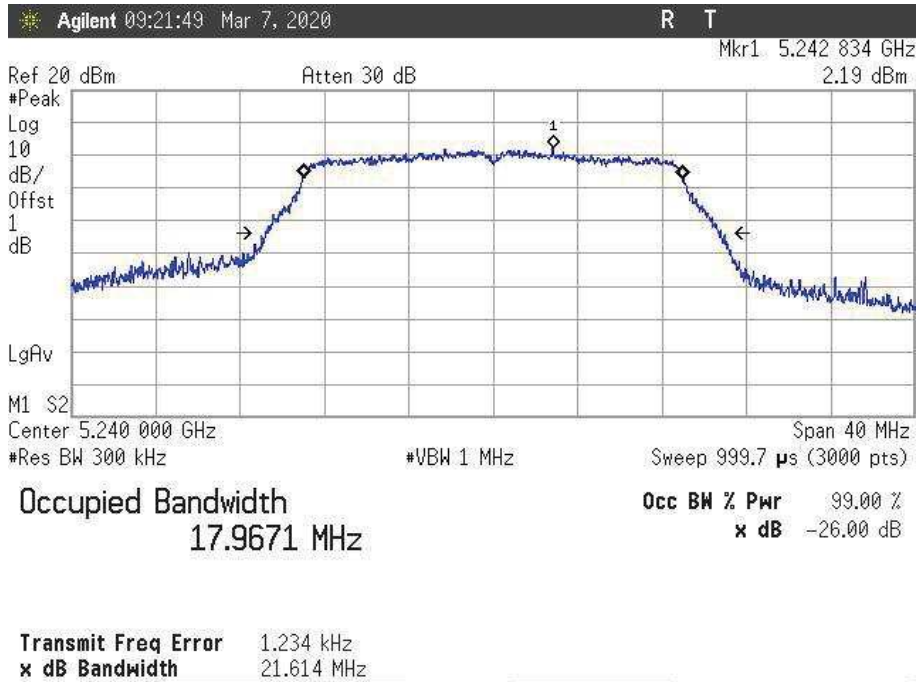
- Low Channel 36 (5180 MHz):



- Middle Channel 40 (5200 MHz):

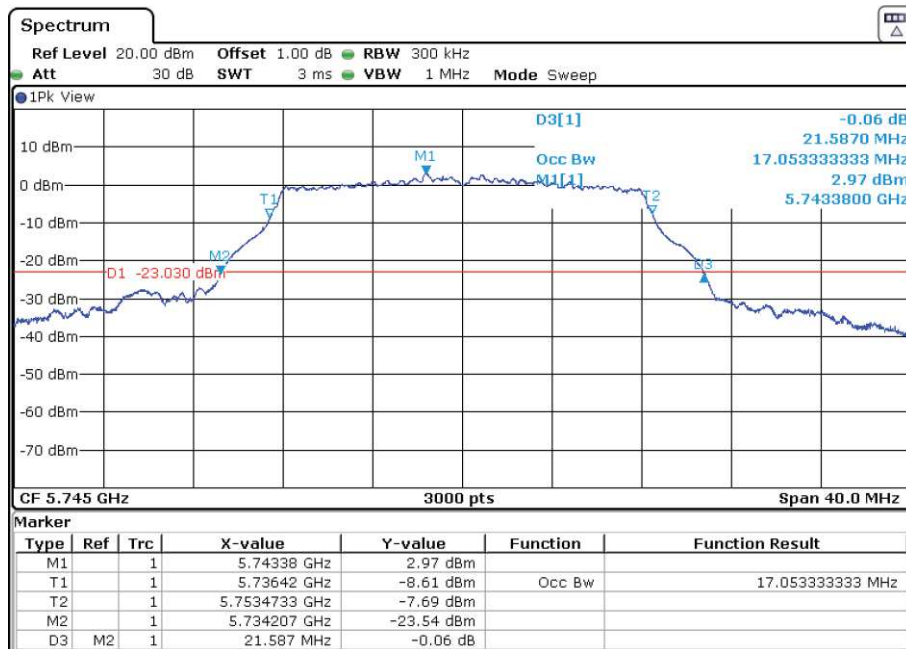


- High Channel 48 (5240 MHz):

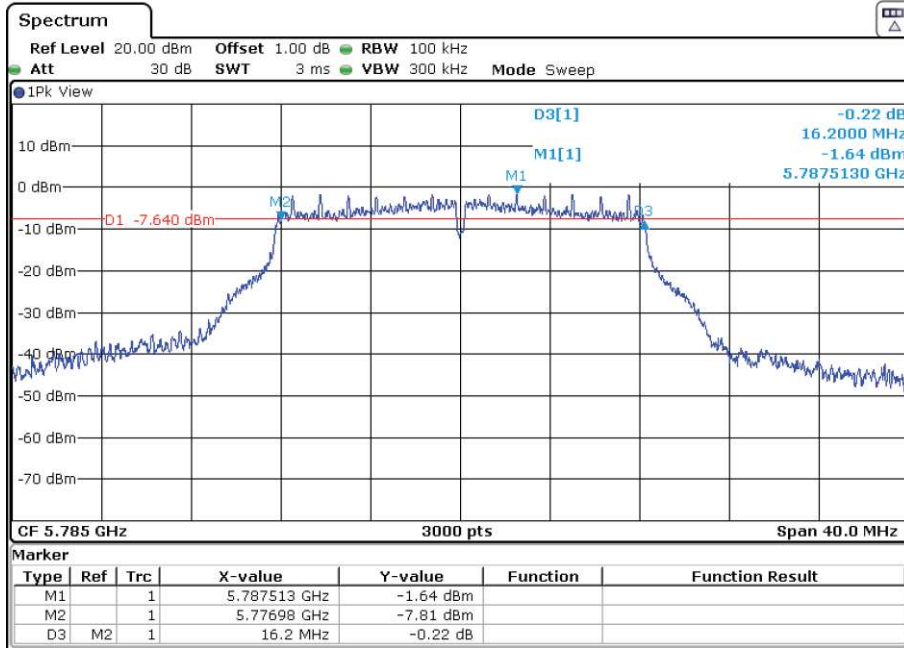


U-NII-3 (5725-5850 MHz)

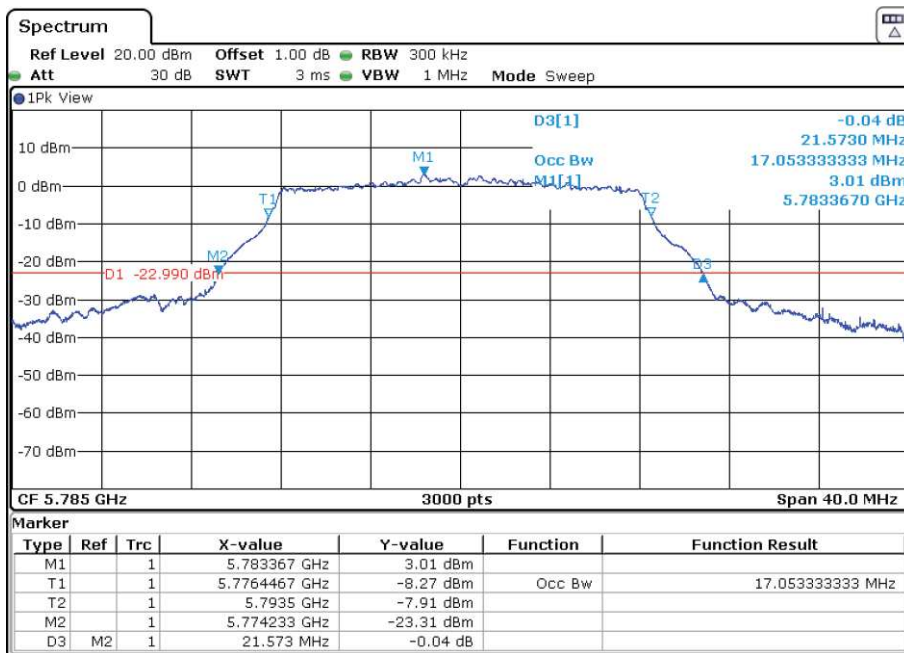
- Low Channel 149 (5745 MHz):



- Middle Channel 157 (5785 MHz):



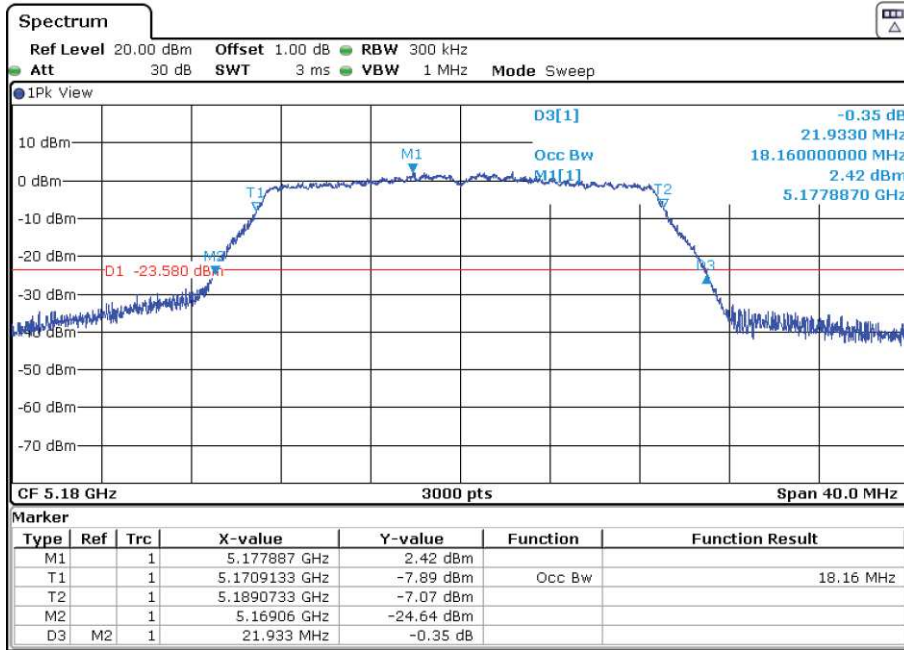
- High Channel 165 (5825 MHz):



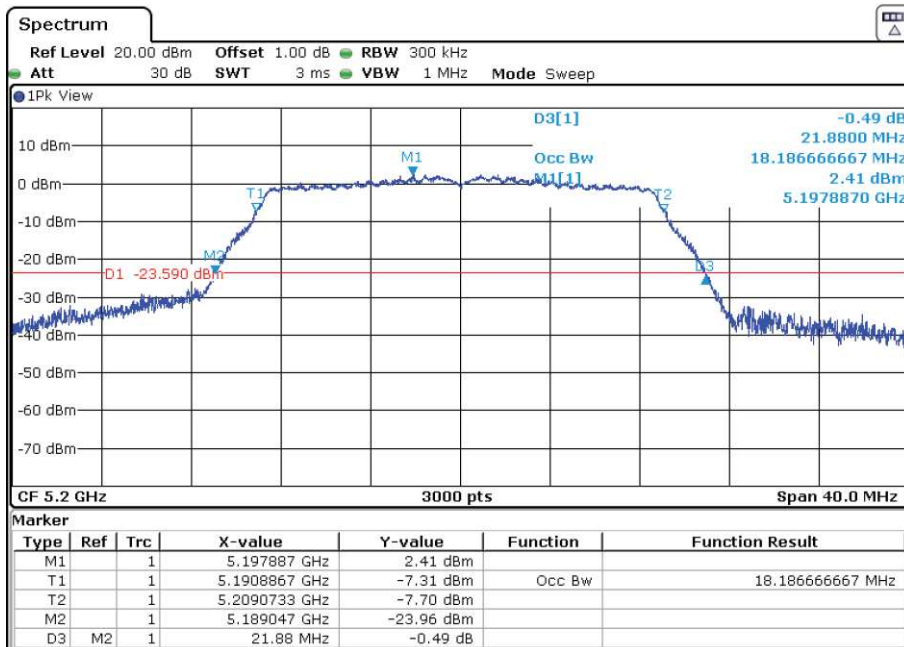
Mode 802.11 n20 HT20:

U-NII-1 (5150-5250 MHz)

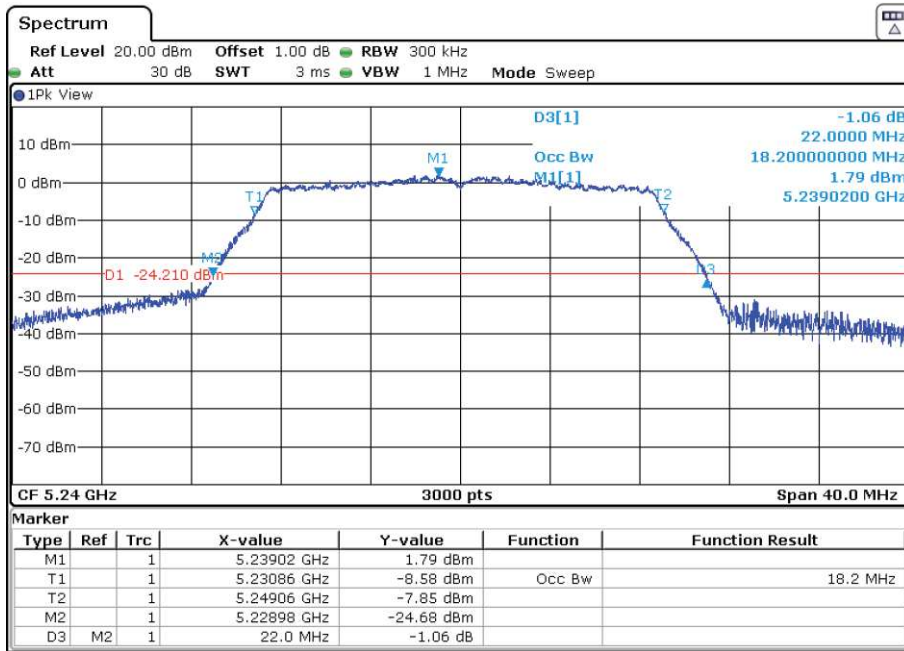
- Low Channel 36 (5180 MHz):



- Middle Channel 40 (5200 MHz):

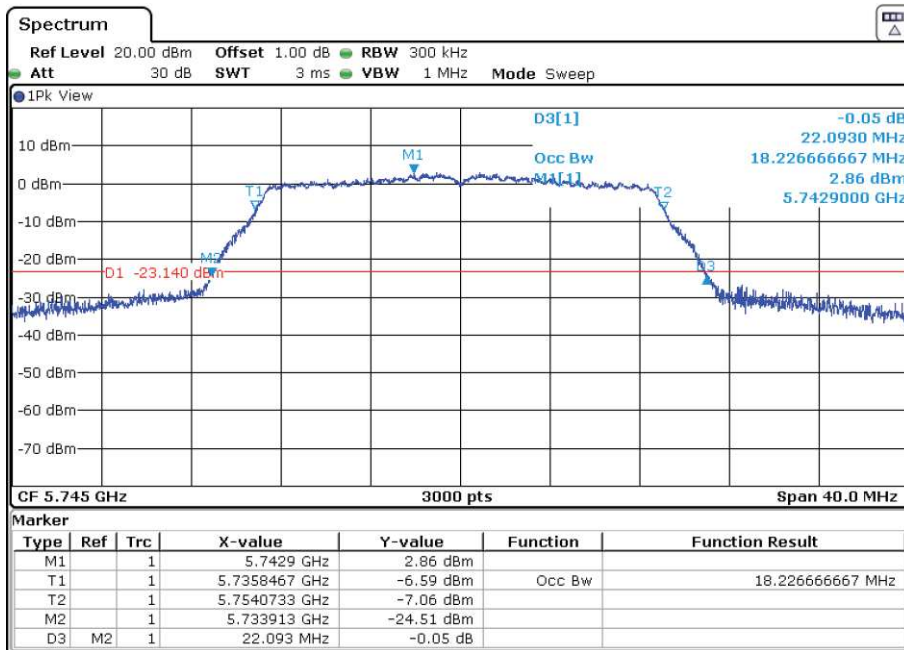


- High Channel 48 (5240 MHz):

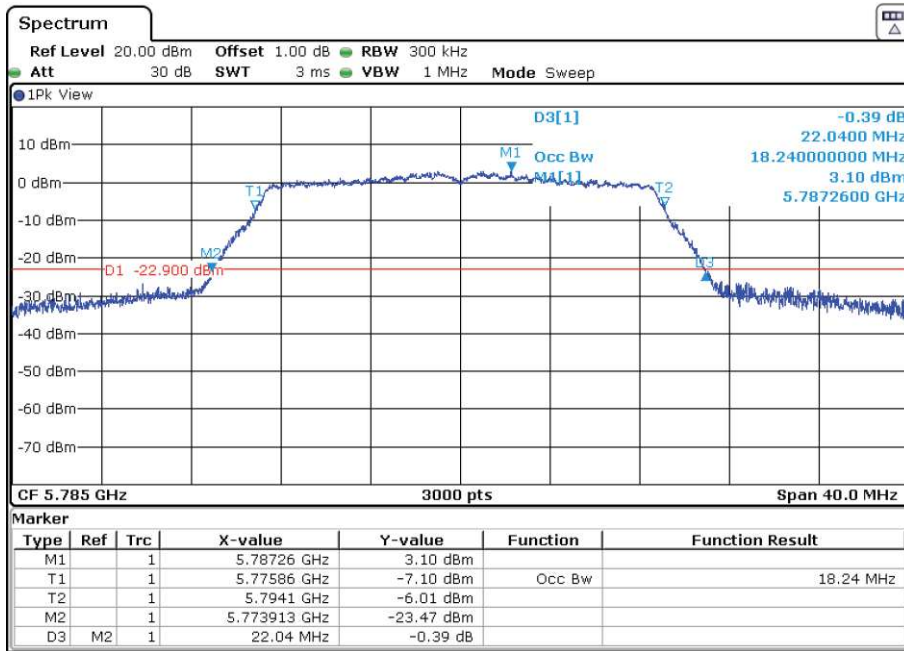


U-NII-3 (5725-5850 MHz)

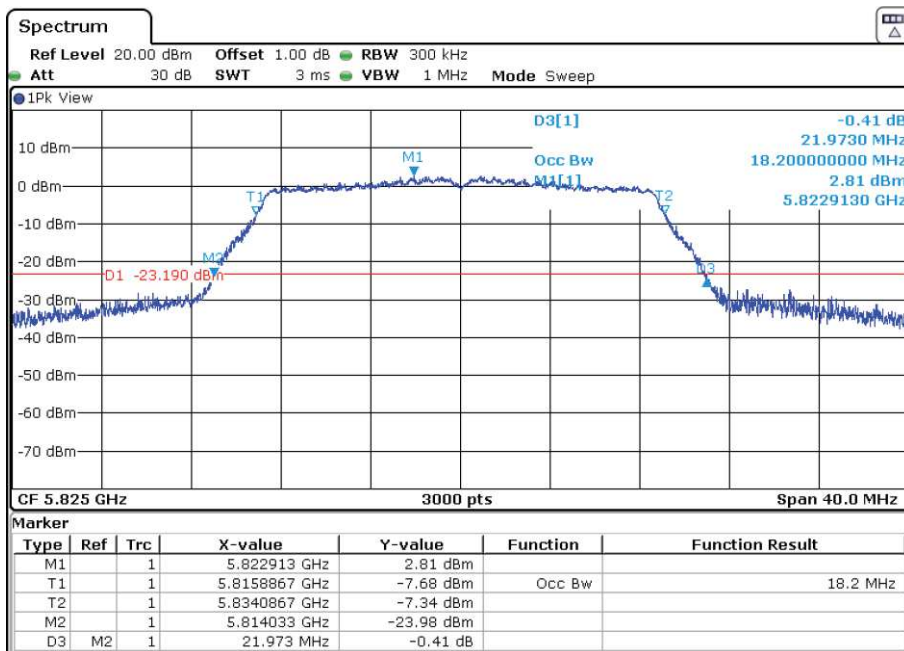
- Low Channel 149 (5745 MHz):



- Middle Channel 157 (5785 MHz):



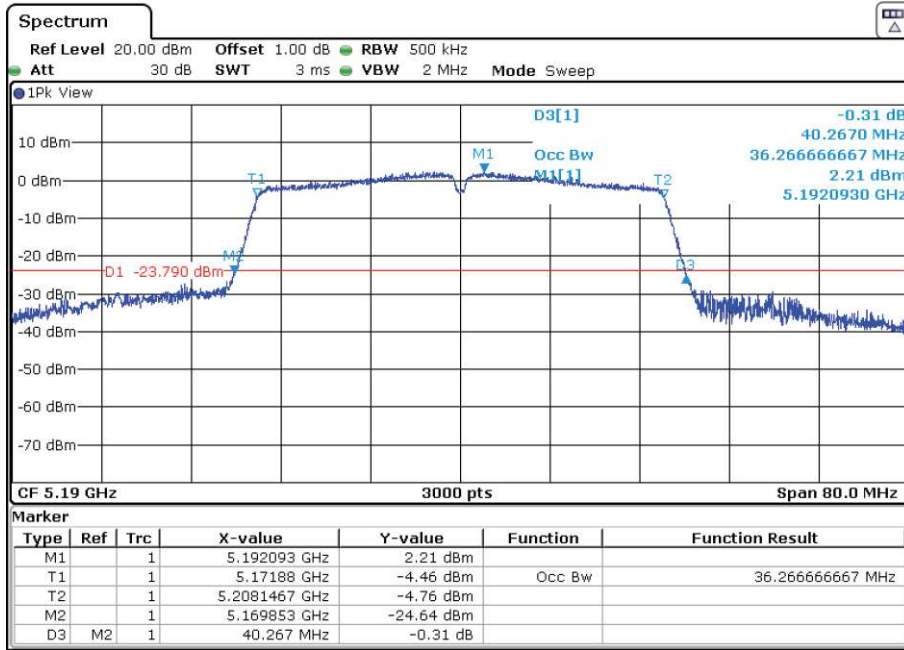
- High Channel 165 (5825 MHz):



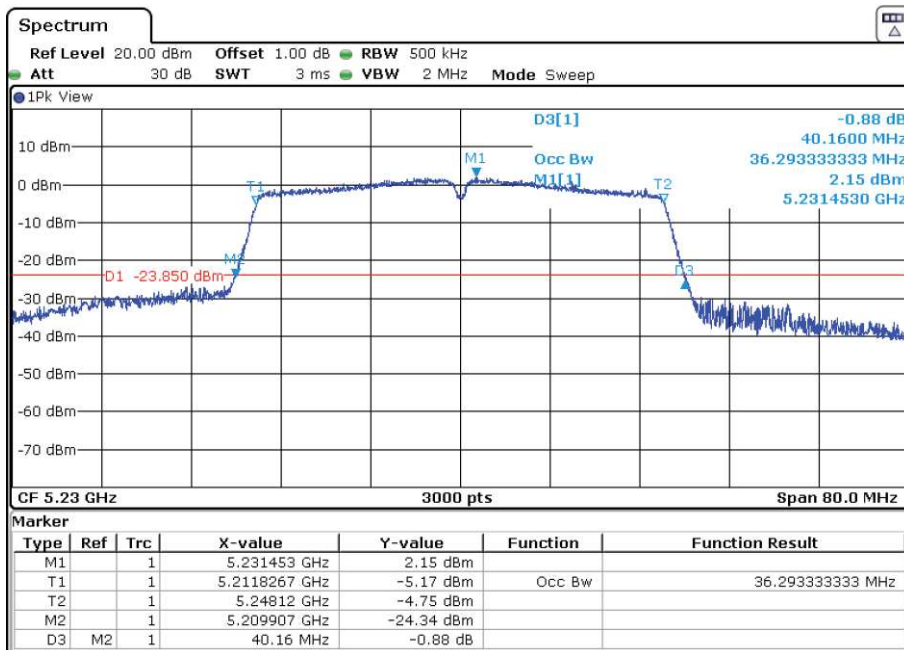
Mode 802.11 n40 (HT40):

U-NII-1 (5150-5250 MHz)

- Low Channel 38 (5190 MHz):



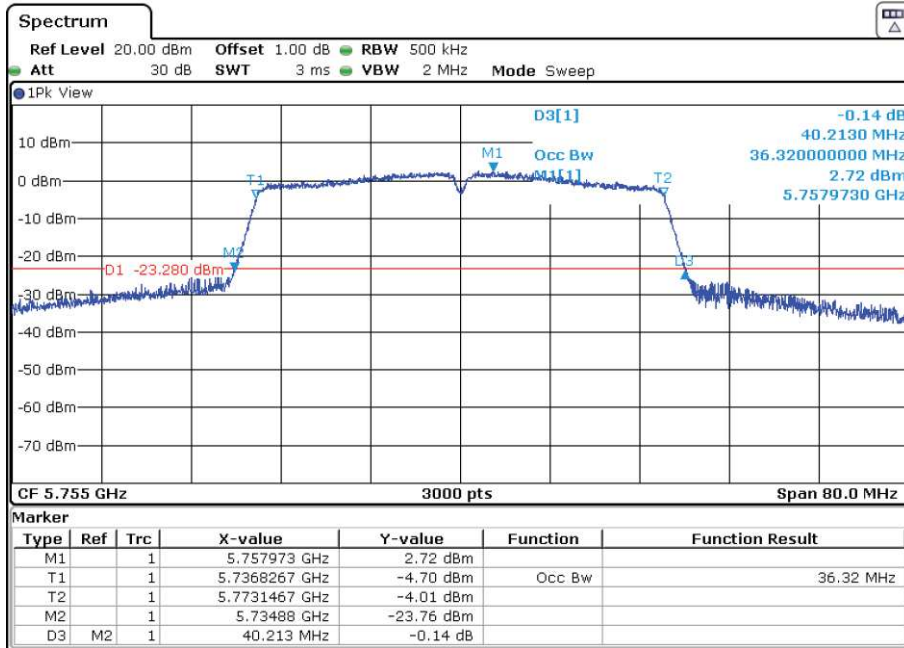
- High Channel 46 (5230 MHz):



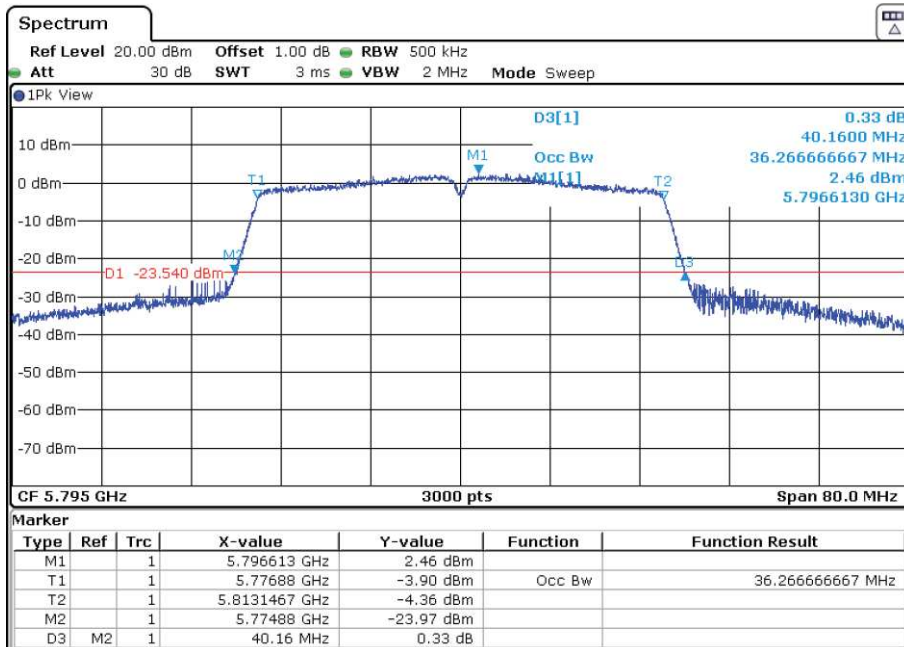
Mode 802.11 ac40 (VHT40):

U-NII-3 (5725-5850 MHz)

- Low Channel 151 (5755 MHz):



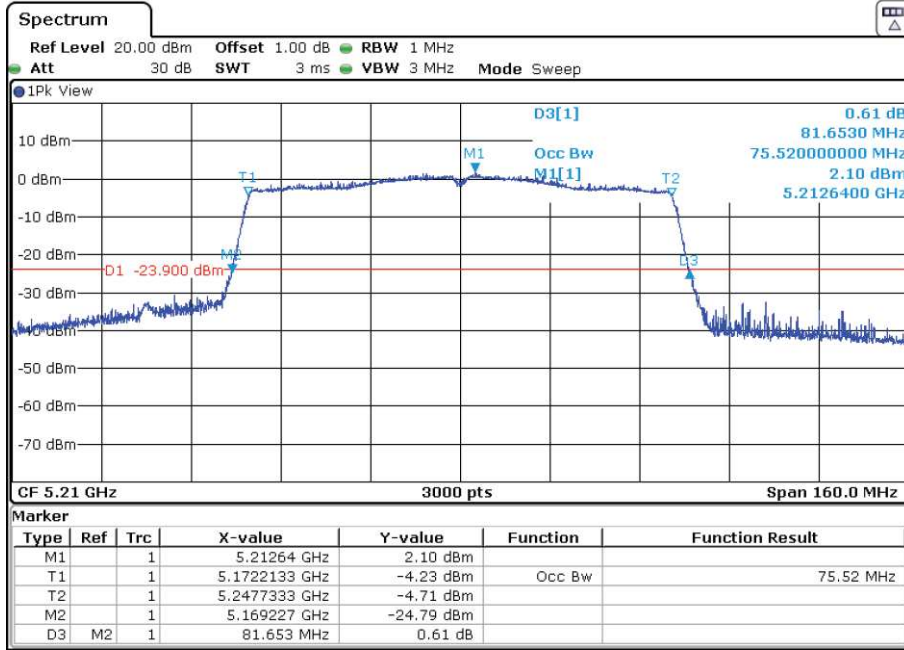
- High Channel 159 (5795 MHz):



Mode 802.11 ac80 (VHT80):

U-NII-1 (5150-5250 MHz)

- Single Channel 42 (5210 MHz):



U-NII-3 (5725-5850 MHz)

- Single Channel 155 (5775 MHz):

