

TEST REPORT

Report No.: SHE19110011-02DE

Date: 2020-1-19

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Applicant

: PCD, LLC

Address of Applicant

: 7651 Southland Blvd. Orlando, FL 32809

Product Name

: Router

Model No.

: R402

Sample No.

: E19110011-05#04

E19110011-05#02

FCC ID

: 2ALJJR402

Standards

: FCC CFR47 Part 15, Subpart C

Date of Receipt

: 2020-1-2

Date of Test

: 2020-1-8 ~ 2020-1-19

Date of Issue

: 2020-1-19

Remark:

This report details the results of the testing carried out on one sample, the results contained in this report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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(Jennifer Zhou)

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Approved by:

Guoyou Chi

(Authorized signatory: Guoyou Chi)

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| Revision Record | | | |
|-----------------|-----------|-----------|------------|
| Version | Date | Revisions | Revised By |
| 1.0 | 2020-1-19 | Original | -- |
| | | | |
| | | | |
| | | | |

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1 General Information

1.1 Testing Laboratory

| | |
|--------------|---|
| Company Name | ICAS Testing Technology Services (Shanghai) Co., Ltd. |
| Address | 155 Pingbei Rd, Minhang District, Shanghai, China |
| Telephone | 0086 21-51682999 |
| Fax | 0086 21-54711112 |
| Homepage | www.icasiso.com |

1.2 Details of Application

| | |
|----------------|--|
| Company Name | PCD, LLC |
| Address | 7651 Southland Blvd. Orlando, FL 32809 |
| Contact Person | Mauricio Velasco |
| Telephone | +1.631.495.7537 |
| Email | mvelasco@pcdlatam.com |

1.3 Details of EUT

| | |
|---------------------------|--|
| Product Name | Router |
| Brand Name | PCD |
| Model No. | R402 |
| FCC ID | 2ALJJR402 |
| Mode of Operation | WLAN 802.11a/n(HT20/40)/ac(HT20/40/80) |
| Frequency Range | Band I: 5150 MHz ~ 5250 MHz Band IV: 5725 MHz ~ 5850 MHz |
| Modulation Type | 256QAM, 64QAM, 16QAM, BPSK, QPSK |
| Channel Bandwidth | 802.11a: 20MHz 802.11n: 20MHz, 40MHz 802.11ac: 20MHz, 40MHz, 80MHz |
| Antenna Type | internal antenna |
| Antenna Gain | 1 dBi |
| Extreme Temperature Range | -10°C~ +55°C |
| Test Voltage | AC 100~240V |
| Extreme Voltage | Low Voltage: DC 12.0V High Voltage: DC 13.2V |
| Product Type | Fixed |

1.4 Test Methodology

| | |
|--|--|
| 47 CFR Part 15, Subpart C (10-1-16 Edition) | Miscellaneous Wireless Communications Services |
|--|--|

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| | |
|-------------------------------------|--|
| KDB Publication 789033 D02 v02r01 | Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E |
| KDB Publication 662911 D01 v02r01 | Emissions Testing of Transmitters with Multiple Outputs in the Same Band (e.g., MIMO, Smart Antenna, etc) |
| RSS-Gen (Issue 5, March 2019) | General Requirements for Compliance of Radio Apparatus |
| RSS-247 (Issue 2, February 2017) | Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices |
| ANSI C63.10-2013 | American National Standard for Testing Unlicensed Wireless Devices |

Note(s):

All test items were verified and recorded according to the standards and without any addition/deviation/exclusion during the test.

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2 Test Condition

2.1 Environmental conditions

| | |
|----------------------------|----------|
| Temperature (°C) | 18-25 |
| Humidity (%RH) | 40-65 |
| Barometric Pressure (mbar) | 960-1060 |

2.2 Equipment List

| Name of Equipment | Manufacturer | Model | Serial No. | Cal. Due Date |
|--|-----------------|----------------|-------------|---------------|
| Spectrum Analyzer | Keysight | N9020B | MY59260184 | 2020-07-28 |
| Spectrum Analyzer | Rohde & Schwarz | FSV40N | 101450 | 2020-06-24 |
| EMI Test Receiver | Rohde & Schwarz | ESPI3 | 100173 | 2020-06-19 |
| EMI Test Receiver | Rohde & Schwarz | ESR 7 | 101911 | 2020-06-19 |
| V-network | SCHWARZBECK | NSLK 8127 | 8127-902 | 2020-02-20 |
| Wideband Radio Communication Tester | Rohde & Schwarz | CMW 500 | 100687 | 2020-08-22 |
| DC Power Supply | ACPOWER | ADC-0800025-15 | D215010003 | 2020-03-15 |
| Temperature Chamber | Muni | M/THP400L | M/161227-01 | 2020-05-08 |
| Broadband Antenna | SCHWARZBECK | VULB9163 | 9163-1037 | 2020-06-06 |
| Horn Antenna-18G | SCHWARZBECK | BBHA9120D | 9120D-1775 | 2020-06-06 |
| Loop Antenna | SCHWARZBECK | FMZB 1513 | N/A | 2021-03-19 |
| Horn Antenna-18~40G | YINGLIAN | LB-180400-KF | N/A | 2020-07-26 |
| EMC chamber 9*6*6 (L*W*H) | CHANGNING | 966 | N/A | 2020-06-26 |
| Shielded Enclosure 8*5*4 (L*W*H) | CHANGNING | 854 | N/A | 2020-08-28 |
| Test Software | BL | BL410_E | N/A | N/A |
| Test Software | BL | BL410_R | N/A | N/A |
| Amplifier and Filter group | BL | BL410_E | N/A | 2020-11-01 |
| Amplifier and Filter group and Power meter | BL | BL410_R | N/A | 2020-11-01 |

2.3 Measurement Uncertainty

| Parameter | Frequency | Uncertainty |
|---------------------------------|----------------|-------------|
| Antenna Port Conducted Emission | < 1GHz | ± 1.5 dB |
| | > 1GHz | ± 1.5 dB |
| Radiated Emission | 30 MHz – 1 GHz | ± 3 dB |
| | > 1GHz | ± 3 dB |

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3 Test Set-up and Operation Modes

3.1 Details of Test Mode

Using test software was control EUT work in continuous transmitter and receiver mode. Select test channel as below:
For 802.11a/n(HT20), 802.11ac(VHT20)

| Band I (5150 – 5250 MHz) | | Band IV (5725 – 5850 MHz) | |
|---------------------------|-----------|----------------------------|-----------|
| Channel | Frequency | Channel | Frequency |
| The lowest channel(CH36) | 5180MHz | The lowest channel(CH149) | 5745MHz |
| The middle channel(CH44) | 5220MHz | The middle channel(CH157) | 5785MHz |
| The highest channel(CH48) | 5240MHz | The highest channel(CH165) | 5825MHz |

For 802.11n(HT40), 802.11ac(VHT40)

| Band I (5150 – 5250 MHz) | | Band IV (5725 – 5850 MHz) | |
|---------------------------|-----------|----------------------------|-----------|
| Channel | Frequency | Channel | Frequency |
| The lowest channel(CH38) | 5190MHz | The lowest channel(CH151) | 5755MHz |
| The highest channel(CH46) | 5230MHz | The highest channel(CH159) | 5795MHz |

For 802.11ac(VHT80)

| Band I (5150 – 5250 MHz) | | Band IV (5725 – 5850 MHz) | |
|--------------------------|-----------|---------------------------|-----------|
| Channel | Frequency | Channel | Frequency |
| The lowest channel(CH42) | 5210MHz | The lowest channel(CH155) | 5775MHz |

Through Pre-scan under all rate at lowest channel, the data rate as below table described is the worst case, so we choose these data rate for test.

| Type | Data rate (For Chain 1) | Data rate (For Chain 2) |
|--------------------------------|-------------------------|-------------------------|
| 802.11a | 24Mbps | 24Mbps |
| 802.11n(HT20), 802.11ac(VHT20) | MCS6 | MCS6 |
| 802.11n(HT40), 802.11ac(VHT40) | MCS4 | MCS6 |
| 802.11ac(VHT80) | MCS3 | MCS3 |

| Type | Data rate (For MIMO) |
|--------------------------------|----------------------|
| 802.11a | 36Mbps |
| 802.11n(HT20), 802.11ac(VHT20) | MCS6 |
| 802.11n(HT40), 802.11ac(VHT40) | MCS4 |
| 802.11ac(VHT80) | MCS3 |

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The basic operation modes are:

- A. On
 - 1. WLAN mode
 - a. Transmitting
 - b. Receiving
- B. Standby
- C. Off

3.2 Special Accessories and Auxiliary Equipment

| Description | Manufacturer | Model No. | Serial No. |
|-------------|--------------|-----------|------------|
| N/A | N/A | N/A | N/A |

3.3 Support Software

| Description | Manufacturer | Software Name |
|-------------|--------------|---------------|
| N/A | N/A | N/A |

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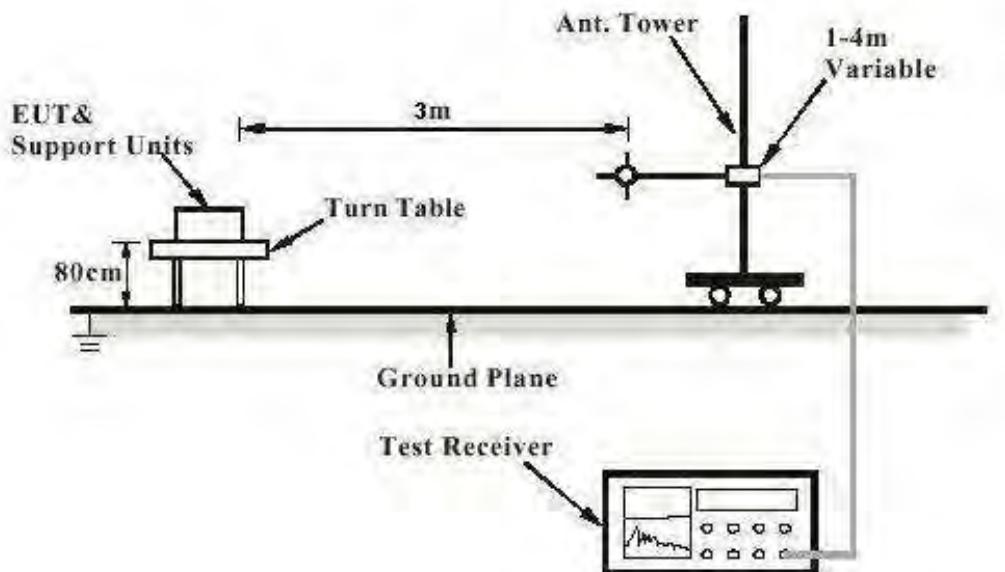
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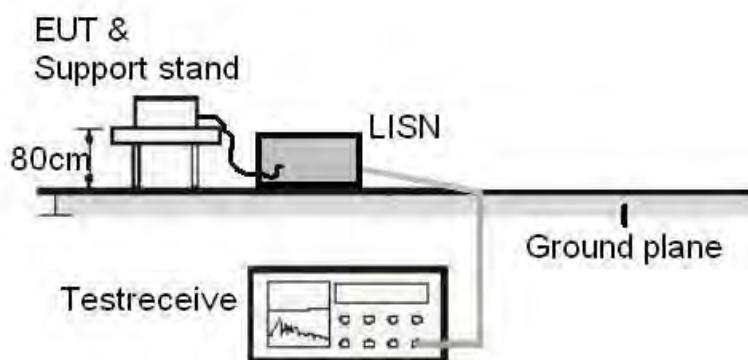
3.4 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test



Note: Measurements above 1GHz are done with a table height of 1.5m. In addition, there is RF absorbing material on the floor of the test site for above 1GHz measurement.

Diagram of Measurement Equipment Configuration for Conduction Measurement



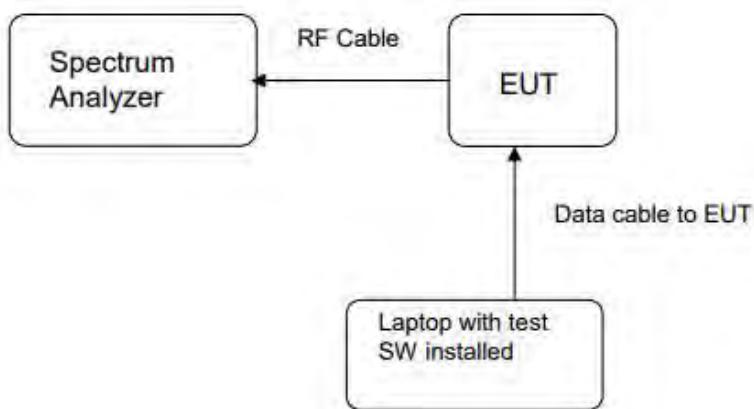
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Diagram of Measurement Equipment Configuration for Transmitter Measurement



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4 Test Results

4.1 Transmitter Requirement & Test Suites

4.1.1 Antenna Requirement

RESULT: **PASS**

| | |
|---------------|---|
| Test standard | : FCC Part 15.407(a), 15.203 RSS-247 6.2 |
| Requirement | : The use of approved antennas only with directional gains that do not exceed 6 dBi |

According to the manufacturer declaration, the EUT has an antenna with a directional gain of 1dBi. The antenna is an internal antenna with no possibility of replacement with a non-approvrd antenna by the end-user.

Therefore, the EUT is considered to comply with this provision.

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4.1.2 Peak Output Power

RESULT:

PASS

| | | |
|-------------------|---|-----------------------------------|
| Test standard | : | FCC Part 15.407(a) RSS-247 6.2 |
| Requirement | : | ANSI C63.10-2013, KDB 789033 |
| Kind of test site | : | Shielded room |

Test setup

| | | |
|---------------------|---|-----------------|
| Test Channel | : | Low/Middle/High |
| Operation Mode | : | A.1.a |
| Ambient temperature | : | 25°C |
| Relative humidity | : | 52% |

Table 1: Peak Output Power

Band I (5150 – 5250 MHz)

| Test Mode | Test Channel (MHz) | Measured Peak Output Power | | | | FCC Limit (mW) | |
|-----------------|-----------------------|----------------------------|-------|---------|-------|----------------------|--|
| | | Chain 1 | | Chain 2 | | | |
| | | (dBm) | (mW) | (dBm) | (mW) | | |
| 802.11a | 5180 | 11.28 | 13.43 | 12.11 | 16.26 | 250 | |
| | 5220 | 11.26 | 13.37 | 12.46 | 17.62 | | |
| | 5240 | 11.15 | 13.03 | 12.63 | 18.32 | | |
| 802.11n(HT20) | 5180 | 11.43 | 13.90 | 12.28 | 16.90 | 250 | |
| | 5220 | 11.48 | 14.06 | 12.69 | 18.58 | | |
| | 5240 | 11.46 | 14.00 | 12.86 | 19.32 | | |
| 802.11ac(VHT20) | 5180 | 11.57 | 14.35 | 12.25 | 16.79 | 250 | |
| | 5220 | 11.44 | 13.93 | 12.66 | 18.45 | | |
| | 5240 | 11.42 | 13.87 | 12.81 | 19.10 | | |
| 802.11n(HT40) | 5190 | 11.17 | 13.09 | 11.98 | 15.78 | 250 | |
| | 5230 | 11.08 | 12.82 | 12.42 | 17.46 | | |
| 802.11ac(VHT40) | 5190 | 11.12 | 12.94 | 11.93 | 15.60 | 250 | |
| | 5230 | 11.02 | 12.65 | 12.39 | 17.34 | | |
| 802.11ac(VHT80) | 5210 | 11.10 | 12.88 | 12.17 | 16.48 | | |

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Band I (5150 – 5250 MHz)

| Test Mode | Test Channel (MHz) | Measured Peak Output Power | | FCC Limit (mW) | |
|-----------------|-----------------------|----------------------------|-------|-------------------|--|
| | | MIMO | | | |
| | | (dBm) | (mW) | | |
| 802.11a | 5180 | 11.86 | 15.35 | 250 | |
| | 5220 | 11.56 | 14.32 | | |
| | 5240 | 11.46 | 14.00 | | |
| 802.11n(HT20) | 5180 | 12.00 | 15.85 | 250 | |
| | 5220 | 11.73 | 14.89 | | |
| | 5240 | 11.62 | 14.52 | | |
| 802.11ac(VHT20) | 5180 | 12.32 | 17.06 | 250 | |
| | 5220 | 12.03 | 15.96 | | |
| | 5240 | 11.93 | 15.60 | | |
| 802.11n(HT40) | 5190 | 11.68 | 14.72 | 250 | |
| | 5230 | 11.46 | 14.00 | | |
| 802.11ac(VHT40) | 5190 | 11.62 | 14.52 | 250 | |
| | 5230 | 10.89 | 12.27 | | |
| 802.11ac(VHT80) | 5210 | 11.96 | 15.70 | | |

Band IV (5725 – 5850 MHz)

| Test Mode | Test Channel (MHz) | Measured Peak Output Power | | | | FCC Limit (W) | |
|-----------------|--------------------------|----------------------------|-------|---------|-------|---------------------|--|
| | | Chain 1 | | Chain 2 | | | |
| | | (dBm) | (mW) | (dBm) | (mW) | | |
| 802.11a | 5745 | 11.26 | 13.37 | 13.04 | 20.14 | 1 | |
| | 5785 | 11.63 | 14.55 | 12.93 | 19.63 | | |
| | 5825 | 11.52 | 14.19 | 12.52 | 17.86 | | |
| 802.11n(HT20) | 5745 | 11.43 | 13.90 | 13.25 | 21.13 | 1 | |
| | 5785 | 11.84 | 15.28 | 13.05 | 20.18 | | |
| | 5825 | 11.71 | 14.83 | 12.65 | 18.41 | | |
| 802.11ac(VHT20) | 5745 | 11.58 | 14.39 | 13.34 | 21.58 | 1 | |
| | 5785 | 11.87 | 15.38 | 13.12 | 20.51 | | |
| | 5825 | 11.75 | 14.96 | 12.51 | 17.82 | | |
| 802.11n(HT40) | 5755 | 11.21 | 13.21 | 12.85 | 19.28 | 1 | |
| | 5795 | 11.60 | 14.45 | 12.72 | 18.71 | | |
| 802.11ac(VHT40) | 5755 | 11.31 | 13.52 | 12.84 | 19.23 | 1 | |
| | 5795 | 11.70 | 14.79 | 12.74 | 18.79 | | |
| 802.11ac(VHT80) | 5775 | 11.41 | 13.84 | 12.60 | 18.20 | | |

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Band IV (5725 – 5850 MHz)

| Test Mode | Test Channel (MHz) | Measured Peak Output Power | | FCC Limit (W) | |
|-----------------|-----------------------|----------------------------|-------|------------------|--|
| | | MIMO | | | |
| | | (dBm) | (mW) | | |
| 802.11a | 5745 | 10.83 | 12.11 | 1 | |
| | 5785 | 10.49 | 11.19 | | |
| | 5825 | 10.12 | 10.28 | | |
| 802.11n(HT20) | 5745 | 11.79 | 15.10 | 1 | |
| | 5785 | 11.47 | 14.03 | | |
| | 5825 | 11.04 | 12.71 | | |
| 802.11ac(VHT20) | 5745 | 13.12 | 20.51 | 1 | |
| | 5785 | 12.91 | 19.54 | | |
| | 5825 | 12.36 | 17.22 | | |
| 802.11n(HT40) | 5755 | 12.91 | 19.54 | 1 | |
| | 5795 | 12.79 | 19.01 | | |
| 802.11ac(VHT40) | 5755 | 12.46 | 17.62 | 1 | |
| | 5795 | 12.32 | 17.06 | | |
| 802.11ac(VHT80) | 5775 | 12.50 | 17.78 | | |

Note:

B is the 99% emissions bandwidth in MHz.

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4.1.3 26dB Bandwidth and 99% Bandwidth

RESULT:

PASS

| | | |
|-------------------|---|-----------------------------------|
| Test standard | : | FCC Part 15.407(a) RSS-247 6.2 |
| Requirement | : | ANSI C63.10-2013, KDB 789033 |
| Kind of test site | : | Shielded room |

Test setup

| | | |
|---------------------|---|-----------------|
| Test Channel | : | Low/Middle/High |
| Operation Mode | : | A.1.a |
| Ambient temperature | : | 25°C |
| Relative humidity | : | 52% |

Table 2: Chain 2 26dB Bandwidth and 99% Bandwidth

Band I (5150 – 5250 MHz)

| Test Mode | Test Channel (MHz) | 26dB Bandwidth (MHz) | 99% Bandwidth (MHz) |
|-----------------|--------------------|----------------------|---------------------|
| 802.11a | 5180 | 19.11 | 16.431 |
| | 5220 | 19.28 | 16.446 |
| | 5240 | 19.12 | 16.439 |
| 802.11n(HT20) | 5180 | 20.25 | 17.641 |
| | 5220 | 20.20 | 17.673 |
| | 5240 | 20.24 | 17.670 |
| 802.11ac(VHT20) | 5180 | 20.20 | 17.660 |
| | 5220 | 20.18 | 17.673 |
| | 5240 | 20.34 | 17.674 |
| 802.11n(HT40) | 5190 | 39.03 | 36.150 |
| | 5230 | 38.60 | 36.179 |
| 802.11ac(VHT40) | 5190 | 39.01 | 36.194 |
| | 5230 | 39.02 | 36.210 |
| 802.11ac(VHT80) | 5210 | 79.62 | 75.661 |

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Band IV (5725 – 5850 MHz)

| Test Mode | Test Channel (MHz) | 26dB Bandwidth (MHz) | 99% Bandwidth (MHz) |
|-----------------|--------------------|----------------------|---------------------|
| 802.11a | 5745 | 19.38 | 16.407 |
| | 5785 | 18.79 | 16.405 |
| | 5825 | 19.01 | 16.415 |
| 802.11n(HT20) | 5745 | 20.47 | 17.672 |
| | 5785 | 20.46 | 17.670 |
| | 5825 | 20.26 | 17.679 |
| 802.11ac(VHT20) | 5745 | 20.42 | 17.658 |
| | 5785 | 20.55 | 17.664 |
| | 5825 | 20.10 | 17.663 |
| 802.11n(HT40) | 5755 | 38.91 | 36.123 |
| | 5795 | 39.34 | 36.088 |
| 802.11ac(VHT40) | 5755 | 39.17 | 36.199 |
| | 5795 | 38.89 | 36.176 |
| 802.11ac(VHT80) | 5775 | 79.66 | 75.640 |

Table 3: MIMO 26dB Bandwidth and 99% Bandwidth

Band I (5150 – 5250 MHz)

| Test Mode | Test Channel (MHz) | 26dB Bandwidth (MHz) | 99% Bandwidth (MHz) |
|-----------------|--------------------|----------------------|---------------------|
| 802.11a | 5180 | 18.67 | 16.422 |
| | 5220 | 18.65 | 16.439 |
| | 5240 | 18.51 | 16.400 |
| 802.11n(HT20) | 5180 | 19.83 | 17.642 |
| | 5220 | 19.90 | 17.621 |
| | 5240 | 20.01 | 17.653 |
| 802.11ac(VHT20) | 5180 | 19.94 | 17.680 |
| | 5220 | 20.16 | 17.661 |
| | 5240 | 19.94 | 20.211 |
| 802.11n(HT40) | 5190 | 38.71 | 36.142 |
| | 5230 | 38.54 | 36.109 |
| 802.11ac(VHT40) | 5190 | 38.96 | 36.104 |
| | 5230 | 38.81 | 36.218 |
| 802.11ac(VHT80) | 5210 | 79.93 | 75.693 |

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Band IV (5725 – 5850 MHz)

| Test Mode | Test Channel (MHz) | 26dB Bandwidth (MHz) | 99% Bandwidth (MHz) |
|-----------------|--------------------|----------------------|---------------------|
| 802.11a | 5745 | 18.56 | 16.442 |
| | 5785 | 18.63 | 16.427 |
| | 5825 | 18.46 | 16.448 |
| 802.11n(HT20) | 5745 | 19.93 | 17.692 |
| | 5785 | 19.80 | 17.688 |
| | 5825 | 20.17 | 17.685 |
| 802.11ac(VHT20) | 5745 | 20.24 | 17.768 |
| | 5785 | 21.43 | 17.777 |
| | 5825 | 21.74 | 17.752 |
| 802.11n(HT40) | 5755 | 38.12 | 35.802 |
| | 5795 | 37.59 | 35.746 |
| 802.11ac(VHT40) | 5755 | 37.64 | 35.893 |
| | 5795 | 38.66 | 36.272 |
| 802.11ac(VHT80) | 5775 | 80.29 | 75.707 |

Table 4: Chain 1 26dB Bandwidth and 99% Bandwidth

Band I (5150 – 5250 MHz)

| Test Mode | Test Channel (MHz) | 26dB Bandwidth (MHz) | 99% Bandwidth (MHz) |
|-----------------|--------------------|----------------------|---------------------|
| 802.11a | 5180 | 19.07 | 16.445 |
| | 5220 | 19.05 | 16.444 |
| | 5240 | 18.95 | 16.430 |
| 802.11n(HT20) | 5180 | 20.15 | 17.686 |
| | 5220 | 20.20 | 17.658 |
| | 5240 | 20.47 | 17.653 |
| 802.11ac(VHT20) | 5180 | 20.15 | 17.640 |
| | 5220 | 20.10 | 17.639 |
| | 5240 | 20.26 | 17.658 |
| 802.11n(HT40) | 5190 | 37.84 | 35.701 |
| | 5230 | 38.75 | 36.207 |
| 802.11ac(VHT40) | 5190 | 38.98 | 36.166 |
| | 5230 | 39.53 | 36.170 |
| 802.11ac(VHT80) | 5210 | 79.58 | 75.720 |

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Band IV (5725 – 5850 MHz)

| Test Mode | Test Channel (MHz) | 26dB Bandwidth (MHz) | 99% Bandwidth (MHz) |
|-----------------|--------------------|----------------------|---------------------|
| 802.11a | 5745 | 19.050 | 16.470 |
| | 5785 | 19.210 | 16.461 |
| | 5825 | 19.450 | 16.442 |
| 802.11n(HT20) | 5745 | 20.090 | 17.677 |
| | 5785 | 20.660 | 17.658 |
| | 5825 | 20.110 | 17.676 |
| 802.11ac(VHT20) | 5745 | 20.470 | 17.657 |
| | 5785 | 20.250 | 17.671 |
| | 5825 | 20.250 | 17.670 |
| 802.11n(HT40) | 5755 | 39.63 | 36.185 |
| | 5795 | 39.68 | 36.173 |
| 802.11ac(VHT40) | 5755 | 38.95 | 36.127 |
| | 5795 | 39.35 | 36.191 |
| 802.11ac(VHT80) | 5775 | 79.52 | 75.609 |

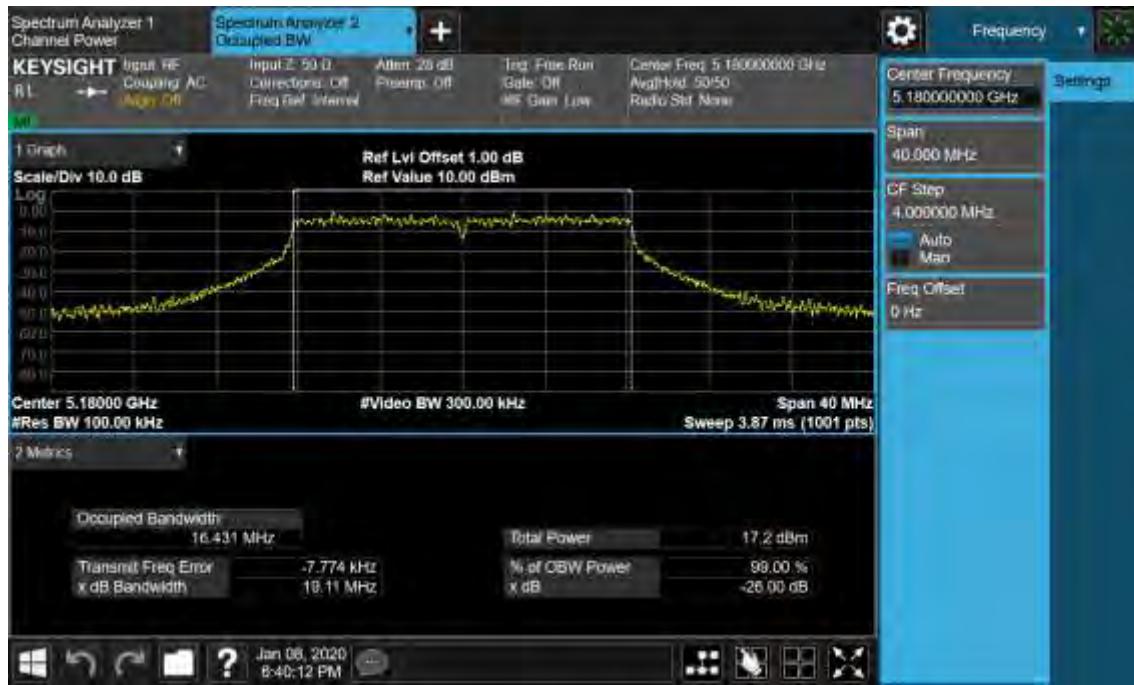
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Chain 2 26dB Bandwidth and 99% Bandwidth, 802.11a, 5180MHz



MIMO 26dB Bandwidth and 99% Bandwidth, 802.11a, 5180MHz



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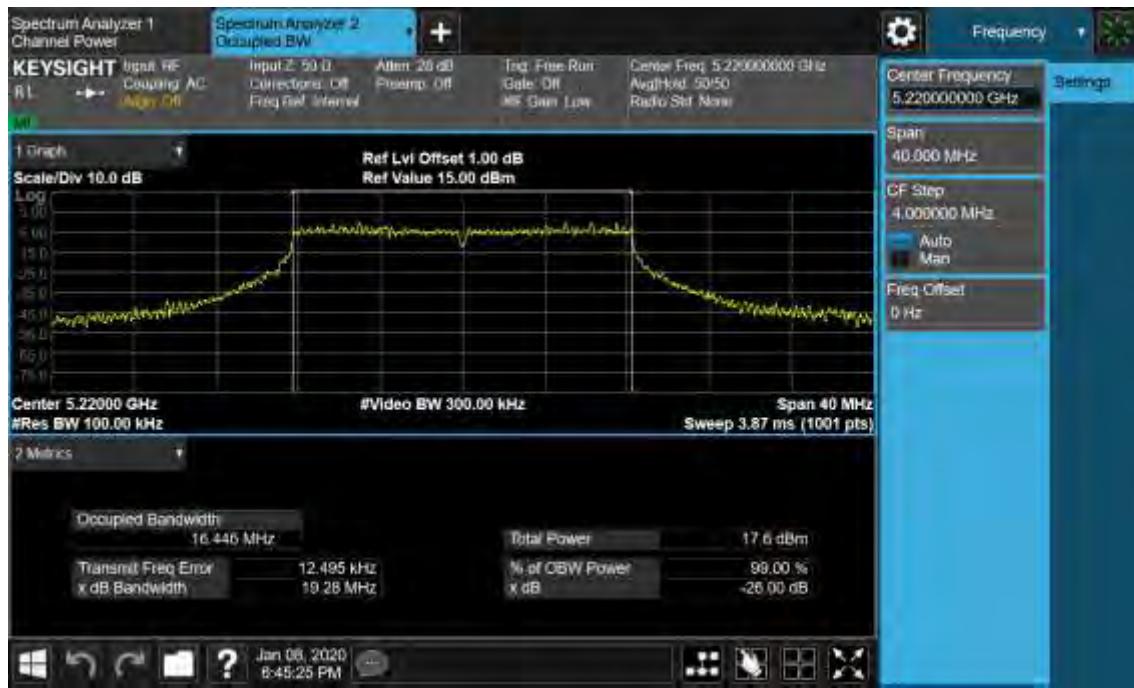
Date: 2020-1-19

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Chain 1 26dB Bandwidth and 99% Bandwidth, 802.11a, 5180MHz



Chain 2 26dB Bandwidth and 99% Bandwidth, 802.11a, 5220MHz



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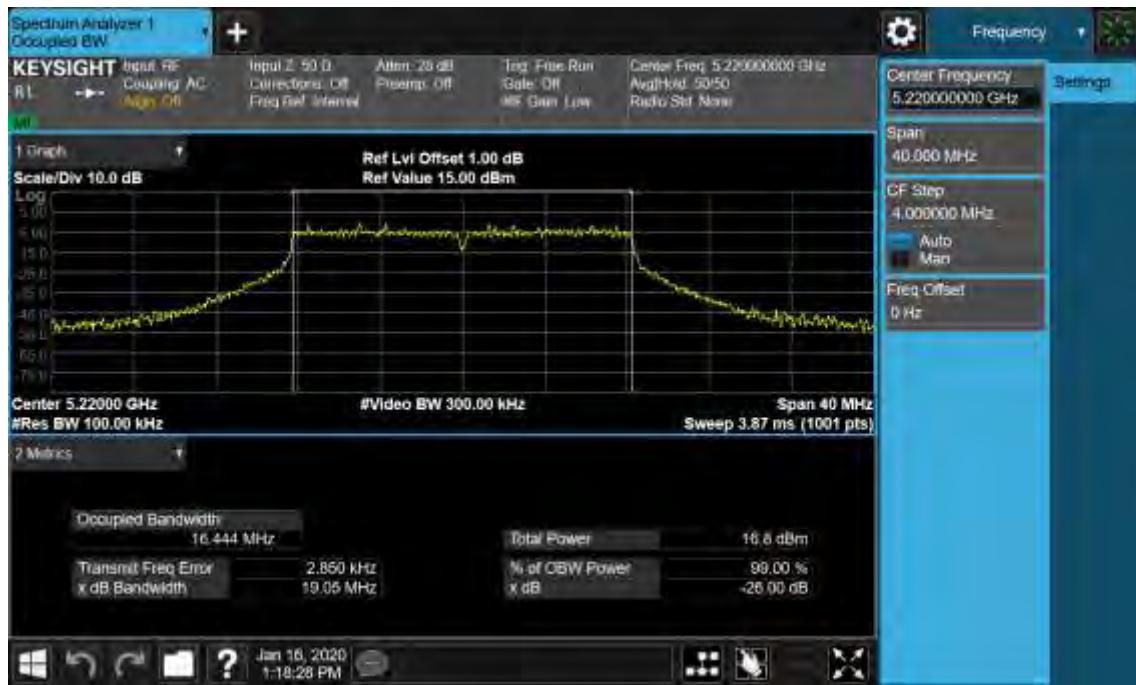
Date: 2020-1-19

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MIMO 26dB Bandwidth and 99% Bandwidth, 802.11a, 5220MHz



Chain 1 26dB Bandwidth and 99% Bandwidth, 802.11a, 5220MHz



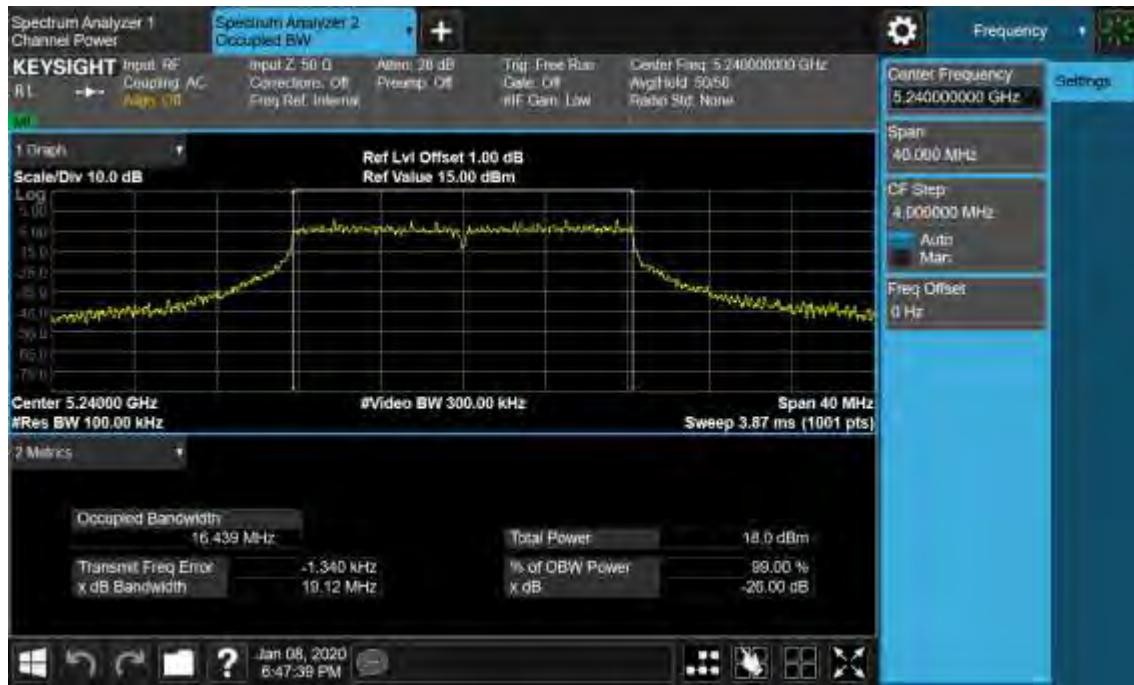
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Chain 2 26dB Bandwidth and 99% Bandwidth, 802.11a, 5240MHz



MIMO 26dB Bandwidth and 99% Bandwidth, 802.11a, 5240MHz



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Chain 1 26dB Bandwidth and 99% Bandwidth, 802.11a, 5240MHz



Chain 2 26dB Bandwidth and 99% Bandwidth, 802.11n(HT20), 5180MHz



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MIMO 26dB Bandwidth and 99% Bandwidth, 802.11n(HT20), 5180MHz



Chain 1 26dB Bandwidth and 99% Bandwidth, 802.11n(HT20), 5180MHz



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Chain 2 26dB Bandwidth and 99% Bandwidth, 802.11n(HT20), 5220MHz



MIMO 26dB Bandwidth and 99% Bandwidth, 802.11n(HT20), 5220MHz



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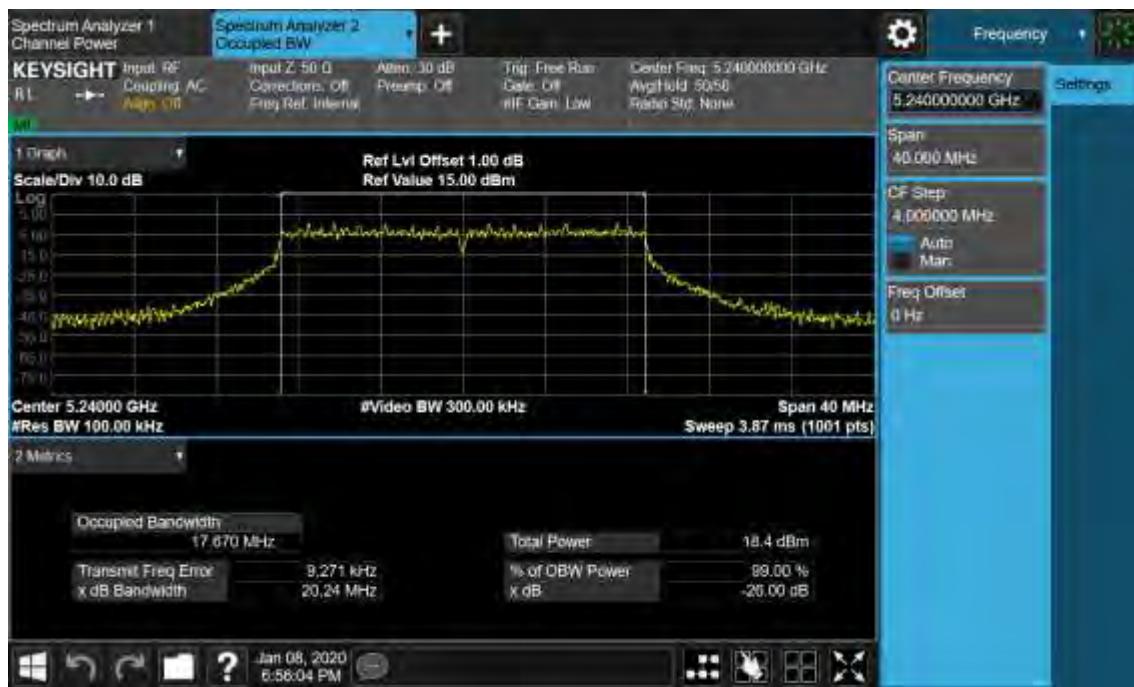
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Chain 1 26dB Bandwidth and 99% Bandwidth, 802.11n(HT20), 5220MHz



Chain 2 26dB Bandwidth and 99% Bandwidth, 802.11n(HT20), 5240MHz



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MIMO 26dB Bandwidth and 99% Bandwidth, 802.11n(HT20), 5240MHz



Chain 1 26dB Bandwidth and 99% Bandwidth, 802.11n(HT20), 5240MHz



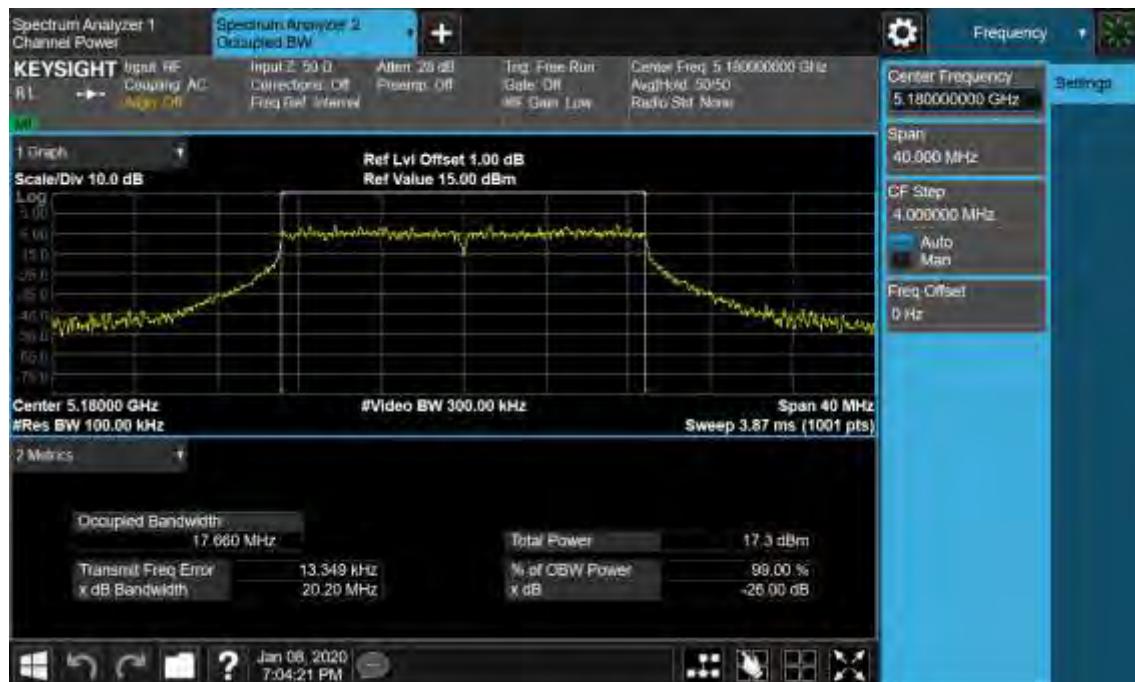
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Chain 2 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT20), 5180MHz



MIMO 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT20), 5180MHz



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Chain 1 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT20), 5180MHz



Chain 2 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT20), 5220MHz



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MIMO 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT20), 5220MHz



Chain 1 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT20), 5220MHz



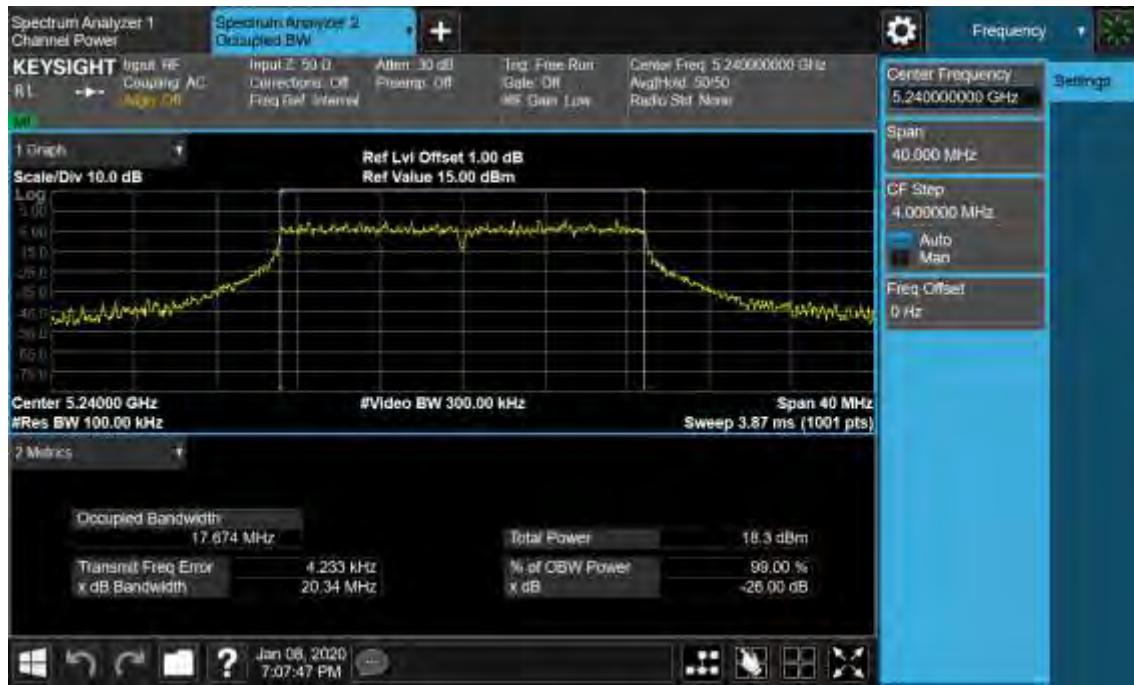
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Chain 2 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT20), 5240MHz



MIMO 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT20), 5240MHz



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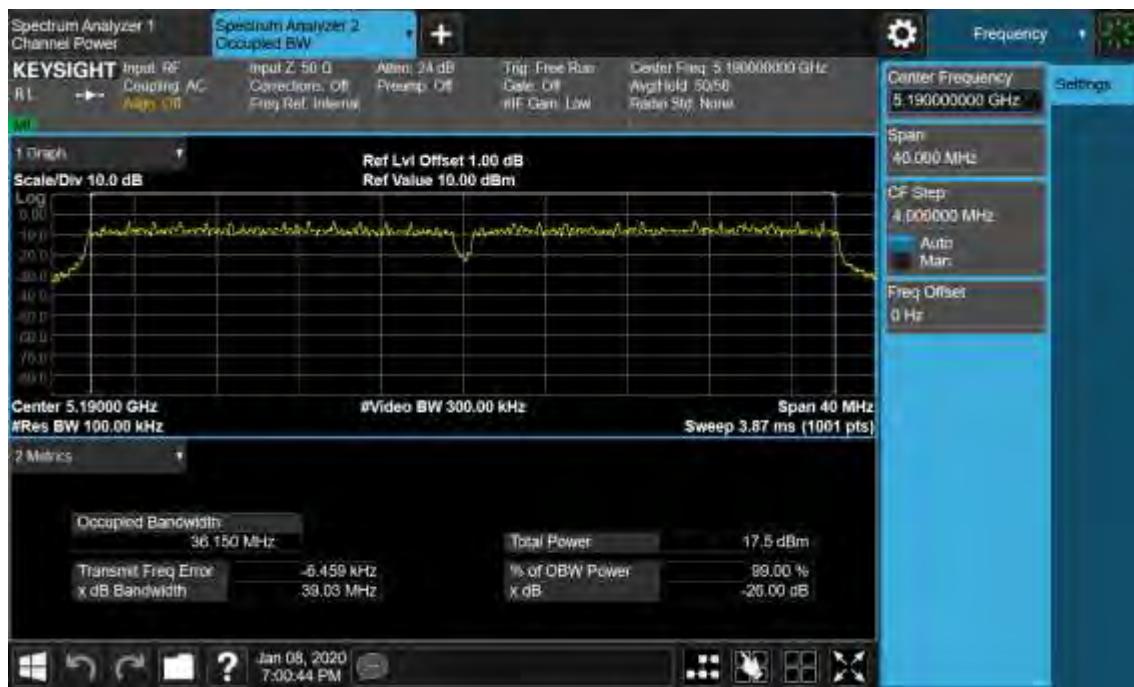
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Chain 1 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT20), 5240MHz



Chain 2 26dB Bandwidth and 99% Bandwidth, 802.11n(HT40), 5190MHz



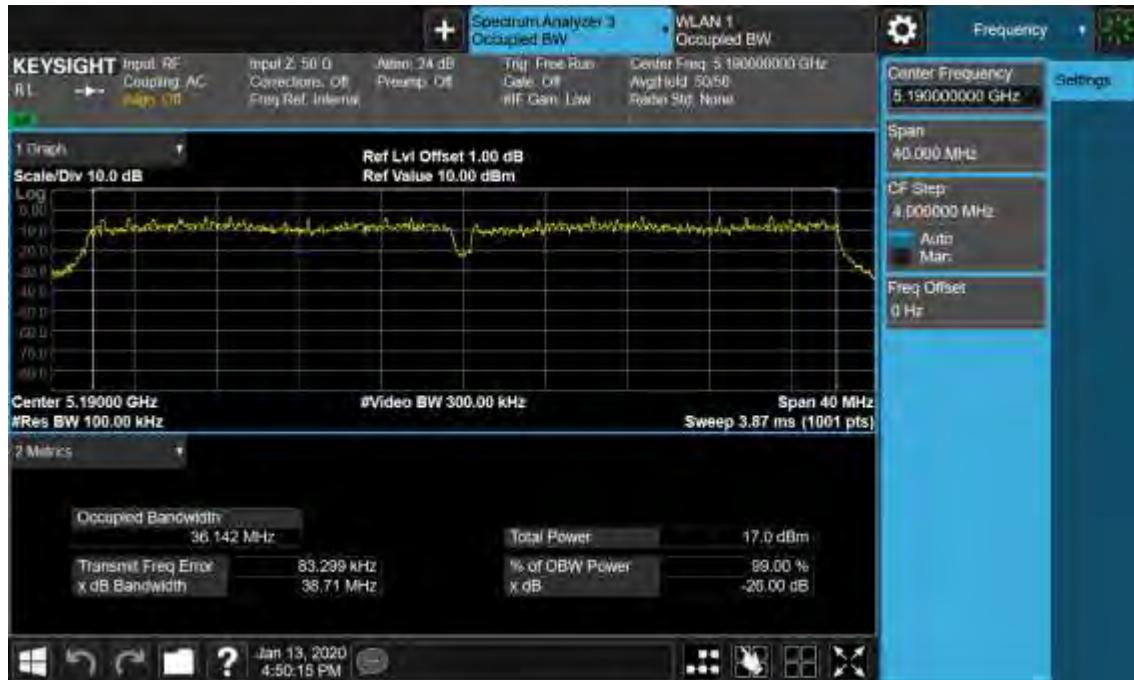
TEST REPORT

Report No.: SHE19110011-02DE

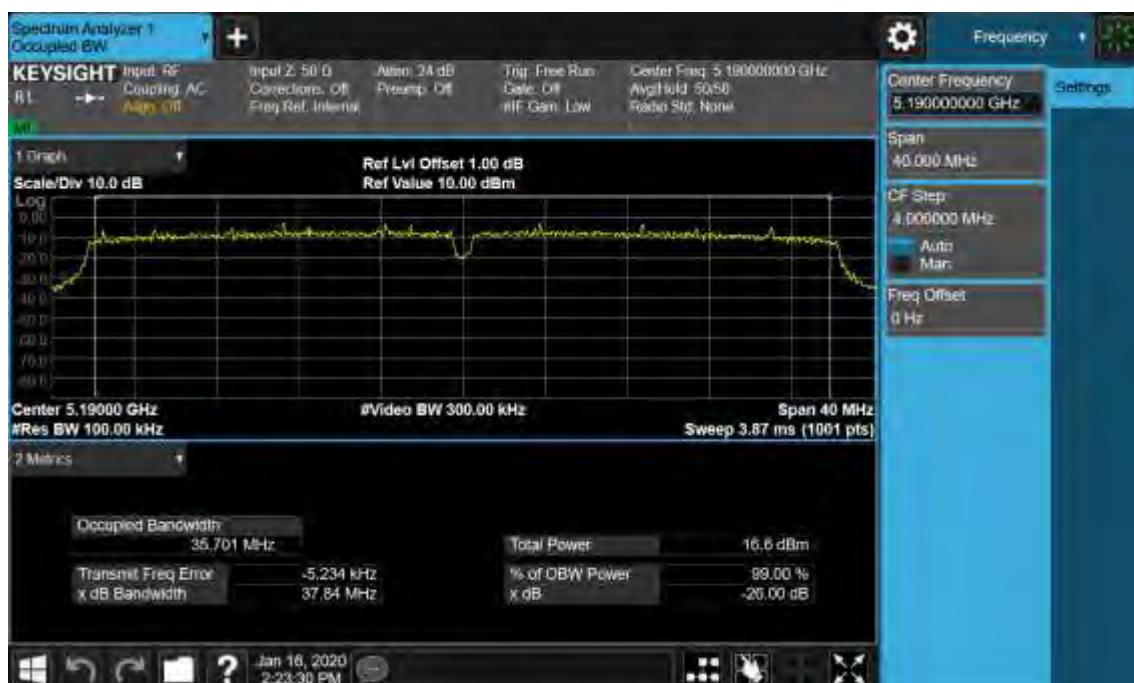
Date: 2020-1-19

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MIMO 26dB Bandwidth and 99% Bandwidth, 802.11n(HT40), 5190MHz



Chain 1 26dB Bandwidth and 99% Bandwidth, 802.11n(HT40), 5190MHz



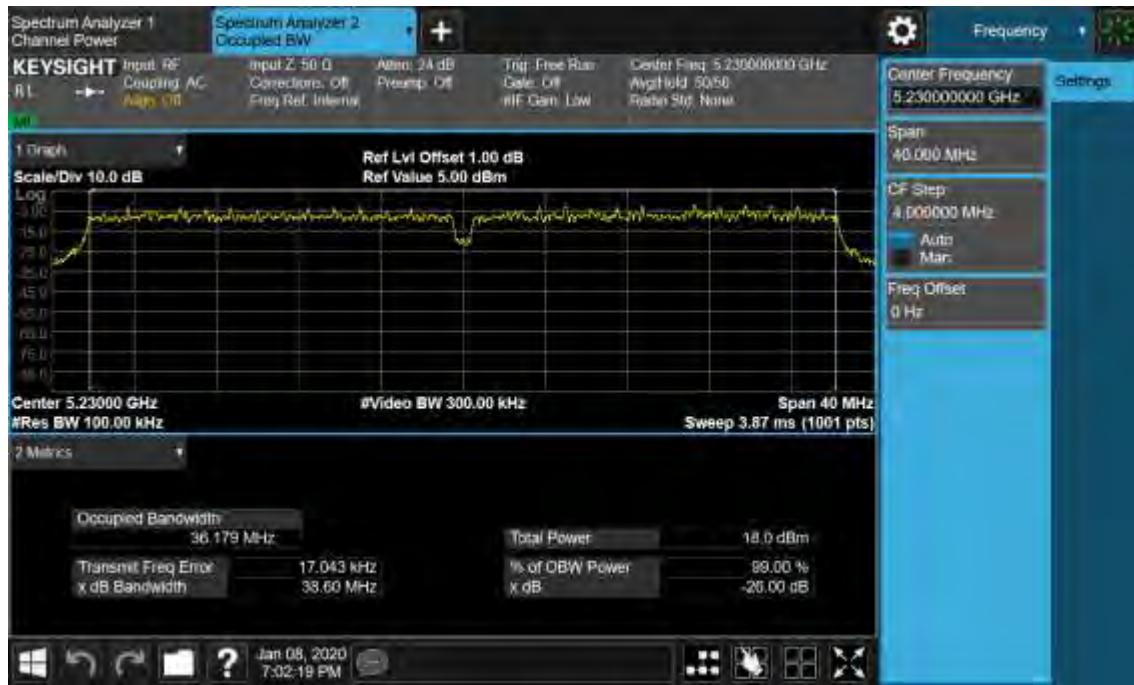
TEST REPORT

Report No.: SHE19110011-02DE

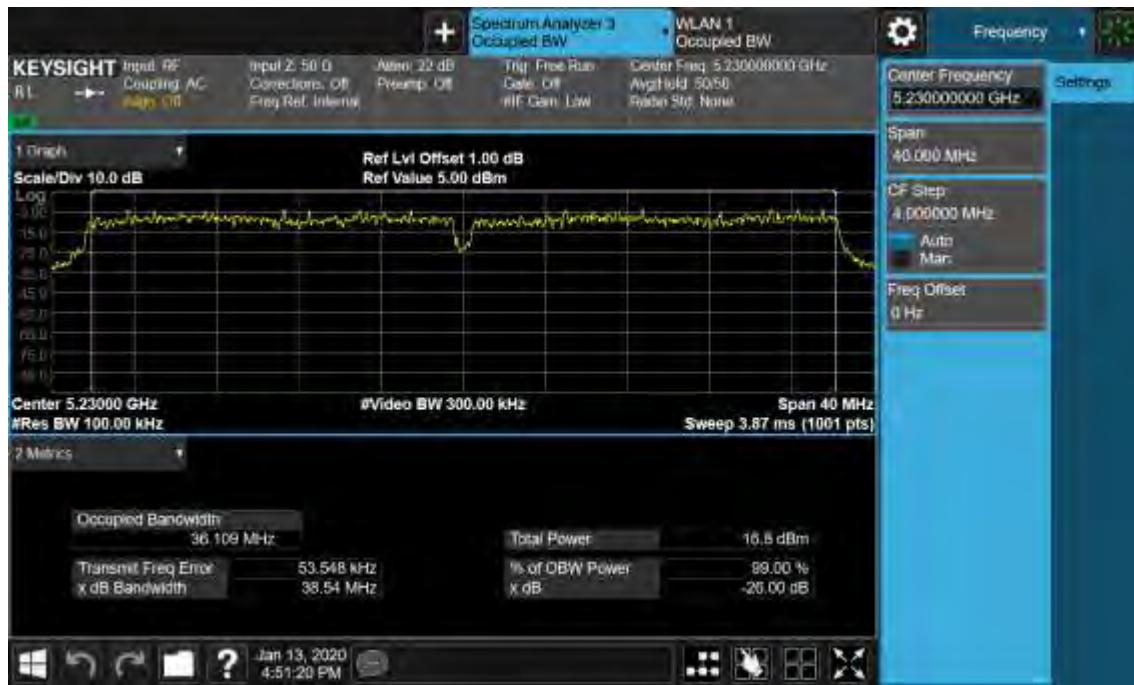
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Chain 2 26dB Bandwidth and 99% Bandwidth, 802.11n(HT40), 5230MHz



MIMO 26dB Bandwidth and 99% Bandwidth, 802.11n(HT40), 5230MHz



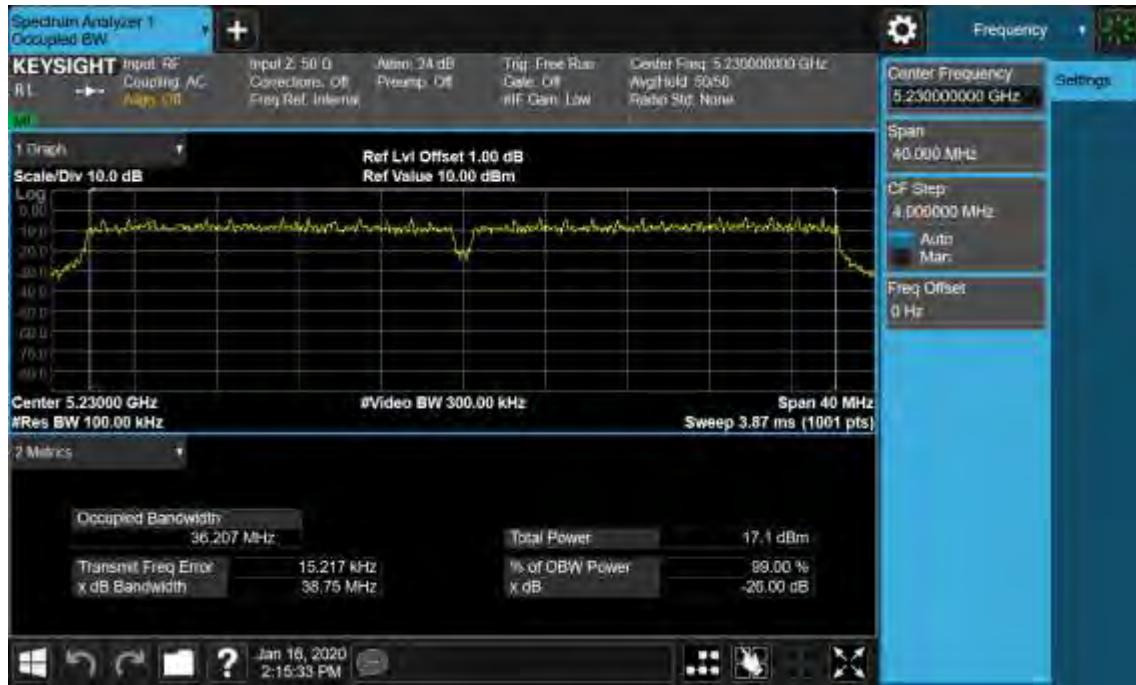
TEST REPORT

Report No.: SHE19110011-02DE

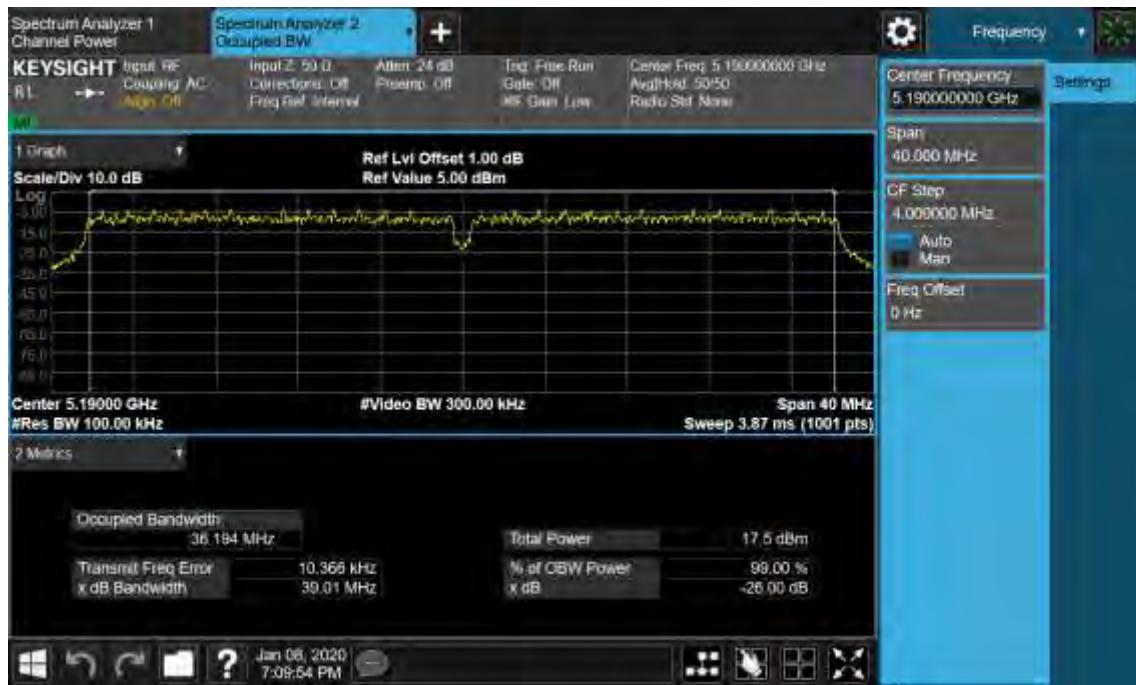
Date: 2020-1-19

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Chain 1 26dB Bandwidth and 99% Bandwidth, 802.11n(HT40), 5230MHz



Chain 2 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT40), 5190MHz



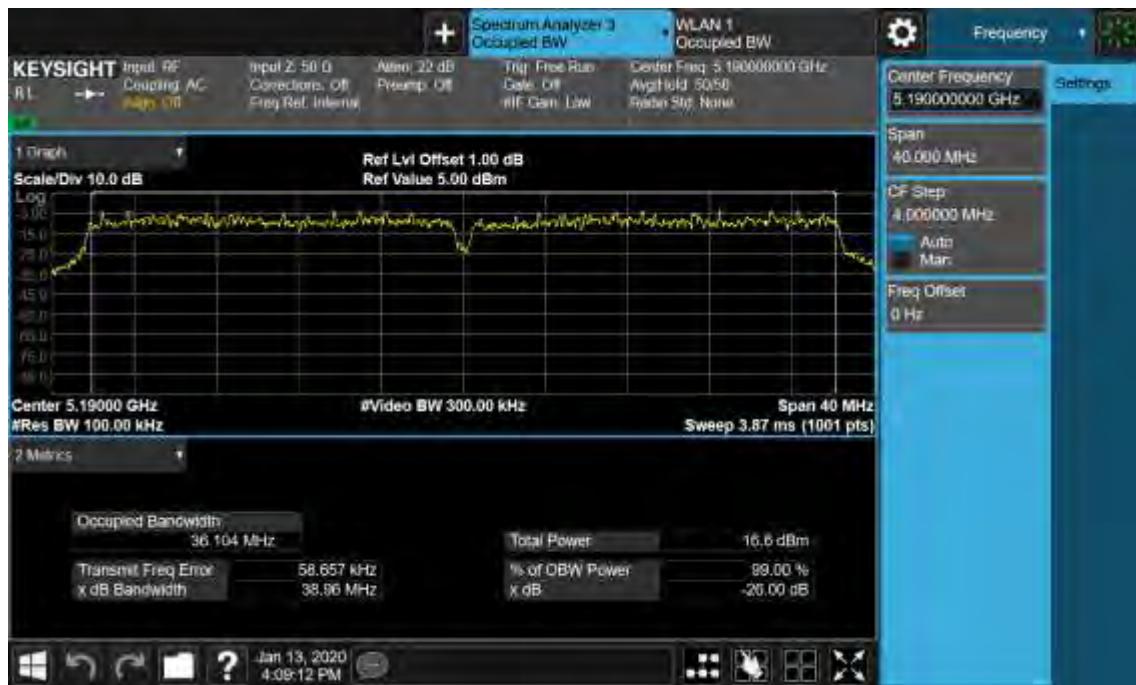
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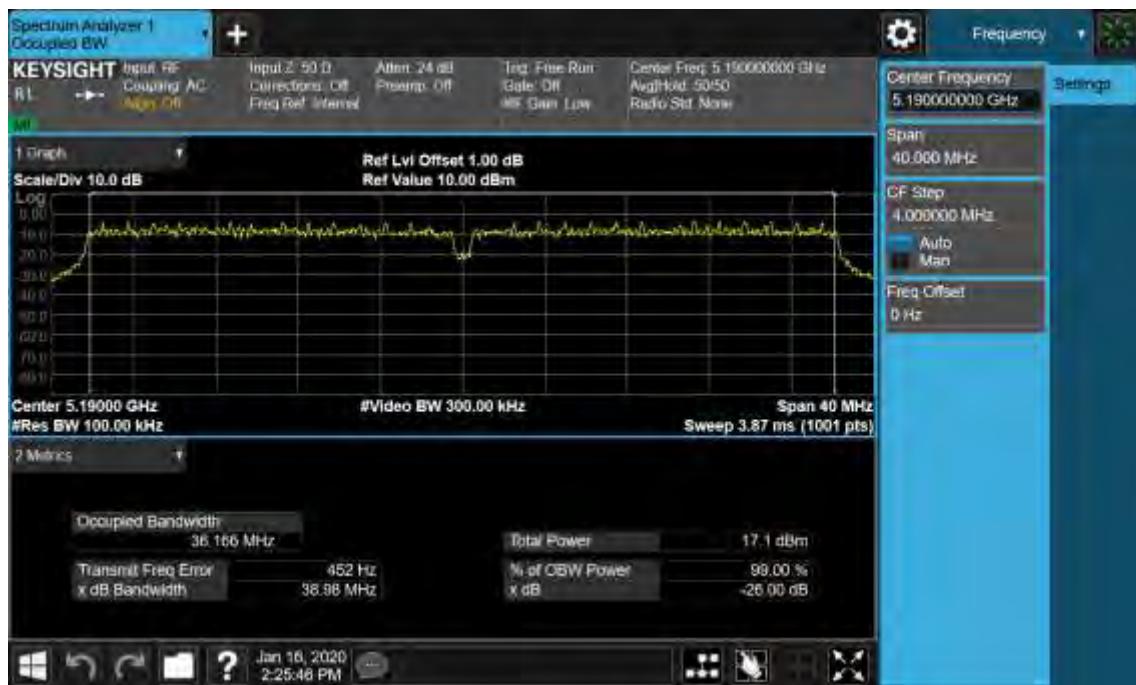
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MIMO 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT40), 5190MHz



Chain 1 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT40), 5190MHz



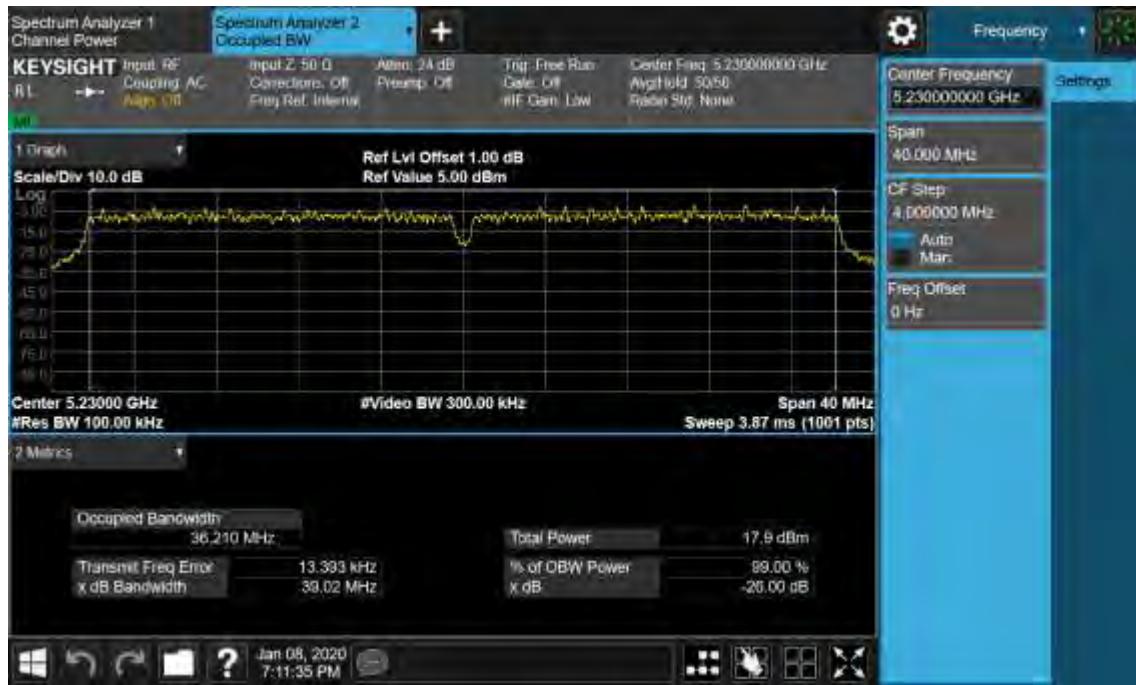
TEST REPORT

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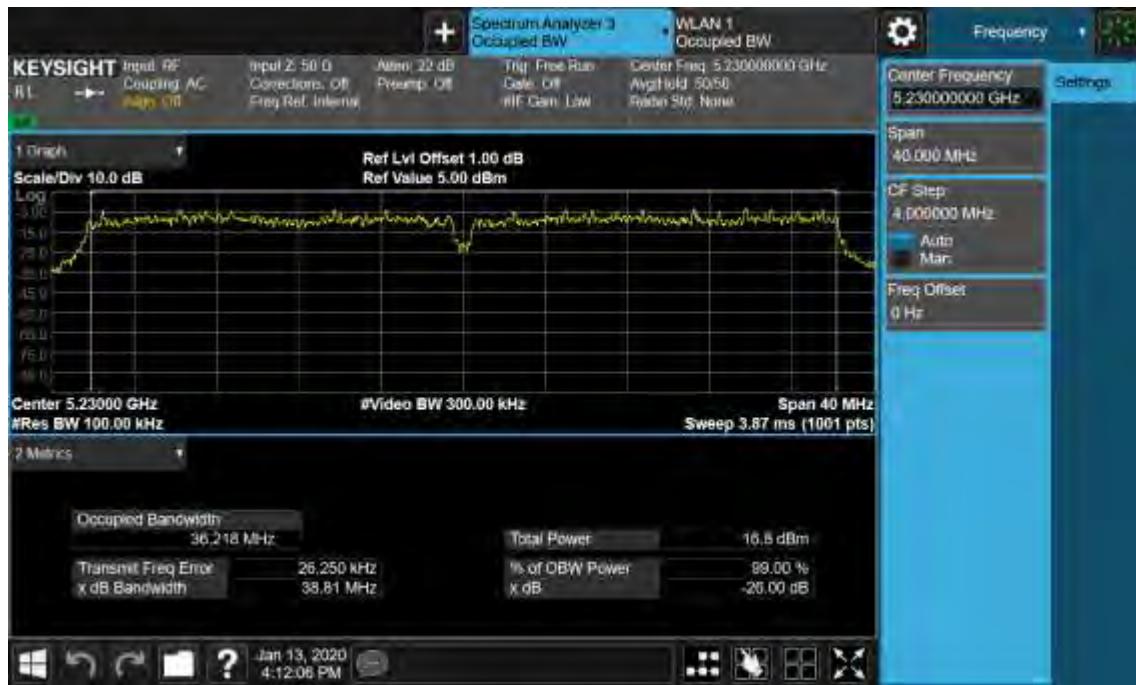
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Chain 2 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT40), 5230MHz



MIMO 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT40), 5230MHz



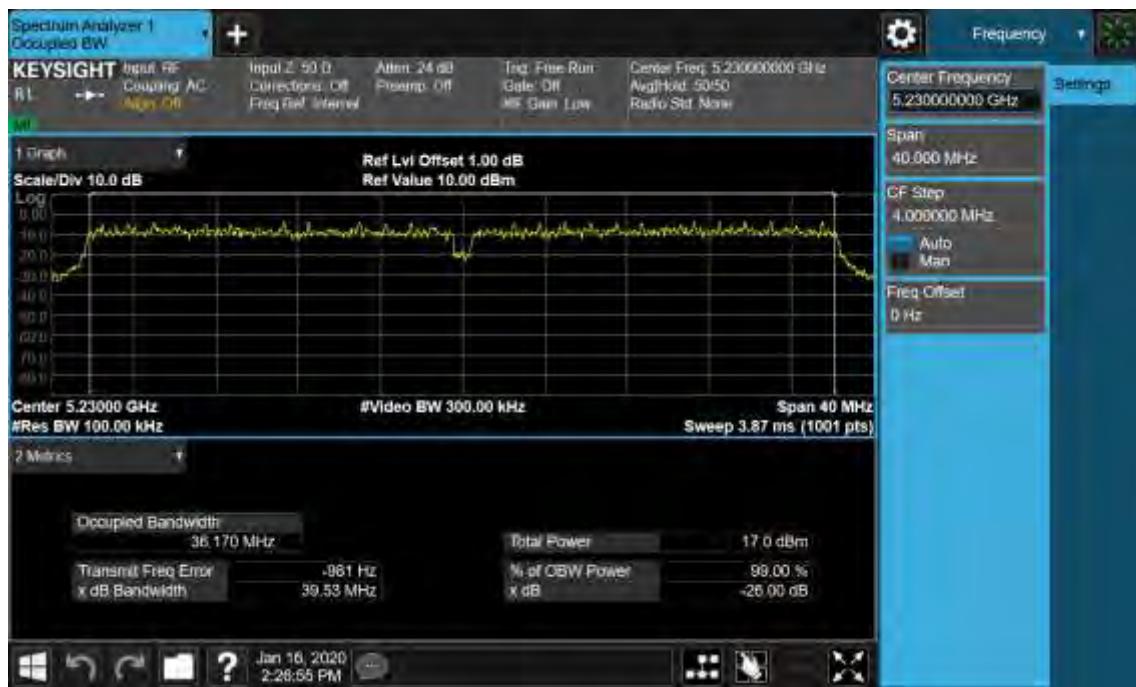
TEST REPORT

Report No.: SHE19110011-02DE

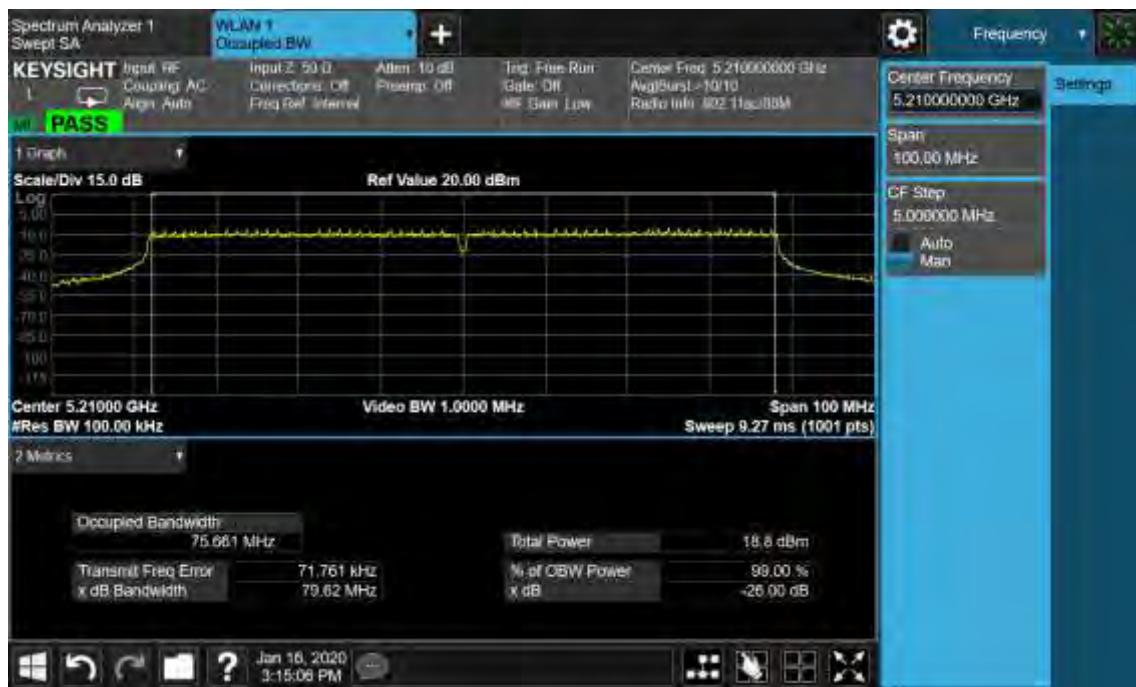
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Chain 1 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT40), 5230MHz



Chain 2 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT80), 5210MHz



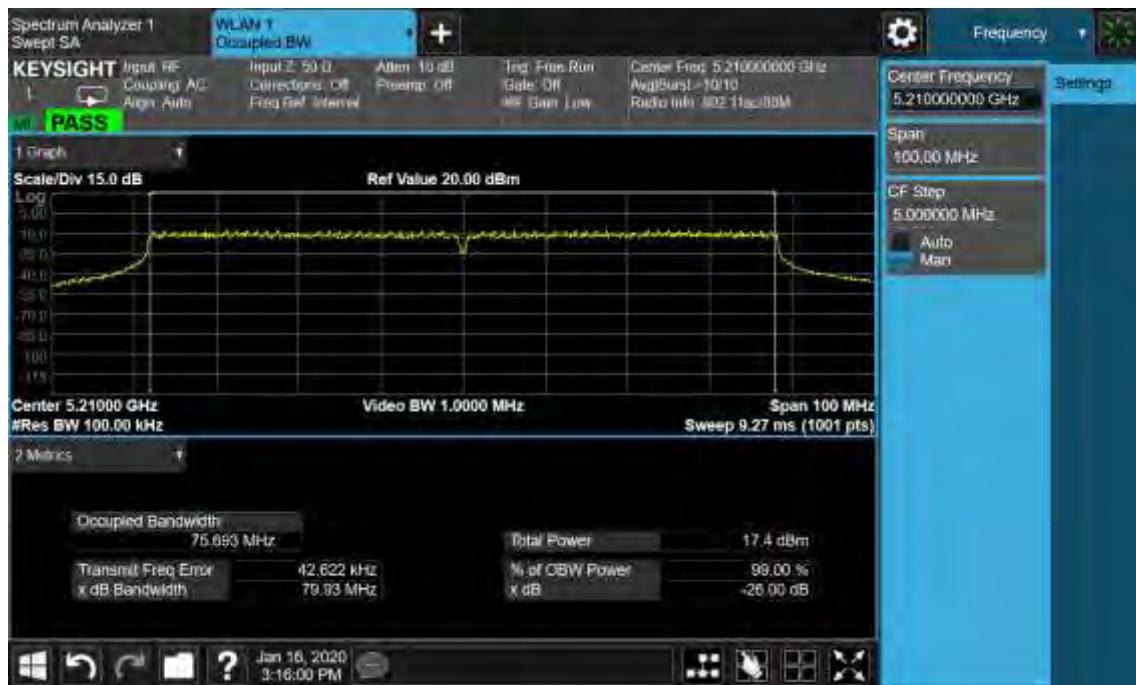
TEST REPORT

Report No.: SHE19110011-02DE

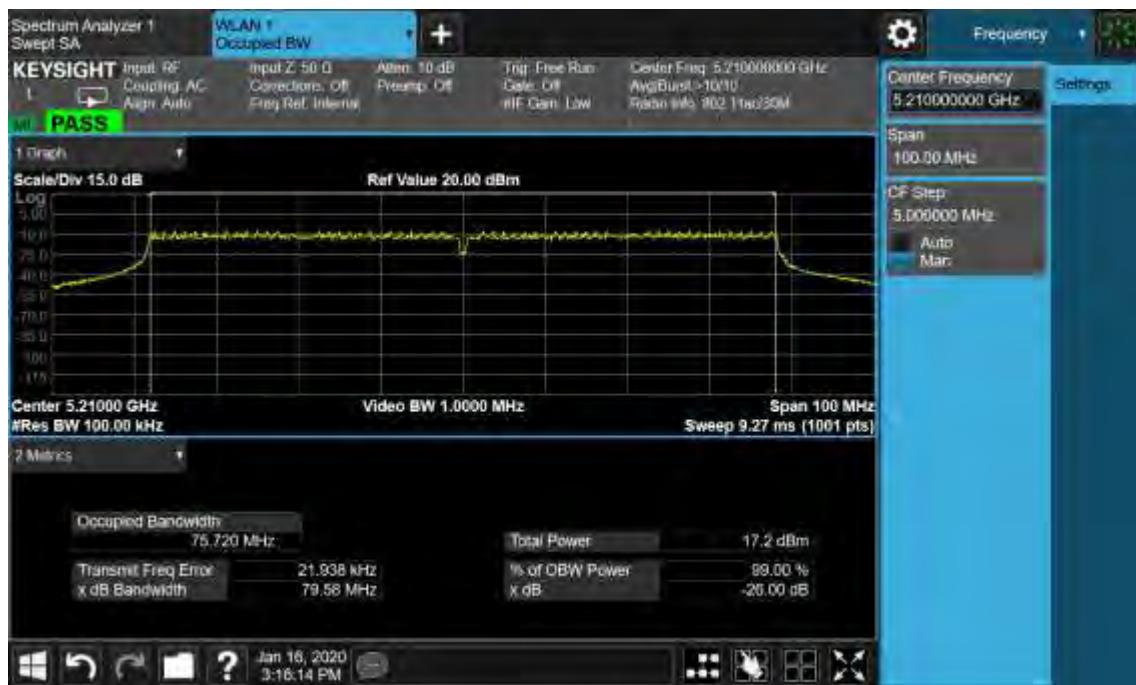
Date: 2020-1-19

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MIMO 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT80), 5210MHz



Chain 1 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT80), 5210MHz



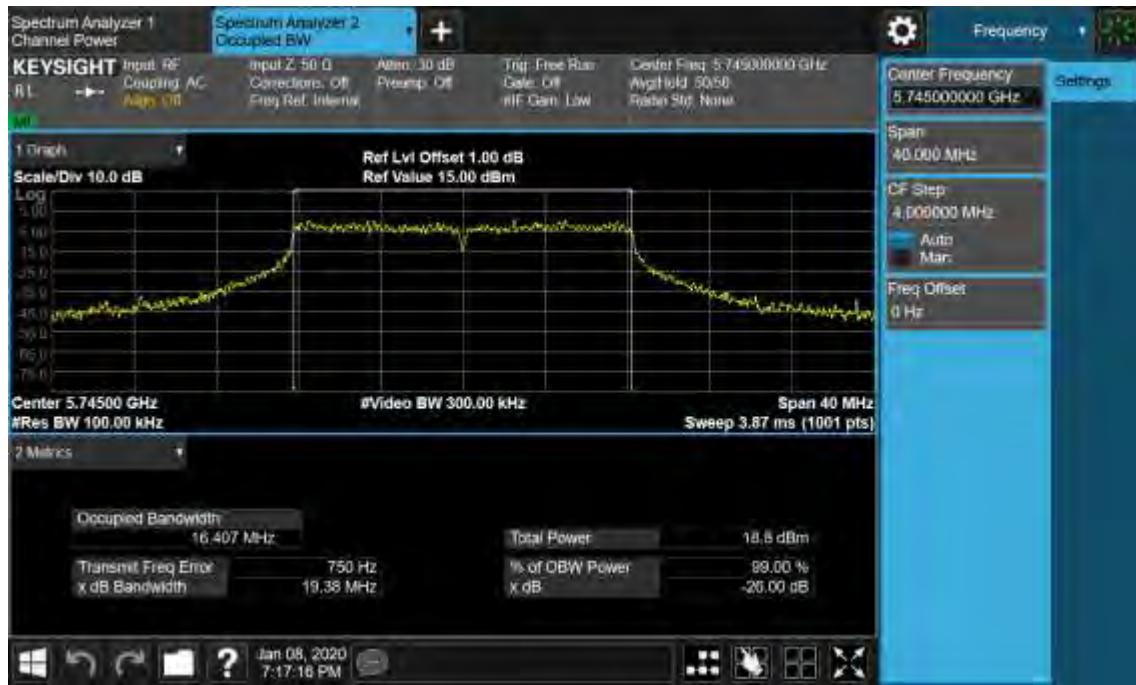
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Chain 2 26dB Bandwidth and 99% Bandwidth, 802.11a, 5745MHz



MIMO 26dB Bandwidth and 99% Bandwidth, 802.11a, 5745MHz



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Chain 1 26dB Bandwidth and 99% Bandwidth, 802.11a, 5745MHz



Chain 2 26dB Bandwidth and 99% Bandwidth, 802.11a, 5785MHz



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MIMO 26dB Bandwidth and 99% Bandwidth, 802.11a, 5785MHz



Chain 1 26dB Bandwidth and 99% Bandwidth, 802.11a, 5785MHz



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Report No.: SHE19110011-02DE

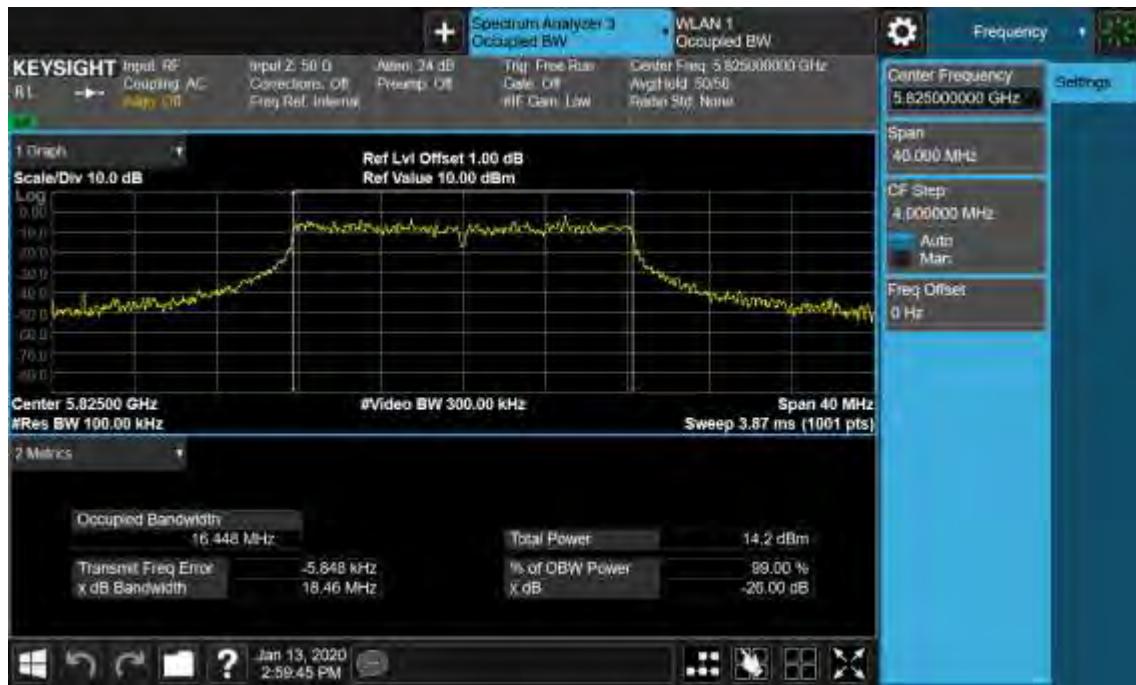
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Chain 2 26dB Bandwidth and 99% Bandwidth, 802.11a, 5825MHz



MIMO 26dB Bandwidth and 99% Bandwidth, 802.11a, 5825MHz



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Chain 1 26dB Bandwidth and 99% Bandwidth, 802.11a, 5825MHz



Chain 2 26dB Bandwidth and 99% Bandwidth, 802.11n(HT20), 5745MHz



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MIMO 26dB Bandwidth and 99% Bandwidth, 802.11n(HT20), 5745MHz



Chain 1 26dB Bandwidth and 99% Bandwidth, 802.11n(HT20), 5745MHz



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Report No.: SHE19110011-02DE

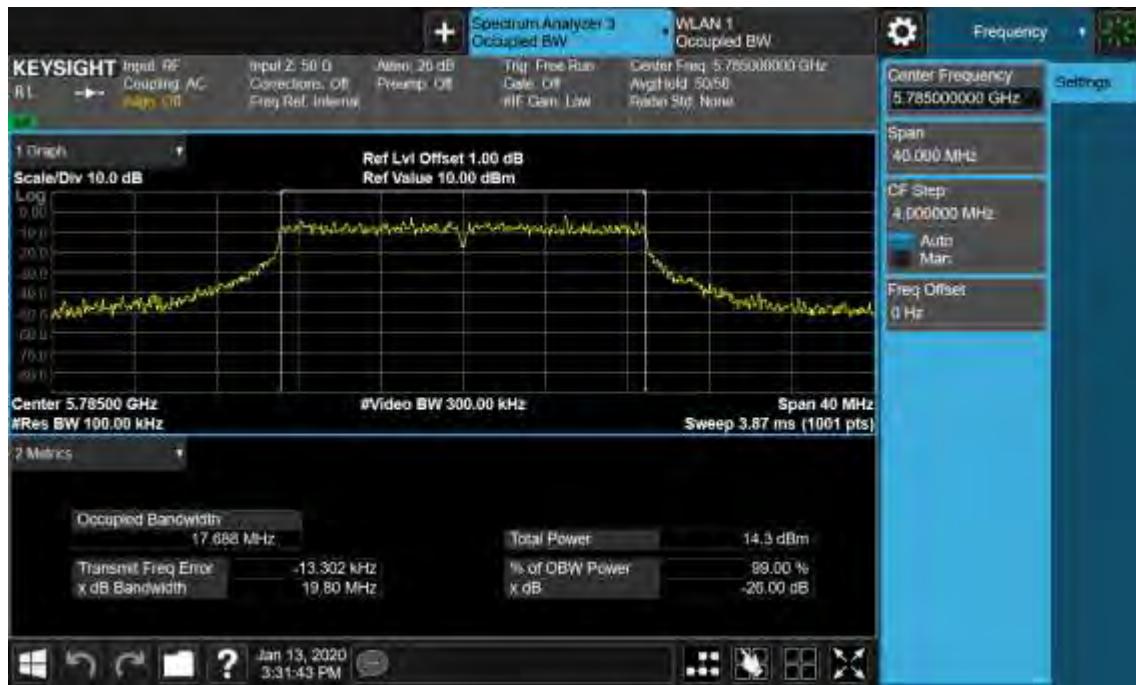
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Chain 2 26dB Bandwidth and 99% Bandwidth, 802.11n(HT20), 5785MHz



MIMO 26dB Bandwidth and 99% Bandwidth, 802.11n(HT20), 5785MHz



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Chain 1 26dB Bandwidth and 99% Bandwidth, 802.11n(HT20), 5785MHz



Chain 2 26dB Bandwidth and 99% Bandwidth, 802.11n(HT20), 5825MHz



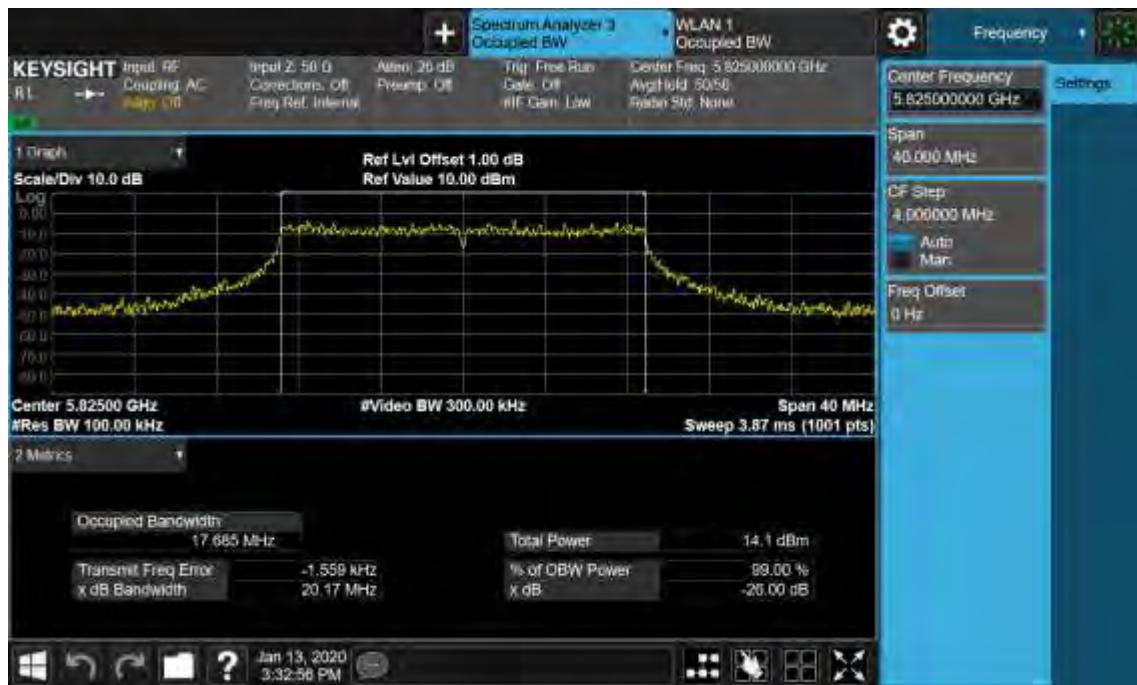
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MIMO 26dB Bandwidth and 99% Bandwidth, 802.11n(HT20), 5825MHz



Chain 1 26dB Bandwidth and 99% Bandwidth, 802.11n(HT20), 5825MHz



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Chain 2 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT20), 5745MHz



MIMO 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT20), 5745MHz



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Chain 1 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT20), 5745MHz



Chain 2 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT20), 5785MHz



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MIMO 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT20), 5785MHz



Chain 1 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT20), 5785MHz



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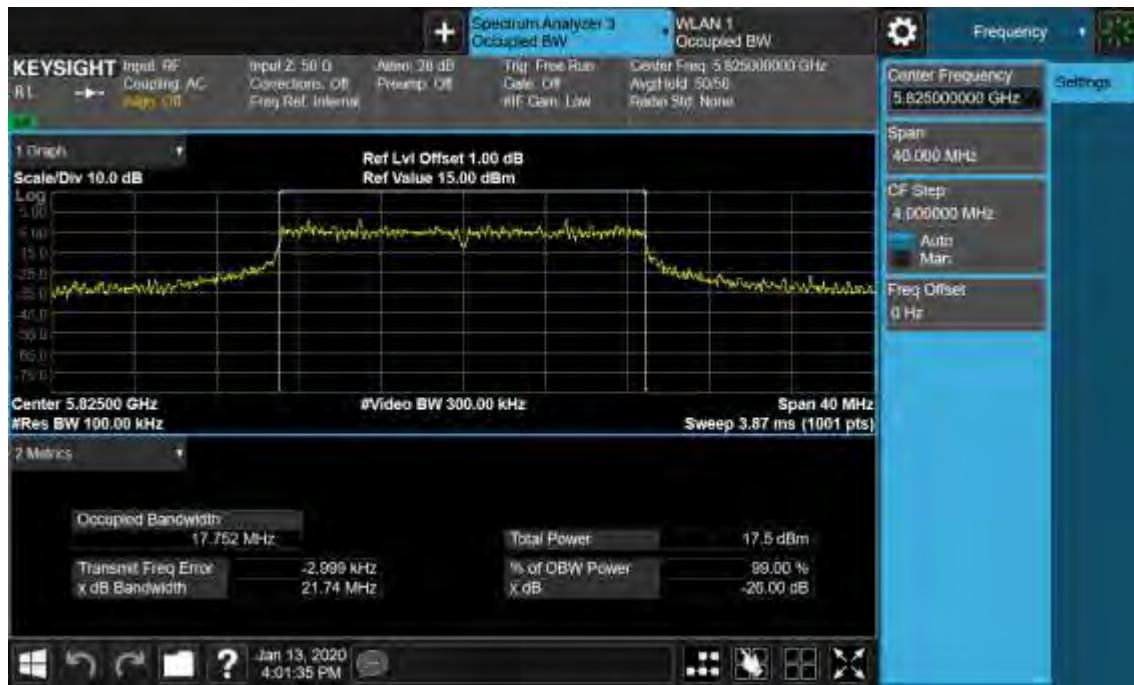
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Chain 2 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT20), 5825MHz



MIMO 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT20), 5825MHz



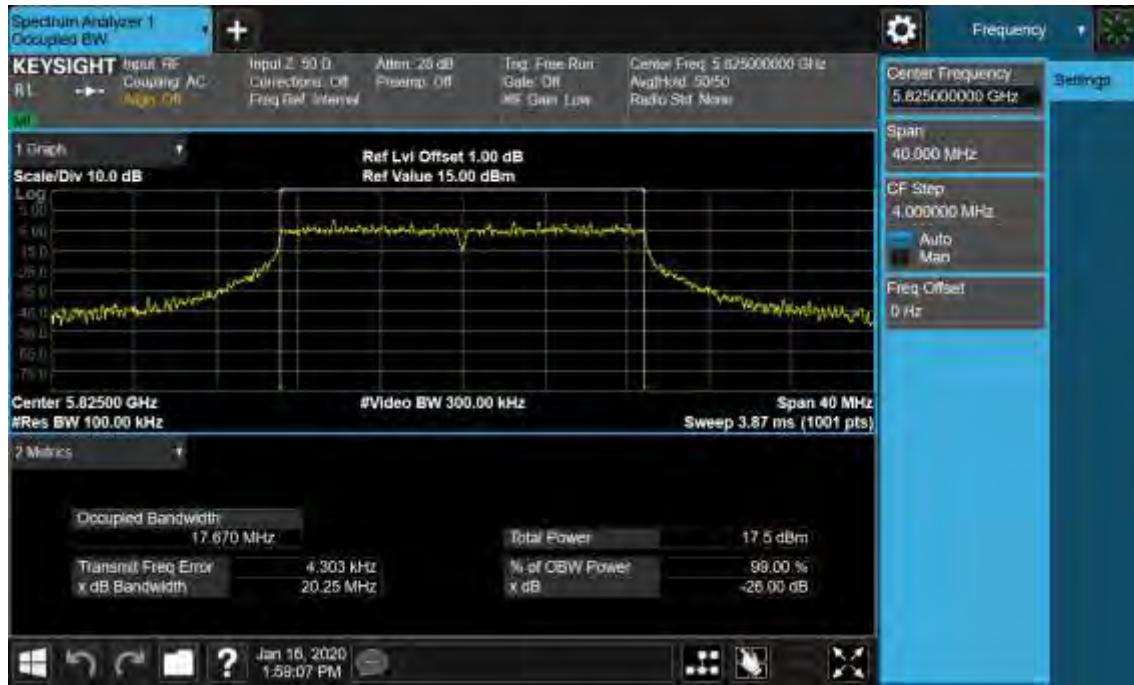
TEST REPORT

Report No.: SHE19110011-02DE

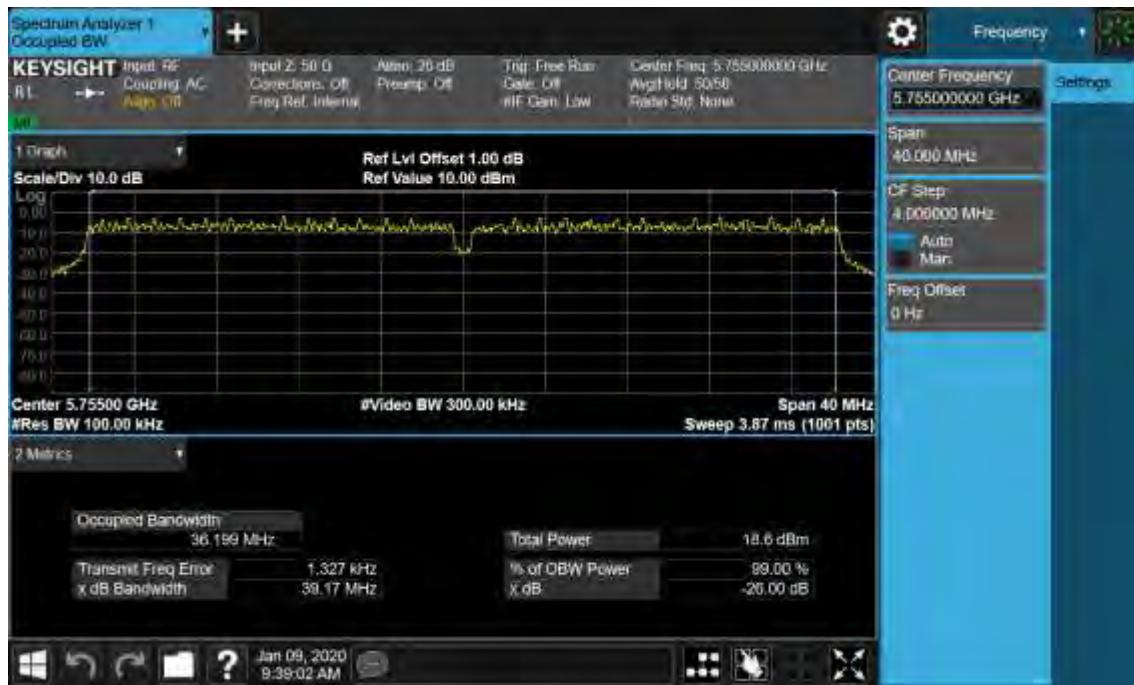
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Chain 2 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT20), 5825MHz



Chain 2 26dB Bandwidth and 99% Bandwidth, 802.11n(HT40), 5755MHz



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Report No.: SHE19110011-02DE

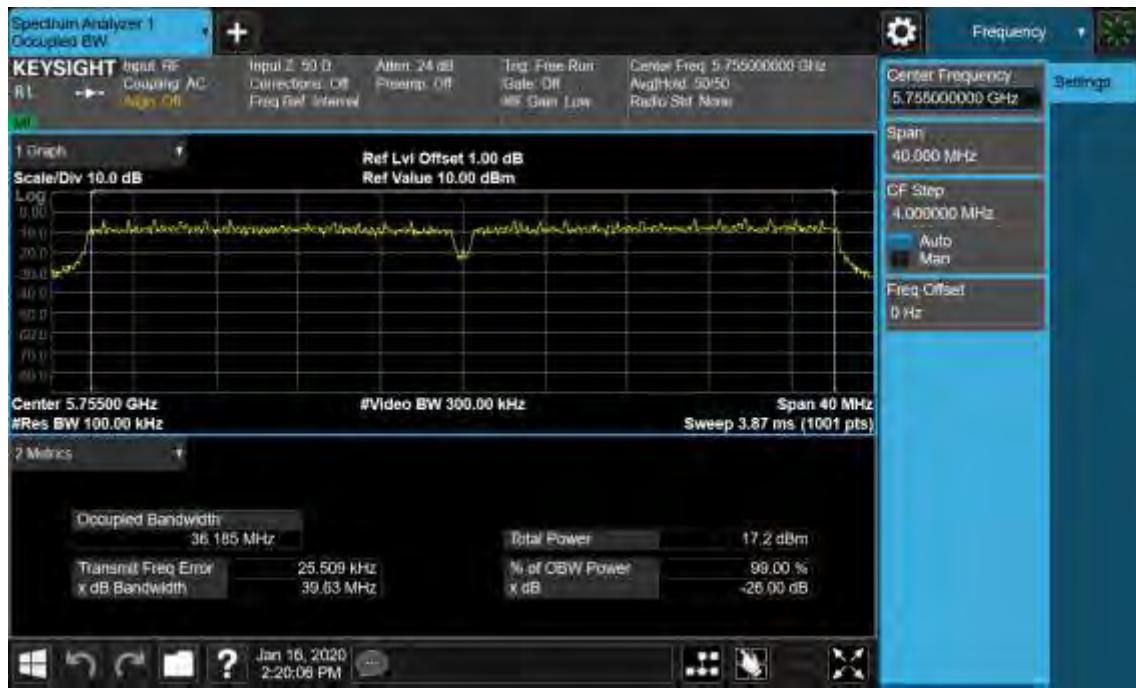
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MIMO 26dB Bandwidth and 99% Bandwidth, 802.11n(HT40), 5755MHz



Chain 1 26dB Bandwidth and 99% Bandwidth, 802.11n(HT40), 5755MHz



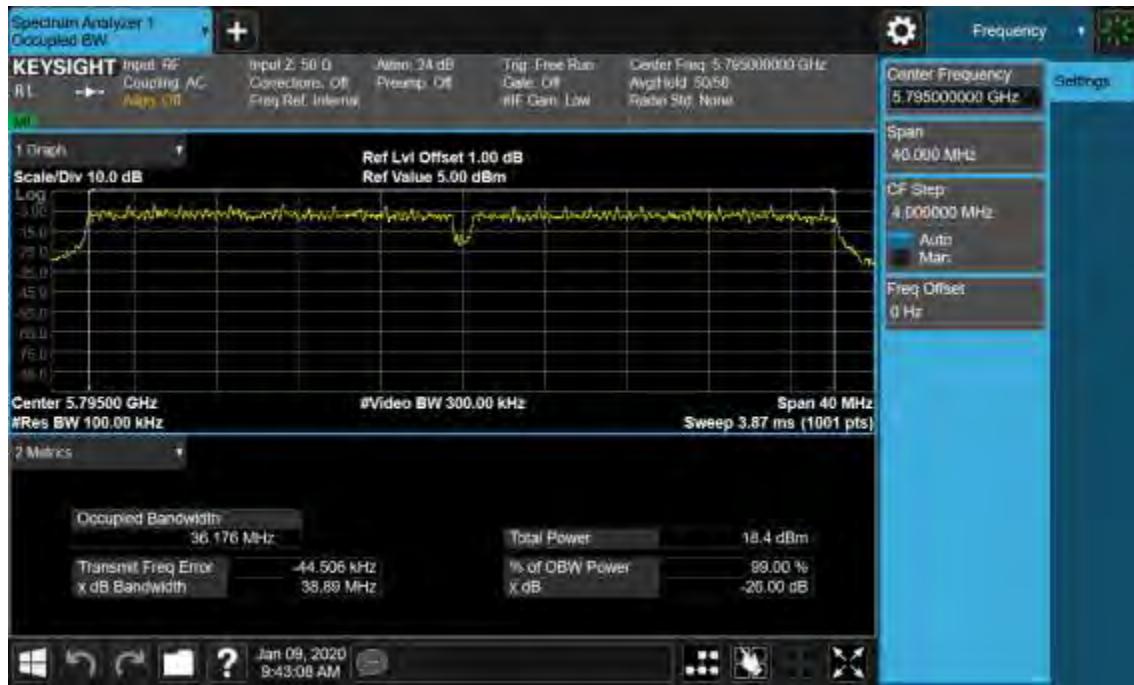
TEST REPORT

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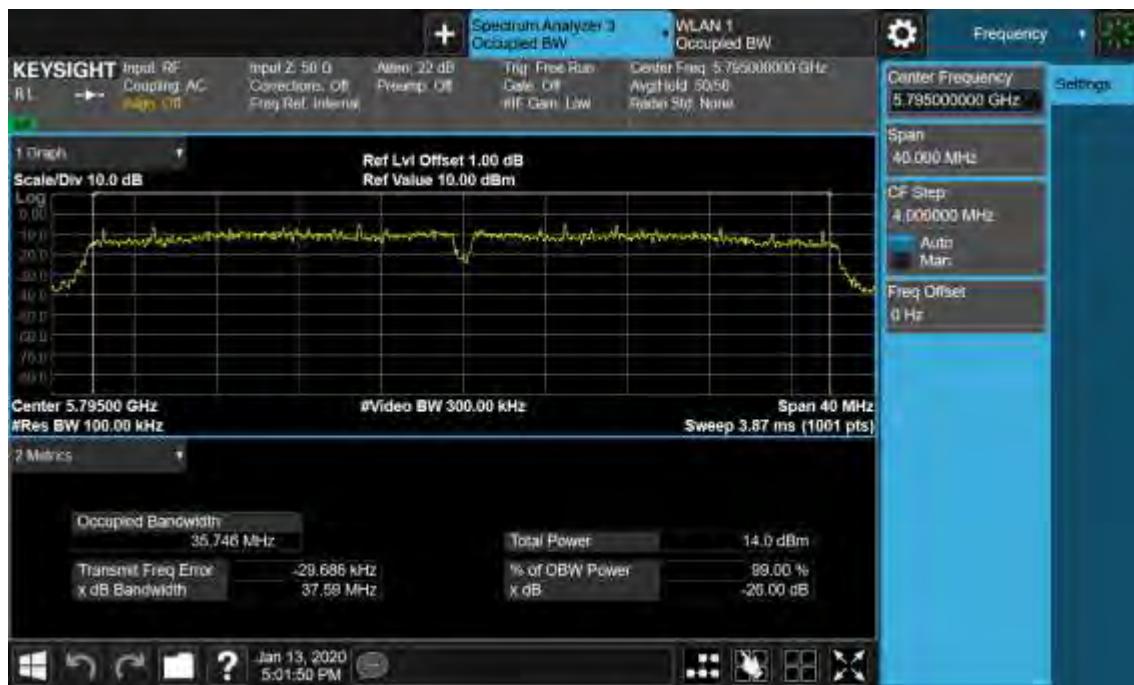
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Chain 2 26dB Bandwidth and 99% Bandwidth, 802.11n(HT40), 5795MHz



MIMO 26dB Bandwidth and 99% Bandwidth, 802.11n(HT40), 5795MHz



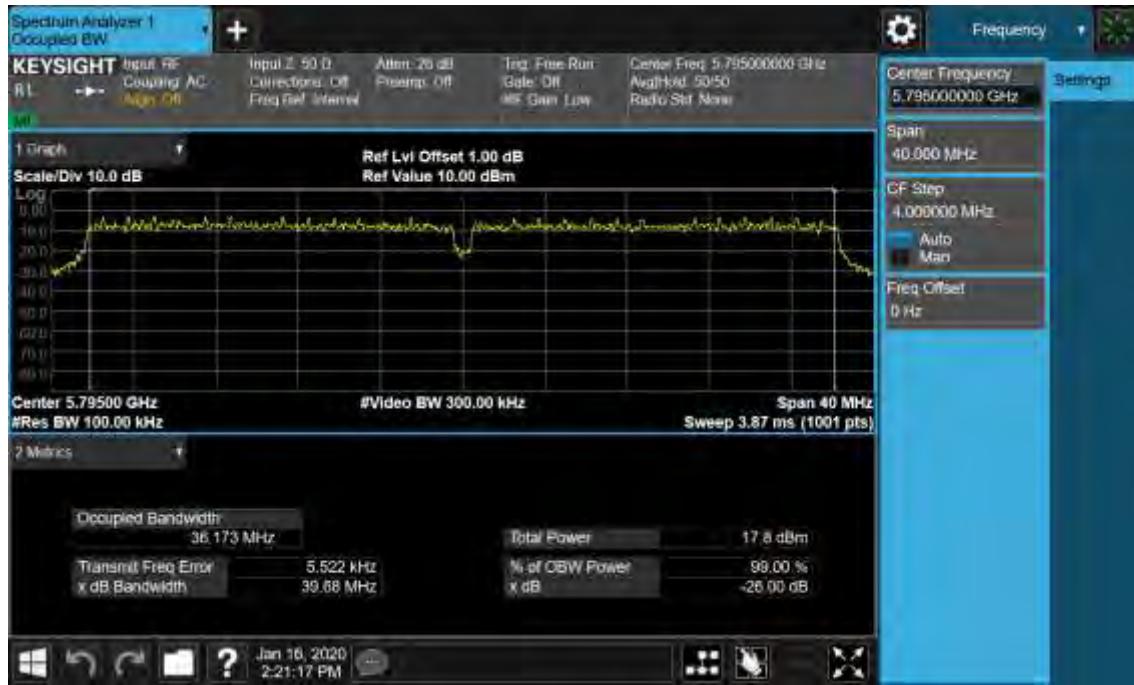
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Report No.: SHE19110011-02DE

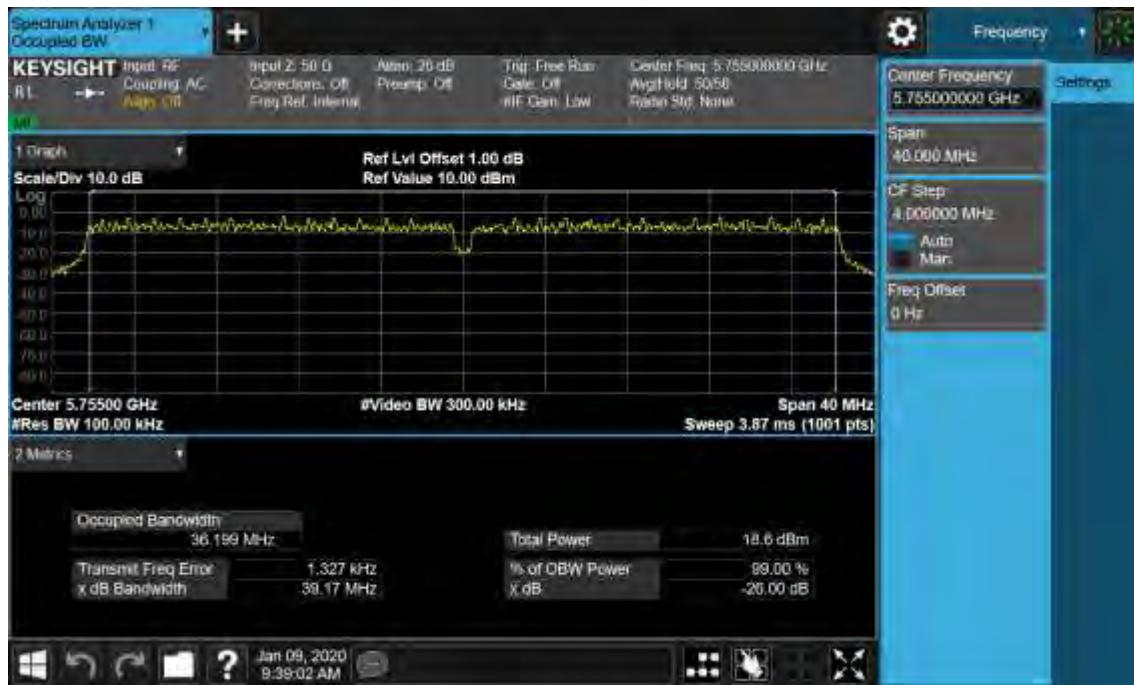
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Chain 1 26dB Bandwidth and 99% Bandwidth, 802.11n(HT40), 5795MHz



Chain 2 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT40), 5755MHz



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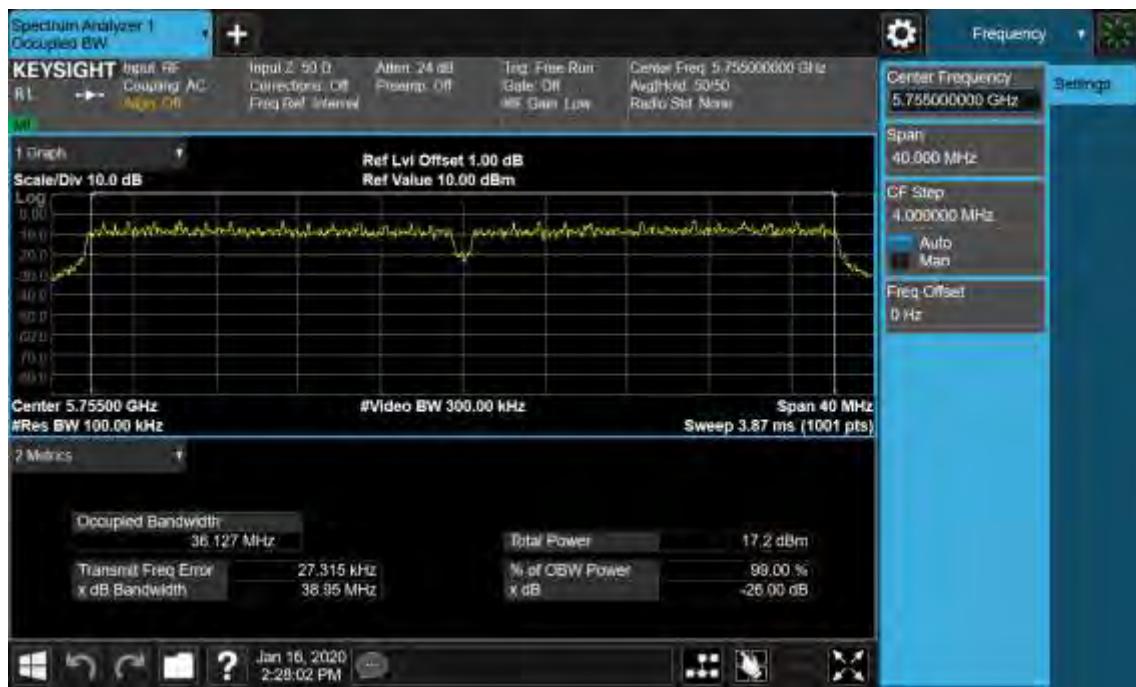
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MIMO 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT40), 5755MHz



Chain 1 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT40), 5755MHz



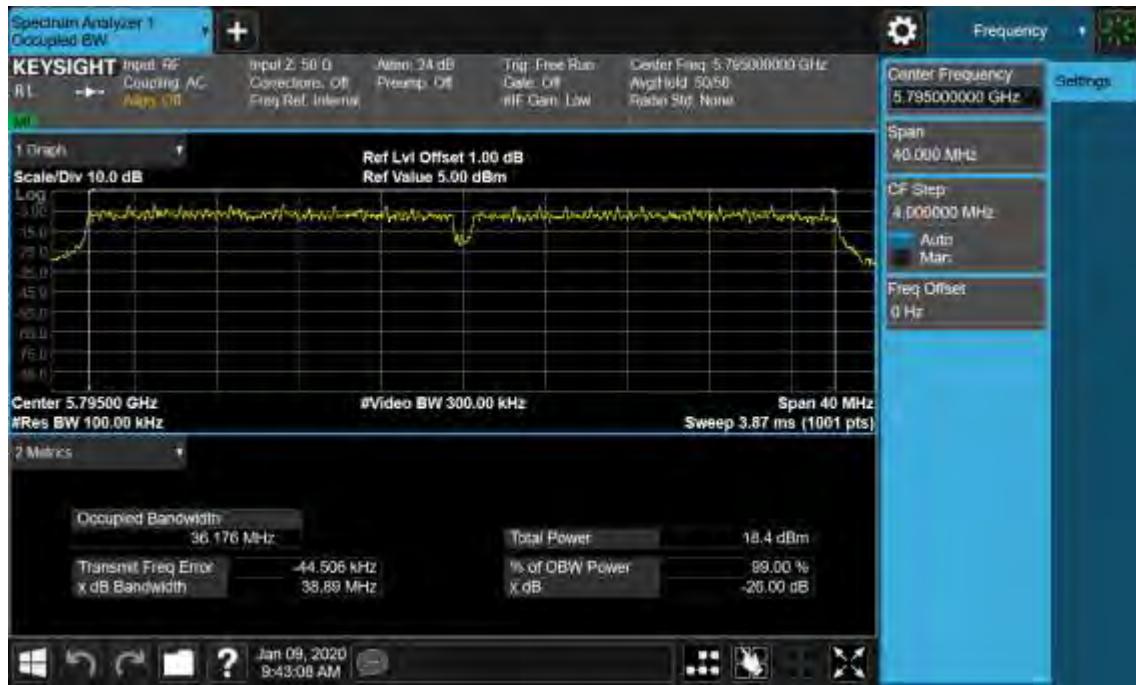
TEST REPORT

Report No.: SHE19110011-02DE

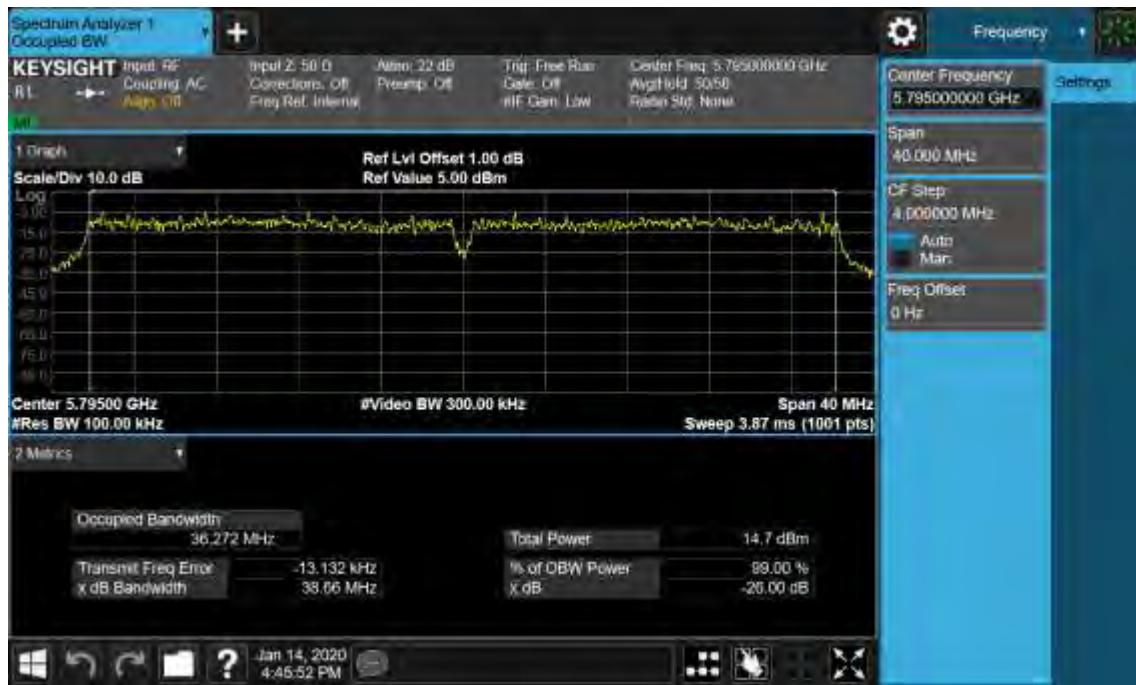
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Chain 2 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT40), 5795MHz



MIMO 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT40), 5795MHz



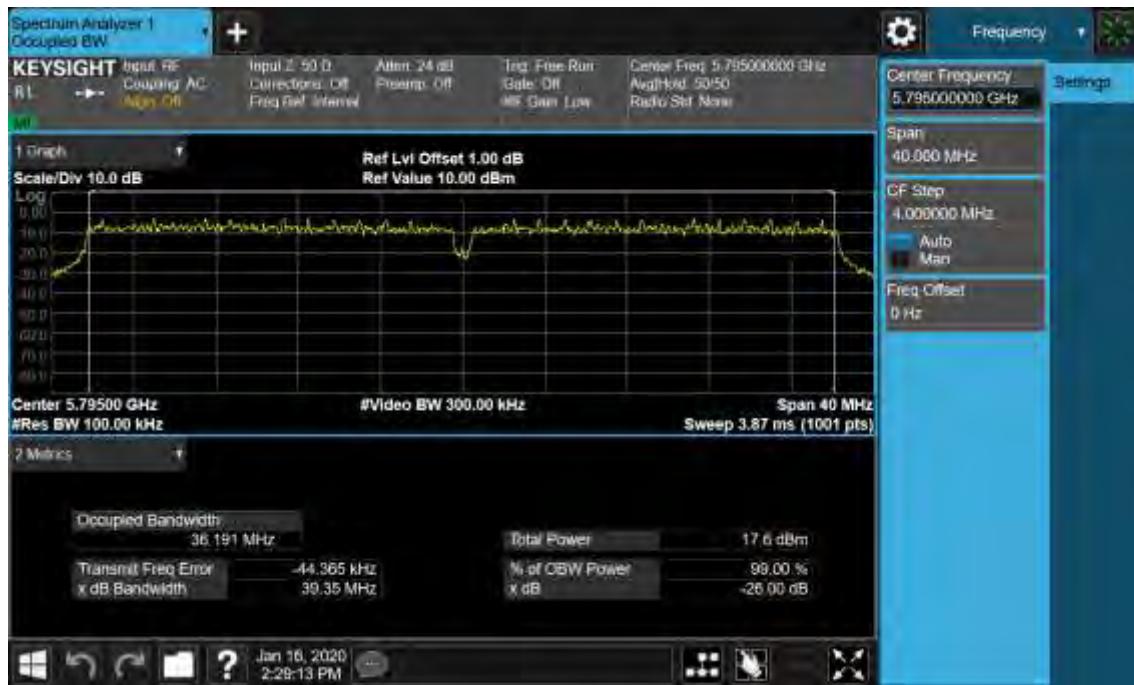
TEST REPORT

Report No.: SHE19110011-02DE

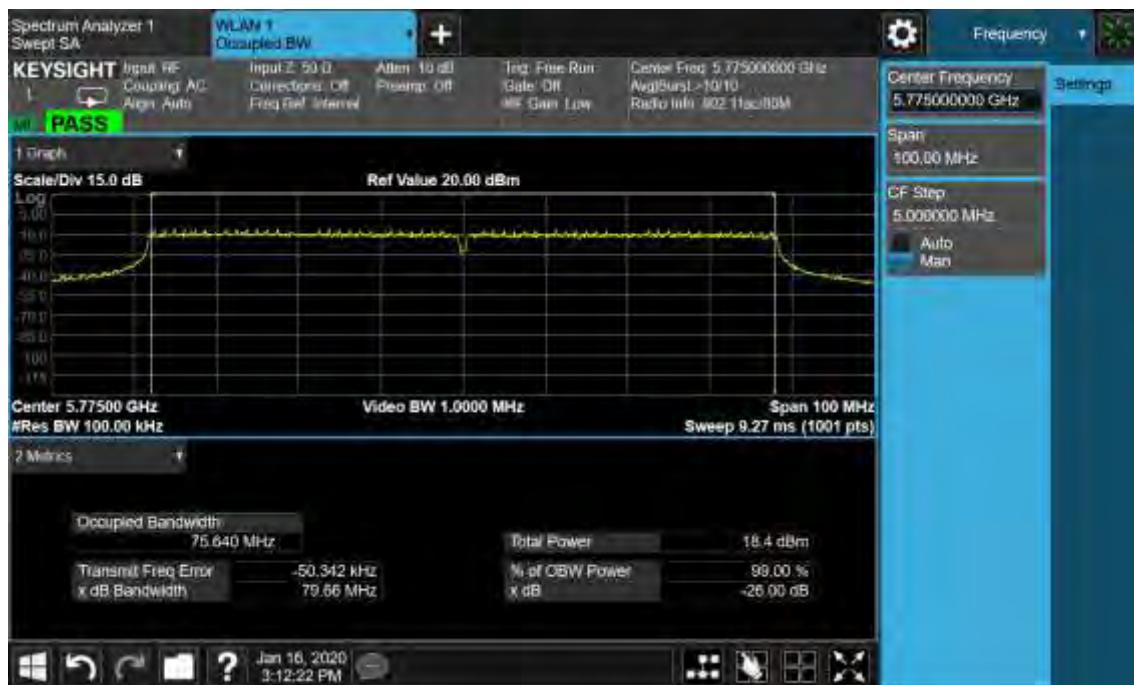
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Chain 1 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT40), 5795MHz



Chain 2 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT80), 5775MHz



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Chain 2 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT80), 5775MHz



Chain 1 26dB Bandwidth and 99% Bandwidth, 802.11ac(VHT80), 5775MHz



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4.1.4 6dB Bandwidth

RESULT:

PASS

| | | |
|-------------------|---|-----------------------------------|
| Test standard | : | FCC Part 15.407(e) RSS-247 6.2 |
| Requirement | : | ANSI C63.10-2013, KDB 789033 |
| Kind of test site | : | Shielded room |

Test setup

| | | |
|---------------------|---|-----------------|
| Test Channel | : | Low/Middle/High |
| Operation Mode | : | A.1.a |
| Ambient temperature | : | 25°C |
| Relative humidity | : | 52% |

Table 5: Chain 2 6dB Bandwidth

Band IV (5725 – 5850 MHz)

| Test Mode | Test Channel (MHz) | 6dB Bandwidth (MHz) | Limit (MHz) |
|-----------------|--------------------|---------------------|-------------|
| 802.11a | 5745 | 16.47 | 0.5 |
| | 5785 | 16.52 | |
| | 5825 | 16.47 | |
| 802.11n(HT20) | 5745 | 17.77 | 0.5 |
| | 5785 | 17.77 | |
| | 5825 | 17.77 | |
| 802.11ac(VHT20) | 5745 | 17.77 | 0.5 |
| | 5785 | 17.72 | |
| | 5825 | 17.42 | |
| 802.11n(HT40) | 5755 | 36.52 | 0.5 |
| | 5795 | 36.12 | |
| 802.11ac(VHT40) | 5755 | 36.37 | 0.5 |
| | 5795 | 36.57 | |
| 802.11ac(VHT80) | 5775 | 76.42 | |

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Table 6: MIMO 6dB Bandwidth

Band IV (5725 – 5850 MHz)

| Test Mode | Test Channel (MHz) | 6dB Bandwidth (MHz) | Limit (MHz) |
|-----------------|--------------------|---------------------|-------------|
| 802.11a | 5745 | 16.57 | 0.5 |
| | 5785 | 16.62 | |
| | 5825 | 16.47 | |
| 802.11n(HT20) | 5745 | 17.77 | 0.5 |
| | 5785 | 17.57 | |
| | 5825 | 17.67 | |
| 802.11ac(VHT20) | 5745 | 17.82 | 0.5 |
| | 5785 | 17.72 | |
| | 5825 | 17.42 | |
| 802.11n(HT40) | 5755 | 28.87 | 0.5 |
| | 5795 | 31.37 | |
| 802.11ac(VHT40) | 5755 | 35.12 | 0.5 |
| | 5795 | 35.77 | |
| 802.11ac(VHT80) | 5775 | 75.72 | |

Table 7: MIMO 6dB Bandwidth

Band IV (5725 – 5850 MHz)

| Test Mode | Test Channel (MHz) | 6dB Bandwidth (MHz) | Limit (MHz) |
|-----------------|--------------------|---------------------|-------------|
| 802.11a | 5745 | 16.52 | 0.5 |
| | 5785 | 16.52 | |
| | 5825 | 16.57 | |
| 802.11n(HT20) | 5745 | 17.77 | 0.5 |
| | 5785 | 17.67 | |
| | 5825 | 17.77 | |
| 802.11ac(VHT20) | 5745 | 17.72 | 0.5 |
| | 5785 | 17.67 | |
| | 5825 | 17.72 | |
| 802.11n(HT40) | 5755 | 36.47 | 0.5 |
| | 5795 | 36.47 | |
| 802.11ac(VHT40) | 5755 | 36.47 | 0.5 |
| | 5795 | 36.32 | |
| 802.11ac(VHT80) | 5775 | 76.42 | |

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Chain 2 6dB Bandwidth, 802.11a, 5745MHz



MIMO 6dB Bandwidth, 802.11a, 5745MHz



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Chain 1 6dB Bandwidth, 802.11a, 5745MHz



Chain 2 6dB Bandwidth, 802.11a, 5785MHz



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MIMO 6dB Bandwidth, 802.11a, 5785MHz



Chain 1 6dB Bandwidth, 802.11a, 5785MHz



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Chain 2 6dB Bandwidth, 802.11a, 5825MHz



MIMO 6dB Bandwidth, 802.11a, 5825MHz



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Chain 1 6dB Bandwidth, 802.11a, 5825MHz



Chain 2 6dB Bandwidth, 802.11n(HT20), 5745MHz



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MIMO 6dB Bandwidth, 802.11n(HT20), 5745MHz



Chain 1 6dB Bandwidth, 802.11n(HT20), 5745MHz



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Chain 2 6dB Bandwidth, 802.11n(HT20), 5785MHz



MIMO 6dB Bandwidth, 802.11n(HT20), 5785MHz



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Chain 1 6dB Bandwidth, 802.11n(HT20), 5785MHz



Chain 2 6dB Bandwidth, 802.11n(HT20), 5825MHz



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MIMO 6dB Bandwidth, 802.11n(HT20), 5825MHz



Chain 1 6dB Bandwidth, 802.11n(HT20), 5825MHz



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Chain 2 6dB Bandwidth, 802.11ac(VHT20), 5745MHz



MIMO 6dB Bandwidth, 802.11ac(VHT20), 5745MHz



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Chain 1 6dB Bandwidth, 802.11ac(VHT20), 5745MHz



Chain 2 6dB Bandwidth, 802.11ac(VHT20), 5785MHz



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MIMO 6dB Bandwidth, 802.11ac(VHT20), 5785MHz



Chain 1 6dB Bandwidth, 802.11ac(VHT20), 5785MHz



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Chain 2 6dB Bandwidth, 802.11ac(VHT20), 5825MHz



MIMO 6dB Bandwidth, 802.11ac(VHT20), 5825MHz



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Chain 1 6dB Bandwidth, 802.11ac(VHT20), 5825MHz



Chain 2 6dB Bandwidth, 802.11n(HT40), 5755MHz



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MIMO 6dB Bandwidth, 802.11n(HT40), 5755MHz



Chain 1 6dB Bandwidth, 802.11n(HT40), 5755MHz



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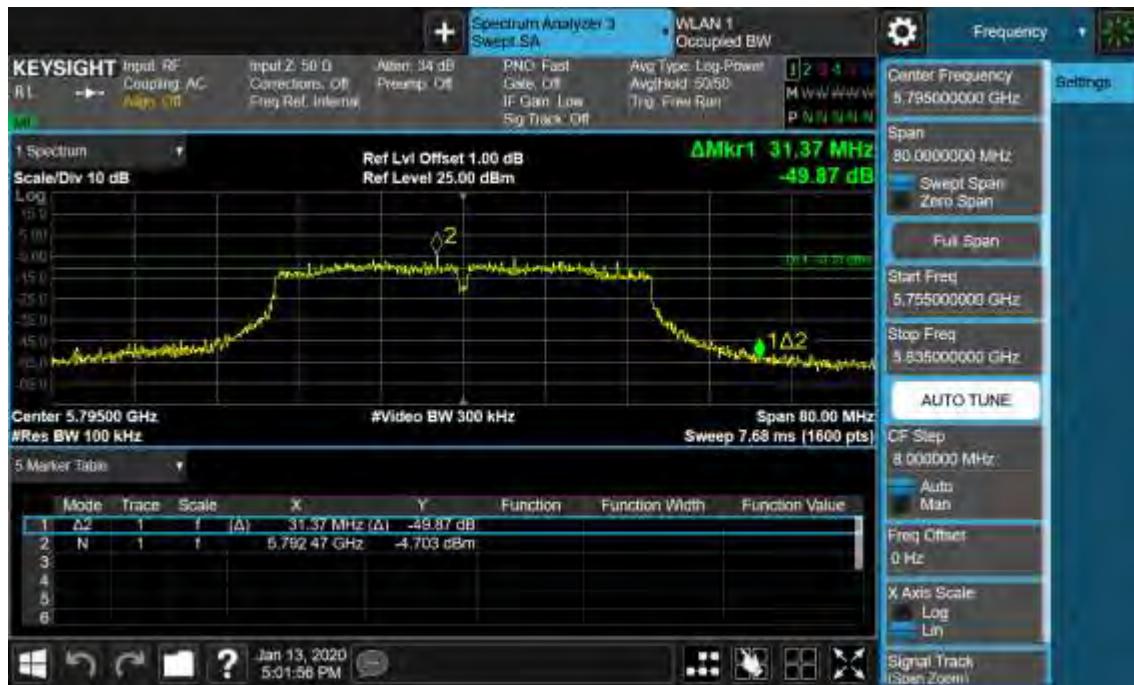
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Chain 2 6dB Bandwidth, 802.11n(HT40), 5795MHz



MIMO 6dB Bandwidth, 802.11n(HT40), 5795MHz



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Chain 1 6dB Bandwidth, 802.11n(HT40), 5795MHz



Chain 2 6dB Bandwidth, 802.11ac(VHT40), 5755MHz



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MIMO 6dB Bandwidth, 802.11ac(VHT40), 5755MHz



Chain 1 6dB Bandwidth, 802.11ac(VHT40), 5755MHz



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Chain 2 6dB Bandwidth, 802.11ac(VHT40), 5795MHz



MIMO 6dB Bandwidth, 802.11ac(VHT40), 5795MHz



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Chain 1 6dB Bandwidth, 802.11ac(VHT40), 5795MHz



Chain 2 6dB Bandwidth, 802.11ac(VHT80), 5775MHz



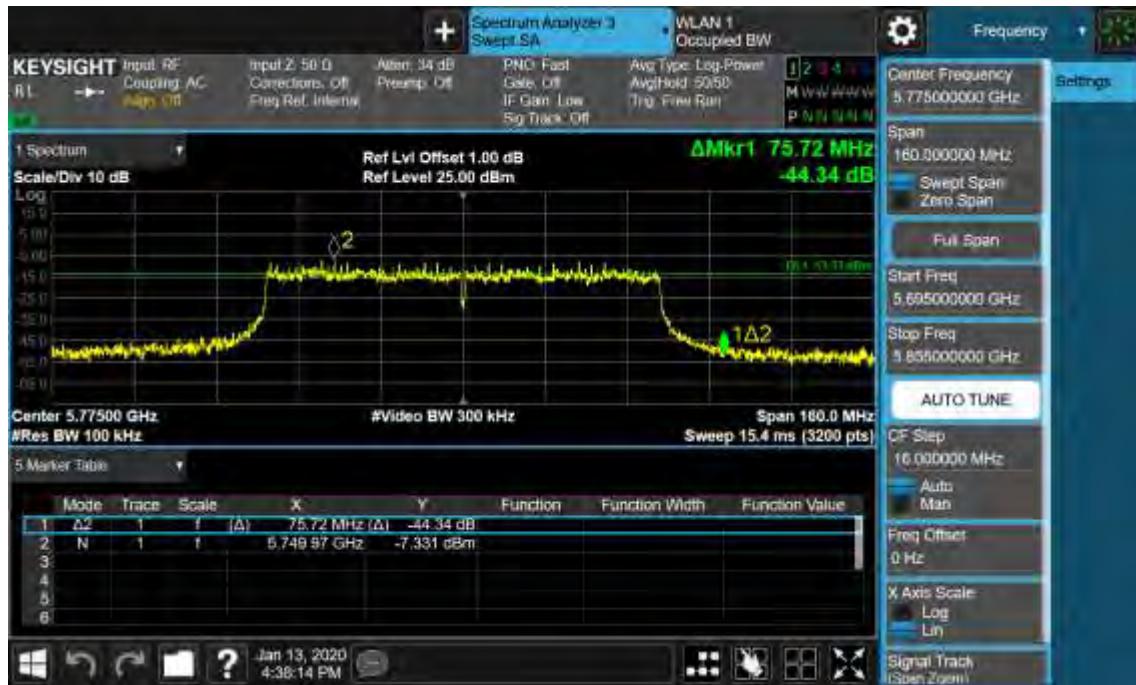
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MIMO 6dB Bandwidth, 802.11ac(VHT80), 5775MHz



Chain 1 6dB Bandwidth, 802.11ac(VHT80), 5775MHz



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4.1.5 Power Spectral Density

RESULT:

PASS

| | | |
|-------------------|---|-----------------------------------|
| Test standard | : | FCC Part 15.407(a) RSS-247 6.2 |
| Requirement | : | ANSI C63.10-2013, KDB 789033 |
| Kind of test site | : | Shielded room |

Test setup

| | | |
|---------------------|---|-----------------|
| Test Channel | : | Low/Middle/High |
| Operation Mode | : | A.1.a |
| Ambient temperature | : | 25°C |
| Relative humidity | : | 52% |

Table 8: Chain 2 Power Spectral Density

Band I (5150 – 5250 MHz)

| Test Mode | Test Channel (MHz) | PSD (dBm/MHz) | FCC Limit (dBm/MHz) |
|------------------|--------------------|---------------|---------------------|
| 802.11a | 5180 | 7.64 | 11 |
| | 5220 | 8.94 | |
| | 5240 | 9.13 | |
| 802.11n(HT20) | 5180 | 6.07 | 11 |
| | 5220 | 7.70 | |
| | 5240 | 8.11 | |
| 802.11ac(VHT20) | 5180 | 6.55 | 11 |
| | 5220 | 8.06 | |
| | 5240 | 8.27 | |
| 802.11n(HT40) | 5190 | 3.93 | 11 |
| | 5230 | 4.68 | |
| 802.11ac(VHT40) | 5190 | 4.51 | 11 |
| | 5230 | 5.10 | |
| 802.11ac(VHT80)* | 5210 | -1.2 | |

*Note :

$$PSD(dBm/MHz) = P(dBm/510kHz) + 10 * \log(1MHz/0.51MHz).$$

$$\text{So } RBW=510kHz \text{ to } RBW=1MHz \text{ PSD}(dBm/MHz) = -1.5 + 0.292 = -1.2$$

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Band IV (5725 – 5850 MHz)

| Test Mode | Test Channel (MHz) | PSD (dBm/MHz) | FCC Limit (dBm/MHz) |
|-----------------|--------------------|---------------|---------------------|
| 802.11a | 5745 | 9.37 | 30 |
| | 5785 | 8.49 | |
| | 5825 | 7.90 | |
| 802.11n(HT20) | 5745 | 7.80 | 30 |
| | 5785 | 7.50 | |
| | 5825 | 7.40 | |
| 802.11ac(VHT20) | 5745 | 7.68 | 30 |
| | 5785 | 7.34 | |
| | 5825 | 7.56 | |
| 802.11n(HT40) | 5755 | 4.80 | 11 |
| | 5795 | 4.91 | |
| 802.11ac(VHT40) | 5755 | 5.92 | |
| | 5795 | 5.81 | |
| 802.11ac(VHT80) | 5775 | -0.30 | |

Table 9: MIMO Power Spectral Density

Band I (5150 – 5250 MHz)

| Test Mode | Test Channel (MHz) | PSD (dBm/MHz) | FCC Limit (dBm/MHz) |
|-----------------|--------------------|---------------|---------------------|
| 802.11a | 5180 | 8.112 | 11 |
| | 5220 | 7.792 | |
| | 5240 | 7.863 | |
| 802.11n(HT20) | 5180 | 8.193 | 11 |
| | 5220 | 8.273 | |
| | 5240 | 8.128 | |
| 802.11ac(VHT20) | 5180 | 8.403 | 11 |
| | 5220 | 8.317 | |
| | 5240 | 8.308 | |
| 802.11n(HT40) | 5190 | 5.177 | 11 |
| | 5230 | 4.835 | |
| 802.11ac(VHT40) | 5190 | 4.265 | |
| | 5230 | 4.712 | |
| 802.11ac(VHT80) | 5210 | -0.73 | |

*Note :

$$PSD(dBm/MHz) = P(dBm/510kHz) + 10 * \log(1MHz/0.51MHz).$$

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So $RBW=510\text{kHz}$ to $RBW=1\text{MHz}$ $PSD(\text{dBm}/\text{MHz}) = -1.03 + 0.292 = -0.73$

Band IV (5725 – 5850 MHz)

| Test Mode | Test Channel (MHz) | PSD (dBm/MHz) | FCC Limit (dBm/MHz) |
|-----------------|--------------------|---------------|---------------------|
| 802.11a | 5745 | 8.02 | 30 |
| | 5785 | 7.71 | |
| | 5825 | 7.33 | |
| 802.11n(HT20) | 5745 | 8.19 | 30 |
| | 5785 | 8.37 | |
| | 5825 | 7.96 | |
| 802.11ac(VHT20) | 5745 | 8.28 | 30 |
| | 5785 | 7.95 | |
| | 5825 | 7.51 | |
| 802.11n(HT40) | 5755 | 5.46 | 11 |
| | 5795 | 5.69 | |
| 802.11ac(VHT40) | 5755 | 6.05 | |
| | 5795 | 6.52 | |
| 802.11ac(VHT80) | 5775 | 0.56 | |

Table 10: Chain 1 Power Spectral Density

Band I (5150 – 5250 MHz)

| Test Mode | Test Channel (MHz) | PSD (dBm/MHz) | FCC Limit (dBm/MHz) |
|-----------------|--------------------|---------------|---------------------|
| 802.11a | 5180 | 8.302 | 11 |
| | 5220 | 8.438 | |
| | 5240 | 8.306 | |
| 802.11n(HT20) | 5180 | 7.563 | |
| | 5220 | 7.453 | |
| | 5240 | 7.503 | |
| 802.11ac(VHT20) | 5180 | 7.266 | |
| | 5220 | 7.109 | |
| | 5240 | 7.486 | |
| 802.11n(HT40) | 5190 | 4.517 | |
| | 5230 | 4.746 | |
| 802.11ac(VHT40) | 5190 | 4.365 | |
| | 5230 | 4.394 | |
| 802.11ac(VHT80) | 5210 | -0.708 | |

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*Note :

$PSD(dBm/MHz) = P(dBm/510kHz) + 10 * \log(1MHz/0.51MHz)$.
So $RBW=510kHz$ to $RBW=1MHz$ $PSD(dBm/MHz) = -1.00 + 0.292 = -0.708$

Band IV (5725 – 5850 MHz)

| Test Mode | Test Channel (MHz) | PSD (dBm/MHz) | FCC Limit (dBm/MHz) |
|-----------------|--------------------|---------------|---------------------|
| 802.11a | 5745 | 8.307 | 30 |
| | 5785 | 8.781 | |
| | 5825 | 8.379 | |
| 802.11n(HT20) | 5745 | 7.326 | 30 |
| | 5785 | 8.160 | |
| | 5825 | 7.491 | |
| 802.11ac(VHT20) | 5745 | 6.987 | 30 |
| | 5785 | 8.279 | |
| | 5825 | 7.685 | |
| 802.11n(HT40) | 5755 | 4.684 | 30 |
| | 5795 | 4.963 | |
| 802.11ac(VHT40) | 5755 | 4.451 | 30 |
| | 5795 | 5.144 | |
| 802.11ac(VHT80) | 5775 | -0.495 | |

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Chain 2 Power Spectral Density, 802.11a, 5180MHz



MIMO Power Spectral Density, 802.11a, 5180MHz



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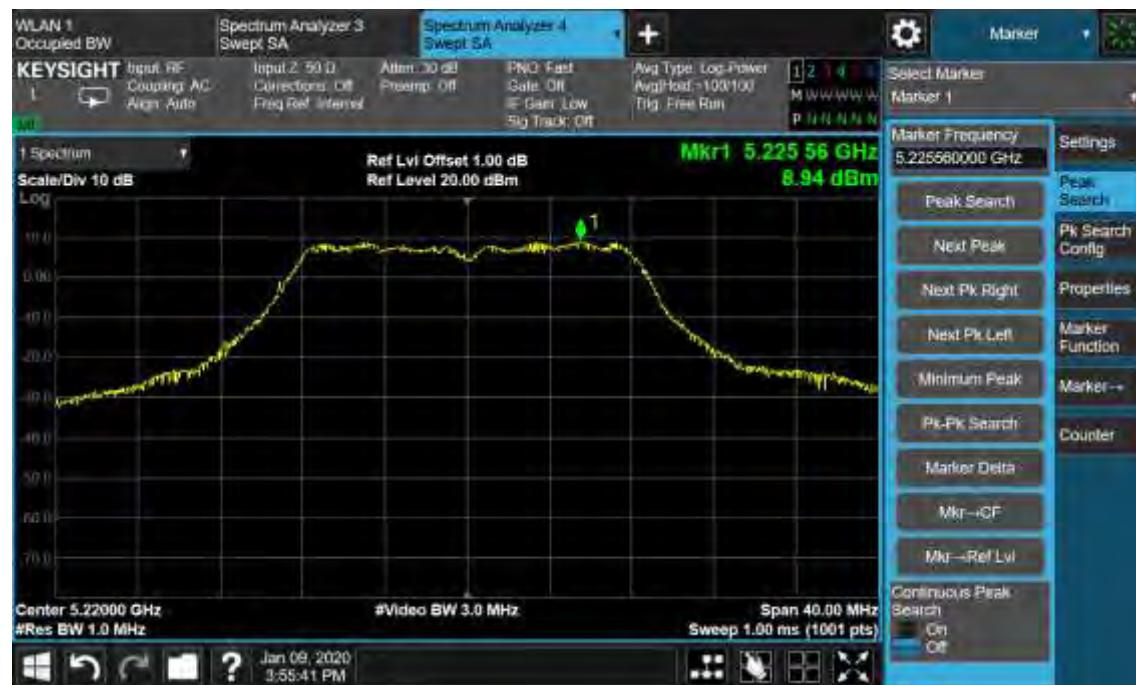
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Chain 1 Power Spectral Density, 802.11a, 5180MHz



Chain 2 Power Spectral Density, 802.11a, 5220MHz



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MIMO Power Spectral Density, 802.11a, 5220MHz



Chain 1 Power Spectral Density, 802.11a, 5220MHz



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Chain 2 Power Spectral Density, 802.11a, 5240MHz



MIMO Power Spectral Density, 802.11a, 5240MHz



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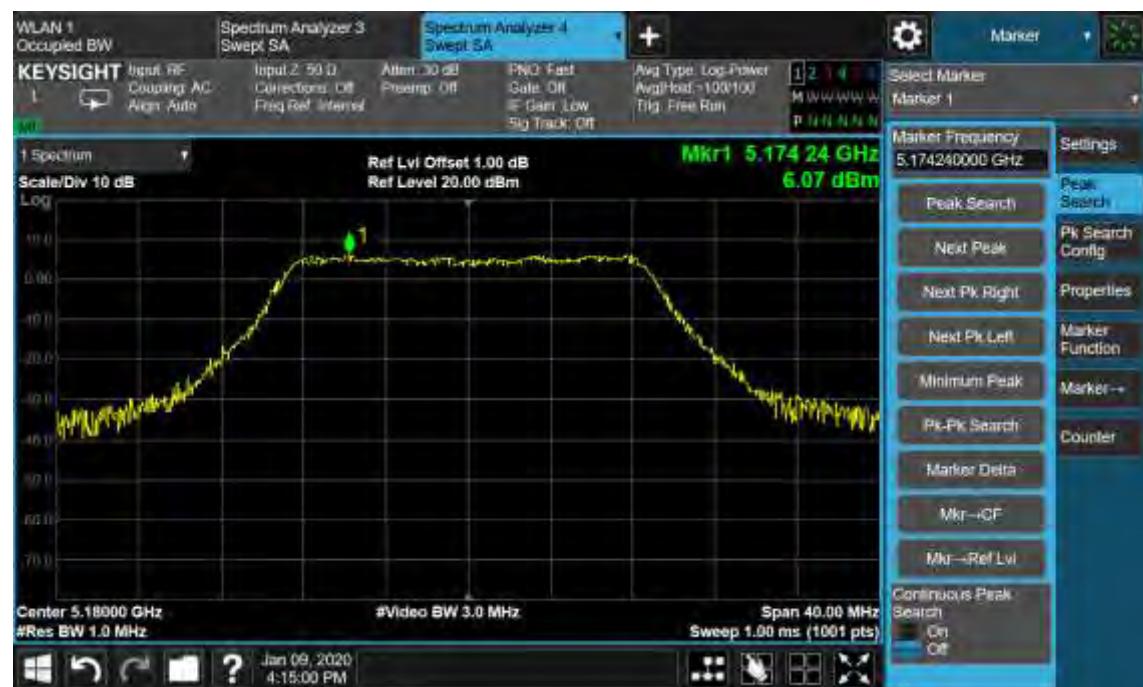
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Chain 1 Power Spectral Density, 802.11a, 5240MHz



Chain 2 Power Spectral Density, 802.11n(HT20), 5180MHz



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MIMO Power Spectral Density, 802.11n(HT20), 5180MHz



Chain 1 Power Spectral Density, 802.11n(HT20), 5180MHz



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Chain 2 Power Spectral Density, 802.11n(HT20), 5220MHz



MIMO power Spectral Density, 802.11n(HT20), 5220MHz



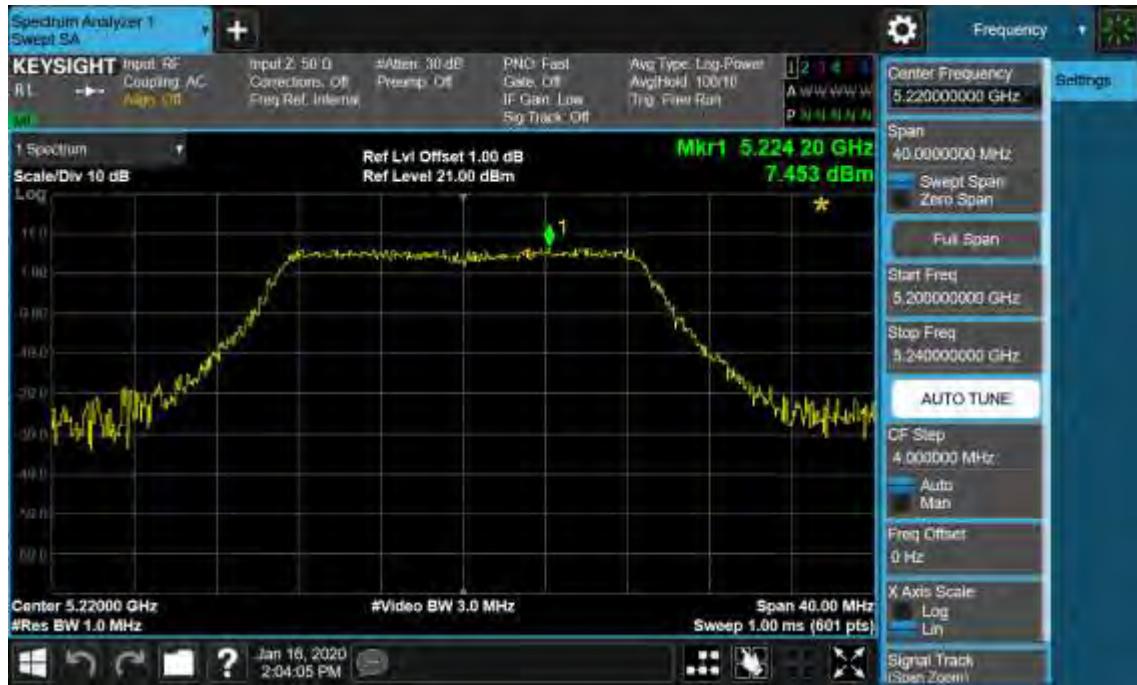
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Chain 1 Power Spectral Density, 802.11n(HT20), 5220MHz



Chain 2 Power Spectral Density, 802.11n(HT20), 5240MHz



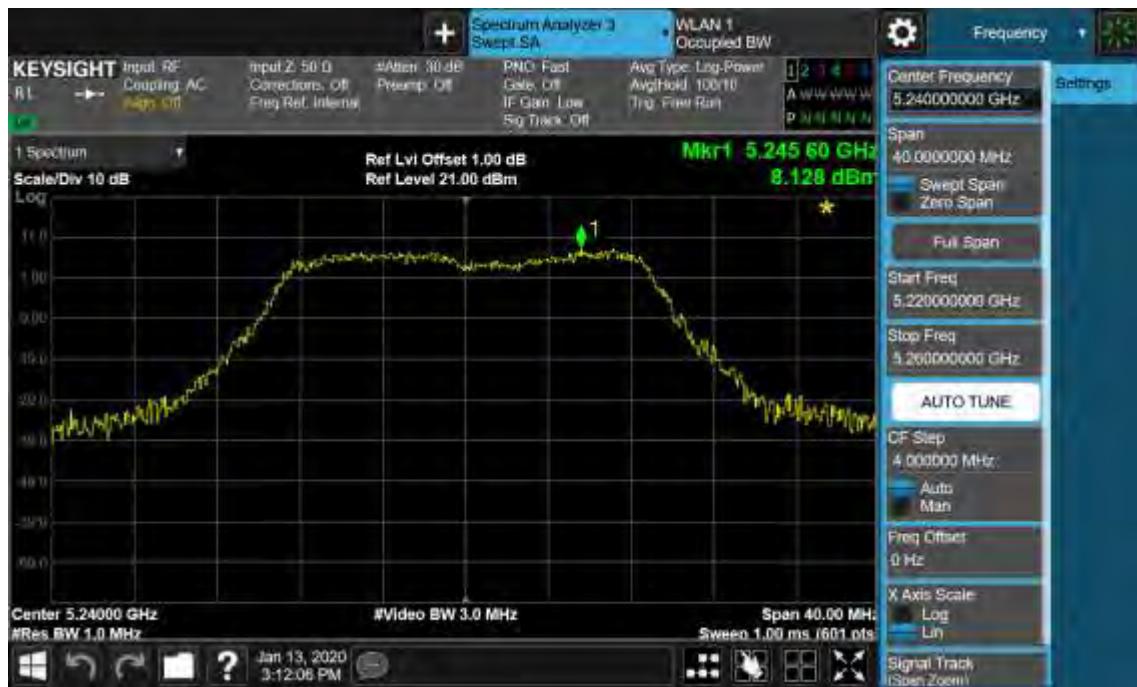
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MIMO Power Spectral Density, 802.11n(HT20), 5240MHz



Chain 1 Power Spectral Density, 802.11n(HT20), 5240MHz



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Chain 2 Power Spectral Density, 802.11ac(VHT20), 5180MHz



MIMO Power Spectral Density, 802.11ac(VHT20), 5180MHz



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Chain 1 Power Spectral Density, 802.11ac(VHT20), 5180MHz



Chain 2 Power Spectral Density, 802.11ac(VHT20), 5220MHz



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MIMO Power Spectral Density, 802.11ac(VHT20), 5220MHz



Chain 1 Power Spectral Density, 802.11ac(VHT20), 5220MHz



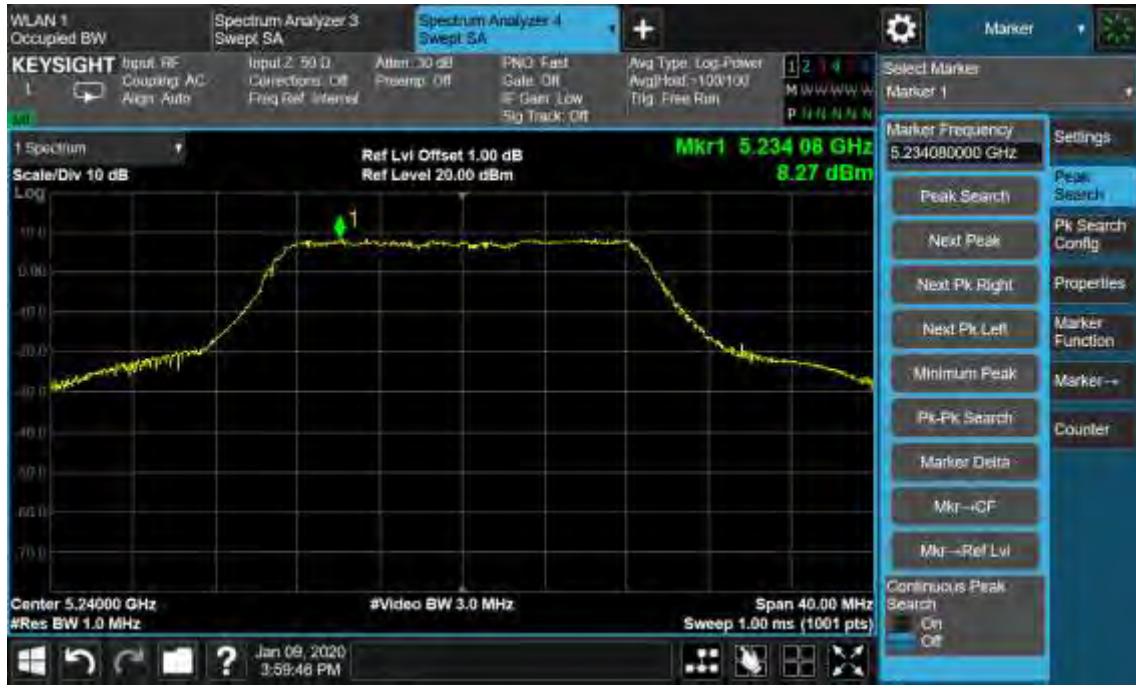
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Chain 2 Power Spectral Density, 802.11ac(VHT20), 5240MHz



MIMO Power Spectral Density, 802.11ac(VHT20), 5240MHz



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Chain 1 Power Spectral Density, 802.11ac(VHT20), 5240MHz



Chain 2 Power Spectral Density, 802.11n(HT40), 5190MHz



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MIMO Power Spectral Density, 802.11n(HT40), 5190MHz



Chain 1 Power Spectral Density, 802.11n(HT40), 5190MHz



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MIMO Power Spectral Density, 802.11n(HT40), 5230MHz



MIMO Power Spectral Density, 802.11n(HT40), 5230MHz



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Chain 1 Power Spectral Density, 802.11n(HT40), 5230MHz



Chain 2 Power Spectral Density, 802.11ac(VHT40), 5190MHz



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MIMO Power Spectral Density, 802.11ac(VHT40), 5190MHz



Chain 1 Power Spectral Density, 802.11ac(VHT40), 5190MHz



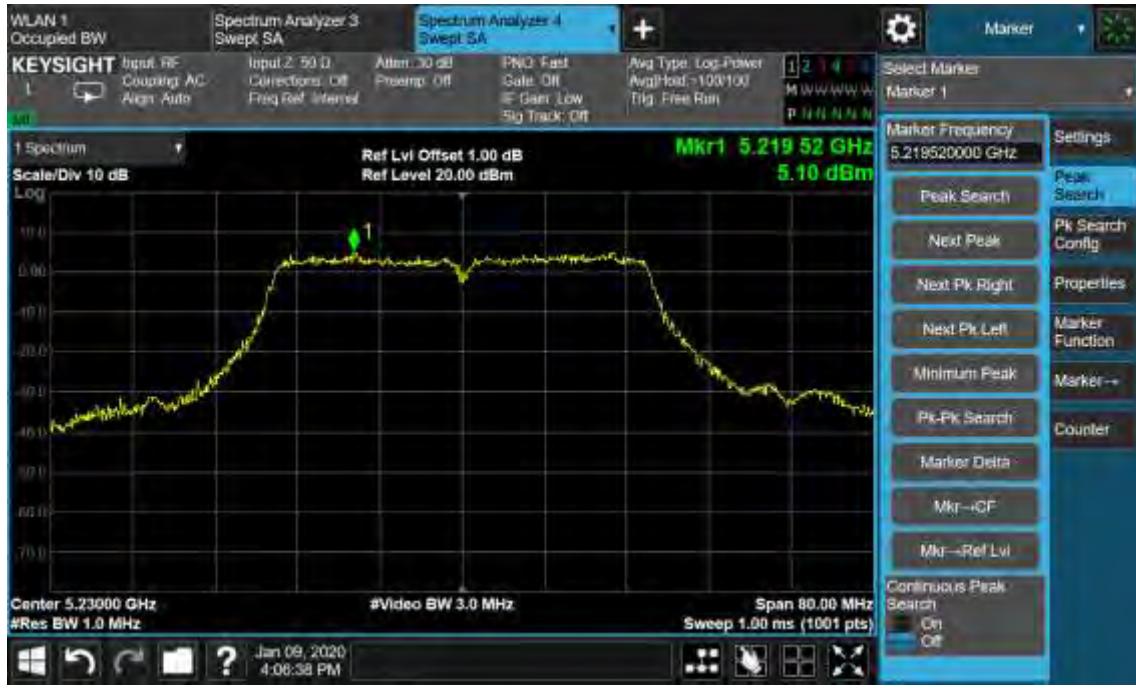
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Chain 2 Power Spectral Density, 802.11ac(VHT40), 5230MHz



MIMO Power Spectral Density, 802.11ac(VHT40), 5230MHz



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Chain 1 Power Spectral Density, 802.11ac(VHT40), 5230MHz



Chain 2 Power Spectral Density, 802.11ac(VHT80), 5210MHz



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MIMO Power Spectral Density, 802.11ac(VHT80), 5210MHz



Chain 1 Power Spectral Density, 802.11ac(VHT80), 5210MHz



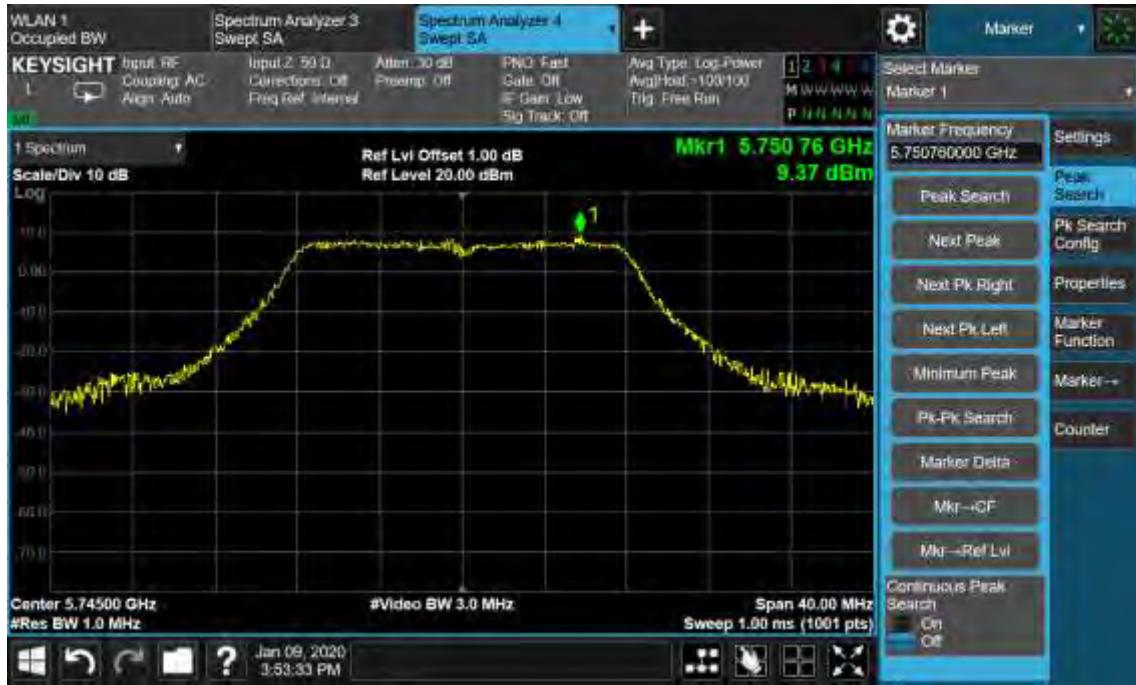
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Chain 2 Power Spectral Density, 802.11a, 5745MHz



MIMO Power Spectral Density, 802.11a, 5745MHz



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Chain 1 Power Spectral Density, 802.11a, 5745MHz



Chain 2 Power Spectral Density, 802.11a, 5785MHz



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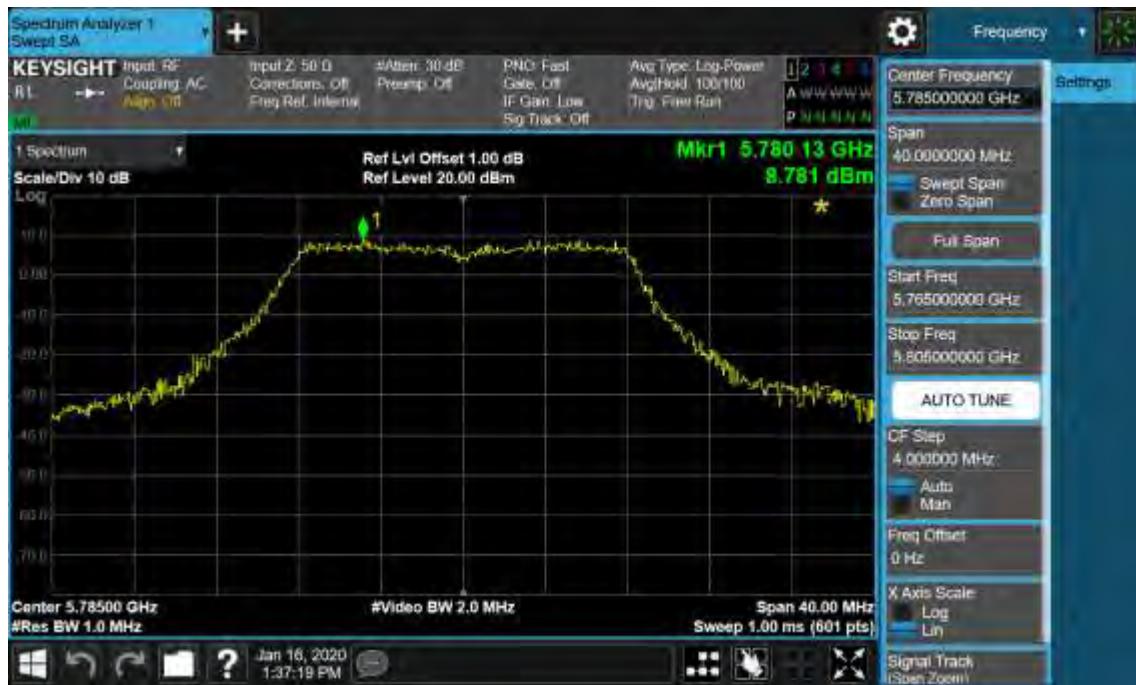
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MIMO Power Spectral Density, 802.11a, 5785MHz



Chain 1 Power Spectral Density, 802.11a, 5785MHz



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Chain 2 Power Spectral Density, 802.11a, 5825MHz



MIMO Power Spectral Density, 802.11a, 5825MHz



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Chain 1 Power Spectral Density, 802.11a, 5825MHz



Chain 2 Power Spectral Density, 802.11n(HT20), 5745MHz



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MIMO Power Spectral Density, 802.11n(HT20), 5745MHz



Chain 1 Power Spectral Density, 802.11n(HT20), 5745MHz



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Chain 2 Power Spectral Density, 802.11n(HT20), 5785MHz



MIMO Power Spectral Density, 802.11n(HT20), 5785MHz



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Chain 1 Power Spectral Density, 802.11n(HT20), 5785MHz



Chain 2 Power Spectral Density, 802.11n(HT20), 5825MHz



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MIMO Power Spectral Density, 802.11n(HT20), 5825MHz



Chain 1 Power Spectral Density, 802.11n(HT20), 5825MHz



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Chain 2 Power Spectral Density, 802.11ac(VHT20), 5745MHz



MIMO Power Spectral Density, 802.11ac(VHT20), 5745MHz



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Chain 1 Power Spectral Density, 802.11ac(VHT20), 5745MHz



Chain 2 Power Spectral Density, 802.11ac(VHT20), 5785MHz



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MIMO Power Spectral Density, 802.11ac(VHT20), 5785MHz



Chain 1 Power Spectral Density, 802.11ac(VHT20), 5785MHz



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Chain 2 Power Spectral Density, 802.11ac(VHT20), 5825MHz



MIMO Power Spectral Density, 802.11ac(VHT20), 5825MHz



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Chain 1 Power Spectral Density, 802.11ac(VHT20), 5825MHz



Chain 2 Power Spectral Density, 802.11n(HT40), 5755MHz



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MIMO Power Spectral Density, 802.11n(HT40), 5755MHz



Chain 1 Power Spectral Density, 802.11n(HT40), 5755MHz



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Chain 2 Power Spectral Density, 802.11n(HT40), 5795MHz



MIMO Power Spectral Density, 802.11n(HT40), 5795MHz



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Chain 1 Power Spectral Density, 802.11n(HT40), 5795MHz



Chain 2 Power Spectral Density, 802.11ac(VHT40), 5755MHz



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MIMO Power Spectral Density, 802.11ac(VHT40), 5755MHz



Chain 1 Power Spectral Density, 802.11ac(VHT40), 5755MHz



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Chain 2 Power Spectral Density, 802.11ac(VHT40), 5795MHz



MIMO Power Spectral Density, 802.11ac(VHT40), 5795MHz



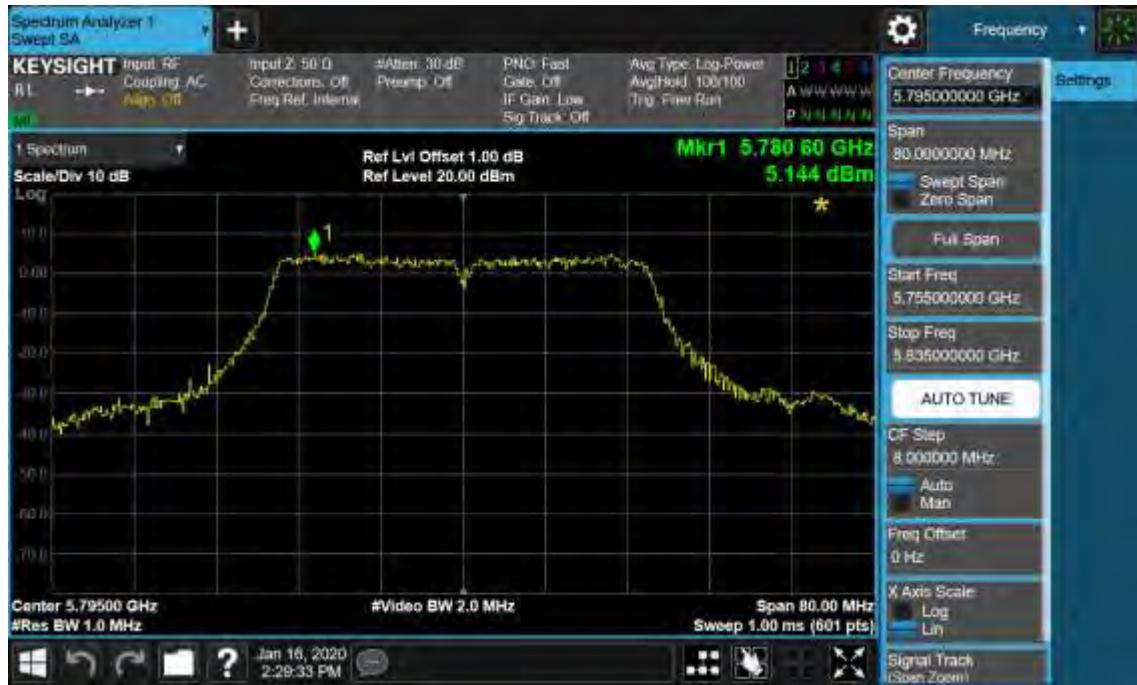
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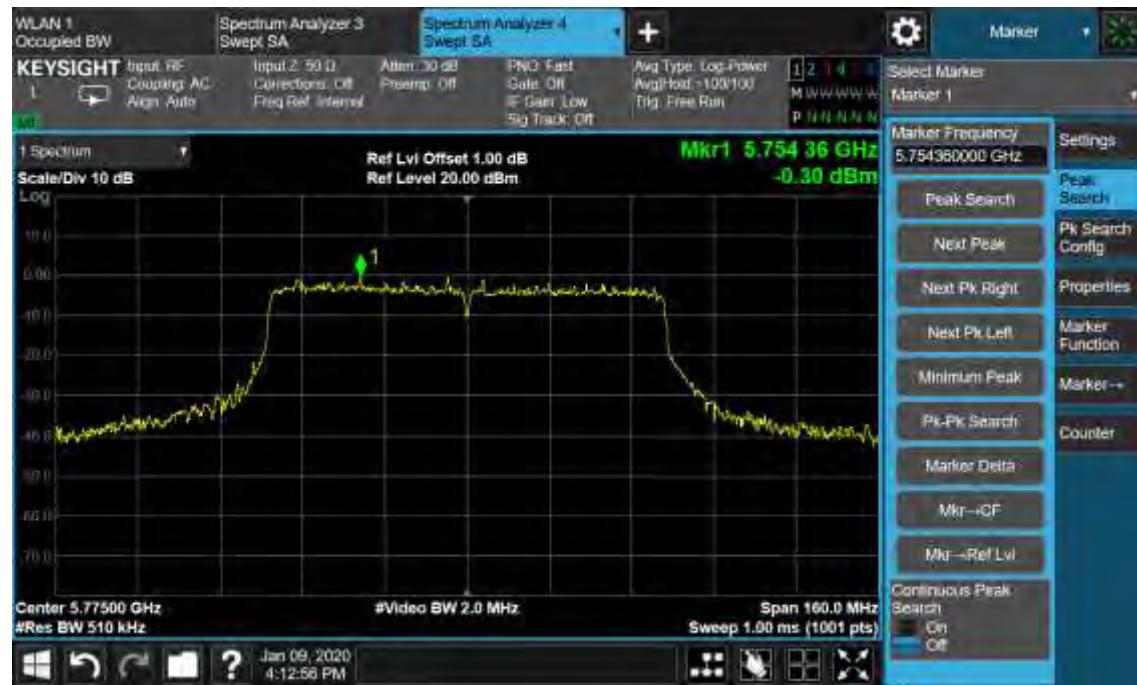
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Chain 1 Power Spectral Density, 802.11ac(VHT40), 5795MHz



Chain 2 Power Spectral Density, 802.11ac(VHT80), 5775MHz



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MIMO Power Spectral Density, 802.11ac(VHT80), 5775MHz



Chain 1 Power Spectral Density, 802.11ac(VHT80), 5775MHz



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4.1.6 Undesirable Emission

RESULT:

PASS

| | | |
|-------------------|---|---|
| Test standard | : | FCC Part 15.407(b), 15.209 RSS-247 6.2 |
| Requirement | : | ANSI C63.10-2013, KDB 789033 |
| Kind of test site | : | Shielded room |

Test setup

| | | |
|---------------------|---|-----------------|
| Test Channel | : | Low/Middle/High |
| Operation Mode | : | A.1.a |
| Ambient temperature | : | 25°C |
| Relative humidity | : | 52% |

For details refer to following test plot.