

# TEST REPORT

FCC ID: 2ADYY-T15RA-1

Product: Laptop Computer

Model No.: T15RA

Trade Mark: TECNO

Report No.: WSCT-ANAB-R&E240800043A-Wi-Fi1

Issued Date: 12 October 2024

Issued for:

**TECNO MOBILE LIMITED**

**FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE 19-25 SHAN MEI  
STREET FOTAN NT HONGKONG**

Issued By:

**World Standardization Certification & Testing Group(Shenzhen) Co.,Ltd.**

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Report No.: WSCT-ANAB-R&amp;E240800043A-Wi-Fi1

## 1. Test Certification

**Product:** Laptop Computer  
**Model No.:** T15RA  
**Trade Mark:** TECNO  
**Applicant:** TECNO MOBILE LIMITED  
**Address:** FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE 19-25  
SHAN MEI STREET FOTAN NT HONGKONG  
**Manufacturer:** TECNO MOBILE LIMITED  
**Address:** FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE 19-25  
SHAN MEI STREET FOTAN NT HONGKONG  
**Date of Test:** 20 September 2024 to 12 October 2024  
**Applicable Standards:** FCC CFR Title 47 Part 15 Subpart C Section 15.247

The above equipment has been tested by World Standardization Certification & Testing Group(Shenzhen)Co., Ltd. and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Tested By: Wang Xiang

(Wang Xiang)

Checked By: Chen Xu

(Chen Xu)

Approved By: Li Huaibi

(Li Huaibi)

Date: 12 October 2024



## 2. Test Result Summary

Requirement	CFR 47 Section	Result
Antenna requirement	§15.203/§15.247 (c)	PASS
AC Power Line Conducted Emission	§15.207	PASS
Conducted Peak Output Power	§15.247 (b)(3) §2.1046	PASS
6dB Emission Bandwidth	§15.247 (a)(2) §2.1049	PASS
Power Spectral Density	§15.247 (e)	PASS
Band Edge	§15.247(d) §2.1051, §2.1057	PASS
Spurious Emission	§15.205/§15.209 §2.1053, §2.1057	PASS

### Note:

1. PASS: Test item meets the requirement.
2. Fail: Test item does not meet the requirement.
3. N/A: Test case does not apply to the test object.
4. The test result judgment is decided by the limit of test standard.



### 3. EUT Description

<b>Product:</b>	Laptop Computer
<b>Model No.:</b>	T15RA
<b>Trade Mark:</b>	TECNO
<b>Operation Frequency:</b>	2412MHz~2462MHz (802.11b/g/n/ax(HT20)) 2422MHz~2452MHz (802.11n/ax(HT40))
<b>Channel Separation:</b>	5MHz
<b>Modulation type:</b>	DSSS (DBPSK, DQPSK, CCK) for IEEE 802.11b OFDM/OFDMA(BPSK,QPSK,16QAM,64QAM,256QAM,1024QAM) for IEEE 802.11g/n/ax
<b>Antenna Type:</b>	Integral Antenna
<b>Antenna Gain</b>	MAIN:1.78dBi ,AUX: 1.88dBi
<b>Operating Voltage:</b>	Adapter1: FC498U Input: 100-240V~50/60Hz 1.5A Max Output: PD:5.V---3A 15.0W 9V---3A 12 V---3A 15V---3A 20V---3.25A PPS: 3.3-11V---5A Max Rechargeable Li-ion Polymer Battery: 156 Rated Voltage: 11.55V Rated Capacity: 6060mAh/70Wh Typical Capacity: 6160mAh/71.14Wh Limited Charge Voltage: 13.2V
<b>Remark:</b>	N/A.

#### Configuration differences

Model	Processor
T15RA	i5
T15RA	i7

Note: The prototypes of both configurations have been tested, and the T15RA (i7) has the worst test result, which is the main test model reported



### Operation Frequency each of channel For 802.11b/g/n/ax(HT20)

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2412MHz	4	2427MHz	7	2442MHz	10	2457MHz
2	2417MHz	5	2432MHz	8	2447MHz	11	2462MHz
3	2422MHz	6	2437MHz	9	2452MHz		

### Operation Frequency each of channel For 802.11n/ax (HT40)

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
--	--	4	2427MHz	7	2442MHz	--	--
--	--	5	2432MHz	8	2447MHz	--	--
3	2422MHz	6	2437MHz	9	2452MHz		

#### Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

#### 802.11b/g/n/ax (HT20)

Channel	Frequency
The lowest channel	2412MHz
The middle channel	2437MHz
The Highest channel	2462MHz

#### 802.11n/ax (HT40)

Channel	Frequency
The lowest channel	2422MHz
The middle channel	2437MHz
The Highest channel	2452MHz



## 4. Genera Information

### 4.1. Test environment and mode

#### Operating Environment:

Temperature:	25.0 °C
Humidity:	56 % RH
Atmospheric Pressure:	1010 mbar

#### Test Mode:

Engineering mode:	Keep the EUT in continuous transmitting by select channel and modulations(The value of duty cycle is 98.46%)
-------------------	--

The sample was placed (0.8m below 1GHz, 1.5m above 1GHz) above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages. For the full battery state and The output power to the maximum state.

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

**Per-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.**

Mode
802.11b
802.11g
802.11n/ax(H20)
802.11n/ax(H40)

#### Final Test Mode:

Operation mode:	Keep the EUT in continuous transmitting with modulation
-----------------	---

1. For WIFI function, the engineering test program was provided and enabled to make EUT continuous transmit/receive. 2. According to ANSI C63.10 standards, the test results are both the "worst case" and "worst setup" 1Mbps for 802.11b, 6Mbps for 802.11g, 6.5Mbps for 802.11n(H20). Duty cycle setting during the transmission is 98.5% with maximum power setting for all modulations.



## 4.2. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Equipment	Model No.	Serial No.	FCC ID	Trade Name
Adapter	FC498U		/	TECNO

**Note:**

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.
3. For conducted measurements (Output Power, 6dB Emission Bandwidth, Power Spectral Density, Spurious Emissions), the antenna of EUT is connected to the test equipment via temporary antenna connector, the antenna connector is soldered on the antenna port of EUT, and the temporary antenna connector is listed in the Test Instruments.



## 5. Facilities and Accreditations

### 5.1. Facilities

All measurement facilities used to collect the measurement data are located at **World Standardization Certification & Testing Group (Shenzhen) Co., Ltd. Building A-B, Baoli'an Industrial Park, No.58 and 60, Tangtou Avenue, Shiyao Street, Bao'an District, Shenzhen City, Guangdong Province, China**

The sites are constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22. All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

### 5.2. ACCREDITATIONS

#### ANAB - Certificate Number: AT-3951

The EMC Laboratory has been accredited by the American Association for Laboratory Accreditation (ANAB). Certification Number: AT-3951



### 5.3.Measurement Uncertainty

The reported uncertainty of measurement  $y \pm U$ , where expended uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately 95 %.

No.	Item	MU
1	Conducted Emission Test	$\pm 3.2\text{dB}$
2	RF power, conducted	$\pm 0.16\text{dB}$
3	Spurious emissions, conducted	$\pm 0.21\text{dB}$
4	All emissions, radiated(<1GHz)	$\pm 4.7\text{dB}$
5	All emissions, radiated(>1GHz)	$\pm 4.7\text{dB}$
6	Temperature	$\pm 0.5^{\circ}\text{C}$
7	Humidity	$\pm 2.0\%$



## 5.4.MEASUREMENT INSTRUMENTS

NAME OF EQUIPMENT	MANUFACTURER	MODEL	SERIAL NUMBER	Calibration Date	Calibration Due.
Test software	--	EZ-EMC	CON-03A	-	-
Test software	--	MTS8310	-	-	-
EMI Test Receiver	R&S	ESCI	100005	11/05/2023	11/04/2024
LISN	AFJ	LS16	16010222119	11/05/2023	11/04/2024
LISN(EUT)	Mestec	AN3016	04/10040	11/05/2023	11/04/2024
Universal Radio Communication Tester	R&S	CMU 200	1100.0008.02	11/05/2023	11/04/2024
Coaxial cable	Megalon	LMR400	N/A	11/05/2023	11/04/2024
GPIO cable	Megalon	GPIO	N/A	11/05/2023	11/04/2024
Spectrum Analyzer	R&S	FSU	100114	11/05/2023	11/04/2024
Pre Amplifier	H.P.	HP8447E	2945A02715	11/05/2023	11/04/2024
Pre-Amplifier	CDSI	PAP-1G18-38	--	11/05/2023	11/04/2024
Bi-log Antenna	SCHWARZBECK	VULB9168	01488	11/05/2023	11/04/2024
9*6*6 Anechoic	--	--	--	11/05/2023	11/04/2024
Horn Antenna	COMPLIANCE ENGINEERING	CE18000	--	11/05/2023	11/04/2024
Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-631	11/05/2023	11/04/2024
Cable	TIME MICROWAVE	LMR-400	N-TYPE04	11/05/2023	11/04/2024
System-Controller	CCS	N/A	N/A	N.C.R	N.C.R
Turn Table	CCS	N/A	N/A	N.C.R	N.C.R
Antenna Tower	CCS	N/A	N/A	N.C.R	N.C.R
RF cable	Murata	MXHQ87WA3000	-	11/05/2023	11/04/2024
Loop Antenna	EMCO	6502	00042960	11/05/2023	11/04/2024
Horn Antenna	SCHWARZBECK	BBHA 9170	1123	11/05/2023	11/04/2024
Power meter	Anritsu	ML2487A	6K00003613	11/05/2023	11/04/2024
Power sensor	Anritsu	MX248XD	--	11/05/2023	11/04/2024
Spectrum Analyzer	Keysight	N9010B	MY60241089	11/05/2023	11/04/2024



## 6. Test Results and Measurement Data

### 6.1. Antenna requirement

**Standard requirement:**

FCC Part15 C Section 15.203 /247(c)

**15.203 requirement:**

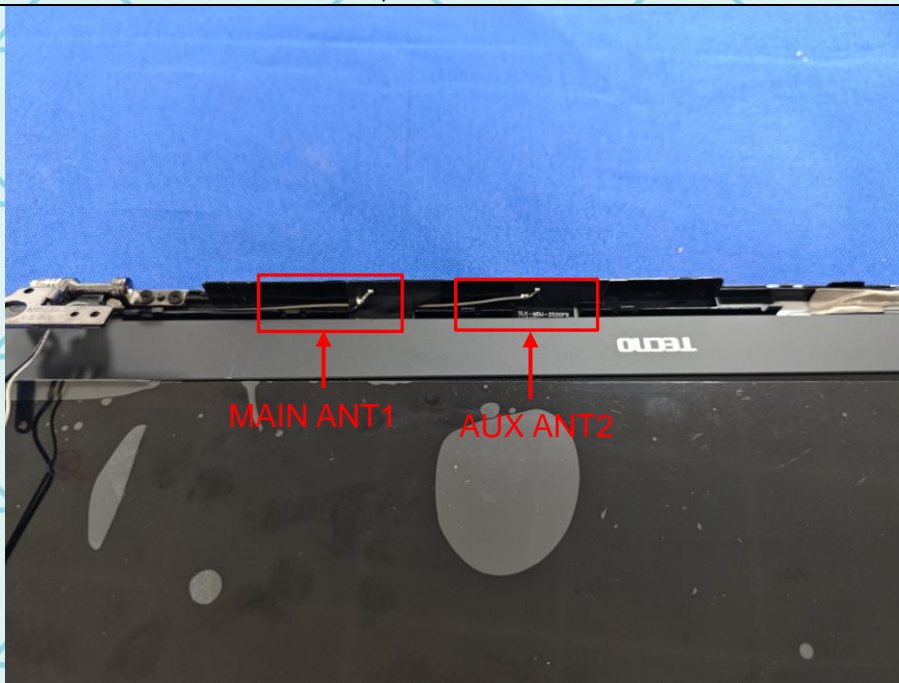
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

**15.247(c) (1)(i) requirement:**

(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

**E.U.T Antenna:**

The Wi-Fi antenna is a Integral Antenna. it meets the standards, and the best case gain of the antenna is "MAIN:1.78dBi ,AUX:1.88dBi"


**<CDD Modes >**

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For CDD transmissions, directional gain is calculated as

Directional gain = GANT + Array Gain, where Array Gain is as follows.

For power spectral density (PSD) measurements on all devices,

Array Gain =  $10 \log(NANT/NSS=1)$  dB.

For power measurements on IEEE 802.11 devices,



Array Gain = 0 dB (i.e., no array gain) for NANT  $\leq 4$ .

Directional gain may be calculated by using the formulas applicable to equal gain antennas with

GANT set equal to the gain of the antenna having the highest gain;

The EUT supports CDD mode.

For power, the directional gain GANT is set equal to the antenna having the highest gain, i.e.,

F)2)f)i).

For PSD, the directional gain calculation is following F)2)f)ii) of KDB 662911 D01 v02r01.

The directional gain "DG" is calculated as following table.

<CDD Modes>	Ant1 (dBi)	Ant2 (dBi)	DG for power (dBi)	DG for PSD (dBi)
2412~2462MHz	1.78	1.88	1.88	4.84

Power limit reduction = Composite gain – 6dBi, ( min = 0 )

PSD limit reduction = Composite gain + PSD Array gain – 6dBi( min = 0 )



## 6.2. Conducted Emission

### 6.2.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.207														
Test Method:	ANSI C63.10:2014														
Frequency Range:	150 kHz to 30 MHz														
Receiver setup:	RBW=9 kHz, VBW=30 kHz, Sweep time=auto														
Limits:	<table><tr><th rowspan="2">Frequency range (MHz)</th><th colspan="2">Limit (dBuV)</th></tr><tr><th>Quasi-peak</th><th>Average</th></tr><tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr><tr><td>0.5-5</td><td>56</td><td>46</td></tr><tr><td>5-30</td><td>60</td><td>50</td></tr></table>	Frequency range (MHz)	Limit (dBuV)		Quasi-peak	Average	0.15-0.5	66 to 56*	56 to 46*	0.5-5	56	46	5-30	60	50
Frequency range (MHz)	Limit (dBuV)														
	Quasi-peak	Average													
0.15-0.5	66 to 56*	56 to 46*													
0.5-5	56	46													
5-30	60	50													
Test Setup:	<div><p>Reference Plane</p><p>40cm 80cm</p><p>E.U.T AC power LISN Filter AC power EMI Receiver</p><p>Test table/Insulation plane</p><p>Remark E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m</p></div>														
Test Mode:	Charging + transmitting with modulation														
Test Procedure:	<ol style="list-style-type: none"><li>1. The E.U.T is connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment.</li><li>2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).</li><li>3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2014 on conducted measurement.</li></ol>														
Test Result:	PASS														



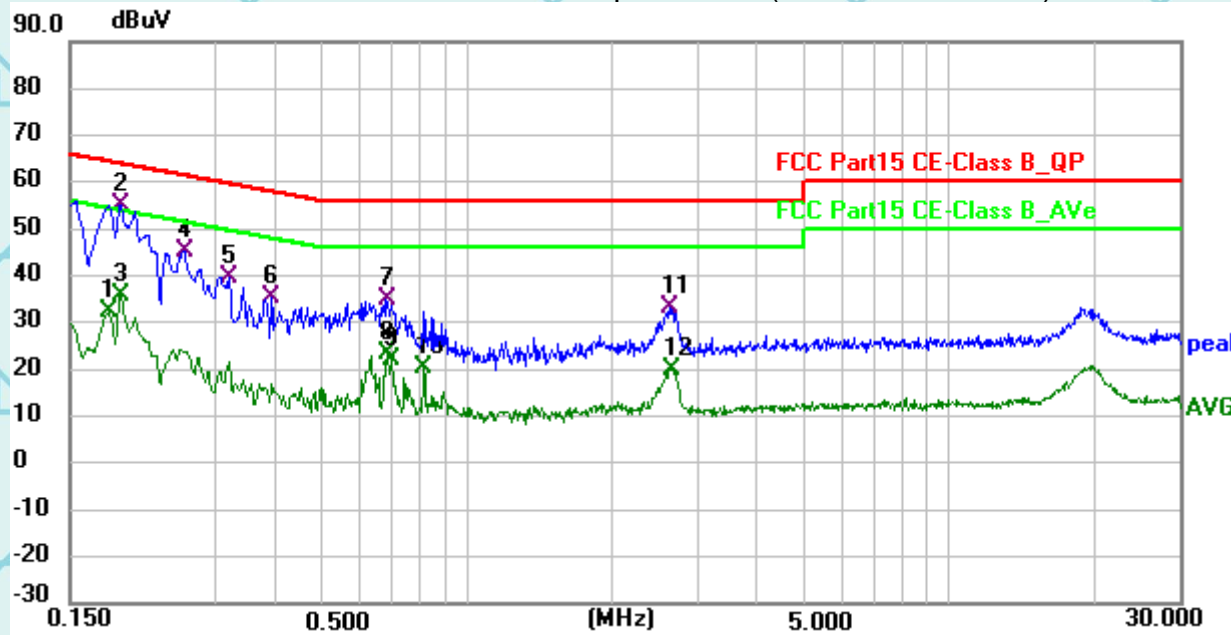
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## 6.2.2. Test data(worst case)

Please refer to following diagram for individual

The worst mode is 11b

Conducted Emission on Line Terminal of the power line (150 kHz to 30MHz)

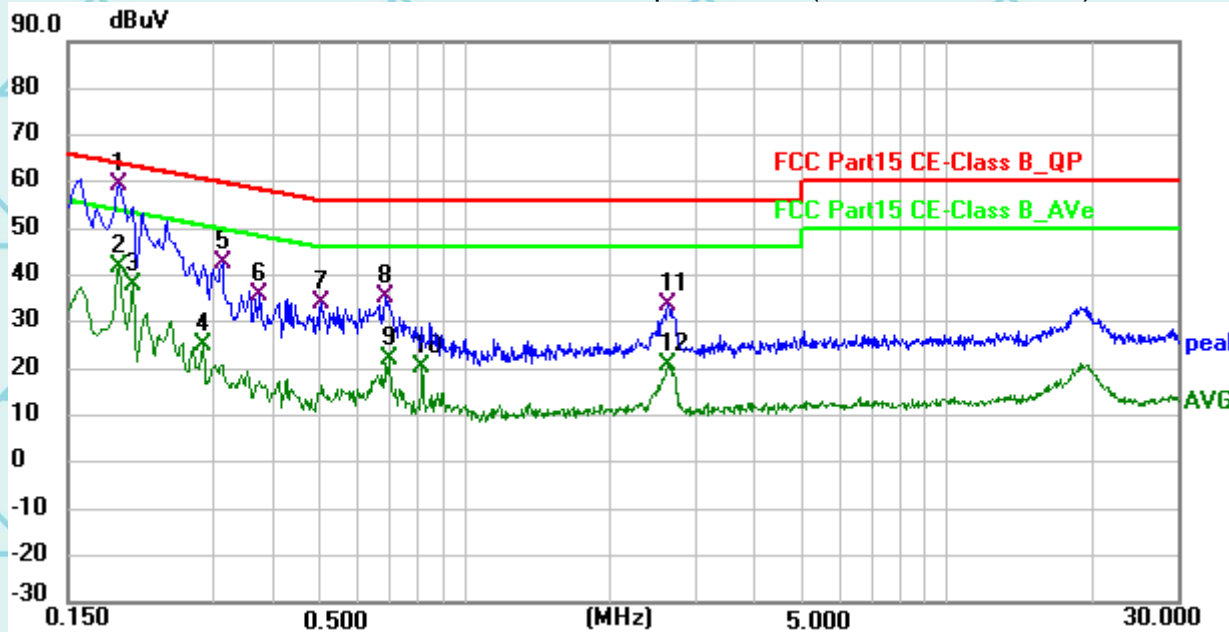


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1815	11.48	20.70	32.18	54.42	-22.24	AVG
2 *	0.1905	34.36	20.70	55.06	64.01	-8.95	QP
3	0.1905	15.23	20.70	35.93	54.01	-18.08	AVG
4	0.2580	24.53	20.66	45.19	61.50	-16.31	QP
5	0.3209	19.14	20.62	39.76	59.68	-19.92	QP
6	0.3930	14.83	20.57	35.40	58.00	-22.60	QP
7	0.6809	14.37	20.54	34.91	56.00	-21.09	QP
8	0.6855	2.90	20.54	23.44	46.00	-22.56	AVG
9	0.6945	1.48	20.54	22.02	46.00	-23.98	AVG
10	0.8160	-0.19	20.59	20.40	46.00	-25.60	AVG
11	2.6340	12.54	20.60	33.14	56.00	-22.86	QP
12	2.6610	-0.52	20.60	20.08	46.00	-25.92	AVG



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# Conducted Emission on Neutral Terminal of the power line (150 kHz to 30MHz)



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1 *	0.1905	38.45	20.70	59.15	64.01	-4.86	QP
2	0.1905	21.06	20.70	41.76	54.01	-12.25	AVG
3	0.2040	17.11	20.69	37.80	53.45	-15.65	AVG
4	0.2850	4.27	20.64	24.91	50.67	-25.76	AVG
5	0.3120	21.99	20.62	42.61	59.92	-17.31	QP
6	0.3750	15.37	20.59	35.96	58.39	-22.43	QP
7	0.5010	13.73	20.51	34.24	56.00	-21.76	QP
8	0.6855	14.77	20.54	35.31	56.00	-20.69	QP
9	0.6945	1.36	20.54	21.90	46.00	-24.10	AVG
10	0.8160	-0.04	20.59	20.55	46.00	-25.45	AVG
11	2.6250	13.11	20.60	33.71	56.00	-22.29	QP
12	2.6385	0.07	20.60	20.67	46.00	-25.33	AVG

## Note1:

Freq. = Emission frequency in MHz

Reading level (dBuV) = Receiver reading

Corr. Factor (dB) = LISN factor + Cable loss

Measurement (dBuV) = Reading level (dBuV) + Corr. Factor (dB)

Limit (dBuV) = Limit stated in standard

Margin (dB) = Measurement (dBuV) – Limits (dBuV)

Q.P. =Quasi-Peak    AVG =average

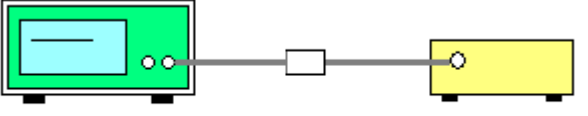
\* is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz.



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### 6.2.3. Maximum Conducted (Average) Output Power

### 6.2.4. Test Specification

<b>Test Requirement:</b>	FCC Part15 C Section 15.247 (b)(3)
<b>Test Method:</b>	KDB 558074
<b>Limit:</b>	30dBm
<b>Test Setup:</b>	 <p><b>Spectrum Analyzer</b>                      <b>EUT</b></p>
<b>Test Mode:</b>	Transmitting mode with modulation
<b>Test Procedure:</b>	<ol style="list-style-type: none"> <li>1. The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v04.</li> <li>2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.</li> <li>3. Set to the maximum power setting and enable the EUT transmit continuously.</li> <li>4. Measure the conducted output power and record the results in the test report.</li> </ol>



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## Test Data

## MAIN Ant1

Mode	Frequency (MHz)	Total Power (dBm)	Limit (dBm)	Verdict
b	2412	18.65	30	Pass
b	2437	18.63	30	Pass
b	2462	18.53	30	Pass
g	2412	21.44	30	Pass
g	2437	21.65	30	Pass
g	2462	21.53	30	Pass
n20	2412	20.57	30	Pass
n20	2437	20.63	30	Pass
n20	2462	20.72	30	Pass
n40	2422	20.87	30	Pass
n40	2437	20.96	30	Pass
n40	2452	20.89	30	Pass
ax20	2412	20.25	30	Pass
ax20	2437	20.48	30	Pass
ax20	2462	20.44	30	Pass
ax40	2422	20.71	30	Pass
ax40	2437	20.98	30	Pass
ax40	2452	20.75	30	Pass

## AUX Ant2

Mode	Frequency (MHz)	Total Power (dBm)	Limit (dBm)	Verdict
b	2412	19.13	30	Pass
b	2437	19.10	30	Pass
b	2462	18.94	30	Pass
g	2412	21.96	30	Pass
g	2437	22.22	30	Pass
g	2462	22.13	30	Pass
n20	2412	20.95	30	Pass
n20	2437	21.19	30	Pass
n20	2462	21.12	30	Pass
n40	2422	21.41	30	Pass
n40	2437	21.26	30	Pass
n40	2452	21.35	30	Pass
ax20	2412	21.01	30	Pass
ax20	2437	20.93	30	Pass
ax20	2462	20.98	30	Pass
ax40	2422	21.30	30	Pass
ax40	2437	21.52	30	Pass
ax40	2452	21.19	30	Pass



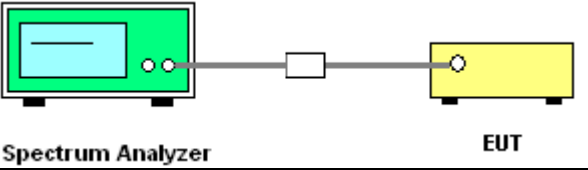
Report No.: WSCT-ANAB-R&E240800043A-Wi-Fi1  
MiMO Mode

Mode	Frequency (MHz)	Total Power (dBm)	Limit (dBm)	Verdict
n20	2412	23.77	30	Pass
n20	2437	23.93	30	Pass
n20	2462	23.93	30	Pass
n40	2422	24.16	30	Pass
n40	2437	24.12	30	Pass
n40	2452	24.14	30	Pass
ax20	2412	23.66	30	Pass
ax20	2437	23.72	30	Pass
ax20	2462	23.73	30	Pass
ax40	2422	24.03	30	Pass
ax40	2437	24.27	30	Pass
ax40	2452	23.99	30	Pass



## 6.3. Emission Bandwidth

### 6.3.1. Test Specification

<b>Test Requirement:</b>	FCC Part15 C Section 15.247 (a)(2)
<b>Test Method:</b>	KDB 558074
<b>Limit:</b>	>500kHz
<b>Test Setup:</b>	 <p>The diagram illustrates the test setup. On the left is a green box representing the Spectrum Analyzer. A cable connects it to a small white box, which in turn connects to a yellow box representing the EUT (Equipment Under Test).</p>
<b>Test Mode:</b>	Transmitting mode with modulation
<b>Test Procedure:</b>	<ol style="list-style-type: none"> <li>1. The testing follows FCC KDB Publication No. 558074 DTS D01 Meas. Guidance v04.</li> <li>2. Set to the maximum power setting and enable the EUT transmit continuously.</li> <li>3. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6dB bandwidth must be greater than 500 kHz.</li> <li>4. Measure and record the results in the test report.</li> </ol>
<b>Test Result:</b>	PASS



### 6.3.2. Test data

Mode	Frequency (MHz)	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
b	2412	8.489	0.5	Pass
b	2437	8.027	0.5	Pass
b	2462	7.549	0.5	Pass
g	2412	15.68	0.5	Pass
g	2437	16.266	0.5	Pass
g	2462	15.924	0.5	Pass
n20	2412	16.285	0.5	Pass
n20	2437	16.28	0.5	Pass
n20	2462	16.909	0.5	Pass
n40	2422	35.037	0.5	Pass
n40	2437	35.015	0.5	Pass
n40	2452	35.067	0.5	Pass
ax20	2412	17.947	0.5	Pass
ax20	2437	15.051	0.5	Pass
ax20	2462	15.124	0.5	Pass
ax40	2422	36.257	0.5	Pass
ax40	2437	36.332	0.5	Pass
ax40	2452	35.101	0.5	Pass

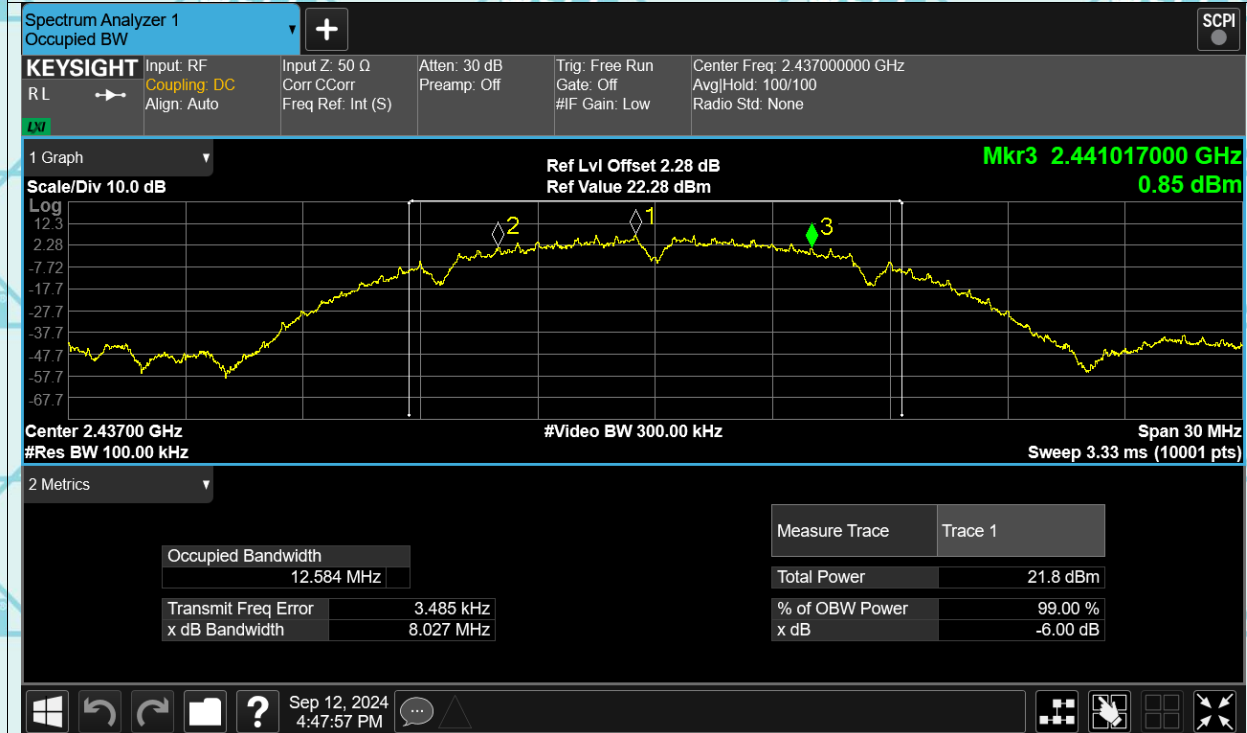


## Test Graphs

-6dB Bandwidth b 2412MHz

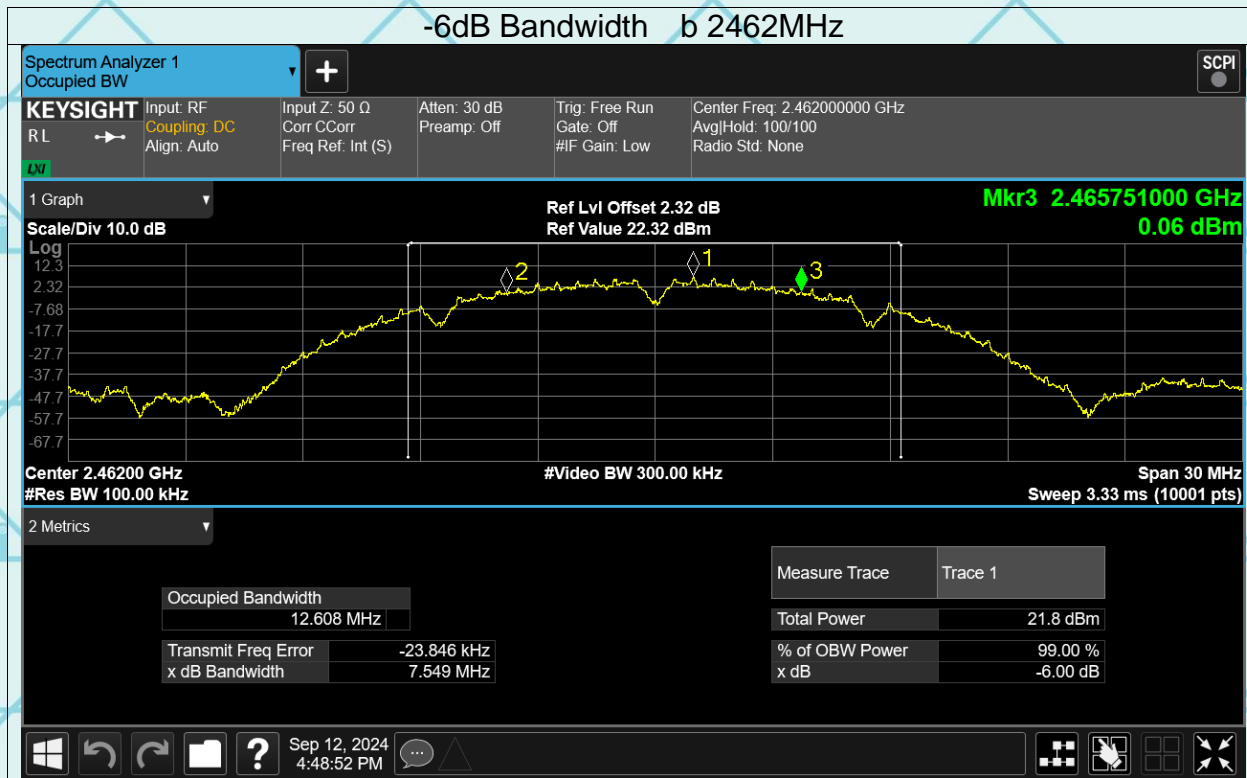


-6dB Bandwidth b 2437MHz

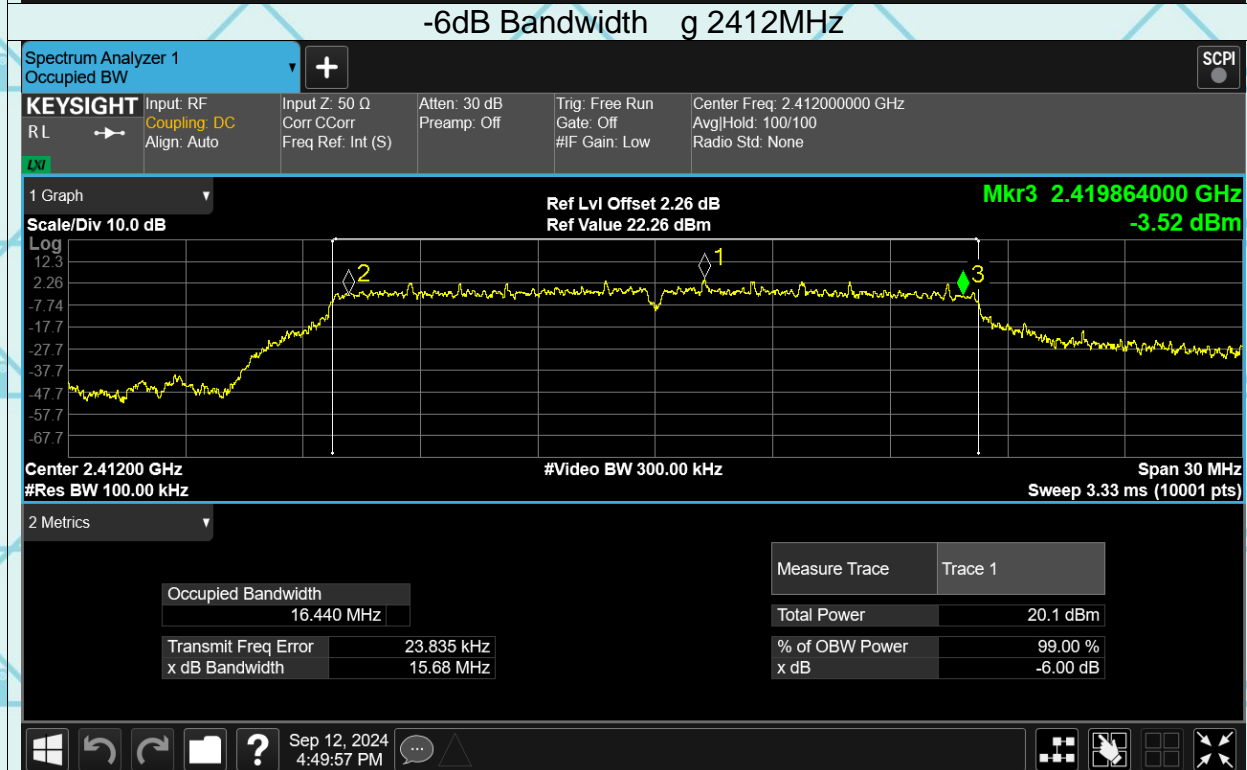




-6dB Bandwidth b 2462MHz

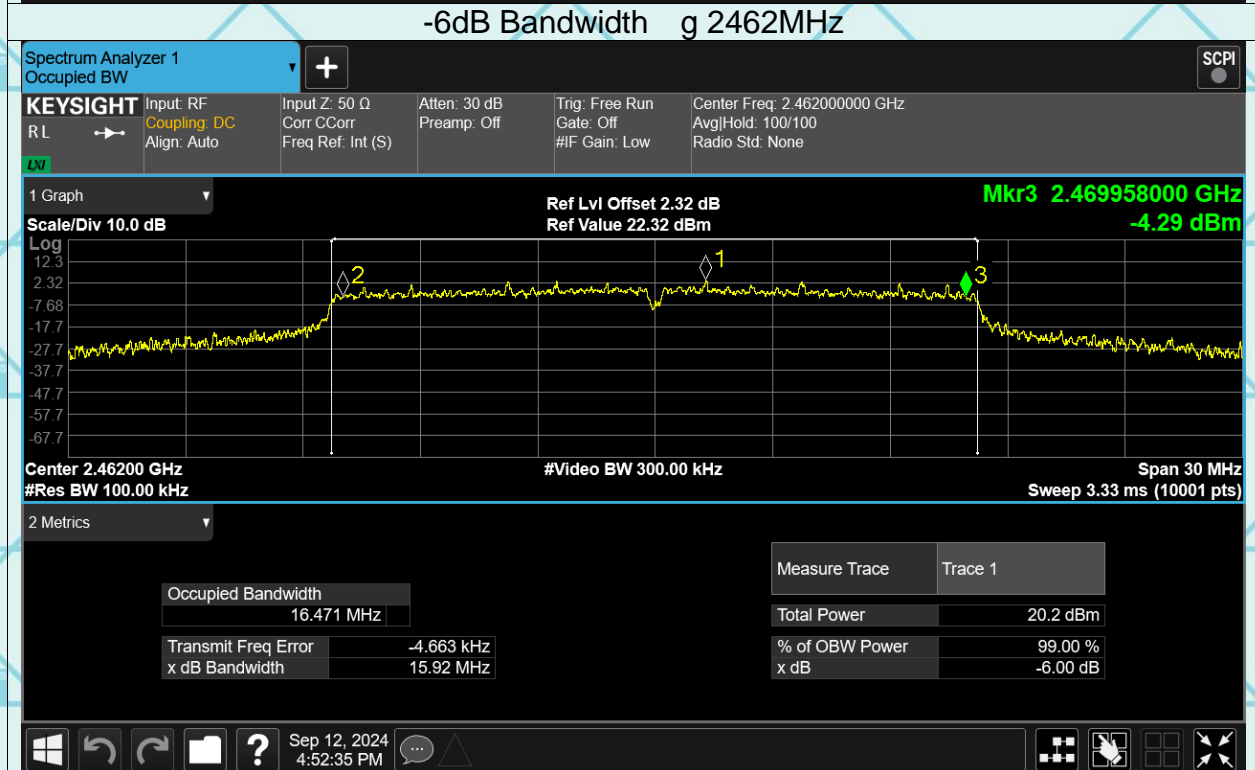
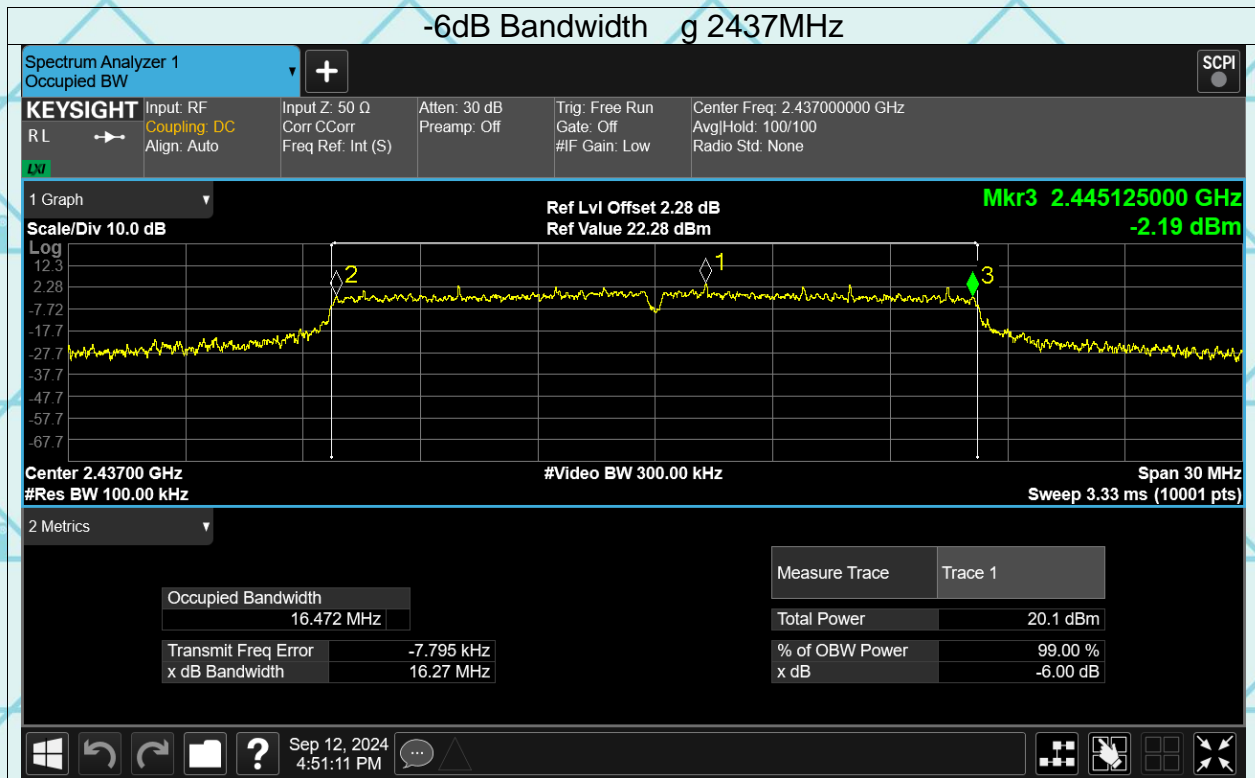


-6dB Bandwidth g 2412MHz



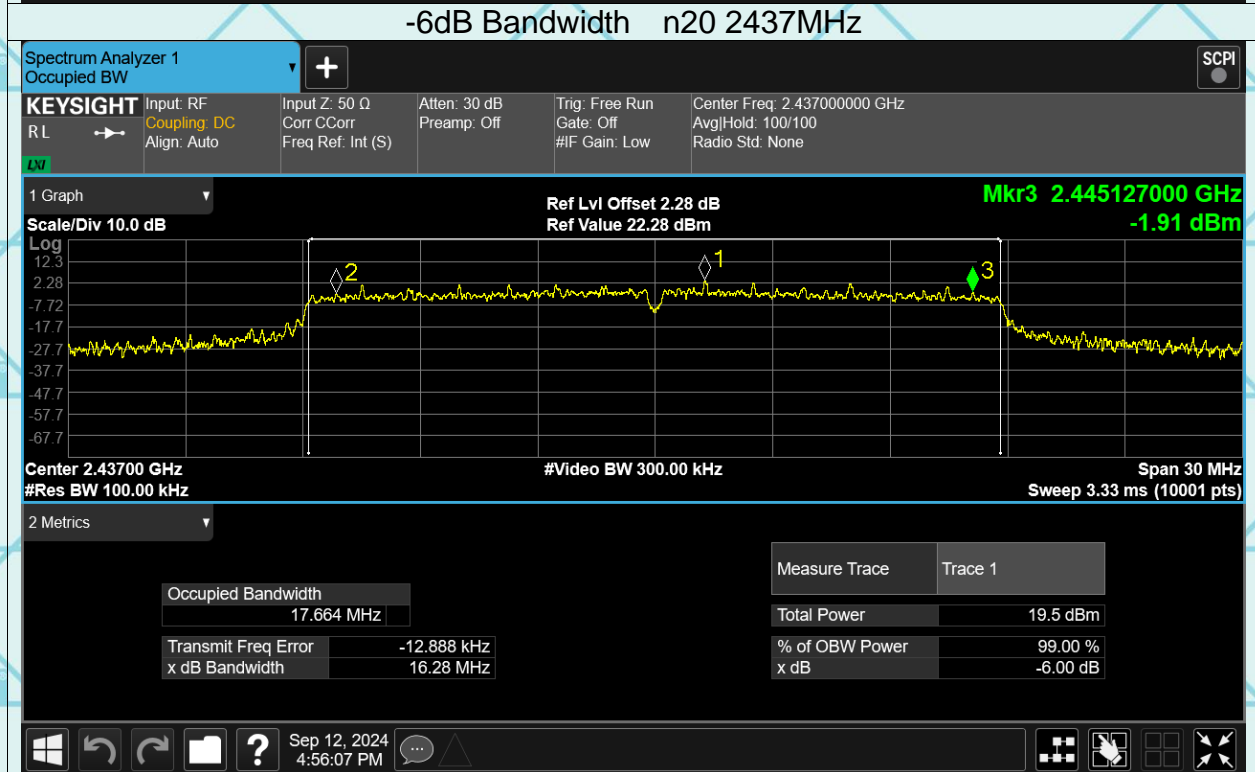
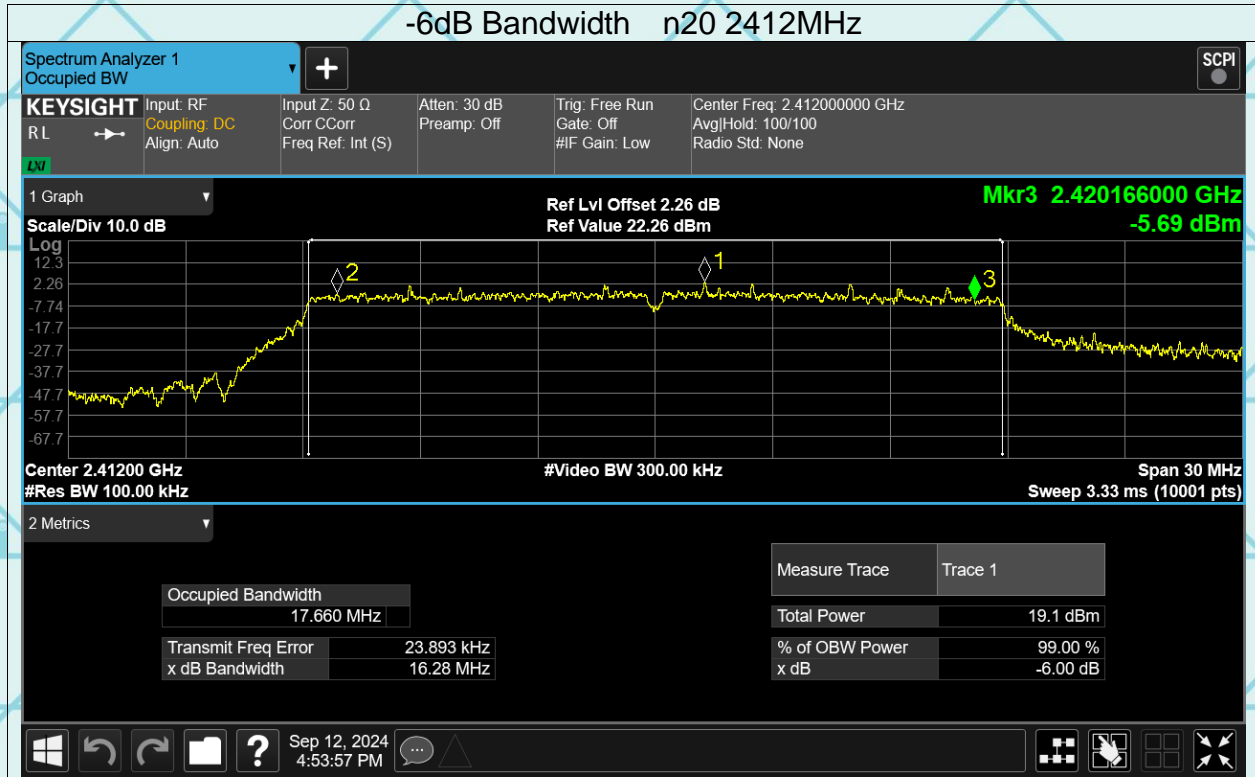


Report No.: WSCT-ANAB-R&E240800043A-Wi-Fi1



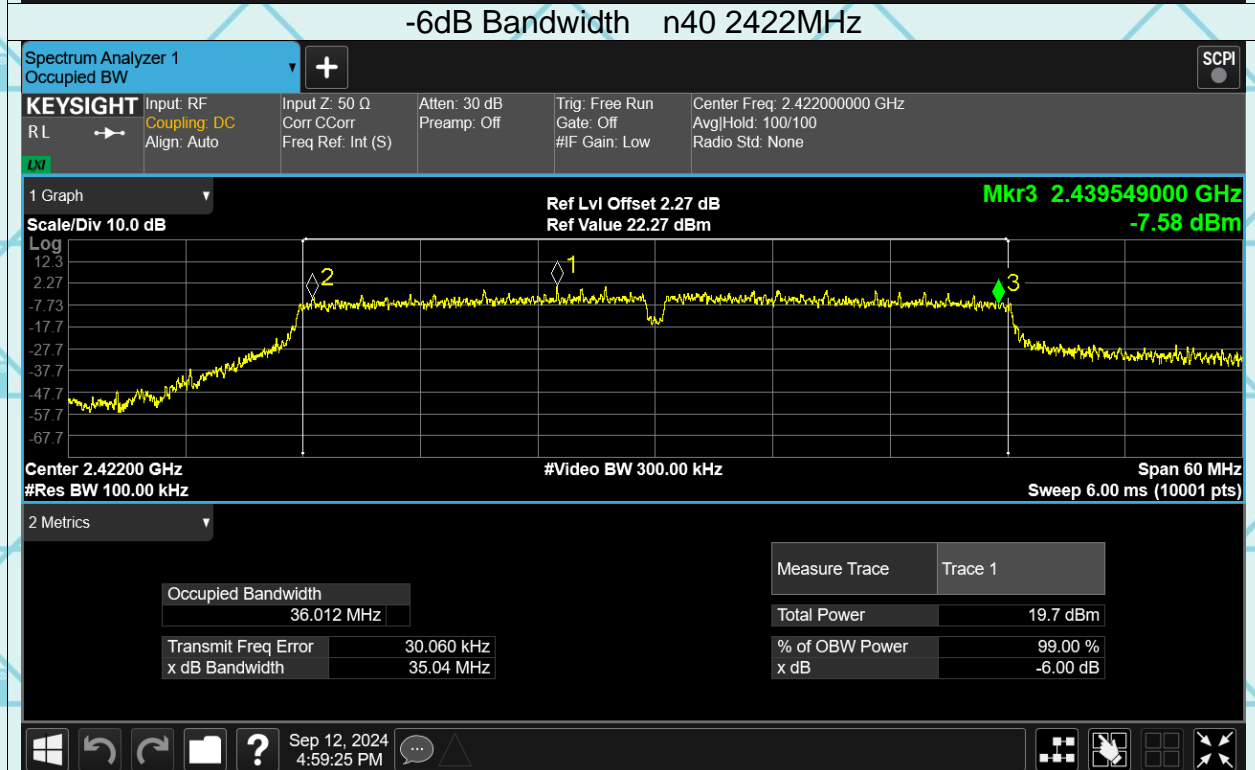
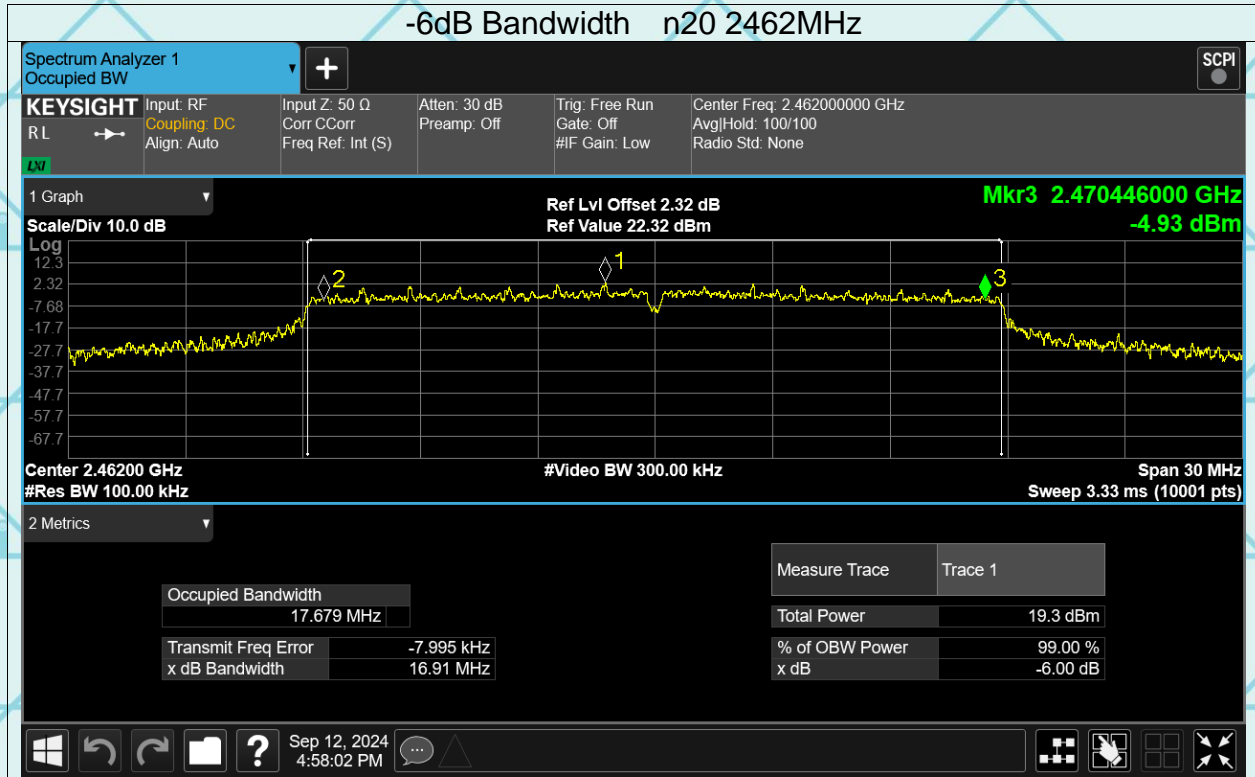


Report No.: WSCT-ANAB-R&E240800043A-Wi-Fi1

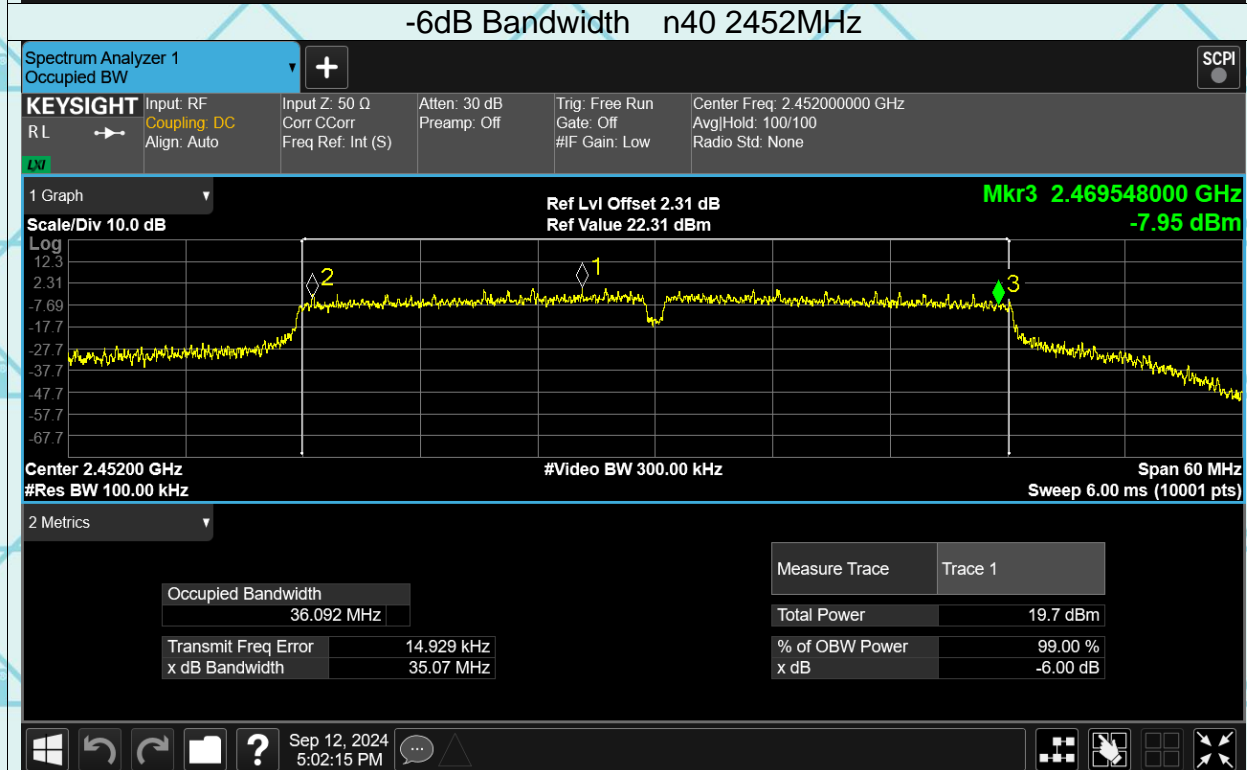
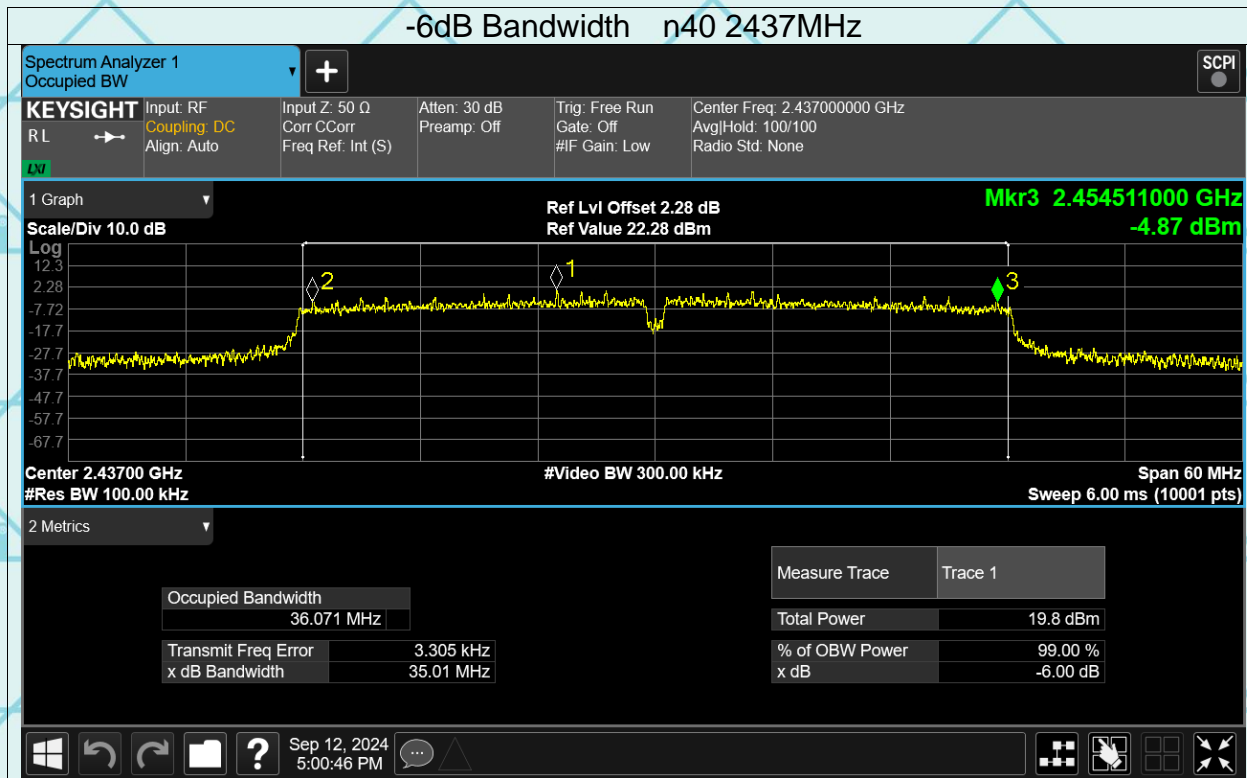




Report No.: WSCT-ANAB-R&E240800043A-Wi-Fi1

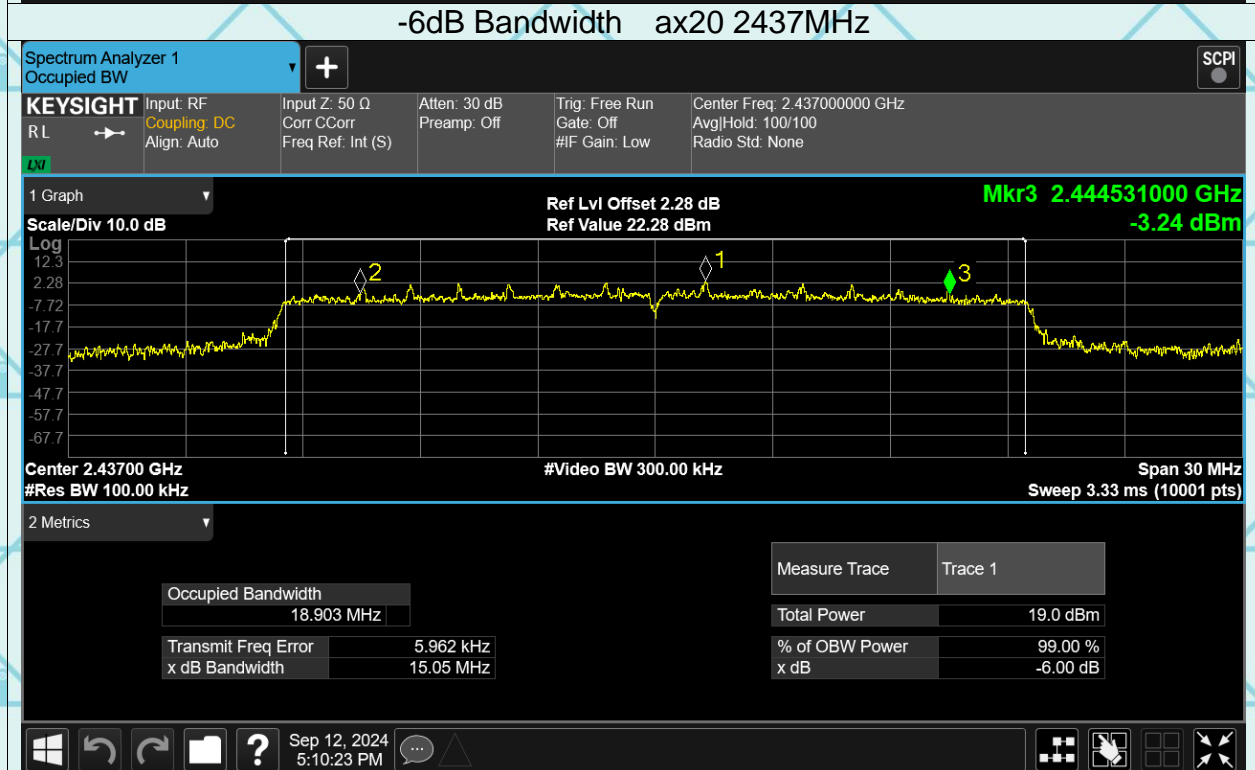
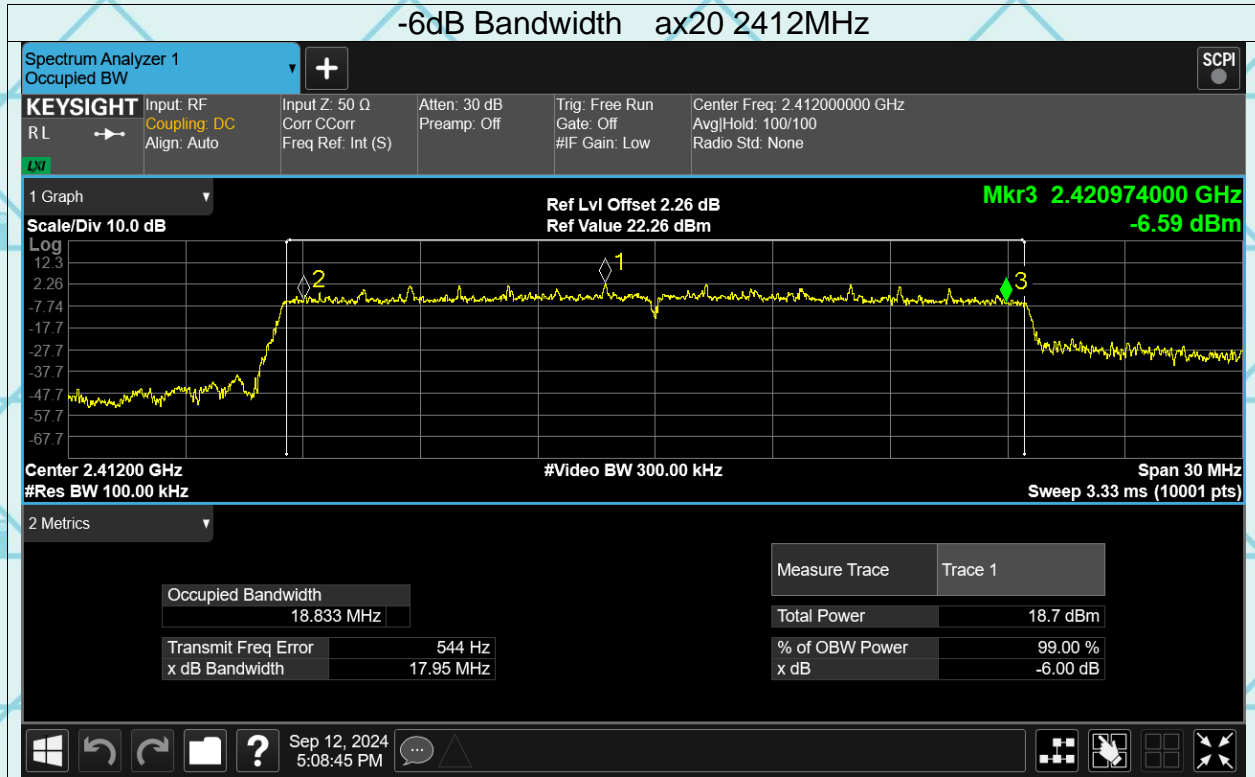






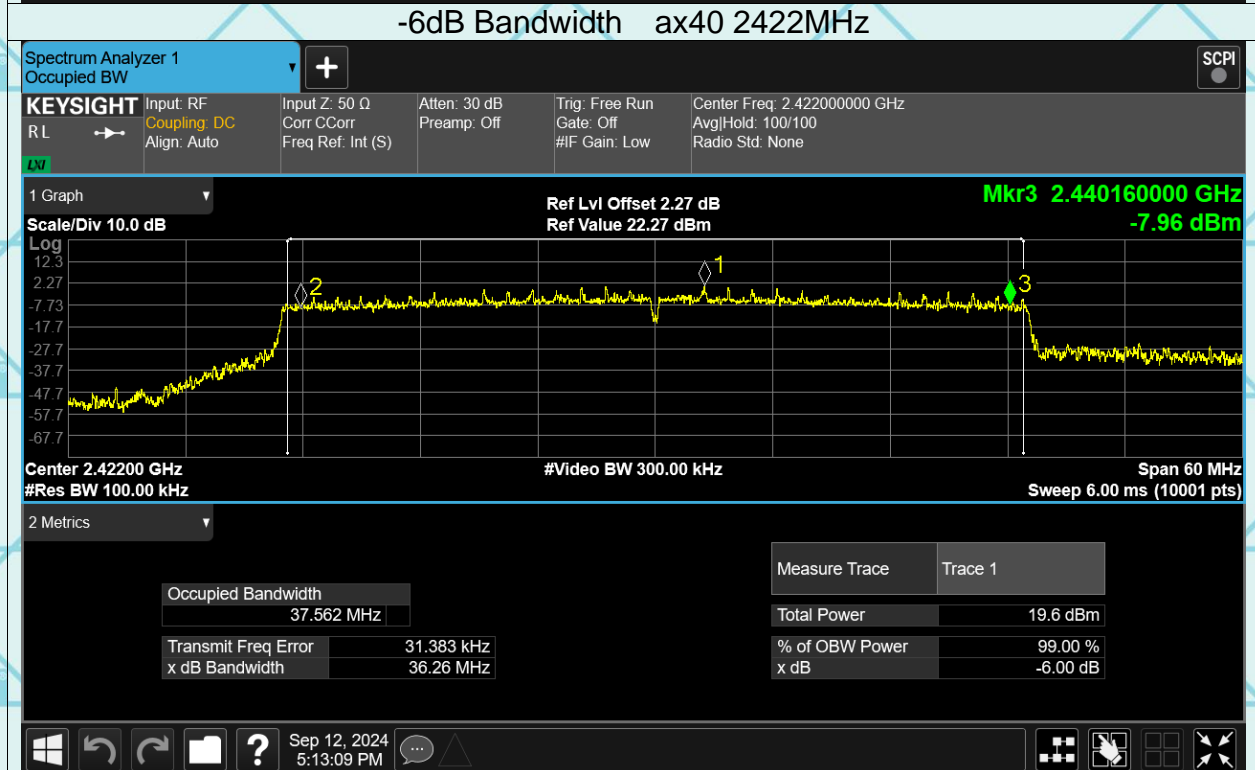
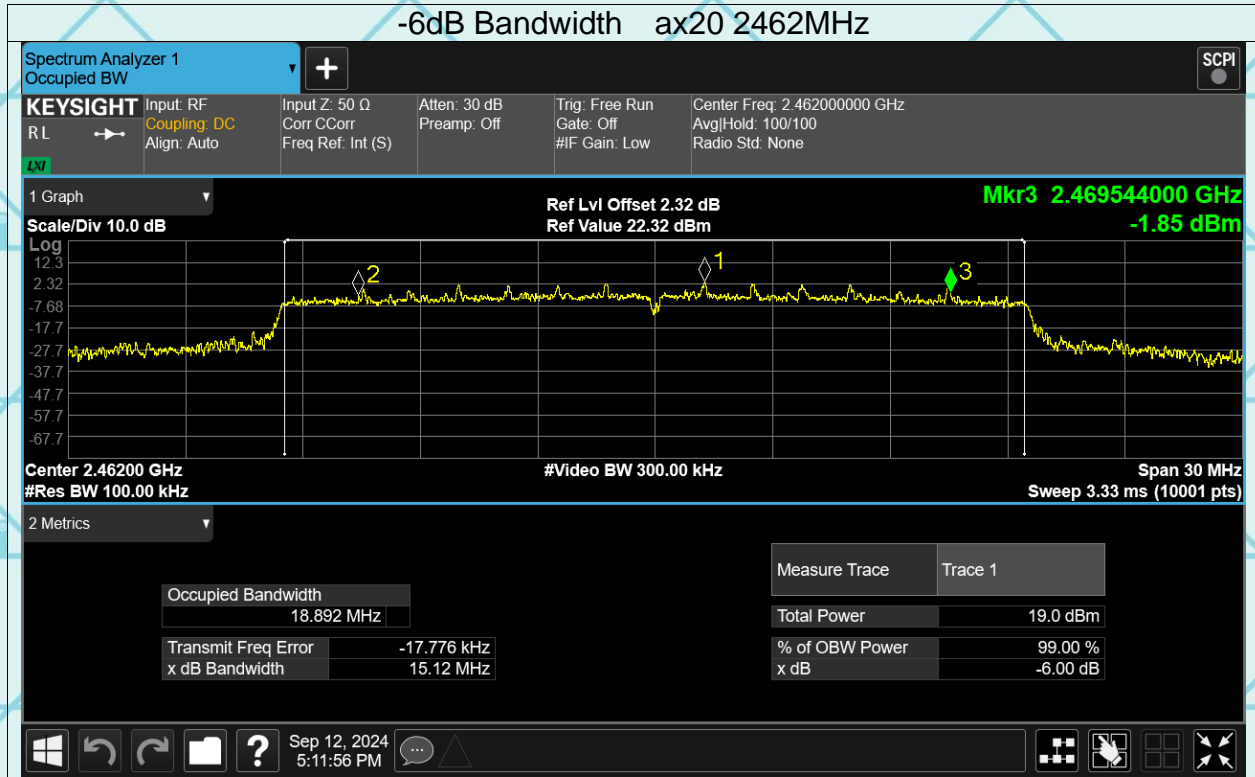


Report No.: WSCT-ANAB-R&E240800043A-Wi-Fi1

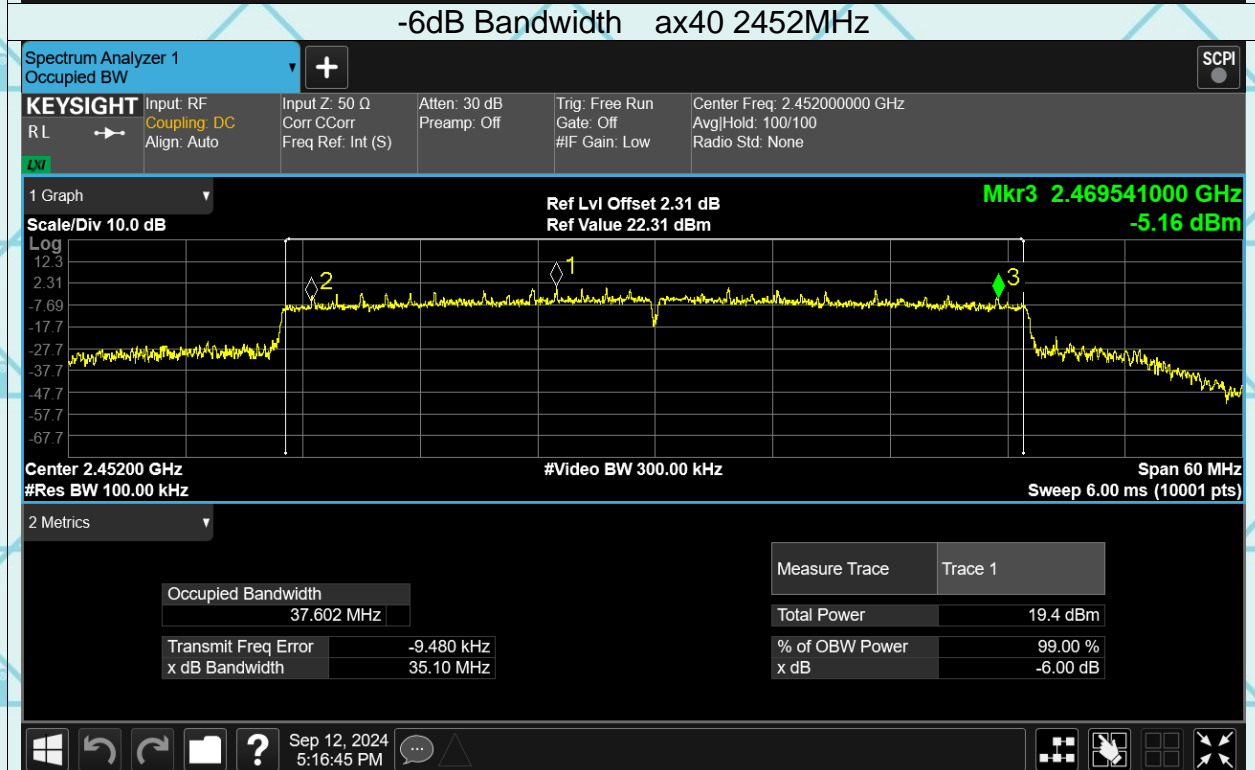
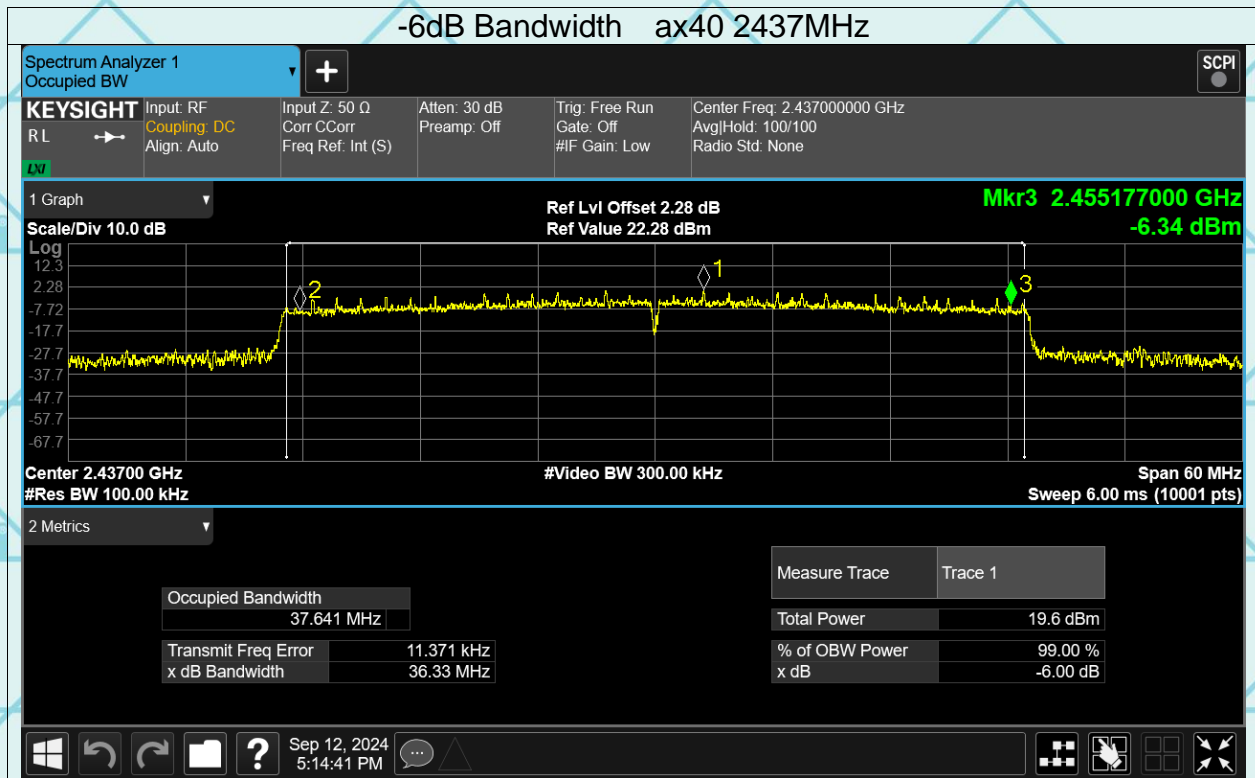




Report No.: WSCT-ANAB-R&E240800043A-Wi-Fi1



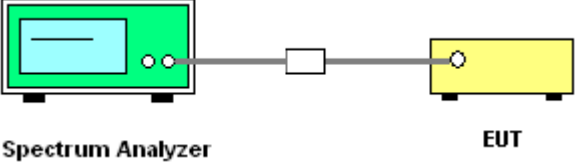






## 6.4. Power Spectral Density

### 6.4.1 Test Specification

<b>Test Requirement:</b>	FCC Part15 C Section 15.247 (e)
<b>Test Method:</b>	KDB 558074
<b>Limit:</b>	The average power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.
<b>Test Setup:</b>	 <p style="text-align: center;">Spectrum Analyzer                      EUT</p>
<b>Test Mode:</b>	Transmitting mode with modulation
<b>Test Procedure:</b>	<ol style="list-style-type: none"> <li>1. The testing follows Measurement Procedure 10.3 Method AVGPDS of FCC KDB Publication No.558074 D01 DTS Meas. Guidance v04</li> <li>2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.</li> <li>3. Set to the maximum power setting and enable the EUT transmit continuously.</li> <li>4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW): <math>3\text{ kHz} \leq \text{RBW} \leq 100\text{ kHz}</math>. Video bandwidth VBW <math>\geq 3 \times \text{RBW}</math>. Set the span to at least 1.5 times the OBW.</li> <li>5. Detector = RMS, Sweep time = auto couple.</li> <li>6. Employ trace averaging (RMS) mode over a minimum of 100 traces. Use the peak marker function to determine the maximum power level.</li> <li>6. Measure and record the results in the test report.</li> </ol>
<b>Test Result:</b>	PASS



## 6.4.2. Test data

MAIN Ant1

Mode	Frequency (MHz)	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
b	2412	2.93	8	Pass
b	2437	4.00	8	Pass
b	2462	3.11	8	Pass
g	2412	-0.71	8	Pass
g	2437	-0.22	8	Pass
g	2462	-0.28	8	Pass
n20	2412	-1.56	8	Pass
n20	2437	-1.27	8	Pass
n20	2462	-1.12	8	Pass
n40	2422	-3.86	8	Pass
n40	2437	-3.54	8	Pass
n40	2452	-4.31	8	Pass
ax20	2412	-2.95	8	Pass
ax20	2437	-2.41	8	Pass
ax20	2462	-2.79	8	Pass
ax40	2422	-3.13	8	Pass
ax40	2437	-2.94	8	Pass
ax40	2452	-4.04	8	Pass

AUX Ant2

Mode	Frequency (MHz)	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
b	2412	3.76	8	Pass
b	2437	3.56	8	Pass
b	2462	3.56	8	Pass
g	2412	-0.52	8	Pass
g	2437	0.28	8	Pass
g	2462	0.49	8	Pass
n20	2412	-1.59	8	Pass
n20	2437	-0.59	8	Pass
n20	2462	-1.00	8	Pass
n40	2422	-2.85	8	Pass
n40	2437	-3.58	8	Pass
n40	2452	-3.24	8	Pass
ax20	2412	-2.13	8	Pass
ax20	2437	-2.05	8	Pass
ax20	2462	-1.86	8	Pass
ax40	2422	-2.57	8	Pass
ax40	2437	-2.42	8	Pass
ax40	2452	-2.47	8	Pass



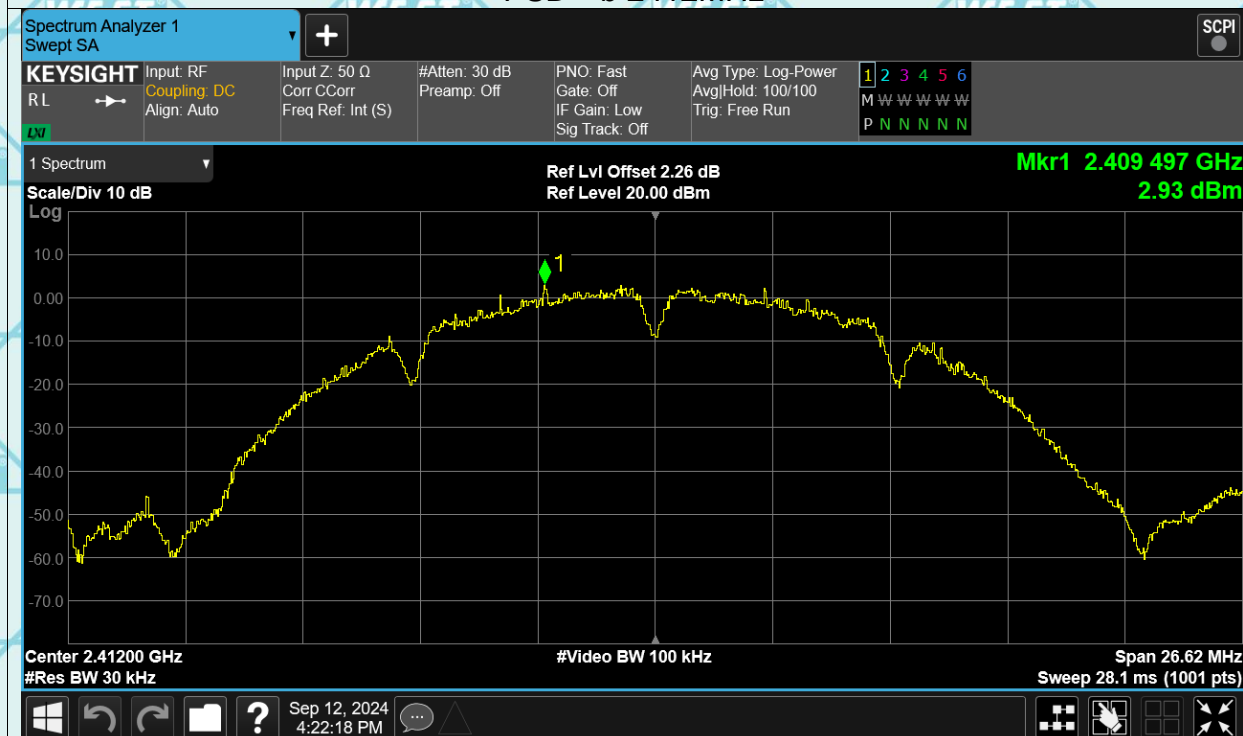
## MIMO

Mode	Frequency (MHz)	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
n20	2412	1.44	8	Pass
n20	2437	2.09	8	Pass
n20	2462	1.95	8	Pass
n40	2422	-0.32	8	Pass
n40	2437	-0.55	8	Pass
n40	2452	-0.73	8	Pass
ax20	2412	0.49	8	Pass
ax20	2437	0.78	8	Pass
ax20	2462	0.71	8	Pass
ax40	2422	0.17	8	Pass
ax40	2437	0.34	8	Pass
ax40	2452	-0.17	8	Pass

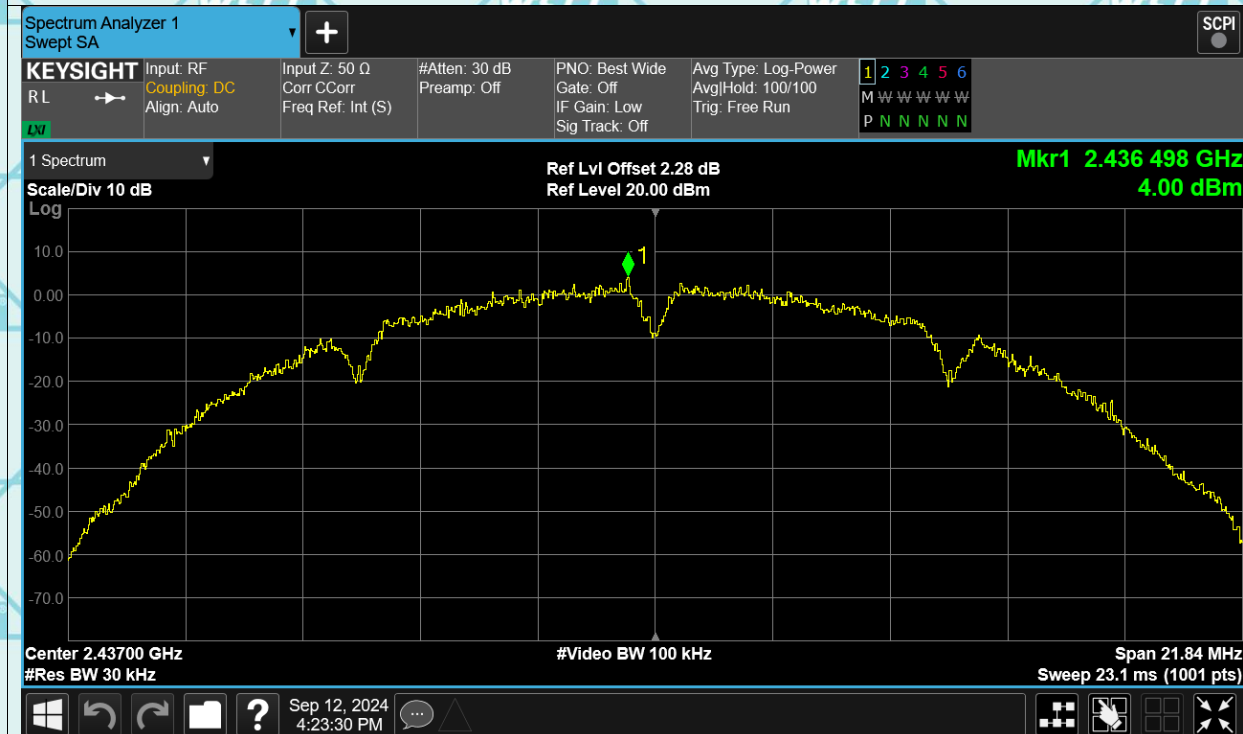


## MAIN ANT1 Test Graphs

### PSD b 2412MHz



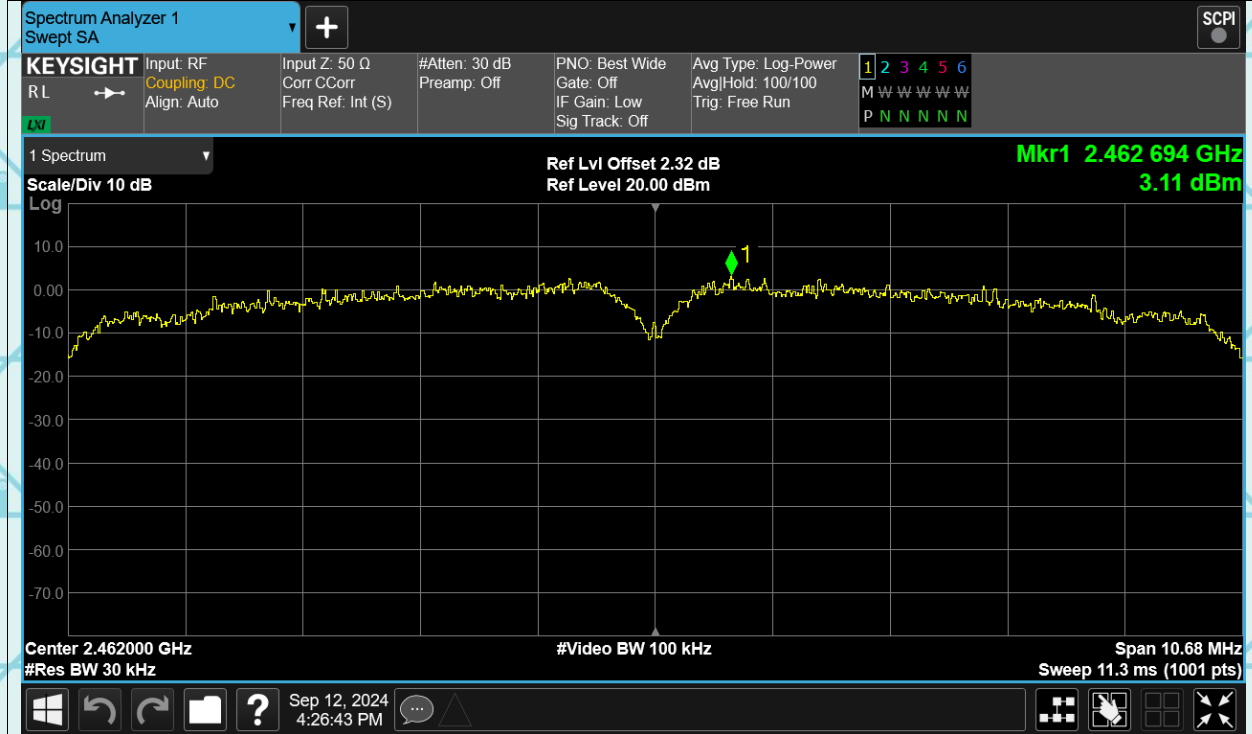
### PSD b 2437MHz



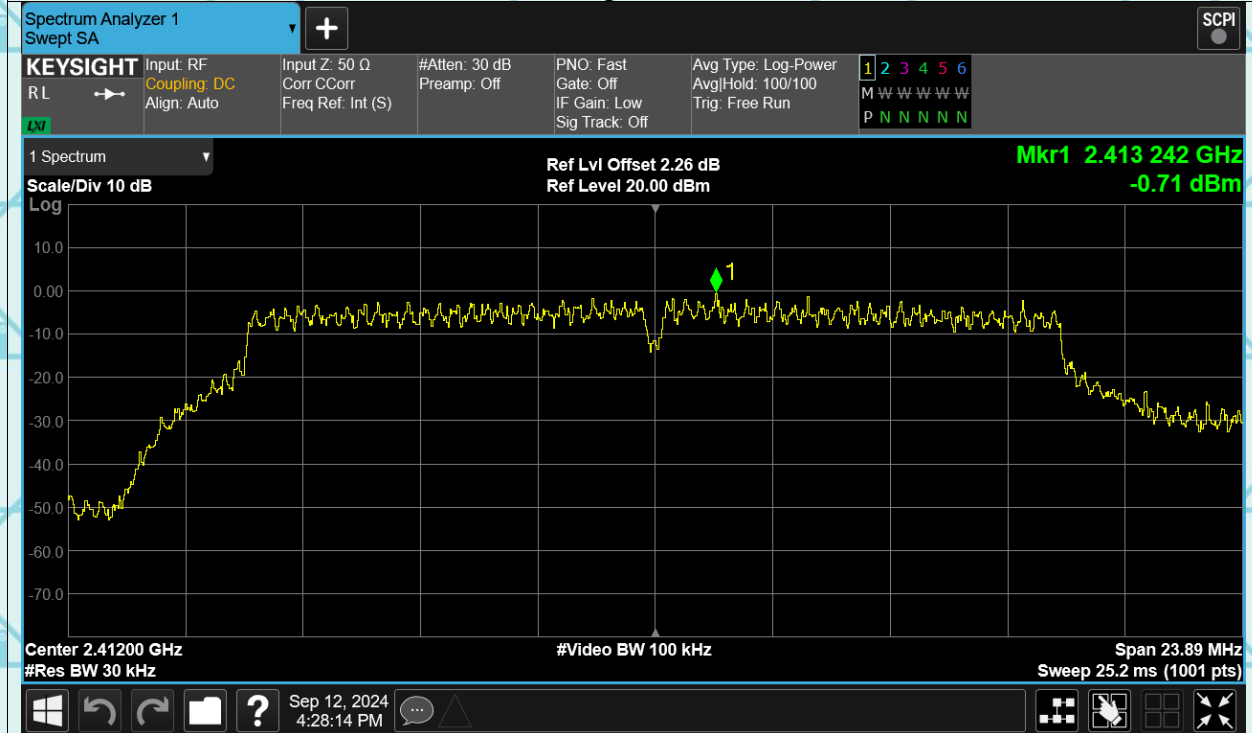


Report No.: WSCT-ANAB-R&E240800043A-Wi-Fi1

## PSD b 2462MHz

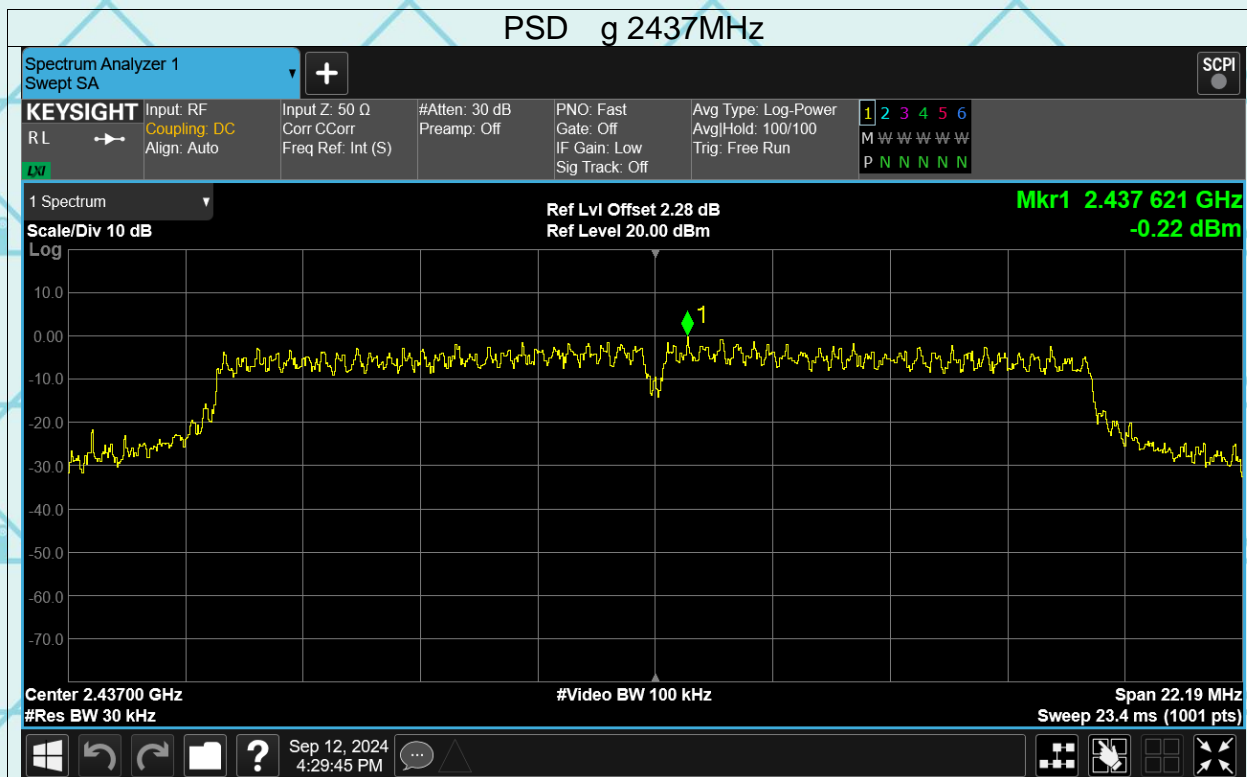


## PSD g 2412MHz

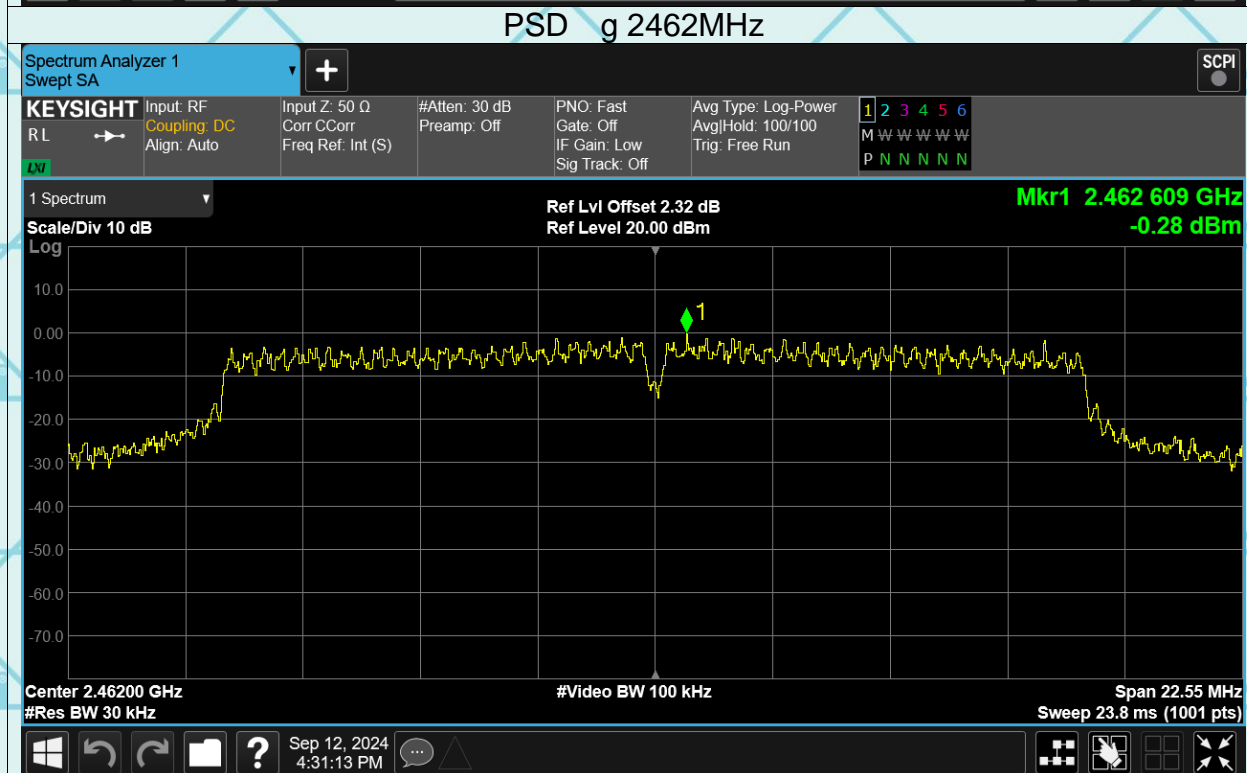




## PSD g 2437MHz



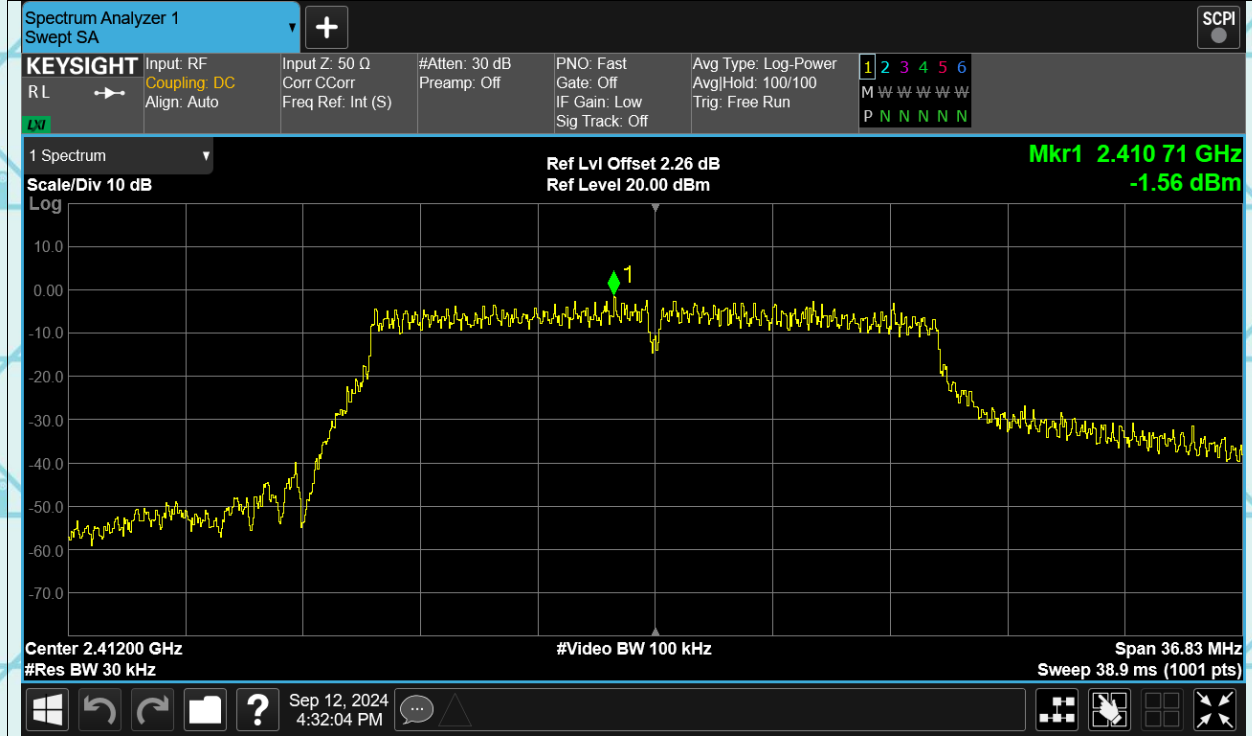
## PSD g 2462MHz



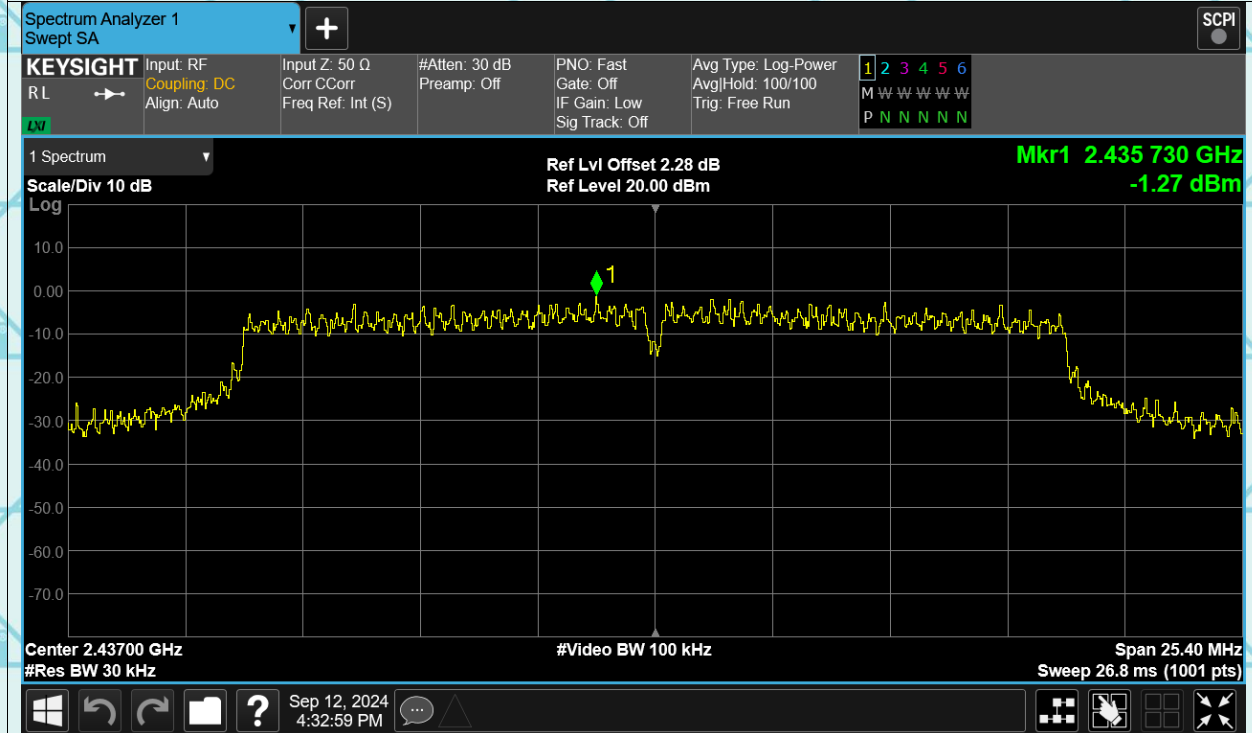


Report No.: WSCT-ANAB-R&E240800043A-Wi-Fi1

## PSD n20 2412MHz



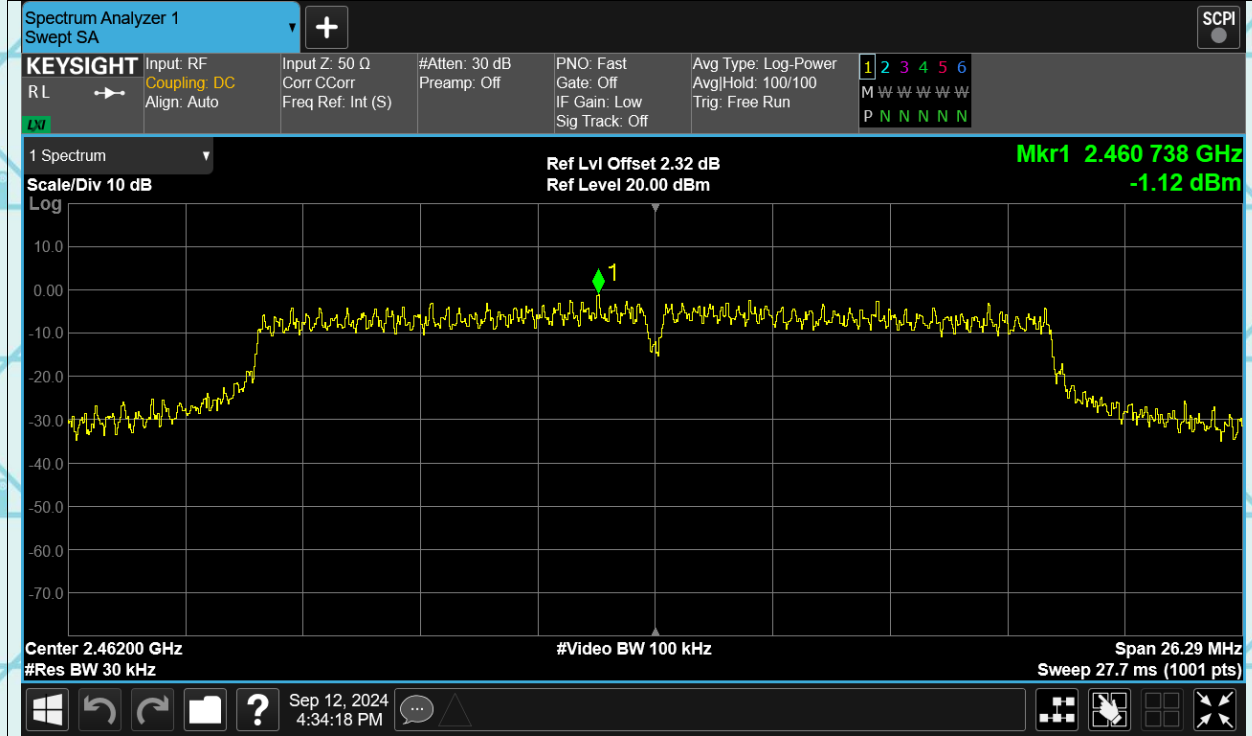
## PSD n20 2437MHz



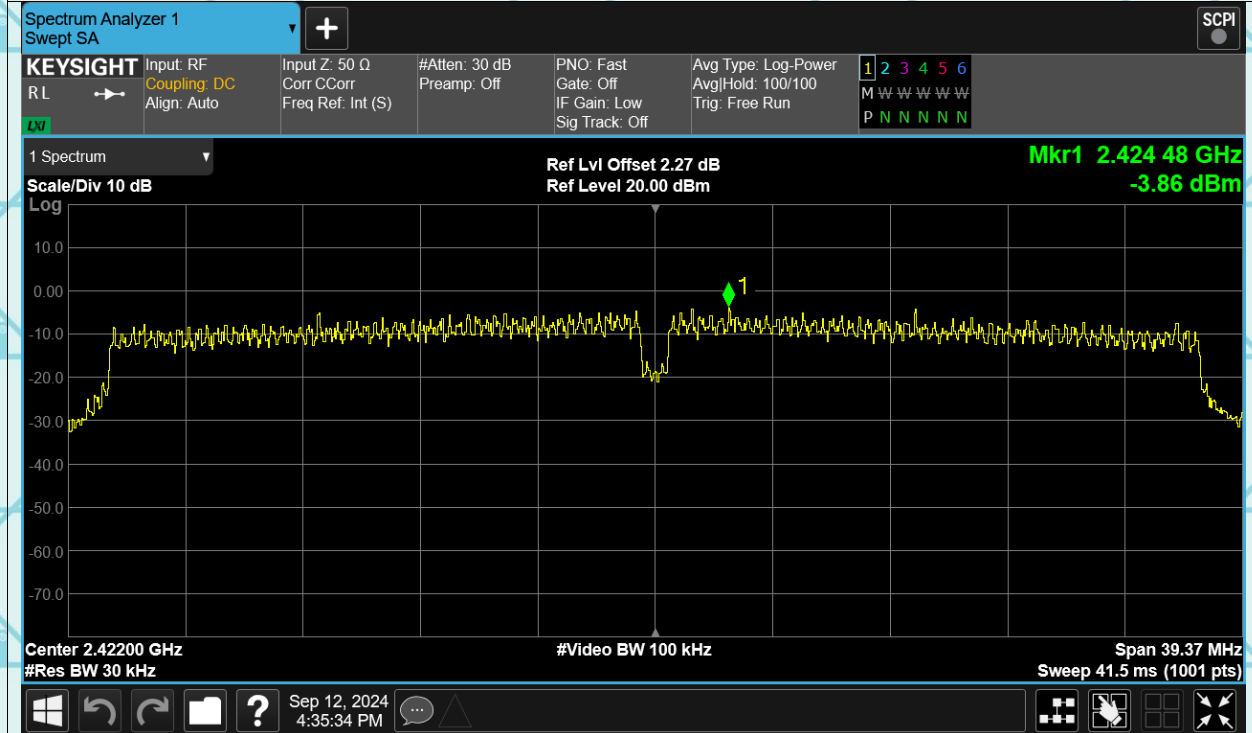


Report No.: WSCT-ANAB-R&E240800043A-Wi-Fi1

## PSD n20 2462MHz

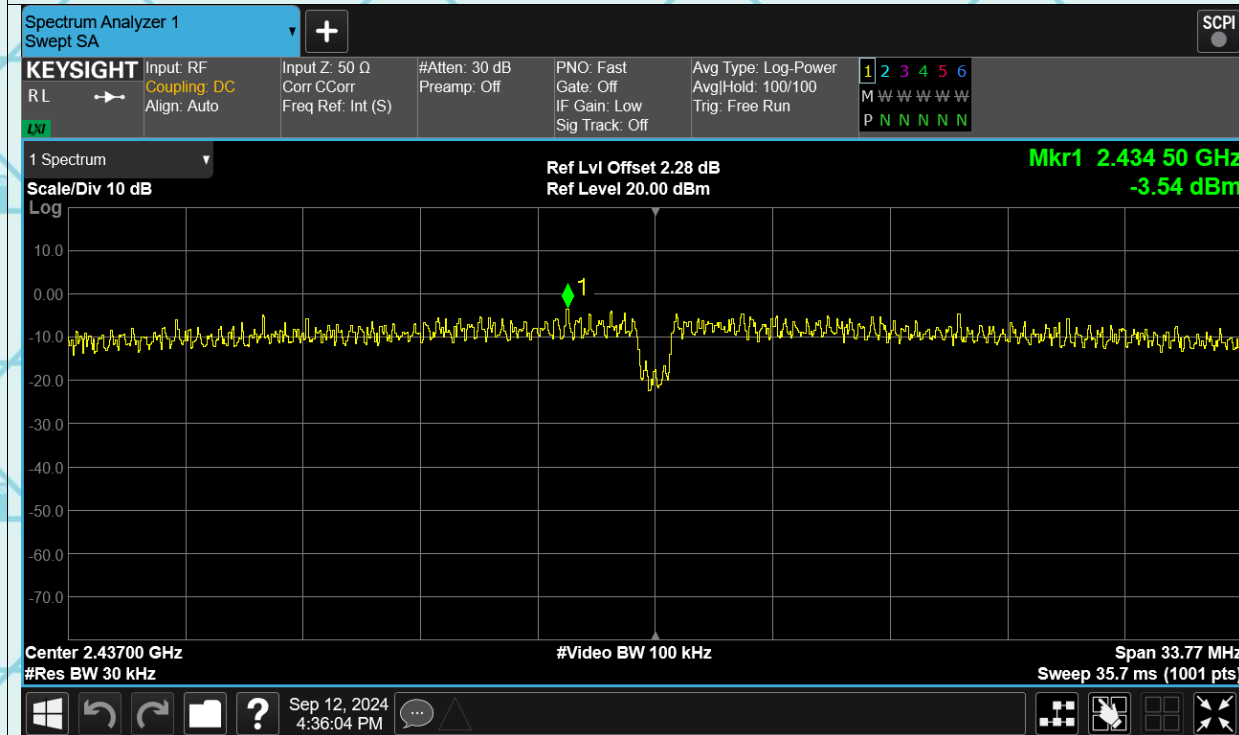


## PSD n40 2422MHz

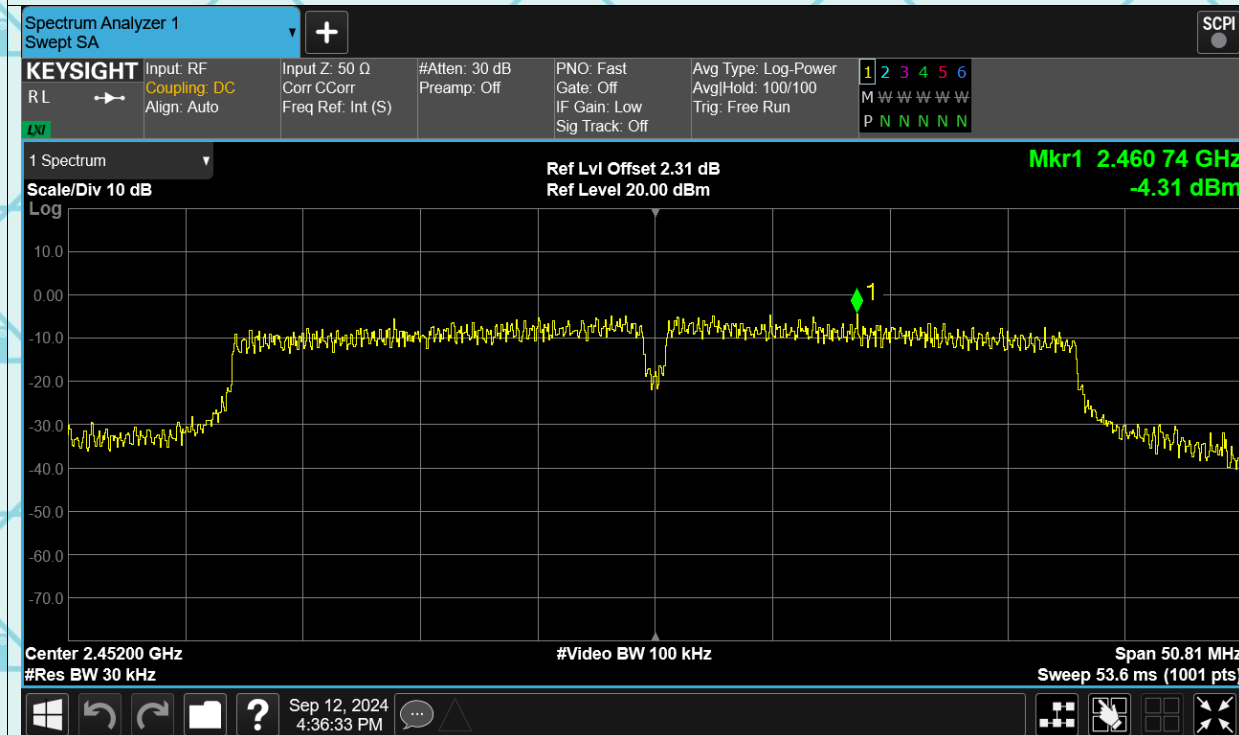




## PSD n40 2437MHz

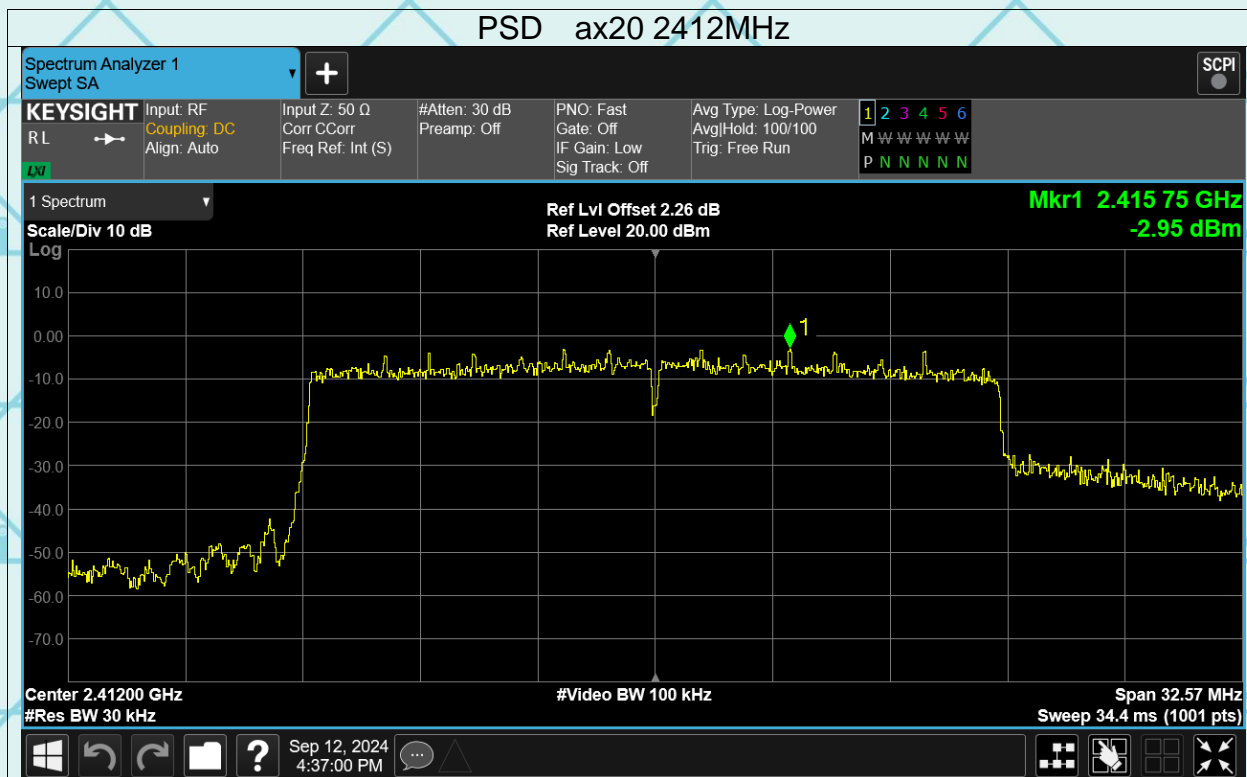


## PSD n40 2452MHz

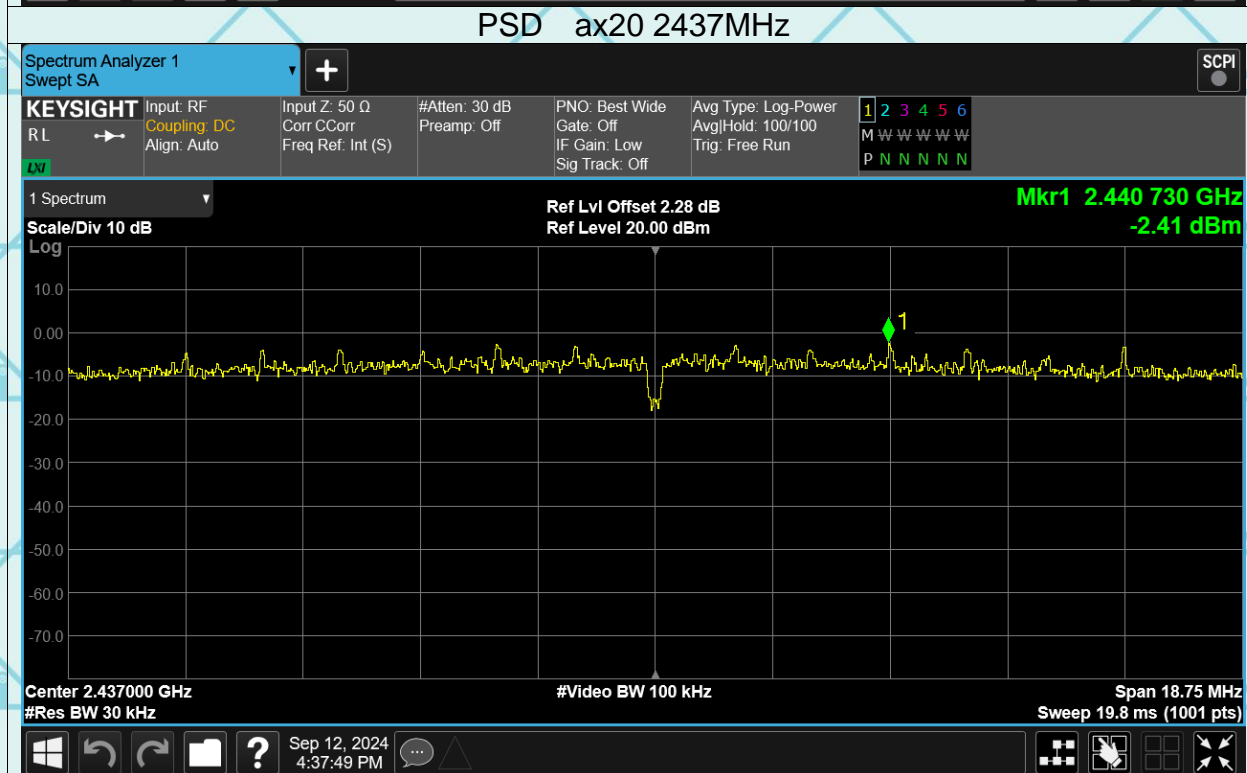




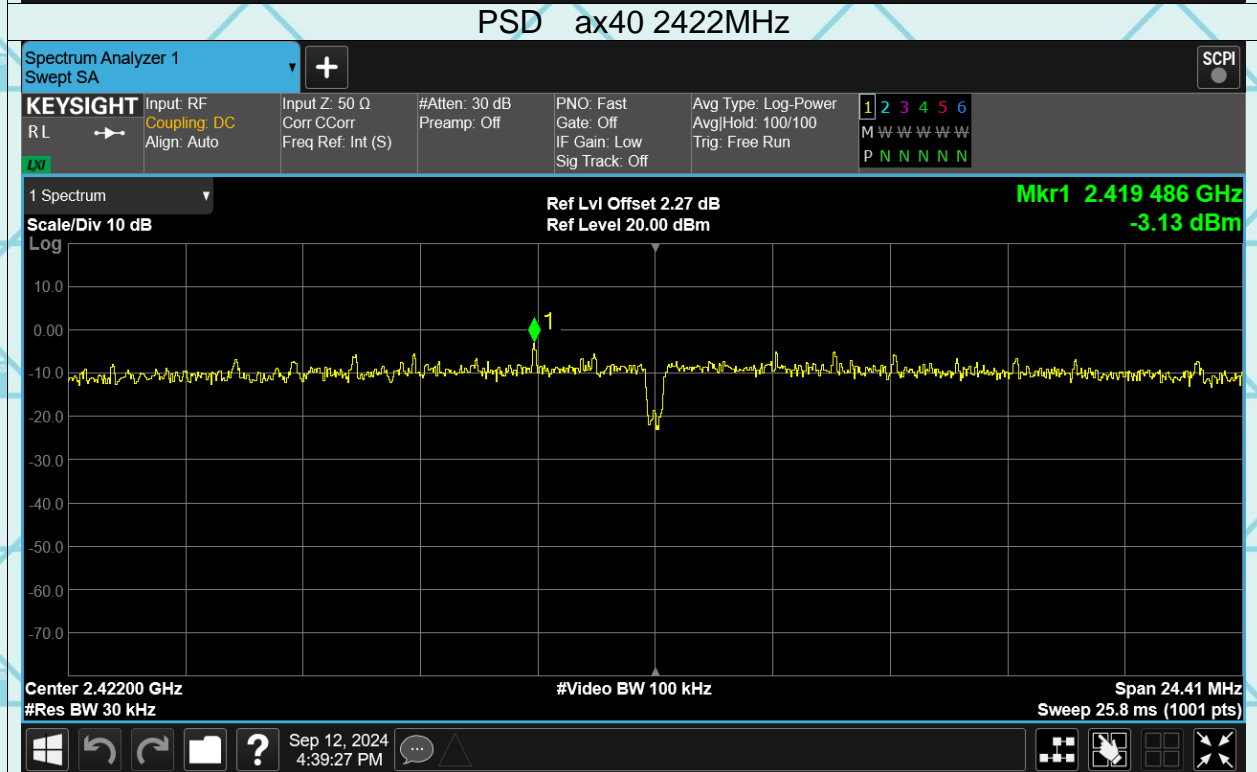
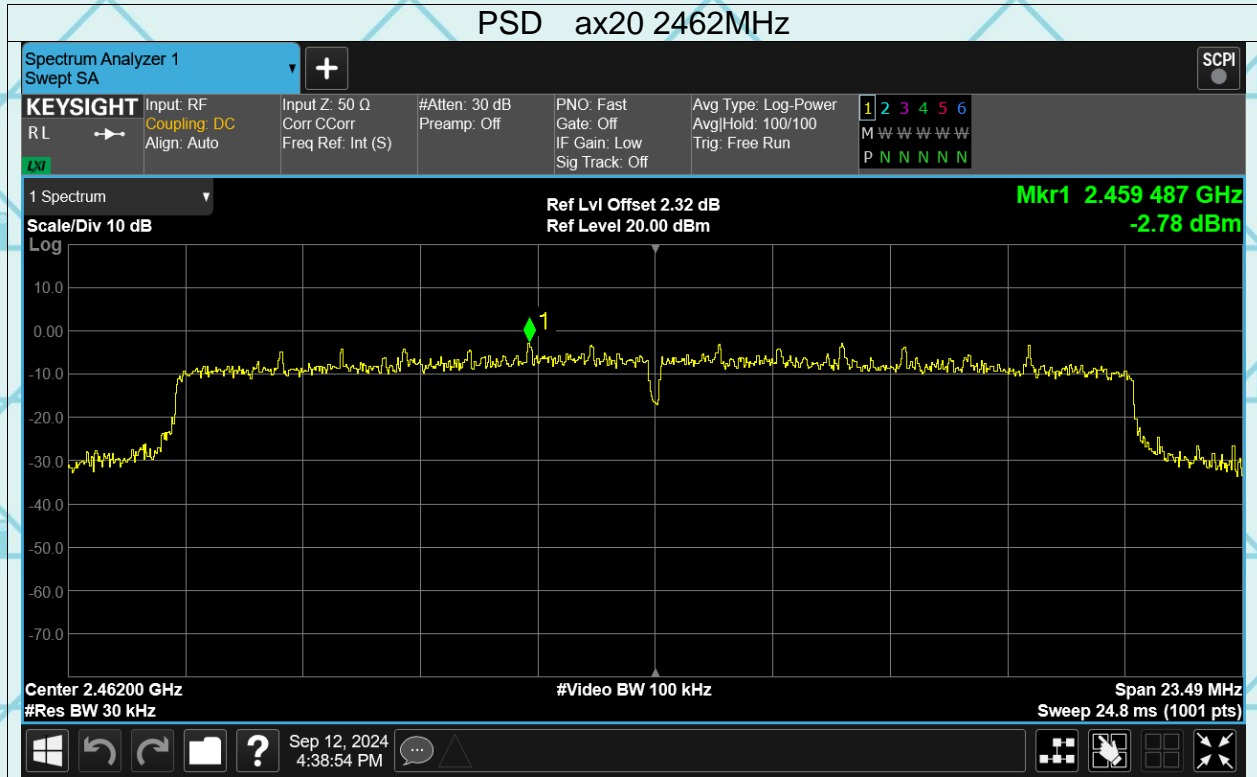
## PSD ax20 2412MHz



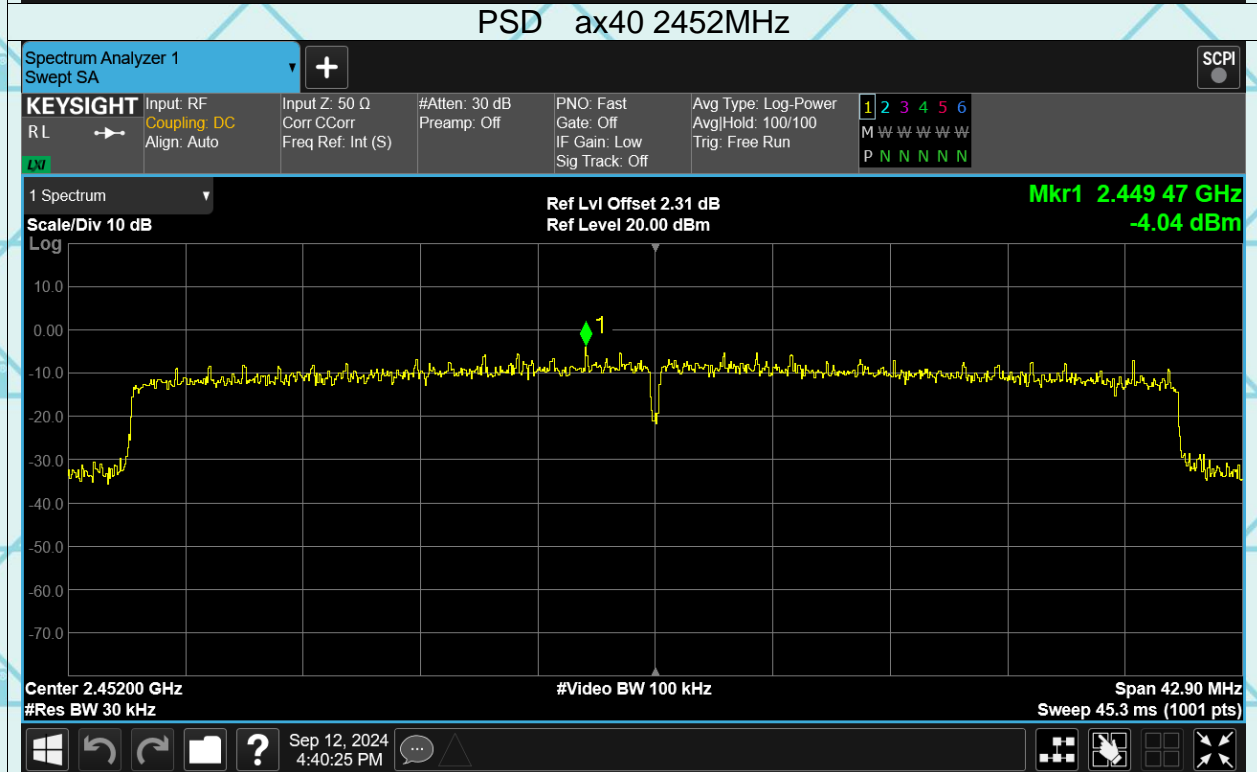
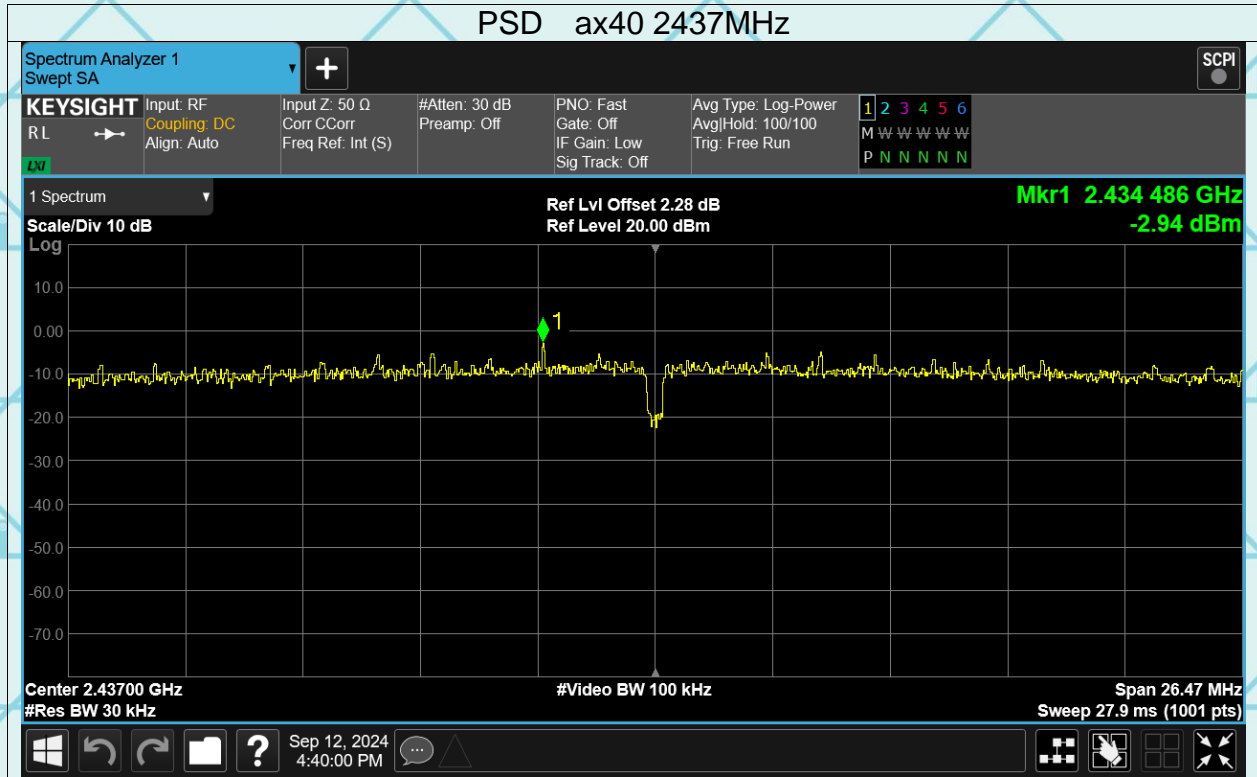
## PSD ax20 2437MHz



Report No.: WSCT-ANAB-R&E240800043A-Wi-Fi1

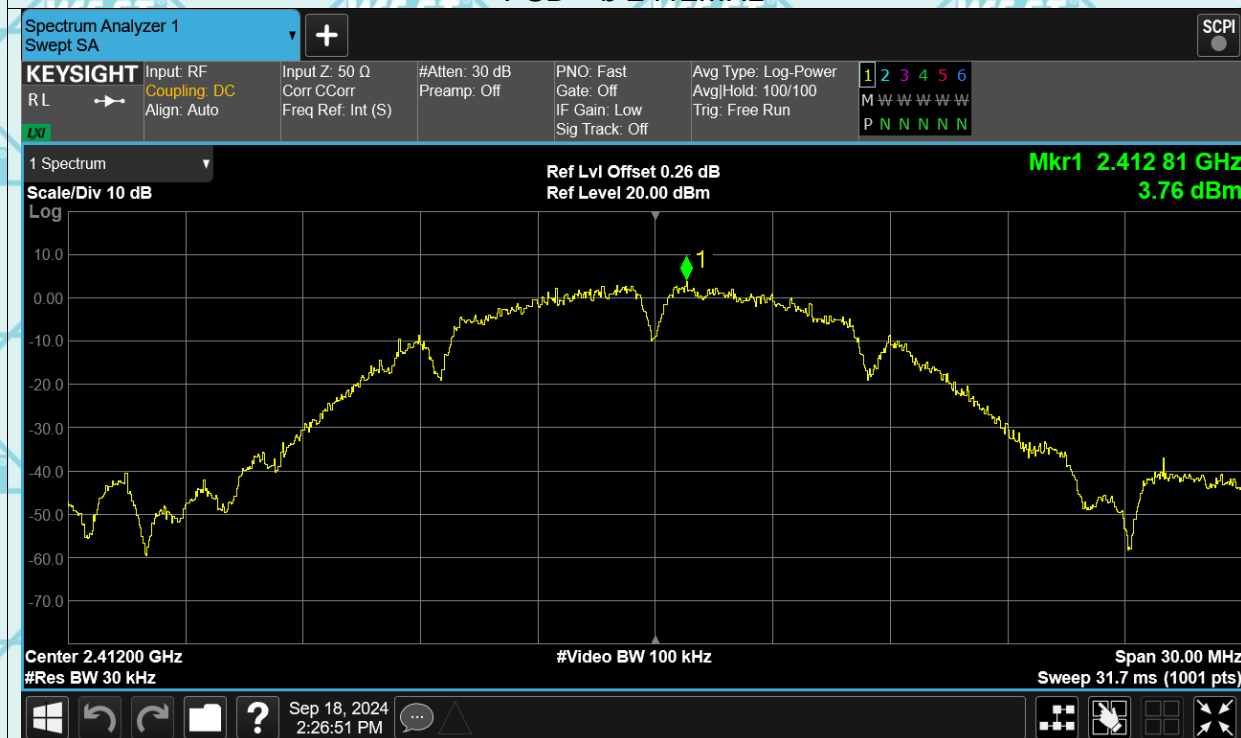




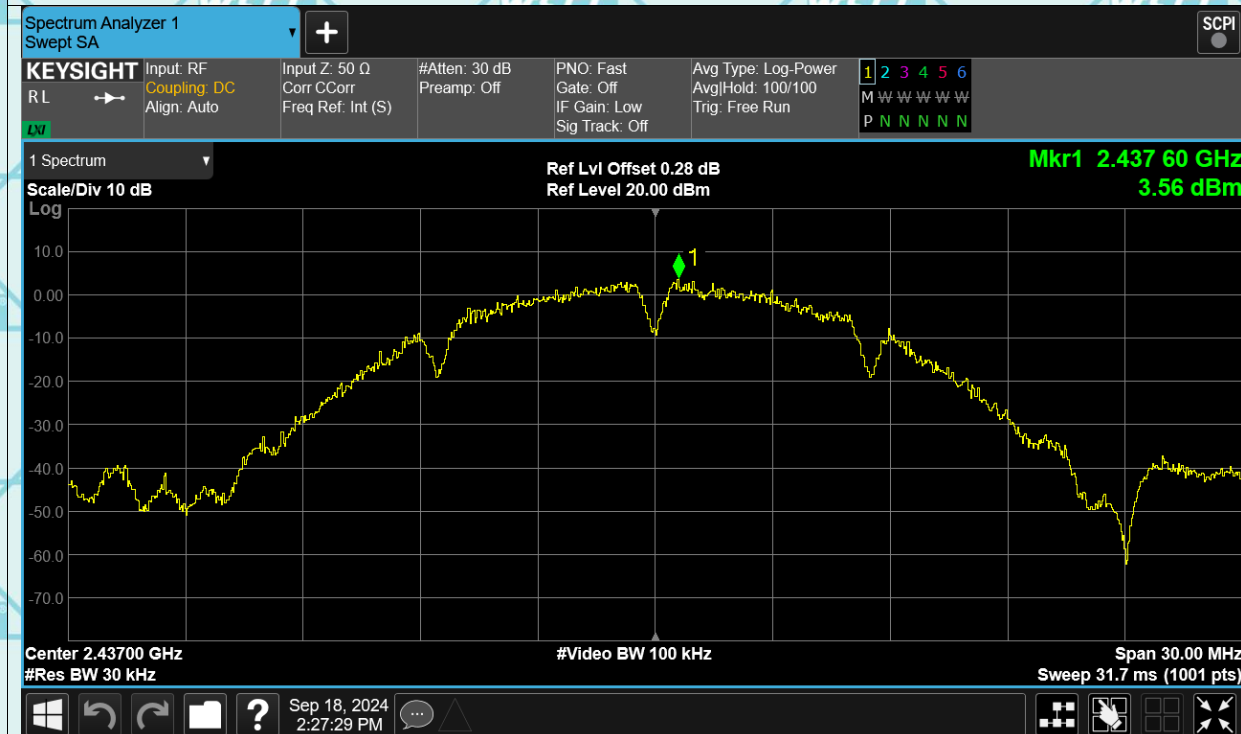


## AUX ANT2 Test Graphs

### PSD b 2412MHz

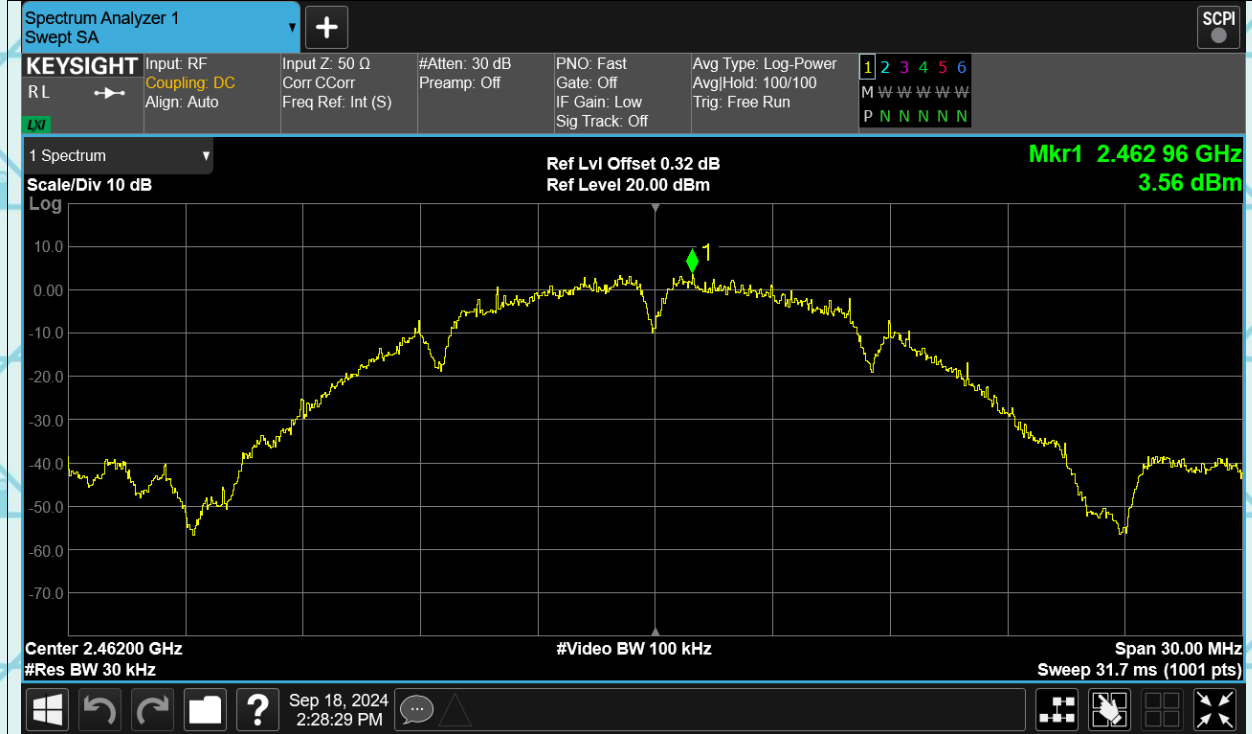


### PSD b 2437MHz

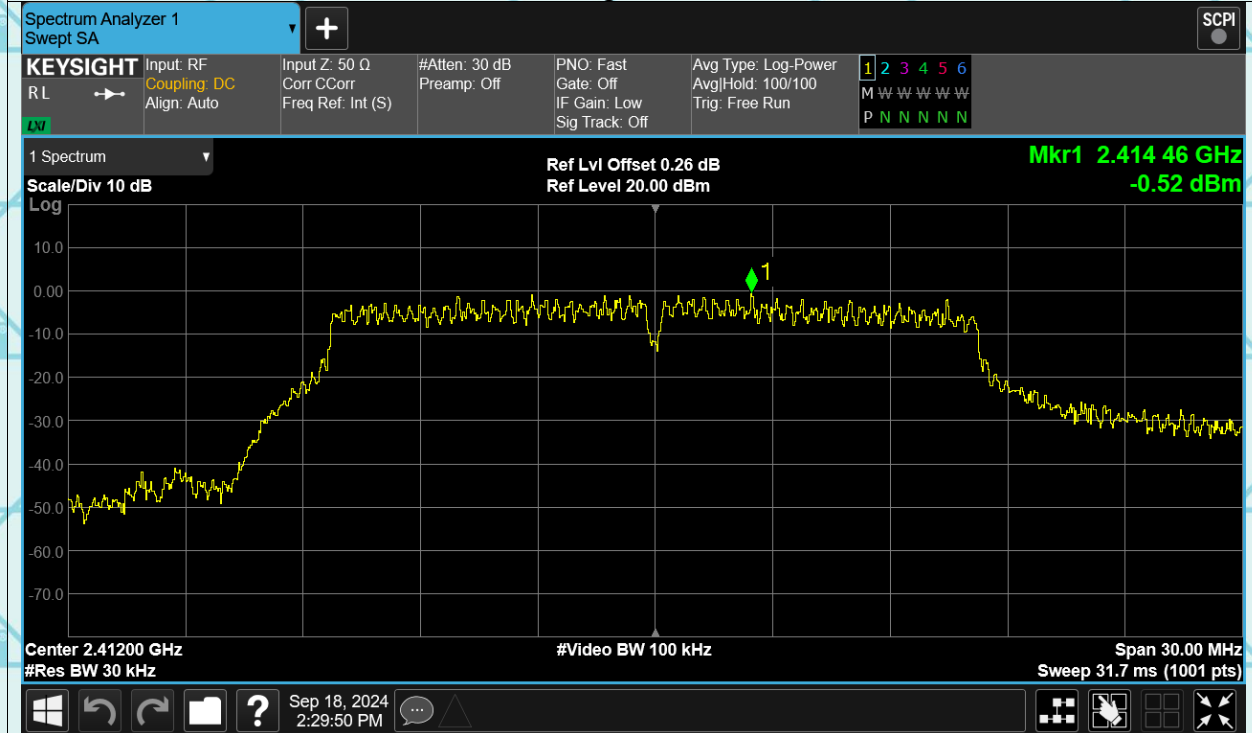




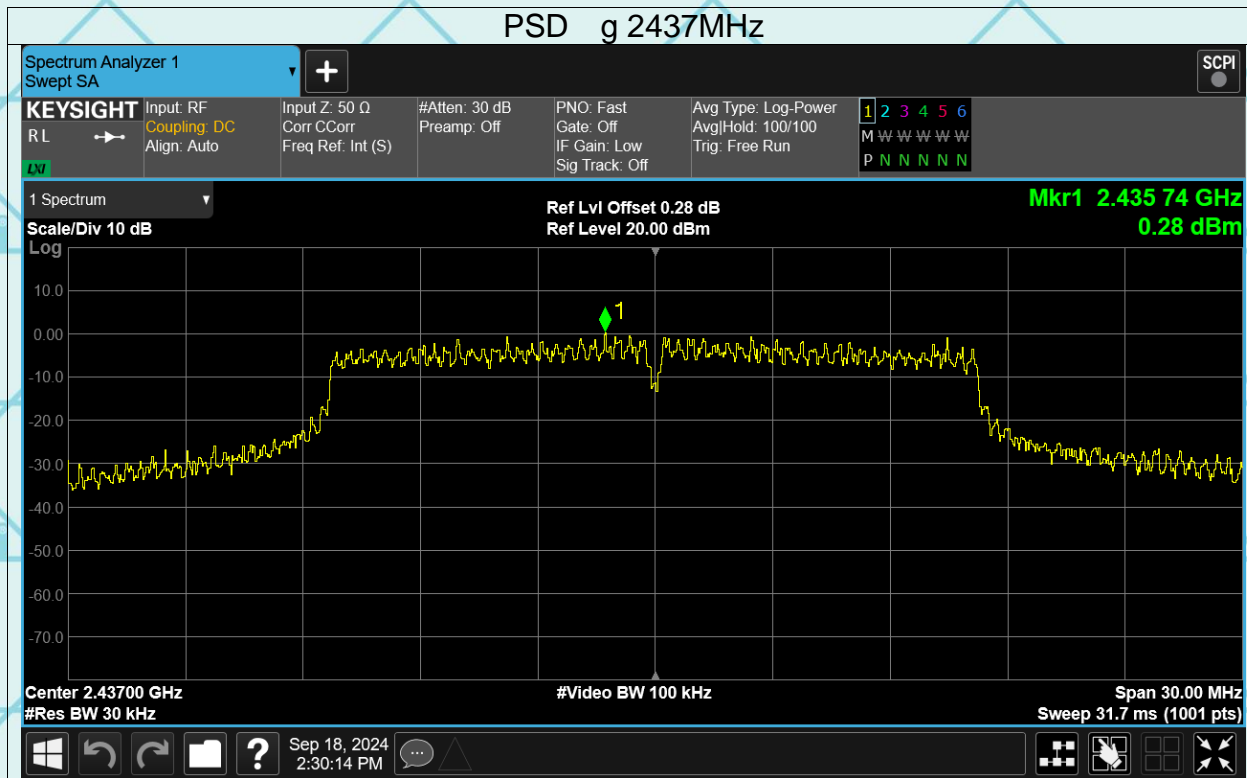
## PSD b 2462MHz



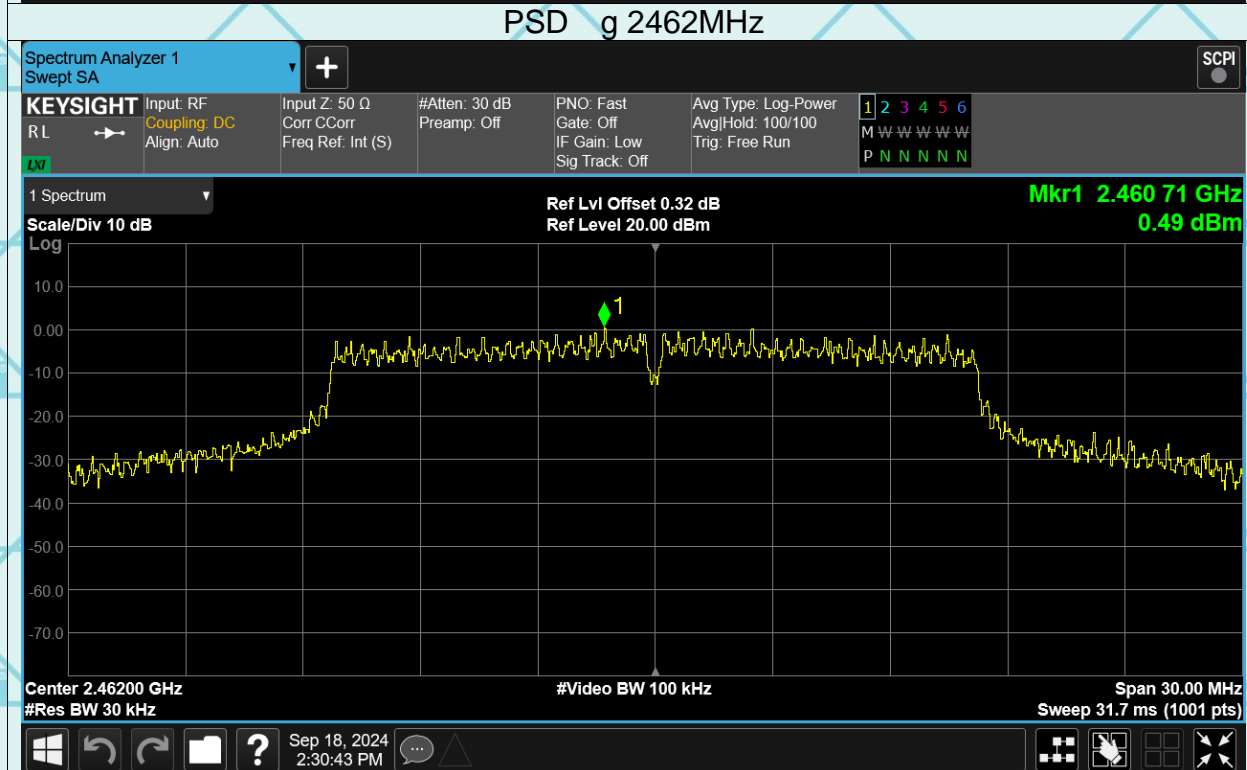
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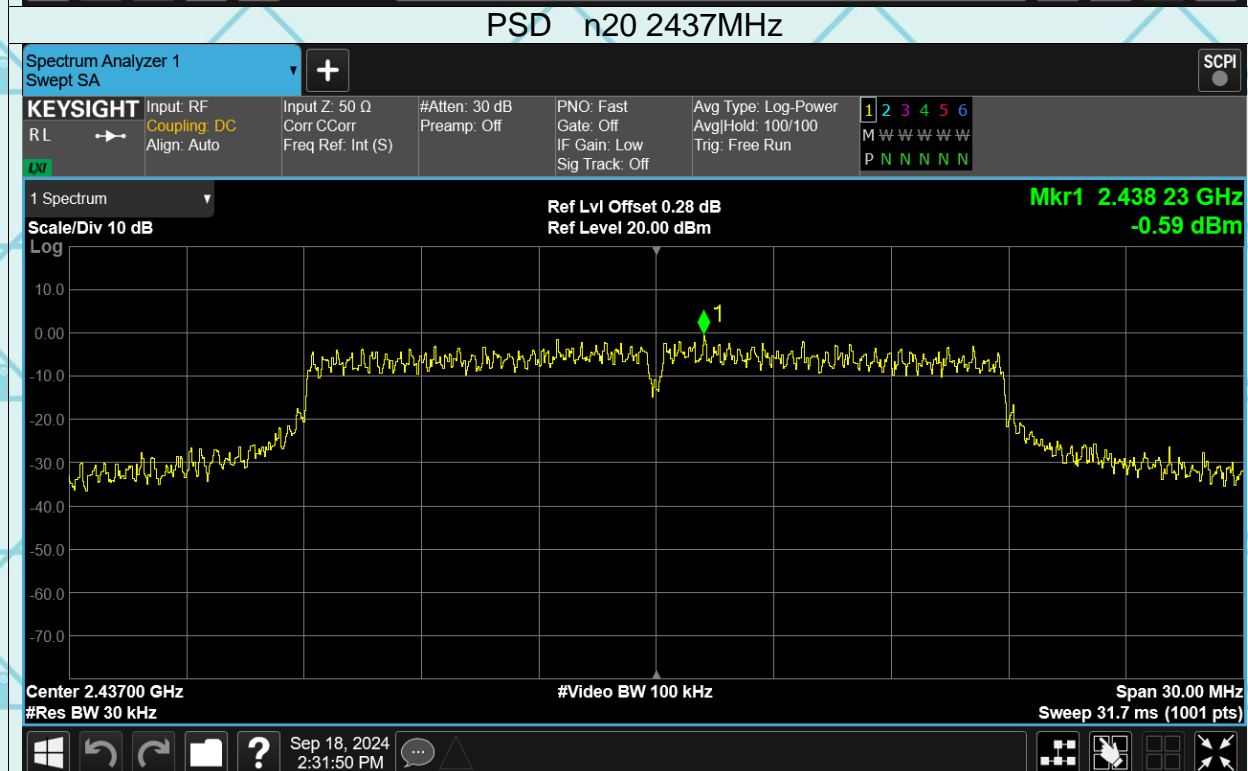
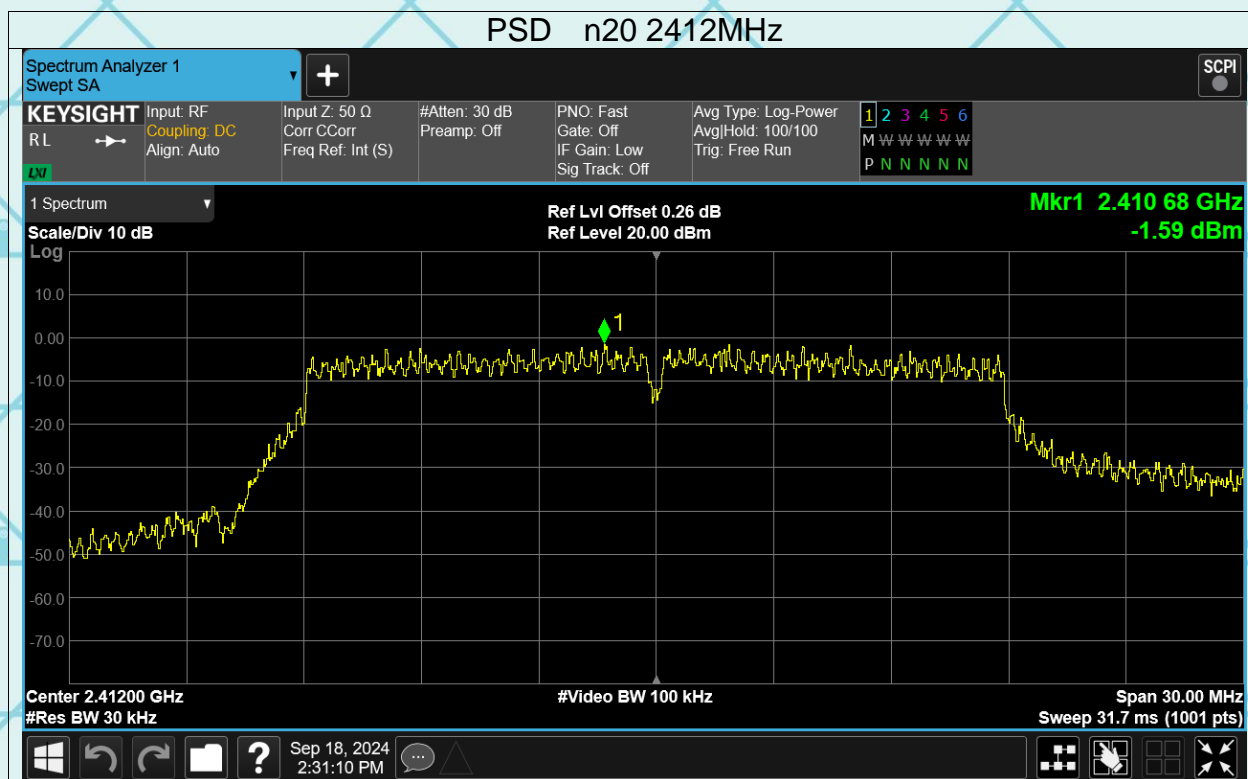
## PSD g 2437MHz



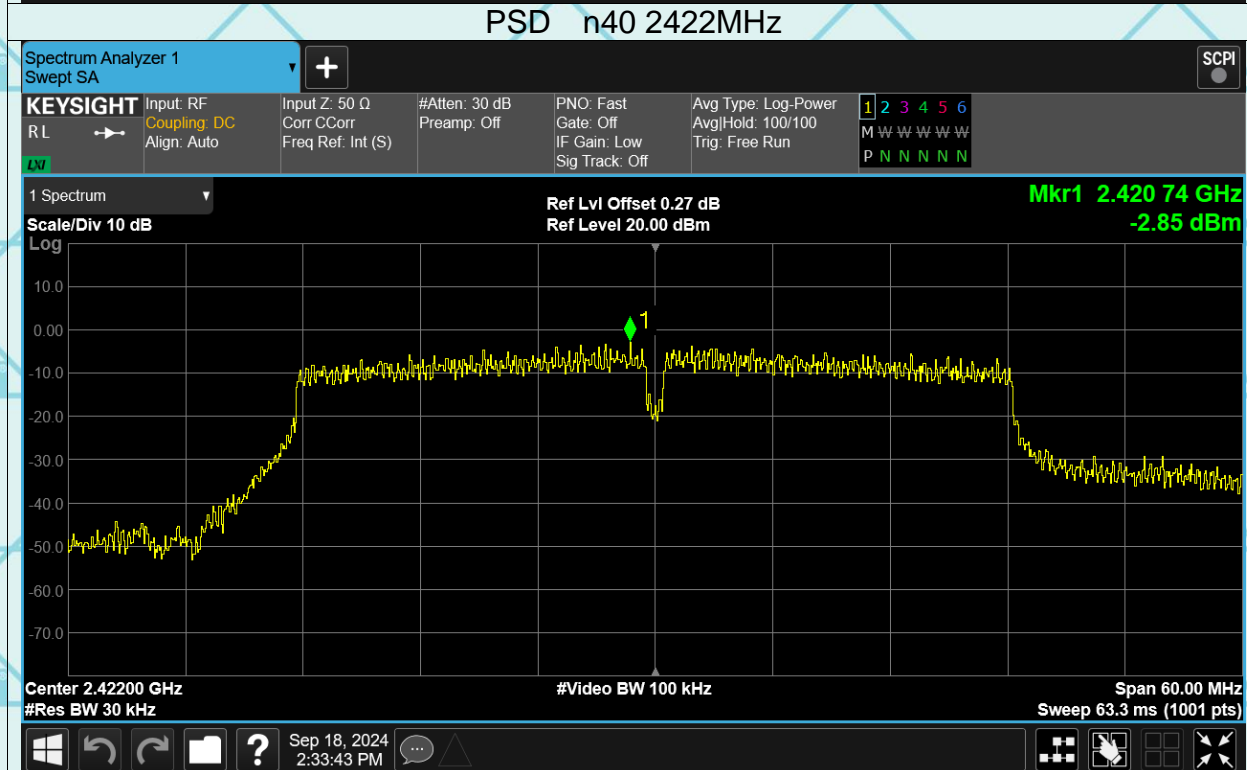
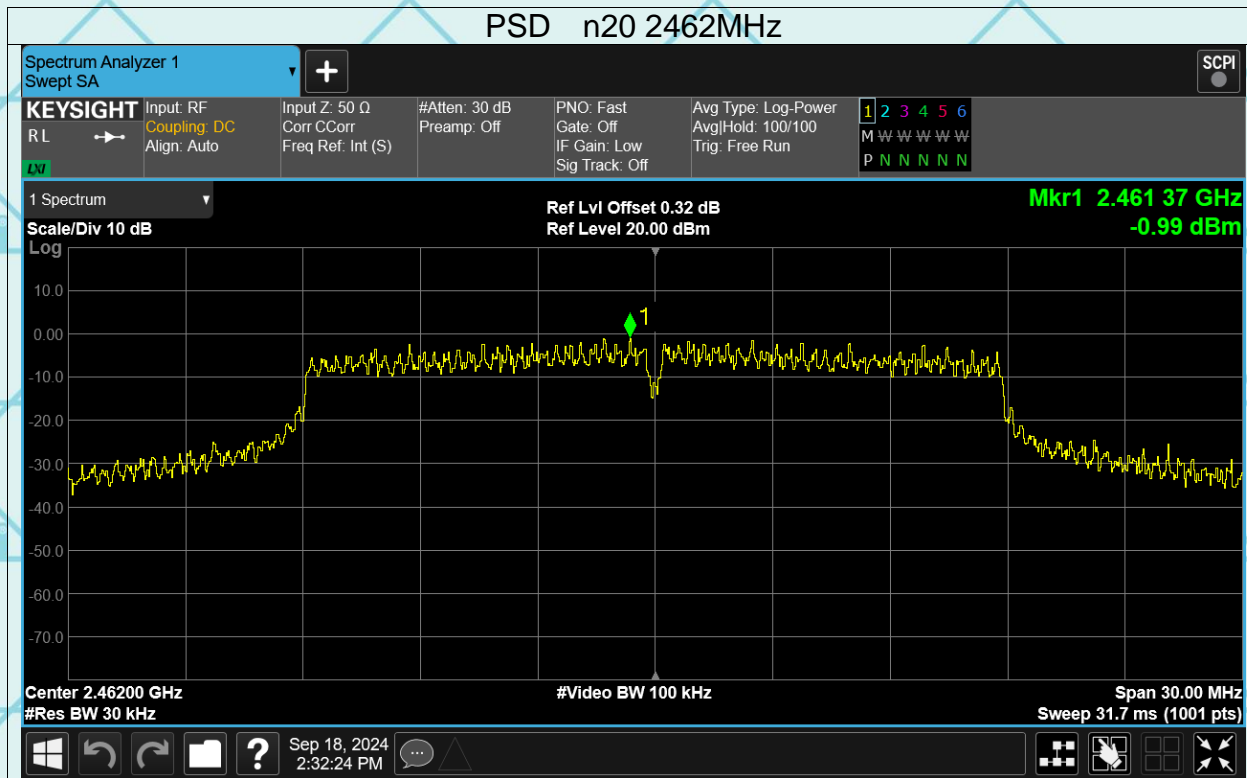
## PSD g 2462MHz







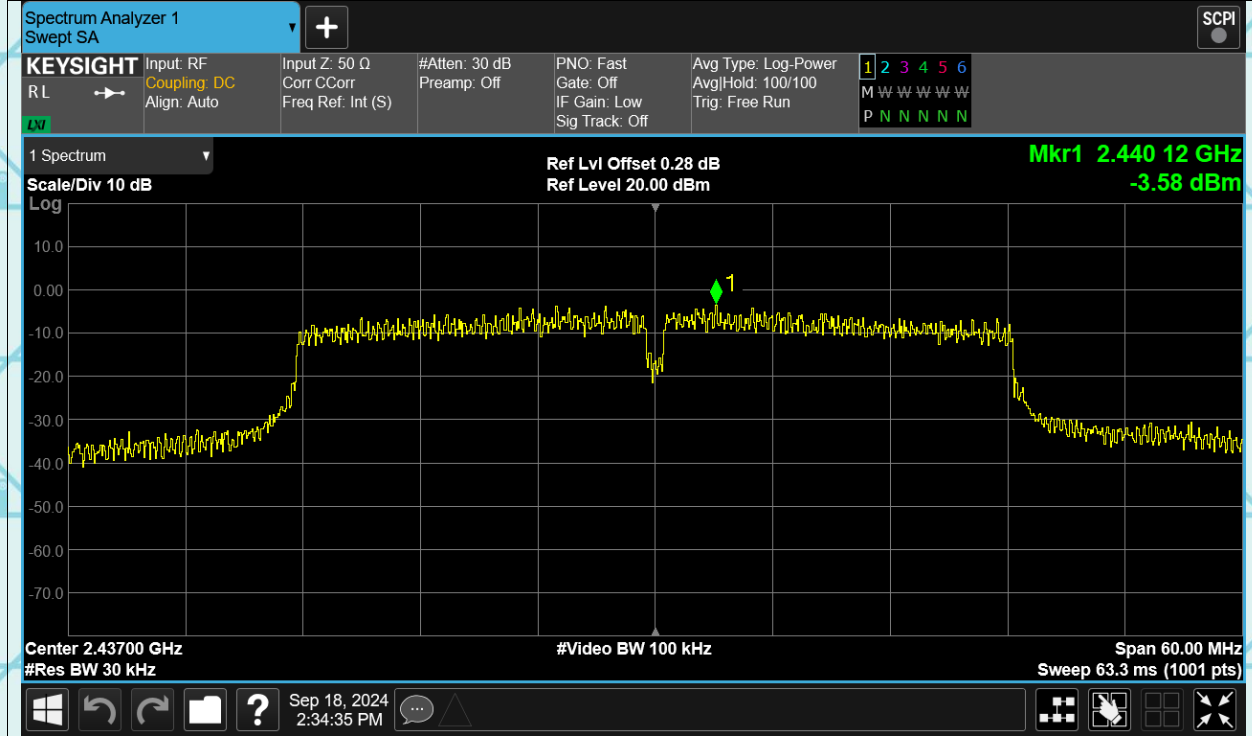
Report No.: WSCT-ANAB-R&E240800043A-Wi-Fi1





Report No.: WSCT-ANAB-R&E240800043A-Wi-Fi1

## PSD n40 2437MHz



## PSD n40 2452MHz

