

MEASUREMENT REPORT

FCC PART 15.407 Narrowband (NB) U-NII 5GHz

Applicant Name:

Apple Inc.
One Apple Park Way
Cupertino, CA 95014
United States

Date of Testing:

05/12/2025 - 09/05/2025

Test Report Issue Date:

9/10/2025

Test Site/Location:

Element Materials Technology, Morgan Hill, CA, USA

Test Report Serial No.:

1C2504170041-19-R1.BCG

FCC ID:

BCGA3361

APPLICANT:

Apple Inc.

Application Type:

Certification

Model:

A3361, A3362

EUT Type:

Tablet Device

Frequency Range:

5162 – 5245MHz, 5733 – 5844MHz

Modulation Type:

GFSK, $\pi/4$ DQPSK, OQPSK, 8PSK, 16QAM

FCC Classification:

Unlicensed National Information Infrastructure (UNII)

FCC Rule Part(s):

Part 15 Subpart E (15.407)

Test Procedure(s):

ANSI C63.10-2020, KDB 789033 D02 v02r01

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.10-2020 and KDB 789033 D02 v02r01. Test results reported herein relate only to the item(s) tested.

This revised Test Report (S/N: 1C2504170041-19-R1.BCG) 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 accordingly.

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

R.J. Ortanez
Executive Vice President



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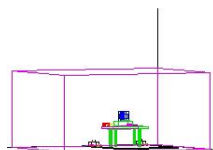
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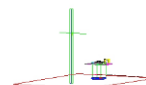
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UNII Band	Tx Frequency [MHz]	Mode	Power Scheme	SISO						TxBF Primary		TxBF Diversity	
				Antenna WF5B		Antenna 4a		Antenna 2a		Summed		Summed	
				Max. Power (mW)	Max. Power (dBm)	Max. Power (mW)	Max. Power (dBm)	Max. Power (mW)	Max. Power (dBm)	Max. Power (mW)	Max. Power (dBm)	Max. Power (mW)	Max. Power (dBm)
1	5162 - 5245	NB UNII BDR	ePA	9.572	9.81	9.817	9.92	9.840	9.93	9.661	9.85	9.638	9.84
			iPA	1.112	0.46	2.466	3.92	1.227	0.89	3.673	5.65	3.673	5.65
		NB UNII LE	ePA	12.274	10.89	12.503	10.97	11.668	10.67	12.106	10.83	12.417	10.94
			iPA	1.213	0.84	2.415	3.83	1.250	0.97	3.524	5.47	3.573	5.53
		NB UNII HDR	ePA	17.498	12.43	22.029	13.43	17.498	12.43	39.264	15.94	37.584	15.75
			iPA	0.628	-2.02	1.239	0.93	0.630	-2.01	1.858	2.69	1.854	2.68
		NB UNII HDT	ePA	17.100	12.33	17.620	12.46	17.742	12.49	17.620	12.46	17.458	12.42
			iPA	0.622	-2.06	1.202	0.80	0.612	-2.13	1.782	2.51	1.786	2.52
		NB UNII BDR	ePA	68.865	18.38	63.387	18.02	69.502	18.42	131.522	21.19	140.281	21.47
			iPA	1.510	1.79	2.761	4.41	1.570	1.96	4.178	6.21	4.246	6.28
3	5733 - 5844	NB UNII LE	ePA	70.307	18.47	69.024	18.39	70.146	18.46	139.637	21.45	138.995	21.43
			iPA	1.585	2.00	2.698	4.31	1.563	1.94	4.169	6.20	4.246	6.28
		NB UNII HDR	ePA	22.080	13.44	25.061	13.99	22.182	13.46	45.814	16.61	46.132	16.64
			iPA	0.787	-1.04	1.413	1.50	0.789	-1.03	2.178	3.38	2.163	3.35
		NB UNII HDT	ePA	22.336	13.49	24.266	13.85	22.336	13.49	46.026	16.63	46.026	16.63
			iPA	0.778	-1.09	1.361	1.34	0.793	-1.01	2.099	3.22	2.109	3.24

FCC EUT Overview

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1.0 INTRODUCTION

1.1 Scope

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

1.2 Element Materials Technology Test Location

These measurement tests were conducted at the Element Materials Technology facility located at 18855 Adams Court, Morgan Hill, CA 95037. The measurement facility is compliant with the test site requirements specified in ANSI C63.4-2014 and KDB 414788 D01 v01r01.

1.3 Test Facility / Accreditations

Measurements were performed at Element Materials Technology located in Morgan Hill, CA 95037, U.S.A.

- Element Materials Technology is an ISO 17025-2017 accredited test facility under the American Association for Laboratory Accreditation (A2LA) with Certificate number 2041.02 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 Materials Technology facility is a registered (22831) 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 designed by NIST under the U.S. and Canada Mutual Recognition Agreements (MRAs)

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2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Apple Tablet Device FCC ID: BCGA3361**. The test data contained in this report pertains only to the emissions due to the EUT's Narrowband UNII transmitter.

- This Narrowband UNII module has been tested by manufacturer and the following were confirmed:
 - A) The hopping sequence is pseudorandom
 - B) The receiver input bandwidth equals the transmit bandwidth
 - C) The receiver hops in sequence with the transmit signal
 - D) Narrowband UNII can only hop within the same UNII band and cannot hop between bands

Test Device Serial No.: P2194C1YXR, DX6T2YQ1GP, H9HHG4000GA0000SDW, H9HHG4000GS0000SDW

2.2 Device Capabilities

This device contains the following capabilities:

850/1700/1900 WCDMA/HSPA, Multi-band LTE, 5G NR (FR1), 802.11b/g/n/ax/be WLAN, 802.11a/n/ac/ax/be UNII (5GHz and 6GHz), 802.15.4, Bluetooth (1x, EDR, LE, HDR, HDT), Narrowband (NB) UNII (5GHz and 6GHz), WPT.

This device supports BT Beamforming, channel puncturing and channel bandwidth reduction.

BDR/LE/HDR/HDRPS/ XHDRPM/HDRPM/ HDT		HDRPL	
Band 1	Band 3	Band 1	Band 3
Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (MHz)
5162	5733	5164	5733
:	:	:	:
5203	5788	5203	5788
:	:	:	:
5245	5844	5242	5844

Table 2-1. NB UNII Frequency / Channel Operations

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Group	Mode	Data Rate (Mbps)	Modulation	Bandwidth (MHz)
1	BDR	1	GFSK	1
2	LE1M	1	GFSK	1
3	LE2M	2	GFSK	2
4	HDR4	4	Pi/4-DQPSK	2
5	HDR8	8	Pi/4-DQPSK	4
6	HDRPS2	2	OQPSK	2
	XHDRPS2	2		
7	HDRPM4	4	OQPSK	4
	HDRPM6	6		
	HDRPM8	8		
	XHDRPM4	4		
	XHDRPM6	6		
	XHDRPM8	8		
8	HDRPM12	12	16QAM	4
	HDRPM16	16		
	XHDRPM12	12		
	XHDRPM16	16		
9	HDRPL8	8	OQPSK	8
	HDRPL12	12		
	HDRPL16	16		
	XHDRPL8	8		
	XHDRPL12	12		
	XHDRPL16	16		
10	HDRPL24	24	16QAM	8
	HDRPL32	32		
	XHDRPL24	24		
	XHDRPL32	32		
11	HDT2	2	Pi/4-QPSK	2
	HDT3	3		
12	HDT4	4	8PSK	2
13	HDT6	6	16QAM	2
	HDT8	8		

Table 2-2. NB UNII Configuration

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Notes: This device is capable of operating in hopping and non-hopping mode. The EUT can hop between different channels in the U-NII Band 1 & U-NII Band 3. 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 KDB 789033 D02 v02r01 and ANSI C63.10-2020. 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:

HDR/HD T Mode		Antenna WF5B		Antenna 4a		Antenna 2a		TxBF Primary		TxBF Diversity	
		Duty Cycle [%]	DCCF [dB]	Duty Cycle [%]	DCCF [dB]	Duty Cycle [%]	DCCF [dB]	Duty Cycle [%]	DCCF [dB]	Duty Cycle [%]	DCCF [dB]
BDR	ePA	76.507	1.163	76.296	1.175	76.401	1.169	76.261	1.177	76.261	1.177
	iPA	76.507	1.163	76.296	1.175	76.401	1.169	76.261	1.177	76.261	1.177
LE1M	ePA	84.859	0.713	84.801	0.716	84.840	0.714	84.859	0.713	84.392	0.737
	iPA	84.859	0.713	84.801	0.716	84.840	0.714	84.859	0.713	84.392	0.737
LE2M	ePA	56.872	2.451	56.781	2.458	56.872	2.451	56.689	2.465	57.016	2.440
	iPA	56.872	2.451	56.781	2.458	56.872	2.451	56.689	2.465	57.016	2.440
HDR4	ePA	77.553	1.104	77.804	1.090	77.804	1.090	77.500	1.107	77.804	1.090
	iPA	77.553	1.104	77.804	1.090	77.804	1.090	77.500	1.107	77.804	1.090
HDR8	ePA	77.911	1.084	77.750	1.093	77.804	1.090	77.750	1.093	77.965	1.081
	iPA	77.911	1.084	77.750	1.093	77.804	1.090	77.750	1.093	77.965	1.081
HDRPS2	ePA	92.130	0.356	91.981	0.363	92.278	0.349	92.003	0.362	91.981	0.363
	iPA	92.130	0.356	91.981	0.363	92.278	0.349	92.003	0.362	91.981	0.363
XHDRPS2	ePA	98.311	0.074	98.084	0.084	98.084	0.084	98.878	0.049	98.560	0.063
	iPA	98.311	0.074	98.084	0.084	98.084	0.084	98.878	0.049	98.560	0.063
XHDRPM6	ePA	86.656	0.622	86.417	0.634	86.080	0.651	86.616	0.624	86.636	0.623
	iPA	86.656	0.622	86.417	0.634	86.080	0.651	86.616	0.624	86.636	0.623
XHDRPM8	ePA	92.024	0.361	92.045	0.360	91.854	0.369	91.833	0.370	92.045	0.360
	iPA	92.024	0.361	92.045	0.360	91.854	0.369	91.833	0.370	92.045	0.360
HDRPM16	ePA	89.187	0.497	89.598	0.477	89.392	0.487	89.598	0.477	89.598	0.477
	iPA	89.187	0.497	89.598	0.477	89.392	0.487	89.598	0.477	89.598	0.477
XHDRPM16	ePA	87.781	0.566	87.519	0.579	87.640	0.573	87.640	0.573	87.498	0.580
	iPA	87.781	0.566	87.519	0.579	87.640	0.573	87.640	0.573	87.498	0.580
HDRPL12	ePA	90.323	0.442	90.095	0.453	89.970	0.459	89.970	0.459	90.074	0.454
	iPA	90.323	0.442	90.095	0.453	89.970	0.459	89.970	0.459	90.074	0.454
XHDRPL16	ePA	94.951	0.225	95.367	0.206	94.995	0.223	95.017	0.222	94.951	0.225
	iPA	94.951	0.225	95.367	0.206	94.995	0.223	95.017	0.222	94.951	0.225
HDRPL32	ePA	88.267	0.542	88.410	0.535	88.288	0.541	88.410	0.535	88.288	0.541
	iPA	88.267	0.542	88.410	0.535	88.288	0.541	88.410	0.535	88.288	0.541
XHDRPL32	ePA	85.585	0.676	85.408	0.685	85.724	0.669	85.803	0.665	85.605	0.675
	iPA	85.585	0.676	85.408	0.685	85.724	0.669	85.803	0.665	85.605	0.675
HDT2	ePA	96.183	0.169	96.161	0.170	96.161	0.170	95.962	0.179	96.006	0.177
	iPA	96.183	0.169	96.161	0.170	96.161	0.170	95.962	0.179	96.006	0.177
HDT8	ePA	88.777	0.517	89.002	0.506	88.941	0.509	88.777	0.517	88.797	0.516
	iPA	88.777	0.517	89.002	0.506	88.941	0.509	88.777	0.517	88.797	0.516
HDT4	ePA	92.790	0.325	93.476	0.293	93.368	0.298	93.282	0.302	93.476	0.293
	iPA	92.790	0.325	93.476	0.293	93.368	0.298	93.282	0.302	93.476	0.293
HDT6	ePA	90.427	0.437	90.240	0.446	90.407	0.438	90.240	0.446	90.240	0.446
	iPA	90.427	0.437	90.240	0.446	90.407	0.438	90.240	0.446	90.240	0.446

Table 2-3. Measured Duty Cycles

FCC ID: BCGA3361	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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This device supports simultaneous transmission operations, which allows multiple transmitters to transmit simultaneously on the same antenna. The table below shows all configurations possible.

Antenna	Simultaneous Tx Config	Bluetooth 2.4GHz	Thread	WLAN	NB UNII	WIFI 5GHz	WIFI 6GHz	LTE / FR1 NR		
		BDR, EDR, LE HDR, HDT	802.15.4	802.11 b/g/n/ax/be	BDR, EDR, LE HDR, HDT	802.11 a/n/ac/ax/be	802.11 a/ax/be	LB	MB/HB	UHB
Ant 4a	Config 1	✓	✗	✗	✗	✓	✗	✗	✗	✗
Ant 4a	Config 2	✓	✗	✗	✗	✗	✓	✗	✗	✗
Ant 4a	Config 3	✗	✓	✗	✗	✓	✗	✗	✗	✗
Ant 4a	Config 4	✗	✓	✗	✗	✗	✓	✗	✗	✗
Ant 4a	Config 5	✗	✗	✓	✓	✗	✗	✗	✗	✗
Ant 4a	Config 6	✗	✗	✓	✗	✓	✗	✗	✗	✗
Ant 4a	Config 7	✗	✗	✓	✗	✗	✓	✗	✗	✗
Ant 2a	Config 8	✓	✗	✗	✗	✓	✗	✗	✗	✗
Ant 2a	Config 9	✓	✗	✗	✗	✗	✓	✗	✗	✗
Ant 2a	Config 10	✗	✓	✗	✗	✓	✗	✗	✗	✗
Ant 2a	Config 11	✗	✓	✗	✗	✗	✓	✗	✗	✗
Ant 2a	Config 12	✗	✗	✓	✓	✗	✗	✗	✗	✗
Ant 2a	Config 13	✗	✗	✓	✗	✓	✗	✗	✗	✗
Ant 2a	Config 14	✗	✗	✓	✗	✗	✓	✗	✗	✗

Table 2-4. Simultaneous Transmission Configurations

✓ = Support; ✗ = Not Support

TxBF Primary = Antenna WF5B + Antenna 4a

TxBF Diversity = Antenna 4a + Antenna 2a

Note:

All the above simultaneous transmission configurations have been tested and the worst-case configuration was found to be Config 1 and reported in RF Bluetooth and RF UNII 5GHz OFDM test reports.

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2.3 Antenna Description

The following antenna gains provided by the manufacturer were used for testing.

Frequency [MHz]	Antenna Gain (dBi)		
	Antenna WF5B	Antenna 4a	Antenna 2a
5162 - 5245	3.2	-2.0	-2.0
5733 – 5844	1.4	0.2	0.8

Table 2-5. Highest Antenna Gain

2.4 Test Support Equipment

1	Apple MacBook Pro	Model:	A2141	S/N:	C02H604EQ05D
	w/AC/DC Adapter	Model:	A2166	S/N:	C4H042705ZNPM0WA6
2	Apple USB-C Cable	Model:	Spartan	S/N:	GXK1336018XKTR024
3	USB-C Cable	Model:	A2795	S/N:	DWH80115BK826GV19
	w/ AC Adapter	Model:	A2305	S/N:	C4H95160004PF4F4V
4	Apple Pencil	Model:	A2538	S/N:	KJ26TCFXJW
5	DC Power Supply	Model:	KPS3010D	S/N:	N/A

Table 2-6. Test Support Equipment List

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2.5 Test Configuration

The EUT was tested per the guidance of ANSI C63.10-2020 and KDB 789033 D02 v02r01. ANSI C63.10-2020 was used to reference the appropriate EUT setup for radiated spurious emissions testing and AC line conducted testing. See Sections 3.2 for AC line conducted emissions test setups, 3.3 for radiated emissions test setups, and 7.2, 7.3, 7.4, and 7.5 for antenna port conducted emissions test setups.

There are two vendors of the WiFi/Bluetooth radio modules, variant 1 and variant 2. Both radio modules have the same mechanical outline, same on-board antenna matching circuit, identical antenna structure, and are built and tested to conform to the same specifications and to operate within the same tolerances. The worst case configuration was found between the two variants. The EUT was also investigated with and without charger.

For emissions from 1GHz – 18GHz, low, mid, and high channels were tested with highest power and worst case configuration. The emissions below 1GHz and above 18GHz were tested with the highest transmitting power and the worst case channel were reported.

The EUT was manipulated through three orthogonal planes of X-orientation (flatbed), Y-orientation (landscape), and Z-orientation (portrait) during the testing. Only the worst case emissions were reported in this test report.

For AC line conducted and radiated test below 1GHz, following configurations were investigated and EUT powered by AC/DC adaptor was the worst case.

- EUT powered by AC/DC adaptor to USB-C cable with wire charger
- EUT powered by host PC via USB-C cable with wire charger

For conducted emissions, the following are the worst case NB UNII modes that were used for testing:

1. BDR
2. LE1M
3. LE2M
4. HDR4
5. HDR8
6. HDRPS2
7. XHDRPM6
8. HDRPM16
9. HDT2
10. HDT4
11. HDT6

For radiated band edge, the following are the worst case NB UNII modes that were used for testing:

1. BDR
2. LE1M
3. LE2M
4. HDR4
5. HDR8
6. XHDRPS2
7. XHDRPM8
8. XHDRPM16
9. XHDRPL16
10. XHDRPL32
11. HDT8

For radiated spurious emissions, the following are the worst case NB UNII modes that were used for testing:

1. BDR
2. LE1M
3. HDR4

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2.6 Software and Firmware

The test was conducted with firmware version 23A256 installed on the EUT.

2.7 EMI Suppression Device(s)/Modifications

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

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3.0 DESCRIPTION OF TESTS

3.1 Evaluation Procedure

The measurement procedures described in the American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices (ANSI C63.10-2020) and the guidance provided in KDB 789033 D02 v02r01 were used in the measurement of the EUT.

Deviation from measurement procedure.....None

3.2 AC Line Conducted Emissions

The line-conducted facility is located inside a 7m x 3.66m x 2.7m shielded enclosure. The shielded enclosure is manufactured by AP Americas. The shielding effectiveness of the shielded room is in accordance with MIL-Std-285 or NSA 65-6. 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 EPCOS 2X60A Power Line Filter (100dB Attenuation, 14kHz-18GHz) and the two EPCOs 2X48A filters (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 ground plane. Power cables for support equipment were routed down to the second LISN while ensuring that that cables were not draped over the second LISN.

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

Line conducted emissions test results are shown in Section 7.8. Automated test software was used to perform the AC line conducted emissions testing. Automated measurement software utilized is Rohde & Schwarz EMC32, Version 10.50.40.

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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.

Per KDB 414788 D01 v01r01, radiated emission test sites other than open-field test sites (e.g., shielded anechoic chambers), may be employed for emission measurements below 30MHz if characterized so that the measurements correspond to those obtained at an open-field test site. To determine test site equivalency, a reference sample transmitting at 149kHz was measured on an open field test site (asphalt with no ground plane) and then measured in the 3m semi-anechoic chamber. A calibrated 60cm loop antenna was used while the reference device was rotated through the X, Y and Z axis in order to capture the worst case level. A maximum deviation of 2.77dB at 149kHz was measured when comparing the 3 meter semi-anechoic chamber to the open field site.

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.

3.4 Environmental Conditions

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

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4.0 ANTENNA REQUIREMENTS

Excerpt from §15.203 of the FCC Rules/Regulations:

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

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

Conclusion:

The EUT complies with the requirement of §15.203.

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5.0 MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.23-2012. All measurement uncertainty values are shown with a coverage factor of $k = 2$ to indicate a 95% level of confidence. The measurement uncertainty shown below meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Contribution	Expanded Uncertainty ($\pm$ dB)
Conducted Bench Top Measurements	2.07
AC Line Conducted Disturbance	1.91
Radiated Disturbance (<30MHz)	4.12
Radiated Disturbance (30MHz - 1GHz)	4.85
Radiated Disturbance (1 - 18GHz)	5.08
Radiated Disturbance (>18GHz)	5.22

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6.0 TEST EQUIPMENT CALIBRATION DATA

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

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Anritsu	ML2496A	Power Meter	2/10/2025	Annual	2/10/2026	1306009
Anritsu	MA2411B	Pulse Power Sensor	2/10/2025	Annual	2/10/2026	1315051
Anritsu	MA2411B	Pulse Power Sensor	2/10/2025	Annual	2/10/2026	1339027
ATM	180-442-KF	20dB Nominal Gain Horn Antenna	3/24/2025	Annual	3/24/2026	T058601-02
ETS-Lindgren	3117	Double Ridged Guide Antenna (1-18 GHz)	9/25/2024	Annual	9/25/2025	00240109
Fairview Microwave/MCL	FMCA1975-36/BW-K10-2W44+	30MHz-40GHz RF Cable/Attenuator *	6/10/2025	Annual	6/10/2026	-
Keysight Technology	N9040B	UXA Signal Analyzer	9/5/2024	Annual	9/5/2025	MY61320121
Keysight Technology	N9030A	PXA Signal Analyzer	10/16/2024	Annual	10/16/2025	MY49430494
Rohde & Schwarz	TS-PR18	Pre-Amplifier (1GHz - 18GHz)	8/14/2024	Annual	8/14/2025	101648
Rohde & Schwarz	FSW43	Spectrum Analyzer 2Hz to 43GHz	11/21/2024	Annual	11/21/2025	104093
Rohde & Schwarz	ESW44	EMI Test Receiver	10/17/2024	Annual	10/17/2025	101668
Rohde & Schwarz	TS-PR8	Pre-Amplifier (30MHz - 8GHz)	9/20/2024	Annual	9/20/2025	102327
Rohde & Schwarz	TS-PR1840	Pre-Amplifier (18GHz - 40GHz)	6/3/2025	Annual	6/3/2026	100052
Rohde & Schwarz	HFH2-Z2	Loop Antenna	5/12/2025	Annual	5/12/2026	100546
Rohde & Schwarz	ENV216	Two-Line V-Network	4/24/2025	Annual	4/24/2026	101364
Schwarzbeck	VULB 9162	Bilog Antenna (30MHz - 6GHz)	9/18/2024	Annual	9/18/2025	00358

Table 6-1. Test Equipment List

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.
- * Denotes passive equipment that have been internally verified/calibrated.

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7.0 TEST RESULTS

7.1 Summary

Company Name: Apple Inc.

FCC ID: BCGA3361

FCC Classification: Unlicensed National Information Infrastructure (UNII)

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
15.407	26dB Bandwidth	N/A	CONDUCTED	N/A	Section 7.2
15.407(e)	6dB Bandwidth	>500kHz(5725-5850MHz)		PASS	Section 7.3
2.1049	Occupied Bandwidth	N/A		N/A	Section 7.2, 7.3
15.407 (a.1.iv), (a.3.i)	Maximum Conducted Output Power	Maximum conducted powers must meet the limits detailed in 15.407 (a)		PASS	Section 7.4
15.407 (a.1.iv), (a.3.i)	Maximum Power Spectral Density	Maximum power spectral density must meet the limits detailed in 15.407 (a)		PASS	Section 7.5
15.407(b.1), (b.4)	Undesirable Emissions	Undesirable emissions must meet the limits detailed in 15.407(b)	RADIATED	PASS	Section 7.6
15.205, 15.407(b.1), (b.4)	General Field Strength Limits (Restricted Bands and Radiated Emission Limits)	Emissions in restricted bands must meet the radiated limits detailed in 15.209		PASS	Section 7.6, 7.7
15.207	AC Conducted Emissions 150kHz – 30MHz	< FCC 15.207 limits	AC LINE CONDUCTED	PASS	Section 7.8

Table 7-1. Summary of Test Results

Notes:

- All channels, modes, and modulations/data rates were investigated. The test results shown in the following sections represent the worst case emissions.
- 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.
- 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.
- 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 "Conducted Automation Software," Version 1.4.0.
- For radiated testing, 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 3.4.2.

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7.2 26dB & 99% Bandwidth Measurement

\$2.1049; \$15.407

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 C63.10-2020 and KDB 789033 D02 v02r01, and at the appropriate frequencies. The spectrum analyzer's bandwidth measurement function is configured to measure the 26dB bandwidth.

Test Procedure Used

ANSI C63.10-2020 – Subclause 12.5.2.
KDB 789033 D02 v02r01 – Section C

Test Settings

1. The signal analyzers' automatic bandwidth measurement capability was used to perform the 26dB bandwidth measurement. The "X" dB bandwidth parameter was set to $X = 26$. The automatic bandwidth measurement function also has the capability of simultaneously measuring the 99% occupied bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = in the range of 1% to 5% 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

1. All antenna configs and power schemes were investigated and only the worst case is reported.
2. Low, mid and high channels were tested and tabular data has been reported. Only mid channel plots have been reported.

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7.2.1 Antenna WF5B 26dB & 99% Bandwidth Measurements (U-NII-1)

Frequency [MHz]	Data Rate [Mbps]	Mode	Power Scheme	Measured 99% Occupied Bandwidth [MHz]	Measured 26dB Bandwidth [MHz]
5162	1.0	NB UNII BDR	ePA	0.930	1.248
5203	1.0	NB UNII BDR	ePA	0.930	1.248
5245	1.0	NB UNII BDR	ePA	0.930	1.248
5162	1.0	NB UNII LE1M	ePA	1.014	1.259
5203	1.0	NB UNII LE1M	ePA	1.014	1.261
5245	1.0	NB UNII LE1M	ePA	1.015	1.260
5162	2.0	NB UNII LE2M	ePA	2.029	2.509
5203	2.0	NB UNII LE2M	ePA	2.028	2.508
5245	2.0	NB UNII LE2M	ePA	2.029	2.510
5162	4.0	NB UNII HDR4	ePA	2.325	2.711
5203	4.0	NB UNII HDR4	ePA	2.325	2.709
5245	4.0	NB UNII HDR4	ePA	2.324	2.710
5162	8.0	NB UNII HDR8	ePA	4.619	5.299
5203	8.0	NB UNII HDR8	ePA	4.615	5.312
5245	8.0	NB UNII HDR8	ePA	4.618	5.306
5162	2.0	NB UNII HDRPS2	ePA	2.382	2.690
5203	2.0	NB UNII HDRPS2	ePA	2.376	2.683
5245	2.0	NB UNII HDRPS2	ePA	2.377	2.690
5162	6.0	NB UNII XHDRPM6	ePA	4.685	5.347
5203	6.0	NB UNII XHDRPM6	ePA	4.709	5.363
5245	6.0	NB UNII XHDRPM6	ePA	4.715	5.351
5162	16.0	NB UNII HDRPM16	ePA	4.671	5.336
5203	16.0	NB UNII HDRPM16	ePA	4.684	5.362
5245	16.0	NB UNII HDRPM16	ePA	4.674	5.346
5164	12.0	NB UNII HDRPL12	ePA	9.372	10.652
5203	12.0	NB UNII HDRPL12	ePA	9.336	10.646
5242	12.0	NB UNII HDRPL12	ePA	9.333	10.655
5164	32.0	NB UNII HDRPL32	ePA	9.277	10.526
5203	32.0	NB UNII HDRPL32	ePA	9.280	10.537
5242	32.0	NB UNII HDRPL32	ePA	9.278	10.537
5162	2.0	NB UNII HDT2	ePA	2.347	2.762
5203	2.0	NB UNII HDT2	ePA	2.346	2.762
5245	2.0	NB UNII HDT2	ePA	2.346	2.763
5162	4.0	NB UNII HDT4	ePA	2.356	2.779
5203	4.0	NB UNII HDT4	ePA	2.356	2.780
5245	4.0	NB UNII HDT4	ePA	2.356	2.780
5162	6.0	NB UNII HDT6	ePA	2.390	2.779
5203	6.0	NB UNII HDT6	ePA	2.390	2.780
5245	6.0	NB UNII HDT6	ePA	2.389	2.779

Table 7-2. Conducted BW Measurements Antenna WF5B

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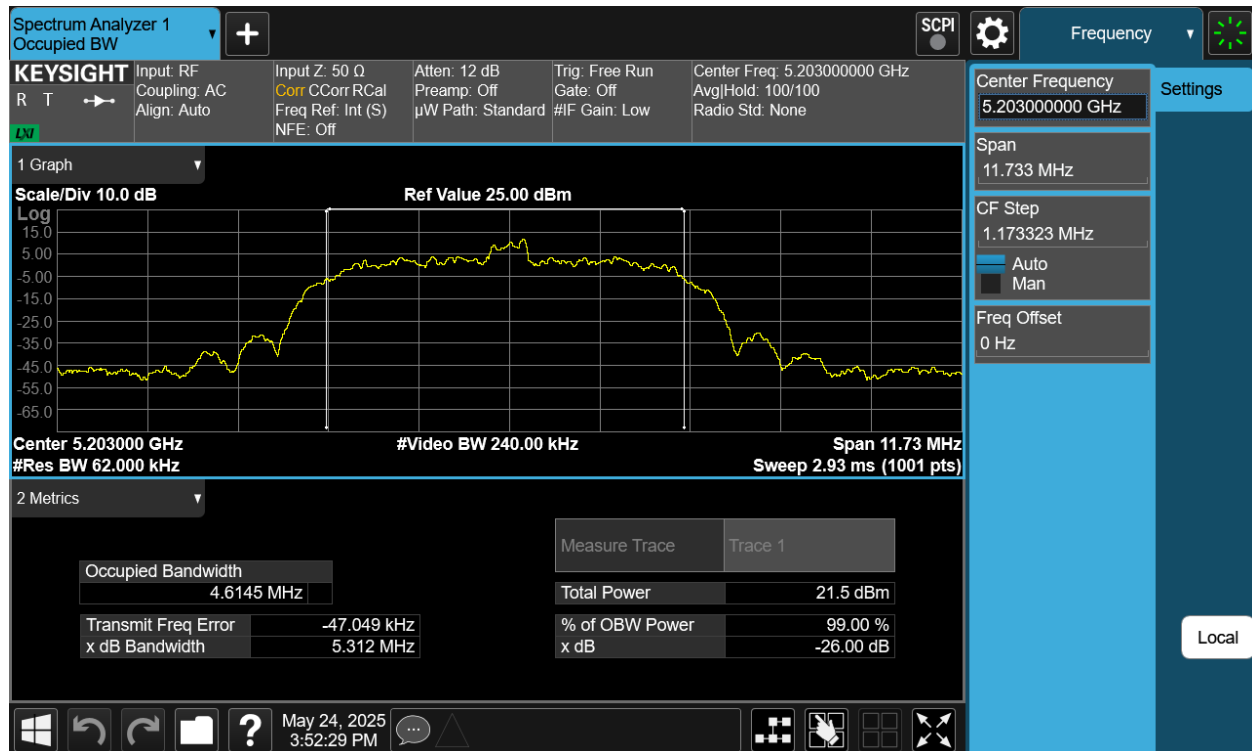
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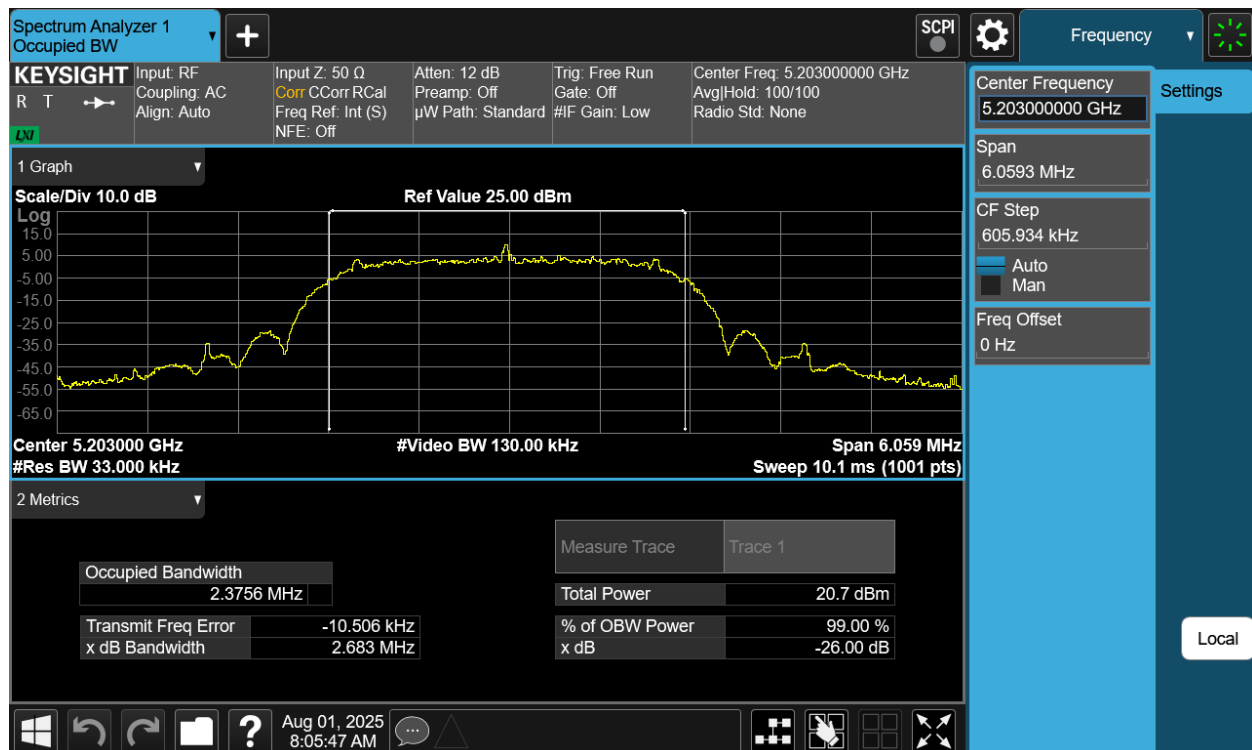
FCC ID: BCGA3361		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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Plot 7-5. 26dB BW & 99% OBW Antenna WF5B (NB UNII HDR8, ePA- 5203MHz)

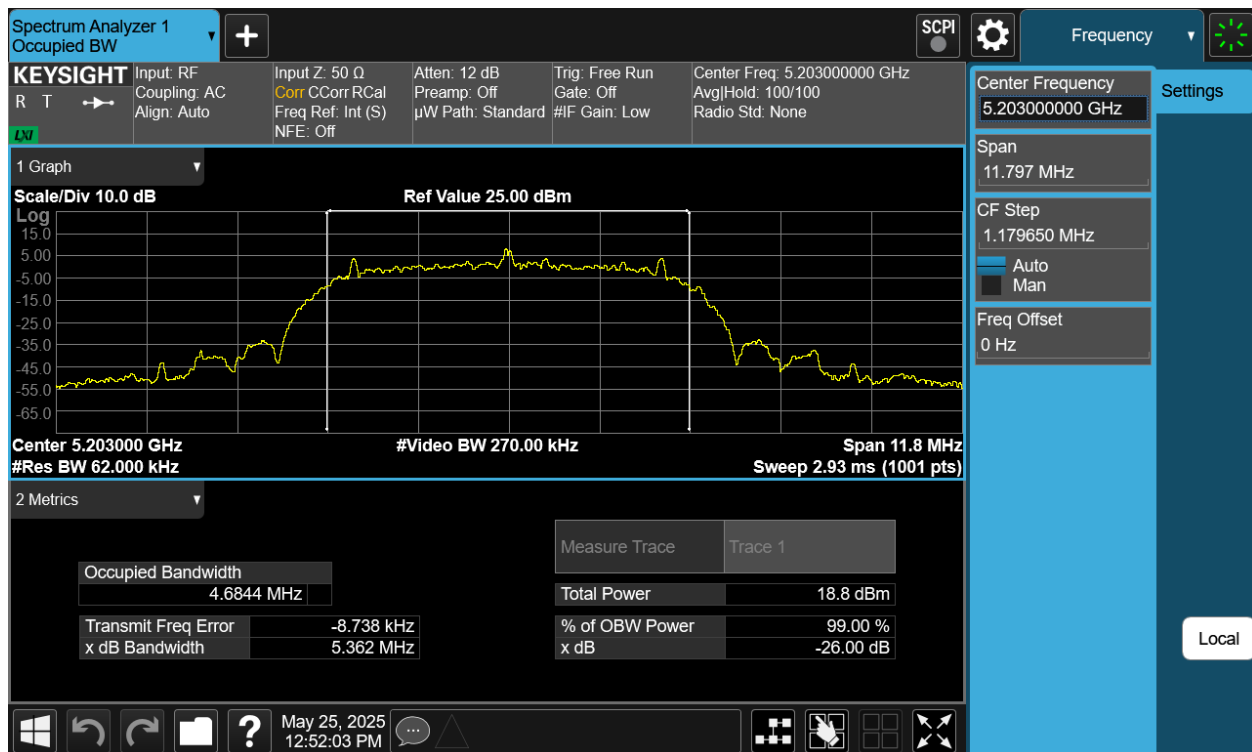


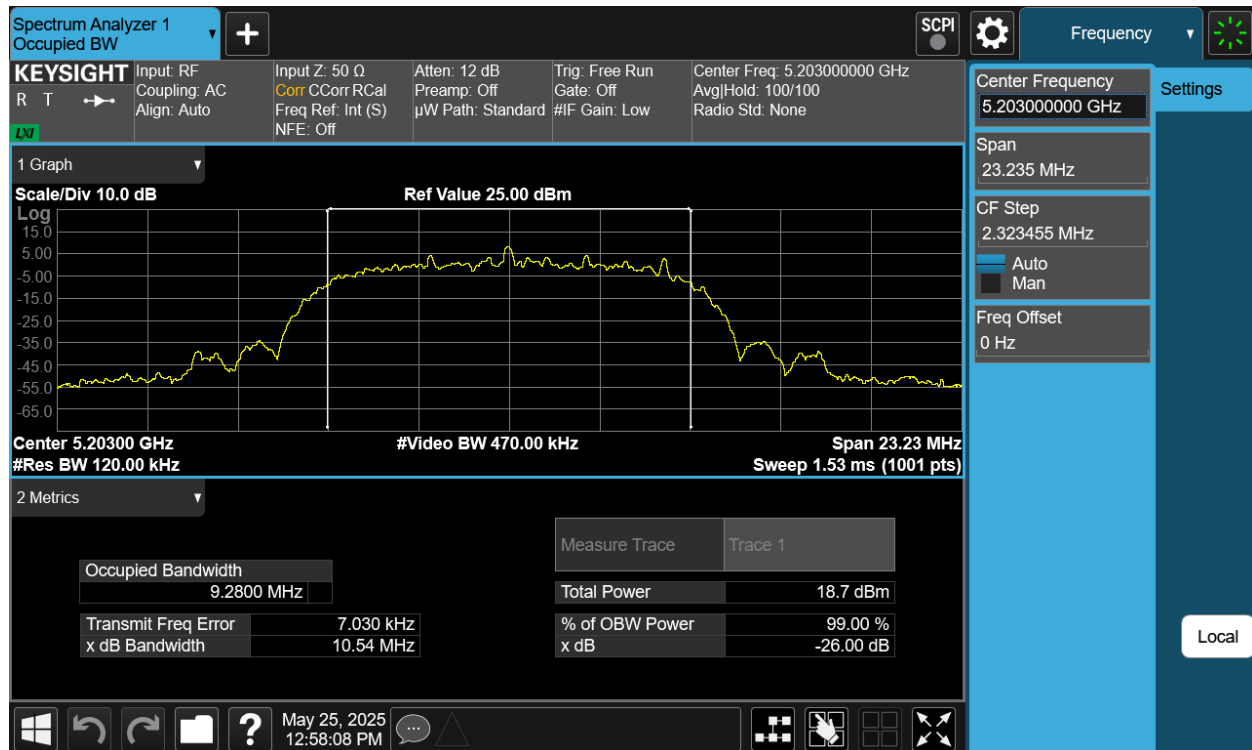
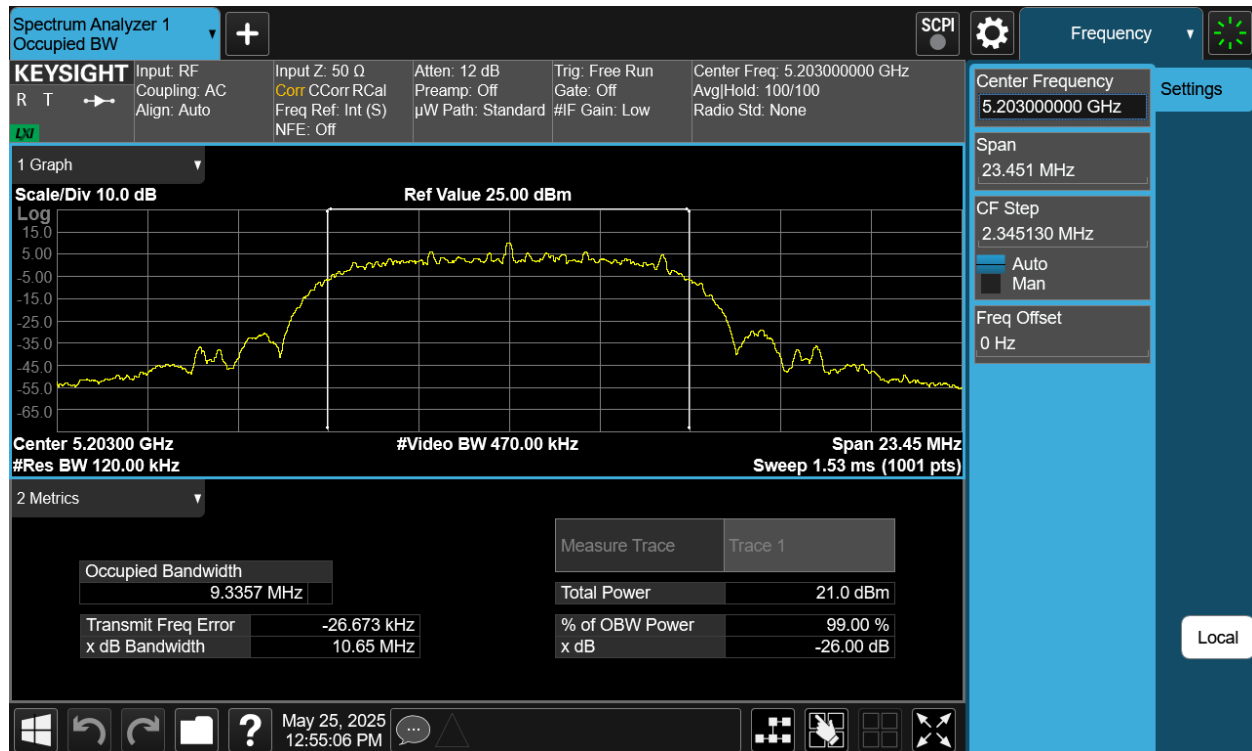
Plot 7-6. 26dB BW & 99% OBW Antenna WF5B (NB UNII HDRPS2, ePA- 5203MHz)

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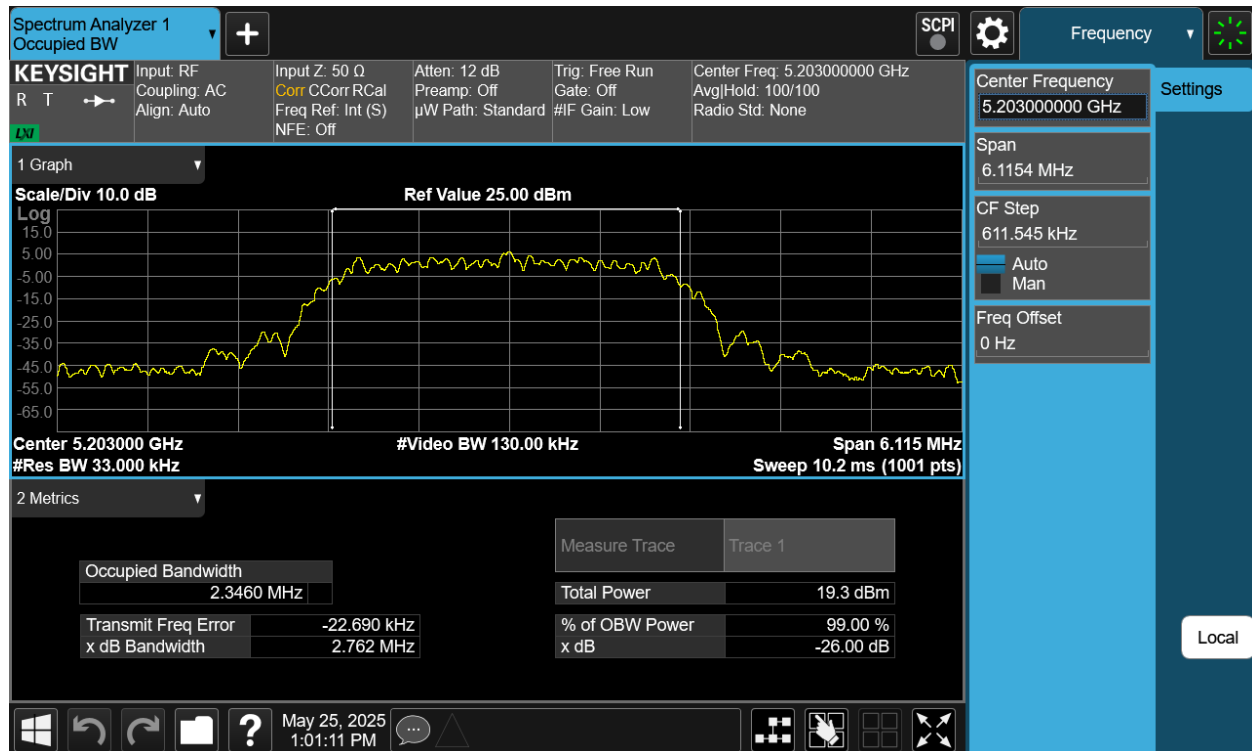




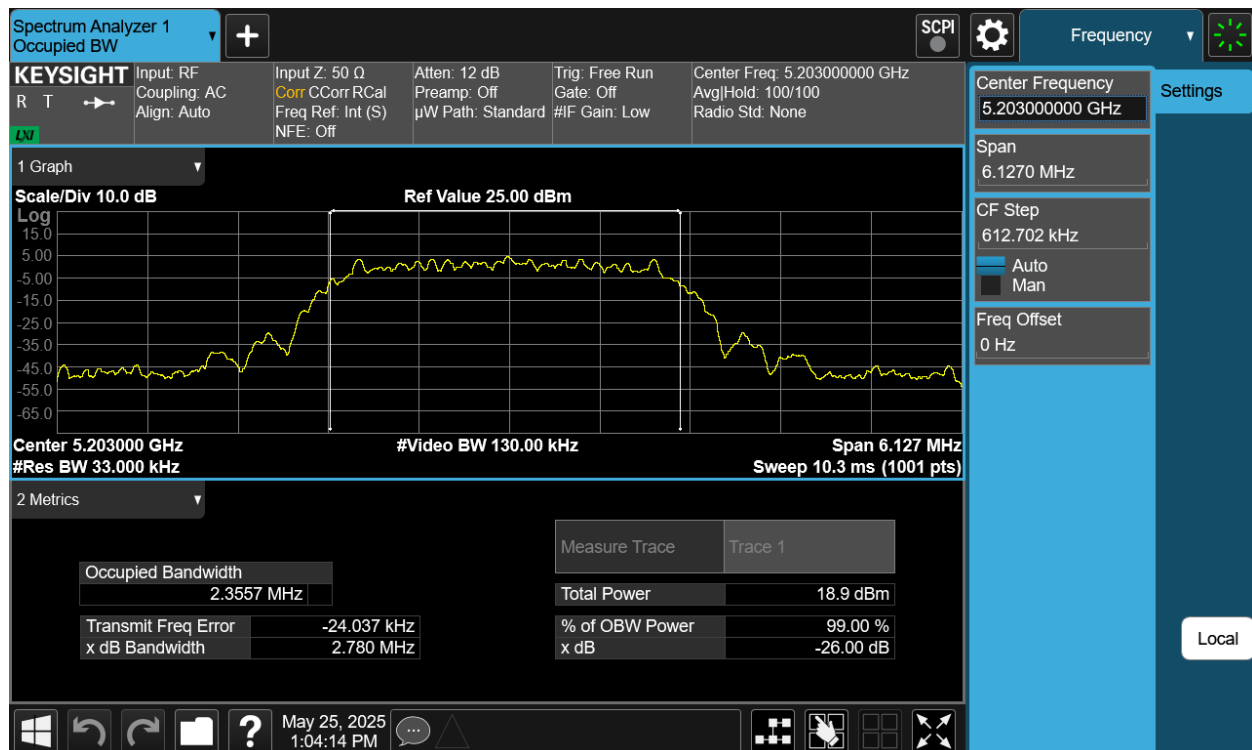
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Plot 7-11. 26dB BW & 99% OBW Antenna WF5B (NB UNII HDT2, ePA- 5203MHz)

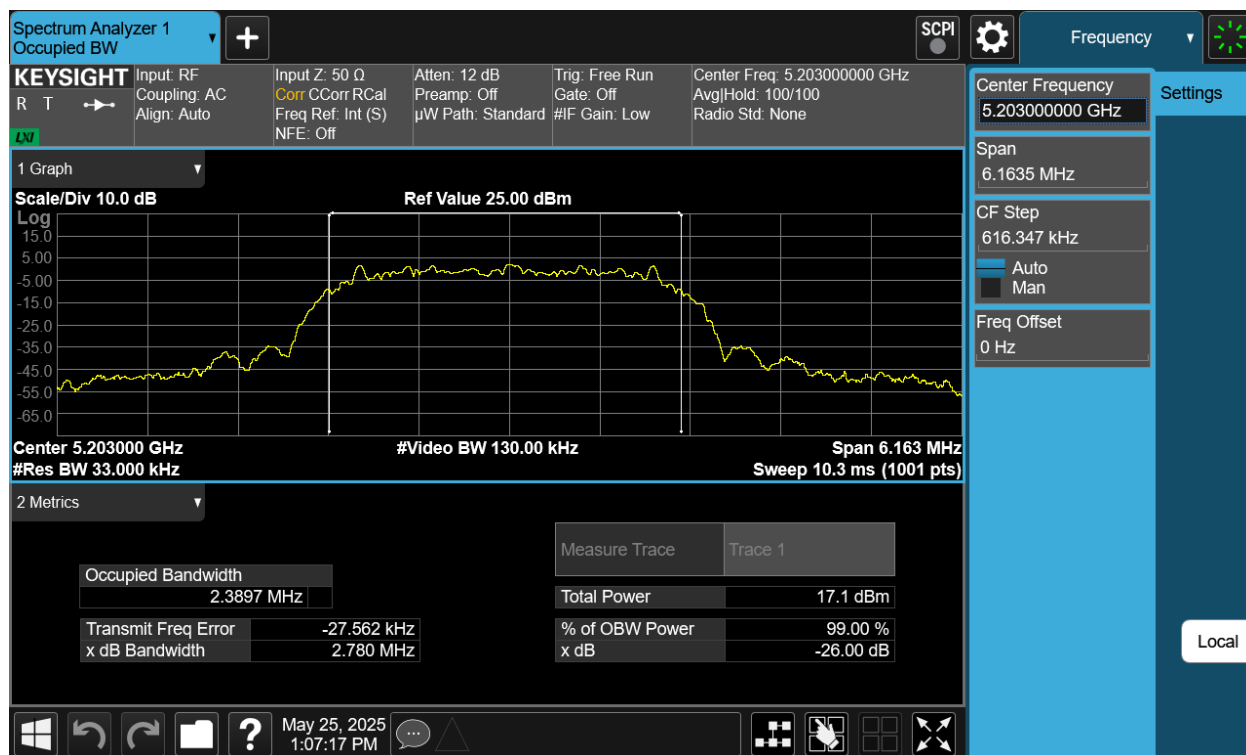


Plot 7-12. 26dB BW & 99% OBW Antenna WF5B (NB UNII HDT4, ePA- 5203MHz)

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Plot 7-13. 26dB BW & 99% OBW Antenna WF5B (NB UNII HDT6, ePA- 5203MHz)

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7.2.2 Antenna 4a 26dB & 99% Bandwidth Measurements (U-NII-1)

Frequency [MHz]	Data Rate [Mbps]	Mode	Power Scheme	Measured 99% Occupied Bandwidth [MHz]	Measured 26dB Bandwidth [MHz]
5162	1.0	NB UNII BDR	ePA	0.930	1.248
5203	1.0	NB UNII BDR	ePA	0.930	1.248
5245	1.0	NB UNII BDR	ePA	0.930	1.248
5162	1.0	NB UNII LE1M	ePA	1.015	1.261
5203	1.0	NB UNII LE1M	ePA	1.015	1.262
5245	1.0	NB UNII LE1M	ePA	1.016	1.262
5162	2.0	NB UNII LE2M	ePA	2.030	2.510
5203	2.0	NB UNII LE2M	ePA	2.031	2.512
5245	2.0	NB UNII LE2M	ePA	2.030	2.510
5162	4.0	NB UNII HDR4	ePA	2.325	2.712
5203	4.0	NB UNII HDR4	ePA	2.325	2.710
5245	4.0	NB UNII HDR4	ePA	2.328	2.717
5162	8.0	NB UNII HDR8	ePA	4.614	5.297
5203	8.0	NB UNII HDR8	ePA	4.614	5.306
5245	8.0	NB UNII HDR8	ePA	4.629	5.310
5162	2.0	NB UNII HDRPS2	ePA	2.376	2.706
5203	2.0	NB UNII HDRPS2	ePA	2.373	2.682
5245	2.0	NB UNII HDRPS2	ePA	2.381	2.679
5162	6.0	NB UNII XHDRPM6	ePA	4.722	5.362
5203	6.0	NB UNII XHDRPM6	ePA	4.700	5.352
5245	6.0	NB UNII XHDRPM6	ePA	4.730	5.372
5162	16.0	NB UNII HDRPM16	ePA	4.668	5.351
5203	16.0	NB UNII HDRPM16	ePA	4.676	5.292
5245	16.0	NB UNII HDRPM16	ePA	4.670	5.297
5164	12.0	NB UNII HDRPL12	ePA	9.349	10.639
5203	12.0	NB UNII HDRPL12	ePA	9.366	10.653
5242	12.0	NB UNII HDRPL12	ePA	9.358	10.649
5164	32.0	NB UNII HDRPL32	ePA	9.272	10.533
5203	32.0	NB UNII HDRPL32	ePA	9.280	10.532
5242	32.0	NB UNII HDRPL32	ePA	9.274	10.547
5162	2.0	NB UNII HDT2	ePA	2.349	2.745
5203	2.0	NB UNII HDT2	ePA	2.349	2.745
5245	2.0	NB UNII HDT2	ePA	2.349	2.745
5162	4.0	NB UNII HDT4	ePA	2.359	2.811
5203	4.0	NB UNII HDT4	ePA	2.360	2.811
5245	4.0	NB UNII HDT4	ePA	2.359	2.812
5162	6.0	NB UNII HDT6	ePA	2.388	2.777
5203	6.0	NB UNII HDT6	ePA	2.388	2.777
5245	6.0	NB UNII HDT6	ePA	2.388	2.778

Table 7-3. Conducted BW Measurements Antenna 4a

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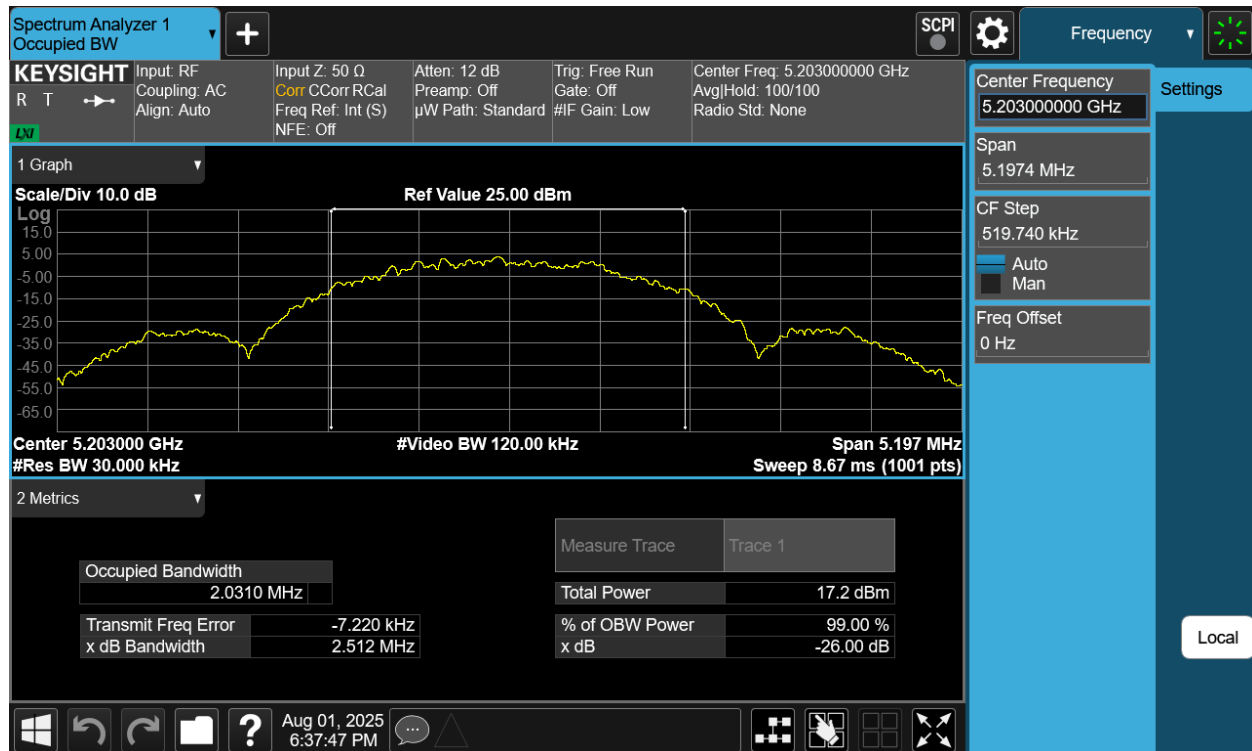
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Plot 7-16. 26dB BW & 99% OBW Antenna 4a (NB UNII LE2M, ePA- 5203MHz)

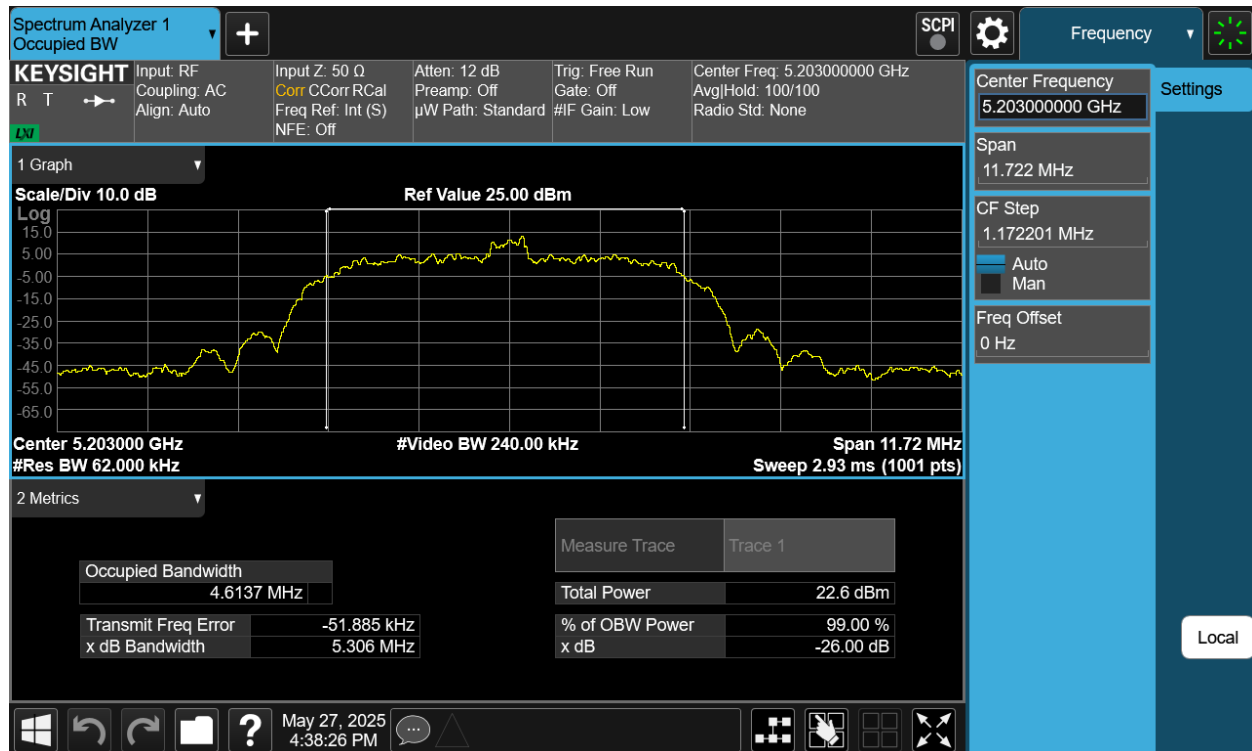


Plot 7-17. 26dB BW & 99% OBW Antenna 4a (NB UNII HDR4, ePA- 5203MHz)

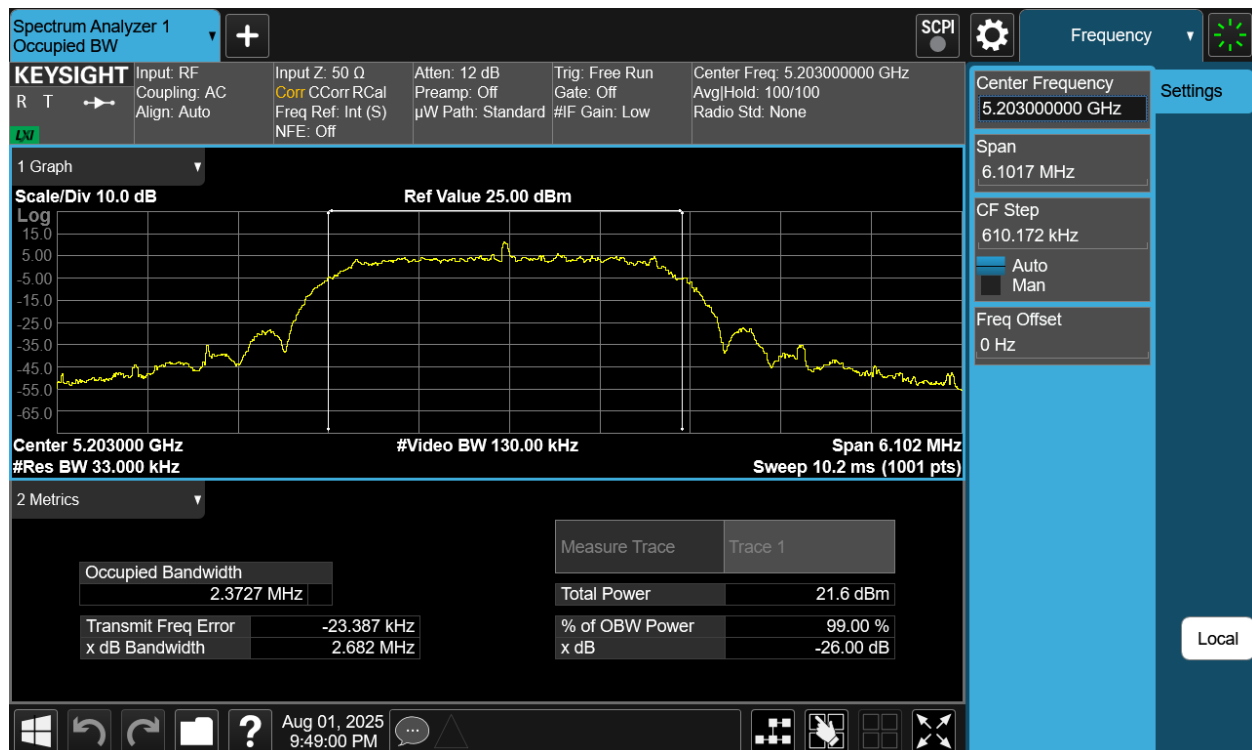
FCC ID: BCGA3361		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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Plot 7-18. 26dB BW & 99% OBW Antenna 4a (NB UNII HDR8, ePA- 5203MHz)

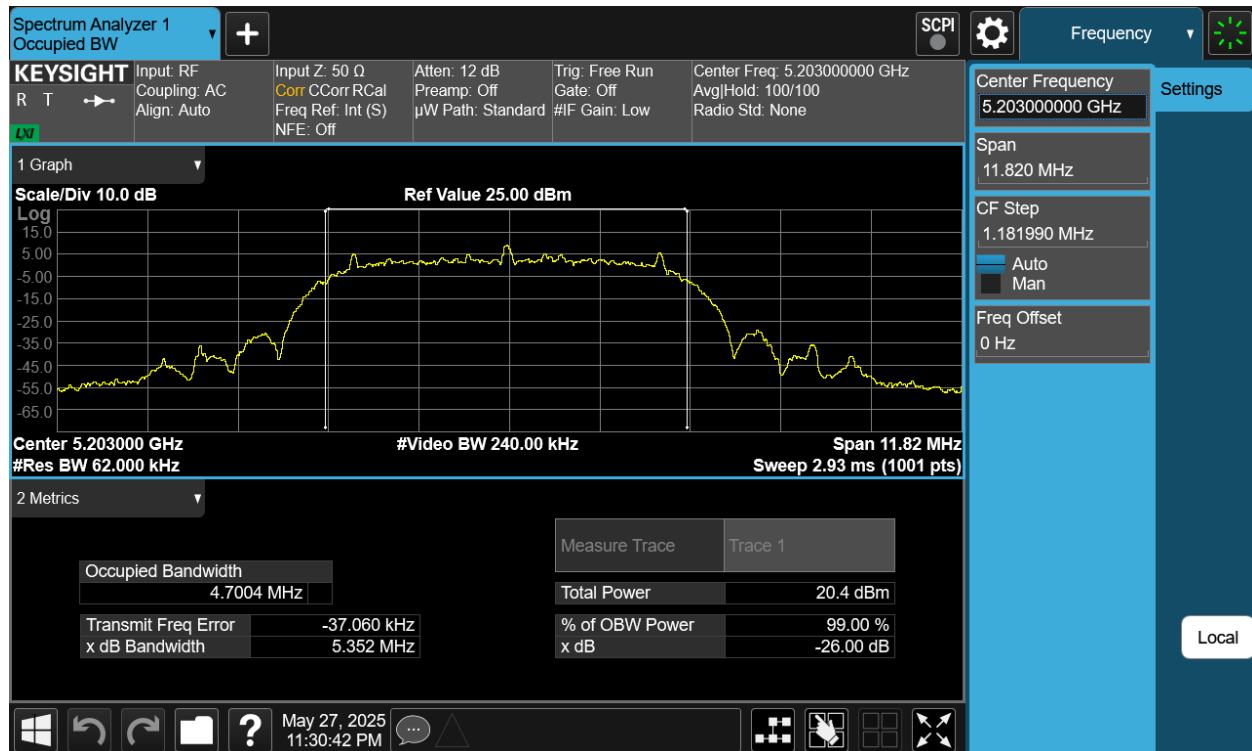


Plot 7-19. 26dB BW & 99% OBW Antenna 4a (NB UNII HDRPS2, ePA- 5203MHz)

FCC ID: BCGA3361		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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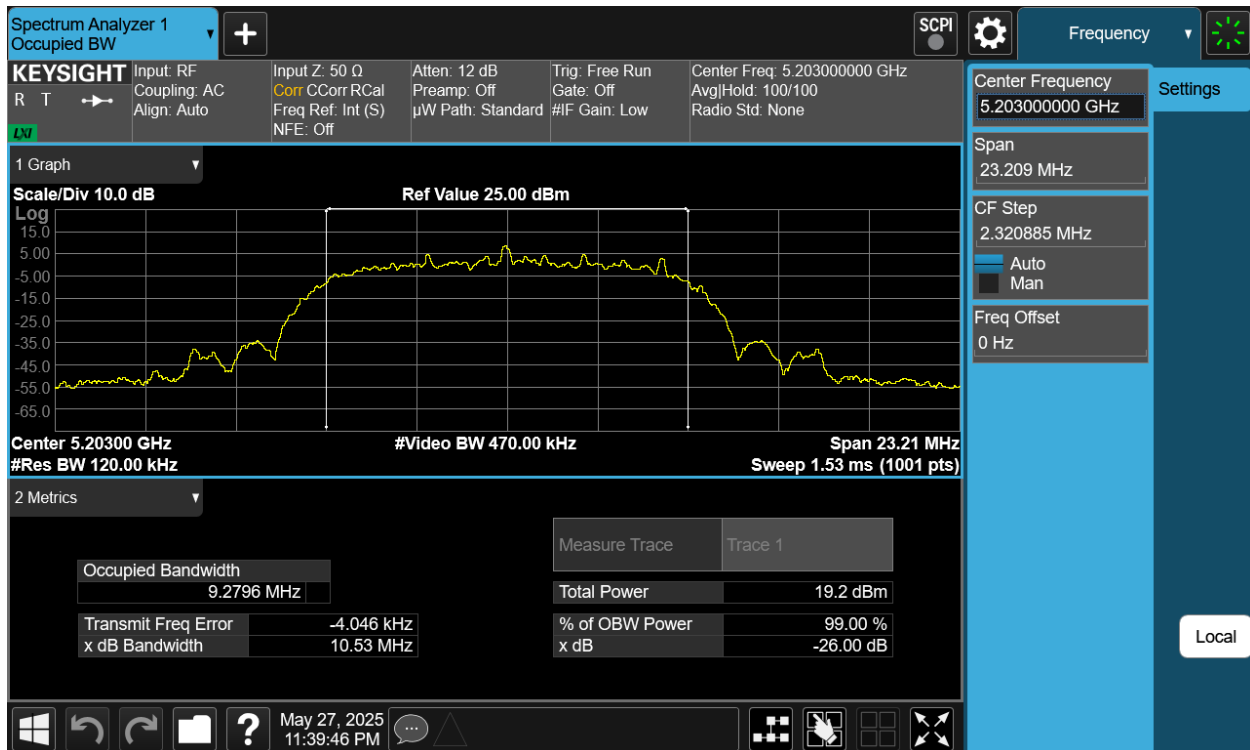
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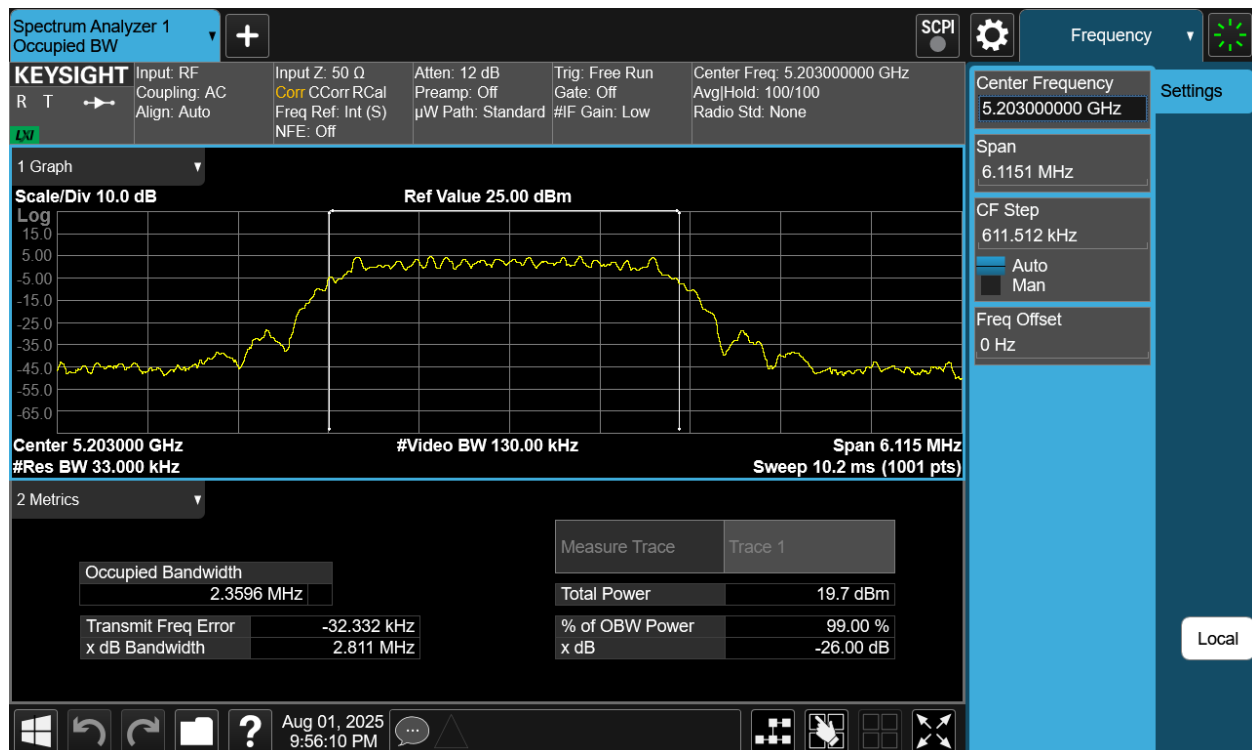
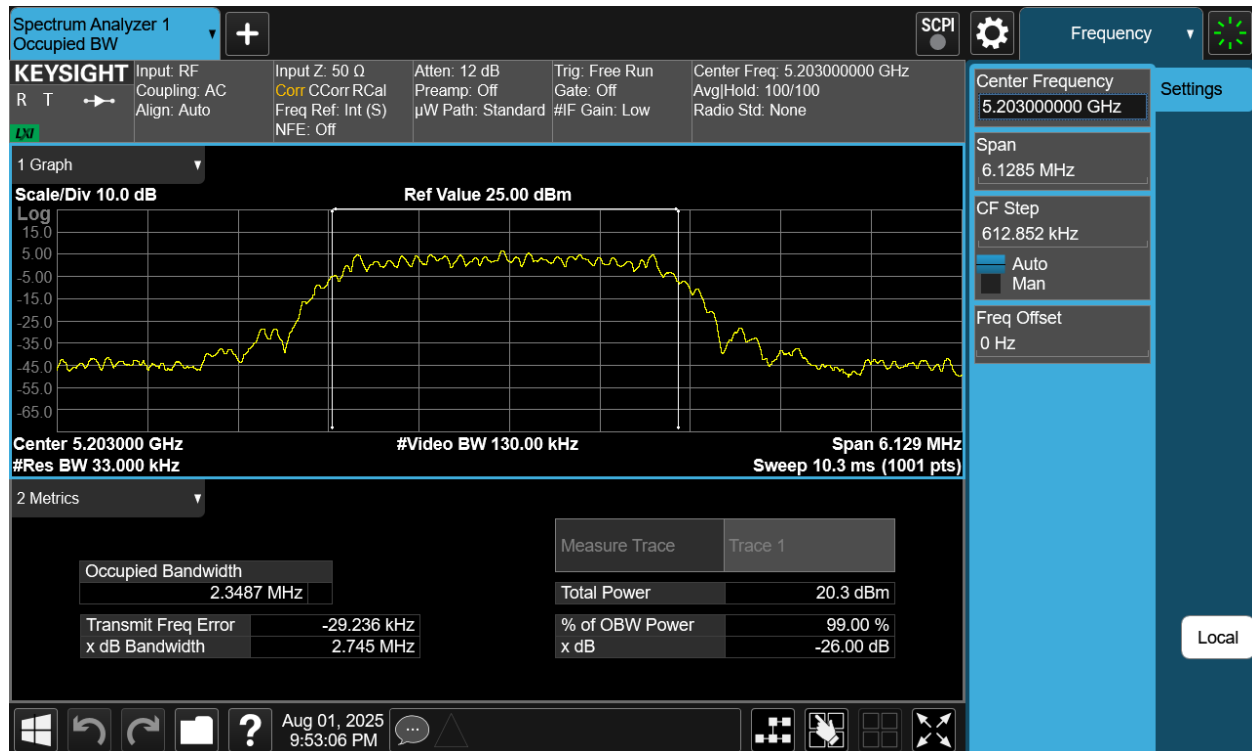


FCC ID: BCGA3361		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2504170041-19-R1.BCG	Test Dates: 05/12/2025 - 09/05/2025	EUT Type: Tablet Device	Page 31 of 432

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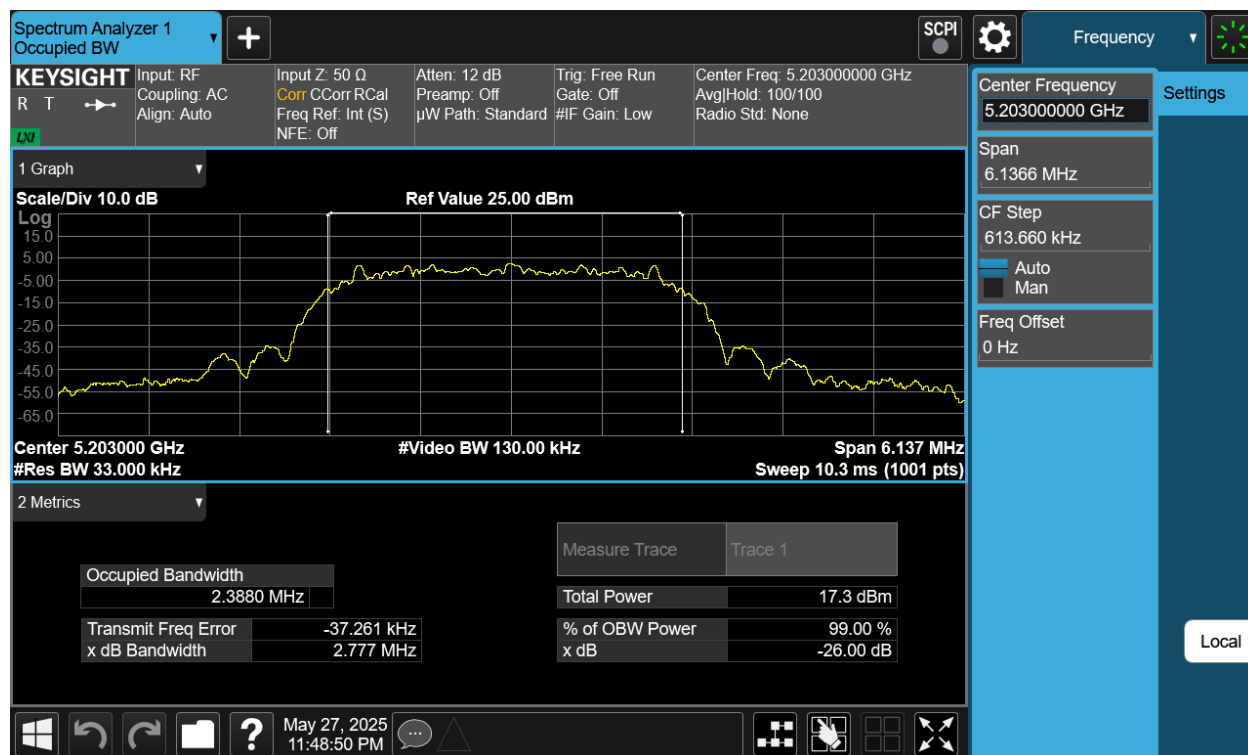




FCC ID: BCGA3361		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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Plot 7-26. 26dB BW & 99% OBW Antenna 4a (NB UNII HDT6, ePA– 5203MHz)

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7.2.3 Antenna 2a 26dB & 99% Bandwidth Measurements (U-NII-1)

Frequency [MHz]	Data Rate [Mbps]	Mode	Power Scheme	Measured 99% Occupied Bandwidth [MHz]	Measured 26dB Bandwidth [MHz]
5162	1.0	NB UNII BDR	ePA	0.930	1.247
5203	1.0	NB UNII BDR	ePA	0.930	1.246
5245	1.0	NB UNII BDR	ePA	0.930	1.246
5162	1.0	NB UNII LE1M	ePA	1.014	1.261
5203	1.0	NB UNII LE1M	ePA	1.014	1.261
5245	1.0	NB UNII LE1M	ePA	1.014	1.260
5162	2.0	NB UNII LE2M	ePA	2.028	2.508
5203	2.0	NB UNII LE2M	ePA	2.028	2.508
5245	2.0	NB UNII LE2M	ePA	2.028	2.509
5162	4.0	NB UNII HDR4	ePA	2.325	2.716
5203	4.0	NB UNII HDR4	ePA	2.325	2.713
5245	4.0	NB UNII HDR4	ePA	2.326	2.712
5162	8.0	NB UNII HDR8	ePA	4.612	5.306
5203	8.0	NB UNII HDR8	ePA	4.619	5.309
5245	8.0	NB UNII HDR8	ePA	4.621	5.329
5162	2.0	NB UNII HDRPS2	ePA	2.374	2.673
5203	2.0	NB UNII HDRPS2	ePA	2.374	2.678
5245	2.0	NB UNII HDRPS2	ePA	2.380	2.702
5162	6.0	NB UNII XHDRPM6	ePA	4.723	5.360
5203	6.0	NB UNII XHDRPM6	ePA	4.732	5.349
5245	6.0	NB UNII XHDRPM6	ePA	4.725	5.380
5162	16.0	NB UNII HDRPM16	ePA	4.677	5.340
5203	16.0	NB UNII HDRPM16	ePA	4.672	5.279
5245	16.0	NB UNII HDRPM16	ePA	4.676	5.287
5164	12.0	NB UNII HDRPL12	ePA	9.350	10.616
5203	12.0	NB UNII HDRPL12	ePA	9.377	10.646
5242	12.0	NB UNII HDRPL12	ePA	9.340	10.643
5164	32.0	NB UNII HDRPL32	ePA	9.274	10.533
5203	32.0	NB UNII HDRPL32	ePA	9.280	10.531
5242	32.0	NB UNII HDRPL32	ePA	9.262	10.547
5162	2.0	NB UNII HDT2	ePA	2.346	2.762
5203	2.0	NB UNII HDT2	ePA	2.346	2.764
5245	2.0	NB UNII HDT2	ePA	2.346	2.762
5162	4.0	NB UNII HDT4	ePA	2.356	2.780
5203	4.0	NB UNII HDT4	ePA	2.356	2.780
5245	4.0	NB UNII HDT4	ePA	2.356	2.781
5162	6.0	NB UNII HDT6	ePA	2.389	2.779
5203	6.0	NB UNII HDT6	ePA	2.389	2.779
5245	6.0	NB UNII HDT6	ePA	2.389	2.779

Table 7-4. Conducted BW Measurements Antenna 2a

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Plot 7-27. 26dB BW & 99% OBW Antenna 2a (NB UNII BDR, ePA- 5203MHz)



Plot 7-28. 26dB BW & 99% OBW Antenna 2a (NB UNII LE1M, ePA- 5203MHz)

FCC ID: BCGA3361		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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Plot 7-29. 26dB BW & 99% OBW Antenna 2a (NB UNII LE2M, ePA- 5203MHz)

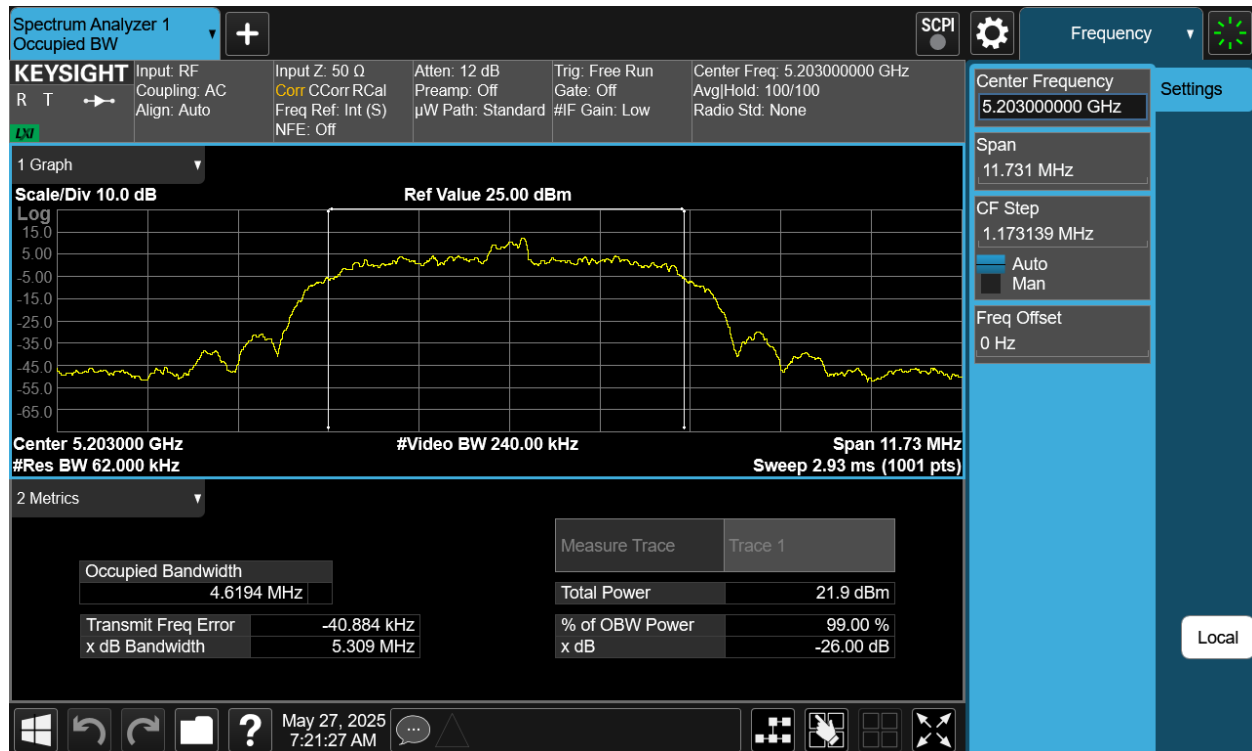


Plot 7-30. 26dB BW & 99% OBW Antenna 2a (NB UNII HDR4, ePA- 5203MHz)

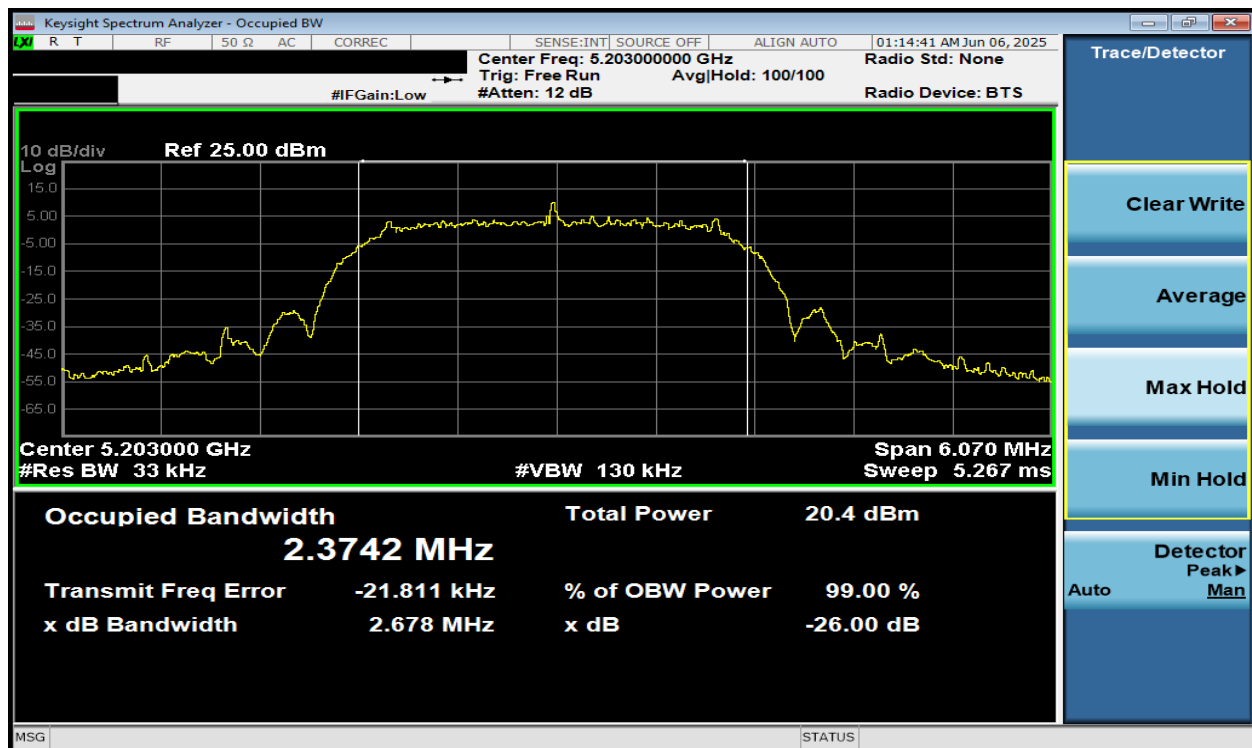
FCC ID: BCGA3361		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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Plot 7-31. 26dB BW & 99% OBW Antenna 2a (NB UNII HDR8, ePA- 5203MHz)

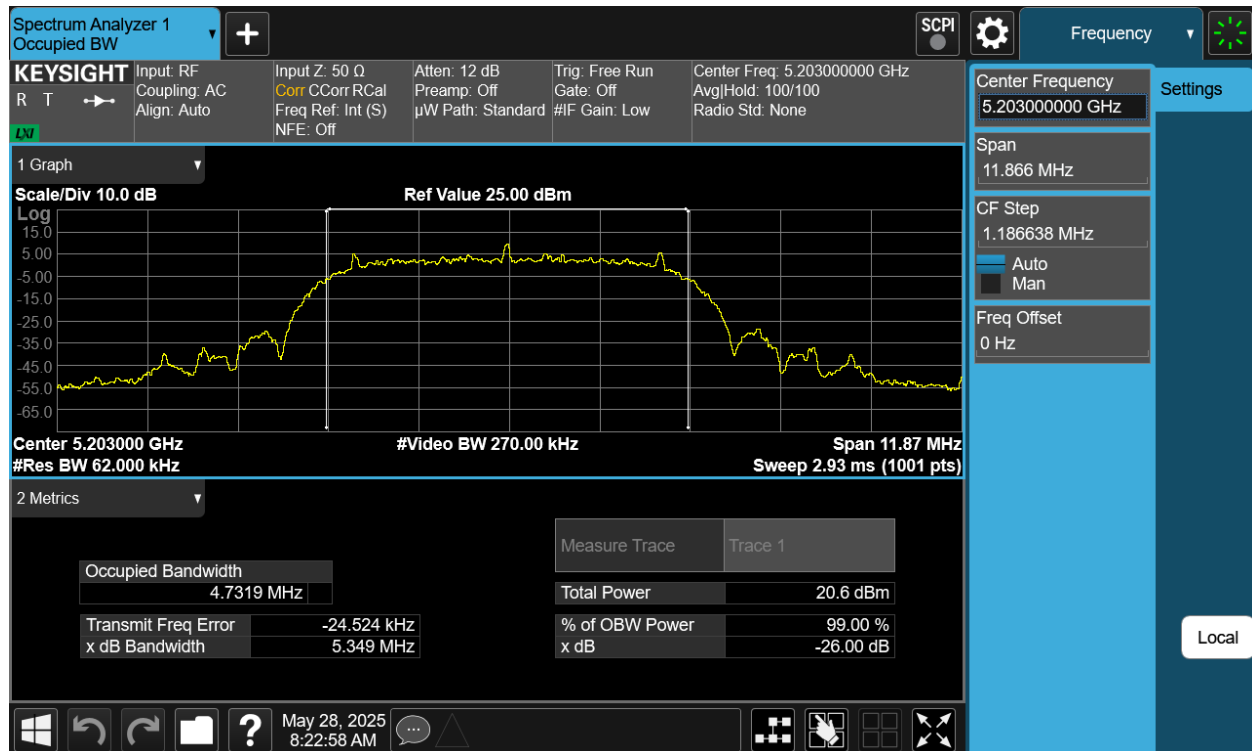


Plot 7-32. 26dB BW & 99% OBW Antenna 2a (NB UNII HDRPS2, ePA- 5203MHz)

FCC ID: BCGA3361		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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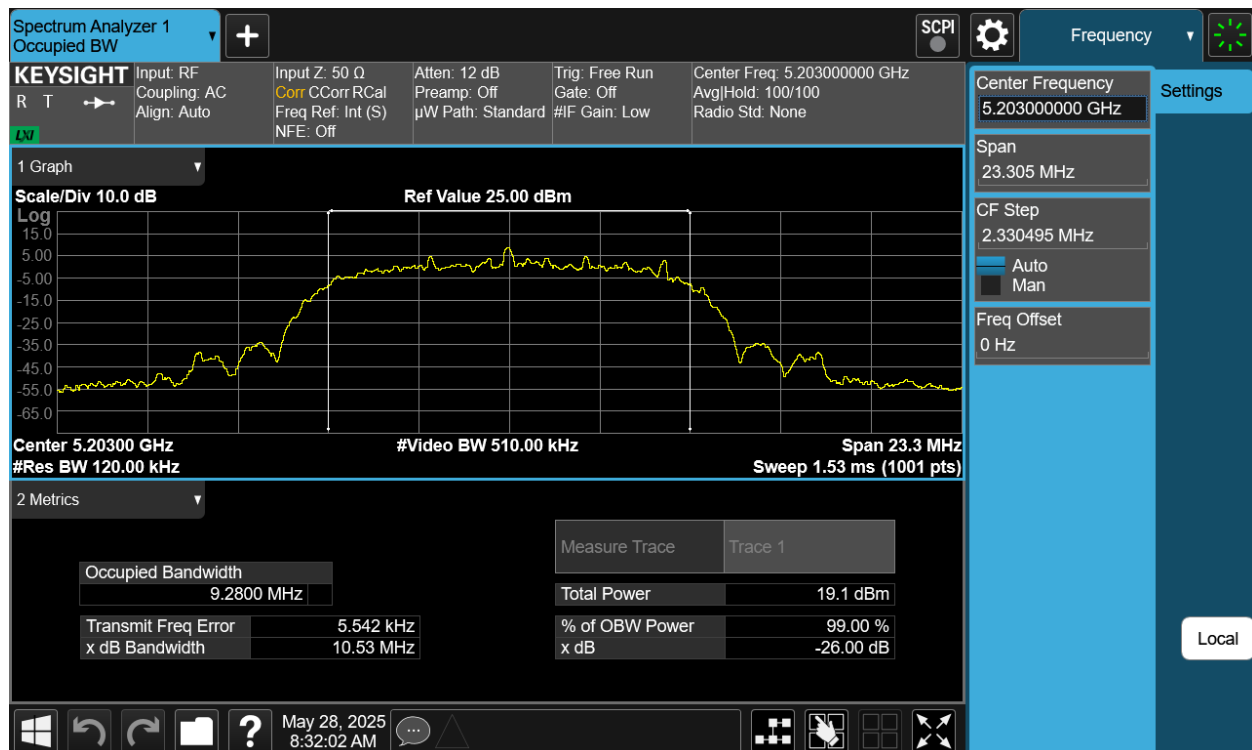
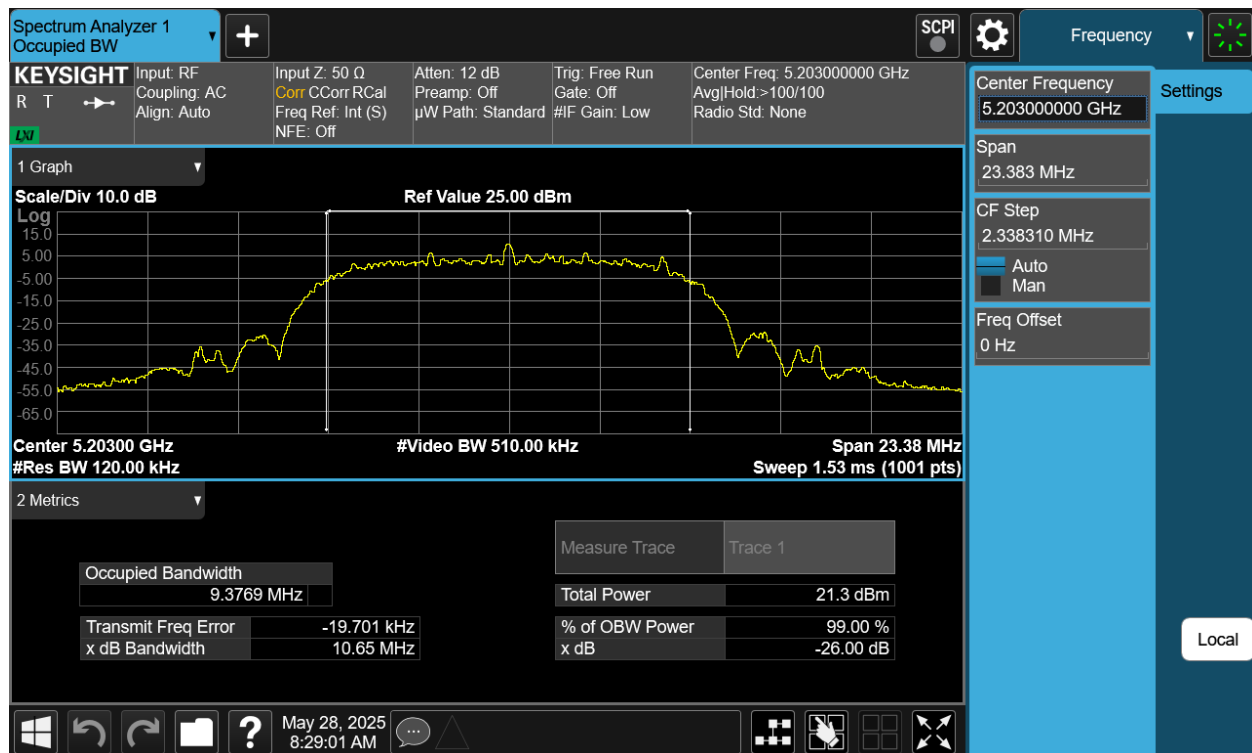
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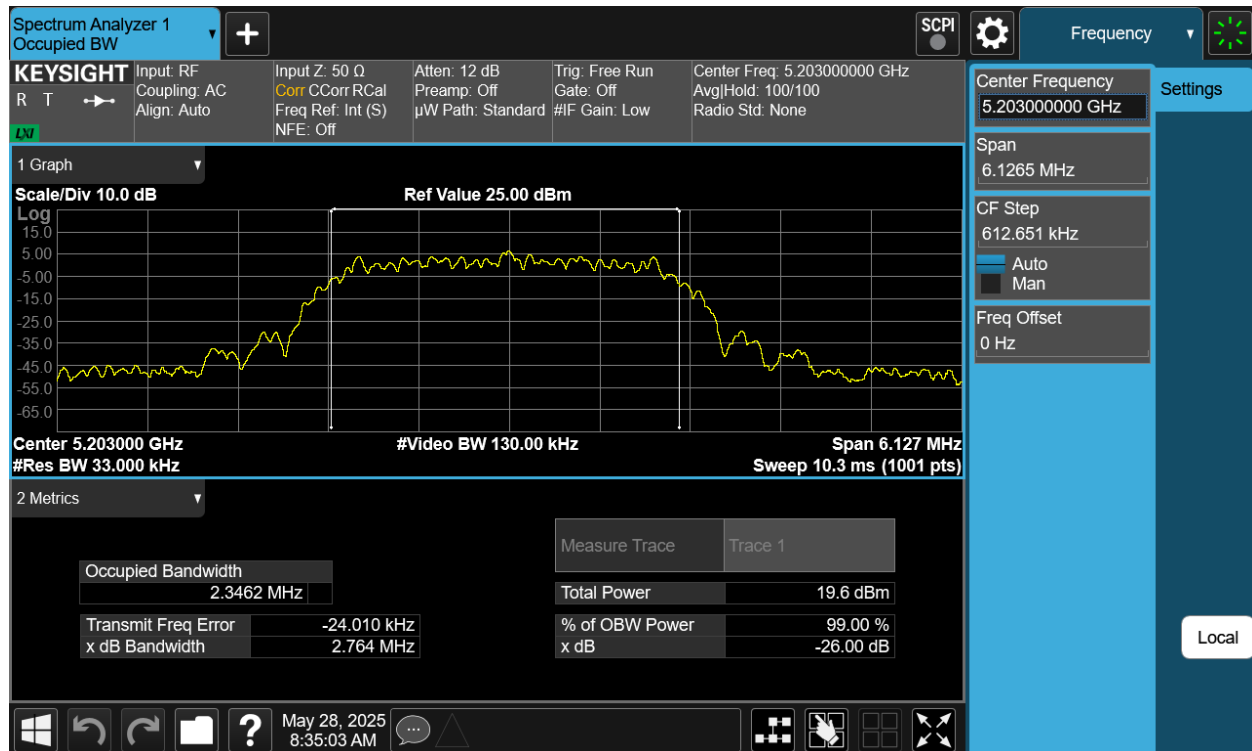
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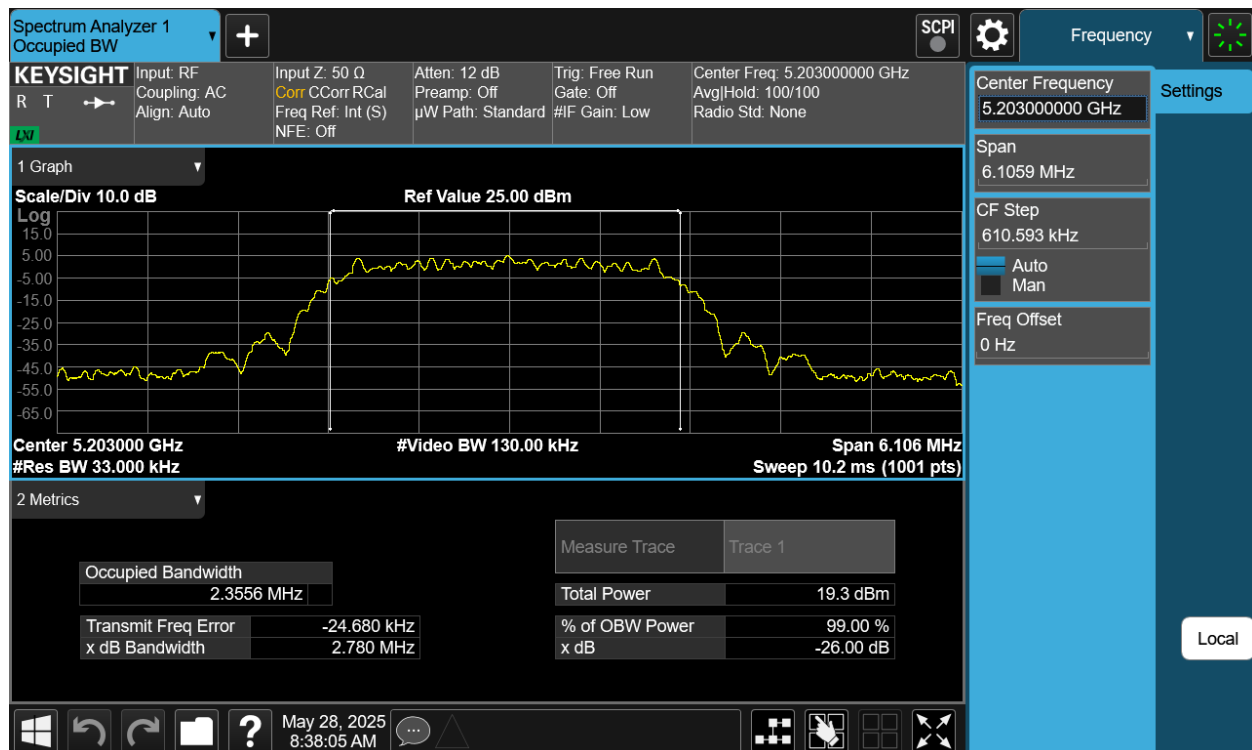
FCC ID: BCGA3361		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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Plot 7-37. 26dB BW & 99% OBW Antenna 2a (NB UNII HDT2, ePA- 5203MHz)



Plot 7-38. 26dB BW & 99% OBW Antenna 2a (NB UNII HDT4, ePA- 5203MHz)

FCC ID: BCGA3361		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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Plot 7-39. 26dB BW & 99% OBW Antenna 2a (NB UNII HDT6, ePA- 5203MHz)

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7.3 6dB & 99% Bandwidth Measurement

\$2.1049; \$15.407 (e)

Test Overview and Limit

The bandwidth at 6dB down from the highest in-band spectral density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating at its maximum duty cycle, at its maximum power control level, as defined in ANSI C63.10-2020 and KDB 789033 D02 v02r01, and at the appropriate frequencies. The spectrum analyzer's bandwidth measurement function is configured to measure the 6dB bandwidth.

In the 5.725 – 5.850GHz band, the 6dB bandwidth must be ≥ 500 kHz.

Test Procedure Used

ANSI C63.10-2020 – Subclause 12.5.1.

KDB 789033 D02 v02r01 – Section C

Test Settings

1. The signal analyzers' automatic bandwidth measurement capability was used to perform the 6dB bandwidth measurement. The "X" dB bandwidth parameter was set to $X = 6$. The automatic bandwidth measurement function also has the capability of simultaneously measuring the 99% occupied bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 100 kHz
3. VBW $\geq 3 \times$ RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple

Test Setup

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



Figure 7-2. Test Instrument & Measurement Setup

Test Notes

1. All antenna configurations and power schemes were investigated and only the worst case is reported.
2. Low, mid and high channels were tested and tabular data has been reported. Only mid channel plots have been reported.

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7.3.1 Antenna WF5B 6dB & 99% Bandwidth Measurements (U-NII-3)

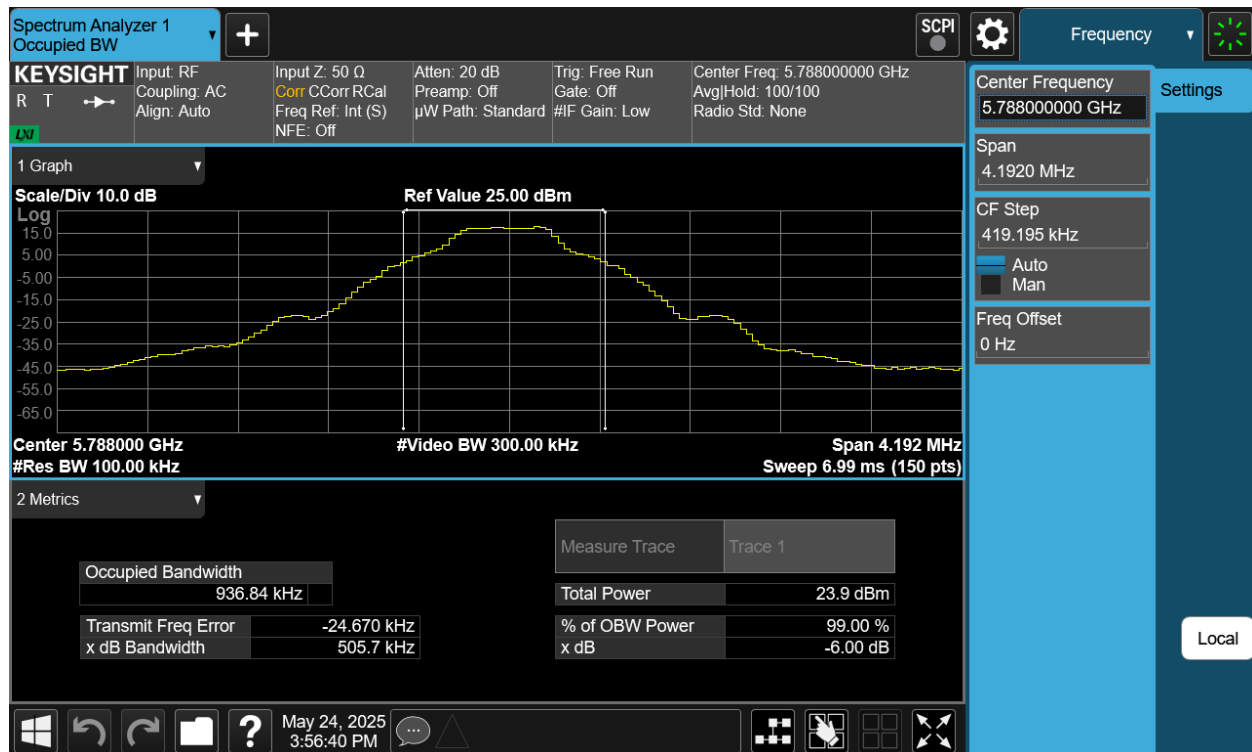
Frequency [MHz]	Data Rate [Mbps]	Mode	Power Scheme	Measured 99% Occupied Bandwidth [MHz]	Measured 6dB Bandwidth [MHz]	Minimum 6dB Bandwidth [MHz]	Pass / Fail
5733	1.0	NB UNII BDR	ePA	0.936	0.506	0.500	Pass
5788	1.0	NB UNII BDR	ePA	0.937	0.506	0.500	Pass
5844	1.0	NB UNII BDR	ePA	0.937	0.506	0.500	Pass
5733	1.0	NB UNII LE1M	ePA	1.032	0.664	0.500	Pass
5788	1.0	NB UNII LE1M	ePA	1.031	0.664	0.500	Pass
5844	1.0	NB UNII LE1M	ePA	1.032	0.663	0.500	Pass
5733	2.0	NB UNII LE2M	ePA	2.042	1.176	0.500	Pass
5788	2.0	NB UNII LE2M	ePA	2.041	1.177	0.500	Pass
5844	2.0	NB UNII LE2M	ePA	2.042	1.179	0.500	Pass
5733	4.0	NB UNII HDR4	ePA	2.348	1.577	0.500	Pass
5788	4.0	NB UNII HDR4	ePA	2.346	1.577	0.500	Pass
5844	4.0	NB UNII HDR4	ePA	2.348	1.580	0.500	Pass
5733	8.0	NB UNII HDR8	ePA	4.648	0.542	0.500	Pass
5788	8.0	NB UNII HDR8	ePA	4.636	0.550	0.500	Pass
5844	8.0	NB UNII HDR8	ePA	4.617	0.550	0.500	Pass
5733	2.0	NB UNII HDRPS2	ePA	2.381	2.021	0.500	Pass
5788	2.0	NB UNII HDRPS2	ePA	2.377	2.112	0.500	Pass
5844	2.0	NB UNII HDRPS2	ePA	2.377	2.074	0.500	Pass
5733	6.0	NB UNII XHDRPM6	ePA	4.716	4.057	0.500	Pass
5788	6.0	NB UNII XHDRPM6	ePA	4.737	4.157	0.500	Pass
5844	6.0	NB UNII XHDRPM6	ePA	4.732	4.035	0.500	Pass
5733	16.0	NB UNII HDRPM16	ePA	4.674	4.025	0.500	Pass
5788	16.0	NB UNII HDRPM16	ePA	4.689	1.166	0.500	Pass
5844	16.0	NB UNII HDRPM16	ePA	4.692	1.198	0.500	Pass
5733	12.0	NB UNII HDRPL12	ePA	9.361	6.096	0.500	Pass
5788	12.0	NB UNII HDRPL12	ePA	9.348	6.109	0.500	Pass
5844	12.0	NB UNII HDRPL12	ePA	9.341	6.103	0.500	Pass
5733	32.0	NB UNII HDRPL32	ePA	9.280	6.110	0.500	Pass
5788	32.0	NB UNII HDRPL32	ePA	9.277	6.106	0.500	Pass
5844	32.0	NB UNII HDRPL32	ePA	9.278	6.112	0.500	Pass
5733	2.0	NB UNII HDT2	ePA	2.388	2.081	0.500	Pass
5788	2.0	NB UNII HDT2	ePA	2.388	2.083	0.500	Pass
5844	2.0	NB UNII HDT2	ePA	2.388	2.082	0.500	Pass
5733	4.0	NB UNII HDT4	ePA	2.397	2.083	0.500	Pass
5788	4.0	NB UNII HDT4	ePA	2.397	2.083	0.500	Pass
5844	4.0	NB UNII HDT4	ePA	2.397	2.083	0.500	Pass
5733	6.0	NB UNII HDT6	ePA	2.395	2.084	0.500	Pass
5788	6.0	NB UNII HDT6	ePA	2.395	2.084	0.500	Pass
5844	6.0	NB UNII HDT6	ePA	2.395	2.084	0.500	Pass

Table 7-5. Conducted BW Measurements Antenna WF5B

FCC ID: BCGA3361		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2504170041-19-R1.BCG	Test Dates: 05/12/2025 - 09/05/2025	EUT Type: Tablet Device	Page 44 of 432

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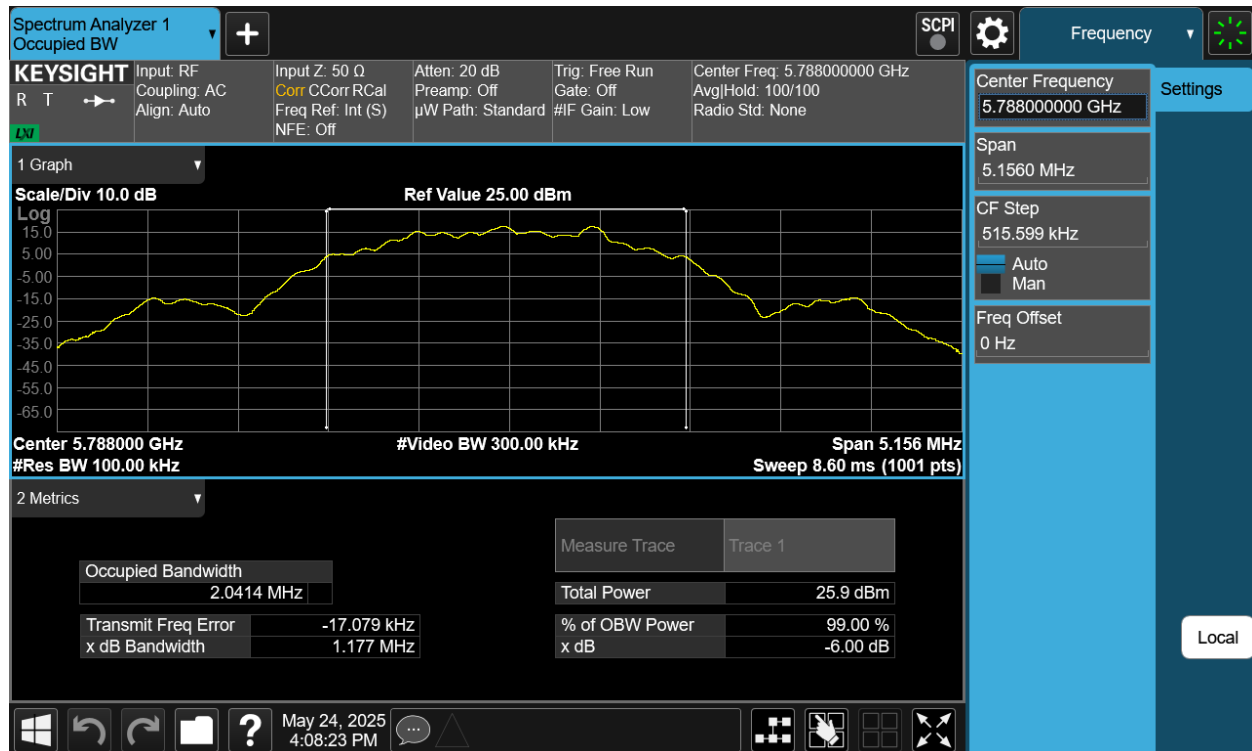
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FCC ID: BCGA3361		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2504170041-19-R1.BCG	Test Dates: 05/12/2025 - 09/05/2025	EUT Type: Tablet Device	Page 45 of 432

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Plot 7-42. 6dB BW & 99% OBW Antenna WF5B (NB UNII LE2M, ePA- 5788MHz)

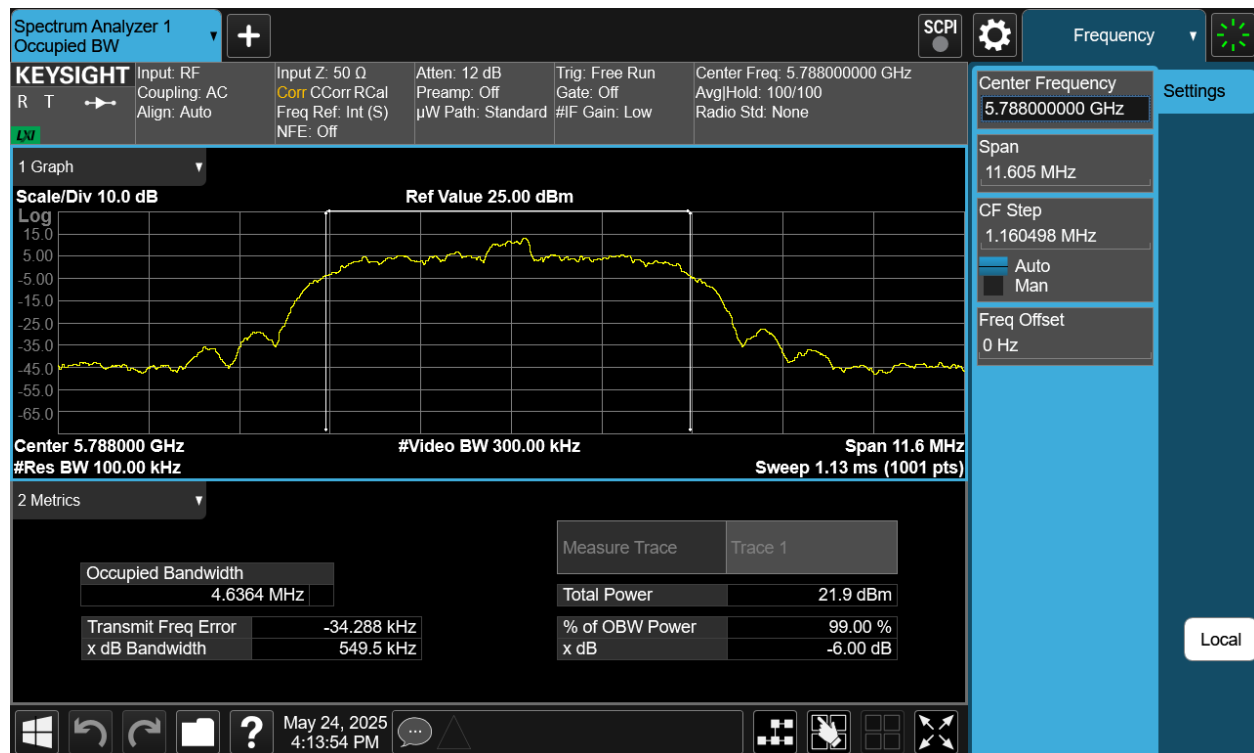


Plot 7-43. 6dB BW & 99% OBW Antenna WF5B (NB UNII HDR4, ePA - 5788MHz)

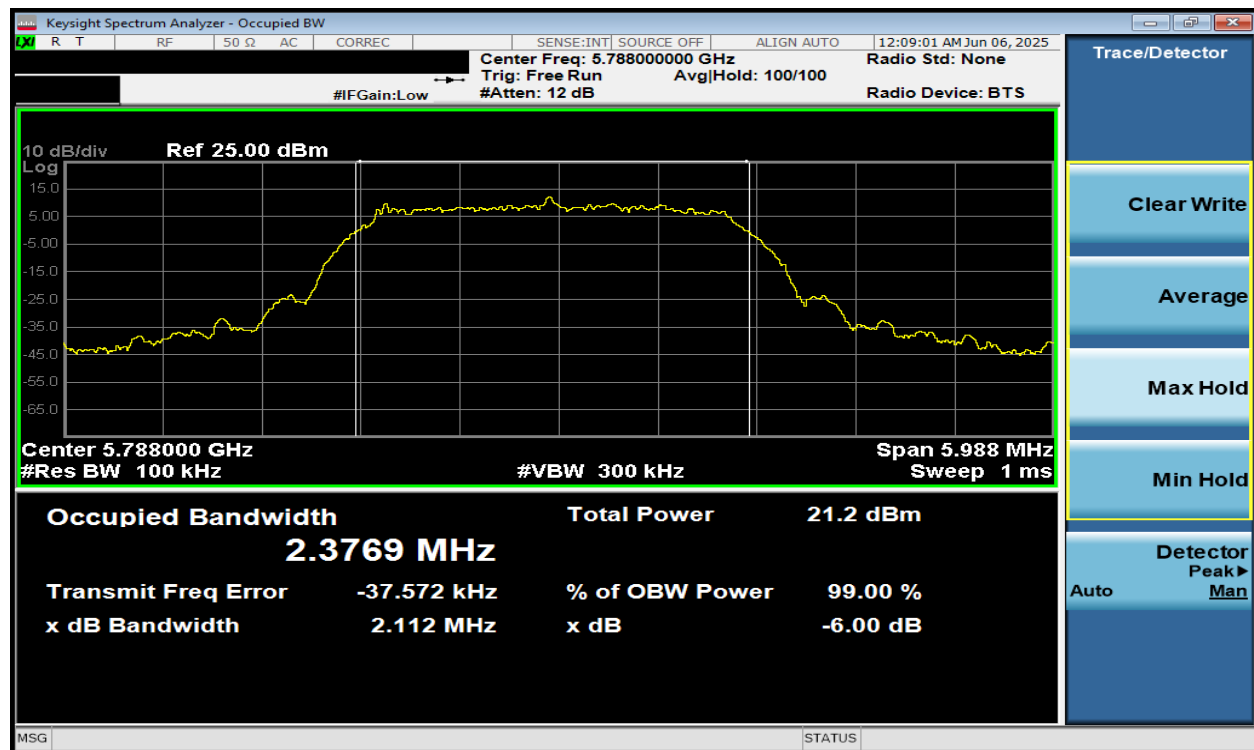
FCC ID: BCGA3361		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2504170041-19-R1.BCG	Test Dates: 05/12/2025 - 09/05/2025	EUT Type: Tablet Device	Page 46 of 432

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Plot 7-44. 6dB BW & 99% OBW Antenna WF5B (NB UNII HDR8, ePA – 5788MHz)

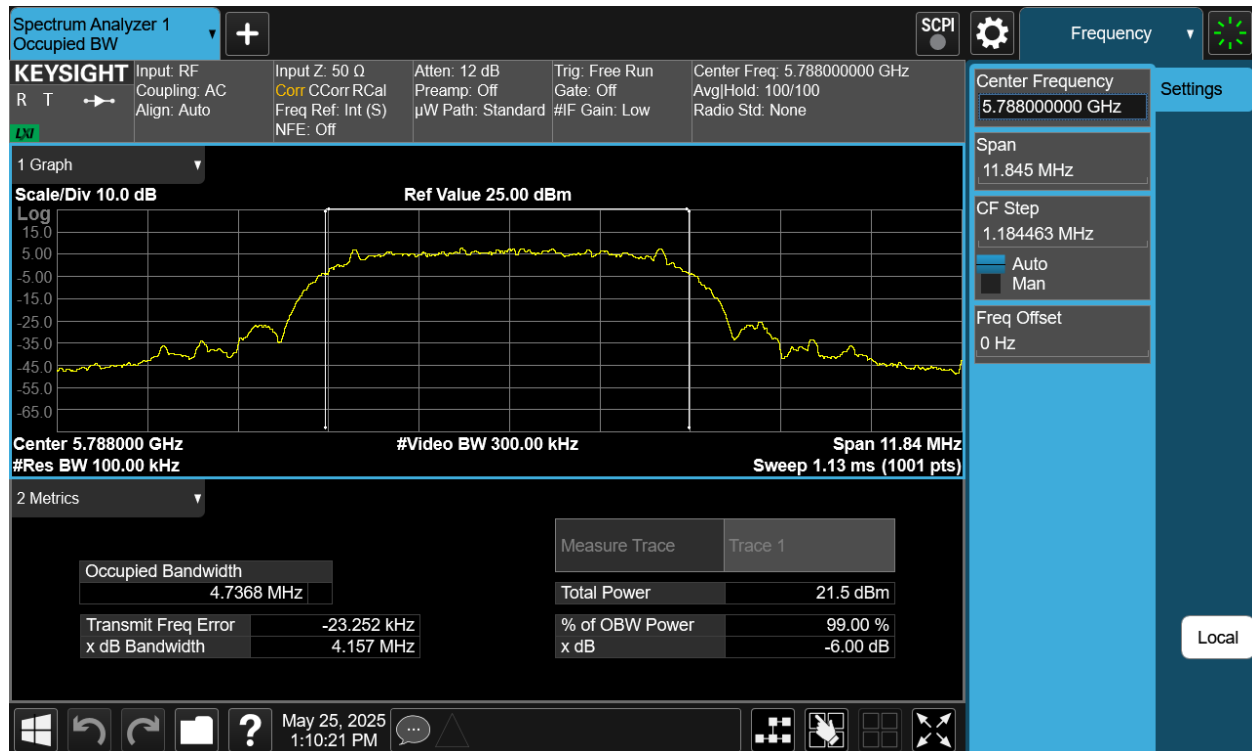


Plot 7-45. 6dB BW & 99% OBW Antenna WF5B (NB UNII HDRPS2, ePA – 5788MHz)

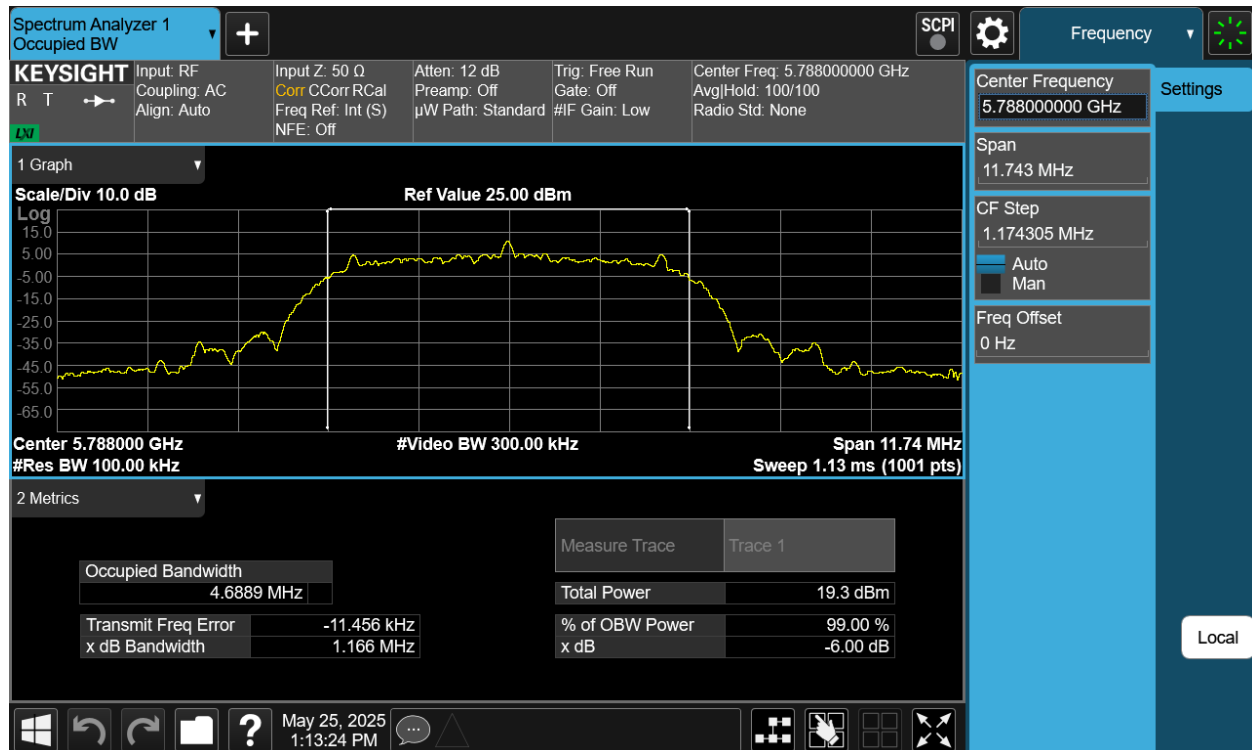
FCC ID: BCGA3361		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2504170041-19-R1.BCG	Test Dates: 05/12/2025 - 09/05/2025	EUT Type: Tablet Device	Page 47 of 432

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Plot 7-46. 6dB BW & 99% OBW Antenna WF5B (NB UNII XHDRPM6, ePA – 5788MHz)

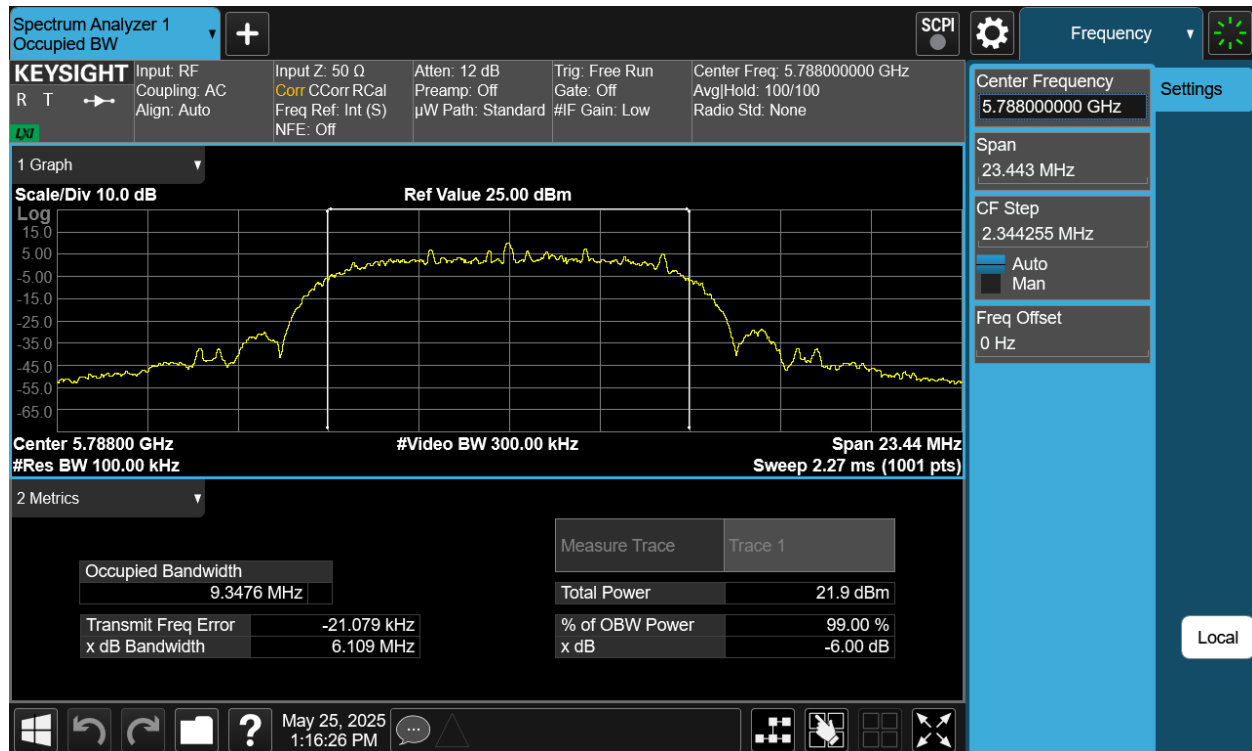


Plot 7-47. 6dB BW & 99% OBW Antenna WF5B (NB UNII HDRPM16, ePA – 5788MHz)

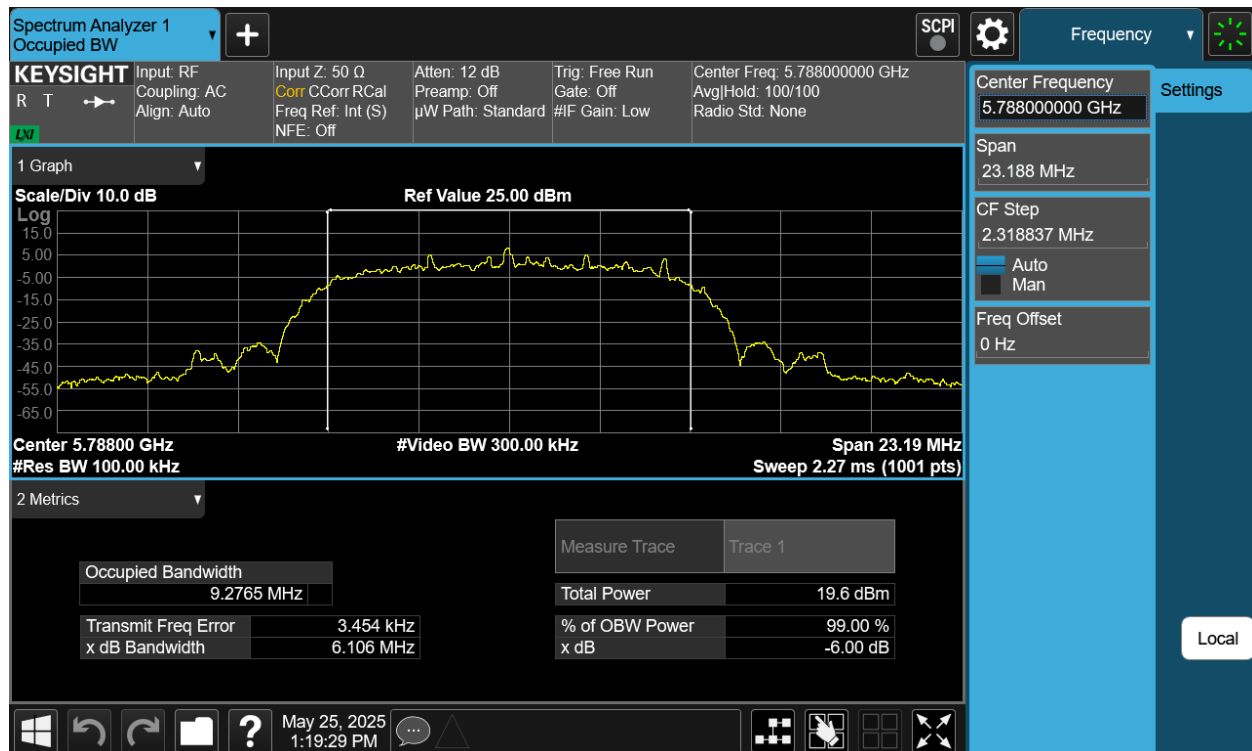
FCC ID: BCGA3361		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2504170041-19-R1.BCG	Test Dates: 05/12/2025 - 09/05/2025	EUT Type: Tablet Device	Page 48 of 432

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Plot 7-48. 6dB BW & 99% OBW Antenna WF5B (NB UNII HDRPL12, ePA – 5788MHz)

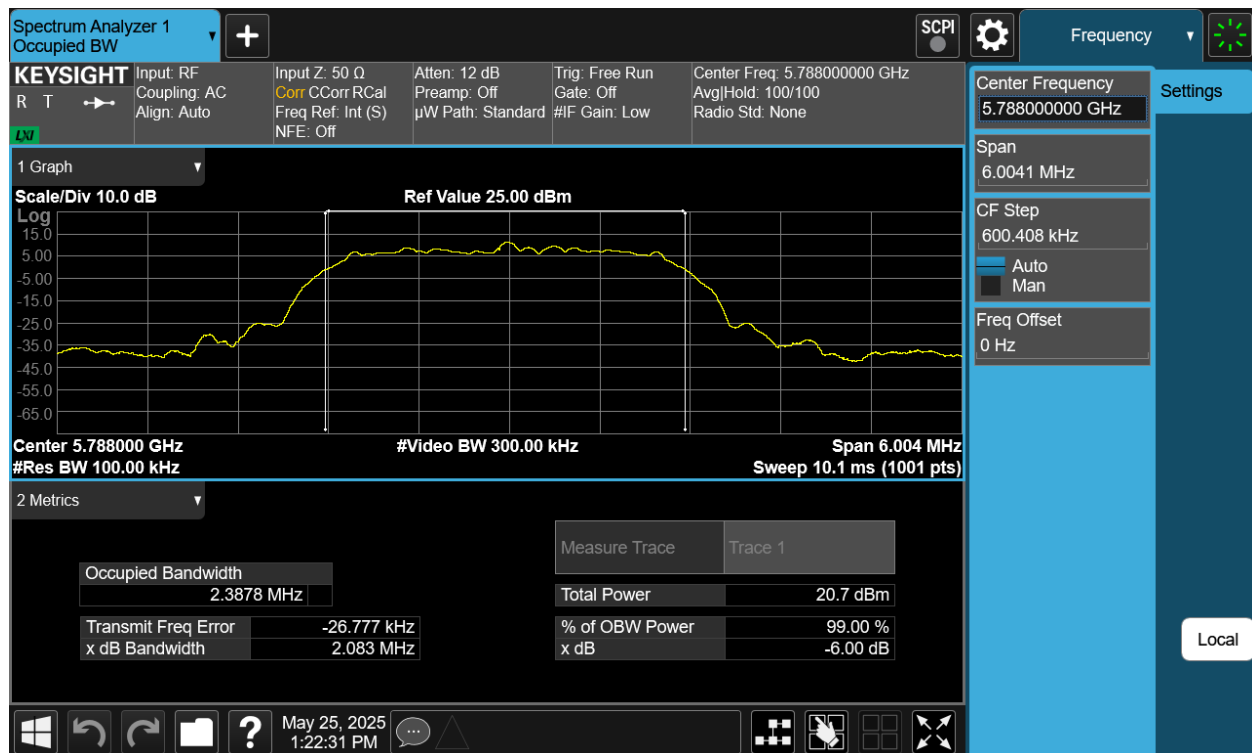


Plot 7-49. 6dB BW & 99% OBW Antenna WF5B (NB UNII HDRPL32, ePA – 5788MHz)

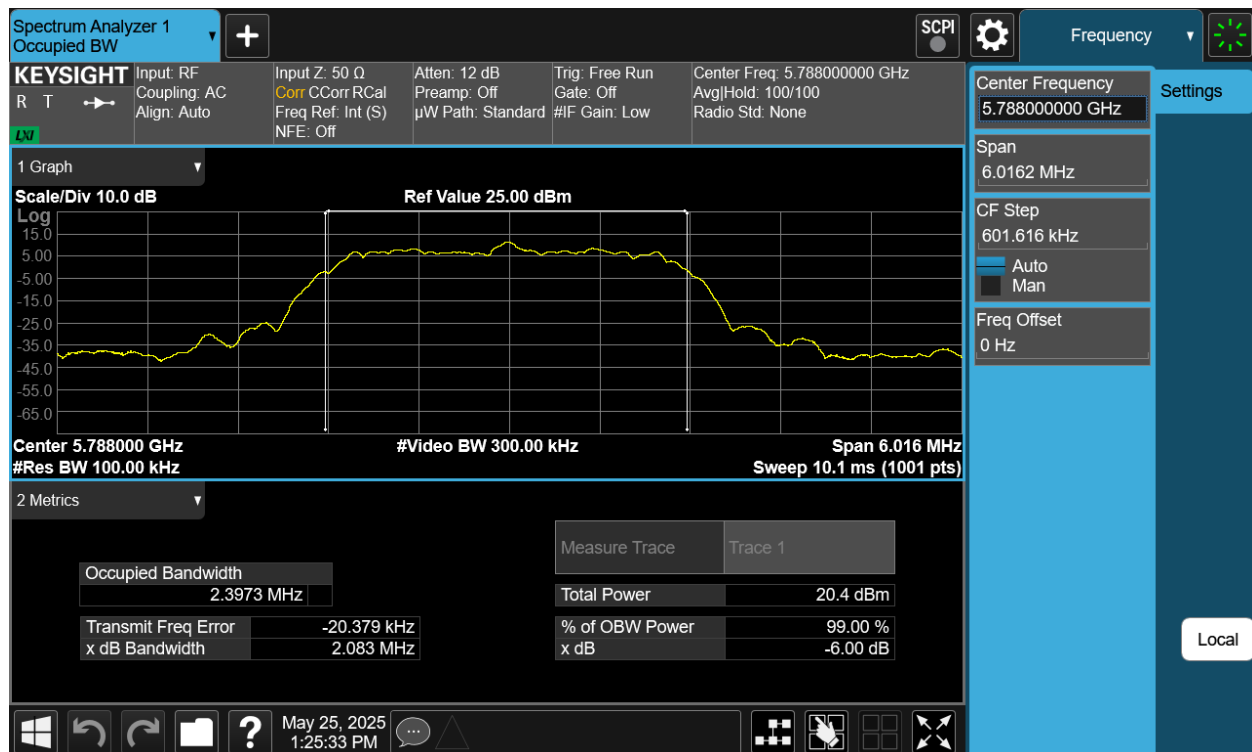
FCC ID: BCGA3361		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2504170041-19-R1.BCG	Test Dates: 05/12/2025 - 09/05/2025	EUT Type: Tablet Device	Page 49 of 432

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Plot 7-50. 6dB BW & 99% OBW Antenna WF5B (NB UNII HDT2, ePA- 5788MHz)



Plot 7-51. 6dB BW & 99% OBW Antenna WF5B (NB UNII HDT4, ePA- 5788MHz)

FCC ID: BCGA3361		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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Plot 7-52. 6dB BW & 99% OBW Antenna WF5B (NB UNII HDT6, ePA– 5788MHz)

FCC ID: BCGA3361		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2504170041-19-R1.BCG	Test Dates: 05/12/2025 - 09/05/2025	EUT Type: Tablet Device	Page 51 of 432

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7.3.2 Antenna 4a 6dB & 99% Bandwidth Measurements (U-NII-3)

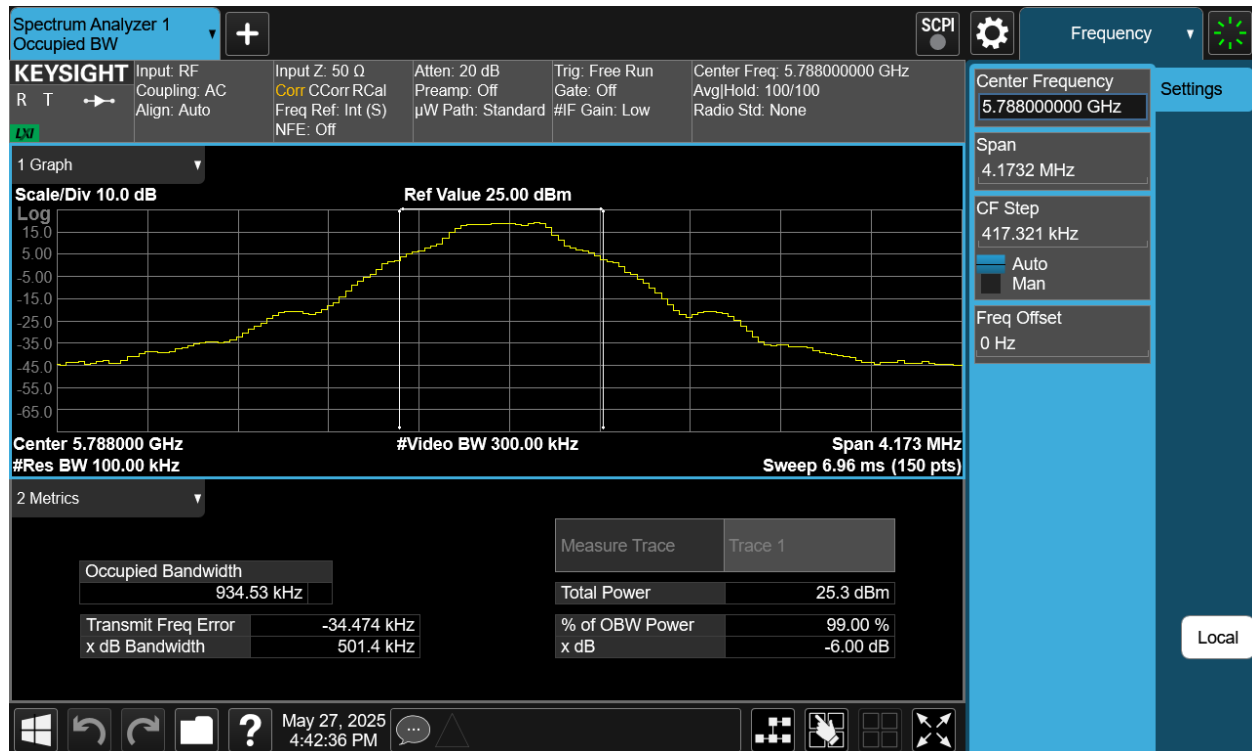
Frequency [MHz]	Data Rate [Mbps]	Mode	Power Scheme	Measured 99% Occupied Bandwidth [MHz]	Measured 6dB Bandwidth [MHz]	Minimum 6dB Bandwidth [MHz]	Pass / Fail
5733	1.0	NB UNII BDR	ePA	0.934	0.502	0.500	Pass
5788	1.0	NB UNII BDR	ePA	0.935	0.501	0.500	Pass
5844	1.0	NB UNII BDR	ePA	0.935	0.502	0.500	Pass
5733	1.0	NB UNII LE1M	ePA	1.033	0.664	0.500	Pass
5788	1.0	NB UNII LE1M	ePA	1.033	0.664	0.500	Pass
5844	1.0	NB UNII LE1M	ePA	1.033	0.664	0.500	Pass
5733	2.0	NB UNII LE2M	ePA	2.042	1.167	0.500	Pass
5788	2.0	NB UNII LE2M	ePA	2.042	1.169	0.500	Pass
5844	2.0	NB UNII LE2M	ePA	2.042	1.171	0.500	Pass
5733	4.0	NB UNII HDR4	ePA	2.350	1.579	0.500	Pass
5788	4.0	NB UNII HDR4	ePA	2.349	1.579	0.500	Pass
5844	4.0	NB UNII HDR4	ePA	2.349	1.576	0.500	Pass
5733	8.0	NB UNII HDR8	ePA	4.641	0.553	0.500	Pass
5788	8.0	NB UNII HDR8	ePA	4.651	0.550	0.500	Pass
5844	8.0	NB UNII HDR8	ePA	4.634	0.556	0.500	Pass
5733	2.0	NB UNII HDRPS2	ePA	2.378	2.095	0.500	Pass
5788	2.0	NB UNII HDRPS2	ePA	2.378	2.097	0.500	Pass
5844	2.0	NB UNII HDRPS2	ePA	2.378	2.092	0.500	Pass
5733	6.0	NB UNII XHDRPM6	ePA	4.716	4.047	0.500	Pass
5788	6.0	NB UNII XHDRPM6	ePA	4.731	4.070	0.500	Pass
5844	6.0	NB UNII XHDRPM6	ePA	4.707	4.083	0.500	Pass
5733	16.0	NB UNII HDRPM16	ePA	4.696	4.021	0.500	Pass
5788	16.0	NB UNII HDRPM16	ePA	4.674	4.020	0.500	Pass
5844	16.0	NB UNII HDRPM16	ePA	4.696	2.726	0.500	Pass
5733	12.0	NB UNII HDRPL12	ePA	9.354	6.100	0.500	Pass
5788	12.0	NB UNII HDRPL12	ePA	9.356	6.110	0.500	Pass
5844	12.0	NB UNII HDRPL12	ePA	9.353	6.104	0.500	Pass
5733	32.0	NB UNII HDRPL32	ePA	9.287	6.109	0.500	Pass
5788	32.0	NB UNII HDRPL32	ePA	9.276	6.106	0.500	Pass
5844	32.0	NB UNII HDRPL32	ePA	9.281	6.110	0.500	Pass
5733	2.0	NB UNII HDT2	ePA	2.388	2.082	0.500	Pass
5788	2.0	NB UNII HDT2	ePA	2.388	2.082	0.500	Pass
5844	2.0	NB UNII HDT2	ePA	2.388	2.083	0.500	Pass
5733	4.0	NB UNII HDT4	ePA	2.397	2.081	0.500	Pass
5788	4.0	NB UNII HDT4	ePA	2.397	2.082	0.500	Pass
5844	4.0	NB UNII HDT4	ePA	2.397	2.082	0.500	Pass
5733	6.0	NB UNII HDT6	ePA	2.394	2.084	0.500	Pass
5788	6.0	NB UNII HDT6	ePA	2.394	2.083	0.500	Pass
5844	6.0	NB UNII HDT6	ePA	2.394	2.083	0.500	Pass

Table 7-6. Conducted BW Measurements Antenna 4a

FCC ID: BCGA3361		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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Plot 7-53. 6dB BW & 99% OBW Antenna 4a (NB UNII BDR, ePA – 5788MHz)



Plot 7-54. 6dB BW & 99% OBW Antenna 4a (NB UNII LE1M, ePA – 5788MHz)

FCC ID: BCGA3361		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2504170041-19-R1.BCG	Test Dates: 05/12/2025 - 09/05/2025	EUT Type: Tablet Device	Page 53 of 432

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Plot 7-55. 6dB BW & 99% OBW Antenna 4a (NB UNII LE2M, ePA– 5788MHz)

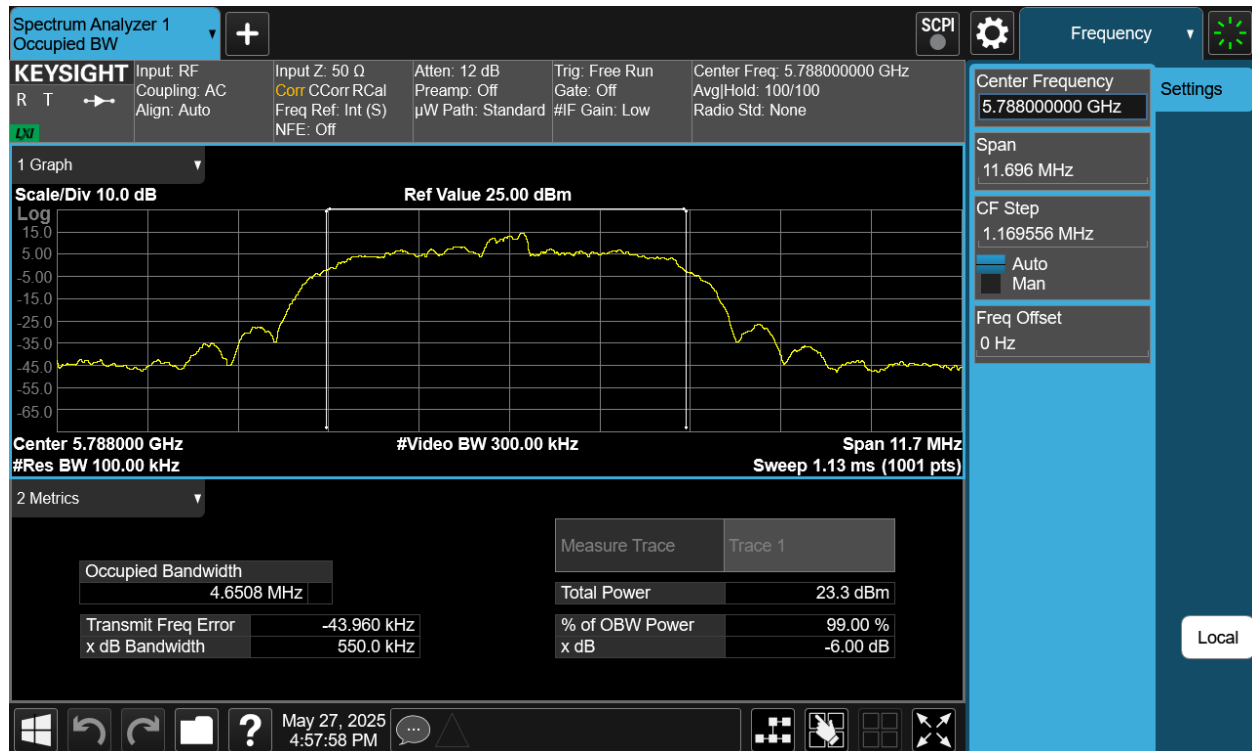


Plot 7-56. 6dB BW & 99% OBW Antenna 4a (NB UNII HDR4, ePA – 5788MHz)

FCC ID: BCGA3361		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1C2504170041-19-R1.BCG	Test Dates: 05/12/2025 - 09/05/2025	EUT Type: Tablet Device	Page 54 of 432

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Test Report S/N: 1C2504170041-19-R1.BCG	Test Dates: 05/12/2025 - 09/05/2025	EUT Type: Tablet Device	Page 55 of 432

