

RF TEST REPORT

Applicant Bouffalo Lab (Nanjing) Co., Ltd
FCC ID 2A9HW-BL616
Product BL616 Module
Brand Bouffalo Lab
Model BL616C50IQ07P00
Report No. R2402A0122-R1
Issue Date March 6, 2024

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 15C (2023)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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Summary of Measurement Results

Number	Test Case	Clause in FCC rules	Verdict
1	Maximum output power	15.247(b)(3)	PASS
2	99% Bandwidth and 6dB Bandwidth	15.247(a)(2) C63.10 6.9	PASS
3	Power spectral density	15.247(e)	PASS
4	Band Edge	15.247(d)	PASS
5	Spurious RF Conducted Emissions	15.247(d)	PASS
6	Unwanted Emissions	15.247(d), 15.205, 15.209	PASS
7	Conducted Emissions	15.207	PASS
Date of Testing: February 4, 2024 ~ March 5, 2024 Date of Sample Received: February 4, 2024			
Note: All indications of Pass/Fail in this report are opinions expressed by TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.			

1. Test Laboratory

1.1. Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of **TA Technology (Shanghai) Co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

1.2. Test Facility

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform measurements.

A2LA (Certificate Number: 3857.01)

TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform measurement.

1.3. Testing Location

Company: TA Technology (Shanghai) Co., Ltd.
Address: Building 3, No.145, Jintang Rd, Pudong Shanghai, P.R.China
City: Shanghai
Post code: 201201
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E-mail: Kain.Xu@cpt.eurofinscn.com

2. General Description of Equipment Under Test

2.1. Applicant and Manufacturer Information

Applicant	Bouffalo Lab (Nanjing) Co., Ltd
Applicant address	5F,Building A, No. 9 Yunzheng Street, Jiangbei New District, Nanjing, China
Manufacturer	Shenzhen Ai-Thinker Technology Co., Ltd
Manufacturer address	Room410, Building C, Huafeng Intelligence Innovation Port, Gushu, Xixiang, Baoan District, Shenzhen, China

2.2. General Information

EUT Description	
Model	BL616C50IQ07P00
Lab internal SN	R2402A0122/S01
Hardware Version	V1.2
Software Version	V2.50
Power Supply	External power supply
Antenna Type	PCB Antenna
Antenna Connector	A permanently attached antenna (meet with the standard FCC Part 15.203 requirement)
Antenna Gain	1.67 dBi
Additional Beamforming Gain	NA
Operating Frequency Range(s)	802.11b/g/n(HT20)/ax(HE20): 2412 ~ 2462 MHz 802.11n(HT40)/ax(HE40): 2422 ~ 2452 MHz Bluetooth LE V5.3: 2402 ~2480 MHz
Modulation Type	802.11b: DSSS 802.11g/n: OFDM 802.11ax SU: OFDM 802.11ax RU: OFDMA Bluetooth LE: GFSK
Max. Output Power	Wi-Fi 2.4G: 18.55 dBm Bluetooth LE: 19.83 dBm
Auxiliary test equipment	
PC	PC Manufacturer: Dell Model: Latitude 3301 SN: DR6DJW2
Note: 1. The EUT is sent from the applicant to TA and the information of the EUT is declared by the applicant.	

3. Applied Standards

According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

Test standards:

FCC CFR47 Part 15C (2023) Radio Frequency Devices

ANSI C63.10-2013

Reference standard:

KDB 558074 D01 15.247 Meas Guidance v05r02

4. Test Configuration

Test Mode

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in lie-down position (Z axis) and the loop antenna is vertical, the others are vertical and horizontal. and the worst case was recorded.

In order to find the worst case condition, Pre-tests are needed at the presence of different data rate. Preliminary tests have been done on all the configuration for confirming worst case. Data rate below means worst-case rate of each test item.

Worst-case data rates are shown as following table.

Test Mode	Data Rate
Bluetooth(Low Energy)	1Mbps; 2Mbps
Bluetooth (Low Energy) (S=2)	500kbps
Bluetooth (Low Energy) (S=8)	125kbps
802.11b	1 Mbps
802.11g	6 Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0
802.11ax HE20	MCS0
802.11ax HE40	MCS0

5. Test Case Results

5.1. Maximum output power

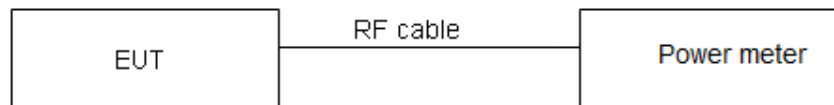
Ambient Condition

Temperature	Relative humidity
15°C ~ 35°C	20% ~ 80%

Methods of Measurement

During the process of the testing, The EUT was connected to Power meter with a known loss. The EUT is max power transmission with proper modulation.

Test Setup



Limits

Rule Part 15.247 (b) (3) specifies that " For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz: 1 Watt."

Average Output Power	$\leq 1\text{W (30dBm)}$
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Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 0.44$ dB.

Test Results

Power Index							
Channel	802.11b	802.11g	802.11n HT20	802.11ax HE20	Channel	802.11n HT40	802.11ax HE40
CH1	19	17	15	15	CH3	15	15
CH6	19	17	16	16	CH6	15	15
CH11	19	17	16	16	CH9	15	15

Power Index		
Channel	Bluetooth LE (1M; 2M; S=2)	Bluetooth LE (S=8)
CH0	20	15
CH19	20	15
CH39	20	15

Test Mode	Duty cycle	Duty cycle correction Factor (dB)
802.11b	0.997	0.00
802.11g	0.994	0.00
802.11n HT20	0.985	0.00
802.11n HT40	0.972	0.12
802.11ax HE20	0.998	0.00
802.11ax HE40	0.996	0.00
Bluetooth LE (1M)	0.852	0.70
Bluetooth LE (2M)	0.574	2.41
Bluetooth LE (S=2)	0.910	0.41
Bluetooth LE (S=8)	0.974	0.11
Note: when Duty cycle ≥ 0.98 , Duty cycle correction Factor not required.		

Test Mode	Carrier frequency (MHz) / Channel	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11b	2412/CH 1	18.47	18.47	30	PASS
	2437/CH 6	18.55	18.55	30	PASS
	2462/CH11	18.49	18.49	30	PASS
802.11g	2412/CH 1	16.31	16.31	30	PASS
	2437/CH 6	16.30	16.30	30	PASS
	2462/CH11	16.32	16.32	30	PASS
802.11n HT20	2412/CH 1	14.48	14.48	30	PASS
	2437/CH 6	15.25	15.25	30	PASS
	2462/CH11	15.30	15.30	30	PASS
802.11n HT40	2422/CH3	14.26	14.38	30	PASS
	2437/CH6	14.21	14.33	30	PASS
	2452/CH9	14.10	14.22	30	PASS
802.11ax HE20	2412/CH 1	14.47	14.47	30	PASS
	2437/CH 6	15.39	15.39	30	PASS
	2462/CH11	15.40	15.40	30	PASS
802.11ax HE40	2422/CH3	14.44	14.44	30	PASS
	2437/CH6	14.36	14.36	30	PASS
	2452/CH9	14.27	14.27	30	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor					

Test Mode	Carrier frequency (MHz) / Channel	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
Bluetooth (Low Energy) (1M)	2402/CH0	18.44	19.14	30	PASS
	2440/CH19	18.62	19.32	30	PASS
	2480/CH39	19.13	19.83	30	PASS
Bluetooth (Low Energy) (2M)	2402/CH0	16.92	19.33	30	PASS
	2440/CH19	17.08	19.49	30	PASS
	2480/CH39	17.34	19.75	30	PASS
Bluetooth (Low Energy) (S=2)	2402/CH0	18.70	19.11	30	PASS
	2440/CH19	18.90	19.31	30	PASS
	2480/CH39	19.23	19.64	30	PASS
Bluetooth (Low Energy) (S=8)	2402/CH0	14.24	14.35	30	PASS
	2440/CH19	14.40	14.51	30	PASS
	2480/CH39	14.75	14.86	30	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor					

TB Mode

Test Mode	Duty cycle	Duty cycle correction Factor (dB)
802.11ax HE20 26-Tones:RU Index 0	0.977	0.10
802.11ax HE20 26-Tones:RU Index 4	0.977	0.10
802.11ax HE20 26-Tones:RU Index 8	0.977	0.10
802.11ax HE20 52-Tones:RU Index 37	0.981	0.00
802.11ax HE20 52-Tones:RU Index 38	0.981	0.00
802.11ax HE20 52-Tones:RU Index 40	0.981	0.00
802.11ax HE20 106-Tones:RU Index 53	0.977	0.10
802.11ax HE20 106-Tones:RU Index 54	0.977	0.10
802.11ax HE20 242-Tones:RU Index 61	0.961	0.17
802.11ax HE40 26-Tones:RU Index 0	0.961	0.17
802.11ax HE40 26-Tones:RU Index 17	0.977	0.10
802.11ax HE40 484-Tones:RU Index 65	0.918	0.37
Note: when Duty cycle $\geq$ 0.98, Duty cycle correction Factor not required.		

Power Index							
Channel	802.11ax HE20 26-Tones	802.11ax HE20 52-Tones	802.11ax HE20 106-Tones	802.11ax HE20 242-Tones	Channel	802.11ax HE40 26-Tones	802.11ax HE40 484-Tones
CH1	16	16	16	15	CH3	15	13
CH6	16	16	16	/	CH9	15	13
CH11	16	16	16	15	/	/	/

Test Mode	Carrier frequency (MHz) / Channel	RU Index	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11ax HE20 26-Tones	2412/CH 1	0	14.90	15.00	30	PASS
	2437/CH 6	4	15.93	16.03	30	PASS
	2462/CH11	8	15.05	15.15	30	PASS
802.11ax HE20 52-Tones	2412/CH 1	37	15.08	15.08	30	PASS
	2437/CH 6	38	15.77	15.77	30	PASS
	2462/CH11	40	15.17	15.17	30	PASS
802.11ax HE20 106-Tones	2412/CH 1	53	15.29	15.39	30	PASS
	2437/CH 6	53	15.49	15.59	30	PASS
	2462/CH11	54	15.39	15.49	30	PASS
802.11ax HE20 242-Tones	2412/CH 1	61	14.29	14.46	30	PASS
	2462/CH11	61	14.30	14.47	30	PASS
802.11ax HE40 26-Tones	2422/CH 3	0	13.41	13.58	30	PASS
	2452/CH 9	17	13.22	13.32	30	PASS
802.11ax HE40 484-Tones	2422/CH 3	65	12.02	12.39	30	PASS
	2452/CH 9	65	11.85	12.22	30	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor						

5.2. 99% Bandwidth and 6dB Bandwidth

Ambient Condition

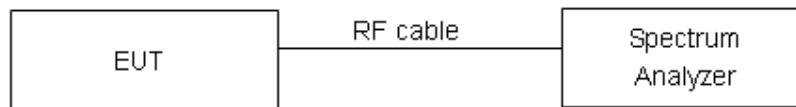
Temperature	Relative humidity
15°C ~ 35°C	20% ~ 80%

Method of Measurement

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable. RBW is set to 100 kHz; VBW is set to 300 kHz on spectrum analyzer. Dector=Peak, Trace mode=max hold.

The EUT was connected to the spectrum analyzer through a known loss cable. The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the actual occupied / x dB bandwidth and the video bandwidth (VBW) shall not be smaller than three times the RBW value.

Test Setup



Limits

Rule Part 15.247 (a) (2) specifies that “Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.”

minimum 6 dB bandwidth	≥ 500 kHz
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Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 936$ Hz.

Test Results:

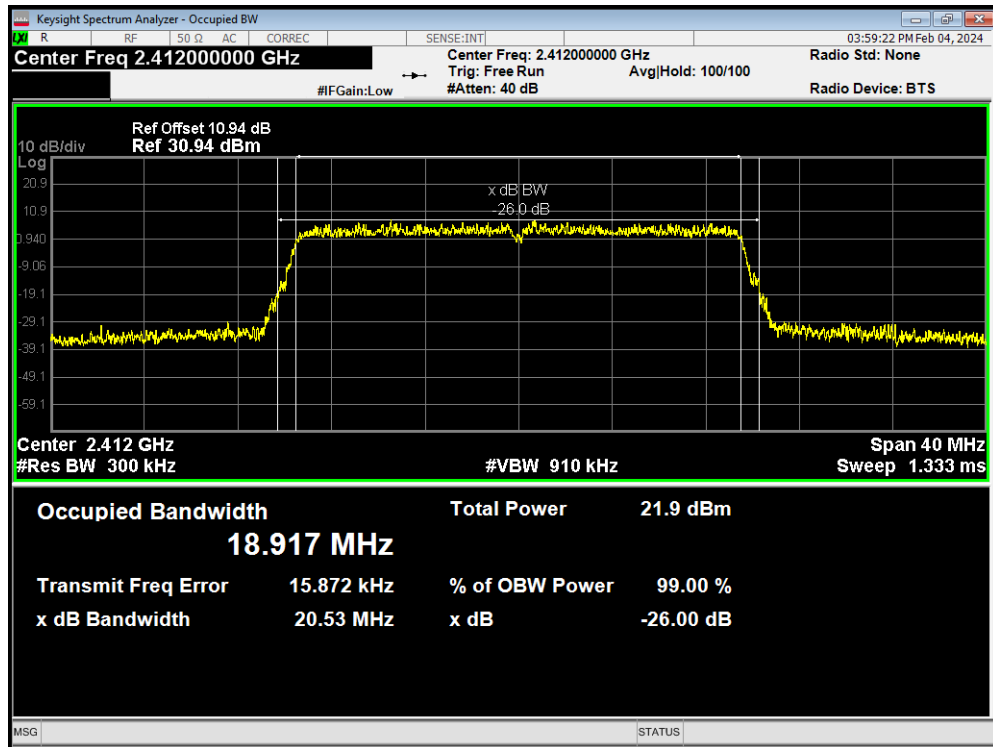
Test Mode	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 6 dB bandwidth (MHz)	Limit (kHz)	Conclusion
802.11b	2412	13.320	9.086	500	PASS
	2437	13.330	9.043	500	PASS
	2462	13.323	9.103	500	PASS
802.11g	2412	16.478	16.327	500	PASS
	2437	16.486	16.308	500	PASS
	2462	16.501	16.167	500	PASS
802.11n HT20	2412	17.528	16.525	500	PASS
	2437	17.533	16.784	500	PASS
	2462	17.520	16.323	500	PASS
802.11n HT40	2422	35.726	35.077	500	PASS
	2437	35.781	35.095	500	PASS
	2452	35.763	35.130	500	PASS
802.11ax HE20	2412	18.917	18.652	500	PASS
	2437	18.944	18.862	500	PASS
	2462	18.944	18.993	500	PASS
802.11ax HE40	2422	37.679	37.603	500	PASS
	2437	37.732	37.395	500	PASS
	2452	37.714	37.366	500	PASS
Bluetooth (Low Energy) (1M)	2402	1.027	0.662	500	PASS
	2440	1.029	0.652	500	PASS
	2480	1.029	0.690	500	PASS
Bluetooth (Low Energy) (2M)	2402	2.038	1.113	500	PASS
	2440	2.049	1.221	500	PASS
	2480	2.045	1.098	500	PASS
Bluetooth (Low Energy) (S=2)	2402	1.021	0.670	500	PASS
	2440	1.020	0.655	500	PASS
	2480	1.009	0.658	500	PASS
Bluetooth (Low Energy) (S=8)	2402	1.046	0.670	500	PASS
	2440	1.050	0.671	500	PASS
	2480	1.042	0.672	500	PASS

TB Mode

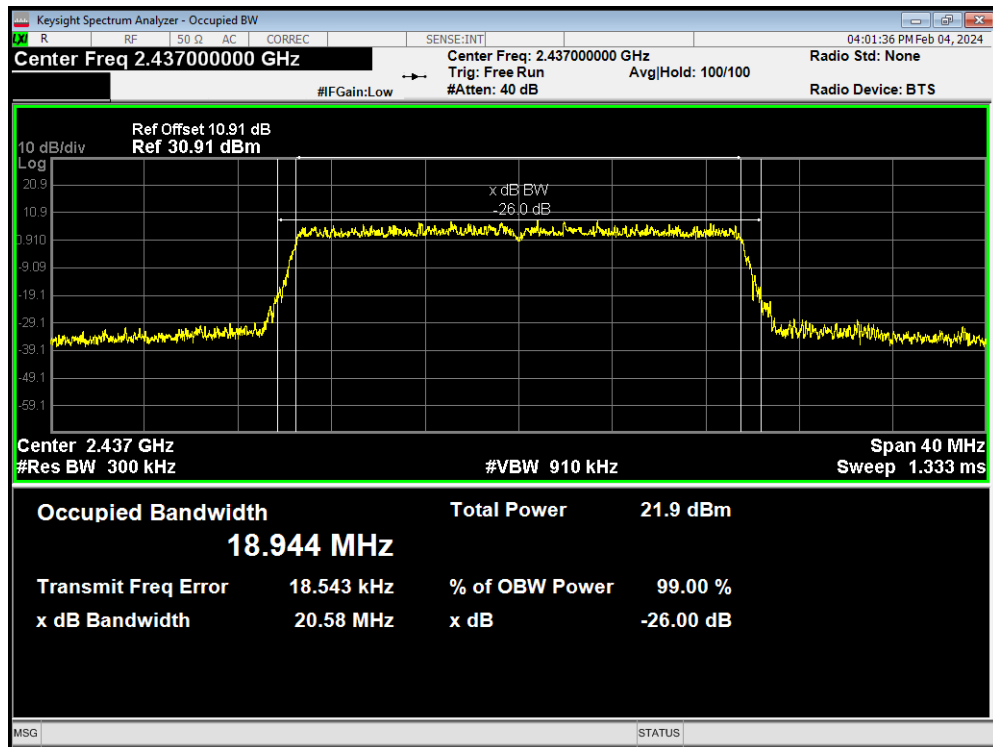
Test Mode	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 6 dB bandwidth (MHz)	Limit (kHz)	Conclusion
802.11ax HE20 26-Tones	2412	18.156	1.993	500	PASS
	2437	16.072	2.533	500	PASS
	2462	17.387	2.047	500	PASS
802.11ax HE20 52-Tones	2412	13.962	4.538	500	PASS
	2437	16.518	11.628	500	PASS
	2462	18.269	7.012	500	PASS
802.11ax HE20 106-Tones	2412	17.509	12.076	500	PASS
	2437	18.042	17.075	500	PASS
	2462	17.018	17.045	500	PASS
802.11ax HE20 242-Tones	2412	18.928	18.953	500	PASS
	2462	18.944	18.896	500	PASS
802.11ax HE40 26-Tones	2422	17.875	1.980	500	PASS
	2452	15.668	2.049	500	PASS
802.11ax HE40 484-Tones	2422	37.800	37.723	500	PASS
	2452	37.797	37.765	500	PASS

99%bandwidth

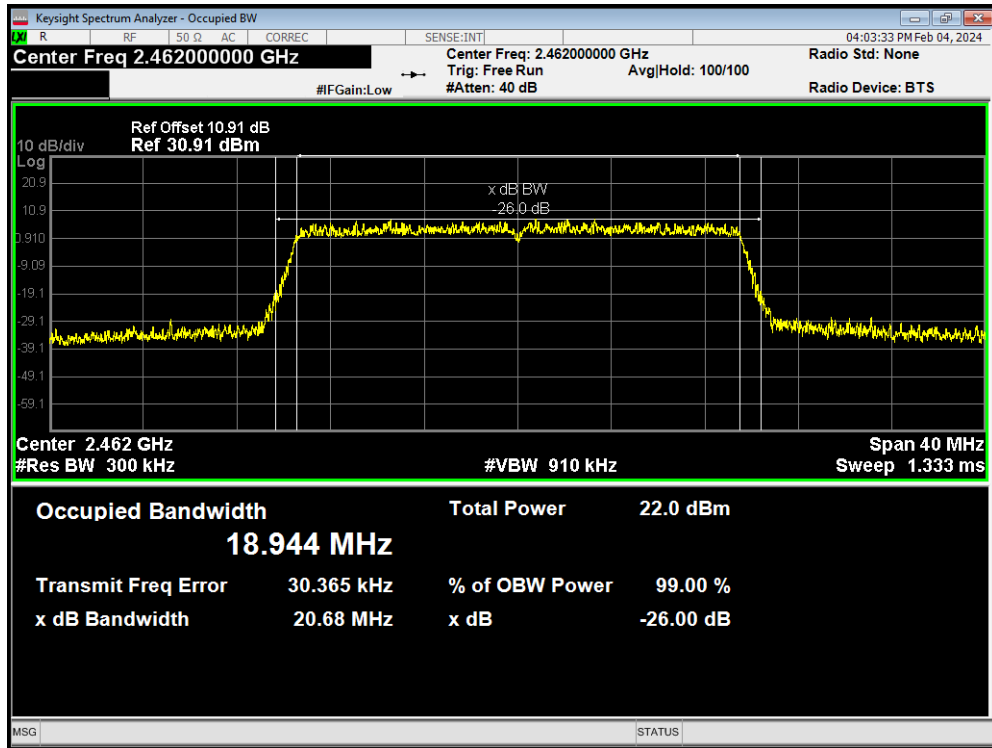
OBW 802.11ax(HE20) 2412MHz



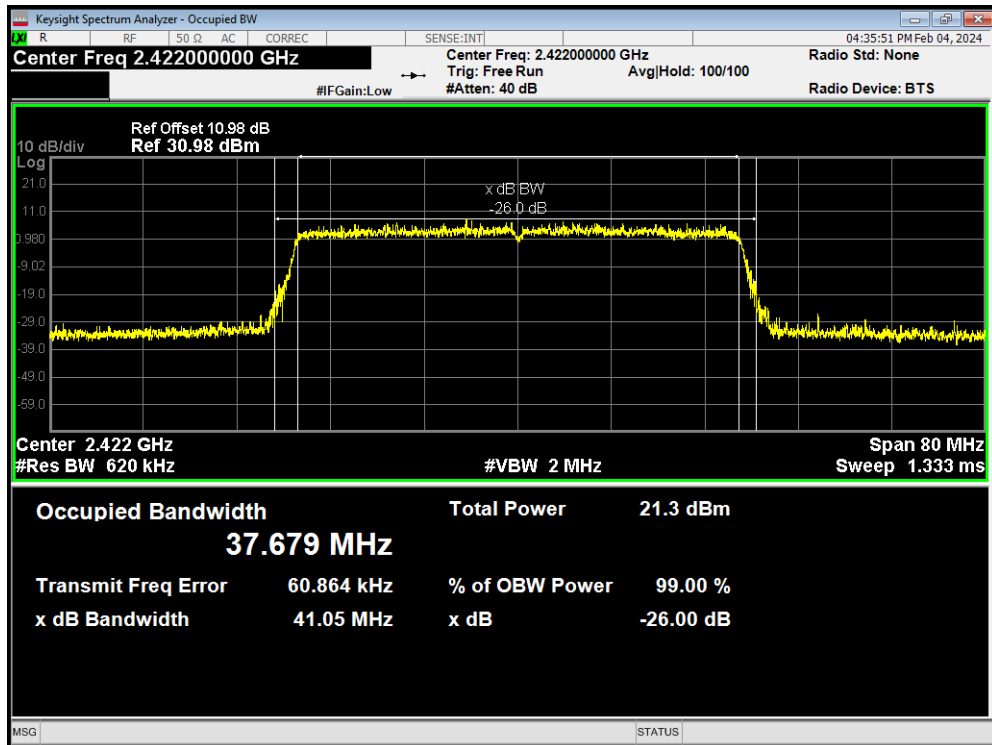
OBW 802.11ax(HE20) 2437MHz



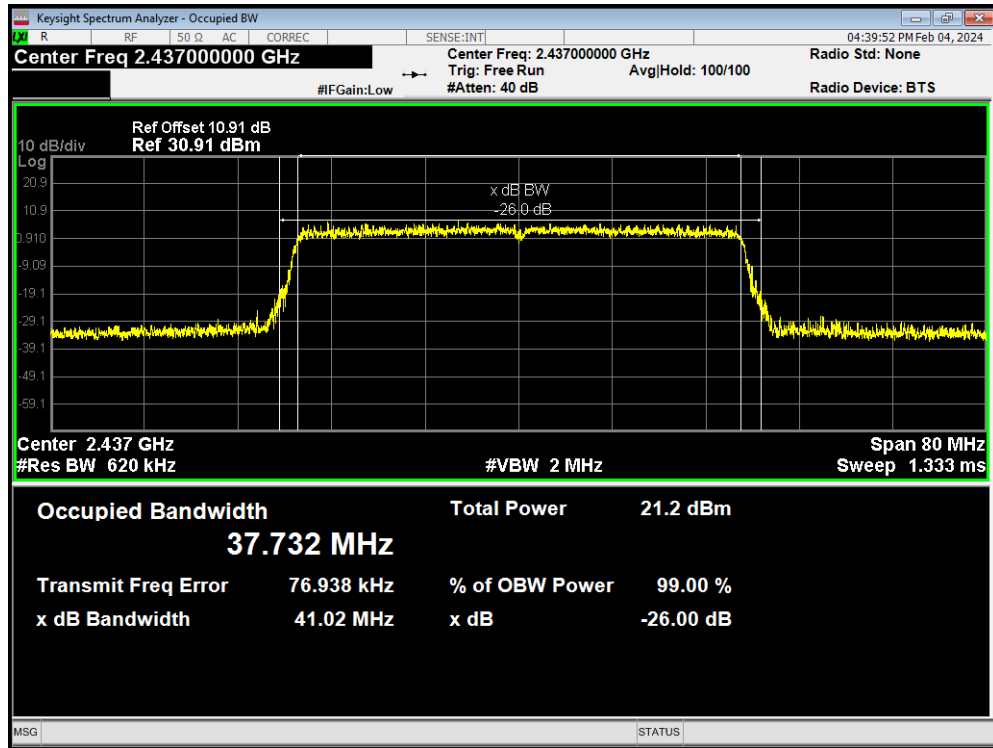
OBW 802.11ax(HE20) 2462MHz



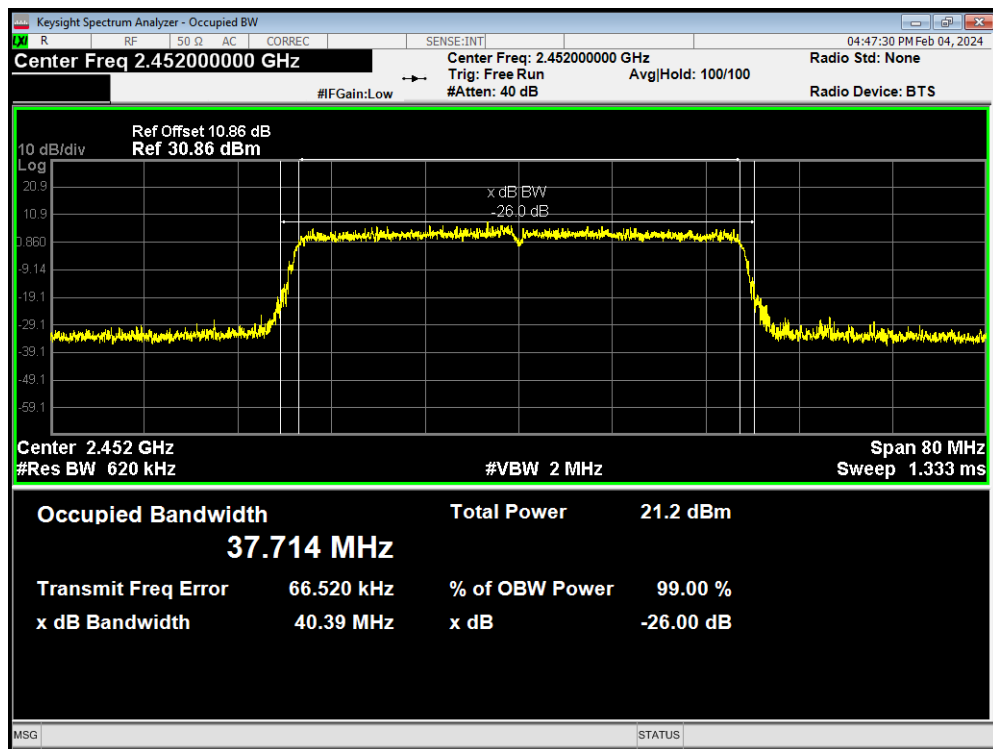
OBW 802.11ax(HE40) 2422MHz



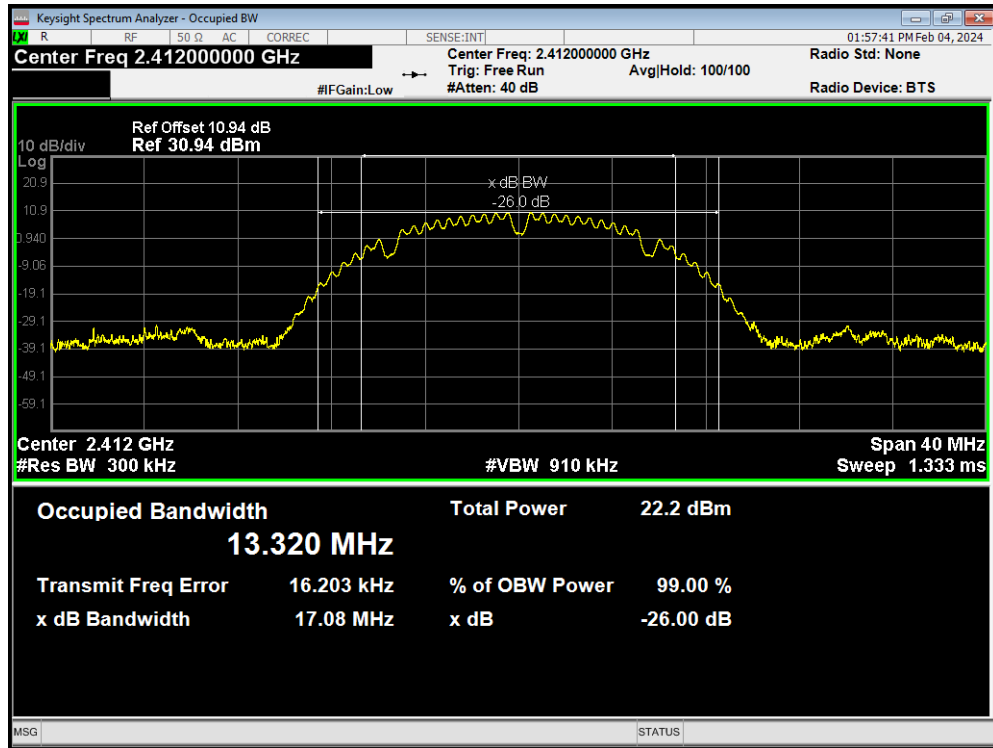
OBW 802.11ax(HE40) 2437MHz



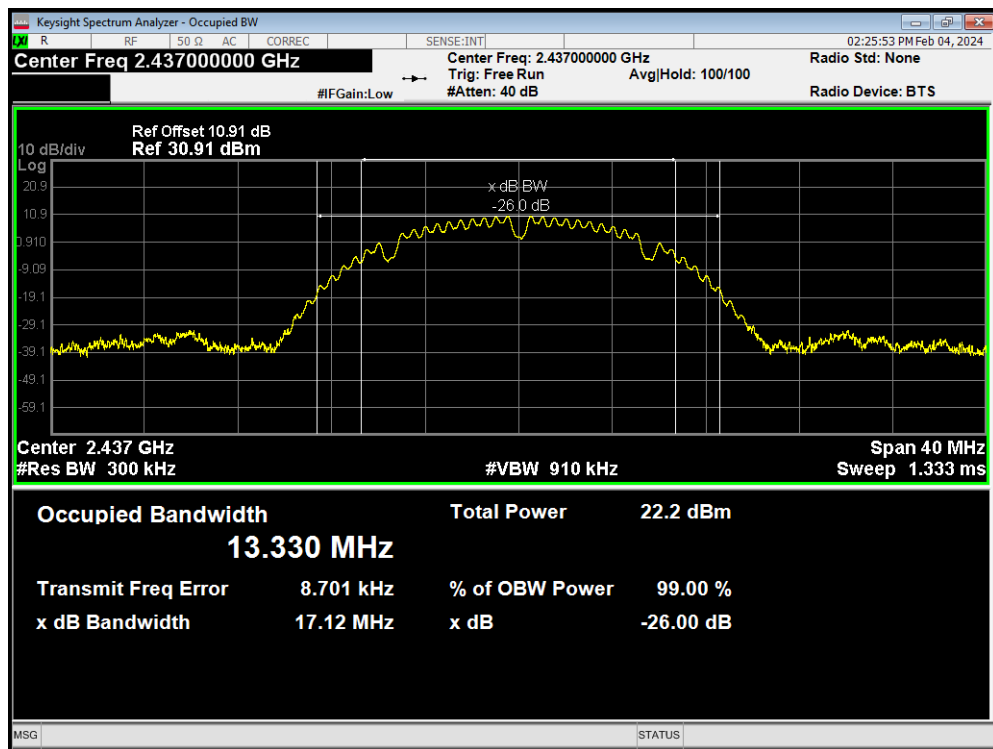
OBW 802.11ax(HE40) 2452MHz



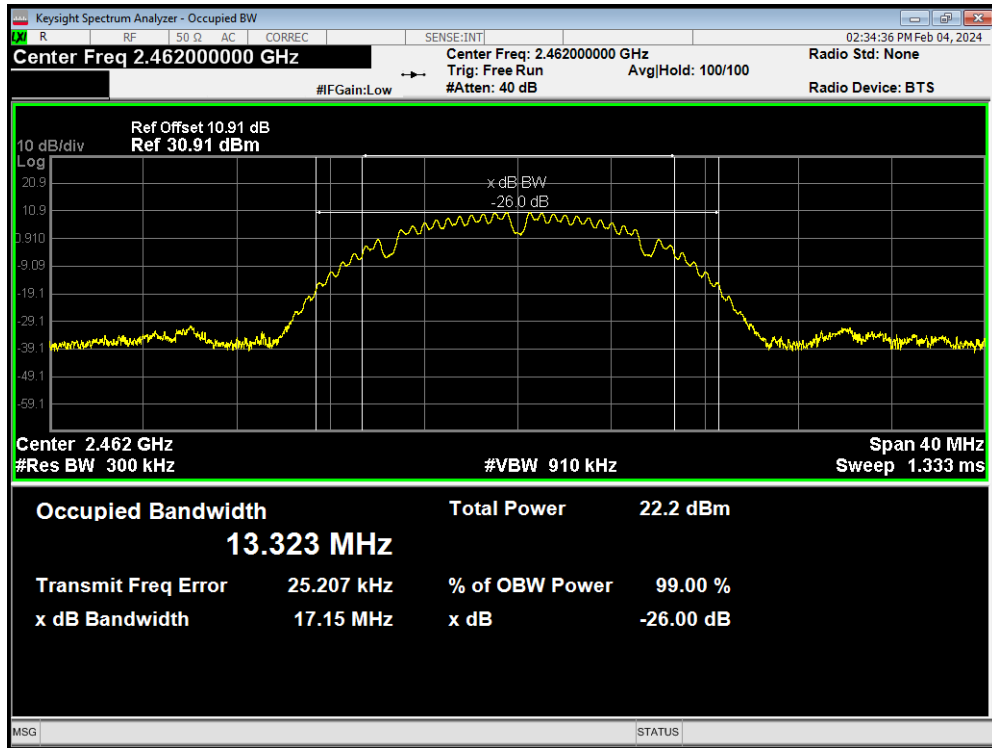
OBW 802.11b 2412MHz



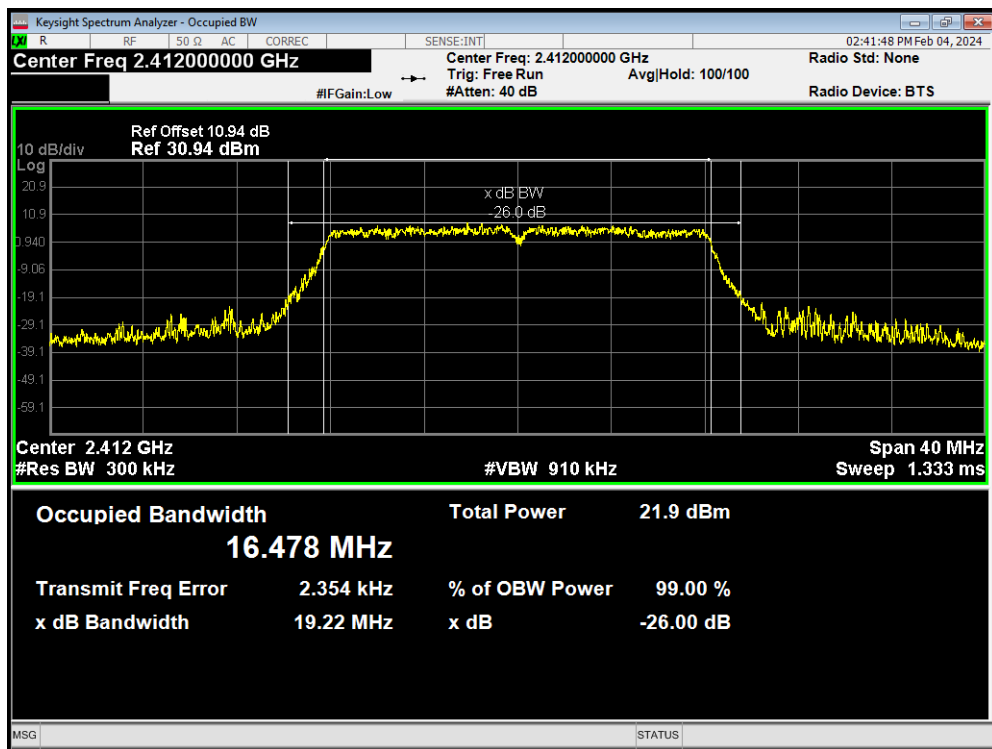
OBW 802.11b 2437MHz



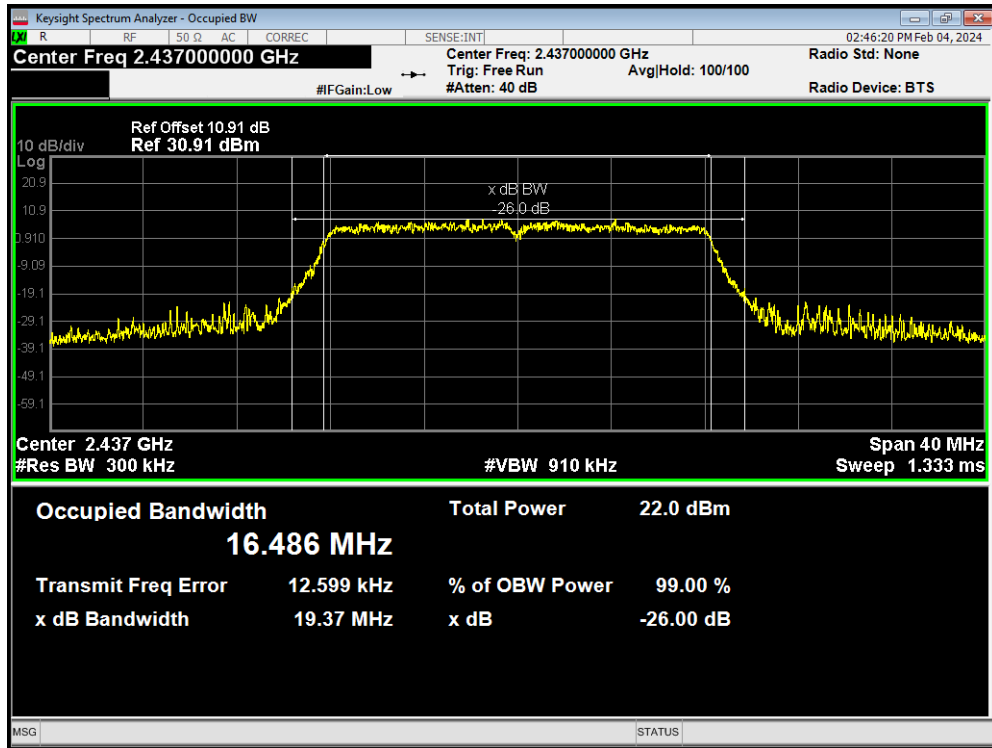
OBW 802.11b 2462MHz



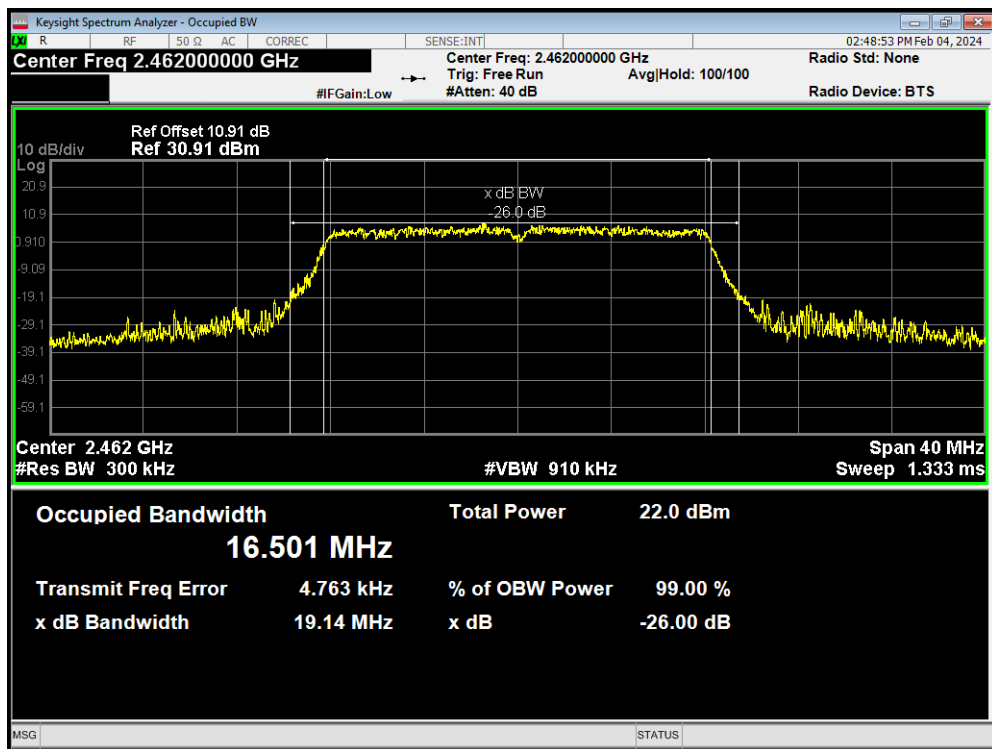
OBW 802.11g 2412MHz



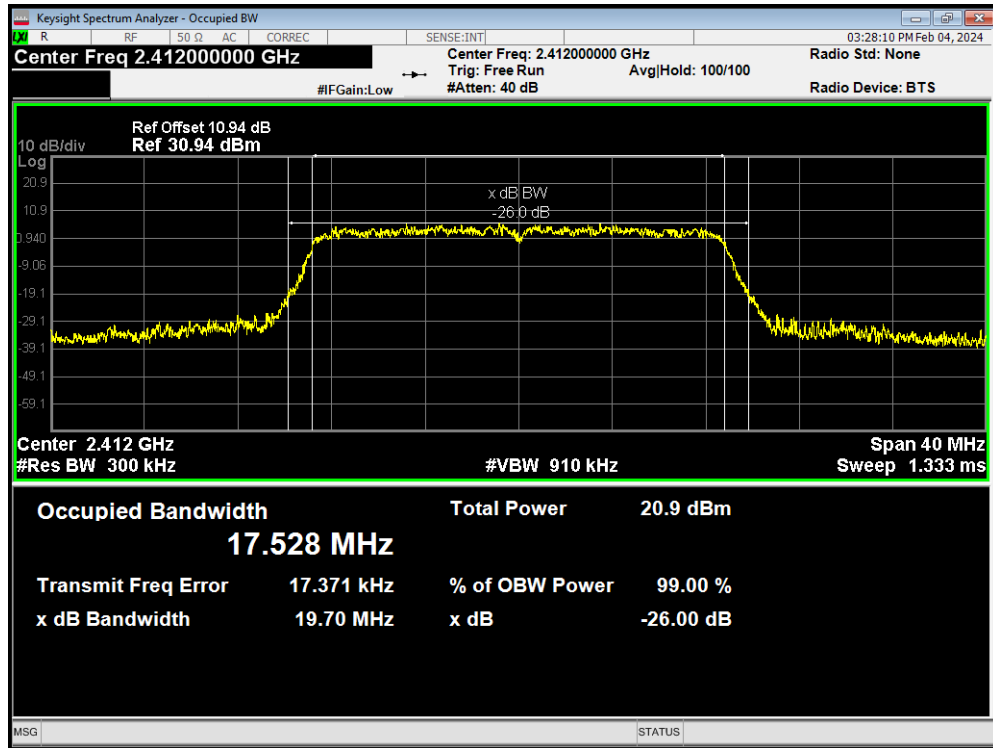
OBW 802.11g 2437MHz



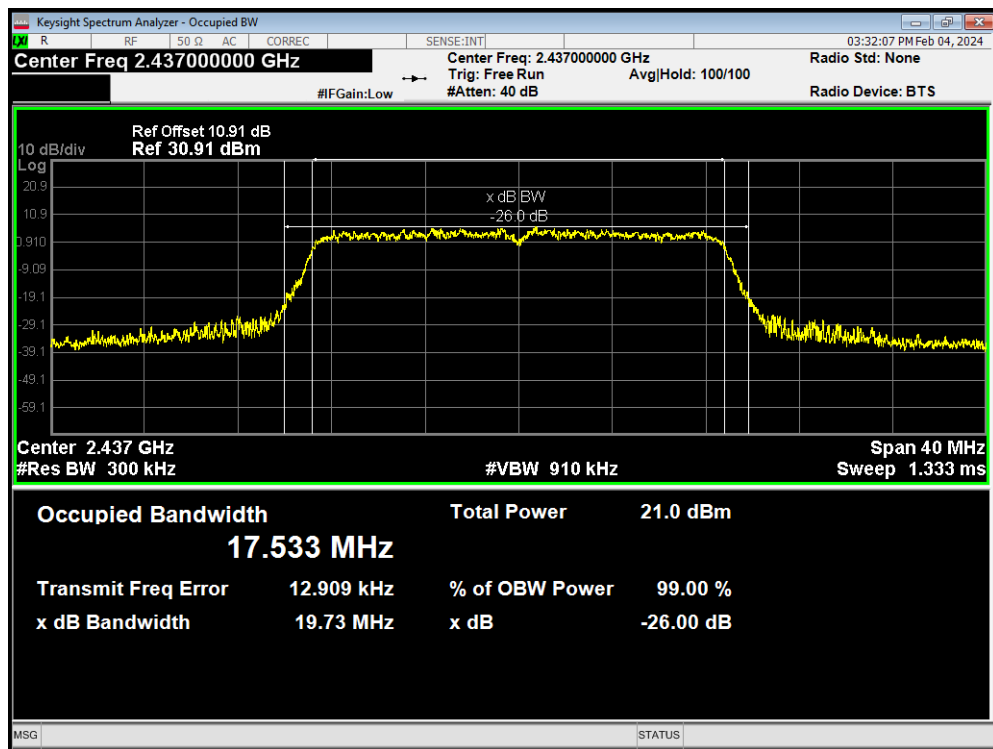
OBW 802.11g 2462MHz



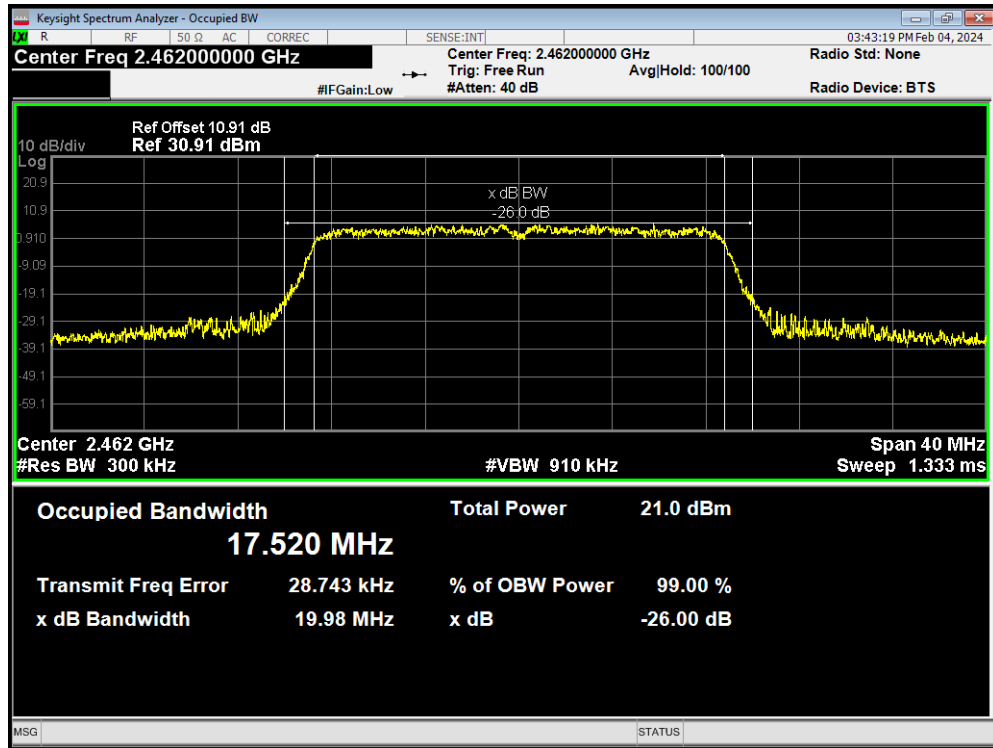
OBW 802.11n(HT20) 2412MHz



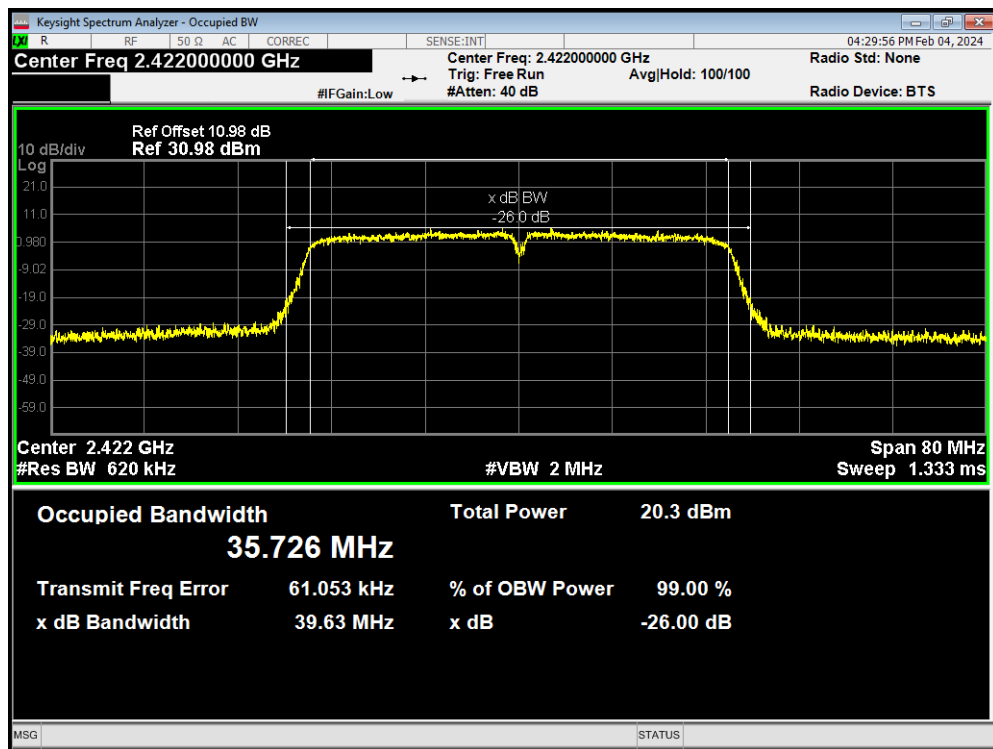
OBW 802.11n(HT20) 2437MHz



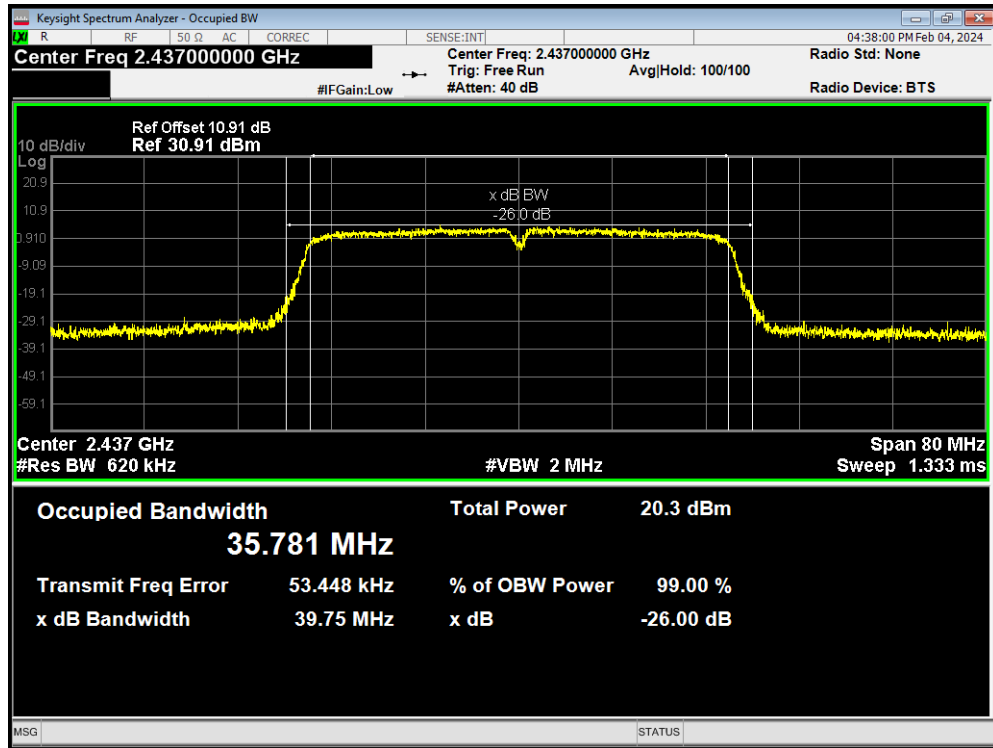
OBW 802.11n(HT20) 2462MHz



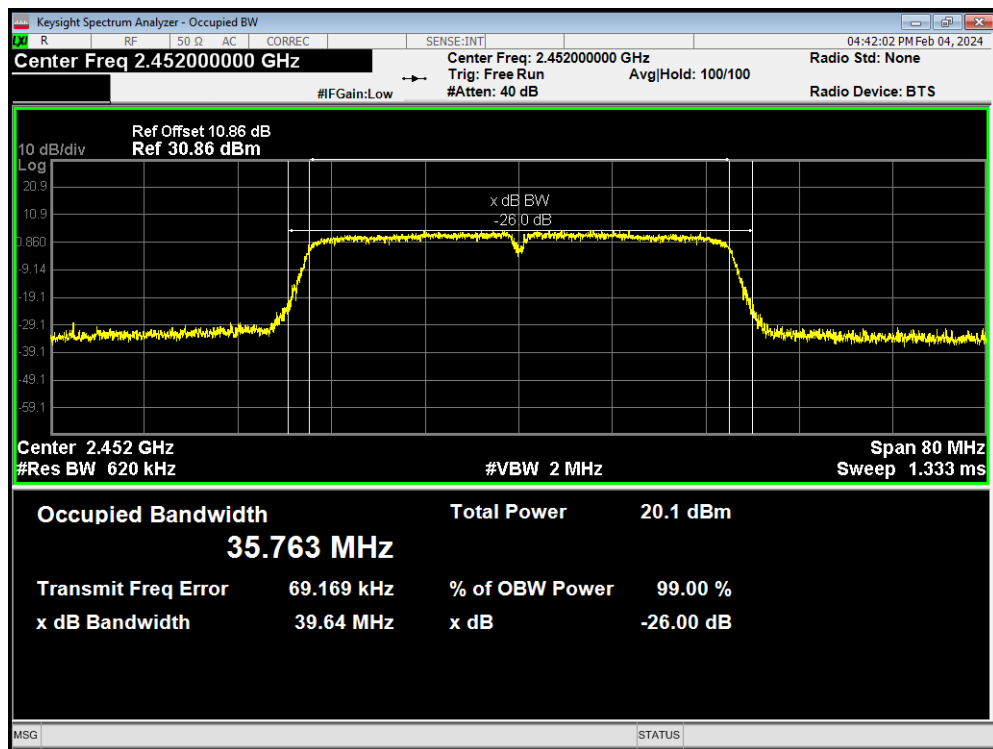
OBW 802.11n(HT40) 2422MHz



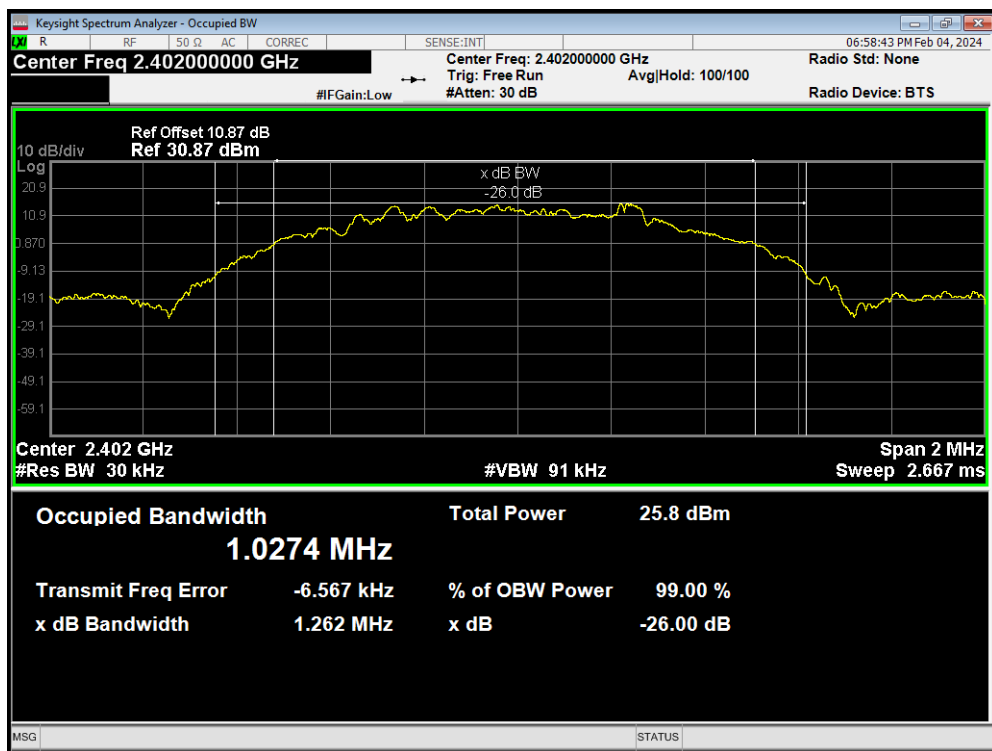
OBW 802.11n(HT40) 2437MHz



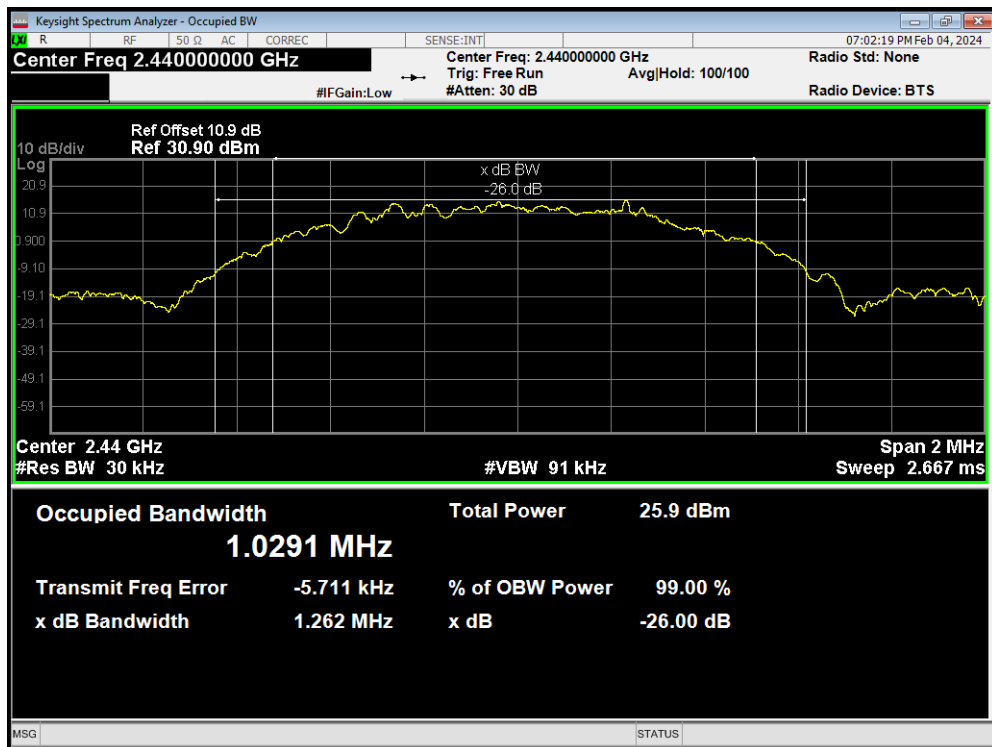
OBW 802.11n(HT40) 2452MHz



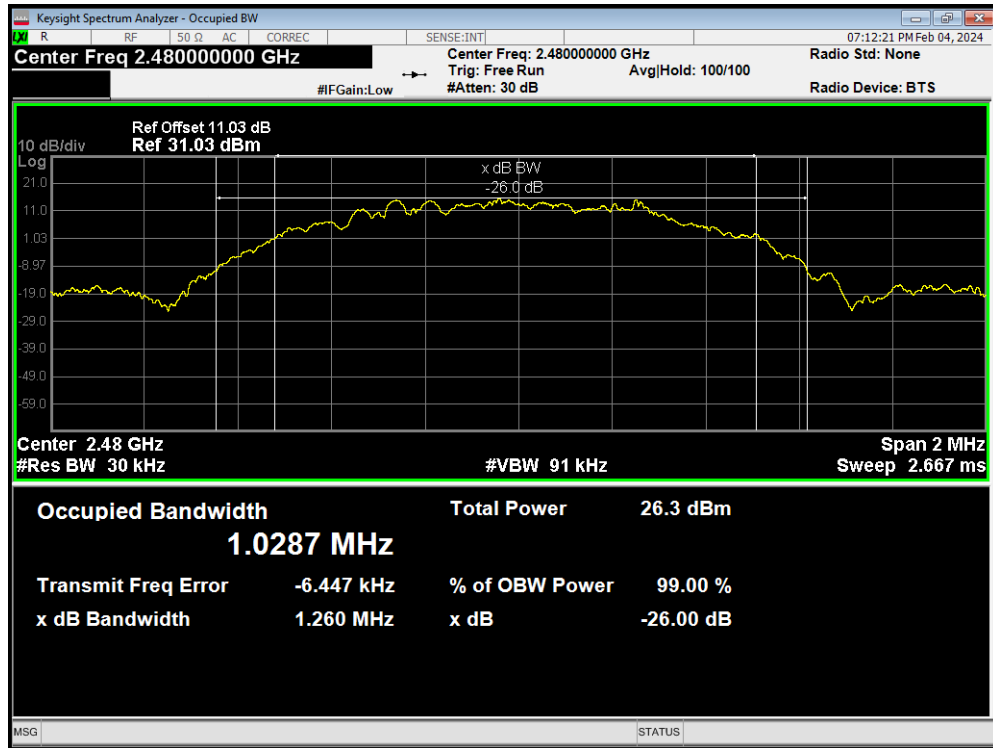
OBW Bluetooth LE(1M) 2402MHz



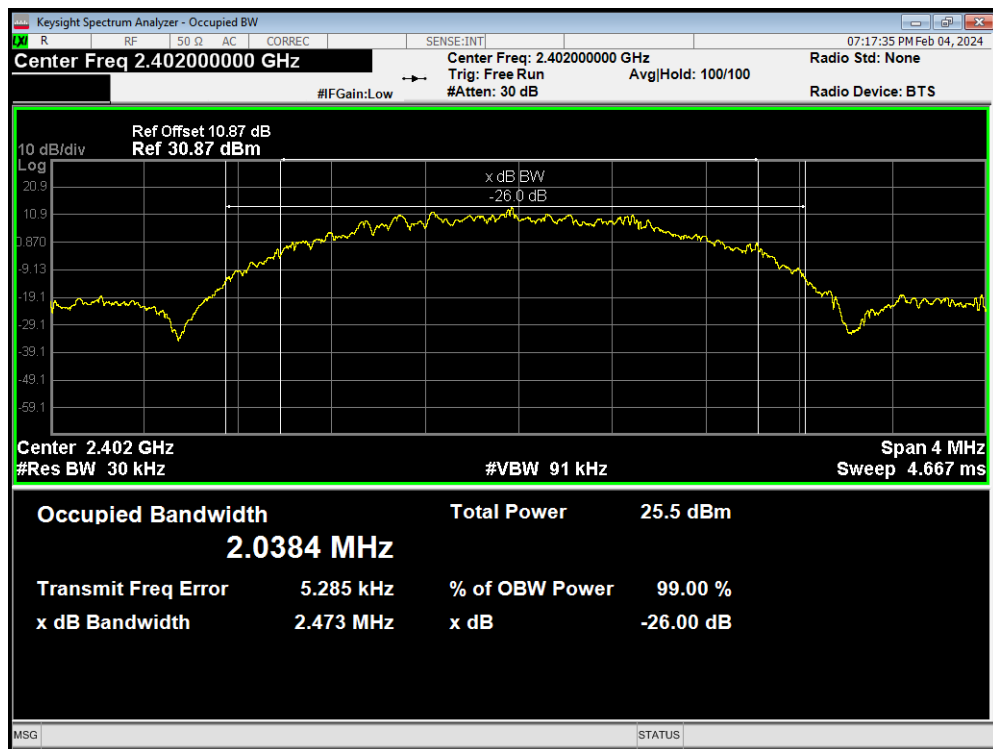
OBW Bluetooth LE(1M) 2440MHz



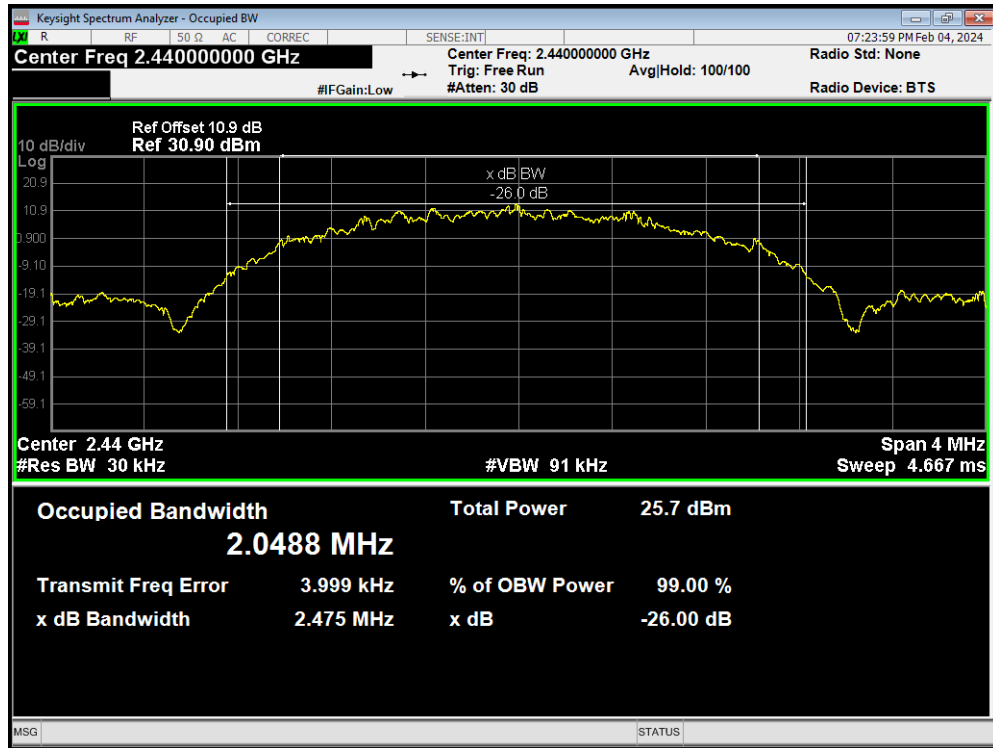
OBW Bluetooth LE(1M) 2480MHz



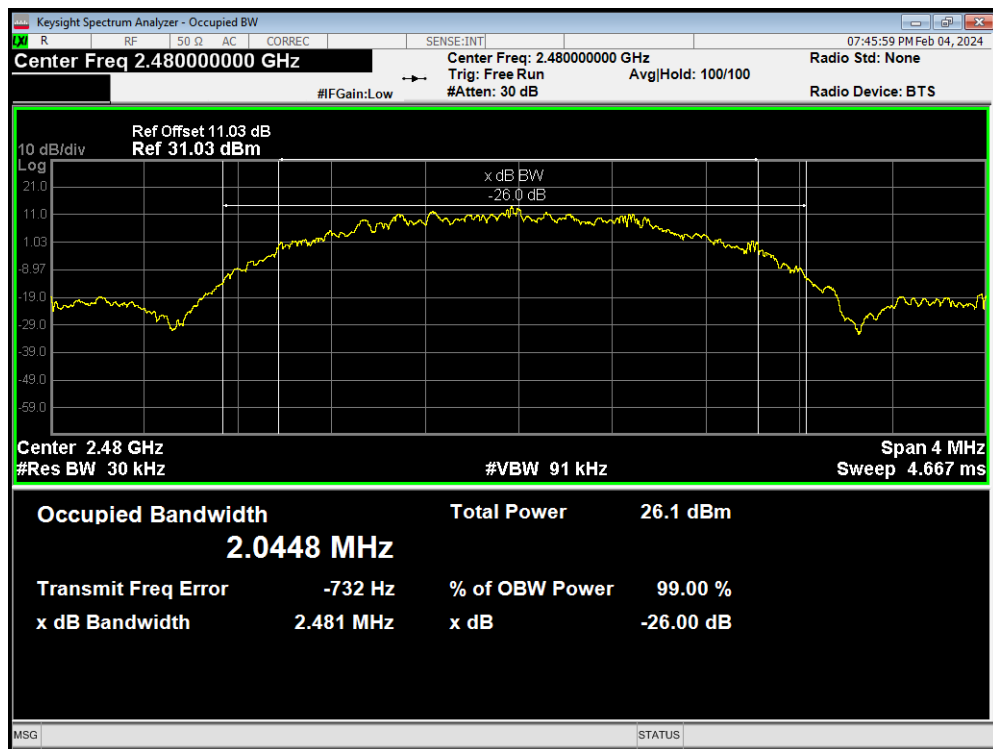
OBW Bluetooth LE(2M) 2402MHz



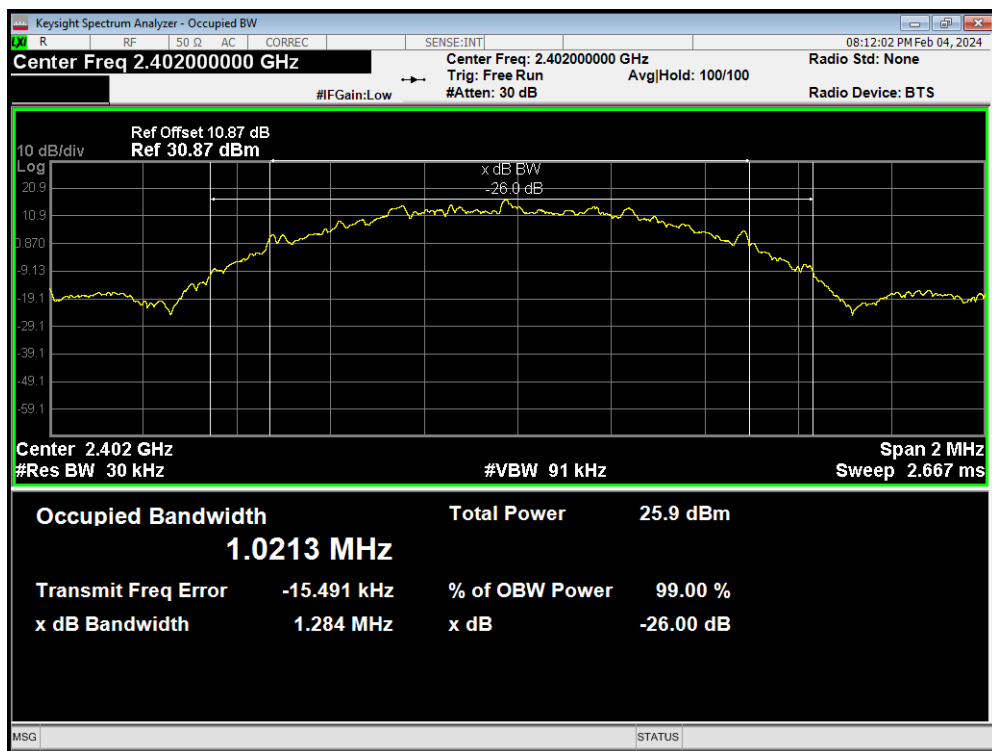
OBW Bluetooth LE(2M) 2440MHz



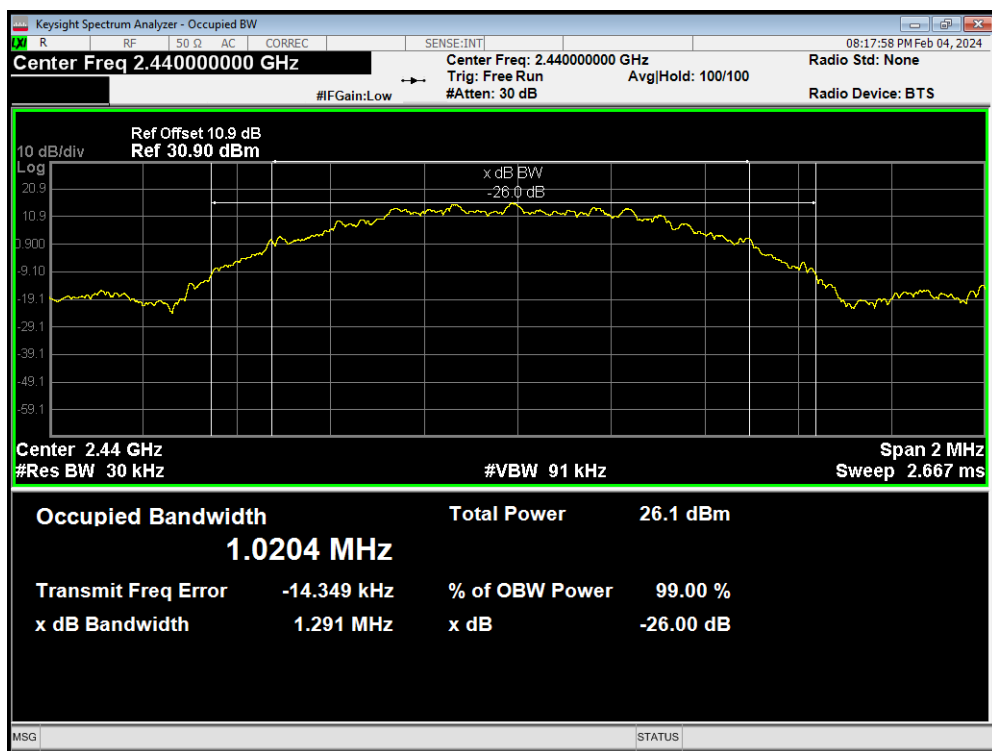
OBW Bluetooth LE(2M) 2480MHz



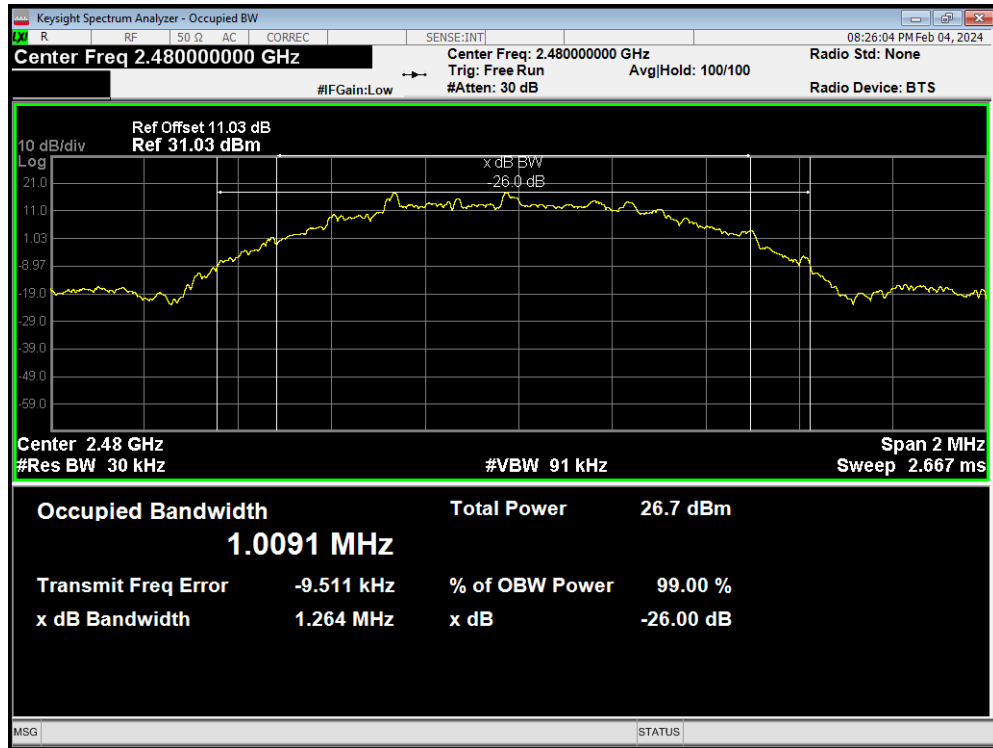
OBW Bluetooth LE(S=2) 2402MHz



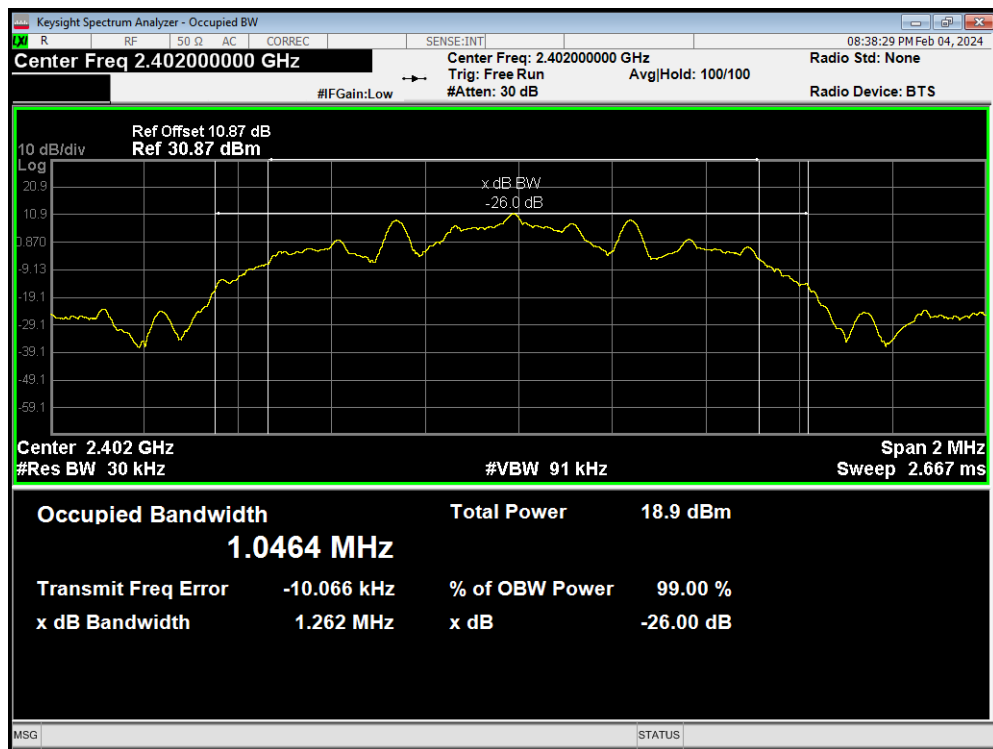
OBW Bluetooth LE(S=2) 2440MHz



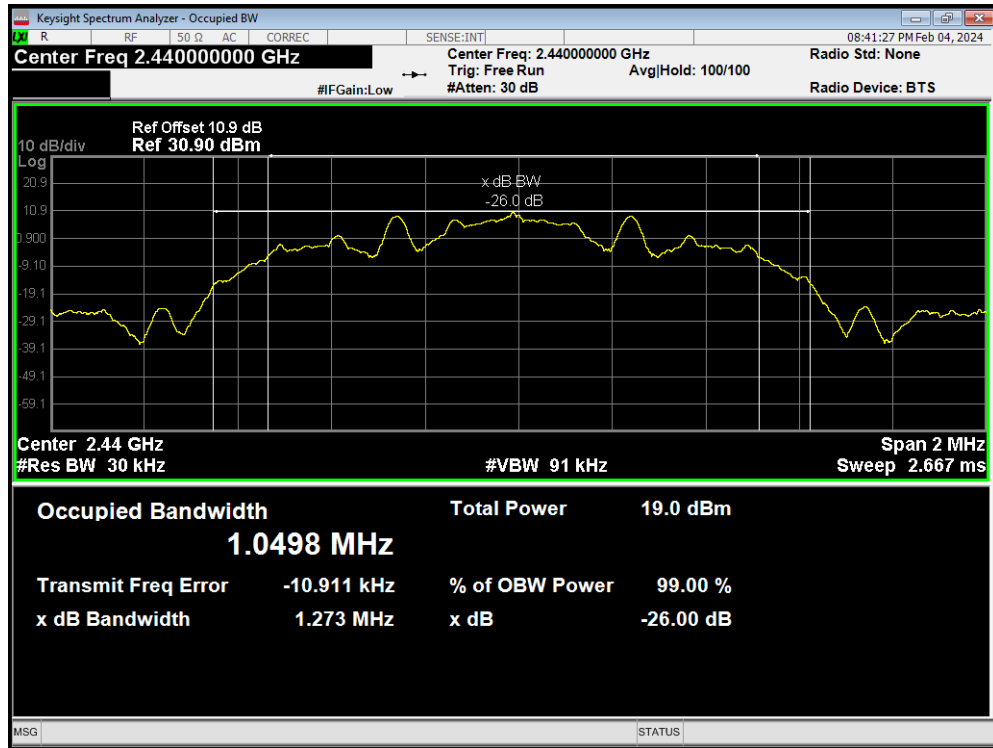
OBW Bluetooth LE(S=2) 2480MHz



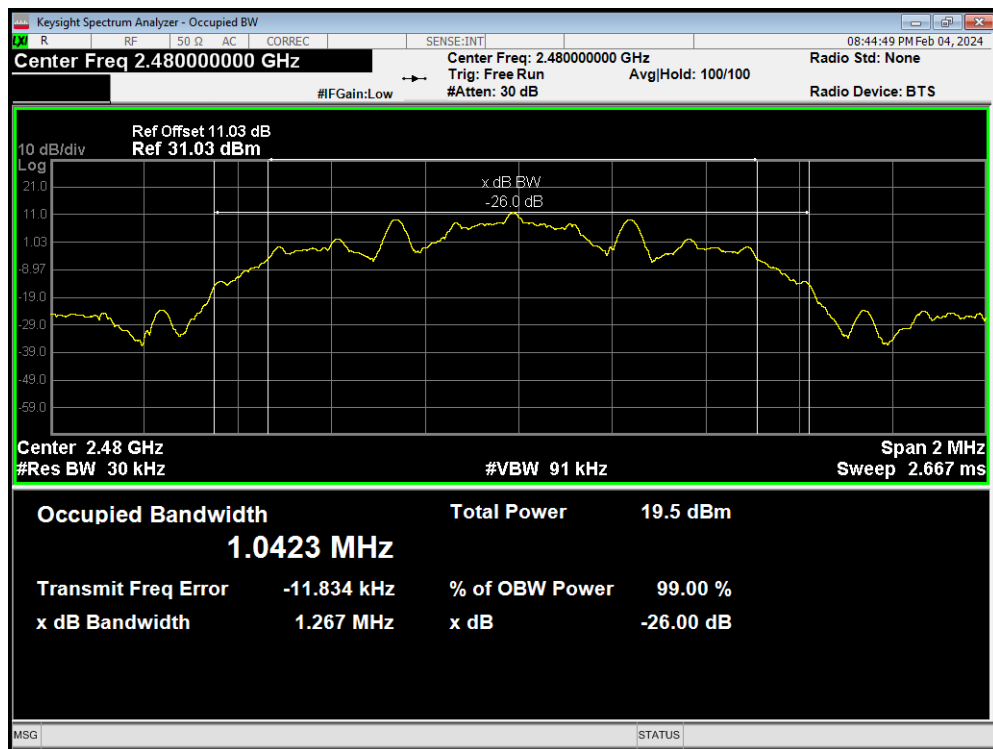
OBW Bluetooth LE(S=8) 2402MHz



OBW Bluetooth LE(S=8) 2440MHz

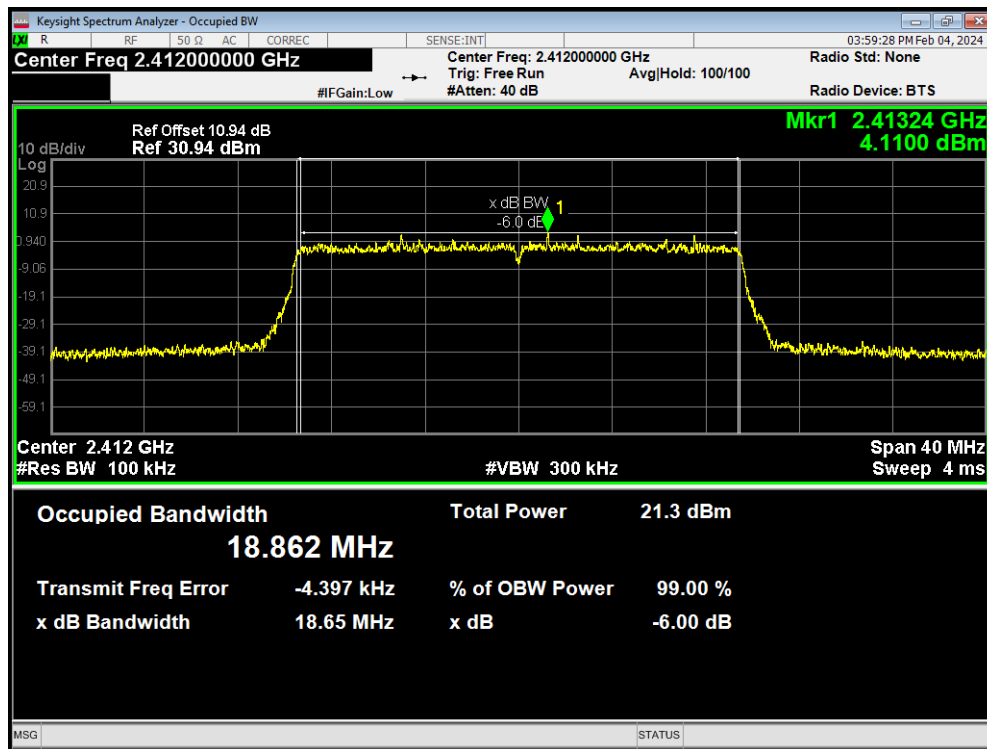


OBW Bluetooth LE(S=8) 2480MHz

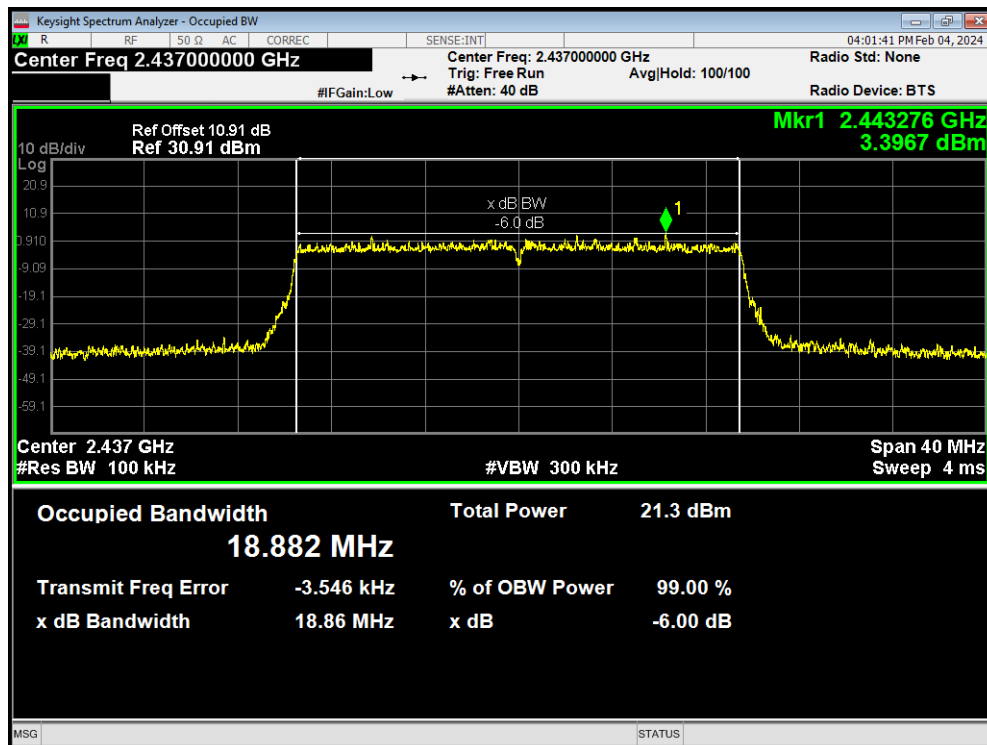


6 dB bandwidth

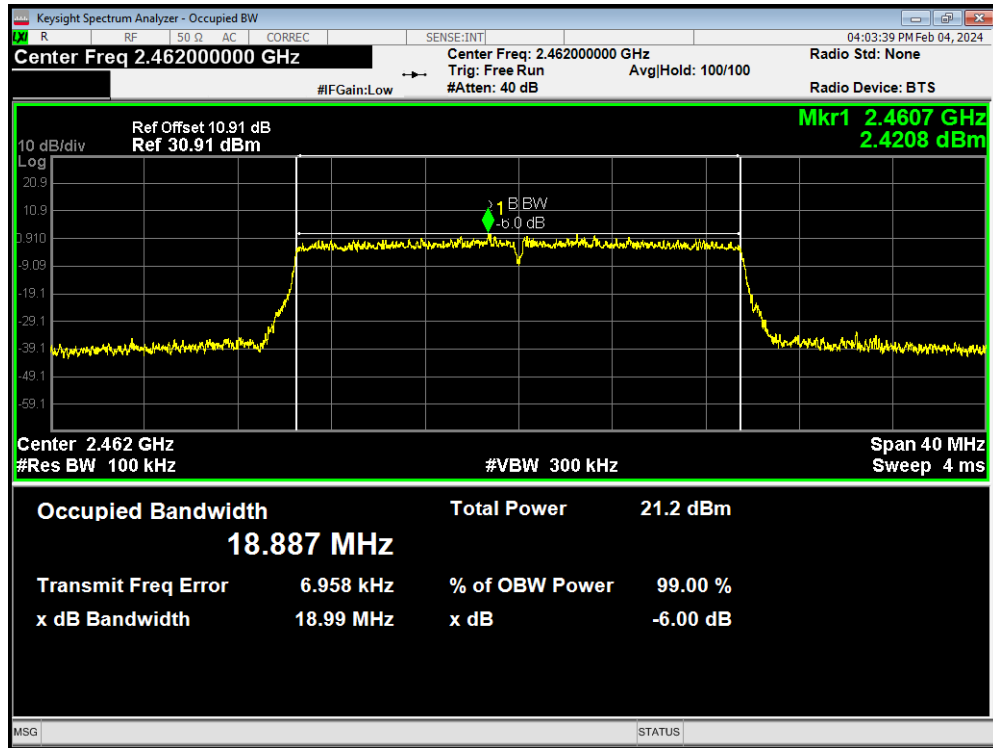
-6dB Bandwidth 802.11ax(HE20) 2412MHz



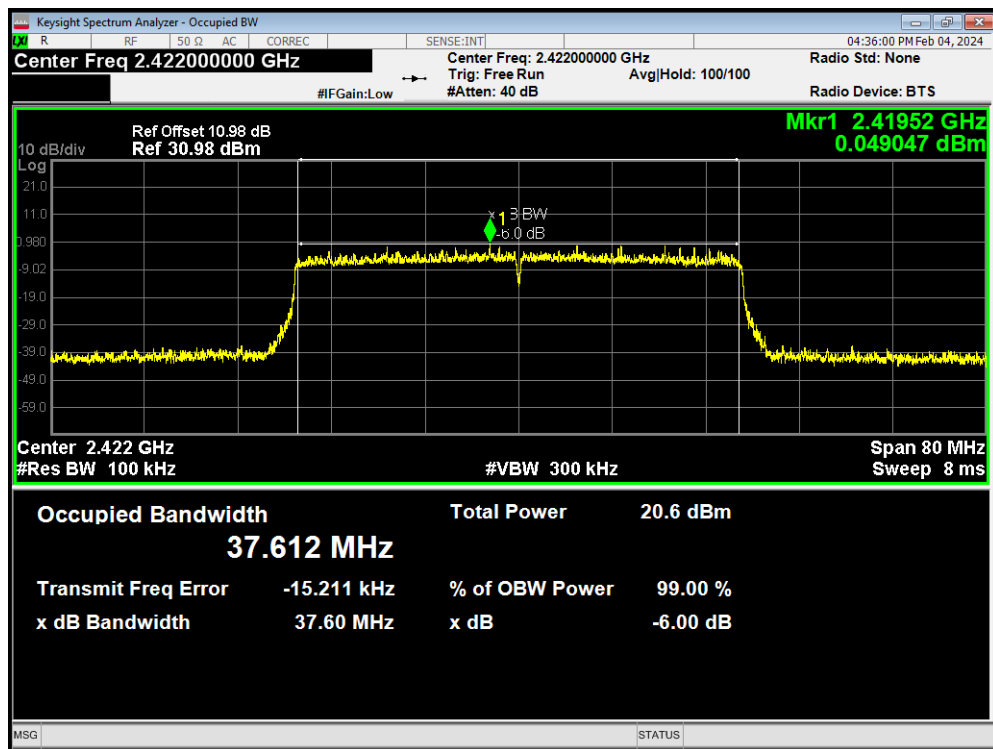
-6dB Bandwidth 802.11ax(HE20) 2437MHz



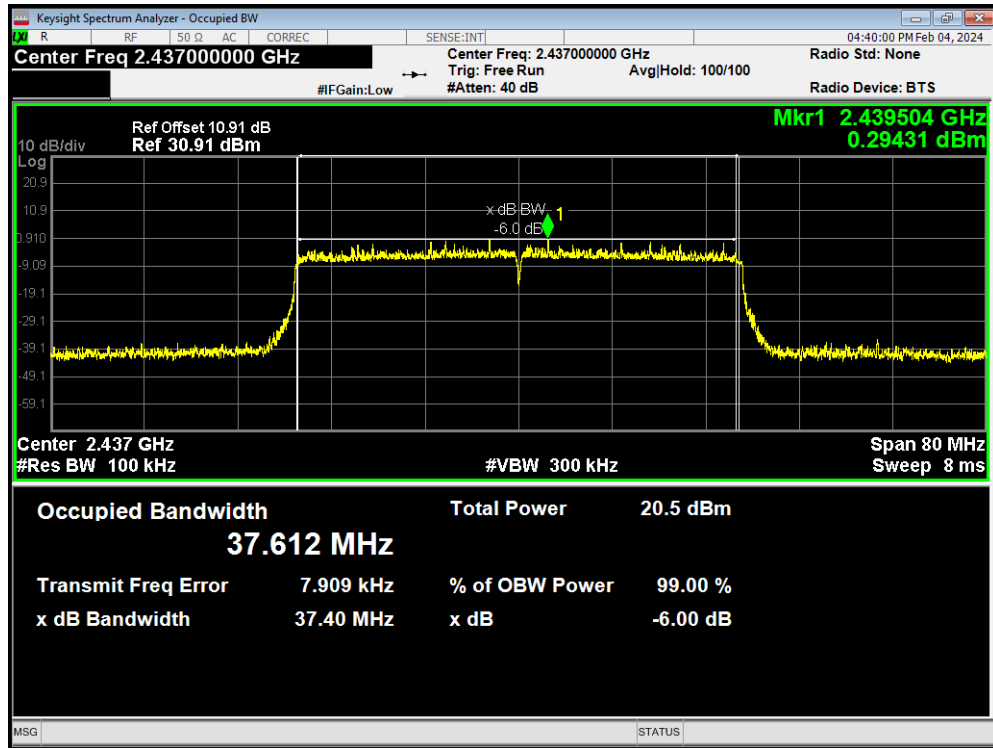
-6dB Bandwidth 802.11ax(HE20) 2462MHz



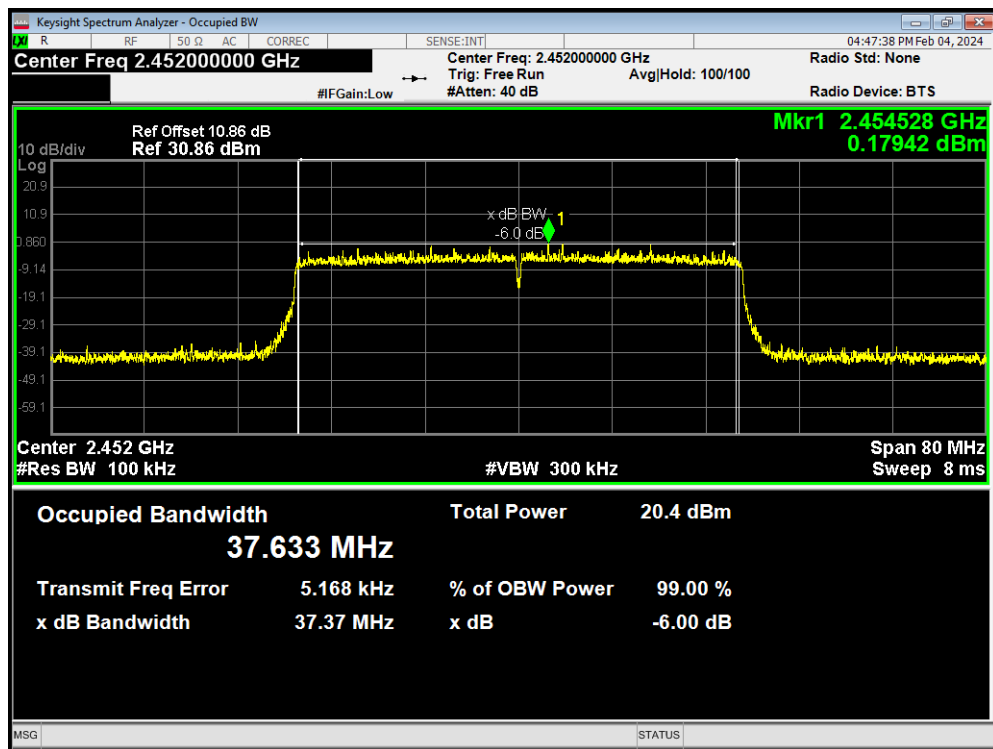
-6dB Bandwidth 802.11ax(HE40) 2422MHz



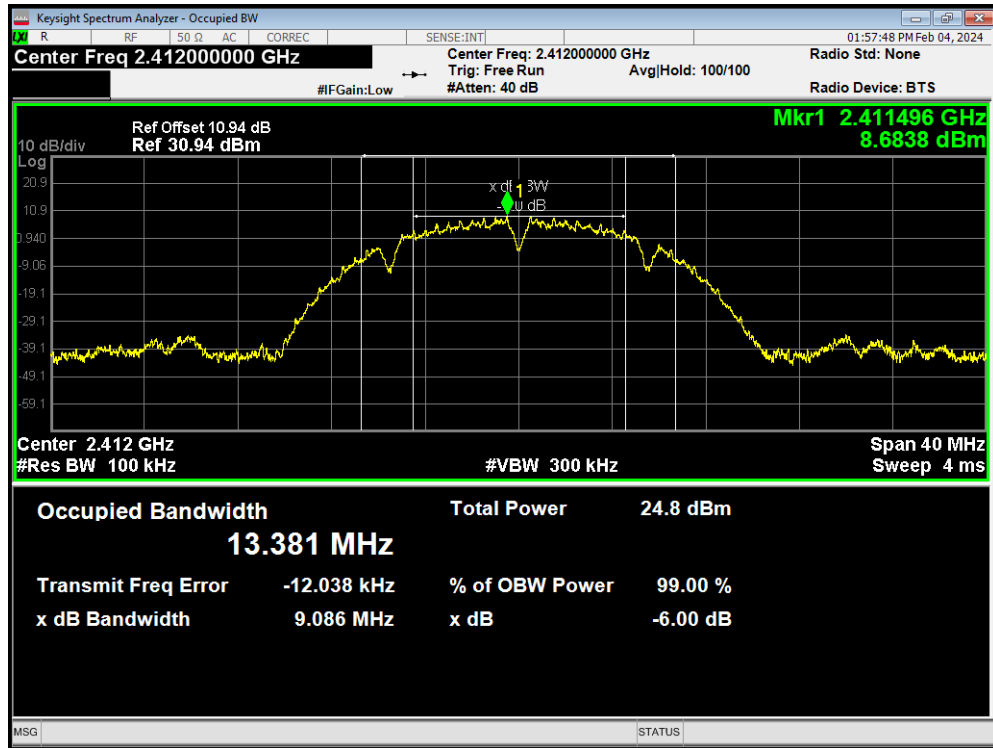
-6dB Bandwidth 802.11ax(HE40) 2437MHz



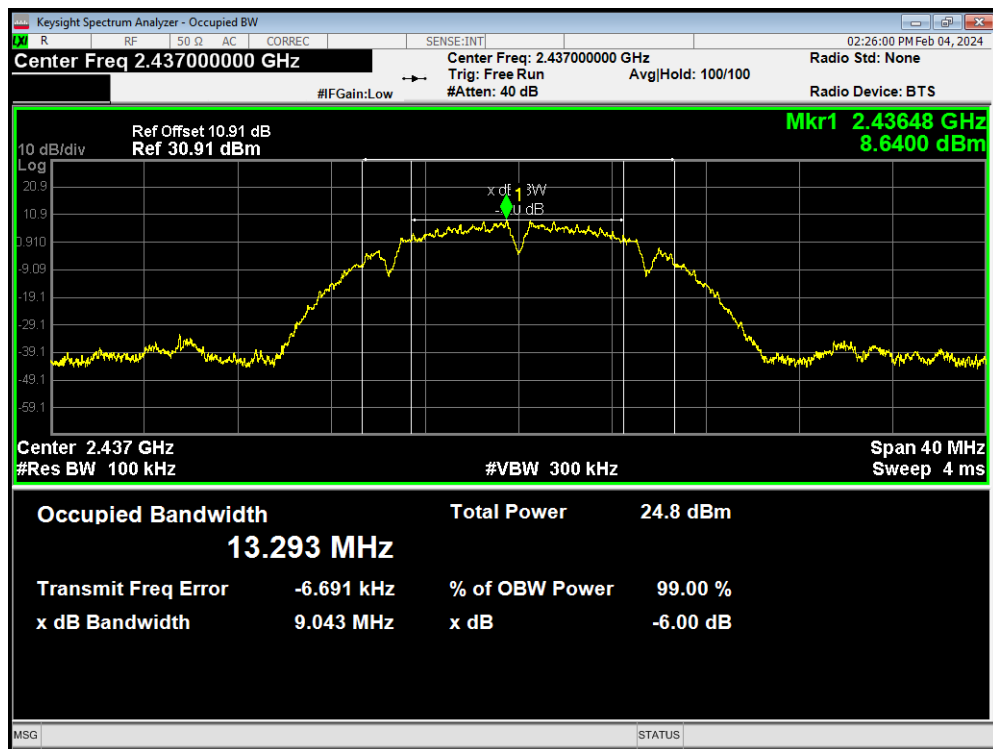
-6dB Bandwidth 802.11ax(HE40) 2452MHz



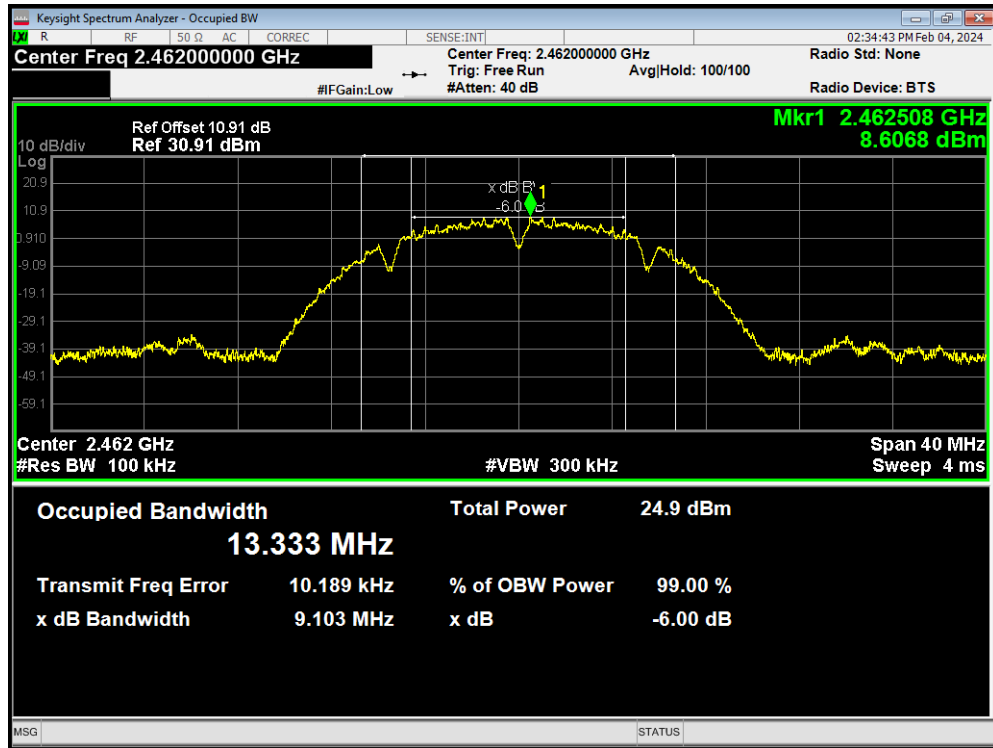
-6dB Bandwidth 802.11b 2412MHz



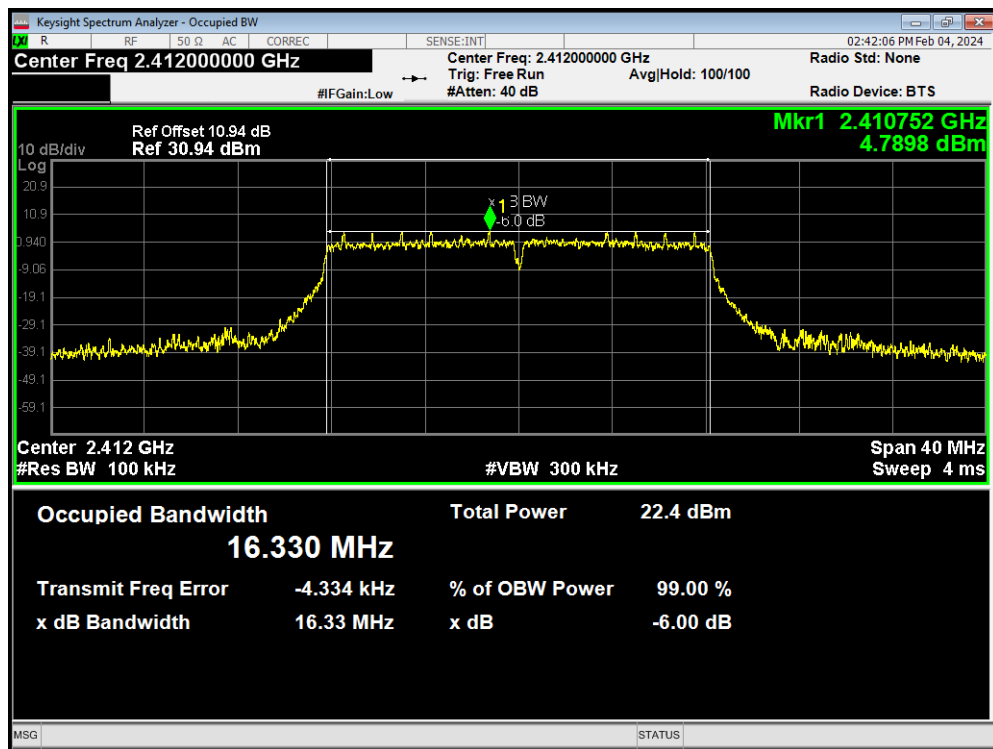
-6dB Bandwidth 802.11b 2437MHz



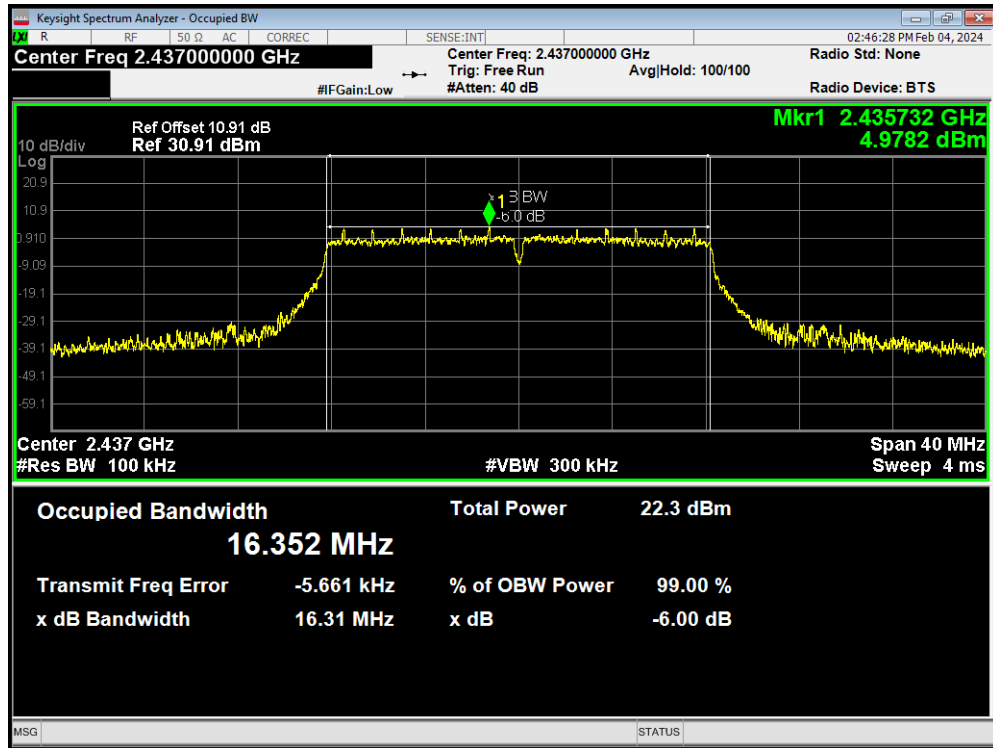
-6dB Bandwidth 802.11b 2462MHz



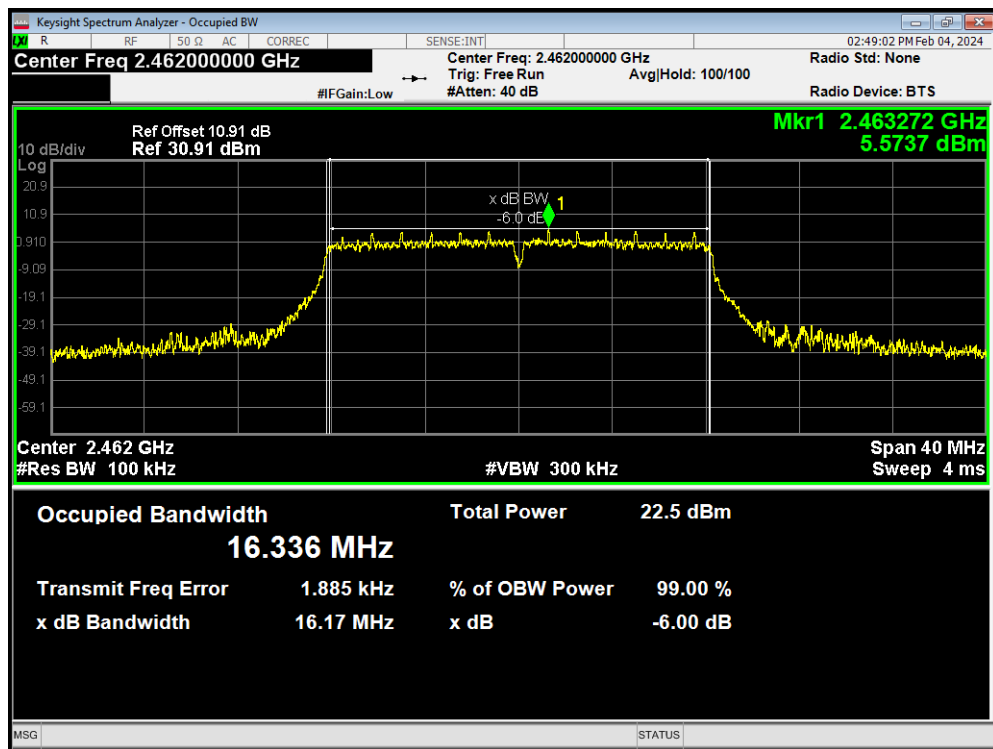
-6dB Bandwidth 802.11g 2412MHz



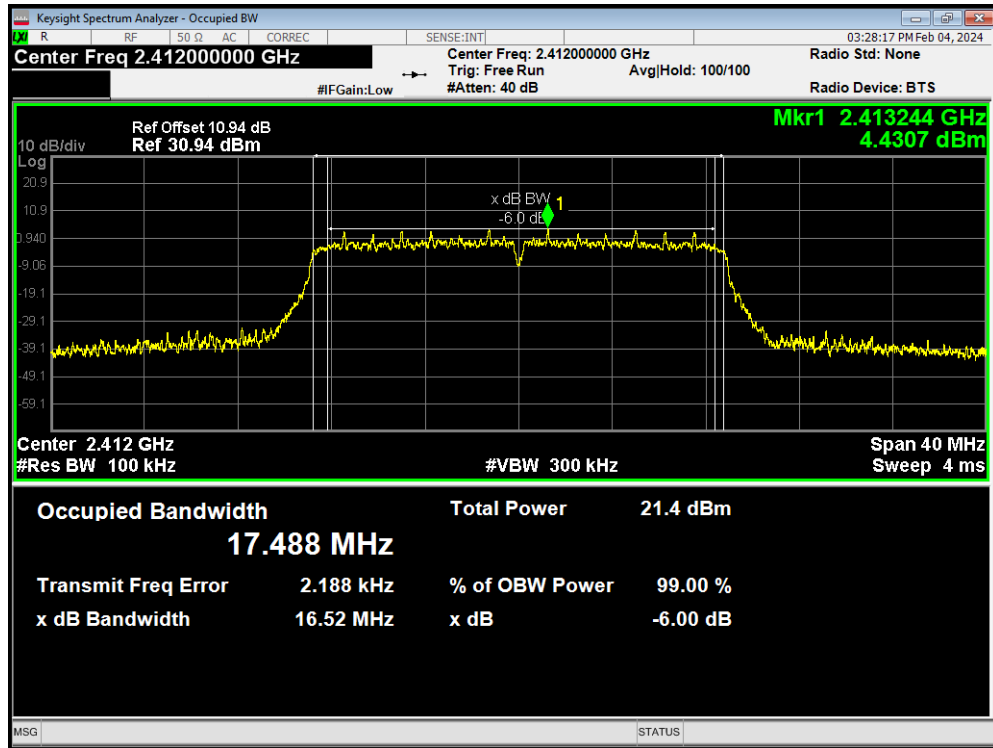
-6dB Bandwidth 802.11g 2437MHz



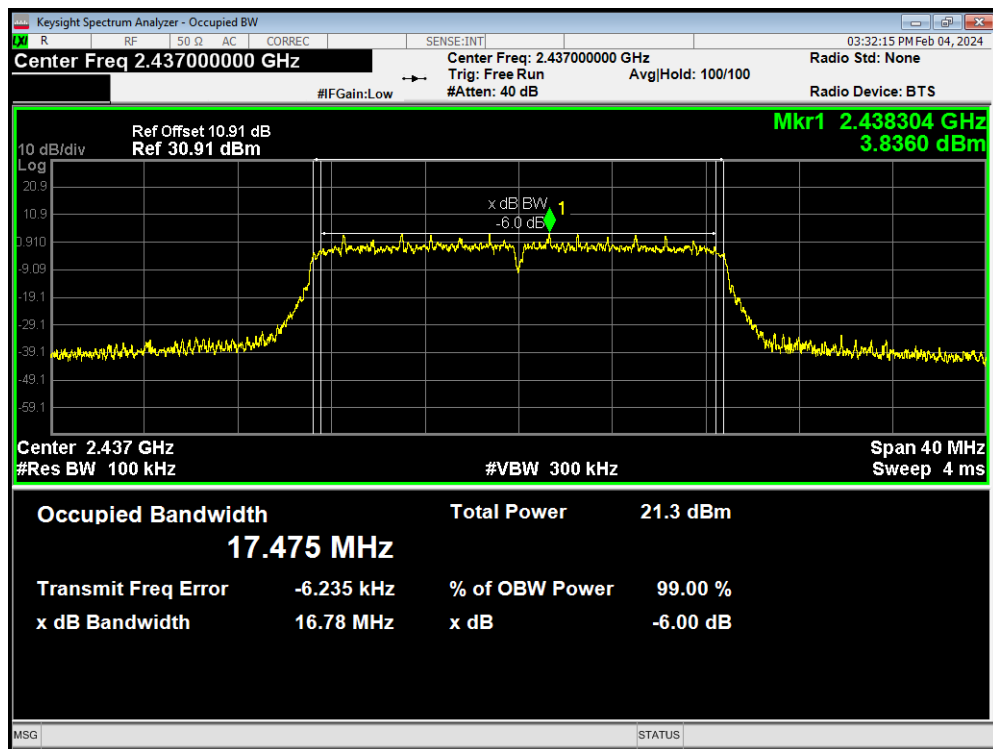
-6dB Bandwidth 802.11g 2462MHz



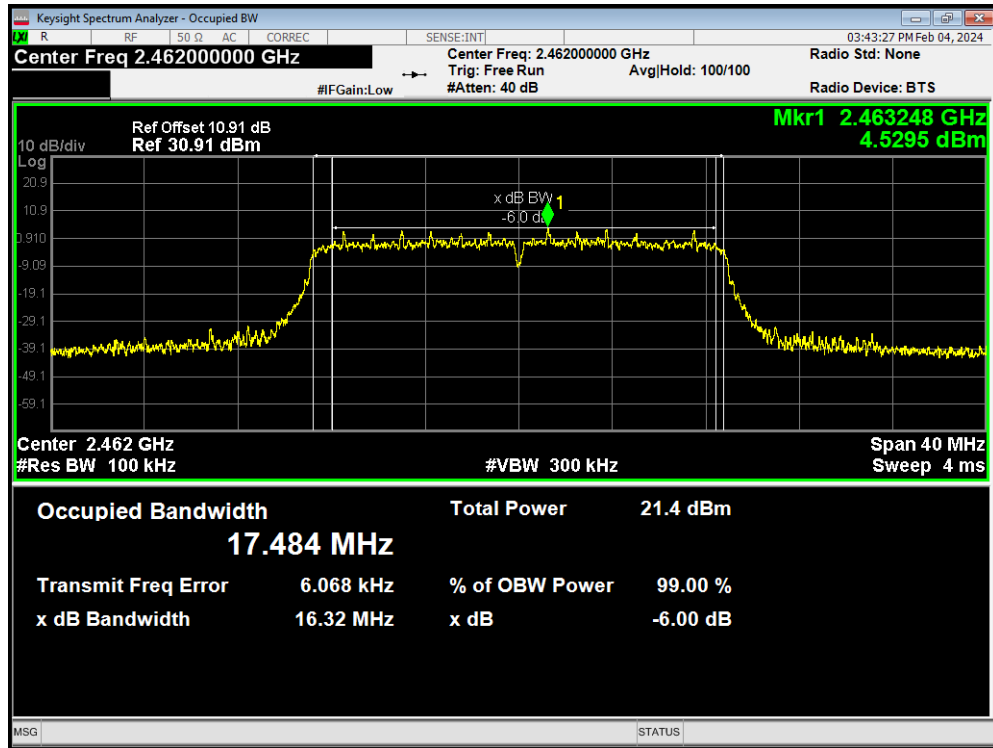
-6dB Bandwidth 802.11n(HT20) 2412MHz



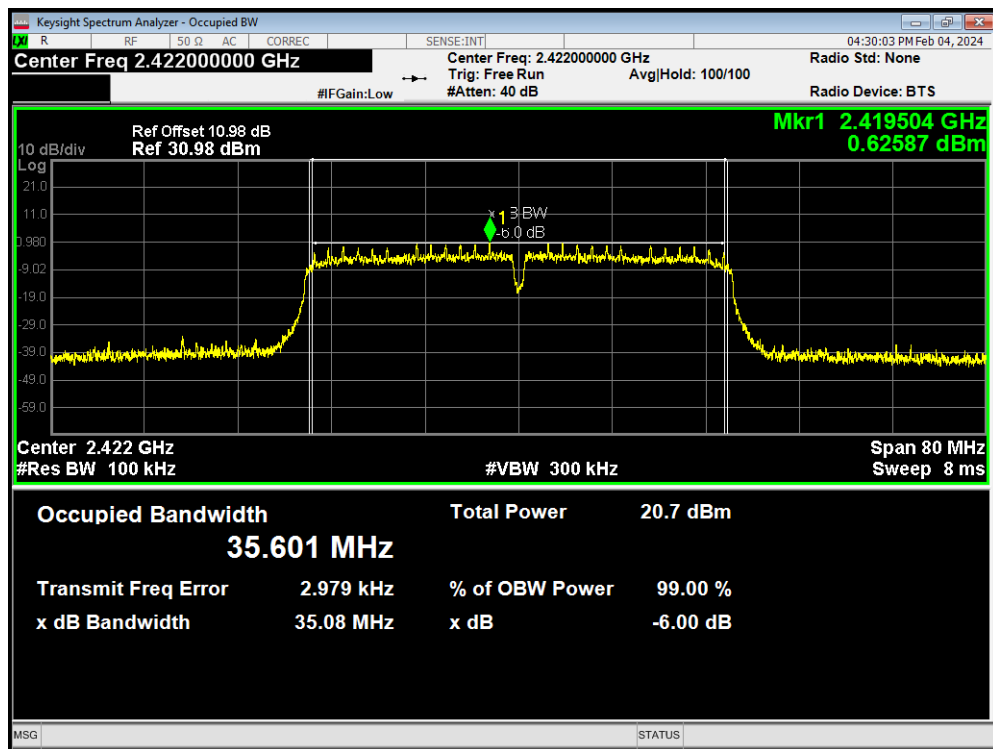
-6dB Bandwidth 802.11n(HT20) 2437MHz



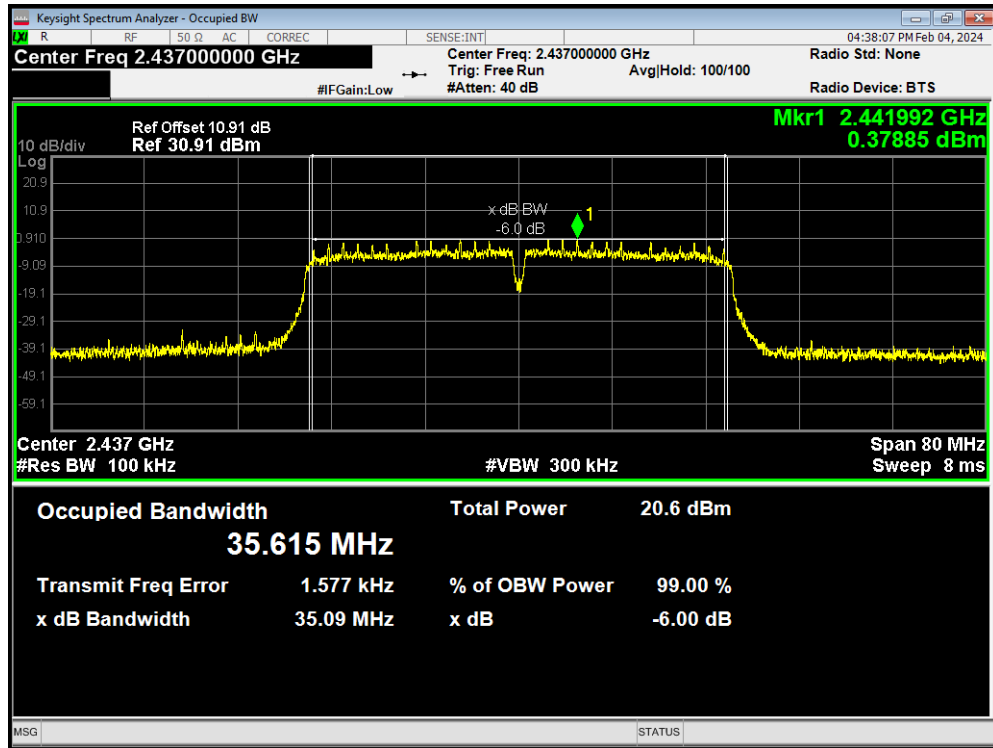
-6dB Bandwidth 802.11n(HT20) 2462MHz



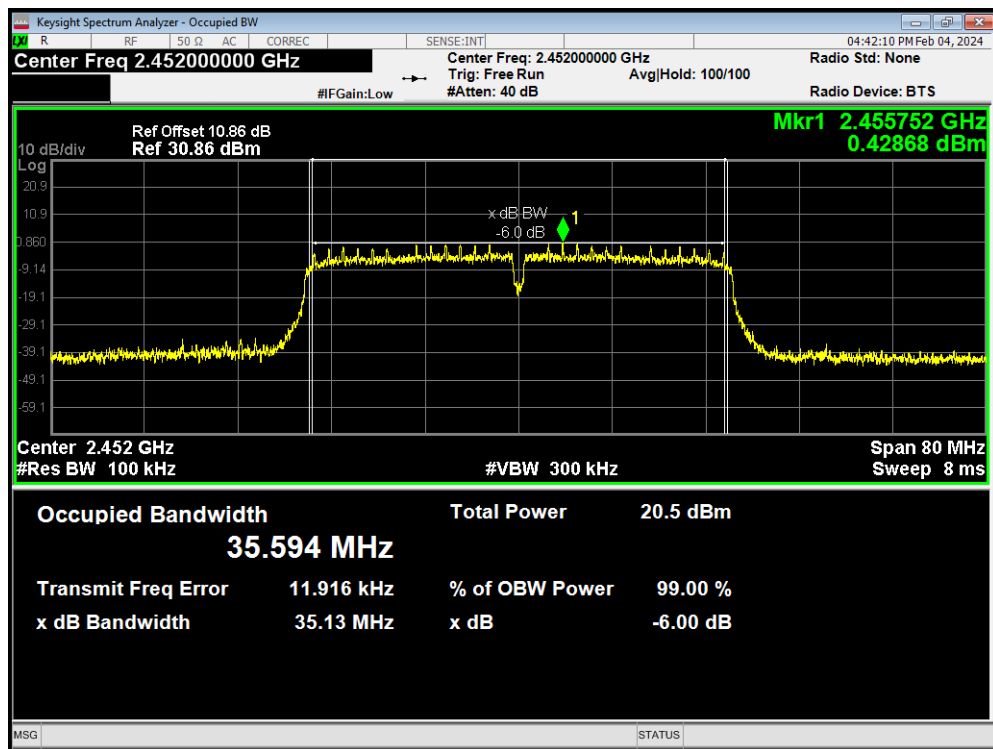
-6dB Bandwidth 802.11n(HT40) 2422MHz



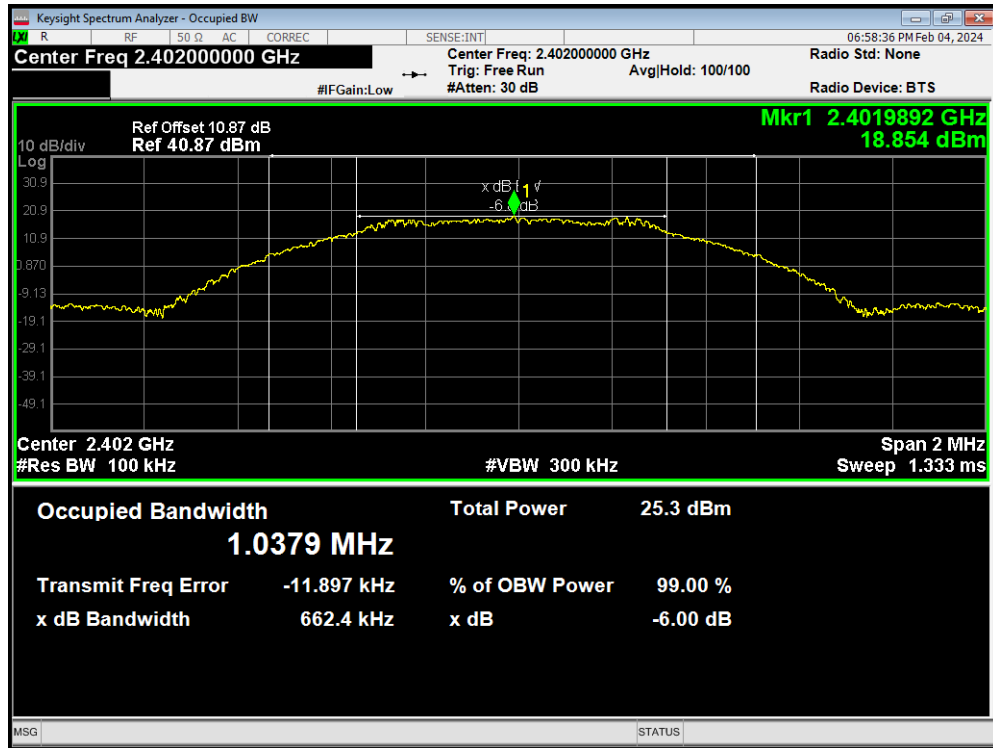
-6dB Bandwidth 802.11n(HT40) 2437MHz



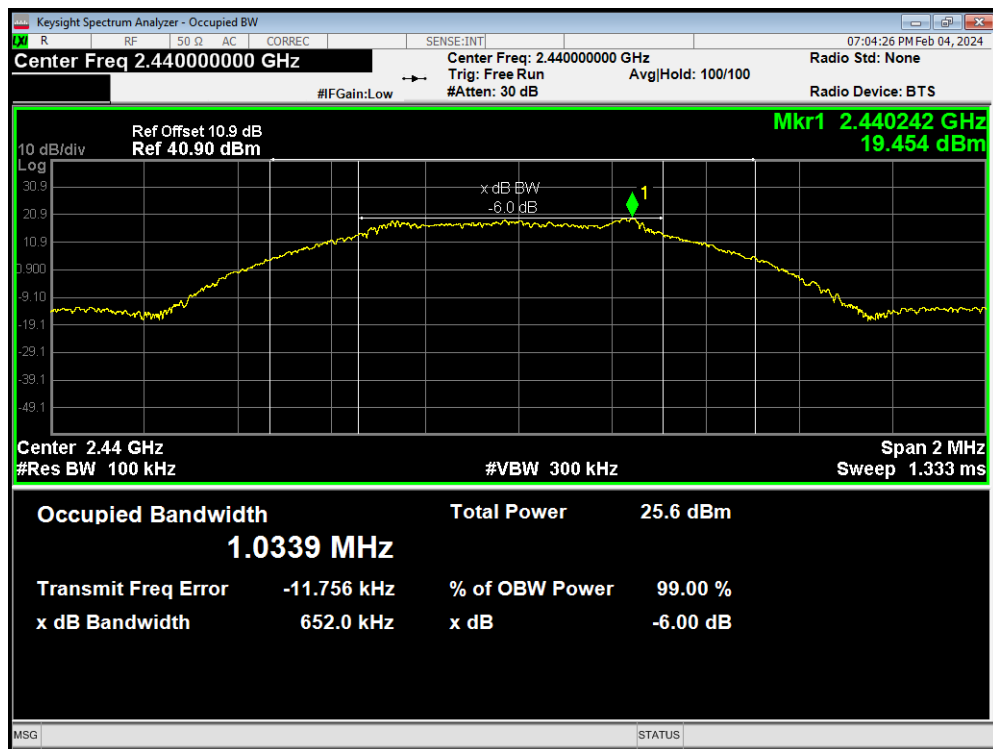
-6dB Bandwidth 802.11n(HT40) 2452MHz



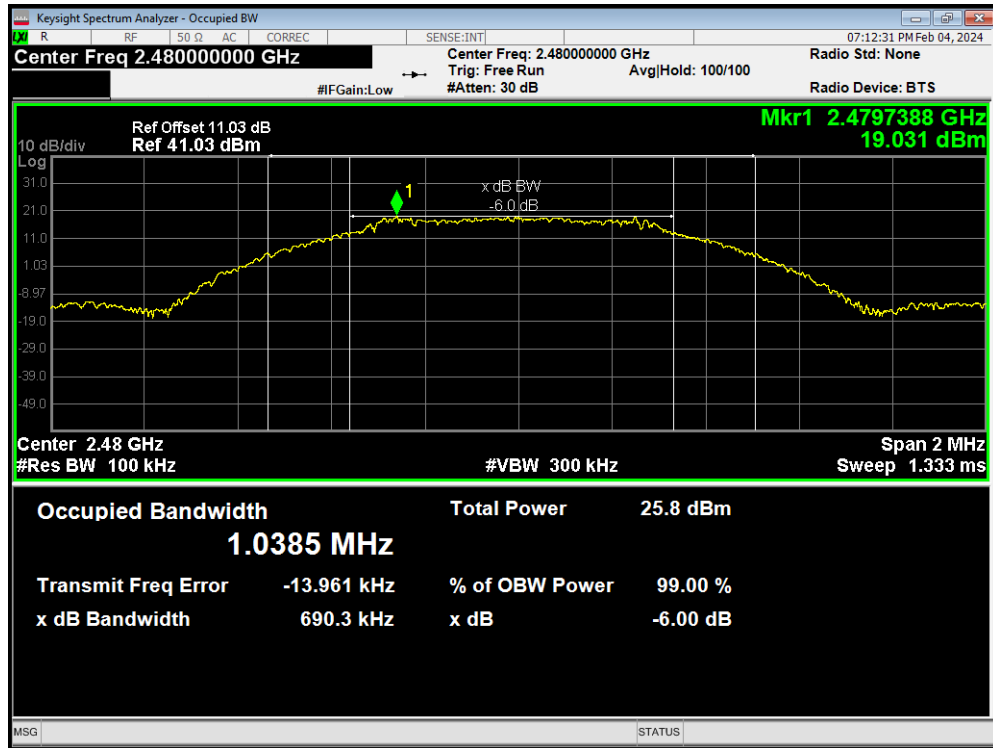
-6dB Bandwidth Bluetooth LE(1M) 2402MHz



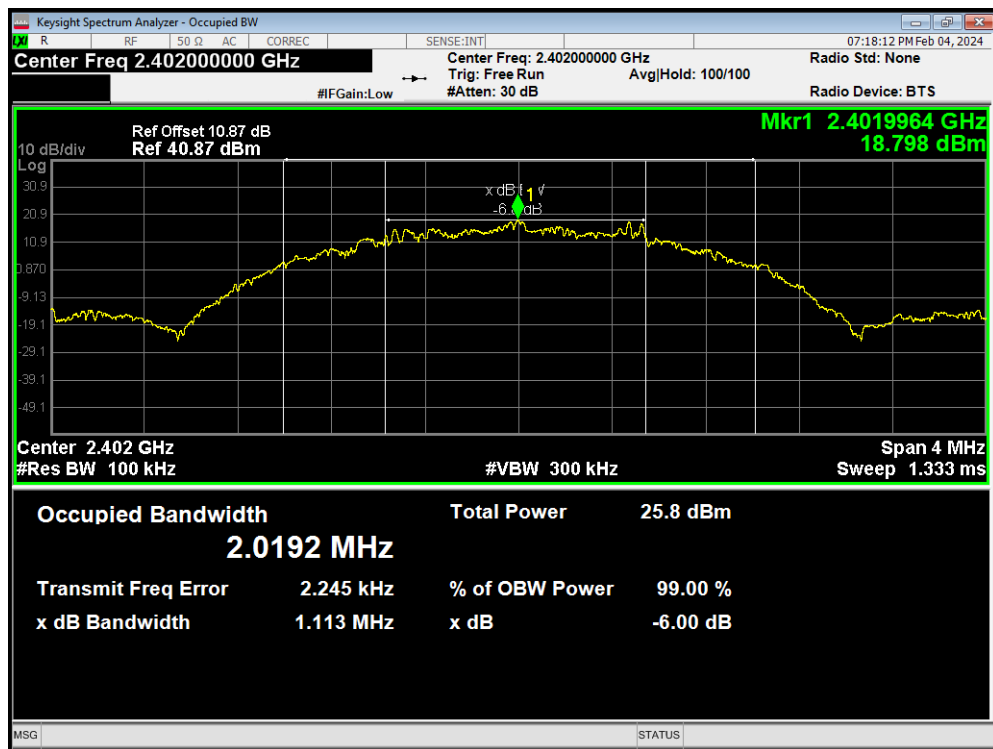
-6dB Bandwidth Bluetooth LE(1M) 2440MHz



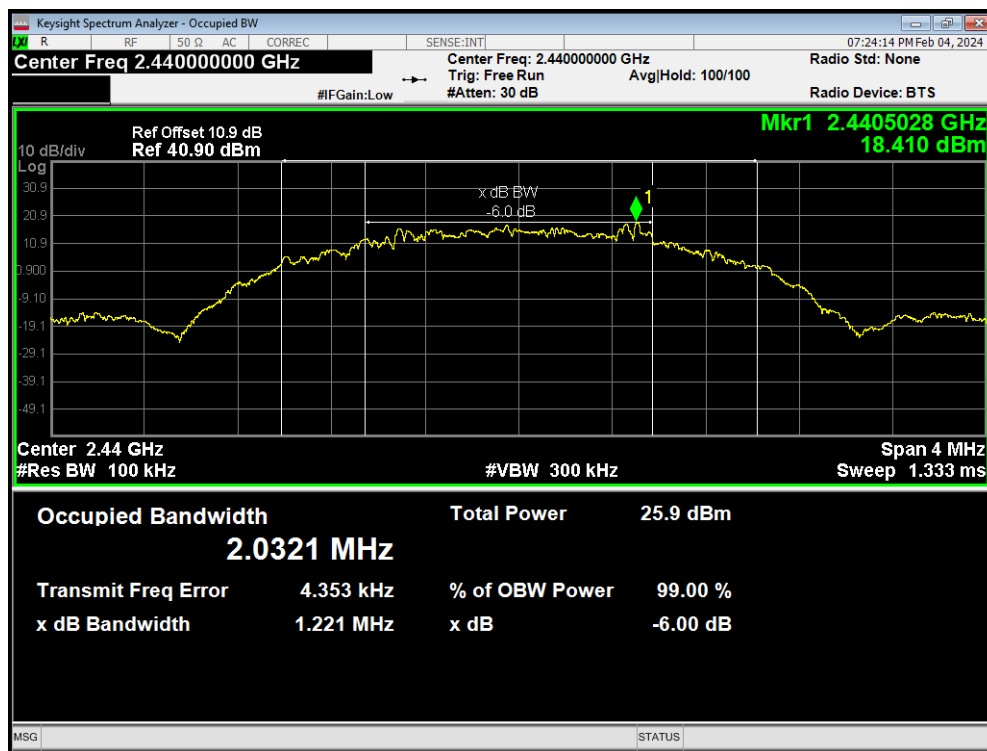
-6dB Bandwidth Bluetooth LE(1M) 2480MHz



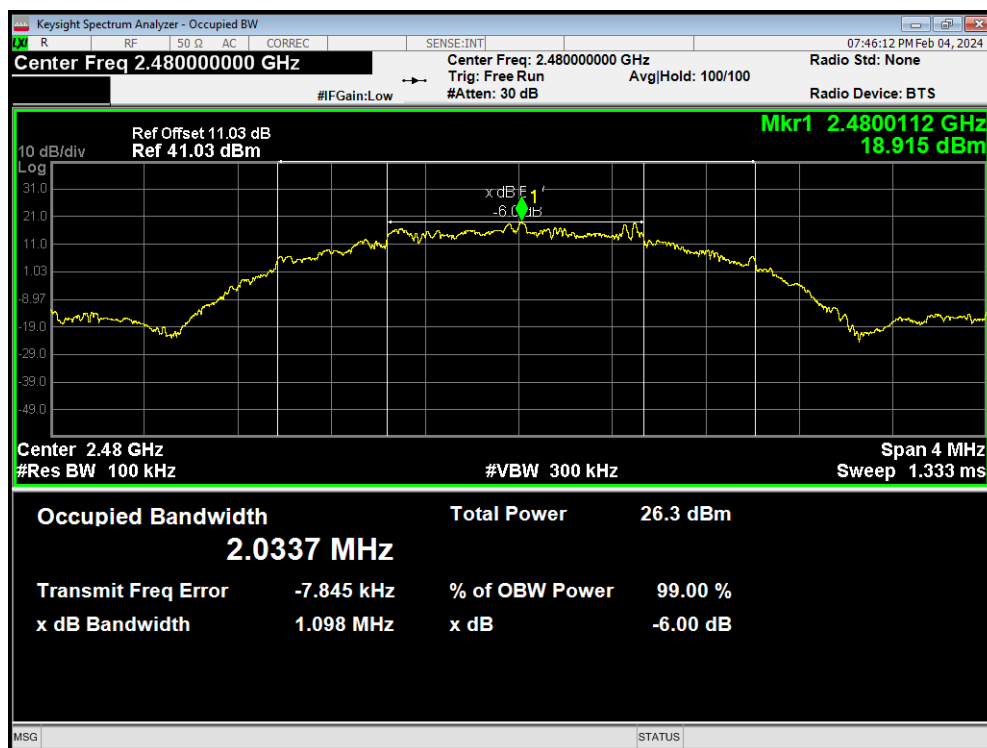
-6dB Bandwidth Bluetooth LE(2M) 2402MHz



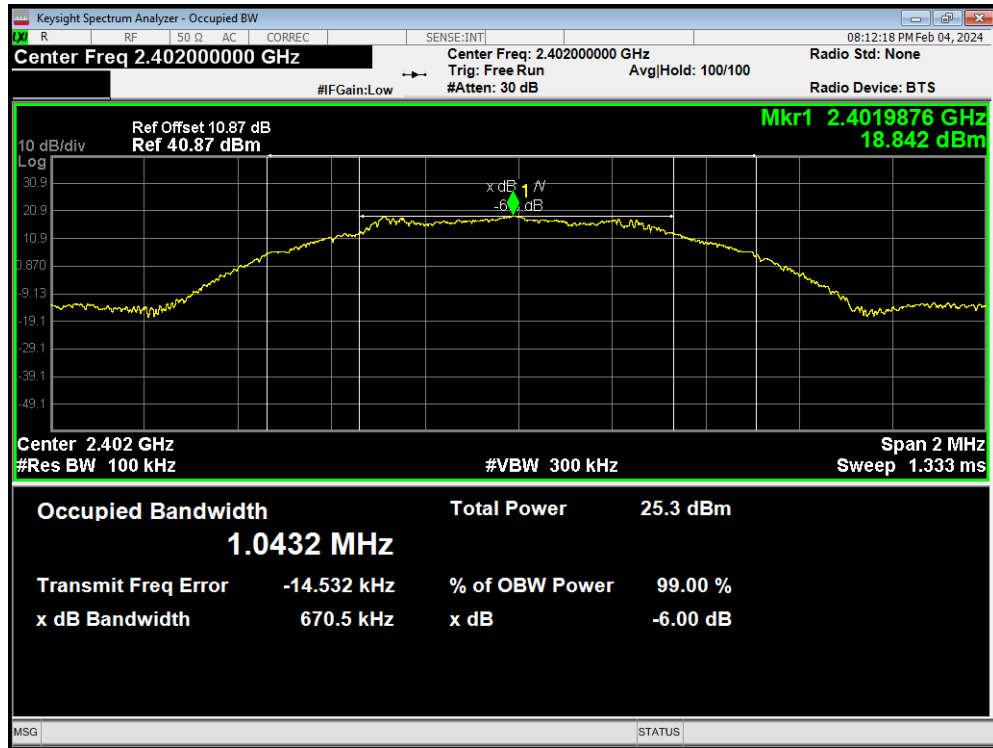
-6dB Bandwidth Bluetooth LE(2M) 2440MHz



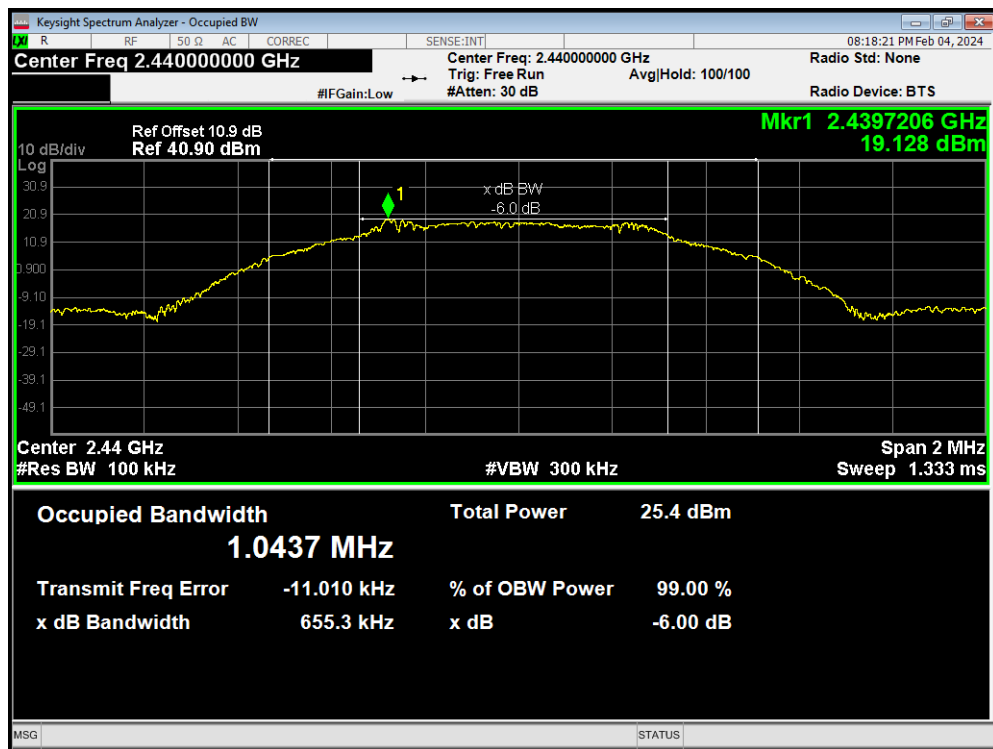
-6dB Bandwidth Bluetooth LE(2M) 2480MHz



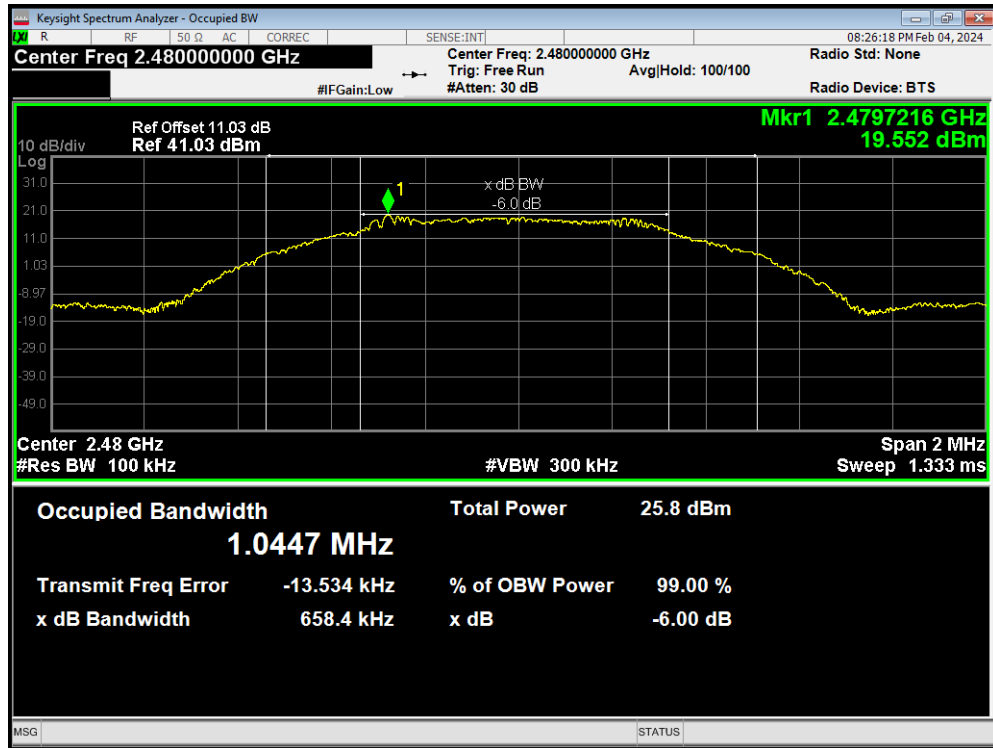
-6dB Bandwidth Bluetooth LE(S=2) 2402MHz



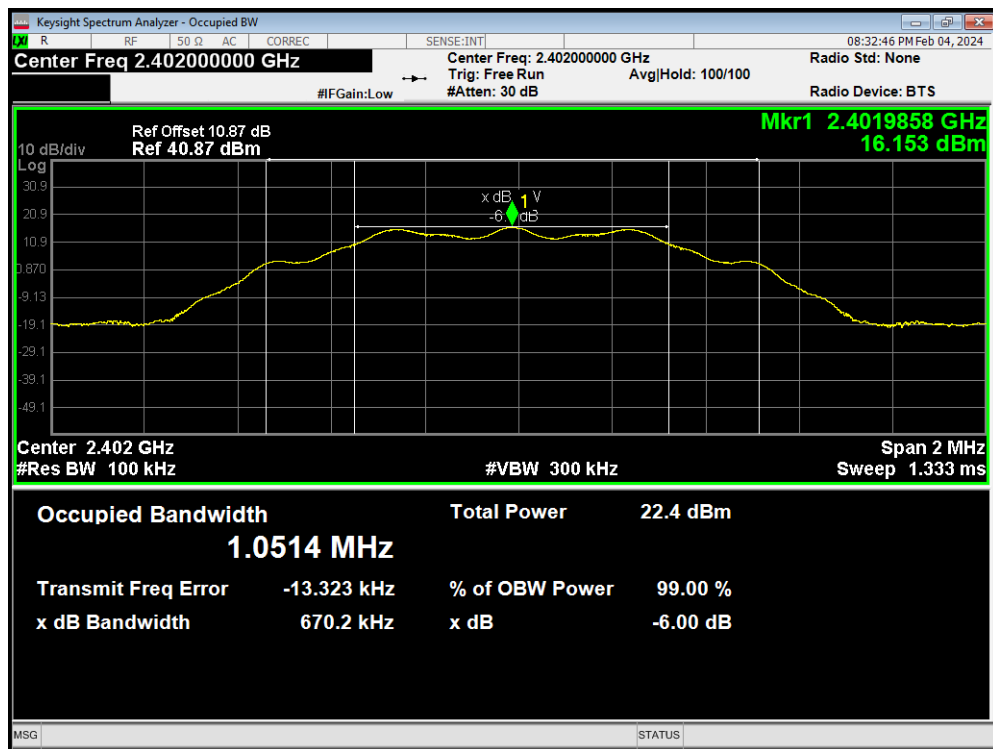
-6dB Bandwidth Bluetooth LE(S=2) 2440MHz



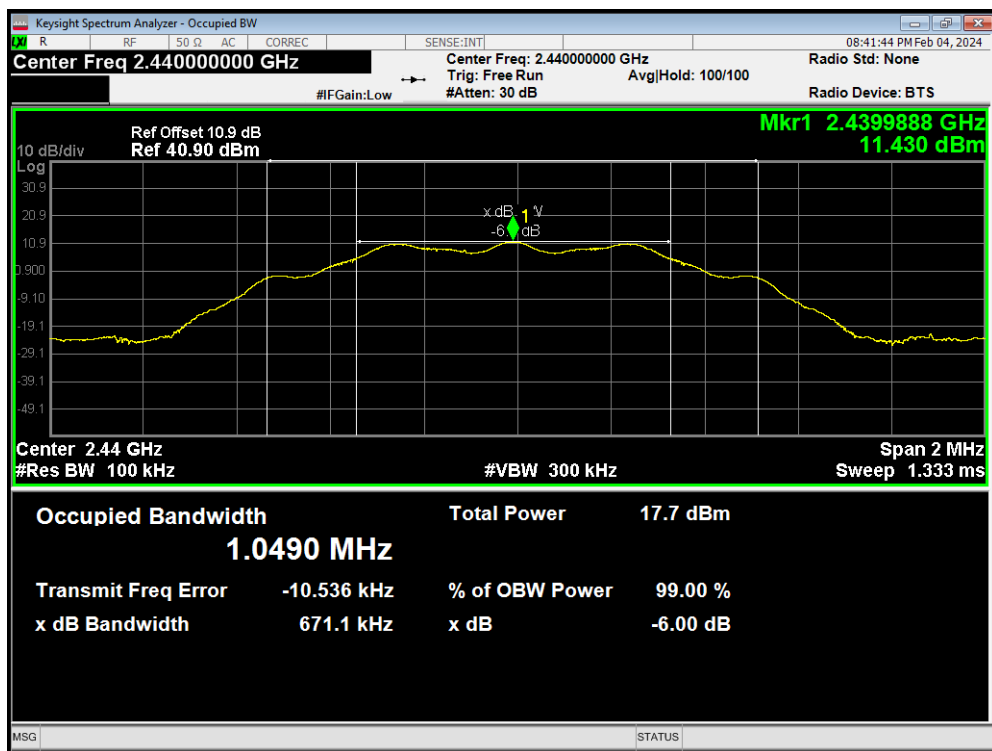
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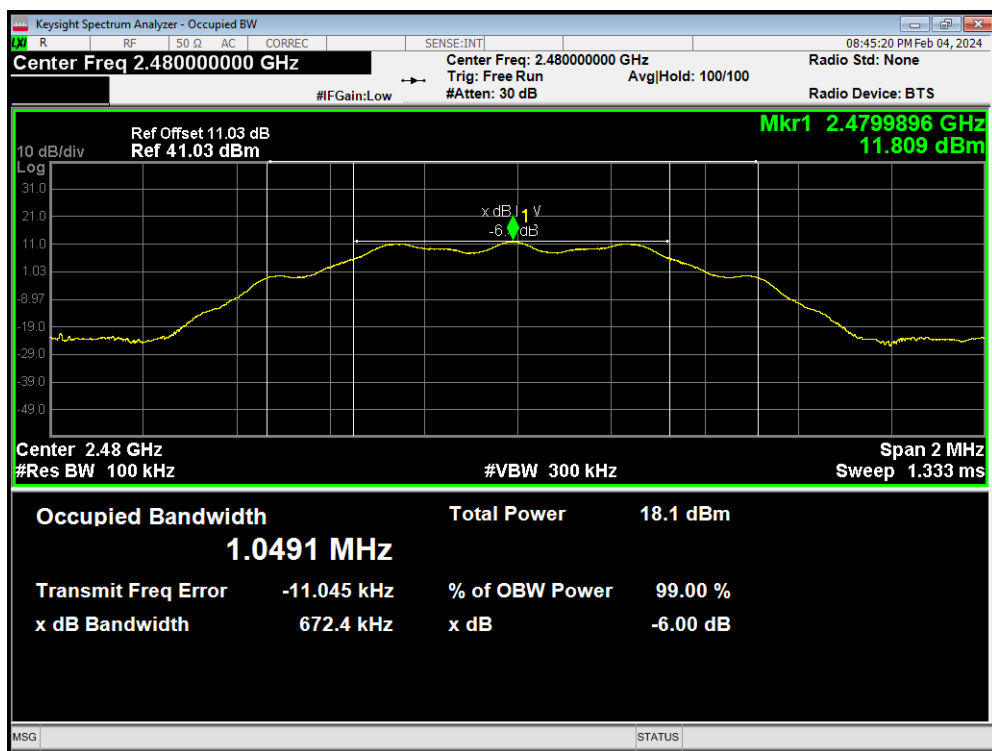
-6dB Bandwidth Bluetooth LE(S=8) 2402MHz



-6dB Bandwidth Bluetooth LE(S=8) 2440MHz



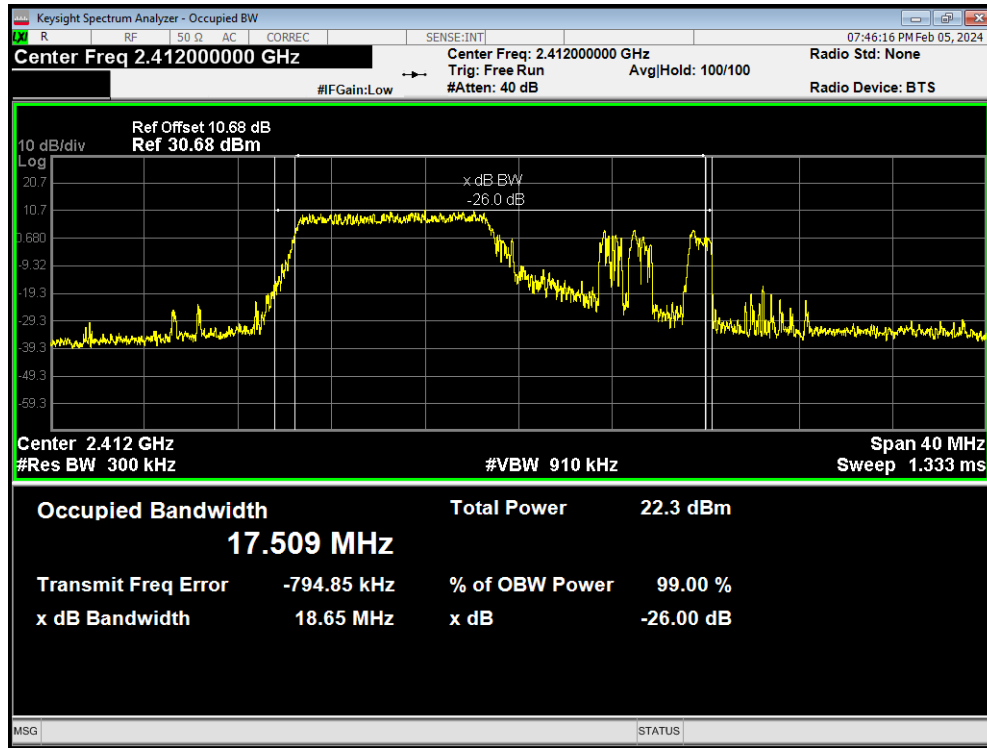
-6dB Bandwidth Bluetooth LE(S=8) 2480MHz



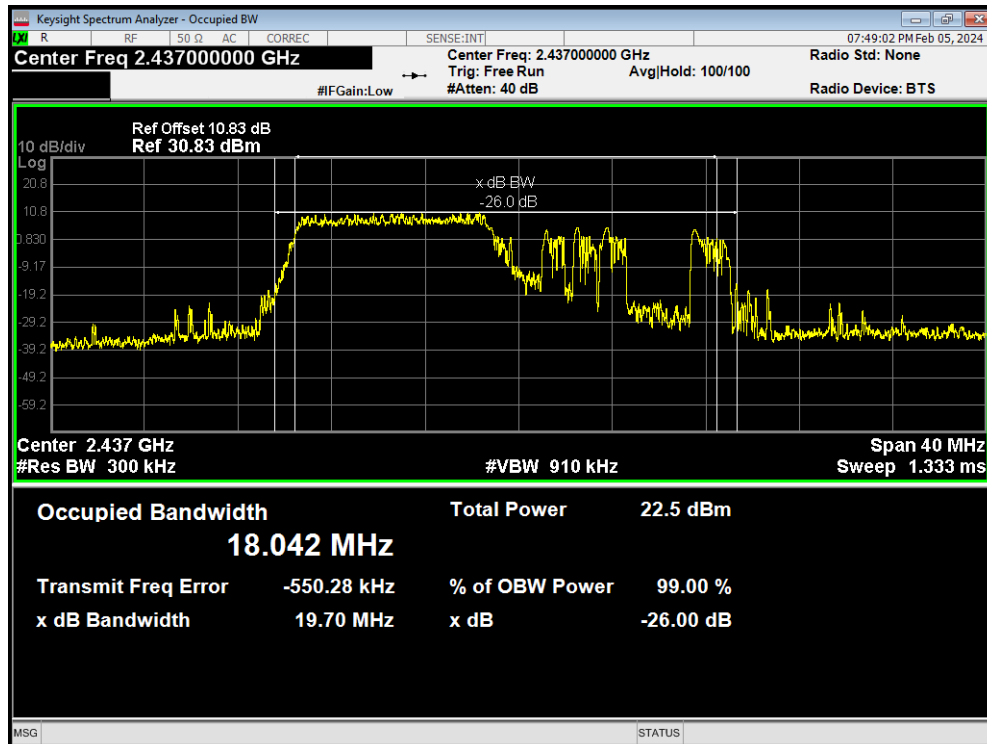
TB Mode

99%bandwidth

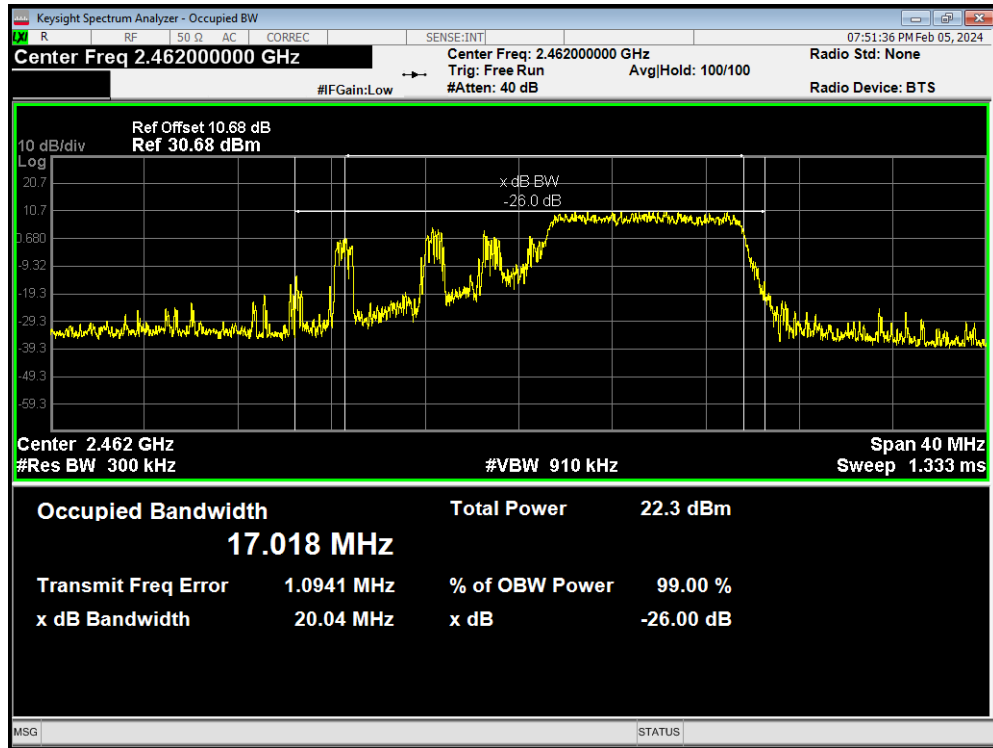
OBW 802.11ax HE20 106-Tone index53 2412MHz



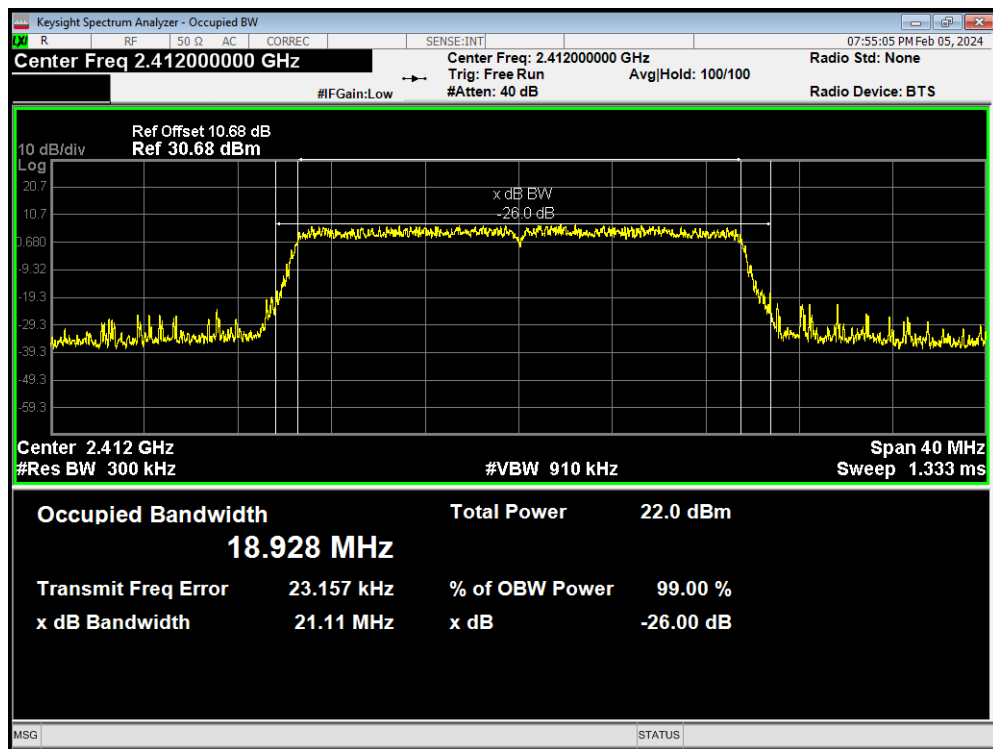
OBW 802.11ax HE20 106-Tone index53 2437MHz



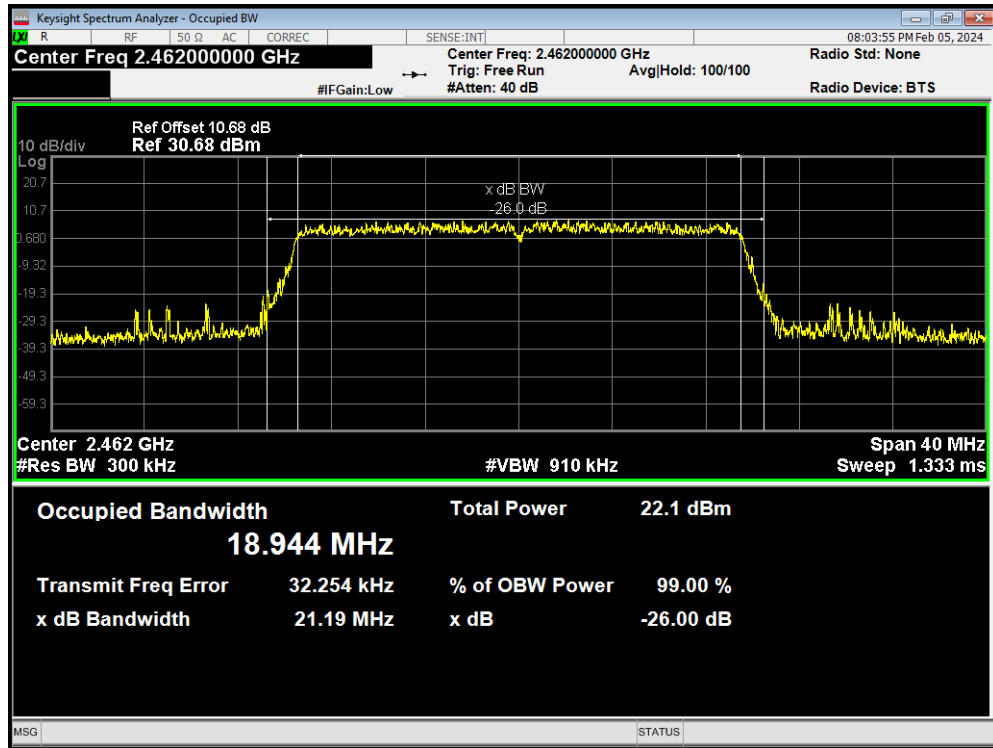
OBW 802.11ax HE20 106-Tone index54 2462MHz



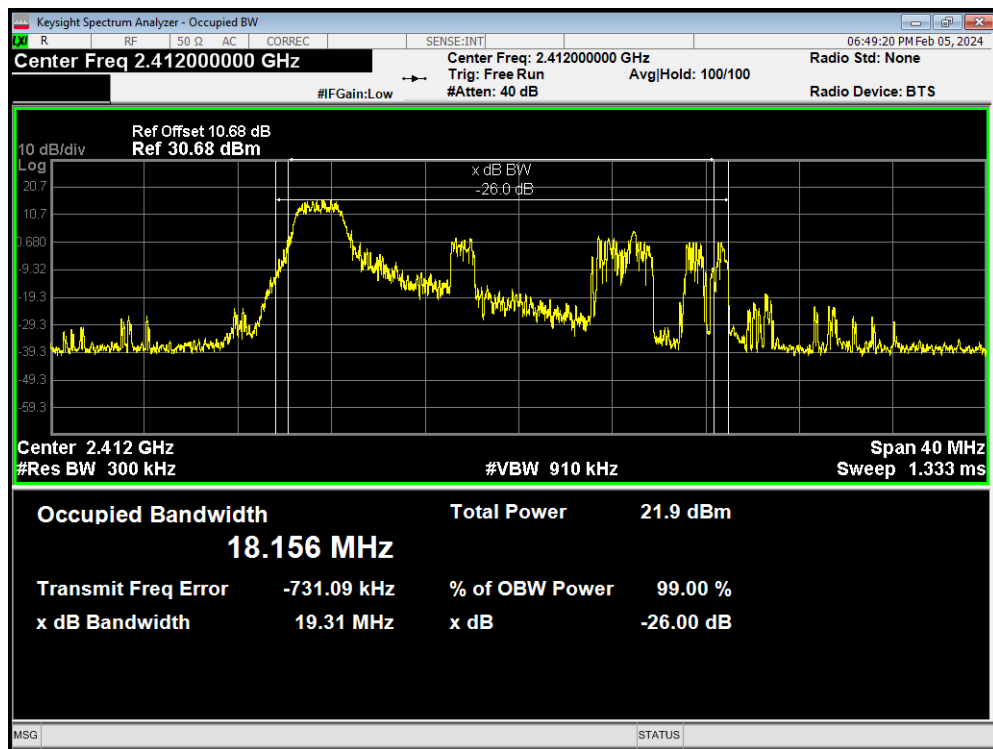
OBW 802.11ax HE20 242-Tone index61 2412MHz



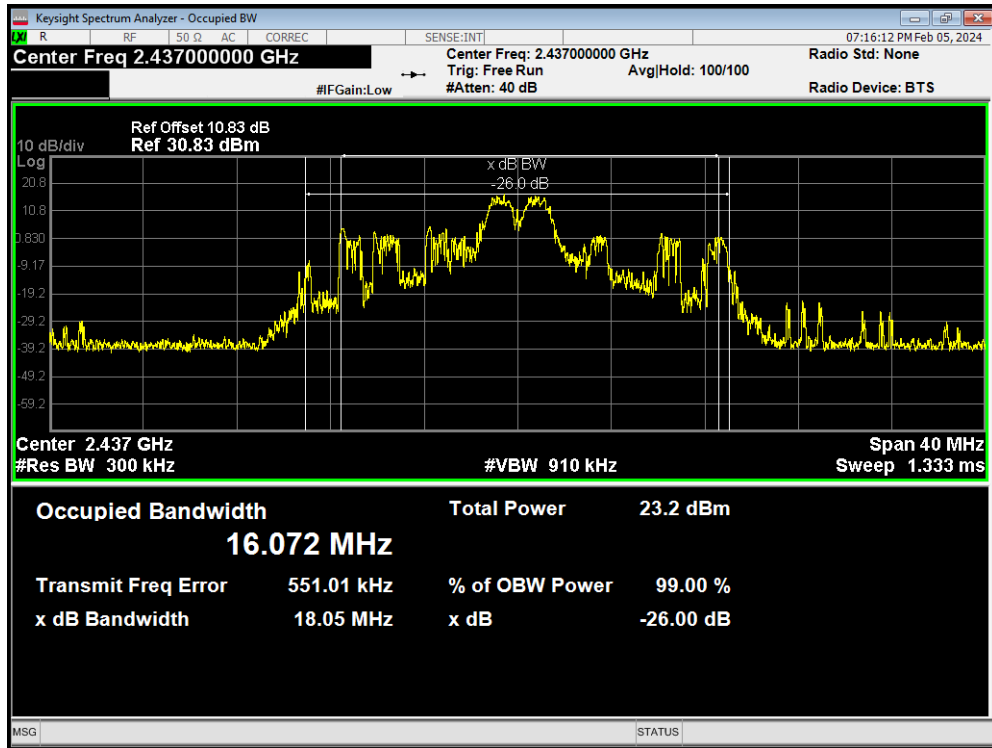
OBW 802.11ax HE20 242-Tone index61 2462MHz



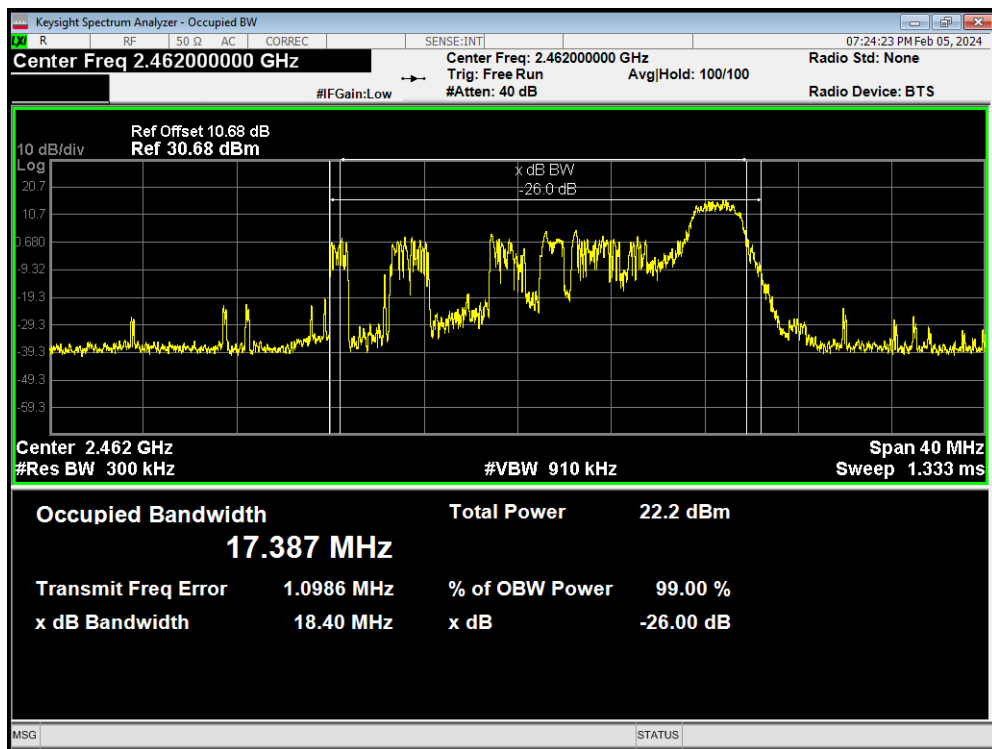
OBW 802.11ax HE20 26-Tone index0 2412MHz



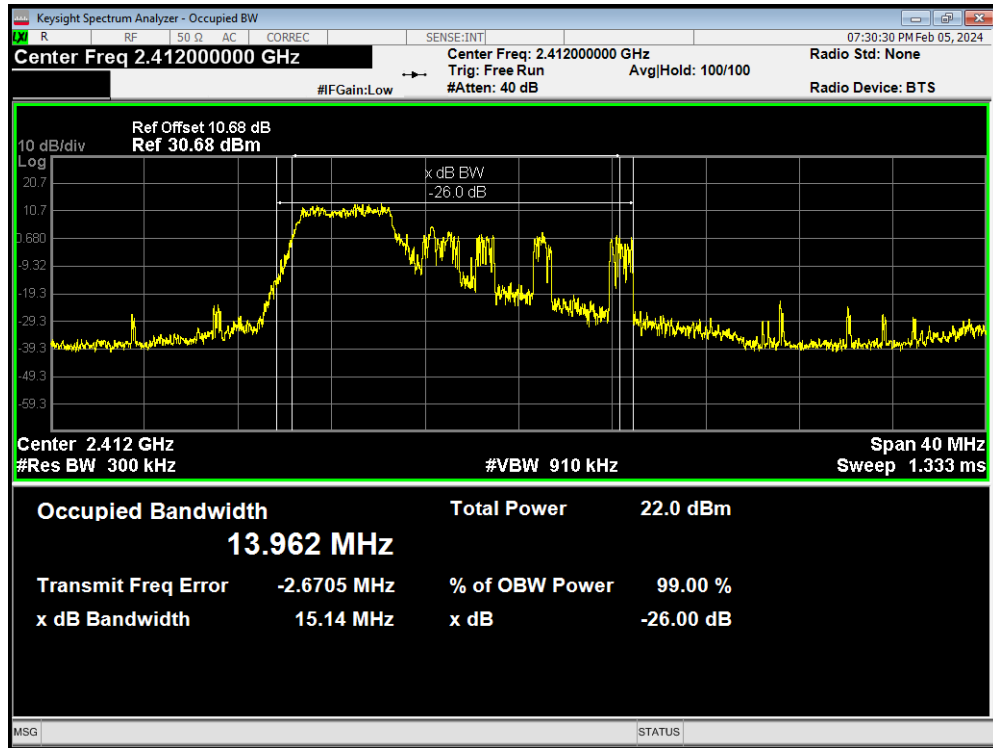
OBW 802.11ax HE20 26-Tone index4 2437MHz



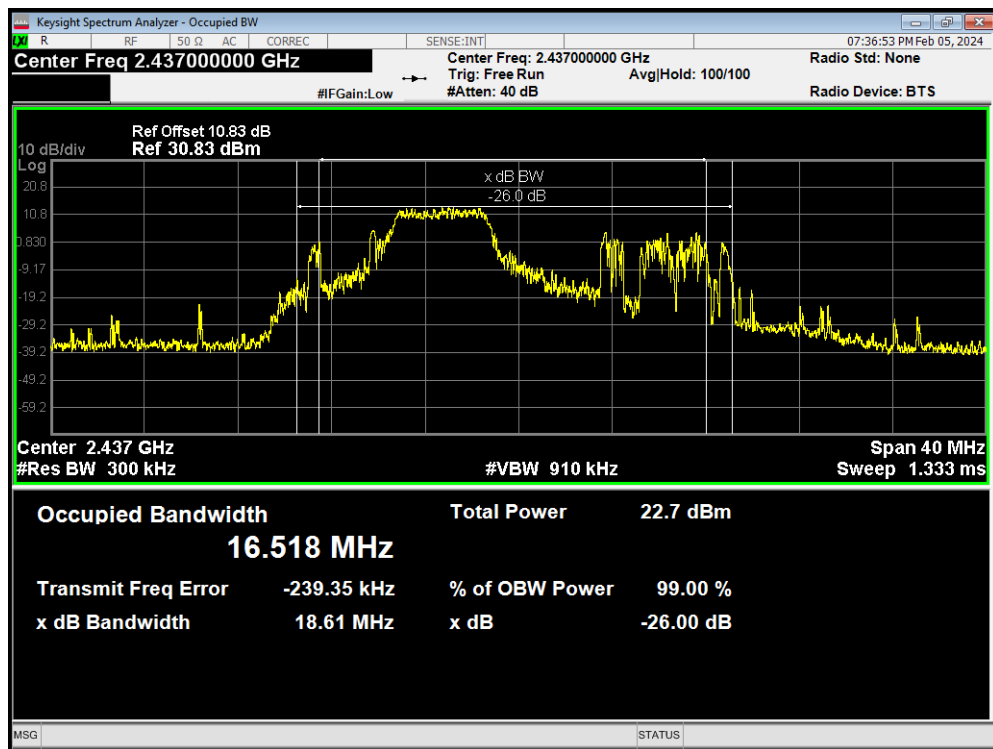
OBW 802.11ax HE20 26-Tone index8 2462MHz



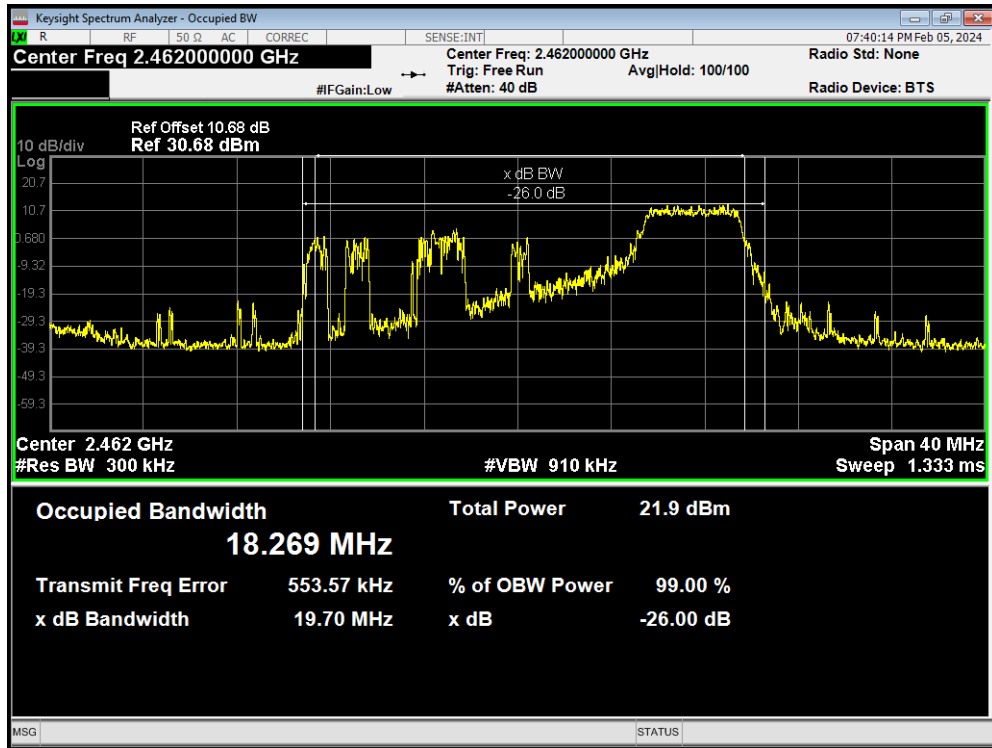
OBW 802.11ax HE20 52-Tone index37 2412MHz



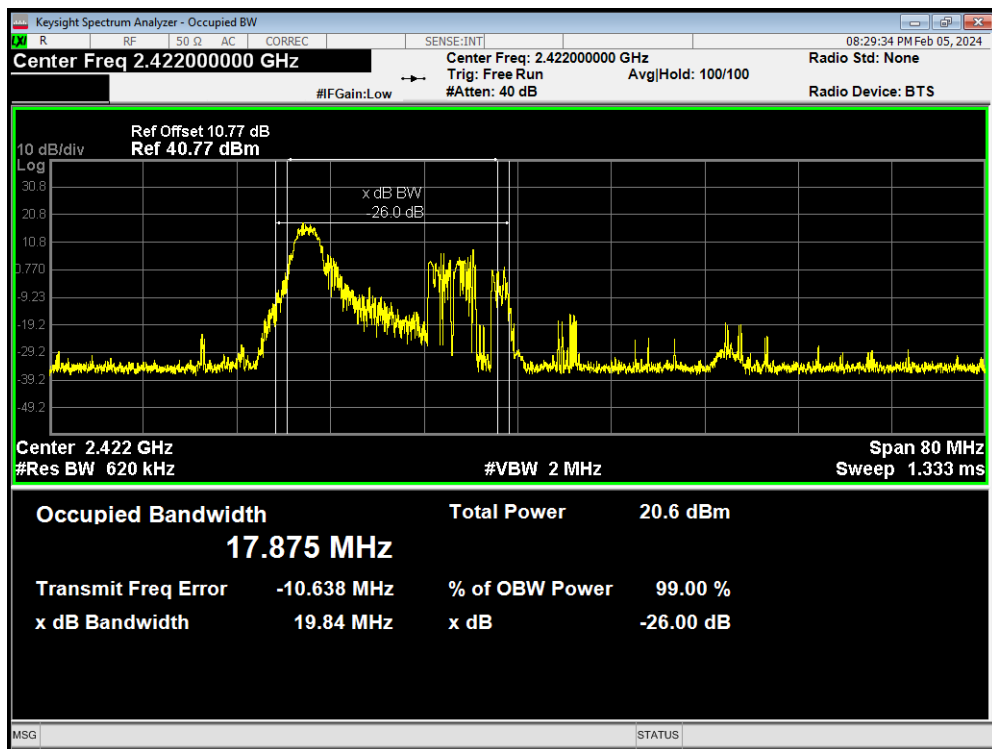
OBW 802.11ax HE20 52-Tone index38 2437MHz



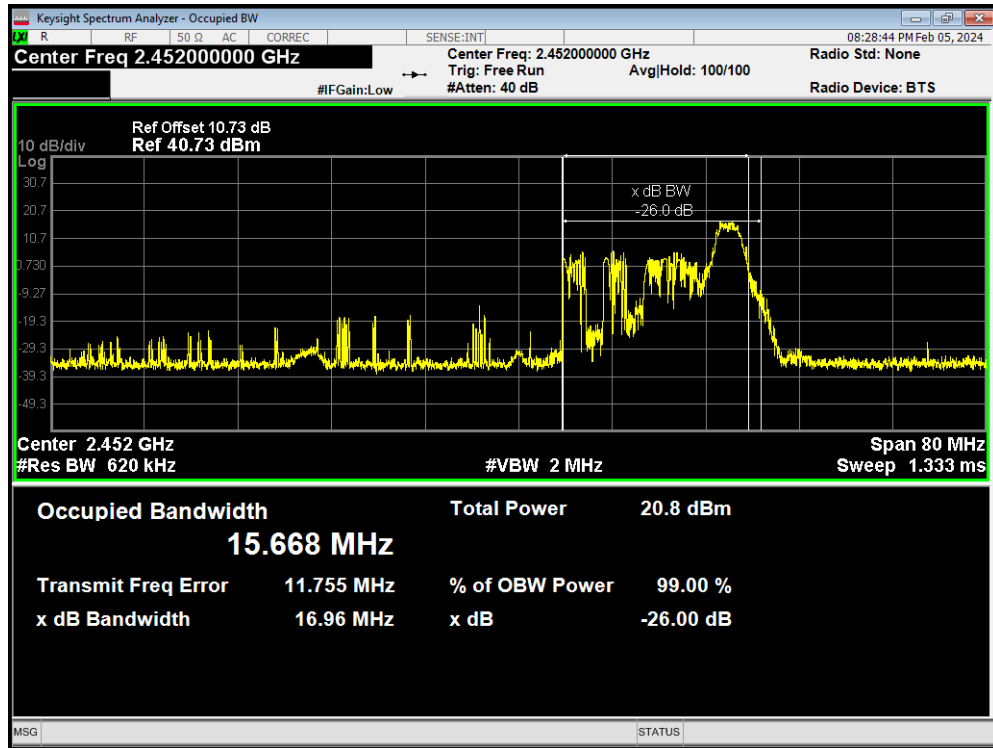
OBW 802.11ax HE20 52-Tone index40 2462MHz



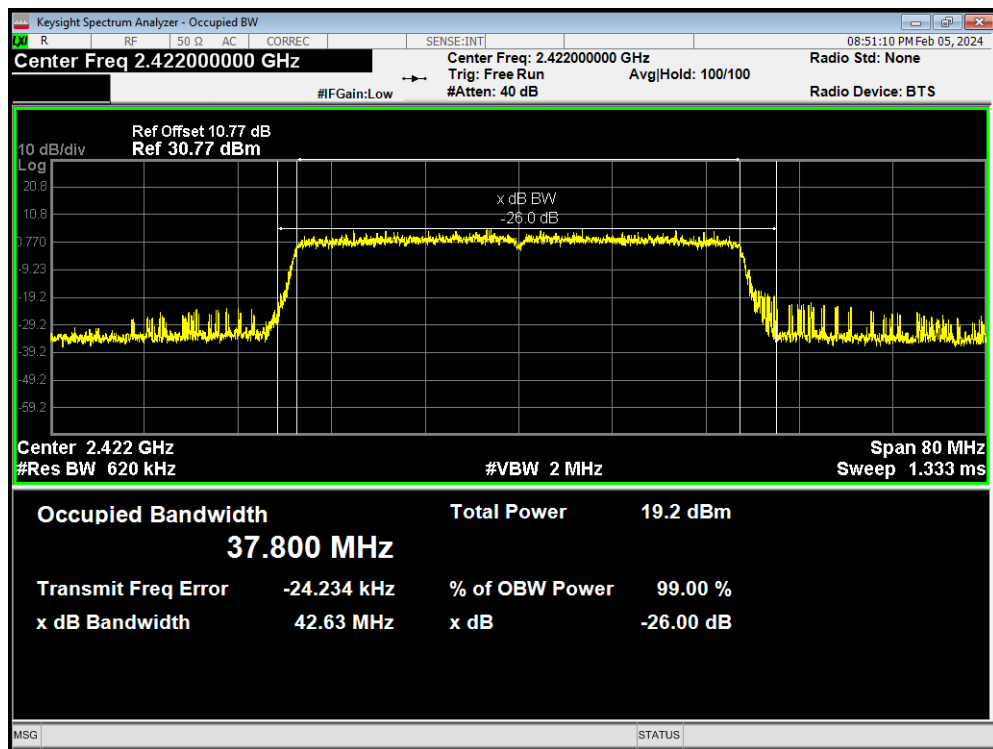
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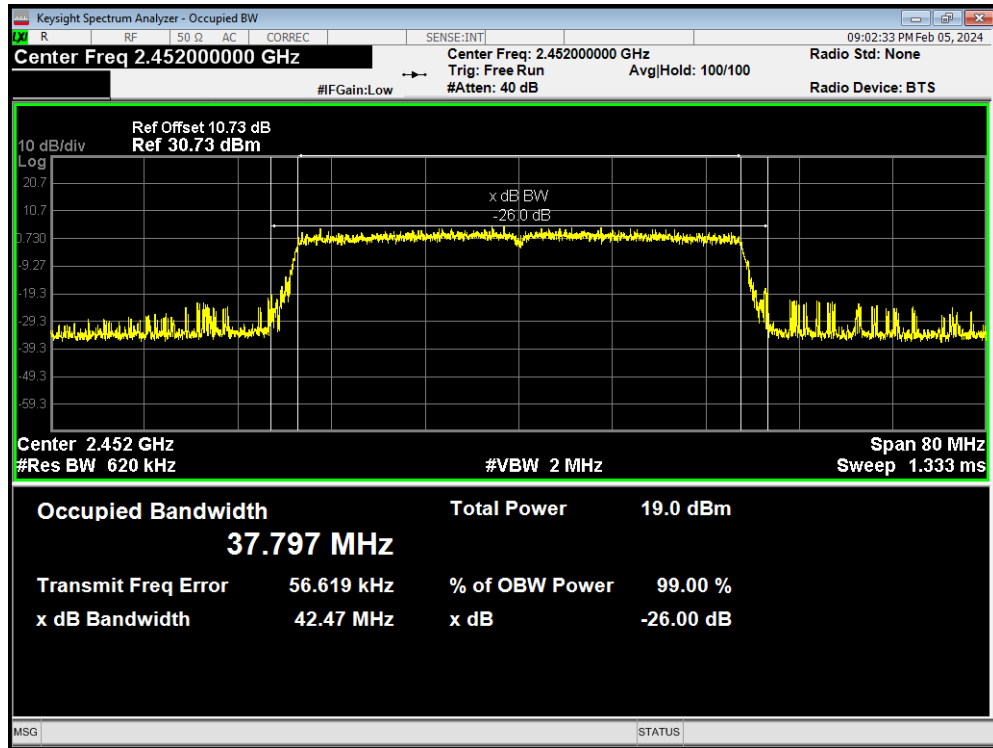
OBW 802.11ax HE40 26-Tone index17 2452MHz



OBW 802.11ax HE40 484-Tone index65 2422MHz

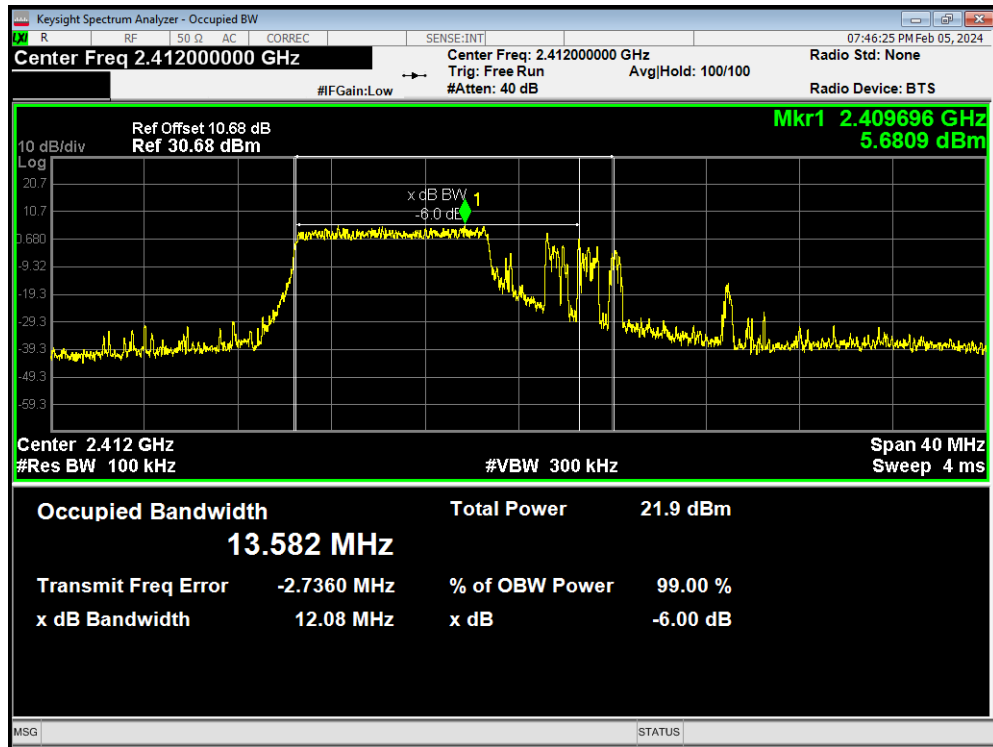


OBW 802.11ax HE40 484-Tone index65 2452MHz

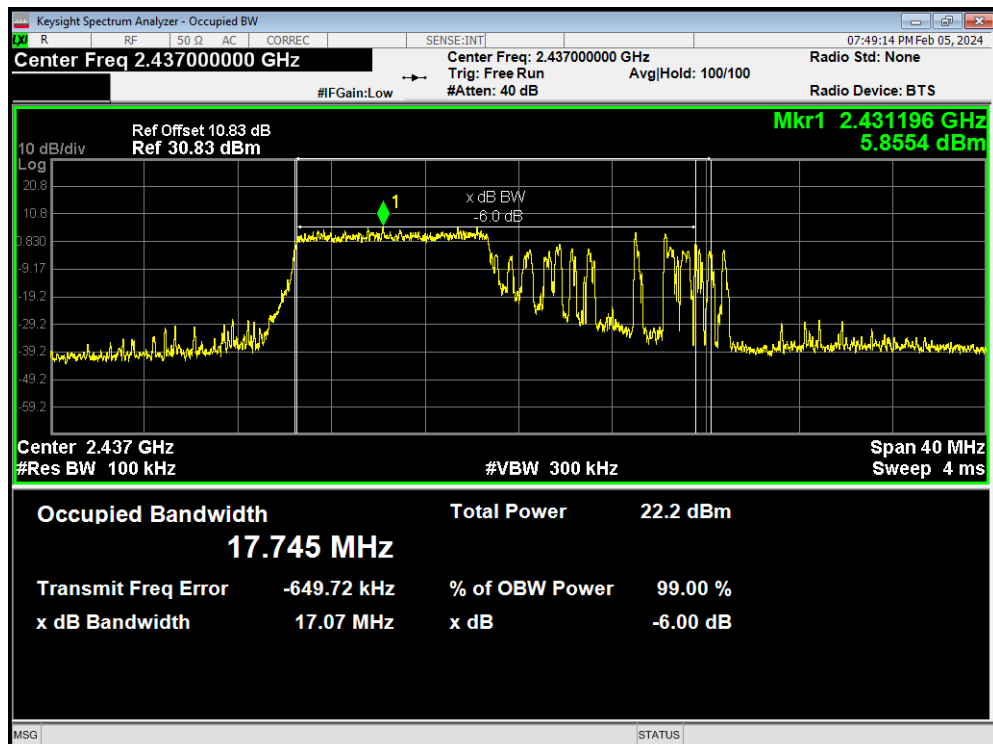


-6dB Bandwidth

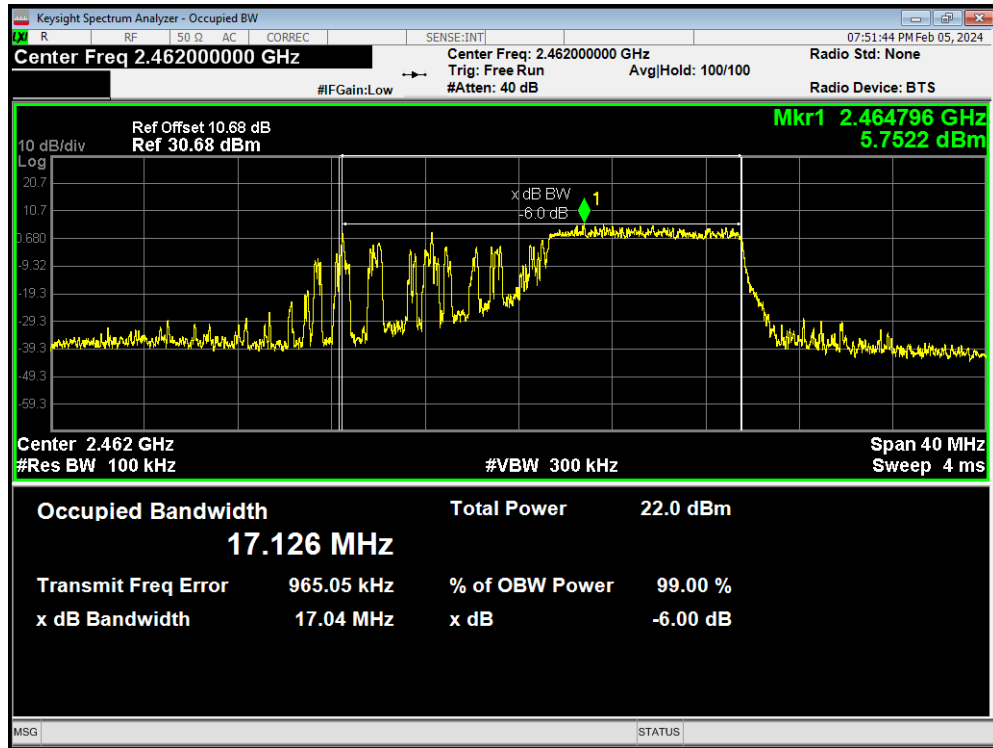
-6dB Bandwidth 802.11ax HE20 106-Tone index53 2412MHz



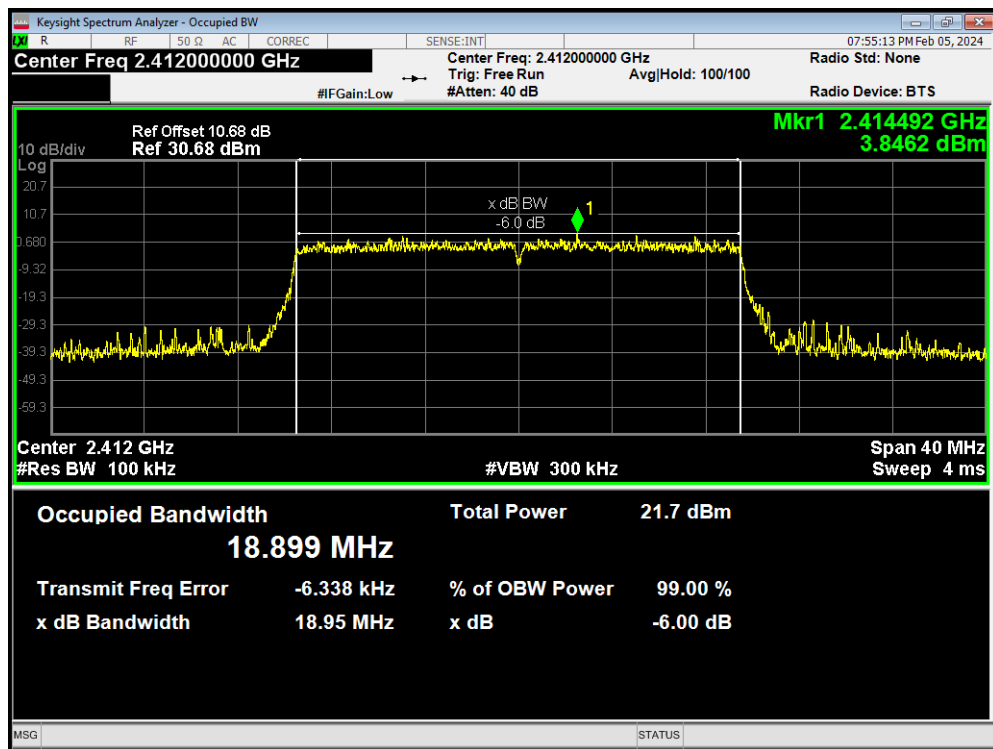
-6dB Bandwidth 802.11ax HE20 106-Tone index53 2437MHz



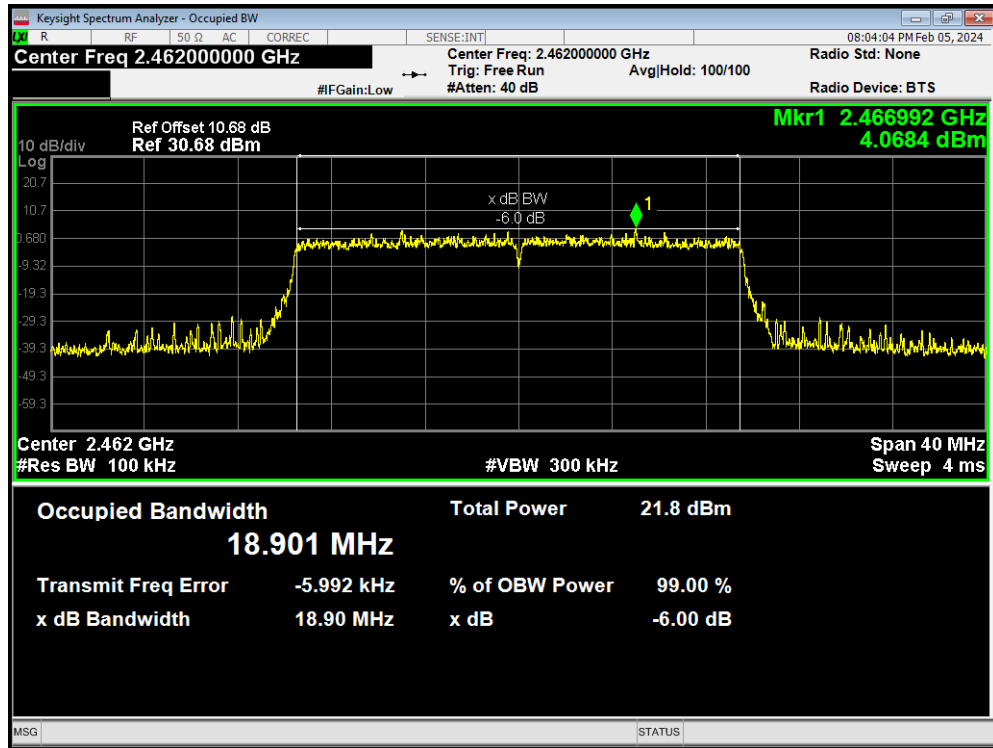
-6dB Bandwidth 802.11ax HE20 106-Tone index54 2462MHz



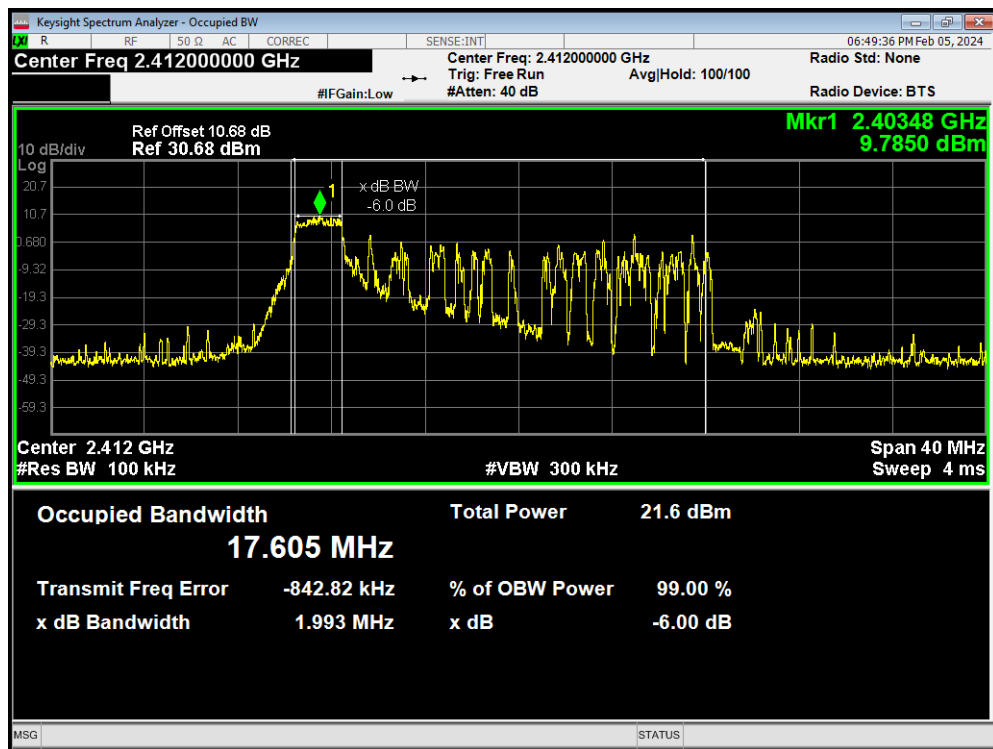
-6dB Bandwidth 802.11ax HE20 242-Tone index61 2412MHz



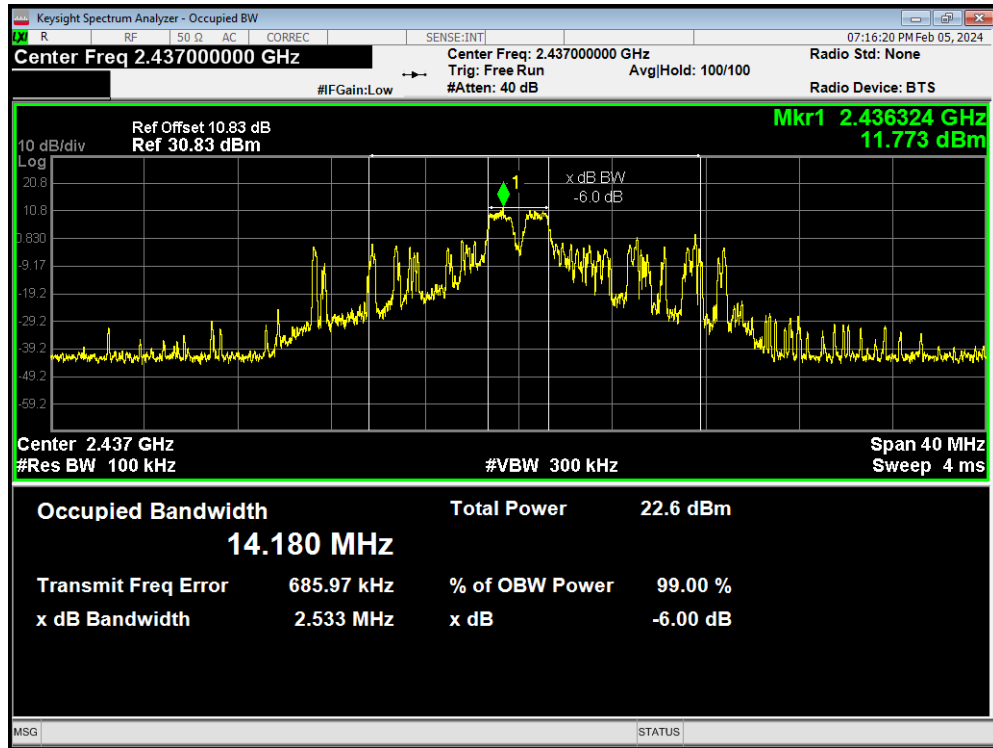
-6dB Bandwidth 802.11ax HE20 242-Tone index61 2462MHz



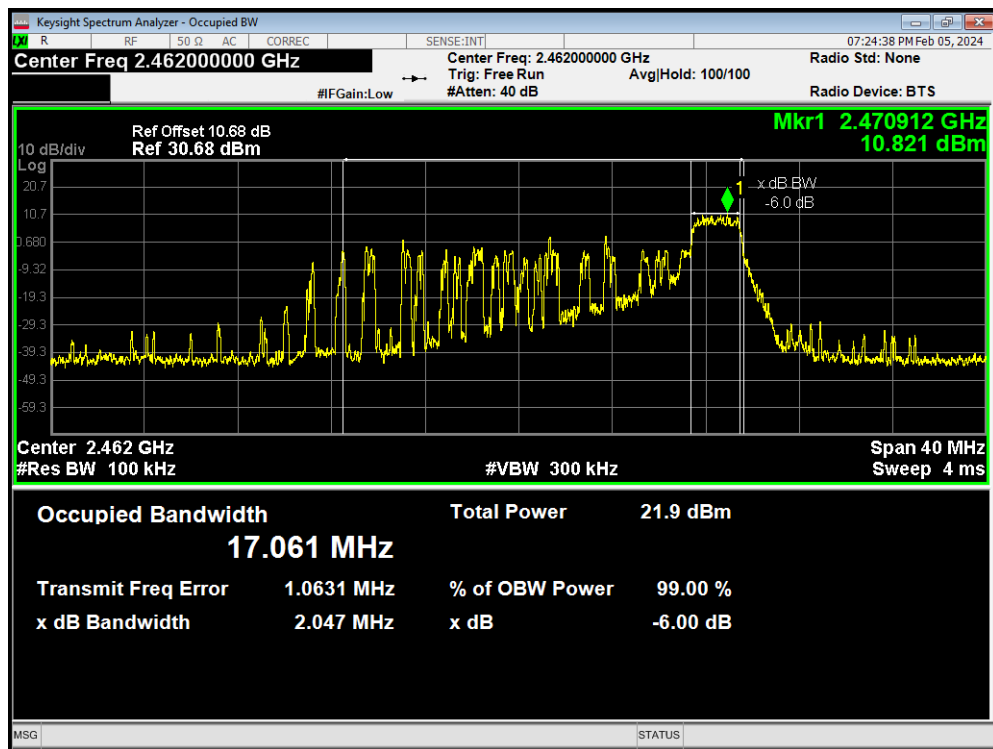
-6dB Bandwidth 802.11ax HE20 26-Tone index0 2412MHz



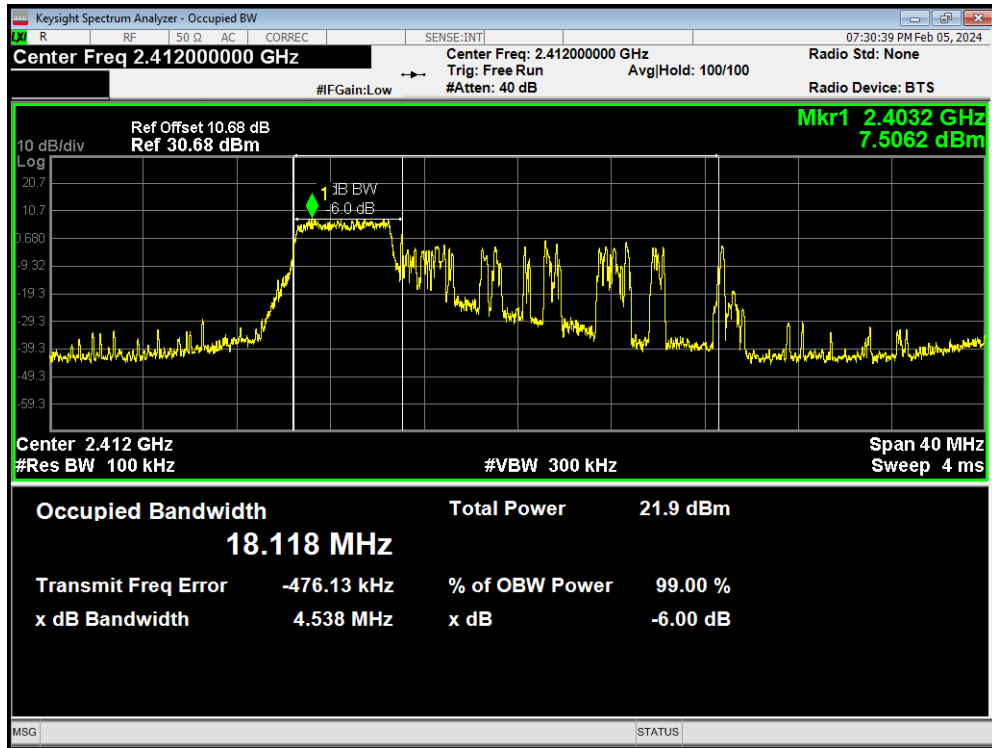
-6dB Bandwidth 802.11ax HE20 26-Tone index4 2437MHz



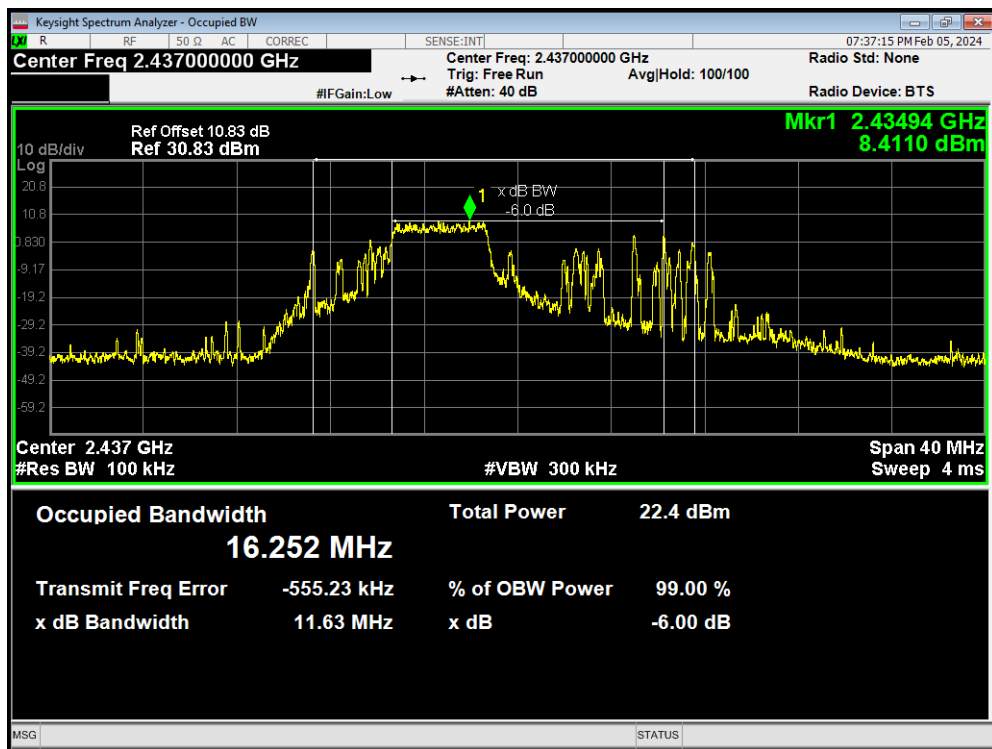
-6dB Bandwidth 802.11ax HE20 26-Tone index8 2462MHz



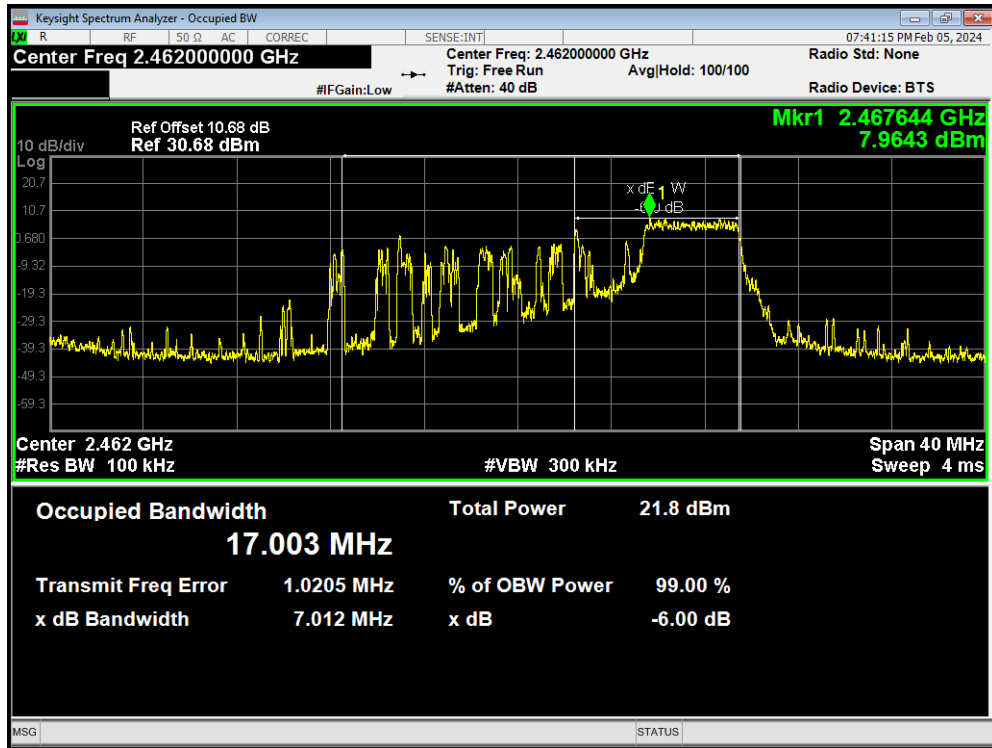
-6dB Bandwidth 802.11ax HE20 52-Tone index37 2412MHz



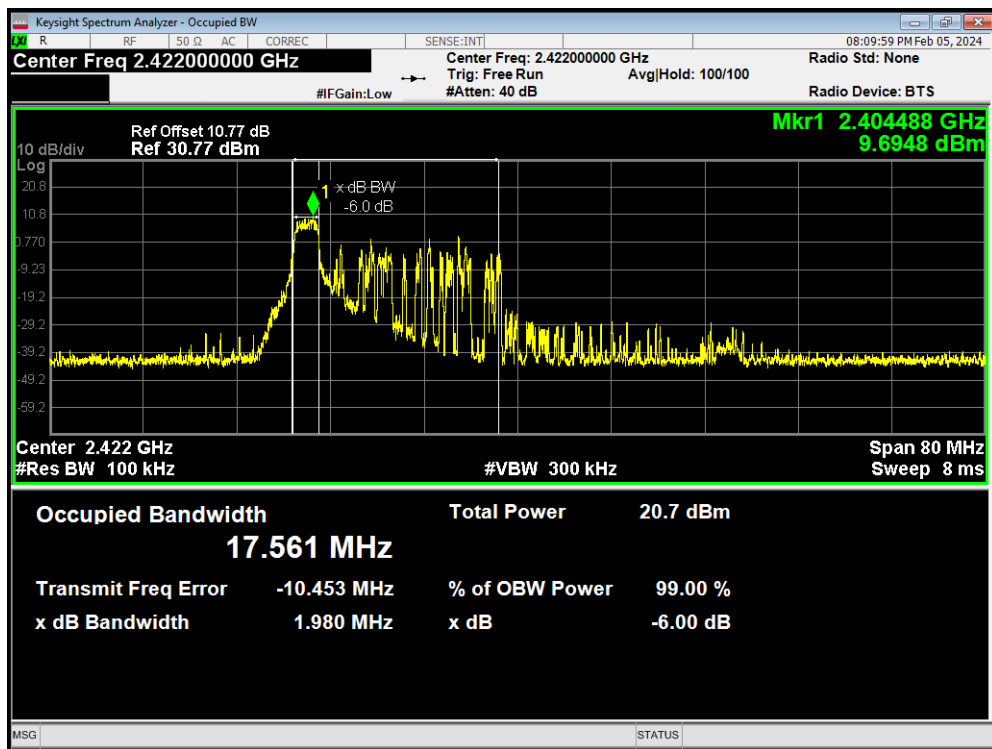
-6dB Bandwidth 802.11ax HE20 52-Tone index38 2437MHz



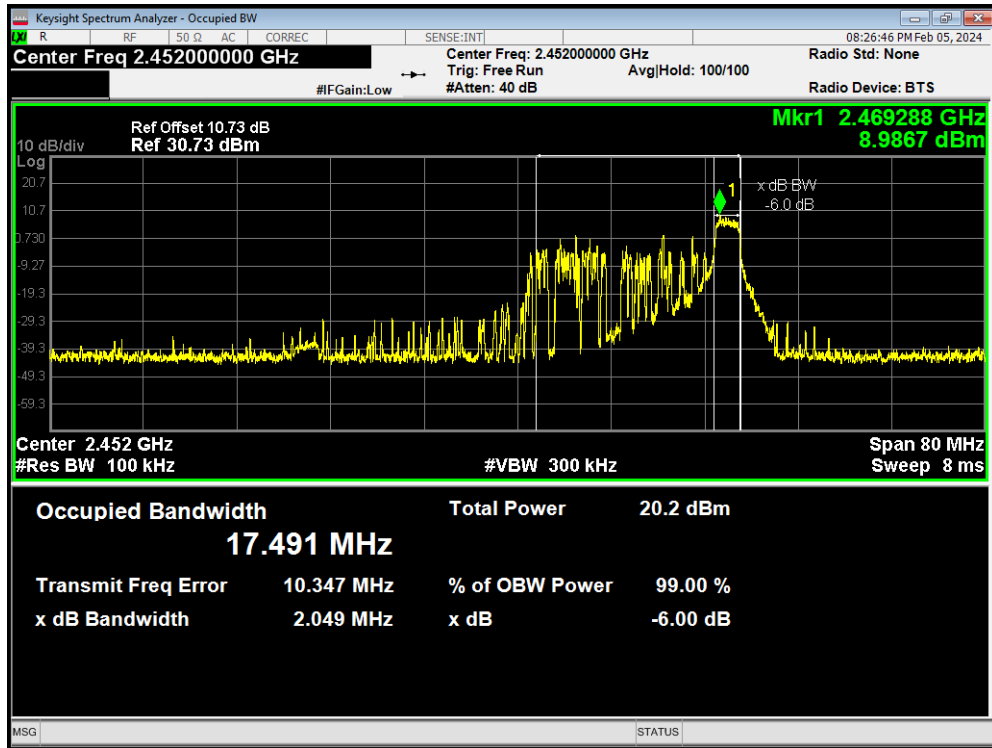
-6dB Bandwidth 802.11ax HE20 52-Tone index40 2462MHz



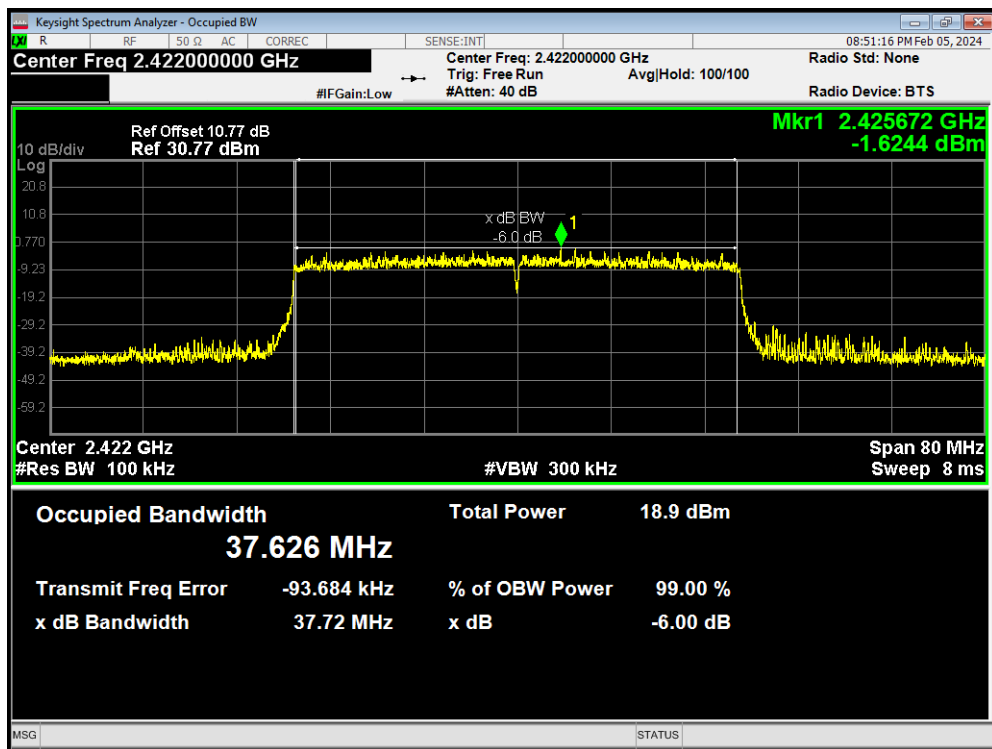
-6dB Bandwidth 802.11ax HE40 26-Tone index0 2422MHz



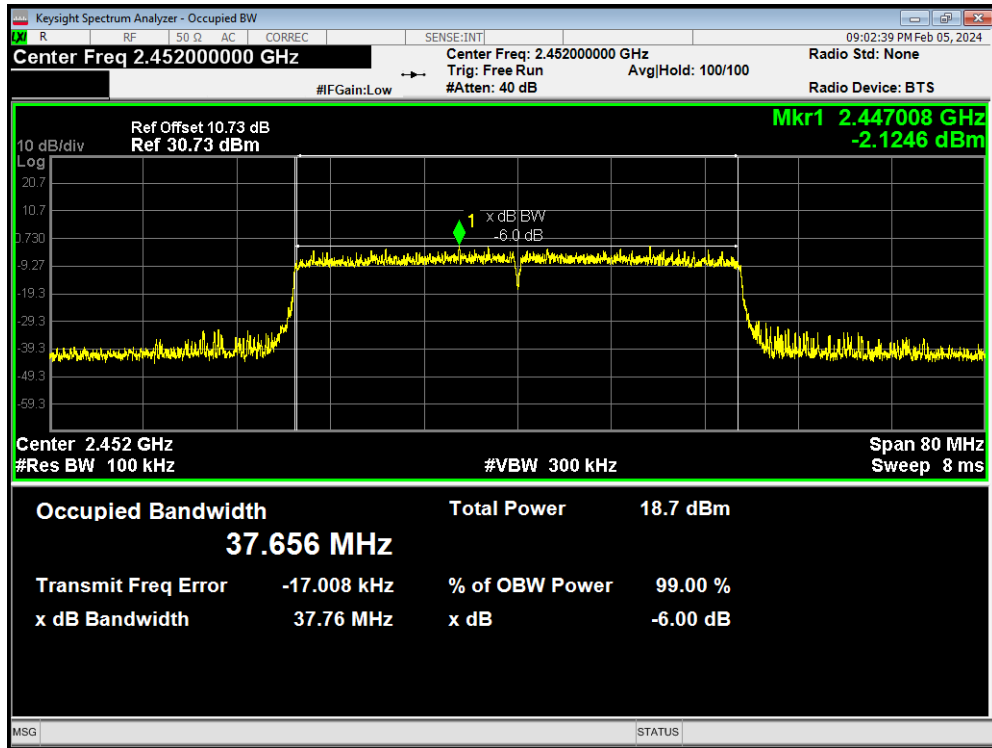
-6dB Bandwidth 802.11ax HE40 26-Tone index17 2452MHz



-6dB Bandwidth 802.11ax HE40 484-Tone index65 2422MHz



-6dB Bandwidth 802.11ax HE40 484-Tone index65 2452MHz



5.3. Band Edge

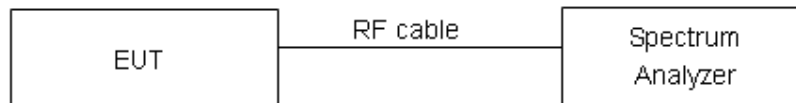
Ambient Condition

Temperature	Relative humidity
15°C ~ 35°C	20% ~ 80%

Method of Measurement

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable the band edge of the lowest and highest channels were measured. The peak detector is used and RBW is set to 100 kHz and VBW is set to 300 kHz on spectrum analyzer. Spectrum analyzer plots are included on the following pages.

Test Setup



Limits

Rule Part 15.247(d) specifies that “In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.” If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.”

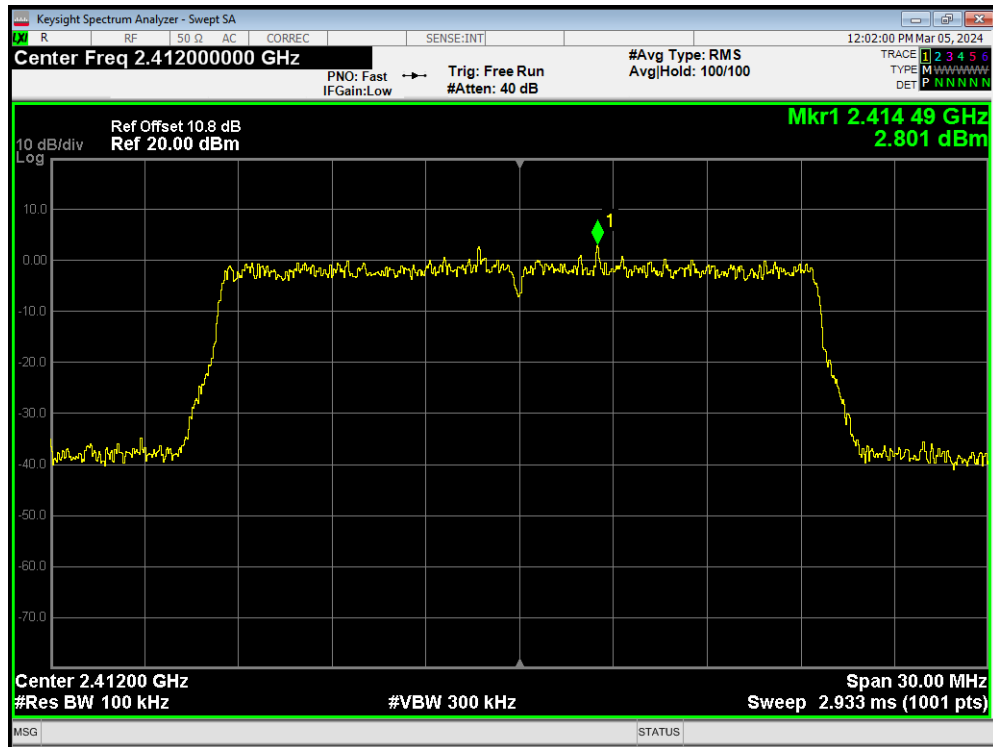
Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

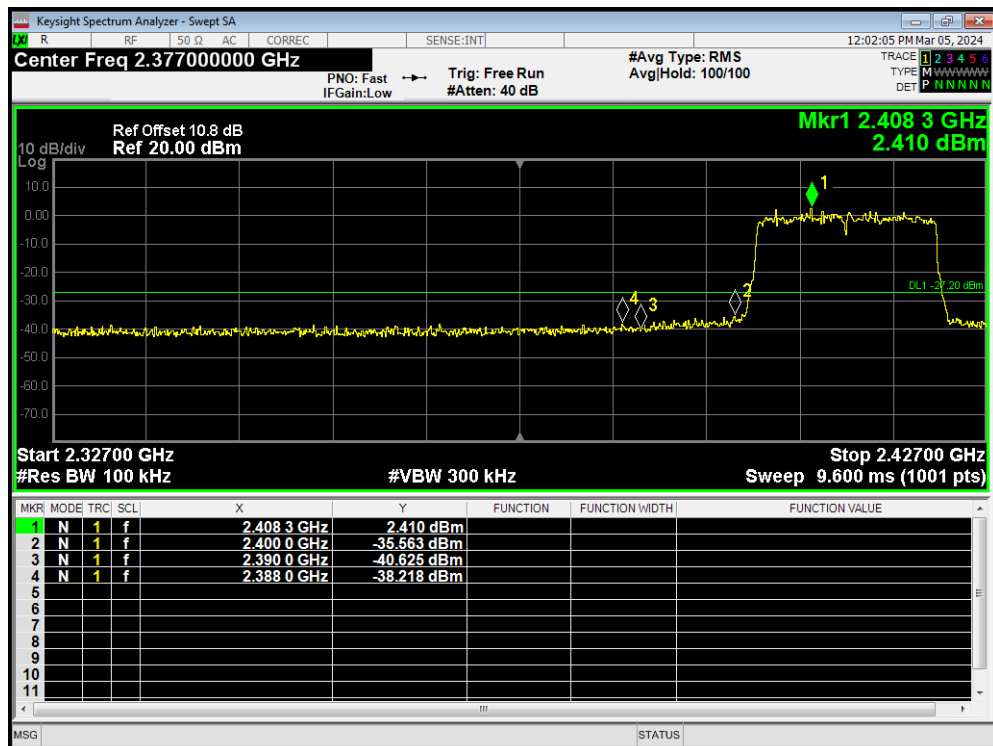
Frequency	Uncertainty
2GHz-3GHz	1.407 dB

Test Results: PASS

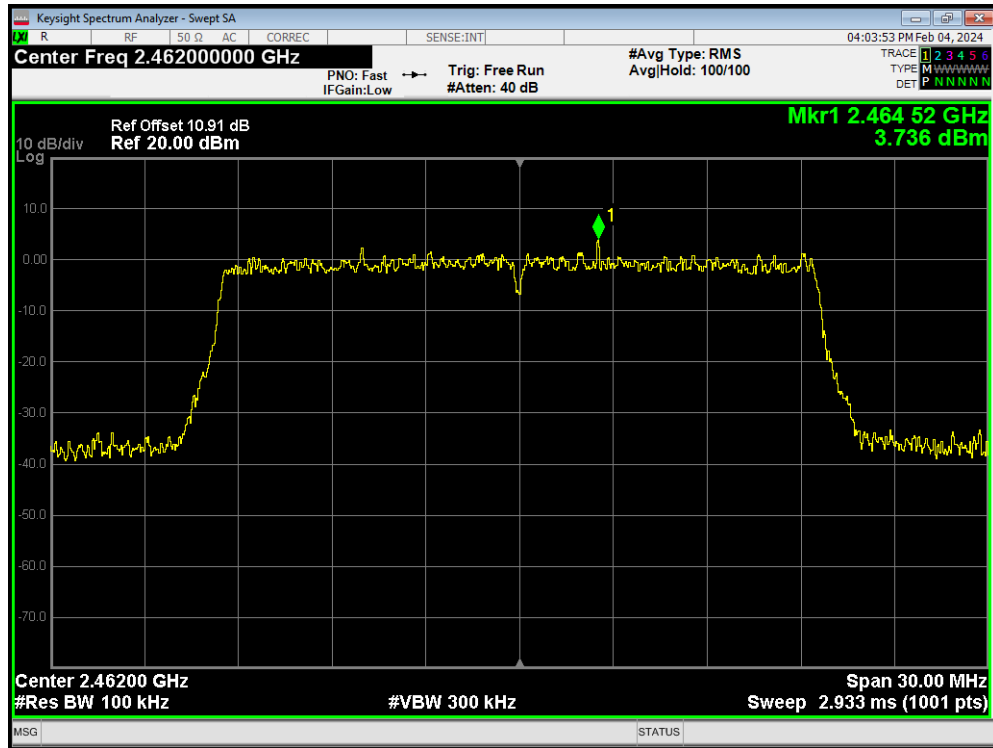
Band Edge 802.11ax(HE20) 2412MHz Ref



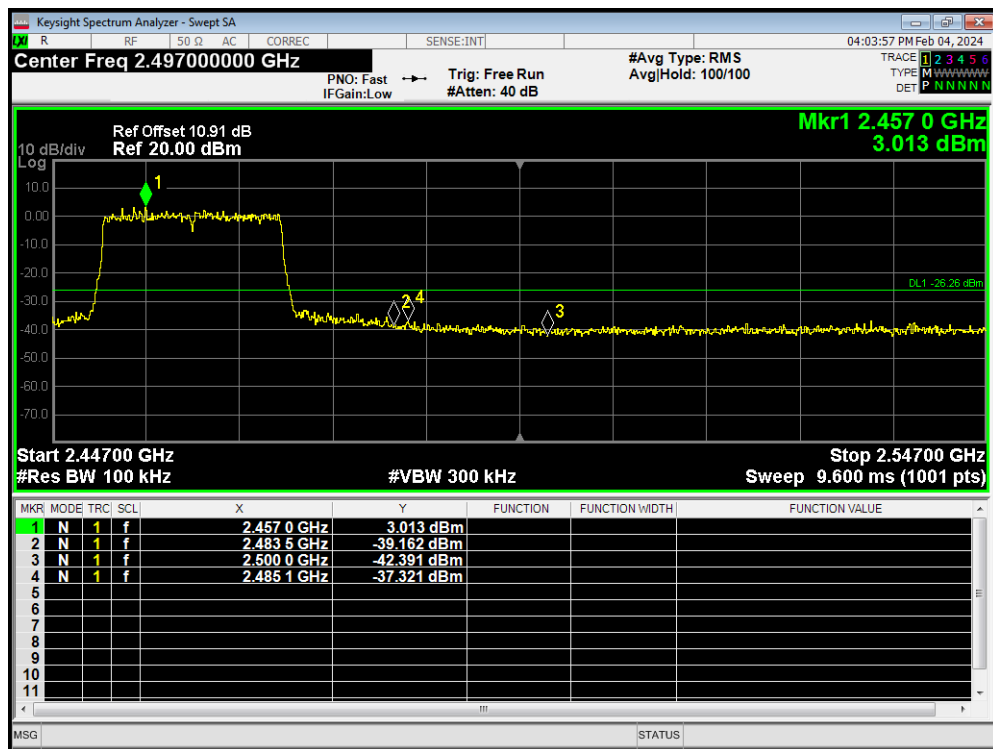
Band Edge 802.11ax(HE20) 2412MHz Emission



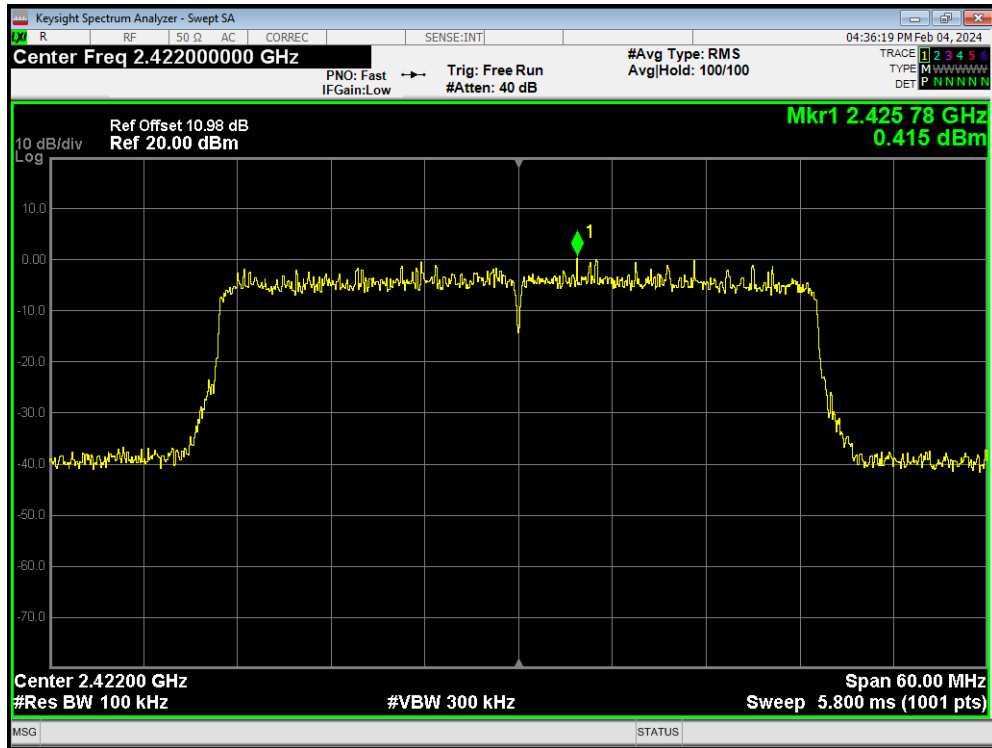
Band Edge 802.11ax(HE20) 2462MHz Ref



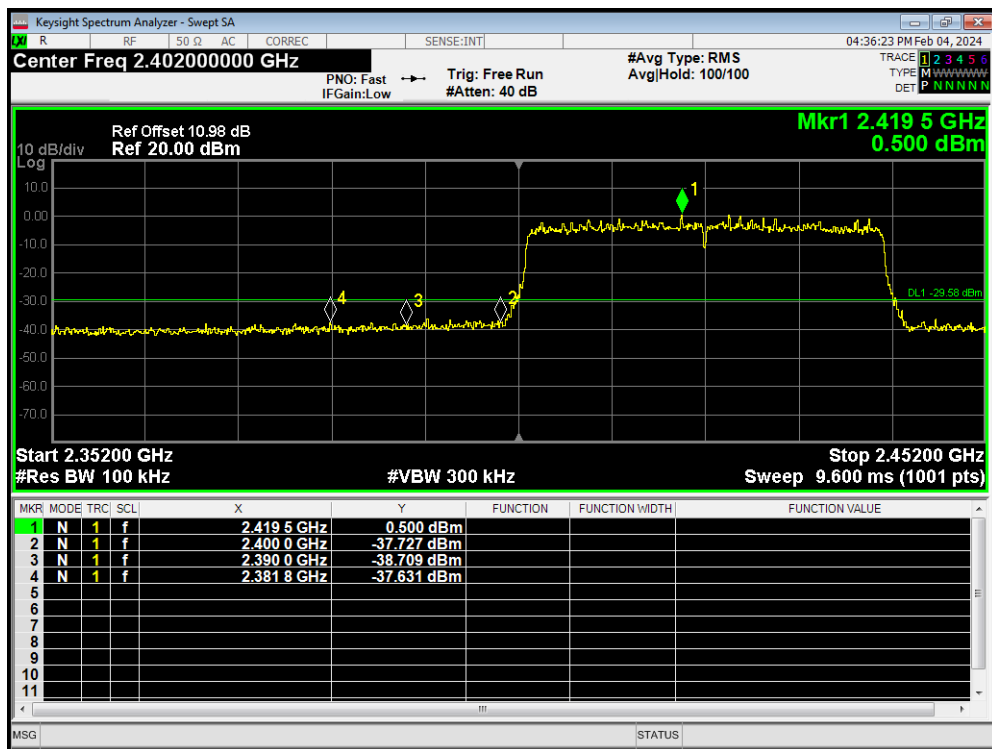
Band Edge 802.11ax(HE20) 2462MHz Emission



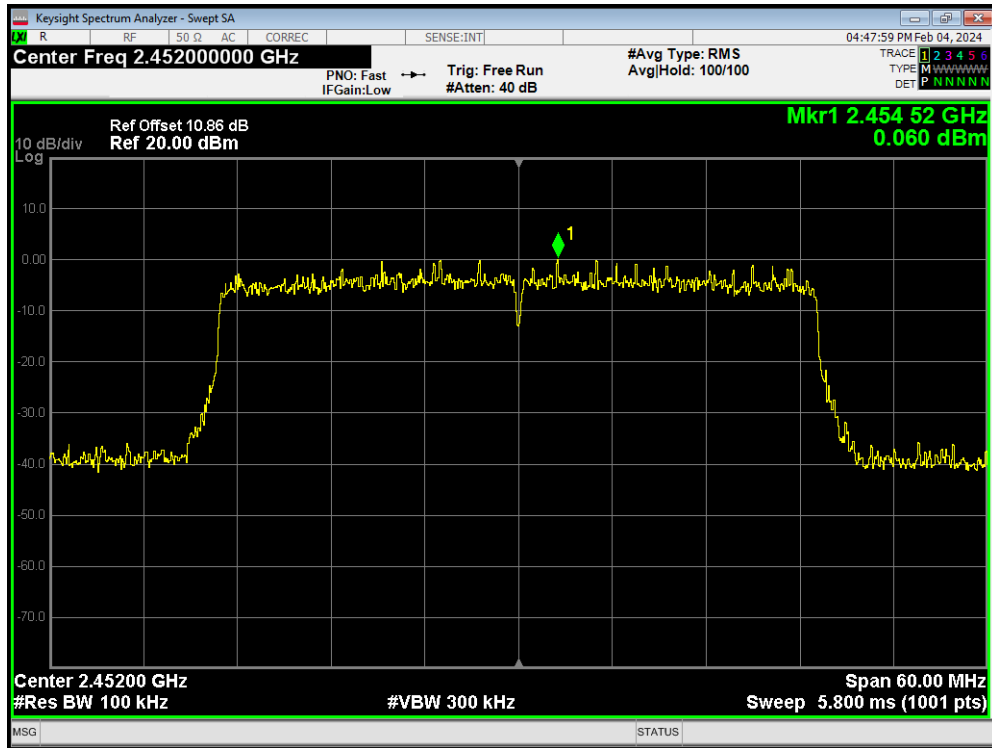
Band Edge 802.11ax(HE40) 2422MHz Ref



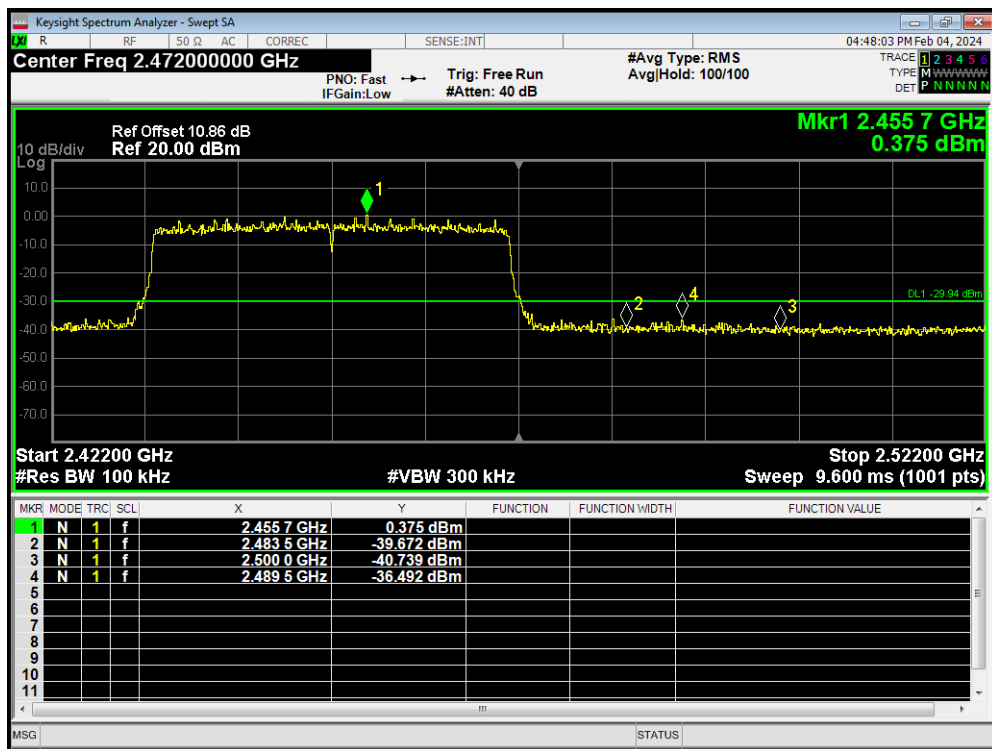
Band Edge 802.11ax(HE40) 2422MHz Emission



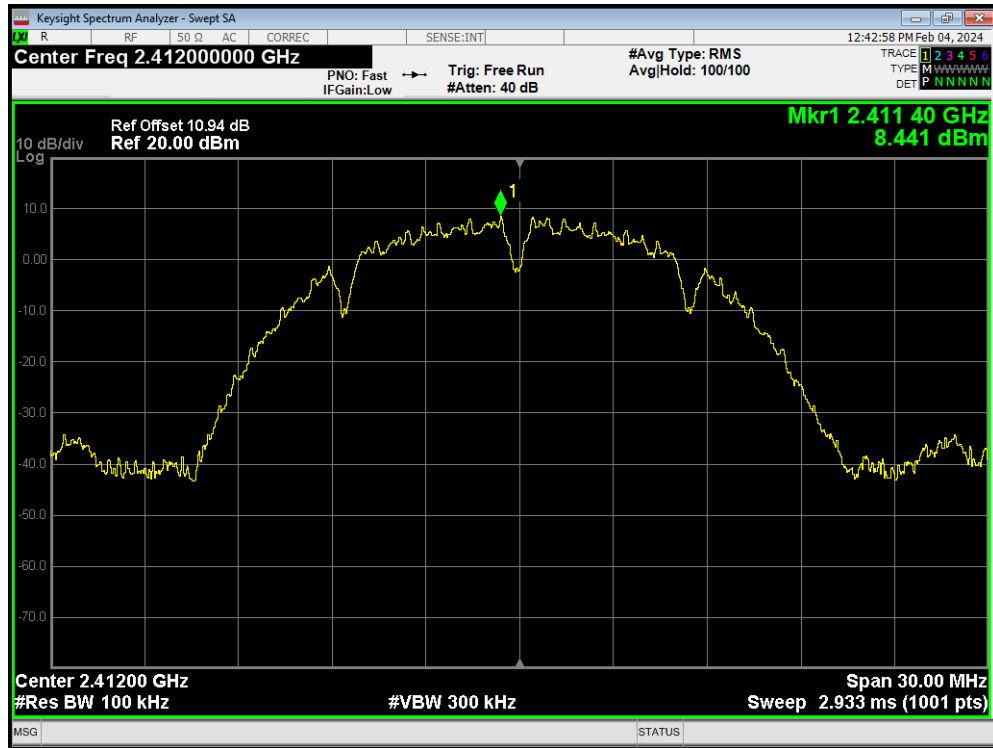
Band Edge 802.11ax(HE40) 2452MHz Ref



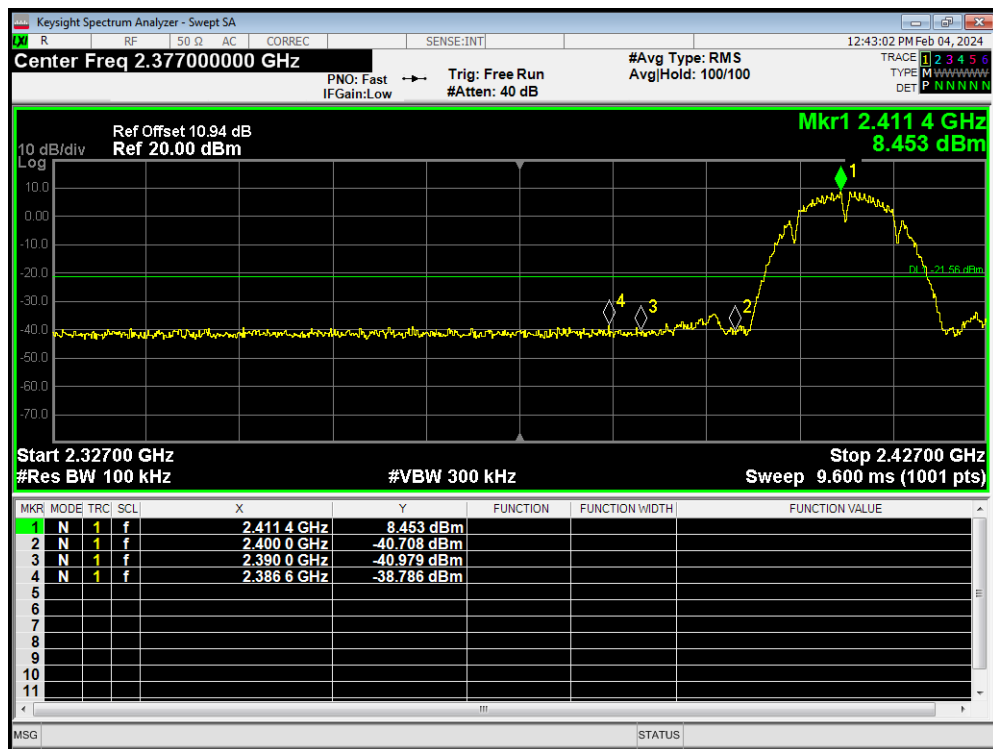
Band Edge 802.11ax(HE40) 2452MHz Emission



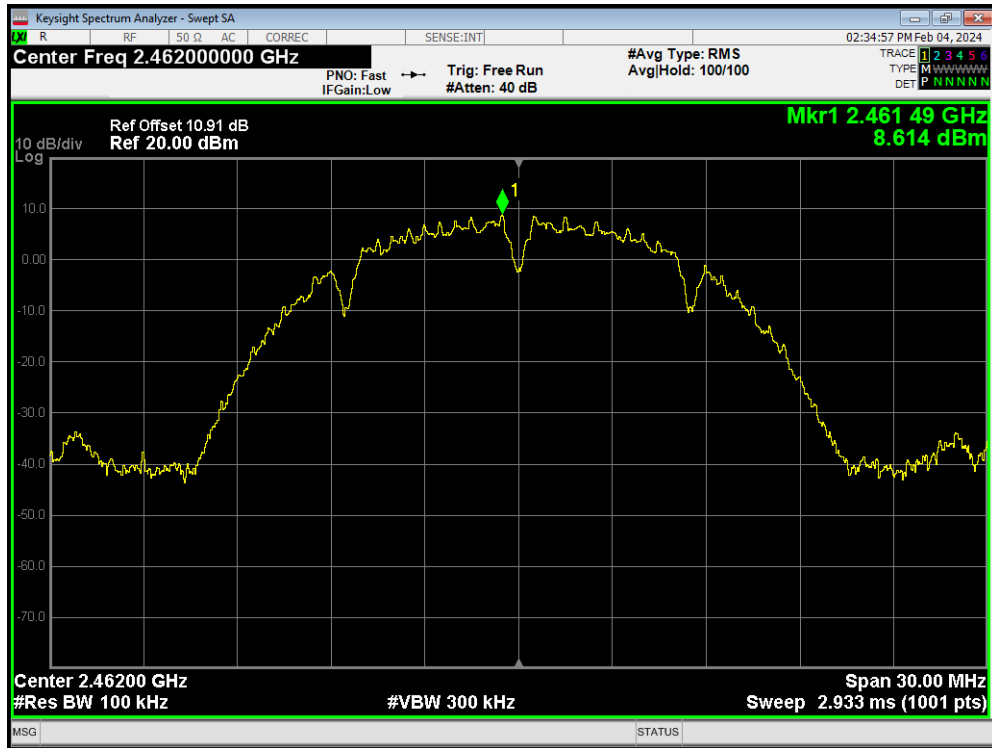
Band Edge 802.11b 2412MHz Ref



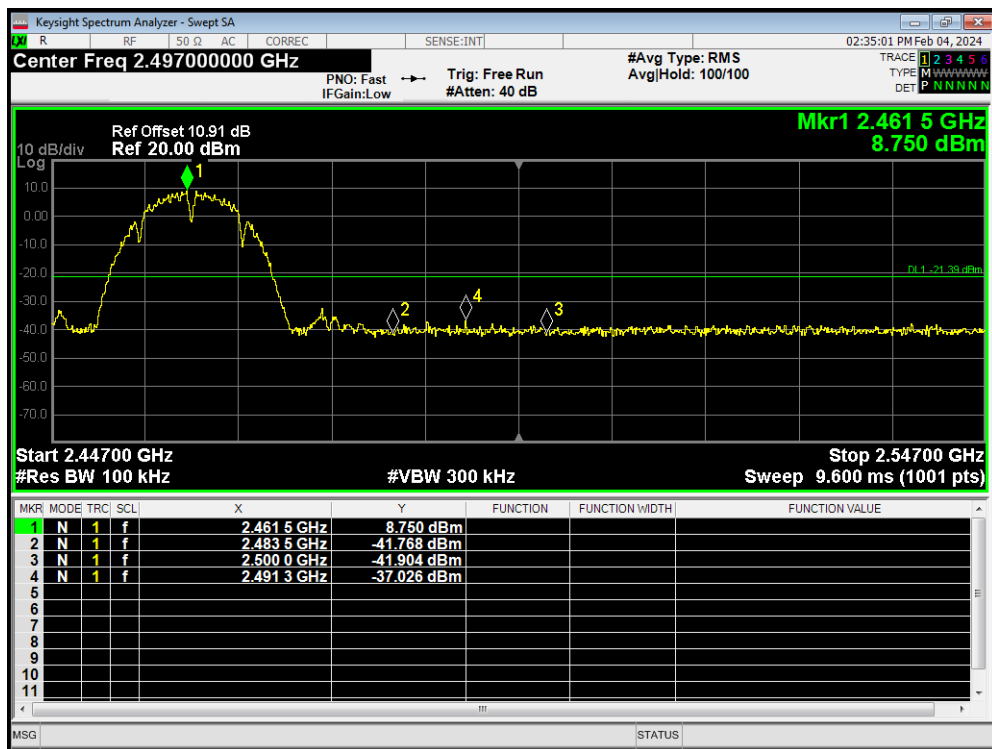
Band Edge 802.11b 2412MHz Emission



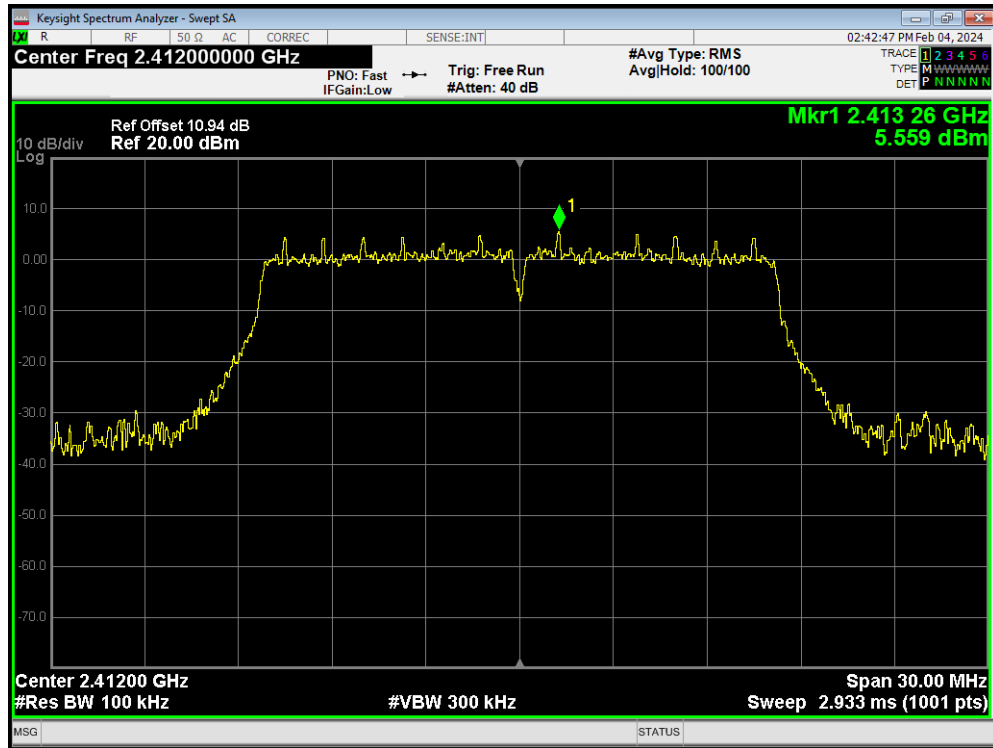
Band Edge 802.11b 2462MHz Ref



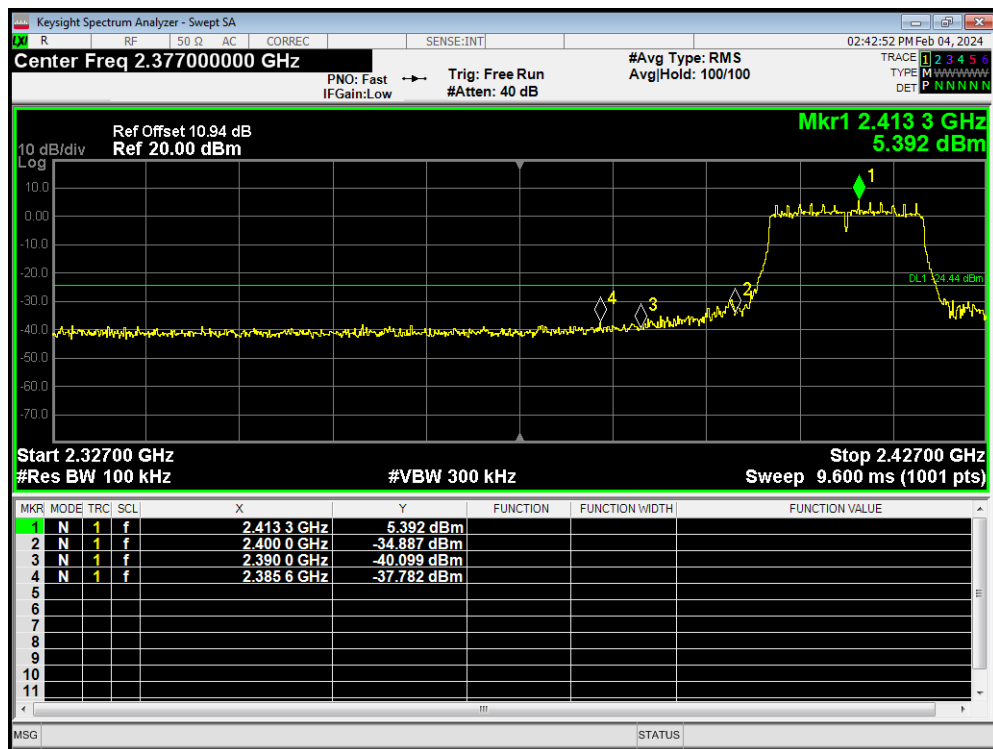
Band Edge 802.11b 2462MHz Emission



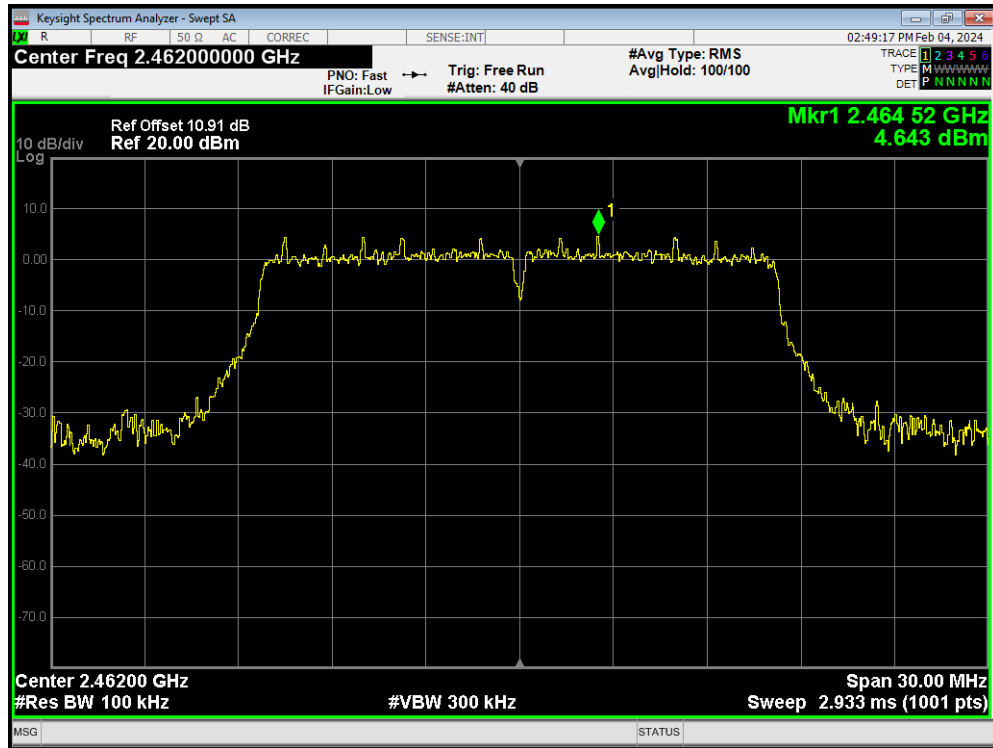
Band Edge 802.11g 2412MHz Ref



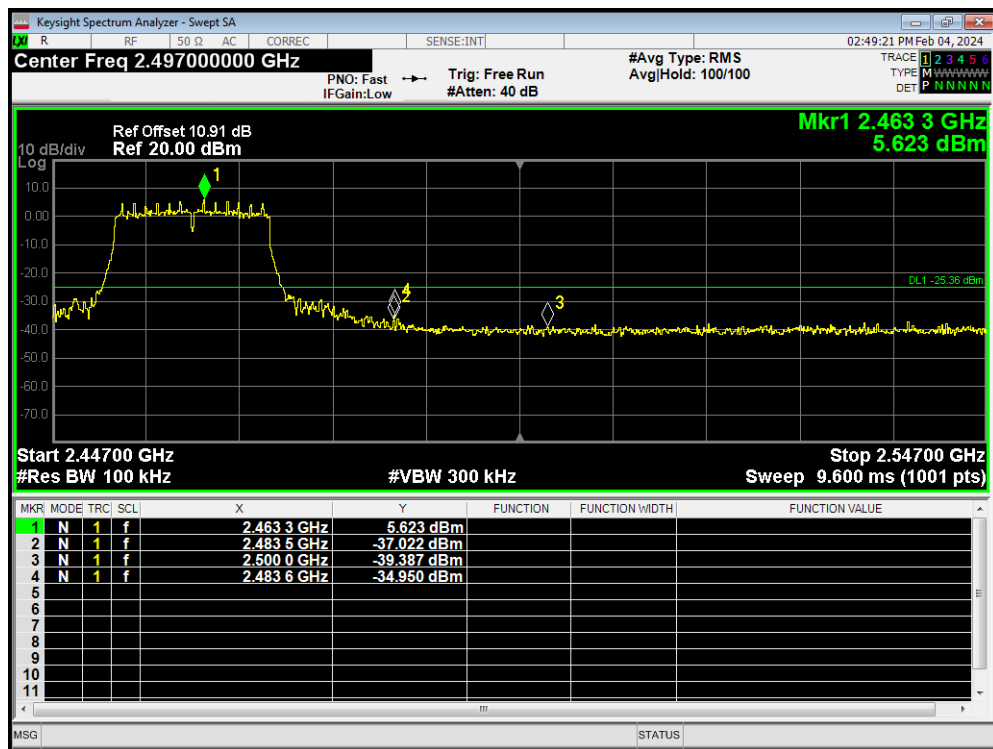
Band Edge 802.11g 2412MHz Emission



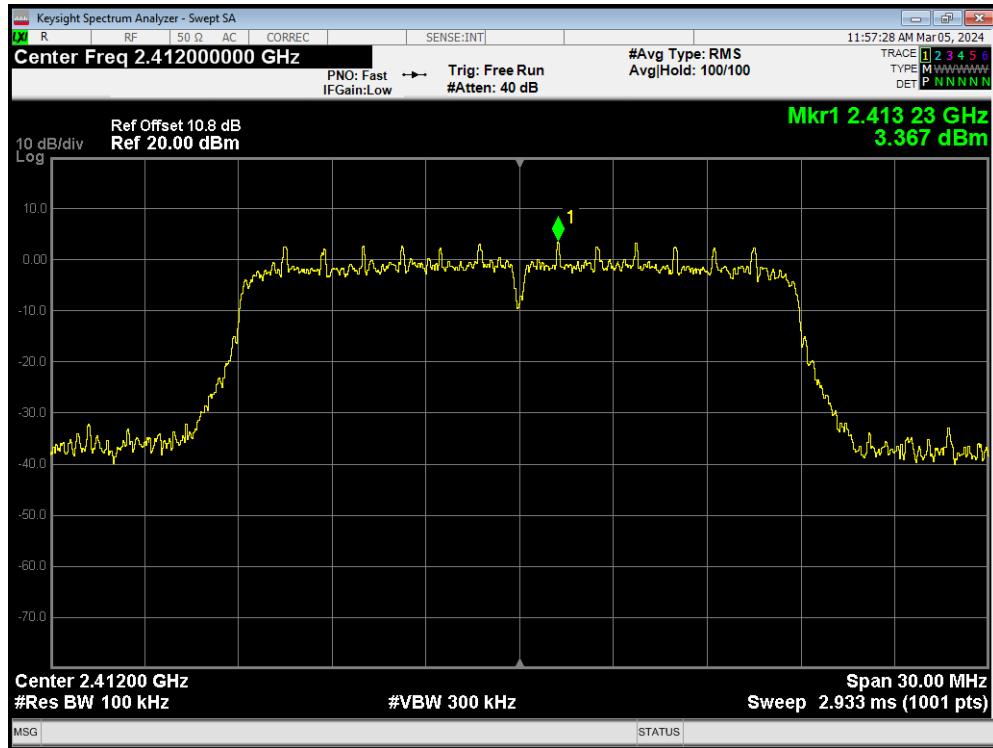
Band Edge 802.11g 2462MHz Ref



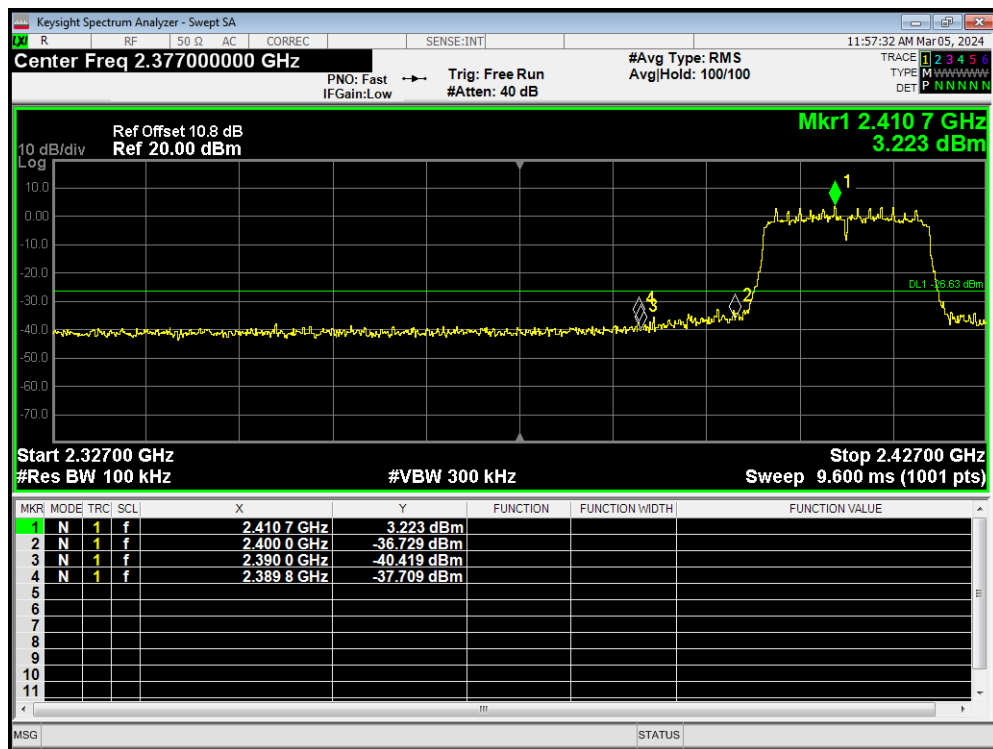
Band Edge 802.11g 2462MHz Emission



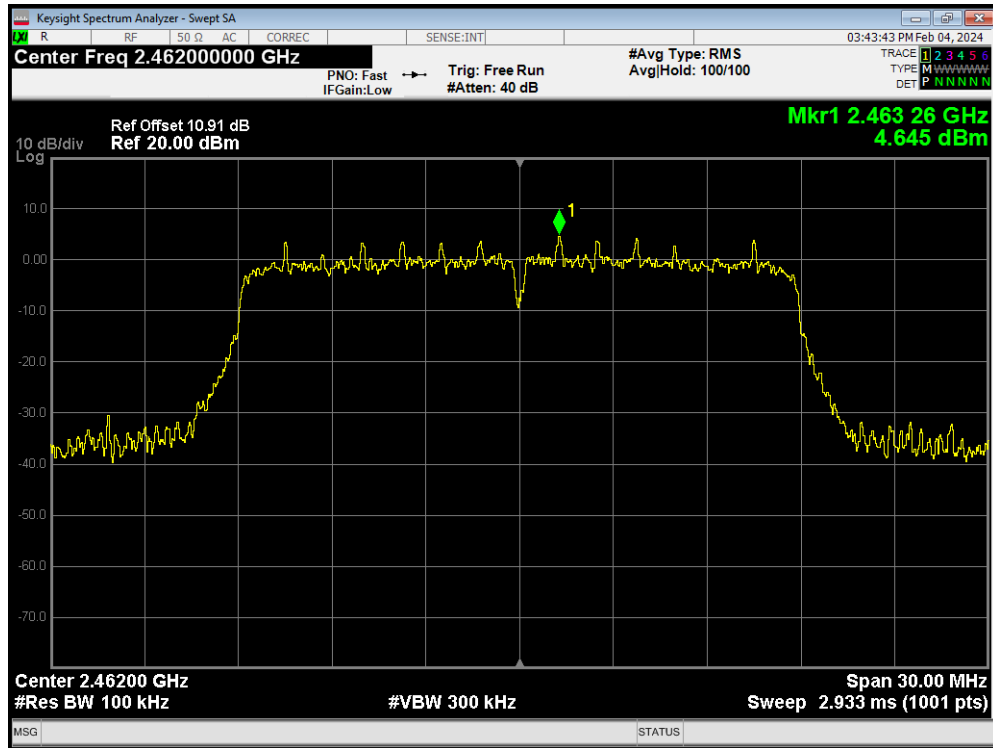
Band Edge 802.11n(HT20) 2412MHz Ref



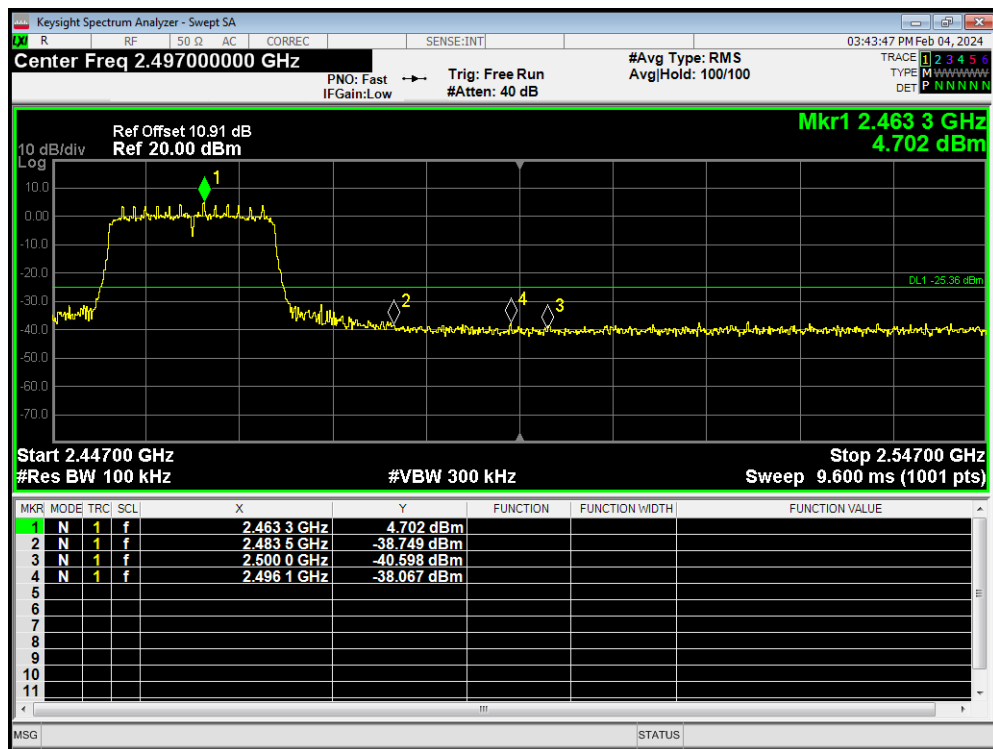
Band Edge 802.11n(HT20) 2412MHz Emission



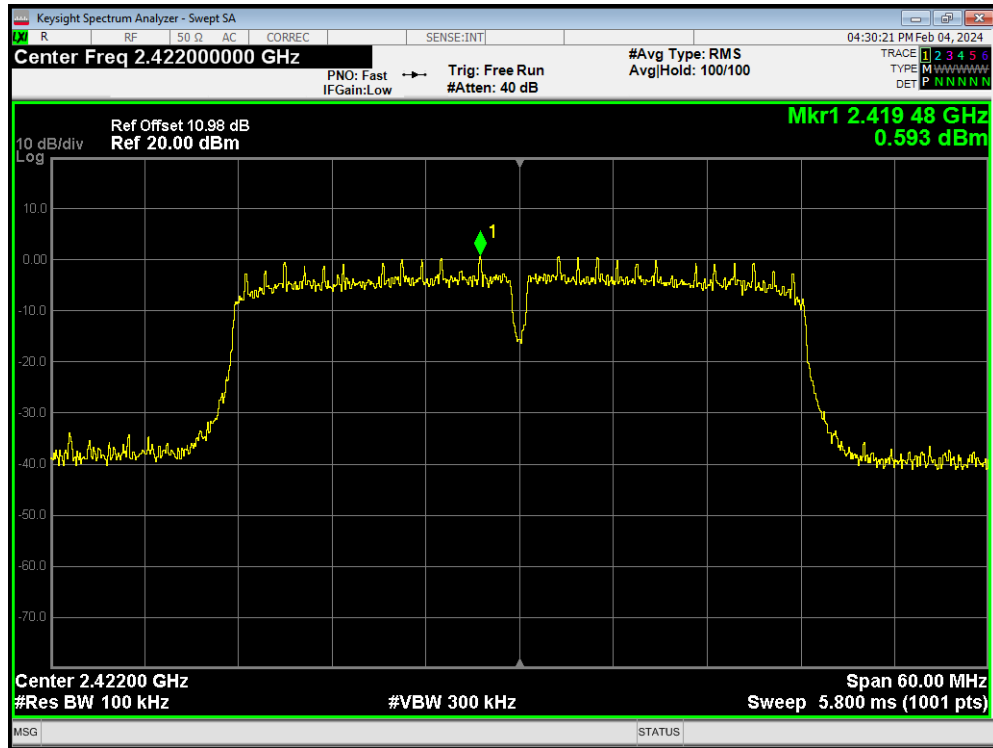
Band Edge 802.11n(HT20) 2462MHz Ref



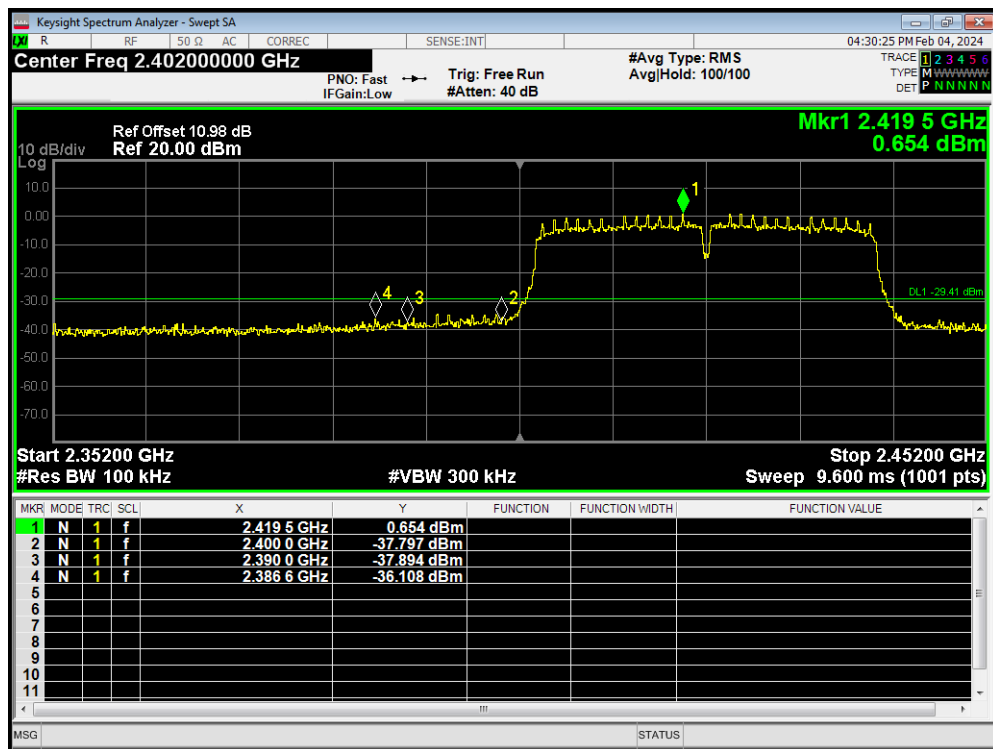
Band Edge 802.11n(HT20) 2462MHz Emission



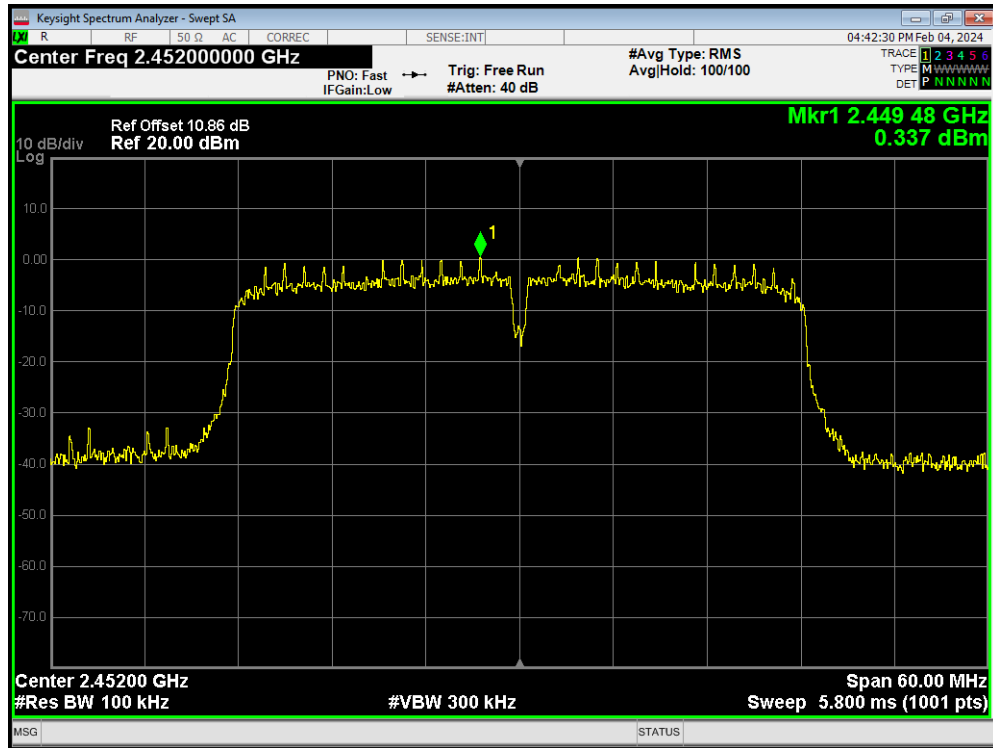
Band Edge 802.11n(HT40) 2422MHz Ref



Band Edge 802.11n(HT40) 2422MHz Emission



Band Edge 802.11n(HT40) 2452MHz Ref



Band Edge 802.11n(HT40) 2452MHz Emission

