RF TEST REPORT

Applicant	MeiG Smart Technology Co., Ltd
FCC ID	2APJ4-MT504
Product	4G Mobile WiFi
Brand	MEIGLink
Model	MT504; MT5XX (XX can be 05-19,61-64)
Report No.	R2209A0873-R4V1
Issue Date	February 9, 2023

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 15C (2022)**. 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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Approved by: Xu Kai

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TABLE OF CONTENT

Version	Revision description	Issue Date
Rev.0	Initial issue of report.	February 3, 2023
Rev.1	Update information.	February 9, 2023
Note: This revised report (Report No.: R2209A0873-R4V1) supersedes and replaces the previously issued report (Report No.: R2209A0873-R4). Please discard or destroy the previously issued report and dispose of it accordingly.		

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 6.7	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: November 14, 2022 ~ December 23, 2022 Date of Sample Received: October 10, 2022			
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
Country:	P. R. China
Contact:	Xu Kai
Telephone:	+86-021-50791141/2/3
Fax:	+86-021-50791141/2/3-8000
Website:	http://www.ta-shanghai.com
E-mail:	xukai@ta-shanghai.com

2. General Description of Equipment under Test

2.1. Applicant and Manufacturer Information

Applicant	MeiG Smart Technology Co., Ltd
Applicant address	2nd Floor,Office Building,No.5 Lingxia Road,Fenghuang,Fuyong Street,Bao'an District,Shenzhen, China.
Manufacturer	MeiG Smart Technology Co., Ltd
Manufacturer address	2nd Floor,Office Building,No.5 Lingxia Road,Fenghuang,Fuyong Street,Bao'an District,Shenzhen, China.

2.2. General information

EUT Description	
Model	MT504; MT5XX (XX can be 05-19, 61-64)
IMEI	864630067884618
Hardware Version	MT562_MB_V1.00_B_PCB
Software Version	MT562_EQ001_5F3270E_221129_T18
Power Supply	AC Adapter/ Battery
Antenna Type	PIFA Antenna
Antenna Connector	A permanently attached antenna(meet with the standard FCC Part 15.203 requirement)
Antenna Gain	1.80 dBi
additional beamforming gain	NA
Operating Frequency Range(s)	802.11b/g/n(HT20): 2412 ~ 2462 MHz 802.11n(HT40): 2422 ~ 2452 MHz
Modulation Type	802.11b: DSSS 802.11g/n(HT20/HT40): OFDM
Max. Output Power	Wi-Fi 2.4G: 17.74 dBm
EUT Accessory	
Adapter	Manufacturer: Dongguan Sunun Power Co., Ltd Model: SA68-050100U
Battery	Manufacturer: Shenzhen Aerospace Electronic Co.,Ltd. Model: /
USB Cable 1	Manufacturer: DONGGUAN GAOHANG ELECTRONIC CO.,LTD Model: USB A/M TO MICRO USB 5P/M Black PVC (Data + charging) 55cm Cable, Shielded
USB Cable 2	Manufacturer: DONGGUAN GAOHANG ELECTRONIC CO.,LTD Model: USB A/M TO MICRO USB 5P/M Black PVC (charging)

	55cm Cable, Shielded
USB Cable 3	Manufacturer: DONGGUAN GAOHANG ELECTRONIC CO.,LTD Model: USB A/M TO MICRO USB 5P/M Black PVC (Date + charging) 20cm Cable, Shielded
USB Cable 4	Manufacturer: DONGGUAN GAOHANG ELECTRONIC CO.,LTD Model: USB A/M TO MICRO USB 5P/M Black PVC (charging) 20cm Cable, Shielded
USB Cable 5	Manufacturer: DONGGUAN GAOHANG ELECTRONIC CO.,LTD Model: USB Type C to Micro USB (connect MIFI) (Date + charging, OTG) 55cm Cable, Shielded
USB Cable 6	Manufacturer: DONGGUAN GAOHANG ELECTRONIC CO.,LTD Model: USB Type C to Micro USB (connect MIFI) (Date + charging, OTG) 100cm Cable, Shielded
USB Cable 7	Manufacturer: DONGGUAN GAOHANG ELECTRONIC CO.,LTD Model: USB Type A to Micro USB (connect MIFI) (Date + charging) 100cm Cable, Shielded
USB Cable 8	Manufacturer: DONGGUAN GAOHANG ELECTRONIC CO.,LTD Model: USB Type C to Micro USB (connect MIFI) (Date + charging) 20cm Cable, Shielded
Note: 1. The EUT is sent from the applicant to TA and the information of the EUT is declared by the applicant. 2. There is more than one USB cable, each one should be applied throughout the compliance test respectively, and however, only the worst case (USB cable 1 for Unwanted Emissions (RE), USB cable 7 for Conducted Emissions) will be recorded in this report. 3. MT504 and MT5XX (XX can be 05-19, 61-64) differ only in model number and the other is the same. The internal name of the XX range will be changed differently due to the consideration of different customer needs later. MT504 were tested in this report.	

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 (2022) 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 (X 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
802.11b	1 Mbps
802.11g	6 Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0

5. Test Case Results

5.1. Maximum output power

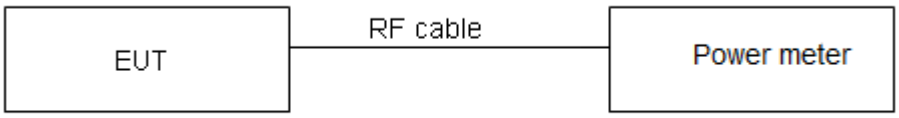
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

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	≤ 1W (30dBm)

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					
Carrier frequency (MHz)	**802.11b**	**802.11g**	**802.11n HT20**	**Carrier frequency (MHz)**	**802.11n HT40**
2412	79	56	44	**2422**	3A
2417	--	72	6C	**2427**	3F
2422	--	80	80	**2432**	44
2437	79	80	80	**2437**	72
2447	--	80	--	**2442**	51
2452	--	66	80	**2447**	3F
2457	--	5B	6C	**2452**	3F
2462	79	56	4C	**--**	--

Test Mode	Duty cycle	Duty cycle correction Factor(dB)
802.11b	1.00	0.00
802.11g	0.99	0.00
802.11n HT20	1.00	0.00
802.11n HT40	0.99	0.00
Note: when Duty cycle≥0.98, Duty cycle correction Factor not required.		

Test Mode	Carrier frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11b	2412	17.11	17.11	30	PASS
	2437	17.29	17.29	30	PASS
	2462	17.35	17.35	30	PASS
802.11g	2412	14.36	14.36	30	PASS
	2417	16.59	16.59	30	PASS
	2422	17.31	17.31	30	PASS
	2437	17.74	17.74	30	PASS
	2447	17.54	17.54	30	PASS
	2452	15.75	15.75	30	PASS
	2457	14.99	14.99	30	PASS
	2462	14.43	14.43	30	PASS
802.11n HT20	2412	11.95	11.95	30	PASS
	2417	15.61	15.61	30	PASS
	2422	16.61	16.61	30	PASS
	2437	17.27	17.27	30	PASS
	2452	17.06	17.06	30	PASS
	2457	15.94	15.94	30	PASS
	2462	13.07	13.07	30	PASS
802.11n HT40	2422	10.97	10.97	30	PASS
	2427	11.67	11.67	30	PASS
	2432	12.24	12.24	30	PASS
	2437	16.60	16.60	30	PASS
	2442	13.81	13.81	30	PASS
	2447	11.88	11.88	30	PASS
	2452	11.95	11.95	30	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor					

5.2. 99% Bandwidth and 6dB Bandwidth

Ambient condition

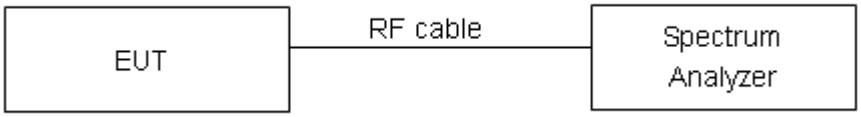
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

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

Measurement Uncertainty

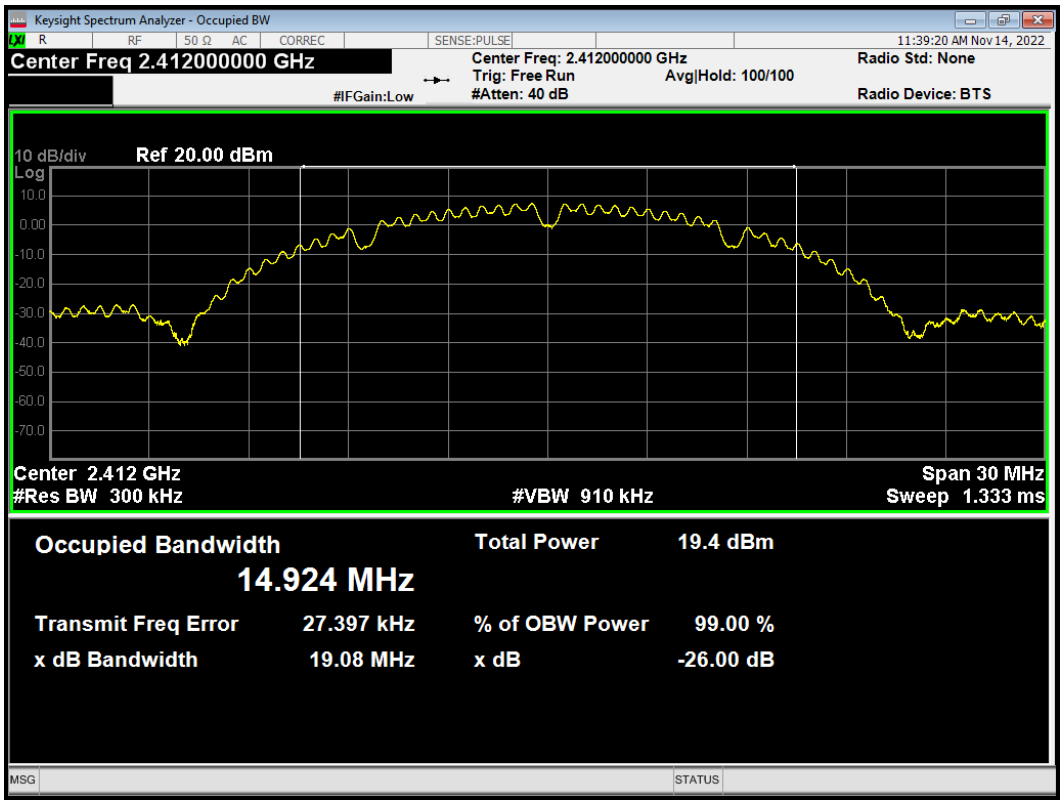
The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U= 936 Hz.

Test Results:

Test Mode	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 6 dB bandwidth (MHz)	Limit (kHz)	Conclusion
802.11b	2412	14.92	10.00	500	PASS
	2437	14.95	10.01	500	PASS
	2462	14.94	9.55	500	PASS
802.11g	2412	16.89	16.34	500	PASS
	2417	16.97	16.35	500	PASS
	2422	17.16	16.35	500	PASS
	2437	17.12	16.33	500	PASS
	2447	17.21	16.37	500	PASS
	2452	16.97	16.35	500	PASS
	2457	16.96	16.36	500	PASS
	2462	16.87	16.35	500	PASS
802.11n HT20	2412	17.92	17.60	500	PASS
	2417	17.98	17.78	500	PASS
	2422	18.12	17.62	500	PASS
	2437	18.08	17.77	500	PASS
	2452	18.12	17.62	500	PASS
	2457	17.99	17.57	500	PASS
	2462	17.92	17.59	500	PASS
802.11n HT40	2422	36.27	35.16	500	PASS
	2427	36.28	35.90	500	PASS
	2432	36.28	35.96	500	PASS
	2437	36.37	35.61	500	PASS
	2442	36.27	35.61	500	PASS
	2447	36.29	35.90	500	PASS
	2452	36.28	36.03	500	PASS

99%bandwidth

OBW 802.11b 2412MHz



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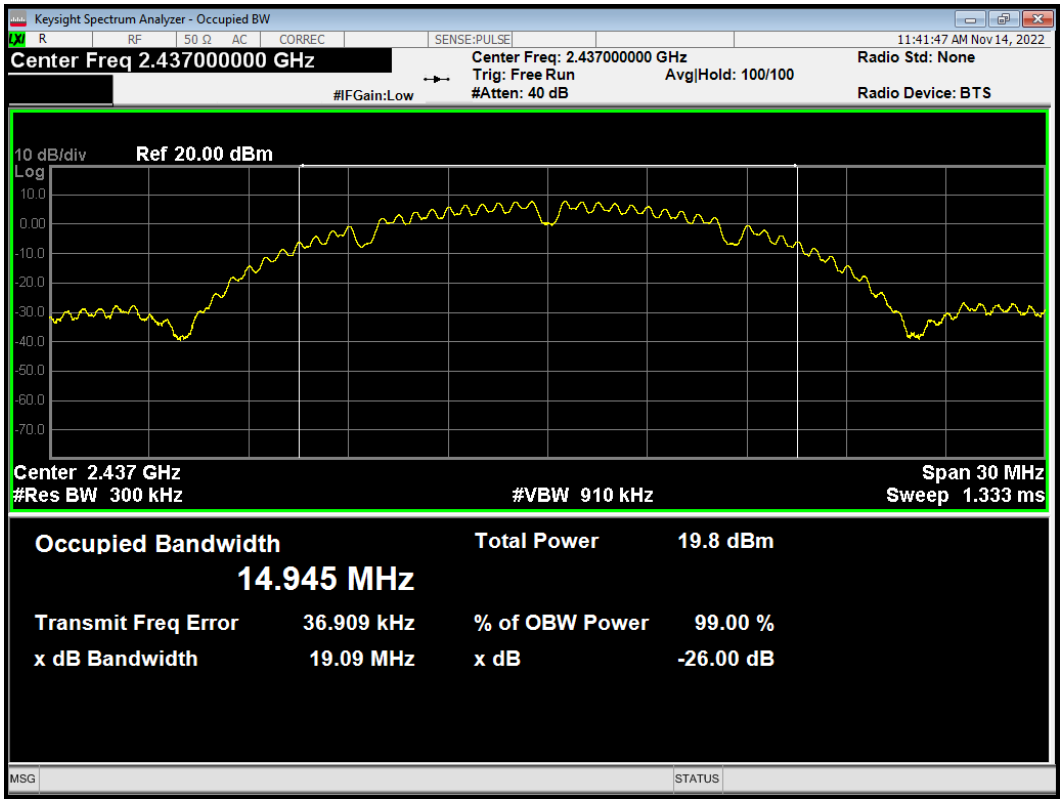

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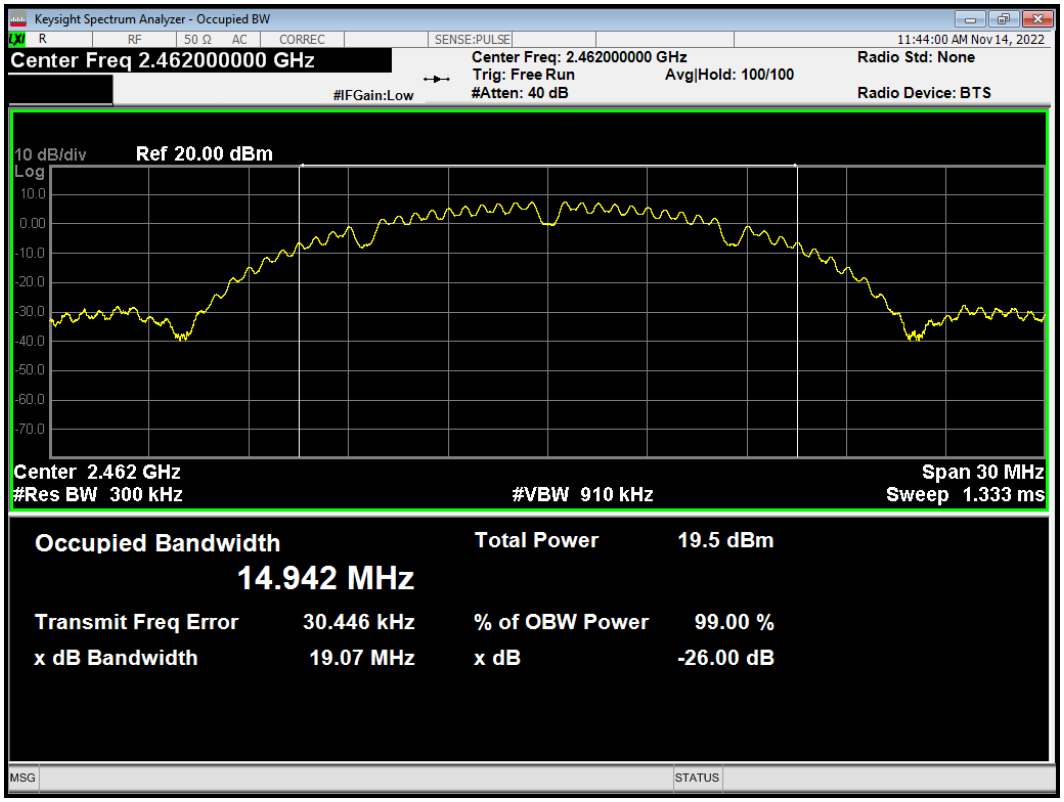

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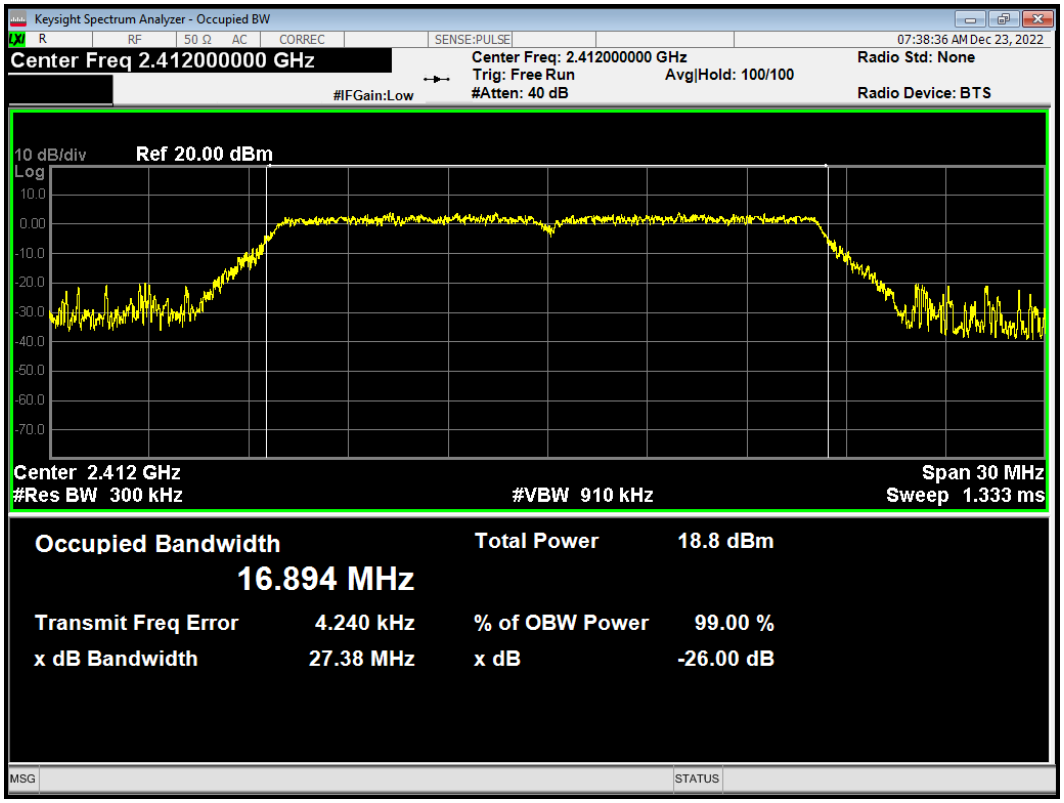

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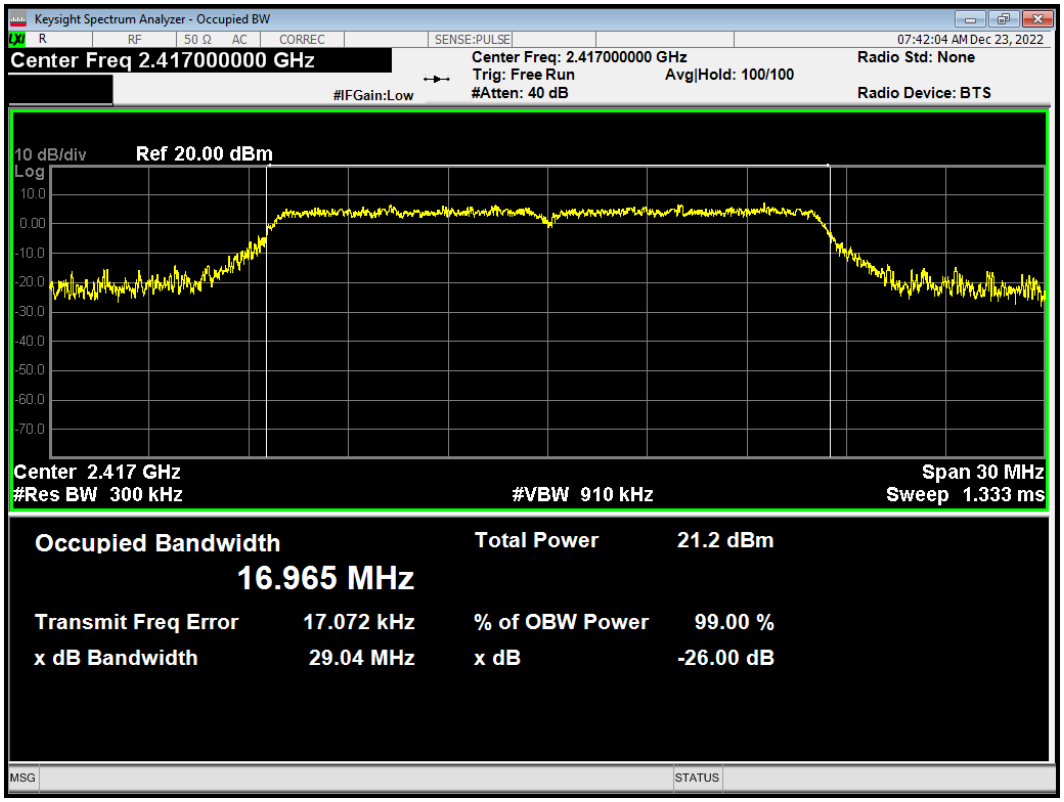

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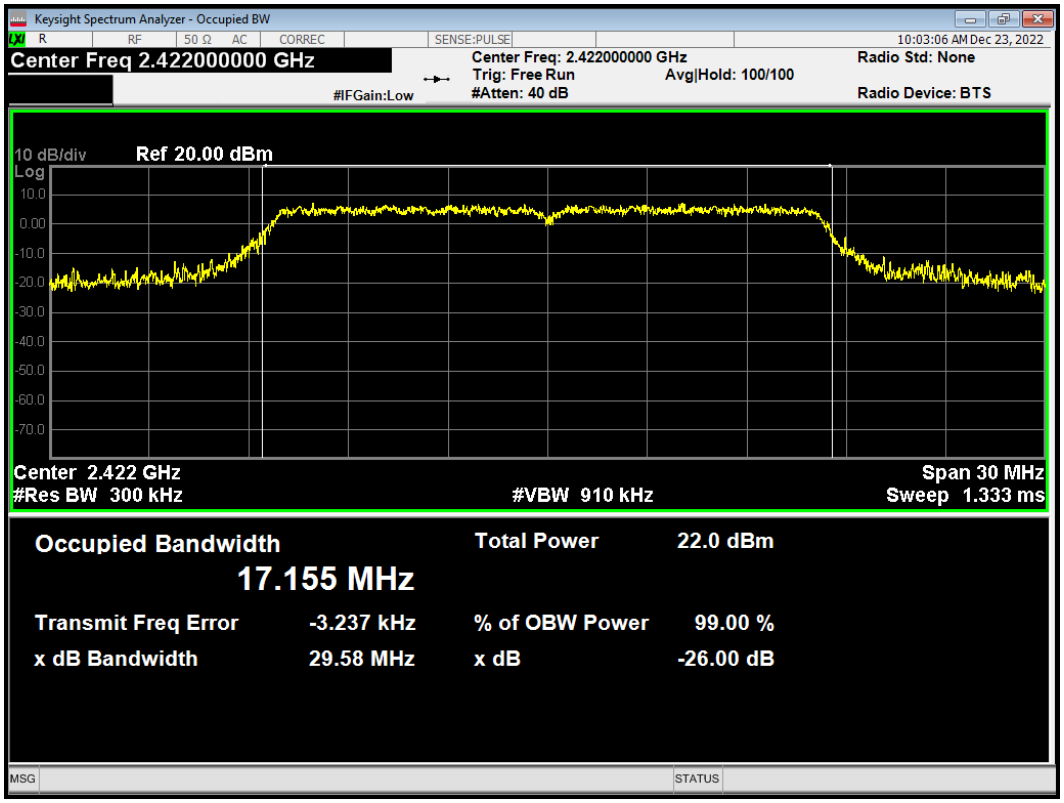

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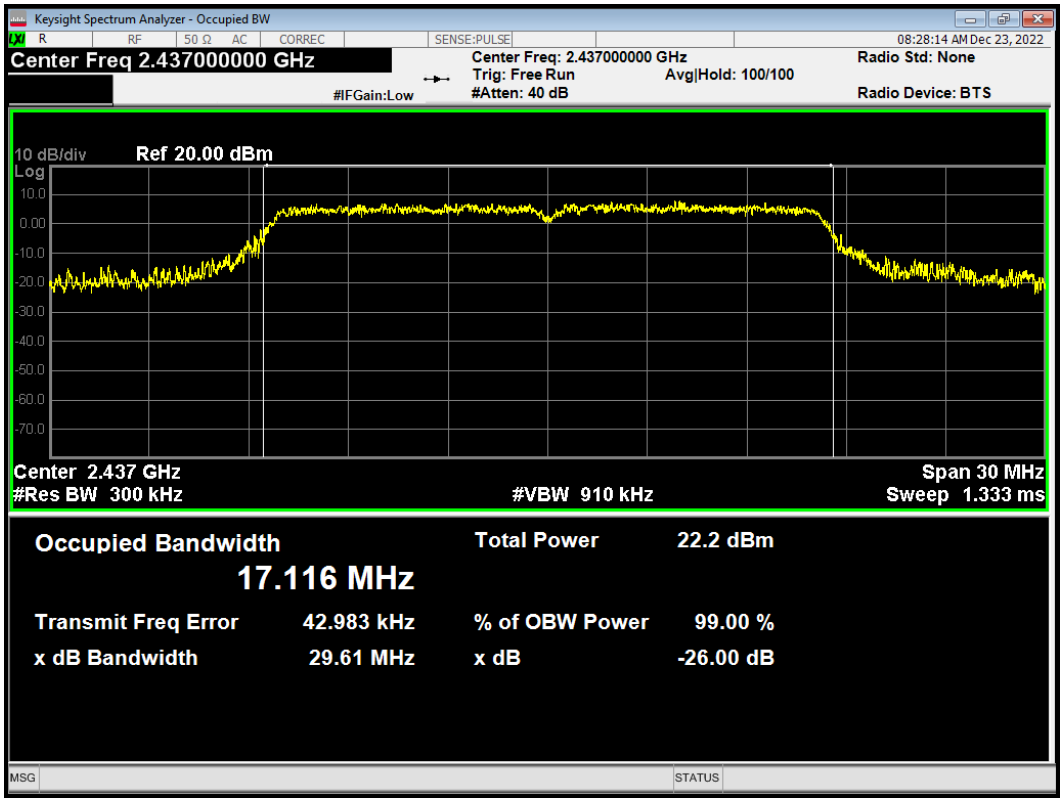

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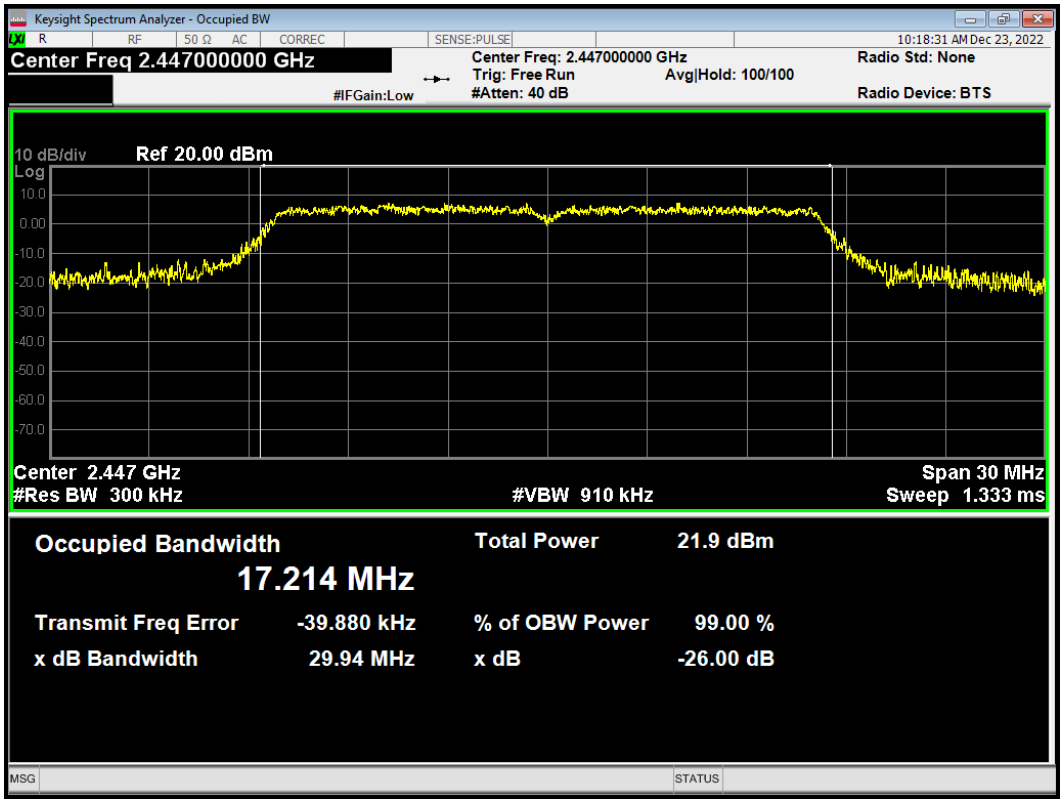

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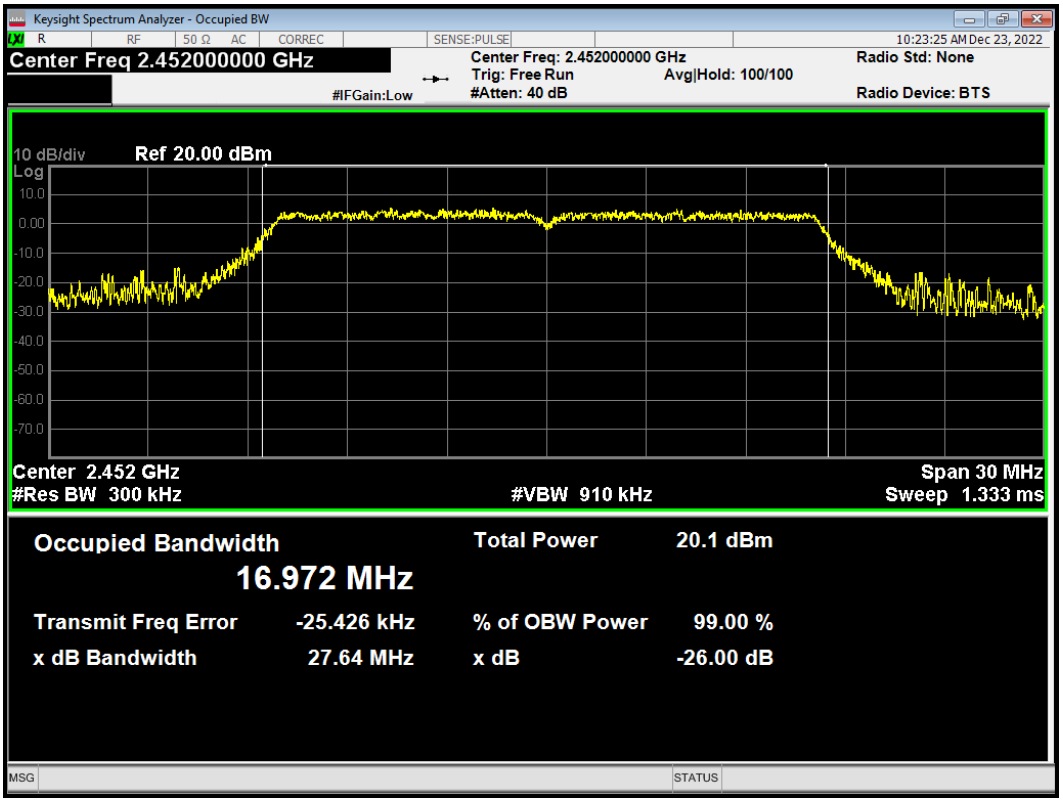
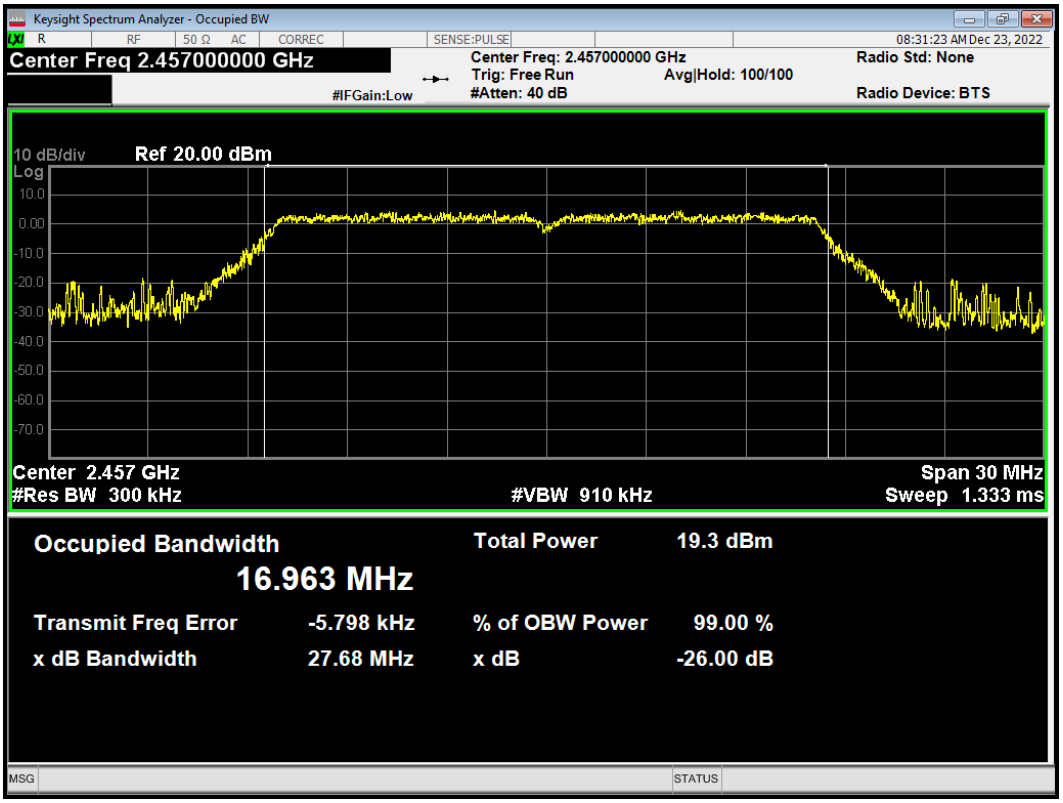
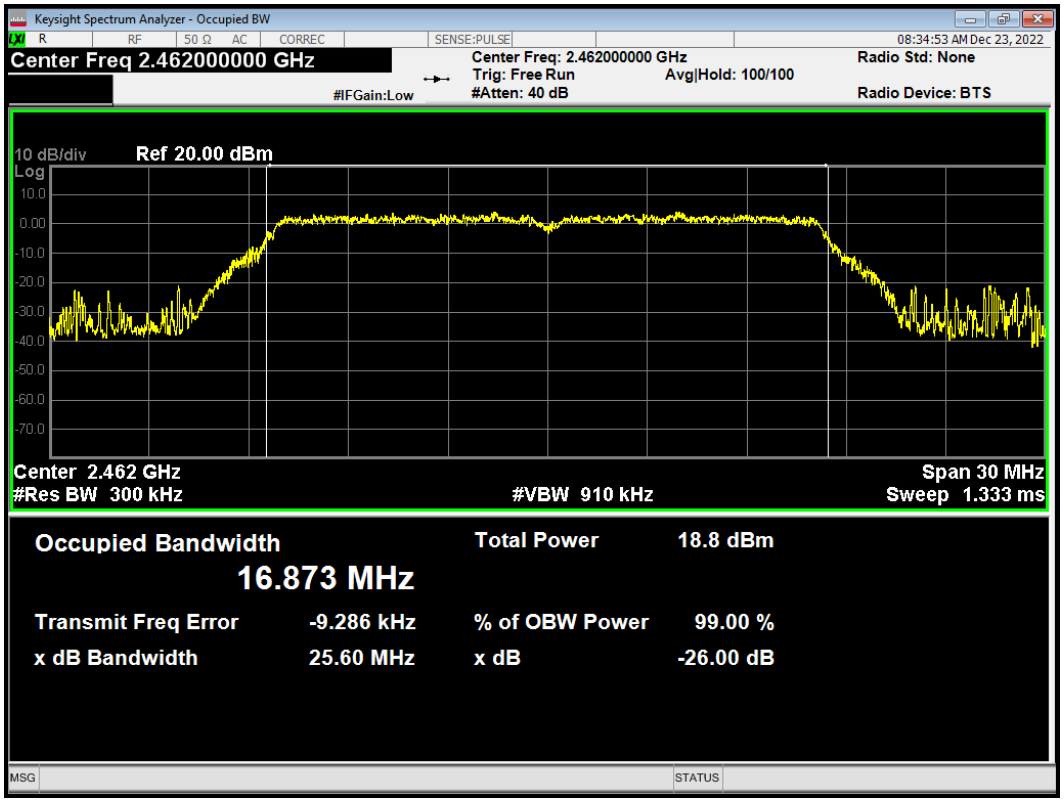


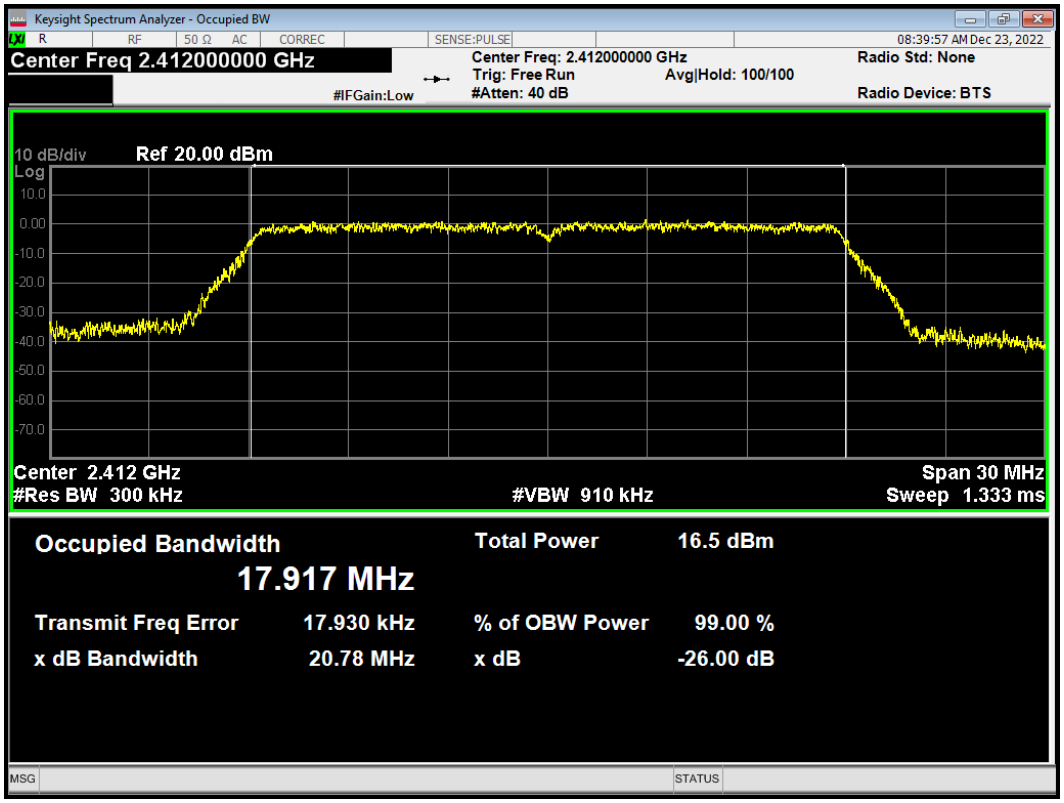
OBW 802.11g 2457MHz



OBW 802.11g 2462MHz



OBW 802.11n(HT20) 2412MHz



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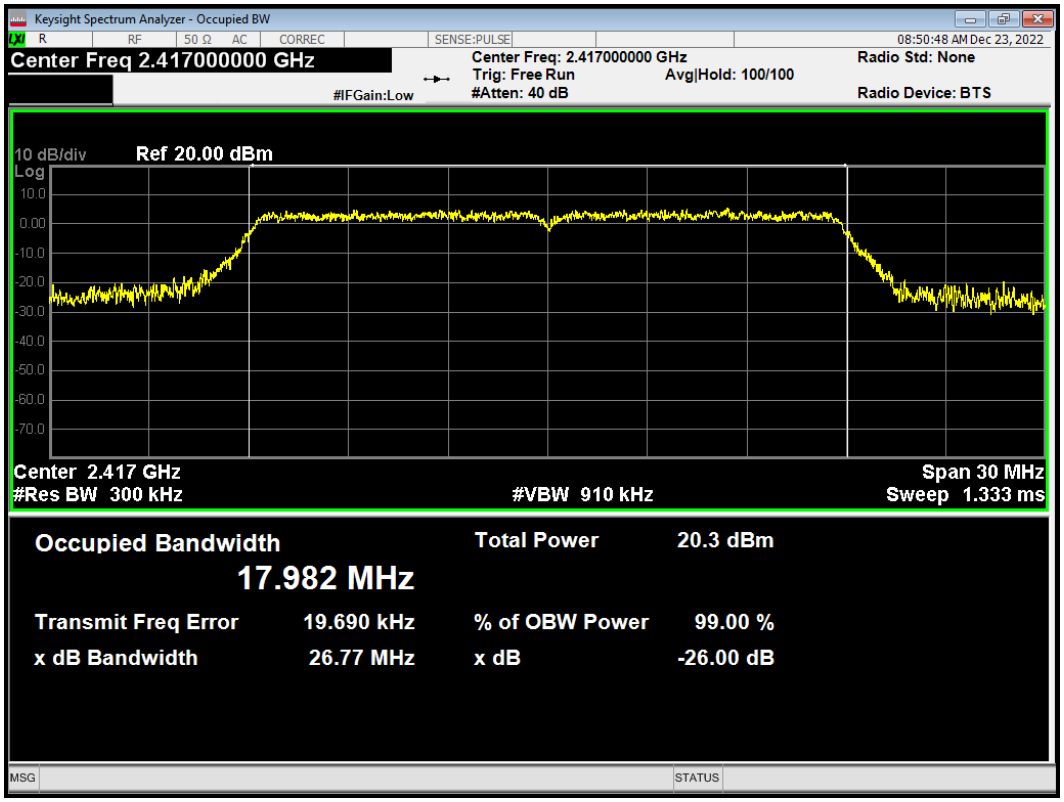

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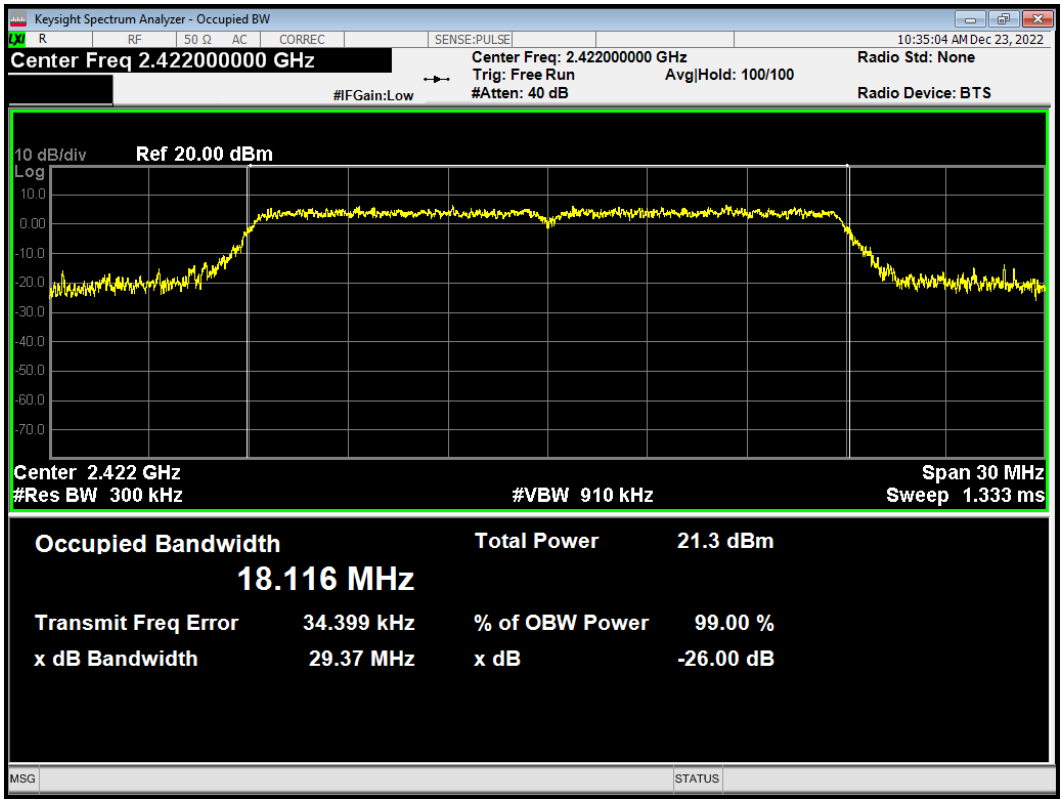

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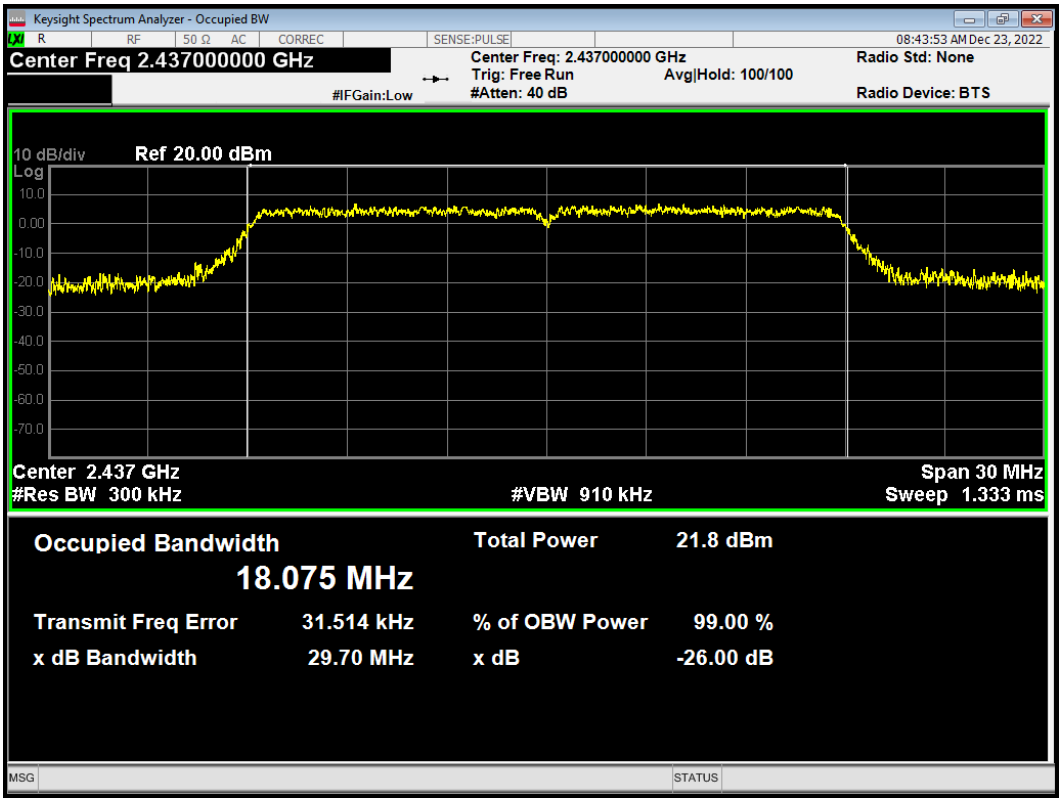
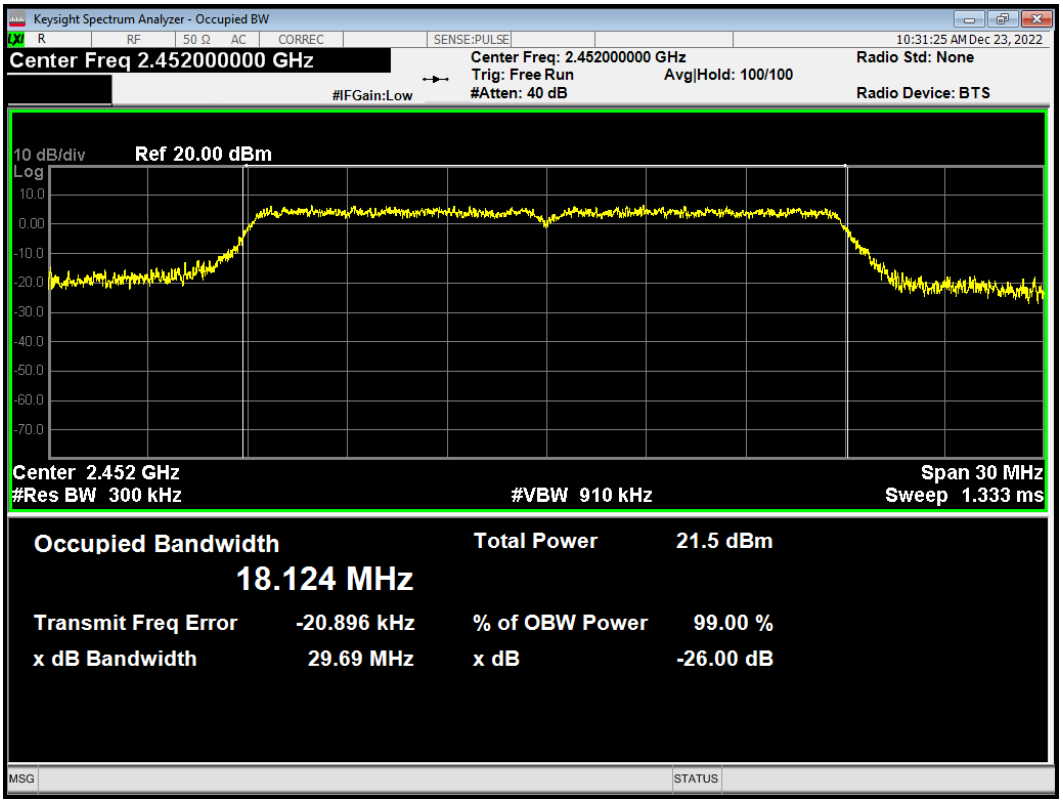
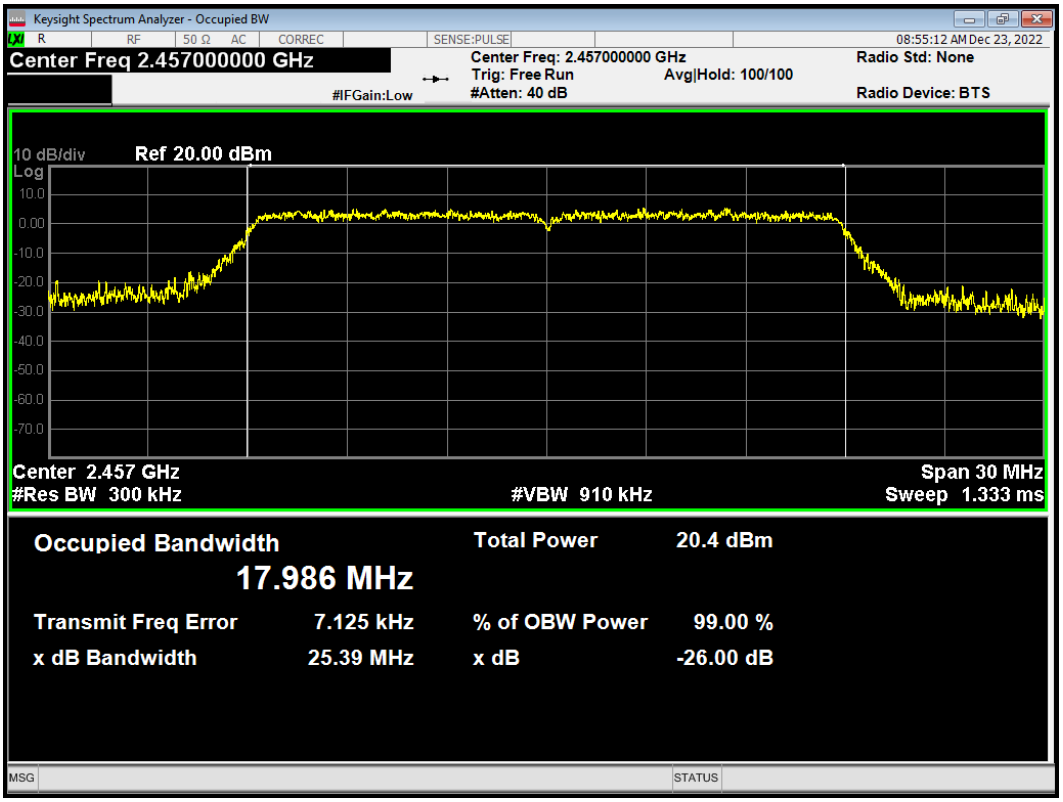


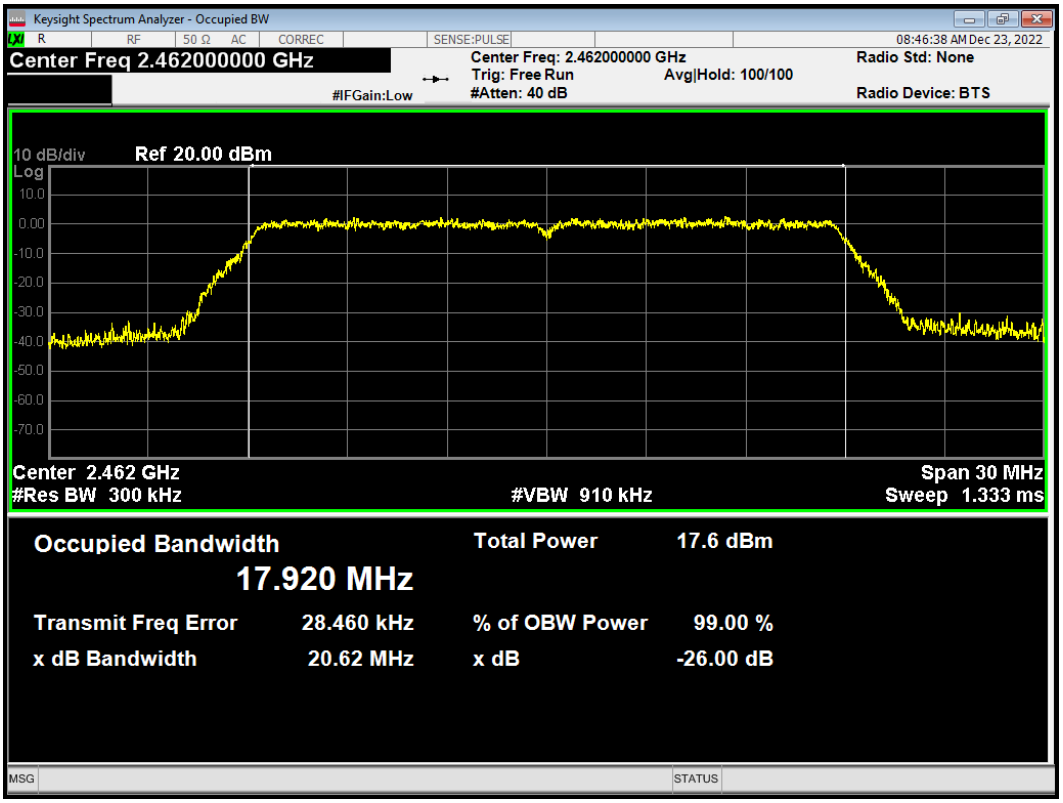
OBW 802.11n(HT20) 2452MHz



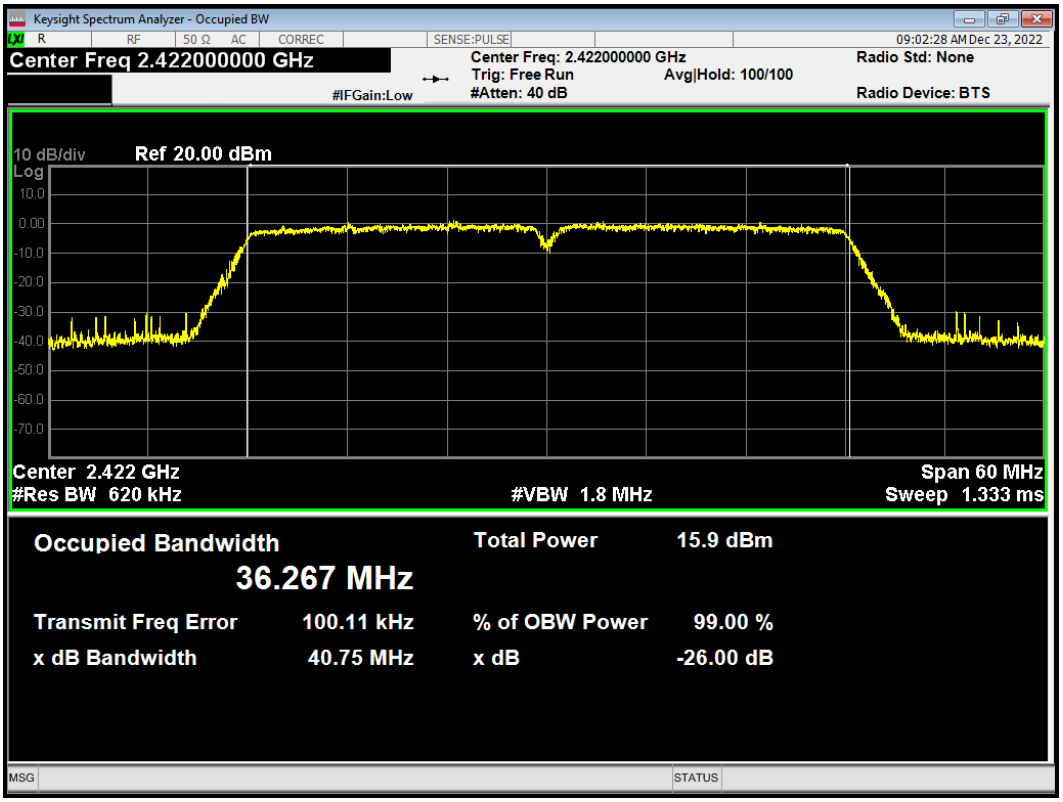
OBW 802.11n(HT20) 2457MHz



OBW 802.11n(HT20) 2462MHz



OBW 802.11n(HT40) 2422MHz



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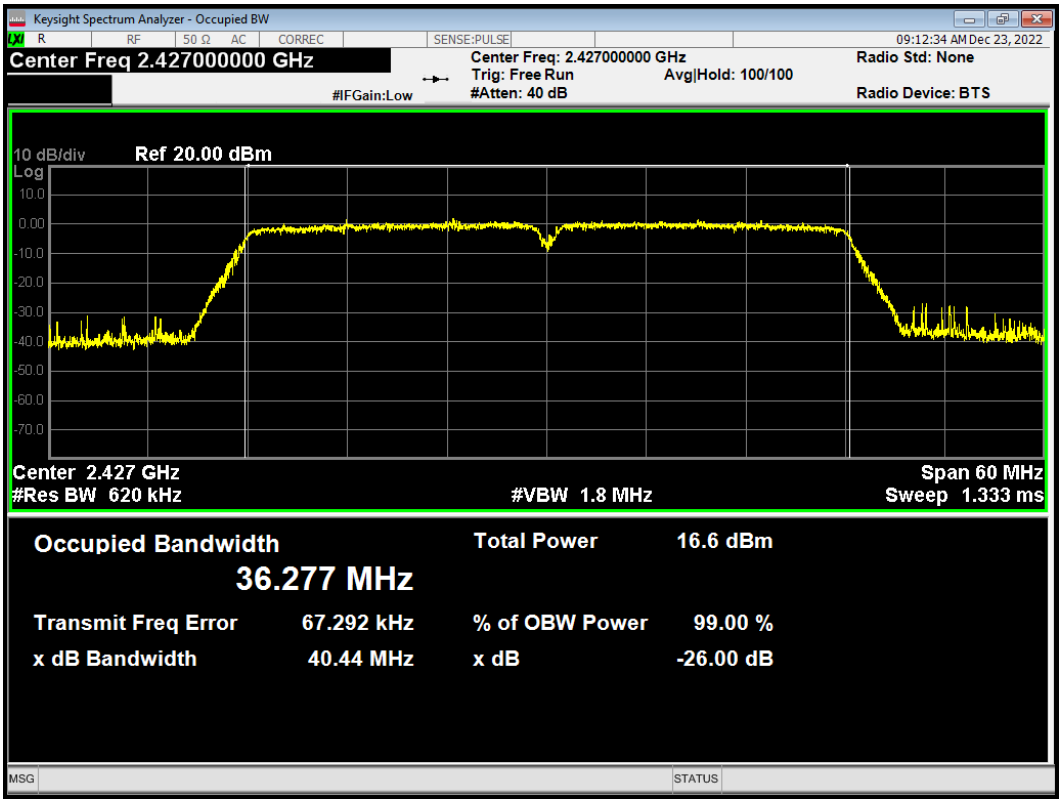

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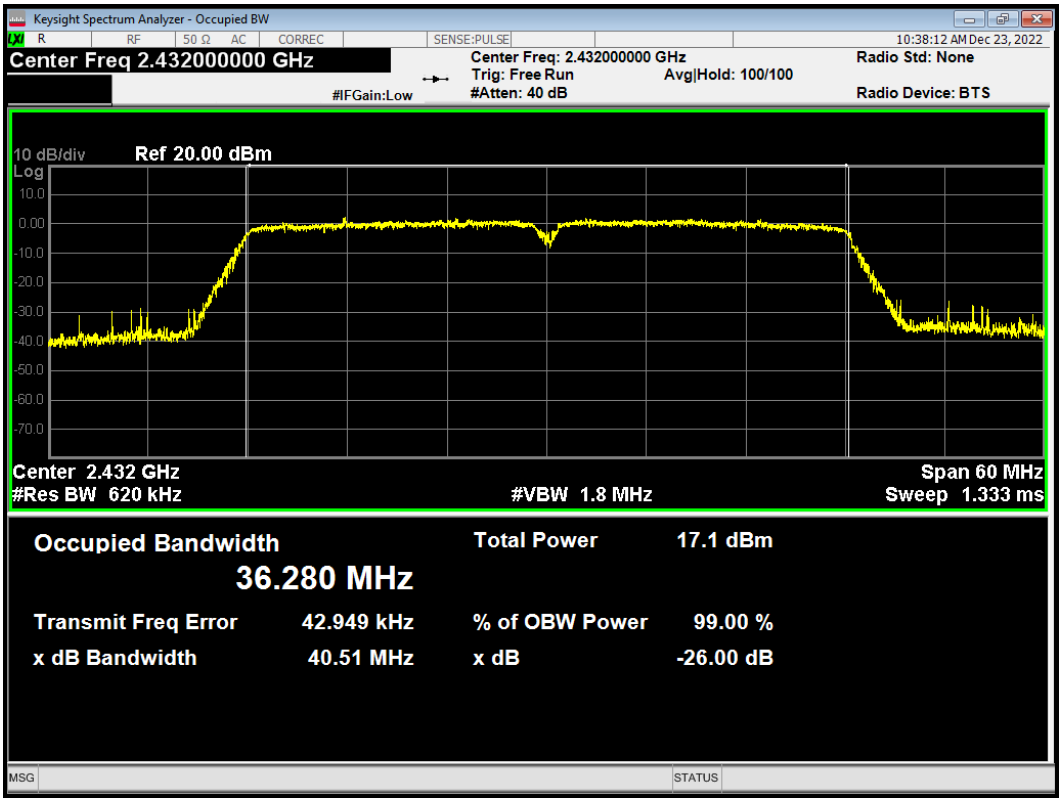
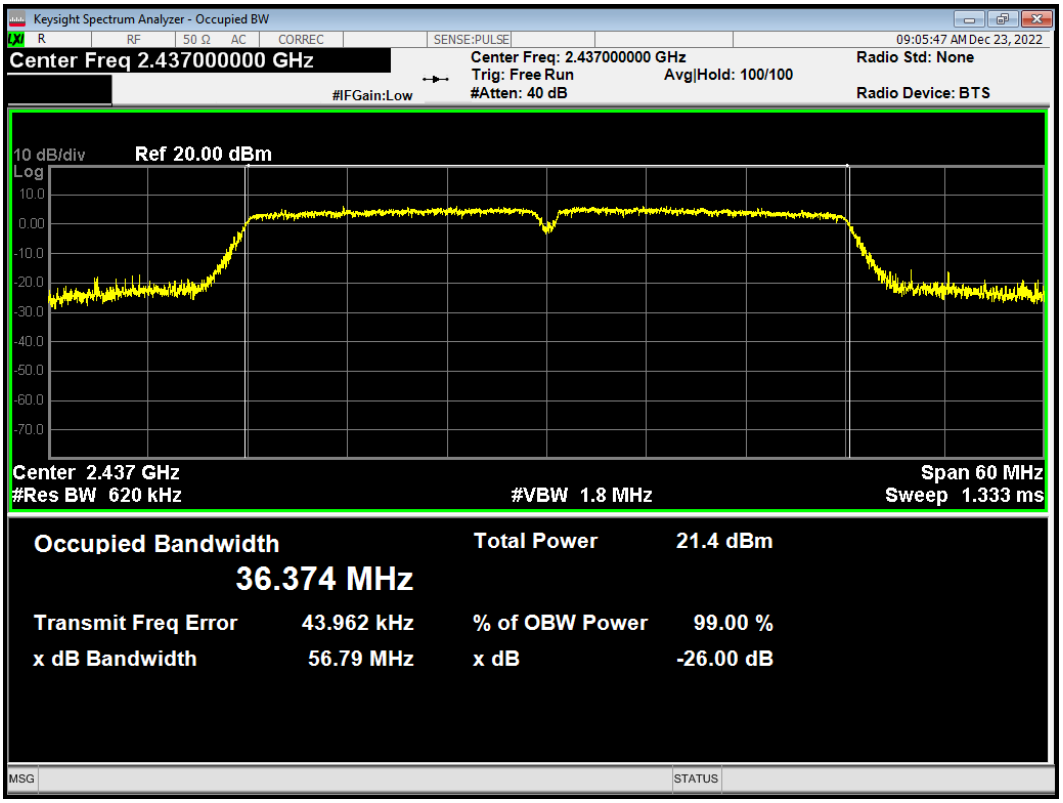


OBW 802.11n(HT40) 2437MHz



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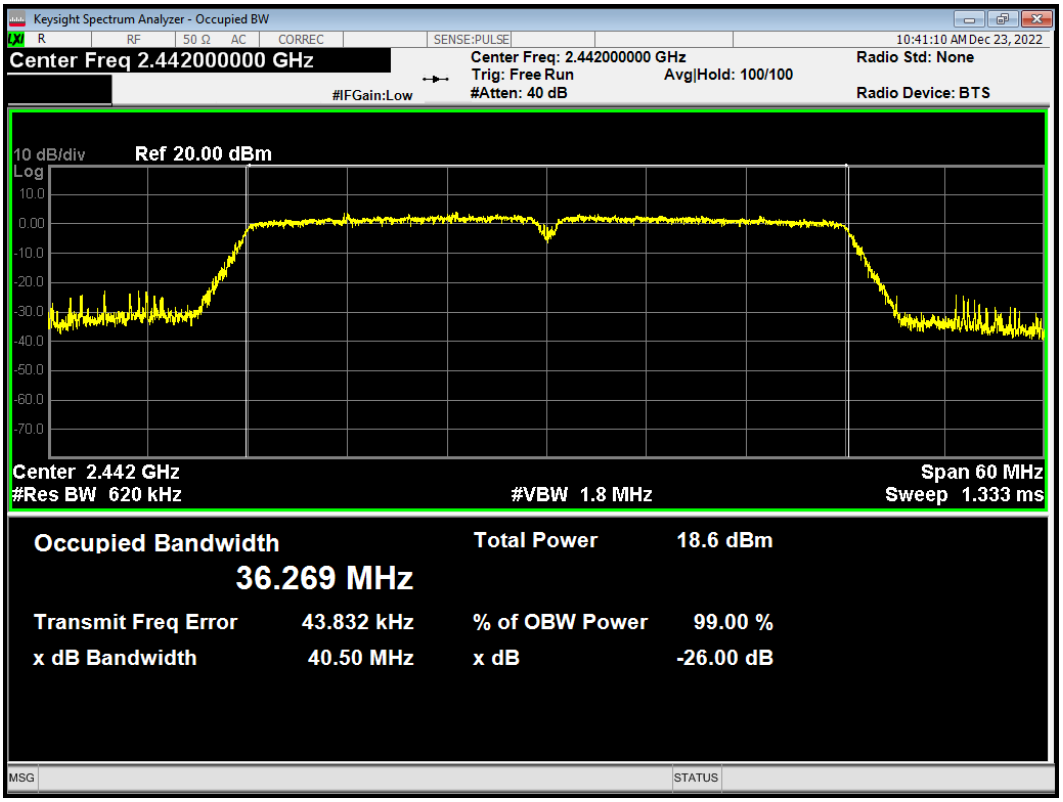
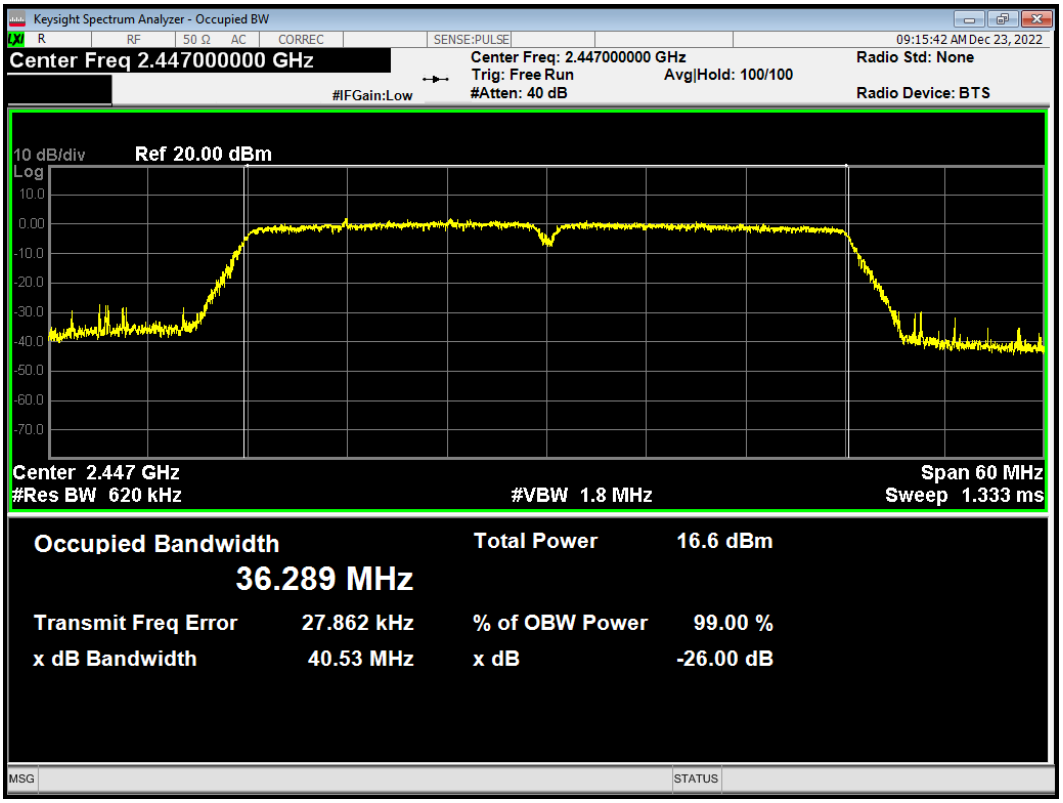
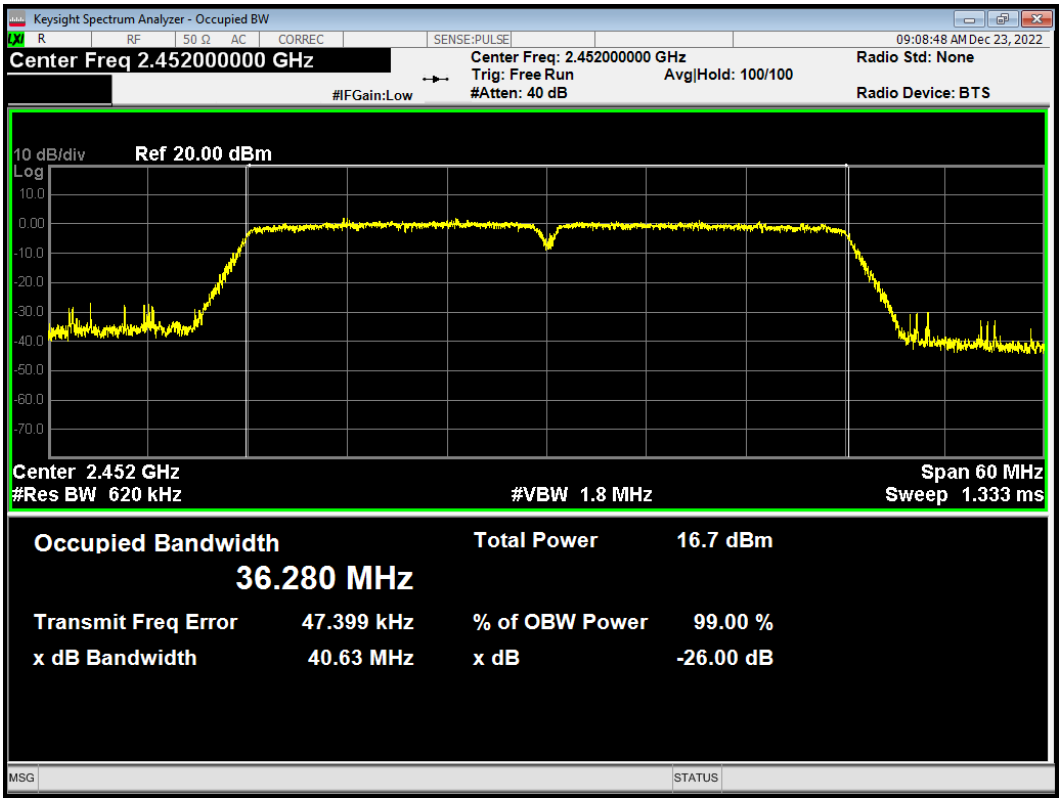


OBW 802.11n(HT40) 2447MHz

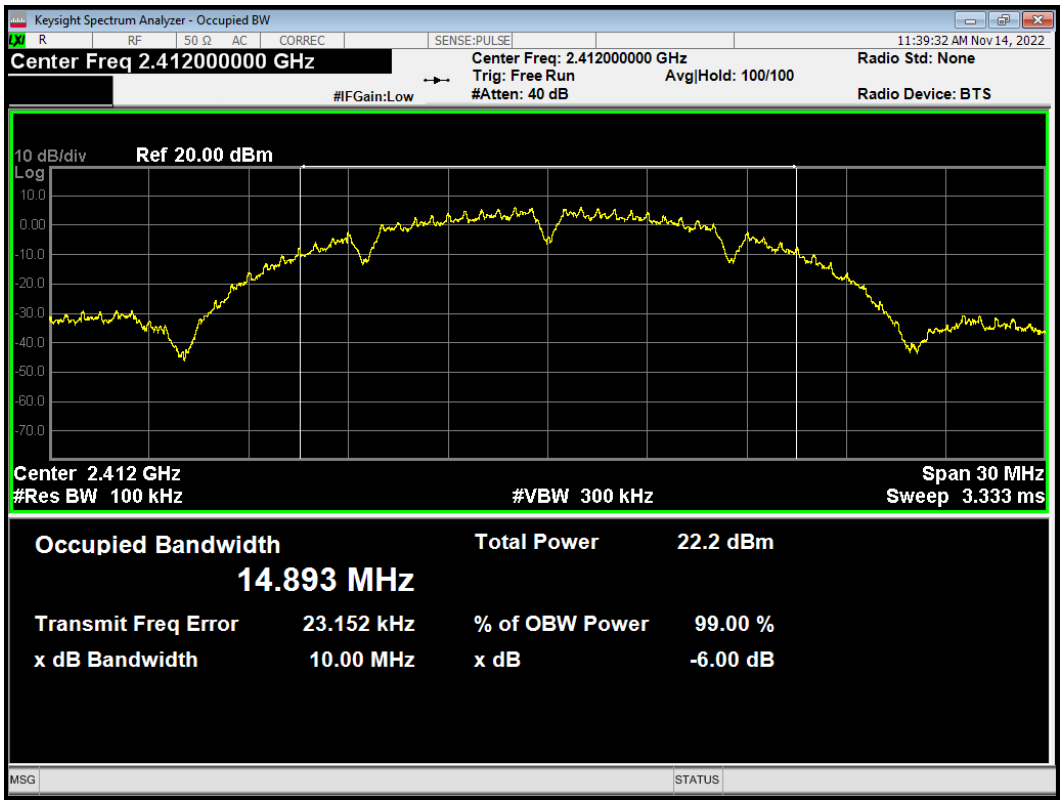


OBW 802.11n(HT40) 2452MHz

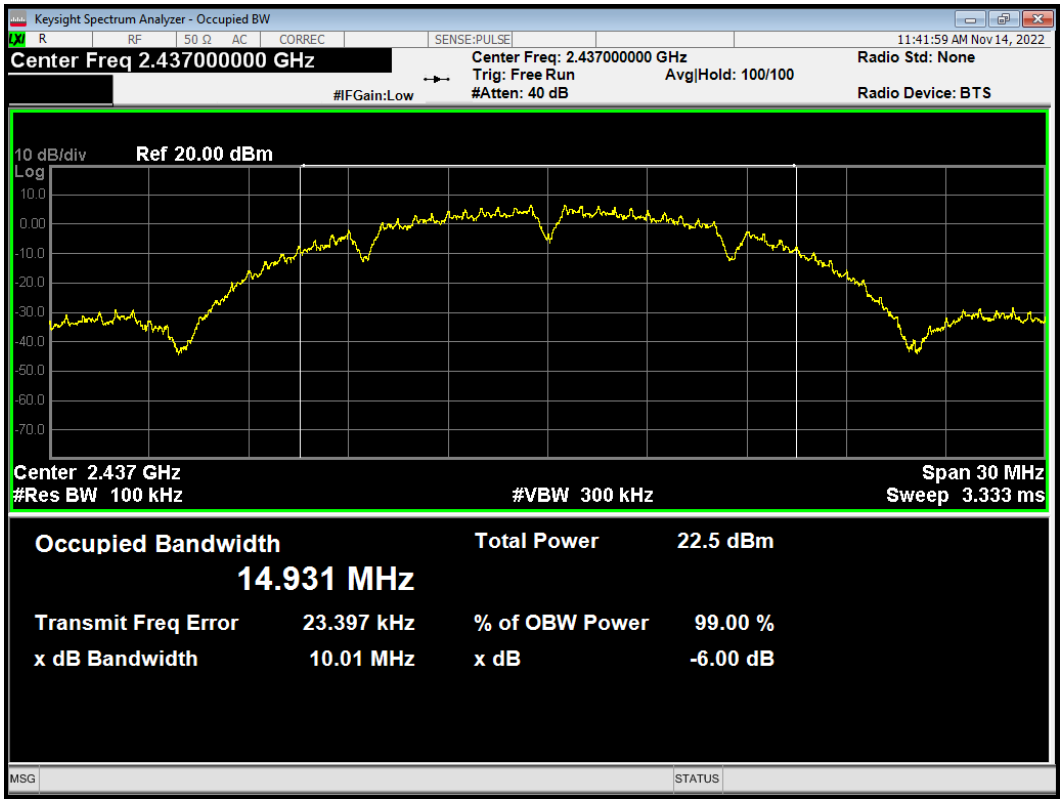


6 dB bandwidth

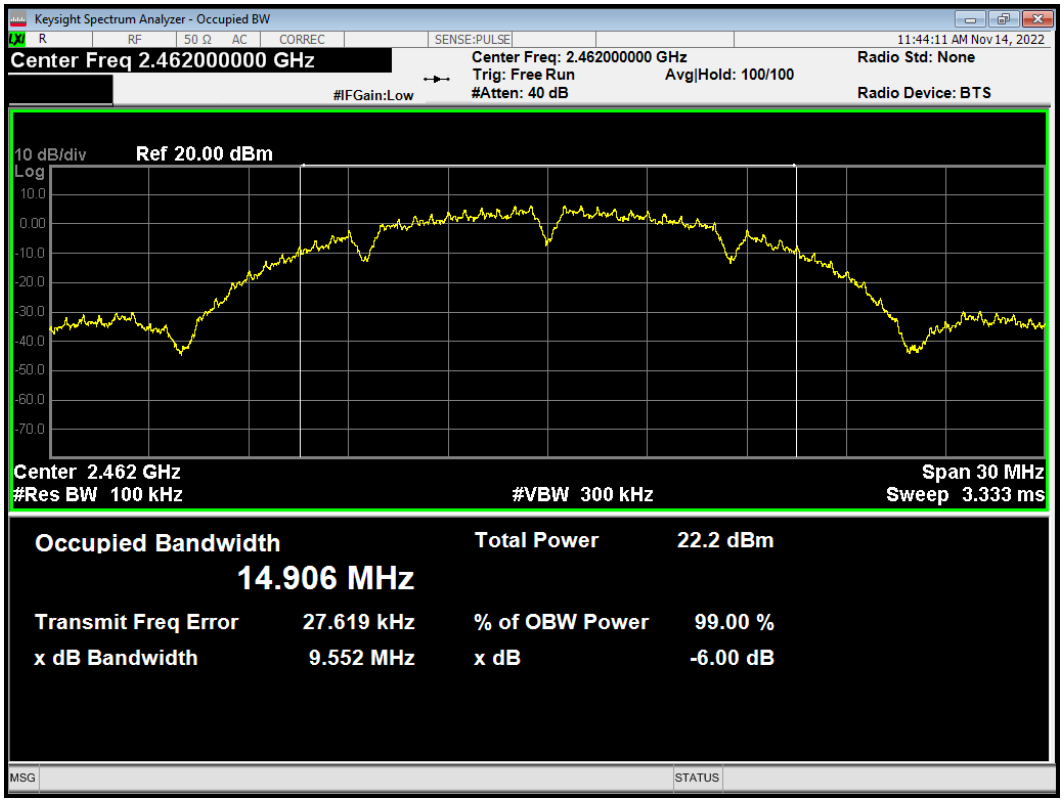
-6dB Bandwidth 802.11b 2412MHz



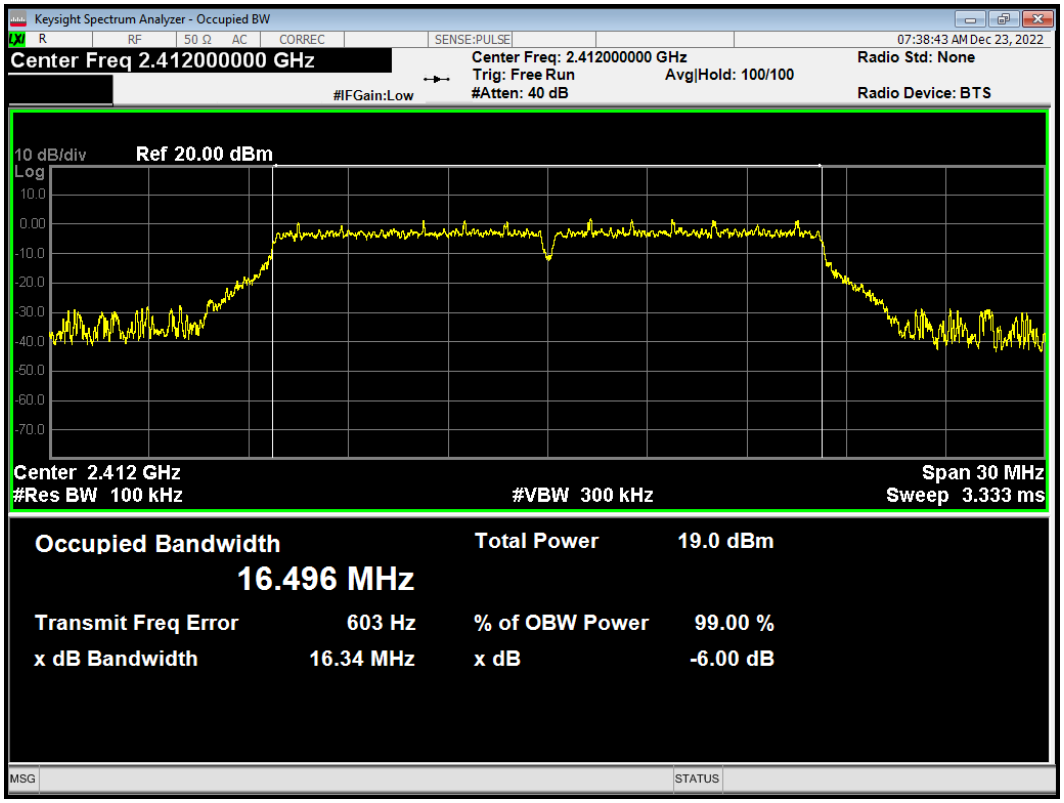
-6dB Bandwidth 802.11b 2437MHz



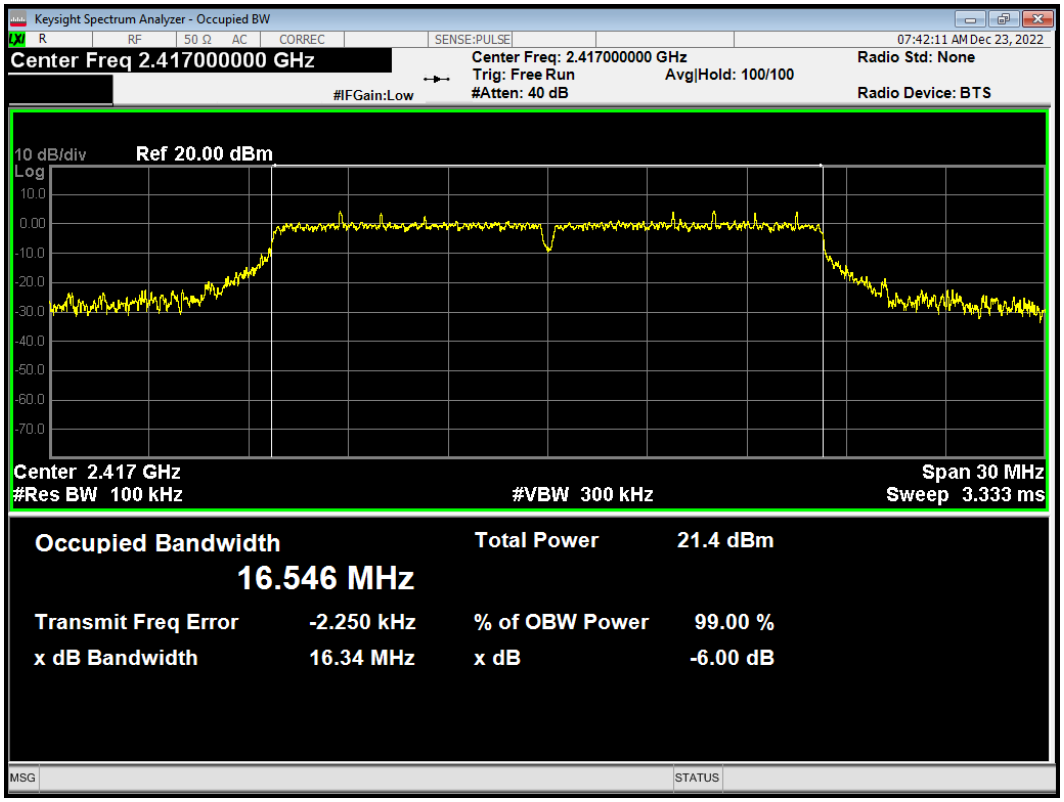
-6dB Bandwidth 802.11b 2462MHz



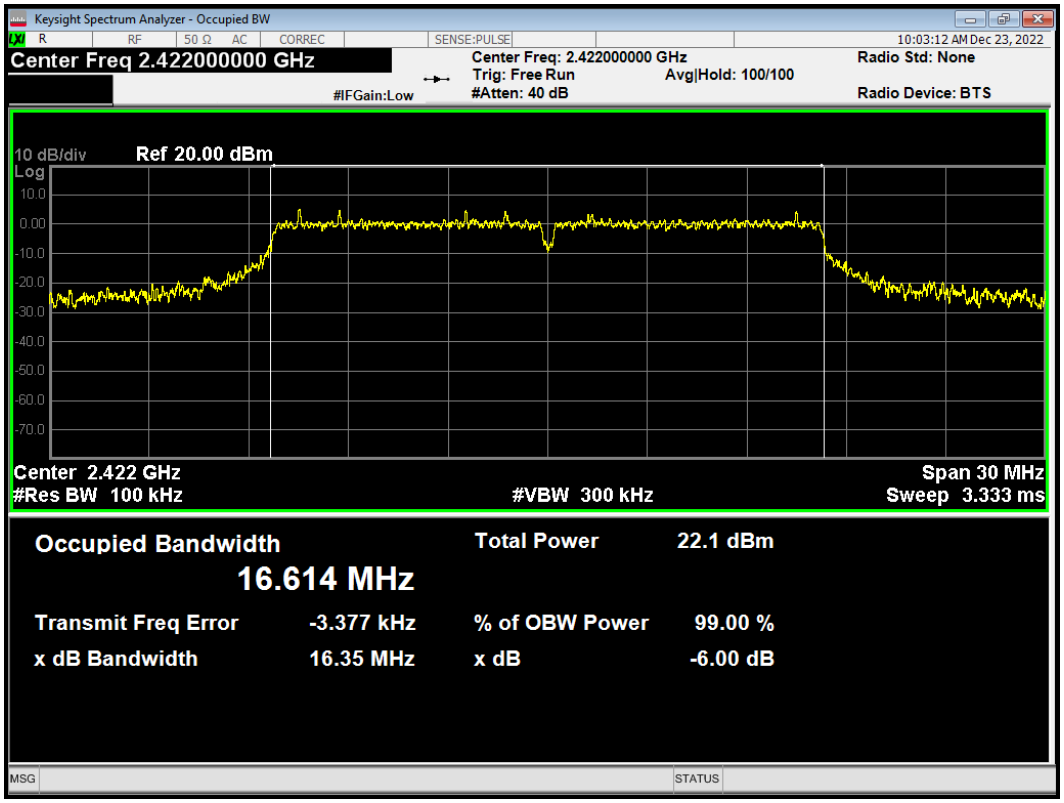
-6dB Bandwidth 802.11g 2412MHz



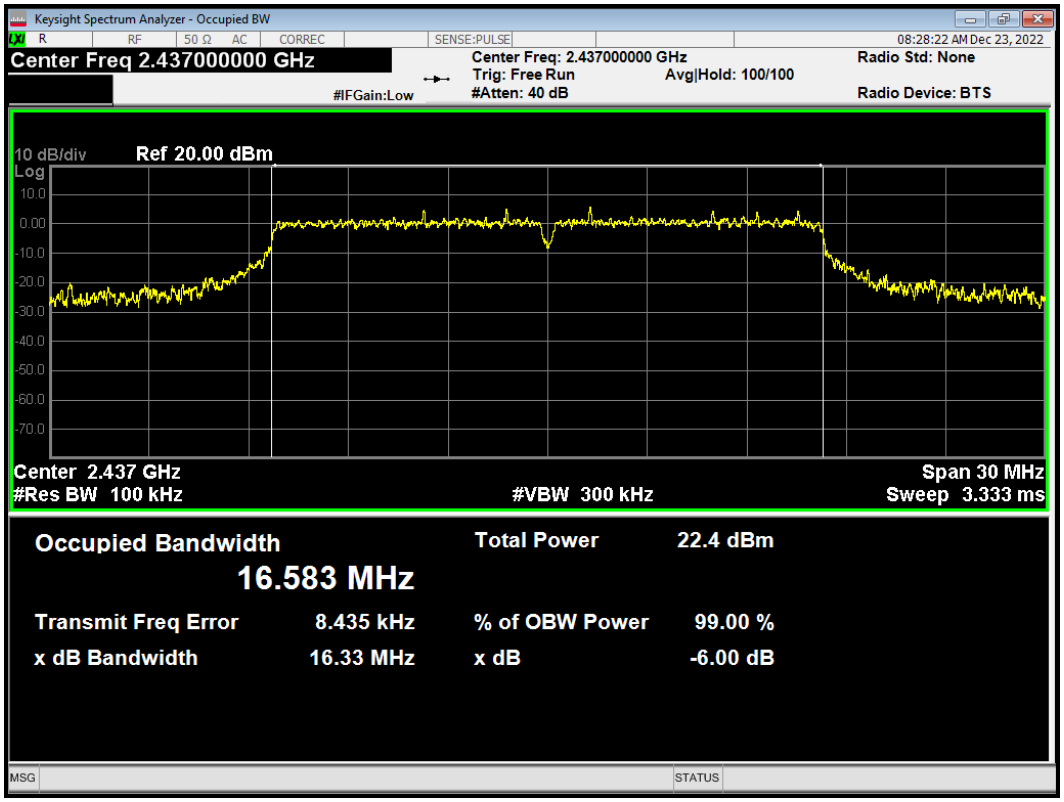
-6dB Bandwidth 802.11g 2417MHz



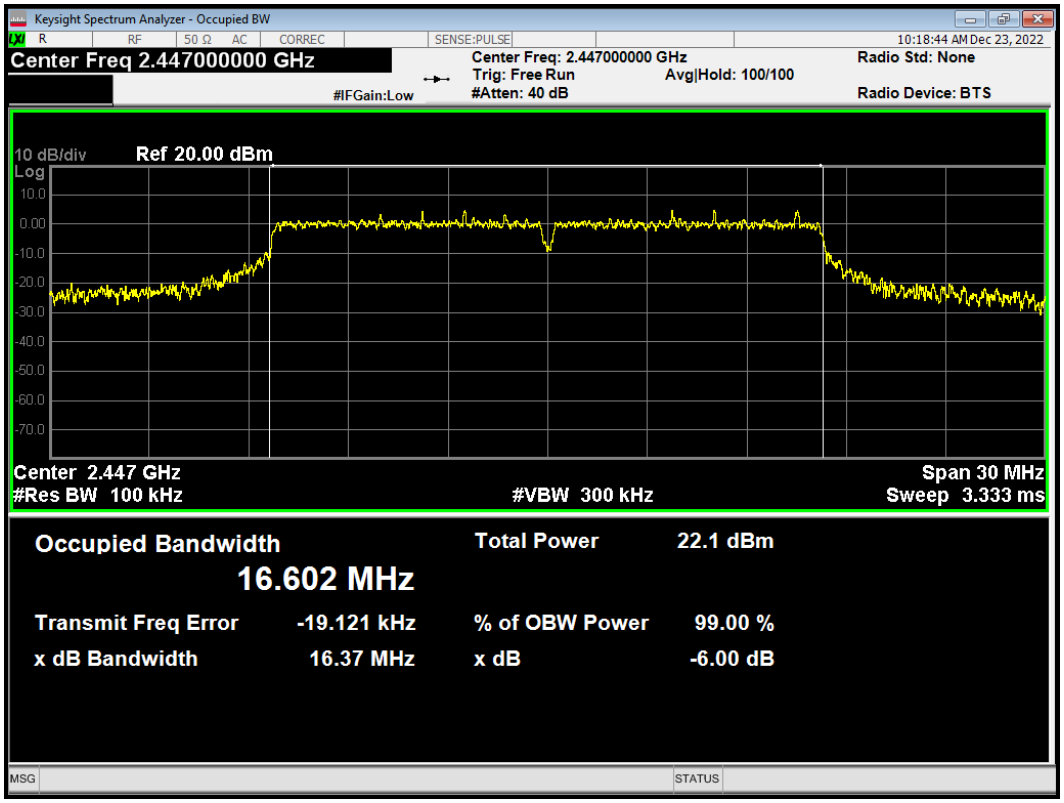
-6dB Bandwidth 802.11g 2422MHz



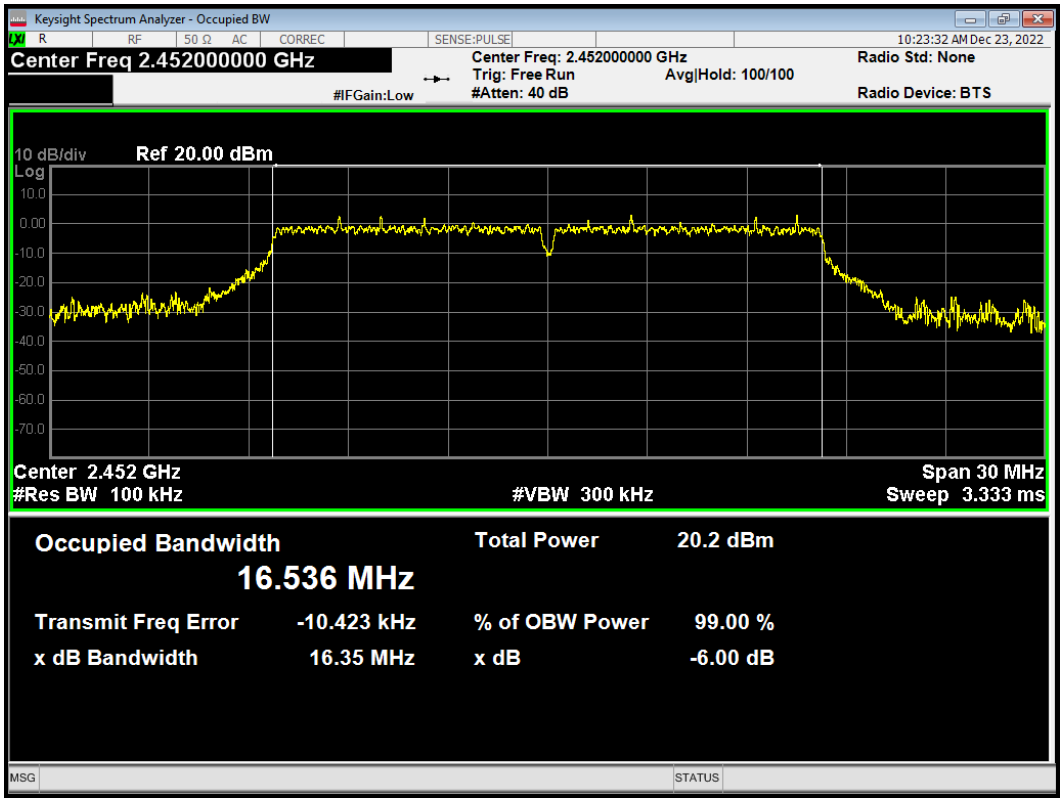
-6dB Bandwidth 802.11g 2437MHz



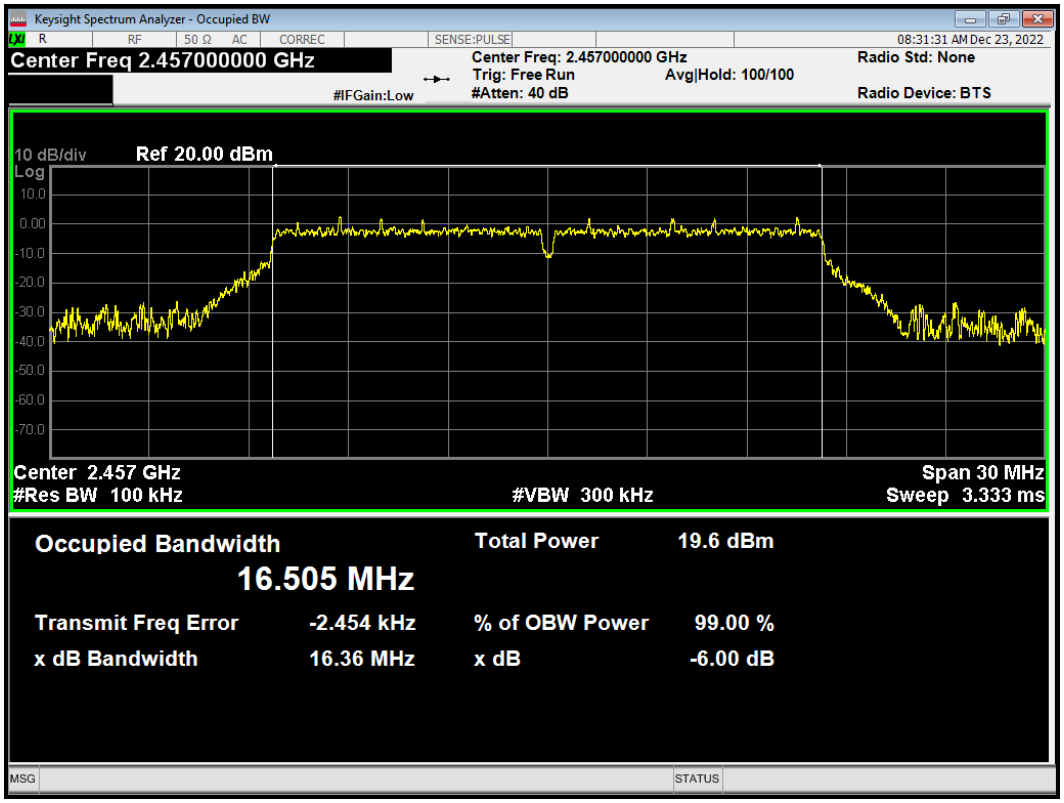
-6dB Bandwidth 802.11g 2447MHz



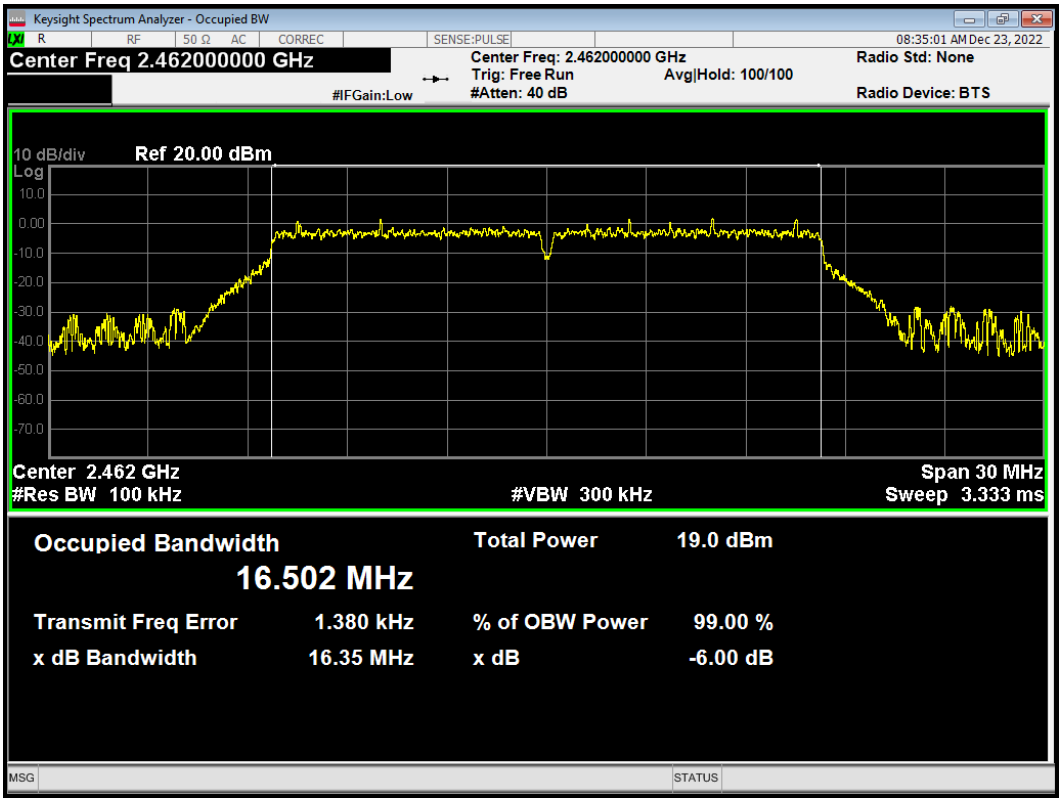
-6dB Bandwidth 802.11g 2452MHz



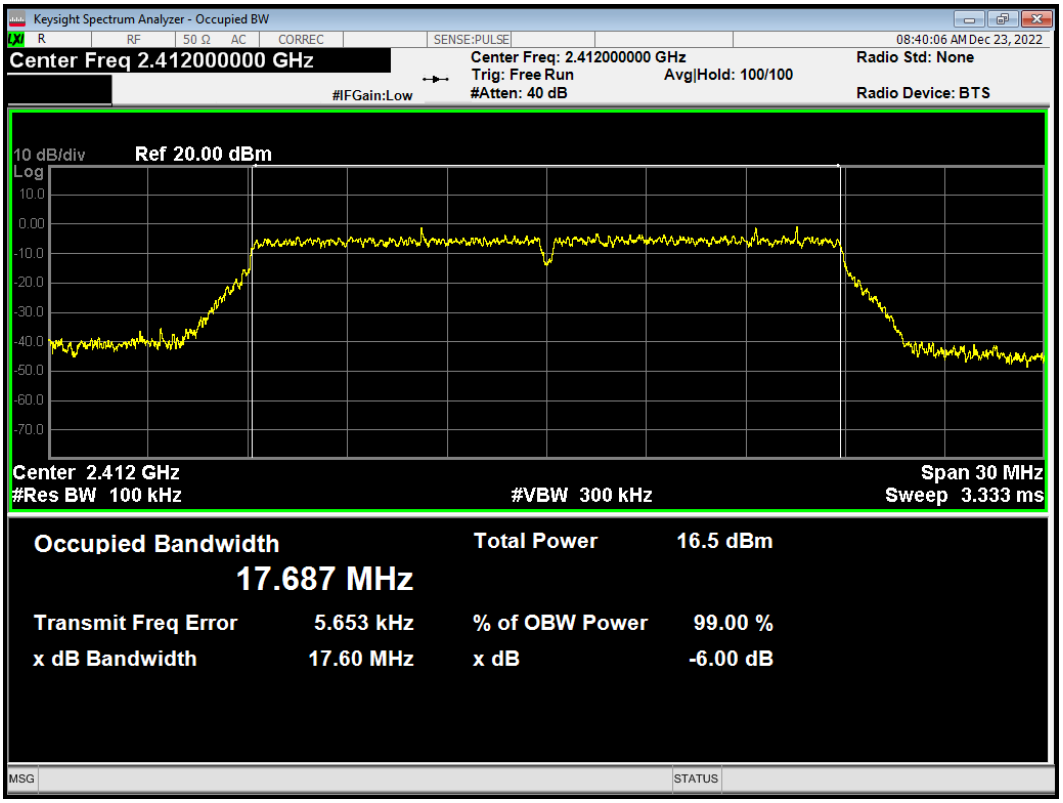
-6dB Bandwidth 802.11g 2457MHz



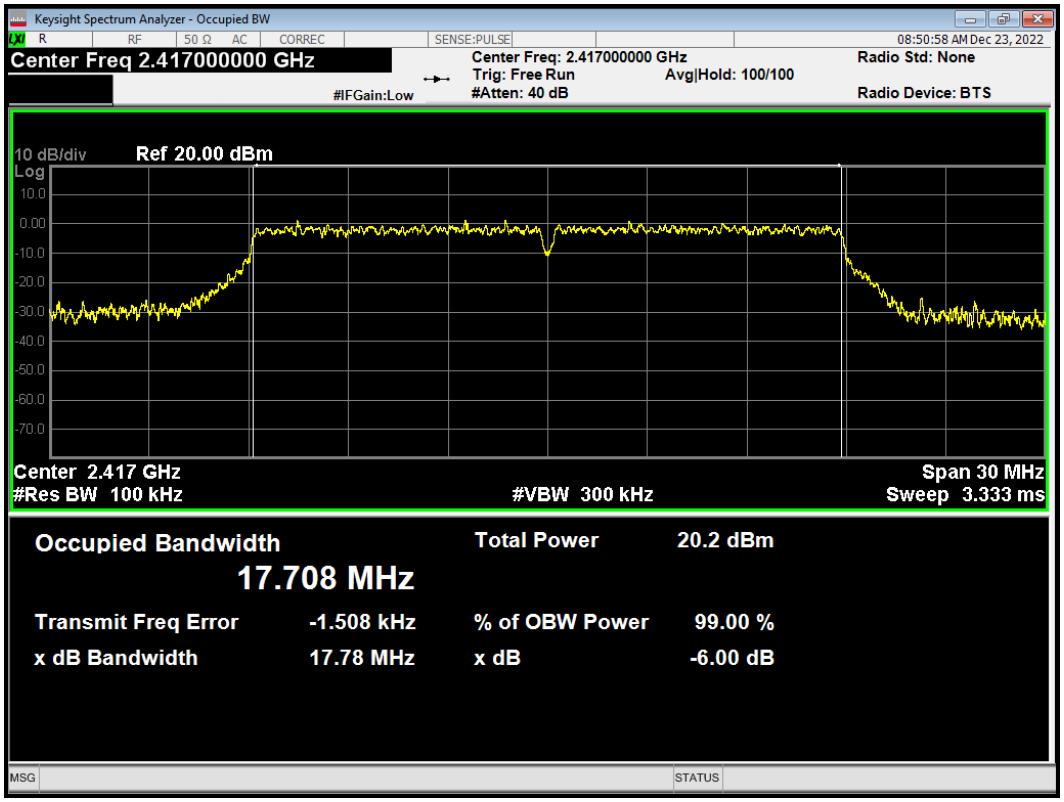
-6dB Bandwidth 802.11g 2462MHz



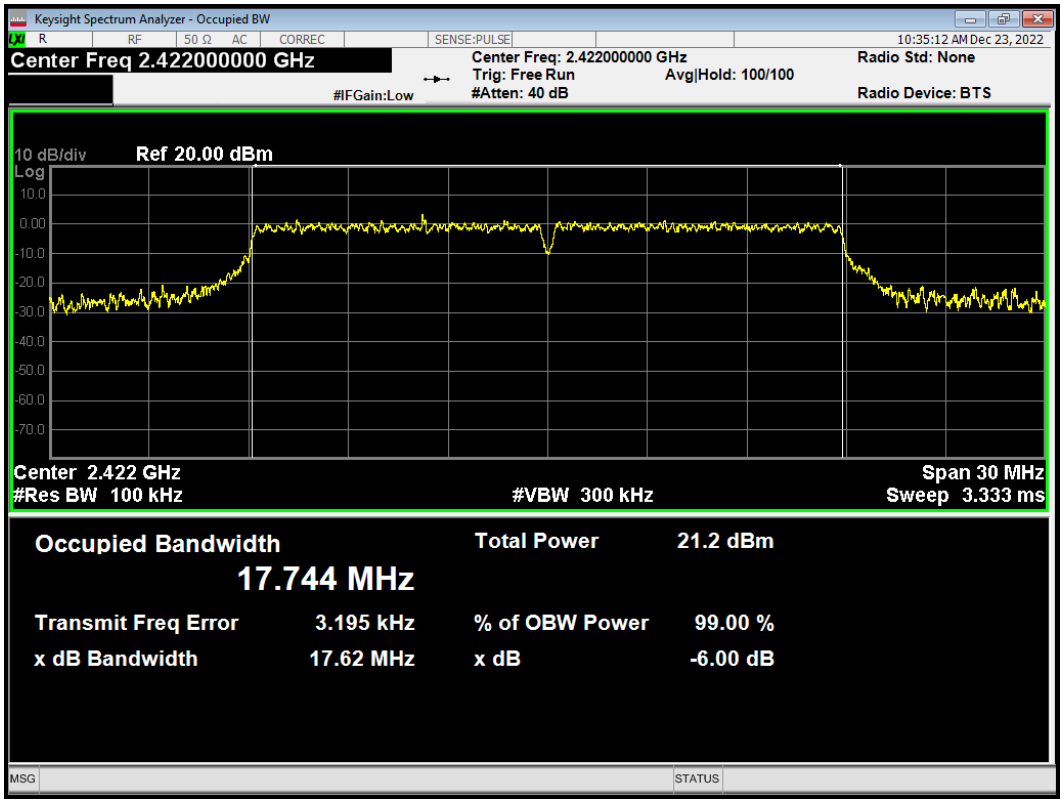
-6dB Bandwidth 802.11n(HT20) 2412MHz



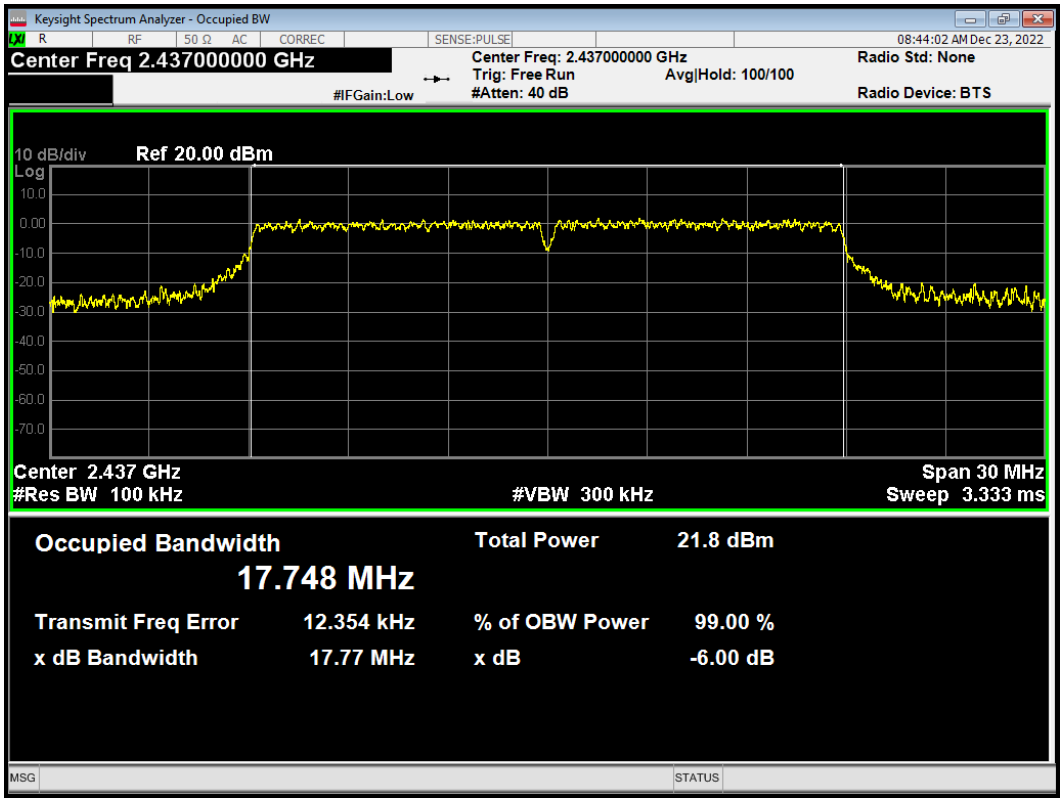
-6dB Bandwidth 802.11n(HT20) 2417MHz



-6dB Bandwidth 802.11n(HT20) 2422MHz



-6dB Bandwidth 802.11n(HT20) 2437MHz



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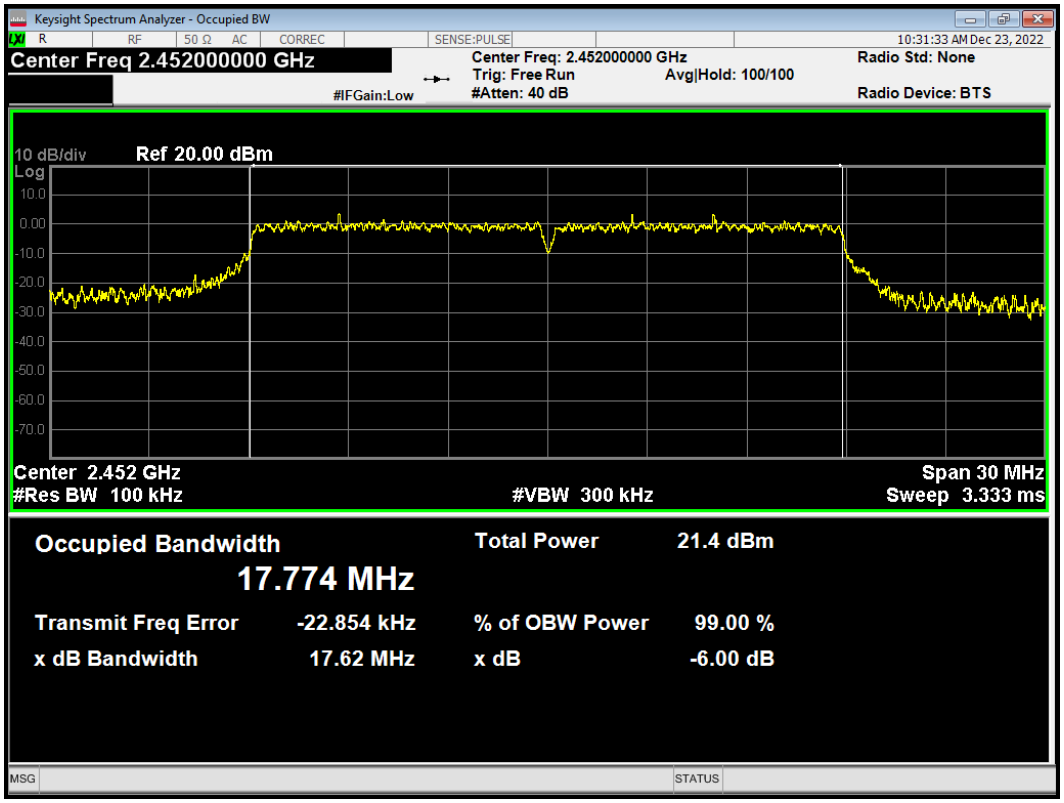
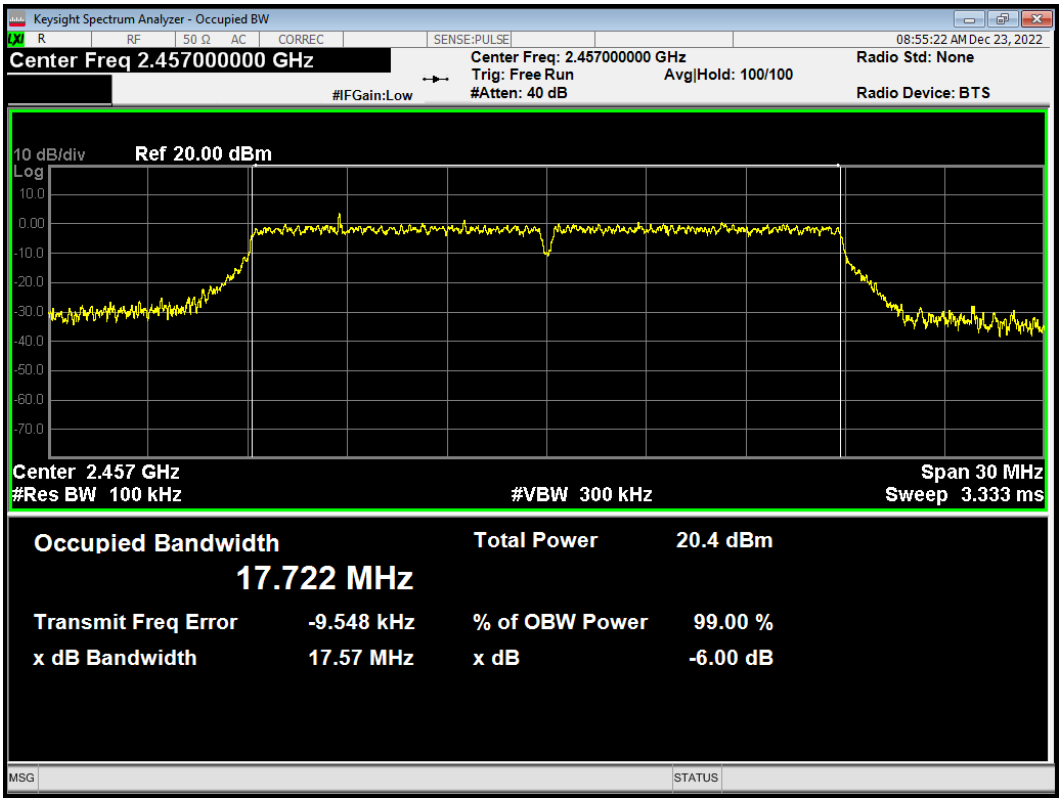
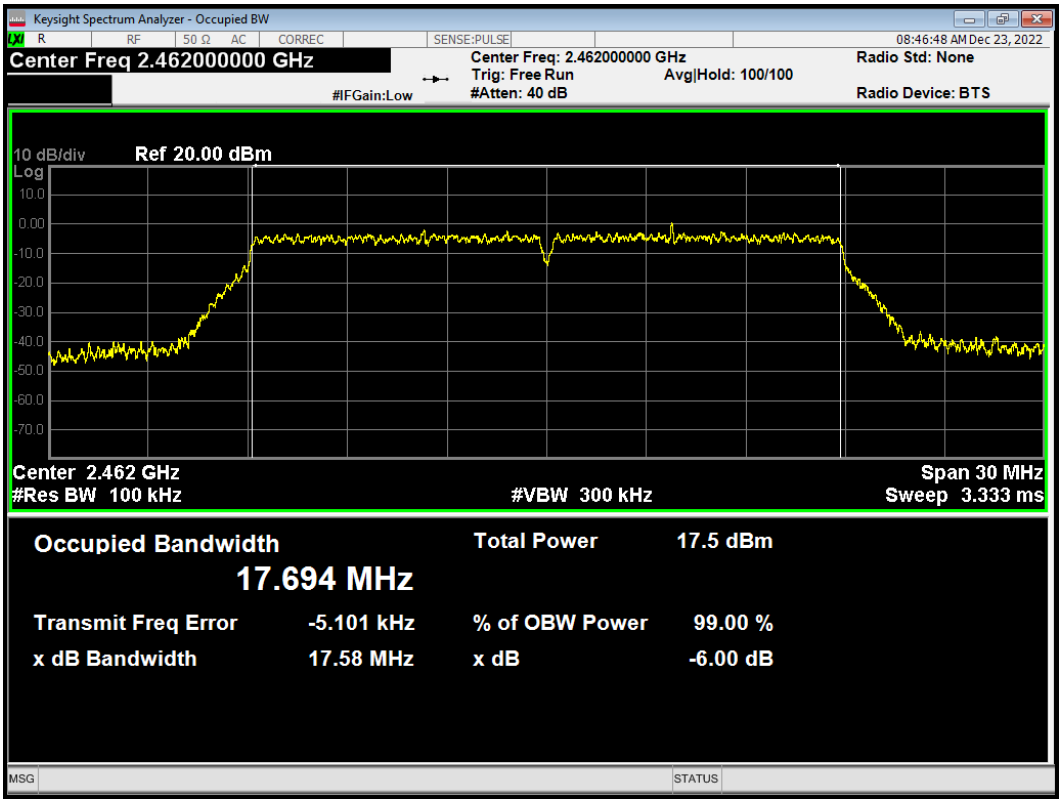


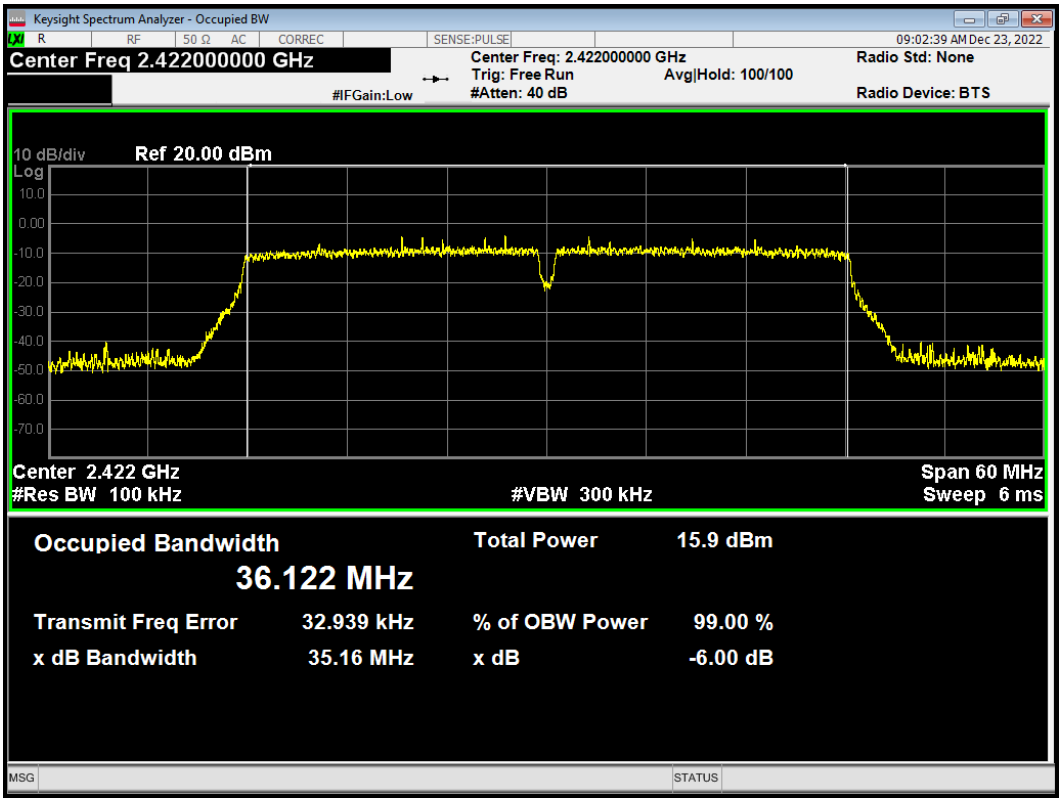
-6dB Bandwidth 802.11n(HT20) 2457MHz



-6dB Bandwidth 802.11n(HT20) 2462MHz



-6dB Bandwidth 802.11n(HT40) 2422MHz



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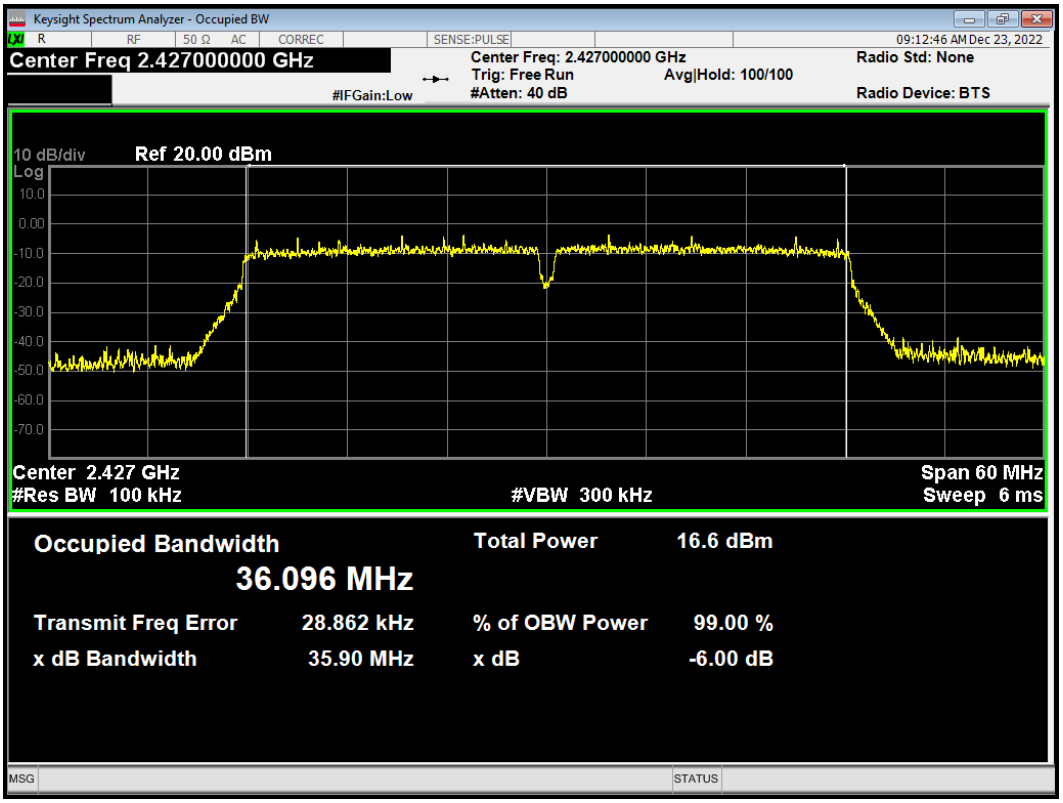

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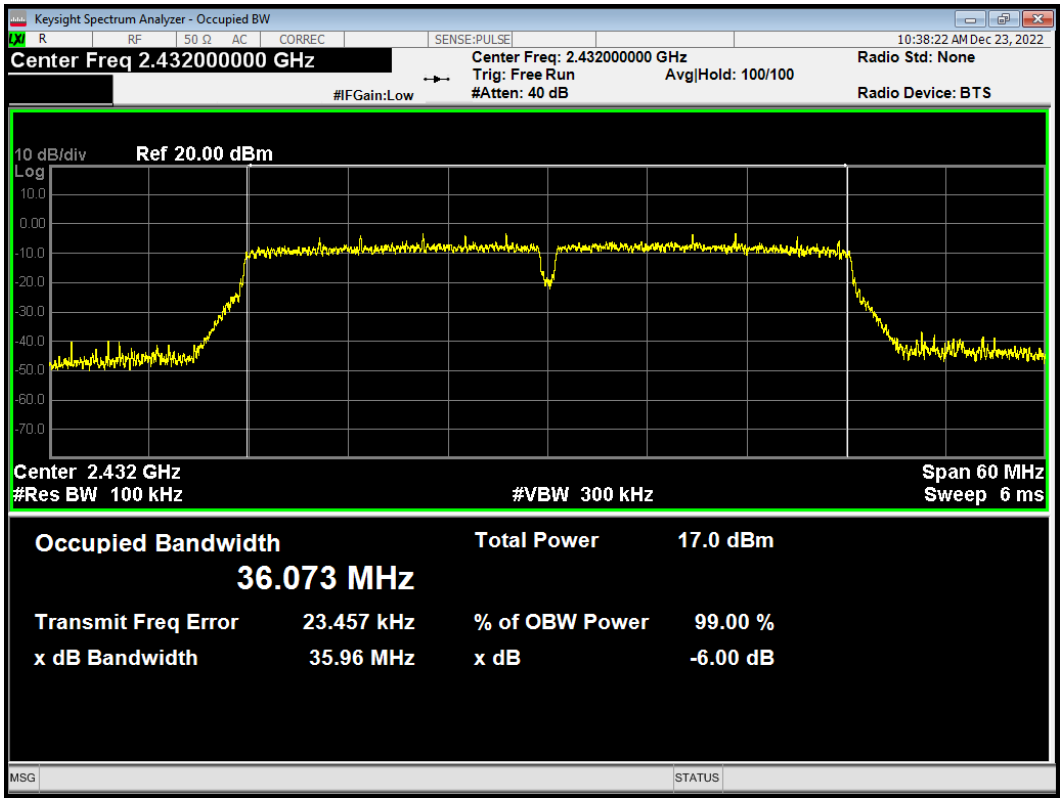
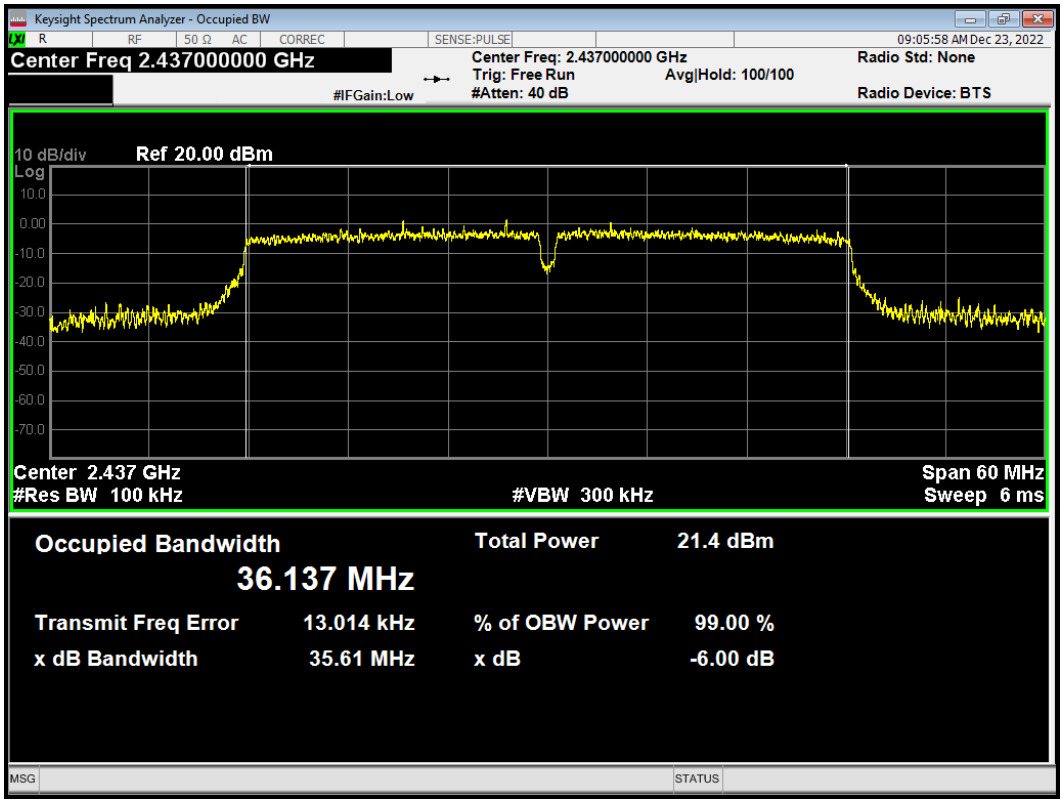
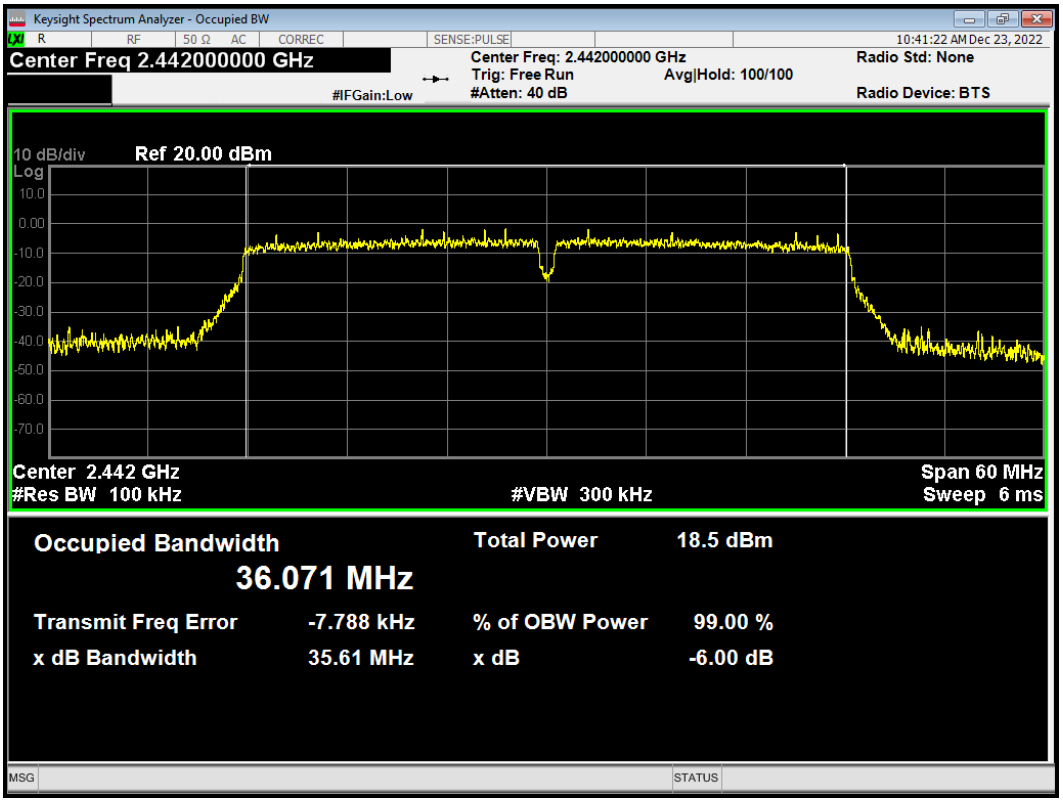


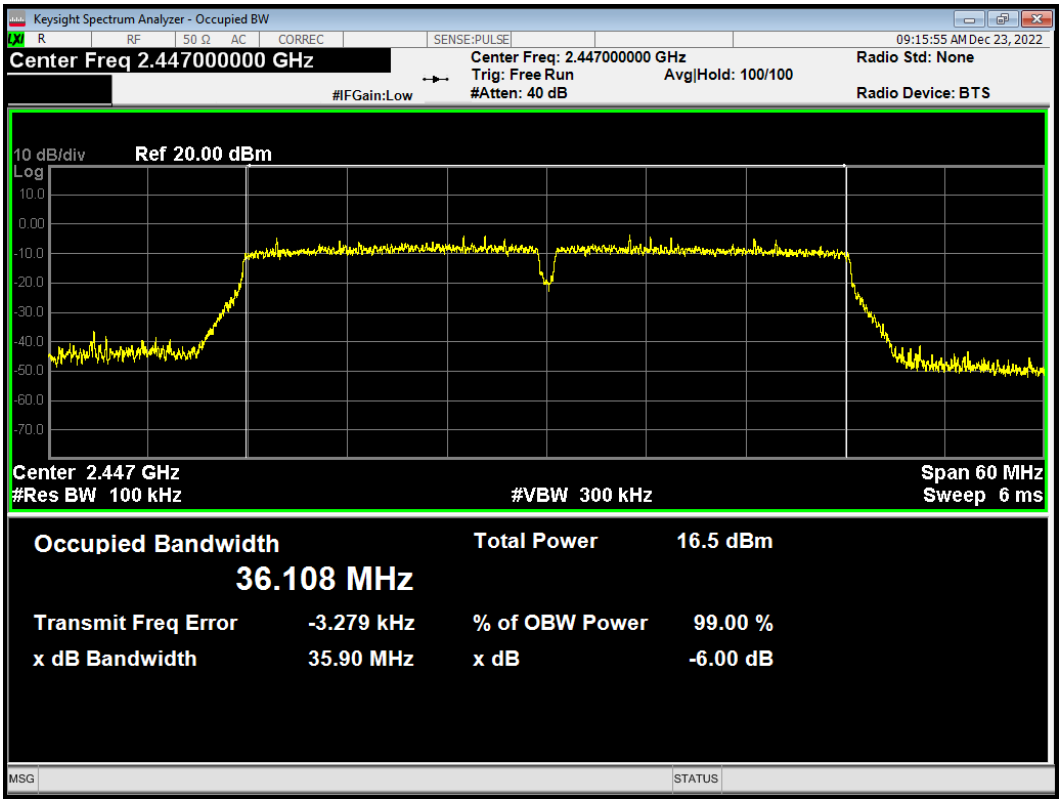
-6dB Bandwidth 802.11n(HT40) 2437MHz



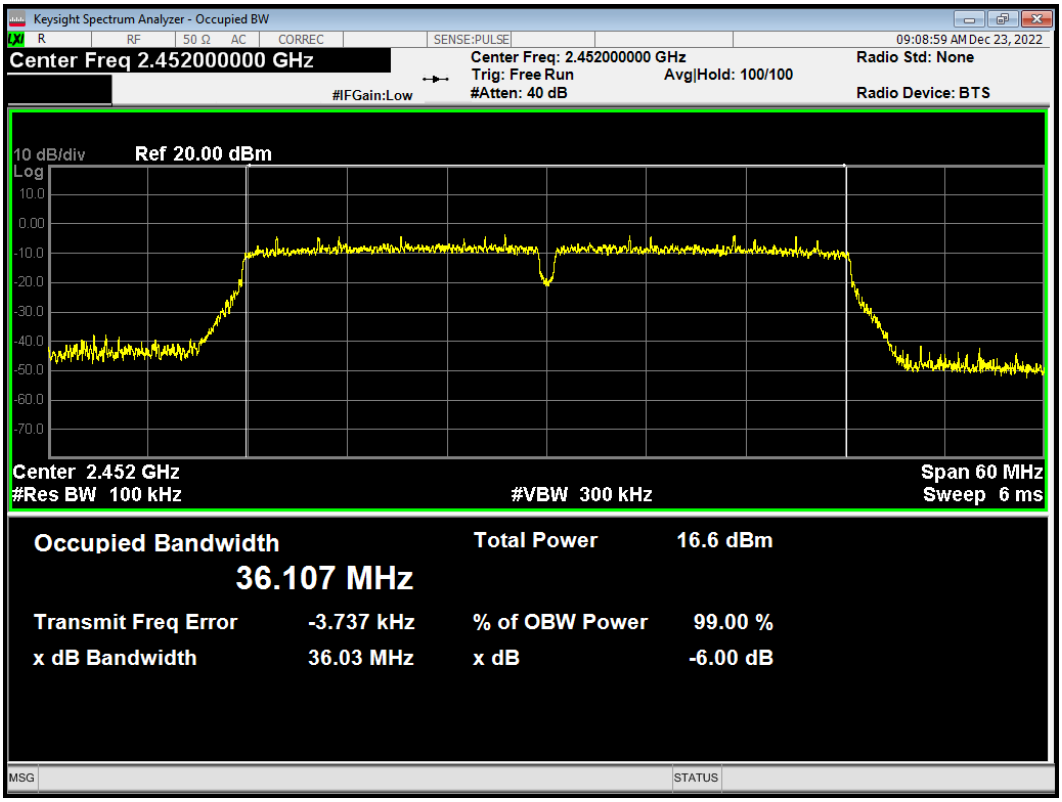
-6dB Bandwidth 802.11n(HT40) 2442MHz



-6dB Bandwidth 802.11n(HT40) 2447MHz



-6dB Bandwidth 802.11n(HT40) 2452MHz



5.3. Band Edge

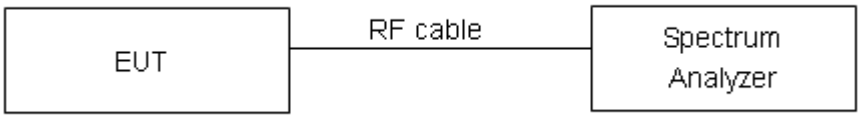
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

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.”

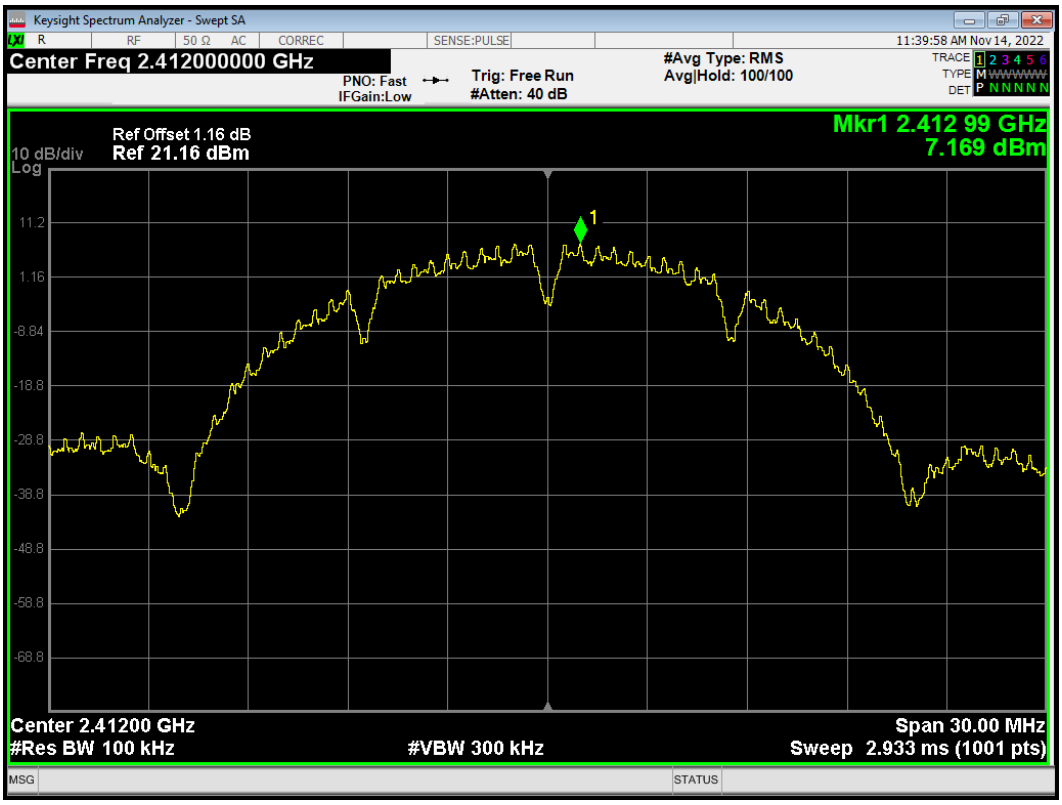
Measurement Uncertainty

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

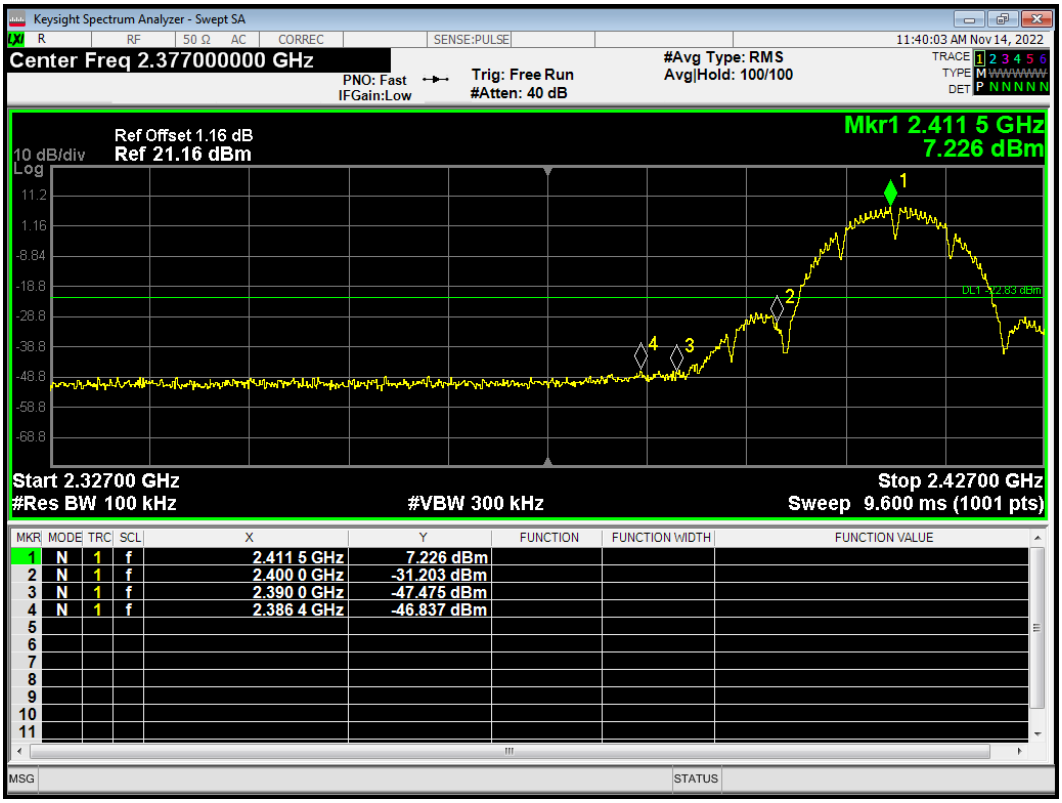
Frequency	Uncertainty
2GHz-3GHz	1.407 dB

Test Results: PASS

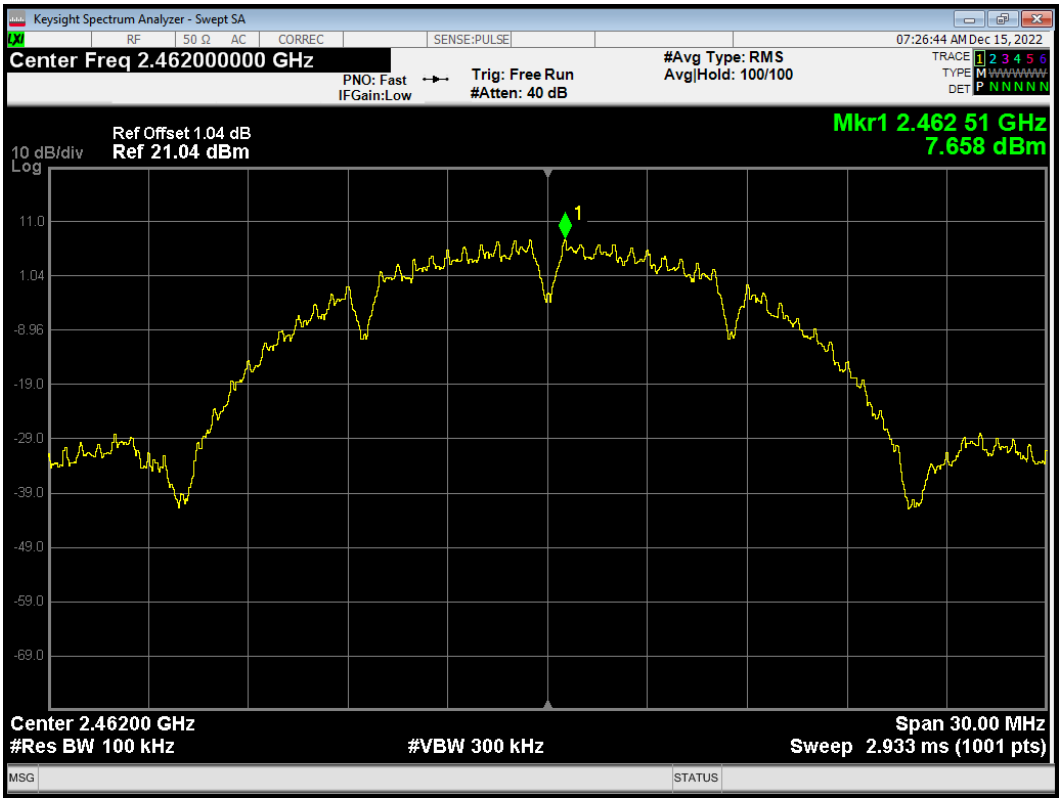
Band Edge 802.11b 2412MHz Ref



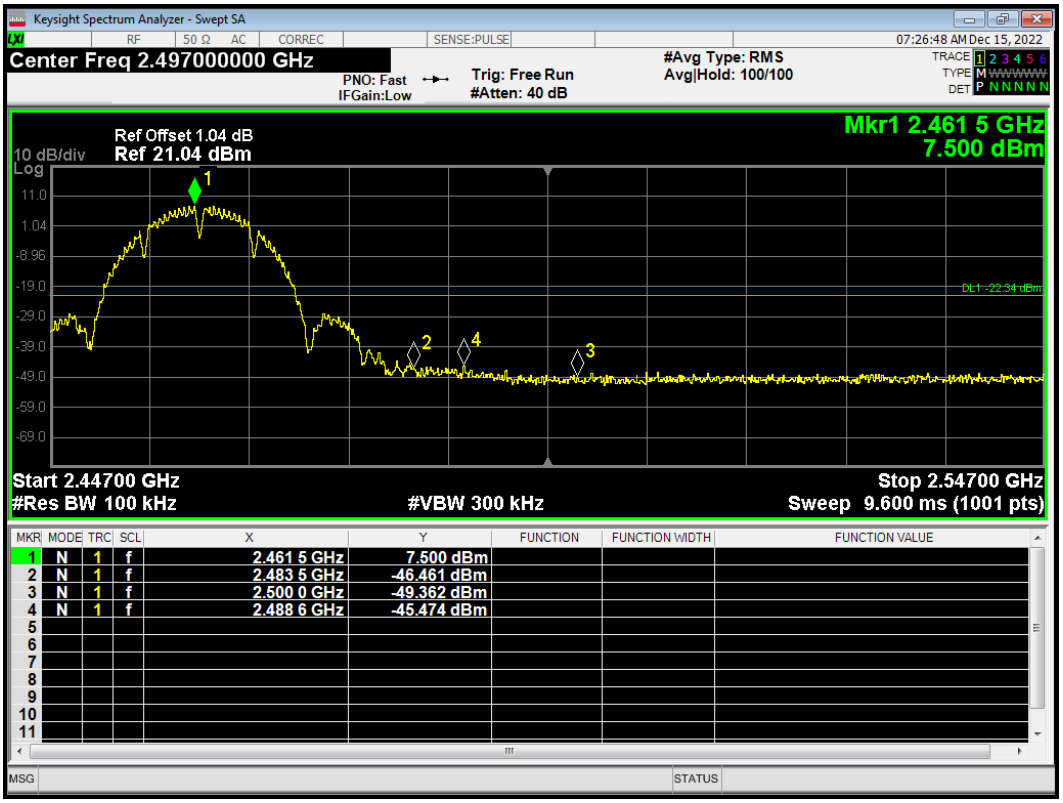
Band Edge 802.11b 2412MHz Emission



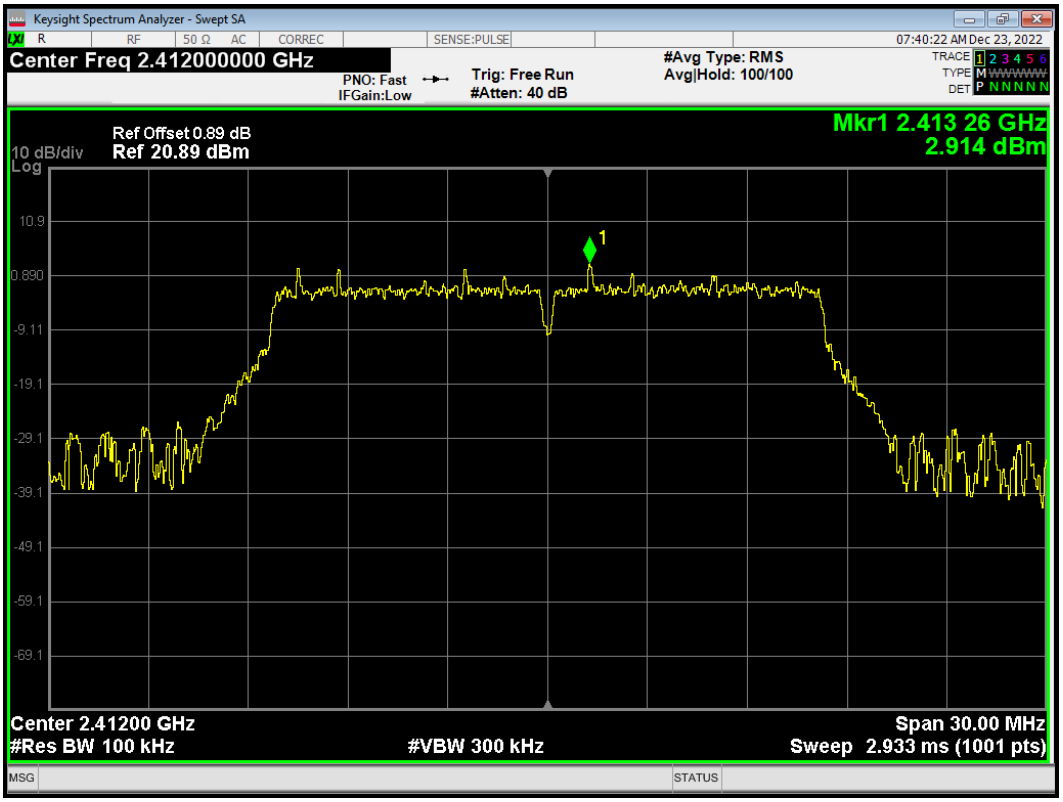
Band Edge 802.11b 2462MHz Ref



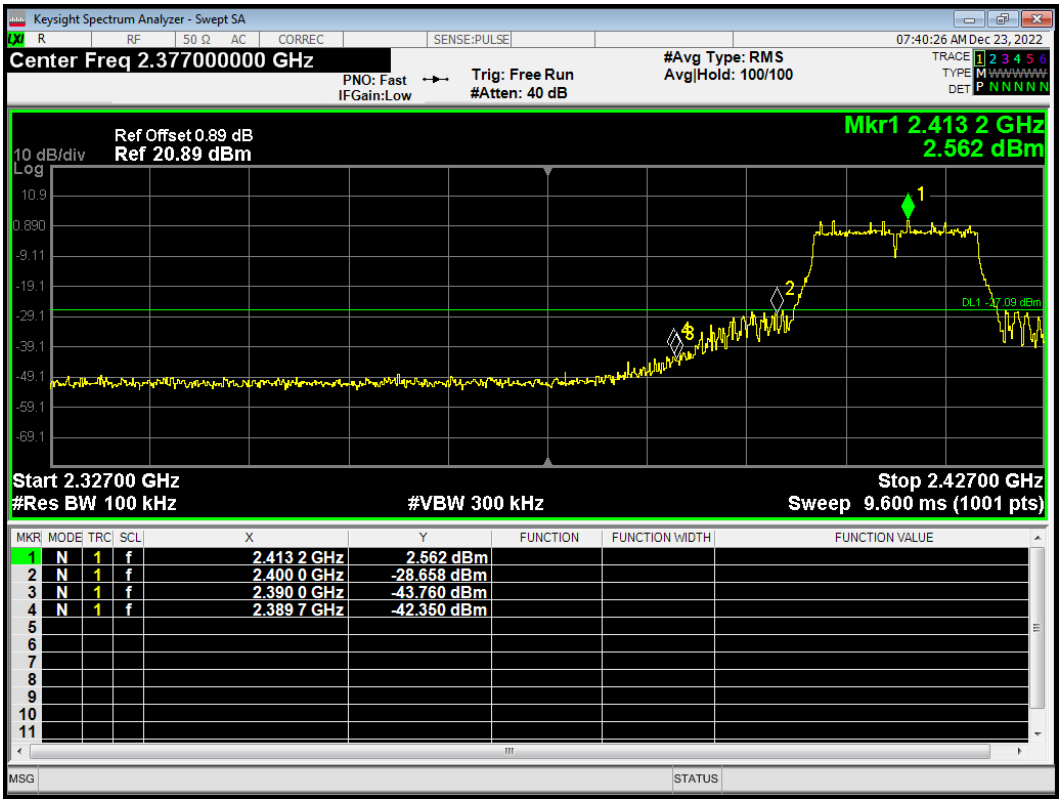
Band Edge 802.11b 2462MHz Emission



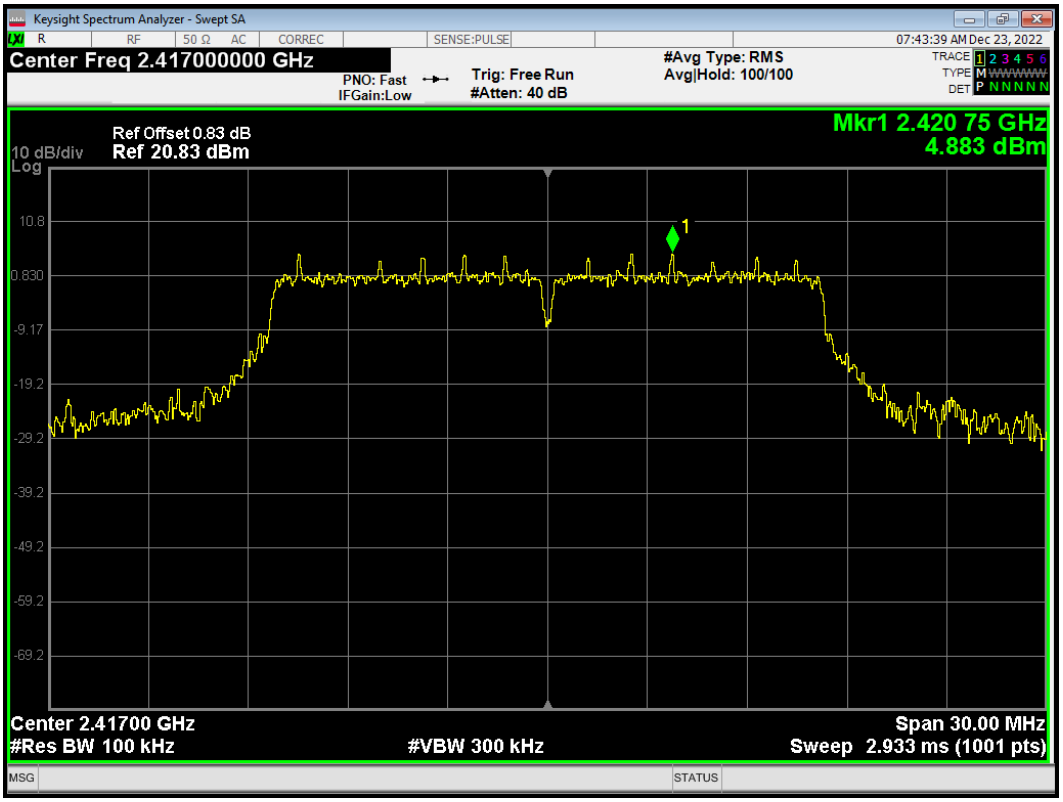
Band Edge 802.11g 2412MHz Ref



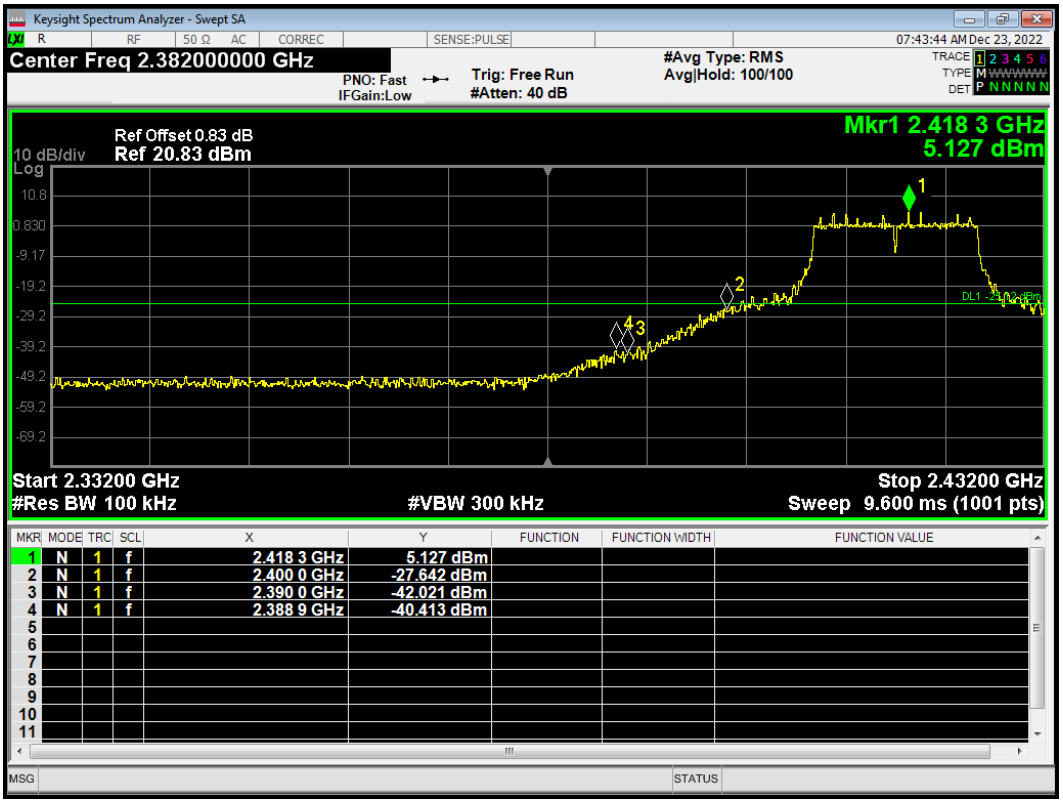
Band Edge 802.11g 2412MHz Emission



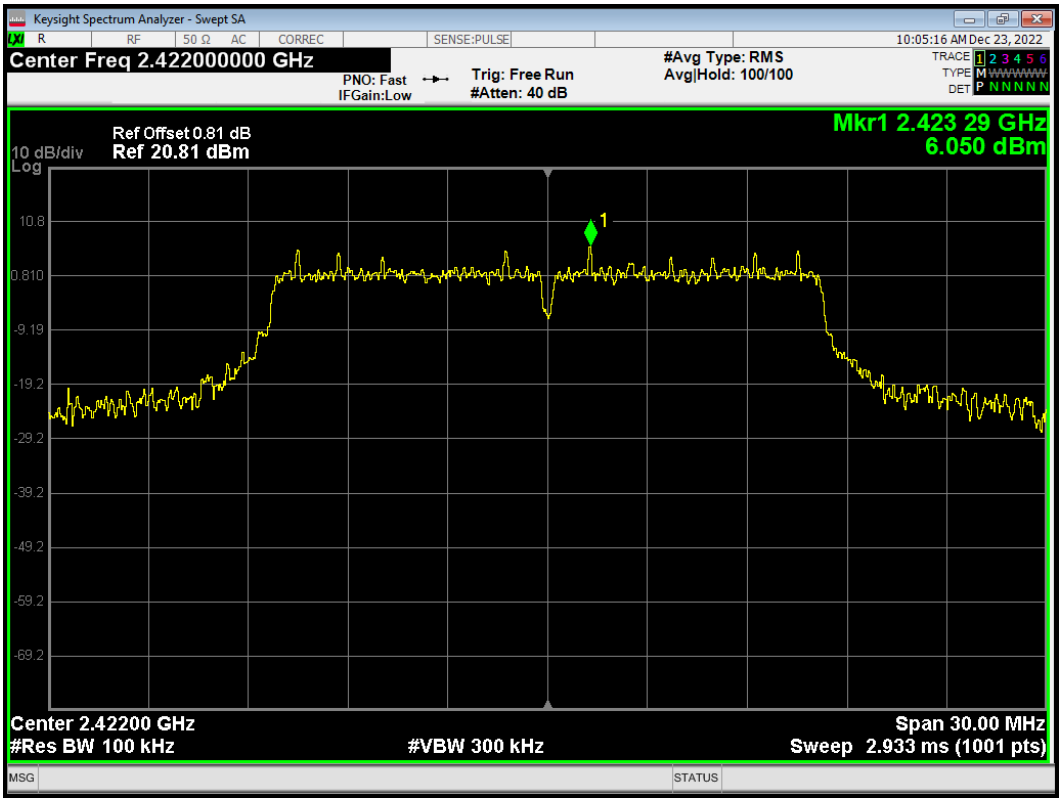
Band Edge 802.11g 2417MHz Ref



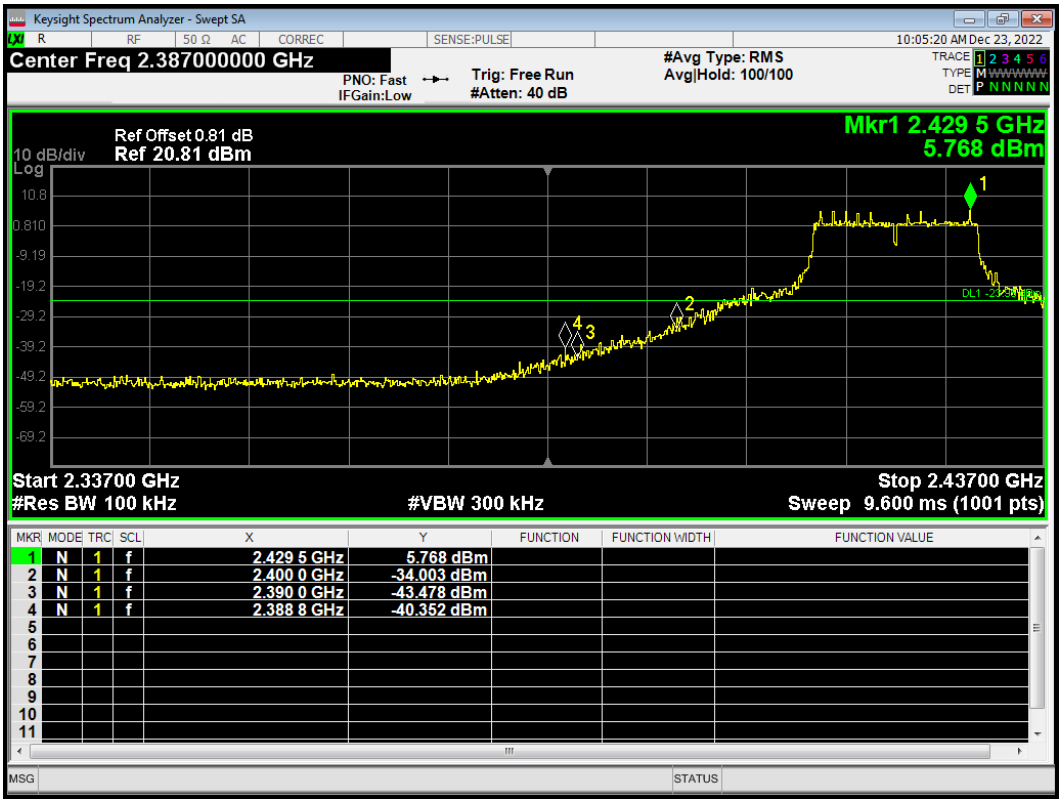
Band Edge 802.11g 2417MHz Emission



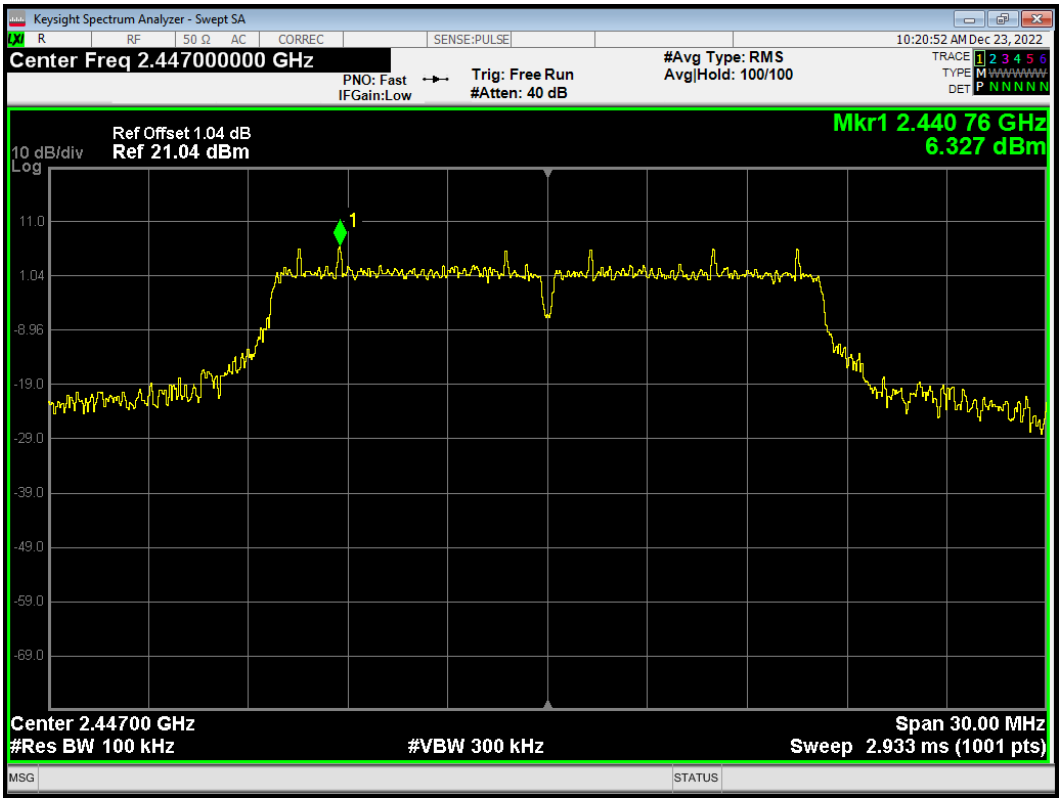
Band Edge 802.11g 2422MHz Ref



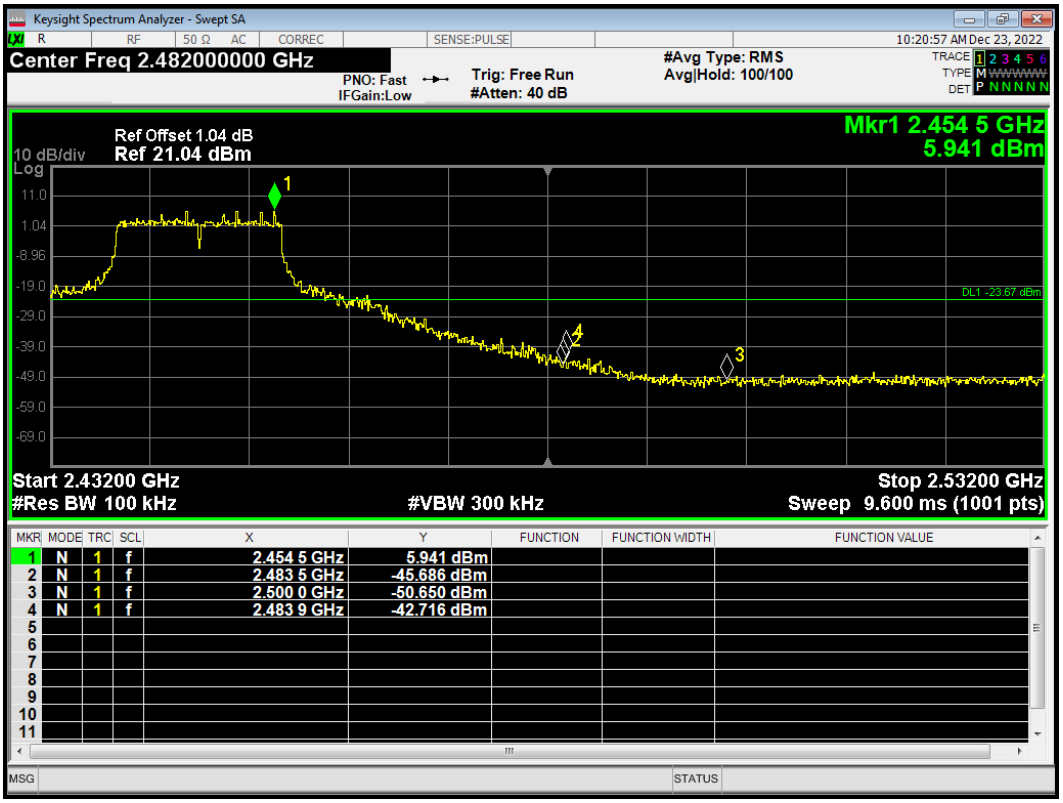
Band Edge 802.11g 2422MHz Emission



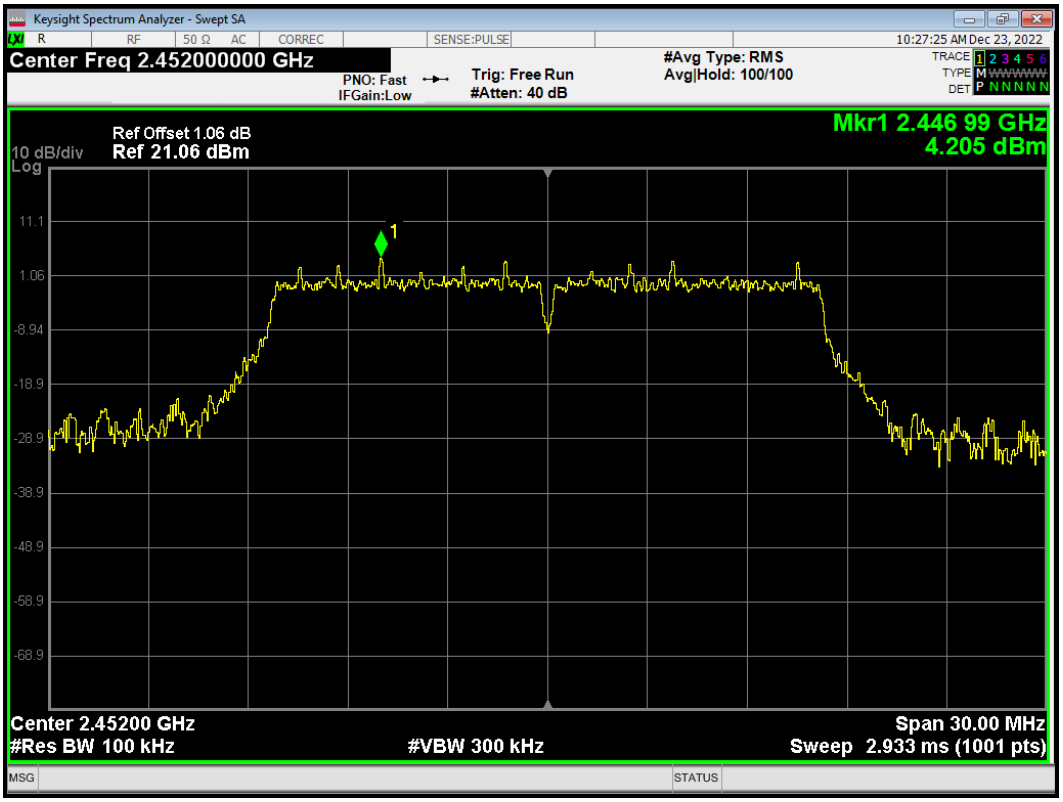
Band Edge 802.11g 2447MHz Ref



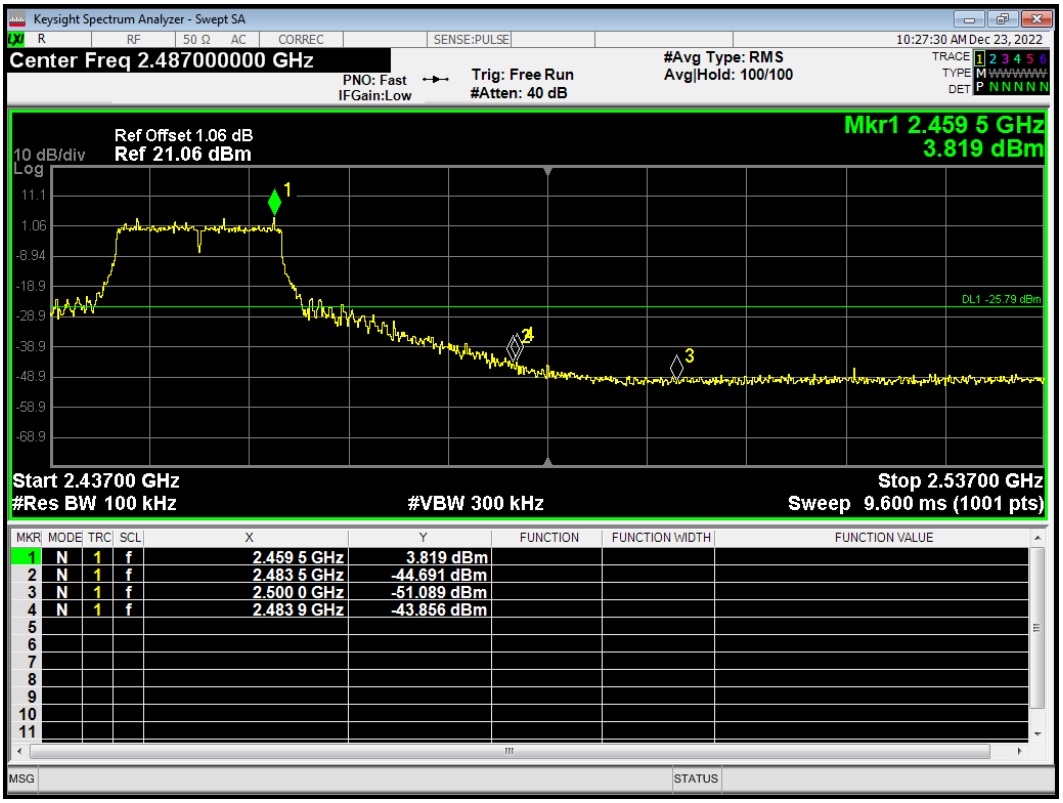
Band Edge 802.11g 2447MHz Emission



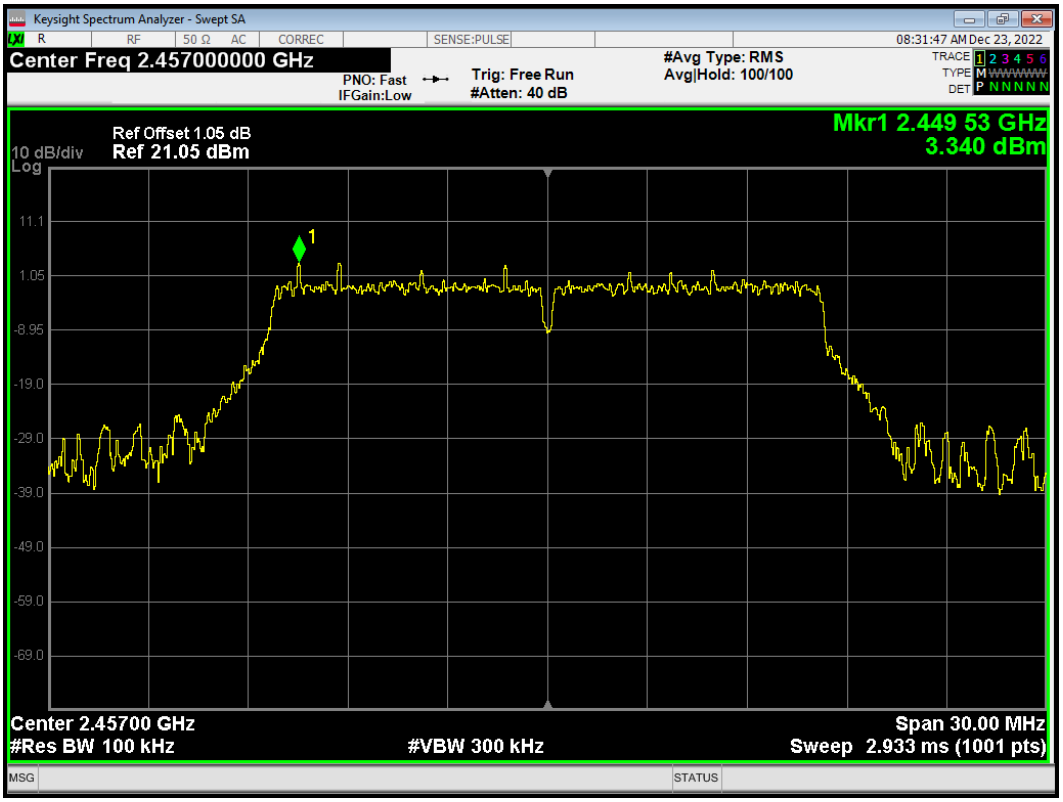
Band Edge 802.11g 2452MHz Ref



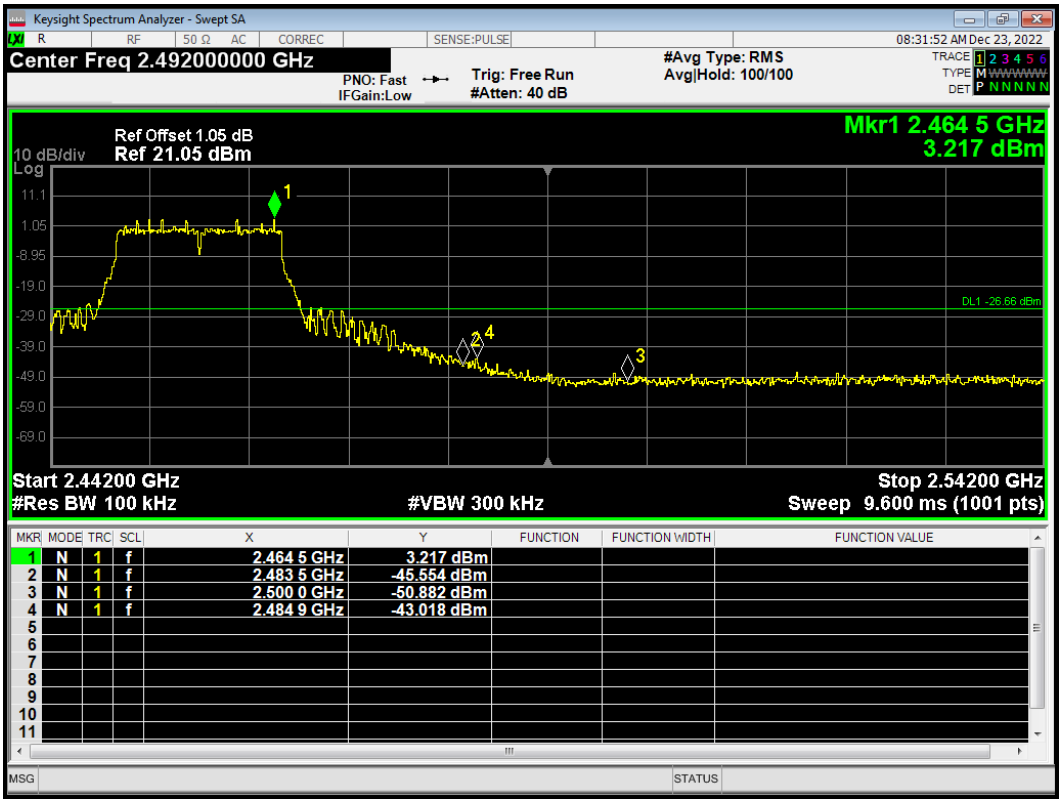
Band Edge 802.11g 2452MHz Emission



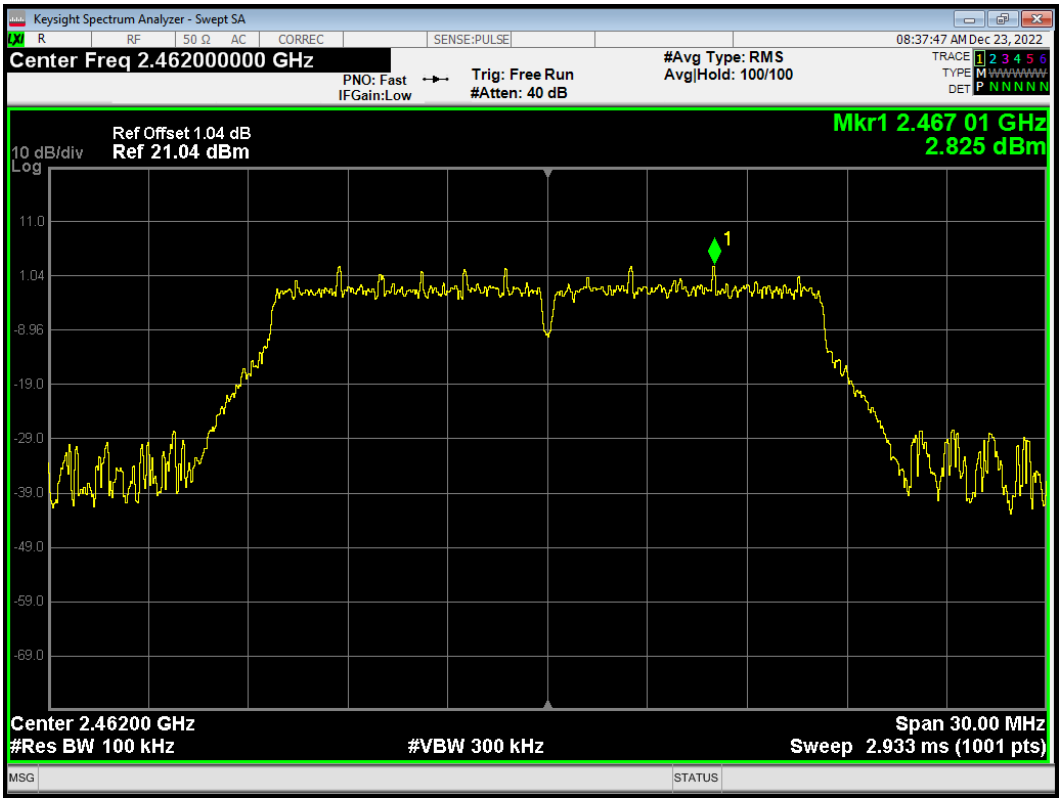
Band Edge 802.11g 2457MHz Ref



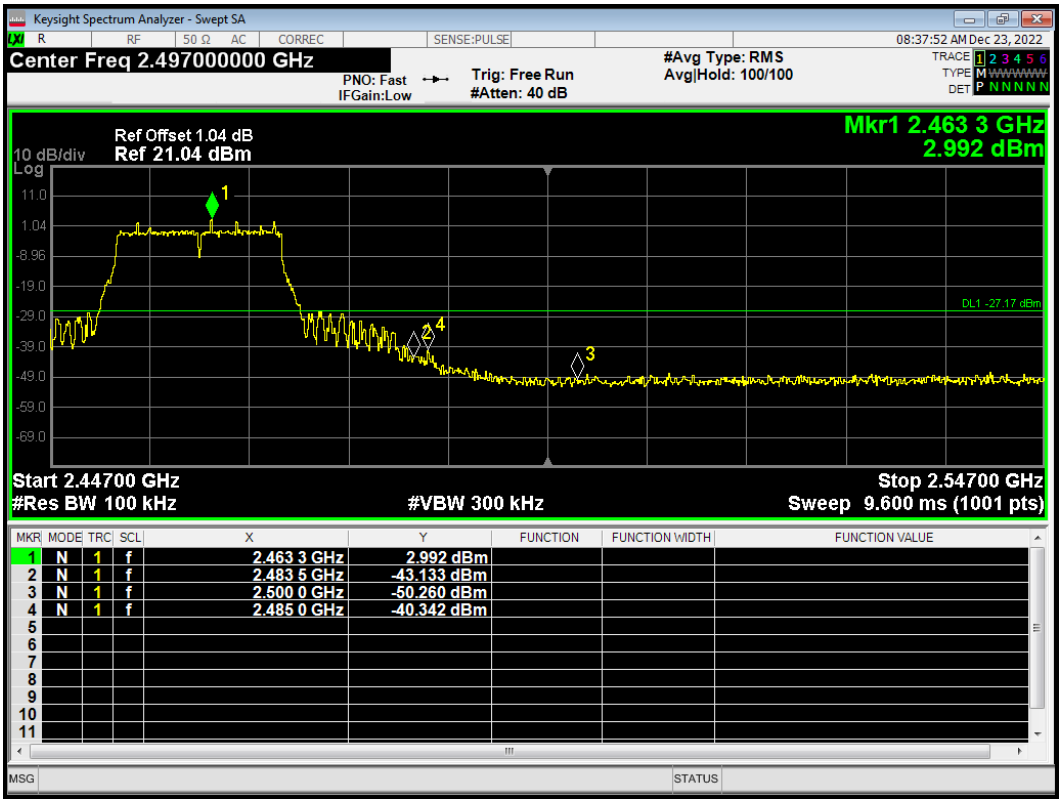
Band Edge 802.11g 2457MHz Emission



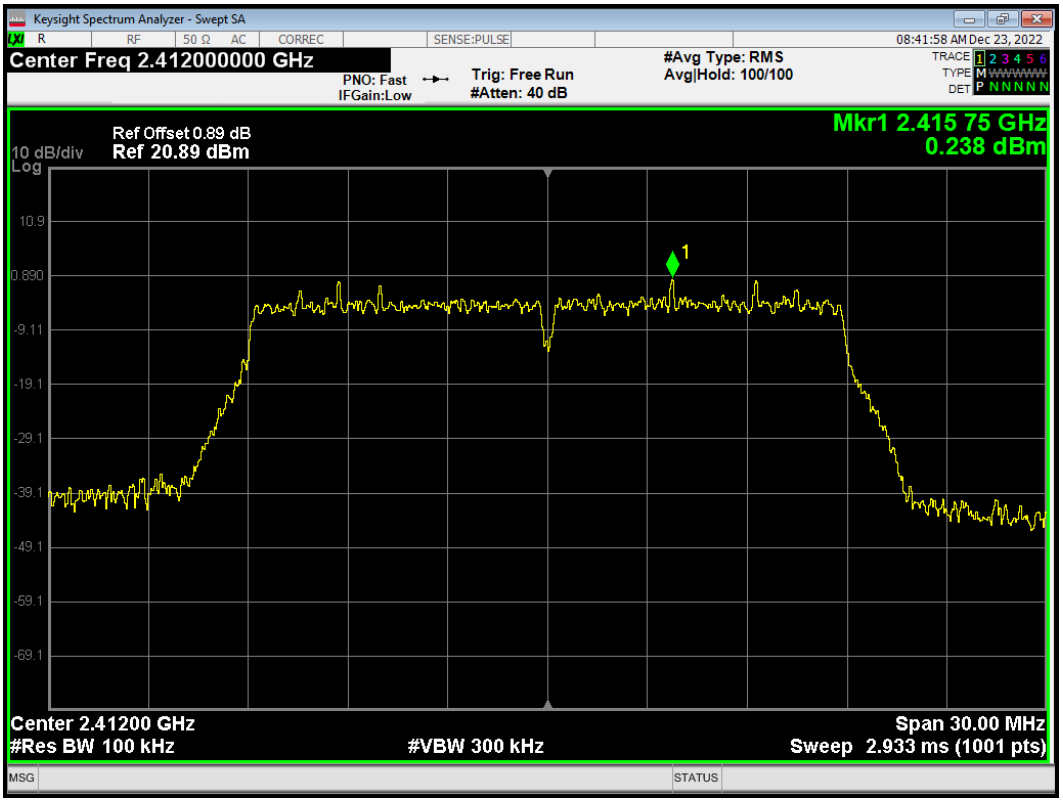
Band Edge 802.11g 2462MHz Ref



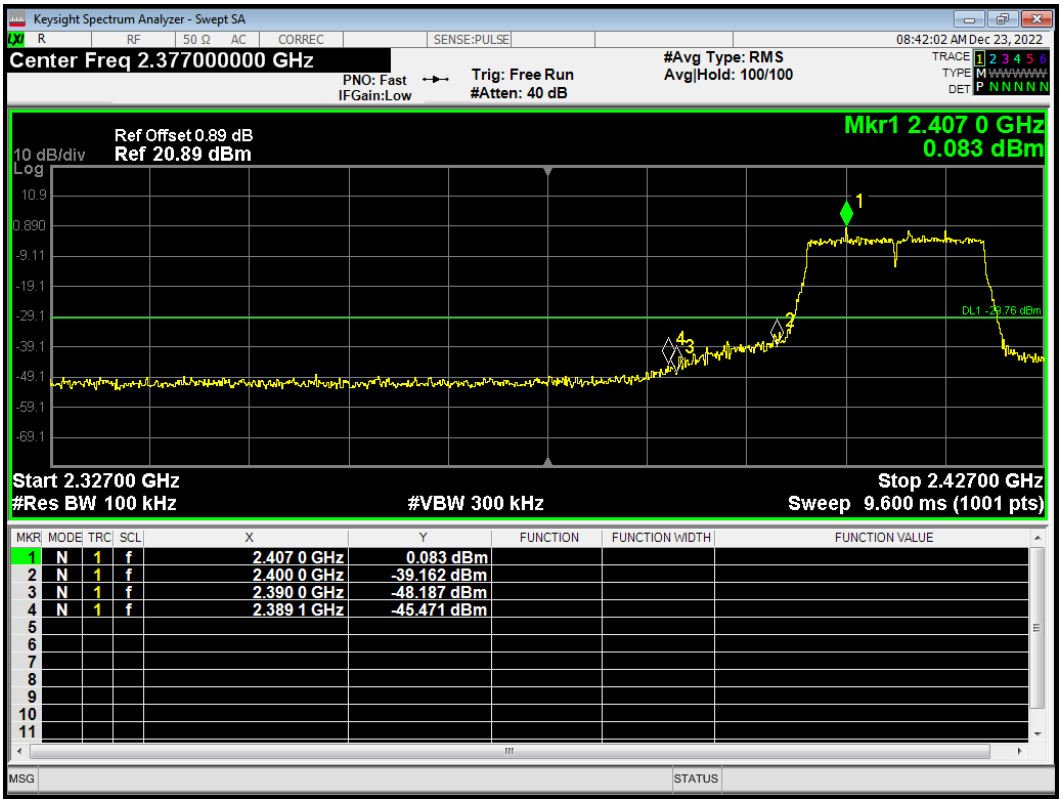
Band Edge 802.11g 2462MHz Emission



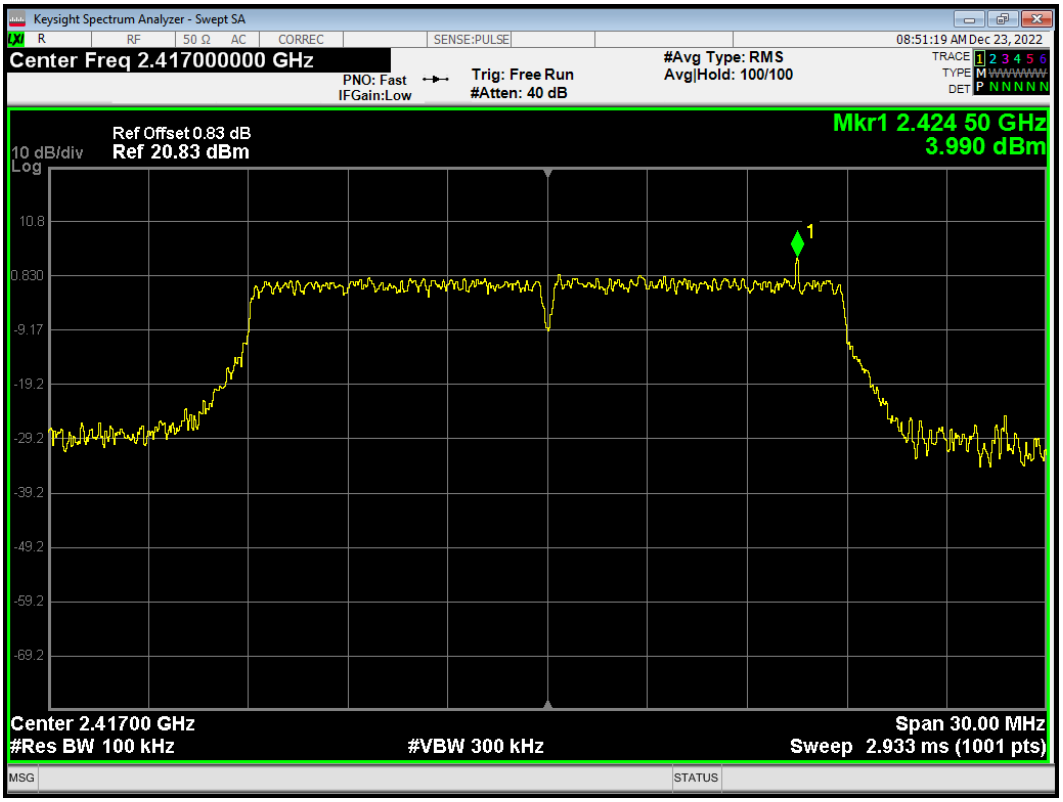
Band Edge 802.11n(HT20) 2412MHz Ref



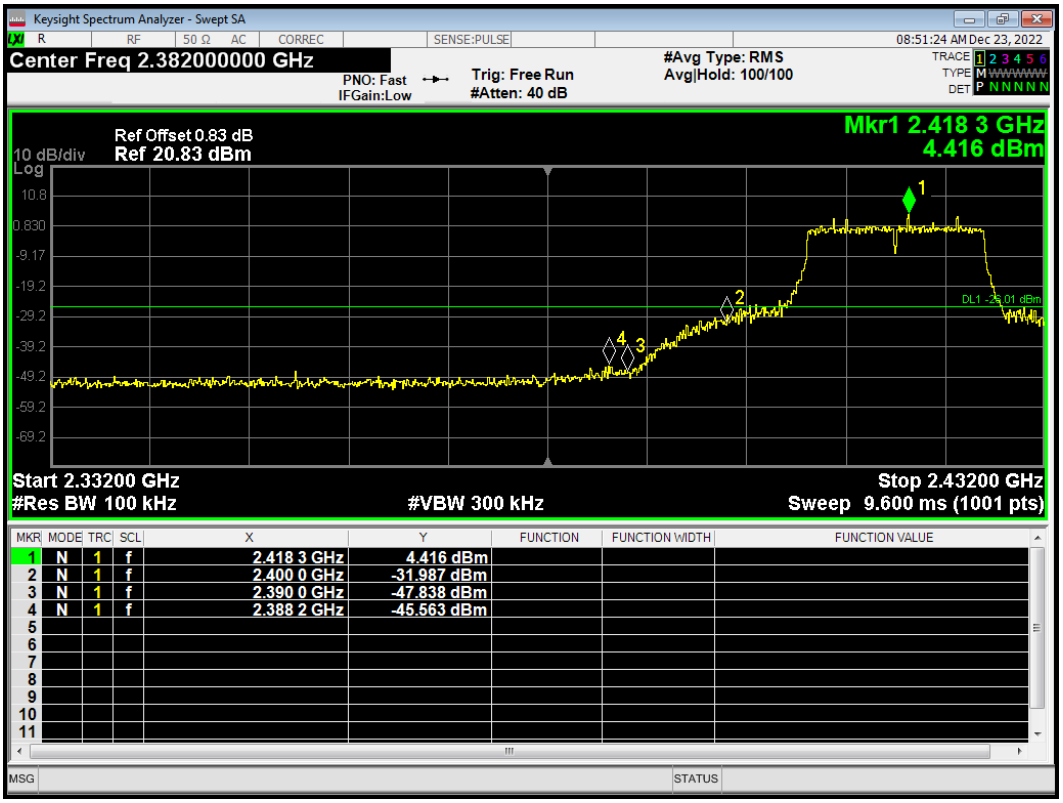
Band Edge 802.11n(HT20) 2412MHz Emission



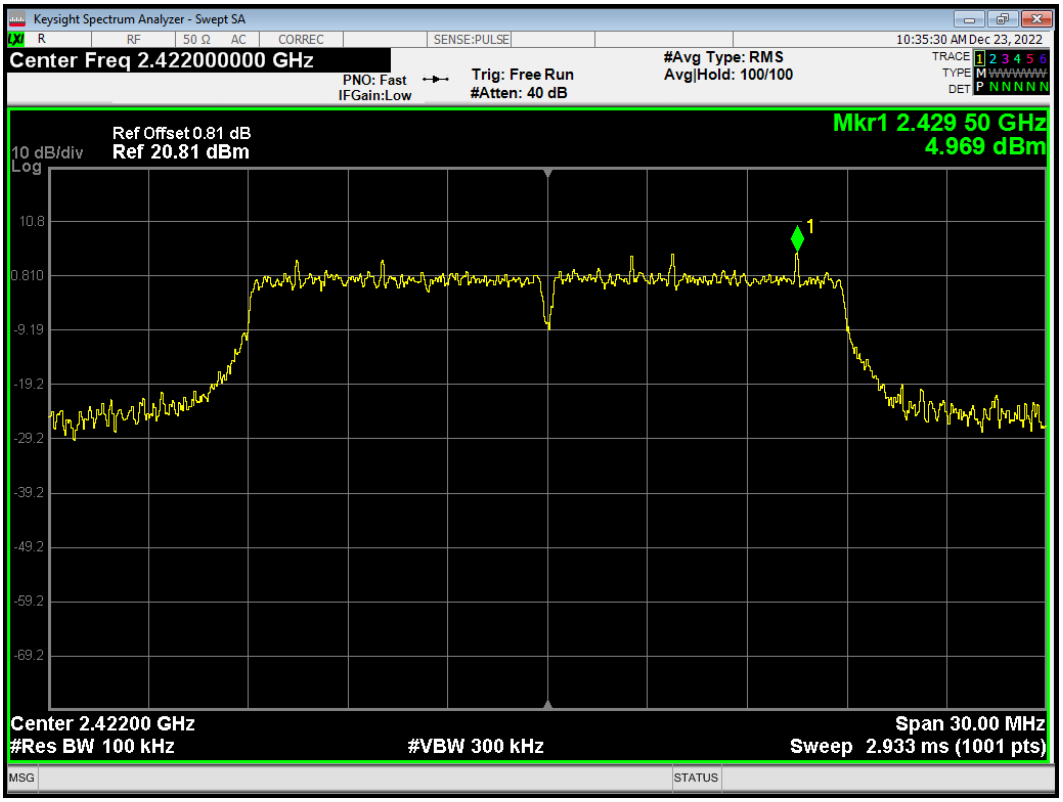
Band Edge 802.11n(HT20) 2417MHz Ref



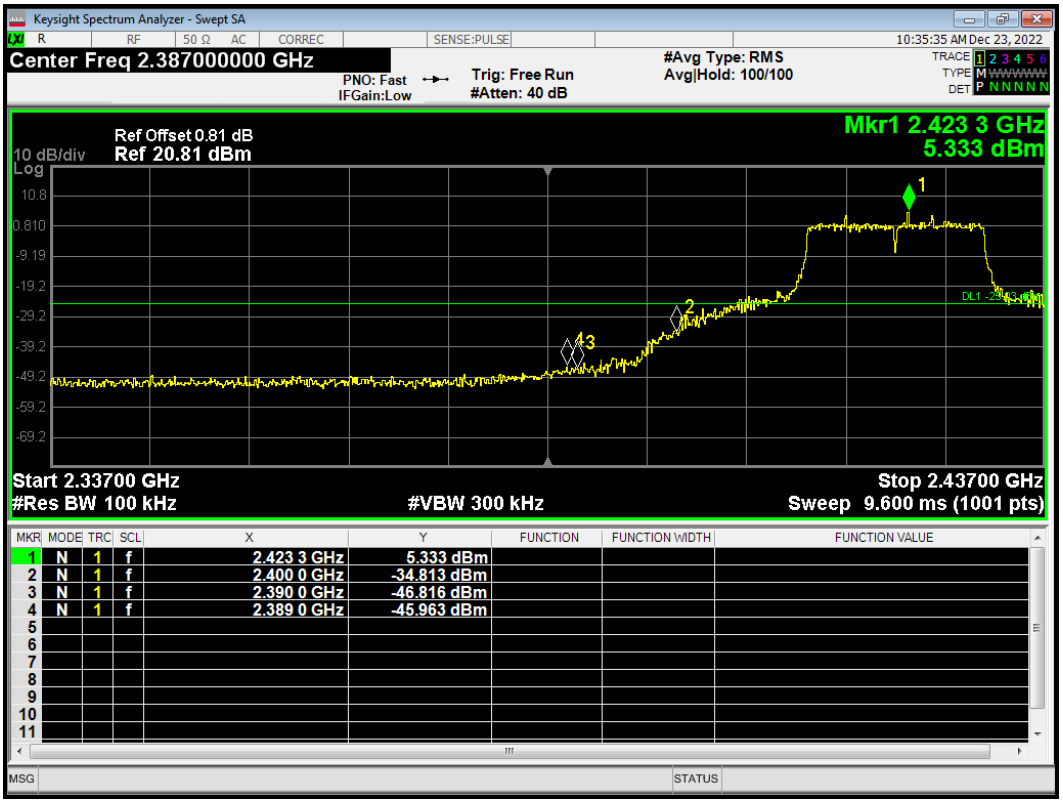
Band Edge 802.11n(HT20) 2417MHz Emission



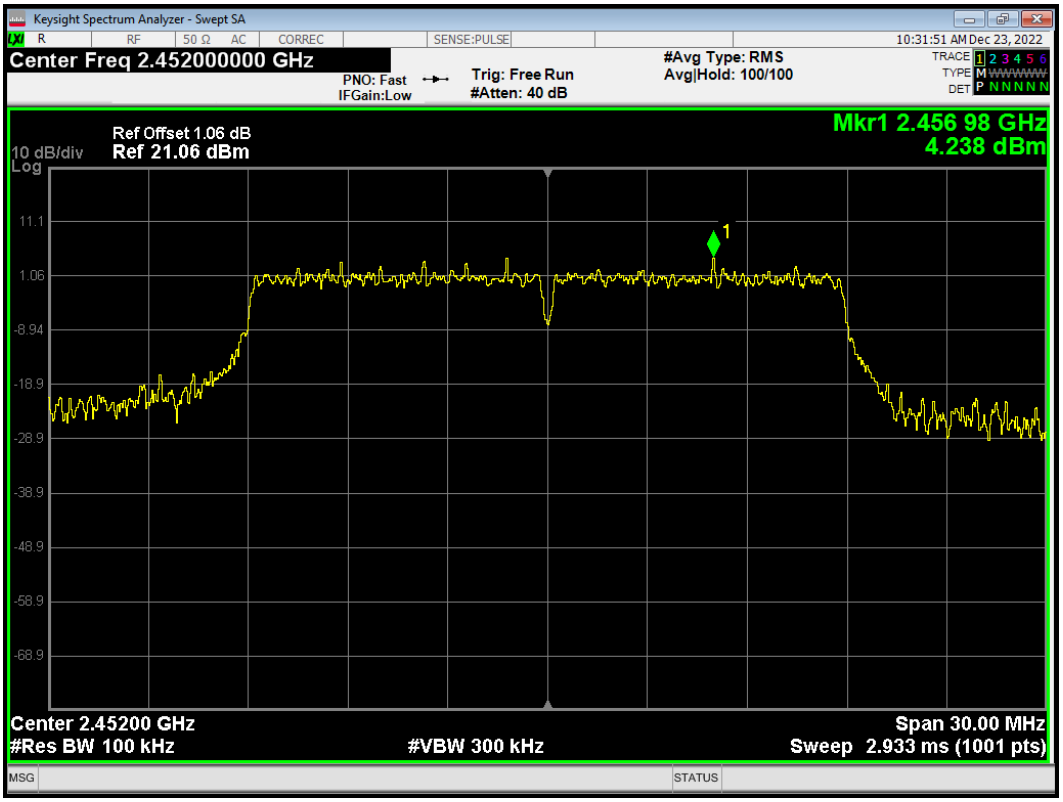
Band Edge 802.11n(HT20) 2422MHz Ref



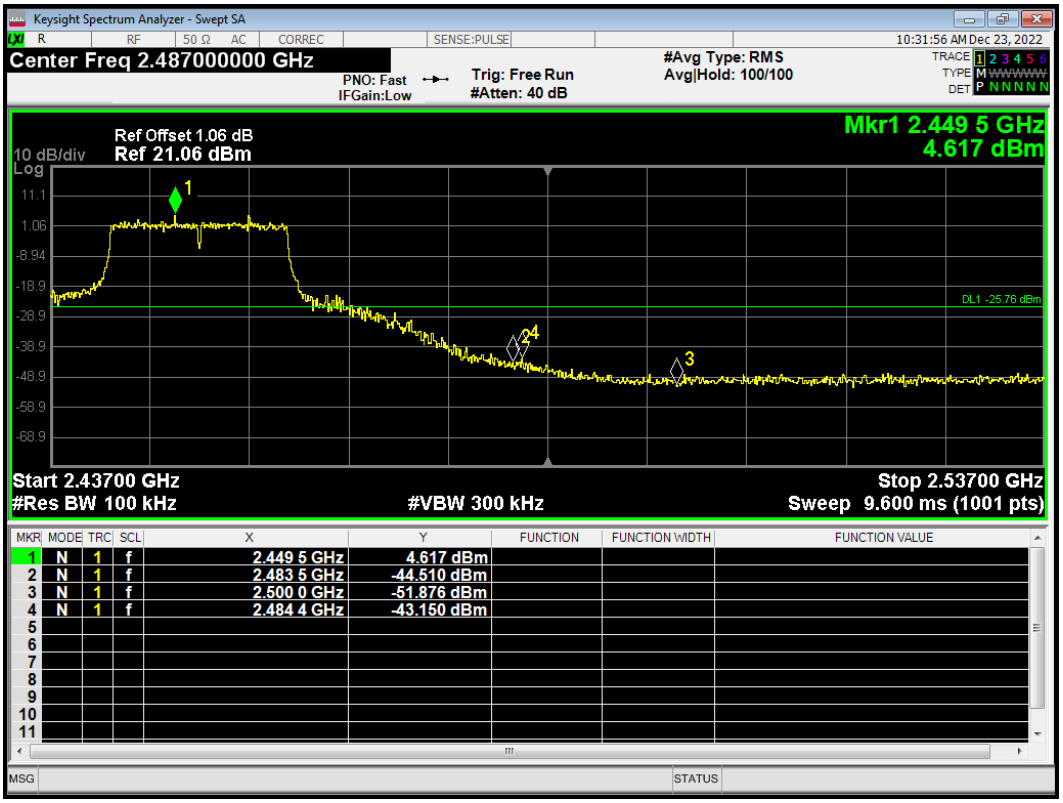
Band Edge 802.11n(HT20) 2422MHz Emission



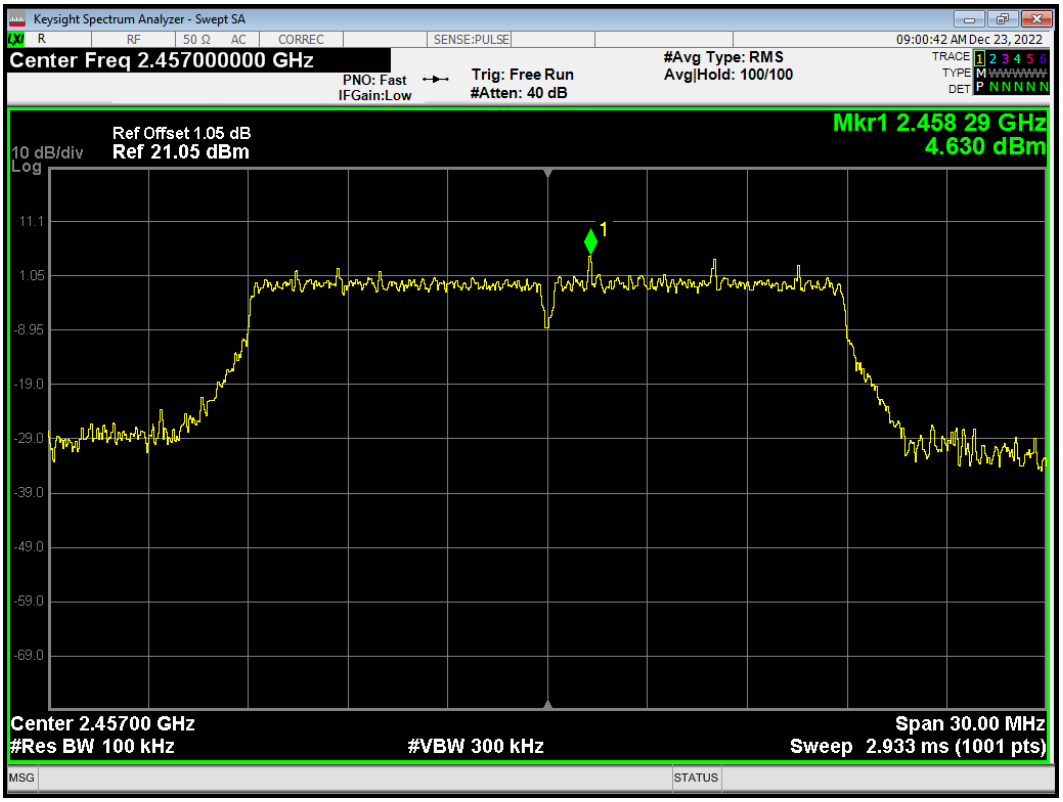
Band Edge 802.11n(HT20) 2452MHz Ref



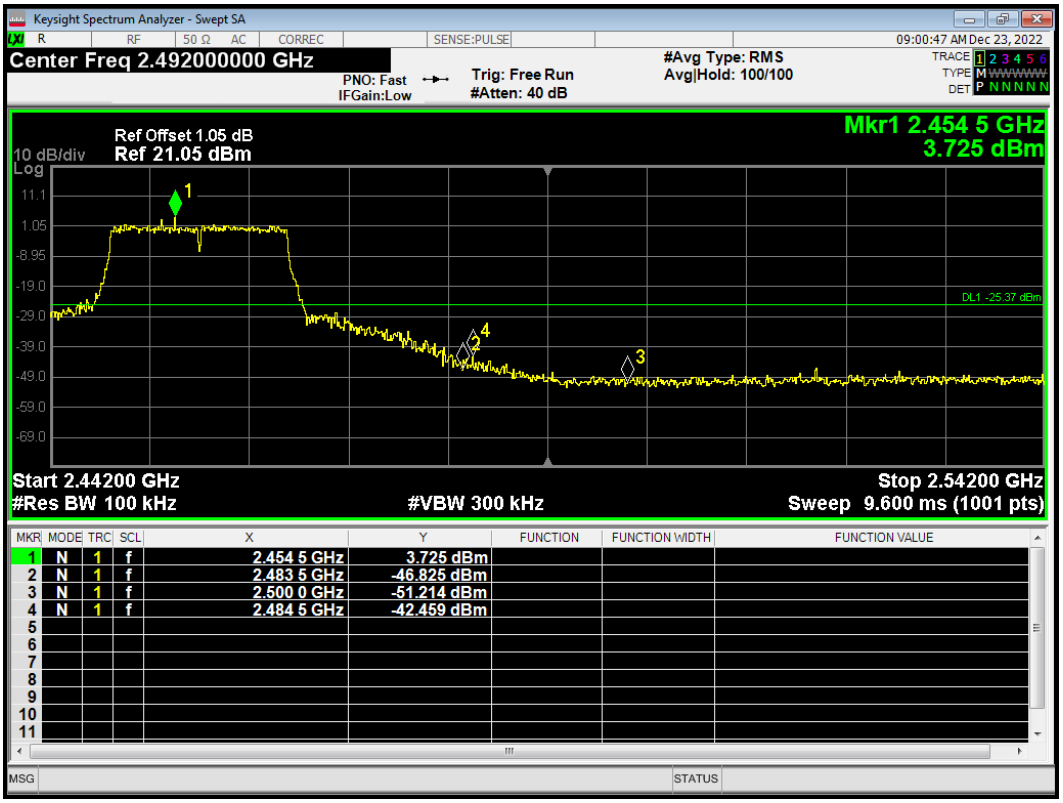
Band Edge 802.11n(HT20) 2452MHz Emission



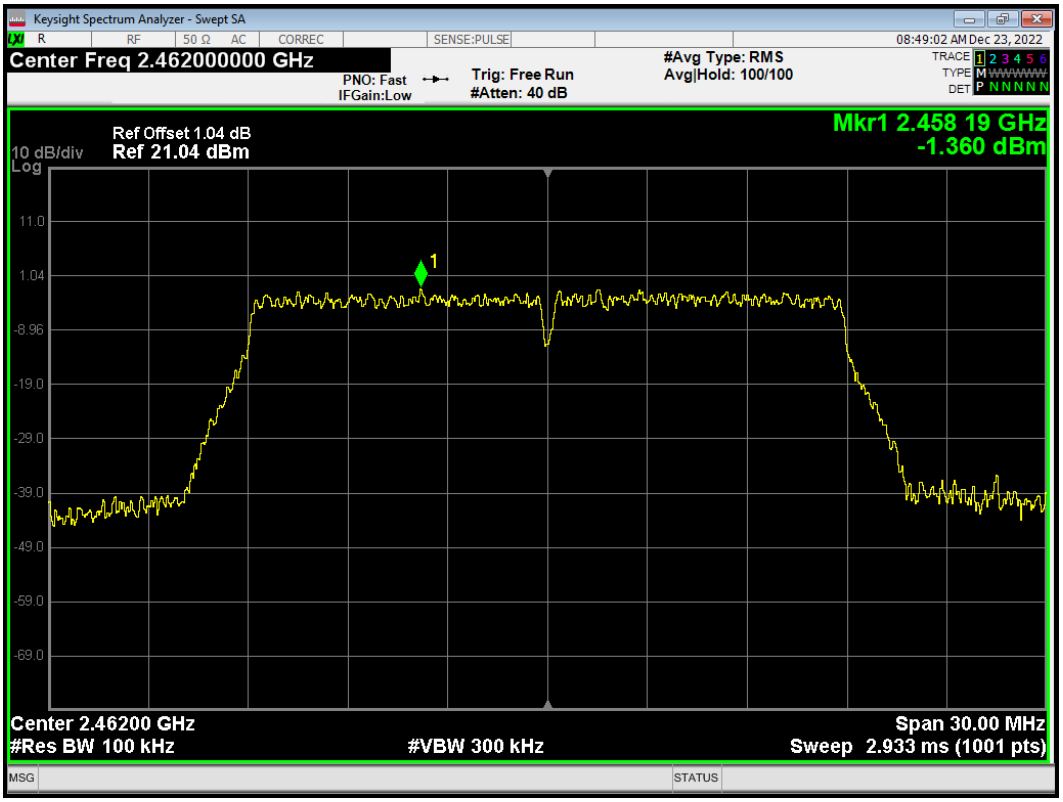
Band Edge 802.11n(HT20) 2457MHz Ref



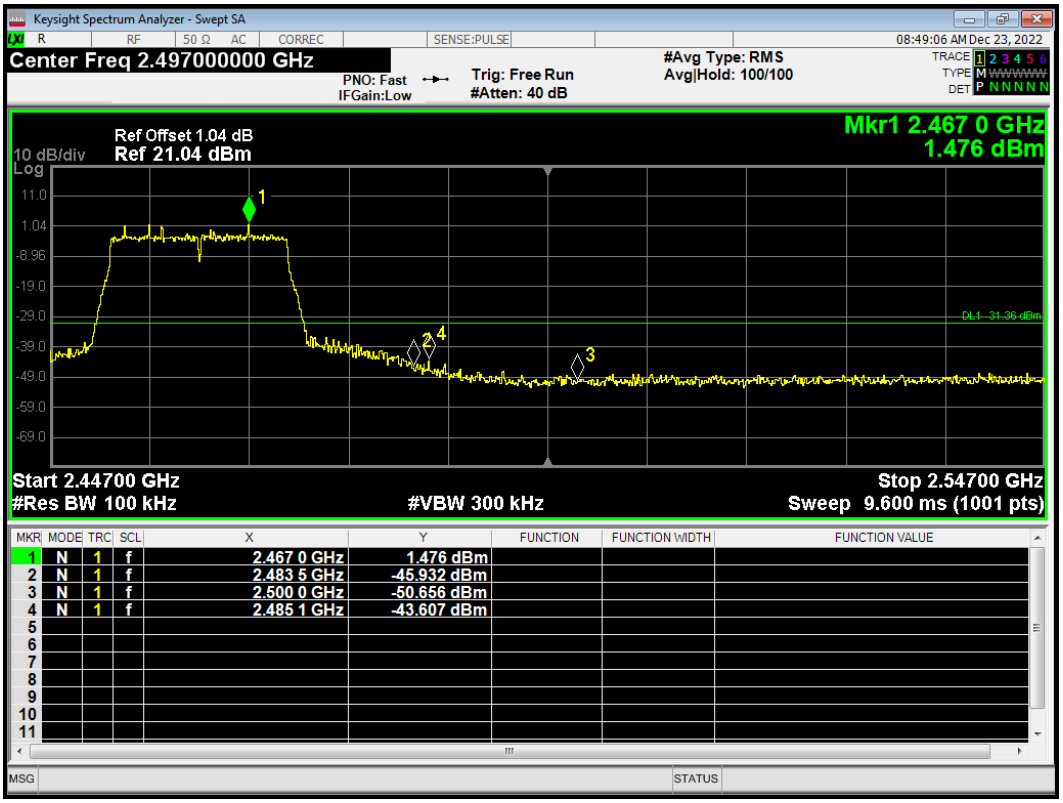
Band Edge 802.11n(HT20) 2457MHz Emission



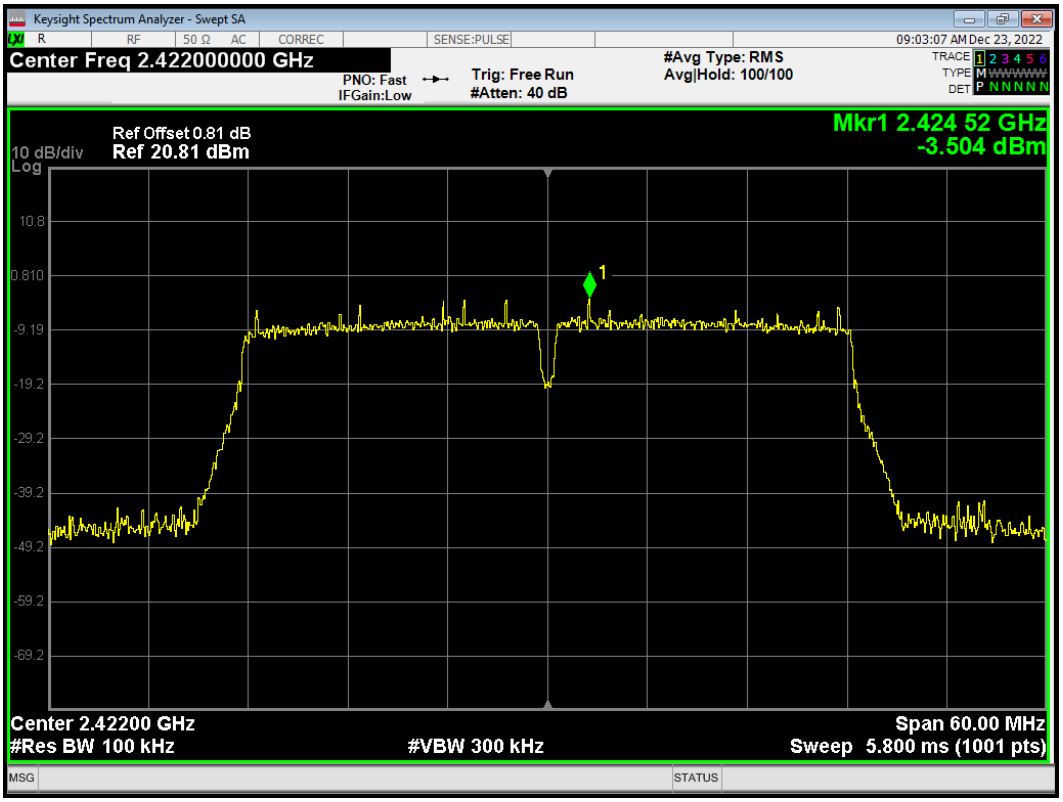
Band Edge 802.11n(HT20) 2462MHz Ref



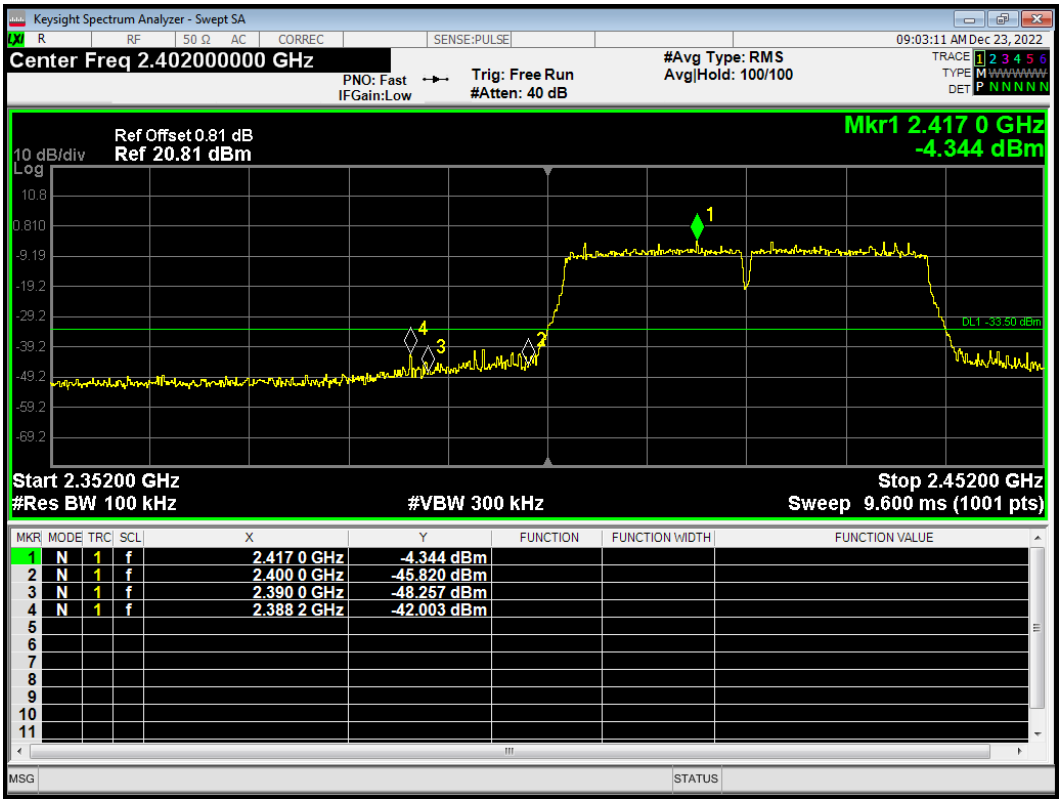
Band Edge 802.11n(HT20) 2462MHz Emission



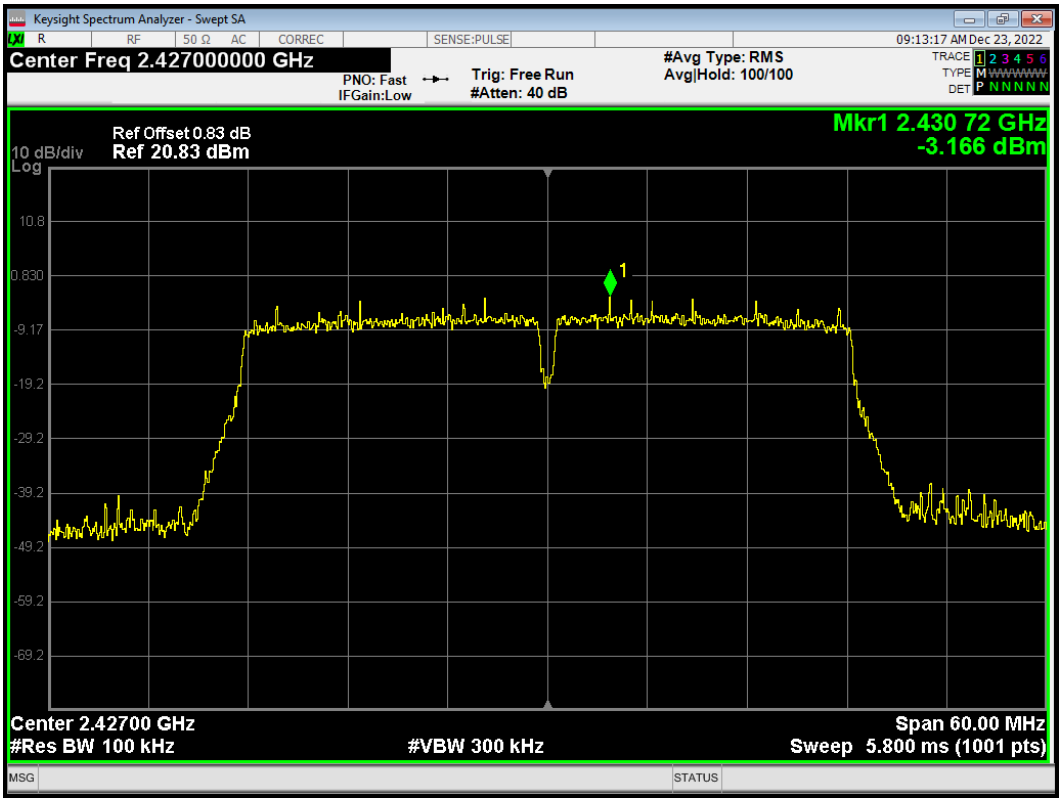
Band Edge 802.11n(HT40) 2422MHz Ref



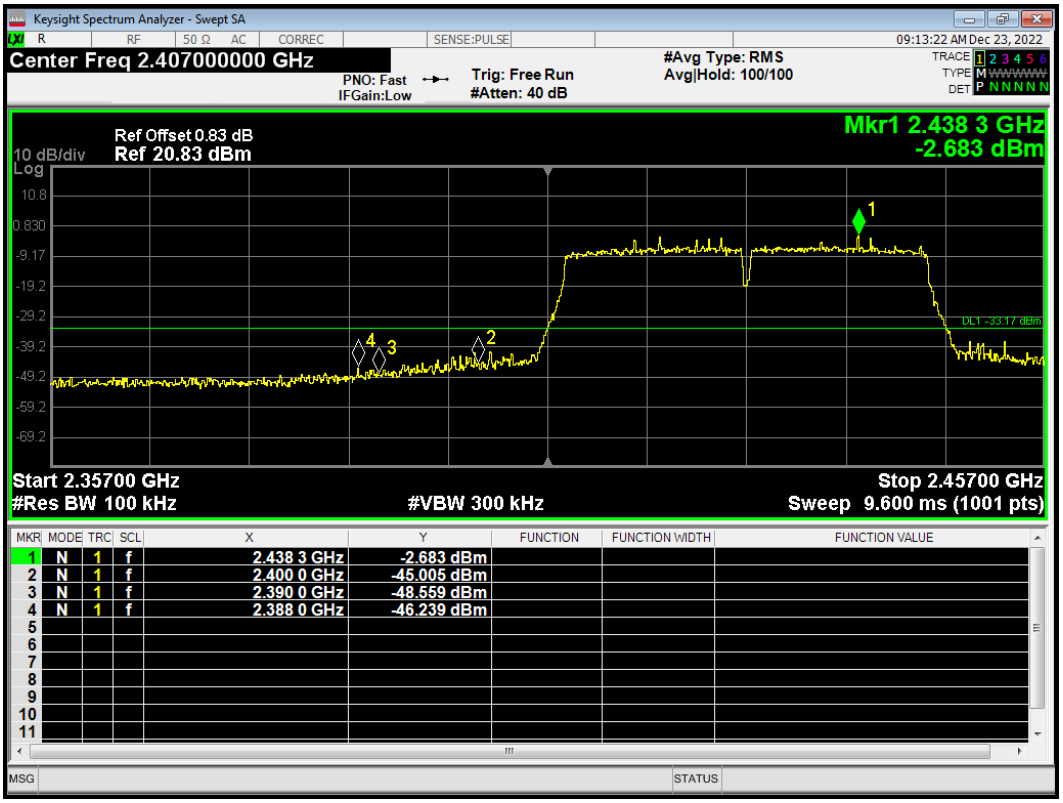
Band Edge 802.11n(HT40) 2422MHz Emission



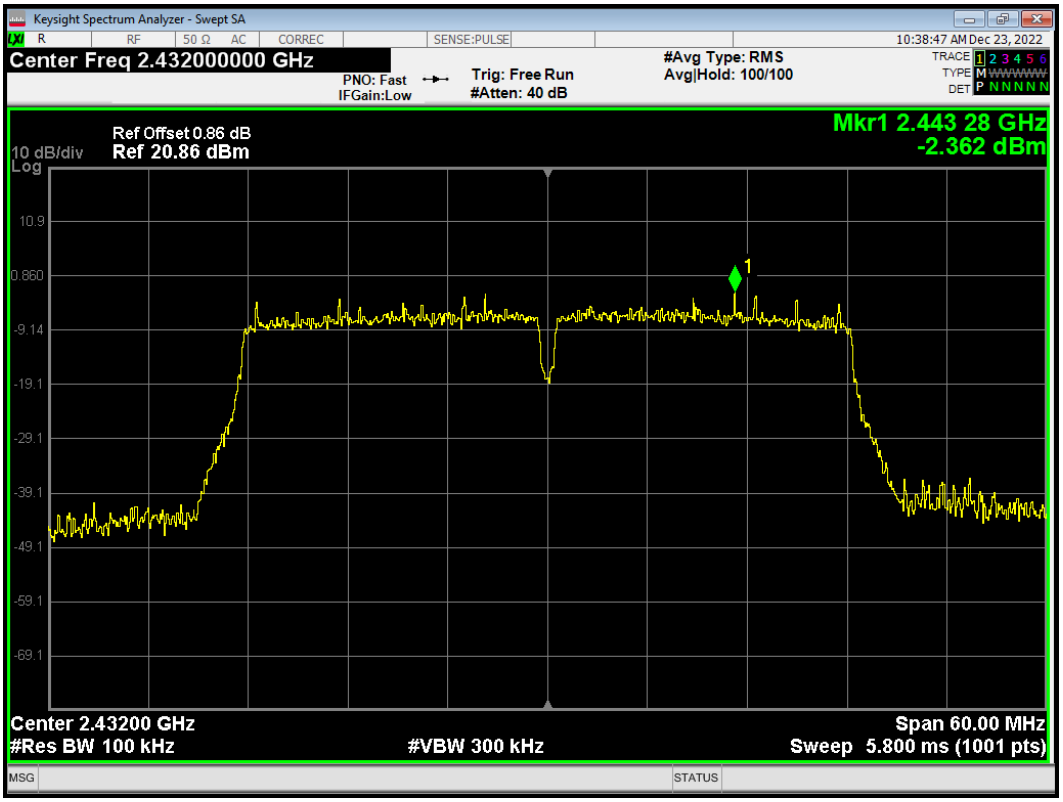
Band Edge 802.11n(HT40) 2427MHz Ref



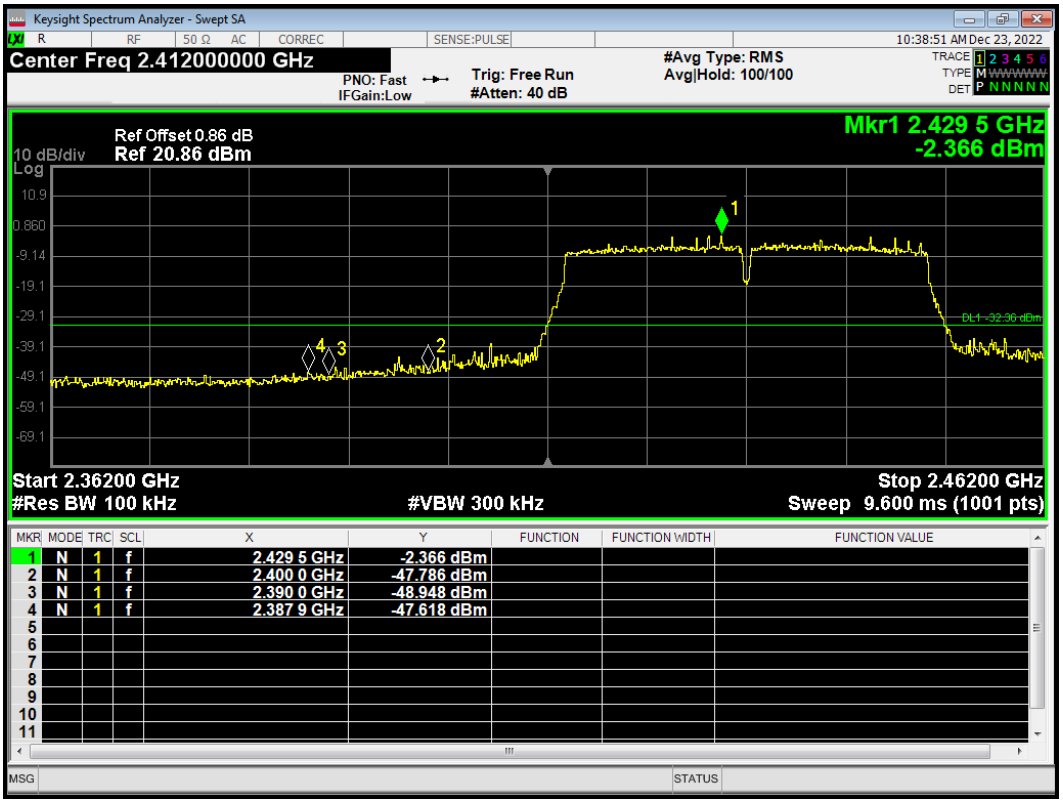
Band Edge 802.11n(HT40) 2427MHz Emission



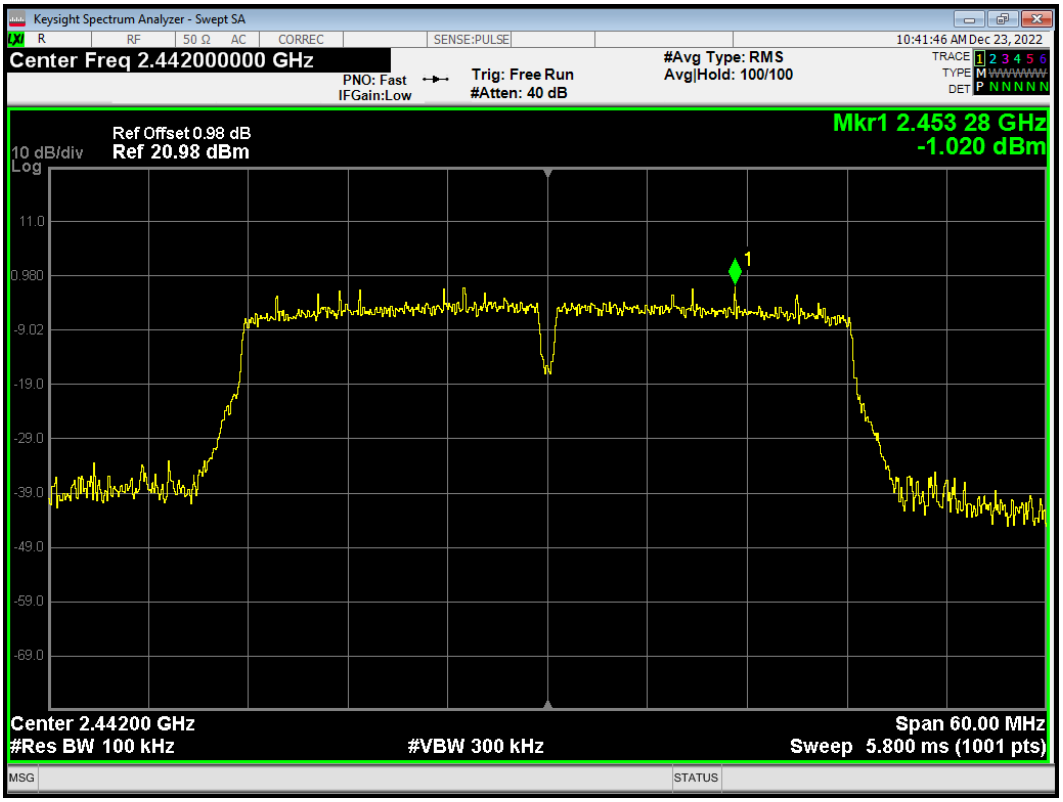
Band Edge 802.11n(HT40) 2432MHz Ref



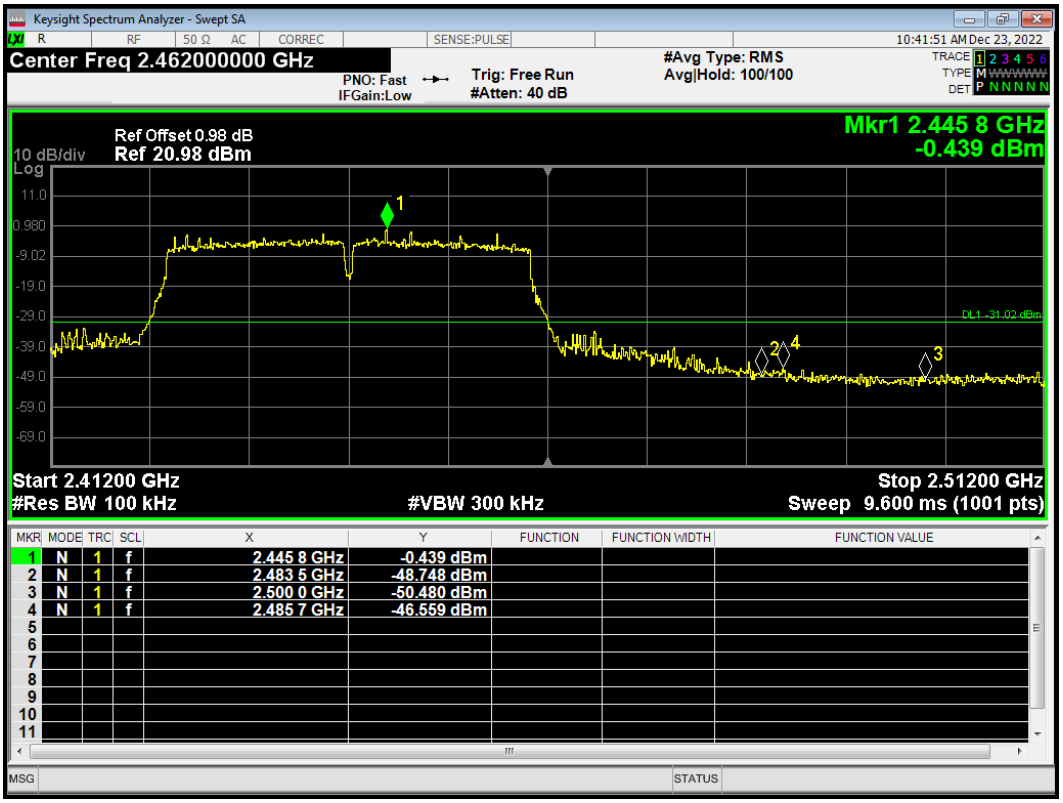
Band Edge 802.11n(HT40) 2432MHz Emission



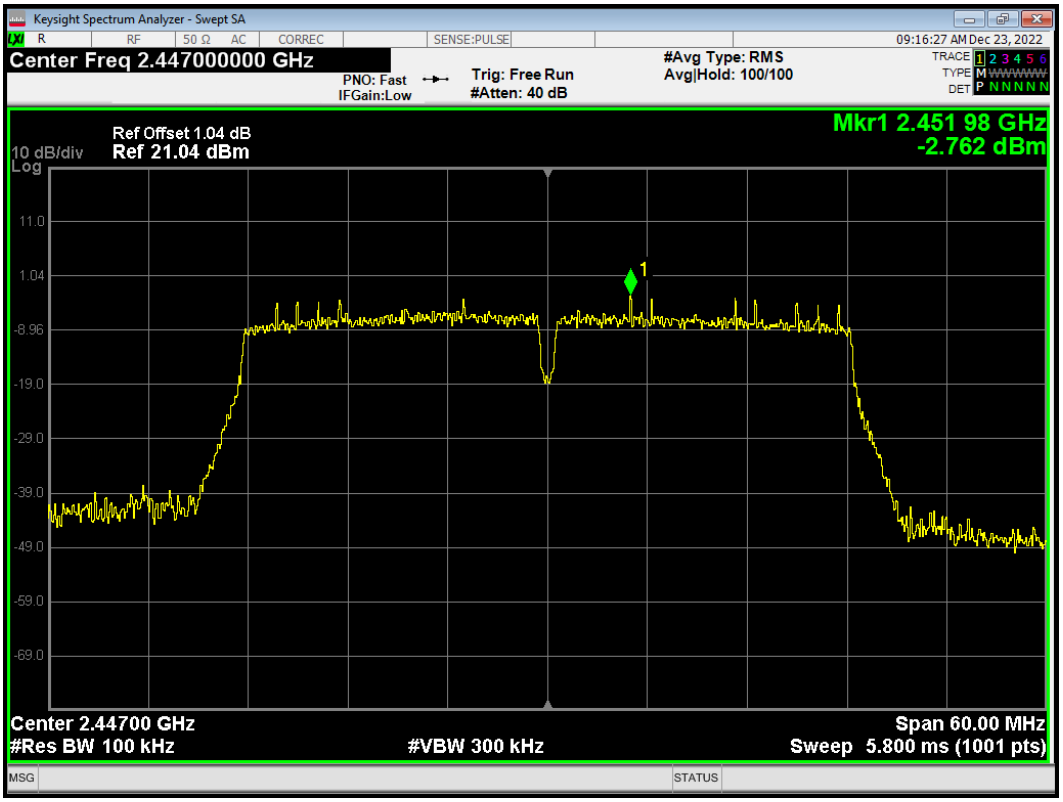
Band Edge 802.11n(HT40) 2442MHz Ref



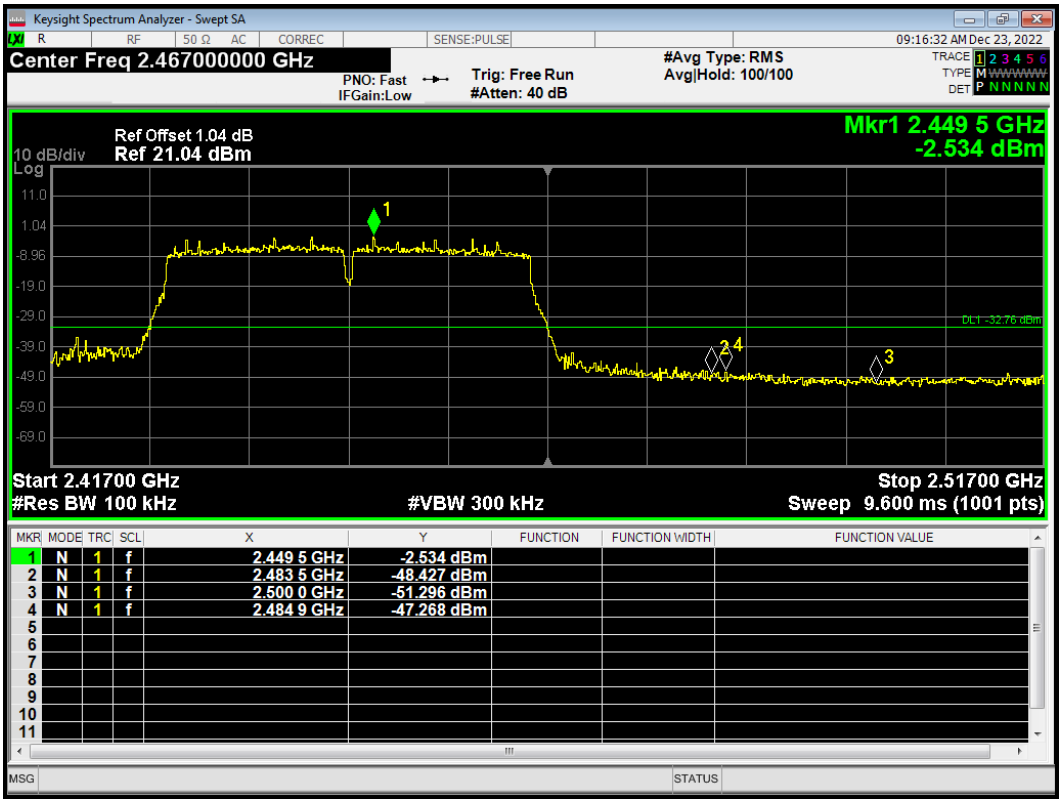
Band Edge 802.11n(HT40) 2442MHz Emission



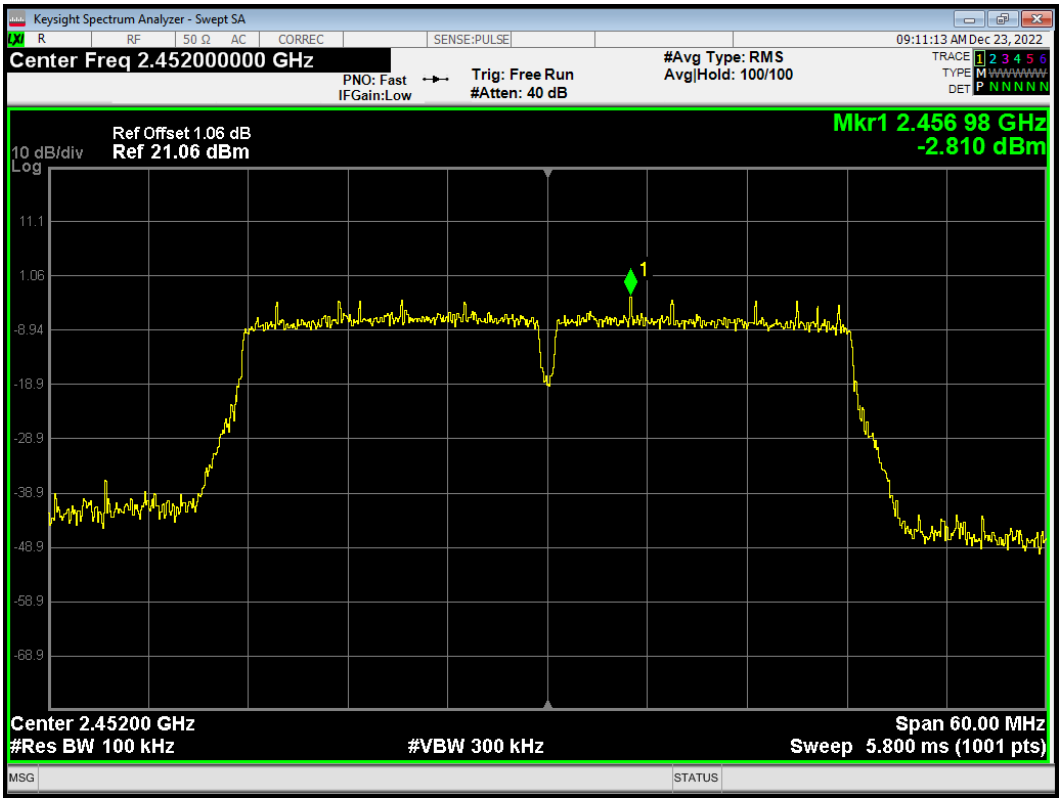
Band Edge 802.11n(HT40) 2447MHz Ref



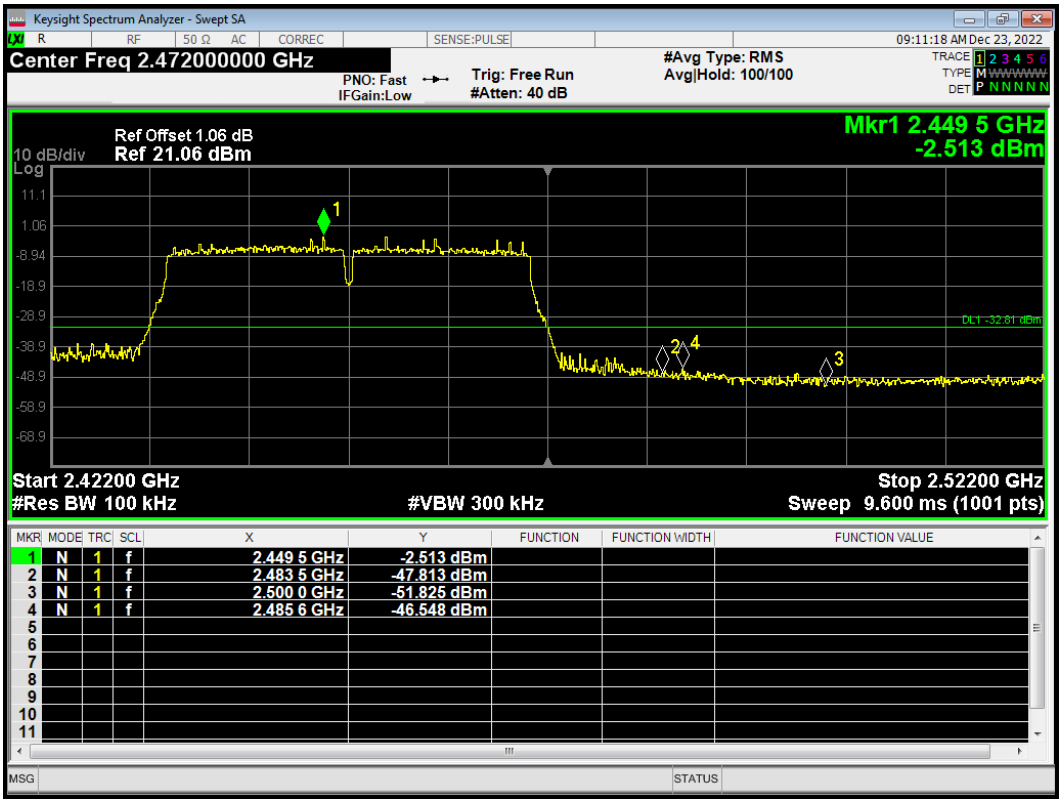
Band Edge 802.11n(HT40) 2447MHz Emission



Band Edge 802.11n(HT40) 2452MHz Ref



Band Edge 802.11n(HT40) 2452MHz Emission



5.4. Power Spectral Density

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

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

Method AVGPSD-2 was used for this test.

a) Measure the duty cycle (D)of the transmitter output signal as described in 11.6

b) Set instrument center frequency to DTS channel center frequency

c) Set span to at least 1.5 times the OBW

d) Set RBW to:3kHz≤RBW≤100Kh

e) Set VBW≥[3x RBW]

f) Detector= power averaging (rms) or sample detector (when rms not available)

g) Ensure that the number of measurement points in the sweep ≥ [2 X span/RBW]

h) Sweep time =auto couple

i) Do not use sweep triggering; allow sweep to "free run”

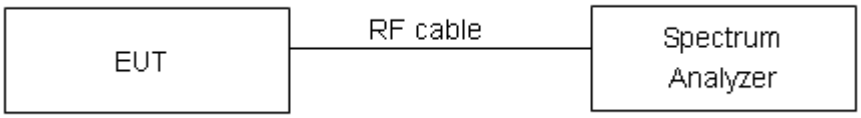
j) Employ trace averaging (rms) mode over a minimum of 100 traces

k) Use the peak marker function to determine the maximum amplitude level

l) Add [10 log(1/ D)], where D is the duty cycle measured in step a), to the measured PSD to compute the average PSD during the actual transmission time

m) If measured value exceeds requirement specified by regulatory agency then reduce RBW (but no less than 3 kHz) and repeat (note that this may require zooming in on the emission of interest and reducing the span to meet the minimum measurement point requirement as the RBW is reduced)

Test setup



Limits

Rule Part 15.247(e) specifies that” For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. ‘’

Limits	≤ 8 dBm / 3kHz

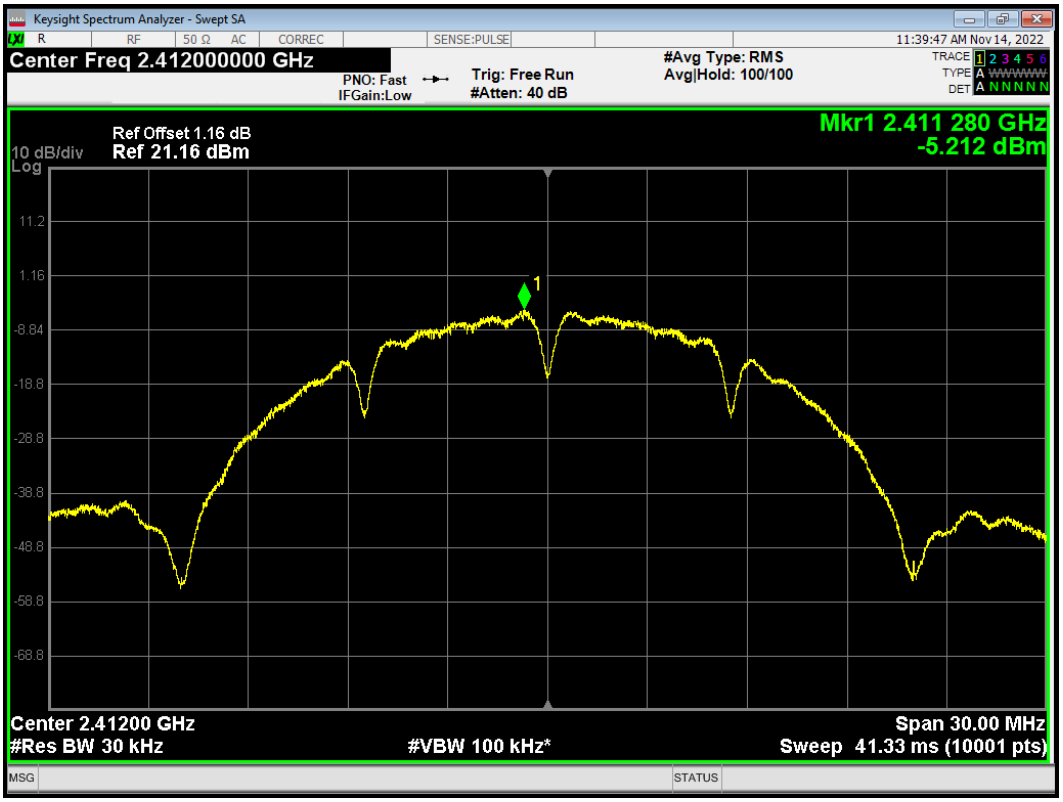
Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U= 0.75dB.

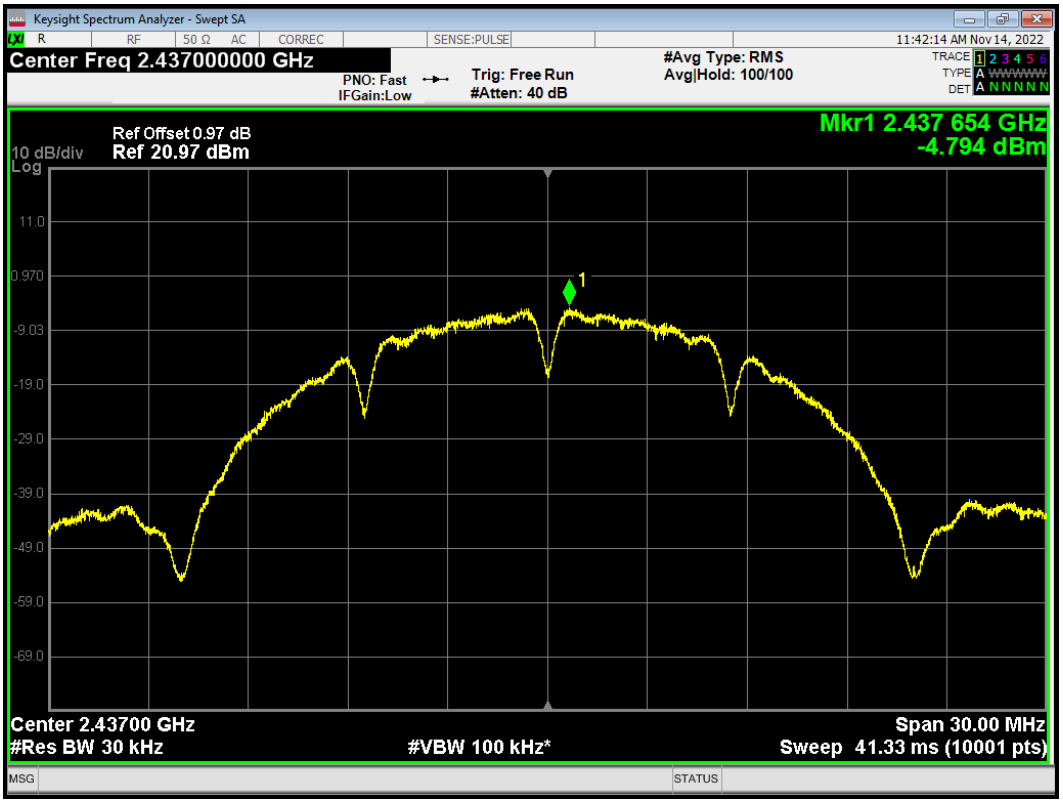
Test Results:

Test Mode	Carrier frequency (MHz)	Read Value (dBm / 30kHz)	Power Spectral Density (dBm / 3kHz)	Limit (dBm / 3kHz)	Conclusion
802.11b	2412	-5.21	-15.21	8	PASS
	2437	-4.79	-14.79	8	PASS
	2462	-4.51	-14.51	8	PASS
802.11g	2412	-10.50	-20.50	8	PASS
	2417	-7.98	-17.98	8	PASS
	2422	-7.24	-17.24	8	PASS
	2437	-7.04	-17.04	8	PASS
	2447	-6.90	-16.90	8	PASS
	2452	-9.02	-19.02	8	PASS
	2457	-9.90	-19.90	8	PASS
	2462	-10.30	-20.30	8	PASS
802.11n HT20	2412	-12.94	-22.94	8	PASS
	2417	-9.21	-19.21	8	PASS
	2422	-8.12	-18.12	8	PASS
	2437	-7.76	-17.76	8	PASS
	2452	-7.72	-17.72	8	PASS
	2457	-9.03	-19.03	8	PASS
	2462	-11.83	-21.83	8	PASS
802.11n HT40	2422	-16.99	-26.99	8	PASS
	2427	-16.25	-26.25	8	PASS
	2432	-15.44	-25.44	8	PASS
	2437	-10.98	-20.98	8	PASS
	2442	-13.78	-23.78	8	PASS
	2447	-15.63	-25.63	8	PASS
	2452	-15.76	-25.76	8	PASS
Note: Power Spectral Density (dBm/3kHz) =Read Value+Duty cycle correction factor + 10*log10(3 / 30)					

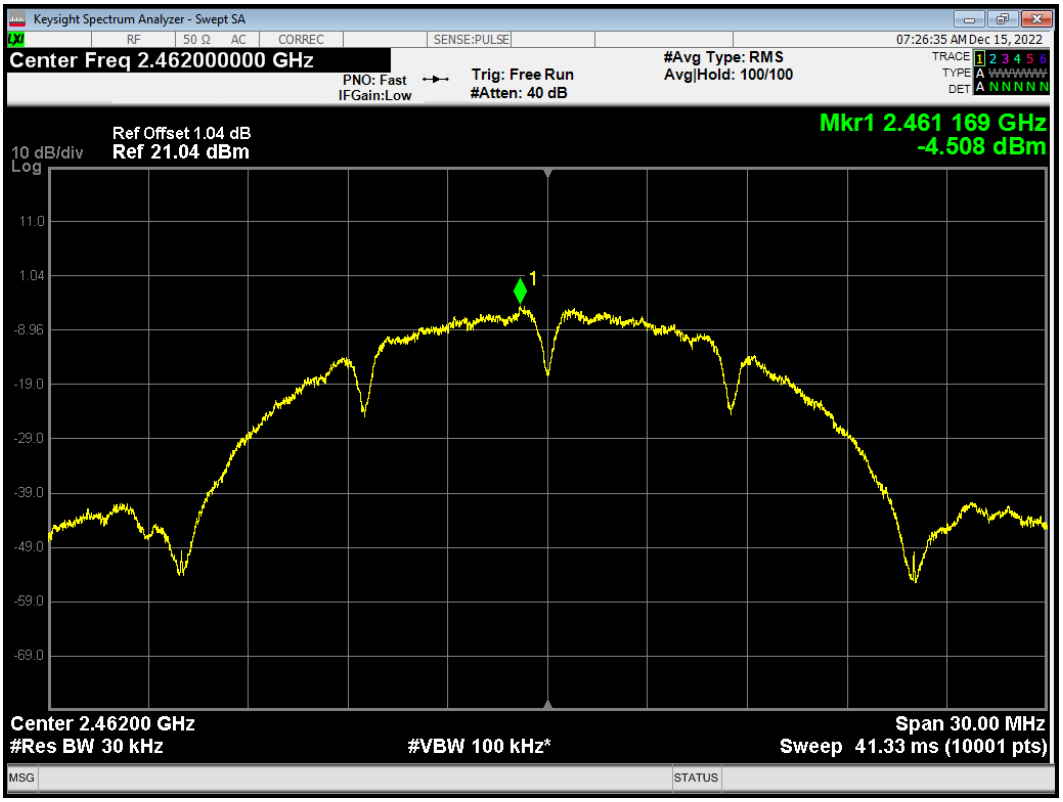
PSD 802.11b 2412MHz



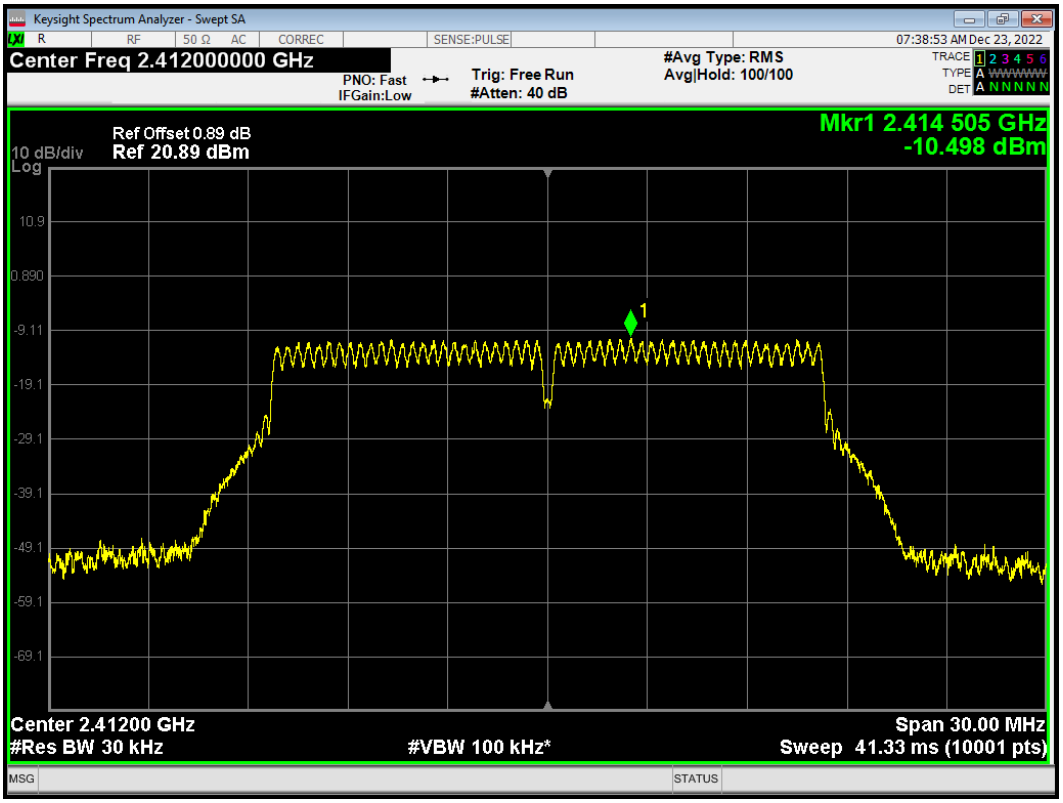
PSD 802.11b 2437MHz



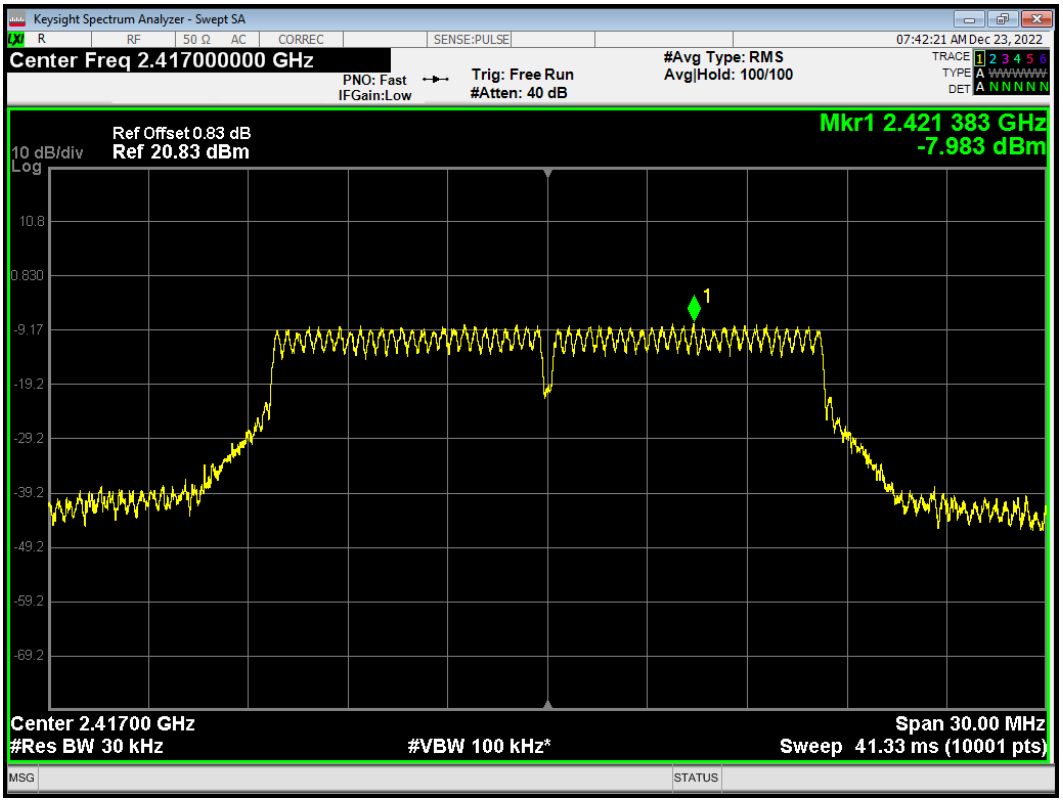
PSD 802.11b 2462MHz



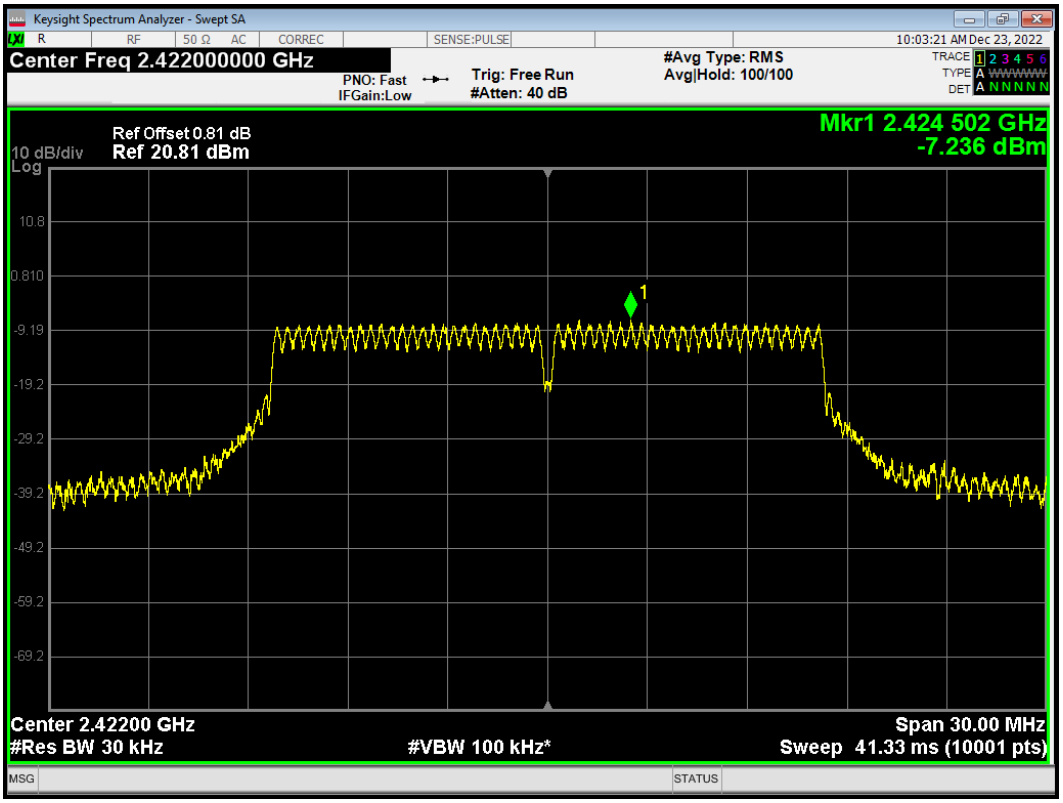
PSD 802.11g 2412MHz



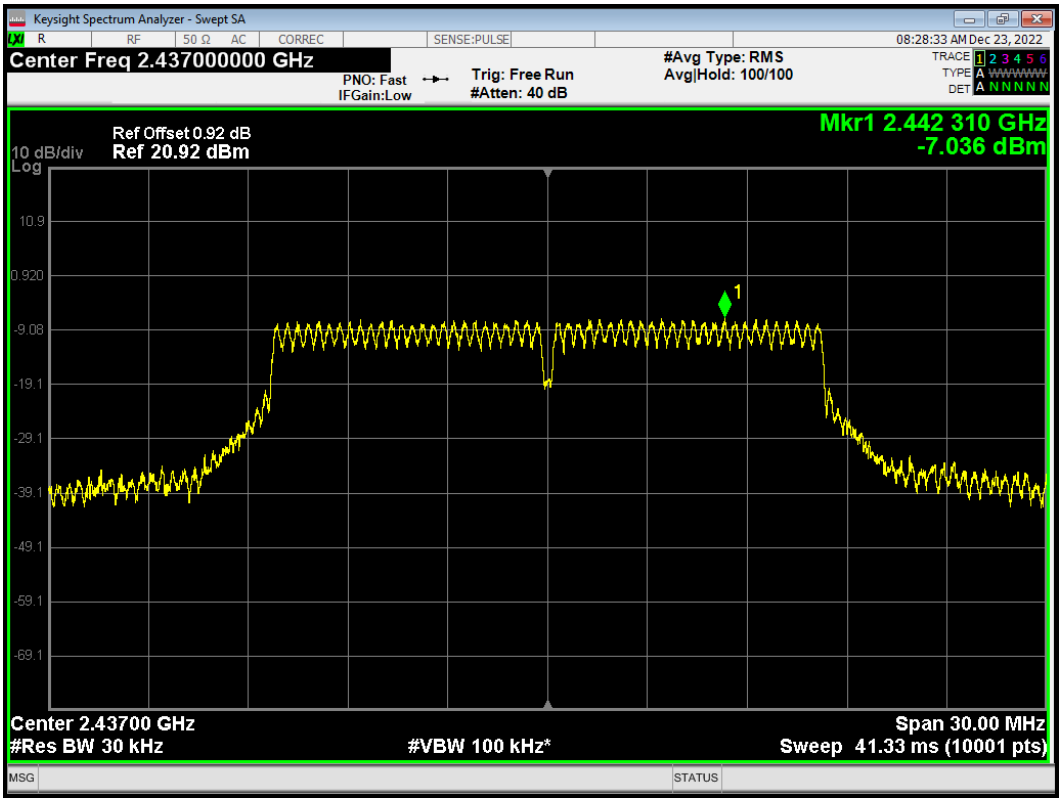
PSD 802.11g 2417MHz



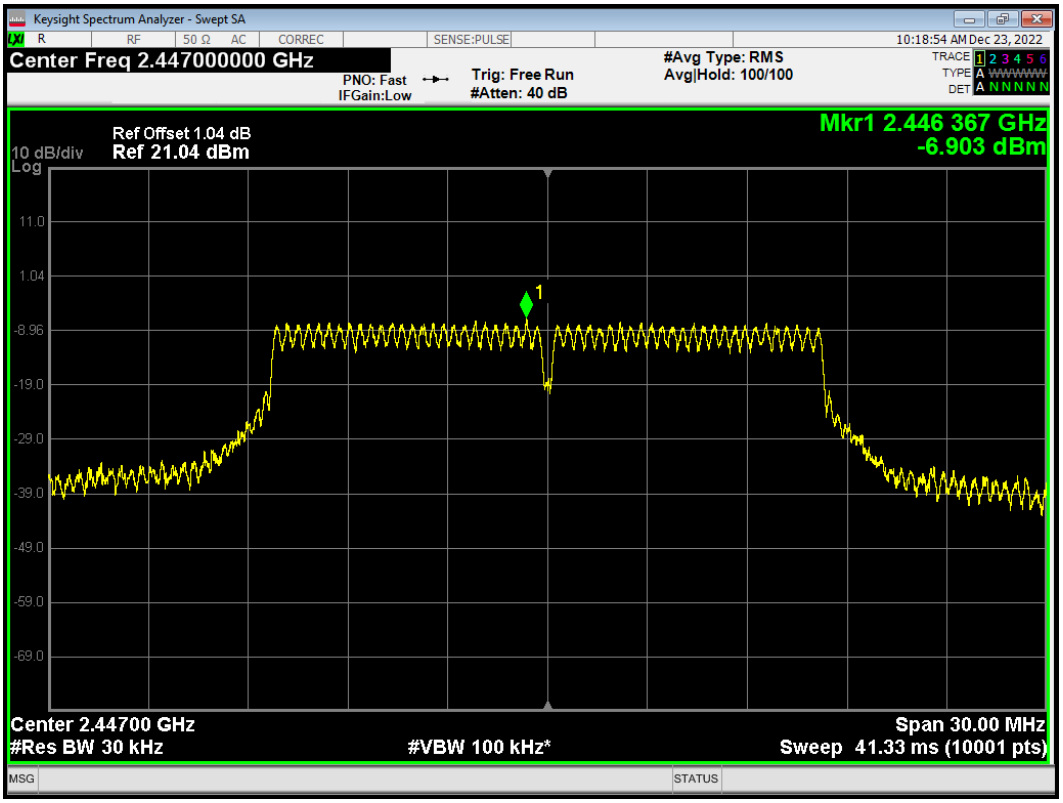
PSD 802.11g 2422MHz



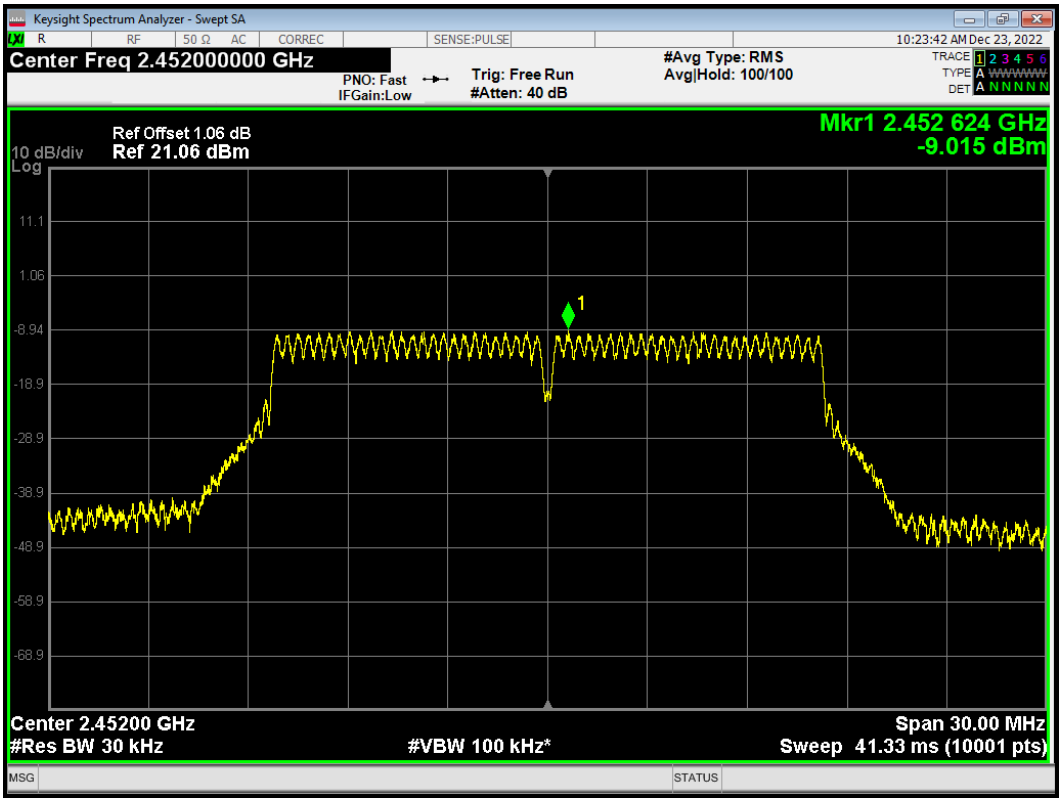
PSD 802.11g 2437MHz



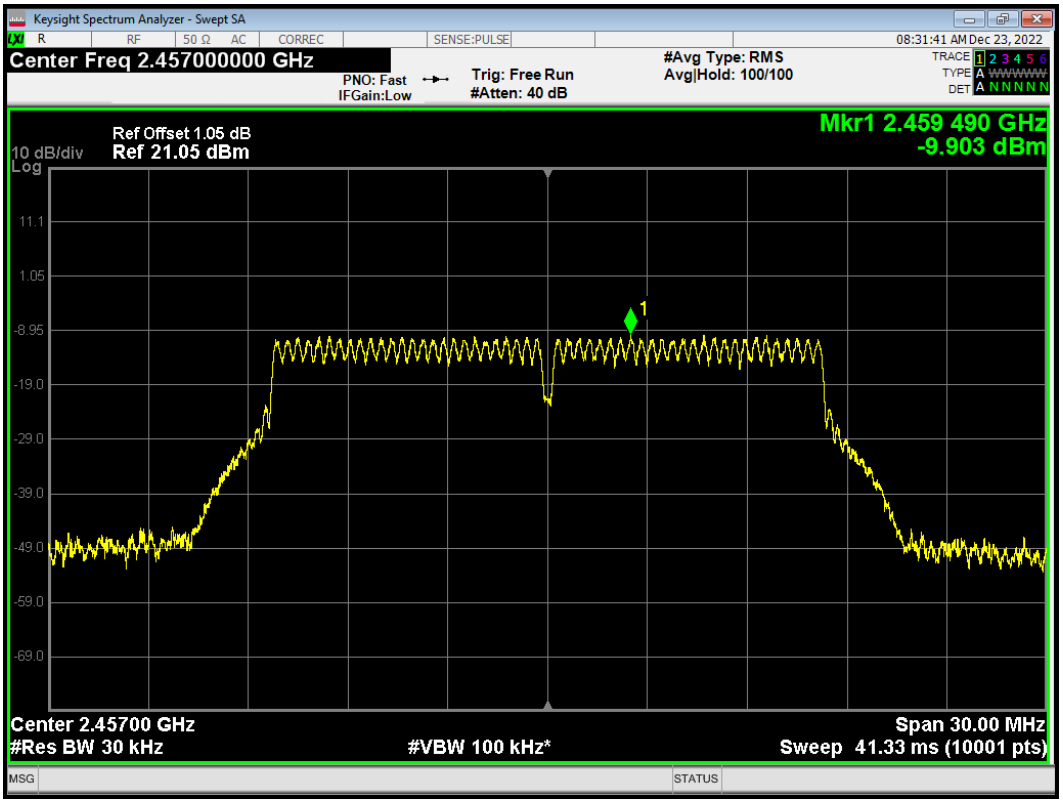
PSD 802.11g 2447MHz



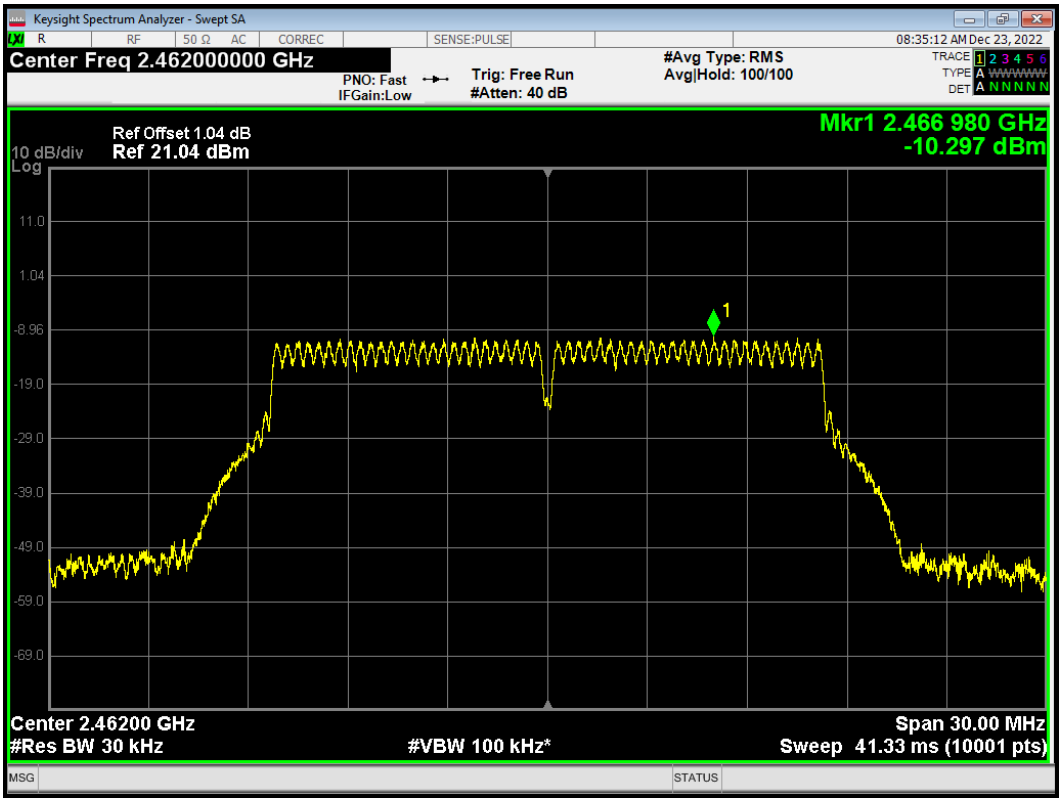
PSD 802.11g 2452MHz



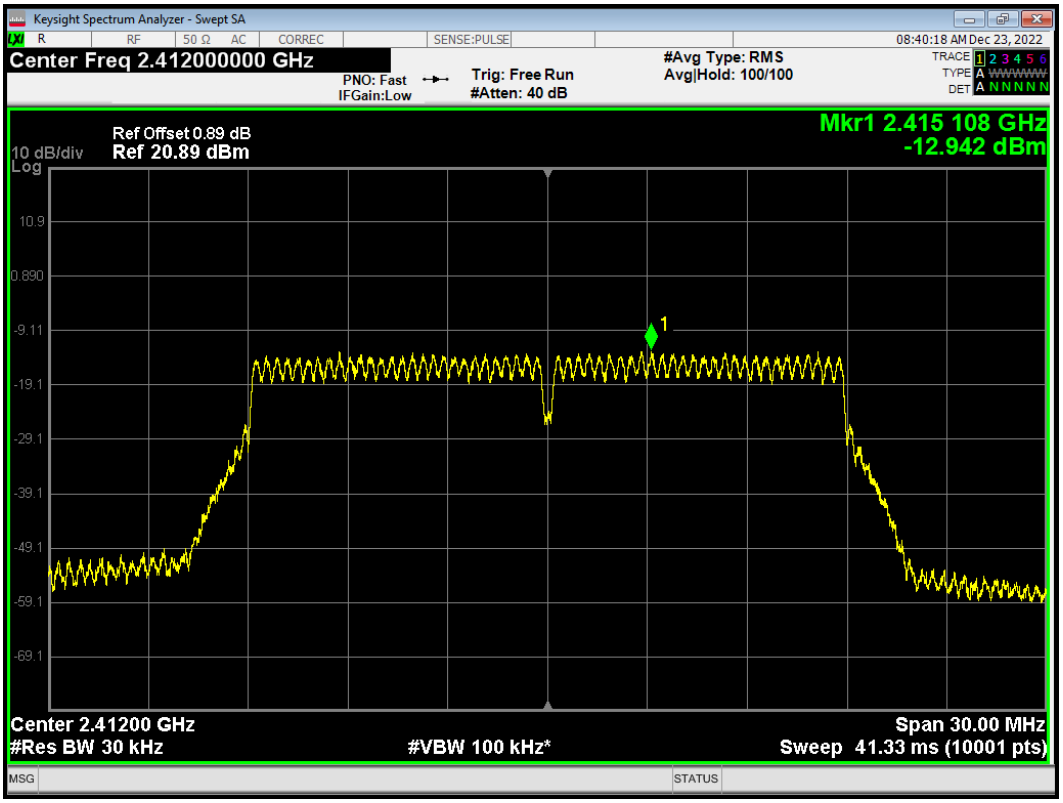
PSD 802.11g 2457MHz



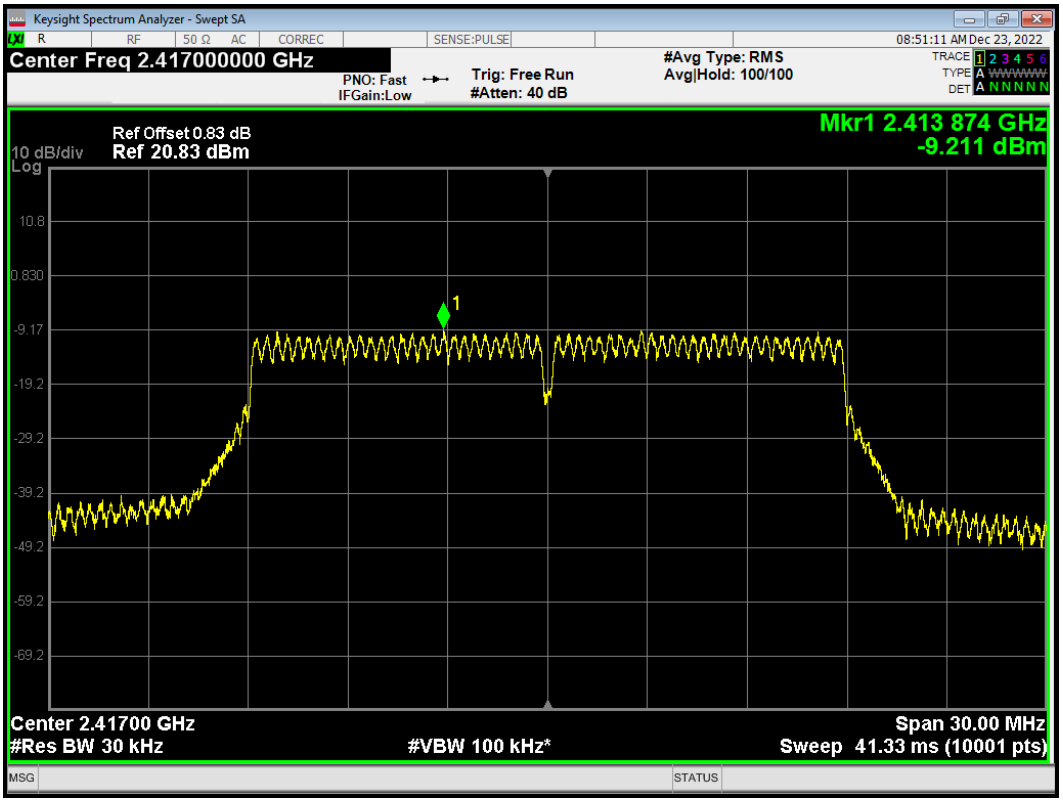
PSD 802.11g 2462MHz



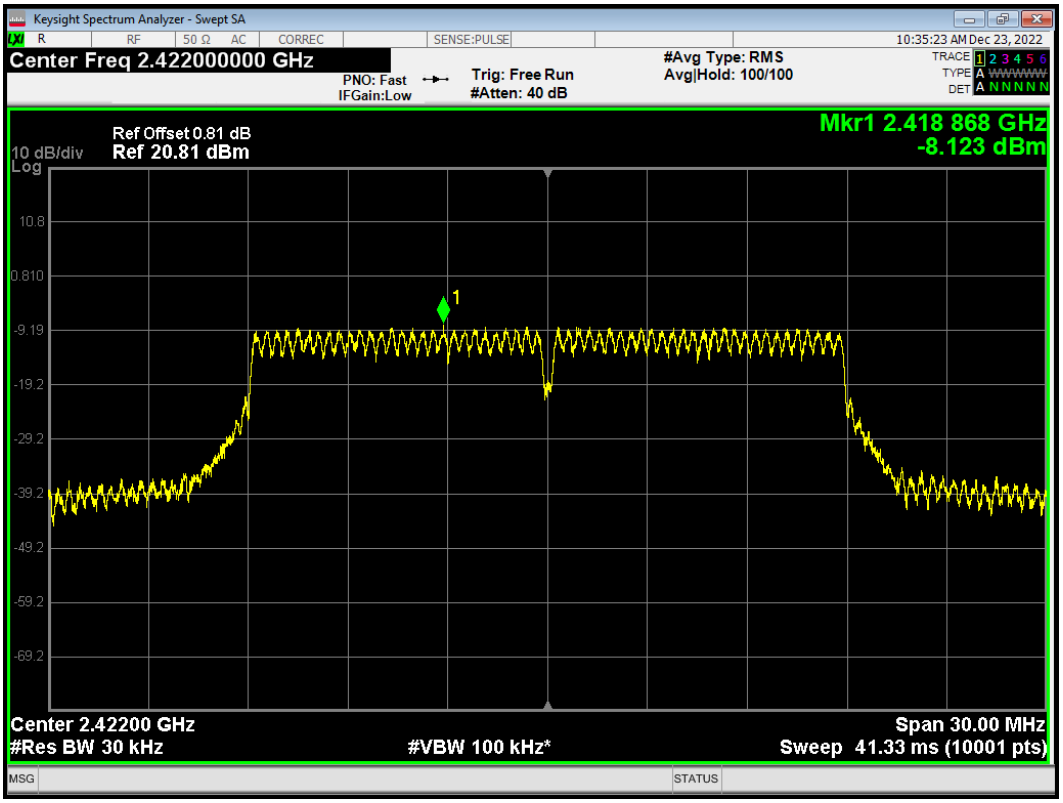
PSD 802.11n(HT20) 2412MHz



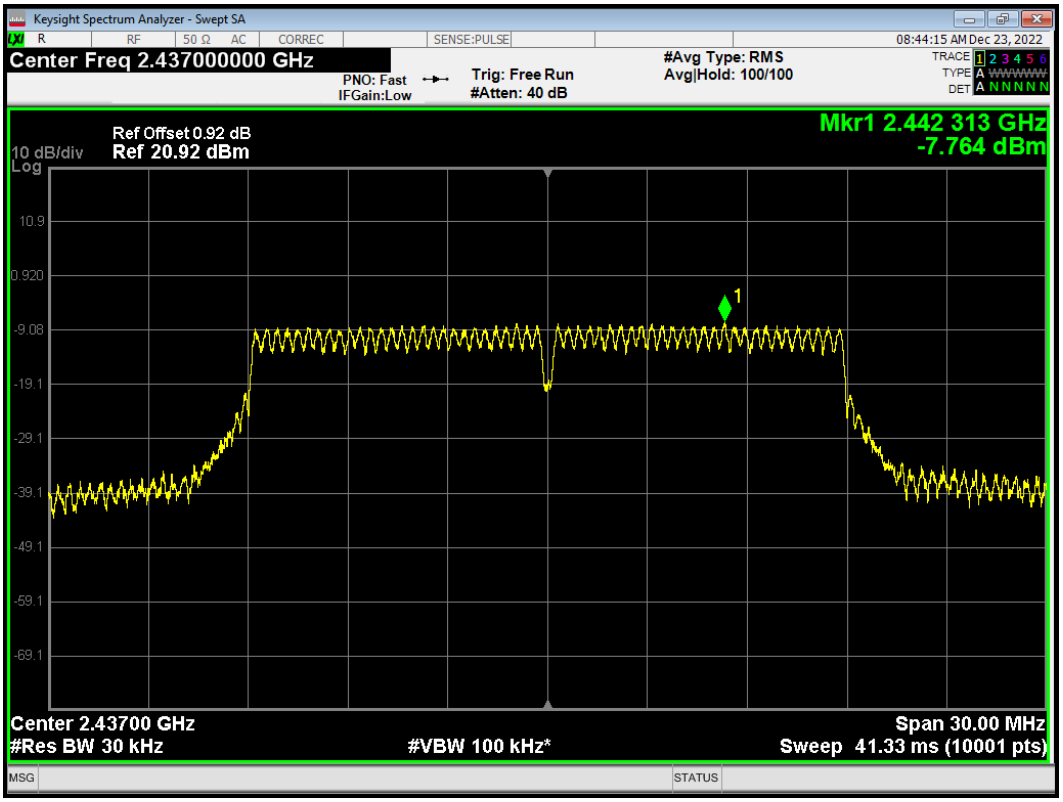
PSD 802.11n(HT20) 2417MHz



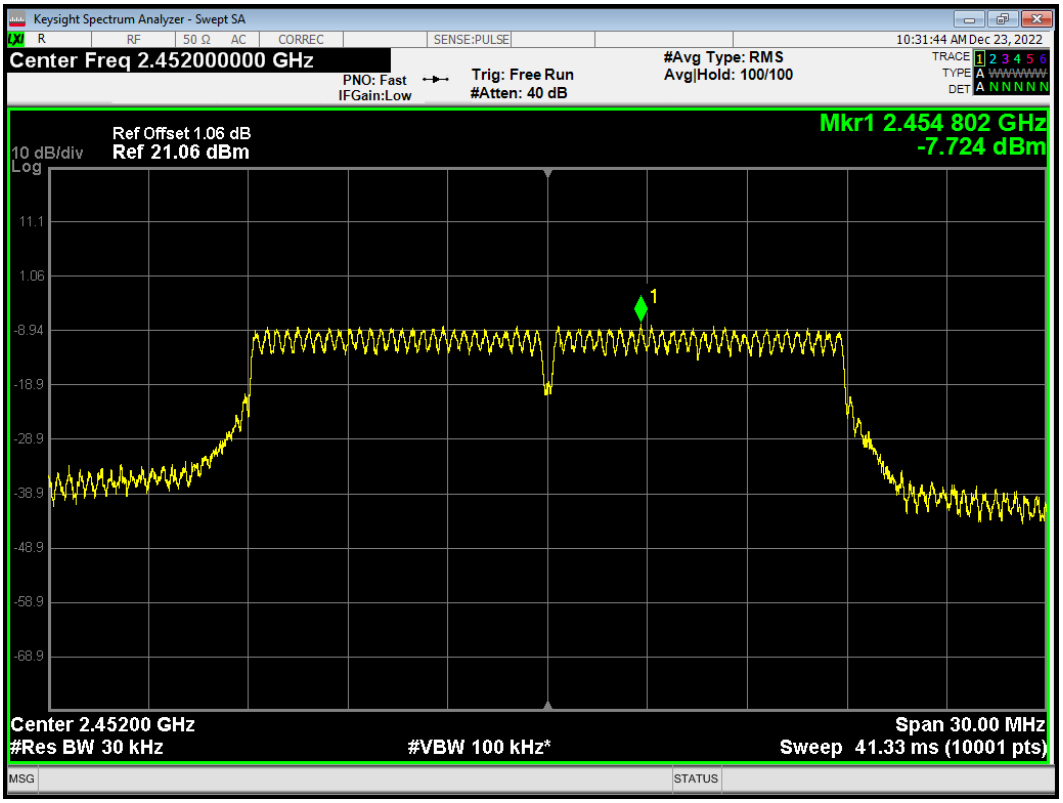
PSD 802.11n(HT20) 2422MHz



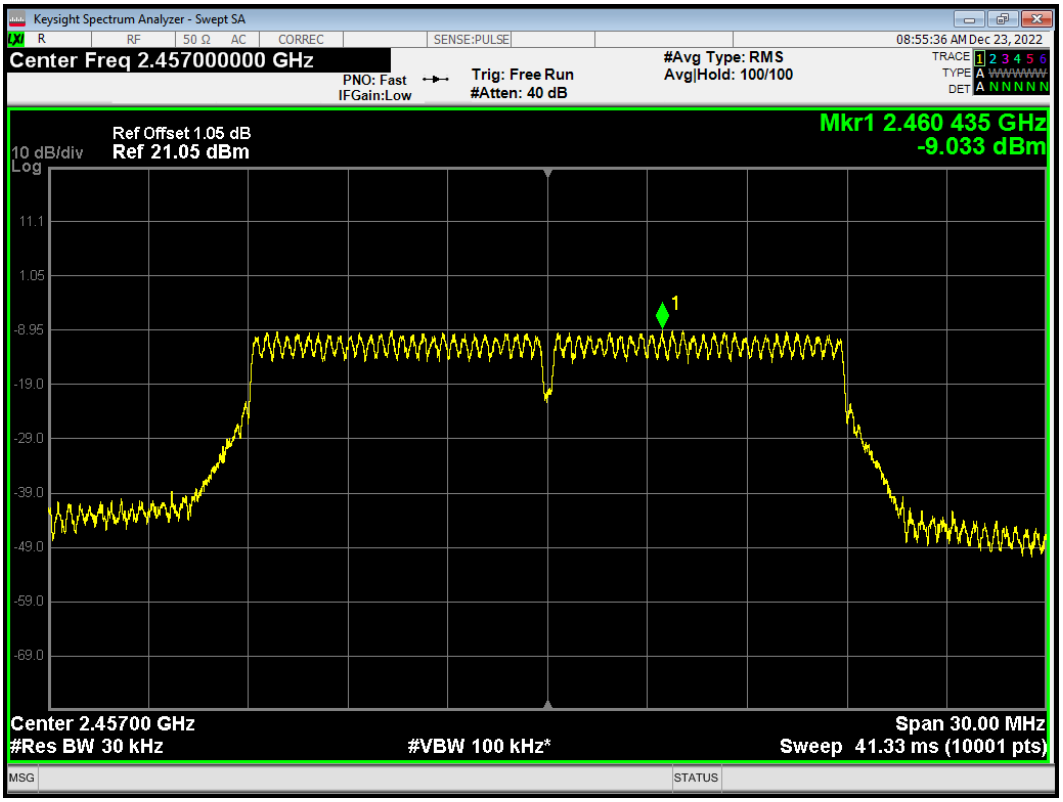
PSD 802.11n(HT20) 2437MHz



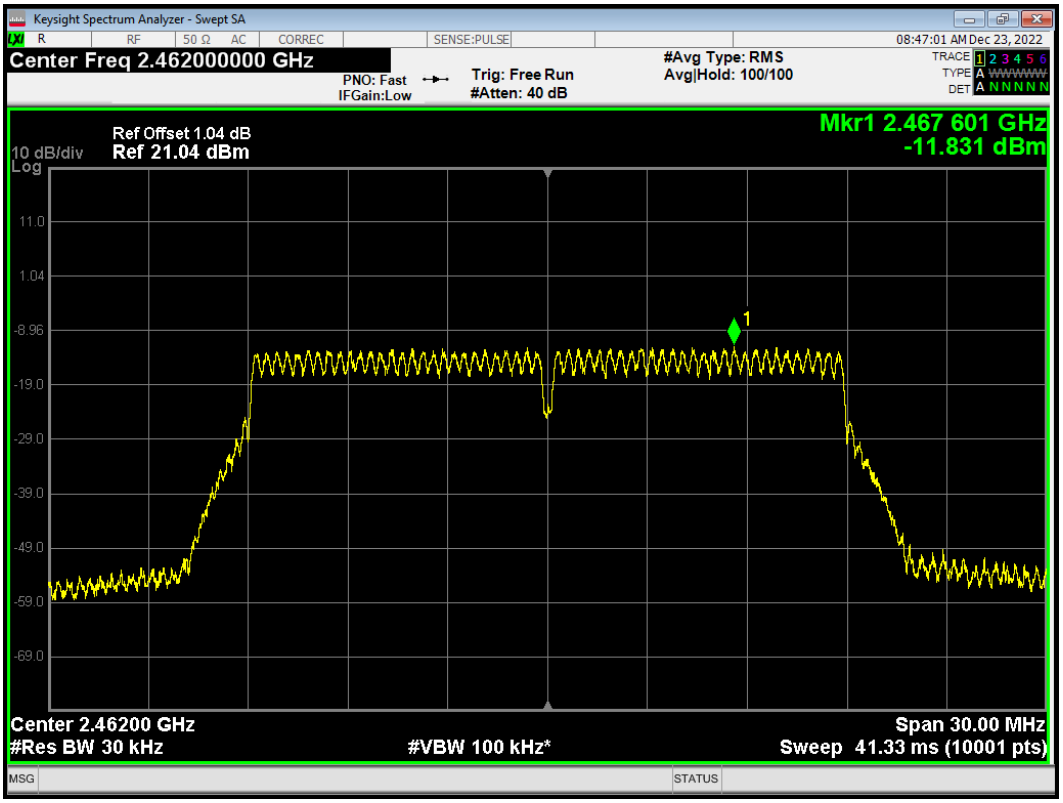
PSD 802.11n(HT20) 2452MHz



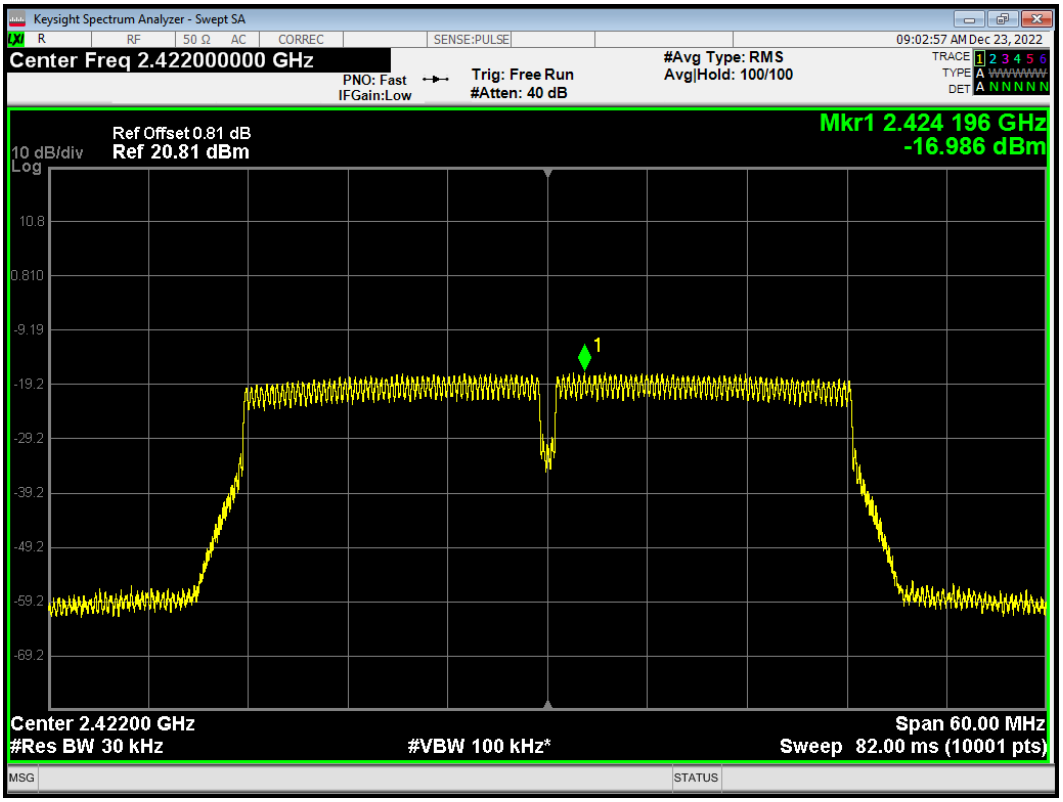
PSD 802.11n(HT20) 2457MHz



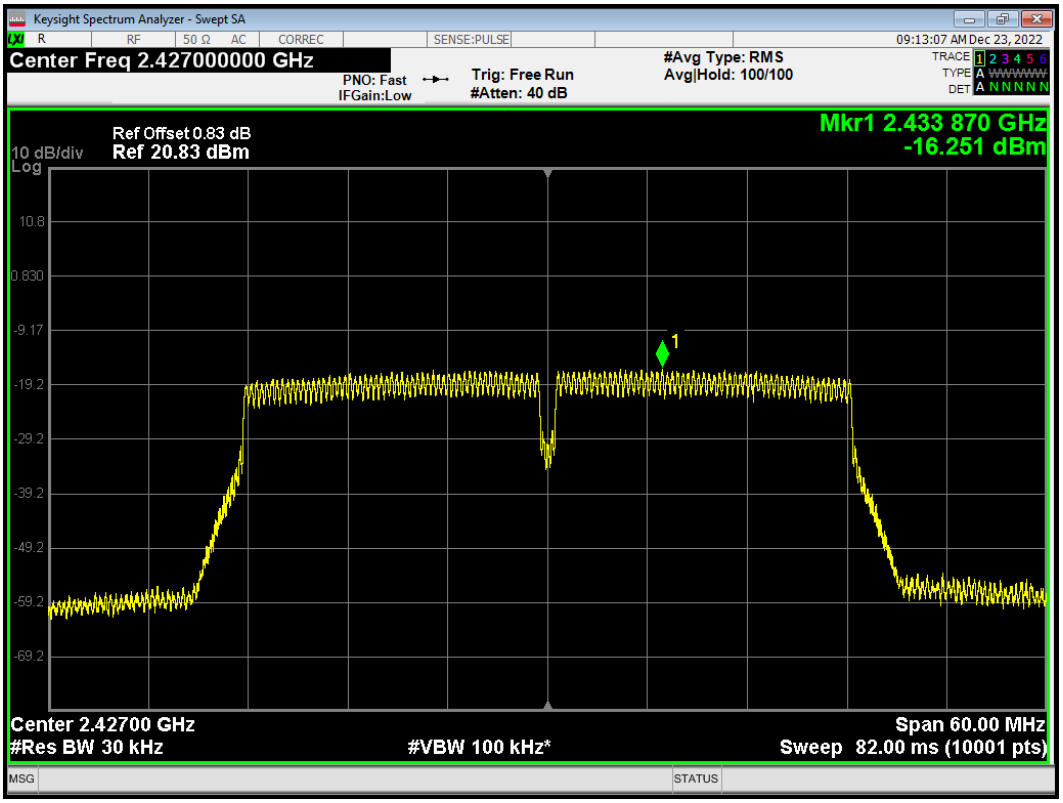
PSD 802.11n(HT20) 2462MHz



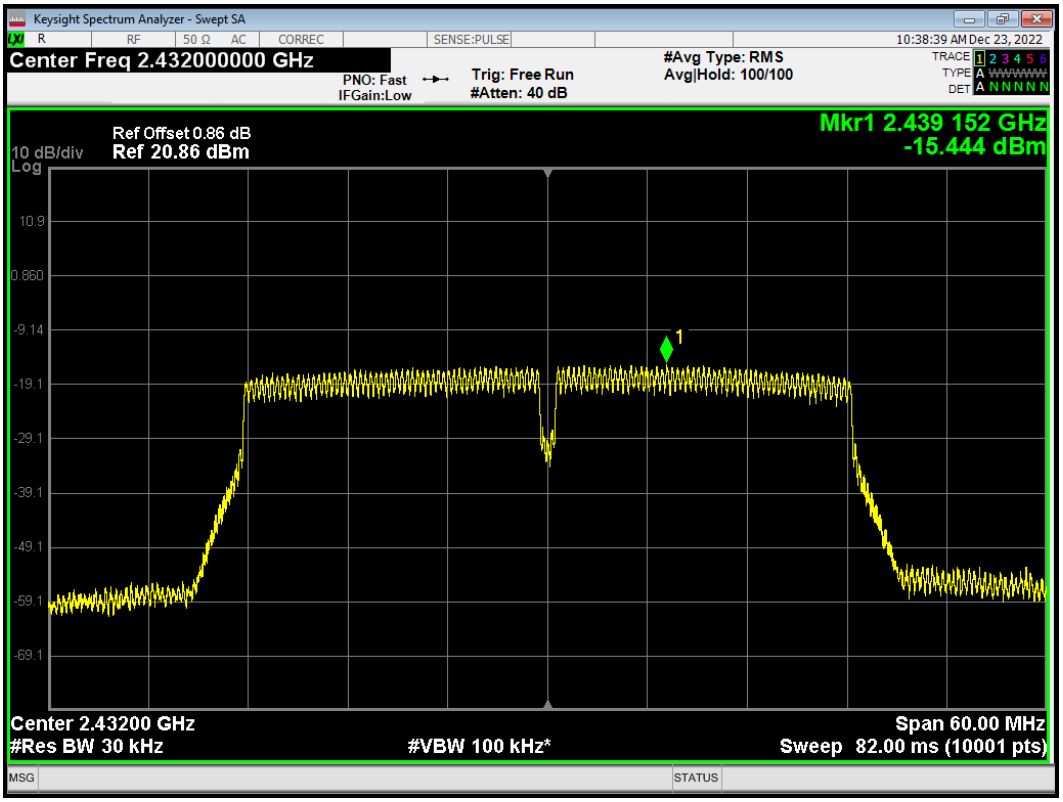
PSD 802.11n(HT40) 2422MHz



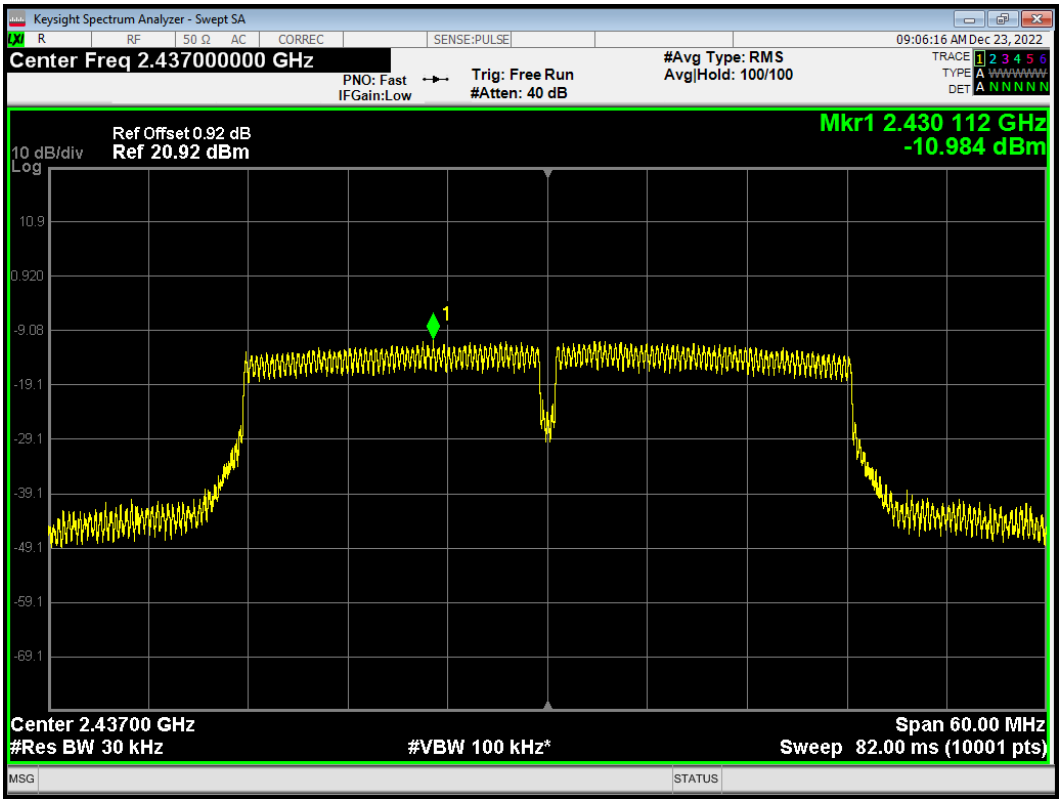
PSD 802.11n(HT40) 2427MHz



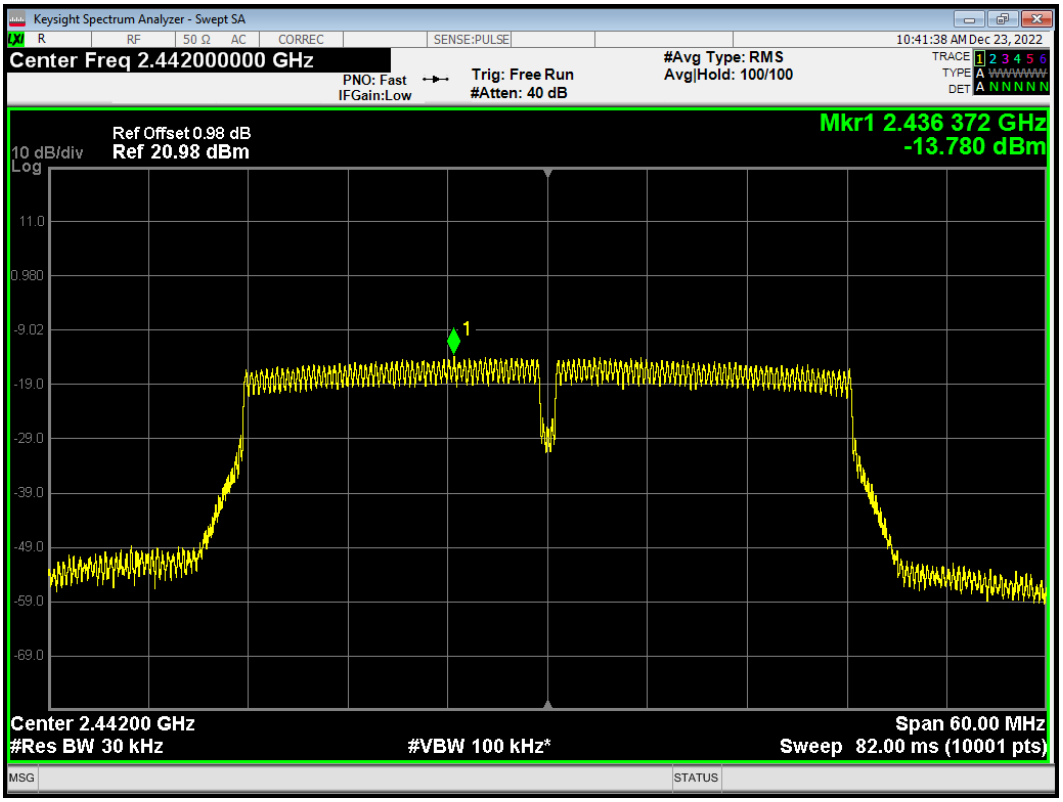
PSD 802.11n(HT40) 2432MHz



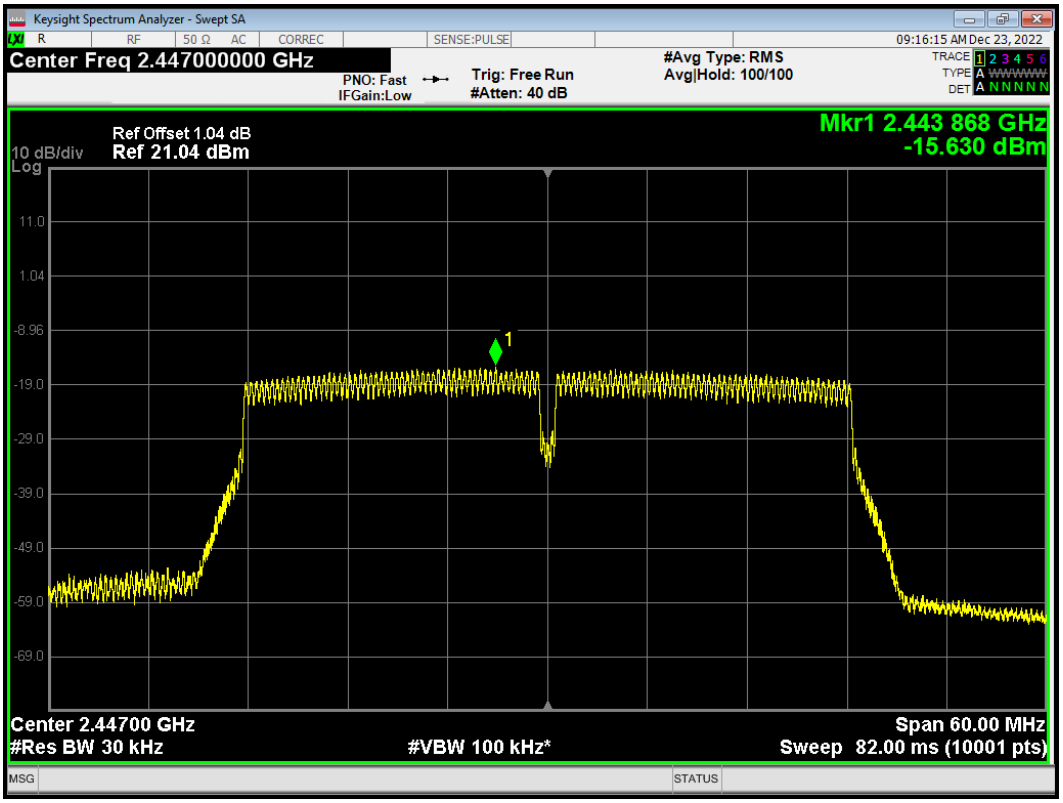
PSD 802.11n(HT40) 2437MHz



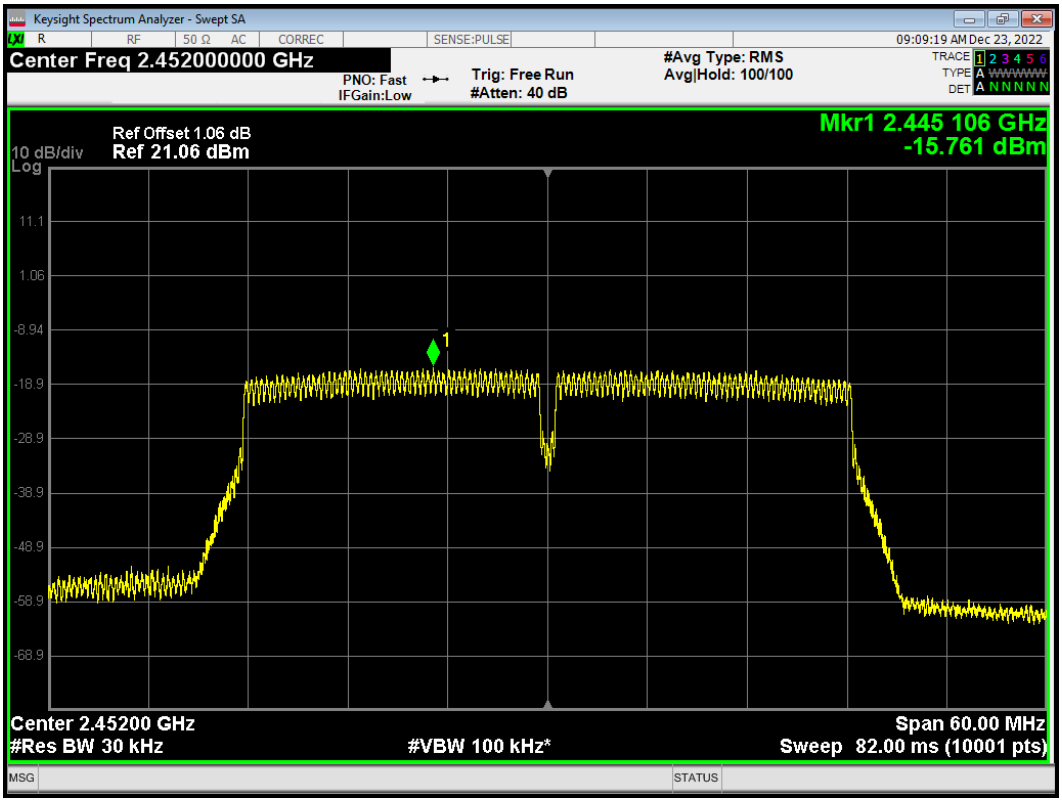
PSD 802.11n(HT40) 2442MHz



PSD 802.11n(HT40) 2447MHz



PSD 802.11n(HT40) 2452MHz



5.5. Spurious RF Conducted Emissions

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to the spectrum analyzer with a known loss. The spectrum analyzer scans from 30MHz to the 10th harmonic of the carrier. The peak detector is used. Set RBW to 100 kHz and VBW to 300 kHz, Sweep is set to ATUO.
The test is in transmitting mode.

Test setup

Limits

Rule Part 15.247(d) pacifies 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. ”

Test Mode	Carrier frequency (MHz)	Reference value (dBm)	Limit
802.11b	2412	7.25	-22.75
	2437	7.45	-22.55
	2462	7.59	-22.41
802.11g	2412	2.48	-27.52
	2417	4.89	-25.11
	2422	5.64	-24.36
	2437	6.44	-23.56
	2447	6.28	-23.72
	2452	4.22	-25.78
	2457	3.27	-26.73
	2462	2.70	-27.3
802.11n	2412	0.60	-29.4

HT20	2417	3.71	-26.29
	2422	2.01	-27.99
	2437	4.85	-25.15
	2452	5.16	-24.84
	2457	4.26	-25.74
	2462	1.46	-28.54
802.11n HT40	2422	-3.60	-33.6
	2427	-4.13	-34.13
	2432	-2.43	-32.43
	2437	2.54	-27.46
	2442	-0.47	-30.47
	2447	-2.38	-32.38
	2452	-2.76	-32.76

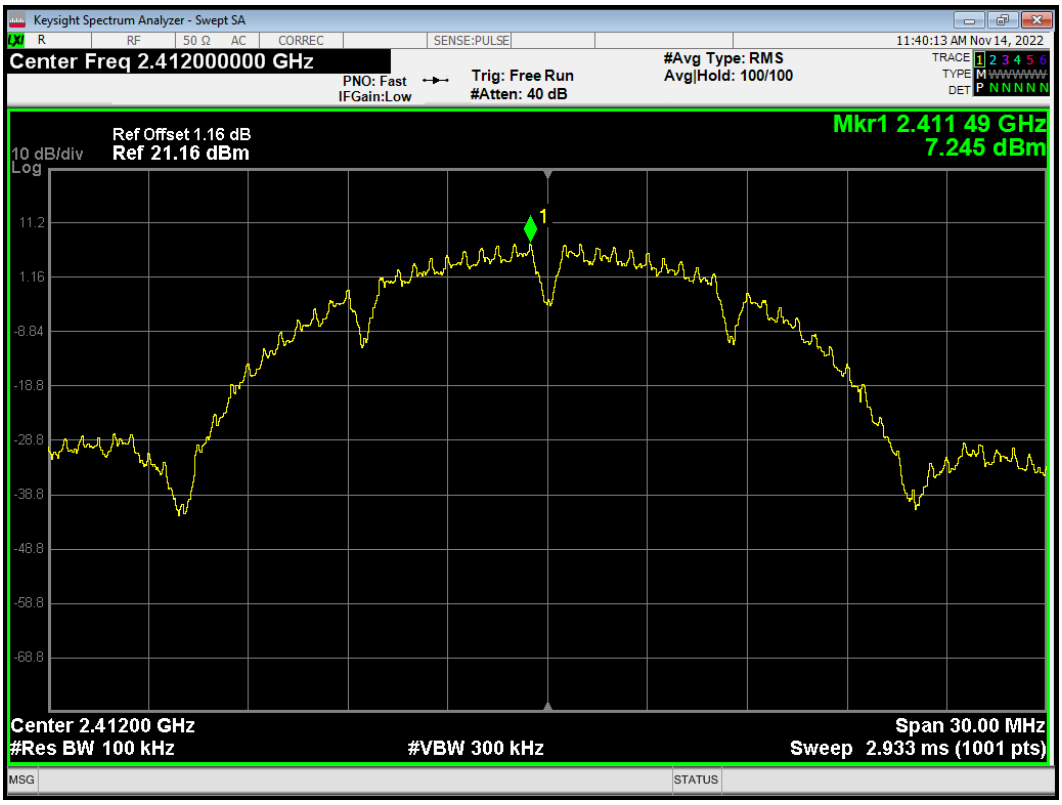
Measurement Uncertainty

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

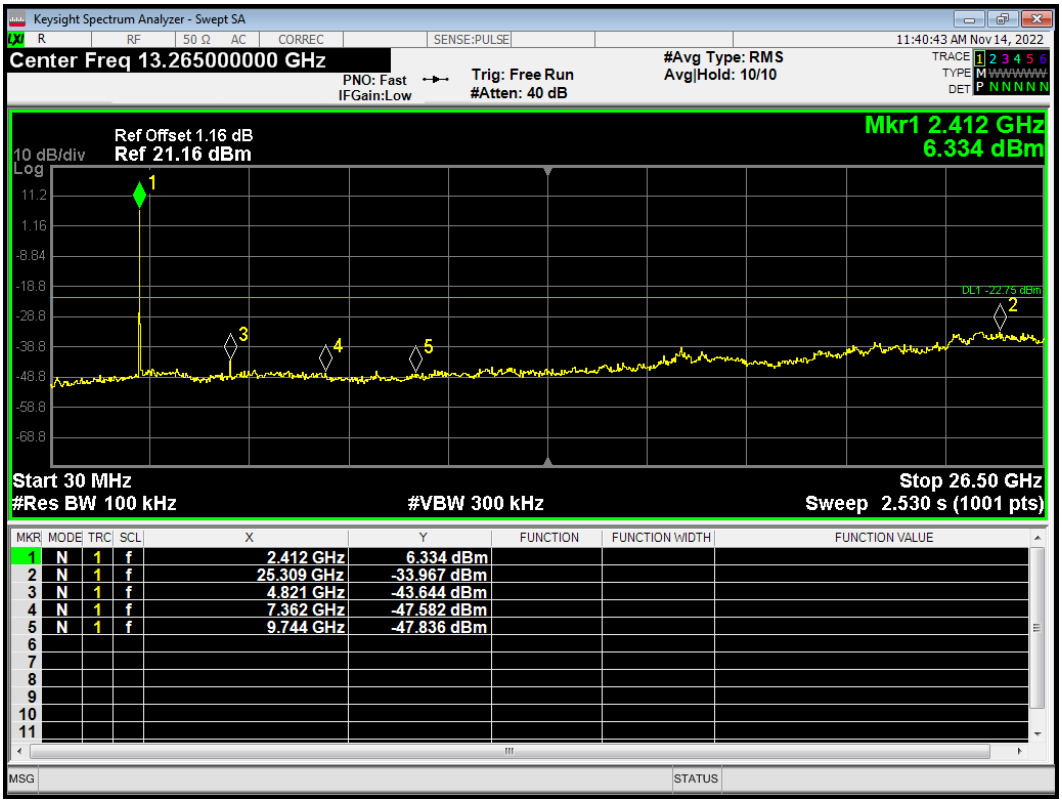
Frequency	Uncertainty
100kHz-2GHz	0.684 dB
2GHz-26GHz	1.407 dB

Test Results:

Tx. Spurious 802.11b 2412MHz Ref

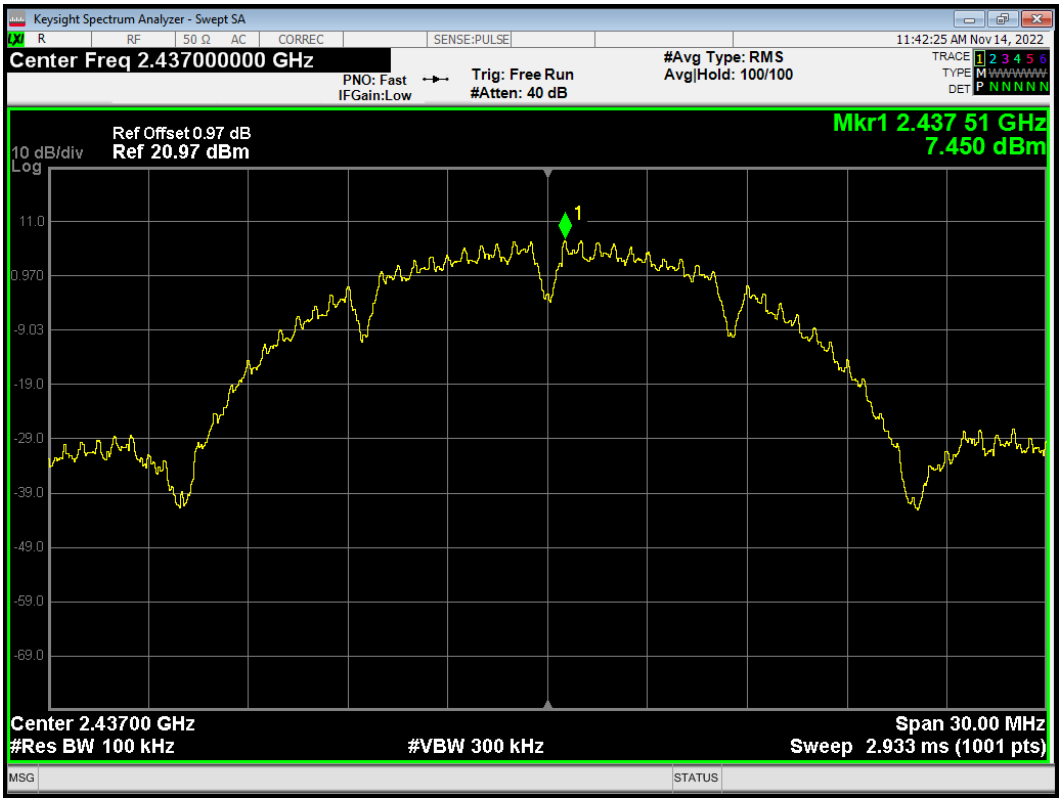


Tx. Spurious 802.11b 2412MHz Emission

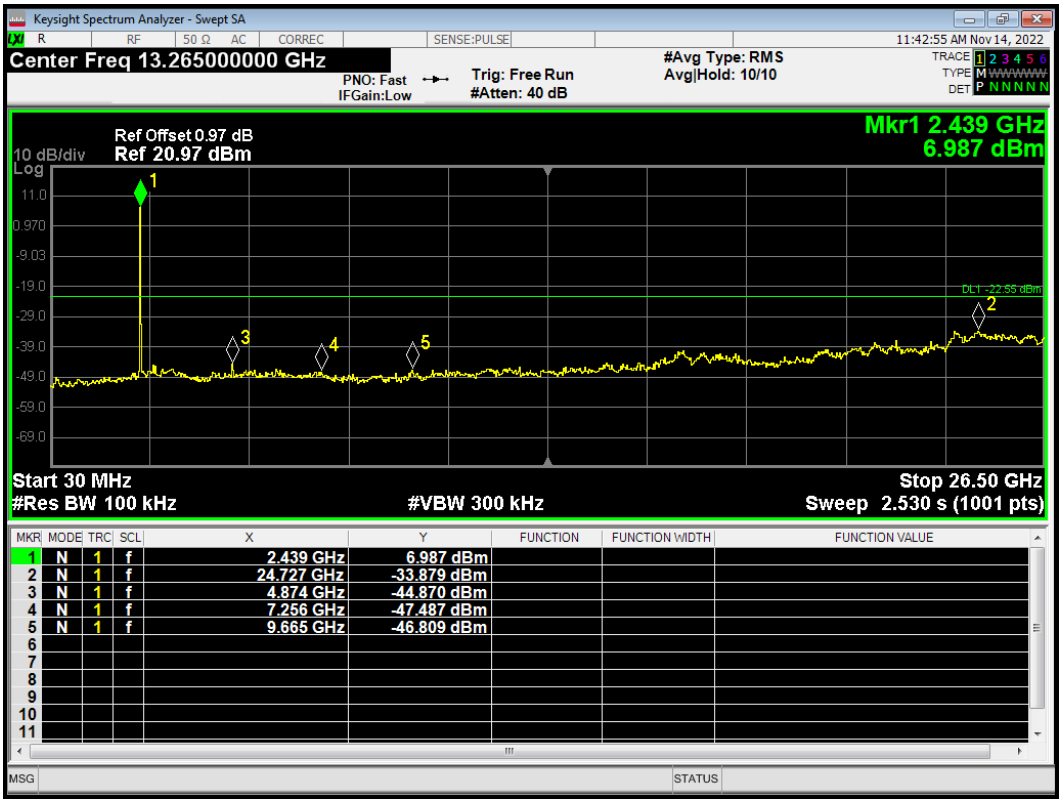


MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.412 GHz	6.334 dBm			
2	N	1	f	25.309 GHz	-33.967 dBm			
3	N	1	f	4.821 GHz	-43.644 dBm			
4	N	1	f	7.362 GHz	-47.582 dBm			
5	N	1	f	9.744 GHz	-47.836 dBm			
6								
7								
8								
9								
10								
11								

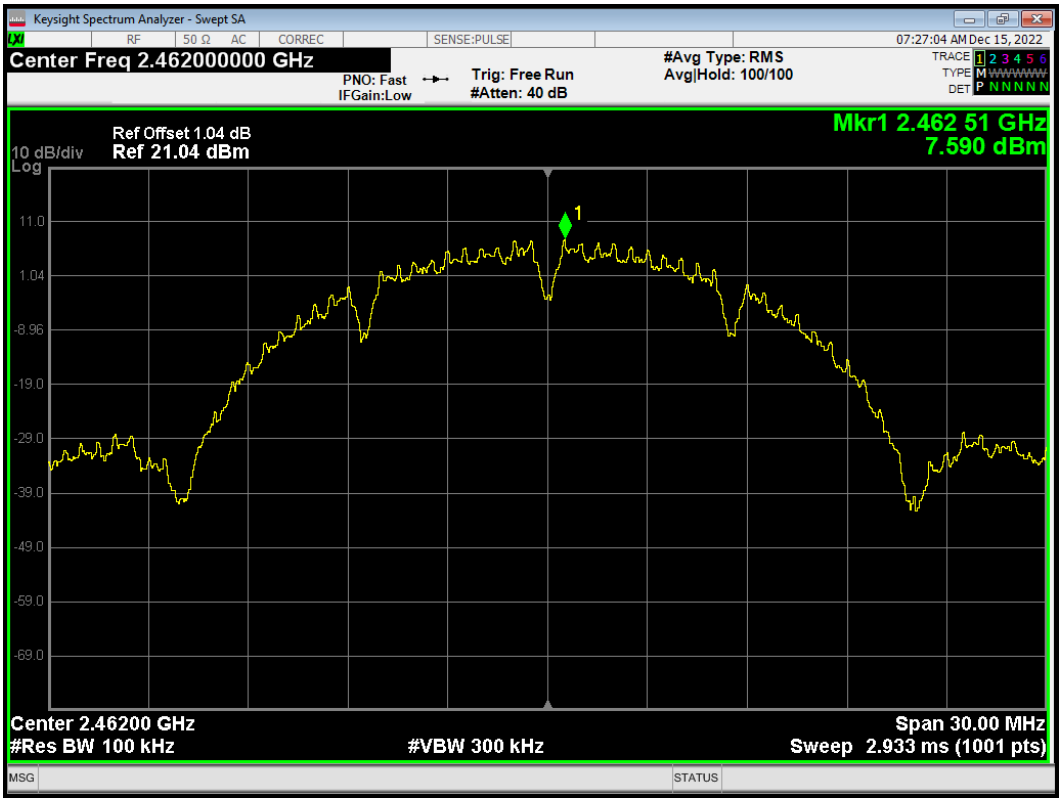
Tx. Spurious 802.11b 2437MHz Ref



Tx. Spurious 802.11b 2437MHz Emission



Tx. Spurious 802.11b 2462MHz Ref



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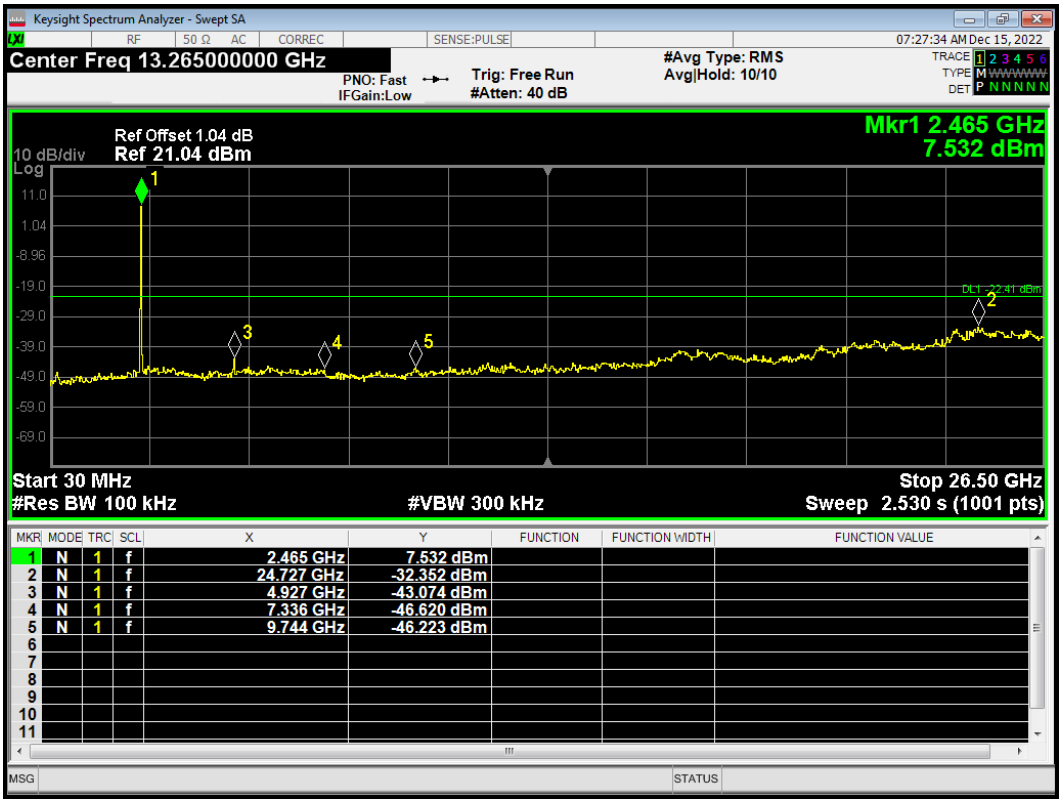
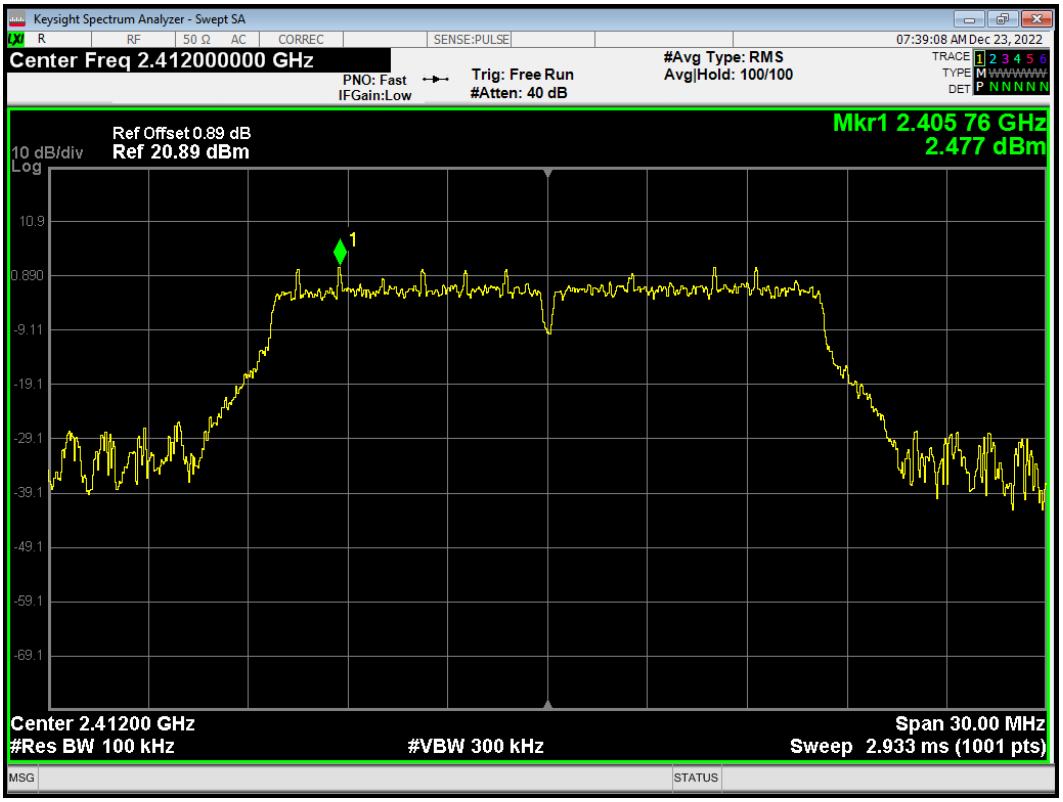


Tx. Spurious 802.11g 2412MHz Ref



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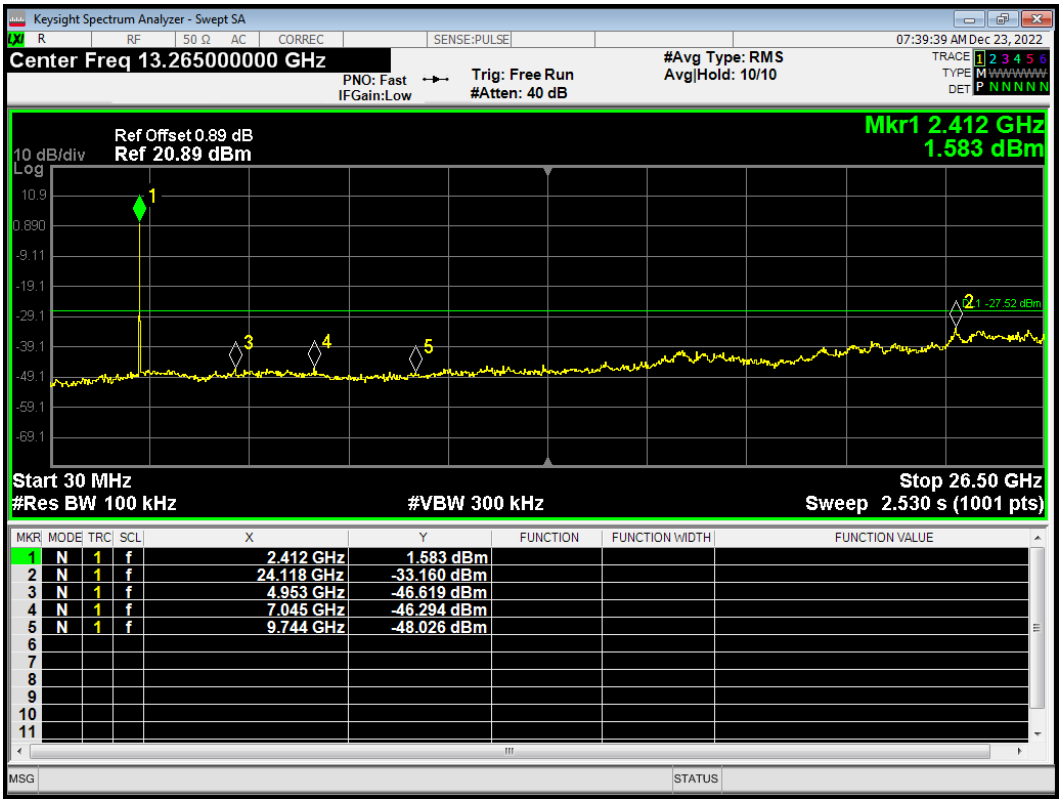
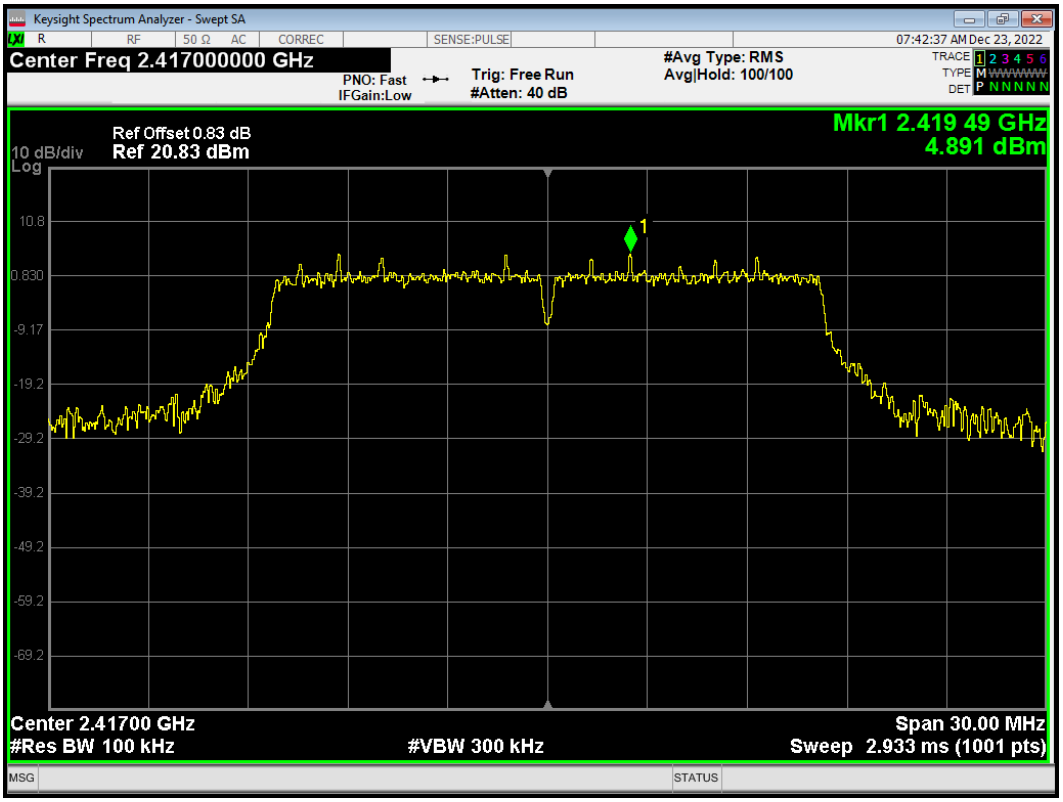


Tx. Spurious 802.11g 2417MHz Ref



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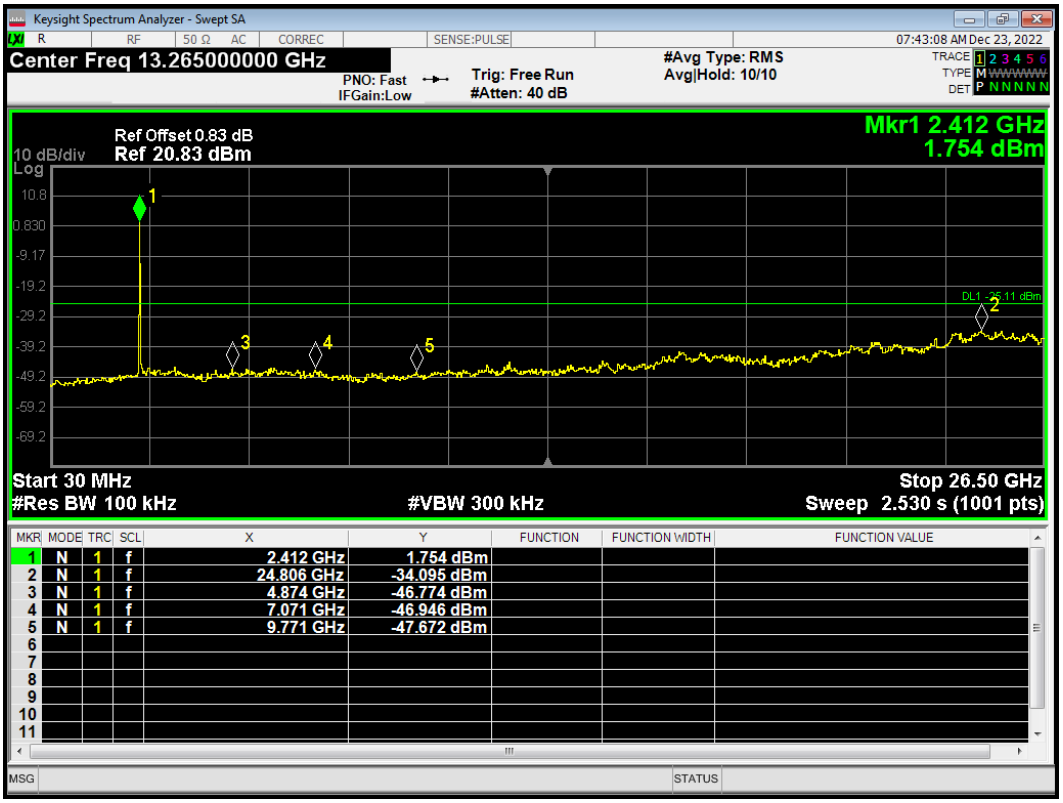

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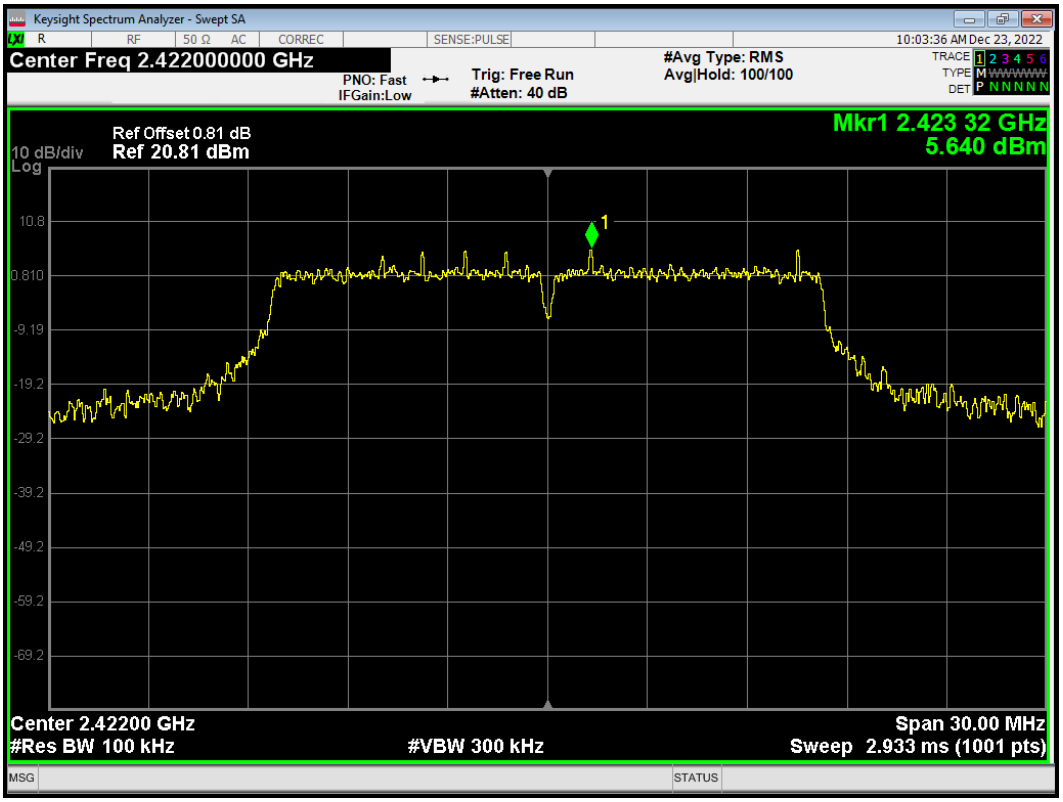

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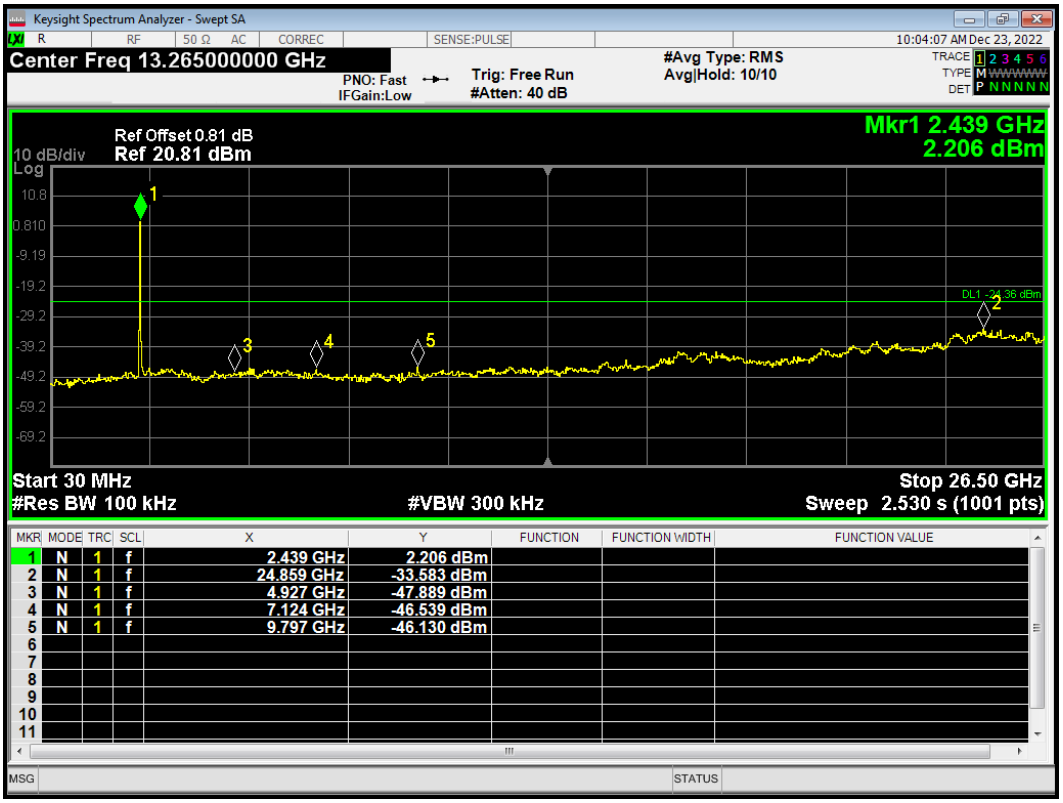

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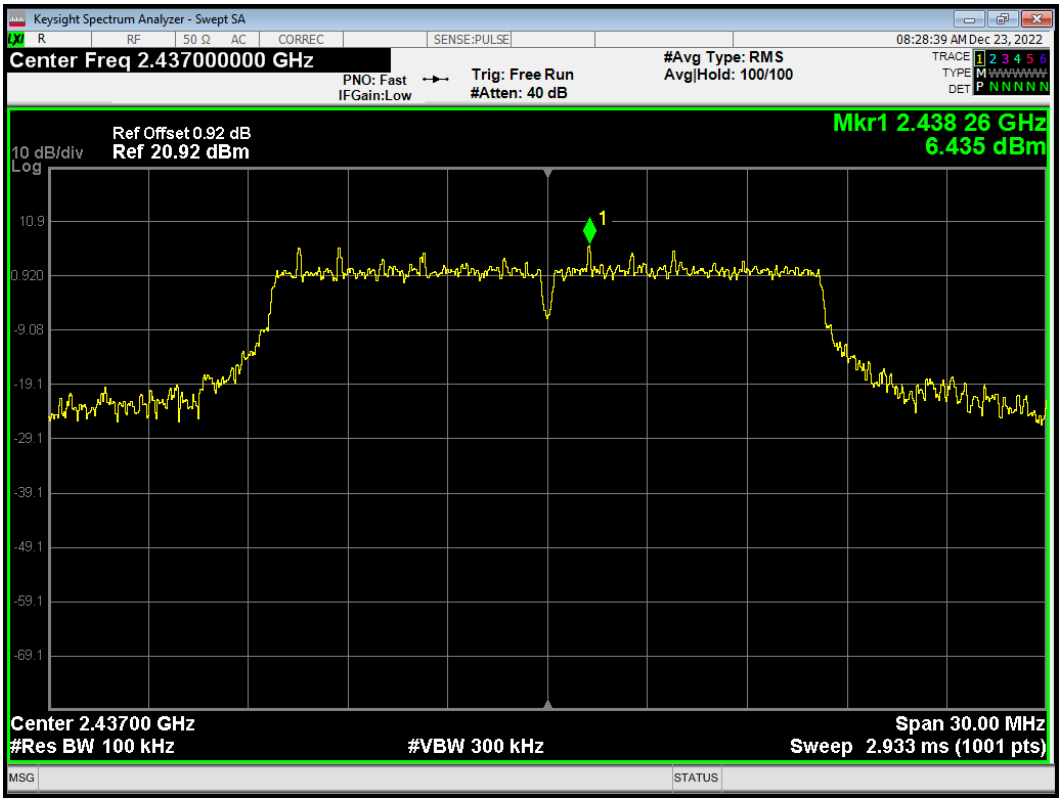

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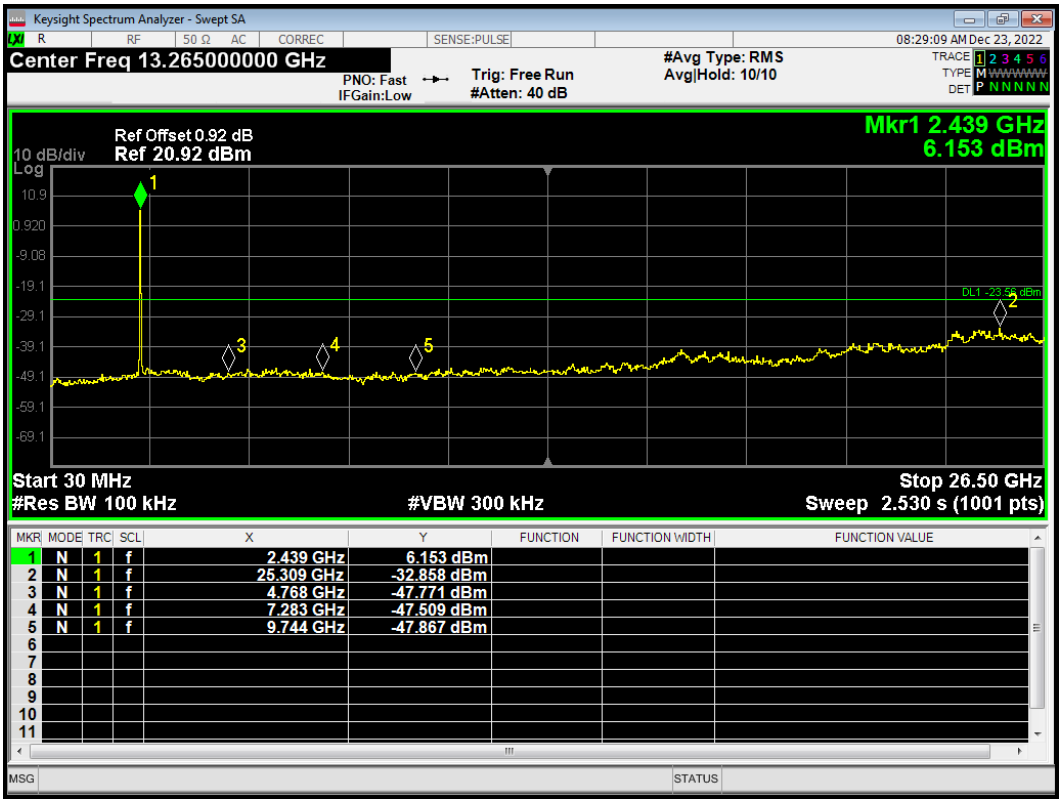
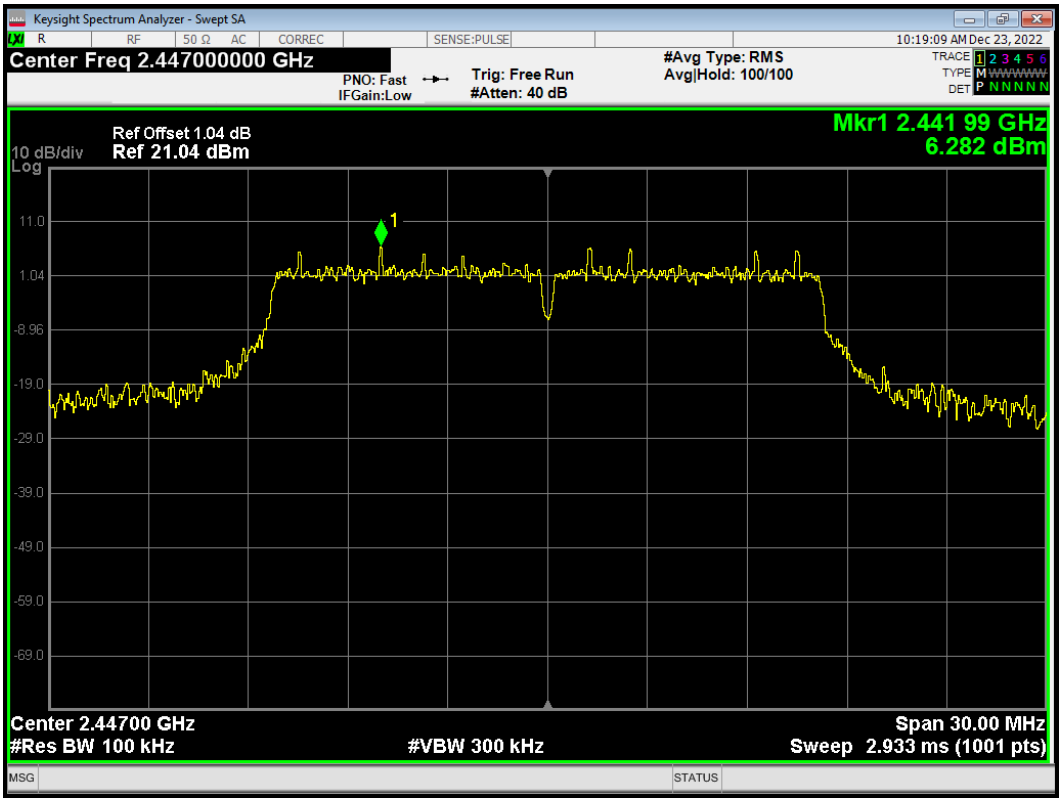
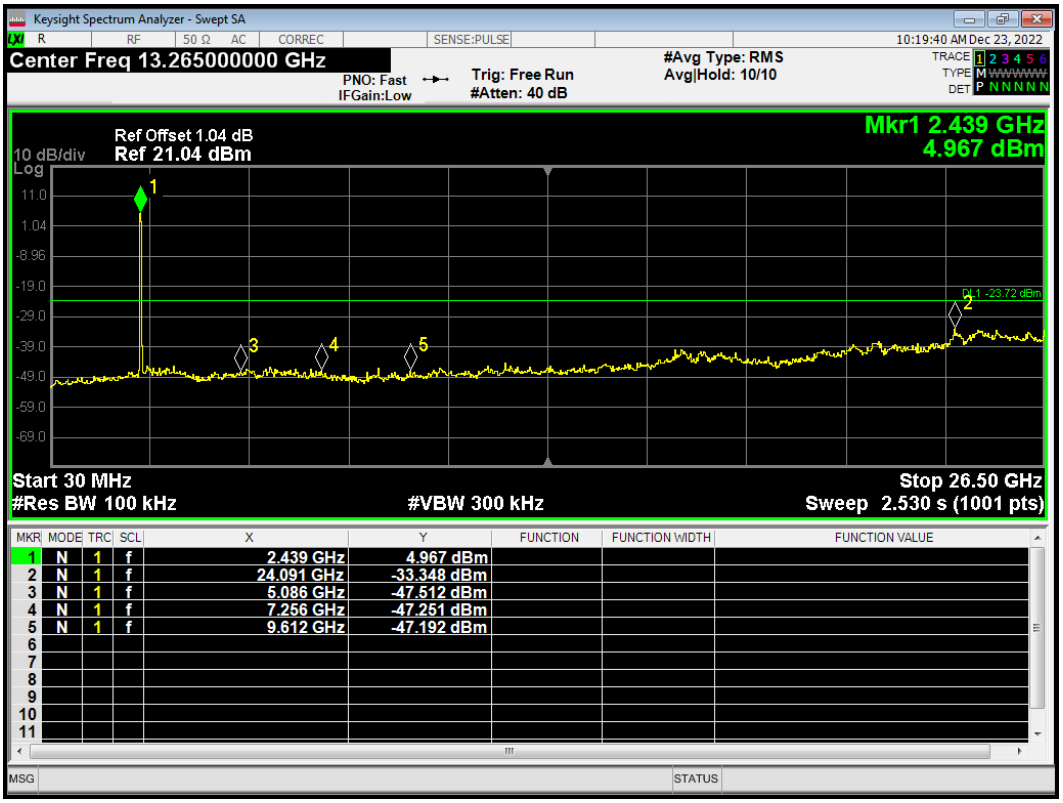


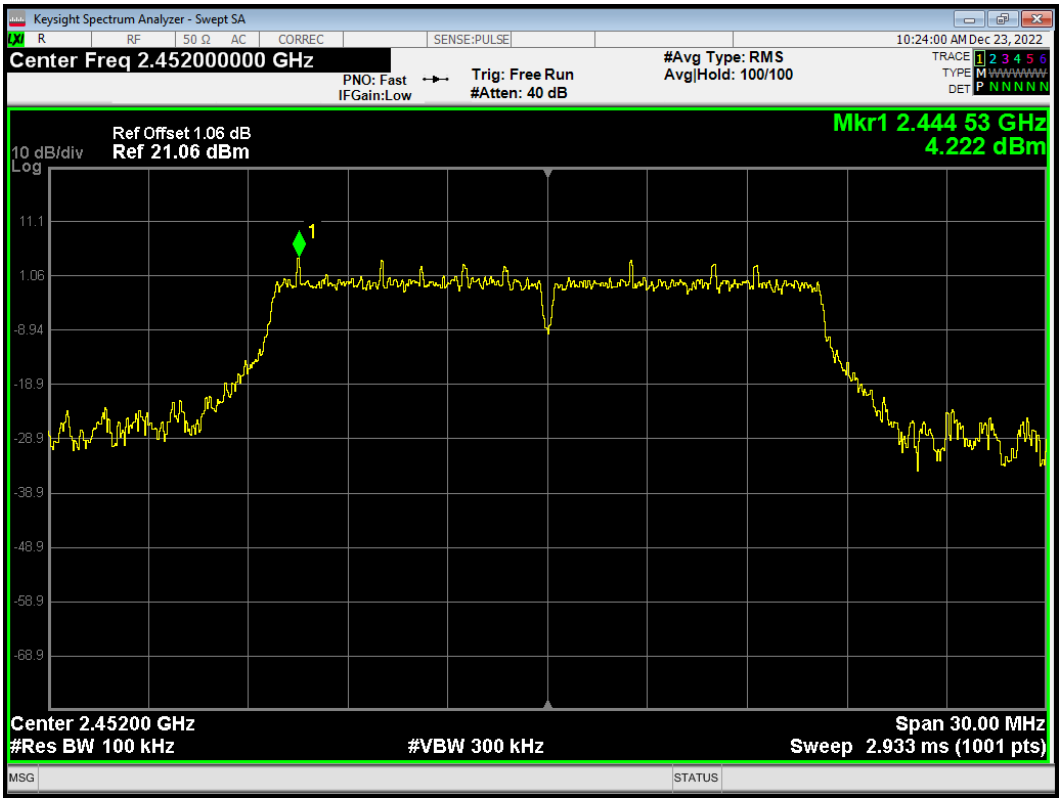
Tx. Spurious 802.11g 2447MHz Ref



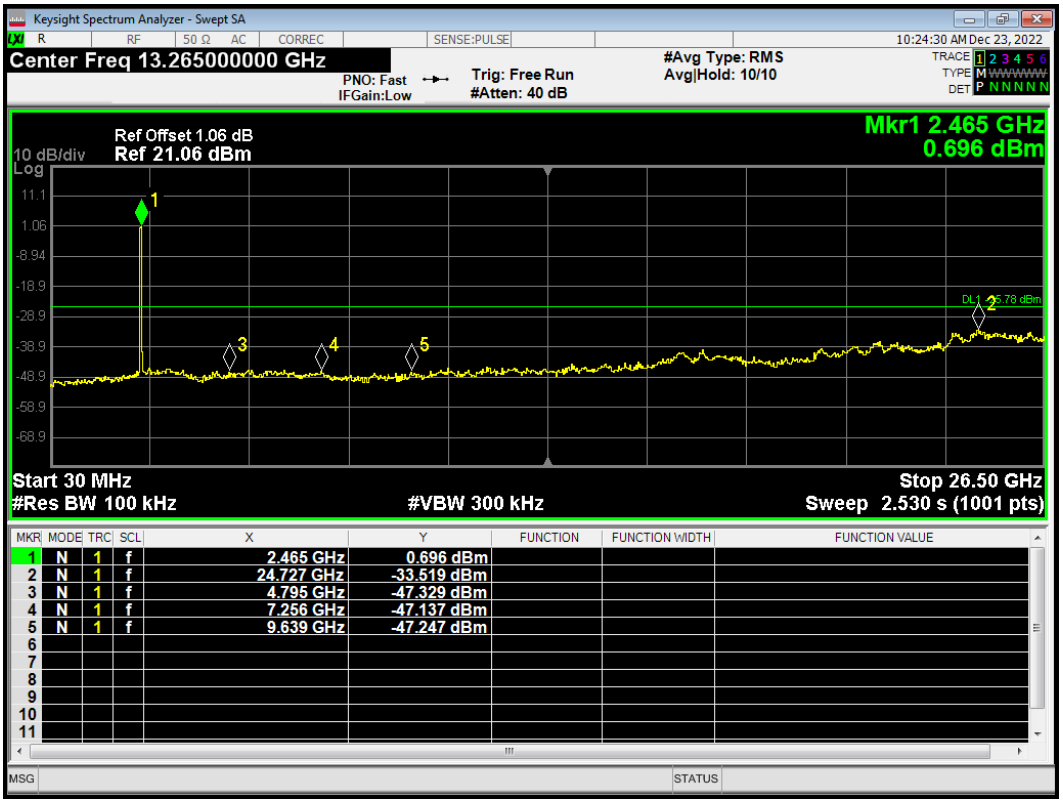
Tx. Spurious 802.11g 2447MHz Emission



Tx. Spurious 802.11g 2452MHz Ref

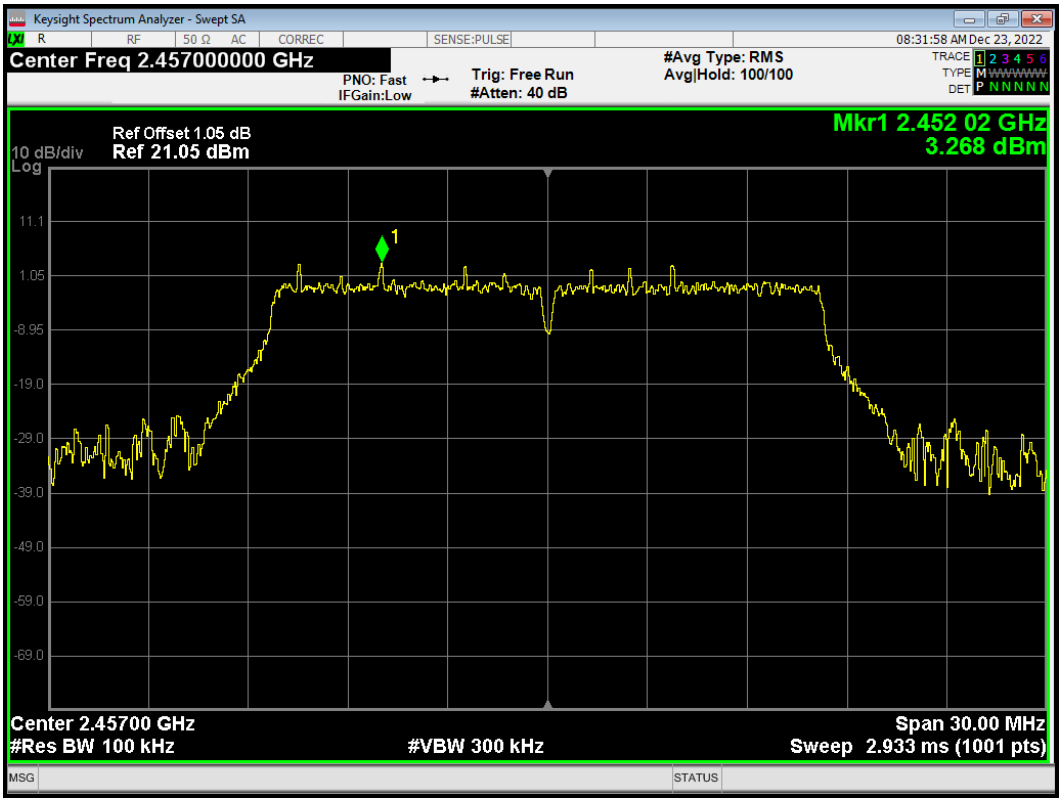


Tx. Spurious 802.11g 2452MHz Emission

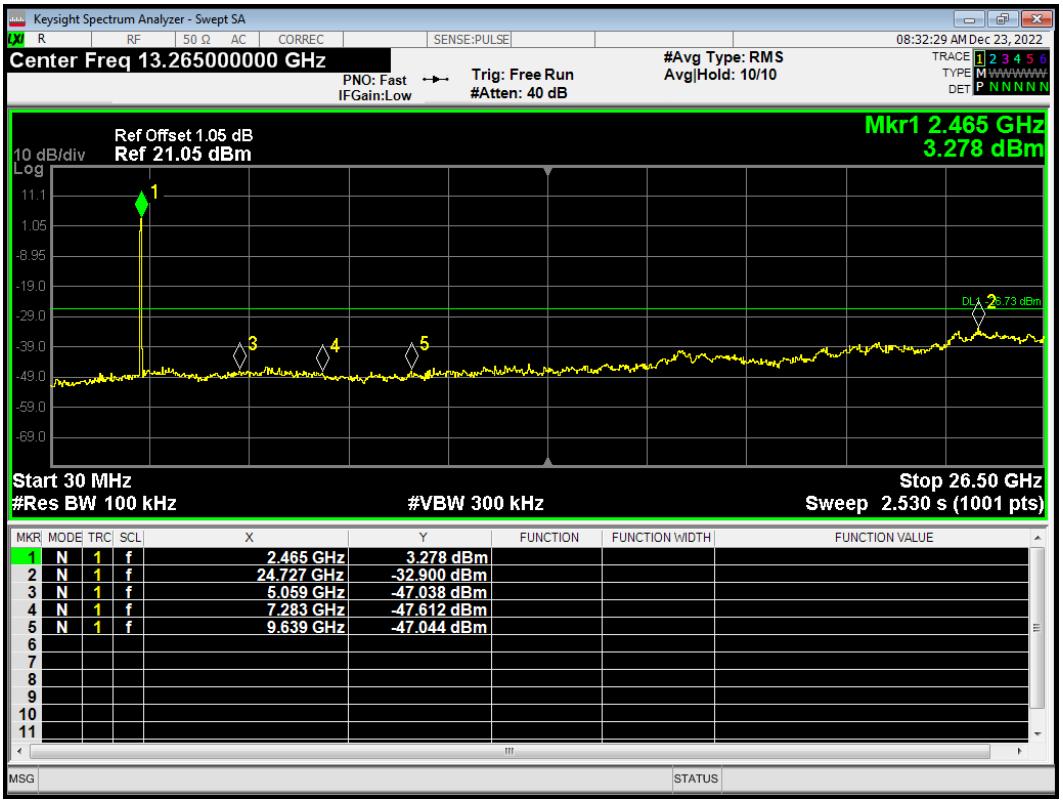


MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.465 GHz	0.696 dBm			
2	N	1	f	24.727 GHz	-33.519 dBm			
3	N	1	f	4.795 GHz	-47.329 dBm			
4	N	1	f	7.256 GHz	-47.137 dBm			
5	N	1	f	9.639 GHz	-47.247 dBm			

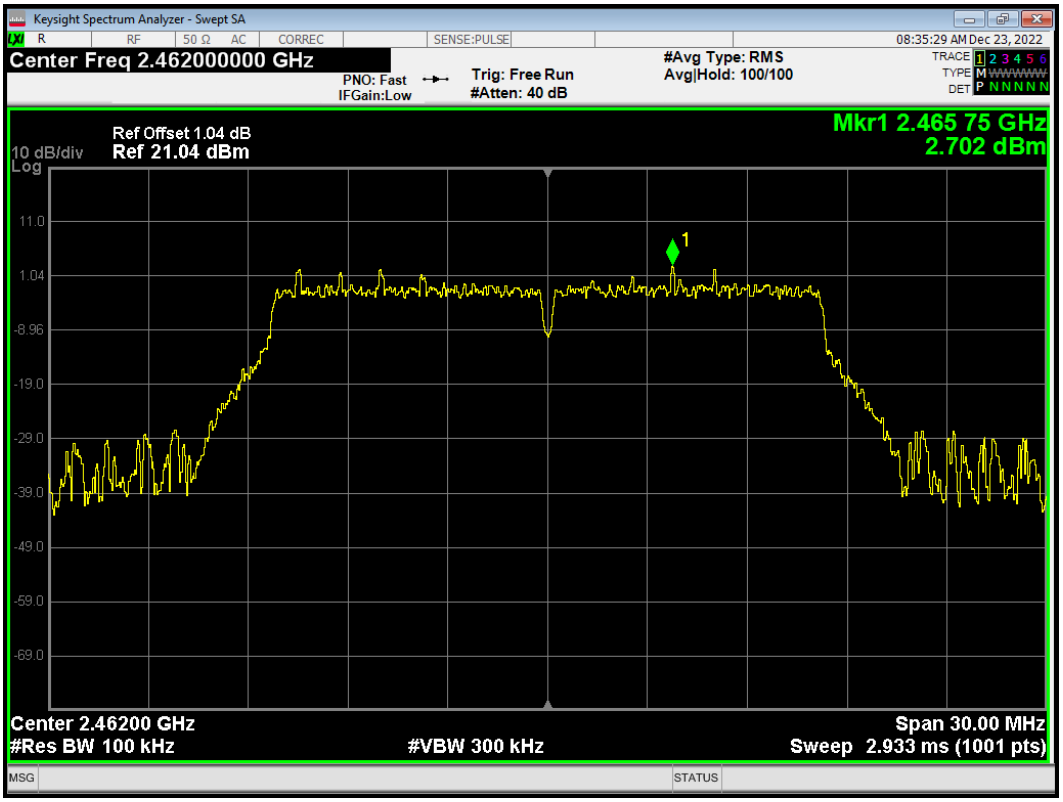
Tx. Spurious 802.11g 2457MHz Ref



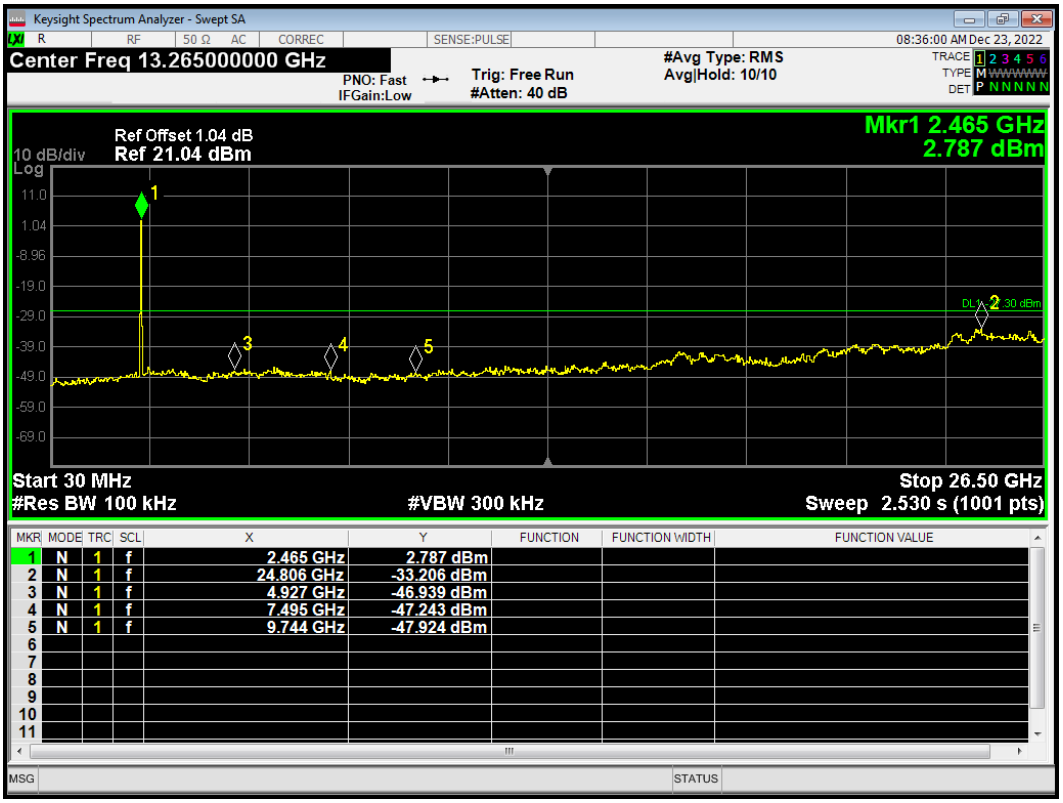
Tx. Spurious 802.11g 2457MHz Emission



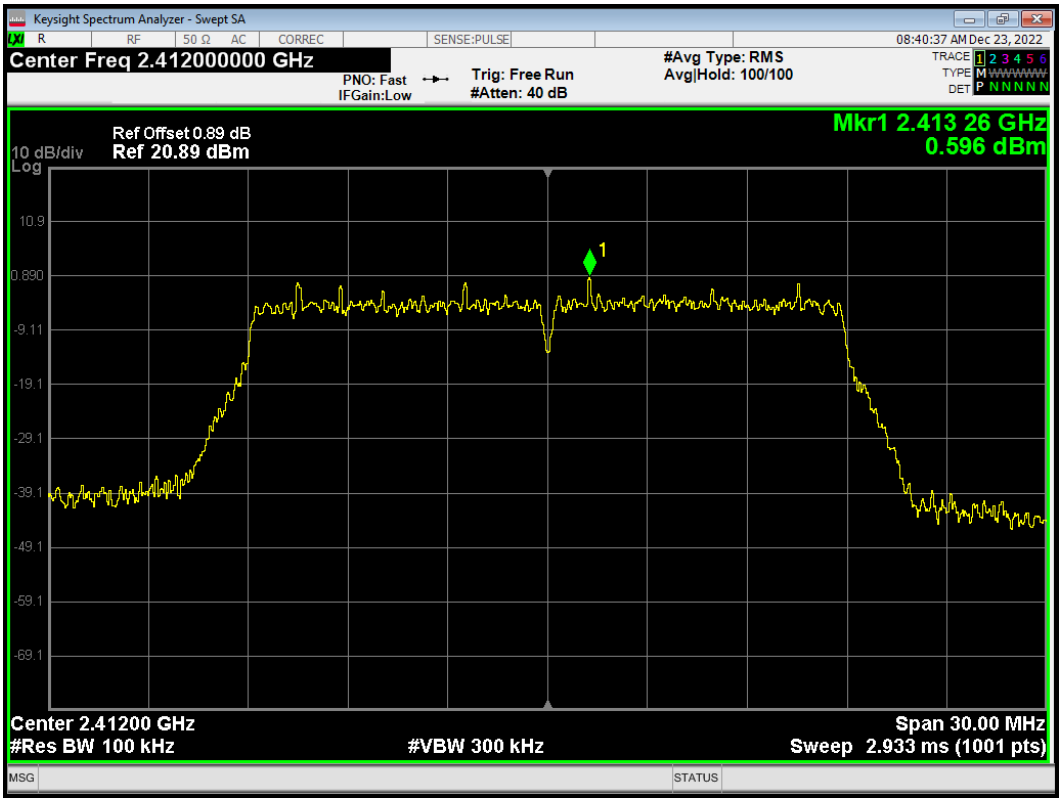
Tx. Spurious 802.11g 2462MHz Ref



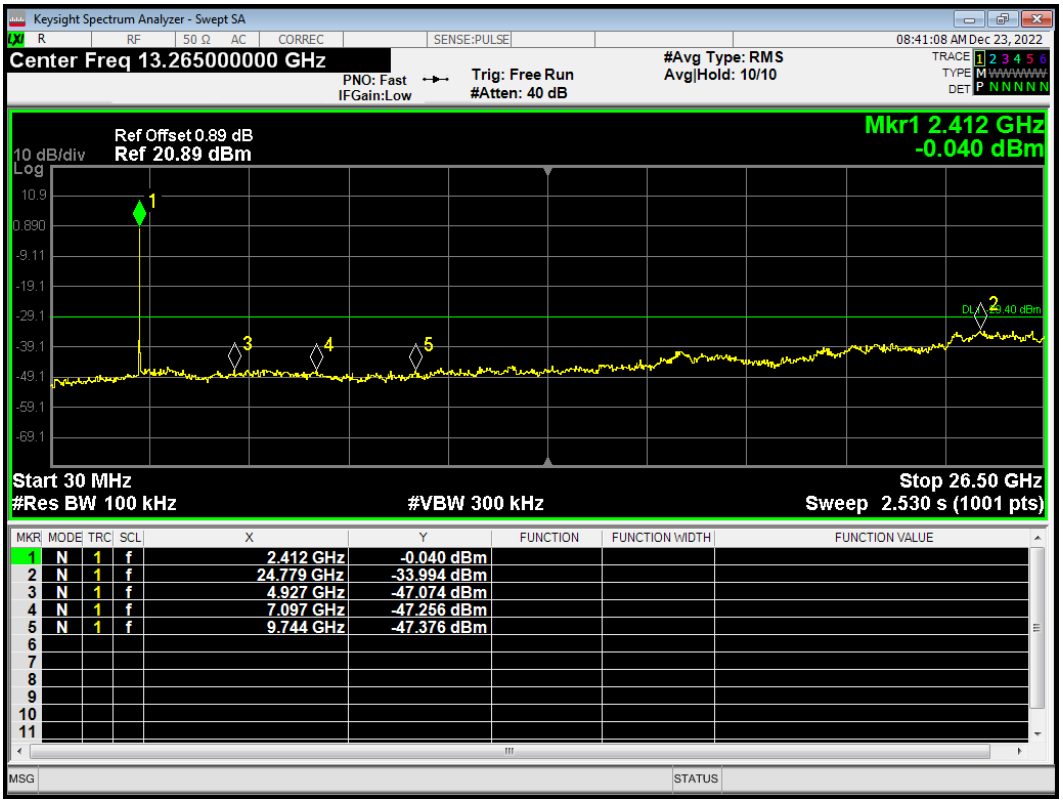
Tx. Spurious 802.11g 2462MHz Emission



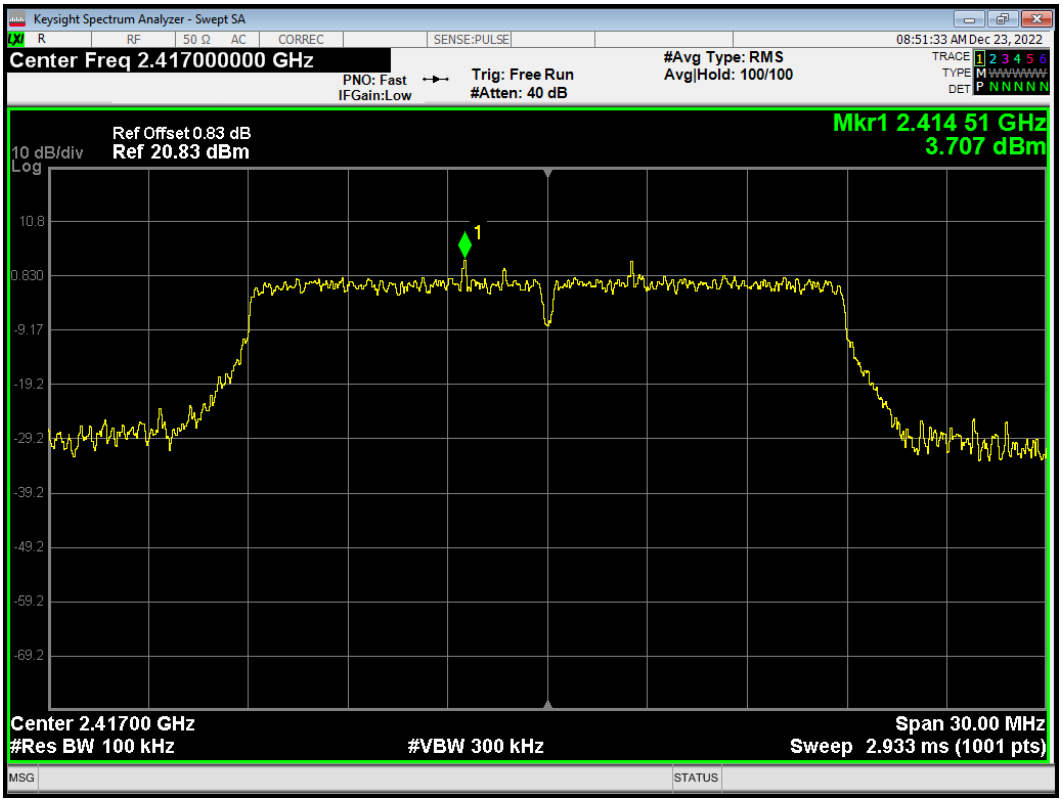
Tx. Spurious 802.11n(HT20) 2412MHz Ref



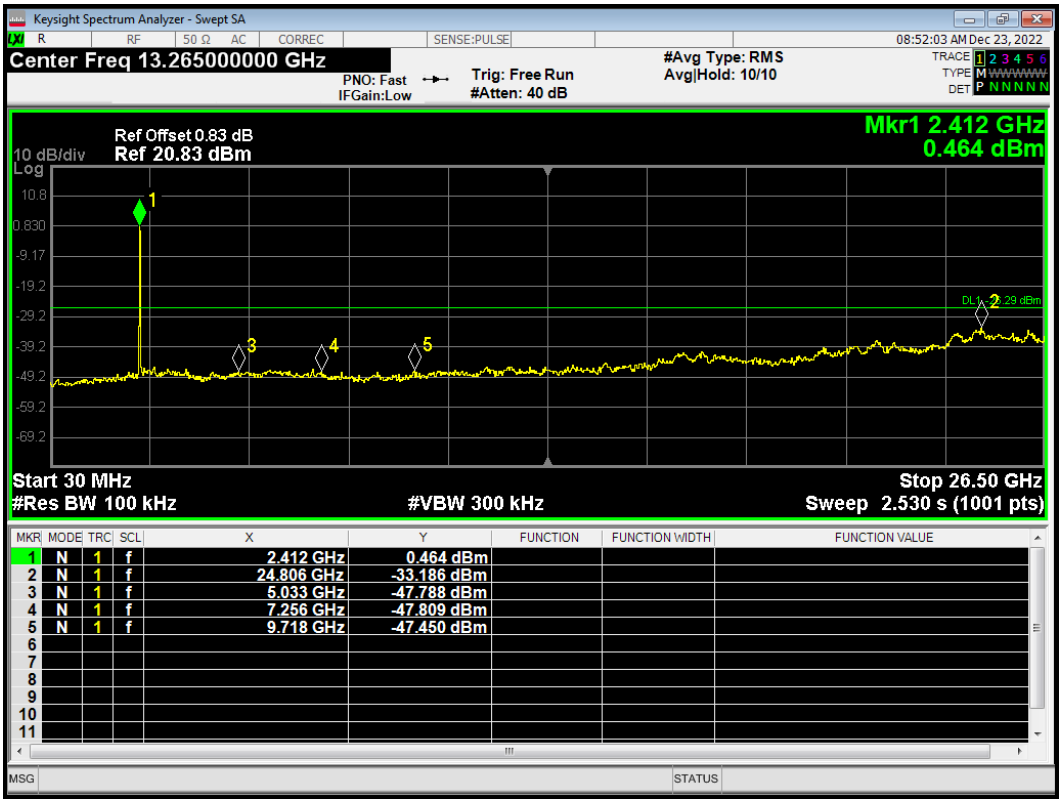
Tx. Spurious 802.11n(HT20) 2412MHz Emission



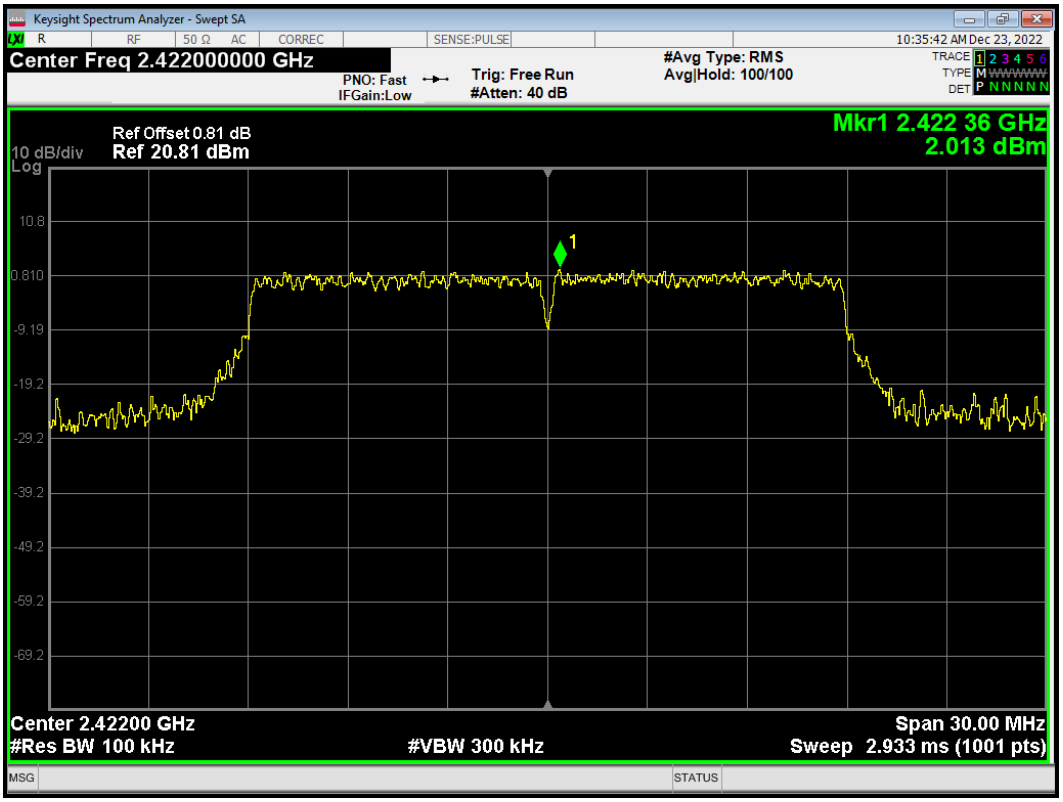
Tx. Spurious 802.11n(HT20) 2417MHz Ref



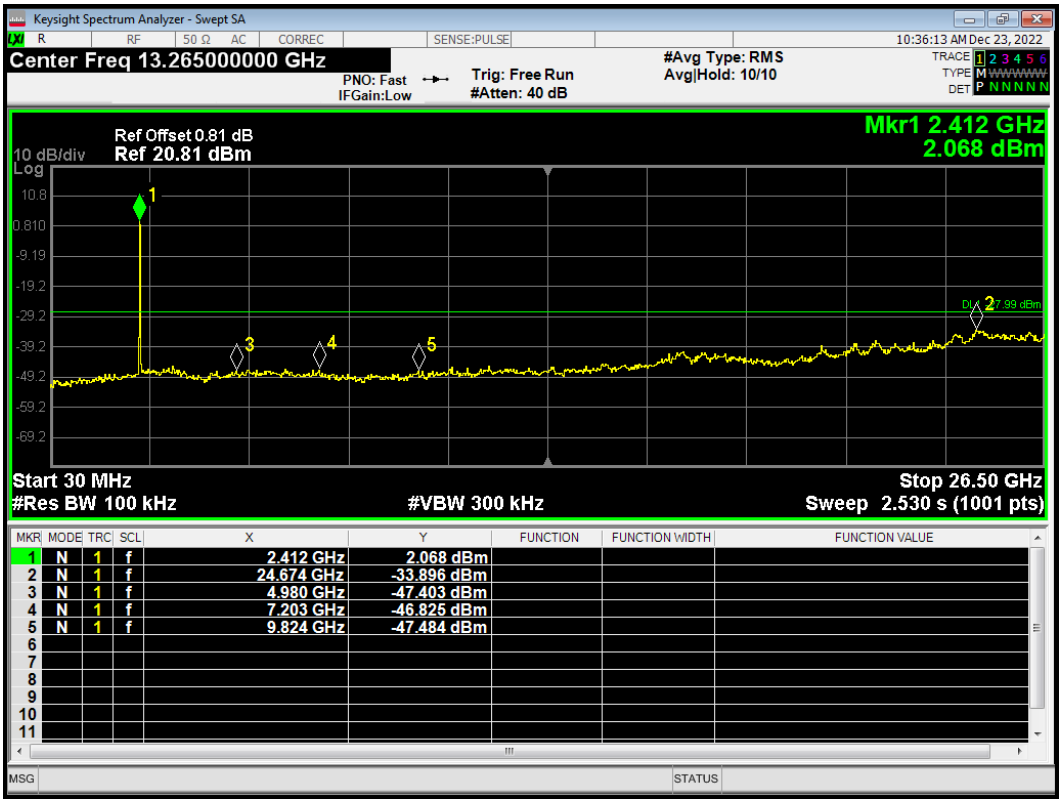
Tx. Spurious 802.11n(HT20) 2417MHz Emission



Tx. Spurious 802.11n(HT20) 2422MHz Ref

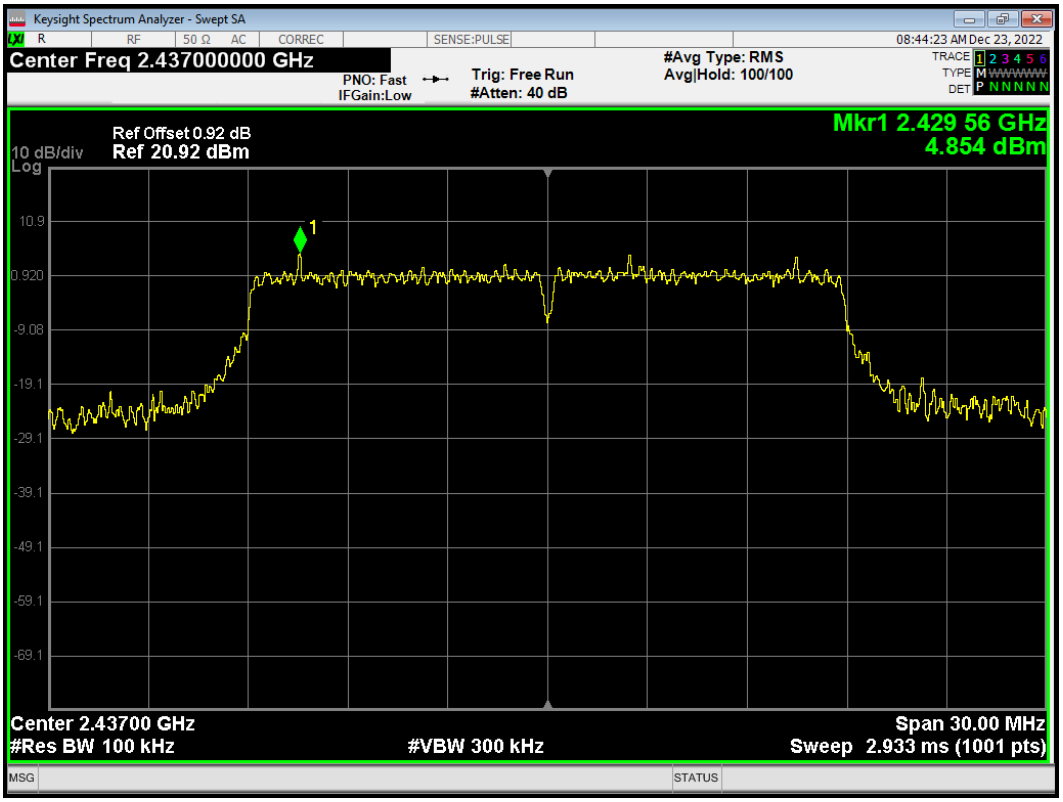


Tx. Spurious 802.11n(HT20) 2422MHz Emission

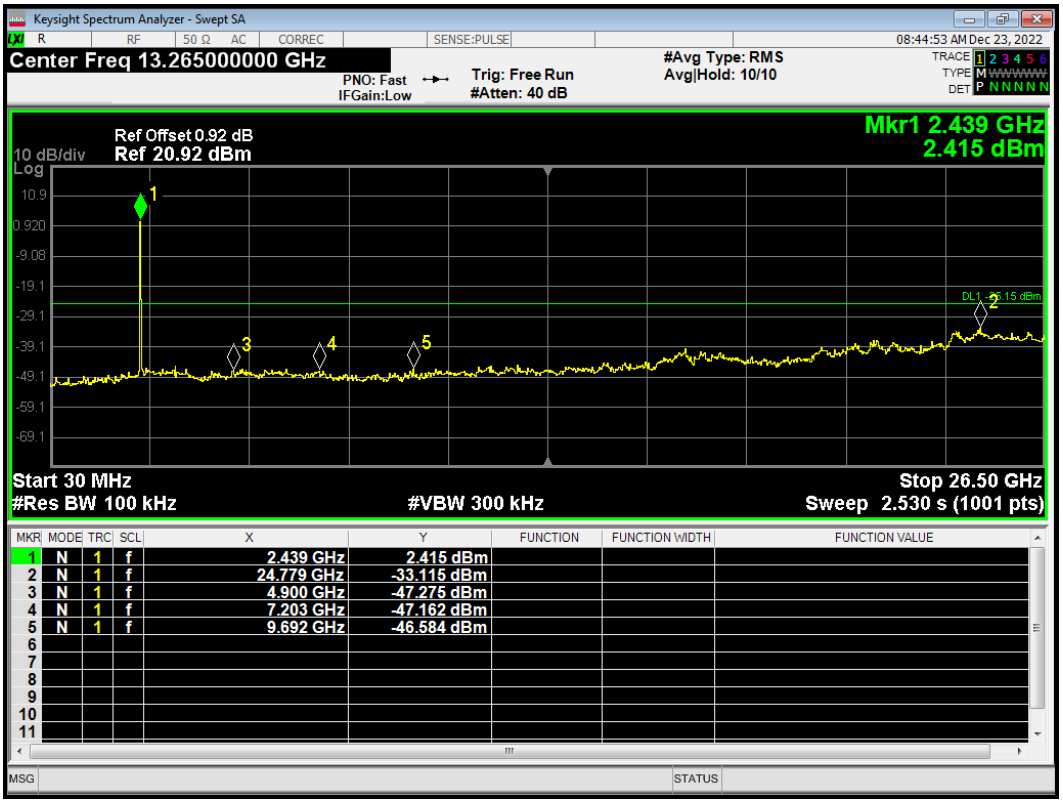


MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.412 GHz	2.068 dBm			
2	N	1	f	24.674 GHz	-33.896 dBm			
3	N	1	f	4.980 GHz	-47.403 dBm			
4	N	1	f	7.203 GHz	-46.825 dBm			
5	N	1	f	9.824 GHz	-47.484 dBm			

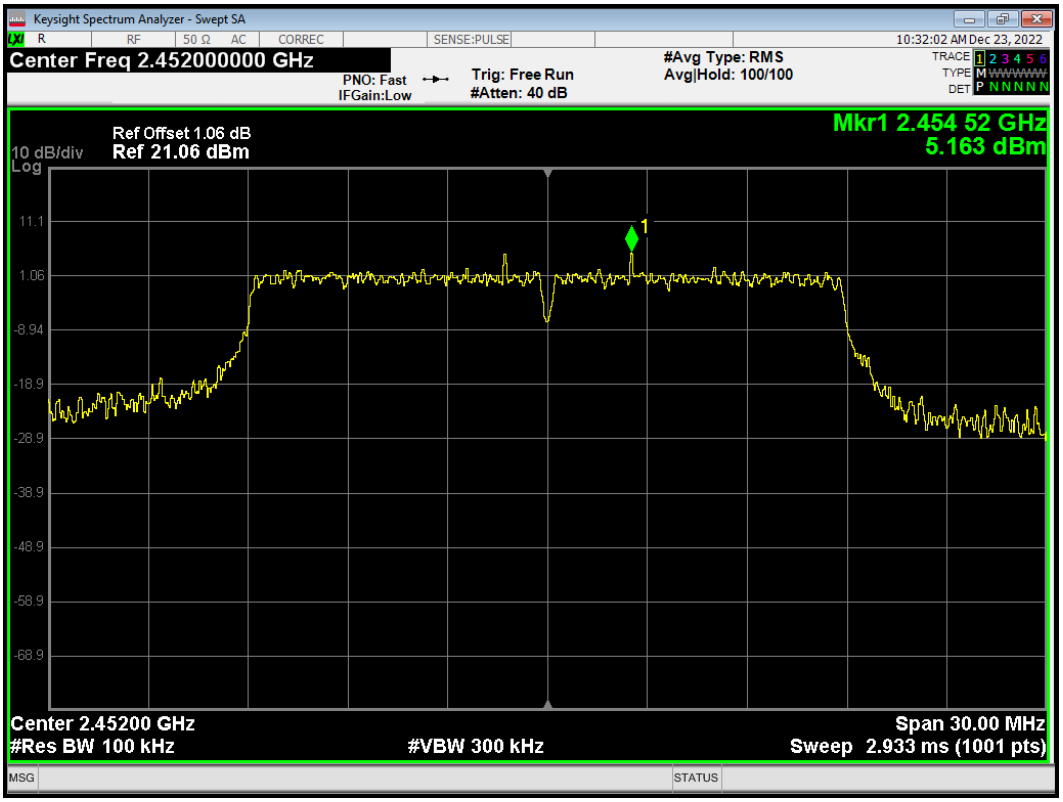
Tx. Spurious 802.11n(HT20) 2437MHz Ref



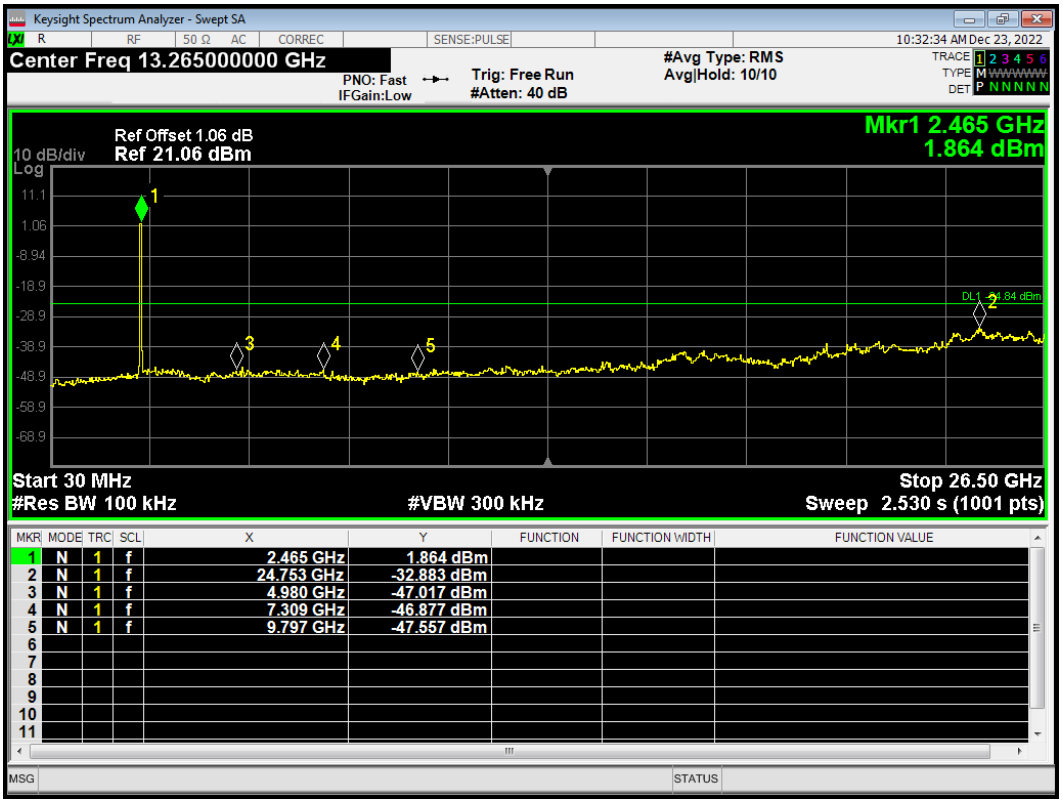
Tx. Spurious 802.11n(HT20) 2437MHz Emission



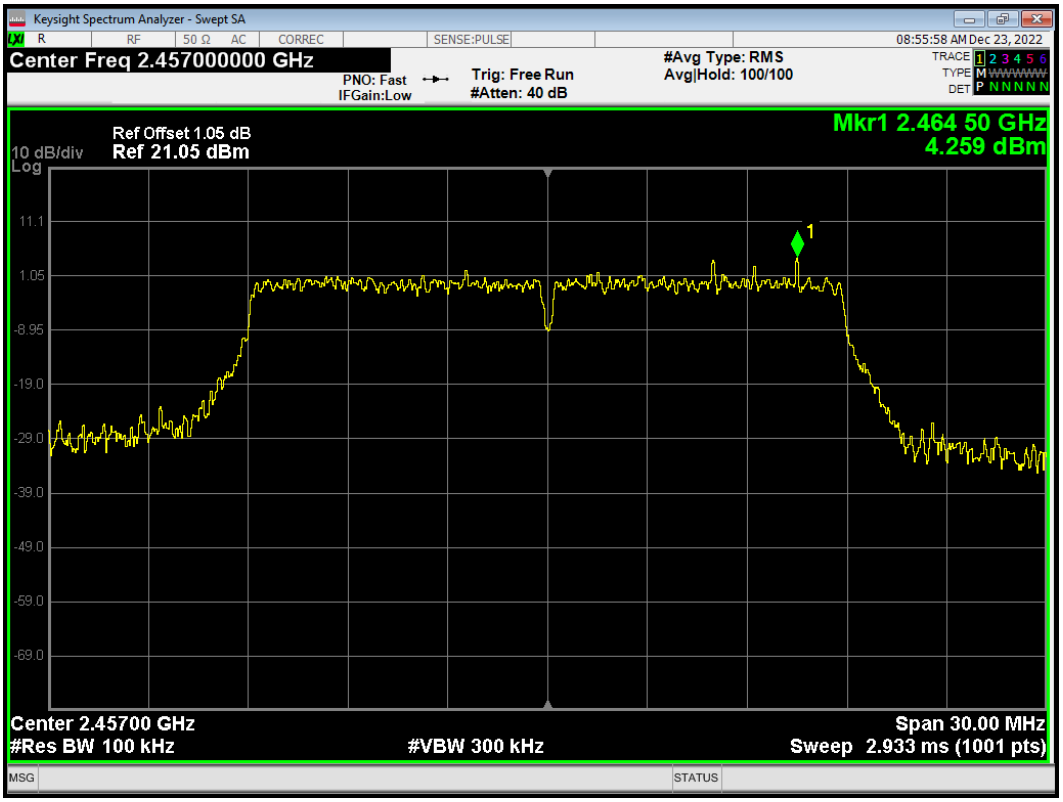
Tx. Spurious 802.11n(HT20) 2452MHz Ref



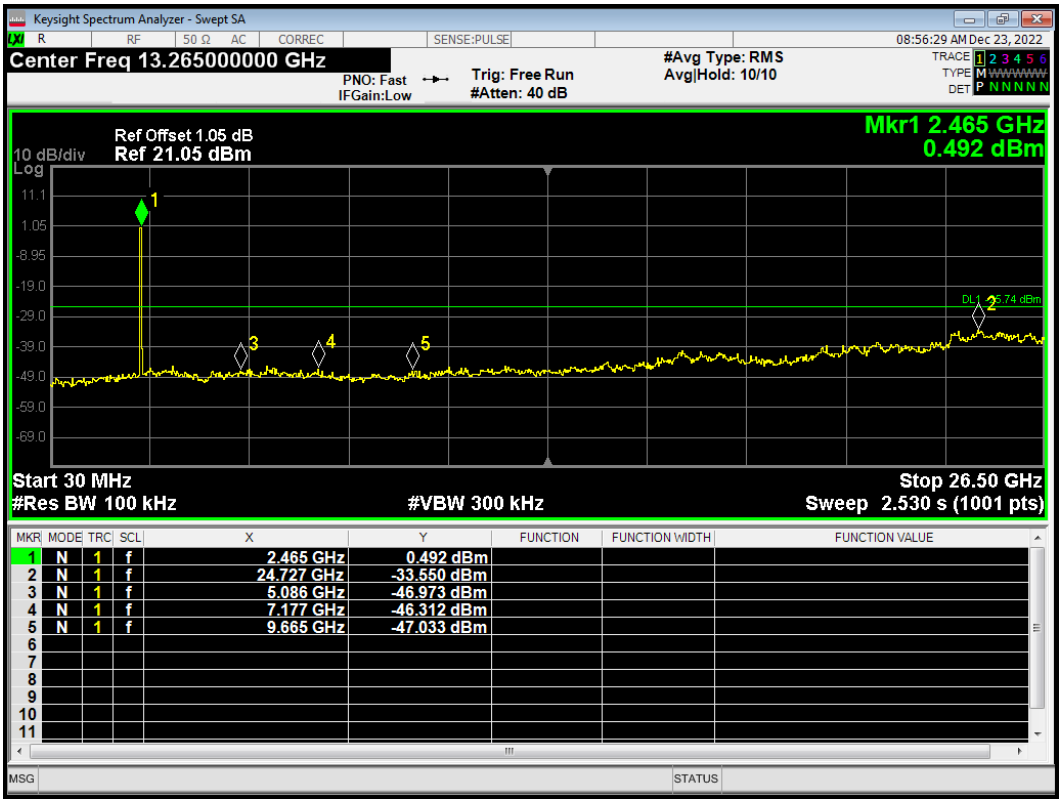
Tx. Spurious 802.11n(HT20) 2452MHz Emission



Tx. Spurious 802.11n(HT20) 2457MHz Ref

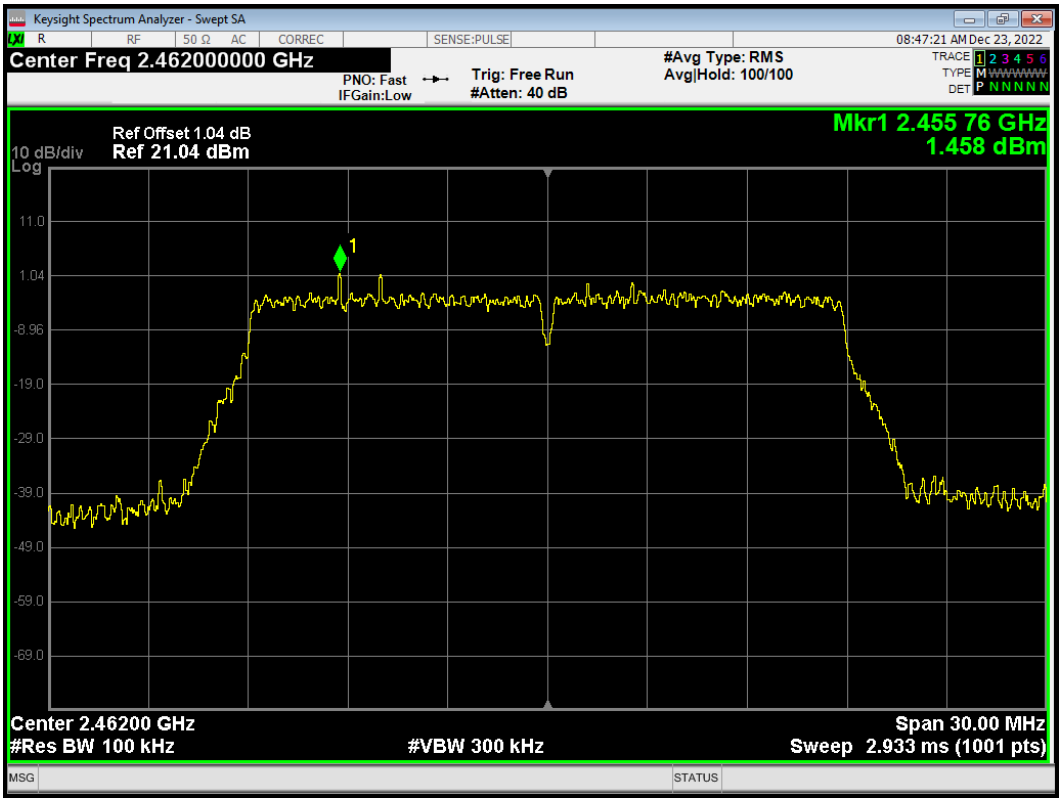


Tx. Spurious 802.11n(HT20) 2457MHz Emission

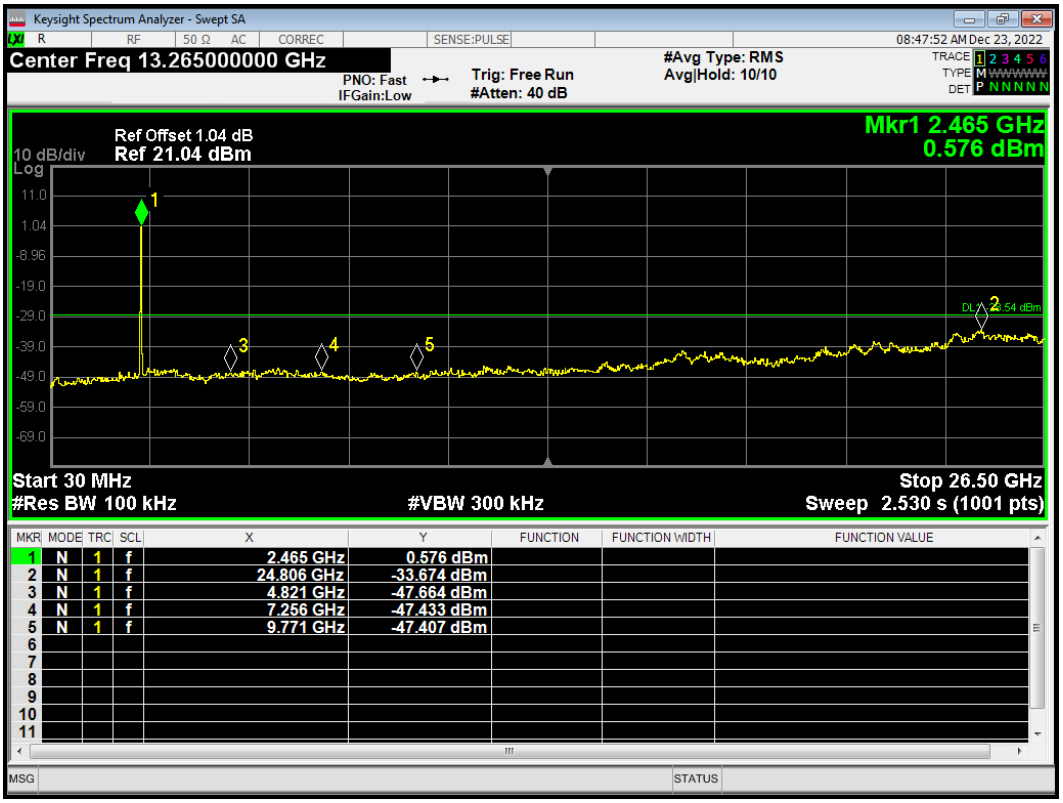


MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.465 GHz	0.492 dBm			
2	N	1	f	24.727 GHz	-33.550 dBm			
3	N	1	f	5.086 GHz	-46.973 dBm			
4	N	1	f	7.177 GHz	-46.312 dBm			
5	N	1	f	9.665 GHz	-47.033 dBm			

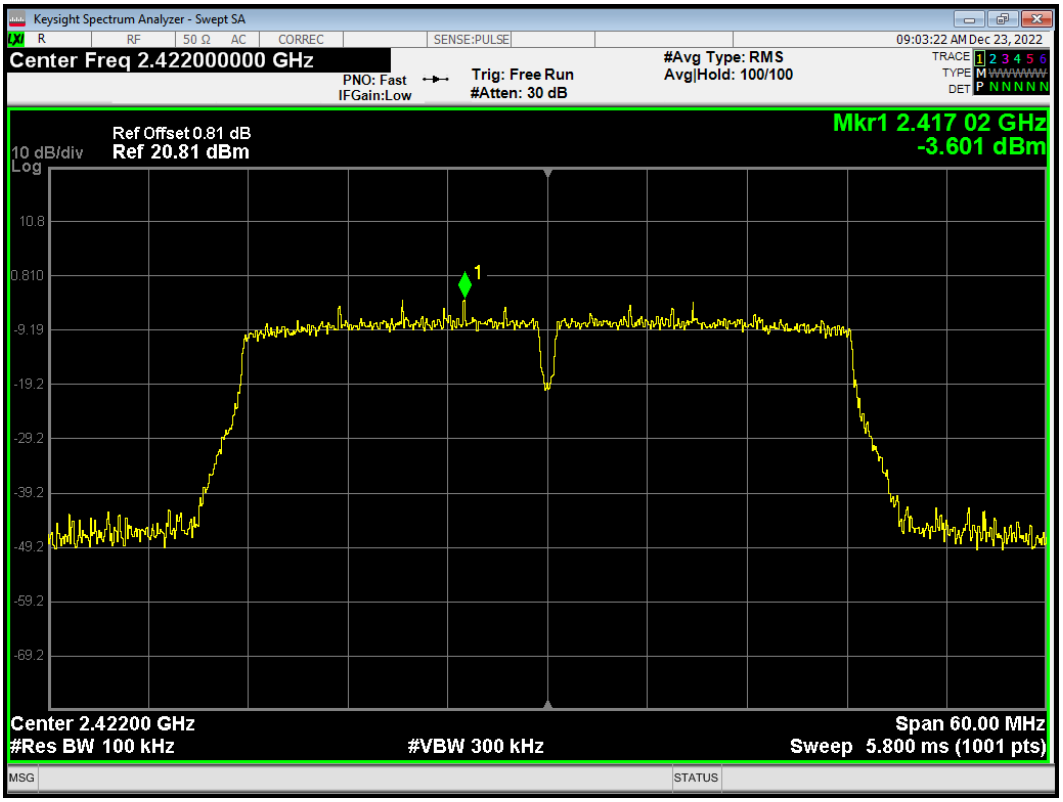
Tx. Spurious 802.11n(HT20) 2462MHz Ref



Tx. Spurious 802.11n(HT20) 2462MHz Emission



Tx. Spurious 802.11n(HT40) 2422MHz Ref



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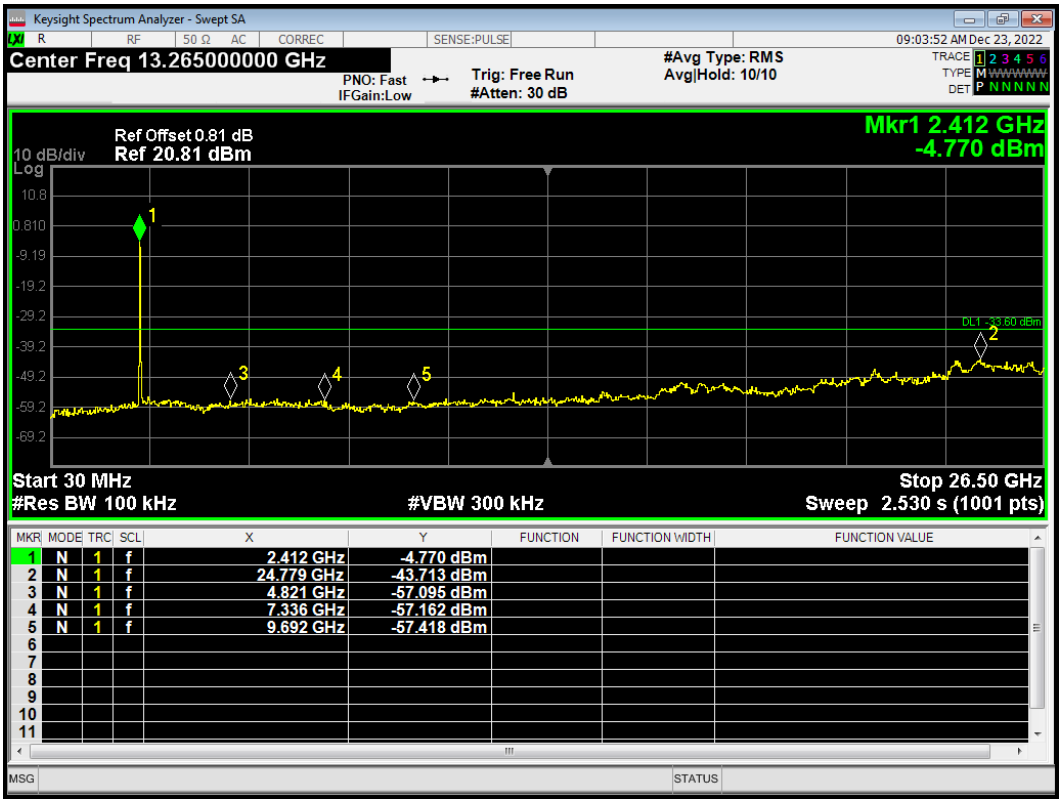

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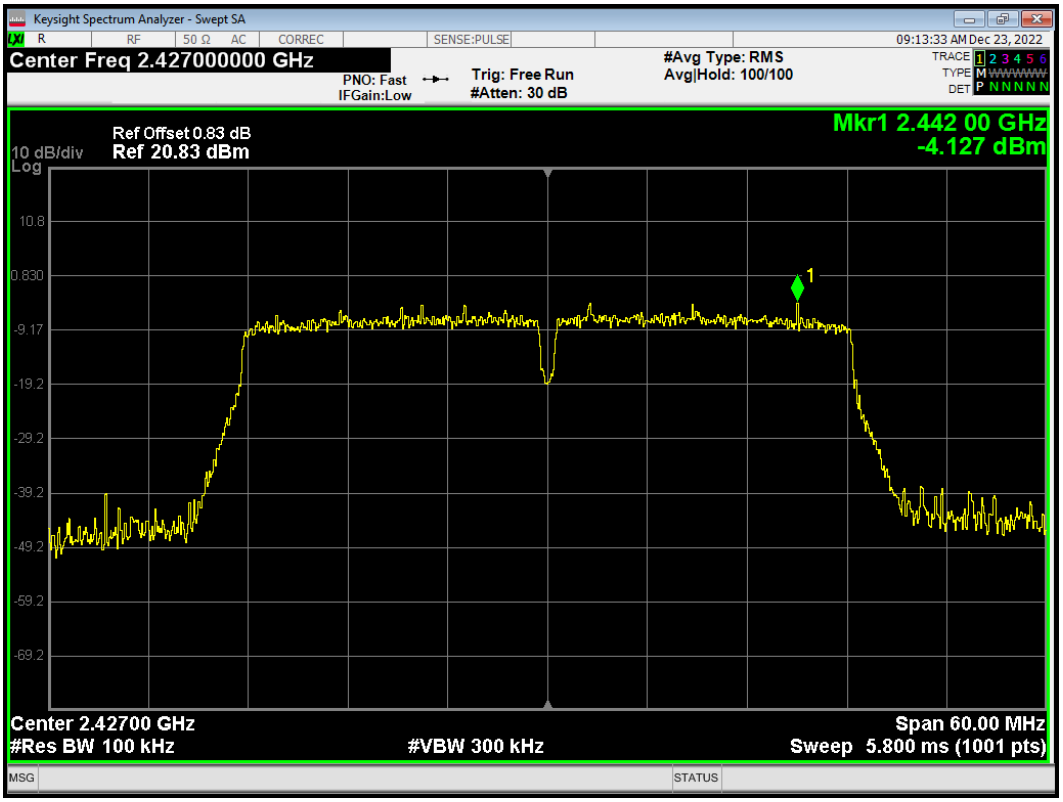

Tx. Spurious 802.11n(HT40) 2427MHz Emission