



# **CERTIFICATION TEST REPORT**

**Report Number. :** 11836945-E4V2

**Applicant :** Google LLC.  
1600 Amphitheatre Parkway  
Mountain View, CA 94043 U.S.A.

**Model :** H0B

**FCC ID :** A4R-H0B

**EUT Description :** Multimedia Device

**Test Standard(s) :** FCC 47 CFR PART 15 SUBPART E

**Date Of Issue:**  
October 25, 2017

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## REPORT REVISION HISTORY

| Rev. | Issue Date | Revisions                    | Revised By |
|------|------------|------------------------------|------------|
| V1   | 10/23/17   | Initial Issue                | ---        |
| V2   | 10/25/17   | Updated Sections 2, 5.5, 8.1 | C. Susa    |

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## 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** Google LLC.  
1600 Amphitheatre Parkway  
Mountain View, CA 94043 U.S.A.

**EUT DESCRIPTION:** Multimedia Device

**MODEL:** H0B

**SERIAL NUMBER:** 7904M2Z2N8(radiated), 7904M2Z2N6(radiated),  
7904M2Z154(conducted)

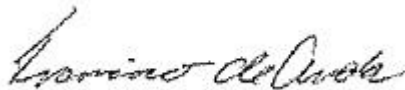
**DATE TESTED:** September 11<sup>th</sup>, 2017 - October 10<sup>th</sup>, 2017

| APPLICABLE STANDARDS     |              |
|--------------------------|--------------|
| STANDARD                 | TEST RESULTS |
| CFR 47 Part 15 Subpart E | Pass         |

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Verification Services Inc. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

**Note:** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of the U.S. government.

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UL Verification Services Inc.

## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, FCC 14-30, FCC KDB 662911 D01 v02r01, FCC KDB 905462 D02 v02/D03 v01r02/D06 v02, FCC KDB 789033 D02 v01r04, FCC KDB 644545 D03 v01, ANSI C63.10-2013, FCC 06-96, FCC KDB 905462 D02 and D03, RSS-GEN Issue 4, and RSS-247 Issue 2.

## 3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, Fremont, California, USA. Line conducted emissions are measured only at the 47173 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

| 47173 Benicia Street                          | 47266 Benicia Street                          |
|-----------------------------------------------|-----------------------------------------------|
| <input checked="" type="checkbox"/> Chamber A | <input checked="" type="checkbox"/> Chamber D |
| <input type="checkbox"/> Chamber B            | <input checked="" type="checkbox"/> Chamber E |
| <input type="checkbox"/> Chamber C            | <input checked="" type="checkbox"/> Chamber F |
|                                               | <input type="checkbox"/> Chamber G            |
|                                               | <input type="checkbox"/> Chamber H            |

The above test sites and facilities are covered under FCC Test Firm Registration # 208313. Chambers A through C are covered under Industry Canada company address code 2324B with site numbers 2324B -1 through 2324B-3, respectively. Chambers D through H are covered under Industry Canada company address code 22541 with site numbers 22541 -1 through 22541-5, respectively.

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <http://ts.nist.gov/standards/scopes/2000650.htm>.

## 4. CALIBRATION AND UNCERTAINTY

### 4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

### 4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

$$\begin{aligned} \text{Field Strength (dBuV/m)} &= \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \\ &\text{Cable Loss (dB)} - \text{Preamplifier Gain (dB)} \\ 36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} &= 28.9 \text{ dBuV/m} \end{aligned}$$

### 4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

| PARAMETER                                | UNCERTAINTY |
|------------------------------------------|-------------|
| Conducted Disturbance, 0.15 to 30 MHz    | 3.84 dB     |
| Conducted Disturbance, 0.15 to 30 MHz    | 3.65 dB     |
| Radiated Disturbance, 9KHz to 30 MHz     | 3.15 dB     |
| Radiated Disturbance, 30 to 1000 MHz     | 5.36 dB     |
| Radiated Disturbance, 1000 to 18000 MHz  | 4.32 dB     |
| Radiated Disturbance, 18000 to 26000 MHz | 4.45 dB     |
| Radiated Disturbance, 26000 to 40000 MHz | 5.24 dB     |

Uncertainty figures are valid to a confidence level of 95%.

## 5. EQUIPMENT UNDER TEST

### 5.1. DESCRIPTION OF EUT

The EUT is a multimedia device

### 5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

#### 5.2 GHz BAND

| Frequency Range (MHz) | Mode           | Output Power (dBm) | Output Power (mW) |
|-----------------------|----------------|--------------------|-------------------|
| <b>1Tx</b>            |                |                    |                   |
| 5180 - 5240           | 802.11a        | 21.50              | 141.25            |
| 5180 - 5240           | 802.11n HT20   | 21.54              | 142.56            |
| 5190 - 5230           | 802.11n HT40   | 21.75              | 149.62            |
| 5210                  | 802.11ac VHT80 | 15.60              | 36.31             |
| <b>2Tx</b>            |                |                    |                   |
| 5180 - 5240           | 802.11n HT20   | 19.28              | 84.72             |
| 5190 - 5230           | 802.11n HT40   | 21.51              | 141.58            |
| 5210                  | 802.11ac VHT80 | 15.62              | 36.48             |

#### 5.3 GHz BAND

| Frequency Range (MHz) | Mode           | Output Power (dBm) | Output Power (mW) |
|-----------------------|----------------|--------------------|-------------------|
| <b>1Tx</b>            |                |                    |                   |
| 5260 - 5320           | 802.11a        | 21.34              | 136.14            |
| 5260 - 5320           | 802.11n HT20   | 21.83              | 152.41            |
| 5270 - 5310           | 802.11n HT40   | 22.10              | 162.18            |
| 5290                  | 802.11ac VHT80 | 15.95              | 39.36             |
| <b>2Tx</b>            |                |                    |                   |
| 5260 - 5320           | 802.11n HT20   | 19.33              | 85.70             |
| 5270 - 5310           | 802.11n HT40   | 20.12              | 102.80            |
| 5290                  | 802.11ac VHT80 | 16.29              | 42.56             |

### 5.6 GHz BAND

| Frequency Range (MHz) | Mode           | Output Power (dBm) | Output Power (mW) |
|-----------------------|----------------|--------------------|-------------------|
| <b>1Tx</b>            |                |                    |                   |
| 5500 - 5700           | 802.11a        | 21.16              | 130.62            |
| 5500 - 5700           | 802.11n HT20   | 21.64              | 145.88            |
| 5510 - 5670           | 802.11n HT40   | 23.17              | 207.49            |
| 5530 - 5610           | 802.11ac VHT80 | 21.45              | 139.64            |
| <b>2Tx</b>            |                |                    |                   |
| 5500 - 5700           | 802.11n HT20   | 19.06              | 80.54             |
| 5510 - 5670           | 802.11n HT40   | 22.01              | 158.85            |
| 5530 - 5610           | 802.11ac VHT80 | 23.16              | 207.01            |

### 5.8 GHz BAND

| Frequency Range (MHz) | Mode           | Output Power (dBm) | Output Power (mW) |
|-----------------------|----------------|--------------------|-------------------|
| <b>1Tx</b>            |                |                    |                   |
| 5745 - 5825           | 802.11a        | 22.85              | 192.75            |
| 5745 - 5825           | 802.11n HT20   | 22.94              | 196.79            |
| 5755 - 5795           | 802.11n HT40   | 23.50              | 223.87            |
| 5775                  | 802.11ac VHT80 | 21.71              | 148.25            |
| <b>2Tx</b>            |                |                    |                   |
| 5745 - 5825           | 802.11n HT20   | 25.83              | 382.82            |
| 5755 - 5795           | 802.11n HT40   | 26.30              | 426.58            |
| 5775                  | 802.11ac VHT80 | 24.58              | 287.08            |

## **STRADDLE CHANNELS**

| Frequency Range (MHz)                                | Mode           | Output Power (dBm) | Output Power (mW) |
|------------------------------------------------------|----------------|--------------------|-------------------|
| <b>1Tx (Channels overlapping UNII-2C and UNII-3)</b> |                |                    |                   |
| 5720 (Whole Fundamental)                             | 802.11a        | 21.93              | 156.10            |
| 5720 (Whole Fundamental)                             | 802.11n HT20   | 22.10              | 162.04            |
| 5710 (Whole Fundamental)                             | 802.11n HT40   | 23.95              | 248.23            |
| 5690 (Whole Fundamental)                             | 802.11ac VHT80 | 22.41              | 174.34            |
| <b>2Tx (Channels overlapping UNII-2C and UNII-3)</b> |                |                    |                   |
| 5720 (Whole Fundamental)                             | 802.11n HT20   | 18.94              | 78.27             |
| 5710 (Whole Fundamental)                             | 802.11n HT40   | 23.07              | 202.60            |
| 5690 (Whole Fundamental)                             | 802.11ac VHT80 | 24.13              | 258.89            |

Note: Straddle channels full power is calculated.

## **5.3. DESCRIPTION OF AVAILABLE ANTENNAS**

| Frequency Band (GHz) | Antenna Gain (dBi) |         |
|----------------------|--------------------|---------|
|                      | Chain 0            | Chain 1 |
| 5.2                  | 4.80               | 4.90    |
| 5.3                  | 5.00               | 4.90    |
| 5.6                  | 5.50               | 4.20    |
| 5.8                  | 5.50               | 4.20    |

Note: Chain 0 → Antenna 1 and Chain1 → Antenna 2

## **5.4. SOFTWARE AND FIRMWARE**

The EUT firmware installed during testing was v1.29.99992

The test utility software used during testing was QRCT v3.0.264.0.

## **5.5. WORST-CASE CONFIGURATION AND MODE**

Radiated emissions below 1GHz, above 18GHz, and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

Band edge and radiated emissions between 1GHz and 18GHz were performed with the EUT set to transmit at the highest power on low, middle and high channels.

The fundamental of the EUT was investigated in two orientations Y and Z, it was determined that Z orientation was worst-case orientation. X orientation was not investigated due to the AC and I/O ports in the back of the EUT. Therefore, all final radiated testing was performed with the EUT in Z orientation.

All measurements were performed with the AC plugged into a power source.

Worst-case data rates as provided by the client were:

802.11a mode: 6 Mbps  
802.11n HT20 mode: MCS0  
802.11n HT40 mode: MCS0  
802.11ac VHT80 mode: MCS0

802.11ac VHT20 and VHT40 mode are different from 802.11nHT20 and HT40 only in control messages and have the same power settings.

For simultaneous transmission of multiple channels from the same antenna in the 2.4GHz and 5GHz bands, tests were conducted for various configurations having the highest power. No noticeable new emission was found.

## 5.6. DESCRIPTION OF TEST SETUP

### SUPPORT EQUIPMENT

| Support Equipment List |              |            |                |
|------------------------|--------------|------------|----------------|
| Description            | Manufacturer | Model      | Serial Number  |
| AC Adapter             | HP           | HSTNN-LA40 | WDUV0B3U8HK1Y  |
| Laptop                 | HP           | 11-d001ax  | 5CD51643JG     |
| USB Ethernet Adapter   | Linksys      | USB3GIG    | 15710S05701719 |
| USB Hub                | CGC          | 27402      | NSN            |

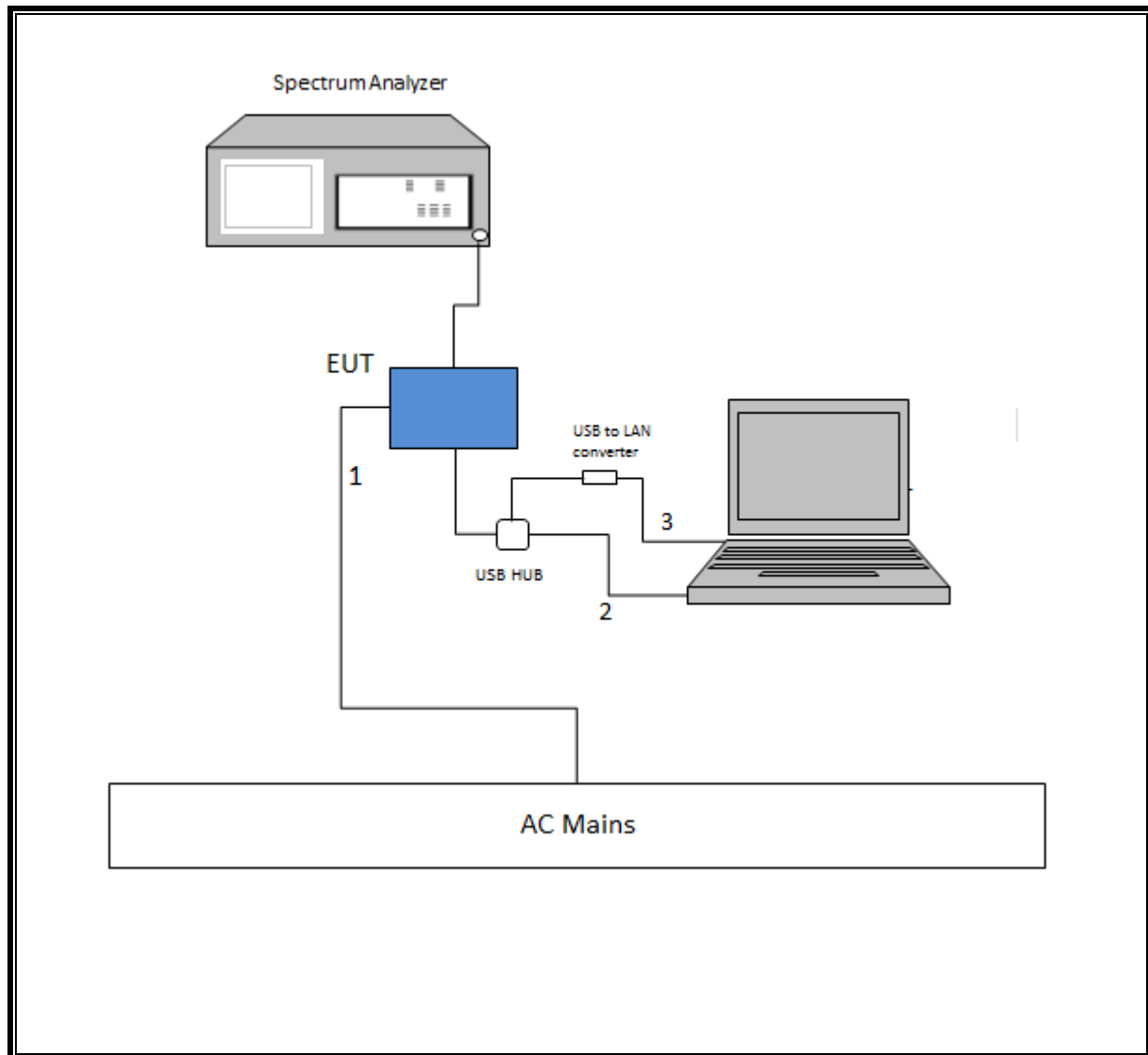
### I/O CABLES

| I/O Cable List |          |                      |                |            |                  |                  |
|----------------|----------|----------------------|----------------|------------|------------------|------------------|
| Cable No       | Port     | # of identical ports | Connector Type | Cable Type | Cable Length (m) | Remarks          |
| 1              | AC       | 1                    | 2-Prong        | unshielded | 2                |                  |
| 2              | USB      | 1                    | USB            | unshielded | 2.5              | USB serial cable |
| 3              | Ethernet | 1                    | RJ45           | unshielded | 1                |                  |

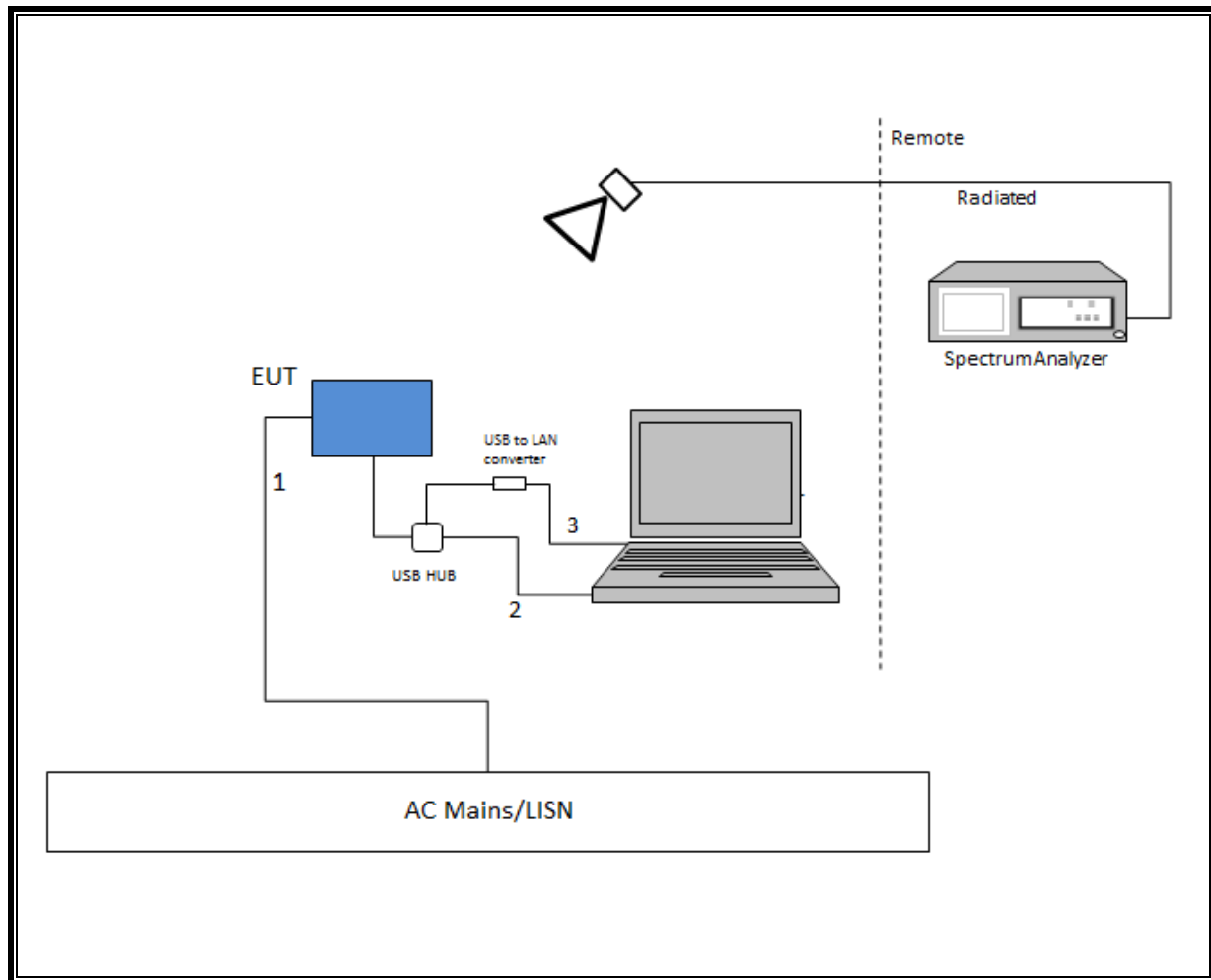
### TEST SETUP

The EUT is connected to a test laptop. Test software exercises the radio.

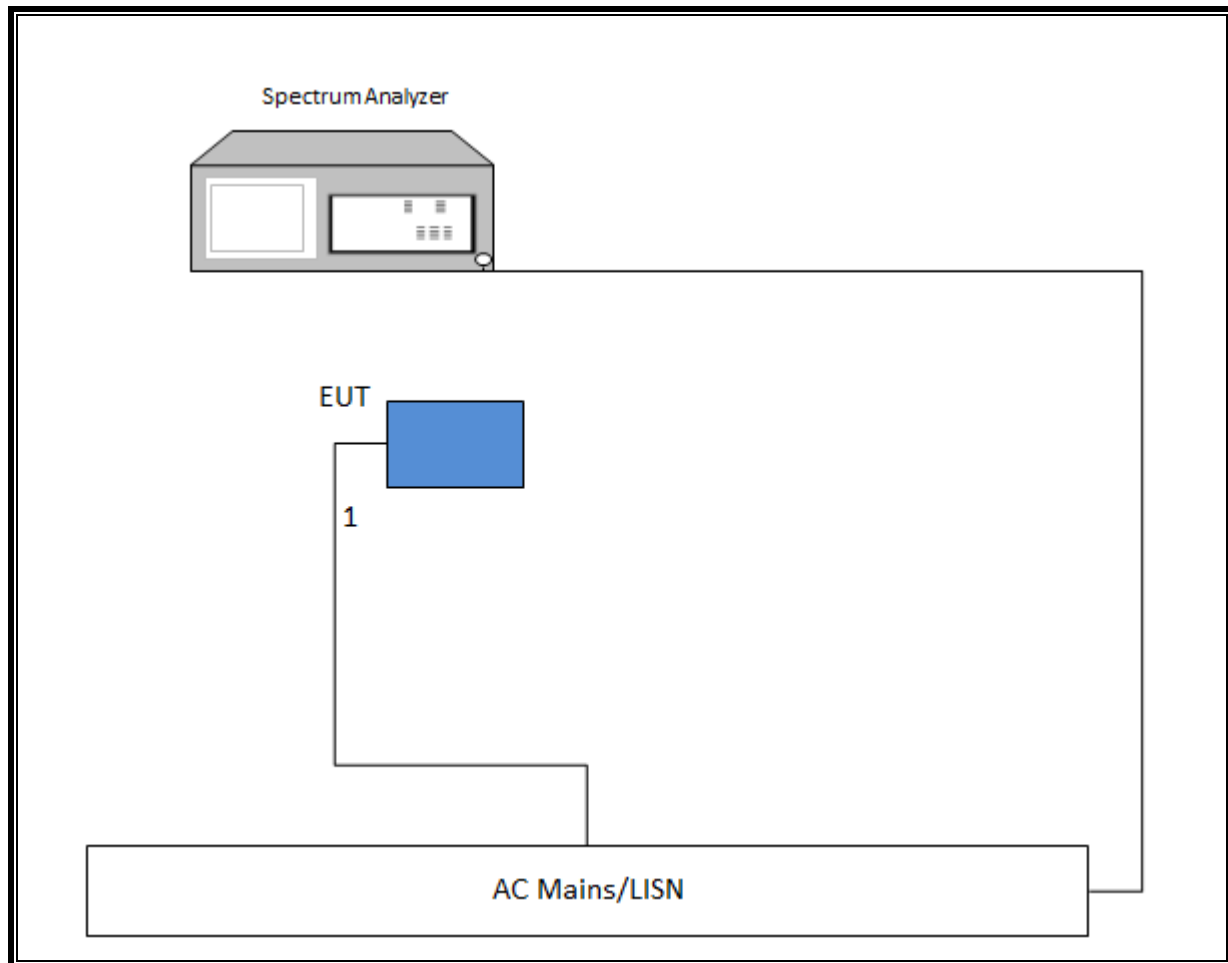
**SETUP DIAGRAM FOR CONDUCTED TESTS**



**SETUP DIAGRAM FOR RADIATED TESTS**



**SETUP DIAGRAM FOR LINE CONDUCTED TEST**



## 6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

| Description                     | Manufacturer                  | Model                   | ID Num | Cal Due  | Last Cal |
|---------------------------------|-------------------------------|-------------------------|--------|----------|----------|
| Antenna, Horn 1-18GHz           | ETS-Lindgren                  | 3117                    | T862   | 06/09/18 | 06/09/17 |
| RF Amplifier, 1-18GHz           | MITEQ                         | AFS42-00101800-25-S-42  | T1165  | 06/24/18 | 06/26/17 |
| RF Amplifier, 1-8GHz            | MITEQ                         | AMF-4D-01000800-30-29P  | T1573  | 06/24/18 | 06/26/17 |
| Spectrum Analyzer               | Keysight                      | N9030A                  | T1466  | 04/11/18 | 04/11/17 |
| Low Pass Filter 5GHz            | Micro-Tronics                 | LPS17541                | T481   | 06/24/18 | 06/24/17 |
| High Pass Filter 6GHz           | Micro-Tronics                 | HPS17542                | T484   | 06/24/18 | 06/24/17 |
| Antenna, Horn 1-18GHz           | ETS-Lindgren                  | 3117                    | T346   | 03/28/18 | 03/28/17 |
| RF Amplifier, 1-18GHz           | MITEQ                         | AFS42-00101800-25-S-42  | T1131  | 06/29/18 | 06/29/17 |
| RF Amplifier, 1-8GHz            | MITEQ                         | AMF-4D-01000800-30-29P  | T1169  | 06/29/18 | 06/29/17 |
| Spectrum Analyzer               | Keysight                      | N9030A                  | T906   | 02/14/18 | 02/14/17 |
| Low Pass Filter 5GHz            | Micro-Tronics                 | LPS17541                | T420   | 06/29/18 | 06/29/17 |
| High Pass Filter 6GHz           | Micro-Tronics                 | HPS17542                | T424   | 06/29/18 | 06/29/17 |
| Antenna, Horn 1-18GHz           | ETS-Lindgren                  | 3117                    | T119   | 03/28/18 | 03/28/18 |
| RF Amplifier, 1-18GHz           | MITEQ                         | AFS42-00101800-25-S-42  | T742   | 01/25/18 | 01/25/17 |
| Spectrum Analyzer               | Keysight                      | N9030A                  | T1113  | 12/20/17 | 12/20/16 |
| Low Pass Filter 5GHz            | Micro-Tronics                 | LPS17541                | T421   | 01/25/18 | 01/25/17 |
| High Pass Filter 6GHz           | Micro-Tronics                 | HPS17542                | T425   | 01/25/18 | 01/25/17 |
| High Pass Filter 3GHz           | Micro-Tronics                 | HPM17543                | T427   | 01/25/18 | 01/25/17 |
| Filter, BRF, 5150-5350MHz       | Micro-Tronics                 | BRC50703                | T1518  | 12/13/17 | 12/13/16 |
| Antenna, Biconolog, 30MHz-1 GHz | Sunol Sciences                | JB1                     | T243   | 10/11/17 | 10/11/16 |
| Rf Preamplifier, 10kHz – 1GHz   | Sonoma                        | 310N                    | T286   | 06/02/18 | 06/02/17 |
| Spectrum Analyzer               | Keysight                      | N9030A                  | T340   | 12/14/17 | 12/14/18 |
| Spectrum Analyzer               | Keysight                      | N9030A                  | T1210  | 07/17/18 | 07/17/17 |
| Power Meter                     | Keysight                      | N1911A                  | T229   | 08/14/18 | 08/14/17 |
| Power Sensor                    | Keysight                      | N1921A                  | T1225  | 03/29/18 | 03/29/17 |
| EMI Receiver                    | Rohde & Schwarz               | ESR                     | T1436  | 01/06/18 | 01/06/17 |
| LISN                            | Fischer Custom Communications | FCC-LISN-50/250-25-2-01 | T1310  | 06/15/18 | 06/15/17 |
| Antenna Horn, 18-26GHz          | ARA                           | MWH-1826                | T89    | 01/04/18 | 01/04/17 |
| Antenna Horn, 26-40GHz          | ARA                           | MWH-2640                | T90    | 08/25/18 | 08/25/17 |
| RF Preamplifier, 1-26GHz        | Agilent                       | 8449B                   | T404   | 07/23/18 | 07/23/17 |
| RF Preamplifier, 26-40GHz       | Miteq                         | TTA2640-35-HG           | T1864  | 09/21/18 | 09/21/17 |
| Spectrum Analyzer               | Keysight                      | N9030A                  | T1454  | 12/15/18 | 12/15/17 |

| Test Software List           |              |        |                       |
|------------------------------|--------------|--------|-----------------------|
| Description                  | Manufacturer | Model  | Version               |
| Radiated Software            | UL           | UL EMC | Ver 9.5, Dec 01, 2016 |
| Conducted Emissions Software | UL           | UL EMC | Ver 9.5, May 26, 2015 |

## 7. MEASUREMENT METHOD

On Time and Duty Cycle: KDB 789033 D02 v01r04, Section B

6 dB BW: KDB 789033 D02 v01r04, Section C.2

26 dB Emission BW: KDB 789033 D02 v01r04, Section C.1

99% Occupied BW: KDB 789033 D02 v01r04, Section D.

Conducted Output Power: KDB 789033 D02 v01r04, Section E.3.b (Method PM-G) and KDB 789033 D02 v01r04, Section E.2.b (Method SA-1)

Power Spectral Density: KDB 789033 D02 v01r04, Section F

Unwanted emissions in restricted bands: KDB 789033 D02 v01r04, Sections G.3, G.4, G.5, and G.6.

Unwanted emissions in non-restricted bands: KDB 789033 D02 v01r04, Sections G.3, G.4, and G.5.

AC Power Line Conducted Emissions: ANSI C63.10-2013, Section 6.2.

## 8. ANTENNA PORT TEST RESULTS

### 8.1. ON TIME AND DUTY CYCLE

#### LIMITS

None; for reporting purposes only.

#### PROCEDURE

KDB 789033 Zero-Span Spectrum Analyzer Method.

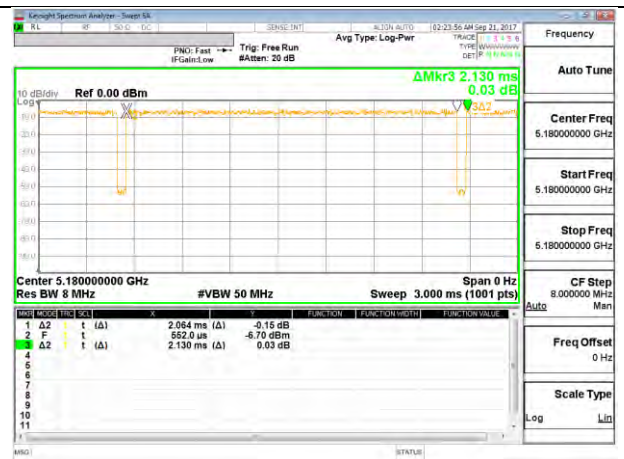
#### ON TIME AND DUTY CYCLE RESULTS

| Mode                   | ON Time<br>B<br>(msec) | Period<br>(msec) | Duty Cycle<br>x<br>(linear) | Duty<br>Cycle<br>(%) | Duty Cycle<br>Correction Factor<br>(dB) | 1/B<br>Minimum VBW<br>(kHz) |
|------------------------|------------------------|------------------|-----------------------------|----------------------|-----------------------------------------|-----------------------------|
| 802.11a Chain 0        | 2.064                  | 2.124            | 0.972                       | 97.18%               | 0.12                                    | 0.484                       |
| 802.11a Chain 1        | 2.064                  | 2.130            | 0.969                       | 96.90%               | 0.14                                    | 0.484                       |
| 802.11n HT20 Chain 0   | 5.002                  | 5.067            | 0.987                       | 98.72%               | 0.00                                    | 0.010                       |
| 802.11n HT20 Chain 1   | 5.000                  | 5.074            | 0.985                       | 98.54%               | 0.00                                    | 0.010                       |
| 802.11n HT20 2Tx CDD   | 4.987                  | 5.070            | 0.984                       | 98.36%               | 0.00                                    | 0.010                       |
| 802.11n HT40 Chain 0   | 2.388                  | 2.484            | 0.961                       | 96.14%               | 0.17                                    | 0.419                       |
| 802.11n HT40 Chain 1   | 2.420                  | 2.489            | 0.972                       | 97.23%               | 0.12                                    | 0.413                       |
| 802.11n HT40 2Tx CDD   | 2.420                  | 2.499            | 0.968                       | 96.84%               | 0.14                                    | 0.413                       |
| 802.11ac VHT80 Chain 0 | 1.144                  | 1.208            | 0.947                       | 94.70%               | 0.24                                    | 0.874                       |
| 802.11ac VHT80 Chain 1 | 1.131                  | 1.199            | 0.943                       | 94.33%               | 0.25                                    | 0.884                       |
| 802.11ac VHT80 2Tx CDD | 1.1490                 | 1.2140           | 0.946                       | 94.65%               | 0.24                                    | 0.870                       |

## DUTY CYCLE PLOTS



802.11a C0 MODE



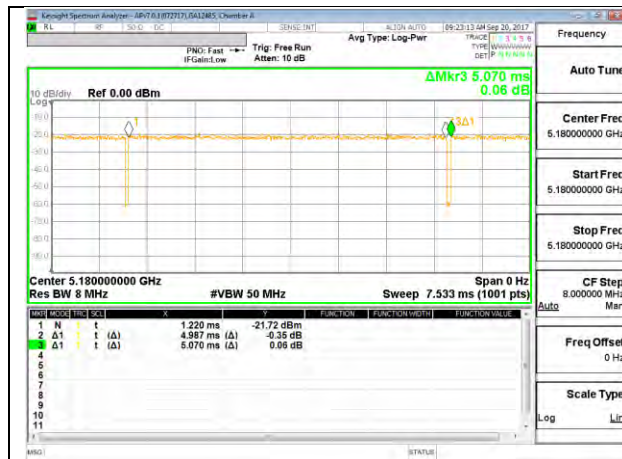
802.11a C1 MODE



802.11n HT20 C0 MODE



802.11n HT20 C1 MODE



802.11n HT20 2Tx CDD MODE



802.11n HT40 C0 MODE



802.11n HT40 C1 MODE



802.11n HT40 2Tx CDD MODE



**802.11ac VHT80 C0 MODE**



**802.11ac VHT80 C1 MODE**



**802.11ac VHT80 2Tx CDD MODE**

## 8.2. 26 dB BANDWIDTH

### LIMITS

None; for reporting purposes only.

### RESULTS

#### 8.2.1. 802.11a MODE IN THE 5.2 GHz BAND

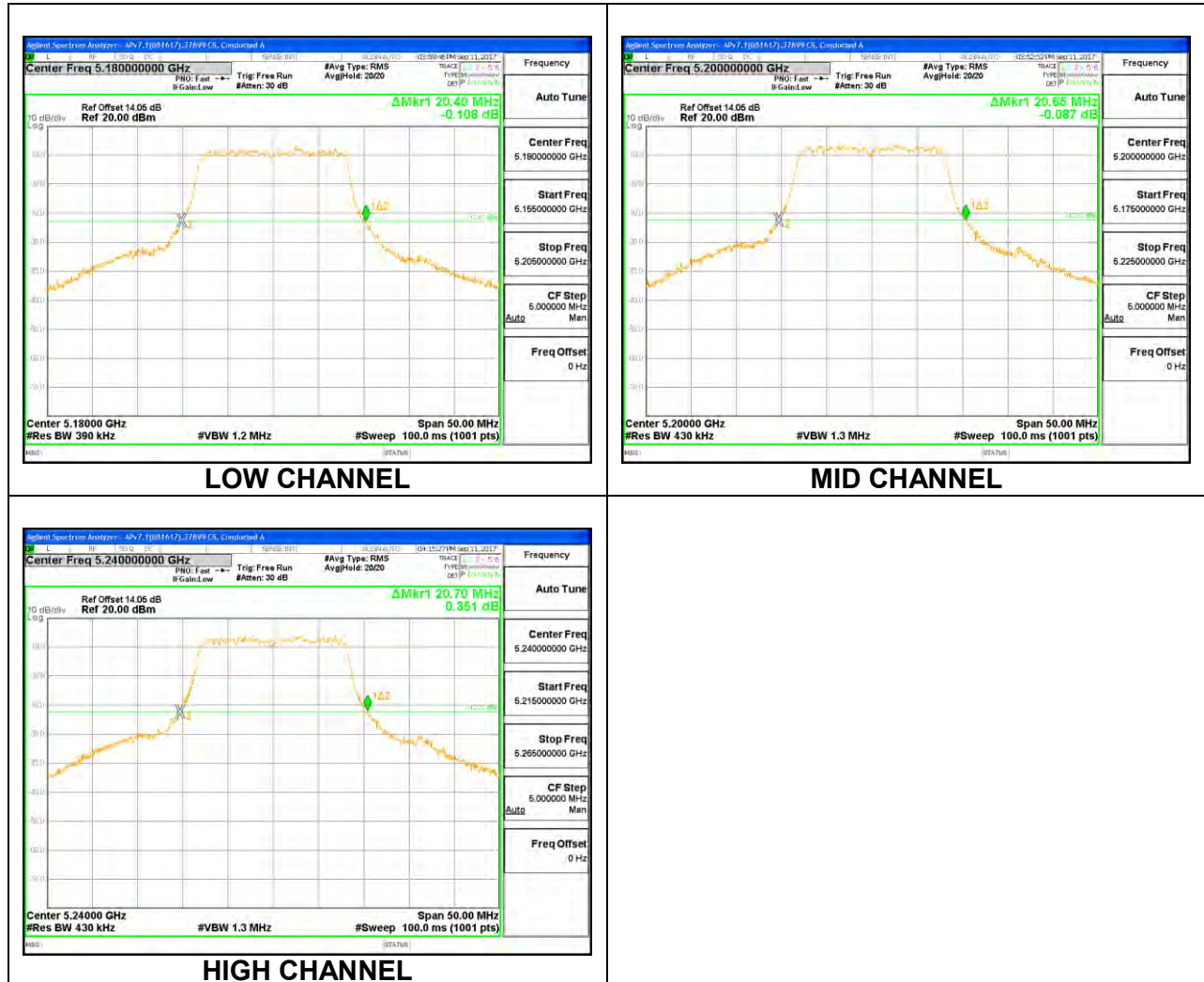
##### 1TX Chain 0

| Channel | Frequency<br>(MHz) | 26 dB Bandwidth<br>(MHz) |
|---------|--------------------|--------------------------|
| Low     | 5180               | 20.60                    |
| Mid     | 5200               | 20.55                    |
| High    | 5240               | 20.55                    |



# 1TX Chain 1

| Channel | Frequency | 26 dB Bandwidth |
|---------|-----------|-----------------|
|         | (MHz)     | (MHz)           |
| Low     | 5180      | 20.40           |
| Mid     | 5200      | 20.65           |
| High    | 5240      | 20.70           |



## 8.2.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

### 1TX Chain 0

| Channel | Frequency<br>(MHz) | 26 dB Bandwidth<br>(MHz) |
|---------|--------------------|--------------------------|
| Low     | 5180               | 21.30                    |
| Mid     | 5200               | 21.20                    |
| High    | 5240               | 21.20                    |



# 1TX Chain 1

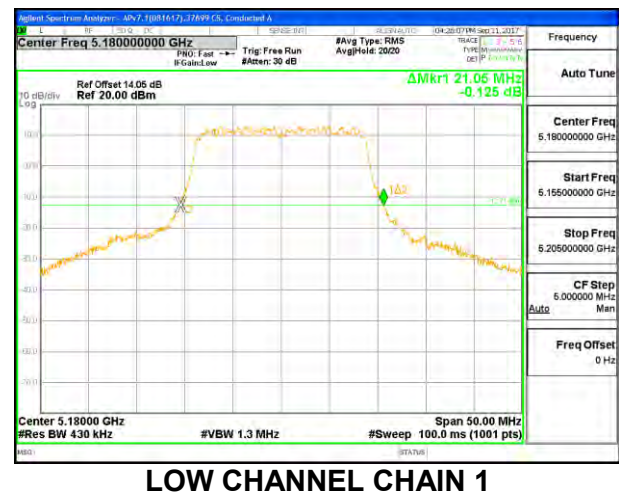
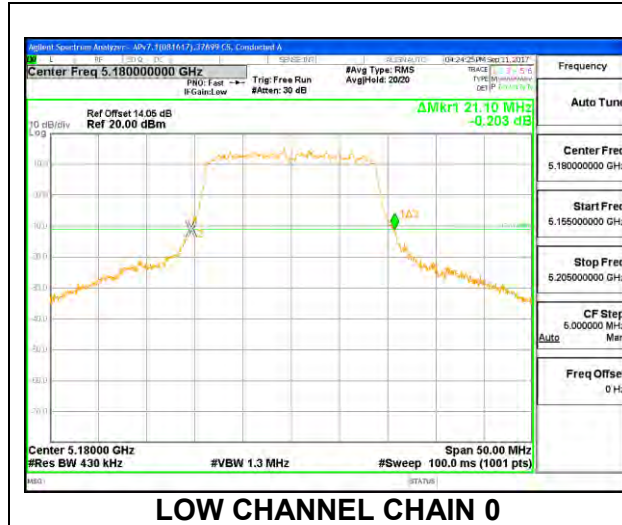
| Channel | Frequency | 26 dB Bandwidth |
|---------|-----------|-----------------|
|         | (MHz)     | (MHz)           |
| Low     | 5180      | 21.25           |
| Mid     | 5200      | 21.25           |
| High    | 5240      | 21.25           |



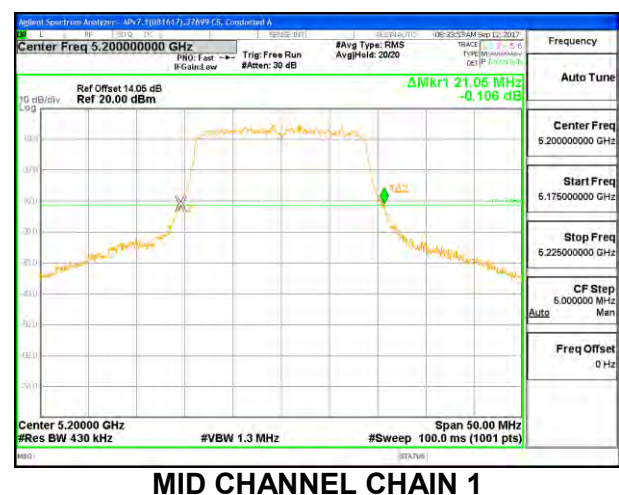
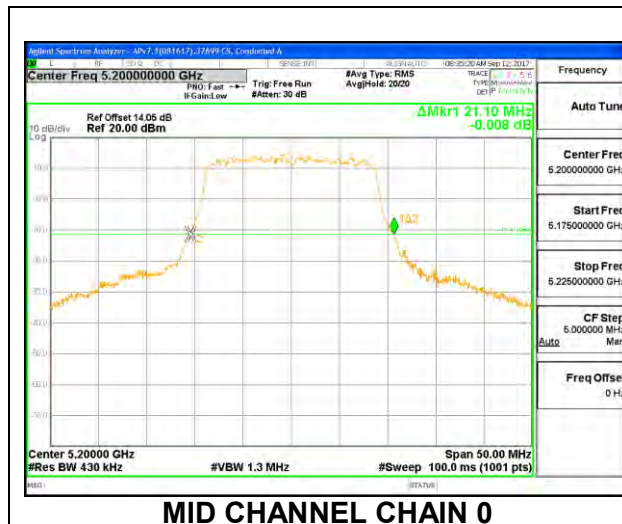
**2TX Chain 0 + Chain 1 CDD**

| Channel | Frequency<br>(MHz) | 26 dB Bandwidth<br>Chain 0<br>(MHz) | 26 dB Bandwidth<br>Chain 1<br>(MHz) |
|---------|--------------------|-------------------------------------|-------------------------------------|
| Low     | 5180               | 21.10                               | 21.05                               |
| Mid     | 5200               | 21.10                               | 21.05                               |
| High    | 5240               | 21.00                               | 21.35                               |

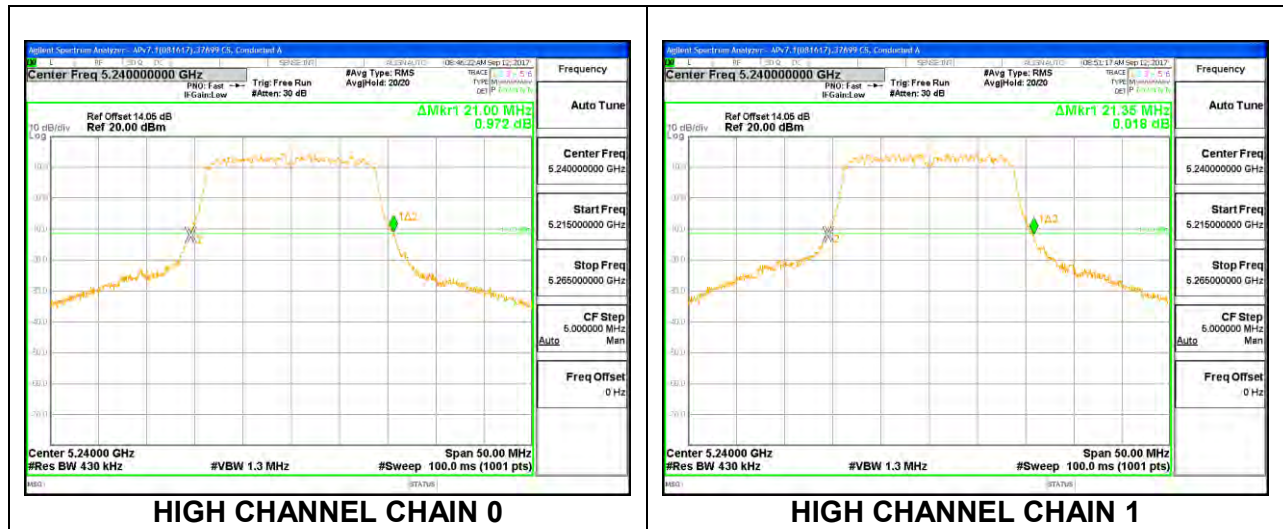
**LOW CHANNEL**



**MID CHANNEL**



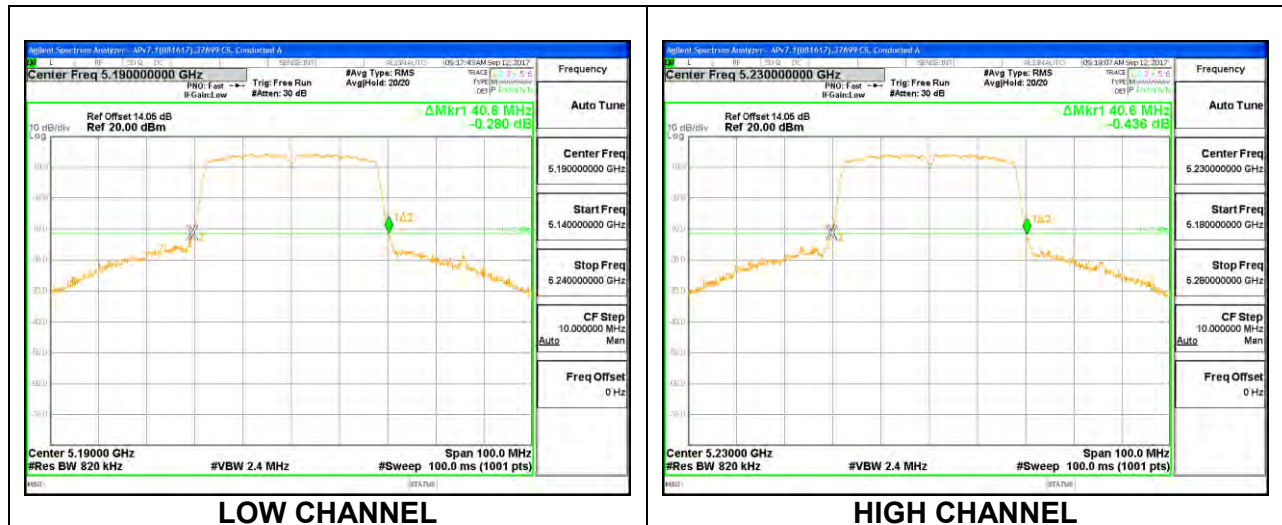
## HIGH CHANNEL



### 8.2.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

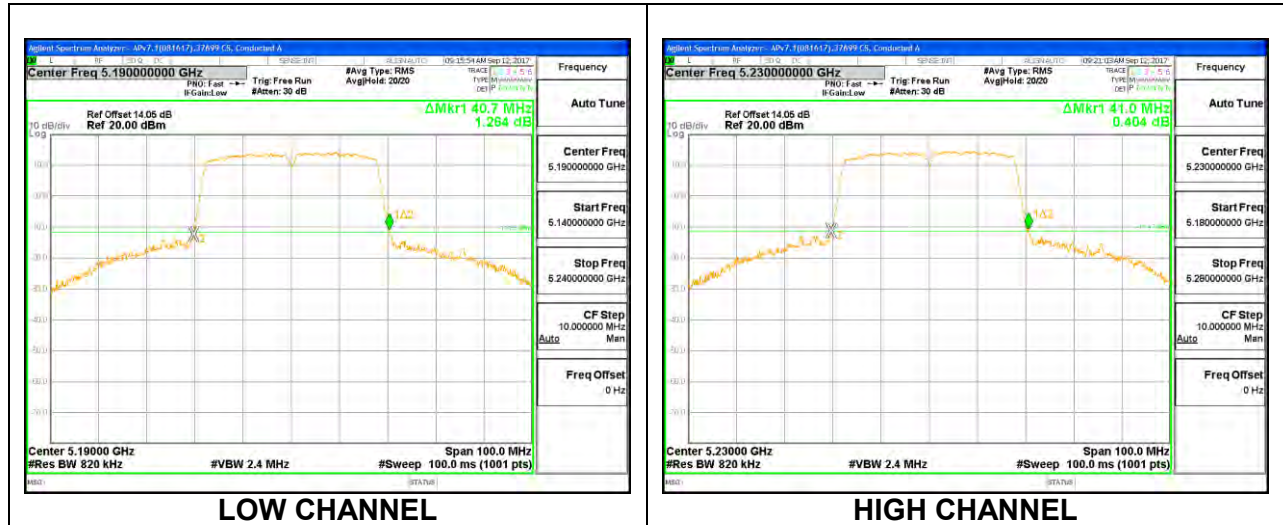
#### 1TX Chain 0

| Channel | Frequency | 26dB Bandwidth |
|---------|-----------|----------------|
|         | (MHz)     | (MHz)          |
| Low     | 5190      | 40.80          |
| High    | 5230      | 40.60          |



# 1TX Chain 1

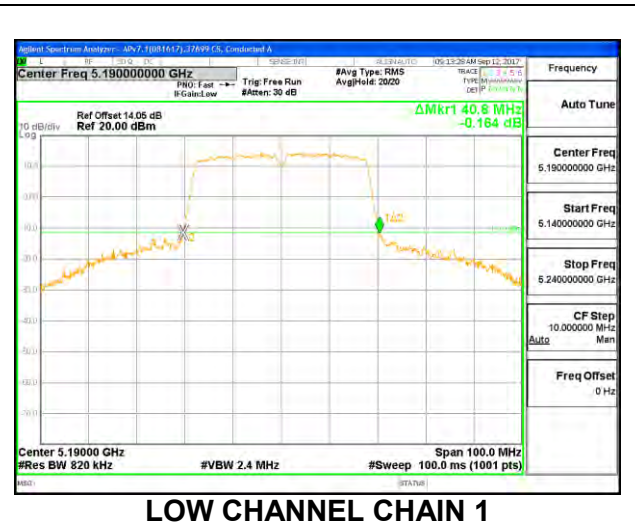
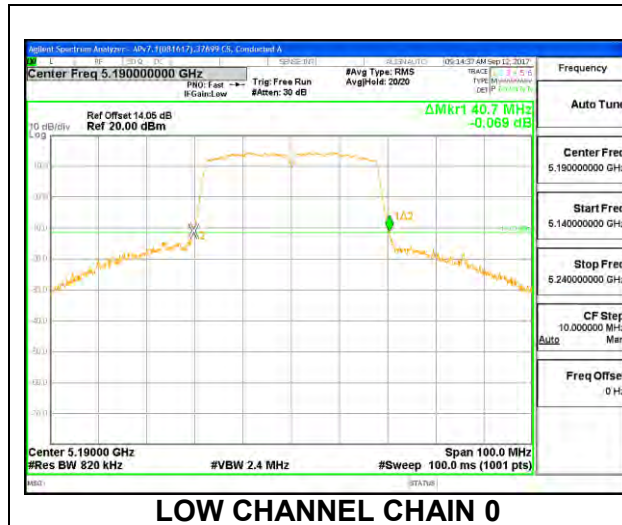
| Channel | Frequency | 26dB Bandwidth |
|---------|-----------|----------------|
|         | (MHz)     | (MHz)          |
| Low     | 5190      | 40.70          |
| High    | 5230      | 41.00          |



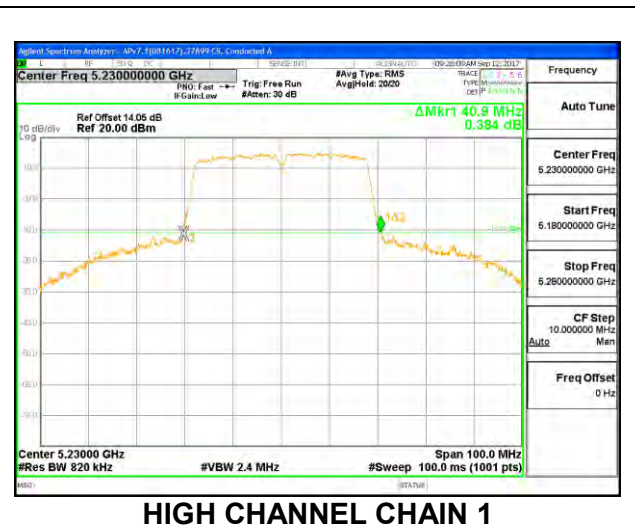
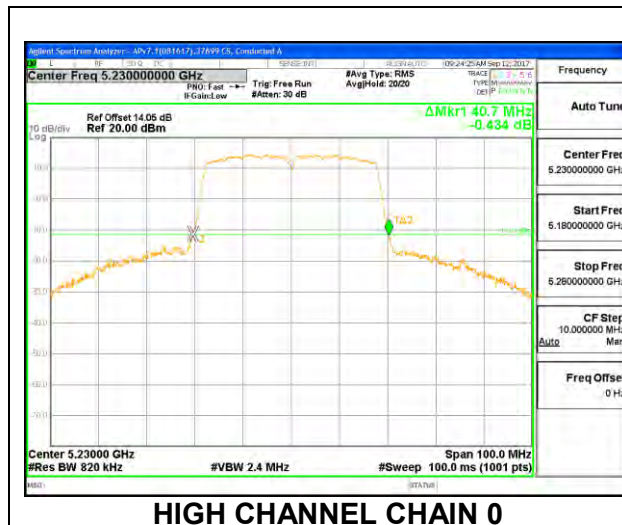
**2TX Chain 0 + Chain 1 CDD MODE**

| Channel | Frequency<br>(MHz) | 26 dB Bandwidth<br>Chain 0<br>(MHz) | 26 dB Bandwidth<br>Chain 1<br>(MHz) |
|---------|--------------------|-------------------------------------|-------------------------------------|
| Low     | 5190               | 40.70                               | 40.80                               |
| High    | 5230               | 40.70                               | 40.90                               |

**LOW CHANNEL**



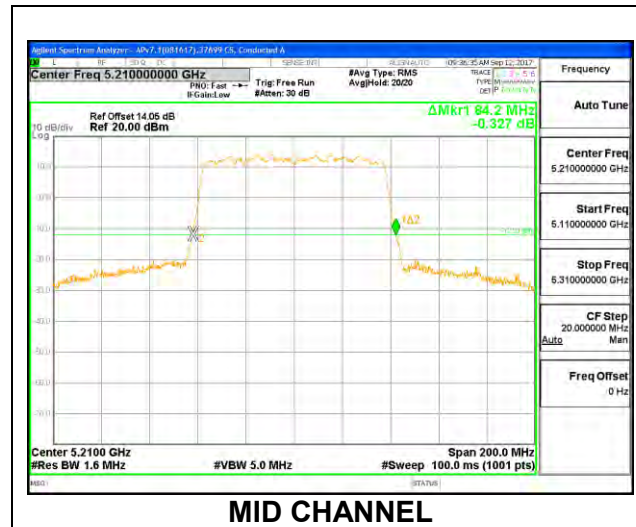
**HIGH CHANNEL**



## 8.2.4. 802.11ac VHT80 MODE IN THE 5.2 GHz BAND

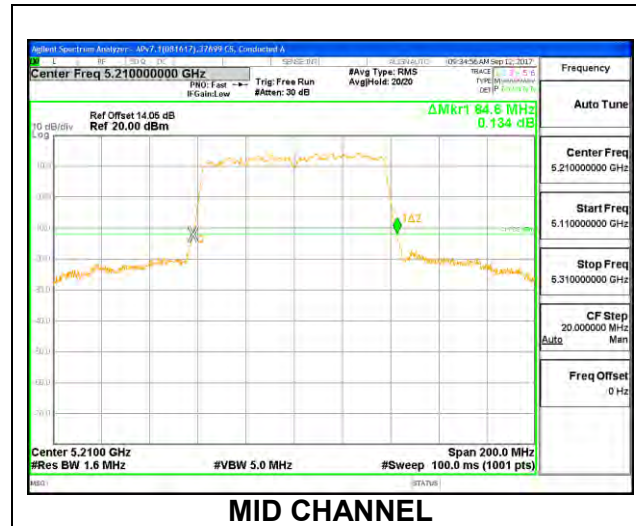
### 1TX Chain 0

| Channel | Frequency | 26 dB Bandwidth |
|---------|-----------|-----------------|
|         | (MHz)     | (MHz)           |
| Mid     | 5210      | 84.20           |



**1TX Chain 1**

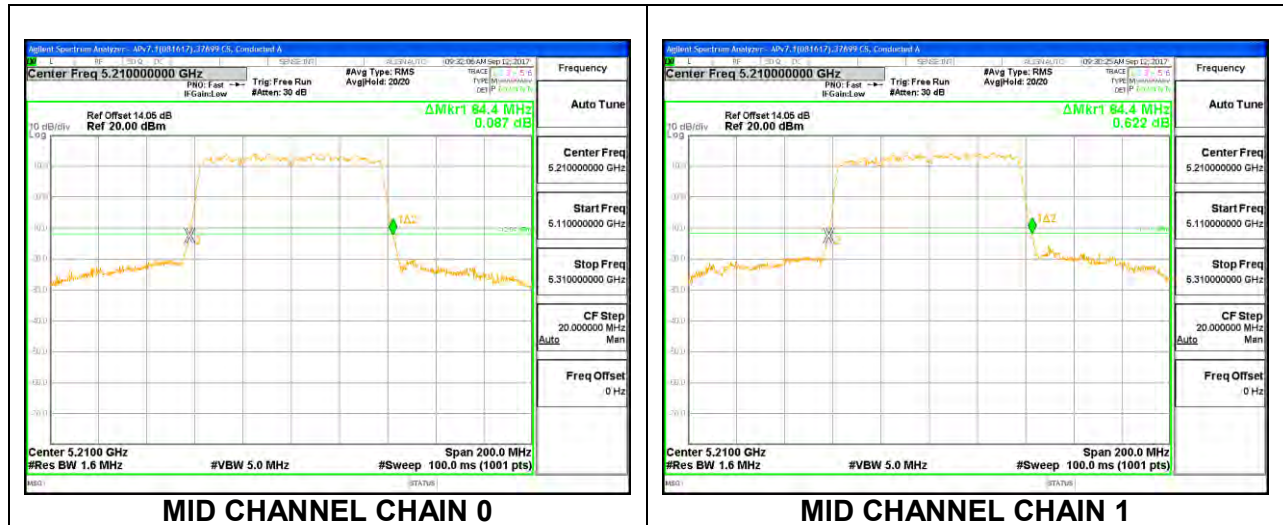
| Channel | Frequency | 26 dB Bandwidth |
|---------|-----------|-----------------|
|         | (MHz)     | (MHz)           |
| Mid     | 5210      | 84.60           |



**2TX Chain 0 + Chain 1 CDD MODE**

| Channel | Frequency | 26 dB Bandwidth<br>Chain 0<br>(MHz) | 26 dB Bandwidth<br>Chain 1<br>(MHz) |
|---------|-----------|-------------------------------------|-------------------------------------|
| Mid     | 5210      | 84.40                               | 84.40                               |

**MID CHANNEL**



## 8.2.5. 802.11a MODE IN THE 5.3 GHz BAND

### 1TX Chain 0

| Channel | Frequency<br>(MHz) | 26 dB Bandwidth<br>(MHz) |
|---------|--------------------|--------------------------|
| Low     | 5260               | 20.55                    |
| Mid     | 5300               | 20.55                    |
| High    | 5320               | 20.55                    |



# 1TX Chain 1

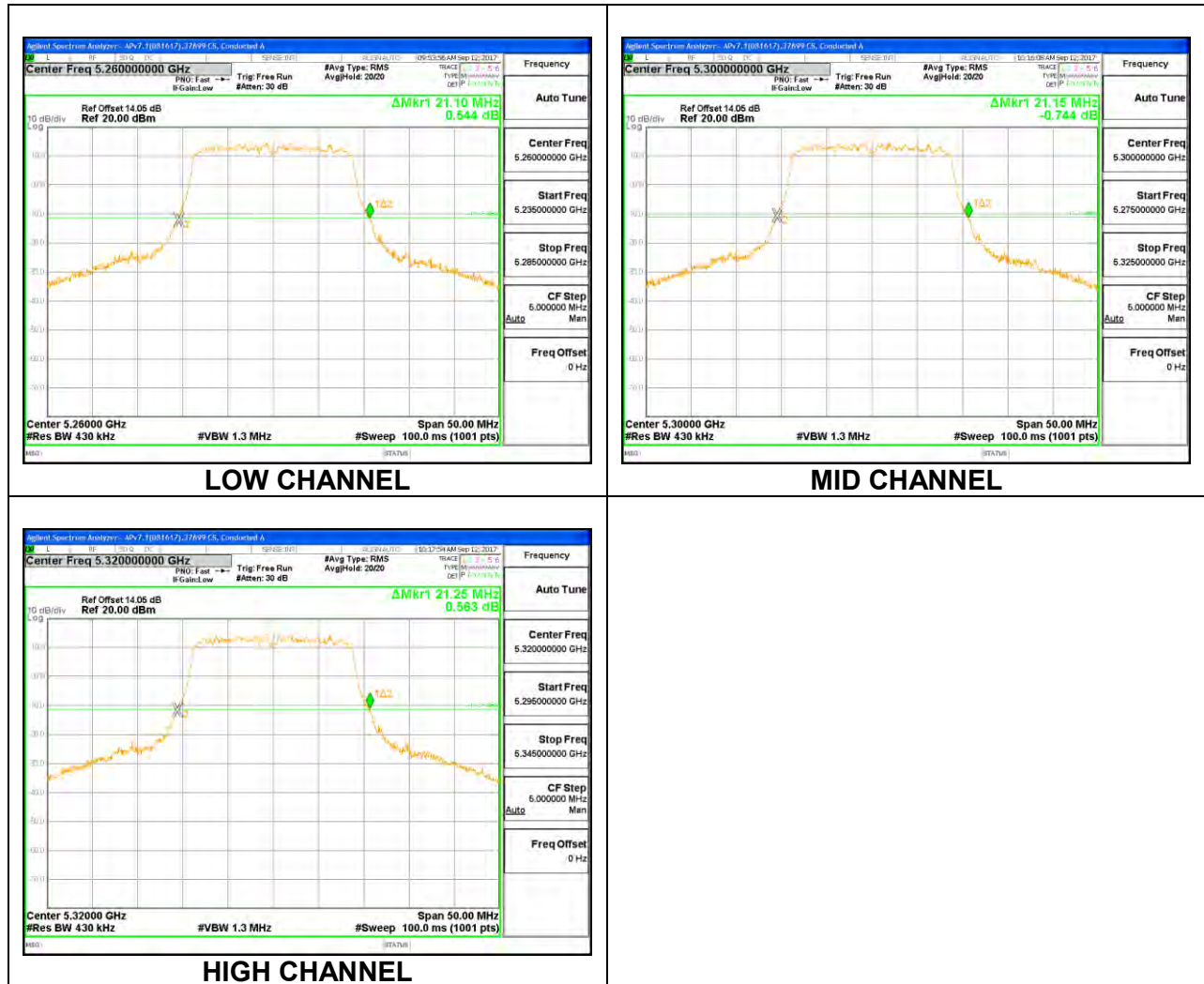
| Channel | Frequency | 26 dB Bandwidth |
|---------|-----------|-----------------|
|         | (MHz)     | (MHz)           |
| Low     | 5260      | 20.65           |
| Mid     | 5300      | 20.65           |
| High    | 5320      | 20.65           |



## 8.2.6. 802.11n HT20 MODE IN THE 5.3 GHz BAND

### 1TX Chain 0

| Channel | Frequency | 26 dB Bandwidth |
|---------|-----------|-----------------|
|         | (MHz)     | (MHz)           |
| Low     | 5260      | 21.10           |
| Mid     | 5300      | 21.15           |
| High    | 5320      | 21.25           |



# 1TX Chain 1

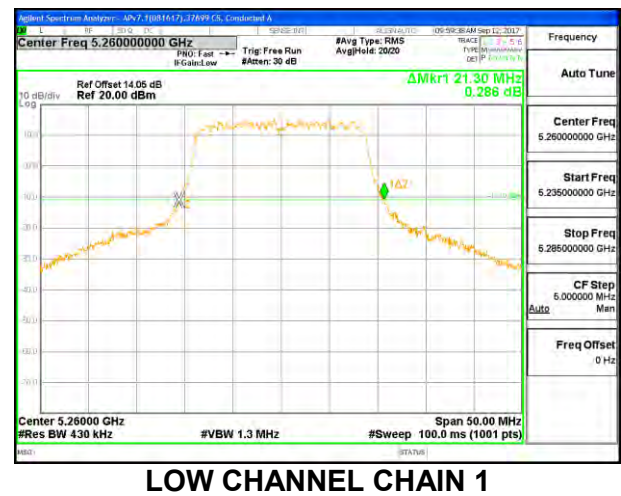
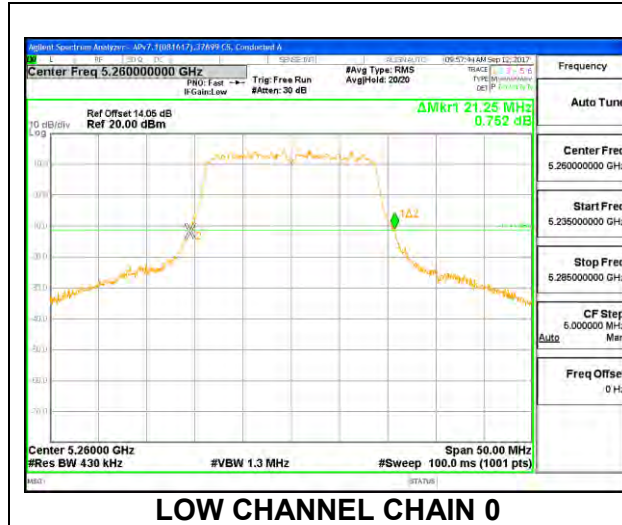
| Channel | Frequency | 26 dB Bandwidth |
|---------|-----------|-----------------|
|         | (MHz)     | (MHz)           |
| Low     | 5260      | 21.25           |
| Mid     | 5300      | 21.25           |
| High    | 5320      | 21.25           |



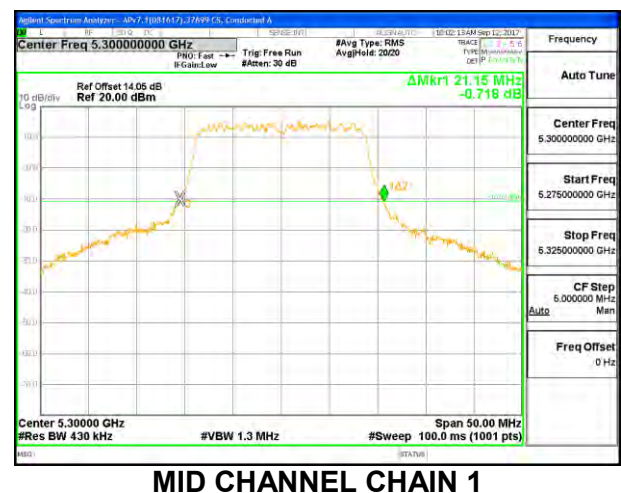
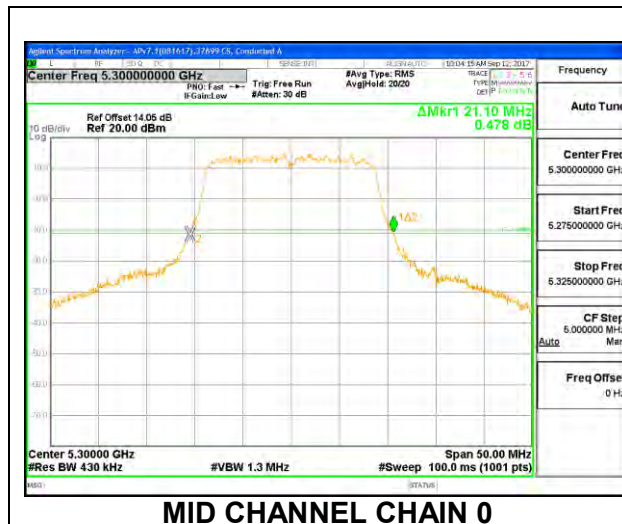
## 2TX Chain 0 + Chain 1 CDD MODE

| Channel | Frequency<br>(MHz) | 26 dB Bandwidth<br>Chain 0<br>(MHz) | 26 dB Bandwidth<br>Chain 1<br>(MHz) |
|---------|--------------------|-------------------------------------|-------------------------------------|
| Low     | 5260               | 21.25                               | 21.30                               |
| Mid     | 5300               | 21.10                               | 21.15                               |
| High    | 5320               | 21.20                               | 21.30                               |

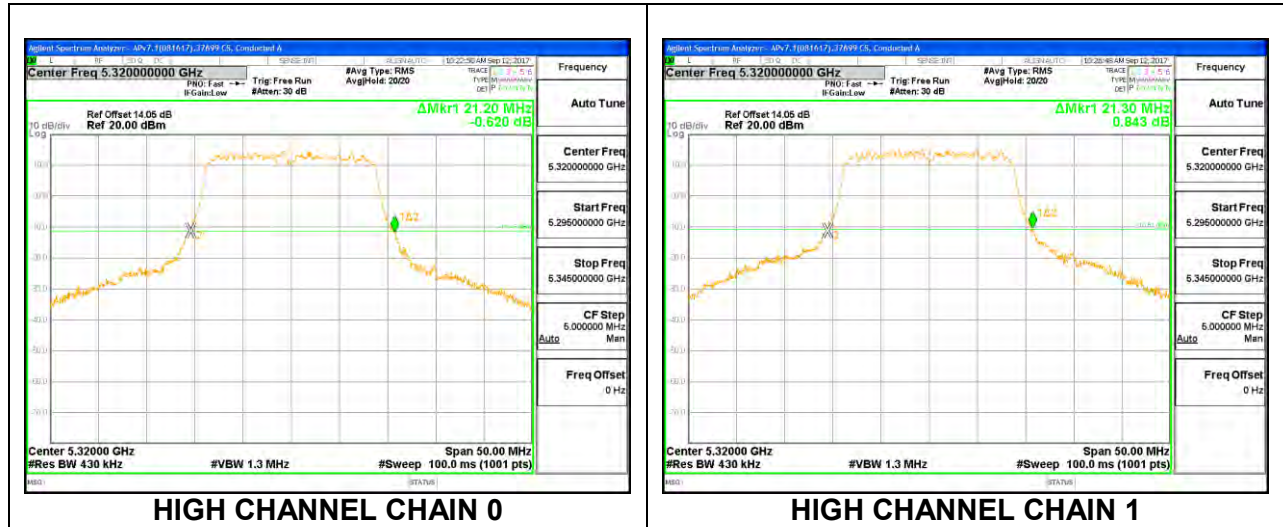
## LOW CHANNEL



## MID CHANNEL



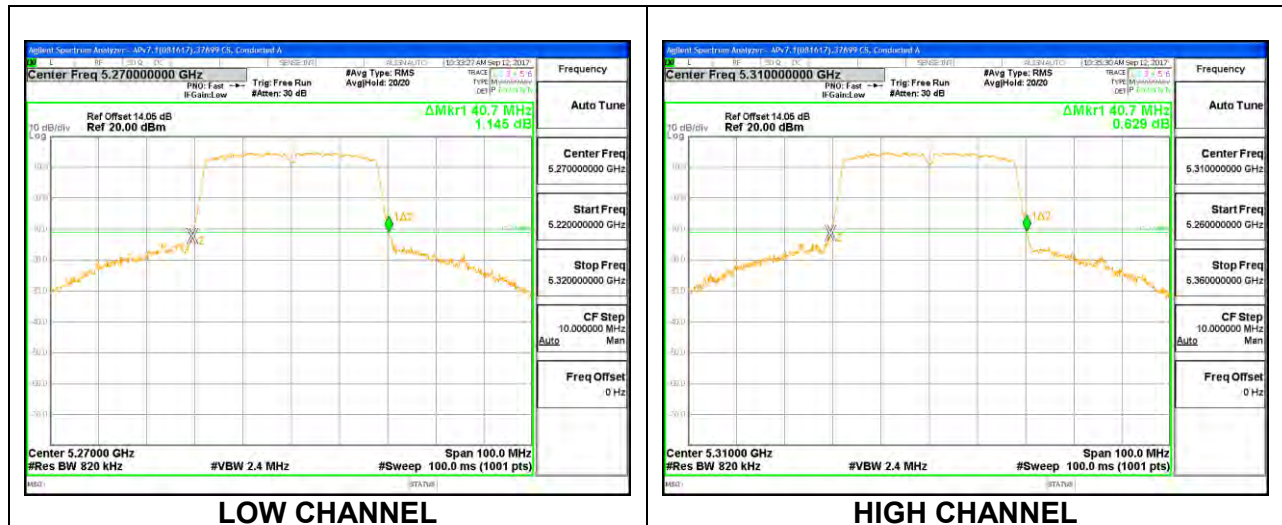
## HIGH CHANNEL



## 8.2.7. 802.11n HT40 MODE IN THE 5.3 GHz BAND

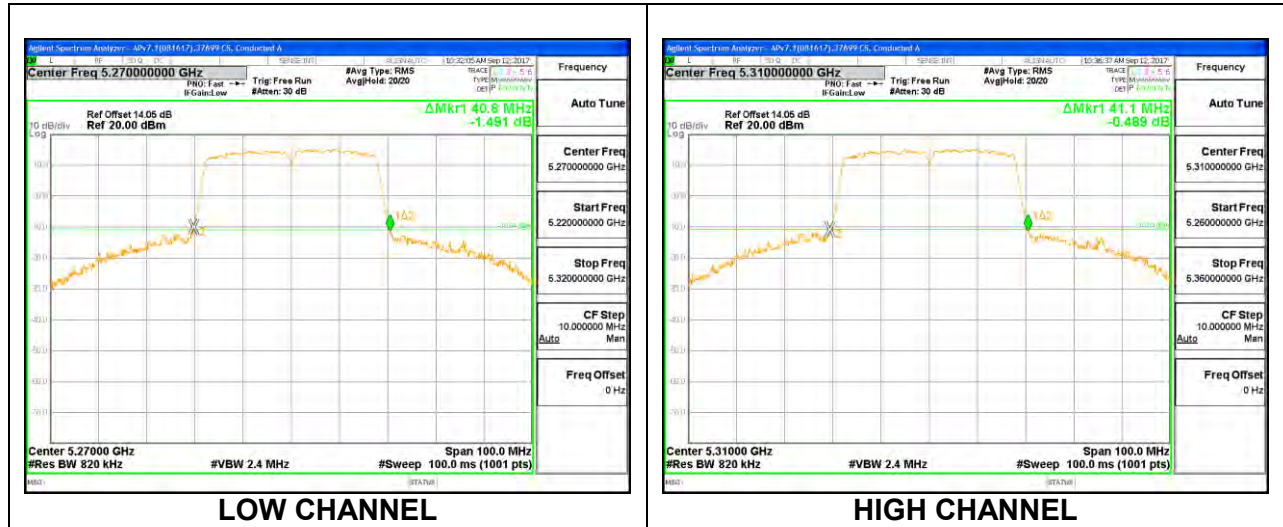
### 1TX Chain 0

| Channel | Frequency | 26dB Bandwidth |
|---------|-----------|----------------|
|         | (MHz)     | (MHz)          |
| Low     | 5270      | 40.70          |
| High    | 5310      | 40.70          |



# 1TX Chain 1

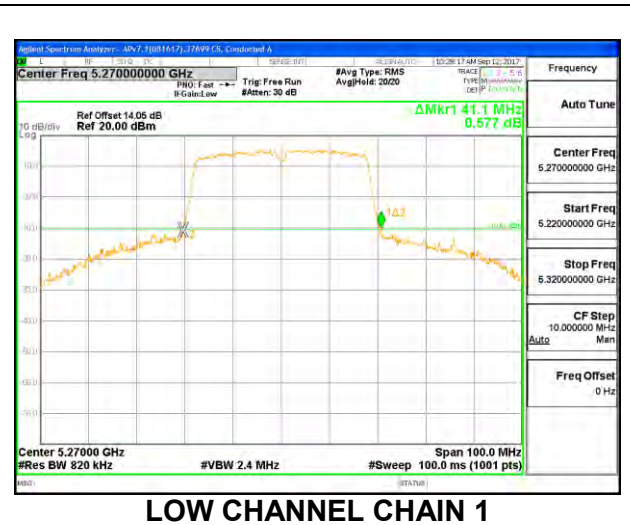
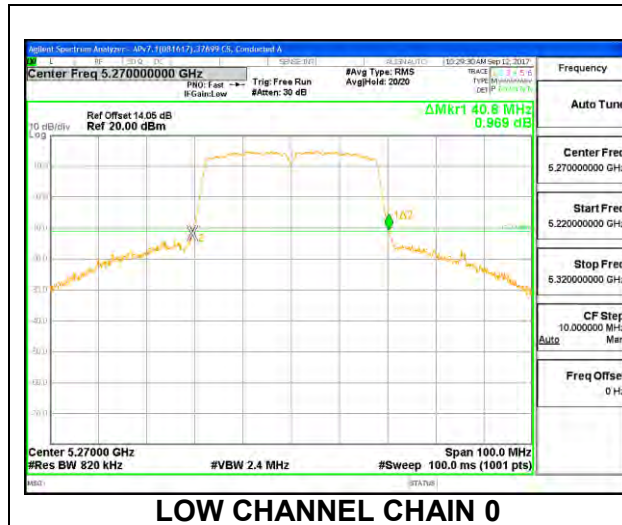
| Channel | Frequency | 26dB Bandwidth |
|---------|-----------|----------------|
|         | (MHz)     | (MHz)          |
| Low     | 5270      | 40.80          |
| High    | 5310      | 41.10          |



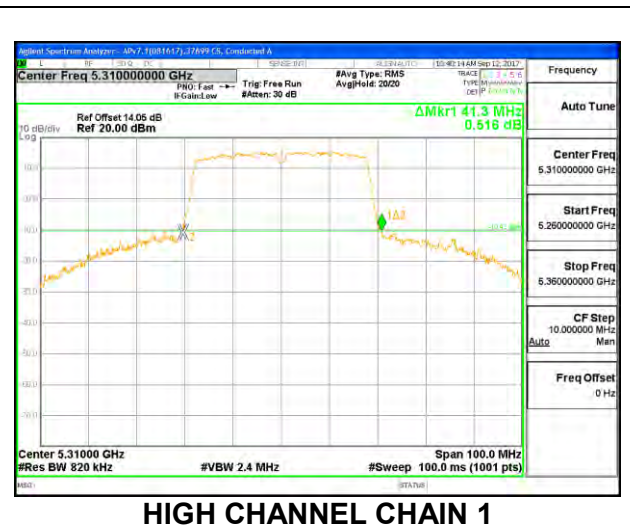
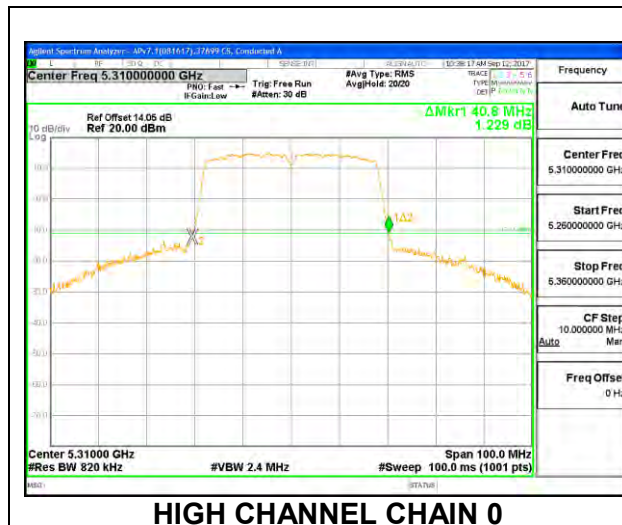
**2TX Chain 0 + Chain 1 CDD MODE**

| Channel | Frequency<br>(MHz) | 26 dB Bandwidth<br>Chain 0<br>(MHz) | 26 dB Bandwidth<br>Chain 1<br>(MHz) |
|---------|--------------------|-------------------------------------|-------------------------------------|
| Low     | 5270               | 40.80                               | 41.10                               |
| High    | 5310               | 40.80                               | 41.30                               |

**LOW CHANNEL**



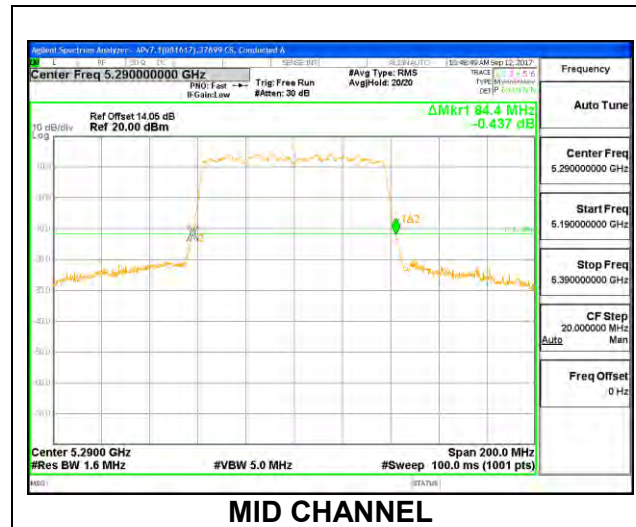
**HIGH CHANNEL**



## 8.2.8. 802.11ac VHT80 MODE IN THE 5.3 GHz BAND

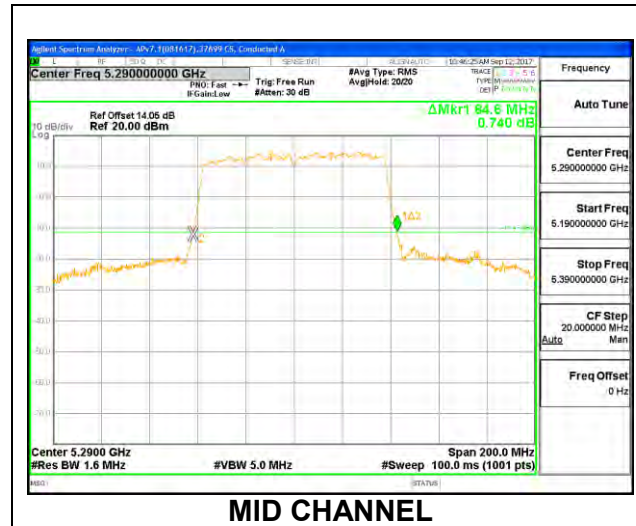
### 1TX Chain 0

| Channel | Frequency | 26 dB Bandwidth |
|---------|-----------|-----------------|
|         | (MHz)     | (MHz)           |
| Mid     | 5290      | 84.40           |



**1TX Chain 1**

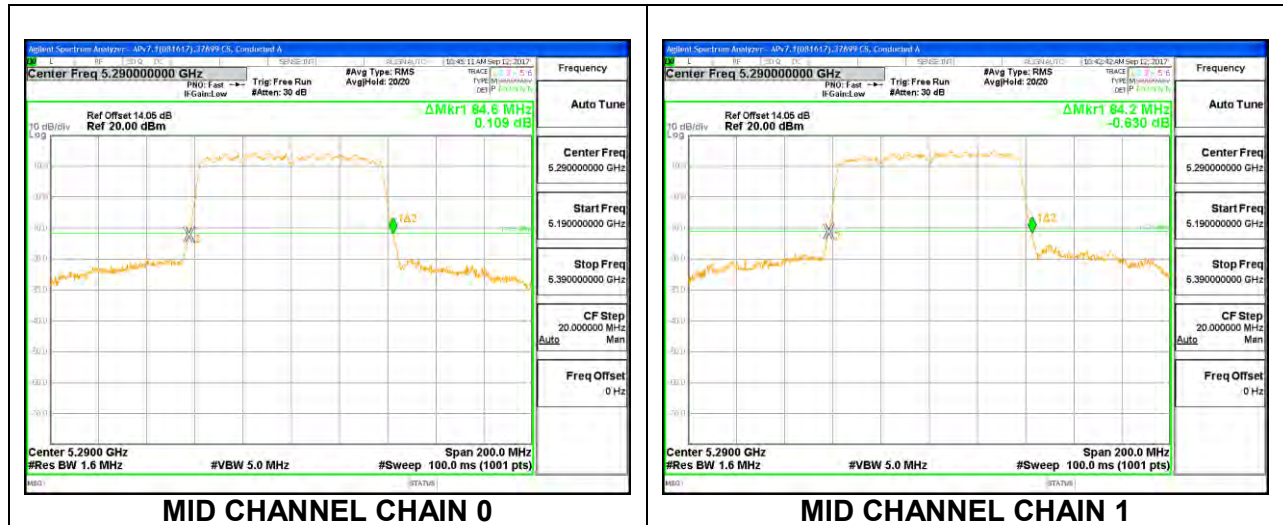
| Channel | Frequency | 26 dB Bandwidth |
|---------|-----------|-----------------|
|         | (MHz)     | (MHz)           |
| Mid     | 5290      | 84.60           |



**2TX Chain 0 + Chain 1 CDD MODE**

| Channel | Frequency | 26 dB Bandwidth<br>Chain 0<br>(MHz) | 26 dB Bandwidth<br>Chain 1<br>(MHz) |
|---------|-----------|-------------------------------------|-------------------------------------|
| Mid     | 5290      | 84.60                               | 84.20                               |

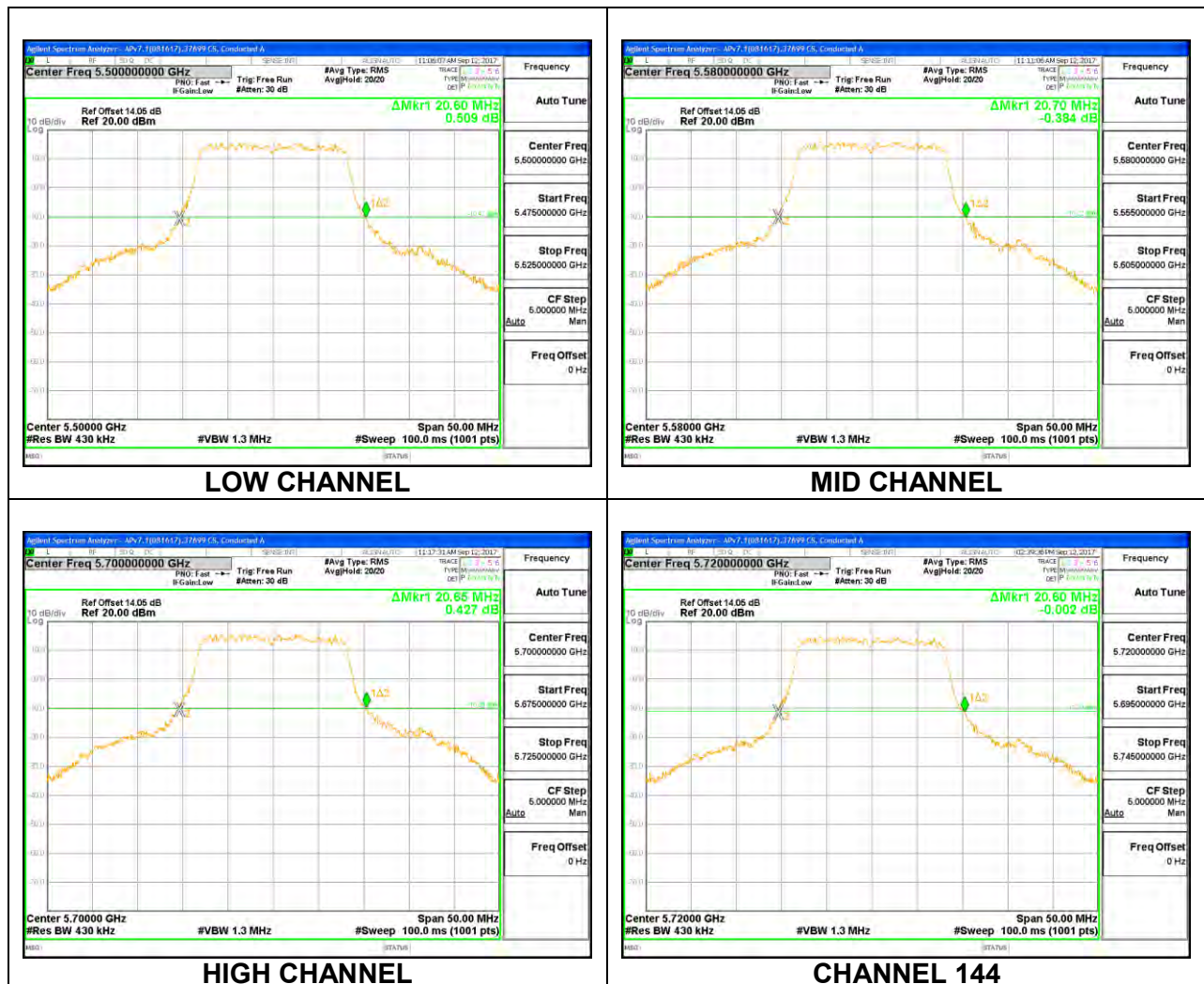
**MID CHANNEL**



## 8.2.9. 802.11a MODE IN THE 5.6 GHz BAND

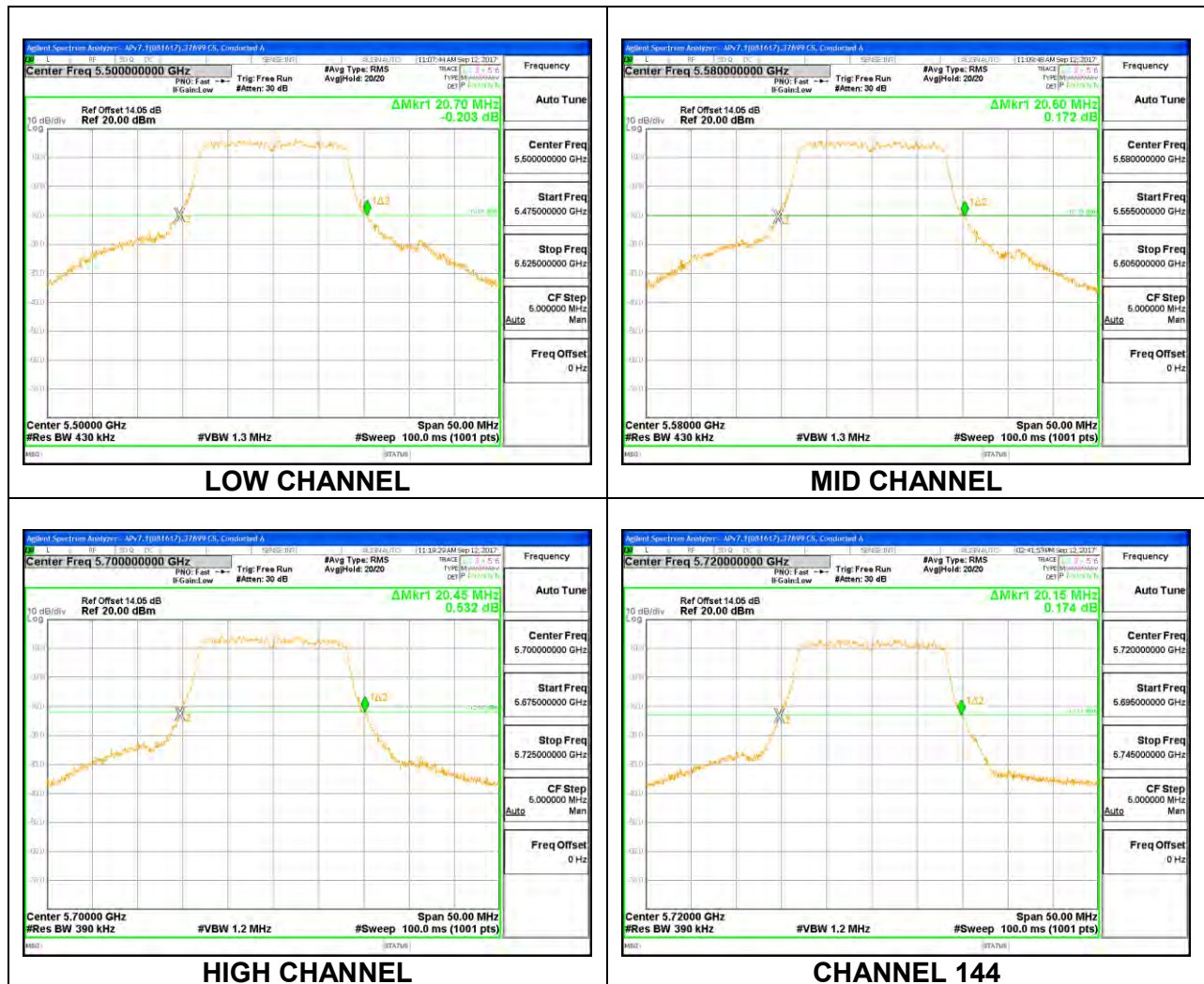
### 1TX Chain 0

| Channel | Frequency<br>(MHz) | 26 dB Bandwidth<br>(MHz) |
|---------|--------------------|--------------------------|
| Low     | 5500               | 20.60                    |
| Mid     | 5580               | 20.70                    |
| High    | 5700               | 20.65                    |
| 144     | 5720               | 20.60                    |



# 1TX Chain 1

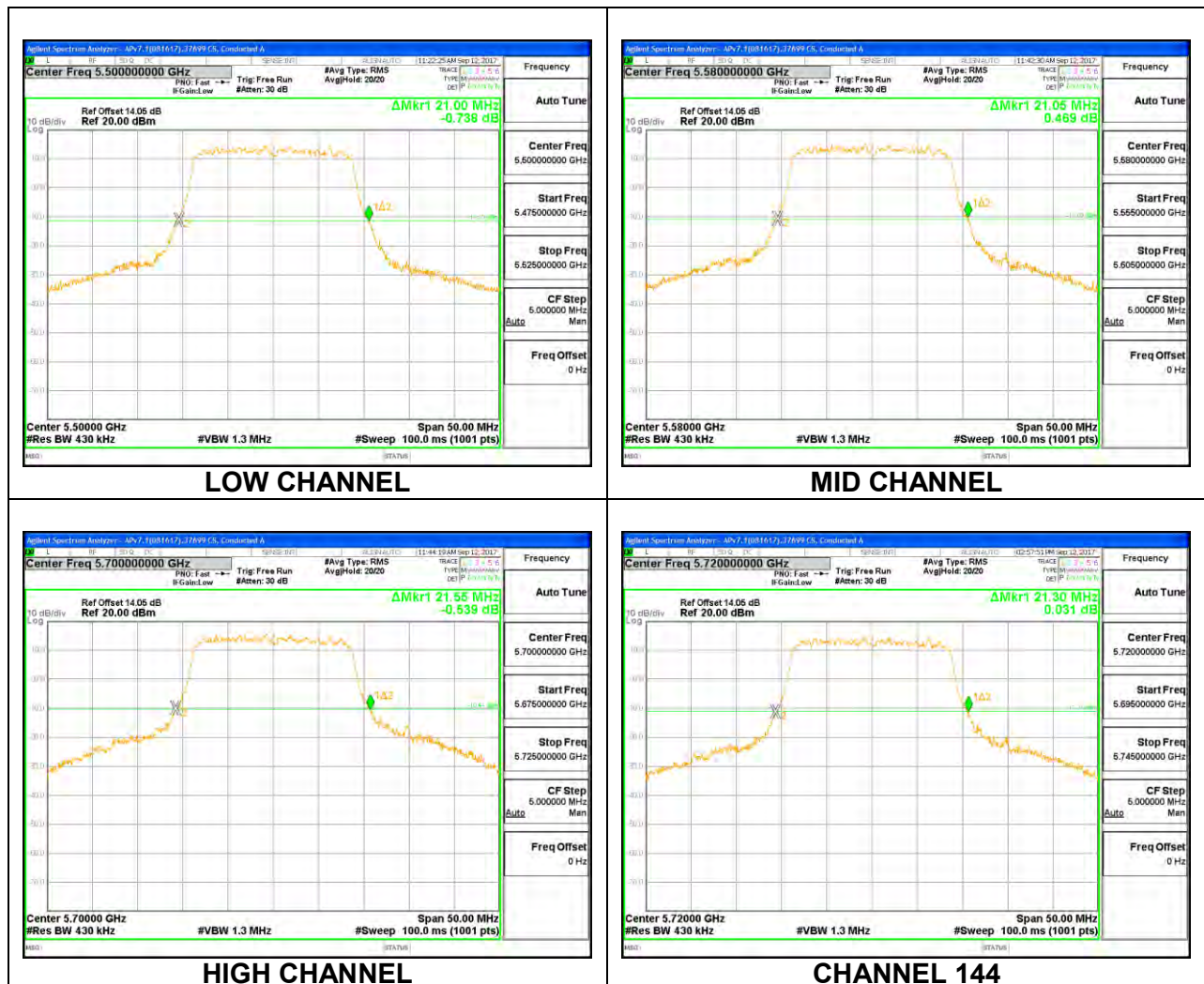
| Channel | Frequency | 26 dB Bandwidth |
|---------|-----------|-----------------|
|         | (MHz)     | (MHz)           |
| Low     | 5500      | 20.70           |
| Mid     | 5580      | 20.60           |
| High    | 5700      | 20.45           |
| 144     | 5720      | 20.15           |



## 8.2.10. 802.11n HT20 MODE IN THE 5.6 GHz BAND

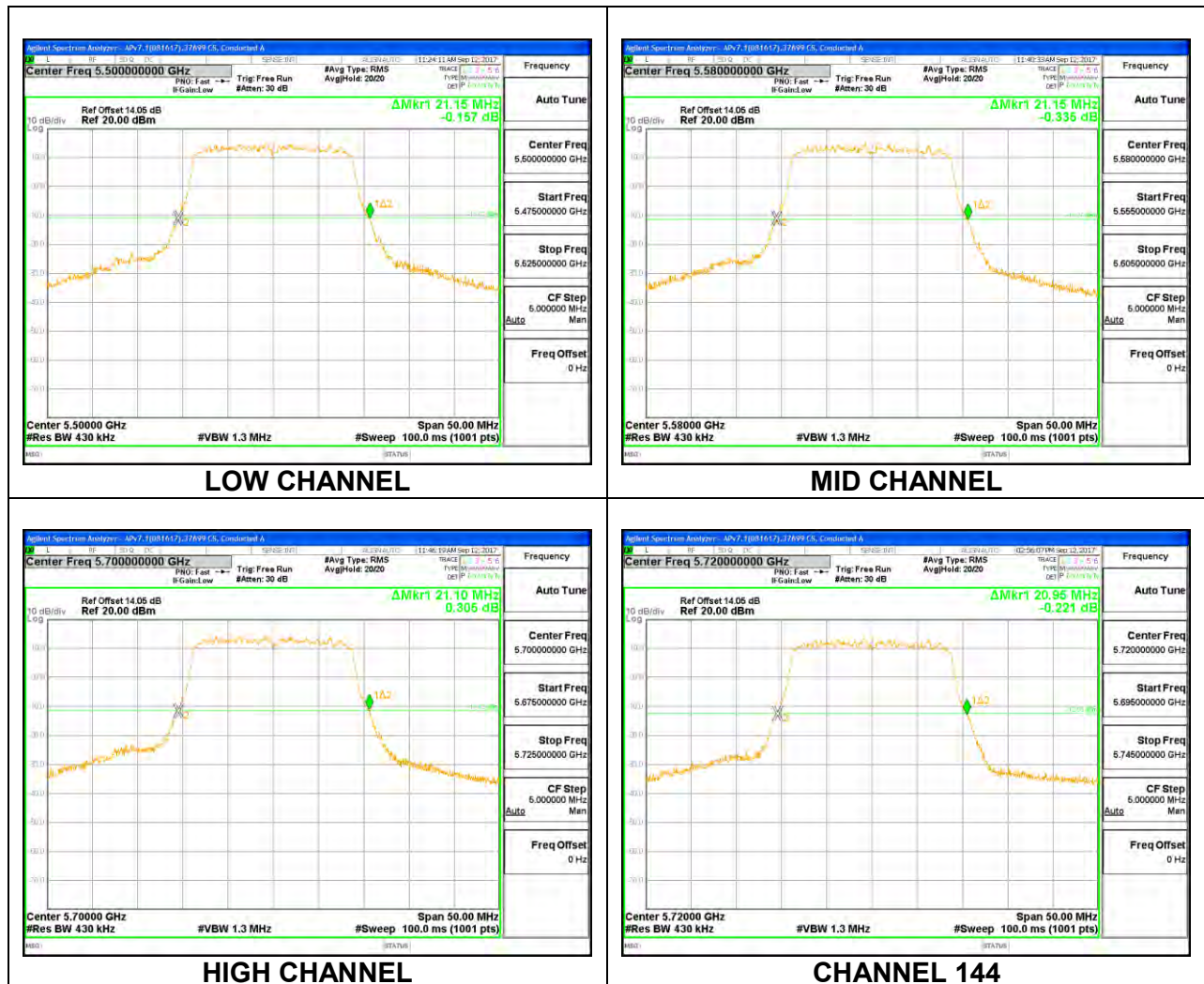
### 1TX Chain 0

| Channel | Frequency<br>(MHz) | 26 dB Bandwidth<br>(MHz) |
|---------|--------------------|--------------------------|
| Low     | 5500               | 21.00                    |
| Mid     | 5580               | 21.05                    |
| High    | 5700               | 21.55                    |
| 144     | 5720               | 21.30                    |



# 1TX Chain 1

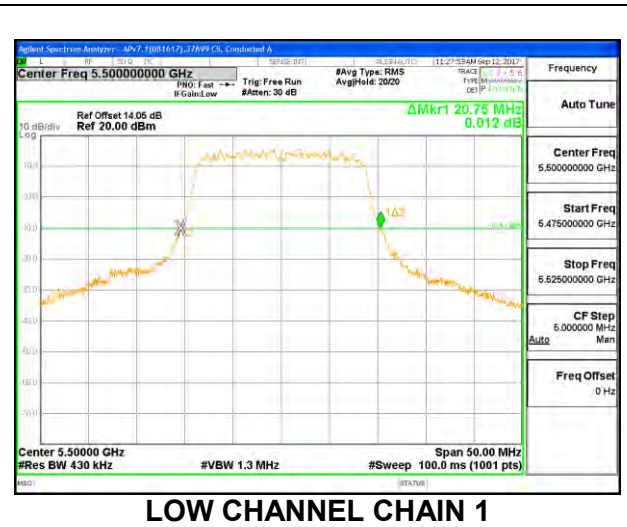
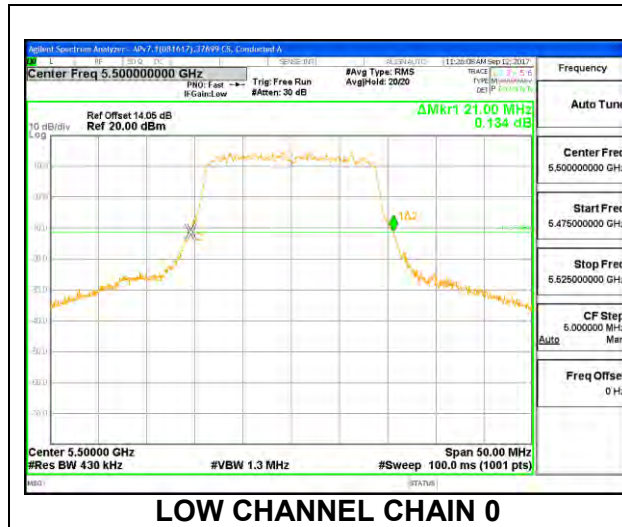
| Channel | Frequency<br>(MHz) | 26 dB Bandwidth<br>(MHz) |
|---------|--------------------|--------------------------|
| Low     | 5500               | 21.15                    |
| Mid     | 5580               | 21.15                    |
| High    | 5700               | 21.10                    |
| 144     | 5720               | 20.95                    |



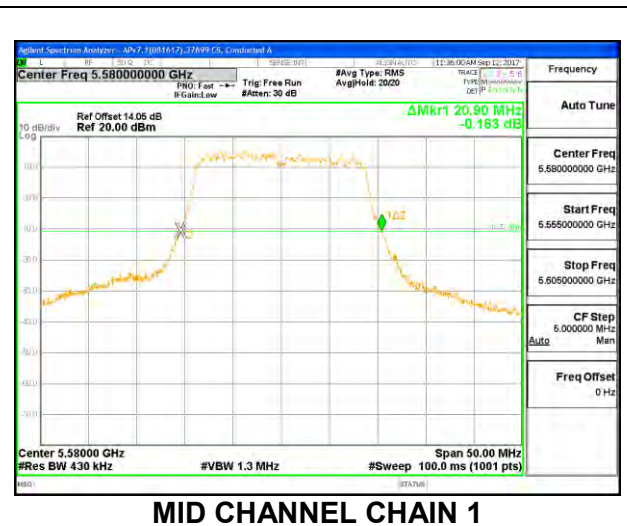
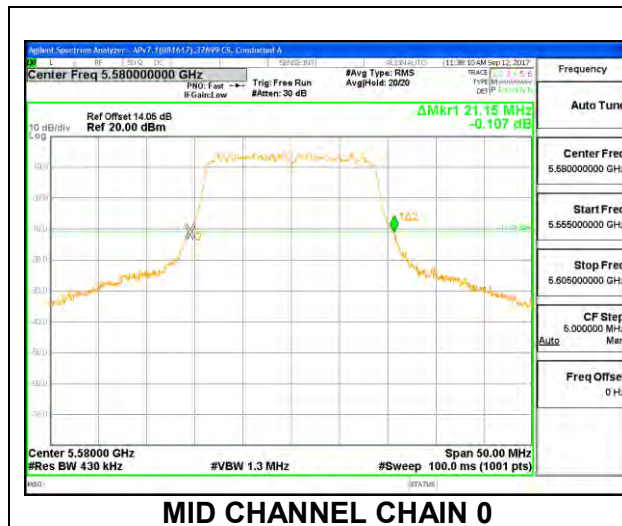
## 2TX Chain 0 + Chain 1 CDD MODE

| Channel | Frequency<br>(MHz) | 26 dB Bandwidth<br>Chain 0<br>(MHz) | 26 dB Bandwidth<br>Chain 1<br>(MHz) |
|---------|--------------------|-------------------------------------|-------------------------------------|
| Low     | 5500               | 21.00                               | 20.75                               |
| Mid     | 5580               | 21.15                               | 20.90                               |
| High    | 5700               | 21.65                               | 20.75                               |
| 144     | 5720               | 21.35                               | 21.10                               |

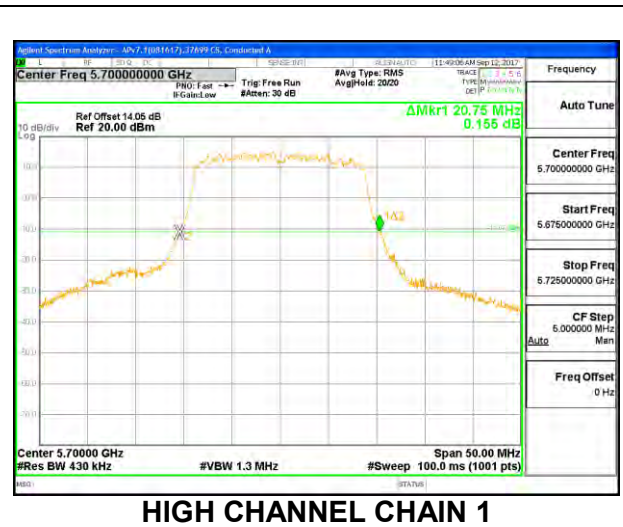
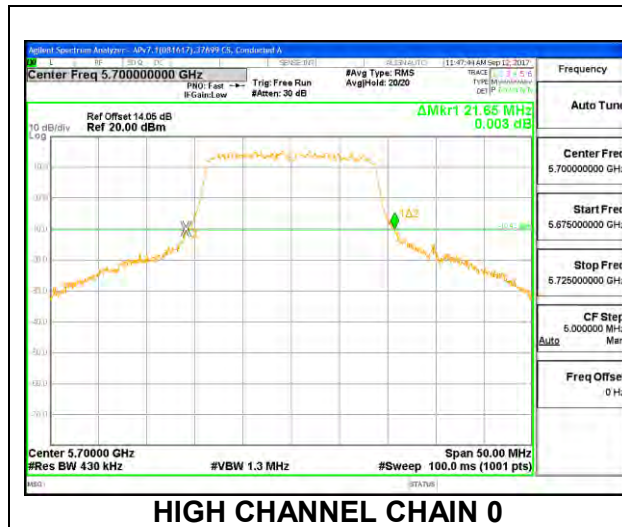
### LOW CHANNEL



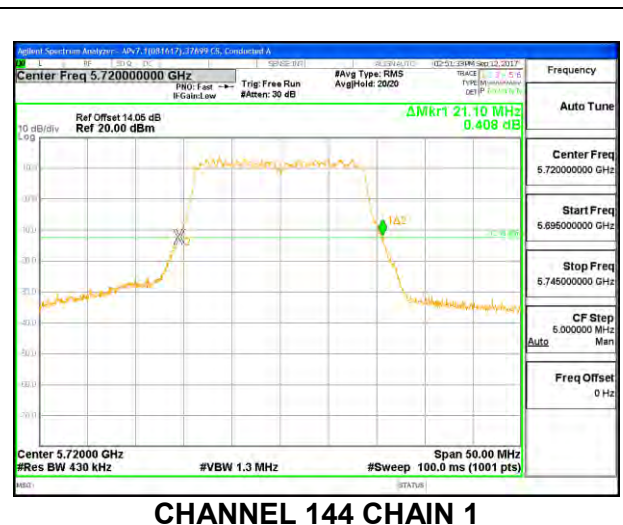
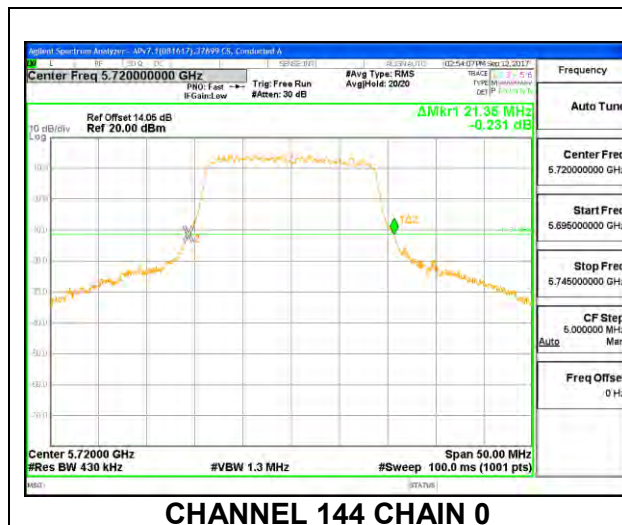
### MID CHANNEL



## HIGH CHANNEL



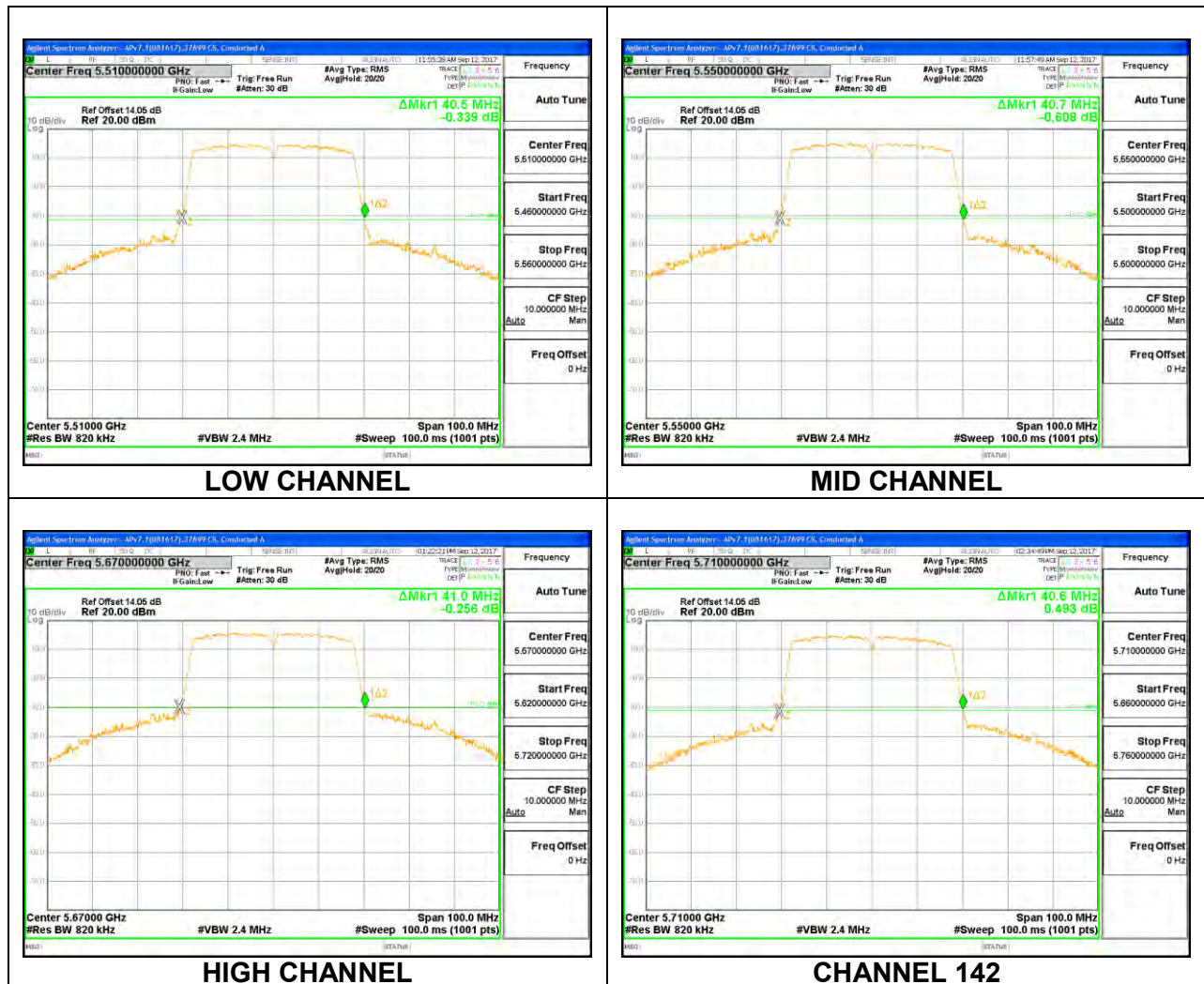
## CHANNEL 144



## 8.2.11. 802.11n HT40 MODE IN THE 5.6 GHz BAND

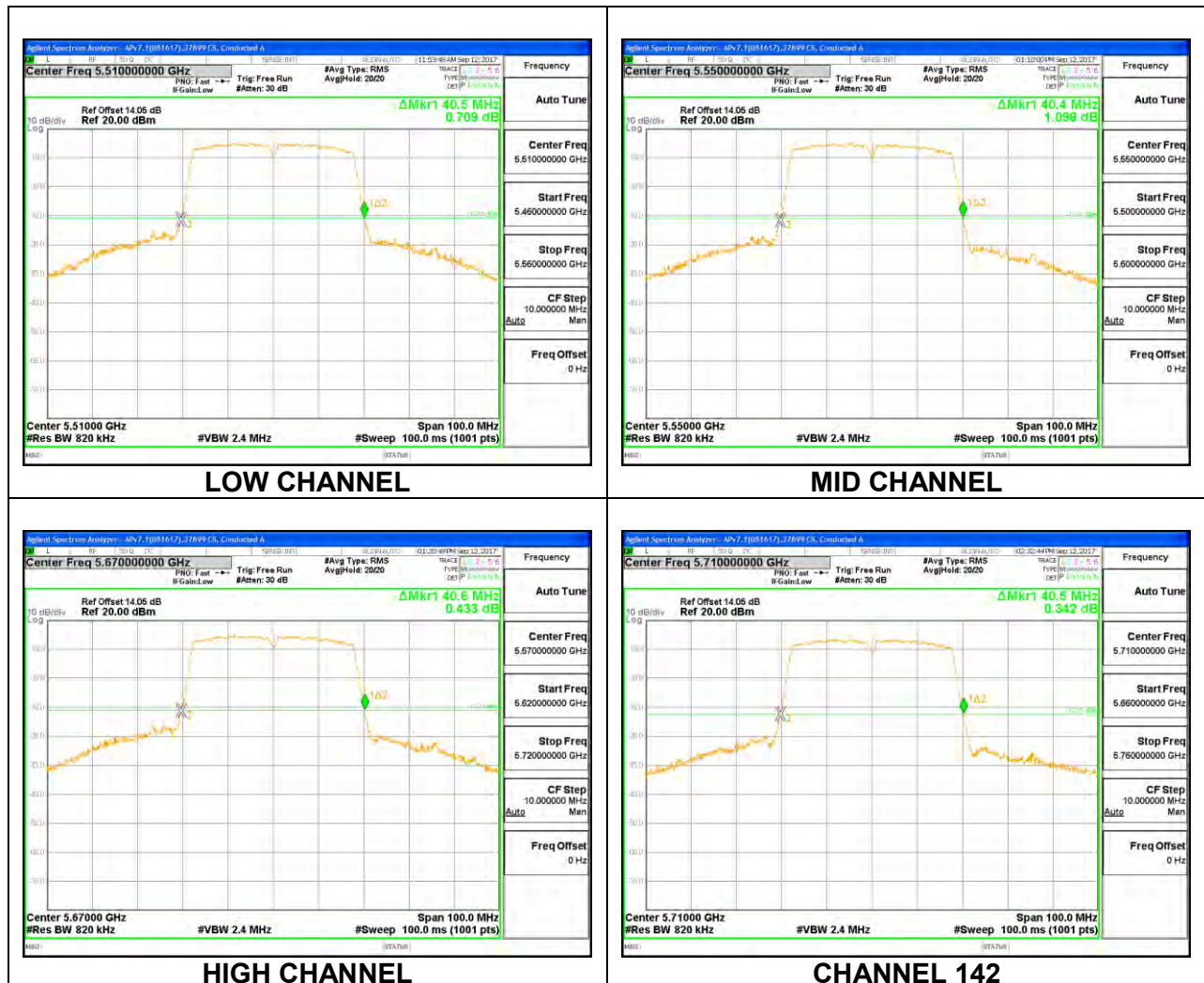
### 1TX Chain 0

| Channel | Frequency | 26 dB Bandwidth |
|---------|-----------|-----------------|
|         | (MHz)     | (MHz)           |
| Low     | 5510      | 40.50           |
| Mid     | 5550      | 40.70           |
| High    | 5670      | 41.00           |
| 142     | 5710      | 40.60           |



# 1TX Chain 1

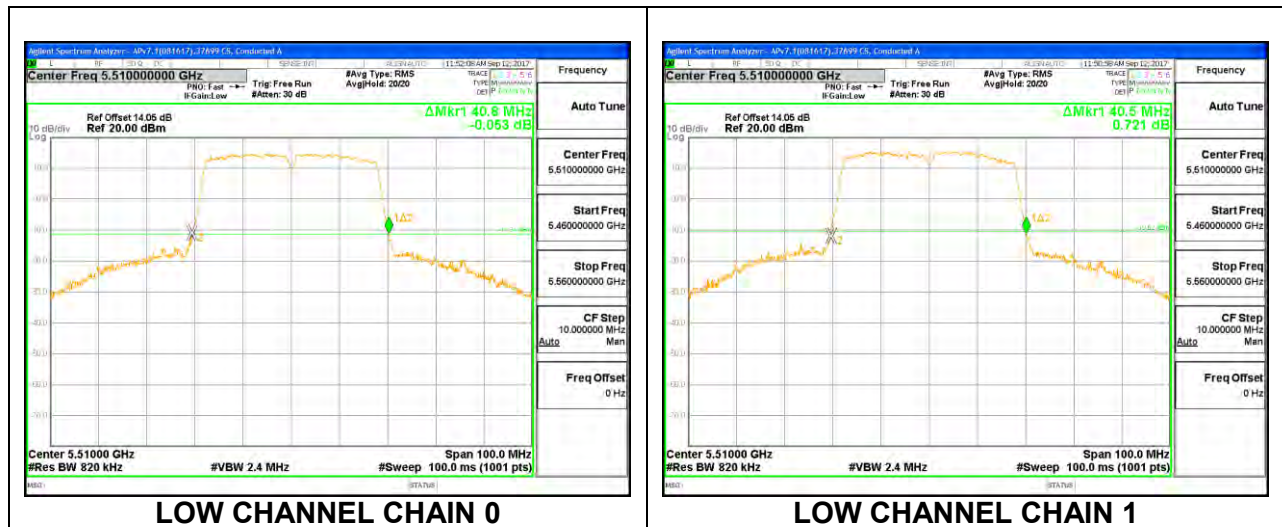
| Channel | Frequency | 26 dB Bandwidth |
|---------|-----------|-----------------|
|         | (MHz)     | (MHz)           |
| Low     | 5510      | 40.50           |
| Mid     | 5550      | 40.40           |
| High    | 5670      | 40.60           |
| 142     | 5710      | 40.50           |



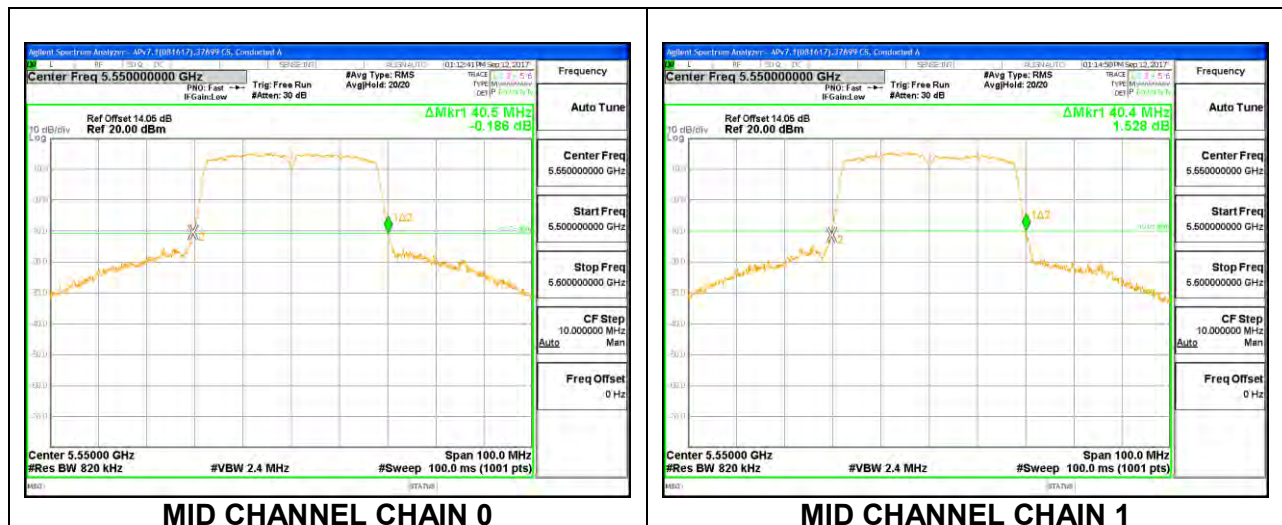
## 2TX Chain 0 + Chain 1 CDD MODE

| Channel | Frequency<br>(MHz) | 26 dB Bandwidth<br>Chain 0<br>(MHz) | 26 dB Bandwidth<br>Chain 1<br>(MHz) |
|---------|--------------------|-------------------------------------|-------------------------------------|
| Low     | 5510               | 40.80                               | 40.50                               |
| Mid     | 5550               | 40.50                               | 40.40                               |
| High    | 5670               | 41.10                               | 40.70                               |
| 142     | 5710               | 40.80                               | 40.40                               |

## LOW CHANNEL



## MID CHANNEL



## HIGH CHANNEL



HIGH CHANNEL CHAIN 0



HIGH CHANNEL CHAIN 1

## CHANNEL 142



CHANNEL 142 CHAIN 0

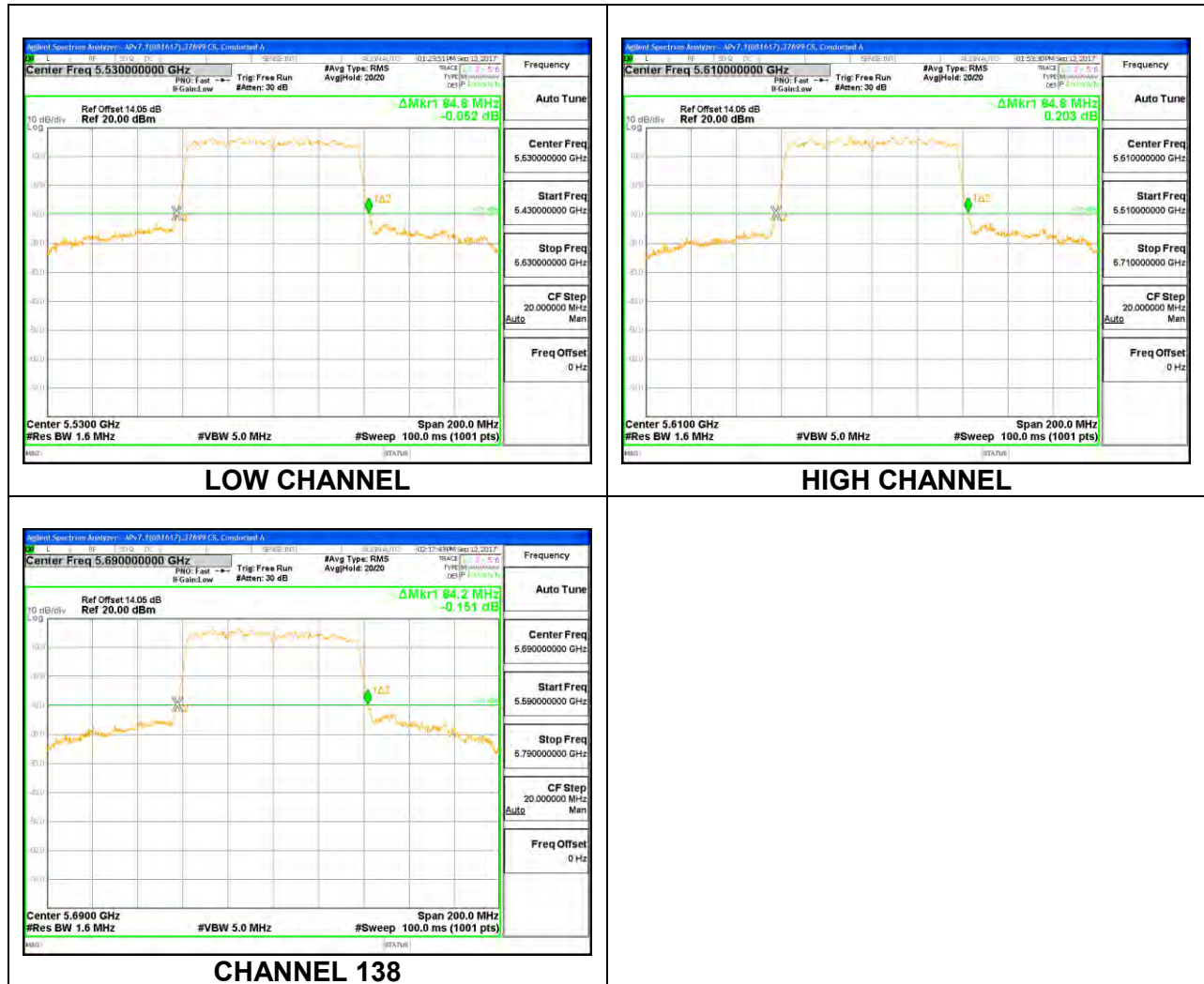


CHANNEL 142 CHAIN 1

## 8.2.12. 802.11ac VHT80 MODE IN THE 5.6 GHz BAND

### 1TX Chain 0

| Channel | Frequency<br>(MHz) | 26 dB Bandwidth<br>(MHz) |
|---------|--------------------|--------------------------|
| Low     | 5530               | 84.80                    |
| High    | 5610               | 84.80                    |
| 138     | 5690               | 84.20                    |



# 1TX Chain 1

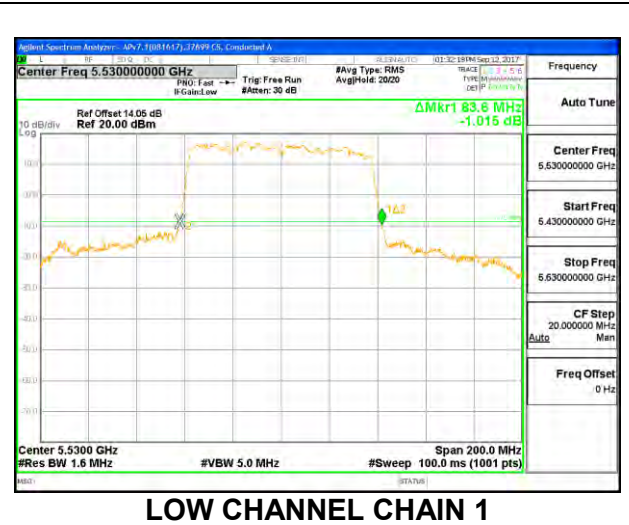
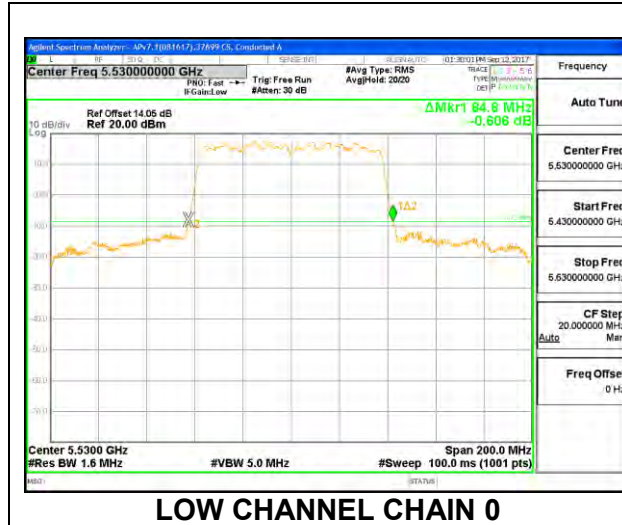
| Channel | Frequency | 26 dB Bandwidth |
|---------|-----------|-----------------|
|         | (MHz)     | (MHz)           |
| Low     | 5530      | 84.20           |
| High    | 5610      | 84.20           |
| 138     | 5690      | 84.20           |



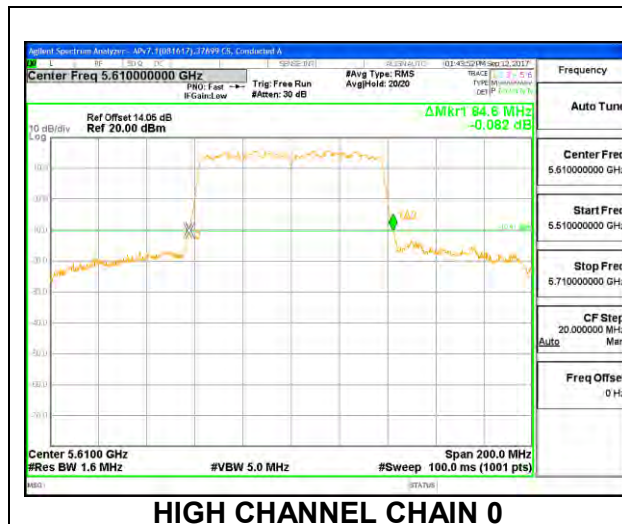
## 2TX Chain 0 + Chain 1 CDD MODE

| Channel | Frequency<br>(MHz) | 26 dB Bandwidth<br>Chain 0<br>(MHz) | 26 dB Bandwidth<br>Chain 1<br>(MHz) |
|---------|--------------------|-------------------------------------|-------------------------------------|
| Low     | 5530               | 84.80                               | 83.60                               |
| High    | 5610               | 84.60                               | 83.60                               |
| 138     | 5690               | 84.40                               | 83.60                               |

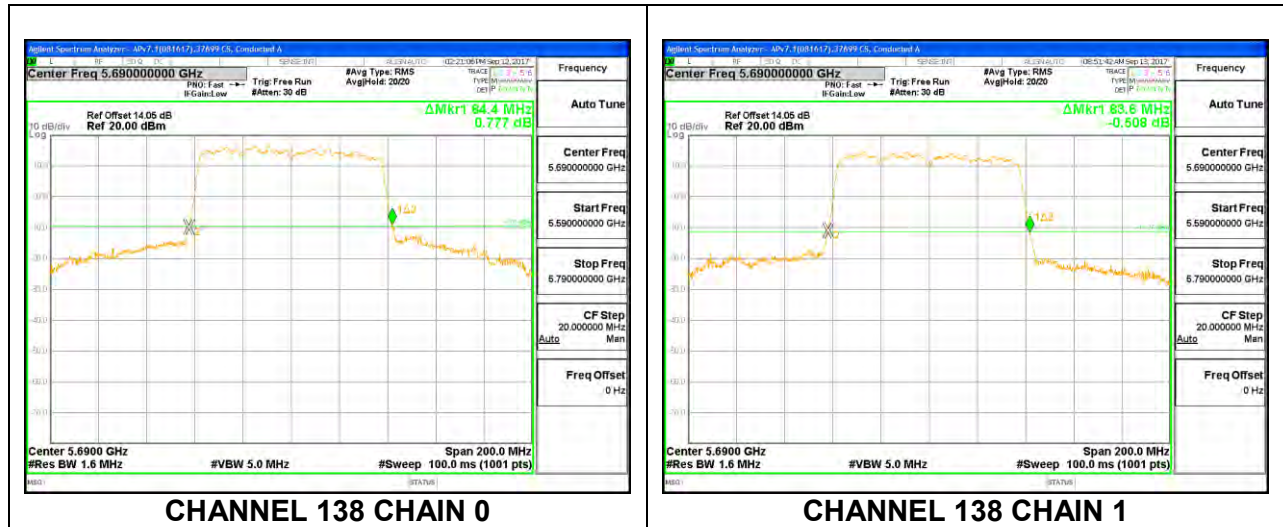
## LOW CHANNEL



## HIGH CHANNEL



## CHANNEL 138



## 8.2.13. 802.11a MODE IN THE 5.8 GHz BAND

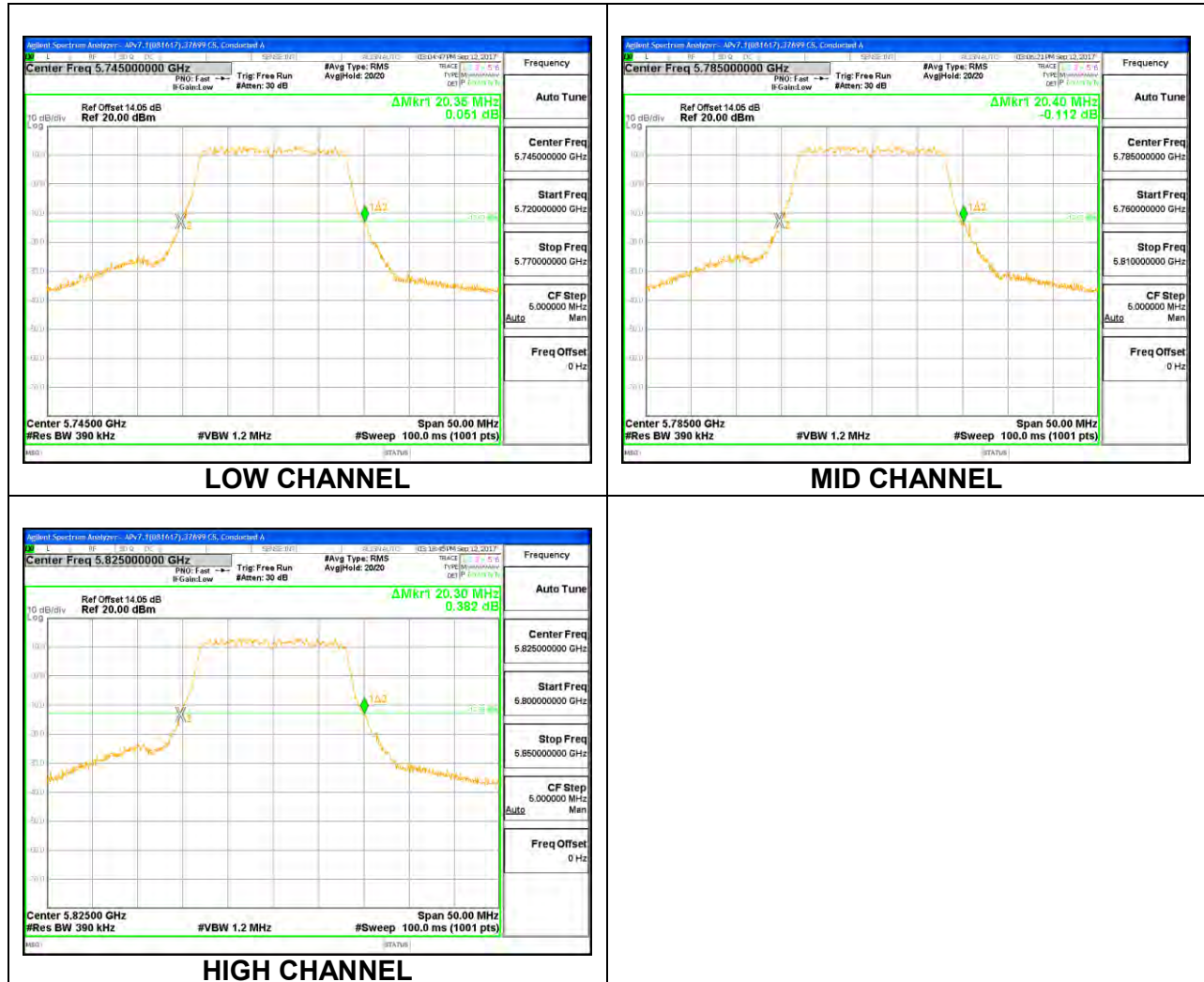
### 1TX Chain 0

| Channel | Frequency<br>(MHz) | 26 dB Bandwidth<br>(MHz) |
|---------|--------------------|--------------------------|
| Low     | 5745               | 20.60                    |
| Mid     | 5785               | 20.60                    |
| High    | 5825               | 20.60                    |



# 1TX Chain 1

| Channel | Frequency | 26 dB Bandwidth |
|---------|-----------|-----------------|
|         | (MHz)     | (MHz)           |
| Low     | 5745      | 20.35           |
| Mid     | 5785      | 20.40           |
| High    | 5825      | 20.30           |



## 8.2.14. 802.11n HT20 MODE IN THE 5.8 GHz BAND

### 1TX Chain 0

| Channel | Frequency | 26 dB Bandwidth |
|---------|-----------|-----------------|
|         | (MHz)     | (MHz)           |
| Low     | 5745      | 21.30           |
| Mid     | 5785      | 21.40           |
| High    | 5825      | 21.35           |



# 1TX Chain 1

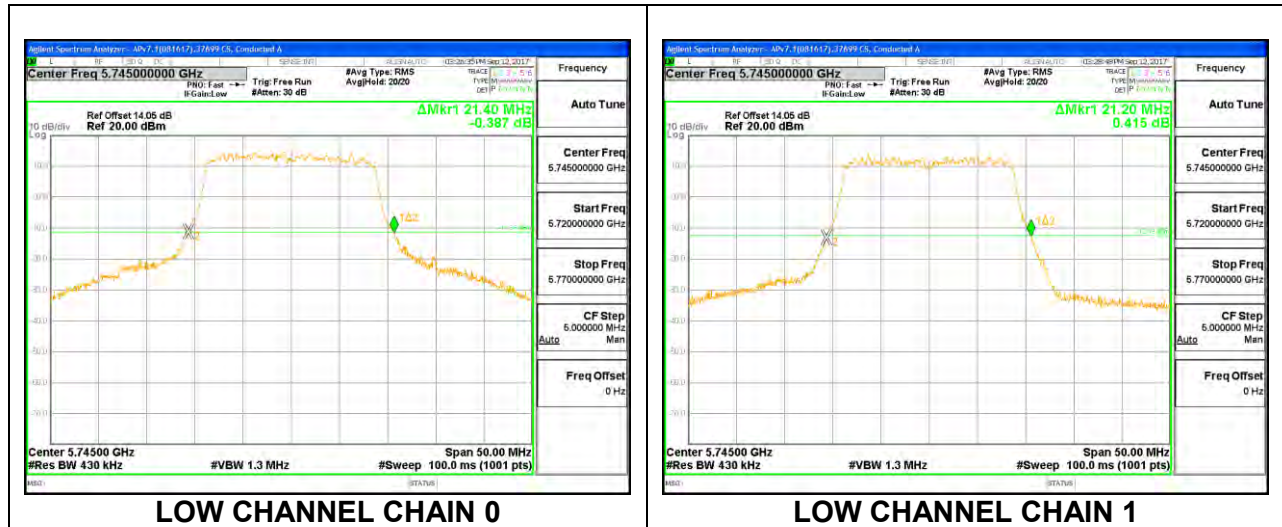
| Channel | Frequency | 26 dB Bandwidth |
|---------|-----------|-----------------|
|         | (MHz)     | (MHz)           |
| Low     | 5745      | 21.00           |
| Mid     | 5785      | 21.10           |
| High    | 5825      | 21.10           |



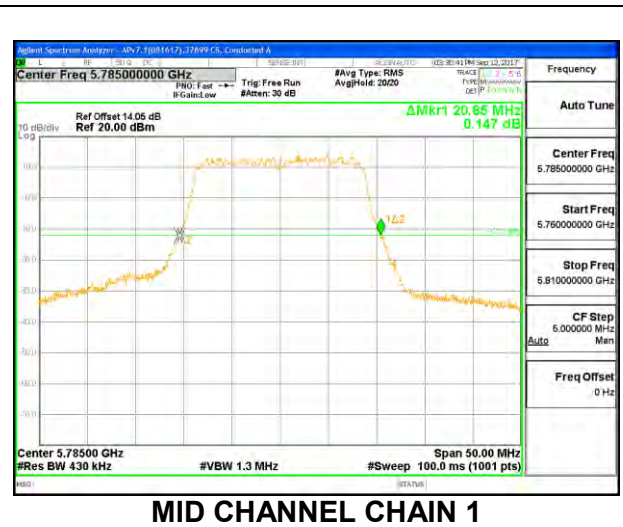
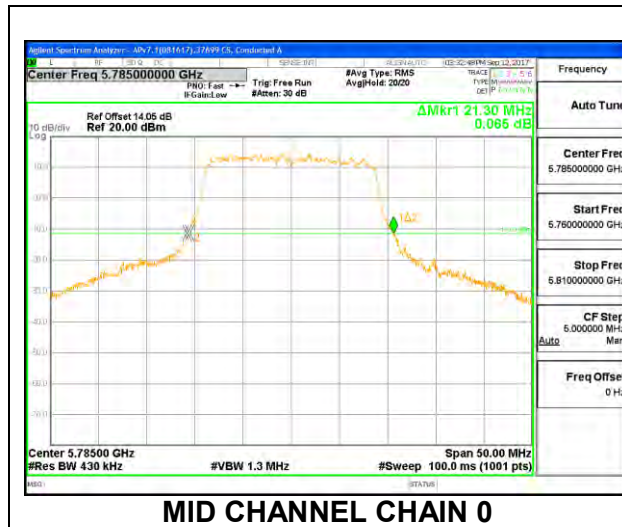
**2TX Chain 0 + Chain 1 CDD MODE**

| Channel | Frequency<br>(MHz) | 26 dB Bandwidth<br>Chain 0<br>(MHz) | 26 dB Bandwidth<br>Chain 1<br>(MHz) |
|---------|--------------------|-------------------------------------|-------------------------------------|
| Low     | 5745               | 21.40                               | 21.20                               |
| Mid     | 5785               | 21.30                               | 20.85                               |
| High    | 5825               | 21.25                               | 20.80                               |

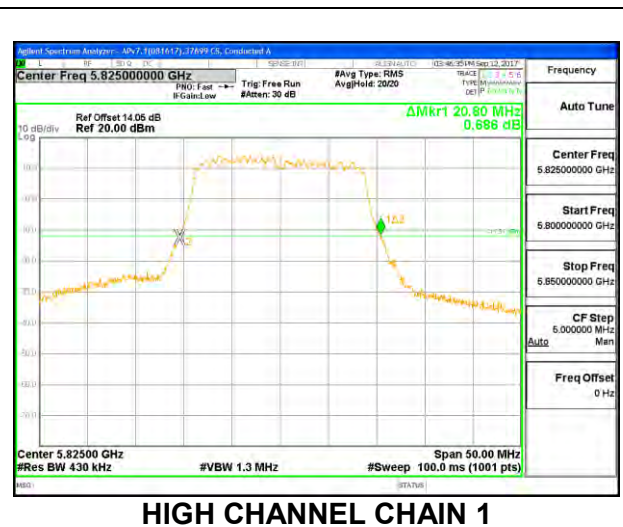
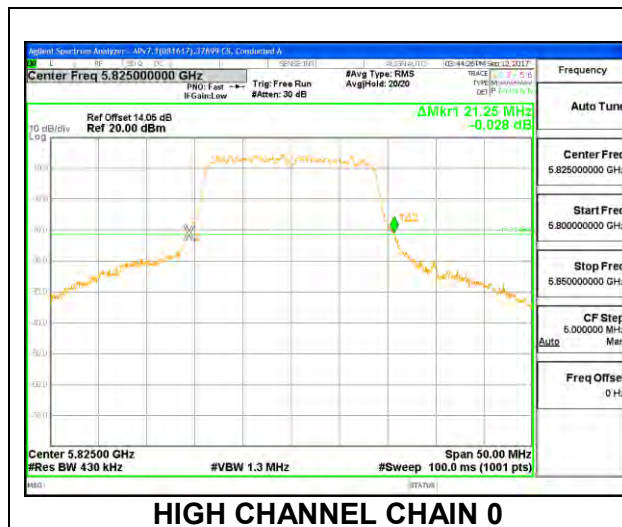
**LOW CHANNEL**



## MID CHANNEL



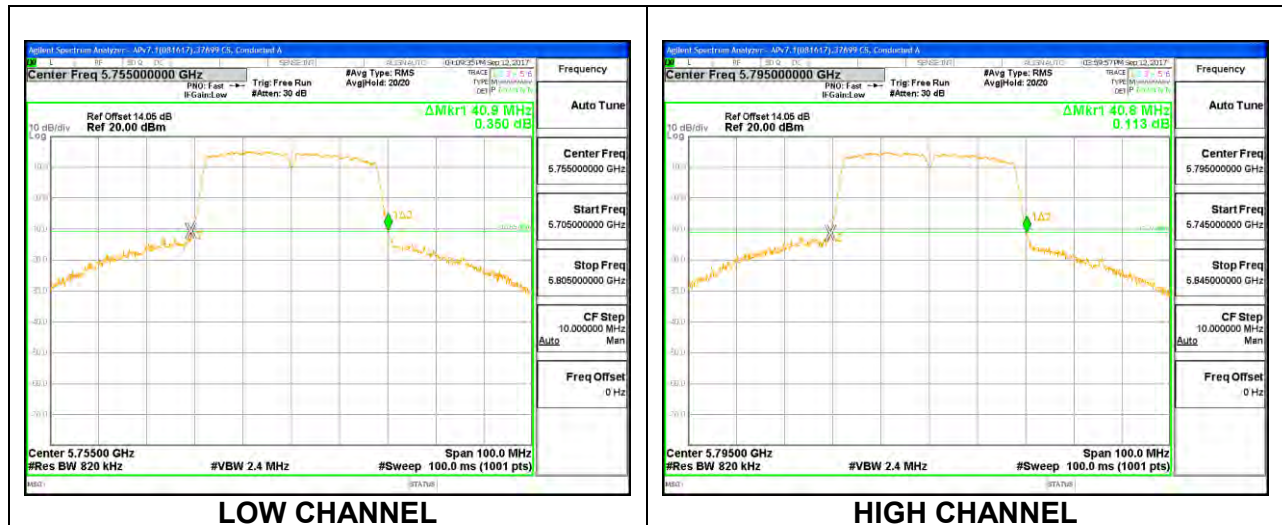
## HIGH CHANNEL



## 8.2.15. 802.11n HT40 MODE IN THE 5.8 GHz BAND

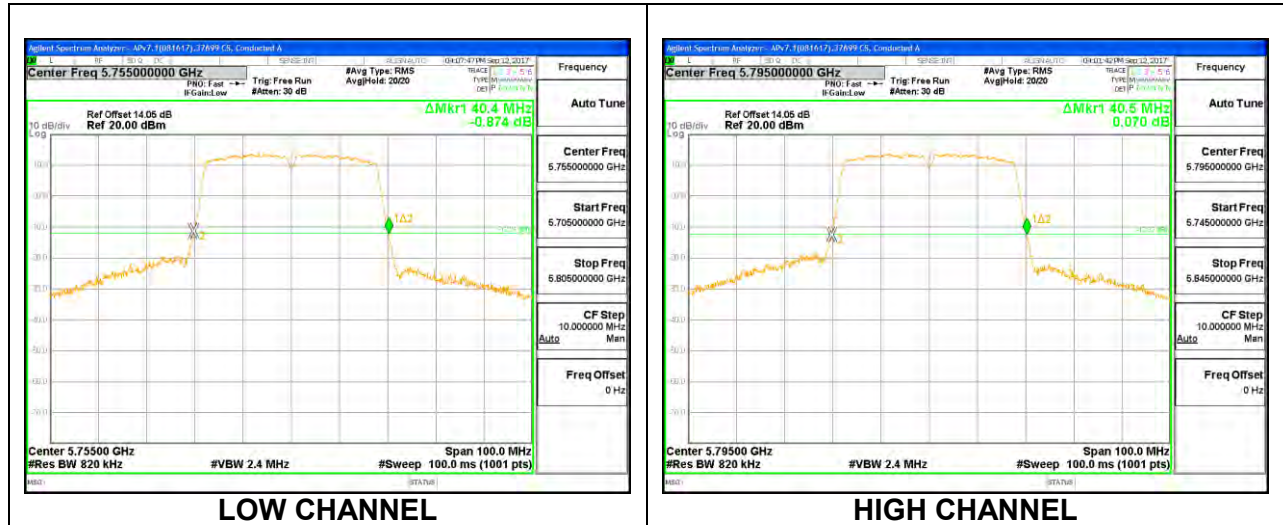
### 1TX Chain 0

| Channel | Frequency<br>(MHz) | 26dB Bandwidth<br>(MHz) |
|---------|--------------------|-------------------------|
| Low     | 5755               | 40.90                   |
| High    | 5795               | 40.80                   |



# 1TX Chain 1

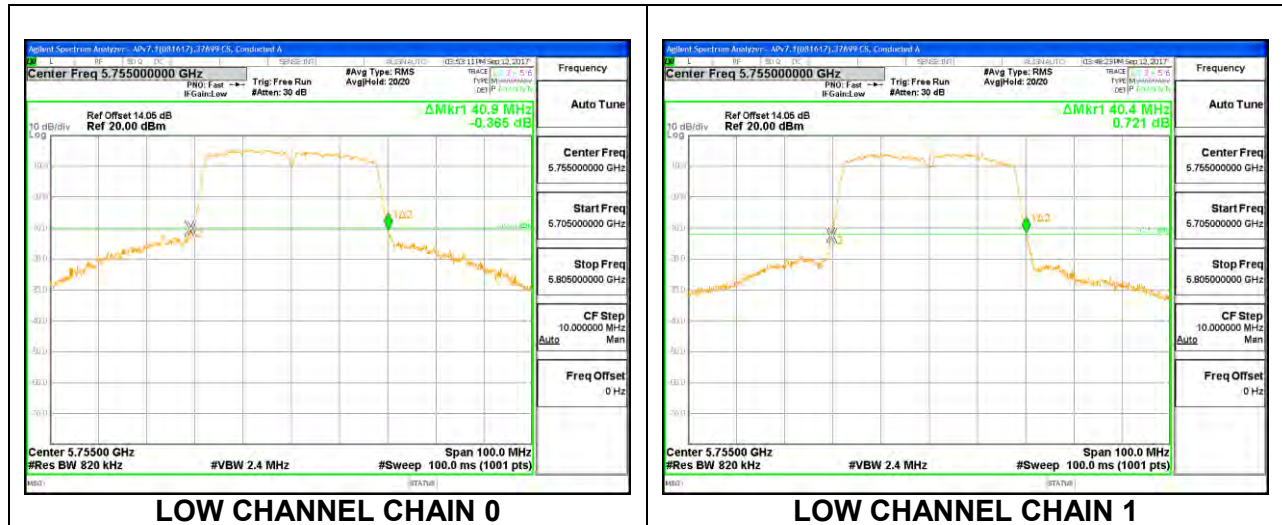
| Channel | Frequency | 26dB Bandwidth |
|---------|-----------|----------------|
|         | (MHz)     | (MHz)          |
| Low     | 5755      | 40.40          |
| High    | 5795      | 40.50          |



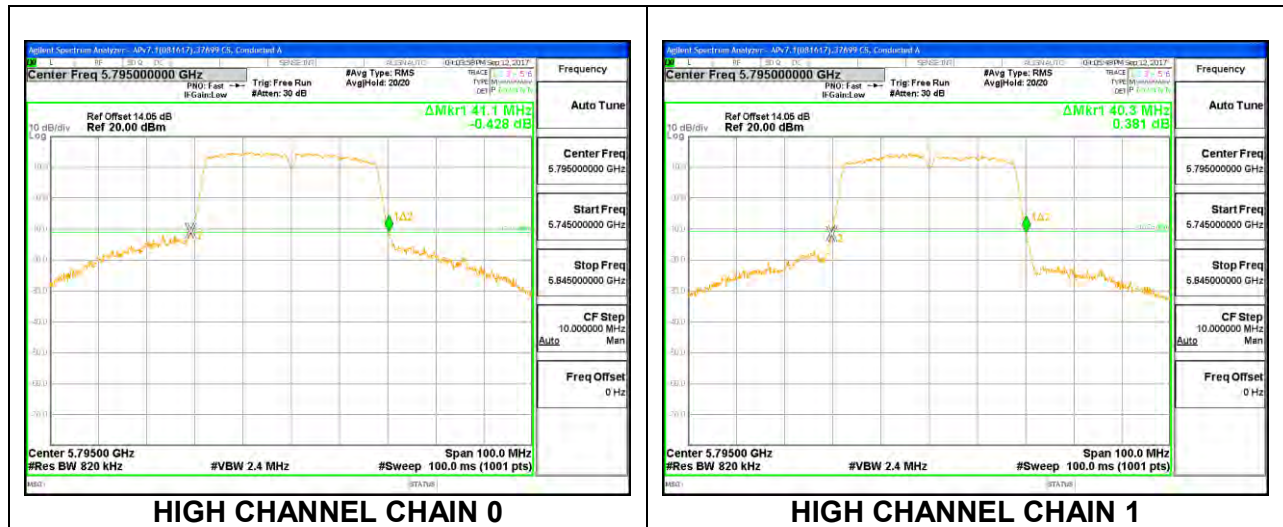
**2TX Chain 0 + Chain 1 CDD MODE**

| Channel | Frequency<br>(MHz) | 26 dB Bandwidth<br>Chain 0<br>(MHz) | 26 dB Bandwidth<br>Chain 1<br>(MHz) |
|---------|--------------------|-------------------------------------|-------------------------------------|
| Low     | 5755               | 40.90                               | 40.40                               |
| High    | 5795               | 41.10                               | 40.30                               |

**LOW CHANNEL**



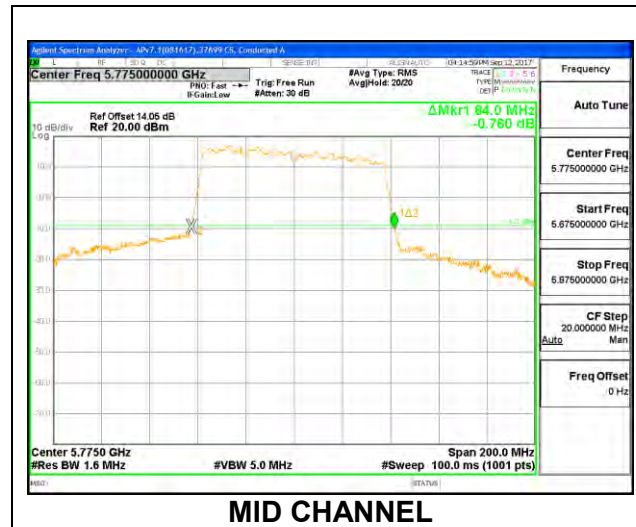
## HIGH CHANNEL



## 8.2.16. 802.11ac VHT80 MODE IN THE 5.8 GHz BAND

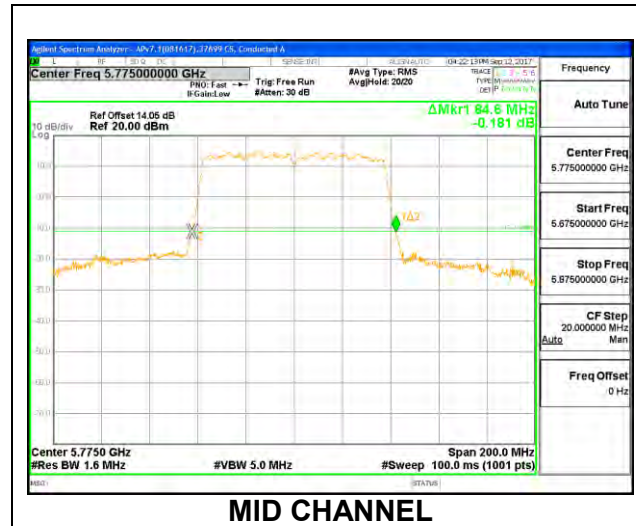
### 1TX Chain 0

| Channel | Frequency | 26 dB Bandwidth |
|---------|-----------|-----------------|
|         | (MHz)     | (MHz)           |
| Mid     | 5775      | 84.00           |



**1TX Chain 1**

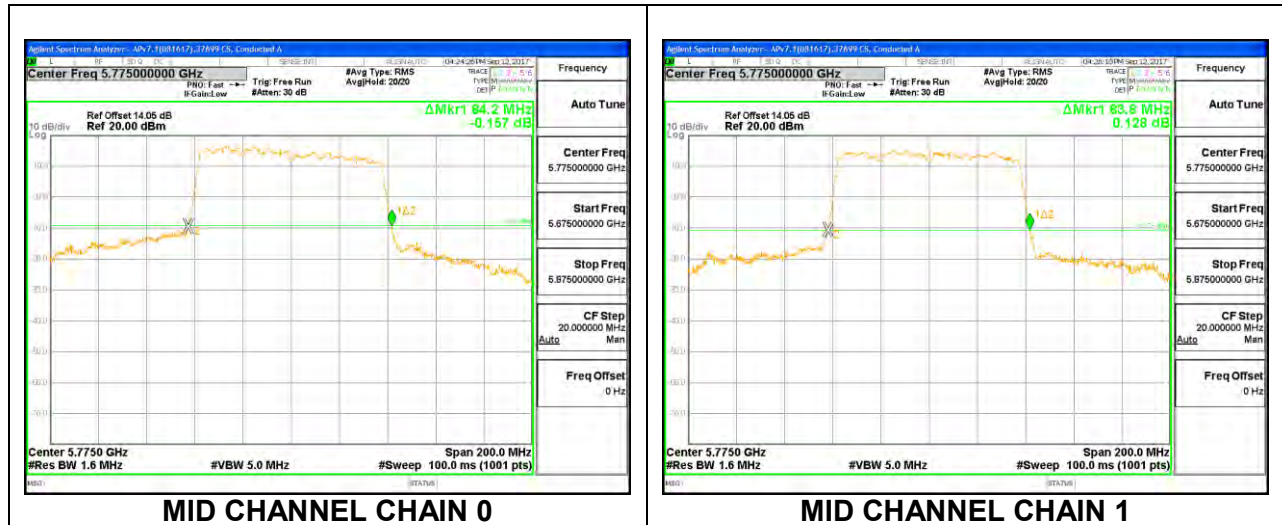
| Channel | Frequency | 26 dB Bandwidth |
|---------|-----------|-----------------|
|         | (MHz)     | (MHz)           |
| Mid     | 5775      | 84.60           |



**2TX Chain 0 + Chain 1 CDD MODE**

| Channel | Frequency | 26 dB Bandwidth<br>Chain 0<br>(MHz) | 26 dB Bandwidth<br>Chain 1<br>(MHz) |
|---------|-----------|-------------------------------------|-------------------------------------|
| Mid     | 5775      | 84.20                               | 83.80                               |

**MID CHANNEL**



## 8.3. 99% BANDWIDTH

### LIMITS

None; for reporting purposes only.

### RESULTS

#### 8.3.1. 802.11a MODE IN THE 5.2 GHz BAND

##### 1TX Chain 0

| Channel | Frequency<br>(MHz) | 99% Bandwidth<br>(MHz) |
|---------|--------------------|------------------------|
| Low     | 5180               | 16.5130                |
| Mid     | 5200               | 16.4930                |
| High    | 5240               | 16.5450                |



# 1TX Chain 1

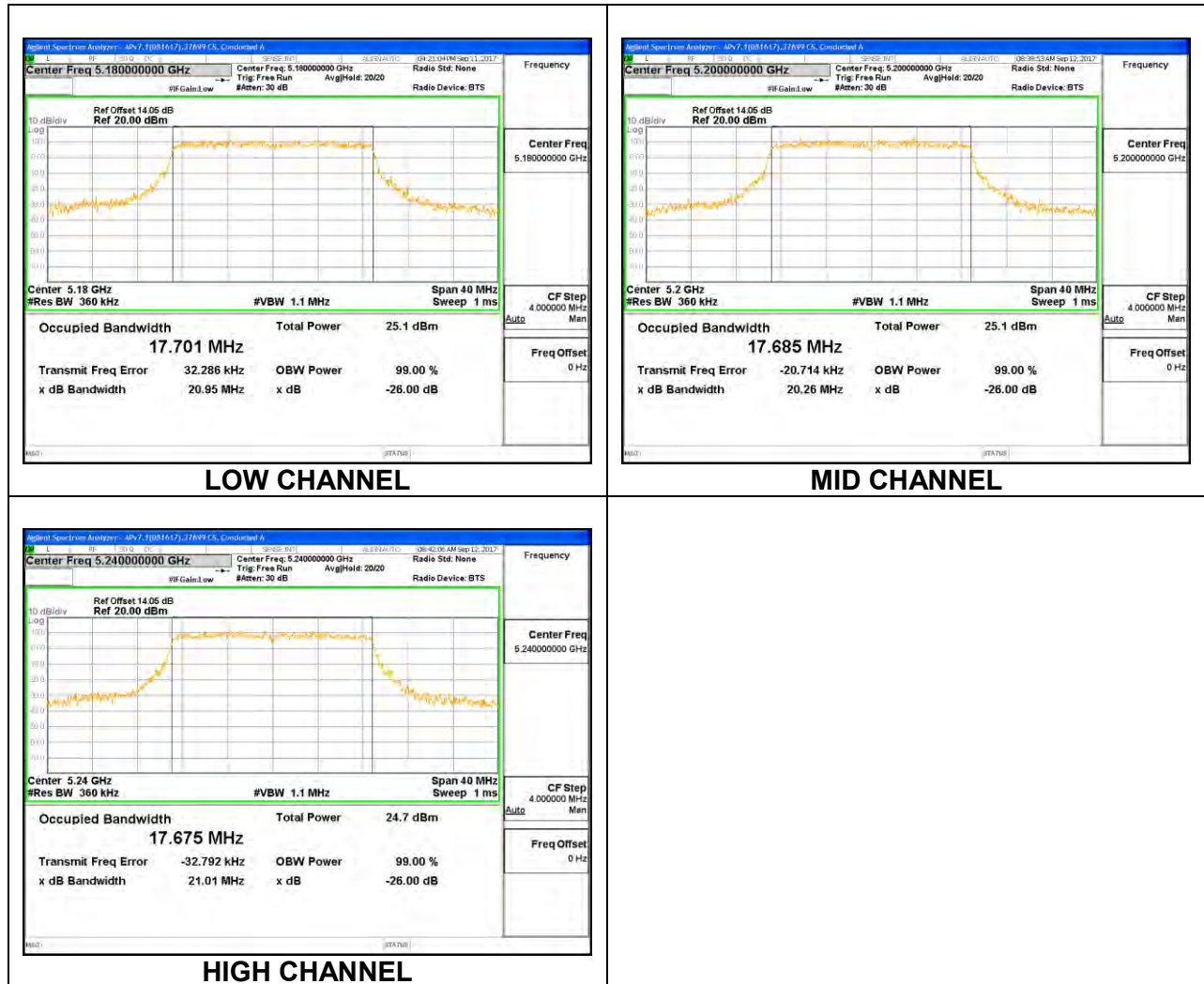
| Channel | Frequency<br>(MHz) | 99% Bandwidth<br>(MHz) |
|---------|--------------------|------------------------|
| Low     | 5180               | 16.5220                |
| Mid     | 5200               | 16.4840                |
| High    | 5240               | 16.5420                |



### 8.3.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

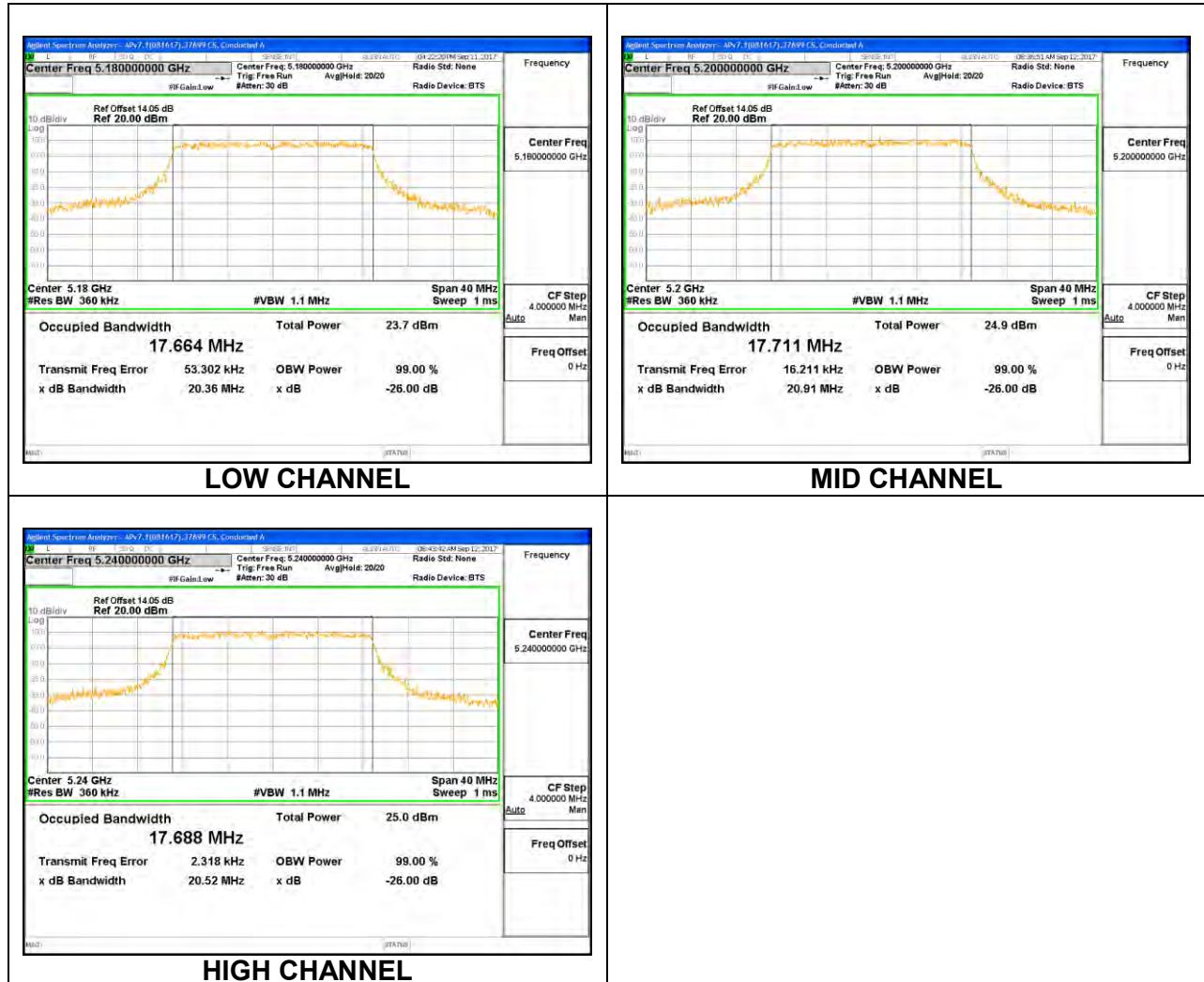
#### 1TX Chain 0

| Channel | Frequency<br>(MHz) | 99% Bandwidth<br>(MHz) |
|---------|--------------------|------------------------|
| Low     | 5180               | 17.7010                |
| Mid     | 5200               | 17.6850                |
| High    | 5240               | 17.6750                |



# 1TX Chain 1

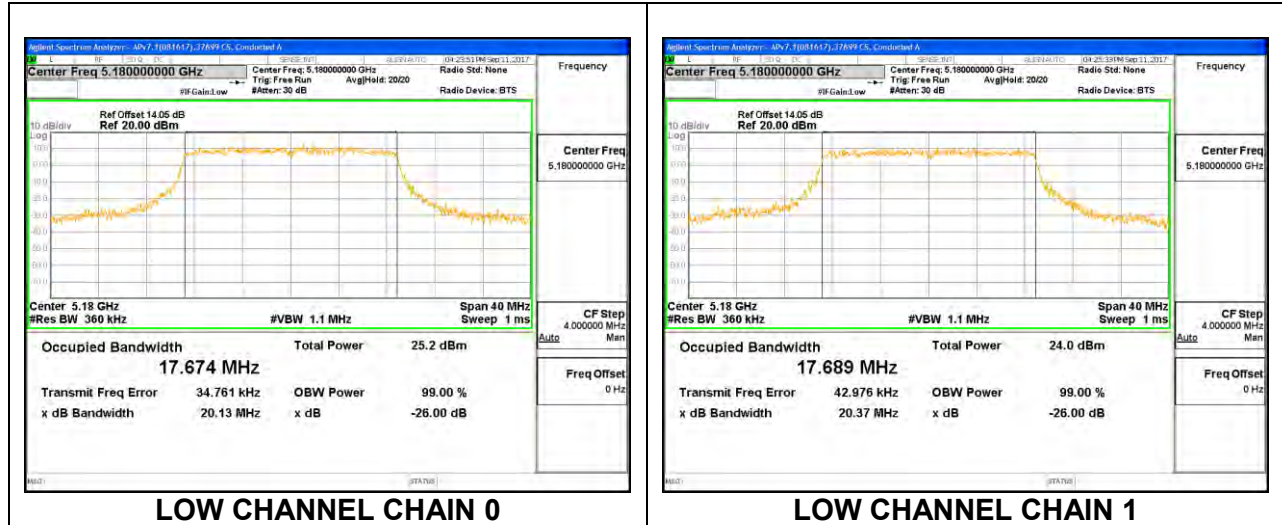
| Channel | Frequency<br>(MHz) | 99% Bandwidth<br>(MHz) |
|---------|--------------------|------------------------|
| Low     | 5180               | 17.6640                |
| Mid     | 5200               | 17.7110                |
| High    | 5240               | 17.6880                |



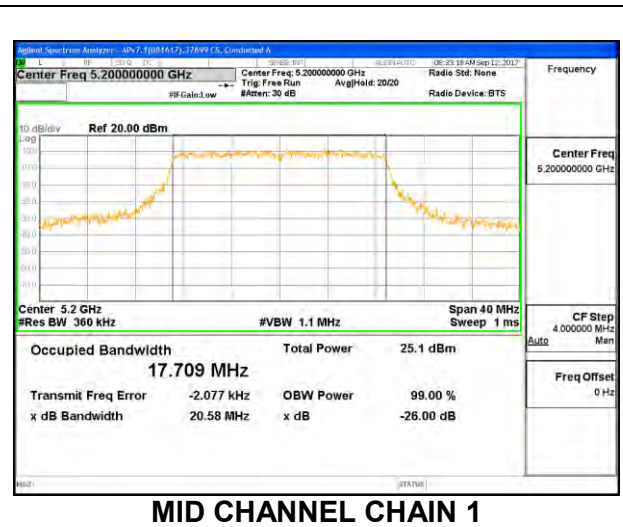
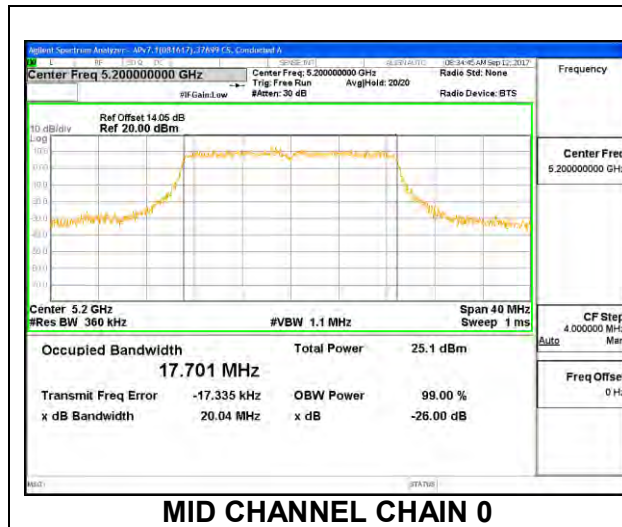
**2TX Chain 0 + Chain 1 CDD MODE**

| Channel | Frequency<br>(MHz) | 99% Bandwidth<br>Chain 0<br>(MHz) | 99% Bandwidth<br>Chain 1<br>(MHz) |
|---------|--------------------|-----------------------------------|-----------------------------------|
| Low     | 5180               | 17.6740                           | 17.6890                           |
| Mid     | 5200               | 17.7010                           | 17.7090                           |
| High    | 5240               | 17.6800                           | 17.7530                           |

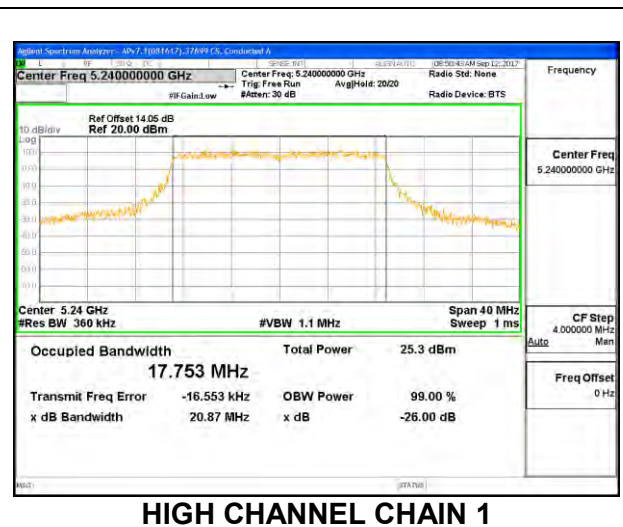
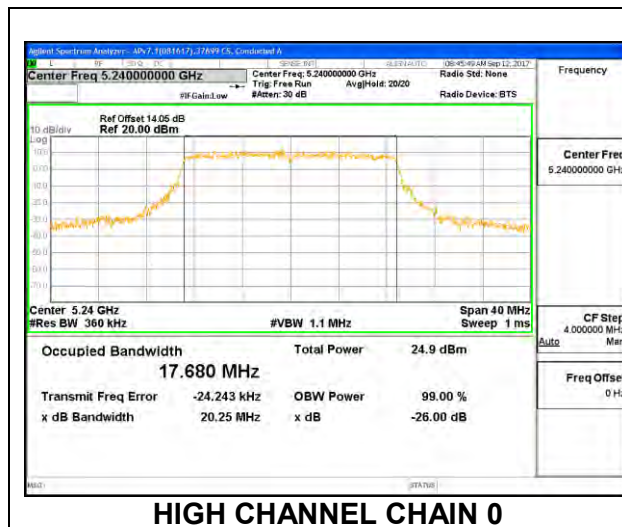
**LOW CHANNEL**



## MID CHANNEL



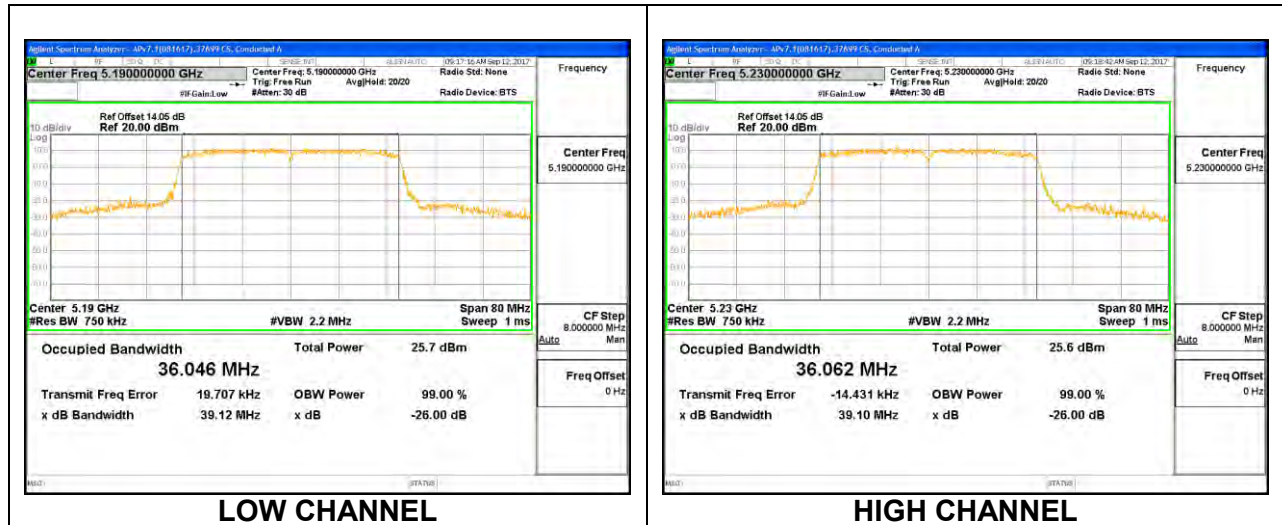
## HIGH CHANNEL



### 8.3.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

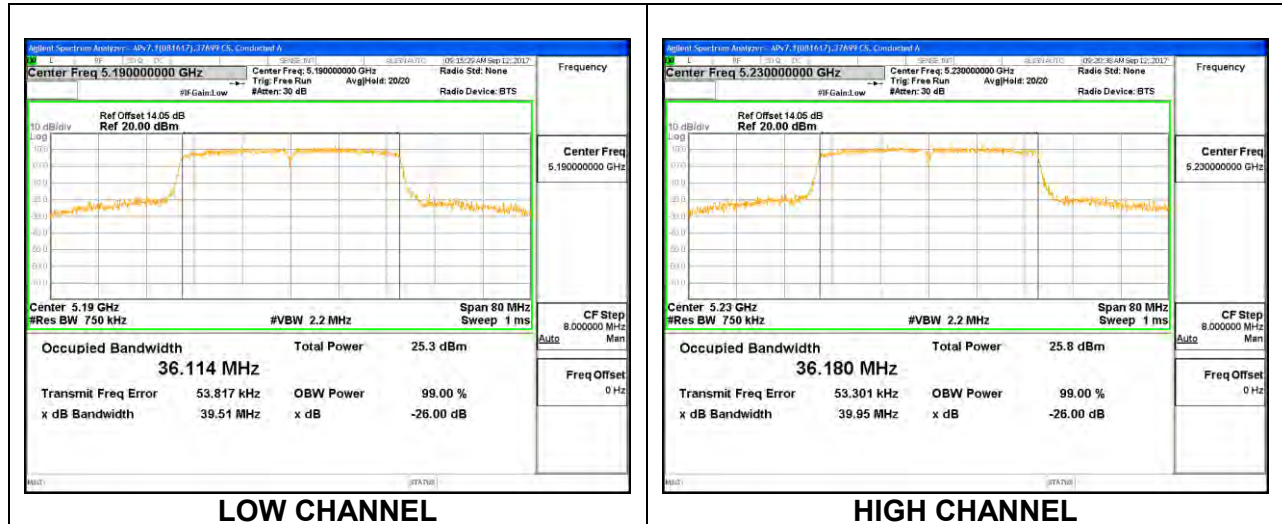
#### 1TX Chain 0

| Channel | Frequency | 99% Bandwidth |
|---------|-----------|---------------|
|         | (MHz)     | (MHz)         |
| Low     | 5190      | 36.0460       |
| High    | 5230      | 36.0620       |



# **1TX Chain 1**

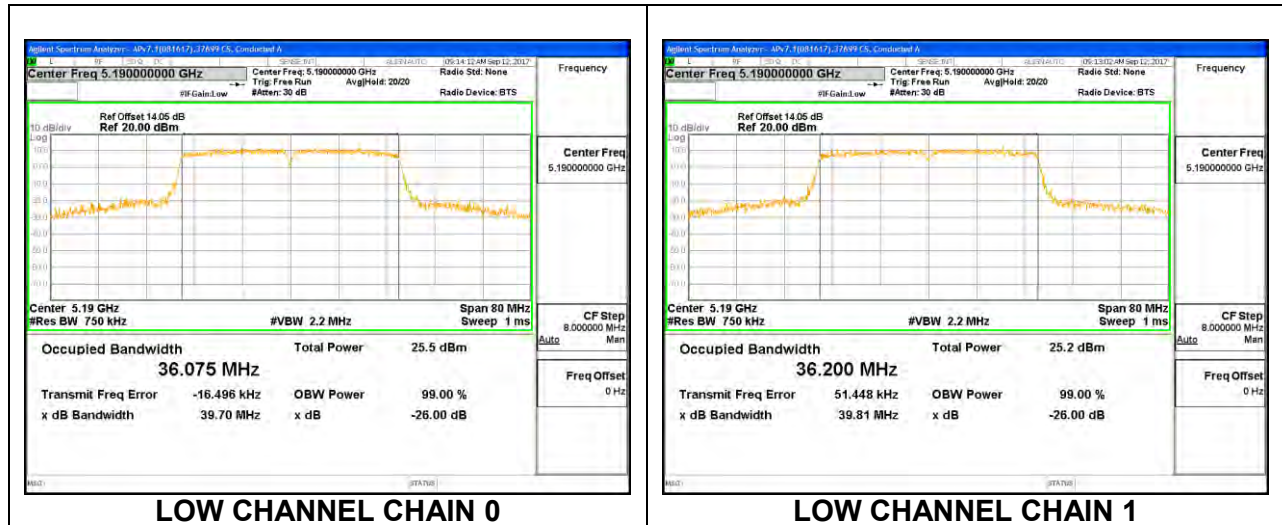
| Channel | Frequency | 99% Bandwidth |
|---------|-----------|---------------|
|         | (MHz)     | (MHz)         |
| Low     | 5190      | 36.1140       |
| High    | 5230      | 36.1800       |



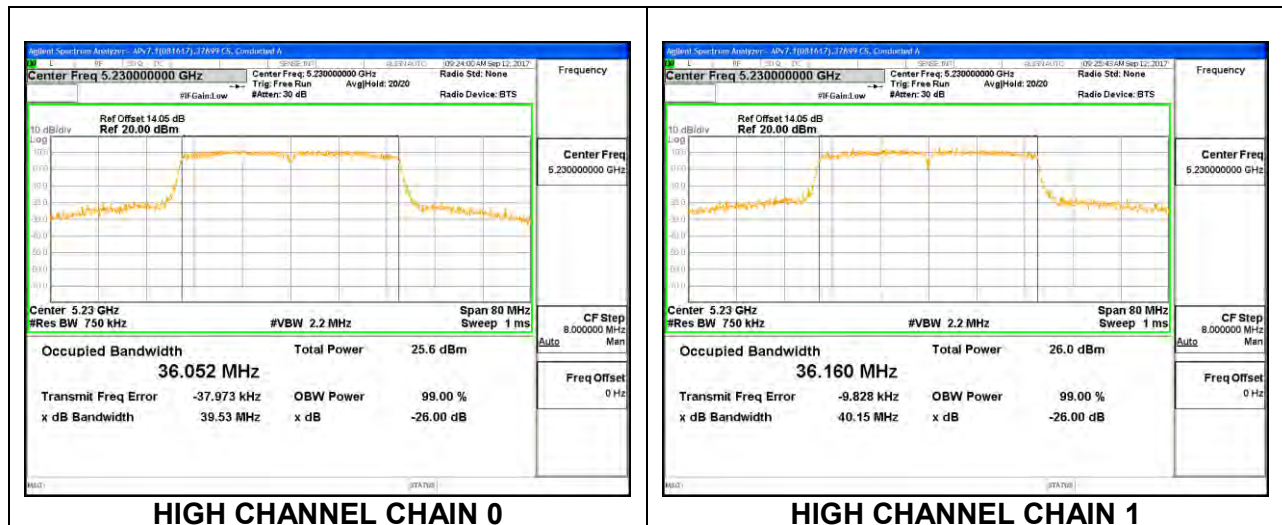
**2TX Chain 0 + Chain 1 CDD MODE**

| Channel | Frequency<br>(MHz) | 99% Bandwidth<br>Chain 0<br>(MHz) | 99% Bandwidth<br>Chain 1<br>(MHz) |
|---------|--------------------|-----------------------------------|-----------------------------------|
| Low     | 5190               | 36.0750                           | 36.2000                           |
| High    | 5230               | 36.0520                           | 36.1600                           |

**LOW CHANNEL**



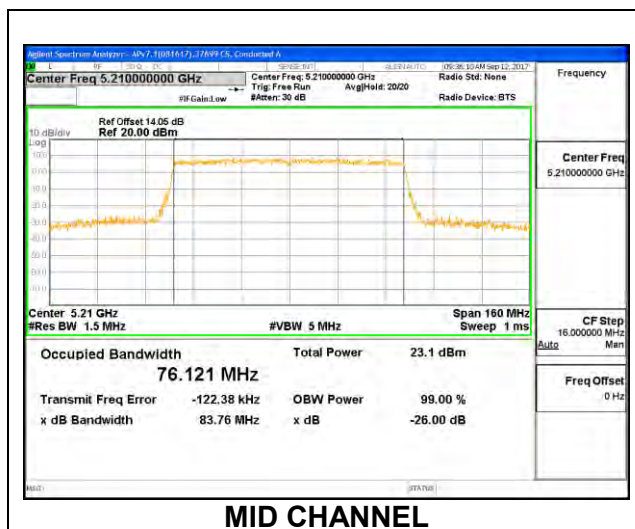
**HIGH CHANNEL**



### 8.3.4. 802.11ac VHT80 MODE IN THE 5.2 GHz BAND

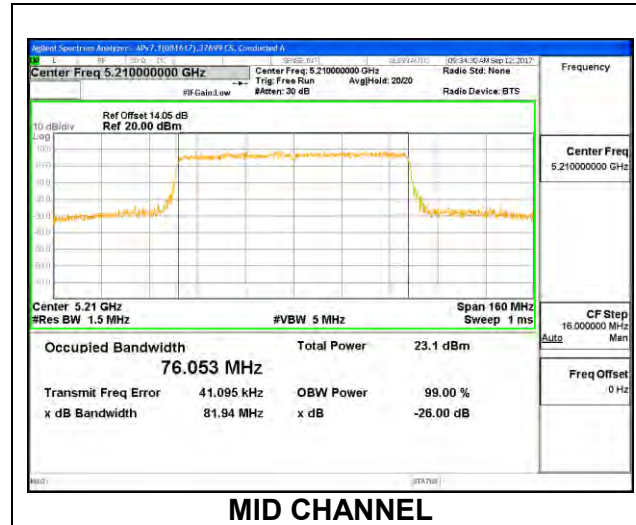
#### 1TX Chain 0

| Channel | Frequency | 99% Bandwidth |
|---------|-----------|---------------|
|         | (MHz)     | (MHz)         |
| Mid     | 5210      | 76.1210       |



**1TX Chain 1**

| Channel | Frequency | 99% Bandwidth |
|---------|-----------|---------------|
|         | (MHz)     | (MHz)         |
| Mid     | 5210      | 76.0530       |

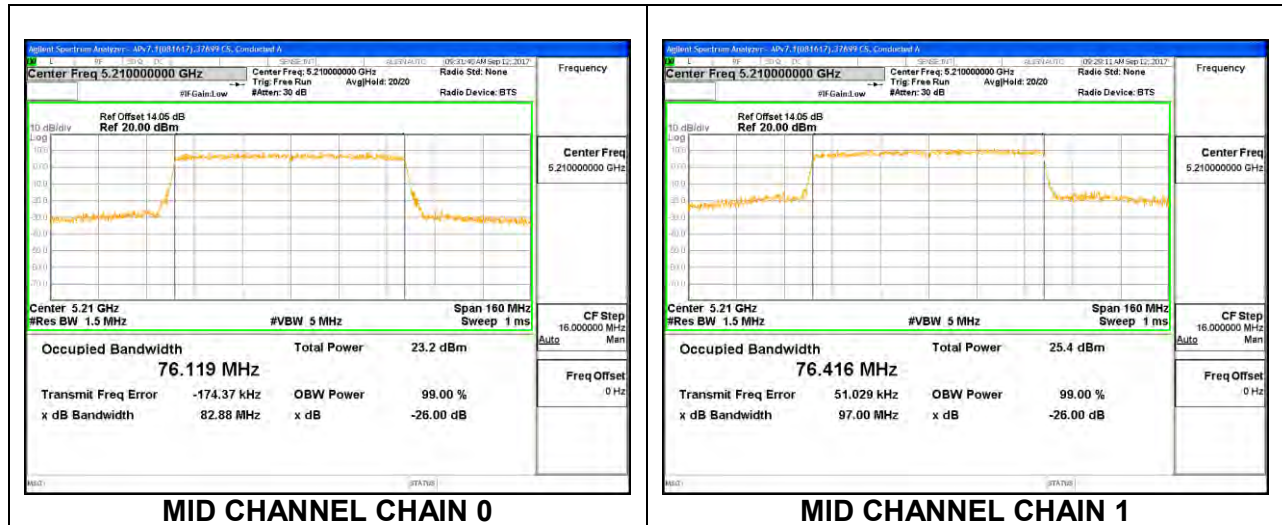


**MID CHANNEL**

**2TX Chain 0 + Chain 1 CDD MODE**

| Channel | Frequency<br>(MHz) | 99% Bandwidth<br>Chain 0<br>(MHz) | 99% Bandwidth<br>Chain 1<br>(MHz) |
|---------|--------------------|-----------------------------------|-----------------------------------|
| Mid     | 5210               | 76.1190                           | 76.4160                           |

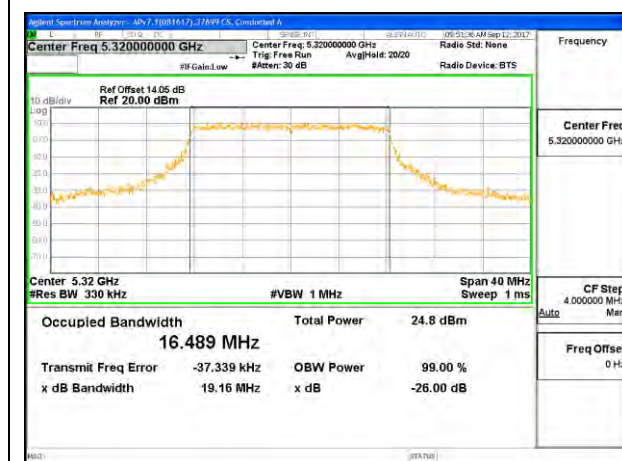
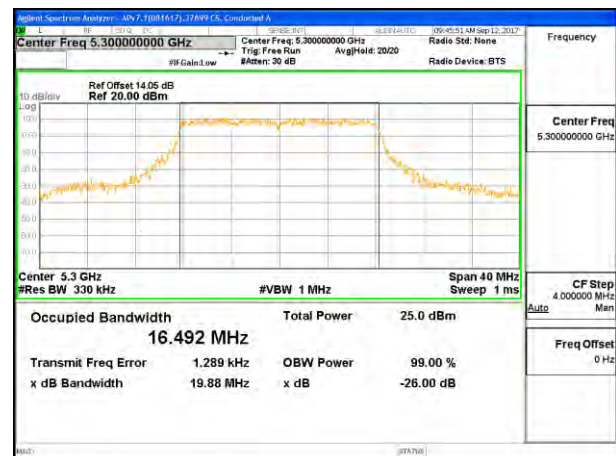
**MID CHANNEL**



### 8.3.5. 802.11a MODE IN THE 5.3 GHz BAND

#### 1TX Chain 0

| Channel | Frequency<br>(MHz) | 99% Bandwidth<br>(MHz) |
|---------|--------------------|------------------------|
| Low     | 5260               | 16.4980                |
| Mid     | 5300               | 16.4920                |
| High    | 5320               | 16.4890                |



# 1TX Chain 1

| Channel | Frequency<br>(MHz) | 99% Bandwidth<br>(MHz) |
|---------|--------------------|------------------------|
| Low     | 5260               | 16.5220                |
| Mid     | 5300               | 16.5230                |
| High    | 5320               | 16.5550                |



### 8.3.6. 802.11n HT20 MODE IN THE 5.3 GHz BAND

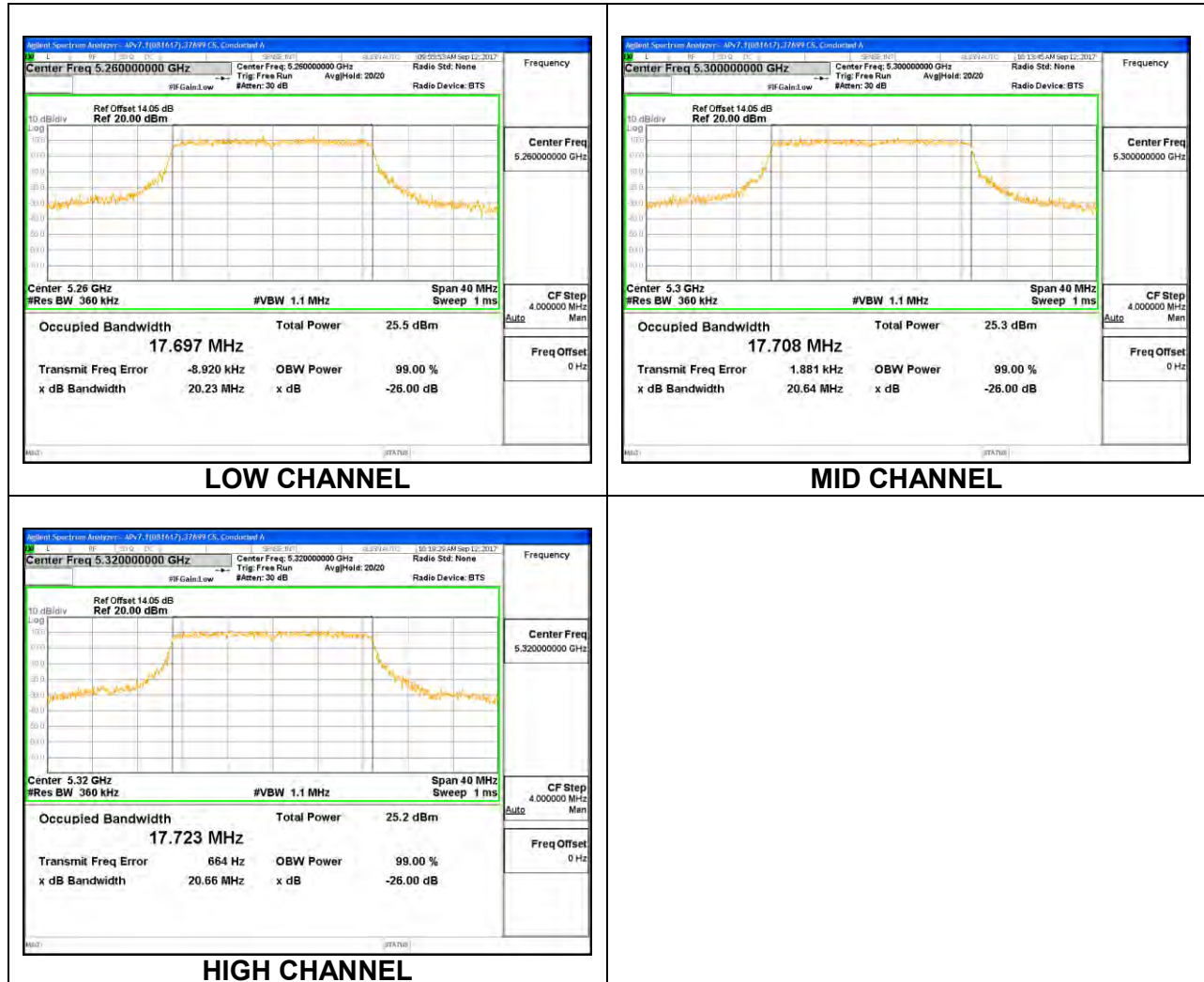
#### 1TX Chain 0

| Channel | Frequency<br>(MHz) | 99% Bandwidth<br>(MHz) |
|---------|--------------------|------------------------|
| Low     | 5260               | 17.7200                |
| Mid     | 5300               | 17.6760                |
| High    | 5320               | 17.6690                |



# 1TX Chain 1

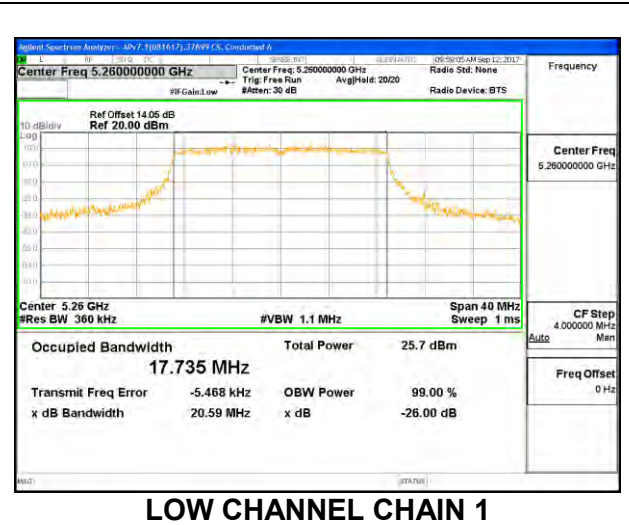
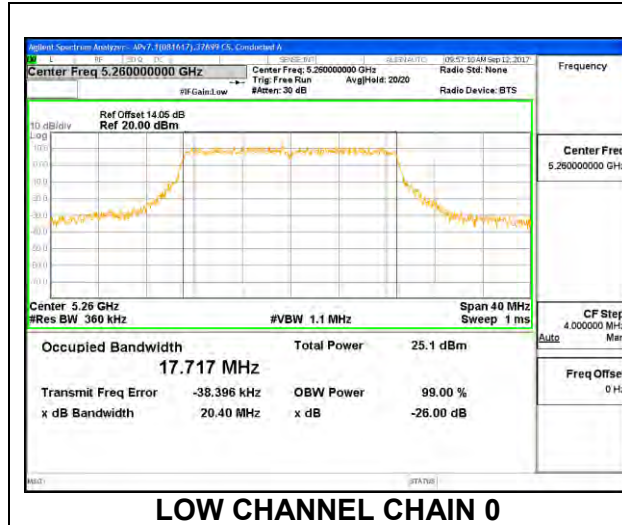
| Channel | Frequency<br>(MHz) | 99% Bandwidth<br>(MHz) |
|---------|--------------------|------------------------|
| Low     | 5260               | 17.6970                |
| Mid     | 5300               | 17.7080                |
| High    | 5320               | 17.7230                |



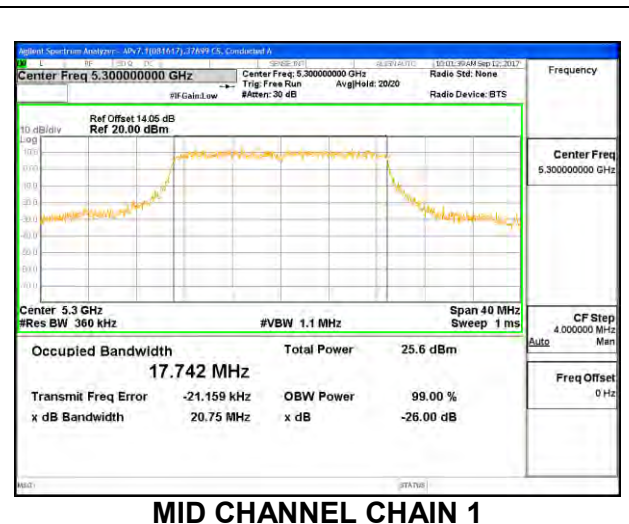
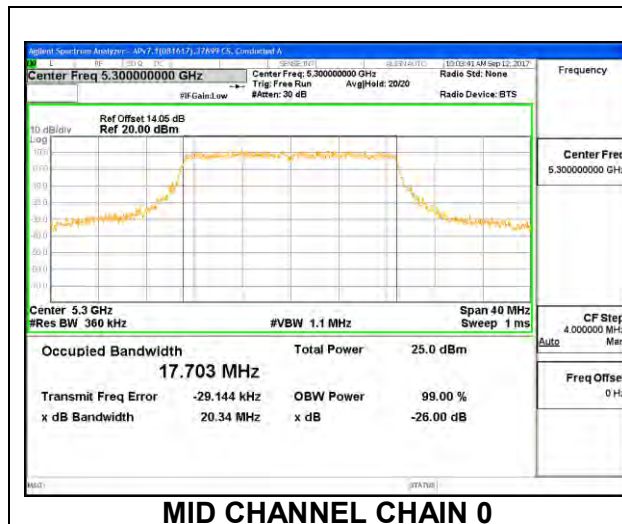
## 2TX Chain 0 + Chain 1 CDD MODE

| Channel | Frequency<br>(MHz) | 99% Bandwidth<br>Chain 0<br>(MHz) | 99% Bandwidth<br>Chain 1<br>(MHz) |
|---------|--------------------|-----------------------------------|-----------------------------------|
| Low     | 5260               | 17.7170                           | 17.7350                           |
| Mid     | 5300               | 17.7030                           | 17.7420                           |
| High    | 5320               | 17.7040                           | 17.7210                           |

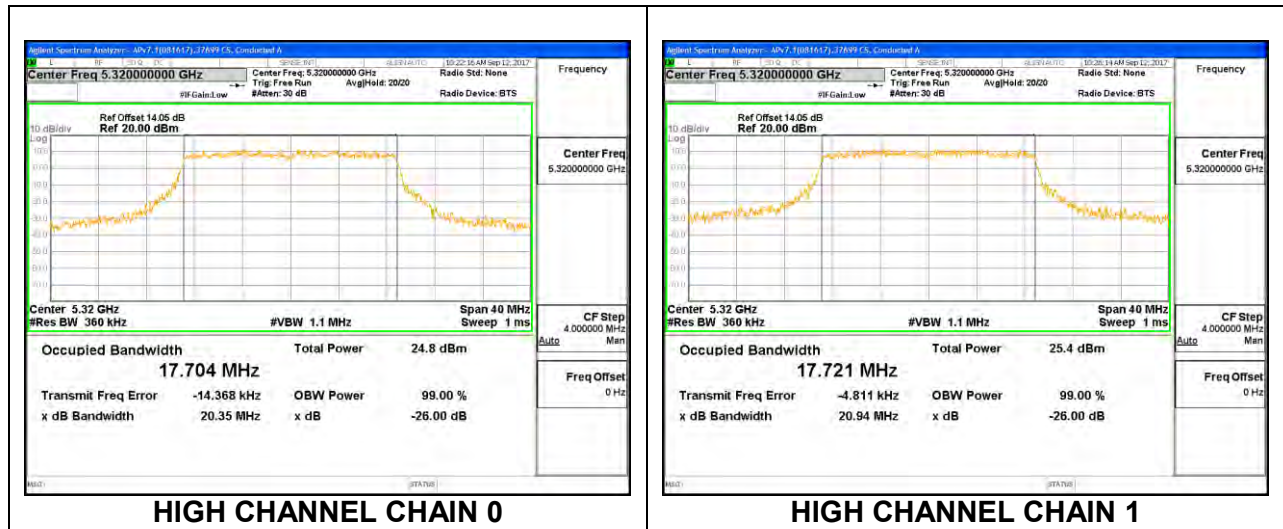
## LOW CHANNEL



## MID CHANNEL



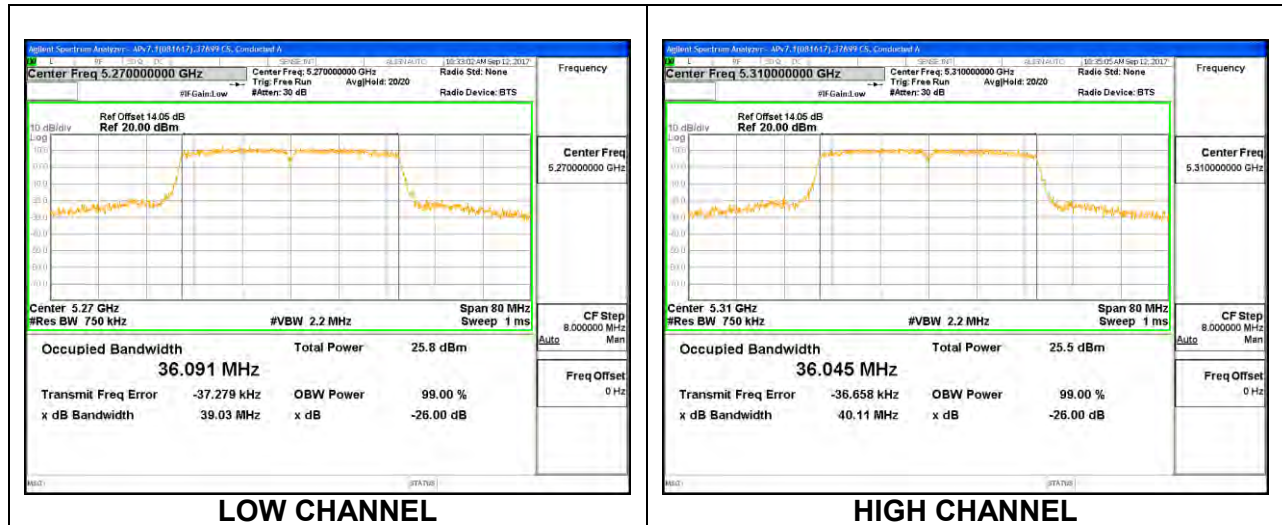
## HIGH CHANNEL



### 8.3.7. 802.11n HT40 MODE IN THE 5.3 GHz BAND

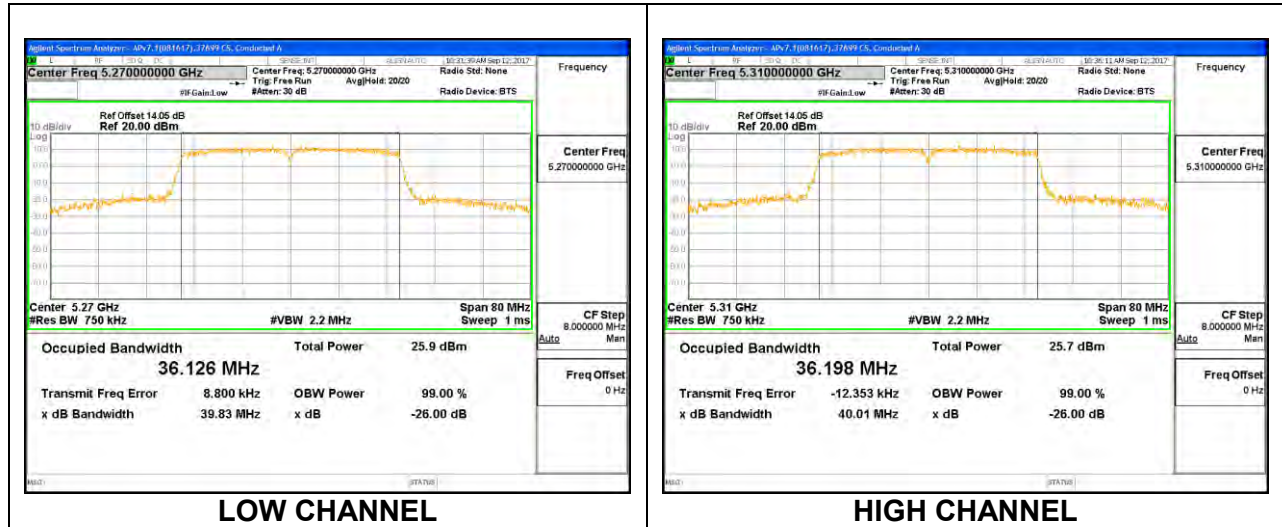
#### 1TX Chain 0

| Channel | Frequency | 99% Bandwidth |
|---------|-----------|---------------|
|         | (MHz)     | (MHz)         |
| Low     | 5270      | 36.0910       |
| High    | 5310      | 36.0450       |



# **1TX Chain 1**

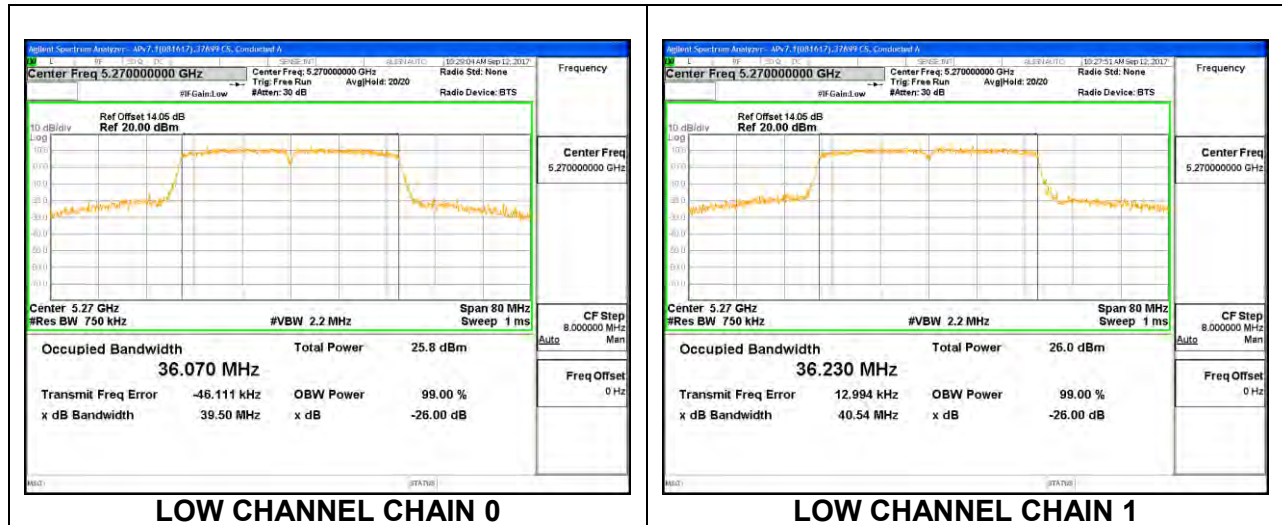
| Channel | Frequency | 99% Bandwidth |
|---------|-----------|---------------|
|         | (MHz)     | (MHz)         |
| Low     | 5270      | 36.1260       |
| High    | 5310      | 36.1980       |



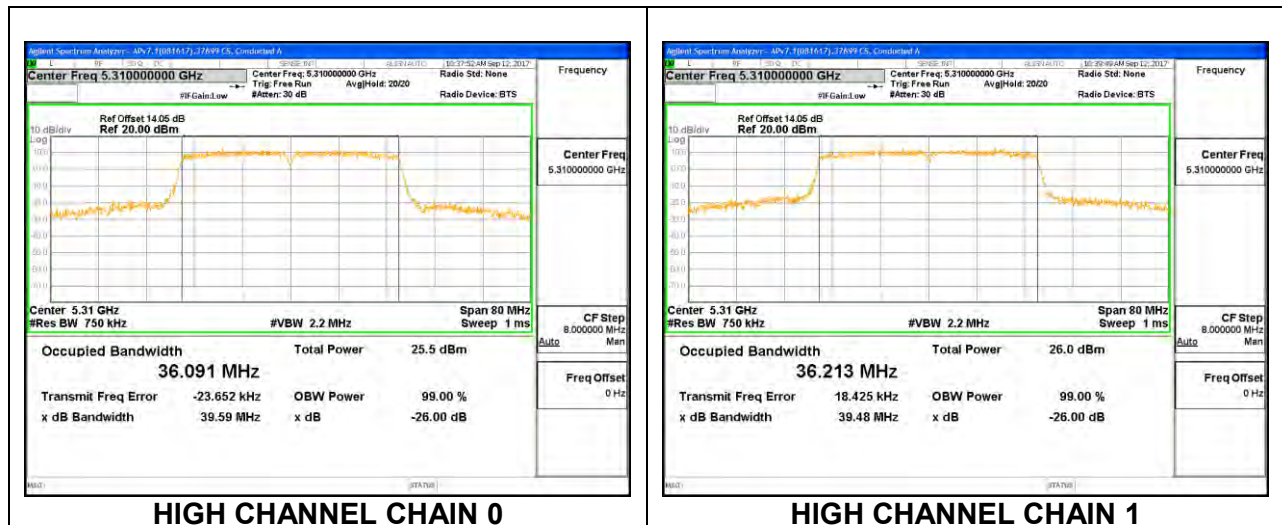
**2TX Chain 0 + Chain 1 CDD MODE**

| Channel | Frequency<br>(MHz) | 99% Bandwidth<br>Chain 0<br>(MHz) | 99% Bandwidth<br>Chain 1<br>(MHz) |
|---------|--------------------|-----------------------------------|-----------------------------------|
| Low     | 5270               | 36.0700                           | 36.2300                           |
| High    | 5310               | 36.0910                           | 36.2130                           |

**LOW CHANNEL**



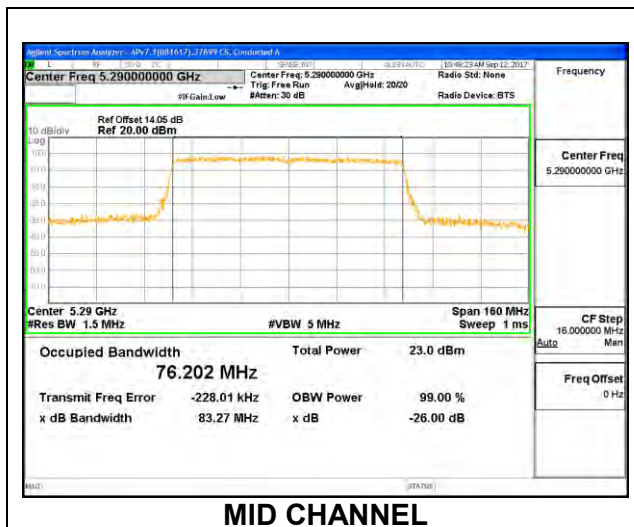
**HIGH CHANNEL**



### 8.3.8. 802.11ac VHT80 MODE IN THE 5.3 GHz BAND

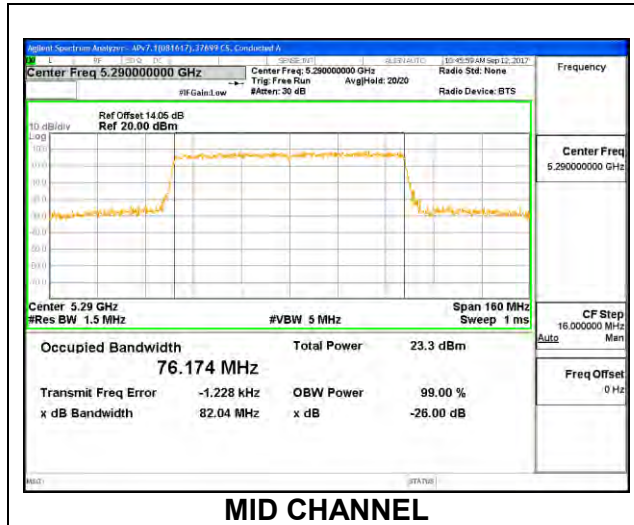
#### 1TX Chain 0

| Channel | Frequency | 99% Bandwidth |
|---------|-----------|---------------|
|         | (MHz)     | (MHz)         |
| Mid     | 5290      | 76.2020       |



**1TX Chain 1**

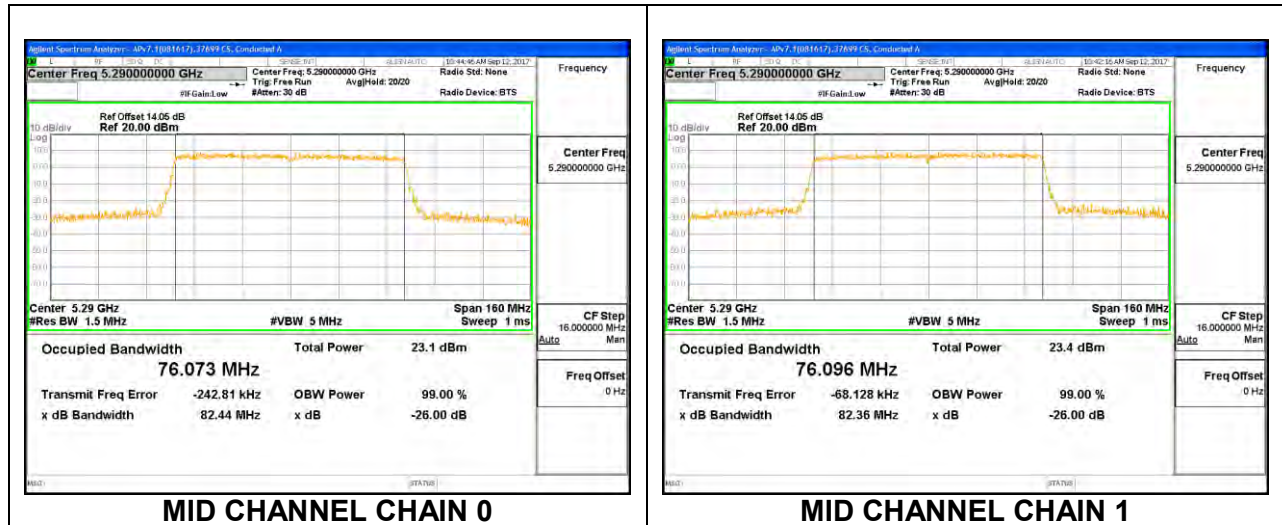
| Channel | Frequency | 99% Bandwidth |
|---------|-----------|---------------|
|         | (MHz)     | (MHz)         |
| Mid     | 5290      | 76.1740       |



**2TX Chain 0 + Chain 1 CDD MODE**

| Channel | Frequency<br>(MHz) | 99% Bandwidth<br>Chain 0<br>(MHz) | 99% Bandwidth<br>Chain 1<br>(MHz) |
|---------|--------------------|-----------------------------------|-----------------------------------|
| Mid     | 5290               | 76.0730                           | 76.0960                           |

**MID CHANNEL**



### 8.3.9. 802.11a MODE IN THE 5.6 GHz BAND

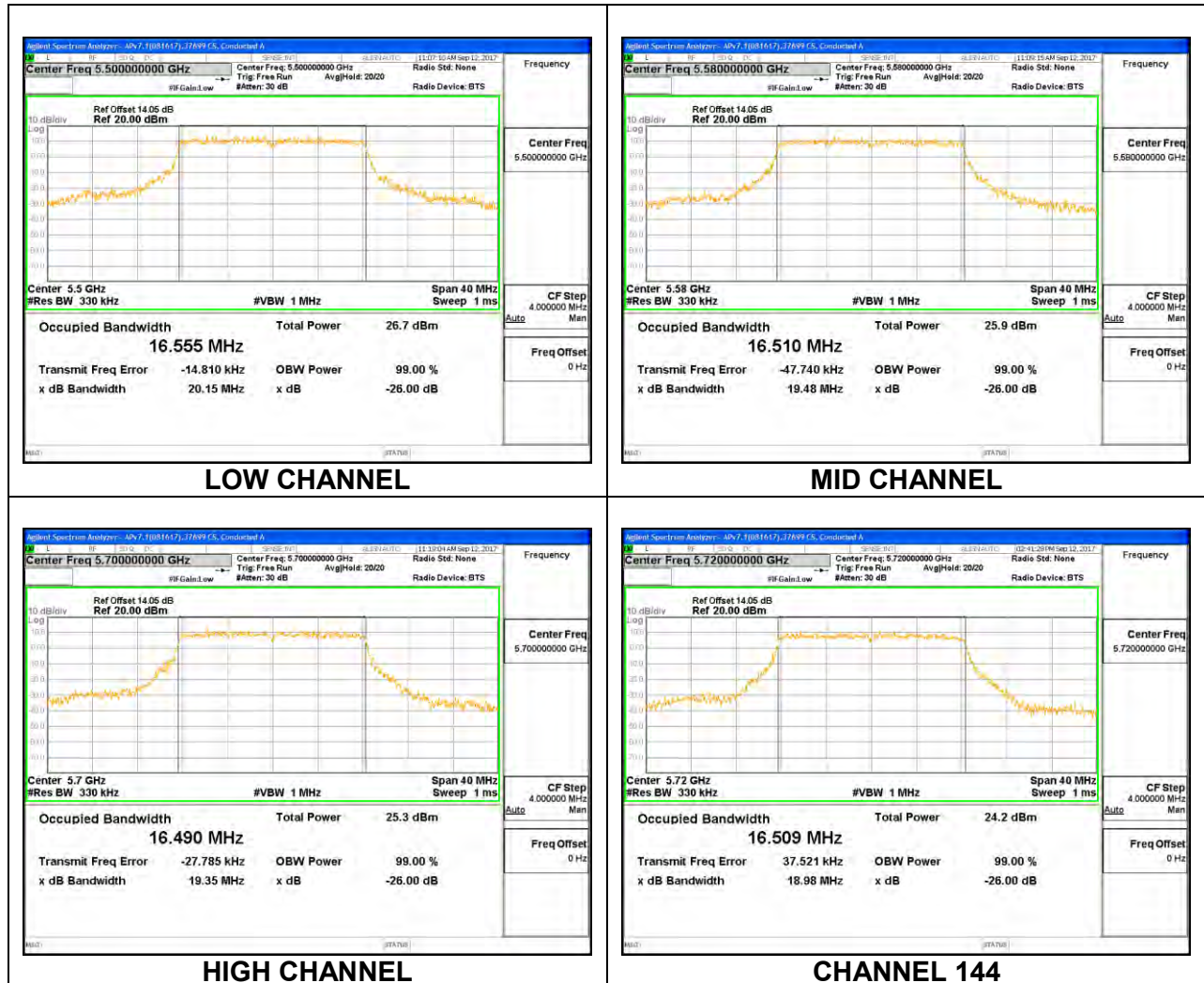
#### 1TX Chain 0

| Channel | Frequency<br>(MHz) | 99% Bandwidth<br>(MHz) |
|---------|--------------------|------------------------|
| Low     | 5500               | 16.5390                |
| Mid     | 5580               | 16.5050                |
| High    | 5700               | 16.5170                |
| 144     | 5720               | 16.5010                |



# 1TX Chain 1

| Channel | Frequency<br>(MHz) | 99% Bandwidth<br>(MHz) |
|---------|--------------------|------------------------|
| Low     | 5500               | 16.5550                |
| Mid     | 5580               | 16.5100                |
| High    | 5700               | 16.4900                |
| 144     | 5720               | 16.5090                |



### 8.3.10. 802.11n HT20 MODE IN THE 5.6 GHz BAND

#### 1TX Chain 0

| Channel | Frequency<br>(MHz) | 99% Bandwidth<br>(MHz) |
|---------|--------------------|------------------------|
| Low     | 5500               | 17.6980                |
| Mid     | 5580               | 17.6830                |
| High    | 5700               | 17.7410                |
| 144     | 5720               | 17.7290                |

