



TEST REPORT

FCC ID: 2AHYJ-TVE1070M

Product: Tablet

Model No.: LincPlus T3

Trade Mark: LincPlus

Report No.: WSCT-A2LA-R&E230300006A-Wi-Fi1

Issued Date: 10 April 2023

Issued for:

Techvision Intelligent Technology Co., Ltd.
5F, No.2 Building, District D, TCL international E City, Nanshan, ShenZhen,
China

Issued By:

World Standardization Certification & Testing Group(Shenzhen) Co., Ltd.
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Report No.: WSCT-A2LA-R&E230300006A-Wi-Fi1

Certificate #5768.01

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1. Test Certification

Product: Tablet

Model No.: LincPlus T3

Trade Mark: LincPlus

Applicant: Techvision Intelligent Technology Co., Ltd.

Address: 5F, No.2 Building, District D, TCL international E City, Nanshan, ShenZhen, China

Manufacturer: Techvision Intelligent Technology Co., Ltd.

Address: 5F, No.2 Building, District D, TCL international E City, Nanshan, ShenZhen, China

Date of Test: 10 March 2023 ~ 09 April 2023

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/system, 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:

Li Huaibi

(Li Huaibi)

Approved By:

Liu Fuxin

(Liu Fuxin)

Date:

10 April 2023



世标检测认证股份

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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

Product:	Tablet
Model No.:	LincPlus T3
Trade Mark:	LincPlus
Operation Frequency:	2412MHz~2462MHz (802.11b/g/n(HT20)) 2422MHz~2452MHz (802.11n(HT40))
Channel Separation:	5MHz
Modulation type:	DSSS(DBPSK, DQPSK, CCK) for IEEE 802.11b OFDM(BPSK,QPSK,16QAM,64QAM,256QAM) for IEEE 802.11g/n
Antenna Type:	Integral Antenna
Antenna Gain	0.86dBi
Power supply:	Li-ion Battery: U3158123PV Rated Voltage: 3.8V Rated Capacity: 7000mAh
Adapter:	Adapter: MX21PD-U Input: 100-240V~50/60Hz 0.5A Output: 5V---3A/9V---2.22A/12V---1.67A
Remark:	N/A.



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

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

802.11n (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(H20)
802.11n(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	Adapter1/2	/	/	ADAPTER

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 **Building A-B, Baoshi Science & Technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China of the World Standardization Certification & Testing Group(Shenzhen) CO., LTD**

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

CNAS - Registration Number: L3732

China National Accreditation Service for Conformity Assessment, The test firm Registration Number: L3732

FCC - Designation Number: CN1303

World Standardization Certification & Testing Group(Shenzhen) CO., LTD. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Designation Number: CN1303.

A2LA - Certificate Number: 5768.01

The EMC Laboratory has been accredited by the American Association for Laboratory Accreditation (A2LA). Certification Number: 5768.01





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	11/05/2022	11/04/2023
LISN	AFJ	LS16	16010222119	11/05/2022	11/04/2023
LISN(EUT)	Mestec	AN3016	04/10040	11/05/2022	11/04/2023
Universal Radio Communication Tester	R&S	CMU 200	1100.0008.02	11/05/2022	11/04/2023
Coaxial cable	Megalon	LMR400	N/A	11/05/2022	11/04/2023
GPIO cable	Megalon	GPIO	N/A	11/05/2022	11/04/2023
Spectrum Analyzer	R&S	FSU	100114	11/05/2022	11/04/2023
Pre Amplifier	H.P.	HP8447E	2945A02715	11/05/2022	11/04/2023
Pre-Amplifier	CDSI	PAP-1G18-38	--	11/05/2022	11/04/2023
Bi-log Antenna	SUNOL Sciences	JB3	A021907	11/05/2022	11/04/2023
9*6*6 Anechoic	--	--	--	11/05/2022	11/04/2023
Horn Antenna	COMPLIANCE ENGINEERING	CE18000	--	11/05/2022	11/04/2023
Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-631	11/05/2022	11/04/2023
Cable	TIME MICROWAVE	LMR-400	N-TYPE04	11/05/2022	11/04/2023
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	-	11/05/2022	11/04/2023
Loop Antenna	EMCO	6502	00042960	11/05/2022	11/04/2023
Horn Antenna	SCHWARZBECK	BBHA 9170	1123	11/05/2022	11/04/2023
Power meter	Anritsu	ML2487A	6K00003613	11/05/2022	11/04/2023
Power sensor	Anritsu	MX248XD	--	11/05/2022	11/04/2023
Spectrum Analyzer	Keysight	N9010B	MY60241089	11/05/2022	11/04/2023





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 WiFi antenna 0.86dBi.



Antenna



6.2. Conducted Emission

6.2.1. Test Specification

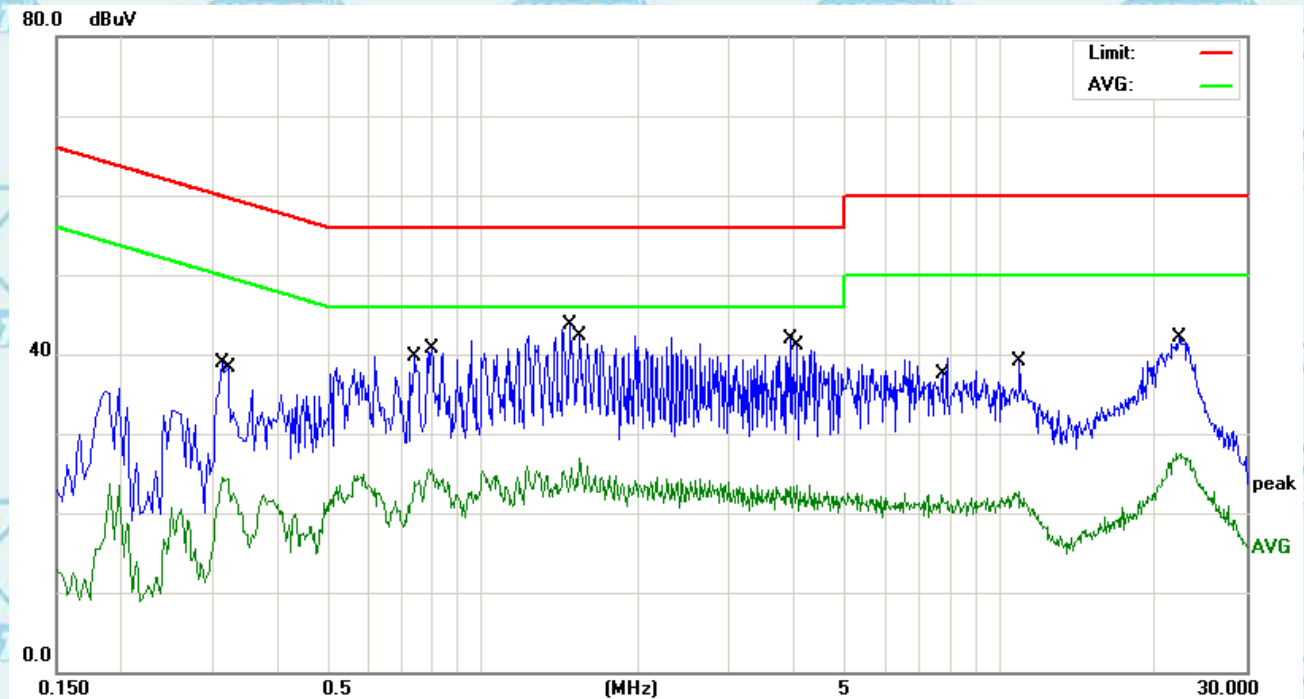
Test Requirement:	FCC Part15 C Section 15.207														
Test Method:	ANSI C63.10:2014														
Frequency Range:	150 kHz to 30 MHz														
Receiver setup:	RBW=9 kHz, VBW=30 kHz, Sweep time=auto														
Limits:	<table><tr><th rowspan="2">Frequency range (MHz)</th><th colspan="2">Limit (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:	Reference Plane 40cm 80cm E.U.T AC power LISN Filter AC power EMI Receiver Test table/Insulation plane Remark E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m														
Test Mode:	Charging + transmitting with modulation														
Test Procedure:	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. 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). 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.														
Test Result:	PASS														



6.2.2. Test data

Please refer to following diagram for individual

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



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1		0.3140	28.41	10.43	38.84	59.86	-21.02	QP
2		0.3220	13.90	10.43	24.33	49.65	-25.32	AVG
3		0.7380	29.27	10.49	39.76	56.00	-16.24	QP
4		0.7900	15.10	10.49	25.59	46.00	-20.41	AVG
5	*	1.4780	33.21	10.58	43.79	56.00	-12.21	QP
6		1.5420	16.40	10.59	26.99	46.00	-19.01	AVG
7		3.9460	31.23	10.68	41.91	56.00	-14.09	QP
8		4.0580	12.88	10.68	23.56	46.00	-22.44	AVG
9		7.6980	11.57	10.74	22.31	50.00	-27.69	AVG
10		10.8860	11.93	10.84	22.77	50.00	-27.23	AVG
11		10.9379	28.23	10.84	39.07	60.00	-20.93	QP
12		22.1980	31.15	11.02	42.17	60.00	-17.83	QP

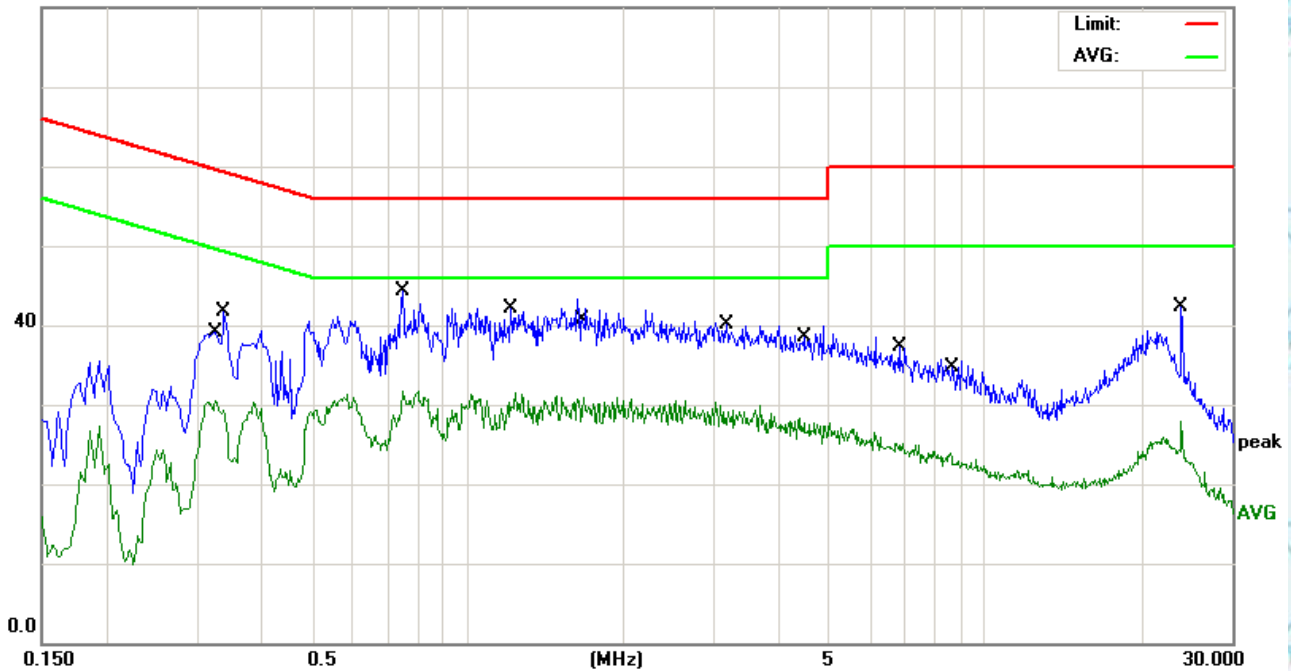


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80.0 dBμV



No.	Mk.	Freq. MHz	Reading Level dBμV	Correct Factor dB	Measure- ment dBμV	Limit dBμV	Over dB	Detector
1		0.3260	20.13	10.44	30.57	49.55	-18.98	AVG
2		0.3379	31.32	10.44	41.76	59.25	-17.49	QP
3	*	0.7500	33.76	10.49	44.25	56.00	-11.75	QP
4		0.7500	21.22	10.49	31.71	46.00	-14.29	AVG
5		1.2100	31.58	10.54	42.12	56.00	-13.88	QP
6		1.6780	20.28	10.61	30.89	46.00	-15.11	AVG
7		3.1619	29.42	10.67	40.09	56.00	-15.91	QP
8		4.4060	17.62	10.68	28.30	46.00	-17.70	AVG
9		6.8260	26.54	10.73	37.27	60.00	-22.73	QP
10		8.5500	13.06	10.76	23.82	50.00	-26.18	AVG
11		23.9980	31.40	10.99	42.39	60.00	-17.61	QP
12		23.9980	16.92	10.99	27.91	50.00	-22.09	AVG

Note:

Freq. = Emission frequency in MHz

Reading level (dBμV) = Receiver reading

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

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

Limit (dBμV) = Limit stated in standard

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

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

Test Requirement:	FCC Part15 C Section 15.247 (b)(3)
Test Method:	KDB 558074
Limit:	30dBm
Test Setup:	 Spectrum Analyzer EUT
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v04. 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. 3. Set to the maximum power setting and enable the EUT transmit continuously. 4. Measure the conducted output power and record the results in the test report.
Test Result:	PASS





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6.2.5. Test Data

Mode	Frequency (MHz)	Total Power (dBm)	Limit (dBm)	Verdict
b	2412	13.51	30	Pass
b	2437	13.55	30	Pass
b	2462	13.15	30	Pass
g	2412	14.56	30	Pass
g	2437	15.38	30	Pass
g	2462	14.23	30	Pass
n20	2412	14.53	30	Pass
n20	2437	15.11	30	Pass
n20	2462	14.53	30	Pass
n40	2422	14.53	30	Pass
n40	2437	14.31	30	Pass
n40	2452	13.72	30	Pass

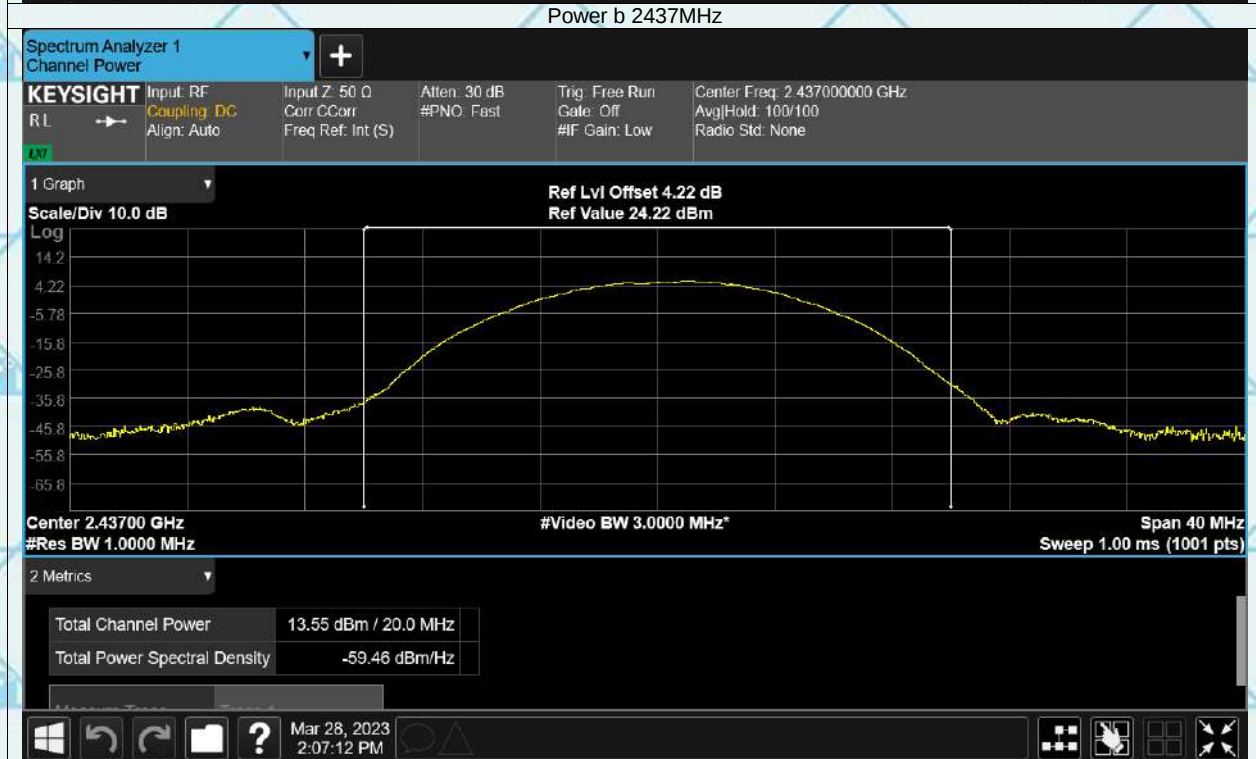
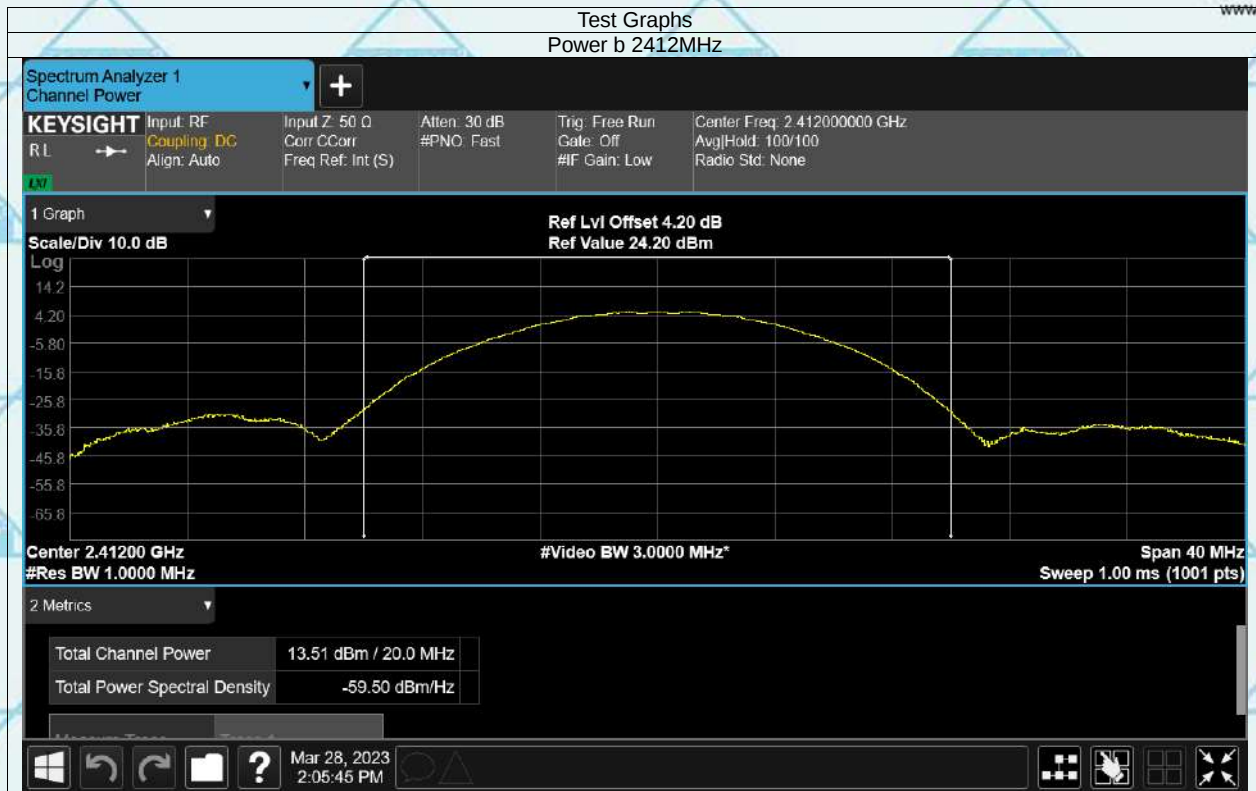




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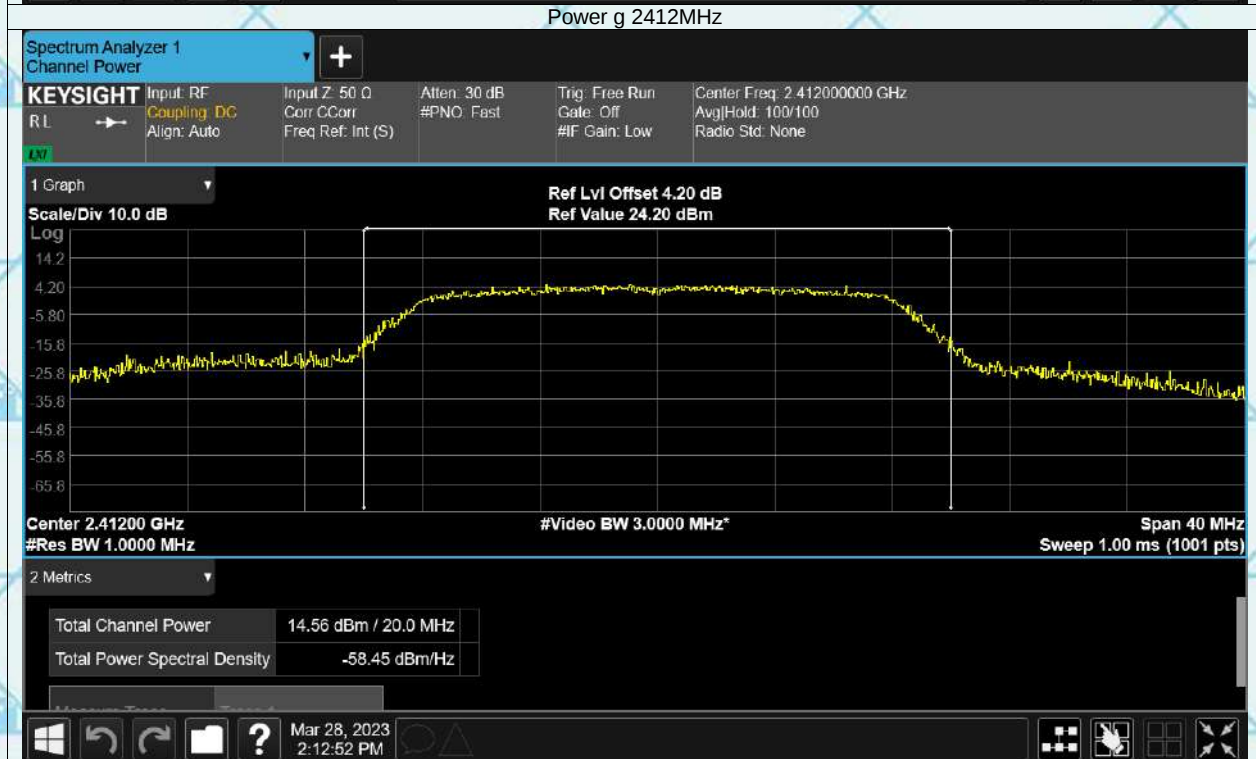
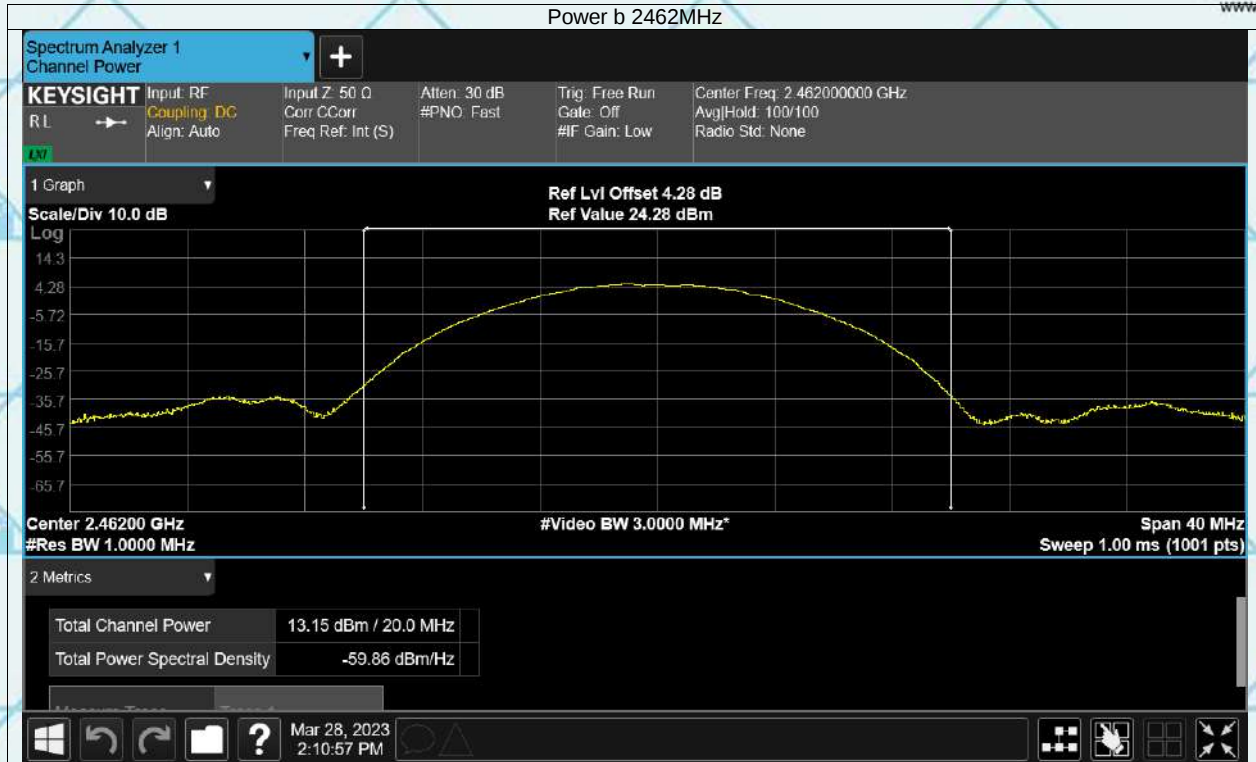




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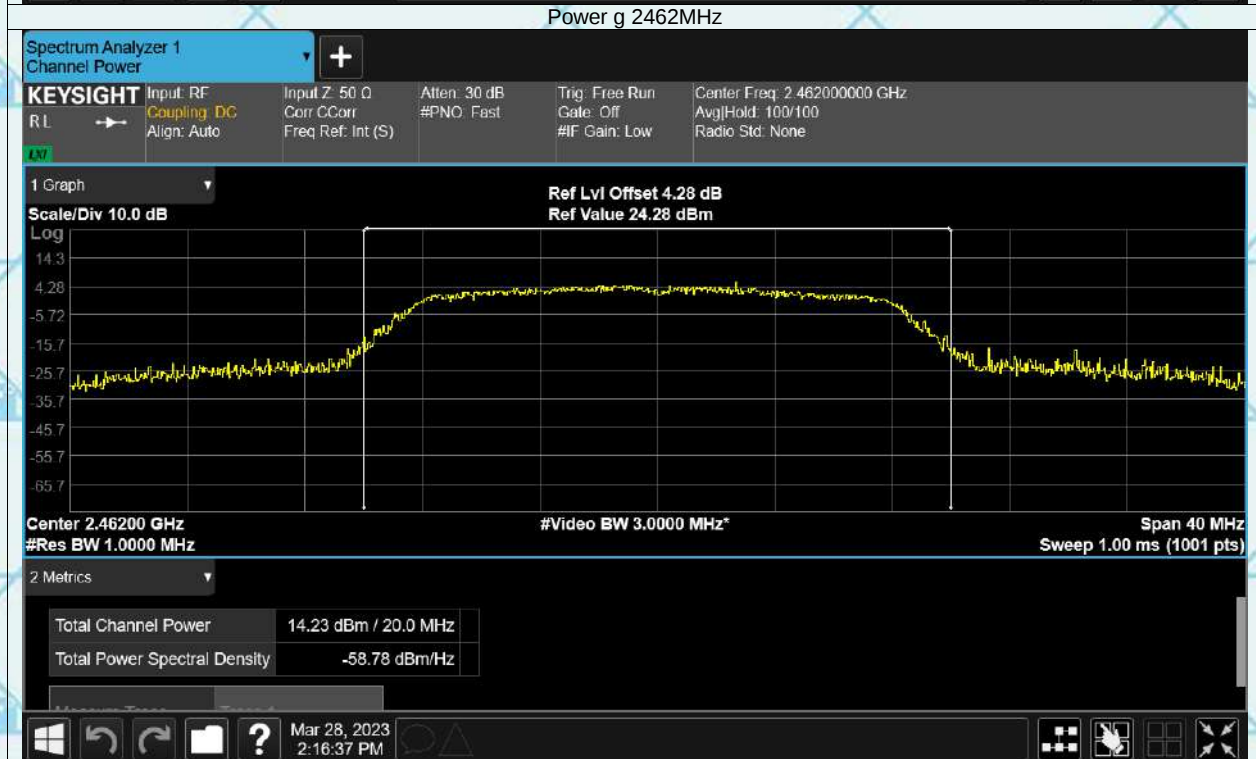
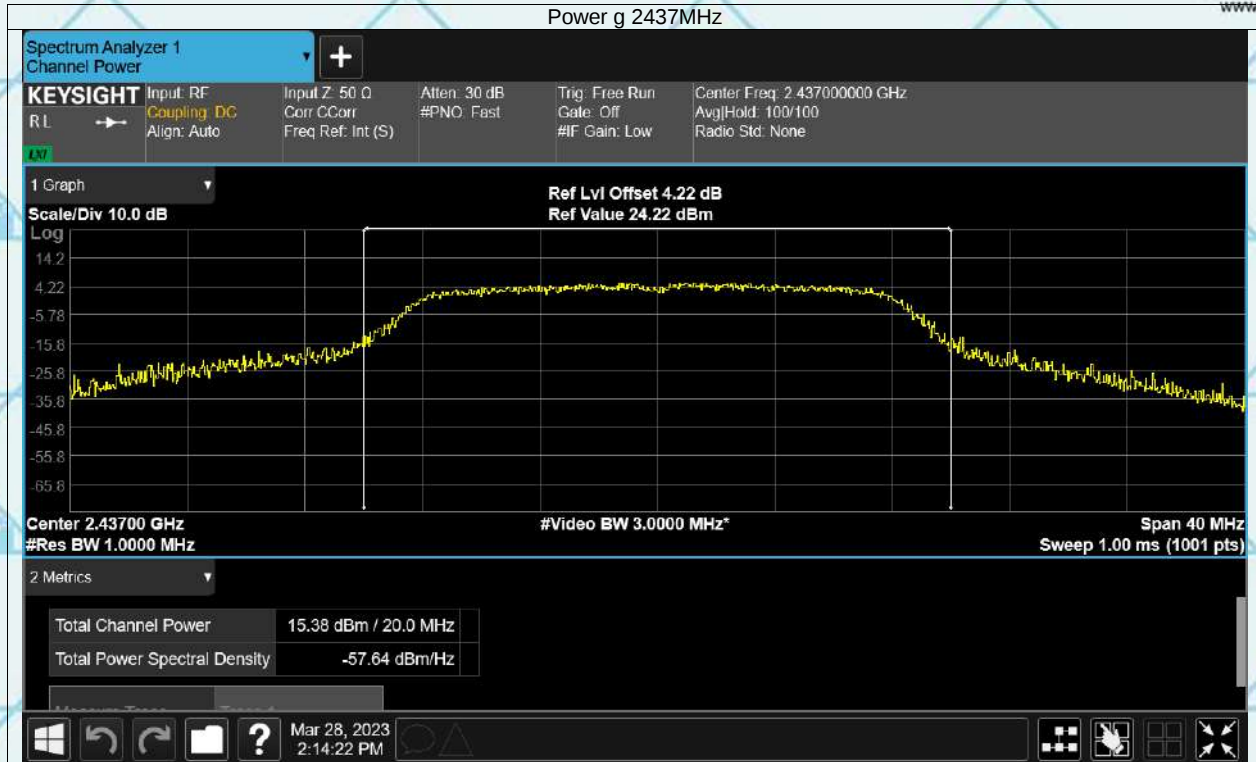




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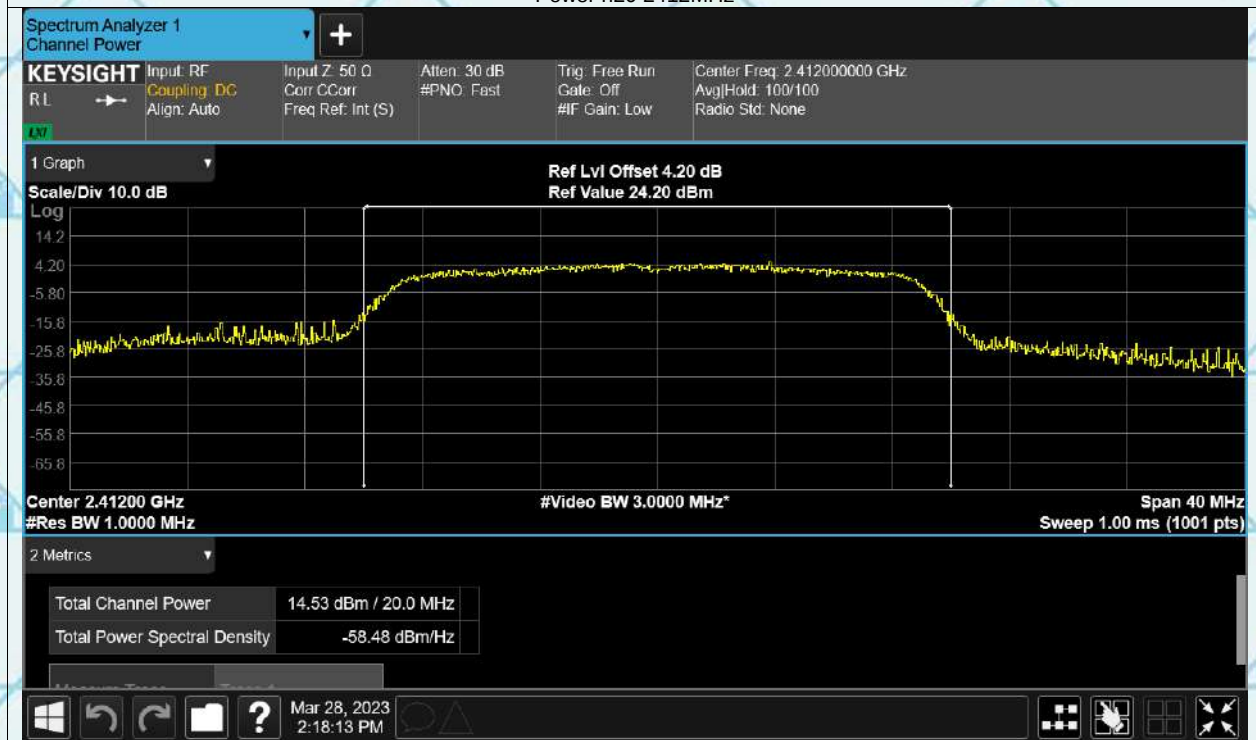


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Power n20 2412MHz



Power n20 2437MHz



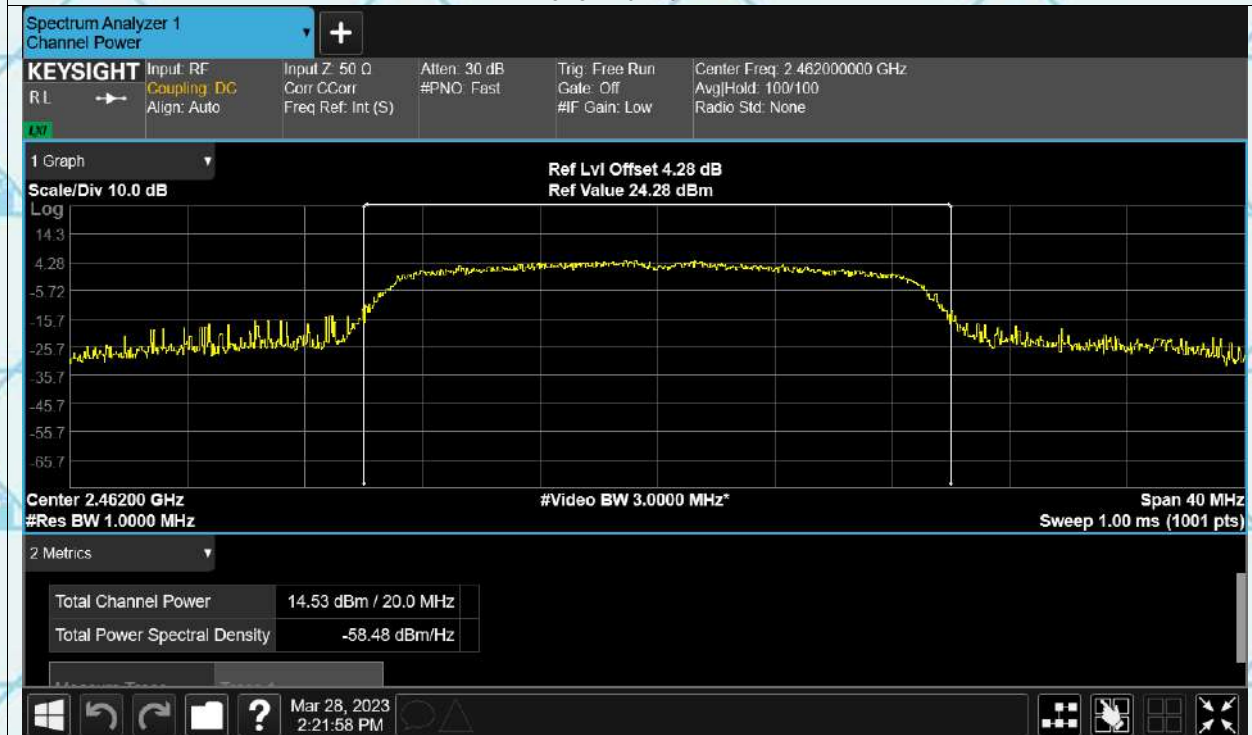


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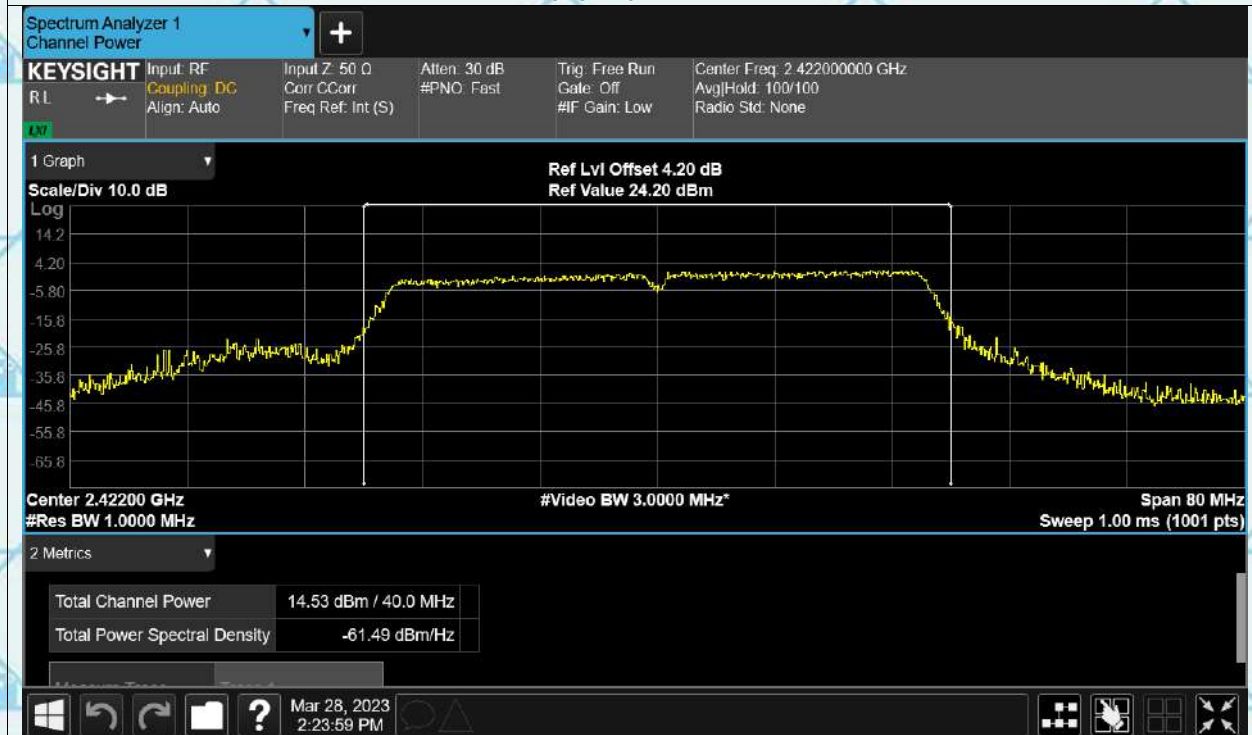
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Power n20 2462MHz



Power n40 2422MHz





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Power n40 2437MHz



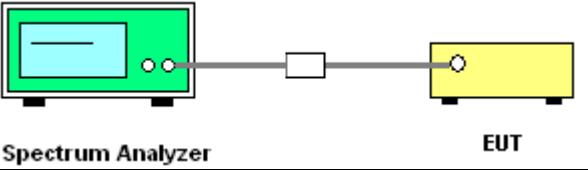
Power n40 2452MHz





6.3. Emission Bandwidth

6.3.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (a)(2)
Test Method:	KDB 558074
Limit:	>500kHz
Test Setup:	 Spectrum Analyzer EUT
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. The testing follows FCC KDB Publication No. 558074 DTS D01 Meas. Guidance v04. 2. Set to the maximum power setting and enable the EUT transmit continuously. 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. 4. Measure and record the results in the test report.
Test Result:	PASS



6.3.2. Test data(worst)

Mode	Frequency (MHz)	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
b	2412	8.491	0.5	Pass
b	2437	7.527	0.5	Pass
b	2462	7.555	0.5	Pass
g	2412	15.067	0.5	Pass
g	2437	15.091	0.5	Pass
g	2462	12.711	0.5	Pass
n20	2412	15.269	0.5	Pass
n20	2437	16.149	0.5	Pass
n20	2462	15.629	0.5	Pass
n40	2422	35.748	0.5	Pass
n40	2437	21.283	0.5	Pass
n40	2452	18.795	0.5	Pass



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Certificate #5768.01

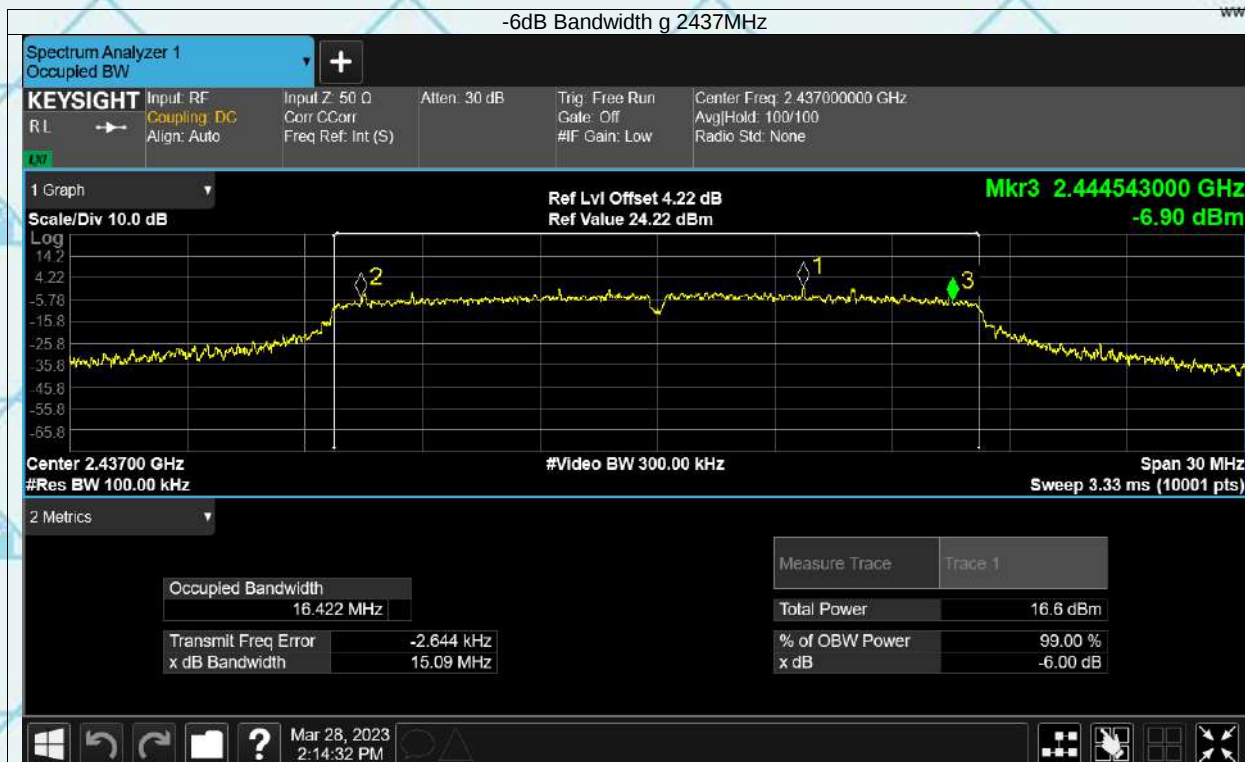
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Report No.: WSCT-A2LA-R&E230300006A-Wi-Fi1

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Report No.: WSCT-A2LA-R&E230300006A-Wi-Fi1

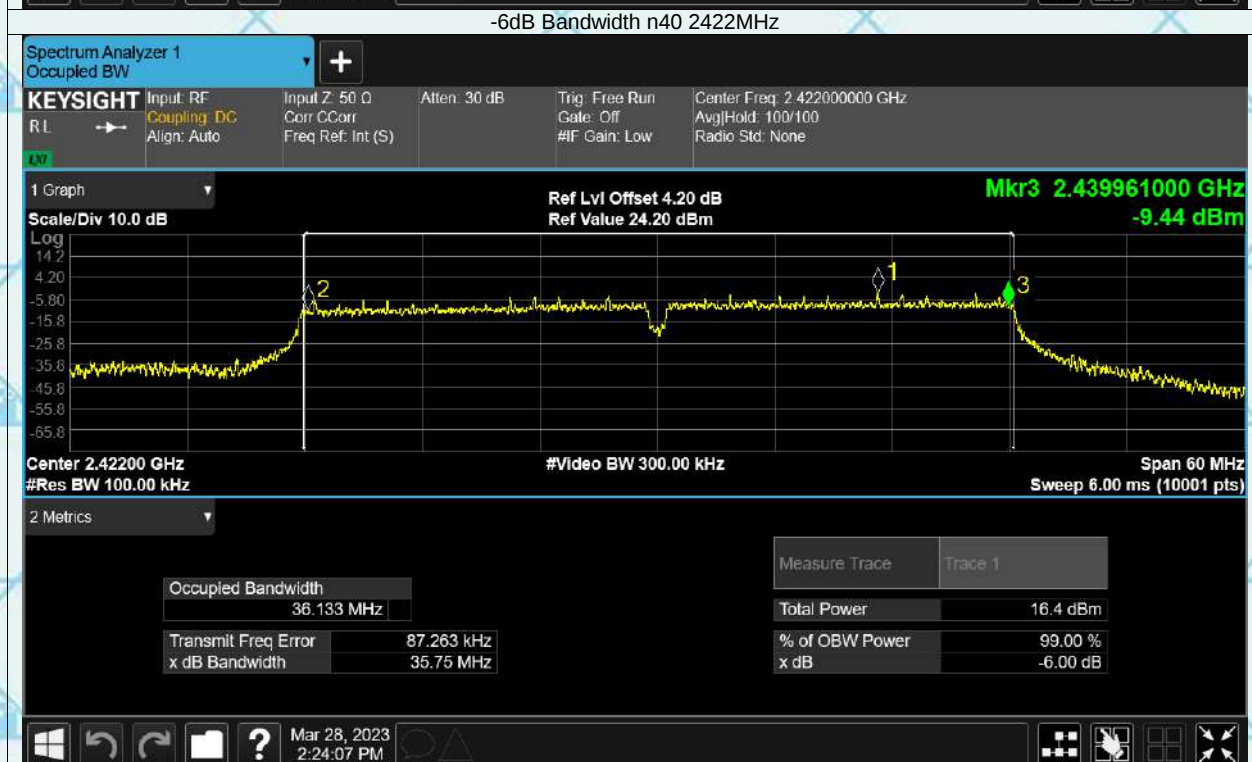
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6.4. Power Spectral Density

6.4.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (e)
Test Method:	KDB 558074
Limit:	The average power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.
Test Setup:	 Spectrum Analyzer EUT
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. The testing follows Measurement Procedure 10.3 Method AVGPSD of FCC KDB Publication No.558074 D01 DTS Meas. Guidance v04 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. 3. Set to the maximum power setting and enable the EUT transmit continuously. 4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW): $3\text{ kHz} \leq \text{RBW} \leq 100\text{ kHz}$. Video bandwidth VBW $\geq 3 \times \text{RBW}$. Set the span to at least 1.5 times the OBW. 5. Detector = RMS, Sweep time = auto couple. 6. Employ trace averaging (RMS) mode over a minimum of 100 traces. Use the peak marker function to determine the maximum power level. 6. Measure and record the results in the test report.
Test Result:	PASS



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Mode	Frequency (MHz)	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
b	2412	-9.93	8	Pass
b	2437	-10.27	8	Pass
b	2462	-11.07	8	Pass
g	2412	-14.87	8	Pass
g	2437	-14.66	8	Pass
g	2462	-15.5	8	Pass
n20	2412	-14.34	8	Pass
n20	2437	-14.41	8	Pass
n20	2462	-14.92	8	Pass
n40	2422	-18.12	8	Pass
n40	2437	-16	8	Pass
n40	2452	-15.92	8	Pass





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PSD b 2412MHz

PSD b 2437MHz





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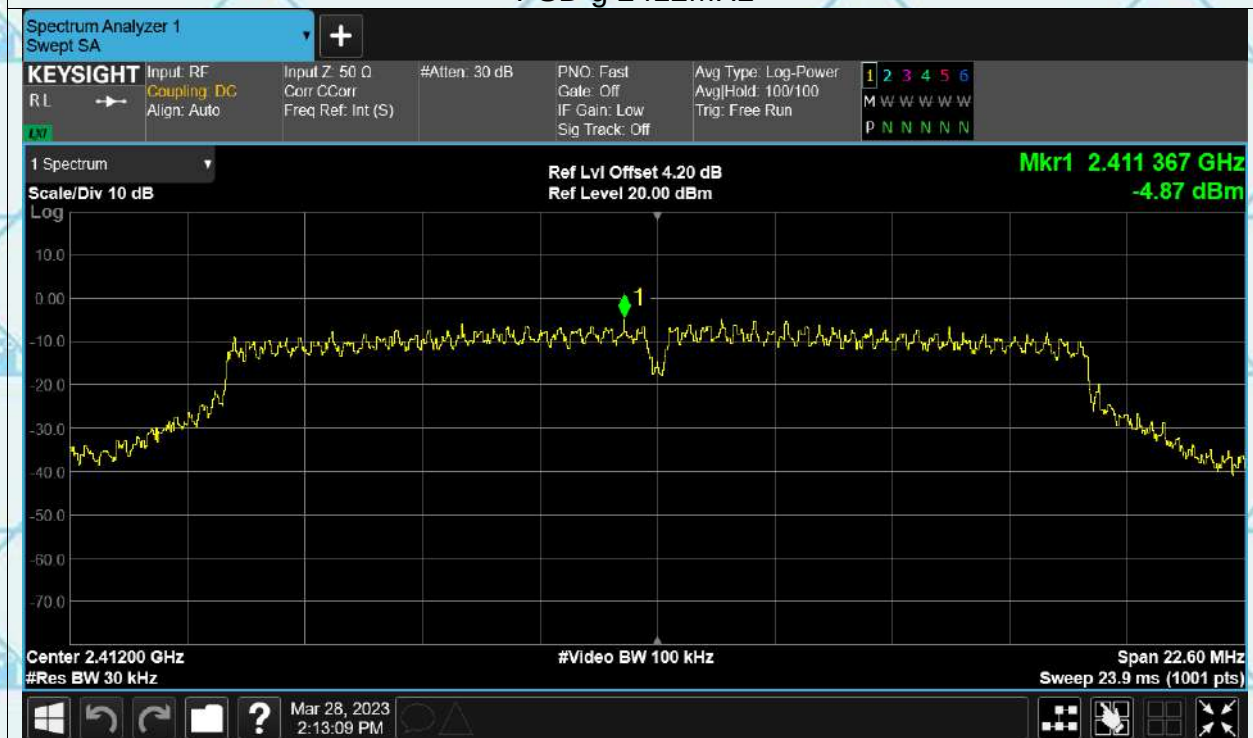
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PSD b 2462MHz



PSD g 2412MHz



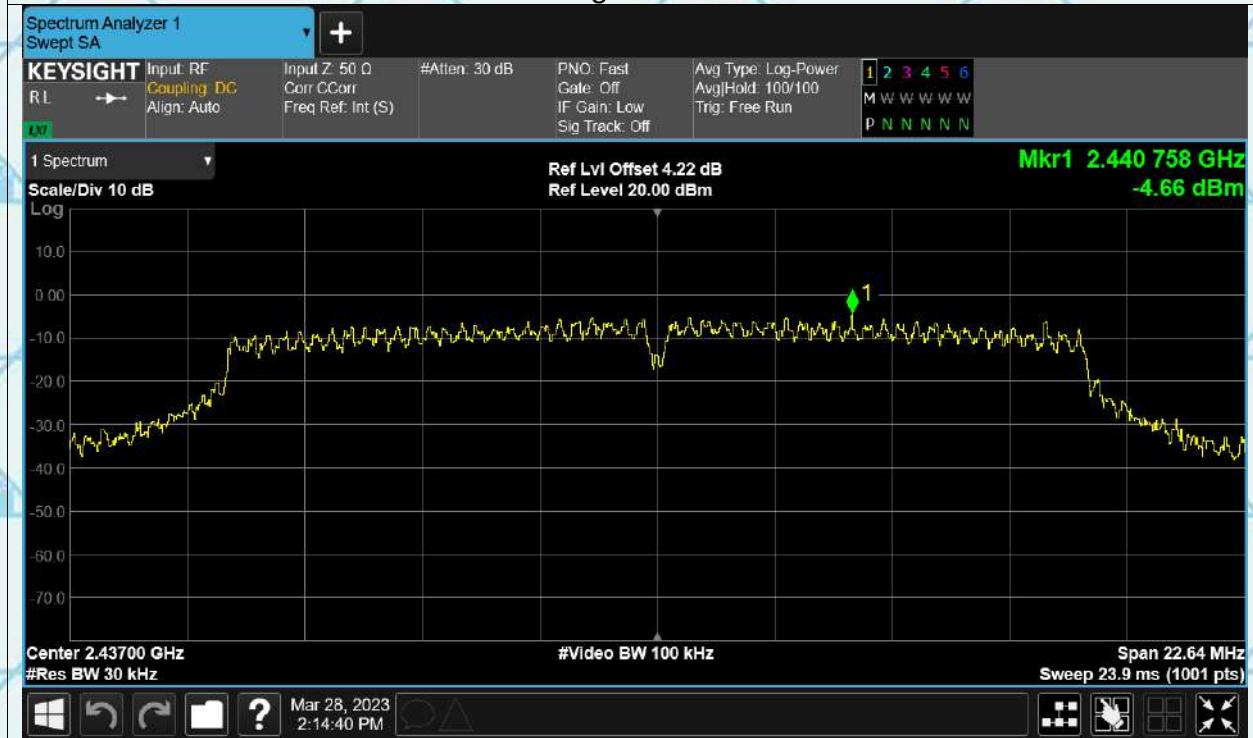


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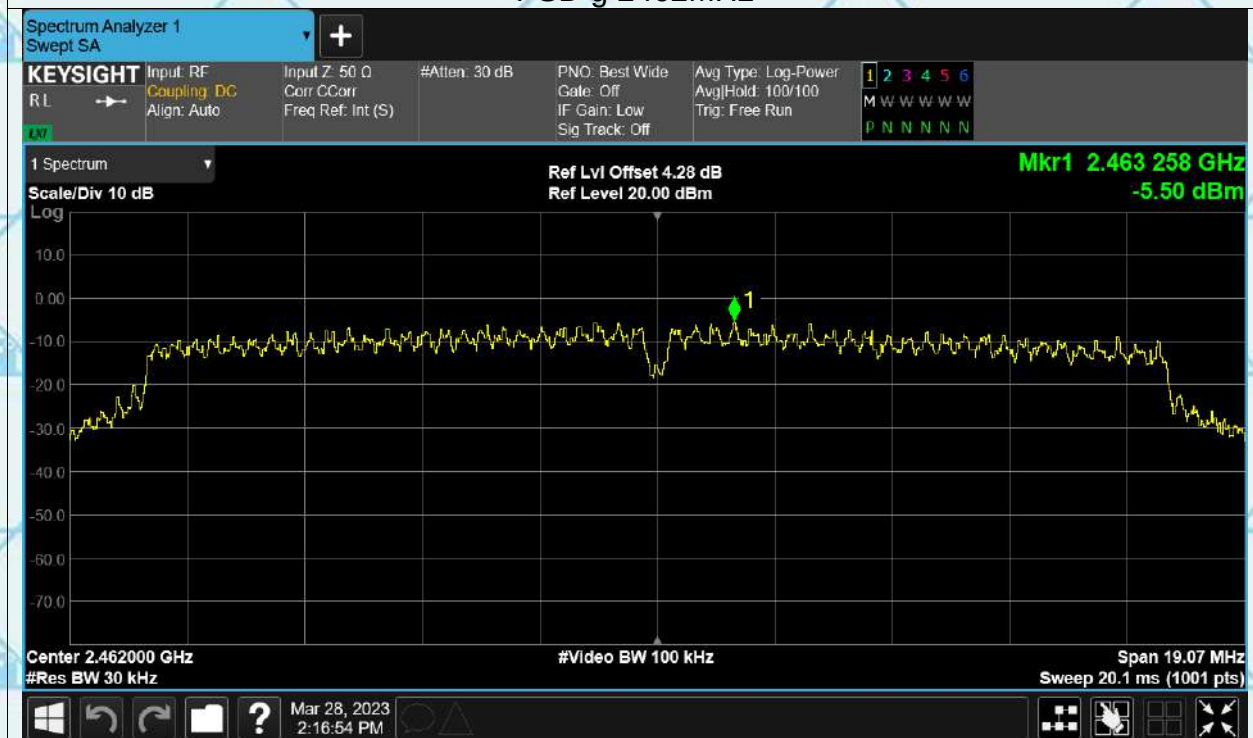
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PSD g 2437MHz



PSD g 2462MHz



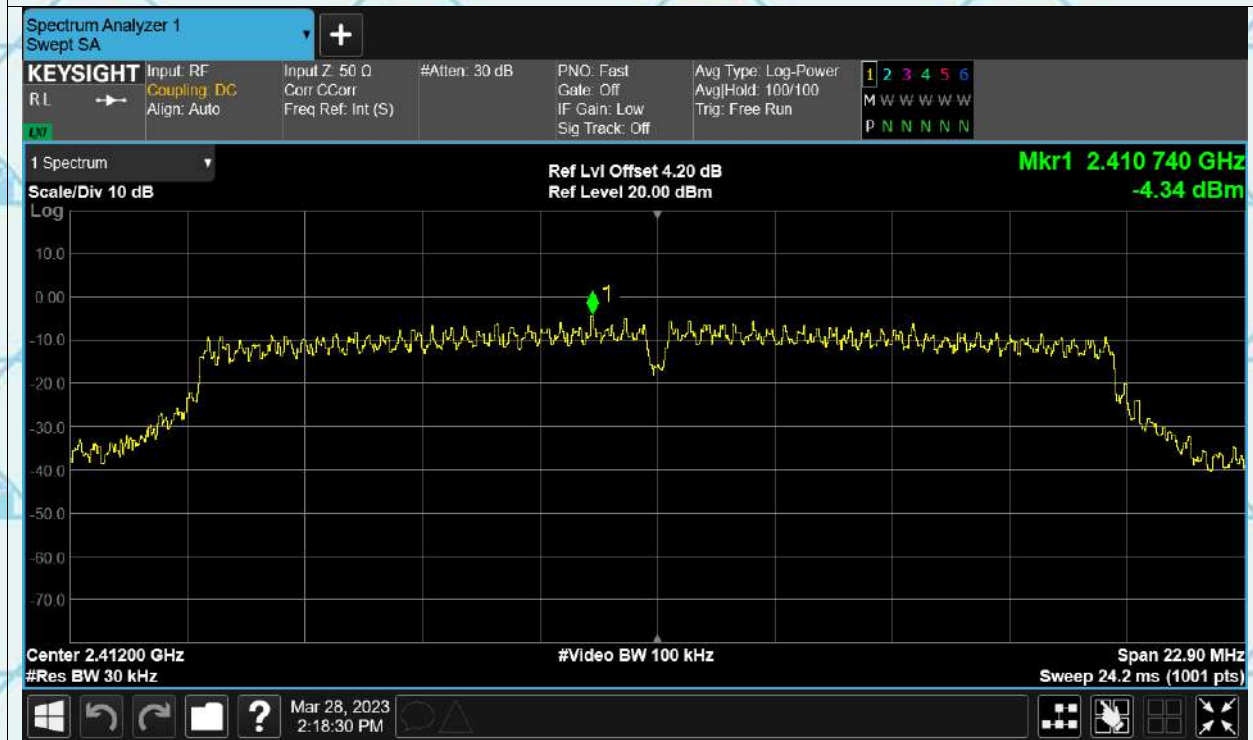


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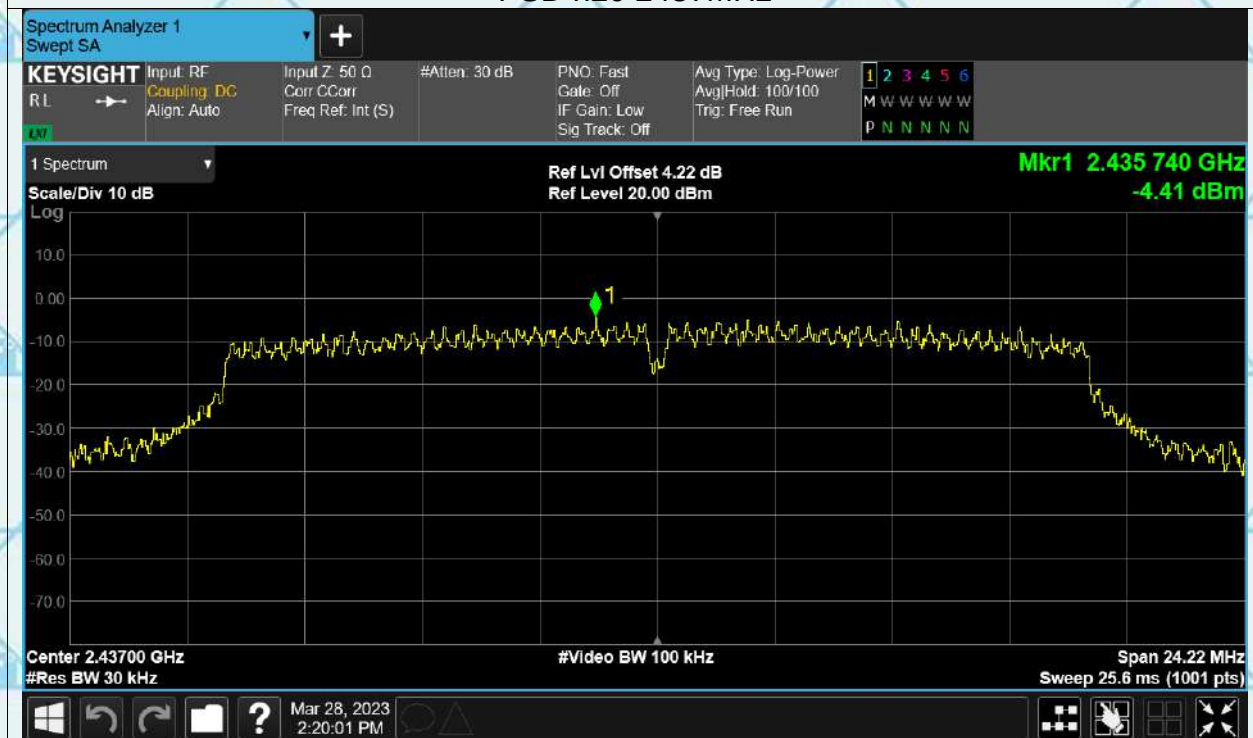
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PSD n20 2412MHz



PSD n20 2437MHz



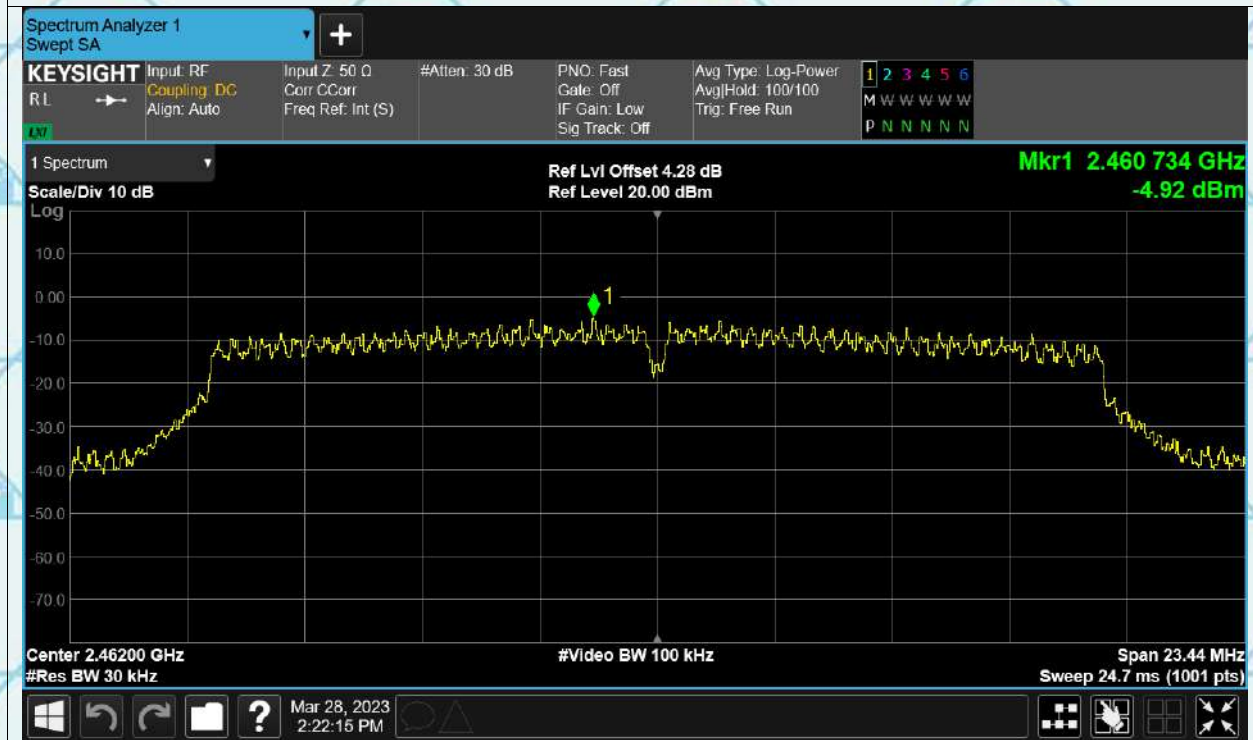


Report No.: WSCT-A2LA-R&E230300006A-Wi-Fi1

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PSD n20 2462MHz



PSD n40 2422MHz



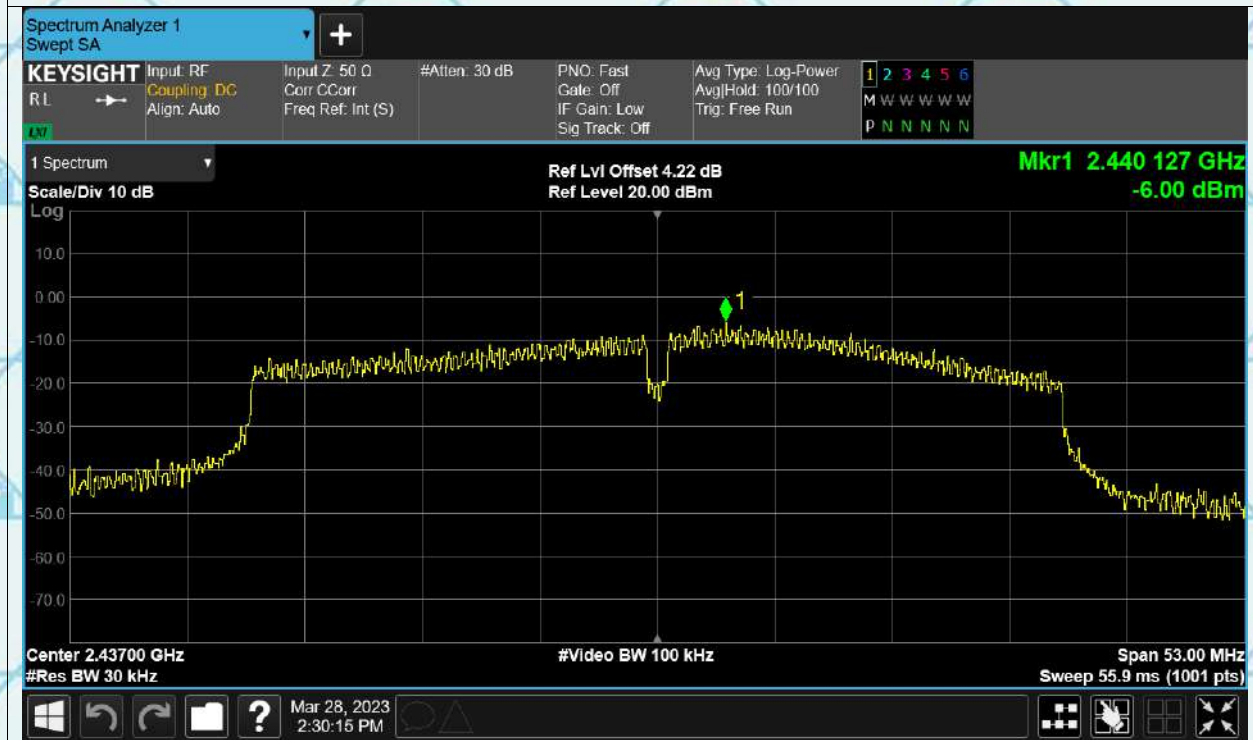


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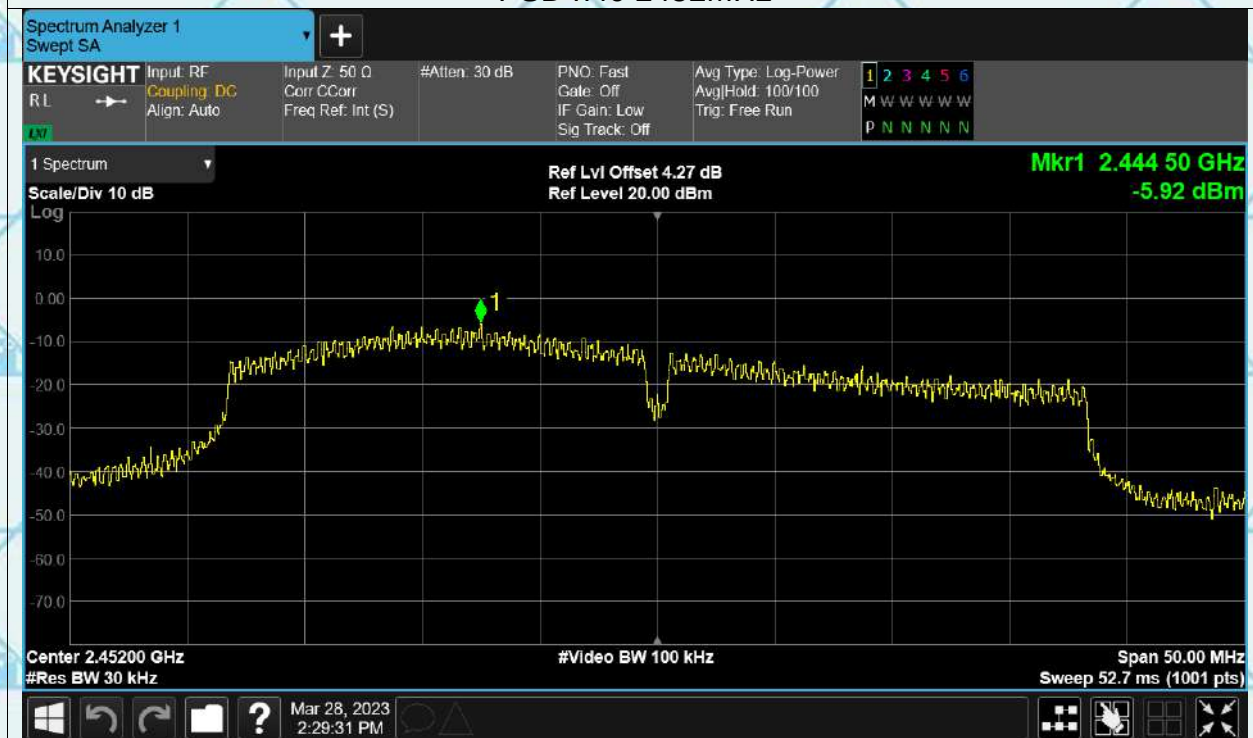
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PSD n40 2437MHz



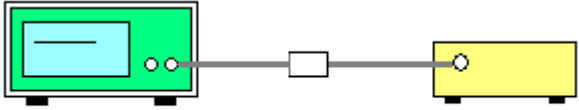
PSD n40 2452MHz





6.5. Conducted Band Edge and Spurious Emission Measurement

6.5.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	KDB558074
Limit:	In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement and radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).
Test Setup:	 Spectrum Analyzer EUT
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v04. 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. 3. Set to the maximum power setting and enable the EUT transmit continuously. 4. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15.247(d). 5. Measure and record the results in the test report. 6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
Test Result:	PASS



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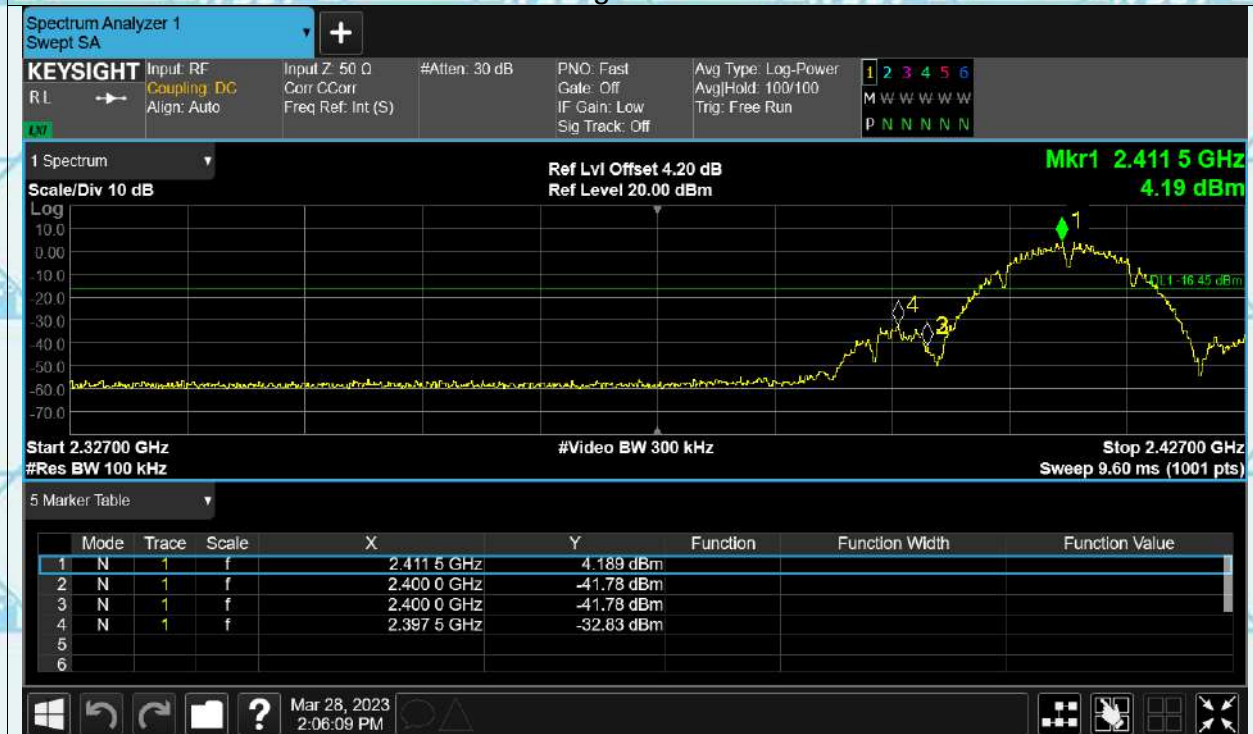
6.5.2. Test Data

Band Edge

Band Edge b 2412MHz



Band Edge b 2412MHz





Report No.: WSCT-A2LA-R&E230300006A-Wi-Fi1

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Band Edge b 2462MHz



Band Edge b 2462MHz





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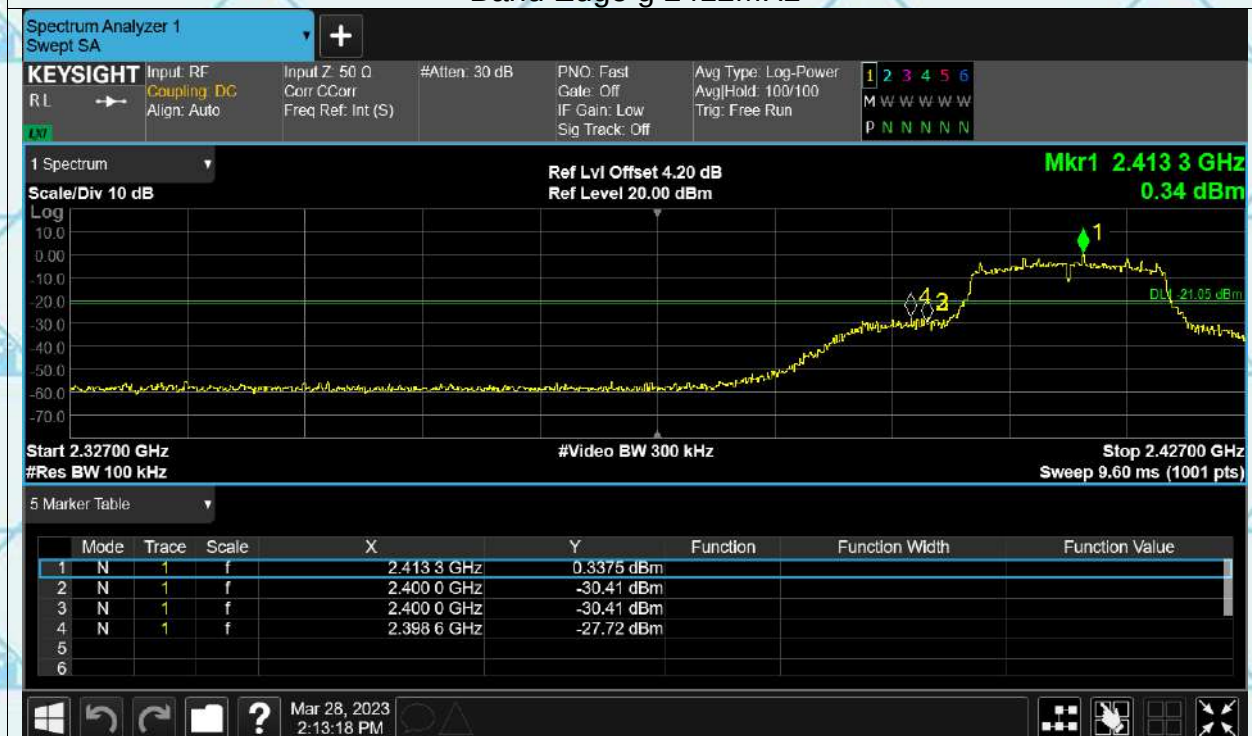
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Band Edge g 2412MHz



Band Edge g 2412MHz





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Band Edge g 2462MHz



Band Edge g 2462MHz





Report No.: WSCT-A2LA-R&E230300006A-Wi-Fi1

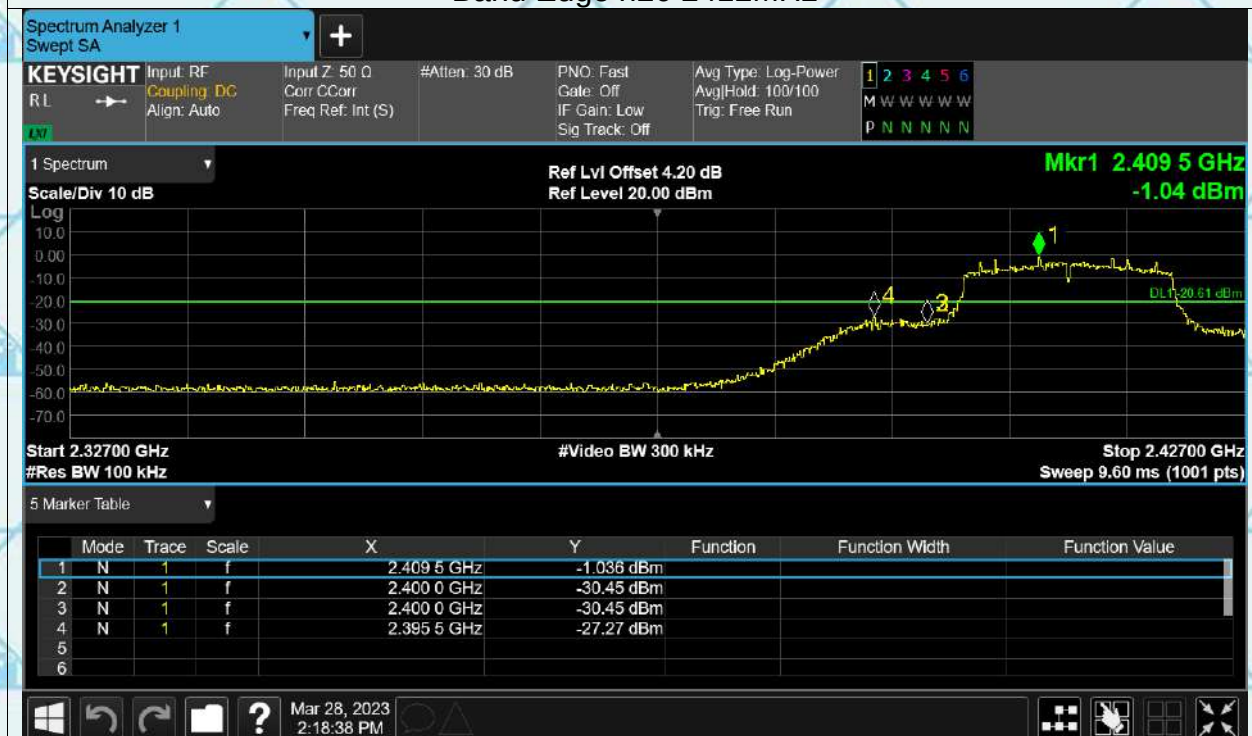
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Band Edge n20 2412MHz



Band Edge n20 2412MHz





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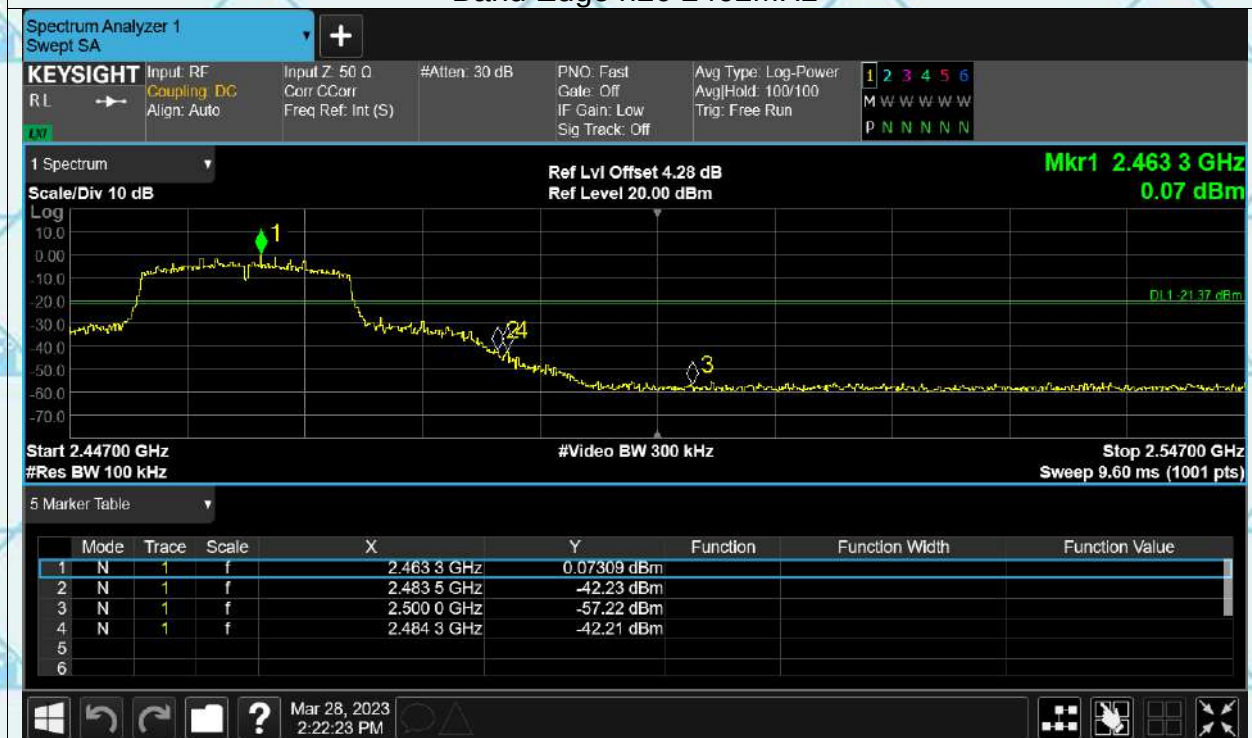
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Band Edge n20 2462MHz



Band Edge n20 2462MHz



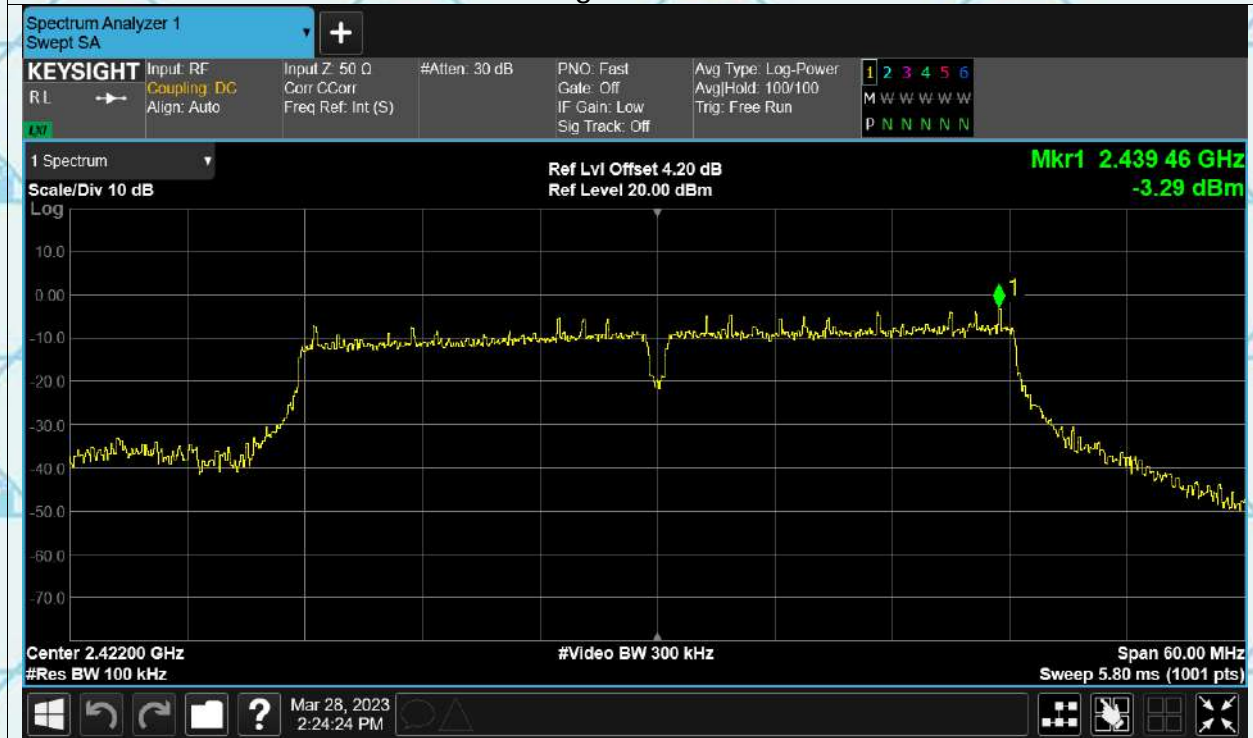


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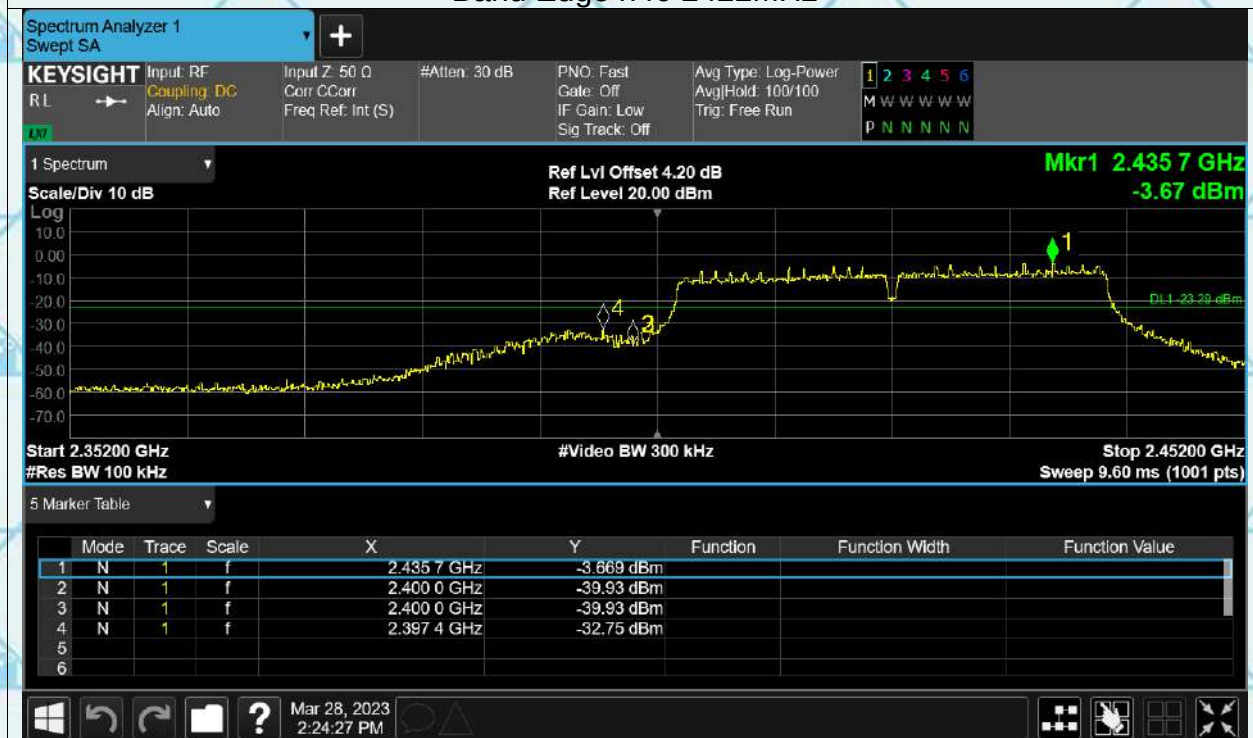
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Band Edge n40 2422MHz



Band Edge n40 2422MHz



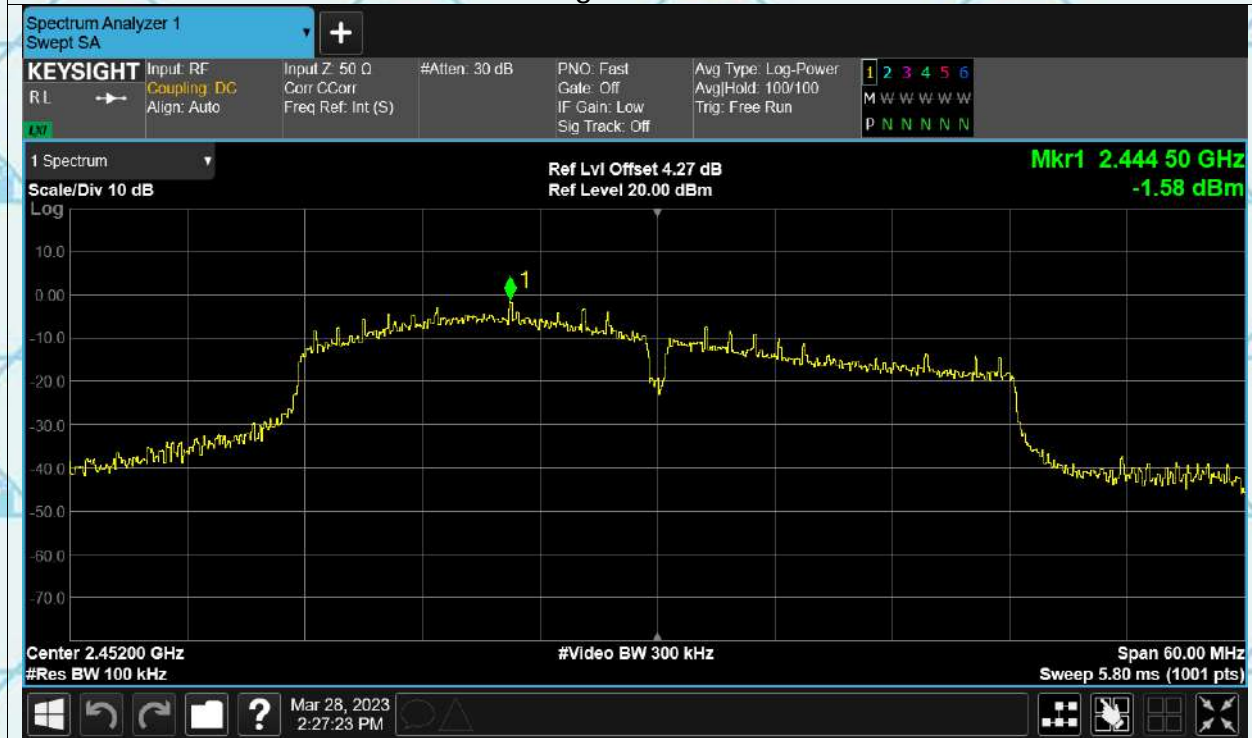


Report No.: WSCT-A2LA-R&E230300006A-Wi-Fi1

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Band Edge n40 2452MHz



Band Edge n40 2452MHz





Report No.: WSCT-A2LA-R&E230300006A-Wi-Fi1

Certificate #5768.01

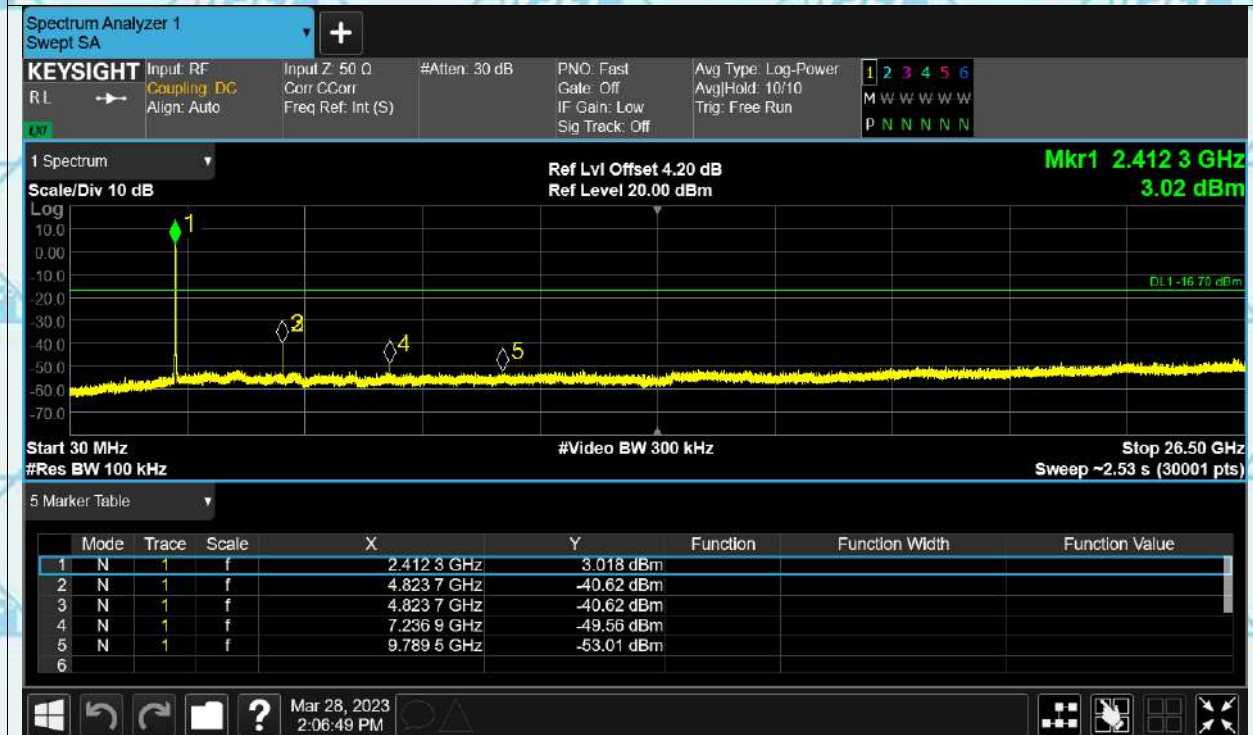
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Conducted RF Spurious Emission

Test Graphs b 2412MHz



b 2412MHz





Report No.: WSCT-A2LA-R&E230300006A-Wi-Fi1

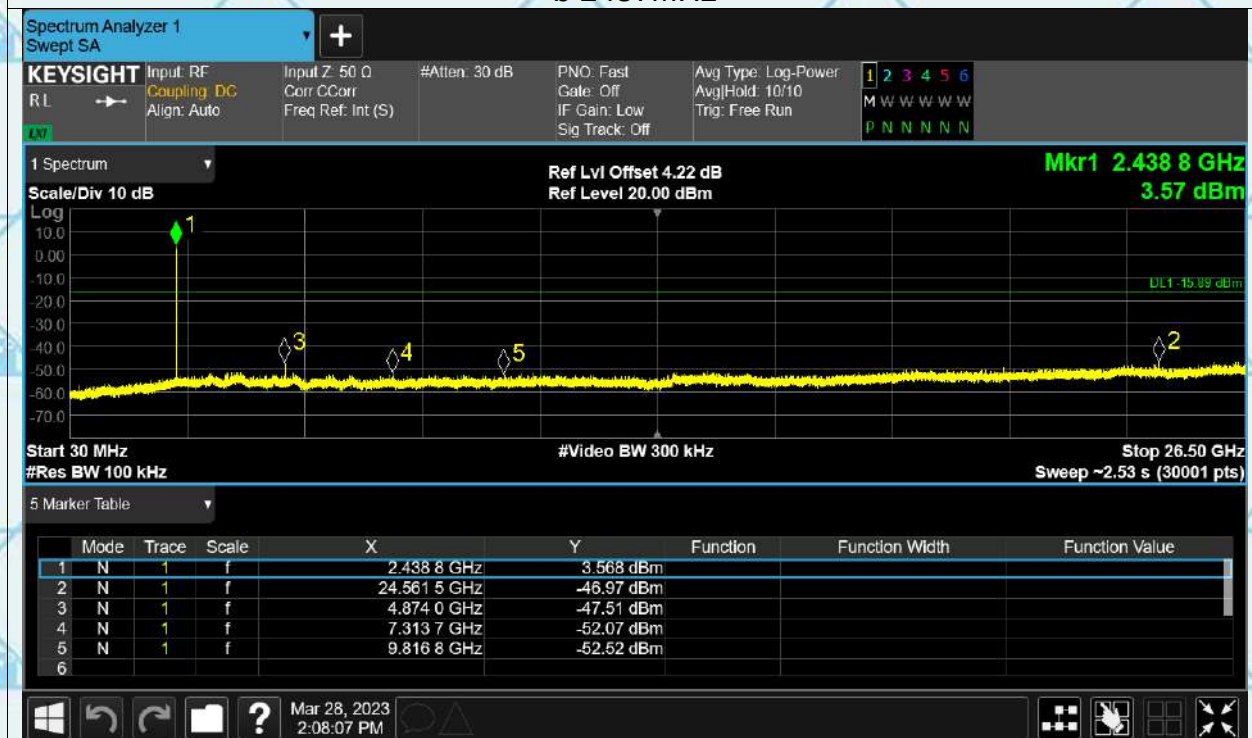
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b 2437MHz



b 2437MHz



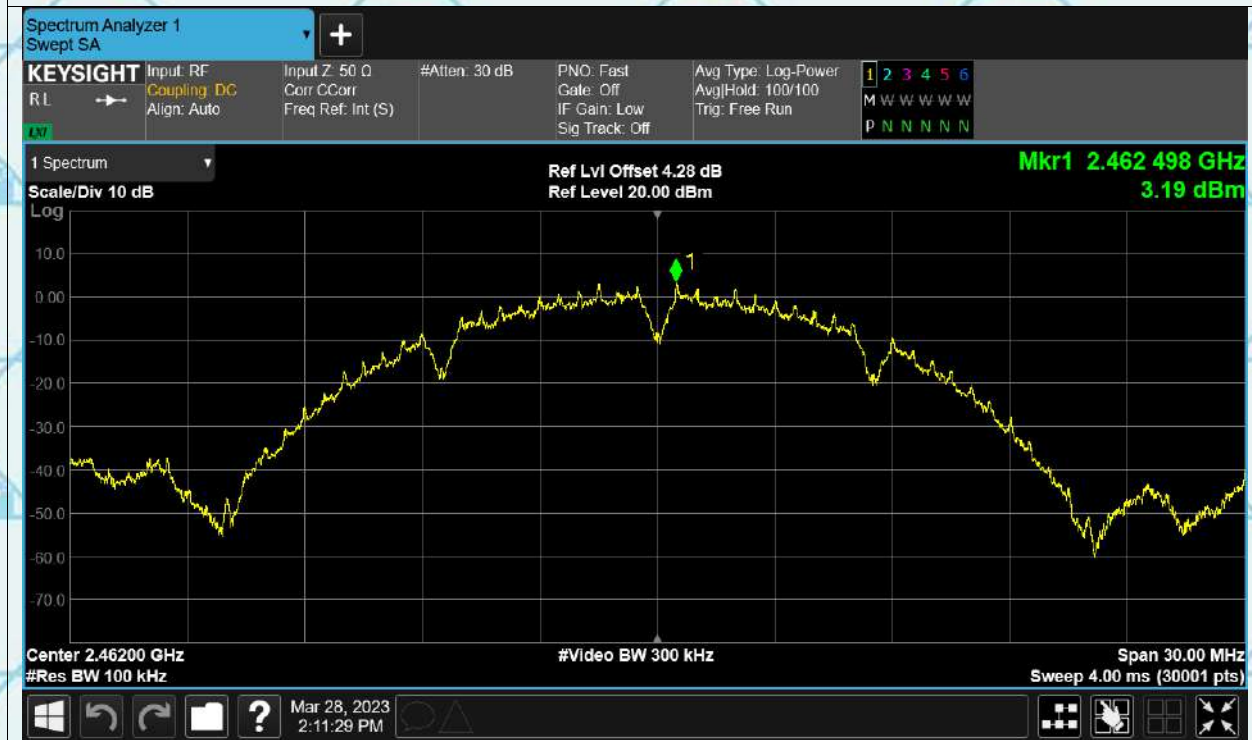


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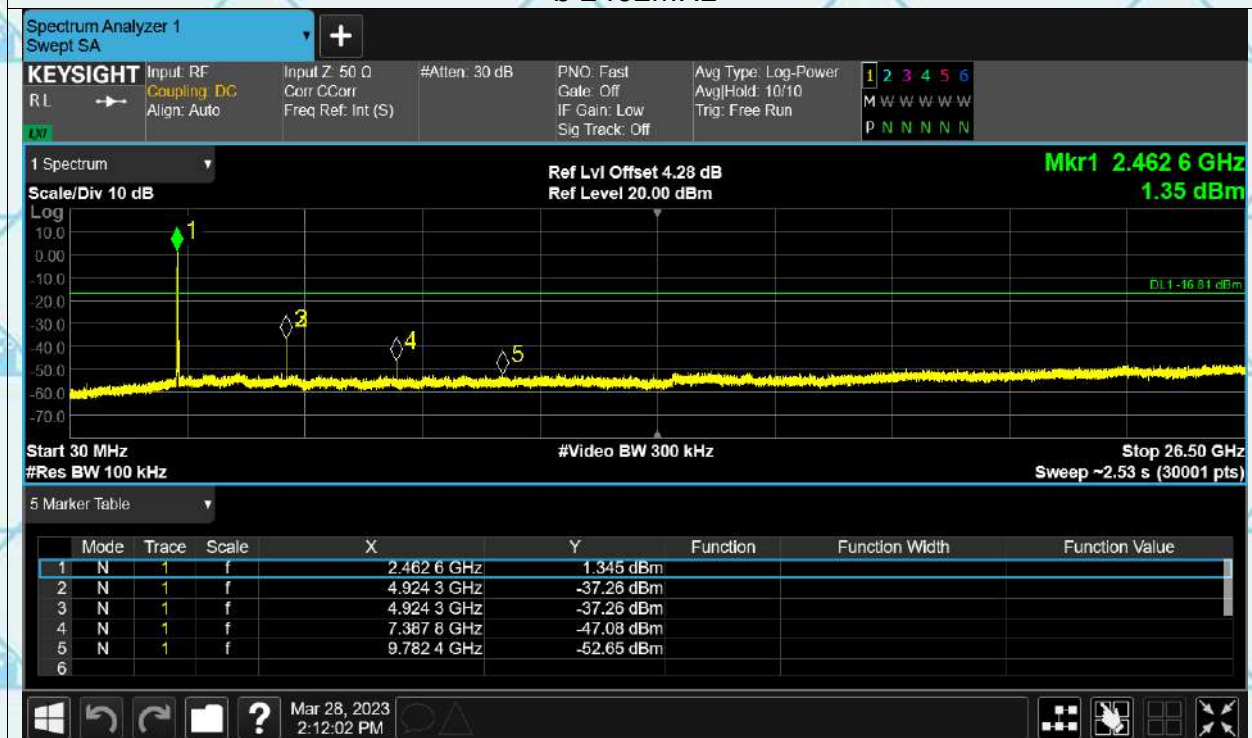
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b 2462MHz



b 2462MHz





Report No.: WSCT-A2LA-R&E230300006A-Wi-Fi1

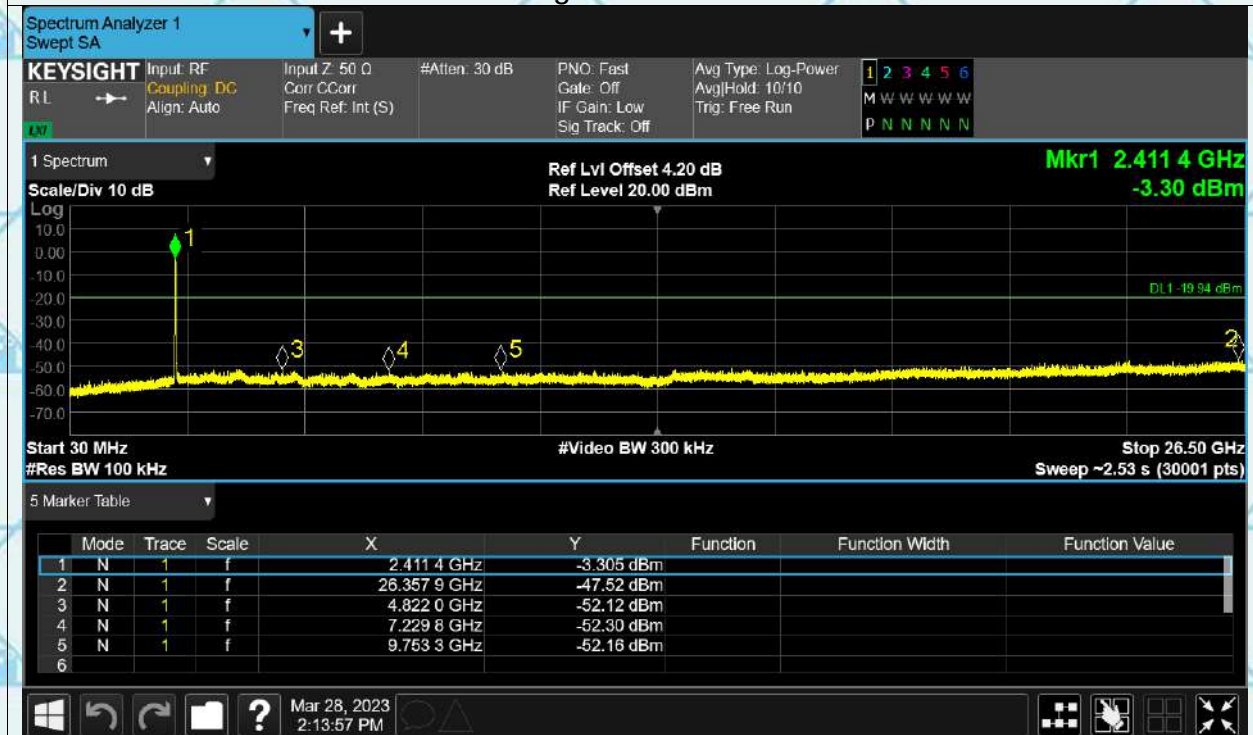
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g 2412MHz



g 2412MHz





Report No.: WSCT-A2LA-R&E230300006A-Wi-Fi1

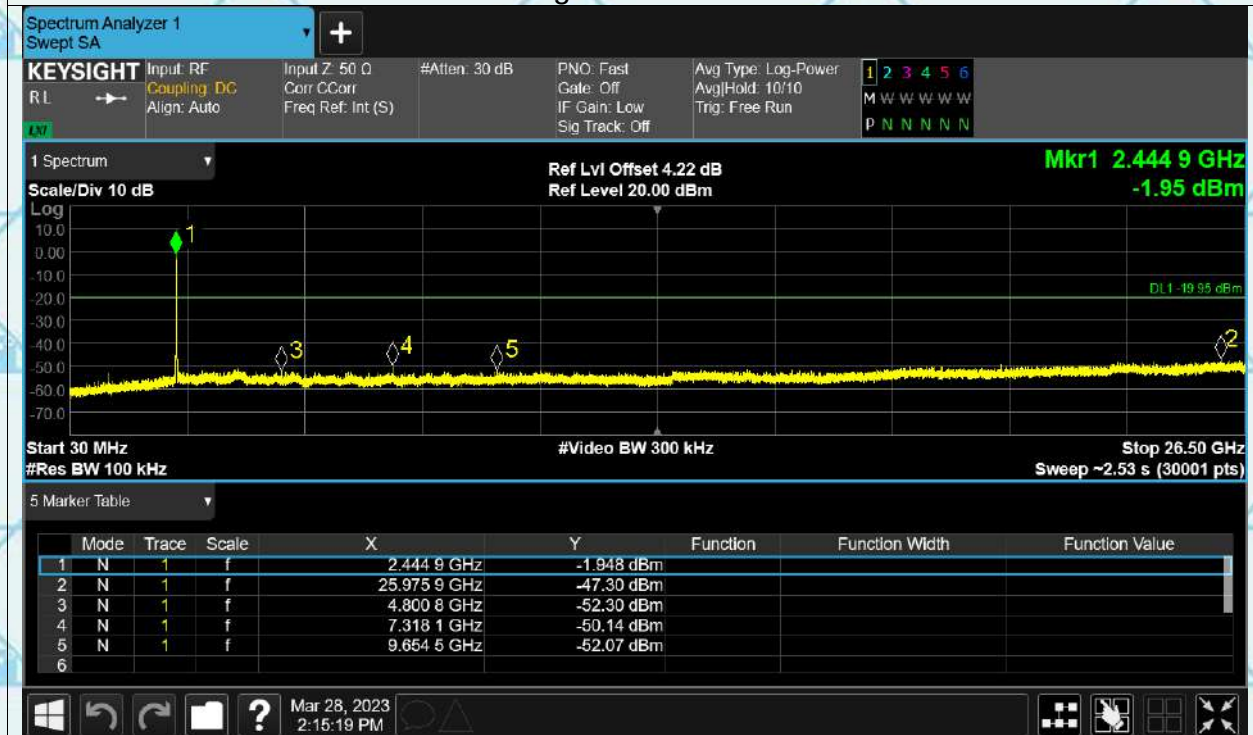
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g 2437MHz



g 2437MHz





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g 2462MHz



g 2462MHz



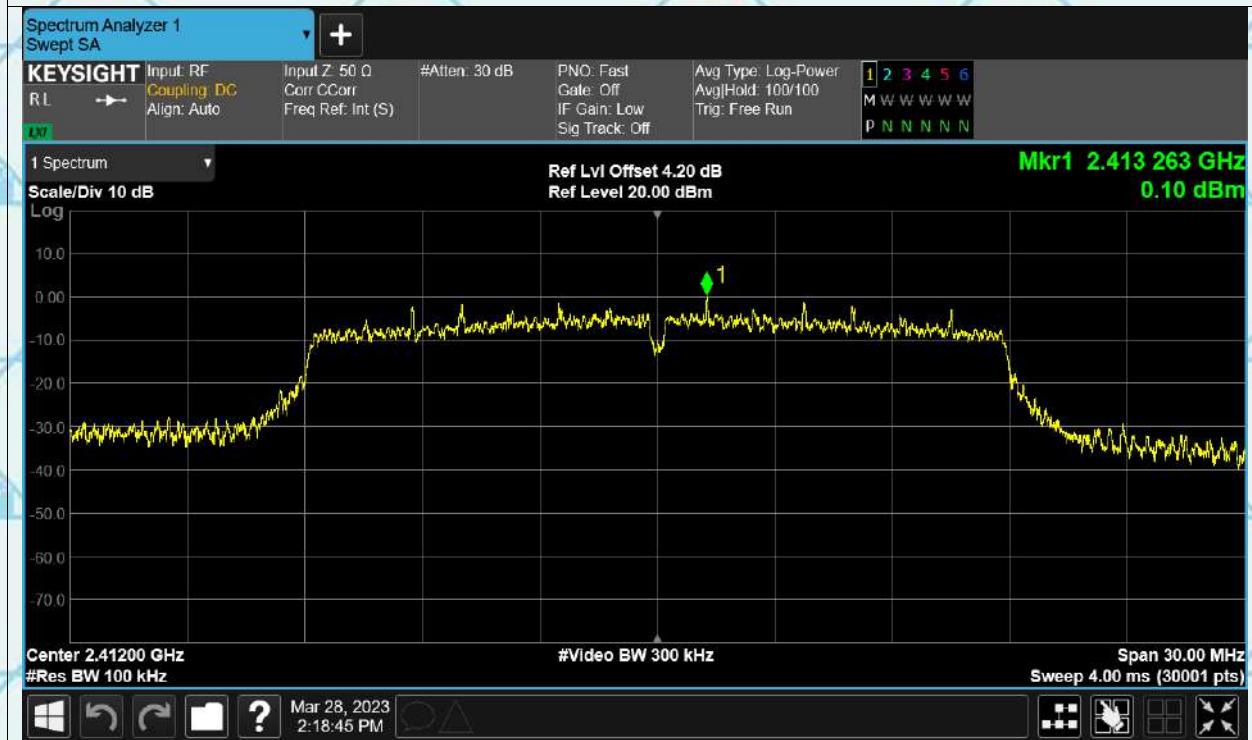


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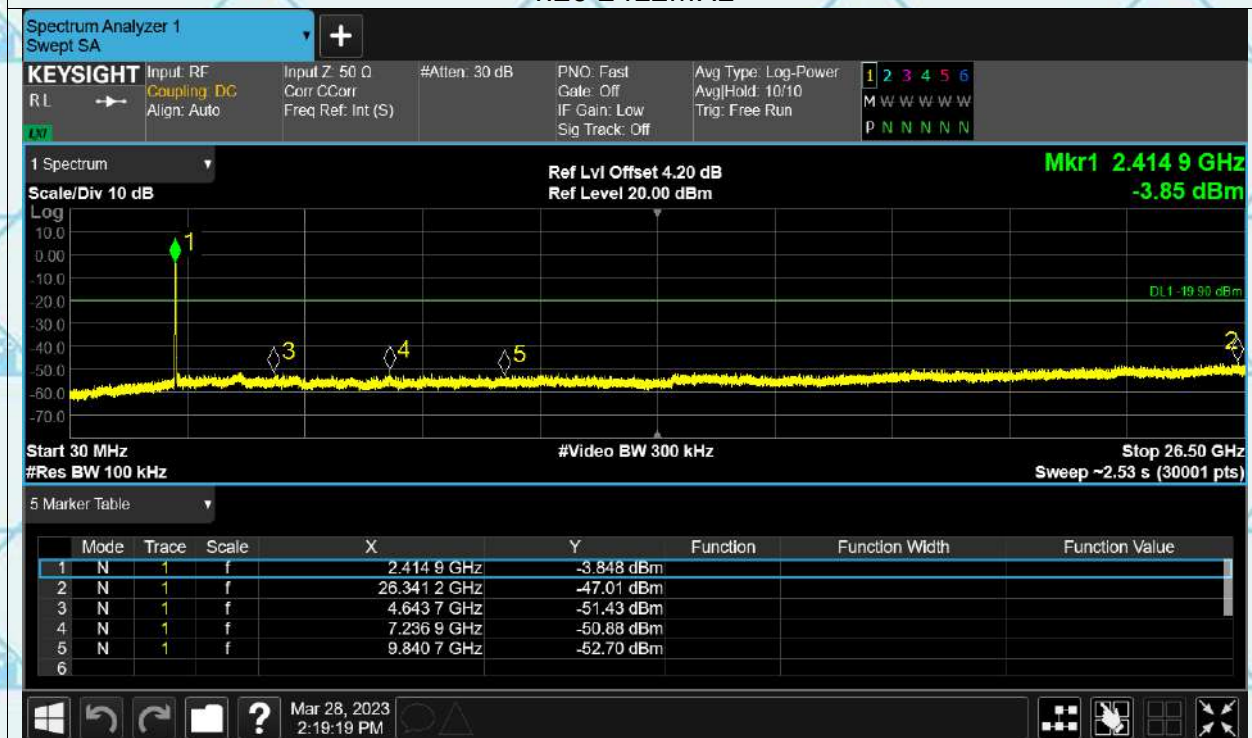
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n20 2412MHz



n20 2412MHz



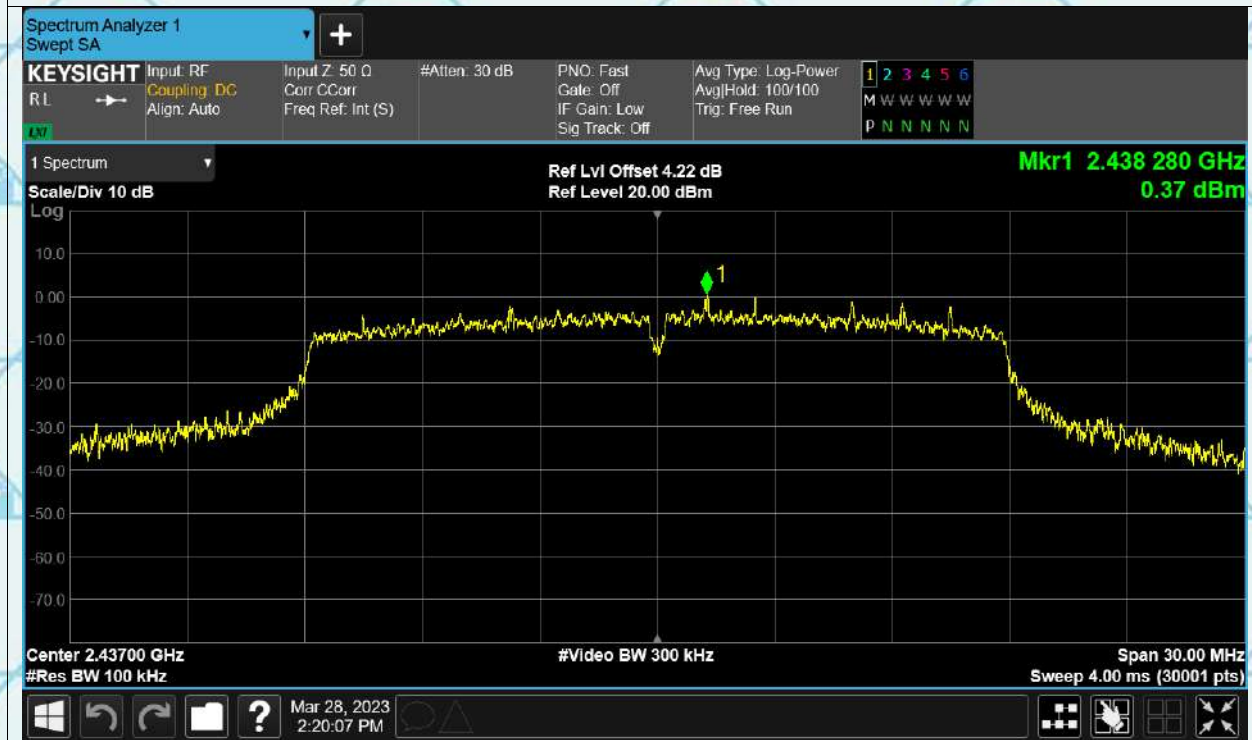


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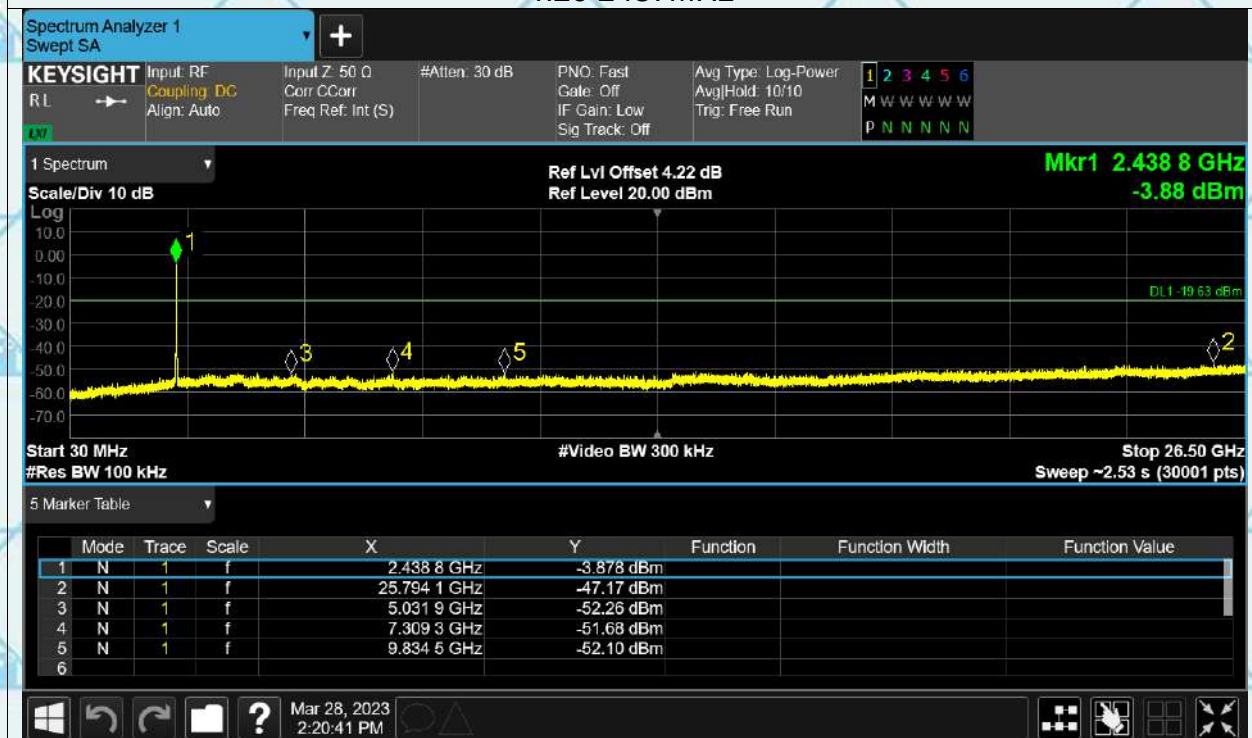
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n20 2437MHz



n20 2437MHz



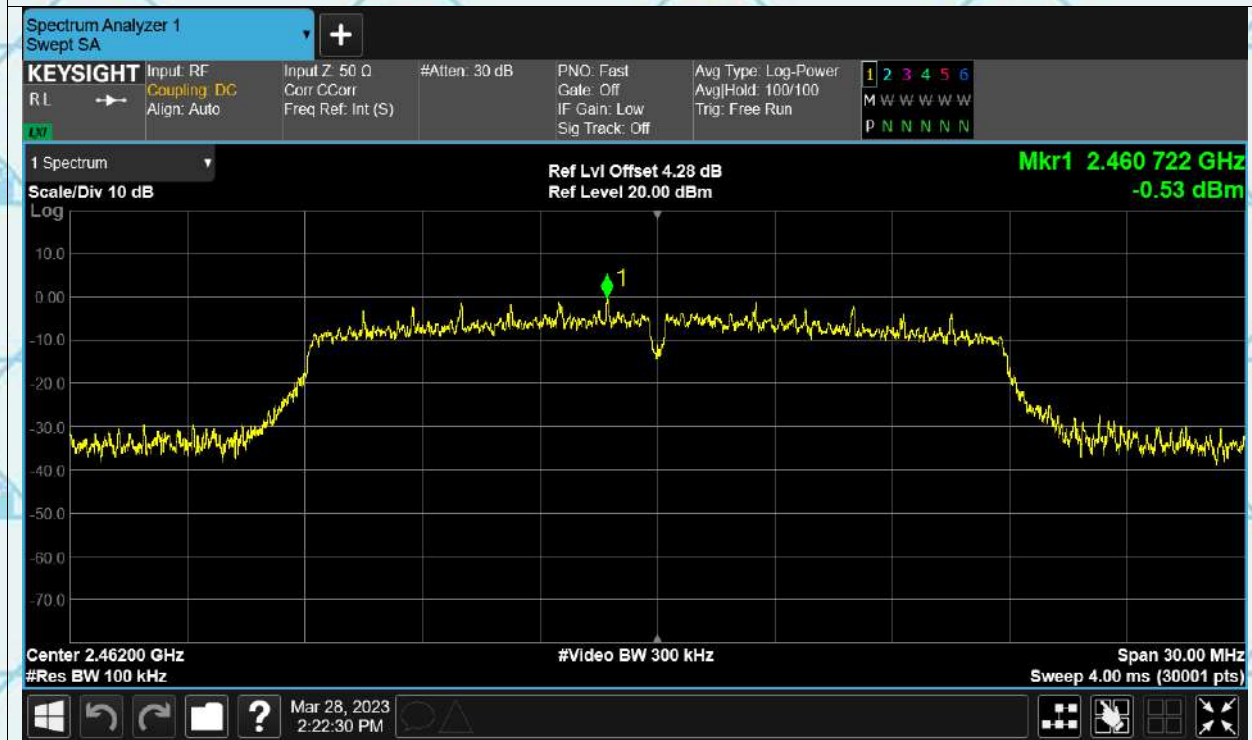


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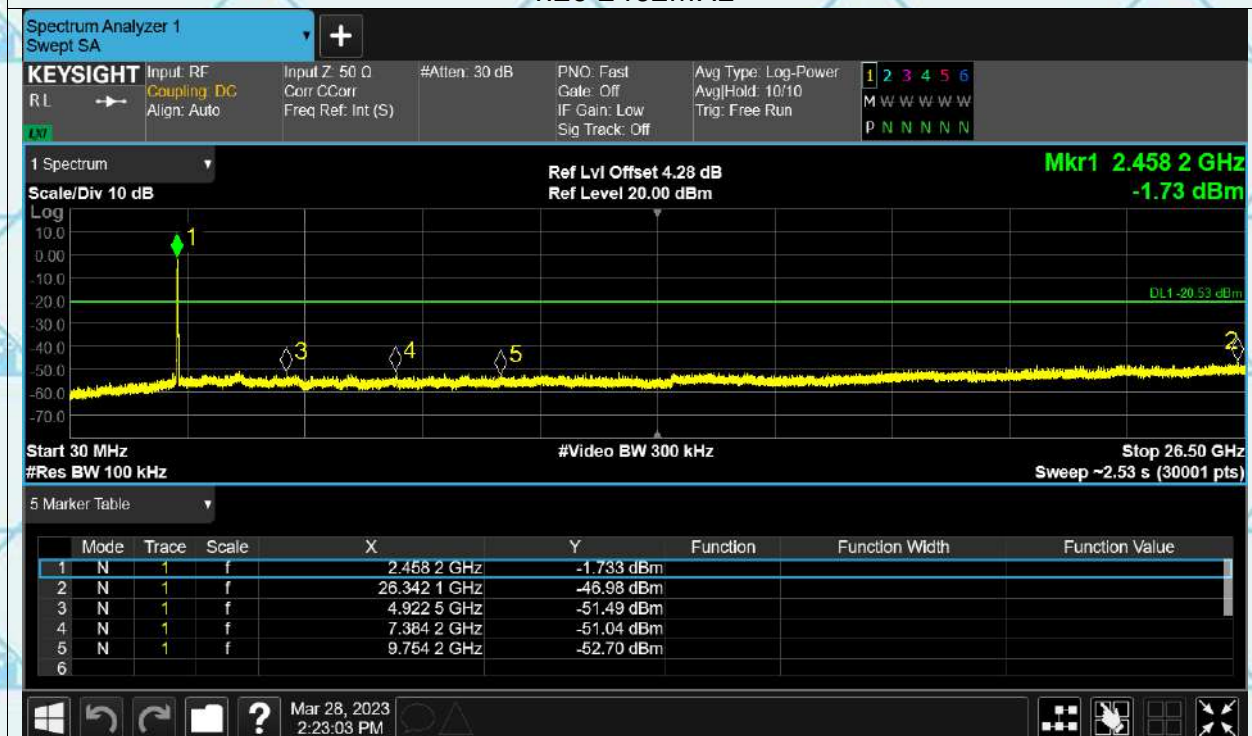
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n20 2462MHz



n20 2462MHz



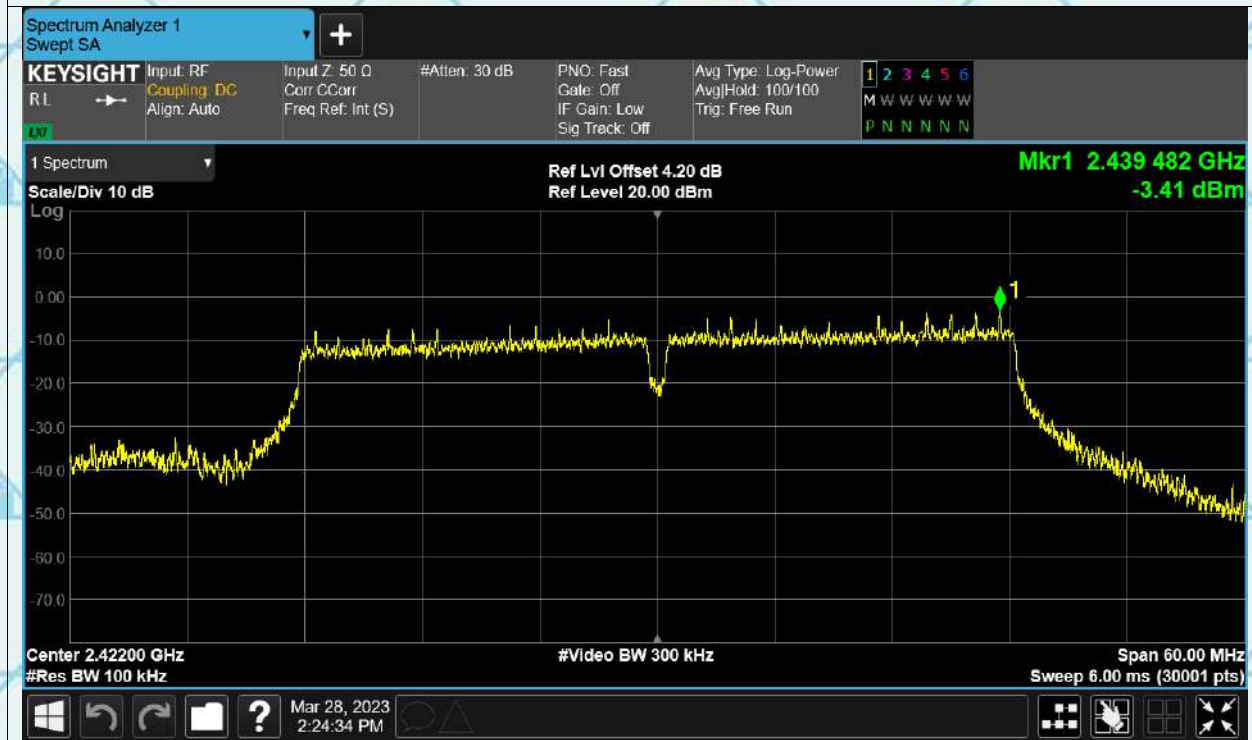


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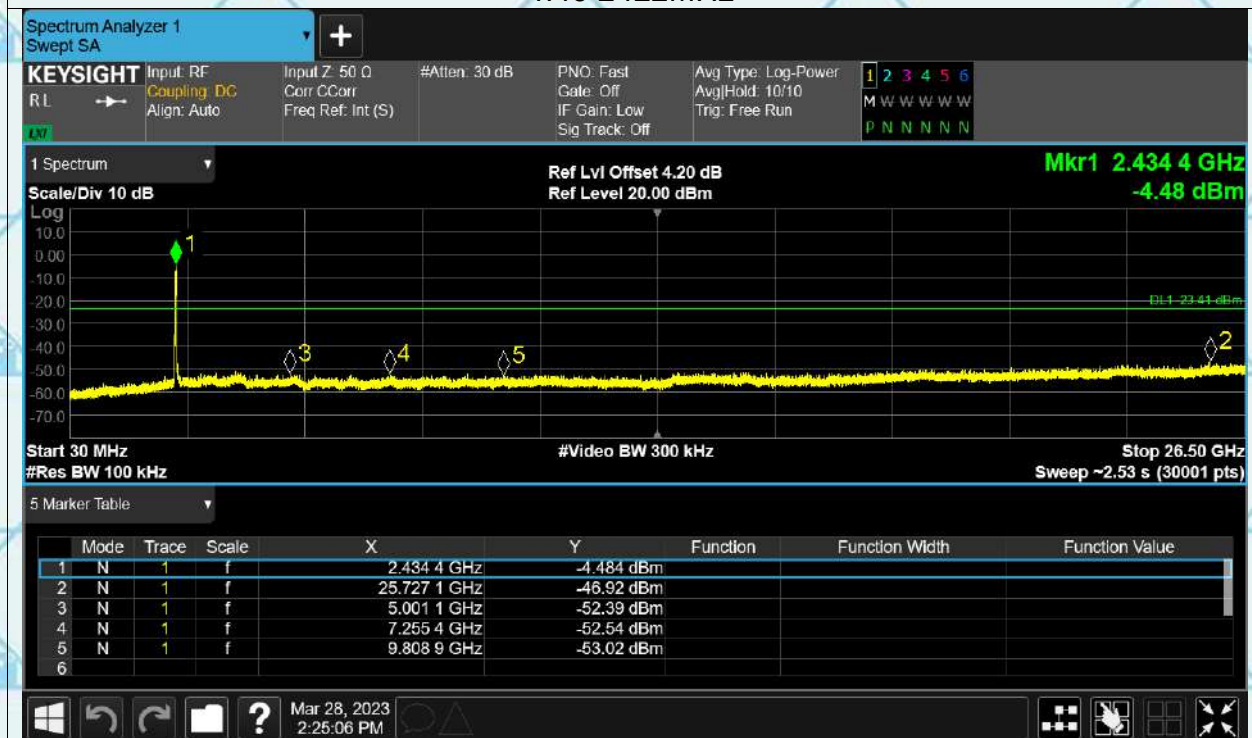
Certificate #5768.01

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n40 2422MHz



n40 2422MHz



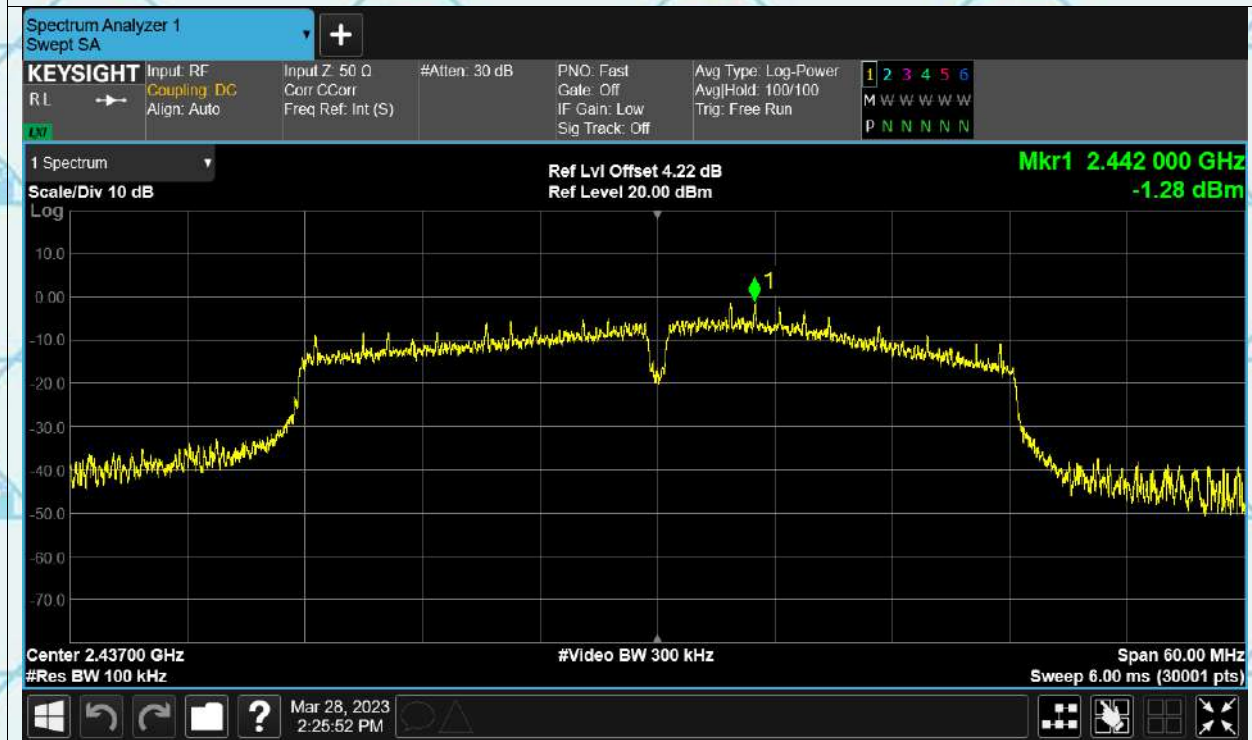


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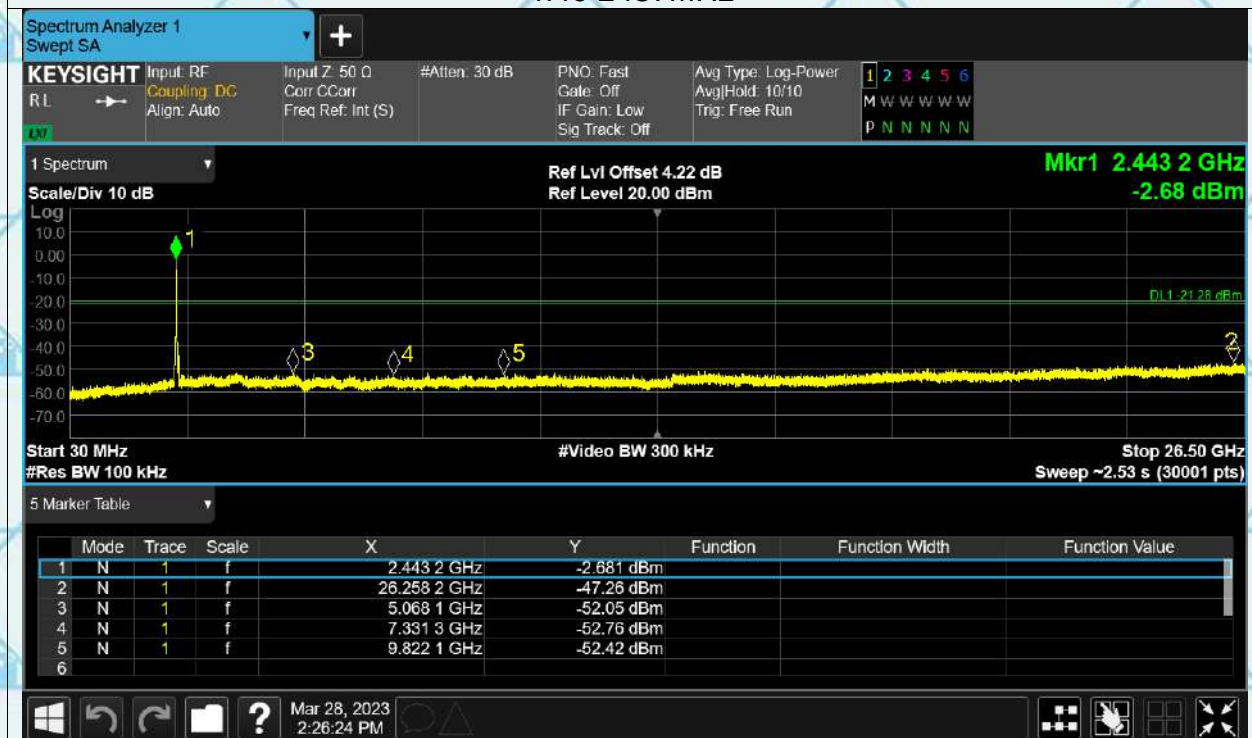
Certificate #5768.01

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n40 2437MHz



n40 2437MHz



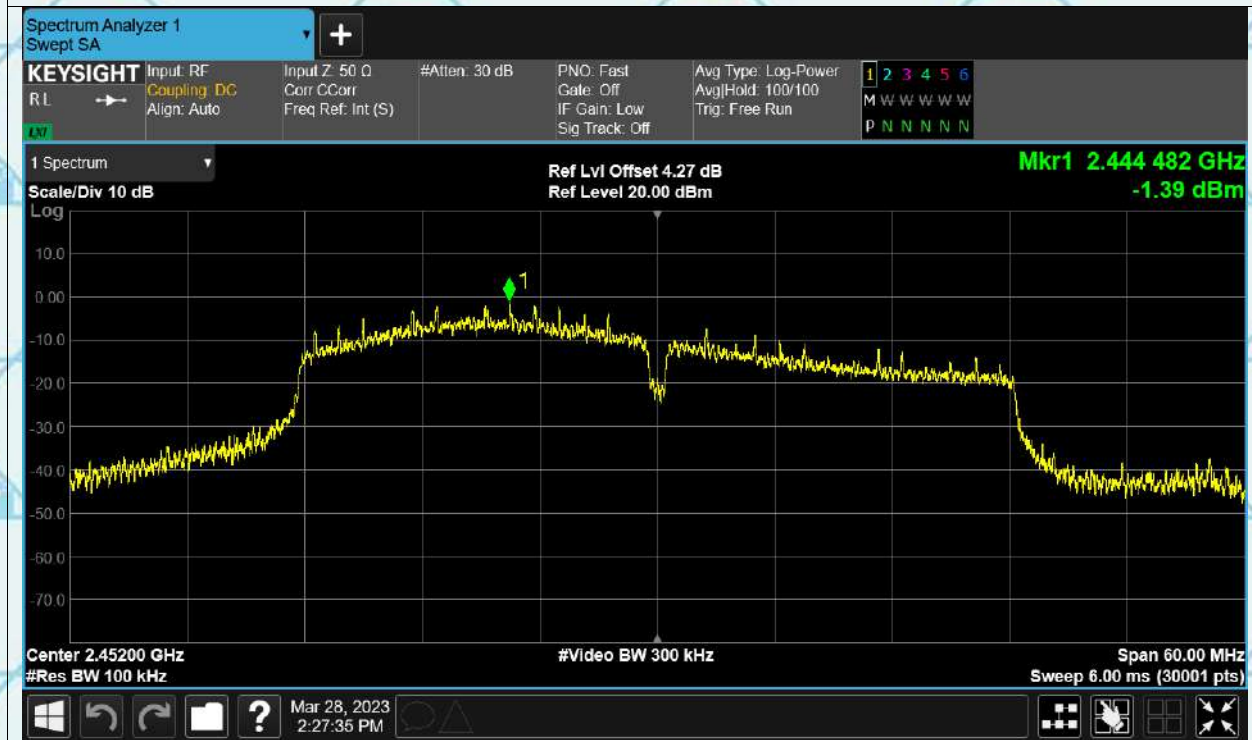


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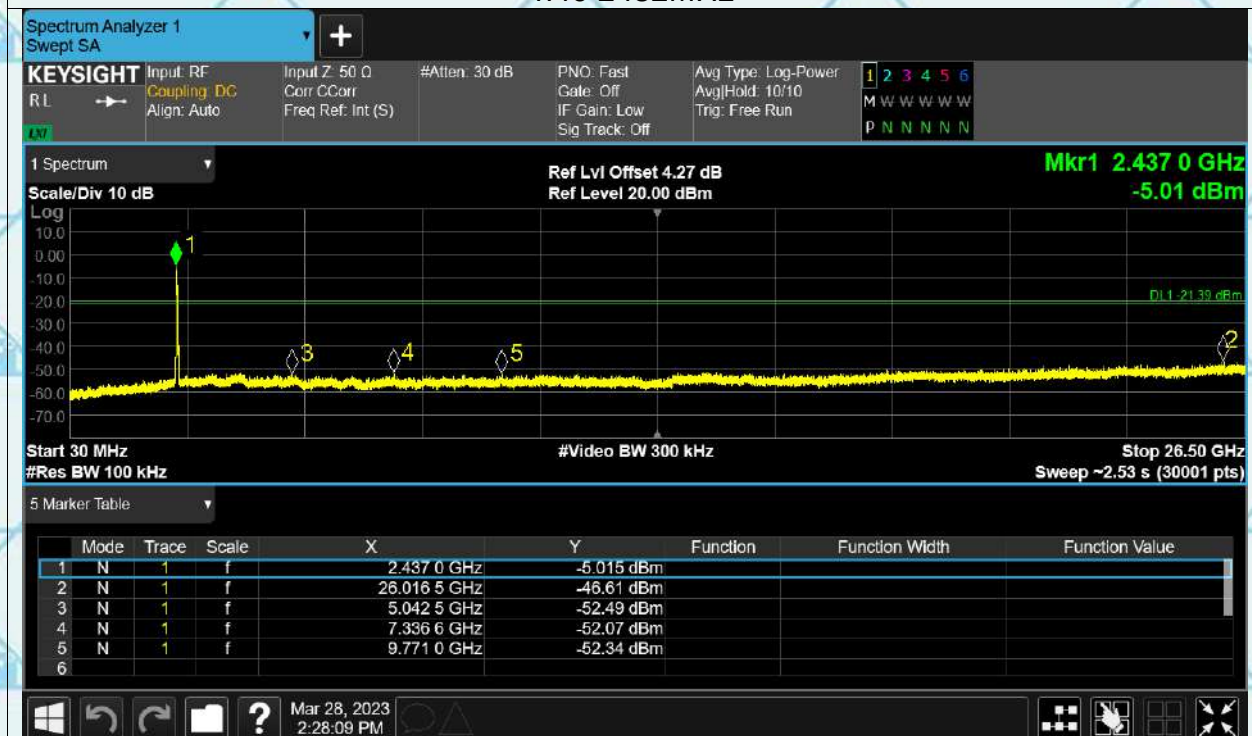
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n40 2452MHz



n40 2452MHz

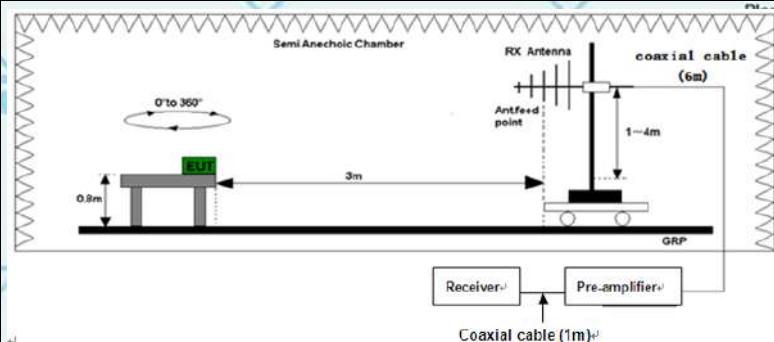




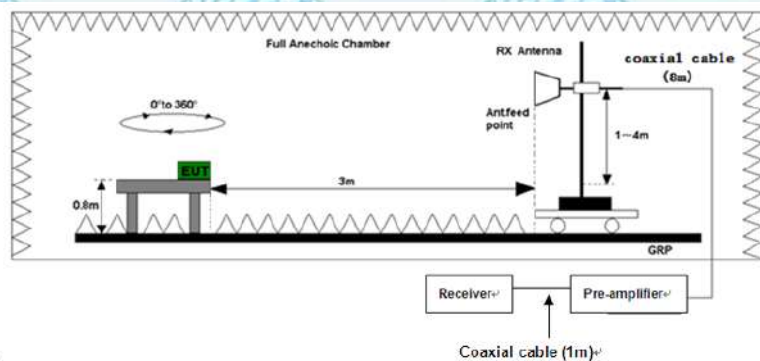
6.6. Radiated Spurious Emission Measurement

6.6.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.209			
Test Method:	ANSI C63.10: 2014			
Frequency Range:	9 kHz to 25 GHz			
Measurement Distance:	3 m			
Antenna Polarization:	Horizontal & Vertical			
Operation mode:	Transmitting mode with modulation			
Receiver Setup:	Frequency	Detector	RBW	VBW
	9kHz- 150kHz	Quasi-peak	200Hz	1kHz
	150kHz- 30MHz	Quasi-peak	9kHz	30kHz
	30MHz-1GHz	Quasi-peak	100KHz	300KHz
	Above 1GHz	Peak	1MHz	3MHz
Limit:				Remark
	9kHz- 150kHz	Quasi-peak	200Hz	1kHz
	150kHz- 30MHz	Quasi-peak	9kHz	30kHz
	30MHz-1GHz	Quasi-peak	100KHz	300KHz
	Above 1GHz	Peak	1MHz	3MHz
Test setup:				Average Value
	Frequency	Field Strength (microvolts/meter)	Measurement Distance (meters)	
	0.009-0.490	2400/F(KHz)	300	
	0.490-1.705	24000/F(KHz)	30	
	1.705-30	30	30	
Test setup:	30-88	100	3	
	88-216	150	3	
	216-960	200	3	
	Above 960	500	3	
	Frequency	Field Strength (microvolts/meter)	Measurement Distance (meters)	Detector
Test setup:	Above 1GHz	500	3	Average
		5000	3	Peak
	For radiated emissions below 30MHz			
	30MHz to 1GHz			



Above 1GHz

**Test Procedure:**

- For the radiated emission test below 1GHz:
The EUT was placed on a turntable with 0.8 meter above ground. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high PASS filter are used for the test in order to get better signal level.
- For the radiated emission test above 1GHz:
Place the measurement antenna on a turntable with 1.5 meter above ground, which is away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.



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	3. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level 4. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported. 5. Use the following spectrum analyzer settings: (1) Span shall wide enough to fully capture the emission being measured; (2) Set RBW=100 kHz for $f < 1$ GHz; VBW $\geq$ RBW; Sweep = auto; Detector function = peak; Trace = max hold; (3) Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement. For average measurement: VBW = 10 Hz, when duty cycle is no less than 98 percent. VBW $\geq 1/T$, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
Test results:	PASS



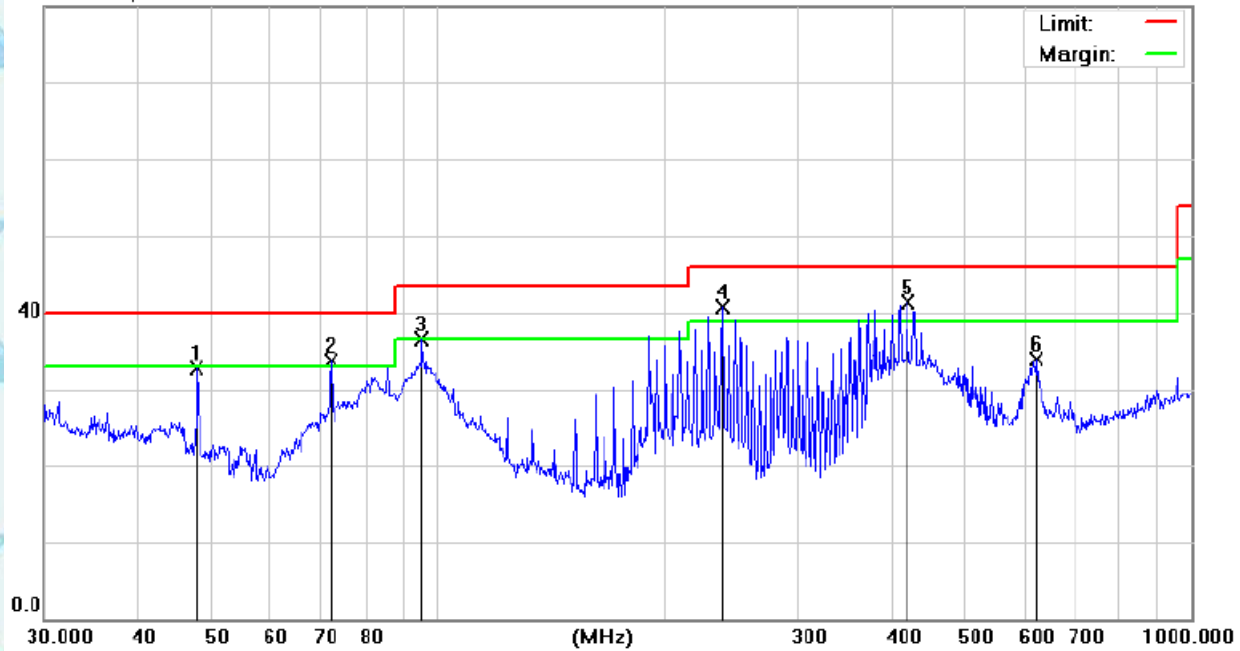


6.6.2. Test Data(worst)

Please refer to following diagram for individual
Below 1GHz

Horizontal:

80.0 dBuV/m



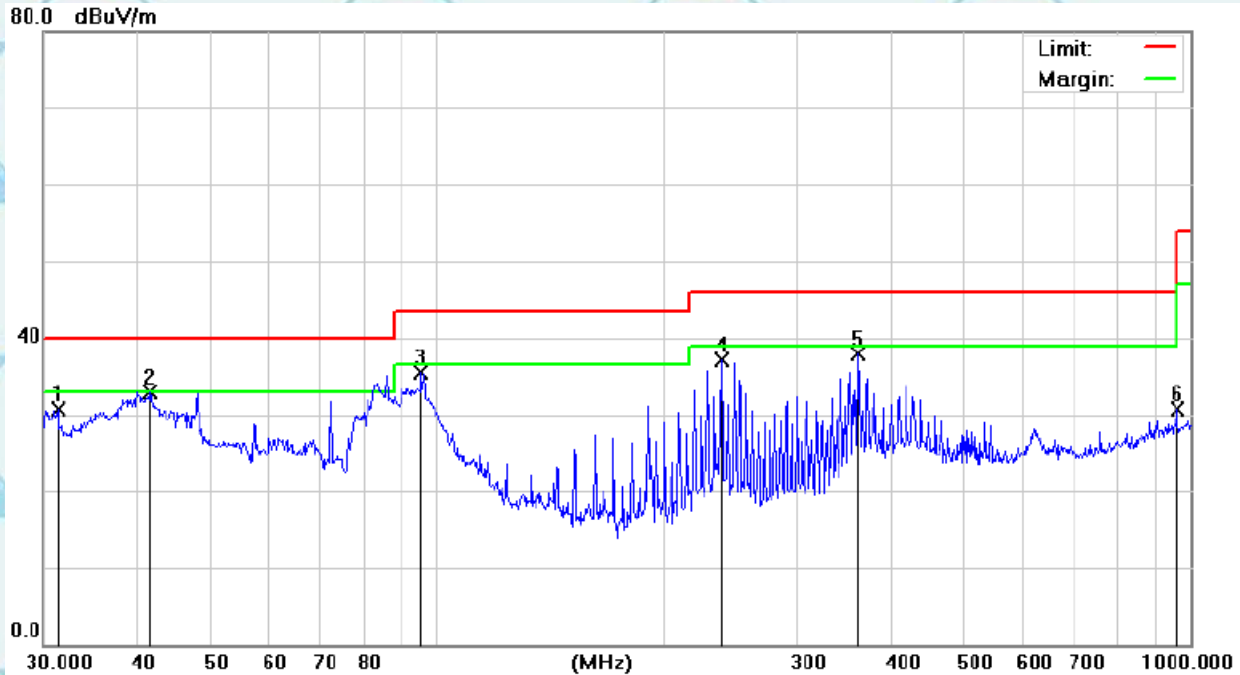
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		47.8260	36.51	-3.72	32.79	40.00	-7.21	QP
2	!	72.0843	40.81	-7.04	33.77	40.00	-6.23	QP
3	!	95.0930	41.35	-4.84	36.51	43.50	-6.99	QP
4	!	238.3102	45.94	-5.25	40.69	46.00	-5.31	QP
5	*	419.1081	42.10	-0.78	41.32	46.00	-4.68	QP
6		622.8900	32.26	1.60	33.86	46.00	-12.14	QP



Report No.: WSCT-A2LA-R&E230300006A-Wi-Fi1
Vertical:

Certificate #5768.01

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No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		31.2893	26.48	4.29	30.77	40.00	-9.23	QP
2	*	41.5670	33.61	-0.69	32.92	40.00	-7.08	QP
3		95.0930	40.32	-4.84	35.48	43.50	-8.02	QP
4		238.3102	42.39	-5.25	37.14	46.00	-8.86	QP
5		361.7139	39.33	-1.42	37.91	46.00	-8.09	QP
6		958.7943	24.18	6.57	30.75	46.00	-15.25	QP

Note: 1. The low frequency, which started from 9KHz~30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported
2. Measurements were conducted in all three channels (high, middle, low), and the worst case Mode (Middle channel) was submitted only.





Above 1GHz

20MHz(802.11b/g/n)

Freq. (MHz)	Low channel: 2412MHz						
	Ant.Pol	Emission Level(dBuV)		Limit 3m(dBuV/m)		Over(dB)	
	H/V	PK	AV	PK	AV	PK	AV
4824	V	58.93	41.15	74	54	-15.07	-12.85
7236	V	59.53	40.28	74	54	-14.47	-13.72
4824	H	59.05	40.83	74	54	-14.95	-13.17
7236	H	59.07	40.07	74	54	-14.93	-13.93

Freq. (MHz)	Middle channel: 2437MHz						
	Ant.Pol	Emission Level(dBuV)		Limit 3m(dBuV/m)		Over(dB)	
	H/V	PK	AV	PK	AV	PK	AV
4874	V	60.07	40.69	74	54	-13.93	-13.31
7311	V	59.07	39.50	74	54	-14.93	-14.50
4874	H	59.65	39.20	74	54	-14.35	-14.80
7311	H	58.28	39.28	74	54	-15.72	-14.72

Freq. (MHz)	High channel: 2462MHz						
	Ant.Pol	Emission Level(dBuV)		Limit 3m(dBuV/m)		Over(dB)	
	H/V	PK	AV	PK	AV	PK	AV
4924	V	59.57	40.63	74	54	-14.43	-13.37
7386	V	58.56	40.69	74	54	-15.44	-13.31
4924	H	58.44	40.12	74	54	-15.56	-13.88
7386	H	59.89	40.89	74	54	-14.11	-13.11

Note:

1. All emissions not reported were more than 20dB below the specified limit or in the noise floor.

2. Emission Level= Reading Level+ Probe Factor +Cable Loss.

Data of measurement within this frequency range shown "--" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.





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For Question,
Please Contact with WSCT
www.wsct-cert.com**40MHz(802.11n)**

Freq. (MHz)	Low channel: 2412MHz						
	Ant.Pol	Emission Level(dBuV)		Limit 3m(dBuV/m)		Over(dB)	
	H/V	PK	AV	PK	AV	PK	AV
4824	V	58.74	40.35	74	54	-15.26	-13.65
7236	V	58.78	39.26	74	54	-15.22	-14.74
4824	H	58.28	39.62	74	54	-15.72	-14.38
7236	H	58.51	39.51	74	54	-15.49	-14.49

Freq. (MHz)	Middle channel: 2437MHz						
	Ant.Pol	Emission Level(dBuV)		Limit 3m(dBuV/m)		Over(dB)	
	H/V	PK	AV	PK	AV	PK	AV
4874	V	59.47	40.83	74	54	-14.53	-13.17
7311	V	58.52	39.69	74	54	-15.48	-14.31
4874	H	59.09	40.67	74	54	-14.91	-13.33
7311	H	59.62	40.62	74	54	-14.38	-13.38

Freq. (MHz)	High channel: 2462MHz						
	Ant.Pol	Emission Level(dBuV)		Limit 3m(dBuV/m)		Over(dB)	
	H/V	PK	AV	PK	AV	PK	AV
4924	V	60.25	40.03	74	54	-13.75	-13.97
7386	V	58.58	40.27	74	54	-15.42	-13.73
4924	H	59.25	40.25	74	54	-14.75	-13.75
7386	H	58.54	39.54	74	54	-15.46	-14.46





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Restricted Bands Requirements

Test result for 802.11b Mode (the worst case)

Frequency	Reading	Correct Factor	Emission Level	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel							
2390	63.74	-8.76	54.98	74	19.02	H	PK
2390	56.16	-8.76	47.40	54	6.60	H	AV
2390	59.31	-8.73	50.58	74	23.42	V	PK
2390	54.59	-8.73	45.86	54	8.14	V	AV
High Channel							
2483.5	60.04	-8.76	51.28	74	22.72	H	PK
2483.5	53.98	-8.76	45.22	54	8.78	H	AV
2483.5	62.85	-8.73	54.12	74	19.88	V	PK
2483.5	56.53	-8.73	47.80	54	6.20	V	AV

*****END OF REPORT*****

