

MEASUREMENT REPORT
FCC Part 15.407 802.11ax/be WiFi 6E (OFDMA)**Applicant Name:**Samsung Electronics Co., Ltd.
129, Samsung-ro,
Yeongtong-gu, Suwon-si
Gyeonggi-do, 16677, Korea**Date of Testing:**

8/22 - 11/09/2023

Test Report Issue Date:

11/27/2023

Test Site/Location:

Element lab., Columbia, MD, USA

Test Report Serial No.:

1M2308210093-16-R1.A3L

FCC ID:**A3LSMS928B****APPLICANT:****Samsung Electronics Co., Ltd.****Application Type:**

Certification

Model:

SM-S928B/DS

Additional Model(s):

SM-S928B

EUT Type:

Portable Handset

Frequency Range:

5935 – 7115MHz

Modulation Type:

OFDMA

FCC Classification:

15E 6GHz Low Power Dual Client (6CD)

FCC Rule Part(s):

Part 15 Subpart E (15.407)

Test Procedure(s):ANSI C63.10-2013, KDB 987594 D02 v01r01,
KDB 648474 D03 v01r04

Note: This revised Test Report (S/N: 1M2308210093-16-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. 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.

RJ Ortanez
Executive Vice President

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Channel Bandwidth [MHz]	UNII Band	Tx Frequency [MHz]	MIMO	
			Max. Power [mW]	Max. Power [dBm]
20	5	5935 - 6415	11.58	10.64
	6	6435 - 6515	8.77	9.43
	7	6535 - 6875	9.27	9.67
	8	6895 - 7115	10.03	10.01
40	5	5965 - 6405	20.55	13.13
	6	6445 - 6525	14.25	11.54
	7	6565 - 6845	16.21	12.10
	8	6885 - 7085	16.92	12.28
80	5	5985 - 6385	47.16	16.74
	6	6465	33.00	15.18
	7	6545 - 6865	34.69	15.40
	8	6945 - 7025	34.43	15.37
160	5	6025 - 6345	36.92	15.67
	6	6505	27.08	14.33
	7	6665 - 6825	29.37	14.68
	8	6985	29.53	14.70
320	5	6105 - 6265	33.97	15.31
	6	6425	27.26	14.36
	7	6585 - 6745	27.98	14.47
	8	6905	28.38	14.53

EUT Overview – Low Power Indoor Client – EIRP

Channel Bandwidth [MHz]	UNII Band	Tx Frequency [MHz]	MIMO	
			Max. Power [mW]	Max. Power [dBm]
20	5	5935 - 6415	47.06	16.73
	7	6535 - 6875	35.11	15.45
40	5	5965 - 6405	45.80	16.61
	7	6565 - 6845	37.03	15.69
80	5	5985 - 6385	58.86	17.70
	7	6545 - 6865	44.82	16.51
160	5	6025 - 6345	59.11	17.72
	7	6665 - 6825	46.61	16.68
320	5	6105 - 6265	52.79	17.23
	7	6585 - 6745	44.36	16.47

EUT Overview – Standard Power Client – EIRP

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1 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 Element Test Location

These measurement tests were conducted at the Element laboratory 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 Element lab located in Columbia, MD 21046, U.S.A.

- Element Washington DC LLC 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.
- Element Washington DC LLC 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).
- Element Washington DC LLC facility is a registered (2451B) test laboratory with the site description on file with ISED.
- Element Washington DC LLC is a Recognized U.S. Certification Assessment Body (CAB # US0110) for ISED Canada as designated by NIST under the U.S. and Canada Mutual Recognition Agreements (MRAs).

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2 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung Electronics Co., Ltd. Portable Handset FCC: A3LSMS928B**. 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.: 0735M, 0734M, 1498M, 1133M

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 (FR1), 802.11b/g/n/ax/be WLAN, 802.11a/n/ac/ax/be UNII (5GHz and 6GHz), Bluetooth (1x, EDR, LE), NFC, Wireless Power Transfer, UWB

Band 5		Band 6		Band 7		Band 8	
Ch.	Frequency (MHz)	Ch.	Frequency (MHz)	Ch.	Frequency (MHz)	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/be (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/be (40MHz BW) Frequency / Channel Operations

Band 5		Band 6		Band 7		Band 8	
Ch.	Frequency (MHz)	Ch.	Frequency (MHz)	Ch.	Frequency (MHz)	Ch.	Frequency (MHz)
7	5985	103	6465	119	6545	199	6945
:	:			:	:	:	:
39	6145			151	6705	215	7025
:	:			:	:		
87	6385			183	6865		

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

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

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

Band 5		Band 6		Band 7		Band 8	
Ch.	Frequency (MHz)	Ch.	Frequency (MHz)	Ch.	Frequency (MHz)	Ch.	Frequency (MHz)
31	6105	95	6425	127	6585	191	6905
63	6265			159	6745		

Table 2-5. 802.11be (320MHz BW) Frequency / Channel Operations

Notes:

1. 6GHz NII operation is possible in 20MHz, 40MHz, 80MHz, and 160MHz channel bandwidths. The maximum achievable duty cycles for all modes were determined based on measurements performed on a spectrum analyzer in zero-span mode with RBW = 8MHz, VBW = 50MHz, and detector = peak per the guidance of Section B)2)b) of ANSI C63.10-2013. 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:

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Mode	Antenna	Bandwidth	Channel	Tone	Duty Cycle
		[MHz]			
802.11be NII RU 6E	MIMO	20	2	26T	99.20
				52T	99.19
				52T+26T	98.96
				106T	98.56
				106T+26T	98.25
				242T	98.33
		40	3	26T	99.20
				52T	99.24
				52T+26T	99.07
				106T	98.63
				106T+26T	98.34
				242T	98.51
		80	7	26T	99.24
				52T	99.24
				52T+26T	99.01
				106T	98.63
				106T+26T	98.44
				242T	98.42
				484T	98.40
				484T+242T	98.83
		160	15	996T	98.33
				26T	99.24
				52T	99.24
				52T+26T	99.01
				106T	98.63
				106T+26T	98.35
				242T	98.42
				484T	98.40
				484T+242T	98.83
				996T	98.33
		320	63	996T+484T	98.66
				2x996T	98.32
				26T	99.28
				52T	99.46
				52T+26T	99.01
				106T	98.71
				106T+26T	98.35
				242T	98.42
				484T	98.41
				484T+242T	98.77
				996T	98.42
				996T+484T	98.73
				2x996T	98.41
				2x996T+484T	98.92
		3x996T	98.71		
		3x996T+484T	98.52		
		4x996T	98.32		

Table 2-6. Measured Duty Cycles

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

WiFi Configurations		SISO		CDD		SDM	
		ANT1	ANT2	ANT1	ANT2	ANT1	ANT2
	11ax	✓	✓	✓	✓	✓	✓
	11be	✓	✓	✓	✓	✓	✓

Table 2-7. 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. The device supports the following data rates (shown in Mbps):

MCS Index	Spatial Stream	OFDMA (802.11ax/be)																				OFDMA (802.11be)				
		26T			52T			106T			242T			484T			996T			2x996T			4x996T			
		0.8µs GI	1.6µs GI	3.2µs GI	0.8µs GI	1.6µs GI	3.2µs GI	0.8µs GI	1.6µs GI	3.2µs GI	0.8µs GI	1.6µs GI	3.2µs GI	0.8µs GI	1.6µs GI	3.2µs GI	0.8µs GI	1.6µs GI	3.2µs GI	0.8µs GI	1.6µs GI	3.2µs GI	0.8µs GI	1.6µs GI	3.2µs GI	
0	0	1	0.9	0.8	0.8	1.8	1.7	1.5	3.8	3.5	3.2	8.6	8.1	7.3	17.2	16.3	14.6	36	34	30.6	72.1	68.1	61.3	144.1	136.1	122.5
1	1	1	1.8	1.7	1.5	3.5	3.3	3	7.5	7.1	6.4	17.2	16.3	14.6	34.4	32.5	29.3	72.1	68.1	61.3	144.1	136.1	122.5	288.2	272.2	245
2	2	1	2.6	2.5	2.3	5.3	5	4.5	11.3	10.6	9.6	25.8	24.4	21.9	51.6	48.8	43.9	108.1	102.1	91.9	216.2	204.2	183.8	432.4	408.3	367.5
3	3	1	3.5	3.3	3	7.1	6.7	6	15	14.2	12.8	34.4	32.5	29.3	68.8	65	58.5	144.1	136.1	122.5	288.2	272.2	245	576.5	544.4	490
4	4	1	5.3	5	4.5	10.6	10	9	22.5	21.3	19.1	51.6	48.8	43.9	103.2	97.5	87.8	216.2	204.2	183.8	432.4	408.3	367.5	864.7	816.7	735
5	5	1	7.1	6.7	6	14.1	13.3	12	30	28.3	25.5	68.8	65	58.5	137.6	130	117	288.2	272.2	245	576.5	544.4	490	1152.9	1088.9	980
6	6	1	7.9	7.5	6.8	15.9	15	13.5	33.8	31.9	28.7	77.4	73.1	65.8	154.9	146.3	131.6	324.3	306.3	275.6	648.5	612.5	551.3	1297.1	1225	1102.5
7	7	1	8.8	8.3	7.5	17.6	16.7	15	37.5	35.4	31.9	86	81.3	73.1	172.1	162.5	146.3	360.3	340.3	306.3	720.6	680.6	612.5	1441.2	1361.1	1225
8	8	1	10.6	10	9	21.2	20	18	45	42.5	38.3	103.2	97.5	87.8	206.5	195	175.5	432.4	408.3	367.5	864.7	816.7	735	1729.4	1633.3	1470
9	9	1	11.8	11.1	10	23.5	22.2	20	50	47.2	42.5	114.7	108.3	97.5	229.4	216.7	195	480.4	453.7	408.3	960.8	907.4	816.7	1921.6	1814.8	1633.3
10	10	1	13.2	12.5	11.3	26.5	25	22.5	56.3	53.1	47.8	129	121.9	109.7	258.1	243.8	219.4	540.4	510.4	459.4	1080.9	1020.8	918.8	2161.8	2041.7	1837.5
11	11	1	14.7	13.9	12.5	29.4	27.8	25	62.5	59	53.1	143.4	135.4	121.9	286.8	270.8	243.8	600.5	567.1	510.4	1201	1134.3	1020.8	2402	2268.5	2041.7
12	12	1	15.9	15	13.5	31.8	30	27	67.5	63.8	57.4	154.9	146.3	131.6	309.7	292.5	263.3	648.5	612.5	551.3	1297.1	1225	1102.5	2594.1	2450	2205
13	13	1	17.6	16.7	15	35.3	33.3	30	75	70.8	63.8	172.1	162.5	146.3	344.1	325	292.5	720.6	680.6	612.5	1441.2	1361.1	1225	2882.4	2722.2	2450
0	0	2	1.8	1.7	1.5	3.5	3.3	3	7.5	7.1	6.4	17.2	16.3	14.6	34.4	32.5	29.3	72.1	68.1	61.3	144.1	136.1	122.5	288.2	272.2	245
1	1	2	3.5	3.3	3	7.1	6.7	6	15	14.2	12.8	34.4	32.5	29.3	68.8	65	58.5	144.1	136.1	122.5	288.2	272.2	245	576.5	544.4	490
2	2	2	5.3	5	4.5	10.6	10	9	22.5	21.3	19.1	51.6	48.8	43.9	103.2	97.5	87.8	216.2	204.2	183.8	432.4	408.3	367.5	864.7	816.7	735
3	3	2	7.1	6.7	6	14.1	13.3	12	30	28.3	25.5	68.8	65	58.5	137.6	130	117	288.2	272.2	245	576.5	544.4	490	1152.9	1088.9	980
4	4	2	10.6	10	9	21.2	20	18	45	42.5	38.3	103.2	97.5	87.8	206.5	195	175.5	432.4	408.3	367.5	864.7	816.7	735	1729.4	1633.3	1470
5	5	2	14.1	13.3	12	28.2	26.7	24	60	56.7	51	137.6	130	117	275.3	260	234	576.5	544.4	490	1152.9	1088.9	980	2305.9	2177.8	1960
6	6	2	15.9	15	13.5	31.8	30	27	67.5	63.8	57.4	154.9	146.3	131.6	309.7	292.5	263.3	648.5	612.5	551.3	1297.1	1225	1102.5	2594.1	2450	2205
7	7	2	17.6	16.7	15	35.3	33.3	30	75	70.8	63.8	172.1	162.5	146.3	344.1	325	292.5	720.6	680.6	612.5	1441.2	1361.1	1225	2882.4	2722.2	2450
8	8	2	21.2	20	18	42.4	40	36	90	85	76.5	206.5	195	175.5	412.9	390	351	864.7	816.7	735	1729.4	1633.3	1470	3458.8	3266.7	2940
9	9	2	23.5	22.2	20	47.1	44.4	40	100	94.4	85	229.4	216.7	195	458.8	433.3	390	960.8	907.4	816.7	1921.6	1814.8	1633.3	3843.1	3629.6	3266.7
10	10	2	26.5	25	22.5	52.9	50	45	112.5	106.3	95.6	258.1	243.8	219.4	516.2	487.5	438.8	1080.9	1020.8	918.8	2161.8	2041.7	1837.5	4323.5	4083.3	3675
11	11	2	29.4	27.8	25	58.8	56.6	50	125	118.1	106.3	286.8	270.8	243.8	573.5	541.7	487.5	1201	1134.3	1020.8	2402	2268.5	2041.7	4803.9	4537	4083.3
12	12	2	31.8	30	27	63.5	60	54	135	127.5	114.8	309.7	292.5	263.3	619.4	585	526.5	1297.1	1225	1102.5	2594.1	2450	2205	5188.2	4900	4410
13	13	2	35.3	33.3	30	70.6	66.7	60	150	141.7	127.5	344.1	325	292.5	688.2	650	585	1441.2	1361.1	1225	2882.4	2722.2	2450	5764.7	5444.4	4900

Table 2-8. Supported Data Rates

4. The device supports either Standard Power (SP) or Low Power Indoor (LPI) operation in the following UNII bands:

UNII Band	Standard Power (SP)	Low Power Indoor (LPI)
UNII 5	✓	✓
UNII 6	X	✓
UNII 7	✓	✓
UNII 8	X	✓

Table 2-9. Power Operation

✓ = Support; ✗ = NOT Support

2.3 Antenna Description

The following antenna gains were used for the testing.

Frequency	Ant1 Peak Gain [dBi]	Ant2 Peak Gain [dBi]	Directional Gain [dBi]
5925 MHz	-5.08	-3.51	-1.25
6025 MHz	-6.16	-3.51	-1.72
6125 MHz	-5.69	-4.03	-1.81
6225 MHz	-6.15	-4.69	-2.38
6325 MHz	-5.93	-4.21	-2.02
6425 MHz	-6.31	-4.88	-2.56
6525 MHz	-6.53	-4.94	-2.69
6625 MHz	-7.03	-5.35	-3.14
6725 MHz	-6.9	-3.96	-2.30
6825 MHz	-7.12	-4.4	-2.64
6925 MHz	-6.72	-3.5	-1.95
7025 MHz	-8.11	-3.15	-2.27
7125 MHz	-9.13	-4.16	-3.28

Table 2-10 Antenna Peak Gain per Frequency

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	Ant1 Peak Gain [dBi]	Ant2 Peak Gain [dBi]	Directional Gain [dBi]
5925 – 6425 MHz	-5.08	-3.51	-1.25
6425 – 6525 MHz	-6.31	-4.88	-2.56
6525 – 6875 MHz	-6.90	-3.96	-2.30
6875 – 7125 MHz	-6.72	-3.50	-1.95

Table 2-11. Antenna Peak Gain

2.4 Test Configuration

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 operation under control of either a low-power indoor access point or standard power access point for frequency ranges 5925 – 6425 MHz and 6525 – 6875 MHz. Power for the EUT may vary depending on whether the device is connected to a standard access point (SP Operation) or a low-power indoor access point (LPI Operation). In cases where these targets differ two data sets have been provided to demonstrate compliance. The worst-case emissions data is shown in this report.

This device supports wireless charging capability and, thus, is subject to the test requirements of KDB 648474 D03 v01r04. Additional radiated spurious emission measurements were performed with the EUT lying flat on an authorized wireless charging pad (WCP) 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 S928BXXU0AWH9 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 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 987594 D02 v01r01 were used in the measurement of the EUT.

Deviation from measurement procedure.....None

3.2 AC Line Conducted Emissions

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

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

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

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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 v01r01.

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 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 MEASUREMENT UNCERTAINTY

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

Contribution	Expanded Uncertainty (\pm dB)
Contention Based Protocol Conducted Measurements	0.86
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 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
-	AP2-001	EMC Cable and Switch System	1/11/2023	Annual	1/11/2024	AP2-001
-	ETS-001	EMC Cable and Switch System	1/11/2023	Annual	1/11/2024	ETS-001
-	ETS-002	EMC Cable and Switch System	1/11/2023	Annual	1/11/2024	ETS-002
-	MD 1M 18-40	EMC Cable and Switch System	1/11/2023	Annual	1/11/2024	MD 1M 18-40
-	WL40-1	Conducted Cable Set (40GHz)	1/12/2023	Annual	1/12/2024	WL40-1
-	WL25-1	Conducted Cable Set (25GHz)	1/12/2023	Annual	1/12/2024	WL25-1
Anritsu	MA24406A	Microwave Peak Power Sensor	9/7/2023	Annual	9/7/2024	11240
Emco	3115	Horn Antenna (1-18GHz)	8/8/2022	Biennial	8/8/2024	9704-5182
Emco	3116	Horn Antenna (18 - 40GHz)	7/5/2022	Biennial	7/5/2024	9203-2178
Pasternack	MNLC-2	Line Conducted Emission Cable (NM)	1/11/2023	Annual	1/11/2024	NMNC-2
ETS-Lindgren	3816/2NM	Line Impedance Stabilization Network	8/11/2022	Biennial	8/11/2024	114451
ETS Lindgren	3116C	1-18 GHz DRG Horn Antenna	2/27/2023	Biennial	2/27/2024	00218893
ETS Lindgren	3115	Double Ridged Guide Horn	4/12/2022	Biennial	4/12/2024	82333
Com-Power	AL-130	9kHz - 30MHz Loop Antenna	4/13/2022	Biennial	4/13/2025	121034
Keysight Technologies	N9020A	MXA Signal Analyzer	3/15/2023	Annual	3/15/2024	MY54500644
Keysight Technologies	N9030A	PXA Signal Analyzer (44GHz)	3/15/2023	Annual	3/15/2024	MY52350166
Keysight Technologies	N9030A	PXA Signal Analyzer	1/31/2023	Annual	1/31/2024	MY55410501
Keysight Technologies	N9030B	PXA Signal Analyzer, Multi-touch	9/7/2023	Annual	9/7/2024	MY57141001
Rohde & Schwarz	ESU26	EMI Test Receiver (26.5GHz)	9/25/2023	Annual	9/25/2024	100342
Rohde & Schwarz	ESU40	EMI Test Receiver (40GHz)	9/11/2023	Annual	9/11/2024	100348
Rohde & Schwarz	ESW44	EMI Test Receiver 2Hz to 44 GHz	3/1/2023	Annual	3/1/2024	101716
Rohde & Schwarz	FSW26	2Hz-26.5GHz Signal and Spectrum Analyzer	11/6/2022	Annual	11/6/2023	103187
Rohde & Schwarz	FSW67	Signal / Spectrum Analyzer	1/13/2023	Annual	1/13/2024	103200
Sunol	JB5	Bi-Log Antenna (30M - 5GHz)	2/21/2023	Biennial	2/21/2025	A051107
Sunol	JB6	LB6 Antenna	3/2/2023	Biennial	3/2/2025	A082816

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 TEST RESULTS

7.1 Summary

Company Name: Samsung Electronics Co., Ltd.
 FCC ID: A3LSMS928B
 FCC Classification: 15E 6GHz Low Power Dual Client (6CD)

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	CONDUCTED	PASS	Section 7.3
15.407(a)(8), 15.407(a)(7)	Maximum Radiated Output Power	< 24dBm over the frequency band of operation <30dBm over the frequency band of operation when connecting to a standard power access point		PASS	Section 7.3
2.1049, 15.407(a)(10)	Occupied Bandwidth/ 26dB Bandwidth	The maximum transmitter channel bandwidth for U-NII devices in the 5.925-7.125 GHz band is 320 megahertz.		PASS	Section 7.2
15.407(a)(8), 15.407(a)(7)	Maximum Power Spectral Density	< -1dBm/MHz e.i.r.p. <17dBm/MHz when operating with a standard power access point		PASS	Section 7.4
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
15.407	AC Conducted Emissions 150kHz – 30MHz	<FCC 15.207 limits	LINE CONDUCTED	PASS	Please see UNII 6E OFDM report

Table 7-1. Summary of Test Results

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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 Element "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 Element "Chamber Automation," Version 1.3.1.
- 6) Per 15.407(a)(7), a device operating under the control of a standard power access point in 5.925-6.425 GHz and 6.525-6.875 GHz bands must not have the maximum power spectral density exceed 17 dBm/MHz e.i.r.p., must limit the maximum e.i.r.p. over the frequency band of operation not exceed 30 dBm, and must limit its power to no more than 6 dB below its associated standard power access point's authorized transmit power. Compliance to this clause is addressed via submission of an attestation following Appendix B of KDB 987594 D01 v01r03.
- 7) 802.11ax/be OFDMA testing was performed for all signal tone configurations as specified by the 802.11ax standard. Worst case results are determined and reported per the guidance provided at the October 2018 TCB Workshop.
- 8) Only one RU index could be selected at a time, so no contiguous or non-contiguous RUs were considered for testing.

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7.2 26dB Bandwidth Measurement

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 at the appropriate frequencies. The spectrum analyzer's bandwidth measurement function is configured to measure the 26dB bandwidth.

The maximum transmitter channel bandwidth for U-NII devices in the 5.925-7.125 GHz band is 320 megahertz.

Test Procedure Used

ANSI C63.10-2013 – Section 12.4

Test Settings

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

Test Setup

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



Figure 7-1. Test Instrument & Measurement Setup

Test Notes

All cases were investigated; a subset of the taken plots were included to represent relevant settings and measurements.

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	Frequency [MHz]	Channel	802.11 MODE	Antenna-1 26dB Bandwidth [MHz]	Antenna-2 26dB Bandwidth [MHz]
Band 5	5935	2	be (20MHz)	18.47	18.17
	6175	45	be (20MHz)	18.36	18.38
	6415	93	be (20MHz)	18.50	18.43
	5965	3	be (40MHz)	25.43	24.12
	6165	43	be (40MHz)	24.66	24.42
	6405	91	be (40MHz)	24.58	24.19
	5985	7	be (80MHz)	31.62	34.78
	6145	39	be (80MHz)	34.93	34.00
	6385	87	be (80MHz)	34.90	34.24
	6025	15	be (160MHz)	41.31	34.72
	6185	47	be (160MHz)	38.93	39.50
	6345	79	be (160MHz)	33.69	35.13
	6105	31	be (320MHz)	41.10	39.12
6265	63	be (320MHz)	42.67	35.63	
Band 6	6475	97	be (20MHz)	18.34	18.41
	6475	105	be (20MHz)	18.55	18.47
	6515	113	be (20MHz)	18.76	18.29
	6445	99	be (40MHz)	24.12	24.29
	6485	107	be (40MHz)	24.77	24.26
	6525	115	be (40MHz)	25.45	24.89
	6465	103	be (80MHz)	33.03	35.23
	6505	111	be (160MHz)	36.54	35.43
Band 5/6/7	6425	95	be (320MHz)	37.76	41.50
Band 7	6695	117	be (20MHz)	18.21	18.44
	6695	149	be (20MHz)	18.69	18.51
	6875	185	be (20MHz)	18.53	18.30
	6565	123	be (40MHz)	25.05	25.00
	6685	155	be (40MHz)	25.37	24.78
	6845	179	be (40MHz)	25.84	24.07
	6545	119	be (80MHz)	34.53	33.50
	6705	151	be (80MHz)	34.63	34.75
	6865	183	be (80MHz)	33.59	36.58
	6665	143	be (160MHz)	35.98	41.24
	6825	175	be (160MHz)	35.48	40.57
Band 6/7	6585	127	be (320MHz)	43.52	38.33
Band 7/8	6745	159	be (320MHz)	36.16	39.14
Band 8	7115	189	be (20MHz)	18.68	18.34
	6995	209	be (20MHz)	18.73	18.31
	7115	233	be (20MHz)	18.56	18.29
	6885	187	be (40MHz)	25.14	24.73
	6965	211	be (40MHz)	23.53	24.21
	7085	227	be (40MHz)	25.01	24.47
	6945	199	be (80MHz)	33.48	36.13
	7025	215	be (80MHz)	36.24	35.44
6985	207	be (160MHz)	38.55	34.18	
Band 7/8	6905	191	be (320MHz)	43.09	37.15

Table 7-2. 26dB Bandwidth Measurements – Partial Tones

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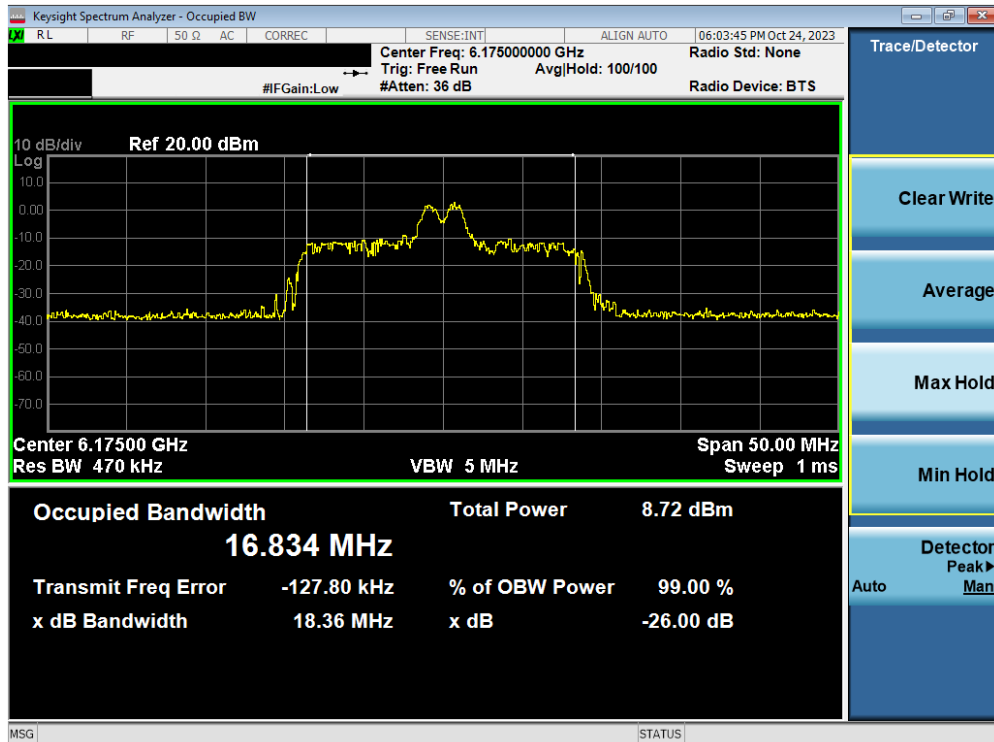
	Frequency [MHz]	Channel	802.11 MODE	Antenna-1 26dB Bandwidth [MHz]	Antenna-2 26dB Bandwidth [MHz]
Band 5	5935	2	be (20MHz)	22.39	22.64
	6175	45	be (20MHz)	22.09	22.24
	6415	93	be (20MHz)	22.17	22.17
	5965	3	be (40MHz)	44.36	45.23
	6165	43	be (40MHz)	43.86	44.14
	6405	91	be (40MHz)	44.08	44.54
	5985	7	be (80MHz)	91.77	88.99
	6145	39	be (80MHz)	89.48	89.94
	6385	87	be (80MHz)	89.12	88.31
	6025	15	be (160MHz)	177.24	171.99
	6185	47	be (160MHz)	183.83	181.77
	6345	79	be (160MHz)	179.49	171.05
	6105	31	be (320MHz)*	315.14	315.03
	6265	63	be (320MHz)*	315.44	314.71
Band 6	6475	97	be (20MHz)	22.17	22.35
	6475	105	be (20MHz)	22.20	22.53
	6515	113	be (20MHz)	22.37	22.31
	6445	99	be (40MHz)	43.33	44.17
	6485	107	be (40MHz)	43.90	44.31
	6525	115	be (40MHz)	43.92	44.44
	6465	103	be (80MHz)	88.14	89.20
	6505	111	be (160MHz)	179.52	174.55
Band 5/6/7	6425	95	be (320MHz)*	314.99	315.38
Band 7	6695	117	be (20MHz)	22.02	22.34
	6695	149	be (20MHz)	22.57	22.67
	6875	185	be (20MHz)	22.45	22.44
	6565	123	be (40MHz)	43.94	43.49
	6685	155	be (40MHz)	44.75	44.39
	6845	179	be (40MHz)	44.07	44.54
	6545	119	be (80MHz)	89.91	88.97
	6705	151	be (80MHz)	88.97	89.48
	6865	183	be (80MHz)	89.49	89.54
	6665	143	be (160MHz)	180.83	185.32
	6825	175	be (160MHz)	184.76	179.78
	Band 6/7	6585	127	be (320MHz)*	315.50
Band 7/8	6745	159	be (320MHz)*	314.95	316.10
Band 8	7115	189	be (20MHz)	22.39	22.28
	6995	209	be (20MHz)	22.38	22.65
	7115	233	be (20MHz)	22.35	22.38
	6885	187	be (40MHz)	44.87	44.21
	6965	211	be (40MHz)	43.86	43.89
	7085	227	be (40MHz)	44.23	43.21
	6945	199	be (80MHz)	91.11	89.73
	7025	215	be (80MHz)	89.31	89.73
Band 7/8	6985	207	be (160MHz)	185.11	186.93
Band 7/8	6905	191	be (320MHz)*	315.20	315.77

Table 7-3. 26dB Bandwidth Measurements – Full Tones

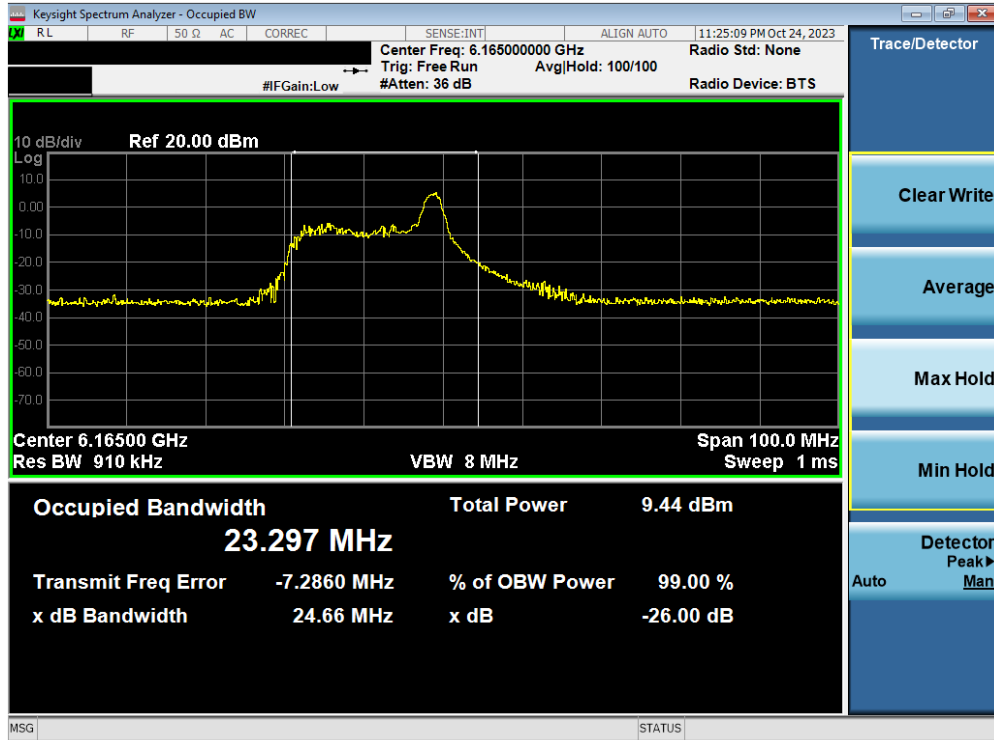
*Occupied Bandwidth Measurement was used to demonstrate compliance.

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MIMO Antenna-1 Bandwidth Measurements - (Partial Tones) – (UNII Band 5)

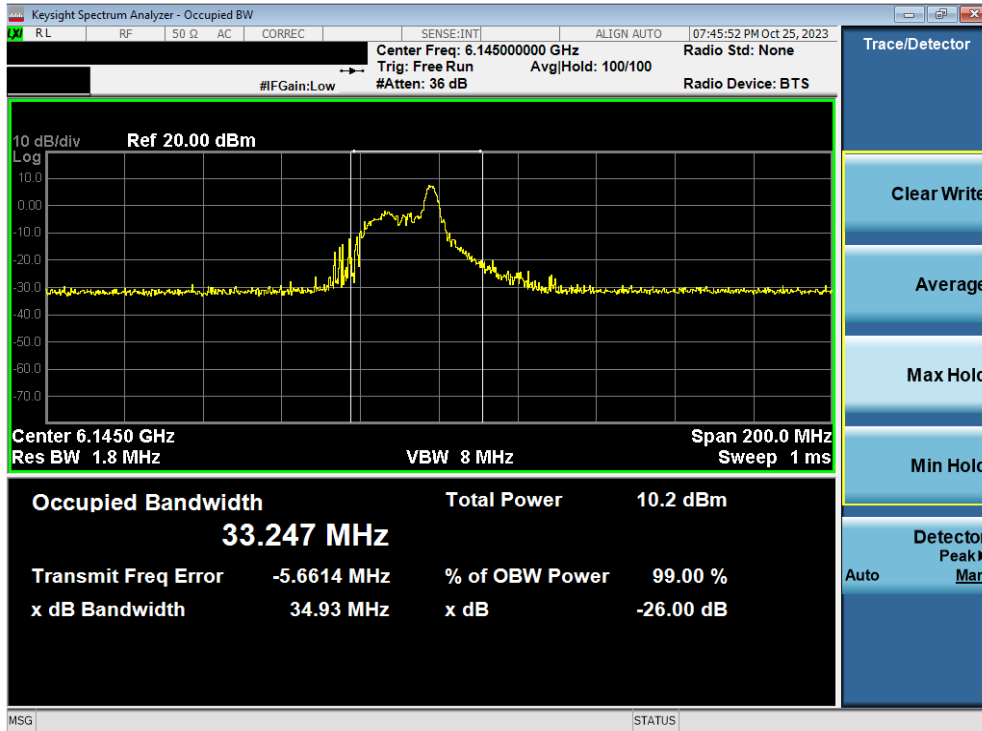


Plot 7-1. Occupied Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax/be (26 Tones) (UNII Band 5) – Ch. 45)

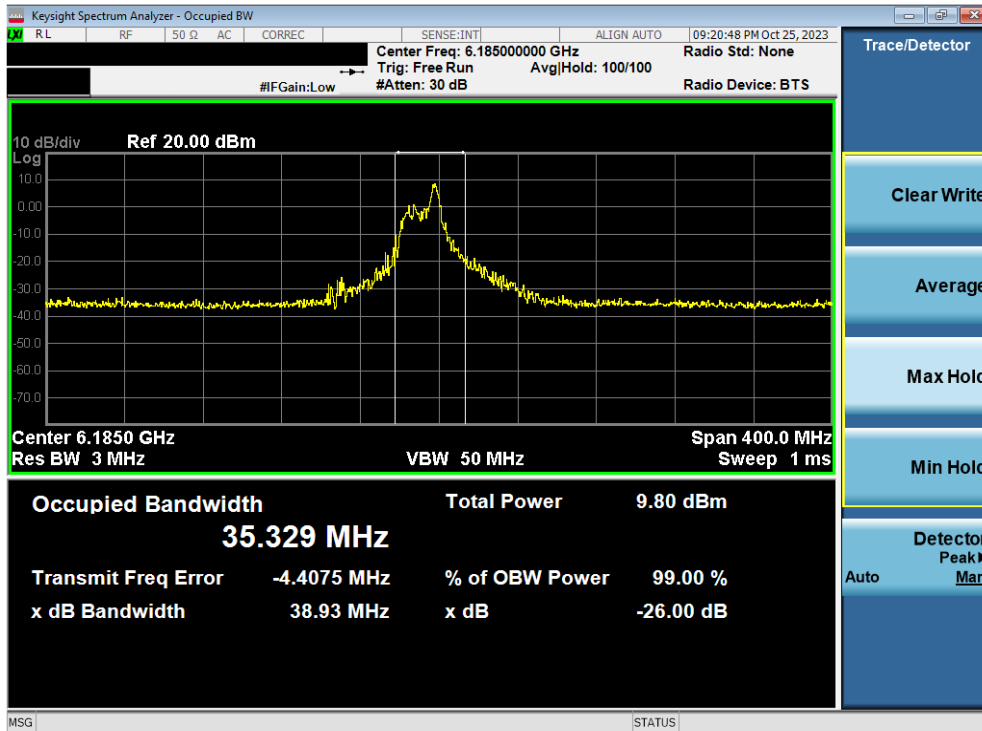


Plot 7-2. Occupied Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax/be (26 Tones) (UNII Band 5) – Ch. 43)

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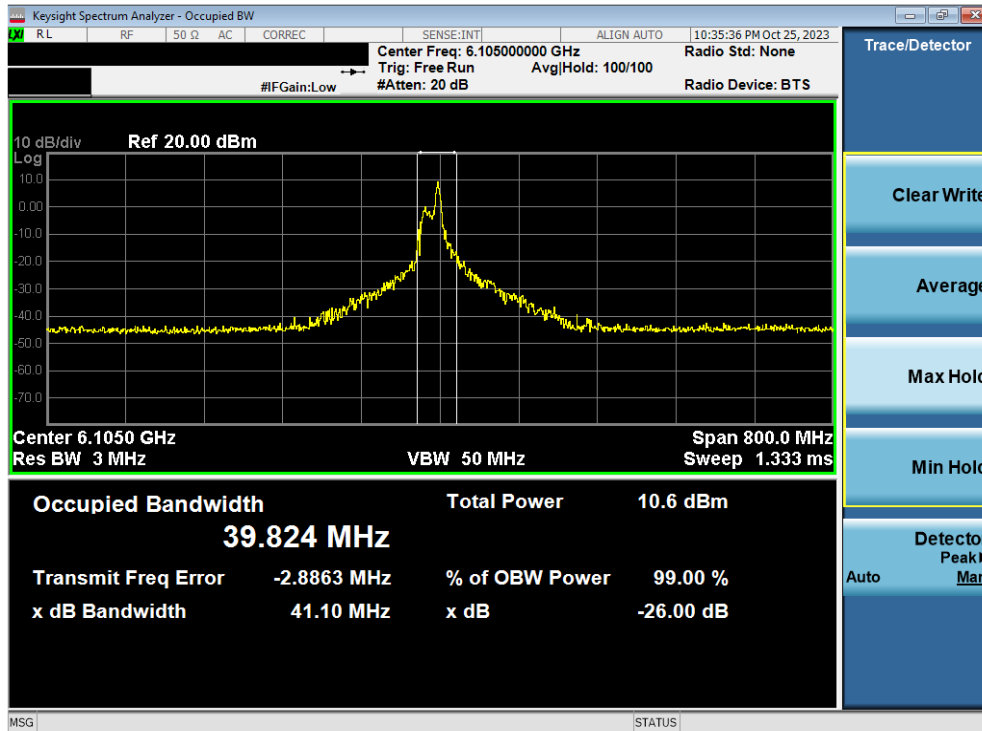


Plot 7-3. Occupied Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax/be (26 Tones) (UNII Band 5) – Ch. 39)



Plot 7-4. Occupied Bandwidth Plot MIMO ANT1 (160MHz BW 802.11ax/be (26 Tones) (UNII Band 5) – Ch. 47)

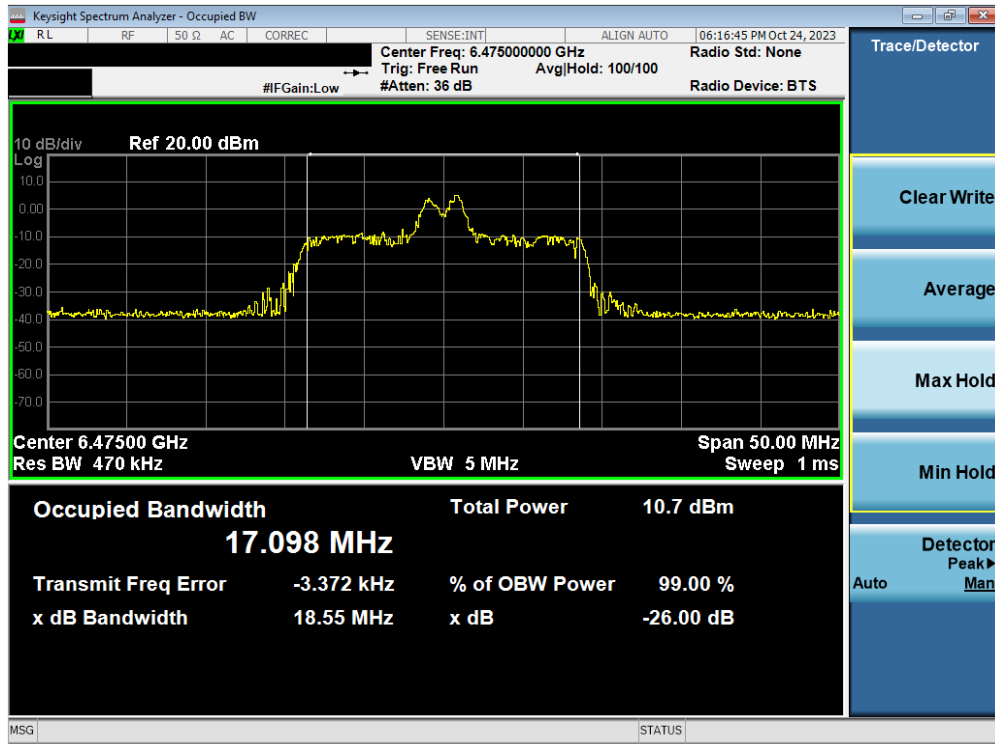
FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2308210093-16-R1.A3L	Test Dates: 8/22 - 11/09/2023	EUT Type: Portable Handset	Page 21 of 330



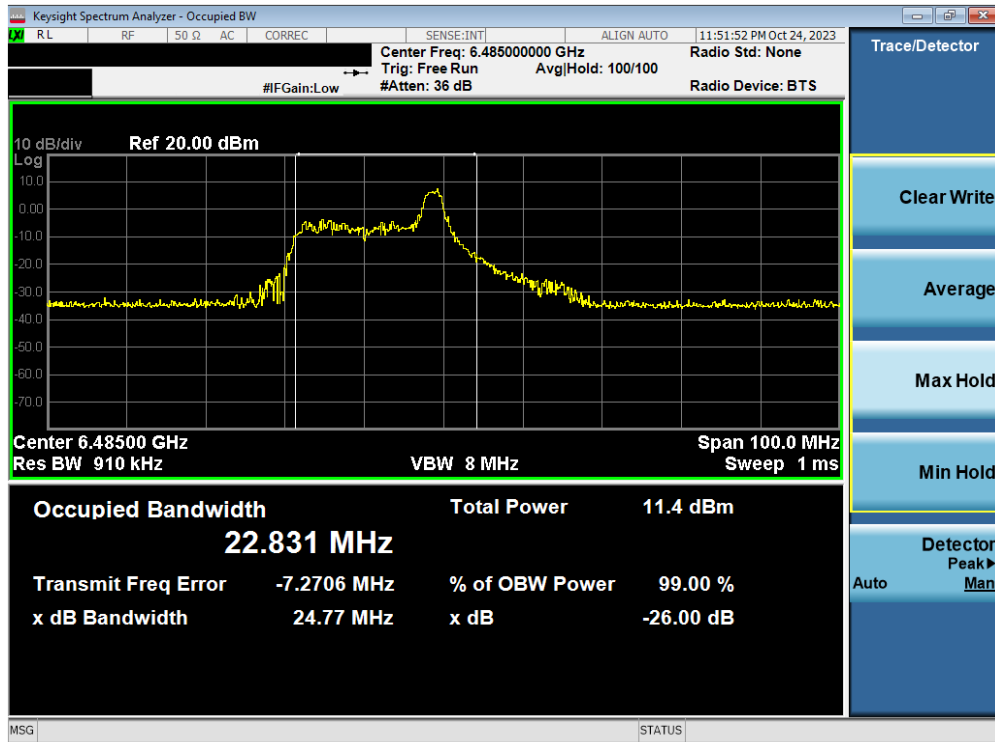
Plot 7-5. Occupied Bandwidth Plot MIMO ANT1 (320MHz BW 802.11ax/be (26 Tones) (UNII Band 5) – Ch. 31)

FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
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MIMO Antenna-1 Bandwidth Measurements - (Partial Tones) – (UNII Band 6)

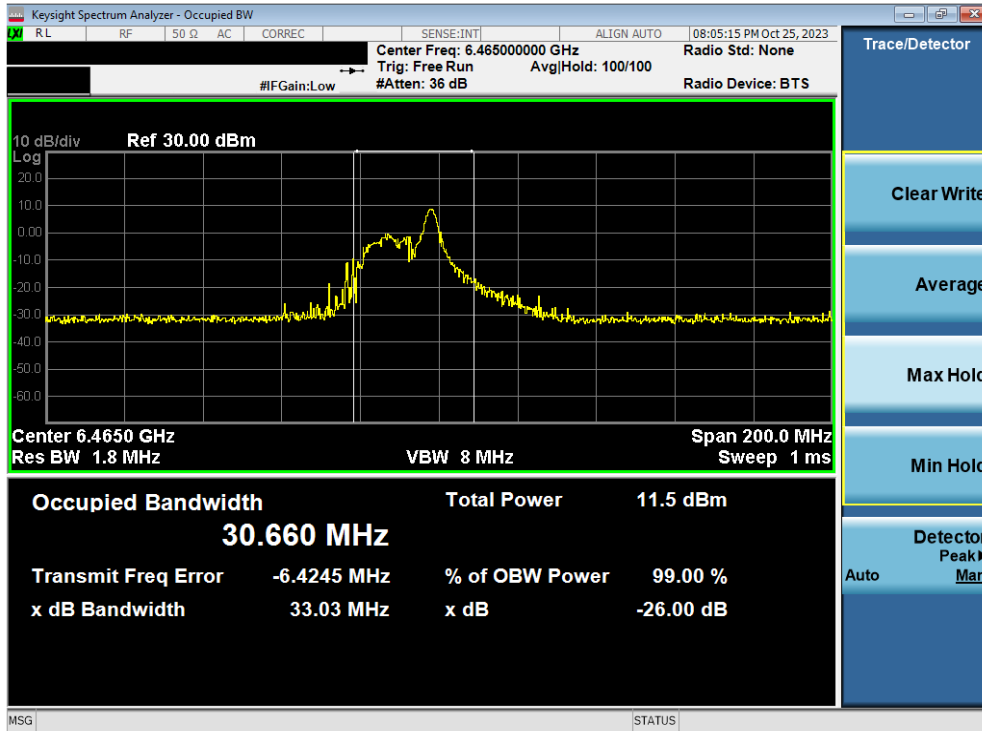


Plot 7-6. Occupied Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax/be (26 Tones) (UNII Band 6) – Ch. 105)

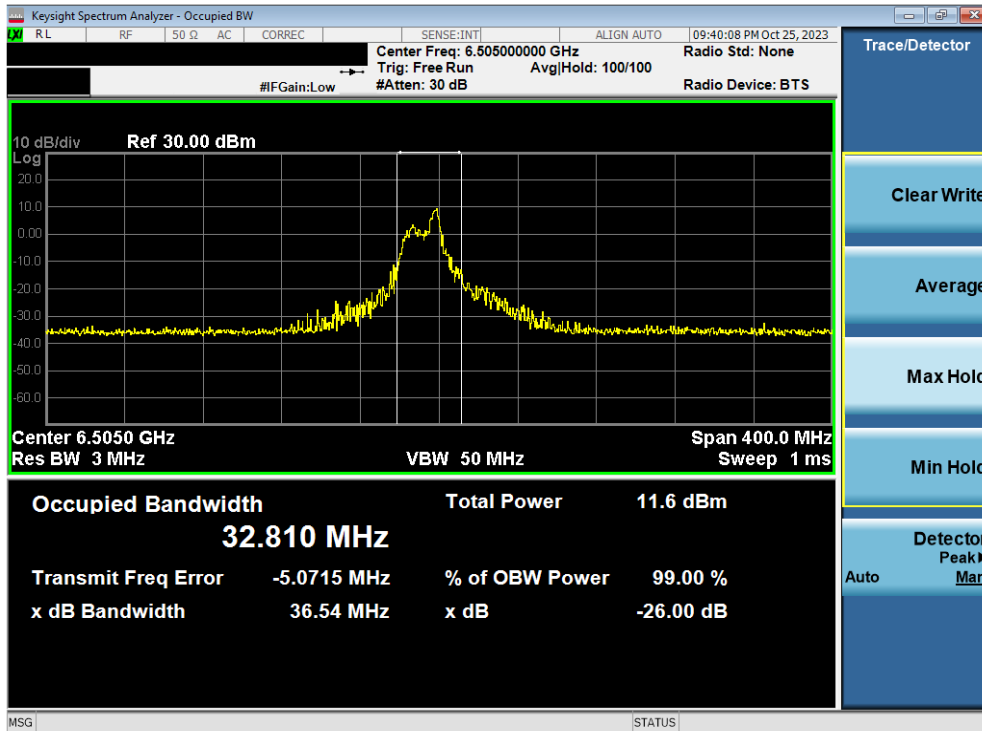


Plot 7-7. Occupied Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax/be (26 Tones) (UNII Band 6) – Ch. 107)

FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2308210093-16-R1.A3L	Test Dates: 8/22 - 11/09/2023	EUT Type: Portable Handset	Page 23 of 330

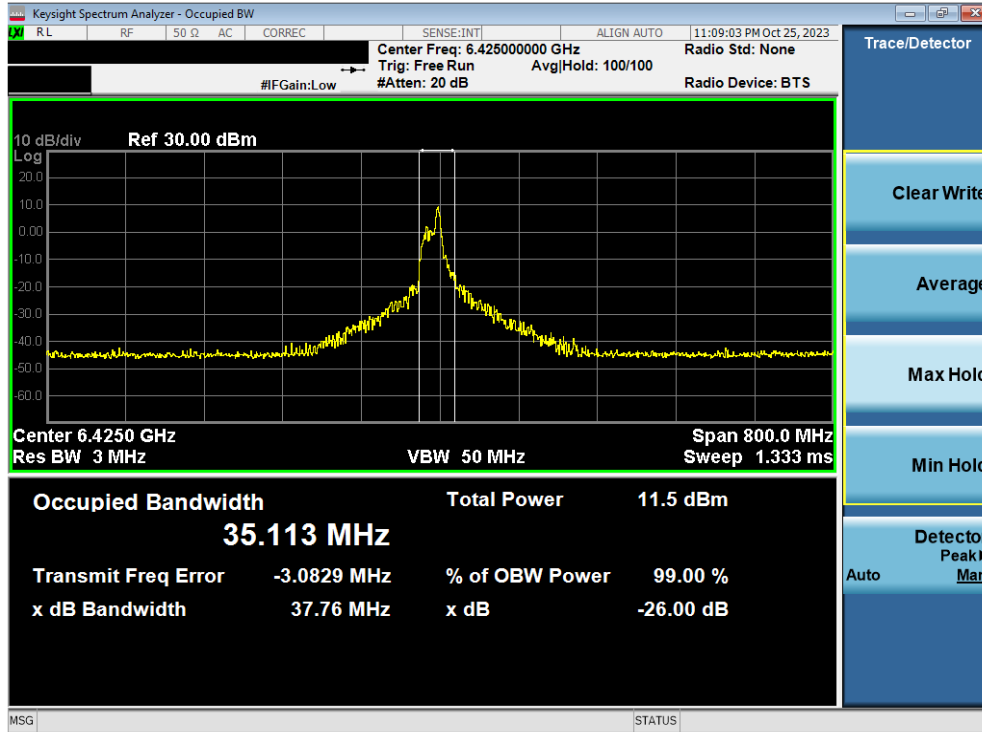


Plot 7-8. Occupied Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax/be (26 Tones) (UNII Band 6) – Ch. 103)



Plot 7-9. Occupied Bandwidth Plot MIMO ANT1 (160MHz BW 802.11ax/be (26 Tones) (UNII Band 6) – Ch. 111)

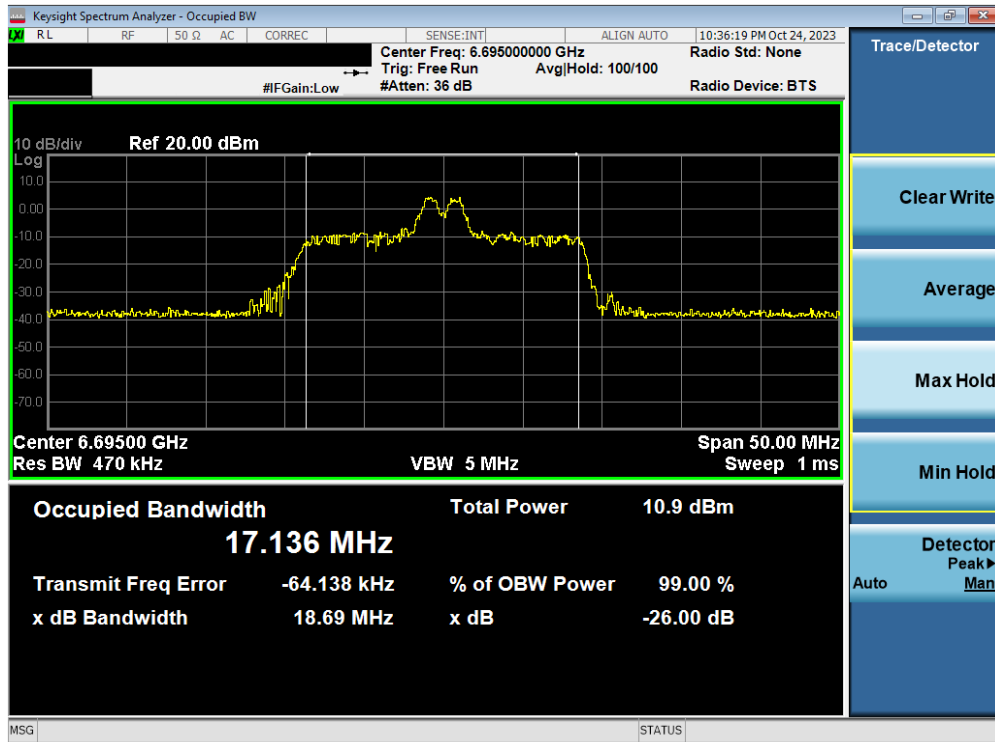
FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2308210093-16-R1.A3L	Test Dates: 8/22 - 11/09/2023	EUT Type: Portable Handset	Page 24 of 330



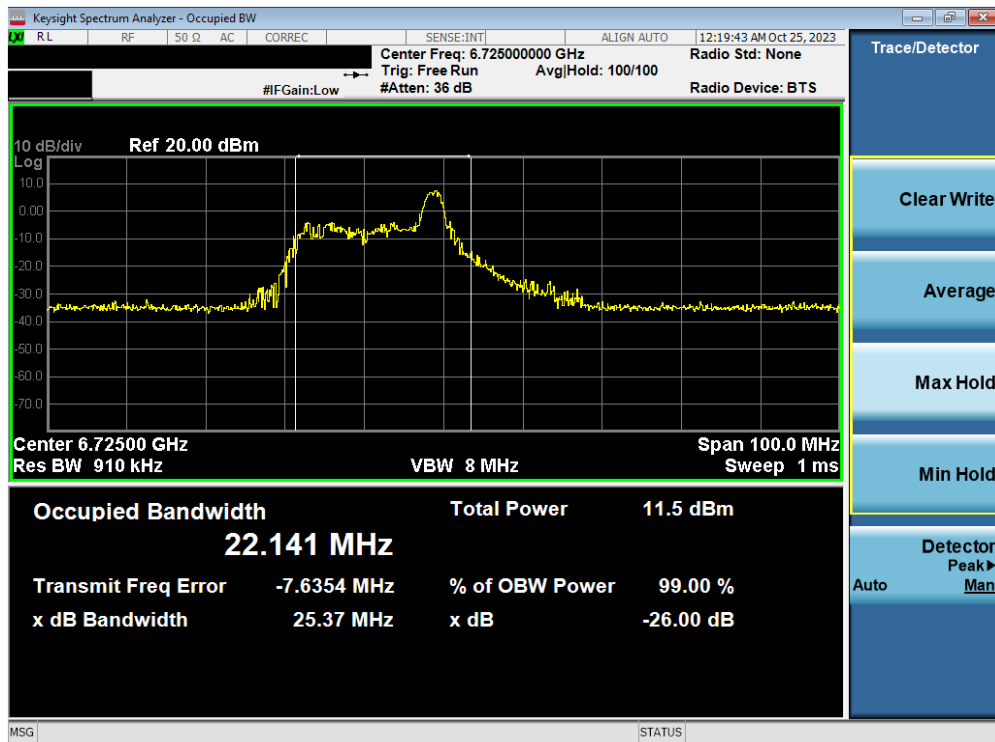
Plot 7-10. Occupied Bandwidth Plot MIMO ANT1 (320MHz BW 802.11ax/be (26 Tones) (UNII Band 5/6/7) – Ch. 95)

FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2308210093-16-R1.A3L	Test Dates: 8/22 - 11/09/2023	EUT Type: Portable Handset	Page 25 of 330

MIMO Antenna-1 Bandwidth Measurements - (Partial Tones) – (UNII Band 7)

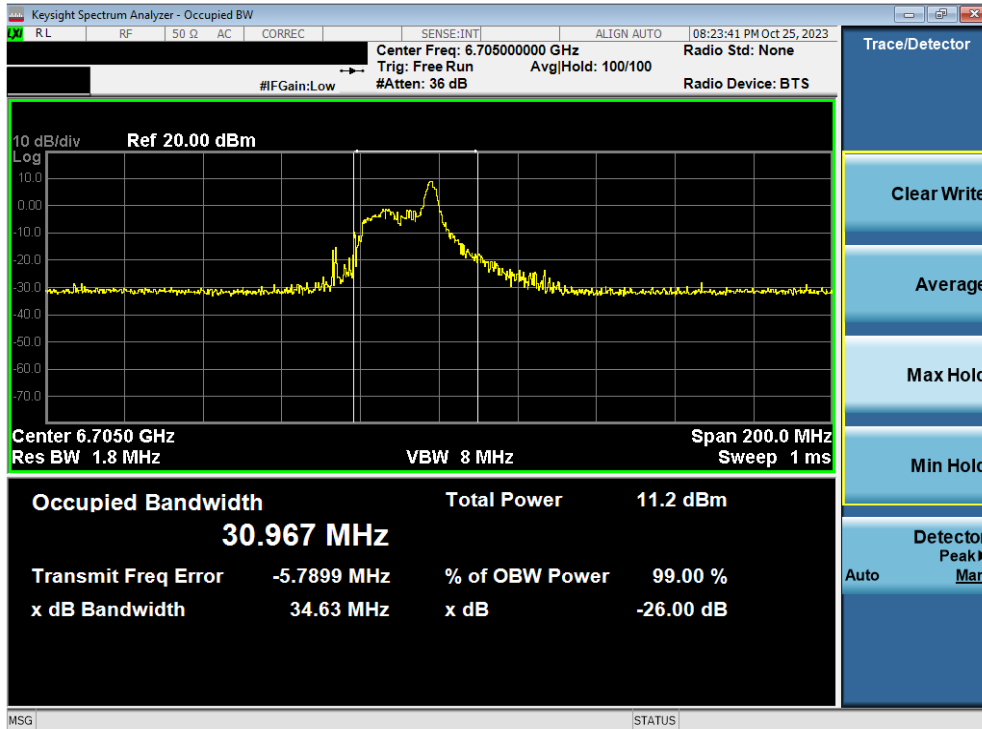


Plot 7-11. Occupied Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax/be (26 Tones) (UNII Band 7) – Ch. 149)

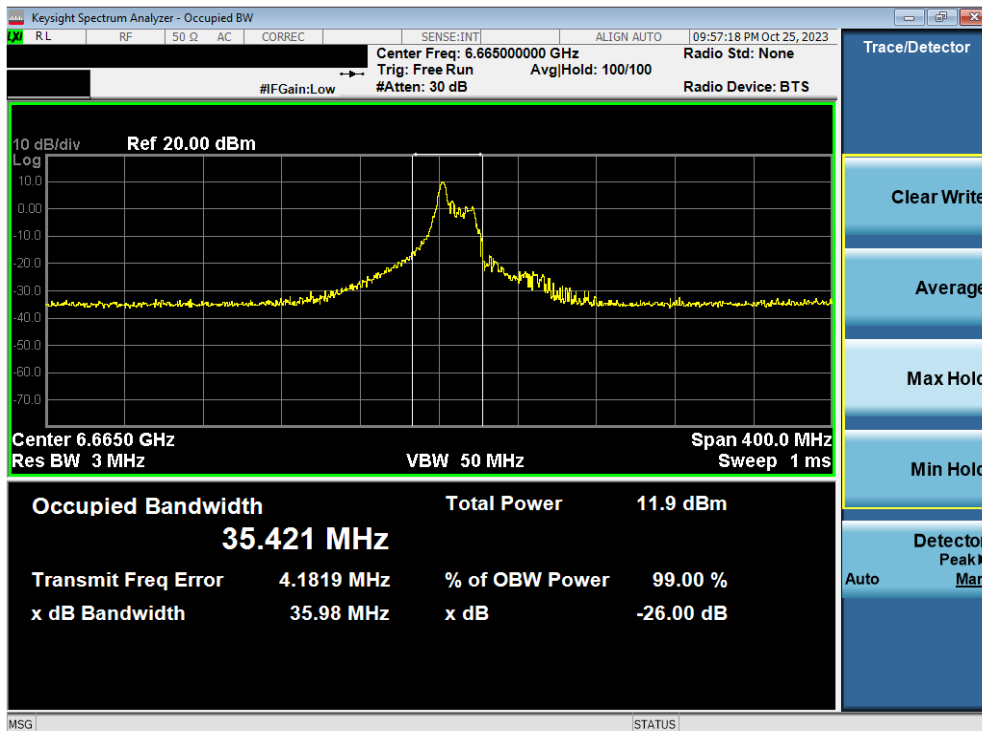


Plot 7-12. Occupied Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax/be (26 Tones) (UNII Band 7) – Ch. 155)

FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2308210093-16-R1.A3L	Test Dates: 8/22 - 11/09/2023	EUT Type: Portable Handset	Page 26 of 330

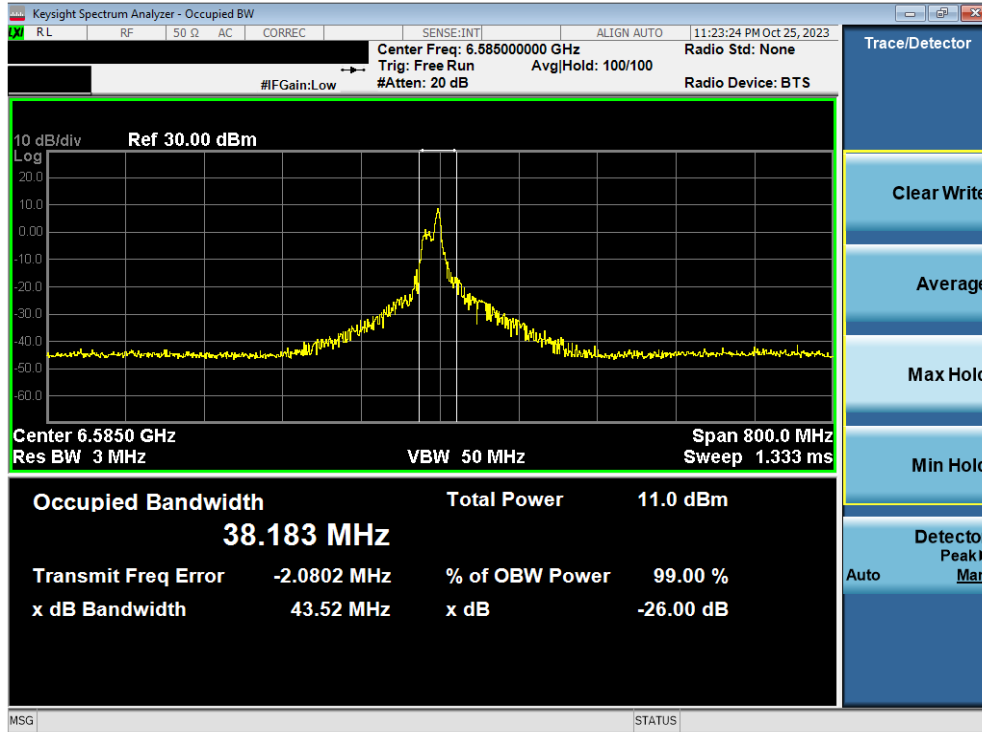


Plot 7-13. Occupied Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax/be (26 Tones) (UNII Band 7) – Ch. 151)



Plot 7-14. Occupied Bandwidth Plot MIMO ANT1 (160MHz BW 802.11ax/be (26 Tones) (UNII Band 7) – Ch. 143)

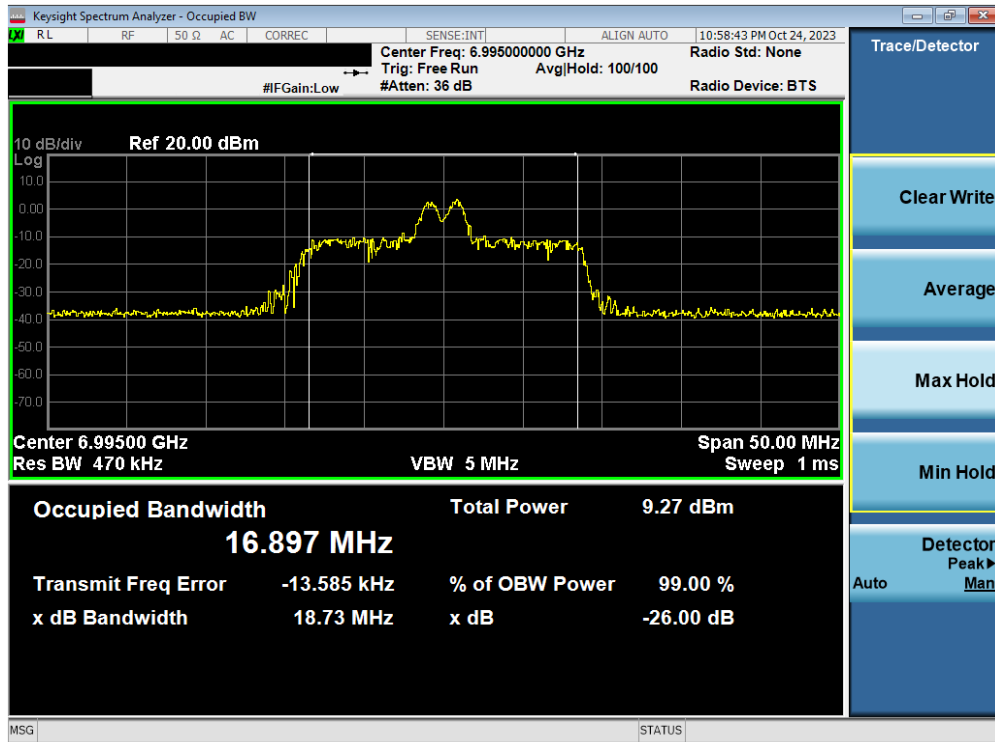
FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2308210093-16-R1.A3L	Test Dates: 8/22 - 11/09/2023	EUT Type: Portable Handset	Page 27 of 330



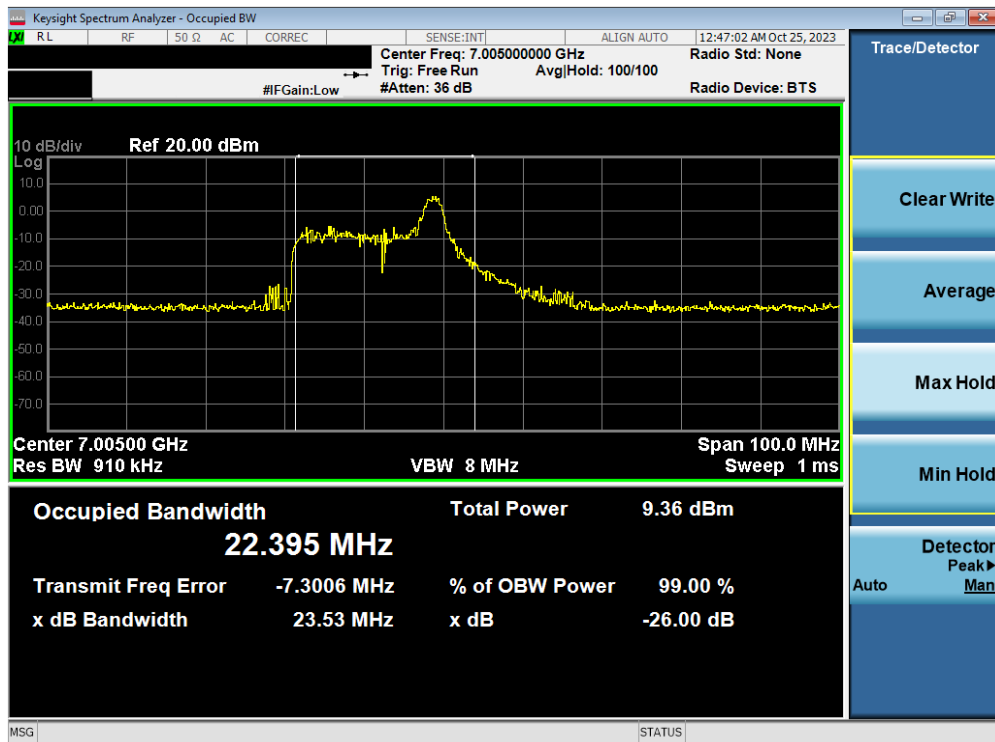
Plot 7-15. Occupied Bandwidth Plot MIMO ANT1 (320MHz BW 802.11ax/be (26 Tones) (UNII Band 6/7) – Ch. 127)

FCC ID: A3LSMS928B		MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2308210093-16-R1.A3L	Test Dates: 8/22 - 11/09/2023	EUT Type: Portable Handset		Page 28 of 330

MIMO Antenna-1 Bandwidth Measurements - (Partial Tones) – (UNII Band 8)

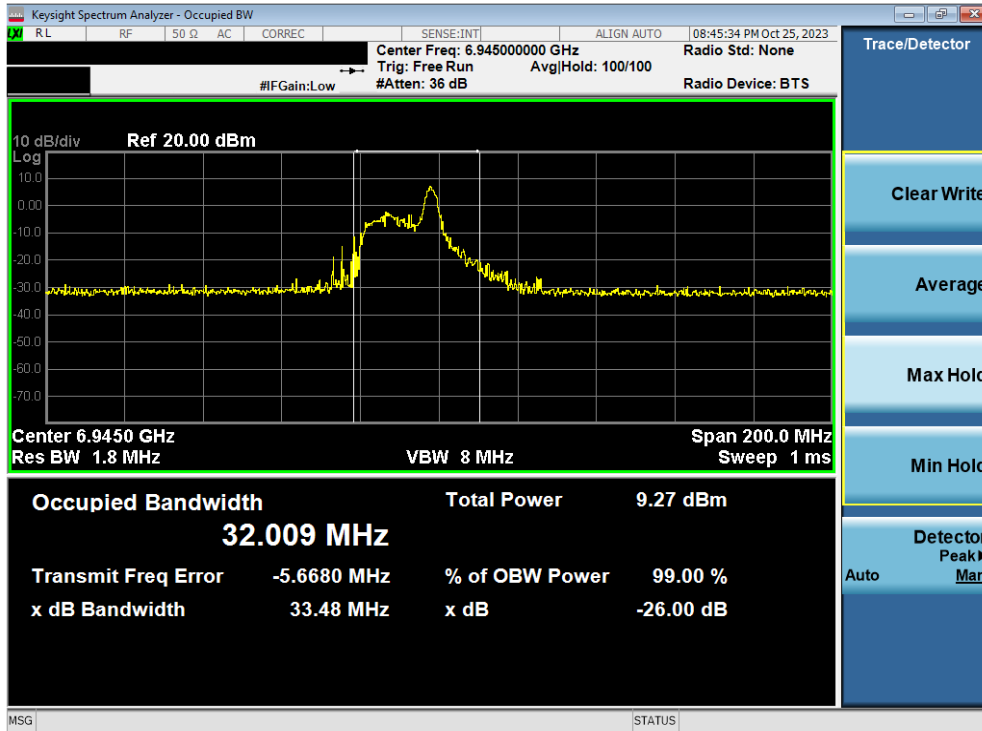


Plot 7-16. Occupied Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax/be (26 Tones) (UNII Band 8) – Ch. 209)

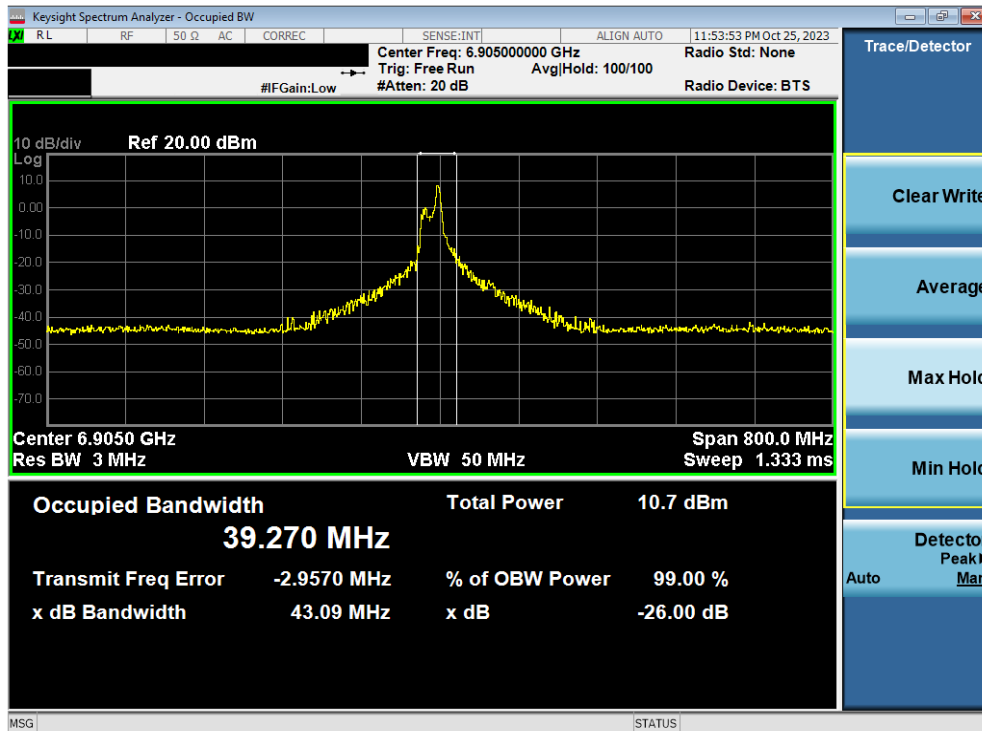


Plot 7-17. Occupied Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax/be (26 Tones) (UNII Band 8) – Ch. 211)

FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2308210093-16-R1.A3L	Test Dates: 8/22 - 11/09/2023	EUT Type: Portable Handset	Page 29 of 330



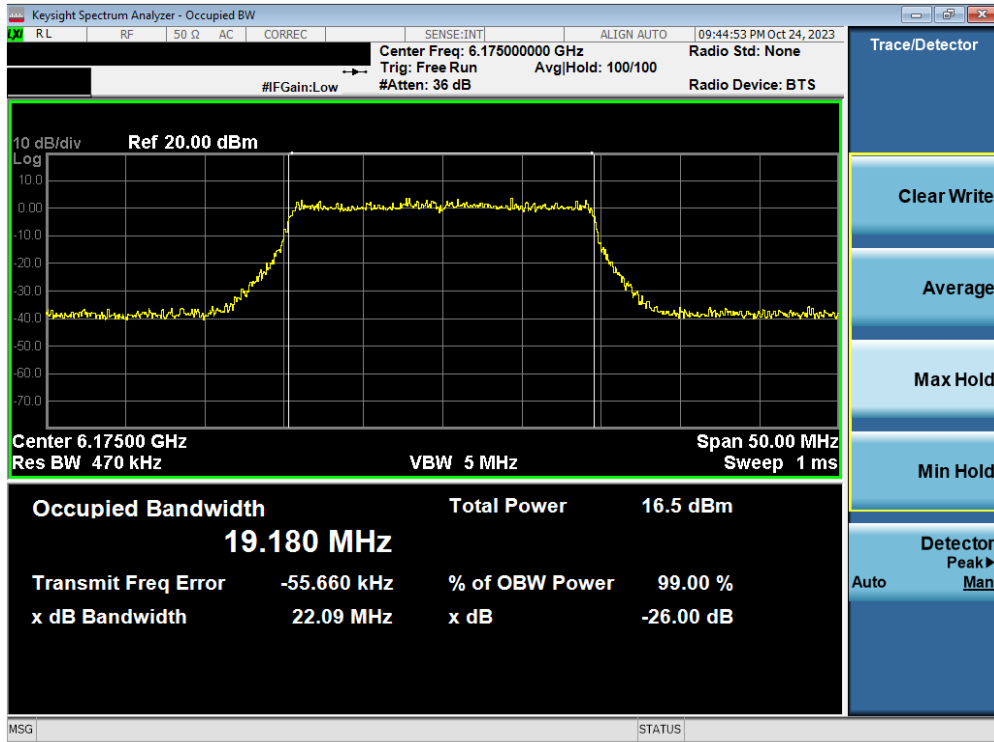
Plot 7-18. Occupied Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax/be (26 Tones) (UNII Band 8) – Ch. 199)



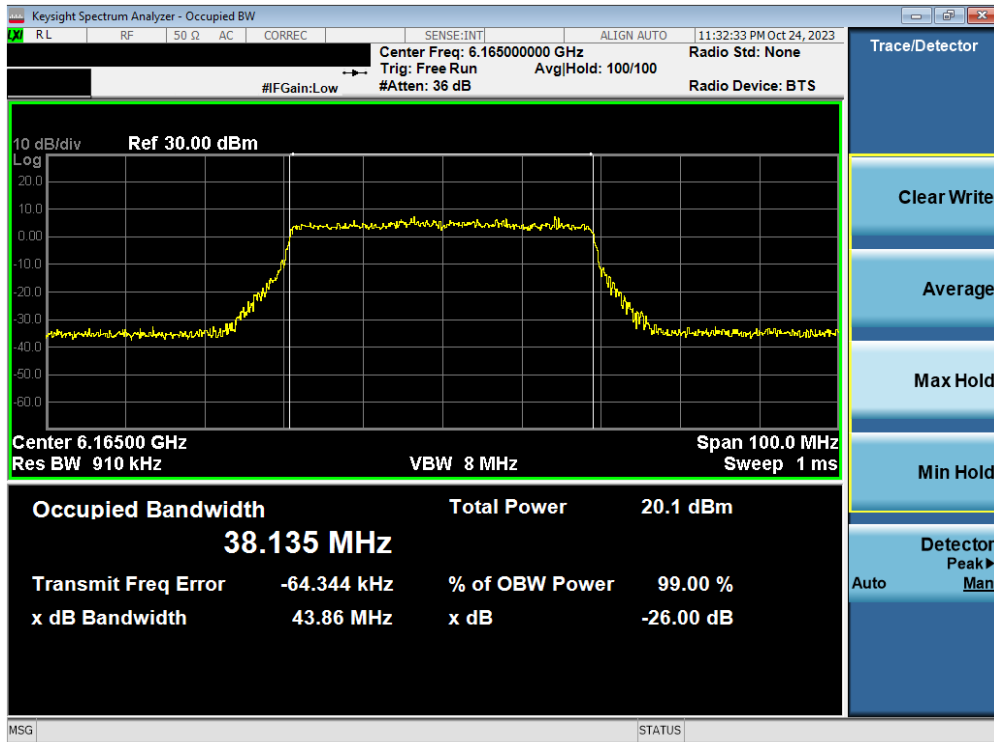
Plot 7-19. Occupied Bandwidth Plot MIMO ANT1 (320MHz BW 802.11ax/be (26 Tones) (UNII Band 7/8) – Ch. 191)

FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
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MIMO Antenna-1 Bandwidth Measurements - (Full Tones) – (UNII Band 5)

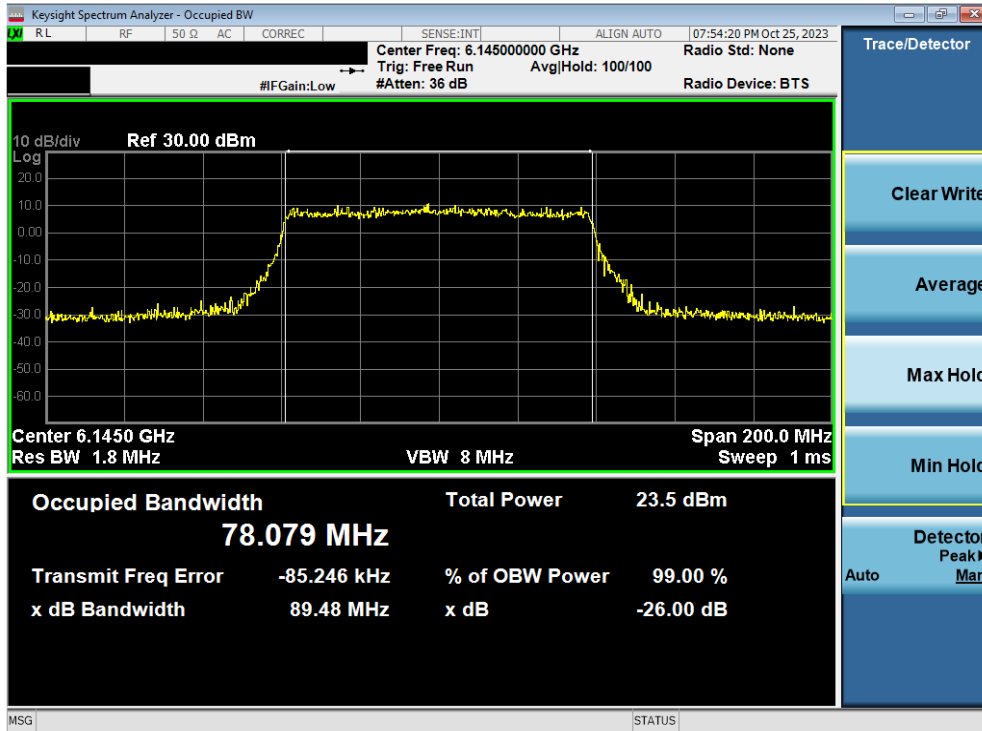


Plot 7-20. Occupied Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax/be (Full Tone) (UNII Band 5) – Ch. 45)

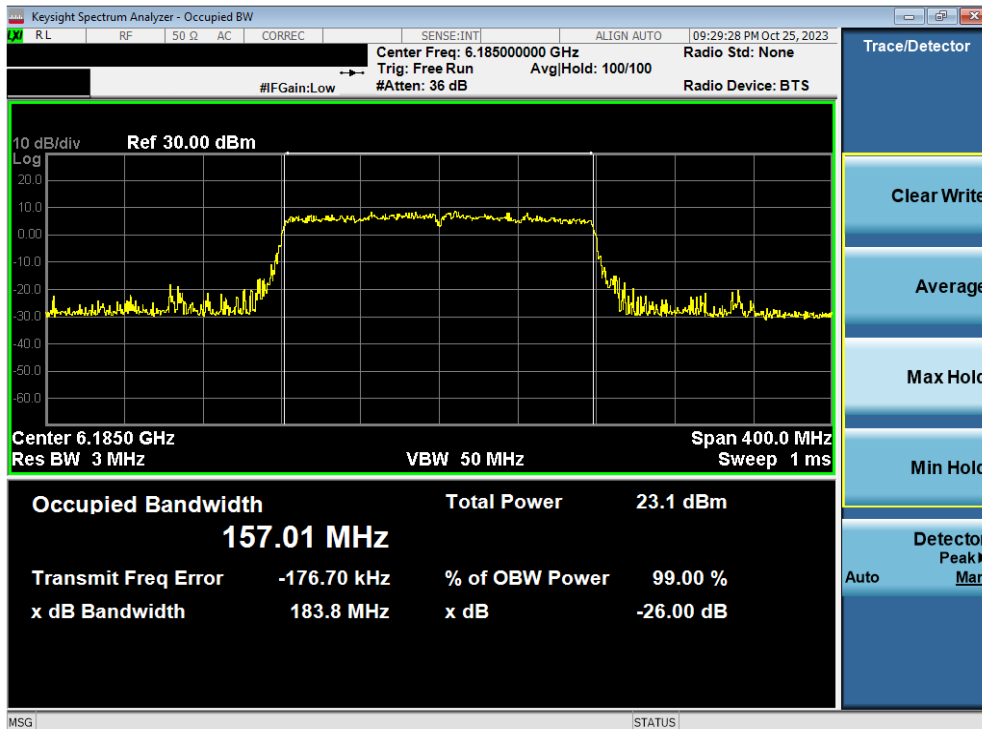


Plot 7-21. Occupied Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax/be (Full Tone) (UNII Band 5) – Ch. 43)

FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
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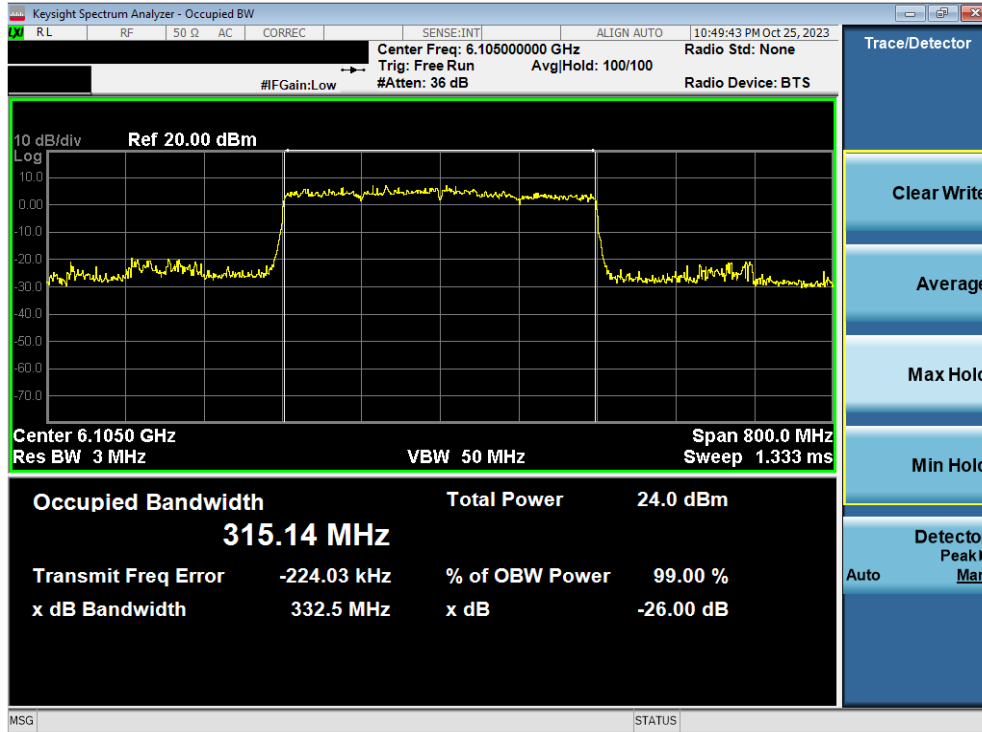


Plot 7-22. Occupied Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax/be (Full Tone) (UNII Band 5) – Ch. 39)



Plot 7-23. Occupied Bandwidth Plot MIMO ANT1 (160MHz BW 802.11ax/be (Full Tone) (UNII Band 5) – Ch. 47)

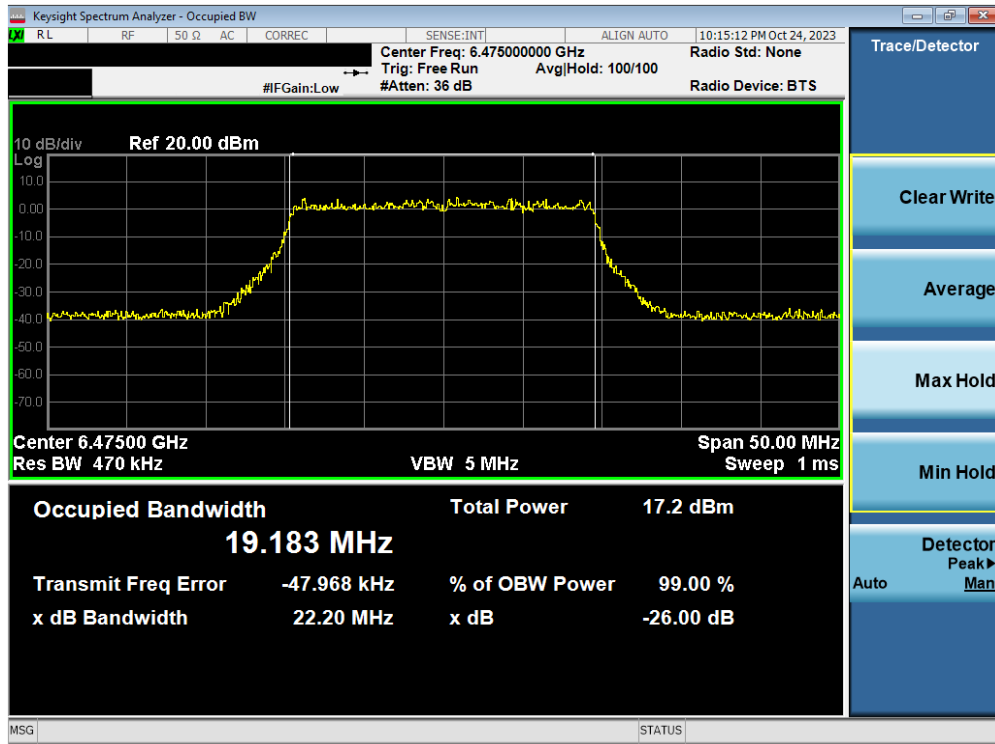
FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2308210093-16-R1.A3L	Test Dates: 8/22 - 11/09/2023	EUT Type: Portable Handset	Page 32 of 330



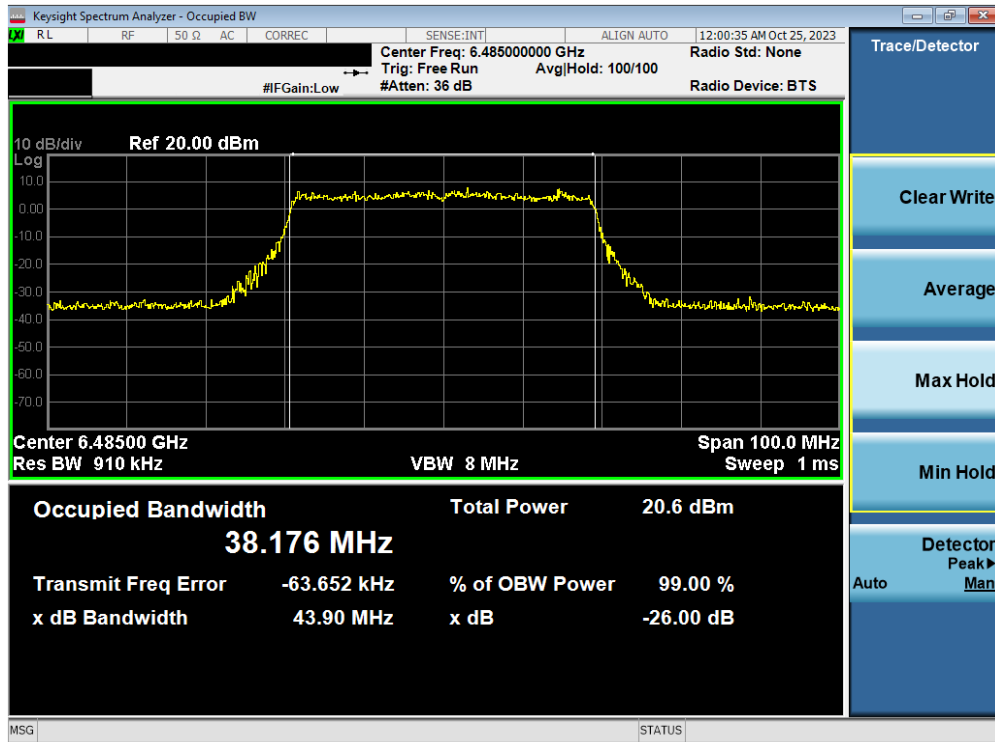
Plot 7-24. Occupied Bandwidth Plot MIMO ANT1 (320MHz BW 802.11ax/be (Full Tones) (UNII Band 5) – Ch. 31)

FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
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MIMO Antenna-1 Bandwidth Measurements - (Full Tones) – (UNII Band 6)

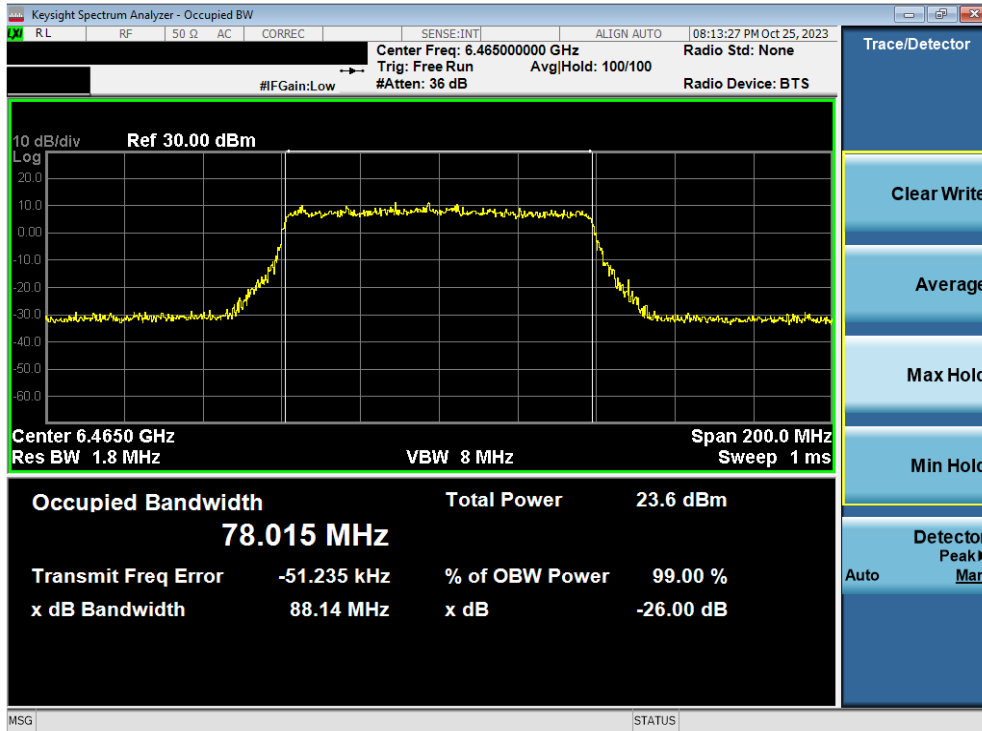


Plot 7-25. Occupied Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax/be (Full Tone) (UNII Band 6) – Ch. 105)

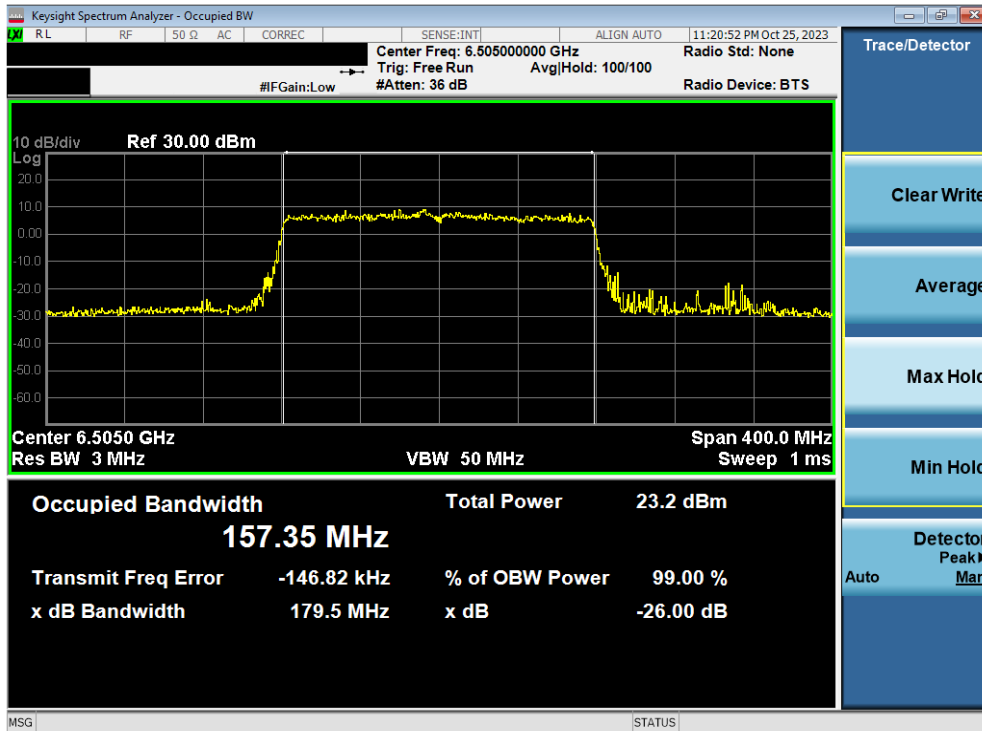


Plot 7-26. Occupied Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax/be (Full Tone) (UNII Band 6) – Ch. 107)

FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2308210093-16-R1.A3L	Test Dates: 8/22 - 11/09/2023	EUT Type: Portable Handset	Page 34 of 330

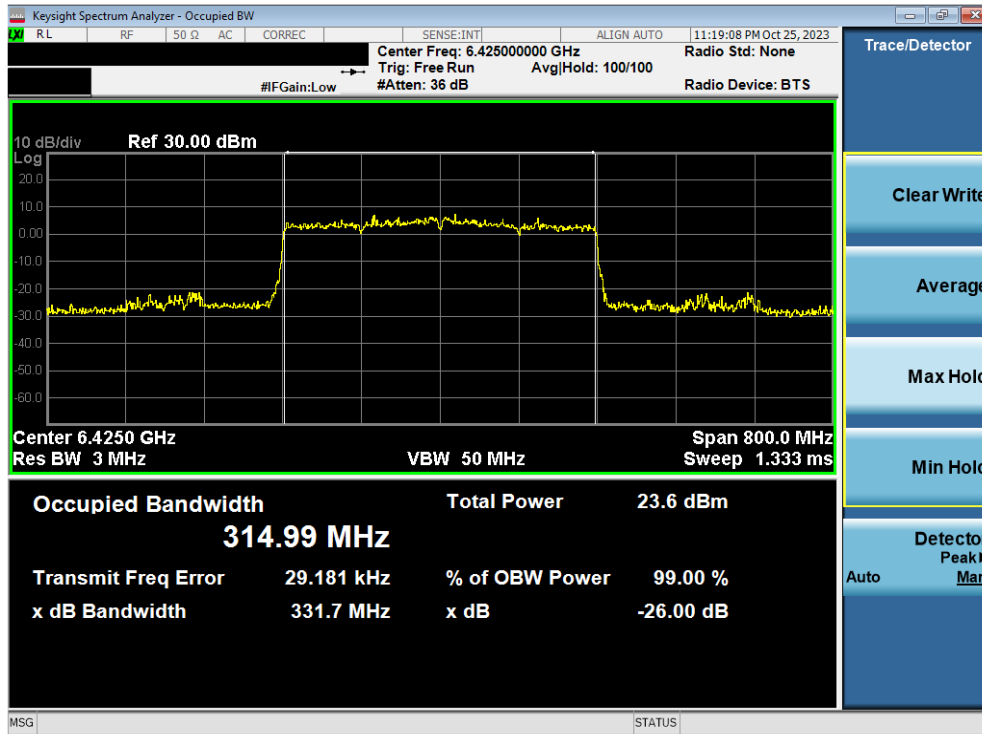


Plot 7-27. Occupied Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax/be (Full Tone) (UNII Band 6) – Ch. 103)



Plot 7-28. Occupied Bandwidth Plot MIMO ANT1 (160MHz BW 802.11ax/be (Full Tone) (UNII Band 6) – Ch. 111)

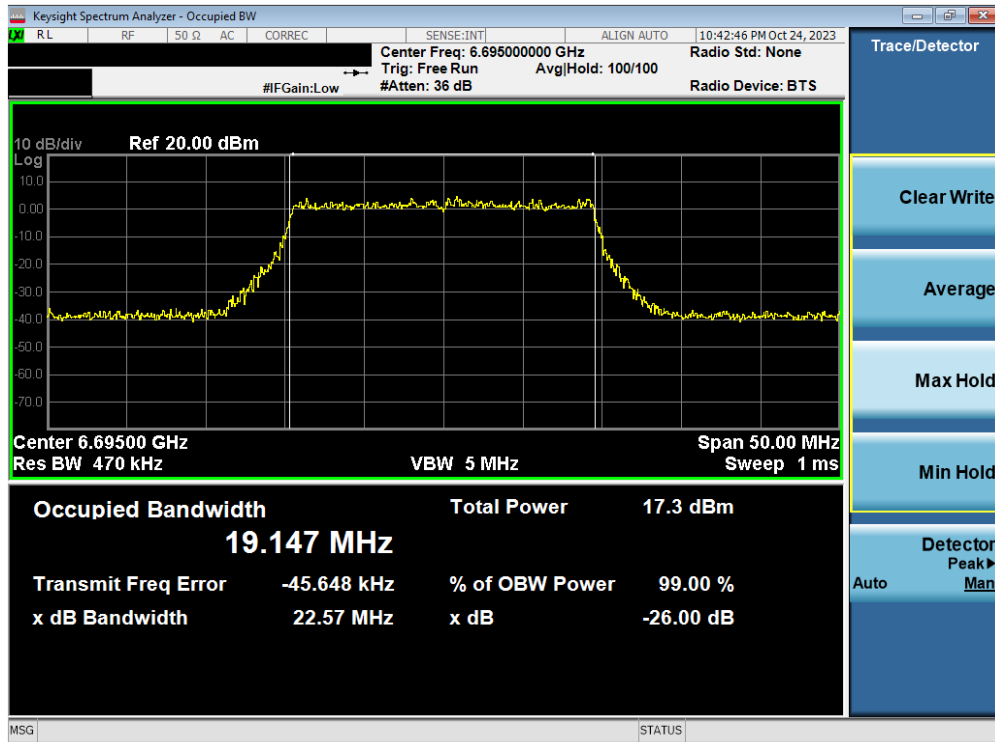
FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
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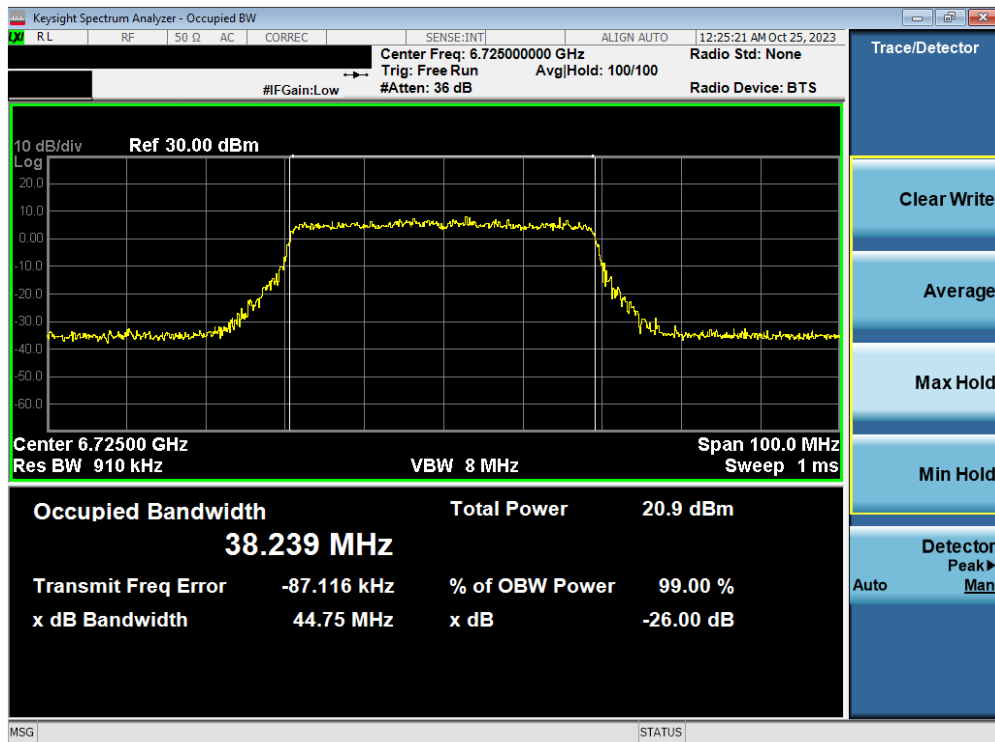
Plot 7-29. Occupied Bandwidth Plot MIMO ANT1 (320MHz BW 802.11ax/be (Full Tones) (UNII Band 5/6/7) – Ch. 95)

FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
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MIMO Antenna-1 Bandwidth Measurements - (Full Tones) – (UNII Band 7)

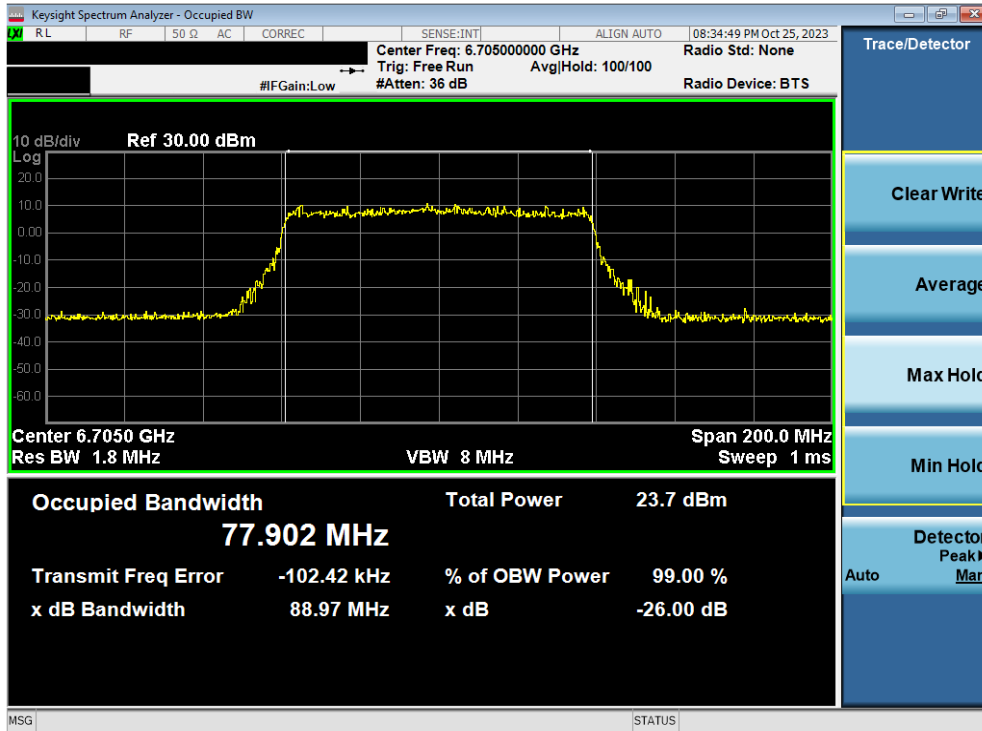


Plot 7-30. Occupied Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax/be (Full Tone) (UNII Band 7) – Ch. 149)

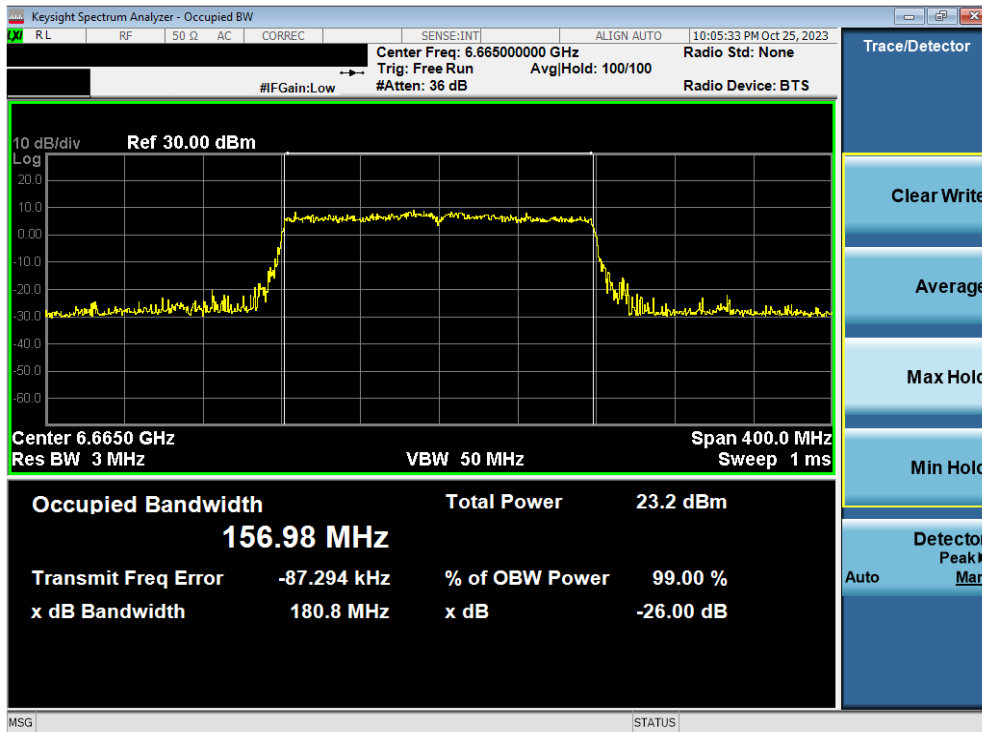


Plot 7-31. Occupied Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax/be (Full Tone) (UNII Band 7) – Ch. 155)

FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
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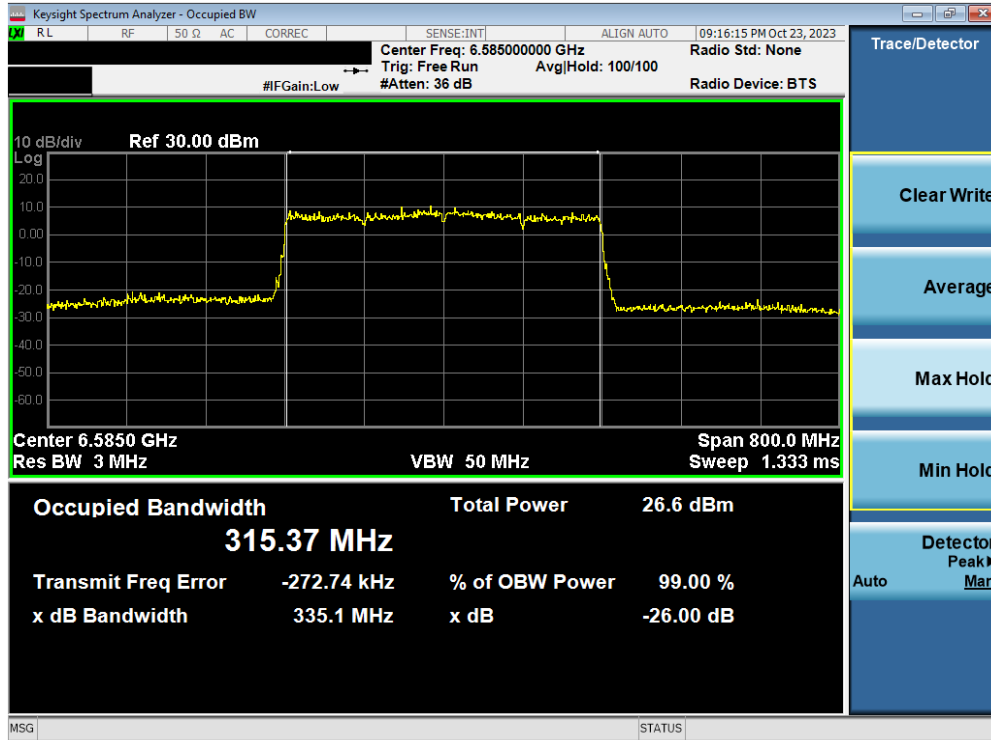


Plot 7-32. Occupied Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax/be (Full Tone) (UNII Band 7) – Ch. 151)



Plot 7-33. Occupied Bandwidth Plot MIMO ANT1 (160MHz BW 802.11ax/be (Full Tone) (UNII Band 7) – Ch. 143)

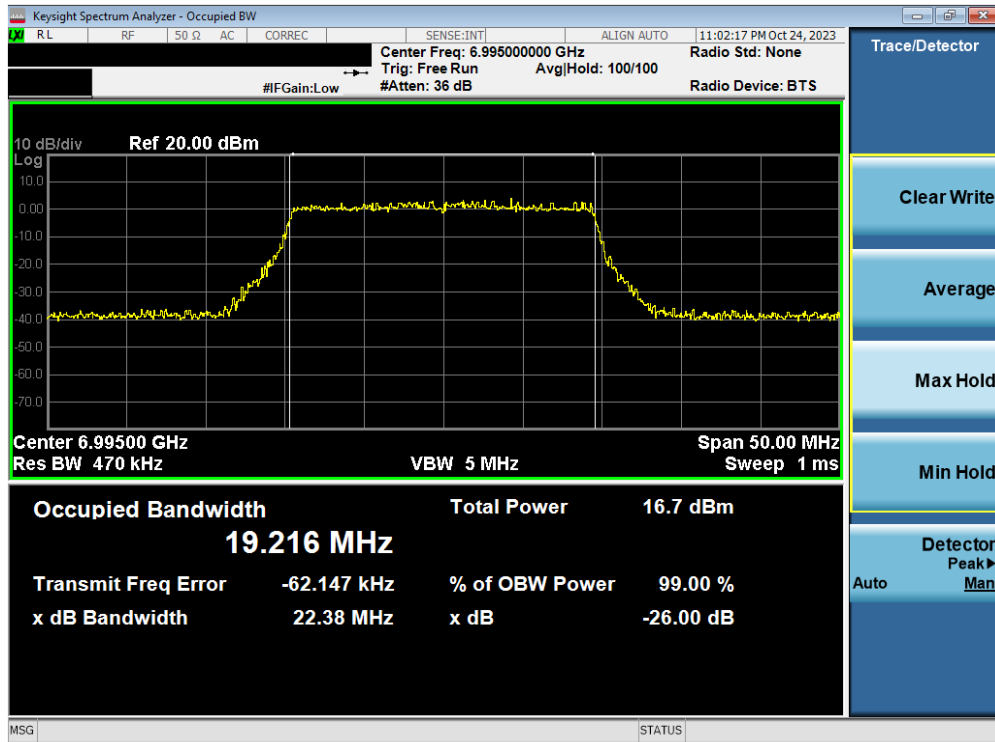
FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
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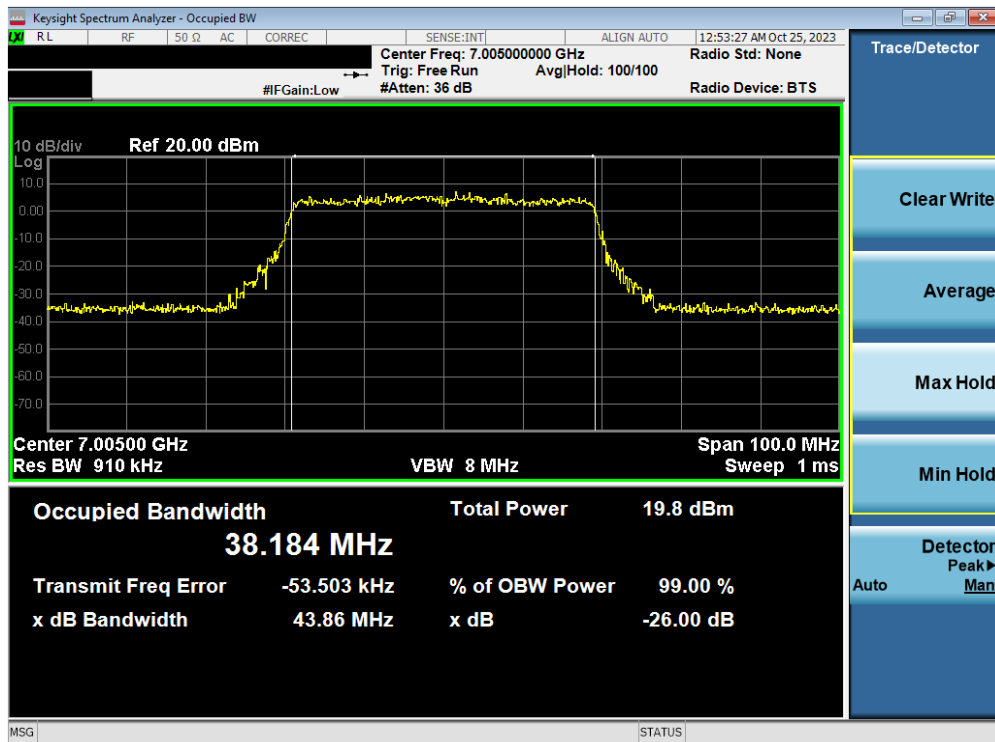
Plot 7-34. Occupied Bandwidth Plot MIMO ANT1 (320MHz BW 802.11ax/be (Full Tones) (UNII Band 6/7) – Ch. 127)

FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
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MIMO Antenna-1 Bandwidth Measurements - (Full Tones) – (UNII Band 8)

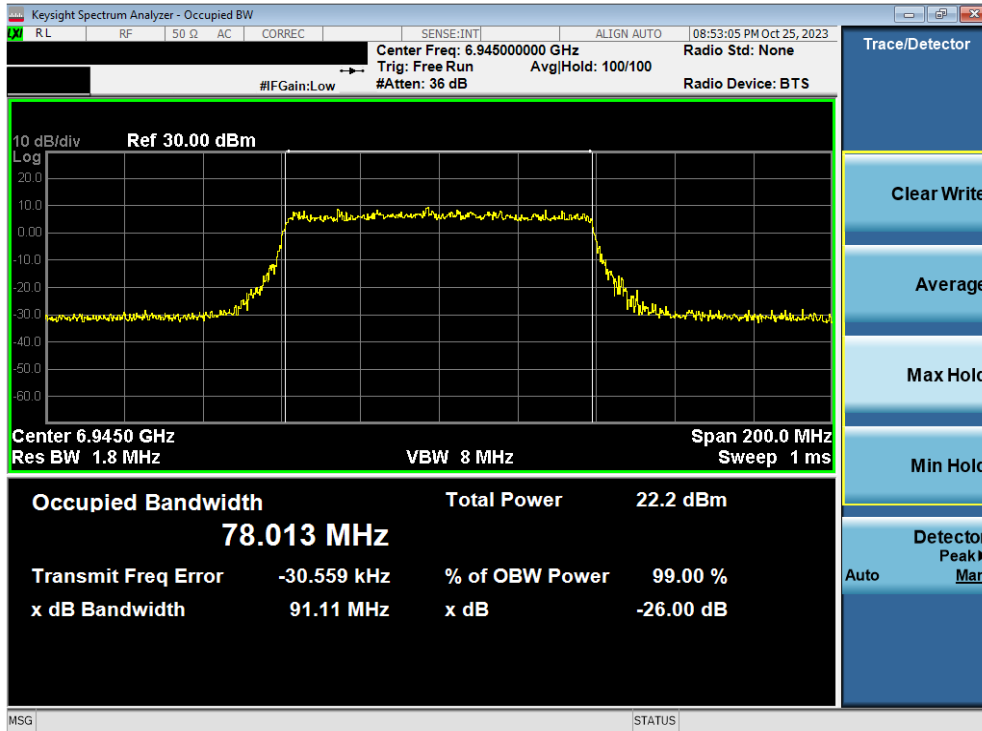


Plot 7-35. Occupied Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax/be (Full Tone) (UNII Band 8) – Ch. 209)

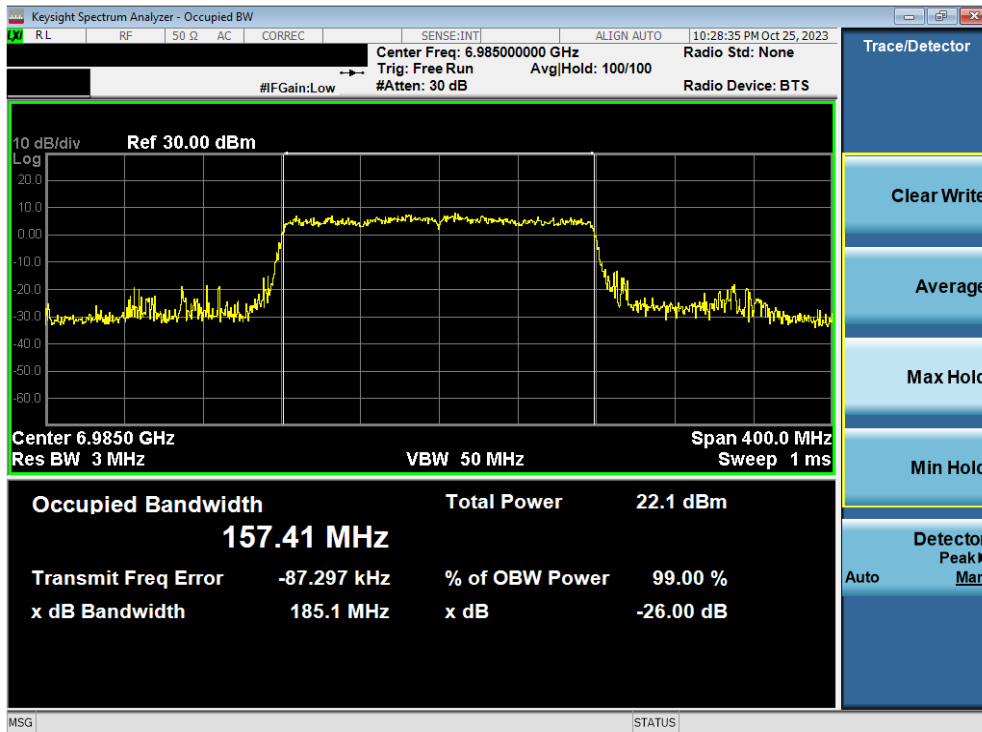


Plot 7-36. Occupied Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax/be (Full Tone) (UNII Band 8) – Ch. 211)

FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
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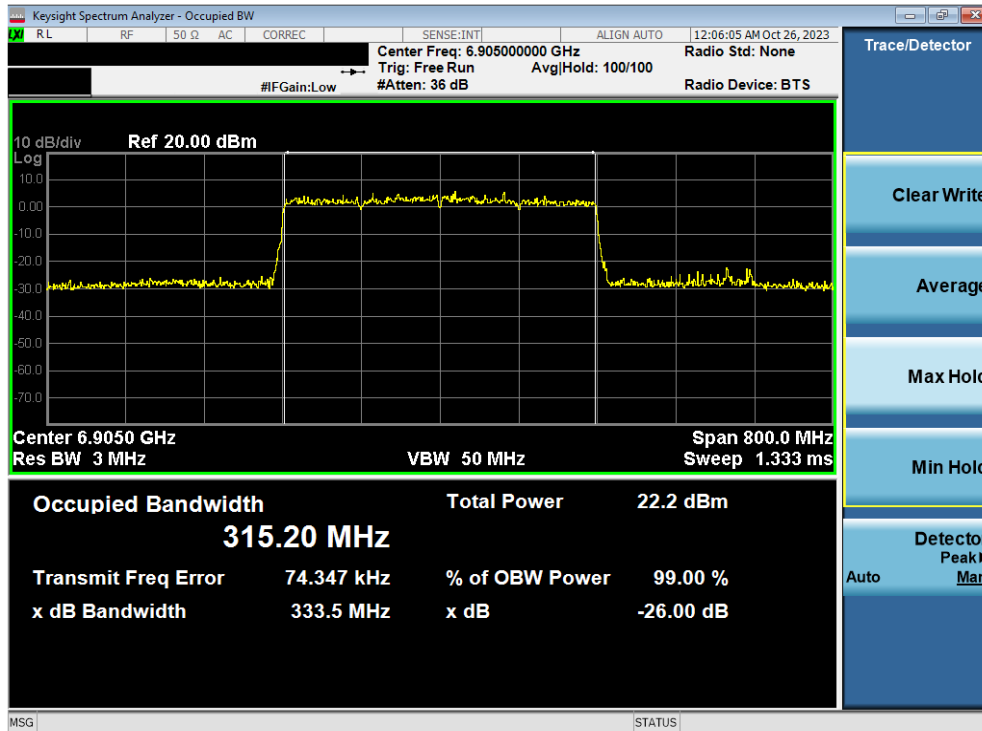


Plot 7-37. Occupied Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax/be (Full Tone) (UNII Band 8) – Ch. 199)



Plot 7-38. Occupied Bandwidth Plot MIMO ANT1 (160MHz BW 802.11ax/be (Full Tone) (UNII Band 8) – Ch. 207)

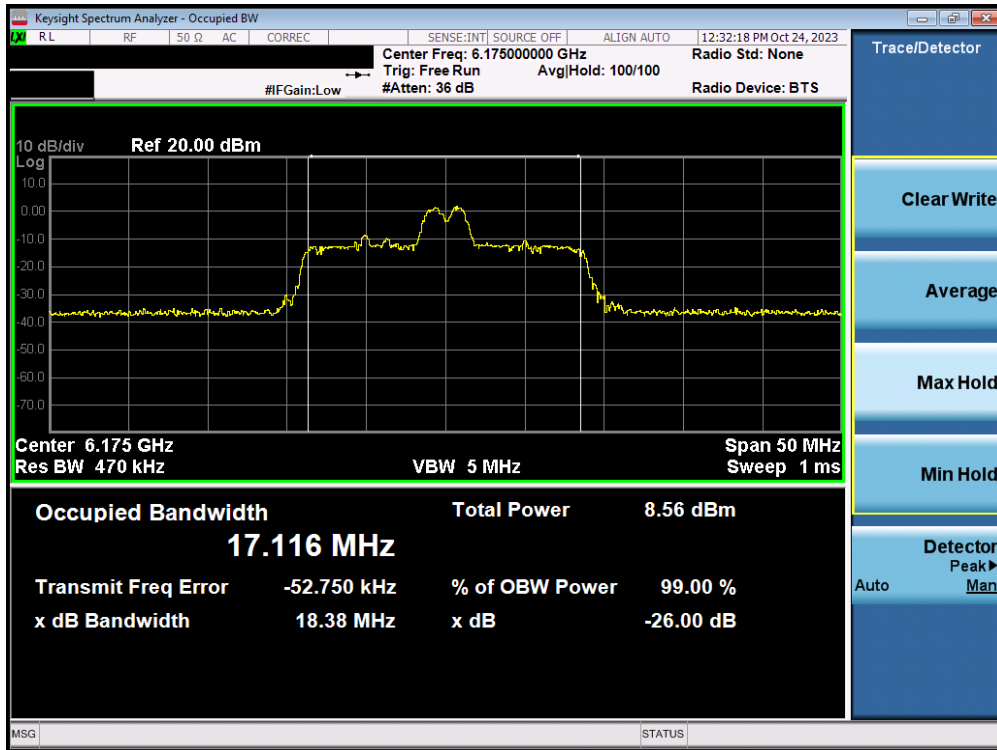
FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2308210093-16-R1.A3L	Test Dates: 8/22 - 11/09/2023	EUT Type: Portable Handset	Page 41 of 330



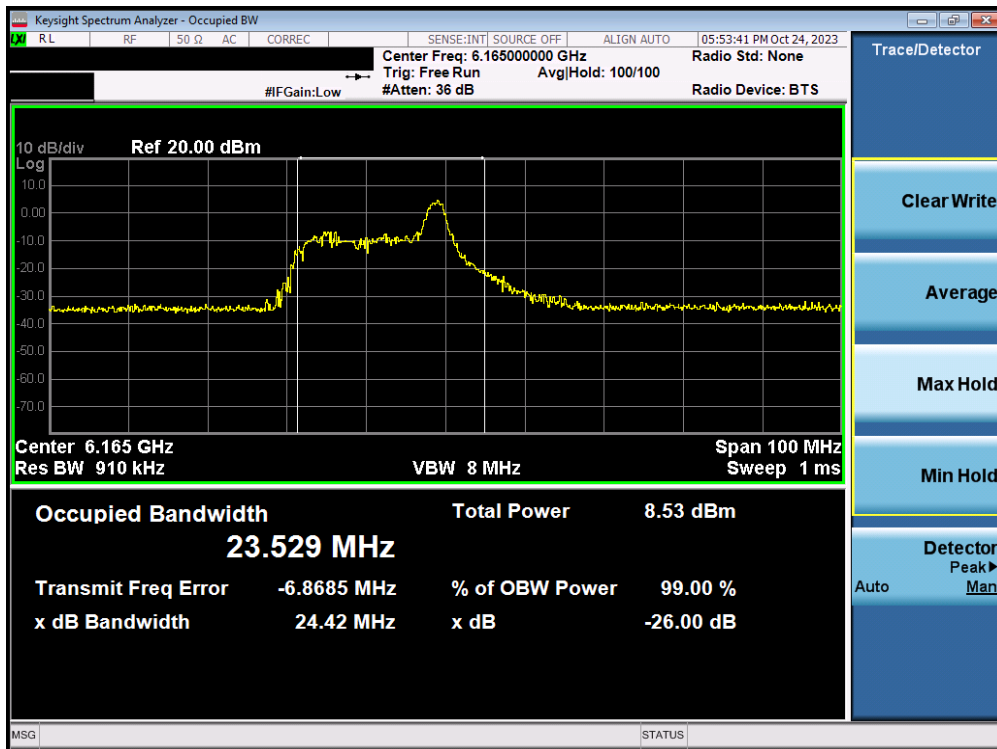
Plot 7-39. Occupied Bandwidth Plot MIMO ANT1 (320MHz BW 802.11ax/be (Full Tones) (UNII Band 8) – Ch. 191)

FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
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MIMO Antenna-2 Bandwidth Measurements - (Partial Tones) – (UNII Band 5)

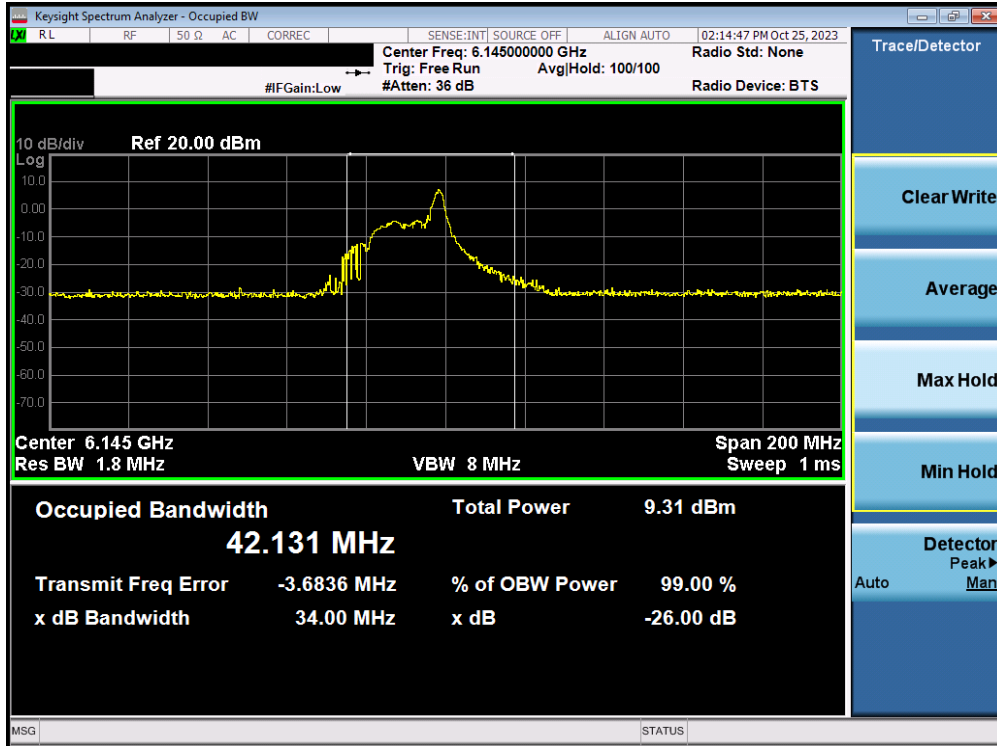


Plot 7-40. Occupied Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax/be (26 Tones) (UNII Band 5) – Ch. 45)

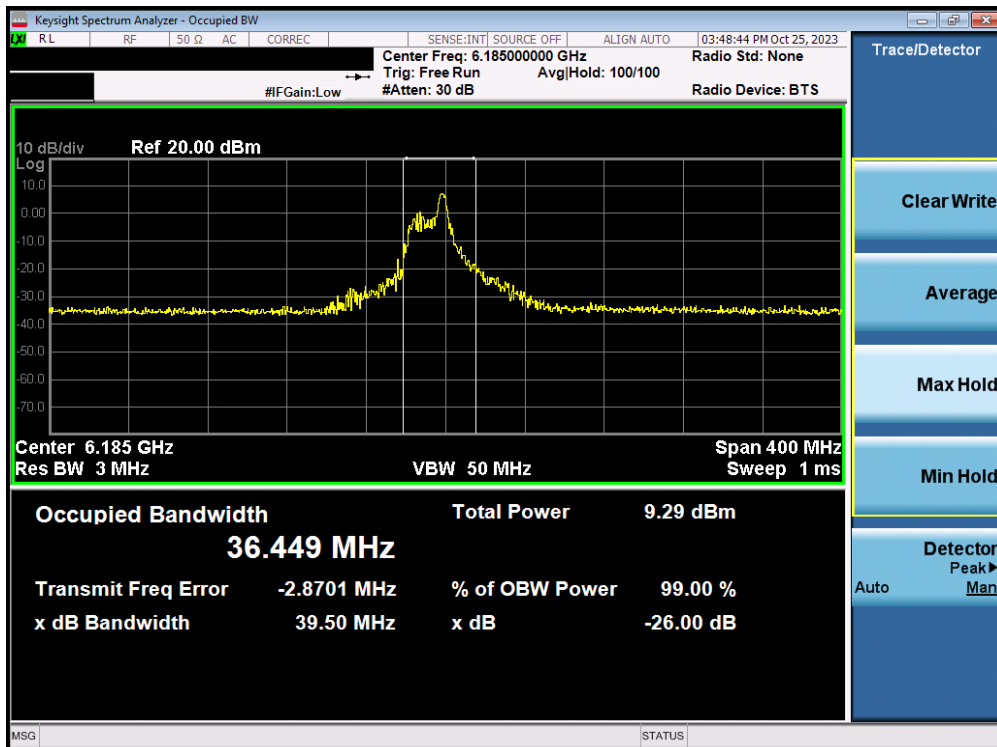


Plot 7-41. Occupied Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax/be (26 Tones) (UNII Band 5) – Ch. 43)

FCC ID: A3LSMS928B		MEASUREMENT REPORT		Approved by: Technical Manager
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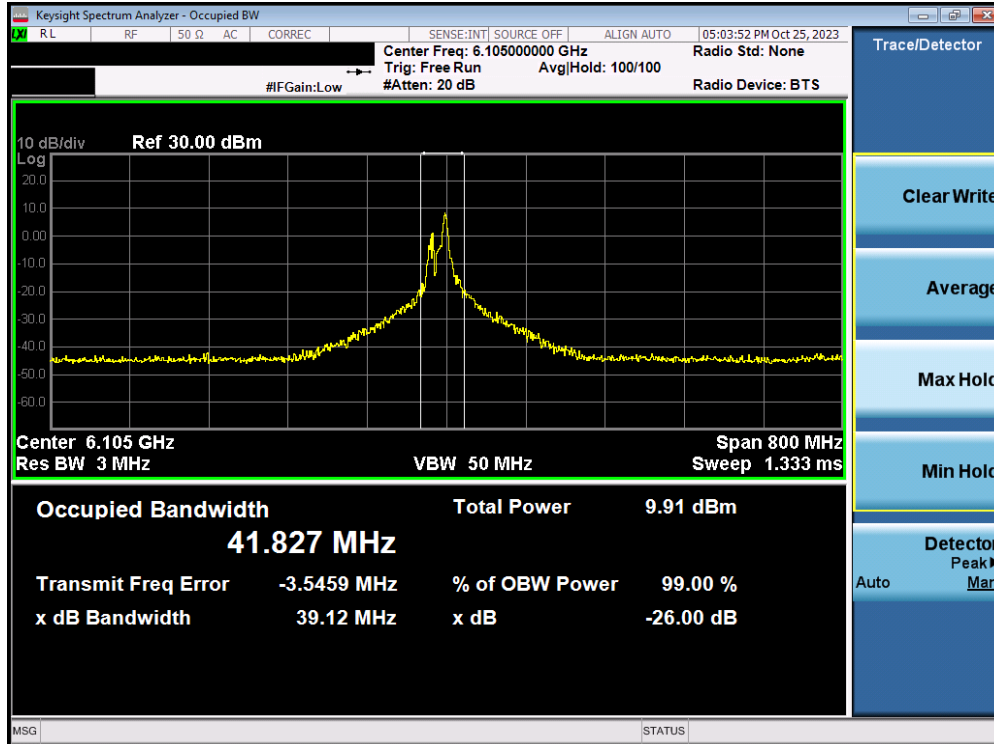


Plot 7-42. Occupied Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax/be (26 Tones) (UNII Band 5) – Ch. 39)



Plot 7-43. Occupied Bandwidth Plot MIMO ANT2 (160MHz BW 802.11ax/be (26 Tones) (UNII Band 5) – Ch. 47)

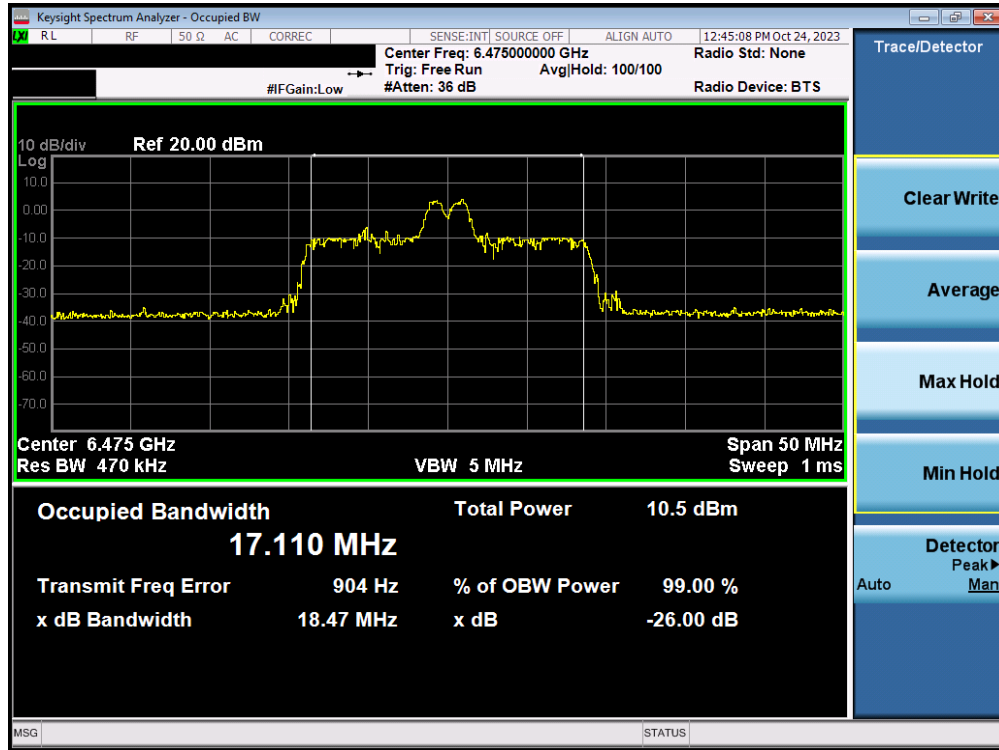
FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
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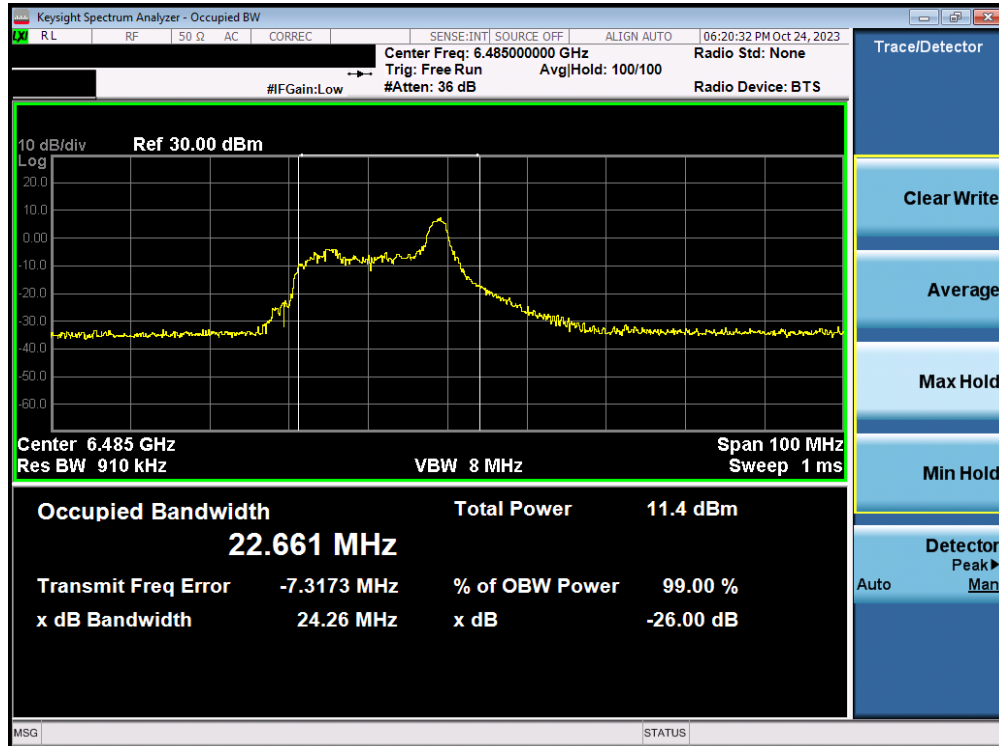
Plot 7-44. Occupied Bandwidth Plot MIMO ANT2 (320MHz BW 802.11ax/be (26 Tones) (UNII Band 5) – Ch. 31)

FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
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MIMO Antenna-2 Bandwidth Measurements - (Partial Tones) – (UNII Band 6)

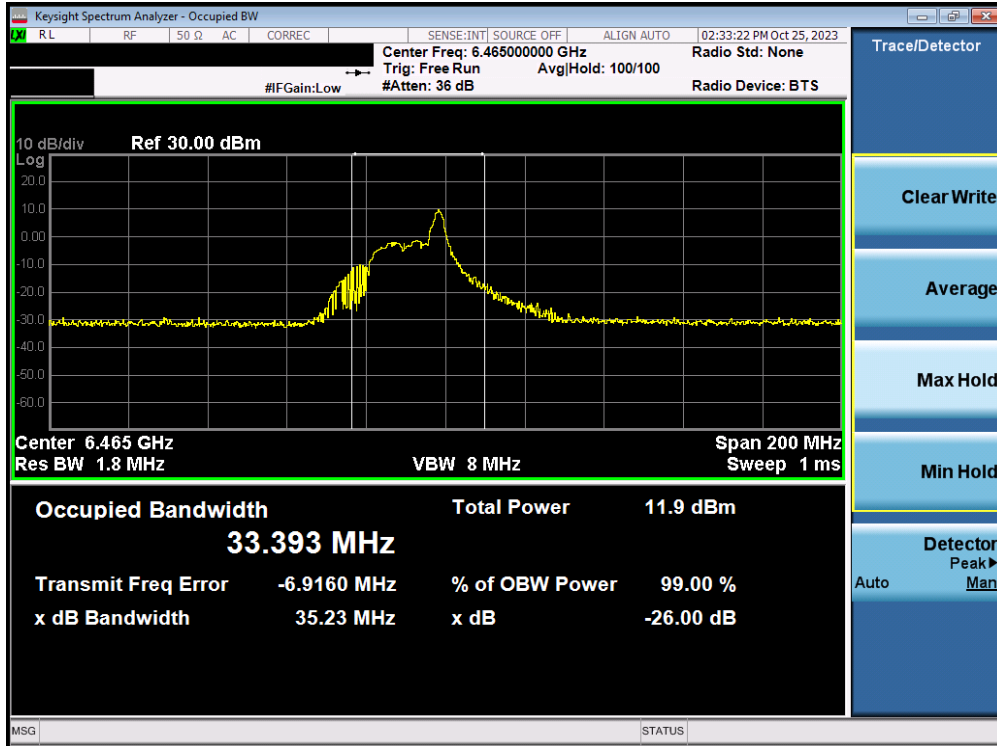


Plot 7-45. Occupied Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax/be (26 Tones) (UNII Band 6) – Ch. 105)

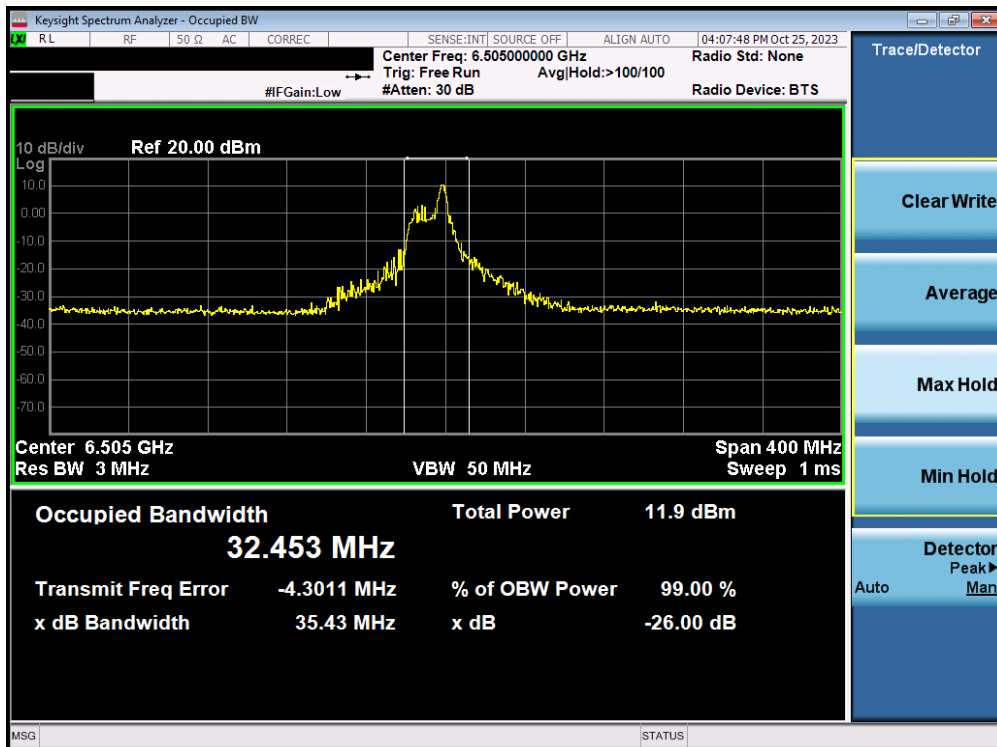


Plot 7-46. Occupied Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax/be (26 Tones) (UNII Band 6) – Ch. 107)

FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
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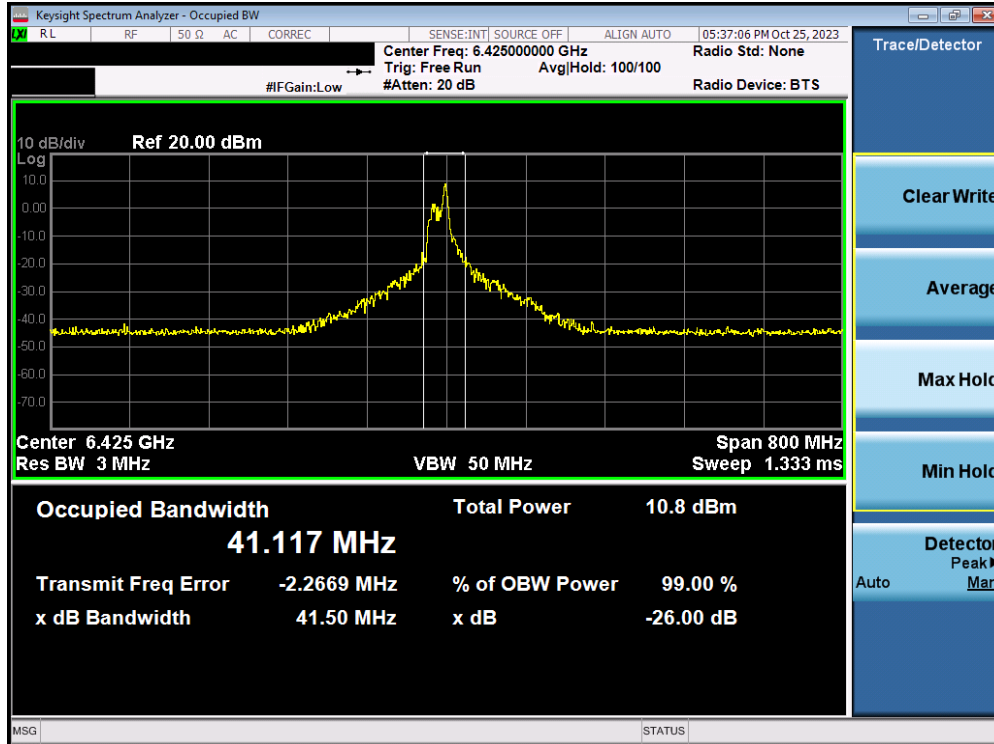


Plot 7-47. Occupied Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax/be (26 Tones) (UNII Band 6) – Ch. 103)



Plot 7-48. Occupied Bandwidth Plot MIMO ANT2 (160MHz BW 802.11ax/be (26 Tones) (UNII Band 6) – Ch. 111)

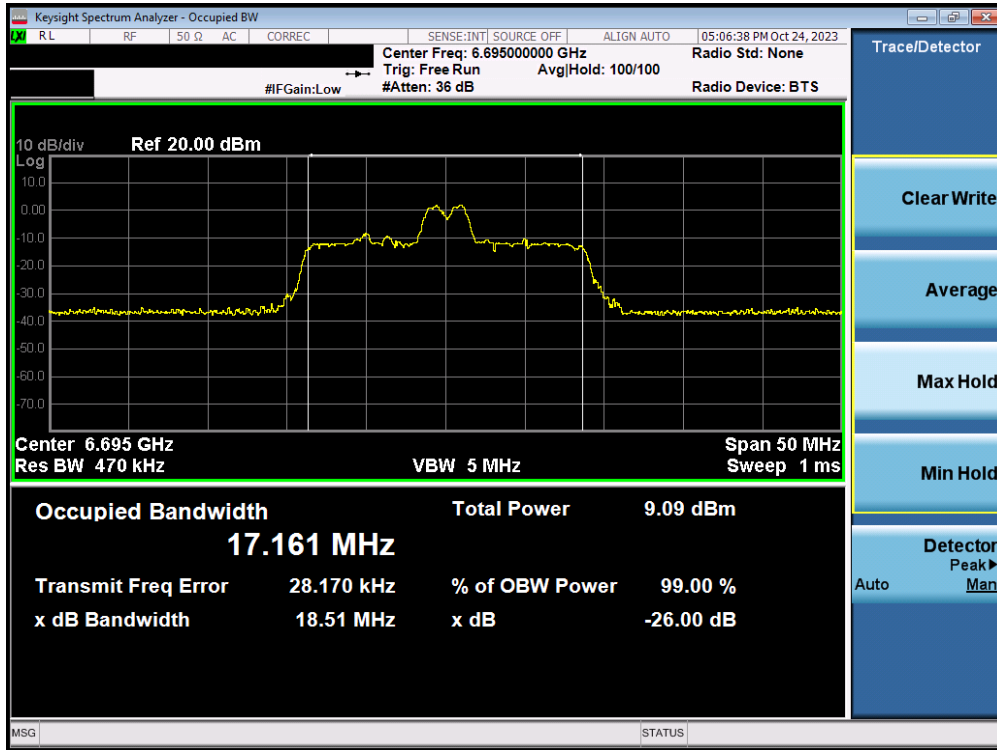
FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2308210093-16-R1.A3L	Test Dates: 8/22 - 11/09/2023	EUT Type: Portable Handset	Page 47 of 330



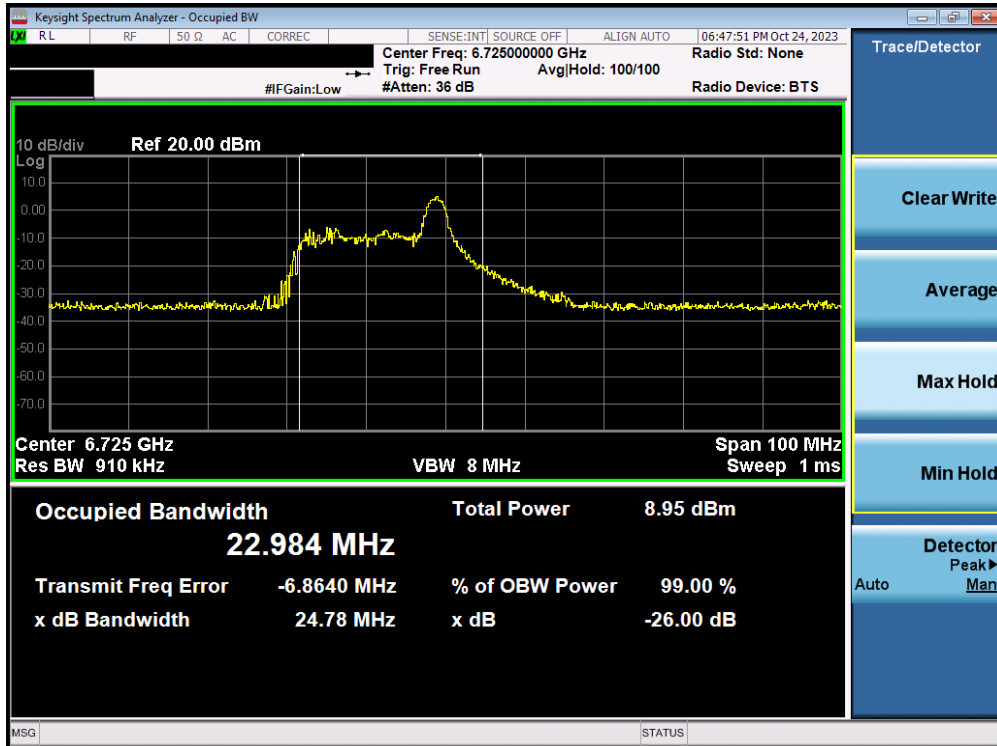
Plot 7-49. Occupied Bandwidth Plot MIMO ANT2 (320MHz BW 802.11ax/be (26 Tones) (UNII Band 5/6/7) – Ch. 95)

FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2308210093-16-R1.A3L	Test Dates: 8/22 - 11/09/2023	EUT Type: Portable Handset	Page 48 of 330

MIMO Antenna-2 Bandwidth Measurements - (Partial Tones) – (UNII Band 7)

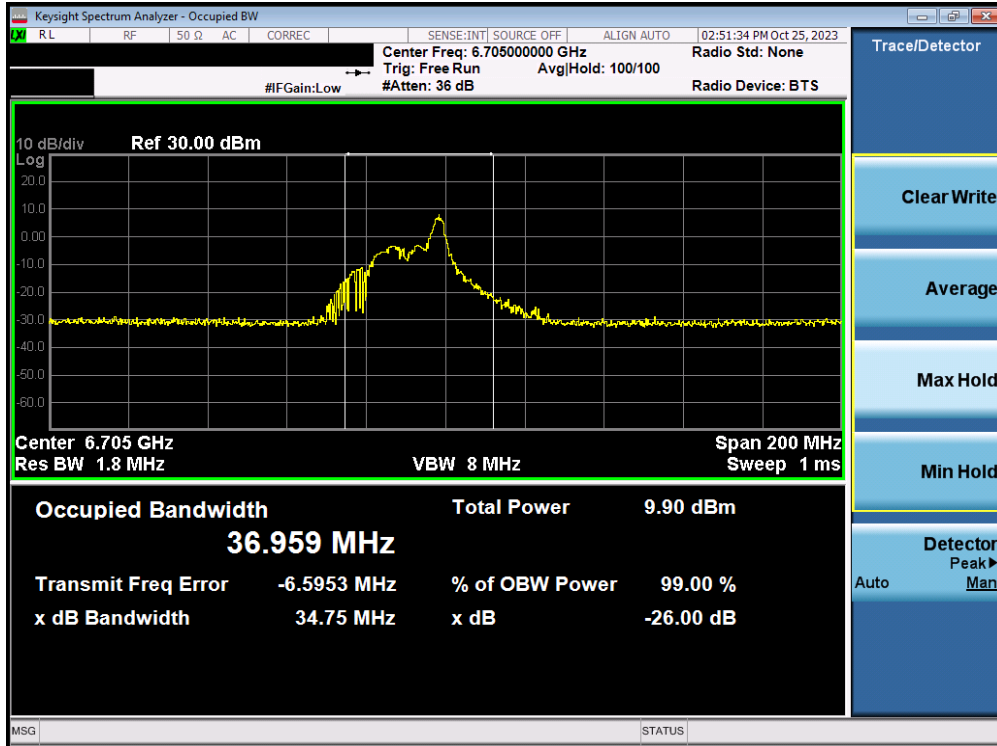


Plot 7-50. Occupied Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax/be (26 Tones) (UNII Band 7) – Ch. 149)

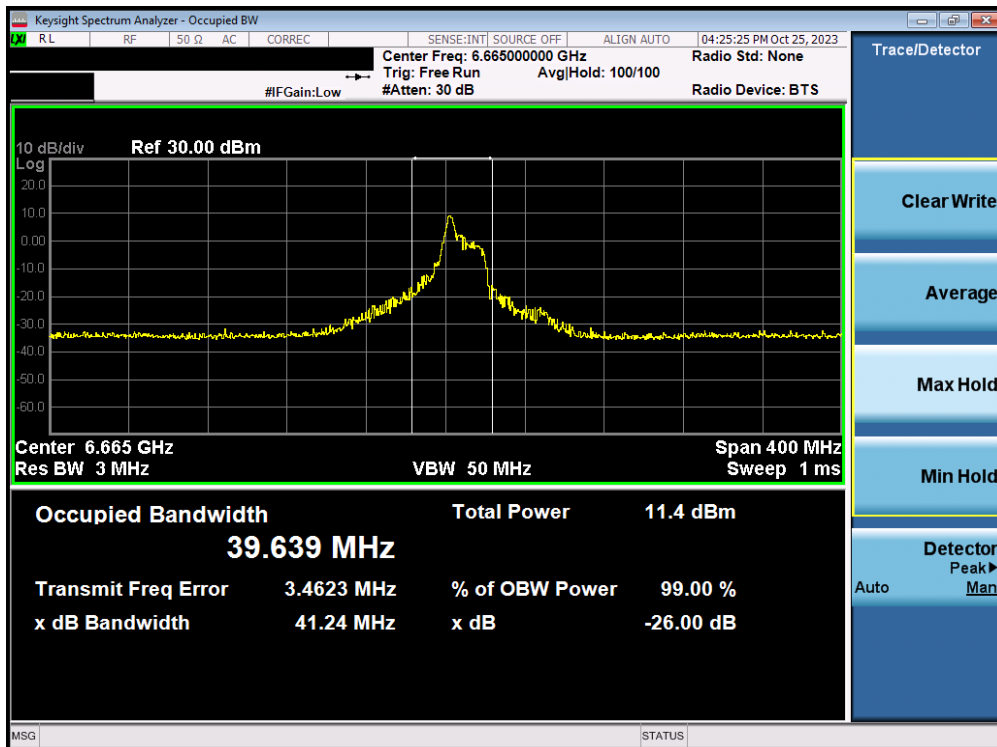


Plot 7-51. Occupied Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax/be (26 Tones) (UNII Band 7) – Ch. 155)

FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2308210093-16-R1.A3L	Test Dates: 8/22 - 11/09/2023	EUT Type: Portable Handset	Page 49 of 330

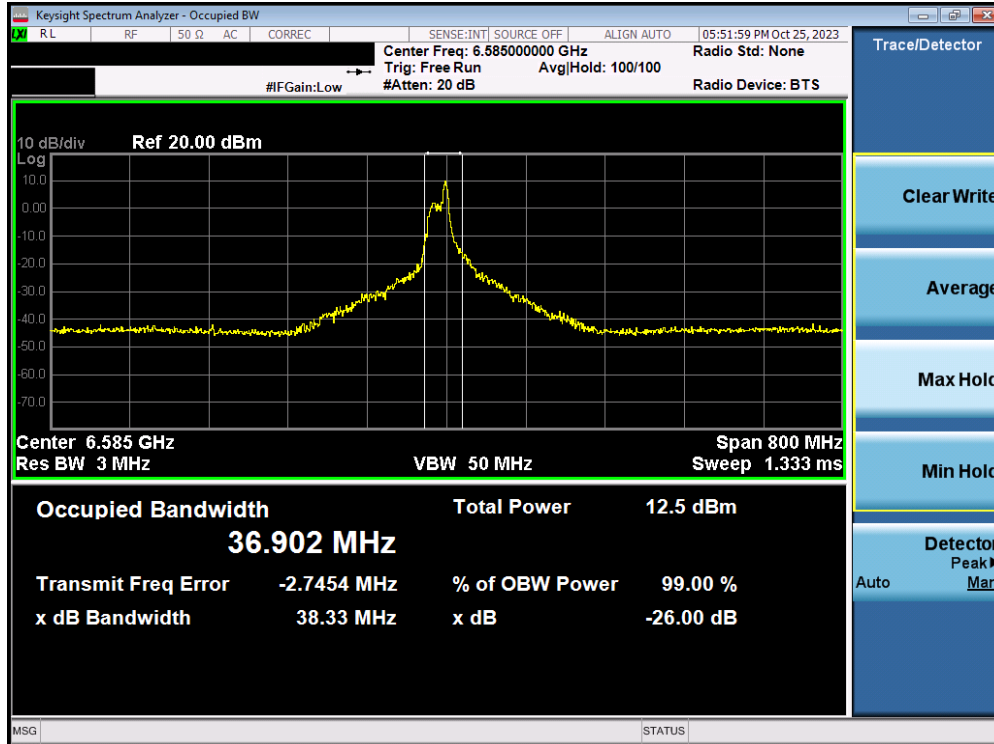


Plot 7-52. Occupied Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax/be (26 Tones) (UNII Band 7) – Ch. 151)



Plot 7-53. Occupied Bandwidth Plot MIMO ANT2 (160MHz BW 802.11ax/be (26 Tones) (UNII Band 7) – Ch. 143)

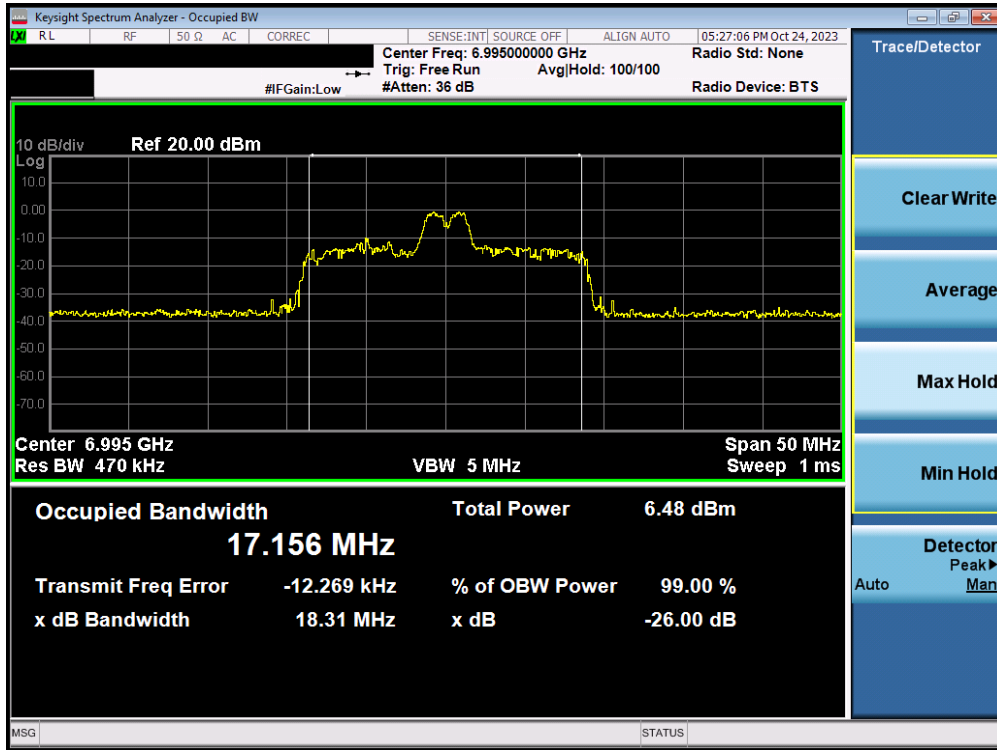
FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2308210093-16-R1.A3L	Test Dates: 8/22 - 11/09/2023	EUT Type: Portable Handset	Page 50 of 330



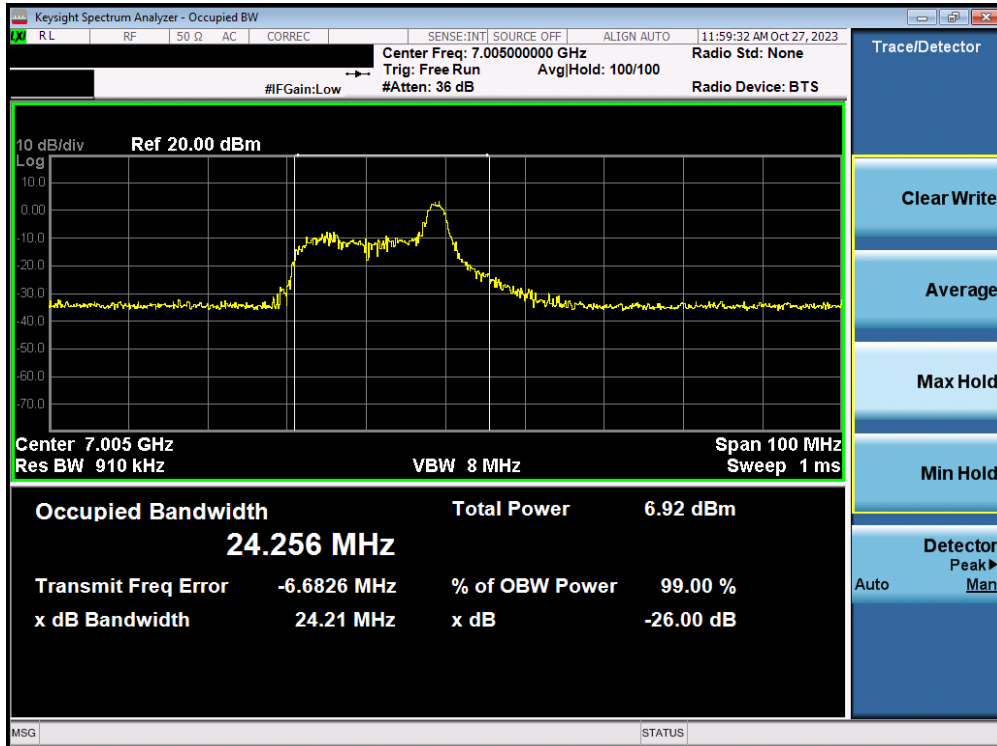
Plot 7-54. Occupied Bandwidth Plot MIMO ANT2 (320MHz BW 802.11ax/be (26 Tones) (UNII Band 6/7) – Ch. 127)

FCC ID: A3LSMS928B		MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2308210093-16-R1.A3L	Test Dates: 8/22 - 11/09/2023	EUT Type: Portable Handset		Page 51 of 330

MIMO Antenna-2 Bandwidth Measurements - (Partial Tones) – (UNII Band 8)

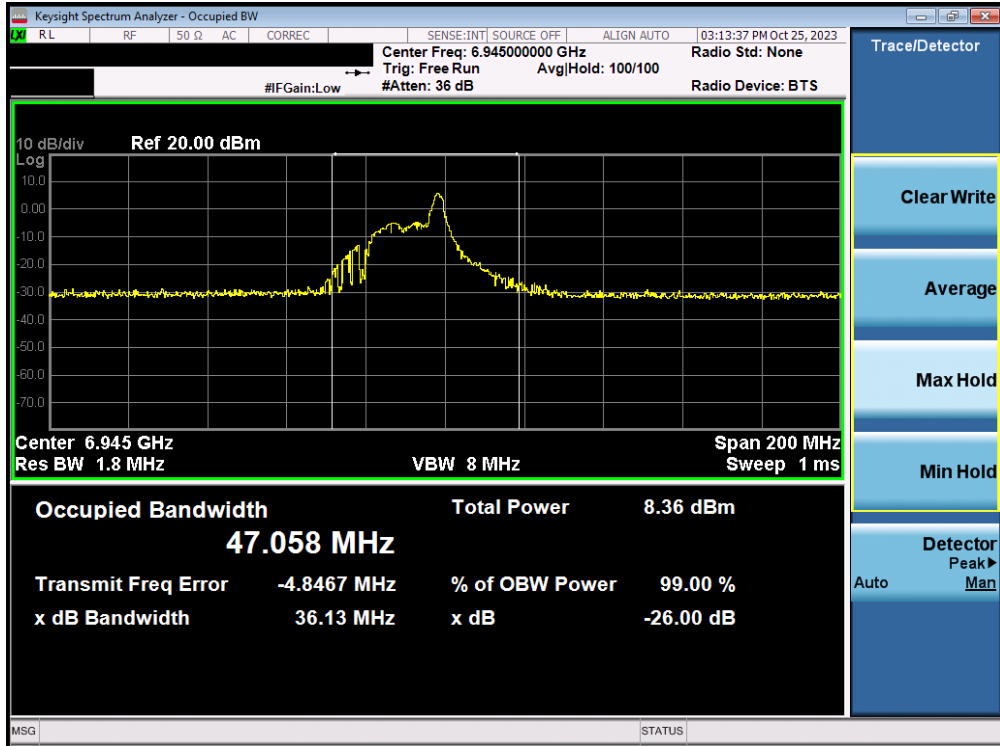


Plot 7-55. Occupied Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax/be (26 Tones) (UNII Band 8) – Ch. 209)

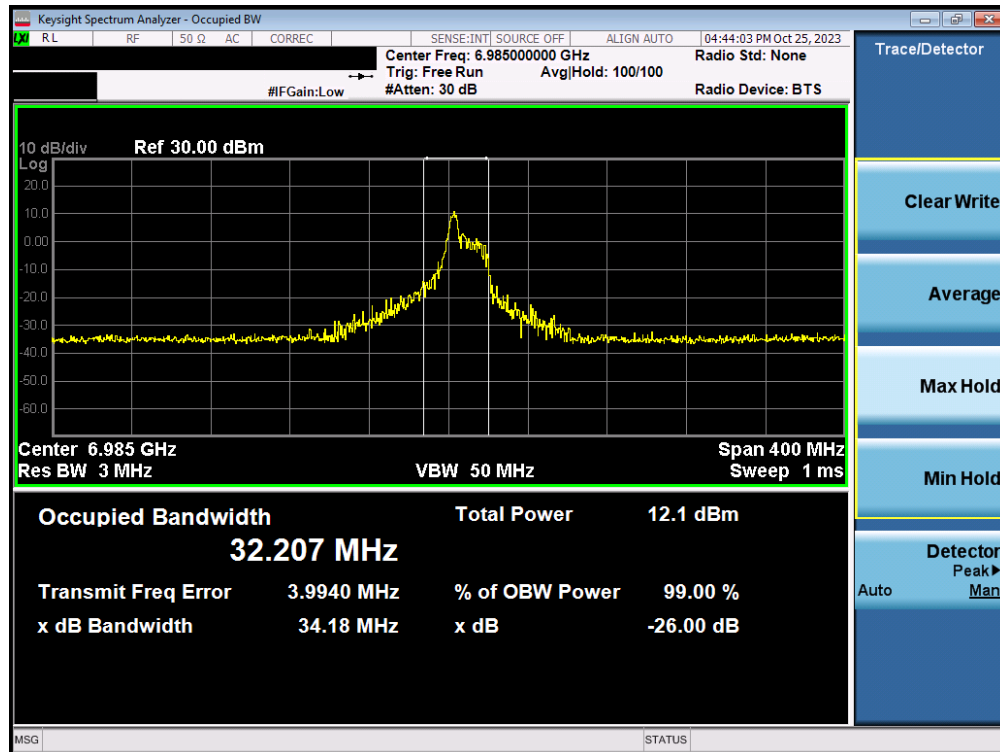


Plot 7-56. Occupied Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax/be (26 Tones) (UNII Band 8) – Ch. 211)

FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2308210093-16-R1.A3L	Test Dates: 8/22 - 11/09/2023	EUT Type: Portable Handset	Page 52 of 330

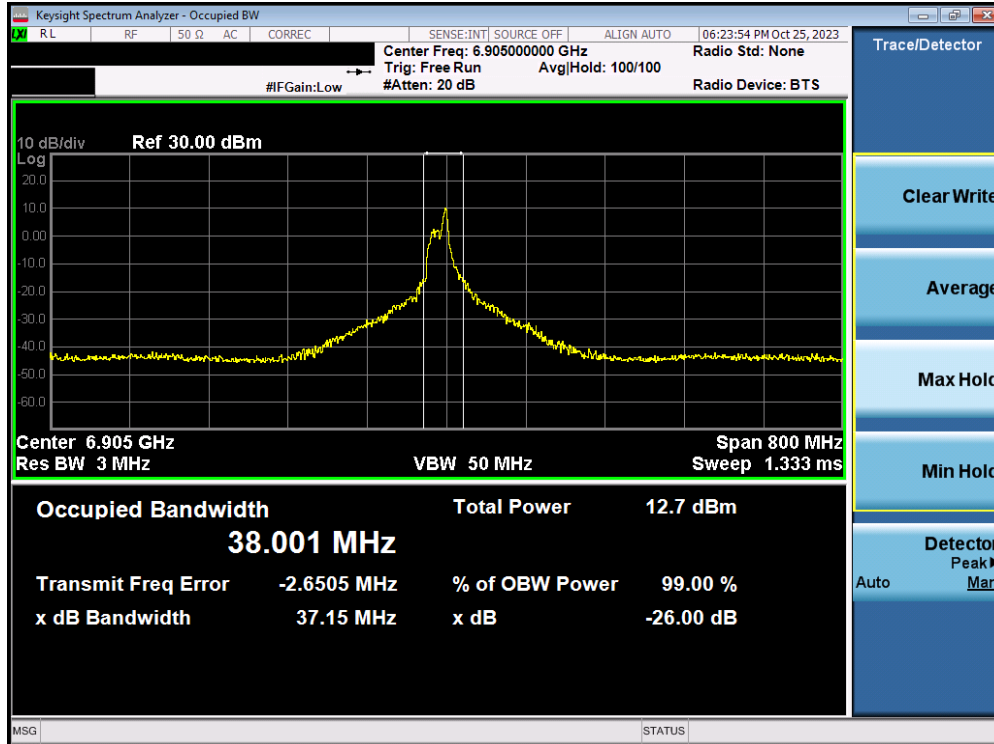


Plot 7-57. Occupied Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax/be (26 Tones) (UNII Band 8) – Ch. 199)



Plot 7-58. Occupied Bandwidth Plot MIMO ANT2 (160MHz BW 802.11ax/be (26 Tones) (UNII Band 8) – Ch. 207)

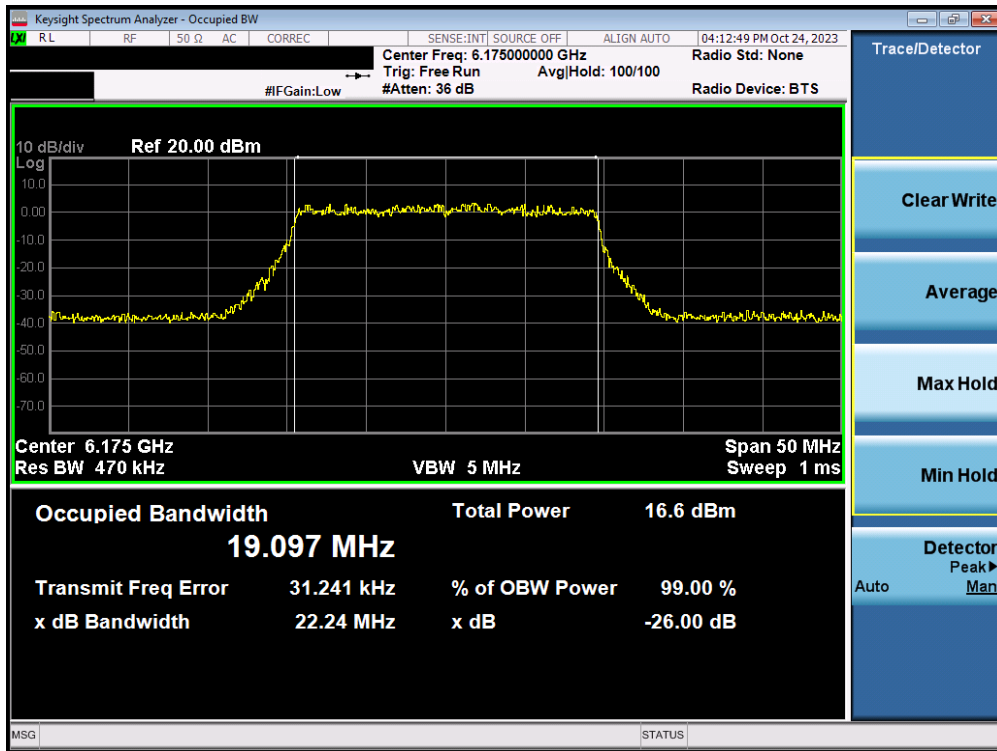
FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2308210093-16-R1.A3L	Test Dates: 8/22 - 11/09/2023	EUT Type: Portable Handset	Page 53 of 330



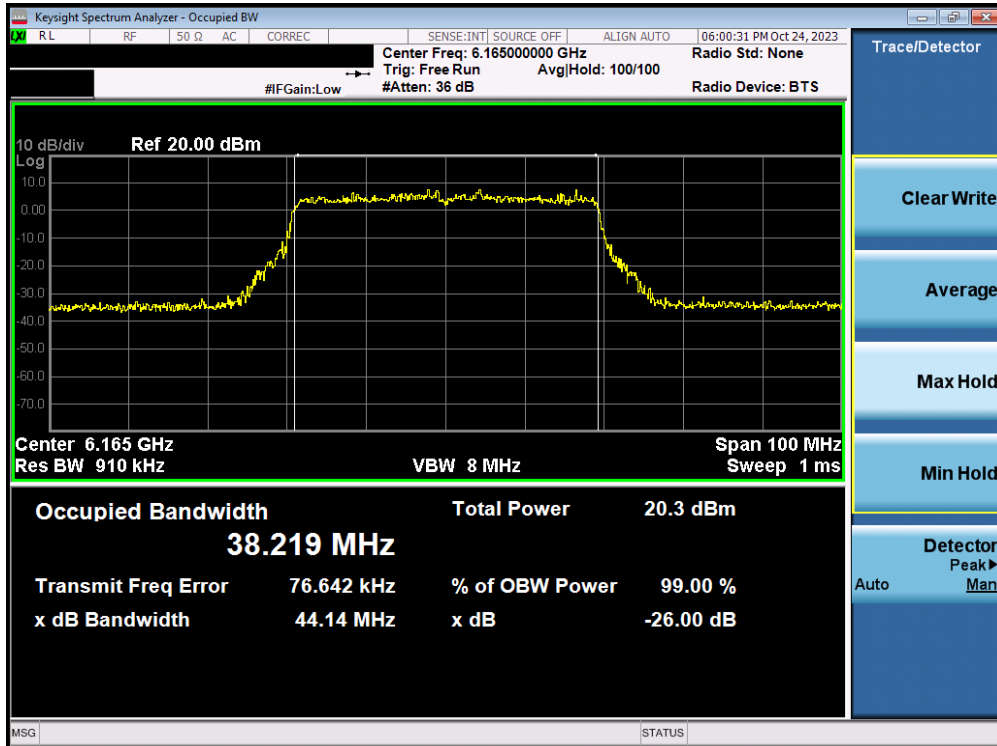
Plot 7-59. Occupied Bandwidth Plot MIMO ANT2 (320MHz BW 802.11ax/be (26 Tones) (UNII Band 7/8) – Ch. 191)

FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2308210093-16-R1.A3L	Test Dates: 8/22 - 11/09/2023	EUT Type: Portable Handset	Page 54 of 330

MIMO Antenna-2 Bandwidth Measurements - (Full Tones) – (UNII Band 5)

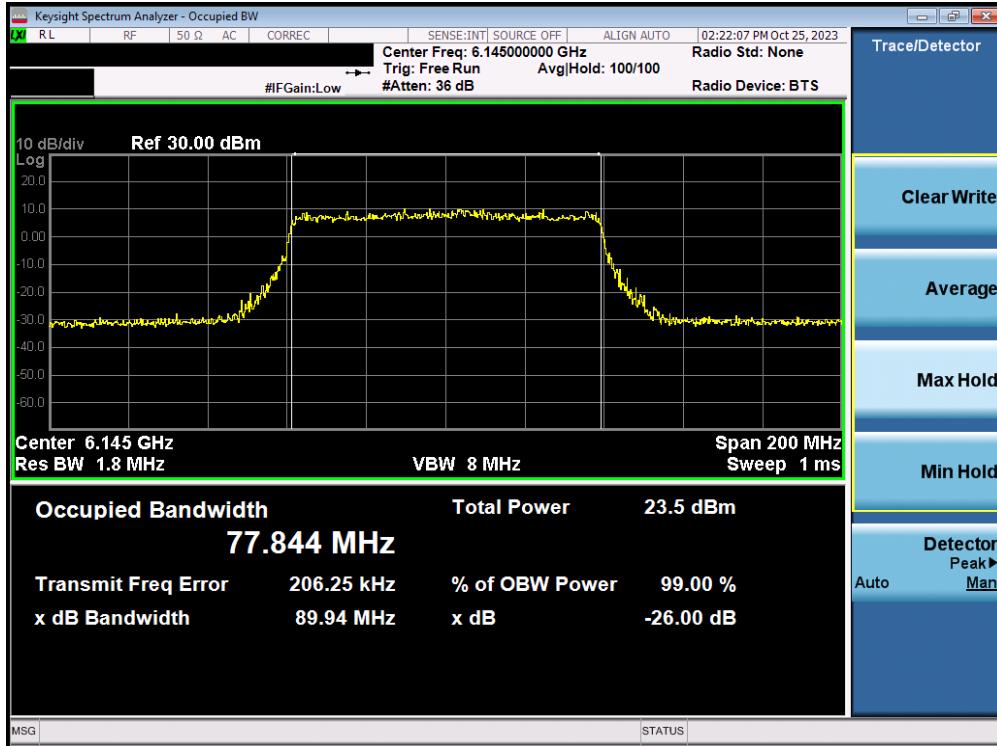


Plot 7-60. Occupied Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax/be (Full Tone) (UNII Band 5) – Ch. 45)

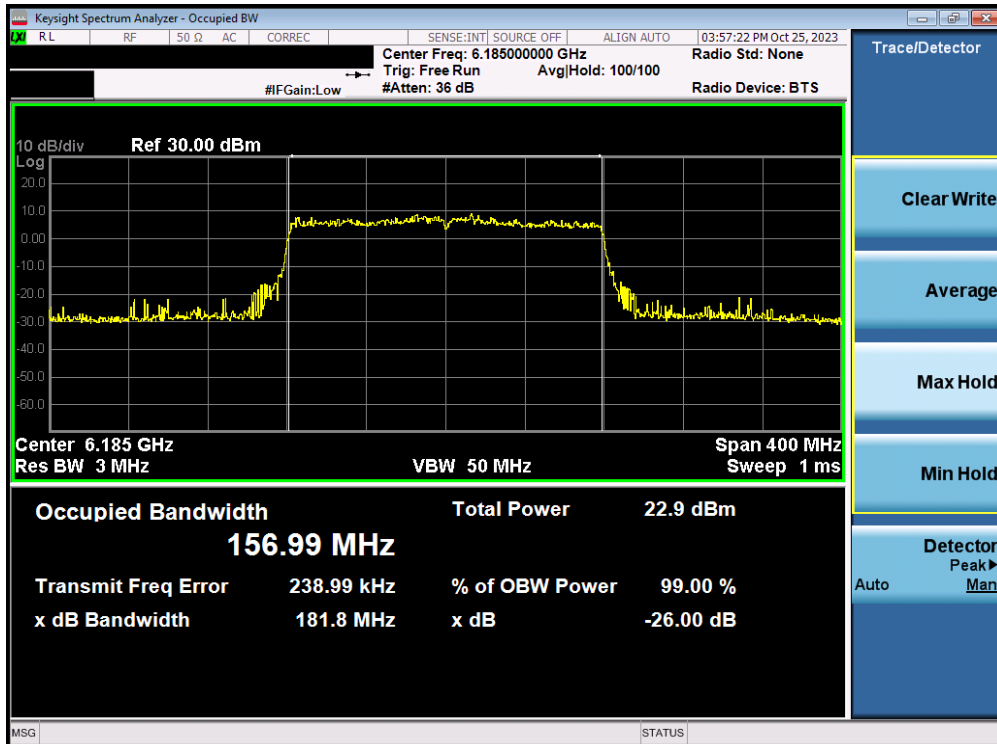


Plot 7-61. Occupied Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax/be (Full Tone) (UNII Band 5) – Ch. 43)

FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2308210093-16-R1.A3L	Test Dates: 8/22 - 11/09/2023	EUT Type: Portable Handset	Page 55 of 330

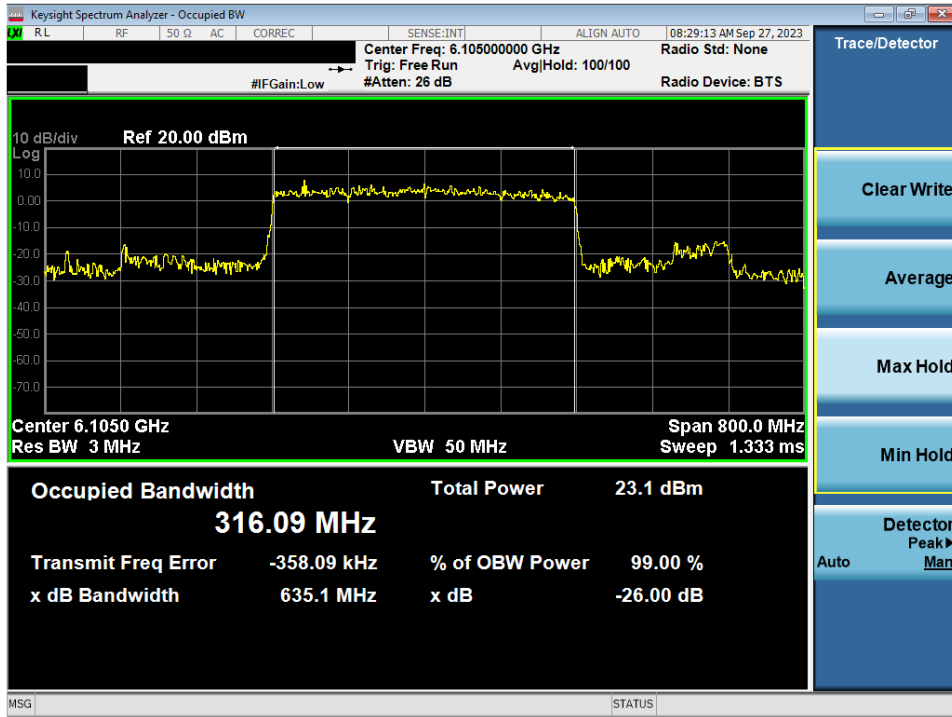


Plot 7-62. Occupied Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax/be (Full Tone) (UNII Band 5) – Ch. 39)



Plot 7-63. Occupied Bandwidth Plot MIMO ANT2 (160MHz BW 802.11ax/be (Full Tone) (UNII Band 5) – Ch. 47)

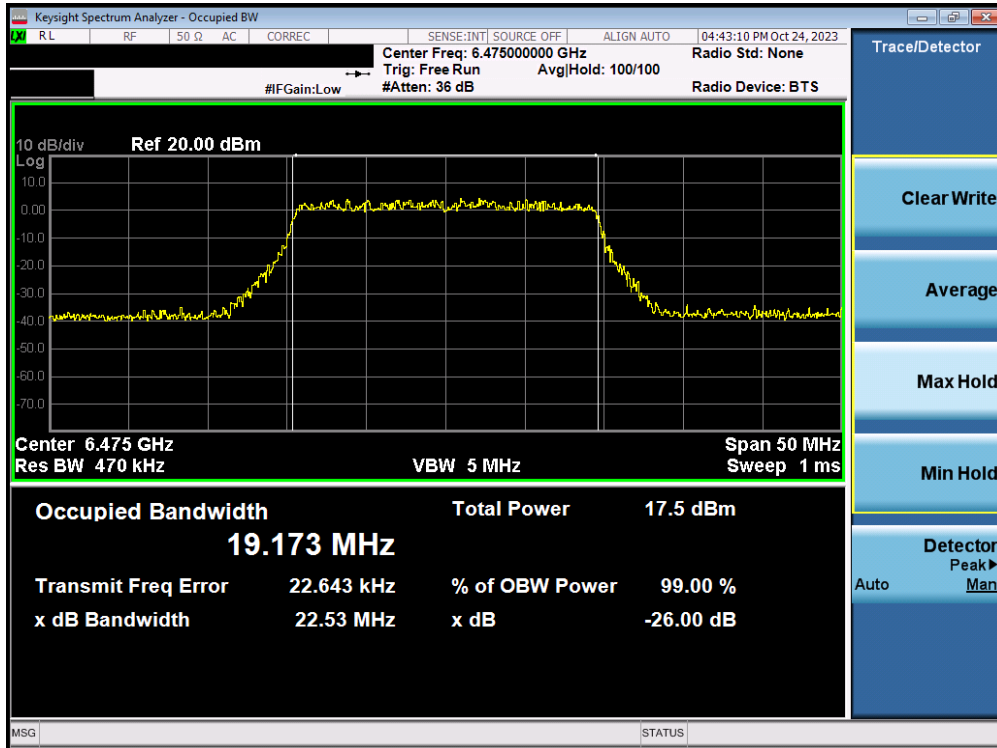
FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2308210093-16-R1.A3L	Test Dates: 8/22 - 11/09/2023	EUT Type: Portable Handset	Page 56 of 330



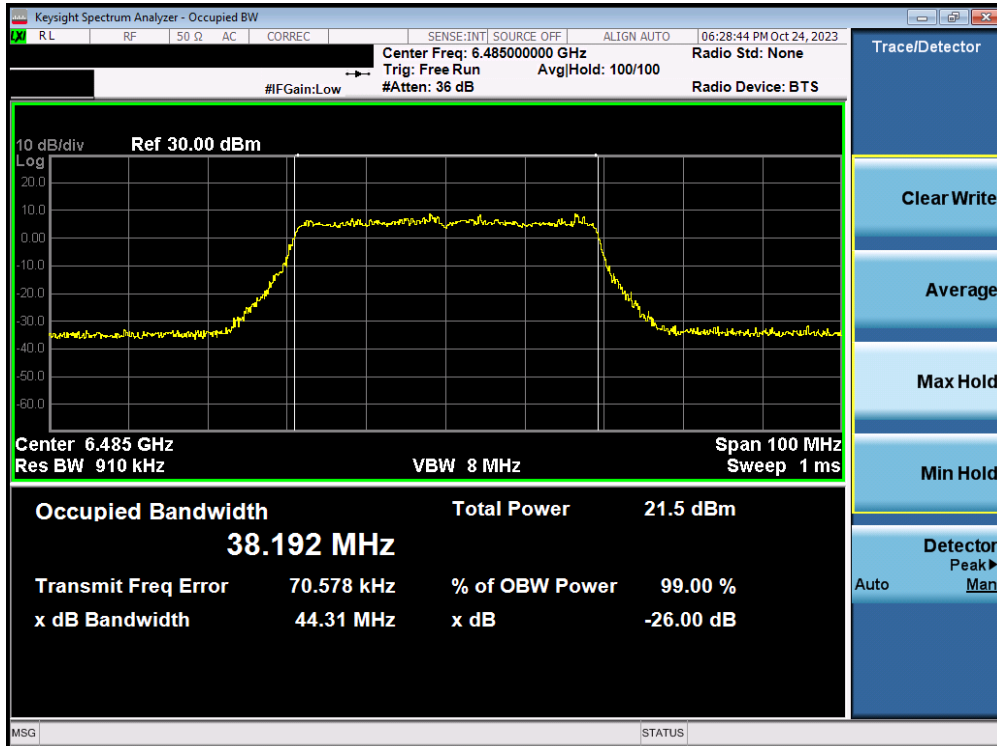
Plot 7-64. Occupied Bandwidth Plot MIMO ANT2 (320MHz BW 802.11ax/be (Full Tones) (UNII Band 5) – Ch. 31)

FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
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MIMO Antenna-2 Bandwidth Measurements - (Full Tones) – (UNII Band 6)

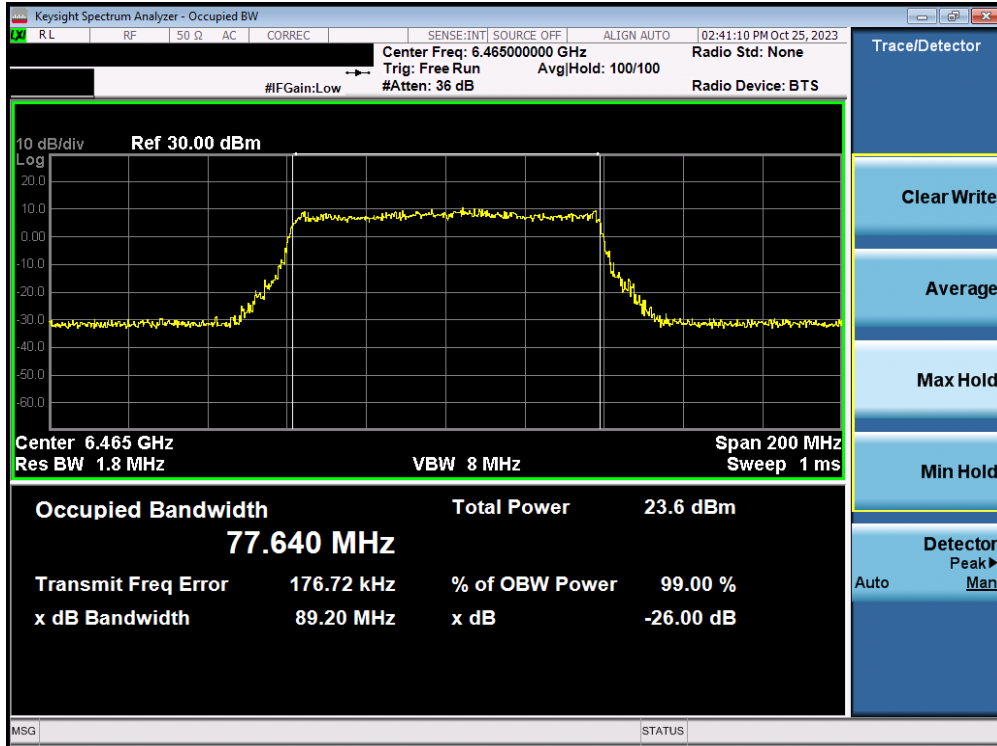


Plot 7-65. Occupied Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax/be (Full Tone) (UNII Band 6) – Ch. 105)

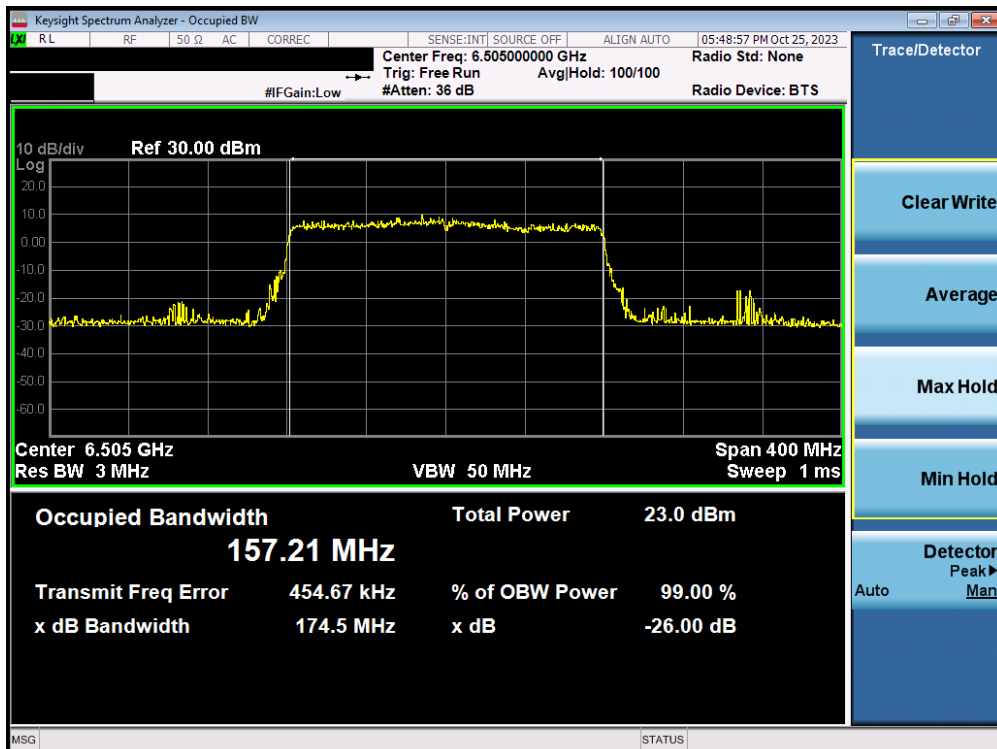


Plot 7-66. Occupied Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax/be (Full Tone) (UNII Band 6) – Ch. 107)

FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2308210093-16-R1.A3L	Test Dates: 8/22 - 11/09/2023	EUT Type: Portable Handset	Page 58 of 330

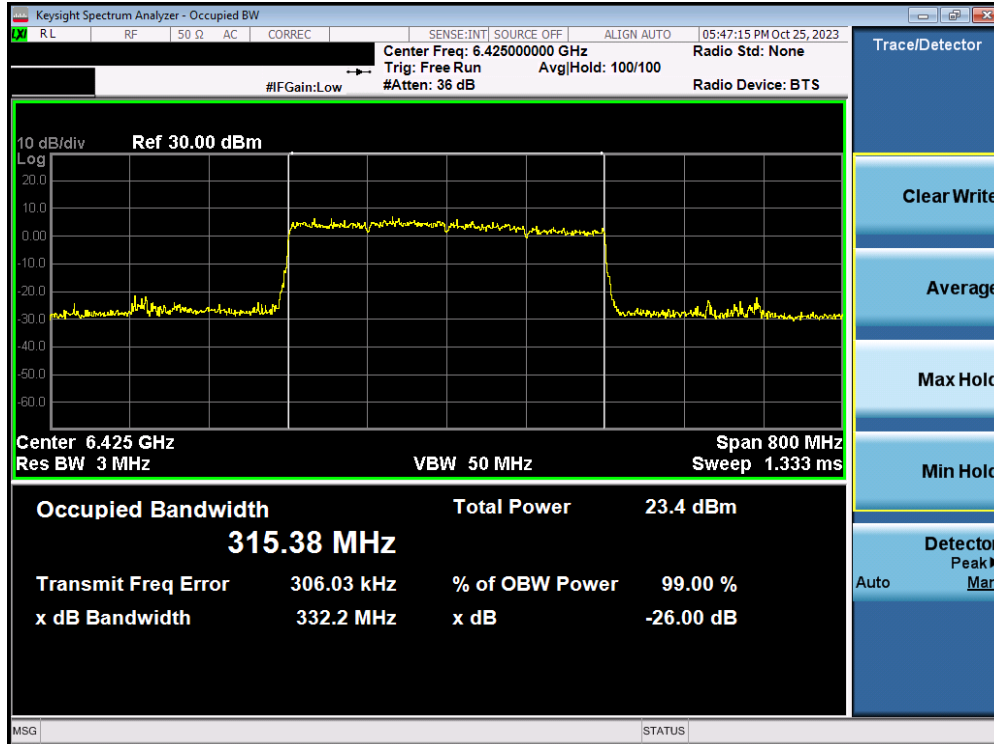


Plot 7-67. Occupied Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax/be (Full Tone) (UNII Band 6) – Ch. 103)



Plot 7-68. Occupied Bandwidth Plot MIMO ANT2 (160MHz BW 802.11ax/be (Full Tone) (UNII Band 6) – Ch. 111)

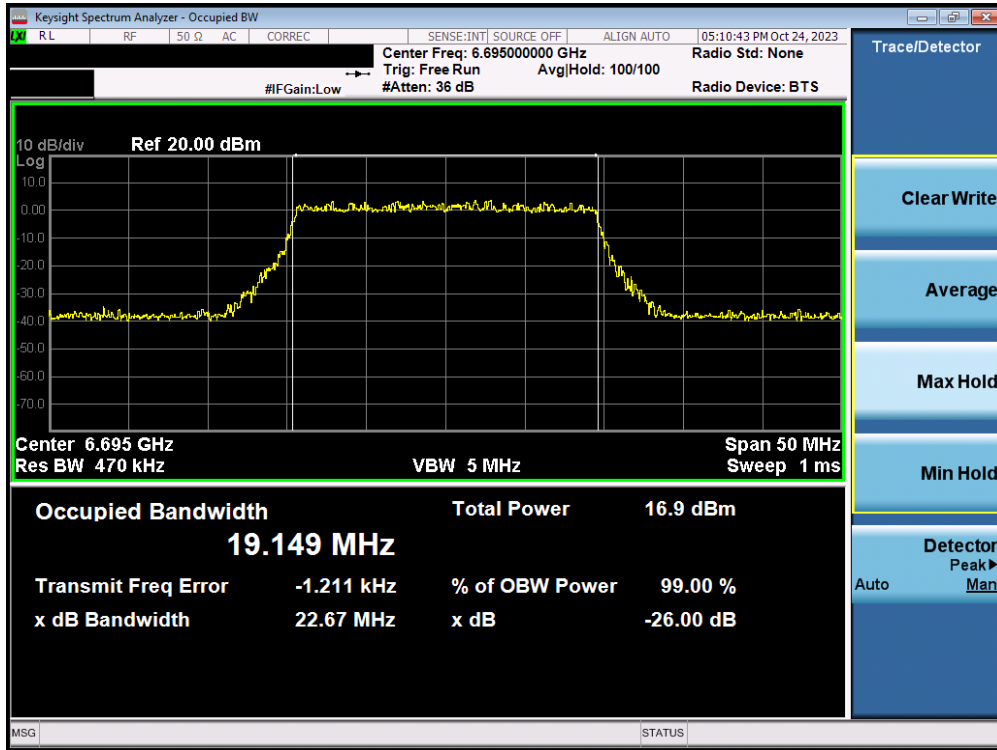
FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2308210093-16-R1.A3L	Test Dates: 8/22 - 11/09/2023	EUT Type: Portable Handset	Page 59 of 330



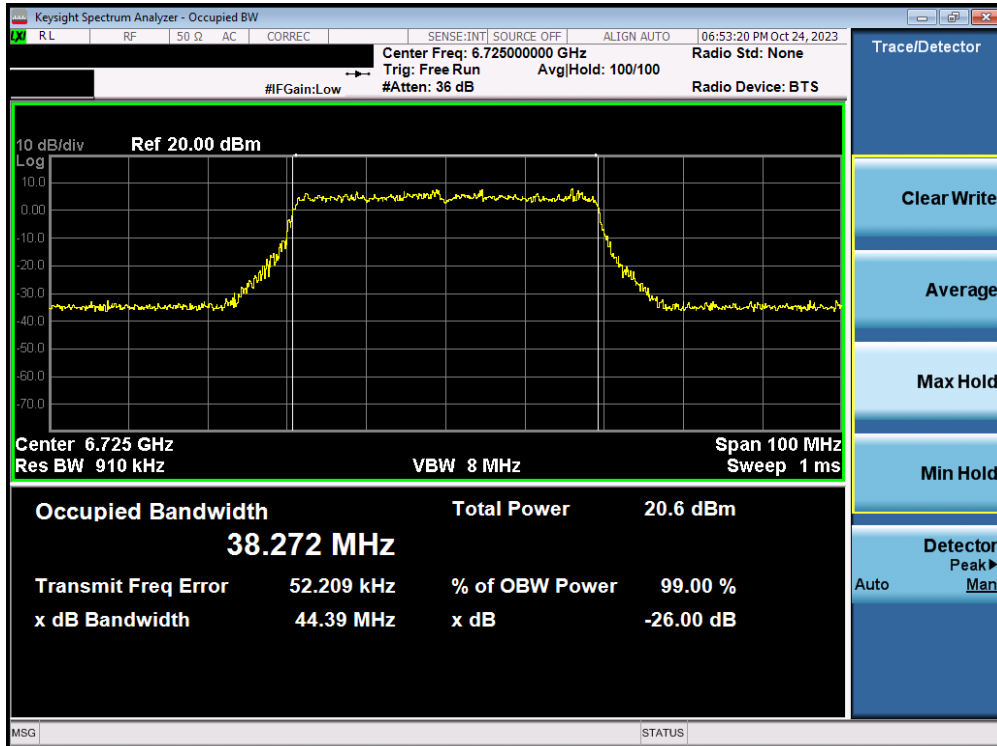
Plot 7-69. Occupied Bandwidth Plot MIMO ANT2 (320MHz BW 802.11ax/be (Full Tones) (UNII Band 5/6/7) – Ch. 95)

FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
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MIMO Antenna-2 Bandwidth Measurements - (Full Tones) – (UNII Band 7)

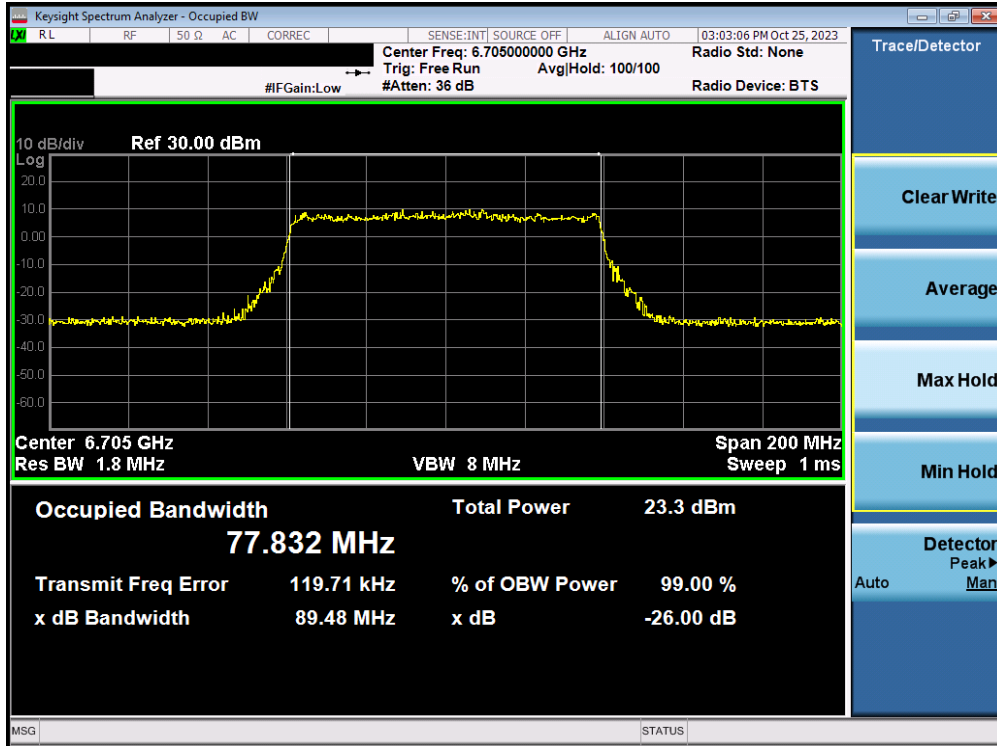


Plot 7-70. Occupied Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax/be (Full Tone) (UNII Band 7) – Ch. 149)

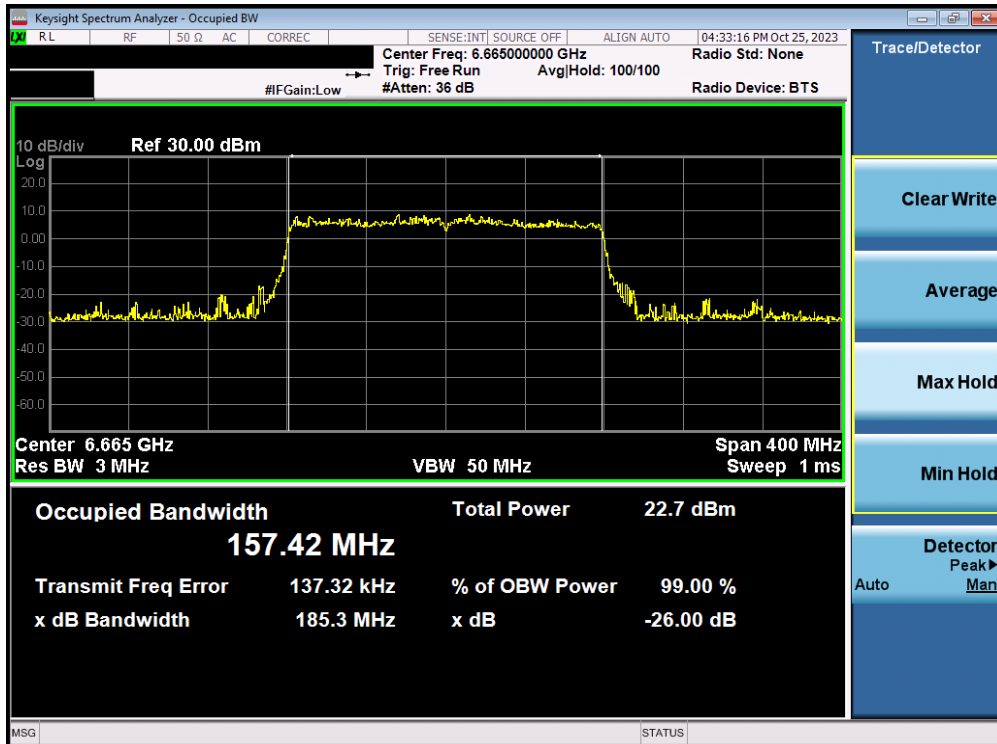


Plot 7-71. Occupied Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax/be (Full Tone) (UNII Band 7) – Ch. 155)

FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
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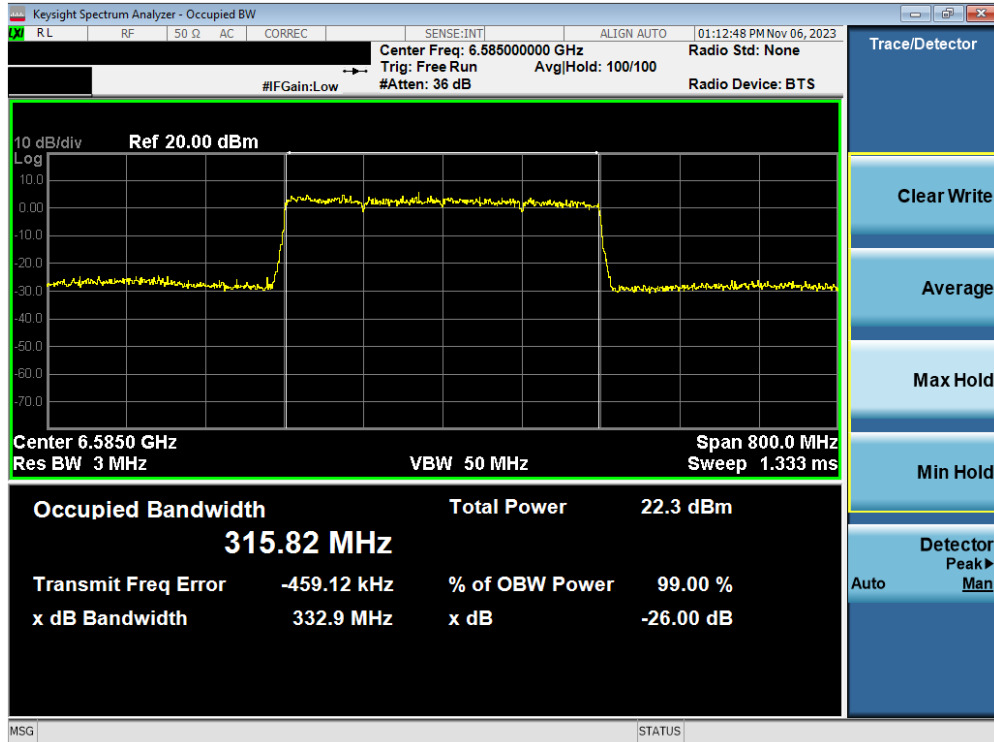


Plot 7-72. Occupied Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax/be (Full Tone) (UNII Band 7) – Ch. 151)



Plot 7-73. Occupied Bandwidth Plot MIMO ANT2 (160MHz BW 802.11ax/be (Full Tone) (UNII Band 7) – Ch. 143)

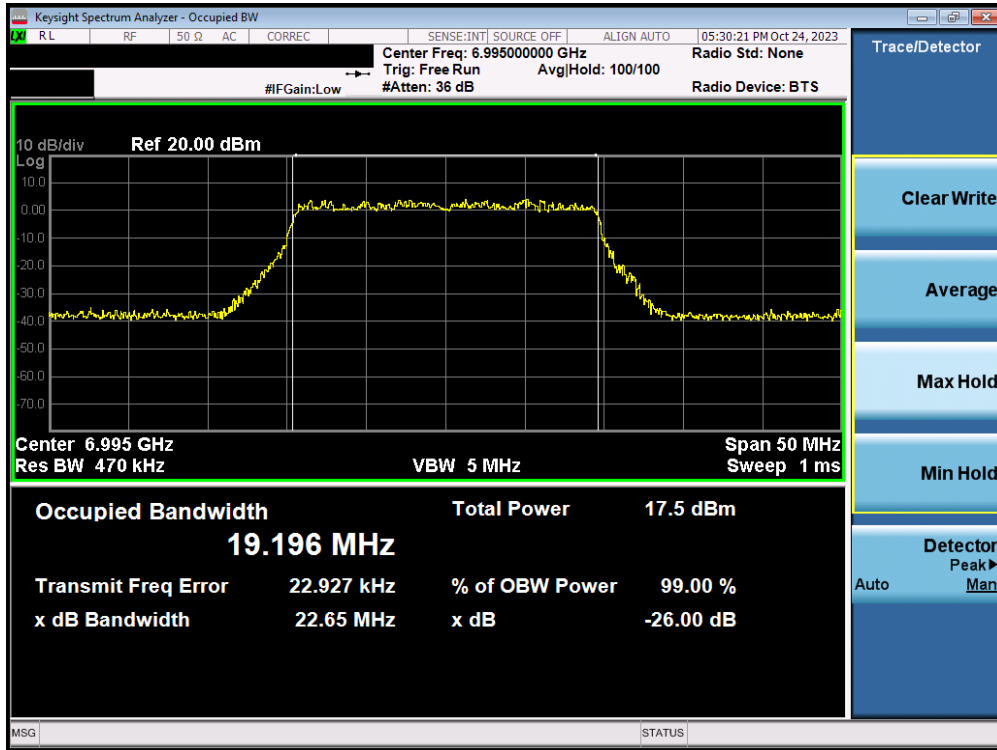
FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2308210093-16-R1.A3L	Test Dates: 8/22 - 11/09/2023	EUT Type: Portable Handset	Page 62 of 330



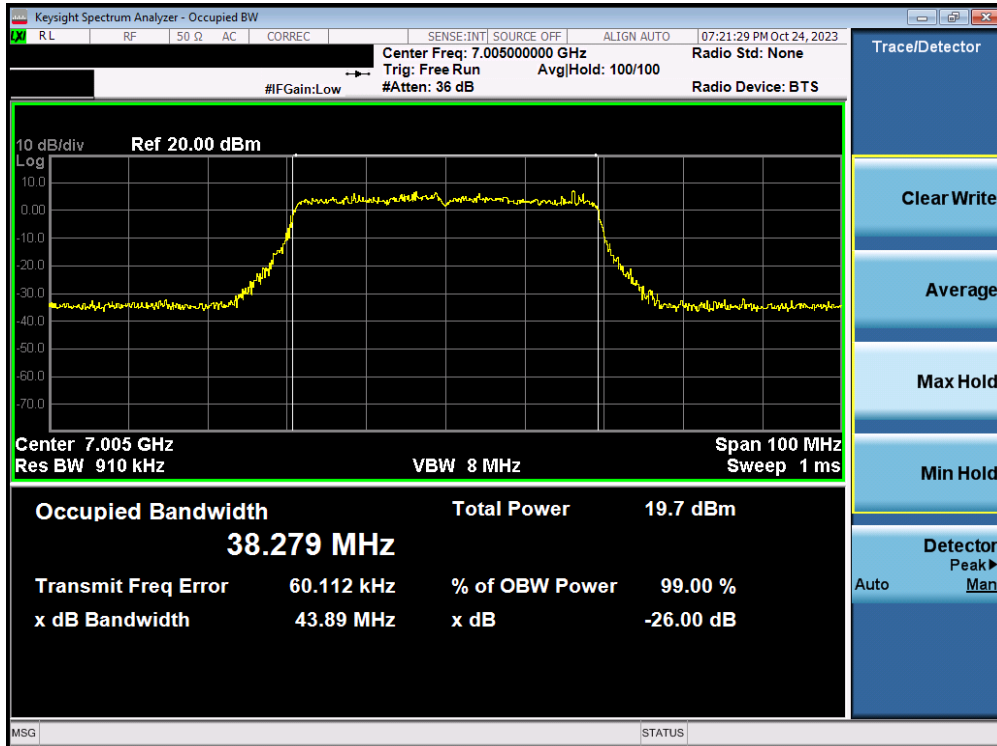
Plot 7-74. Occupied Bandwidth Plot MIMO ANT2 (320MHz BW 802.11ax/be (Full Tones) (UNII Band 6/7) – Ch. 127)

FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
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MIMO Antenna-2 Bandwidth Measurements - (Full Tones) – (UNII Band 8)

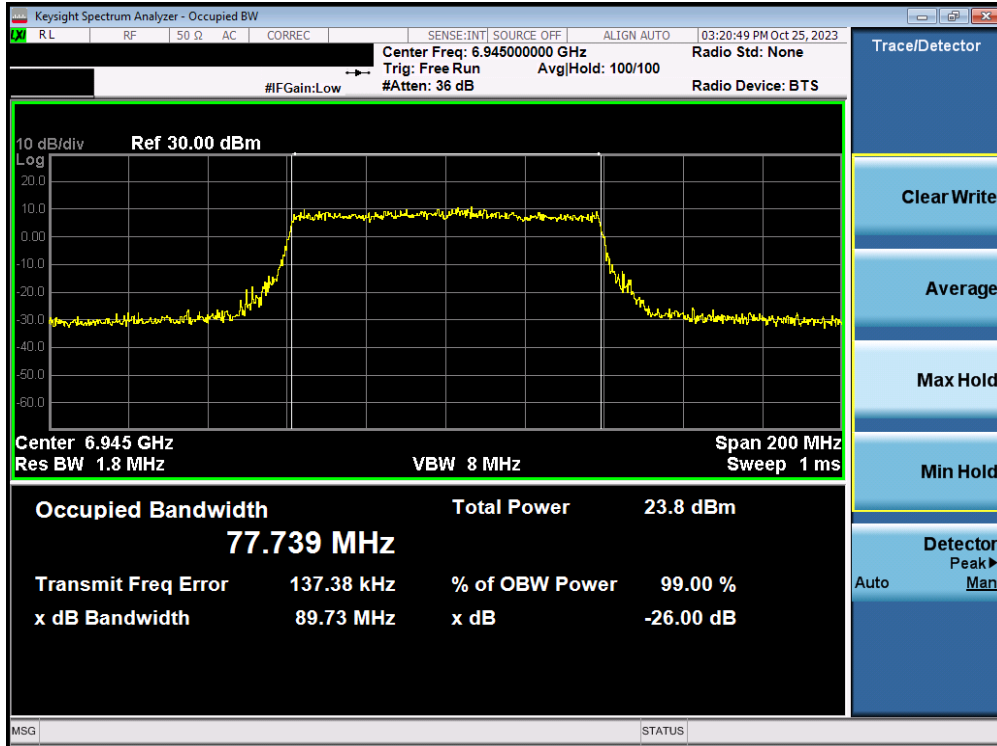


Plot 7-75. Occupied Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax/be (Full Tone) (UNII Band 8) – Ch. 209)

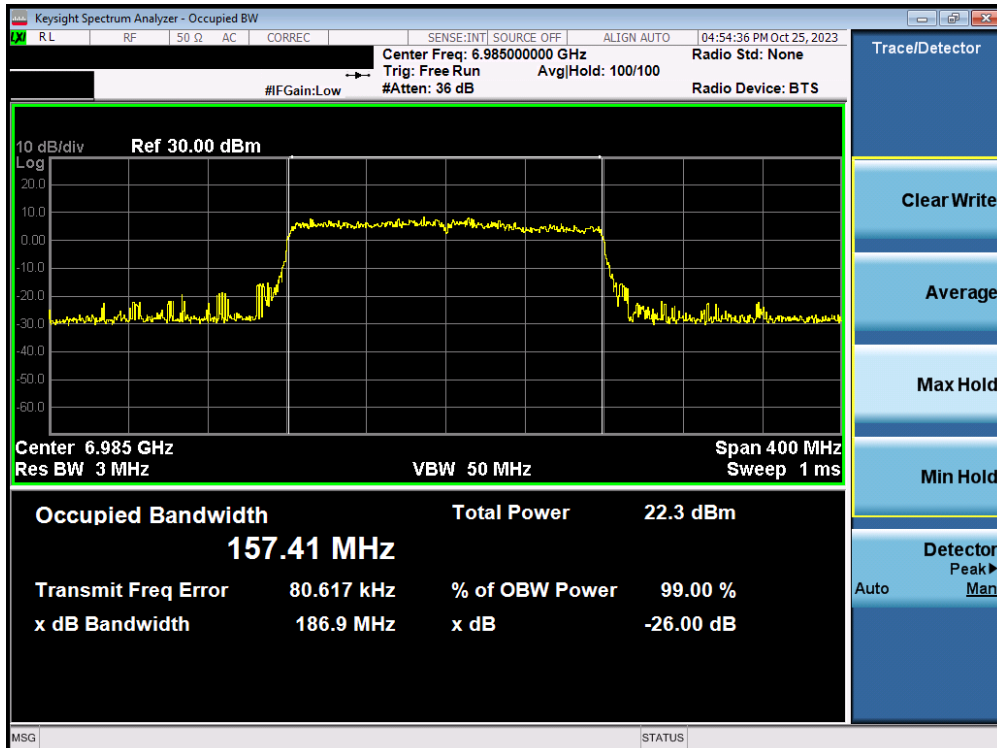


Plot 7-76. Occupied Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax/be (Full Tone) (UNII Band 8) – Ch. 211)

FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
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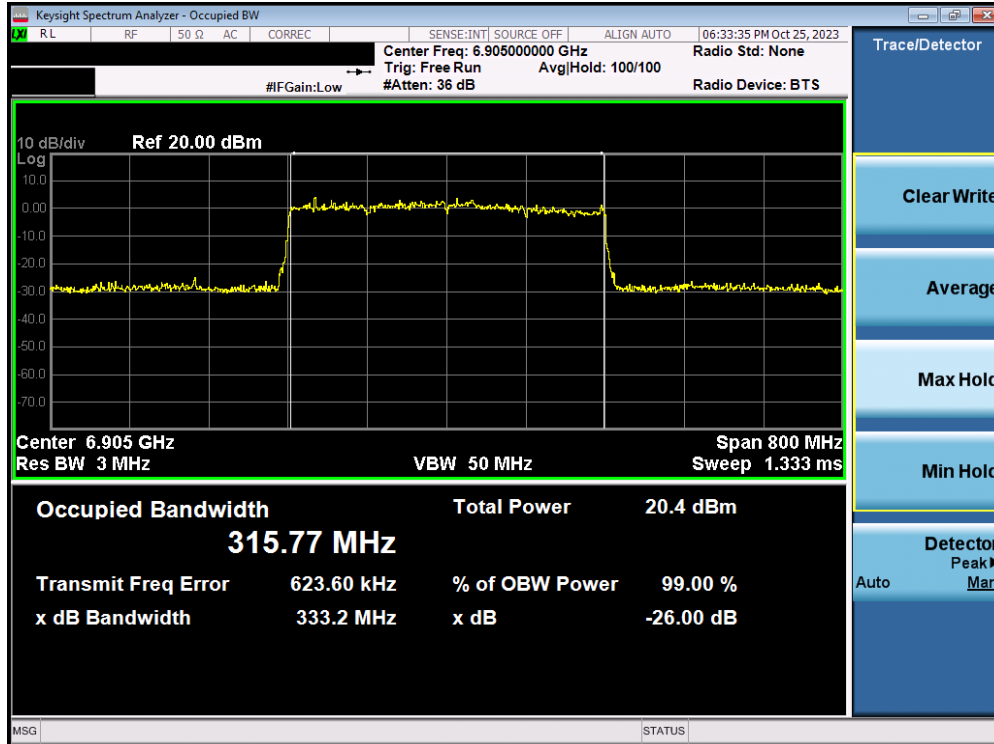


Plot 7-77. Occupied Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax/be (Full Tone) (UNII Band 8) – Ch. 199)



Plot 7-78. Occupied Bandwidth Plot MIMO ANT2 (160MHz BW 802.11ax/be (Full Tone) (UNII Band 8) – Ch. 207)

FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
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Plot 7-79. Occupied Bandwidth Plot MIMO ANT2 (320MHz BW 802.11ax/be (Full Tones) (UNII Band 8) – Ch. 191)

FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
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7.3 UNII Output Power Measurement

Test Overview and Limits

A transmitter antenna terminal of the EUT is connected to the input of an RF pulse power sensor. Measurement is made using a broadband average power meter while the EUT is operating at its maximum duty cycle, at its maximum power control level, as defined in ANSI C63.10-2013, and at the appropriate frequencies.

For client devices operating under the control of an indoor access point in the 5.925-7.125 GHz bands, the maximum e.i.r.p. over the frequency band of operation must not exceed 24 dBm. For client devices operating under the control of a standard power access point, the maximum e.i.r.p. over the frequency band of operation must not exceed 30 dBm and the device must limit its power to no more than 6 dB below its associated standard power access point's authorized transmit power.

Test Procedure Used

ANSI C63.10-2013 – Section 12.3.3.2 Method PM-G
ANSI C63.10-2013 – Section 14.2 Measure-and-Sum Technique

Test Settings

Average power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter. The trace was averaged over 100 traces to obtain the final measured average power.

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

Compliance for this device while operating under the control of either an indoor low power access point or a standard power access point is demonstrated by applying the tighter low power indoor access point limit of 24dBm e.i.r.p. for both cases.

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40MHz BW	Band	Freq [MHz]	Channel	Tones	Average Conducted Power (dBm)			Dir. Ant. Gain [dBi]	Max e.i.r.p [dBm]	e.i.r.p Limit [dBm]	e.i.r.p Margin [dB]
					RU Index						
					65						
					ANT1	ANT2	MIMO				
5	5965	3	484T	10.82	11.38	14.12	-1.25	12.9	24.0	-11.13	
	6165	43	484T	11.49	11.24	14.38	-1.25	13.1	24.0	-10.87	
	6405	91	484T	11.37	11.15	14.27	-1.25	13.0	24.0	-10.98	
6	6445	99	484T	11.22	10.95	14.09	-2.56	11.5	24.0	-12.46	
	6485	107	484T	11.16	10.78	13.99	-2.56	11.4	24.0	-12.57	
	6525	115	484T	11.25	10.72	14.00	-2.56	11.4	24.0	-12.55	
7	6565	123	484T	10.32	10.73	13.54	-2.30	11.2	24.0	-12.76	
	6685	147	484T	11.28	10.91	14.11	-2.30	11.8	24.0	-12.19	
	6845	179	484T	11.32	11.45	14.39	-2.30	12.1	24.0	-11.90	
8	6885	187	484T	11.06	10.31	13.71	-1.95	11.8	24.0	-12.24	
	7005	211	484T	11.29	11.16	14.23	-1.95	12.3	24.0	-11.72	
	7085	227	484T	9.81	11.49	13.74	-1.95	11.8	24.0	-12.21	

Table 7-10. MIMO BW 802.11ax/be (UNII) Maximum Conducted Output Power – 484T – LPI

80MHz BW	Band	Freq [MHz]	Channel	Tones	Average Conducted Power (dBm)						Dir. Ant. Gain [dBi]	Max e.i.r.p [dBm]	e.i.r.p Limit [dBm]	e.i.r.p Margin [dB]
					MRU Index									
					90 (MRU 1)			91 (MRU 2)						
					ANT1	ANT2	MIMO	ANT1	ANT2	MIMO				
5	6145	39	484+242T	14.82	14.35	17.60	14.71	14.32	17.53	-1.25	16.4	24.0	-7.65	
6	6465	103	484+242T	14.65	14.24	17.46	14.54	14.13	17.35	-2.56	14.9	24.0	-9.10	
7	6705	151	484+242T	14.99	14.36	17.70	14.99	14.25	17.65	-2.30	15.4	24.0	-8.60	
8	6945	199	484+242T	13.43	14.99	17.29	13.33	14.92	17.21	-1.95	15.3	24.0	-8.66	

Table 7-11. MIMO BW 802.11ax/be (UNII) Maximum Conducted Output Power – 484T + 242T – LPI

80MHz BW	Band	Freq [MHz]	Channel	Tones	Average Conducted Power (dBm)			Dir. Ant. Gain [dBi]	Max e.i.r.p [dBm]	e.i.r.p Limit [dBm]	e.i.r.p Margin [dB]
					RU Index						
					67						
					ANT1	ANT2	MIMO				
5	5985	7	996T	14.43	14.78	17.62	-1.25	16.4	24.0	-7.63	
	6145	39	996T	14.96	14.40	17.70	-1.25	16.5	24.0	-7.55	
	6385	87	996T	14.99	14.96	17.99	-1.25	16.7	24.0	-7.26	
6	6465	103	996T	14.75	14.71	17.74	-2.56	15.2	24.0	-8.82	
	6545	119	996T	14.56	14.02	17.31	-2.30	15.0	24.0	-8.99	
	6705	151	996T	14.74	14.29	17.53	-2.30	15.2	24.0	-8.77	
7	6865	183	996T	14.99	14.37	17.70	-2.30	15.4	24.0	-8.60	
	6945	199	996T	13.55	14.96	17.32	-1.95	15.4	24.0	-8.63	
	7025	215	996T	14.74	13.62	17.22	-1.95	15.3	24.0	-8.73	

Table 7-12. MIMO BW 802.11ax/be (UNII) Maximum Conducted Output Power – 996T – LPI

160MHz BW	Band	Freq [MHz]	Channel	Tones	Average Conducted Power (dBm)						Dir. Ant. Gain [dBi]	Max e.i.r.p [dBm]	e.i.r.p Limit [dBm]	e.i.r.p Margin [dB]
					RU Index									
					67L			67U						
					ANT1	ANT2	MIMO	ANT1	ANT2	MIMO				
5	6025	15	996T	13.99	13.66	16.84	13.87	13.50	16.70	-1.25	15.6	24.0	-8.41	
	6185	47	996T	13.62	13.58	16.61	13.50	13.69	16.61	-1.25	15.4	24.0	-8.64	
	6345	79	996T	13.64	13.99	16.83	13.57	13.95	16.78	-1.25	15.6	24.0	-8.42	
6	6505	111	996T	13.89	13.63	16.77	13.75	13.41	16.60	-2.56	14.2	24.0	-9.79	
	6665	143	996T	13.98	13.54	16.78	13.99	13.94	16.98	-2.30	14.7	24.0	-9.32	
	6825	175	996T	13.85	13.67	16.77	13.91	13.99	16.96	-2.30	14.7	24.0	-9.34	
8	6985	207	996T	13.22	13.61	16.43	13.34	13.83	16.60	-1.95	14.6	24.0	-9.35	

Table 7-13. MIMO BW 802.11ax/be (UNII) Maximum Conducted Output Power – 996T – LPI

160MHz BW	Band	Freq [MHz]	Channel	Tones	Average Conducted Power (dBm)						Dir. Ant. Gain [dBi]	Max e.i.r.p [dBm]	e.i.r.p Limit [dBm]	e.i.r.p Margin [dB]
					MRU Index									
					94 (MRU 1)			95 (MRU 2)						
					ANT1	ANT2	MIMO	ANT1	ANT2	MIMO				
5	6185	47	996+484T	13.66	13.72	16.70	13.84	13.98	16.92	-1.25	15.7	24.0	-8.33	
6	6505	111	996+484T	13.76	13.71	16.74	13.99	13.70	16.86	-2.56	14.3	24.0	-9.70	
7	6665	143	996+484T	13.71	13.50	16.62	13.99	13.85	16.93	-2.30	14.6	24.0	-9.37	
8	6985	207	996+484T	13.38	13.90	16.65	13.19	13.64	16.43	-1.95	14.7	24.0	-9.30	

Table 7-14. MIMO BW 802.11ax/be (UNII) Maximum Conducted Output Power – 996+484T – LPI

160MHz BW	Band	Freq [MHz]	Channel	Tones	Average Conducted Power (dBm)			Dir. Ant. Gain [dBi]	Max e.i.r.p [dBm]	e.i.r.p Limit [dBm]	e.i.r.p Margin [dB]
					RU Index						
					68						
					ANT1	ANT2	MIMO				
5	6025	15	2x996T	13.68	13.25	16.48	-1.25	15.2	24.0	-8.77	
	6185	47	2x996T	13.74	13.82	16.79	-1.25	15.5	24.0	-8.46	
	6345	79	2x996T	13.34	13.64	16.50	-1.25	15.3	24.0	-8.75	
6	6505	111	2x996T	13.99	13.75	16.88	-2.56	14.3	24.0	-9.67	
	6665	143	2x996T	13.90	13.61	16.77	-2.30	14.5	24.0	-9.53	
	6825	175	2x996T	13.88	13.83	16.86	-2.30	14.6	24.0	-9.43	
8	6985	207	2x996T	13.15	13.67	16.43	-1.95	14.5	24.0	-9.52	

Table 7-15. MIMO BW 802.11ax/be (UNII) Maximum Conducted Output Power – 2x996T – LPI

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320MHz BW	Band	Freq [MHz]	Channel	Tones	Average Conducted Power (dBm)			Dir. Ant. Gain [dBi]	Max e.i.r.p [dBm]	e.i.r.p Limit [dBm]	e.i.r.p Margin [dB]
					RU Index						
					69						
5	6105	31	4x996T	13.91	13.00	16.49	-1.25	15.2	24.0	-8.76	
	6265	63	4x996T	13.26	13.62	16.45	-1.25	15.2	24.0	-8.80	
	6425	95	4x996T	13.48	13.52	16.51	-2.56	14.0	24.0	-10.04	
	6585	127	4x996T	13.99	13.34	16.69	-2.30	14.4	24.0	-9.61	
7	6745	159	4x996T	13.87	13.63	16.76	-2.30	14.5	24.0	-9.53	
8	6905	191	4x996T	13.99	12.50	16.32	-1.95	14.4	24.0	-9.63	

Table 7-16. MIMO BW 802.11ax/be (UNII) Maximum Conducted Output Power – 4x996T – LPI

320MHz BW	Band	Freq [MHz]	Channel	Tones	Average Conducted Power (dBm)						Dir. Ant. Gain [dBi]	Max e.i.r.p [dBm]	e.i.r.p Limit [dBm]	e.i.r.p Margin [dB]
					MRU Index									
					105 (MRU 1)			106 (MRU 4)						
5	6105	31	3x996+484T	ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	-1.25	15.1	24.0	-8.93	
	6425	95	3x996+484T	13.71	13.69	16.71	13.74	13.78	16.77	-2.56	14.2	24.0	-9.78	
	6585	127	3x996+484T	13.72	12.72	16.26	13.79	12.74	16.31	-2.30	14.0	24.0	-9.99	
	6905	191	3x996+484T	13.67	12.28	16.04	13.86	12.40	16.20	-1.95	14.2	24.0	-9.75	

Table 7-17. MIMO BW 802.11ax/be (UNII) Maximum Conducted Output Power – 3x996+484T – LPI

320MHz BW	Band	Freq [MHz]	Channel	Tones	Average Conducted Power (dBm)						Dir. Ant. Gain [dBi]	Max e.i.r.p [dBm]	e.i.r.p Limit [dBm]	e.i.r.p Margin [dB]
					MRU Index									
					104 (MRU 1)			104 (MRU 4)						
5	6105	31	3x996T	ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	-1.25	15.3	24.0	-8.70	
	6425	95	3x996T	13.85	12.98	16.45	13.99	13.03	16.55	-2.56	14.4	24.0	-9.64	
	6585	127	3x996T	13.78	13.38	16.60	13.99	13.45	16.74	-2.30	14.4	24.0	-9.56	
	6905	191	3x996T	13.71	12.40	16.12	13.73	12.12	16.01	-1.95	14.2	24.0	-9.83	

Table 7-18. MIMO BW 802.11ax/be (UNII) Maximum Conducted Output Power – 3x996T – LPI

320MHz BW	Band	Freq [MHz]	Channel	Tones	Average Conducted Power (dBm)						Dir. Ant. Gain [dBi]	Max e.i.r.p [dBm]	e.i.r.p Limit [dBm]	e.i.r.p Margin [dB]
					MRU Index									
					100 (MRU 1)			103 (MRU 4)						
5	6105	31	2x996+484T	ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	-1.25	15.3	24.0	-8.69	
	6425	95	2x996+484T	13.60	12.68	16.17	13.99	13.06	16.56	-2.56	14.4	24.0	-9.65	
	6585	127	2x996+484T	13.61	13.66	16.65	13.91	13.89	16.91	-2.30	14.4	24.0	-9.56	
	6905	191	2x996+484T	13.99	13.44	16.73	13.99	13.43	16.73	-2.30	14.4	24.0	-9.56	
8	6905	191	2x996+484T	13.76	12.73	16.29	13.95	12.93	16.48	-1.95	14.5	24.0	-9.47	

Table 7-19. MIMO BW 802.11ax/be (UNII) Maximum Conducted Output Power – 2x996+484T – LPI

20MHz BW	Band	Freq [MHz]	Channel	Tones	Average Conducted Power (dBm)									Dir. Ant. Gain [dBi]	Max e.i.r.p [dBm]	e.i.r.p Limit [dBm]	e.i.r.p Margin [dB]
					RU Index												
					0			4			8						
5	5935	2	26T	ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	-1.25	5.4	24.0	-18.63	
	6175	45	26T	3.04	3.54	6.31	3.26	3.93	6.62	2.96	3.57	6.29	-1.25	15.6	24.0	-8.36	
	6415	93	26T	13.79	13.29	16.60	13.99	13.77	16.99	13.75	13.22	16.55	-1.25	15.7	24.0	-8.27	
	6585	117	26T	13.99	13.94	16.97	13.95	13.93	16.95	13.97	13.74	16.87	-2.30	14.5	24.0	-9.53	
7	6695	149	26T	13.80	13.07	16.46	13.65	13.10	16.39	13.76	13.01	16.41	-2.30	14.2	24.0	-9.83	

Table 7-20. MIMO BW 802.11ax/be (UNII) Maximum Conducted Output Power – 26T – SP

20MHz BW	Band	Freq [MHz]	Channel	Tones	Average Conducted Power (dBm)									Dir. Ant. Gain [dBi]	Max e.i.r.p [dBm]	e.i.r.p Limit [dBm]	e.i.r.p Margin [dB]
					RU Index												
					37			39			40						
5	5935	2	52T	ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	-1.25	6.9	24.0	-17.09	
	6175	45	52T	4.75	4.95	7.86	5.02	5.27	8.16	4.66	4.92	7.80	-1.25	15.6	24.0	-8.44	
	6415	93	52T	13.77	13.31	16.55	13.99	13.59	16.81	13.80	13.35	16.59	-1.25	15.7	24.0	-8.29	
	6585	117	52T	13.97	13.93	16.96	13.91	13.72	16.83	13.94	13.70	16.83	-2.30	14.4	24.0	-9.59	
7	6695	149	52T	13.91	13.46	16.70	13.69	13.27	16.50	13.91	13.41	16.68	-2.30	14.4	24.0	-9.64	
				13.75	13.02	16.41	13.99	13.27	16.65	13.76	13.02	16.42	-2.30	14.4	24.0	-9.64	

Table 7-21. MIMO BW 802.11ax/be (UNII) Maximum Conducted Output Power – 52T – SP

Band	Freq [MHz]	Channel	Tones	Average Conducted Power (dBm)						Dir. Ant. Gain [dBi]	Max e.i.r.p [dBm]	e.i.r.p Limit [dBm]	e.i.r.p Margin [dB]
				RU Index									
				70			72						
5	5935	2	52+26T	ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	-1.25	6.9	24.0	-17.14
	6175	45	52+26T	4.76	5.42	8.11	5.07	4.93	8.01	-1.25	15.6	24.0	-8.40
	6695	149	52+26T	13.89	13.78	16.85	13.99	13.58	16.80	-2.30	14.4	24.0	-9.59

Table 7-22. MIMO BW 802.11ax/be (UNII) Maximum Conducted Output Power – 52+26T – SP

20MHz BW	Band	Freq [MHz]	Channel	Tones	Average Conducted Power (dBm)						Dir. Ant. Gain [dBi]	Max e.i.r.p [dBm]	e.i.r.p Limit [dBm]	e.i.r.p Margin [dB]
					RU Index									
					53			54						
5	5935	2	106T	ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	-1.25	9.3	24.0	-14.70	
	6175	45	106T	7.36	7.71	10.55	7.29	7.71	10.52	-1.25	15.4	24.0	-8.58	
	6415	93	106T	13.87	13.43	16.67	13.93	13.39	16.63	-1.25	15.7	24.0	-8.32	
	6585	117	106T	13.64	13.53	16.59	13.99	13.86	16.93	-2.30	14.5	24.0	-9.49	
7	6695	149	106T	13.99	13.23	16.63	13.96	13.17	16.59	-2.30	14.3	24.0	-9.66	

Table 7-23. MIMO BW 802.11ax/be (UNII) Maximum Conducted Output Power – 106T – SP

Band	Freq [MHz]	Channel	Tones	Average Conducted Power (dBm)						Dir. Ant. Gain [dBi]	Max e.i.r.p [dBm]	e.i.r.p Limit [dBm]	e.i.r.p Margin [dB]
				RU Index									
				82			83						
5	5935	2	106+26T	ANT1	ANT2	MIMO	ANT1	ANT2	MIMO	-1.25	9.4	24.0	-14.58
	6175	45	106+26T	7.33	7.97	10.67	7.53	7.68	10.61	-1.25	15.7	24.0	-8.32
	6695	149	106+26T	13.99	13.86	16.93	13.62	13.32	16.48	-2.30	14.4	24.0	-9.56

Table 7-24. MIMO BW 802.11ax/be (UNII) Maximum Conducted Output Power – 106+26T – SP

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20MHz BW	Band	Freq [MHz]	Channel	Tones	Average Conducted Power (dBm)			Dir. Ant. Gain [dBi]	Max e.i.r.p [dBm]	e.i.r.p Limit [dBm]	e.i.r.p Margin [dB]
					RU Index						
					61						
					ANT1	ANT2	MIMO				
5	5935	2	242T	11.68	11.99	14.85	-1.25	13.6	24.0	-10.40	
	6175	45	242T	14.83	14.39	17.63	-1.25	16.4	24.0	-7.62	
	6415	93	242T	14.99	14.94	17.98	-1.25	16.7	24.0	-7.27	
7	6535	117	242T	14.99	14.48	17.75	-2.30	15.5	24.0	-8.55	
	6695	149	242T	14.85	14.45	17.67	-2.30	15.4	24.0	-8.63	

Table 7-25. MIMO BW 802.11ax/be (UNII) Maximum Conducted Output Power – 242T – SP

40MHz BW	Band	Freq [MHz]	Channel	Tones	Average Conducted Power (dBm)			Dir. Ant. Gain [dBi]	Max e.i.r.p [dBm]	e.i.r.p Limit [dBm]	e.i.r.p Margin [dB]
					RU Index						
					65						
					ANT1	ANT2	MIMO				
5	5965	3	484T	14.22	14.79	17.53	-1.25	16.3	24.0	-7.72	
	6165	43	484T	14.98	14.71	17.86	-1.25	16.6	24.0	-7.39	
	6405	91	484T	14.73	14.76	17.76	-1.25	16.5	24.0	-7.49	
7	6565	123	484T	14.98	14.33	17.68	-2.30	15.4	24.0	-8.62	
	6685	147	484T	14.99	14.95	17.98	-2.30	15.7	24.0	-8.31	
	6845	179	484T	14.83	14.72	17.79	-2.30	15.5	24.0	-8.51	

Table 7-26. MIMO BW 802.11ax/be (UNII) Maximum Conducted Output Power – 484T – SP

80MHz BW	Band	Freq [MHz]	Channel	Tones	Average Conducted Power (dBm)						Dir. Ant. Gain [dBi]	Max e.i.r.p [dBm]	e.i.r.p Limit [dBm]	e.i.r.p Margin [dB]
					MRU Index									
					90 (MRU 1)			91 (MRU 2)						
					ANT1	ANT2	MIMO	ANT1	ANT2	MIMO				
5	6145	39	484+242T	15.79	15.33	18.57	15.73	15.17	18.47	-1.25	17.3	24.0	-6.68	
7	6705	151	484+242T	15.62	14.91	18.29	15.99	15.52	18.77	-2.30	16.5	24.0	-7.52	

Table 7-27. MIMO BW 802.11ax/be (UNII) Maximum Conducted Output Power – 484T + 242T – SP

80MHz BW	Band	Freq [MHz]	Channel	Tones	Average Conducted Power (dBm)			Dir. Ant. Gain [dBi]	Max e.i.r.p [dBm]	e.i.r.p Limit [dBm]	e.i.r.p Margin [dB]
					RU Index						
					67						
					ANT1	ANT2	MIMO				
5	5985	7	996T	15.42	15.79	18.62	-1.25	17.4	24.0	-6.63	
	6145	39	996T	15.99	15.38	18.71	-1.25	17.5	24.0	-6.54	
	6385	87	996T	15.99	15.88	18.95	-1.25	17.7	24.0	-6.30	
7	6705	151	996T	15.75	15.11	18.45	-2.30	16.2	24.0	-7.84	

Table 7-28. MIMO BW 802.11ax/be (UNII) Maximum Conducted Output Power – 996T – SP

160MHz BW	Band	Freq [MHz]	Channel	Tones	Average Conducted Power (dBm)						Dir. Ant. Gain [dBi]	Max e.i.r.p [dBm]	e.i.r.p Limit [dBm]	e.i.r.p Margin [dB]
					MRU Index									
					94 (MRU 1)			95 (MRU 2)						
					ANT1	ANT2	MIMO	ANT1	ANT2	MIMO				
5	6185	47	996+484T	15.71	15.81	18.77	15.99	15.92	18.97	-1.25	17.7	24.0	-6.28	
7	6665	143	996+484T	15.80	15.47	18.65	15.99	15.68	18.85	-2.30	16.6	24.0	-7.45	

Table 7-29. MIMO BW 802.11ax/be (UNII) Maximum Conducted Output Power – 996+484T – SP

160MHz BW	Band	Freq [MHz]	Channel	Tones	Average Conducted Power (dBm)			Dir. Ant. Gain [dBi]	Max e.i.r.p [dBm]	e.i.r.p Limit [dBm]	e.i.r.p Margin [dB]
					RU Index						
					68						
					ANT1	ANT2	MIMO				
5	6025	15	2x996T	15.84	15.35	18.61	-1.25	17.4	24.0	-6.64	
	6185	47	2x996T	15.87	15.63	18.76	-1.25	17.5	24.0	-6.49	
	6345	79	2x996T	15.26	15.69	18.49	-1.25	17.2	24.0	-6.76	
7	6665	143	2x996T	15.99	15.75	18.88	-2.30	16.6	24.0	-7.42	

Table 7-30. MIMO BW 802.11ax/be (UNII) Maximum Conducted Output Power – 2x996T – SP

320MHz BW	Band	Freq [MHz]	Channel	Tones	Average Conducted Power (dBm)			Dir. Ant. Gain [dBi]	Max e.i.r.p [dBm]	e.i.r.p Limit [dBm]	e.i.r.p Margin [dB]
					RU Index						
					69						
					ANT1	ANT2	MIMO				
5	6105	31	4x996T	15.87	14.97	18.45	-1.25	17.2	24.0	-6.80	
7	6745	159	4x996T	15.78	15.48	18.64	-2.30	16.3	24.0	-7.65	

Table 7-31. MIMO BW 802.11ax/be (UNII) Maximum Conducted Output Power – 4x996T – SP

320MHz BW	Band	Freq [MHz]	Channel	Tones	Average Conducted Power (dBm)						Dir. Ant. Gain [dBi]	Max e.i.r.p [dBm]	e.i.r.p Limit [dBm]	e.i.r.p Margin [dB]
					MRU Index									
					105 (MRU 1)			106 (MRU 4)						
					ANT1	ANT2	MIMO	ANT1	ANT2	MIMO				
5	6105	31	3x996+484T	15.57	14.71	18.17	15.63	14.73	18.21	-1.25	17.0	24.0	-7.04	
7	6745	159	3x996+484T	15.89	14.38	18.21	15.78	14.26	18.10	-2.30	15.9	24.0	-8.09	

Table 7-32. MIMO BW 802.11ax/be (UNII) Maximum Conducted Output Power – 3x996+484T – SP

320MHz BW	Band	Freq [MHz]	Channel	Tones	Average Conducted Power (dBm)						Dir. Ant. Gain [dBi]	Max e.i.r.p [dBm]	e.i.r.p Limit [dBm]	e.i.r.p Margin [dB]
					MRU Index									
					104 (MRU 1)			104 (MRU 4)						
					ANT1	ANT2	MIMO	ANT1	ANT2	MIMO				
5	6105	31	3x996T	15.77	14.96	18.39	15.92	14.95	18.47	-1.25	17.2	24.0	-6.78	
7	6745	159	3x996T	15.83	14.38	18.18	15.81	14.40	18.17	-2.30	15.9	24.0	-8.12	

Table 7-33. MIMO BW 802.11ax/be (UNII) Maximum Conducted Output Power – 3x996T – SP

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320MHz BW	Band	Freq [MHz]	Channel	Tones	Average Conducted Power (dBm)						Dir. Ant. Gain [dBi]	Max e.i.r.p [dBm]	e.i.r.p Limit [dBm]	e.i.r.p Margin [dB]
					MRU Index									
					100 (MRU 1)			103 (MRU 4)						
					ANT1	ANT2	MIMO	ANT1	ANT2	MIMO				
5	6105	31	2x996+484T	15.99	14.87	18.47	15.77	14.68	18.27	-1.25	17.2	24.0	-6.77	
7	6745	159	2x996+484T	15.99	14.64	18.38	15.94	14.64	18.35	-2.30	16.1	24.0	-7.92	

Table 7-34. MIMO BW 802.11ax/be (UNII) Maximum Conducted Output Power – 2x996+484T – SP

Sample MIMO Calculation:

At 5935MHz in 802.11be (20MHz BW – 26 Tones) mode, the average conducted output power was measured to be -1.42 dBm for Antenna-1 and -1.45 dBm for Antenna-2.

$$\text{Antenna 1} + \text{Antenna 2} = \text{MIMO}$$

$$(-1.42 \text{ dBm} + -1.45 \text{ dBm}) = (0.722 \text{ mW} + 0.717 \text{ mW}) = 1.439 \text{ mW} = 1.58 \text{ dBm}$$

Sample Directional Gain Calculation:

Per ANSI C63.10-2013 Section 14.4.3, the directional gain is calculated using the following formula, where GN is the gain of the nth antenna and NANT, the total number of antennas used.

$$\text{Directional gain} = 10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{\text{ANT}}] \text{ dBi}$$

Sample e.i.r.p. Calculation:

At 5935MHz in 802.11be (20MHz BW – 26 Tones) mode, the average MIMO conducted power was calculated to be 1.58 dBm with directional gain of -1.25 dBi.

$$\text{e.i.r.p. (dBm)} = \text{Conducted Power (dBm)} + \text{Ant gain (dBi)}$$

$$1.58 \text{ dBm} + -1.25 \text{ dBi} = 0.33 \text{ dBm}$$

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7.4 Maximum Power Spectral Density

Test Overview and Limit

The spectrum analyzer was connected to the antenna terminal while the EUT was operating at its maximum duty cycle, at its maximum power control level, as defined in ANSI C63.10-2013, and at the appropriate frequencies. Method SA-1, as defined in ANSI C63.10-2013, was used to measure the power spectral density.

In the 5.925-7.125 GHz bands, the maximum power spectral density must not exceed -1 dBm e.i.r.p. in any 1-megahertz band. For client devices, except for fixed client devices as defined in this subpart, operating under the control of a standard power access point in 5.925-6.425 GHz and 6.525-6.875 GHz bands, the maximum power spectral density must not exceed 17 dBm/MHz e.i.r.p.

Test Procedure Used

ANSI C63.10-2013 – Section 12.3.2.2

ANSI C63.10-2013 – Section 14.3.2.2 Measure-and-Sum Technique

Test Settings

1. Analyzer was set to the center frequency of the UNII channel under investigation
2. Span was set to encompass the entire emission bandwidth of the signal
3. RBW = 1MHz
4. VBW = 3MHz
5. Number of sweep points $\geq 2 \times (\text{span}/\text{RBW})$
6. Sweep time = auto
7. Detector = power averaging (RMS)
8. Trigger was set to free run for all modes
9. Trace was averaged over 100 sweeps
10. The peak search function of the spectrum analyzer was used to find the peak of the spectrum.

Test Setup

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



Figure 7-3. Test Instrument & Measurement Setup

Test Notes

None.

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MIMO Power Spectral Density Measurements

	Frequency [MHz]	Channel	802.11 MODE	Antenna-1 Power Density [dBm]	Antenna-2 Power Density [dBm]	Antenna-1 Gain [dBi]	Antenna-2 Gain [dBi]	Summed MIMO Power Density [dBm]	Directional Gain [dBi]	EIRP [dBm]	Max EIRP [dBm]	Margin [dB]
Band 5	5935	2	be (20MHz)	-3.92	-4.54	-5.08	-3.51	-1.21	-1.25	-2.46	-1	-1.46
	6175	45	be (20MHz)	-4.45	-5.09	-5.69	-4.03	-1.75	-1.81	-3.56	-1	-2.56
	6415	93	be (20MHz)	-4.21	-4.06	-6.31	-4.88	-1.12	-2.56	-3.68	-1	-2.68
	5965	3	be (40MHz)	-3.03	-3.45	-5.08	-3.51	-0.22	-1.25	-1.47	-1	-0.47
	6165	43	be (40MHz)	-2.85	-3.85	-5.69	-4.03	-0.31	-1.81	-2.12	-1	-1.12
	6405	91	be (40MHz)	-1.20	-3.06	-6.31	-4.88	0.98	-2.56	-1.58	-1	-0.58
	5985	7	be (80MHz)	-2.67	-3.01	-6.16	-3.51	0.17	-1.72	-1.55	-1	-0.55
	6145	39	be (80MHz)	-2.71	-3.94	-5.69	-4.03	-0.27	-1.81	-2.08	-1	-1.08
	6385	87	be (80MHz)	-3.62	-2.33	-6.31	-4.88	0.09	-2.56	-2.47	-1	-1.47
	6025	15	be (160MHz)	-2.56	-3.69	-6.16	-3.51	-0.08	-1.72	-1.81	-1	-0.81
	6185	47	be (160MHz)	-2.83	-3.67	-6.15	-4.69	-0.22	-2.38	-2.60	-1	-1.60
	6345	79	be (160MHz)	-4.02	-2.47	-5.93	-4.21	-0.17	-2.02	-2.19	-1	-1.19
	6105	31	be (320MHz)	-2.00	-4.16	-5.69	-4.03	0.06	-1.81	-1.75	-1	-0.75
	6265	63	be (320MHz)	-3.48	-3.11	-6.15	-4.69	-0.28	-2.38	-2.66	-1	-1.66
Band 6	6475	97	be (20MHz)	-3.40	-3.64	-6.31	-4.88	-0.51	-2.56	-3.07	-1	-2.07
	6475	105	be (20MHz)	-2.42	-2.11	-6.31	-4.88	0.75	-2.56	-1.80	-1	-0.80
	6515	113	be (20MHz)	-2.21	-2.64	-6.53	-4.94	0.59	-2.69	-2.10	-1	-1.10
	6445	99	be (40MHz)	-1.97	-2.55	-6.31	-4.88	0.76	-2.56	-1.80	-1	-0.80
	6485	107	be (40MHz)	-1.45	-1.50	-6.53	-4.94	1.54	-2.69	-1.15	-1	-0.15
	6525	115	be (40MHz)	-1.98	-1.35	-6.53	-4.94	1.36	-2.69	-1.33	-1	-0.33
	6465	103	be (80MHz)	-1.87	-2.13	-6.31	-4.88	1.01	-2.56	-1.54	-1	-0.54
Band 5/6/7	6505	111	be (160MHz)	-1.44	-1.36	-6.53	-4.94	1.61	-2.69	-1.08	-1	-0.08
	6425	95	be (320MHz)	-1.96	-2.55	-6.31	-4.88	0.77	-2.56	-1.79	-1	-0.79
	6695	117	be (20MHz)	-3.42	-3.04	-6.90	-3.96	-0.22	-2.30	-2.51	-1	-1.51
	6695	149	be (20MHz)	-2.30	-4.65	-6.90	-3.96	-0.30	-2.30	-2.60	-1	-1.60
	6875	185	be (20MHz)	-3.64	-4.77	-7.12	-4.40	-1.16	-2.64	-3.80	-1	-2.80
	6565	123	be (40MHz)	-1.63	-1.65	-6.53	-4.94	1.37	-2.69	-1.32	-1	-0.32
	6685	155	be (40MHz)	-1.59	-3.38	-6.90	-3.96	0.62	-2.30	-1.68	-1	-0.68
	6845	179	be (40MHz)	-2.74	-3.51	-7.12	-4.40	-0.10	-2.64	-2.74	-1	-1.74
	6545	119	be (80MHz)	-2.28	-1.30	-6.53	-4.94	1.25	-2.69	-1.44	-1	-0.44
	6705	151	be (80MHz)	-1.62	-3.37	-6.90	-3.96	0.60	-2.30	-1.70	-1	-0.70
	6865	183	be (80MHz)	-2.88	-3.19	-7.12	-4.40	-0.02	-2.64	-2.66	-1	-1.66
	6665	143	be (160MHz)	-1.56	-2.79	-7.03	-5.35	0.88	-3.14	-2.26	-1	-1.26
	6825	175	be (160MHz)	-2.61	-3.35	-7.12	-4.40	0.05	-2.64	-2.60	-1	-1.60
	6585	127	be (320MHz)	-2.29	-2.09	-7.03	-5.35	0.82	-3.14	-2.32	-1	-1.32
Band 7/8	6745	159	be (320MHz)	-1.86	-3.03	-6.90	-3.96	0.61	-2.30	-1.69	-1	-0.69
	7115	189	be (20MHz)	-4.10	-4.34	-9.13	-4.16	-1.21	-3.28	-4.49	-1	-3.49
	6995	209	be (20MHz)	-3.77	-6.38	-8.11	-3.15	-1.87	-2.27	-4.14	-1	-3.14
	7115	233	be (20MHz)	-3.13	-3.19	-9.13	-4.16	-0.15	-3.28	-3.43	-1	-2.43
	6885	187	be (40MHz)	-3.20	-4.24	-6.72	-3.50	-0.68	-1.95	-2.63	-1	-1.63
	6965	211	be (40MHz)	-2.65	-5.16	-6.72	-3.50	-0.71	-1.95	-2.67	-1	-1.67
	7085	227	be (40MHz)	-2.06	-2.18	-9.13	-4.16	0.89	-3.28	-2.39	-1	-1.39
	6945	199	be (80MHz)	-3.51	-4.94	-6.72	-3.50	-1.15	-1.95	-3.10	-1	-2.10
	7025	215	be (80MHz)	-3.10	-3.69	-8.11	-3.15	-0.38	-2.27	-2.65	-1	-1.65
	6985	207	be (160MHz)	-3.09	-1.45	-8.11	-3.15	0.82	-2.27	-1.45	-1	-0.45
	6985	191	be (320MHz)	-3.59	-2.29	-8.11	-3.15	0.12	-2.27	-2.15	-1	-1.15

Table 7-35. MIMO e.i.r.p. Conducted Power Spectral Density Measurements (26 Tones) – LPI

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	Frequency [MHz]	Channel	802.11 MODE	MRU	Antenna-1 Power Density [dBm]	Antenna-2 Power Density [dBm]	Antenna-1 Gain [dBi]	Antenna-2 Gain [dBi]	Summed MIMO Power Density [dBm]	Directional Gain [dBi]	EIRP [dBm]	Max EIRP [dBm]	Margin [dB]
Band 5	5935	2	be (20MHz)	106+26T	-4.80	-3.39	-5.08	-3.51	-1.03	-1.25	-2.27	-1	-1.27
	5935	2	be (20MHz)	52+26T	-5.57	-3.77	-5.08	-3.51	-1.57	-1.25	-2.82	-1	-1.82
	6145	39	be (80MHz)	484+242T	-3.02	-1.87	-5.69	-4.03	0.60	-1.81	-1.21	-1	-0.21
	6185	47	be (160MHz)	996+484T	-4.74	-4.27	-6.15	-4.69	-1.49	-2.38	-3.87	-1	-2.87
	6105	31	be (320MHz)	3x996+484T	-9.14	-8.80	-5.69	-4.03	-5.95	-1.81	-7.76	-1	-6.76
	6105	31	be (320MHz)	3x996T	-7.29	-6.97	-5.69	-4.03	-4.11	-1.81	-5.92	-1	-4.92
6105	31	be (320MHz)	2x996+484T	-7.93	-8.10	-5.69	-4.03	-5.00	-1.81	-6.81	-1	-5.81	
Band 6	6475	105	be (20MHz)	106+26T	-3.62	-4.36	-6.31	-4.88	-0.96	-2.56	-3.52	-1	-2.52
	6475	105	be (20MHz)	52+26T	-3.70	-5.80	-6.31	-4.88	-1.61	-2.56	-4.17	-1	-3.17
	6465	103	be (80MHz)	484+242T	-1.64	-2.10	-6.31	-4.88	1.15	-2.56	-1.41	-1	-0.41
Band 5/6/7	6505	111	be (160MHz)	996+484T	-4.12	-5.22	-6.53	-4.94	-1.63	-2.69	-4.31	-1	-3.31
	6425	95	be (320MHz)	3x996+484T	-7.87	-8.10	-6.31	-4.88	-4.97	-2.56	-7.53	-1	-6.53
	6425	95	be (320MHz)	3x996T	-7.04	-7.52	-6.31	-4.88	-4.26	-2.56	-6.82	-1	-5.82
Band 7	6425	95	be (320MHz)	2x996+484T	-6.63	-7.15	-6.31	-4.88	-3.87	-2.56	-6.43	-1	-5.43
	6695	149	be (20MHz)	106+26T	-4.06	-4.81	-6.90	-3.96	-1.41	-2.30	-3.70	-1	-2.70
	6695	149	be (20MHz)	52+26T	-4.01	-6.00	-6.90	-3.96	-1.88	-2.30	-4.18	-1	-3.18
Band 6/7	6705	151	be (80MHz)	484+242T	-2.09	-2.40	-6.90	-3.96	0.77	-2.30	-1.53	-1	-0.53
	6665	143	be (160MHz)	996+484T	-4.30	-5.14	-7.03	-5.35	-1.69	-3.14	-4.83	-1	-3.83
	6585	127	be (320MHz)	3x996+484T	-8.81	-9.01	-7.03	-5.35	-5.90	-3.14	-9.03	-1	-8.03
Band 8	6585	127	be (320MHz)	3x996T	-7.86	-8.14	-7.03	-5.35	-4.98	-3.14	-8.12	-1	-7.12
	6585	127	be (320MHz)	2x996+484T	-7.61	-7.70	-7.03	-5.35	-4.65	-3.14	-7.79	-1	-6.79
	6945	199	be (80MHz)	484+242T	-3.07	-2.15	-6.72	-3.50	0.43	-1.95	-1.52	-1	-0.52
Band 7/8	6985	207	be (160MHz)	996+484T	-4.58	-5.35	-8.11	-3.15	-1.93	-2.27	-4.20	-1	-3.20
	6905	191	be (320MHz)	3x996+484T	-8.25	-7.99	-6.72	-3.50	-5.11	-1.95	-7.06	-1	-6.06
	6905	191	be (320MHz)	3x996T	-7.54	-7.21	-6.72	-3.50	-4.36	-1.95	-6.32	-1	-5.32
6905	191	be (320MHz)	2x996+484T	-6.94	-6.73	-6.72	-3.50	-3.82	-1.95	-5.77	-1	-4.77	

Table 7-36. MIMO e.i.r.p. Conducted Power Spectral Density Measurements – LPI – MRU

	Frequency [MHz]	Channel	802.11 MODE	Antenna-1 Power Density [dBm]	Antenna-2 Power Density [dBm]	Antenna-1 Gain [dBi]	Antenna-2 Gain [dBi]	Summed MIMO Power Density [dBm]	Directional Gain [dBi]	EIRP [dBm]	Max EIRP [dBm]	Margin [dB]
Band 5	5935	2	be (20MHz)	9.77	10.50	-5.08	-3.51	13.16	-1.25	11.91	17	-5.09
	6175	45	be (20MHz)	10.44	10.30	-5.69	-4.03	13.38	-1.81	11.57	17	-5.43
	6415	93	be (20MHz)	10.93	10.32	-6.31	-4.88	13.64	-2.56	11.09	17	-5.91
	5965	3	be (40MHz)	11.18	11.70	-5.08	-3.51	14.45	-1.25	13.20	17	-3.80
	6165	43	be (40MHz)	11.60	11.66	-5.69	-4.03	14.64	-1.81	12.83	17	-4.17
	6405	91	be (40MHz)	12.06	11.57	-6.31	-4.88	14.83	-2.56	12.27	17	-4.73
	5985	7	be (80MHz)	10.65	11.05	-6.16	-3.51	13.87	-1.72	12.14	17	-4.86
	6145	39	be (80MHz)	10.82	10.73	-5.69	-4.03	13.78	-1.81	11.97	17	-5.03
	6385	87	be (80MHz)	11.20	11.18	-6.31	-4.88	14.20	-2.56	11.65	17	-5.35
	6025	15	be (160MHz)	10.92	9.94	-6.16	-3.51	13.47	-1.72	11.74	17	-5.26
	6185	47	be (160MHz)	10.38	10.69	-6.15	-4.69	13.55	-2.38	11.17	17	-5.83
	6345	79	be (160MHz)	10.13	10.58	-5.93	-4.21	13.37	-2.02	11.35	17	-5.65
	6105	31	be (320MHz)	10.89	9.95	-5.69	-4.03	13.45	-1.81	11.64	17	-5.36
	6265	63	be (320MHz)	10.40	10.11	-6.15	-4.69	13.27	-2.38	10.89	17	-6.11
Band 7	6695	117	be (20MHz)	10.41	9.82	-6.90	-3.96	13.14	-2.30	10.84	17	-6.16
	6695	149	be (20MHz)	10.81	9.96	-6.90	-3.96	13.42	-2.30	11.12	17	-5.88
	6875	185	be (20MHz)	10.35	9.72	-7.12	-4.40	13.06	-2.64	10.41	17	-6.59
	6565	123	be (40MHz)	11.13	11.12	-6.53	-4.94	14.13	-2.69	11.44	17	-5.56
	6685	155	be (40MHz)	11.30	11.15	-6.90	-3.96	14.24	-2.30	11.94	17	-5.06
	6845	179	be (40MHz)	11.48	11.45	-7.12	-4.40	14.47	-2.64	11.83	17	-5.17
	6545	119	ax (80MHz)	10.17	9.94	-6.53	-4.94	13.07	-2.69	10.38	17	-6.62
	6545	119	be (80MHz)	10.17	9.94	-6.53	-4.94	13.07	-2.69	10.38	17	-6.62
	6705	151	be (80MHz)	11.49	10.48	-6.90	-3.96	14.02	-2.30	11.73	17	-5.27
	6865	183	be (80MHz)	10.47	10.19	-7.12	-4.40	13.34	-2.64	10.70	17	-6.30
	6665	143	be (160MHz)	10.42	9.59	-7.03	-5.35	13.03	-3.14	9.90	17	-7.10
6825	175	be (160MHz)	10.22	10.36	-7.12	-4.40	13.30	-2.64	10.66	17	-6.34	
Band 7/8	6745	159	be (320MHz)	10.27	9.73	-6.90	-3.96	13.02	-2.30	10.72	17	-6.28

Table 7-37. MIMO e.i.r.p. Conducted Power Spectral Density Measurements (26 Tones) – SP

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	Frequency [MHz]	Channel	802.11 MODE	MRU	Antenna-1 Power Density [dBm]	Antenna-2 Power Density [dBm]	Antenna-1 Gain [dBi]	Antenna-2 Gain [dBi]	Summed MIMO Power Density [dBm]	Directional Gain [dBi]	EIRP [dBm]	Max EIRP [dBm]	Margin [dB]
Band 5	6175	45	be (20MHz)	106+26T	4.01	4.64	-5.69	-4.03	7.34	-1.81	5.53	17	-11.47
	6175	45	be (20MHz)	52+26T	6.23	6.78	-5.69	-4.03	9.52	-1.81	7.71	17	-9.29
	6145	39	be (80MHz)	484+242T	-1.35	-0.91	-5.69	-4.03	1.89	-1.81	0.08	17	-16.92
	6185	47	be (160MHz)	996+484T	-2.65	-2.19	-6.15	-4.69	0.60	-2.38	-1.78	17	-18.78
	6105	31	be (320MHz)	3x996+484T	-6.20	-7.10	-5.69	-4.03	-3.61	-1.81	-5.42	17	-22.42
	6105	31	be (320MHz)	3x996T	-5.89	-6.74	-5.69	-4.03	-3.28	-1.81	-5.09	17	-22.09
Band 7	6105	31	be (320MHz)	2x996+484T	-4.99	-6.14	-5.69	-4.03	-2.52	-1.81	-4.33	17	-21.33
	6695	149	be (20MHz)	106+26T	4.19	3.65	-6.90	-3.96	6.94	-2.30	4.64	17	-12.36
	6695	149	be (20MHz)	52+26T	6.51	5.73	-6.90	-3.96	9.15	-2.30	6.85	17	-10.15
	6705	151	be (80MHz)	484+242T	-0.95	-0.78	-6.90	-3.96	2.15	-2.30	-0.15	17	-17.15
Band 7/8	6665	143	be (160MHz)	996+484T	-2.61	-2.46	-7.03	-5.35	0.47	-3.14	-2.66	17	-19.66
	6745	159	be (320MHz)	3x996+484T	-6.67	-7.92	-6.90	-3.96	-4.24	-2.30	-6.53	17	-23.53
	6745	159	be (320MHz)	3x996T	-6.01	-7.13	-6.90	-3.96	-3.53	-2.30	-5.82	17	-22.82
	6745	159	be (320MHz)	2x996+484T	-5.35	-6.80	-6.90	-3.96	-3.01	-2.30	-5.30	17	-22.30

Table 7-38. MIMO e.i.r.p. Conducted Power Spectral Density Measurements – SP – MRU

	Frequency [MHz]	Channel	802.11 MODE	Antenna-1 Power Density [dBm]	Antenna-2 Power Density [dBm]	Antenna-1 Gain [dBi]	Antenna-2 Gain [dBi]	Summed MIMO Power Density [dBm]	Directional Gain [dBi]	EIRP [dBm]	Max EIRP [dBm]	Margin [dB]	
Band 5	5935	2	be (20MHz)	-3.03	-3.05	-5.08	-3.51	-0.03	-1.25	-1.28	-1	-0.28	
	6175	45	be (20MHz)	-2.67	-2.79	-5.69	-4.03	0.28	-1.81	-1.53	-1	-0.53	
	6415	93	be (20MHz)	-2.70	-3.17	-6.31	-4.88	0.08	-2.56	-2.47	-1	-1.47	
	5965	3	be (40MHz)	-3.34	-3.06	-5.08	-3.51	-0.19	-1.25	-1.44	-1	-0.44	
	6165	43	be (40MHz)	-2.23	-2.41	-5.69	-4.03	0.69	-1.81	-1.12	-1	-0.12	
	6405	91	be (40MHz)	-1.95	-2.26	-6.31	-4.88	0.91	-2.56	-1.65	-1	-0.65	
	5985	7	be (80MHz)	-3.32	-2.59	-6.16	-3.51	0.07	-1.72	-1.65	-1	-0.65	
	6145	39	be (80MHz)	-2.79	-3.08	-5.69	-4.03	0.08	-1.81	-1.73	-1	-0.73	
	6385	87	be (80MHz)	-2.20	-2.22	-6.31	-4.88	0.80	-2.56	-1.75	-1	-0.75	
	6025	15	be (160MHz)	-6.08	-6.47	-6.16	-3.51	-3.26	-1.72	-4.99	-1	-3.99	
	6185	47	be (160MHz)	-6.16	-5.79	-6.15	-4.69	-2.96	-2.38	-5.34	-1	-4.34	
	6345	79	be (160MHz)	-6.74	-6.01	-5.93	-4.21	-3.35	-2.02	-5.37	-1	-4.37	
	6105	31	be (320MHz)	-8.06	-9.14	-5.69	-4.03	-5.56	-1.81	-7.37	-1	-6.37	
	6265	63	be (320MHz)	-8.77	-8.66	-6.15	-4.69	-5.71	-2.38	-8.08	-1	-7.08	
Band 6	6475	97	be (20MHz)	-1.78	-2.47	-6.31	-4.88	0.90	-2.56	-1.65	-1	-0.65	
	6475	105	be (20MHz)	-2.10	-1.88	-6.31	-4.88	1.02	-2.56	-1.53	-1	-0.53	
	6515	113	be (20MHz)	-2.09	-2.40	-6.53	-4.94	0.77	-2.69	-1.92	-1	-0.92	
	6445	99	be (40MHz)	-1.48	-2.16	-6.31	-4.88	1.20	-2.56	-1.35	-1	-0.35	
	6485	107	be (40MHz)	-1.75	-1.50	-6.53	-4.94	1.39	-2.69	-1.30	-1	-0.30	
	6525	115	be (40MHz)	-2.02	-2.29	-6.53	-4.94	0.86	-2.69	-1.83	-1	-0.83	
	6465	103	be (80MHz)	-2.20	-2.19	-6.31	-4.88	0.82	-2.56	-1.74	-1	-0.74	
Band 5/6/7	6505	111	be (160MHz)	-6.10	-5.59	-6.53	-4.94	-2.83	-2.69	-5.52	-1	-4.52	
	6425	95	be (320MHz)	-8.26	-8.47	-6.31	-4.88	-5.35	-2.56	-7.91	-1	-6.91	
	6695	117	be (20MHz)	-2.29	-2.97	-6.90	-3.96	0.40	-2.30	-1.90	-1	-0.90	
	6695	149	be (20MHz)	-1.66	-2.40	-6.90	-3.96	1.00	-2.30	-1.30	-1	-0.30	
	6875	185	be (20MHz)	-1.71	-2.93	-7.12	-4.40	0.73	-2.64	-1.91	-1	-0.91	
	6565	123	be (40MHz)	-1.64	-2.07	-6.53	-4.94	1.16	-2.69	-1.53	-1	-0.53	
	6685	155	be (40MHz)	-1.53	-2.13	-6.90	-3.96	1.19	-2.30	-1.11	-1	-0.11	
	6845	179	be (40MHz)	-1.50	-1.53	-7.12	-4.40	1.49	-2.64	-1.15	-1	-0.15	
	6545	119	be (80MHz)	-3.19	-3.46	-6.53	-4.94	-0.31	-2.69	-3.00	-1	-2.00	
	6705	151	be (80MHz)	-2.71	-2.67	-6.90	-3.96	0.32	-2.30	-1.97	-1	-0.97	
	6865	183	be (80MHz)	-2.64	-2.83	-7.12	-4.40	0.28	-2.64	-2.37	-1	-1.37	
	6665	143	be (160MHz)	-5.68	-6.45	-7.03	-5.35	-3.04	-3.14	-6.18	-1	-5.18	
	6825	175	be (160MHz)	-5.91	-5.65	-7.12	-4.40	-2.77	-2.64	-5.41	-1	-4.41	
	6585	127	be (320MHz)	-8.07	-8.51	-7.03	-5.35	-5.27	-3.14	-8.41	-1	-7.41	
Band 7/8	6745	159	be (320MHz)	-7.75	-8.26	-6.90	-3.96	-4.98	-2.30	-7.28	-1	-6.28	
	Band 8	7115	189	be (20MHz)	-1.97	-2.86	-9.13	-4.16	0.62	-3.28	-2.66	-1	-1.66
		6995	209	be (20MHz)	-2.21	-1.96	-8.11	-3.15	0.93	-2.27	-1.34	-1	-0.34
		7115	233	be (20MHz)	-2.40	-2.65	-9.13	-4.16	0.49	-3.28	-2.80	-1	-1.80
		6885	187	be (40MHz)	-2.34	-3.16	-6.72	-3.50	0.28	-1.95	-1.68	-1	-0.68
		6965	211	be (40MHz)	-2.52	-2.89	-6.72	-3.50	0.31	-1.95	-1.65	-1	-0.65
		7085	227	be (40MHz)	-2.61	-1.02	-9.13	-4.16	1.27	-3.28	-2.02	-1	-1.02
		6945	199	be (80MHz)	-4.20	-2.26	-6.72	-3.50	-0.11	-1.95	-2.06	-1	-1.06
		7025	215	be (80MHz)	-2.99	-4.12	-8.11	-3.15	-0.51	-2.27	-2.78	-1	-1.78
	6985	207	be (160MHz)	-6.48	-6.59	-8.11	-3.15	-3.53	-2.27	-5.80	-1	-4.80	
	Band 7/8	6905	191	be (320MHz)	-7.86	-9.36	-6.72	-3.50	-5.54	-1.95	-7.49	-1	-6.49

Table 7-39. MIMO e.i.r.p. Conducted Power Spectral Density Measurements (Full Tones) – LPI

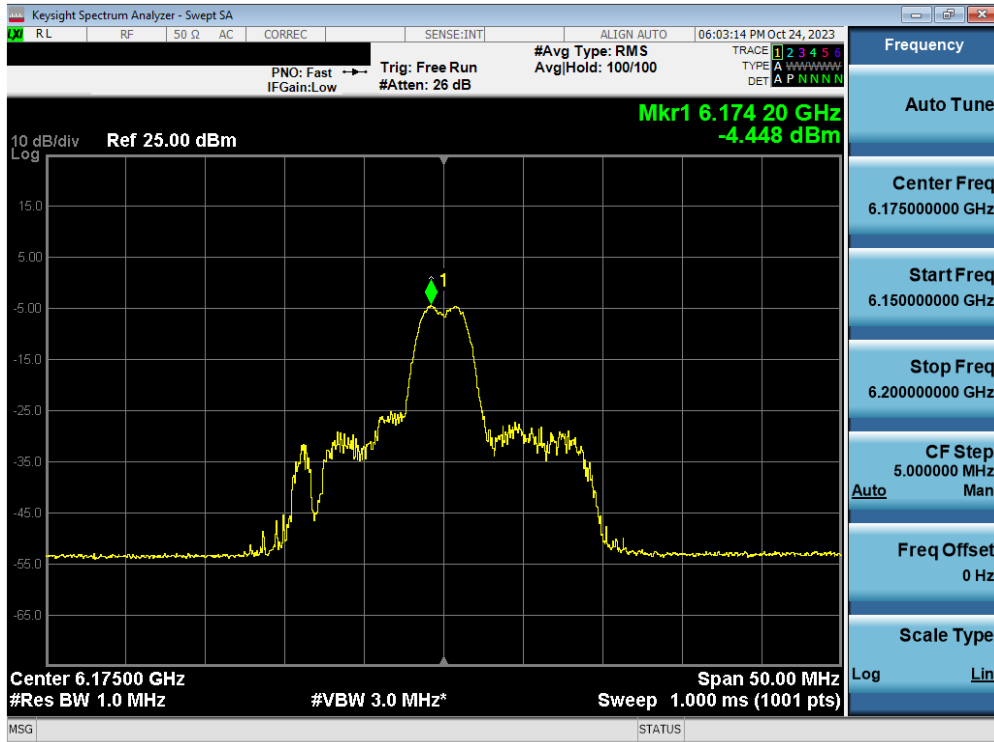
FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2308210093-16-R1.A3L	Test Dates: 8/22 - 11/09/2023	EUT Type: Portable Handset	Page 76 of 330

	Frequency [MHz]	Channel	802.11 MODE	Antenna-1 Power Density [dBm]	Antenna-2 Power Density [dBm]	Antenna-1 Gain [dBi]	Antenna-2 Gain [dBi]	Summed MIMO Power Density [dBm]	Directional Gain [dBi]	EIRP [dBm]	Max EIRP [dBm]	Margin [dB]
Band 5	5935	2	be (20MHz)	2.84	3.27	-5.08	-3.51	6.07	-1.25	4.82	17	-12.18
	6175	45	be (20MHz)	3.41	3.41	-5.69	-4.03	6.42	-1.81	4.61	17	-12.39
	6415	93	be (20MHz)	3.93	3.41	-6.31	-4.88	6.69	-2.56	4.13	17	-12.87
	5965	3	be (40MHz)	-0.23	0.24	-5.08	-3.51	3.02	-1.25	1.77	17	-15.23
	6165	43	be (40MHz)	0.55	0.47	-5.69	-4.03	3.52	-1.81	1.71	17	-15.29
	6405	91	be (40MHz)	0.60	0.32	-6.31	-4.88	3.47	-2.56	0.92	17	-16.08
	5985	7	be (80MHz)	-0.44	0.50	-6.16	-3.51	3.07	-1.72	1.34	17	-15.66
	6145	39	be (80MHz)	-0.90	-0.38	-5.69	-4.03	2.38	-1.81	0.57	17	-16.43
	6385	87	be (80MHz)	-1.47	-0.21	-6.31	-4.88	2.22	-2.56	-0.34	17	-17.34
	6025	15	be (160MHz)	-3.36	-3.82	-3.01	-4.86	-0.57	-0.88	-1.45	17	-18.45
	6185	47	be (160MHz)	-3.92	-3.12	-3.07	-2.78	-0.49	0.09	-0.40	17	-17.40
	6345	79	be (160MHz)	-4.99	-3.63	-3.59	-3.42	-1.25	-0.49	-1.74	17	-18.74
	6105	31	be (320MHz)	-7.65	-7.94	-3.07	-2.78	-4.78	0.09	-4.69	17	-21.69
6265	63	be (320MHz)	-8.53	-7.75	-3.59	-3.42	-5.11	-0.49	-5.61	17	-22.61	
Band 7	6695	117	be (20MHz)	3.28	2.79	-6.90	-3.96	6.05	-2.30	3.76	17	-13.24
	6695	149	be (20MHz)	3.57	3.03	-6.90	-3.96	6.31	-2.30	4.02	17	-12.98
	6875	185	be (20MHz)	3.67	2.89	-7.12	-4.40	6.31	-2.64	3.67	17	-13.33
	6565	123	be (40MHz)	0.21	-0.08	-6.53	-4.94	3.08	-2.69	0.39	17	-16.61
	6685	155	be (40MHz)	0.36	0.07	-6.90	-3.96	3.23	-2.30	0.93	17	-16.07
	6845	179	be (40MHz)	0.46	0.66	-7.12	-4.40	3.57	-2.64	0.93	17	-16.07
	6545	119	be (80MHz)	-1.46	-1.03	-6.53	-4.94	1.77	-2.69	-0.91	17	-17.91
	6705	151	be (80MHz)	-0.44	-0.56	-6.90	-3.96	2.51	-2.30	0.21	17	-16.79
	6865	183	be (80MHz)	-1.57	-1.43	-7.12	-4.40	1.51	-2.64	-1.13	17	-18.13
	6665	143	be (160MHz)	-3.96	-4.71	-3.81	-3.43	-1.31	-0.61	-1.92	17	-18.92
6825	175	be (160MHz)	-4.17	-3.86	-3.65	-5.95	-1.00	-1.71	-2.71	17	-19.71	
Band 7/8	6745	159	be (320MHz)	-8.03	-8.13	-3.65	-5.95	-5.07	-1.71	-6.78	17	-23.78

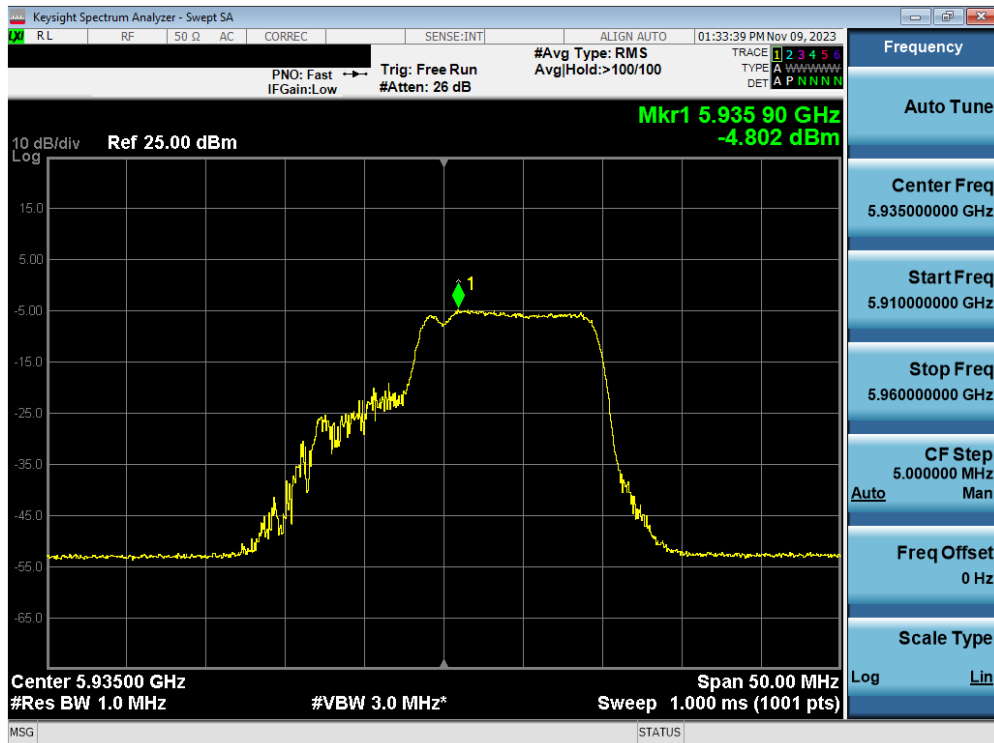
Table 7-40. MIMO e.i.r.p. Conducted Power Spectral Density Measurements (Full Tones) – SP

FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2308210093-16-R1.A3L	Test Dates: 8/22 - 11/09/2023	EUT Type: Portable Handset	Page 77 of 330

MIMO Antenna-1 Power Spectral Measurements - (Partial Tones) – (UNII Band 5)

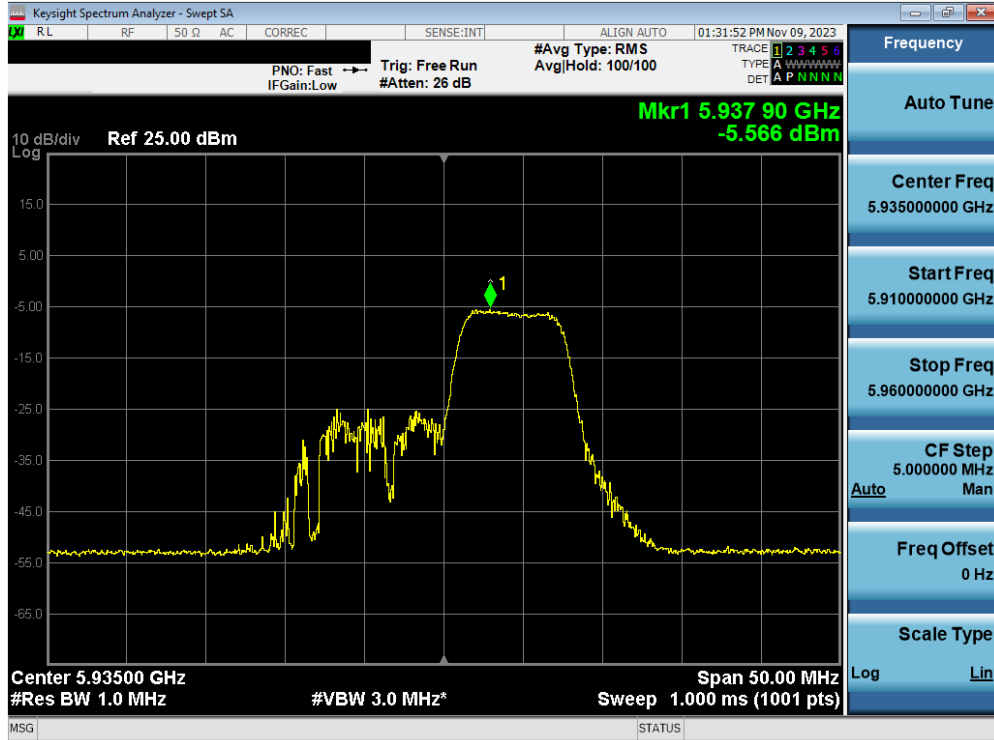


Plot 7-80. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax/be (26 Tones) (UNII Band 5) – Ch. 45) – LPI

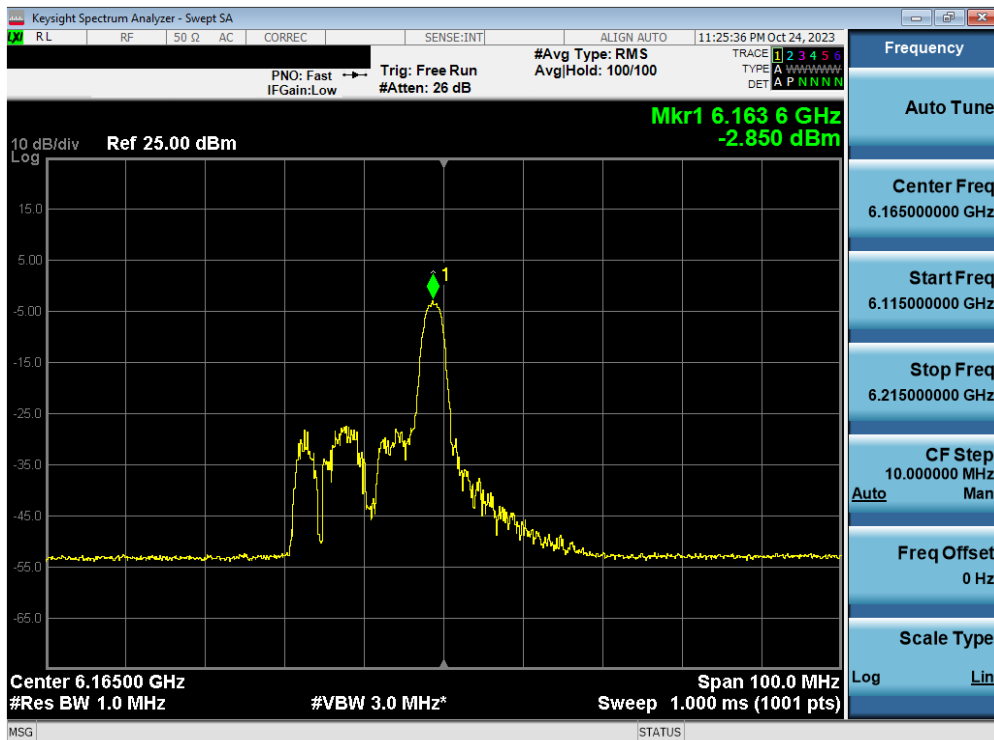


Plot 7-81. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax/be (MRU) (UNII Band 5) – Ch. 2) – LPI – 106+26T

FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2308210093-16-R1.A3L	Test Dates: 8/22 - 11/09/2023	EUT Type: Portable Handset	Page 78 of 330

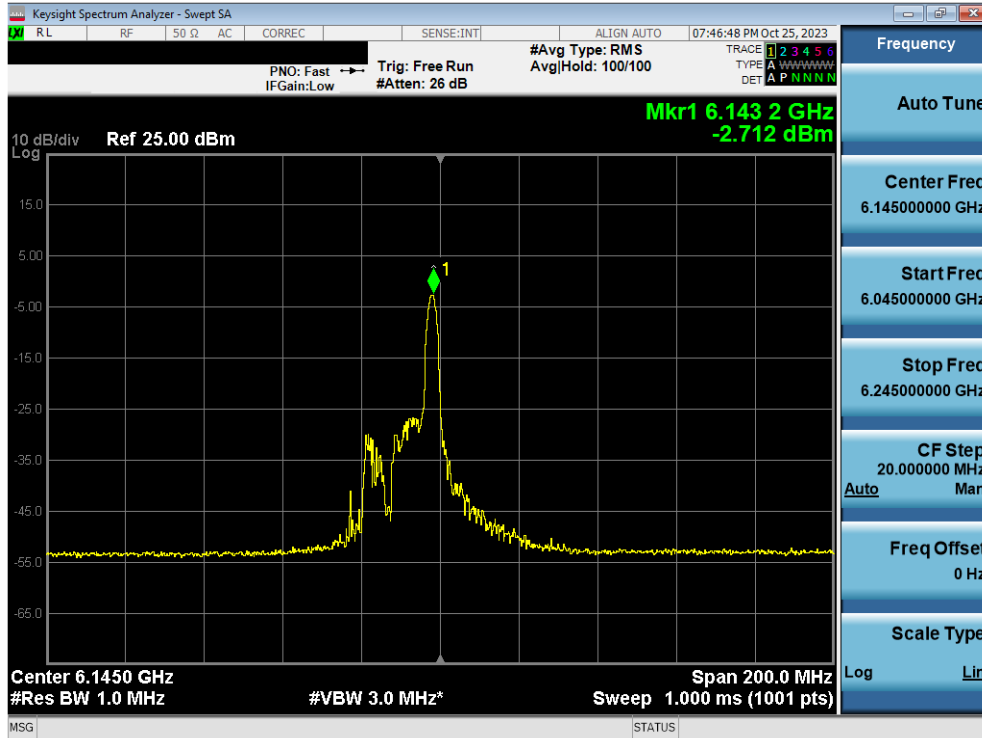


Plot 7-82. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax/be (MRU) (UNII Band 5) – Ch. 2) – LPI – 52+26T

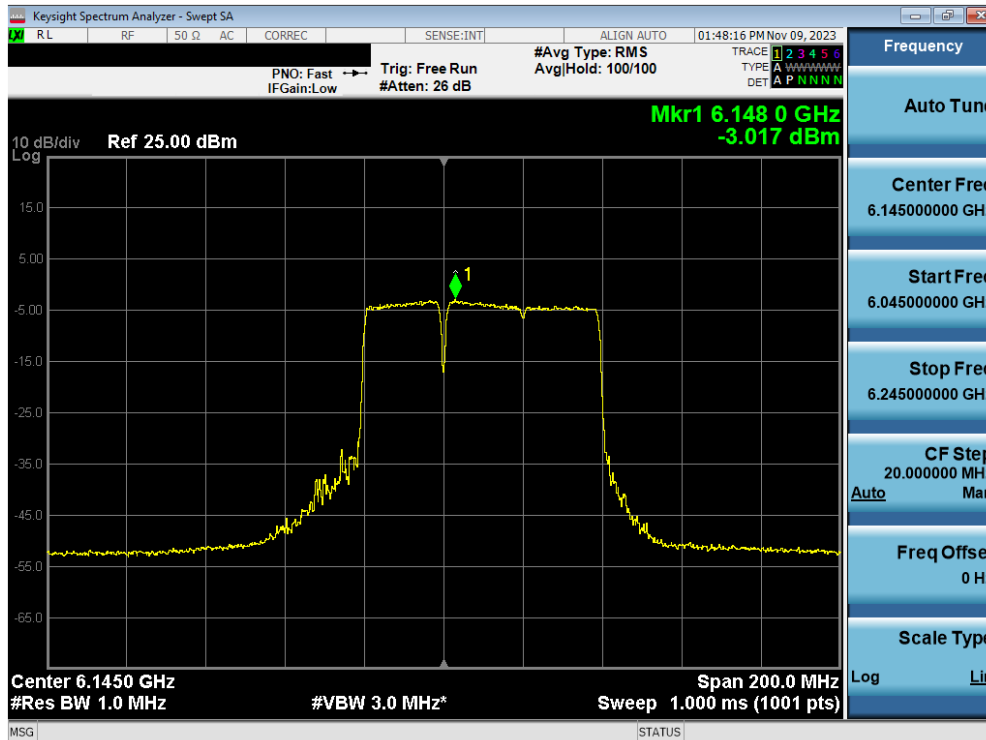


Plot 7-83. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax/be (26 Tones) (UNII Band 5) – Ch. 43) – LPI

FCC ID: A3LSMS928B		MEASUREMENT REPORT		Approved by:
Test Report S/N:	Test Dates:	EUT Type:		Technical Manager
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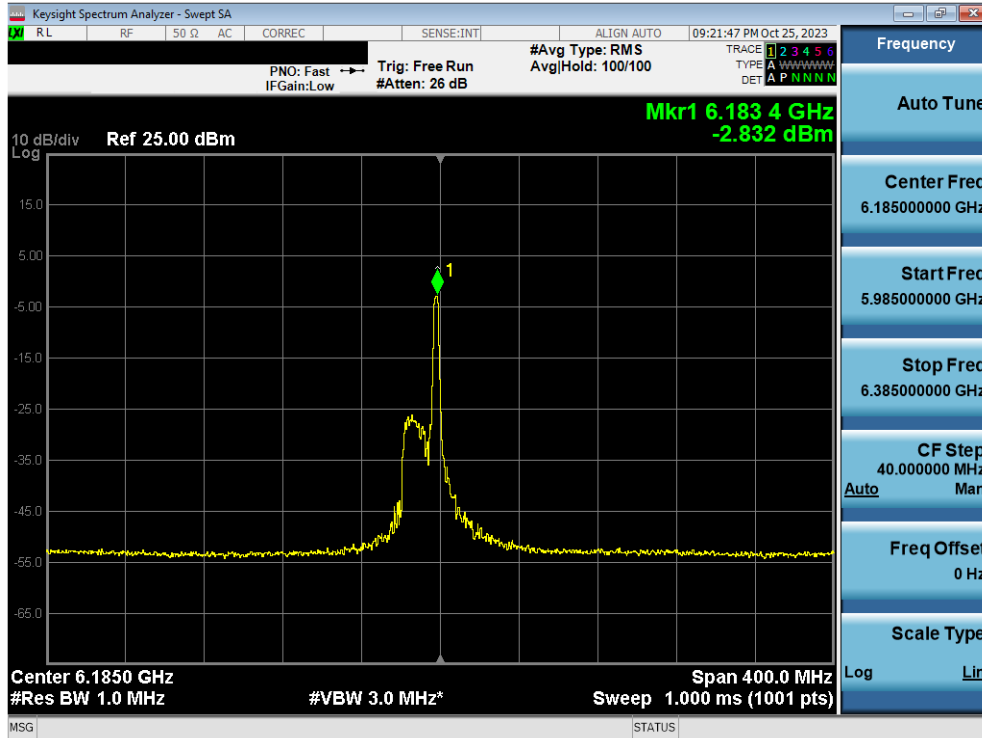


Plot 7-84. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax/be (26 Tones) (UNII Band 5) – Ch. 39) – LPI

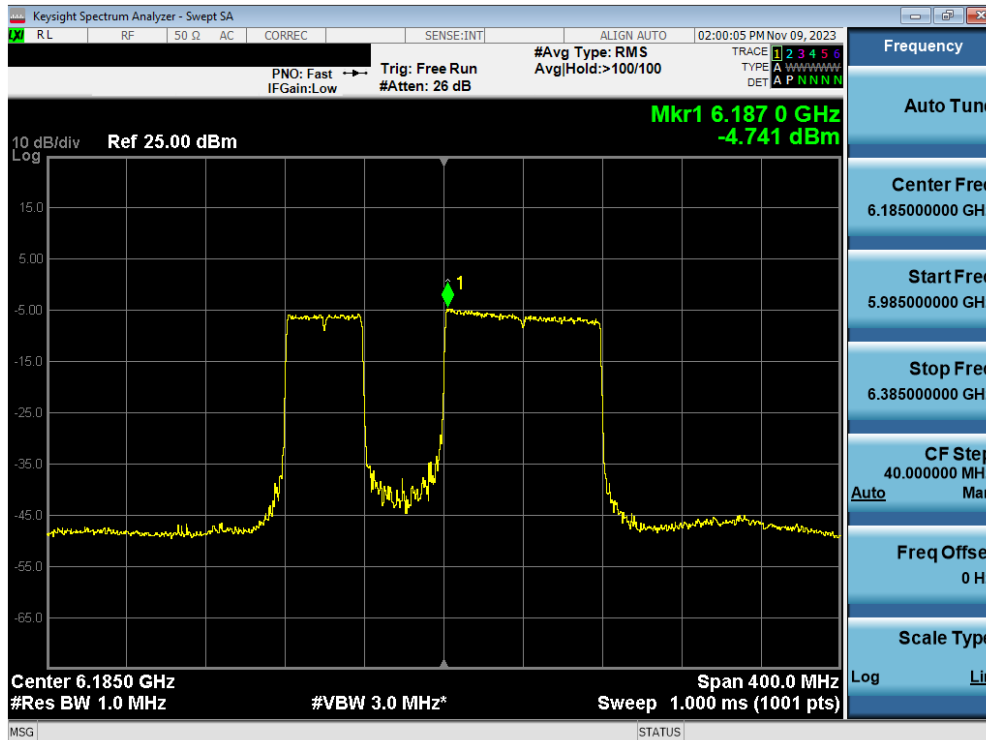


Plot 7-85. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax/be (MRU) (UNII Band 5) – Ch. 39) – LPI – 484+242T

FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2308210093-16-R1.A3L	Test Dates: 8/22 - 11/09/2023	EUT Type: Portable Handset	Page 80 of 330



Plot 7-86. Power Spectral Density Plot MIMO ANT1 (160MHz BW 802.11ax/be (26 Tones) (UNII Band 5) – Ch. 47) – LPI



Plot 7-87. Power Spectral Density Plot MIMO ANT1 (160MHz BW 802.11ax/be (MRU) (UNII Band 5) – Ch. 15) – LPI – 996+242T

FCC ID: A3LSMS928B	MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2308210093-16-R1.A3L	Test Dates: 8/22 - 11/09/2023	EUT Type: Portable Handset	Page 81 of 330