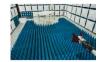


## PCTEST

7185 Oakland Mills Road, Columbia, MD 21046 USA Tel. 410.290.6652 / Fax 410.290.6654 http://www.pctest.com



## MEASUREMENT REPORT FCC Part 15.407 802.11ax WIFI 6E OFDMA

#### **Applicant Name:**

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

## Date of Testing: 9/9 – 12/06/2021 Test Report Issue Date: 12/13/2021 Test Site/Location: PCTEST Lab. Columbia, MD, USA Test Report Serial No.: 1M2110010116-12-R1.A3L

# FCC ID:

#### A3LSMS906E

Certification

# APPLICANT:

## Samsung Electronics Co., Ltd.

Application Type:
Model:
Additional Model(s):
EUT Type:
Frequency Range:
Modulation Type:
FCC Classification:
Test Procedure(s):

SM-S906E/DS SM-S906E Portable Handset 5935 – 7115MHz OFDMA 15E 6GHz Low Power Indoor Client (6XD) ANSI C63.10-2013, KDB 789033 D02 v02r01, KDB 648474 D03 v01r04, KDB 662911 D01 v02r01, KDB 987594 D02 V01R01

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.

Note: This revised Test Report (S/N: 1M2110010116-12-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.

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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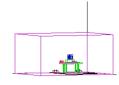


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# **MEASUREMENT REPORT**



			MIMO		
UNII Band	Channel Bandwidth (MHz)	Tx Frequency (MHz)	Max. Power (mW)	Max. Power (dBm)	
5		5935 - 6415	25.003	13.98	
6	20	6435 - 6515	23.442	13.70	
7	20	6535 - 6875	25.003	13.98	
8		6895 - 7115	25.003	13.98	
5		5965 - 6405	25.061	13.99	
6	40	6445 - 6525	23.768	13.76	
7		6565 - 6845	25.061	13.99	
8		6885 - 7085	24.774	13.94	
5		5985 - 6385	24.946	13.97	
6	80	6465	21.827	13.39	
7	00	6545 - 6865	24.604	13.91	
8		6945 - 7025	24.547	13.90	
5		6025 - 6345	25.061	13.99	
6	160	6505	23.550	13.72	
7	100	6665 - 6825	24.946	13.97	
8		6985	25.003	13.98	

**EUT Overview** 

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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: A3LSMS906E. The test data contained in this report pertains only to the emissions due to the EUT's UNII transmitter while operating in the 6GHz band.

Test Device Serial No.: 1233M, 0278M, 1224M, 0284M, 1229M, 0292M, 0298M

#### 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 5	_	Band 6	_	Band 7		Band 8
Ch.	Frequency (MHz)						
2	5935	97	6435	117	6535	189	6895
:	:	:	:	:	:	:	:
45	6175	105	6475	149	6695	209	6995
:	:	:	:	:	:	:	:
93	6415	113	6515	185	6875	233	7115

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

	Band 5		Band 6		Band 7		Band 8
Ch.	Frequency (MHz)	Ch.	Frequency (MHz)	Ch.	Frequency (MHz)	Ch.	Frequency (MHz)
3	5965	99	6445	123	6565	187	6885
:	:	:	:	:	:	:	:
43	6165	107	6485	155	6725	211	7005
:	:	:	:	:	:	:	:
91	6405	115	6525	179	6845	227	7085
	Table 2-2. 802.11ax (40MHz BW) Frequency / Channel Operations						

	Band 5		Band 6		Band 7		Ban
Ch.	Frequency (MHz)	Ch.	Frequency (MHz)	Ch.	Frequency (MHz)	Ch.	Frequen
7	5985	103	6465	119	6545	199	69
:	:			:	:	:	:
39	6145			151	6705	215	70
:	:			:	:		
87	6385			183	6865		
	Tab	le 2-3. 802	2.11ax (80MHz BW)	Frequen	cy / Channel Operation	ations	

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nd 8

Frequency (MHz)
6945
7025



	Band 5	_	Band 6		Band 7	_	Band 8
Ch.	Frequency (MHz)						
15	6025	111	6505	143	6665	207	6985
:	:			:	:		
47	6185			175	6825		
:	:						
79	6345						

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

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#### Notes:

6GHz NII operation is possible in 20MHz, and 40MHz, and 80MHz and 160MHz channel bandwidths. The
maximum achievable duty cycles for all modes were determined based on measurements performed on a
spectrum analyzer in zero-span mode with RBW = 8MHz, VBW = 50MHz, and detector = peak per the guidance
of Section B)2)b) of ANSI C63.10-2013 and KDB 789033 D02 v02r01. The RBW and VBW were both greater
than 50/T, where T is the minimum transmission duration, and the number of sweep points across T was greater
than 100. The duty cycles are as follows:

Mode	Antenna	Bandwidth	Tone	Duty Cycle
		[MHz]		
			26T	98.7
802.11ax	MIMO	20	52T	98.2
NII RU 6E			106T	97.7
			242T	96.5
			26T	97.9
802.11ax			52T	96.0
NII RU 6E	MIMO	40	106T	96.2
			242T	94.2
			484T	90.7
			26T	96.7
			52T	94.8
802.11ax	MIMO	80	106T	96.2
NII RU 6E	IVIIIVIO	80	242T	93.7
			484T	90.3
			996T	86.1
			26T	98.0
			52T	96.0
802.11ax	MIMO	160	106T	96.2
NII RU 6E		1st	242T	94.1
			484T	90.6
			996T	86.0
			26T	97.9
			52T	95.9
802.11ax		160	106T	96.6
NII RU 6E	MIMO	2nd	242T	93.4
			484T	90.7
			996T	86.2

Table 2-5. Measured Duty Cycles

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

WiFi Configurations		CI	DD	SE	DM
		ANT1	ANT2	ANT1	ANT2
	11ax (20MHz)	~	✓	$\checkmark$	✓
6 GHz	11ax (40MHz)	~	✓	$\checkmark$	✓
0 GHZ	11ax (80MHz)	~	✓	$\checkmark$	✓
	11ax (160MHz)	✓	✓	✓	✓

Table 2-6.	Frequency /	Channel	Operations
------------	-------------	---------	------------

✓ = Support; = NOT Support

**SDM** = Spatial Diversity Multiplexing – MIMO function

**CDD** = Cyclic Delay Diversity - 2Tx Function

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), 5GHz, and 6GHz bands simultaneously on each antenna.

## 2.3 Antenna Description

Following antenna was used for the testing.

Frequency Band	Antenna 1 Gain (dBi)	Antenna 2 Gain (dBi)	Directional Gain (dBi)
5	-7.7	-7.7	-4.69
6	-7.8	-7.8	-4.79
7	-7.8	-7.8	-4.79
8	-7.7	-7.8	-4.74

Table 2-7. Antenna Peak Gain

## 2.4 Test Configuration

The EUT was tested per the guidance of KDB 987594 D02 V01R01 and 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, 7.5 and 7.6 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 simulated call or data transmission configuration. The worst case radiated emissions data is shown in this report.

## 2.5 Software and Firmware

The test was conducted with firmware version S906EXXU0AUJ5 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.

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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 414788 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	1315051
Emco	3115	Horn Antenna (1-18GHz)	6/18/2020	Biennial	6/18/2022	9704-5182
Emco	3116	Horn Antenna (18 - 40GHz)	5/11/2021	Biennial	5/11/2023	9203-2178
ETS-Lindgren	3816/2NM	Line Impedance Stabilization Network	7/9/2020	Biennial	7/9/2022	114451
Keysight Technologies	N9030A	PXA Signal Analyzer (3Hz-26.5GHz)	8/17/2020	Annual	12/17/2021	MY54490576
Pasternack	NMLC-2	Line Conducted Emissions Cable (NM)	9/10/2021	Annual	9/10/2022	NMLC-2
Rohde & Schwarz	ESU26	EMI Test Receiver (26.5GHz)	8/3/2021	Annual	8/3/2022	100342
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	102135
Rohde & Schwarz	SCMW-Z800A	UP/DOWN Converter	N/A		1211.4530.02	
Rohde & Schwarz	CMW500	Radio Communication Tester	3/19/2021	Annual	3/19/2022	112347
Solar Electronics	8012-50-R-24-BNC	Line Impedance Stabilization Network	9/21/2021	Biennial	9/21/2023	310233

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:A3LSMS906EFCC Classification:15E 6 GHz Low Power Indoor Client (6XD)

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
2.1046, 15.407(a)(11)	Maximum Conducted Output Power	N/A		PASS	Section 7.3
2.1049, 15.407(a)(10)	Occupied Bandwidth/ 26dB Bandwidth	99% of the occupied bandwidth of any channel must be contained within each of its respective U-NII sub bands The maximum transmitter channel bandwidth for U-NII devices in the 5.925-7.125 GHz band is 320 megahertz.	CONDUCTED	PASS	Section 7.2
15.407(a)(8)	Maximum Power Spectral Density	< -1dBm/MHz e.i.r.p.		PASS	Section 7.4
15.407(a)(8)	Maximum Radiated Output Power	< 24dBm over the frequency band of operation		PASS	Section 7.3
15.407(b)(7)	In-Band Emissions	EUT must meet the limits detailed in 15.407(b)(6)		PASS	Section 7.5
15.407(d)(6)	Contention Based Protocol	EUT must detect AWGN signal with 90% (or better) certainty		PASS	Section 7.6
15.407(b)(6)	Undesirable Emissions	< -27dBm/MHz e.i.r.p. outside of the 5.925 – 7.125GHz band	RADIATED	PASS	Section 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 7.7, 7.8
15.407(b)(9)	AC Conducted Emissions (150kHz – 30MHz)	< FCC 15.207 limits	LINE CONDUCTED	PASS	Section 7.9

#### 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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## 7.2 26dB Bandwidth Measurement – 802.11ax

<u>2.1049, 15.407(a)(10)</u>

#### **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 KDB 987594 D02 V01R01

#### **Test Settings**

- The signal analyzers' automatic bandwidth measurement capability was used to perform the 26dB bandwidth measurement. The "X" dB bandwidth parameter was set to X = 26. The automatic bandwidth measurement function also has the capability of simultaneously measuring the 99% occupied bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
- 2. RBW = approximately 1% of the emission bandwidth
- 3. VBW  $\geq$  3 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 26dB Bandwidth Measurements (26 Tones)

Plot 7-1. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (26 Tones) UNII Band 5) - Ch. 2)



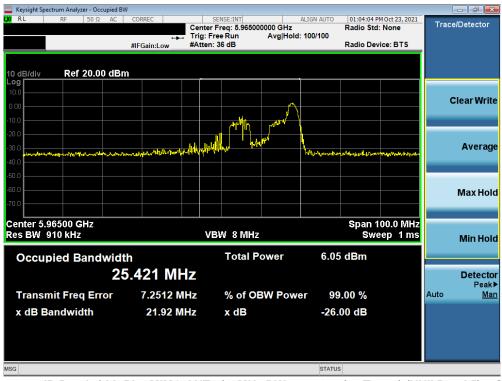
Plot 7-2. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (26 Tones) (UNII Band 5) - Ch. 45)

FCC ID: A3LSMS906E	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Plot 7-3. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (26 Tones) UNII Band 5) - Ch. 93)



Plot 7-4. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (26 Tones) (UNII Band 5) - Ch. 3)

FCC ID: A3LSMS906E	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
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Plot 7-5. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (26 Tones) (UNII Band 5) - Ch. 43)



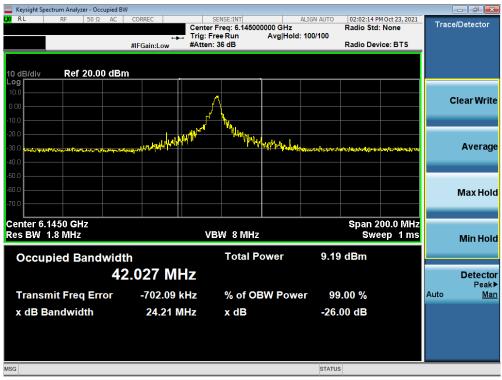
Plot 7-6. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (26 Tones) (UNII Band 5) – Ch. 91)

FCC ID: A3LSMS906E	PCTEST *	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
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Keysight Spectrum Analyzer - Occupied BW					
LXI RE S0Ω AC C			LIGN AUTO 01:48:58 Radio S	8 PM Oct 23, 2021	Trace/Detector
	Trig: Fre	req: 5.985000000 GHz e Run Avg Hold:		a: None	
#	FGain:Low #Atten:			evice: BTS	
10 dB/dby Dof 20 00 dBm					
10 dB/div Ref 20.00 dBm					
10.0					
0.00		^			Clear Write
-10.0	1.a	الم السري			
	Aller Aller	A. Manual			
-20.0	A MILLION AND	4 Mallalan			
-30.0 augustus and an and an and a second	- MANY	- Willingson	******	and the second	Average
-40.0					
-50.0					
-60.0					
					Max Hold
-70.0					
Center 5.9850 GHz			Snan	200.0 MHz	
Res BW 1.8 MHz	VB	W 8 MHz		veep 1 ms	
					Min Hold
Occupied Bandwidth		Total Power	8.92 dBm		
46.	448 MHz				Detector Peak►
Transmit Freq Error	5.478 kHz	% of OBW Powe	r 99.00 %		Auto <u>Man</u>
x dB Bandwidth	43.88 MHz	x dB	-26.00 dB		
	45.00 MHZ	X UB	-20.00 dB		
MSG			STATUS		

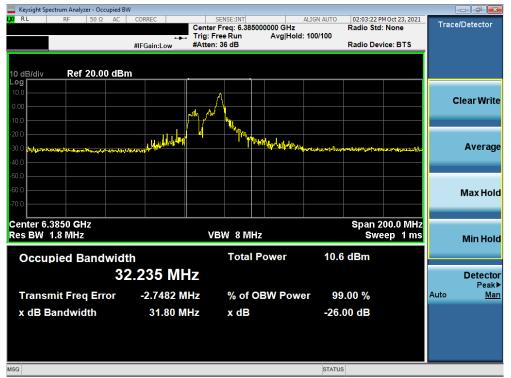
Plot 7-7. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (26 Tones) (UNII Band 5) - Ch. 7)



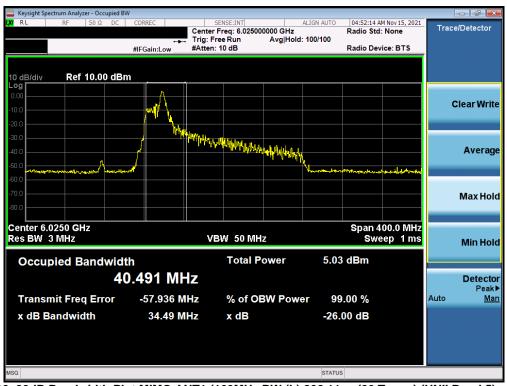
Plot 7-8. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (26 Tones) (UNII Band 5) - Ch. 39)

FCC ID: A3LSMS906E	PCTEST *	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
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Plot 7-9. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (26 Tones) (UNII Band 5) - Ch. 87)



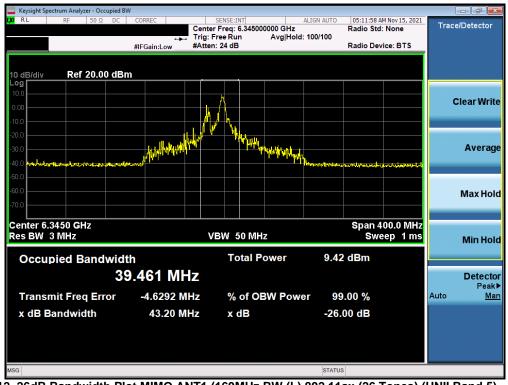
Plot 7-10. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW (L) 802.11ax (26 Tones) (UNII Band 5) - Ch. 15)

FCC ID: A3LSMS906E	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
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Plot 7-11. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW (L) 802.11ax (26 Tones) (UNII Band 5) - Ch. 47)



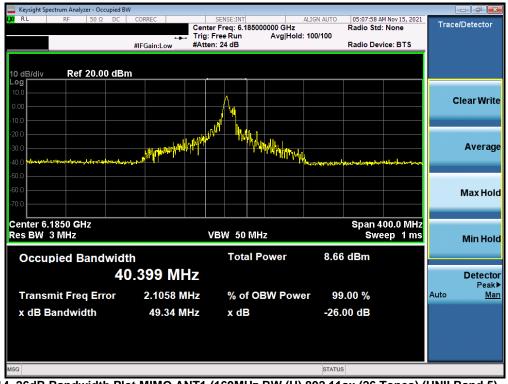
Plot 7-12. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW (L) 802.11ax (26 Tones) (UNII Band 5) - Ch. 79)

FCC ID: A3LSMS906E	Proud to be part of the element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Keysight Spectrum Analyzer - Occupied BW	V				- 6 -
XIRL RF 50Ω DC	CORREC	SENSE:INT A	LIGN AUTO 05:05:47 Al Radio Std:	Mov 15, 2021	Trace/Detector
	Trig:	Free Run Avg Hold:	100/100		
	#IFGain:Low #Atte	en: 24 dB	Radio Dev	ice: BTS	
10 dB/div Ref 20.00 dBm	n				
Log					
0.00		A			Clear Writ
-10.0		N Col			
-20.0					
		where the last			Averag
-30.0	and the second second second second	K Mali II			Averay
-40.0 Alternative and provide and a state of the	and the second s		وراية معقورها المهاد والعود حالم والمنها	for the second second second	
-50.0					
-60.0					Max Hol
-70.0					
Center 6.0250 GHz			Span 4	00.0 MHz	
Res BW 3 MHz		VBW 50 MHz		ep 1 ms	Min Hol
					WIIITIO
Occupied Bandwidt	h	Total Power	6.34 dBm		
48	3.657 MHz				Detecto
		~ < <b>O</b> DW D	00.00.0/		Peak
Transmit Freq Error	31.803 MHz	% of OBW Powe	r 99.00 %		Auto <u>Ma</u>
x dB Bandwidth	56.44 MHz	x dB	-26.00 dB		
MSG			STATUS		

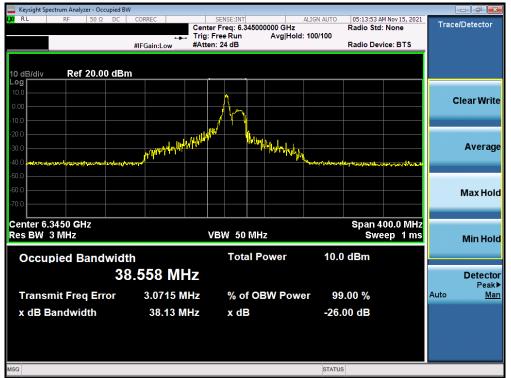
Plot 7-13. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW (U) 802.11ax (26 Tones) (UNII Band 5) - Ch. 15)



Plot 7-14. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW (U) 802.11ax (26 Tones) (UNII Band 5) - Ch. 47)

FCC ID: A3LSMS906E	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
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Plot 7-15. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW (U) 802.11ax (26 Tones) (UNII Band 5) - Ch. 79)



Plot 7-16. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (26 Tones) (UNII Band 6) - Ch. 97)

FCC ID: A3LSMS906E	PCTEST *	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Plot 7-17. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (26 Tones) (UNII Band 6) - Ch. 105)



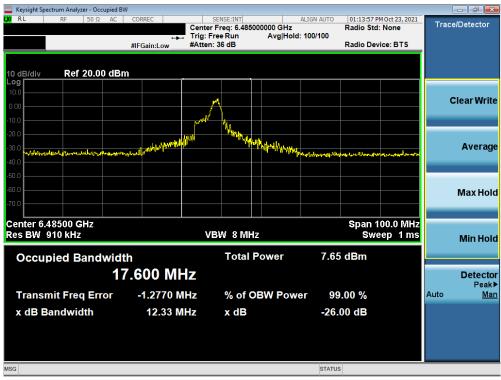
Plot 7-18. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (26 Tones) (UNII Band 6) – Ch. 113)

FCC ID: A3LSMS906E	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
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🔤 Keysight Spectrum Analyzer - Occupied BW							
LXX RL RF 50Ω AC	CORREC	SENSE:INT			0:38 PM Oct 23, 2021	Trac	e/Detector
		nter Freq: 6.44500 g: Free Run	Avg Hold: 1		Std: None		
		tten: 36 dB			Device: BTS		
10 dB/div Ref 20.00 dBm Log							
10.0							
0.00		m				(	Clear Write
-10.0	, <b>MHM</b> MM	J 4					
-20.0	─ <b>┟┟┊┠╎╹╎</b> ╟┉╜	<u> </u>					
-30.0	N						Average
-40.0		* with which	and the second stand of the second stand	wardinander	with the man and the Will a strong to the man		_
-50.0							
-60.0							Max Hold
-70.0							
Center 6.44500 GHz					an 100.0 MHz		
Res BW 910 kHz		VBW 8 MHz			Sweep 1 ms		Min Hold
		Total P		7.34 dBn	_		
Occupied Bandwidt	n	l otal P	ower	7.34 dBn	1		
18	.836 MHz						Detector
							Peak▶
Transmit Freq Error	-8.6660 MHz	% of O	3W Power	99.00 %	6	Auto	<u>Man</u>
x dB Bandwidth	21.10 MHz	x dB		-26.00 dl	2		
X dB Bandwidth	21.10 10112	A UD		-20.00 ui			
MSG				STATUS			

Plot 7-19. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (26 Tones) (UNII Band 6) - Ch. 99)



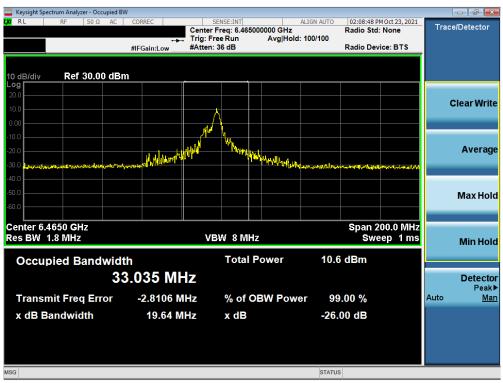
Plot 7-20. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (26 Tones) (UNII Band 6) - Ch. 107)

FCC ID: A3LSMS906E	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
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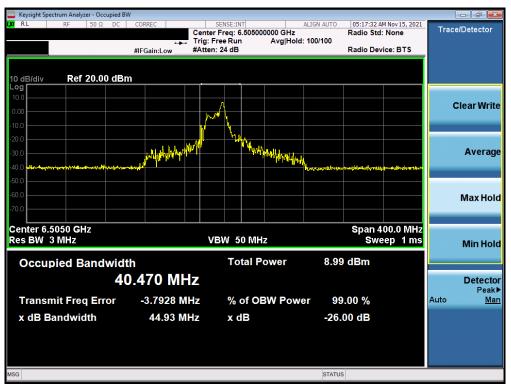
Plot 7-21. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (26 Tones) (UNII Band 6) - Ch. 115)



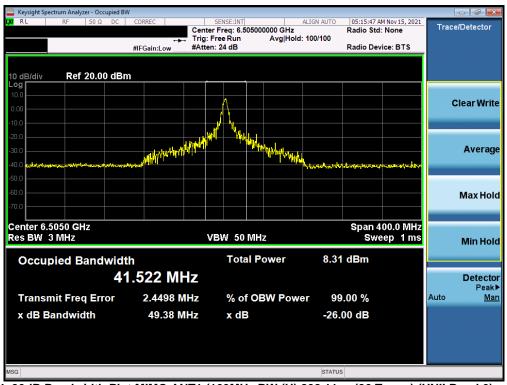
Plot 7-22. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (26 Tones) (UNII Band 6) - Ch. 103)

FCC ID: A3LSMS906E	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
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Plot 7-23. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW (L) 802.11ax (26 Tones) (UNII Band 6) - Ch. 111)



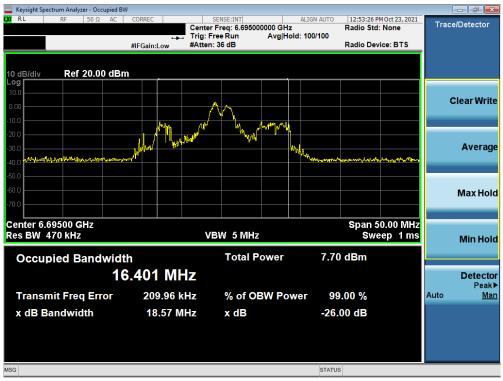
Plot 7-24. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW (U) 802.11ax (26 Tones) (UNII Band 6) - Ch. 111)

FCC ID: A3LSMS906E	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
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Plot 7-25. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 117)



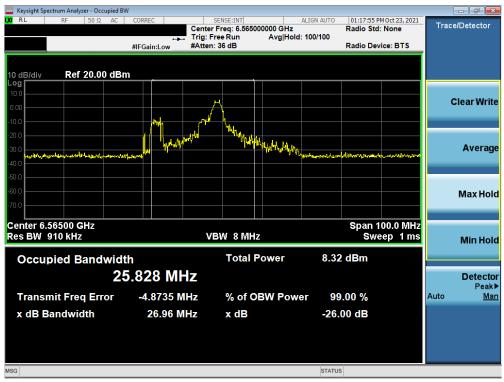
Plot 7-26. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 149)

FCC ID: A3LSMS906E	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
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Plot 7-27. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 185)



Plot 7-28. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 123)

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Plot 7-29. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 155)



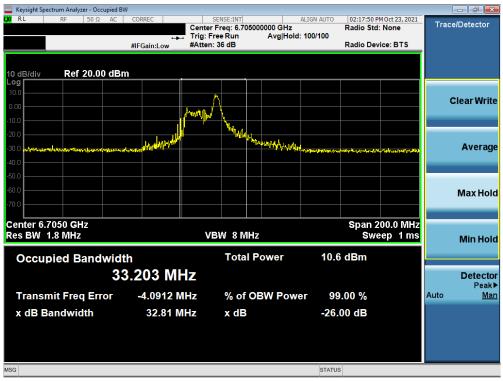
Plot 7-30. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 179)

FCC ID: A3LSMS906E	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
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Plot 7-31. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 119)



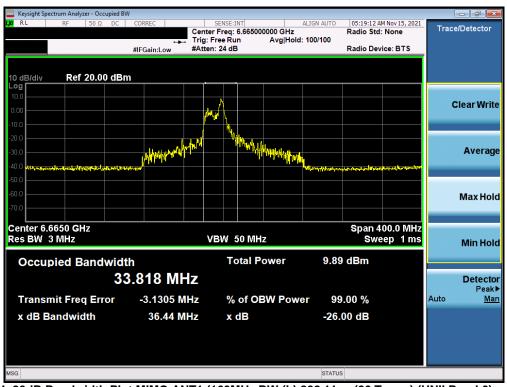
Plot 7-32. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 151)

FCC ID: A3LSMS906E	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
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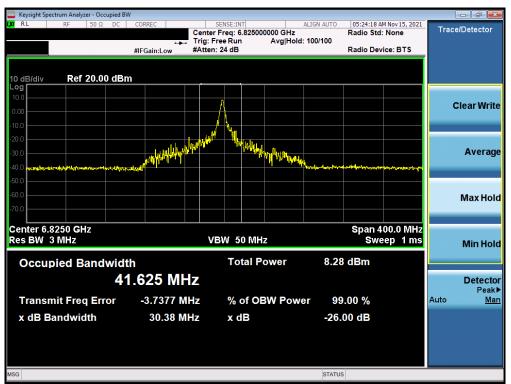
Plot 7-33. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 183)



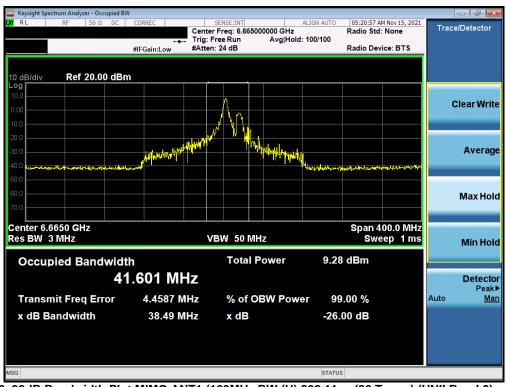
Plot 7-34. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW (L) 802.11ax (26 Tones) (UNII Band 6) - Ch. 143)

FCC ID: A3LSMS906E	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
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Plot 7-35. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW (L) 802.11ax (26 Tones) (UNII Band 6) - Ch. 175)



Plot 7-36. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW (U) 802.11ax (26 Tones) (UNII Band 6) - Ch. 143)

FCC ID: A3LSMS906E	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
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Plot 7-37. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW (U) 802.11ax (26 Tones) (UNII Band 6) - Ch. 175)



Plot 7-38. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (26 Tones) (UNII Band 8) - Ch. 189)

FCC ID: A3LSMS906E	PCTEST *	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Plot 7-39. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (26 Tones) (UNII Band 8) - Ch. 209)



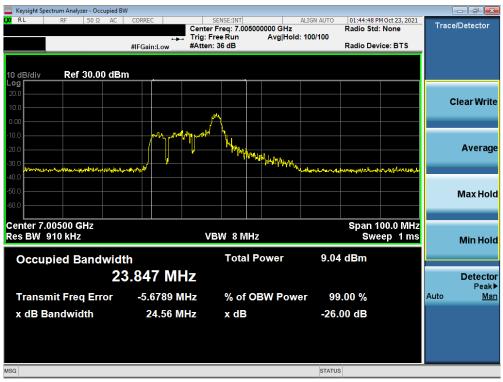
Plot 7-40. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (26 Tones) (UNII Band 8) - Ch. 233)

FCC ID: A3LSMS906E	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dage 25 of 202	
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Plot 7-41. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (26 Tones) (UNII Band 8) - Ch. 187)



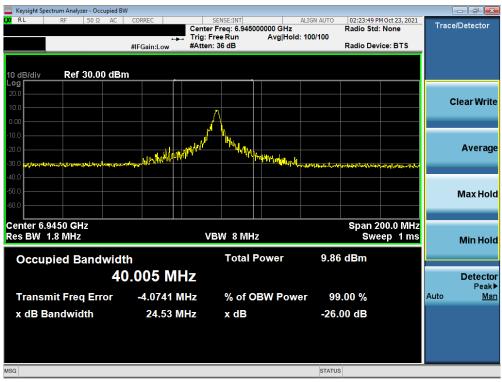
Plot 7-42. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (26 Tones) (UNII Band 8) - Ch. 211)

FCC ID: A3LSMS906E	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dogo 26 of 202	
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Plot 7-43. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (26 Tones) (UNII Band 8) - Ch. 227)



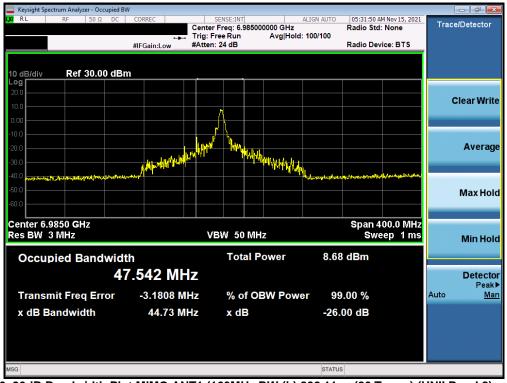
Plot 7-44. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (26 Tones) (UNII Band 8) - Ch. 199)

FCC ID: A3LSMS906E	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dage 27 of 202	
1M2110010116-12-R1.A3L	9/9 - 12/06/2021	Portable Handset	Page 37 of 292	
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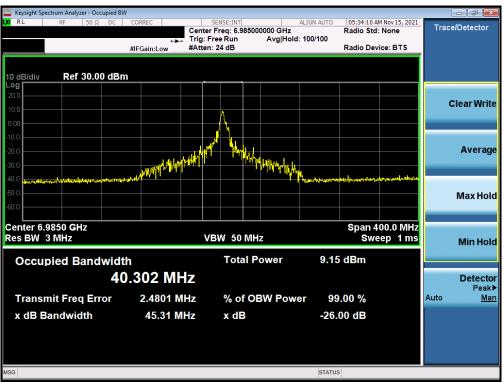
Plot 7-45. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (26 Tones) (UNII Band 8) - Ch. 215)



Plot 7-46. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW (L) 802.11ax (26 Tones) (UNII Band 8) - Ch. 207)

FCC ID: A3LSMS906E	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dage 20 of 202	
1M2110010116-12-R1.A3L	9/9 - 12/06/2021	Portable Handset	Page 38 of 292	
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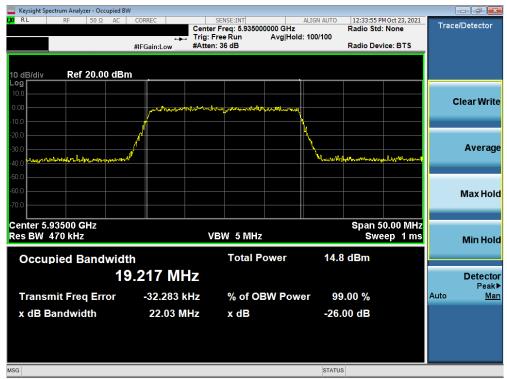


Plot 7-47. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW (U) 802.11ax (26 Tones) (UNII Band 8) - Ch. 207)

FCC ID: A3LSMS906E	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Daga 20 of 202
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## MIMO Antenna-1 26dB Bandwidth Measurements (Full Tones)



Plot 7-48. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (Full Tones) UNII Band 5) - Ch. 2)



Plot 7-49. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (Full Tones) (UNII Band 5) - Ch. 45)

FCC ID: A3LSMS906E	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 40 of 202
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www.www.com analyzer - Occupied BW	1				- d <u>- x</u>
IXI RL RF 50Ω AC	Trig: I	SENSE:INT r Freq: 6.415000000 GHz Free Run Avg Hol n: 36 dB	Radio d: 100/100	54 PM Oct 23, 2021 Std: None Device: BTS	Trace/Detector
10 dB/div Ref 20.00 dBn	۱		<b>.</b>		
0.00	uknumuthan	Laper Hander Robert Martin Weington America	1		Clear Write
-10.0	/				Average
-40.0 <b></b>	<sup>n</sup>		W Work- William	wantaan การการการการการการการการการการการการการก	
-60.0					Max Hold
Center 6.41500 GHz Res BW 470 kHz		/BW 5 MHz	S	n 50.00 MHz Sweep 1 ms	Min Hold
Occupied Bandwidt	<sup>h</sup> ).226 MHz	Total Power	15.3 dBm		Detector
Transmit Freq Error	-39.639 kHz	% of OBW Pow			Peak▶ Auto <u>Man</u>
x dB Bandwidth	21.72 MHz	x dB	-26.00 dB		
MSG			STATUS		

Plot 7-50. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (Full Tones) UNII Band 5) - Ch. 93)



Plot 7-51. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (Full Tones) (UNII Band 5) - Ch. 3)

FCC ID: A3LSMS906E	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dage 44 of 202	
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Keysight Spectrum Analyzer - Occupied B	W						×
<b>LXI</b> RE 50Ω AC	CORREC	SENSE:INT	ALIGN AUTO	01:06:30 PM 0		Trace/Detec	tor
		Center Freq: 6.16500 Trig: Free Run	Avg Hold: 100/100	Radio Std: N	vone		
	#IFGain:Low	#Atten: 36 dB		Radio Devic	e: BTS		
10 dB/div Ref 30.00 dBr	n						
20.0							
						ClearV	Vrite
10.0	سهمهما لمعاور ليهالو	+ my maren afal before on	holeman				
0.00							
-10.0	/						
-20.0						Ave	rage
22.0	/						Ŭ
water water that will fly had weater	not		"Linnot M	harry marine and a second	manhorman		
-40.0							
-50.0						Max	Hold
-60.0							
Center 6.16500 GHz				Span 10	0.0 MHz		
Res BW 910 kHz		VBW 8 MHz		Swee	ep 1 ms	Min	Hold
Occupied Bandwid	th	Total P	ower 20.	6 dBm			
3.	7.646 MH	7				Dete	octor
J		Z					eak▶
Transmit Freq Error	1.901 ki	z % of OE	3W Power 99	9.00 %		Auto	Man
· · ·							
x dB Bandwidth	40.80 MI	Hz xdB	-26.	.00 dB			
MSG			STATU	S			

Plot 7-52. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (Full Tones) (UNII Band 5) - Ch. 43)



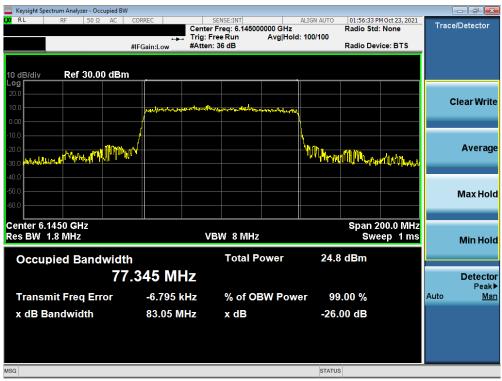
Plot 7-53. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (Full Tones) (UNII Band 5) - Ch. 91)

FCC ID: A3LSMS906E	PCTEST *	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dama 40 of 000
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Keysight Spectrum Analyzer - Occupied BW						p X
LXI RE 50Ω AC	CORREC	SENSE:INT		8 PM Oct 23, 2021	Trace/Dete	ctor
		nter Freq: 5.985000000 GH g: Free Run Avg H	z Radio S old: 100/100	ta: None		
		tten: 36 dB		evice: BTS		
10 dB/div Ref 30.00 dBm						
Log						
20.0					Clear	Mrito
10.0	A. P. S. Mary of the state of the	and a star and the star and a star	shqr4		Clear	wille
0.00						
-10.0						
-20.0	<b>.</b>				Ave	erage
and the stark and starting of the second start	lm		JUN HAMAN AND AND AND AND AND AND AND AND AND A	No funsifier		go
				an and a full that and the family of the		
-40.0						
-50.0					Max	Hold
-60.0						
Center 5.9850 GHz				200.0 MHz		
Res BW 1.8 MHz		VBW 8 MHz	S	weep 1ms	Min	Hold
Occupied Bandwidt		Total Power	24.7 dBm			
			24.7 0.011			
77	.365 MHz					ector
Transmit Freq Error	-169.96 kHz	% of OBW Po	wer 99.00 %		Auto	Peak► <u>Man</u>
· · · · ·	82.92 MHz	x dB	-26.00 dB			
x dB Bandwidth	82.92 MHZ	X dB	-20.00 dB			
MSG			STATUS			

Plot 7-54. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (Full Tones) (UNII Band 5) - Ch. 7)



Plot 7-55. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (Full Tones) (UNII Band 5) - Ch. 39)

FCC ID: A3LSMS906E	Proud to be part of the element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dama 40 at 000
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KL         RF         50 Ω         AC         CORREC         SENSE:INT         ALIGN AUTO         [02:04:19 PM Oct 23, 2021]         Trace/Detect           Center Freq:         6.385000000 GHz         Radio Std: None         Trig: Free Run         Avg Hold:>100/100         #IFGain:Low         #IFGain:Low         Radio Device: BTS         Trig: Free Run         Trig: Free Run         Radio Device: BTS         Trig:	tor
trig: Free Run Avg Hold:>100/100	
10 dB/div Ref 30.00 dBm	
20.0	
10.0 Clear V	<b>/</b> rite
	rage
300 where the second seco	
-40.0	
50.0 Max	
Max	loid
Center 6.3850 GHz Span 200.0 MHz	
Kes BW 1.8 WHZ Sweep 1 ms Min	1010
Occupied Bandwidth Total Power 25.2 dBm	
	ector eak▶
Transmit Freq Error -61.560 kHz % of OBW Power 99.00 %	Man
-	
x dB Bandwidth 82.86 MHz x dB -26.00 dB	
MSG STATUS	

Plot 7-56. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (Full Tones) (UNII Band 5) - Ch. 87)



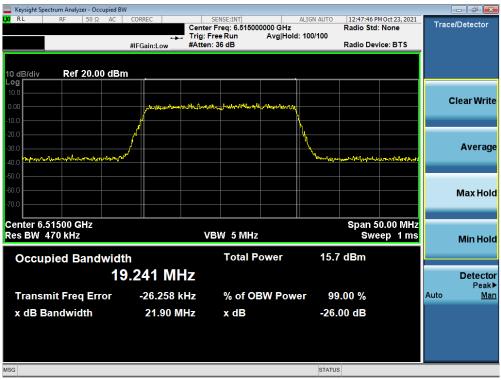
Plot 7-57. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (Full Tones) (UNII Band 6) - Ch. 97)

FCC ID: A3LSMS906E	PCTEST *	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dama 44 at 200
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Keysight Spectrum Analyzer - Occupied B	W					[	- 0 ×
<b>LXI</b> RL RF 50Ω AC	CORREC	SENSE:INT	ALIGN AUTO	12:44:44 PM		Trace	e/Detector
		Center Freq: 6.47500 Trig: Free Run	Avg Hold: 100/100	Radio Std: I	None		
		#Atten: 36 dB	Avginola. 100/100	Radio Devid	e: BTS		
10 dB/div Ref 20.00 dB	m						
Log							
10.0							Clear Write
0.00	Markenkin	marthaling	convolution of				
-10.0			<u> </u>				
-20.0			l N				
	, North Contraction of the second sec						
-30.0	1						Average
-40.0 arth marter and and and and a set of the set of the set	n <sup>1</sup>		"Morton	have been about	with the start of the	_	
-50.0							
-60.0							
-50.0							Max Hold
-70.0							
Center 6.47500 GHz					.00 MHz		
Res BW 470 kHz		VBW 5MHz		Swee	ep 1ms		Min Hold
Occupied Bandwid	th	Total P	ower 15.7	′ dBm			
1	9.179 MH	7					Detector
							Peak
Transmit Freq Error	-36.755 kH	z % of OE	3W Power 99	.00 %		Auto	Man
x dB Bandwidth	21.83 MH	z xdB	-26.	00 dB			
MSG			STATUS	5			

Plot 7-58. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (Full Tones) (UNII Band 6) - Ch. 105)



Plot 7-59. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (Full Tones) (UNII Band 6) - Ch. 113)

FCC ID: A3LSMS906E	PCTEST *	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dama 45 at 000	
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							×
<mark>IX/</mark> RL RF 50Ω AC C	ORREC	SENSE:INT	ALIGN AUTO	01:11:42 PM C		Trace/Detec	tor
		er Freq: 6.445000000 GHz Free Run Avg Hol	d: 100/100	Radio Std: N	one		
#		en: 36 dB		Radio Devic	e: BTS		
10 dB/div Ref 30.00 dBm							
Log							
20.0							
10.0						Clear	Nrite
0.00	phonewoullhounduble	within the and a with any of the particular					_
			λ.				
-10.0						_	
-20.0			<u>⊦</u> ₽,			Ave	rage
-30.0	<u> </u>		Humanhaman	الم الم الم			_
-40.0				and an and a second second	******		
-50.0							
-60.0						Мах	Hola
-80.0							
Center 6.44500 GHz				Span 10	0.0 MHz		
Res BW 910 kHz		VBW 8 MHz			p 1 ms	Min	Hold
						IVIIII	noiu
Occupied Bandwidth		Total Power	21.0	dBm			_
	699 MHz					Dete	ector
57.							Peak►
Transmit Freq Error	-34.500 kHz	% of OBW Pow	ver 99.(	00 %		Auto	Man
x dB Bandwidth	41.07 MHz	x dB	-26.0	0 aB			
MSG			STATUS				

Plot 7-60. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (Full Tones) (UNII Band 6) - Ch. 99)



Plot 7-61. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (Full Tones) (UNII Band 6) - Ch. 107)

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weysight Spectrum Analyzer - Occupied BW							
<mark>IX/</mark> RL RF 50Ω AC C	ORREC	SENSE:INT	ALIGN AUTO	01:16:04 PM Radio Std:		Trace	e/Detector
		ter Freq: 6.52500000 : Free Run A	vg Hold: 100/100	Radio Std: I	None		
#		en: 36 dB		Radio Devid	e: BTS		
)							
10 dB/div Ref 30.00 dBm							
Log							
20.0							
10.0						C	Clear Write
0.00	And the stand of the stand of the	man marken marked	a particular			_	
			Ν				
-10.0			i i				•
-20.0							Average
-30.0			The stars of the stars of	When we way the days		_	
-40.0				an a constant si a An eli dada	and the second		
-50.0							Max Hold
-60.0							Max Hulu
Center 6.52500 GHz				Span 10	0.0 MHz		
Res BW 910 kHz		VBW 8 MHz		Swee	ep 1 ms		Min Hold
							Minitiona
Occupied Bandwidth		Total Pov	ver 20.8	3 dBm			
37	705 MHz						Detector
01.							Peak►
Transmit Freq Error	-34.526 kHz	% of OBW	Power 99	0.00 %		Auto	<u>Man</u>
x dB Bandwidth	40.72 MHz	x dB	-26	00 dB			
	40.72 MINZ	X UB	-20.				
MSG			STATU	5			

Plot 7-62. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (Full Tones) (UNII Band 6) - Ch. 115)



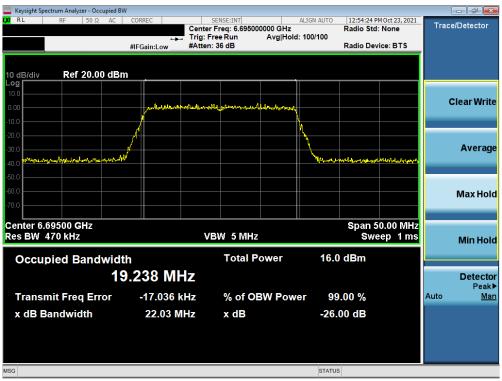
Plot 7-63. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (Full Tones) (UNII Band 6) - Ch. 103)

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www.www.com/www.cow/www.com/www.cow/ww							- 6 <b>-</b>
LXI RE 50Ω AC	CORREC	SENSE:INT	ALIGN AUTO	12:48:51 PM (		Trac	e/Detector
		iter Freq: 6.53500000 j: Free Run A	vg Hold: 100/100	Radio Std: N	one		
		ten: 36 dB		Radio Devic	e: BTS		
10 dB/div Ref 20.00 dBm							
10.0							
0.00	I I de Maril a Let	- all all all and				(	Clear Write
-10.0	1		N				
-20.0							
-30.0			<u> </u>				Average
-40.0 mpmmmlan man marker and			hunder	www.	maluron		
-50.0							
-60.0							Max Hold
-70.0							
Center 6.53500 GHz				Span 50			
Res BW 470 kHz		VBW 5 MHz		Swee	p 1 ms		Min Hold
Occupied Dandwidth		Total Pow	or 16.2	dBm		_	
Occupied Bandwidth		TOtal FOW	ei 10.2	ubiii			
19	.185 MHz						Detector
							Peak►
Transmit Freq Error	-17.911 kHz	% of OBW	Power 99	.00 %		Auto	<u>Man</u>
x dB Bandwidth	21.74 MHz	x dB	-26.	00 dB			
MSG			STATUS	5			

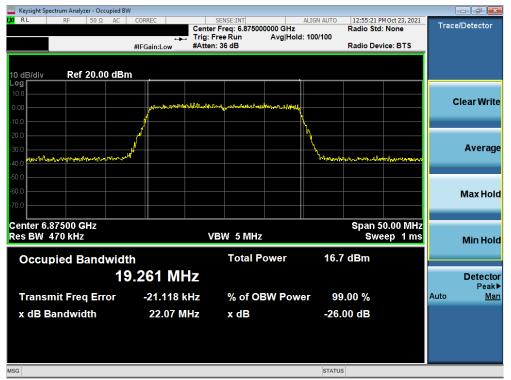
Plot 7-64. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (Full Tones) (UNII Band 7) - Ch. 117)



Plot 7-65. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (Full Tones) (UNII Band 7) - Ch. 149)

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Plot 7-66. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (Full Tones) (UNII Band 7) - Ch. 185)



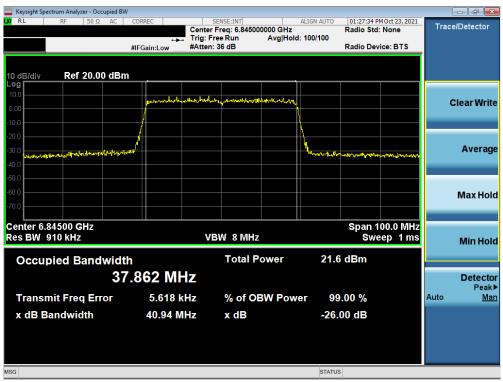
Plot 7-67. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (Full Tones) (UNII Band 7) - Ch. 123)

FCC ID: A3LSMS906E	PCTEST *	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
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	ectrum Analyzer												- 6 <b>-</b> ×
RL	RF	50 Ω	AC	CORREC			NSE:INT	00000 GHz	ALIGN AUTO	01:20:28 P Radio Std	M Oct 23, 2021	Trac	e/Detector
				#IFGain	Low		e Run		d:>100/100	Radio Dev			
0 dB/div	Ref 2	20.00	dBm										
				yar	n mai an	u <sub>erse</sub> llma <sub>story</sub>	Jt Hunardapa	and from the standing				(	Clear Write
0.0													
0.0 30.0 مندر الم	handerstander	n <del>a, a</del> lve	had the plane	<i>.</i> /					Marwalesnell	<b>L</b> ffersonspeligelsijle	er of the state of		Averag
D.O D.O													Max Hol
enter 6.	72500 GH	17								Snan 1	00.0 MHz		
	910 kHz					VBV	W 8 MH:	Z			ep 1ms		Min Hol
Occu	pied Ba	ndv	vidt	n			Total F	ower	20.5	5 dBm			
			37	.772	2 MF	z							Detecto Peak
Transi	mit Freq	Erro	or	2	.640 k	Hz	% of O	BW Pow	ver 99	0.00 %		Auto	Ma
x dB B	andwidt	th		4(	).65 M	Hz	x dB		-26.	00 dB			
G									STATU	5			

Plot 7-68. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (Full Tones) (UNII Band 7) - Ch. 155)



Plot 7-69. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (Full Tones) (UNII Band 7) - Ch. 179)

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Keysight Spectrum Analyzer - Occupied I	BW				
IM RL RF 50Ω AC	🛻 Trig: I	SENSE:INT Freq: 6.545000000 GHz Free Run Avg Ho n: 36 dB	Radio St Id: 100/100	PM Oct 23, 2021 d: None evice: BTS	Trace/Detector
10 dB/div Ref 30.00 dB	m		-		
20.0	مىرى بىلىرى يەرىپىرى مەرىپارىسى بىلىرى يەرىپىرى	and the content of the second s	<b>u</b>		Clear Write
-10.0					Auerore
-20.0 -30.0 ***********************************	Ny W		Hanna Inthe	un MMMundu	Average
-50.0					Max Hold
Center 6.5450 GHz Res BW 1.8 MHz		/BW 8 MHz		200.0 MHz veep 1 ms	Min Hold
Occupied Bandwid		Total Power	25.5 dBm		
/ Transmit Freq Error	7.402 MHz -121.87 kHz	% of OBW Pov	wer 99.00 %		Detector Peak► Auto <u>Man</u>
x dB Bandwidth	83.43 MHz	x dB	-26.00 dB		
MSG			STATUS		

Plot 7-70. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (Full Tones) (UNII Band 7) - Ch. 119)



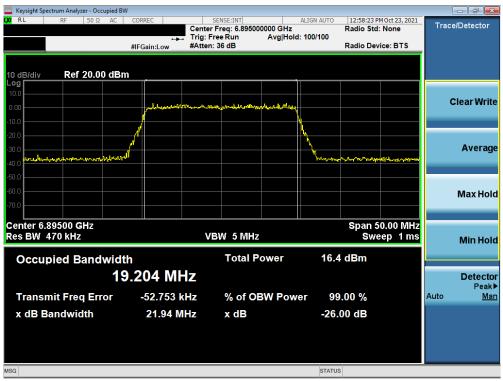
Plot 7-71. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (Full Tones) (UNII Band 7) - Ch. 151)

FCC ID: A3LSMS906E	PCTEST *	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dama 54 at 200
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www.www.com analyzer - Occupied BW							- 6 <u>- ×</u>
LXX RL RF 50Ω AC	CORREC	SENSE:INT		GN AUTO 02:19:41 P Radio Std	M Oct 23, 2021	Trac	e/Detector
		enter Freq: 6.86500 rig: Free Run	Avg Hold: 10		None		
		Atten: 36 dB		Radio Dev	ice: BTS		
10 dB/div Ref 30.00 dBm							
Log							
20.0							Clear Write
10.0	monument	*****	the way we have the				
0.00							
-10.0			\ <u> </u>				
-20.0	<b>/</b>		\\	him. Amer			Average
-20.0	<u></u>			Mary Mary	white Walland		
-40.0							
-50.0							Max Hold
-60.0							
Center 6.8650 GHz				Snan 2	00.0 MHz		
Res BW 1.8 MHz		VBW 8 MHz		Swe	ep 1 ms		
							Min Hold
Occupied Bandwidth		Total P	ower	25.0 dBm			
//.	487 MHz	4					Detector Peak►
Transmit Freq Error	-32.721 kHz	z % of OE	BW Power	99.00 %		Auto	Man
x dB Bandwidth	83.07 MHz	z x dB		-26.00 dB			
		xub					
MSG				STATUS			

Plot 7-72. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (Full Tones) (UNII Band 7) - Ch. 183)



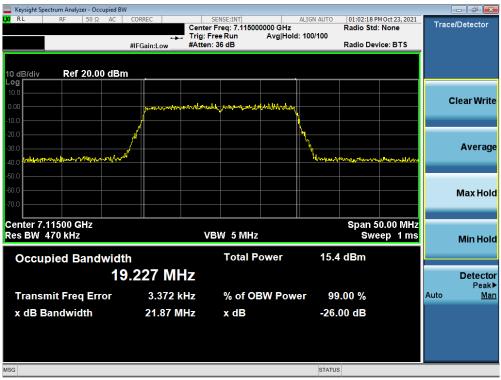
Plot 7-73. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (Full Tones) (UNII Band 8) - Ch. 189)

FCC ID: A3LSMS906E	PCTEST *	MEASUREMENT REPORT (CERTIFICATION)	SAMBUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Da an 50 at 000
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🔤 Keysight Spectrum Analyzer - Occupied BW 👘									
LX RE S0Ω AC C	ORREC		NSE:INT		ALIGN AUTO		M Oct 23, 2021	Trac	e/Detector
			eq: 6.99500 ≘Run		l: 100/100	Radio Std:	None		
#1	FGain:Low	#Atten: 3				Radio Dev	ice: BTS		
10 dB/div Ref 20.00 dBm									
10.0									
0.00	matheater	alunation	بروالالمعالمين والمرو	how have a server				1	Clear Write
-10.0		- 1 - 6	1	1					
	s l				h.				
-20.0 p					۱ <mark>۰</mark>				_
-30.0					1. L.				Average
-40.0 moun mon marked and a filler					When the start	Magnellin	halsendarente		
-50.0									
-60.0									
-70.0									Max Hold
-70.0									
Center 6.99500 GHz						Span 5	0.00 MHz		
Res BW 470 kHz		VBV	V 5 MHz				ep 1 ms		Min Hold
							<u> </u>		
Occupied Bandwidth			Total P	ower	15.8	dBm			
	234 M⊦	-							Detector
19.4	234 1016	12							Detector Peak▶
Transmit Freq Error	-37.311 k	Hz	% of OE	3W Pow	er 99	.00 %		Auto	Man
x dB Bandwidth	21.98 M	HZ	x dB		-26.	00 dB			
MSG					STATUS				

Plot 7-74. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (Full Tones) (UNII Band 8) - Ch. 209)



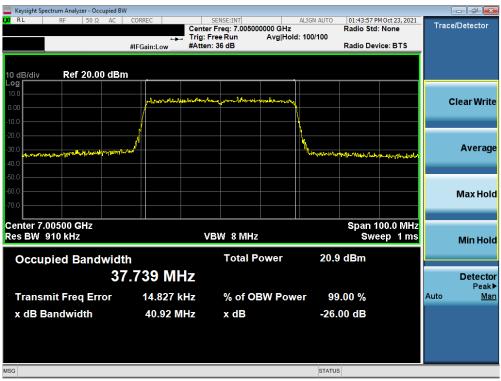
Plot 7-75. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (Full Tones) (UNII Band 8) - Ch. 233)

FCC ID: A3LSMS906E	PCTEST *	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		D
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🔤 Keysight Spectrum Analyzer - Occupied BW 🚽									
KL RF 50Ω AC C	ORREC		VSE:INT		ALIGN AUTO		M Oct 23, 2021	Trac	e/Detector
			eq: 6.88500		I: 100/100	Radio Std	: None		0.000000
#	IFGain:Low	#Atten: 36		, trainere		Radio Dev	rice: BTS		
10 dB/div Ref 20.00 dBm									
Log 10.0									
	Alunhan	with the state of the second	and the second states	ر مارد بر المعالم					Clear Write
0.00	1 1				1				
-10.0					\				
-20.0	1				1				
	<b>/</b>				Ъ <u>.</u>				Average
Alexandration of the second se					man	human	mounder		Average
-40.0									
-50.0									
-60.0									Max Hold
-70.0									Max Hold
-70.0									
Center 6.88500 GHz						Snan 1	00.0 MHz		
Res BW 910 kHz		VBV	V 8 MHz				ep 1 ms		
						- Oliv	sop i mo		Min Hold
Occupied Bandwidth			Total P	ower	20.4	dBm			
		-							
37.	761 MF	Z							Detector
									Peak►
Transmit Freq Error	-1.078 k	Hz	% of OE	3W Pow	er 99	.00 %		Auto	<u>Man</u>
x dB Bandwidth	41.19 M	Hz	x dB		-26.0	00 dB			
			A		201				
MSG					STATUS				

Plot 7-76. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (Full Tones) (UNII Band 8) - Ch. 187)



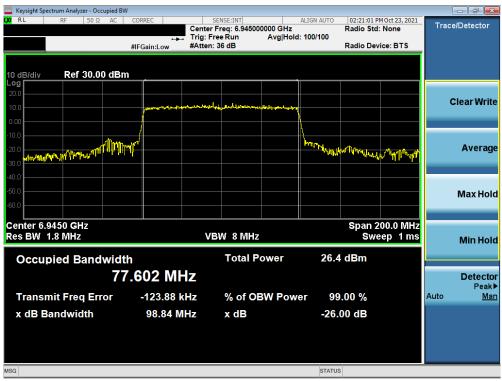
Plot 7-77. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (Full Tones) (UNII Band 8) - Ch. 211)

FCC ID: A3LSMS906E	PCTEST *	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Dama 54 at 200
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🔤 Keysight Spectrum Analyzer - Occupied BW							- 6 -
LX/ RL RF 50Ω AC	CORREC	SENSE:INT			PM Oct 23, 2021	Trac	e/Detector
		nter Freq: 7.08500 ig: Free Run	Avg Hold: 1	Radio St 00/100	a: None		
		tten: 36 dB			evice: BTS		
10 dB/div Ref 20.00 dBm							
10.0							
0.00	protonteration	www.ener	- month la la				Clear Write
-10.0			l A				
	1						
-20.0			Т Ц <mark>У</mark>				
-30.0 Lunghland pollogentaria	a <mark>v/</mark>		I I J	hamper happy the second second	Manhowhend		Average
-40.0							
-50.0							
-60.0							Max Hold
-70.0							
-70.0							
Center 7.08500 GHz				Span	100.0 MHz		
Res BW/910 kHz		VBW 8 MHz			veep 1ms		Min Hold
,							Millinoid
Occupied Bandwidth	h	Total P	ower	20.9 dBm			
37	.610 MHz						Detector
51	.010 10112						Peak►
Transmit Freq Error	-15.246 kHz	% of O	<b>3W Power</b>	99.00 %		Auto	<u>Man</u>
x dB Bandwidth	40.79 MHz	x dB		-26.00 dB			
	40.79 MHZ	хив		-20.00 UB			
MSG				STATUS			

Plot 7-78. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (Full Tones) (UNII Band 8) - Ch. 227)



Plot 7-79. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (Full Tones) (UNII Band 8) - Ch. 199)

FCC ID: A3LSMS906E	PCTEST *	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		D
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Keysight Spectrum Analyzer - Occupied BW							
🗶 RL RF 50Ω AC COR		ENSE:INT Freg: 7.025000000 GHz	ALIGN AUTO	02:25:58 P	M Oct 23, 2021	Trace	/Detector
	Trig: Fr		d: 100/100	Radio Sta	None		
#IFG	Gain:Low #Atten:	36 dB		Radio Dev	ice: BTS		
10 dB/div Ref 30.00 dBm							
Log							
20.0							lear Write
10.0	and a second and the second	we have the second second second second				, c	ieai wiile
0.00							
-10.0			<u> </u>				
			M. Marsher	NEM			Average
-20.0 -30.0			hinnerstered	ent en ditte			/// of 0.90
-40.0							
-50.0							Max Hold
-60.0							
Center 7.0250 GHz Res BW 1.8 MHz	VE	W 8 MHz			00.0 MHz		
	VE			SWE	ep 1 ms		Min Hold
Occupied Bandwidth		Total Power	25.9	dBm			
	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	rotarr offor	Loio				
//.6	82 MHz						Detector
Transmit Freq Error	23.137 kHz	% of OBW Pow	ver 99.	.00 %		Auto	Peak▶ <u>Man</u>
x dB Bandwidth	99.90 MHz	x dB	-26.0	)0 dB			
MSG			STATUS				

Plot 7-80. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (Full Tones) (UNII Band 8) - Ch. 215)

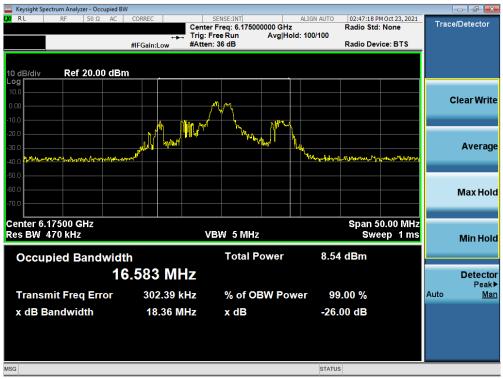
FCC ID: A3LSMS906E	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:		Daga EC at 202
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## MIMO Antenna-2 26dB Bandwidth Measurements (26 Tones)



Plot 7-81. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax (26 Tones) UNII Band 5) - Ch. 2)



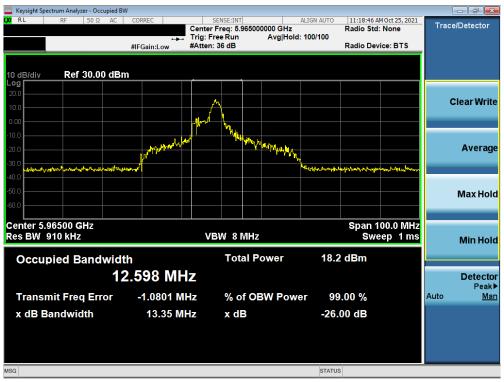
Plot 7-82. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax (26 Tones) (UNII Band 5) - Ch. 45)

FCC ID: A3LSMS906E	Proud to be part of reserved	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Plot 7-83. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax (26 Tones) UNII Band 5) - Ch. 93)



Plot 7-84. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax (26 Tones) (UNII Band 5) - Ch. 3)

FCC ID: A3LSMS906E	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager		
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Plot 7-85. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax (26 Tones) (UNII Band 5) - Ch. 43)



Plot 7-86. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax (26 Tones) (UNII Band 5) - Ch. 91)

FCC ID: A3LSMS906E	PCTEST *	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:	Гуре:		
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www.www.com analyzer - Occupied BW								- 6 <b>-</b>
LXX RL RF 50Ω AC	CORREC	SENSE:INT ter Freg: 5.98500		ALIGN AUTO	12:07:31 P	M Oct 25, 2021	Trac	e/Detector
		j: Free Run	Avg Hold:		Radio Sta	None		
		ten: 36 dB	•.		Radio Dev	ice: BTS		
10 dB/div Ref 20.00 dBm								
Log								
10.0		4						Clear Write
0.00								
-10.0	<b>/</b> 4%p%	NO Mun T						
-20.0		<mark>  '</mark>						
-30.0 distriguing and most strange from the start of the	Market Market Market		Winner	- Calatra (Jakory work)	Moto and	and the second		Average
-40.0								
-50.0								
-60.0								Max Hold
-70.0								
Center 5.9850 GHz					Snan 2	00.0 MHz		
Res BW 1.8 MHz		VBW 8 MHz				ep 1 ms		Min Hold
								Min Hold
Occupied Bandwidth	1	Total P	ower	10.2	dBm			
	.772 MHz							Detector
30								Detector Peak►
Transmit Freq Error	212.65 kHz	% of O	3W Powe	er 99.	.00 %		Auto	Man
x dB Bandwidth	38.94 MHz	x dB			0 dB			
	30.94 WINZ	хав		-20.0				
MSG				STATUS				

Plot 7-87. 26dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax (26 Tones) (UNII Band 5) - Ch. 7)



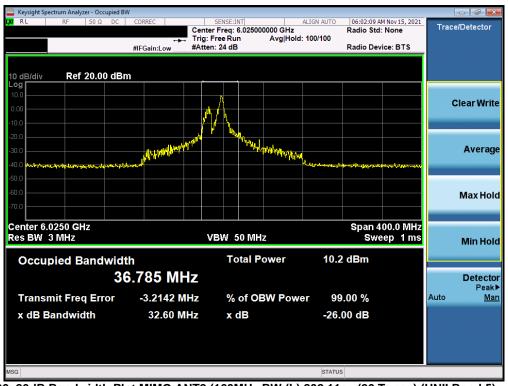
Plot 7-88. 26dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax (26 Tones) (UNII Band 5) - Ch. 39)

FCC ID: A3LSMS906E	Proud to be part of the element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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🔤 Keysight Spectrum Analyzer - Occupied BW							- 6 ×
<mark>IX/</mark> RL RF 50Ω AC C	ORREC	SENSE:INT			3:49 PM Oct 25, 2021 o Std: None	Trac	e/Detector
		Center Freq: 6.38500 Trig: Free Run	Avg Hold:		o Sta: None		
#		#Atten: 36 dB			o Device: BTS		
10 dB/div Ref 30.00 dBm							
Log							
20.0							
10.0							Clear Write
0.00							
-10.0	ll ll	munger has many					
-20.0	And the Burgland		Munipertury				Average
-30.0 www.www.www.www.hat.min.www.an.	and the second		I. MILL ST	the for the second s	wounderhouserer		
-40.0							
-50.0							Max Hold
-60.0							Maxilolu
Center 6.3850 GHz				Sp	an 200.0 MHz		
Res BW 1.8 MHz		VBW 8 MHz			Sweep 1 ms		Min Hold
Occupied Bandwidth		Total P	ower	11.8 dBr	n		
38	058 MH	7					Detector
00.		4					Peak►
Transmit Freq Error	124.38 kH	z % of OE	<b>3W Powe</b>	r 99.00 9	%	Auto	<u>Man</u>
x dB Bandwidth	39.27 MH	z xdB		-26.00 d	D		
	33.27 WIT			-20.00 u	D		
MSG				STATUS			

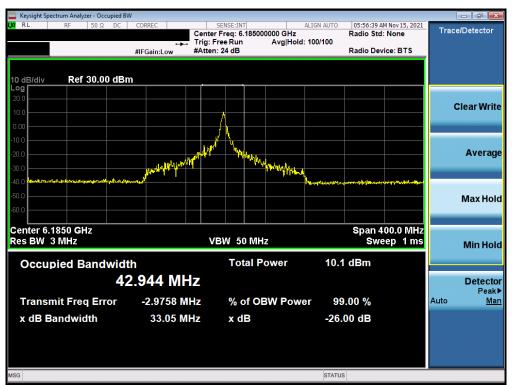
Plot 7-89. 26dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax (26 Tones) (UNII Band 5) - Ch. 87)



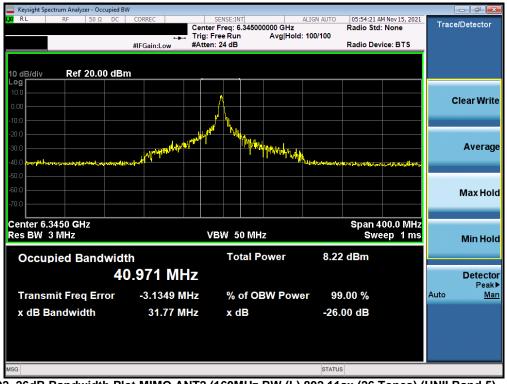
Plot 7-90. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW (L) 802.11ax (26 Tones) (UNII Band 5) - Ch. 15)

FCC ID: A3LSMS906E	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager		
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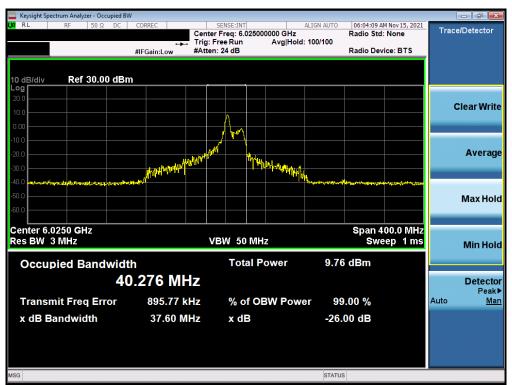
Plot 7-91. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW (L) 802.11ax (26 Tones) (UNII Band 5) - Ch. 47)



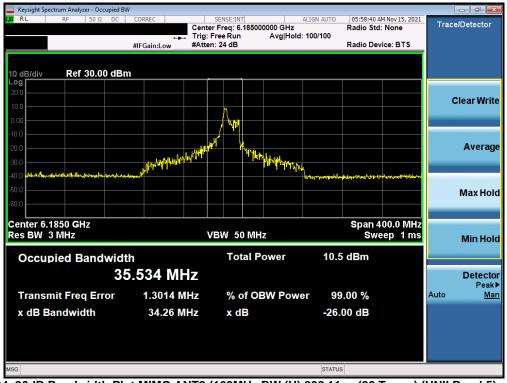
Plot 7-92. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW (L) 802.11ax (26 Tones) (UNII Band 5) - Ch. 79)

FCC ID: A3LSMS906E	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager		
Test Report S/N:	Test Dates:	EUT Type:	Dage 62 of 202		
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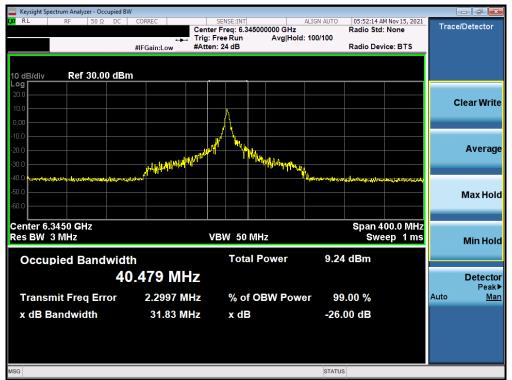
Plot 7-93. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW (U) 802.11ax (26 Tones) (UNII Band 5) - Ch. 15)



Plot 7-94. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW (U) 802.11ax (26 Tones) (UNII Band 5) - Ch. 47)

FCC ID: A3LSMS906E	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager		
Test Report S/N:	Test Dates:	EUT Type:	Dage 62 of 202		
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Plot 7-95. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW (U) 802.11ax (26 Tones) (UNII Band 5) - Ch. 79)



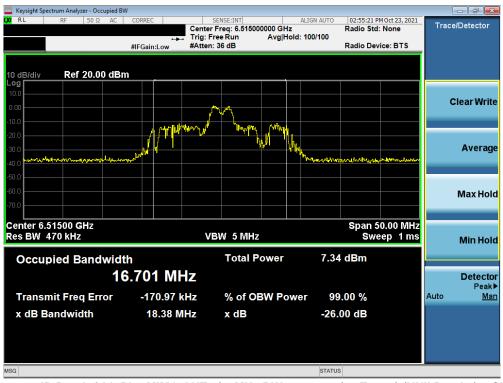
Plot 7-96. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax (26 Tones) (UNII Band 6) - Ch. 97)

FCC ID: A3LSMS906E	PCTEST *	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:		Dama 04 at 000	
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Plot 7-97. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax (26 Tones) (UNII Band 6) - Ch. 105)



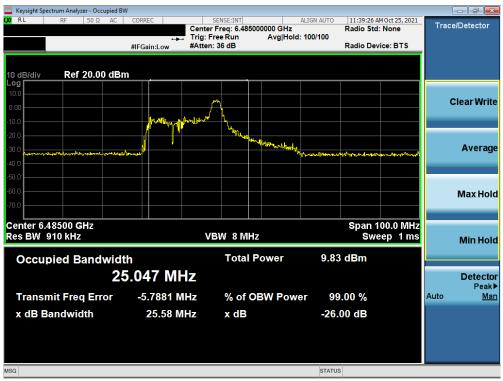
Plot 7-98. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax (26 Tones) (UNII Band 6) - Ch. 113)

FCC ID: A3LSMS906E	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager		
Test Report S/N:	Test Dates:	EUT Type:	Dage CE of 202		
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Plot 7-99. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax (26 Tones) (UNII Band 6) - Ch. 99)



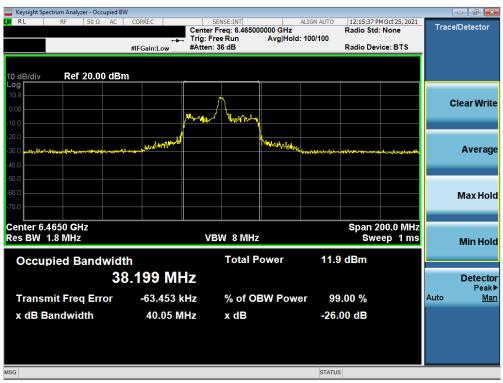
Plot 7-100. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax (26 Tones) (UNII Band 6) - Ch. 107)

FCC ID: A3LSMS906E	Proud to be part of the element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Plot 7-101. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax (26 Tones) (UNII Band 6) - Ch. 115)



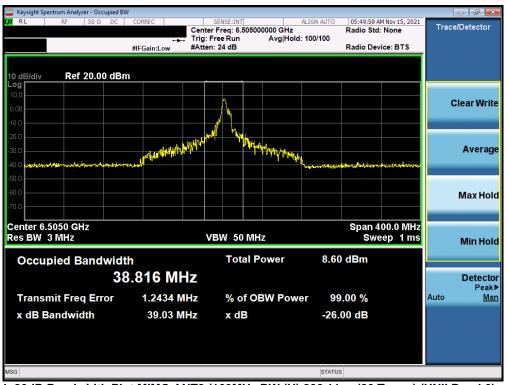
Plot 7-102. 26dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax (26 Tones) (UNII Band 6) - Ch. 103)

FCC ID: A3LSMS906E	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager		
Test Report S/N:	Test Dates:	EUT Type:	Da		
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Plot 7-103. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW (L) 802.11ax (26 Tones) (UNII Band 6) - Ch. 111)



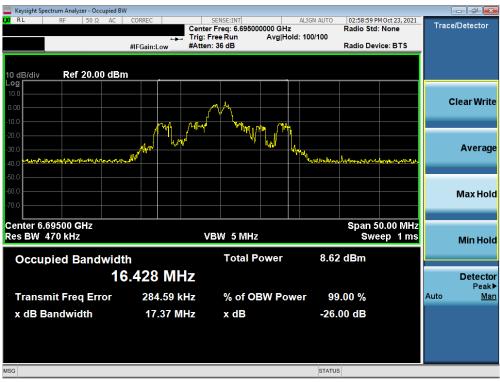
Plot 7-104. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW (U) 802.11ax (26 Tones) (UNII Band 6) - Ch. 111)

FCC ID: A3LSMS906E	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager		
Test Report S/N:	Test Dates:	EUT Type:	Dama 60 of 000		
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Plot 7-105. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 117)



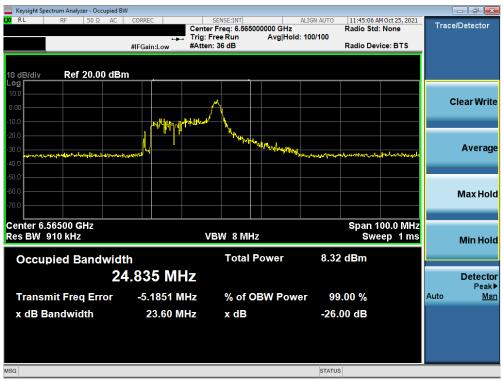
Plot 7-106. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 149)

FCC ID: A3LSMS906E	PCTEST *	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Plot 7-107. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 185)



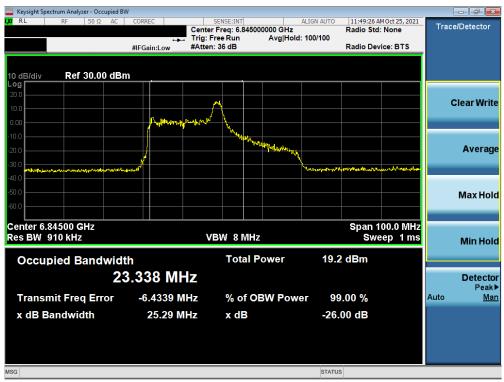
Plot 7-108. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 123)

FCC ID: A3LSMS906E	Proud to be part of the element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Plot 7-109. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 155)



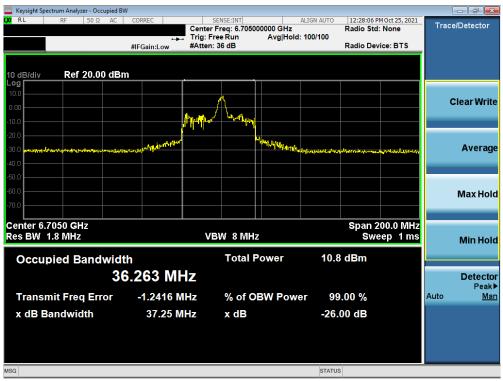
Plot 7-110. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 179)

FCC ID: A3LSMS906E	Proud to be part of the element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Keysight Spectrum Analyzer - Occupied B\	N					
LX/ RL RF 50Ω AC	CORREC	SENSE:INT		IGN AUTO 12:26:27 PM Radio Std:	1 Oct 25, 2021	Trace/Detector
		Center Freq: 6.54500 Trig: Free Run	Avg Hold: 10		None	
		#Atten: 36 dB		Radio Devi	ice: BTS	
10 dB/div Ref 30.00 dBr	~					
	<u> </u>					
20.0						
10.0						Clear Write
		ſΊ				
0.00	ىلار	hould have be				
-10.0	Y	an an				
-20.0			hale to a			Average
-30,0 march plan and un all prover year of the	warman and a start and a st		1 Mushallan	water and a second s	the second participation of th	
-40.0						
-50.0						
						Max Hold
-60.0						
Center 6.5450 GHz				Span 2	00.0 MHz	
Res BW 1.8 MHz		VBW 8 MHz		Swe	ep 1 ms	
				OWC	ep mis	Min Hold
Occupied Bandwidt	h	Total P	ower	11.7 dBm		
39	9.427 MHz	Ζ				Detector
T	040 47 1.11			00.00.0/		Peak▶ Auto Man
Transmit Freq Error	-313.17 kH	z % of OE	BW Power	99.00 %		Auto <u>Man</u>
x dB Bandwidth	40.50 MH	z xdB		-26.00 dB		
MSG				STATUS		

Plot 7-111. 26dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 119)



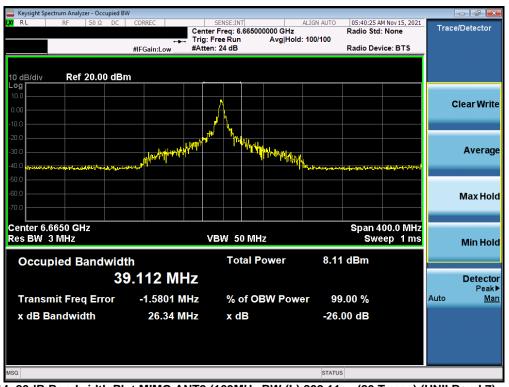
Plot 7-112. 26dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 151)

FCC ID: A3LSMS906E	Proud to be part of the element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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🔤 Keysight Spectrum Analyzer - Occupied BW					- 0 ×
LXI RE 50Ω AC				1 Oct 25, 2021	Trace/Detector
		Freq: 6.865000000 GHz ree Run Avg Hold:	Radio Std: 100/100	None	
	#IFGain:Low #Atten		Radio Devi	ice: BTS	
10 dB/div Ref 20.00 dBm Log					
10.0					
		m III			Clear Write
0.00	Proton				
-10.0					
-20.0					
-30.0 manustanting Manustration	An In Martin	Marily affecting the second	mater we have a har word to be the first of	and a file and the	Average
-40.0					-
-50.0					
-60.0					Max Hold
-70.0					
Center 6.8650 GHz			Span 2	00.0 MHz	
Res BW 1.8 MHz	V	BW 8 MHz	Swe	ep 1 ms	Min Hold
Occupied Bandwidt	h	Total Power	10.6 dBm		
35	.804 MHz				Detector
					Peak►
Transmit Freq Error	-1.2250 MHz	% of OBW Powe	r 99.00 %		Auto <u>Man</u>
x dB Bandwidth	36.62 MHz	x dB	-26.00 dB		
x dB Bandwidth	36.62 MHz	x dB	-26.00 dB		
MSG			STATUS		

Plot 7-113. 26dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 183)



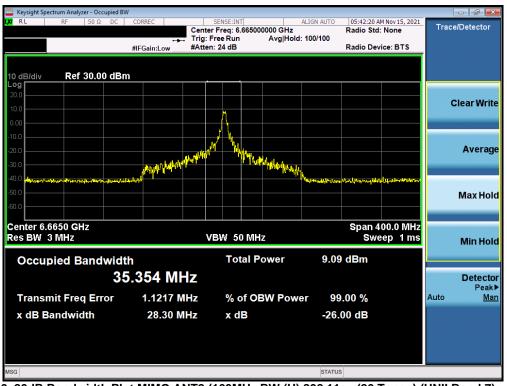
Plot 7-114. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW (L) 802.11ax (26 Tones) (UNII Band 7) - Ch. 143)

FCC ID: A3LSMS906E	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager		
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Plot 7-115. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW (L) 802.11ax (26 Tones) (UNII Band 7) - Ch. 175)



Plot 7-116. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW (U) 802.11ax (26 Tones) (UNII Band 7) - Ch. 143)

FCC ID: A3LSMS906E	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager		
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