

PCTEST

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MEASUREMENT REPORT FCC PART 15.407

Applicant Name:

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

Date of Testing: 9/9 - 11/11/2021 Report Issue Date: 11/12/2021 Test Site/Location: PCTEST Lab. Columbia, MD, USA Test Report Serial No.: 1M2109090103-11-R1.A3L

FCC ID:

A3LSMS906U

APPLICANT:

Samsung Electronics Co., Ltd.

Application Type:	Certification		
Model:	SM-S906U		
Additional Model:	SM-S906U1		
EUT Type:	Portable Handset		
Frequency Range:	5180 – 5885MHz		
Modulation Type:	OFDM		
FCC Equipment Class:	Unlicensed National Information Infrastructure TX (NII)		
FCC Rule Part(s):	Part 15 Subpart E (15.407)		
Test Procedure(s):	ANSI C63.10-2013, KDB 789033 D02 v02r01,		
	KDB 662911 D01 v02r0, KDB 291074 DR01 v01,		
	KDB 648474 D03 v01r04		

Note: This revised Test Report (S/N: 1M2109090103-11-R1.A3L) supersedes and replaces the previously issued test report on the same subject device for the same type of testing as indicated. Please discard or destroy the previously issued test report(s) and dispose of it accordingly.

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



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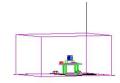


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MEASUREMENT REPORT



			MIMO	
UNII Band	Channel Bandwidth (MHz)	Tx Frequency (MHz)	Max. Power (mW)	Max. Power (dBm)
1		5180 - 5240	95.940	19.82
2A		5260 - 5320	99.083	19.96
2C	20	5500 - 5720	98.855	19.95
3		5745 - 5825	99.770	19.99
4		5845 - 5885	19.907	12.99
1		5190 - 5230	97.275	19.88
2A		5270 - 5310	94.842	19.77
2C	40	5510 - 5710	98.628	19.94
3		5755 - 5795	93.111	19.69
4		5835 - 5875	20.184	13.05
1		5210	84.140	19.25
2A		5290	87.700	19.43
2C	80	5530 - 5690	88.512	19.47
3		5775	75.162	18.76
3/4		5855	17.378	12.40
1/2A		5250	75.336	18.77
2B	160	5570	72.277	18.59
3/4		5815	14.622	11.65
		EUT Overview		

EUT Overview

Note: UNII Band 4 powers shown in the table above are EIRP values.

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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 ISED Standards (RSS).
- PCTEST facility is a registered (2451B) test laboratory with the site description on file with ISED.

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PRODUCT INFORMATION 2.0

2.1 **Equipment Description**

The Equipment Under Test (EUT) is the Samsung Portable Handset FCC ID: A3LSMS906U. The test data contained in this report pertains only to the emissions due to the EUT's UNII transmitter.

Test Device Serial No.: 1229M, 0292M, 0298M, 1224M, 0278M

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, 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			Band 4
Ch.	Frequency (MHz)		Ch.	Frequency (MHz)		Ch.	Frequency (MHz)		Ch.	Frequency (MHz)		Ch.	Frequency (MHz)
36	5180		52	5260		100	5500		149	5745		169	5845
:	:		:	:		:	:		:	:		:	:
40	5200		56	5280		120	5600		157	5785		173	5865
:	:		:	:		:	:		:	:			:
48	5240		64	5320		144	5720		165	5825		177	5885
	Table 2-1, 80	2.1	1a/8	02.11n / 802.1	1120	c / 80	2.11ax (20MH	z)	Freque	ency / Channe	el C)perat	tions

ble 2-1. 802.11a / 802.11n / 802.11ac / 802.11ax (20MHz) Frequency / Channel Operations

-	-		
Ban	h	1	
Dal	IM.		

Frequency

(MHz)

5190

2

5230

Ch.

38

÷

46

Ch.

54

•

62

	Band 2A
L	Frequency

(MHz)

5270

2

5310

Band 20

Ch.

102

:

118

:

142

138

Frequency

(MHz)

5510

2

5590

:

5710

	Band 3
Ch.	Frequency (MHz)
151	5755
:	:
159	5795

Band 4

Dand 1

Ch.	Frequency (MHz)
167	5835
:	:
175	5875

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

	Band 1		Band 2A Band 2C Ban		Band 3				
Ch.	Frequency (MHz)	Ch.	Frequency (MHz)		Ch.	Frequency (MHz)]	Ch.	Frequency (MHz)
42	5210	58	5290		106	5530		155	5775
				-	•				

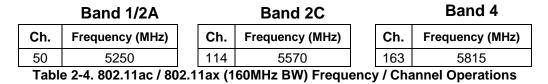
and 3		Danu 4
equency (MHz)	Ch.	Frequency (MHz)
5775	171	5855

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

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Notes:

5GHz NII operation is possible in 20MHz, and 40MHz, and 80MHz 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:

lode/Band	Duty Cycle [%]
	Cycle [%]
а	98.5
n (HT20)	97.0
ac (HT20)	97.1
ax (HT20)	96.7
n (HT40)	94.8
ac (HT40)	94.2
ax (HT40)	94.2
ac (HT80)	90.5
ax (HT80)	89.9
ac (HT160)	85.2
ax (HT160)	86.4
	n (HT20) ac (HT20) ax (HT20) n (HT40) ac (HT40) ac (HT40) ac (HT80) ax (HT80) ac (HT160)

Table 2-5. Measured Duty Cycles

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

WiFi Configurations		SE	M	CDD	
	oningurations	ANT1	ANT2	ANT1	ANT2
	11a	\checkmark	✓	✓	✓
	11n/ac/ax (20MHz)	\checkmark	✓	✓	✓
5GHz	11n/ac/ax (40MHz)	✓	✓	✓	✓
	11ac/ax (80MHz)	\checkmark	✓	\checkmark	✓

Table 2-6. Frequency / Channel Operations

✓ = Support ; × = NOT Support

SISO = Single Input Single Output

SDM = Spatial Diversity Multiplexing – MIMO function

CDD = Cyclic Delay Diversity - 2Tx Function

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3. This device supports simultaneous transmission operation, which allows for two SISO channels to operate independent of one another in the 2.4GHz (WLAN & BT) and 5GHz bands simultaneously on each antenna. The following tables show the worst case configurations determined during testing. The data for these configurations is contained in this test report. The BT + 5GHz case is not considered as worst case since the BT power is lower than the 2.4GHz WLAN power.

Configuration 1: ANT1 transmitting in 2.4GHz mode and ANT1 and ANT2 in 5GHz mode

Description	2.4 GHz Emission	5 GHz Emission
Antenna	1	1,2
Channel	6	100
Operating Frequency (MHz)	2437	5500
Data Rate (Mbps)	6	6
Mode	b	а

Table 2-7. Config-1 (ANT1 2.4GHz & ANT2 5GHz)

Configuration 2: ANT1 and ANT2 transmitting in 5GHz mode and ANT2 in 2.4GHz mode

Description	2.4 GHz Emission	5 GHz Emission
Antenna	2	1,2
Channel	6	100
Operating Frequency (MHz)	2437	5500
Data Rate (Mbps)	6	6
Mode	b	а

Table 2-8. Config-2 (ANT1 5GHz & ANT2 2.4GHz)

Configuration 3: ANT1 and ANT2 both transmitting in 2.4GHz and 5GHz modes simultaneously

Description	2.4 GHz Emission	5 GHz Emission
Antenna	1, 2	1, 2
Channel	6	100
Operating Frequency (MHz)	2437	5500
Data Rate (Mbps)	6	6
Mode	b	а

Table 2-9. Config-3 (ANT1 MIMO & ANT2 MIMO)

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Configuration 4: ANT1 and ANT2 both transmitting in 2.4GHz and 6GHz modes simultaneously

Description	2.4 GHz Emission	6 GHz Emission
Antenna	1, 2	1, 2
Channel	6	117
Operating Frequency (MHz)	2437	6535
Data Rate (Mbps)	6	6
Mode	b	а

Table 2-10. Config-4 (ANT1 MIMO & ANT2 MIMO)

2.3 Antenna Description

Following antenna was used for the testing.

Frequency [GHz]	Antenna 1 Gain (dBi)	Antenna 2 Gain (dBi)	Directional Gain [dBi]
5.150	-6.4	-6.7	-3.54
5.300	-6.4	-6.5	-3.44
5.500	-6.5	-7.0	-3.74
5.725	-6.8	-7.0	-3.89
5.960	-7.2	-7.4	-4.29

Table 2-11. 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, 7.3, 7.4, and 7.5 for antenna port conducted emissions test setups.

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-N5100 while operating under normal conditions in a

2.5 Software and Firmware

The test was conducted with firmware version S906USQU0AUJ9 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, $50\Omega/50\mu$ H 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 7.8. The EMI Receiver mode of the Agilent MXE was used to perform AC line conducted emissions testing.

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3.3 Radiated Emissions

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 (±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)	9/7/2021	Annual	9/7/2022	WL25-1
-	WL25-2	Conducted Cable Set (25GHz)	9/7/2021	Annual	9/7/2022	WL25-2
-	WL25-3	Conducted Cable Set (25GHz)	9/7/2021	Annual	9/7/2022	WL25-3
-	WL40-1	Conducted Cable Set (40GHz)	9/10/2021	Annual	9/10/2022	WL40-1
Agilent	N9038A	MXE EMI Receiver	8/11/2020	Annual	12/1/2021	MY51210133
Agilent	N9030A	PXA Signal Analyzer (44GHz)	7/21/2021	Annual	7/21/2022	MY49430494
Anritsu	ML2495A	Power Meter	1/18/2021	Annual	1/18/2022	941001
Anritsu	MA2411B	Pulse Power Sensor	3/8/2021	Annual	3/8/2022	1339007
Emco	3115	Horn Antenna (1-18GHz)	6/18/2020	Biennial	6/18/2022	9704-5182
Emco	3116C	Horn Antenna (18 - 40GHz)	5/112021	Biennial	5/11/2023	218893
ETS-Lindgren	3816/2NM	Line Impedance Stabilization Network	7/9/2020	Biennial	7/9/2022	114451
Keysight Technologies	N9030A	PXA Signal Analyzer (44GHz)	8/17/2020	Annual	12/17/2021	MY52350166
Pasternack	NMLC-2	Line Conducted Emissions Cable (NM)	9/10/2021	Annual	9/10/2022	NMLC-2
Keysight Technologies	N9030A	PXA Signal Analyzer (44GHz)	7/21/2021	Annual	7/12/2022	MY49430494
Rohde & Schwarz	ESU26	EMI Test Receiver (26.5GHz)	8/3/2021	Annual	8/3/2022	100342
Rohde & Schwarz	ESW44	EMI Test Receiver 2Hz to 44GHz	1/21/2021	Annual	1/21/2022	101716
Rohde & Schwarz	FSW67	Signal / Spectrum Analyzer	8/25/2021	Annual	8/25/2022	103200
Rohde & Schwarz	SFUNIT-Rx	Shielded Filter Unit	9/3/2021	Annual	9/3/2022	102138
Solar Electronics	8012-50-R-24-BNC	Line Impedance Stabilization Network	9/21/2021	Biennial	9/21/2023	310233
Schwarzbeck	VULB9162	Bilog Antenna	4/17/2020		4/17/2022	00301

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:	A3LSMS906U
FCC Classification:	Unlicensed National Information Infrastructure (UNII)

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
N/A	26dB Bandwidth	N/A		PASS	Section 7.2
15.407(e)	6dB Bandwidth	>500kHz(5725-5850MHz)		PASS	Section 7.3
15.407 (a)(1)(iv), (a)(2), (a)(3)(i)	Maximum Conducted Output Power	Maximum conducted powers must meet the limits detailed in 15.407 (a)		PASS	Section 7.4
15.407(a)(3)(iii)	e.i.r.p.(UNII-4)	30dBm	CONDUCTED	PASS	Section 7.4
15.407 (a)(1)(iv), (a)(2), (a)(3)(i)	Maximum Power Spectral Density	Maximum power spectral density must meet the limits detailed in 15.407 (a)		PASS	Section 7.5
15.407(a)(3)(iii)	Maximum e.i.r.p. Density (UNII-4)	14dBm/MHz		PASS	Section 7.5
15.407(h)	Dynamic Frequency Selection	See DFS Test Report		PASS	See DFS Test Report
15.407(b)(1), (b)(2), (b)(3), (b)(4)(i), (b)(5)(ii), (b)(5)(iii)	Undesirable Emissions	Undesirable emissions must meet the limits detailed in 15.407(b)	RADIATED	PASS	Section 7.6, 7.7
15.205, 15.209	General Field Strength Limits (Restricted Bands and Radiated Emission Limits)	Emissions in restricted bands must meet the radiated limits detailed in 15.209		PASS	Section 7.6, 7.7
15.407(b)(9), 15.207	AC Conducted Emissions 150kHz – 30MHz	< FCC 15.207 limits	LINE CONDUCTED	PASS	Section 7.8

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.

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26dB Bandwidth Measurement – 802.11a/n/ac/ax 7.2

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 > 3 x 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

None.

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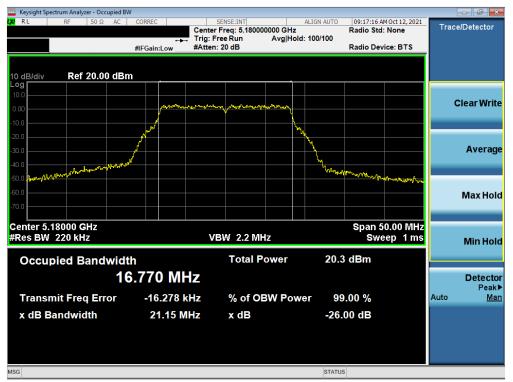
MIMO Antenna-1 26 dB Bandwidth Measurements

	Frequency	Channel	802.11 Mode	Data Rate [Mbps]	Measured 26dB Bandwidth
	[MHz]	No.			[MHz]
	5180	36	а	6	21.15
	5200	40	а	6	21.23
	5240	48	а	6	21.39
	5180	36	n (20MHz)	6.5/7.2 (MCS0)	21.45
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	21.44
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	21.41
-	5180	36	ax (20MHz)	6.5/7.2 (MCS0)	21.34
Band ,	5200	40	ax (20MHz)	6.5/7.2 (MCS0)	21.44
ä	5240	48	ax (20MHz)	6.5/7.2 (MCS0)	21.24
	5190	38	n (40MHz)	13.5/15 (MCS0)	40.09
	5230	46	n (40MHz)	13.5/15 (MCS0)	39.84
	5190	38	ax (40MHz)	13.5/15 (MCS0)	39.92
	5230	46	ax (40MHz)	13.5/15 (MCS0)	39.63
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	81.67
	5210	42	ax (80MHz)	29.3/32.5 (MCS0)	81.54
2 X	5250	50	ac (160MHz)	58.5/65 (MCS0)	164.40
Band 1/2A	5250	50	ax (160MHz)	58.5/65 (MCS0)	164.40
	5260	52	а	6	21.13
	5280	56	а	6	21.22
	5320	64	а	6	21.15
	5260	52	n (20MHz)	6.5/7.2 (MCS0)	21.34
	5280	56	n (20MHz)	6.5/7.2 (MCS0)	21.40
	5320	64	n (20MHz)	6.5/7.2 (MCS0)	21.33
۲.	5260	52	ax (20MHz)	6.5/7.2 (MCS0)	21.21
Band 2A	5280	56	ax (20MHz)	6.5/7.2 (MCS0)	21.26
Bar	5320	64	ax (20MHz)	6.5/7.2 (MCS0)	21.45
	5270	54	n (40MHz)	13.5/15 (MCS0)	39.82
	5310	62	n (40MHz)	13.5/15 (MCS0)	40.19
	5270	54	ax (40MHz)	13.5/15 (MCS0)	39.84
	5310	62	ax (40MHz)	13.5/15 (MCS0)	39.86
	5290	58	ac (80MHz)	29.3/32.5 (MCS0)	81.77
	5290	58	ax (80MHz)	29.3/32.5 (MCS0)	81.04
	5500	100	a a	6	21.23
	5600	120	а	6	21.03
	5720	144	а	6	21.10
	5500	100	n (20MHz)	6.5/7.2 (MCS0)	21.51
	5600	120	n (20MHz)	6.5/7.2 (MCS0)	21.31
	5720	144	n (20MHz)	6.5/7.2 (MCS0)	21.35
	5500	100	ax (20MHz)	6.5/7.2 (MCS0)	21.37
	5600	120	ax (20MHz)	6.5/7.2 (MCS0)	21.40
	5720	144	ax (20MHz)	6.5/7.2 (MCS0)	21.22
	5510	102	n (40MHz)	13.5/15 (MCS0)	40.15
U	5590	118	n (40MHz)	13.5/15 (MCS0)	39.74
Band 2C	5710	142	n (40MHz)	13.5/15 (MCS0)	39.77
Ban	5510	102	ax (40MHz)	13.5/15 (MCS0)	39.60
	5590	118	ax (40MHz)	13.5/15 (MCS0)	39.74
	5710	142	ax (40MHz)	13.5/15 (MCS0)	39.66
	5530	106	ac (80MHz)	29.3/32.5 (MCS0)	81.55
	5610	122	ac (80MHz)	29.3/32.5 (MCS0)	81.42
	5690	138	ac (80MHz)	29.3/32.5 (MCS0)	81.31
	5530	106	ac (80MHz)	29.3/32.5 (MCS0)	80.91
	5530		ax (80101HZ) ax (80MHz)		
		122		29.3/32.5 (MCS0)	81.85 81.22
	5690 5570	138	ax (80MHz)	29.3/32.5 (MCS0)	
	5570	114	ac (160MHz)	58.5/65 (MCS0)	165.00
	5570	114	ax (160MHz)	58.5/65 (MCS0)	165.90

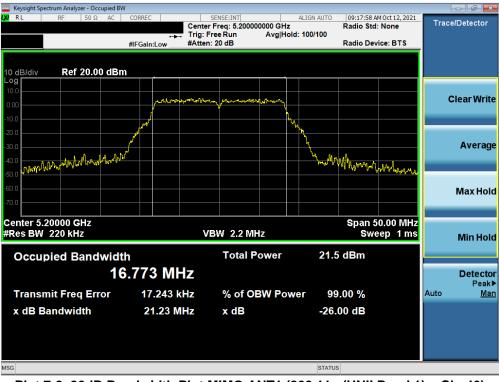
Table 7-2. Conducted Bandwidth Measurements MIMO ANT1

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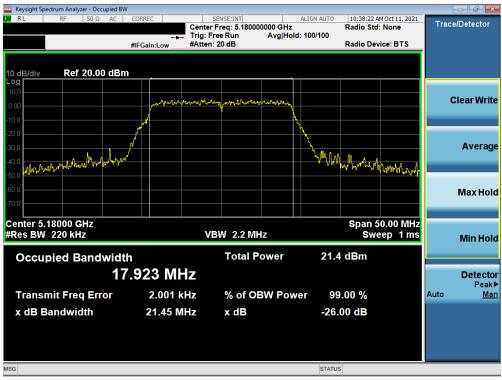
Plot 7-2. 26dB Bandwidth Plot MIMO ANT1 (802.11a (UNII Band 1) – Ch. 40)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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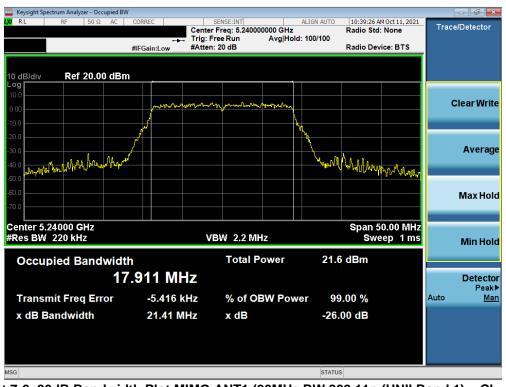
Plot 7-4. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11n (UNII Band 1) - Ch. 36)

FCC ID: A3LSMS906U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager	
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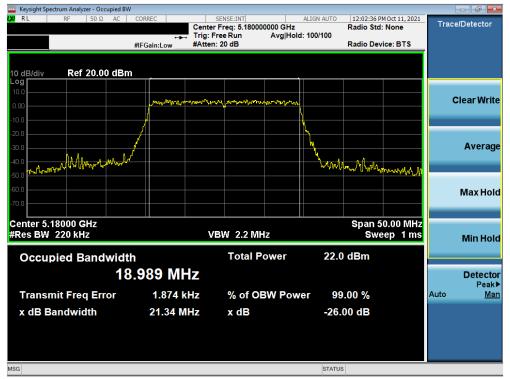
Plot 7-5. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11n (UNII Band 1) - Ch. 40)



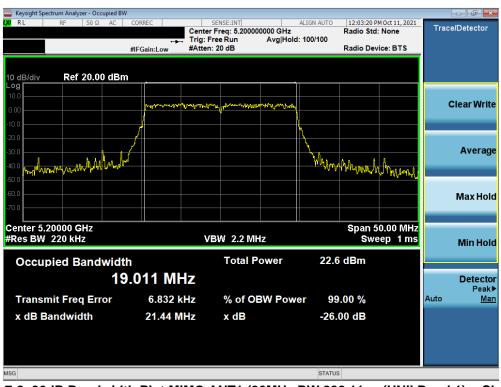
Plot 7-6. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11n (UNII Band 1) - Ch. 48)

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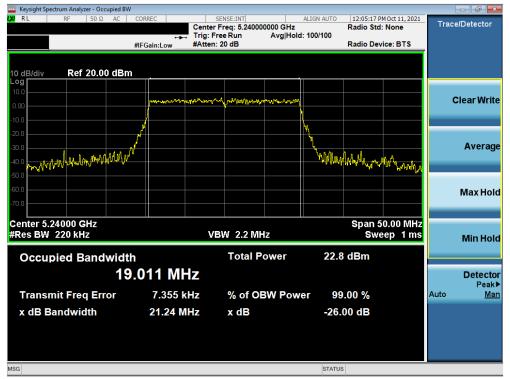
Plot 7-7. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (UNII Band 1) - Ch. 36)



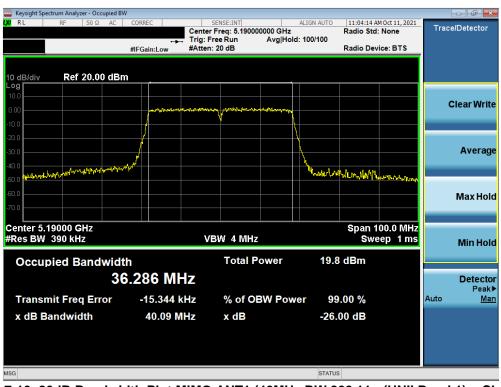
Plot 7-8. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (UNII Band 1) - Ch. 40)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager	
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Plot 7-9. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (UNII Band 1) - Ch. 48)



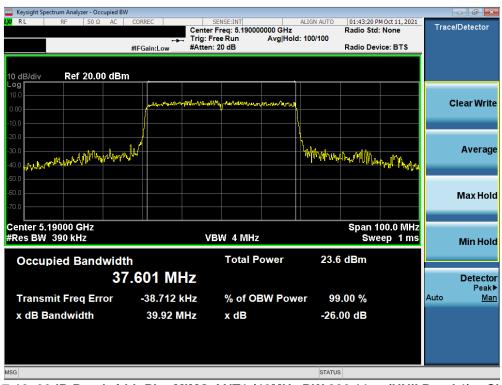
Plot 7-10. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11n (UNII Band 1) - Ch. 38)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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Keysight Spectrum Analyzer - Occupied B ¹	W						
XX RL RF 50Ω AC	CORREC	SENSE:INT	ALIGN AUTO		Oct 11, 2021	Trace	/Detector
		er Freq: 5.230000000 GH: Free Run Avg H	z old: 100/100	Radio Std:	None		Bottottol
		en: 20 dB		Radio Devi	ce: BTS		
10 dB/div Ref 20.00 dBr	m		•				
Log 10.0							
						c	lear Write
0.00	And and a state of the state of	real contraction and the second second				-	
-10.0	(<u> </u>				
-20.0	, (`						
-30.0							Average
	J		b				Average
-40.0 Mally my Month March March	two in the second se		The March Las	Alla D. In			
-50.0			united and	n shawaya na ana	all have a ship has		
-60.0							Max Hold
-70.0							Max Hold
-70.0						_	
Center 5.23000 GHz				Snan 1(00.0 MHz		
#Res BW 390 kHz		VBW 4 MHz			ep 1 ms		
				0.110			Min Hold
Occupied Bandwid	th	Total Power	20.4	dBm			
			20.4				
3	6.266 MHz						Detector
							Peak►
Transmit Freq Error	-3.797 kHz	% of OBW Po	wer 99.	00 %		Auto	<u>Man</u>
x dB Bandwidth	39.84 MHz	x dB	-26.0	0 dB			
	00.04 11112	A dB	20.0				
MSG			STATUS				
MSG			STATUS				

Plot 7-11. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11n (UNII Band 1) - Ch. 46)



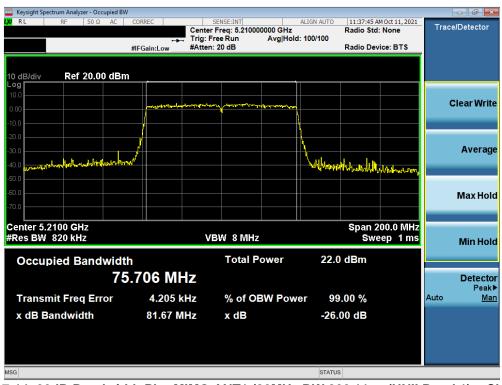
Plot 7-12. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (UNII Band 1) - Ch. 38)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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Keysight Spectrum Analyzer - Occupied BW					
LXI RL RF 50Ω AC	CORREC	SENSE:INT		PM Oct 11, 2021	Trace/Detector
		er Freq: 5.230000000 GHz Free Run Avg Hol	Radio St	d: None	Trace/Delector
		rreeRun Avg∣⊓oi n:20 dB	d: 100/100 Radio De	vice: BTS	
	#ir Gain.Low #ir tete		rtudio De		
10 dB/div Ref 20.00 dBm					
Log					
10.0	BLANDA KANA KANAN	my allow many balant			01
0.00		and allow a survey with a factor			Clear Write
-10.0					
-20.0					
-30.0 -40.0 กุษฐภษณ์ ในที่เกาะศัพทุใ 10 ในโอาคาปูโนที่	W		10 Hergrand hard are her film		Average
-40.0 man alway and a fragman all and a source of the			a a suma arte alle a the	WM Malana	
				Walt	
-50.0					
-60.0					Max Hold
-70.0					
Center 5.23000 GHz			Span	100.0 MHz	
#Res BW 390 kHz	1	/BW 4 MHz		veep 1 ms	Min Hold
					ΜΙΠΗΟΙά
Occupied Bandwidth	•	Total Power	23.9 dBm		
37	.464 MHz				Detector
					Peak▶
Transmit Freq Error	2.011 kHz	% of OBW Pow	ver 99.00 %		Auto <u>Man</u>
x dB Bandwidth	39.63 MHz	x dB	-26.00 dB		
	39.03 WINZ	XUD	-20.00 uB		
MSG			STATUS		

Plot 7-13. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (UNII Band 1) - Ch. 46)



Plot 7-14. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ac (UNII Band 1) - Ch. 42)

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Keysight Spectrum Analyzer - Occupied BV	V				
💢 RL RF 50Ω AC	CORREC	SENSE:INT		5 PM Oct 11, 2021 td: None	Trace/Detector
		er Freq: 5.210000000 GHz Free Run Avg Holo	d: 100/100	a: None	
		n: 20 dB		evice: BTS	
10 dB/div Ref 20.00 dBr					
10.0					
0.00	mahrow how proved	Homy of my have been and prover the	x		Clear Write
-10.0			N		
-20.0					
-30.0					Average
-40.0	sod		- White the allow		
-50.0			a Azerdan da Bulkamafan Pérdi	Were Calling work and	
-60.0					
					Max Hold
-70,0					
Center 5.2100 GHz			Snan	200.0 MHz	
#Res BW 820 kHz	1	/BW 8 MHz		veep 1 ms	
				roop Thio	Min Hold
Occupied Bandwidt	h	Total Power	22.0 dBm		
	6.940 MHz				Detector
Transmit Freq Error	-61.167 kHz	% of OBW Pow	/er 99.00 %		Peak▶ Auto <u>Man</u>
x dB Bandwidth	81.54 MHz	x dB	-26.00 dB		
	01.04 11112	A db	20.00 48		
MSG			STATUS		

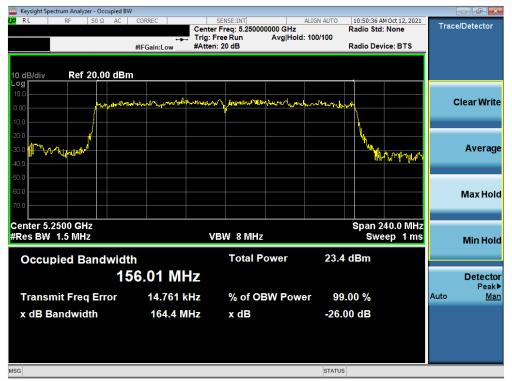
Plot 7-15. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (UNII Band 1) - Ch. 42)



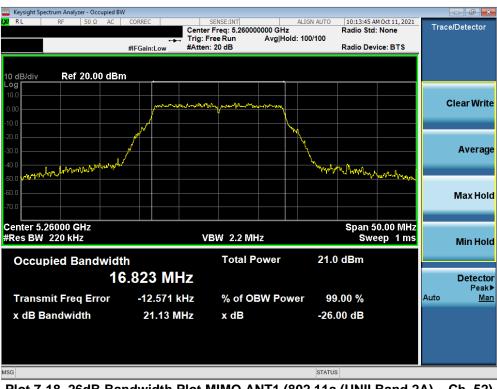
Plot 7-16. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW 802.11ac (UNII Band 1/2A) - Ch. 50)

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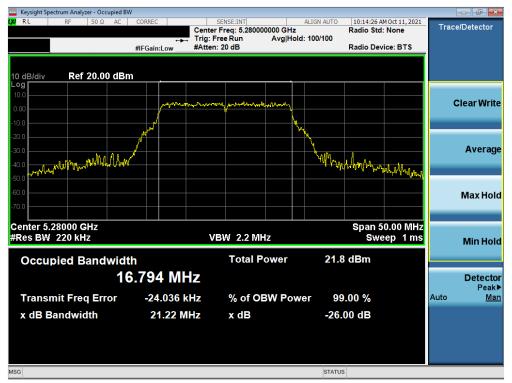
Plot 7-17. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW 802.11ax (UNII Band 1/2A) - Ch. 50)



Plot 7-18. 26dB Bandwidth Plot MIMO ANT1 (802.11a (UNII Band 2A) - Ch. 52)

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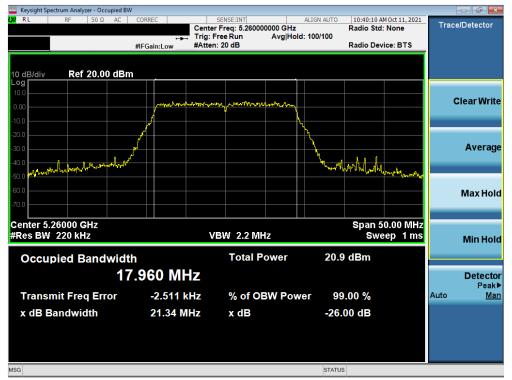
Plot 7-19. 26dB Bandwidth Plot MIMO ANT1 (802.11a (UNII Band 2A) - Ch. 56)



Plot 7-20. 26dB Bandwidth Plot MIMO ANT1 (802.11a (UNII Band 2A) – Ch. 64)

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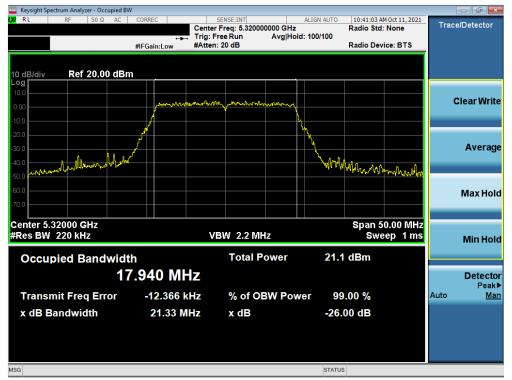
Plot 7-21. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11n (UNII Band 2A) - Ch. 52)



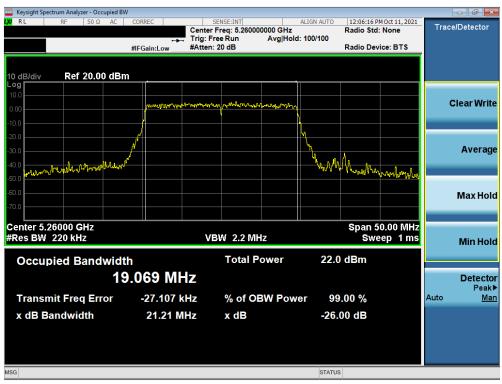
Plot 7-22. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11n (UNII Band 2A) - Ch. 56)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dama 07 at 055
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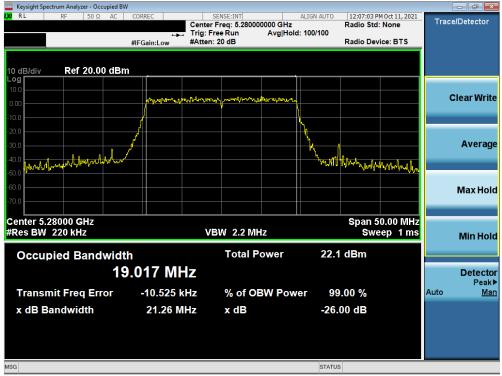
Plot 7-23. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11n (UNII Band 2A) - Ch. 64)



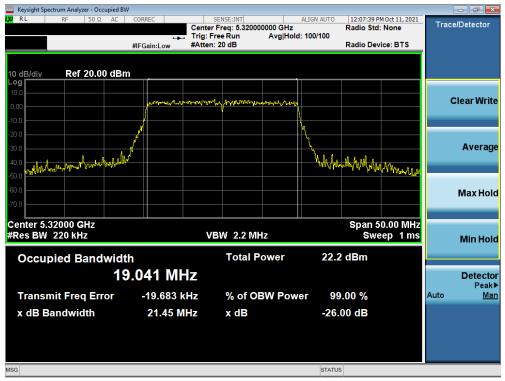
Plot 7-24. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (UNII Band 2A) - Ch. 52)

FCC ID: A3LSMS906U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 20 of 255
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Plot 7-25. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (UNII Band 2A) - Ch. 56)



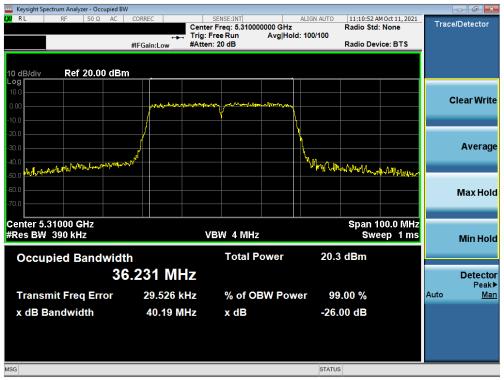
Plot 7-26. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (UNII Band 2A) - Ch. 64)

FCC ID: A3LSMS906U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 20 of 255
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Keysight Spectrum Analyzer - Occupied B							
LXI RL RF 50Ω AC	CORREC	SENSE:INT enter Freg: 5.27000	ALIGN A	UTO 11:06:12 AM Radio Std:	4 Oct 11, 2021	Trace	Detector
		rig: Free Run	Avg Hold: 100/10		None		
	#IFGain:Low #	Atten: 20 dB		Radio Devi	ice: BTS		
10 dB/div Ref 20.00 dB	m						
Log							
10.0		mentione and method				с	lear Write
0.00		and the second s					
-10.0							
-20.0			├ ─── │ \				
-30.0			<u> </u>				Average
-40.0 Witnessen mining	u∭ ^{1,7}		<u></u>	MANANAMANA	a March		
-50.0 JUTUWANA			. 41	ા જાગ્ય ૫૦૦ નાથવાથા	A nultre from		
-60.0							
-70.0							Max Hold
-70.0							
Center 5.27000 GHz			· · · · · · · · · · · · · · · · · · ·	Span 1	00.0 MHz		
#Res BW 390 kHz		VBW 4 MHz		Swe	ep 1 ms		Min Hold
Occupied Bandwid	th	Total P	ower 2	20.9 dBm			
3	6.278 MHz						Detector
							Peak▶
Transmit Freq Error	-10.375 kHz	z % of OE	3W Power	99.00 %		Auto	<u>Man</u>
x dB Bandwidth	39.82 MHz	x dB		-26.00 dB			
MSG			S	STATUS			

Plot 7-27. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11n (UNII Band 2A) - Ch. 54)



Plot 7-28. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11n (UNII Band 2A) - Ch. 62)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 20 of 255
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🔤 Keysight Spectrum Analyzer - Occup	pied BW						
<mark>(X)</mark> RL RF 50 Ω	AC CORREC	SENSE:INT Center Freq: 5.27000	ALIGN AUTO	01:44:40 P	MOct 11, 2021	Trace	Detector
	i a i		Avg Hold: 100/100	Raulo Stu	None		
	#IFGain:Low	#Atten: 20 dB		Radio Dev	ice: BTS		
10 dB/div Ref 20.00	dBm						
Log							
10.0	Atha Asha laa a	march march un wall where	ماليم الأبر بينا			с	lear Write
0.00						Ŭ	
-10.0							
-20.0							
-30.0							Average
-30.0 -40.0 your april maker a free	WWW		AMANN'	ll.haryaha	ممثلاه م		
-50.0					PO Q. WYNIA hole		
-60.0							Max Hold
-70.0							
Center 5.27000 GHz				Enon 1	00.0 MHz		
#Res BW 390 kHz		VBW 4 MHz			ep 1 ms		
WIGS DW 530 KHZ				011	сртпа		Min Hold
Occupied Bandw	vidth	Total P	ower 23.0) dBm			
		I					
	37.500 MH						Detector Peak▶
Transmit Freq Erro	or 4.468 k	Hz % of OE	BW Power 99	.00 %		Auto	Man
x dB Bandwidth	39.84 M	Hz xdB	-26.	00 dB			
MSG			STATUS	3			

Plot 7-29. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (UNII Band 2A) - Ch. 54)



Plot 7-30. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (UNII Band 2A) - Ch. 62)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dage 24 of 255	
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Keysight Spectrum Analyzer - Occupied BV	V						
KI RF 50Ω AC	CORREC	SENSE:INT enter Freq: 5.29000	ALIGN AUTO	11:38:50 A Radio Std	MOct 11, 2021	Trace	/Detector
		rig: Free Run	Avg Hold: 100/100	Raulo Stu	None		
	#IFGain:Low #	Atten: 20 dB		Radio Dev	ice: BTS		
10 dB/div Ref 20.00 dBr	n						
Log 10.0							
		wardener wardener				с	lear Write
0.00		· · · · · ·					
-10.0			Ì,				
-20.0	<mark>/</mark>		\				
-30.0			<u> </u>				Average
-40.0 worden and the flow of the section	<u>"</u>		Web.M.	where the hold of the	A A A A	_	
-50.0					and and the property of the second		
-60.0							Max Hold
-70.0							Μαχ Ποιά
Center 5.2900 GHz					00.0 MHz		
#Res BW 820 kHz		VBW 8 MHz		Swe	ep 1 ms		Min Hold
		Total P		7 dBm			
Occupied Bandwidt			ower 21.	/ ubm			
75	5.690 MHz						Detector
	-22.649 kHz	9/ of OF	3W Power 99	9.00 %		Auto	Peak▶ Man
Transmit Freq Error	-22.049 KHZ		sw Power 9	9.00 %		Auto	<u>iviari</u>
x dB Bandwidth	81.77 MHz	z x dB	-26	.00 dB			
MSG			STATU	s			
MSG			STATU	IS			

Plot 7-31. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ac (UNII Band 2A) - Ch. 58)



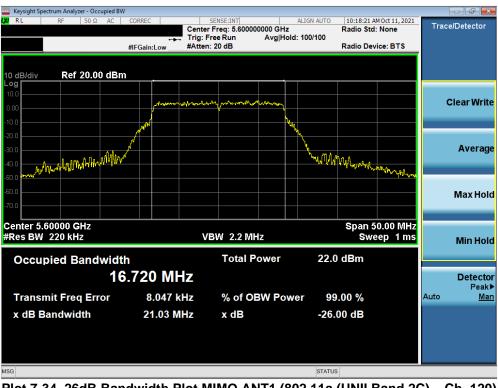
Plot 7-32. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (UNII Band 2A) - Ch. 58)

FCC ID: A3LSMS906U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 22 of 255
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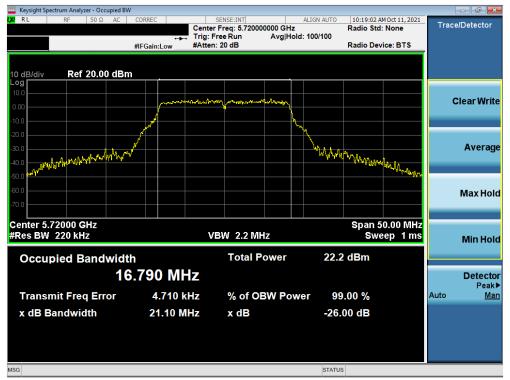
Plot 7-33. 26dB Bandwidth Plot MIMO ANT1 (802.11a (UNII Band 2C) - Ch. 100)



Plot 7-34. 26dB Bandwidth Plot MIMO ANT1 (802.11a (UNII Band 2C) - Ch. 120)

FCC ID: A3LSMS906U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Daga 22 of 255	
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Plot 7-35. 26dB Bandwidth Plot MIMO ANT1 (802.11a (UNII Band 2C) - Ch. 144)



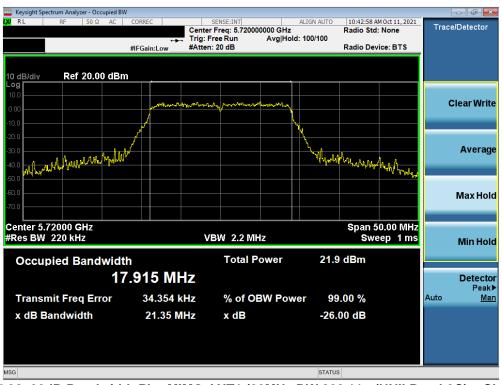
Plot 7-36. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11n (UNII Band 2C) - Ch. 100)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dawa 04 -4 055	
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Plot 7-37. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11n (UNII Band 2C) - Ch. 120)



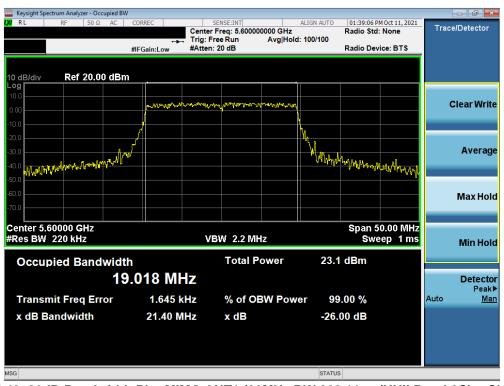
Plot 7-38. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11n (UNII Band 2C) - Ch. 144)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dogo 25 of 255	
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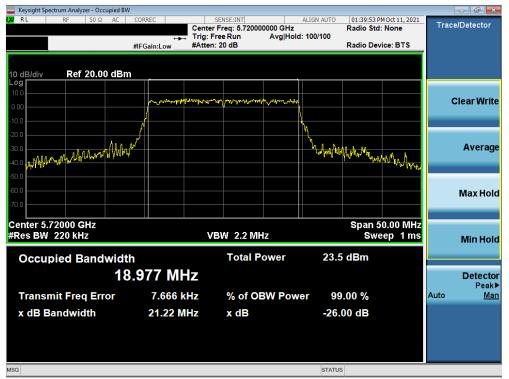
Plot 7-39. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (UNII Band 2C) - Ch. 100)



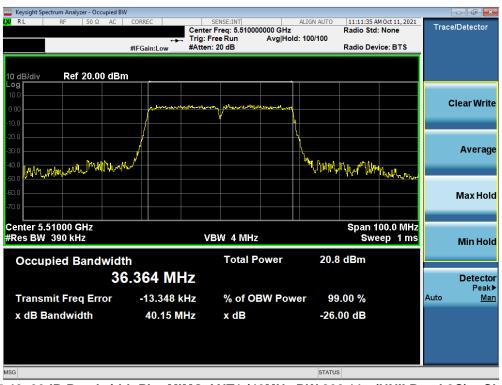
Plot 7-40. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (UNII Band 2C) - Ch. 120)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dage 20 of 255	
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Plot 7-41. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (UNII Band 2C) - Ch. 144)



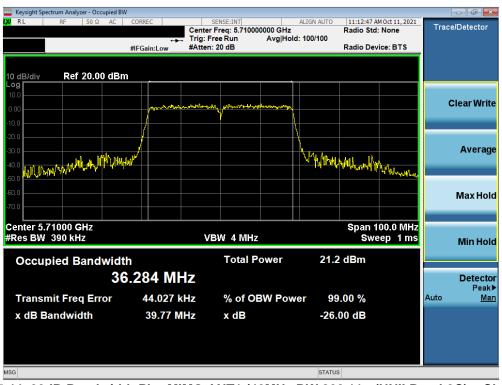
Plot 7-42. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11n (UNII Band 2C) - Ch. 102)

FCC ID: A3LSMS906U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: Test Dates:		EUT Type:	Dage 27 of 255
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Keysight Spectrum Analyzer - Occupied BW								
🗶 RL RF 50Ω AC C	ORREC	SENSE:INT		ALIGN AUTO		M Oct 11, 2021	Trace	e/Detector
		Center Freq: 5.59000 Trig: Free Run		400/400	Radio Std	: None	TTAC	Belector
		#Atten: 20 dB	Avg Hold	1. 100/100	Radio Dev	ice: BTS		
	FGam.Low				Tualo Det			
10 dB/div Ref 20.00 dBm								
Log								
10.0								
0.00	manhonder	march and prophilition	mulasting				, c	Clear Write
-10.0		V						
-20.0	1			1				
-30.0	/			<u>h</u>				Average
	f			Mr Mala n	a an an an an An L			
-40.0 -50.0 Jos Marin M.				1 1146.1	vometh	Lallama and		
-60.0								Max Hold
-70.0								
Center 5.59000 GHz					Span 1	00.0 MHz		
#Res BW 390 kHz		VBW 4 MHz				eep 1 ms		Min Hold
								Will Hold
Occupied Bandwidth		Total P	ower	21.0	dBm			
36.	308 MH:	2						Detector
								Peak►
Transmit Freq Error	11.665 kH	z % of O	BW Pow	er 99	.00 %		Auto	<u>Man</u>
x dB Bandwidth	39.74 MH	z xdB		-26	00 dB			
				200				
							_	
							_	
MSG				STATUS				

Plot 7-43. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11n (UNII Band 2C) - Ch. 118)



Plot 7-44. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11n (UNII Band 2C) - Ch. 142)

FCC ID: A3LSMS906U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dege 20 of 255
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Keysight Spectrum Analyzer - Occupied BW					
XIRL RF 50Ω AC		SENSE:INT Freq: 5.510000000 GHz	ALIGN AUTO 01:56:25 P Radio Std	M Oct 11, 2021	Trace/Detector
			d: 100/100	None	
	#IFGain:Low #Atten	: 20 dB	Radio Dev	ice: BTS	
10 dB/div Ref 20.00 dBm					
Log 10.0					
	All and all and a low and and	May My marked and Miles			Clear Write
0.00					
-10.0					
-20.0					
-30.0					Average
-30.0 -40.0	<u>r</u>		www.lowww.logallungle	wolle 1	
-50.0				and a china a c	
-60.0					
					Max Hold
-70.0					
Center 5.51000 GHz			Span 1	00.0 MHz	
#Res BW 390 kHz	v	BW 4 MHz		ep 1 ms	Min Hold
					WIIITTOIG
Occupied Bandwidth	า	Total Power	23.1 dBm		
37	.639 MHz				Detector
					Peak►
Transmit Freq Error	18.703 kHz	% of OBW Pow	ver 99.00 %		Auto <u>Man</u>
x dB Bandwidth	39.60 MHz	x dB	-26.00 dB		
MSG			STATUS		

Plot 7-45. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (UNII Band 2C) - Ch. 102)



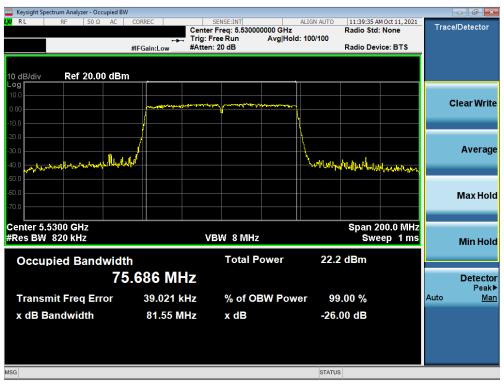
Plot 7-46. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (UNII Band 2C) - Ch. 118)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 20 of 255
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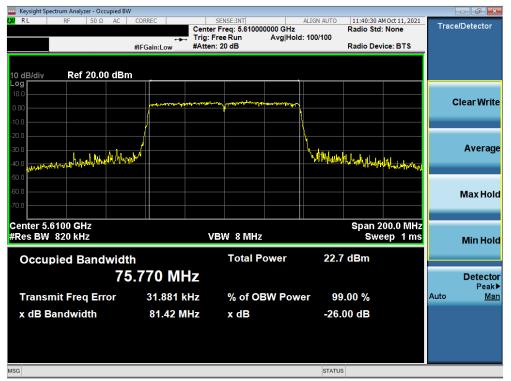
Plot 7-47. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (UNII Band 2C) - Ch. 142)



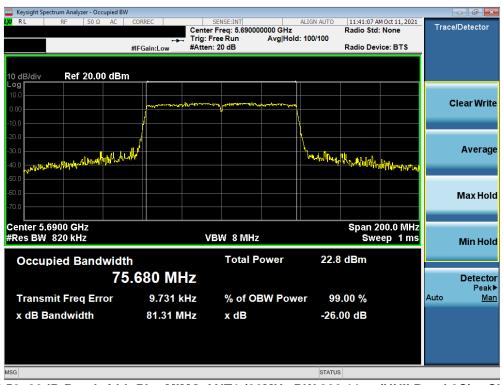
Plot 7-48. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ac (UNII Band 2C) - Ch. 106)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager		
Test Report S/N:	Test Dates:	EUT Type:	Dage 40 of 255		
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Plot 7-49. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ac (UNII Band 2C) - Ch. 122)



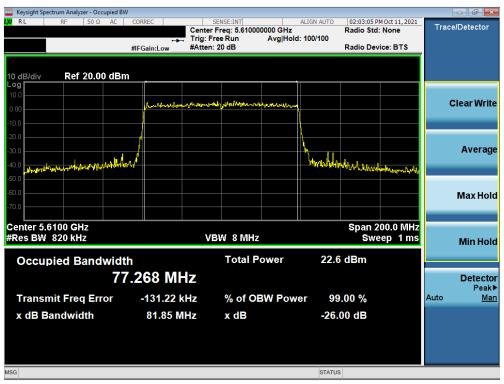
Plot 7-50. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ac (UNII Band 2C) - Ch. 138)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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Exercise Content and Sectrum Analyzer - Occupied BW					- ē 💌
💢 RL RF 50Ω AC	CORREC	SENSE:INT Freg: 5.530000000 GHz	ALIGN AUTO 02:02:21 F	PM Oct 11, 2021	Trace/Detector
			d: 100/100	: None	
		n: 20 dB	Radio De	vice: BTS	
10 dB/div Ref 20.00 dBm					
Log					
0.00	Auron washes	nd was marked and a second	u .		Clear Write
-10.0					
-20.0					Average
-30.0					Average
-40.0 ml your her her her her her her her her her he	*		Marthur level mark	Consimily report of	
-50.0					
-60.0					Max Hold
-70.0					
Center 5.5300 GHz					
#Res BW 820 kHz	1	/BW 8 MHz		200.0 MHz eep 1 ms	
				cep mis	Min Hold
Occupied Bandwidth		Total Power	22.1 dBm		
	941 MHz				Detector
/6					Detector Peak►
Transmit Freq Error	70.046 kHz	% of OBW Pow	ver 99.00 %		Auto <u>Man</u>
x dB Bandwidth	80.91 MHz	x dB	-26.00 dB		
MSG			STATUS		
MOG			STATUS		

Plot 7-51. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (UNII Band 2C) - Ch. 106)



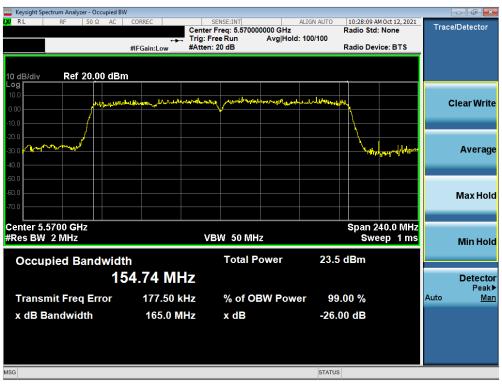
Plot 7-52. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (UNII Band 2C) - Ch. 122)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager		
Test Report S/N:	Test Dates:	EUT Type:	Dage 42 of 255		
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								- # *
💢 RL RF 50Ω AC 0	ORREC	SENSE:INT		ALIGN AUTO		M Oct 11, 2021	Trace	/Detector
		enter Freq: 5.69000 rig: Free Run	0000 GHz Avg Hold:	400/400	Radio Std	None	mact	
#		Atten: 20 dB	Avginoid.	. 100/100	Radio Dev	ice: BTS		
	FGalli.Low				Itaalo Ber			
10 dB/div Ref 20.00 dBm								
Log								
10.0		بيب وأما يتابا						lear Write
0.00	han marging and	tophing phanlipson	half a share a					lear write
-10.0	l.							
-20.0								
-30.0	{			h. L. J.	1			Average
-40.0 mound further of the start of the second seco	1			Then when	WW LUNG	Millelah at		
-50.0					111111	Indit in the second states of		
-60.0								Max Hold
-70.0								
Center 5.6900 GHz						00.0 MHz		
#Res BW 820 kHz		VBW 8 MHz			Swe	ep 1 ms		Min Hold
Occupied Bandwidth		Total P	ower	23.0	dBm			
	124 MLL-							Detect
11.	121 MHz							Detector Peak▶
Transmit Freq Error	64.564 kHz	% of O	3W Powe	00	.00 %		Auto	Peak⊫ Man
Transmit Freq Error	04.J04 KHZ	% 01 01	DW FOWE	99	.00 %		Auto	IVIAII
x dB Bandwidth	81.22 MHz	x dB		-26.0)0 dB			
MSG				STATUS				

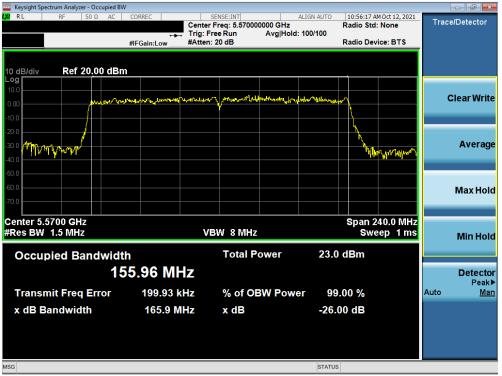
Plot 7-53. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (UNII Band 2C) - Ch. 138)



Plot 7-54. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW 802.11ac (UNII Band 2C) - Ch. 114)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager		
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Plot 7-55. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW 802.11ax (UNII Band 2C) - Ch. 114)

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MIMO Antenna-2 26dB Bandwidth Measurements

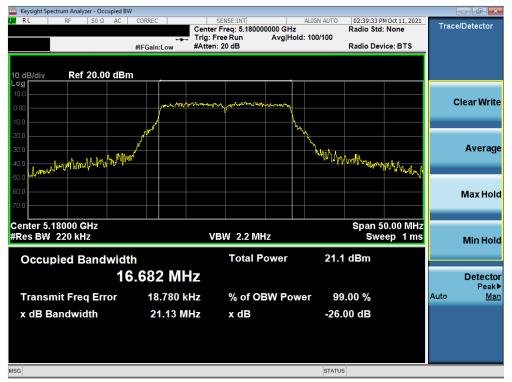
	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured 26dB Bandwidth [MHz]
	5180	36	а	6	21.13
	5200	40	а	6	21.03
	5240	48	а	6	21.35
	5180	36	n (20MHz)	6.5/7.2 (MCS0)	21.56
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	21.34
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	21.64
	5180	36	ax (20MHz)	6.5/7.2 (MCS0)	21.40
Band 1	5200	40	ax (20MHz)	6.5/7.2 (MCS0)	21.08
ä	5240	48	ax (20MHz)	6.5/7.2 (MCS0)	21.22
	5190	38	n (40MHz)	13.5/15 (MCS0)	39.37
	5230	46	n (40MHz)	13.5/15 (MCS0)	39.33
	5190	38	ax (40MHz)	13.5/15 (MCS0)	39.94
	5230	46	ax (40MHz)	13.5/15 (MCS0)	39.45
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	80.52
	5210	42	ax (80MHz)	29.3/32.5 (MCS0)	80.95
2 2	5250	50	ac (160MHz)	58.5/65 (MCS0)	164.30
Band 1/2A	5250	50	ax (160MHz)	58.5/65 (MCS0)	163.50
	5260	52	a	6	21.01
	5280	56	а	6	21.05
	5320	64	а	6	20.88
	5260	52	n (20MHz)	6.5/7.2 (MCS0)	21.25
	5280	56	n (20MHz)	6.5/7.2 (MCS0)	21.36
	5320	64	n (20MHz)	6.5/7.2 (MCS0)	21.59
₹Z	5260	52	ax (20MHz)	6.5/7.2 (MCS0)	21.13
Band 2A	5280	56	ax (20MHz)	6.5/7.2 (MCS0)	21.47
Bar	5320	64	ax (20MHz)	6.5/7.2 (MCS0)	21.34
	5270	54	n (40MHz)	13.5/15 (MCS0)	39.41
	5310	62	n (40MHz)	13.5/15 (MCS0)	39.31
	5270	54	ax (40MHz)	13.5/15 (MCS0)	39.63
	5310	62	ax (40MHz)	13.5/15 (MCS0)	39.76
	5290	58	ac (80MHz)	29.3/32.5 (MCS0)	80.98
	5290	58	ax (80MHz)	29.3/32.5 (MCS0)	80.26
	5500	100	а	6	21.46
	5600	120	а	6	21.34
	5720	144	а	6	21.22
	5500	100	n (20MHz)	6.5/7.2 (MCS0)	21.50
	5600	120	n (20MHz)	6.5/7.2 (MCS0)	21.50
	5720	144	n (20MHz)	6.5/7.2 (MCS0)	21.82
	5500	100	ax (20MHz)	6.5/7.2 (MCS0)	21.44
	5600	120	ax (20MHz)	6.5/7.2 (MCS0)	22.17
	5720	144	ax (20MHz)	6.5/7.2 (MCS0)	21.23
	5510	102	n (40MHz)	13.5/15 (MCS0)	39.26
с С	5590	118	n (40MHz)	13.5/15 (MCS0)	39.44
Band 2C	5710	142	n (40MHz)	13.5/15 (MCS0)	39.17
Ba	5510	102	ax (40MHz)	13.5/15 (MCS0)	39.73
	5590	118	ax (40MHz)	13.5/15 (MCS0)	39.84
	5710	142	ax (40MHz)	13.5/15 (MCS0)	39.88
	5530	106	ac (80MHz)	29.3/32.5 (MCS0)	80.63
	5610	122	ac (80MHz)	29.3/32.5 (MCS0)	80.98
	5690	138	ac (80MHz)	29.3/32.5 (MCS0)	80.93
	5530	106	ax (80MHz)	29.3/32.5 (MCS0)	80.99
	5610	122	ax (80MHz)	29.3/32.5 (MCS0)	81.61
	5690	138	ax (80MHz)	29.3/32.5 (MCS0)	80.80
	5570	114	ac (160MHz)	58.5/65 (MCS0)	165.30
	5570	114	ax (160MHz)	58.5/65 (MCS0)	164.30
- I - 7				Measureme	

Table 7-3. Conducted Bandwidth Measurements MIMO ANT2

FCC ID: A3LSMS906U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dage 45 of 255	
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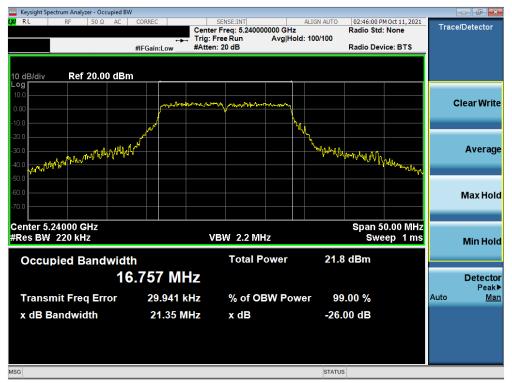
Plot 7-56. 26dB Bandwidth Plot MIMO ANT2 (802.11a (UNII Band 1) - Ch. 36)



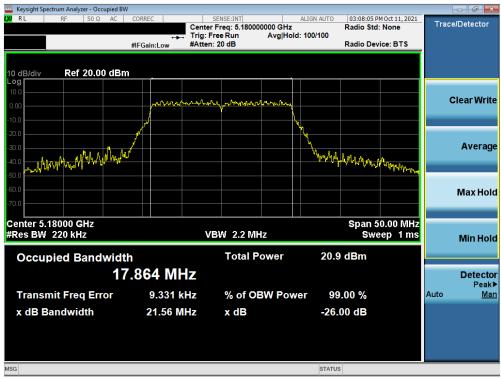
Plot 7-57. 26dB Bandwidth Plot MIMO ANT2 (802.11a (UNII Band 1) - Ch. 40)

FCC ID: A3LSMS906U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: Test Dates:		EUT Type:	Dage 46 of 255
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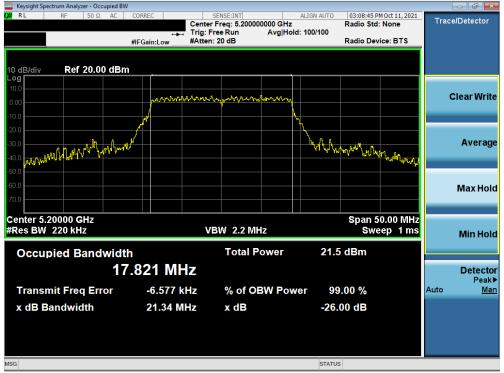
Plot 7-58. 26dB Bandwidth Plot MIMO ANT2 (802.11a (UNII Band 1) - Ch. 48)



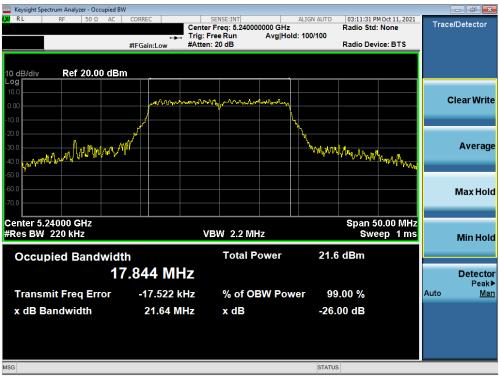
Plot 7-59. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11n (UNII Band 1) - Ch. 36)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: Test Dates:		EUT Type:	Dage 47 of 255
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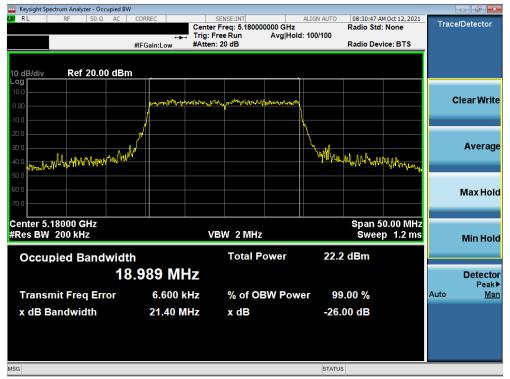
Plot 7-60. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11n (UNII Band 1) - Ch. 40)



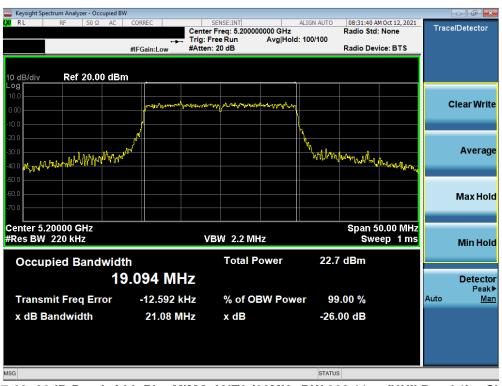
Plot 7-61. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11n (UNII Band 1) - Ch. 48)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 49 of 255
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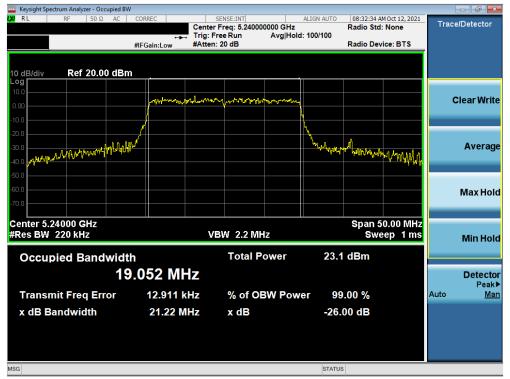
Plot 7-62. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax (UNII Band 1) - Ch. 36)



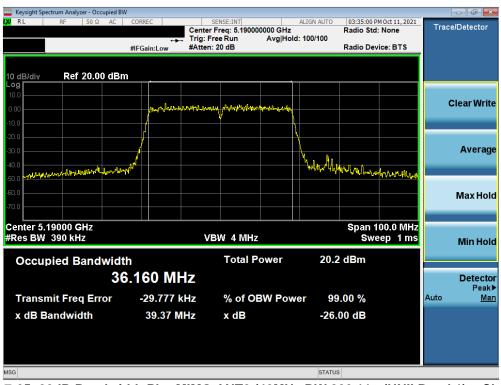
Plot 7-63. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax (UNII Band 1) - Ch. 40)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: Test Dates:		EUT Type:	Dage 40 of 255
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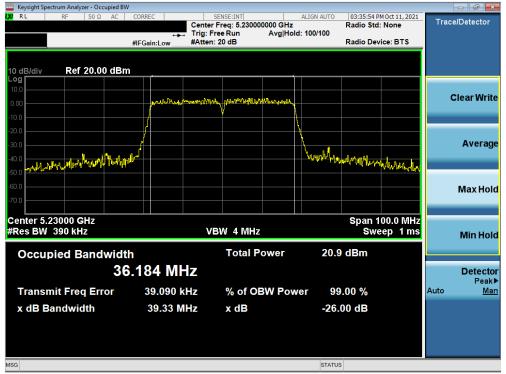
Plot 7-64. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax (UNII Band 1) - Ch. 48)



Plot 7-65. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11n (UNII Band 1) - Ch. 38)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Daga E0 of 255
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Plot 7-66. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11n (UNII Band 1) - Ch. 46)



Plot 7-67. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax (UNII Band 1) - Ch. 38)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 51 of 255
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Keysight Spectrum Analyzer - Occupied BW								
LXI RL RF 50Ω AC COR		SENSE:INT		ALIGN AUTO		MOct 12, 2021	Trace	e/Detector
		Center Freq: 5.23000 Trig: Free Run	Avg Hold:	· 100/100	Radio Std:	None		
#IFG		Atten: 20 dB			Radio Dev	ice: BTS		
,								
10 dB/div Ref 20.00 dBm Log								
10.0								
0.00	mmumula	when we want	Arthurnen				c	lear Write
-10.0								
-20.0				1.4.0	លវិរមែ			
-30.0				whiter when	where the states	Mar Marine		Average
-40.0						M M L		
-50.0								
-60.0								Max Hold
-70.0								
Center 5.23000 GHz						00.0 MHz		
#Res BW 390 kHz		VBW 4 MHz			Swe	ep 1 ms		Min Hold
		Total P	011/0 <i>r</i>	24.2	dBm			
Occupied Bandwidth			ower	24.2	авт			
37.6	33 MHz	2						Detector
								Peak▶
Transmit Freq Error	18.338 kHz	z % of Of	3W Powe	er 99	.00 %		Auto	<u>Man</u>
x dB Bandwidth	39.45 MHz	z x dB		-26 ()0 dB			
	59.45 MIL			-20.0				
MSG				STATUS				

Plot 7-68. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax (UNII Band 1) - Ch. 46)



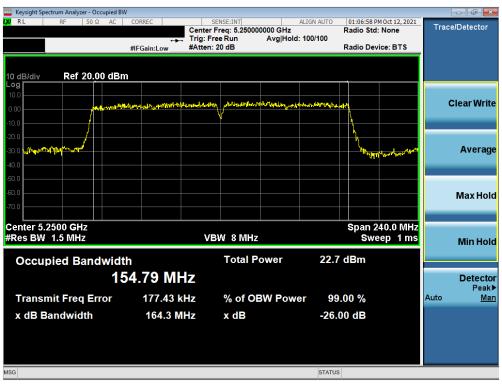
Plot 7-69. 26dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ac (UNII Band 1) - Ch. 42)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager		
Test Report S/N:	Test Dates:	EUT Type:	Dage 52 of 255		
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Keysight Spectrum Analyzer - Occupied B	W				- o x
KL RF 50Ω AC		SENSE:INT Freg: 5.210000000 GHz	ALIGN AUTO 08:45:32 Radio St	AM Oct 12, 2021	Trace/Detector
			d: 100/100	a: None	
		: 20 dB		vice: BTS	
10 dB/div Ref 20.00 dB	20				
Log					
10.0					
0.00	moundannoul	stype wet when how have been and			Clear Write
-10.0					
-20.0					
-30.0					Average
-40.0 and and a strange and a	Net Contraction of the second se		Monde Martin Lalado	WHULLAMA	
-50.0					
-60.0					Max Hold
-70.0					Max Hold
-70.0					
Center 5.2100 GHz			Span	200.0 MHz	
#Res BW 820 kHz	v	BW 8 MHz		eep 1 ms	Min Hold
					MITTOIG
Occupied Bandwid	th	Total Power	21.9 dBm		
	7.101 MHz				Detector
					Peak►
Transmit Freq Error	232 Hz	% of OBW Pow	ver 99.00 %		Auto <u>Man</u>
x dB Bandwidth	80.95 MHz	x dB	-26.00 dB		
	00.00 11112		20.00 uB		
MSG			STATUS		

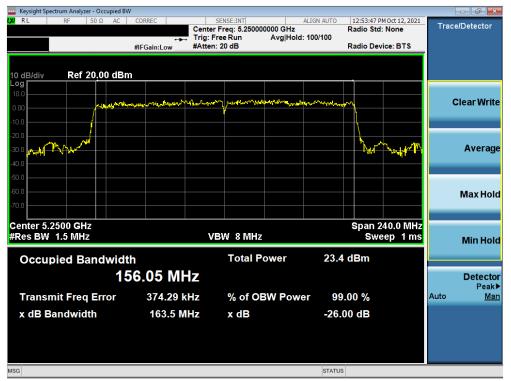
Plot 7-70. 26dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax (UNII Band 1) - Ch. 42)



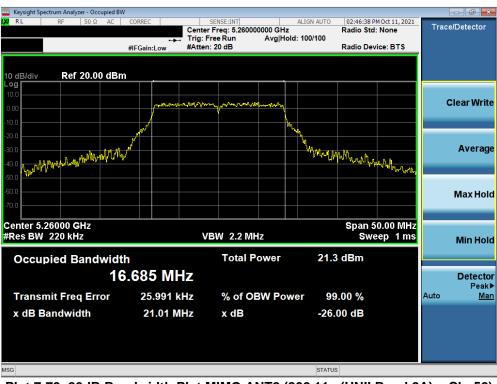
Plot 7-71. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW 802.11ac (UNII Band 1/2A) - Ch. 50)

FCC ID: A3LSMS906U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 52 of 255
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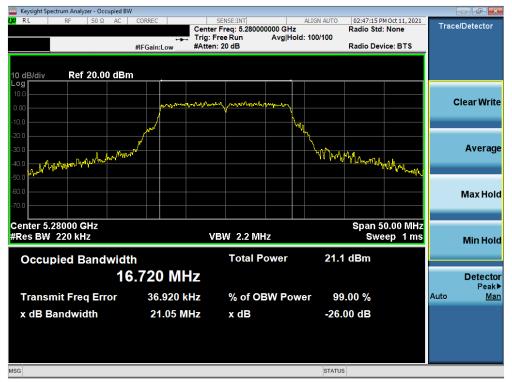
Plot 7-72. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW 802.11ax (UNII Band 1/2A) - Ch. 50)



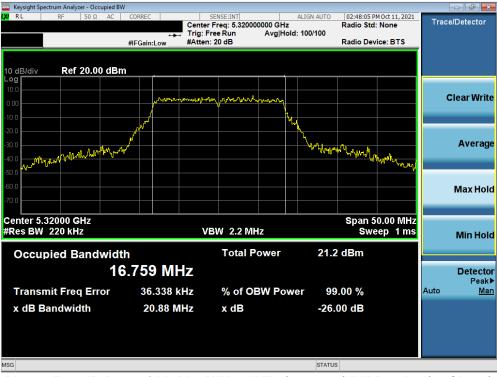
Plot 7-73. 26dB Bandwidth Plot MIMO ANT2 (802.11a (UNII Band 2A) - Ch. 52)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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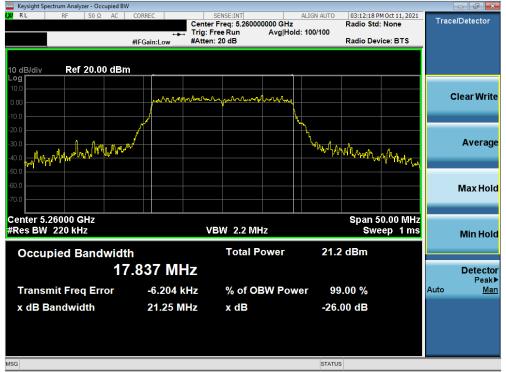
Plot 7-74. 26dB Bandwidth Plot MIMO ANT2 (802.11a (UNII Band 2A) - Ch. 56)



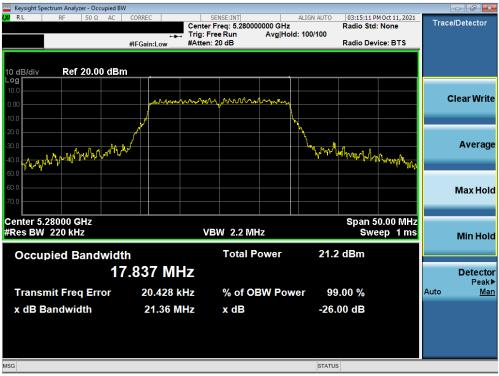
Plot 7-75. 26dB Bandwidth Plot MIMO ANT2 (802.11a (UNII Band 2A) – Ch. 64)

FCC ID: A3LSMS906U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: Test Dates:		EUT Type:	Dage FE of 255
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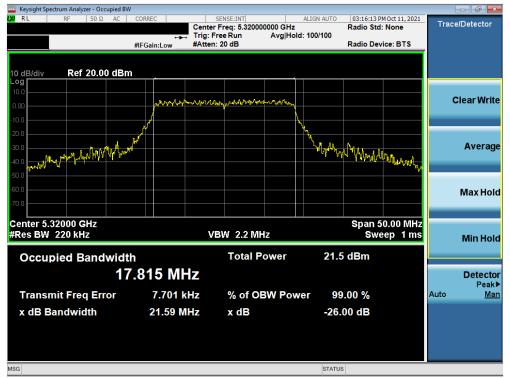
Plot 7-76. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11n (UNII Band 2A) - Ch. 52)



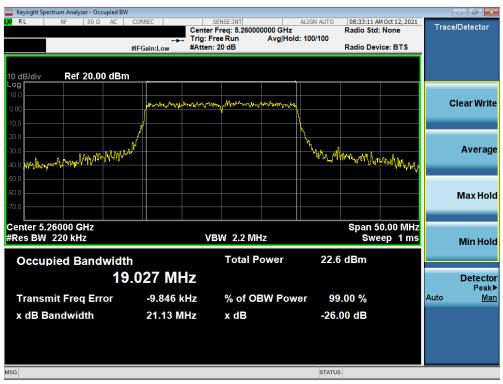
Plot 7-77. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11n (UNII Band 2A) - Ch. 56)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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Plot 7-78. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11n (UNII Band 2A) - Ch. 64)



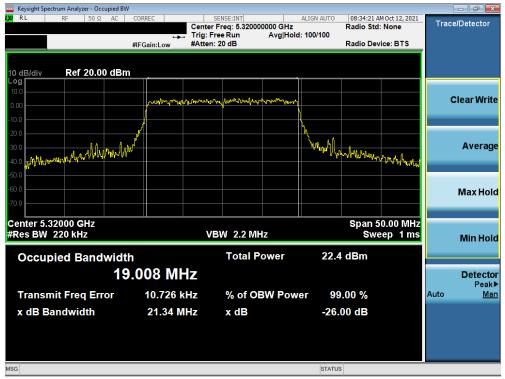
Plot 7-79. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax (UNII Band 2A) - Ch. 52)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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Keysight Spectrum Analyzer - Occupied E	W				
LXI RL RF 50Ω AC	CORREC	SENSE:INT		M Oct 12, 2021	Trace/Detector
		er Freq: 5.280000000 GHz Free Run Avg Ho	Radio Sto Id: 100/100	: None	11400120100101
		n: 20 dB	Radio De	vice: BTS	
	an ounicou				
10 dB/div Ref 20.00 dB	m				
Log					
10.0					Clear Write
0.00	and Antonia and a second	Mary runn Marshur was			Clear write
-10.0					
	5		h		
-20.0	J I				
-30.0 -40.0 And	n.M ^{.C}		Montralework		Average
-40.0 - 1. t. + Arthalia Martha Cing and yr			···· ·· ·· ·· ·· ·· ·· ·· ·· ·· ·· ·· ·	mart the barren	
-50.0					
-60.0					Max Hold
-70.0					
Center 5.28000 GHz			Span :	50.00 MHz	
#Res BW 220 kHz	١	/BW 2.2 MHz	Sw	eep 1 ms	Min Hold
					MITTOIG
Occupied Bandwid	th	Total Power	22.5 dBm		
1	9.045 MHz				Detector
					Peak▶
Transmit Freq Error	-6.230 kHz	% of OBW Pov	ver 99.00 %		Auto <u>Man</u>
x dB Bandwidth	21.47 MHz	x dB	-26.00 dB		
x db Ballawiddi	21.47 10112	Adb	20.00 48		
100			OTATIO		
MSG			STATUS		

Plot 7-80. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax (UNII Band 2A) - Ch. 56)



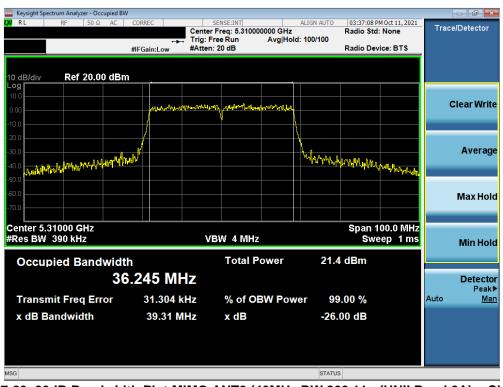
Plot 7-81. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax (UNII Band 2A) - Ch. 64)

FCC ID: A3LSMS906U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager	
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Keysight Spectrum Analyzer - Occupied BW							
KAL RF 50Ω AC	CORREC	SENSE:INT	ALIGN AL		M Oct 11, 2021	Trace	Detector
		enter Freq: 5.270000 rig: Free Run	000 GHz Avg Hold: 100/10	Radio Std:	None		
		Atten: 20 dB		Radio Dev	ice: BTS		
10 dB/div Ref 20.00 dBm Log							
10.0							
0.00	Jun Ingraph	Alteration production	And Malada			С	lear Write
		Y					
-10.0							
-20.0	<mark>/</mark>						
-30.0	_/			4			Average
-30.0 -40.0 miltor	- Yerr		- Alter A	montant	14		
-50.0					Thank		
-60.0							Max Hold
-70.0							
Center 5.27000 GHz					00.0 MHz		
#Res BW 390 kHz		VBW 4 MHz		Swe	ep 1 ms		Min Hold
Occupied Bandwidth	1	Total Po	wer	21.7 dBm			
36	.280 MHz						Detector
							Peak▶
Transmit Freq Error	2.907 kHz	% of OB	W Power	99.00 %		Auto	<u>Man</u>
x dB Bandwidth	39.41 MHz	x dB		26.00 dB			
	39.41 MIHZ	X UD		20.00 UB			
MSG			s	TATUS			

Plot 7-82. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11n (UNII Band 2A) - Ch. 54)



Plot 7-83. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11n (UNII Band 2A) - Ch. 62)

FCC ID: A3LSMS906U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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Exercise Content and Sectrum Analyzer - Occupied BW					- ē 💌
KL RF 50Ω AC		SENSE:INT Freg: 5.270000000 GHz	ALIGN AUTO 08:40:39 / Radio Sto	AM Oct 12, 2021	Trace/Detector
			d: 100/100	: None	
		: 20 dB	Radio De	vice: BTS	
10 dB/div Ref 20.00 dBm					
Log					
0.00	Mandahan	word of the lange march the			Clear Write
-10.0					
-20.0					
-30.0 -40.0 productor population of the second	J*		hiller well how when the	10.00	Average
-40.0			- Y II to Whith DW	WINT TY	
-50.0					
-60.0					
					Max Hold
-70.0					
Center 5.27000 GHz			Span '	100.0 MHz	
#Res BW 390 kHz	v	BW 4 MHz	Sw	eep 1 ms	Min Hold
					WIITHOID
Occupied Bandwidth		Total Power	22.8 dBm		
	.501 MHz				Detector
37.					Detector Peak►
Transmit Freq Error	37.713 kHz	% of OBW Pow	ver 99.00 %		Auto <u>Man</u>
x dB Bandwidth	39.63 MHz	x dB	-26.00 dB		
MSG			STATUS		

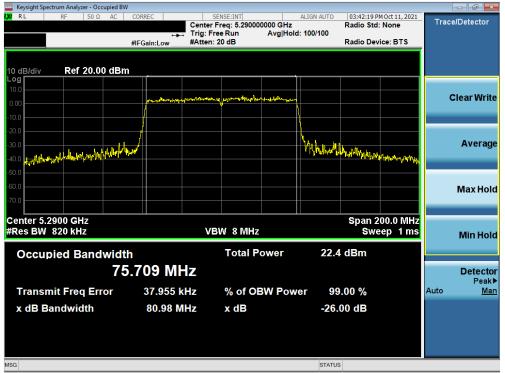
Plot 7-84. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax (UNII Band 2A) - Ch. 54)



Plot 7-85. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax (UNII Band 2A) - Ch. 62)

FCC ID: A3LSMS906U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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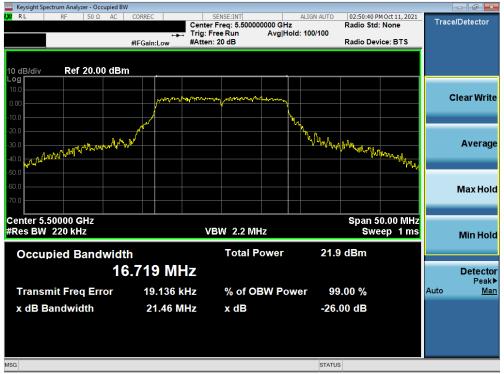
Plot 7-86. 26dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ac (UNII Band 2A) - Ch. 58)



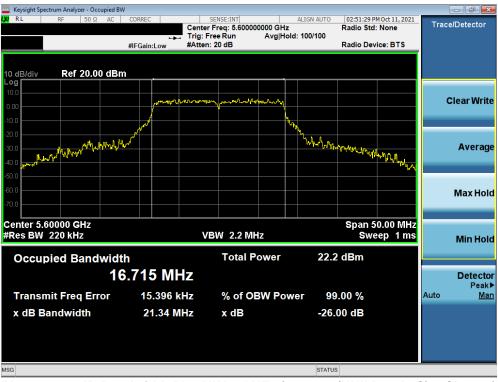
Plot 7-87. 26dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax (UNII Band 2A) - Ch. 58)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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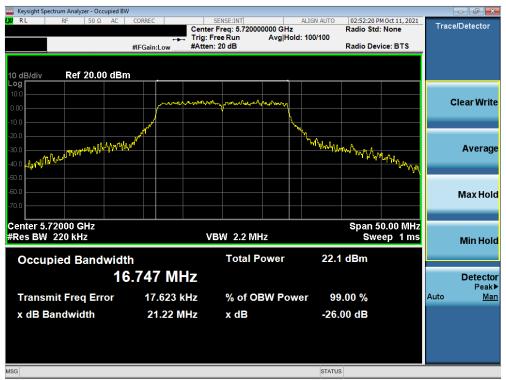
Plot 7-88. 26dB Bandwidth Plot MIMO ANT2 (802.11a (UNII Band 2C) - Ch. 100)



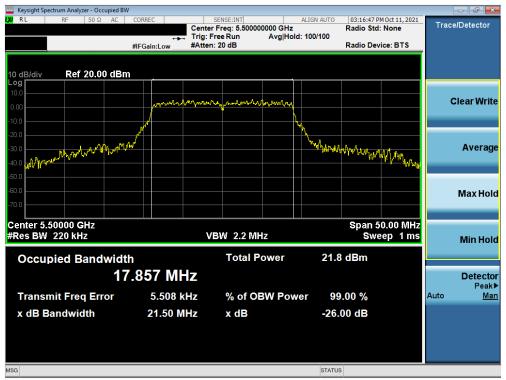
Plot 7-89. 26dB Bandwidth Plot MIMO ANT2 (802.11a (UNII Band 2C) – Ch. 120)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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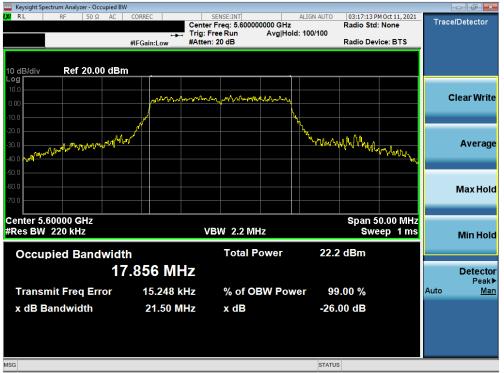
Plot 7-90. 26dB Bandwidth Plot MIMO ANT2 (802.11a (UNII Band 2C) - Ch. 144)



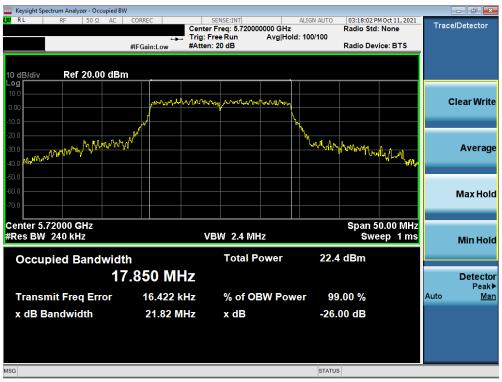
Plot 7-91. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11n (UNII Band 2C) - Ch. 100

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager	
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Plot 7-92. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11n (UNII Band 2C) - Ch. 120)



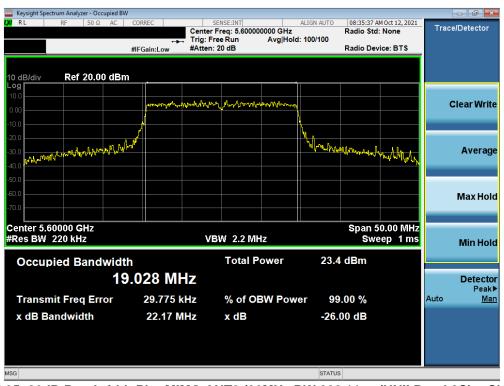
Plot 7-93. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11n (UNII Band 2C) - Ch. 144)

FCC ID: A3LSMS906U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dama 04 at 055
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🔤 Keysight Spectrum Analyzer - Occupied BW 🚽								
💢 RL RF 50Ω AC C	ORREC	SENSE:INT		ALIGN AUTO		M Oct 12, 2021	Trace	e/Detector
		nter Freq: 5.50000 g: Free Run	Avg Hold:	100/100	Radio Std	: None		
#		tten: 20 dB			Radio Dev	vice: BTS		
10 dB/div Ref 20.00 dBm								
10.0								
0.00	mannowww	man pertonant	Wary				C	Clear Write
			l l					
-10.0				۱.				
-20.0				1				
-30.0				¹ ่งในฟีฟ ู	Munnan	Lines 1		Average
-30.0 -30.0 -40.0					1-1 -	Www.way		
-50.0								
-60.0								Max Hold
-70.0								
Center 5.50000 GHz						0.00 MHz		
#Res BW 220 kHz		VBW 2.2 MH	Z		SWe	eep 1 ms		Min Hold
		T - 4 - 1 D			-10			
Occupied Bandwidth		Total P	ower	23.2	dBm			
19 (098 MHz							Detector
10.								Peak►
Transmit Freq Error	38.982 kHz	% of O	3W Powe	r 99.	.00 %		Auto	<u>Man</u>
x dB Bandwidth	21.44 MHz	x dB		26.0)0 dB			
	Z 1.44 WITIZ	X UD		-20.0	JU UB			
MSG				STATUS				

Plot 7-94. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax (UNII Band 2C) - Ch. 100



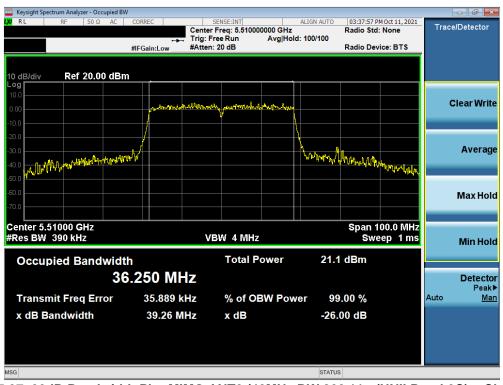
Plot 7-95. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax (UNII Band 2C) - Ch. 120)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager			
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Keysight Spectrum Analyzer - Occupied BW									
💢 RL RF 50Ω AC C	ORREC		SE:INT		ALIGN AUTO		M Oct 12, 2021	Trac	e/Detector
	-	Center Fre Trig: Free			d: 100/100	Radio Std	: None		
#1	FGain:Low	#Atten: 20		/ aginon		Radio Dev	vice: BTS		
10 dB/div Ref 20.00 dBm Log		1							
10.0									
	manhan	mont	unit handlerthart	why how way				(Clear Write
0.00	l (İ			N Contraction of the second se				
-10.0	1				1				
-20.0	/								
-20.0 -30.0 -40.0					"rangen filming	molymphon			Average
-40.0 WWW							Www.W		-
10.0									
-50.0									
-60.0									Max Hold
-70.0									
Center 5.72000 GHz							0.00 MHz		
#Res BW 220 kHz		VBW	/ 2.2 MF	Z		Swe	eep 1 ms		Min Hold
Occupied Bandwidth			Total P	ower	23.6	dBm			
19 ()89 M⊦	7							Detector
13.		12							Peak ►
Transmit Freq Error	-3.718 k	Hz	% of OE	BW Pow	er 99	.00 %		Auto	Man
x dB Bandwidth	21.23 M	Hz	x dB		-26 (00 dB			
	21.25 11	112			-201				
MSG					STATUS				

Plot 7-96. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax (UNII Band 2C) - Ch. 144)



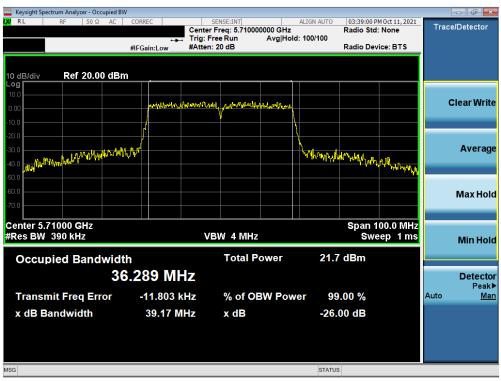
Plot 7-97. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11n (UNII Band 2C) - Ch. 102)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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Keysight Spectrum Analyzer - Occupied	BW							
💢 RL RF 50Ω AC	CORREC	SENSE:INT		ALIGN AUTO		MOct 11, 2021	Trace	/Detector
		Center Freq: 5.5900 Trig: Free Run	Avg Hold	· 100/100	Radio Std:	None		
	#IFGain:Low	#Atten: 20 dB			Radio Dev	ice: BTS		
10 dB/div Ref 20.00 dE	sm							
10.0								
0.00	n. Menue	damana mound	Second and the second				C	lear Write
-10.0								
-20.0	/		\					
-30.0				<u>λ</u>				Average
-40.0 - 1 H I. IN WALLAND	whith the			Why hanger of	my willing			J
MUNDU					بالمعد و	^{www.}		
-50.0								
-60.0								Max Hold
-70.0								
Center 5.59000 GHz					Span 1	00.0 MHz		
#Res BW 390 kHz		VBW 4 MHz	2		Swe	ep 1 ms		Min Hold
Occupied Bandwic	dth	Total F	Power	20.8	dBm			
2	6.290 MH	7						Detector
		12						Detector Peak▶
Transmit Freq Error	8.773 k	Hz % of O	BW Powe	er 99	.00 %		Auto	Man
x dB Bandwidth	39.44 M	Hz x dB		-26.0)0 dB			
	55.44 M			-20.0				
MSG				STATUS				

Plot 7-98. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11n (UNII Band 2C) - Ch. 118)



Plot 7-99. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11n (UNII Band 2C) - Ch. 142)

FCC ID: A3LSMS906U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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🔤 Keysight Spectrum Analyzer - Occupied BW								
LXX RL RF 50Ω AC	CORREC	SENSE:INT		LIGN AUTO		4 Oct 12, 2021	Trace	e/Detector
		Center Freq: 5.51000 Trig: Free Run	Avg Hold: 1		Radio Std:	None		
		#Atten: 20 dB	/ approved.		Radio Dev	ice: BTS		
10 dB/div Ref 20.00 dBm			· · · · ·					
Log 10.0								
	at work from all	red way and market	henrymin				c	Clear Write
0.00								
-10.0								
-20.0			N					
-30.0	MMN		1	hanner and the	. Millin			Average
-30.0 -40.0	Υ			er or halfe	Unit II The	Mary Present		5
						- They		
-50.0								
-60.0								Max Hold
-70.0								
Center 5.51000 GHz					Span 1	00.0 MHz		
#Res BW 390 kHz		VBW 4 MHz			Swe	ep 1 ms		Min Hold
Occupied Bandwidt	h	Total P	ower	23.0 0	dBm			
27	.580 MH	7						Detector
31	.300 IVIL							Detector Peak▶
Transmit Freq Error	129 H	z % of O	BW Power	r 99.(00 %		Auto	Man
x dB Bandwidth	39.73 MH	z x dB		-26.00	0 dB			
	55.75 Mil			-20.00	o u D			
MSG				STATUS				

Plot 7-100. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax (UNII Band 2C) - Ch. 102)



Plot 7-101. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax (UNII Band 2C) - Ch. 118)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager			
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www.www.com/analyzer - Occupied BW					- ē 💌
LX RL RF 50Ω AC	CORREC	SENSE:INT	ALIGN AUTO 08:43:13 Radio St	AM Oct 12, 2021	Trace/Detector
		er Freq: 5.710000000 GHz Free Run Avg Hol	d: 100/100	a: None	
		n: 20 dB		evice: BTS	
10 dB/div Ref 20.00 dBm					
Log					
10.0		4			
0.00	Jan Marth My forman all 1000	myamantinghangenang			Clear Write
-10.0					
-20.0			.		
-20.0 -30.0 -40.0 a month of the state of th	w .		Monor will the		Average
Contractive Way of the state				Hand Martin	Average
-40.0				- Marta	
-50.0					
-60.0					Max Hold
-70.0					
Center 5.71000 GHz				100.0 MHz	
#Res BW 390 kHz		/BW 4 MHz	Sw	reep 1 ms	Min Hold
		Total Power	23.4 dBm		
Occupied Bandwidth		Total Power	23.4 dBm		
37	.640 MHz				Detector
					Peak►
Transmit Freq Error	60.100 kHz	% of OBW Pow	ver 99.00 %		Auto <u>Man</u>
x dB Bandwidth	39.88 MHz	x dB	-26.00 dB		
MSG			STATUS		

Plot 7-102. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax (UNII Band 2C) - Ch. 142)



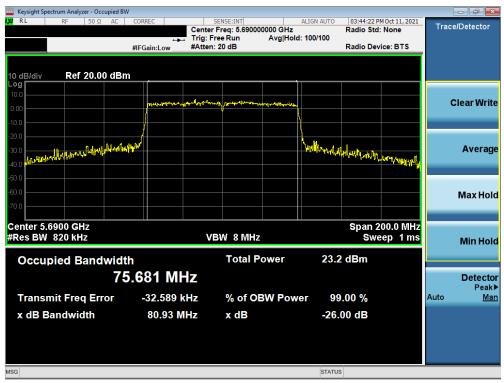
Plot 7-103. 26dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ac (UNII Band 2C) - Ch. 106)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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LXI RL RF 50Ω AC	CORREC	SENSE:INT		PM Oct 11, 2021	Trace/Detector
		er Freq: 5.61000000 GHz	Radio St	d: None	TracerDelector
		Free Run Avg Hol n: 20 dB	ld: 100/100 Radio Do	vice: BTS	
	#IFGain:Low #Atte	11. 20 UD	Raulo De	VICE. DT3	
10 dB/div Ref 20.00 dBm					
Log					
10.0					
0.00	nowhitempoladration	ally prover marked and a series			Clear Write
-10.0					
-20.0					
-30.0	Hite		La Manual marthan		Average
A AD COMPANY A MOVING A AN A A A A A A A A A A A A A A A A			and the state of t	With de au	Average
-40.0				All and a local days	
-50.0					
-60.0					
-80.0					Max Hold
-70.0					
Center 5.6100 GHz				200.0 MHz	
#Res BW 820 kHz	1	/BW 8 MHz	Sw	eep 1 ms	Min Hold
Occupied Bandwidth		Total Power	22.9 dBm		
/5	.871 MHz				Detector
	00.040111		00.00		Peak►
Transmit Freq Error	30.816 kHz	% of OBW Pov	ver 99.00 %		Auto <u>Man</u>
x dB Bandwidth	80.98 MHz	x dB	-26.00 dB		
	00.00 11112	A UD	-20.00 00		
MSG			STATUS		

Plot 7-104. 26dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ac (UNII Band 2C) - Ch. 122)



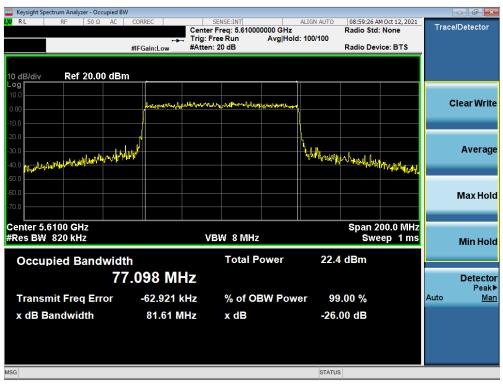
Plot 7-105. 26dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ac (UNII Band 2C) - Ch. 138)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager	
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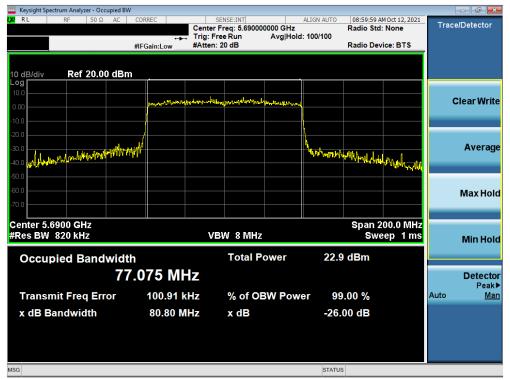
Plot 7-106. 26dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ac (UNII Band 2C) - Ch. 106)



Plot 7-107. 26dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ac (UNII Band 2C) - Ch. 122)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager	
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Plot 7-108. 26dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ac (UNII Band 2C) - Ch. 138)



Plot 7-109. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW 802.11ac (UNII Band 2C) - Ch. 114)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Daga 70 of 255	
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www.www.www.com.com.com.com.com.com.com.com.com.com	BW				
LXI RL RF 50Ω AC	CORREC	SENSE:INT r Freg: 5.570000000 GHz	ALIGN AUTO	12:51:20 PM Oct 12, 202 Radio Std: None	Trace/Detector
	Trig: I	Free Run Avg Ho	ld: 100/100		
	#IFGain:Low #Atter	n: 20 dB		Radio Device: BTS	_
10 dB/div Ref 20.00 dB	3m				
Log					
	up man an an what what when the	w Malan manufacture	a Aca Maladia	MA.	Clear Write
0.00	onthe AVC and a strategy and a state				
-10.0					
-20.0					
				WANT WATER	A Average
-40.0					
-50.0					
-60.0					Max Hold
-70.0					Wax Hold
10.0					
Center 5.5700 GHz				Span 240.0 MH	Iz
#Res BW 1.5 MHz	<u> </u>	/BW 8 MHz		Sweep 1 m	S Min Hold
		Total Power	22.7	dBm	
Occupied Bandwid		Total Power	22.1	abm	
1	56.44 MHz				Detector
					Peak►
Transmit Freq Error	226.58 kHz	% of OBW Pov	ver 99	.00 %	Auto <u>Man</u>
x dB Bandwidth	164.3 MHz	x dB	-26.0	00 dB	
100			0747		
MSG			STATUS		

Plot 7-110. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW 802.11ax (UNII Band 2C) – Ch. 114)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dogo 72 of 255	
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7.3 6dB Bandwidth Measurement – 802.11a/n/ac/ax

<u>§15.407 (e); RSS-Gen [6.2]</u>

Test Overview and Limit

The bandwidth at 6dB 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 6dB bandwidth.

In the 5.725 – 5.850GHz and 5.850 – 5.895 bands, the 6dB bandwidth must be \geq 500 kHz.

Test Procedure Used

ANSI C63.10-2013 – Section 6.9.2 KDB 789033 D02 v02r01 – Section C

Test Settings

- The signal analyzers' automatic bandwidth measurement capability was used to perform the 6dB bandwidth measurement. The "X" dB bandwidth parameter was set to X = 6. 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 = 100 kHz
- 3. VBW <u>></u> 3 x RBW
- 4. Detector = Peak
- 5. Trace mode = max hold
- 6. Sweep = auto couple

Test Setup

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



Figure 7-2. Test Instrument & Measurement Setup

Test Notes

None.

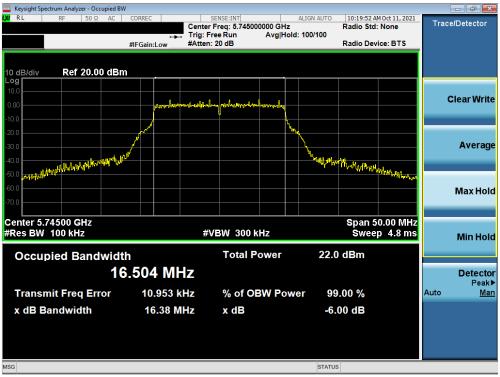
FCC ID: A3LSMS906U	Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager				
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	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured 6dB Bandwidth [MHz]
	5745	149	а	6	16.38
	5785	157	а	6	16.40
	5825	165	а	6	16.36
	5745	149	n (20MHz)	6.5/7.2 (MCS0)	17.60
	5785	157	n (20MHz)	6.5/7.2 (MCS0)	17.61
	5825	165	n (20MHz)	6.5/7.2 (MCS0)	17.64
e	5745	149	ax (20MHz)	6.5/7.2 (MCS0)	18.97
Band	5785	157	ax (20MHz)	6.5/7.2 (MCS0)	19.00
ä	5825	165	ax (20MHz)	6.5/7.2 (MCS0)	17.58
	5755	151	n (40MHz)	13.5/15 (MCS0)	36.34
	5795	159	n (40MHz)	13.5/15 (MCS0)	36.40
	5755	151	ax (40MHz)	13.5/15 (MCS0)	37.57
	5795	159	ax (40MHz)	13.5/15 (MCS0)	37.53
	5775	155	ac (80MHz)	29.3/32.5 (MCS0)	75.99
	5775	155	ax (80MHz)	29.3/32.5 (MCS0)	76.51

MIMO Antenna-1 6 dB Bandwidth Measurements

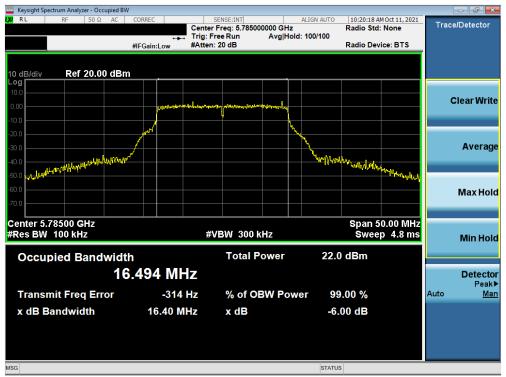
Table 7-4. Conducted Bandwidth Measurements MIMO ANT1



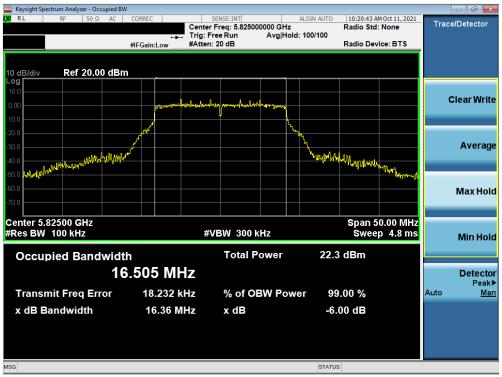
Plot 7-111. 6dB Bandwidth Plot MIMO ANT1 (802.11a (UNII Band 3) - Ch. 149)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager	
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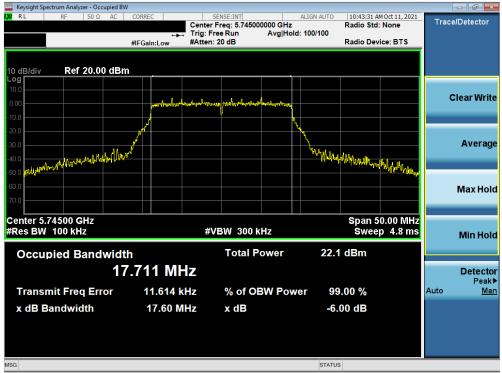
Plot 7-112. 6dB Bandwidth Plot MIMO ANT1 (802.11a (UNII Band 3) - Ch. 157)



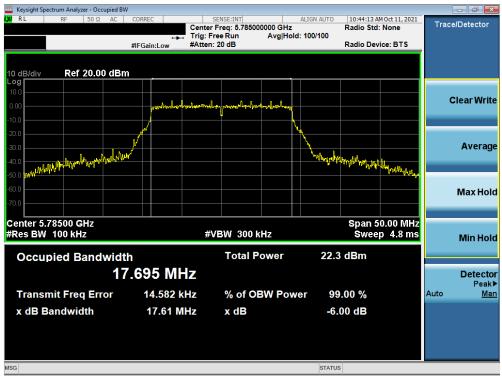
Plot 7-113. 6dB Bandwidth Plot MIMO ANT1 (802.11a (UNII Band 3) - Ch. 165)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager	
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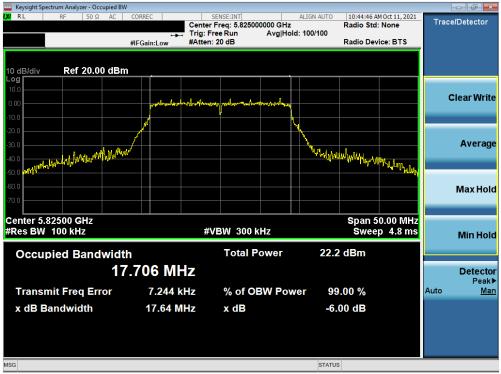
Plot 7-114. 6dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11n (UNII Band 3) - Ch. 149)



Plot 7-115. 6dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11n (UNII Band 3) - Ch. 157)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager	
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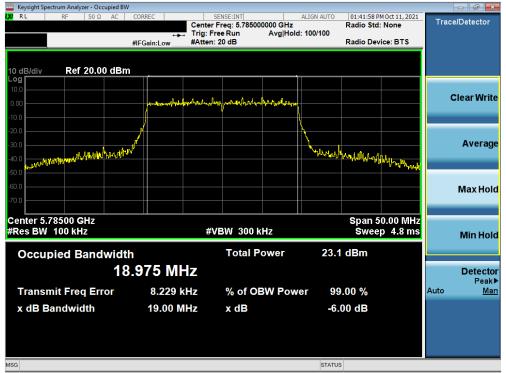
Plot 7-116. 6dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11n (UNII Band 3) - Ch. 165)



Plot 7-117. 6dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (UNII Band 3) - Ch. 149)

FCC ID: A3LSMS906U	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager	
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Plot 7-118. 6dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (UNII Band 3) - Ch. 157)



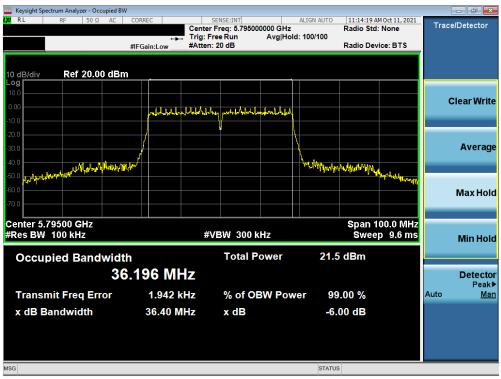
Plot 7-119. 6dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (UNII Band 3) – Ch. 165)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager				
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Keysight Spectrum Analyzer - Occupied	1 BW				
LX RL RF 50Ω AC		SENSE:INT	ALIGN AUTO	11:13:42 AM Oct 11, 2021	Trace/Detector
		nter Freq: 5.755000 ig: Free Run	000 GHz Avg Hold: 100/100	Radio Std: None	TracerDetector
		ig: Free Run itten: 20 dB	Avginoia: 100/100	Radio Device: BTS	
	#IFGallILOW #/			Rualo Bethee. B To	
10 dB/div Ref 20.00 dl	Bm				
Log					
10.0					Ole on White
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		ų į			
-20.0			<u>N</u>		
-30.0	/				Average
-40.0	/		N		
The second secon	un martin		Yr yn	And Markell	
-40.0 -50.0				Frid WVindaw Viewhore	
-60.0					Max Hold
-70.0					
Center 5.75500 GHz				Span 100.0 MHz	
#Res BW 100 kHz		#VBW 300 kH	z	Sweep 9.6 ms	Min Hold
					WIII HOIG
Occupied Bandwi	dth	Total Po	wer 21.3	dBm	
	36.196 MHz				Detector
					Peak►
Transmit Freq Error	16.018 kHz	% of OB	W Power 99	.00 %	Auto <u>Man</u>
x dB Bandwidth	36.34 MHz	x dB	-6	00 dB	
	50.54 MITZ	A GD	-0.	00 00	
				-	
MSG			STATUS	Ś	

Plot 7-120. 6dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11n (UNII Band 3) - Ch. 151)



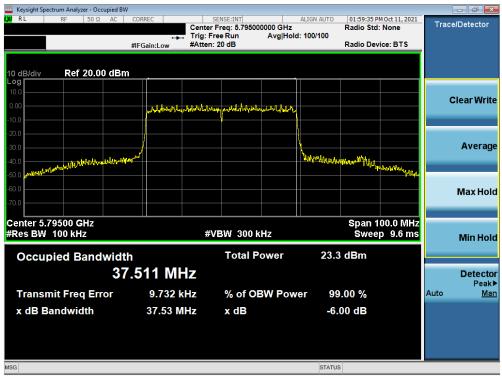
Plot 7-121. 6dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11n (UNII Band 3) - Ch. 159)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager				
Test Report S/N:	Test Dates:	EUT Type:	Dage 80 of 255				
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🔤 Key	sight Spectrum	Analyzer - Oc	cupied BW									
LXI RI	- R	F 50 Ω	AC COR	REC		NSE:INT		ALIGN AUTO		M Oct 11, 2021	Trac	e/Detector
						req: 5.75500		400/400	Radio Std	: None	mac	erbelector
			mE.C	+	 Trig: Free #Atten: 2 		Avg Hold	1: 100/100	Radio Dev	dee: BTS		
			#IFC	Sain:Low	#Atten. 2	.0 0.0			Raulo Dev	ACE. DT3		
10 dE	3/div	Ref 20.0	0 dBm									
Log												
10.0												
0.00					بروليا الأسطولي						(Clear Write
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-20.0				/								
-30.0								l				Average
00.0								View Inc.	11			····· g -
-40.0		-Alexandra	1 m Jan for for the set					Weyeshing May	Manard Mana	4. Miles Sec.		
-50.0	MURA SHAVEN	1 1	p.a.loopington March							and the second		
-60.0												
												Max Hold
-70.0												
									0	00.0 5411-		
	ter 5.755				-40.0		-11-			00.0 MHz		
#Re	s BW 10	U KHZ			#VE	3W 300 I	(HZ		Swee	p 9.6 ms		Min Hold
						_						
0	ccupie	d Band	lwidth			Total F	ower	23.2	dBm			
			27 /	63 MI	7							Detector
			57.4									Peak ►
Т	ransmit	Freq Eri	ror	12.040 k	Hz	% of O	BW Pow	er 99	.00 %		Auto	Man
v	dB Band	width		37.57 M	Hz	x dB		-6-	00 dB			
^				37.37 W	INZ	X UD		-0.	00 UB			
MSG								STATUS				

Plot 7-122. 6dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (UNII Band 3) - Ch. 151)



Plot 7-123. 6dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (UNII Band 3) - Ch. 159)

FCC ID: A3LSMS906U	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager		
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🔤 Keysight Sp	ectrum Analyze	r - Occup	ied BW										
LXI RL	RF	50 Ω	AC COF	RREC		SENSE			ALIGN AUTO		M Oct 11, 2021	Tree	e/Detector
								0000 GHz		Radio Std	: None	Trac	e/Detector
						: Free R		Avg Hold	1: 100/100				
			#IF	Gain:Low	#At	ten: 20 d	В			Radio Dev	ice: BTS		
10 dB/div	Ref 2	20.00	dBm	_									
Log													
10.0													
0.00													Clear Write
				alad, bla	الله الماليات	MULA	LAN AND AND	ulututi					
-10.0													
-20.0				<u> </u>		.							
				1					ł				Average
-30.0													Average
-40.0									<u> </u>				
50.0	and	and the second	weldown						mound	all warman			
-50.0 Al Mar	And a state of the	all one								and a second second	through and an		
-60.0													Max Hold
70.0													Max Holu
-70.0												_	
	.7750 GHz										200.0 MHz		
#Res BW	100 kHz					#VBW	300 k	Hz		Sweep	19.13 ms		Min Hold
													minning
Occu	pied Ba	ndw	vidth			Т	otal P	ower	22.	4 dBm			
occu													
			75.5	18 N	ЛНz								Detector
													Peak▶
Trans	mit Freq	Erro	r	73.13	7 kHz	%	of O	3W Pow	er 9	9.00 %		Auto	Man
v dB E	Bandwid	th		75 00	MHz	v	dB		-6	.00 dB			
	Sanuwiu	ui		15.55		~	uВ		-0	.00 uB			
MSG									STATI	JS			

Plot 7-124. 6dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ac (UNII Band 3) - Ch. 155)



Plot 7-125. 6dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (UNII Band 3) - Ch. 155)

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	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured 6dB Bandwidth [MHz]
Band 3/4	5845	169	а	6	16.33
Band 4	5865	173	а	6	16.34
Danu 4	5885	177	а	6	16.34
Band 3/4	5845	169	n (20MHz)	6.5/7.2 (MCS0)	17.28
Band 4	5865	173	n (20MHz)	6.5/7.2 (MCS0)	17.62
Danu 4	5885	177	n (20MHz)	6.5/7.2 (MCS0)	17.62
Band 3/4	5845	169	ax (20MHz)	6.5/7.2 (MCS0)	19.04
Band 4	5865	173	ax (20MHz)	6.5/7.2 (MCS0)	17.62
Dallu 4	5885	177	ax (20MHz)	6.5/7.2 (MCS0)	17.62
Band 3/4	5835	167	n (40MHz)	13.5/15 (MCS0)	36.27
Band 4	5875	175	n (40MHz)	13.5/15 (MCS0)	36.03
Band 3/4	5835	167	ax (40MHz)	13.5/15 (MCS0)	37.20
Band 4	5875	175	ax (40MHz)	13.5/15 (MCS0)	37.49
	5855	171	ac (80MHz)	29.3/32.5 (MCS0)	75.55
Band 2/4	5855	171	ax (80MHz)	29.3/32.5 (MCS0)	77.36
Band 3/4	5815	163	ac (160MHz)	58.5/65 (MCS0)	155.80
	5815	163	ax (160MHz)	58.5/65 (MCS0)	156.60

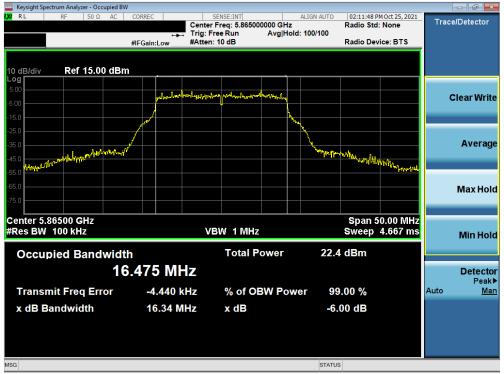
Table 7-5. Conducted Bandwidth Measurements Band 4 MIMO ANT1



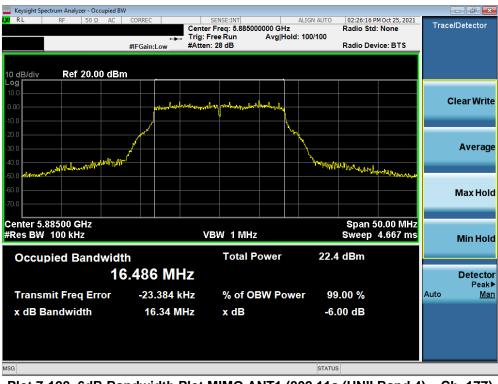
Plot 7-126. 6dB Bandwidth Plot MIMO ANT1 (802.11a (UNII Band 3/4) – Ch. 169)

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Plot 7-127. 6dB Bandwidth Plot MIMO ANT1 (802.11a (UNII Band 4) - Ch. 173)



Plot 7-128. 6dB Bandwidth Plot MIMO ANT1 (802.11a (UNII Band 4) – Ch. 177)

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