Element Materials Technology
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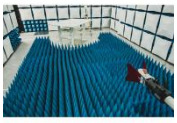


MEASUREMENT REPORT
FCC PART 15.247 / ISED RSS-247 WLAN OFDMA

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

Date of Testing:
1/8/2024 - 3/15/2024
Test Report Issue Date:
3/30/2024
Test Site/Location:
Element Materials Technology, Morgan Hill, CA, USA
Test Report Serial No.:
1C2311270067-04.BCG

FCC ID:	**BCGA2836**
IC:	**579C-A2836**
APPLICANT:	**Apple Inc.**

Application Type:	Certification
Model/HVIN:	A2836
EUT Type:	Tablet Device
Frequency Range:	2412 – 2467MHz
Modulation Type:	OFDMA
FCC Classification:	Digital Transmission System (DTS)
FCC Rule Part(s):	Part 15 Subpart C (15.247)
ISED Specification:	RSS-247 Issue 3
Test Procedure(s):	ANSI C63.10-2013, KDB 558074 D01 v05r02, KDB 662911 D01 v02r01

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.10-2013 and KDB 558074 D01 v05r02. 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.

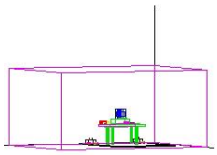
RJ Ortanez
Executive Vice President

Prepared by: WKR0000010596

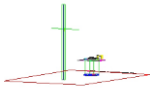
Reviewed by: WKR0000005805

ACCREDITED
CERT #2041.02

TABLE OF CONTENTS



MEASUREMENT REPORT



802.11	RU	Tx Frequency [MHz]	Antenna WF8				Antenna WF7				Antenna WF9			
			Avg Conducted		Peak Conducted		Avg Conducted		Peak Conducted		Avg Conducted		Peak Conducted	
			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)	Max. Power (mW)	Max. Power (dBm)
11ax OFDMA	26	2412 - 2467	14.109	11.50	119.702	20.78	13.533	11.31	114.156	20.58	13.778	11.39	121.367	20.84
11ax OFDMA	242	2412 - 2467	98.243	19.92	554.115	27.44	104.641	20.20	536.290	27.29	108.593	20.36	567.545	27.54

EUT Overview SISO (802.11ax – RU)

Mode	RU	Tx Frequency [MHz]	Antenna WF8				Antenna WF7				CDD			
			Avg Conducted		Peak Conducted		Avg Conducted		Peak Conducted		Avg Conducted		Peak Conducted	
			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)	Max. Power (mW)	Max. Power (dBm)
11ax OFDMA	26	2412 - 2467	14.125	11.50	119.399	20.77	13.852	11.42	120.116	20.80	27.967	14.47	239.515	23.79
11ax OFDMA	242	2412 - 2467	103.633	20.16	450.298	26.54	105.584	20.24	450.817	26.54	209.218	23.21	882.414	29.46

EUT Overview CDD Primary (802.11ax – RU)

Mode	RU	Tx Frequency [MHz]	Antenna WF8				Antenna WF9				CDD			
			Avg Conducted		Peak Conducted		Avg Conducted		Peak Conducted		Avg Conducted		Peak Conducted	
			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)	Max. Power (mW)	Max. Power (dBm)
11ax OFDMA	26	2412 - 2467	14.125	11.50	119.399	20.77	14.125	11.50	127.526	21.06	27.803	14.44	246.837	23.92
11ax OFDMA	242	2412 - 2467	103.633	20.16	420.339	26.24	106.439	20.27	465.693	26.68	210.072	23.22	872.299	29.41

EUT Overview CDD Diversity (802.11ax – RU)

1.0 INTRODUCTION

1.1 Scope

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

1.2 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 designated by NIST under the U.S. and Canada Mutual Recognition Agreements (MRAs).

2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Tablet Device FCC ID: BCGA2836, IC: 579C-A2836**. The test data contained in this report pertains only to the emissions due to the EUT's WLAN 802.11ax – RU (DTS) transmitter.

Test Device Serial No.: *H2Q92063PV, NH3KWXD3J7, M6NM4JFC3F, DLXH0G0000300001NH*

2.2 Device Capabilities

This device contains the following capabilities:

802.11b/g/n/ax WLAN, 802.11a/n/ac/ax UNII, 802.11a/ax WIFI 6E, Bluetooth (1x, EDR, LE1M, LE2M, HDR4, HDR8), NB UNII (1x, HDR4, HDR8), WPT, 802.15.4

This device supports BT Beamforming

Ch.	Frequency (MHz)	Ch.	Frequency (MHz)
1	2412	8	2447
2	2417	9	2452
3	2422	10	2457
4	2427	11	2462
5	2432	12	2467
6	2437	13*	2472
7	2442		

Table 2-1. 802.11ax Frequency/ Channel Operations

*Channel 13 is disabled for DTS 802.11ax HE20.

Note: 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 6.0 b) of KDB 558074 D01 v05r02 and 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:

Measured Duty Cycles						
802.11 Mode/Band		Duty Cycle [%]				
		Antenna WF8	Antenna WF7	Antenna WF9	CDD (Primary)	CDD (Diversity)
2.4GHz	ax (RU26)	88.1	88.4	88.1	88.61	88.61
	ax (RU242)	92.2	91.4	92.0	92.04	91.39

Table 2-2. Measured Duty Cycles

The device employs CDD technology. Below are the possible configurations.

WiFi Configurations		SISO			MIMO Primary				MIMO Diversity			
					SDM		CDD		SDM		CDD	
		Antenna WF8	Antenna WF7	Antenna WF9	Antenna WF8	Antenna WF7	Antenna WF8	Antenna WF7	Antenna WF8	Antenna WF9	Antenna WF8	Antenna WF9
2.4GHz	11ax	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 2-3. WiFi Configurations

✓= Support ; × = NOT Support
SISO = Single Input Single Output
SDM = Spatial Diversity Multiplexing – CDD function
CDD = Cyclic Delay Diversity - 2Tx Function

Data Rate(s) Supported: 8/8.6Mbps, 16/17.2Mbps, 24/25.8Mbps, 33/34.4Mbps, 49/51.6Mbps, 65/68.8Mbps, 73/77.4Mbps, 81/86.0Mbps, 98/103.2Mbps, 108/114.7Mbps (ax – 20MHz)
16/17.2 Mbps, 32/34.4 Mbps, 48/51.6 Mbps, 66/68.8 Mbps, 98/103.2 Mbps, 130/137.6 Mbps, 146/154.8 Mbps, 162/172 Mbps, 196/206.4 Mbps, 216/229.4Mbps (CDD ax – 20MHz)

This device supports simultaneous transmission operations, which allows for multiple transmitters to transmit simultaneously on the same antenna. The table below shows all configurations possible.

Antenna	Simultaneous Tx Config	Wifi 2GHz	Bluetooth	Thread	Wifi 5GHz	Wifi 6GHz	NB UNII
		802.11 b/g/n/ax	BDR, EDR, HDR4/8, LE1/2M	802.15.4	802.11 a/n/ac/ax	802.11 a/ax	BDR, HDR4/8
WF8	Config 1	✓	✗	✗	✗	✗	✓
WF8	Config 2	✗	✓	✗	✓	✗	✗
WF8	Config 3	✗	✓	✗	✗	✓	✗
WF8	Config 4	✗	✗	✓	✓	✗	✗
WF8	Config 5	✗	✗	✓	✗	✓	✗
WF7	Config 6	✓	✗	✗	✗	✗	✓
WF7	Config 7	✗	✓	✗	✓	✗	✗
WF7	Config 8	✗	✓	✗	✗	✓	✗
WF7	Config 9	✗	✗	✓	✓	✗	✗
WF7	Config 10	✗	✗	✓	✗	✓	✗

Table 2-4. Simultaneous Transmission Configurations

✓ = Support; × = Not Support

Note:

All the above simultaneous transmission configurations have been tested and the worst case configuration was found to be Config 2 and reported in Bluetooth and UNII RF test reports.

Specific 2.4GHz Wi-Fi antenna that can only transmit simultaneously with 2.4GHz Bluetooth antenna is listed in the SAR test report. For BT (2.4GHz) in connected mode and Wi-Fi (2.4GHz) - Wi-Fi max power will not exceed minimum of (13.5dBm, SAR max cap, Reg max cap) power. For BT (2.4GHz) in disconnected mode and Wi-Fi (2.4GHz) - BT will be using iPA only and Wi-Fi max power will not exceed minimum of (SAR max cap, Reg max cap) power. Bluetooth can simultaneously transmit with IEEE 802.11a/n/ac/ax 5/6 GHz on separate antenna.

2.3 Antenna Description

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

Frequency (GHz)	Antenna Gain (dBi)		
	Antenna WF8	Antenna WF7	Antenna WF9
2.4	3.50	3.00	1.50

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:	A246C	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

2.5 Test Configuration

The EUT was tested per the guidance of ANSI C63.10-2013 and KDB 558074 D01 v05r02. ANSI C63.10-2013 was used to reference the appropriate EUT setup for radiated spurious emissions testing. See Sections 3.2 for radiated emissions test setups, and 7.2, 7.3, 7.4, 7.5, and 7.6 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.

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 are reported in this test report.

For AC line conducted and radiated test below 1GHz, following configurations were investigated and the worst case was reported.

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

802.11ax HE20 2Tx CDD mode test data provided in this report covers 802.11ax HE20 2Tx SDM.

For 802.11b/g/n/ax-SU test results, see separate WLAN report, 1C2311270067-03.BCG

2.6 Software and Firmware

The test was conducted with firmware version 21E8197 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.

3.0 DESCRIPTION OF TESTS

3.1 Evaluation Procedure

The measurement procedures described in the American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices (ANSI C63.10-2013) and the guidance provided in KDB 558074 D01 v05r02 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 groundplane. Power cables for support equipment were routed down to the second LISN while ensuring that the cables were not draped over the second LISN.

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

Line conducted emissions test results are shown in Section 7.9. 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.

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 rotated about its vertical axis 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 15ºC to 35ºC. The relative humidity is controlled within range of 10% to 75%. The atmospheric pressure is monitored within the range 86-106kPa (860-1060mbar).

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 connections to an external antenna.

Conclusion:

The EUT unit complies with the requirement of §15.203.

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 (±dB)
Conducted Bench Top Measurements	2.07
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)	4.59

6.0 TEST EQUIPMENT CALIBRATION DATA

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

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent Technologies	N9030A	3Hz-44GHz PXA Signal Analyzer	6/21/2023	Annual	6/21/2024	MY49430244
Anritsu	ML2496A	Power Meter	4/4/2023	Annual	4/4/2024	1840005
Anritsu	MA2411B	Pulse Power Sensor	8/22/2023	Annual	8/22/2024	1726262
Anritsu	MA2411B	Pulse Power Sensor	4/5/2023	Annual	4/5/2024	1726261
ETS-Lindgren	3117	Double Ridged Guide Antenna (1-18 GHz)	3/30/2023	Annual	3/30/2024	00218555
Keysight Technology	N9040B	UXA Signal Analyzer	3/10/2023	Annual	3/10/2024	MY57212015
Rohde & Schwarz	TS-PR18	Pre-Amplifier (1GHz - 18GHz)	8/31/2023	Annual	8/31/2024	100052
Rohde & Schwarz	FSV40	Signal Analyzer (10Hz-40GHz)	5/11/2023	Annual	5/11/2024	101619
Rohde & Schwarz	ESW44	EMI Test Receiver	6/6/2023	Annual	6/6/2024	101668
Rohde & Schwarz	TS-PR8	Pre-Amplifier (30MHz - 8GHz)	6/22/2023	Annual	6/22/2024	102356
Rohde & Schwarz	TS-PR1840	Pre-Amplifier (18GHz - 40GHz)	6/2/2023	Annual	6/2/2024	100050
Rohde & Schwarz	HFH2-Z2	Loop Antenna	5/1/2023	Annual	5/1/2024	100519
Rohde & Schwarz	ENV216	Two-Line V-Network	6/8/2023	Annual	6/8/2024	192052
Schwarzbeck	VULB 9162	Bilog Antenna (30MHz - 6GHz)	4/17/2023	Annual	4/17/2024	00304

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.

7.0 TEST RESULTS

7.1 Summary

Company Name: Apple Inc.

FCC ID: BCGA2836

IC: 579C-A2836

FCC Classification: Digital Transmission System (DTS)

FCC Part Section(s)	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
15.247(a)(2)	RSS-247 [5.2]	6dB Bandwidth	> 500kHz	CONDUCTED	PASS	Section 7.1
2.1049	RSS-Gen [6.7]	Occupied Bandwidth	N/A		N/A	Section 7.1
15.247(b)(3)	RSS-247 [5.4]	Transmitter Output Power	< 1 Watt		PASS	Sections 7.3
15.247(e)	RSS-247 [5.2]	Transmitter Power Spectral Density	< 8dBm / 3kHz Band		PASS	Section 7.4
15.247(d)	RSS-247 [5.5]	Band Edge / Out-of-Band Emissions	≥ 20dBc		PASS	Sections 7.5, 7.6
15.205 15.209	RSS-Gen [8.9]	General Field Strength Limits (Restricted Bands and Radiated Emission Limits)	Emissions in restricted bands must meet the radiated limits detailed in 15.209 (RSS-Gen [8.9])	RADIATED	PASS	Sections 7.7, 7.8
15.207	RSS-Gen [8.8]	AC Conducted Emissions 150kHz – 30MHz	< FCC 15.207 limits (RSS-Gen[8.8])	AC LINE CONDUCTED	PASS	Section 7.9

Table 7-1. Summary of Test Results

Notes:

1. All modes of operation and data rates were investigated. 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 "WLAN Automation," Version 5.0.
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 3.0.
6. 802.11ax OFDMA testing was performed for all signal tone configurations as specified by the 802.11ax standard. Worst case results are determined and reported per the guidance provided at the October 2018 TCB Workshop.
7. Only one RU index could be selected at a time so no contiguous or non-contiguous RU's were considered for testing.

7.2 Bandwidth Measurement

§15.247(a.2); RSS-247 [5.2]; RSS-Gen [6.7]

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 transmitter antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates were investigated and the worst case configuration results are reported in this section.

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured. All modes of operation were investigated and the worst case configuration results are reported in this section.

The minimum permissible 6dB bandwidth is 500 kHz.

Test Procedure Used

ANSI C63.10-2013 – Subclause 11.8.2 Option 2
KDB 558074 D01 v05r02 – Section 8.2
RSS-Gen [6.7]

Test Settings

1. The signal analyzers' automatic bandwidth measurement capability of the spectrum analyzer was used to perform the 99% occupied bandwidth and the 6dB bandwidth measurement. The "X" dB bandwidth parameter was set to X = 6. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 100kHz
3. VBW ≥ 3 x RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. The trace was allowed to stabilize
8. If necessary, steps 2 – 7 were repeated after changing the RBW such that it would be within 1 – 5% of the 99% occupied bandwidth observed in Step 7

Test Setup

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

Figure 7-1. Test Instrument & Measurement Setup

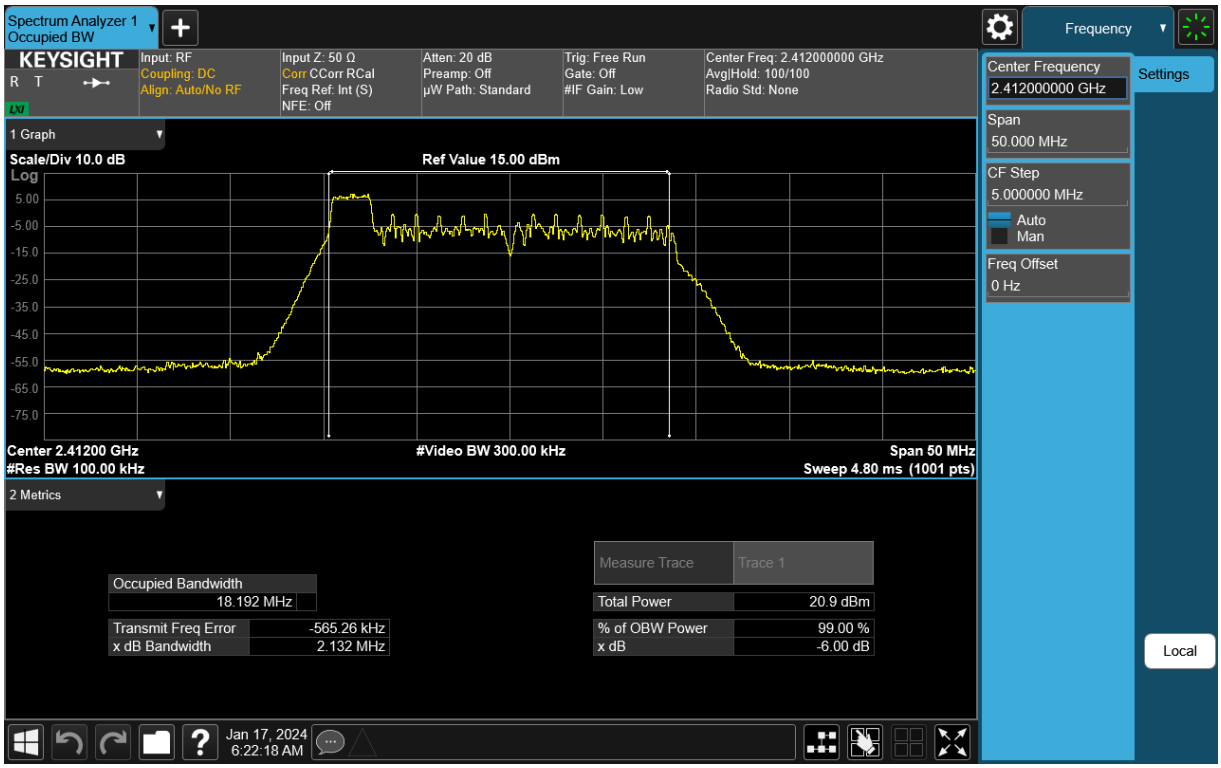
Test Notes

1. All antenna configurations and data rates were investigated and only the worst case is reported
2. All RU's were investigated and only worst case partially-loaded and fully-loaded RU's are reported.

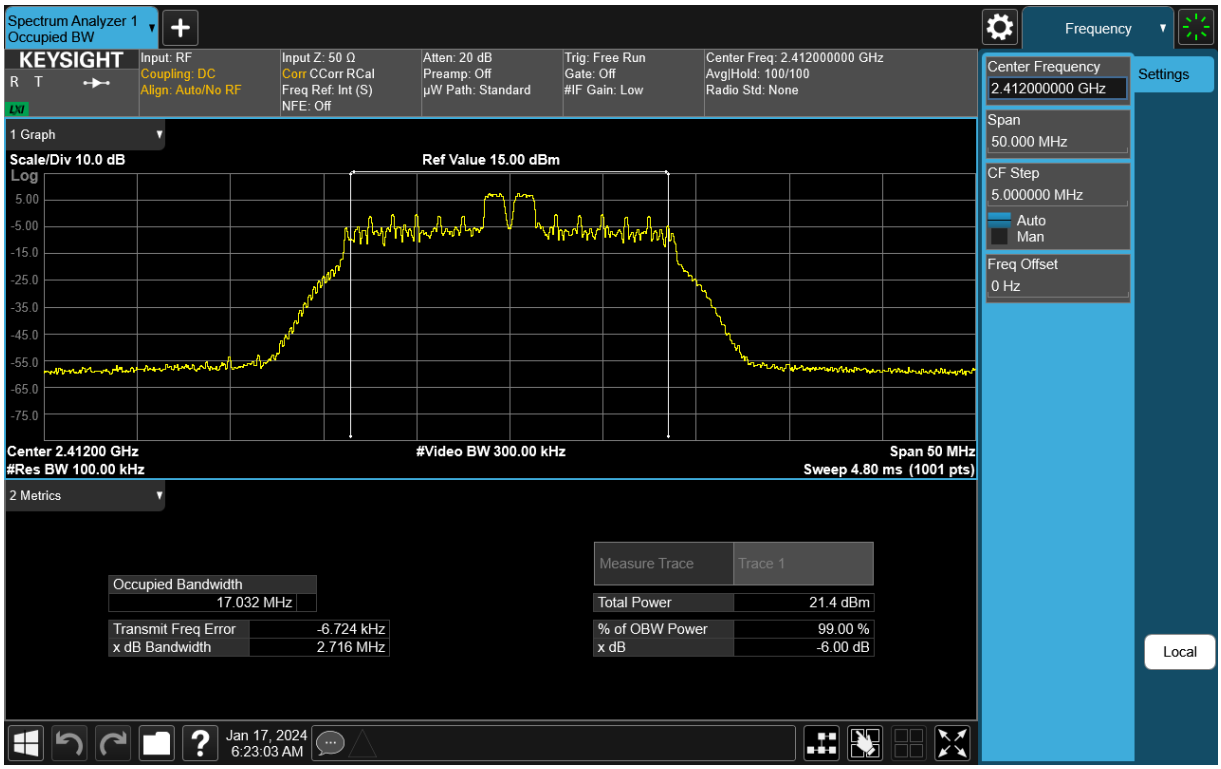
Antenna WF8 Bandwidth Measurements

Frequency [MHz]	Channel	802.11 MODE	RU Size	RU Index	Data Rate [Mbps]	Measured 99% Occupied Bandwidth [MHz]	Measured 6dB Bandwidth [MHz]	Minimum 6dB Bandwidth [MHz]	Pass/Fail
2412	1	ax	26	0	10/11.8 (MCS9)	18.19	2.13	0.50	Pass
			26	4	10/11.8 (MCS9)	17.03	2.72	0.50	Pass
			26	8	10/11.8 (MCS9)	18.25	2.12	0.50	Pass
2437	6	ax	26	0	10/11.8 (MCS9)	18.18	2.10	0.50	Pass
			26	4	10/11.8 (MCS9)	17.04	2.69	0.50	Pass
			26	8	10/11.8 (MCS9)	18.24	2.12	0.50	Pass
2462	11	ax	26	0	10/11.8 (MCS9)	18.19	2.11	0.50	Pass
			26	4	10/11.8 (MCS9)	17.05	2.71	0.50	Pass
			26	8	10/11.8 (MCS9)	18.26	2.11	0.50	Pass
2412	1	ax	242	61	97.5/114.7 (MCS9)	18.96	19.14	0.50	Pass
2437	6	ax	242	61	97.5/114.7 (MCS9)	18.97	19.11	0.50	Pass
2462	11	ax	242	61	97.5/114.7 (MCS9)	18.95	19.12	0.50	Pass

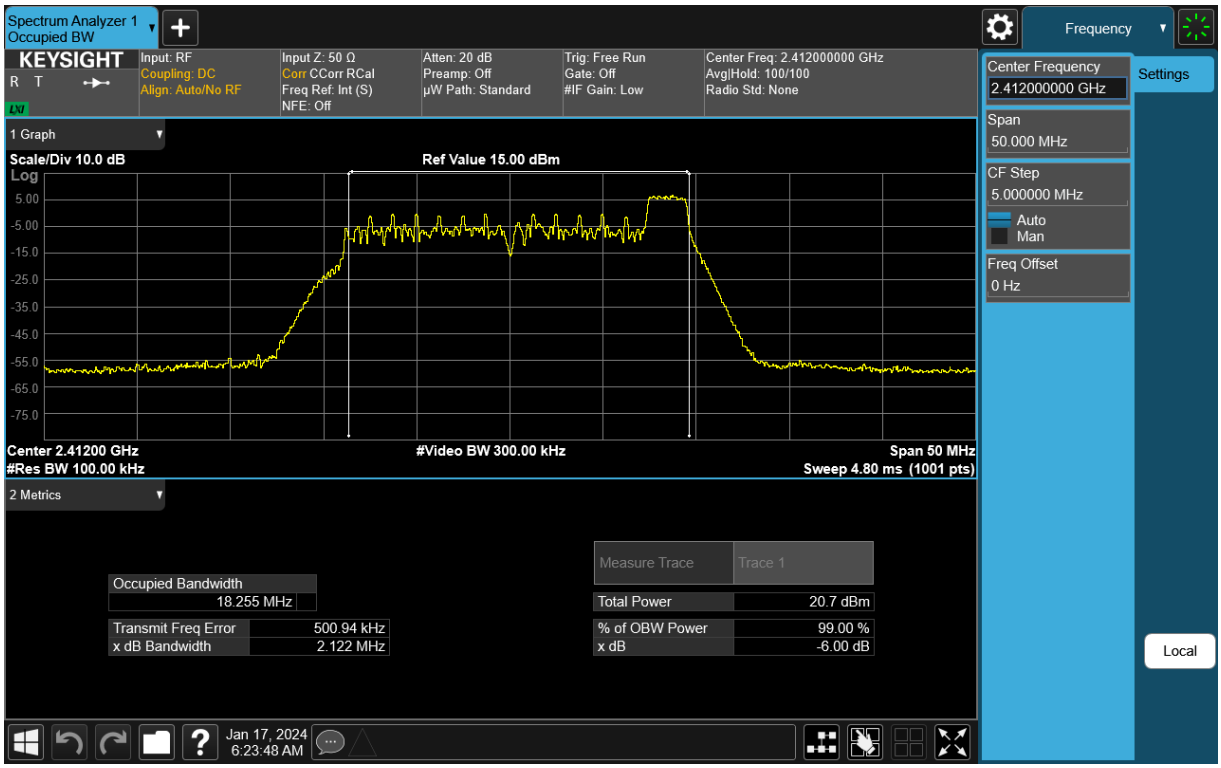
Table 7-2. 6dB BW & 99% OBW Measurements Antenna WF8



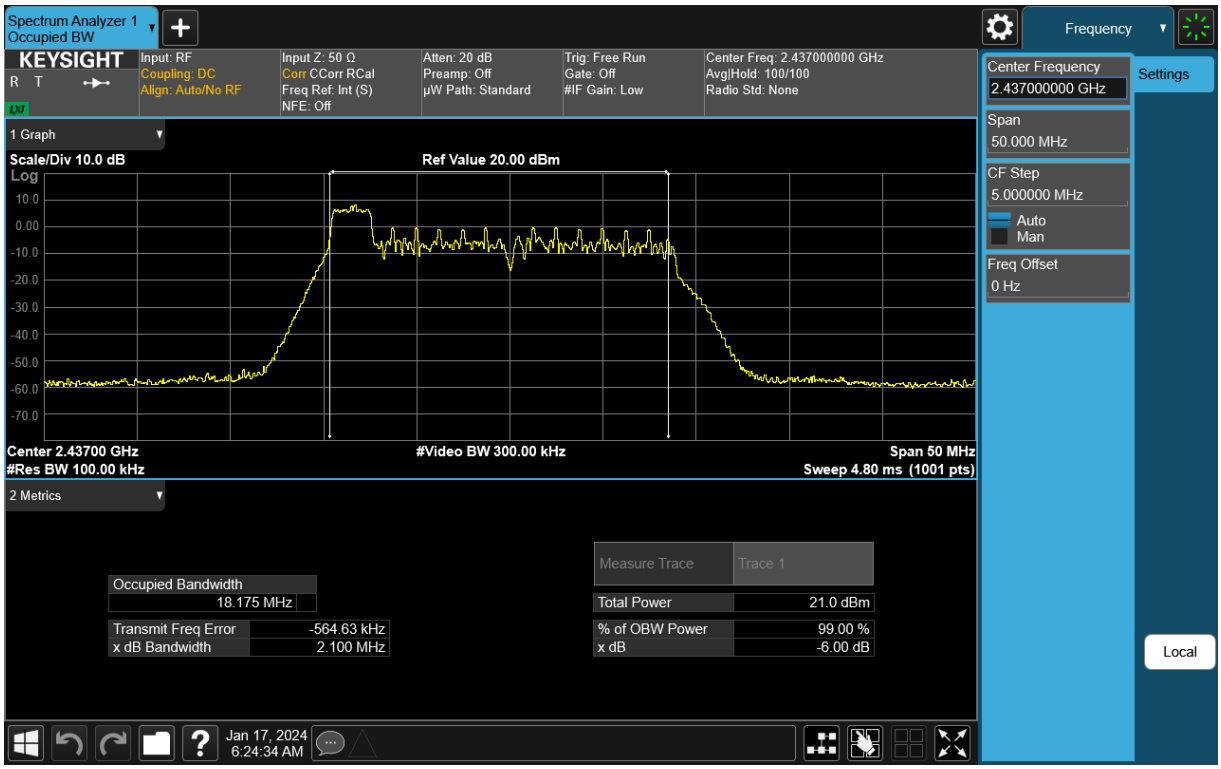
Plot 7-1. 6dB BW & 99% OBW Plot Antenna WF8 (802.11ax OFDMA – RU26 Index 0 – Ch. 1)



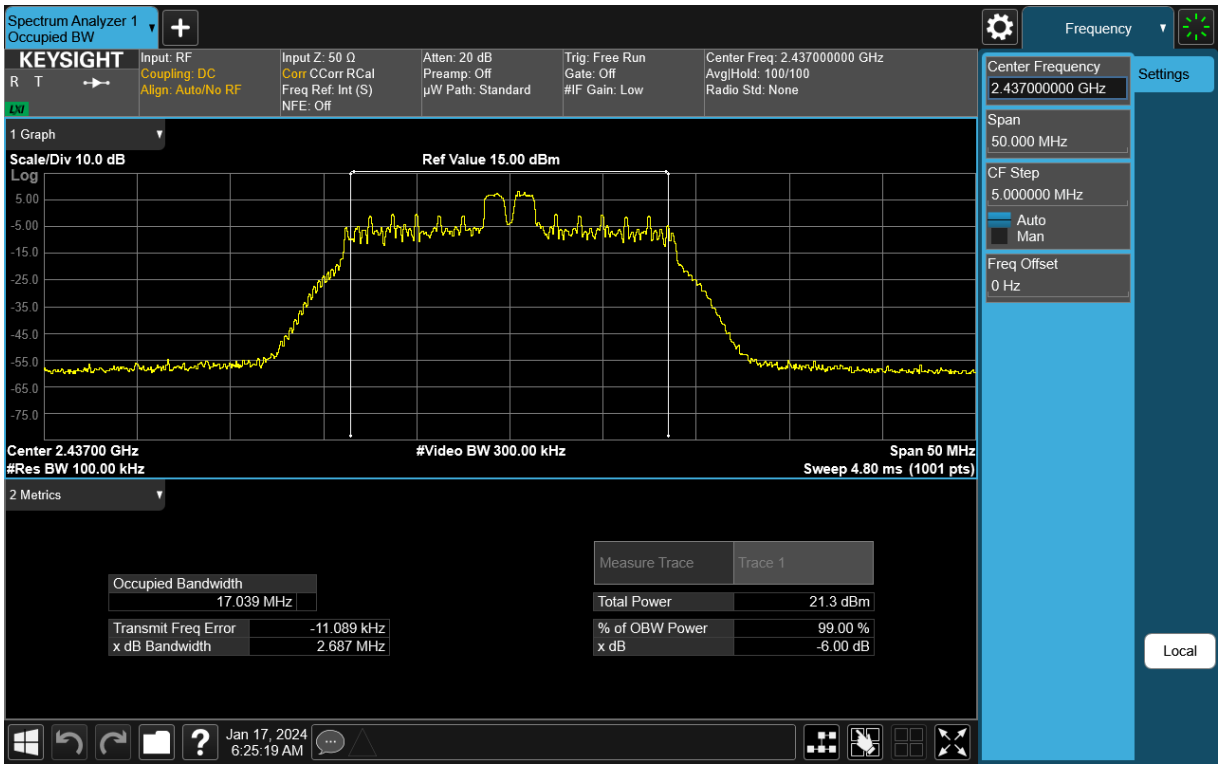
Plot 7-2. 6dB BW & 99% OBW Plot Antenna WF8 (802.11ax OFDMA – RU26 Index 4 – Ch. 1)



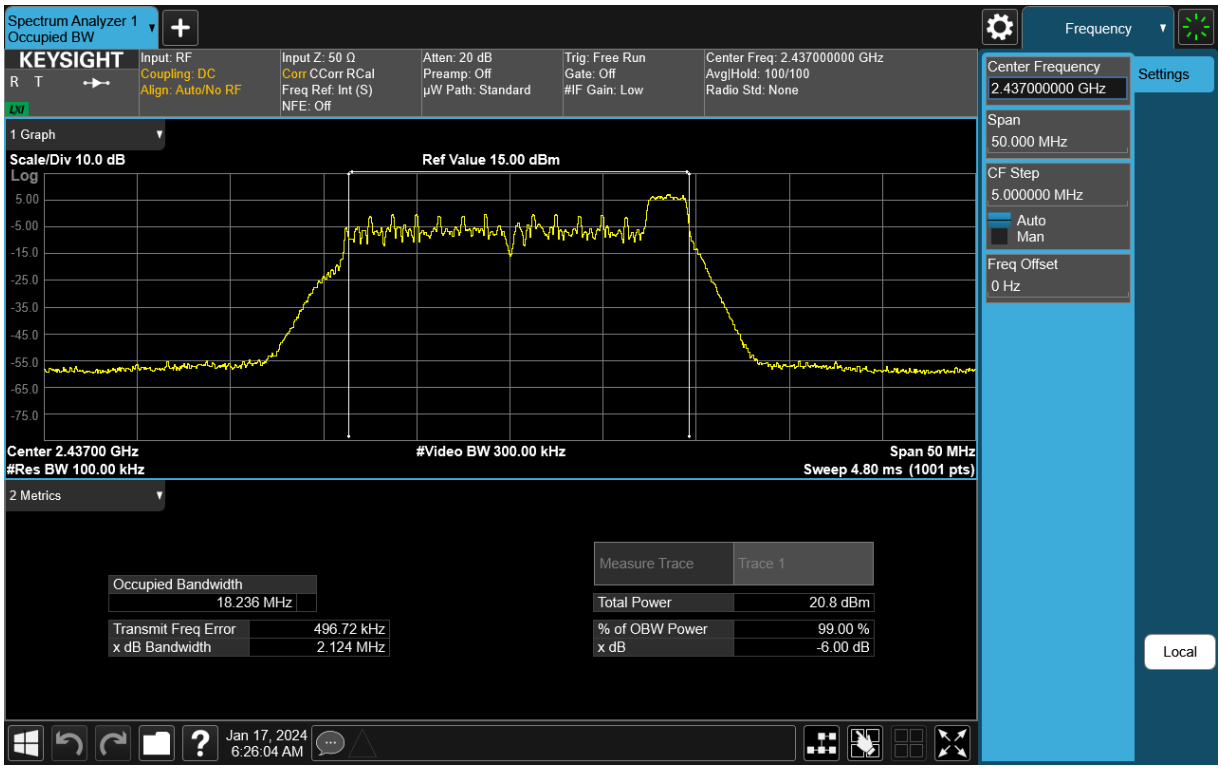
Plot 7-3. 6dB BW & 99% OBW Plot Antenna WF8 (802.11ax OFDMA – RU26 Index 8 – Ch. 1)



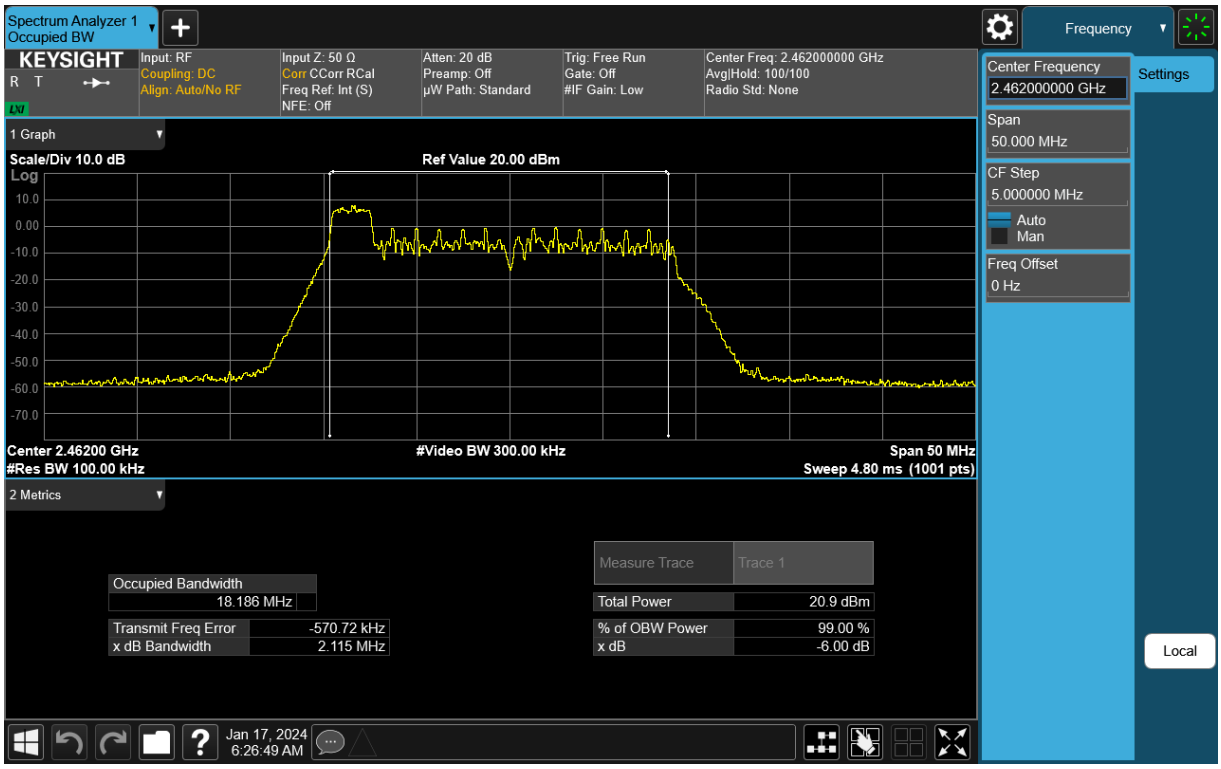
Plot 7-4. 6dB BW & 99% OBW Plot Antenna WF8 (802.11ax OFDMA – RU26 Index 0 – Ch. 6)



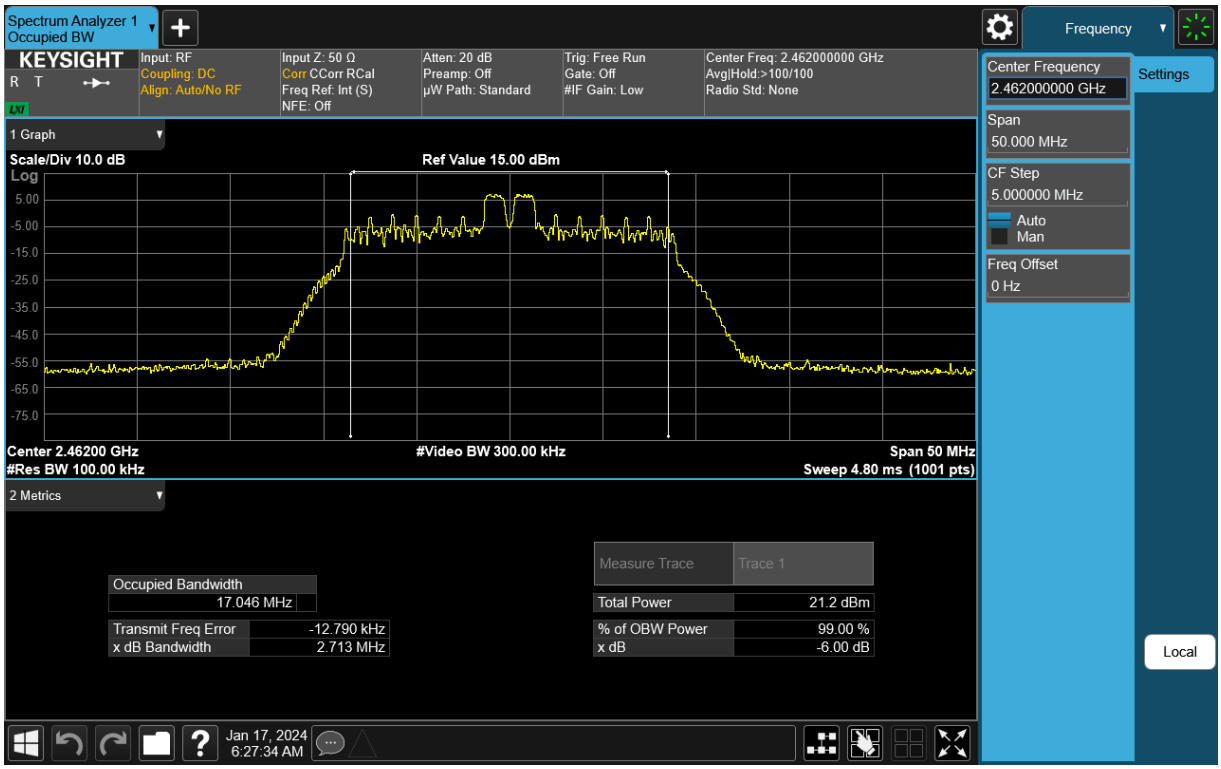
Plot 7-5. 6dB BW & 99% OBW Plot Antenna WF8 (802.11ax OFDMA – RU26 Index 4 – Ch. 6)



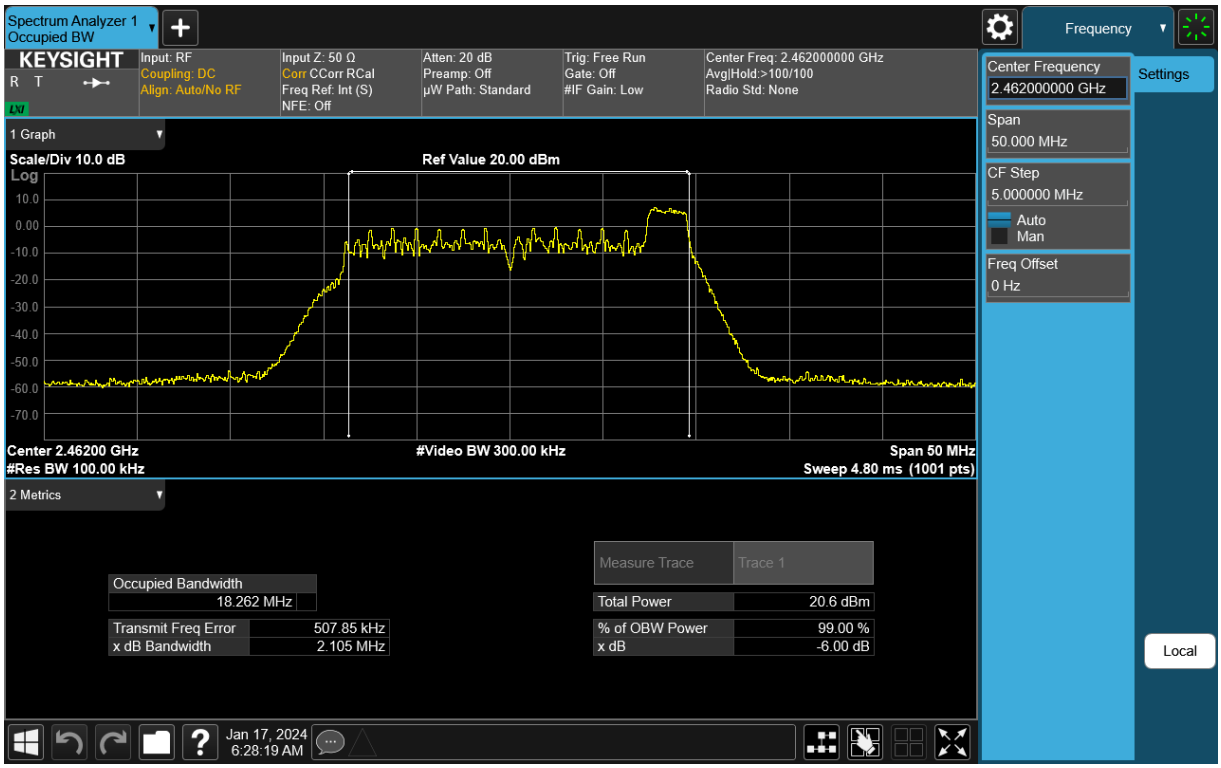
Plot 7-6. 6dB BW & 99% OBW Antenna WF8 (802.11ax OFDMA – RU26 Index 8 – Ch. 6)



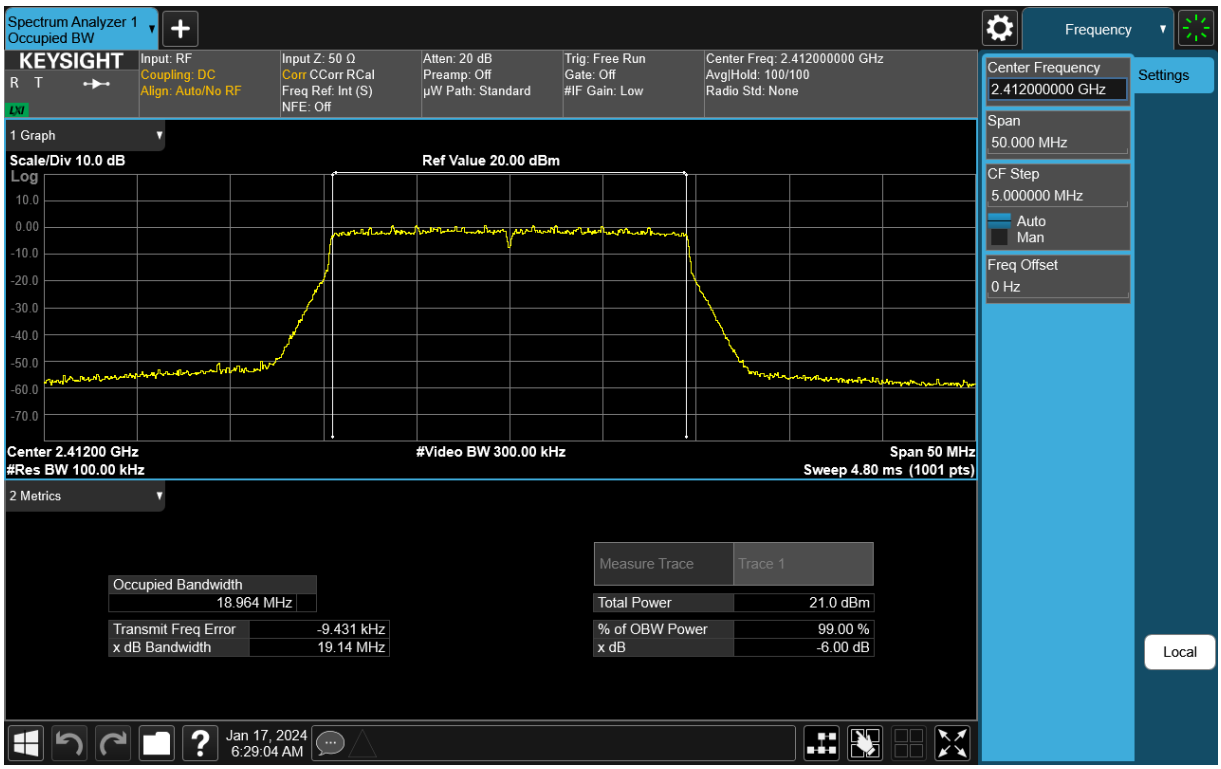
Plot 7-7. 6dB BW & 99% OBW Antenna WF8 (802.11ax OFDMA – RU26 Index 0 – Ch. 11)



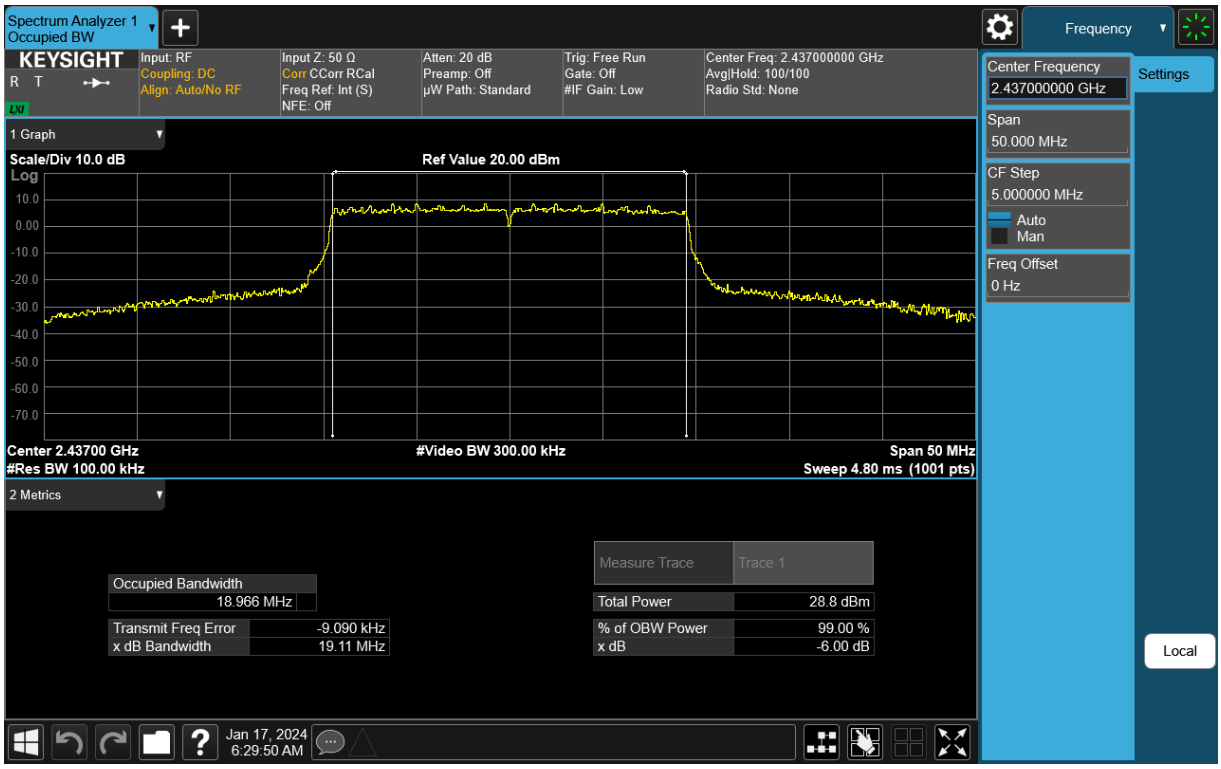
Plot 7-8. 6dB BW & 99% OBW Antenna WF8 (802.11ax OFDMA – RU26 Index 4 – Ch. 11)



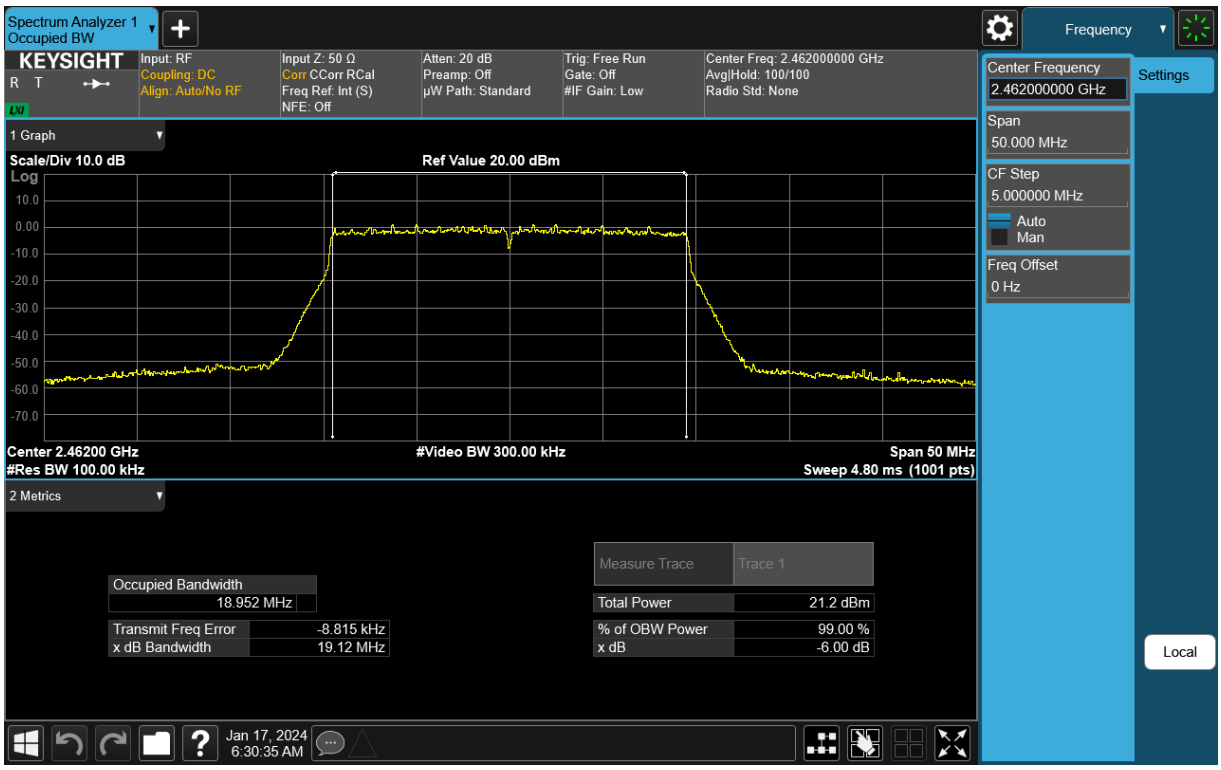
Plot 7-9. 6dB BW & 99% OBW Plot Antenna WF8 (802.11ax OFDMA – RU26 Index 8 – Ch. 11)



Plot 7-10. 6dB BW & 99% OBW Plot Antenna WF8 (802.11ax OFDMA – RU242 – Ch. 1)



Plot 7-11. 6dB BW & 99% OBW Plot Antenna WF8 (802.11ax OFDMA – RU242 – Ch. 6)

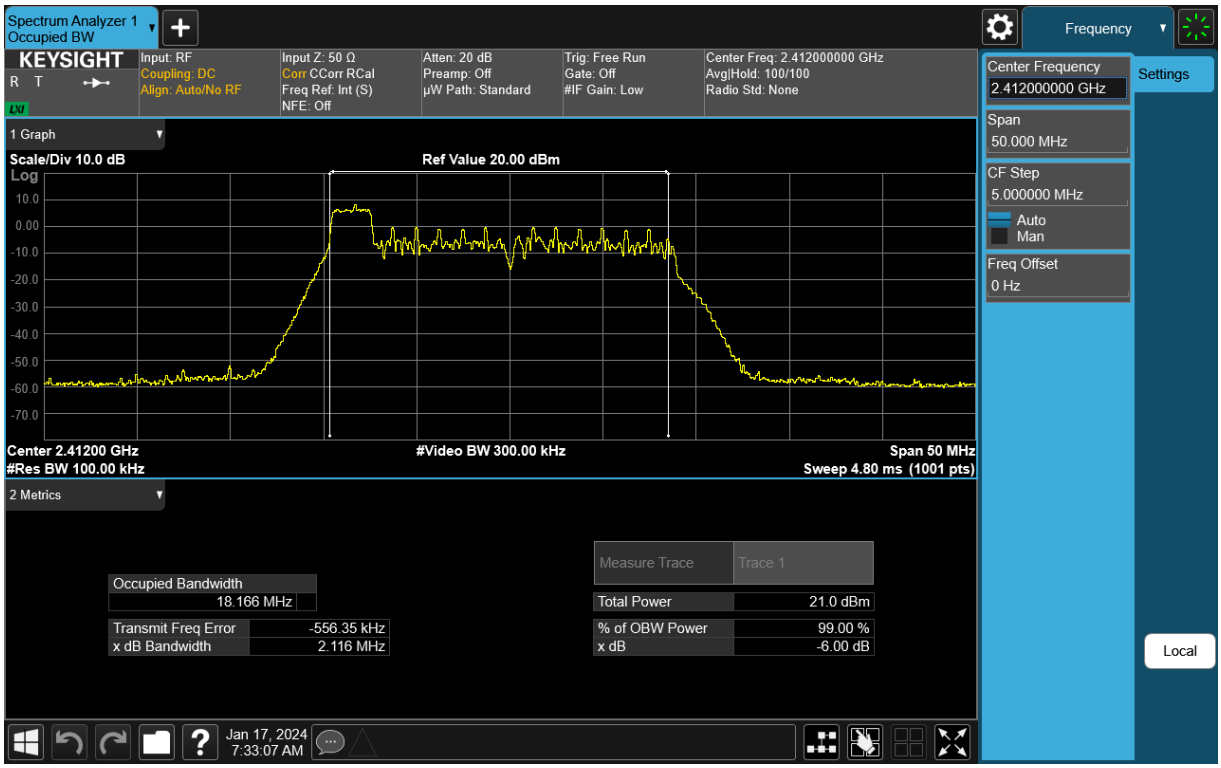


Plot 7-12. 6dB BW & 99% OBW Plot Antenna WF8 (802.11ax OFDMA – RU242 – Ch. 11)

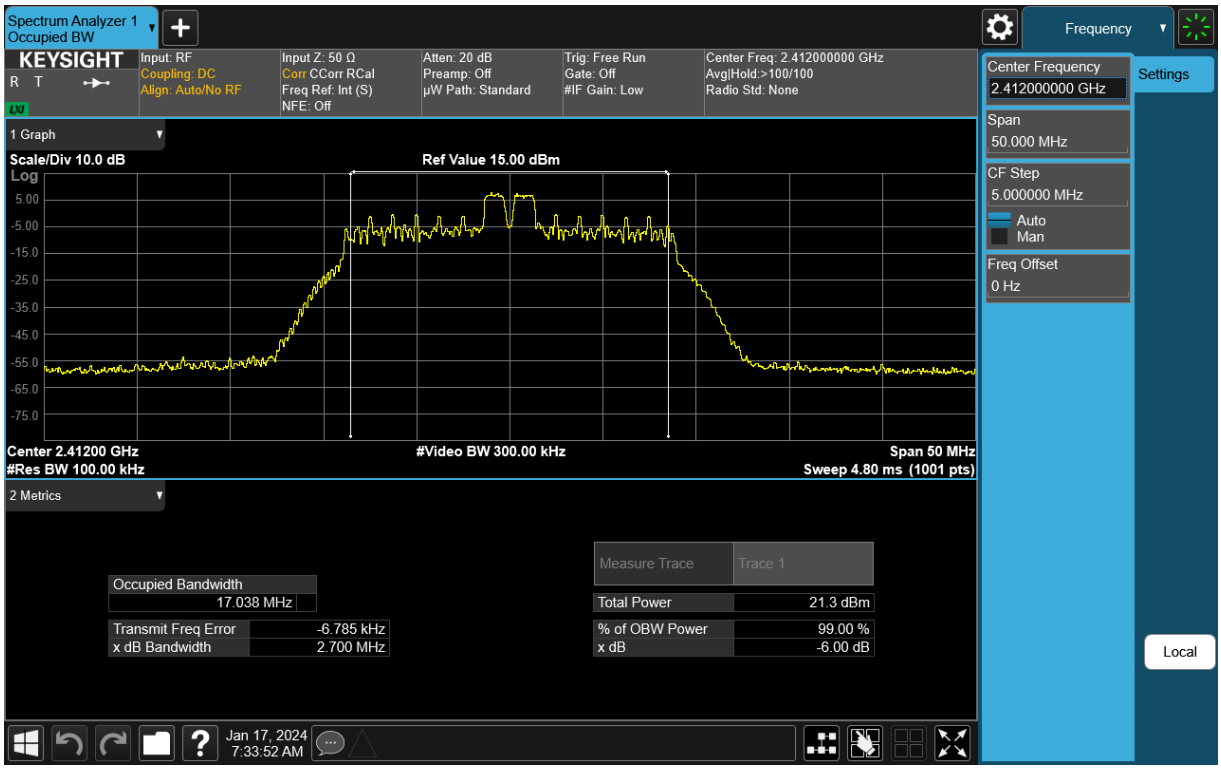
Antenna WF7 Bandwidth Measurements

Frequency [MHz]	Channel	802.11 MODE	RU Size	RU Index	Data Rate [Mbps]	Measured 99% Occupied Bandwidth [MHz]	Measured 6dB Bandwidth [MHz]	Minimum 6dB Bandwidth [MHz]	Pass/Fail
2412	1	ax	26	0	10/11.8 (MCS9)	18.17	2.12	0.50	Pass
			26	4	10/11.8 (MCS9)	17.04	2.70	0.50	Pass
			26	8	10/11.8 (MCS9)	18.24	2.12	0.50	Pass
2437	6	ax	26	0	10/11.8 (MCS9)	18.19	2.14	0.50	Pass
			26	4	10/11.8 (MCS9)	17.06	2.71	0.50	Pass
			26	8	10/11.8 (MCS9)	18.25	2.12	0.50	Pass
2462	11	ax	26	0	10/11.8 (MCS9)	18.17	2.08	0.50	Pass
			26	4	10/11.8 (MCS9)	17.04	2.68	0.50	Pass
			26	8	10/11.8 (MCS9)	18.25	2.13	0.50	Pass
2412	1	ax	242	61	97.5/114.7 (MCS9)	18.96	19.12	0.50	Pass
2437	6	ax	242	61	97.5/114.7 (MCS9)	18.98	19.12	0.50	Pass
2462	11	ax	242	61	97.5/114.7 (MCS9)	18.96	19.13	0.50	Pass

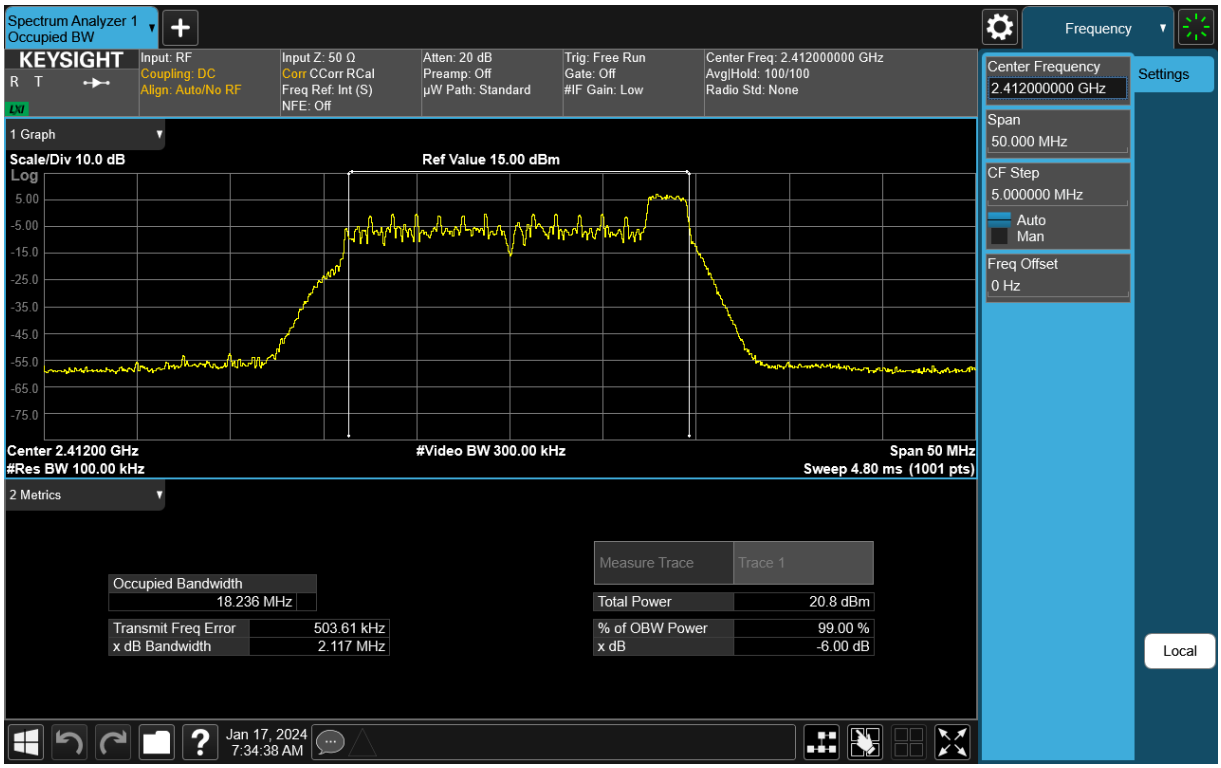
Table 7-3. 6dB BW & 99% OBW Measurements Antenna WF7



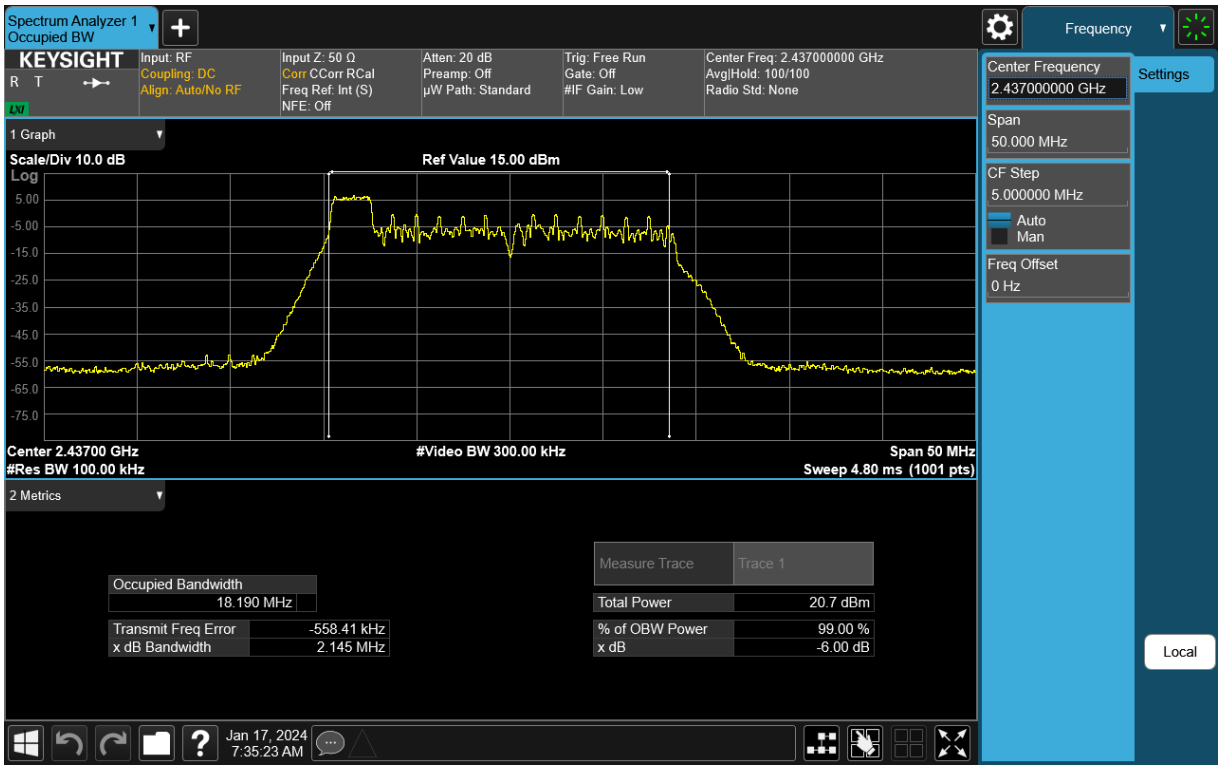
Plot 7-13. 6dB BW & 99% OBW Plot Antenna WF7 (802.11ax OFDMA – RU26 Index 0 – Ch. 1)



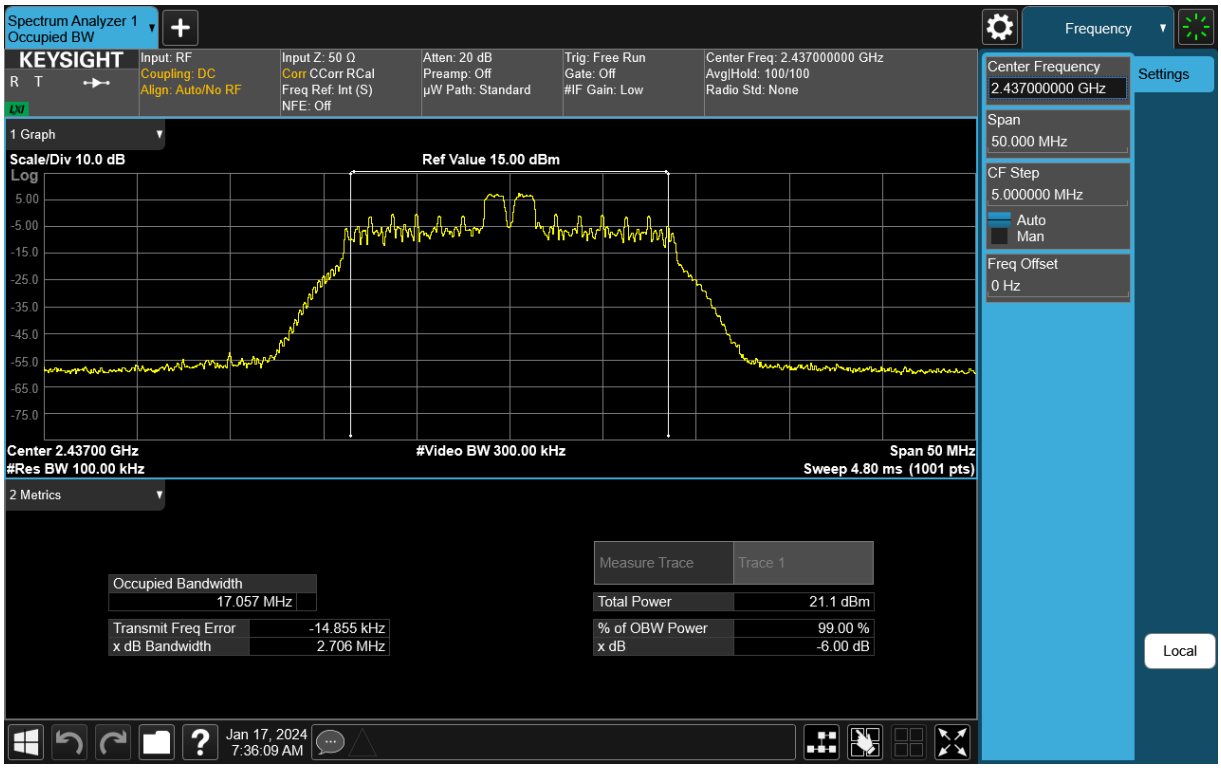
Plot 7-14. 6dB BW & 99% OBW Plot Antenna WF7 (802.11ax OFDMA – RU26 Index 4 – Ch. 1)



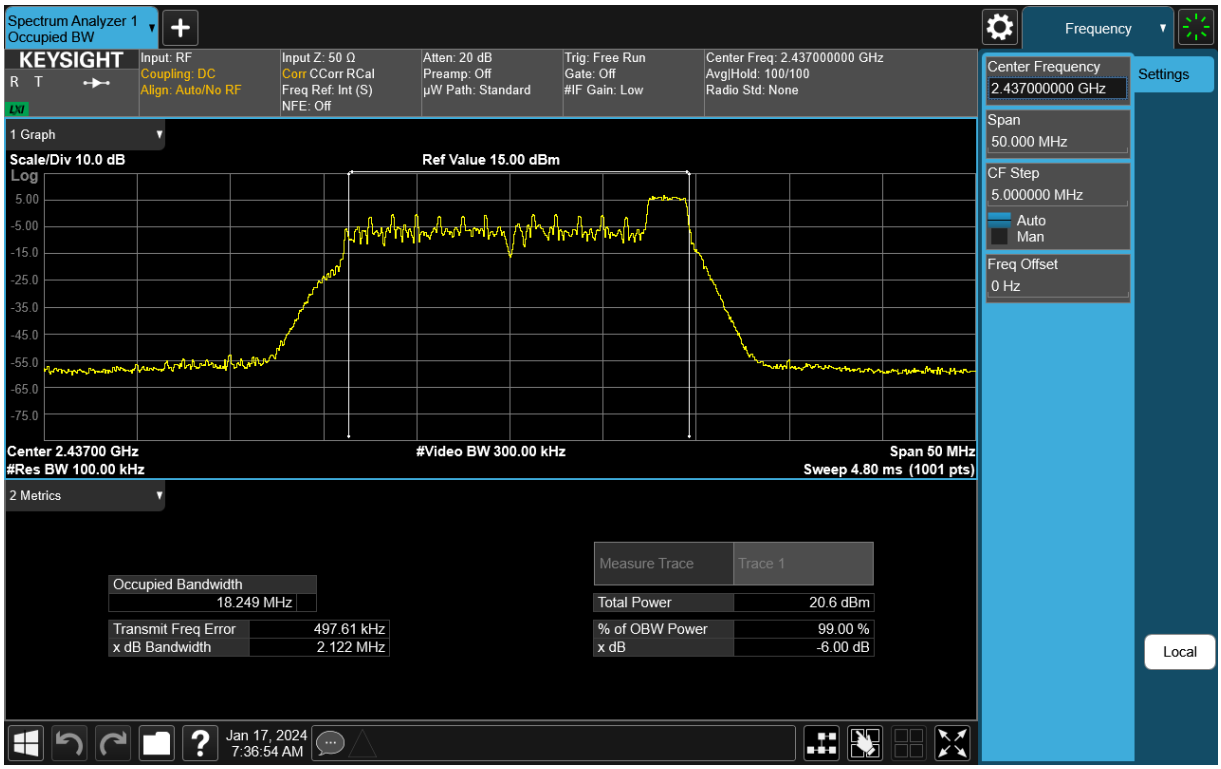
Plot 7-15. 6dB BW & 99% OBW Plot Antenna WF7 (802.11ax OFDMA – RU26 Index 8 – Ch. 1)



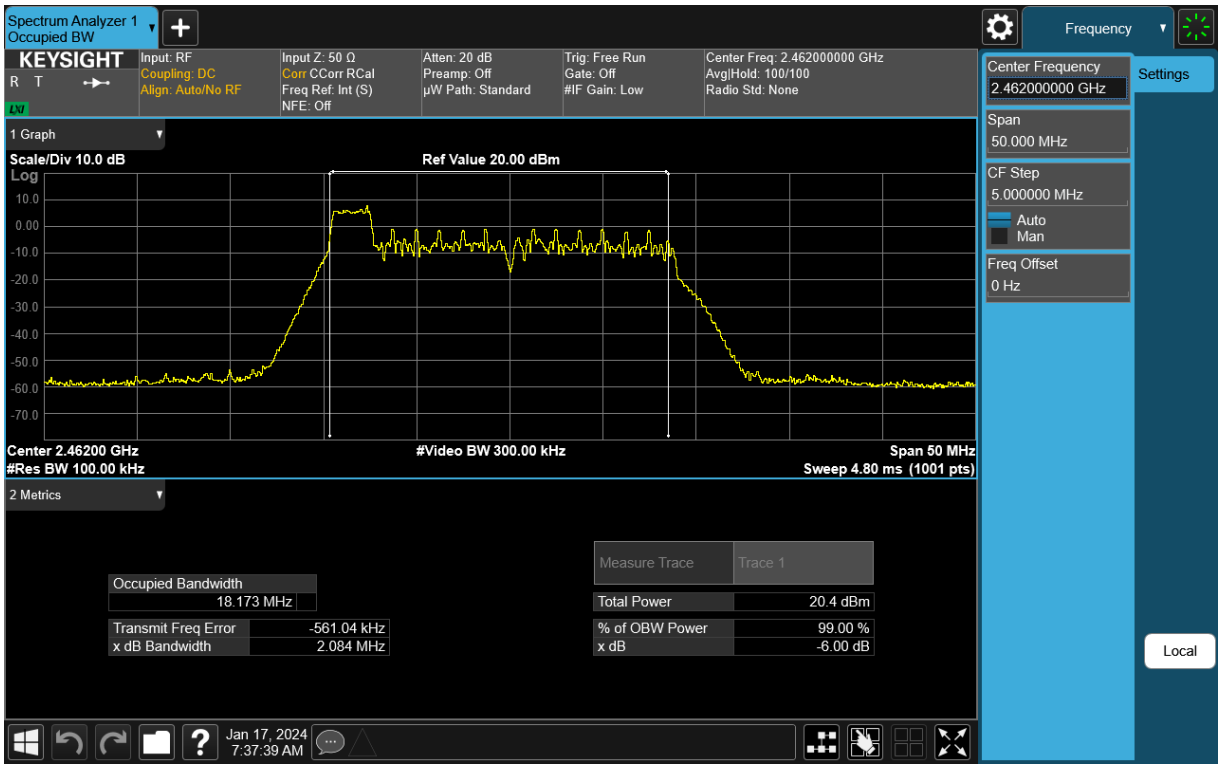
Plot 7-16. 6dB BW & 99% OBW Plot Antenna WF7 (802.11ax OFDMA – RU26 Index 0 – Ch. 6)



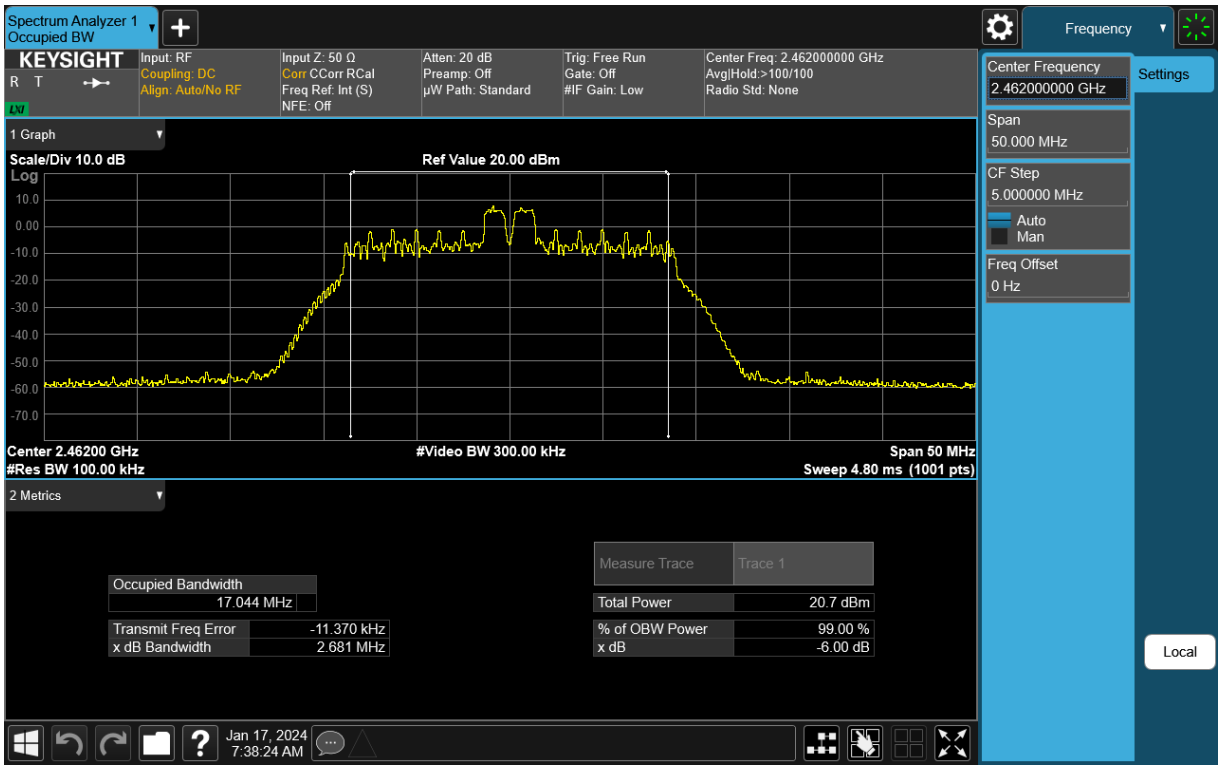
Plot 7-17. 6dB BW & 99% OBW Plot Antenna WF7 (802.11ax OFDMA – RU26 Index 4 – Ch. 6)



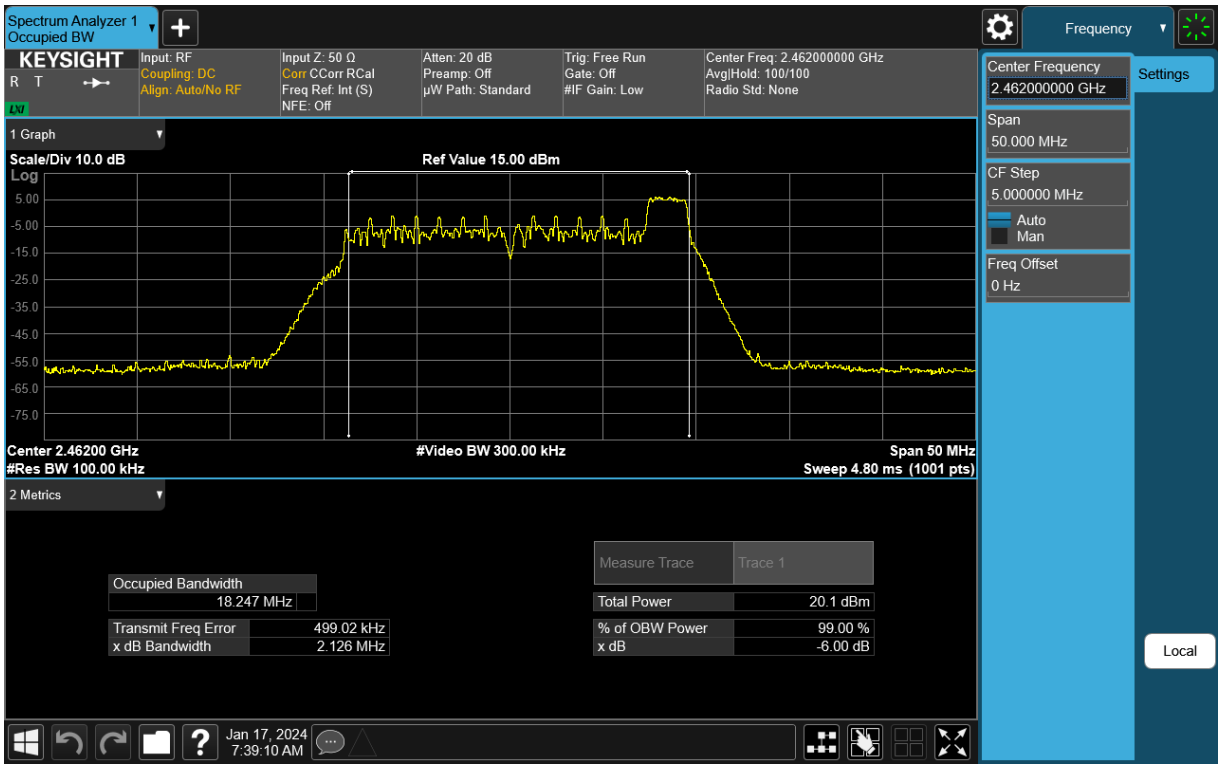
Plot 7-18. 6dB BW & 99% OBW Antenna WF7 (802.11ax OFDMA – RU26 Index 8 – Ch. 6)



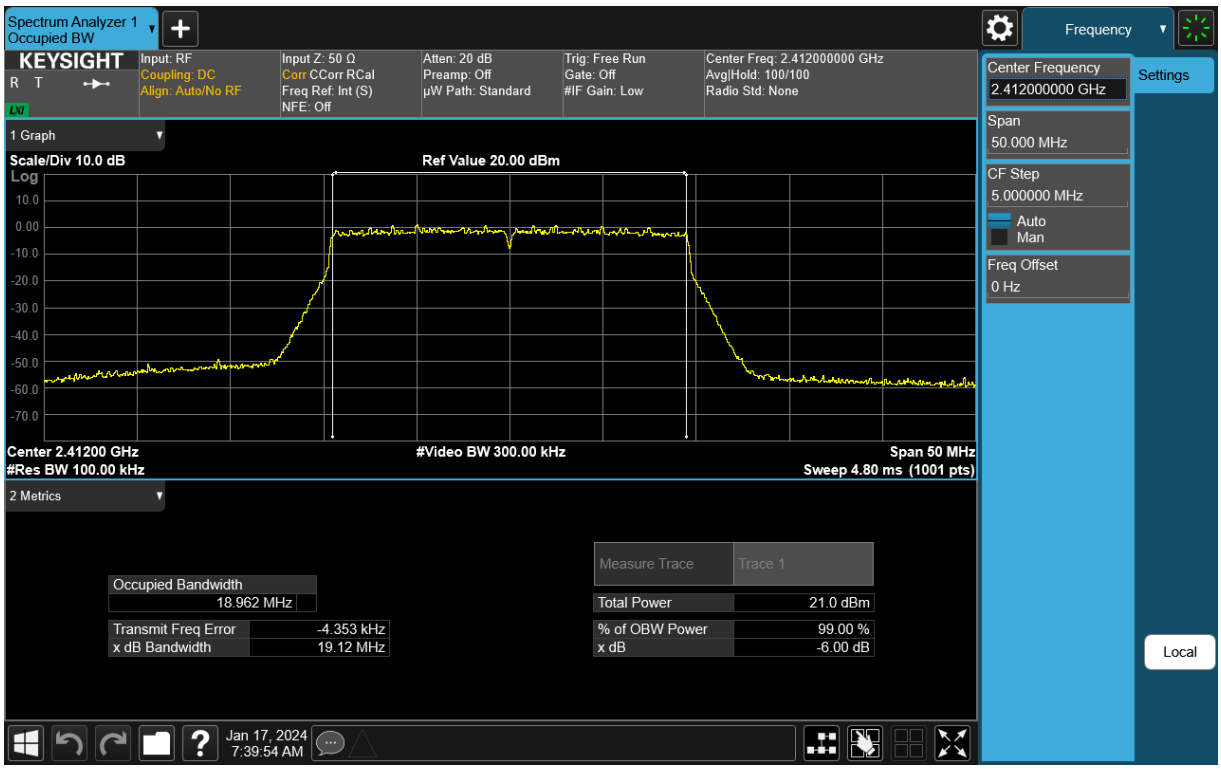
Plot 7-19. 6dB BW & 99% OBW Antenna WF7 (802.11ax OFDMA – RU26 Index 0 – Ch. 11)



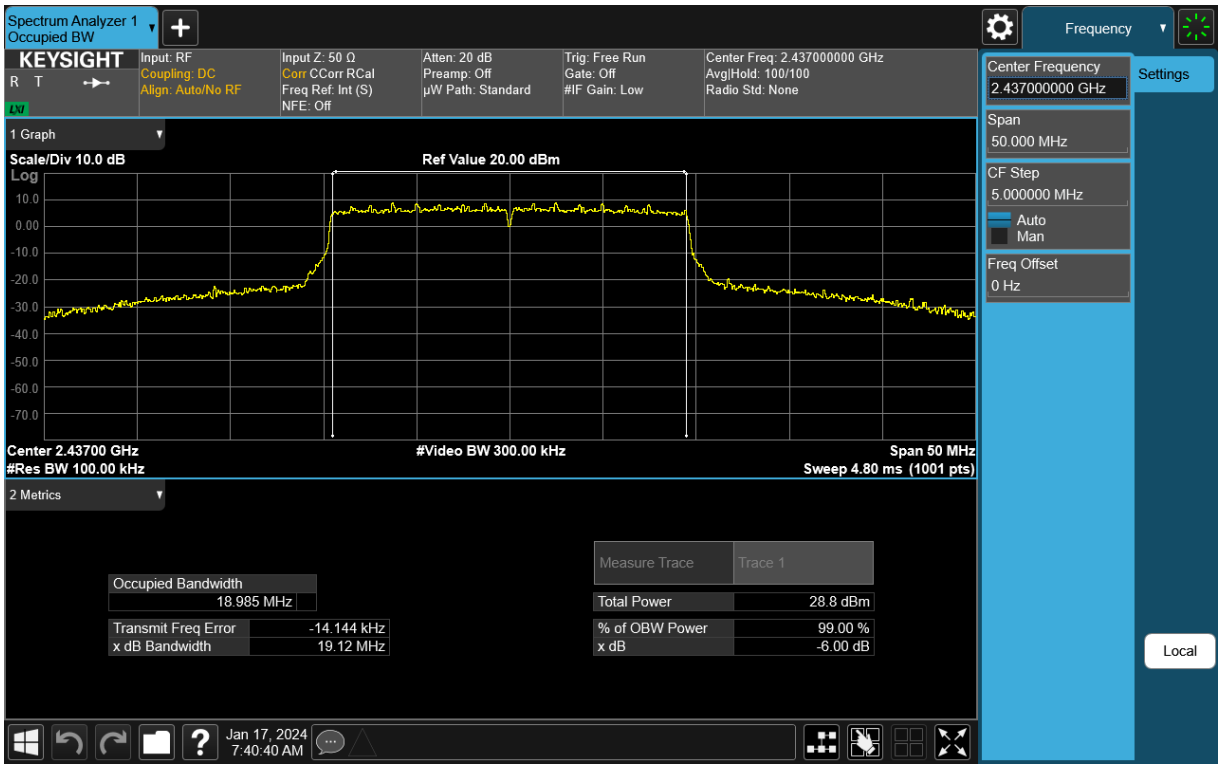
Plot 7-20. 6dB BW & 99% OBW Antenna WF7 (802.11ax OFDMA – RU26 Index 4 – Ch. 11)



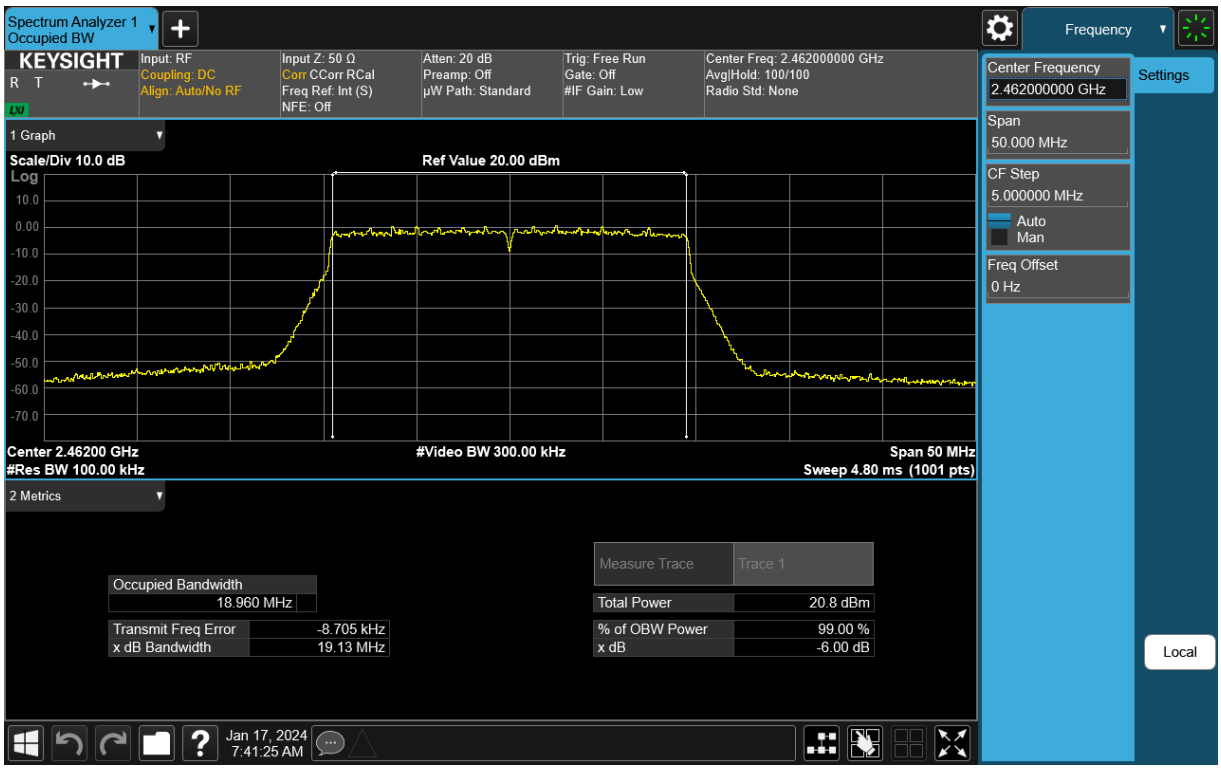
Plot 7-21. 6dB BW & 99% OBW Plot Antenna WF7 (802.11ax OFDMA – RU26 Index 8 – Ch. 11)



Plot 7-22. 6dB BW & 99% OBW Plot Antenna WF7 (802.11ax OFDMA – RU242 – Ch. 1)



Plot 7-23. 6dB BW & 99% OBW Plot Antenna WF7 (802.11ax OFDMA – RU242 – Ch. 6)

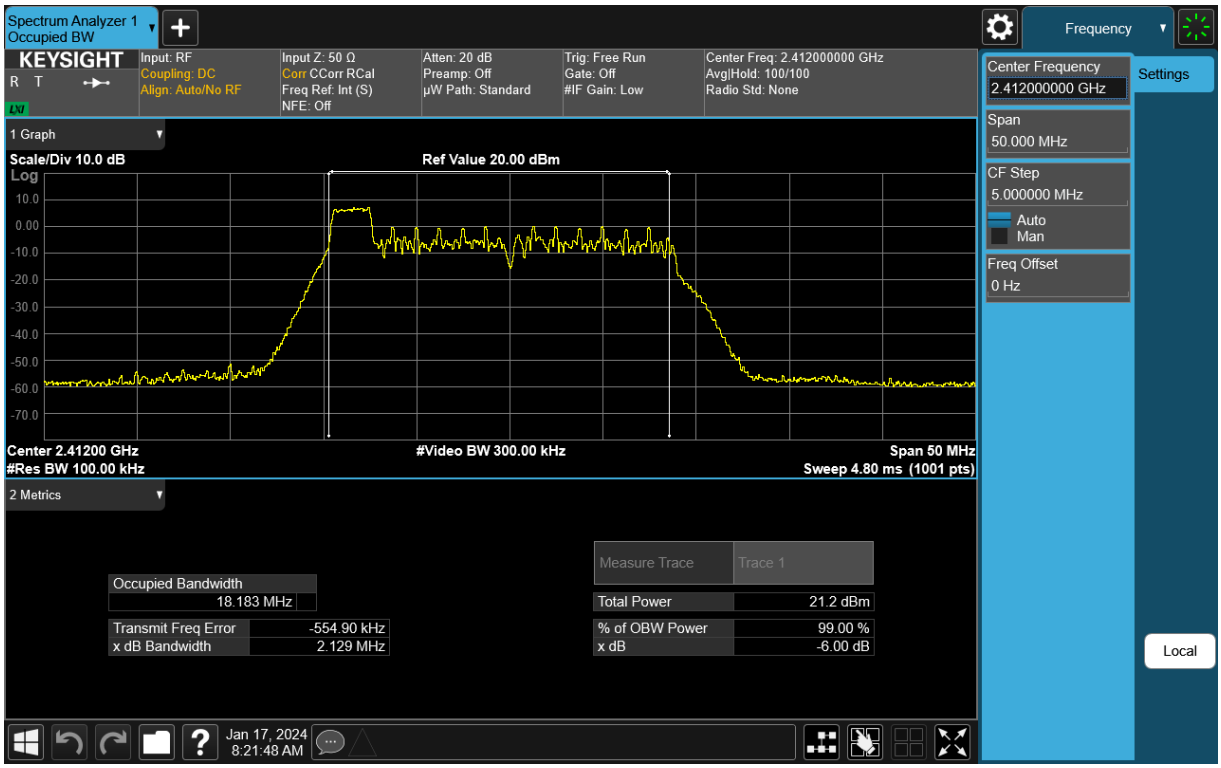


Plot 7-24. 6dB BW & 99% OBW Plot Antenna WF7 (802.11ax OFDMA – RU242 – Ch. 11)

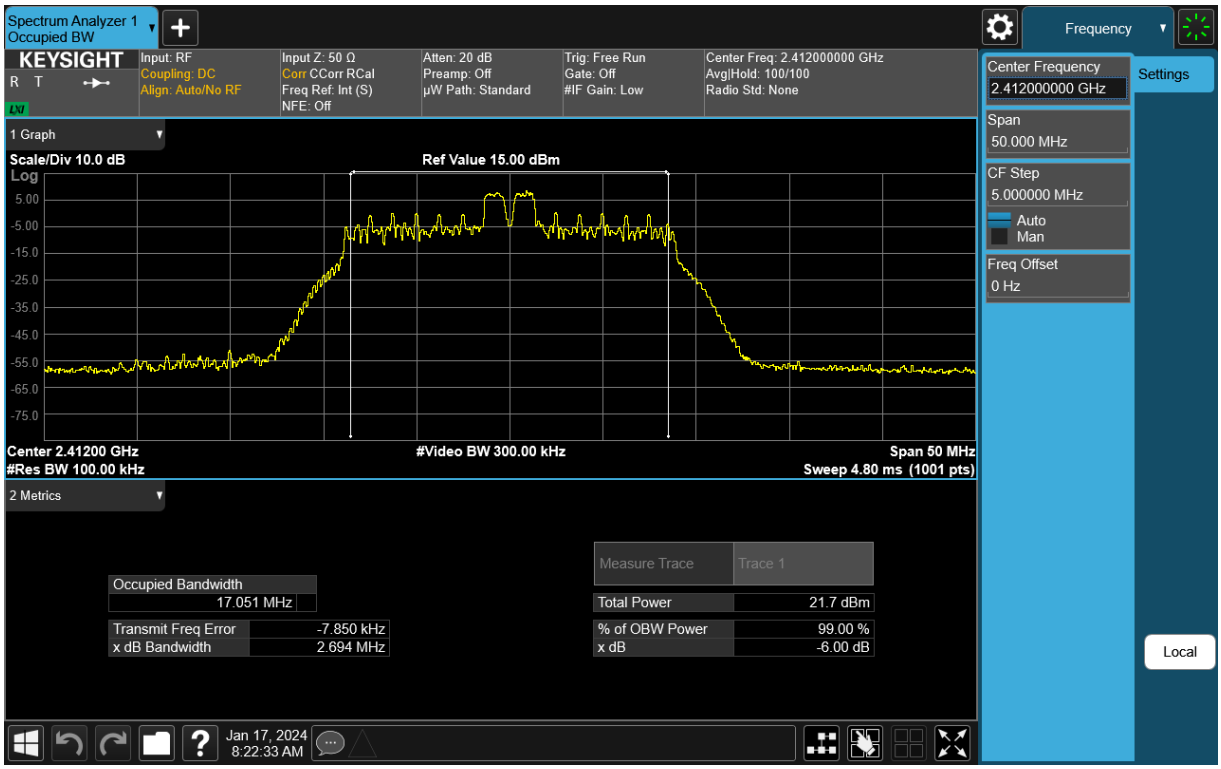
Antenna WF9 Bandwidth Measurements

Frequency [MHz]	Channel	802.11 MODE	RU Size	RU Index	Data Rate [Mbps]	Measured 99% Occupied Bandwidth [MHz]	Measured 6dB Bandwidth [MHz]	Minimum 6dB Bandwidth [MHz]	Pass/Fail
2412	1	ax	26	0	10/11.8 (MCS9)	18.18	2.13	0.50	Pass
			26	4	10/11.8 (MCS9)	17.05	2.69	0.50	Pass
			26	8	10/11.8 (MCS9)	18.23	2.13	0.50	Pass
2437	6	ax	26	0	10/11.8 (MCS9)	18.18	2.13	0.50	Pass
			26	4	10/11.8 (MCS9)	17.06	2.72	0.50	Pass
			26	8	10/11.8 (MCS9)	18.24	2.13	0.50	Pass
2462	11	ax	26	0	10/11.8 (MCS9)	18.20	2.10	0.50	Pass
			26	4	10/11.8 (MCS9)	17.03	2.71	0.50	Pass
			26	8	10/11.8 (MCS9)	18.22	2.10	0.50	Pass
2412	1	ax	242	61	97.5/114.7 (MCS9)	18.95	19.13	0.50	Pass
2437	6	ax	242	61	97.5/114.7 (MCS9)	18.98	19.11	0.50	Pass
2462	11	ax	242	61	97.5/114.7 (MCS9)	18.95	19.12	0.50	Pass

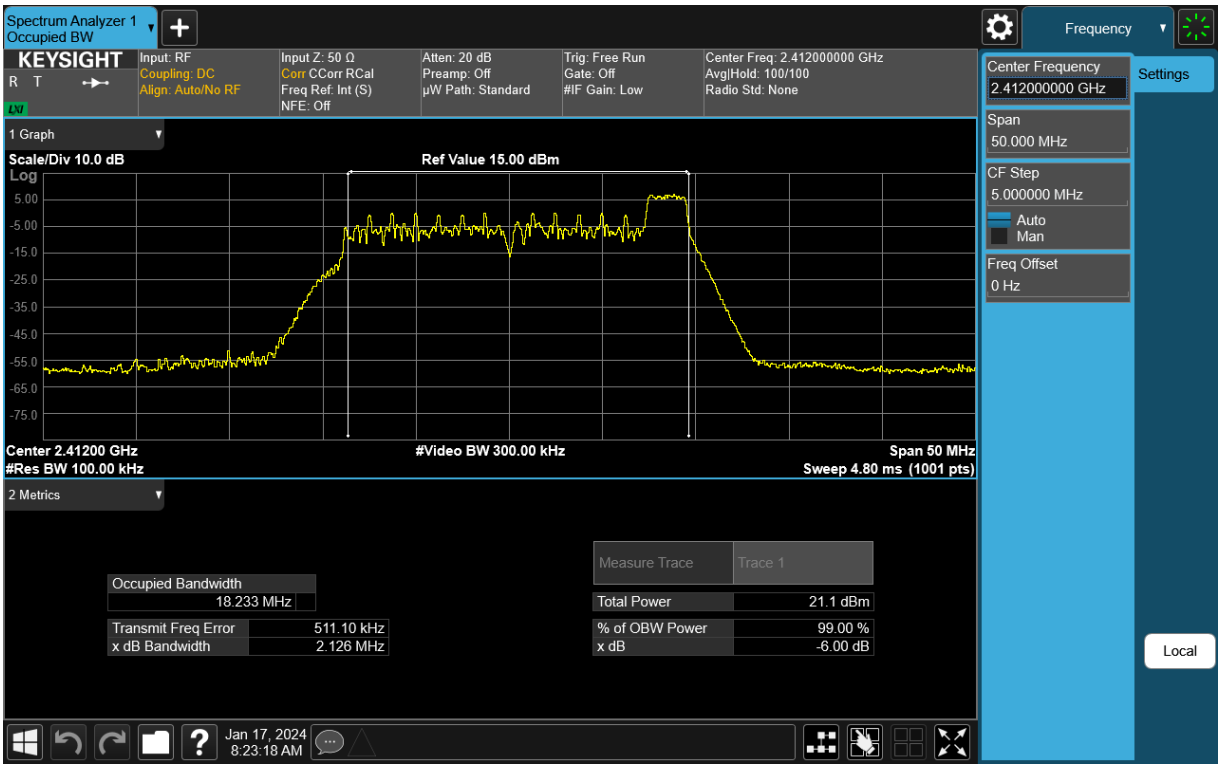
Table 7-4. 6dB BW & 99% OBW Measurements Antenna WF9



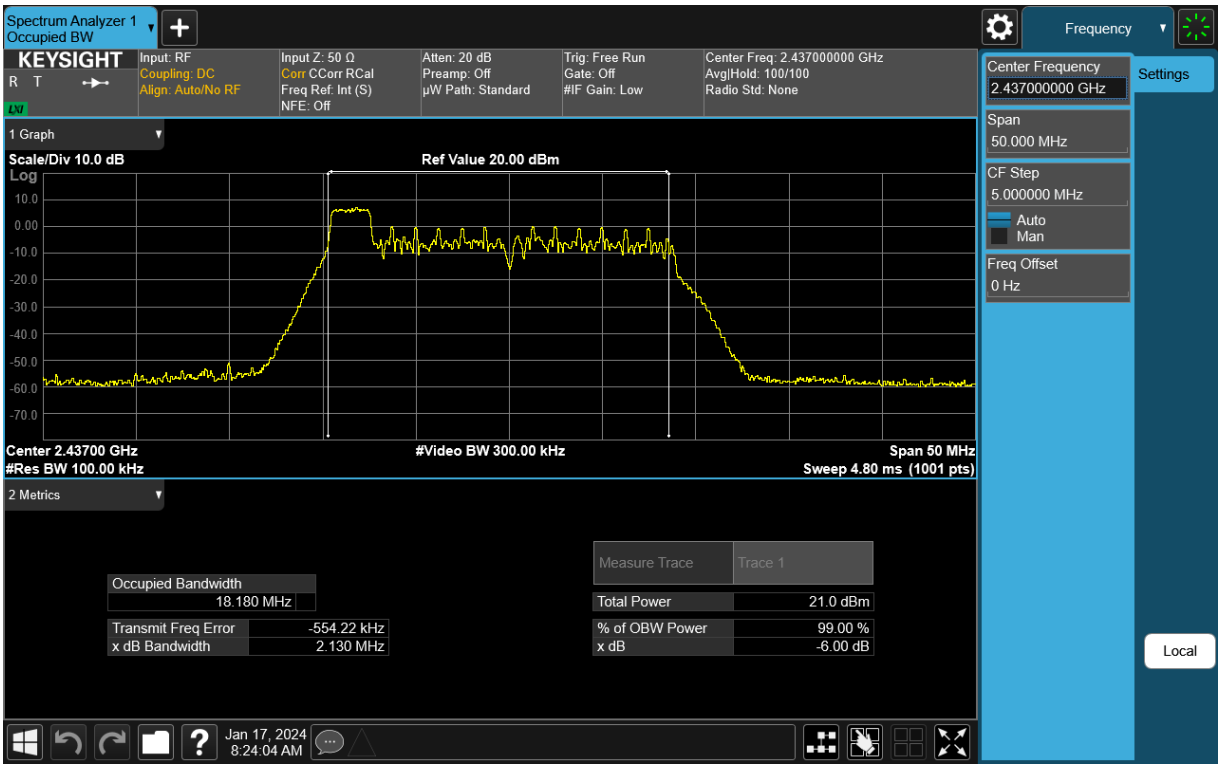
Plot 7-25. 6dB BW & 99% OBW Plot Antenna WF9 (802.11ax OFDMA – RU26 Index 0 – Ch. 1)



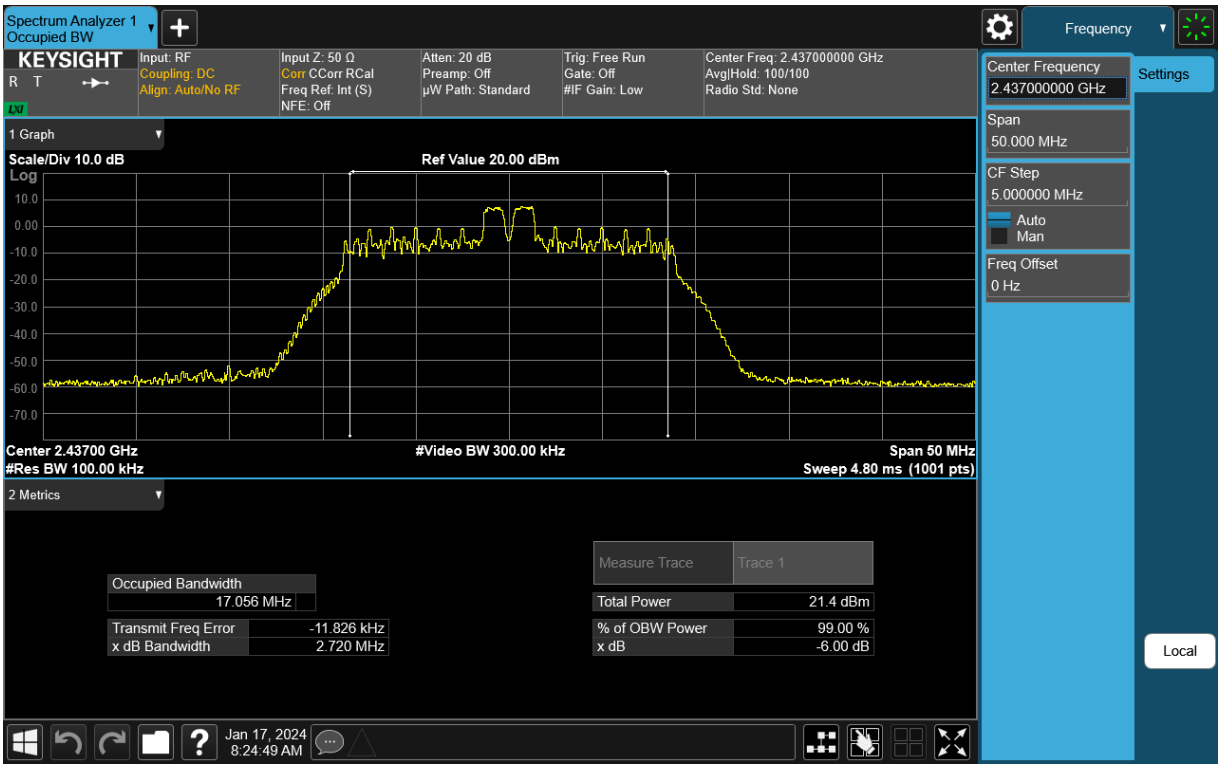
Plot 7-26. 6dB BW & 99% OBW Plot Antenna WF9 (802.11ax OFDMA – RU26 Index 4 – Ch. 1)



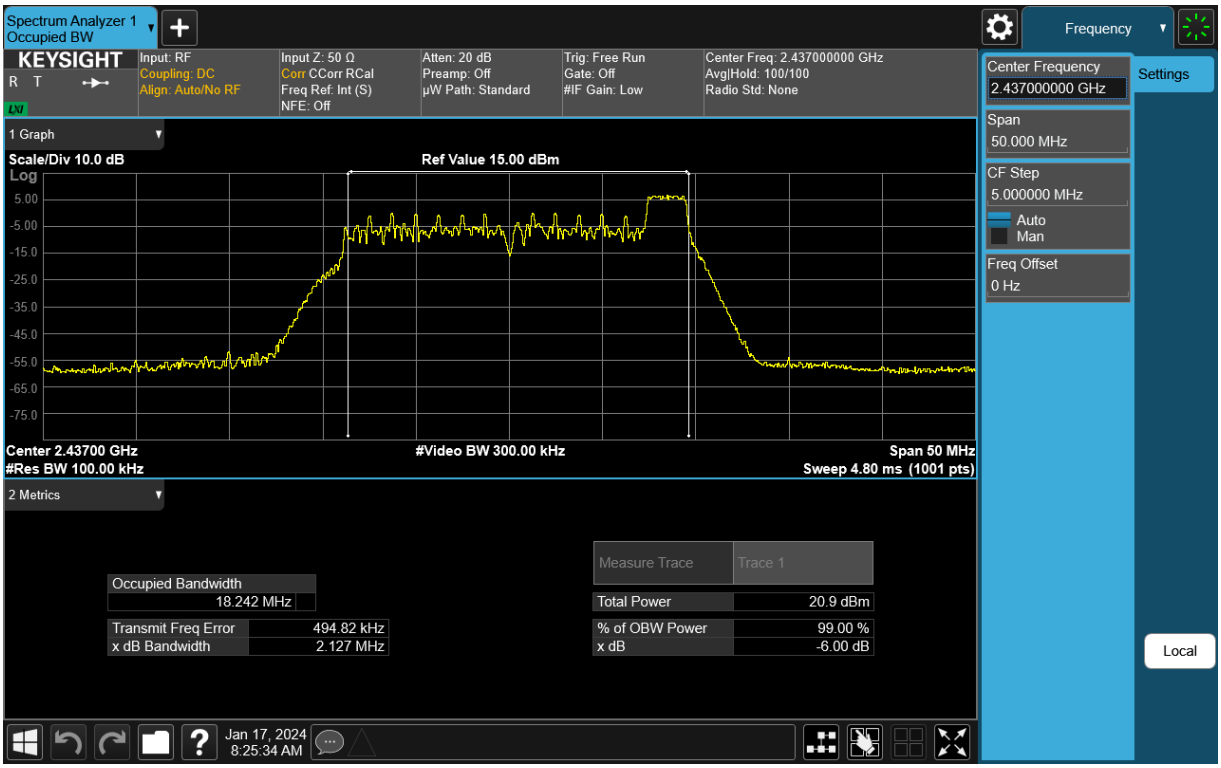
Plot 7-27. 6dB BW & 99% OBW Plot Antenna WF9 (802.11ax OFDMA – RU26 Index 8 – Ch. 1)



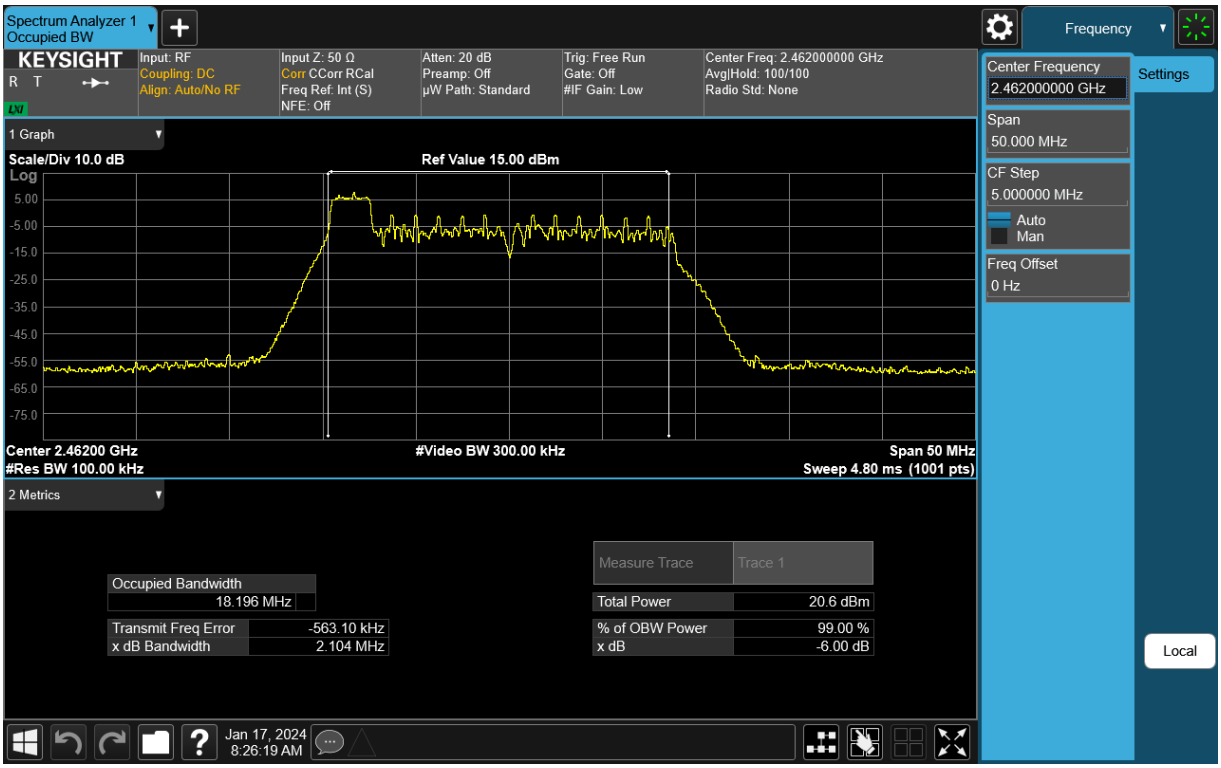
Plot 7-28. 6dB BW & 99% OBW Plot Antenna WF9 (802.11ax OFDMA – RU26 Index 0 – Ch. 6)



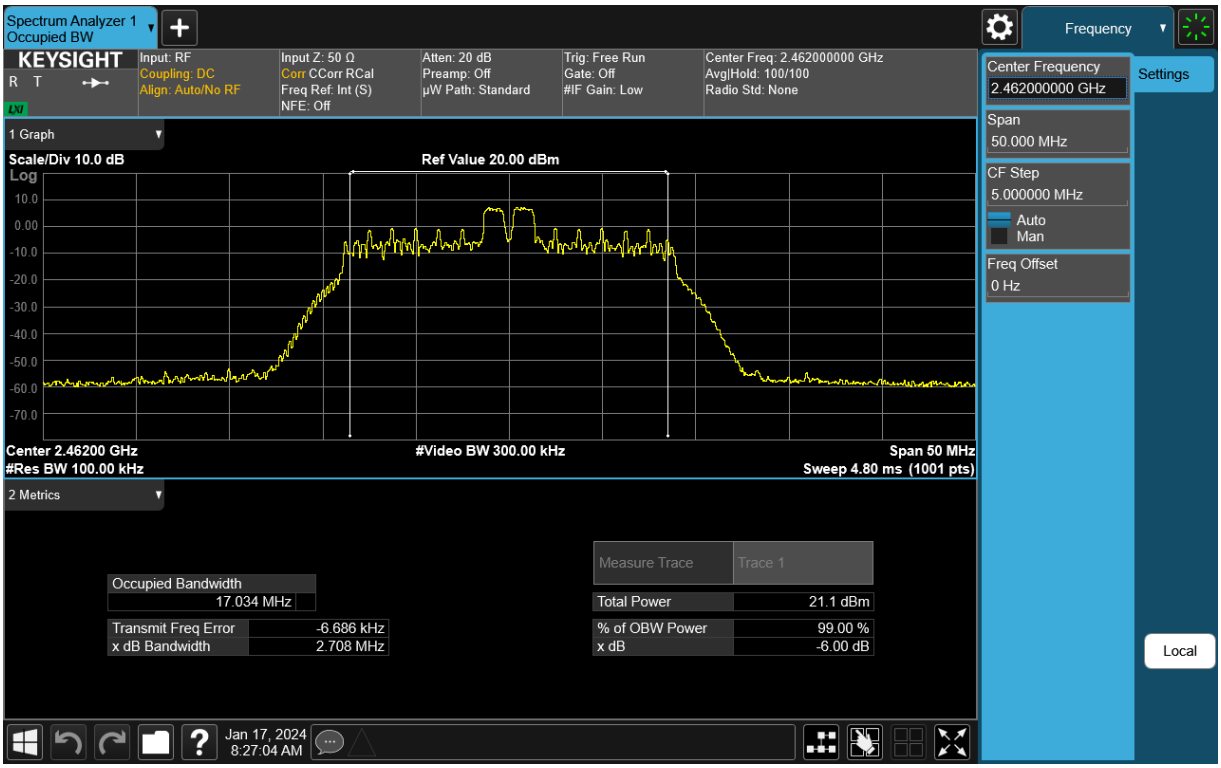
Plot 7-29. 6dB BW & 99% OBW Plot Antenna WF9 (802.11ax OFDMA – RU26 Index 4 – Ch. 6)



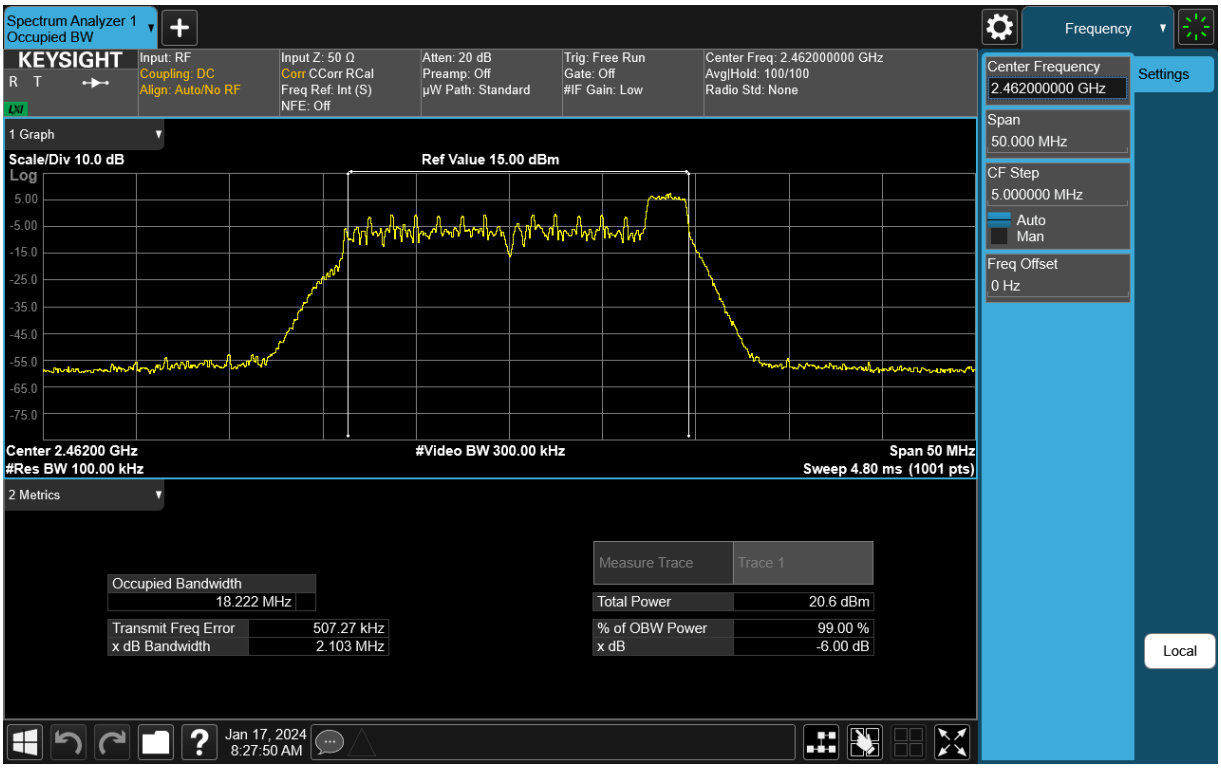
Plot 7-30. 6dB BW & 99% OBW Antenna WF9 (802.11ax OFDMA – RU26 Index 8 – Ch. 6)



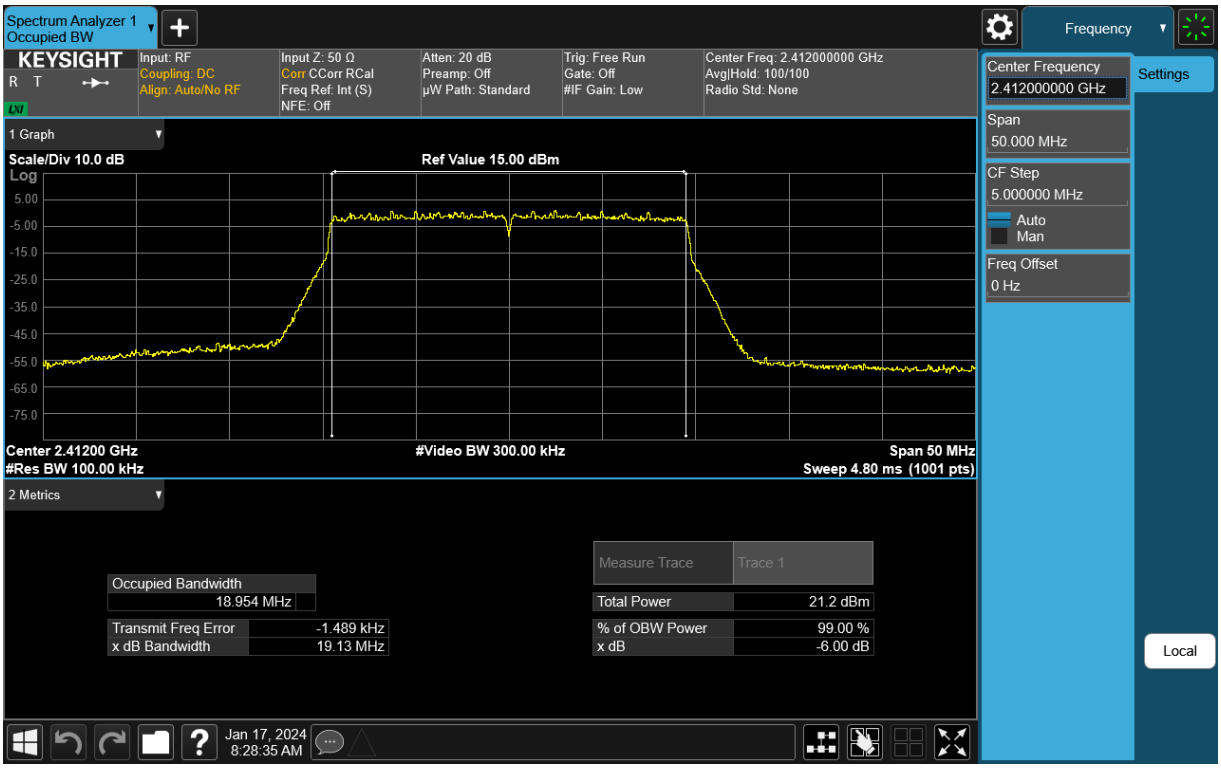
Plot 7-31. 6dB BW & 99% OBW Antenna WF9 (802.11ax OFDMA – RU26 Index 0 – Ch. 11)



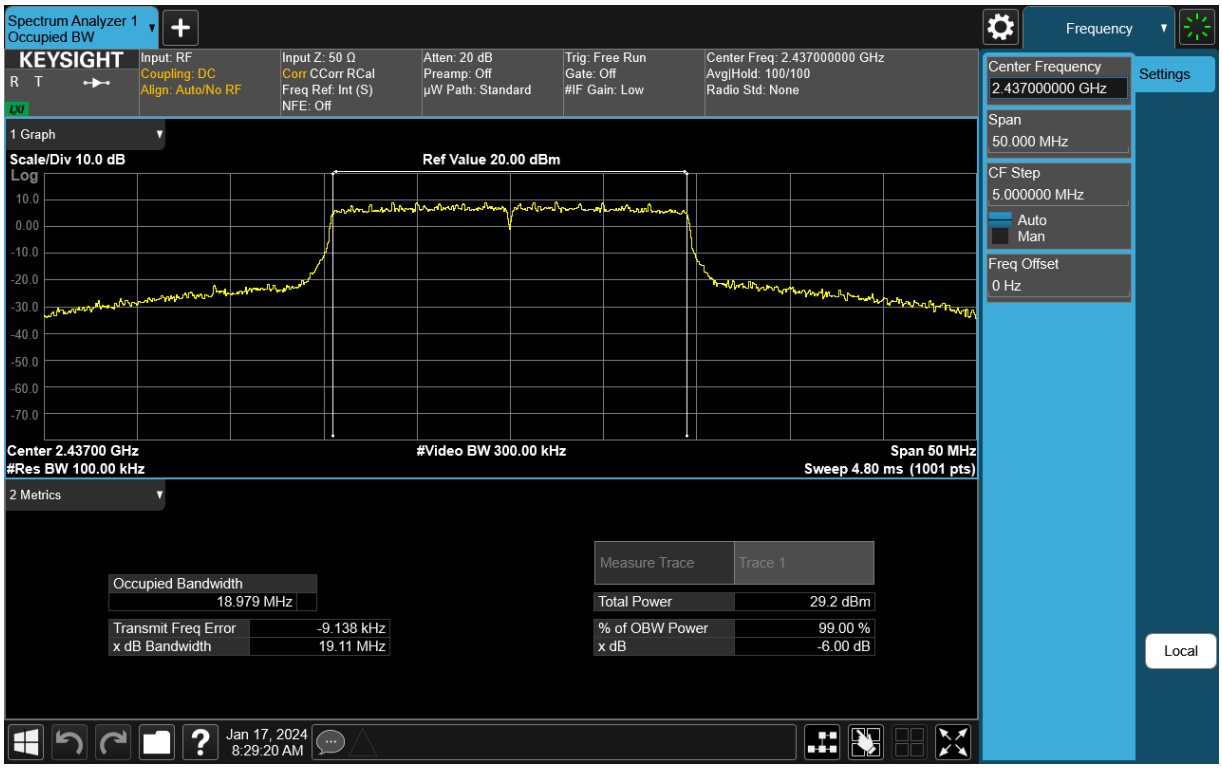
Plot 7-32. 6dB BW & 99% OBW Antenna WF9 (802.11ax OFDMA – RU26 Index 4 – Ch. 11)



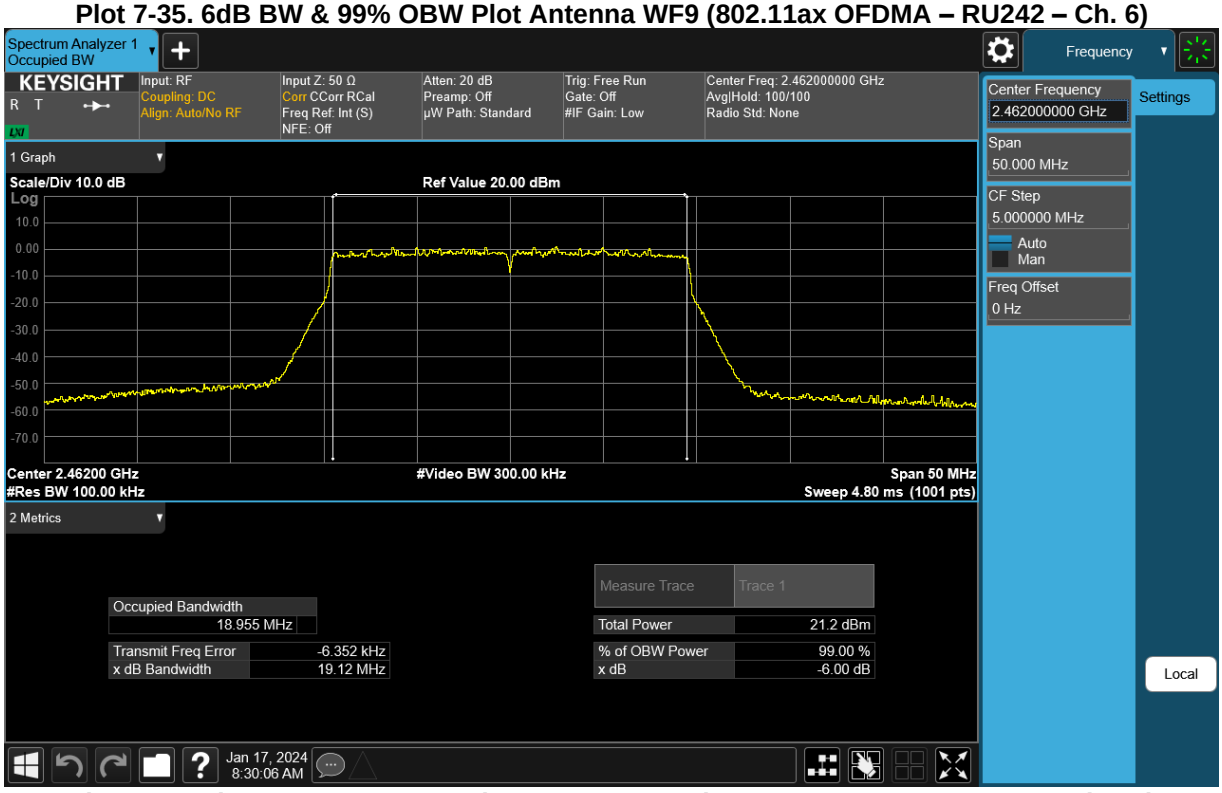
Plot 7-33. 6dB BW & 99% OBW Plot Antenna WF9 (802.11ax OFDMA – RU26 Index 8 – Ch. 11)



Plot 7-34. 6dB BW & 99% OBW Plot Antenna WF9 (802.11ax OFDMA – RU242 – Ch. 1)



Plot 7-35. 6dB BW & 99% OBW Plot Antenna WF9 (802.11ax OFDMA – RU242 – Ch. 6)



Plot 7-36. 6dB BW & 99% OBW Plot Antenna WF9 (802.11ax OFDMA – RU242 – Ch. 11)

7.3 Output Power Measurement

§15.247(b.3); RSS-247 [5.4]

Test Overview and Limits

A transmitter antenna terminal of EUT is connected to the input of an RF power sensor. Measurement is made using a broadband power meter capable of making peak and average measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

The maximum peak conducted output power of digital modulation systems operating in the 2400-2483.5 MHz band is 1 Watt.

The conducted output power limit on paragraph above is based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For DTSs employing digital modulation techniques operating in the band 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1 W. The e.i.r.p. shall not exceed 4 W.

Test Procedure Used

ANSI C63.10-2013 – Subclause 11.9.1.3 PKPM1 Peak Power Method
KDB 558074 D01 v05r02 – Section 8.3.1.3 PKPM1 Peak-reading Power Meter Method
ANSI C63.10-2013 – Subclause 11.9.2.3.2 Method AVGPM-G
KDB 558074 D01 v05r02 – Section 8.3.2.3 Measurement using a Power Meter (PM)
ANSI C63.10-2013 – Subclause 14.2 Measure-and-Sum Technique
KDB 662911 D01 v02r01 – Section E)1) Measure-and-Sum Technique

Test Settings

Method PKPM1 (Peak Power Measurement)

Peak 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 pulse sensor employs a VBW = 50MHz so this method was only used for signals whose DTS bandwidth was less than or equal to 50MHz.

Method AVGPM-G (Average Power Measurement)

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 diagrams below.

Figure 7-2. Test Instrument & Measurement Setup for Power Meter Measurements

Test Notes

1. All RU's were investigated and only worst case partially-loaded and fully-loaded RU's are reported.
2. For 802.11ax-RU, the worst case data rate was found to be MCS9.

7.3.1 Average Output Power Measurement

Freq [MHz]	Channel	RU Size	RU Index	Data Rate [Mbps]	Detector	Conducted Powers (dBm)	Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
2412	1	26	0	108/114.7 (MCS9)	AVG	10.93	30.00	-19.08	3.50	14.43	36.02	-21.60
2412	1	26	4	108/114.7 (MCS9)	AVG	11.50	30.00	-18.51	3.50	15.00	36.02	-21.03
2412	1	26	8	108/114.7 (MCS9)	AVG	10.61	30.00	-19.39	3.50	14.11	36.02	-21.91
2437	6	26	0	108/114.7 (MCS9)	AVG	11.05	30.00	-18.95	3.50	14.55	36.02	-21.47
2437	6	26	4	108/114.7 (MCS9)	AVG	11.39	30.00	-18.61	3.50	14.89	36.02	-21.13
2437	6	26	8	108/114.7 (MCS9)	AVG	10.75	30.00	-19.25	3.50	14.25	36.02	-21.77
2462	11	26	0	108/114.7 (MCS9)	AVG	10.77	30.00	-19.23	3.50	14.27	36.02	-21.75
2462	11	26	4	108/114.7 (MCS9)	AVG	11.40	30.00	-18.60	3.50	14.90	36.02	-21.12
2462	11	26	8	108/114.7 (MCS9)	AVG	10.54	30.00	-19.46	3.50	14.04	36.02	-21.98

Table 7-5. Average Conducted Output Power Measurements Antenna WF8 (RU26)

Freq [MHz]	Channel	RU Size	RU Index	Data Rate [Mbps]	Detector	Conducted Powers (dBm)	Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
2412	1	242	61	108/114.7 (MCS9)	AVG	12.84	30.00	-17.16	3.50	16.34	36.02	-19.68
2417	2	242	61	108/114.7 (MCS9)	AVG	16.50	30.00	-13.50	3.50	20.00	36.02	-16.02
2422	3	242	61	108/114.7 (MCS9)	AVG	17.88	30.00	-12.13	3.50	21.38	36.02	-14.65
2427	4	242	61	108/114.7 (MCS9)	AVG	18.89	30.00	-11.11	3.50	22.39	36.02	-13.63
2432	5	242	61	108/114.7 (MCS9)	AVG	19.92	30.00	-10.08	3.50	23.42	36.02	-12.60
2437	6	242	61	108/114.7 (MCS9)	AVG	19.87	30.00	-10.13	3.50	23.37	36.02	-12.65
2442	7	242	61	108/114.7 (MCS9)	AVG	19.81	30.00	-10.19	3.50	23.31	36.02	-12.71
2447	8	242	61	108/114.7 (MCS9)	AVG	19.00	30.00	-11.00	3.50	22.50	36.02	-13.52
2452	9	242	61	108/114.7 (MCS9)	AVG	17.95	30.00	-12.05	3.50	21.45	36.02	-14.57
2457	10	242	61	108/114.7 (MCS9)	AVG	16.20	30.00	-13.81	3.50	19.70	36.02	-16.33
2462	11	242	61	108/114.7 (MCS9)	AVG	13.33	30.00	-16.67	3.50	16.83	36.02	-19.19
2467	12	242	61	108/114.7 (MCS9)	AVG	11.46	30.00	-18.54	3.50	14.96	36.02	-21.06

Table 7-6. Average Conducted Output Power Measurements Antenna WF8 (RU242)

Freq [MHz]	Channel	RU Size	RU Index	Data Rate [Mbps]	Detector	Conducted Powers (dBm)	Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
2412	1	26	0	108/114.7 (MCS9)	AVG	10.93	30.00	-19.07	3.00	13.93	36.02	-22.09
2412	1	26	4	108/114.7 (MCS9)	AVG	11.31	30.00	-18.69	3.00	14.31	36.02	-21.71
2412	1	26	8	108/114.7 (MCS9)	AVG	10.71	30.00	-19.29	3.00	13.71	36.02	-22.31
2437	6	26	0	108/114.7 (MCS9)	AVG	11.00	30.00	-19.01	3.00	14.00	36.02	-22.03
2437	6	26	4	108/114.7 (MCS9)	AVG	11.30	30.00	-18.70	3.00	14.30	36.02	-21.72
2437	6	26	8	108/114.7 (MCS9)	AVG	10.70	30.00	-19.30	3.00	13.70	36.02	-22.32
2462	11	26	0	108/114.7 (MCS9)	AVG	10.65	30.00	-19.36	3.00	13.65	36.02	-22.38
2462	11	26	4	108/114.7 (MCS9)	AVG	11.19	30.00	-18.81	3.00	14.19	36.02	-21.83
2462	11	26	8	108/114.7 (MCS9)	AVG	10.34	30.00	-19.66	3.00	13.34	36.02	-22.68

Table 7-7. Average Conducted Output Power Measurements Antenna WF7 (RU26)

Freq [MHz]	Channel	RU Size	RU Index	Data Rate [Mbps]	Detector	Conducted Powers (dBm)	Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
2412	1	242	61	108/114.7 (MCS9)	AVG	12.85	30.00	-17.15	3.00	15.85	36.02	-20.17
2417	2	242	61	108/114.7 (MCS9)	AVG	16.31	30.00	-13.69	3.00	19.31	36.02	-16.71
2422	3	242	61	108/114.7 (MCS9)	AVG	17.86	30.00	-12.14	3.00	20.86	36.02	-15.16
2427	4	242	61	108/114.7 (MCS9)	AVG	18.81	30.00	-11.20	3.00	21.81	36.02	-14.22
2432	5	242	61	108/114.7 (MCS9)	AVG	20.20	30.00	-9.80	3.00	23.20	36.02	-12.82
2437	6	242	61	108/114.7 (MCS9)	AVG	20.19	30.00	-9.81	3.00	23.19	36.02	-12.83
2442	7	242	61	108/114.7 (MCS9)	AVG	20.13	30.00	-9.87	3.00	23.13	36.02	-12.89
2447	8	242	61	108/114.7 (MCS9)	AVG	18.92	30.00	-11.08	3.00	21.92	36.02	-14.10
2452	9	242	61	108/114.7 (MCS9)	AVG	18.00	30.00	-12.00	3.00	21.00	36.02	-15.02
2457	10	242	61	108/114.7 (MCS9)	AVG	16.12	30.00	-13.88	3.00	19.12	36.02	-16.90
2462	11	242	61	108/114.7 (MCS9)	AVG	13.50	30.00	-16.50	3.00	16.50	36.02	-19.52
2467	12	242	61	108/114.7 (MCS9)	AVG	11.29	30.00	-18.71	3.00	14.29	36.02	-21.73

Table 7-8. Average Conducted Output Power Measurements Antenna WF7 (RU242)

Freq [MHz]	Channel	RU Size	RU Index	Data Rate [Mbps]	Detector	Conducted Powers (dBm)	Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
2412	1	26	0	108/114.7 (MCS9)	AVG	11.05	30.00	-18.95	1.50	12.55	36.02	-23.47
2412	1	26	4	108/114.7 (MCS9)	AVG	11.37	30.00	-18.63	1.50	12.87	36.02	-23.15
2412	1	26	8	108/114.7 (MCS9)	AVG	10.96	30.00	-19.04	1.50	12.46	36.02	-23.56
2417	2	26	0	108/114.7 (MCS9)	AVG	11.11	30.00	-18.89	1.50	12.61	36.02	-23.41
2437	6	26	0	108/114.7 (MCS9)	AVG	11.18	30.00	-18.82	1.50	12.68	36.02	-23.34
2437	6	26	4	108/114.7 (MCS9)	AVG	11.36	30.00	-18.64	1.50	12.86	36.02	-23.16
2437	6	26	8	108/114.7 (MCS9)	AVG	11.03	30.00	-18.97	1.50	12.53	36.02	-23.49
2462	11	26	0	108/114.7 (MCS9)	AVG	10.97	30.00	-19.03	1.50	12.47	36.02	-23.55
2462	11	26	4	108/114.7 (MCS9)	AVG	11.39	30.00	-18.61	1.50	12.89	36.02	-23.13
2462	11	26	8	108/114.7 (MCS9)	AVG	10.74	30.00	-19.26	1.50	12.24	36.02	-23.78

Table 7-9. Average Conducted Output Power Measurements Antenna WF9 (RU26)

Freq [MHz]	Channel	RU Size	RU Index	Data Rate [Mbps]	Detector	Conducted Powers (dBm)	Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
2412	1	242	61	108/114.7 (MCS9)	AVG	13.00	30.00	-17.00	1.50	14.50	36.02	-21.52
2417	2	242	61	108/114.7 (MCS9)	AVG	16.50	30.00	-13.50	1.50	18.00	36.02	-18.02
2422	3	242	61	108/114.7 (MCS9)	AVG	17.89	30.00	-12.11	1.50	19.39	36.02	-16.63
2427	4	242	61	108/114.7 (MCS9)	AVG	18.85	30.00	-11.15	1.50	20.35	36.02	-15.67
2432	5	242	61	108/114.7 (MCS9)	AVG	20.36	30.00	-9.64	1.50	21.86	36.02	-14.16
2437	6	242	61	108/114.7 (MCS9)	AVG	20.29	30.00	-9.71	1.50	21.79	36.02	-14.23
2442	7	242	61	108/114.7 (MCS9)	AVG	20.36	30.00	-9.64	1.50	21.86	36.02	-14.16
2447	8	242	61	108/114.7 (MCS9)	AVG	19.00	30.00	-11.00	1.50	20.50	36.02	-15.52
2452	9	242	61	108/114.7 (MCS9)	AVG	17.97	30.00	-12.03	1.50	19.47	36.02	-16.55
2457	10	242	61	108/114.7 (MCS9)	AVG	16.19	30.00	-13.81	1.50	17.69	36.02	-18.33
2462	11	242	61	108/114.7 (MCS9)	AVG	13.29	30.00	-16.71	1.50	14.79	36.02	-21.23
2467	12	242	61	108/114.7 (MCS9)	AVG	11.50	30.00	-18.50	1.50	13.00	36.02	-23.02

Table 7-10. Average Conducted Output Power Measurements Antenna WF9 (RU242)

Freq [MHz]	Channel	RU Size	RU Index	Data Rate [Mbps]	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Directional Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
						Ant WF8	Ant WF7	Summed						
2412	1	26	0	216/229.4 (MCS9)	AVG	11.28	11.25	14.27	29.74	-15.46	6.26	20.54	36.02	-15.48
2412	1	26	4	216/229.4 (MCS9)	AVG	11.34	11.42	14.39	29.74	-15.35	6.26	20.65	36.02	-15.37
2412	1	26	8	216/229.4 (MCS9)	AVG	11.17	11.16	14.17	29.74	-15.56	6.26	20.44	36.02	-15.59
2437	6	26	0	216/229.4 (MCS9)	AVG	11.22	11.10	14.17	29.74	-15.56	6.26	20.44	36.02	-15.59
2437	6	26	4	216/229.4 (MCS9)	AVG	11.50	11.41	14.47	29.74	-15.27	6.26	20.73	36.02	-15.29
2437	6	26	8	216/229.4 (MCS9)	AVG	10.96	10.82	13.90	29.74	-15.84	6.26	20.16	36.02	-15.86
2462	11	26	0	216/229.4 (MCS9)	AVG	11.16	10.78	13.98	29.74	-15.75	6.26	20.25	36.02	-15.77
2462	11	26	4	216/229.4 (MCS9)	AVG	11.50	11.29	14.40	29.74	-15.33	6.26	20.67	36.02	-15.35
2462	11	26	8	216/229.4 (MCS9)	AVG	10.87	10.59	13.74	29.74	-15.99	6.26	20.01	36.02	-16.01

Table 7-11. Average Conducted Output Power Measurements Primary CDD (RU26)

Freq [MHz]	Channel	RU Size	RU Index	Data Rate [Mbps]	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Directional Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
						Ant WF8	Ant WF7	Summed						
2412	1	242	61	216/229.4 (MCS9)	AVG	12.68	12.64	15.67	29.74	-14.07	6.26	21.93	36.02	-14.09
2417	2	242	61	216/229.4 (MCS9)	AVG	15.25	15.19	18.23	29.74	-11.51	6.26	24.49	36.02	-11.53
2422	3	242	61	216/229.4 (MCS9)	AVG	17.23	17.25	20.25	29.74	-9.49	6.26	26.51	36.02	-9.51
2427	4	242	61	216/229.4 (MCS9)	AVG	18.05	18.16	21.12	29.74	-8.62	6.26	27.38	36.02	-8.64
2432	5	242	61	216/229.4 (MCS9)	AVG	19.43	19.44	22.44	29.74	-7.29	6.26	28.71	36.02	-7.31
2437	6	242	61	216/229.4 (MCS9)	AVG	20.16	20.24	23.21	29.74	-6.53	6.26	29.47	36.02	-6.55
2442	7	242	61	216/229.4 (MCS9)	AVG	19.29	19.50	22.41	29.74	-7.33	6.26	28.67	36.02	-7.35
2447	8	242	61	216/229.4 (MCS9)	AVG	17.31	17.37	20.35	29.74	-9.39	6.26	26.61	36.02	-9.41
2452	9	242	61	216/229.4 (MCS9)	AVG	16.75	17.00	19.89	29.74	-9.85	6.26	26.15	36.02	-9.87
2457	10	242	61	216/229.4 (MCS9)	AVG	15.22	15.25	18.24	29.74	-11.49	6.26	24.51	36.02	-11.51
2462	11	242	61	216/229.4 (MCS9)	AVG	13.00	12.88	15.95	29.74	-13.79	6.26	22.21	36.02	-13.81
2467	12	242	61	216/229.4 (MCS9)	AVG	11.50	11.45	14.49	29.74	-15.25	6.26	20.75	36.02	-15.27

Table 7-12. Average Conducted Output Power Measurements Primary CDD (RU242)

Freq [MHz]	Channel	RU Size	RU Index	Data Rate [Mbps]	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Directional Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
						Ant WF8	Ant WF9	Summed						
2412	1	26	0	216/229.4 (MCS9)	AVG	11.28	11.50	14.40	30.00	-15.60	5.57	19.97	36.02	-16.05
2412	1	26	4	216/229.4 (MCS9)	AVG	11.34	11.46	14.41	30.00	-15.59	5.57	19.98	36.02	-16.04
2412	1	26	8	216/229.4 (MCS9)	AVG	11.17	11.45	14.32	30.00	-15.68	5.57	19.89	36.02	-16.13
2437	6	26	0	216/229.4 (MCS9)	AVG	11.22	11.28	14.26	30.00	-15.74	5.57	19.83	36.02	-16.19
2437	6	26	4	216/229.4 (MCS9)	AVG	11.50	11.36	14.44	30.00	-15.56	5.57	20.01	36.02	-16.01
2437	6	26	8	216/229.4 (MCS9)	AVG	10.96	10.99	13.99	30.00	-16.01	5.57	19.55	36.02	-16.47
2462	11	26	0	216/229.4 (MCS9)	AVG	11.16	11.05	14.11	30.00	-15.89	5.57	19.68	36.02	-16.34
2462	11	26	4	216/229.4 (MCS9)	AVG	11.50	11.30	14.41	30.00	-15.59	5.57	19.98	36.02	-16.04
2462	11	26	8	216/229.4 (MCS9)	AVG	10.87	10.88	13.88	30.00	-16.12	5.57	19.45	36.02	-16.57

Table 7-13. Average Conducted Output Power Measurements Diversity CDD (RU26)

Freq [MHz]	Channel	RU Size	RU Index	Data Rate [Mbps]	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Directional Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
						Ant WF8	Ant WF9	Summed						
2412	1	242	61	216/229.4 (MCS9)	AVG	12.68	12.75	15.73	30.00	-14.27	5.57	21.29	36.02	-14.73
2417	2	242	61	216/229.4 (MCS9)	AVG	15.25	15.25	18.26	30.00	-11.74	5.57	23.83	36.02	-12.19
2422	3	242	61	216/229.4 (MCS9)	AVG	17.23	17.25	20.25	30.00	-9.75	5.57	25.82	36.02	-10.20
2427	4	242	61	216/229.4 (MCS9)	AVG	18.05	18.25	21.16	30.00	-8.84	5.57	26.73	36.02	-9.29
2432	5	242	61	216/229.4 (MCS9)	AVG	19.43	19.50	22.47	30.00	-7.53	5.57	28.04	36.02	-7.98
2437	6	242	61	216/229.4 (MCS9)	AVG	20.16	20.27	23.22	30.00	-6.78	5.57	28.79	36.02	-7.23
2442	7	242	61	216/229.4 (MCS9)	AVG	19.29	19.28	22.30	30.00	-7.70	5.57	27.86	36.02	-8.16
2447	8	242	61	216/229.4 (MCS9)	AVG	17.31	17.50	20.42	30.00	-9.58	5.57	25.98	36.02	-10.04
2452	9	242	61	216/229.4 (MCS9)	AVG	16.75	16.79	19.78	30.00	-10.22	5.57	25.35	36.02	-10.67
2457	10	242	61	216/229.4 (MCS9)	AVG	15.22	15.24	18.24	30.00	-11.76	5.57	23.81	36.02	-12.21
2462	11	242	61	216/229.4 (MCS9)	AVG	13.00	13.00	16.01	30.00	-13.99	5.57	21.58	36.02	-14.44
2467	12	242	61	216/229.4 (MCS9)	AVG	11.50	11.26	14.39	30.00	-15.61	5.57	19.96	36.02	-16.06

Table 7-14. Average Conducted Output Power Measurements Diversity CDD (RU242)

7.3.3 Peak Output Power Measurement

Freq [MHz]	Channel	RU Size	RU Index	Data Rate [Mbps]	Detector	Conducted Powers (dBm)	Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
2412	1	26	0	108/114.7 (MCS9)	PEAK	20.49	30.00	-9.51	3.50	23.99	36.02	-12.03
2412	1	26	4	108/114.7 (MCS9)	PEAK	20.78	30.00	-9.22	3.50	24.28	36.02	-11.74
2412	1	26	8	108/114.7 (MCS9)	PEAK	20.43	30.00	-9.57	3.50	23.93	36.02	-12.09
2437	6	26	0	108/114.7 (MCS9)	PEAK	20.60	30.00	-9.40	3.50	24.10	36.02	-11.92
2437	6	26	4	108/114.7 (MCS9)	PEAK	20.65	30.00	-9.35	3.50	24.15	36.02	-11.87
2437	6	26	8	108/114.7 (MCS9)	PEAK	20.58	30.00	-9.42	3.50	24.08	36.02	-11.94
2462	11	26	0	108/114.7 (MCS9)	PEAK	20.31	30.00	-9.69	3.50	23.81	36.02	-12.21
2462	11	26	4	108/114.7 (MCS9)	PEAK	20.59	30.00	-9.41	3.50	24.09	36.02	-11.93
2462	11	26	8	108/114.7 (MCS9)	PEAK	20.31	30.00	-9.70	3.50	23.81	36.02	-12.22

Table 7-15. Peak Conducted Output Power Measurements Antenna WF8 (RU26)

Freq [MHz]	Channel	RU Size	RU Index	Data Rate [Mbps]	Detector	Conducted Powers (dBm)	Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
2412	1	242	61	108/114.7 (MCS9)	PEAK	22.68	30.00	-7.32	3.50	26.18	36.02	-9.84
2417	2	242	61	108/114.7 (MCS9)	PEAK	25.85	30.00	-4.16	3.50	29.35	36.02	-6.68
2422	3	242	61	108/114.7 (MCS9)	PEAK	26.56	30.00	-3.44	3.50	30.06	36.02	-5.96
2427	4	242	61	108/114.7 (MCS9)	PEAK	27.03	30.00	-2.97	3.50	30.53	36.02	-5.49
2432	5	242	61	108/114.7 (MCS9)	PEAK	27.44	30.00	-2.56	3.50	30.94	36.02	-5.08
2437	6	242	61	108/114.7 (MCS9)	PEAK	27.39	30.00	-2.61	3.50	30.89	36.02	-5.13
2442	7	242	61	108/114.7 (MCS9)	PEAK	27.40	30.00	-2.60	3.50	30.90	36.02	-5.12
2447	8	242	61	108/114.7 (MCS9)	PEAK	27.09	30.00	-2.91	3.50	30.59	36.02	-5.43
2452	9	242	61	108/114.7 (MCS9)	PEAK	26.62	30.00	-3.39	3.50	30.12	36.02	-5.91
2457	10	242	61	108/114.7 (MCS9)	PEAK	25.61	30.00	-4.39	3.50	29.11	36.02	-6.91
2462	11	242	61	108/114.7 (MCS9)	PEAK	23.13	30.00	-6.87	3.50	26.63	36.02	-9.39
2467	12	242	61	108/114.7 (MCS9)	PEAK	21.30	30.00	-8.70	3.50	24.80	36.02	-11.22

Table 7-16. Peak Conducted Output Power Measurements Antenna WF8 (RU242)

Freq [MHz]	Channel	RU Size	RU Index	Data Rate [Mbps]	Detector	Conducted Powers (dBm)	Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
2412	1	26	0	108/114.7 (MCS9)	PEAK	20.54	30.00	-9.46	3.00	23.54	36.02	-12.48
2412	1	26	4	108/114.7 (MCS9)	PEAK	20.58	30.00	-9.43	3.00	23.58	36.02	-12.45
2412	1	26	8	108/114.7 (MCS9)	PEAK	20.55	30.00	-9.45	3.00	23.55	36.02	-12.47
2437	6	26	0	108/114.7 (MCS9)	PEAK	20.53	30.00	-9.47	3.00	23.53	36.02	-12.49
2437	6	26	4	108/114.7 (MCS9)	PEAK	20.52	30.00	-9.48	3.00	23.52	36.02	-12.50
2437	6	26	8	108/114.7 (MCS9)	PEAK	20.52	30.00	-9.48	3.00	23.52	36.02	-12.50
2462	11	26	0	108/114.7 (MCS9)	PEAK	20.33	30.00	-9.67	3.00	23.33	36.02	-12.69
2462	11	26	4	108/114.7 (MCS9)	PEAK	20.50	30.00	-9.50	3.00	23.50	36.02	-12.52
2462	11	26	8	108/114.7 (MCS9)	PEAK	20.26	30.00	-9.74	3.00	23.26	36.02	-12.76

Table 7-17. Peak Conducted Output Power Measurements Antenna WF7 (RU26)

Freq [MHz]	Channel	RU Size	RU Index	Data Rate [Mbps]	Detector	Conducted Powers (dBm)	Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
2412	1	242	61	108/114.7 (MCS9)	PEAK	22.75	30.00	-7.25	3.00	25.75	36.02	-10.27
2417	2	242	61	108/114.7 (MCS9)	PEAK	25.59	30.00	-4.41	3.00	28.59	36.02	-7.43
2422	3	242	61	108/114.7 (MCS9)	PEAK	26.38	30.00	-3.62	3.00	29.38	36.02	-6.64
2427	4	242	61	108/114.7 (MCS9)	PEAK	26.75	30.00	-3.25	3.00	29.75	36.02	-6.27
2432	5	242	61	108/114.7 (MCS9)	PEAK	27.25	30.00	-2.75	3.00	30.25	36.02	-5.77
2437	6	242	61	108/114.7 (MCS9)	PEAK	27.29	30.00	-2.71	3.00	30.29	36.02	-5.73
2442	7	242	61	108/114.7 (MCS9)	PEAK	27.27	30.00	-2.73	3.00	30.27	36.02	-5.75
2447	8	242	61	108/114.7 (MCS9)	PEAK	26.75	30.00	-3.25	3.00	29.75	36.02	-6.27
2452	9	242	61	108/114.7 (MCS9)	PEAK	26.43	30.00	-3.57	3.00	29.43	36.02	-6.59
2457	10	242	61	108/114.7 (MCS9)	PEAK	25.38	30.00	-4.63	3.00	28.38	36.02	-7.65
2462	11	242	61	108/114.7 (MCS9)	PEAK	23.37	30.00	-6.63	3.00	26.37	36.02	-9.65
2467	12	242	61	108/114.7 (MCS9)	PEAK	21.13	30.00	-8.87	3.00	24.13	36.02	-11.89

Table 7-18. Peak Conducted Output Power Measurements Antenna WF7 (RU242)

Freq [MHz]	Channel	RU Size	RU Index	Data Rate [Mbps]	Detector	Conducted Powers (dBm)	Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
2412	1	26	0	108/114.7 (MCS9)	PEAK	20.70	30.00	-9.30	1.50	22.20	36.02	-13.82
2412	1	26	4	108/114.7 (MCS9)	PEAK	20.63	30.00	-9.37	1.50	22.13	36.02	-13.89
2412	1	26	8	108/114.7 (MCS9)	PEAK	20.79	30.00	-9.21	1.50	22.29	36.02	-13.73
2437	6	26	0	108/114.7 (MCS9)	PEAK	20.79	30.00	-9.21	1.50	22.29	36.02	-13.73
2437	6	26	4	108/114.7 (MCS9)	PEAK	20.64	30.00	-9.37	1.50	22.14	36.02	-13.89
2437	6	26	8	108/114.7 (MCS9)	PEAK	20.84	30.00	-9.16	1.50	22.34	36.02	-13.68
2462	11	26	0	108/114.7 (MCS9)	PEAK	20.67	30.00	-9.33	1.50	22.17	36.02	-13.85
2462	11	26	4	108/114.7 (MCS9)	PEAK	20.69	30.00	-9.31	1.50	22.19	36.02	-13.83
2462	11	26	8	108/114.7 (MCS9)	PEAK	20.70	30.00	-9.30	1.50	22.20	36.02	-13.82

Table 7-19. Peak Conducted Output Power Measurements Antenna WF9 (RU26)

Freq [MHz]	Channel	RU Size	RU Index	Data Rate [Mbps]	Detector	Conducted Powers (dBm)	Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
2412	1	242	61	108/114.7 (MCS9)	PEAK	23.02	30.00	-6.98	1.50	24.52	36.02	-11.50
2417	2	242	61	108/114.7 (MCS9)	PEAK	25.87	30.00	-4.14	1.50	27.37	36.02	-8.66
2422	3	242	61	108/114.7 (MCS9)	PEAK	26.56	30.00	-3.44	1.50	28.06	36.02	-7.96
2427	4	242	61	108/114.7 (MCS9)	PEAK	27.01	30.00	-2.99	1.50	28.51	36.02	-7.51
2432	5	242	61	108/114.7 (MCS9)	PEAK	27.54	30.00	-2.46	1.50	29.04	36.02	-6.98
2437	6	242	61	108/114.7 (MCS9)	PEAK	27.48	30.00	-2.52	1.50	28.98	36.02	-7.04
2442	7	242	61	108/114.7 (MCS9)	PEAK	27.52	30.00	-2.49	1.50	29.02	36.02	-7.01
2447	8	242	61	108/114.7 (MCS9)	PEAK	27.07	30.00	-2.93	1.50	28.57	36.02	-7.45
2452	9	242	61	108/114.7 (MCS9)	PEAK	26.60	30.00	-3.40	1.50	28.10	36.02	-7.92
2457	10	242	61	108/114.7 (MCS9)	PEAK	25.58	30.00	-4.42	1.50	27.08	36.02	-8.94
2462	11	242	61	108/114.7 (MCS9)	PEAK	23.14	30.00	-6.86	1.50	24.64	36.02	-11.38
2467	12	242	61	108/114.7 (MCS9)	PEAK	21.51	30.00	-8.49	1.50	23.01	36.02	-13.01

Table 7-20. Peak Conducted Output Power Measurements Antenna WF9 (RU242)

Freq [MHz]	Channel	RU Size	RU Index	Data Rate [Mbps]	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Directional Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
						Ant WF8	Ant WF7	Summed						
2412	1	26	0	216/229.4 (MCS9)	PEAK	20.67	20.65	23.67	29.74	-6.07	6.26	29.93	36.02	-6.09
2412	1	26	4	216/229.4 (MCS9)	PEAK	20.45	20.55	23.51	29.74	-6.23	6.26	29.77	36.02	-6.25
2412	1	26	8	216/229.4 (MCS9)	PEAK	20.77	20.80	23.79	29.74	-5.94	6.26	30.06	36.02	-5.96
2437	6	26	0	216/229.4 (MCS9)	PEAK	20.56	20.57	23.57	29.74	-6.16	6.26	29.84	36.02	-6.18
2437	6	26	4	216/229.4 (MCS9)	PEAK	20.57	20.49	23.54	29.74	-6.20	6.26	29.80	36.02	-6.22
2437	6	26	8	216/229.4 (MCS9)	PEAK	20.54	20.55	23.56	29.74	-6.18	6.26	29.82	36.02	-6.20
2462	11	26	0	216/229.4 (MCS9)	PEAK	20.59	20.13	23.37	29.74	-6.36	6.26	29.64	36.02	-6.39
2462	11	26	4	216/229.4 (MCS9)	PEAK	20.51	20.31	23.42	29.74	-6.31	6.26	29.69	36.02	-6.33
2462	11	26	8	216/229.4 (MCS9)	PEAK	20.54	20.26	23.41	29.74	-6.33	6.26	29.67	36.02	-6.35

Table 7-21. Peak Conducted Output Power Measurements Primary CDD (RU26)

Freq [MHz]	Channel	RU Size	RU Index	Data Rate [Mbps]	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Directional Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
						Ant WF8	Ant WF7	Summed						
2412	1	242	61	216/229.4 (MCS9)	PEAK	22.29	22.31	25.31	29.74	-4.43	6.26	31.57	36.02	-4.45
2417	2	242	61	216/229.4 (MCS9)	PEAK	24.77	24.65	27.72	29.74	-2.02	6.26	33.98	36.02	-2.04
2422	3	242	61	216/229.4 (MCS9)	PEAK	26.10	25.94	29.03	29.74	-0.70	6.26	35.30	36.02	-0.72
2427	4	242	61	216/229.4 (MCS9)	PEAK	26.54	26.36	29.46	29.74	-0.28	6.26	35.72	36.02	-0.30
2432	5	242	61	216/229.4 (MCS9)	PEAK	26.13	26.54	29.35	29.74	-0.38	6.26	35.62	36.02	-0.40
2437	6	242	61	216/229.4 (MCS9)	PEAK	26.44	26.23	29.35	29.74	-0.39	6.26	35.61	36.02	-0.41
2442	7	242	61	216/229.4 (MCS9)	PEAK	26.08	26.52	29.31	29.74	-0.42	6.26	35.58	36.02	-0.44
2447	8	242	61	216/229.4 (MCS9)	PEAK	26.14	26.00	29.08	29.74	-0.66	6.26	35.34	36.02	-0.68
2452	9	242	61	216/229.4 (MCS9)	PEAK	25.77	25.83	28.81	29.74	-0.92	6.26	35.08	36.02	-0.94
2457	10	242	61	216/229.4 (MCS9)	PEAK	24.69	24.68	27.69	29.74	-2.04	6.26	33.96	36.02	-2.06
2462	11	242	61	216/229.4 (MCS9)	PEAK	22.64	22.41	25.53	29.74	-4.20	6.26	31.80	36.02	-4.22
2467	12	242	61	216/229.4 (MCS9)	PEAK	21.20	21.08	24.15	29.74	-5.59	6.26	30.41	36.02	-5.61

Table 7-22. Peak Conducted Output Power Measurements Primary CDD (RU242)

Freq [MHz]	Channel	RU Size	RU Index	Data Rate [Mbps]	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Directional Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
						Ant WF8	Ant WF9	Summed						
2412	1	26	0	216/229.4 (MCS9)	PEAK	20.67	21.06	23.88	30.00	-6.12	5.57	29.44	36.02	-6.58
2412	1	26	4	216/229.4 (MCS9)	PEAK	20.45	20.55	23.51	30.00	-6.49	5.57	29.08	36.02	-6.95
2412	1	26	8	216/229.4 (MCS9)	PEAK	20.77	21.05	23.92	30.00	-6.08	5.57	29.49	36.02	-6.53
2437	6	26	0	216/229.4 (MCS9)	PEAK	20.56	20.69	23.63	30.00	-6.37	5.57	29.20	36.02	-6.82
2437	6	26	4	216/229.4 (MCS9)	PEAK	20.57	20.46	23.52	30.00	-6.48	5.57	29.09	36.02	-6.93
2437	6	26	8	216/229.4 (MCS9)	PEAK	20.54	20.68	23.62	30.00	-6.38	5.57	29.19	36.02	-6.83
2462	11	26	0	216/229.4 (MCS9)	PEAK	20.59	20.44	23.52	30.00	-6.48	5.57	29.09	36.02	-6.93
2462	11	26	4	216/229.4 (MCS9)	PEAK	20.51	20.52	23.53	30.00	-6.47	5.57	29.10	36.02	-6.93
2462	11	26	8	216/229.4 (MCS9)	PEAK	20.54	20.54	23.55	30.00	-6.45	5.57	29.12	36.02	-6.91

Table 7-23. Peak Conducted Output Power Measurements Diversity CDD (RU26)

	Freq [MHz]	Channel	RU Size	RU Index	Data Rate [Mbps]	Detector	Conducted Power [dBm]			Conducted Power Limit [dBm]	Conducted Power Margin [dB]	Directional Ant. Gain [dBi]	Max e.i.r.p. [dBm]	Max e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
							Ant WF8	Ant WF9	Summed						
2.4GHz	2412	1	242	61	216/229.4 (MCS9)	PEAK	22.29	22.54	25.43	30.00	-4.57	5.57	31.00	36.02	-5.02
	2417	2	242	61	216/229.4 (MCS9)	PEAK	24.77	24.71	27.75	30.00	-2.25	5.57	33.32	36.02	-2.70
	2422	3	242	61	216/229.4 (MCS9)	PEAK	26.10	26.06	29.09	30.00	-0.91	5.57	34.66	36.02	-1.36
	2427	4	242	61	216/229.4 (MCS9)	PEAK	26.14	26.30	29.23	30.00	-0.77	5.57	34.79	36.02	-1.23
	2432	5	242	61	216/229.4 (MCS9)	PEAK	26.13	26.53	29.35	30.00	-0.65	5.57	34.92	36.02	-1.11
	2437	6	242	61	216/229.4 (MCS9)	PEAK	26.24	26.55	29.41	30.00	-0.59	5.57	34.97	36.02	-1.05
	2442	7	242	61	216/229.4 (MCS9)	PEAK	26.08	26.68	29.40	30.00	-0.60	5.57	34.97	36.02	-1.05
	2447	8	242	61	216/229.4 (MCS9)	PEAK	26.14	26.22	29.19	30.00	-0.81	5.57	34.76	36.02	-1.26
	2452	9	242	61	216/229.4 (MCS9)	PEAK	25.77	25.80	28.80	30.00	-1.20	5.57	34.36	36.02	-1.66
	2457	10	242	61	216/229.4 (MCS9)	PEAK	24.69	24.69	27.70	30.00	-2.30	5.57	33.27	36.02	-2.76
	2462	11	242	61	216/229.4 (MCS9)	PEAK	22.64	22.74	25.70	30.00	-4.30	5.57	31.26	36.02	-4.76
	2467	12	242	61	216/229.4 (MCS9)	PEAK	21.20	20.90	24.06	30.00	-5.94	5.57	29.63	36.02	-6.39

Table 7-24. Peak Conducted Output Power Measurements Diversity CDD (RU242)

Note:

Per ANSI C63.10-2013 and KDB 662911 D01 v02r01 Section E)1), the conducted powers at Antenna WF8 and Antenna WF7 were first measured separately during CDD transmission as shown in the section above. The measured values were then summed in linear power units then converted back to dBm.

Per ANSI C63.10-2013 Subclause 14.4.3, the directional gain is calculated using the following formula, where G_N is the gain of the nth antenna and N_{ANT}, the total number of antennas used.

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

Sample CDD Calculation:

At 2412MHz the average conducted output power was measured to be 12.68 dBm for Antenna WF8 and 12.64 dBm for Antenna WF7.

Antenna WF8 + Antenna WF7 = CDD

(12.68 dBm + 12.64 dBm) = (18.535 mW + 18.365 mW) = 36.9 mW = 15.67 dBm

Sample e.i.r.p. Calculation:

At 2412MHz, the average conducted output power was calculated to be 15.67 dBm with directional gain of 6.26 dBi.

e.i.r.p. (dBm) = Conducted Power (dBm) + Ant gain (dBi)

15.67 dBm + 6.26 dBi = 21.93 dBm

7.4 Power Spectral Density

§15.247(e); RSS-247 [5.2]

Test Overview and Limit

The peak power density is measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates, RU configurations, and RU indices were investigated and the worst case configuration results are reported in this section.

The maximum permissible power spectral density is 8 dBm in any 3 kHz band.

Test Procedure Used

ANSI C63.10-2013 – Subclause 11.10.3 Method AVGPSD
KDB 558074 D01 v05r02 – Section 8.4 DTS Maximum Power Spectral Density level in the fundamental emission
ANSI C63.10-2013 – Subclause 14.3.2.2 Measure-and-Sum Technique
KDB 662911 D01 v02r01 – Section E)2) Measure-and-Sum Technique

Test Settings

1. Analyzer was set to the center frequency of the DTS channel under investigation
2. Set span to at least 1.5 times the OBW.
3. RBW = 3kHz
4. VBW = 1MHz
5. Detector = power averaging (rms)
6. Number of sweep points ≥ [2 x span/RBW]
7. Sweep time = auto couple
8. Trace mode = Averaging (RMS) over a minimum of 100 traces
9. Trace was allowed to stabilize

Test Setup

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

Figure 7-3. Test Instrument & Measurement Setup

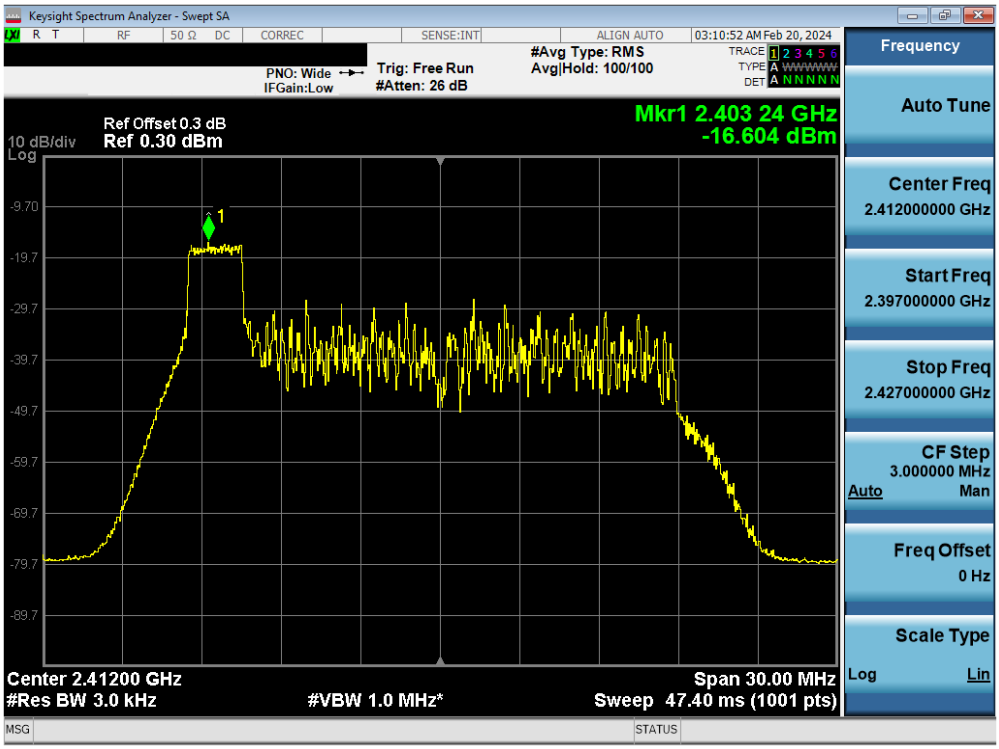
Test Notes

1. All data rates were investigated and only the worst case is reported.
2. All RU's were investigated and only worst case partially-loaded and fully-loaded RU's are reported.

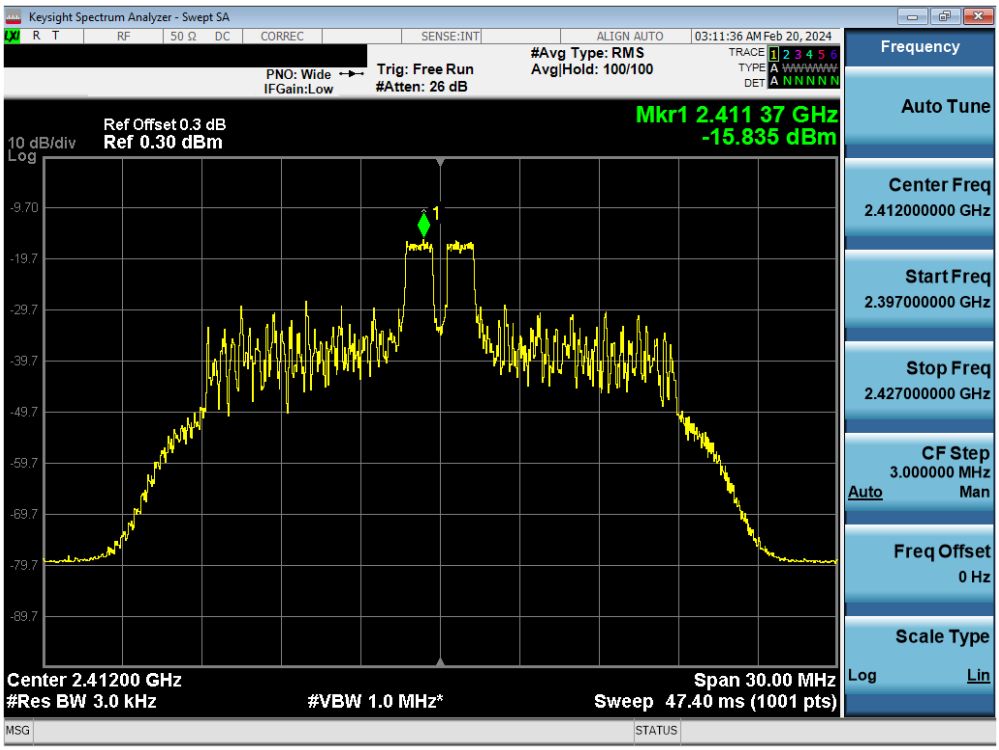
Antenna WF8 Power Spectral Density Measurements

Frequency [MHz]	Channel No.	802.11 MODE	RU Size	RU Index	Data Rate [Mbps]	Measured Power Density [dBm/3kHz]	Max Power Density [dBm/3kHz]	Margin [dB]	Pass/Fail
2412	1	ax	26	0	10/11.8 (MCS9)	-16.60	8.0	-24.60	Pass
			26	4	10/11.8 (MCS9)	-15.84	8.0	-23.84	Pass
			26	8	10/11.8 (MCS9)	-17.14	8.0	-25.14	Pass
2437	6	ax	26	0	10/11.8 (MCS9)	-16.63	8.0	-24.63	Pass
			26	4	10/11.8 (MCS9)	-16.15	8.0	-24.15	Pass
			26	8	10/11.8 (MCS9)	-17.00	8.0	-25.00	Pass
2462	11	ax	26	0	10/11.8 (MCS9)	-16.64	8.0	-24.64	Pass
			26	4	10/11.8 (MCS9)	-15.88	8.0	-23.88	Pass
			26	8	10/11.8 (MCS9)	-17.36	8.0	-25.36	Pass
2412	1	ax (20MHz)	242	61	97.5/114.7 (MCS9)	-20.14	8.0	-28.14	Pass
2437	6	ax (20MHz)	242	61	97.5/114.7 (MCS9)	-13.06	8.0	-21.06	Pass
2462	11	ax (20MHz)	242	61	97.5/114.7 (MCS9)	-19.44	8.0	-27.44	Pass

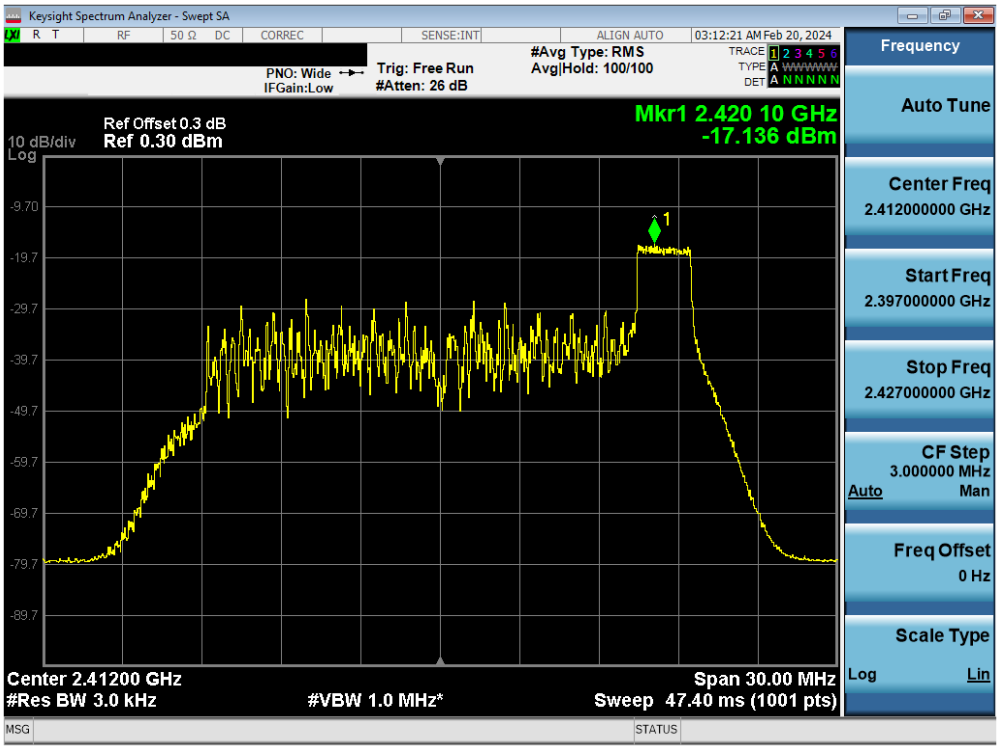
Table 7-25. Conducted Power Density Measurements Antenna WF8



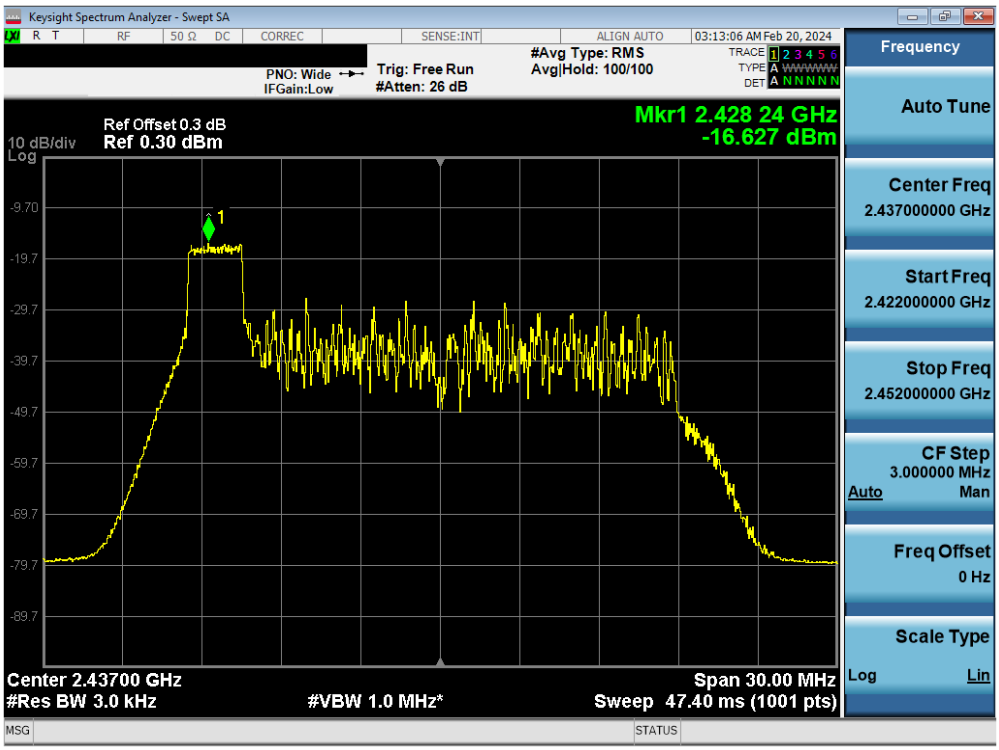
Plot 7-37. Power Spectral Density Plot Antenna WF8 (802.11ax OFDMA – RU26 Index 0 – Ch. 1)



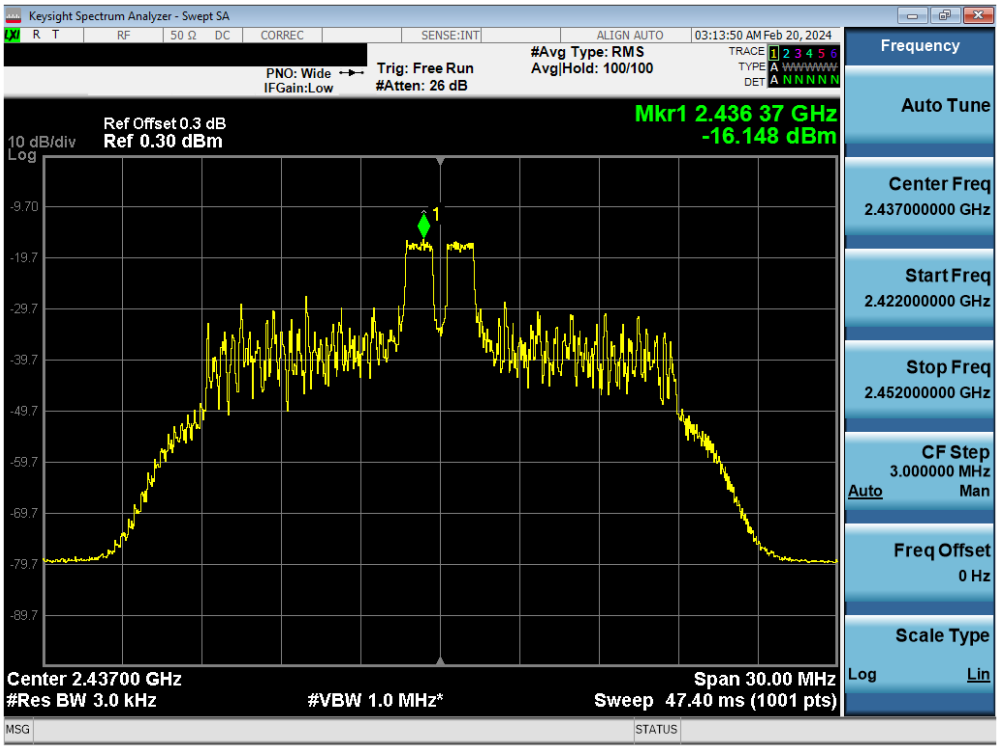
Plot 7-38. Power Spectral Density Plot Antenna WF8 (802.11ax OFDMA – RU26 Index 4 – Ch. 1)



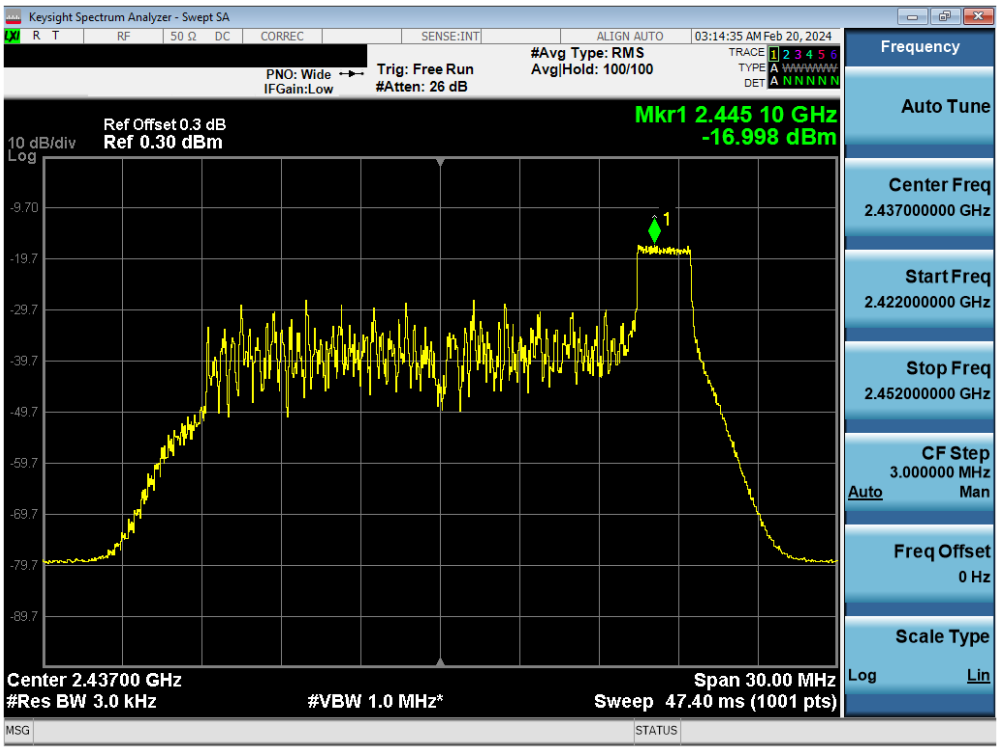
Plot 7-39. Power Spectral Density Plot Antenna WF8 (802.11ax OFDMA – RU26 Index 8 – Ch. 1)



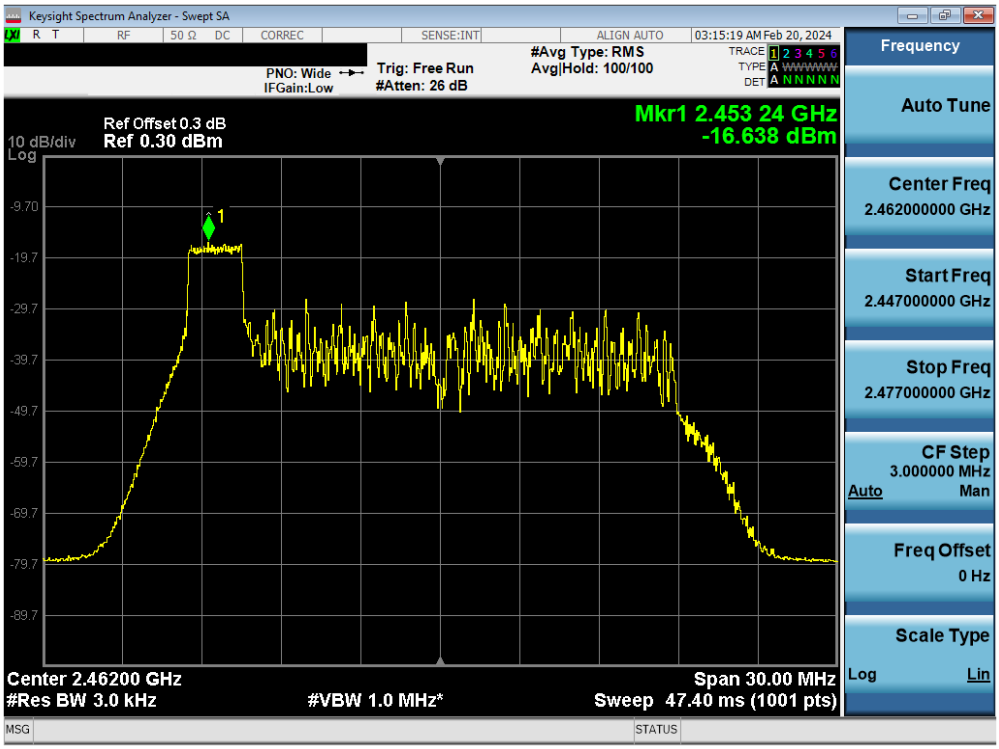
Plot 7-40. Power Spectral Density Plot Antenna WF8 (802.11ax OFDMA – RU26 Index 0 – Ch. 6)



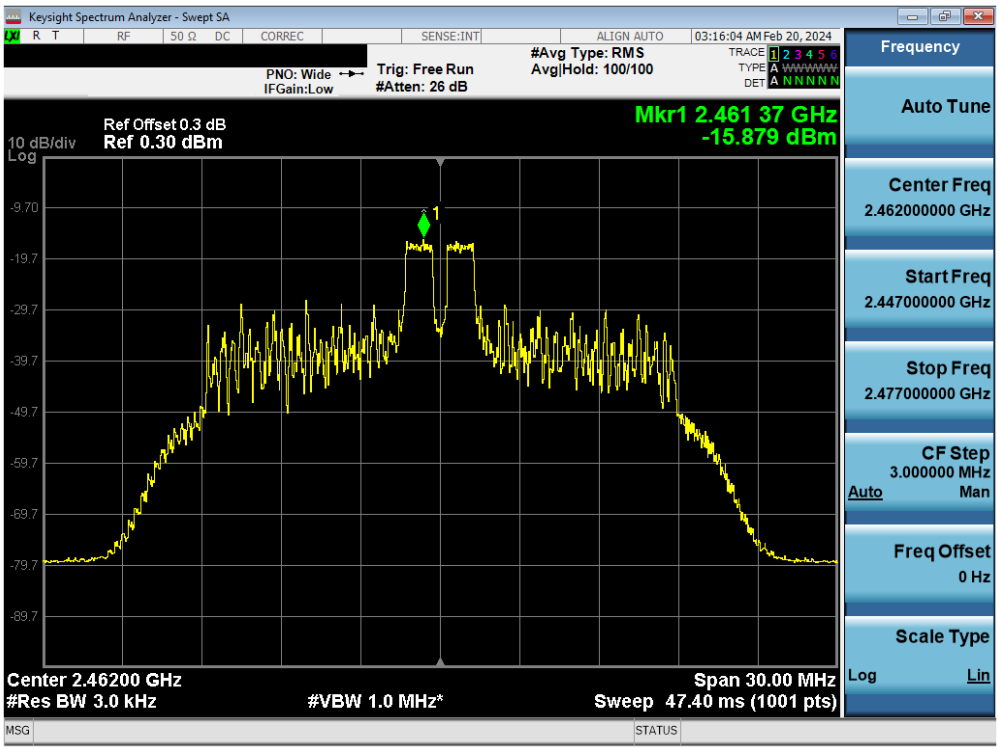
Plot 7-41. Power Spectral Density Plot Antenna WF8 (802.11ax OFDMA – RU26 Index 4 – Ch. 6)



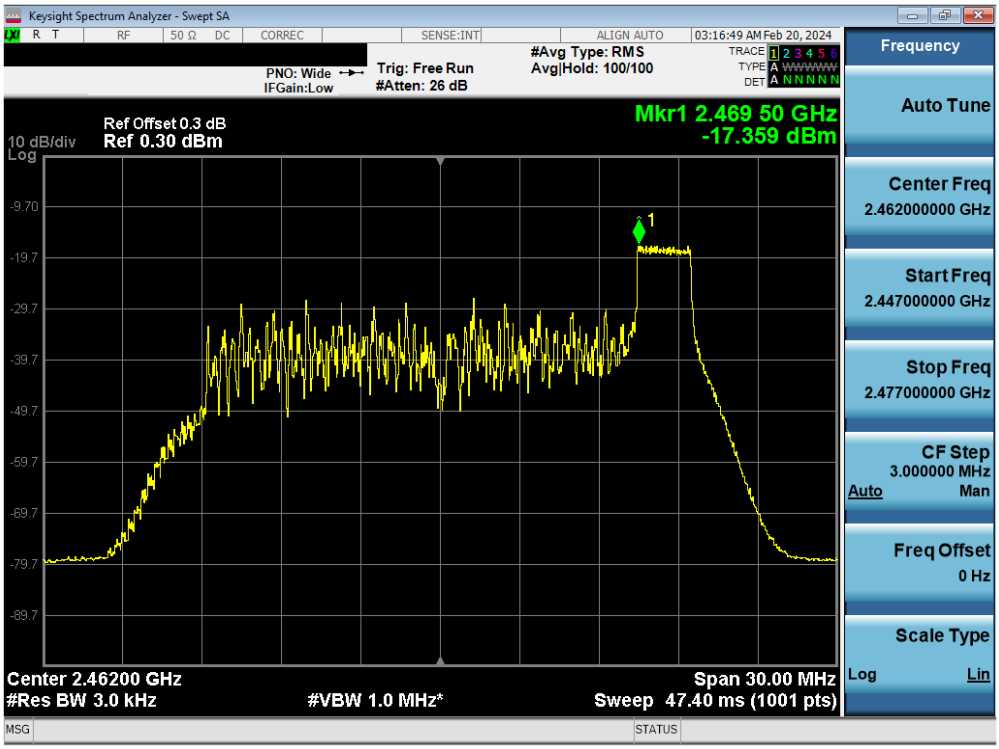
Plot 7-42. Power Spectral Density Plot Antenna WF8 (802.11ax OFDMA – RU26 Index 8 – Ch. 6)



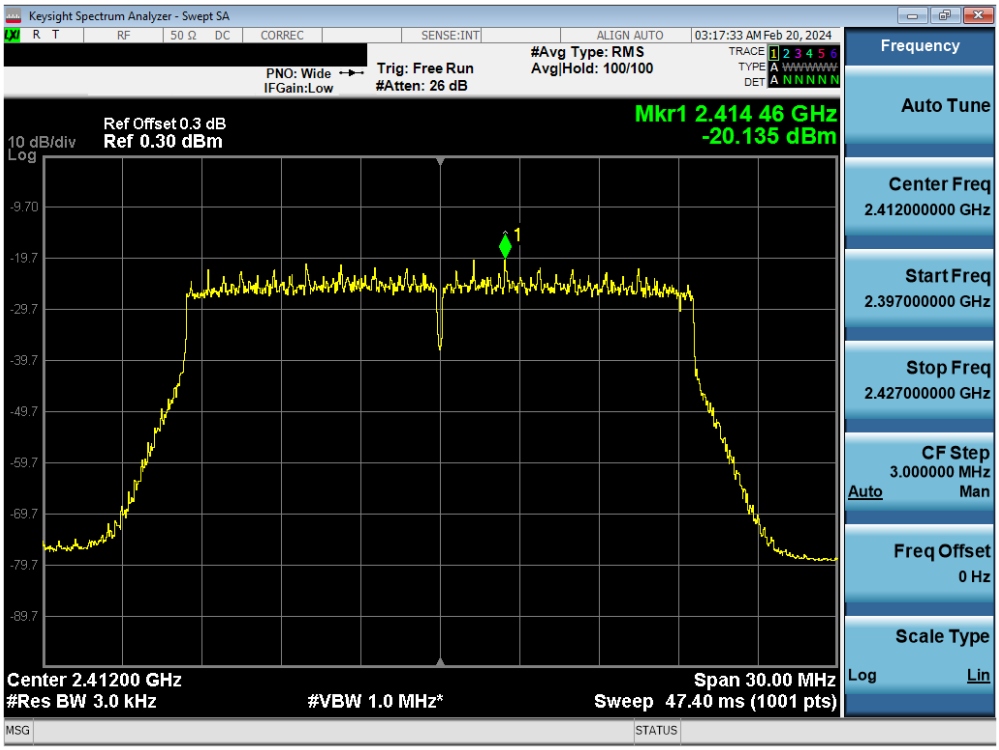
Plot 7-43. Power Spectral Density Plot Antenna WF8 (802.11ax OFDMA – RU26 Index 0 – Ch. 11)



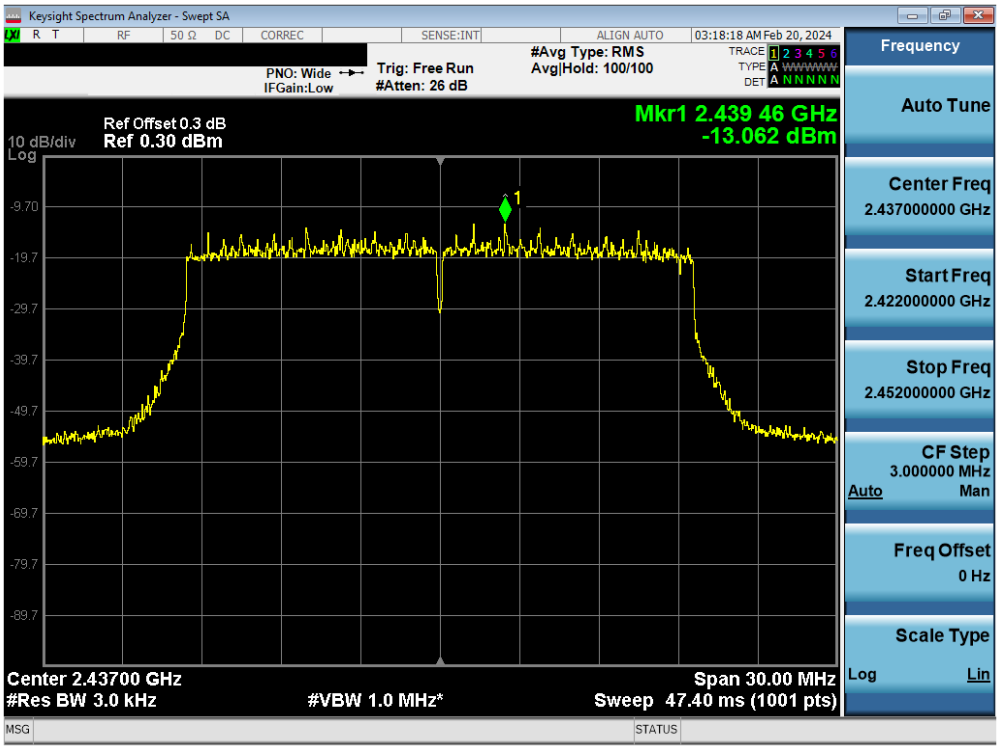
Plot 7-44. Power Spectral Density Plot Antenna WF8 (802.11ax OFDMA – RU26 Index 4 – Ch. 11)



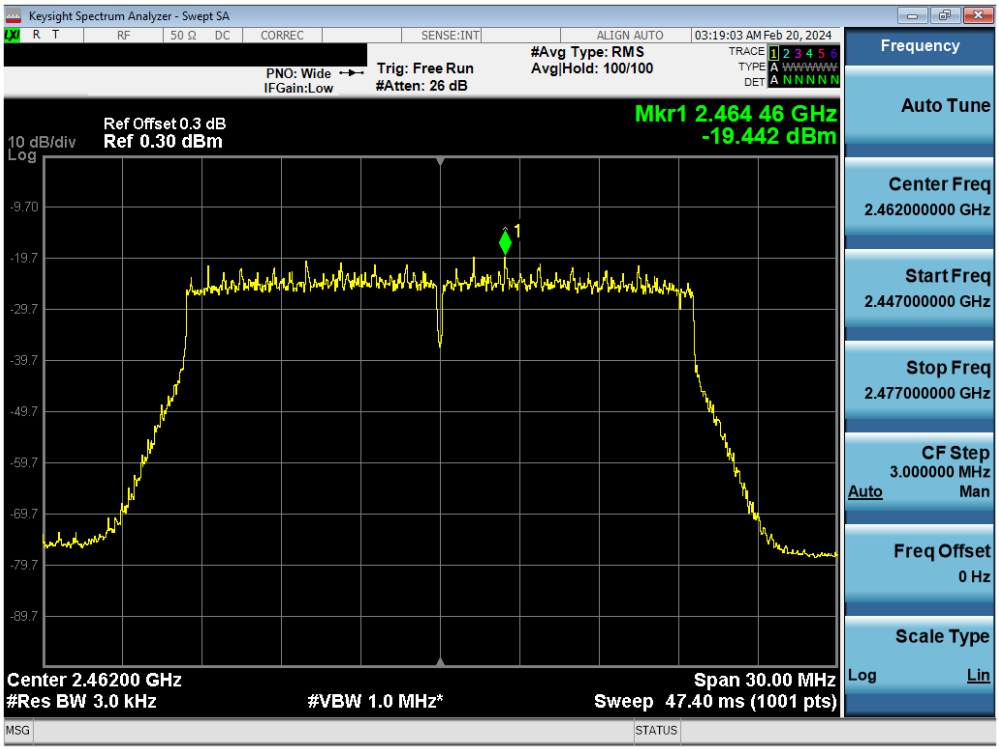
Plot 7-45. Power Spectral Density Plot Antenna WF8 (802.11ax OFDMA – RU26 Index 8 – Ch. 11)



Plot 7-46. Power Spectral Density Plot Antenna WF8 (802.11ax OFDMA – RU242 – Ch. 1)



Plot 7-47. Power Spectral Density Plot Antenna WF8 (802.11ax OFDMA – RU242 – Ch. 6)

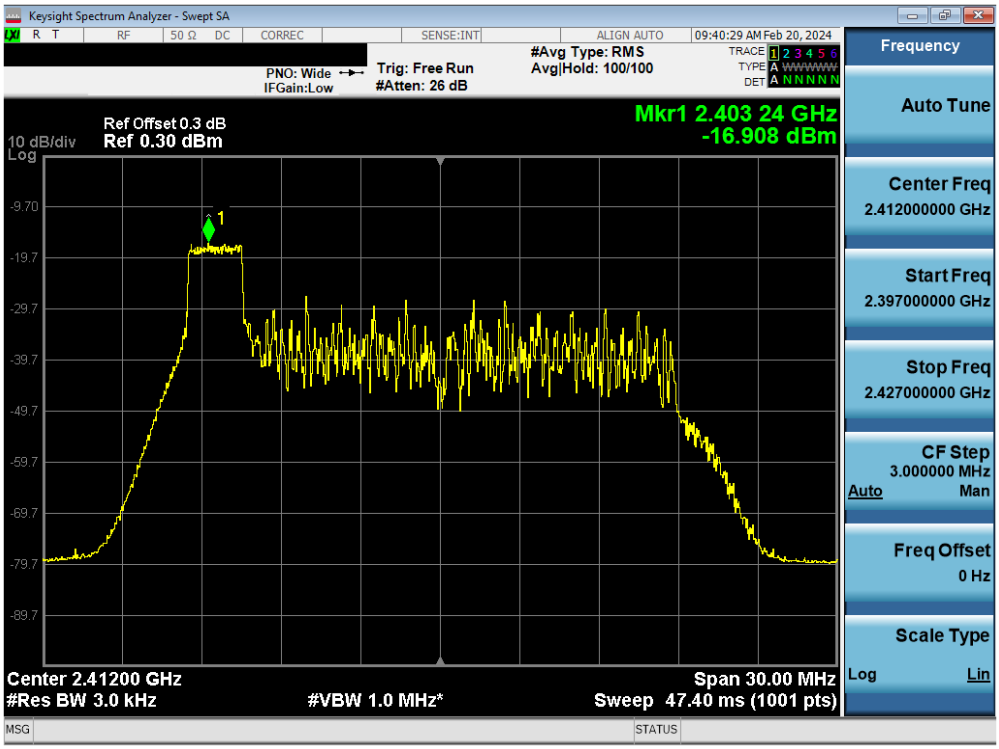


Plot 7-48. Power Spectral Density Plot Antenna WF8 (802.11ax OFDMA – RU242 – Ch. 11)

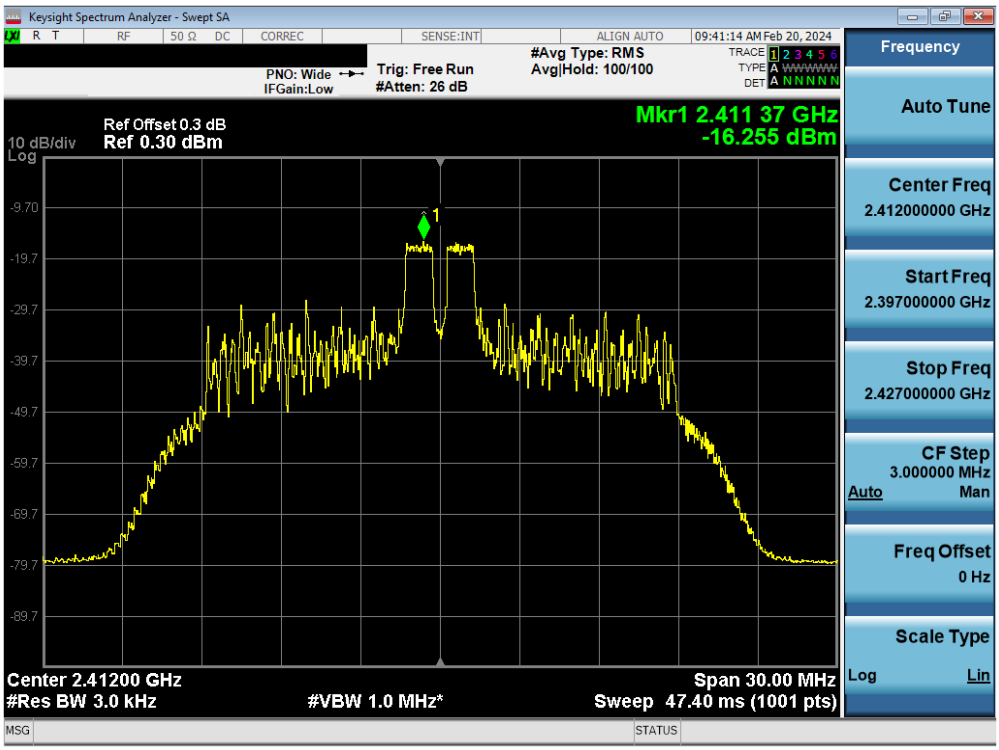
Antenna WF7 Power Spectral Density Measurements

Frequency [MHz]	Channel No.	802.11 MODE	RU Size	RU Index	Data Rate [Mbps]	Measured Power Density [dBm/3kHz]	Max Power Density [dBm/3kHz]	Margin [dB]	Pass/Fail
2412	1	ax	26	0	10/11.8 (MCS9)	-16.91	8.0	-24.91	Pass
			26	4	10/11.8 (MCS9)	-16.26	8.0	-24.26	Pass
			26	8	10/11.8 (MCS9)	-17.15	8.0	-25.15	Pass
2437	6	ax	26	0	10/11.8 (MCS9)	-16.85	8.0	-24.85	Pass
			26	4	10/11.8 (MCS9)	-16.18	8.0	-24.18	Pass
			26	8	10/11.8 (MCS9)	-17.31	8.0	-25.31	Pass
2462	11	ax	26	0	10/11.8 (MCS9)	-17.14	8.0	-25.14	Pass
			26	4	10/11.8 (MCS9)	-16.40	8.0	-24.40	Pass
			26	8	10/11.8 (MCS9)	-17.46	8.0	-25.46	Pass
2412	1	ax (20MHz)	242	61	97.5/114.7 (MCS9)	-20.14	8.0	-28.14	Pass
2437	6	ax (20MHz)	242	61	97.5/114.7 (MCS9)	-12.83	8.0	-20.83	Pass
2462	11	ax (20MHz)	242	61	97.5/114.7 (MCS9)	-19.48	8.0	-27.48	Pass

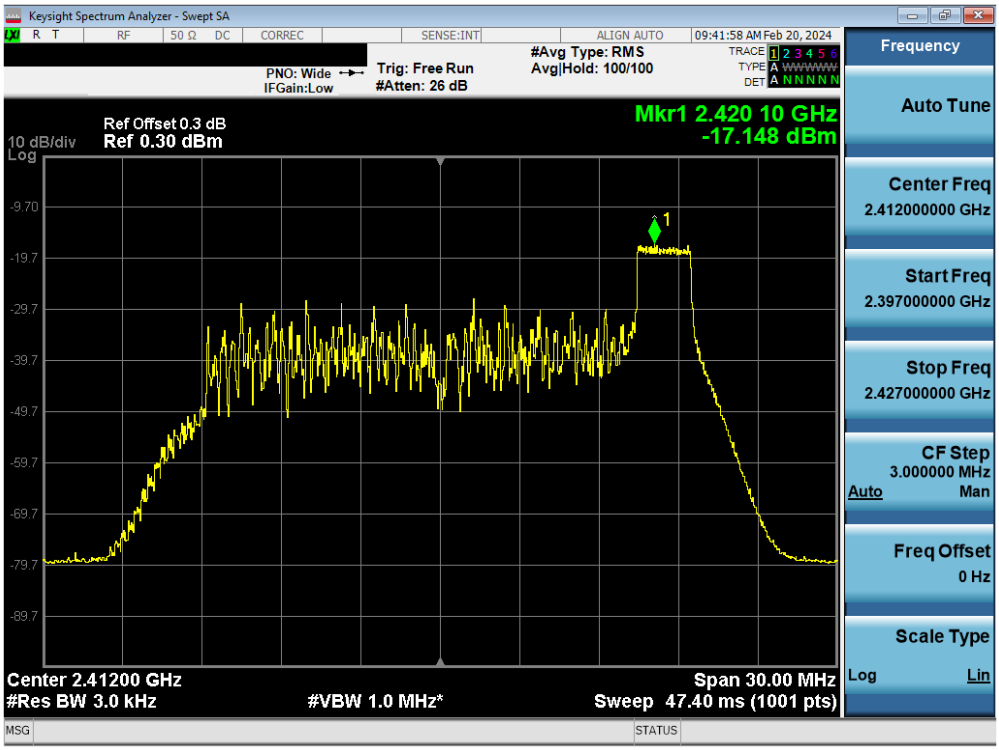
Table 7-26. Conducted Power Density Measurements Antenna WF7



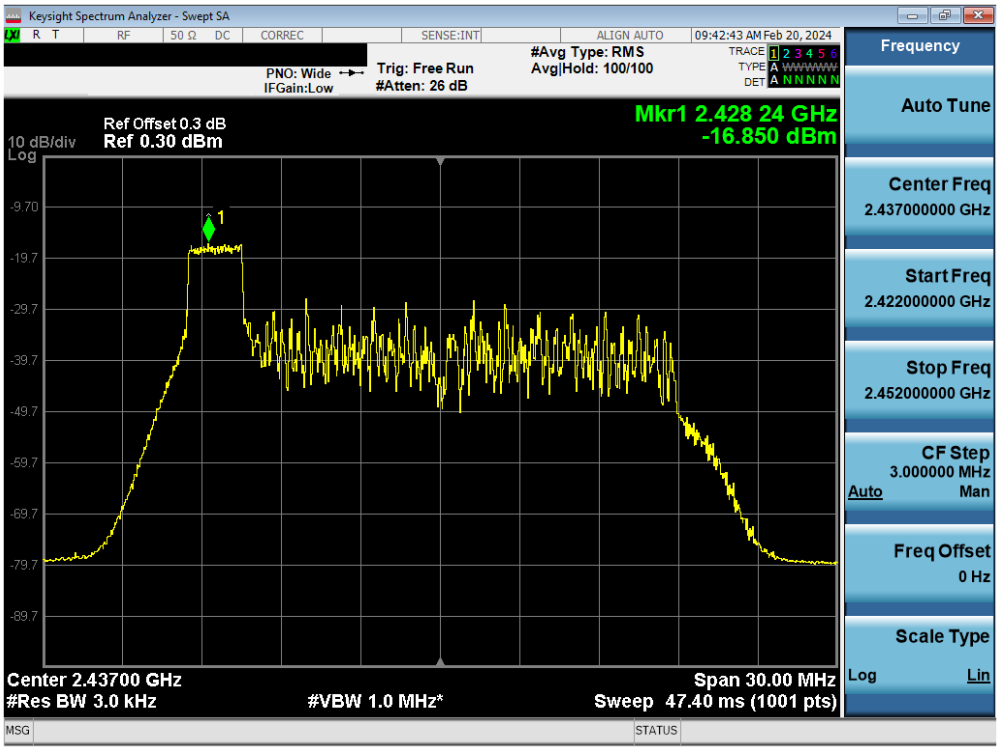
Plot 7-49. Power Spectral Density Plot Antenna WF7 (802.11ax OFDMA – RU26 Index 0 – Ch. 1)



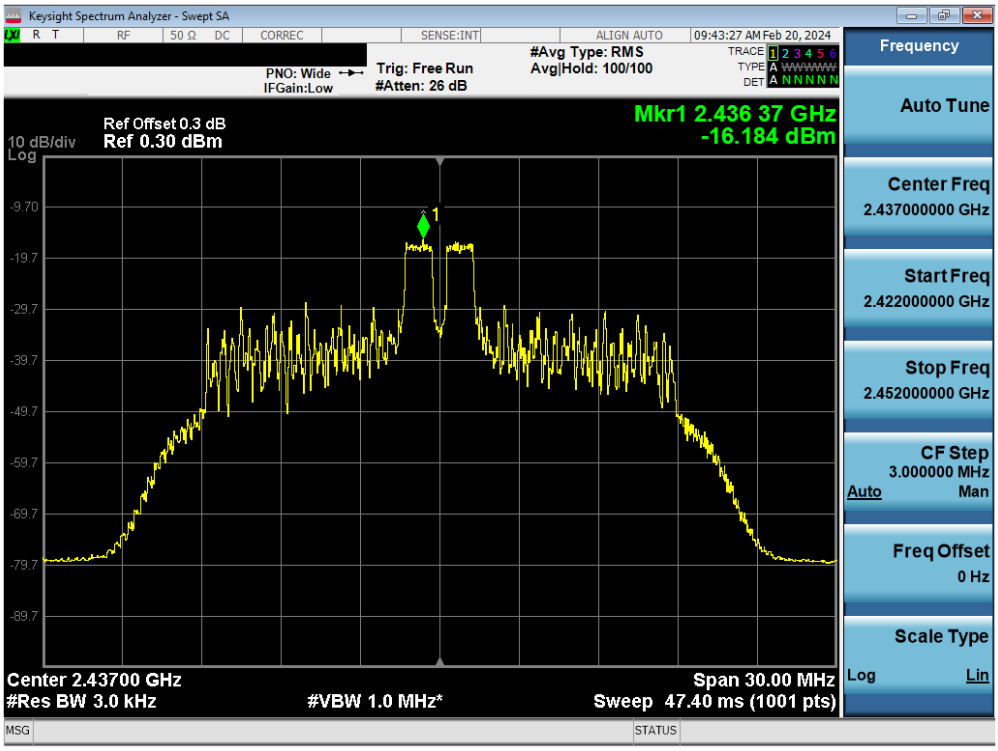
Plot 7-50. Power Spectral Density Plot Antenna WF7 (802.11ax OFDMA – RU26 Index 4 – Ch. 1)



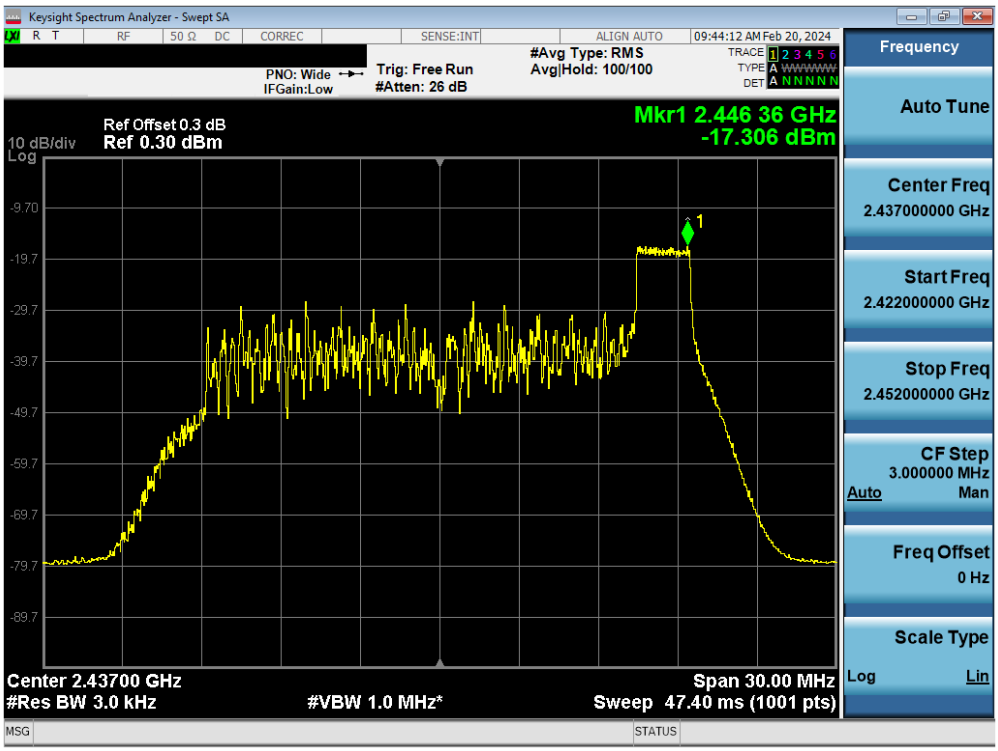
Plot 7-51. Power Spectral Density Plot Antenna WF7 (802.11ax OFDMA – RU26 Index 8 – Ch. 1)



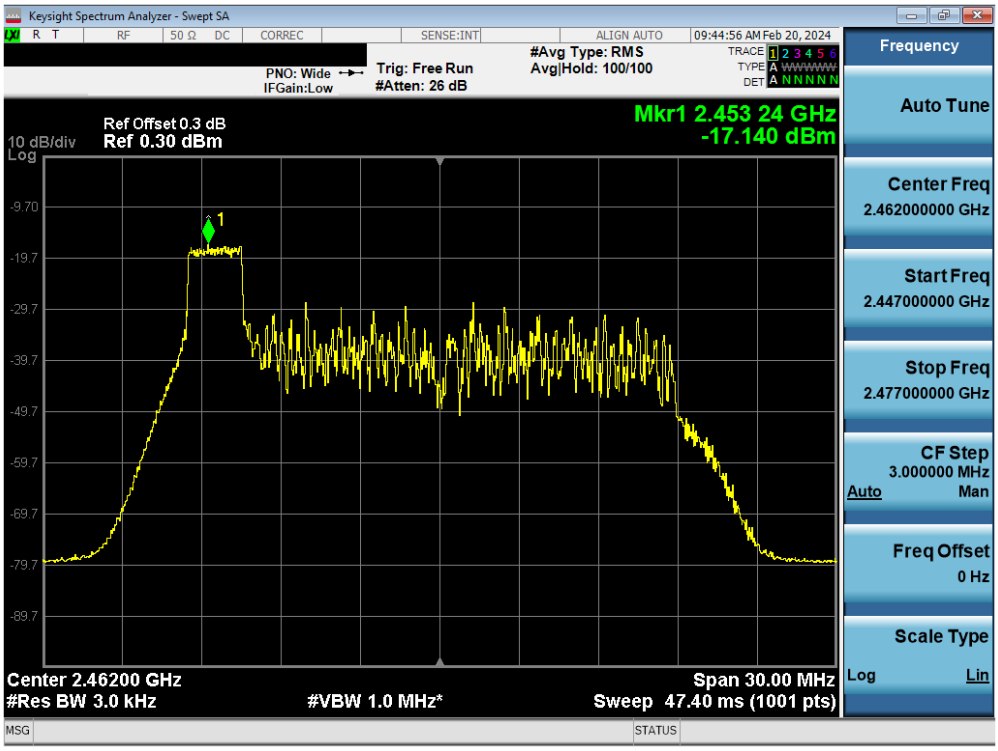
Plot 7-52. Power Spectral Density Plot Antenna WF7 (802.11ax OFDMA – RU26 Index 0 – Ch. 6)



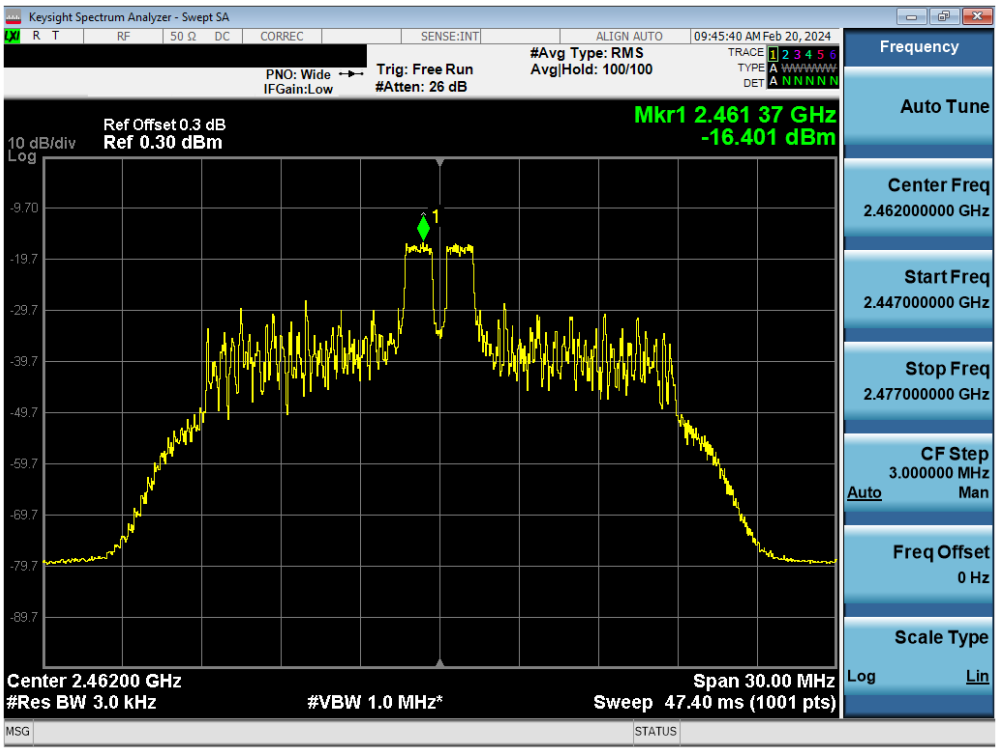
Plot 7-53. Power Spectral Density Plot Antenna WF7 (802.11ax OFDMA – RU26 Index 4 – Ch. 6)



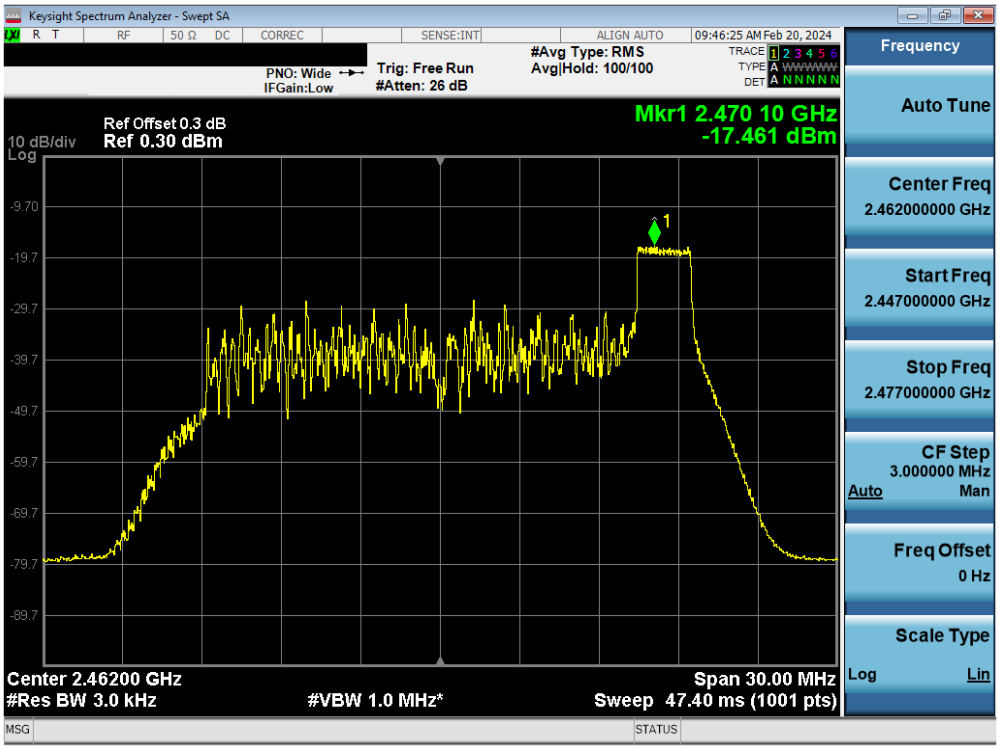
Plot 7-54. Power Spectral Density Plot Antenna WF7 (802.11ax OFDMA – RU26 Index 8 – Ch. 6)



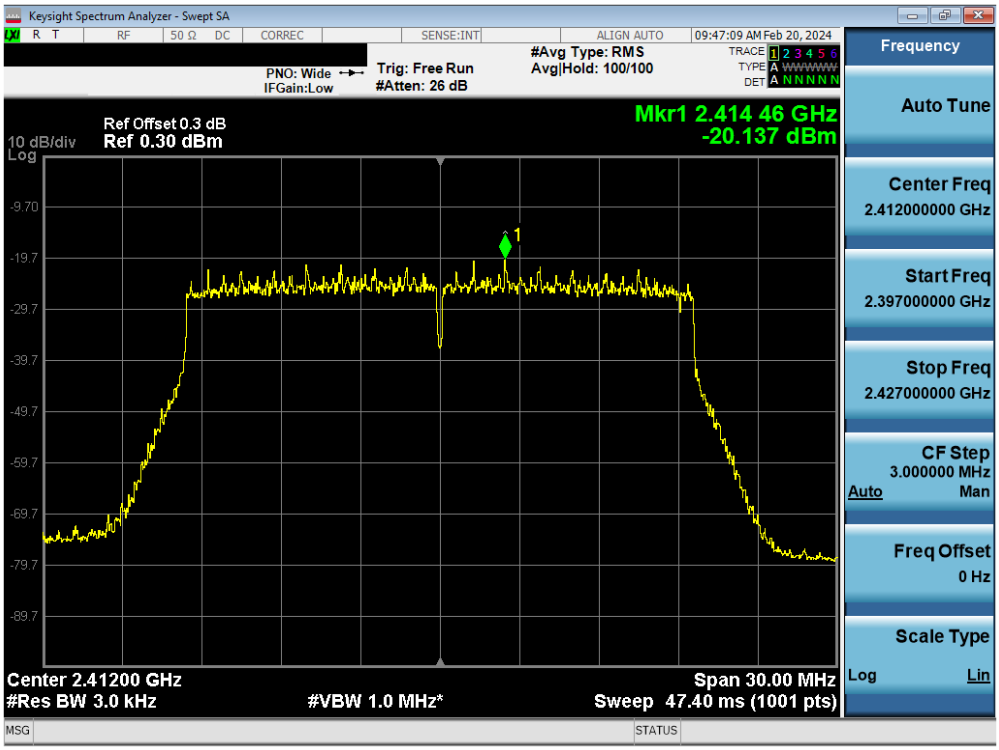
Plot 7-55. Power Spectral Density Plot Antenna WF7 (802.11ax OFDMA – RU26 Index 0 – Ch. 11)



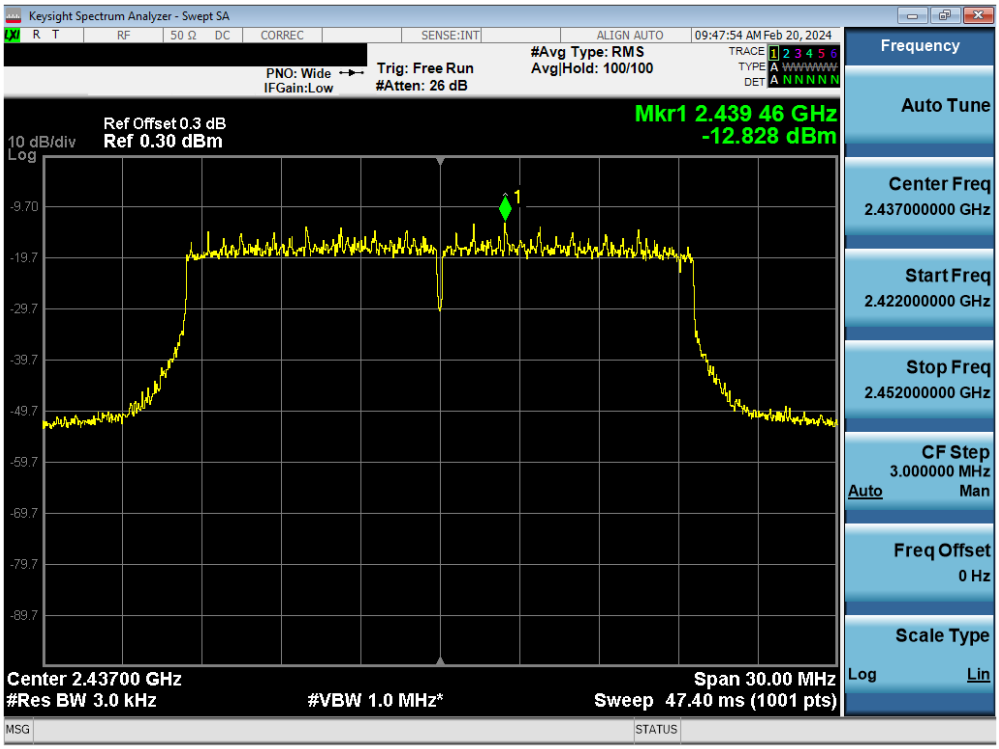
Plot 7-56. Power Spectral Density Plot Antenna WF7 (802.11ax OFDMA – RU26 Index 4 – Ch. 11)



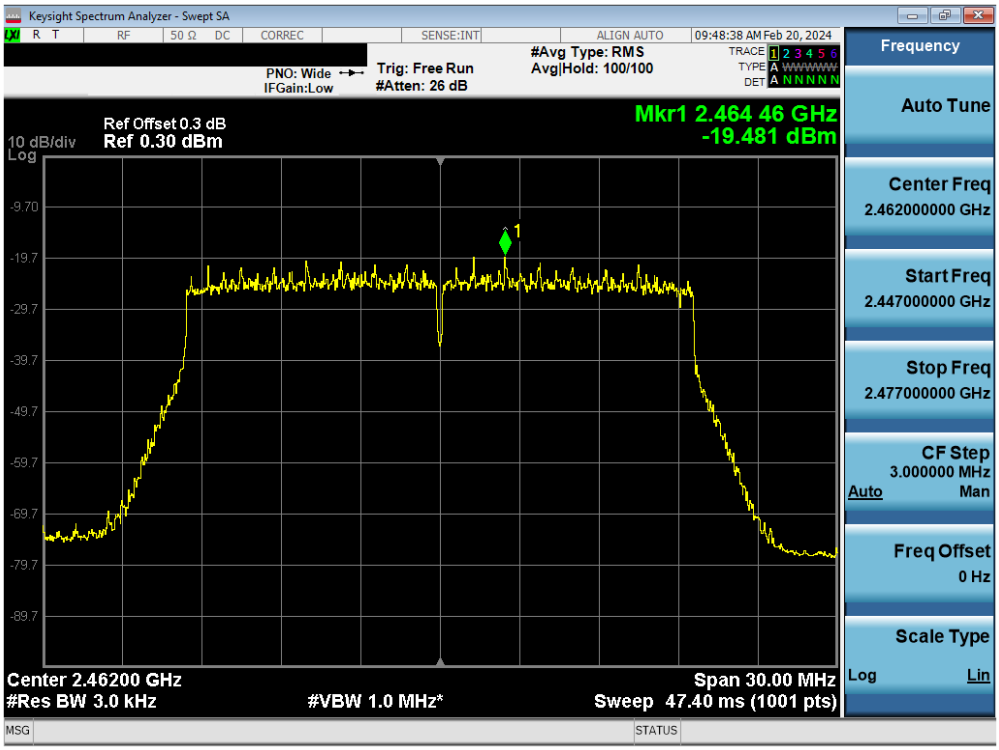
Plot 7-57. Power Spectral Density Plot Antenna WF7 (802.11ax OFDMA – RU26 Index 8 – Ch. 11)



Plot 7-58. Power Spectral Density Plot Antenna WF7 (802.11ax OFDMA – RU242 – Ch. 1)



Plot 7-59. Power Spectral Density Plot Antenna WF7 (802.11ax OFDMA – RU242 – Ch. 6)

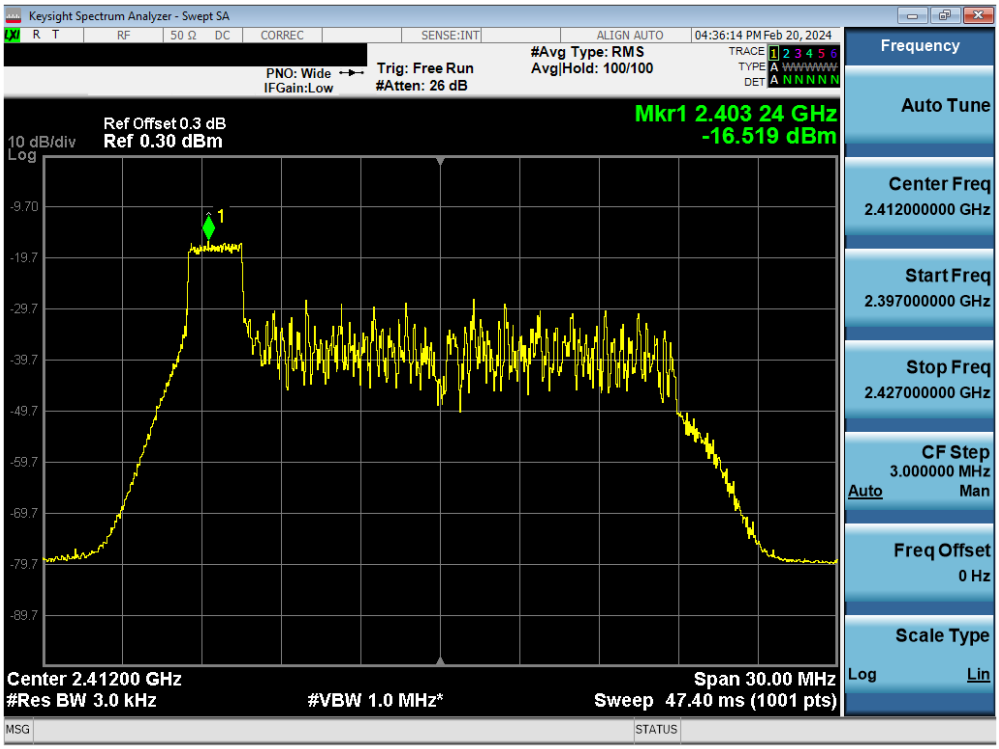


Plot 7-60. Power Spectral Density Plot Antenna WF7 (802.11ax OFDMA – RU242 – Ch. 11)

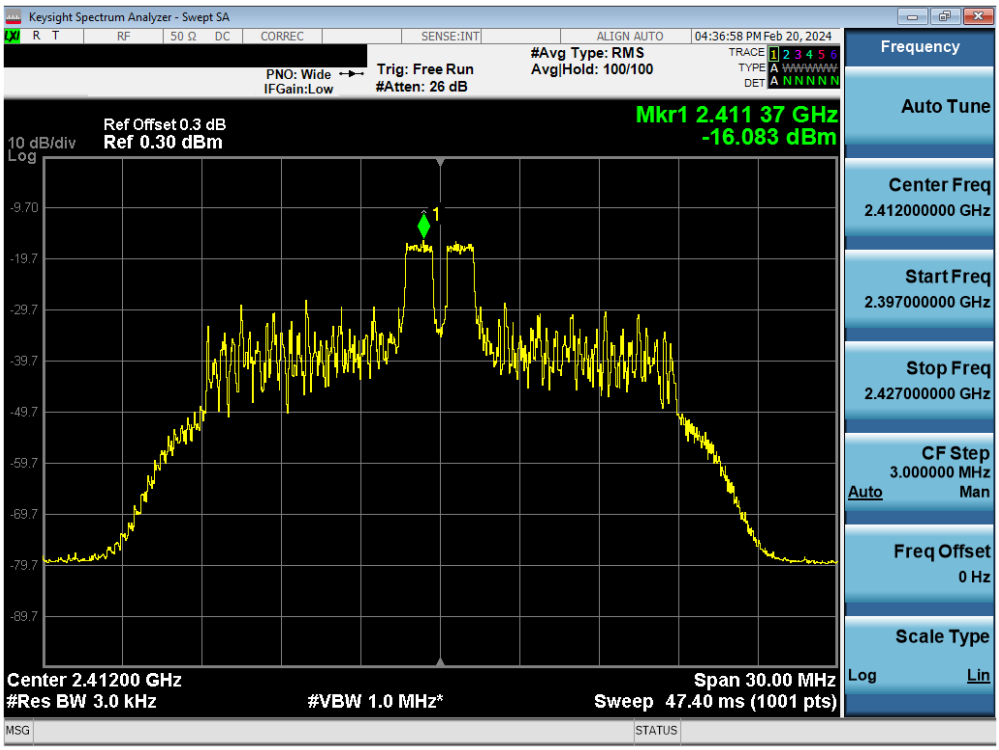
Antenna WF9 Power Spectral Density Measurements

Frequency [MHz]	Channel No.	802.11 MODE	RU Size	RU Index	Data Rate [Mbps]	Measured Power Density [dBm/3kHz]	Max Power Density [dBm/3kHz]	Margin [dB]	Pass/Fail
2412	1	ax	26	0	10/11.8 (MCS9)	-16.52	8.0	-24.52	Pass
			26	4	10/11.8 (MCS9)	-16.08	8.0	-24.08	Pass
			26	8	10/11.8 (MCS9)	-17.02	8.0	-25.02	Pass
2437	6	ax	26	0	10/11.8 (MCS9)	-16.34	8.0	-24.34	Pass
			26	4	10/11.8 (MCS9)	-16.14	8.0	-24.14	Pass
			26	8	10/11.8 (MCS9)	-16.70	8.0	-24.70	Pass
2462	11	ax	26	0	10/11.8 (MCS9)	-16.51	8.0	-24.51	Pass
			26	4	10/11.8 (MCS9)	-16.10	8.0	-24.10	Pass
			26	8	10/11.8 (MCS9)	-17.03	8.0	-25.03	Pass
2412	1	ax (20MHz)	242	61	97.5/114.7 (MCS9)	-19.68	8.0	-27.68	Pass
2437	6	ax (20MHz)	242	61	97.5/114.7 (MCS9)	-12.59	8.0	-20.59	Pass
2462	11	ax (20MHz)	242	61	97.5/114.7 (MCS9)	-19.74	8.0	-27.74	Pass

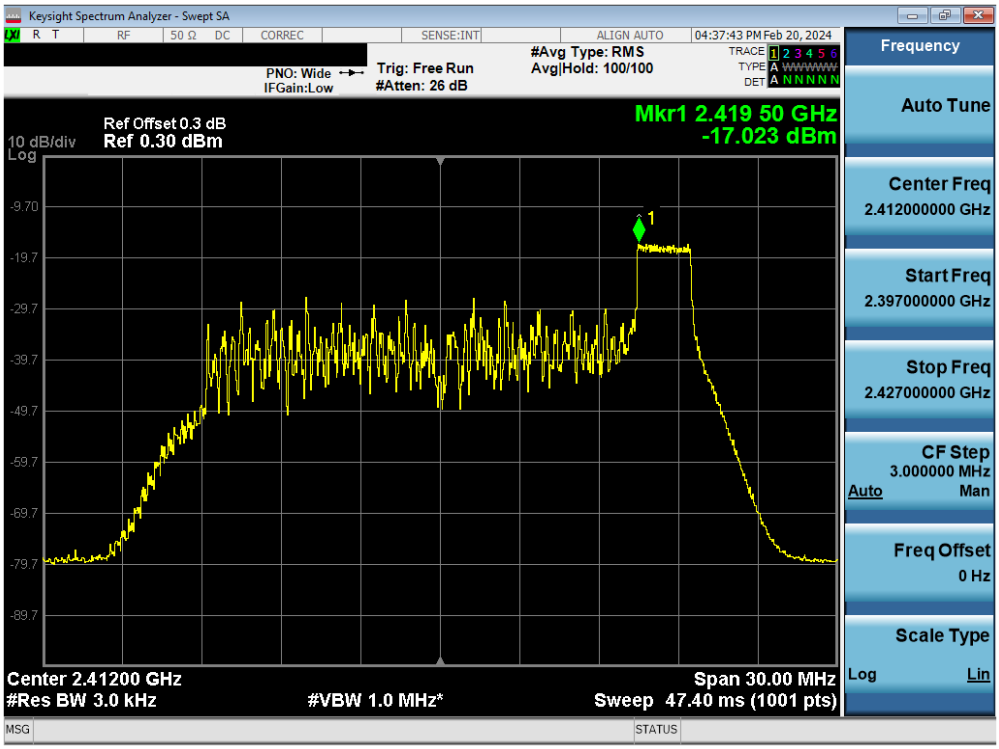
Table 7-27. Conducted Power Density Measurements Antenna WF9



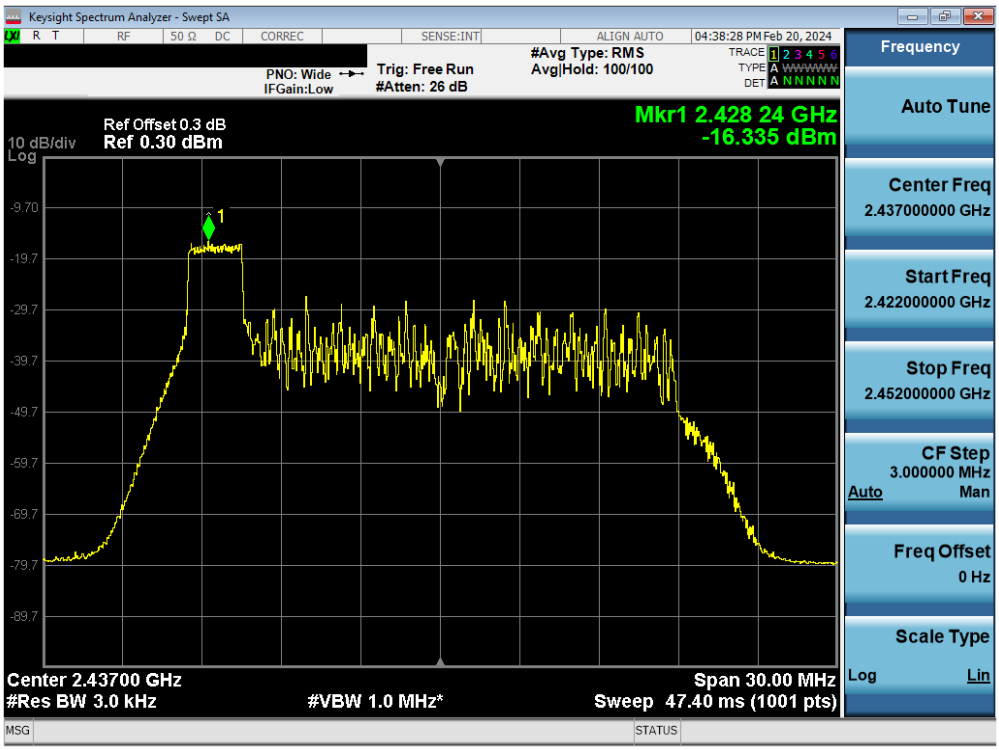
Plot 7-61. Power Spectral Density Plot Antenna WF9 (802.11ax OFDMA – RU26 Index 0 – Ch. 1)



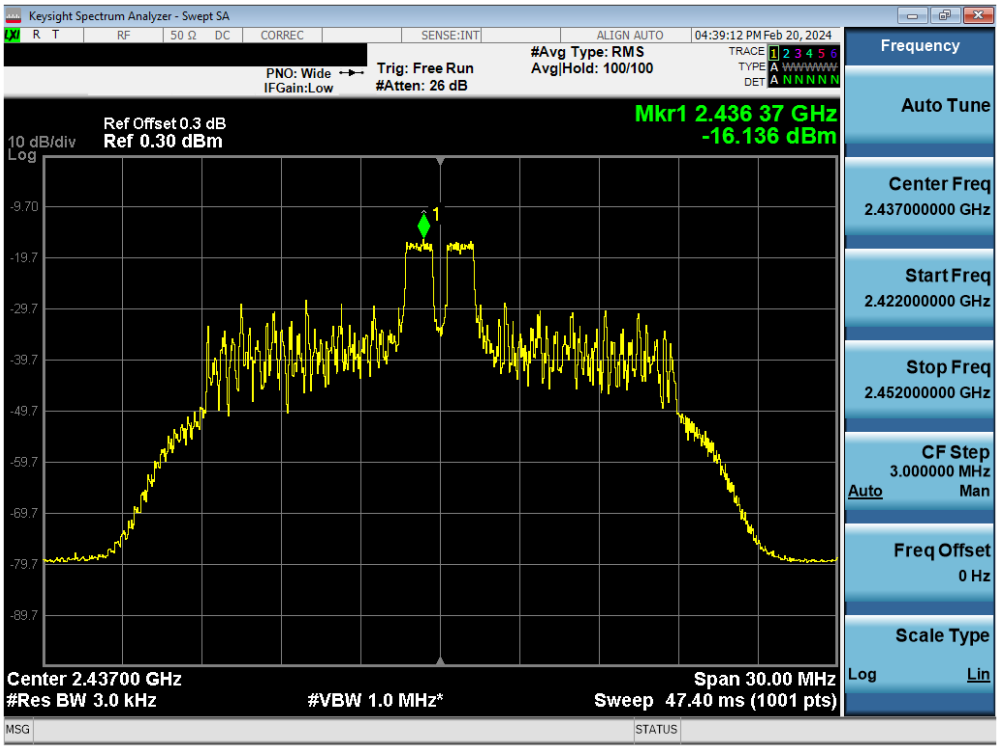
Plot 7-62. Power Spectral Density Plot Antenna WF9 (802.11ax OFDMA – RU26 Index 4 – Ch. 1)



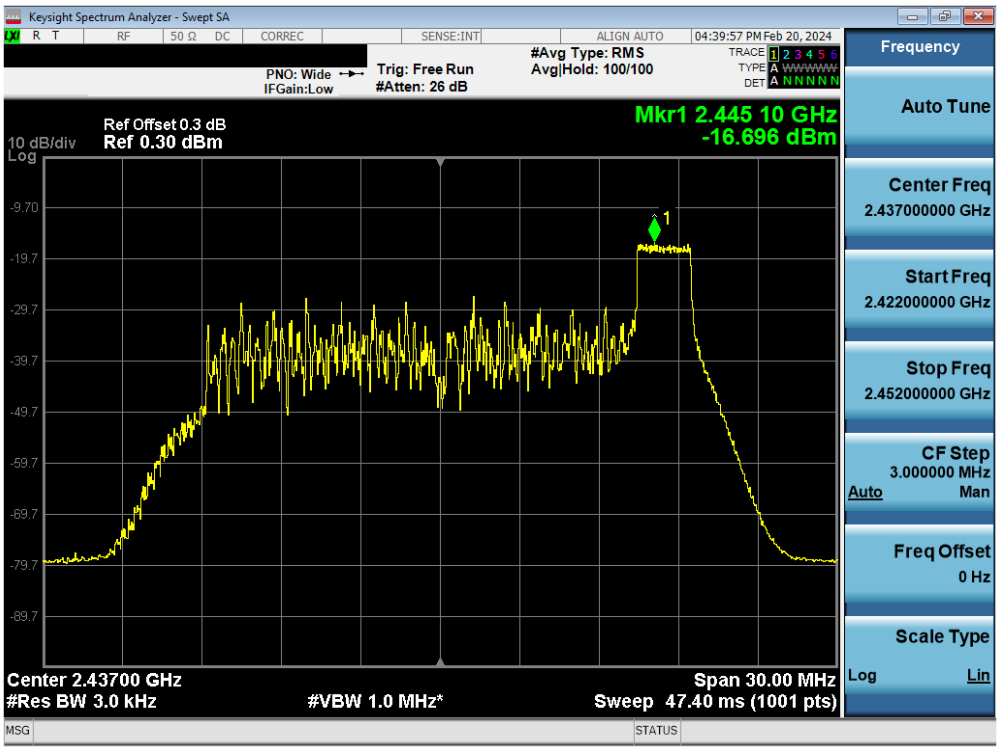
Plot 7-63. Power Spectral Density Plot Antenna WF9 (802.11ax OFDMA – RU26 Index 8 – Ch. 1)



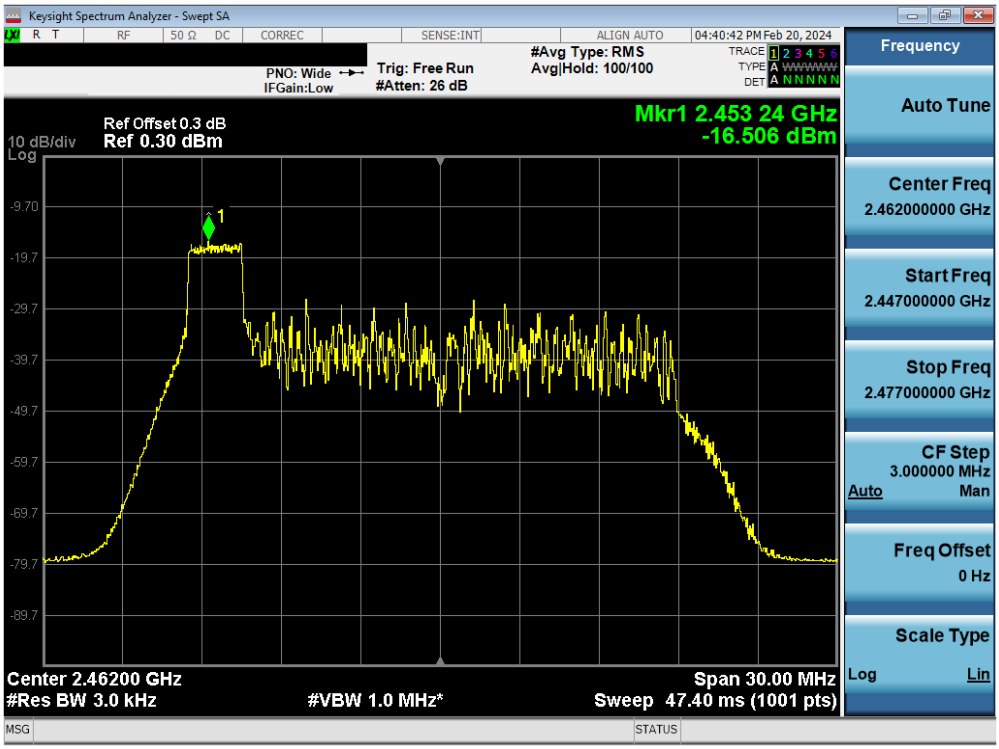
Plot 7-64. Power Spectral Density Plot Antenna WF9 (802.11ax OFDMA – RU26 Index 0 – Ch. 6)



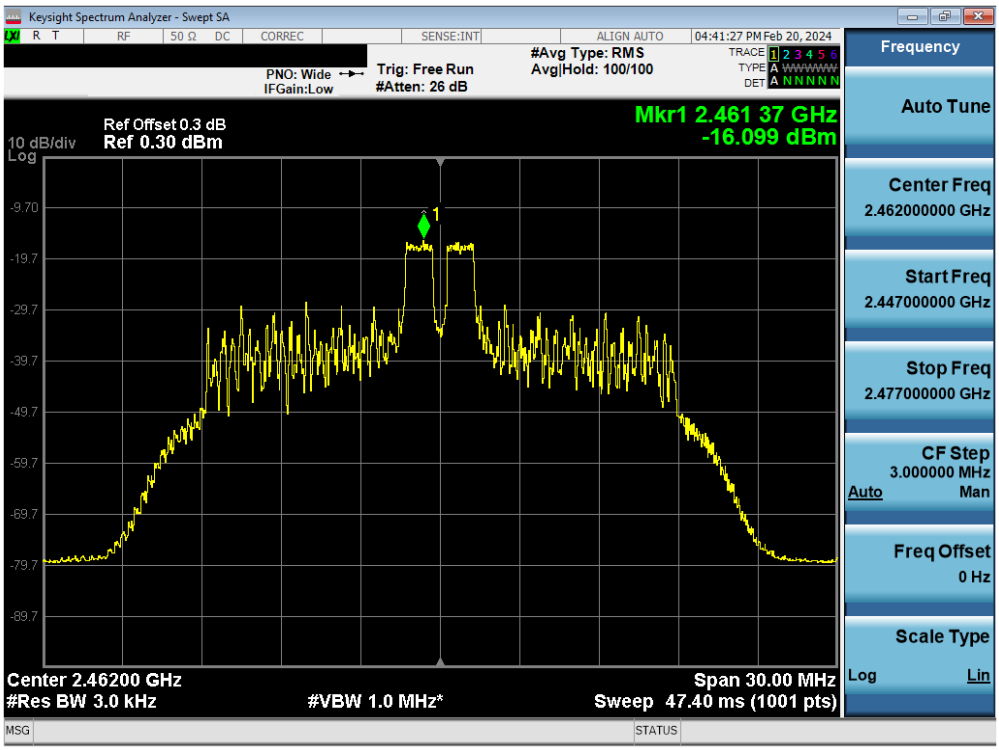
Plot 7-65. Power Spectral Density Plot Antenna WF9 (802.11ax OFDMA – RU26 Index 4 – Ch. 6)



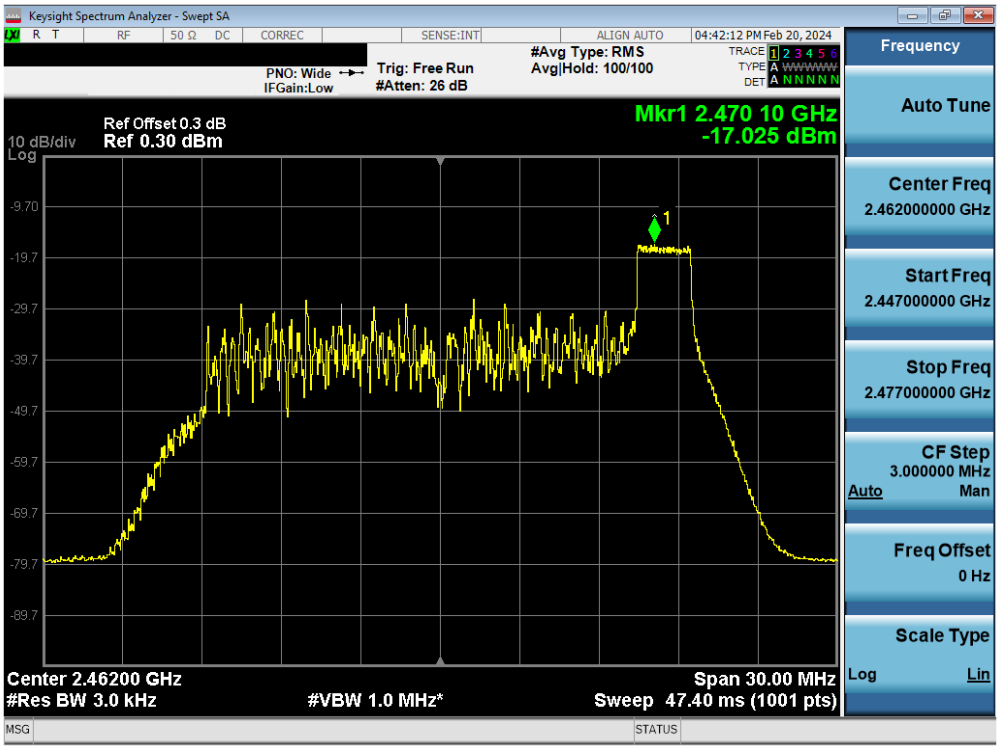
Plot 7-66. Power Spectral Density Plot Antenna WF9 (802.11ax OFDMA – RU26 Index 8 – Ch. 6)



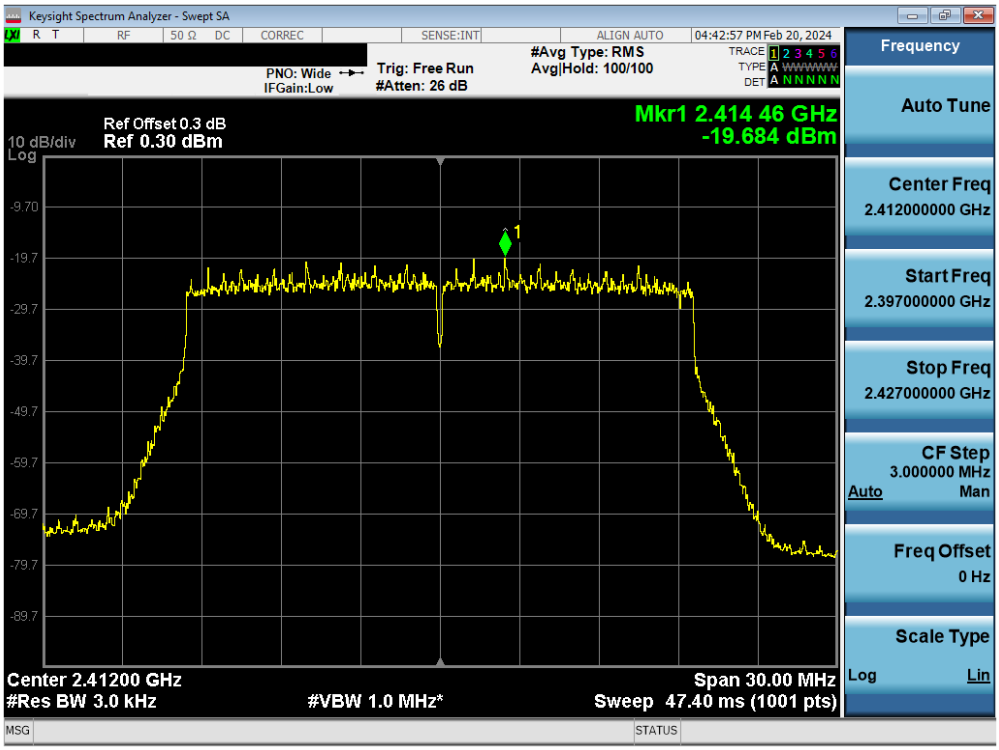
Plot 7-67. Power Spectral Density Plot Antenna WF9 (802.11ax OFDMA – RU26 Index 0 – Ch. 11)



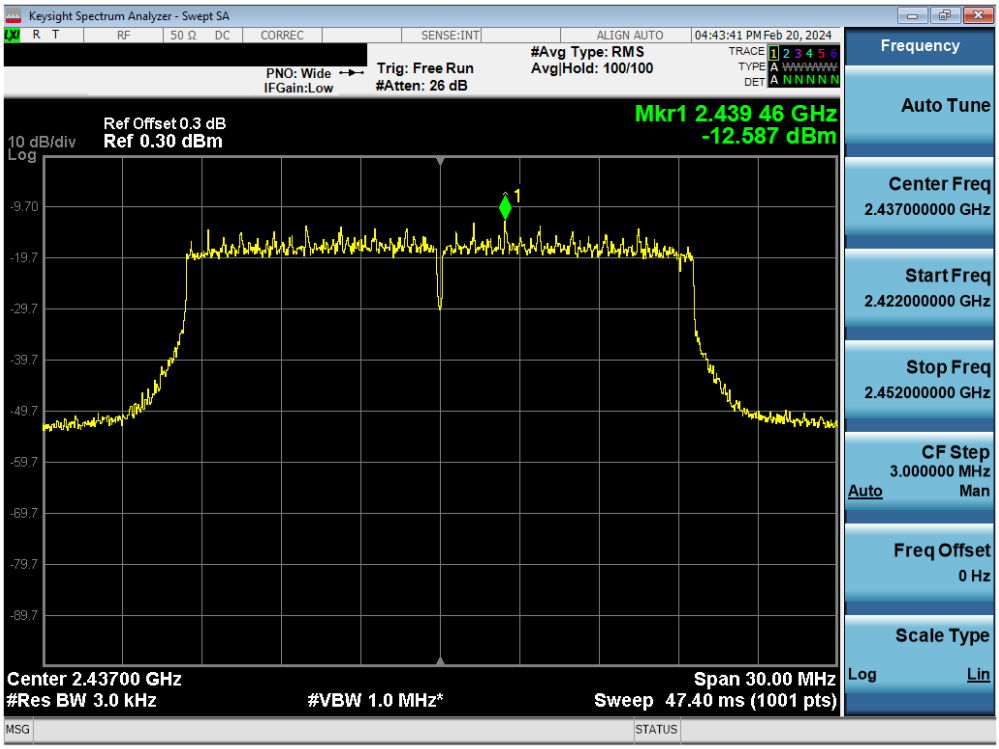
Plot 7-68. Power Spectral Density Plot Antenna WF9 (802.11ax OFDMA – RU26 Index 4 – Ch. 11)



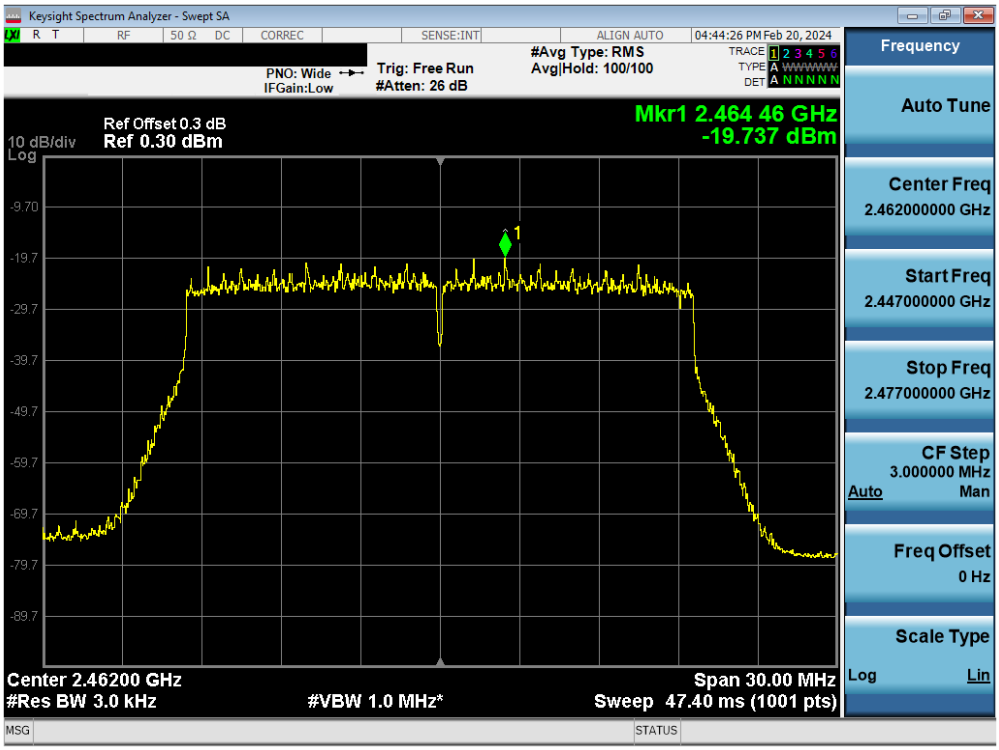
Plot 7-69. Power Spectral Density Plot Antenna WF9 (802.11ax OFDMA – RU26 Index 8 – Ch. 11)



Plot 7-70. Power Spectral Density Plot Antenna WF9 (802.11ax OFDMA – RU242 – Ch. 1)



Plot 7-71. Power Spectral Density Plot Antenna WF9 (802.11ax OFDMA – RU242 – Ch. 6)

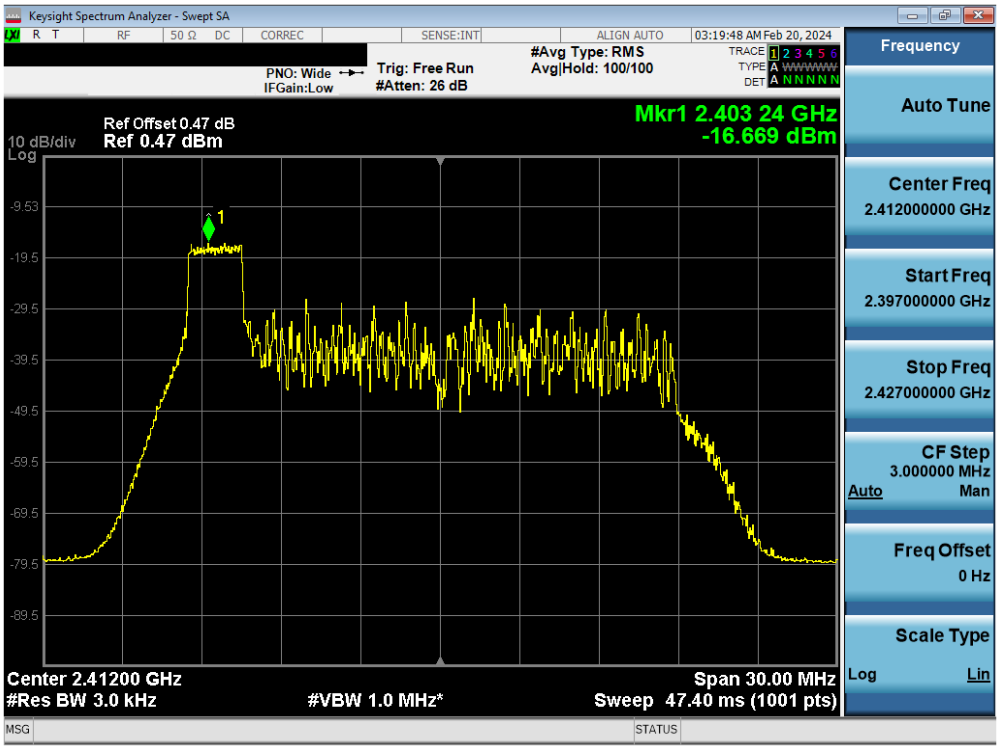


Plot 7-72. Power Spectral Density Plot Antenna WF9 (802.11ax OFDMA – RU242 – Ch. 11)

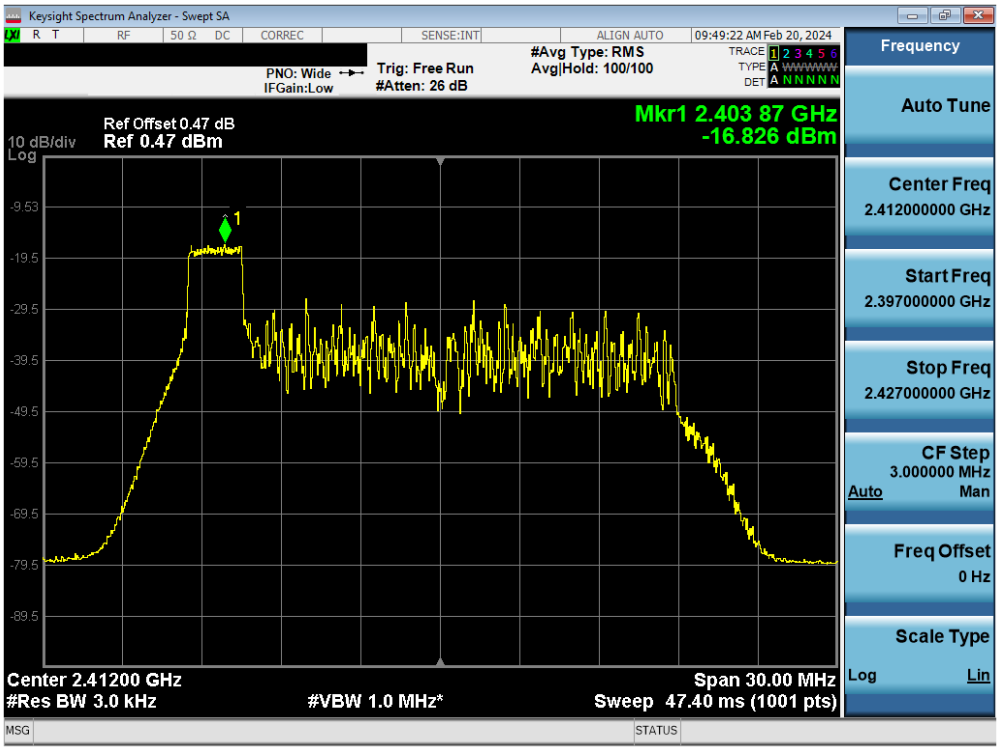
CDD Power Spectral Density Primary Measurements

	Frequency [MHz]	Channel No.	802.11 MODE	RU Size	RU Index	Data Rate [Mbps]	Ant WF8 Power Density [dBm/3kHz]	Ant WF7 Power Density [dBm/3kHz]	Summed Power Density [dBm/3kHz]	Max Power Density [dBm/3kHz]	Margin [dB]	Pass/Fail
DTS	2412	1	ax	26	0	20/23.5 (MCS9)	-16.67	-16.83	-13.74	8.0	-24.83	Pass
				26	4	20/23.5 (MCS9)	-16.29	-16.17	-13.22	8.0	-24.17	Pass
				26	8	20/23.5 (MCS9)	-17.02	-17.13	-14.07	8.0	-25.13	Pass
	2437	6	ax	26	0	20/23.5 (MCS9)	-16.34	-16.47	-13.39	8.0	-24.47	Pass
				26	4	20/23.5 (MCS9)	-16.29	-16.00	-13.13	8.0	-24.00	Pass
				26	8	20/23.5 (MCS9)	-16.82	-17.09	-13.94	8.0	-25.09	Pass
	2462	11	ax	26	0	20/23.5 (MCS9)	-16.80	-16.92	-13.85	8.0	-24.92	Pass
				26	4	20/23.5 (MCS9)	-16.19	-16.58	-13.37	8.0	-24.58	Pass
				26	8	20/23.5 (MCS9)	-17.10	-17.35	-14.21	8.0	-25.35	Pass
DTS	2412	1	ax	242	61	195/229.4 (MCS9)	-20.70	-20.86	-17.77	8.0	-28.86	Pass
	2437	6	ax	242	61	195/229.4 (MCS9)	-13.11	-12.83	-9.96	8.0	-20.83	Pass
	2462	11	ax	242	61	195/229.4 (MCS9)	-20.07	-20.34	-17.19	8.0	-28.34	Pass

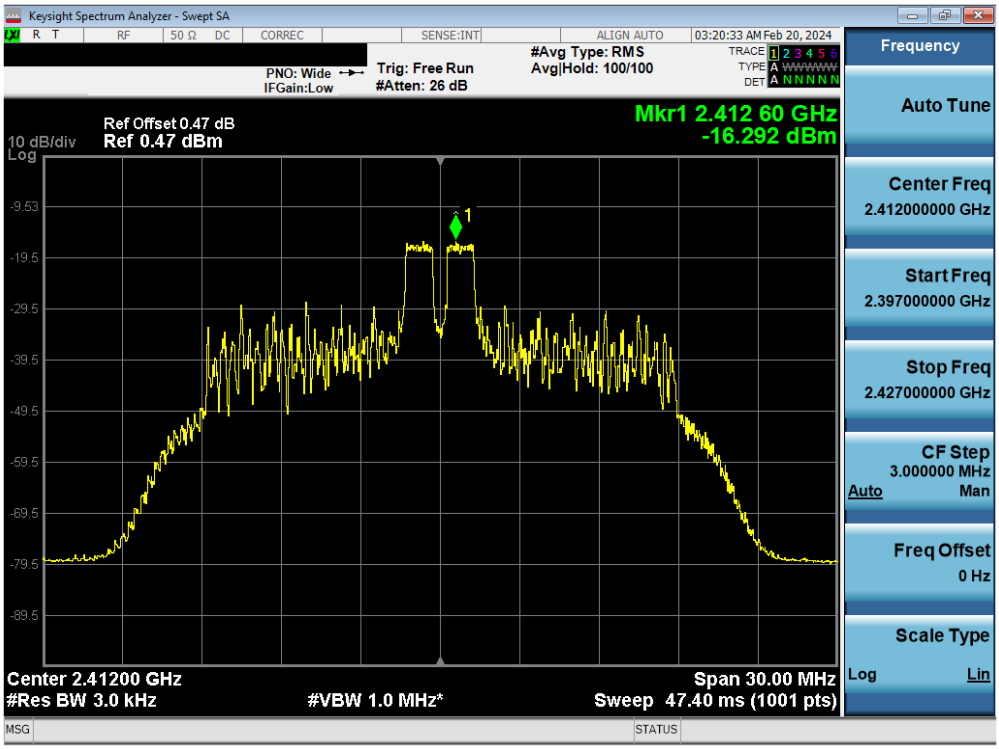
Table 7-28.CDD Conducted Power Density Primary Measurements



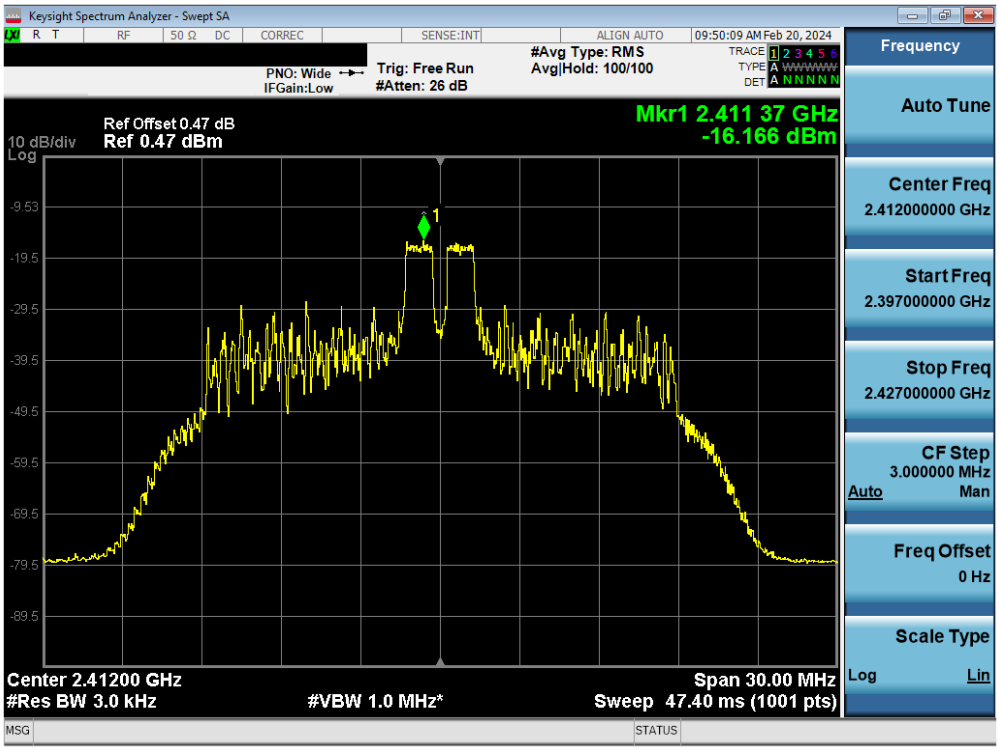
Plot 7-73. Power Spectral Density Plot Primary Antenna WF8 (802.11ax OFDMA – RU26 Index 0 – Ch. 1)



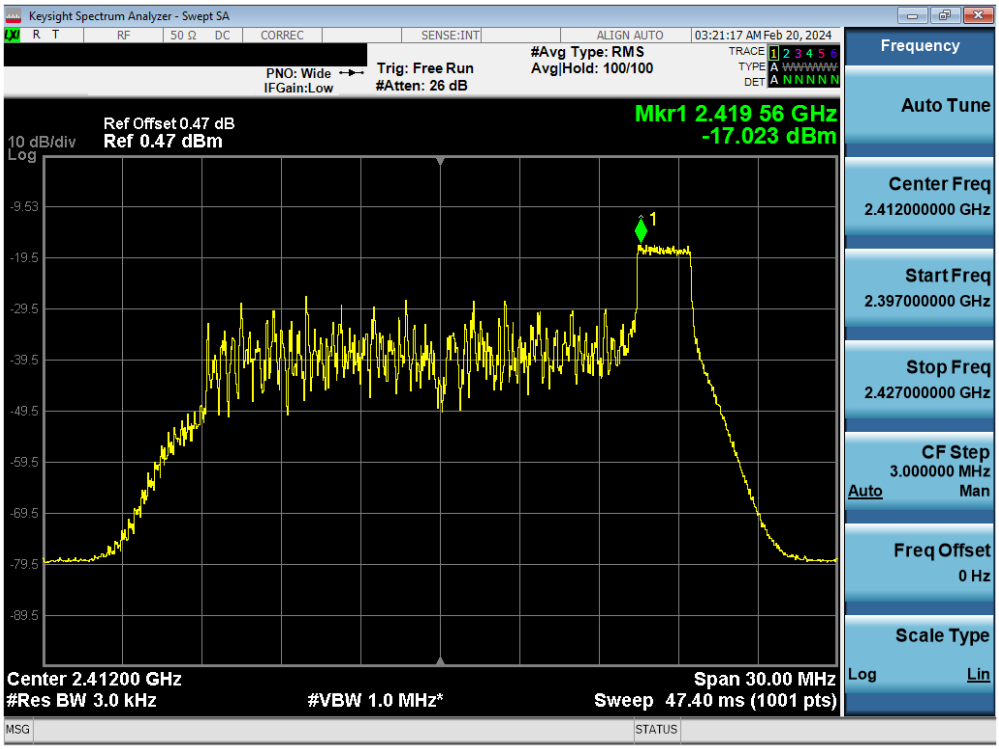
Plot 7-74. Power Spectral Density Plot Primary Antenna WF7 (802.11ax OFDMA – RU26 Index 0 – Ch. 1)



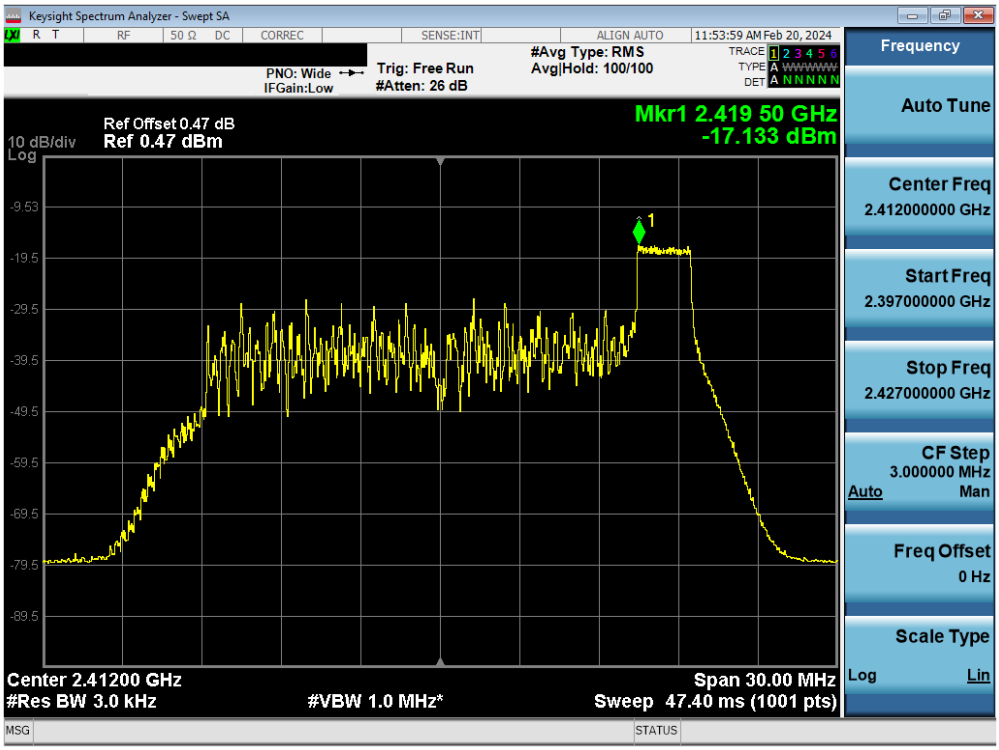
Plot 7-75. Power Spectral Density Plot Primary Antenna WF8 (802.11ax OFDMA – RU26 Index 4 – Ch. 1)



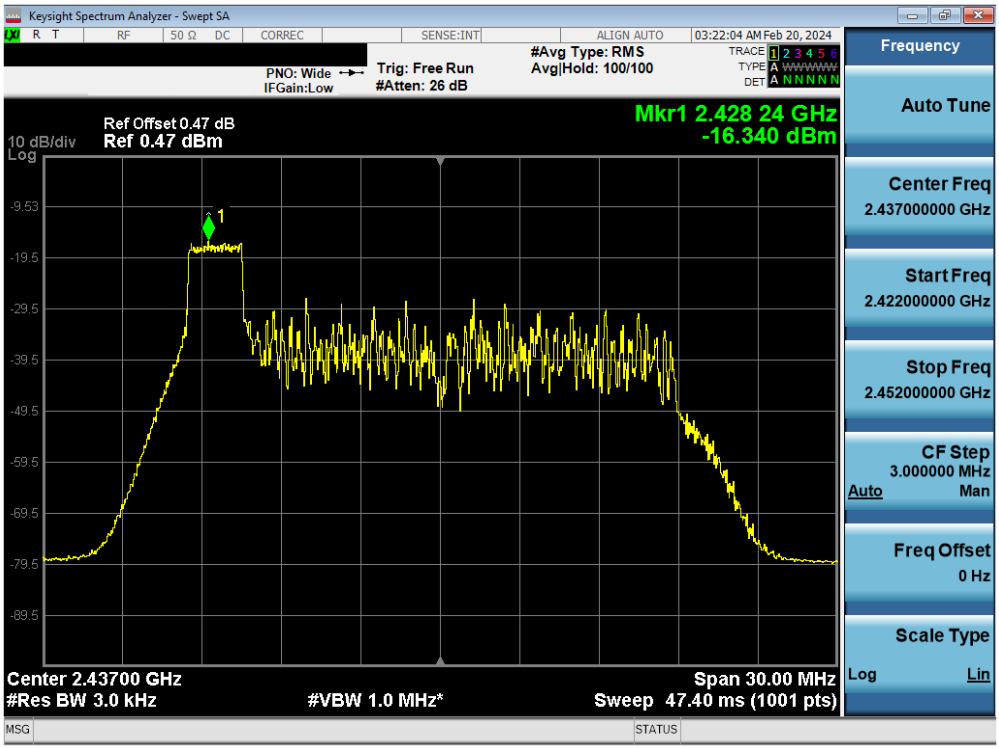
Plot 7-76. Power Spectral Density Plot Primary Antenna WF7 (802.11ax OFDMA – RU26 Index 4 – Ch. 1)



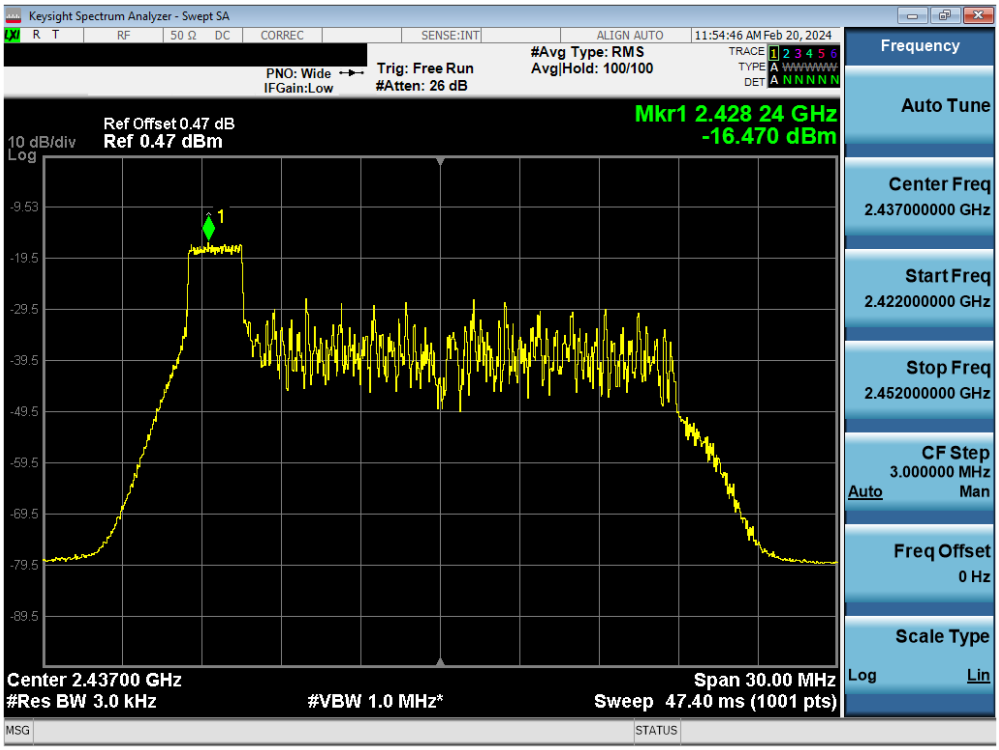
Plot 7-77. Power Spectral Density Plot Primary Antenna WF8 (802.11ax OFDMA – RU26 Index 8 – Ch. 1)



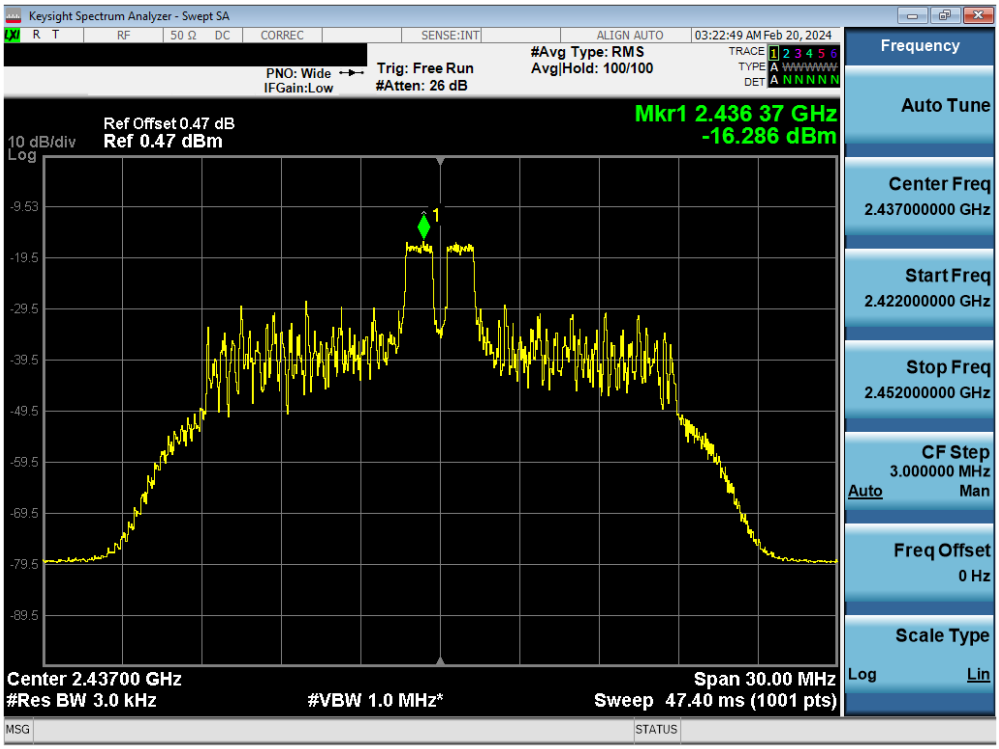
Plot 7-78. Power Spectral Density Plot Primary Antenna WF7 (802.11ax OFDMA – RU26 Index 8 – Ch. 1)



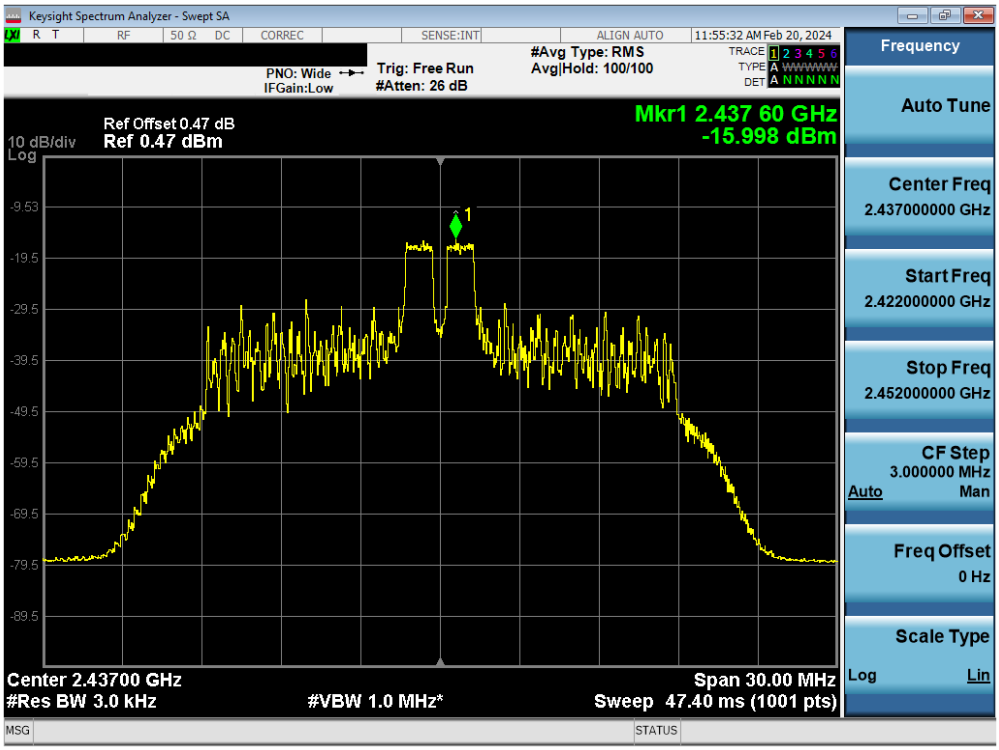
Plot 7-79. Power Spectral Density Plot Primary Antenna WF8 (802.11ax OFDMA – RU26 Index 0 – Ch. 6)



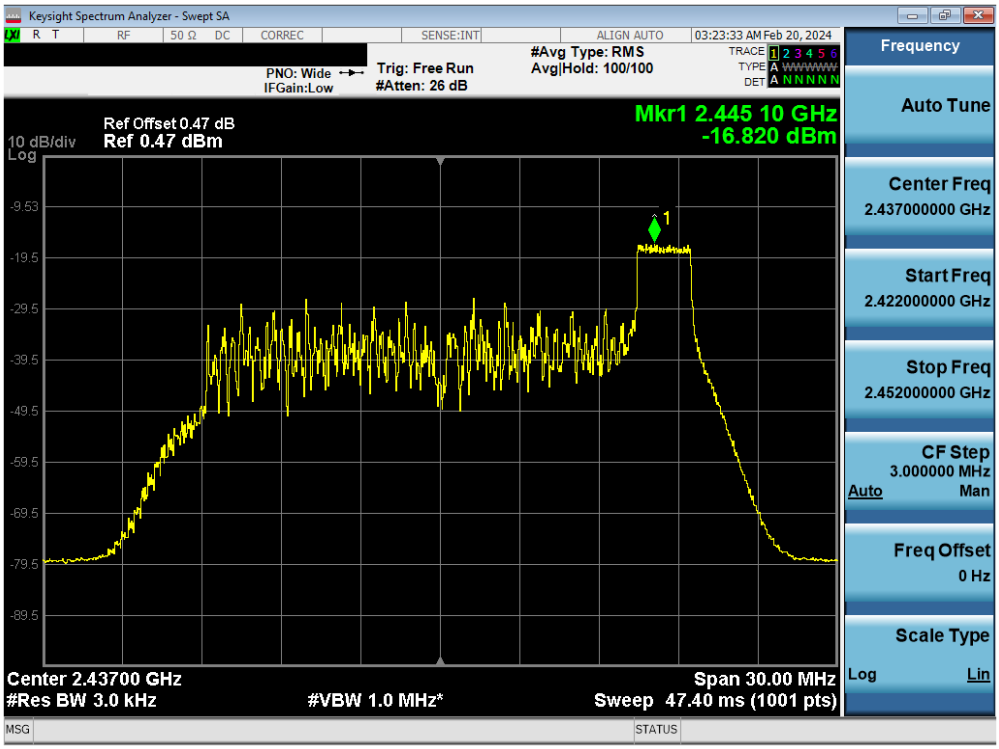
Plot 7-80. Power Spectral Density Plot Primary Antenna WF7 (802.11ax OFDMA – RU26 Index 0 – Ch. 6)



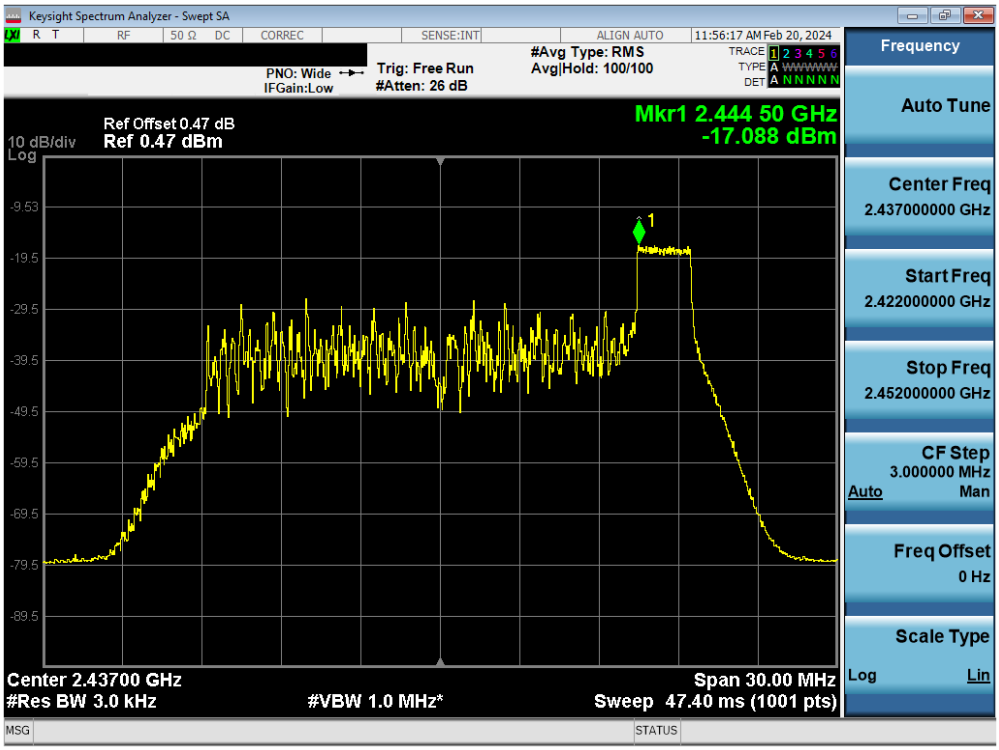
Plot 7-81. Power Spectral Density Plot Primary Antenna WF8 (802.11ax OFDMA – RU26 Index 4 – Ch. 6)



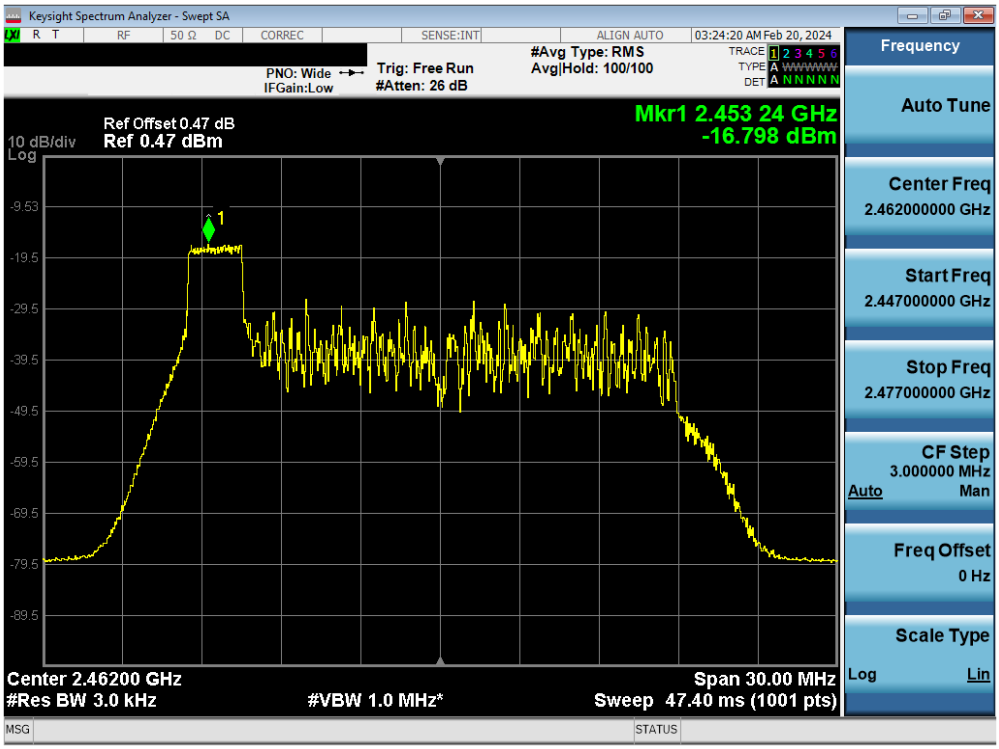
Plot 7-82. Power Spectral Density Plot Primary Antenna WF7 (802.11ax OFDMA – RU26 Index 4 – Ch. 6)



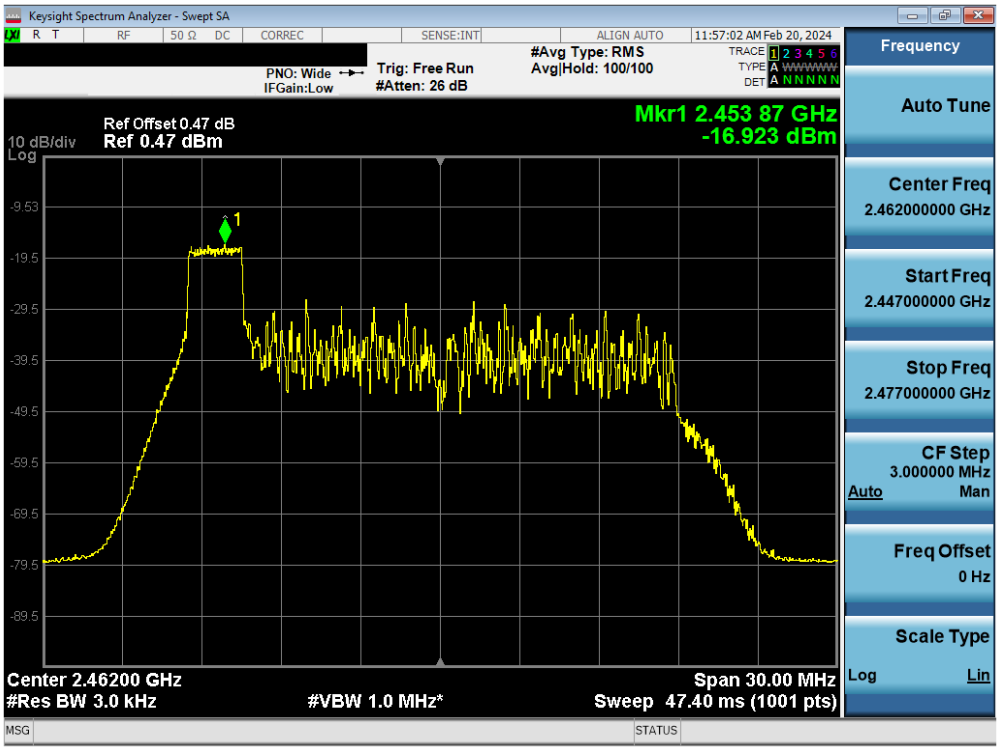
Plot 7-83. Power Spectral Density Plot Primary Antenna WF8 (802.11ax OFDMA – RU26 Index 8 – Ch. 6)



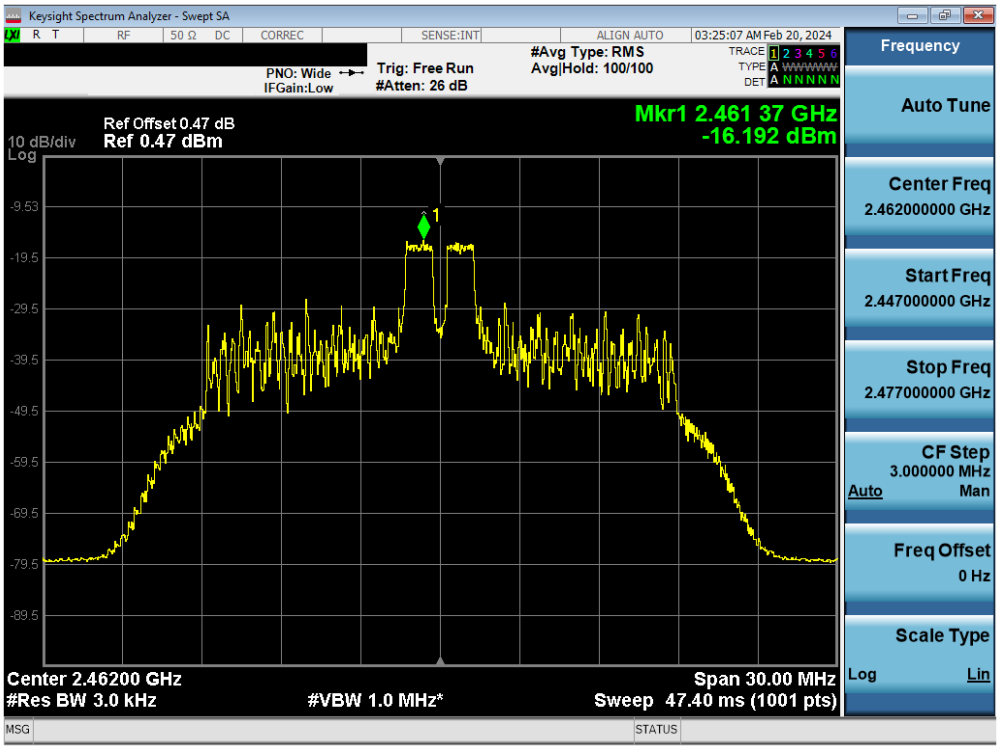
Plot 7-84. Power Spectral Density Plot Primary Antenna WF7 (802.11ax OFDMA – RU26 Index 8 – Ch. 6)



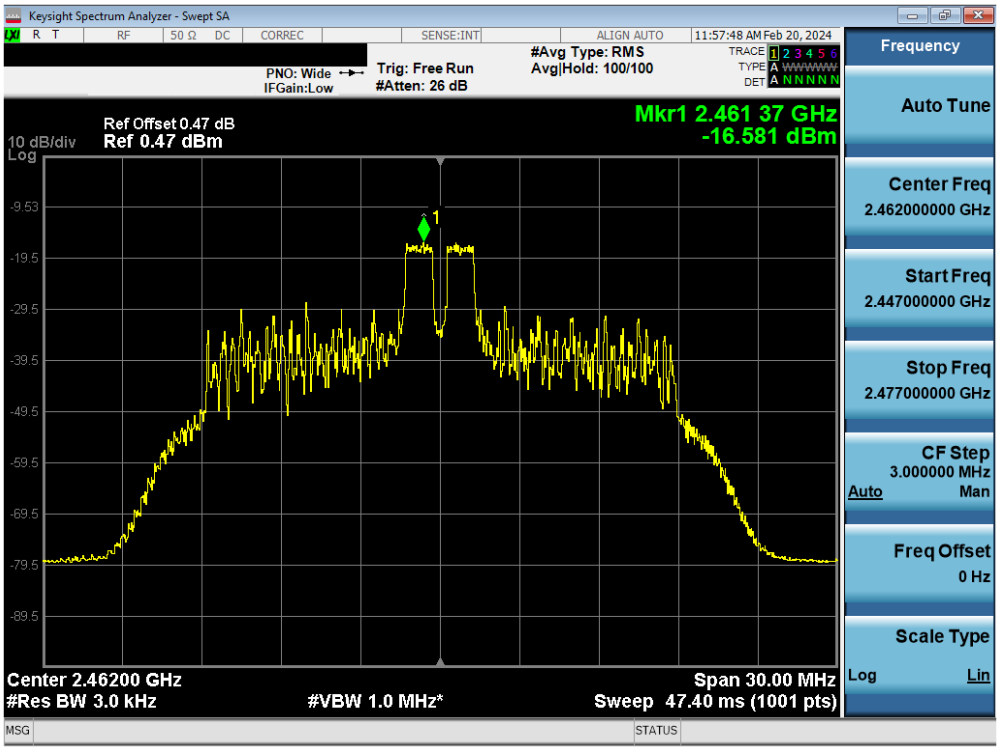
Plot 7-85. Power Spectral Density Plot Primary Antenna WF8 (802.11ax OFDMA – RU26 Index 0 – Ch. 11)



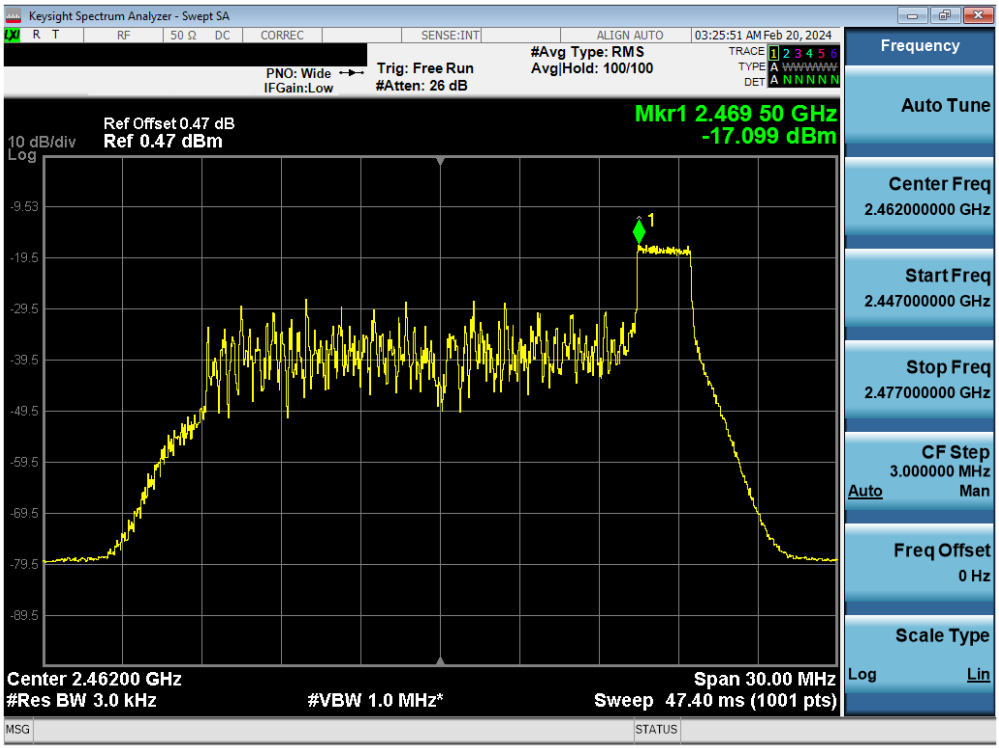
Plot 7-86. Power Spectral Density Plot Primary Antenna WF7 (802.11ax OFDMA – RU26 Index 0 – Ch. 11)



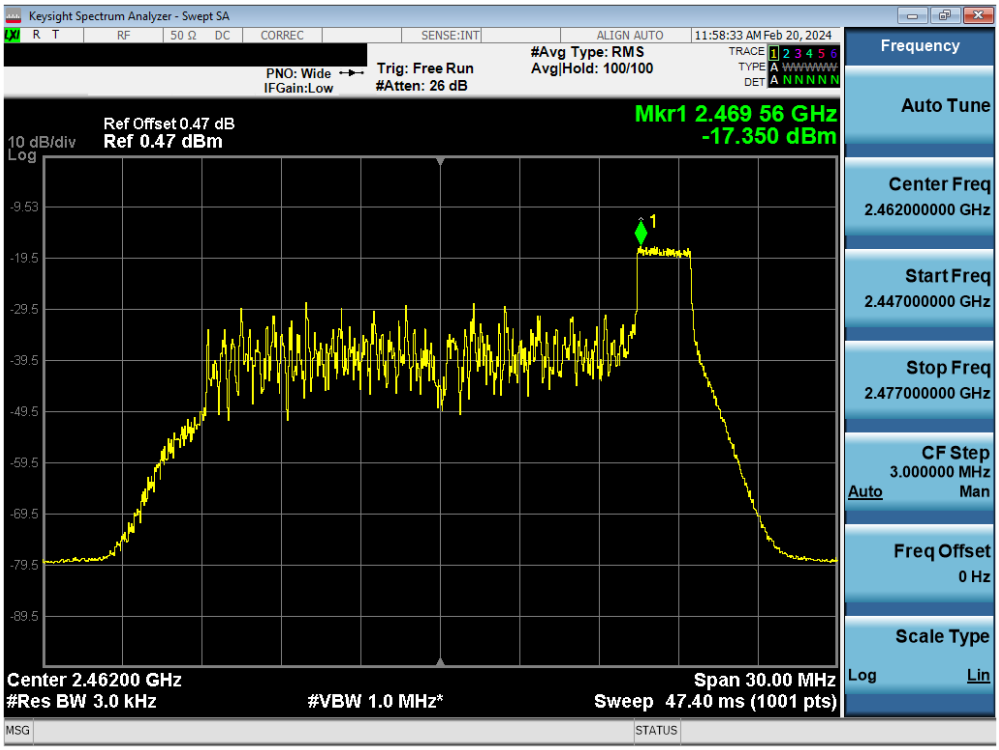
Plot 7-87. Power Spectral Density Plot Primary Antenna WF8 (802.11ax OFDMA – RU26 Index 4 – Ch. 11)



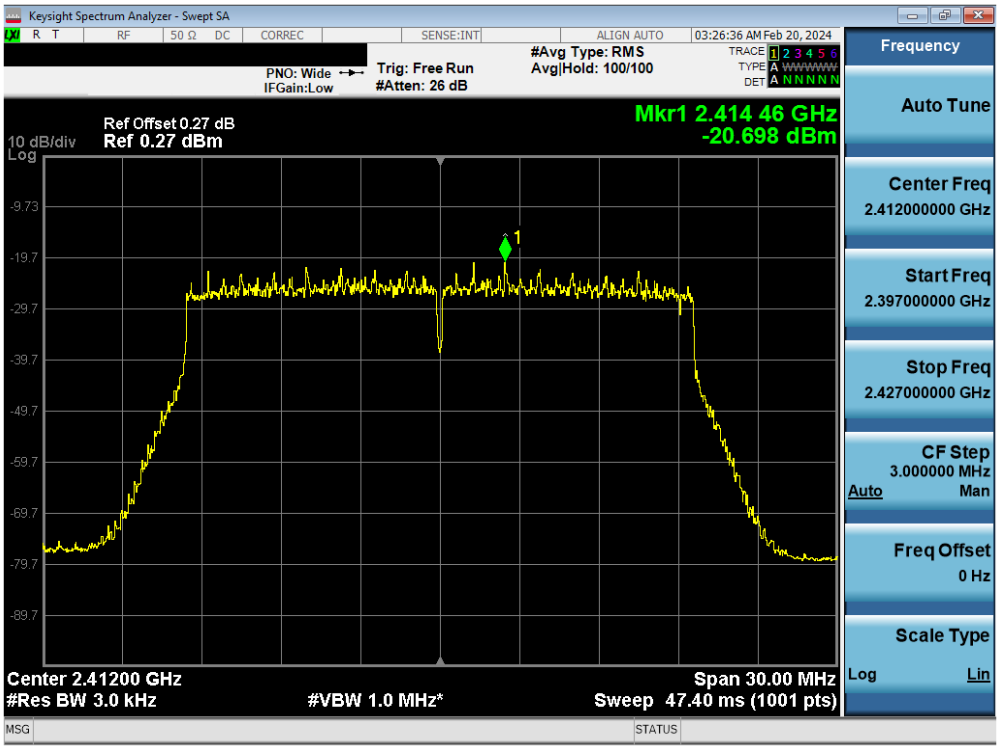
Plot 7-88. Power Spectral Density Plot Primary Antenna WF7 (802.11ax OFDMA – RU26 Index 4 – Ch. 11)



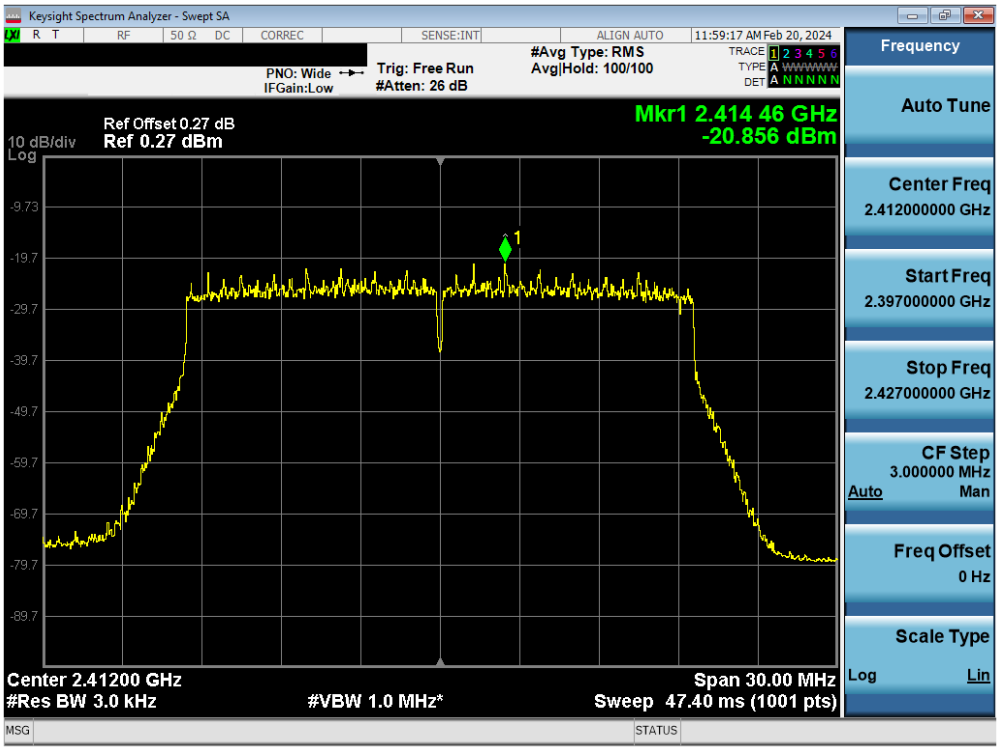
Plot 7-89. Power Spectral Density Plot Primary Antenna WF8 (802.11ax OFDMA – RU26 Index 8 – Ch. 11)



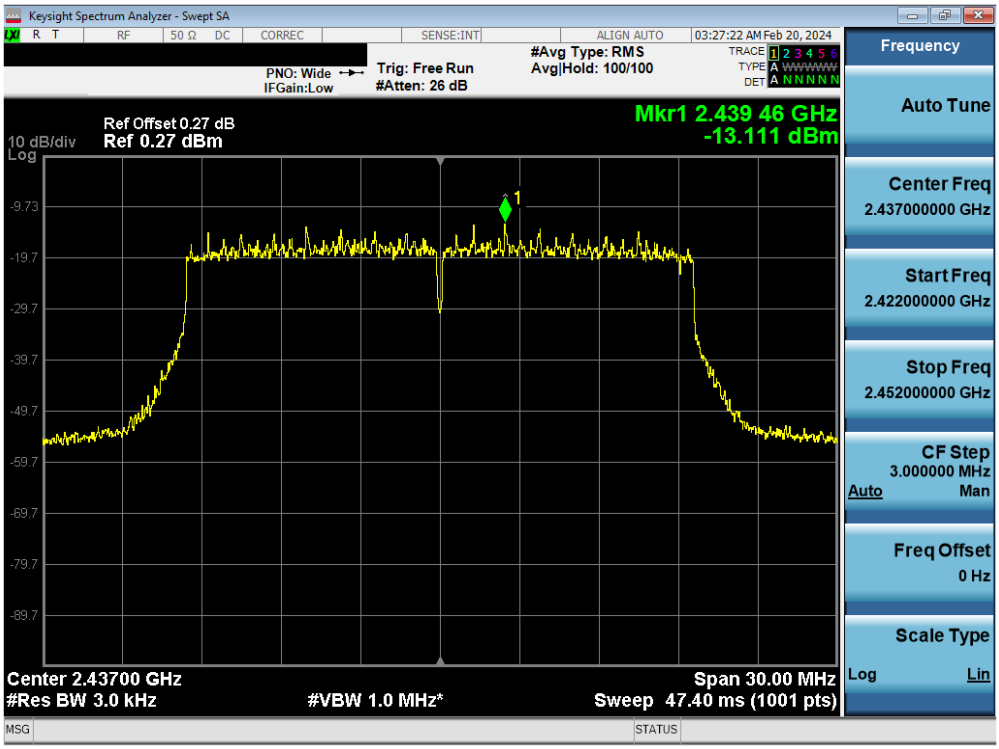
Plot 7-90. Power Spectral Density Plot Primary Antenna WF7 (802.11ax OFDMA – RU26 Index 8 – Ch. 11)



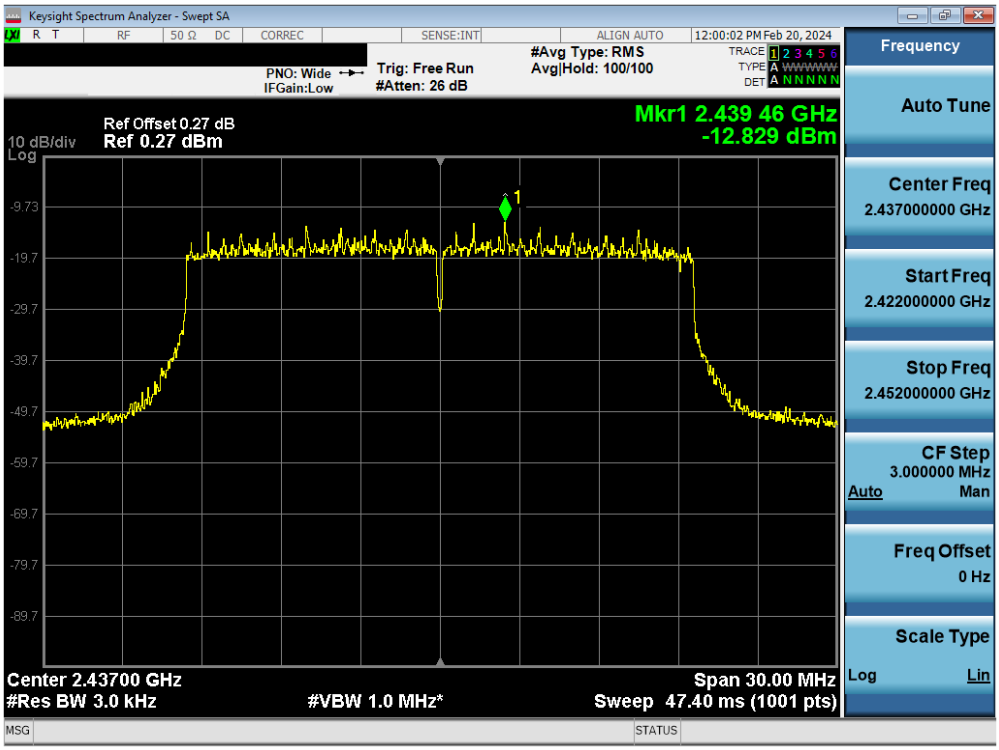
Plot 7-91. Power Spectral Density Plot Primary Antenna WF8 (802.11ax OFDMA – RU242 – Ch. 1)



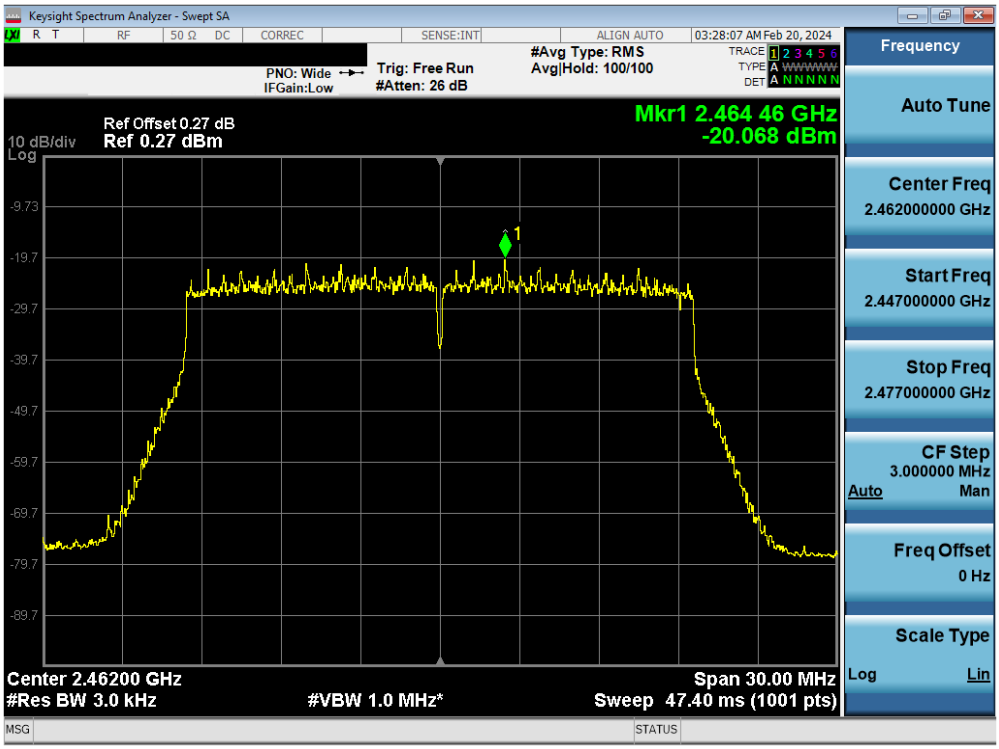
Plot 7-92. Power Spectral Density Plot Primary Antenna WF7 (802.11ax OFDMA – RU242 – Ch. 1)



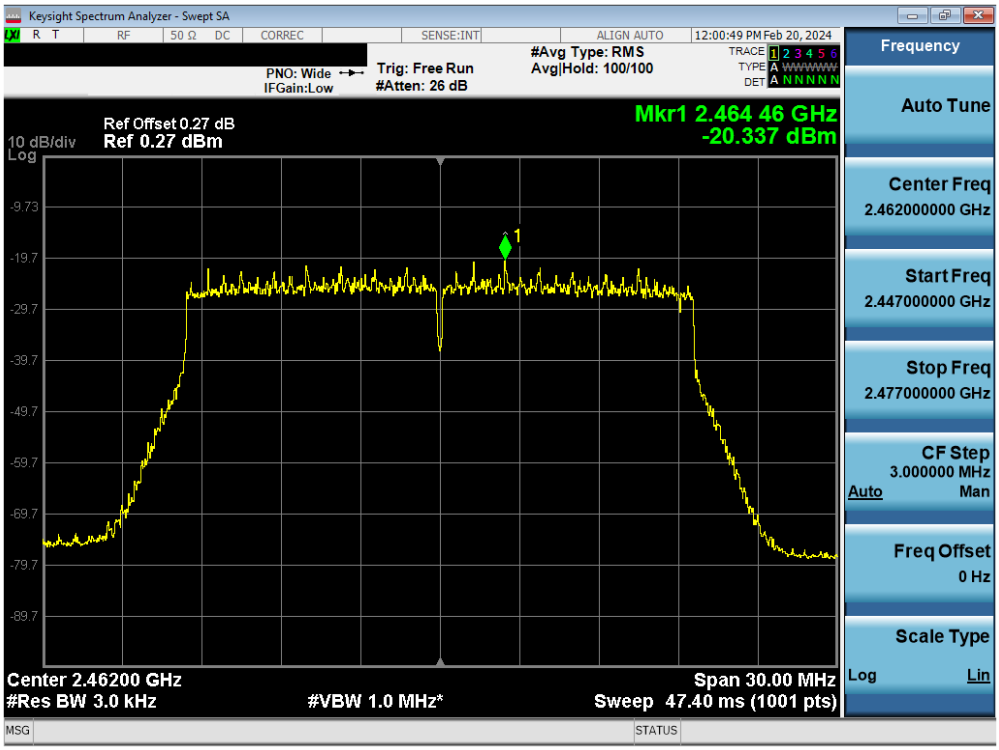
Plot 7-93. Power Spectral Density Plot Primary Antenna WF8 (802.11ax OFDMA – RU242 – Ch. 6)



Plot 7-94. Power Spectral Density Plot Primary Antenna WF7 (802.11ax OFDMA – RU242 – Ch. 6)



Plot 7-95. Power Spectral Density Plot Primary Antenna WF8 (802.11ax OFDMA – RU242 – Ch. 11)

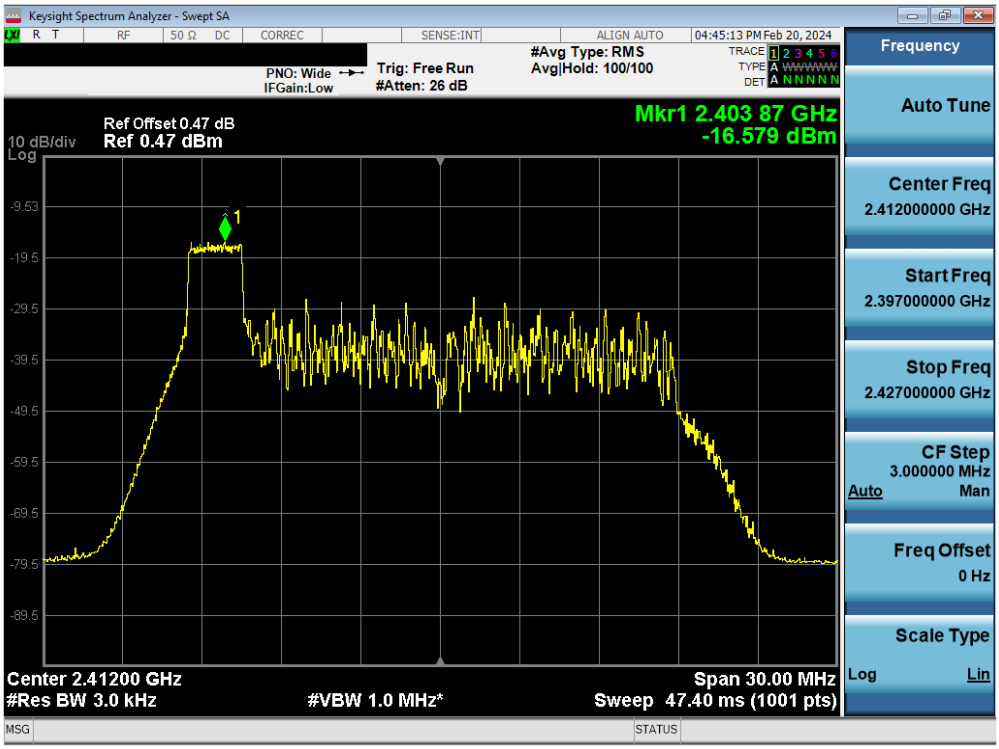


Plot 7-96. Power Spectral Density Plot Primary Antenna WF7 (802.11ax OFDMA – RU242 – Ch. 11)

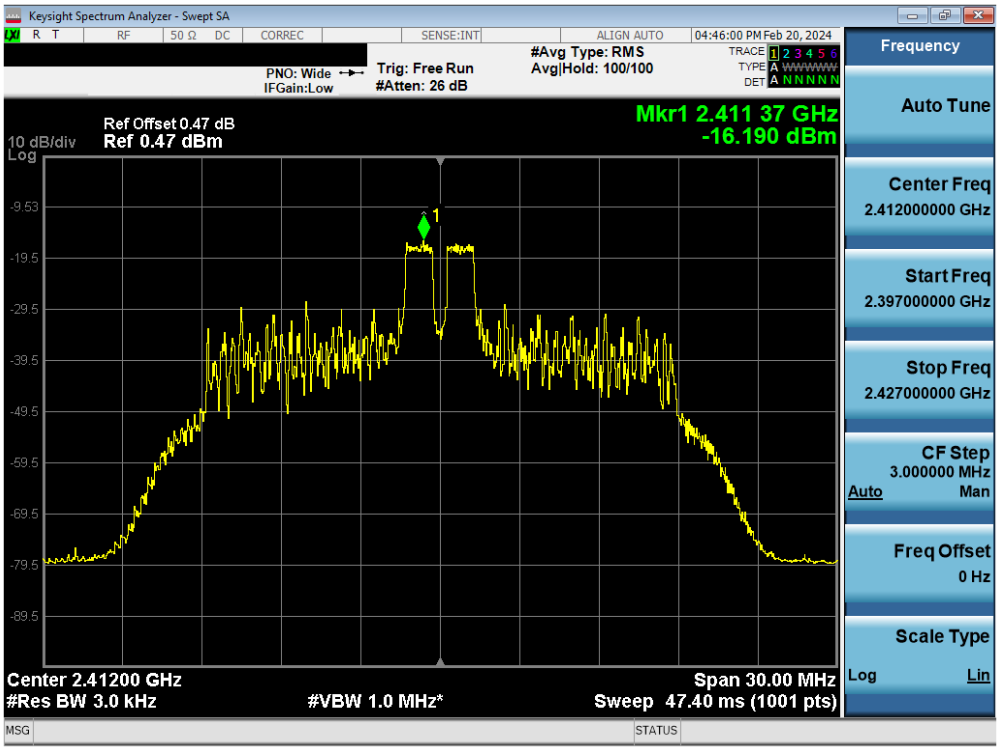
CDD Power Spectral Density Diversity Measurements

Frequency [MHz]	Channel No.	802.11 MODE	RU Size	RU Index	Data Rate [Mbps]	Ant WF8 Power Density [dBm/3kHz]	Ant WF9 Power Density [dBm/3kHz]	Summed Power Density [dBm/3kHz]	Max Power Density [dBm/3kHz]	Margin [dB]	Pass/Fail
2412	1	ax	26	0	20/23.5 (MCS9)	-16.67	-16.58	-13.61	8.0	-24.58	Pass
			26	4	20/23.5 (MCS9)	-16.29	-16.19	-13.23	8.0	-24.19	Pass
			26	8	20/23.5 (MCS9)	-17.02	-16.81	-13.90	8.0	-24.81	Pass
2437	6	ax	26	0	20/23.5 (MCS9)	-16.34	-16.18	-13.25	8.0	-24.18	Pass
			26	4	20/23.5 (MCS9)	-16.29	-16.15	-13.21	8.0	-24.15	Pass
			26	8	20/23.5 (MCS9)	-16.82	-16.67	-13.73	8.0	-24.67	Pass
2462	11	ax	26	0	20/23.5 (MCS9)	-16.80	-16.42	-13.59	8.0	-24.42	Pass
			26	4	20/23.5 (MCS9)	-16.19	-16.31	-13.24	8.0	-24.31	Pass
			26	8	20/23.5 (MCS9)	-17.10	-16.98	-14.03	8.0	-24.98	Pass
2412	1	ax	242	61	195/229.4 (MCS9)	-20.70	-20.74	-17.71	8.0	-28.74	Pass
2437	6	ax	242	61	195/229.4 (MCS9)	-13.11	-12.54	-9.80	8.0	-20.54	Pass
2462	11	ax	242	61	195/229.4 (MCS9)	-20.07	-19.93	-16.99	8.0	-27.93	Pass

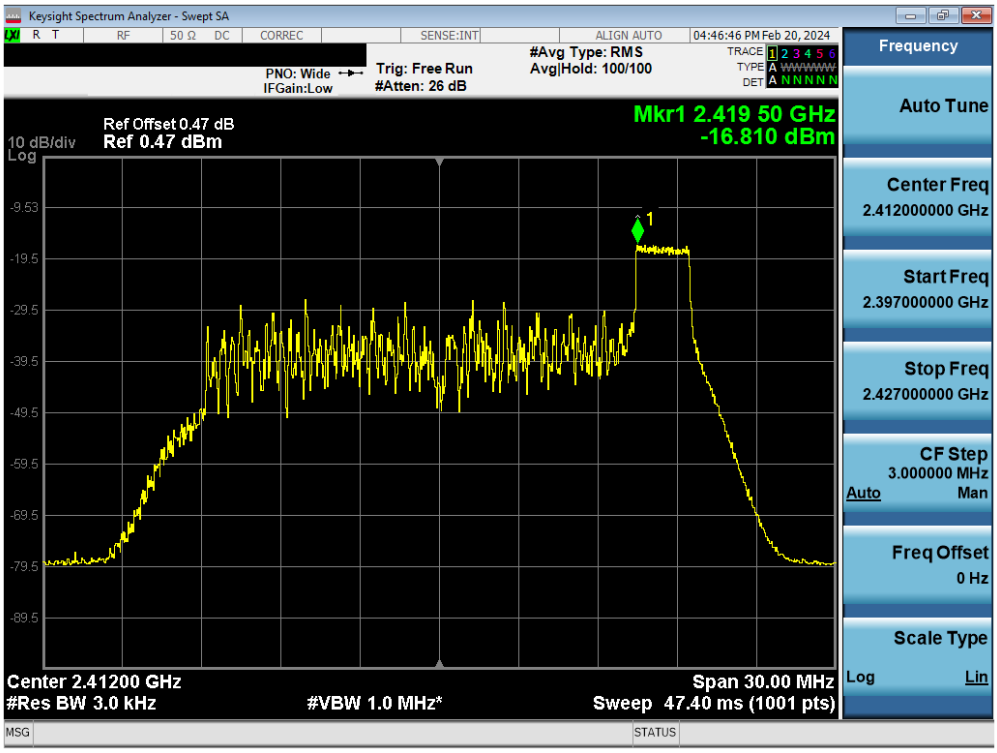
Table 7-29.CDD Conducted Power Density Diversity Measurements



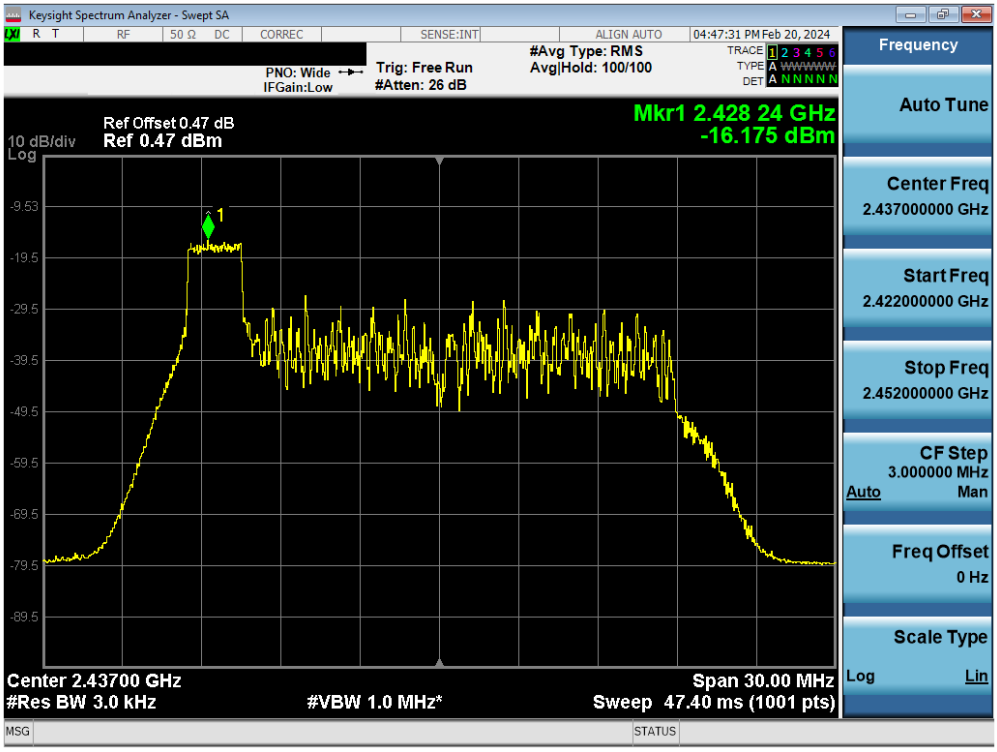
Plot 7-97. Power Spectral Density Plot Diversity Antenna WF9 (802.11ax OFDMA – RU26 Index 0 – Ch. 1)



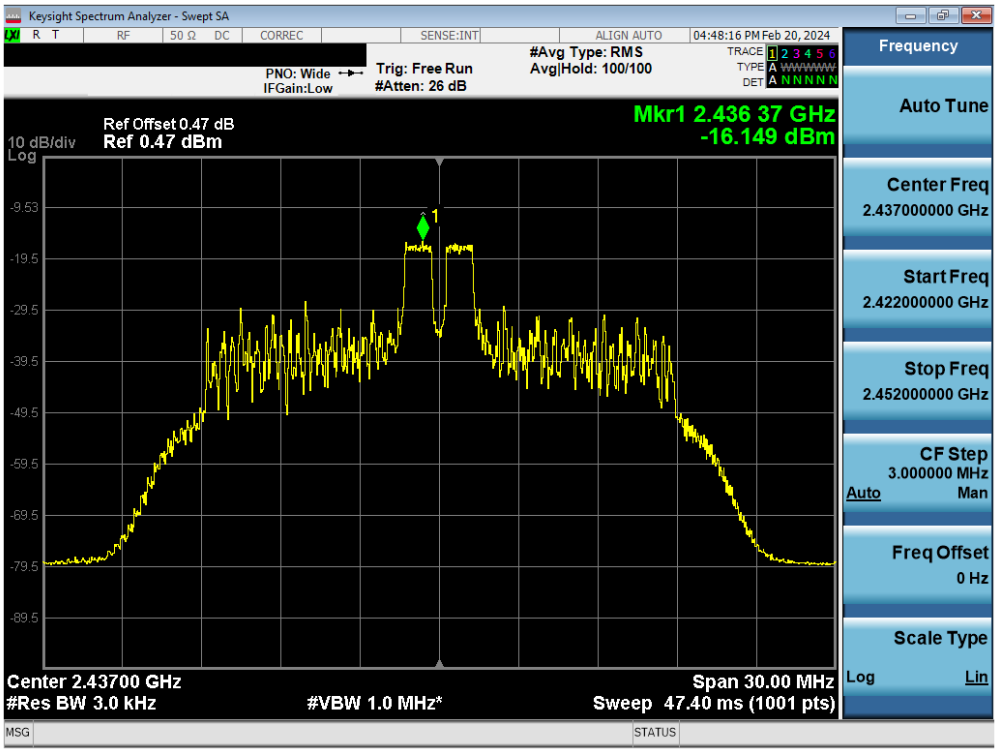
Plot 7-98. Power Spectral Density Plot Diversity Antenna WF9 (802.11ax OFDMA – RU26 Index 4 – Ch. 1)



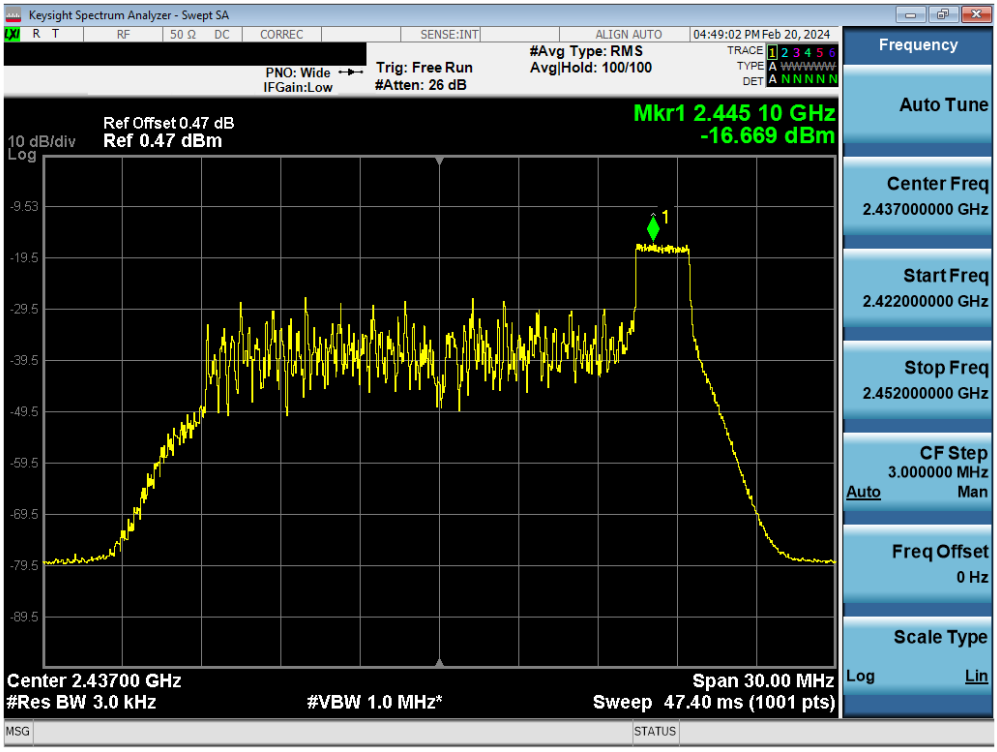
Plot 7-99. Power Spectral Density Plot Diversity Antenna WF9 (802.11ax OFDMA – RU26 Index 8 – Ch. 1)



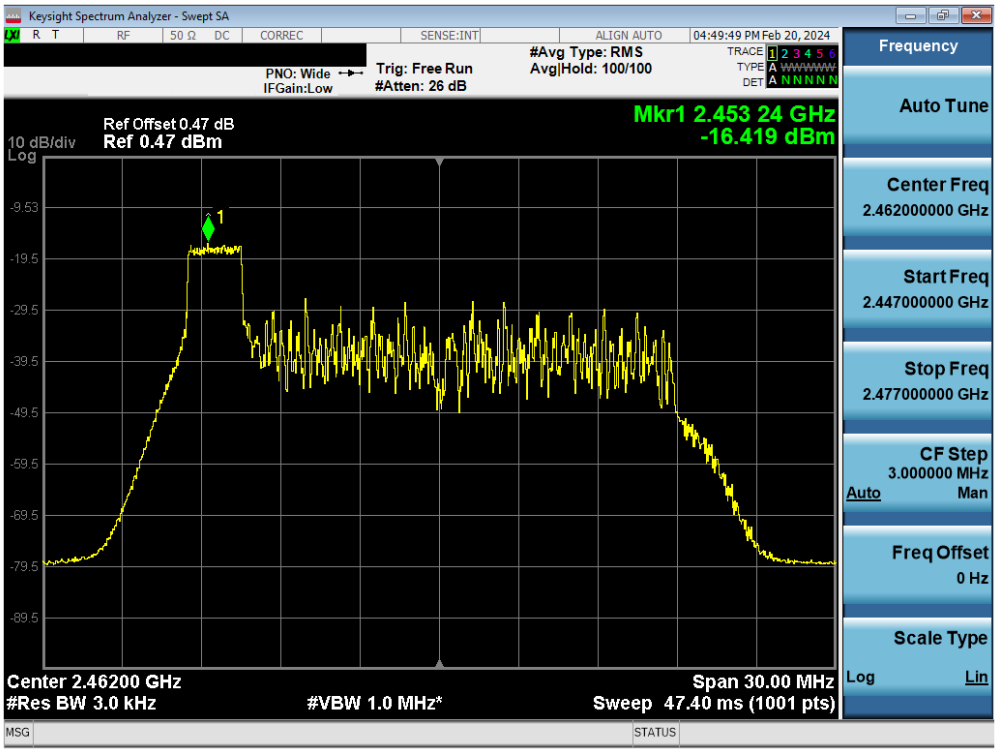
Plot 7-100. Power Spectral Density Plot Diversity Antenna WF9 (802.11ax OFDMA – RU26 Index 0 – Ch. 6)



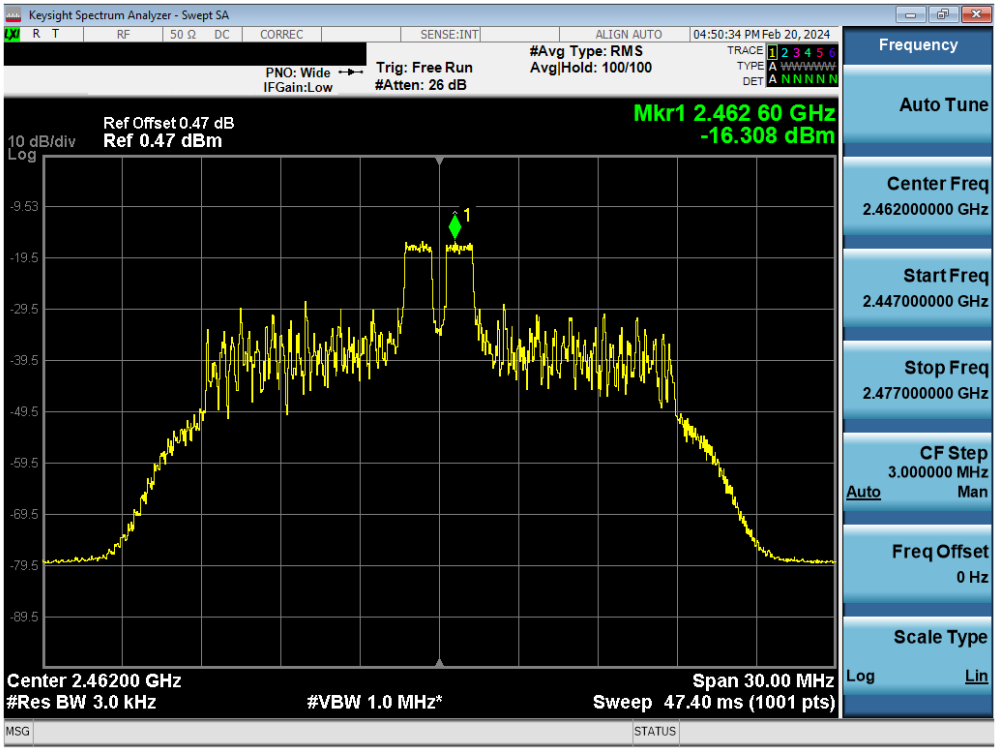
Plot 7-101. Power Spectral Density Plot Diversity Antenna WF9 (802.11ax OFDMA – RU26 Index 4 – Ch. 6)



Plot 7-102. Power Spectral Density Plot Diversity Antenna WF9 (802.11ax OFDMA – RU26 Index 8 – Ch. 6)



Plot 7-103. Power Spectral Density Plot Diversity Antenna WF9 (802.11ax OFDMA – RU26 Index 0 – Ch. 11)



Plot 7-104. Power Spectral Density Plot Diversity Antenna WF9 (802.11ax OFDMA – RU26 Index 4 – Ch. 11)