

**MEASUREMENT REPORT**
FCC PART 15.407 UNII OFDMA**Applicant Name:**

Samsung Electronics Co., Ltd.
129, Samsung-ro,
Yeongtong-gu, Suwon-si
Gyeonggi-do, 16677, Korea

Date of Testing:

04/22/21 - 06/22/21

Test Site/Location:

PCTEST Lab. Columbia, MD, USA

Test Report Serial No.:

1M2104190044-13.A3L

FCC ID:

A3LSMF926B

APPLICANT:

Samsung Electronics Co., Ltd.

Application Type:

Certification

Model:

SM-F926B

Additional Model(s):

SM-F926B/DS

EUT Type:

Portable Handset

Frequency Range:

5180 – 5825MHz

Modulation Type:

OFDMA

FCC Classification:

Unlicensed National Information Infrastructure (UNII)

FCC Rule Part(s):

Part 15 Subpart E (15.407)

ISED Specification:


RSS-247 Issue 2

Test Procedure(s):

ANSI C63.10-2013, KDB 789033 D02 v02r01,
KDB 648474 D03 v01r04, KDB 662911 D01 v02r01

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.10-2013 and KDB 789033 D02 v02r01. Test results reported herein relate only to the item(s) tested.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

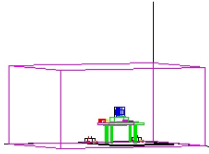

Randy Ortanez
President

| | | | | |
|--|---|--|---|--|
| FCC ID: A3LSMF926B |  | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 1 of 204 |

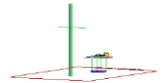
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| UNII Band | Channel Bandwidth (MHz) | Tx Frequency (MHz) | MIMO | |
|-----------|-------------------------|--------------------|-----------------|------------------|
| | | | Max. Power (mW) | Max. Power (dBm) |
| 1 | 20 | 5180 - 5240 | 122.462 | 20.88 |
| 2A | | 5260 - 5320 | 118.850 | 20.75 |
| 2C | | 5500 - 5720 | 123.027 | 20.90 |
| 3 | | 5745 - 5825 | 117.490 | 20.70 |
| 1 | 40 | 5190 - 5230 | 99.083 | 19.96 |
| 2A | | 5270 - 5310 | 93.972 | 19.73 |
| 2C | | 5510 - 5710 | 99.770 | 19.99 |
| 3 | | 5755 - 5795 | 96.383 | 19.84 |
| 1 | 80 | 5210 | 79.250 | 18.99 |
| 2A | | 5290 | 77.090 | 18.87 |
| 2C | | 5530 - 5690 | 78.705 | 18.96 |
| 3 | | 5775 | 70.307 | 18.47 |
| 1/2A | 160 | 5250 | 62.373 | 17.95 |
| 2C | | 5570 | 62.373 | 17.95 |

EUT Overview

| | | | | |
|---|--|---------------------------------------|---|-----------------------------------|
| FCC ID: A3LSMF926B |  PCTEST Proud to be part of  | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by: Technical Manager |
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1.0 INTRODUCTION

1.1 Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Innovation, Science and Economic Development Canada.

1.2 PCTEST Test Location

These measurement tests were conducted at the PCTEST facility located at 7185 Oakland Mills Road, Columbia, MD 21046. The measurement facility is compliant with the test site requirements specified in ANSI C63.4-2014.

1.3 Test Facility / Accreditations

Measurements were performed at PCTEST located in Columbia, MD 21046, U.S.A.

- PCTEST is an ISO 17025-2017 accredited test facility under the American Association for Laboratory Accreditation (A2LA) with Certificate number 2041.01 for Specific Absorption Rate (SAR), Hearing Aid Compatibility (HAC) testing, where applicable, and Electromagnetic Compatibility (EMC) testing for FCC and Innovation, Science, and Economic Development Canada rules.
- PCTEST TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC 17065-2012 by A2LA (Certificate number 2041.03) in all scopes of FCC Rules and ISSED Standards (RSS).
- PCTEST facility is a registered (2451B) test laboratory with the site description on file with ISSED.

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2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung Portable Handset FCC ID: A3LSMF926B**. The test data contained in this report pertains only to the emissions due to the EUT's UNII transmitter.

Test Device Serial No.: 1580M, 2004M, 1571M, 2024M, 1578M, 2007M

2.2 Device Capabilities

This device contains the following capabilities:

850/1900 GSM/GPRS/EDGE, 850/1700/1900 WCDMA/HSPA, Multi-band LTE, Multi-band 5G NR (n5, n66), 802.11b/g/n/ax WLAN, 802.11a/n/ac/ax UNII (5GHz and 6GHz), Bluetooth (1x, EDR, LE), NFC, Wireless Power Transfer, UWB

| Band 1 | | Band 2A | | Band 2C | | Band 3 | |
|--------|-----------------|---------|-----------------|---------|-----------------|--------|-----------------|
| Ch. | Frequency (MHz) | Ch. | Frequency (MHz) | Ch. | Frequency (MHz) | Ch. | Frequency (MHz) |
| 36 | 5180 | 52 | 5260 | 100 | 5500 | 149 | 5745 |
| : | : | : | : | : | : | : | : |
| 42 | 5210 | 56 | 5280 | 120 | 5600 | 157 | 5785 |
| : | : | : | : | : | : | : | : |
| 48 | 5240 | 64 | 5320 | 144 | 5720 | 165 | 5825 |

Table 2-1. 802.11ax (20MHz) Frequency / Channel Operations

| Band 1 | | Band 2A | | Band 2C | | Band 3 | |
|--------|-----------------|---------|-----------------|---------|-----------------|--------|-----------------|
| Ch. | Frequency (MHz) | Ch. | Frequency (MHz) | Ch. | Frequency (MHz) | Ch. | Frequency (MHz) |
| 38 | 5190 | 54 | 5270 | 102 | 5510 | 151 | 5755 |
| : | : | : | : | : | : | : | : |
| 46 | 5230 | 62 | 5310 | 118 | 5590 | 159 | 5795 |
| | | | | : | : | | |
| | | | | 142 | 5710 | | |

Table 2-2. 802.11ax (40MHz BW) Frequency / Channel Operations

| Band 1 | | Band 2A | | Band 2C | | Band 3 | |
|--------|-----------------|---------|-----------------|---------|-----------------|--------|-----------------|
| Ch. | Frequency (MHz) | Ch. | Frequency (MHz) | Ch. | Frequency (MHz) | Ch. | Frequency (MHz) |
| 42 | 5210 | 58 | 5290 | 106 | 5530 | 155 | 5775 |
| | | | | : | : | | |
| | | | | 138 | 5690 | | |

Table 2-3. 802.11ax (80MHz BW) Frequency / Channel Operations

| Band 1/2A | | Band 2C | |
|-----------|-----------------|---------|-----------------|
| Ch. | Frequency (MHz) | Ch. | Frequency (MHz) |
| 50 | 5250 | 114 | 5570 |

Table 2-4. 802.11ax (160MHz BW) Frequency / Channel Operations

| | | | | |
|---|---|---------------------------------------|---|-----------------------------------|
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Notes:

- 5GHz NII operation is possible in 20MHz, 40MHz, 80MHz, and 160MHz channel bandwidths. The maximum achievable duty cycles for all modes were determined based on measurements performed on a spectrum analyzer in zero-span mode with RBW = 8MHz, VBW = 50MHz, and detector = peak per the guidance of Section B)2)b) of ANSI C63.10-2013 and KDB 789033 D02 v02r01. The RBW and VBW were both greater than 50/T, where T is the minimum transmission duration, and the number of sweep points across T was greater than 100. The duty cycles are as follows:

| BW [MHz] | Tones | Duty Cycle |
|----------|-------|------------|
| 20 | 26T | 99.4 |
| | 52T | 99.4 |
| | 106T | 99.4 |
| | 242T | 99.4 |
| 40 | 26T | 99.2 |
| | 52T | 99.4 |
| | 106T | 99.3 |
| | 242T | 99.4 |
| | 484T | 99.3 |
| 80 | 26T | 99.3 |
| | 52T | 99.3 |
| | 106T | 99.2 |
| | 242T | 99.3 |
| | 484T | 99.3 |
| | 996T | 99.3 |
| 160 1st | 26T | 99.3 |
| | 52T | 99.3 |
| | 106T | 99.3 |
| | 242T | 99.3 |
| | 484T | 99.3 |
| | 996T | 99.3 |
| 160 2nd | 26T | 99.4 |
| | 52T | 99.4 |
| | 106T | 99.2 |
| | 242T | 99.3 |
| | 484T | 99.3 |
| | 996T | 99.3 |

Table 2-5. Measured Duty Cycles

| | | | | |
|---|---|---------------------------------------|---|-----------------------------------|
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2. The device employs MIMO technology. Below are the possible configurations.

| WiFi Configurations | | SDM | | MIMO | |
|---------------------|---------------|------|------|------|------|
| | | ANT1 | ANT2 | ANT1 | ANT2 |
| 5GHz | 11ax (20MHz) | ✓ | ✓ | ✓ | ✓ |
| | 11ax (40MHz) | ✓ | ✓ | ✓ | ✓ |
| | 11ax (80MHz) | ✓ | ✓ | ✓ | ✓ |
| | 11ax (160MHz) | ✓ | ✓ | ✓ | ✓ |

Table 2-6. Frequency / Channel Operations

✓ = Support ; ✗ = NOT Support

SDM = Spatial Diversity Multiplexing – MIMO function

2.3 Antenna Description

Following antenna was used for the testing.

| Frequency [GHz] | Antenna 1 Gain (dBi) | Antenna 2 Gain (dBi) |
|-----------------|----------------------|----------------------|
| 5.20 | -4.75 | -2.57 |
| 5.30 | -5.74 | -2.57 |
| 5.50 | -5.11 | -4.93 |
| 5.80 | -8.70 | -6.82 |

Table 2-7. Antenna Peak Gain

2.4 Test Configuration

The EUT was tested per the guidance of KDB 789033 D02 v02r01. ANSI C63.10-2013 was used to reference the appropriate EUT setup for radiated spurious emissions testing and AC line conducted testing. See Sections 3.2 for AC line conducted emissions test setups, 3.3 for radiated emissions test setups, and 7.2, 7.4, and 7.5 for antenna port conducted emissions test setups.

This device supports two configurations: one is with screen open and one is with screen closed. Both configurations are tested, and the worst case radiated emissions data is shown in this report.

This device supports wireless charging capability and, thus, is subject to the test requirements of KDB 648474 D03 v01r04. Additional radiated spurious emission measurements were performed with the EUT lying flat on an authorized wireless charging pad (WCP) Model: EP-NG930 while operating under normal conditions in a simulated call or data transmission configuration. The worst case radiated emissions data is shown in this report.

2.5 Software and Firmware

The test was conducted with firmware version F926USQ0AUCE installed on the EUT.

2.6 EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and/or no modifications were made during testing.

| | | | | |
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3.0 DESCRIPTION OF TESTS

3.1 Evaluation Procedure

The measurement procedures described in the American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices (ANSI C63.10-2013) and the guidance provided in KDB 789033 D02 v02r01 were used in the measurement of the EUT.

Deviation from measurement procedure.....None

3.2 AC Line Conducted Emissions

The line-conducted facility is located inside a 10'x16'x9' shielded enclosure. The shielded enclosure is manufactured by ETS Lindgren RF Enclosures. The shielding effectiveness of the shielded room is in accordance with MIL-Std-285 or NSA 65-5. A 1m x 1.5m wooden table 80cm high is placed 40cm away from the vertical wall and 80cm away from the sidewall of the shielded room. Two 10kHz-30MHz, 50Ω/50μH Line-Impedance Stabilization Networks (LISNs) are bonded to the shielded room floor. Power to the LISNs is filtered by external high-current high-insertion loss power line filters. The external power line filter is an ETS Lindgren Model LPRX-4X30 (100dB Attenuation, 14kHz-18GHz) and the two EMI/RFI filters are ETS Lindgren Model LRW-2030-S1 (100dB Minimum Insertion Loss, 14kHz – 10GHz). These filters attenuate ambient signal noise from entering the measurement lines. These filters are also bonded to the shielded enclosure.

The EUT is powered from one LISN and the support equipment is powered from the second LISN. If the EUT is a DC-powered device, power will be derived from the source power supply it normally will be powered from and this supply line(s) will be connected to the second LISN. All interconnecting cables more than 1 meter were shortened to a 1 meter length by non-inductive bundling (serpentine fashion) and draped over the back edge of the test table. All cables were at least 40cm above the horizontal reference groundplane. Power cables for support equipment were routed down to the second LISN while ensuring that that cables were not draped over the second LISN.

Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The RF output of the LISN was connected to the spectrum analyzer and exploratory measurements were made to determine the frequencies producing the maximum emission from the EUT. The spectrum was scanned from 150kHz to 30MHz with a spectrum analyzer. The detector function was set to peak mode for exploratory measurements while the bandwidth of the analyzer was set to 10kHz. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Once the worst case emissions have been identified, the one EUT cable configuration/arrangement and mode of operation that produced these emissions is used for final measurements on the same test site. The analyzer is set to CISPR quasi-peak and average detectors with a 9kHz resolution bandwidth for final measurements.

Line conducted emissions test results are shown in Section 7.9. The EMI Receiver mode of the Agilent MXE was used to perform AC line conducted emissions testing.

3.3 Radiated Emissions

| | | | | |
|---|---|---------------------------------------|---|-----------------------------------|
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The radiated test facilities consisted of an indoor 3 meter semi-anechoic chamber used for final measurements and exploratory measurements, when necessary. The measurement area is contained within the semi-anechoic chamber which is shielded from any ambient interference. The test site inside the chamber is a 6m x 5.2m elliptical, obstruction-free area in accordance with Figure 5.7 of Clause 5 in ANSI C63.4-2014. Absorbers are arranged on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections for measurements above 1GHz. An 80cm tall test table made of Styrodur is placed on top of the turn table. For measurements above 1GHz, an additional Styrodur pedestal is placed on top of the test table to bring the total table height to 1.5m.

For all measurements, the spectrum was scanned through all EUT azimuths and from 1 to 4 meter receive antenna height using a broadband antenna from 30MHz up to the upper frequency shown in 15.33 depending on the highest frequency generated or used in the device or on which the device operates or tunes. For frequencies above 1GHz, linearly polarized double ridge horn antennas were used. For frequencies below 30MHz, a calibrated loop antenna was used. When exploratory measurements were necessary, they were performed at 1 meter test distance inside the semi-anechoic chamber using broadband antennas, broadband amplifiers, and spectrum analyzers to determine the frequencies and modes producing the maximum emissions. Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The test set-up was placed on top of the 1 x 1.5 meter table. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Appropriate precaution was taken to ensure that all emissions from the EUT were maximized and investigated. The system configuration, mode of operation, turntable azimuth, and receive antenna height was noted for each frequency found.

Final measurements were made in the semi-anechoic chamber using calibrated, linearly polarized broadband and horn antennas. The test setup was configured to the setup that produced the worst case emissions. The spectrum analyzer was set to investigate all frequencies required for testing to compare the highest radiated disturbances with respect to the specified limits. The turntable containing the EUT was rotated through 360 degrees and the height of the receive antenna was varied 1 to 4 meters and stopped at the azimuth and height producing the maximum emission. Each emission was maximized by changing the orientation of the EUT through three orthogonal planes and changing the polarity of the receive antenna, whichever produced the worst-case emissions.

All radiated measurements are performed in a chamber that meets the site requirements per ANSI C63.4-2014. Additionally, radiated emissions below 30MHz are also validated on an Open Area Test Site to assert correlation with the chamber measurements per the requirements of KDB 474788 D01.

3.4 Environmental Conditions

The temperature is controlled within range of 15°C to 35°C. The relative humidity is controlled within range of 10% to 75%. The atmospheric pressure is monitored within the range 86-106kPa (860-1060mbar).

| | | | | |
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4.0 ANTENNA REQUIREMENTS

Excerpt from §15.203 of the FCC Rules/Regulations:

“An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.”

- The antennas of the EUT are **permanently attached**.
- There are no provisions for connection to an external antenna.

Conclusion:

The EUT complies with the requirement of §15.203.

| | | | | |
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5.0 MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.10-2013. All measurement uncertainty values are shown with a coverage factor of $k = 2$ to indicate a 95% level of confidence. The measurement uncertainty shown below meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

| Contribution | Expanded Uncertainty (\pm dB) |
|----------------------------------|----------------------------------|
| Conducted Bench Top Measurements | 1.13 |
| Line Conducted Disturbance | 3.09 |
| Radiated Disturbance (<1GHz) | 4.98 |
| Radiated Disturbance (>1GHz) | 5.07 |
| Radiated Disturbance (>18GHz) | 5.09 |

| | | | |
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6.0 TEST EQUIPMENT CALIBRATION DATA

Test Equipment Calibration is traceable to the National Institute of Standards and Technology (NIST). Measurements antennas used during testing were calibrated in accordance to the requirements of ANSI C63.5-2017.

| Manufacturer | Model | Description | Cal Date | Cal Interval | Cal Due | Serial Number |
|-----------------------|------------------|---|------------|--------------|------------|---------------|
| - | WL25-1 | Conducted Cable Set (25GHz) | 2/23/2021 | Annual | 2/23/2022 | WL25-1 |
| - | WL40-1 | WLAN Cable Set (40GHz) | 2/23/2021 | Annual | 2/23/2022 | WL40-1 |
| - | WL25-2 | WLAN Cable Set (25GHz) | 2/23/2021 | Annual | 2/23/2022 | WL25-2 |
| - | WL25-3 | Conducted Cable Set (25GHz) | 3/12/2021 | Annual | 3/12/2022 | WL25-3 |
| - | WL40-2 | WLAN Cable Set (40GHz) | 3/12/2021 | Annual | 3/12/2022 | WL40-2 |
| Anritsu | ML2495A | Power Meter | 3/4/2021 | Annual | 3/4/2022 | 1328004 |
| Anritsu | MA2411B | Pulse Power Sensor | 10/19/2020 | Annual | 10/19/2021 | 1339026 |
| Anritsu | MS46322A | Vector Network Analyzer | 11/6/2020 | Annual | 11/6/2021 | 1521001 |
| Anritsu | 36585K-2F | Precision Autocal 2-Port | 10/24/2020 | Annual | 10/24/2021 | 1628014 |
| Com-Power | AL-130 | 9kHz - 30MHz Loop Antenna | 10/10/2019 | Biennial | 10/10/2021 | 121034 |
| Emco | 3115 | Horn Antenna (1-18GHz) | 6/18/2020 | Biennial | 6/18/2022 | 9704-5182 |
| Emco | 3116 | Horn Antenna (18 - 40GHz) | 8/7/2018 | Triennial | 8/7/2021 | 9203-2178 |
| Espec | ESX-2CA | Environmental Chamber | 8/27/2020 | Biennial | 8/27/2022 | 17620 |
| ETS-Lindgren | 3816/2NM | LISN | 7/9/2020 | Biennial | 7/9/2022 | 114451 |
| ETS-Lindgren | 3115 | Double Ridged Guide Horn 750MHz - 18GHz | 3/12/2020 | Biennial | 3/12/2022 | 150693 |
| Keysight Technologies | N9020A | MXA Signal Analyzer | 8/14/2020 | Annual | 8/14/2021 | US46470561 |
| Keysight Technologies | N9038A | MXE EMI Receiver | 8/11/2020 | Annual | 8/11/2021 | MY51210133 |
| Keysight Technologies | N9030A | PXA Signal Analyzer (44GHz) | 8/17/2020 | Annual | 8/17/2021 | MY52350166 |
| Keysight Technologies | N9020A | MXA Signal Analyzer | 9/22/2020 | Annual | 9/22/2021 | MY54500644 |
| Pasternack | NMLC-2 | Line Conducted Emissions Cable (NM) | 2/25/2021 | Annual | 2/25/2022 | NMLC-2 |
| Rohde & Schwarz | ESU26 | EMI Test Receiver (26.5GHz) | 7/15/2020 | Annual | 7/15/2021 | 100342 |
| Rohde & Schwarz | ESU40 | EMI Test Receiver (40GHz) | 5/25/2021 | Annual | 5/25/2022 | 100348 |
| Rohde & Schwarz | FSW67 | Signal / Spectrum Analyzer | 8/10/2020 | Annual | 8/10/2021 | 103200 |
| Solar Electronics | 8012-50-R-24-BNC | Line Impedance Stabilization Network | 10/1/2019 | Biennial | 10/1/2021 | 310233 |
| Sunol | DRH-118 | Horn Antenna (1-18 GHz) | 8/27/2019 | Biennial | 8/27/2021 | A042511 |
| Sunol Science | JB5 | Bi-Log Antenna (30M - 5GHz) | 7/27/2020 | Biennial | 7/27/2022 | A051107 |

Table 6-1. Annual Test Equipment Calibration Schedule

Note:

For equipment listed above that has a calibration date or calibration due date that falls within the test date range, care was taken to ensure that this equipment was used after the calibration date and before the calibration due date.

| | | | |
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7.0 TEST RESULTS

7.1 Summary

Company Name: Samsung Electronics Co., Ltd.
FCC ID: A3LSMF926B
FCC Classification: Unlicensed National Information Infrastructure (UNII)

| FCC Part Section(s) | RSS Section(s) | Test Description | Test Limit | Test Condition | Test Result | Reference |
|------------------------------------|----------------|---|--|----------------|-------------|---------------------|
| N/A | RSS-Gen [6.7] | 26dB Bandwidth | N/A | CONDUCTED | PASS | Section 7.2 |
| 15.407(e) | RSS-Gen [6.7] | 6dB Bandwidth | >500kHz(5725-5850MHz) | | PASS | Section 7.3 |
| 15.407 (a.1.iv), (a.2), (a.3) | RSS-247 [6.2] | Maximum Conducted Output Power | Maximum conducted powers must meet the limits detailed in 15.407 (a) (RSS-247 [6.2]) | | PASS | Section 7.4 |
| 15.407 (a.1.iv), (a.2), (a.3) | RSS-247 [6.2] | Maximum Power Spectral Density | Maximum power spectral density must meet the limits detailed in 15.407 (a) (RSS-247 [6.2]) | | PASS | Section 7.5 |
| 15.407(h) | RSS-247 [6.3] | Dynamic Frequency Selection | See DFS Test Report | | PASS | See DFS Test Report |
| 15.407(b.1), (2), (3), (4) | RSS-247 [6.2] | Undesirable Emissions | Undesirable emissions must meet the limits detailed in 15.407(b) (RSS-247 [6.2]) | RADIATED | PASS | Section 7.6 |
| 15.205, 15.407(b.1), (4), (5), (6) | RSS-Gen [8.9] | General Field Strength Limits (Restricted Bands and Radiated Emission Limits) | Emissions in restricted bands must meet the radiated limits detailed in 15.209 (RSS-Gen [8.9]) | | PASS | Section 7.6, 7.7 |

Table 7-1. Summary of Test Results

Notes:

- 1) All channels, modes, and modulations/data rates were investigated among all UNII bands. The test results shown in the following sections represent the worst case emissions.
- 2) The analyzer plots shown in this section were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables and attenuators used as part of the system to connect the EUT to the analyzer at all frequencies of interest.
- 3) All antenna port conducted emissions testing was performed on a test bench with the antenna port of the EUT connected to the spectrum analyzer through calibrated cables and attenuators.
- 4) For conducted spurious emissions, automated test software was used to measure emissions and capture the corresponding plots necessary to show compliance. The measurement software utilized is PCTEST "UNII Automation," Version 4.7.
- 5) For radiated band edge, automated test software was used to measure emissions and capture the corresponding plots necessary to show compliance. The measurement software utilized is PCTEST "Chamber Automation," Version 1.3.1.
- 6) 802.11ax OFDMA testing was performed for all signal tone configurations as specified by the 802.11ax standard. Worst case results are determined and reported per the guidance provided at the October 2018 TCB Workshop.
- 7) Only one RU index could be selected at a time so no contiguous or non-contiguous RU's were considered for testing.

| | | | | |
|---|---|---------------------------------------|---|-----------------------------------|
| FCC ID: A3LSMF926B |  | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 13 of 204 |

7.2 26dB Bandwidth Measurement – 802.11ax OFDMA

RSS-Gen [6.2]

Test Overview and Limit

The bandwidth at 26dB down from the highest in-band spectral density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating at its maximum duty cycle, at its maximum power control level, as defined in ANSI C63.10-2013 and KDB 789033 D02 v02r01, and at the appropriate frequencies. The spectrum analyzer's bandwidth measurement function is configured to measure the 26dB bandwidth.

The 26dB bandwidth is used to determine the conducted power limits.

Test Procedure Used

ANSI C63.10-2013 – Section 12.4

KDB 789033 D02 v02r01 – Section C

Test Settings

1. The signal analyzers' automatic bandwidth measurement capability was used to perform the 26dB bandwidth measurement. The "X" dB bandwidth parameter was set to $X = 26$. The automatic bandwidth measurement function also has the capability of simultaneously measuring the 99% occupied bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = approximately 1% of the emission bandwidth
3. $VBW \geq 3 \times RBW$
4. Detector = Peak
5. Trace mode = max hold

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.



Figure 7-1. Test Instrument & Measurement Setup

Test Notes

The 26dB Bandwidth measurement for each channel was measured with the RU index showing the highest conducted power.

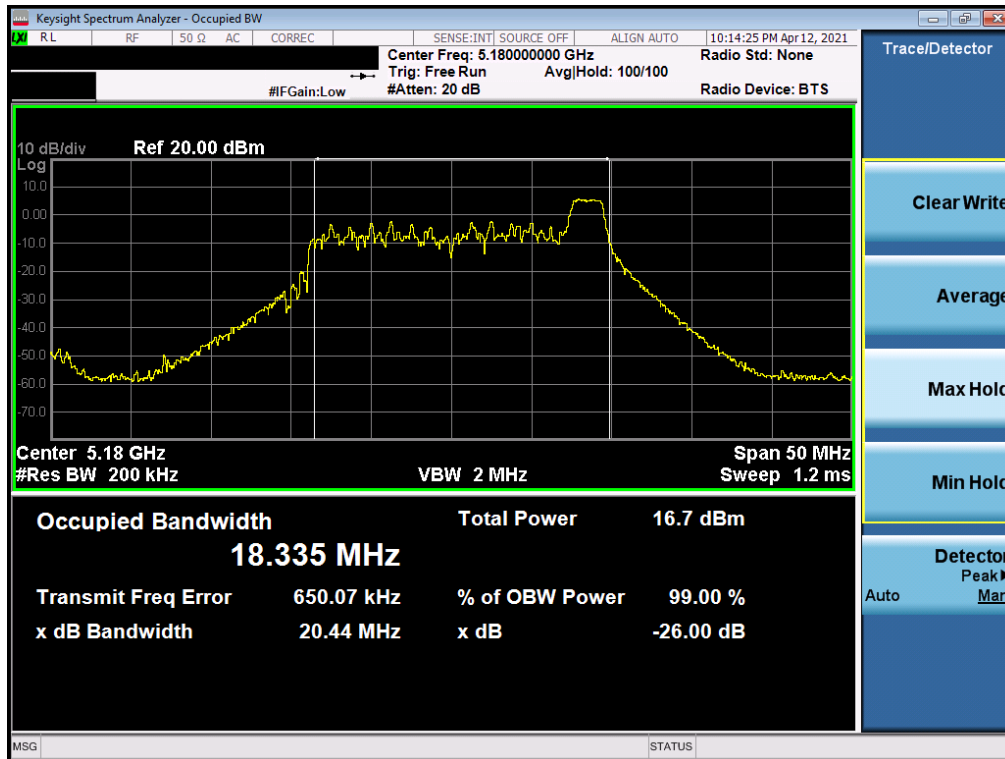
| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 14 of 204 |

MIMO Antenna 1 - 26dB Bandwidth Measurements (26 Tones)

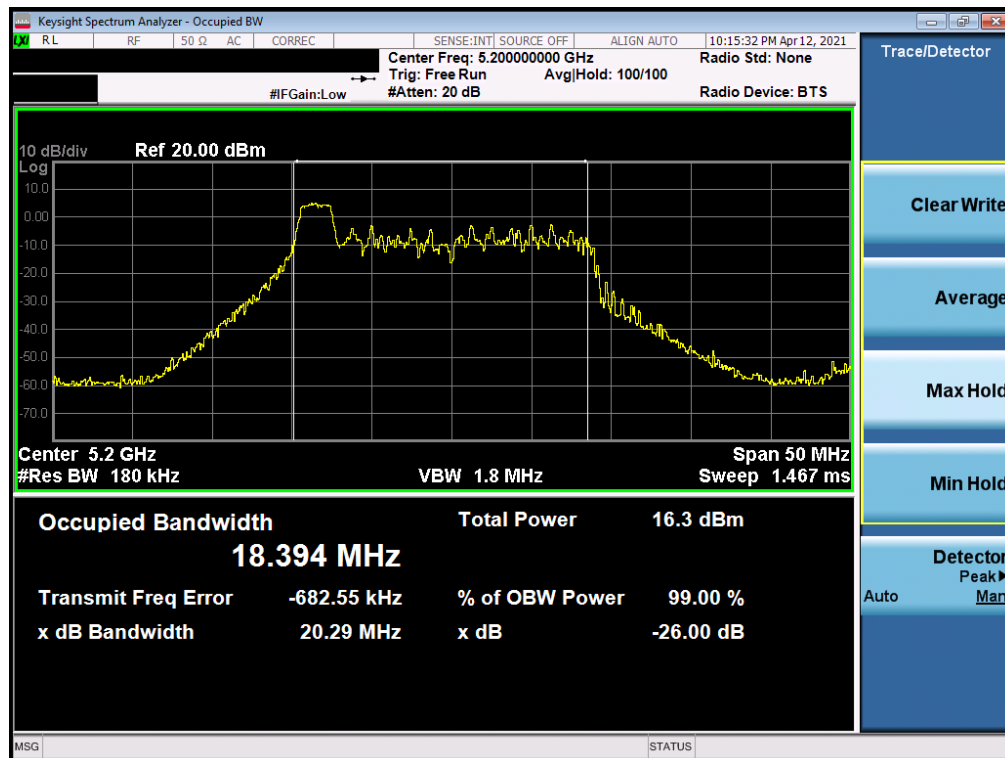
| | Frequency [MHz] | Channel No. | 802.11 Mode | Tones | Data Rate [Mbps] | Measured 26dB Bandwidth [MHz] |
|-----------|-----------------|-------------|---------------|-------|------------------|-------------------------------|
| Band 1 | 5180 | 36 | ax (20MHz) | 26T | MCS0 | 20.44 |
| | 5200 | 40 | ax (20MHz) | 26T | MCS0 | 20.29 |
| | 5240 | 48 | ax (20MHz) | 26T | MCS0 | 19.93 |
| | 5190 | 38 | ax (40MHz) | 26T | MCS0 | 37.65 |
| | 5230 | 46 | ax (40MHz) | 26T | MCS0 | 38.03 |
| | 5210 | 42 | ax (80MHz) | 26T | MCS0 | 80.86 |
| Band 1/2A | 5250 | 50 | ax (160MHz L) | 26T | MCS0 | 156.80 |
| | 5250 | 50 | ax (160MHz U) | 26T | MCS0 | 156.50 |
| Band 2A | 5260 | 52 | ax (20MHz) | 26T | MCS0 | 20.09 |
| | 5280 | 56 | ax (20MHz) | 26T | MCS0 | 18.73 |
| | 5320 | 64 | ax (20MHz) | 26T | MCS0 | 18.67 |
| | 5270 | 54 | ax (40MHz) | 26T | MCS0 | 38.35 |
| | 5310 | 62 | ax (40MHz) | 26T | MCS0 | 38.30 |
| | 5290 | 58 | ax (80MHz) | 26T | MCS0 | 77.98 |
| Band 2C | 5500 | 100 | ax (20MHz) | 26T | MCS0 | 18.39 |
| | 5600 | 120 | ax (20MHz) | 26T | MCS0 | 18.76 |
| | 5720 | 144 | ax (20MHz) | 26T | MCS0 | 20.31 |
| | 5510 | 102 | ax (40MHz) | 26T | MCS0 | 38.00 |
| | 5590 | 118 | ax (40MHz) | 26T | MCS0 | 38.15 |
| | 5710 | 142 | ax (40MHz) | 26T | MCS0 | 38.16 |
| | 5530 | 106 | ax (80MHz) | 26T | MCS0 | 78.07 |
| | 5610 | 122 | ax (80MHz) | 26T | MCS0 | 78.04 |
| | 5690 | 138 | ax (80MHz) | 26T | MCS0 | 81.44 |
| | 5570 | 114 | ax (160MHz L) | 26T | MCS0 | 153.70 |
| | 5570 | 114 | ax (160MHz U) | 26T | MCS0 | 157.50 |

Table 7-2. Conducted Bandwidth Measurements MIMO ANT1 (26 Tones)

| | | | | |
|---|---|---------------------------------------|---|-----------------------------------|
| FCC ID: A3LSMF926B |  | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 15 of 204 |

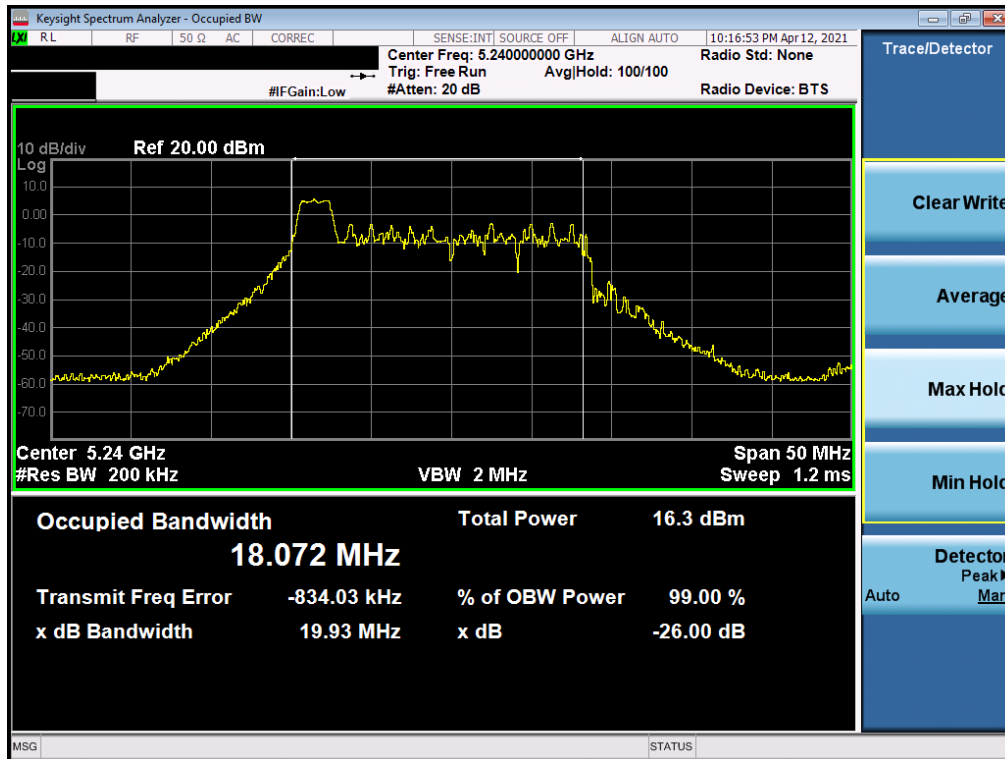


Plot 7-1. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 36)

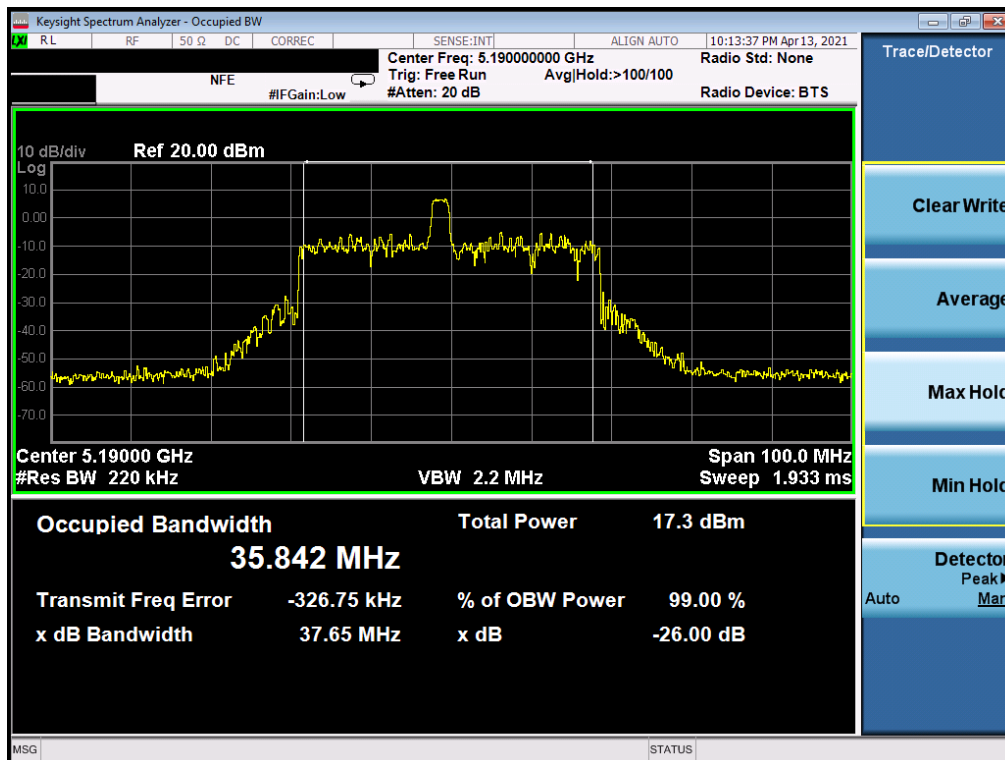


Plot 7-2. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 40)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 16 of 204 |

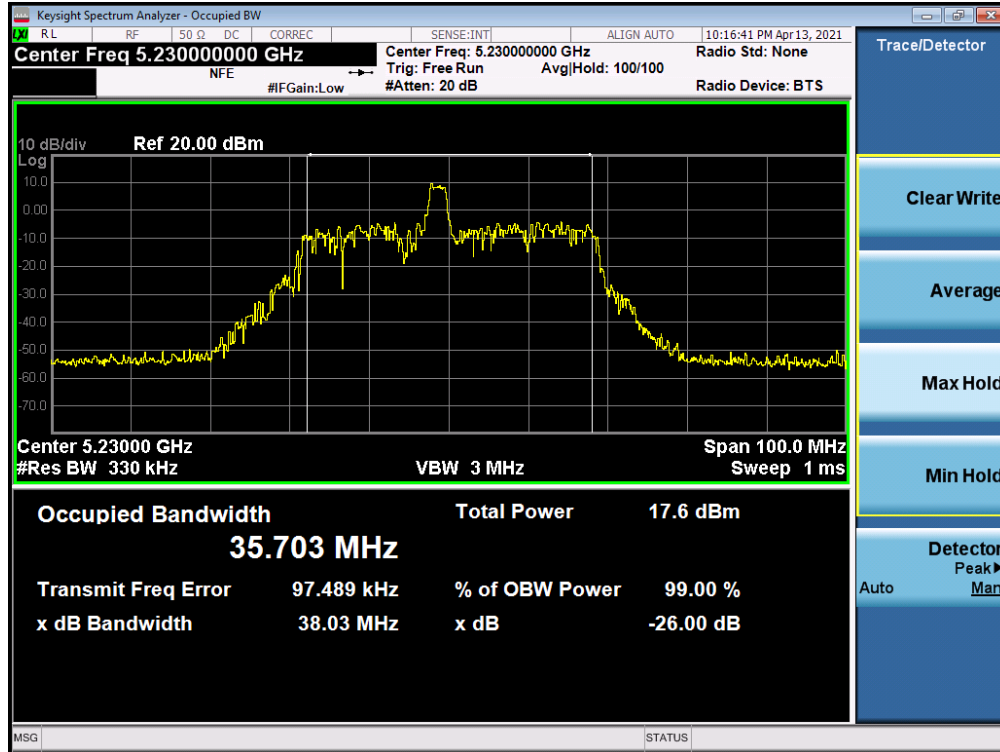


Plot 7-3. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 48)

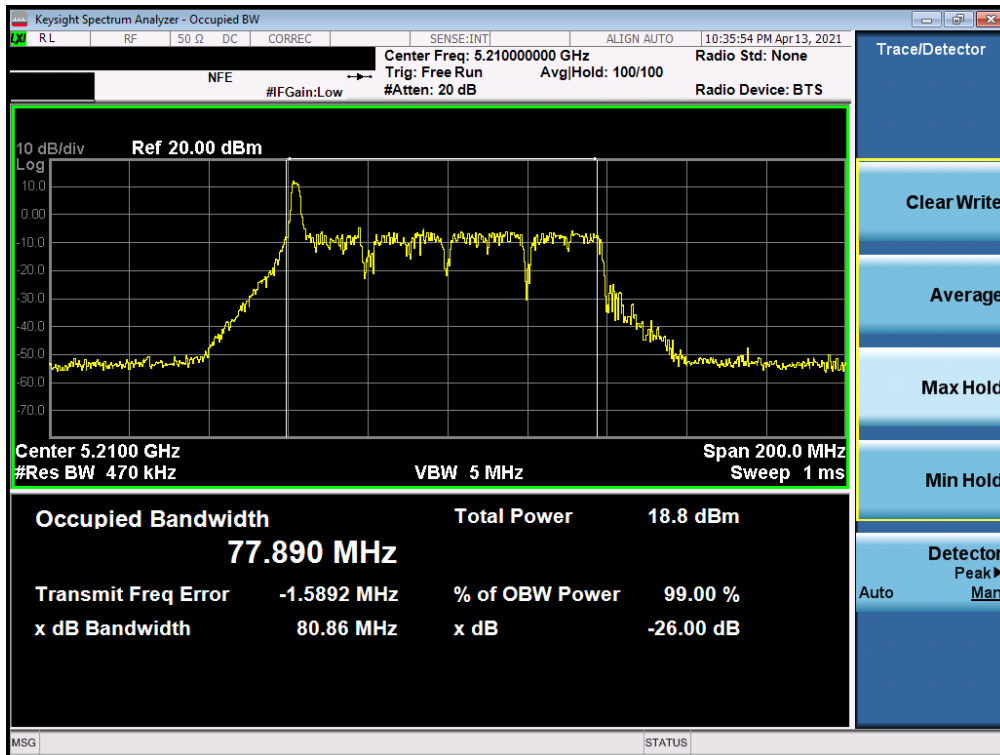


Plot 7-4. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 38)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 17 of 204 |

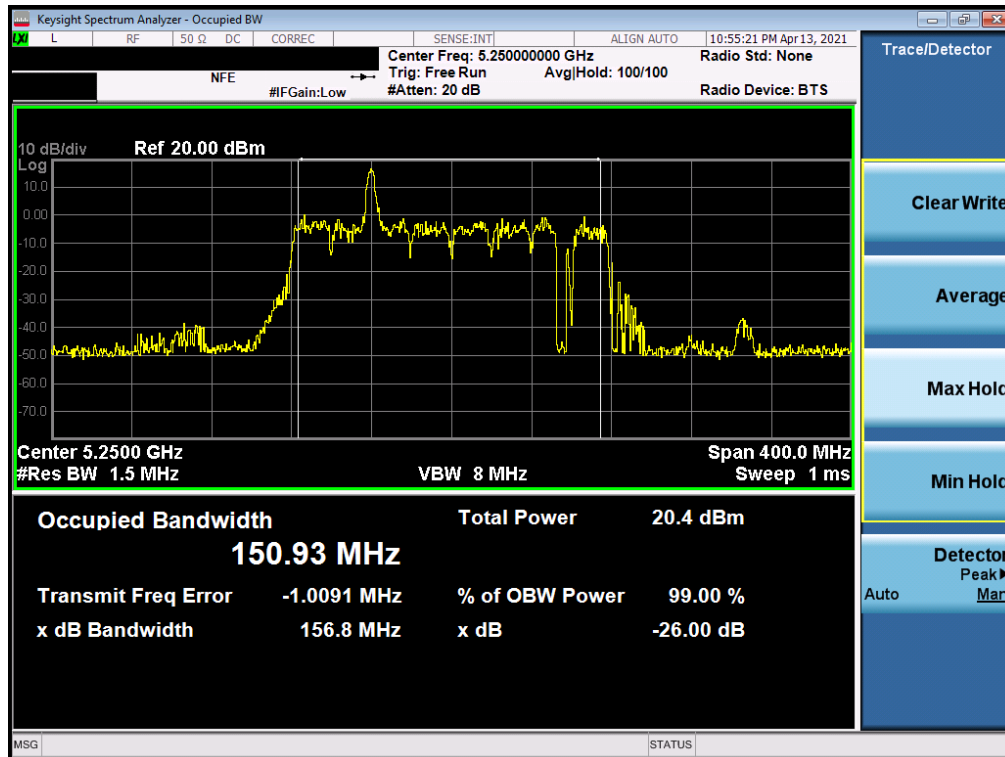


Plot 7-5. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 46)

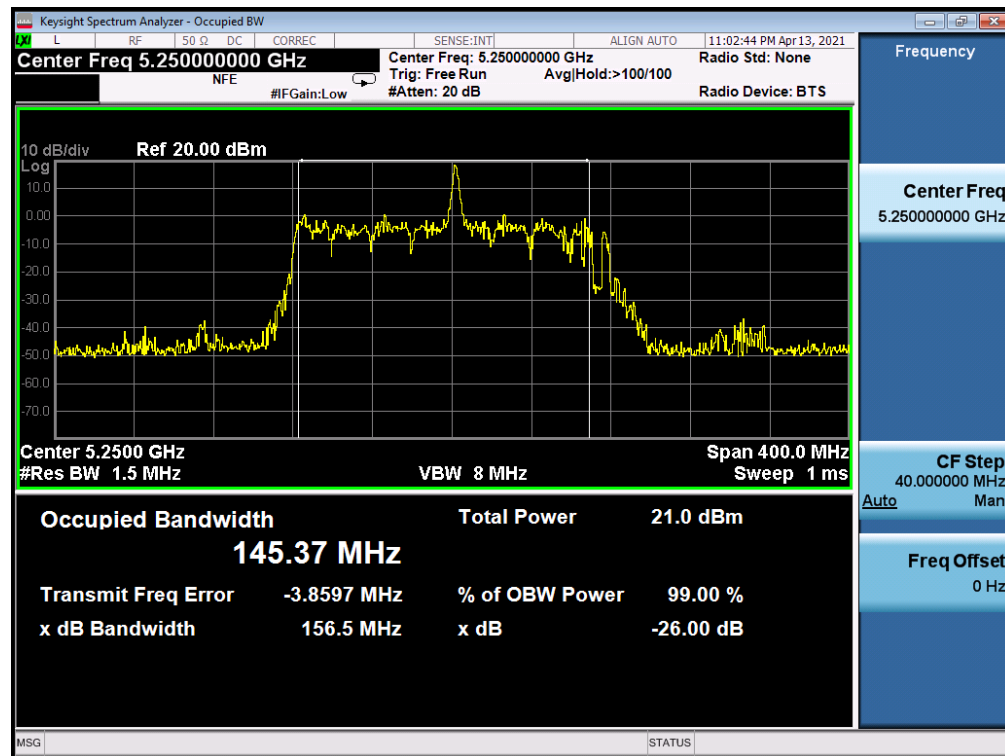


Plot 7-6. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 42)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 18 of 204 |

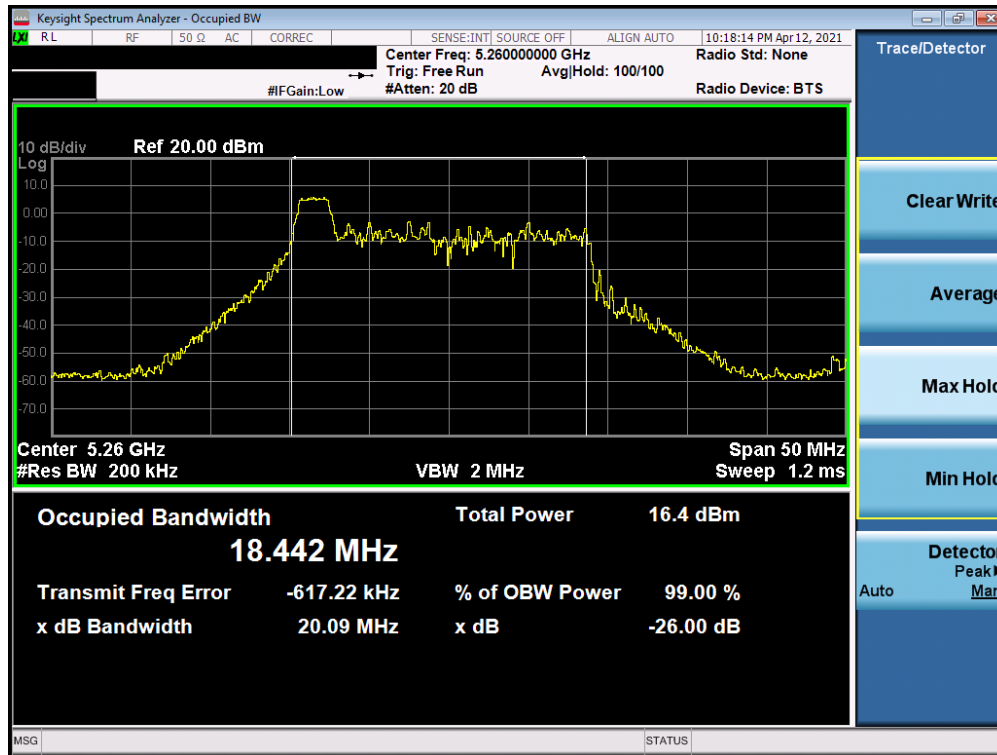


Plot 7-7. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW(L) 802.11ax – 26 Tones (UNII Band 1/2A) – Ch. 50)

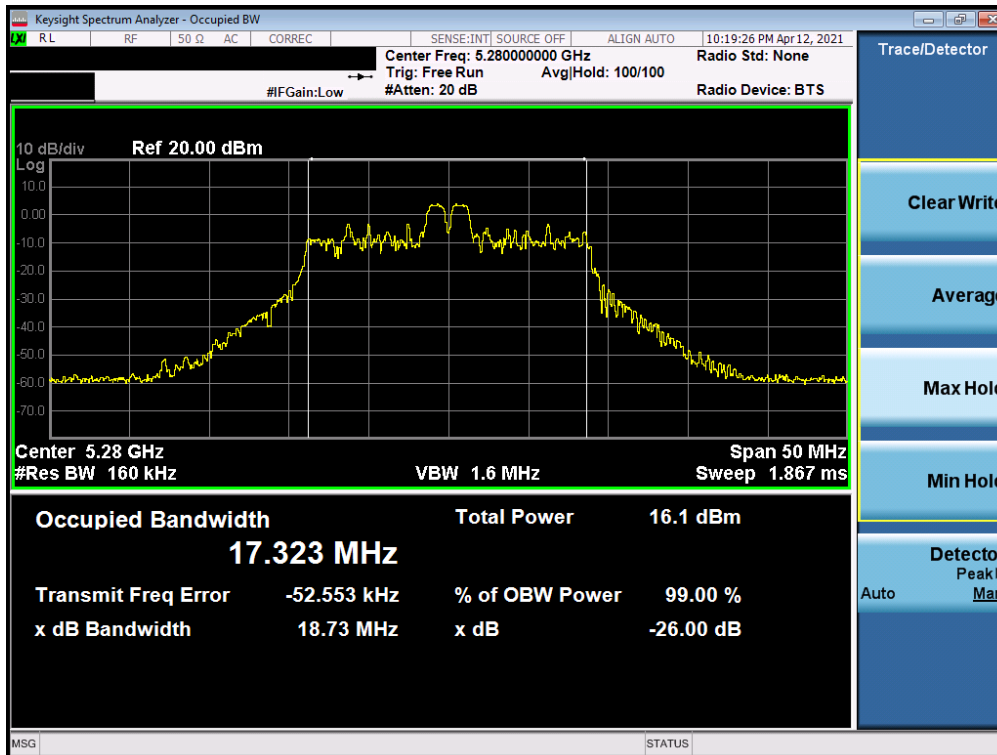


Plot 7-8. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW(U) 802.11ax – 26 Tones (UNII Band 1/2A) – Ch. 50)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 19 of 204 |

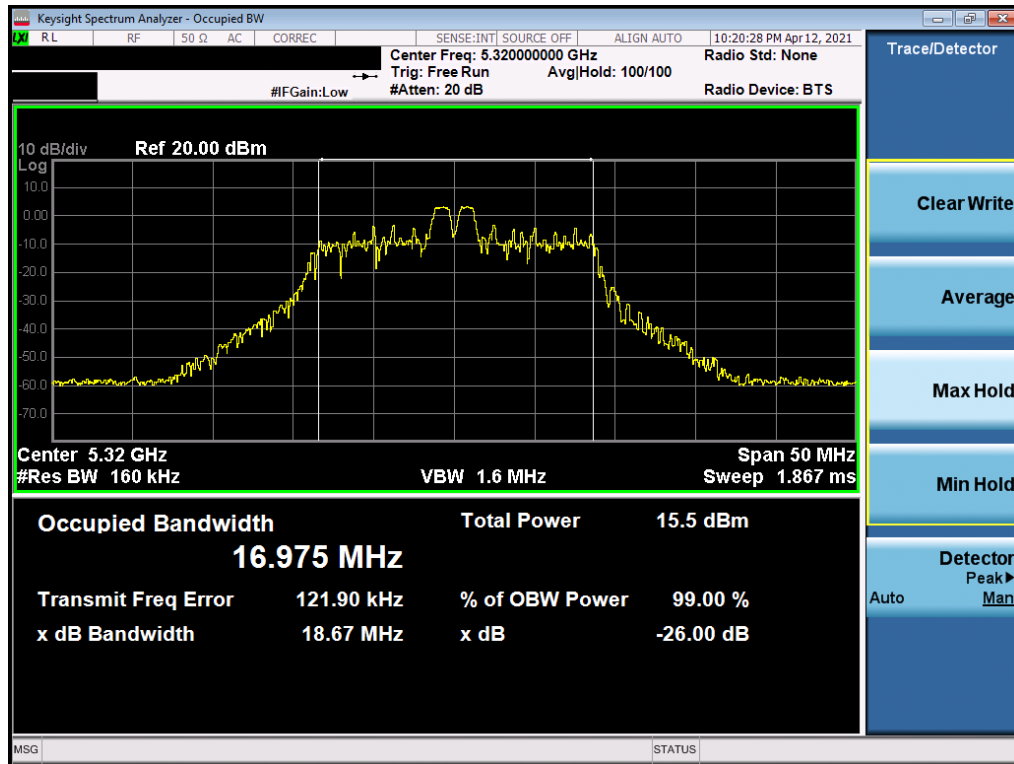


Plot 7-9. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 52)

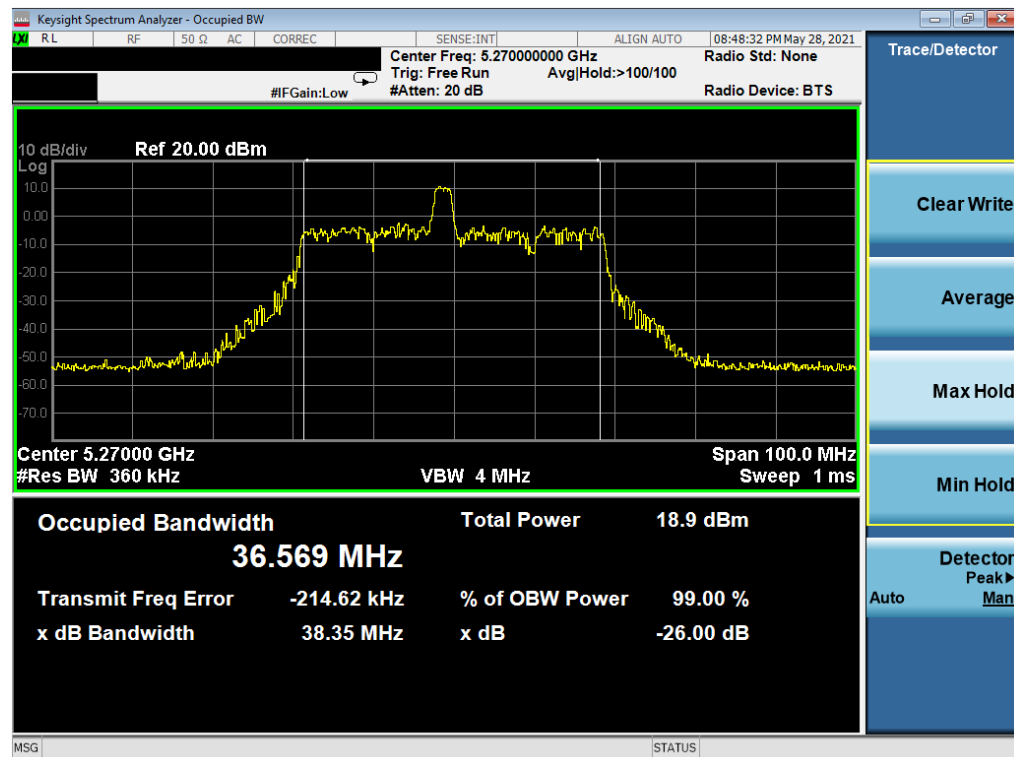


Plot 7-10. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 56)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 20 of 204 |

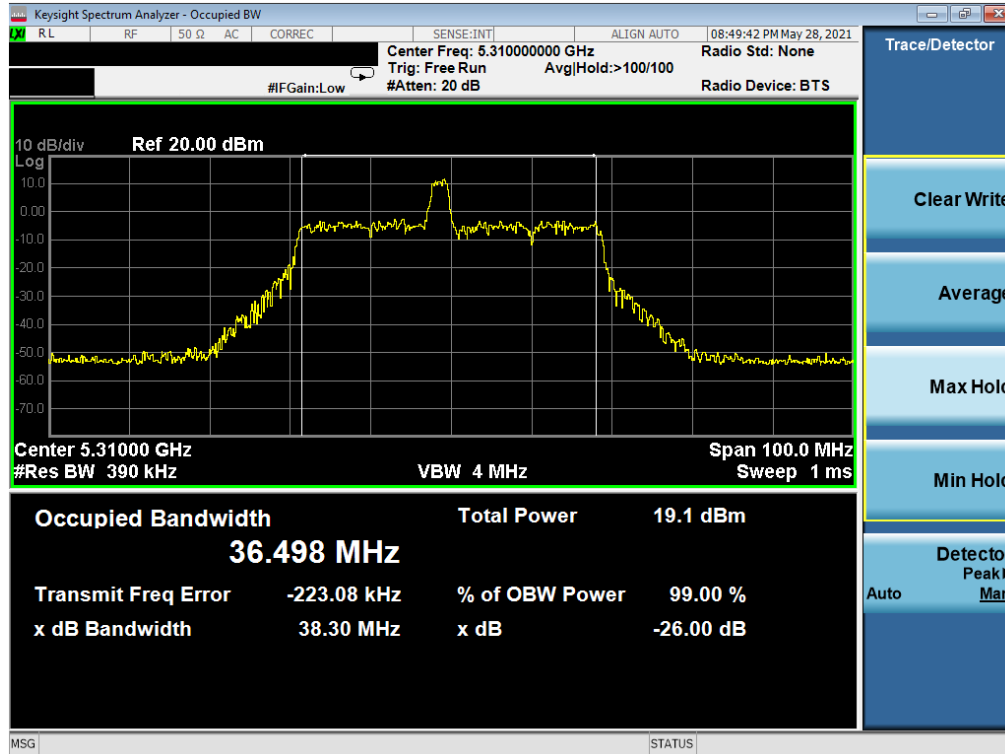


Plot 7-11. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 64)

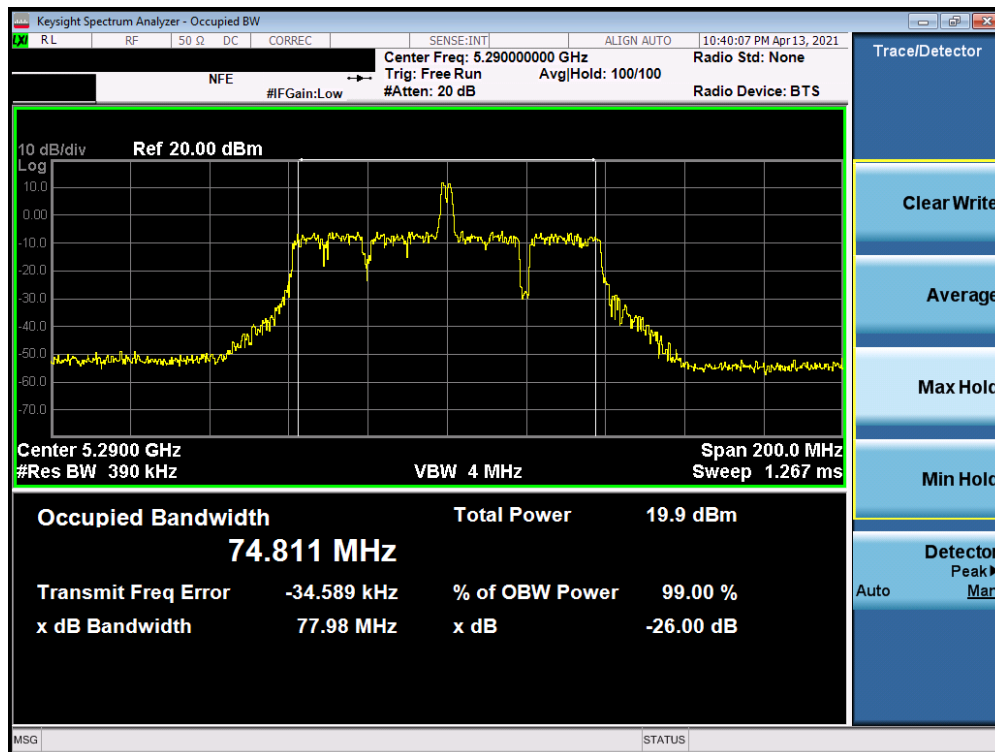


Plot 7-12. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 54)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 21 of 204 |

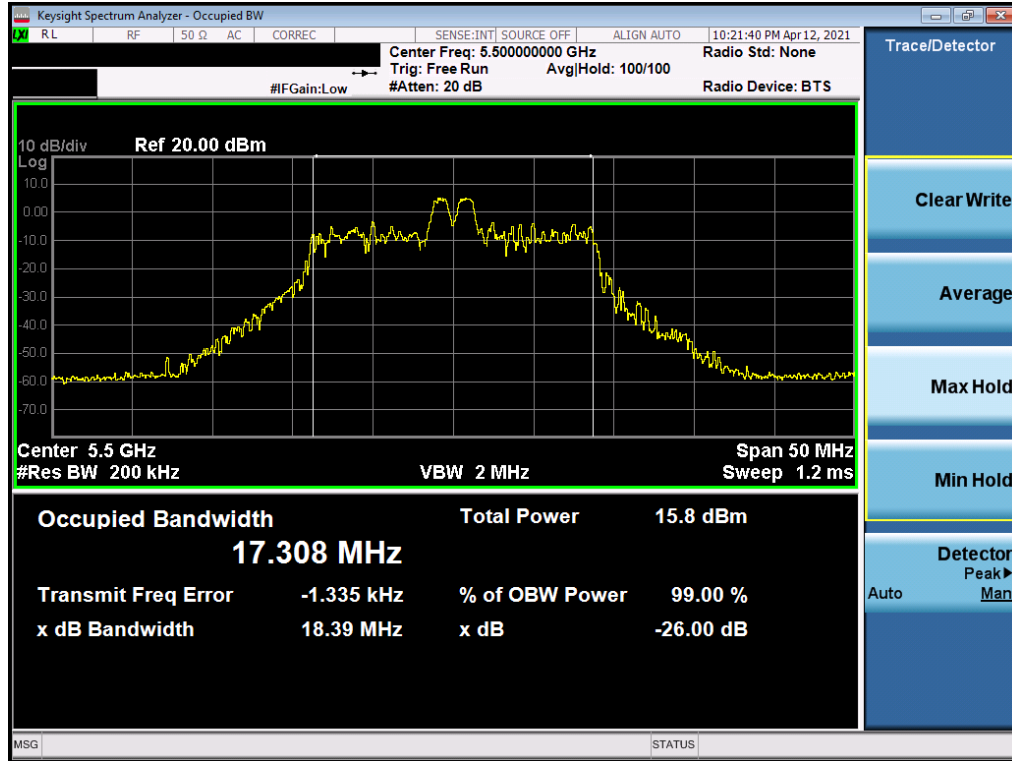


Plot 7-13. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 62)

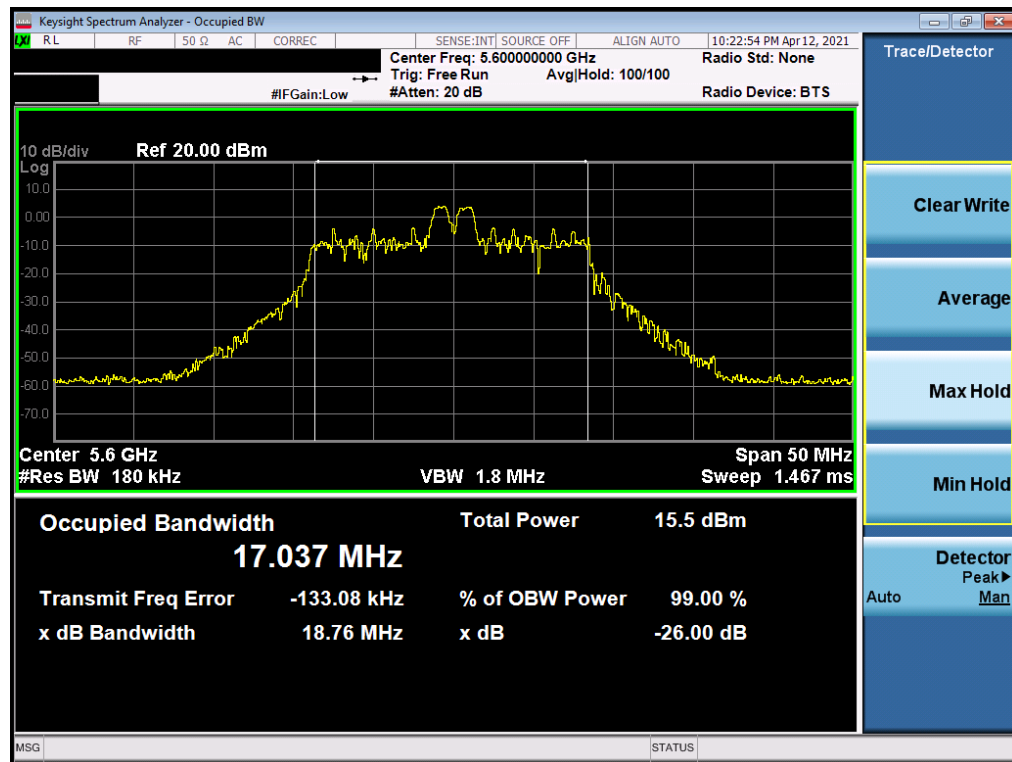


Plot 7-14. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 58)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 22 of 204 |

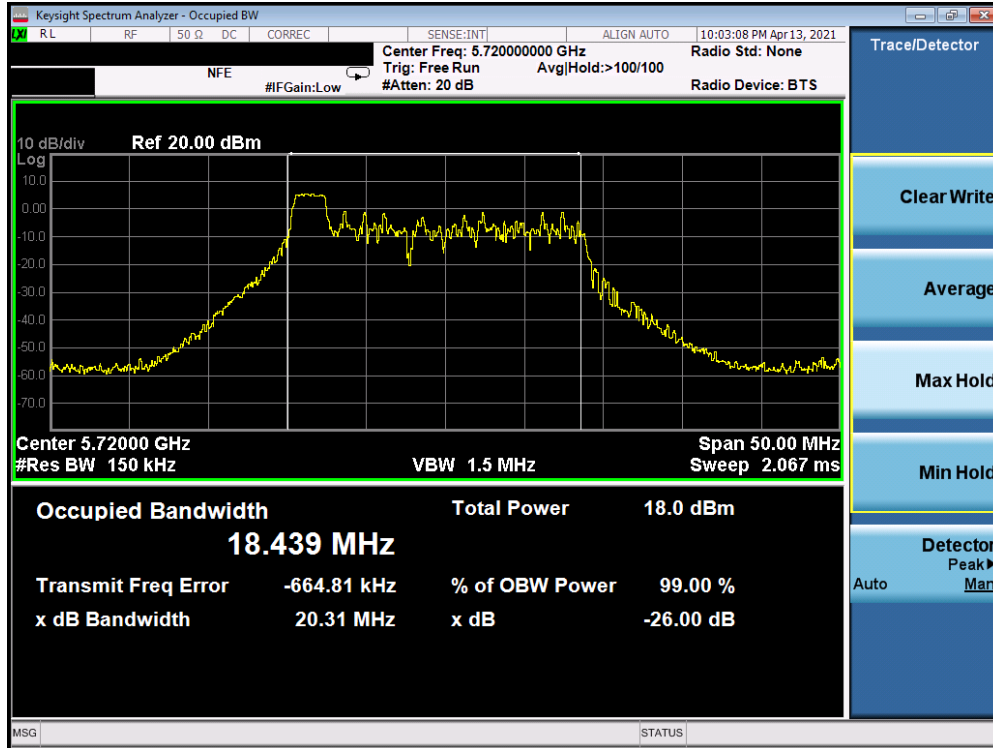


Plot 7-15. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 100)

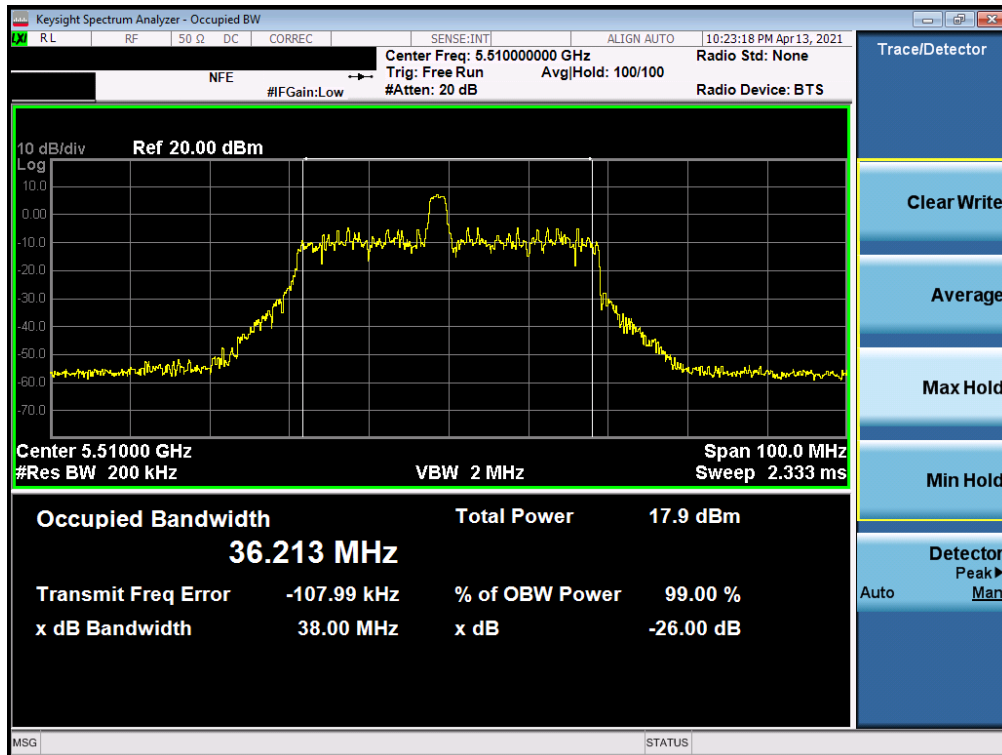


Plot 7-16. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 120)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 23 of 204 |

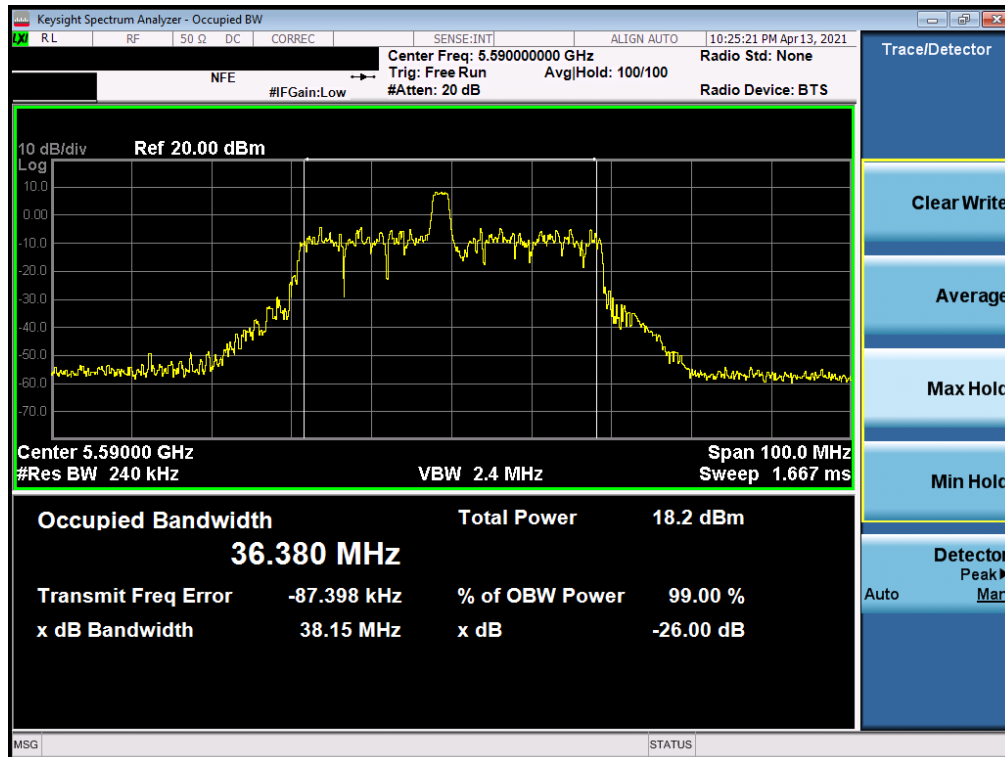


Plot 7-17. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 144)

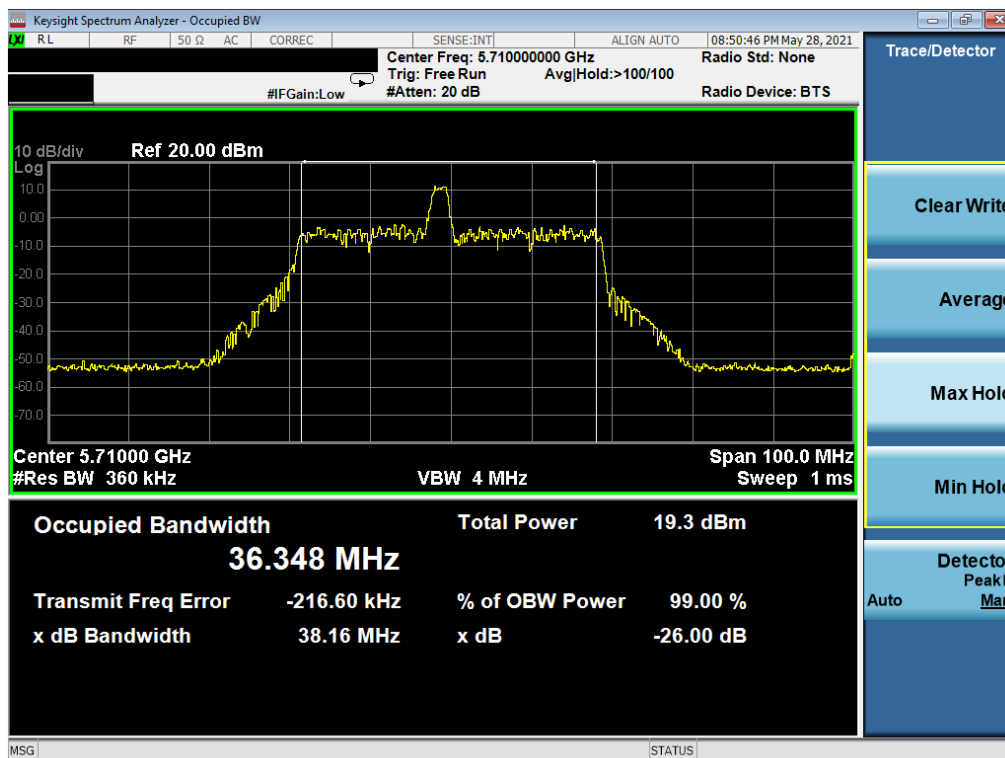


Plot 7-18. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 102)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 24 of 204 |

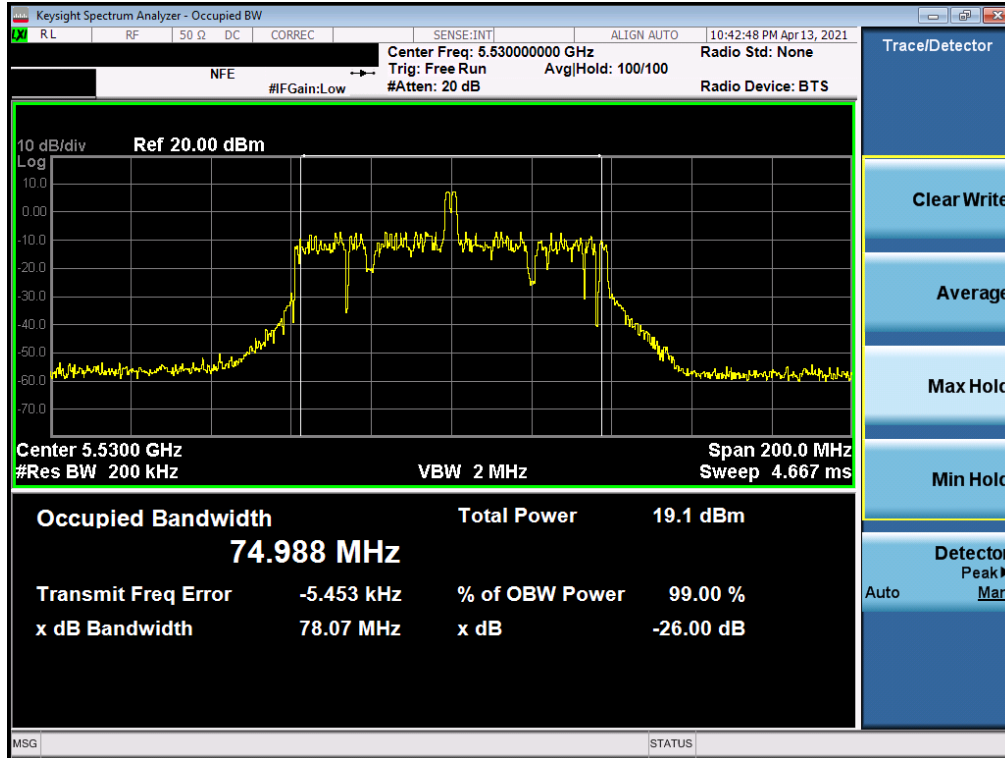


Plot 7-19. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 118)

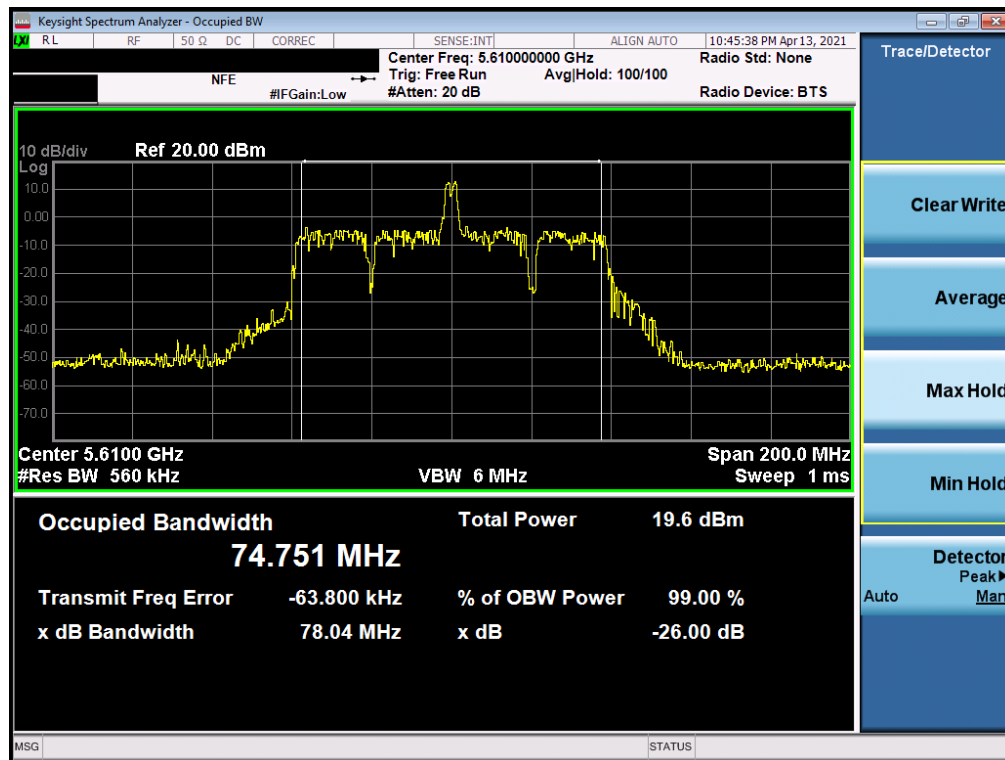


Plot 7-20. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 142)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 25 of 204 |

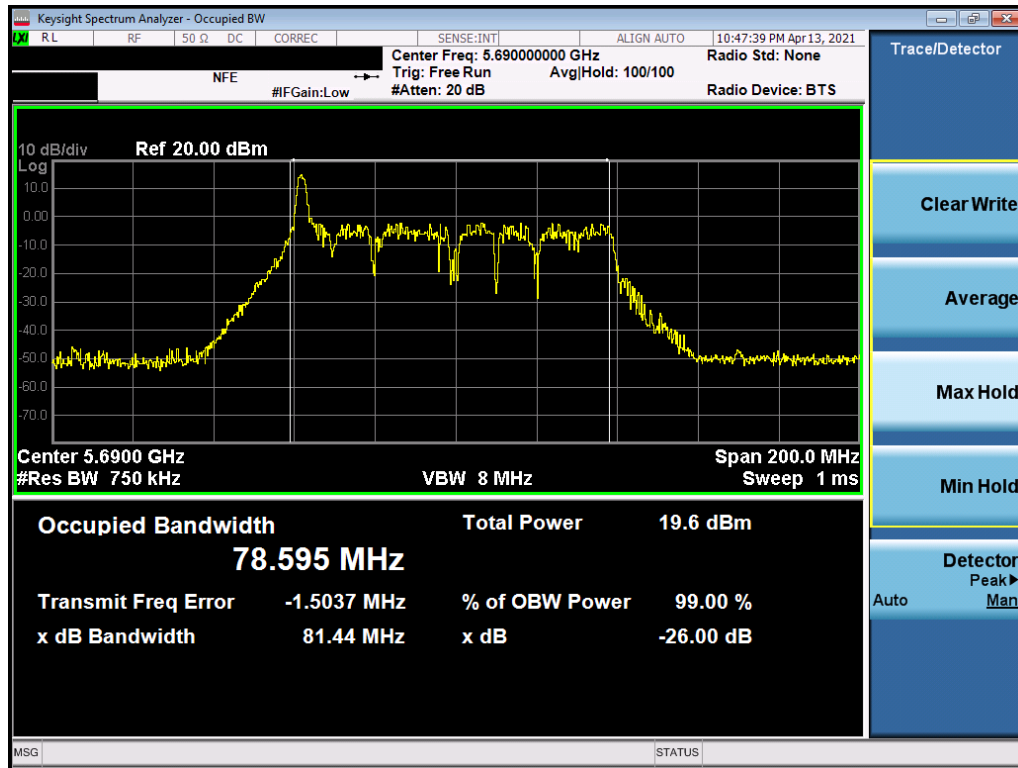


Plot 7-21. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 106)

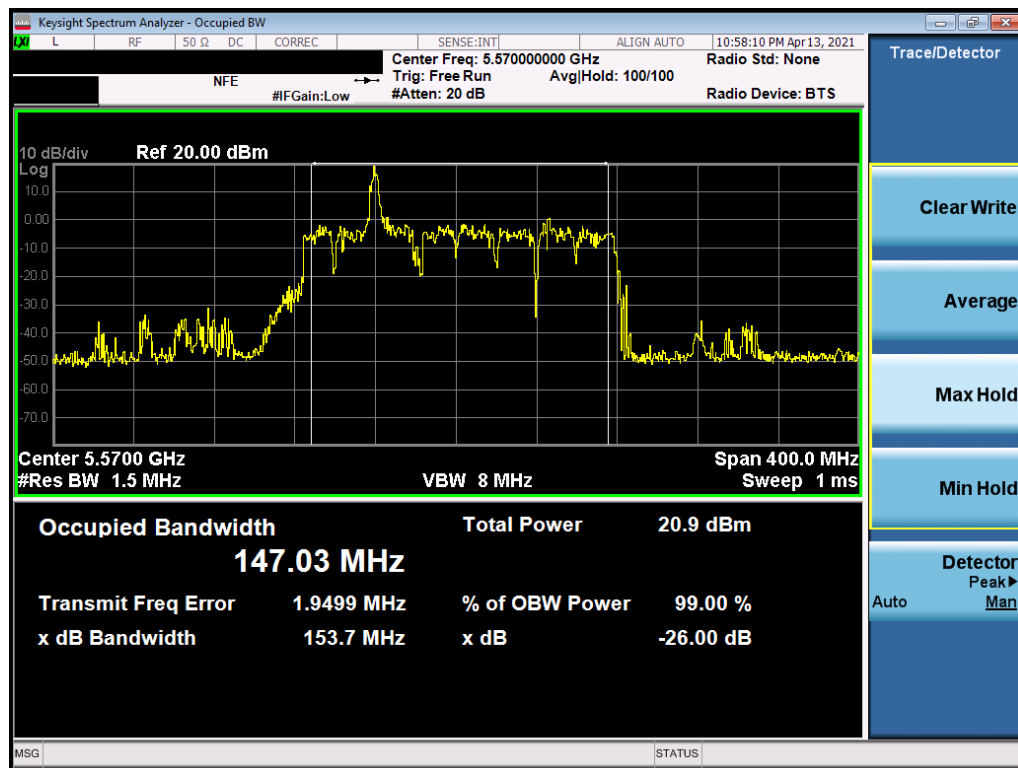


Plot 7-22. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 122)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 26 of 204 |

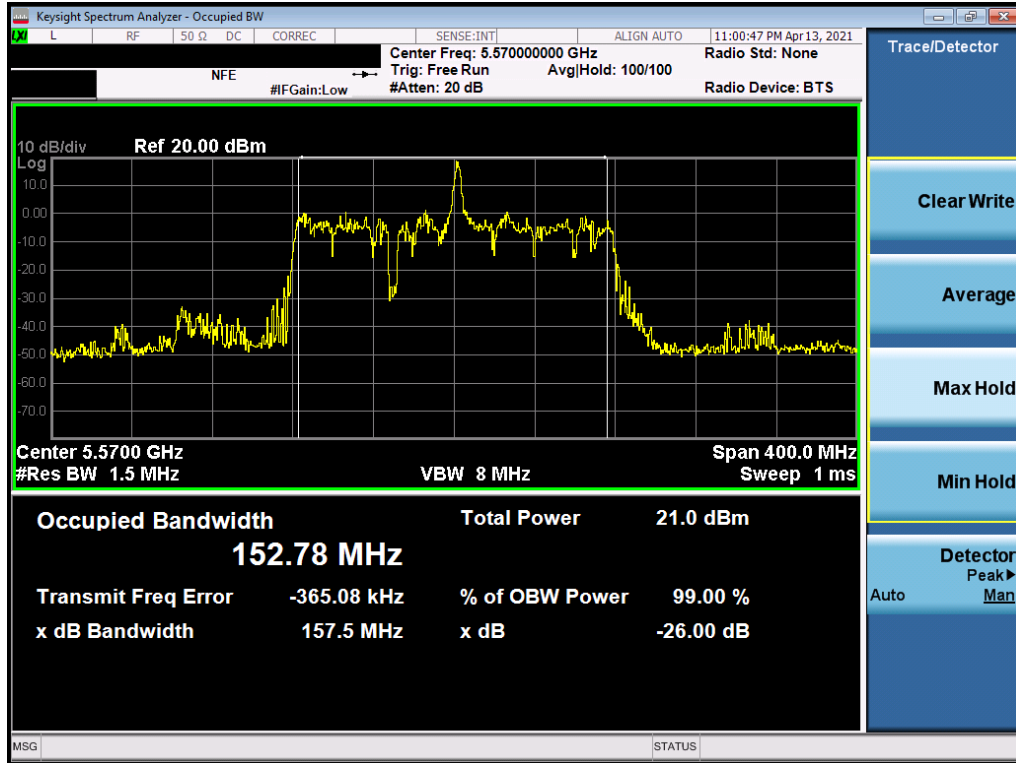


Plot 7-23. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 138)



Plot 7-24. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW(L) 802.11ax – 26 Tones (UNII Band 2C) – Ch. 114)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 27 of 204 |



Plot 7-25. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW(U) 802.11ax – 26 Tones (UNII Band 2C) – Ch. 114)

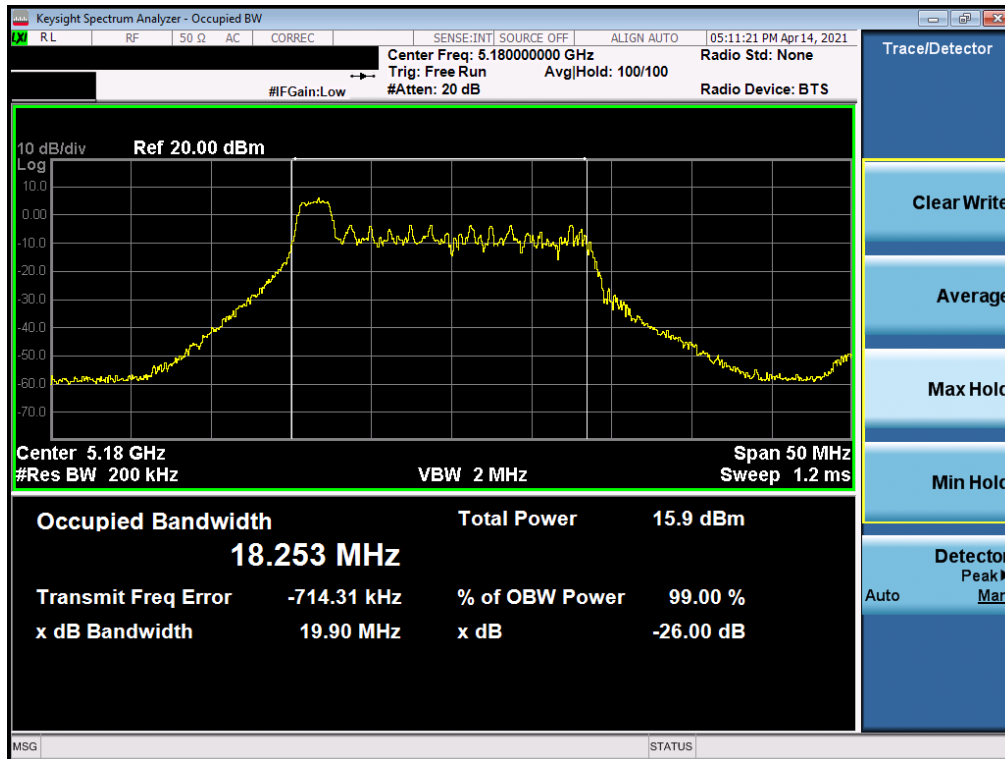
| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 28 of 204 |

MIMO Antenna 2 – 26dB Bandwidth Measurements (26 Tones)

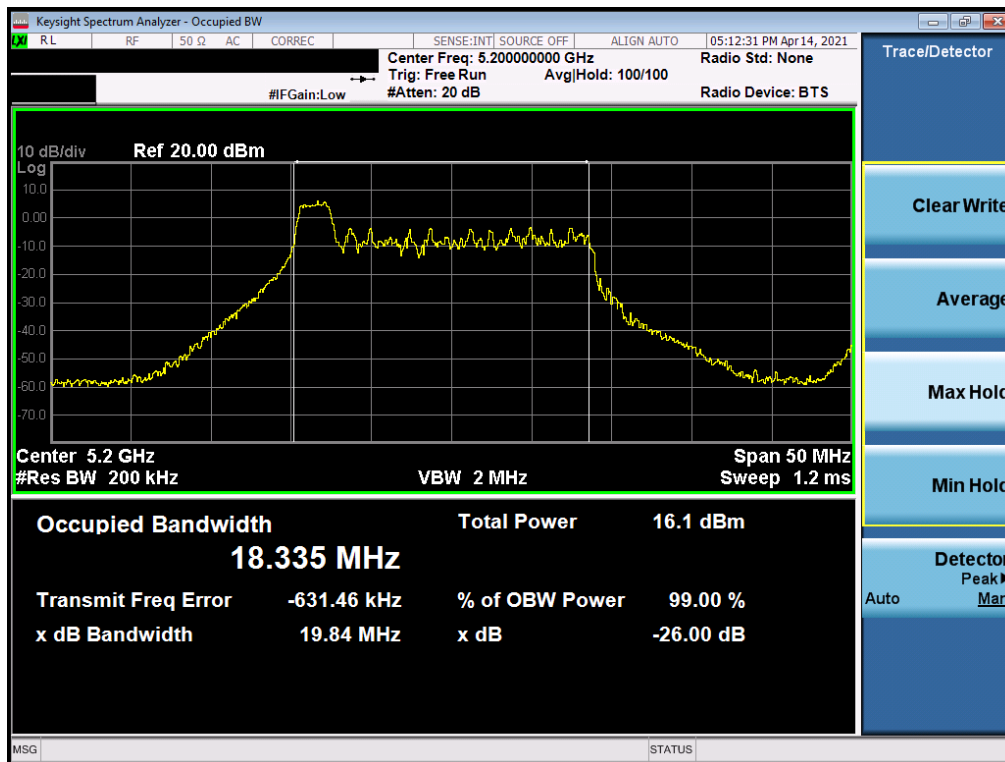
| | Frequency [MHz] | Channel No. | 802.11 Mode | Tones | Data Rate [Mbps] | Measured 26dB Bandwidth [MHz] |
|-----------|-----------------|-------------|---------------|-------|------------------|-------------------------------|
| Band 1 | 5180 | 36 | ax (20MHz) | 26T | MCS0 | 19.90 |
| | 5200 | 40 | ax (20MHz) | 26T | MCS0 | 19.84 |
| | 5240 | 48 | ax (20MHz) | 26T | MCS0 | 19.88 |
| | 5190 | 38 | ax (40MHz) | 26T | MCS0 | 38.04 |
| | 5230 | 46 | ax (40MHz) | 26T | MCS0 | 38.02 |
| | 5210 | 42 | ax (80MHz) | 26T | MCS0 | 77.18 |
| Band 1/2A | 5250 | 50 | ax (160MHz L) | 26T | MCS0 | 162.60 |
| | 5250 | 50 | ax (160MHz U) | 26T | MCS0 | 156.70 |
| Band 2A | 5260 | 52 | ax (20MHz) | 26T | MCS0 | 20.00 |
| | 5280 | 56 | ax (20MHz) | 26T | MCS0 | 18.32 |
| | 5320 | 64 | ax (20MHz) | 26T | MCS0 | 18.32 |
| | 5270 | 54 | ax (40MHz) | 26T | MCS0 | 38.03 |
| | 5310 | 62 | ax (40MHz) | 26T | MCS0 | 38.07 |
| | 5290 | 58 | ax (80MHz) | 26T | MCS0 | 77.18 |
| Band 2C | 5500 | 100 | ax (20MHz) | 26T | MCS0 | 18.15 |
| | 5600 | 120 | ax (20MHz) | 26T | MCS0 | 19.79 |
| | 5720 | 144 | ax (20MHz) | 26T | MCS0 | 19.80 |
| | 5510 | 102 | ax (40MHz) | 26T | MCS0 | 37.12 |
| | 5590 | 118 | ax (40MHz) | 26T | MCS0 | 38.06 |
| | 5710 | 142 | ax (40MHz) | 26T | MCS0 | 38.08 |
| | 5530 | 106 | ax (80MHz) | 26T | MCS0 | 77.95 |
| | 5610 | 122 | ax (80MHz) | 26T | MCS0 | 77.69 |
| | 5690 | 138 | ax (80MHz) | 26T | MCS0 | 78.10 |
| | 5570 | 114 | ax (160MHz L) | 26T | MCS0 | 157.80 |
| | 5570 | 114 | ax (160MHz U) | 26T | MCS0 | 157.40 |

Table 7-3. Conducted Bandwidth Measurements MIMO ANT2 (26 Tones)

| | | | | |
|---|---|---------------------------------------|---|-----------------------------------|
| FCC ID: A3LSMF926B |  | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 29 of 204 |

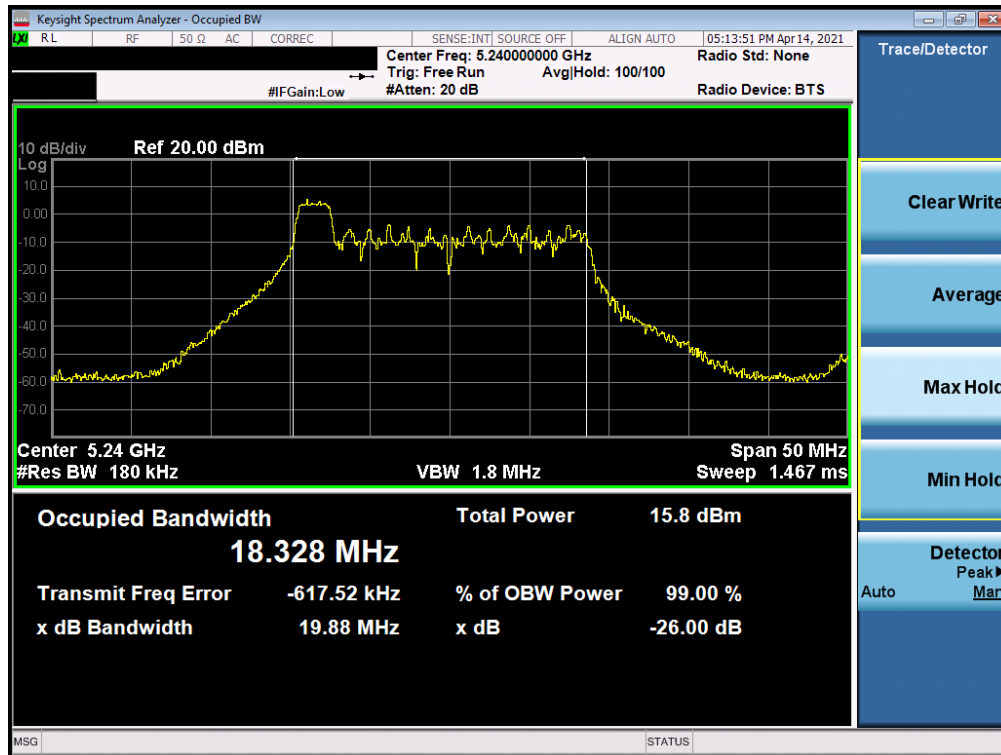


Plot 7-26. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 36)

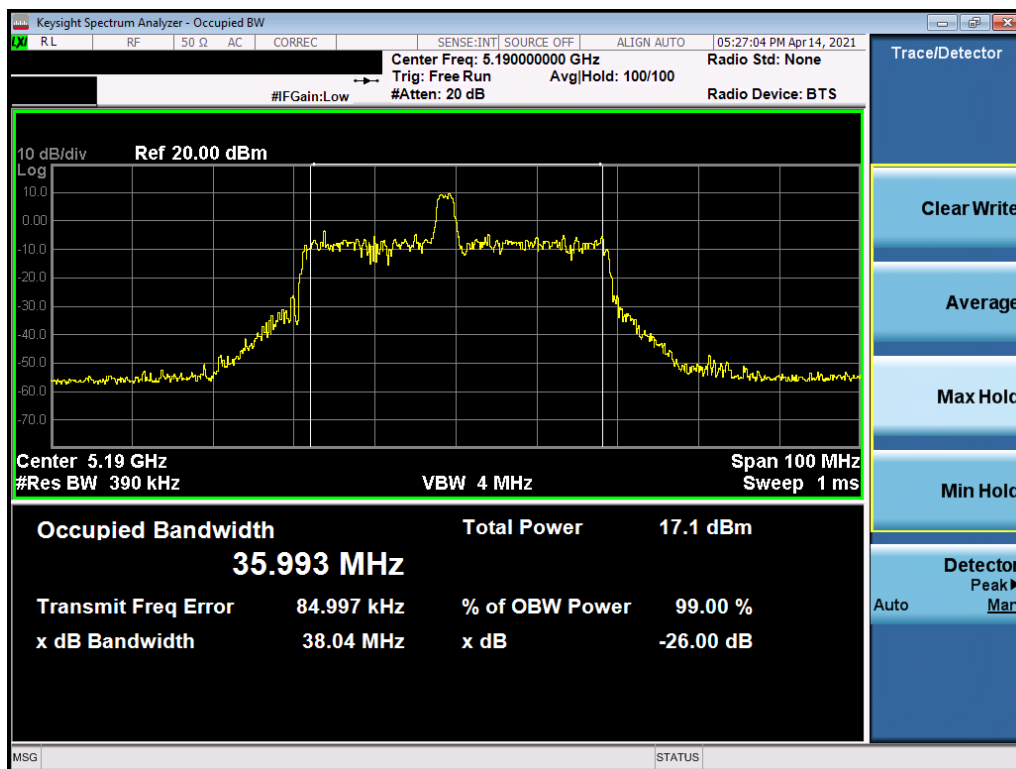


Plot 7-27. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 40)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 30 of 204 |

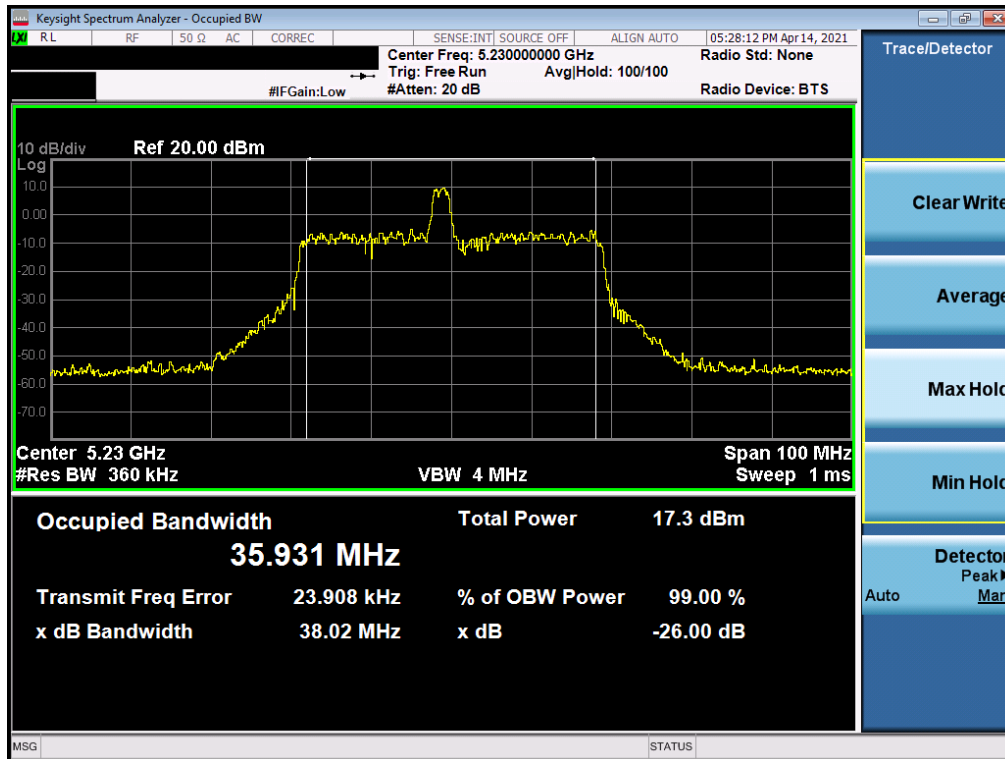


Plot 7-28. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 48)

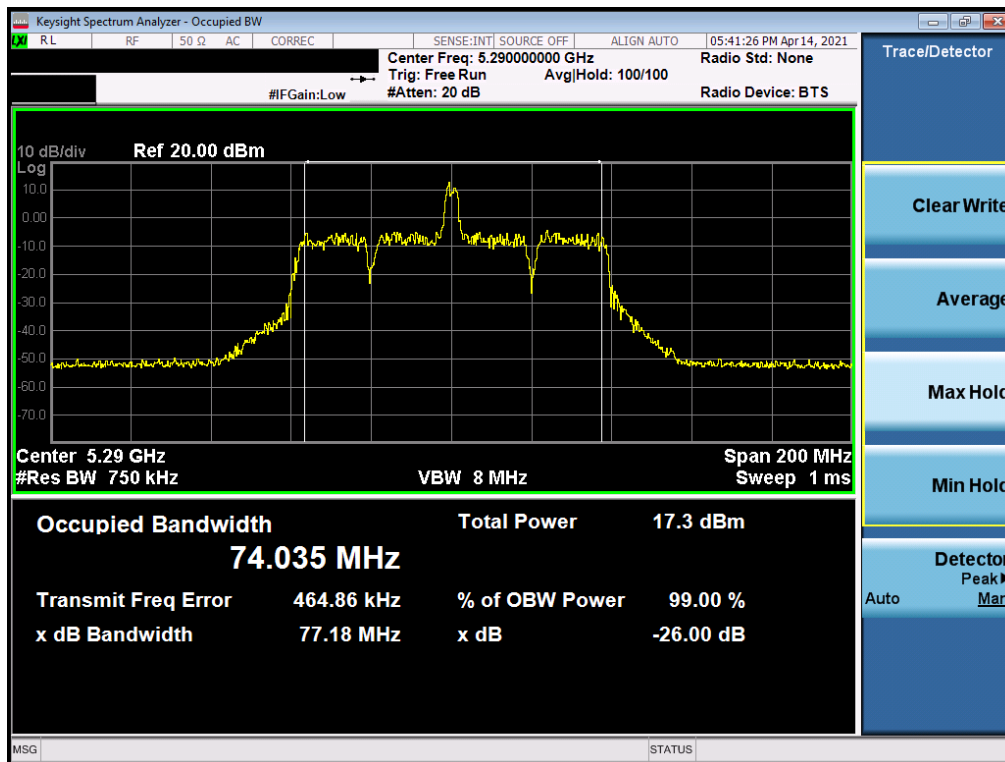


Plot 7-29. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 38)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 31 of 204 |

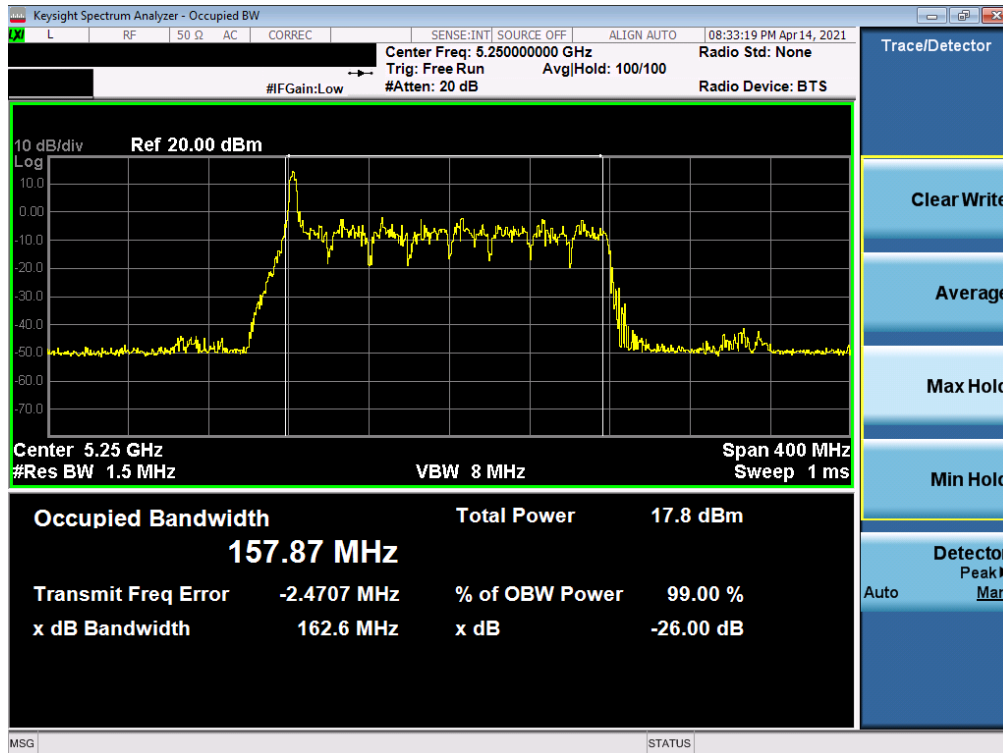


Plot 7-30. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 46)

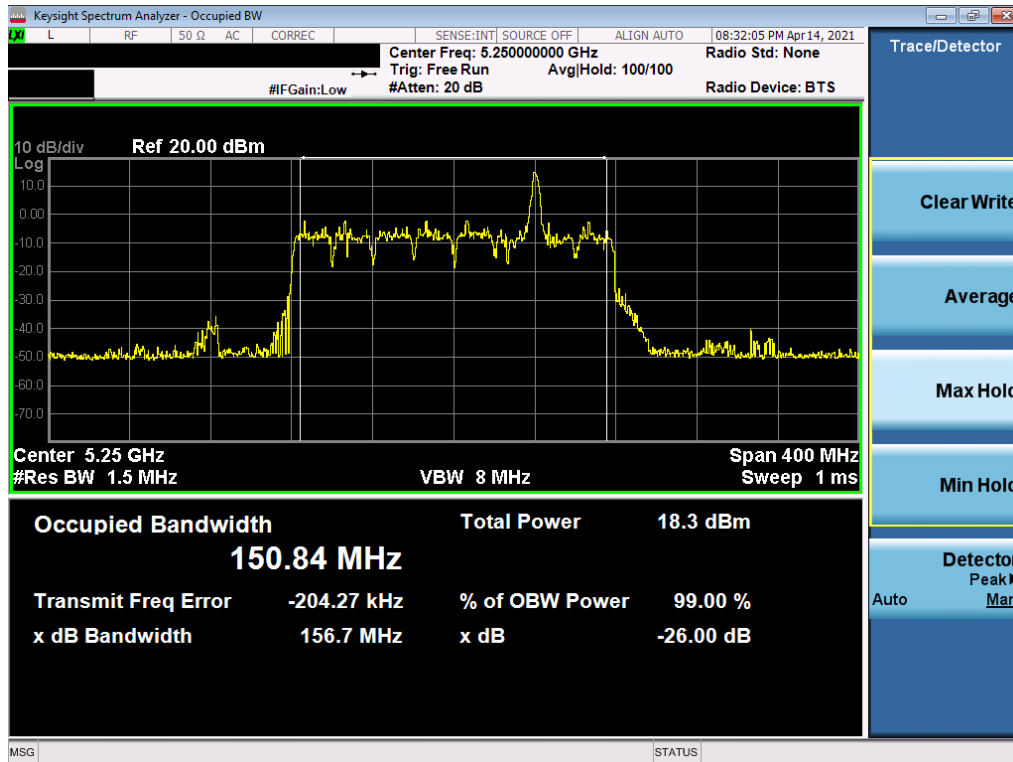


Plot 7-31. 26dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 42)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 32 of 204 |

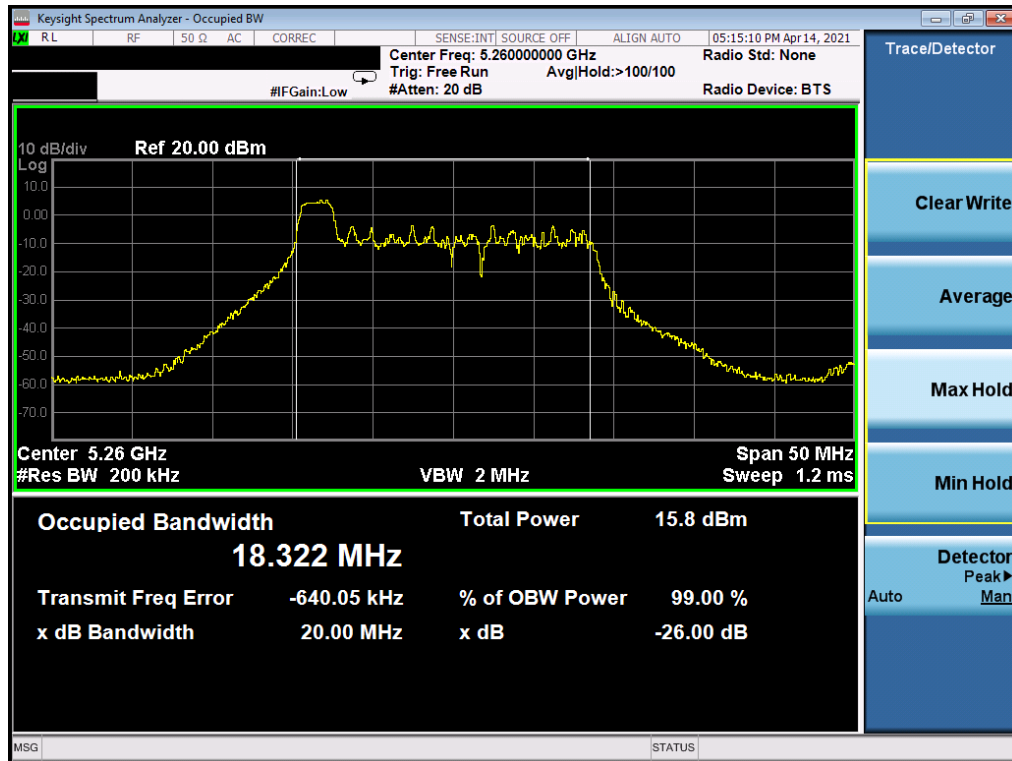


Plot 7-32. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW(L) 802.11ax – 26 Tones (UNII Band 1/2A) – Ch. 50)



Plot 7-33. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW(U) 802.11ax – 26 Tones (UNII Band 1/2A) – Ch. 50)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 33 of 204 |

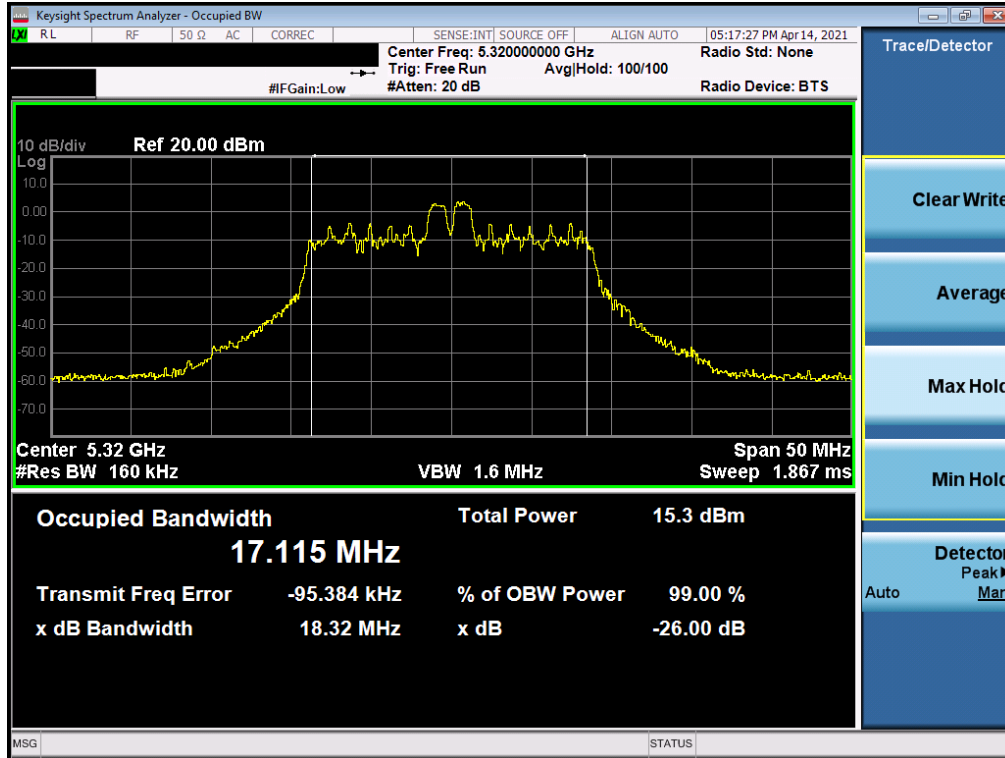


Plot 7-34. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 52)

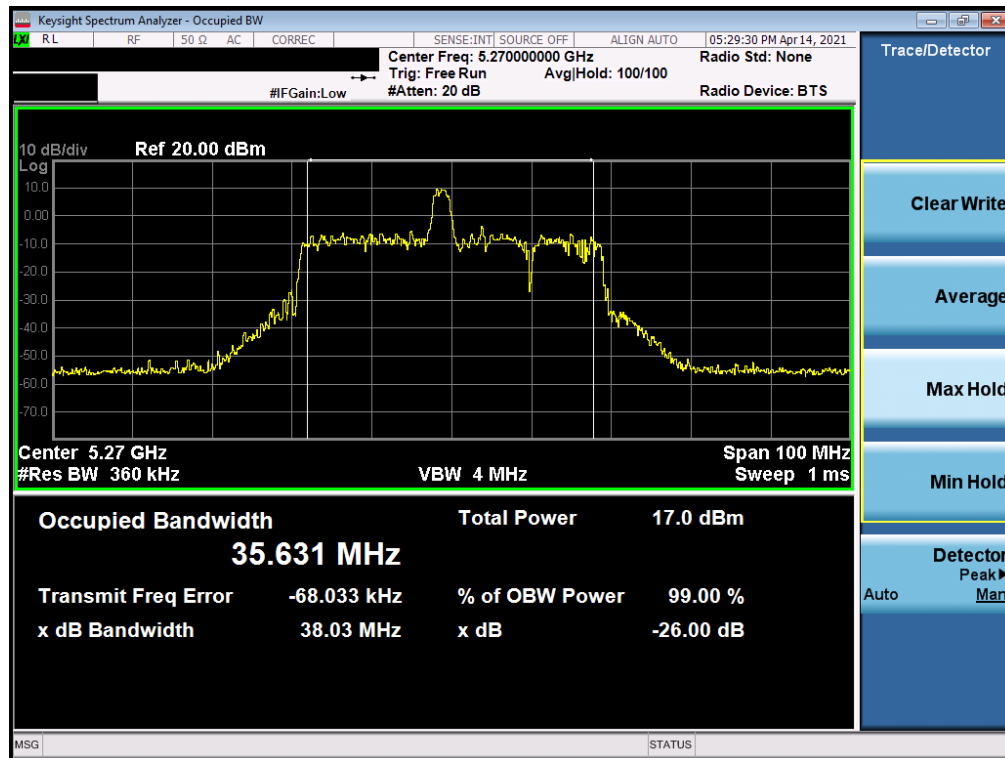


Plot 7-35. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 56)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 34 of 204 |

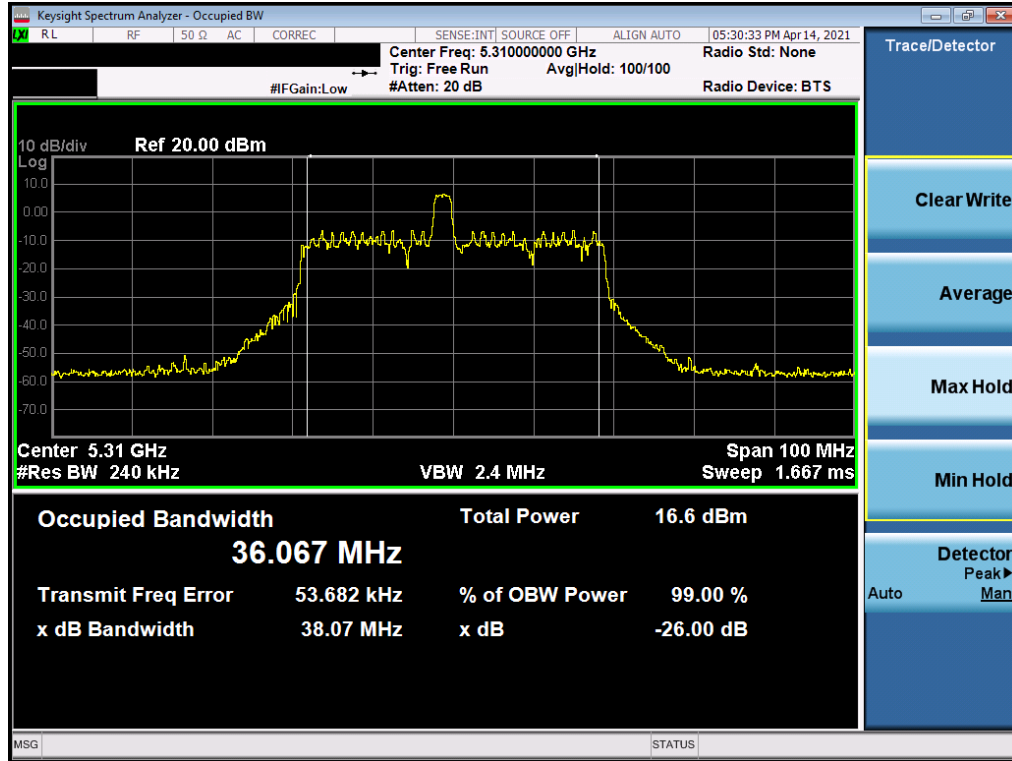


Plot 7-36. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 64)

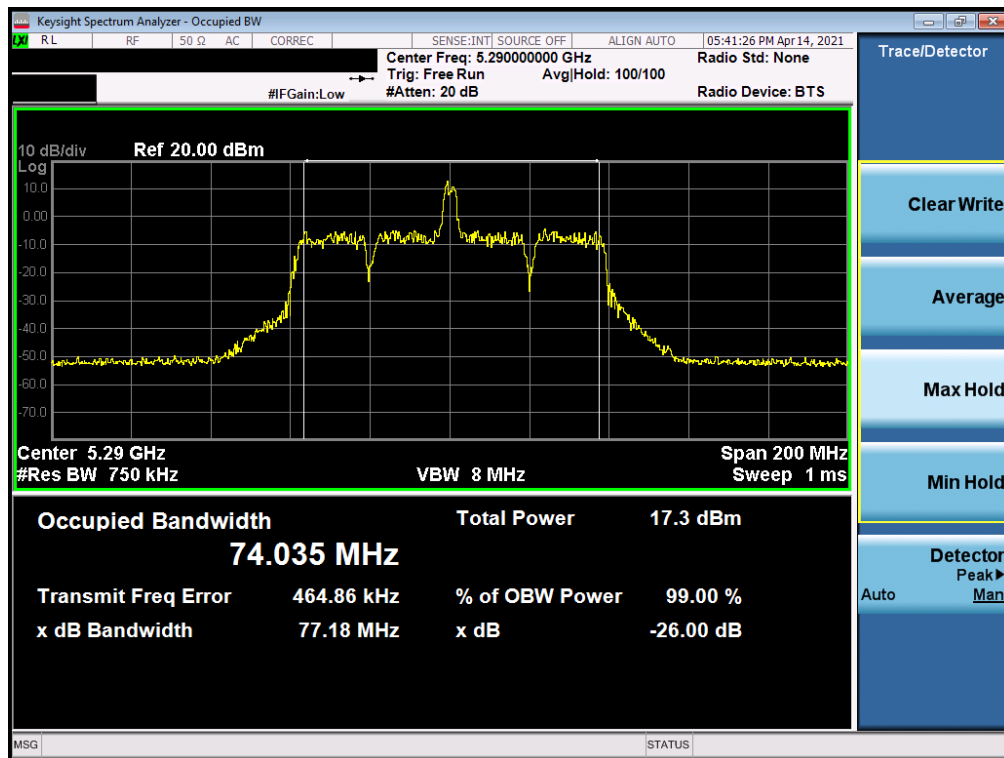


Plot 7-37. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 54)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 35 of 204 |

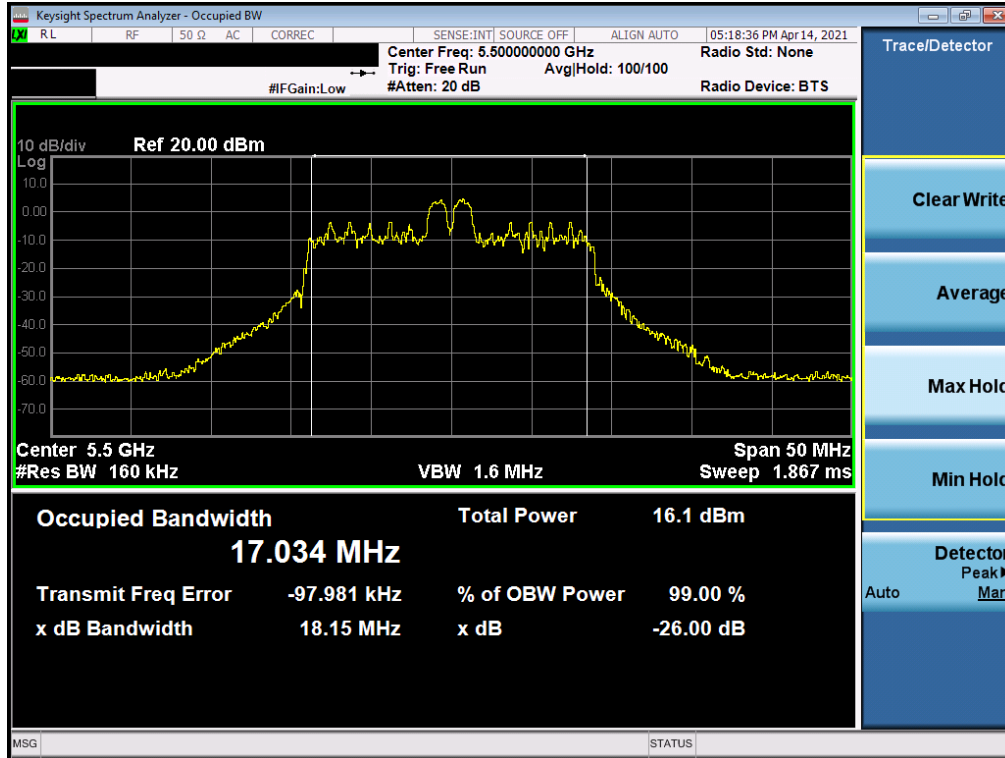


Plot 7-38. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 62)

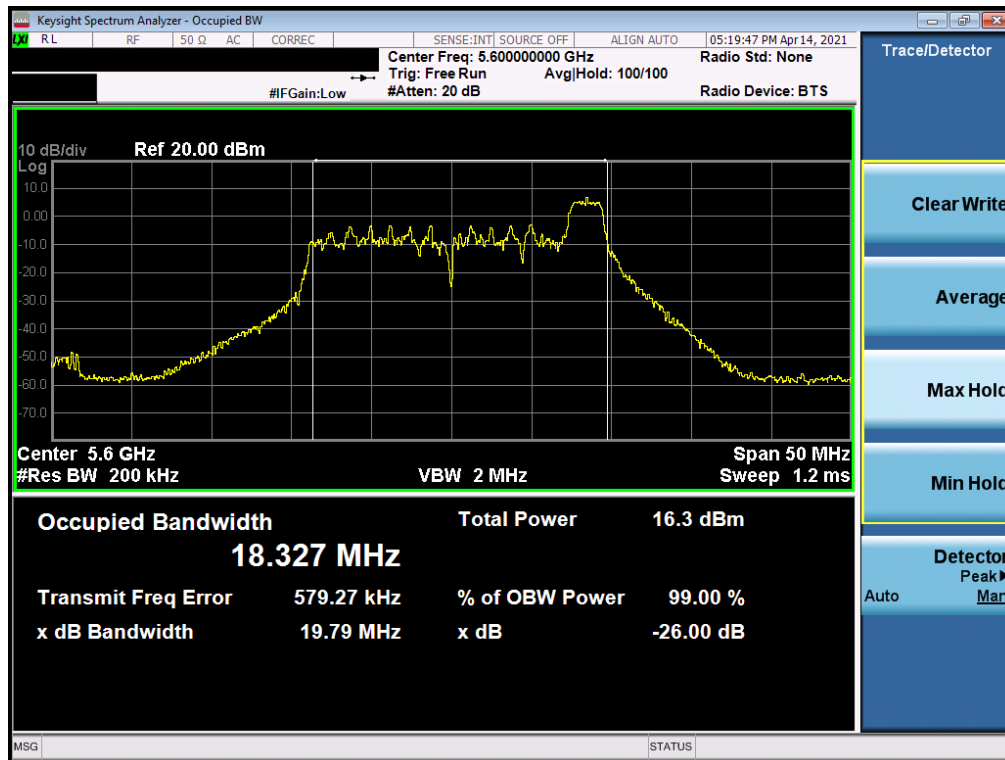


Plot 7-39. 26dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 58)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 36 of 204 |

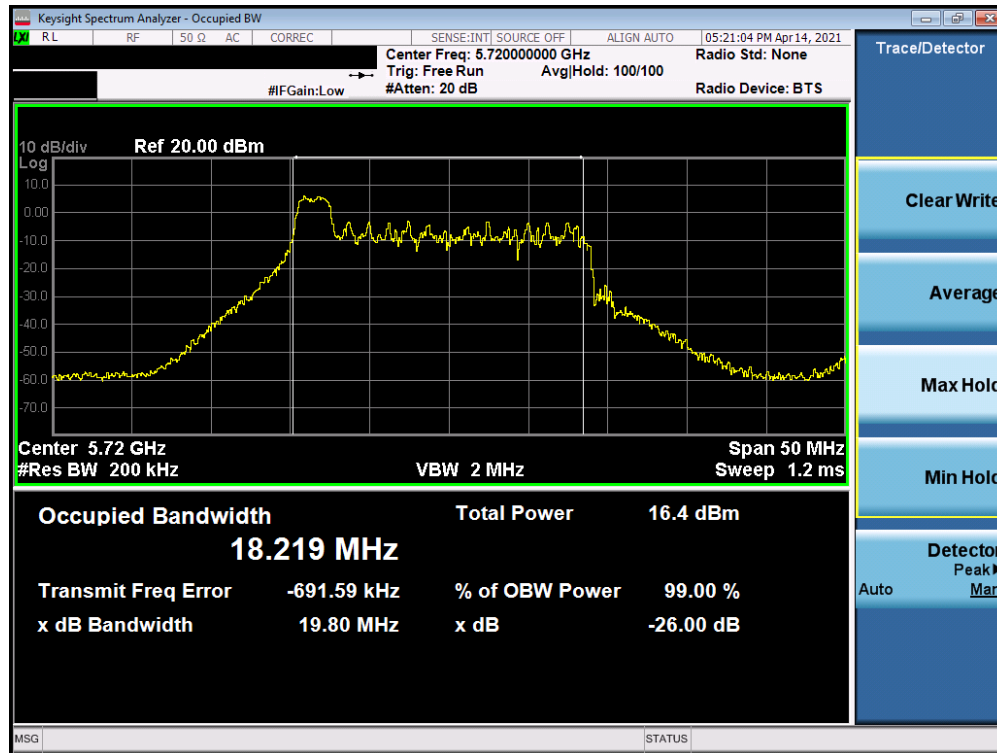


Plot 7-40. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 100)

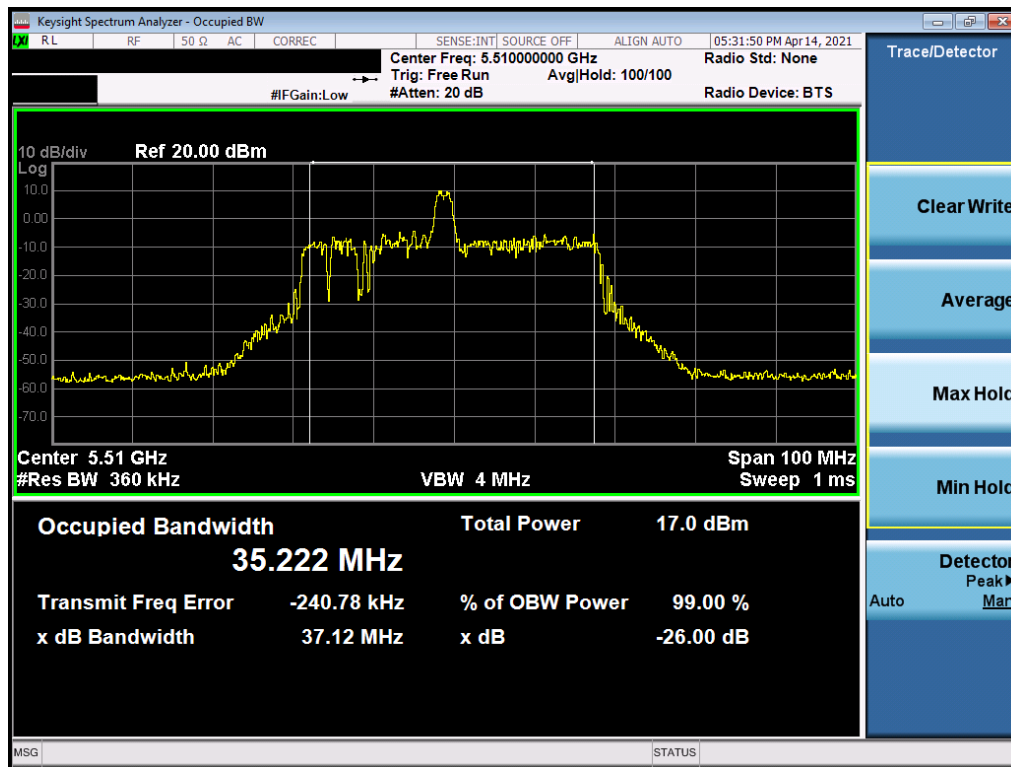


Plot 7-41. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 120)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 37 of 204 |

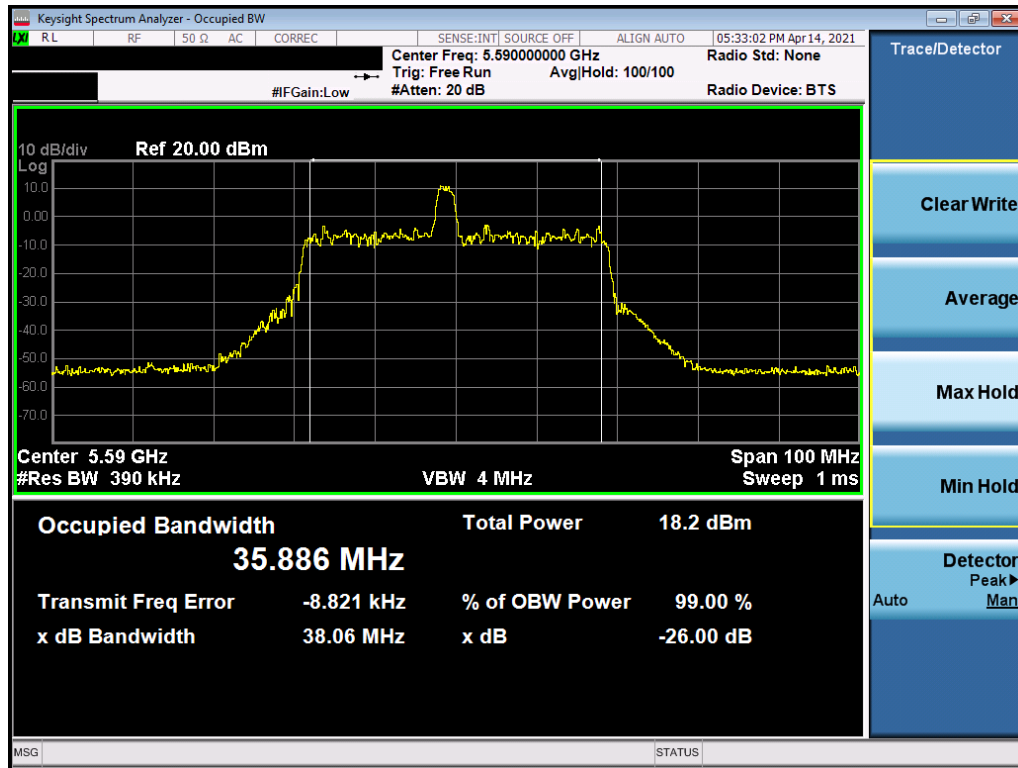


Plot 7-42. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 144)

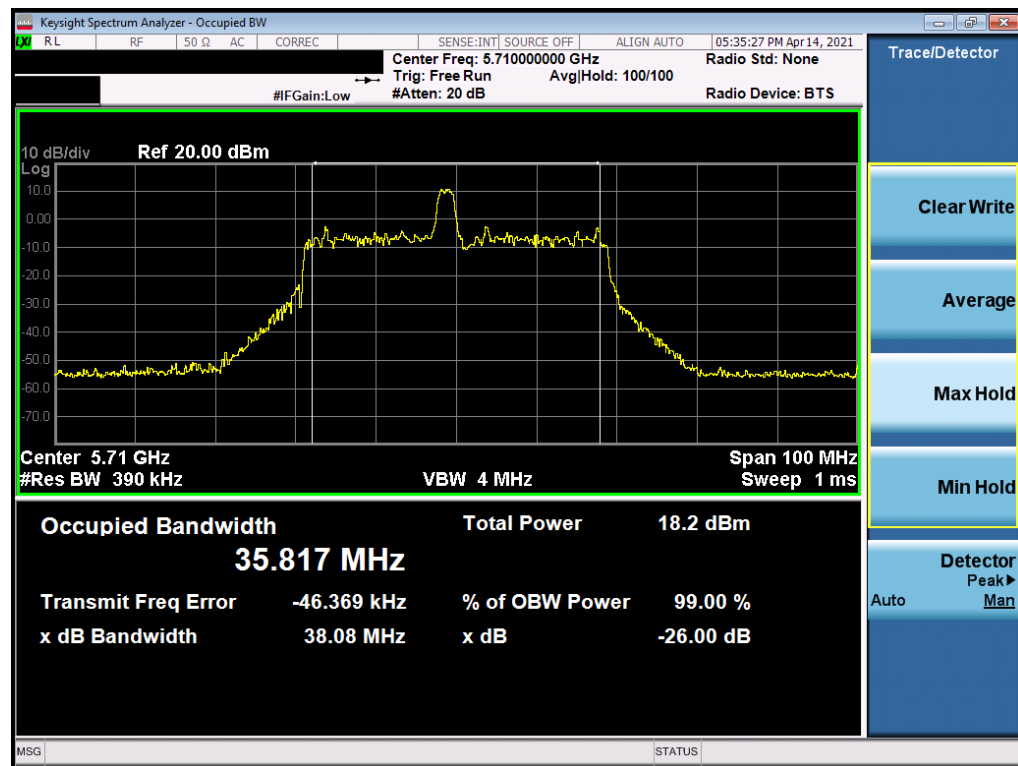


Plot 7-43. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 102)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 38 of 204 |

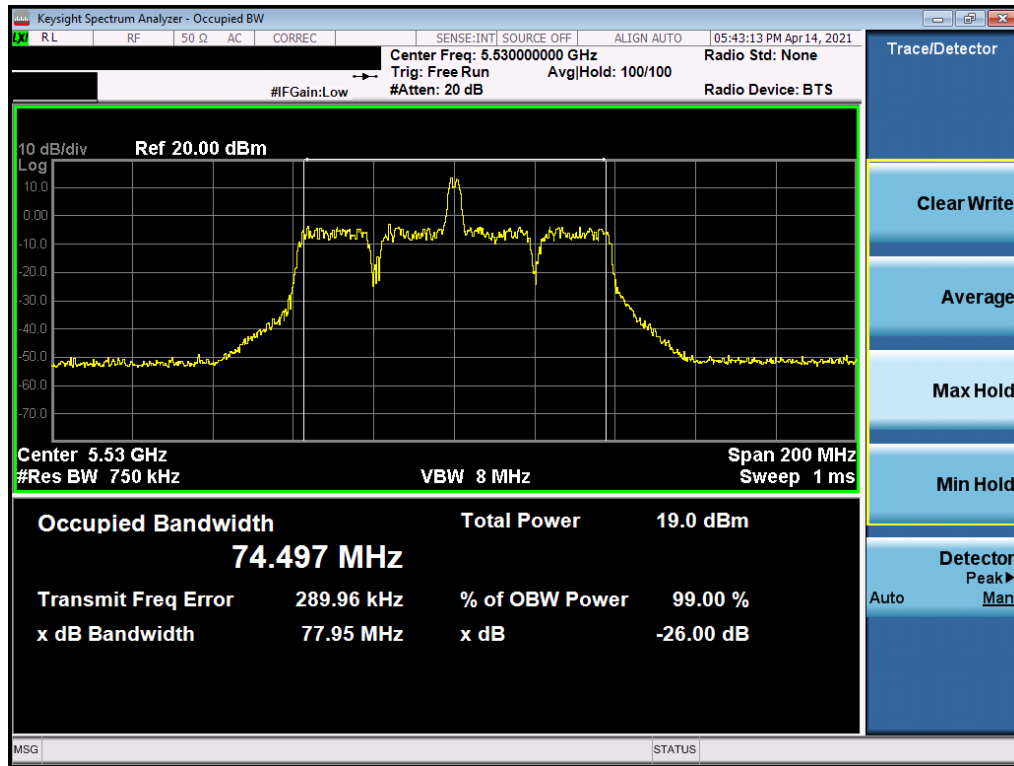


Plot 7-44. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 118)

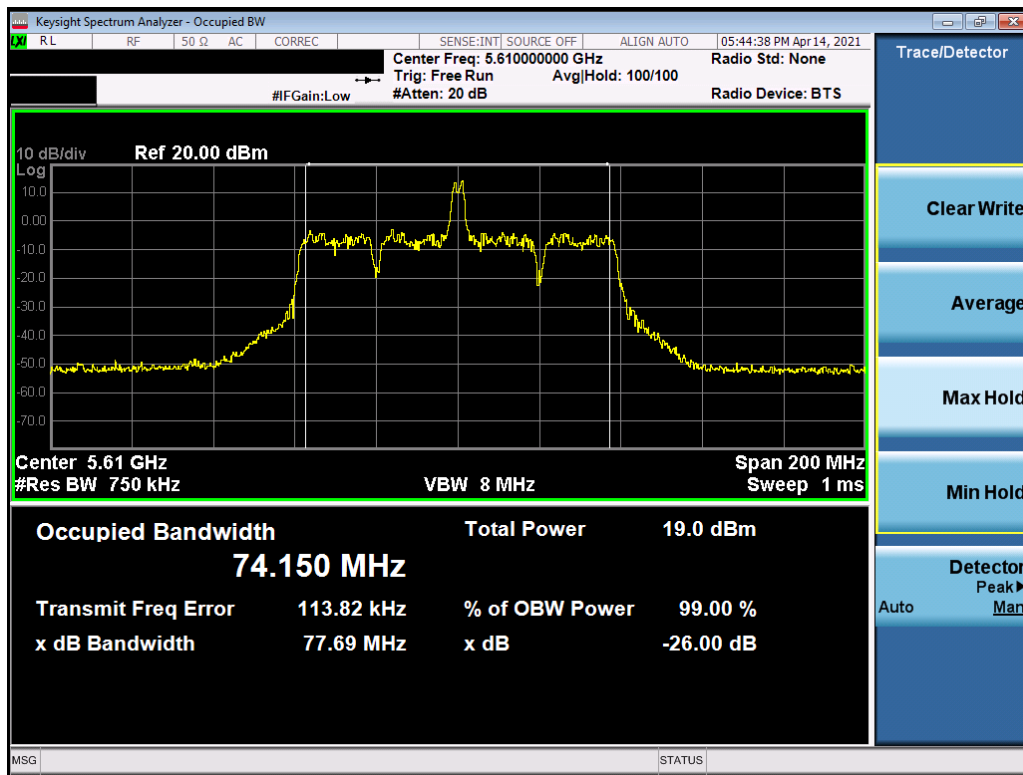


Plot 7-45. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 142)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 39 of 204 |

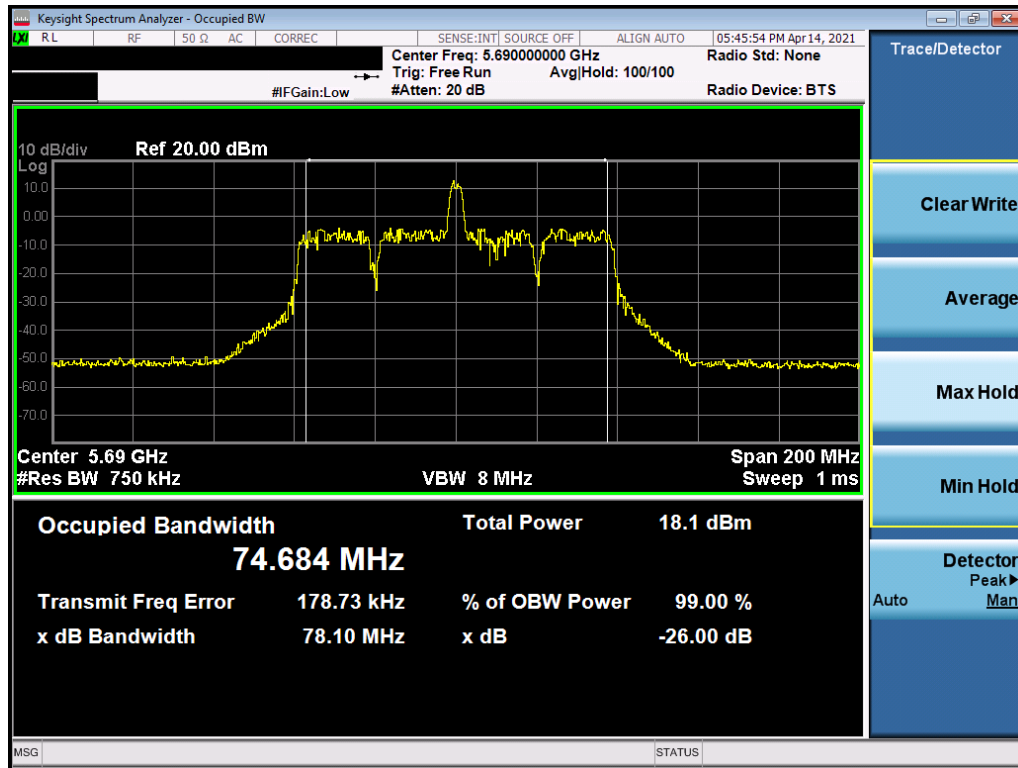


Plot 7-46. 26dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 106)

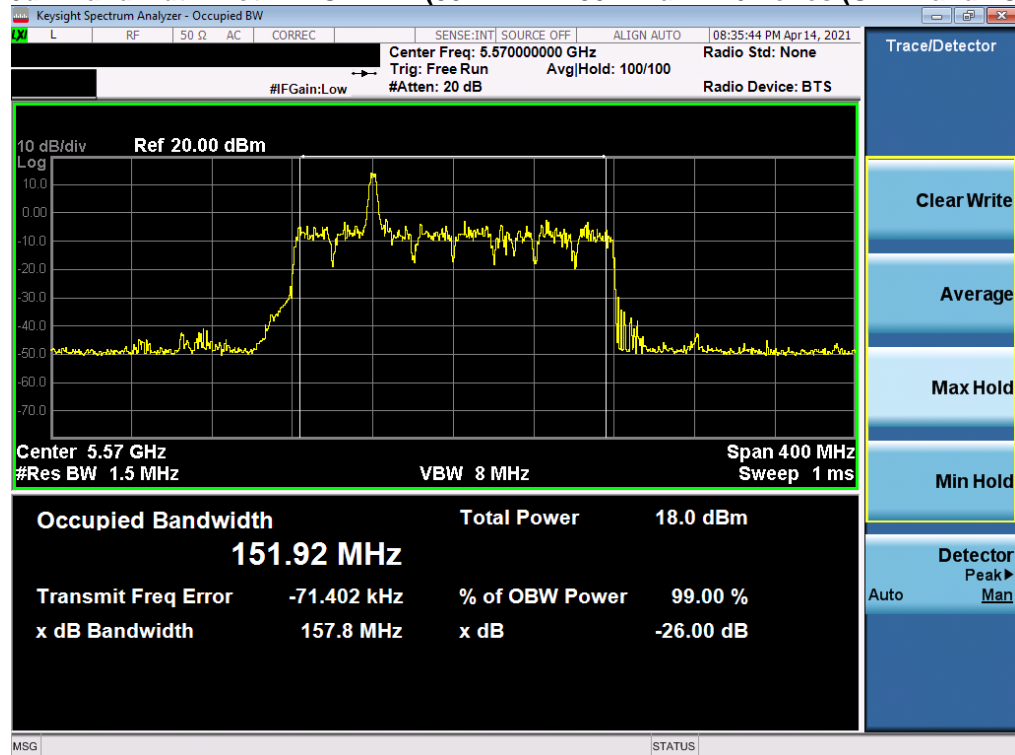


Plot 7-47. 26dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 122)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 40 of 204 |

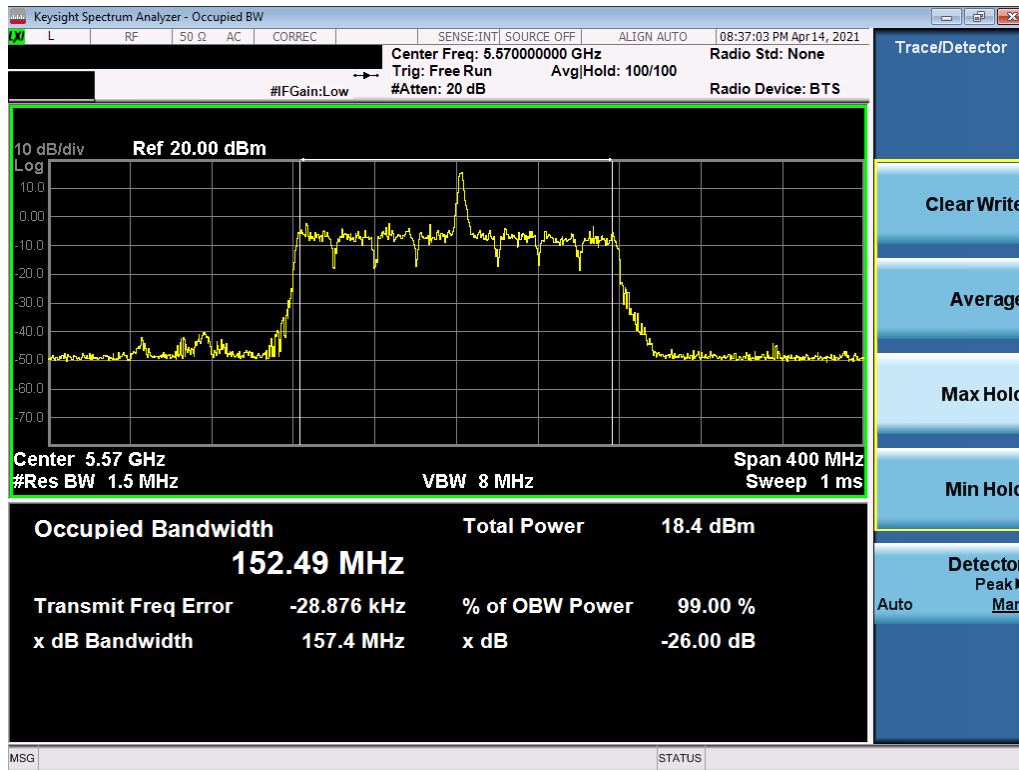


Plot 7-48. 26dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 138)



Plot 7-49. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW(L) 802.11ax – 26 Tones (UNII Band 2C) – Ch. 114)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 41 of 204 |



Plot 7-50. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW(U) 802.11ax – 26 Tones (UNII Band 2C) – Ch. 114)

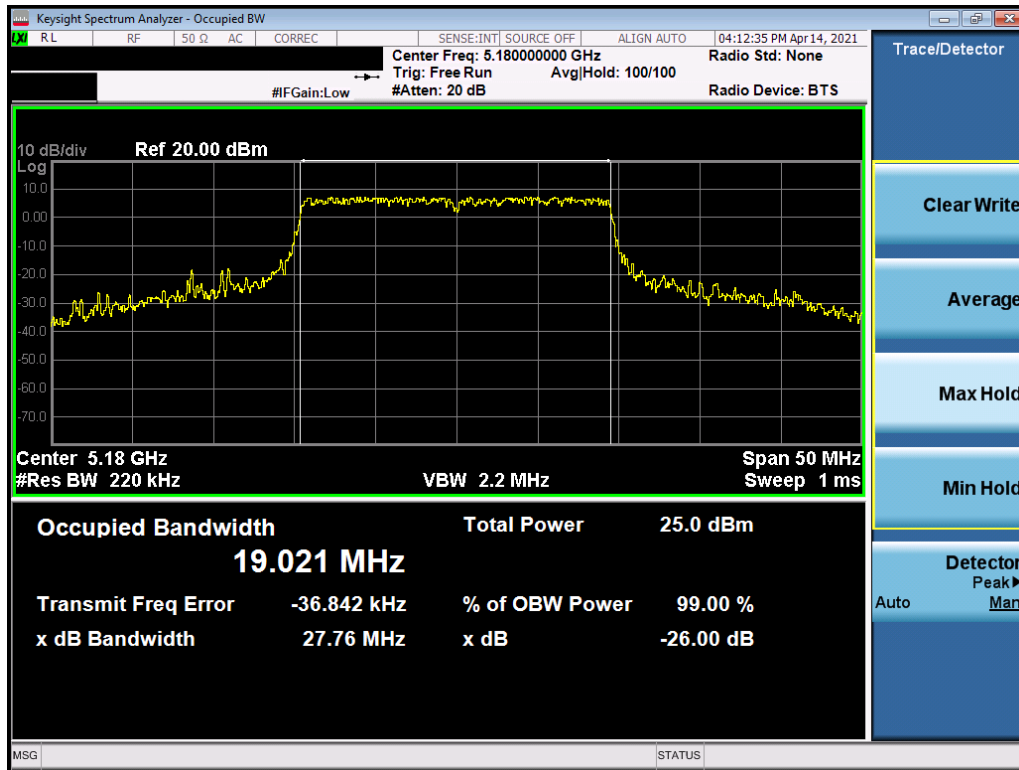
| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 42 of 204 |

MIMO Antenna 1 - 26dB Bandwidth Measurements (Full Tones)

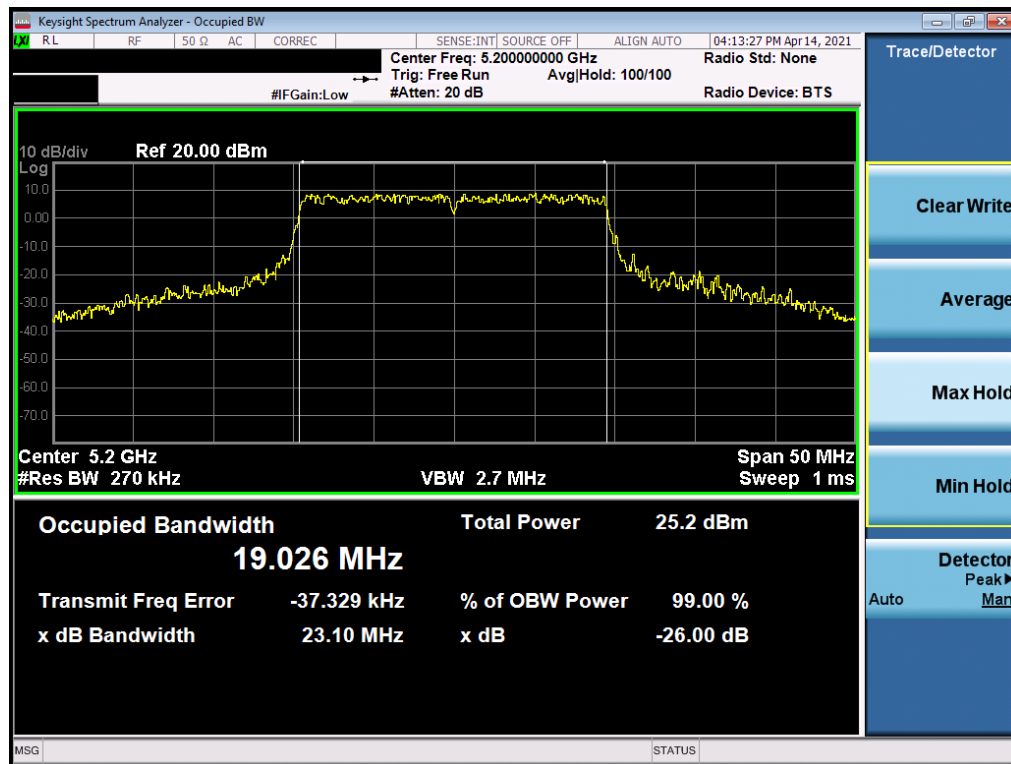
| | Frequency [MHz] | Channel No. | 802.11 Mode | Tones | Data Rate [Mbps] | Measured 26dB Bandwidth [MHz] |
|-----------|-----------------|-------------|---------------|-------|------------------|-------------------------------|
| Band 1 | 5180 | 36 | ax (20MHz) | 242T | MCS0 | 27.76 |
| | 5200 | 40 | ax (20MHz) | 242T | MCS0 | 23.10 |
| | 5240 | 48 | ax (20MHz) | 242T | MCS0 | 22.01 |
| | 5190 | 38 | ax (40MHz) | 484T | MCS0 | 42.50 |
| | 5230 | 46 | ax (40MHz) | 484T | MCS0 | 43.62 |
| | 5210 | 42 | ax (80MHz) | 996T | MCS0 | 86.41 |
| Band 1/2A | 5210 | 50 | ax (160MHz L) | 996T | MCS0 | 165.20 |
| | 5210 | 50 | ax (160MHz U) | 996T | MCS0 | 166.00 |
| Band 2A | 5260 | 52 | ax (20MHz) | 242T | MCS0 | 22.23 |
| | 5280 | 56 | ax (20MHz) | 242T | MCS0 | 21.92 |
| | 5320 | 64 | ax (20MHz) | 242T | MCS0 | 21.89 |
| | 5270 | 54 | ax (40MHz) | 484T | MCS0 | 42.79 |
| | 5310 | 62 | ax (40MHz) | 484T | MCS0 | 44.43 |
| | 5290 | 58 | ax (80MHz) | 996T | MCS0 | 86.98 |
| Band 2C | 5500 | 100 | ax (20MHz) | 242T | MCS0 | 22.46 |
| | 5600 | 120 | ax (20MHz) | 242T | MCS0 | 22.24 |
| | 5720 | 144 | ax (20MHz) | 242T | MCS0 | 25.77 |
| | 5510 | 102 | ax (40MHz) | 484T | MCS0 | 42.58 |
| | 5590 | 118 | ax (40MHz) | 484T | MCS0 | 43.08 |
| | 5710 | 142 | ax (40MHz) | 484T | MCS0 | 45.23 |
| | 5530 | 106 | ax (80MHz) | 996T | MCS0 | 85.73 |
| | 5610 | 122 | ax (80MHz) | 996T | MCS0 | 85.52 |
| | 5690 | 138 | ax (80MHz) | 996T | MCS0 | 86.98 |
| | 5570 | 114 | ax (160MHz L) | 996T | MCS0 | 163.00 |
| | 5570 | 114 | ax (160MHz U) | 996T | MCS0 | 163.30 |

Table 7-4. Conducted Bandwidth Measurements MIMO ANT1 (Full Tones)

| | | | | |
|---|---|---------------------------------------|---|-----------------------------------|
| FCC ID: A3LSMF926B |  | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 43 of 204 |

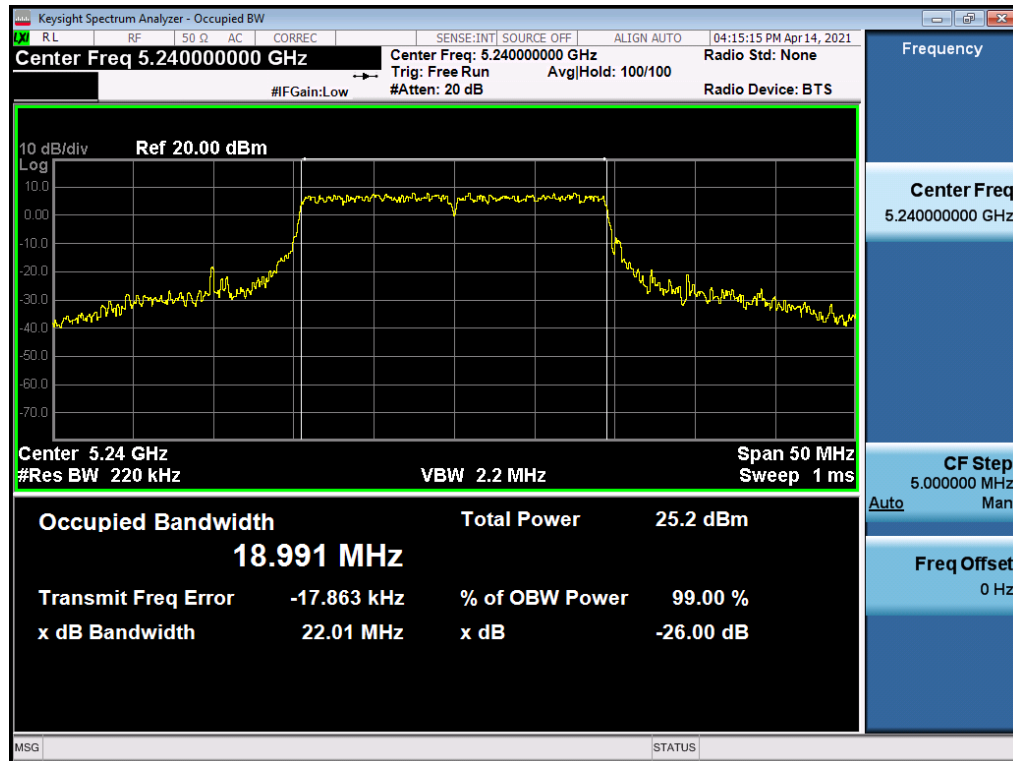


Plot 7-51. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax – 242 Tones (UNII Band 1) – Ch. 36)

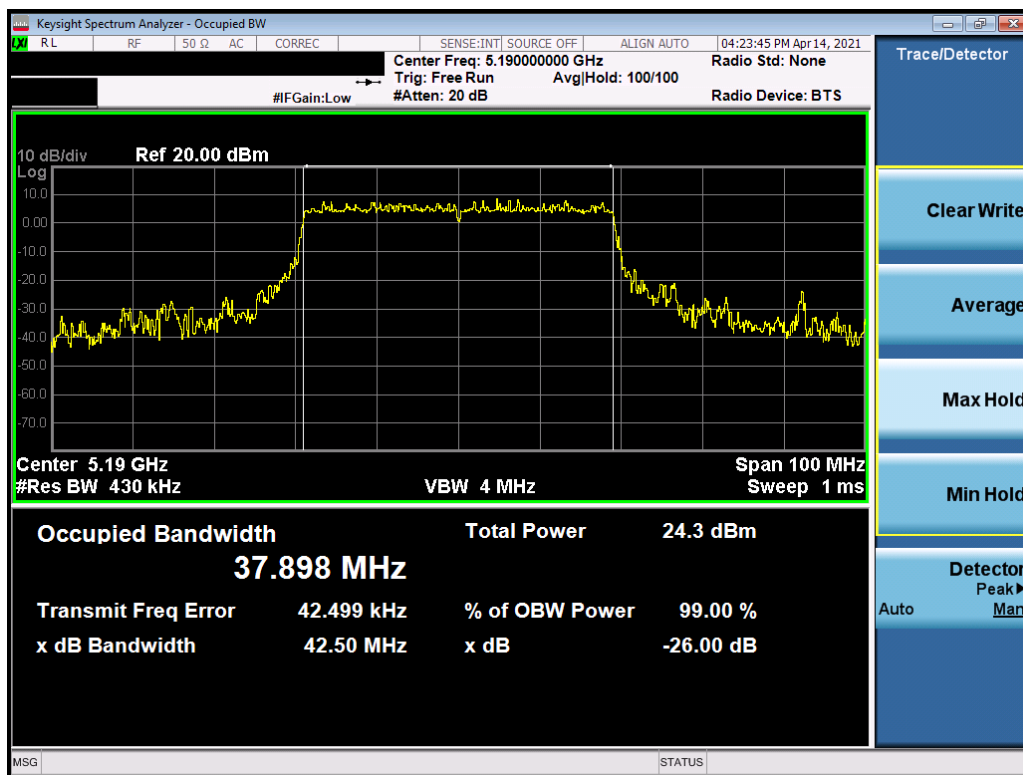


Plot 7-52. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax – 242 Tones (UNII Band 1) – Ch. 40)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 44 of 204 |

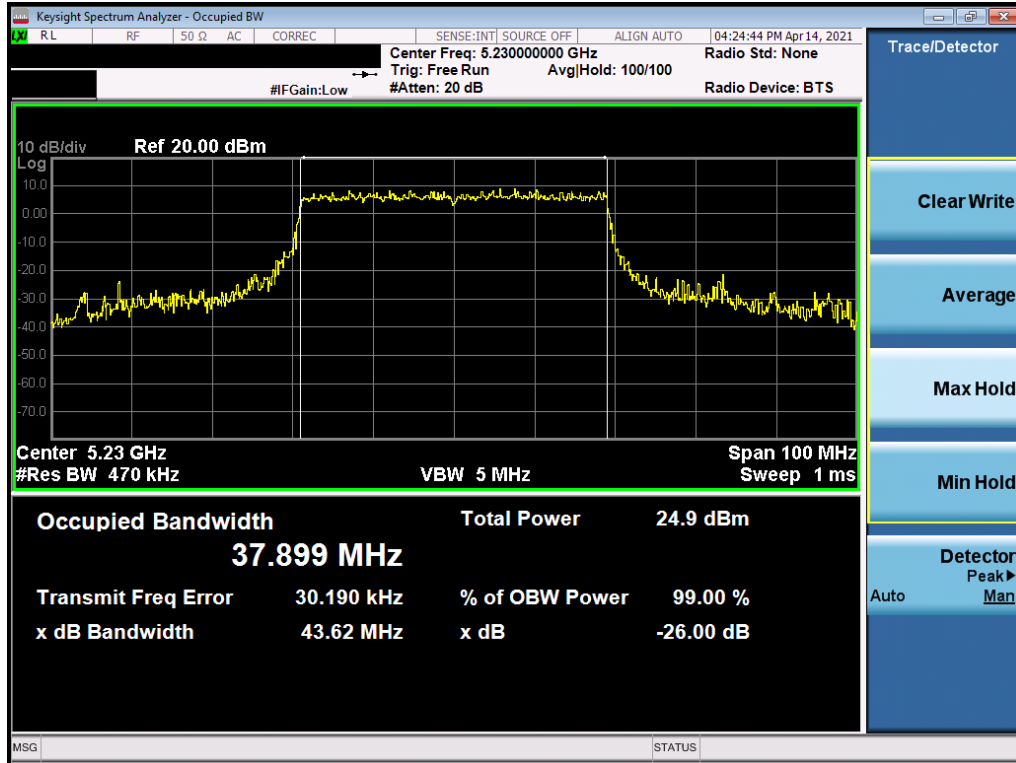


Plot 7-53. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax – 242 Tones (UNII Band 1) – Ch. 48)

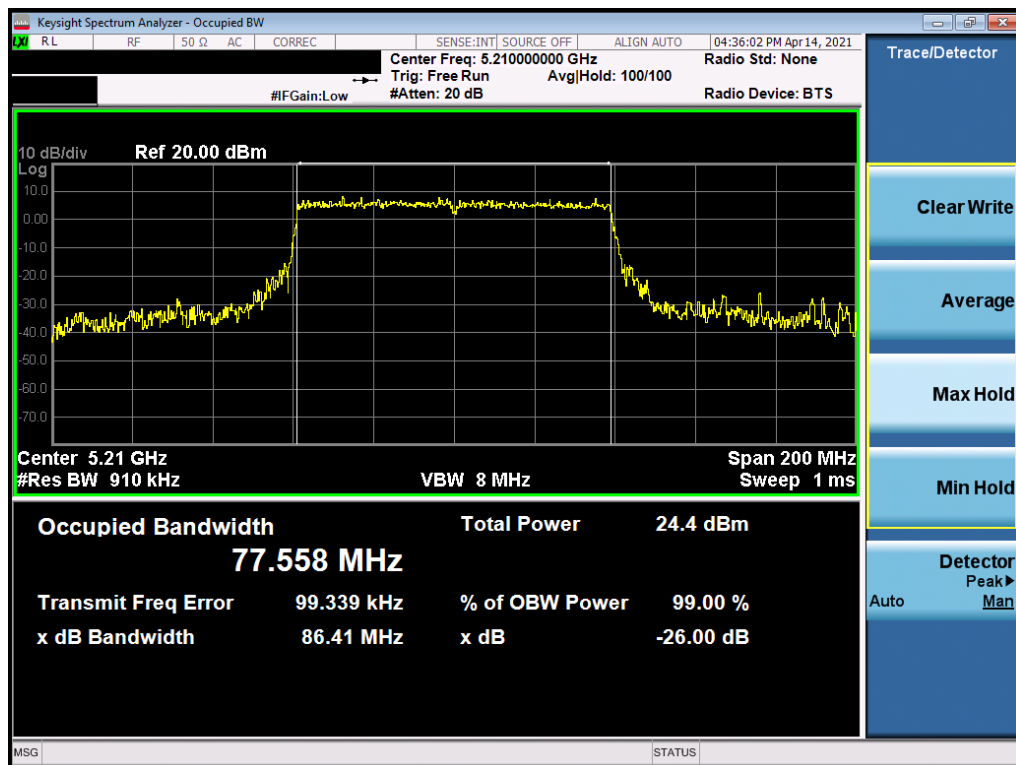


Plot 7-54. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax – 484 Tones (UNII Band 1) – Ch. 38)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 45 of 204 |

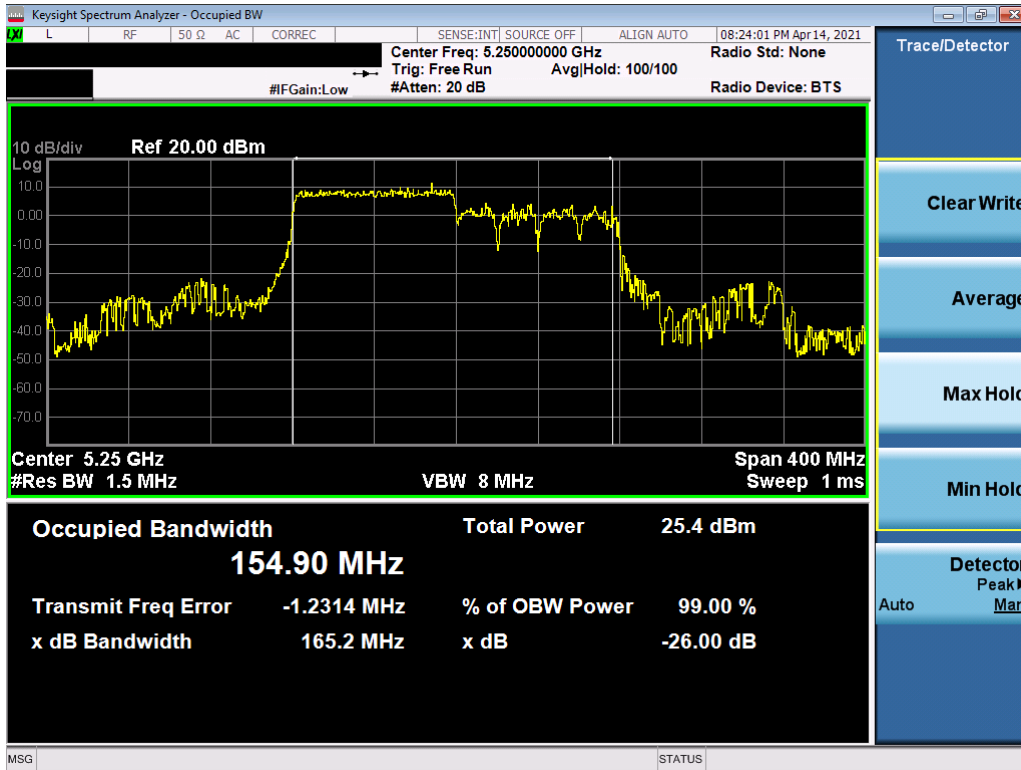


Plot 7-55. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax – 484 Tones (UNII Band 1) – Ch. 46)

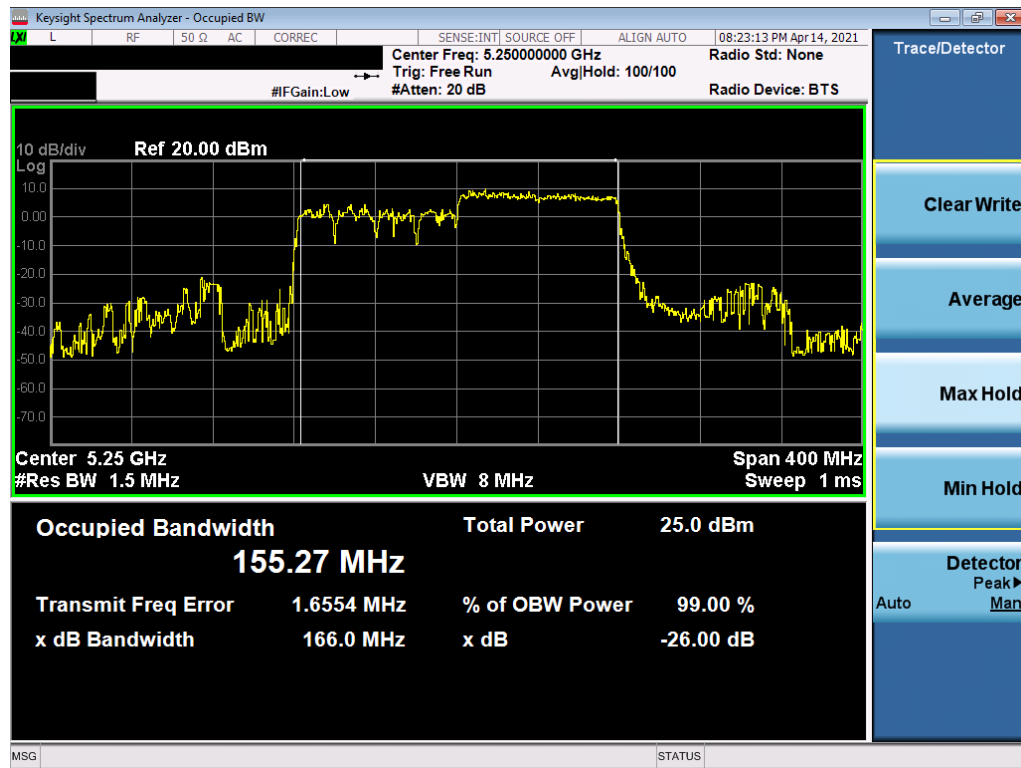


Plot 7-56. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax – 996 Tones (UNII Band 1) – Ch. 42)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 46 of 204 |

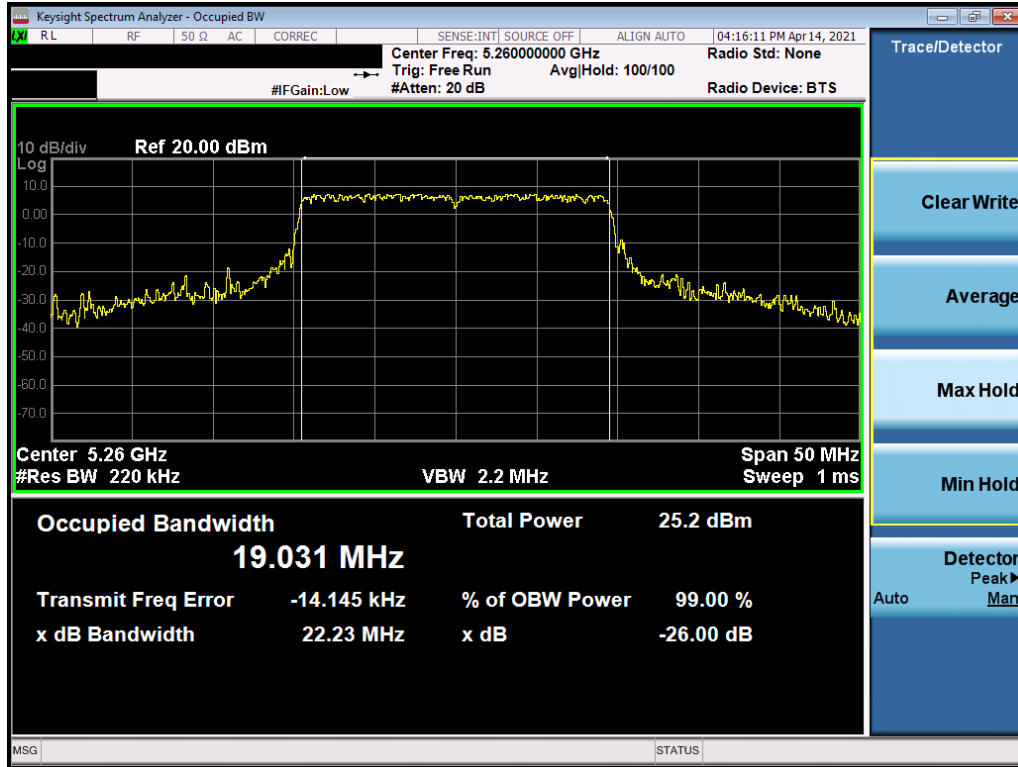


Plot 7-57. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW(L) 802.11ax – 996 Tones (UNII Band 1/2A) – Ch. 50)

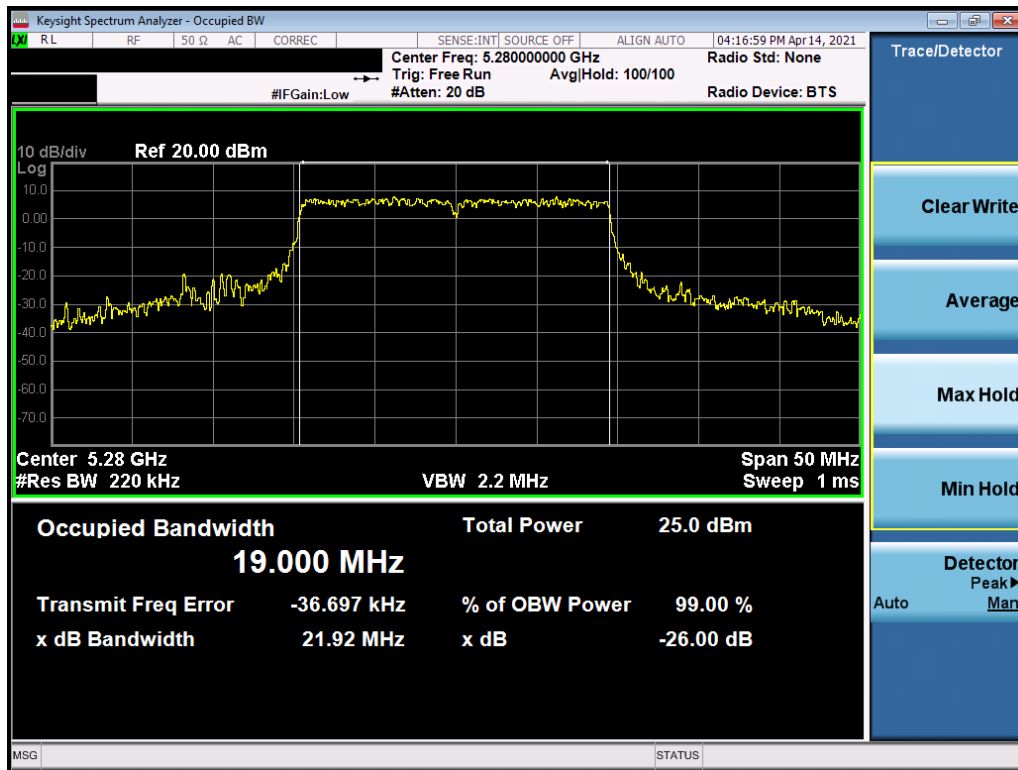


Plot 7-58. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW(U) 802.11ax – 996 Tones (UNII Band 1/2A) – Ch. 50)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 47 of 204 |

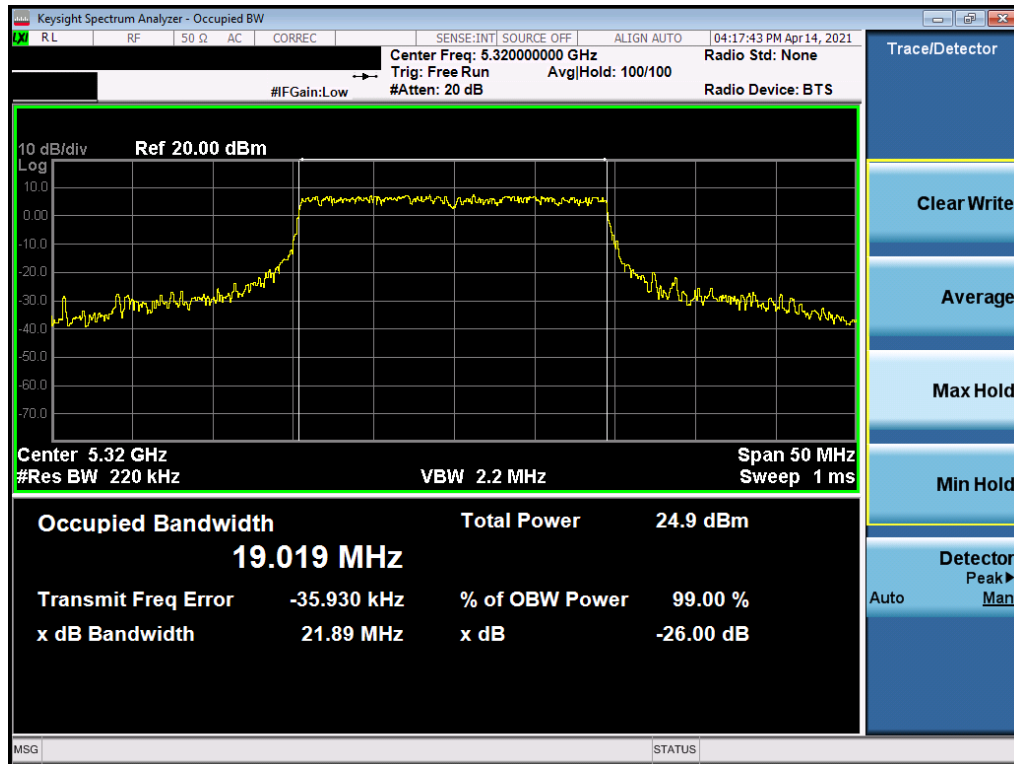


Plot 7-59. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax – 242 Tones (UNII Band 2A) – Ch. 52)

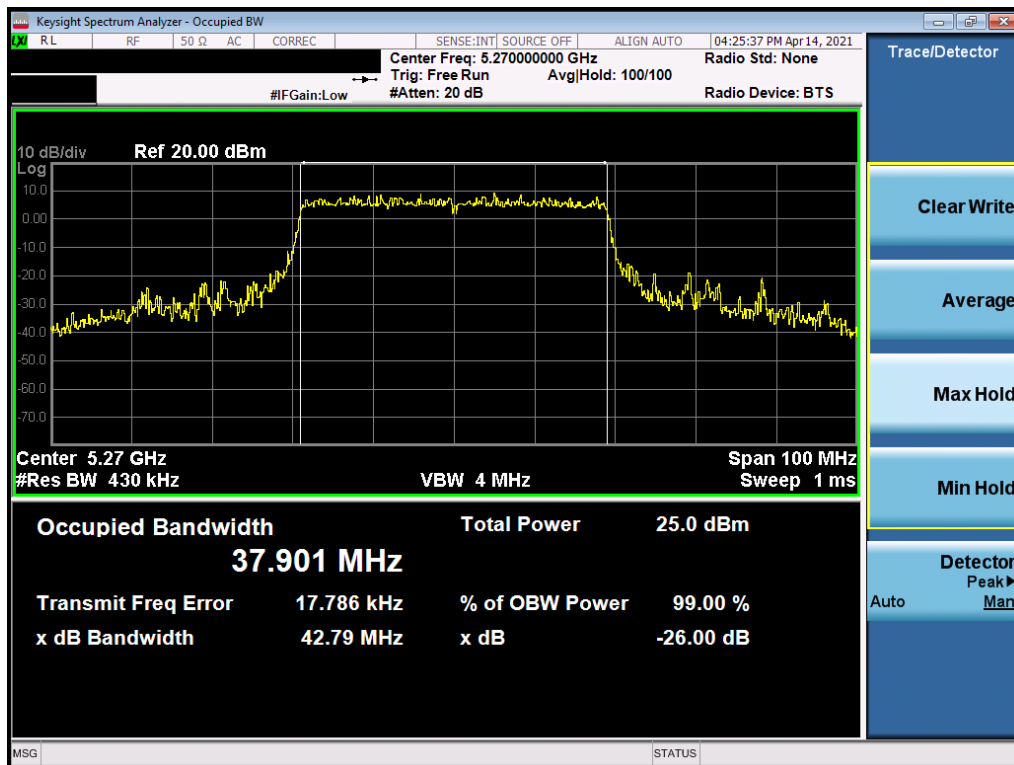


Plot 7-60. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax – 242 Tones (UNII Band 2A) – Ch. 56)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 48 of 204 |

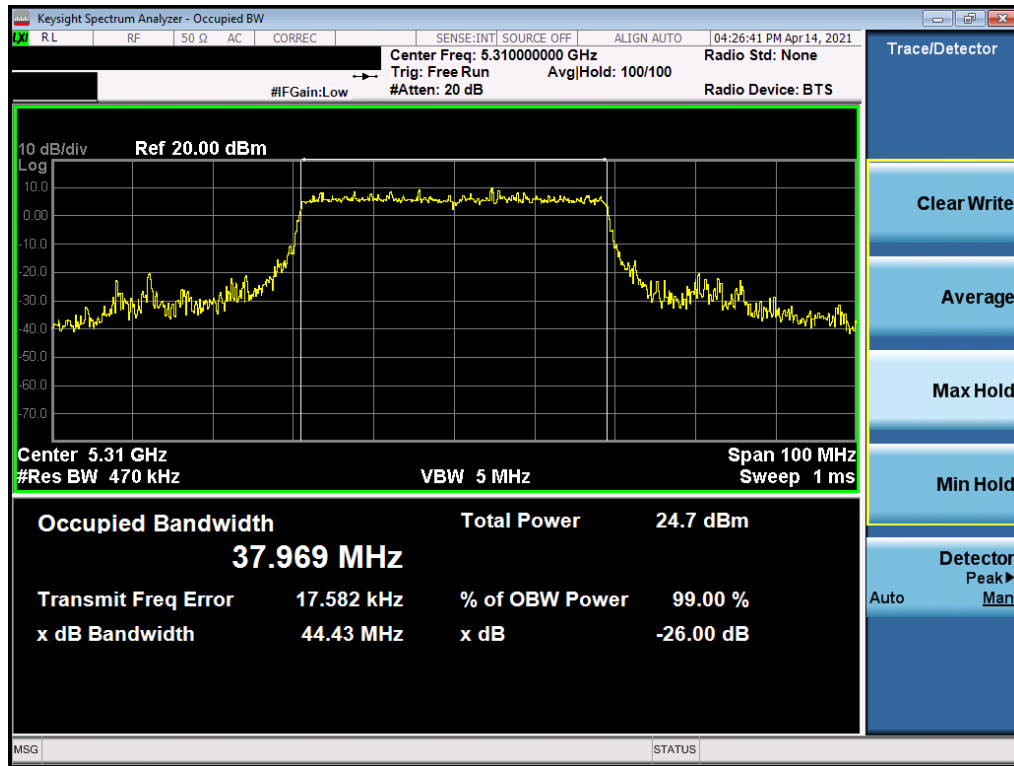


Plot 7-61. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax – 242 Tones (UNII Band 2A) – Ch. 64)

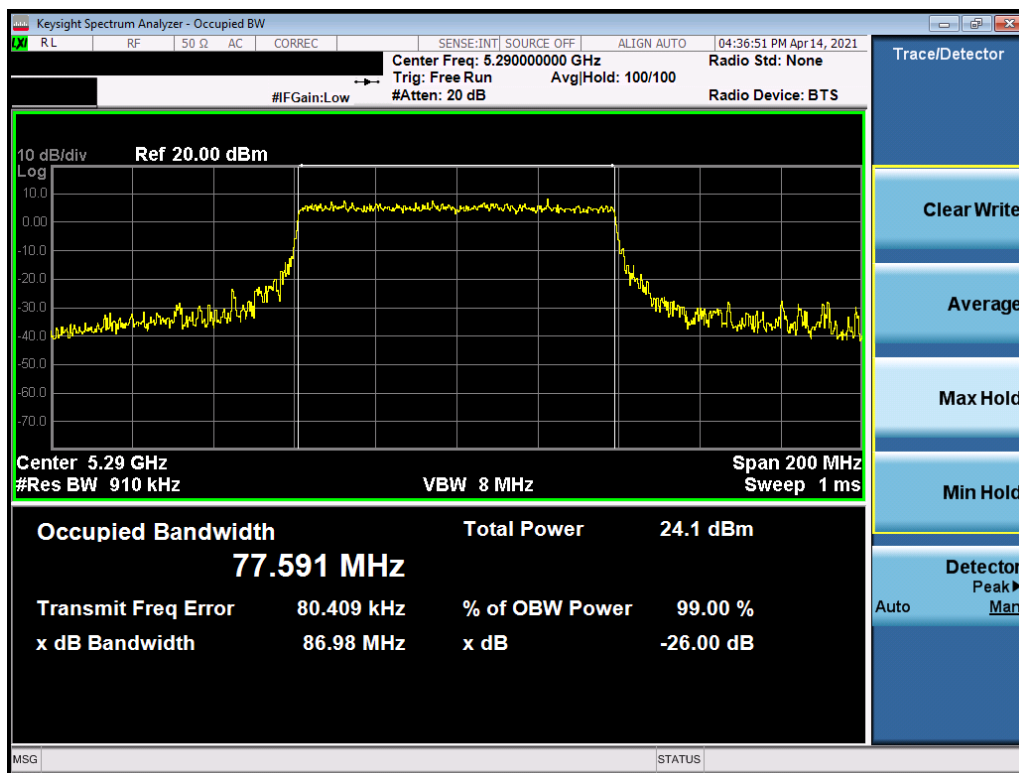


Plot 7-62. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax – 484 Tones (UNII Band 2A) – Ch. 54)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 49 of 204 |

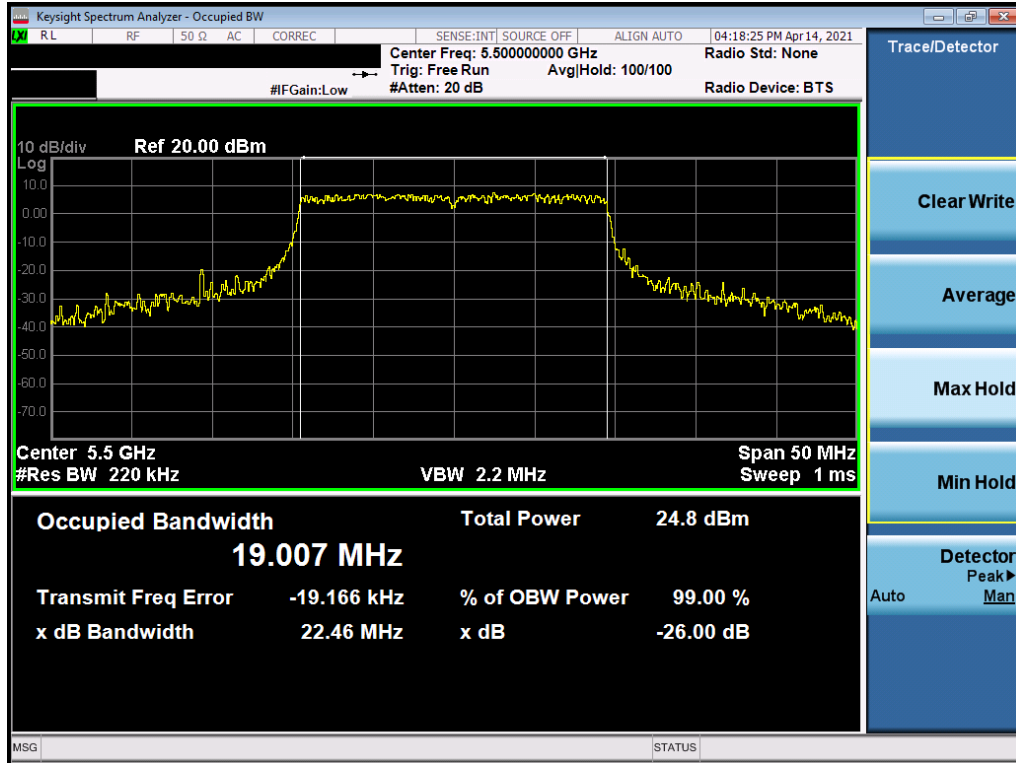


Plot 7-63. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax – 484 Tones (UNII Band 2A) – Ch. 62)

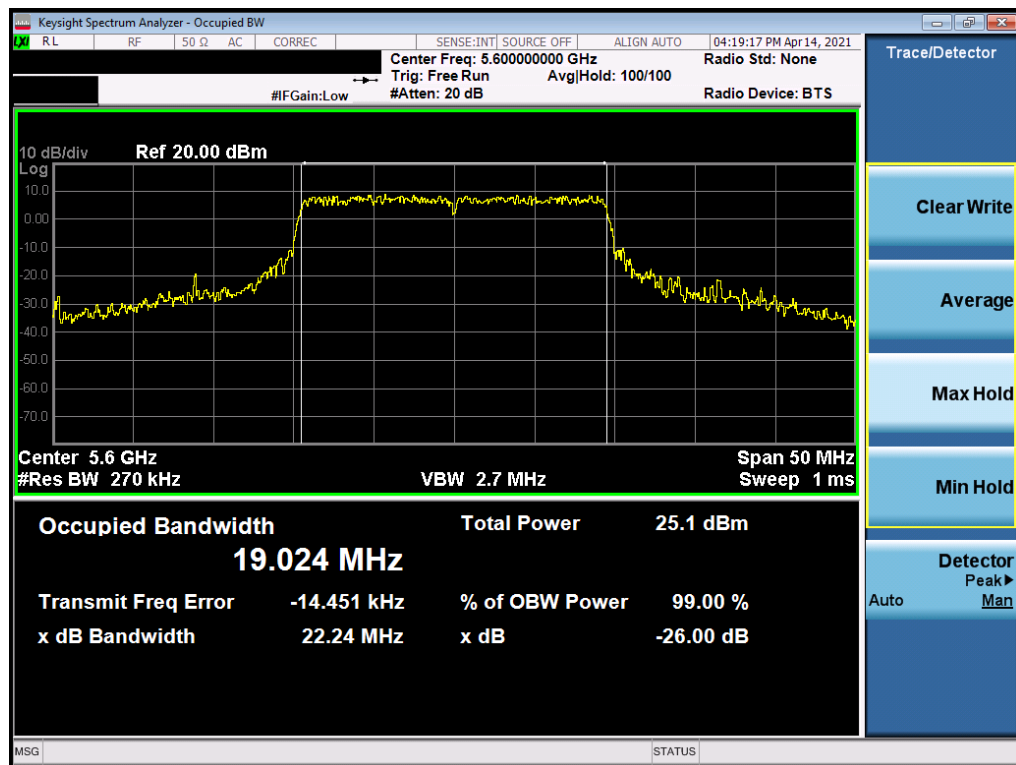


Plot 7-64. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax – 996 Tones (UNII Band 2A) – Ch. 58)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 50 of 204 |

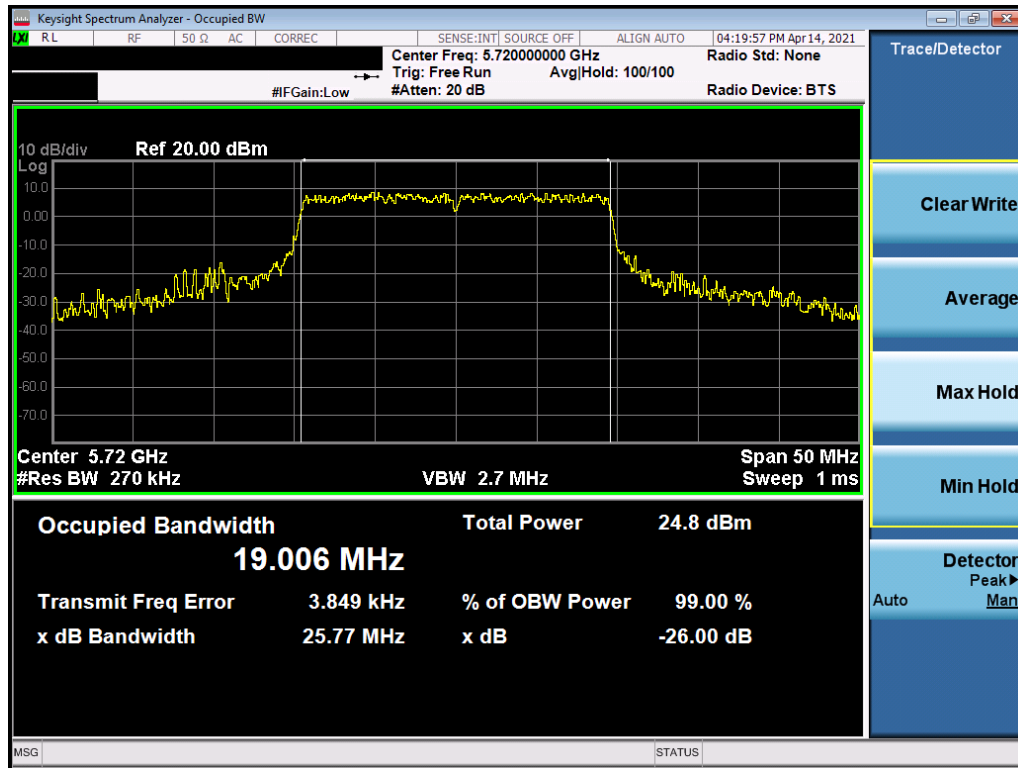


Plot 7-65. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax – 242 Tones (UNII Band 2C) – Ch. 100)

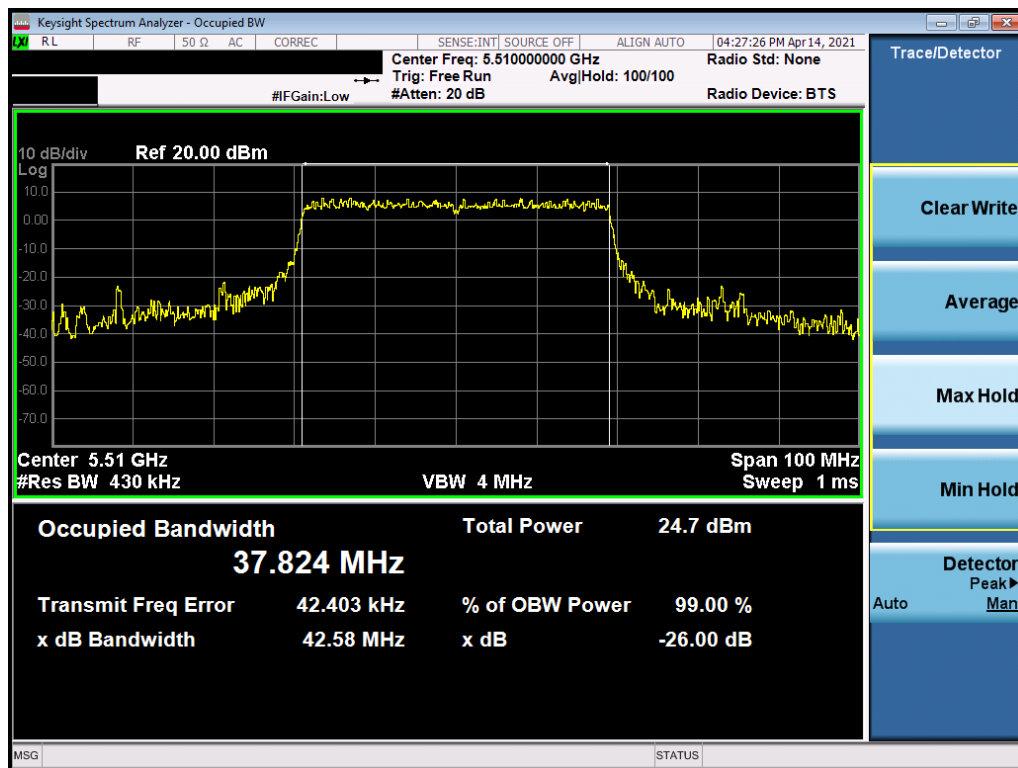


Plot 7-66. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax – 242 Tones (UNII Band 2C) – Ch. 120)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 51 of 204 |

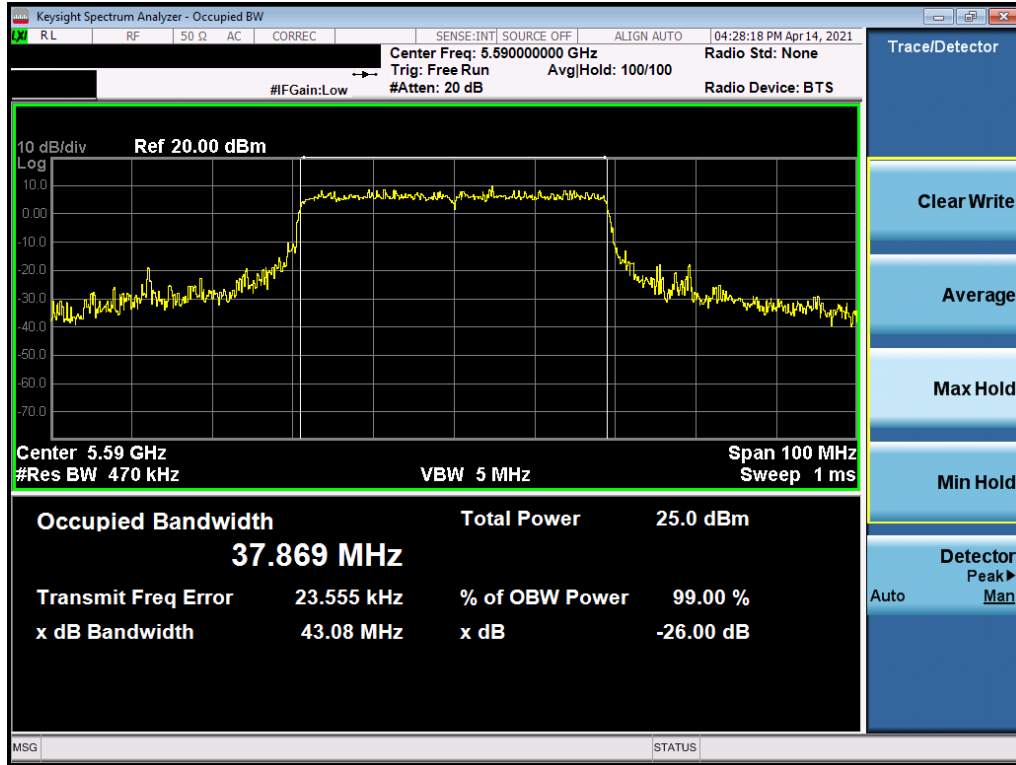


Plot 7-67. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax – 242 Tones (UNII Band 2C) – Ch. 144)

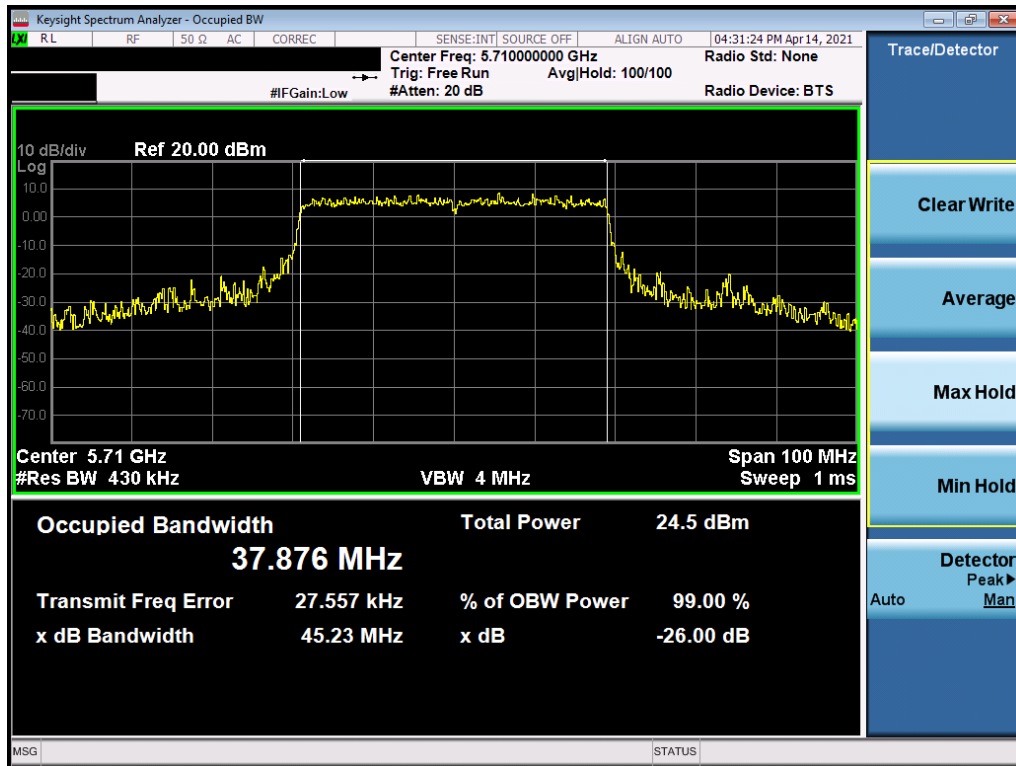


Plot 7-68. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax – 484 Tones (UNII Band 2C) – Ch. 102)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 52 of 204 |

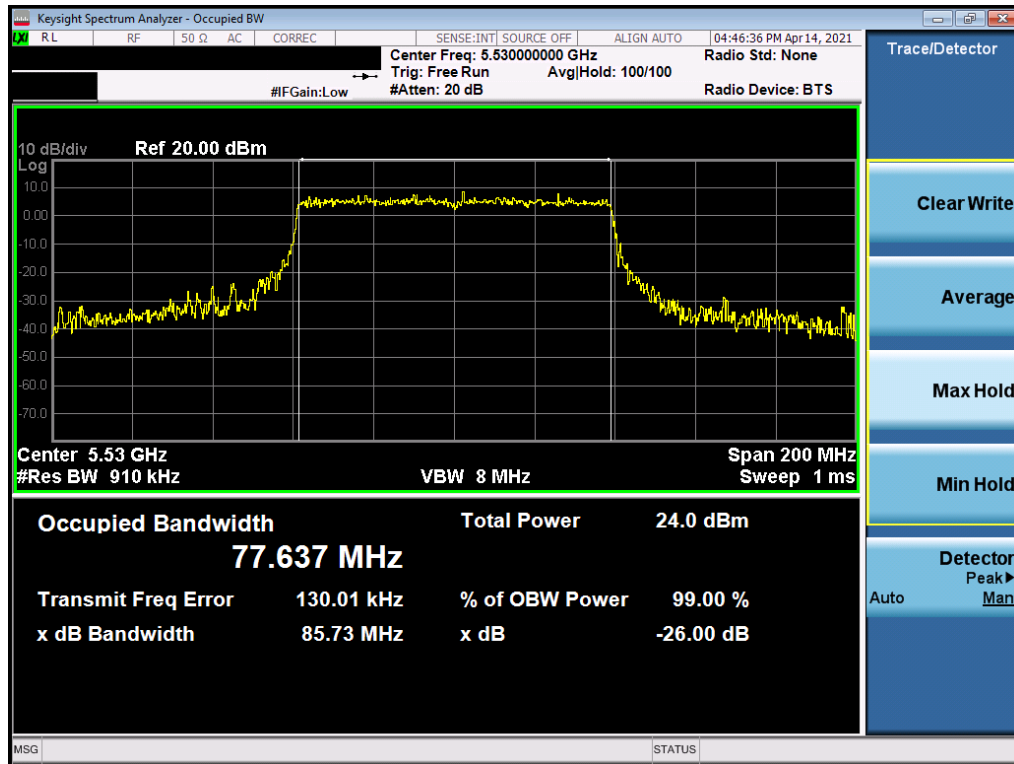


Plot 7-69. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax – 484 Tones (UNII Band 2C) – Ch. 118)

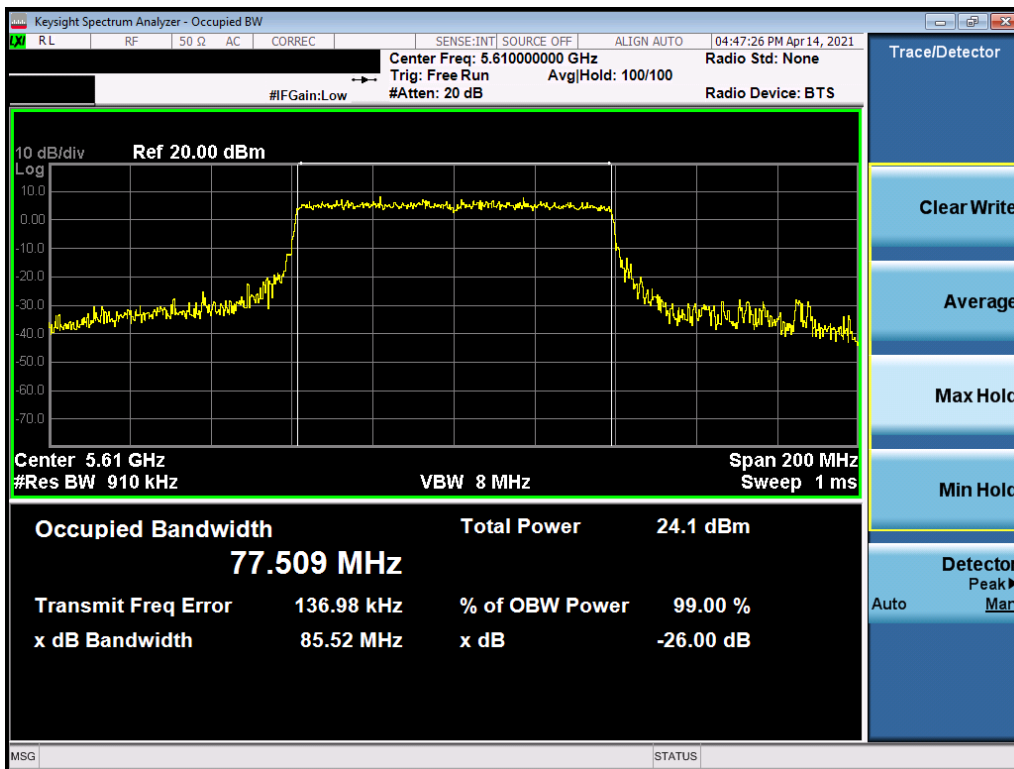


Plot 7-70. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax – 484 Tones (UNII Band 2C) – Ch. 142)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 53 of 204 |

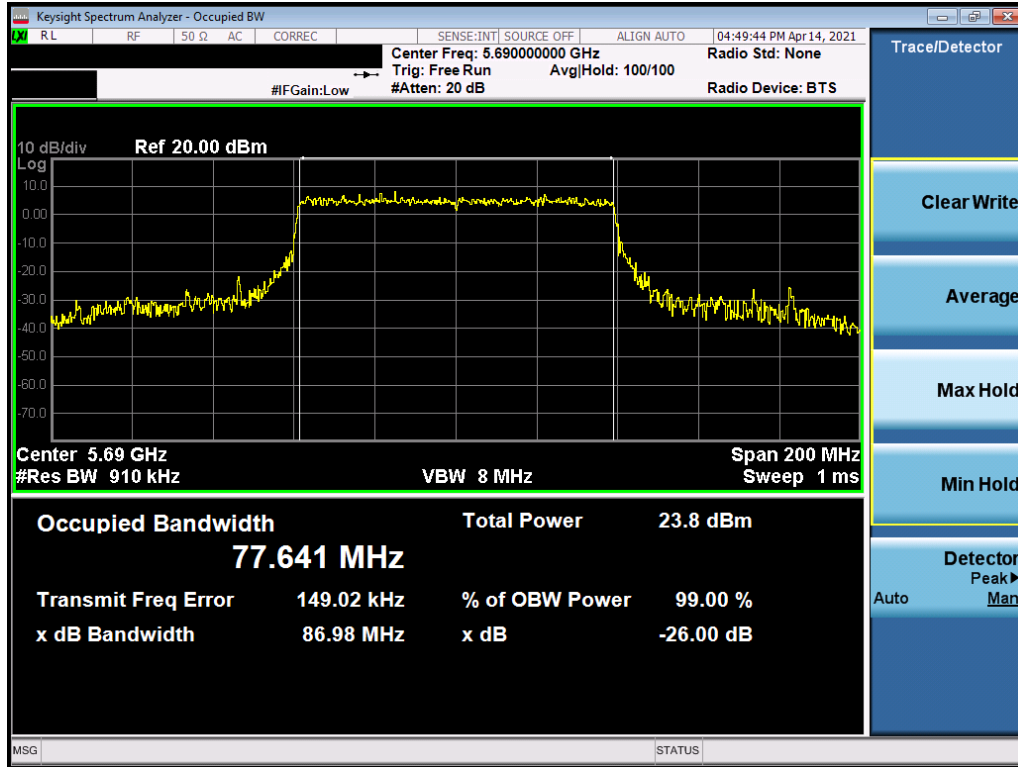


Plot 7-71. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax – 996 Tones (UNII Band 2C) – Ch. 106)

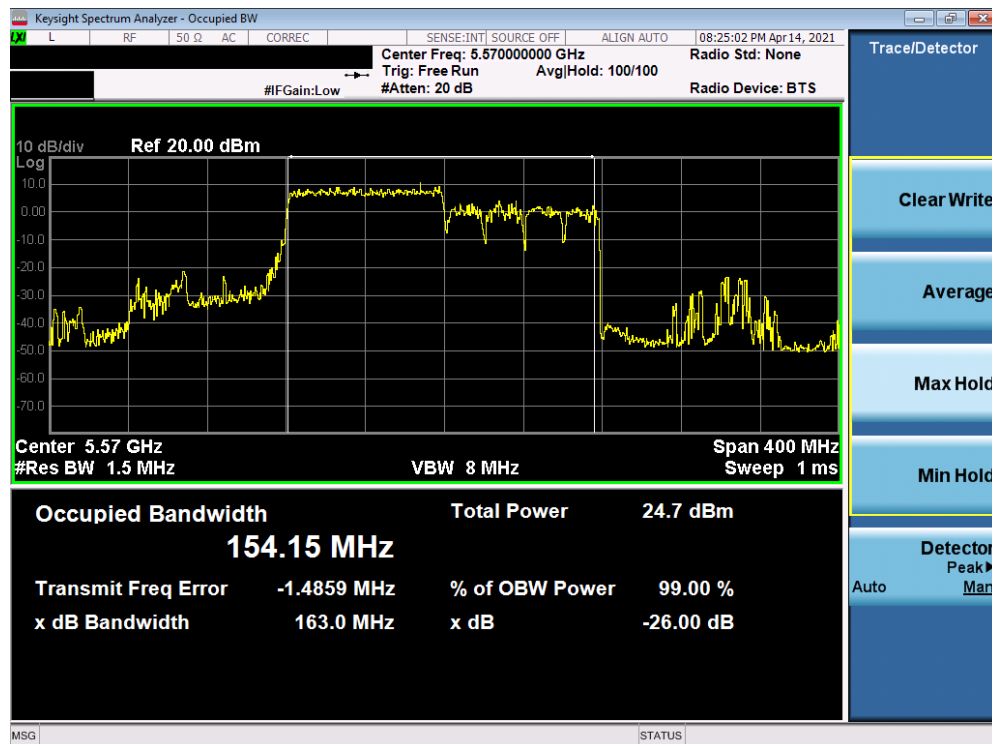


Plot 7-72. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax – 996 Tones (UNII Band 2C) – Ch. 122)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 54 of 204 |

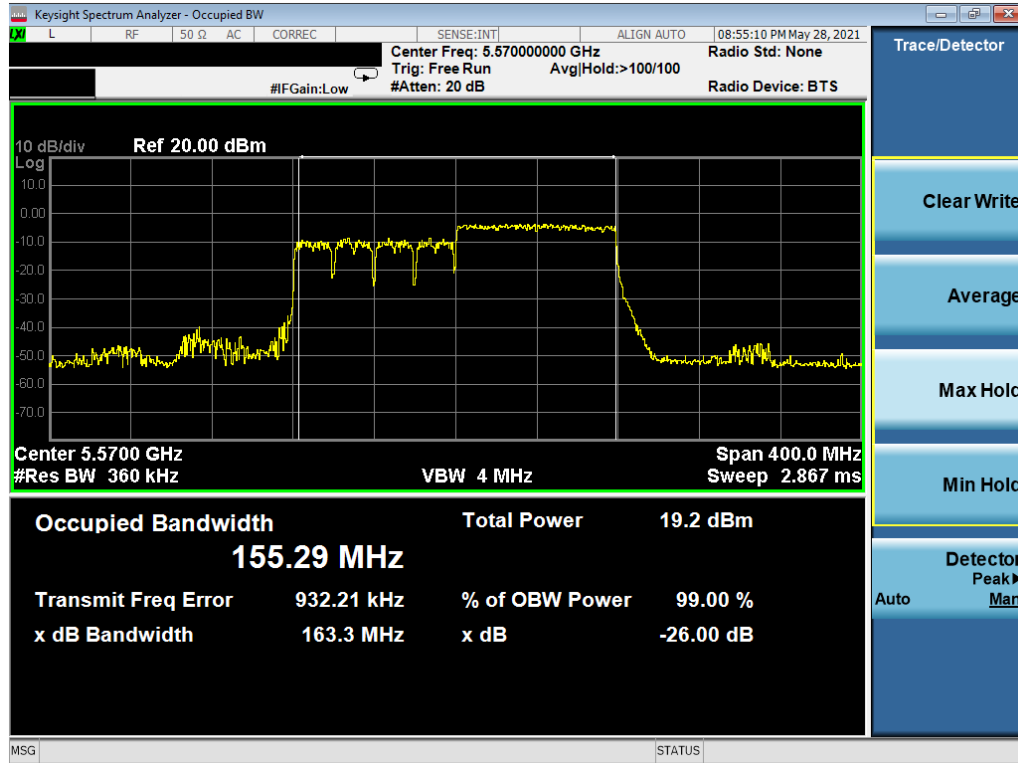


Plot 7-73. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax – 996 Tones (UNII Band 2C) – Ch. 138)



Plot 7-74. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW(L) 802.11ax – 996 Tones (UNII Band 2C) – Ch. 114)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 55 of 204 |



Plot 7-75. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW(U) 802.11ax – 996 Tones (UNII Band 2C) – Ch. 114)

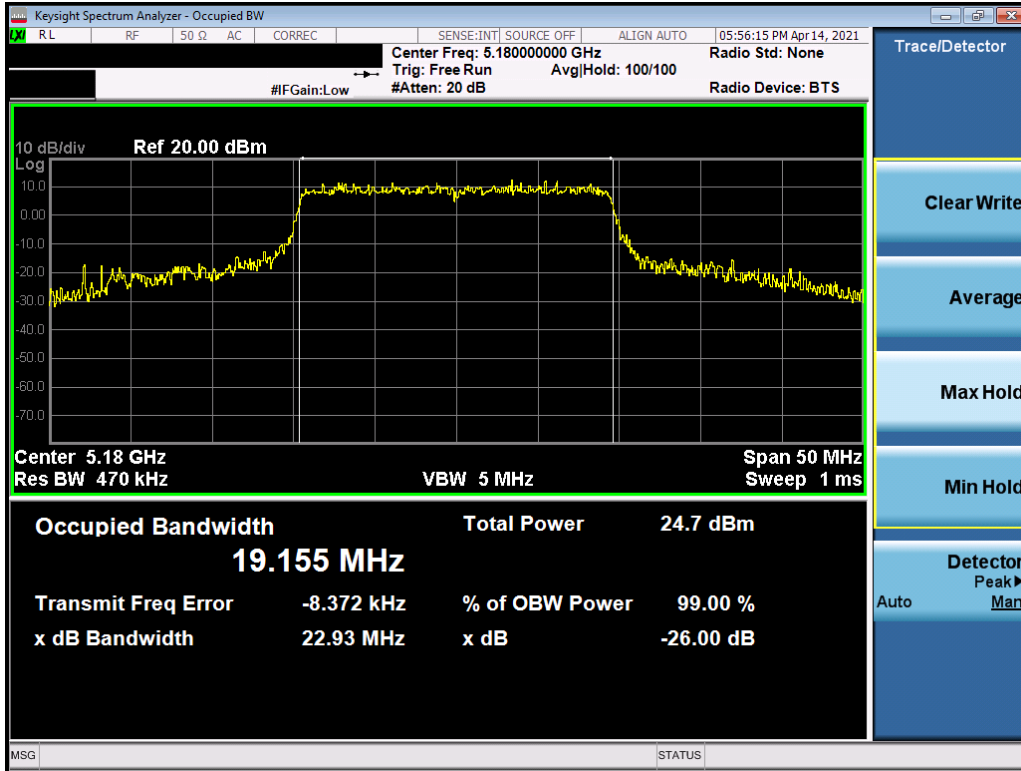
| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 56 of 204 |

MIMO Antenna 2 - 26dB Bandwidth Measurements (Full Tones)

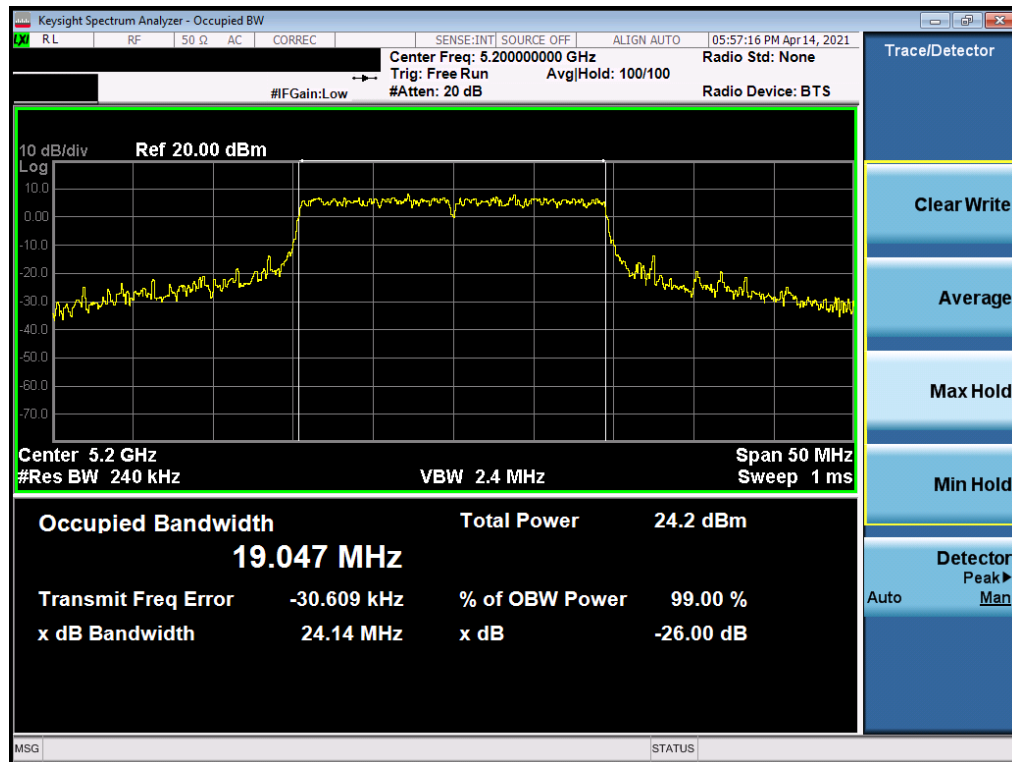
| | Frequency [MHz] | Channel No. | 802.11 Mode | Tones | Data Rate [Mbps] | Measured 26dB Bandwidth [MHz] |
|-----------|-----------------|-------------|---------------|-------|------------------|-------------------------------|
| Band 1 | 5180 | 36 | ax (20MHz) | 242T | MCS0 | 22.93 |
| | 5200 | 40 | ax (20MHz) | 242T | MCS0 | 24.14 |
| | 5240 | 48 | ax (20MHz) | 242T | MCS0 | 22.98 |
| | 5190 | 38 | ax (40MHz) | 484T | MCS0 | 45.22 |
| | 5230 | 46 | ax (40MHz) | 484T | MCS0 | 44.01 |
| | 5210 | 42 | ax (80MHz) | 996T | MCS0 | 89.02 |
| Band 1/2A | 5210 | 50 | ax (160MHz L) | 996T | MCS0 | 164.70 |
| | 5210 | 50 | ax (160MHz U) | 996T | MCS0 | 156.50 |
| Band 2A | 5260 | 52 | ax (20MHz) | 242T | MCS0 | 23.29 |
| | 5280 | 56 | ax (20MHz) | 242T | MCS0 | 24.02 |
| | 5320 | 64 | ax (20MHz) | 242T | MCS0 | 21.44 |
| | 5270 | 54 | ax (40MHz) | 484T | MCS0 | 45.17 |
| | 5310 | 62 | ax (40MHz) | 484T | MCS0 | 45.37 |
| | 5290 | 58 | ax (80MHz) | 996T | MCS0 | 89.02 |
| Band 2C | 5500 | 100 | ax (20MHz) | 242T | MCS0 | 24.06 |
| | 5600 | 120 | ax (20MHz) | 242T | MCS0 | 22.63 |
| | 5720 | 144 | ax (20MHz) | 242T | MCS0 | 24.18 |
| | 5510 | 102 | ax (40MHz) | 484T | MCS0 | 47.57 |
| | 5590 | 118 | ax (40MHz) | 484T | MCS0 | 45.39 |
| | 5710 | 142 | ax (40MHz) | 484T | MCS0 | 46.80 |
| | 5530 | 106 | ax (80MHz) | 996T | MCS0 | 87.60 |
| | 5610 | 122 | ax (80MHz) | 996T | MCS0 | 86.31 |
| | 5690 | 138 | ax (80MHz) | 996T | MCS0 | 86.18 |
| | 5570 | 114 | ax (160MHz L) | 996T | MCS0 | 166.40 |
| | 5570 | 114 | ax (160MHz U) | 996T | MCS0 | 165.20 |

Table 7-5. Conducted Bandwidth Measurements MIMO ANT2 (Full Tones)

| | | | | |
|---|---|---------------------------------------|---|-----------------------------------|
| FCC ID: A3LSMF926B |  | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 57 of 204 |

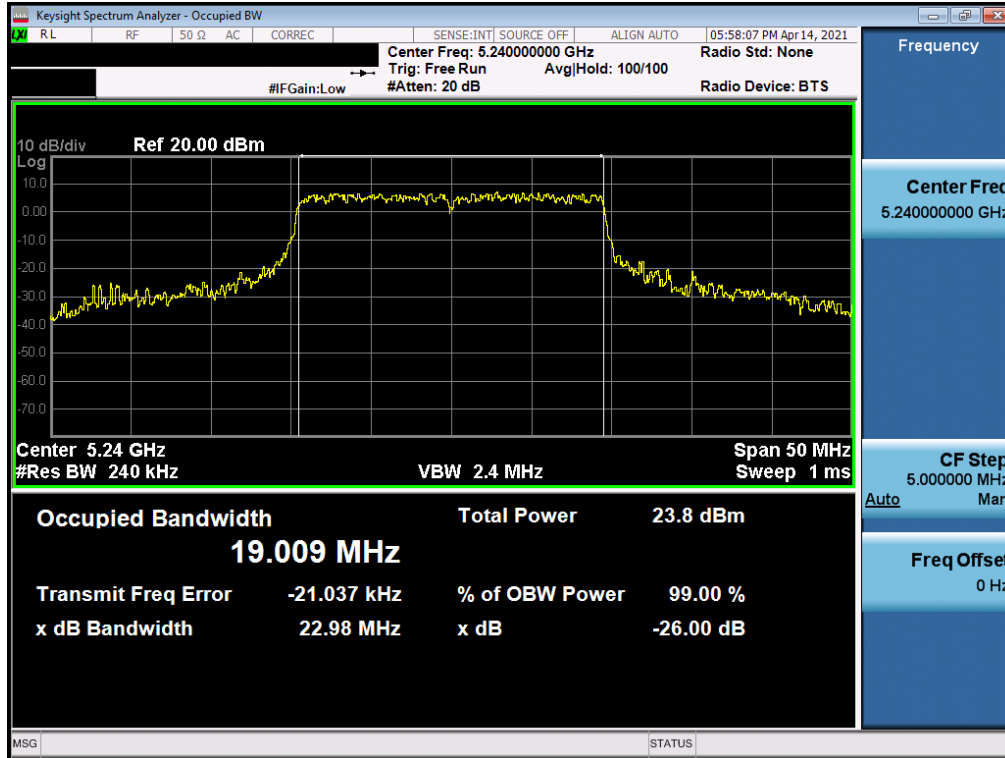


Plot 7-76. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 1) – Ch. 36)

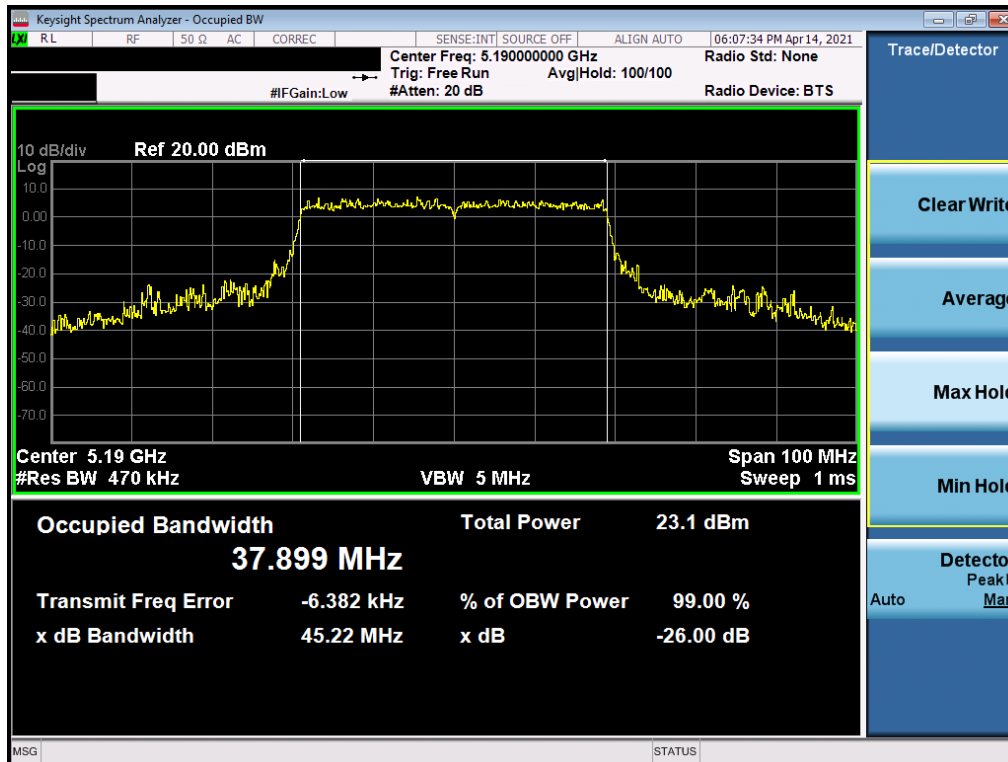


Plot 7-77. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 1) – Ch. 40)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 58 of 204 |

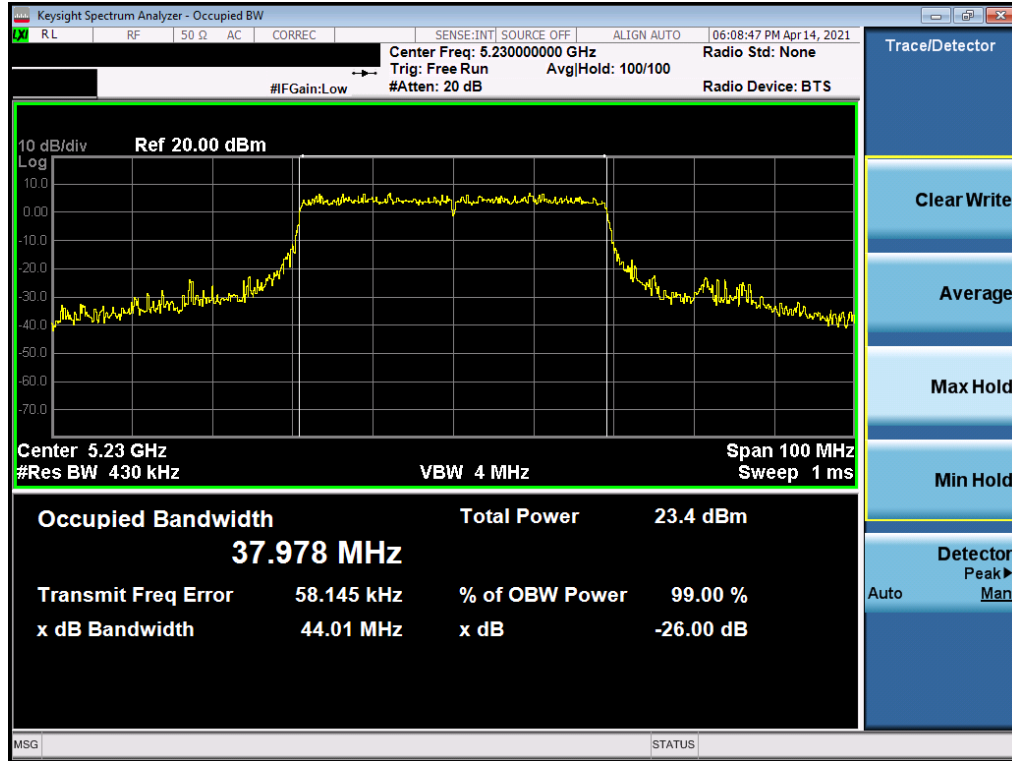


Plot 7-78. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 1) – Ch. 48)

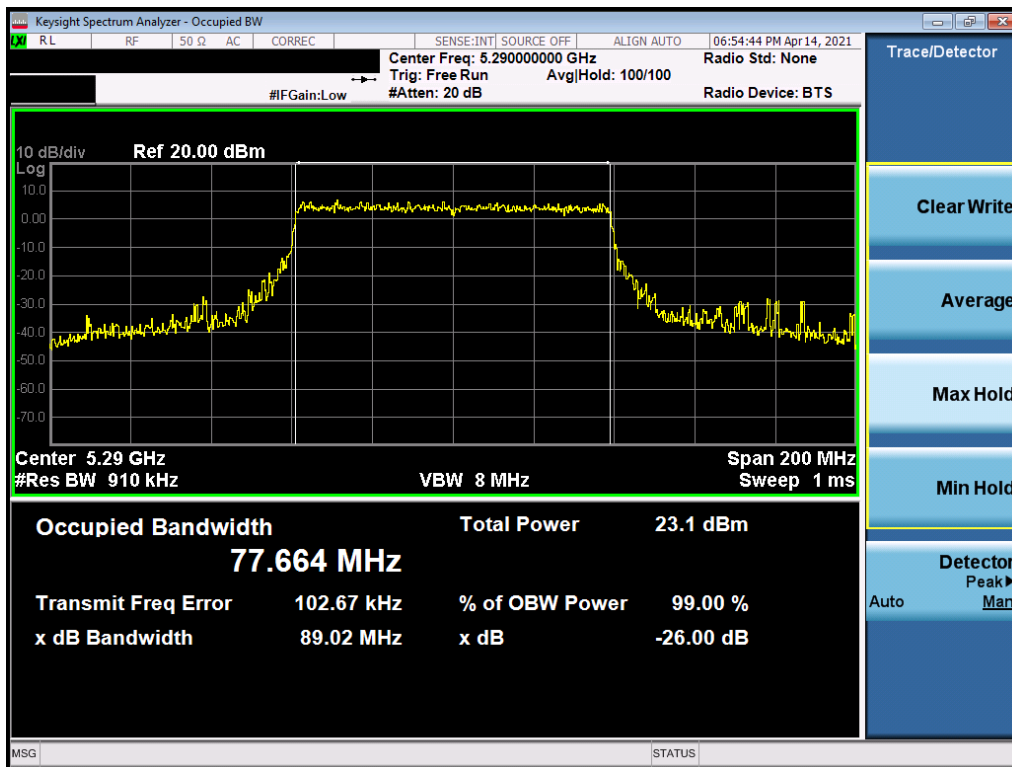


Plot 7-79. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax – 484 Tones (UNII Band 1) – Ch. 38)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 59 of 204 |

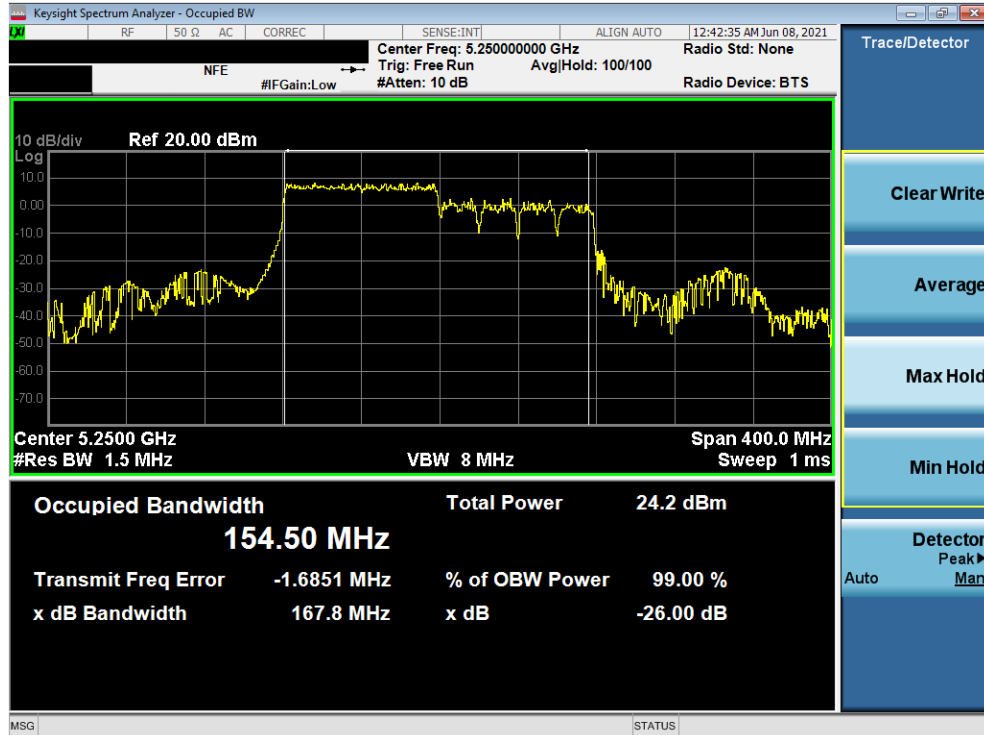


Plot 7-80. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax – 484 Tones (UNII Band 1) – Ch. 46)

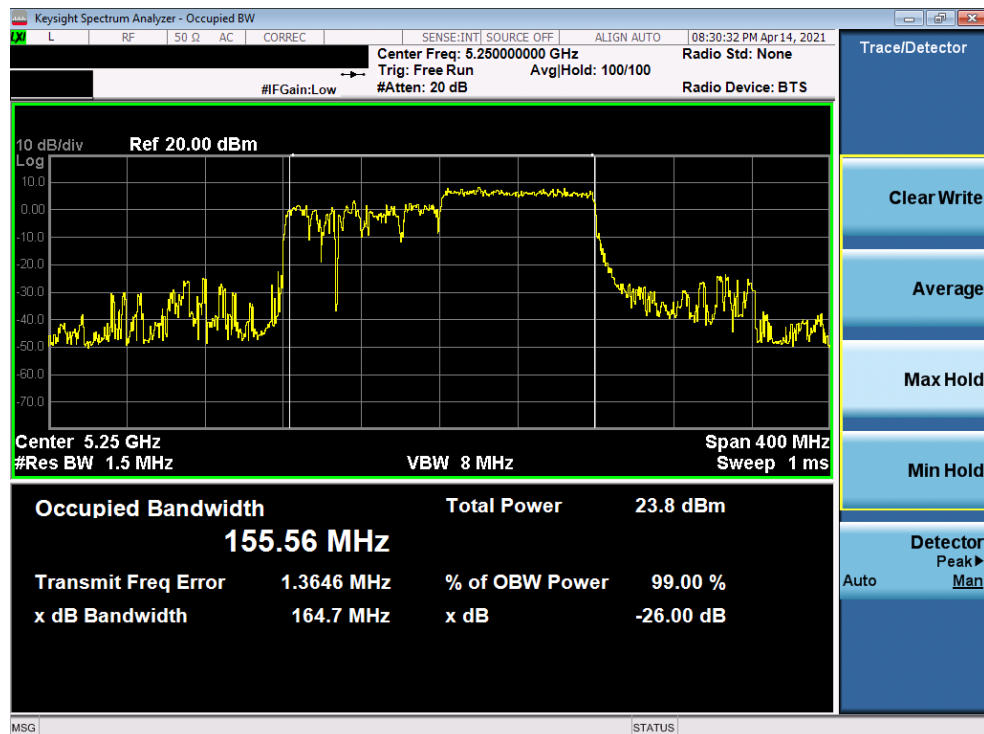


Plot 7-81. 26dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax – 996 Tones (UNII Band 1) – Ch. 42)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 60 of 204 |

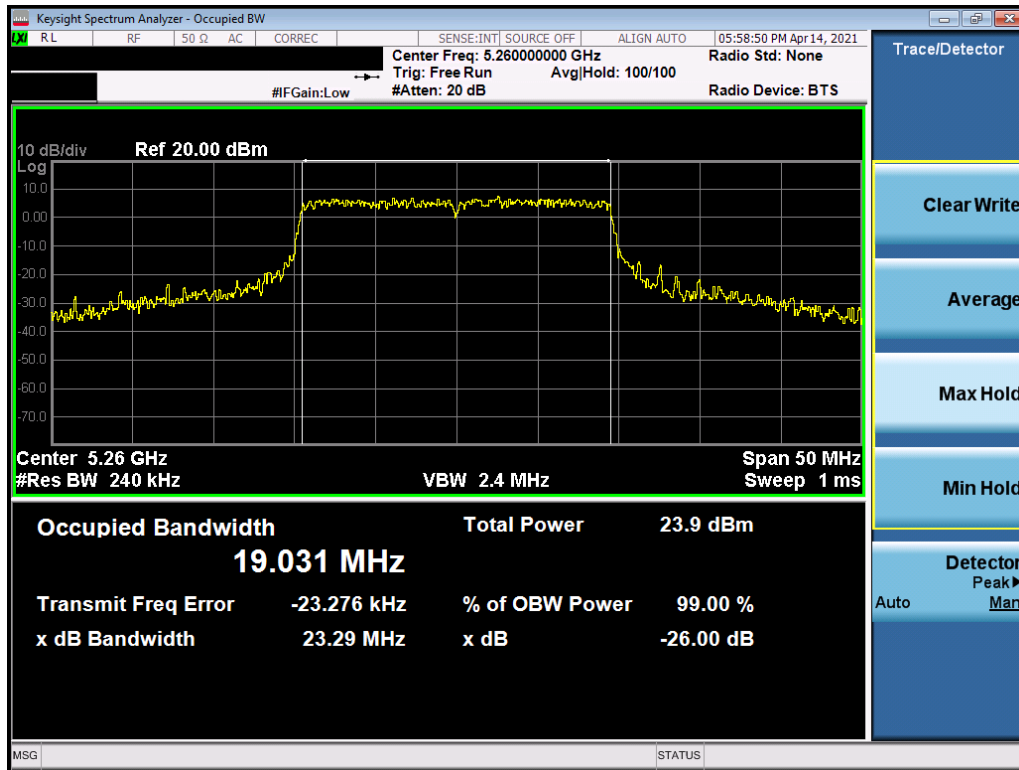


Plot 7-82. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW(L) 802.11ax – 996 Tones (UNII Band 1/2A) – Ch. 50)

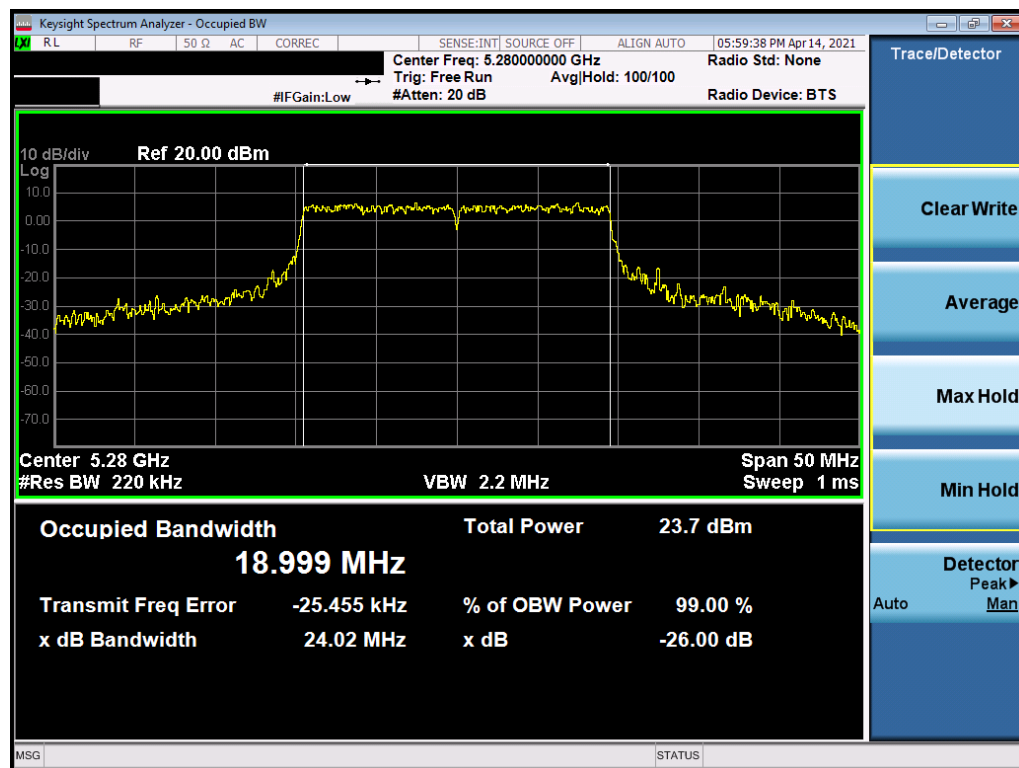


Plot 7-83. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW(U) 802.11ax – 996 Tones (UNII Band 1/2A) – Ch. 50)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 61 of 204 |

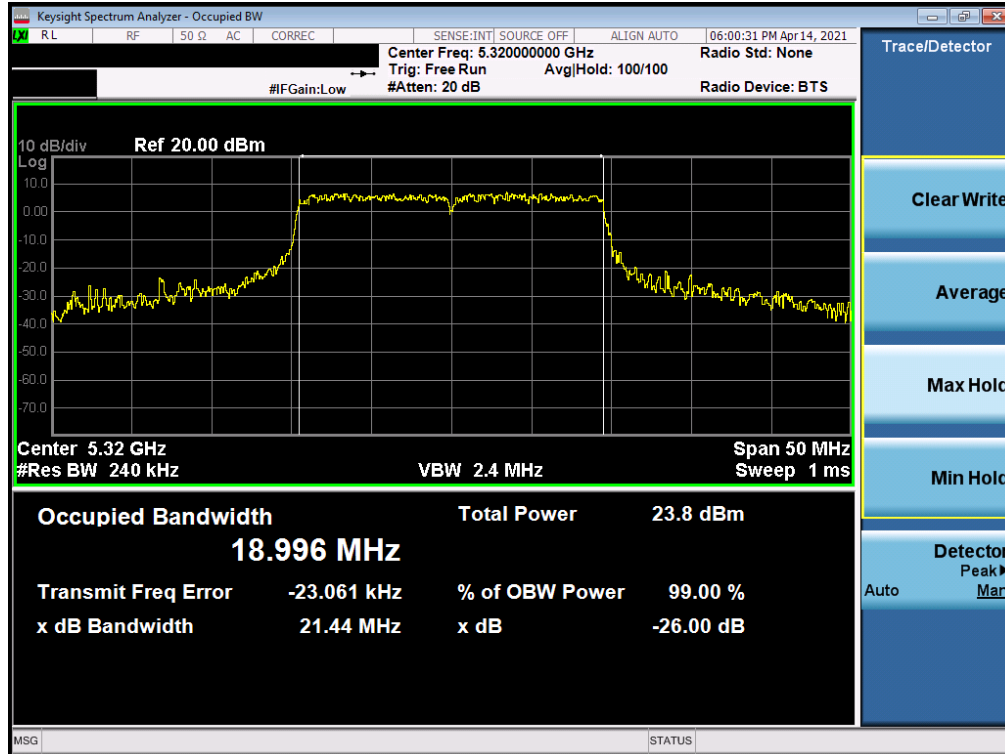


Plot 7-84. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 2A) – Ch. 52)

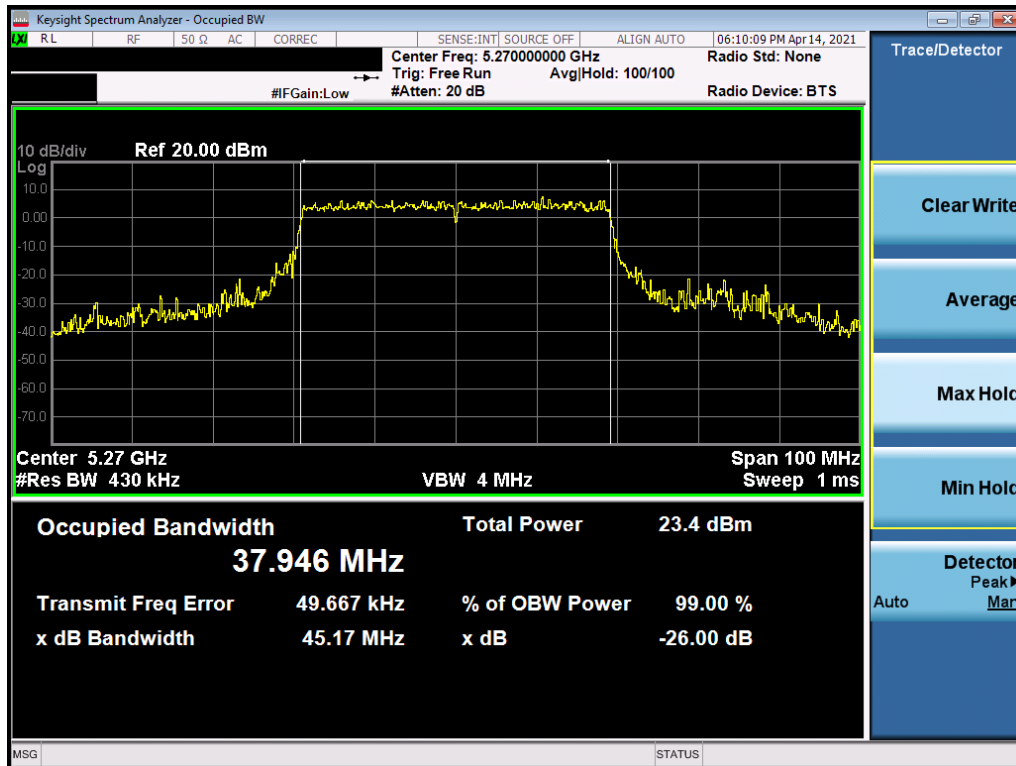


Plot 7-85. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 2A) – Ch. 56)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 62 of 204 |



Plot 7-86. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax – 242 Tones (UNII Band 2A) – Ch. 64)



Plot 7-87. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax – 484 Tones (UNII Band 2A) – Ch. 54)

| | | | | |
|---|--|---------------------------------------|----------------|-----------------------------------|
| FCC ID: A3LSMF926B | PCTEST Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
| Test Report S/N: 1M2104190044-13.A3L | Test Dates: 04/22/21 - 06/22/21 | EUT Type: Portable Handset | | Page 63 of 204 |