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TESTING
CNAS L9092

TEST REPORT

Report No.....: S20251017267602-G1
Applicant.....: Shanghai MXCHIP Information
Technology Co., Ltd
9th Floor, Building B, Lane 2145,
Applicant's address: JinshaJiang Road, Putuo District,
Shanghai (200333)
Sample description.: Embedded Wi-Fi/BLE Module
Model.....: EMC6069-P



方圆广电检验检测股份有限公司
Fanguang Inspection & Testing Co., Ltd.



扫一扫 验真伪

TEST REPORT

Application No..... : S202510172676

Applicant's name... : Shanghai MXCHIP Information Technology Co., Ltd

Applicant's address: 9th Floor, Building B, Lane 2145, JinshaJiang Road, Putuo District, Shanghai (200333)

Sample description: Embedded Wi-Fi/BLE Module

Model : EMC6069-P

Date of receipt of test item : 2025.10.20

Test location : 3/F., Comprehensive Laboratory Building, No.8, Ningyun Road, Xinwu District, Wuxi, Jiangsu, China

Test standard : ARIB STD-T66 Ver.3.7 MIC Article 2 Paragraph 1 Item 19

Test date(s) : 2025.10.27 ~ 2025.12.22

Test result : The test results are in compliance with the above mentioned standards.

Date of issue : 2025-12-26

Compiled by:

Stone Zhang

Stone Zhang

Reviewed by:

Jacke Ding

Jacke Ding

Approved by:

Line Chen/Manager

Line Chen

Other aspects: (1) P = passed; F = failed; N/A = not applicable; (2) This report shall be replaced by report S20251017267602, which shall be invalid immediately upon the issuance of this report. (3). The initial issuance date of report S20251017267602 was Dec 23, 2025, and the first amendment to the report was made on Dec 25, 2025, the factory's address change Building 1, Floors 1-2 and Building 2, Wenbai Avenue No.998, Baihe Street, Economic and Technological Development Zone (Longquanyi District), Chengdu City, Sichuan Province, P.R.China.



Test item description :	Embedded Wi-Fi/BLE Module
Trade mark :	MXCHIP
Manufacturer..... :	Shanghai MXCHIP Information Technology Co., Ltd
Manufacturer's address..... :	9th Floor, Building B, Lane 2145, JinshaJiang Road, Putuo District, Shanghai (200333)
Factory..... :	Chengdu Xuguang Technology Co., Ltd
Factory's address..... :	Building 1, Floors 1-2 and Building 2, Wenbai Avenue No.998, Baihe Street, Economic and Technological Development Zone (Longquanyi District), Chengdu City, Sichuan Province, P.R.China
Ratings :	DC 3.3V, 300mA



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1. General Information

1.1. Testing Facility

Test Site
Fangguang Inspection & Testing Co., Ltd.
Test Site Location
3/F., Comprehensive Laboratory Building, No.8, Ningyun Road, Xinwu District, Wuxi, Jiangsu, China

1.2. Feature of Equipment Under Test

Product Name	Embedded Wi-Fi/BLE Module
Model No.	EMC6069-P
Power Supply	DC 3.3V, 300mA
Rated Power	802.11b: 9.5 mW/MHz 802.11g: 9.0 mW/MHz 802.11n-HT20: 9.0 mW/MHz 802.11n-HT40: 3.0 mW/MHz 802.11ax-HE20: 9.5 mW/MHz 802.11ax-HE40: 4.0 mW/MHz
Wi-Fi Specification:	802.11b/g/n/ax
Hardware Version:	B3
Software Version:	A284
EUT sample number:	S202510172676-1-1 (Conducted)

Note: This information is provided by the Customer and its authenticity is the responsibility of the Customer.

1.3. Product Specification Subjective to this Report

Frequency Range:	802.11b/g/n-HT20/ax-HE20: 2412 ~ 2472MHz 802.11n-HT40/ax-HE40: 2422 ~ 2462MHz
Channel Number:	802.11b/g/n-HT20/ax-HE20:13 802.11n-HT40/ax-HE40:9
Channel Spacing	5MHz
Antenna Type:	PCB Antenna
Antenna Gain:	2dBi
Type of Modulation:	802.11b: DSSS 802.11g/n: OFDM 802.11ax: OFDMA



Data Rate:	802.11b: 1/2/5.5/11Mbps 802.11g: 6/9/12/18/24/36/48/54Mbps 802.11n: MCS0~MCS7 802.11ax: MCS0~MCS9
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Note:

1. For other features of this EUT, test report will be issued separately.
2. The maximum Antenna Gain was declared by the manufacturer.

1.4. Working Frequencies for this Report

802.11b/g/n-HT20/ax-HE20

Channel	Frequency	Channel	Frequency	Channel	Frequency
01	2412 MHz	02	2417 MHz	03	2422 MHz
04	2427 MHz	05	2432 MHz	06	2437 MHz
07	2442 MHz	08	2447 MHz	09	2452 MHz
10	2457 MHz	11	2462 MHz	12	2467 MHz
13	2472 MHz	--	--	--	--

EUT was tested with Channel 01, 07 and 13.

802.11n-HT40/ax-HE40

Channel	Frequency	Channel	Frequency	Channel	Frequency
--	--	--	--	03	2422 MHz
04	2427 MHz	05	2432 MHz	06	2437 MHz
07	2442 MHz	08	2447 MHz	09	2452 MHz
10	2457 MHz	11	2462 MHz	--	--

EUT was tested with Channel 03, 07 and 11.

2. Test Configuration of Equipment under Test

2.1. Test Mode

Test Mode
Mode 1: 2.4G WIFI Transmit mode
Mode 2: 2.4G WIFI Receive mode
Mode 3: 2.4G WIFI Normal mode

2.2. Test Methodology

Measurement was conducted by the test method which MIC notification No. 88 of 2004, Annex 43.

2.3. Test Software

RF Test Tool: Wifi_Test_ToolV2.0.3.exe

We have pretested all the data rate, the worst condition was performed under:

Mode	Data rate	Channel	Power Level Setting
802.11b	1 Mbps	1	10
		7	9
		13	10
802.11g	6 Mbps	1	50
		7	50
		13	50
802.11n-HT20	MCS0	1	50
		7	50
		13	50
802.11n-HT40	MCS0	3	40
		7	40
		11	40
802.11ax-HE20	MCS0	1	50
		7	50
		13	40
802.11ax-HE40	MCS0	3	45
		7	45
		11	45

Note:

The 802.11ax mode is investigated among different tones, full resource units (RU), partial resource units. We have tested all the full resource units (RU) and partial resource units, only the worst mode data will be included



in the report in the end.

2.4. Local Supportive

No.	Name of Equipment	Manufacturer	Model	Serial Number
A	Notebook	DELL	Ideacentre 720-18IKL	/
B	USB Cable	/	/	/
C	Serial Debug Board	/	/	/
D	DC Source	KORAD	KA3005DS	/

2.5. Test Setup



3. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

RF frequency
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 0.1×10^{-6} MHz
Conducted Spurious Emissions
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 30MHz-1GHz: 1.00 dB 1GHz-12.75GHz: 1.30 dB
Output Power
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 0.60dB
Power Spectrum Density
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 0.80dB
Occupied Bandwidth
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 0.20MHz

This uncertainty represents an expanded uncertainty factor of $k=2$.

4. Test Summary

ARIB STD-T66 Ver.3.7 MIC Article 2 Paragraph 1 Item 19		
Standard Section	Test Type and Limit	Test Result
Article 5	Frequency Error	PASS
Article 6	Occupied Bandwidth, Spreading Bandwidth and Spreading Rate	PASS
Article 7	Unwanted Emission Intensity	PASS
Article 14	Antenna Power and Antenna Power Tolerance	PASS
Article 24	Limitation of Collateral Emission of Receiver	PASS
Article 49.20(1);k	Carrier Sense Capability	PASS
Article 49.20(1);e	Transmission Antenna Gain	N/A (See Note 1)
Article 49.20(1);f	Transmission Radiation Angle Width	N/A (See Note 1)
Article 9.4	Interference Prevention Function	PASS
Article 49.20(1);k	Frequency Hopping Dwell Time	N/A (See Note 2)
Article 49.20(1);a	Construction Protection Confirmation	PASS

Note:

1. This test item will not be applied to the transmission antenna which EIRP is less than 12.14dBm.
2. This test is only required for FHSS system devices



5. List of Measuring Instrument

Instrument	Manufacturer	Type No.	Asset No.	Calibration Agency	Cali. Interval	Cali. Due Date
Spectrum Analyzer	Keysight	N9010B	FWXGJC-2018-010	GRGTEST	1 year	2026/07/16
Spectrum Analyzer	Keysight	N9020A	FWXGJC-2025-006	GRGTEST	1 year	2026/07/16
RF Control Unit	Toncend	JS0806-2	FWXGJC-2018-013	GRGTEST	1 year	2026/07/16
Signal Generator	Keysight	N5182B	FWXGJC-2018-011	GRGTEST	1 year	2026/07/07
Signal Generator	Keysight	N5171B	FWXGJC-2018-012	GRGTEST	1 year	2026/07/14
Comprehensive measuring instrument	R&S	CMW270	FWXGJC-2018-023	GRGTEST	1 year	2026/07/20
Wideband Radio Communication Tester	R&S	CMW500	FWXZ-2025-001	GRGTEST	1 year	2026/07/07
Thermohygrometer	Yuhuaze	HTC-1	FWXDA-2016-385	GRGTEST	1 year	2026/08/24
Aneroid Barometer	Shanghai Yipin	DYM3	FWXDA-2018-038	GRGTEST	1 year	2026/06/04

Test Software	Manufacturer	Version	Asset No.	Function
RF Test Software	Tonscend	3.3.10	/	/

Note:

1. Calibration conducted in foreign countries, which shall be equivalent to the calibration conducted by the NICT or a designated calibration agency under Article 102-18 paragraph (1).
2. GRGTEST full name is GRG METROLOGY & TEST GROUP CO., LTD.

6. Frequency Error

6.1. Limit

Item	Limits
Frequency Error	±50ppm

6.2. Test Setup



6.3. Test Procedure

Frequency accuracy of SA shall be less than 10% of limits tolerance (5ppm)

Set the EUT to the measurement frequency without modulation.

Setting of SA is following as: RBW:1kHz / VBW:30kHz / SPAN: 100 kHz

Center Frequency: The center frequency of testing for EUT

Sweep time: Auto

Sweep mode: Continuous sweep

Detect mode: Positive peak

EUT have transmitted absence of modulation signal and fixed channelize. f is using the mark cursor to mark the peak frequency value fc is declaring of channel frequency.

Then the frequency error formula is $(f-f_c)/f_c \times 10^6$ ppm and the limit is less than ±50ppm

6.4. Test Result

Test environment:

Temperature:	23.8 ~ 28.6 °C
Relative Humidity:	48 ~ 62 %
ATM Pressure:	100.8 ~102.5 kPa
Test Date (yy-mm-dd):	2025.10.27 ~ 2025.12.22
Test Voltage:	NV 3.3V, LV 2.97V, HV 3.63V
Test Engineer:	Stone Zhang

Test Data:

NTLV:

Frequency (MHz)	Reading Frequency (MHz)	Frequency Tolerance (ppm)	Limit (ppm)	Verdict
2412	2411.9971	-1.20	±50	PASS
2422	2421.9954	-1.90		PASS
2442	2441.9957	-1.76		PASS
2462	2461.9956	-1.79		PASS
2472	2471.9958	-1.70		PASS

Note: FT (ppm) = {(RF – MF) / MF} * 1000000

(FT: Frequency Tolerance, RF: Reading Frequency, MF: Measurement Frequency)

NTNV:

Frequency (MHz)	Reading Frequency (MHz)	Frequency Tolerance (ppm)	Limit (ppm)	Verdict
2412	2411.9984	-0.66	±50	PASS
2422	2421.9934	-2.73		PASS
2442	2441.9959	-1.68		PASS
2462	2461.9960	-1.62		PASS
2472	2471.9974	-1.05		PASS

Note: FT (ppm) = {(RF – MF) / MF} * 1000000

(FT: Frequency Tolerance, RF: Reading Frequency, MF: Measurement Frequency)

NTHV:

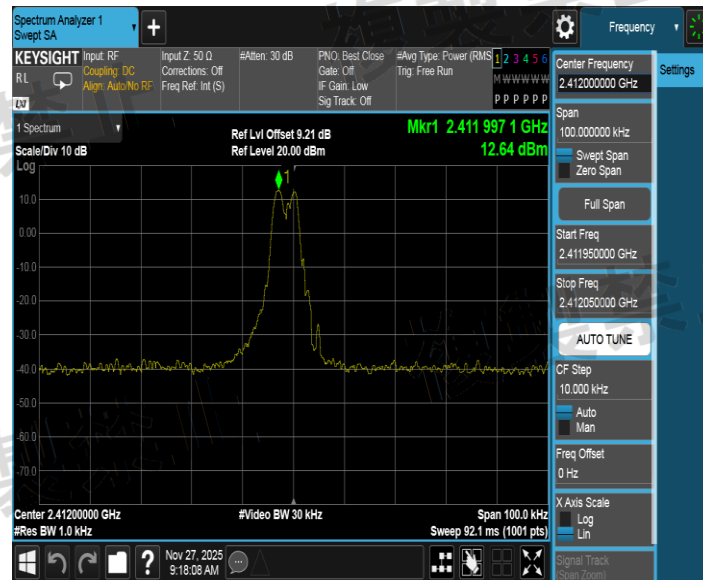
Frequency (MHz)	Reading Frequency (MHz)	Frequency Tolerance (ppm)	Limit (ppm)	Verdict
2412	2411.9967	-1.37	±50	PASS
2422	2421.9959	-1.69		PASS
2442	2441.9958	-1.72		PASS
2462	2461.9957	-1.75		PASS
2472	2471.9957	-1.74		PASS

Note: FT (ppm) = {(RF – MF) / MF} * 1000000

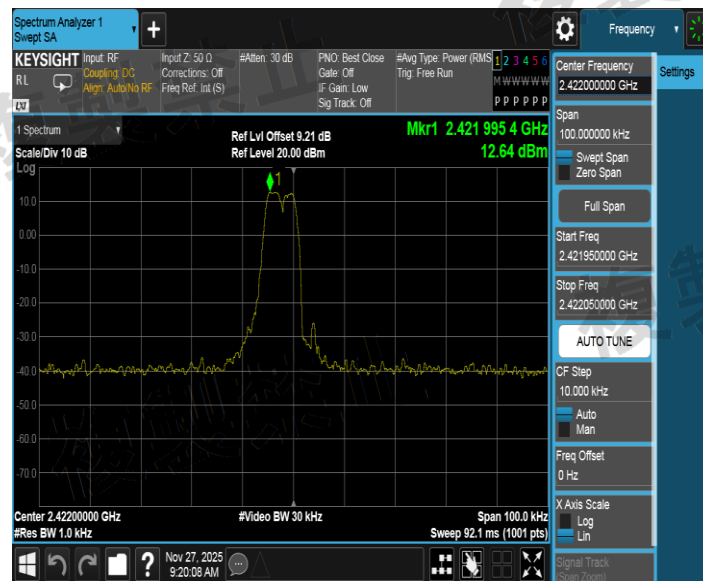
(FT: Frequency Tolerance, RF: Reading Frequency, MF: Measurement Frequency)

Test Plots:

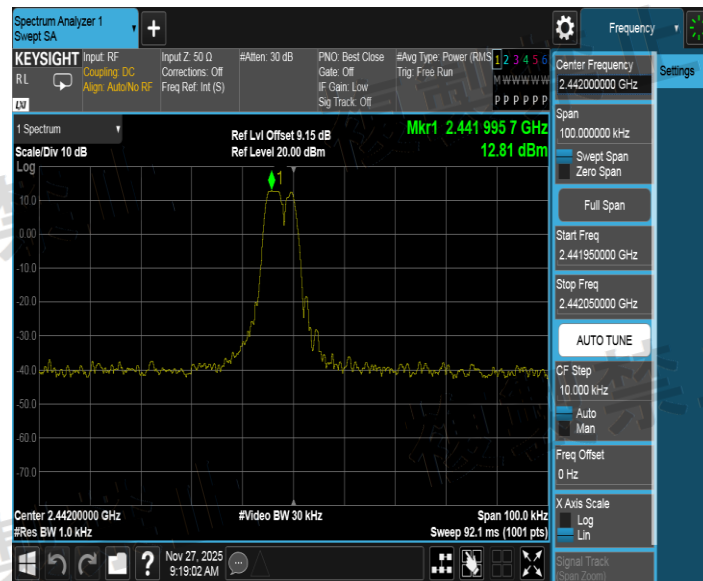
NTLV_WIFI_Ant1_2412



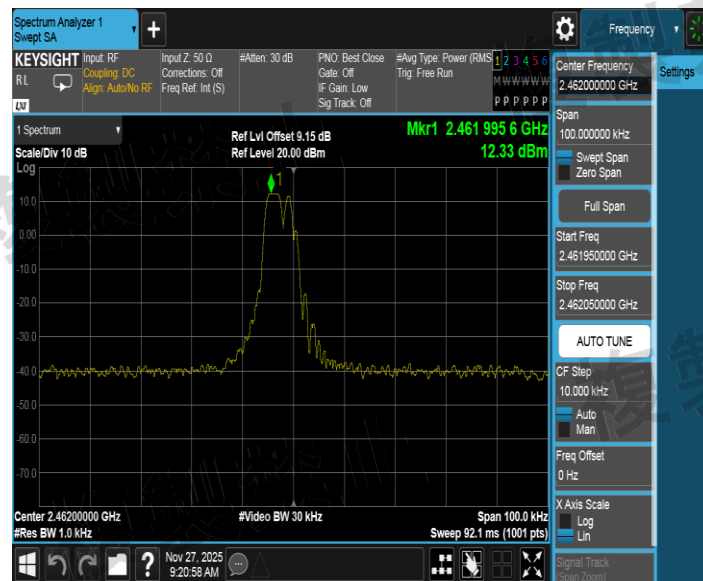
NTLV_WIFI_Ant1_2422



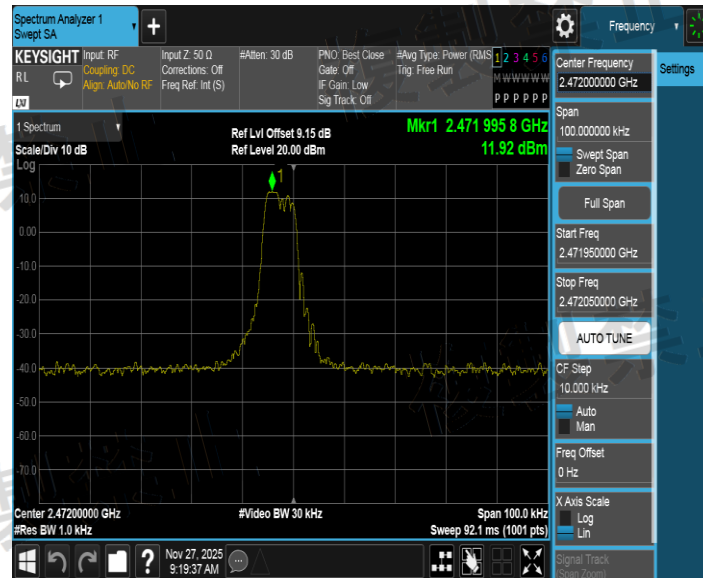
NTLV_WIFI_Ant1_2442



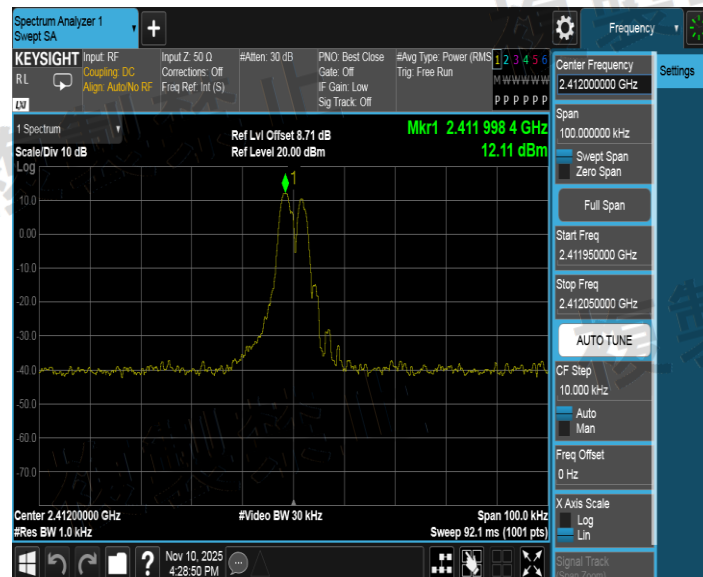
NTLV_WIFI_Ant1_2462



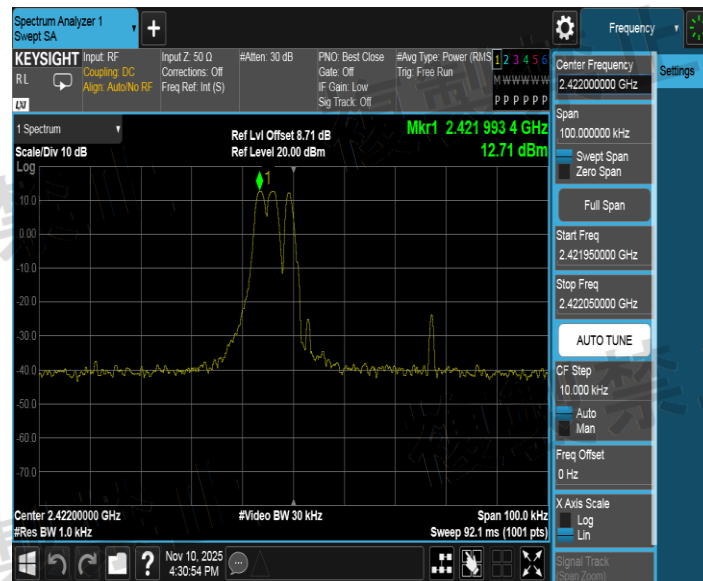
NTLV_WIFI_Ant1_2472



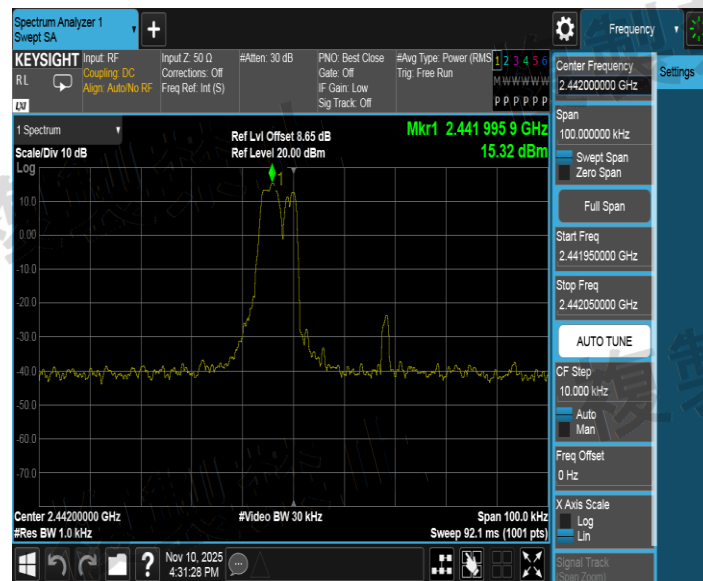
NTNV_WIFI_Ant1_2412



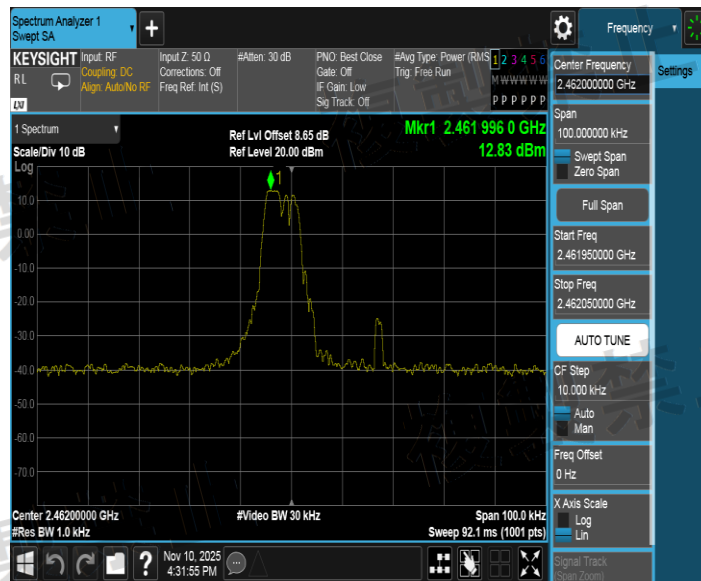
NTNV_WIFI_Ant1_2422



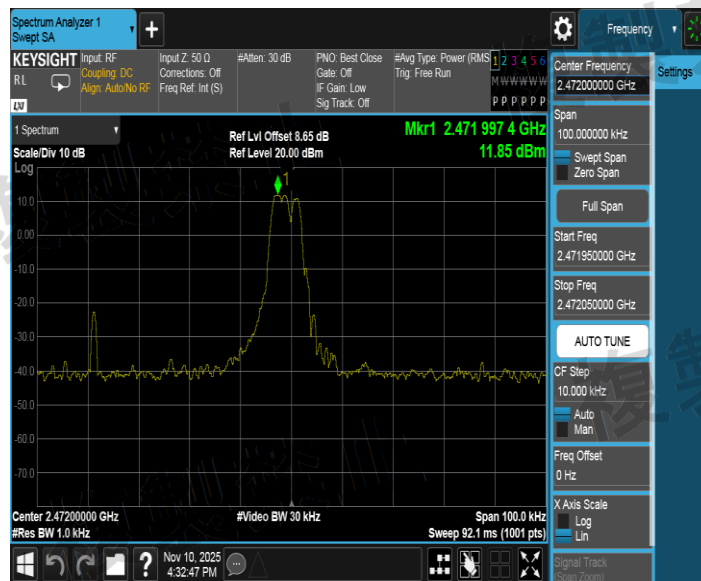
NTNV_WIFI_Ant1_2442



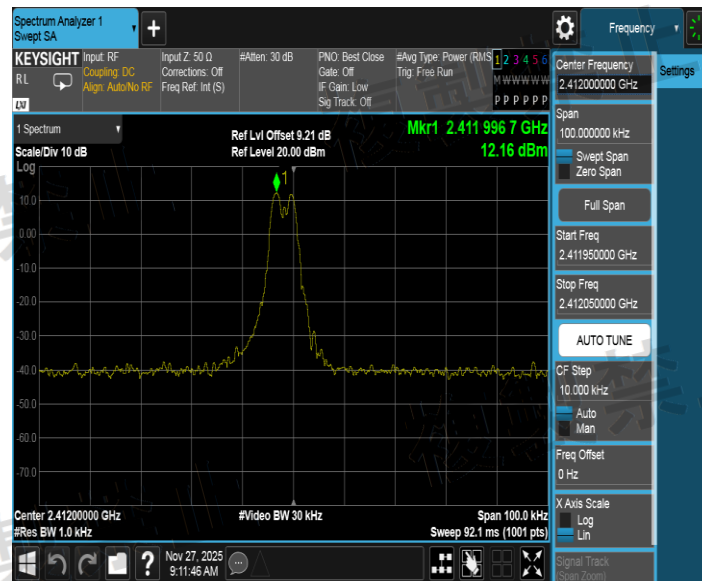
NTNV_WIFI_Ant1_2462



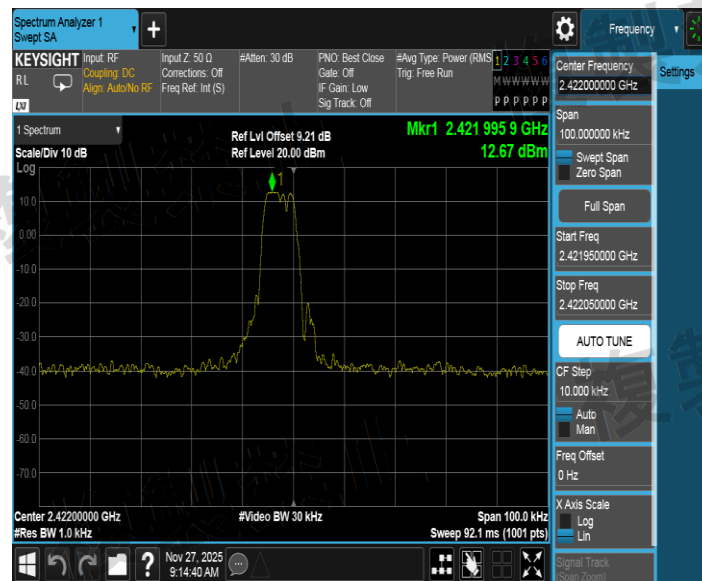
NTNV_WIFI_Ant1_2472



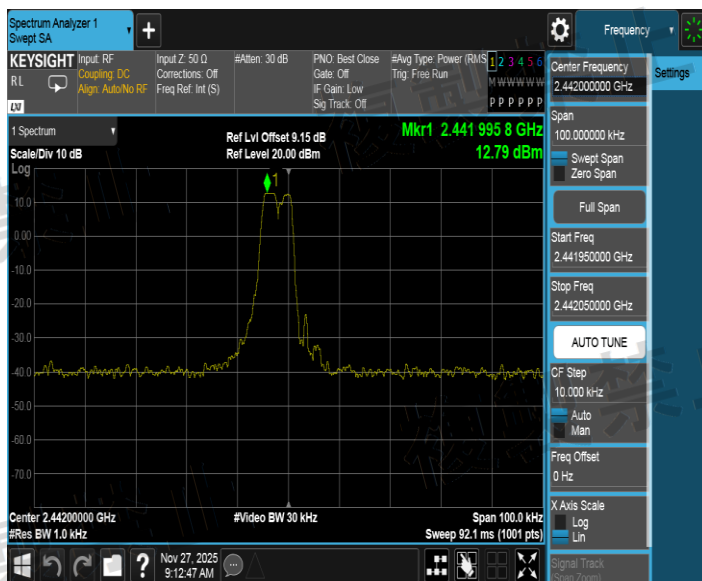
NTHV_WIFI_Ant1_2412



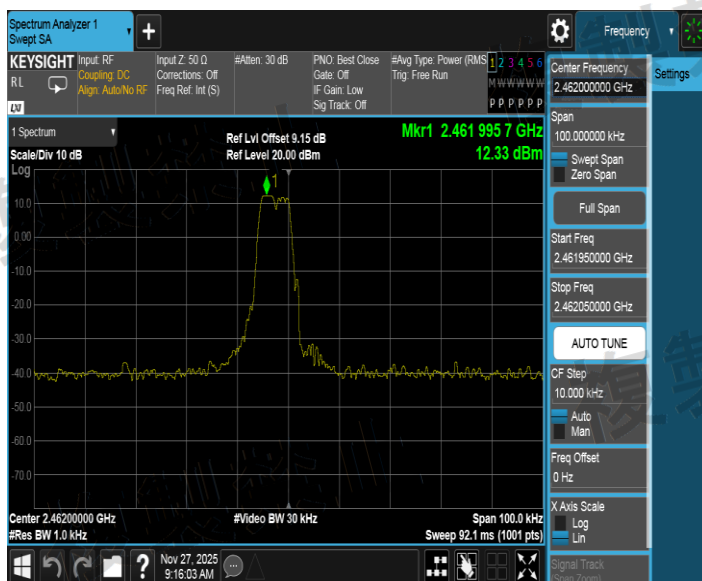
NTHV_WIFI_Ant1_2422



NTHV_WIFI_Ant1_2442

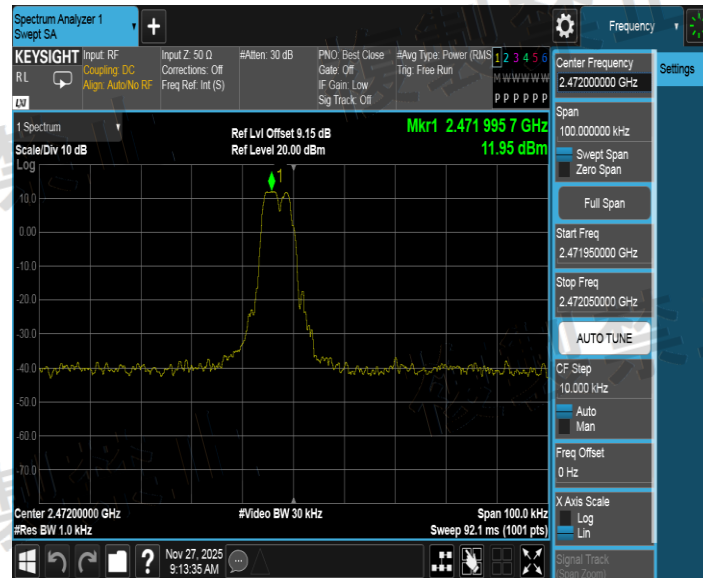


NTHV_WIFI_Ant1_2462





NTHV_WIFI_Ant1_2472



7. Occupied Bandwidth, Spreading Bandwidth and Spreading Rate

7.1. Limit

Item	Limits
Occupied Bandwidth	FHSS $\leq$ 83.5MHz; OFDM, DSSS $\leq$ 26MHz; 26 MHz $\leq$ OFDM $\leq$ 40MHz
Spreading Bandwidth	$\geq$ 500 kHz (FHSS, DSSS)
Spreading Rate	$\geq$ 5, Operating Frequency 2400-2483.5MHz

7.2. Test Setup



7.3. Test Procedure

Setting of SA is following as: RB: 300 kHz / VB: 300 kHz / Sweep time: Auto / Sweep Mode:

Continuous sweep / Detect mode: Positive peak / Trace mode: Max hold.

EUT have transmitted the maximum modulation signal and fixed channelize. SA set to 99% of occupied bandwidth to measure occupied bandwidth.

EUT have transmitted the maximum modulation signal and fixed channelize. SA set to 90% of occupied bandwidth to measure occupied bandwidth.

Spread Factor = Spread Bandwidth/modulation rate.

7.4. Test Result

Test environment:

Temperature:	23.8 ~ 28.6 °C
Relative Humidity:	48 ~ 62 %
ATM Pressure:	100.8 ~102.5 kPa
Test Date (yy-mm-dd):	2025.10.27 ~ 2025.12.22
Test Voltage:	NV 3.3V, LV 2.97V, HV 3.63V
Test Engineer:	Stone Zhang

Test Data:

Occupied Bandwidth

Test Condition	Test Mode	Antenna	Frequency (MHz)	Result [MHz]	Limit [MHz]	Verdict
NTLV	11B	Ant1	2412	13.995	≤26	PASS
			2442	13.961	≤26	PASS
			2472	13.986	≤26	PASS
	11G	Ant1	2412	16.145	≤26	PASS
			2442	16.140	≤26	PASS
			2472	16.144	≤26	PASS
	11N20SISO	Ant1	2412	17.204	≤26	PASS
			2442	17.191	≤26	PASS
			2472	17.212	≤26	PASS
	11N40SISO	Ant1	2422	35.622	26-40	PASS
			2442	35.556	26-40	PASS
			2462	35.573	26-40	PASS
	11AX20SISO	Ant1	2412	18.254	≤26	PASS
			2442	18.227	≤26	PASS
			2472	18.233	≤26	PASS
	11AX40SISO	Ant1	2422	35.619	26-40	PASS
			2442	35.560	26-40	PASS
			2462	35.595	26-40	PASS

Spread Bandwidth

Test Condition	Test Mode	Antenna	Channel	Result [MHz]	Limit [MHz]	Verdict
NTLV	11B	Ant1	2412	8.851	≥0.5	PASS
			2442	8.817	≥0.5	PASS
			2472	8.848	≥0.5	PASS



Spreading Rate

Test Mode	Channel	Spreading Bandwidth (MHz)	Modulation Rate	Spreading Rate	Limit	Verdict
11B	2412	8.851	1.375	6.437	≥5	PASS
	2442	8.817	1.375	6.412	≥5	PASS
	2472	8.848	1.375	6.435	≥5	PASS

Note:

1. Spreading Rate = Spreading Bandwidth / Modulation Rate of EUT.
2. For 802.11b mode, the modulation rate of EUT is 1.375.

Test Condition	Test Mode	Antenna	Frequency (MHz)	Result [MHz]	Limit [MHz]	Verdict
NTNV	11B	Ant1	2412	13.999	≤26	PASS
			2442	13.998	≤26	PASS
			2472	14.014	≤26	PASS
	11G	Ant1	2412	16.155	≤26	PASS
			2442	16.147	≤26	PASS
			2472	16.144	≤26	PASS
	11N20SISO	Ant1	2412	17.223	≤26	PASS
			2442	17.216	≤26	PASS
			2472	17.208	≤26	PASS
	11N40SISO	Ant1	2422	35.617	26-40	PASS
			2442	35.558	26-40	PASS
			2462	35.598	26-40	PASS
	11AX20SISO	Ant1	2412	18.234	≤26	PASS
			2442	18.220	≤26	PASS
			2472	18.282	≤26	PASS
	11AX40SISO	Ant1	2422	35.621	26-40	PASS
			2442	35.565	26-40	PASS
			2462	35.585	26-40	PASS

Spread Bandwidth

Test Condition	Test Mode	Antenna	Channel	Result [MHz]	Limit [MHz]	Verdict
NTNV	11B	Ant1	2412	8.859	≥0.5	PASS
			2442	8.875	≥0.5	PASS
			2472	8.798	≥0.5	PASS

Spreading Rate

Test Mode	Channel	Spreading Bandwidth (MHz)	Modulation Rate	Spreading Rate	Limit	Verdict
11B	2412	8.859	1.375	6.443	≥5	PASS
	2442	8.875	1.375	6.455	≥5	PASS
	2472	8.798	1.375	6.399	≥5	PASS

Note:

1. Spreading Rate = Spreading Bandwidth / Modulation Rate of EUT.
2. For 802.11b mode, the modulation rate of EUT is 1.375.

Test Condition	Test Mode	Antenna	Frequency (MHz)	Result [MHz]	Limit [MHz]	Verdict
NTNV	11B	Ant1	2412	13.995	≤26	PASS
			2442	13.964	≤26	PASS
			2472	13.976	≤26	PASS
	11G	Ant1	2412	16.160	≤26	PASS
			2442	16.151	≤26	PASS
			2472	16.152	≤26	PASS
	11N20SISO	Ant1	2412	17.222	≤26	PASS
			2442	17.206	≤26	PASS
			2472	17.222	≤26	PASS
	11N40SISO	Ant1	2422	35.618	26-40	PASS
			2442	35.552	26-40	PASS
			2462	35.596	26-40	PASS
	11AX20SISO	Ant1	2412	18.271	≤26	PASS
			2442	18.235	≤26	PASS
			2472	18.254	≤26	PASS
	11AX40SISO	Ant1	2422	35.602	26-40	PASS
			2442	35.534	26-40	PASS
			2462	35.576	26-40	PASS



Spread Bandwidth

Test Condition	Test Mode	Antenna	Channel	Result [MHz]	Limit [MHz]	Verdict
NTHV	11B	Ant1	2412	8.866	≥0.5	PASS
			2442	8.828	≥0.5	PASS
			2472	8.842	≥0.5	PASS

Spreading Rate

Test Mode	Channel	Spreading Bandwidth (MHz)	Modulation Rate	Spreading Rate	Limit	Verdict
11B	2412	8.866	1.375	6.448	≥5	PASS
	2442	8.828	1.375	6.420	≥5	PASS
	2472	8.842	1.375	6.431	≥5	PASS

Note:

1. Spreading Rate = Spreading Bandwidth / Modulation Rate of EUT.
2. For 802.11b mode, the modulation rate of EUT is 1.375.



Test Plots:

Occupied Bandwidth

NTLV_11B_Ant1_2412



NTLV_11B_Ant1_2442



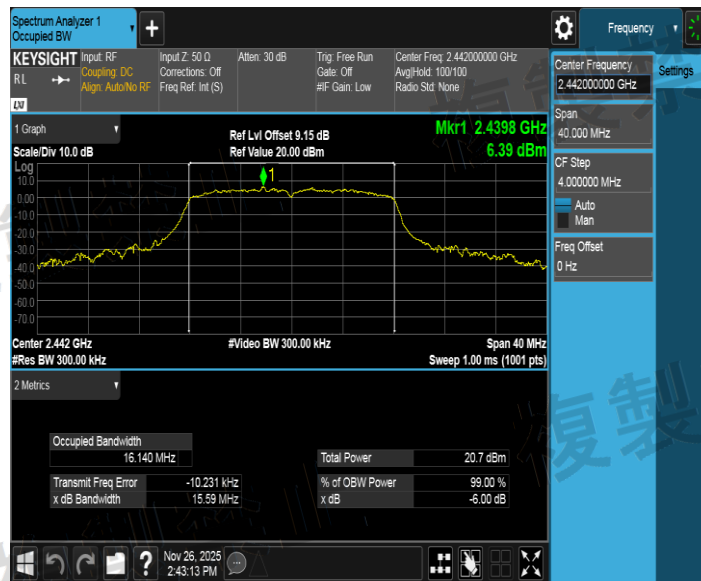
NTLV_11B_Ant1_2472



NTLV_11G_Ant1_2412



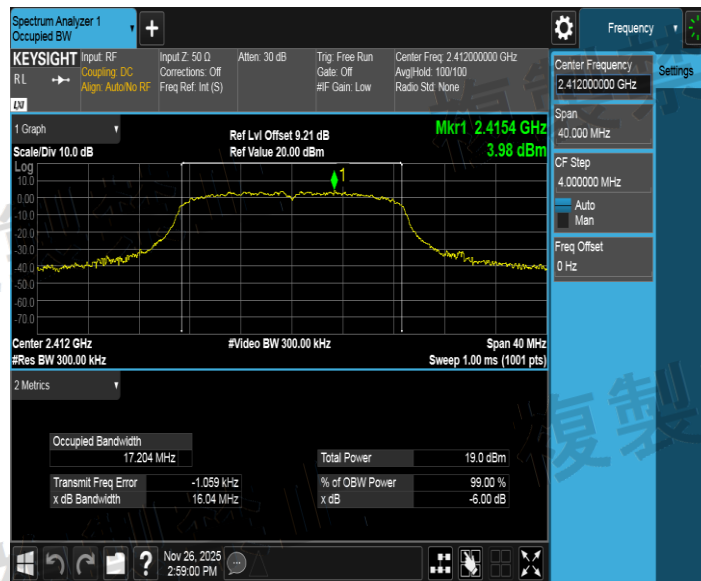
NTLV_11G_Ant1_2442



NTLV_11G_Ant1_2472



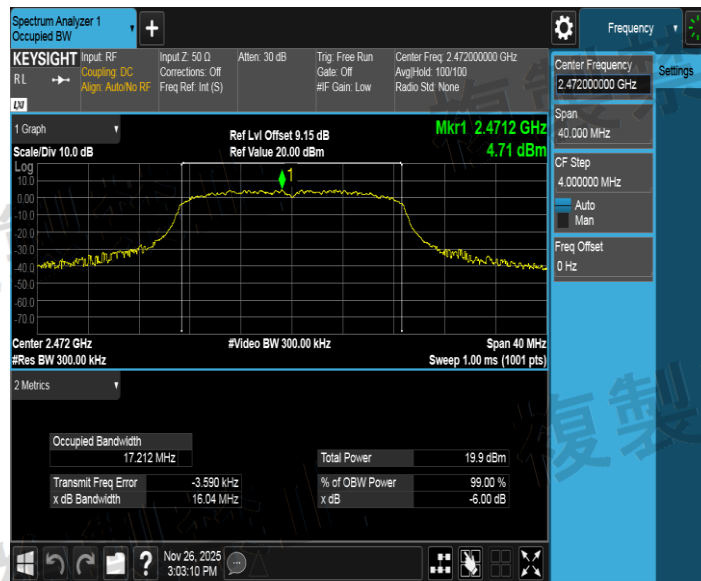
NTLV_11N20SISO_Ant1_2412



NTLV_11N20SISO_Ant1_2442



NTLV_11N20SISO_Ant1_2472



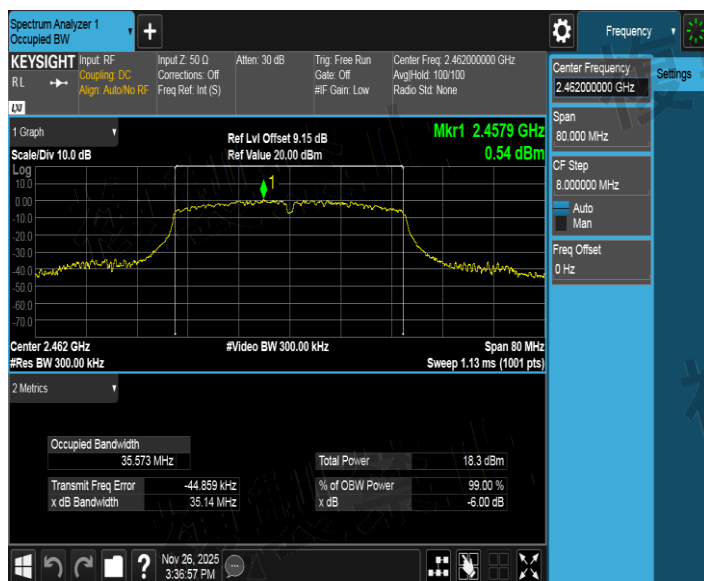
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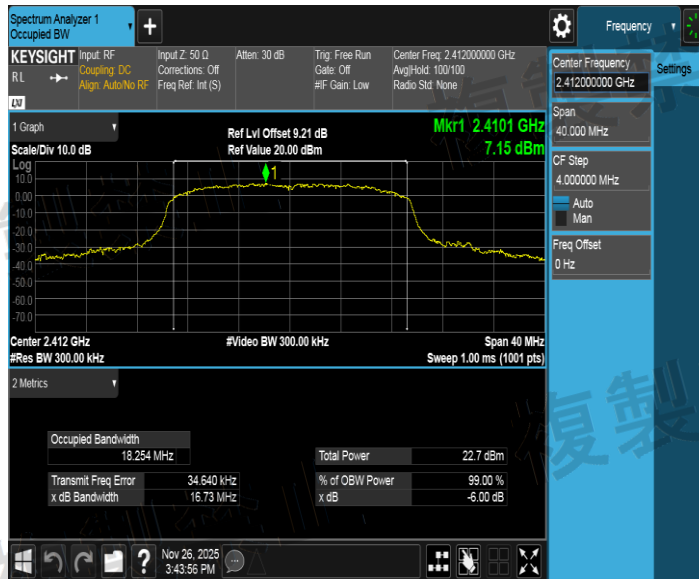
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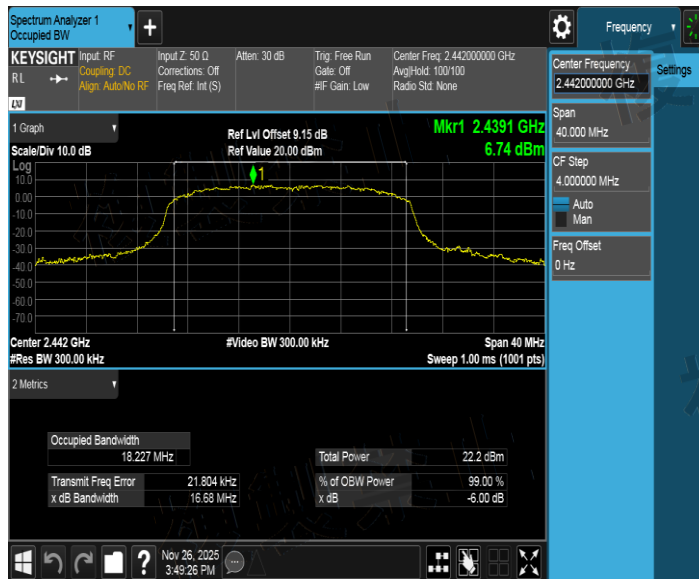
NTLV_11N40SISO_Ant1_2462



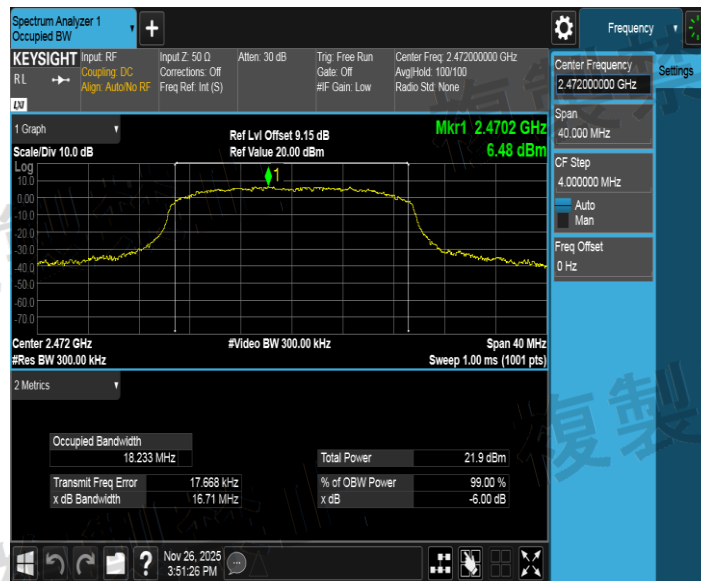
NTLV_11AX20SISO_Ant1_2412



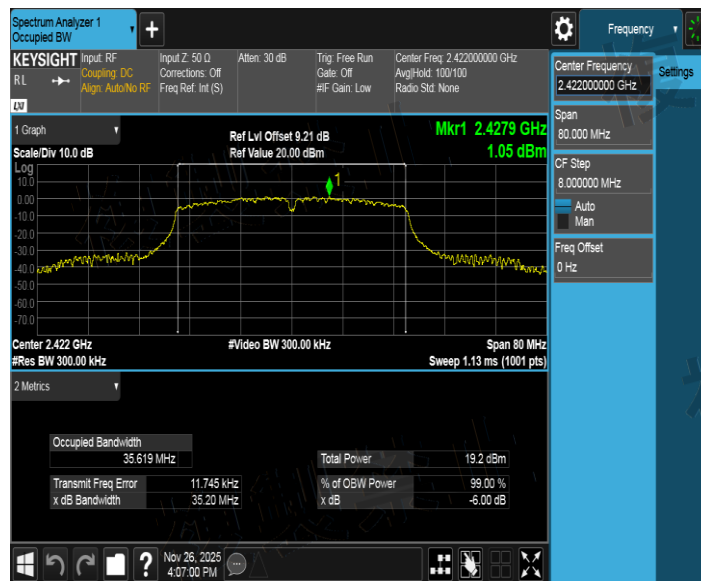
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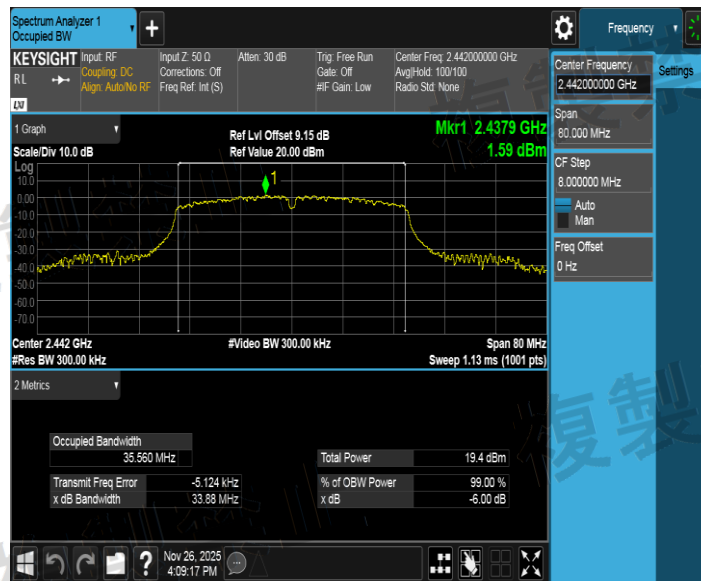
NTLV_11AX20SISO_Ant1_2472



NTLV_11AX40SISO_Ant1_2422



NTLV_11AX40SISO_Ant1_2442



NTLV_11AX40SISO_Ant1_2462



Spread Bandwidth

NTLV_11B_Ant1_2412



NTLV_11B_Ant1_2442



NTLV_11B_Ant1_2472



Occupied Bandwidth

NTNV_11B_Ant1_2412



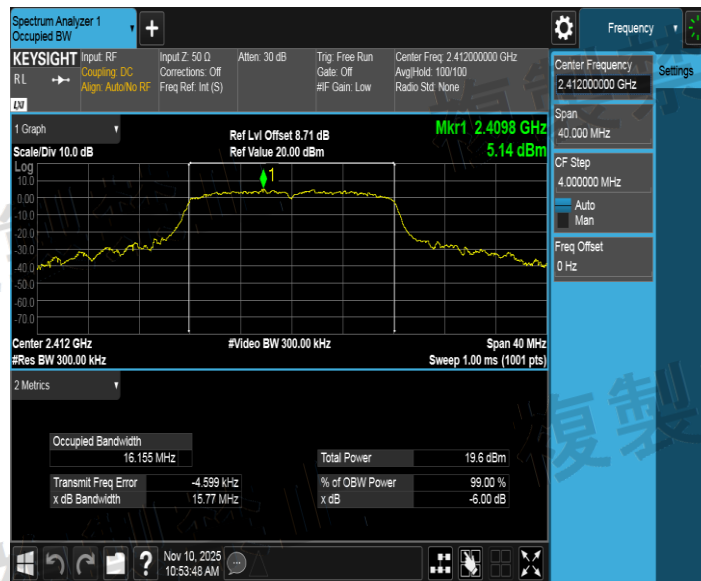
NTNV_11B_Ant1_2442



NTNV_11B_Ant1_2472



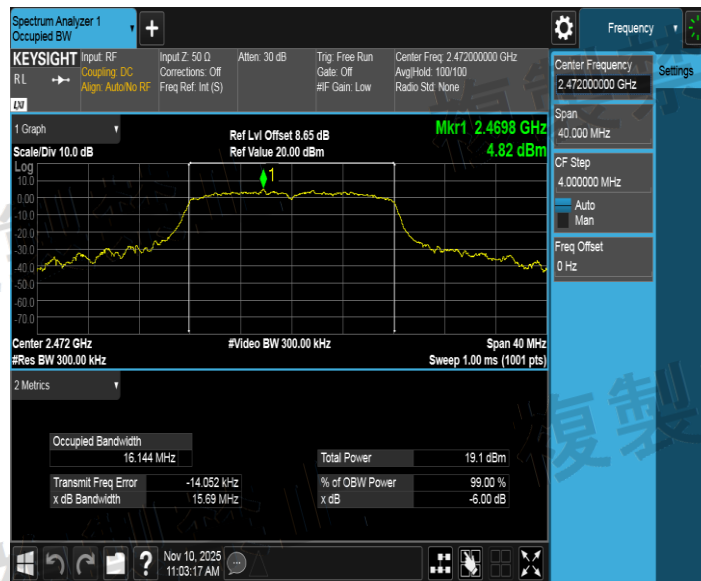
NTNV_11G_Ant1_2412



NTNV_11G_Ant1_2442



NTNV_11G_Ant1_2472



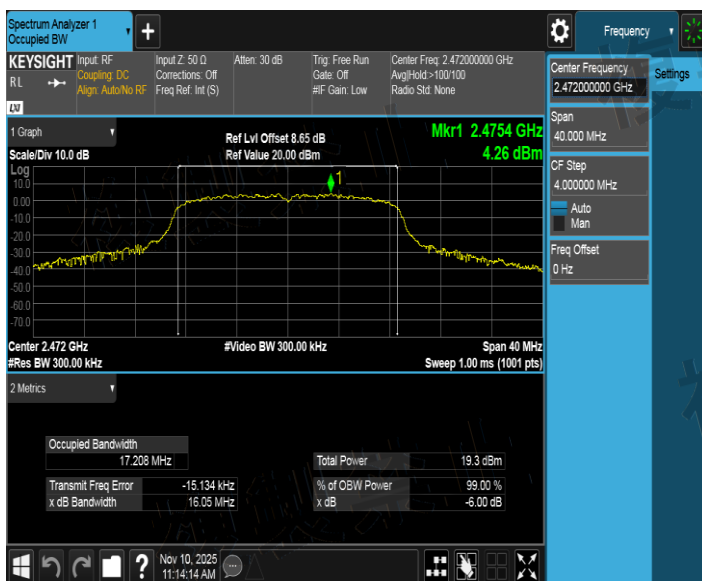
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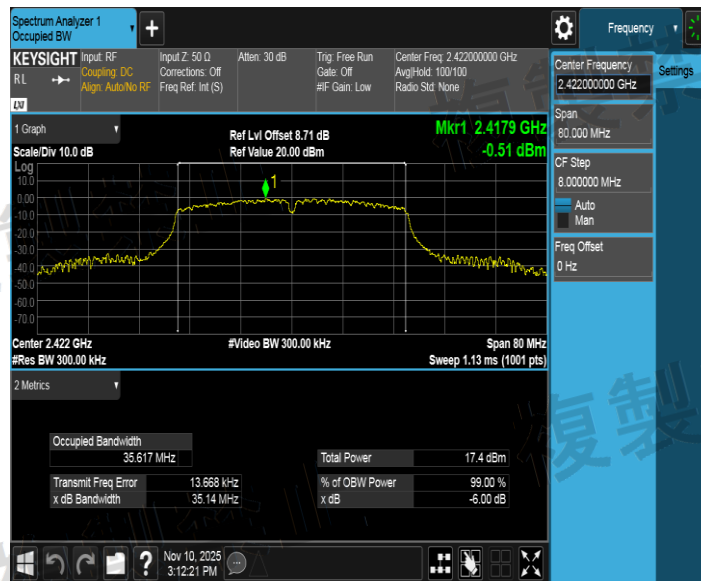
NTNV_11N20SISO_Ant1_2442



NTNV_11N20SISO_Ant1_2472



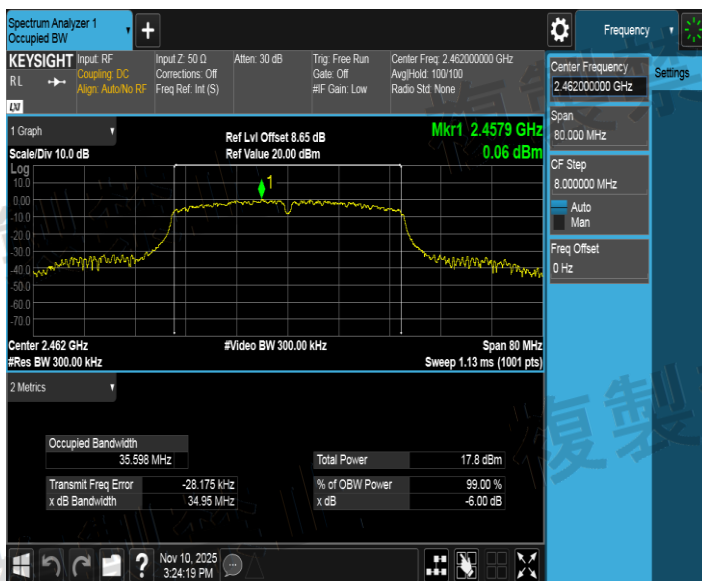
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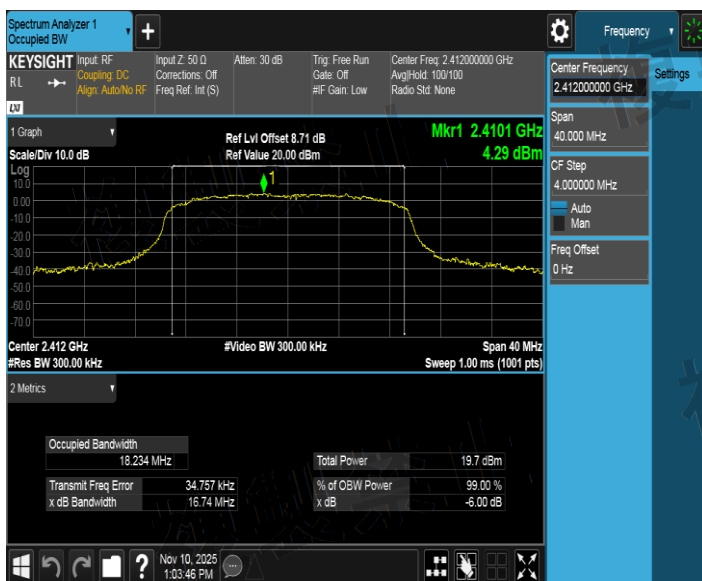
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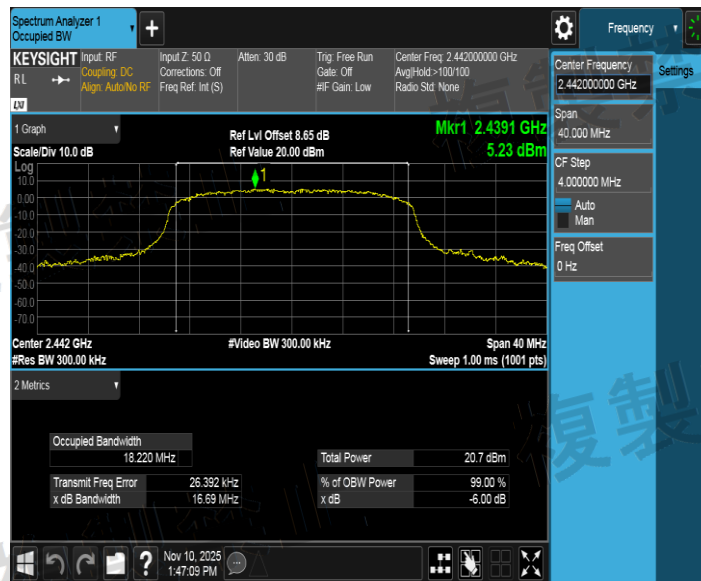
NTNV_11N40SISO_Ant1_2462



NTNV_11AX20SISO_Ant1_2412



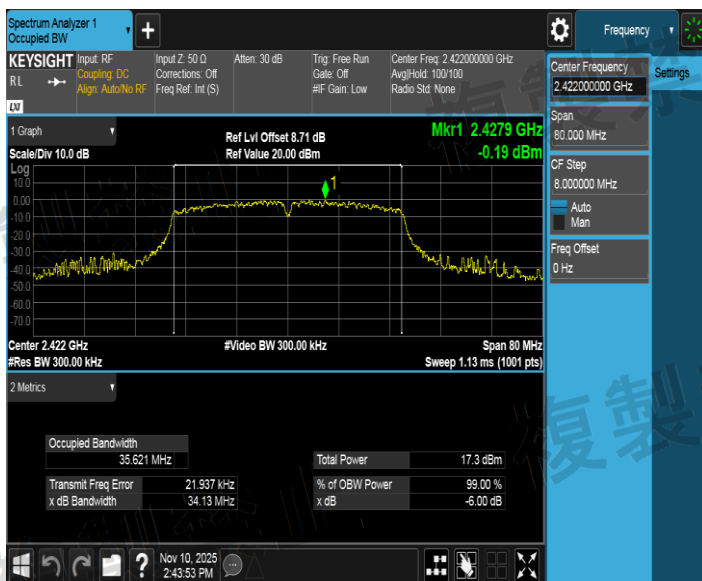
NTNV_11AX20SISO_Ant1_2442



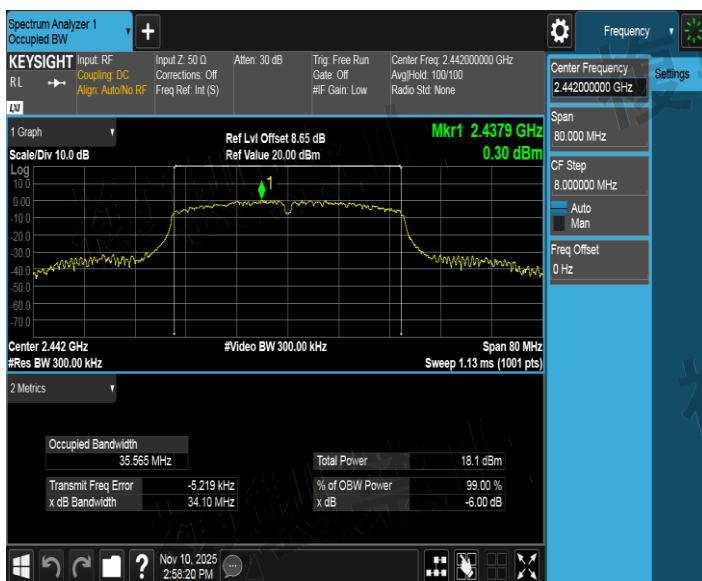
NTNV_11AX20SISO_Ant1_2472



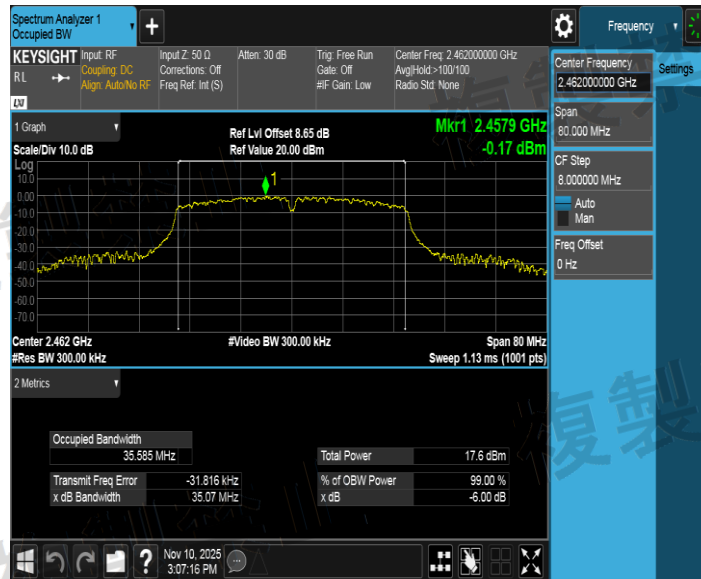
NTNV_11AX40SISO_Ant1_2422



NTNV_11AX40SISO_Ant1_2442



NTNV_11AX40SISO_Ant1_2462



Spread Bandwidth

NTNV_11B_Ant1_2412



NTNV_11B_Ant1_2442



NTNV_11B_Ant1_2472



Occupied Bandwidth

NTHV_11B_Ant1_2412



NTHV_11B_Ant1_2442



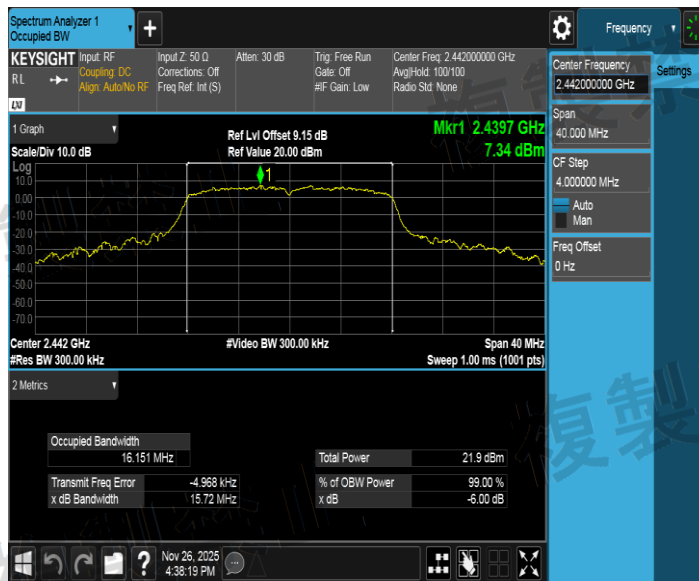
NTHV_11B_Ant1_2472



NTHV_11G_Ant1_2412



NTHV_11G_Ant1_2442



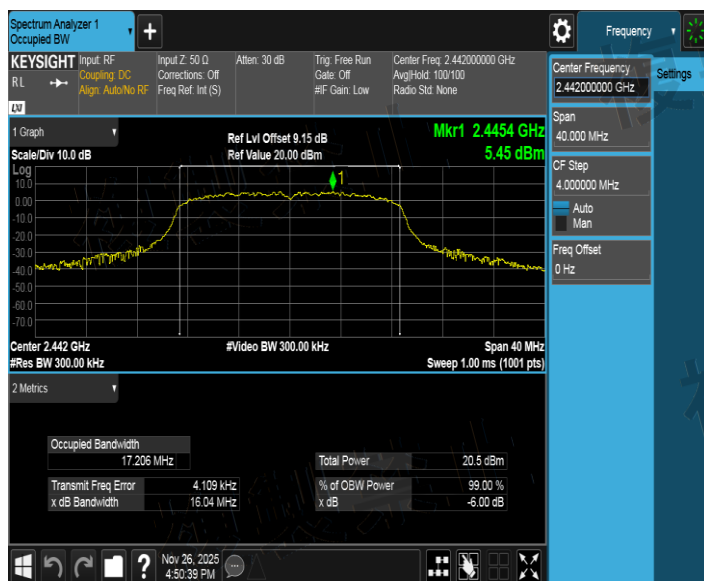
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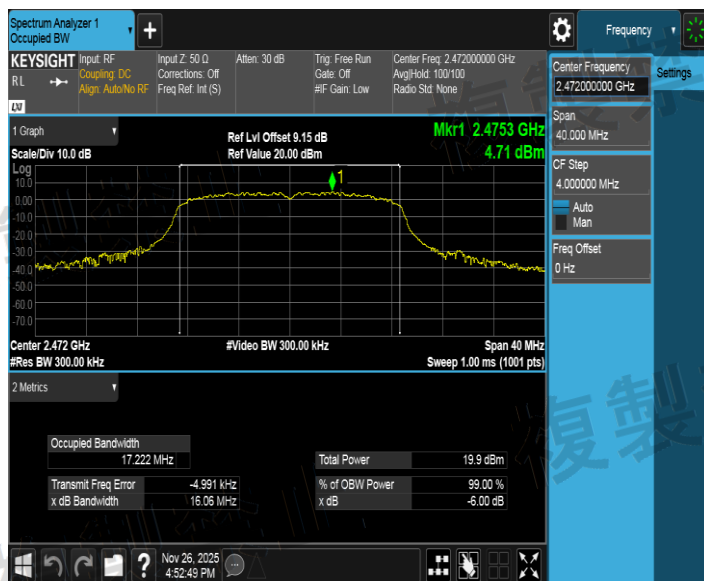
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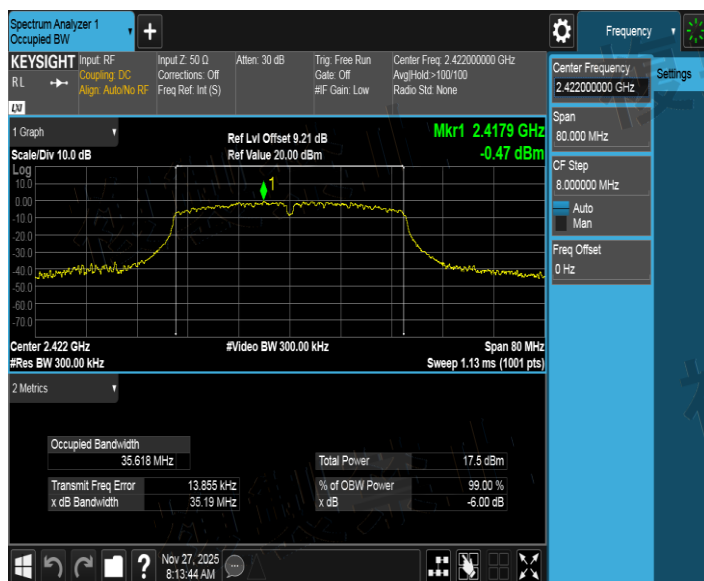
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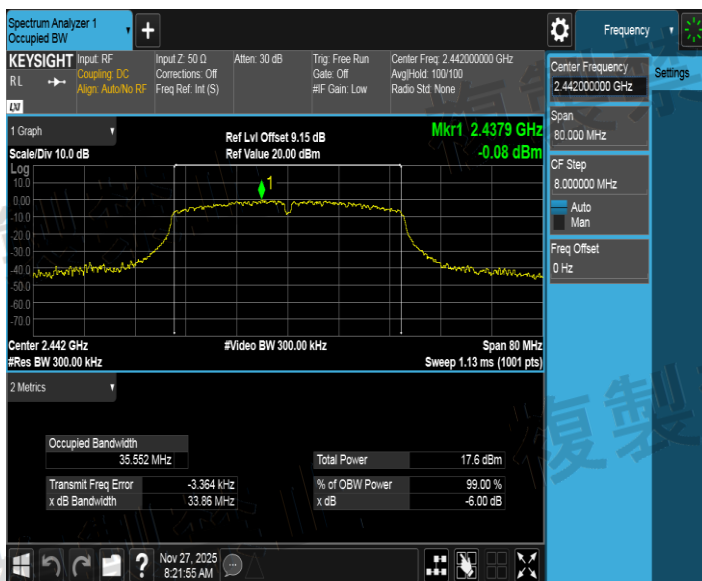
NTHV_11N20SISO_Ant1_2472



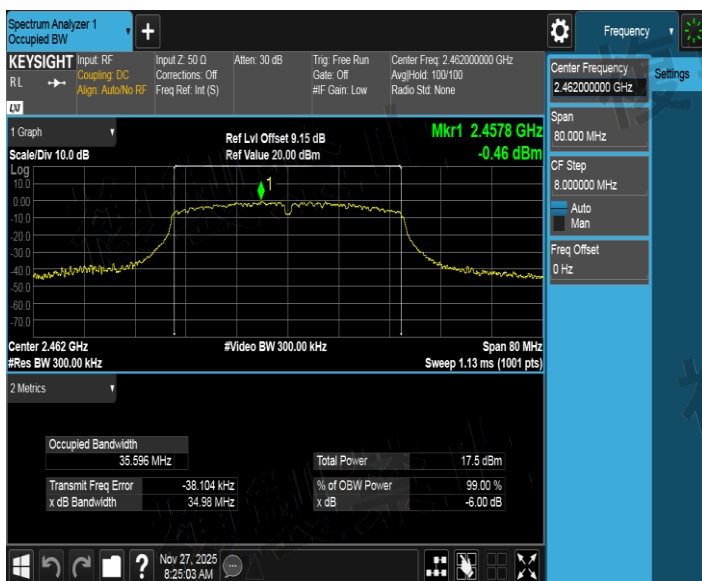
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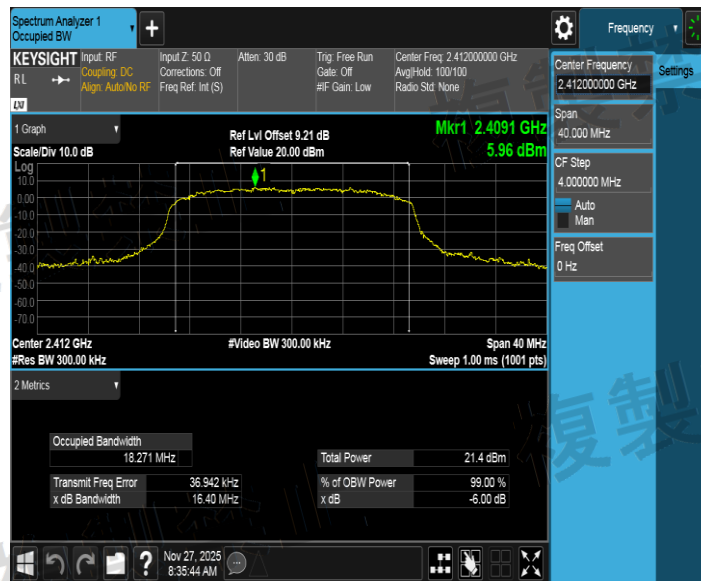
NTHV_11N40SISO_Ant1_2442



NTHV_11N40SISO_Ant1_2462



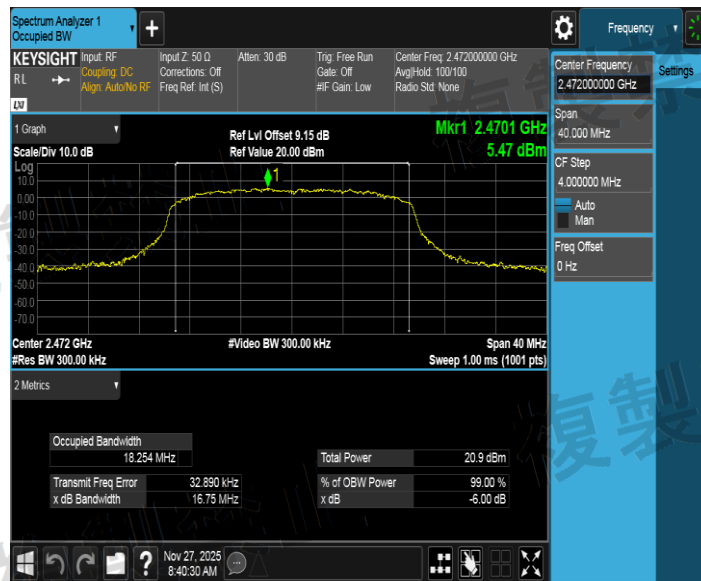
NTHV_11AX20SISO_Ant1_2412



NTHV_11AX20SISO_Ant1_2442



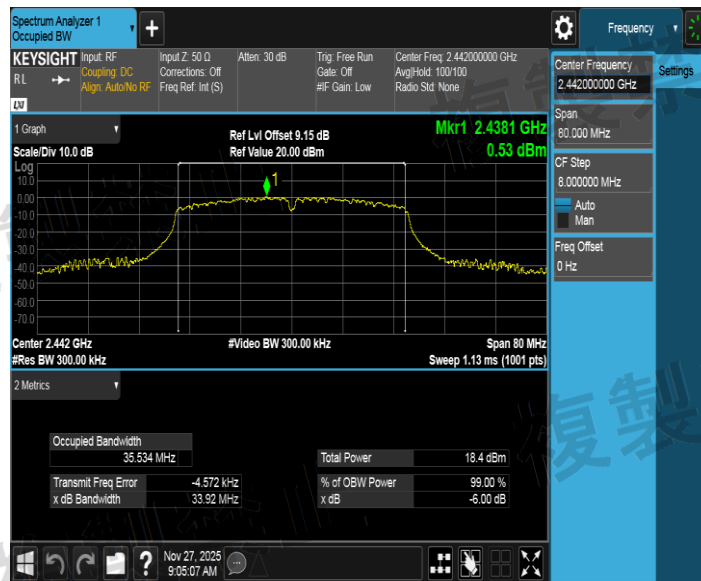
NTHV_11AX20SISO_Ant1_2472



NTHV_11AX40SISO_Ant1_2422



NTHV_11AX40SISO_Ant1_2442



NTHV_11AX40SISO_Ant1_2462



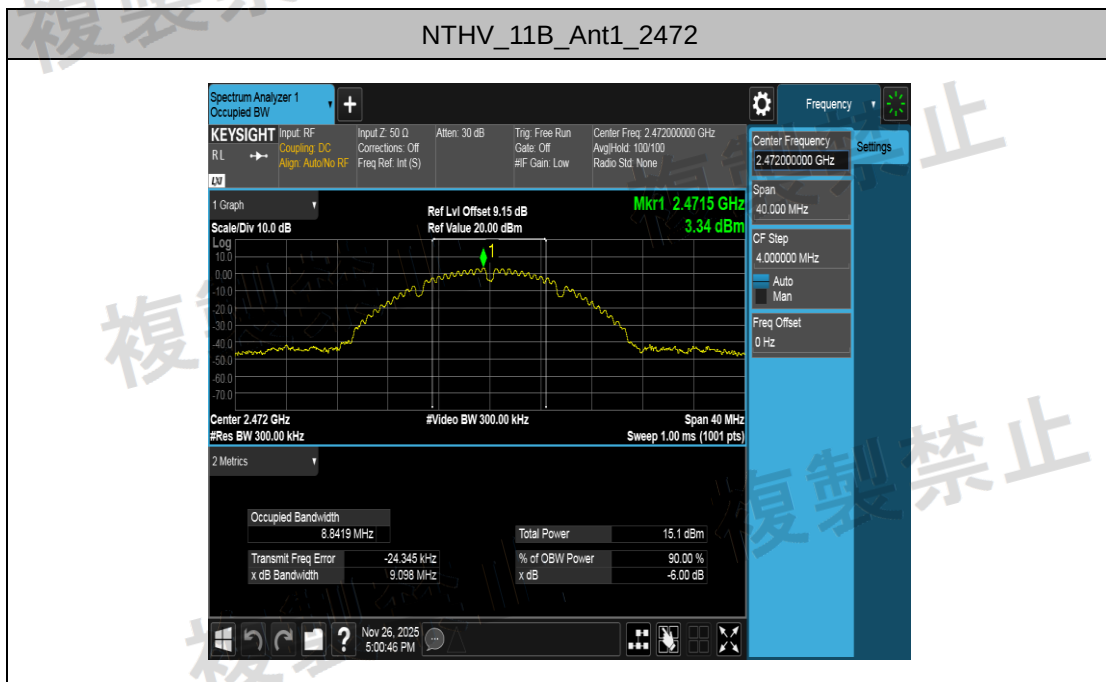
Spread Bandwidth

NTHV_11B_Ant1_2412



NTHV_11B_Ant1_2442





8. Antenna Power and Antenna Power Tolerance

8.1. Limit

Item	Limits
Antenna Power	$\leq 3\text{mW/MHz}$ (FHSS 2427 ~ 2470.75 MHz) $\leq 5\text{mW/MHz}$ (OFDM, DSSS 2400 ~ 2483.5MHz, for 26MHz< occupied bandwidth $\leq 40\text{MHz}$) $\leq 10\text{mW/MHz}$ (OFDM, DSSS 2400 ~ 2483.5MHz, for occupied bandwidth $\leq 26\text{MHz}$) $\leq 10\text{mW}$ (Other modulation method 2400 ~ 2483.5MHz)
Antenna Power Error	-80% ~ +20% (Base on manufacturer declare antenna power density)
E.i.r.p	$\leq 12.14\text{dBm/MHz}$ (OFDM,DSSS from 2400-2483.5MHz)

8.2. Test Setup



8.3. Test Procedure

The spectrum analyzer setting up to search a frequency that will give the maximum value of antenna power is as follows.

Center frequency	Test frequency
Sweep bandwidth	2 times of occupied bandwidth
Resoluble bandwidth	1MHz
Video bandwidth	1MHz
Y-axis scale	10dB/Div.
Sweep time	Minimum time by which measuring accuracy is assured (In case of burst



	wave, 1 burst shall be contained per 1 sample)
Trigger condition	Free run
Data points	More than 400 points
Sweep mode	Continuous sweeping
Display mode	Maximum holding

The spectrum analyzer setting up to measure antenna power is as follows. In this case, connecting the high frequency power meter with IF output of the spectrum analyzer, calibrate indication of the high frequency power meter power against output point of the radio equipment.

Center frequency	Maximum power point frequency
Sweep bandwidth	0Hz
Resoluble bandwidth	1MHz
Video bandwidth	Equivalent to resolvable bandwidth
Sweep mode	Continuous sweeping

Note: The test frequency range of spectrum Analyzer is 10Hz-30GHz, it contains test frequencies, so spectrum Analyzer didn't connect to high frequency power meter.



8.4. Test Result

Test environment:

Temperature:	23.8 ~ 28.6 °C
Relative Humidity:	48 ~ 62 %
ATM Pressure:	100.8 ~102.5 kPa
Test Date (yy-mm-dd):	2025.10.27 ~ 2025.12.22
Test Voltage:	NV 3.3V, LV 2.97V, HV 3.63V
Test Engineer:	Stone Zhang

Test Data:

NTLV:

802.11b

Frequency (MHz)	Antenna Power (dBm)	Antenna Power (mW/MHz)	Rated Power (mW/MHz)	Antenna Power Limit (mW/MHz)	Tolerance (%)	Antenna Gain (dBi)	EIRP dBm/MHz	EIRP Limit (dBm/MHz)	Tolerance Limit
2412	9.60	9.1201	9.5	≤ 10	4.804	2	11.60	≤ 12.14	-80% ~ +20%
2442	9.98	9.9541	9.5		-11.313	2	11.98		
2472	9.18	8.2794	9.5		-15.428	2	11.18		

Note:

1. The Rated power is 9.5 mW/MHz, which is declared by manufacturer.
2. Tolerance(%)=(Antenna Power-Rated Power)/Rated Power) x 100%.

802.11g

Frequency (MHz)	Antenna Power (dBm)	Antenna Power (mW/MHz)	Rated Power (mW/MHz)	Antenna Power Limit (mW/MHz)	Tolerance (%)	Antenna Gain (dBi)	EIRP dBm/MHz	EIRP Limit (dBm/MHz)	Tolerance Limit
2412	9.43	8.7700	9.0	≤ 10	-2.56	2	11.43	≤ 12.14	-80% ~ +20%
2442	9.51	8.9331	9.0		-0.74	2	11.51		
2472	9.11	8.1470	9.0		-9.48	2	11.11		

Note:

1. The Rated power is 9.0 mW/MHz, which is declared by manufacturer.
2. Tolerance(%)=(Antenna Power-Rated Power)/Rated Power) x 100%.

802.11n-HT20

Frequency (MHz)	Antenna Power (dBm)	Antenna Power (mW/MHz)	Rated Power (mW/MHz)	Antenna Power Limit (mW/MHz)	Tolerance (%)	Antenna Gain (dBi)	EIRP dBm/MHz	EIRP Limit (dBm/MHz)	Tolerance Limit
2412	9.12	8.1658	9.0	≤ 10	-9.27	2	11.12	≤ 12.14	-80% ~ +20%
2442	9.68	9.2897	9.0		3.22	2	11.68		



2472	9.36	8.6298	9.0		-4.11	2	11.36		
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Note:

1. The Rated power is 9.0 mW/MHz, which is declared by manufacturer.
2. Tolerance(%)=(Antenna Power-Rated Power)/Rated Power) x 100%.

802.11n-HT40

Frequency (MHz)	Antenna Power (dBm)	Antenna Power (mW/MHz)	Rated Power (mW/MHz)	Antenna Power Limit (mW/MHz)	Tolerance (%)	Antenna Gain (dBi)	EIRP dBm/MHz)	EIRP Limit (dBm/MHz)	Tolerance Limit
2422	4.69	2.9444	3.0	≅ 5	-1.85	2	6.69	≅ 9.13	-80% ~ +20%
2442	5.14	3.2659	3.0		8.86	2	7.14		
2462	4.70	2.9512	3.0		-1.63	2	6.70		

Note:

1. The Rated power is 3.0 mW/MHz, which is declared by manufacturer.
2. Tolerance(%)=(Antenna Power-Rated Power)/Rated Power) x 100%.

802.11ax-HE20

Frequency (MHz)	Antenna Power (dBm)	Antenna Power (mW/MHz)	Rated Power (mW/MHz)	Antenna Power Limit (mW/MHz)	Tolerance (%)	Antenna Gain (dBi)	EIRP dBm/MHz)	EIRP Limit (dBm/MHz)	Tolerance Limit
2412	9.89	9.7499	9.5	≅ 10	2.63	2	11.89	≅ 12.14	-80% ~ +20%
2442	9.87	9.7051	9.5		2.16	2	11.87		
2472	9.77	9.4842	9.5		-0.17	2	11.77		

Note:

1. The Rated power is 9.5 mW/MHz, which is declared by manufacturer.
2. Tolerance(%)=(Antenna Power-Rated Power)/Rated Power) x 100%.

802.11ax-HE40

Frequency (MHz)	Antenna Power (dBm)	Antenna Power (mW/MHz)	Rated Power (mW/MHz)	Antenna Power Limit (mW/MHz)	Tolerance (%)	Antenna Gain (dBi)	EIRP dBm/MHz)	EIRP Limit (dBm/MHz)	Tolerance Limit
2422	6.11	4.0832	4.0	≅ 5	2.08	2	8.11	≅ 9.13	-80% ~ +20%
2442	6.50	4.4668	4.0		11.67	2	8.50		
2462	5.85	3.8459	4.0		-3.85	2	7.85		

Note:

1. The Rated power is 4.0 mW/MHz, which is declared by manufacturer.
2. Tolerance(%)=(Antenna Power-Rated Power)/Rated Power) x 100%.



NTNV:

802.11b

Frequency (MHz)	Antenna Power (dBm)	Antenna Power (mW/MHz)	Rated Power (mW/MHz)	Antenna Power Limit (mW/MHz)	Tolerance (%)	Antenna Gain (dBi)	EIRP dBm/MHz	EIRP Limit (dBm/MHz)	Tolerance Limit
2412	9.89	9.7499	9.5	≤ 10	2.63	2	11.89	≤ 12.14	-80% ~ +20%
2442	9.79	9.5280	9.5		0.29	2	11.79		
2472	9.80	9.5499	9.5		0.53	2	11.80		

Note:

1. The Rated power is 9.5 mW/MHz, which is declared by manufacturer.
2. Tolerance(%)=(Antenna Power-Rated Power)/Rated Power) x 100%.

802.11g

Frequency (MHz)	Antenna Power (dBm)	Antenna Power (mW/MHz)	Rated Power (mW/MHz)	Antenna Power Limit (mW/MHz)	Tolerance (%)	Antenna Gain (dBi)	EIRP dBm/MHz	EIRP Limit (dBm/MHz)	Tolerance Limit
2412	9.37	8.6497	9.0	≤ 10	-3.89	2	11.37	≤ 12.14	-80% ~ +20%
2442	9.20	8.3176	9.0		-7.58	2	11.20		
2472	9.25	8.4140	9.0		-6.51	2	11.25		

Note:

1. The Rated power is 9.0 mW/MHz, which is declared by manufacturer.
2. Tolerance(%)=(Antenna Power-Rated Power)/Rated Power) x 100%.

802.11n-HT20

Frequency (MHz)	Antenna Power (dBm)	Antenna Power (mW/MHz)	Rated Power (mW/MHz)	Antenna Power Limit (mW/MHz)	Tolerance (%)	Antenna Gain (dBi)	EIRP dBm/MHz	EIRP Limit (dBm/MHz)	Tolerance Limit
2412	9.34	8.5901	9.0	≤ 10	-4.55	2	11.34	≤ 12.14	-80% ~ +20%
2442	9.52	8.9536	9.0		-0.52	2	11.52		
2472	9.32	8.5507	9.0		-4.99	2	11.32		

Note:

1. The Rated power is 9.0 mW/MHz, which is declared by manufacturer.
2. Tolerance(%)=(Antenna Power-Rated Power)/Rated Power) x 100%.

802.11n-HT40

Frequency (MHz)	Antenna Power (dBm)	Antenna Power (mW/MHz)	Rated Power (mW/MHz)	Antenna Power Limit (mW/MHz)	Tolerance (%)	Antenna Gain (dBi)	EIRP dBm/MHz)	EIRP Limit (dBm/MHz)	Tolerance Limit
2422	3.03	2.0091	3.0	≅ 5	-33.03	2	5.03	≅ 9.13	-80% ~ +20%
2442	3.94	2.4774	3.0		-17.42	2	5.94		
2462	3.51	2.2439	3.0		-25.20	2	5.51		

Note:

- The Rated power is 3.0 mW/MHz, which is declared by manufacturer.
- Tolerance(%)=(Antenna Power-Rated Power)/Rated Power) x 100%.

802.11ax-HE20

Frequency (MHz)	Antenna Power (dBm)	Antenna Power (mW/MHz)	Rated Power (mW/MHz)	Antenna Power Limit (mW/MHz)	Tolerance (%)	Antenna Gain (dBi)	EIRP dBm/MHz)	EIRP Limit (dBm/MHz)	Tolerance Limit
2412	9.78	9.5060	9.5	≅ 10	0.06	2	11.78	≅ 12.14	-80% ~ +20%
2442	9.75	9.4406	9.5		-0.63	2	11.75		
2472	9.65	9.2257	9.5		-2.89	2	11.65		

Note:

- The Rated power is 9.5 mW/MHz, which is declared by manufacturer.
- Tolerance(%)=(Antenna Power-Rated Power)/Rated Power) x 100%.

802.11ax-HE40

Frequency (MHz)	Antenna Power (dBm)	Antenna Power (mW/MHz)	Rated Power (mW/MHz)	Antenna Power Limit (mW/MHz)	Tolerance (%)	Antenna Gain (dBi)	EIRP dBm/MHz)	EIRP Limit (dBm/MHz)	Tolerance Limit
2422	3.67	2.3281	4.0	≅ 5	-41.80	2	5.67	≅ 9.13	-80% ~ +20%
2442	4.24	2.6546	4.0		-33.64	2	6.24		
2462	3.16	2.0701	4.0		-48.25	2	5.16		

Note:

- The Rated power is 4.0 mW/MHz, which is declared by manufacturer.
- Tolerance(%)=(Antenna Power-Rated Power)/Rated Power) x 100%.



NTHV:

802.11b

Frequency (MHz)	Antenna Power (dBm)	Antenna Power (mW/MHz)	Rated Power (mW/MHz)	Antenna Power Limit (mW/MHz)	Tolerance (%)	Antenna Gain (dBi)	EIRP dBm/MHz)	EIRP Limit (dBm/MHz)	Tolerance Limit
2412	8.66	7.3451	9.5	≤ 10	-22.68	2	10.66	≤ 12.14	-80% ~ +20%
2442	9.10	8.1283	9.5		-14.44	2	11.10		
2472	9.24	8.3946	9.5		-11.64	2	11.24		

Note:

1. The Rated power is 9.5 mW/MHz, which is declared by manufacturer.
2. Tolerance(%)=(Antenna Power-Rated Power)/Rated Power) x 100%.

802.11g

Frequency (MHz)	Antenna Power (dBm)	Antenna Power (mW/MHz)	Rated Power (mW/MHz)	Antenna Power Limit (mW/MHz)	Tolerance (%)	Antenna Gain (dBi)	EIRP dBm/MHz)	EIRP Limit (dBm/MHz)	Tolerance Limit
2412	9.56	9.0365	9.0	≤ 10	0.41	2	11.56	≤ 12.14	-80% ~ +20%
2442	9.44	8.7902	9.0		-2.33	2	11.44		
2472	9.55	9.0157	9.0		0.17	2	11.55		

Note:

1. The Rated power is 9.0 mW/MHz, which is declared by manufacturer.
2. Tolerance(%)=(Antenna Power-Rated Power)/Rated Power) x 100%.

802.11n-HT20

Frequency (MHz)	Antenna Power (dBm)	Antenna Power (mW/MHz)	Rated Power (mW/MHz)	Antenna Power Limit (mW/MHz)	Tolerance (%)	Antenna Gain (dBi)	EIRP dBm/MHz)	EIRP Limit (dBm/MHz)	Tolerance Limit
2412	9.55	9.0157	9.0	≤ 10	0.17	2	11.55	≤ 12.14	-80% ~ +20%
2442	9.60	9.1201	9.0		1.33	2	11.60		
2472	9.38	8.6696	9.0		-3.67	2	11.38		

Note:

1. The Rated power is 9.0 mW/MHz, which is declared by manufacturer.
2. Tolerance(%)=(Antenna Power-Rated Power)/Rated Power) x 100%.

802.11n-HT40

Frequency (MHz)	Antenna Power (dBm)	Antenna Power (mW/MHz)	Rated Power (mW/MHz)	Antenna Power Limit (mW/MHz)	Tolerance (%)	Antenna Gain (dBi)	EIRP dBm/MHz)	EIRP Limit (dBm/MHz)	Tolerance Limit
2422	3.02	2.0045	3.0	≅ 5	-33.18	2	5.02	≅ 9.13	-80% ~ +20%
2442	3.61	2.2961	3.0		-23.46	2	5.61		
2462	3.05	2.0184	3.0		-32.72	2	5.05		

Note:

1. The Rated power is 3.0 mW/MHz, which is declared by manufacturer.
2. Tolerance(%)=(Antenna Power-Rated Power)/Rated Power) x 100%.

802.11ax-HE20

Frequency (MHz)	Antenna Power (dBm)	Antenna Power (mW/MHz)	Rated Power (mW/MHz)	Antenna Power Limit (mW/MHz)	Tolerance (%)	Antenna Gain (dBi)	EIRP dBm/MHz)	EIRP Limit (dBm/MHz)	Tolerance Limit
2412	9.74	9.4189	9.5	≅ 10	-0.85	2	11.74	≅ 12.14	-80% ~ +20%
2442	9.66	9.2470	9.5		-2.66	2	11.66		
2472	9.38	8.6696	9.5		-8.74	2	11.38		

Note:

1. The Rated power is 9.5 mW/MHz, which is declared by manufacturer.
2. Tolerance(%)=(Antenna Power-Rated Power)/Rated Power) x 100%.

802.11ax-HE40

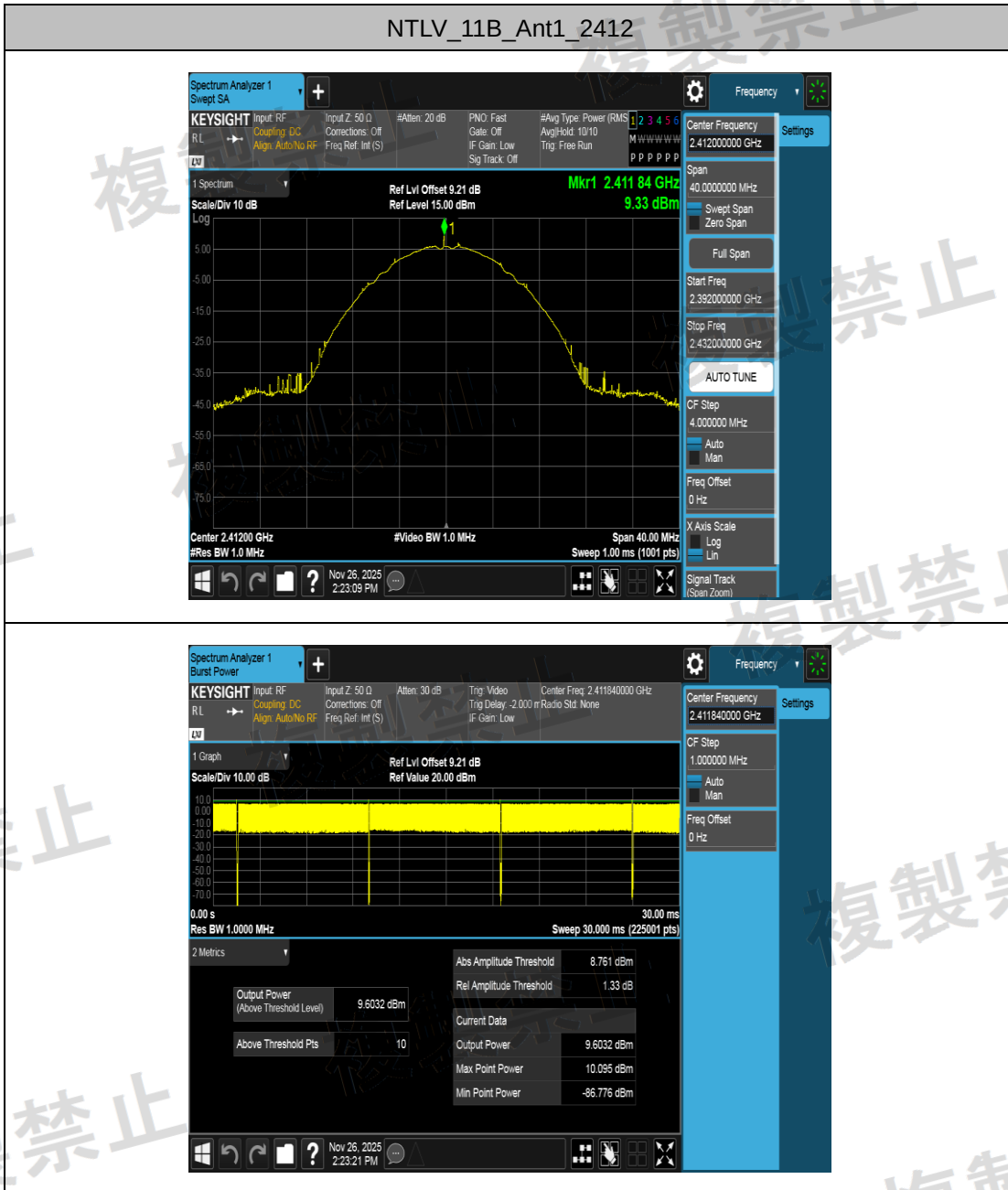
Frequency (MHz)	Antenna Power (dBm)	Antenna Power (mW/MHz)	Rated Power (mW/MHz)	Antenna Power Limit (mW/MHz)	Tolerance (%)	Antenna Gain (dBi)	EIRP dBm/MHz)	EIRP Limit (dBm/MHz)	Tolerance Limit
2422	6.65	4.6238	4.0	≅ 5	15.60	2	8.65	≅ 9.13	-80% ~ +20%
2442	5.11	3.2434	4.0		-18.92	2	7.11		
2462	5.26	3.3574	4.0		-16.07	2	7.26		

Note:

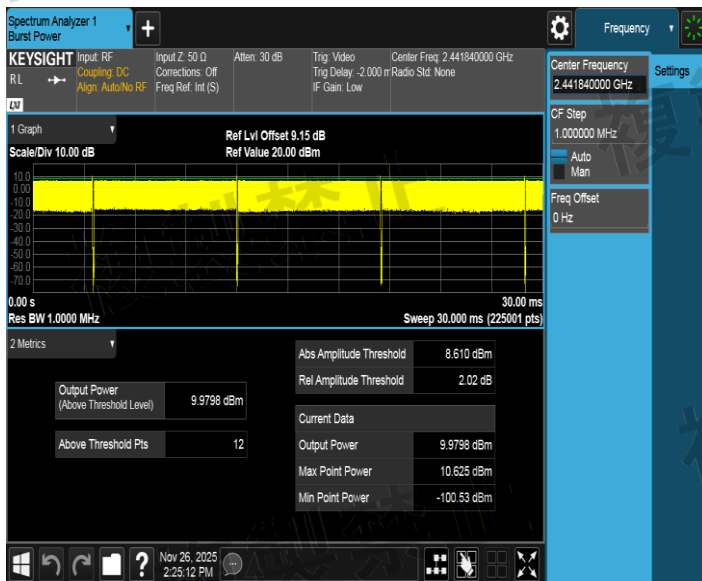
1. The Rated power is 4.0 mW/MHz, which is declared by manufacturer.
2. Tolerance(%)=(Antenna Power-Rated Power)/Rated Power) x 100%.



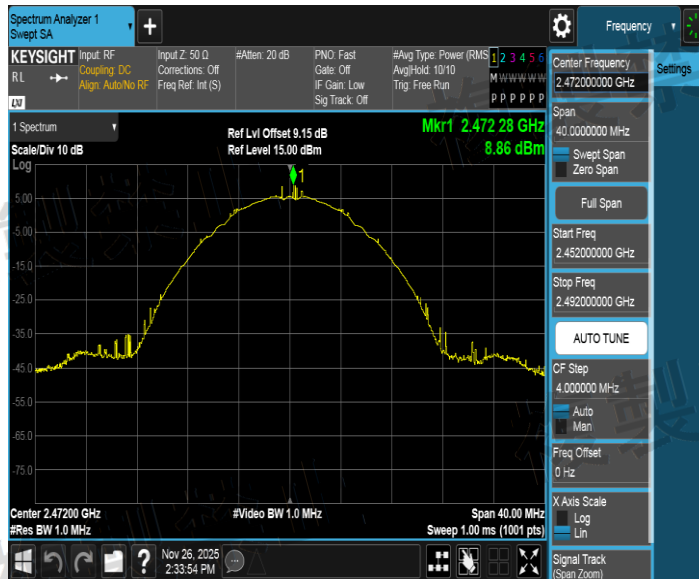
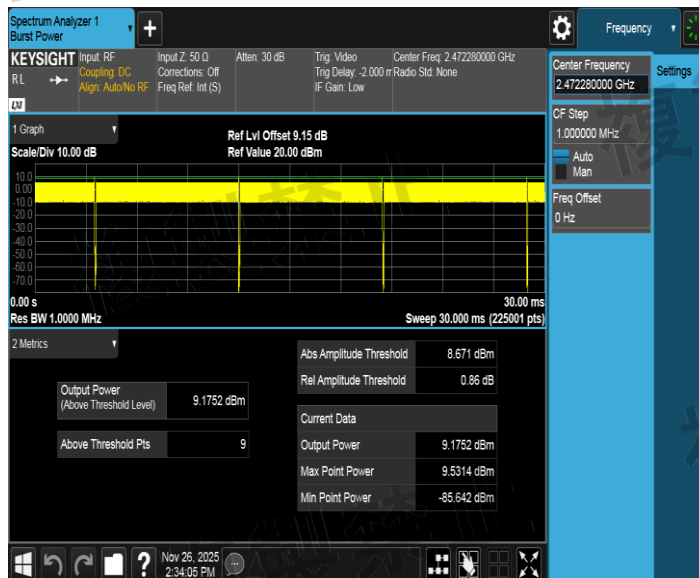
Test Plots:



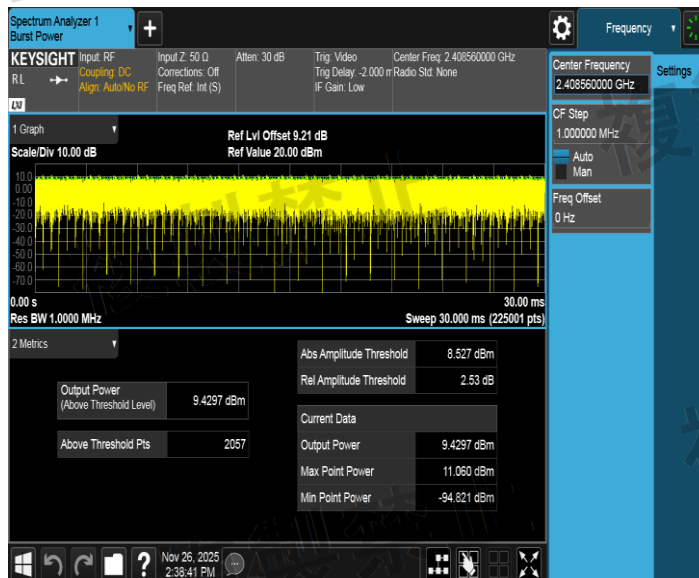
NTLV_11B_Ant1_2442



NTLV_11B_Ant1_2472



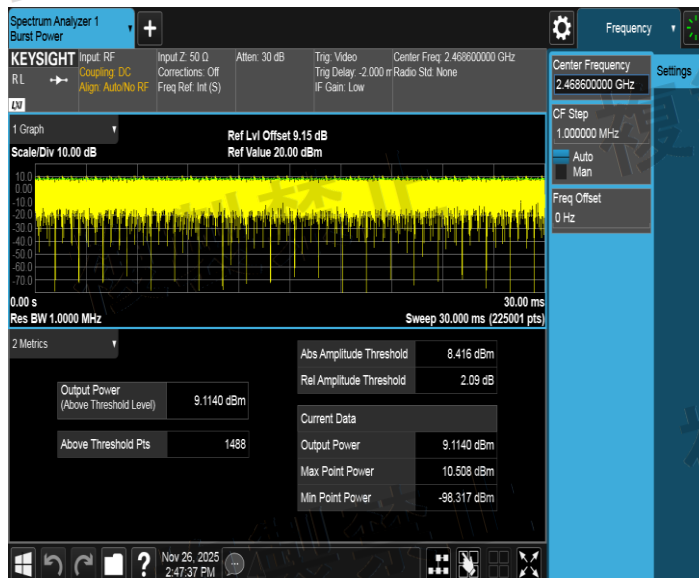
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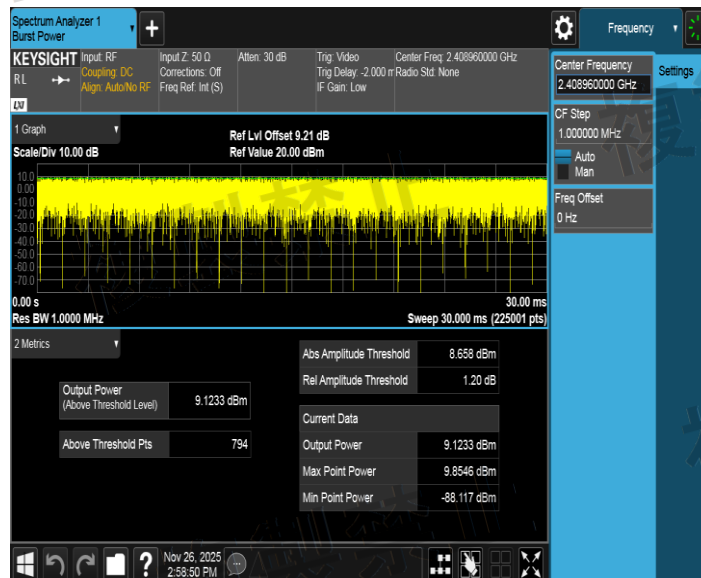
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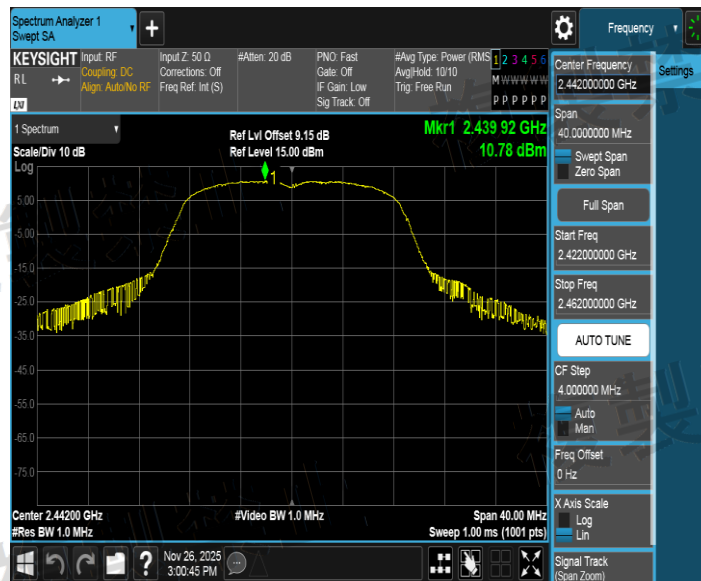
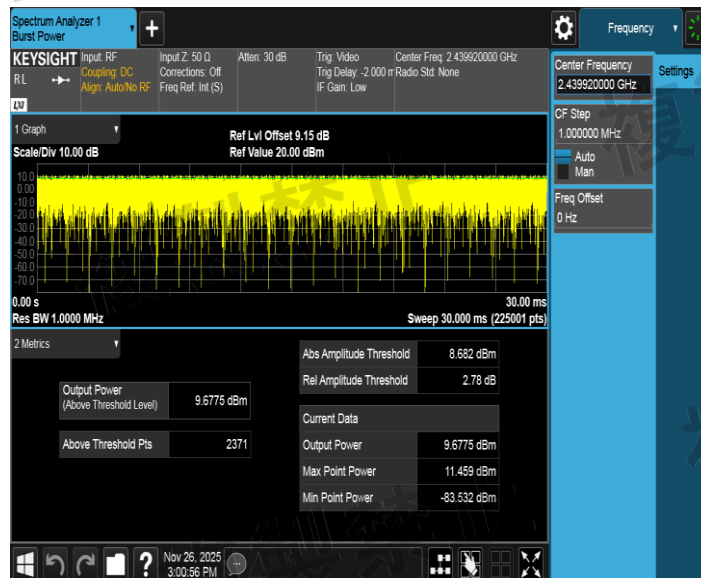
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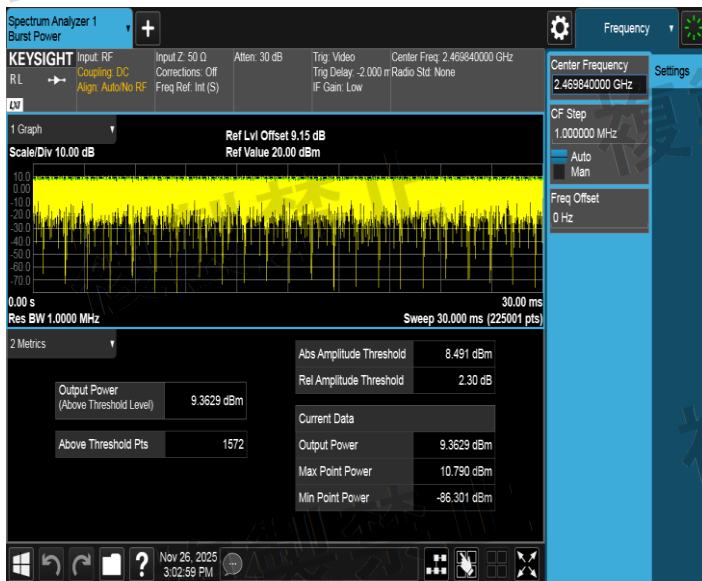
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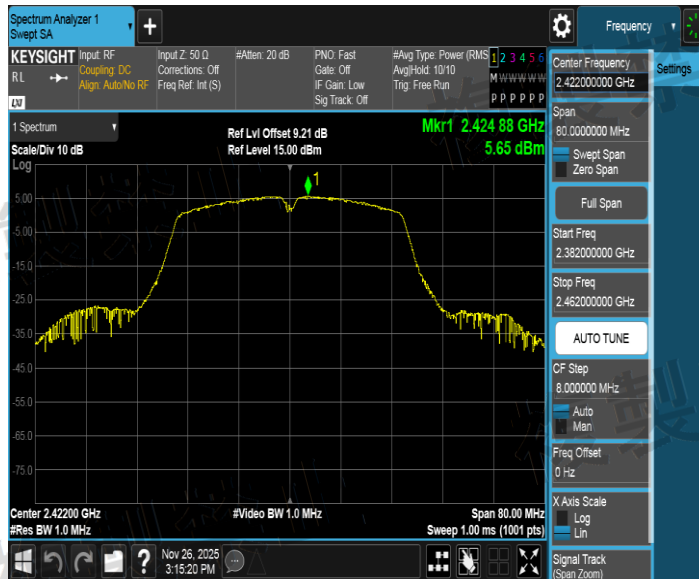
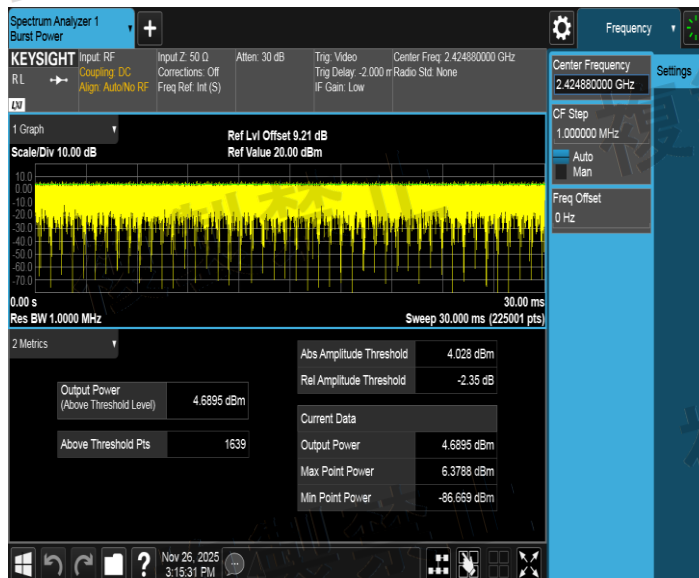
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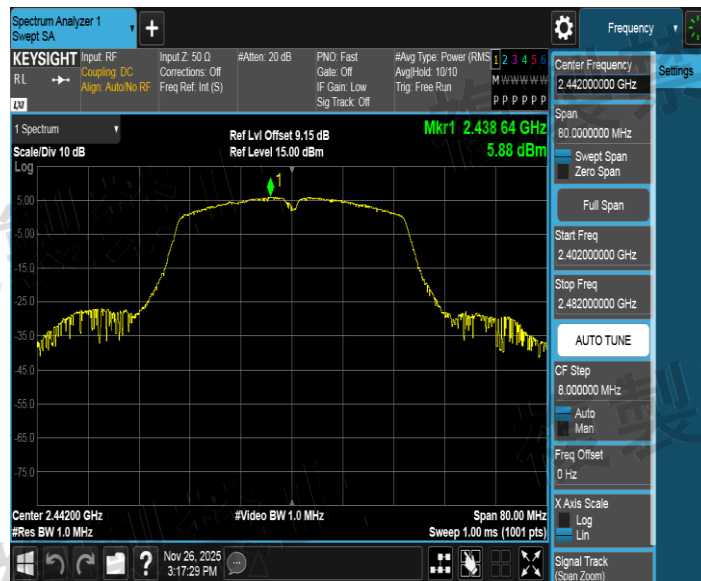
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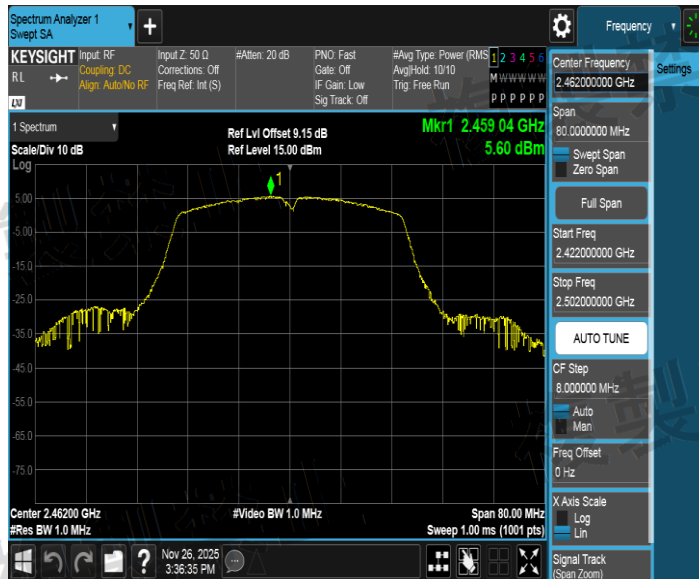
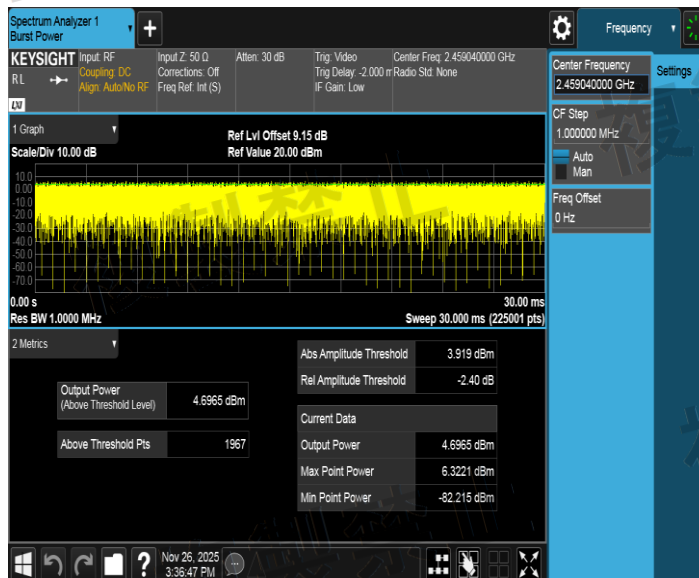
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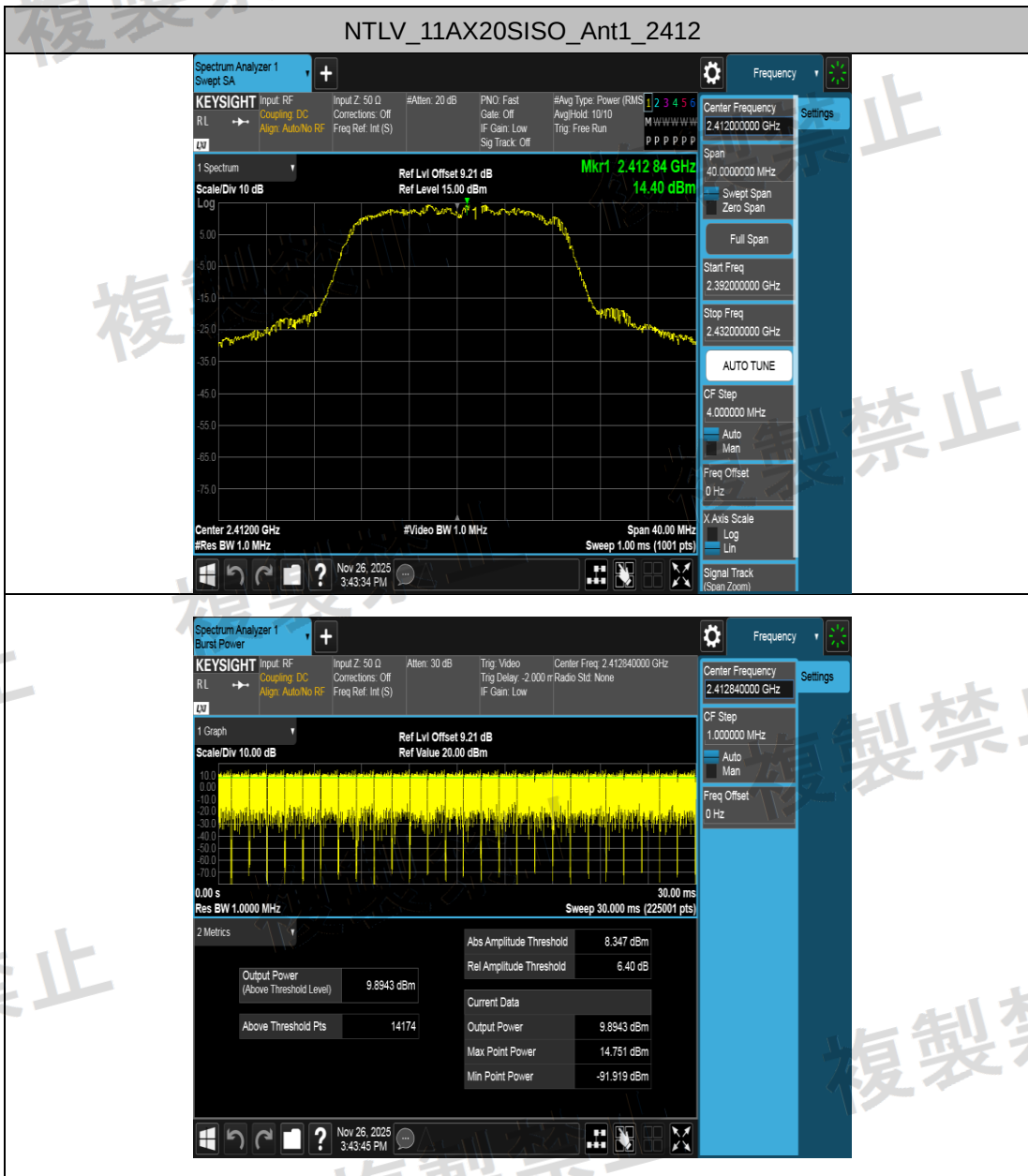


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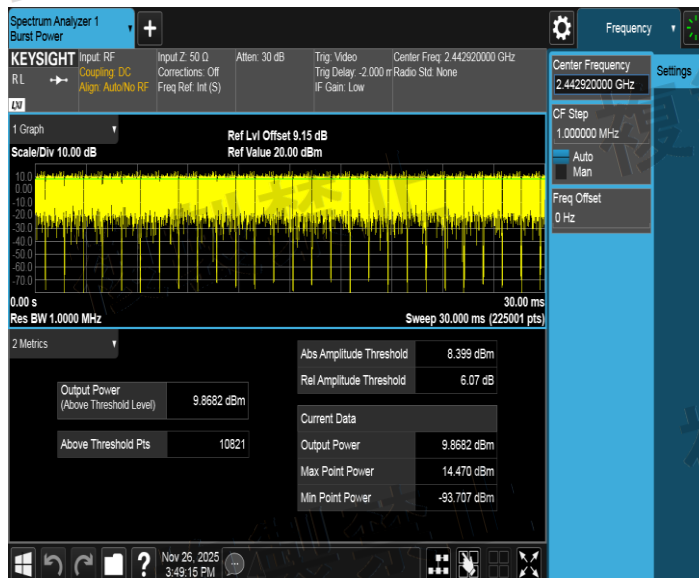


NTLV_11N40SISO_Ant1_2462





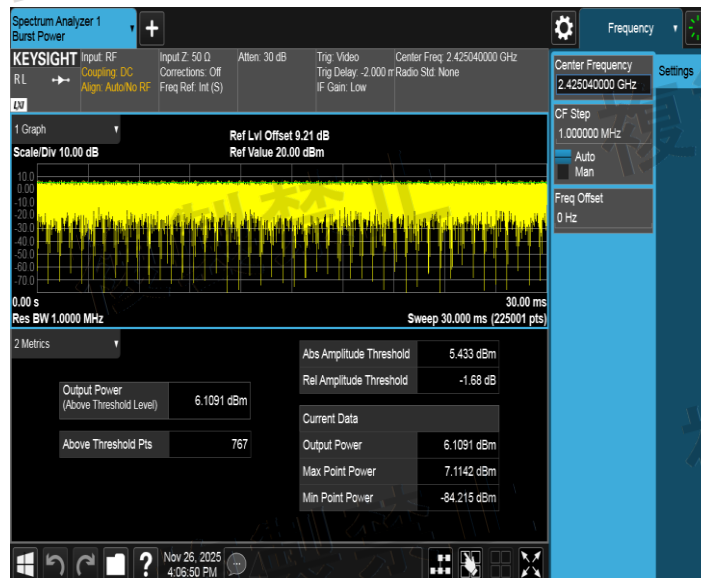
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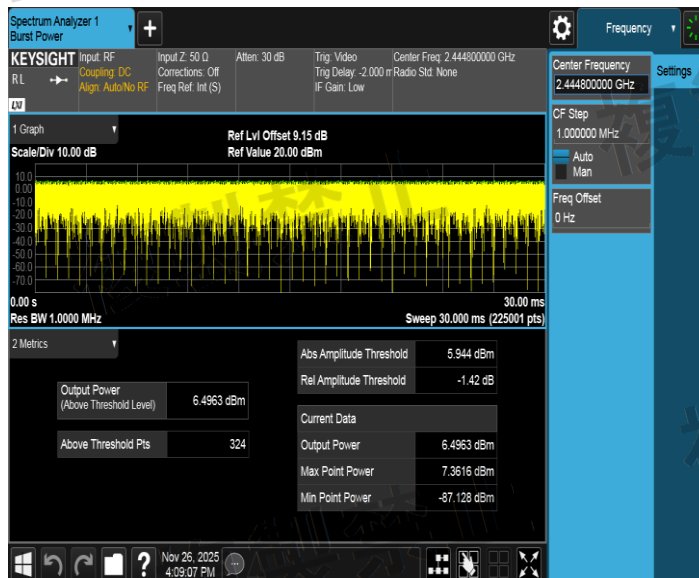
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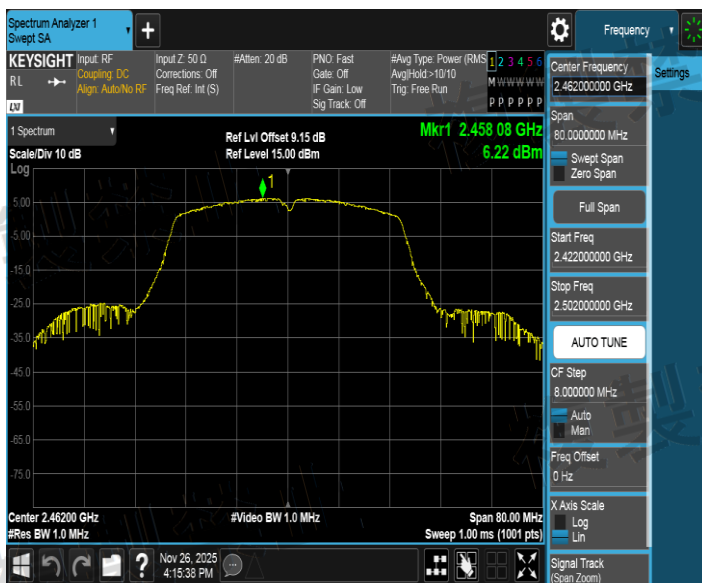
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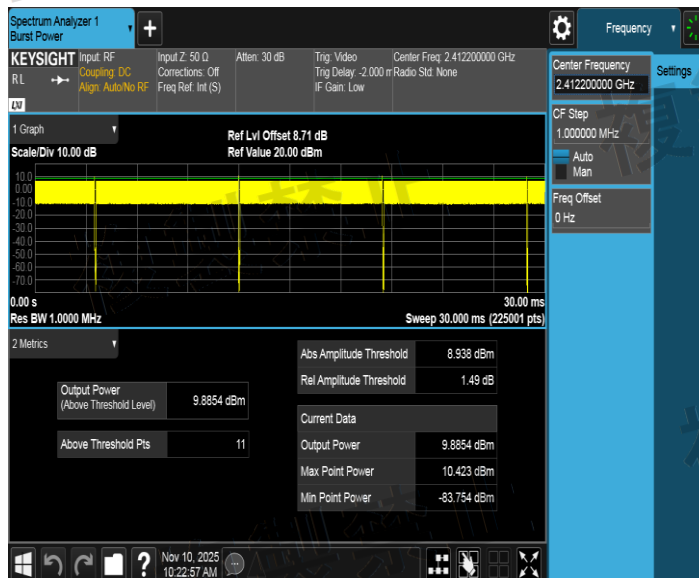
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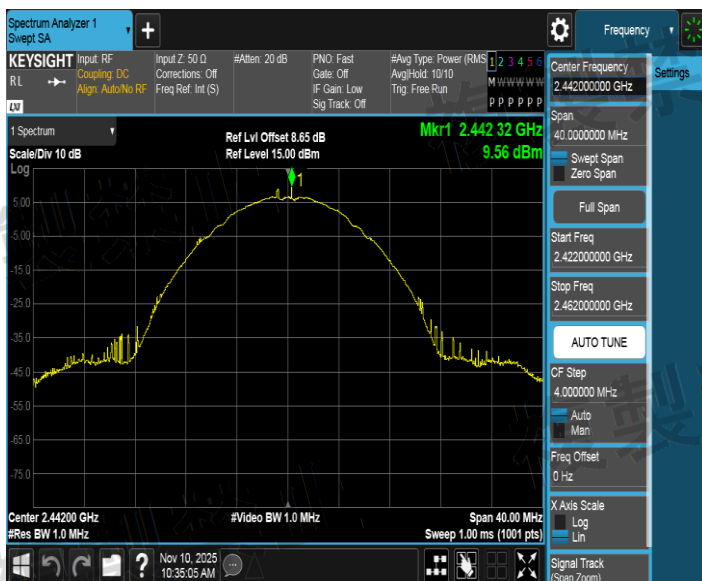
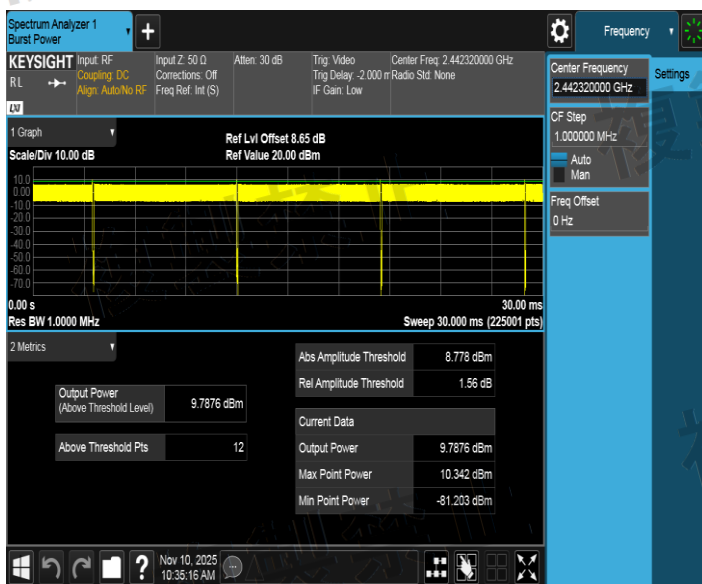
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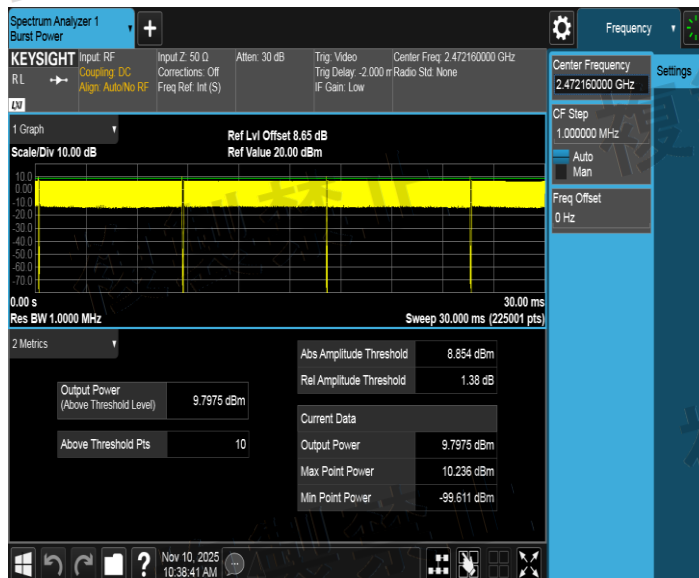
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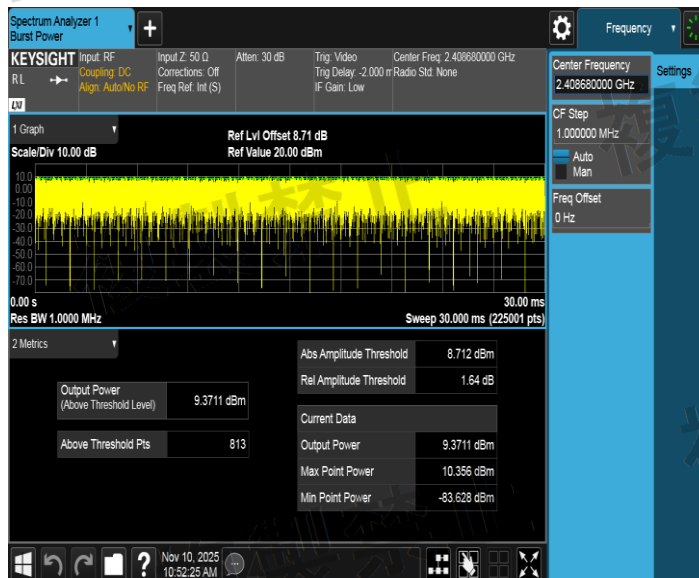
NTNV_11B_Ant1_2442



NTNV_11B_Ant1_2472



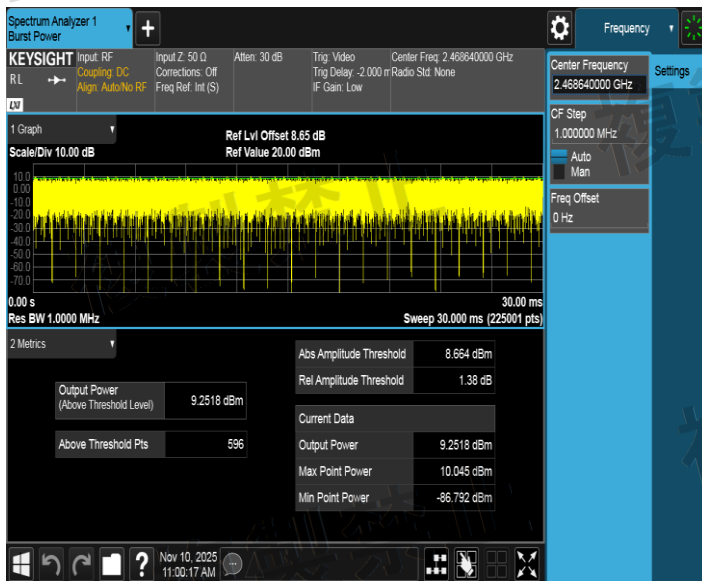
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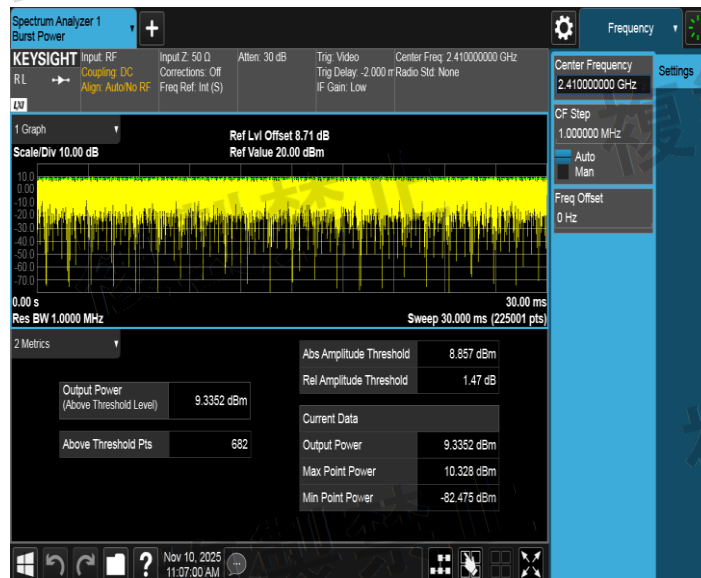
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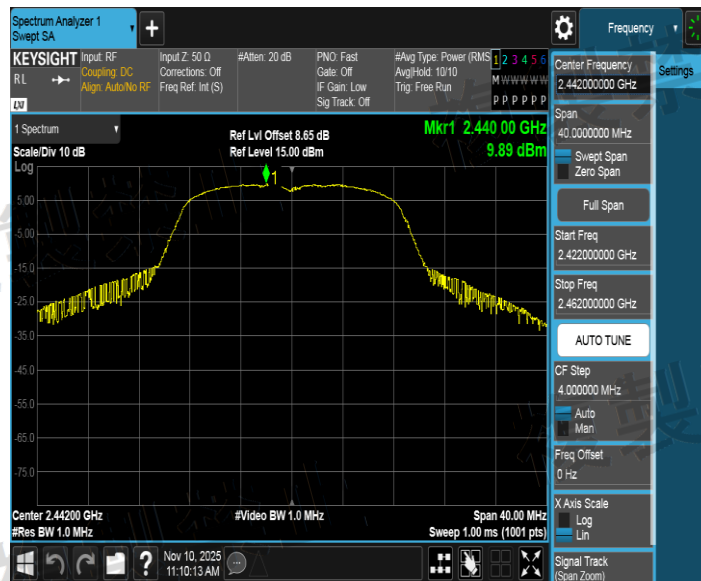
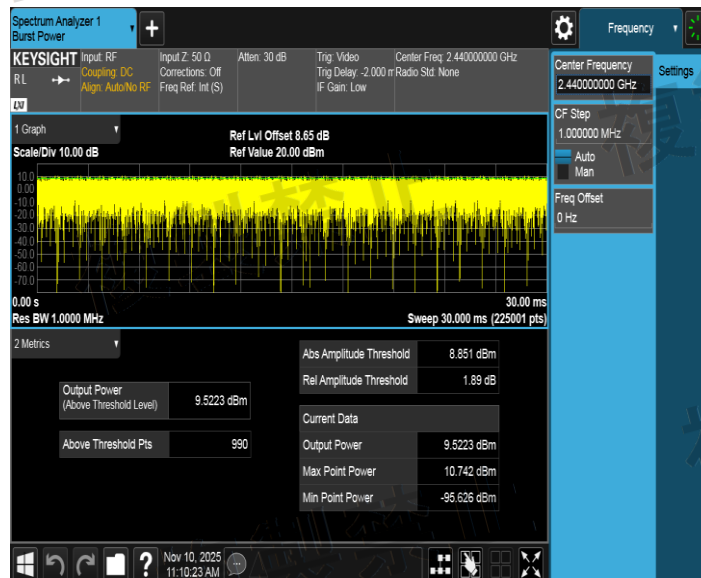
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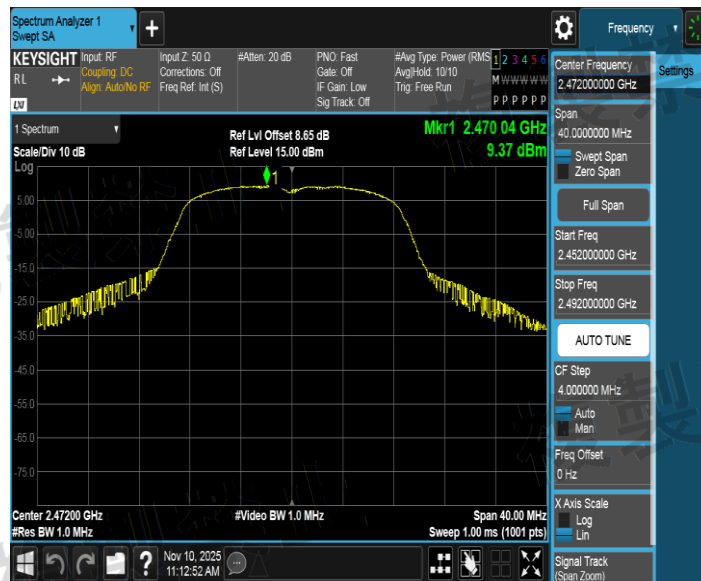
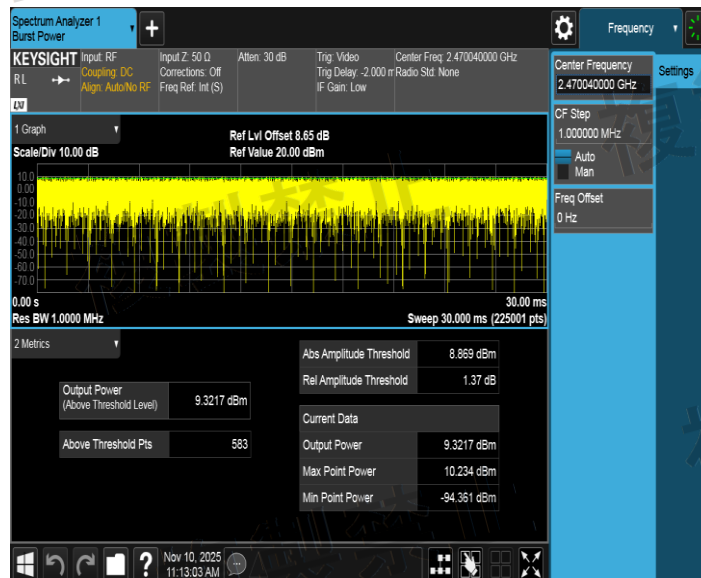
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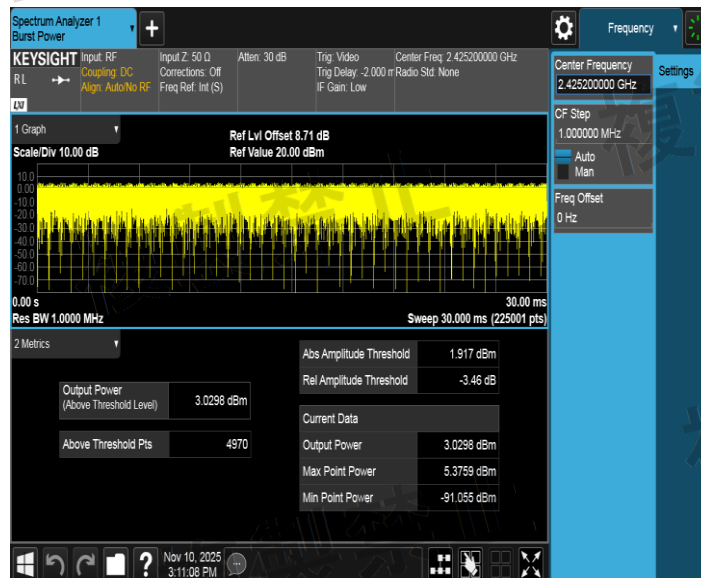
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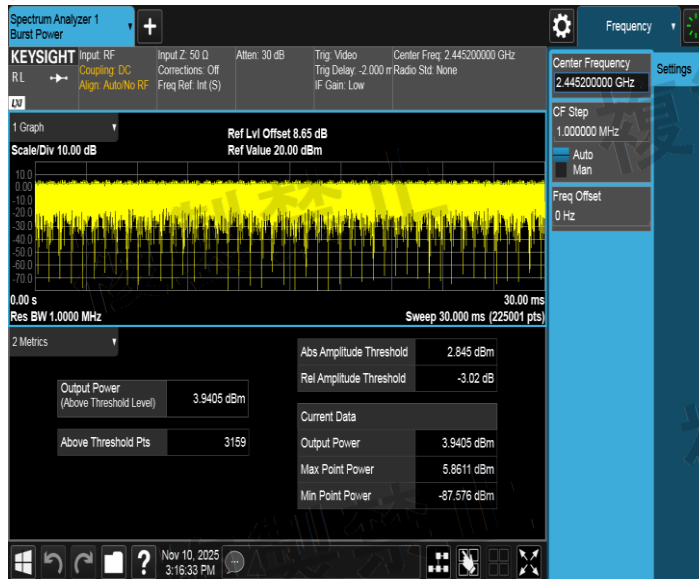
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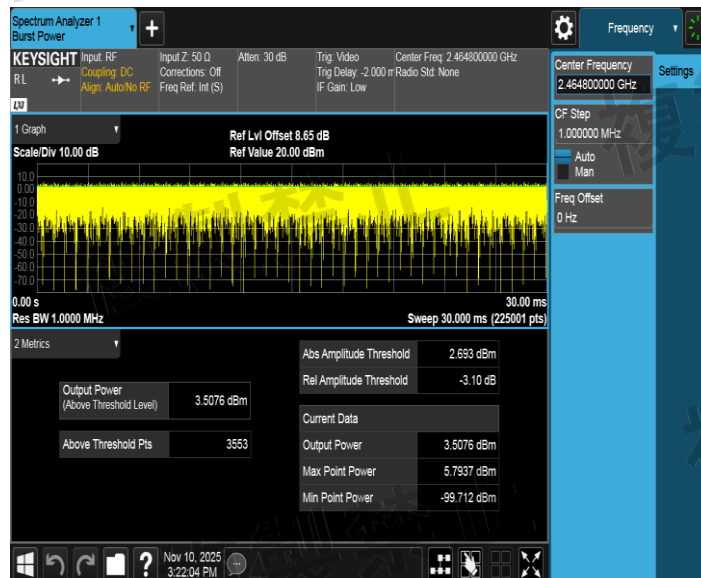
NTNV_11N40SISO_Ant1_2422



NTNV_11N40SISO_Ant1_2442



NTNV_11N40SISO_Ant1_2462



NTNV_11AX20SISO_Ant1_2412



NTNV_11AX20SISO_Ant1_2442



NTNV_11AX20SISO_Ant1_2472

