EMTEK
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TEST REPORT

Product Name : Smart Portable Projector
Model Number : J61-7K4, J61-7KA, J61-7KB, J61-7KC, J61-7KD, J61-7KE, J61-7KF

Prepared for	:	SHENZHEN HOLATEK CO., LTD.
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Report Number	:	ENS2502280323W00503R
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Modified Information

Version	Report No.	Revision Date	Summary
Ver.1.0	ENS2502280323W00503R	/	Original Report

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TEST RESULT CERTIFICATION

Applicant	:	SHENZHEN HOLATEK CO., LTD.
Address	:	#12,Building 1,Chongwen Park, Nanshan Zhiyuan,3370 Liuxian Ave, Nanshan District, Shenzhen, China
Manufacturer	:	SHENZHEN HOLATEK CO., LTD.
Address	:	#12,Building 1,Chongwen Park, Nanshan Zhiyuan,3370 Liuxian Ave, Nanshan District, Shenzhen, China
EUT	:	Smart Portable Projector
Model Name	:	J61-7K4, J61-7KA, J61-7KB, J61-7KC, J61-7KD, J61-7KE, J61-7KF
Trademark	:	JMGO

Measurement Procedure Used:

APPLICABLE STANDARDS		
STANDARD	**Test Procedure**	**TEST RESULT**
Item 19 of Article 2 Paragraph 1	MIC public notice 88:2004, annex 43	PASS

The device described above is tested by EMTEK (SHENZHEN) CO., LTD. to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and EMTEK (SHENZHEN) CO., LTD. is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) was measured according to the test methods of Ordinance Concerning Technical Regulations Conformity Certification etc. of Specified Radio Equipment in Annex 1, the Ministry of Internal Affairs and Communication notification in Annex “43” of Article 88, Paragraph 1 or the test method more than equivalent and the result is technically compliant with the ARIB STD T-66 requirements.
The test results of this report relate only to the tested sample identified in this report

Date of Test : March 1, 2025 to March 25, 2025

Prepared by : Una Yu/Editor

Reviewer : Joe Xia/Supervisor

Approved & Authorized Signer : Lisa Wang/Manager

1 EUT TECHNICAL DESCRIPTION

Characteristics	Description
Product:	Smart Portable Projector
Model Number:	J61-7K4, J61-7KA, J61-7KB, J61-7KC, J61-7KD, J61-7KE, J61-7KF (Note: All models are identical in circuitry and electrical, mechanical and physical construction; It is just that the number of laser light sources used by different models is not the same.Mode J61-7K4 was Chosen final test.)
Test Sample S/N:	N/A
Variant Number:	N/A
IEEE 802.11 WLAN Mode Supported:	802.11b 802.11g 802.11n(20MHz channel bandwidth) 802.11n(40MHz channel bandwidth)
Modulation:	DSSS with DBPSK/DQPSK/CCK for 802.11b; OFDM with BPSK/QPSK/16QAM/64QAM for 802.11g/n;
Operating Frequency Range:	2412-2472MHz for 802.11b/g/n(HT20); 2422-2462MHz for 802.11n(HT40);
Number of Channels:	13 channels for 802.11b/g/n(HT20); 9 Channels for 802.11n(HT40);
Rated Antenna power:	IEEE 802.11b: 2412-2472 MHz: 10mW/MHz IEEE 802.11g: 2412-2472 MHz: 10 mW/MHz IEEE 802.11n (HT20): 2412-2472 MHz: 10 mW/MHz IEEE 802.11n (HT40): 2422-2462 MHz: 5 mW/MHz
Antenna Port:	☒ Antenna port 1, ☒ Antenna port 2
Antenna Type:	☒ ANT 1: FPC Antenna ☒ ANT 2: FPC Antenna
Antenna Gain:	☒ ANT 1: 1.7 dBi ☒ ANT 2: 1.8 dBi (Note: The antenna information is provided by the customers, which will have a certain impact on the test results.)
Power Supply:	DC 20V from adapter
Adapter:	Adapter 1 MODEL:PD065E-G1C0AVU INPUT:100-240V~50/60Hz 1.5A OUTPUT:5.0V/3A or 9.0V/3A or 12.0V/3A or 15.0V/3A or 20.0V/3.25A Adapter 2: MODEL:XY-PD065P03 INPUT:100-240V~50/60Hz 1.5A OUTPUT:5.0V/3A or 9.0V/3A or 12.0V/3A or 15.0V/3A or 20.0V/3.25A 65W
Test Voltage:	AC 100V/50Hz
Temperature Range:	0° C ~ +40° C

Software Version:	1 .1.21.6
Hardware Version:	Ver B

Note: *for more details, please refer to the User's manual of the EUT.*

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2 SUMMARY OF TEST RESULT

Clause	Test Parameter	Verdict	Remark
Item 19 of Article 2 Paragraph 1	Antenna Power	Pass	
Item 19 of Article 2 Paragraph 1	Frequency Error	Pass	
Item 19 of Article 2 Paragraph 1	Occupied Bandwidth (99%)	Pass	
Item 19 of Article 2 Paragraph 1	Spreading Bandwidth (90%)&Spread Factor	Pass	
Item 19 of Article 2 Paragraph 1	Spurious Emissions of Tx	Pass	
Item 19 of Article 2 Paragraph 1	Spurious Emissions of Rx	Pass	
Item 19 of Article 2 Paragraph 1	Interference Prevention Function	Pass	
Item 19 of Article 2 Paragraph 1	Carrier sense capability	Pass	
Item 19 of Article 2 Paragraph 1	RF accessibility	Pass	

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3 TEST METHODOLOGY

3.1 GENERAL DESCRIPTION OF APPLIED STANDARDS

According to its specifications, the EUT must comply with the requirements of the following standards:

Item 19 of Article 2 Paragraph 1 of the TELEC rules for 2.4GHz band wide-band low-power data communication system. All measurements contained in this report were conducted with test method for radio equipment specified in MIC public notice 88:2004, annex 43 for certification. And measuring method for electric field intensity of radio station with remarkably weak radiowave transmitted.

3.2 MEASUREMENT EQUIPMENT USED

3.2.1 Radio Frequency Test Equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Calibration Body	Calibration Method
Wideband Radio Communication Tester	R&S	CMW500	171168	2024/9/18	LISAI	(c)
Spectrum Analyzer	R&S	FSV3044	101289	2024/12/17		
Signal Analyzer	Agilent	N9010A	MY53470879	2024/5/10	LISAI	(c)
Analog Signal Generator	R&S	SMB100A	183237	2024/9/18	LISAI	(c)
Vector Signal Generator	R&S	SMM100A	101808	2024/9/18	LISAI	(c)
RF Control Unit(Power Meter)	Tonscend	JS0806-2	22C8060567	2024/9/18	LISAI	(c)
Temperature&Humidity Chamber	ESPEC	EL-02KA	12107166	2024/5/10	N/A	N/A

Remark:

(a) Calibration conducted by the National Institute of Information and Communications Technology (NICT) in Japan (hereinafter referred to as "NICT") or a designated calibration agency under Article 102-18 paragraph (1) in JRL.

(b) Correction conducted pursuant to the provisions of Article 135 or Article 144 of the Measurement Act (Act No. 51 of 1992).

(c) Calibration conducted in countries except Japan, which shall be equivalent to the calibration conducted by the NICT or a designated calibration agency under Article 102-18 paragraph (1).

(d) Calibration, etc. conducted by using measuring instruments and other equipment listed in the right column of appended table No. 3, which shall have been given any type of calibration, etc. listed above from (a) to (c).

From JRL Article 24-2, paragraph 4, Item 2

Notice: Calibration duration for above equipments is 1 year.

3.3 DESCRIPTION OF TEST MODES

The EUT has been tested under its typical operating condition.
The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

Test of channel included the lowest and middle and highest frequency to perform the test, then record on this report.

Pre-defined engineering program for regulatory testing used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

Frequency and Channels list for 802.11b/g/n(HT20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	6	2437	11	2462
2	2417	7	2442	12	2467
3	2422	8	2447	13	2472
4	2427	9	2452		
5	2432	10	2457		

Frequency and Channels list for 802.11n(HT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
3	2422	6	2437	9	2452
4	2427	7	2442	10	2457
5	2432	8	2447	11	2462

Test Frequency and Channels for 802.11b/g/n(HT20):

Lowest Frequency		Middle Frequency		Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	7	2442	13	2472

Test Frequency and channels for 802.11n(HT40):

Lowest Frequency		Middle Frequency		Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
3	2422	7	2442	11	2462

3.4 SUPPORT EQUIPMENT

EUT Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/

Auxiliary Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
/	/	/	/

Notes:

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. *Unless otherwise denoted as EUT in 『Remark』 column , device(s) used in tested system is a support equipment*

4 FACILITIES AND ACCREDITATIONS

4.1 FACILITIES

All measurement facilities used to collect the measurement data are located at
Building 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, China
The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22."

4.2 LABORATORY ACCREDITATIONS AND LISTINGS

Site Description

Name of Firm	:	EMTEK (SHENZHEN) CO., LTD.
Site Location	:	Building 69, Majialong, Industry Zone, Nanshan District, Shenzhen, Guangdong, China

5 TEST SYSTEM UNCERTAINTY

The following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Parameter	Uncertainty
Radio Frequency	±1x10^-5
Uncertainty for Output power test	±0.83dB
Conducted Emissions Test	±2.0dB
Radiated Emission Test	±2.0dB
Occupied Bandwidth Test	±1.0dB
Power density test	±1.85dB
All emission, radiated	±3dB
Antenna Port Emission	±3dB
Temperature	±0.5℃
Humidity	±3%

Measurement Uncertainty for a level of Confidence of 95%

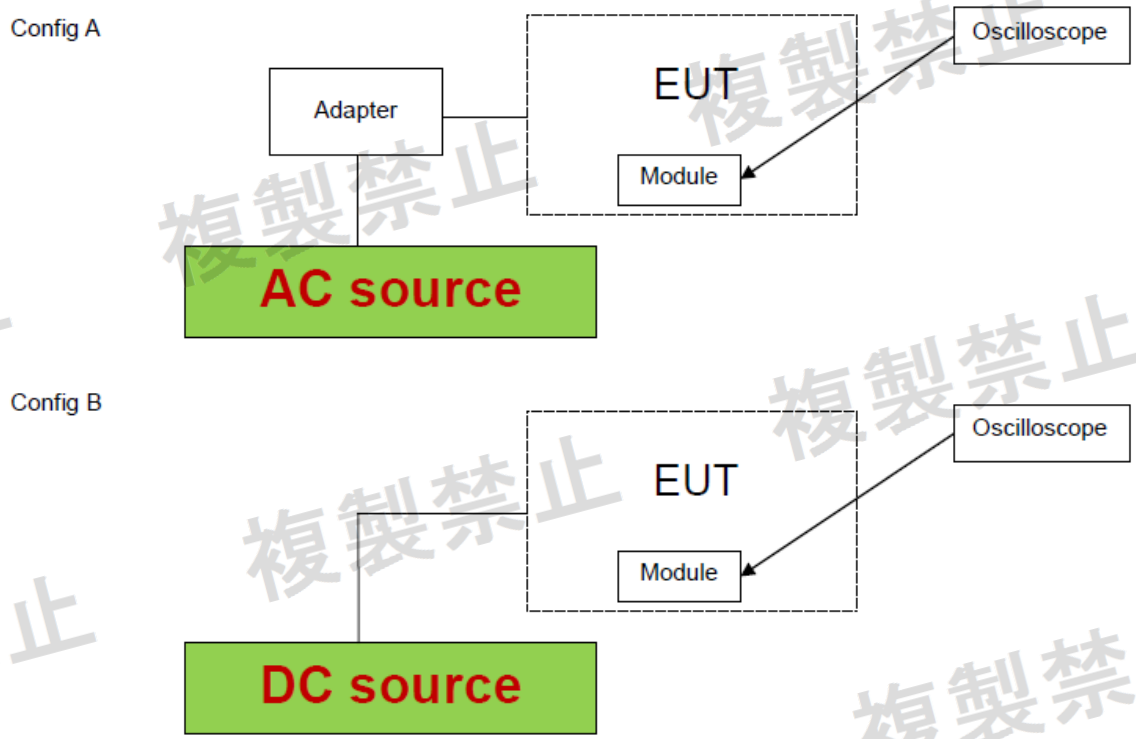
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6 WIRELESS MODULE VOLTAGE TEST IN EXTREME CONDITIONS

6.1 Applicable Standard

When there is a fluctuation of +/-10% input voltage from external power to the test equipment. If the fluctuation of input voltage to the circuit of the radio part (excl. power) in the test equipment is confirmed below +/-1%, Measurement shall be tested with the rated voltage.

6.2 Test Configuration



6.3 Test Results

Test Sample DC Input Voltage	18.0V	20.0V	22.0V
Input Voltage To The Circuit	3.30	3.30	3.30
Module Rated Voltage	3.30	3.30	3.30
The Deviation of Module Voltage (%)	0.00%	0.00%	0.00%

Note: In extreme conditions, The test sample module power is confirmed below +/-1%.

7 TEST REQUIREMENTS

7.1 ANTENNA POWER

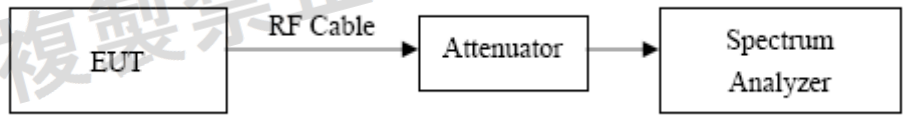
7.1.1 Applicable Standard

According to Equipment Regulations, art. 49.20.

7.1.2 Conformance Limit

The max permitted antenna power density shall not exceed 10mW/MHz and deviation of power density shall be within +20% of declared power density.
Eirp: not exceed 12.14dBm/ MHz(OFDM.DS form 2400-2483.5 MHz)

7.1.3 Test Setup Block Diagram



7.1.4 Test Procedure

Set the EUT on the test frequency and the consecutive TX mode or continuous (constant period, constant burst length) burst TX mode.
In case of spreading code used, set on the test spreading code, then the modulation is performed with standard coding test signal.
(1) Measure the equivalent noise bandwidth at the spectrum analyzer for resolution bandwidth of 1 MHz, then read the value correcting the resolution bandwidth on the 1 MHz equivalent bandwidth. In case of a spreading bandwidth lower than 1 MHz, however, perform the correction only for a higher value than “Spreading bandwidth (MHz) / Equivalent noise bandwidth (MHz)”.
(2)The attenuation value of the attenuator shall be set to achieve the optimal operating input level at the spectrum analyzer.
(3)Spectrum analyzer for seeking the maximum antenna power is set as below.

Central Frequency	Test frequency
Sweeping Bandwidth	Approx. twice the Occupied Bandwidth
Resolution Bandwidth	1 MHz
Video Bandwidth	Approx. twice the resolution bandwidth (2MHz)
Y-Axis Scale	10 dB/Div
Sweep Time	Minimum time to assure the measurement accuracy (In case of burst wave, 1 burst per 1 sample)
Trigger Condition	Free run
Data points	More than 400 points
Sweep Mode	Consecutive sweep
Phase-Detection Mode	Positive peak
Display mode	Max-hold

(4) Spectrum analyzer for measuring the antenna power is set as below. In this case, calibrate the indication of the RF Power Meter on the output of the EUT with the RF Power Meter connected to the IF output of the spectrum analyzer.

Central Frequency	Frequency to achieve the maximum power (sought frequency)
Sweeping Bandwidth	0 Hz
Resolution Bandwidth	1 MHz
Video Bandwidth	Same level as the resolution bandwidth
Sweep Mode	Consecutive sweep
Phase-Detection Mode	Sample

Measurement Procedure
(1) No frequency hopping systems:
a. Configure the settings of the spectrum analyzer to 2(3).
b. After repeating sweeps (until no display changes are found), measure the maximum power frequency per MHz.
c. Connect the high frequency power meter to the IF output of the spectrum analysers.
d. Configure the settings of the spectrum analyzer to 2(4).
e. Set the antenna power as follows:
- Continuous waves: value indicated on the high frequency power meter, corrected according to 2(1).
- Burst waves: value similarly corrected in the case of continuous waves and value calculated from the average power within bursts from rates of transmission times (i.e. correction on the duty-cycle, to find the average within the transmit burst)

7.1.5 Environmental Conditions

Temperature:	25°C
Relative Humidity:	60%
ATM Pressure:	1011 mbar

7.1.6 Test Results

Antenna Power							
Test Condition	Test Mode	Antenna	Frequency[MHz]	Result (dBm/MHz)	Result (mW/MHz)	Limit (mW/MHz)	Verdict
NTNV	11B	Ant1	2412	7.65	5.8210	≤10	PASS
NTNV	11B	Ant2	2412	7.35	5.4325	≤10	PASS
NTNV	11B	Ant1	2442	8.16	6.5464	≤10	PASS
NTNV	11B	Ant2	2442	7.91	6.1802	≤10	PASS
NTNV	11B	Ant1	2472	8.40	6.9183	≤10	PASS
NTNV	11B	Ant2	2472	7.98	6.2806	≤10	PASS
NTNV	11G	Ant1	2412	9.27	8.4528	≤10	PASS
NTNV	11G	Ant2	2412	9.18	8.2794	≤10	PASS
NTNV	11G	Ant1	2442	9.32	8.5507	≤10	PASS
NTNV	11G	Ant2	2442	9.28	8.4723	≤10	PASS
NTNV	11G	Ant1	2472	9.63	9.1833	≤10	PASS
NTNV	11G	Ant2	2472	9.57	9.0573	≤10	PASS
NTNV	11N20MIMO	Ant1	2412	4.96	3.1333	≤10	PASS
NTNV	11N20MIMO	Ant2	2412	6.52	4.4875	≤10	PASS
NTNV	11N20MIMO	total	2412	8.82	7.6208	≤10	PASS
NTNV	11N20MIMO	Ant1	2442	5.05	3.1989	≤10	PASS
NTNV	11N20MIMO	Ant2	2442	6.54	4.5082	≤10	PASS
NTNV	11N20MIMO	total	2442	8.87	7.7071	≤10	PASS
NTNV	11N20MIMO	Ant1	2472	3.65	2.3174	≤10	PASS
NTNV	11N20MIMO	Ant2	2472	5.40	3.4674	≤10	PASS
NTNV	11N20MIMO	total	2472	7.62	5.7848	≤10	PASS
NTNV	11N40MIMO	Ant1	2422	-0.57	0.8770	≤5	PASS
NTNV	11N40MIMO	Ant2	2422	1.61	1.4488	≤5	PASS
NTNV	11N40MIMO	total	2422	3.67	2.3258	≤5	PASS
NTNV	11N40MIMO	Ant1	2442	0.44	1.1066	≤5	PASS
NTNV	11N40MIMO	Ant2	2442	2.28	1.6904	≤5	PASS
NTNV	11N40MIMO	total	2442	4.47	2.7970	≤5	PASS
NTNV	11N40MIMO	Ant1	2462	0.78	1.1967	≤5	PASS
NTNV	11N40MIMO	Ant2	2462	2.79	1.9011	≤5	PASS
NTNV	11N40MIMO	total	2462	4.91	3.0978	≤5	PASS

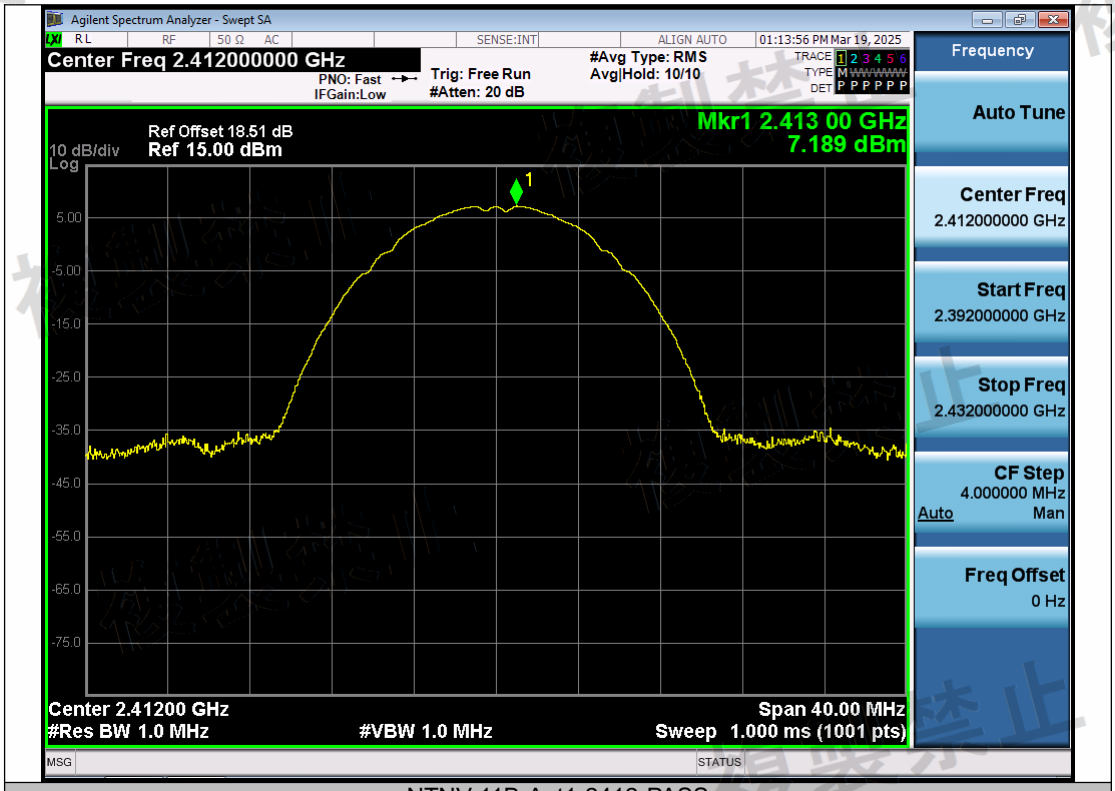
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EIRP							
Test Condition	Test Mode	Antenna	Frequency[MHz]	Result (dBm/MHz)	EIRP (dBm/MHz)	Limit (dBm/MHz)	Verdict
NTNV	11B	Ant1	2412	7.65	9.35	≤12.14	PASS
NTNV	11B	Ant2	2412	7.35	9.15	≤12.14	PASS
NTNV	11B	Ant1	2442	8.16	9.86	≤12.14	PASS
NTNV	11B	Ant2	2442	7.91	9.71	≤12.14	PASS
NTNV	11B	Ant1	2472	8.40	10.10	≤12.14	PASS
NTNV	11B	Ant2	2472	7.98	9.78	≤12.14	PASS
NTNV	11G	Ant1	2412	9.27	10.97	≤12.14	PASS
NTNV	11G	Ant2	2412	9.18	10.98	≤12.14	PASS
NTNV	11G	Ant1	2442	9.32	11.02	≤12.14	PASS
NTNV	11G	Ant2	2442	9.28	11.08	≤12.14	PASS
NTNV	11G	Ant1	2472	9.63	11.33	≤12.14	PASS
NTNV	11G	Ant2	2472	9.57	11.37	≤12.14	PASS
NTNV	11N20MIMO	Ant1	2412	4.96	6.66	≤12.14	PASS
NTNV	11N20MIMO	Ant2	2412	6.52	8.32	≤12.14	PASS
NTNV	11N20MIMO	total	2412	8.82	10.58	≤12.14	PASS
NTNV	11N20MIMO	Ant1	2442	5.05	6.75	≤12.14	PASS
NTNV	11N20MIMO	Ant2	2442	6.54	8.34	≤12.14	PASS
NTNV	11N20MIMO	total	2442	8.87	10.63	≤12.14	PASS
NTNV	11N20MIMO	Ant1	2472	3.65	5.35	≤12.14	PASS
NTNV	11N20MIMO	Ant2	2472	5.40	7.20	≤12.14	PASS
NTNV	11N20MIMO	total	2472	7.62	9.38	≤12.14	PASS
NTNV	11N40MIMO	Ant1	2422	-0.57	1.13	≤9.13	PASS
NTNV	11N40MIMO	Ant2	2422	1.61	3.41	≤9.13	PASS
NTNV	11N40MIMO	total	2422	3.67	5.43	≤9.13	PASS
NTNV	11N40MIMO	Ant1	2442	0.44	2.14	≤9.13	PASS
NTNV	11N40MIMO	Ant2	2442	2.28	4.08	≤9.13	PASS
NTNV	11N40MIMO	total	2442	4.47	6.23	≤9.13	PASS
NTNV	11N40MIMO	Ant1	2462	0.78	2.48	≤9.13	PASS
NTNV	11N40MIMO	Ant2	2462	2.79	4.59	≤9.13	PASS
NTNV	11N40MIMO	total	2462	4.91	6.67	≤9.13	PASS

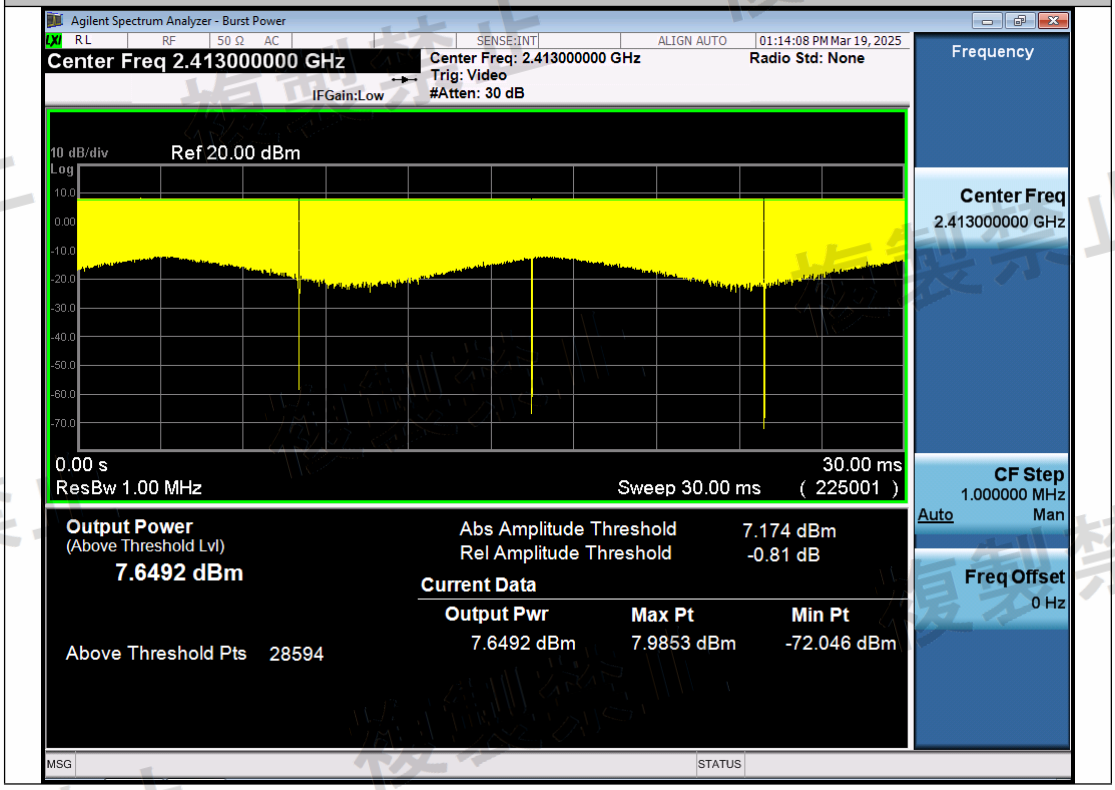
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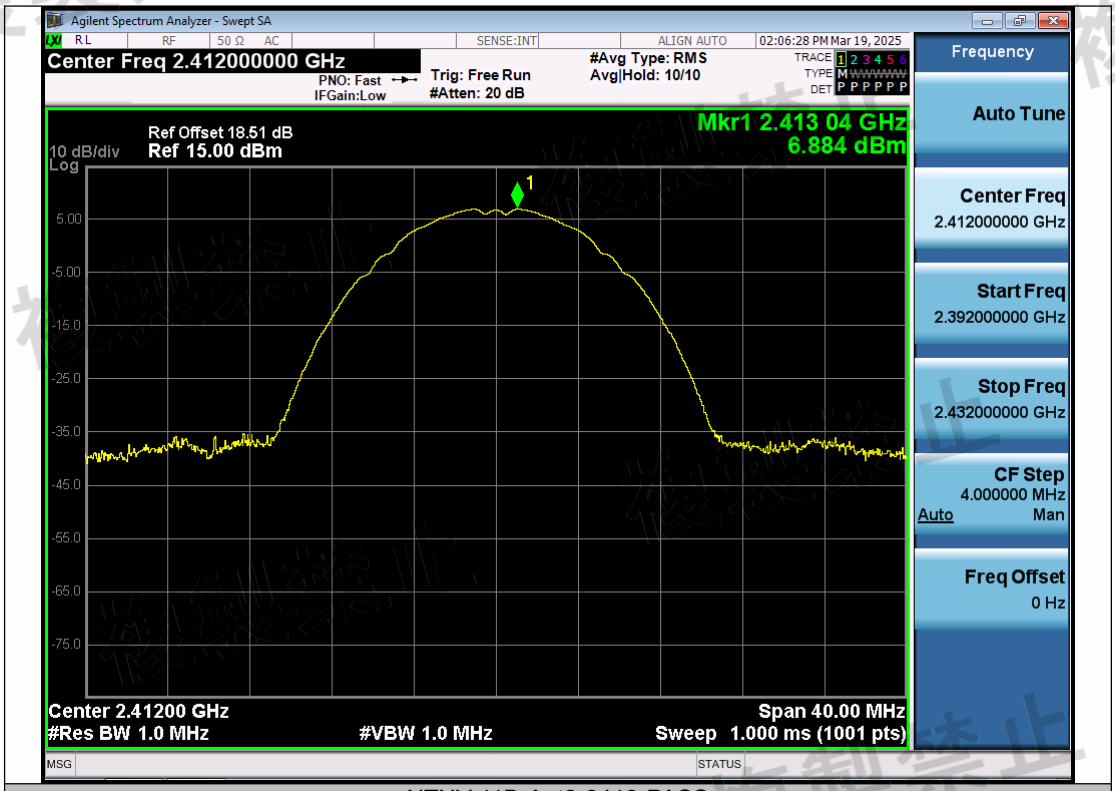
Tolerance								
Test Condition	Test Mode	Antenna	Frequency [MHz]	Power (mW/MHz)	RatedPower (mW/MHz)	Result (%)	Limit (%)	Verdict
NTNV	11B	Ant1	2412	5.8210	10	-41.79	+20	PASS
NTNV	11B	Ant2	2412	5.4325	10	-45.68	+20	PASS
NTNV	11B	Ant1	2442	6.5464	10	-34.54	+20	PASS
NTNV	11B	Ant2	2442	6.1802	10	-38.20	+20	PASS
NTNV	11B	Ant1	2472	6.9183	10	-30.82	+20	PASS
NTNV	11B	Ant2	2472	6.2806	10	-37.19	+20	PASS
NTNV	11G	Ant1	2412	8.4528	10	-15.47	+20	PASS
NTNV	11G	Ant2	2412	8.2794	10	-17.21	+20	PASS
NTNV	11G	Ant1	2442	8.5507	10	-14.49	+20	PASS
NTNV	11G	Ant2	2442	8.4723	10	-15.28	+20	PASS
NTNV	11G	Ant1	2472	9.1833	10	-8.17	+20	PASS
NTNV	11G	Ant2	2472	9.0573	10	-9.43	+20	PASS
NTNV	11N20MIMO	Ant1	2412	3.1333	10	-68.67	+20	PASS
NTNV	11N20MIMO	Ant2	2412	4.4875	10	-55.13	+20	PASS
NTNV	11N20MIMO	total	2412	7.6208	10	-23.79	+20	PASS
NTNV	11N20MIMO	Ant1	2442	3.1989	10	-68.01	+20	PASS
NTNV	11N20MIMO	Ant2	2442	4.5082	10	-54.92	+20	PASS
NTNV	11N20MIMO	total	2442	7.7071	10	-22.93	+20	PASS
NTNV	11N20MIMO	Ant1	2472	2.3174	10	-76.83	+20	PASS
NTNV	11N20MIMO	Ant2	2472	3.4674	10	-65.33	+20	PASS
NTNV	11N20MIMO	total	2472	5.7848	10	-42.15	+20	PASS
NTNV	11N40MIMO	Ant1	2422	0.8770	5	-82.46	+20	PASS
NTNV	11N40MIMO	Ant2	2422	1.4488	5	-71.02	+20	PASS
NTNV	11N40MIMO	total	2422	2.3258	5	-53.48	+20	PASS
NTNV	11N40MIMO	Ant1	2442	1.1066	5	-77.87	+20	PASS
NTNV	11N40MIMO	Ant2	2442	1.6904	5	-66.19	+20	PASS
NTNV	11N40MIMO	total	2442	2.7970	5	-44.06	+20	PASS
NTNV	11N40MIMO	Ant1	2462	1.1967	5	-76.07	+20	PASS
NTNV	11N40MIMO	Ant2	2462	1.9011	5	-61.98	+20	PASS
NTNV	11N40MIMO	total	2462	3.0978	5	-38.04	+20	PASS

複製禁止

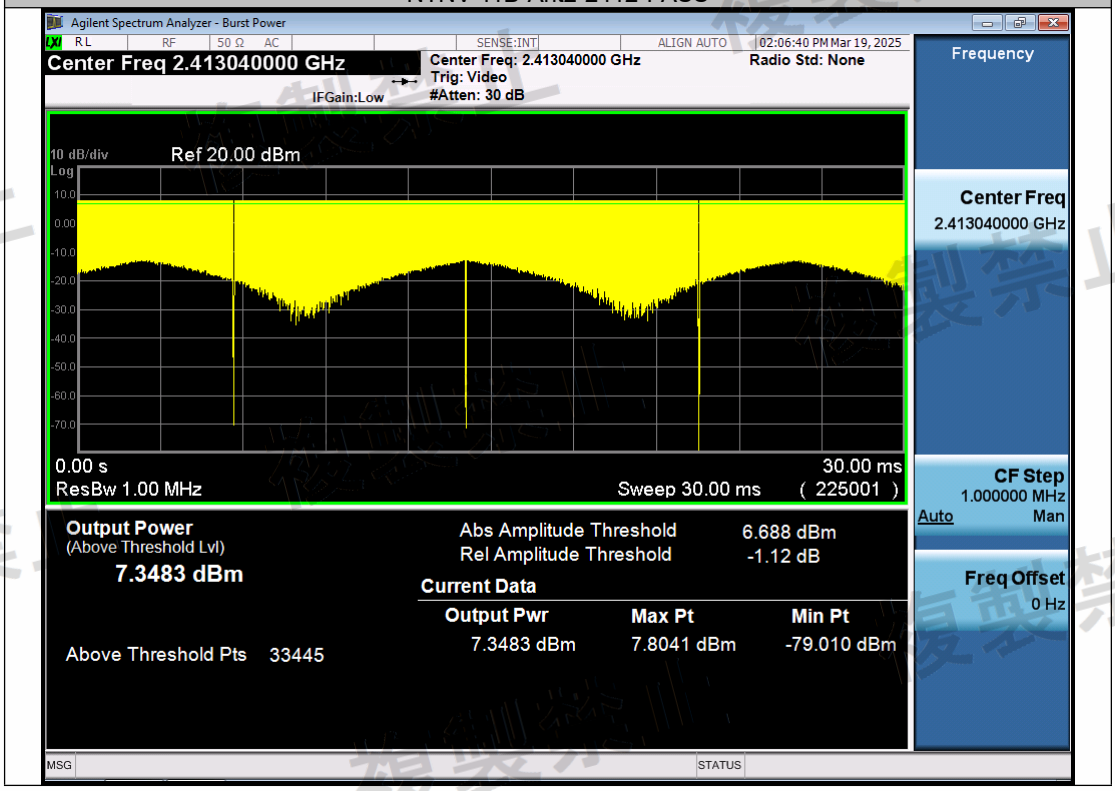


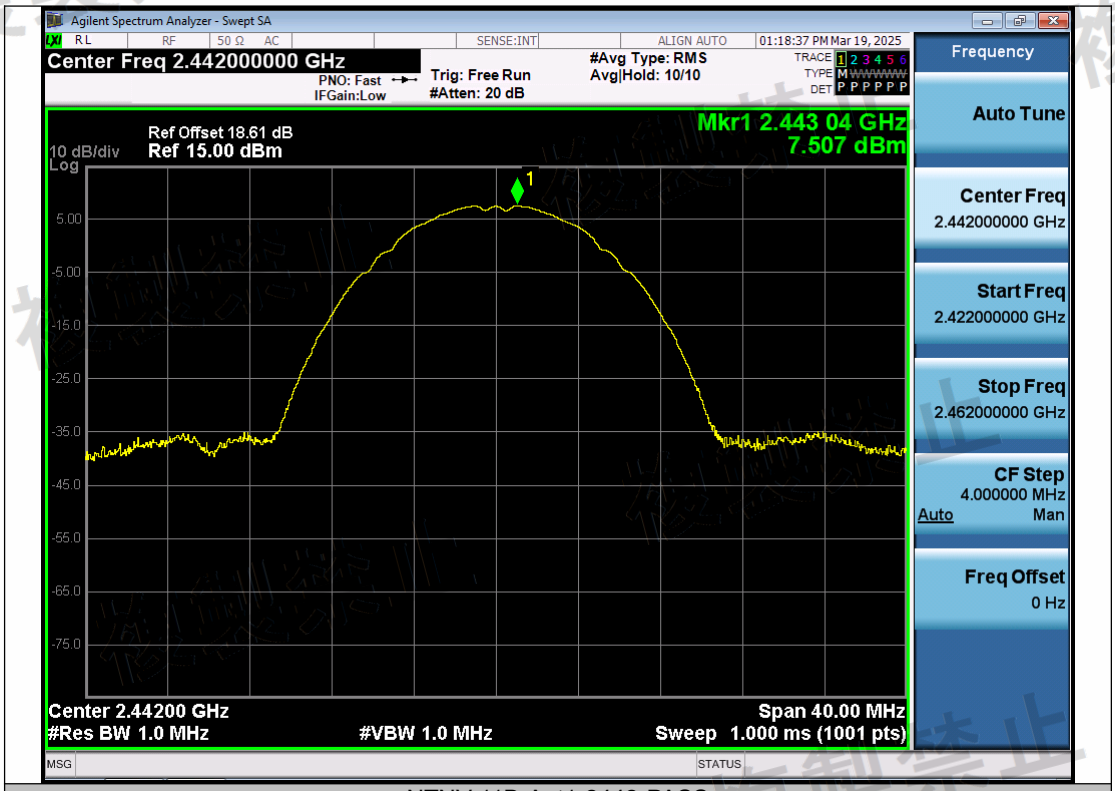
NTNV-11B-Ant1-2412-PASS



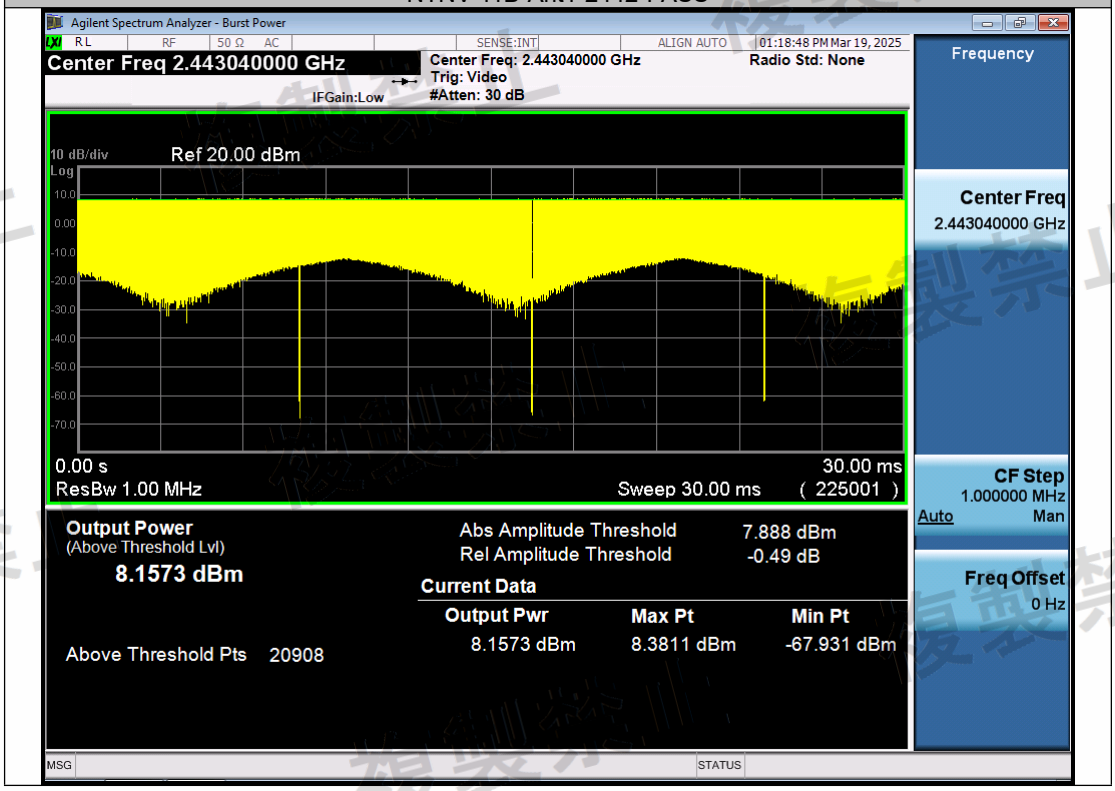


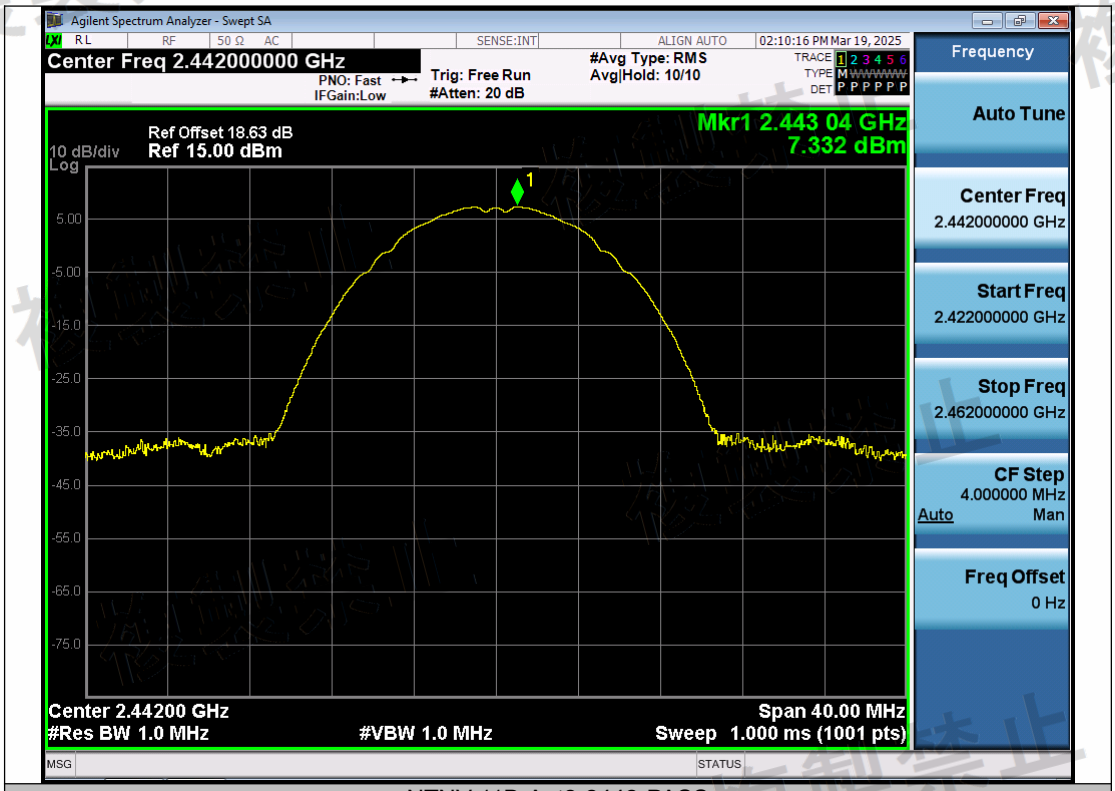
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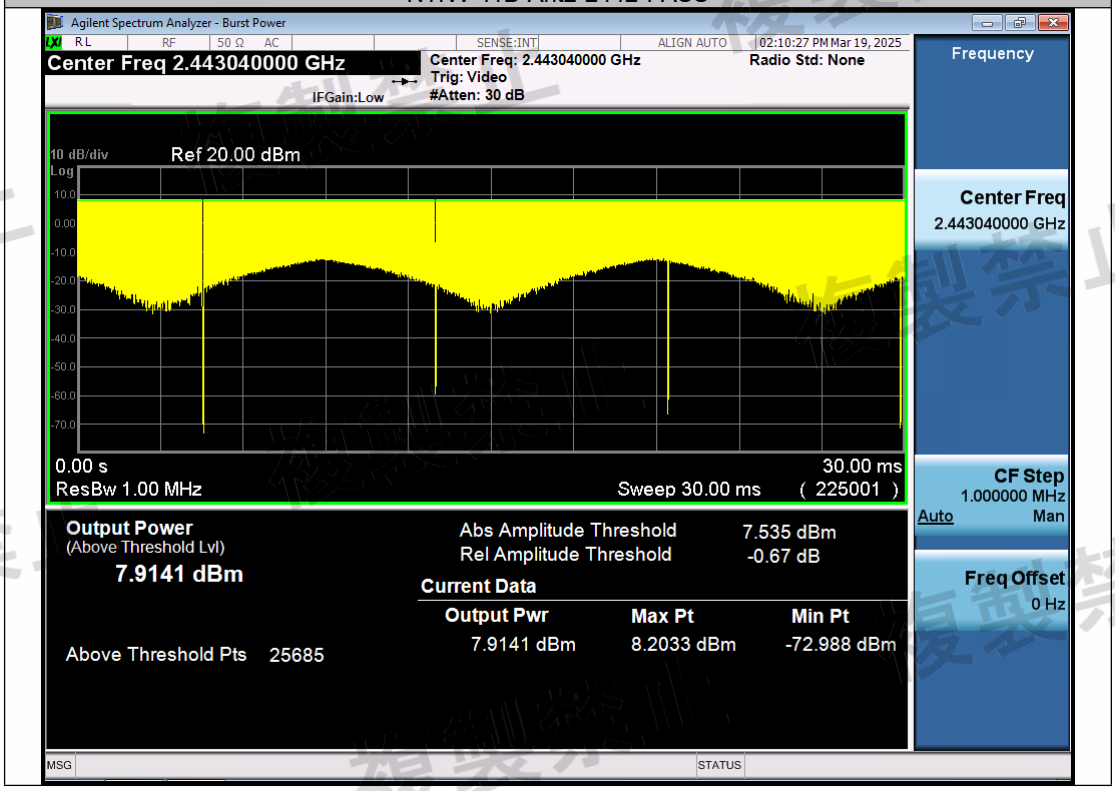


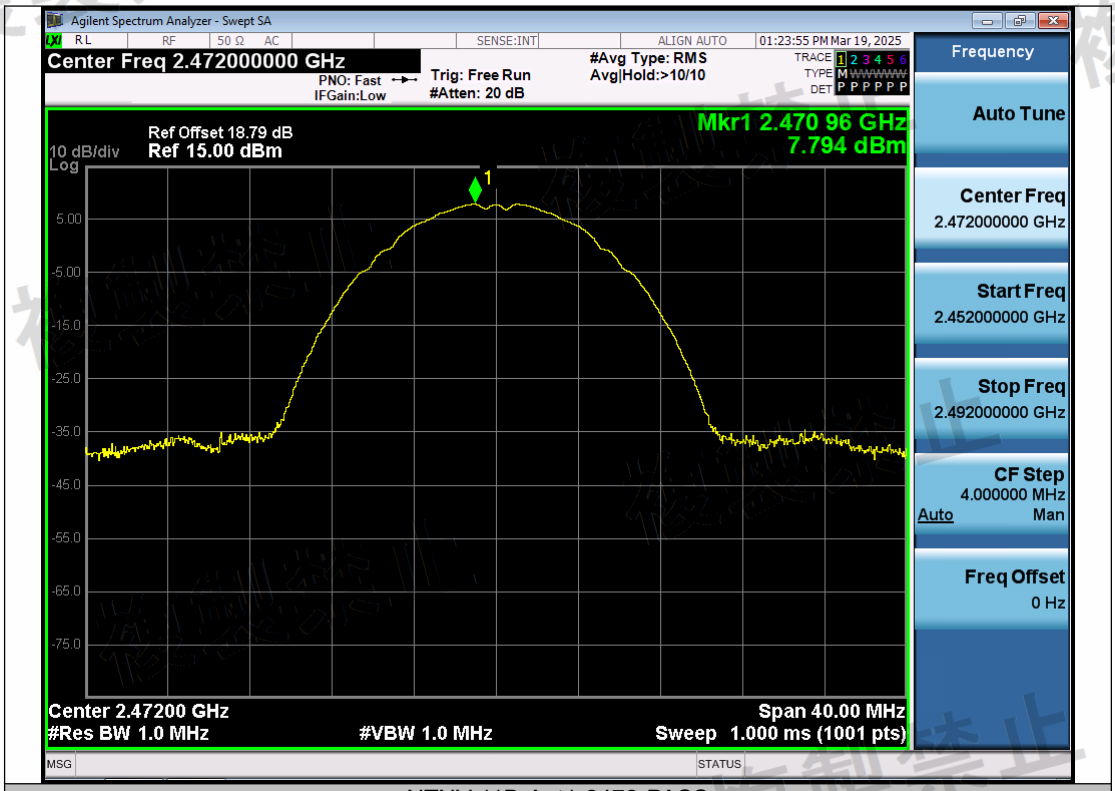
NTNV-11B-Ant1-2442-PASS



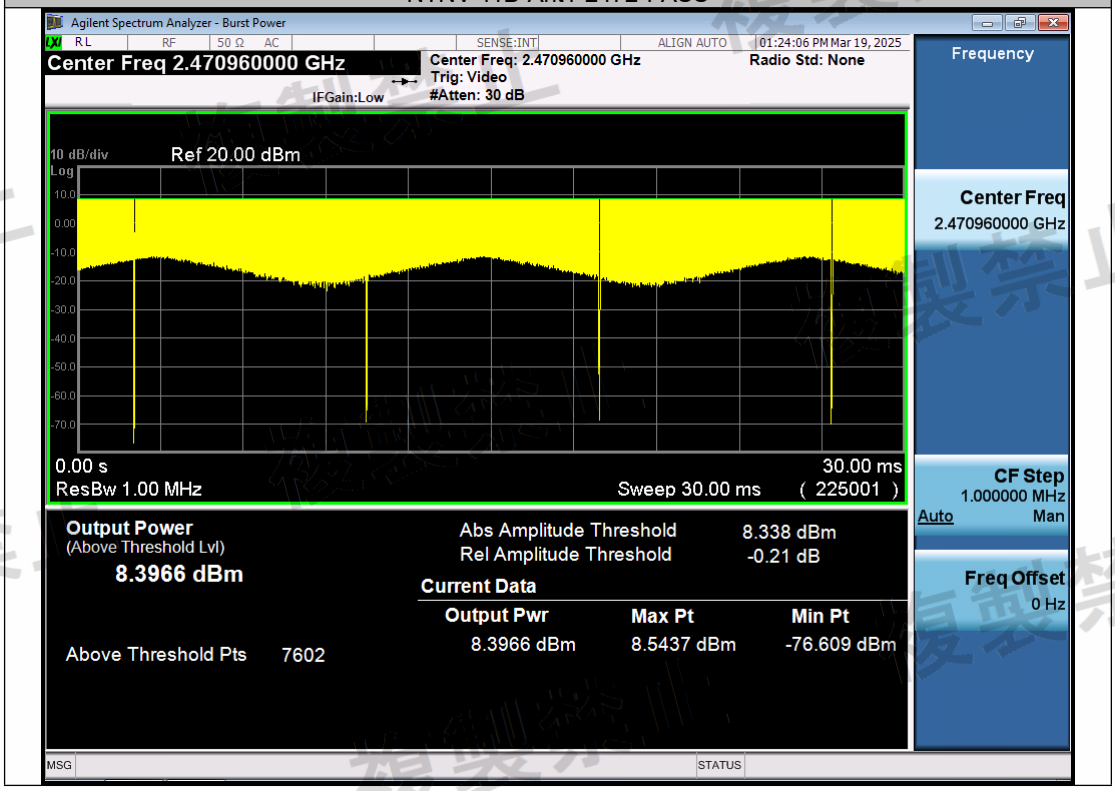


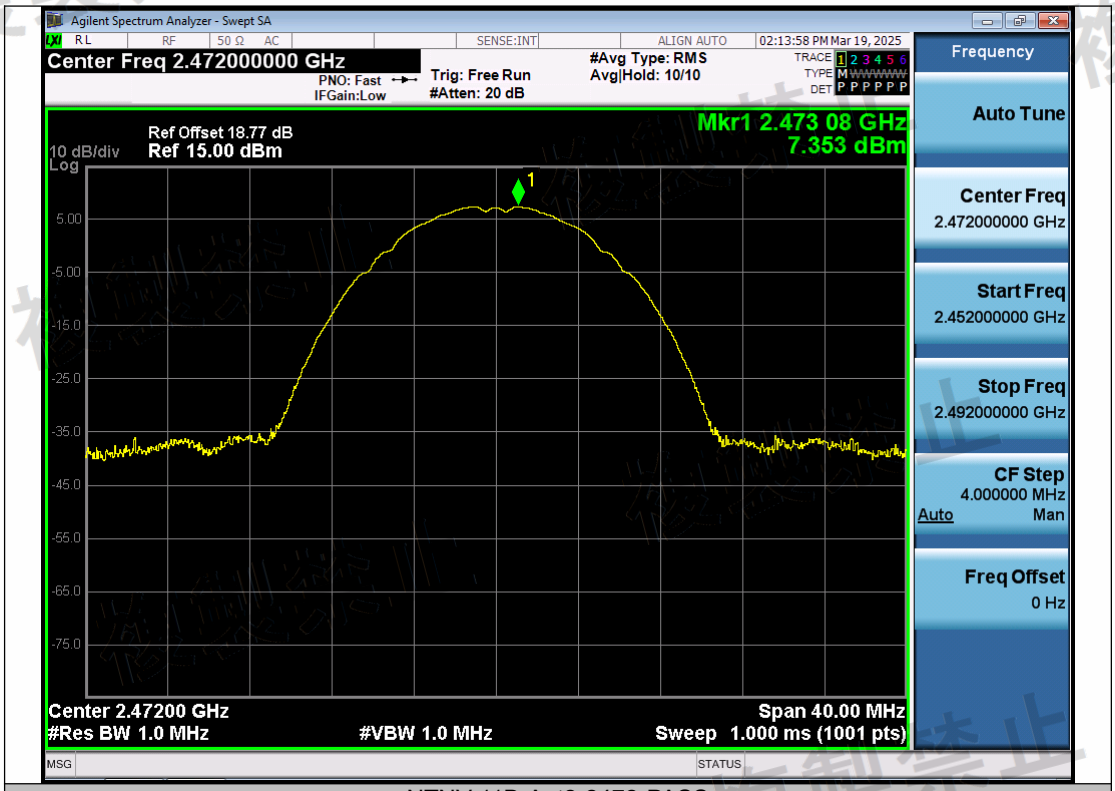
NTNV-11B-Ant2-2442-PASS





NTNV-11B-Ant1-2472-PASS





NTNV-11B-Ant2-2472-PASS



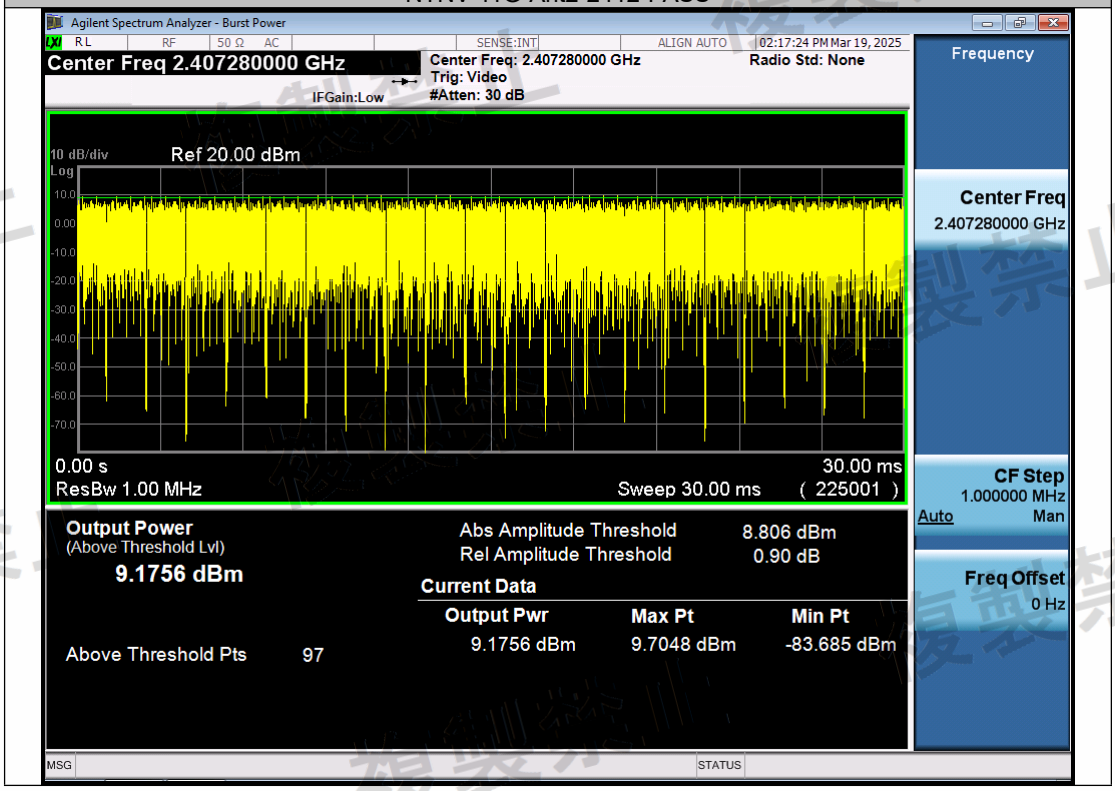


NTNV-11G-Ant1-2412-PASS



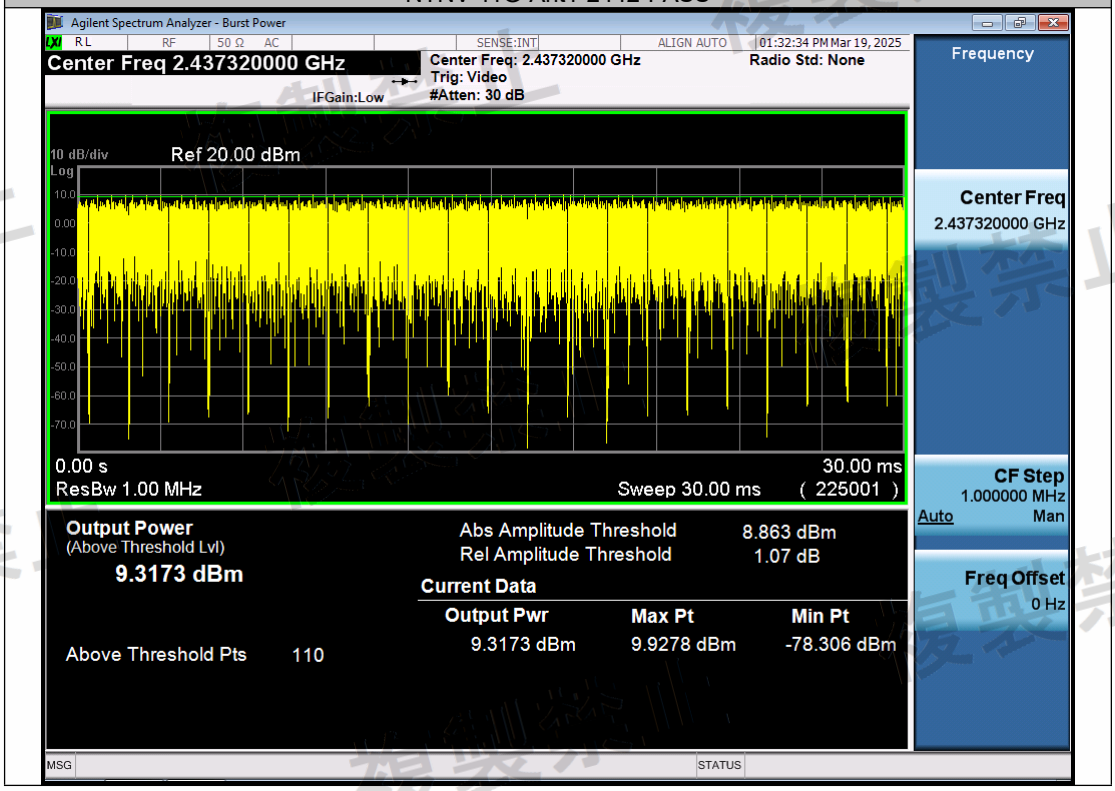


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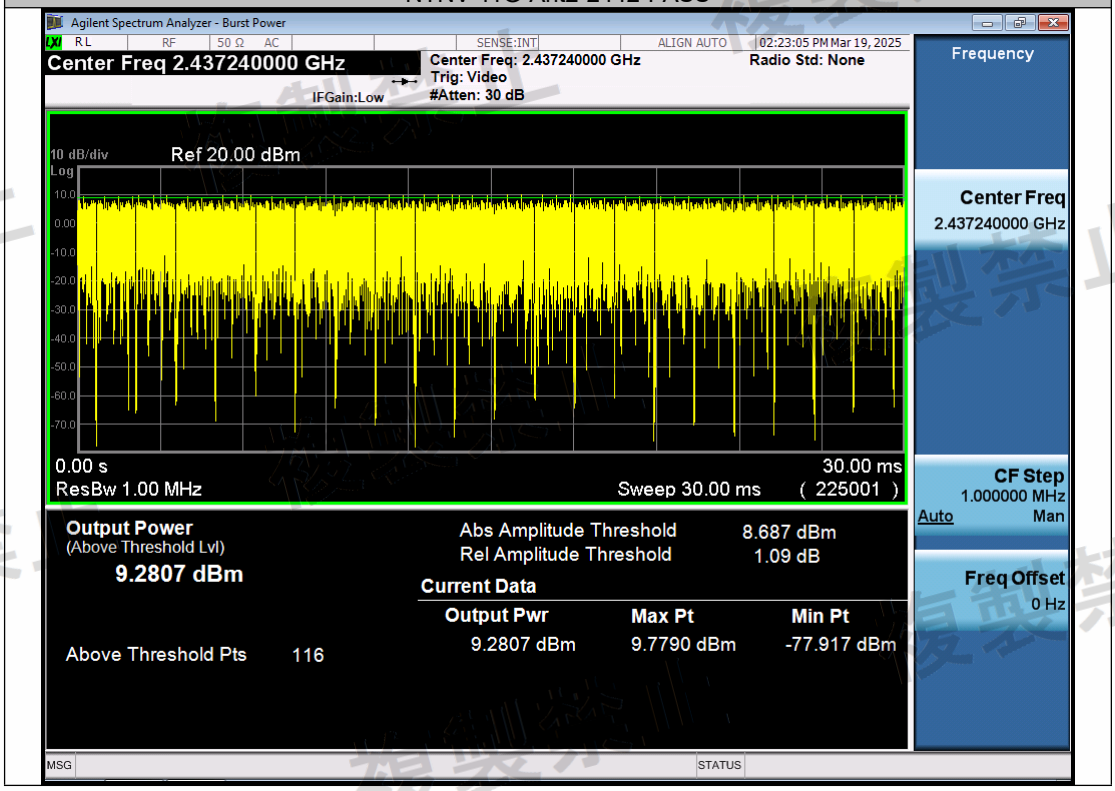


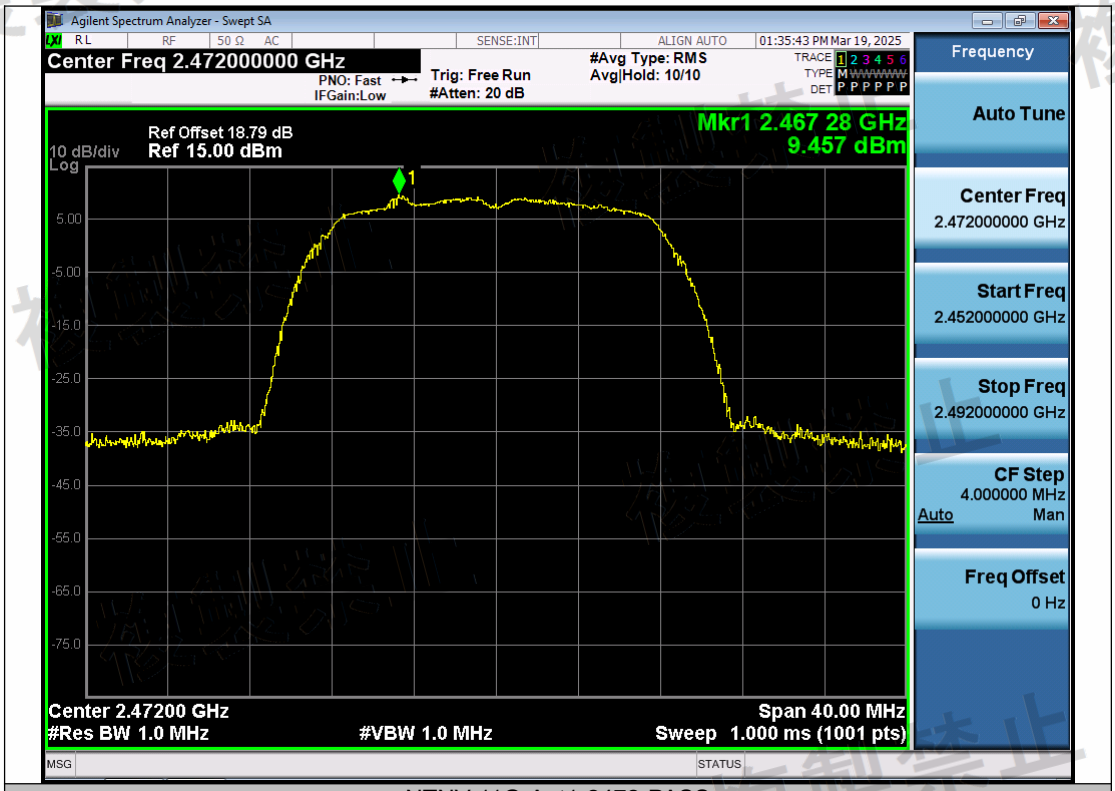
NTNV-11G-Ant1-2442-PASS



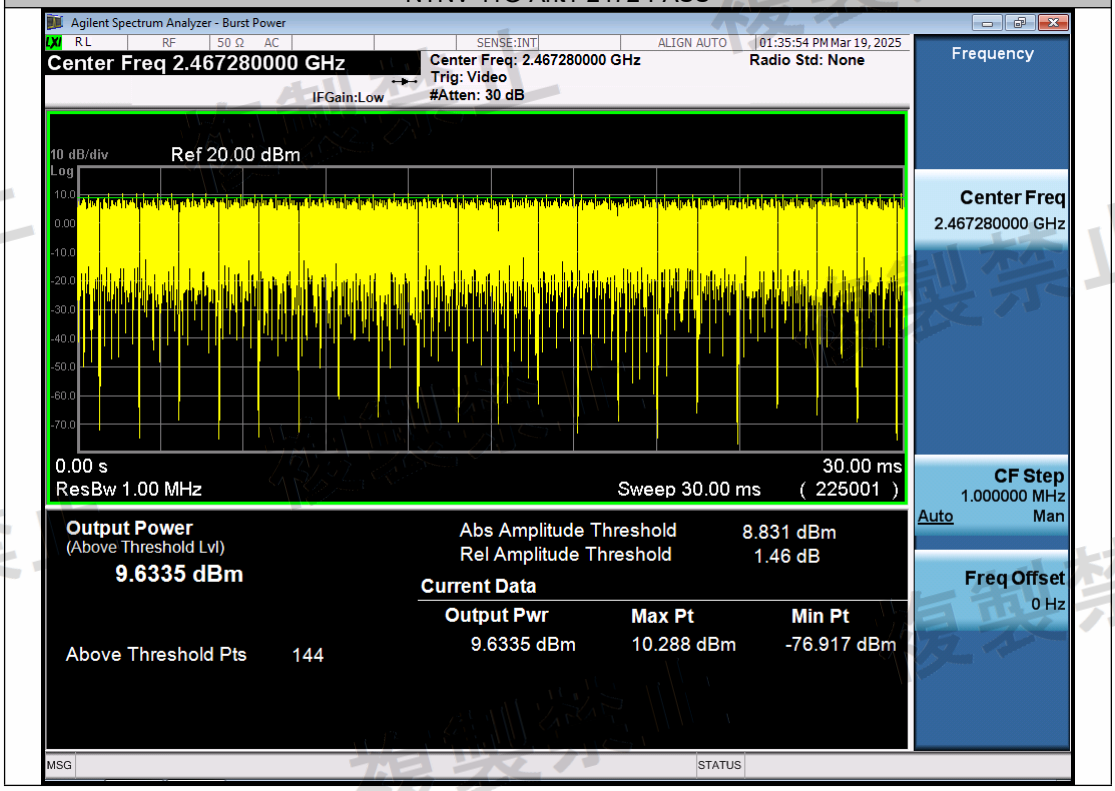


NTNV-11G-Ant2-2442-PASS



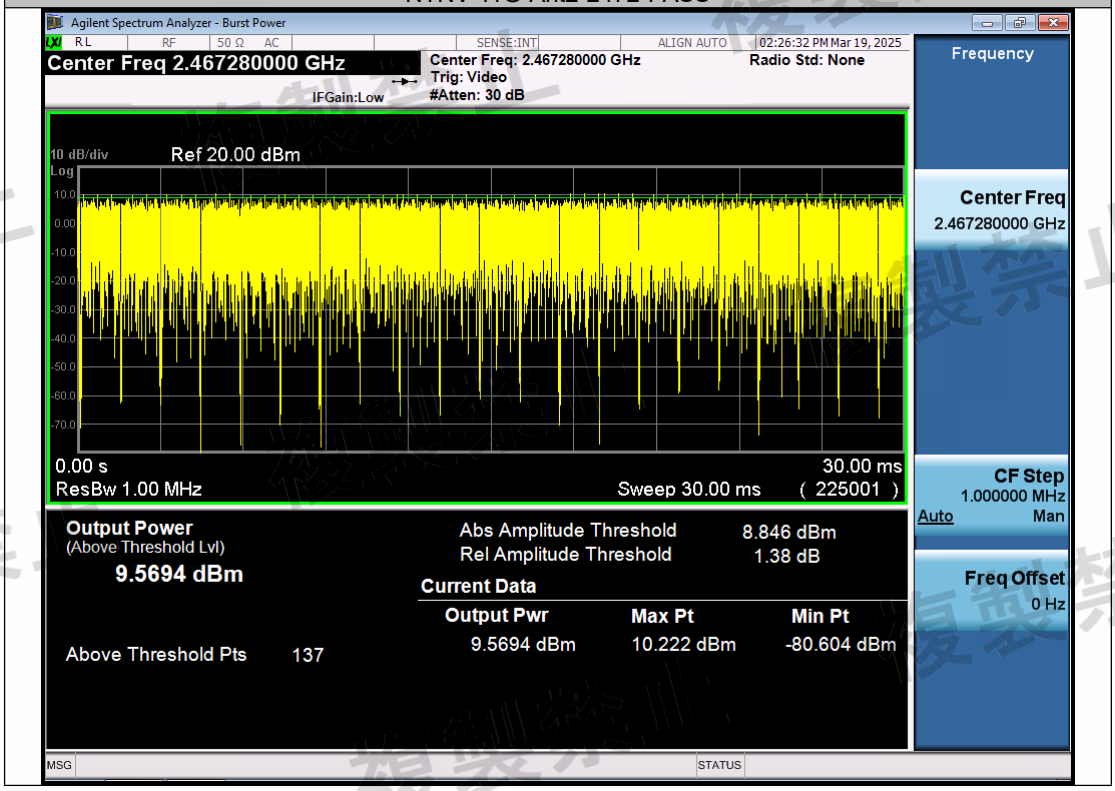


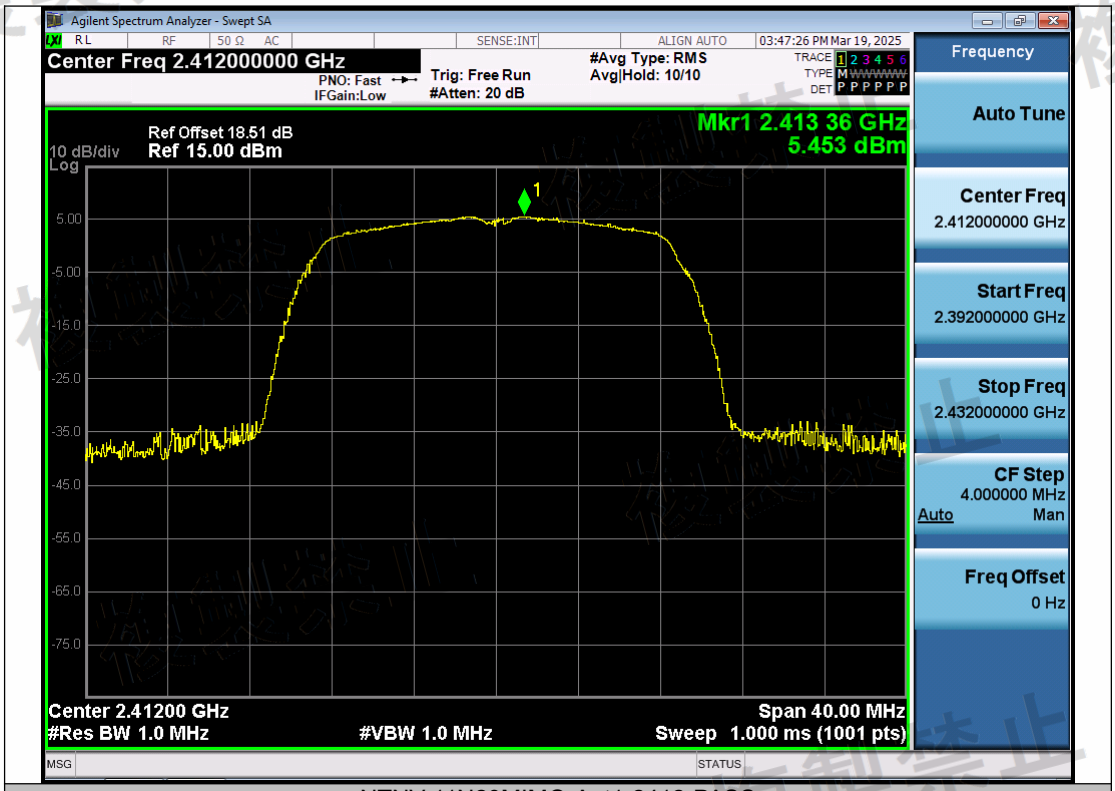
NTNV-11G-Ant1-2472-PASS



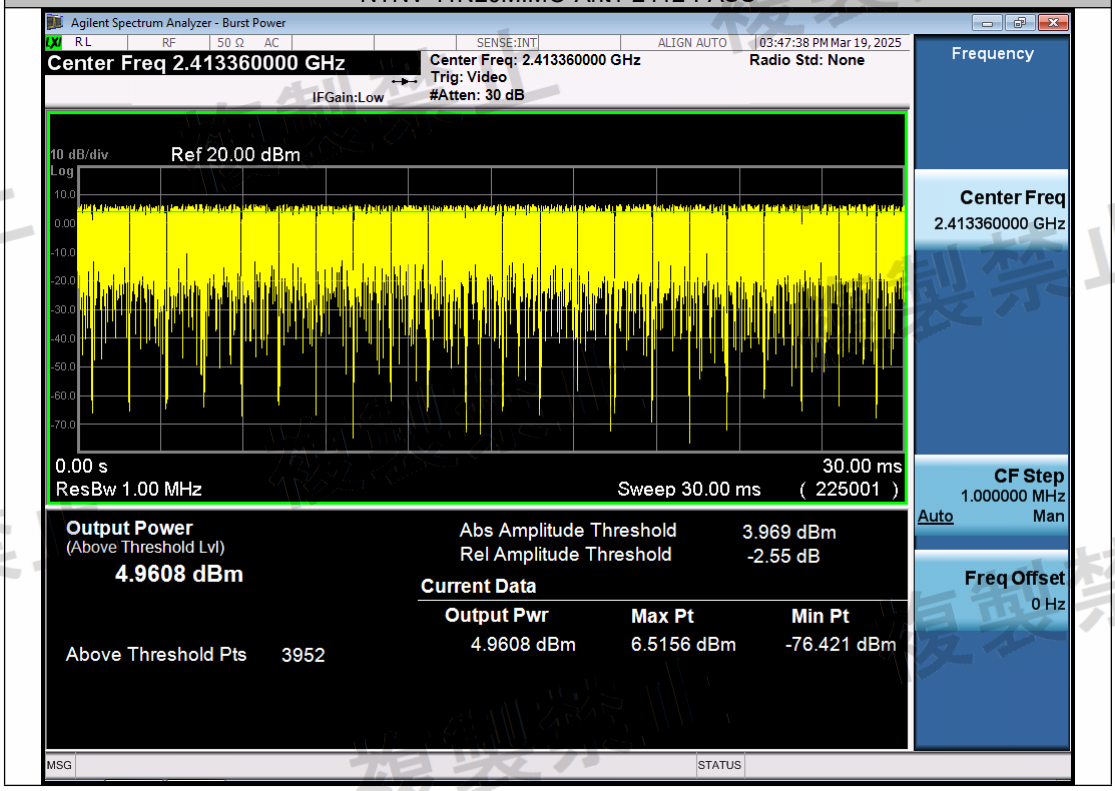


NTNV-11G-Ant2-2472-PASS



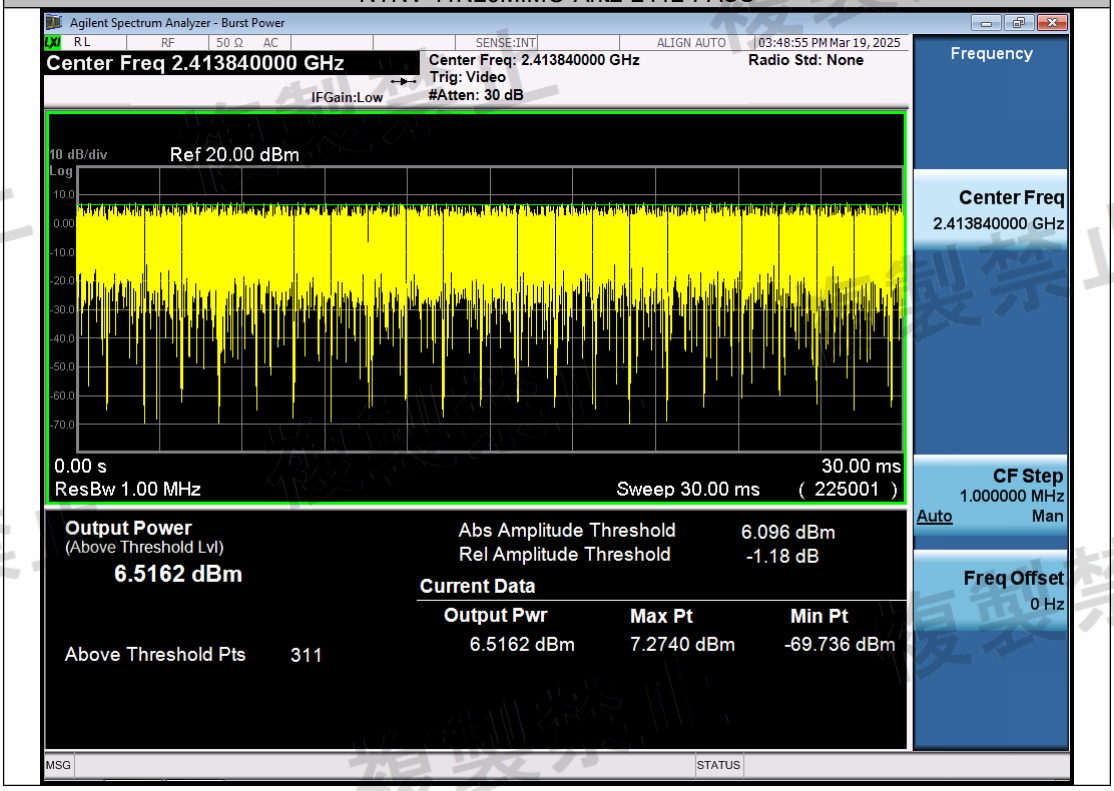


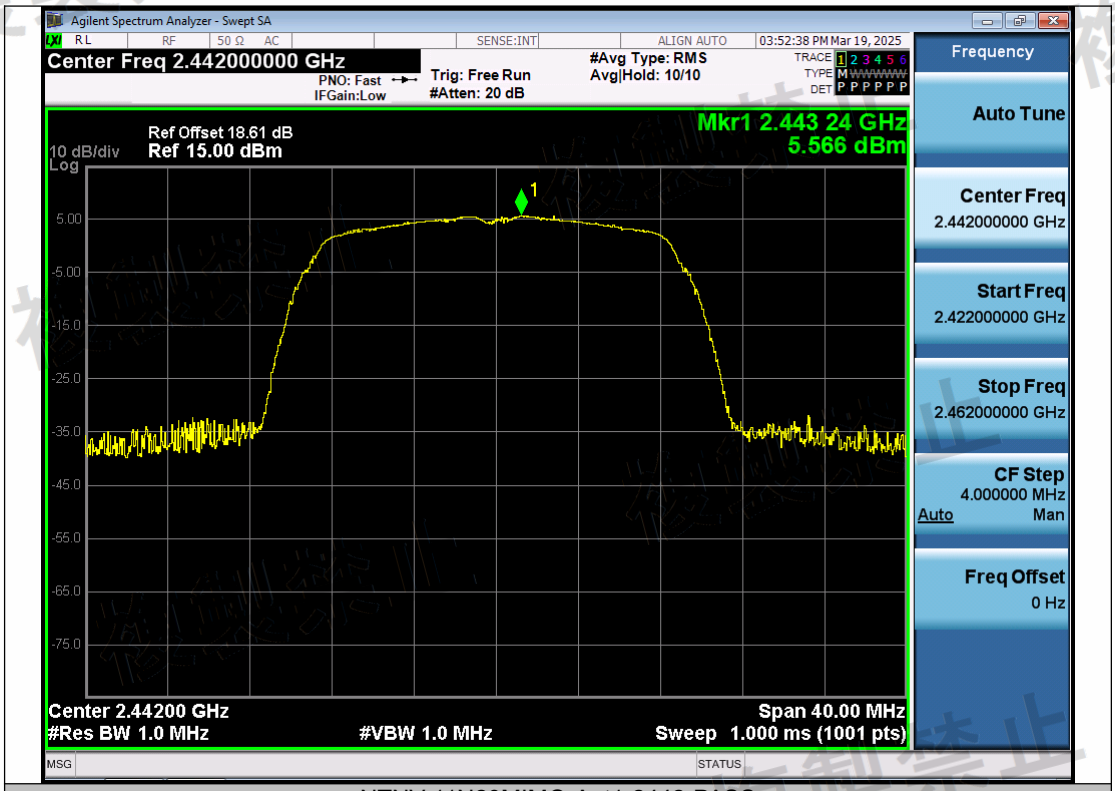
NTNV-11N20MIMO-Ant1-2412-PASS





NTNV-11N20MIMO-Ant2-2412-PASS





NTNV-11N20MIMO-Ant1-2442-PASS





NTNV-11N20MIMO-Ant2-2442-PASS



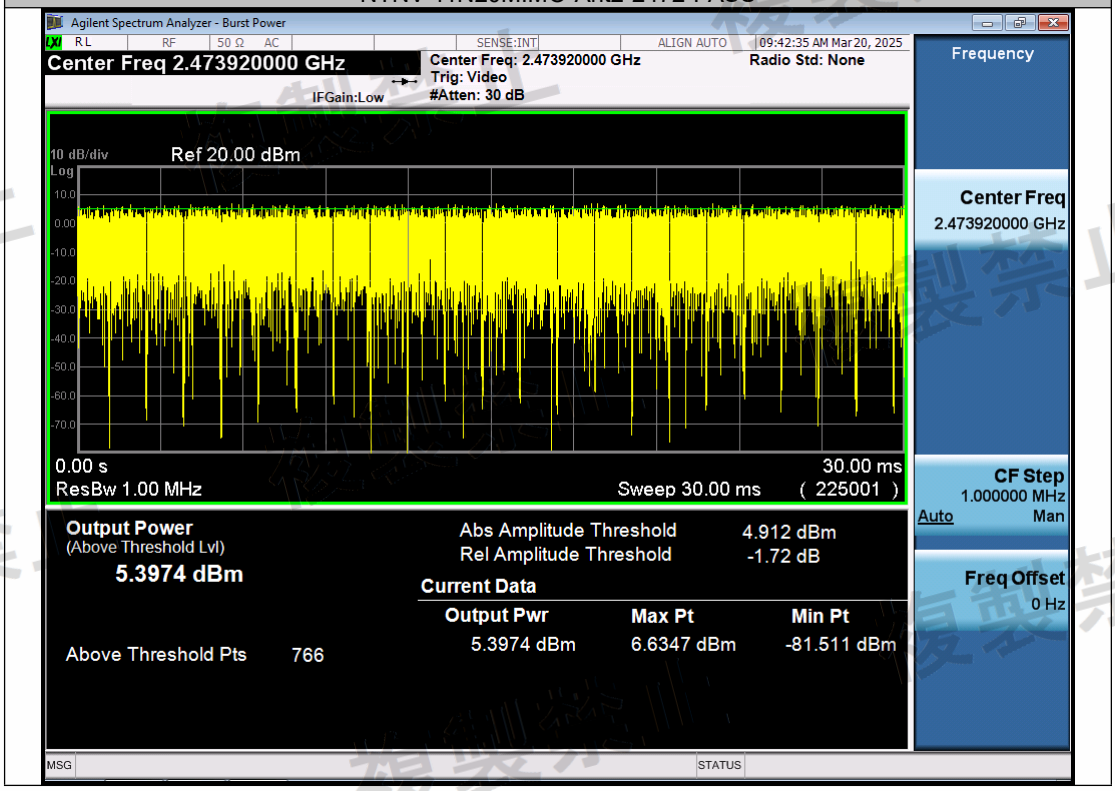


NTNV-11N20MIMO-Ant1-2472-PASS





NTNV-11N20MIMO-Ant2-2472-PASS





NTNV-11N40MIMO-Ant1-2422-PASS





NTNV-11N40MIMO-Ant2-2422-PASS





NTNV-11N40MIMO-Ant1-2442-PASS





NTNV-11N40MIMO-Ant2-2442-PASS





NTNV-11N40MIMO-Ant1-2462-PASS





NTNV-11N40MIMO-Ant2-2462-PASS



7.2 Frequency Error

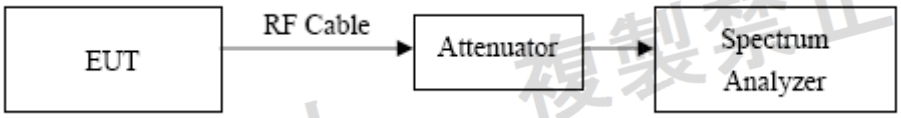
7.2.1 Applicable Standard

According to Item 19 of Article 2 Paragraph 1.

7.2.2 Conformance Limit

the maximum permit tolerance of frequency is 50ppm.

7.2.3 Test Setup Block Diagram



7.2.4 Test Procedure

1. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

2. Set center frequency of spectrum analyzer = operating frequency.

3. Set the spectrum analyzer as RBW, VBW=10KHz, Span = 1MHz.

4 'Maximum Hold' mode may be used to accumulate the measurement result over several scans provided emssion is repetitive in nature.

5. Repeat above procedures until all frequency measured was complete.

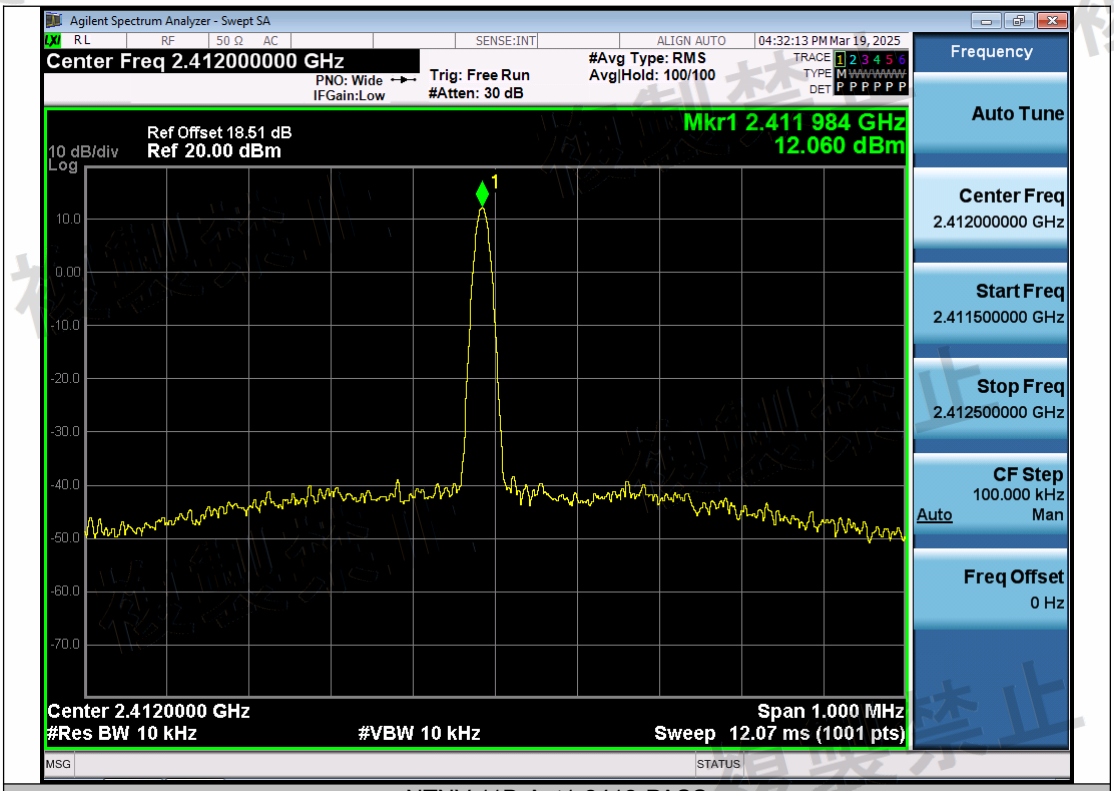
7.2.5 Environmental Conditions

Temperature:	25°C
Relative Humidity:	60%
ATM Pressure:	1011 mbar

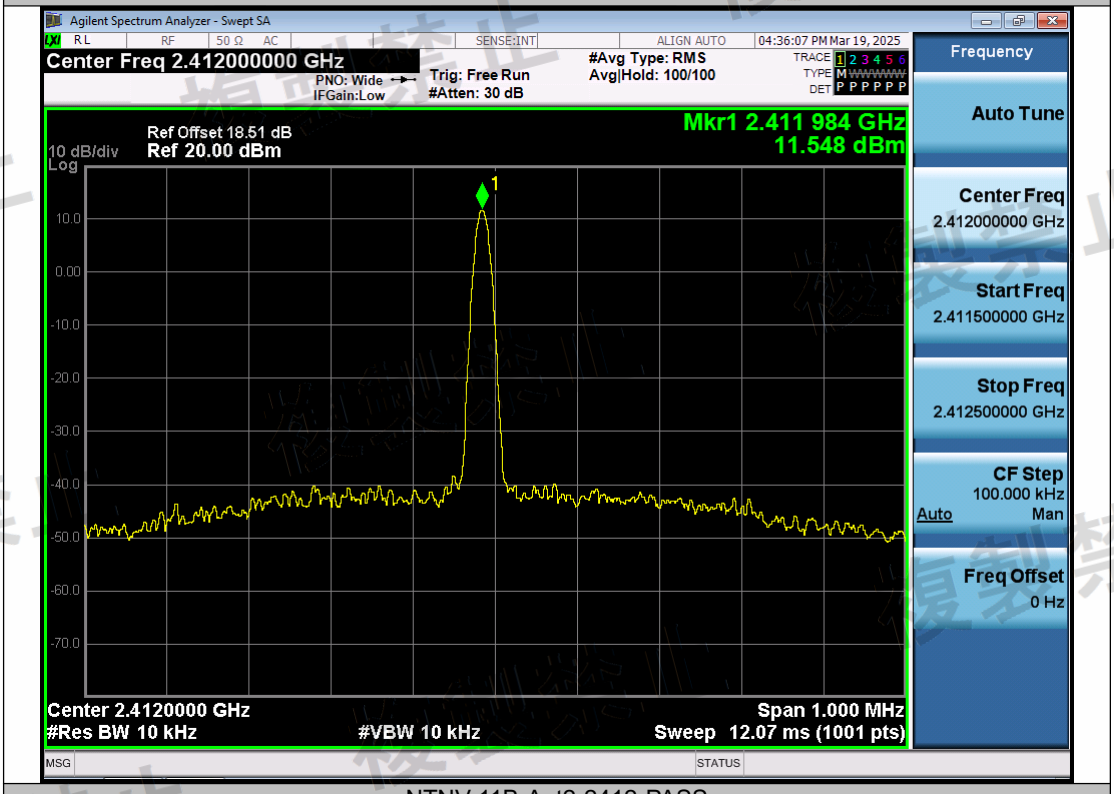
7.2.6 Test Results

TestCondition	TestMode	Antenna	Frequency[MHz]	CenterFreq [MHz]	Result[ppm]	Limit[ppm]	Verdict
NTNV	11B	Ant1	2412	2411.984	-6.63350	±50	PASS
NTNV	11B	Ant2	2412	2411.984	-6.63350	±50	PASS
NTNV	11B	Ant1	2442	2441.984	-6.55201	±50	PASS
NTNV	11B	Ant2	2442	2441.984	-6.55201	±50	PASS
NTNV	11B	Ant1	2472	2471.984	-6.47249	±50	PASS
NTNV	11B	Ant2	2472	2471.984	-6.47249	±50	PASS
NTNV	11G	Ant1	2412	2411.984	-6.63350	±50	PASS
NTNV	11G	Ant2	2412	2411.984	-6.63350	±50	PASS
NTNV	11G	Ant1	2442	2441.984	-6.55201	±50	PASS
NTNV	11G	Ant2	2442	2441.984	-6.55201	±50	PASS
NTNV	11G	Ant1	2472	2471.984	-6.47249	±50	PASS
NTNV	11G	Ant2	2472	2471.984	-6.47249	±50	PASS
NTNV	11N20MIMO	Ant1	2412	2411.985	-6.21891	±50	PASS
NTNV	11N20MIMO	Ant2	2412	2411.984	-6.63350	±50	PASS
NTNV	11N20MIMO	Ant1	2442	2441.984	-6.55201	±50	PASS
NTNV	11N20MIMO	Ant2	2442	2441.984	-6.55201	±50	PASS
NTNV	11N20MIMO	Ant1	2472	2471.984	-6.47249	±50	PASS
NTNV	11N20MIMO	Ant2	2472	2471.984	-6.47249	±50	PASS
NTNV	11N40MIMO	Ant1	2422	2421.984	-6.60611	±50	PASS
NTNV	11N40MIMO	Ant2	2422	2421.984	-6.60611	±50	PASS
NTNV	11N40MIMO	Ant1	2442	2441.984	-6.55201	±50	PASS
NTNV	11N40MIMO	Ant2	2442	2441.984	-6.55201	±50	PASS
NTNV	11N40MIMO	Ant1	2462	2461.984	-6.49878	±50	PASS
NTNV	11N40MIMO	Ant2	2462	2461.984	-6.49878	±50	PASS

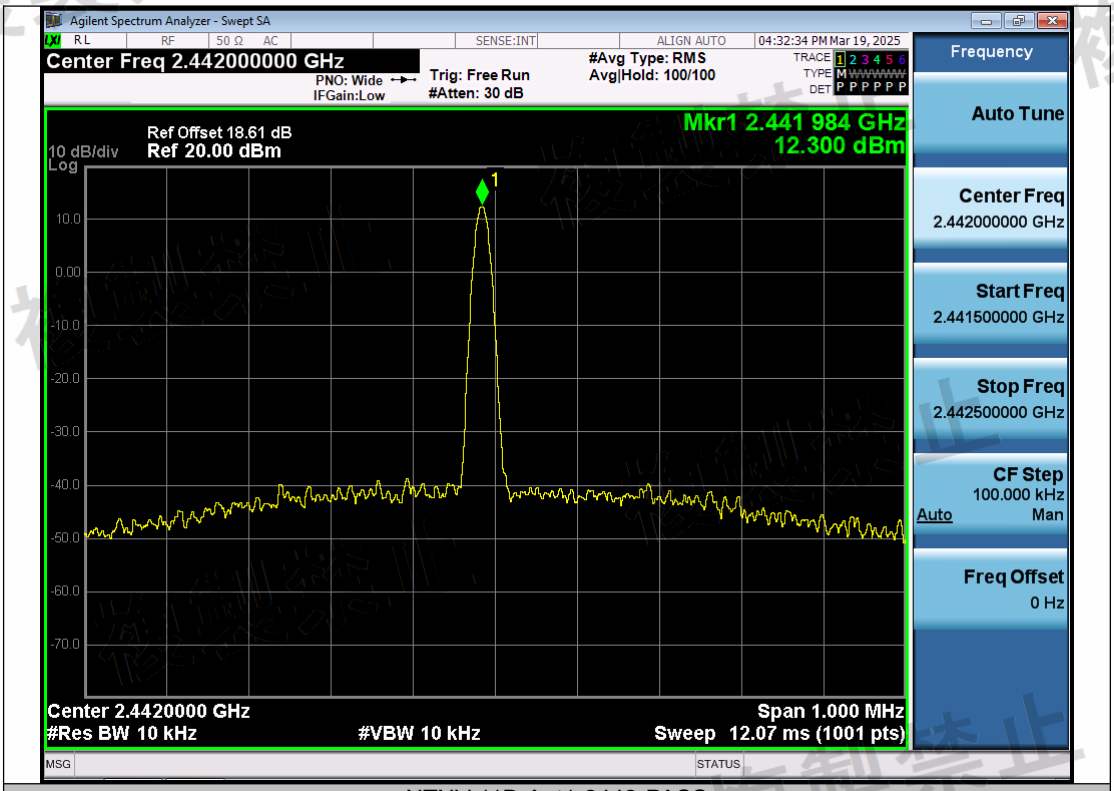
Note: All modes 2.4G 802.11b/g/n have been tested, and the worst result recorded in the report.



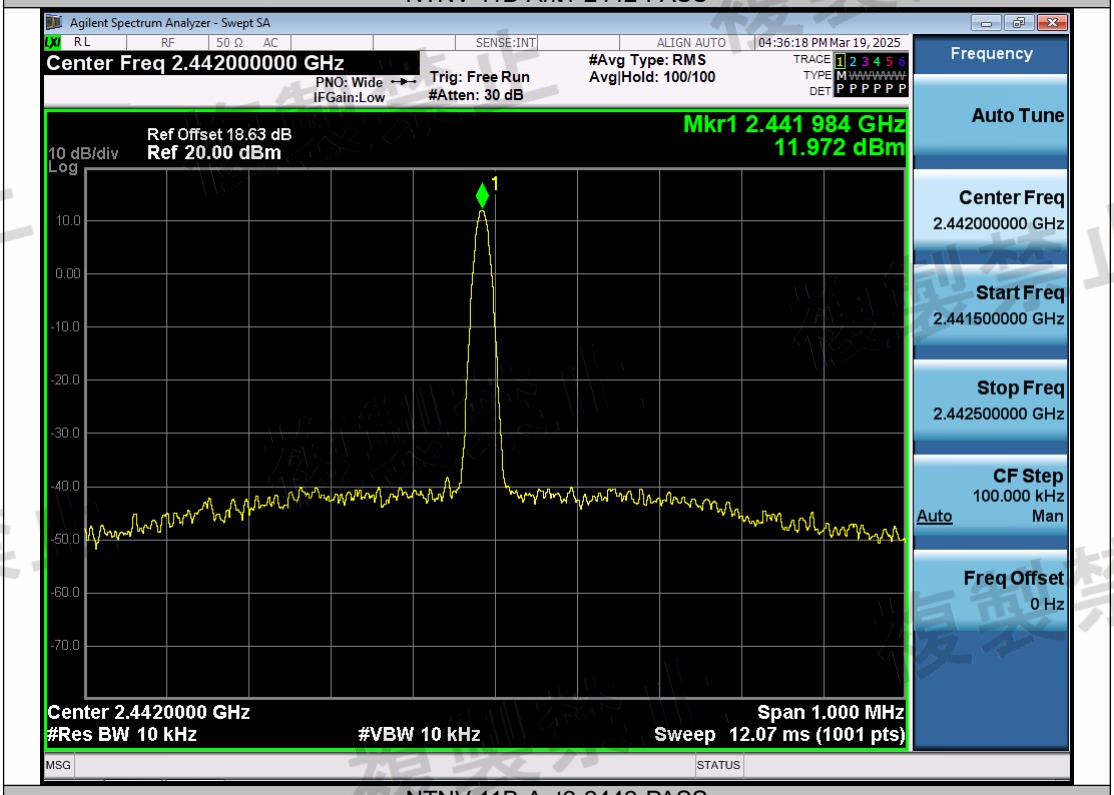
NTNV-11B-Ant1-2412-PASS



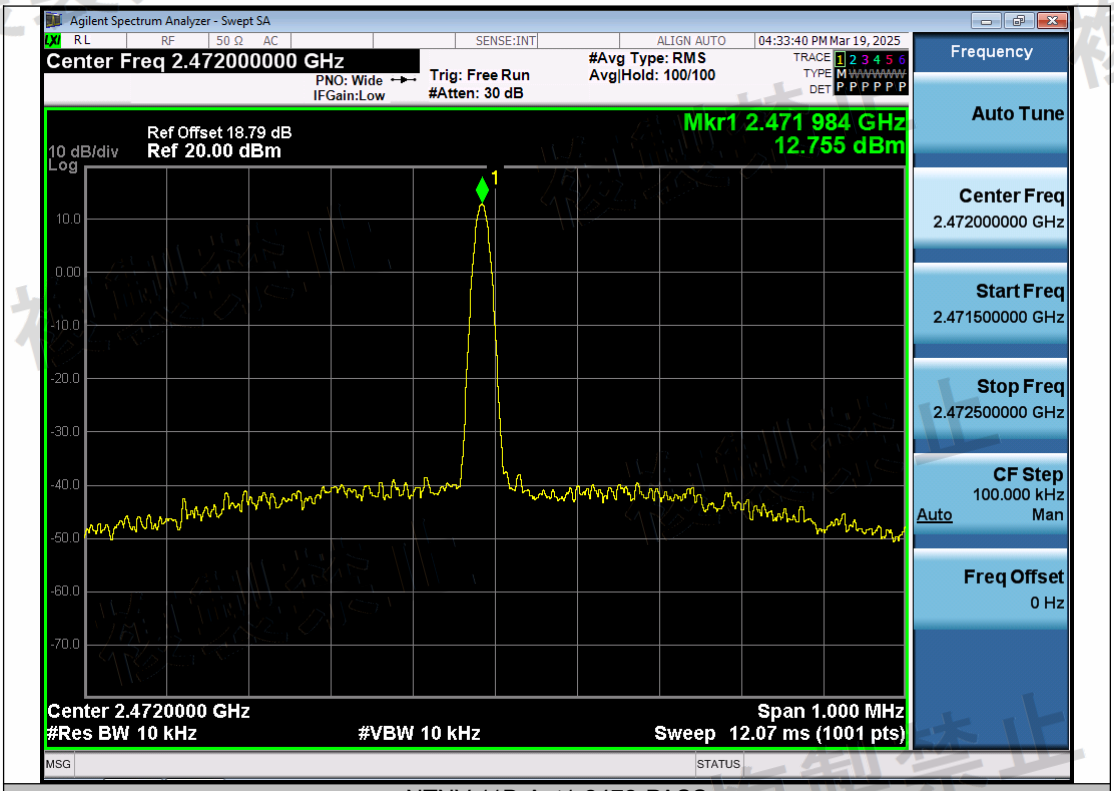
NTNV-11B-Ant2-2412-PASS



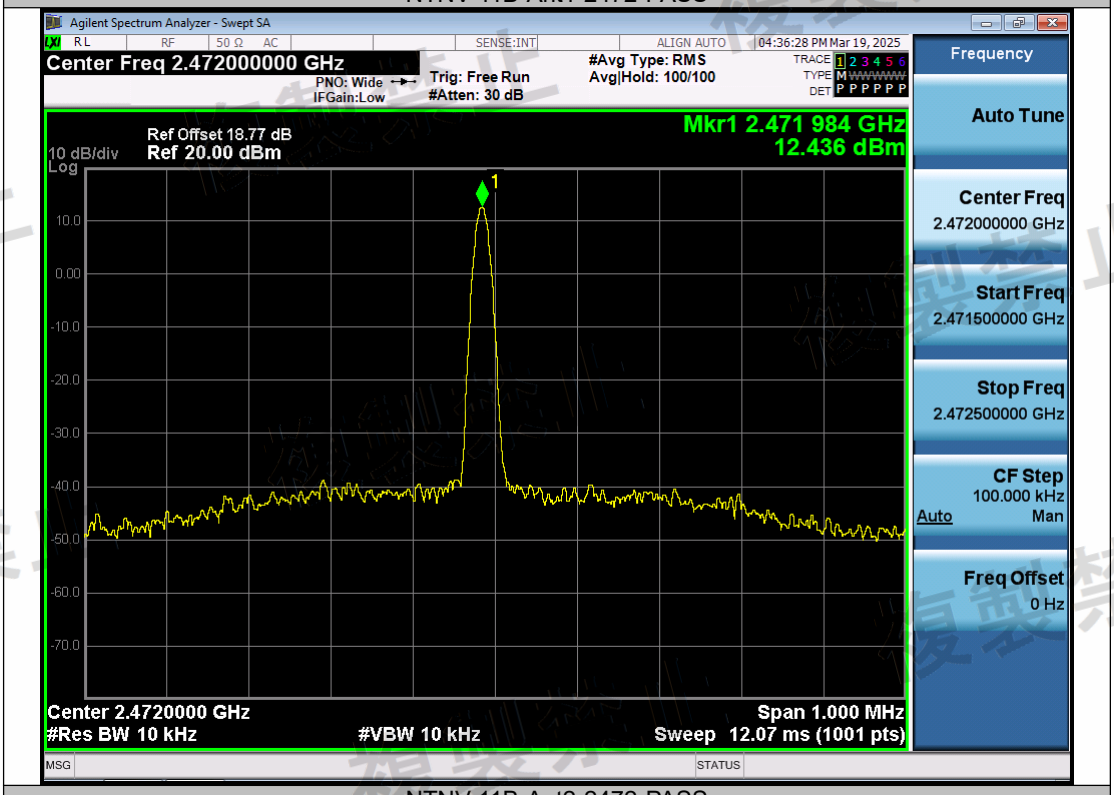
NTNV-11B-Ant1-2442-PASS



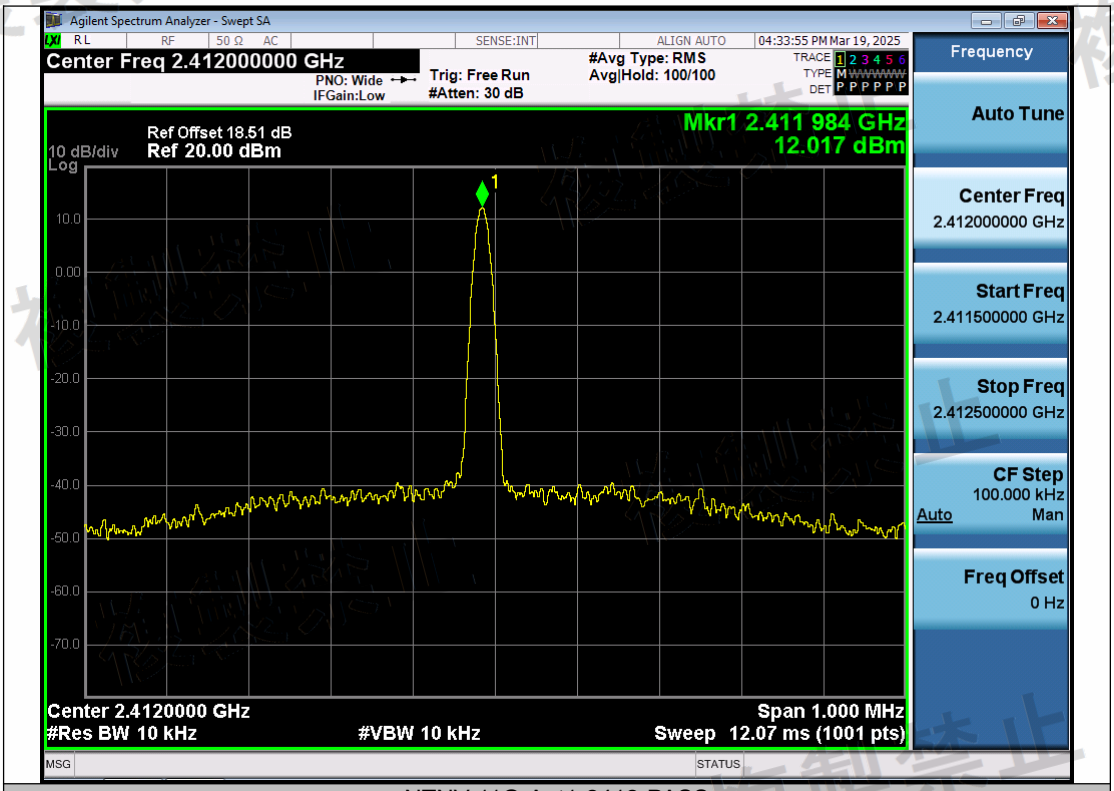
NTNV-11B-Ant2-2442-PASS



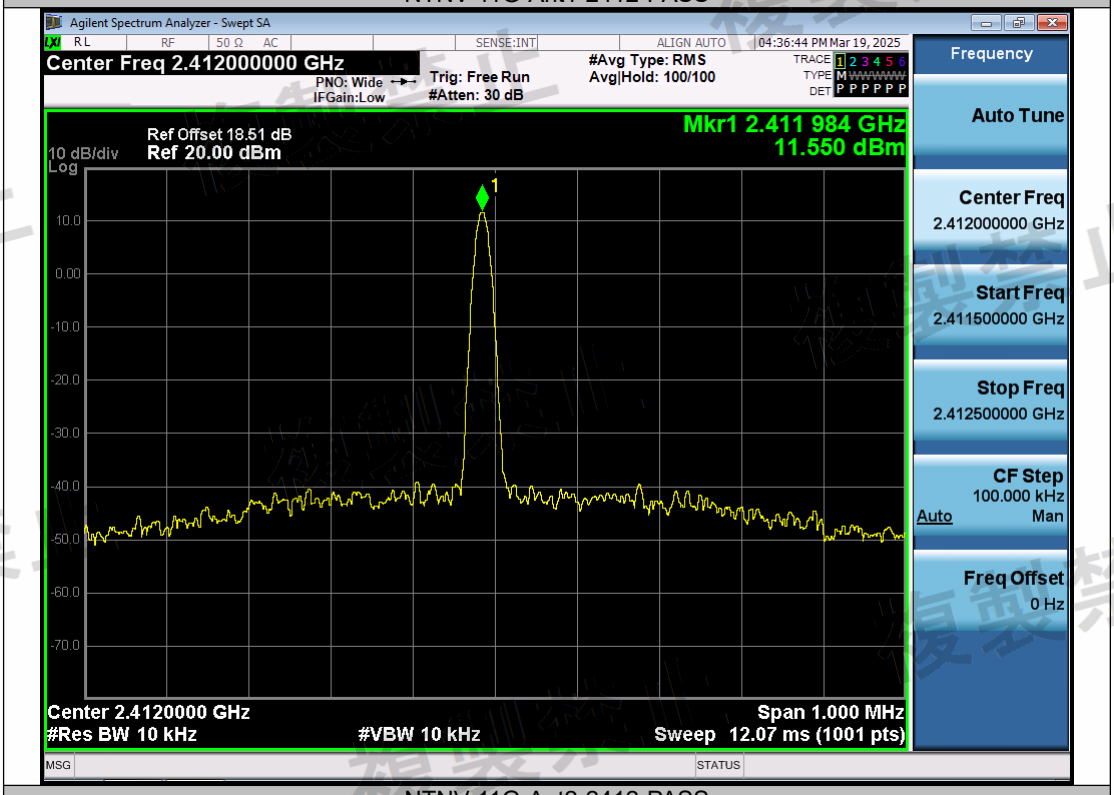
NTNV-11B-Ant1-2472-PASS



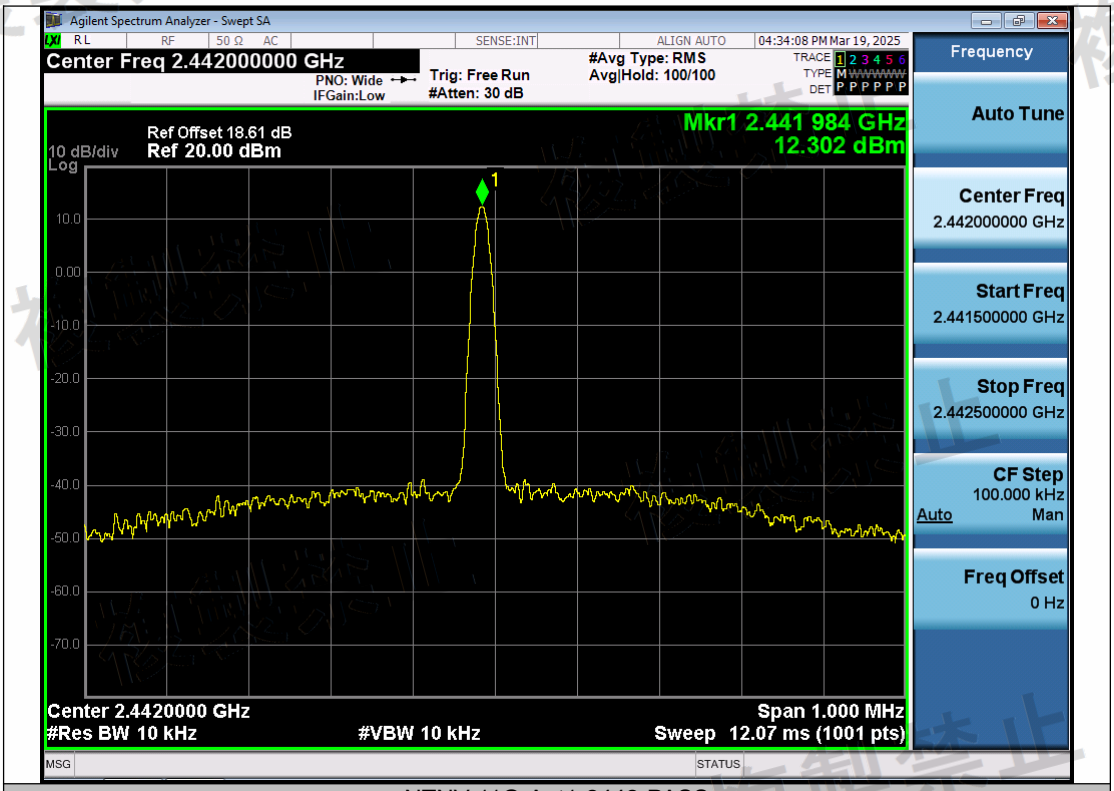
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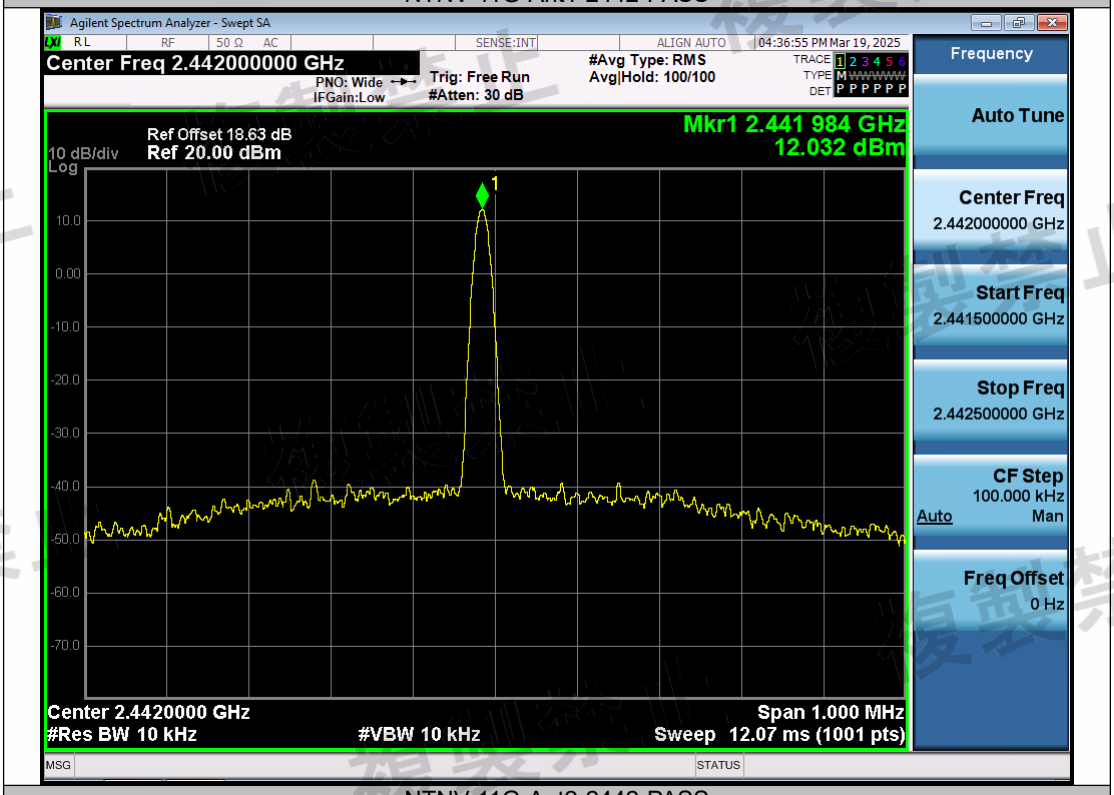
NTNV-11G-Ant1-2412-PASS



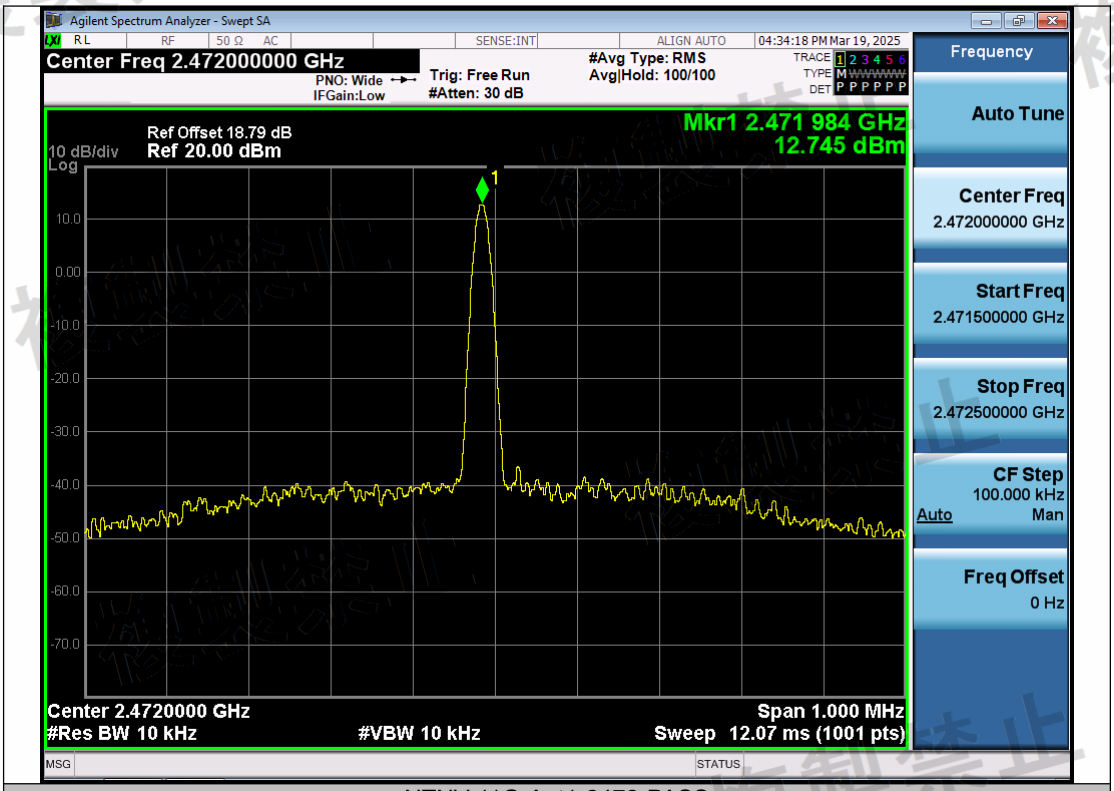
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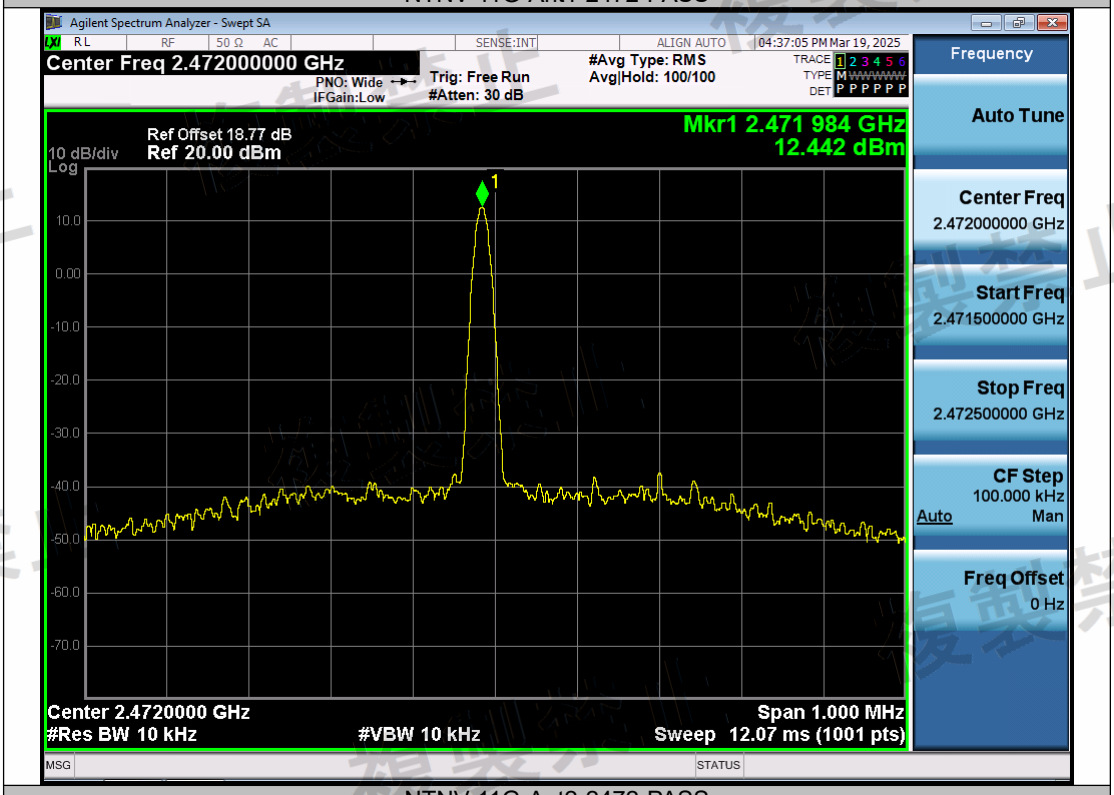
NTNV-11G-Ant1-2442-PASS



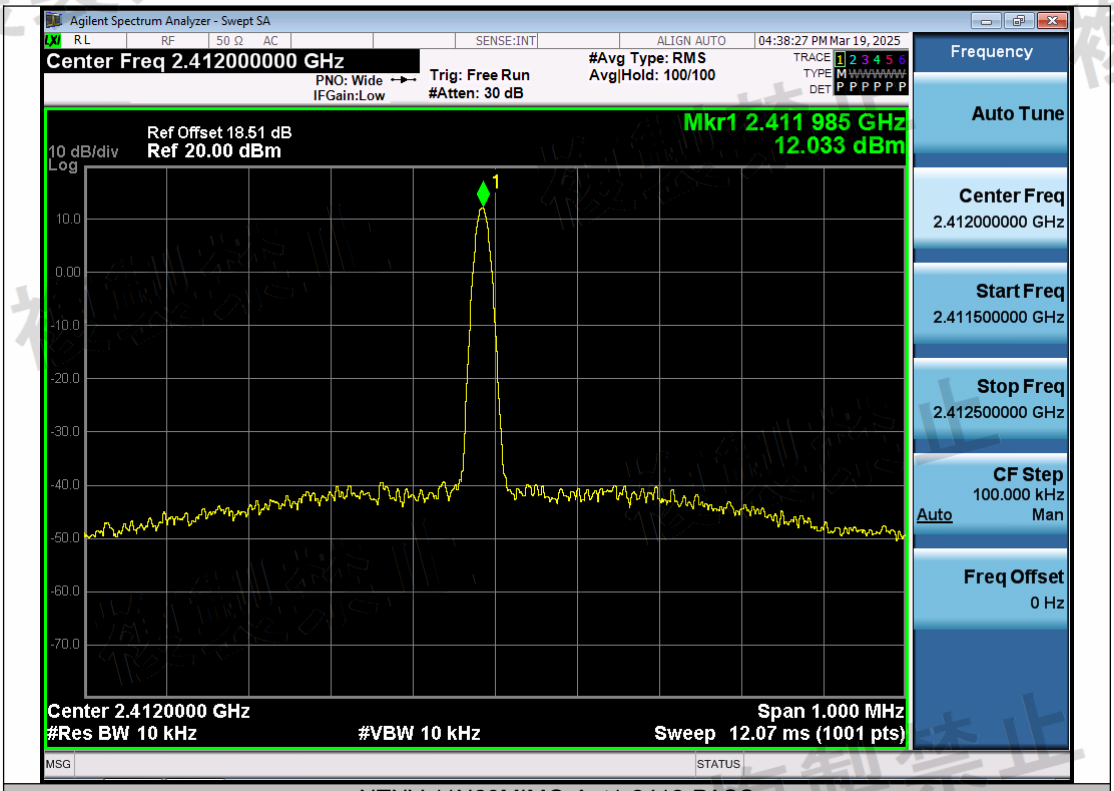
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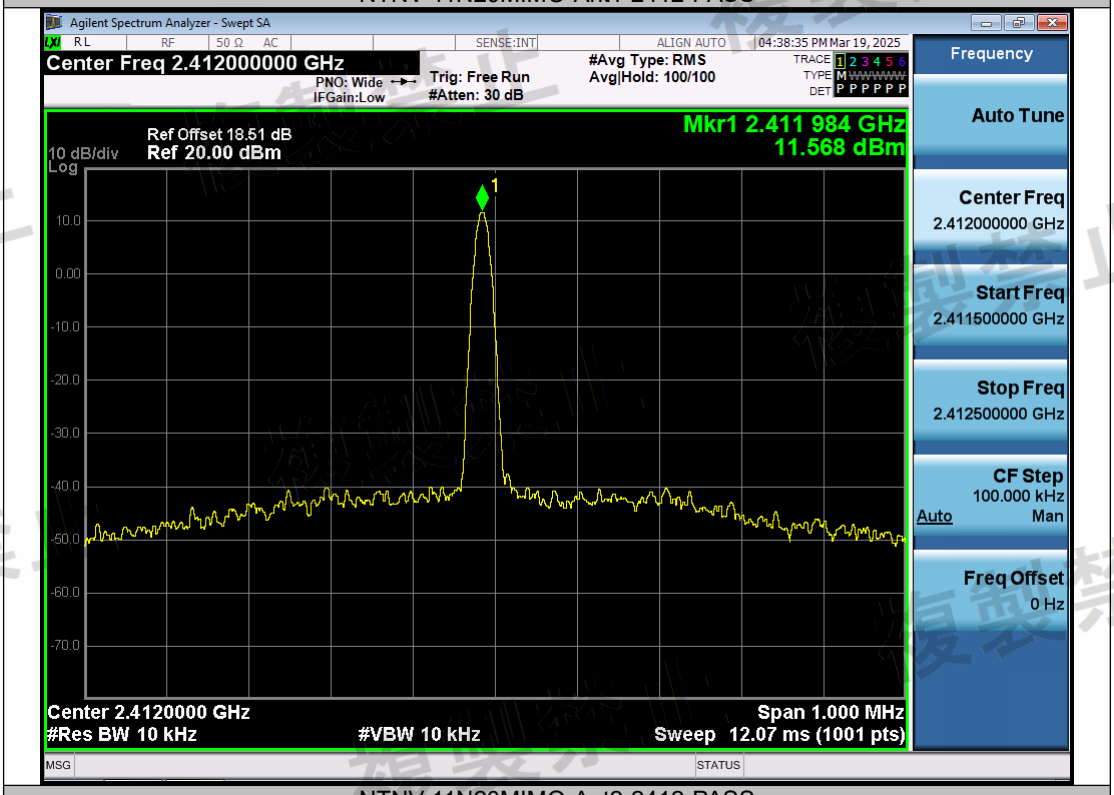
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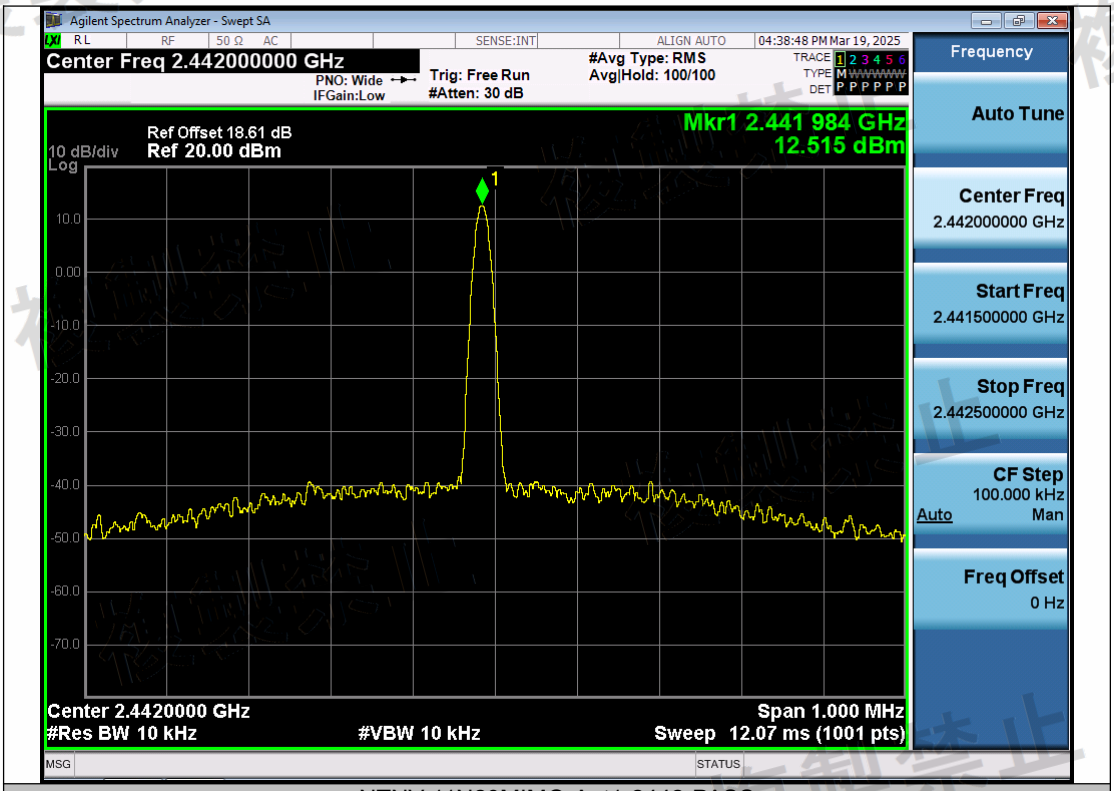
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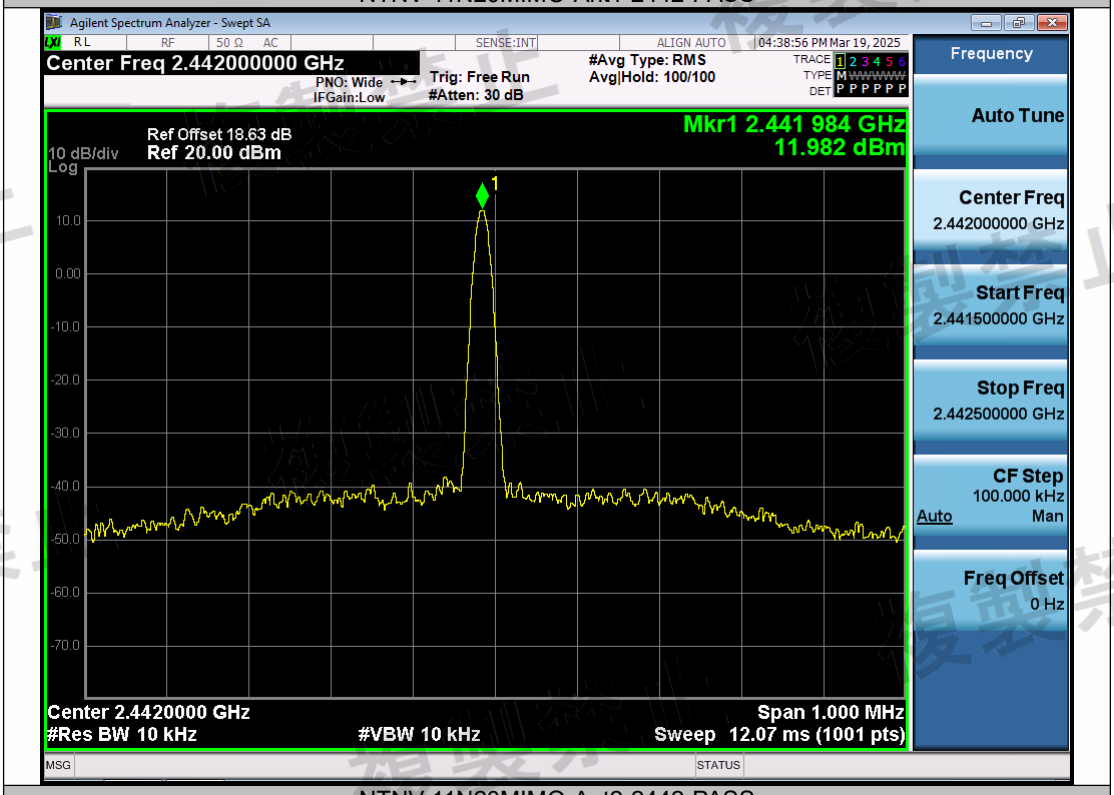
NTNV-11N20MIMO-Ant1-2412-PASS



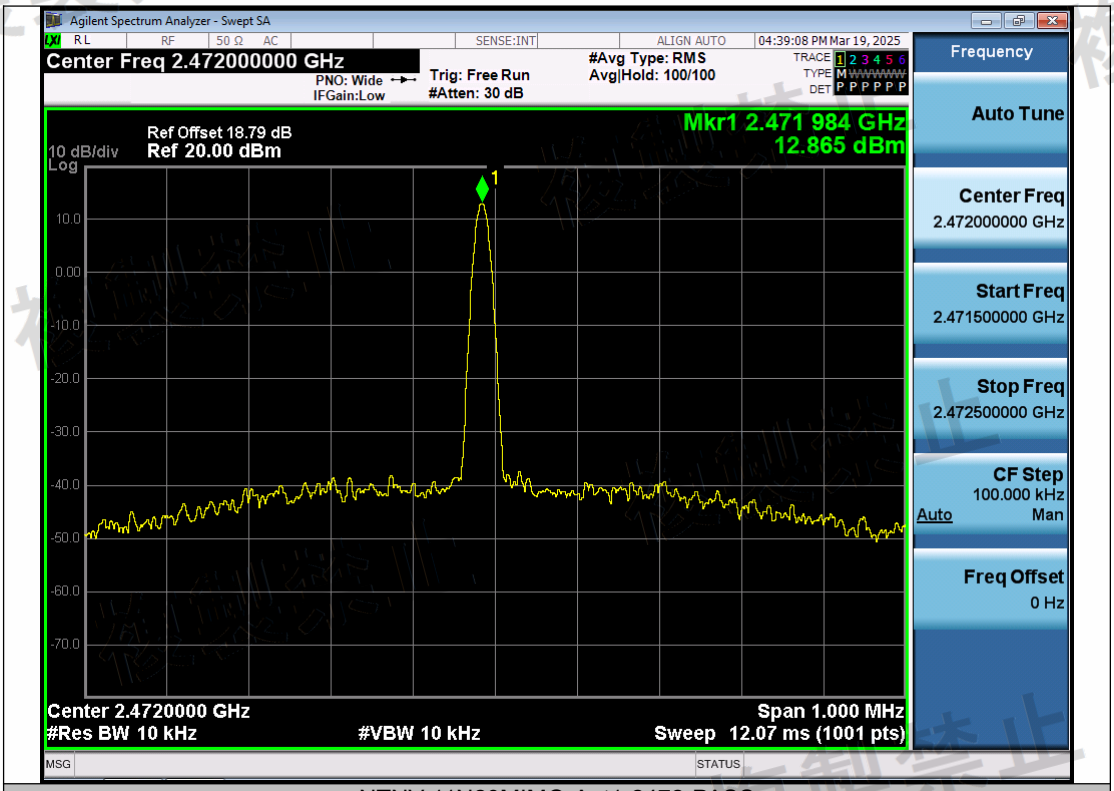
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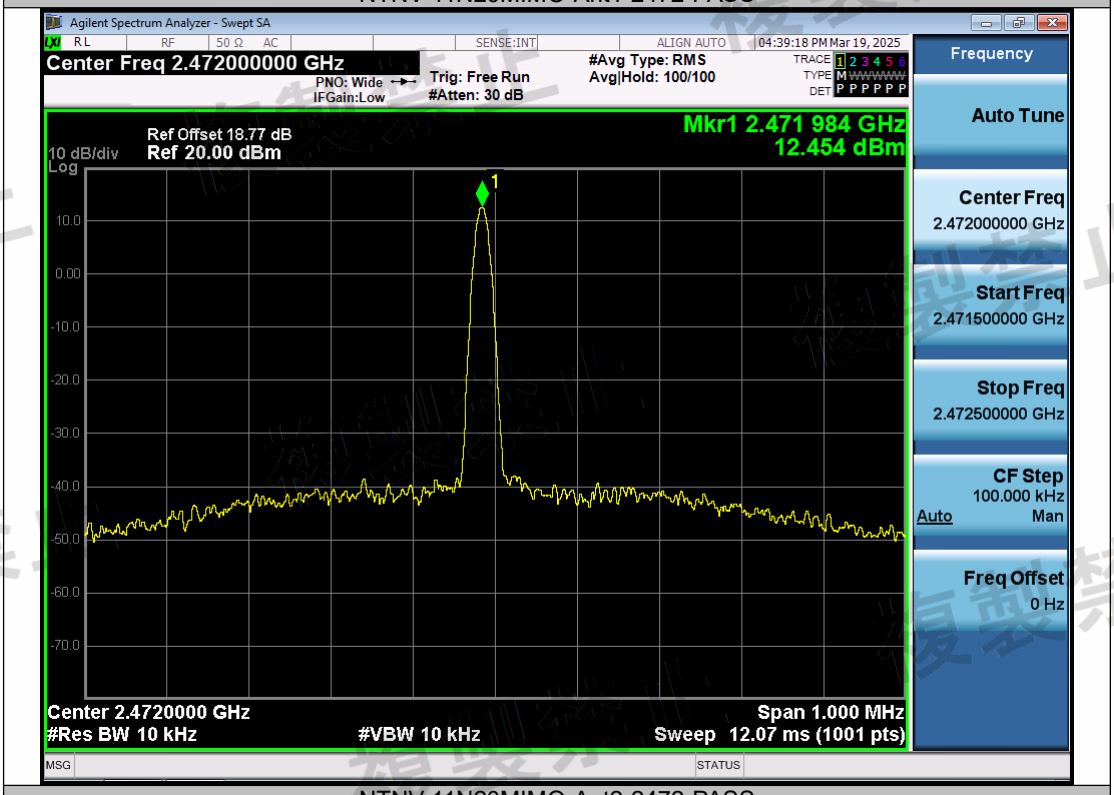
NTNV-11N20MIMO-Ant1-2442-PASS



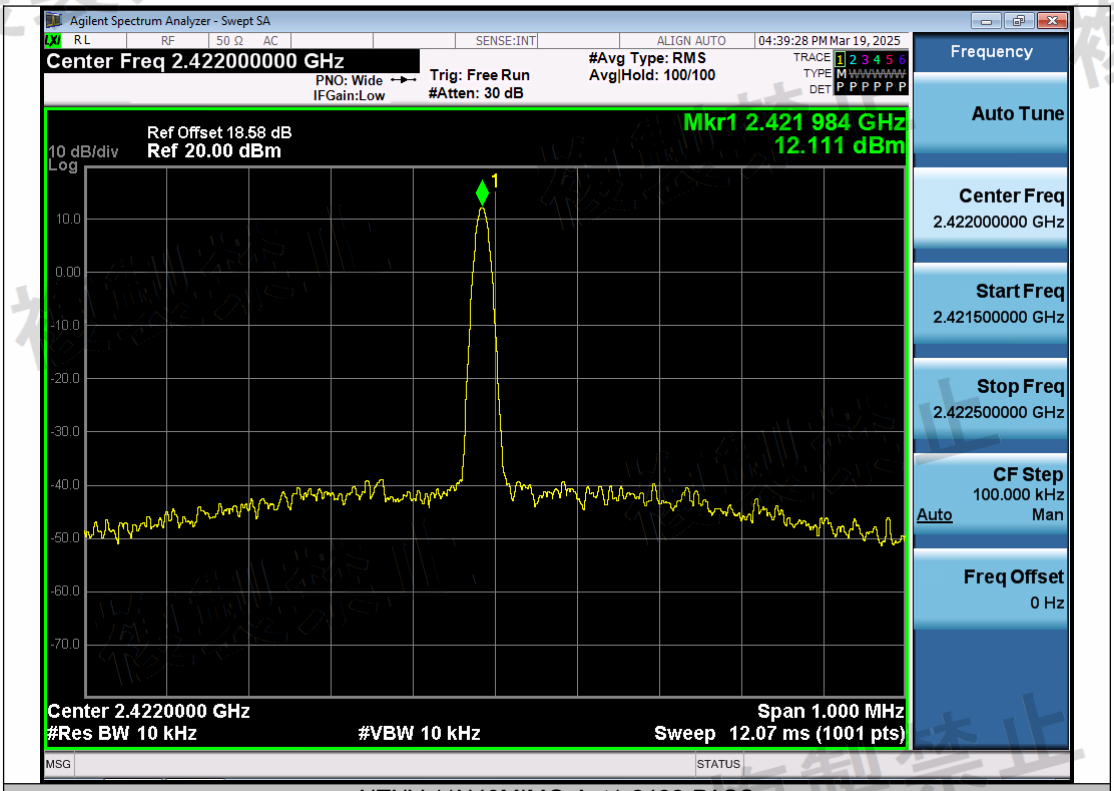
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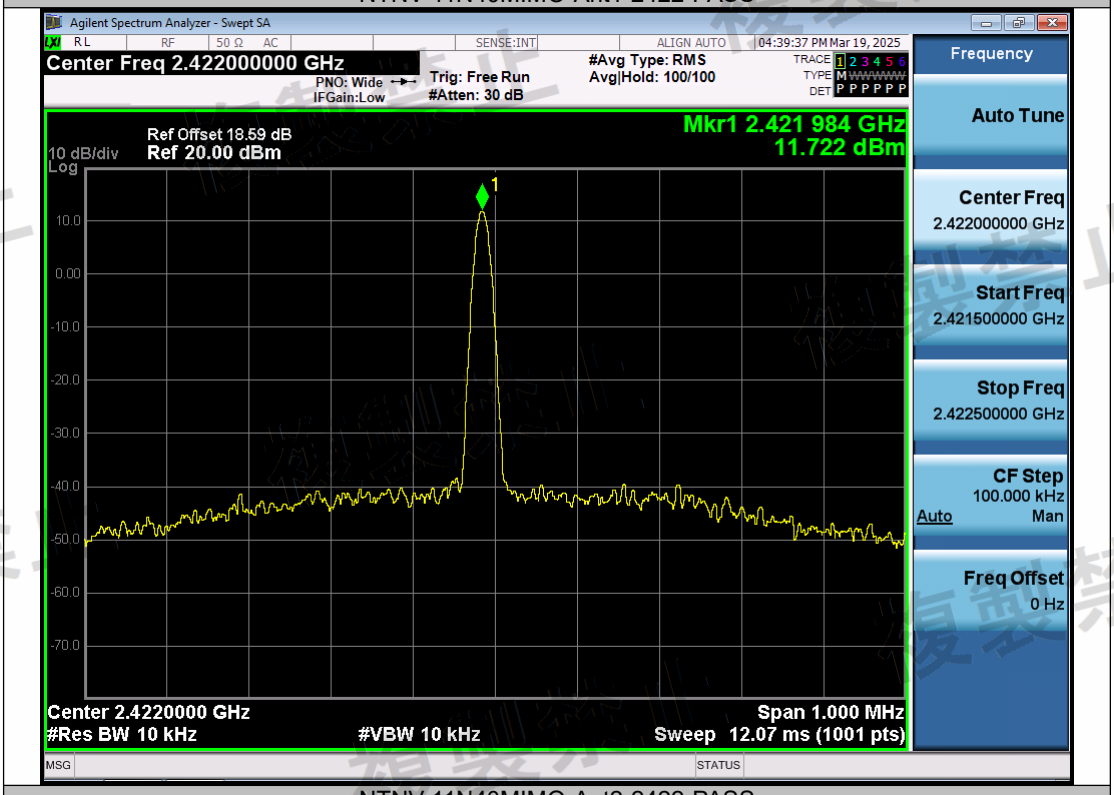
NTNV-11N20MIMO-Ant1-2472-PASS



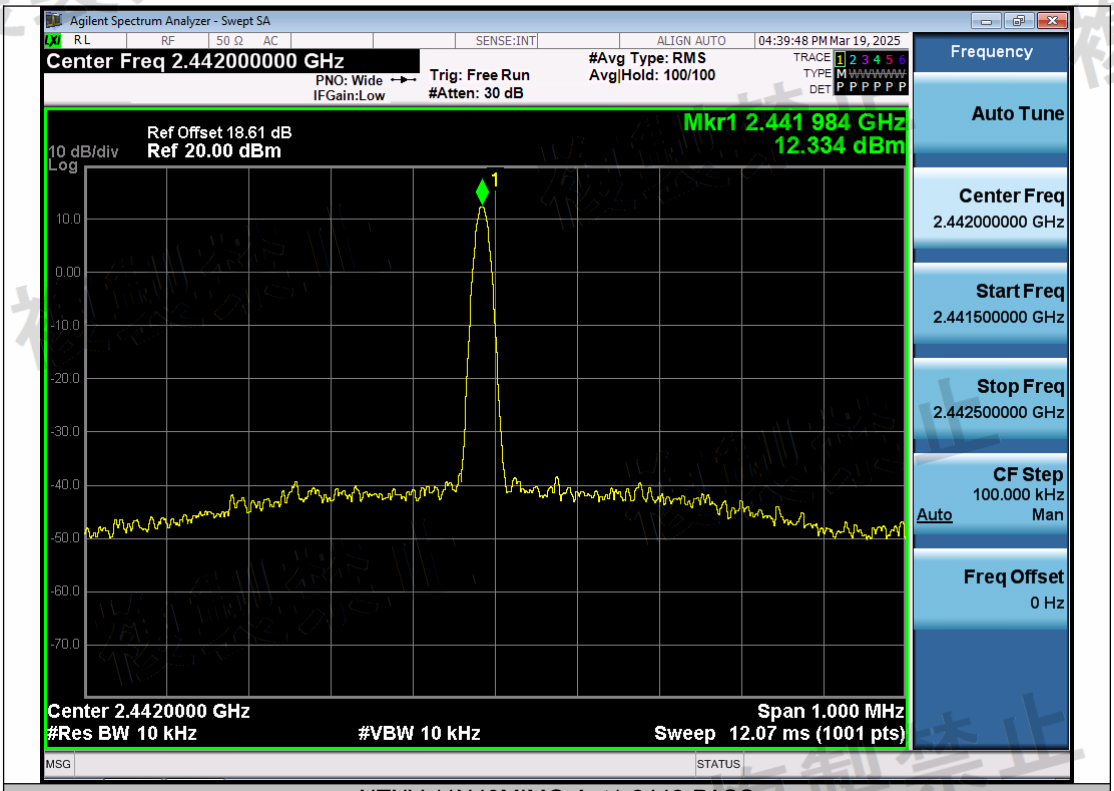
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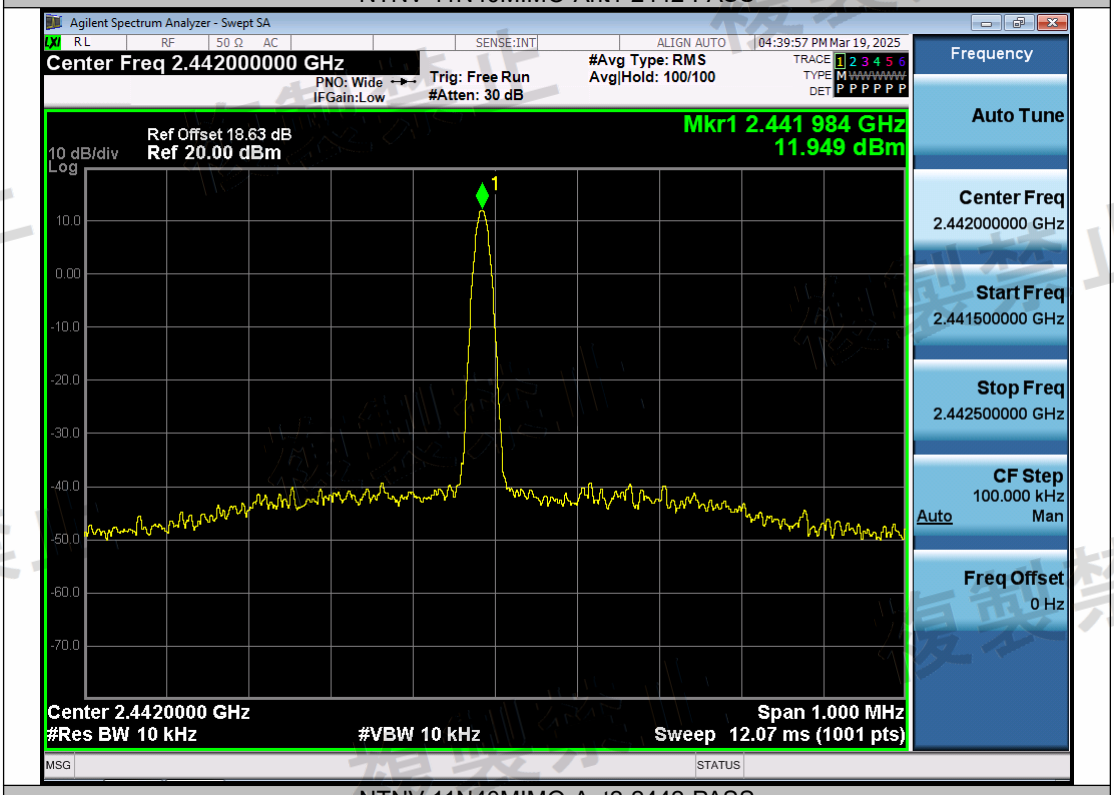
NTNV-11N40MIMO-Ant1-2422-PASS



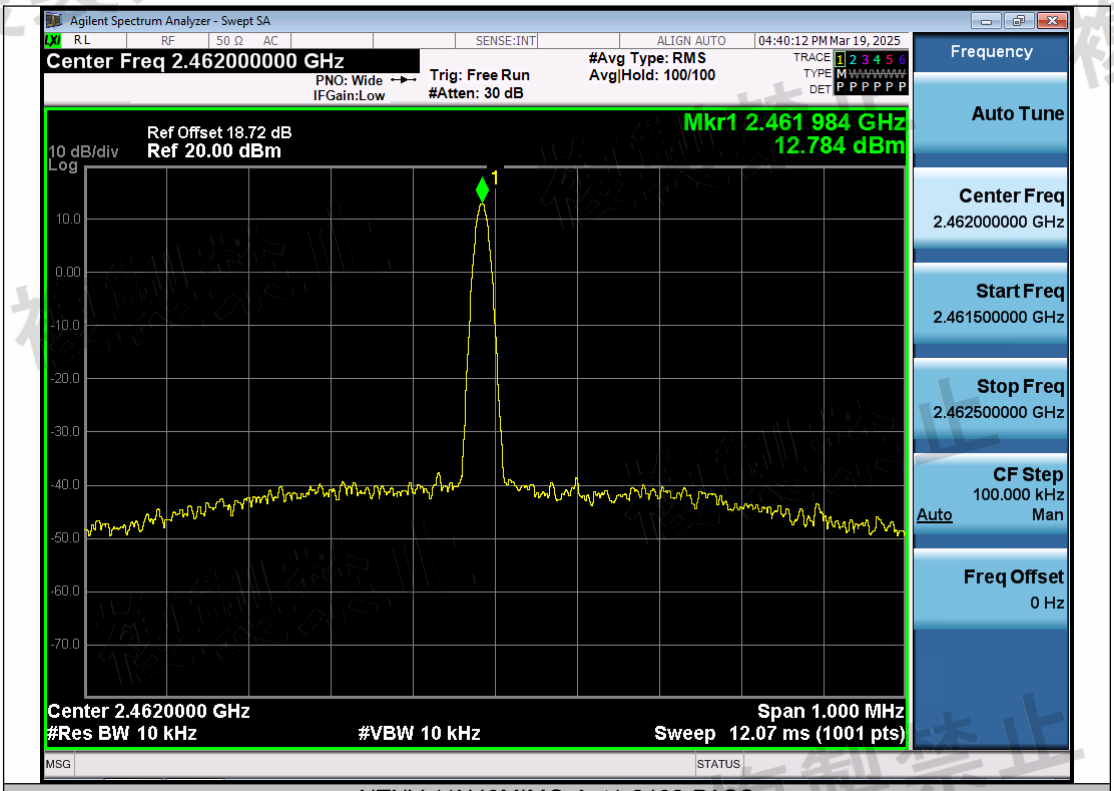
NTNV-11N40MIMO-Ant2-2422-PASS



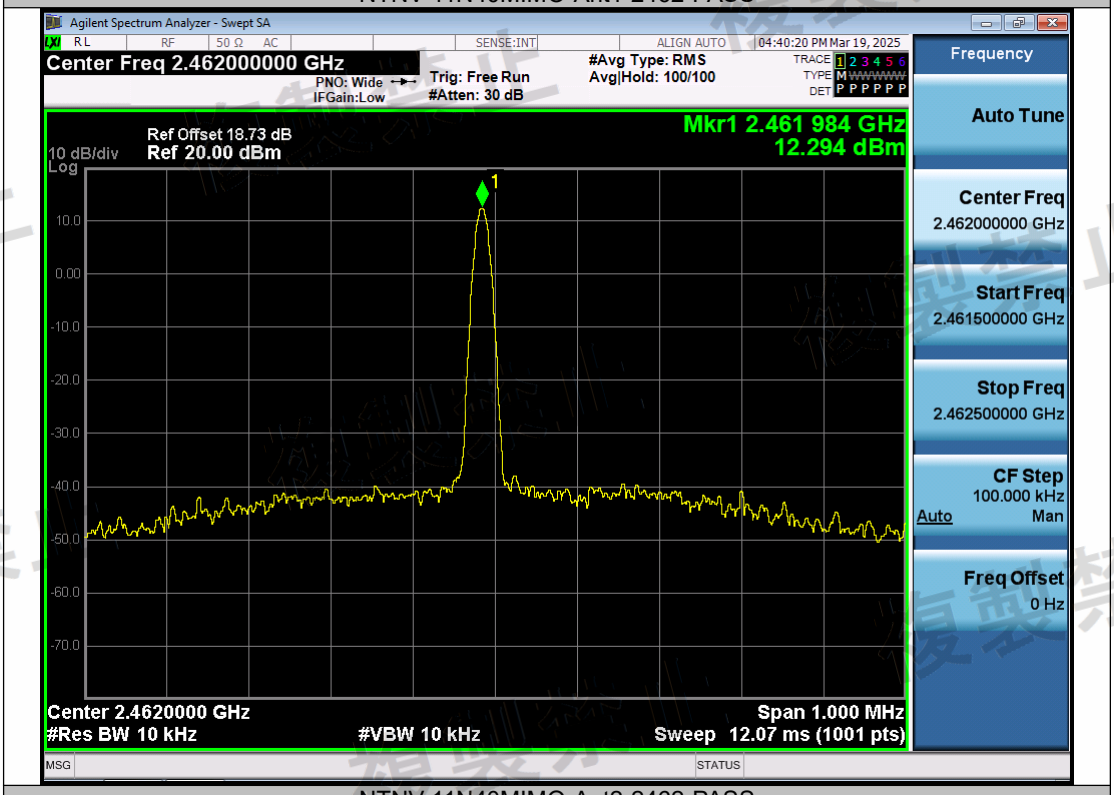
NTNV-11N40MIMO-Ant1-2442-PASS



NTNV-11N40MIMO-Ant2-2442-PASS



NTNV-11N40MIMO-Ant1-2462-PASS



NTNV-11N40MIMO-Ant2-2462-PASS

7.3 Occupied Bandwidth (99%)&Spreading Bandwidth (90%)&Spread Factor

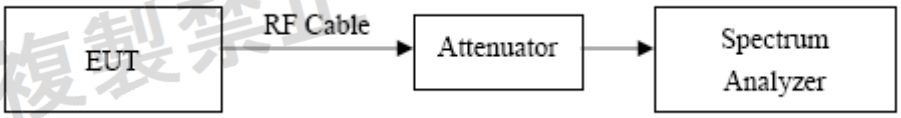
7.3.1 Applicable Standard

According to Item 19 of Article 2 Paragraph 1.

7.3.2 Conformance Limit

Occupied bandwidth: FH≤83.5 MHz; DS≤26 MHz; OFDM≤38 MHz, Others≤26 MHz
Spread Bandwidth: ≥ 500 kHz (FH, DS), Spread factor>5.

7.3.3 Test Setup Block Diagram



7.3.4 Test Procedure

(1) Spectrum analyzer is set as below

Central Frequency	Test frequency
Sweeping Bandwidth	2 to 3.5 times the allowable value(SPAN=80MHz for 802.11n(HT40) ,SPAN=50MHz for the others)
Resolution Bandwidth	Lower than 3 % of allowable value(RBW=300kHz)
Video Bandwidth	Equivalent to resoluble bandwidth
Y-Axis Scale	10 dB/Div
Input Level	Carrier level is sufficiently higher than spectrum analyzer noise
Sweep Time	Minimum time to assure the measurement accuracy (In case of burst wave, 1 burst per 1 sample)
Sampling points	More than 400 points
Sweep Mode	Consecutive sweep
Phase-Detection Mode	Positive peak
Trigger Condition	Max-hold

(2) Repeat the sweeping till no change was observed on the display and enter all values of data point to the computer as array variable.

(3) About all data, convert dB value to antilogarithm of electric power dimension.

(4) Add up the electric power of all data and record it as “Sum total of electric power”.

(5) Adding up data in order from the lowest frequency to upper frequencies, look for a limit point where the value reaches to 0.5% (5% in case of diffusion bandwidth) of “Sum total of electric power”. Convert the limit point to frequency and record as “Lowest limit frequency”.

(6) Adding up data in order from the highest frequency to lower frequencies, look for a limit point

where the value reaches to 0.5% (5% in case of diffusion bandwidth) of “Sum total of electric power”. Convert the limit point to frequency and record as “Highest limit frequency”.

(7) Repeat above procedures until all frequency measured was complete.

(8)Spread Factor=Spread Bandwidth/modulation rate. The modulation rate: MR=1.375 for 802.11b, MR=1.5 for 802.11g/n20, MR=3 for 802.11n40.

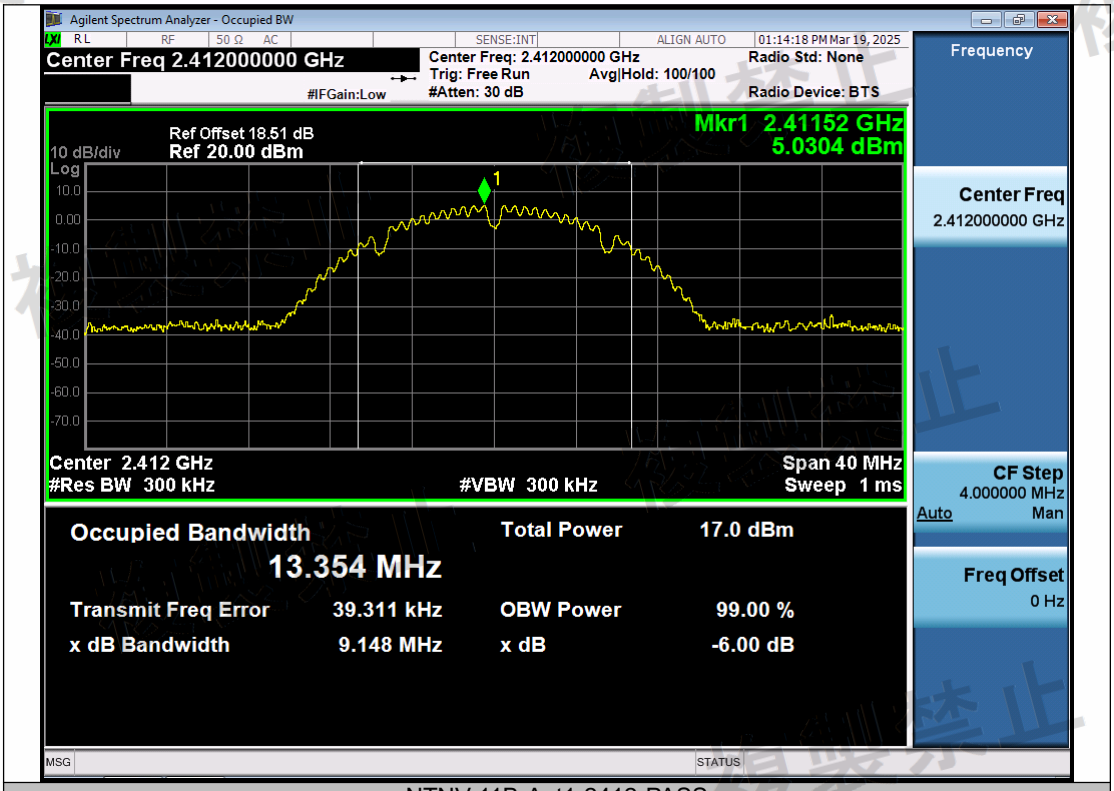
7.3.5 Environmental Conditions

Temperature:	25°C
Relative Humidity:	45%
ATM Pressure:	1011 mbar

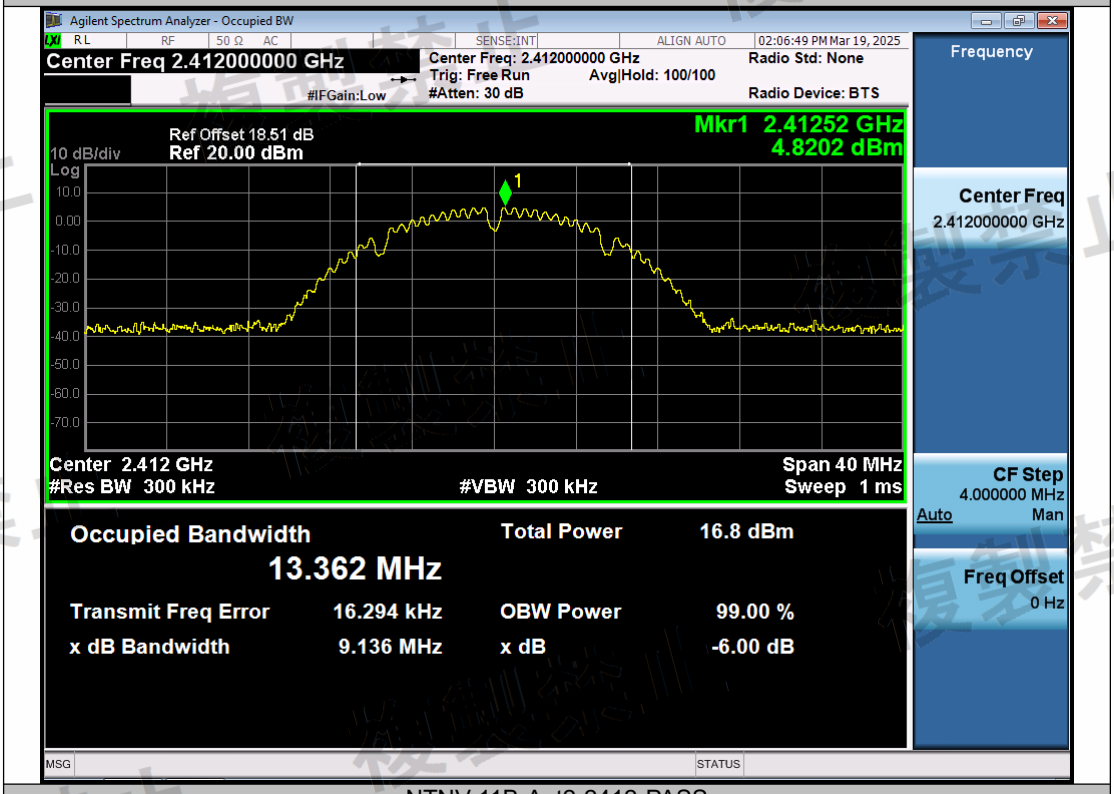
7.3.6 Test Results

Occupied Bandwidth (99% Emission bandwidth)

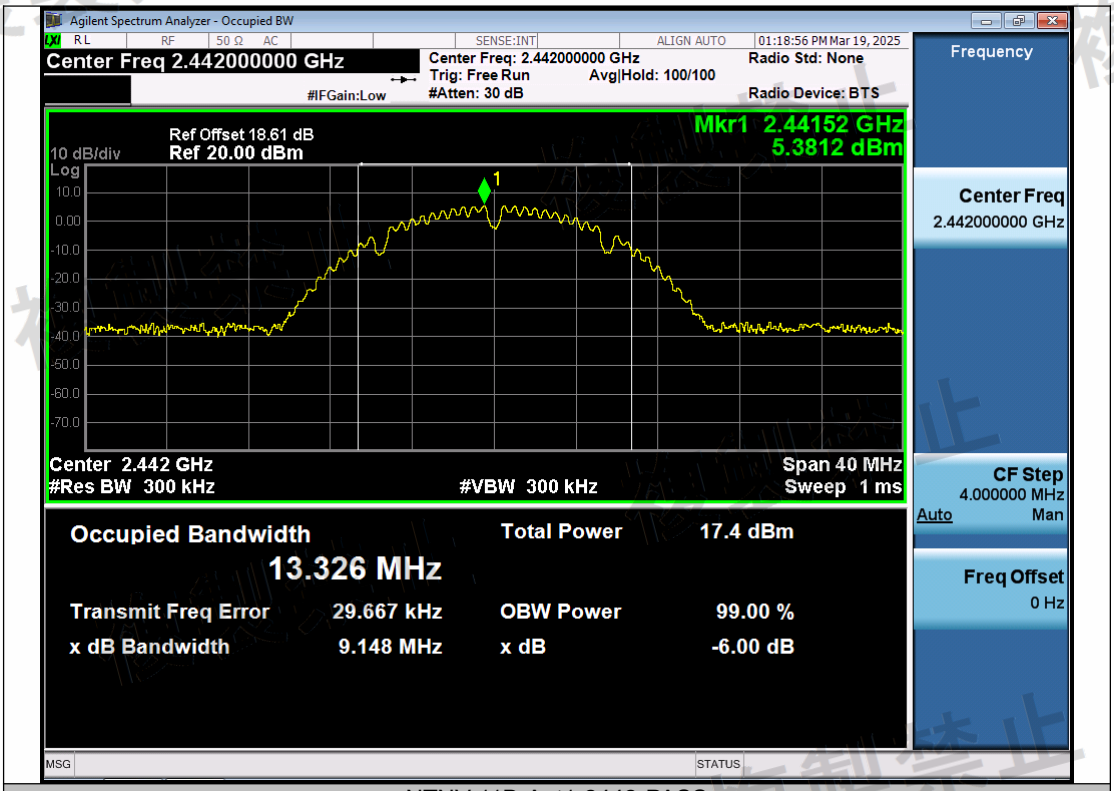
TestCondition	TestMode	Antenna	Frequency[MHz]	Result [MHz]	Limit [MHz]	Verdict
NTNV	11B	Ant1	2412	13.354	≤26	PASS
NTNV	11B	Ant2	2412	13.362	≤26	PASS
NTNV	11B	Ant1	2442	13.326	≤26	PASS
NTNV	11B	Ant2	2442	13.347	≤26	PASS
NTNV	11B	Ant1	2472	13.338	≤26	PASS
NTNV	11B	Ant2	2472	13.339	≤26	PASS
NTNV	11G	Ant1	2412	16.626	≤26	PASS
NTNV	11G	Ant2	2412	16.609	≤26	PASS
NTNV	11G	Ant1	2442	16.578	≤26	PASS
NTNV	11G	Ant2	2442	16.589	≤26	PASS
NTNV	11G	Ant1	2472	16.611	≤26	PASS
NTNV	11G	Ant2	2472	16.660	≤26	PASS
NTNV	11N20MIMO	Ant1	2412	17.637	≤26	PASS
NTNV	11N20MIMO	Ant2	2412	17.553	≤26	PASS
NTNV	11N20MIMO	Ant1	2442	17.624	≤26	PASS
NTNV	11N20MIMO	Ant2	2442	17.560	≤26	PASS
NTNV	11N20MIMO	Ant1	2472	17.633	≤26	PASS
NTNV	11N20MIMO	Ant2	2472	17.552	≤26	PASS
NTNV	11N40MIMO	Ant1	2422	35.978	26-40	PASS
NTNV	11N40MIMO	Ant2	2422	36.087	26-40	PASS
NTNV	11N40MIMO	Ant1	2442	35.912	26-40	PASS
NTNV	11N40MIMO	Ant2	2442	35.967	26-40	PASS
NTNV	11N40MIMO	Ant1	2462	35.884	26-40	PASS
NTNV	11N40MIMO	Ant2	2462	36.002	26-40	PASS



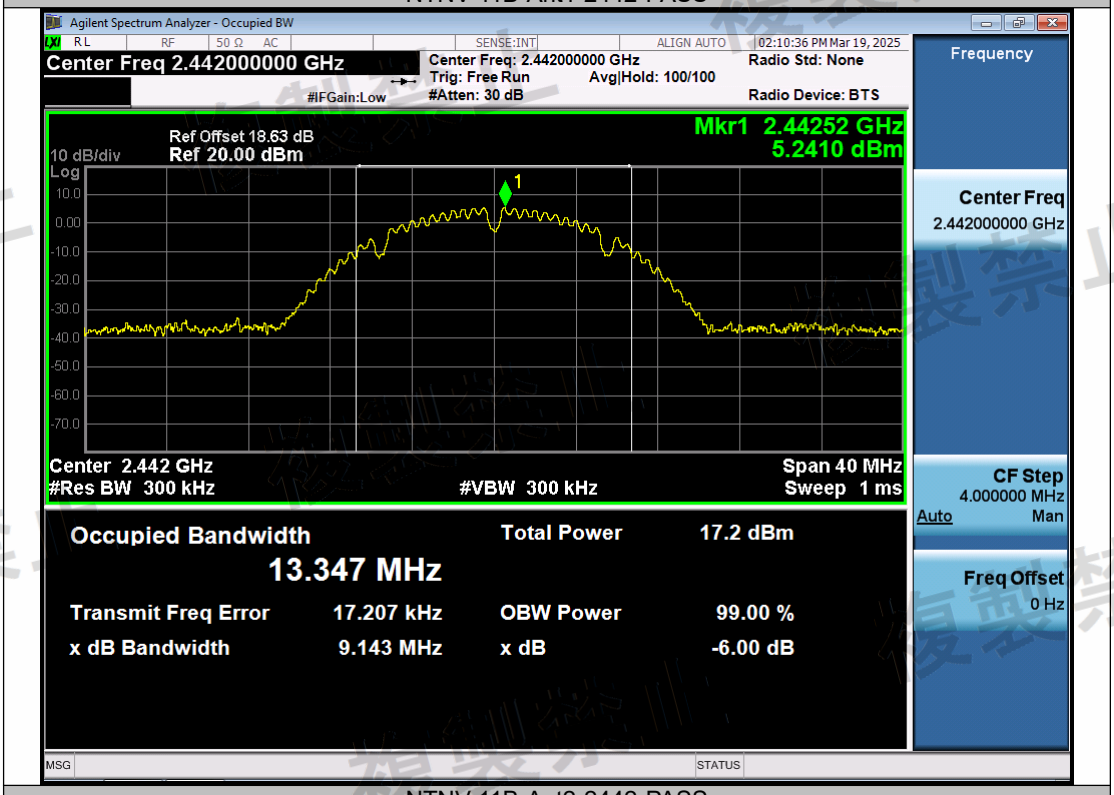
NTNV-11B-Ant1-2412-PASS



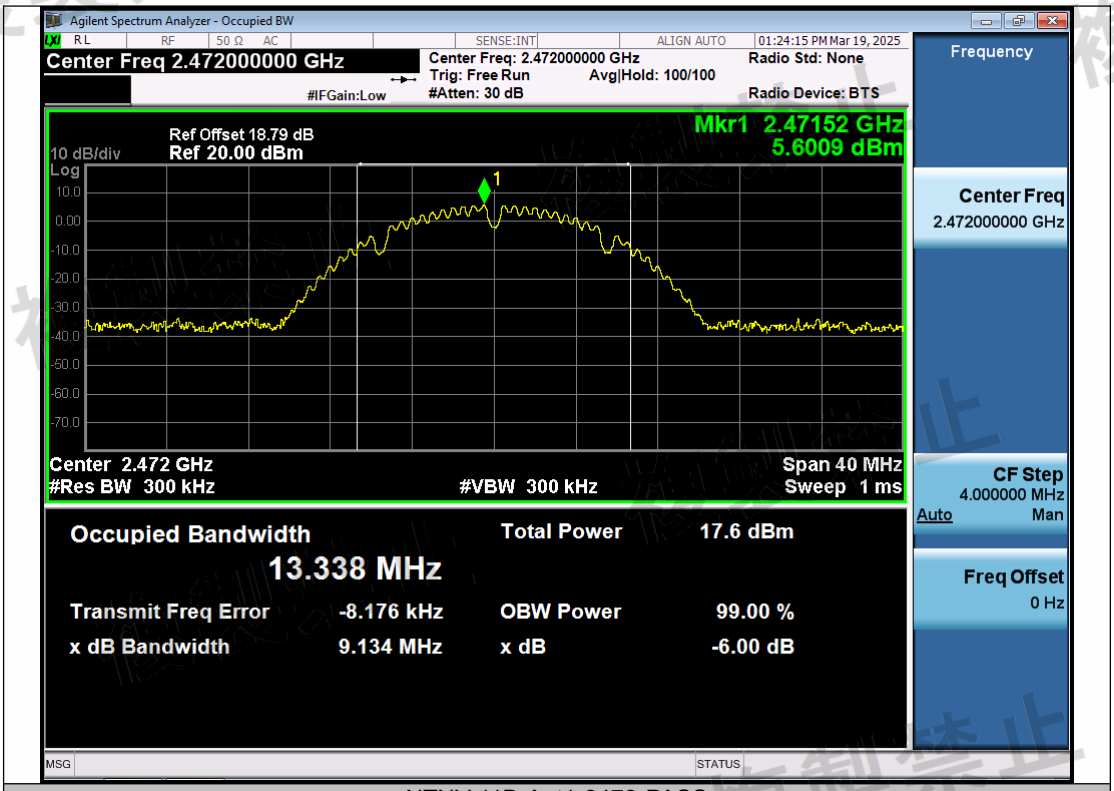
NTNV-11B-Ant2-2412-PASS



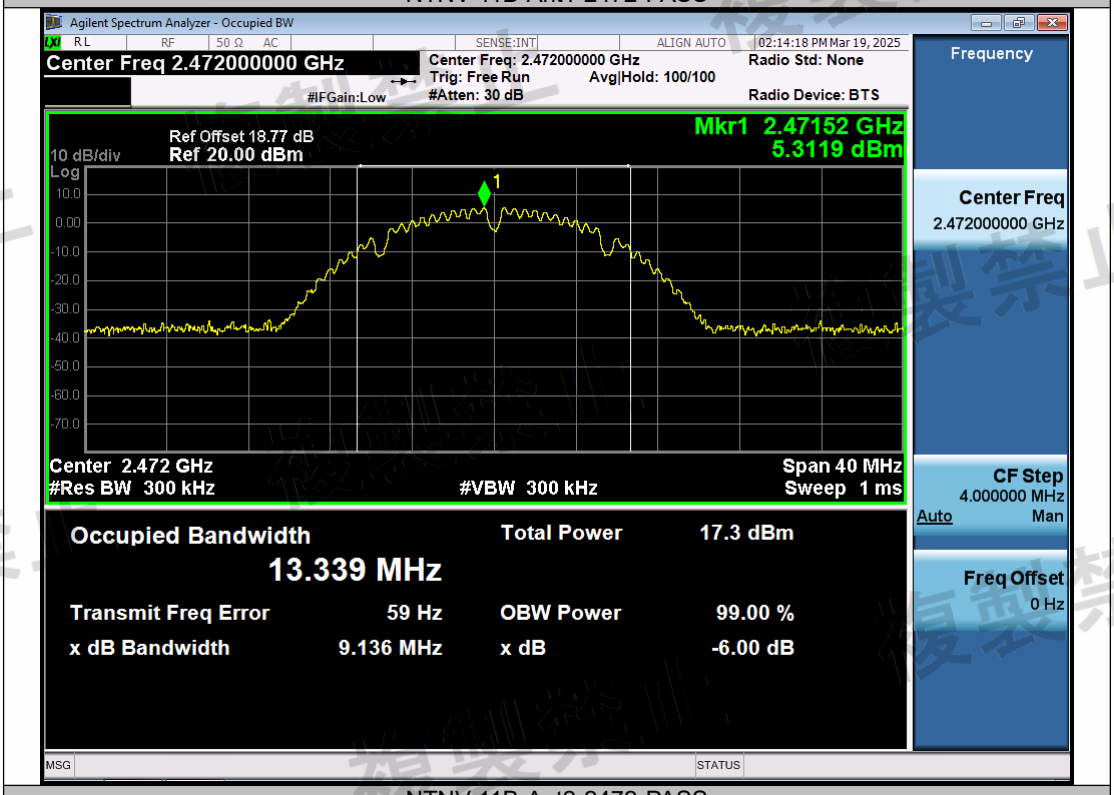
NTNV-11B-Ant1-2442-PASS



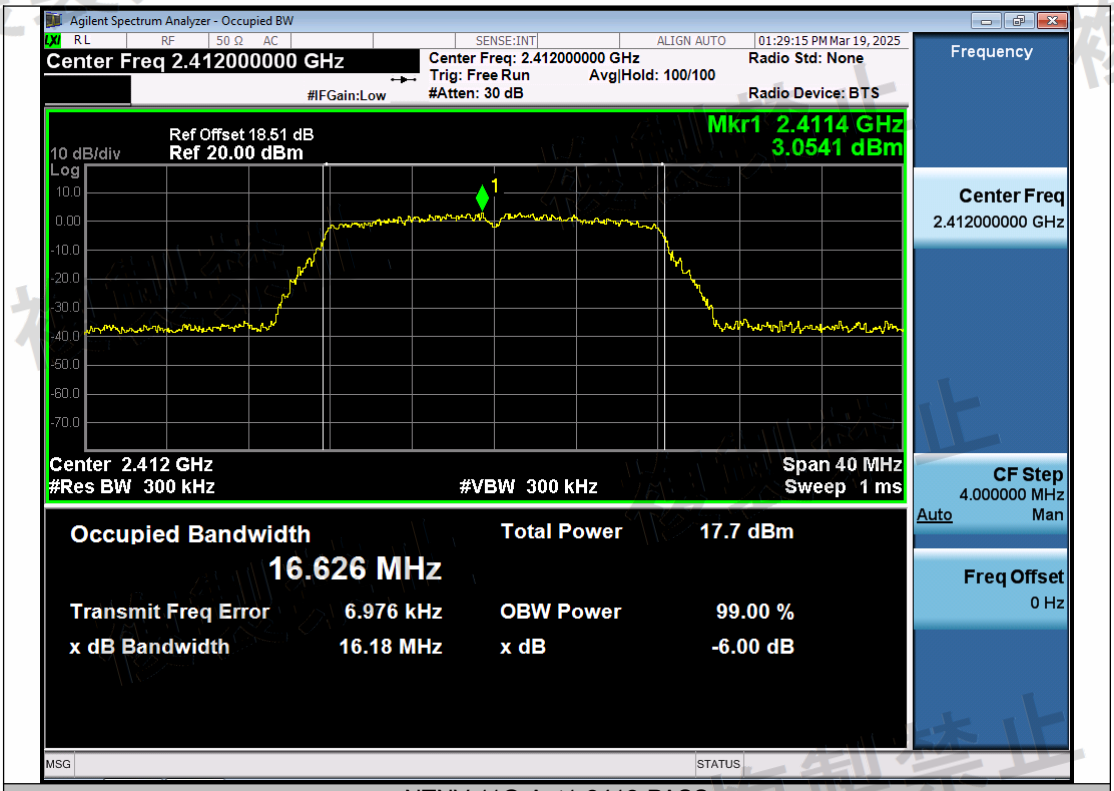
NTNV-11B-Ant2-2442-PASS



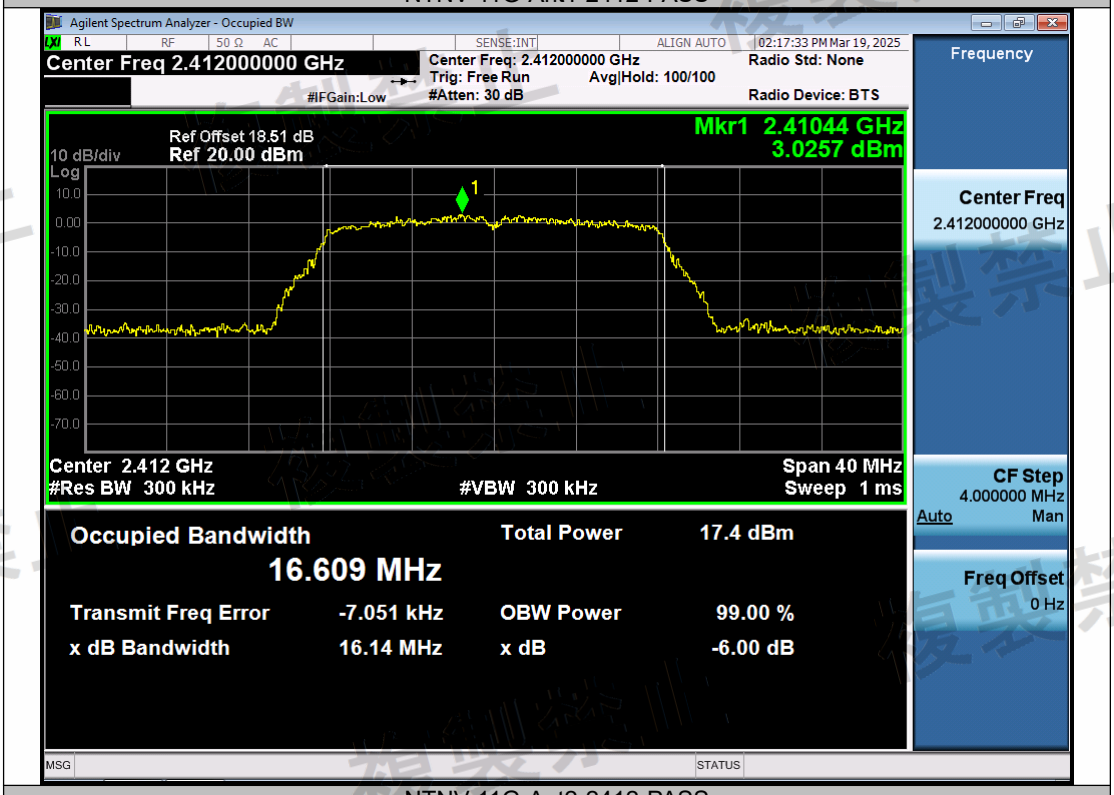
NTNV-11B-Ant1-2472-PASS



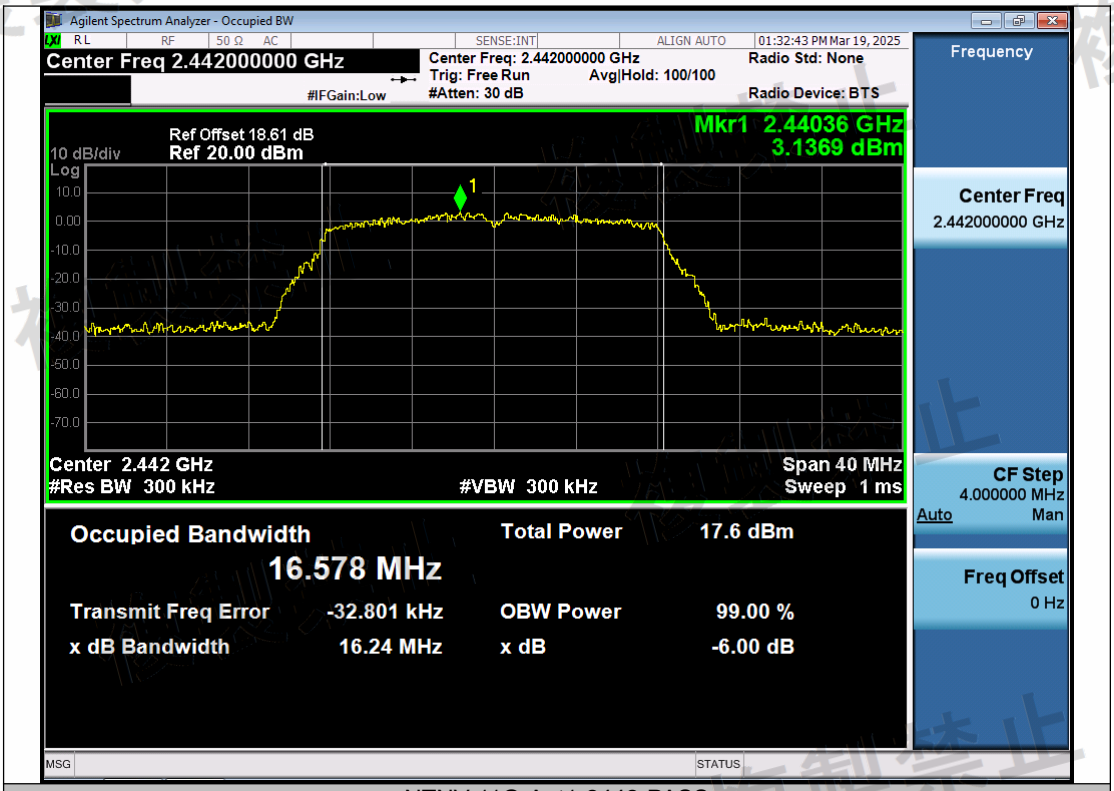
NTNV-11B-Ant2-2472-PASS



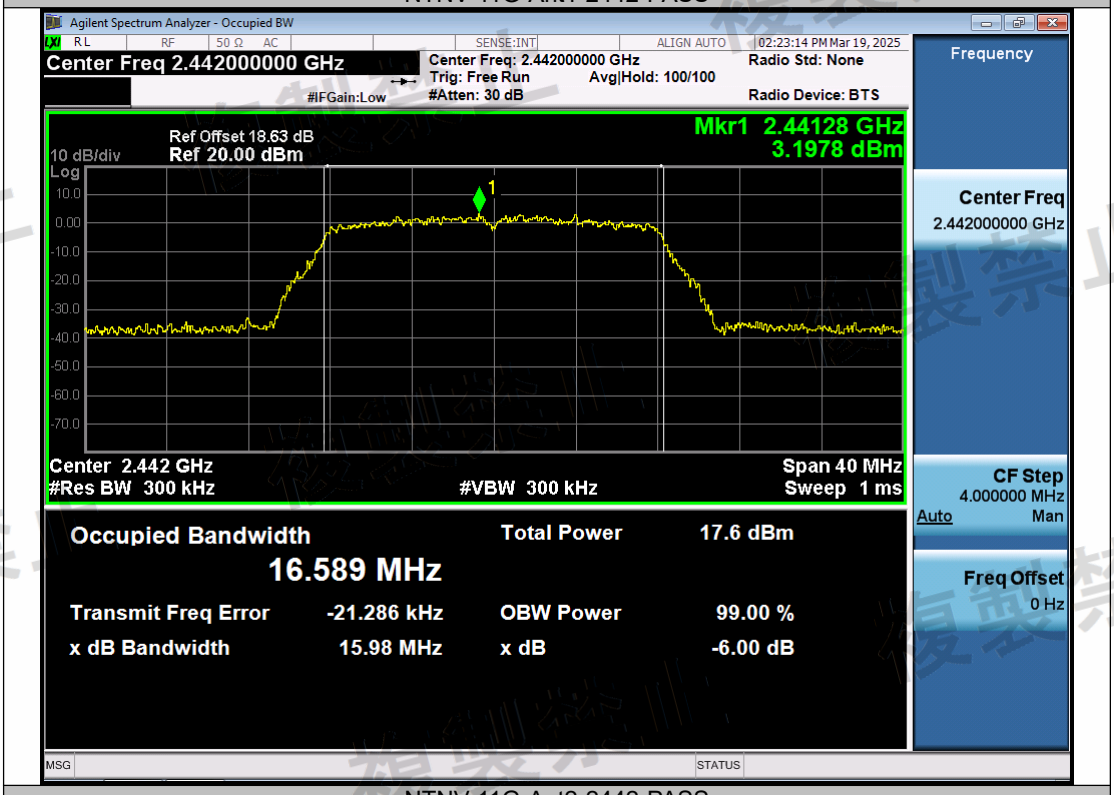
NTNV-11G-Ant1-2412-PASS



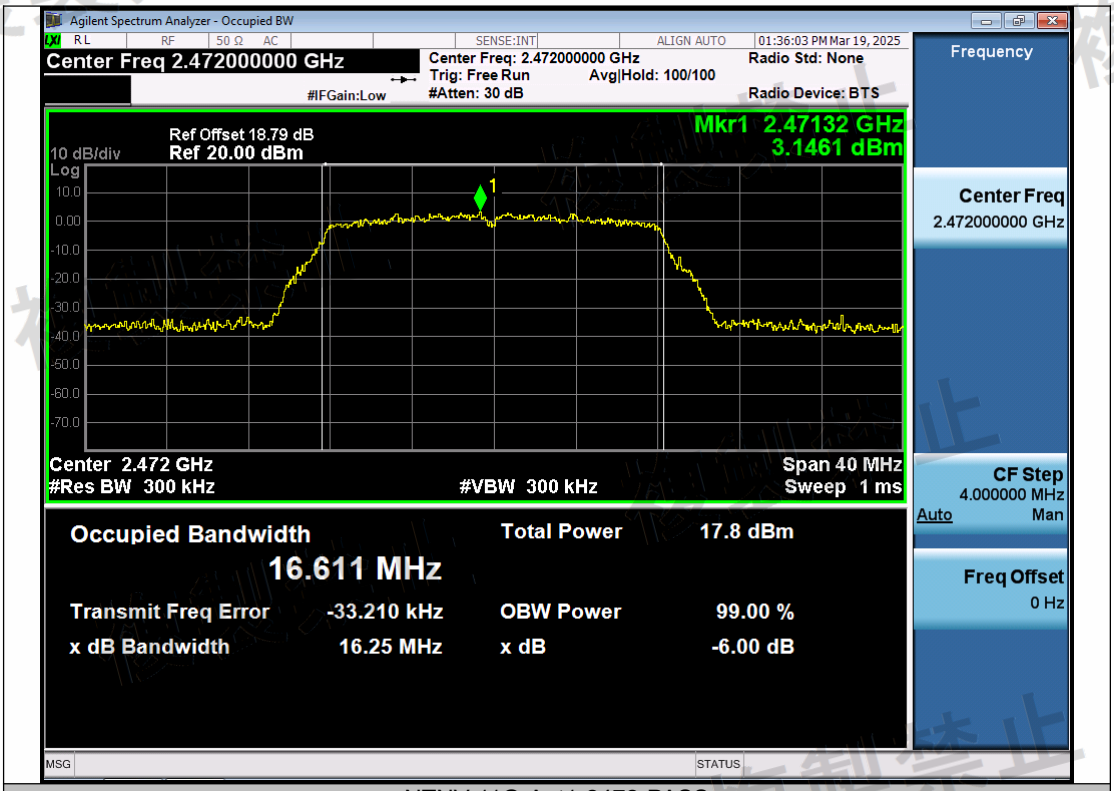
NTNV-11G-Ant2-2412-PASS



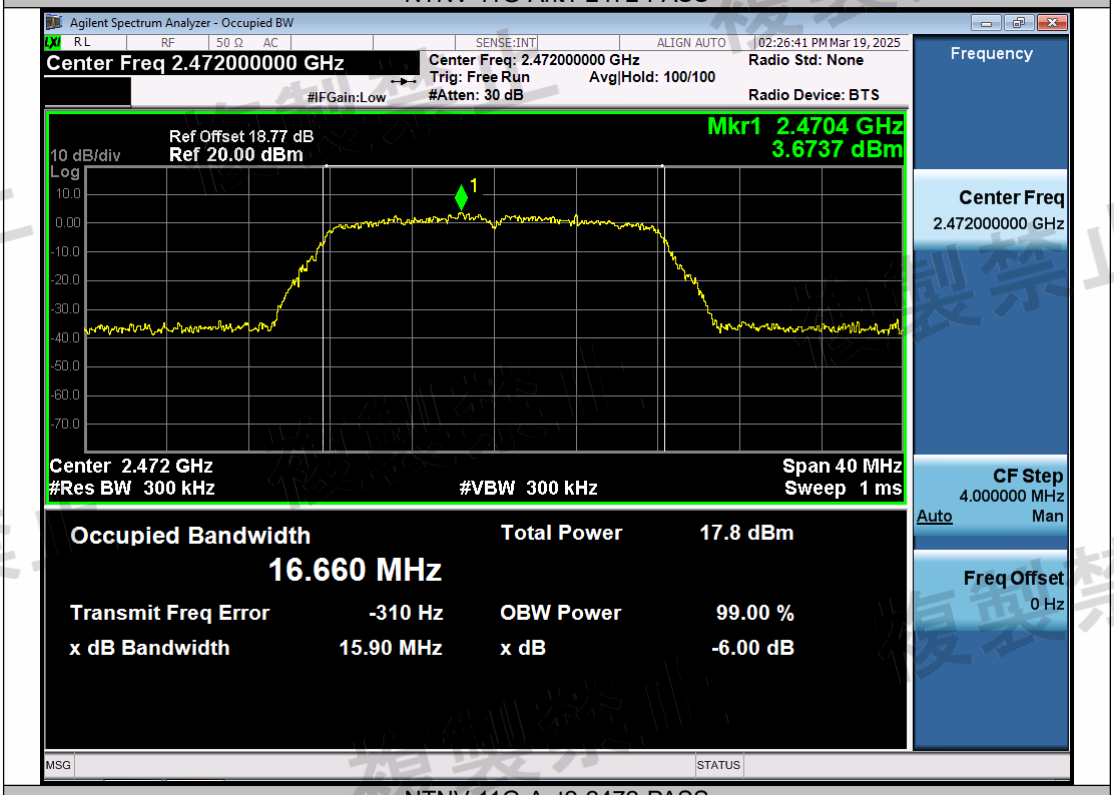
NTNV-11G-Ant1-2442-PASS



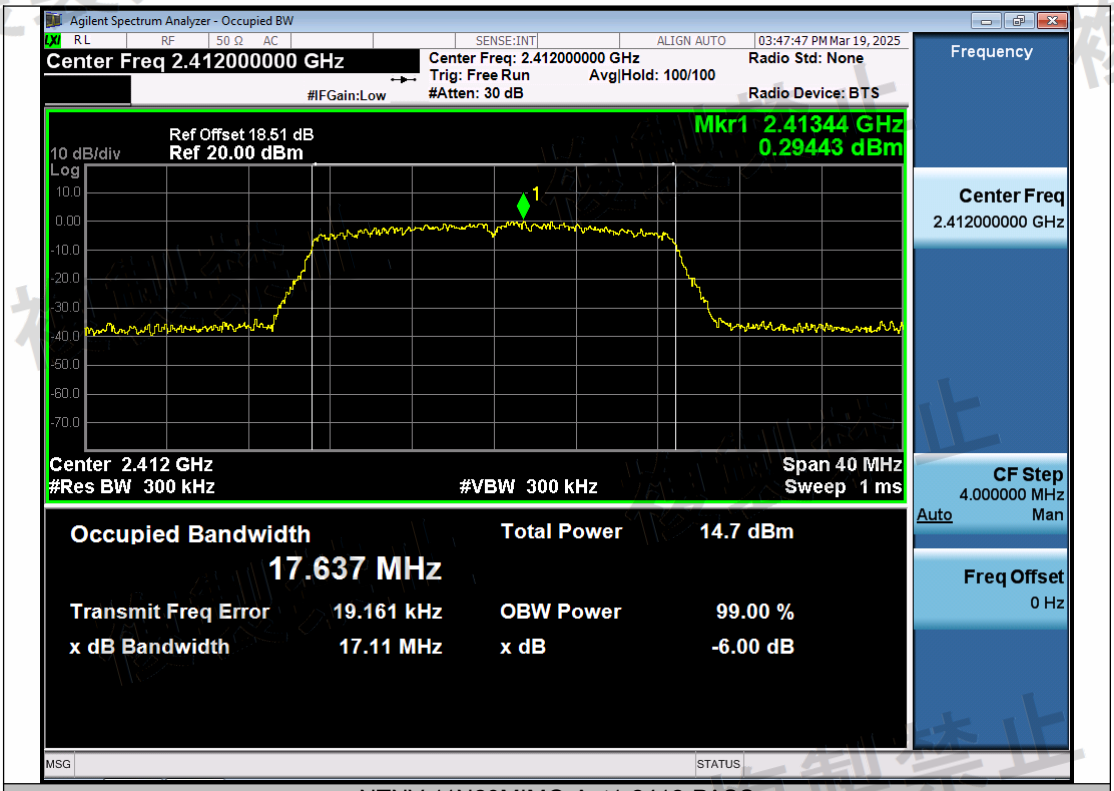
NTNV-11G-Ant2-2442-PASS



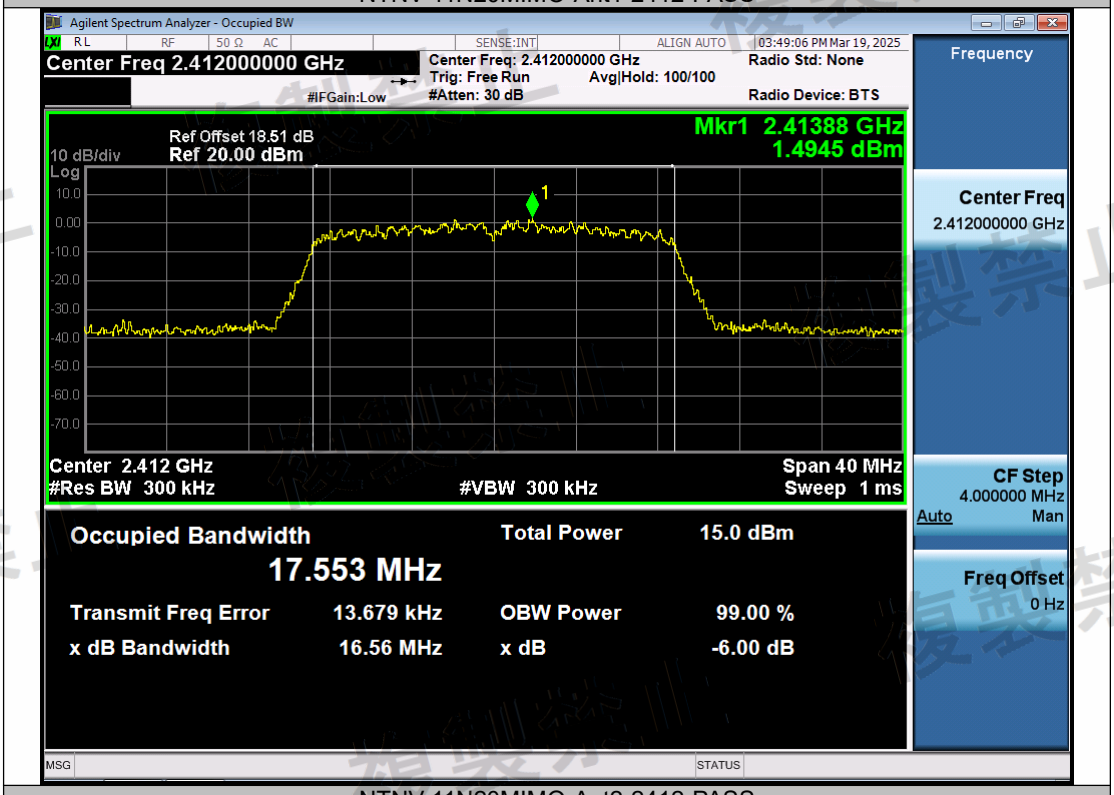
NTNV-11G-Ant1-2472-PASS



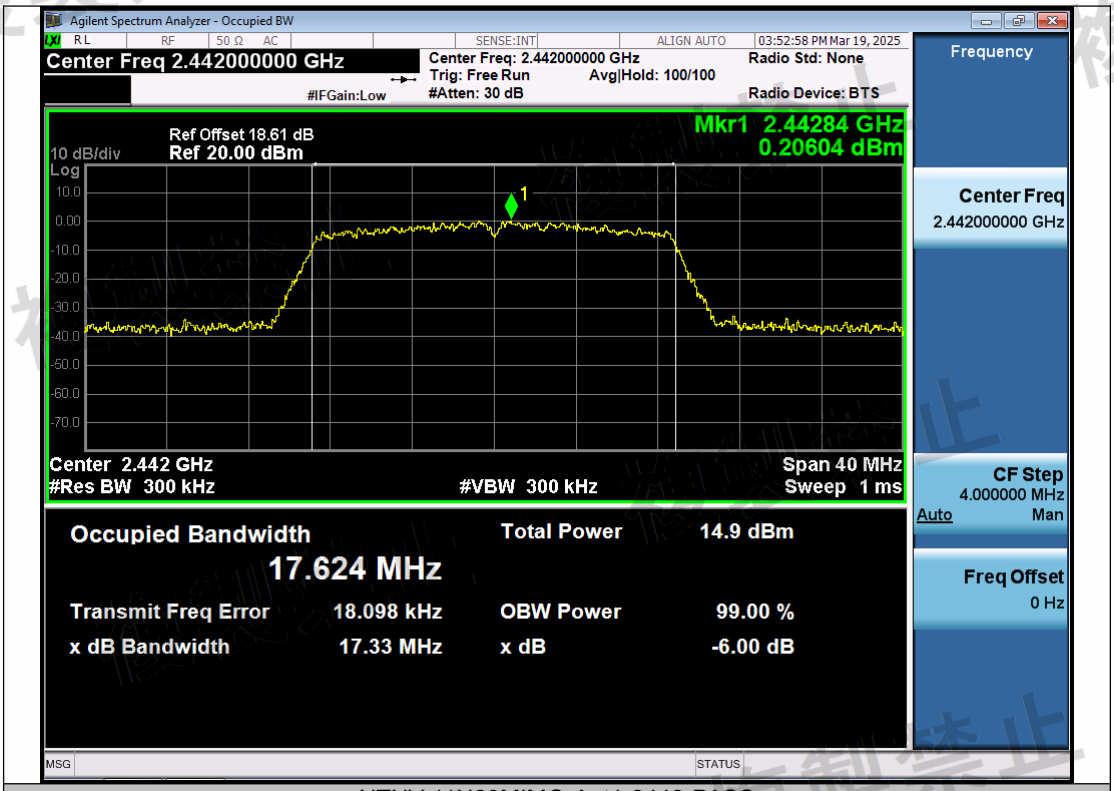
NTNV-11G-Ant2-2472-PASS



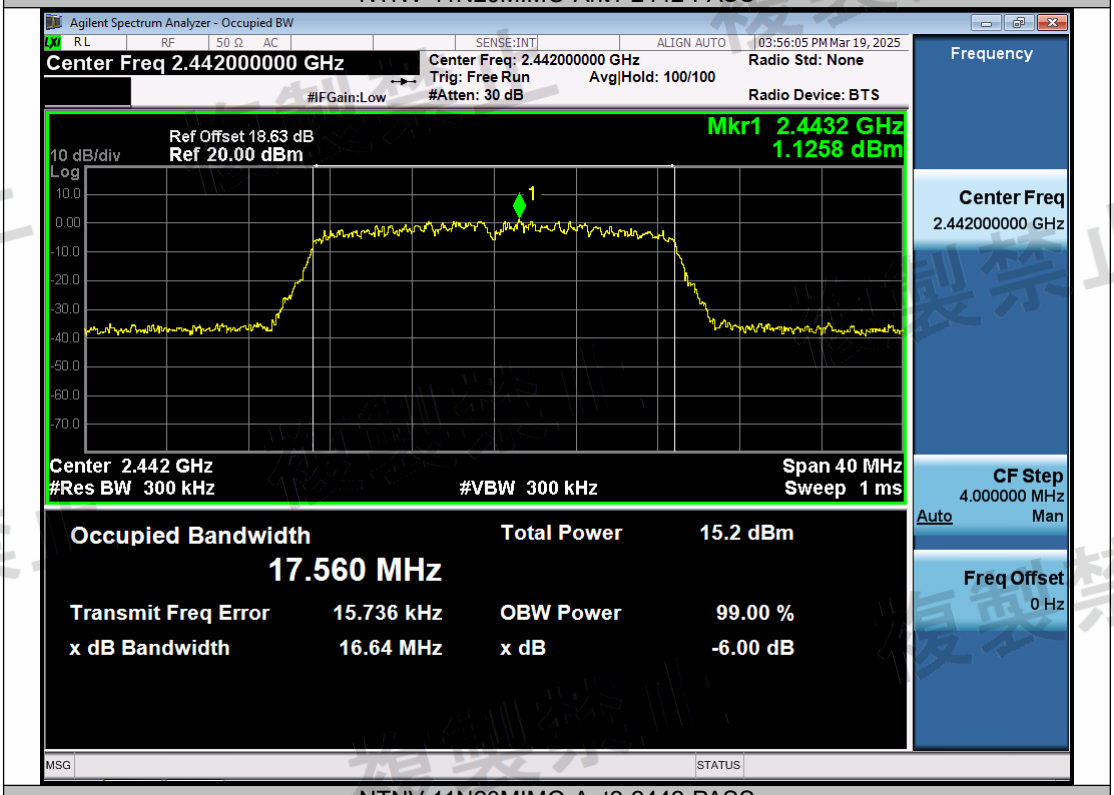
NTNV-11N20MIMO-Ant1-2412-PASS



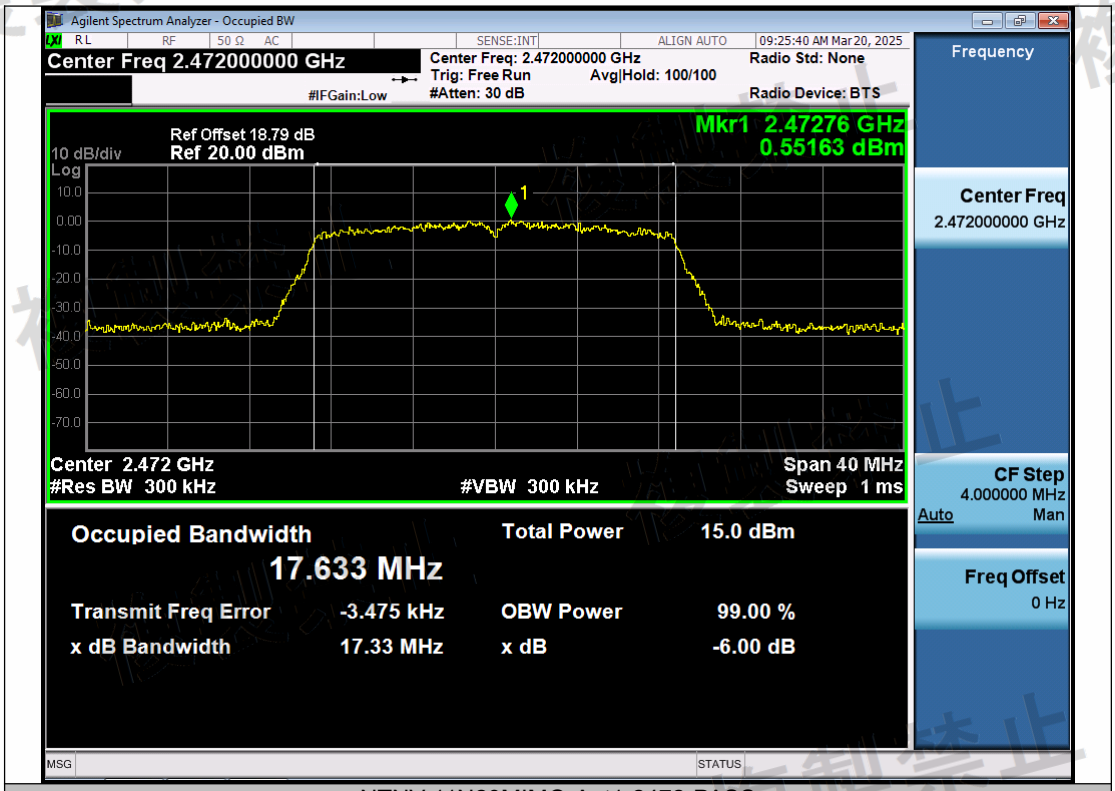
NTNV-11N20MIMO-Ant2-2412-PASS



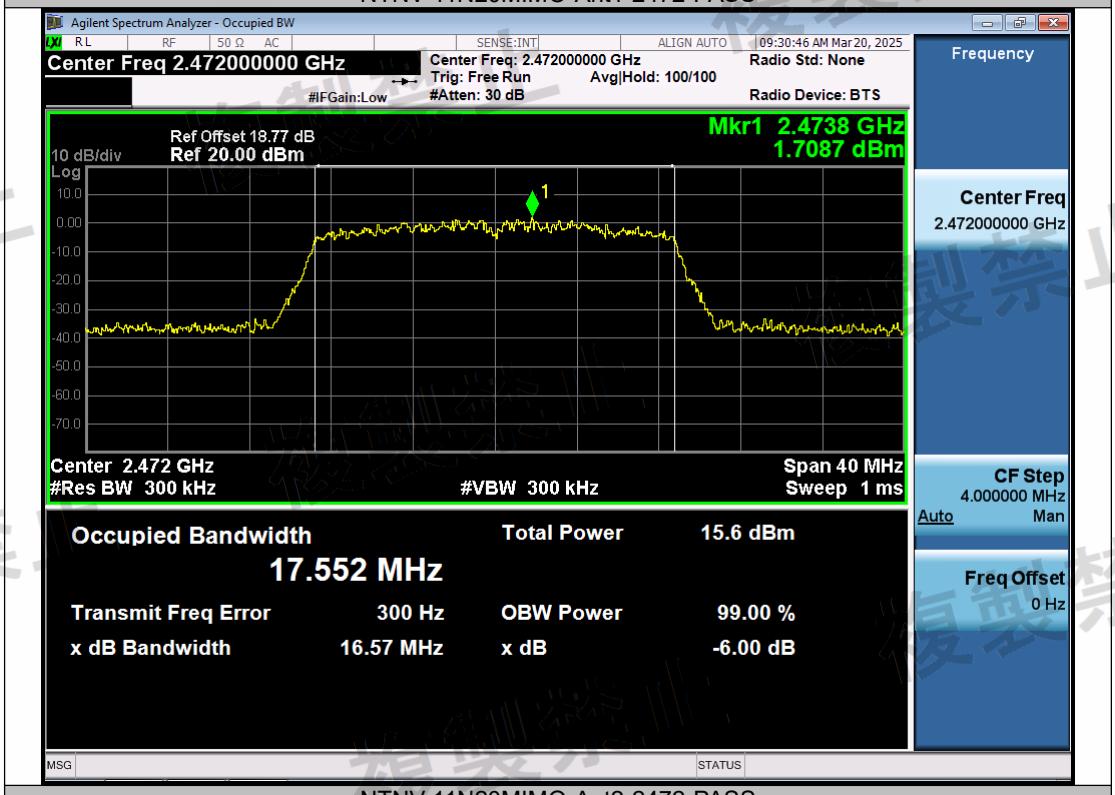
NTNV-11N20MIMO-Ant1-2442-PASS



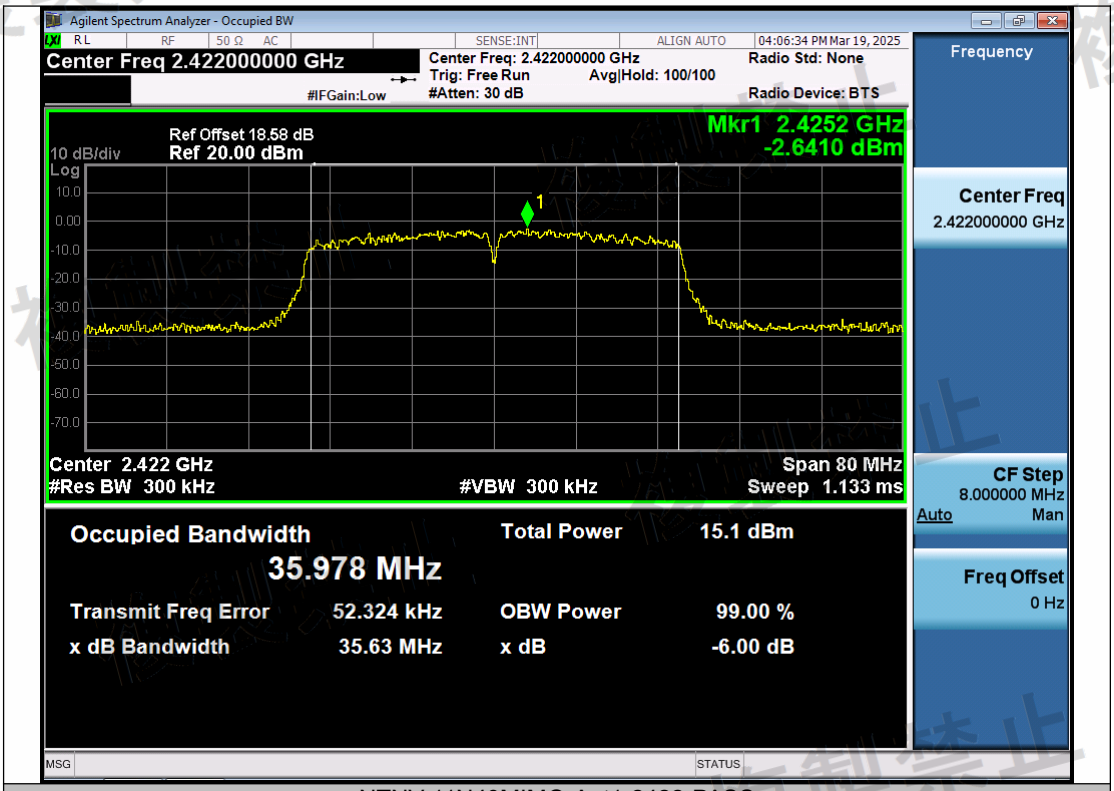
NTNV-11N20MIMO-Ant2-2442-PASS



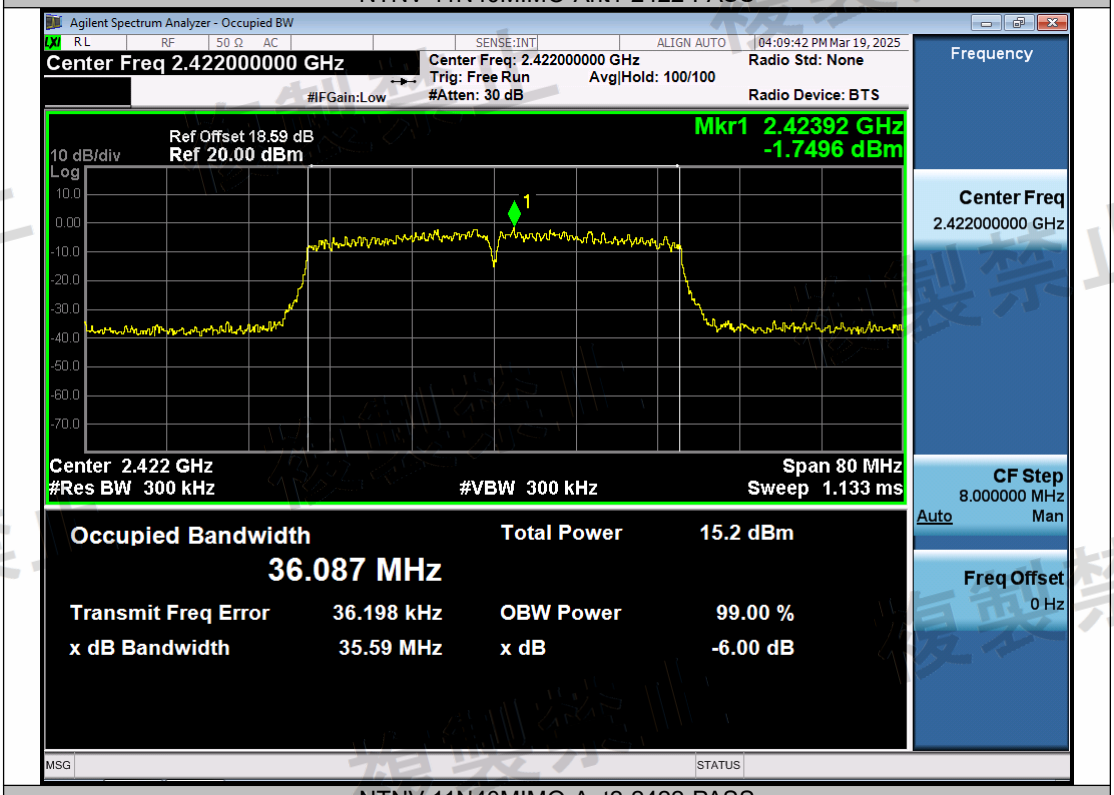
NTNV-11N20MIMO-Ant1-2472-PASS



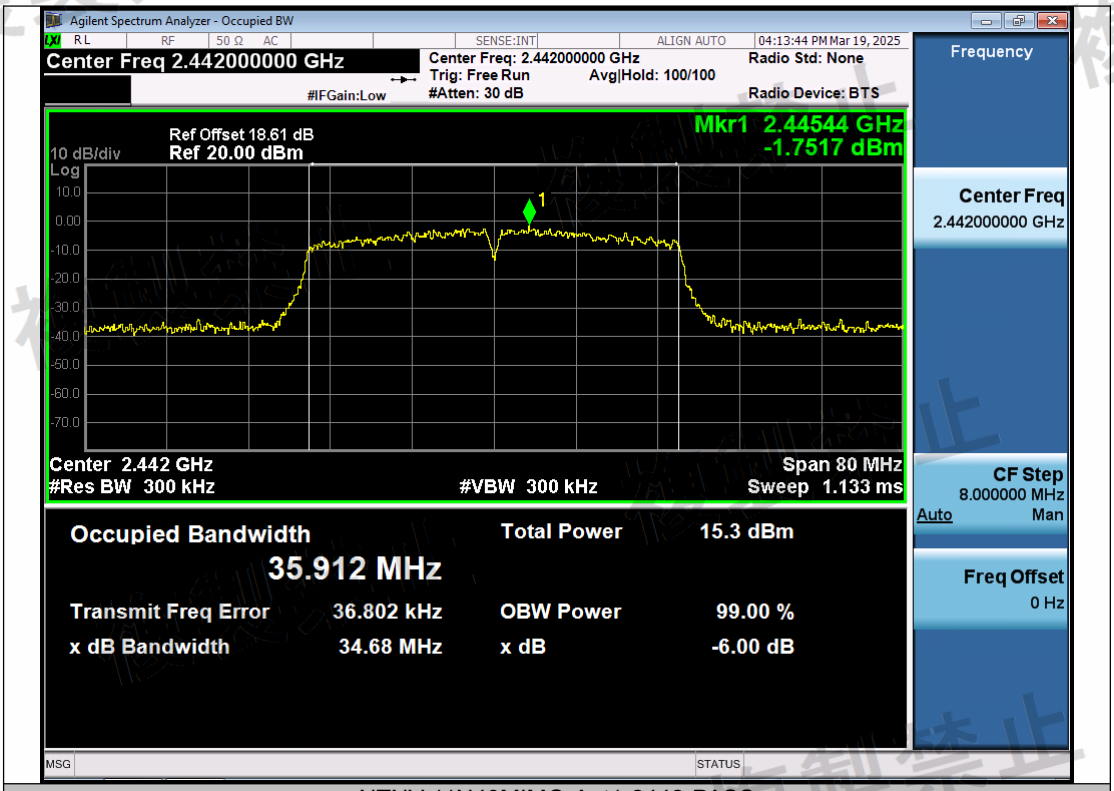
NTNV-11N20MIMO-Ant2-2472-PASS



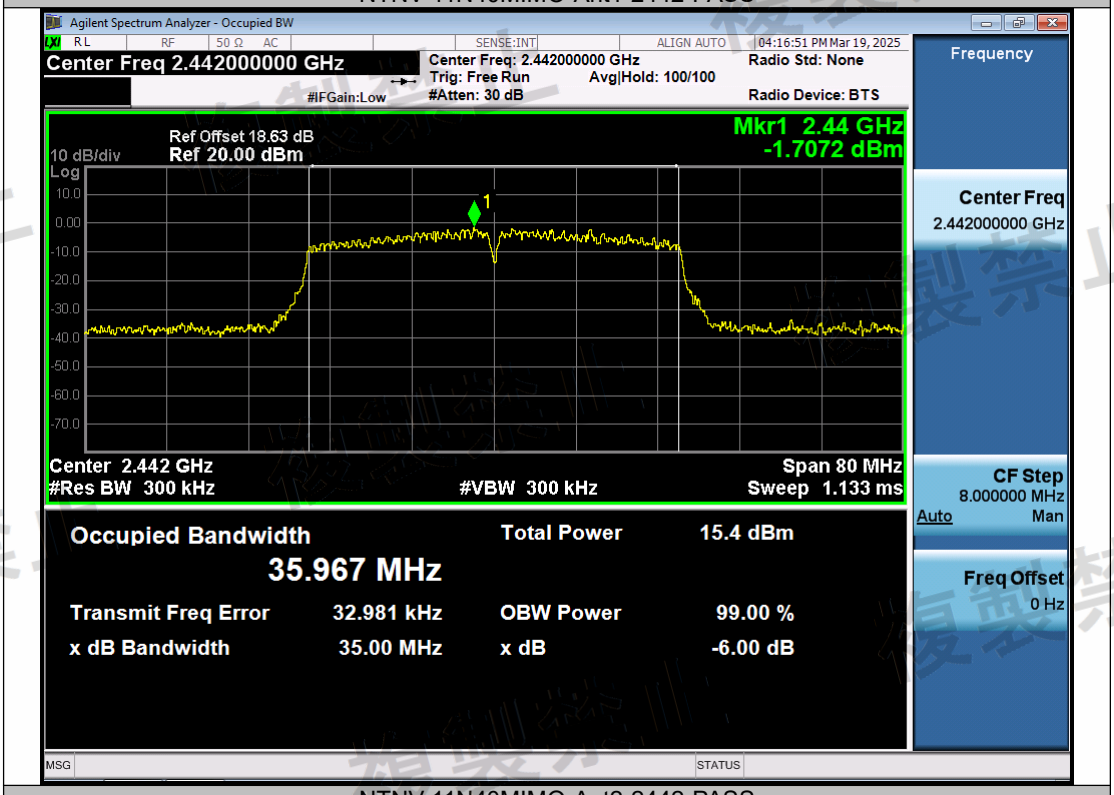
NTNV-11N40MIMO-Ant1-2422-PASS



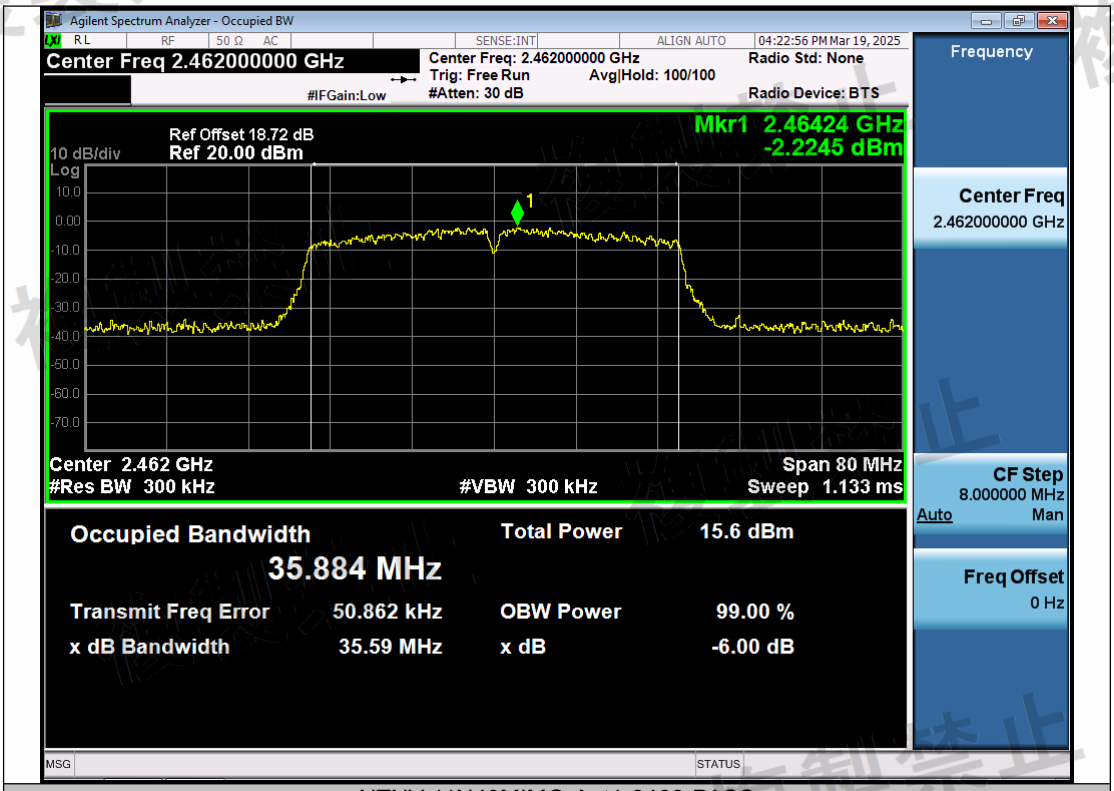
NTNV-11N40MIMO-Ant2-2422-PASS



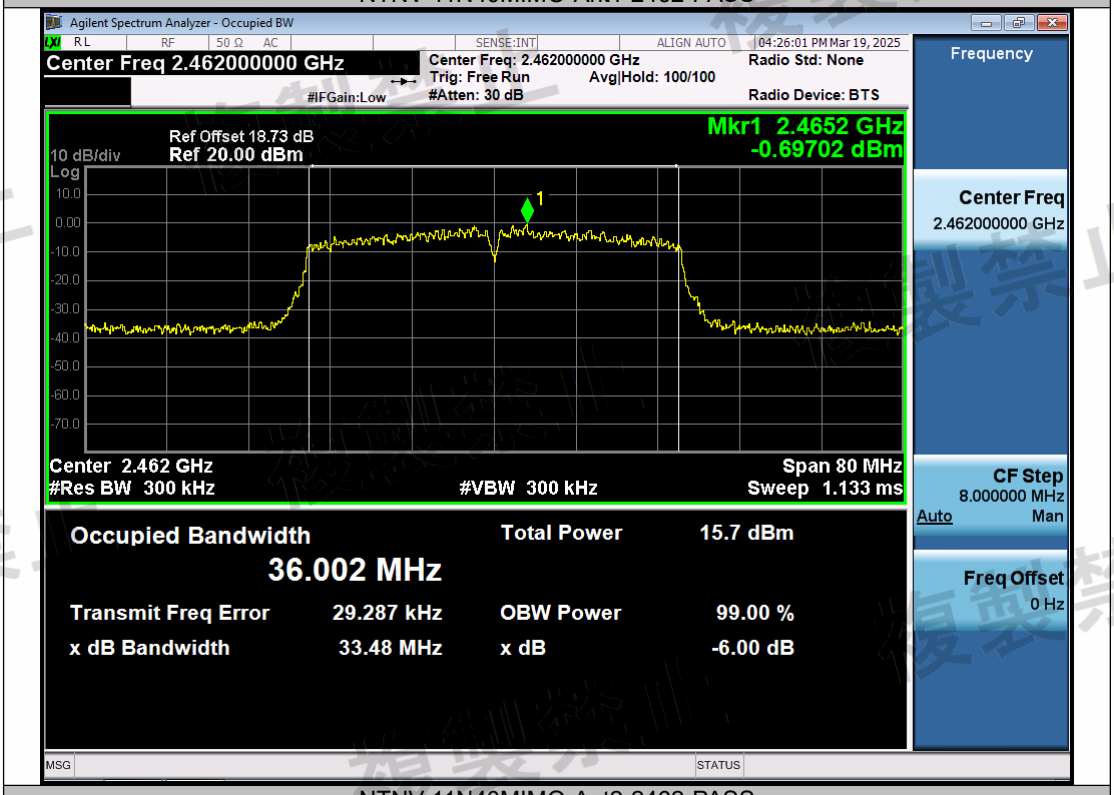
NTNV-11N40MIMO-Ant1-2442-PASS



NTNV-11N40MIMO-Ant2-2442-PASS



NTNV-11N40MIMO-Ant1-2462-PASS

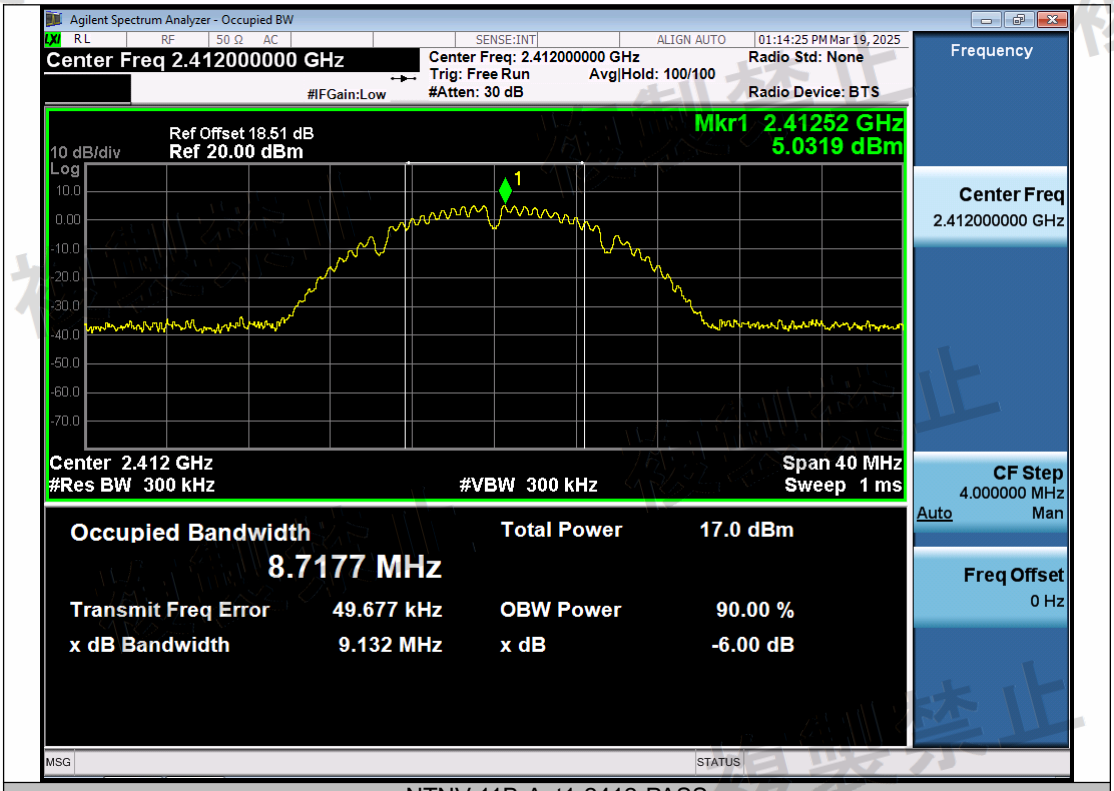


NTNV-11N40MIMO-Ant2-2462-PASS

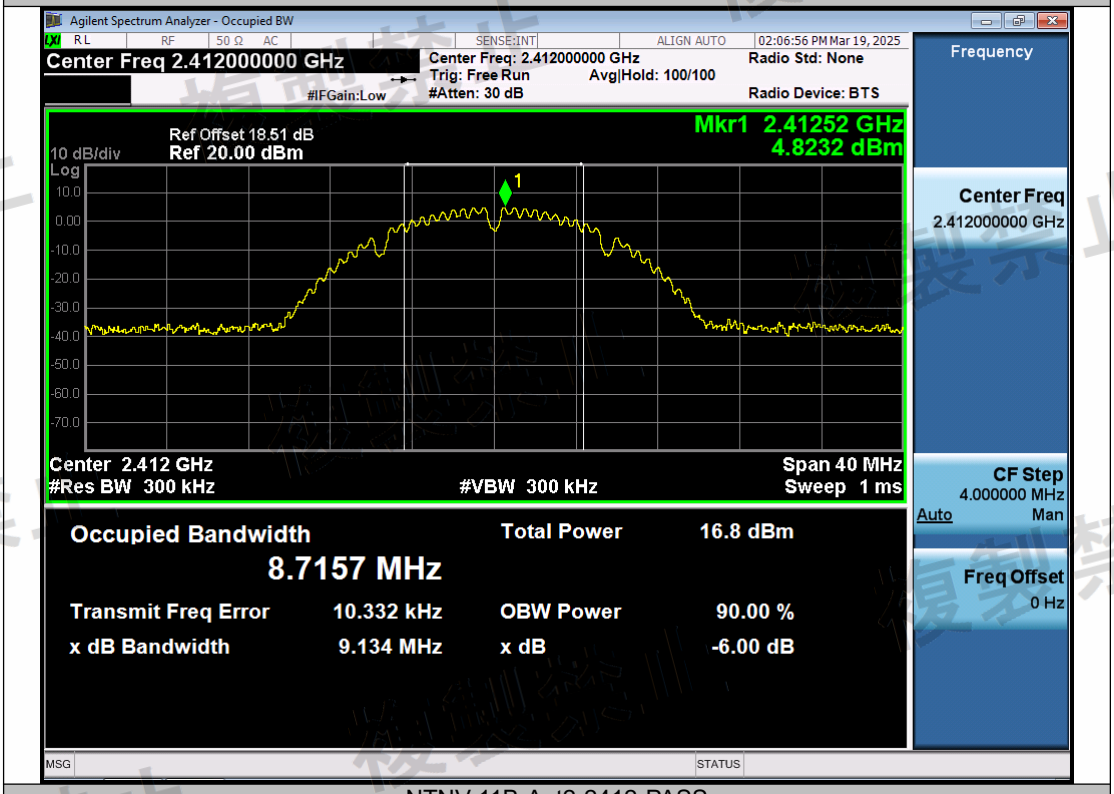
Spread Bandwidth (90% Emission bandwidth)

TestCondition	TestMode	Antenna	Frequency[MHz]	Result [MHz]	Limit [MHz]	SpreadFactor	Limit	Verdict
NTNV	11B	Ant1	2412	8.718	≥0.5	6.340	>5	PASS
NTNV	11B	Ant2	2412	8.716	≥0.5	6.339	>5	PASS
NTNV	11B	Ant1	2442	8.708	≥0.5	6.333	>5	PASS
NTNV	11B	Ant2	2442	8.732	≥0.5	6.351	>5	PASS
NTNV	11B	Ant1	2472	8.718	≥0.5	6.340	>5	PASS
NTNV	11B	Ant2	2472	8.712	≥0.5	6.336	>5	PASS
NTNV	11G	Ant1	2412	14.053	≥0.5	---	---	PASS
NTNV	11G	Ant2	2412	14.106	≥0.5	---	---	PASS
NTNV	11G	Ant1	2442	13.946	≥0.5	---	---	PASS
NTNV	11G	Ant2	2442	13.978	≥0.5	---	---	PASS
NTNV	11G	Ant1	2472	14.082	≥0.5	---	---	PASS
NTNV	11G	Ant2	2472	13.933	≥0.5	---	---	PASS
NTNV	11N20MIMO	Ant1	2412	14.886	≥0.5	---	---	PASS
NTNV	11N20MIMO	Ant2	2412	14.619	≥0.5	---	---	PASS
NTNV	11N20MIMO	Ant1	2442	14.894	≥0.5	---	---	PASS
NTNV	11N20MIMO	Ant2	2442	14.860	≥0.5	---	---	PASS
NTNV	11N20MIMO	Ant1	2472	15.008	≥0.5	---	---	PASS
NTNV	11N20MIMO	Ant2	2472	14.868	≥0.5	---	---	PASS
NTNV	11N40MIMO	Ant1	2422	30.738	≥0.5	---	---	PASS
NTNV	11N40MIMO	Ant2	2422	30.909	≥0.5	---	---	PASS
NTNV	11N40MIMO	Ant1	2442	30.135	≥0.5	---	---	PASS
NTNV	11N40MIMO	Ant2	2442	30.273	≥0.5	---	---	PASS
NTNV	11N40MIMO	Ant1	2462	29.849	≥0.5	---	---	PASS
NTNV	11N40MIMO	Ant2	2462	30.199	≥0.5	---	---	PASS

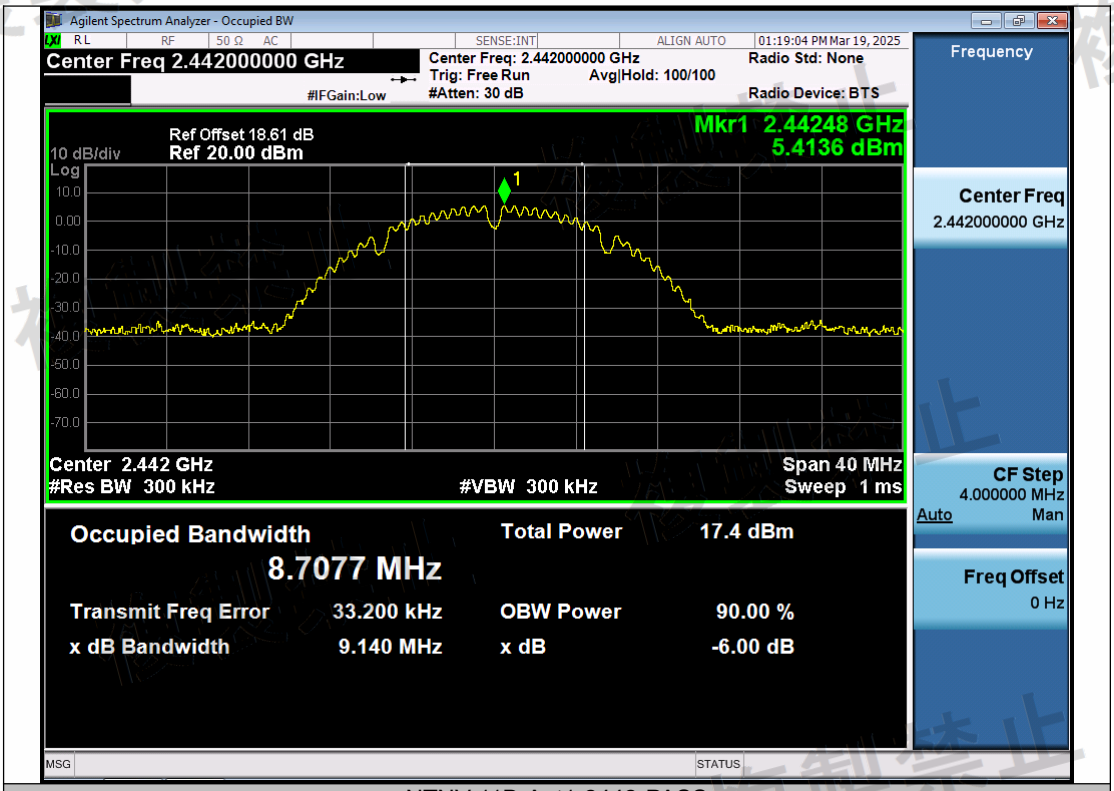
複製禁止



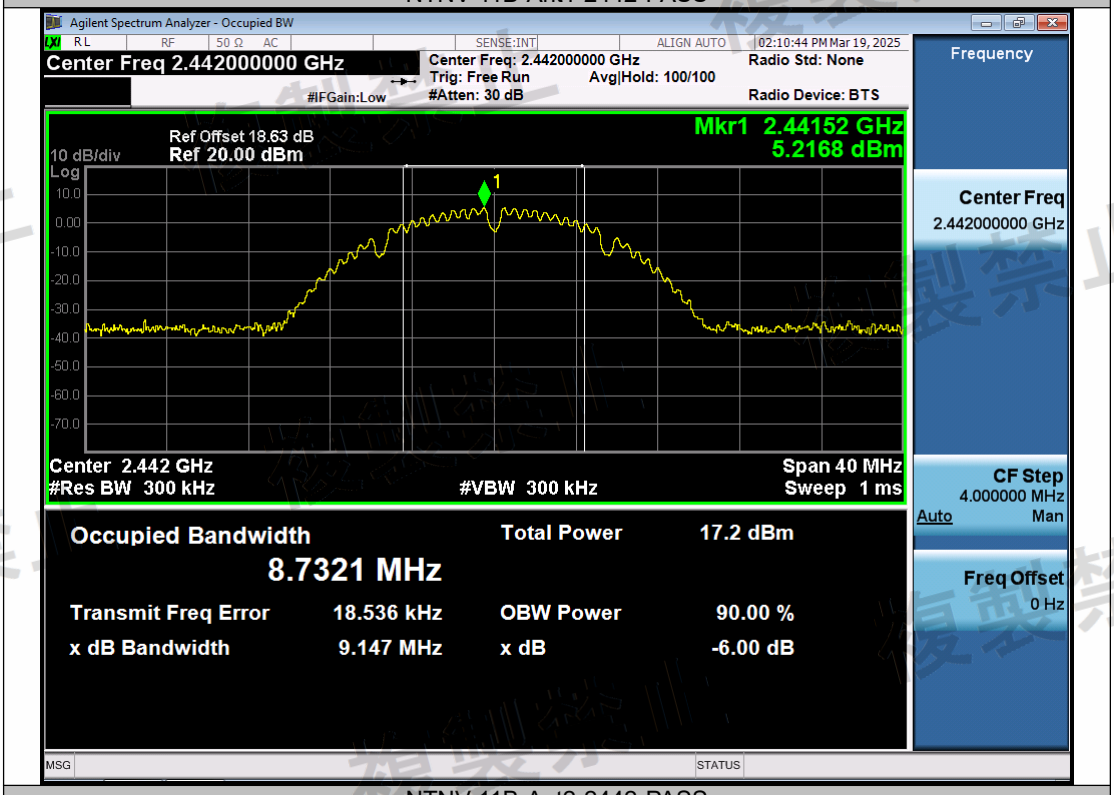
NTNV-11B-Ant1-2412-PASS



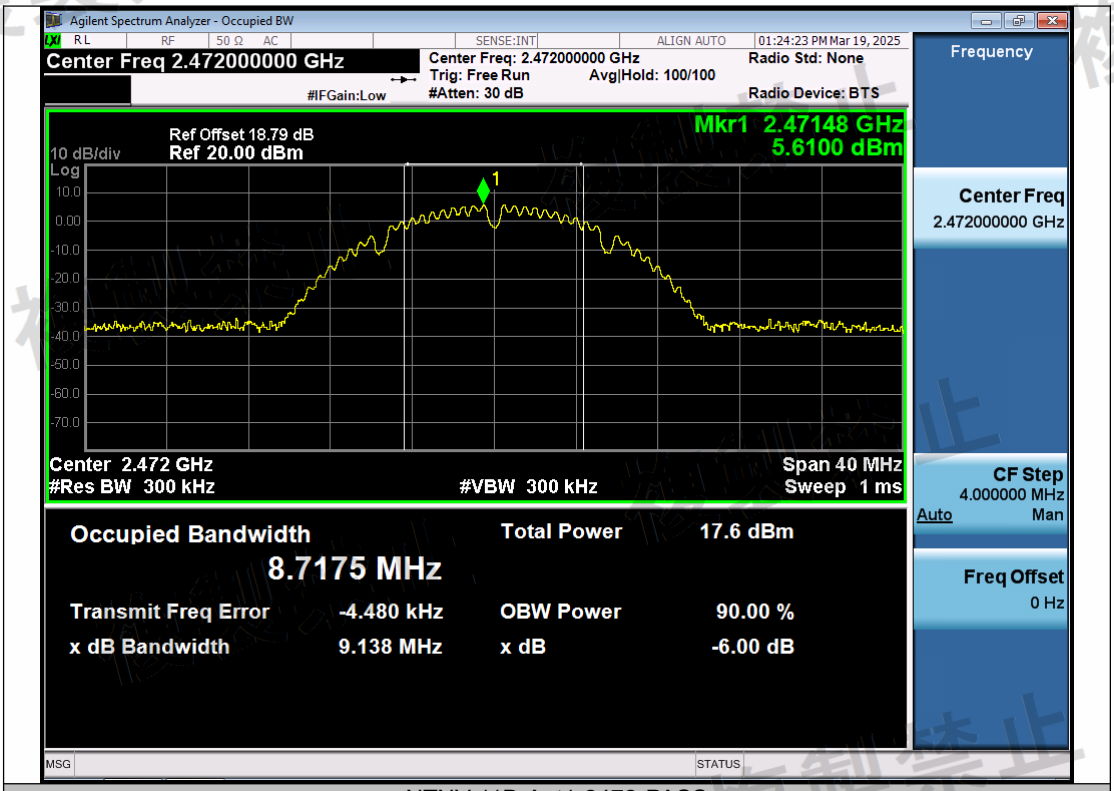
NTNV-11B-Ant2-2412-PASS



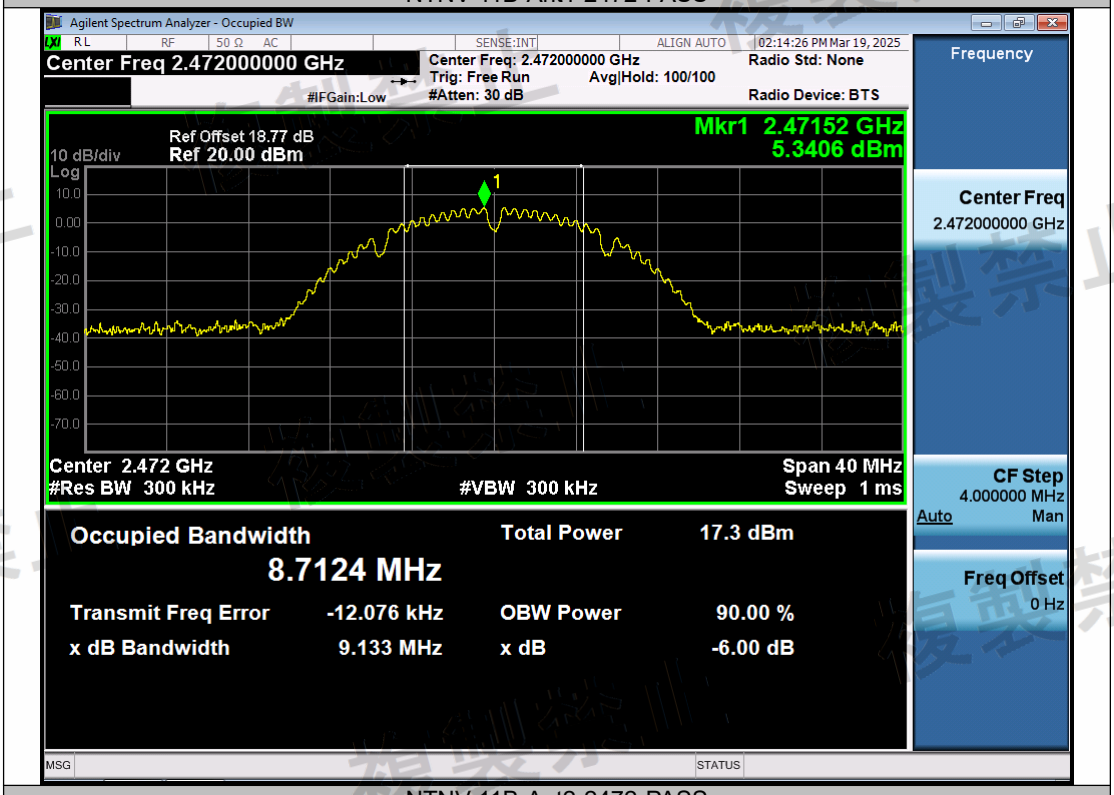
NTNV-11B-Ant1-2442-PASS



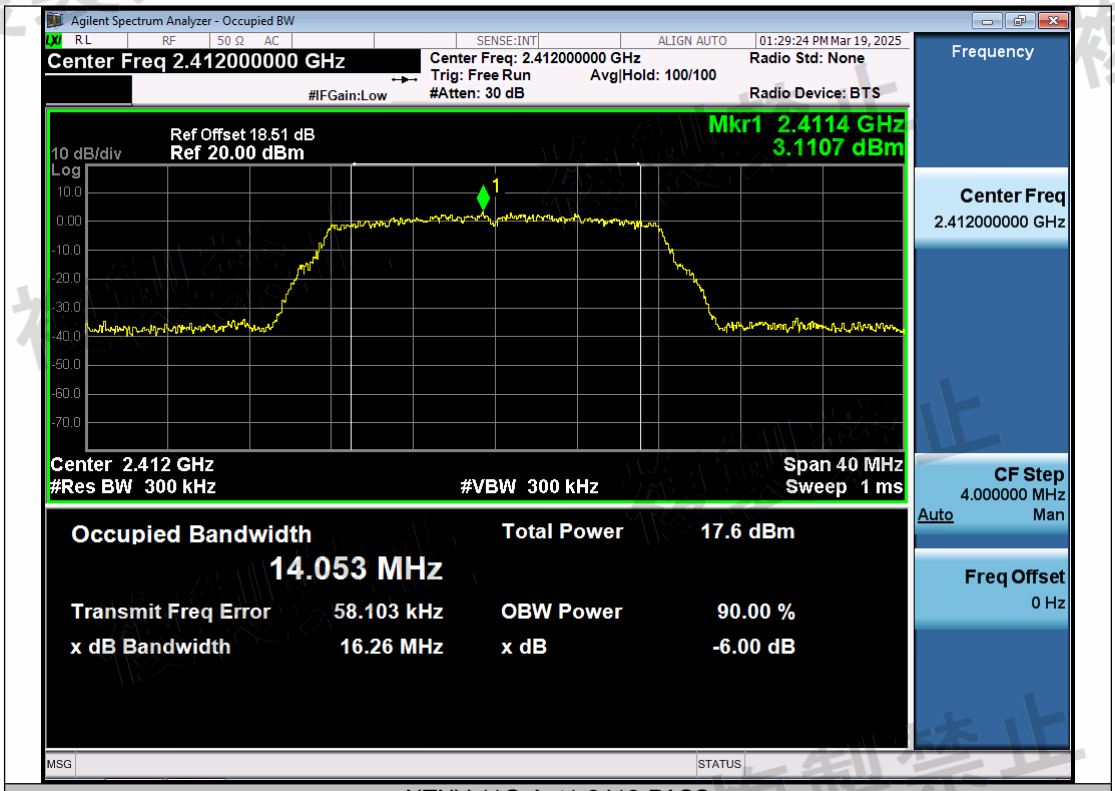
NTNV-11B-Ant2-2442-PASS



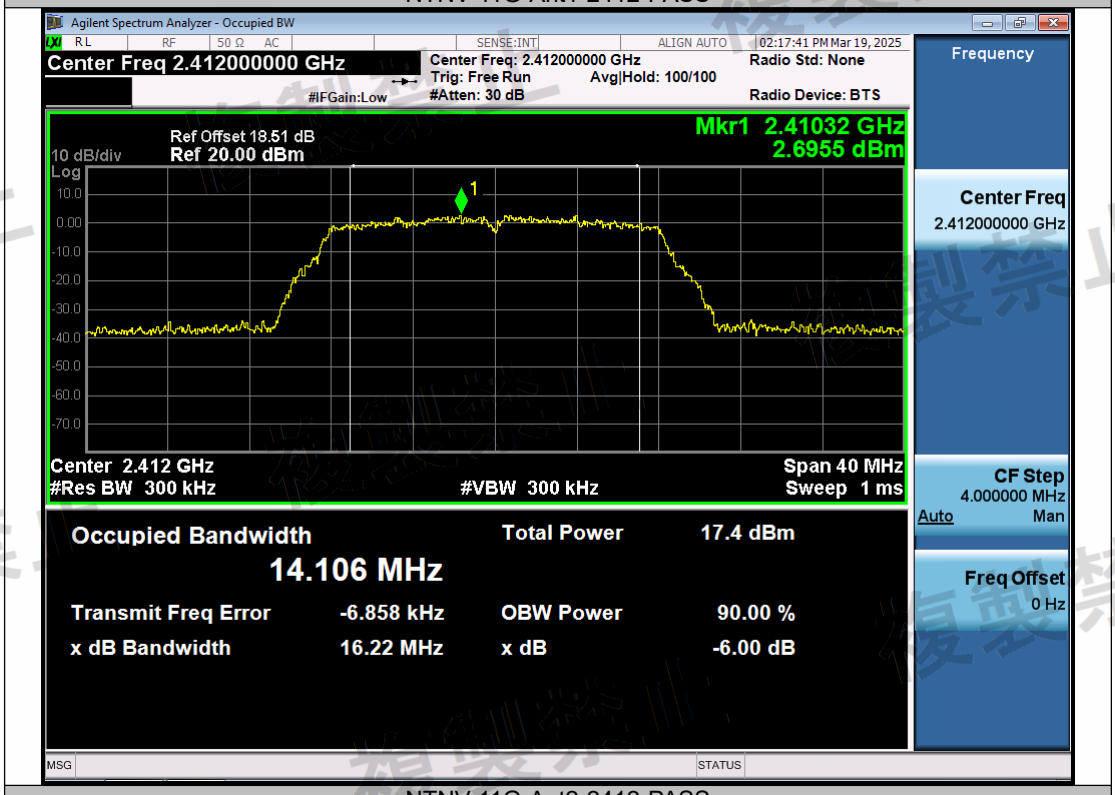
NTNV-11B-Ant1-2472-PASS



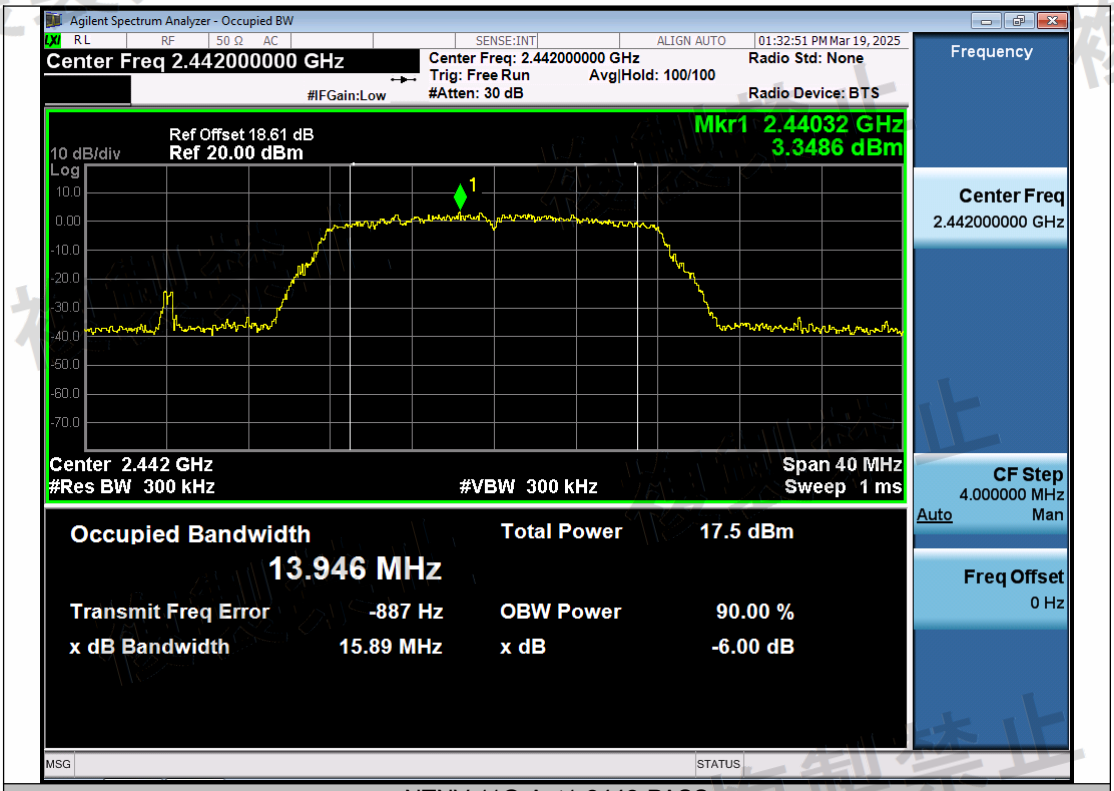
NTNV-11B-Ant2-2472-PASS



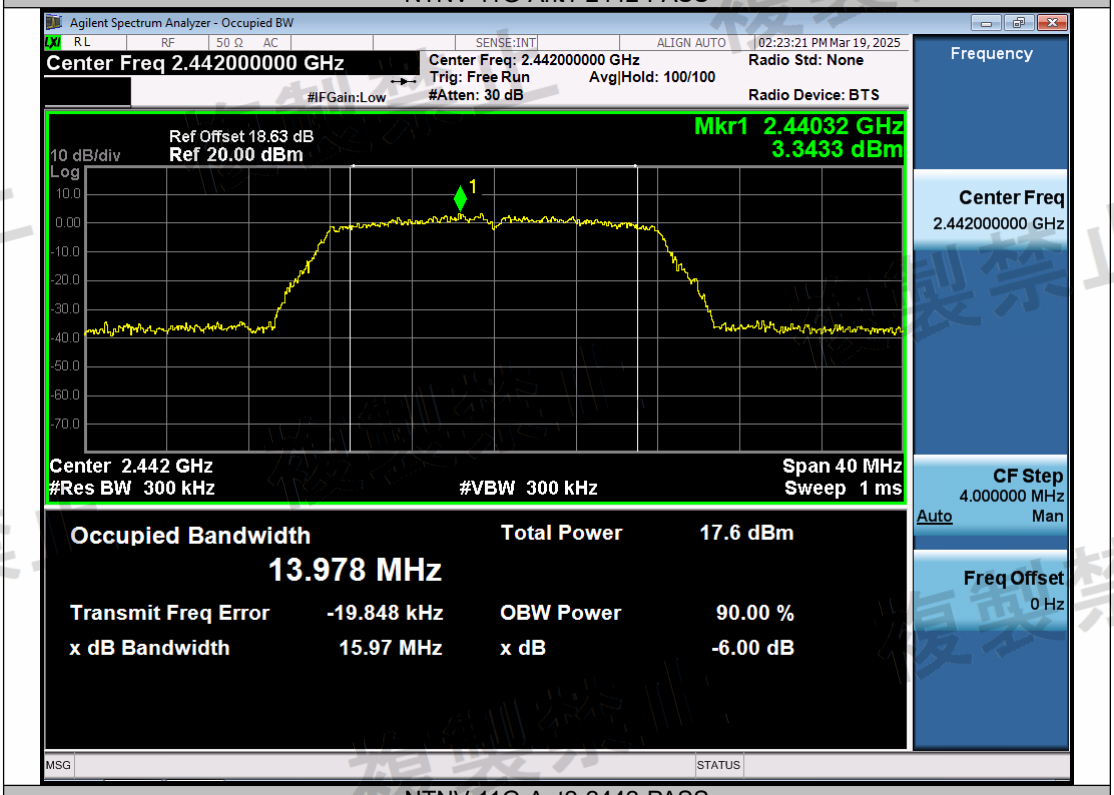
NTNV-11G-Ant1-2412-PASS



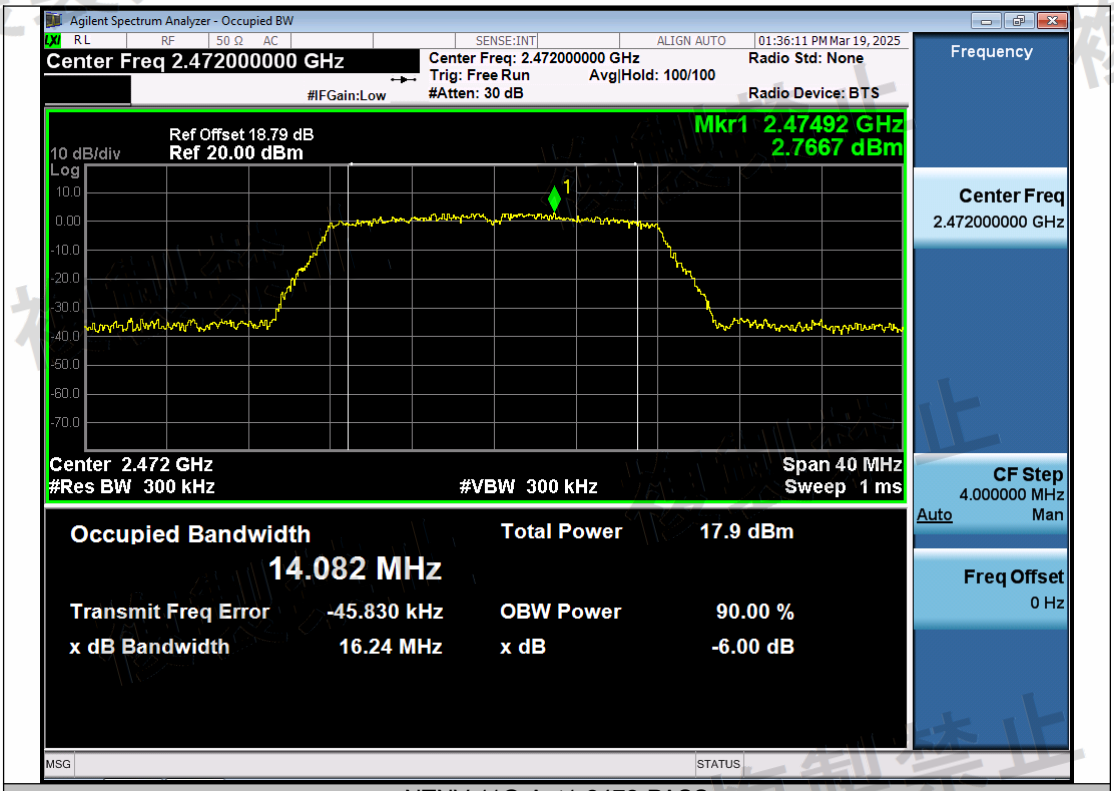
NTNV-11G-Ant2-2412-PASS



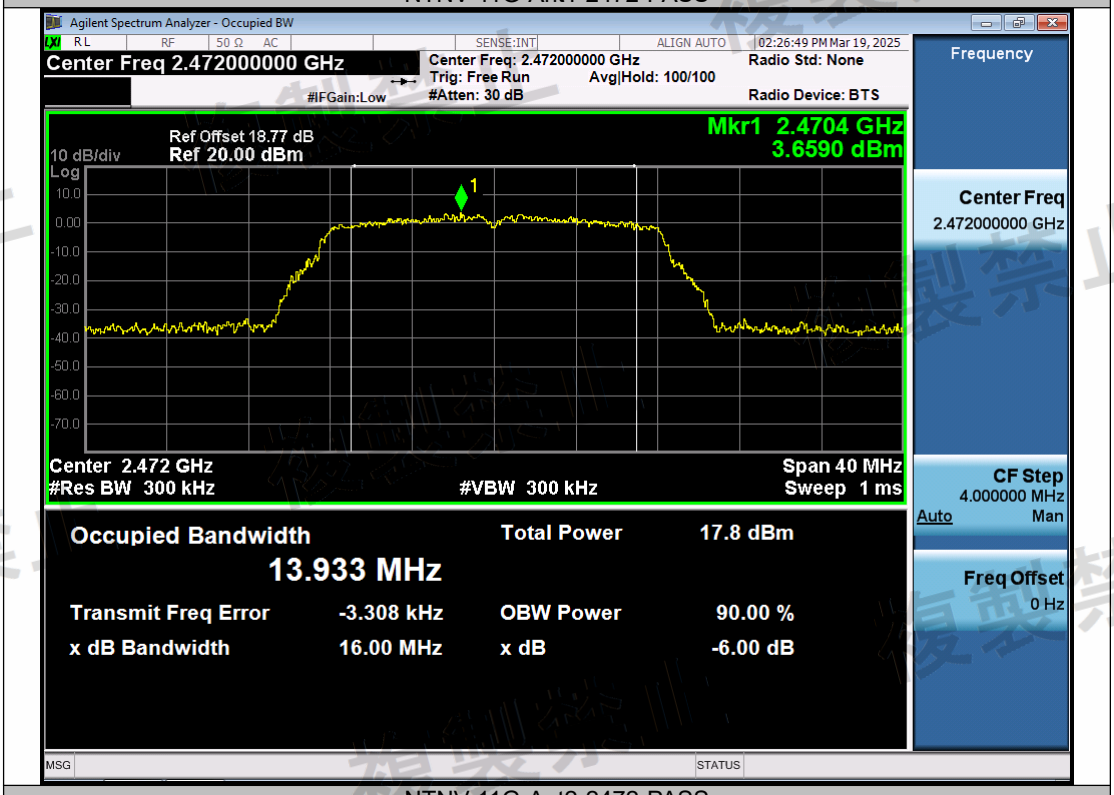
NTNV-11G-Ant1-2442-PASS



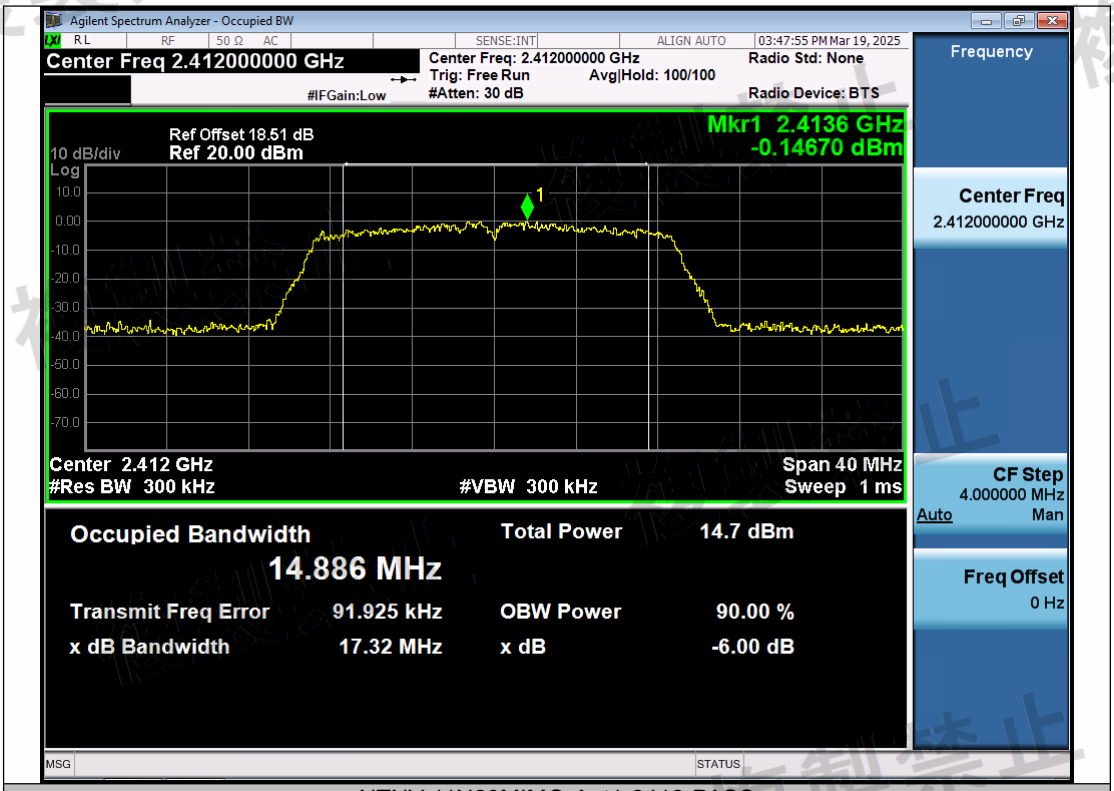
NTNV-11G-Ant2-2442-PASS



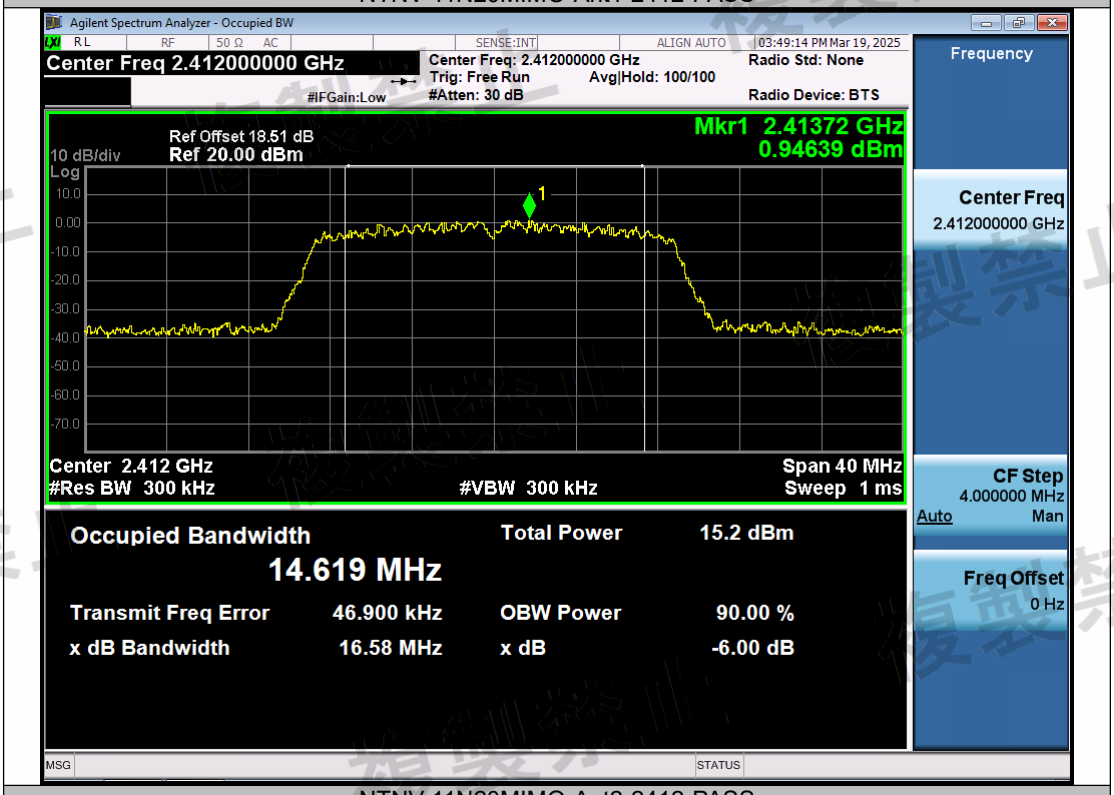
NTNV-11G-Ant1-2472-PASS



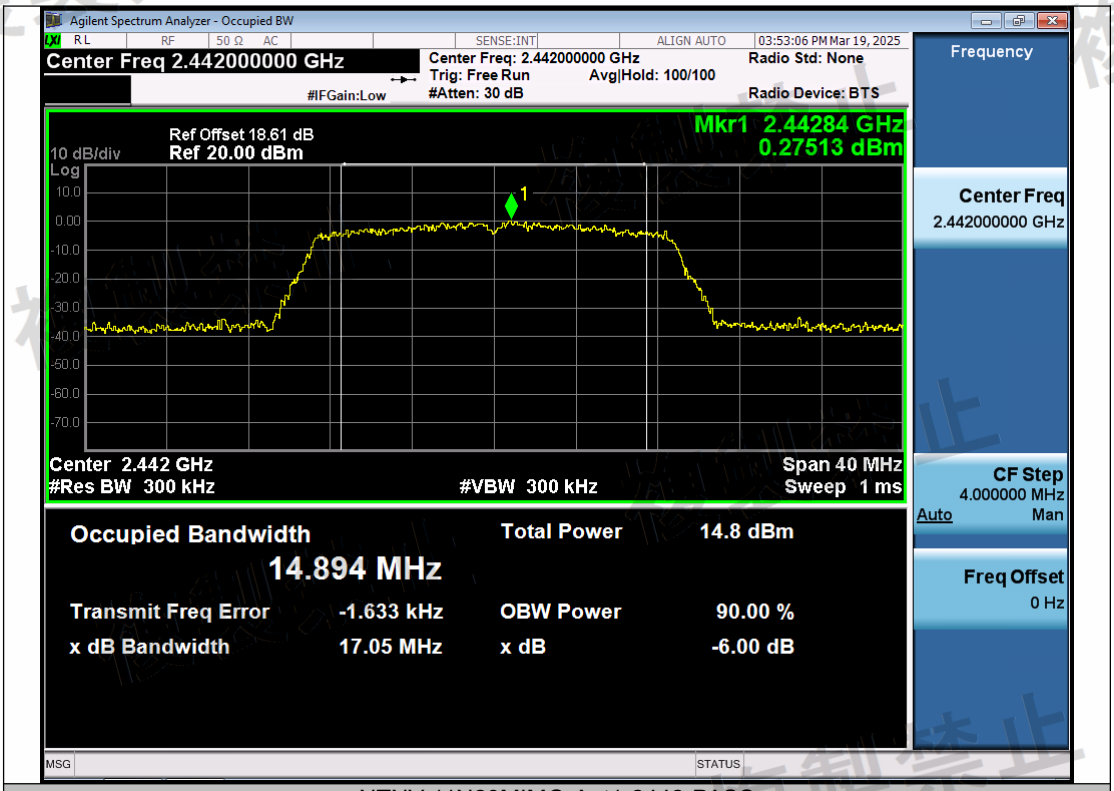
NTNV-11G-Ant2-2472-PASS



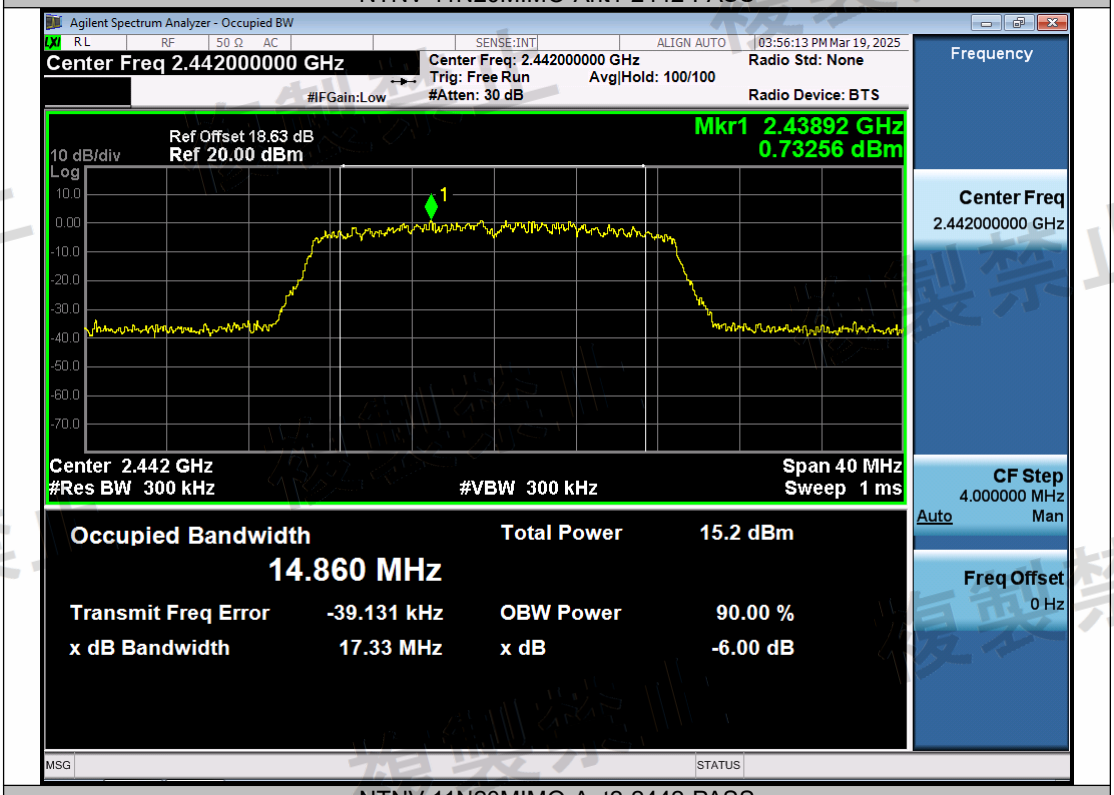
NTNV-11N20MIMO-Ant1-2412-PASS



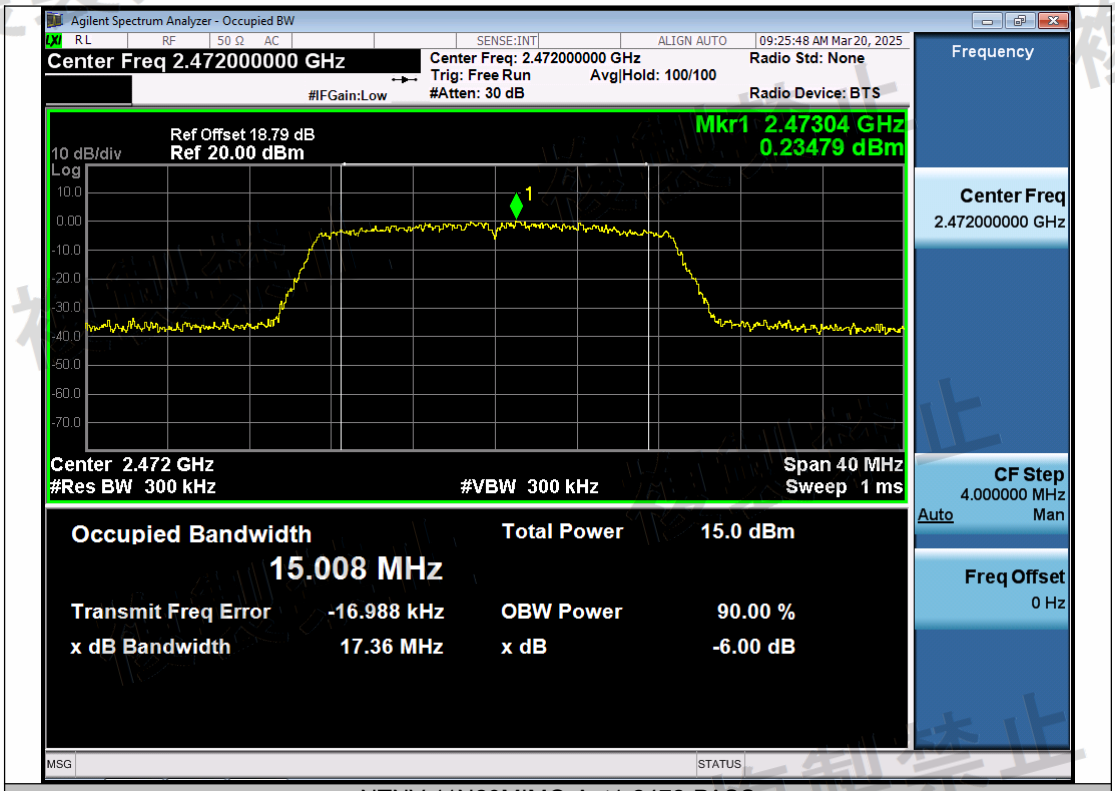
NTNV-11N20MIMO-Ant2-2412-PASS



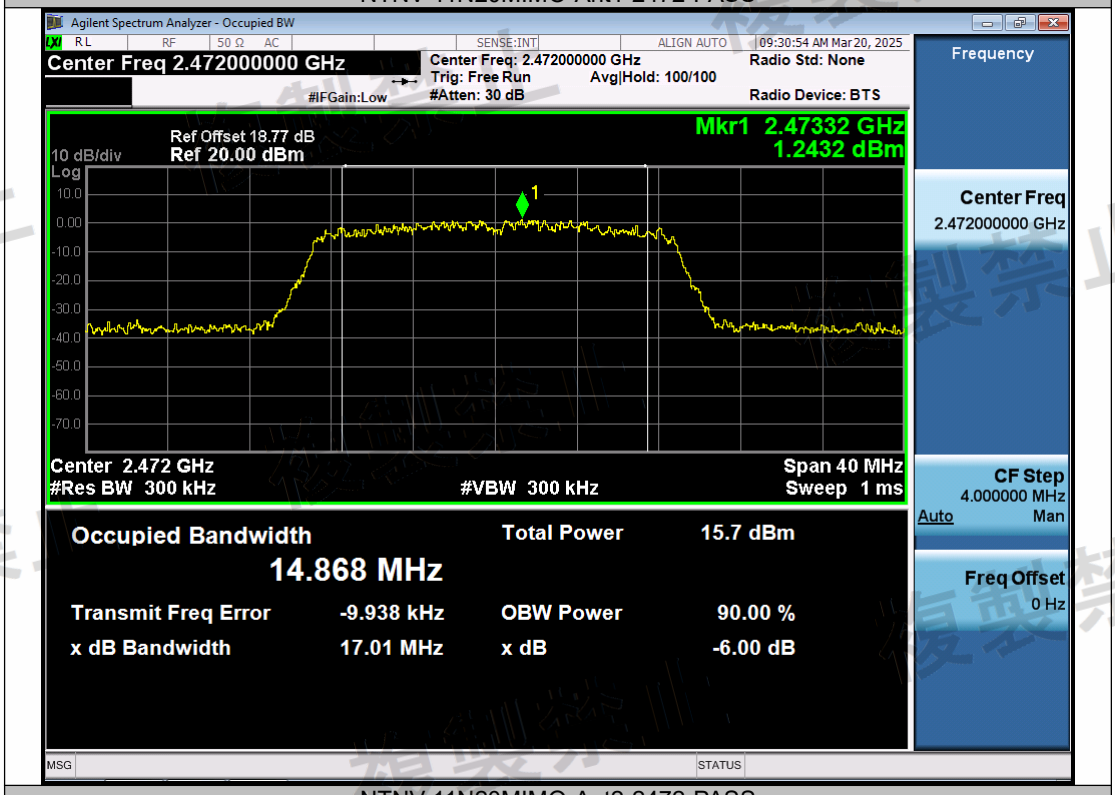
NTNV-11N20MIMO-Ant1-2442-PASS



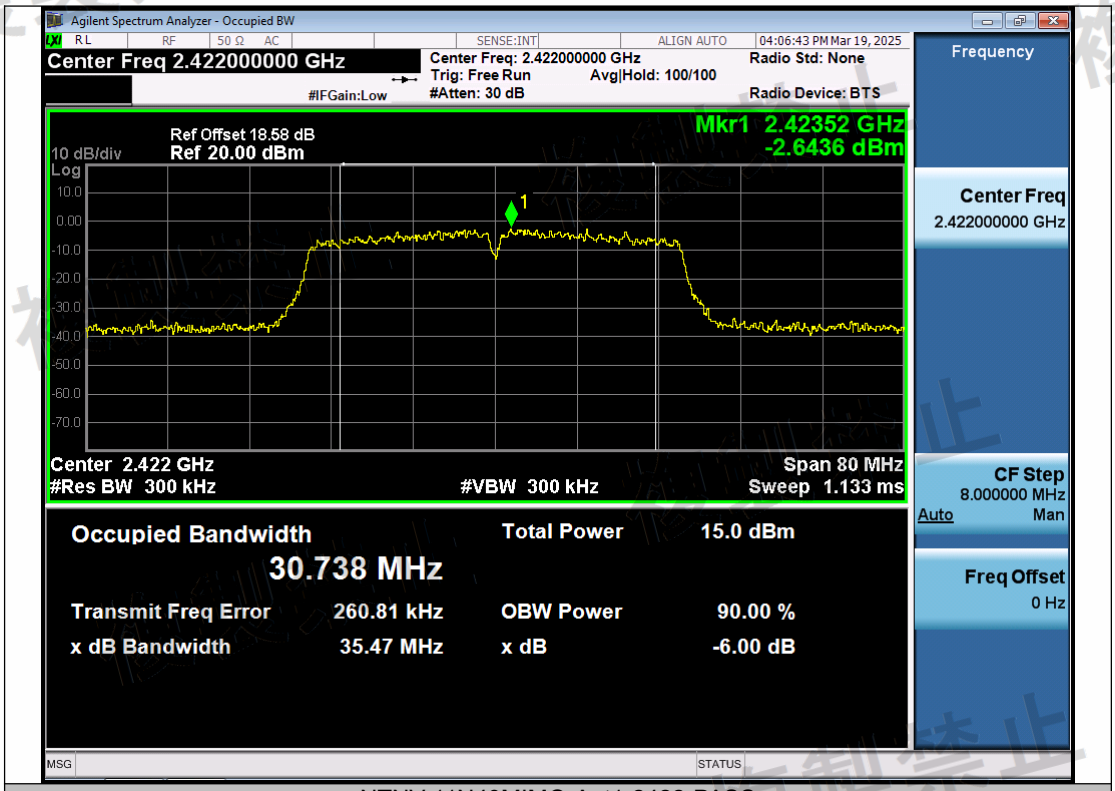
NTNV-11N20MIMO-Ant2-2442-PASS



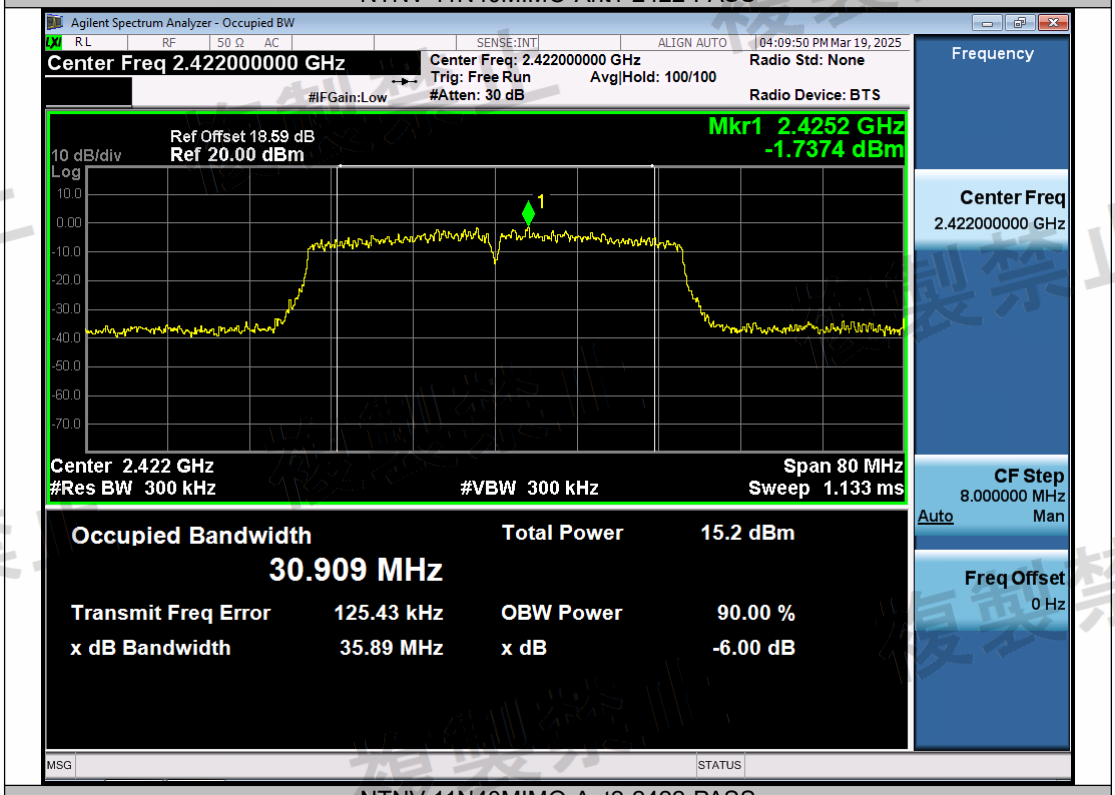
NTNV-11N20MIMO-Ant1-2472-PASS



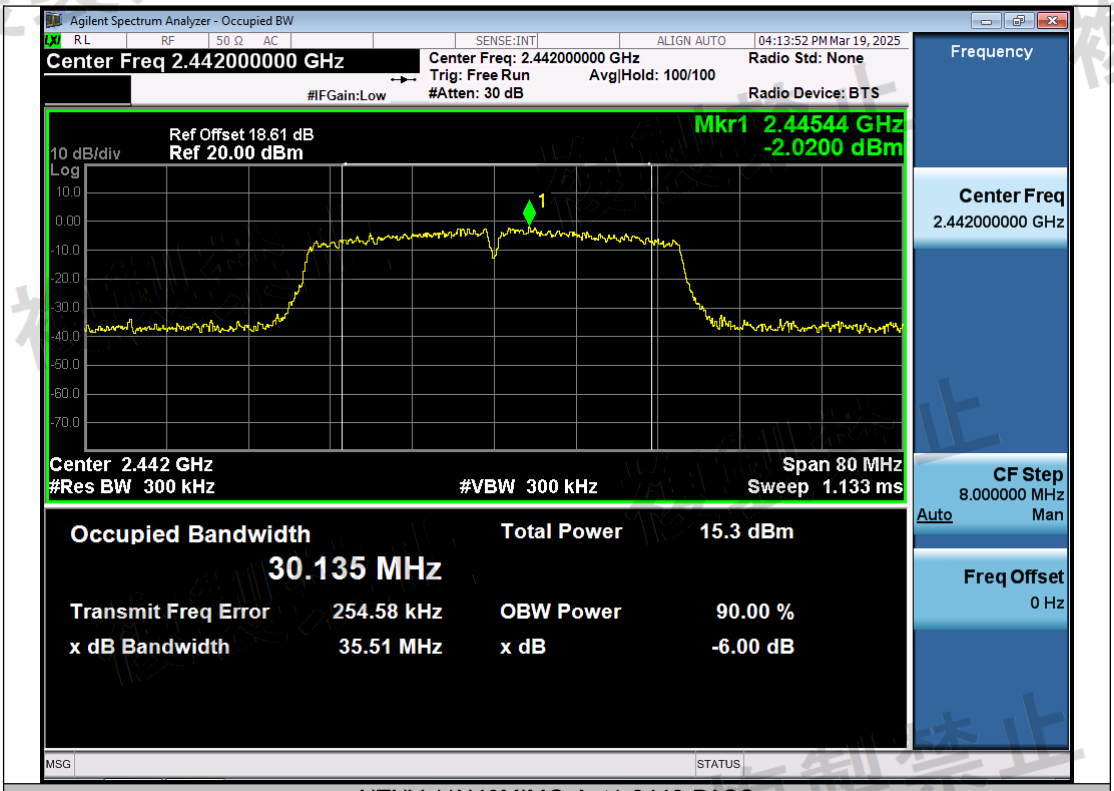
NTNV-11N20MIMO-Ant2-2472-PASS



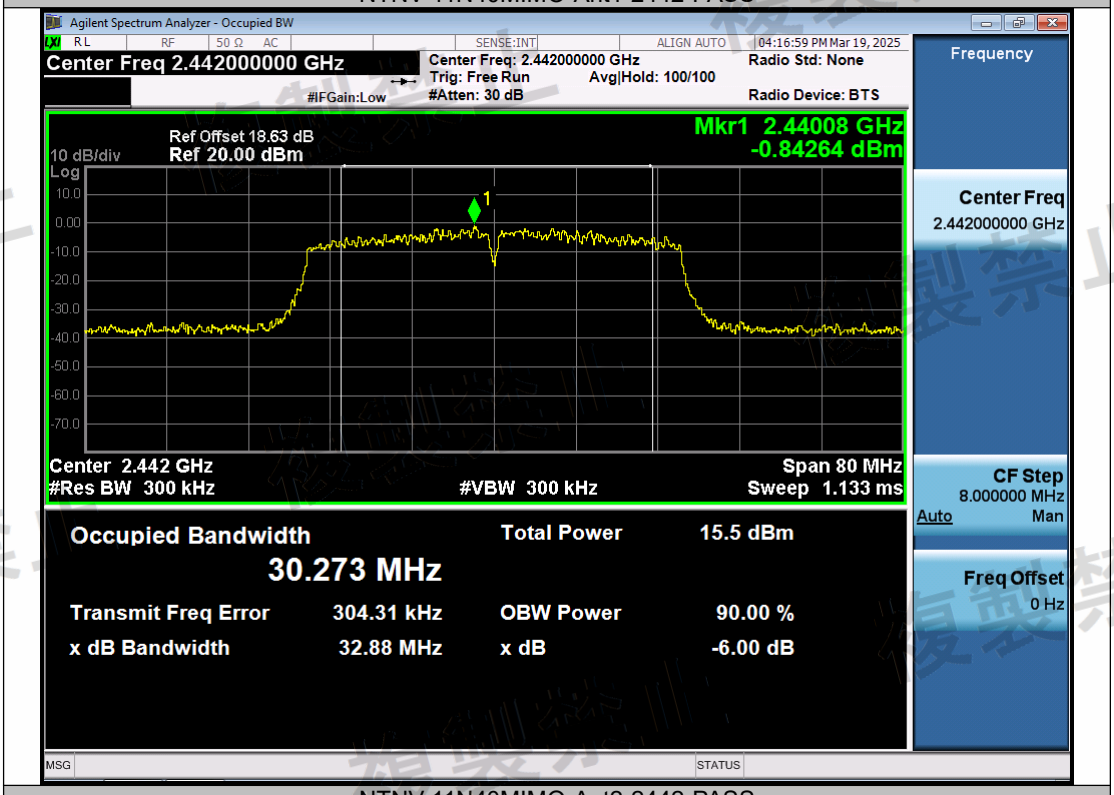
NTNV-11N40MIMO-Ant1-2422-PASS



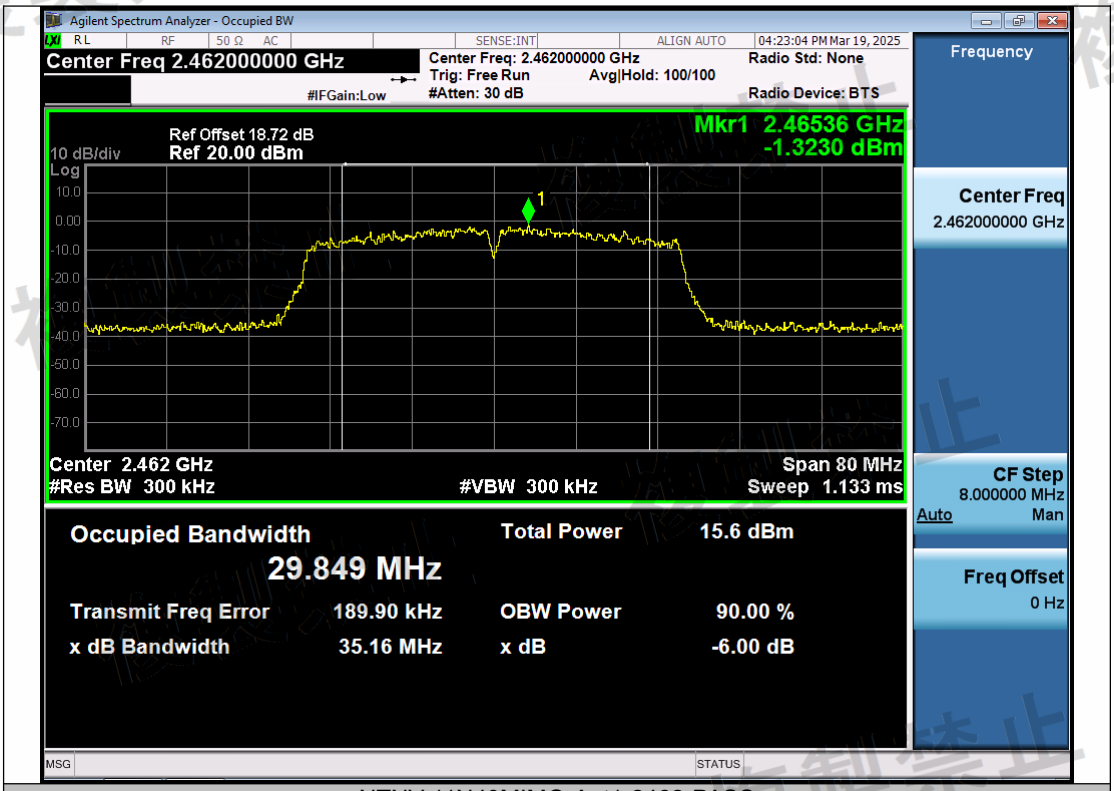
NTNV-11N40MIMO-Ant2-2422-PASS



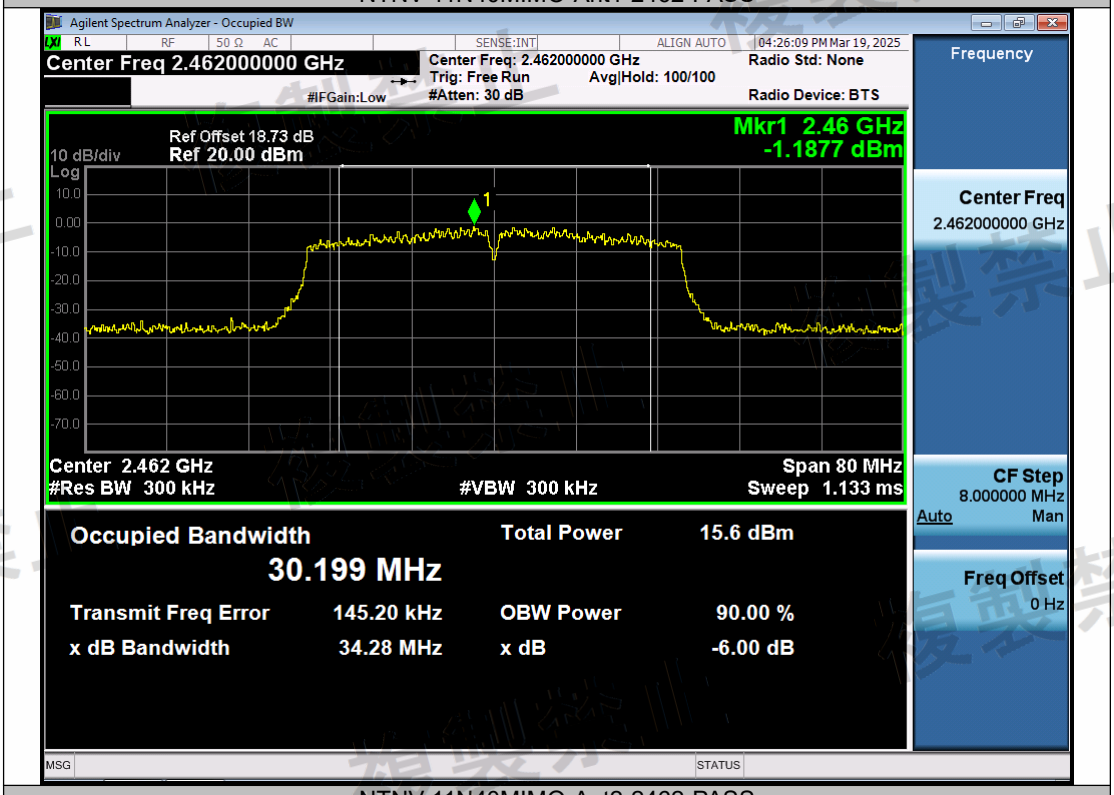
NTNV-11N40MIMO-Ant1-2442-PASS



NTNV-11N40MIMO-Ant2-2442-PASS



NTNV-11N40MIMO-Ant1-2462-PASS



NTNV-11N40MIMO-Ant2-2462-PASS

7.4 Spurious Emissions of Tx

7.4.1 Applicable Standard

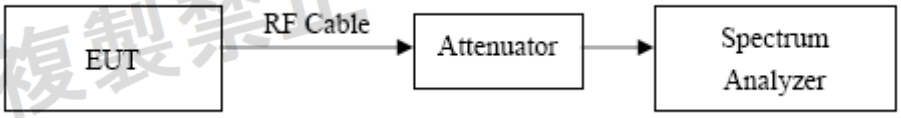
According to Item 19 of Article 2 Paragraph 1.

7.4.2 Conformance Limit

Permissible mean power of spurious emission of each frequency supplied to a feeder, that is, mean power of spurious emission in the 1 MHz bandwidth at frequency f other than frequency band used shall be as follows:

(1) Below 2387MHz: 2.5μW/MHz (-26dB)
(2) 2387 to 2400MHz: 25μW/MHz (-16dB)
(3) 2483.5 through 2496.5MHz: 25μW/MHz (-16dB)
(4) Over 2496.5MHz: 2.5μW/MHz (-26dB)

7.4.3 Test Setup Block Diagram



7.4.4 Test Procedure

(1)Spectrum analyzer for seeking the spurious emission is set as below

Sweeping Bandwidth	For seeking the spurious emission, from frequency lowest possible to the 5 times the carrier frequency
Resolution Bandwidth	1 MHz
Video Bandwidth	Approx. As same as Resolution bandwidth (1 MHz)
Y-Axis Scale	10 dB/Div
Input Level	Value of maximum dynamic range
Sweep Time	Minimum time to assure the measurement accuracy (Note 1)
Sweep Mode	Single sweep
Phase-Detection Mode	Positive peak

(2)The settings of the spectrum analyzer while conducting spurious amplitude measurements are as follows:
- Central Frequency: Acquired spurious frequencies in (1)
- Sweep Frequency 0 Hz
- Resolution Bandwidth 1 MHz
- Video Bandwidth same as Resolution Bandwidth
- Note: take into account that the requirement limits the power in a bandwidth of 1 MHz.
- If the measurement is carried out with a bandwidth of 100 kHz (for frequencies below 1 GHz), the limit shall be reduced with 10 dB.
- For example 2.5 uW in 1 MHz = -26 dBm limit, becomes –36 dBm for 100 kHz bandwidth.
- Y-Axis Scale 10 dB/Div
- Input Level: choose input level within the linear range of the SA mixer (so that no additional spurious are generated by the mixer)
- Sweep Time: Minimum amount of time to ensure measurement accuracy. However, in the case of burst waves, time exceeds duration of 1 burst.
- Data Points Over 400 points
- Sweep Mode: Single sweep
- Detection Mode Sample (BIN-Width << RBW, so that all spurious emissions are captured) [BIN-width is the frequency difference between 2 adjacent sample points on the display)

(3)Set EUT as occupied bandwidth is measure. That is, Set the EUT on the test frequency and the continuous

TX mode or continuous (constant period, constant burst length) burst TX mode. In case of spreading code used, set on the test spreading code, then the modulation is performed with standard coding test signal.
The spectrum analyzer is set as 2 (1). Seek the spurious emission If the amplitude of the sought spurious emission satisfies the specified value (in case of 2 (2) Note 1, the specified value is –3dB), the measurement of 2 (2) is not performed, then the estimated value is employed as the measured value.
In case the sought spurious emission amplitude exceeds the specified value, seek the spurious frequency by narrowing the sweeping band sequentially as 100 MHz, 10 MHz, 1 MHz for the purpose of higher accuracy of the spectrum analyzer. Set the spectrum analyzer as 2 (2). Estimate the mean value of the spurious amplitude, then employ it as the measured value (In case DSSS as well as OFDM with burst wave, the mean inside of the burst).
Sweep Bandwidth: 30MHz~2387MHz, 2483.5MHz~2496.5MHz, 2496.5MHz~12500MHz
Respectively mark the maximum results in the above sweep bandwidth.

7.4.5 Environmental Conditions

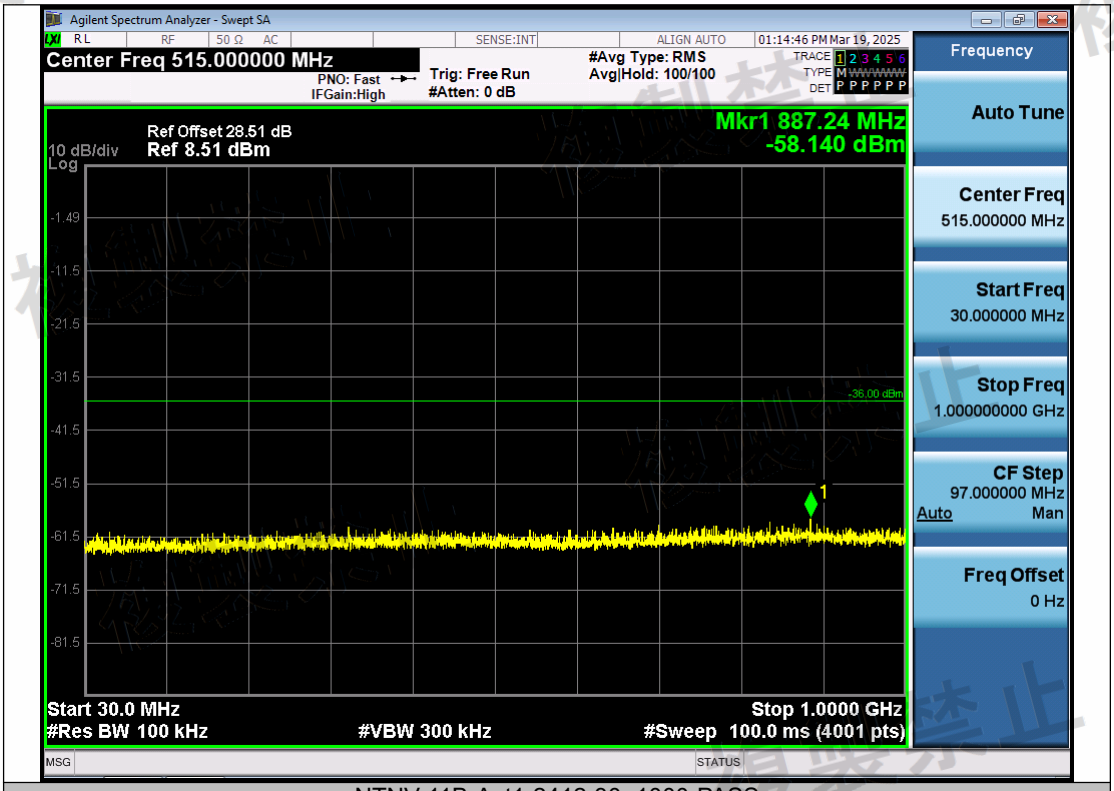
Temperature:	25 °C
Relative Humidity:	60%
ATM Pressure:	1011 mbar

7.4.6 Test Results

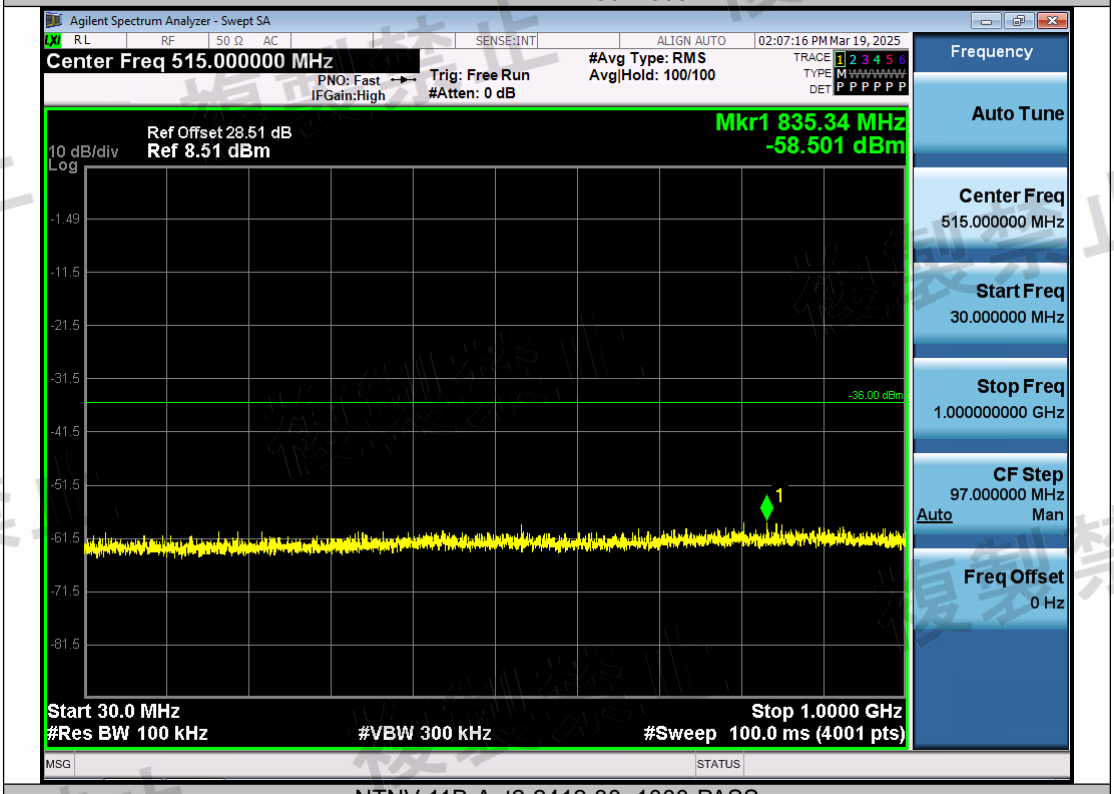
TestCondition	TestMode	Antenna	Frequency [MHz]	Freq.Range [MHz]	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [μW]	Limit [μW]	Verdict
NTNV	11B	Ant1	2412	30~1000	887.24	-58.14	≤-36	0.00153	≤0.3	PASS
NTNV	11B	Ant2	2412	30~1000	835.34	-58.50	≤-36	0.00141	≤0.3	PASS
NTNV	11B	Ant1	2412	1000~2387	2386.65	-49.48	≤-26	0.01127	≤2.5	PASS
NTNV	11B	Ant2	2412	1000~2387	1746.55	-46.97	≤-26	0.02009	≤2.5	PASS
NTNV	11B	Ant1	2412	2387~2400	2399.60	-38.82	≤-16	0.13122	≤25	PASS
NTNV	11B	Ant2	2412	2387~2400	2399.77	-40.02	≤-16	0.09954	≤25	PASS
NTNV	11B	Ant1	2412	2483.5~2496.5	2489.98	-50.29	≤-16	0.00935	≤25	PASS
NTNV	11B	Ant2	2412	2483.5~2496.5	2489.73	-50.93	≤-16	0.00807	≤25	PASS
NTNV	11B	Ant1	2412	2496.5~13000	2523.28	-53.41	≤-26	0.00456	≤2.5	PASS
NTNV	11B	Ant2	2412	2496.5~13000	2577.90	-49.46	≤-26	0.01132	≤2.5	PASS
NTNV	11B	Ant1	2442	30~1000	920.22	-58.39	≤-36	0.00145	≤0.3	PASS
NTNV	11B	Ant2	2442	30~1000	898.64	-58.54	≤-36	0.00140	≤0.3	PASS
NTNV	11B	Ant1	2442	1000~2387	2377.64	-52.92	≤-26	0.00511	≤2.5	PASS
NTNV	11B	Ant2	2442	1000~2387	2359.95	-53.08	≤-26	0.00492	≤2.5	PASS
NTNV	11B	Ant1	2442	2387~2400	2397.69	-51.43	≤-16	0.00719	≤25	PASS
NTNV	11B	Ant2	2442	2387~2400	2398.93	-51.28	≤-16	0.00745	≤25	PASS
NTNV	11B	Ant1	2442	2483.5~2496.5	2490.93	-49.31	≤-16	0.01172	≤25	PASS
NTNV	11B	Ant2	2442	2483.5~2496.5	2485.95	-50.30	≤-16	0.00933	≤25	PASS
NTNV	11B	Ant1	2442	2496.5~13000	2521.71	-52.80	≤-26	0.00525	≤2.5	PASS
NTNV	11B	Ant2	2442	2496.5~13000	2607.84	-49.44	≤-26	0.01138	≤2.5	PASS
NTNV	11B	Ant1	2472	30~1000	344.28	-57.75	≤-36	0.00168	≤0.3	PASS
NTNV	11B	Ant2	2472	30~1000	762.59	-58.74	≤-36	0.00134	≤0.3	PASS
NTNV	11B	Ant1	2472	1000~2387	2371.05	-52.61	≤-26	0.00548	≤2.5	PASS
NTNV	11B	Ant2	2472	1000~2387	2371.05	-53.50	≤-26	0.00447	≤2.5	PASS
NTNV	11B	Ant1	2472	2387~2400	2397.69	-51.99	≤-16	0.00632	≤25	PASS
NTNV	11B	Ant2	2472	2387~2400	2396.87	-51.94	≤-16	0.00640	≤25	PASS
NTNV	11B	Ant1	2472	2483.5~2496.5	2487.63	-39.10	≤-16	0.12303	≤25	PASS
NTNV	11B	Ant2	2472	2483.5~2496.5	2483.94	-40.53	≤-16	0.08851	≤25	PASS
NTNV	11B	Ant1	2472	2496.5~13000	2497.55	-50.15	≤-26	0.00966	≤2.5	PASS
NTNV	11B	Ant2	2472	2496.5~13000	2498.60	-50.27	≤-26	0.00940	≤2.5	PASS
NTNV	11G	Ant1	2412	30~1000	922.16	-58.53	≤-36	0.00140	≤0.3	PASS
NTNV	11G	Ant2	2412	30~1000	947.38	-58.69	≤-36	0.00135	≤0.3	PASS
NTNV	11G	Ant1	2412	1000~2387	2384.92	-45.62	≤-26	0.02742	≤2.5	PASS
NTNV	11G	Ant2	2412	1000~2387	2387.00	-44.08	≤-26	0.03908	≤2.5	PASS
NTNV	11G	Ant1	2412	2387~2400	2399.49	-34.39	≤-16	0.36392	≤25	PASS
NTNV	11G	Ant2	2412	2387~2400	2399.71	-34.93	≤-16	0.32137	≤25	PASS
NTNV	11G	Ant1	2412	2483.5~2496.5	2488.07	-47.64	≤-16	0.01722	≤25	PASS
NTNV	11G	Ant2	2412	2483.5~2496.5	2487.43	-46.83	≤-16	0.02075	≤25	PASS
NTNV	11G	Ant1	2412	2496.5~13000	2518.03	-50.91	≤-26	0.00811	≤2.5	PASS
NTNV	11G	Ant2	2412	2496.5~13000	2577.90	-49.37	≤-26	0.01156	≤2.5	PASS
NTNV	11G	Ant1	2442	30~1000	252.13	-56.82	≤-36	0.00208	≤0.3	PASS
NTNV	11G	Ant2	2442	30~1000	803.82	-58.10	≤-36	0.00155	≤0.3	PASS
NTNV	11G	Ant1	2442	1000~2387	2383.53	-45.83	≤-26	0.02612	≤2.5	PASS
NTNV	11G	Ant2	2442	1000~2387	2371.40	-46.99	≤-26	0.02000	≤2.5	PASS
NTNV	11G	Ant1	2442	2387~2400	2398.47	-43.32	≤-16	0.04656	≤25	PASS
NTNV	11G	Ant2	2442	2387~2400	2396.63	-44.37	≤-16	0.03656	≤25	PASS
NTNV	11G	Ant1	2442	2483.5~2496.5	2483.79	-44.04	≤-16	0.03945	≤25	PASS
NTNV	11G	Ant2	2442	2483.5~2496.5	2488.63	-44.89	≤-16	0.03243	≤25	PASS
NTNV	11G	Ant1	2442	2496.5~13000	2497.55	-47.32	≤-26	0.01854	≤2.5	PASS
NTNV	11G	Ant2	2442	2496.5~13000	2500.18	-47.56	≤-26	0.01754	≤2.5	PASS
NTNV	11G	Ant1	2472	30~1000	255.77	-56.35	≤-36	0.00232	≤0.3	PASS
NTNV	11G	Ant2	2472	30~1000	825.64	-58.26	≤-36	0.00149	≤0.3	PASS

NTNV	11G	Ant1	2472	1000~2387	2385.96	-47.66	≤-26	0.01714	≤2.5	PASS
NTNV	11G	Ant2	2472	1000~2387	2372.09	-48.62	≤-26	0.01374	≤2.5	PASS
NTNV	11G	Ant1	2472	2387~2400	2398.95	-45.56	≤-16	0.02780	≤25	PASS
NTNV	11G	Ant2	2472	2387~2400	2394.83	-46.47	≤-16	0.02254	≤25	PASS
NTNV	11G	Ant1	2472	2483.5~2496.5	2483.51	-32.35	≤-16	0.58210	≤25	PASS
NTNV	11G	Ant2	2472	2483.5~2496.5	2483.71	-33.91	≤-16	0.40644	≤25	PASS
NTNV	11G	Ant1	2472	2496.5~13000	2496.50	-43.99	≤-26	0.03990	≤2.5	PASS
NTNV	11G	Ant2	2472	2496.5~13000	2499.13	-44.70	≤-26	0.03388	≤2.5	PASS
NTNV	11N20MIMO	Ant1	2412	30~1000	309.60	-59.31	≤-36	0.00117	≤0.3	PASS
NTNV	11N20MIMO	Ant2	2412	30~1000	862.26	-59.22	≤-36	0.00120	≤0.3	PASS
NTNV	11N20MIMO	Ant1	2412	1000~2387	2386.65	-41.69	≤-26	0.06776	≤2.5	PASS
NTNV	11N20MIMO	Ant2	2412	1000~2387	2387.00	-44.35	≤-26	0.03673	≤2.5	PASS
NTNV	11N20MIMO	Ant1	2412	2387~2400	2398.30	-34.41	≤-16	0.36224	≤25	PASS
NTNV	11N20MIMO	Ant2	2412	2387~2400	2398.76	-35.00	≤-16	0.31623	≤25	PASS
NTNV	11N20MIMO	Ant1	2412	2483.5~2496.5	2485.16	-49.57	≤-16	0.01104	≤25	PASS
NTNV	11N20MIMO	Ant2	2412	2483.5~2496.5	2484.55	-49.73	≤-16	0.01064	≤25	PASS
NTNV	11N20MIMO	Ant1	2412	2496.5~13000	2571.07	-51.35	≤-26	0.00733	≤2.5	PASS
NTNV	11N20MIMO	Ant2	2412	2496.5~13000	2575.80	-48.79	≤-26	0.01321	≤2.5	PASS
NTNV	11N20MIMO	Ant1	2442	30~1000	356.89	-57.93	≤-36	0.00161	≤0.3	PASS
NTNV	11N20MIMO	Ant2	2442	30~1000	959.26	-58.79	≤-36	0.00132	≤0.3	PASS
NTNV	11N20MIMO	Ant1	2442	1000~2387	2382.49	-50.41	≤-26	0.00910	≤2.5	PASS
NTNV	11N20MIMO	Ant2	2442	1000~2387	2386.31	-51.06	≤-26	0.00783	≤2.5	PASS
NTNV	11N20MIMO	Ant1	2442	2387~2400	2398.63	-48.70	≤-16	0.01349	≤25	PASS
NTNV	11N20MIMO	Ant2	2442	2387~2400	2399.69	-49.07	≤-16	0.01239	≤25	PASS
NTNV	11N20MIMO	Ant1	2442	2483.5~2496.5	2483.90	-47.68	≤-16	0.01706	≤25	PASS
NTNV	11N20MIMO	Ant2	2442	2483.5~2496.5	2486.31	-48.30	≤-16	0.01479	≤25	PASS
NTNV	11N20MIMO	Ant1	2442	2496.5~13000	2500.70	-50.95	≤-26	0.00804	≤2.5	PASS
NTNV	11N20MIMO	Ant2	2442	2496.5~13000	2518.56	-49.31	≤-26	0.01172	≤2.5	PASS
NTNV	11N20MIMO	Ant1	2472	30~1000	930.65	-59.32	≤-36	0.00117	≤0.3	PASS
NTNV	11N20MIMO	Ant2	2472	30~1000	884.81	-59.28	≤-36	0.00118	≤0.3	PASS
NTNV	11N20MIMO	Ant1	2472	1000~2387	2374.86	-52.00	≤-26	0.00631	≤2.5	PASS
NTNV	11N20MIMO	Ant2	2472	1000~2387	2371.05	-51.27	≤-26	0.00746	≤2.5	PASS
NTNV	11N20MIMO	Ant1	2472	2387~2400	2393.86	-50.55	≤-16	0.00881	≤25	PASS
NTNV	11N20MIMO	Ant2	2472	2387~2400	2399.92	-50.26	≤-16	0.00942	≤25	PASS
NTNV	11N20MIMO	Ant1	2472	2483.5~2496.5	2484.78	-31.73	≤-16	0.67143	≤25	PASS
NTNV	11N20MIMO	Ant2	2472	2483.5~2496.5	2486.72	-33.35	≤-16	0.46238	≤25	PASS
NTNV	11N20MIMO	Ant1	2472	2496.5~13000	2496.50	-38.64	≤-26	0.13677	≤2.5	PASS
NTNV	11N20MIMO	Ant2	2472	2496.5~13000	2497.55	-42.80	≤-26	0.05248	≤2.5	PASS
NTNV	11N40MIMO	Ant1	2422	30~1000	30.73	-49.46	≤-36	0.01132	≤0.3	PASS
NTNV	11N40MIMO	Ant2	2422	30~1000	937.19	-59.09	≤-36	0.00123	≤0.3	PASS
NTNV	11N40MIMO	Ant1	2422	1000~2387	2383.88	-42.98	≤-26	0.05035	≤2.5	PASS
NTNV	11N40MIMO	Ant2	2422	1000~2387	2385.96	-44.37	≤-26	0.03656	≤2.5	PASS
NTNV	11N40MIMO	Ant1	2422	2387~2400	2399.99	-34.01	≤-16	0.39719	≤25	PASS
NTNV	11N40MIMO	Ant2	2422	2387~2400	2399.91	-34.83	≤-16	0.32885	≤25	PASS
NTNV	11N40MIMO	Ant1	2422	2483.5~2496.5	2483.76	-46.02	≤-16	0.02500	≤25	PASS
NTNV	11N40MIMO	Ant2	2422	2483.5~2496.5	2483.73	-48.48	≤-16	0.01419	≤25	PASS
NTNV	11N40MIMO	Ant1	2422	2496.5~13000	2501.75	-51.21	≤-26	0.00757	≤2.5	PASS
NTNV	11N40MIMO	Ant2	2422	2496.5~13000	2591.56	-51.53	≤-26	0.00703	≤2.5	PASS
NTNV	11N40MIMO	Ant1	2442	30~1000	30.00	-50.15	≤-36	0.00966	≤0.3	PASS
NTNV	11N40MIMO	Ant2	2442	30~1000	820.31	-58.03	≤-36	0.00157	≤0.3	PASS
NTNV	11N40MIMO	Ant1	2442	1000~2387	2383.88	-45.46	≤-26	0.02844	≤2.5	PASS
NTNV	11N40MIMO	Ant2	2442	1000~2387	2385.61	-46.69	≤-26	0.02143	≤2.5	PASS
NTNV	11N40MIMO	Ant1	2442	2387~2400	2391.13	-43.07	≤-16	0.04932	≤25	PASS
NTNV	11N40MIMO	Ant2	2442	2387~2400	2398.62	-45.01	≤-16	0.03155	≤25	PASS
NTNV	11N40MIMO	Ant1	2442	2483.5~2496.5	2492.88	-39.27	≤-16	0.11830	≤25	PASS

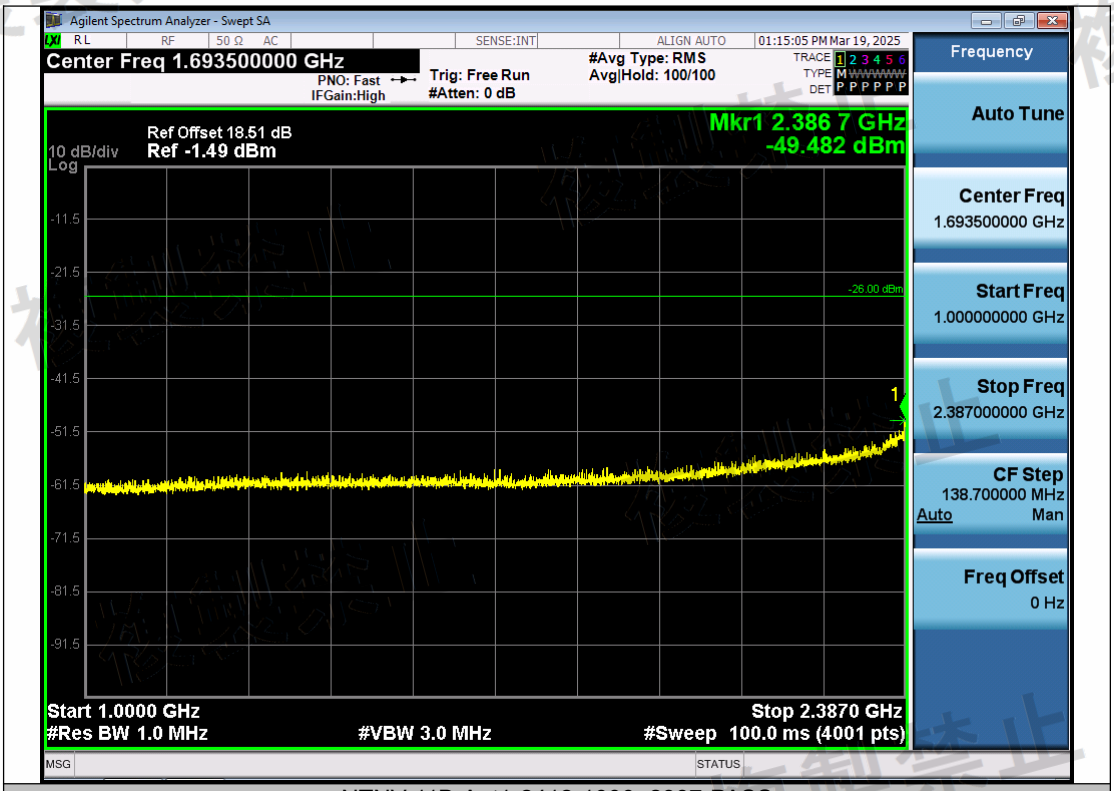
NTNV	11N40MIMO	Ant2	2442	2483.5~2496.5	2493.52	-42.25	≤-16	0.05957	≤25	PASS
NTNV	11N40MIMO	Ant1	2442	2496.5~13000	2497.55	-42.69	≤-26	0.05383	≤2.5	PASS
NTNV	11N40MIMO	Ant2	2442	2496.5~13000	2497.03	-45.85	≤-26	0.02600	≤2.5	PASS
NTNV	11N40MIMO	Ant1	2462	30~1000	30.00	-50.80	≤-36	0.00832	≤0.3	PASS
NTNV	11N40MIMO	Ant2	2462	30~1000	773.51	-57.89	≤-36	0.00163	≤0.3	PASS
NTNV	11N40MIMO	Ant1	2462	1000~2387	2368.28	-52.19	≤-26	0.00604	≤2.5	PASS
NTNV	11N40MIMO	Ant2	2462	1000~2387	2382.15	-51.64	≤-26	0.00685	≤2.5	PASS
NTNV	11N40MIMO	Ant1	2462	2387~2400	2397.61	-46.73	≤-16	0.02123	≤25	PASS
NTNV	11N40MIMO	Ant2	2462	2387~2400	2398.80	-47.00	≤-16	0.01995	≤25	PASS
NTNV	11N40MIMO	Ant1	2462	2483.5~2496.5	2483.51	-28.29	≤-16	1.48252	≤25	PASS
NTNV	11N40MIMO	Ant2	2462	2483.5~2496.5	2483.54	-29.08	≤-16	1.23595	≤25	PASS
NTNV	11N40MIMO	Ant1	2462	2496.5~13000	2497.55	-38.55	≤-26	0.13964	≤2.5	PASS
NTNV	11N40MIMO	Ant2	2462	2496.5~13000	2505.43	-42.96	≤-26	0.05058	≤2.5	PASS



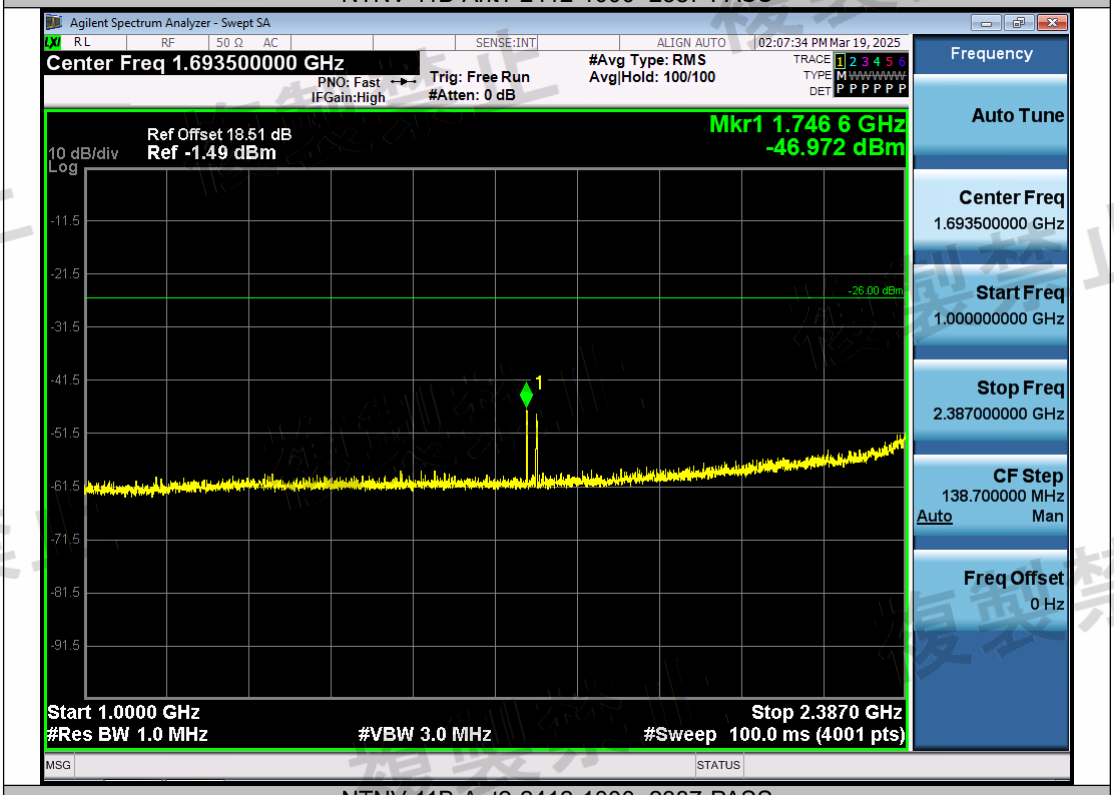
NTNV-11B-Ant1-2412-30~1000-PASS



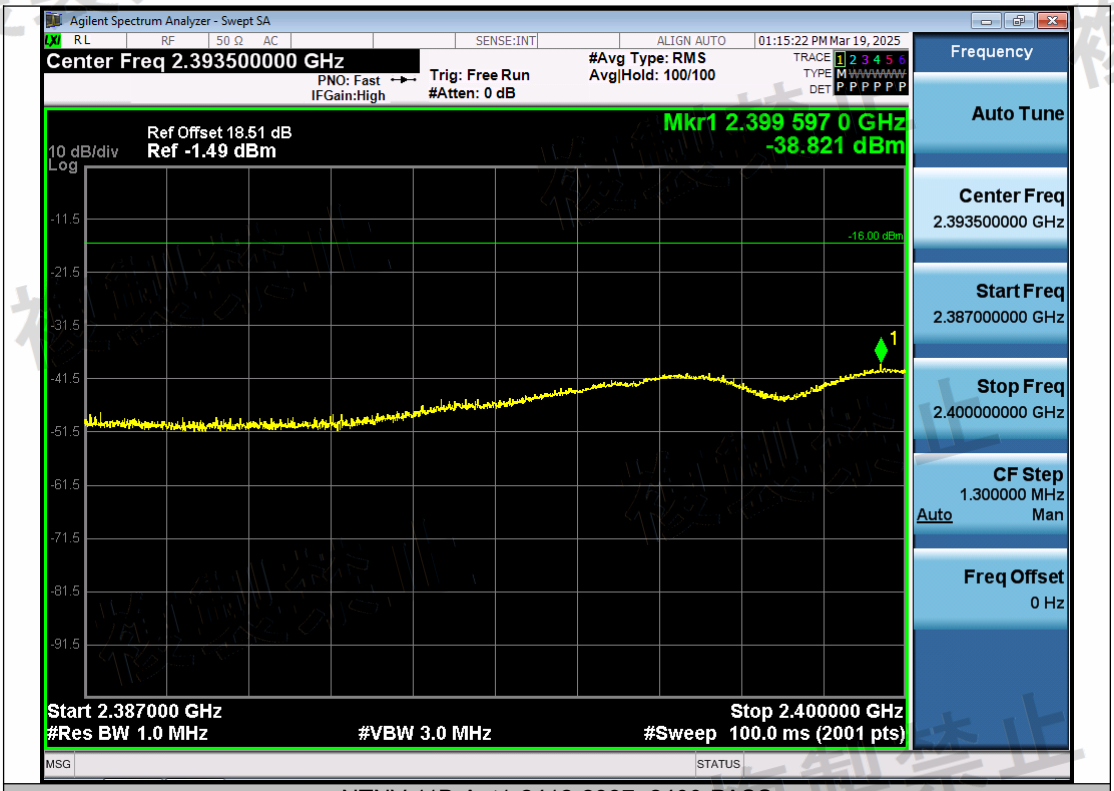
NTNV-11B-Ant2-2412-30~1000-PASS



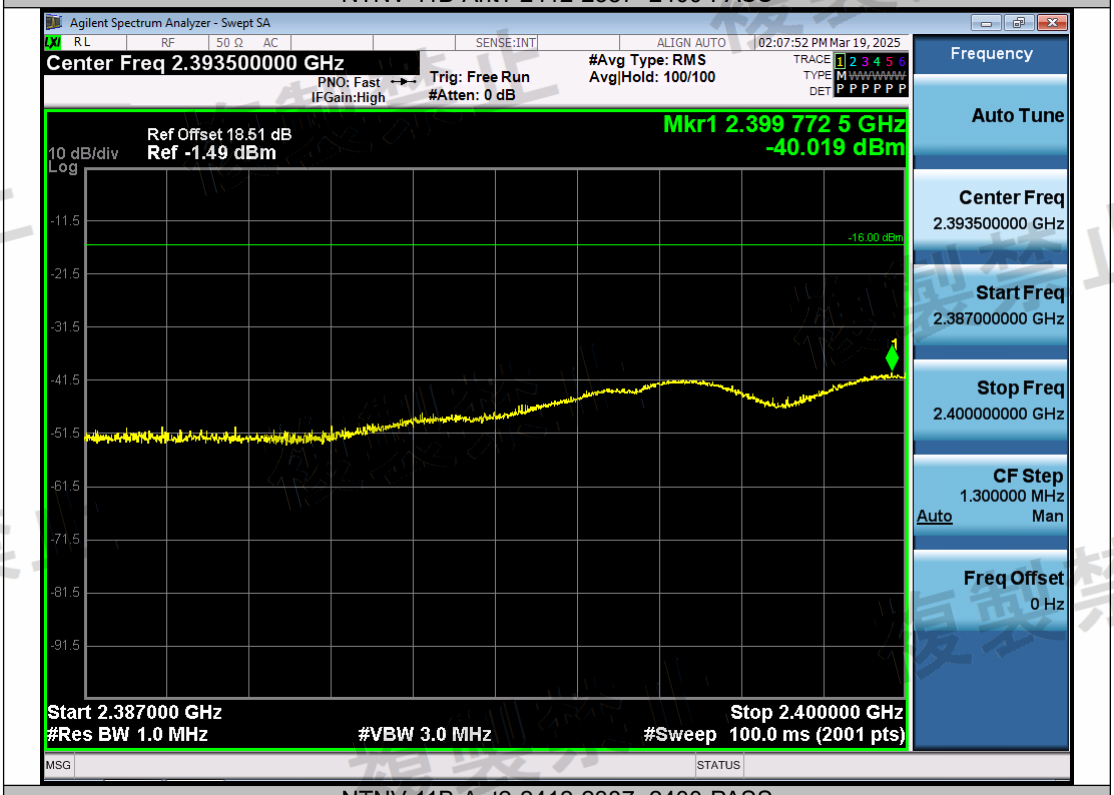
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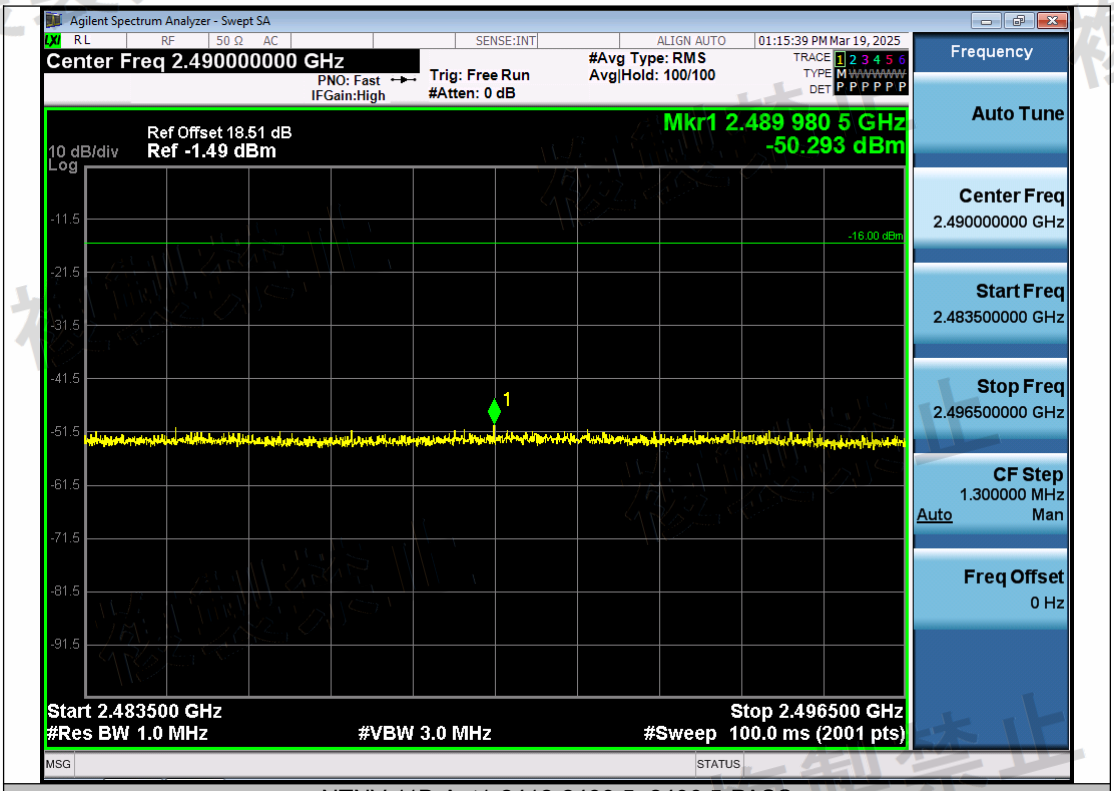
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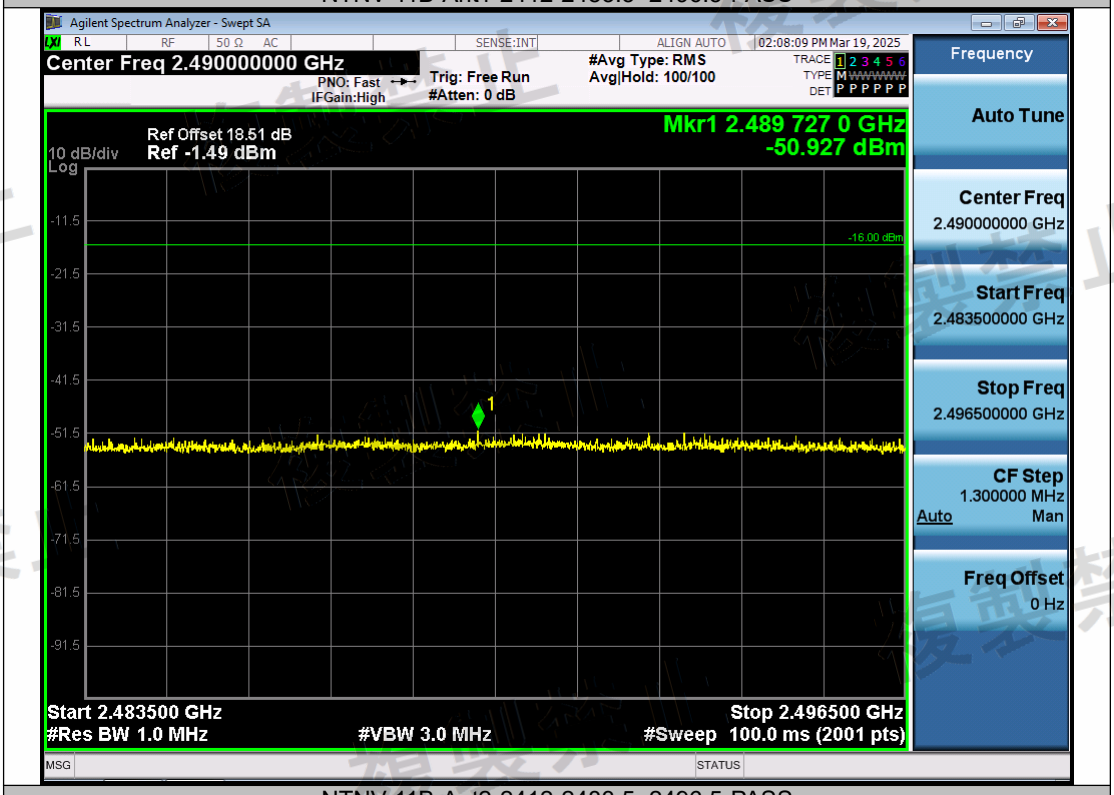
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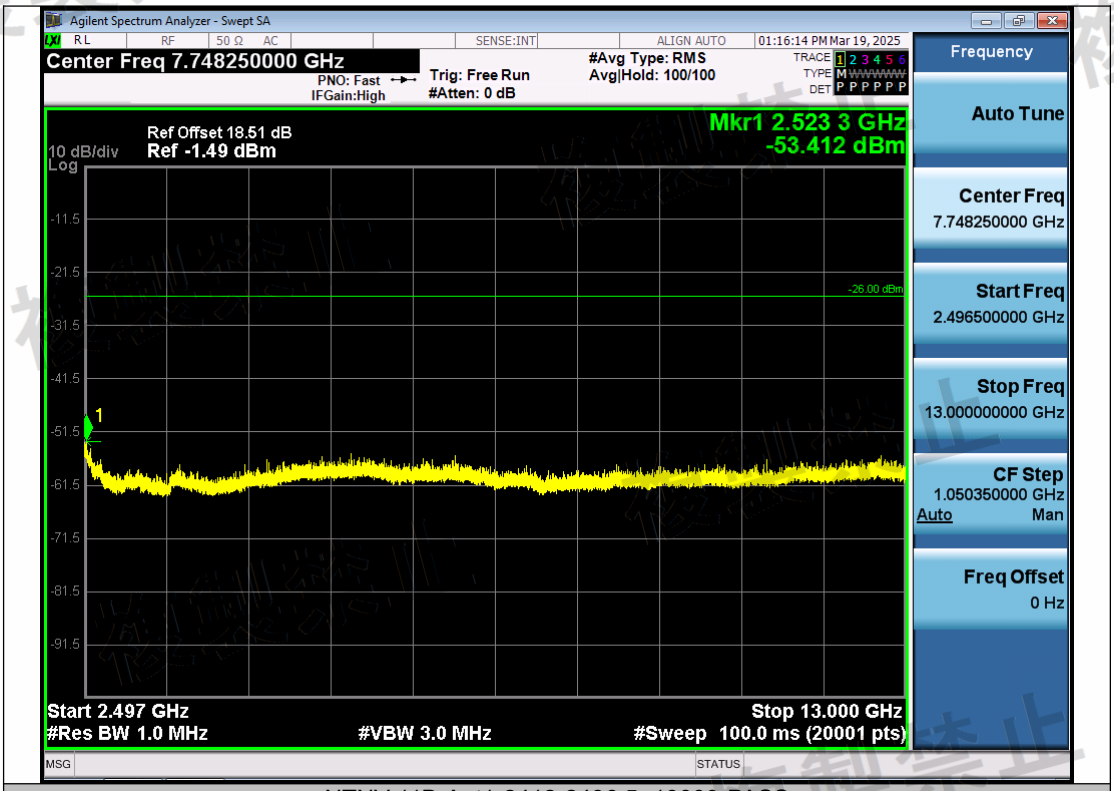
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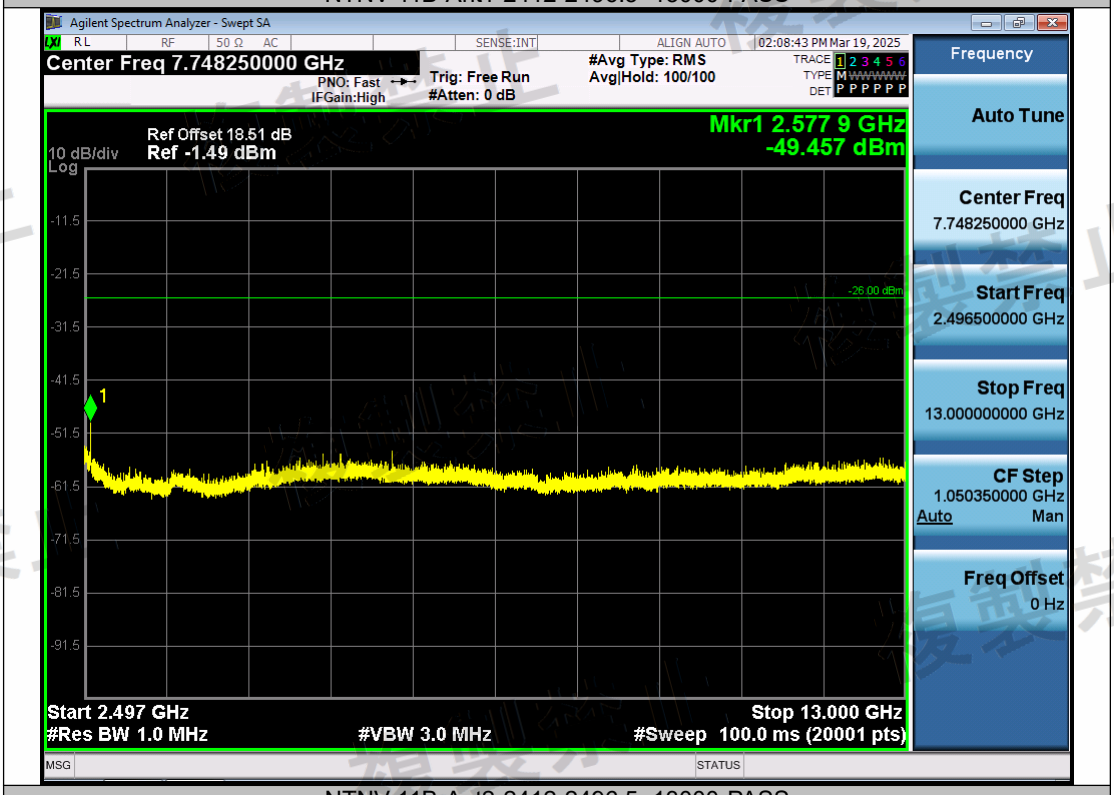
NTNV-11B-Ant1-2412-2483.5~2496.5-PASS



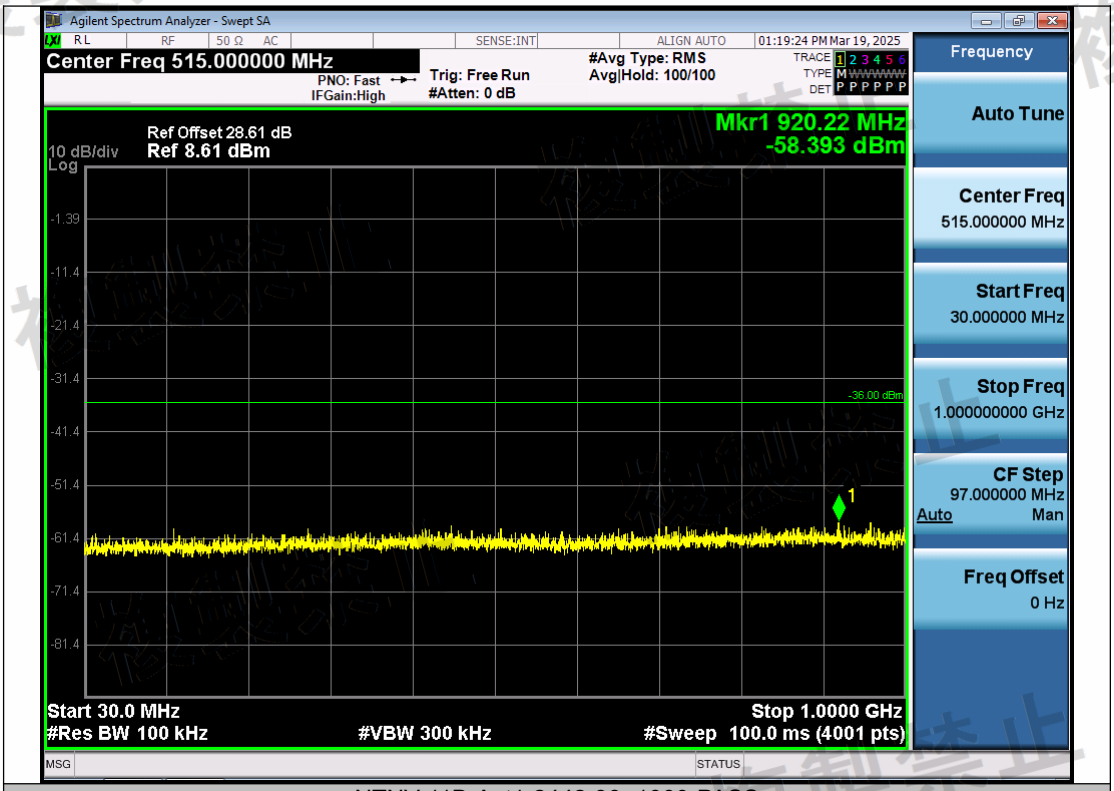
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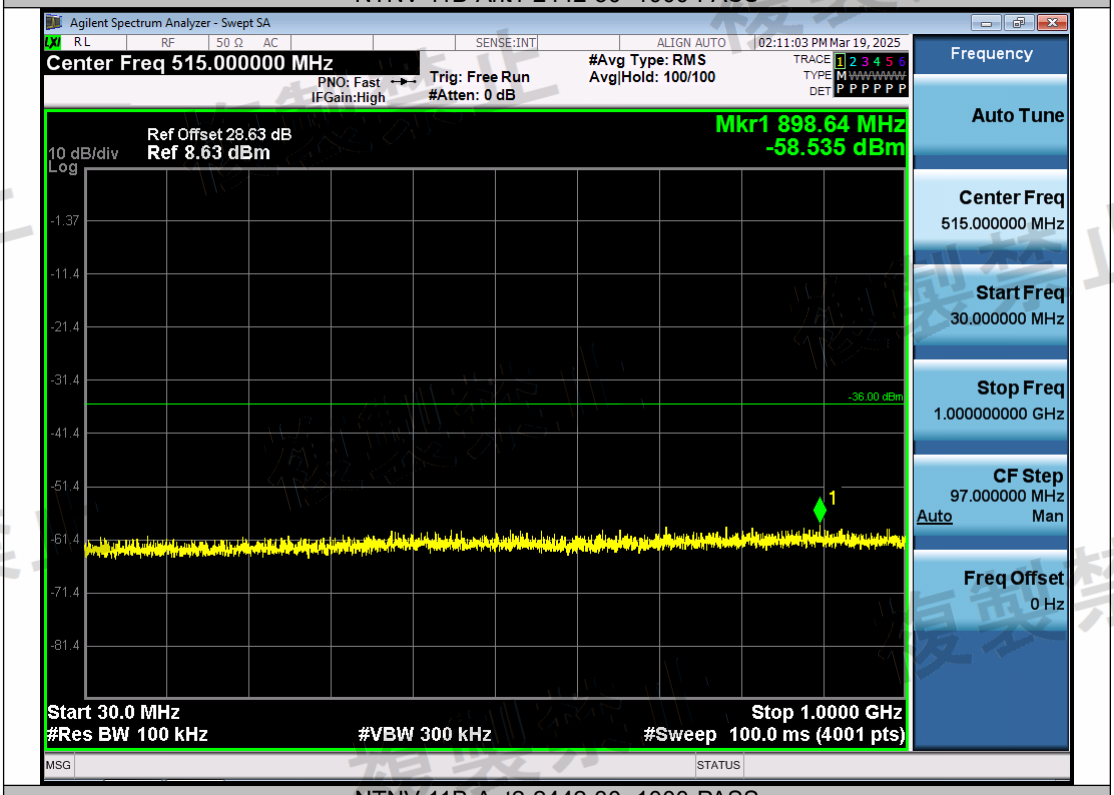
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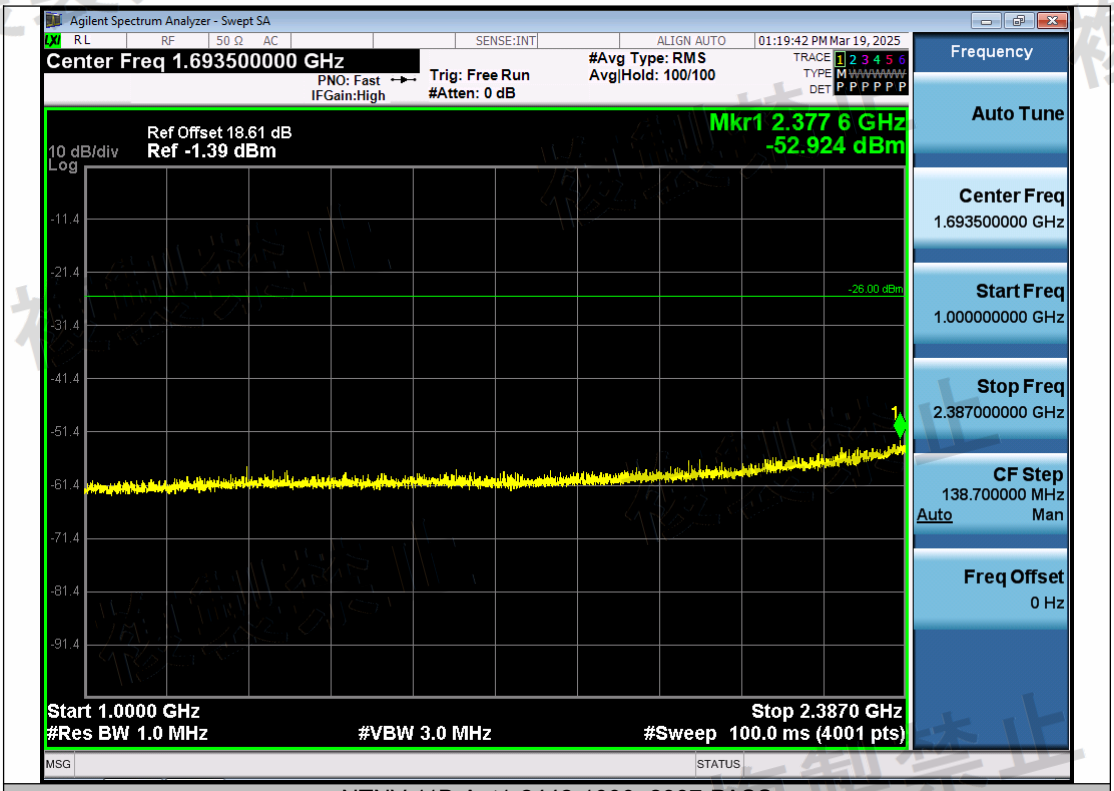
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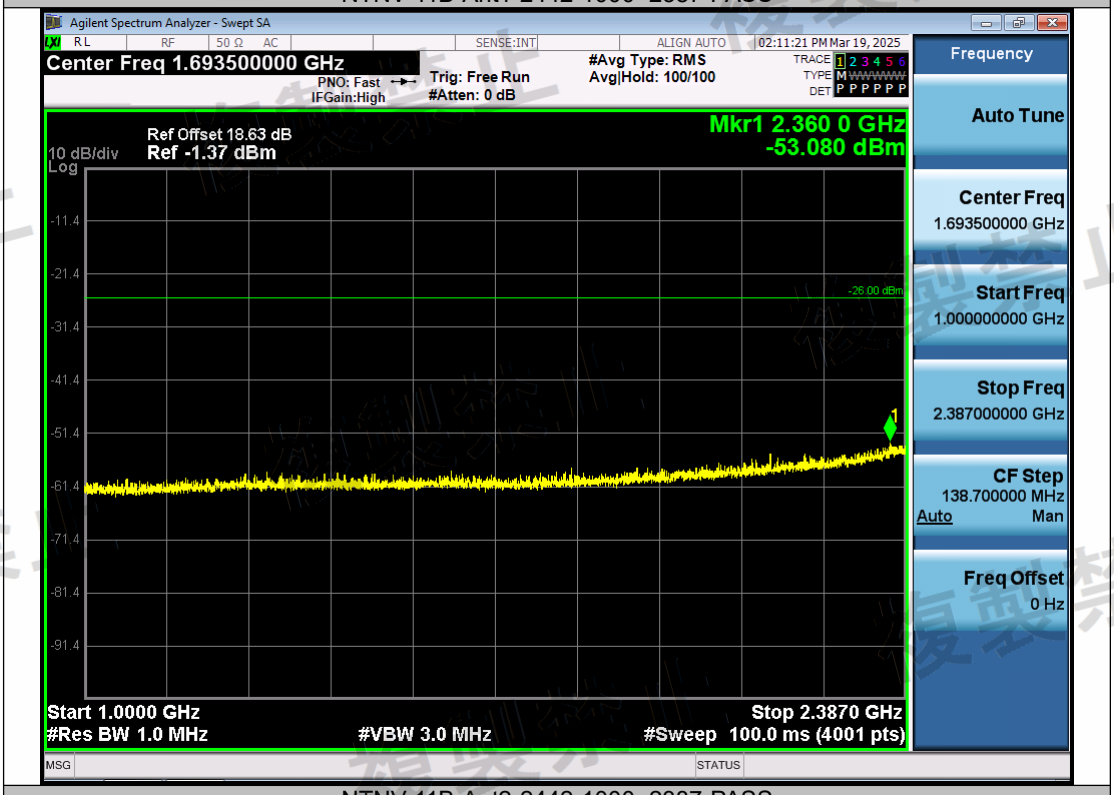
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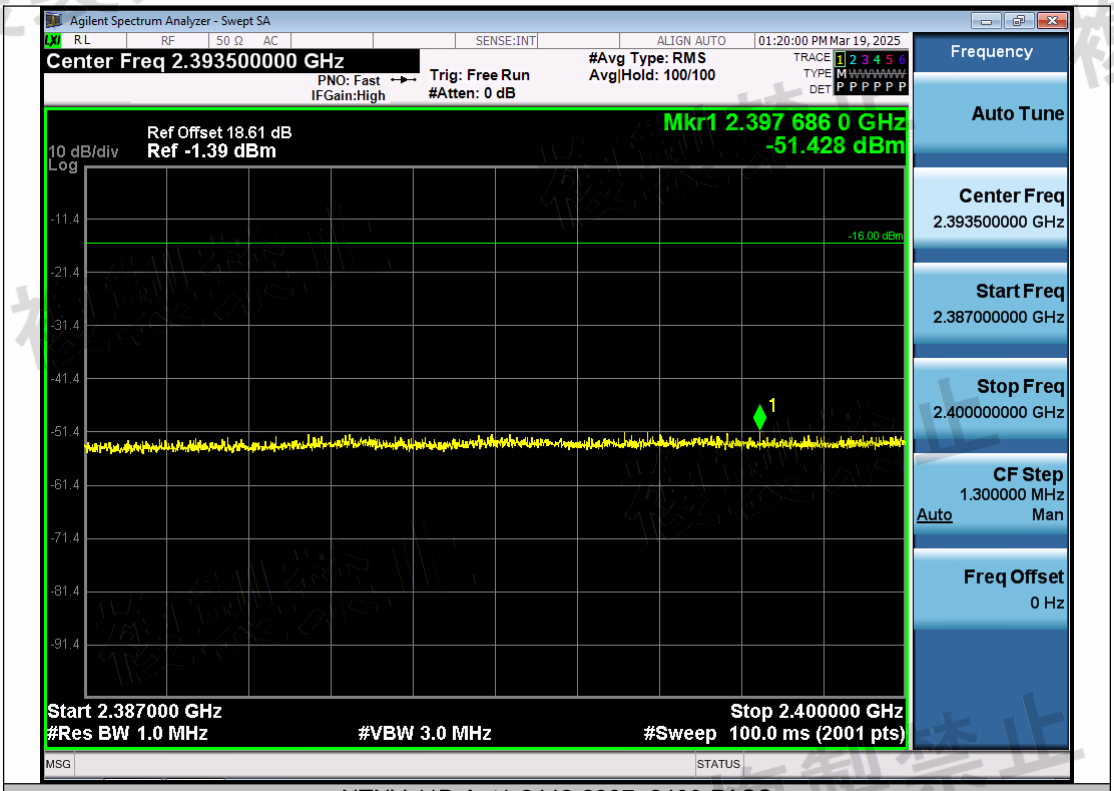
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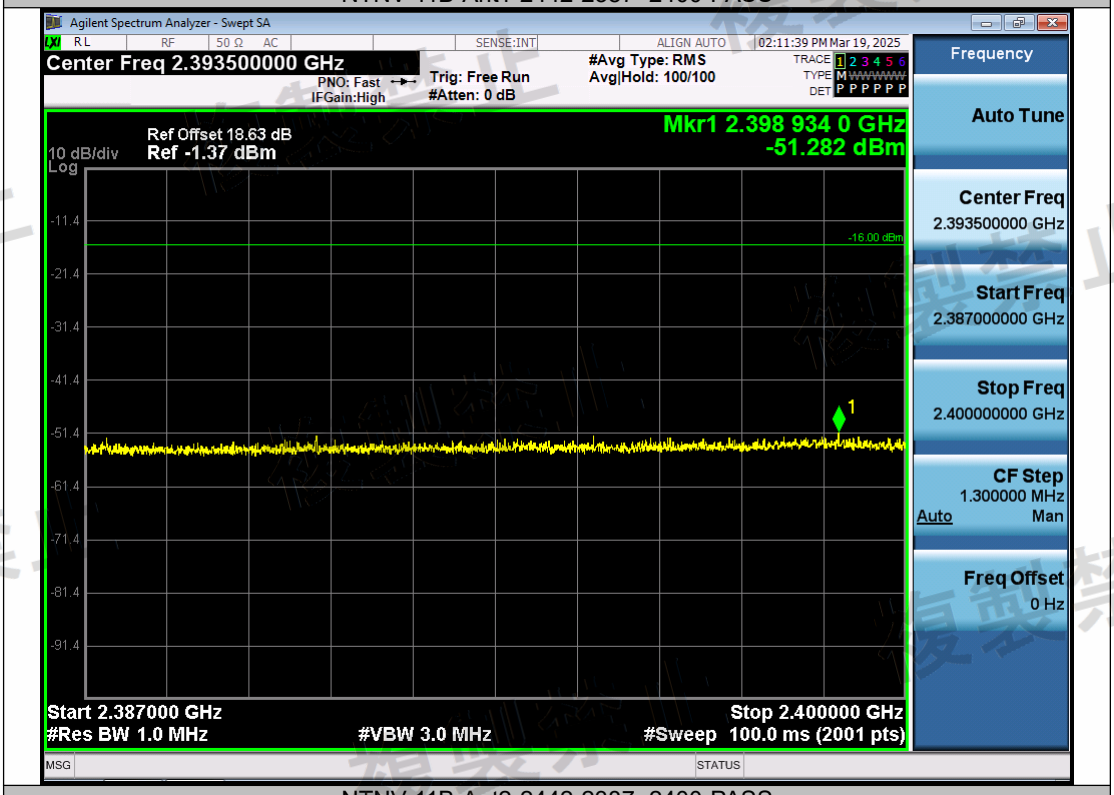
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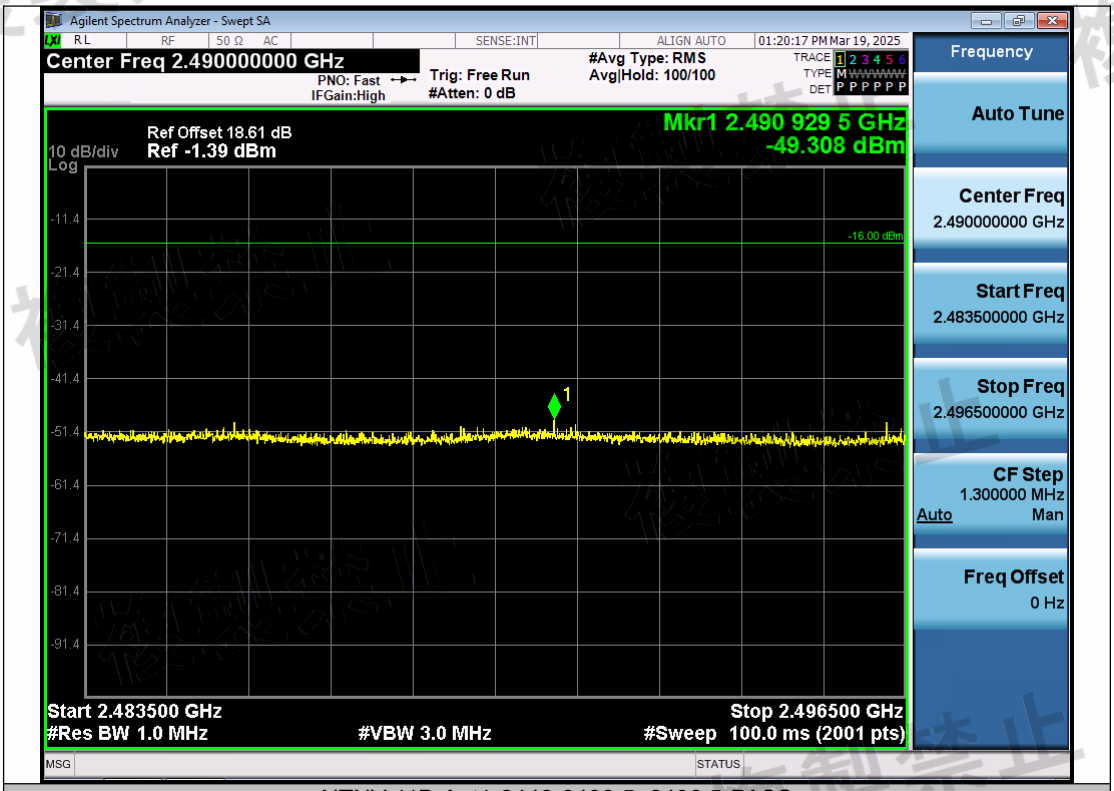
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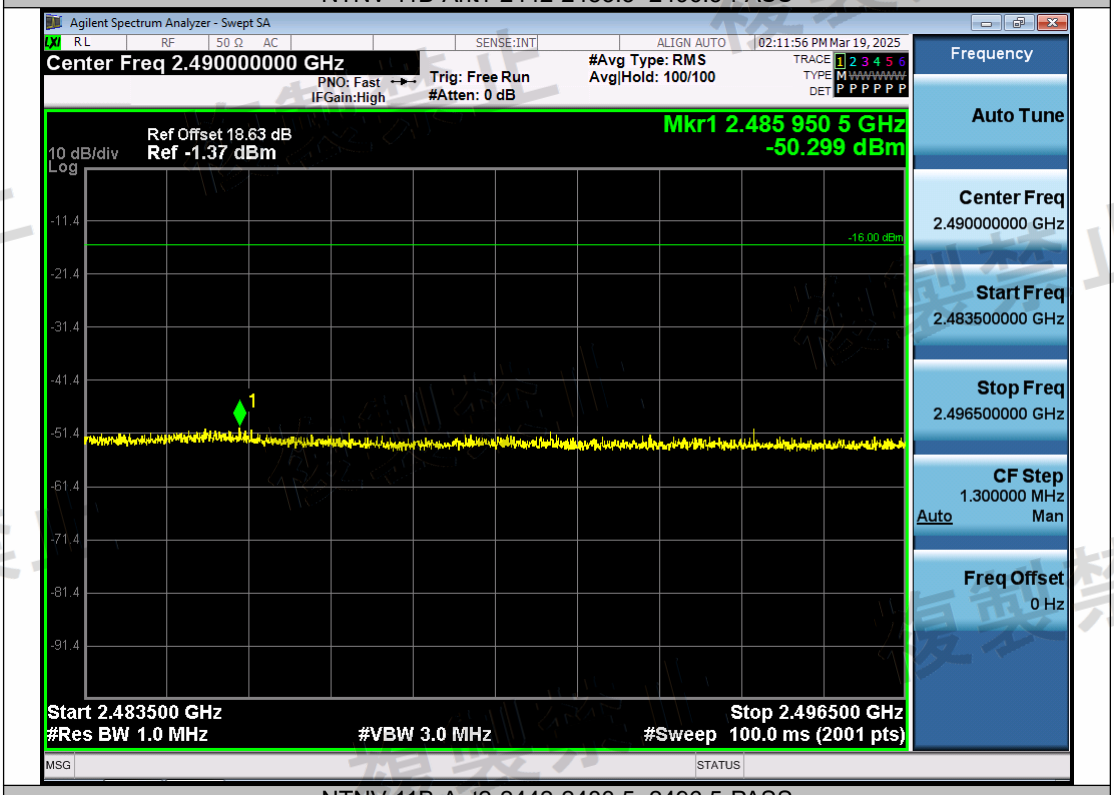
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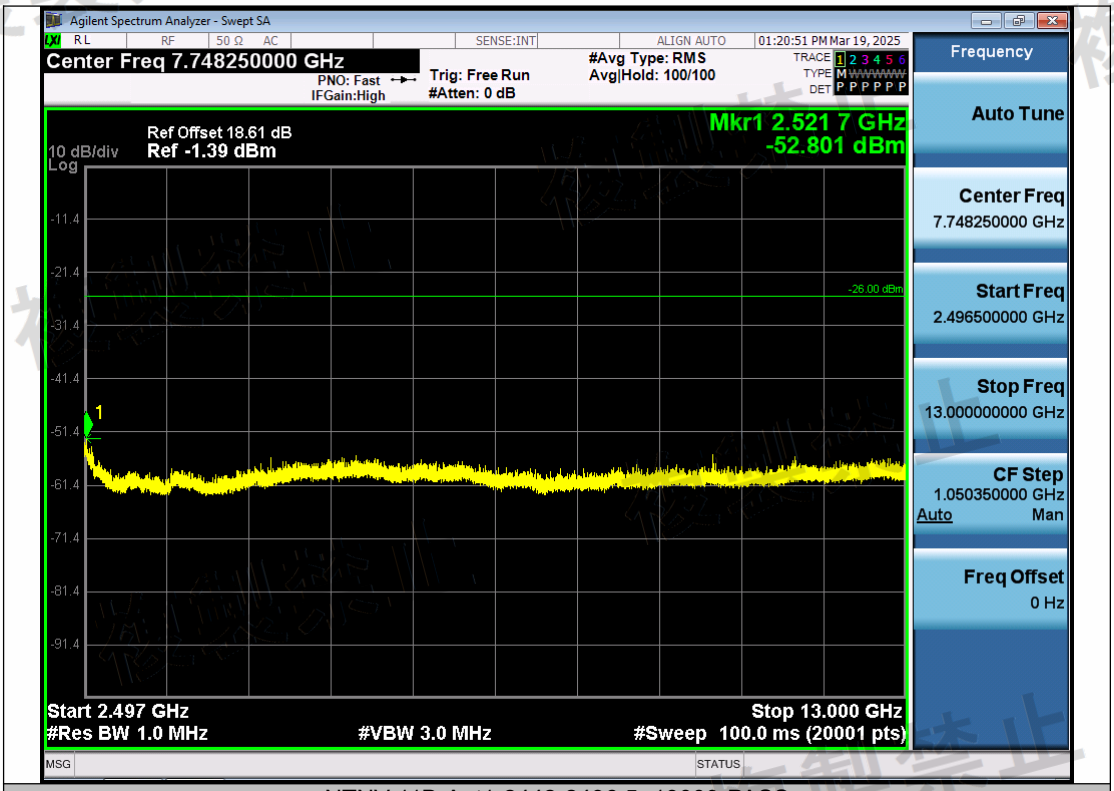
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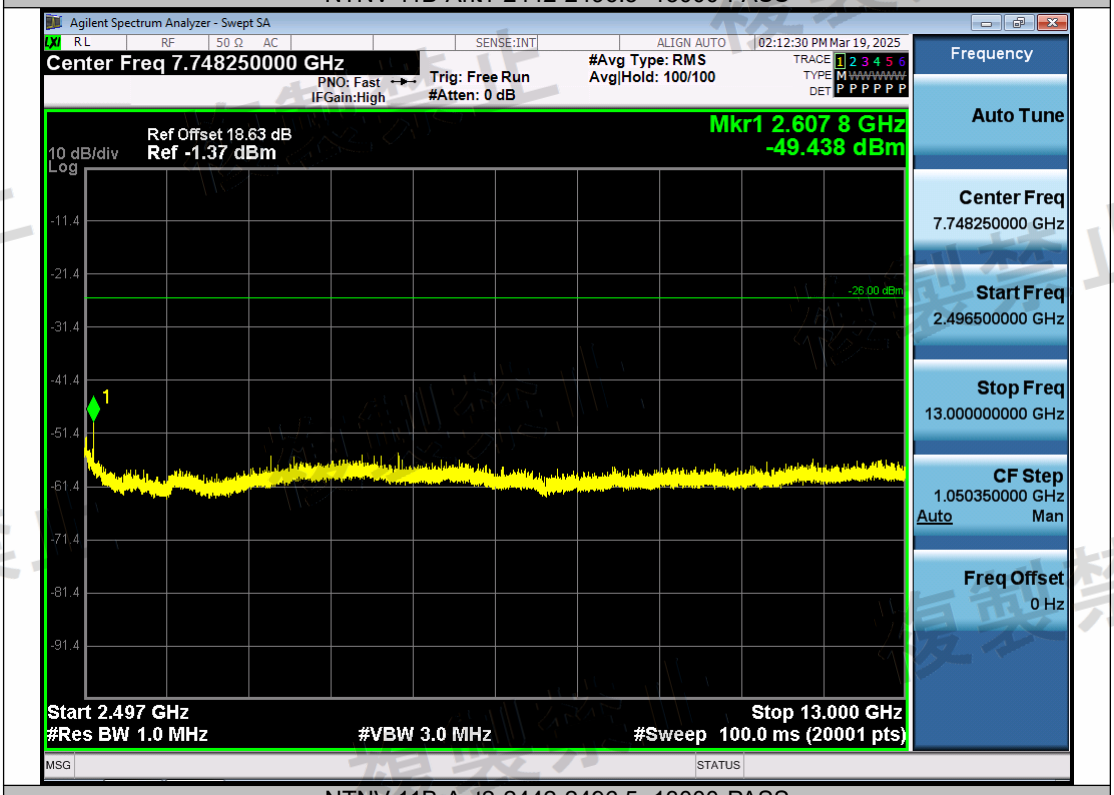
NTNV-11B-Ant1-2442-2483.5~2496.5-PASS



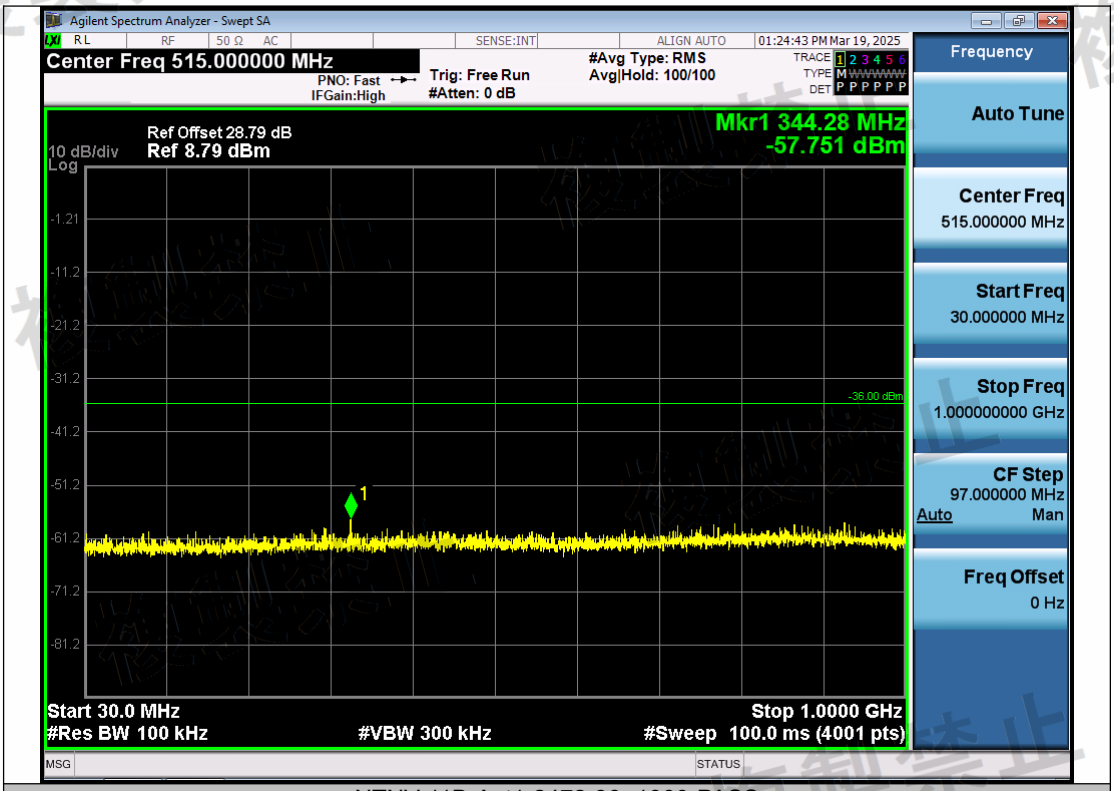
NTNV-11B-Ant2-2442-2483.5~2496.5-PASS



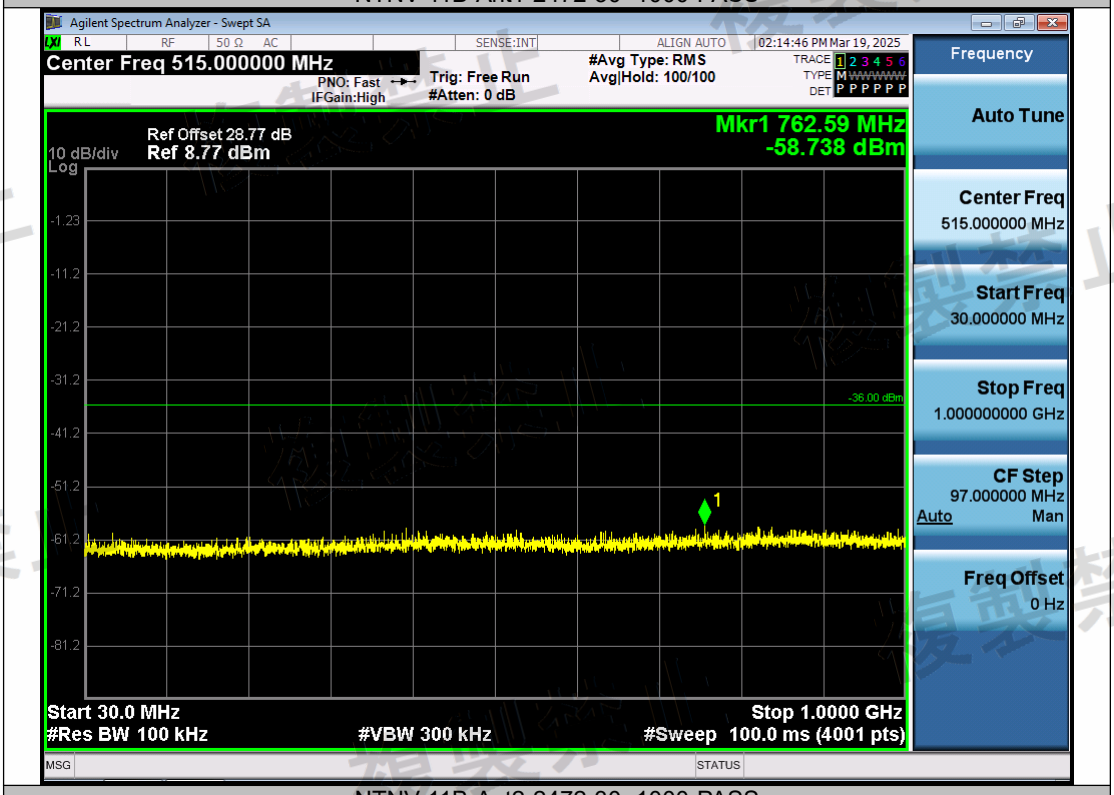
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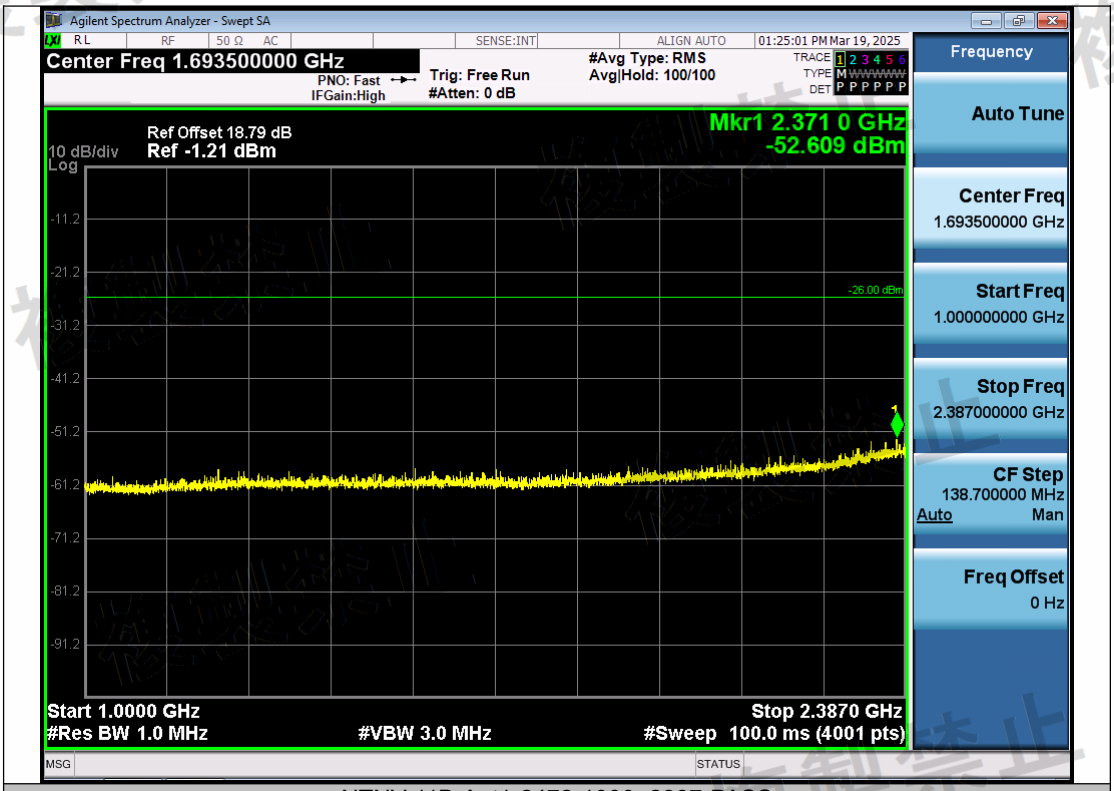
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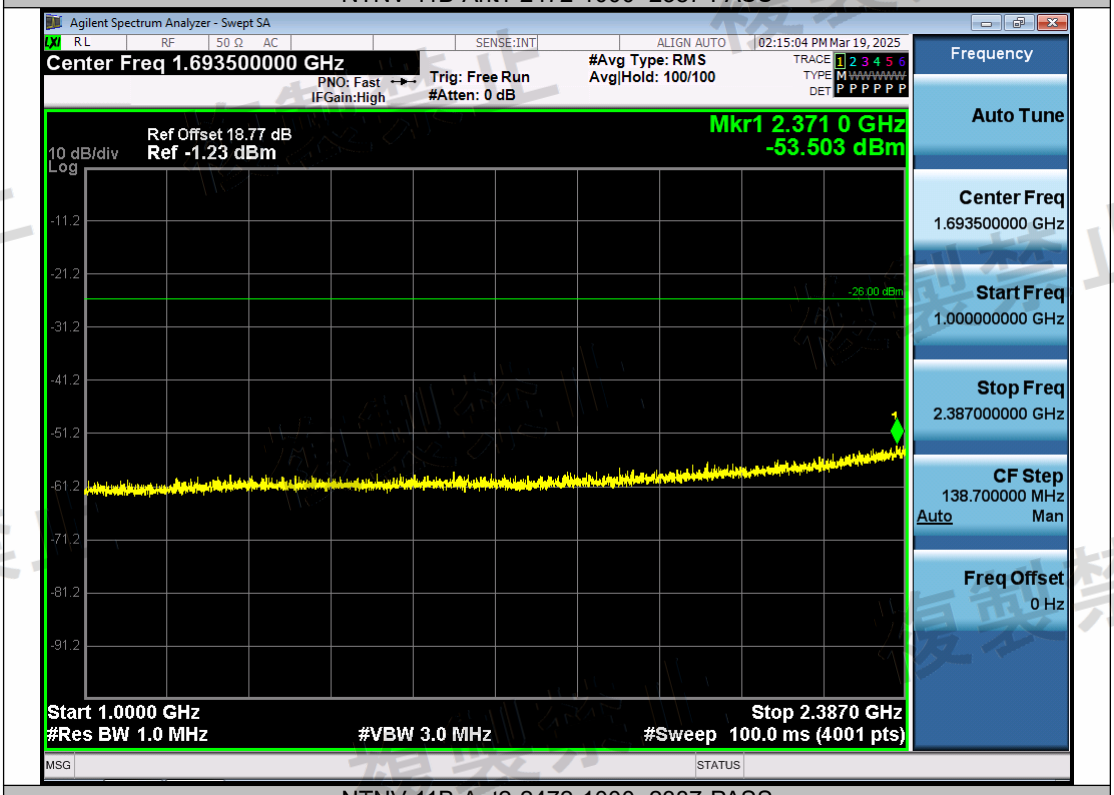
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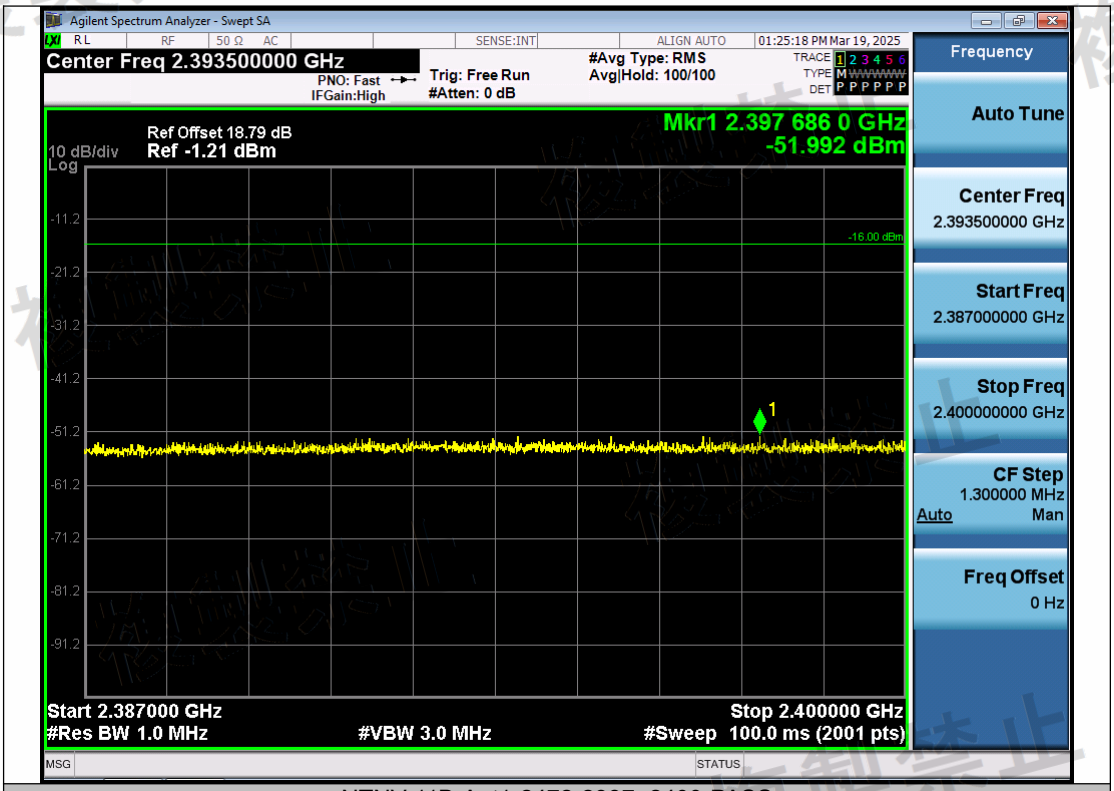
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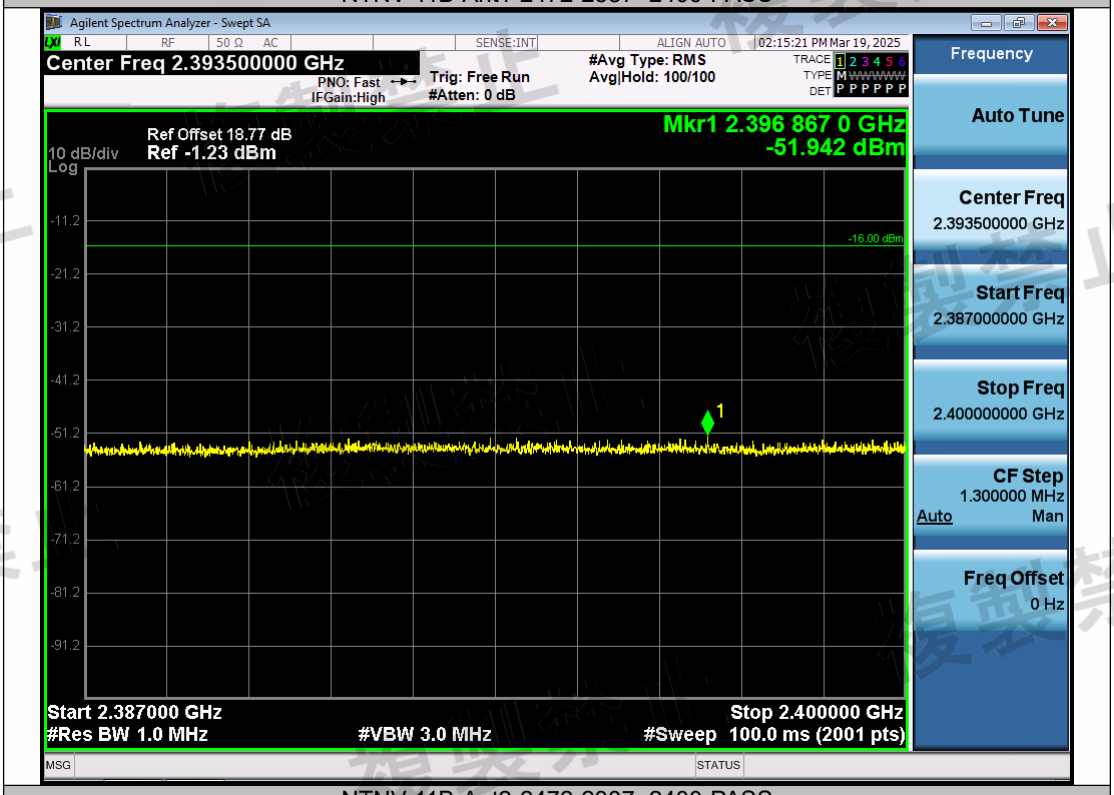
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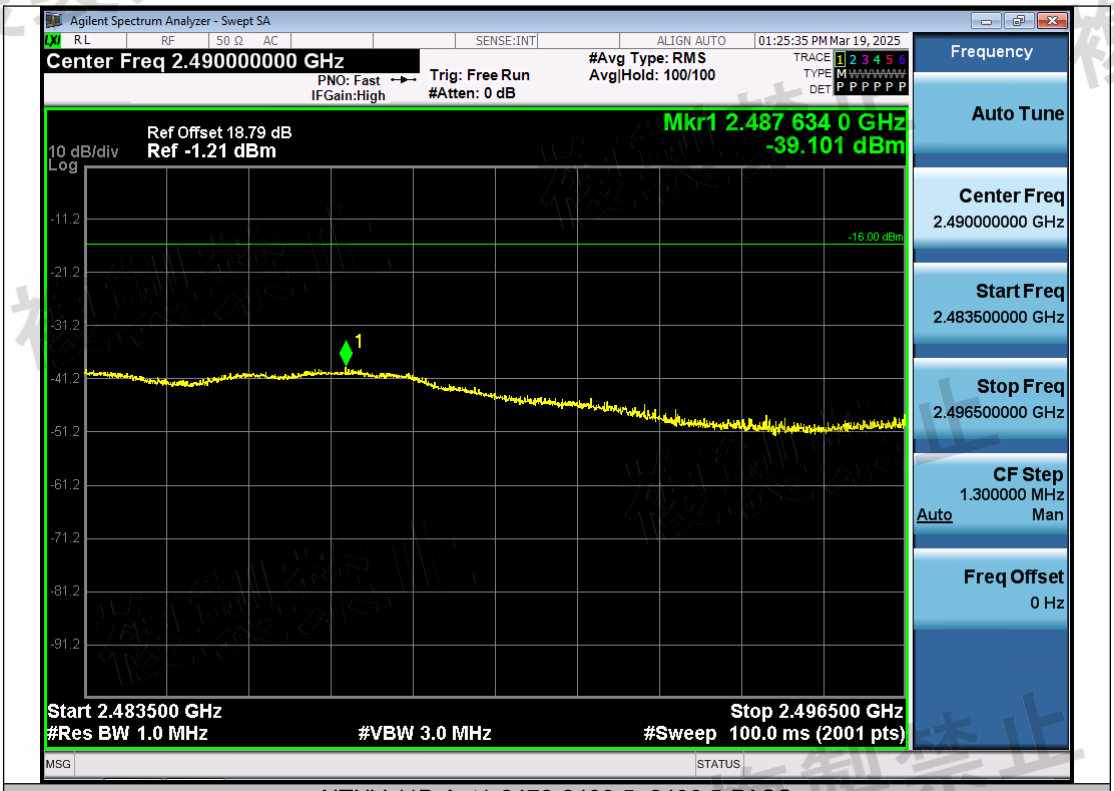
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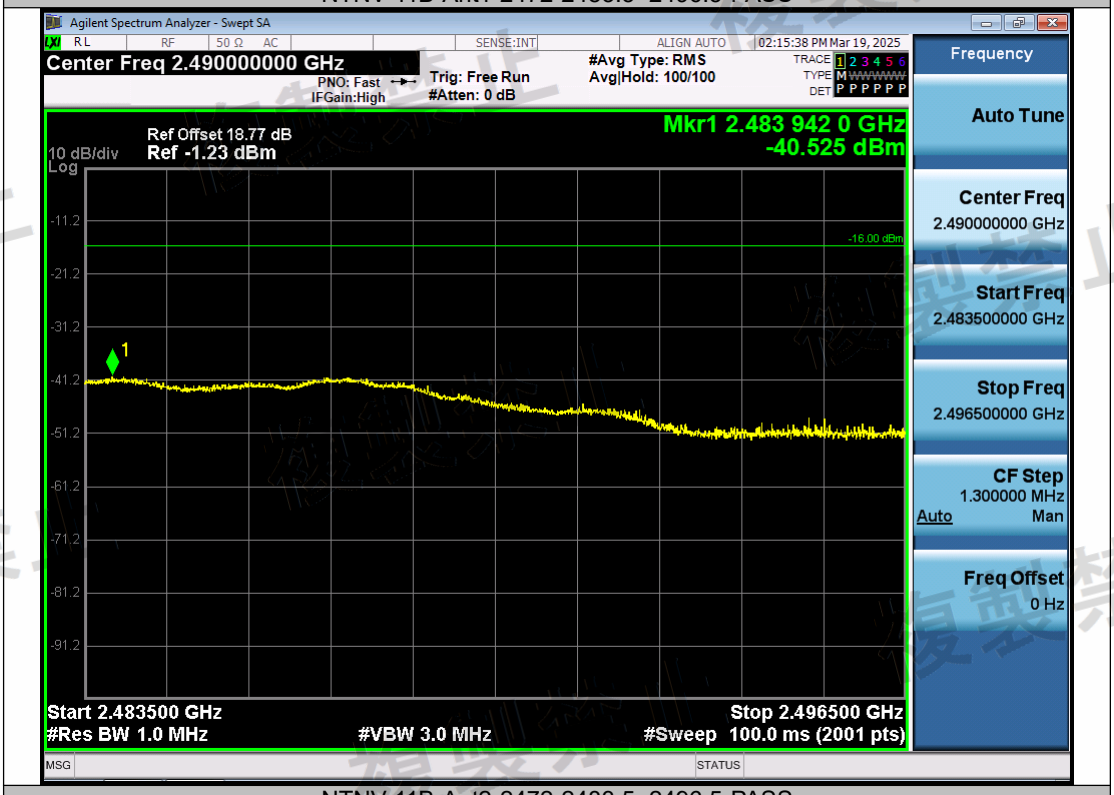
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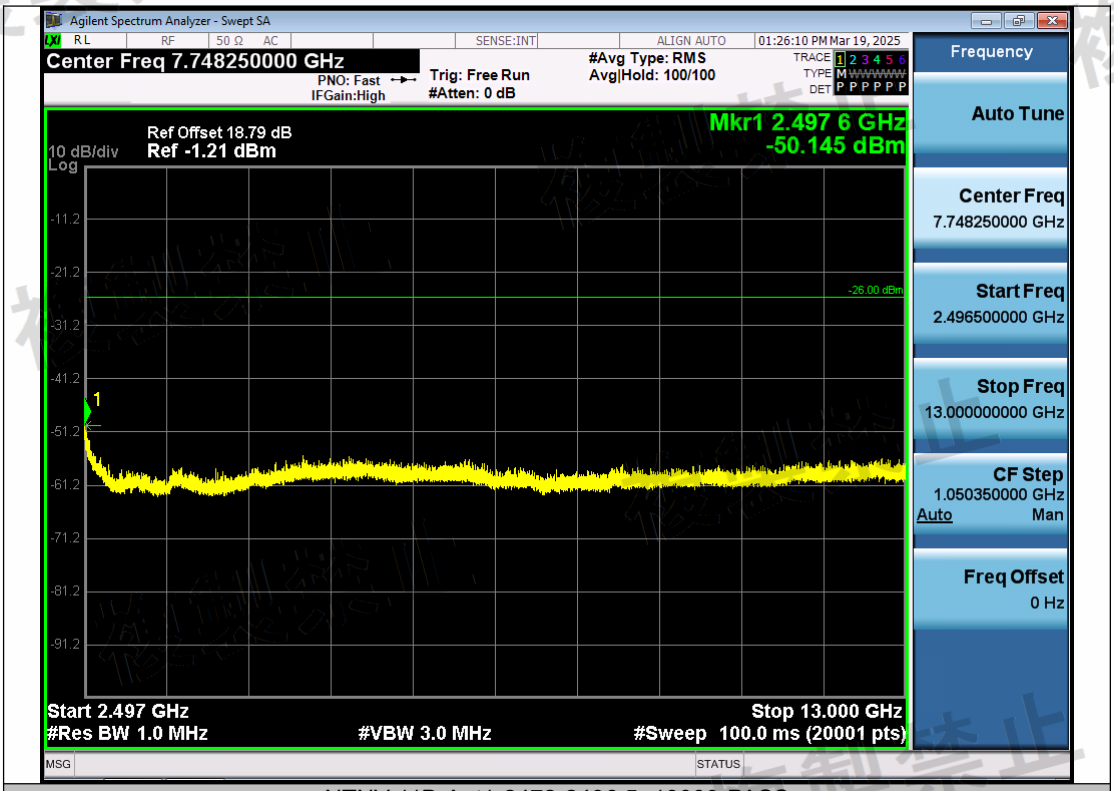
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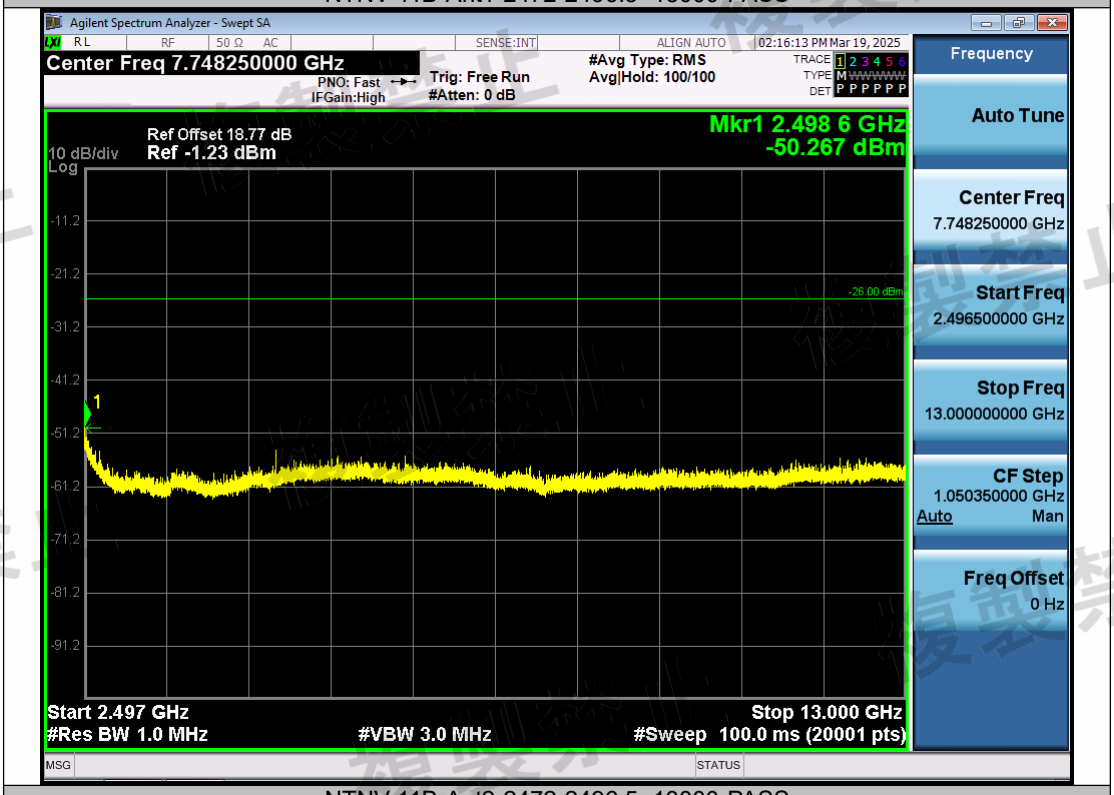
NTNV-11B-Ant1-2472-2483.5~2496.5-PASS



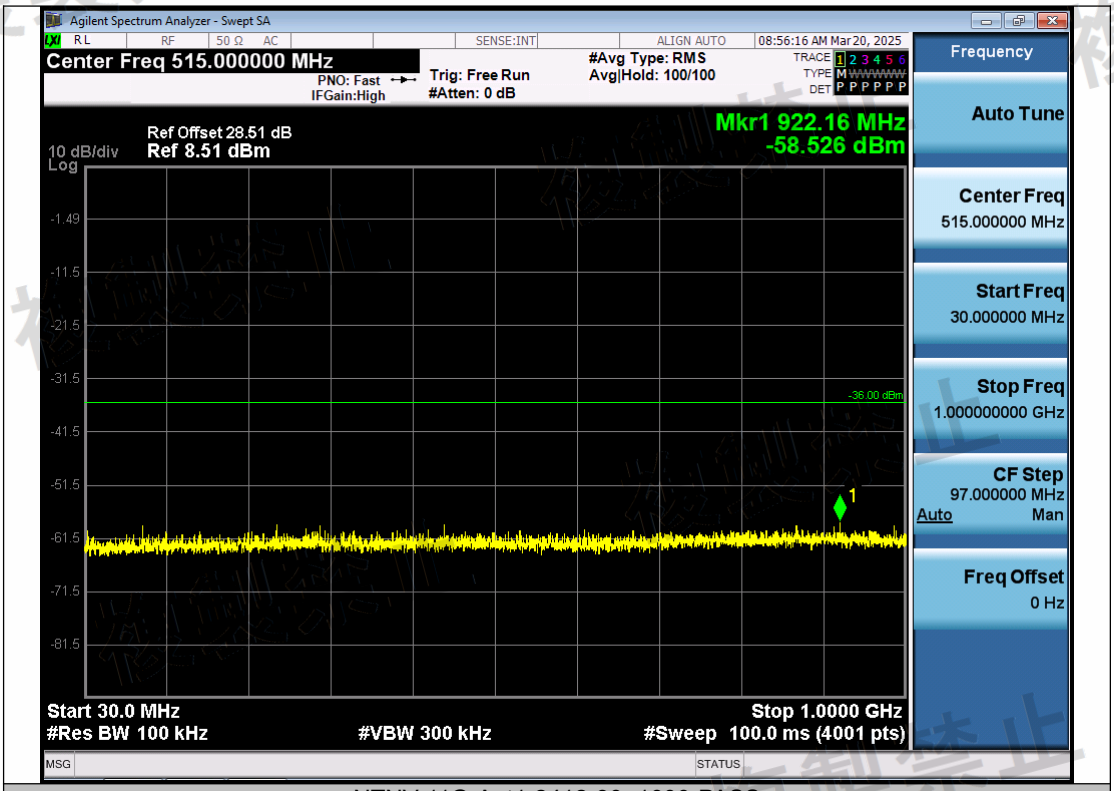
NTNV-11B-Ant2-2472-2483.5~2496.5-PASS



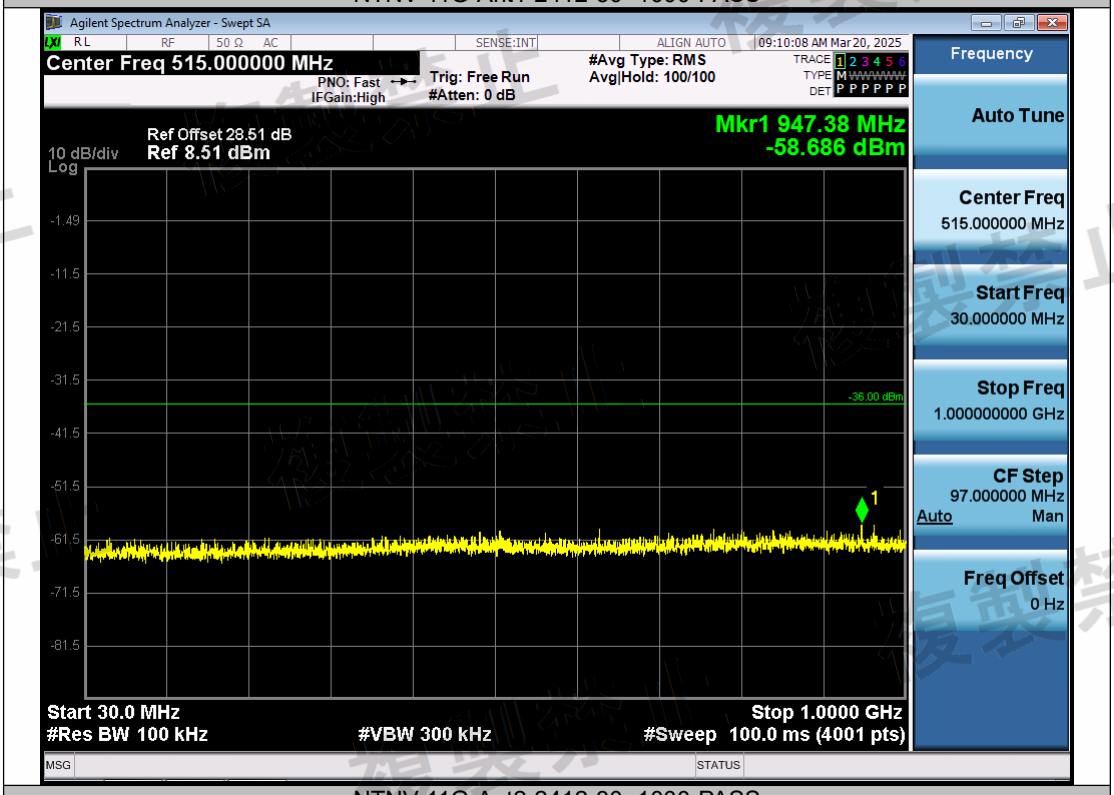
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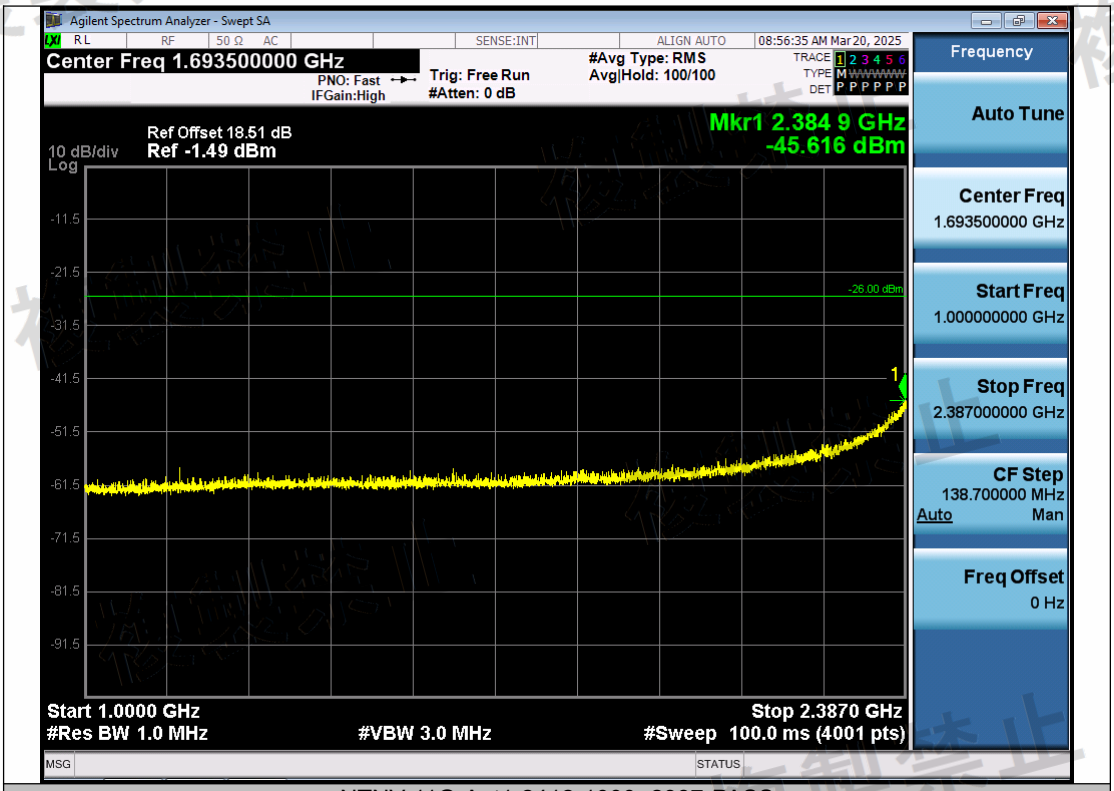
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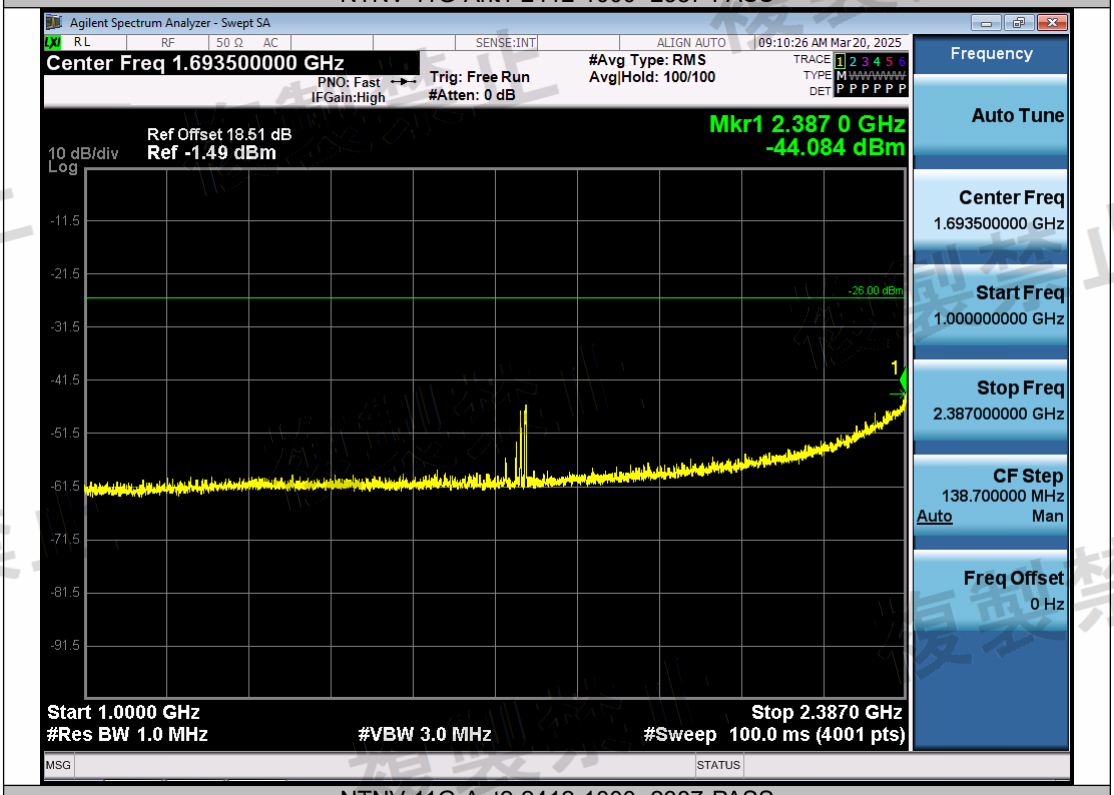
NTNV-11G-Ant1-2412-30~1000-PASS



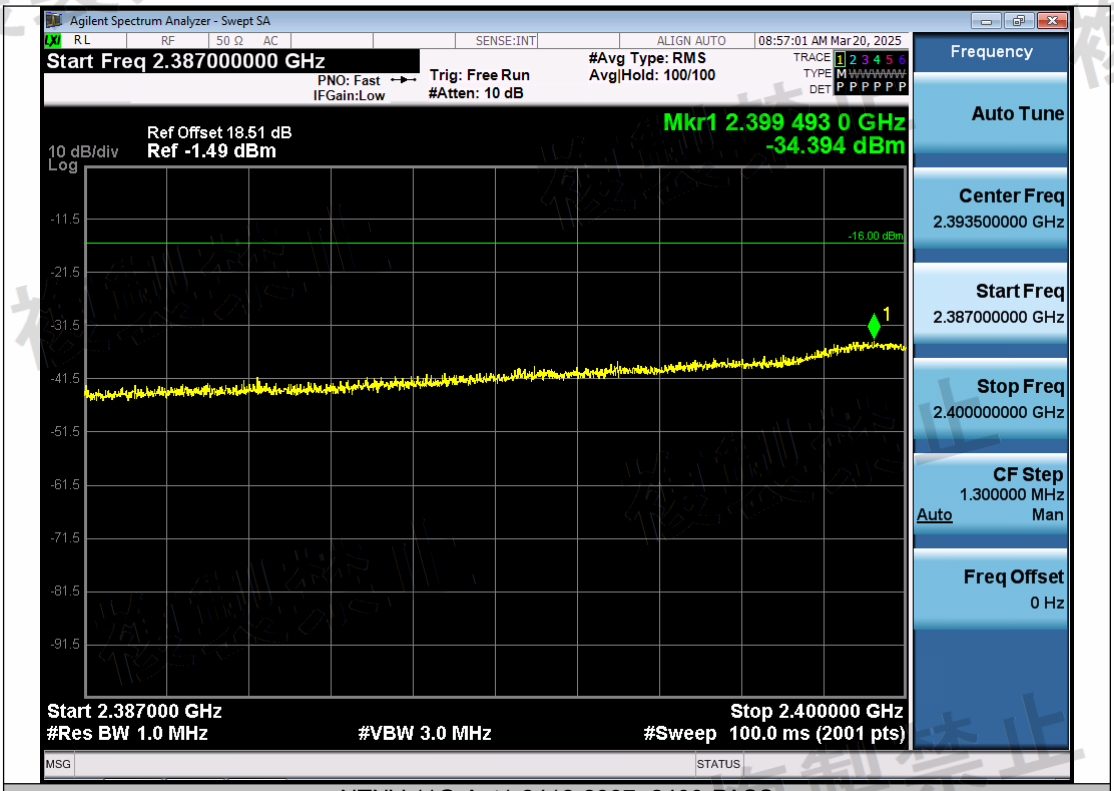
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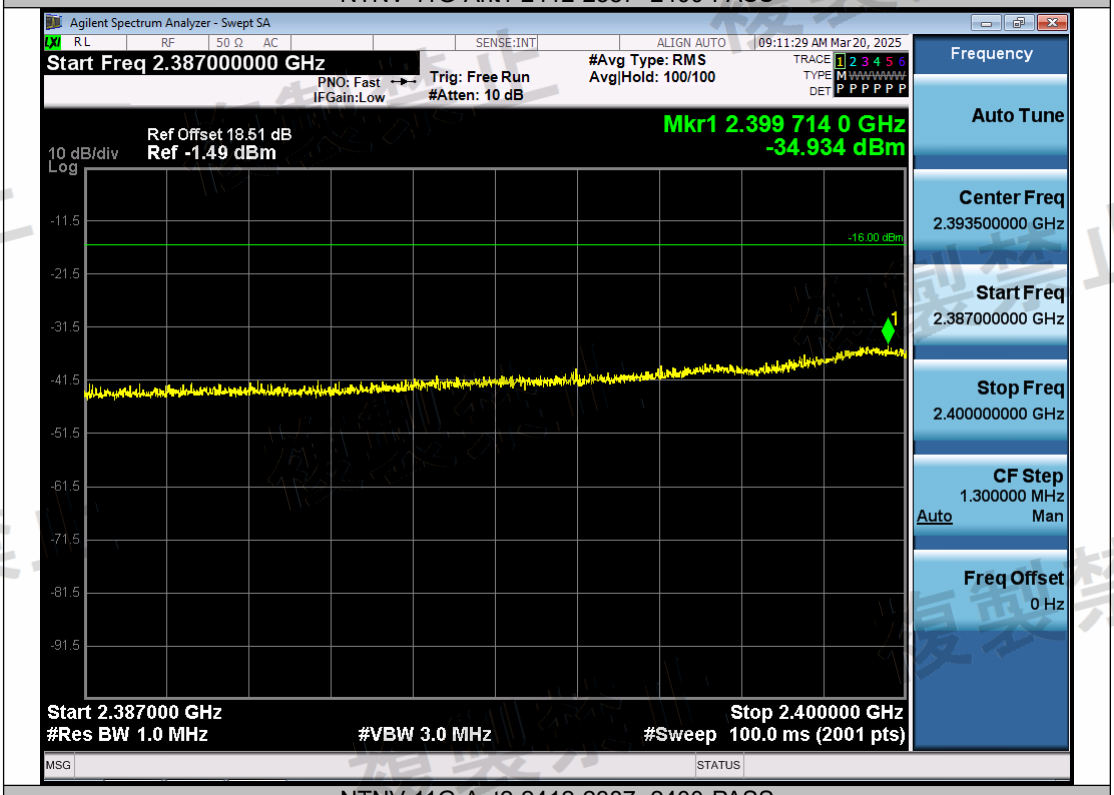
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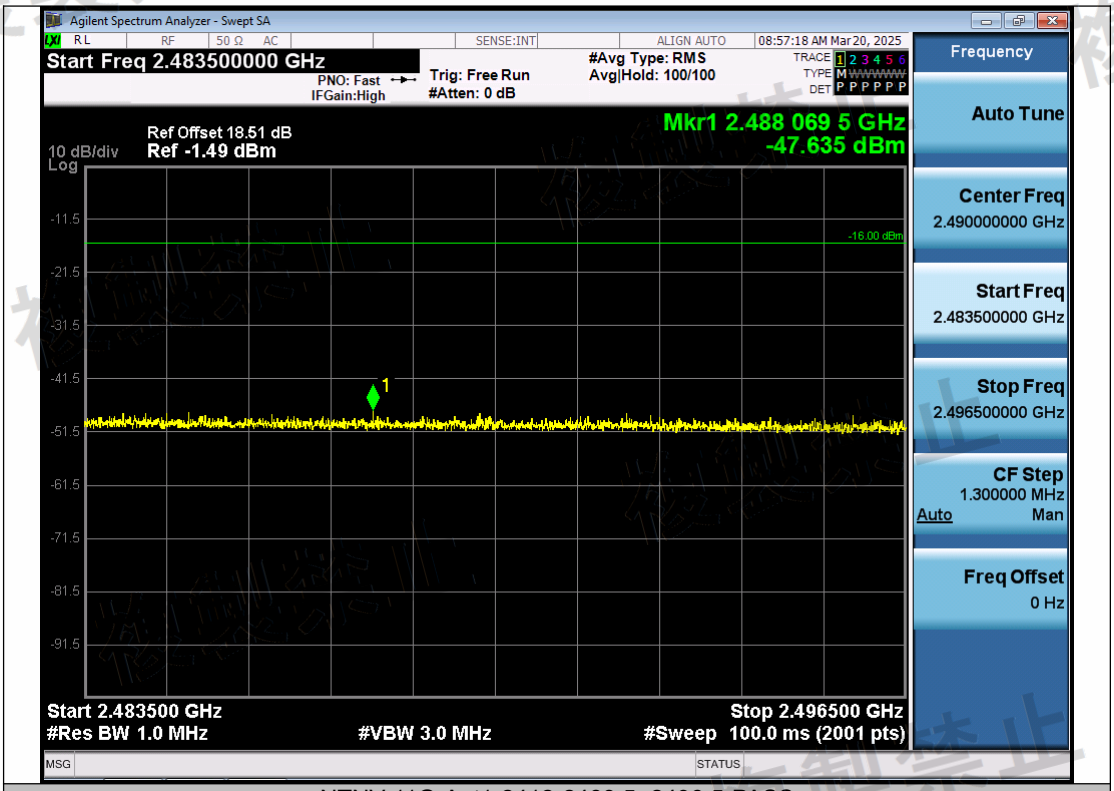
NTNV-11G-Ant2-2412-1000~2387-PASS



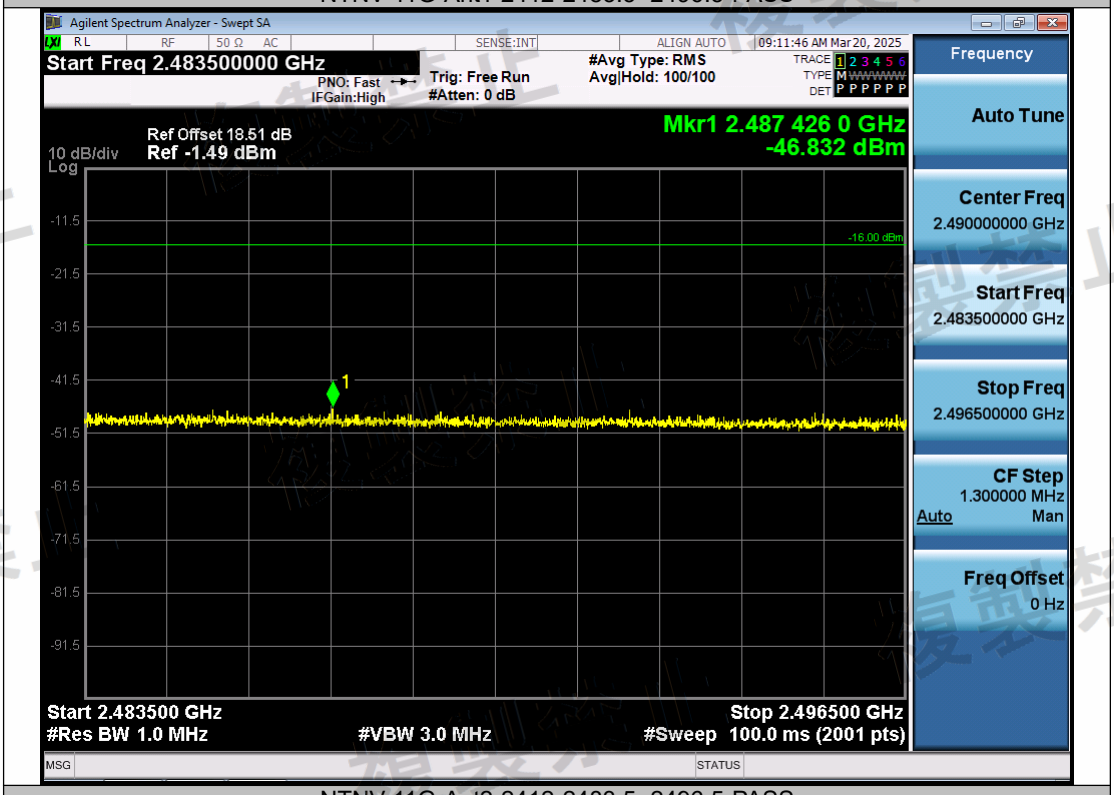
NTNV-11G-Ant1-2412-2387~2400-PASS



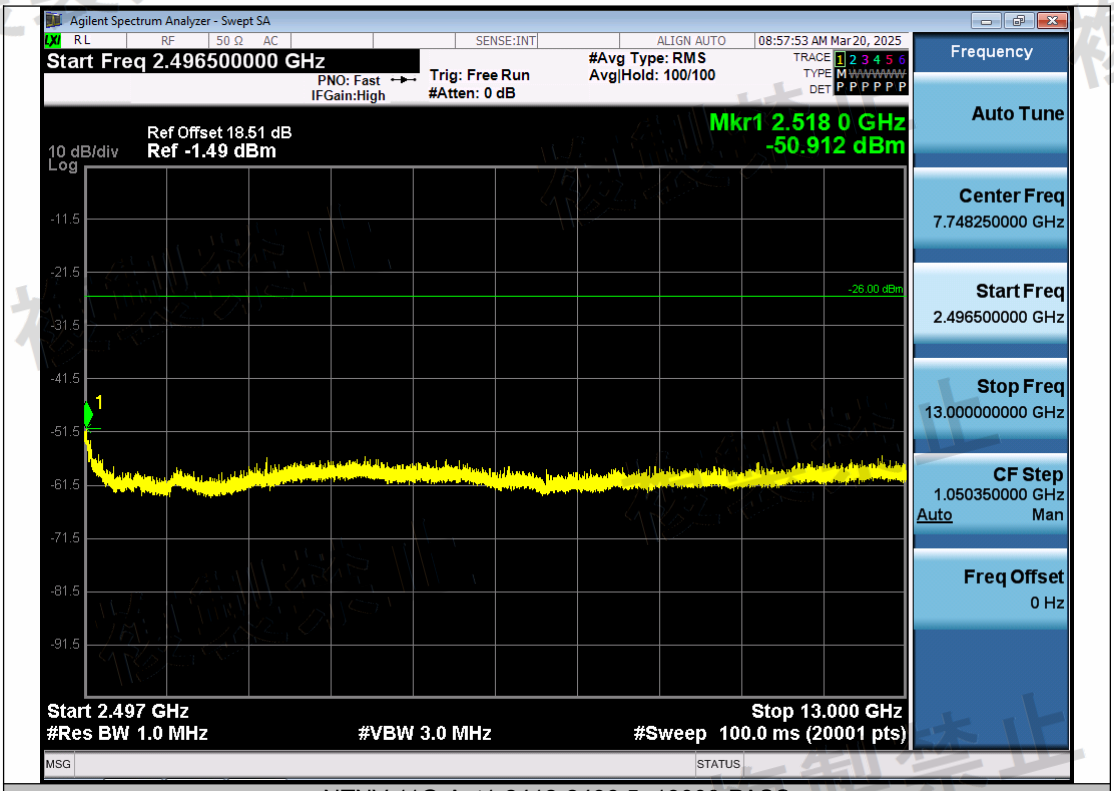
NTNV-11G-Ant2-2412-2387~2400-PASS



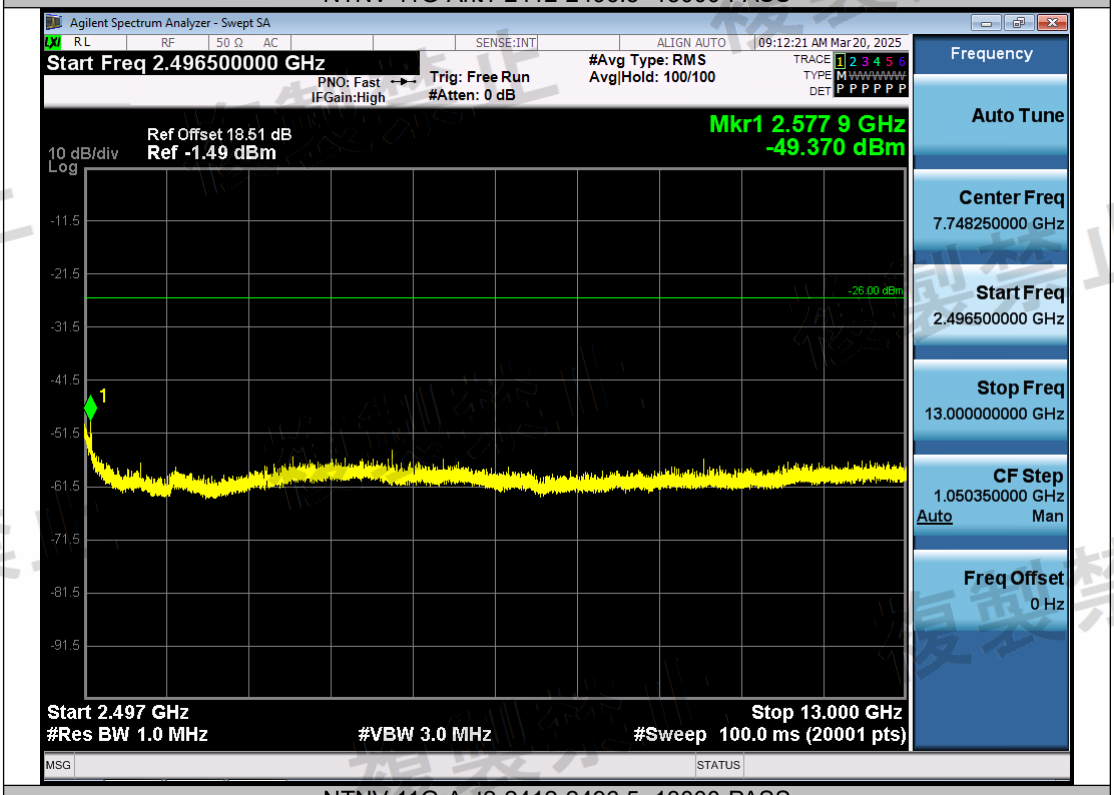
NTNV-11G-Ant1-2412-2483.5~2496.5-PASS



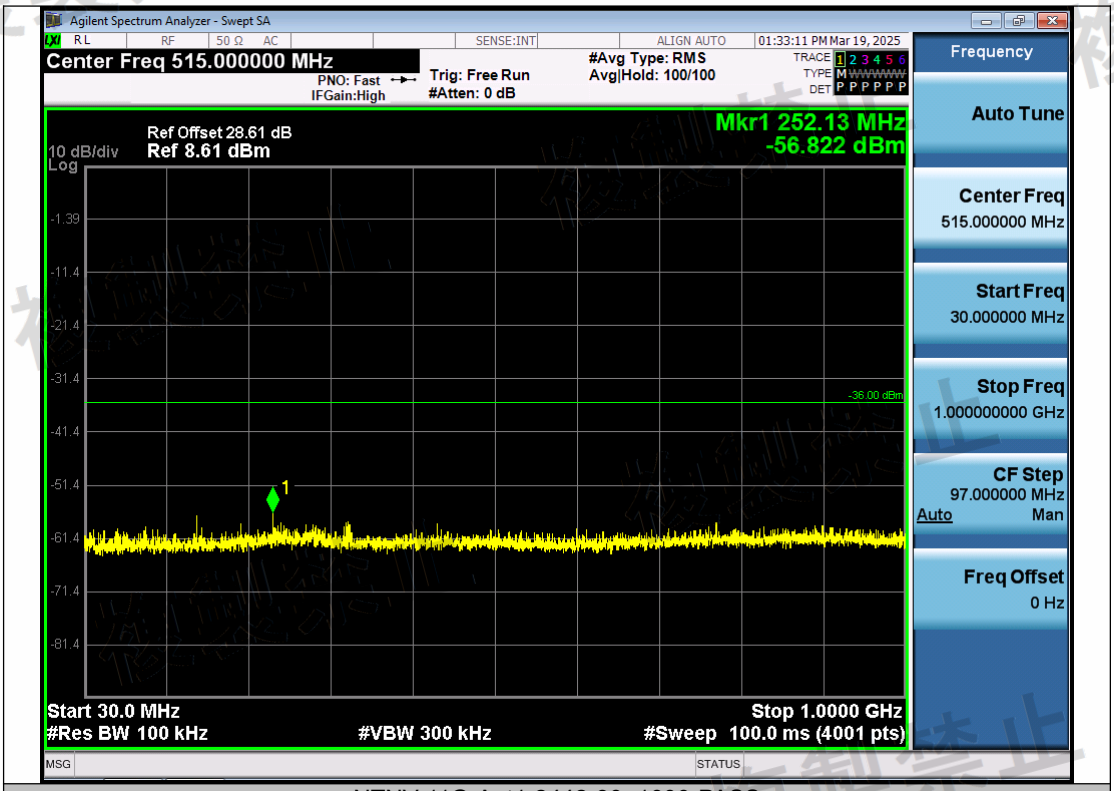
NTNV-11G-Ant2-2412-2483.5~2496.5-PASS



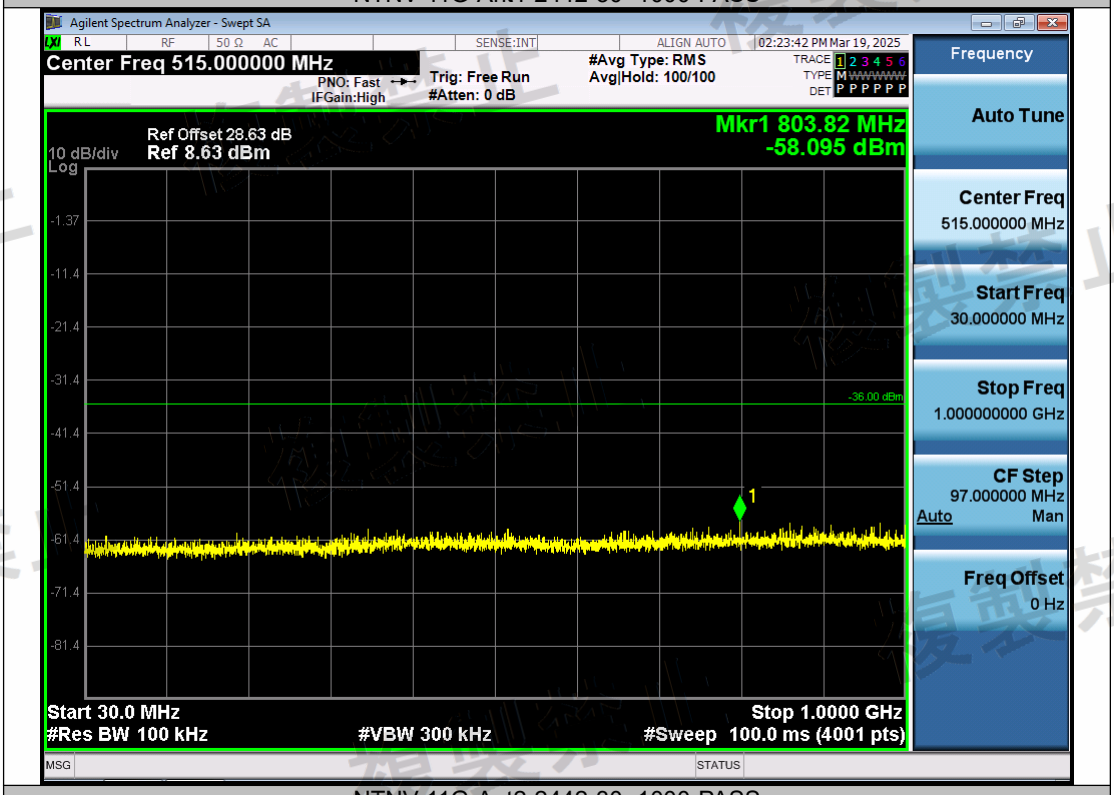
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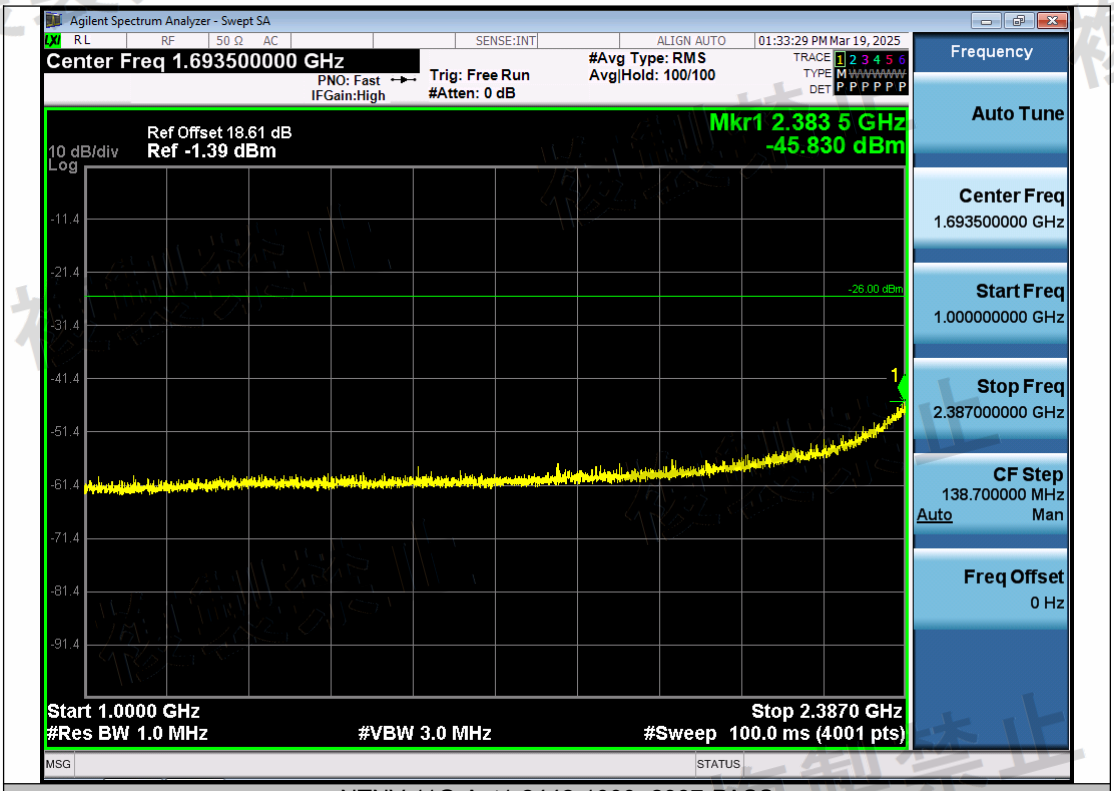
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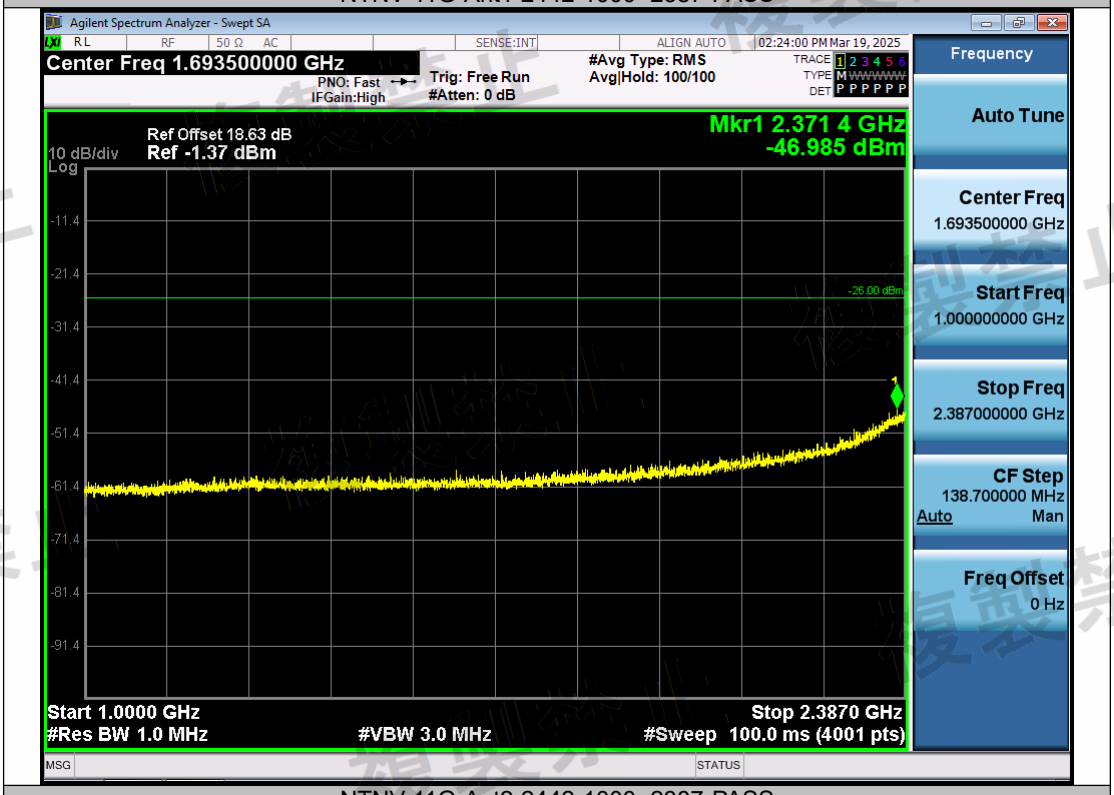
NTNV-11G-Ant1-2442-30~1000-PASS



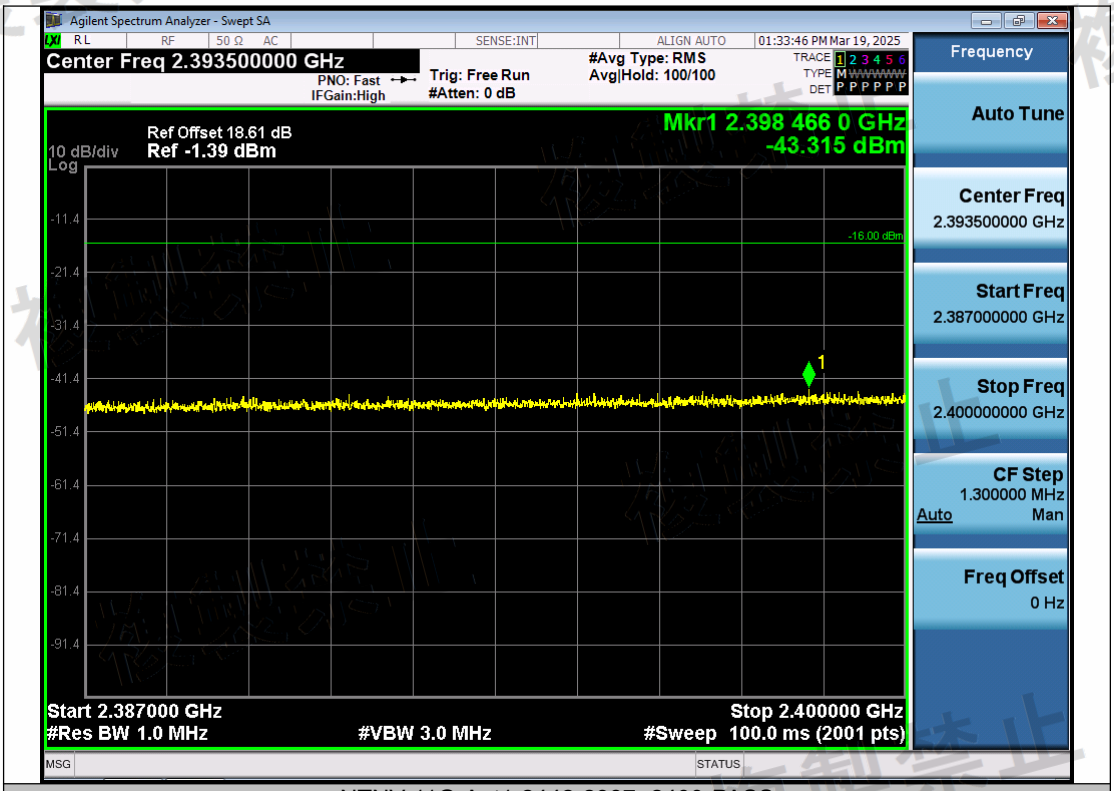
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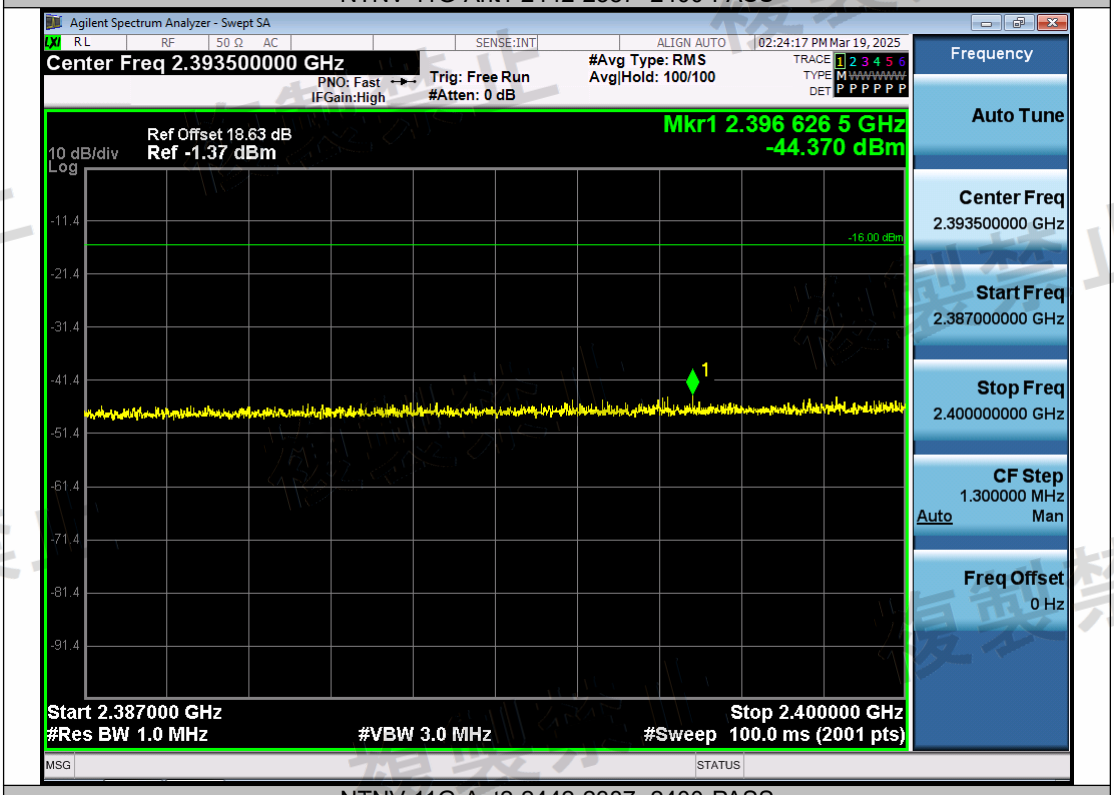
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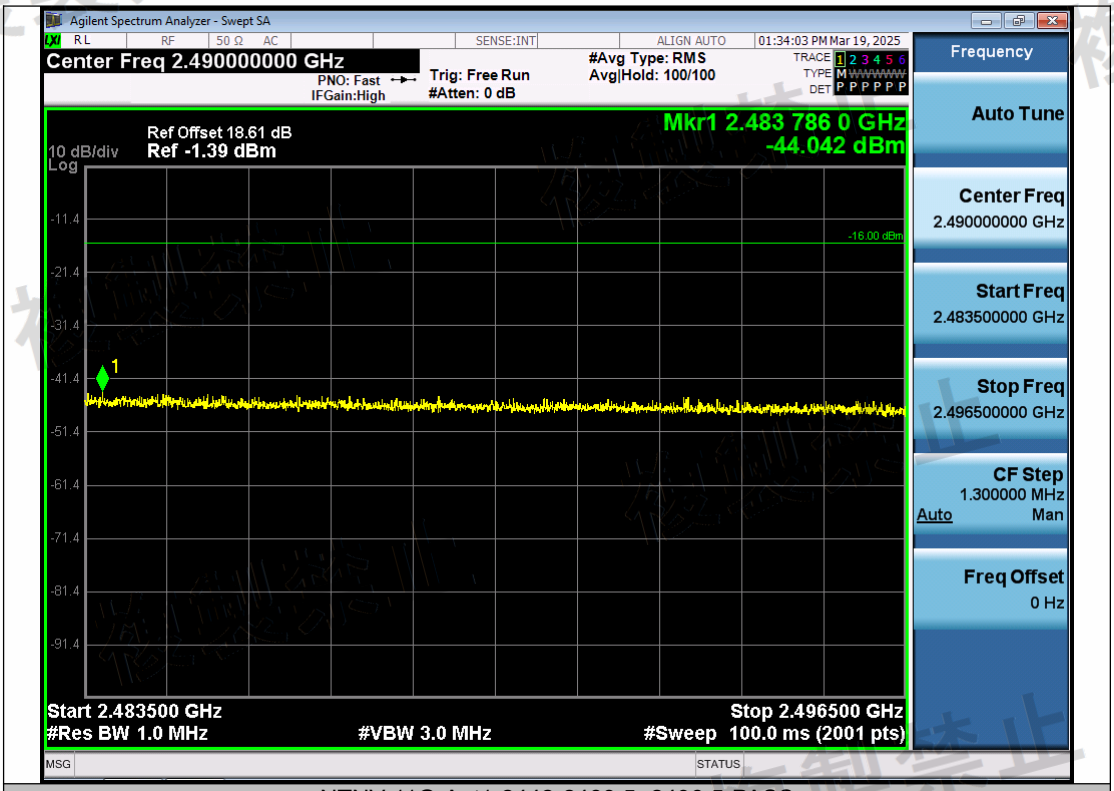
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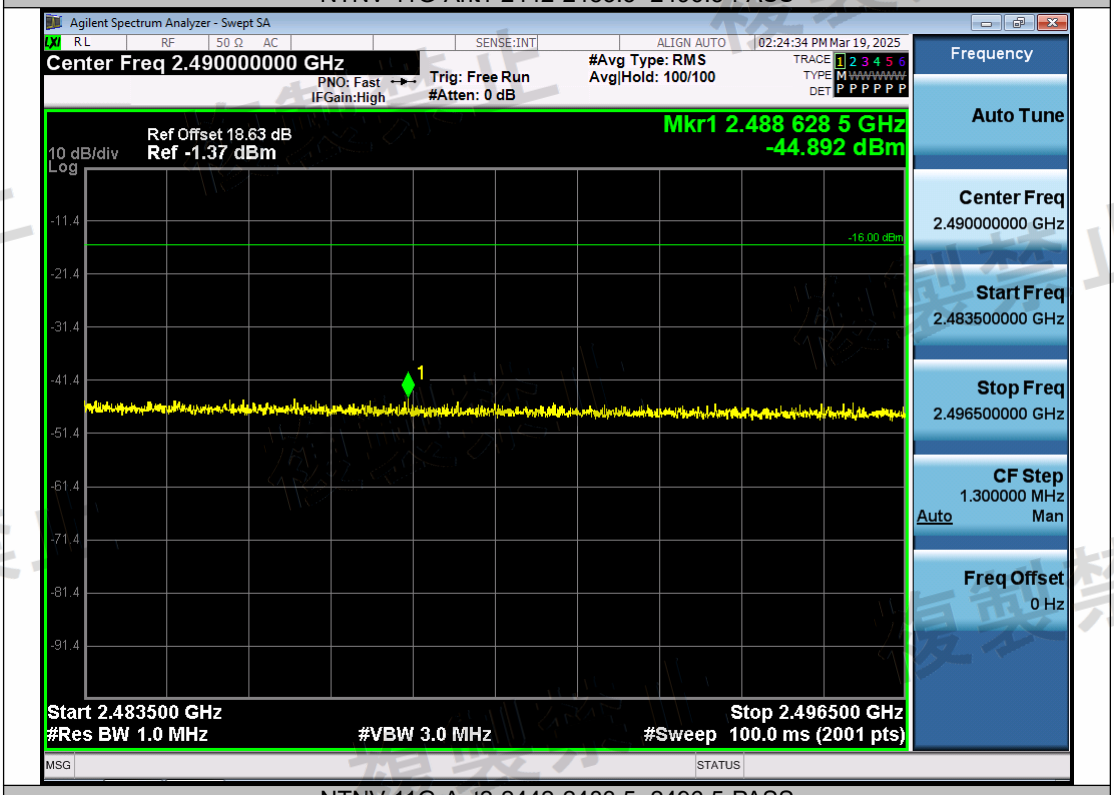
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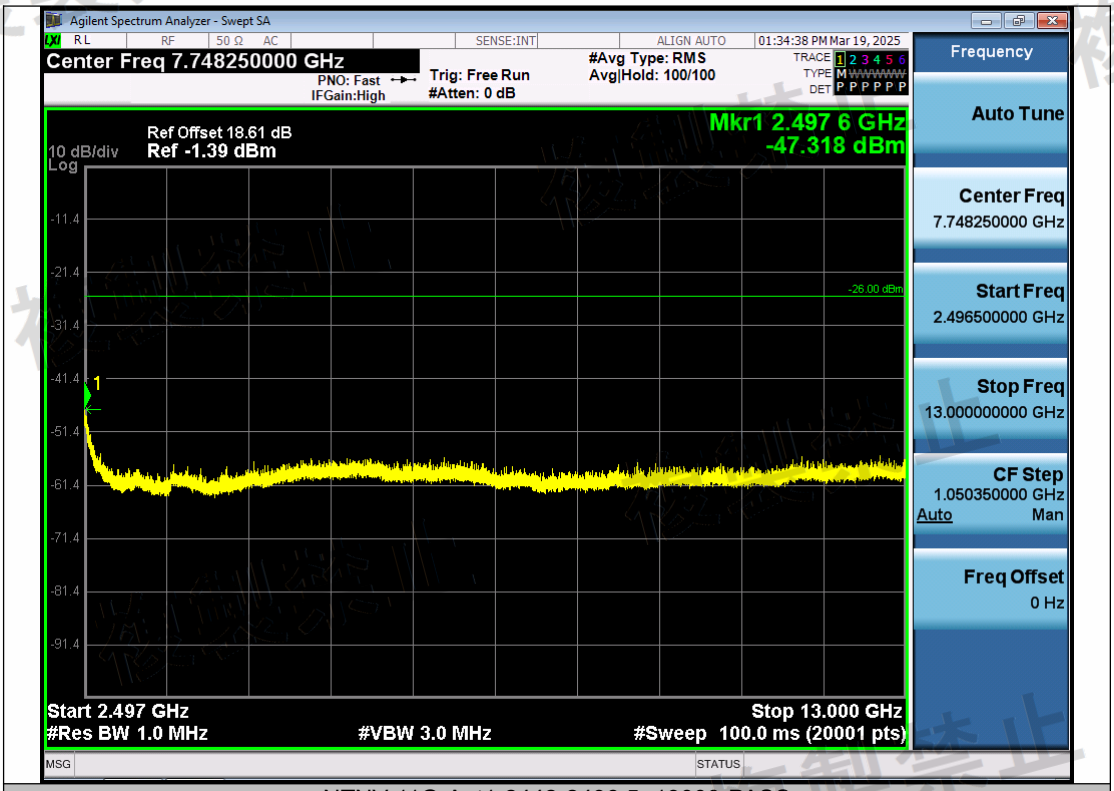
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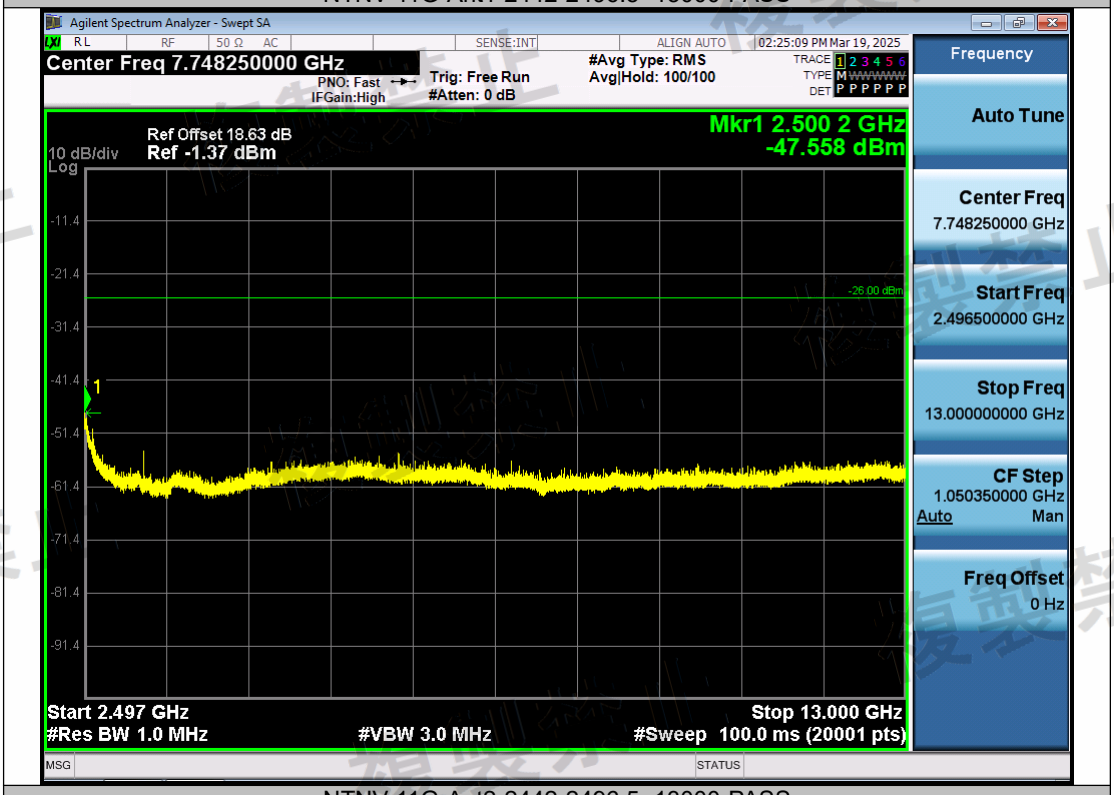
NTNV-11G-Ant1-2442-2483.5~2496.5-PASS



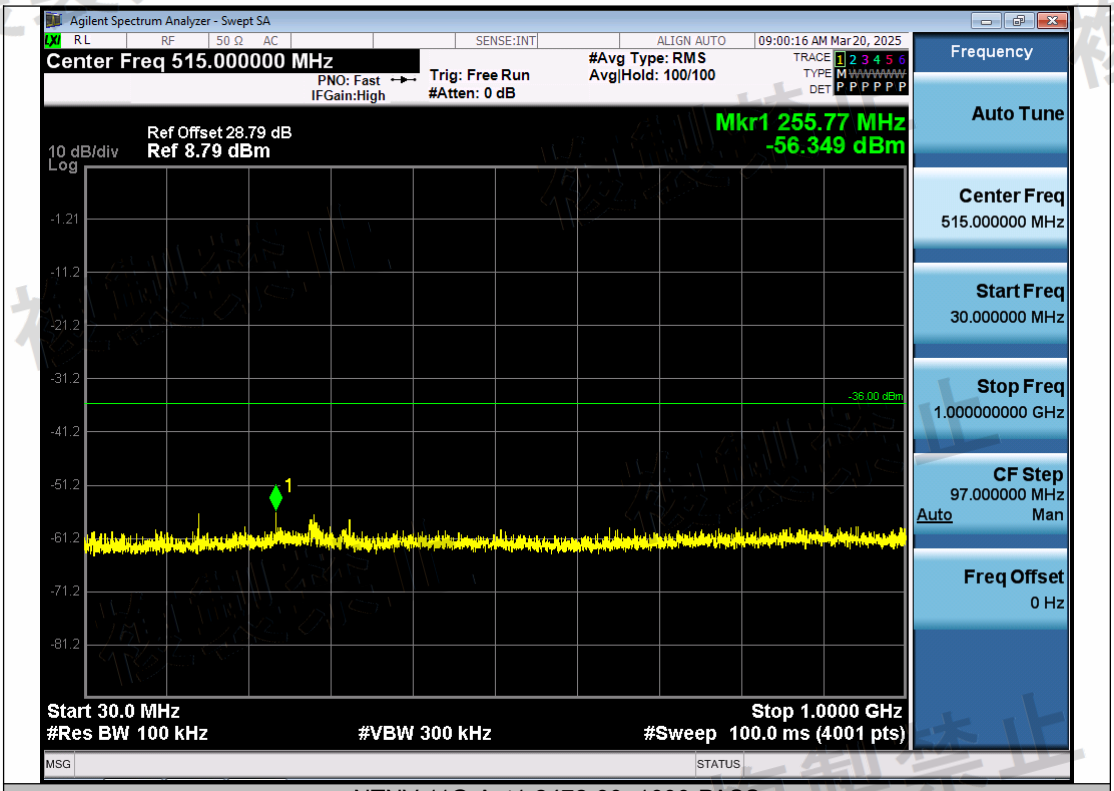
NTNV-11G-Ant2-2442-2483.5~2496.5-PASS



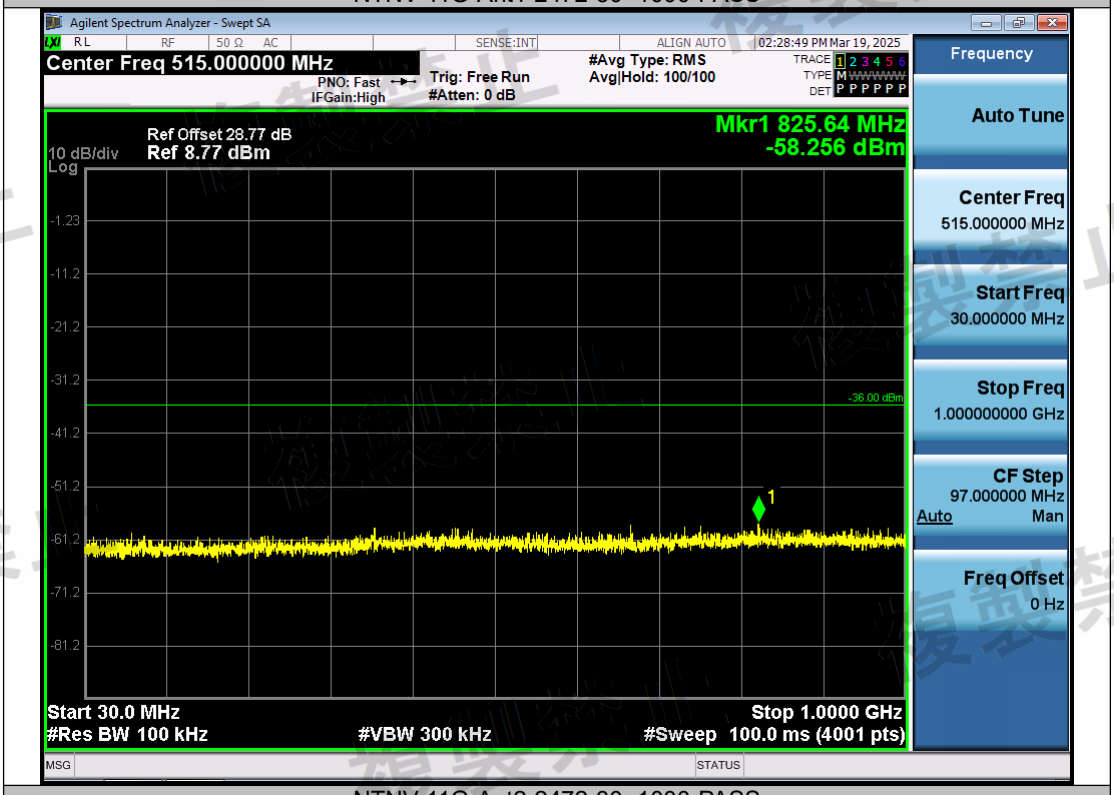
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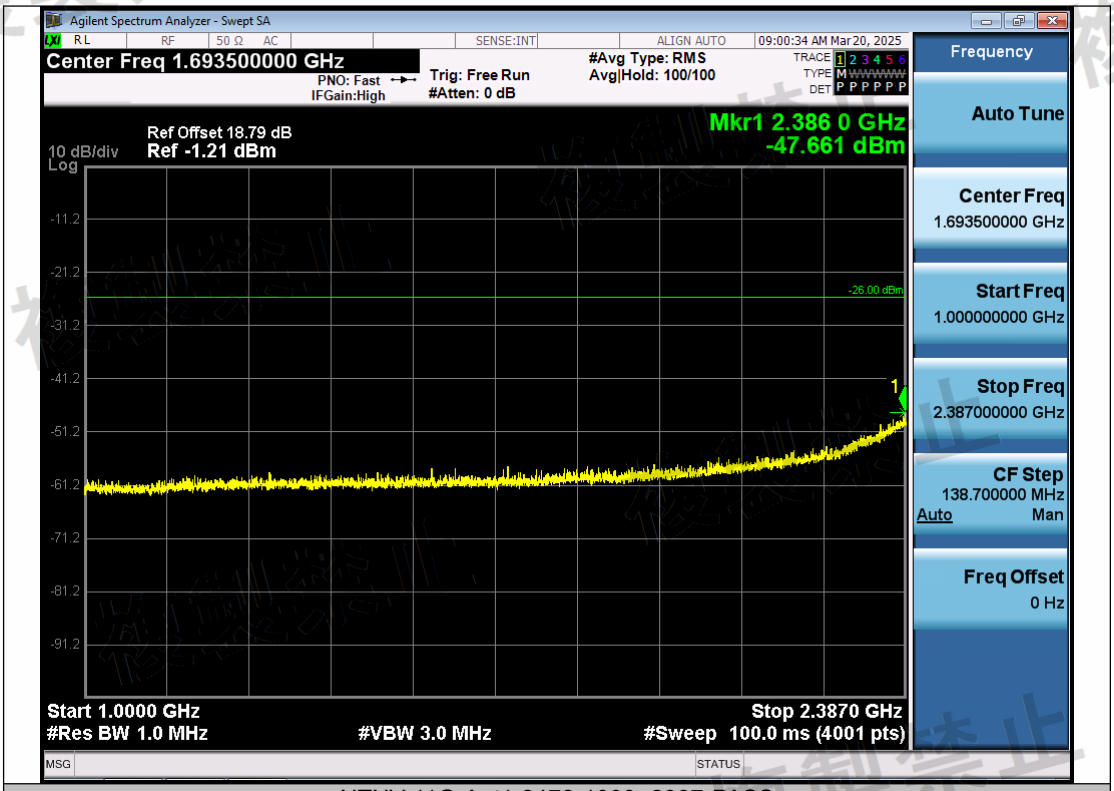
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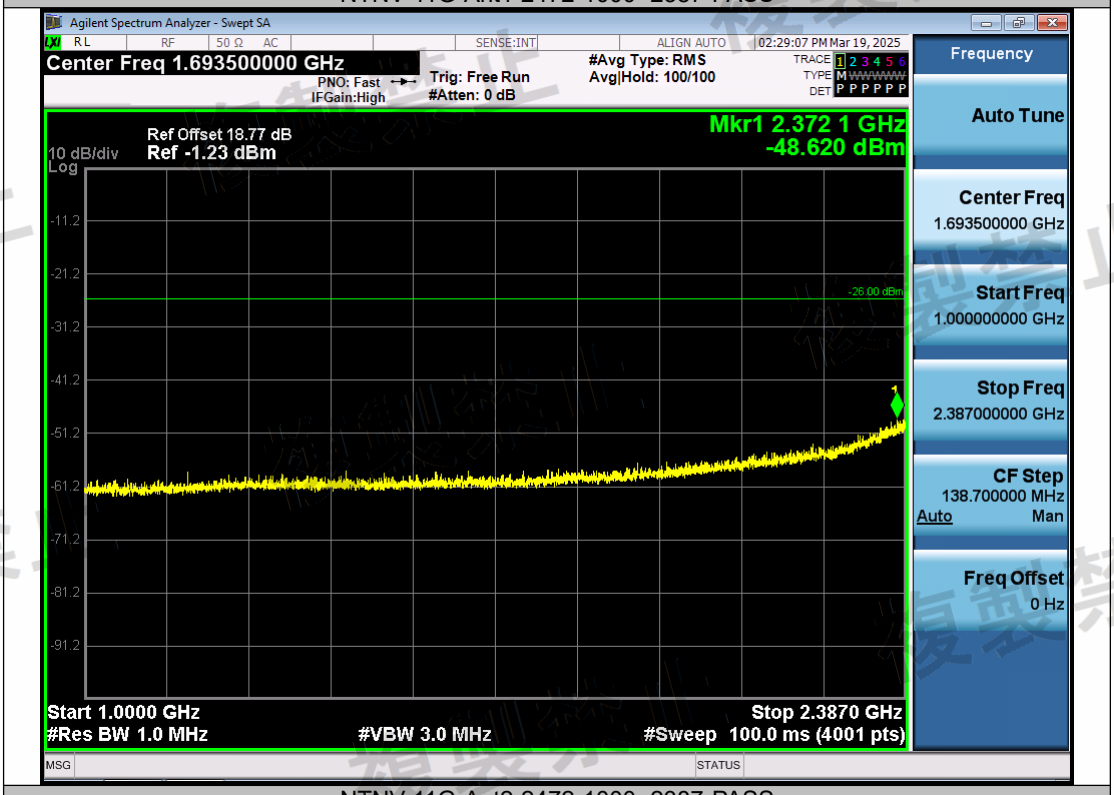
NTNV-11G-Ant1-2472-30~1000-PASS



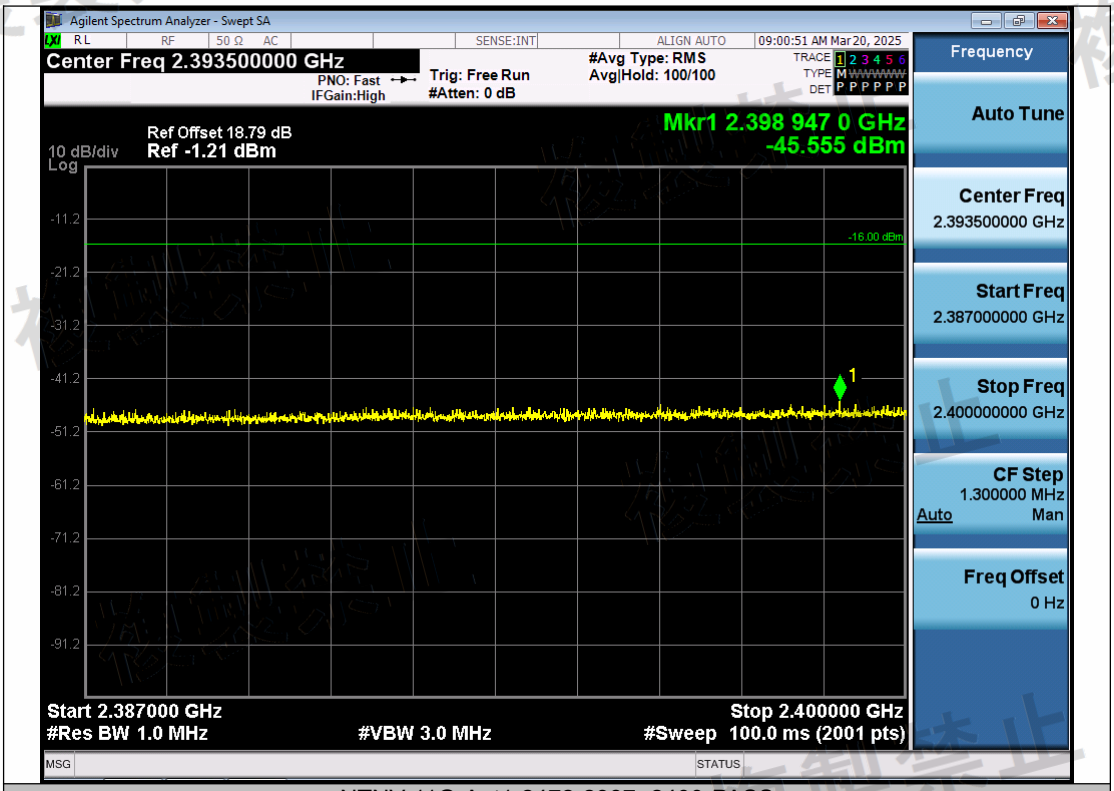
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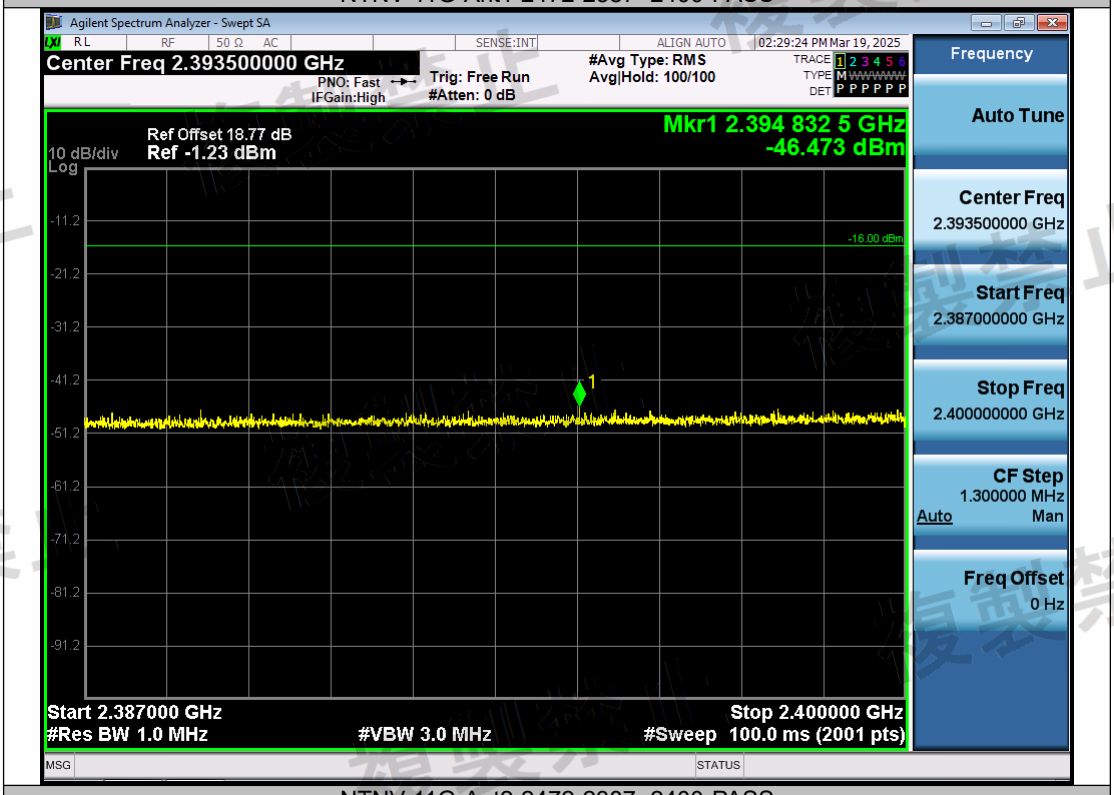
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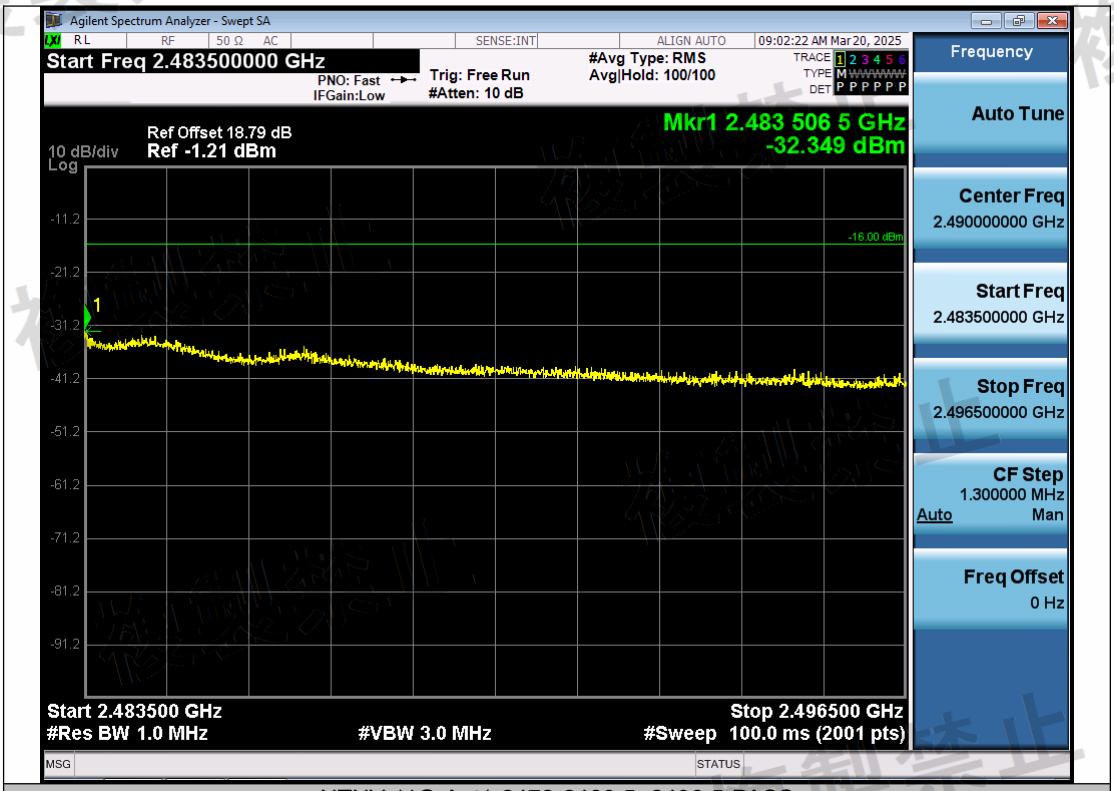
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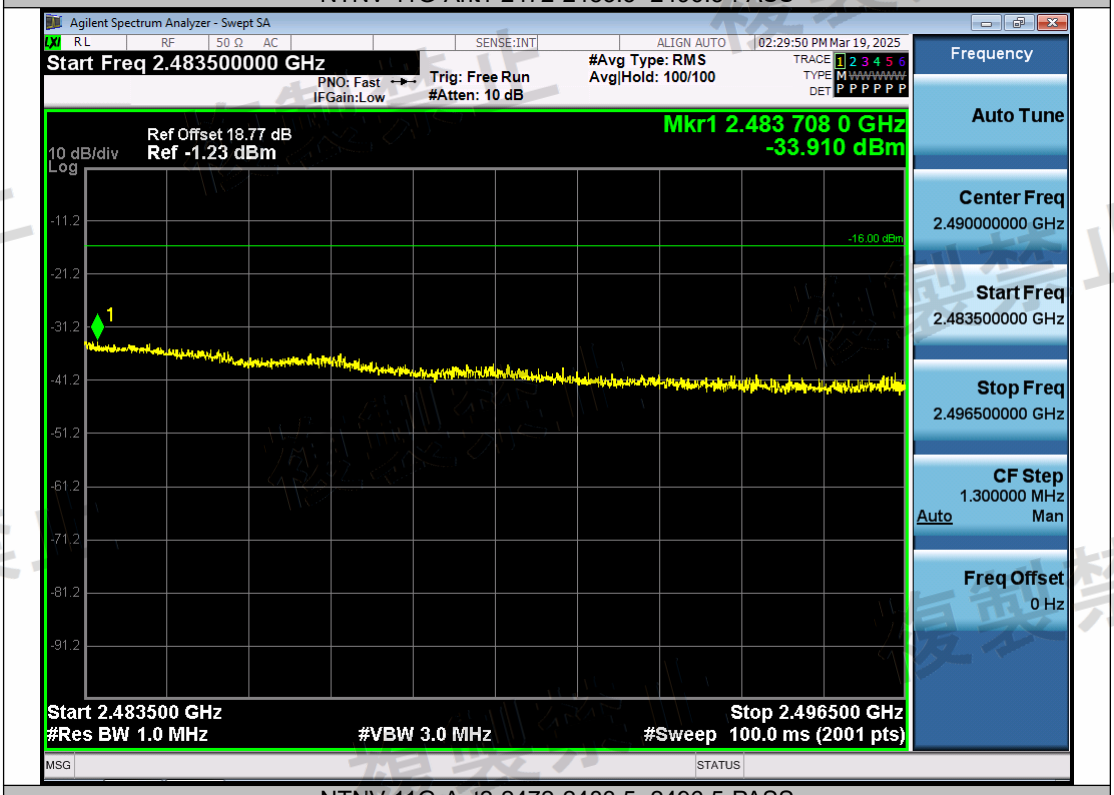
NTNV-11G-Ant1-2472-2387~2400-PASS



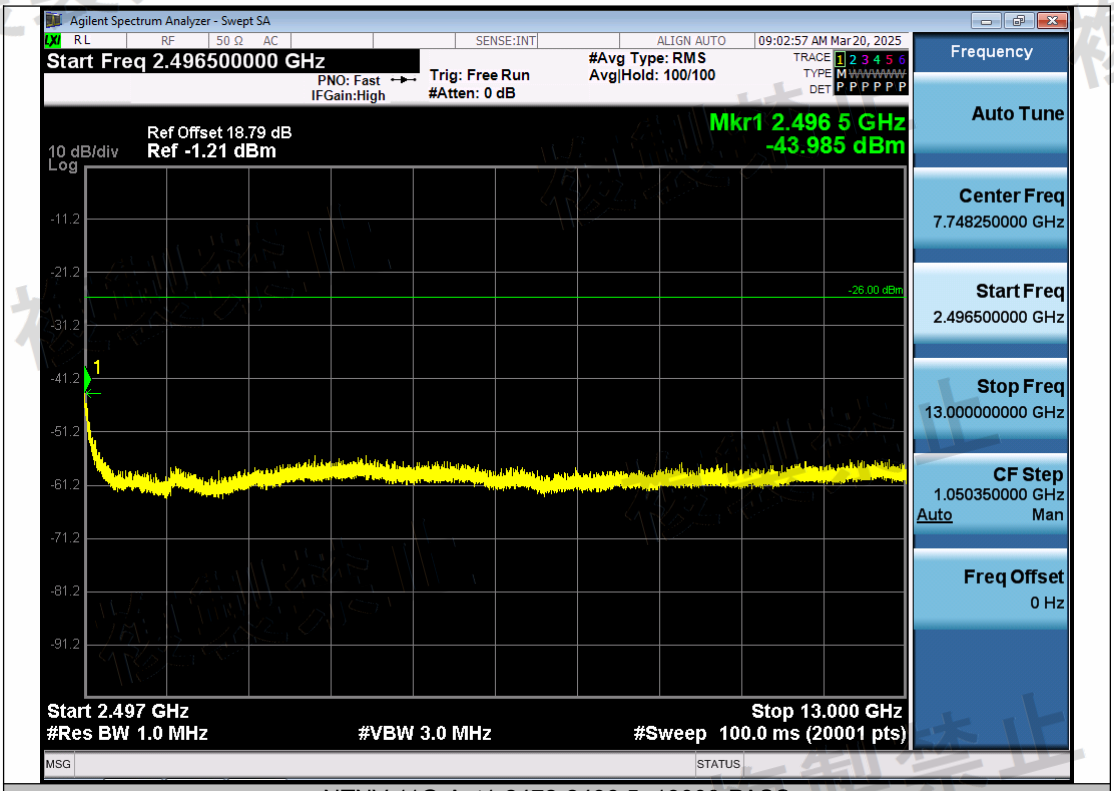
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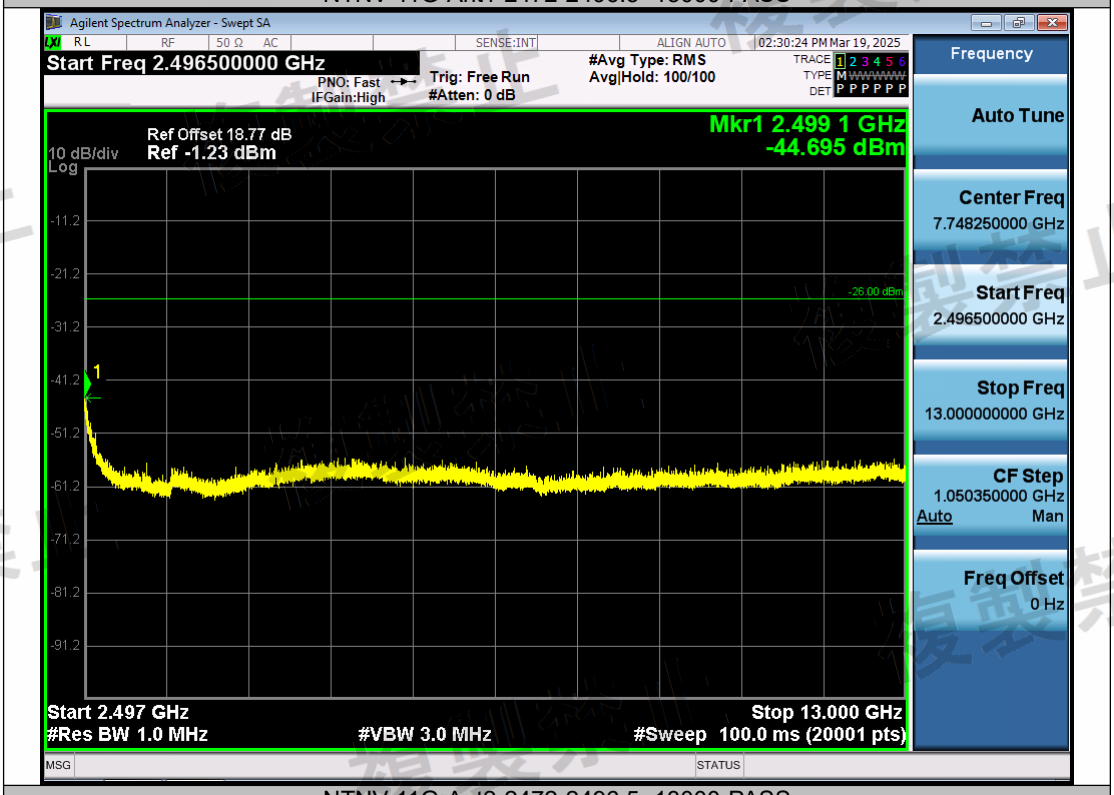
NTNV-11G-Ant1-2472-2483.5~2496.5-PASS



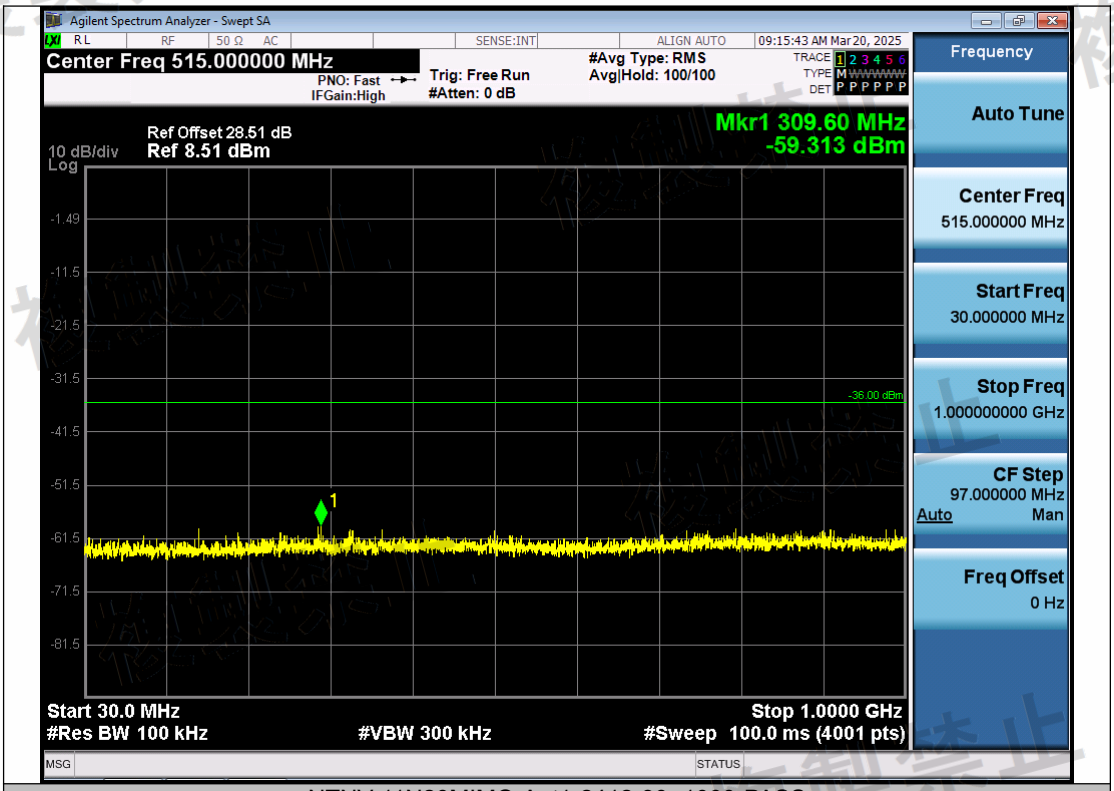
NTNV-11G-Ant2-2472-2483.5~2496.5-PASS



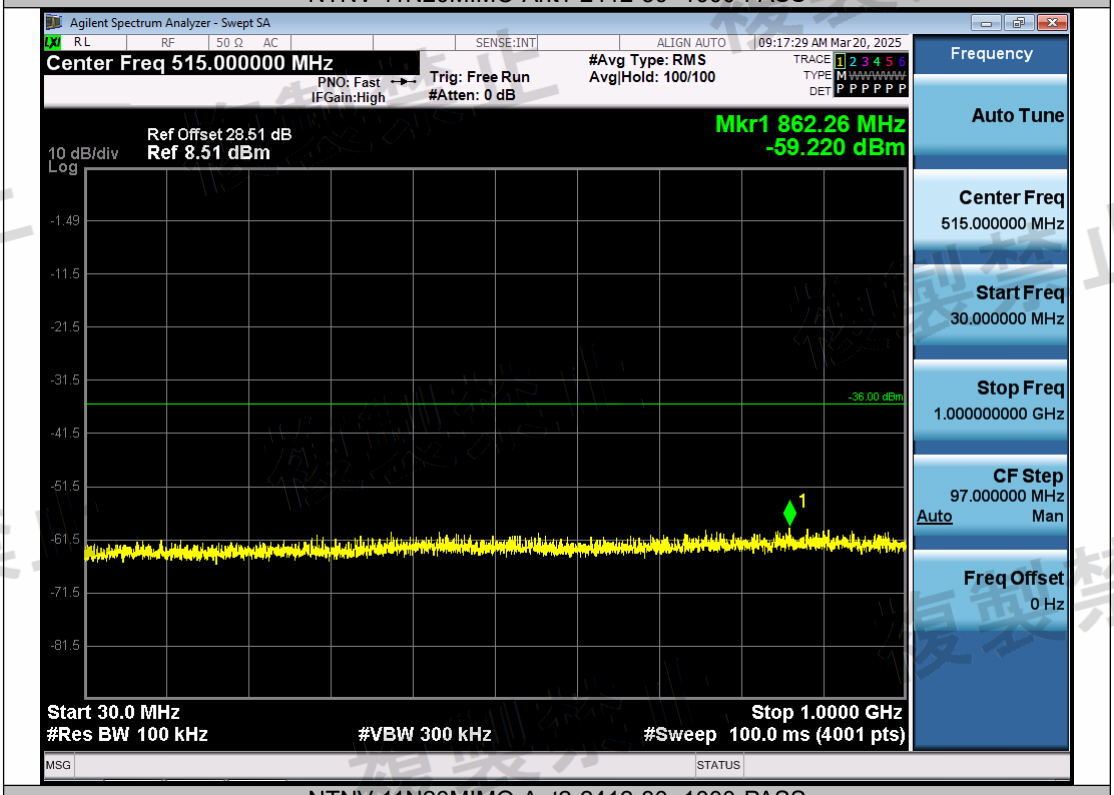
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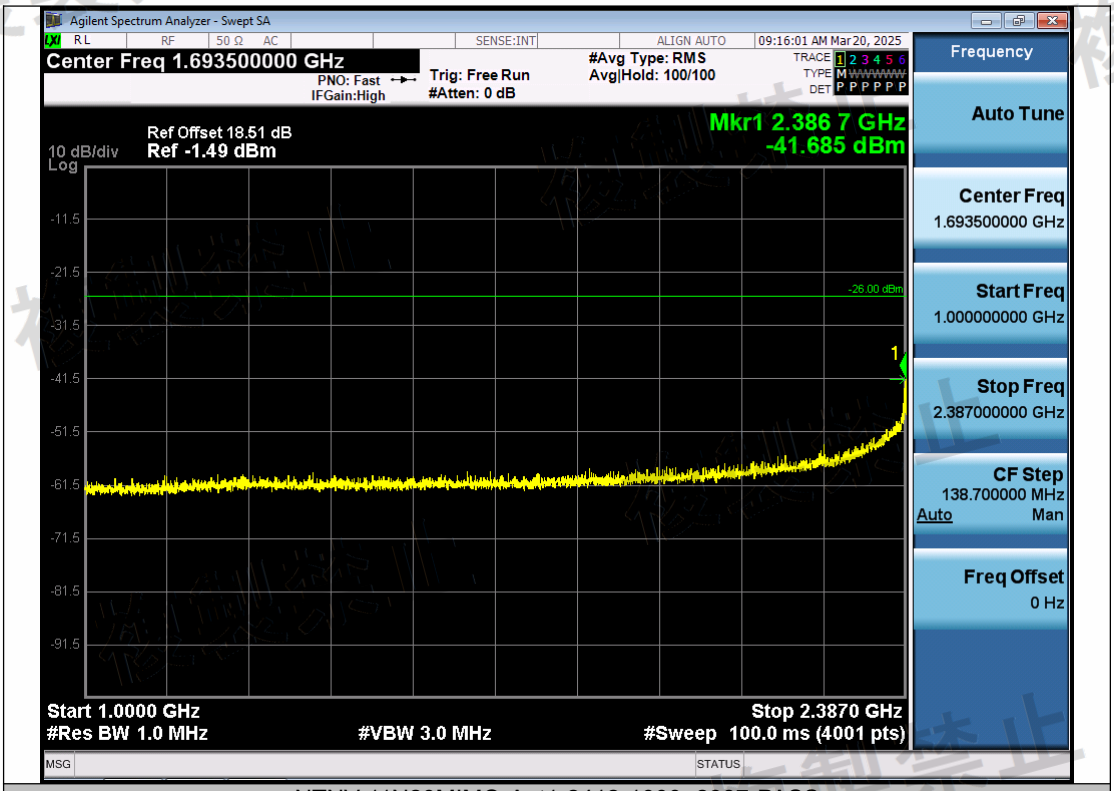
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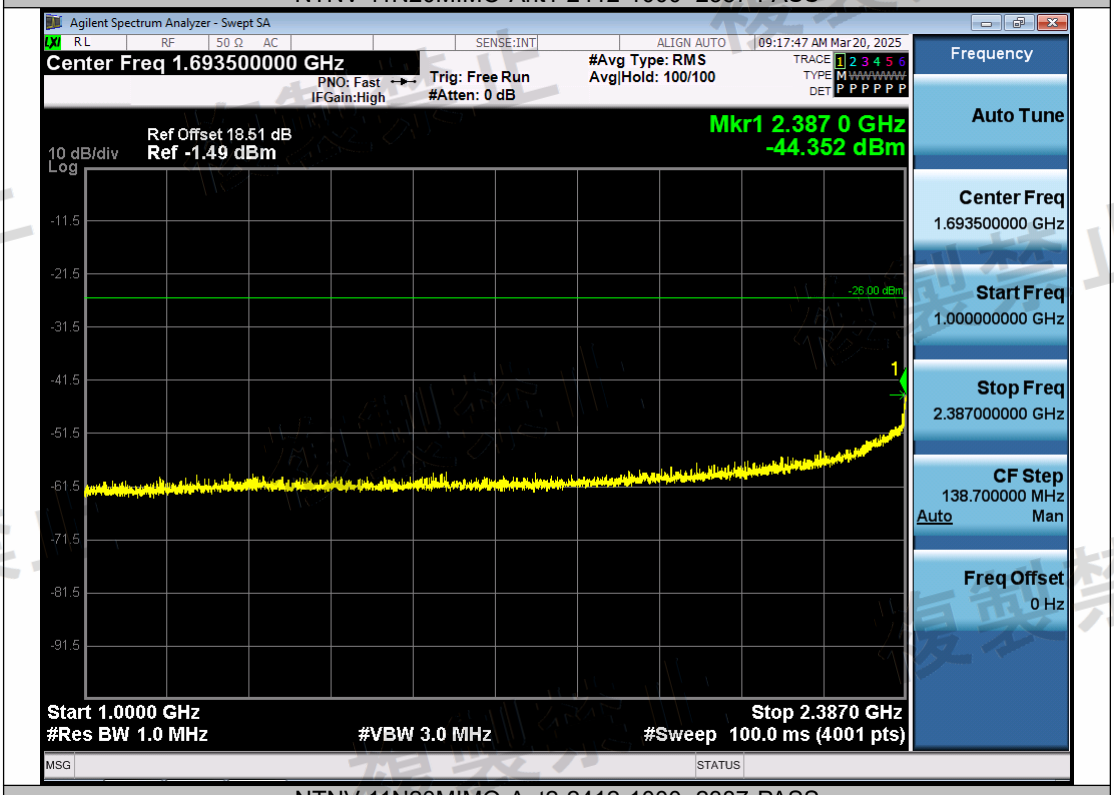
NTNV-11N20MIMO-Ant1-2412-30~1000-PASS



NTNV-11N20MIMO-Ant2-2412-30~1000-PASS



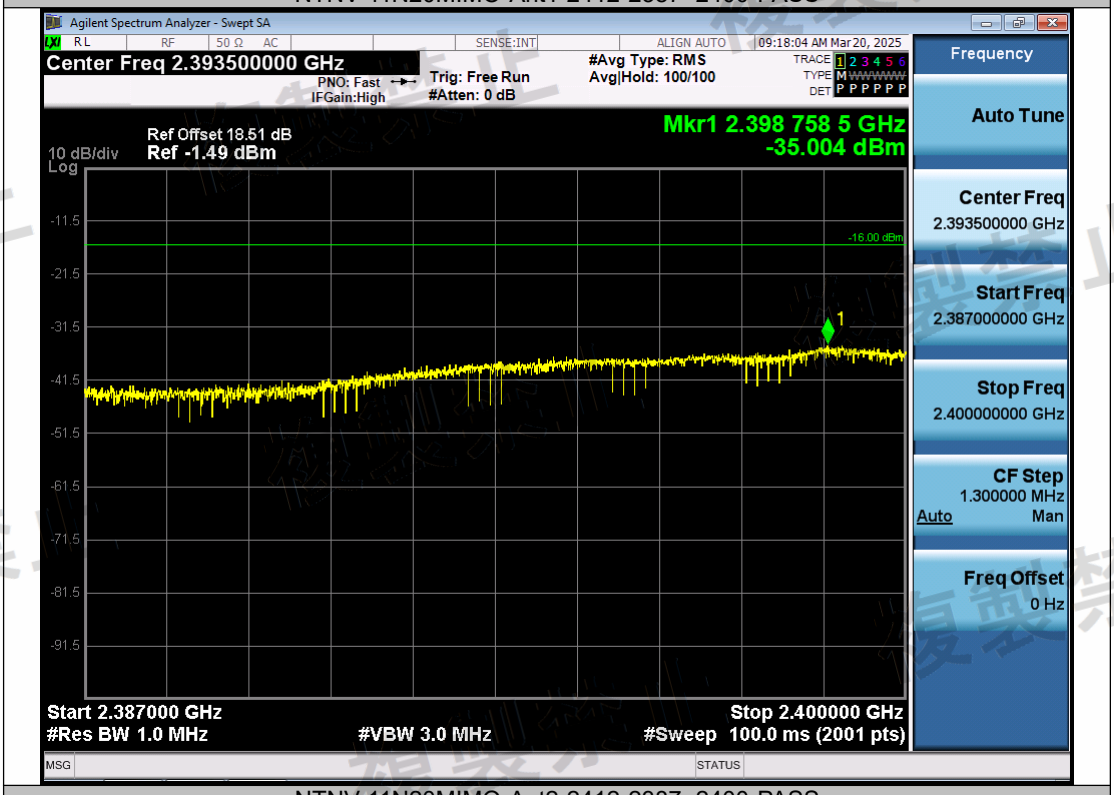
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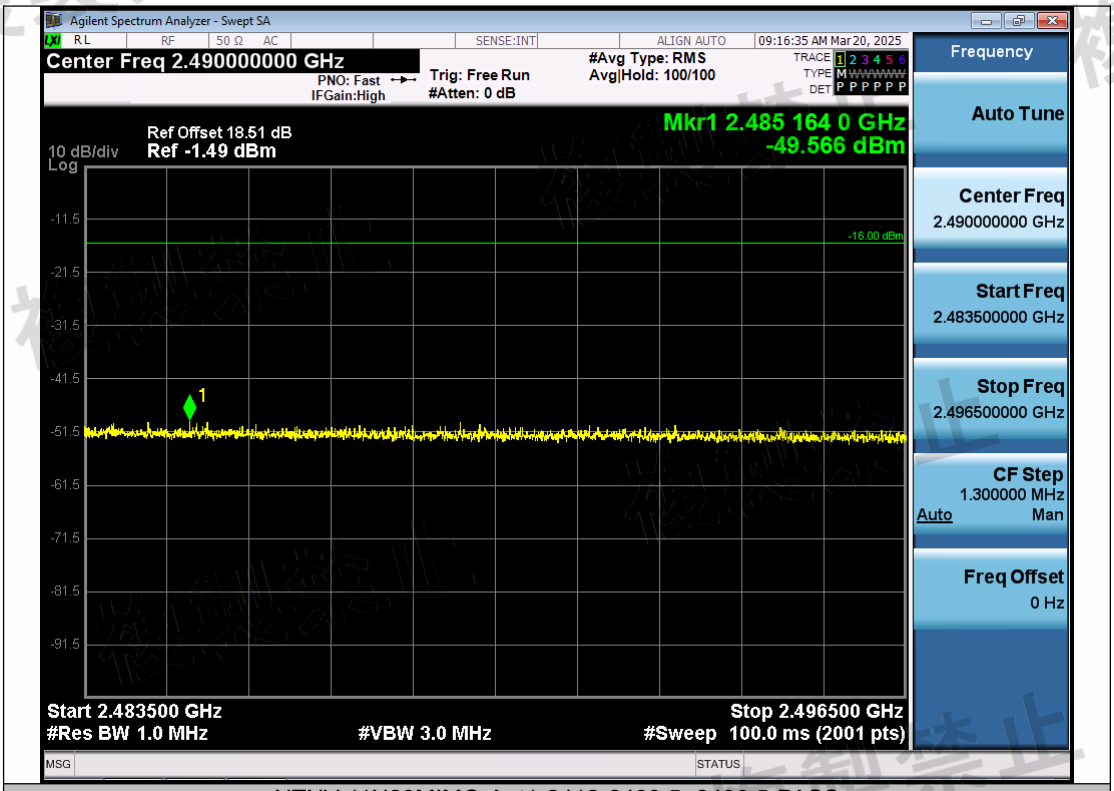
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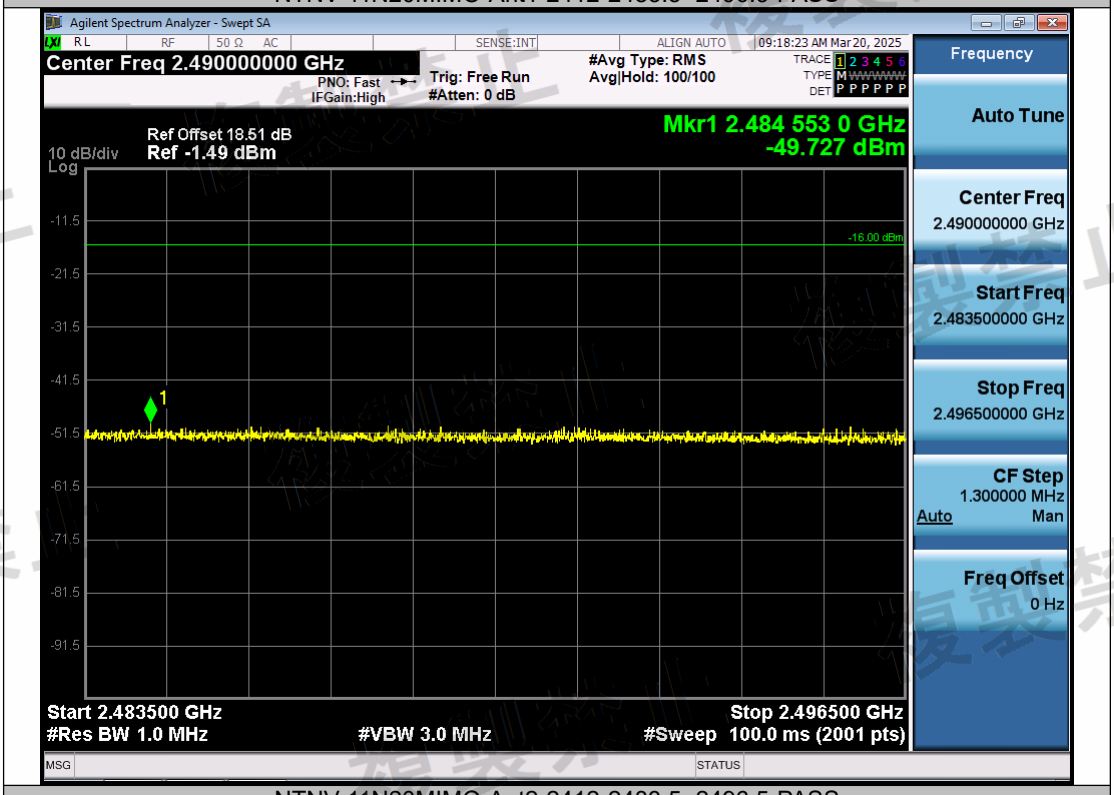
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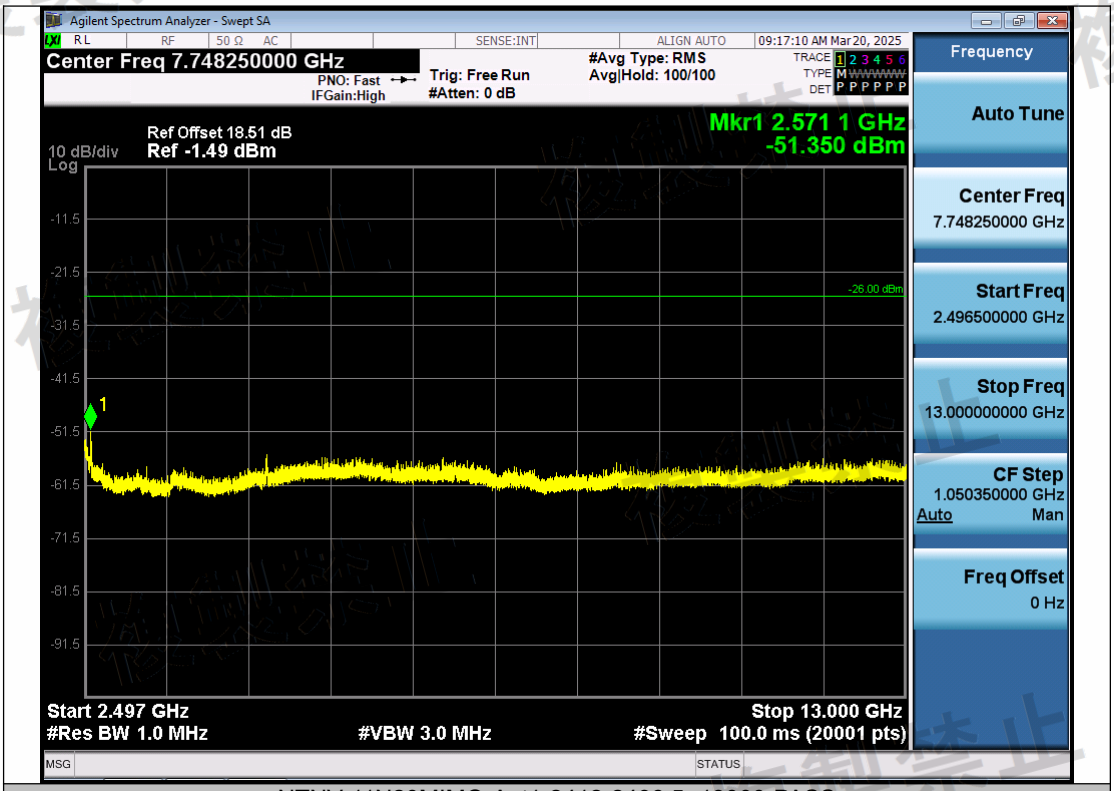
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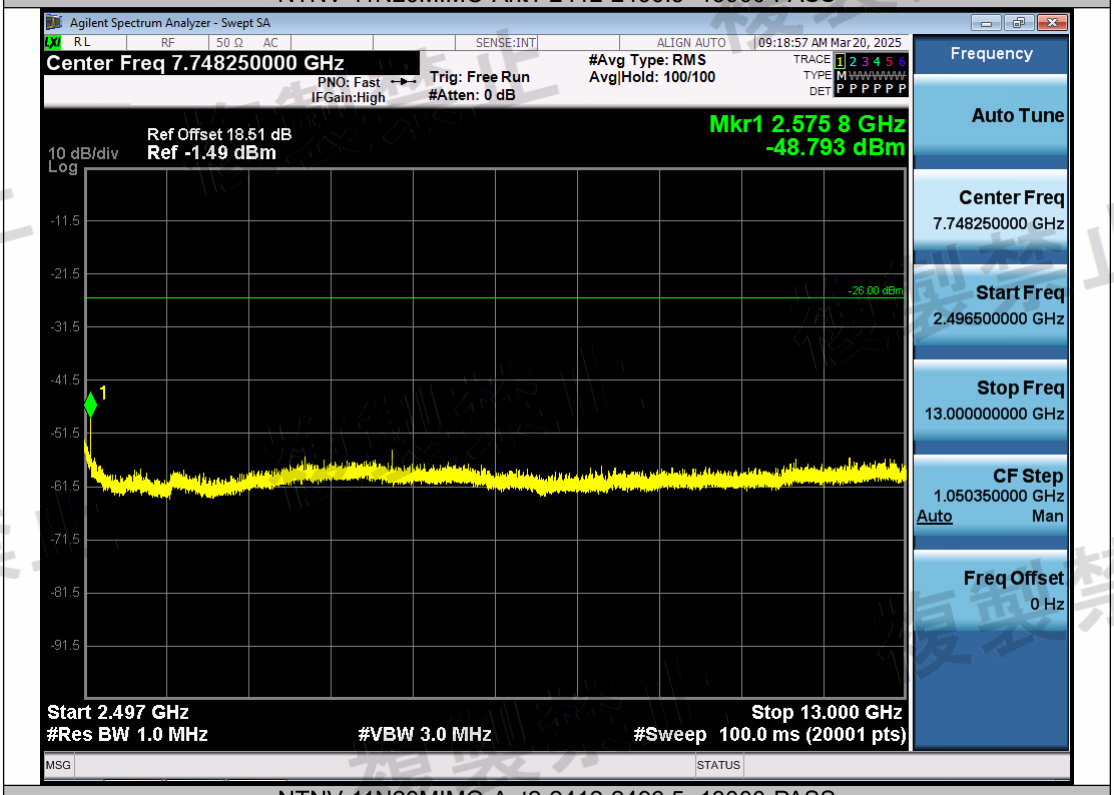
NTNV-11N20MIMO-Ant1-2412-2483.5~2496.5-PASS



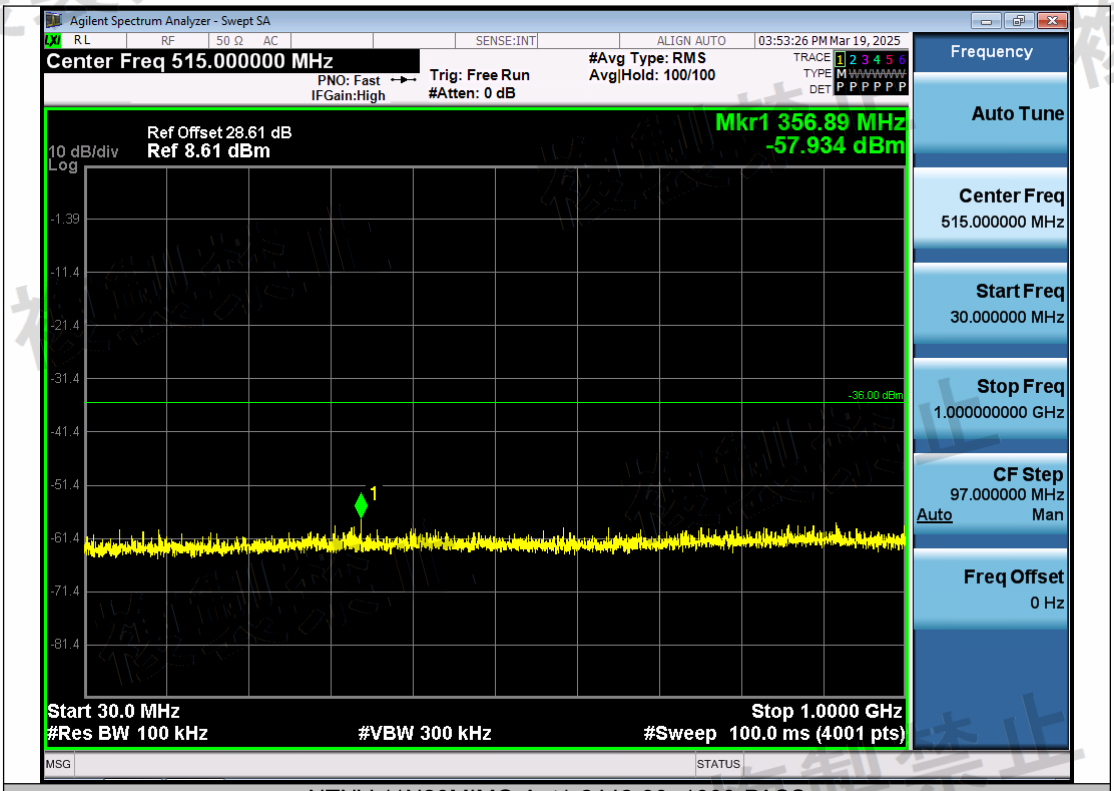
NTNV-11N20MIMO-Ant2-2412-2483.5~2496.5-PASS



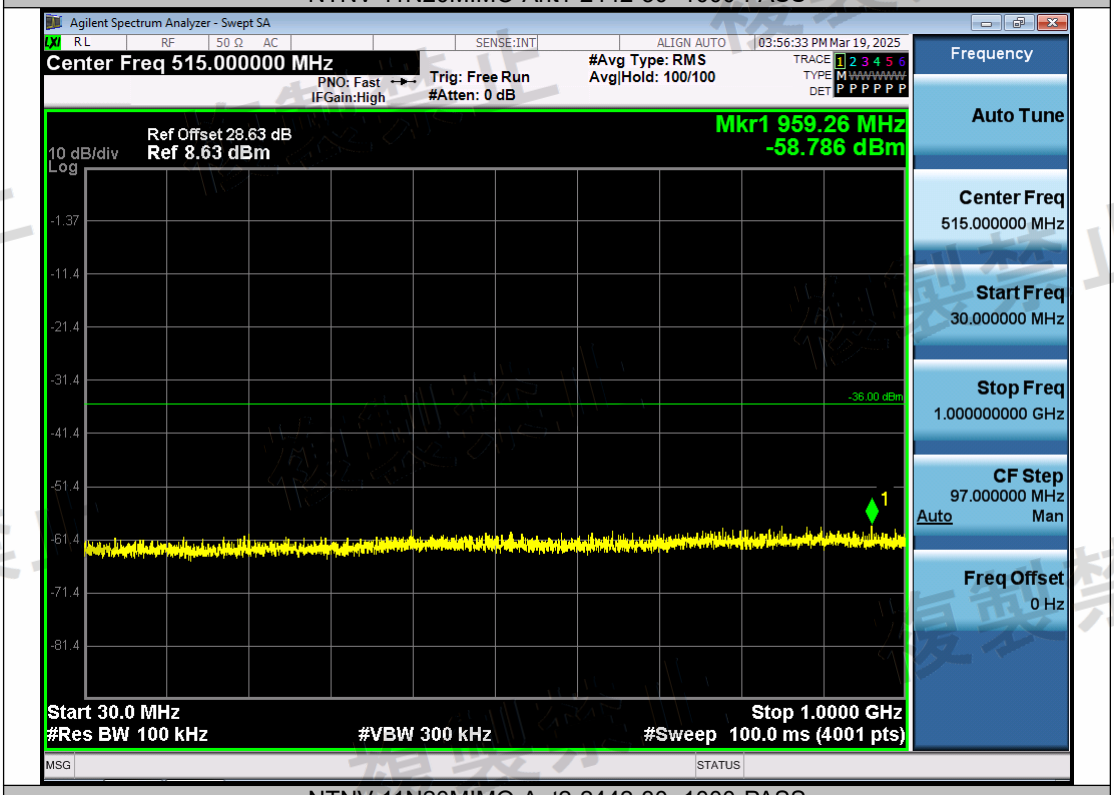
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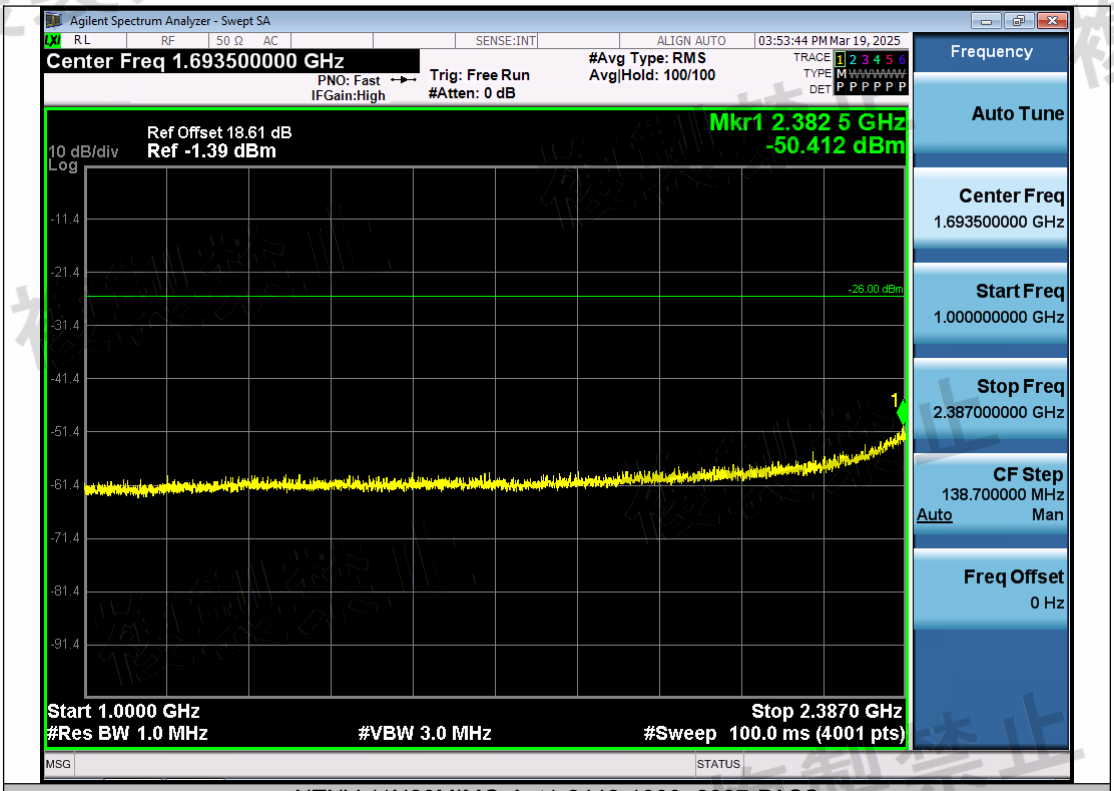
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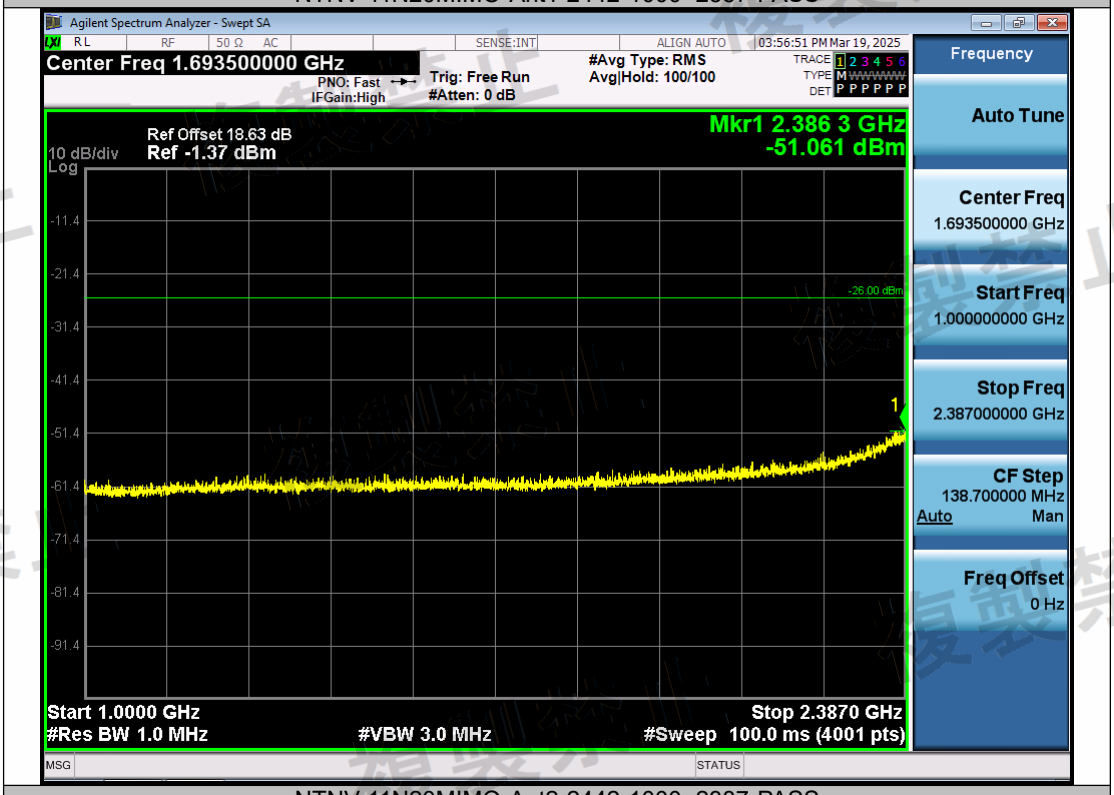
NTNV-11N20MIMO-Ant1-2442-30~1000-PASS



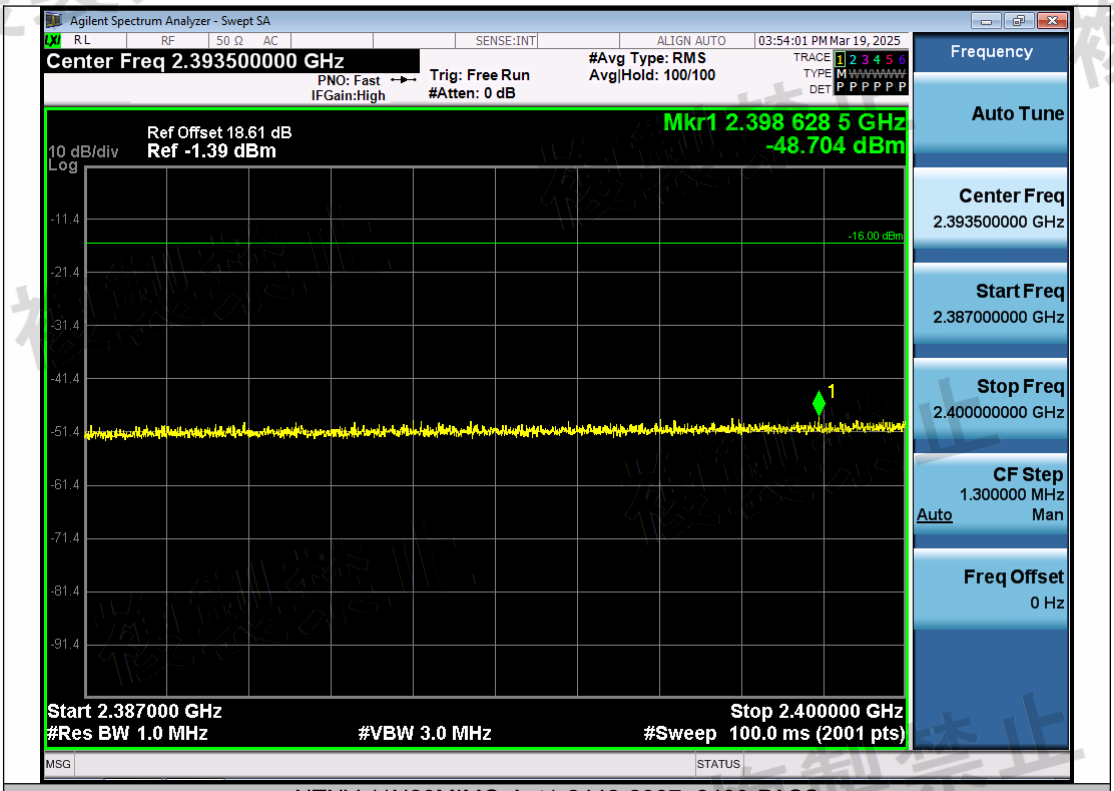
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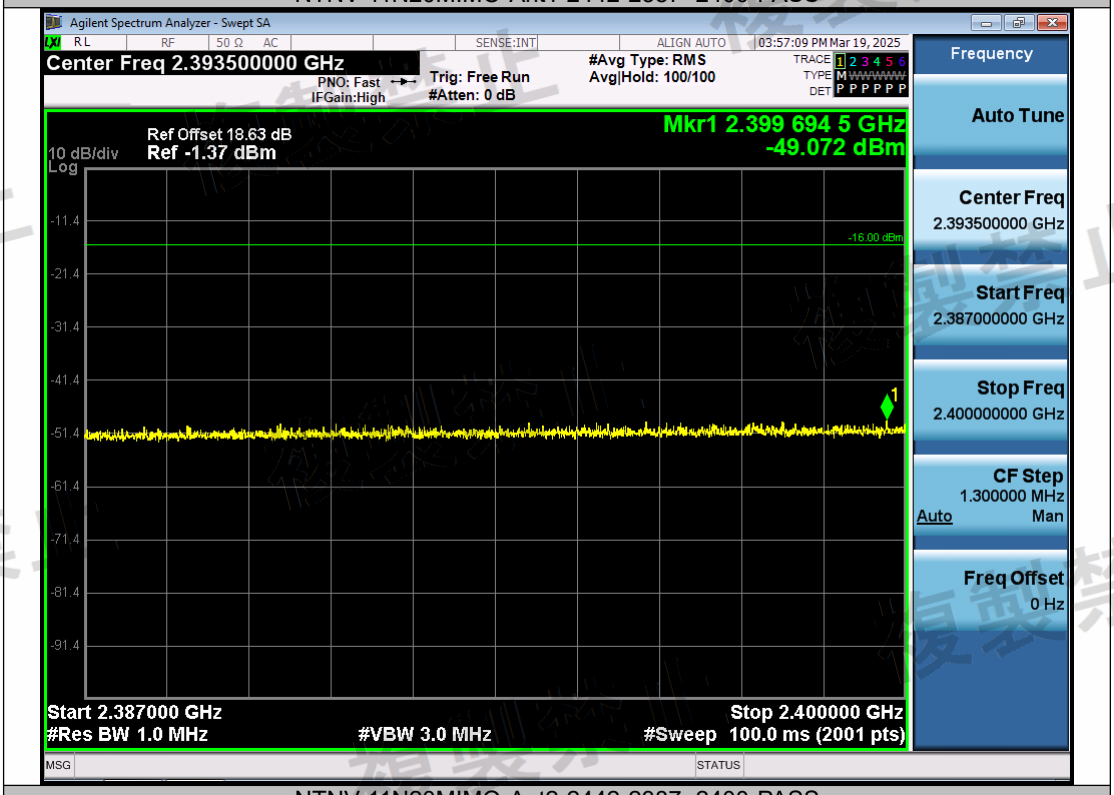
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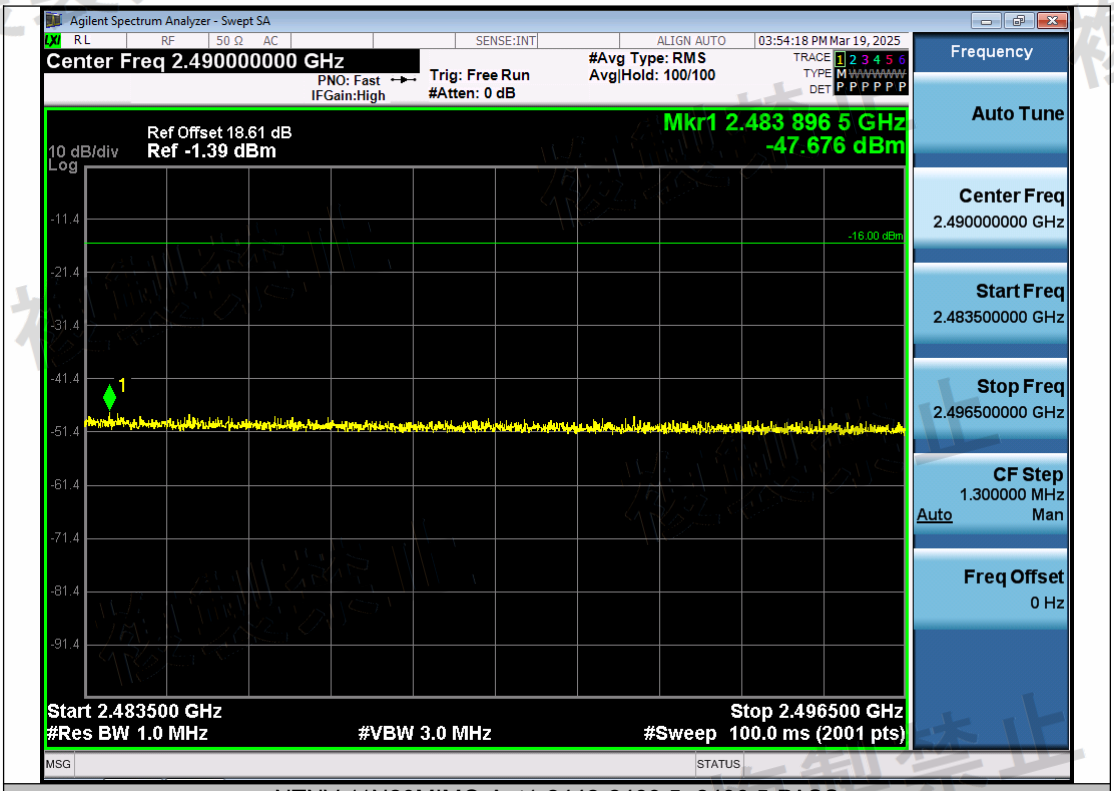
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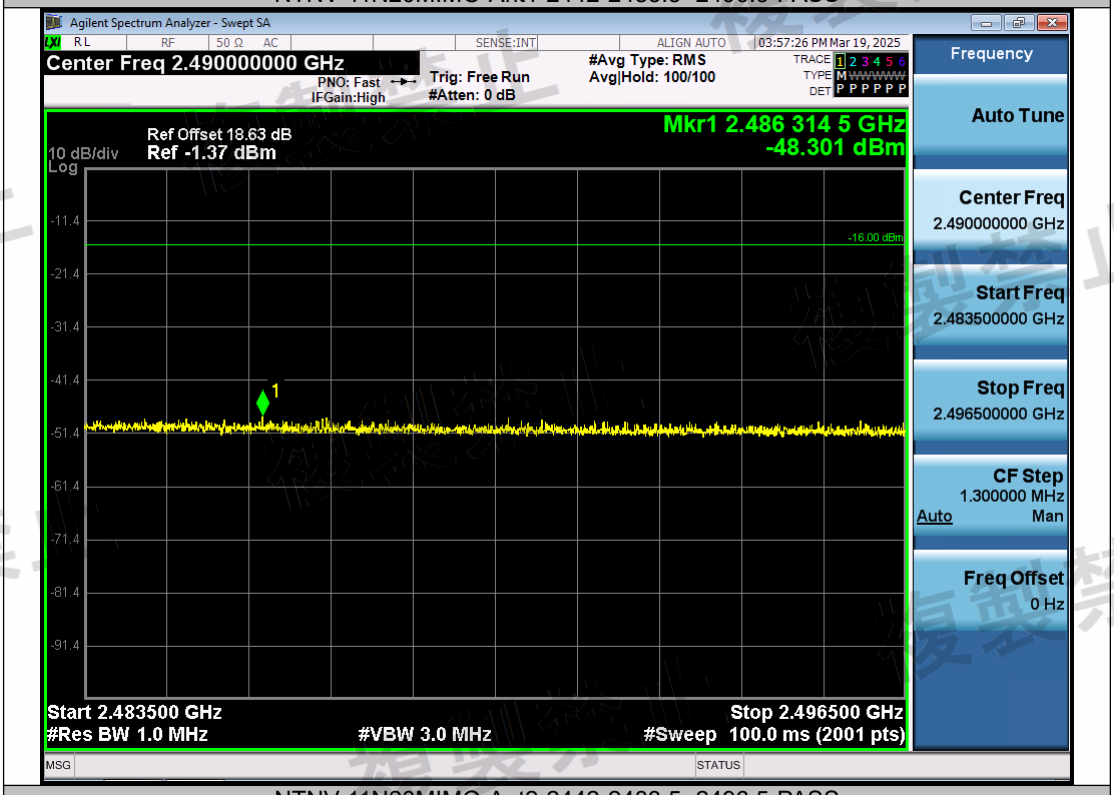
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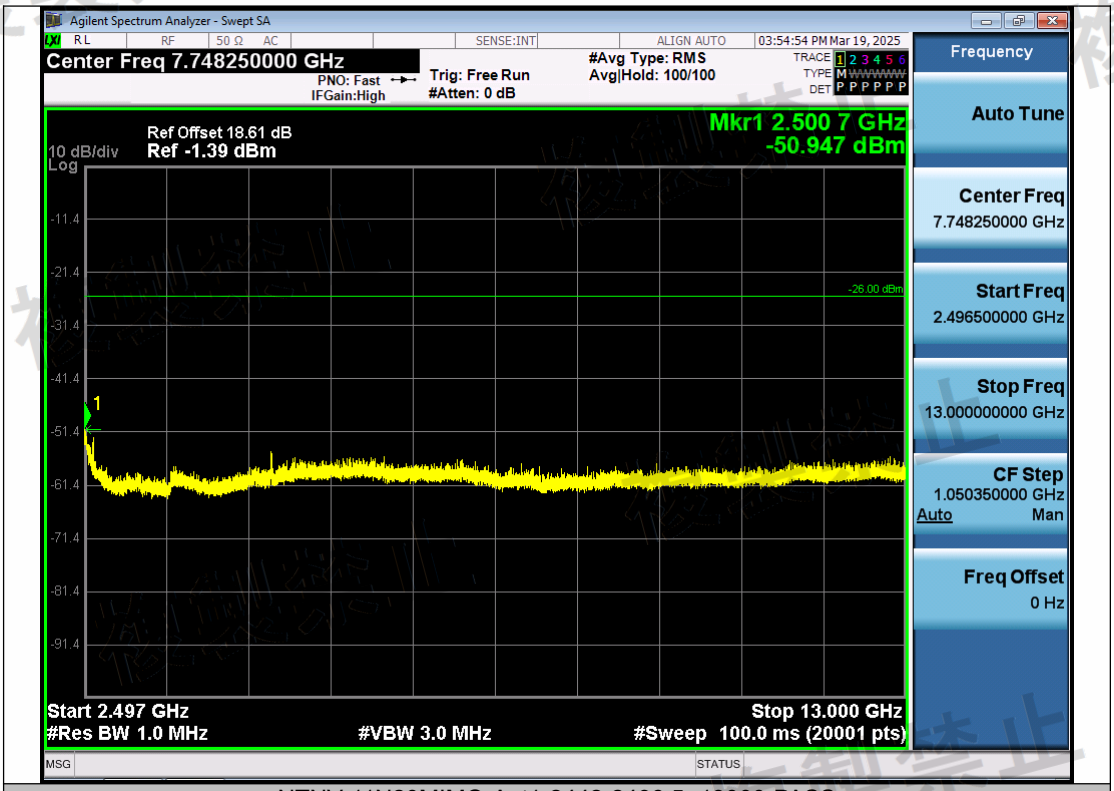
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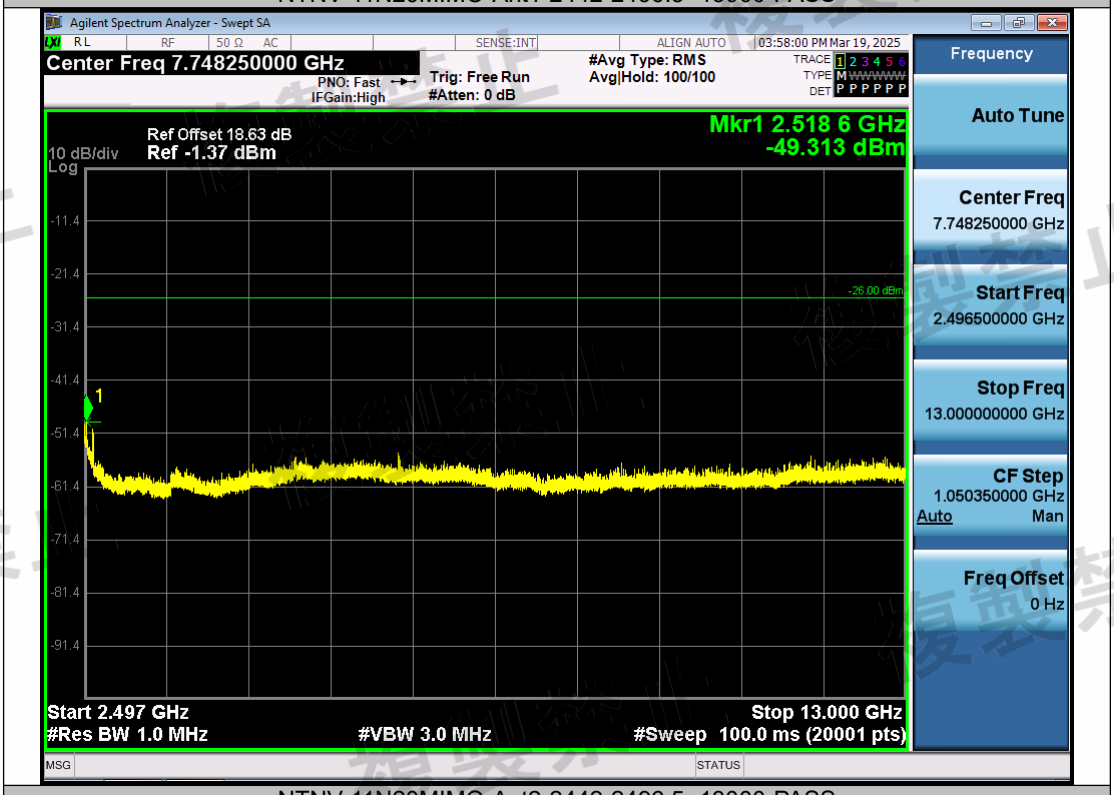
NTNV-11N20MIMO-Ant1-2442-2483.5~2496.5-PASS



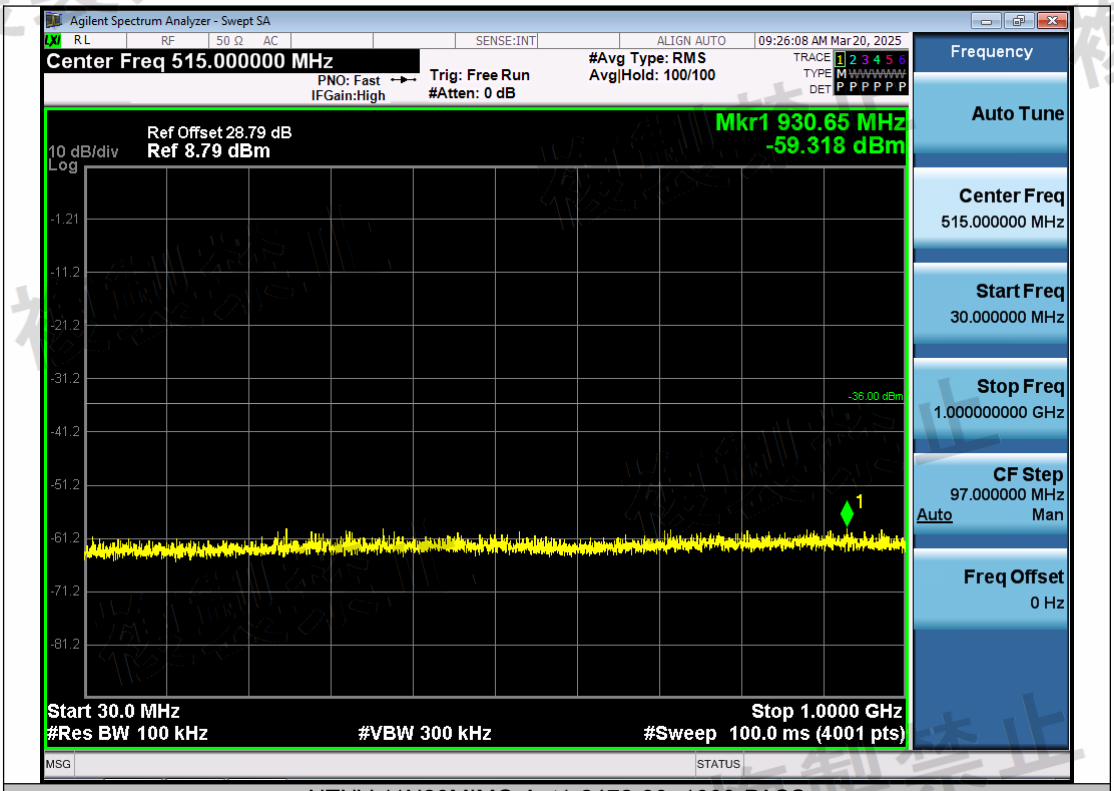
NTNV-11N20MIMO-Ant2-2442-2483.5~2496.5-PASS



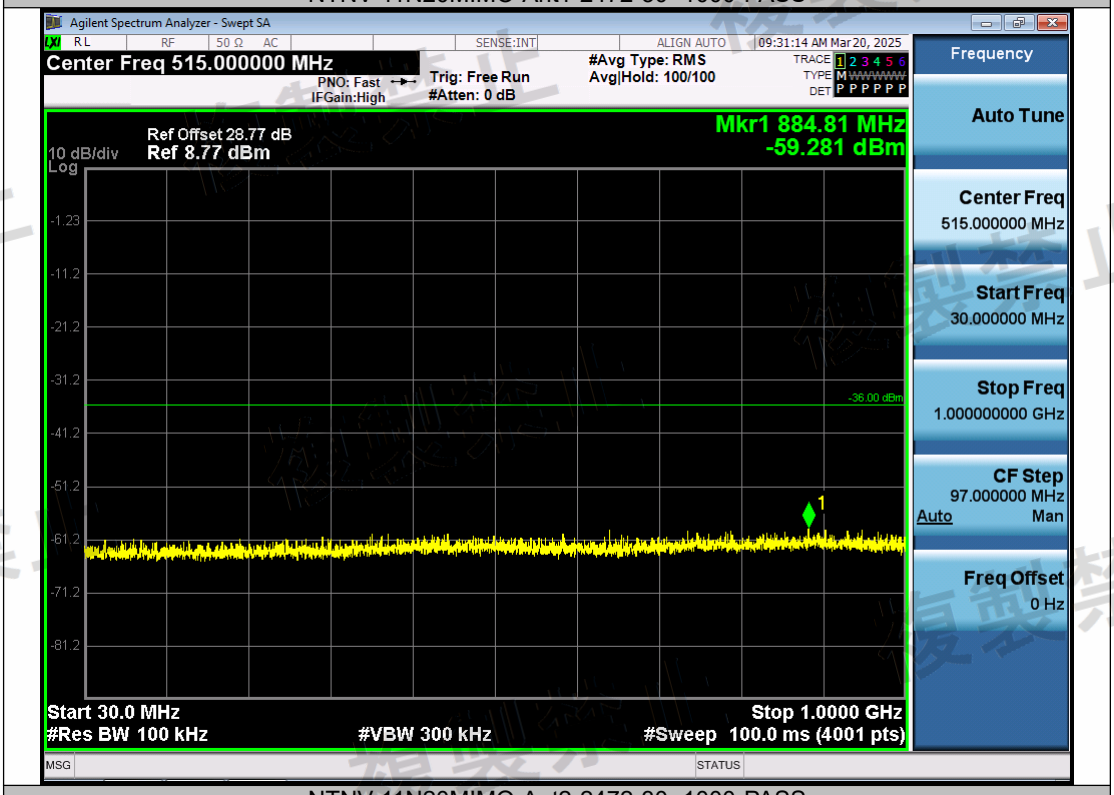
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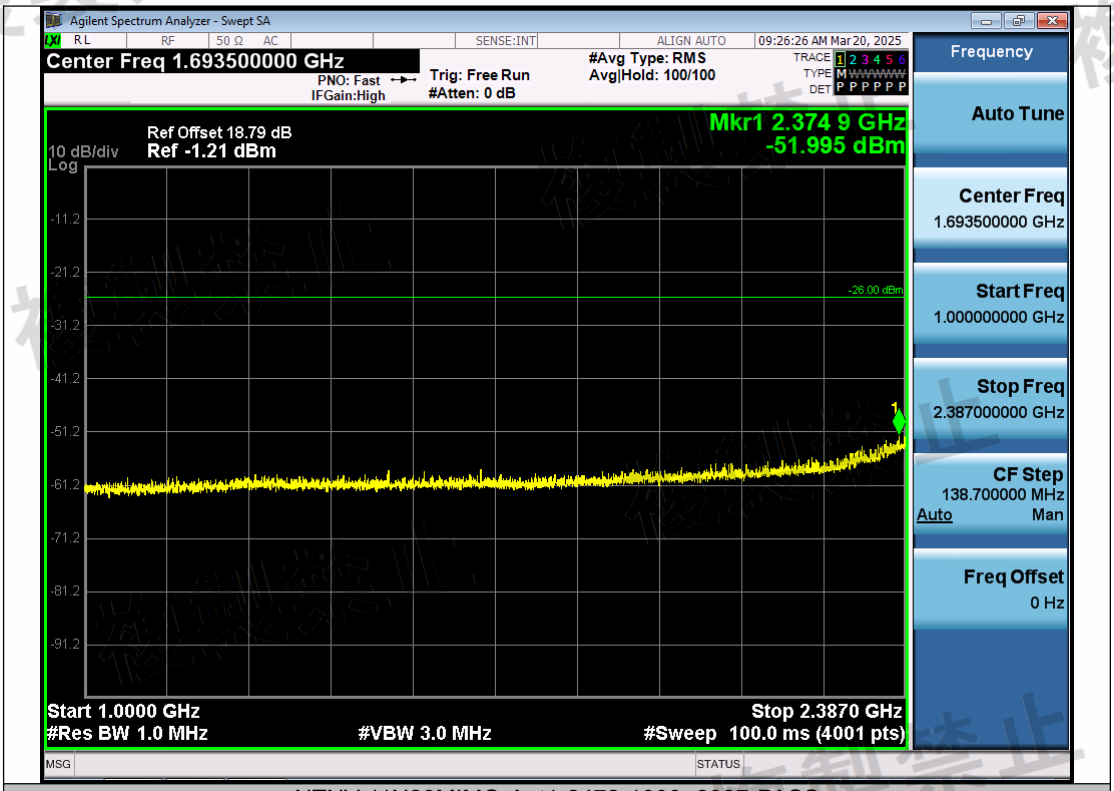
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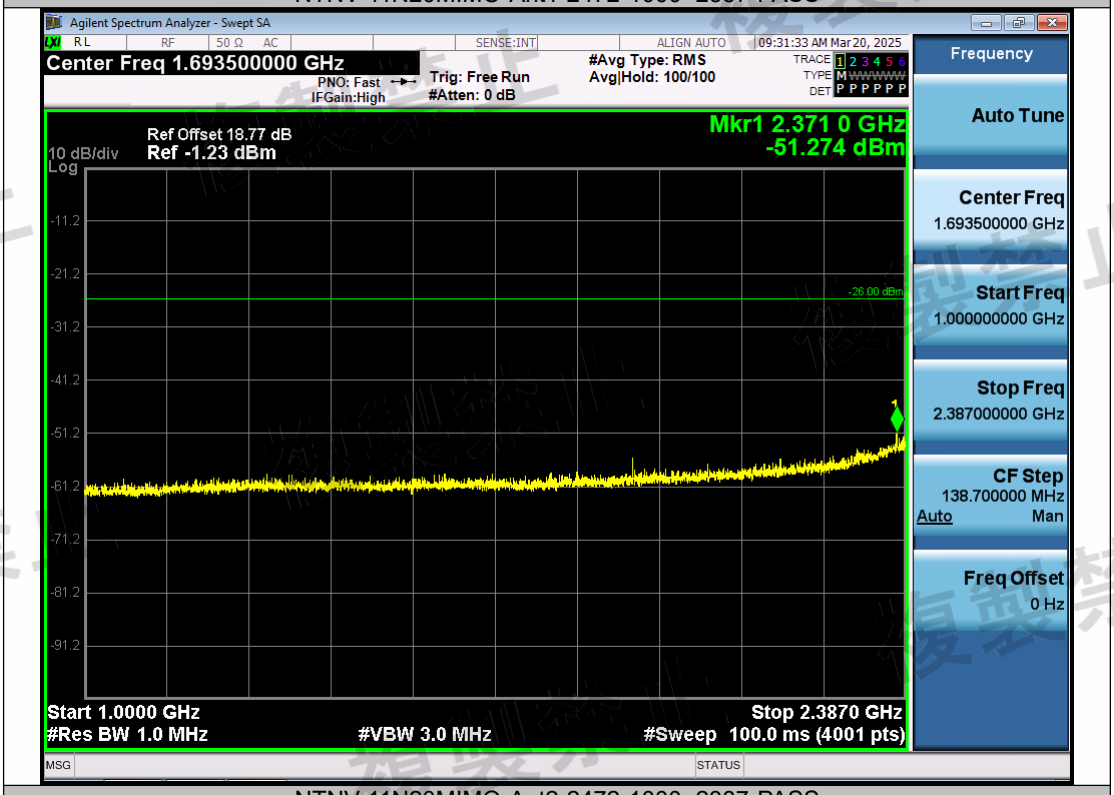
NTNV-11N20MIMO-Ant1-2472-30~1000-PASS



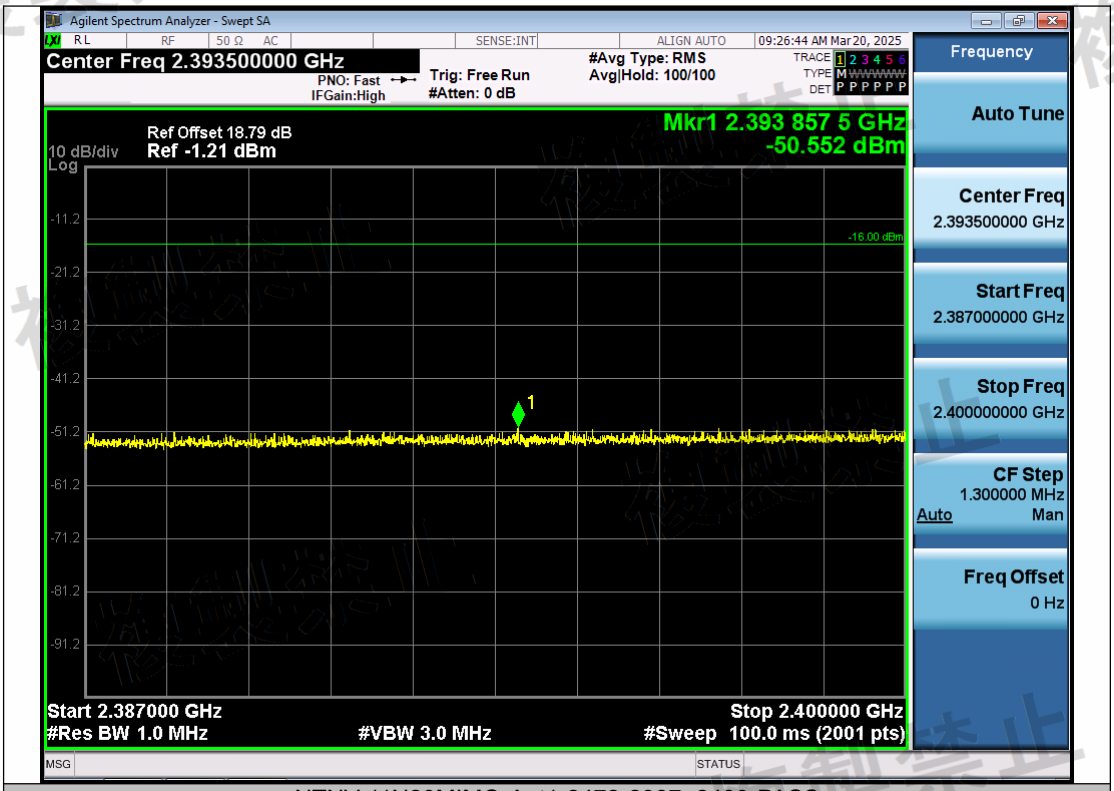
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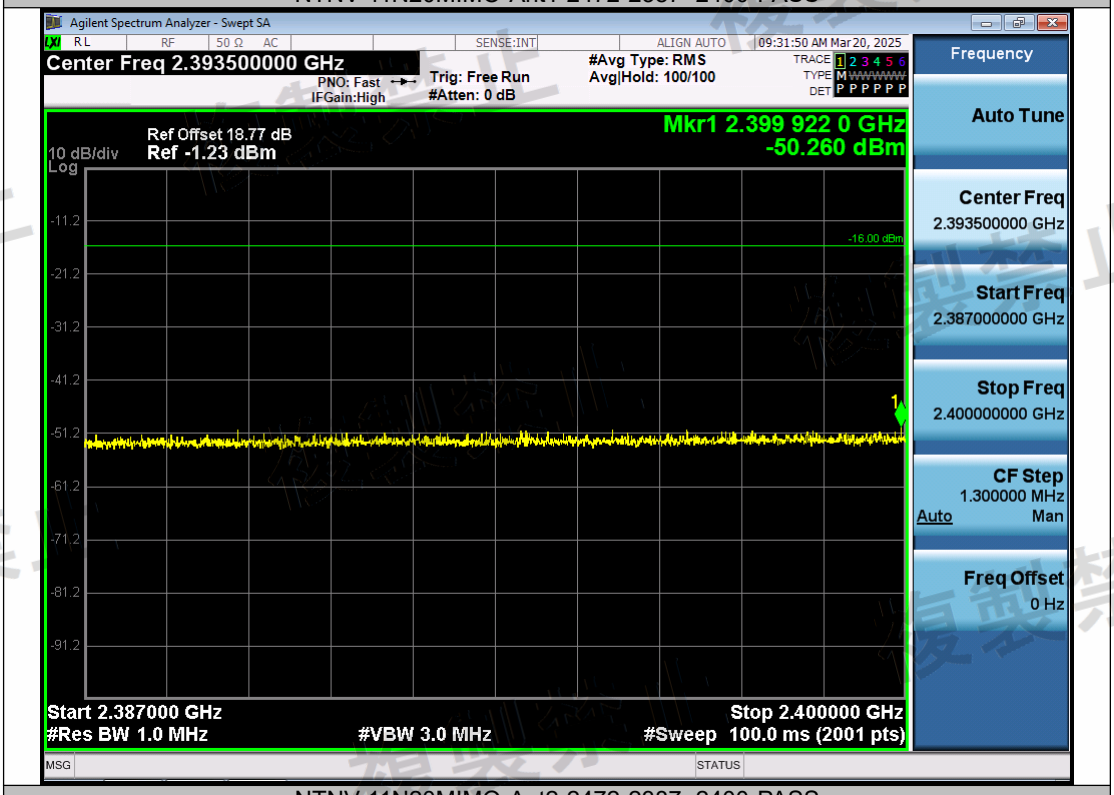
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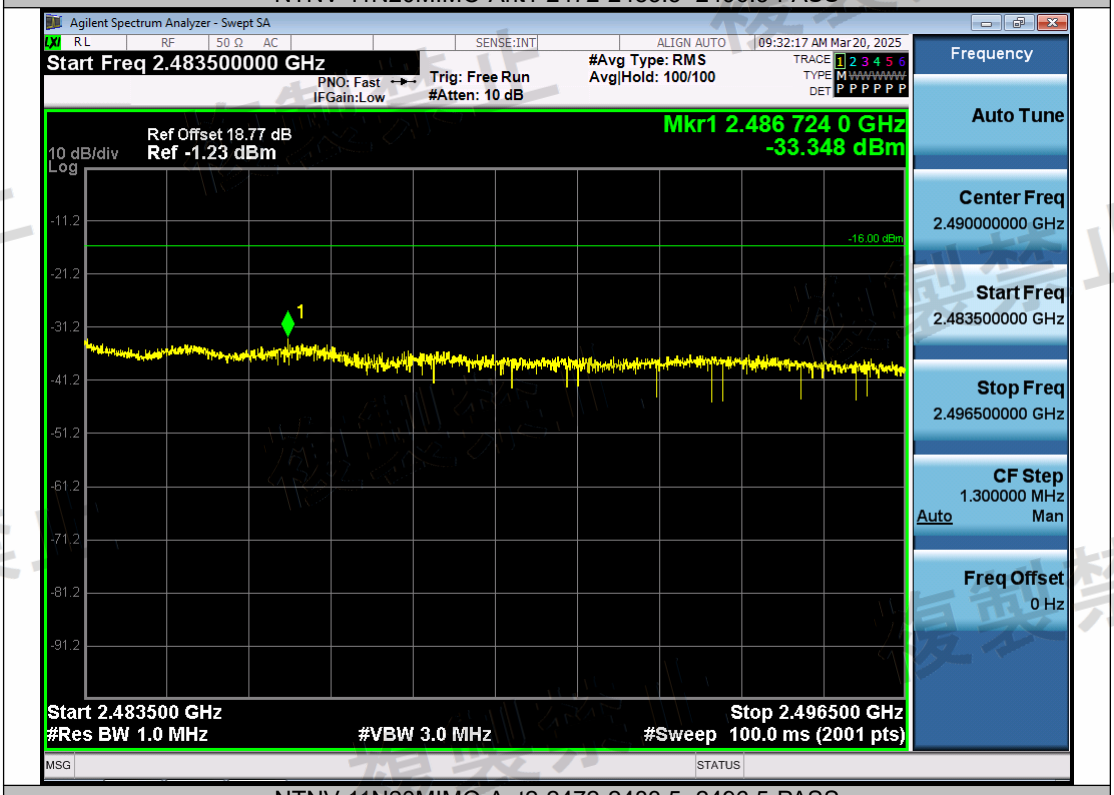
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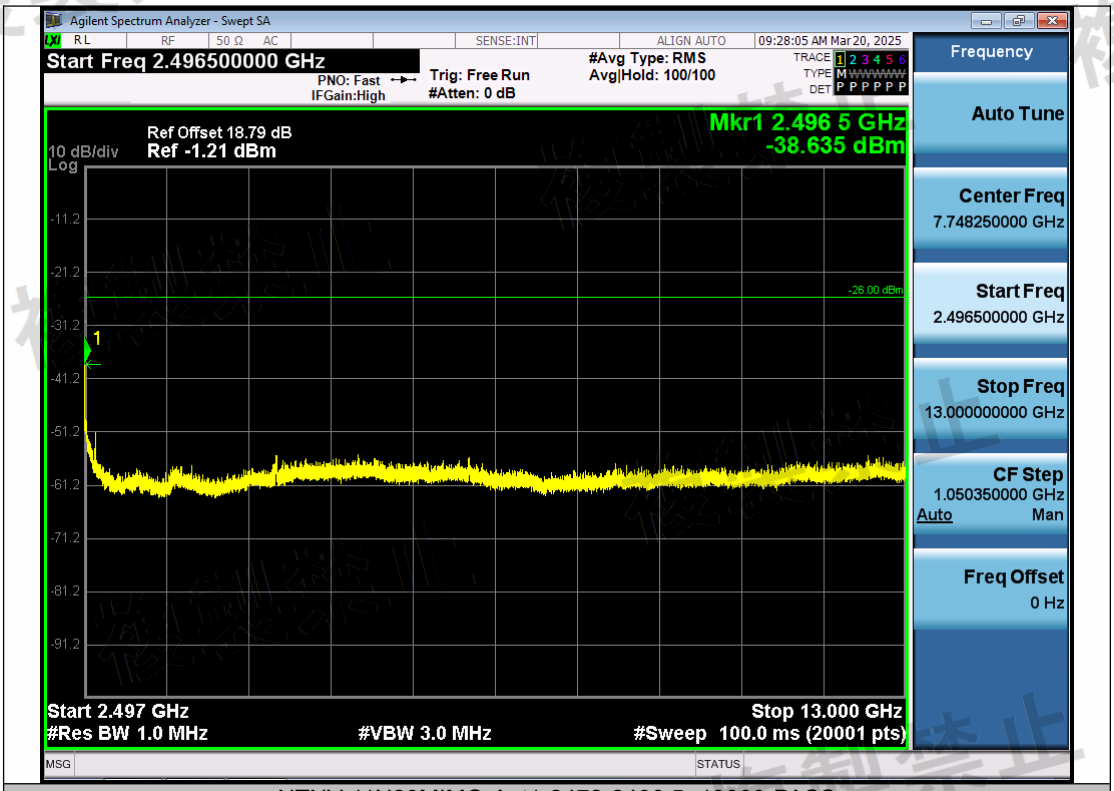
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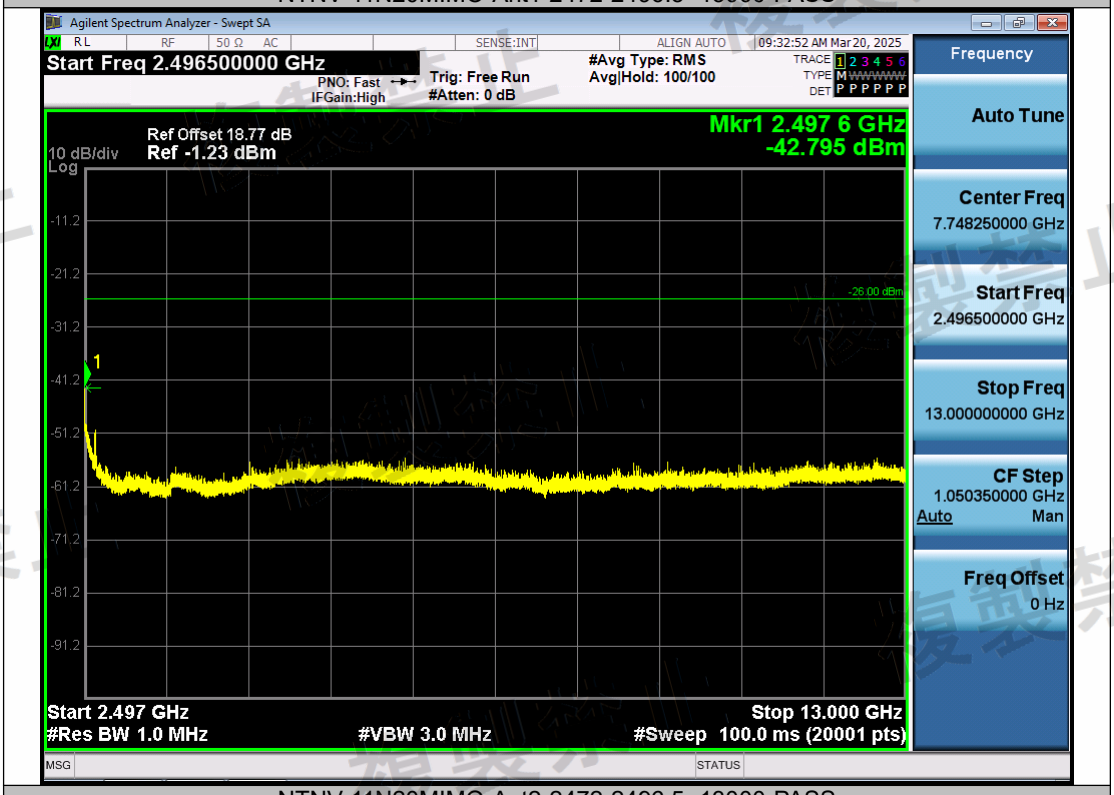
NTNV-11N20MIMO-Ant1-2472-2483.5~2496.5-PASS



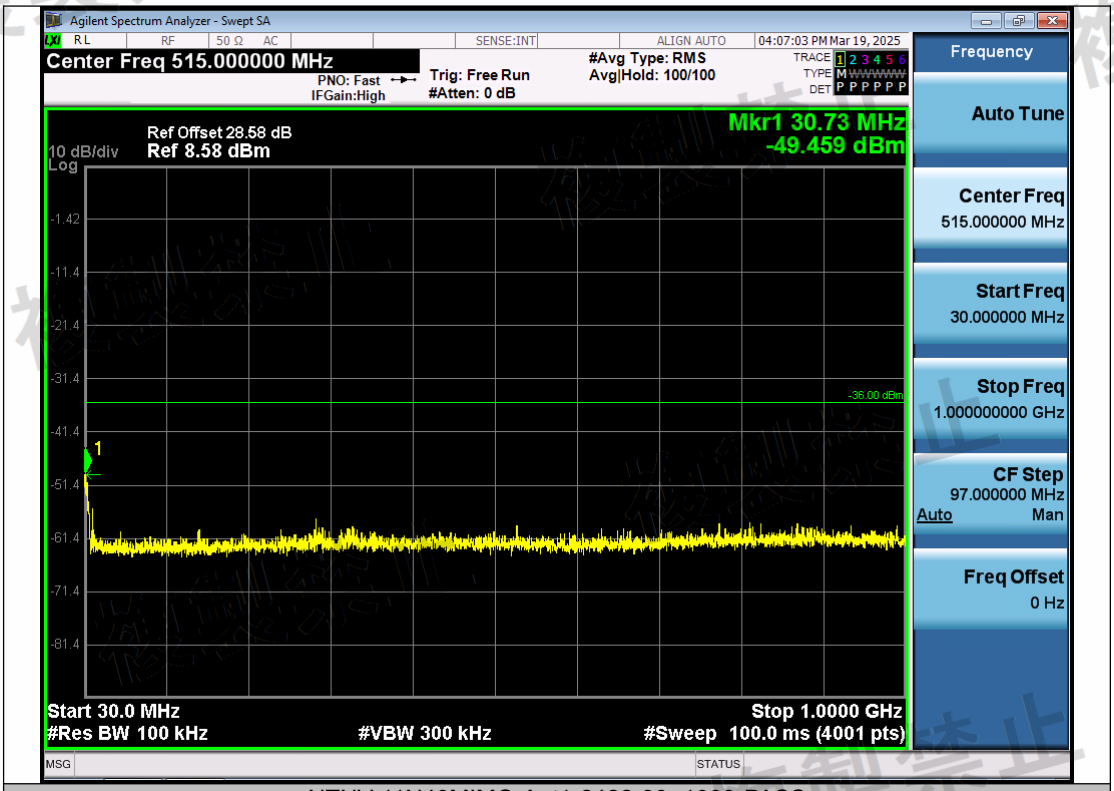
NTNV-11N20MIMO-Ant2-2472-2483.5~2496.5-PASS



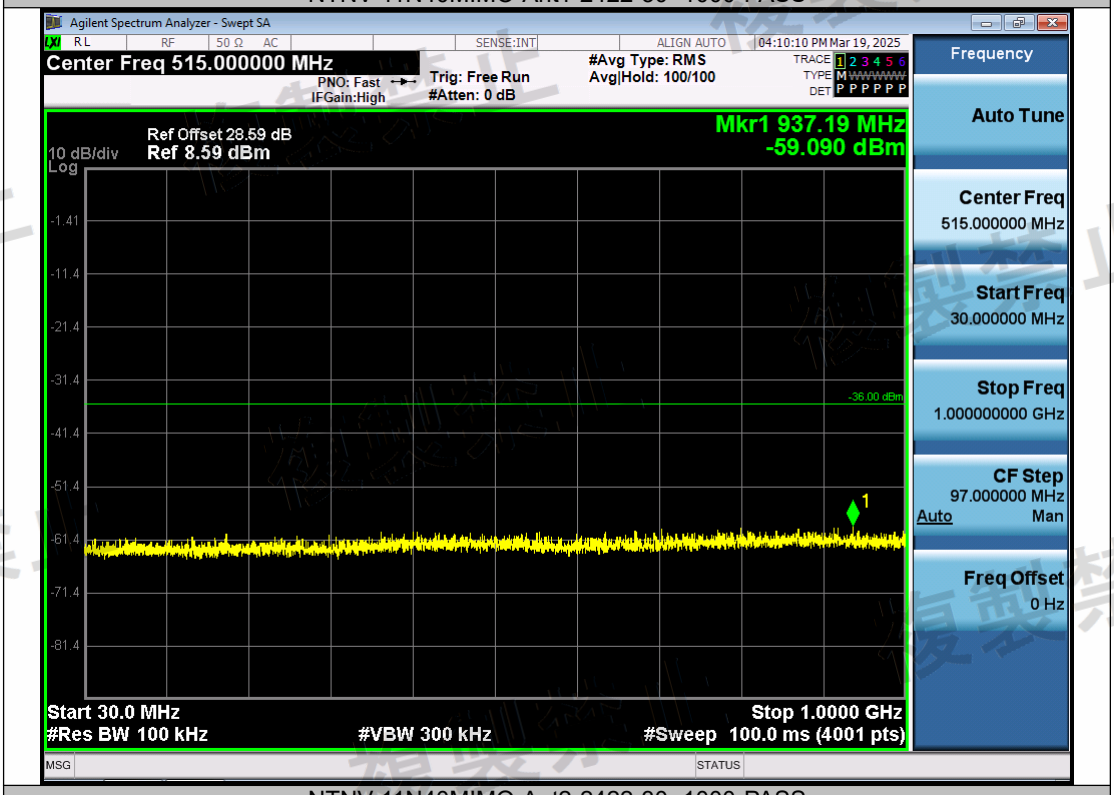
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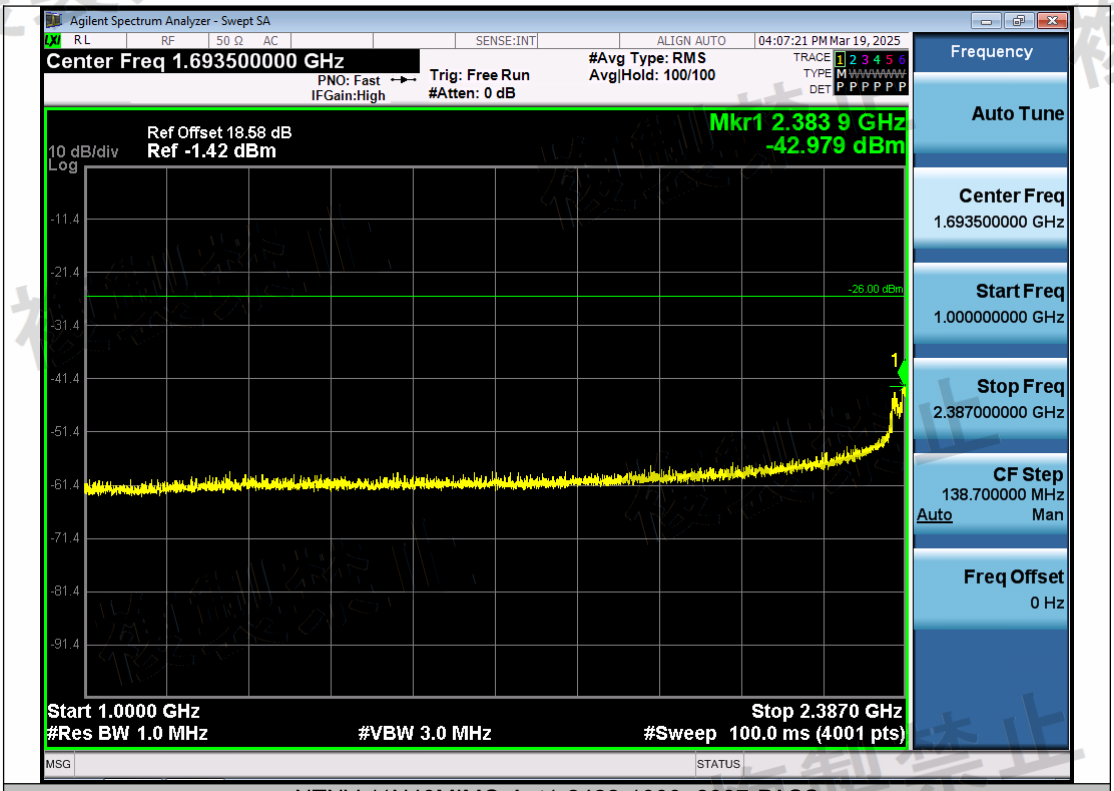
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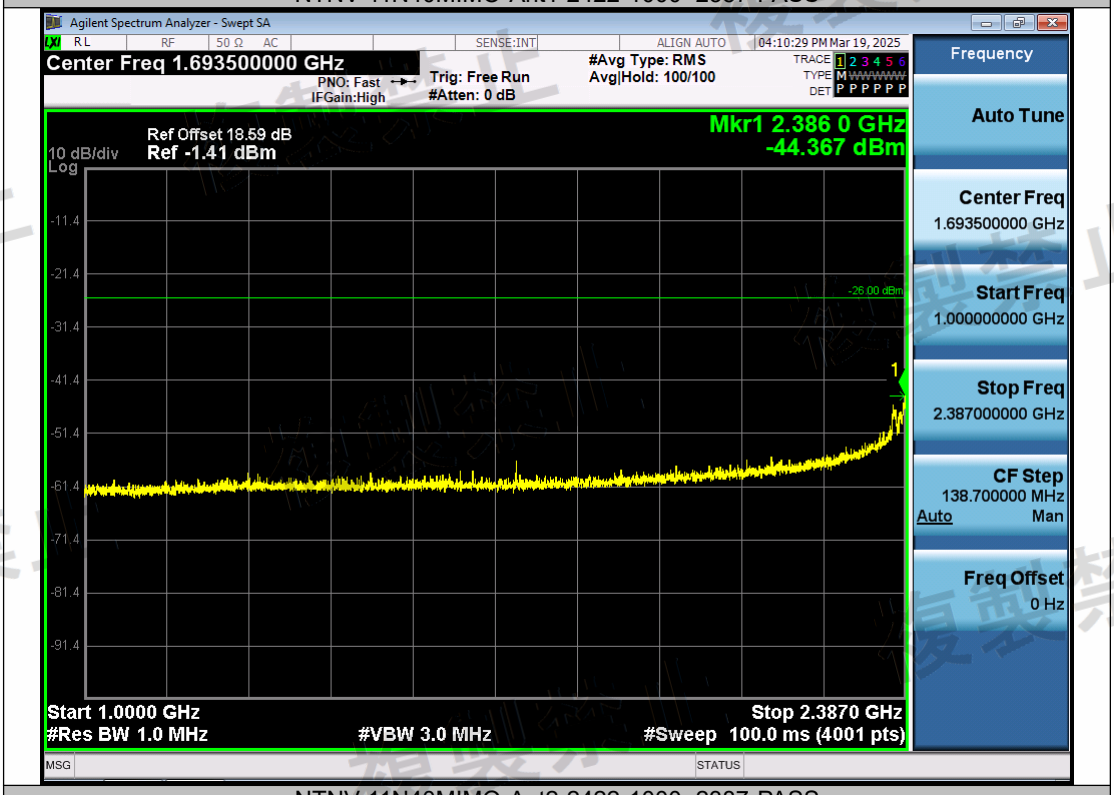
NTNV-11N40MIMO-Ant1-2422-30~1000-PASS



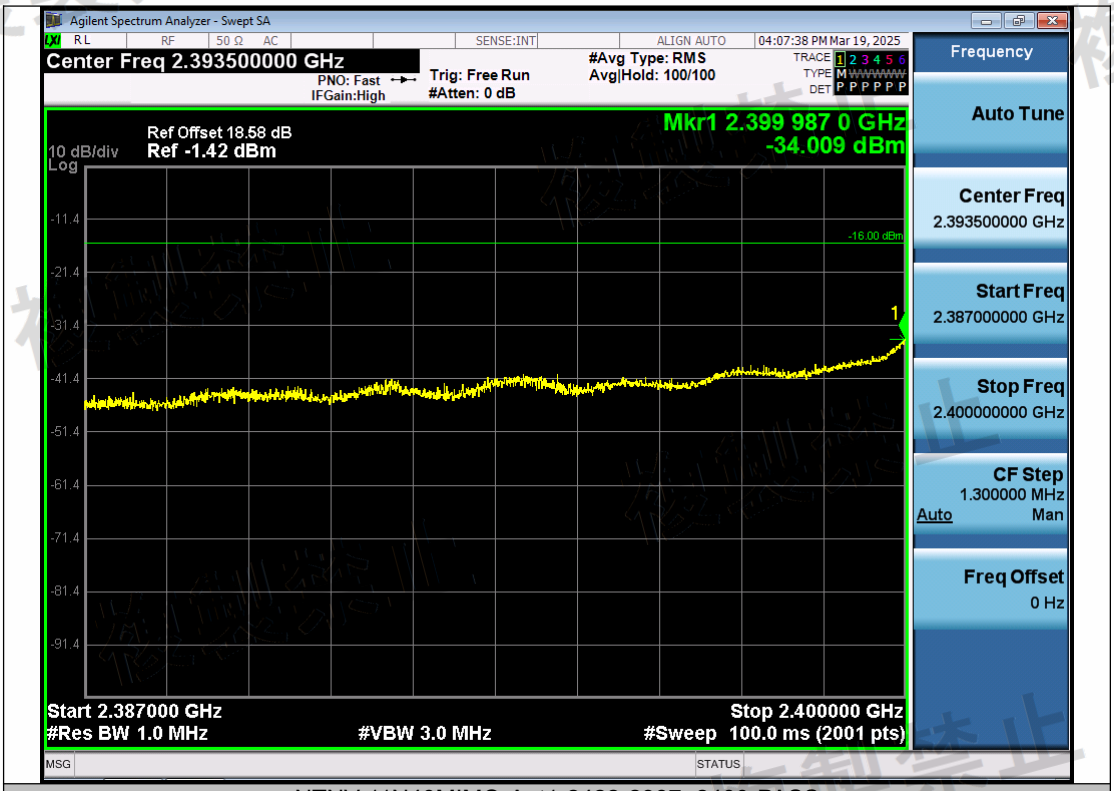
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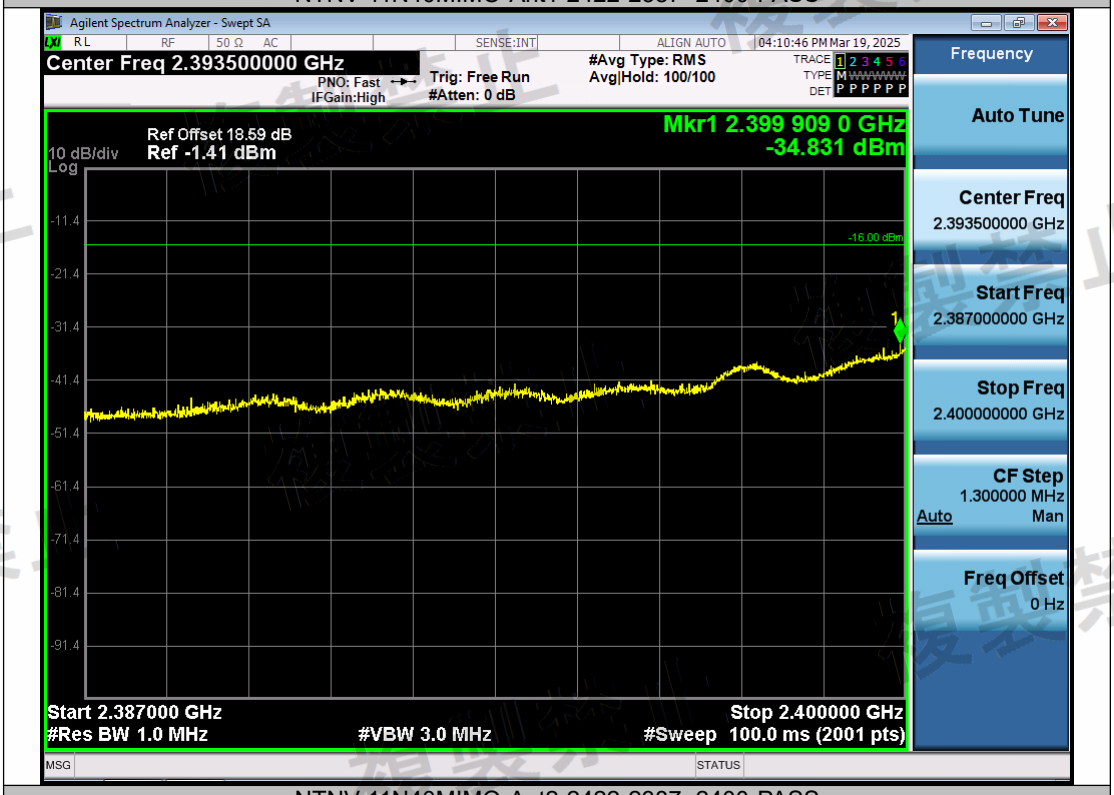
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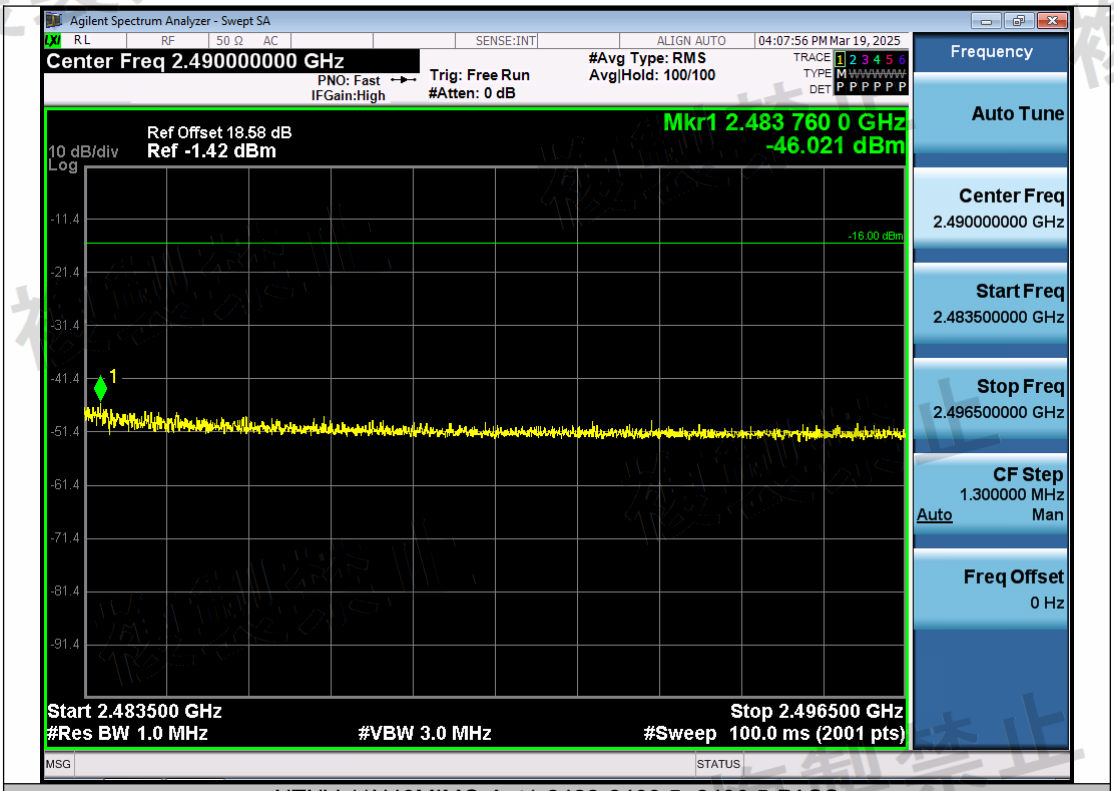
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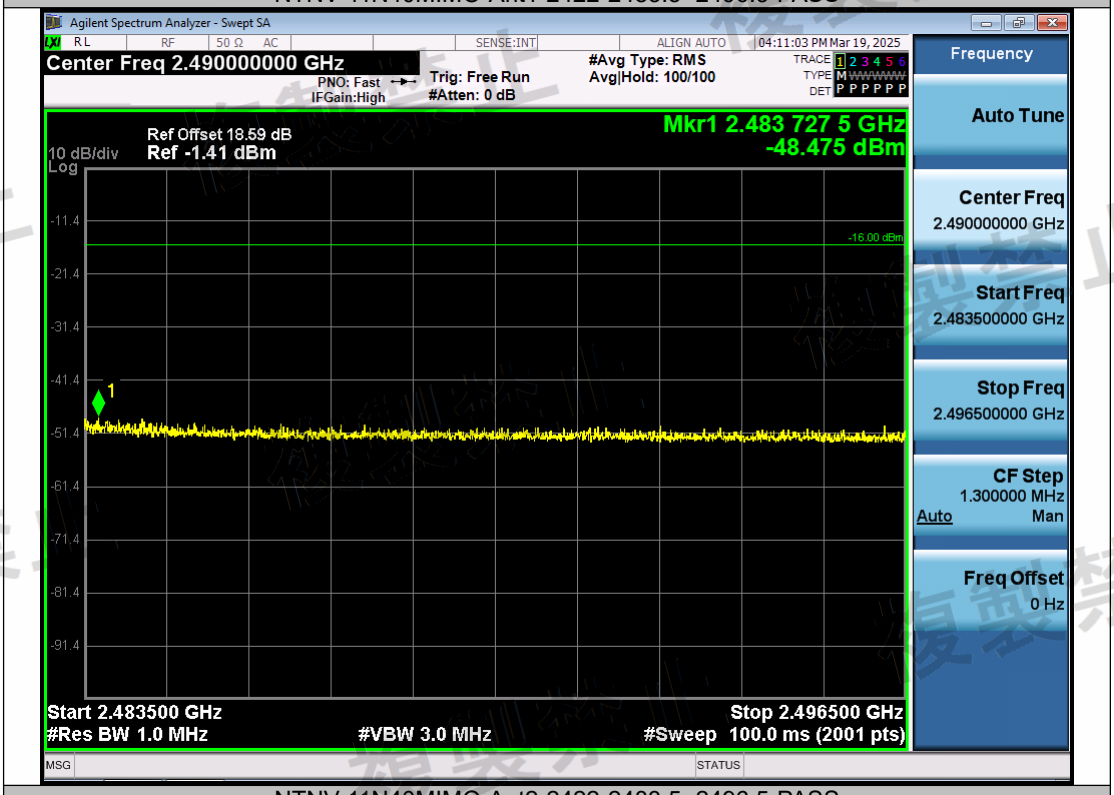
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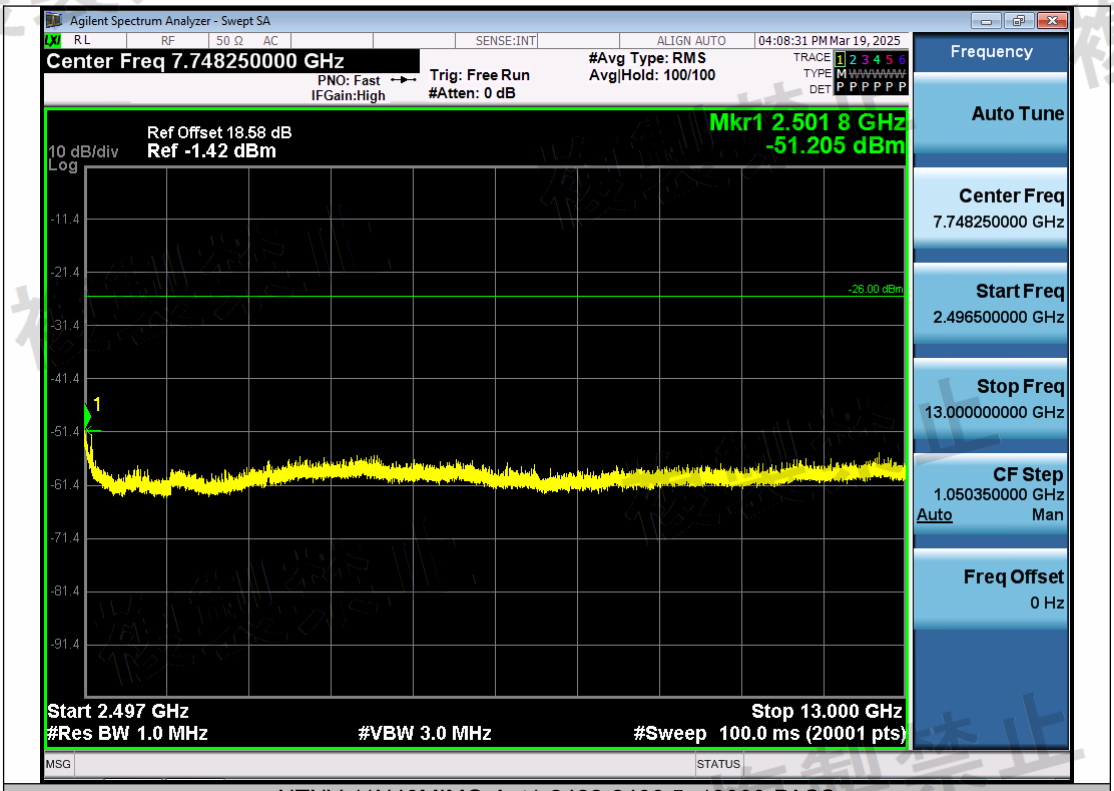
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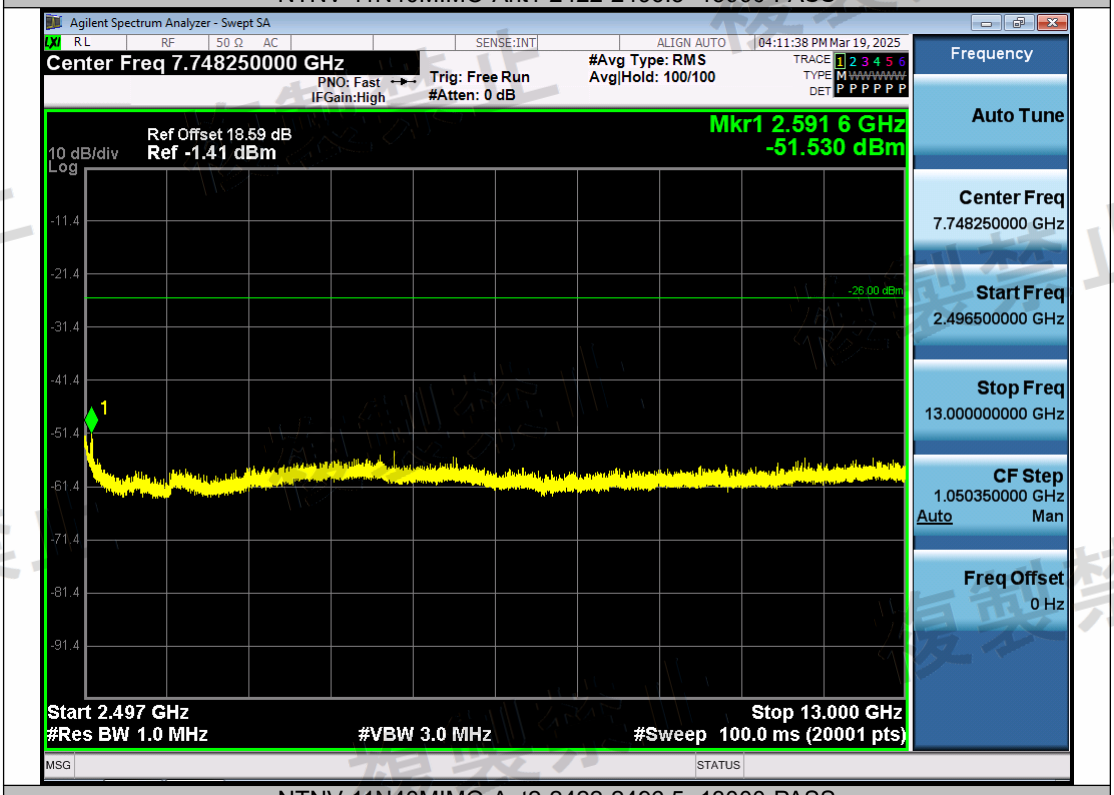
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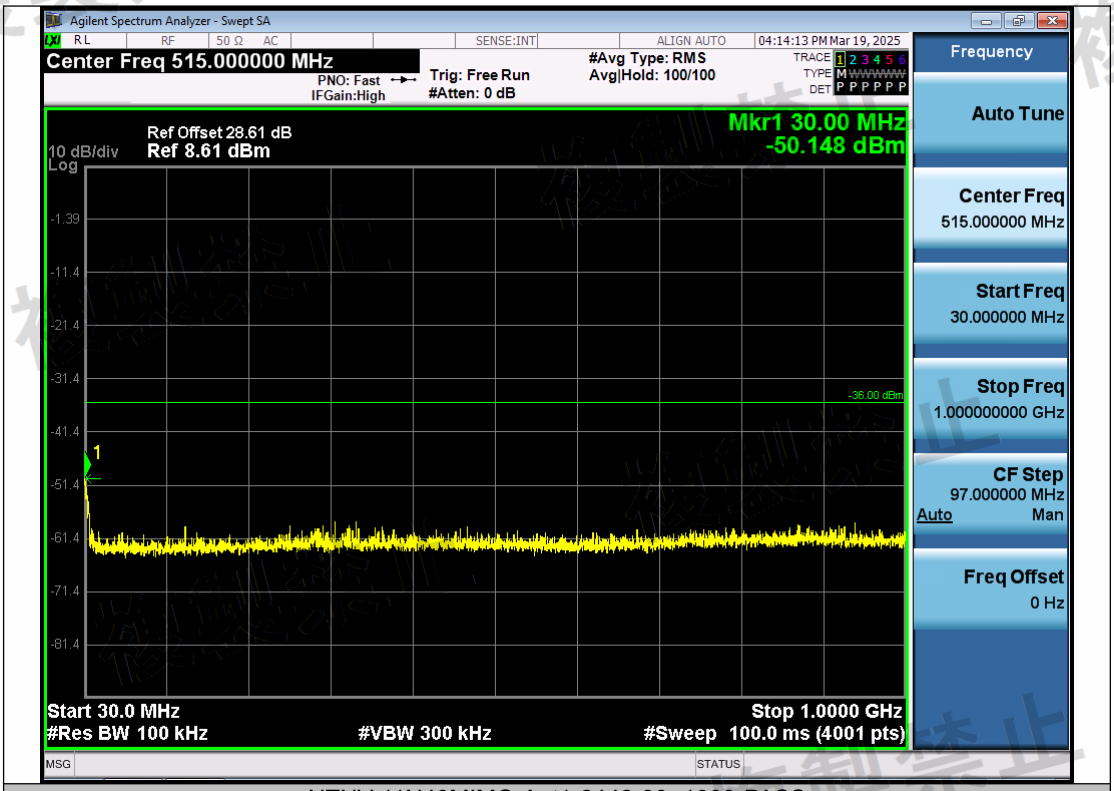
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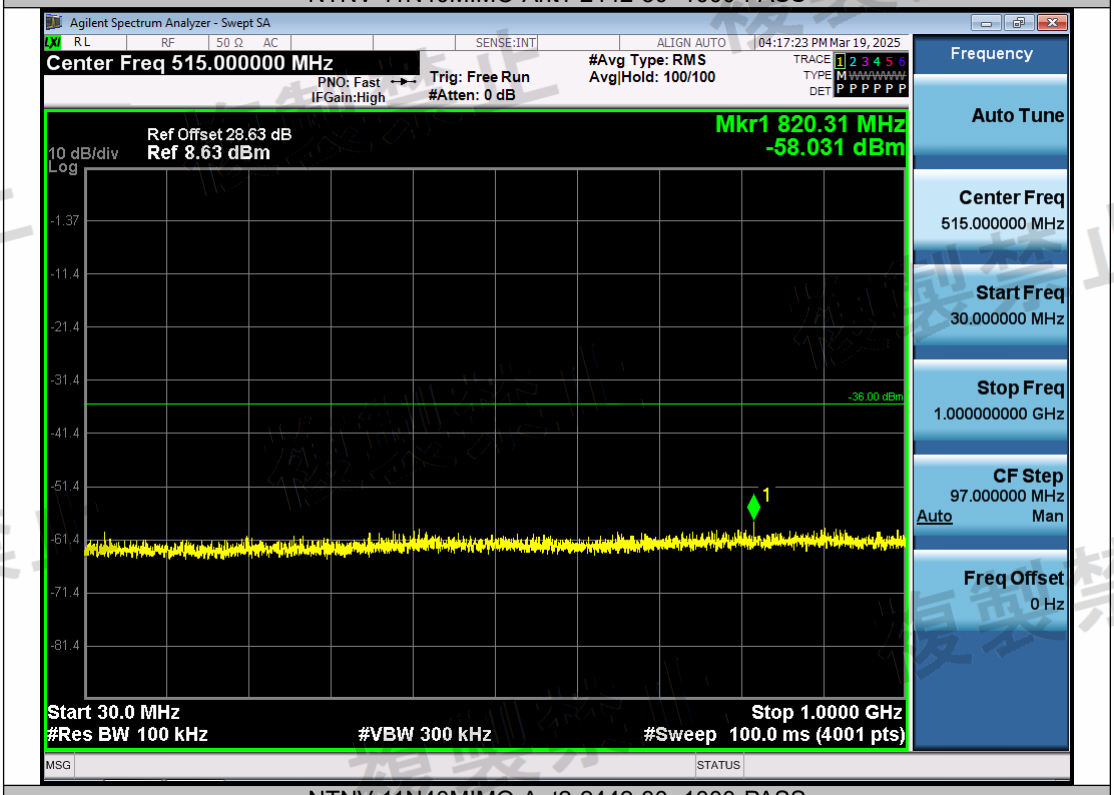
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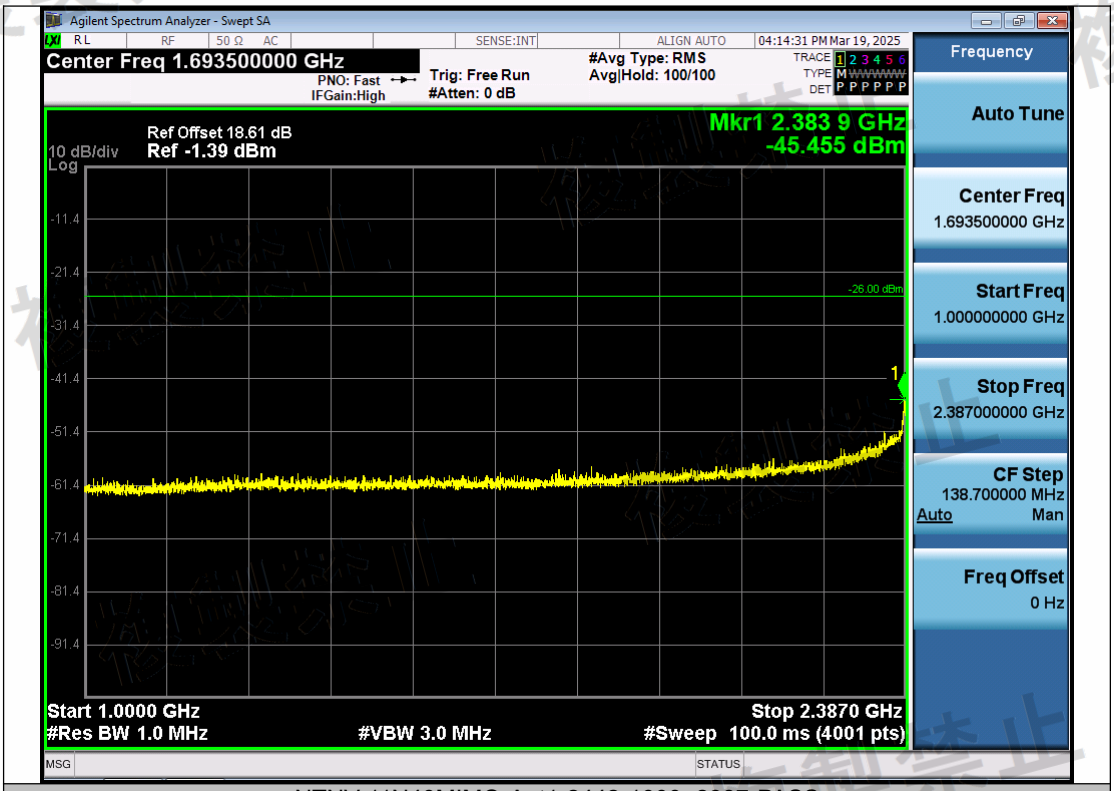
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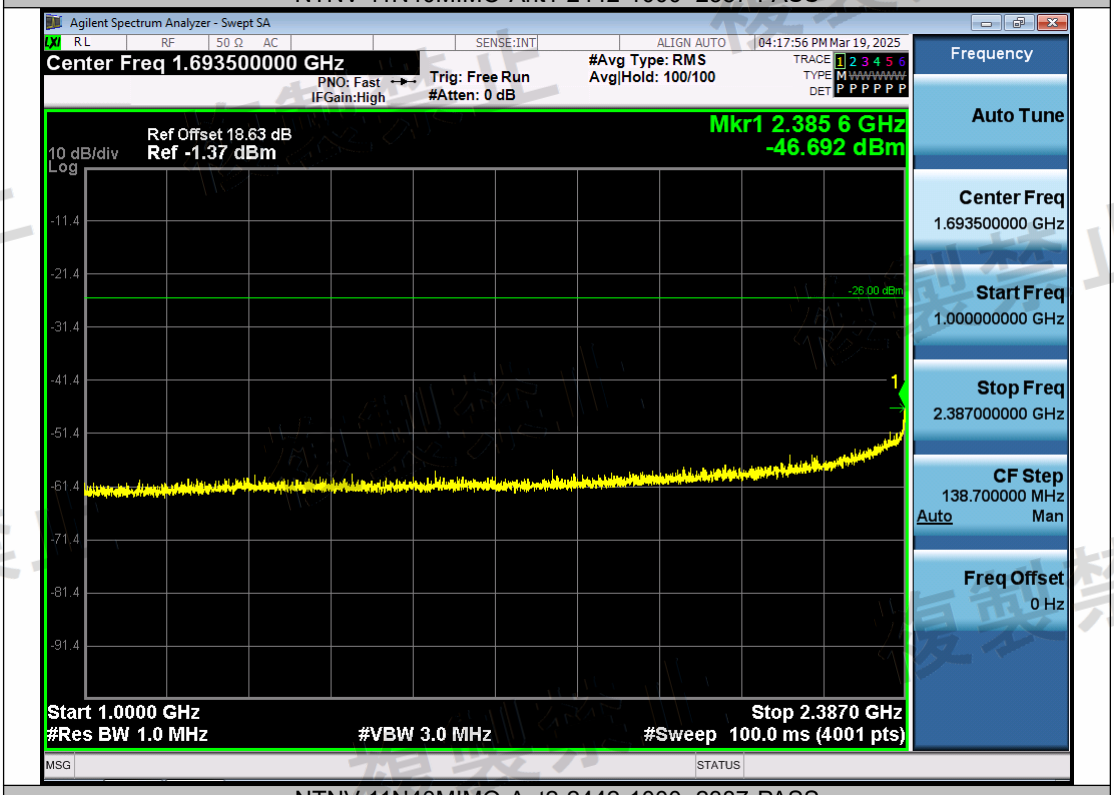
NTNV-11N40MIMO-Ant1-2442-30~1000-PASS



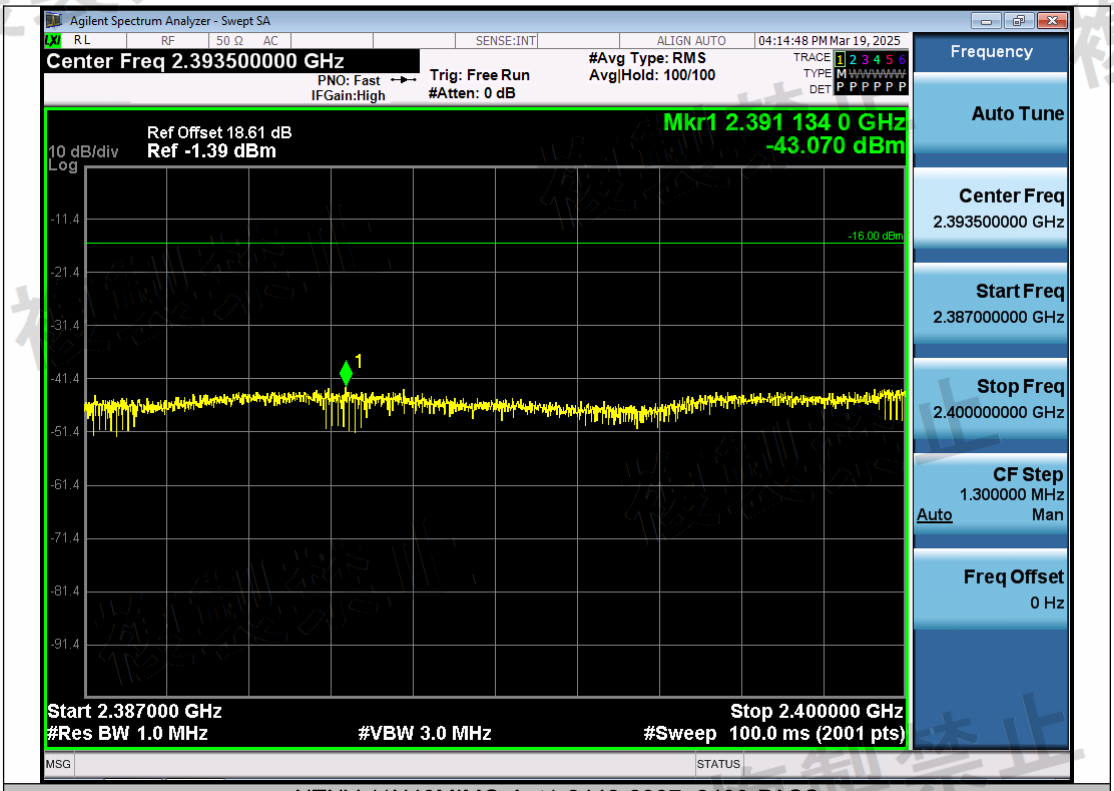
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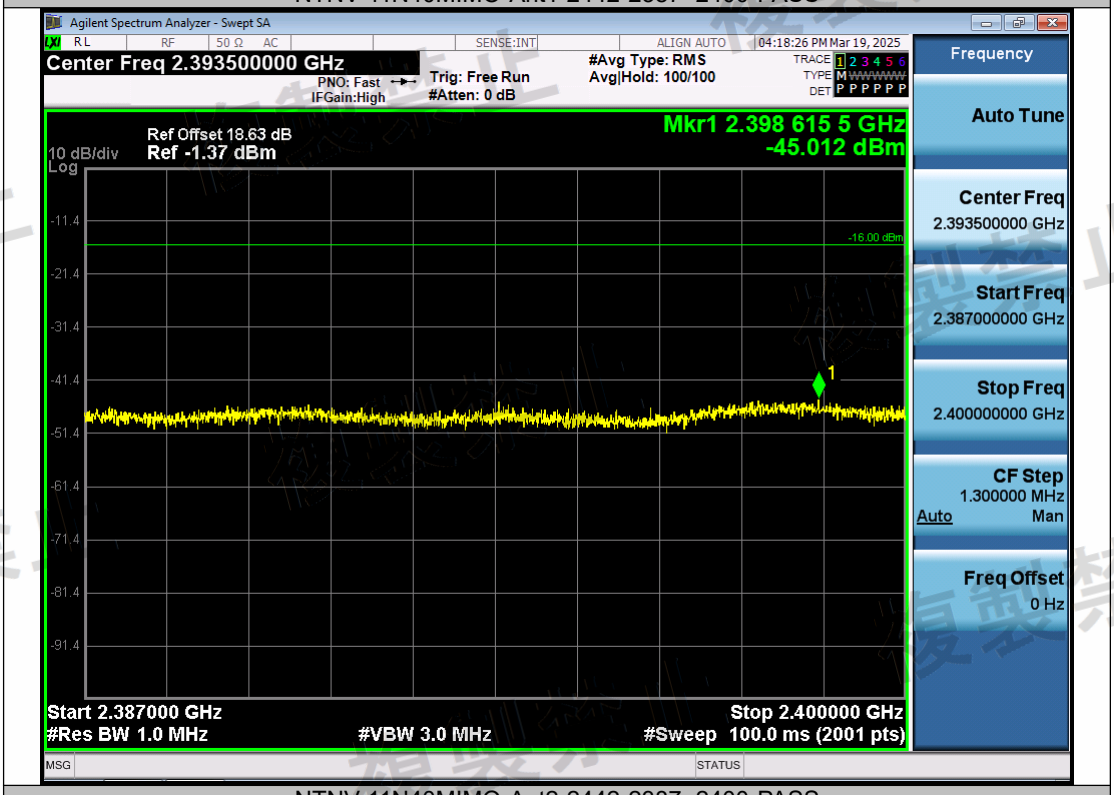
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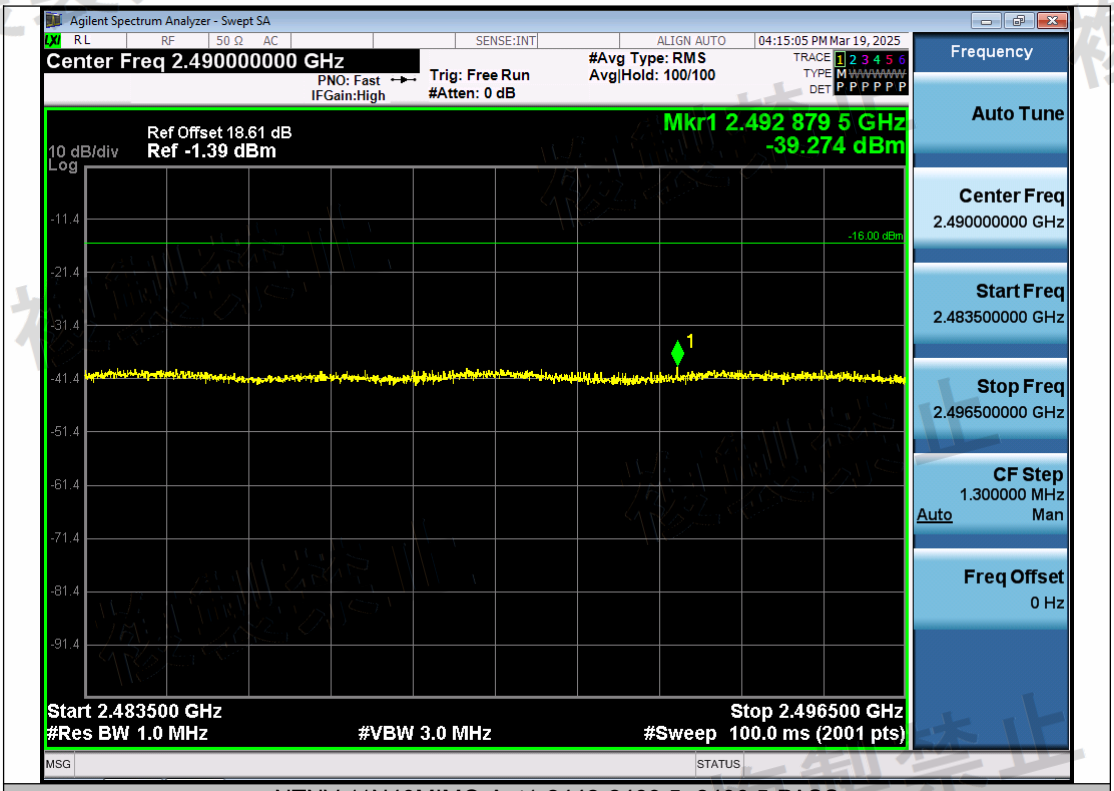
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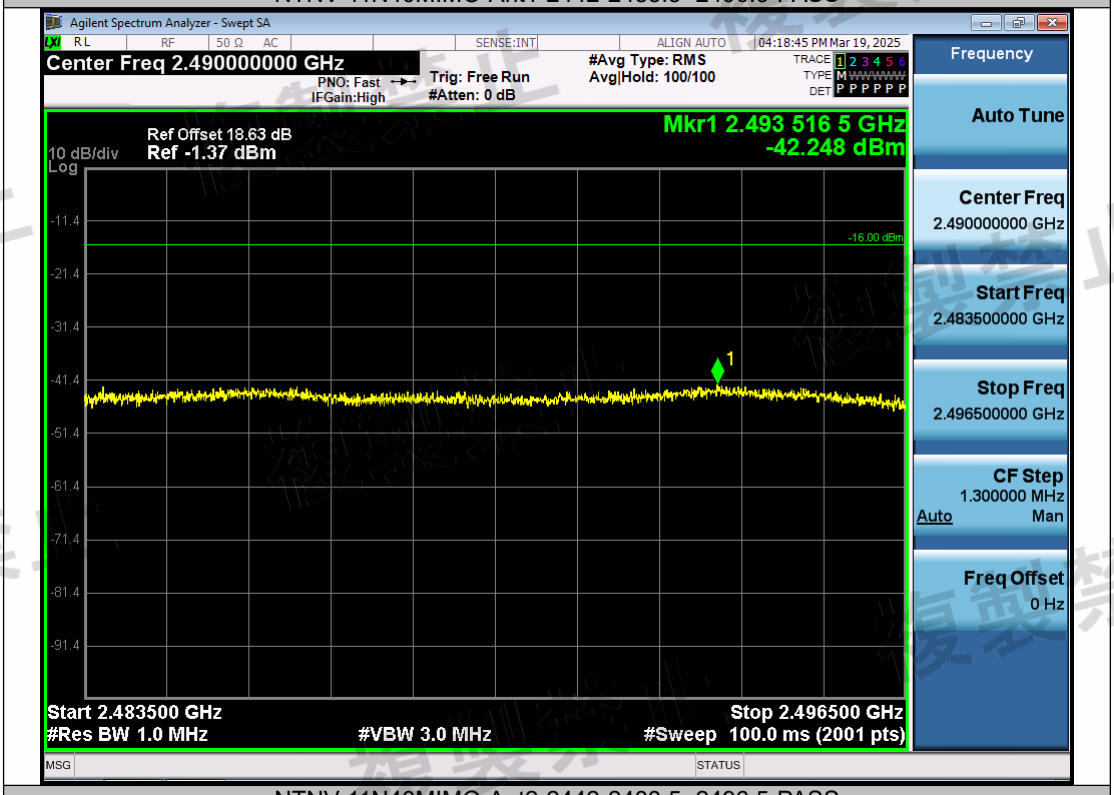
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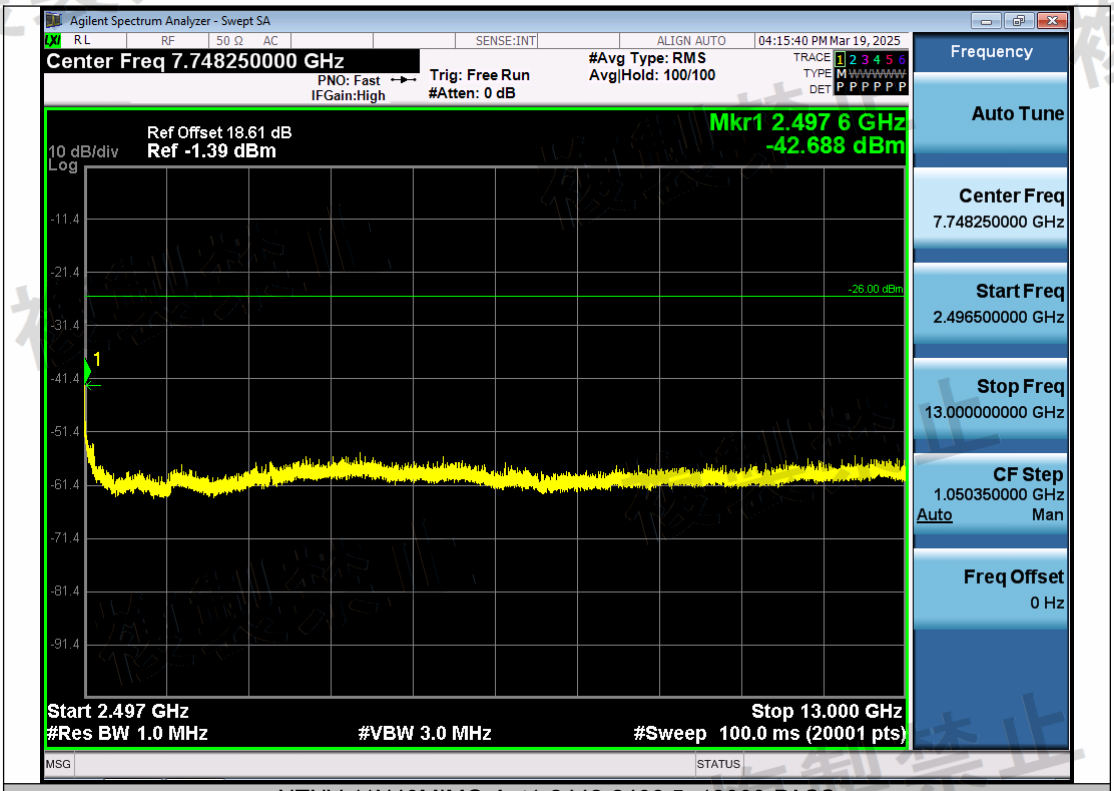
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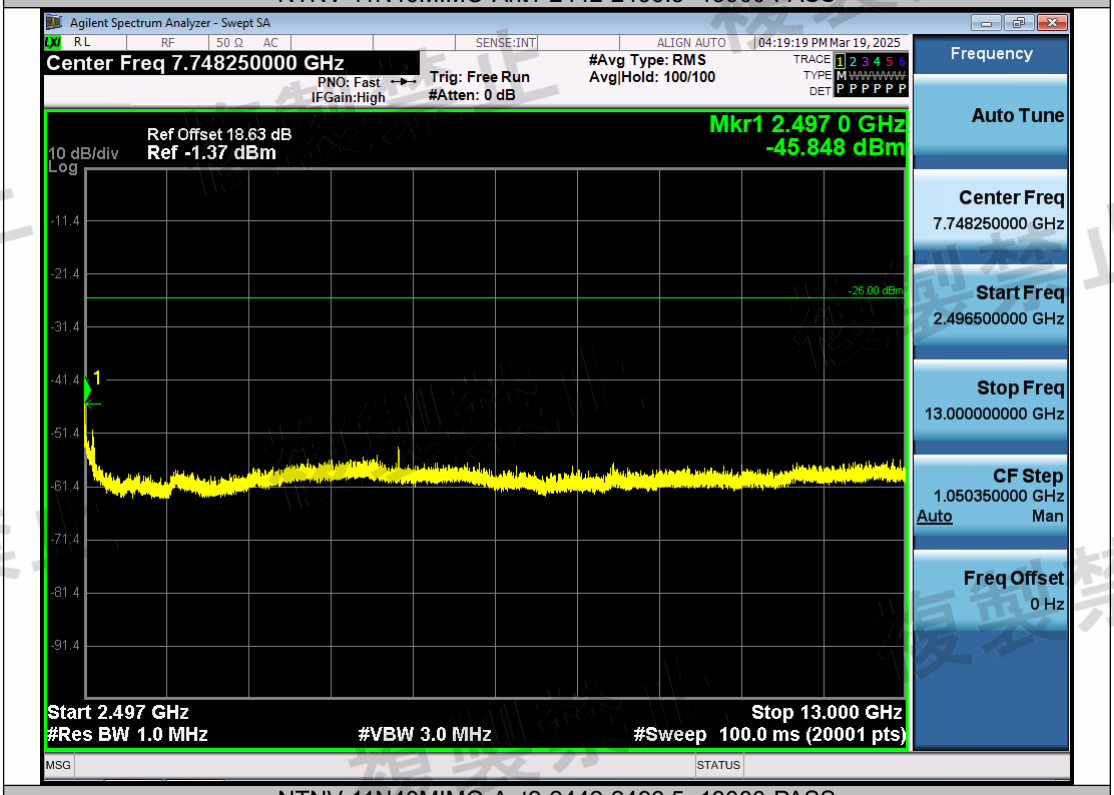
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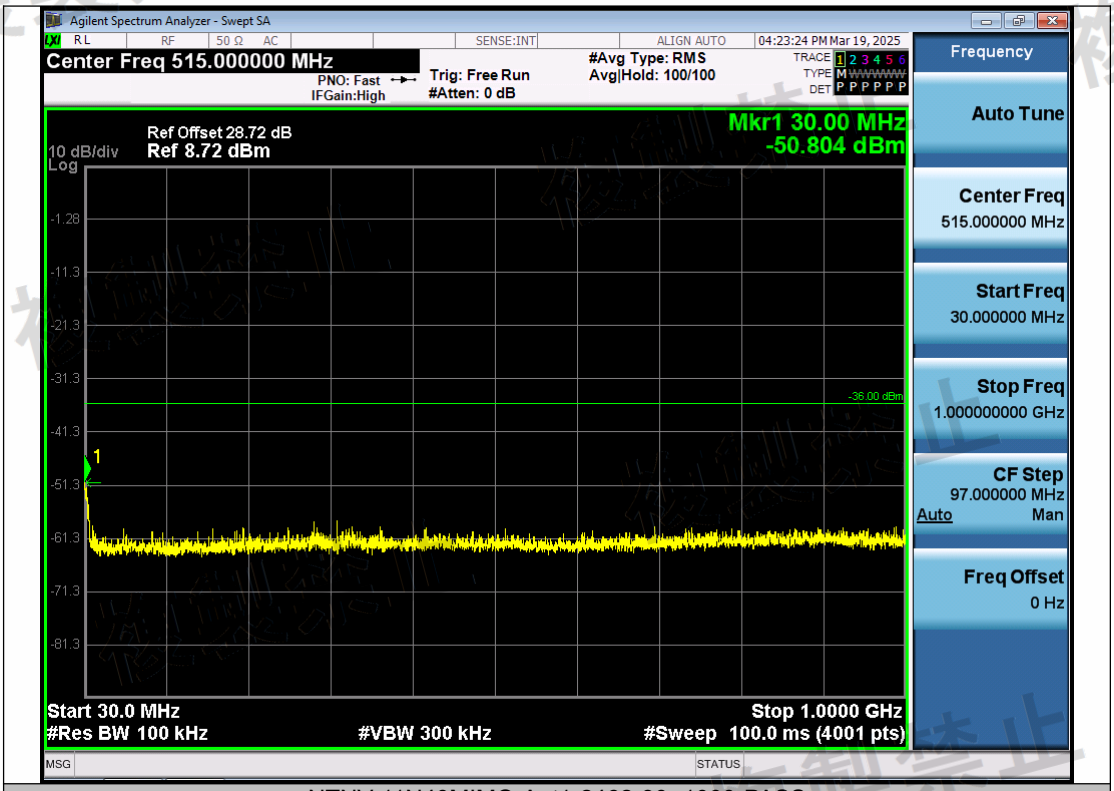
NTNV-11N40MIMO-Ant2-2442-2483.5~2496.5-PASS



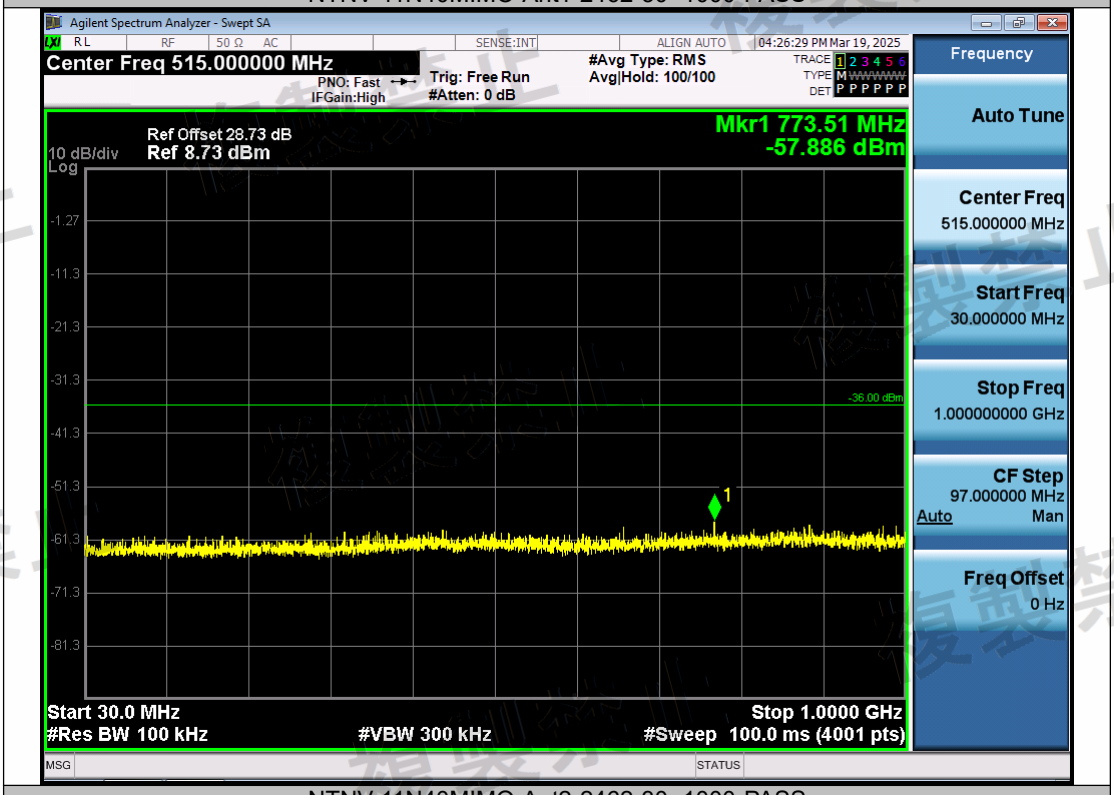
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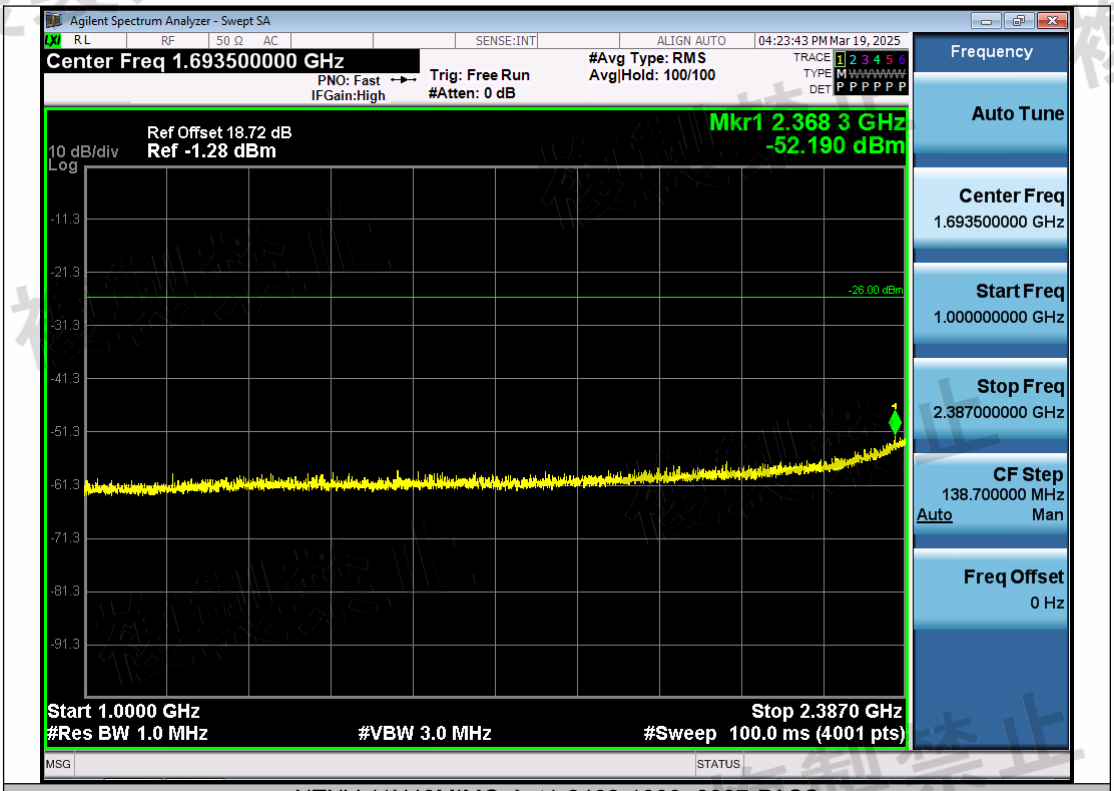
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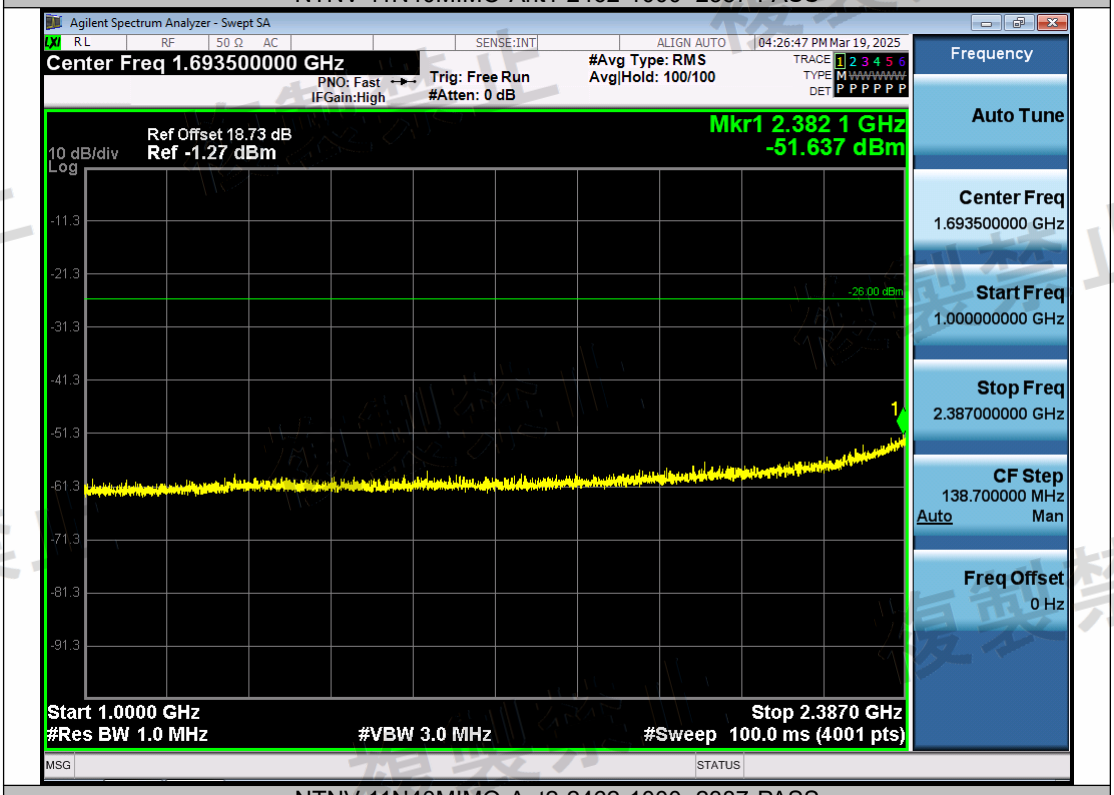
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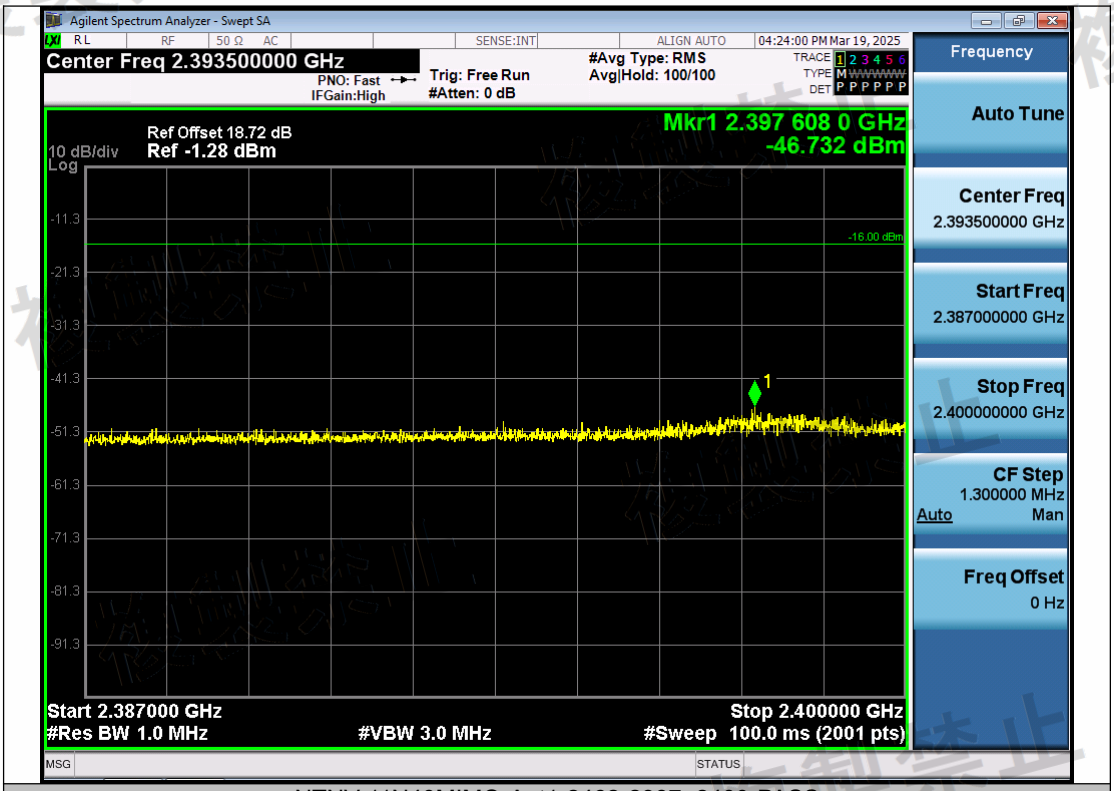
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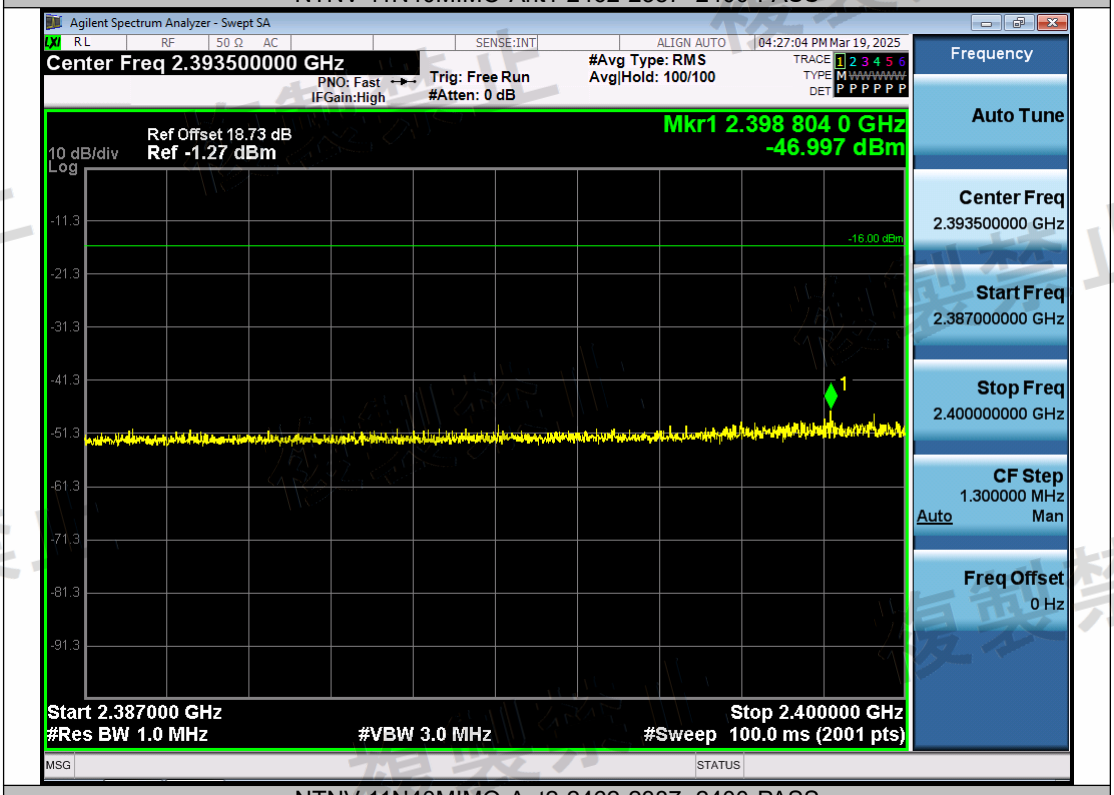
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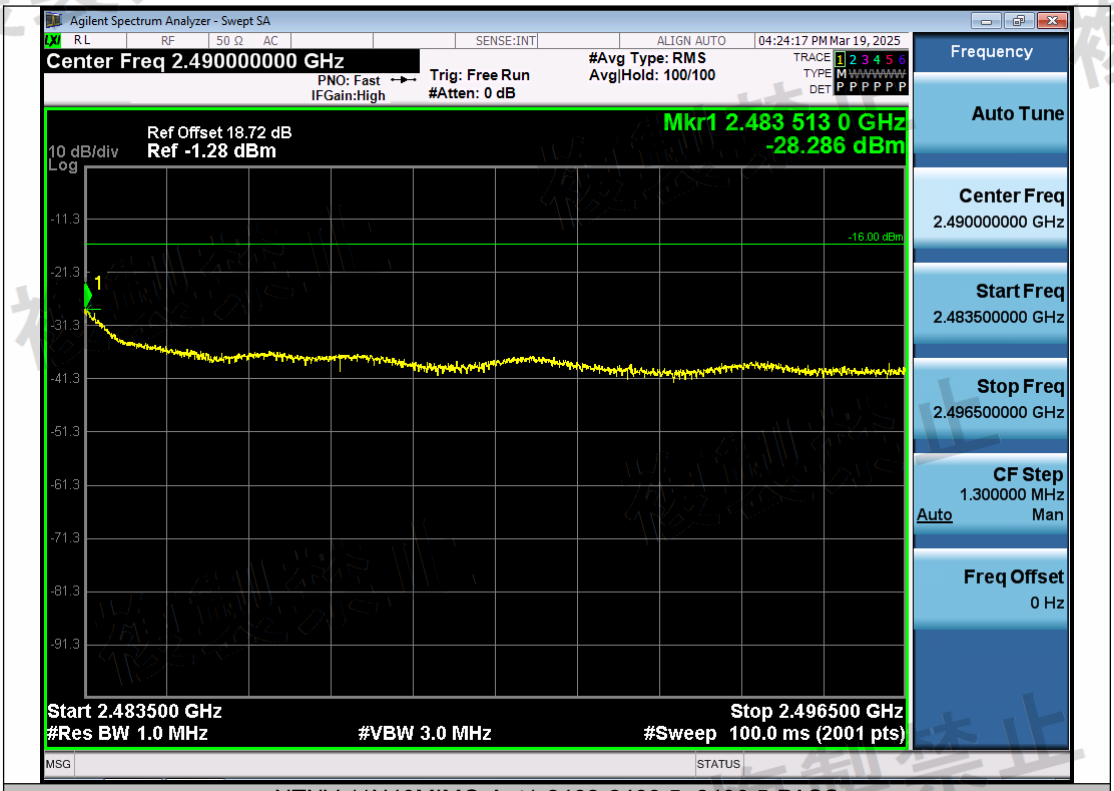
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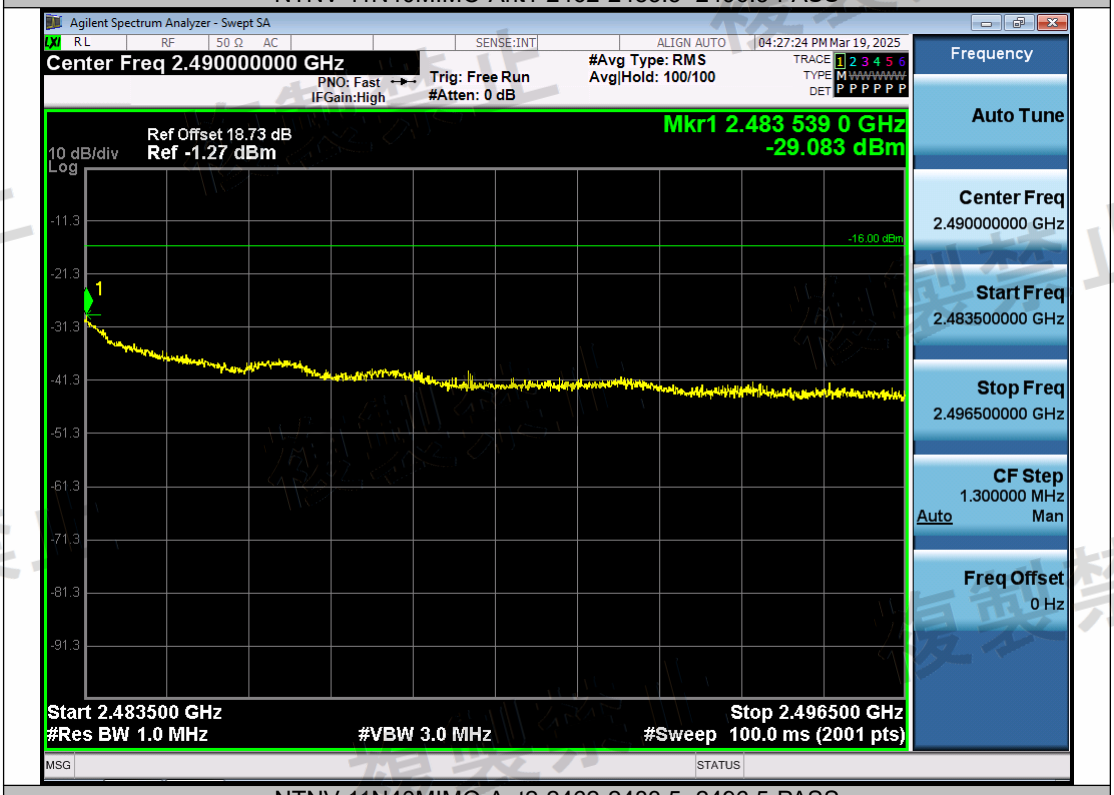
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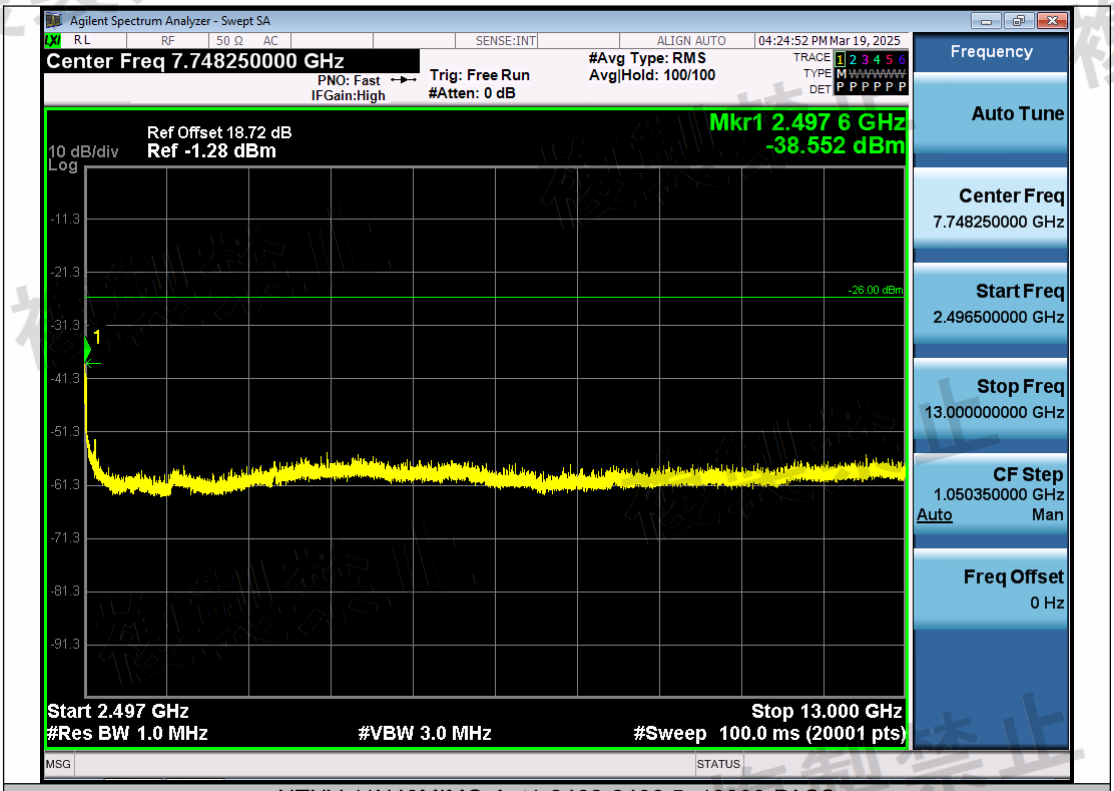
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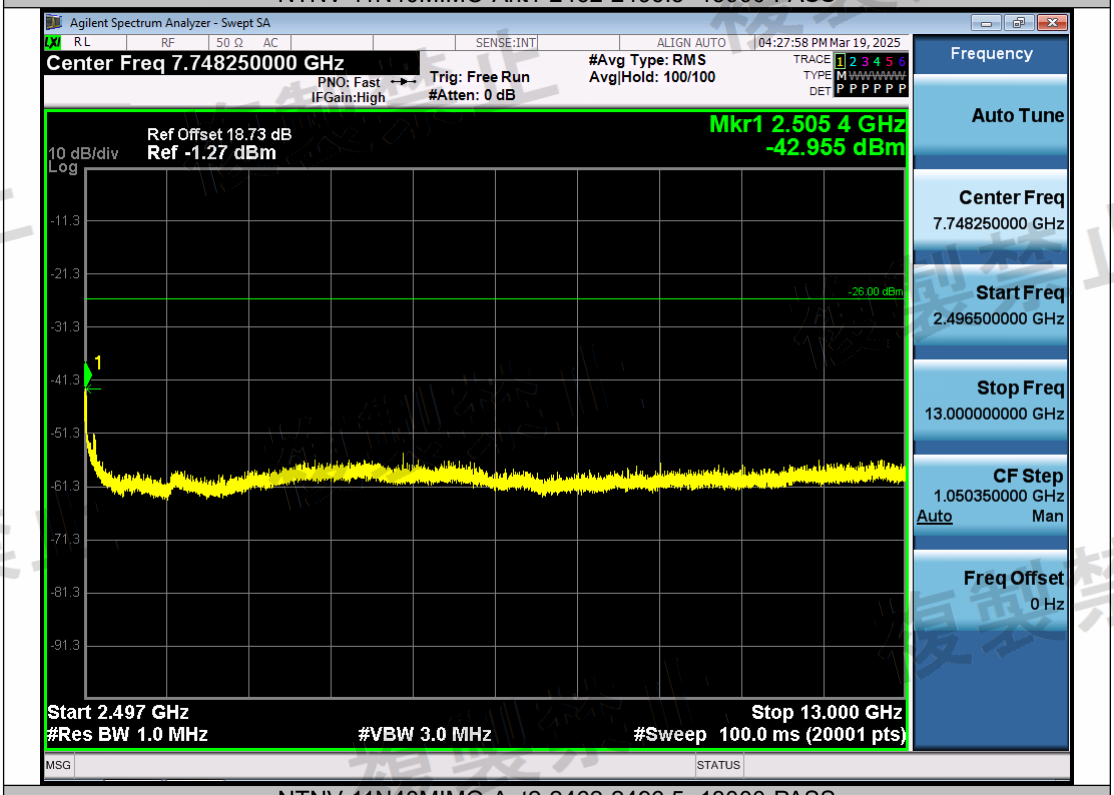
NTNV-11N40MIMO-Ant1-2462-2483.5~2496.5-PASS



NTNV-11N40MIMO-Ant2-2462-2483.5~2496.5-PASS



NTNV-11N40MIMO-Ant1-2462-2496.5~13000-PASS



NTNV-11N40MIMO-Ant2-2462-2496.5~13000-PASS

7.5 Spurious Emissions of Rx

7.5.1 Applicable Standard

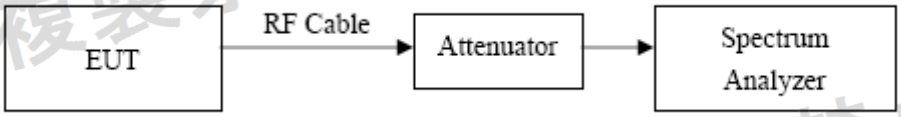
According to Item 19 of Article 2 Paragraph 1.

7.5.2 Conformance Limit

The limit on secondary emissions radiated from the receiving equipment within which the function of other radio equipment will not be impaired shall be, in terms of the power of a dummy antenna circuit that has the same electrical constant as the receiving antenna, 4nW (-54dBm) or less at a frequency below 1 GHz and 20 nW(-47dBm) or less at a frequency of 1 GHz or higher as measured using the circuit.

a. 30 MHz - 1000 MHz	4 nW (-54dBm) or less
b. 1GHz – 12.5 GHz	20 nW(-47dBm) or less

7.5.3 Test Setup Block Diagram



7.5.4 Test Procedure

Set the EUT so that the test frequency is can be measured receipt consecutively all the time.
(1) Set the attenuation value of the dummy load lowest as possible, due to low level of the measured object.
(2) Set Spectrum analyzer for seeking the collateral emission is set as below.

Sweeping Bandwidth	30MHz to 5 times of carrier frequency
Resolution Bandwidth	In case of frequency lower than 1 GHz, 100 kHz In case of frequency higher than 1 MHz
Video Bandwidth	Same level as the resolution bandwidth
Sweep Time	Minimum time to assure the measurement accuracy
Y-Axis Scale	10 dB/Div
Sweep Mode	Single sweep
Phase-Detection Mode	Positive peak

(3) Spectrum analyzer for measuring the collateral emission is set as below.

Central Frequency	Collateral emission frequency
Sweeping Bandwidth	0 Hz
Resolution Bandwidth	In case of frequency lower than 1 GHz, 100 kHz In case of frequency higher than 1 MHz
Video Bandwidth	Same level as the resolution bandwidth
Sweep Mode	Single sweep
Detection Mode	Sample

Set the spectrum analyzer as (2), seek the maximum amplitude of the collateral emission.
In case of sought result lower than 1/10 limit value, employ the sought value as the measured value.
In case the sought value exceeds 1/10 limit value, seek the collateral emission frequency by narrowing the sweeping band sequentially to 1/10 for the purpose of higher accuracy of the spectrum analyzer. Set the spectrum analyzer as (3).

7.5.5 Environmental Conditions

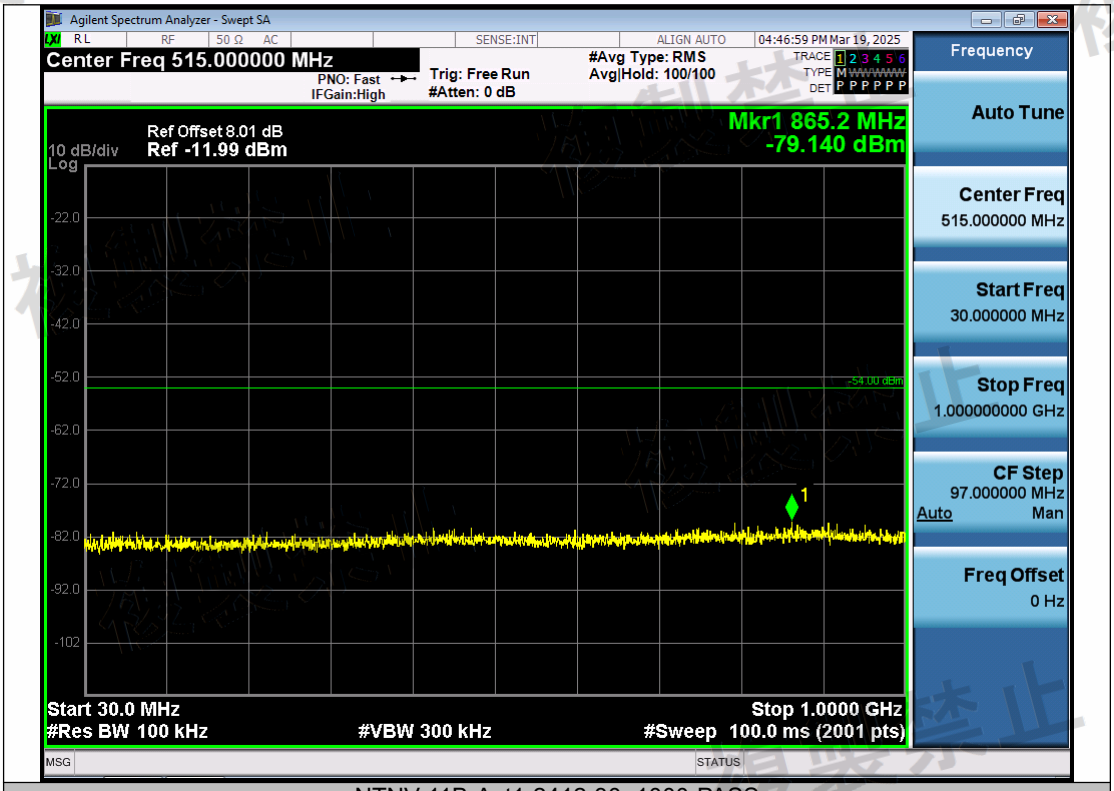
Temperature:	25 °C
Relative Humidity:	60%
ATM Pressure:	1011 mbar

7.5.6 Test Results

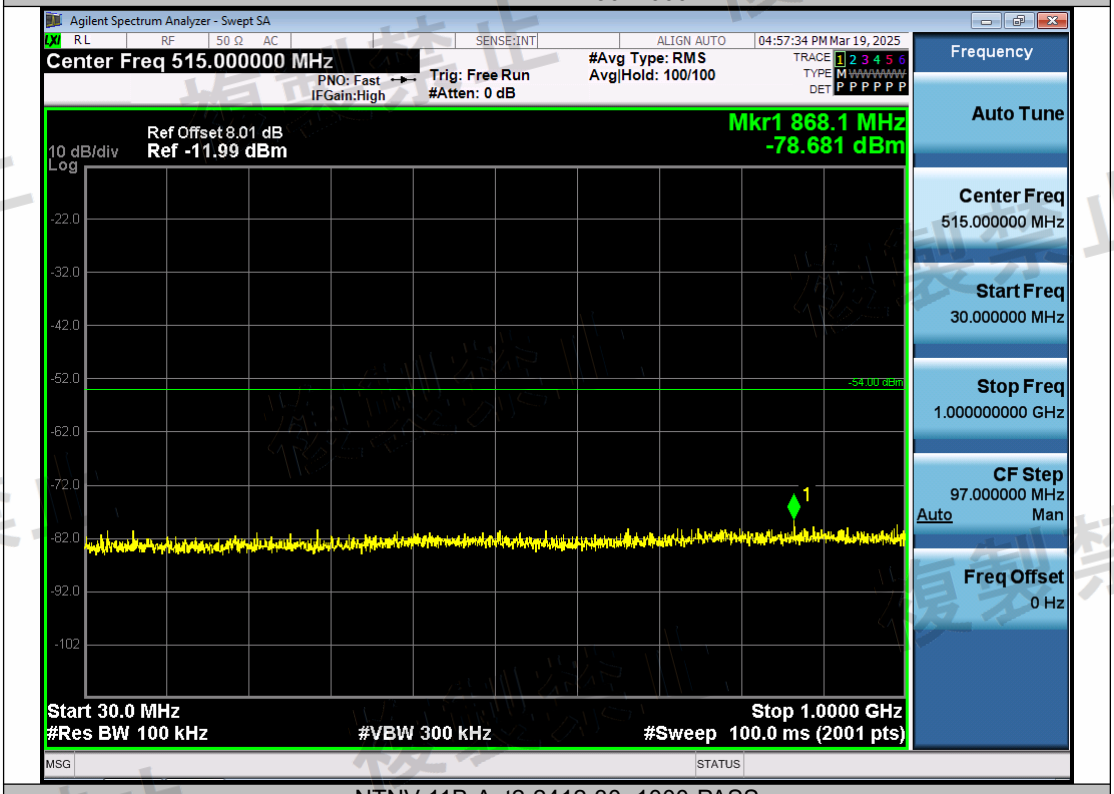
TestCondition	TestMode	Antenna	Frequency [MHz]	Freq.Range [MHz]	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [nW]	Limit [nW]	Verdict
NTNV	11B	Ant1	2412	30~1000	865.17	-79.14	≤-54	0.01219	≤4	PASS
NTNV	11B	Ant2	2412	30~1000	868.08	-78.68	≤-54	0.01355	≤4	PASS
NTNV	11B	Ant1	2412	1000~13000	2455.60	-66.14	≤-47	0.24322	≤20	PASS
NTNV	11B	Ant2	2412	1000~13000	2456.20	-65.67	≤-47	0.27102	≤20	PASS
NTNV	11B	Ant1	2442	30~1000	888.45	-79.85	≤-54	0.01035	≤4	PASS
NTNV	11B	Ant2	2442	30~1000	874.39	-78.83	≤-54	0.01309	≤4	PASS
NTNV	11B	Ant1	2442	1000~13000	2455.00	-65.04	≤-47	0.31333	≤20	PASS
NTNV	11B	Ant2	2442	1000~13000	2456.80	-65.34	≤-47	0.29242	≤20	PASS
NTNV	11B	Ant1	2472	30~1000	752.17	-78.91	≤-54	0.01285	≤4	PASS
NTNV	11B	Ant2	2472	30~1000	978.66	-78.76	≤-54	0.01330	≤4	PASS
NTNV	11B	Ant1	2472	1000~13000	3050.80	-65.16	≤-47	0.30479	≤20	PASS
NTNV	11B	Ant2	2472	1000~13000	2456.20	-65.14	≤-47	0.30620	≤20	PASS
NTNV	11G	Ant1	2412	30~1000	870.02	-79.58	≤-54	0.01102	≤4	PASS
NTNV	11G	Ant2	2412	30~1000	851.59	-79.98	≤-54	0.01005	≤4	PASS
NTNV	11G	Ant1	2412	1000~13000	11768.20	-66.45	≤-47	0.22646	≤20	PASS
NTNV	11G	Ant2	2412	1000~13000	2457.40	-63.82	≤-47	0.41495	≤20	PASS
NTNV	11G	Ant1	2442	30~1000	881.66	-79.02	≤-54	0.01253	≤4	PASS
NTNV	11G	Ant2	2442	30~1000	880.21	-79.55	≤-54	0.01109	≤4	PASS
NTNV	11G	Ant1	2442	1000~13000	1763.80	-65.52	≤-47	0.28054	≤20	PASS
NTNV	11G	Ant2	2442	1000~13000	2456.20	-64.98	≤-47	0.31769	≤20	PASS
NTNV	11G	Ant1	2472	30~1000	552.35	-78.87	≤-54	0.01297	≤4	PASS
NTNV	11G	Ant2	2472	30~1000	897.67	-79.10	≤-54	0.01230	≤4	PASS
NTNV	11G	Ant1	2472	1000~13000	11976.40	-65.61	≤-47	0.27479	≤20	PASS
NTNV	11G	Ant2	2472	1000~13000	2455.60	-64.21	≤-47	0.37931	≤20	PASS
NTNV	11N20MIMO	Ant1	2412	30~1000	971.39	-79.67	≤-54	0.01079	≤4	PASS
NTNV	11N20MIMO	Ant2	2412	30~1000	860.81	-79.28	≤-54	0.01180	≤4	PASS
NTNV	11N20MIMO	Ant1	2412	1000~13000	2453.80	-64.76	≤-47	0.33420	≤20	PASS
NTNV	11N20MIMO	Ant2	2412	1000~13000	2456.20	-65.15	≤-47	0.30549	≤20	PASS
NTNV	11N20MIMO	Ant1	2442	30~1000	818.13	-79.42	≤-54	0.01143	≤4	PASS
NTNV	11N20MIMO	Ant2	2442	30~1000	935.50	-78.59	≤-54	0.01384	≤4	PASS
NTNV	11N20MIMO	Ant1	2442	1000~13000	2456.20	-64.08	≤-47	0.39084	≤20	PASS
NTNV	11N20MIMO	Ant2	2442	1000~13000	2456.20	-64.52	≤-47	0.35318	≤20	PASS
NTNV	11N20MIMO	Ant1	2472	30~1000	818.61	-79.28	≤-54	0.01180	≤4	PASS
NTNV	11N20MIMO	Ant2	2472	30~1000	823.46	-79.31	≤-54	0.01172	≤4	PASS
NTNV	11N20MIMO	Ant1	2472	1000~13000	2455.60	-64.91	≤-47	0.32285	≤20	PASS
NTNV	11N20MIMO	Ant2	2472	1000~13000	2455.00	-64.38	≤-47	0.36475	≤20	PASS
NTNV	11N40MIMO	Ant1	2422	30~1000	916.10	-79.50	≤-54	0.01122	≤4	PASS
NTNV	11N40MIMO	Ant2	2422	30~1000	957.32	-79.74	≤-54	0.01062	≤4	PASS
NTNV	11N40MIMO	Ant1	2422	1000~13000	2455.60	-65.36	≤-47	0.29107	≤20	PASS
NTNV	11N40MIMO	Ant2	2422	1000~13000	5851.60	-66.64	≤-47	0.21677	≤20	PASS
NTNV	11N40MIMO	Ant1	2442	30~1000	941.32	-79.97	≤-54	0.01007	≤4	PASS
NTNV	11N40MIMO	Ant2	2442	30~1000	901.55	-80.31	≤-54	0.00931	≤4	PASS
NTNV	11N40MIMO	Ant1	2442	1000~13000	6001.60	-66.51	≤-47	0.22336	≤20	PASS

NTNV	11N40MIMO	Ant2	2442	1000~13000	6005.80	-66.21	≤-47	0.23933	≤20	PASS
NTNV	11N40MIMO	Ant1	2462	30~1000	926.28	-79.51	≤-54	0.01119	≤4	PASS
NTNV	11N40MIMO	Ant2	2462	30~1000	907.37	-79.47	≤-54	0.01130	≤4	PASS
NTNV	11N40MIMO	Ant1	2462	1000~13000	2411.20	-65.50	≤-47	0.28184	≤20	PASS
NTNV	11N40MIMO	Ant2	2462	1000~13000	5927.20	-65.56	≤-47	0.27797	≤20	PASS

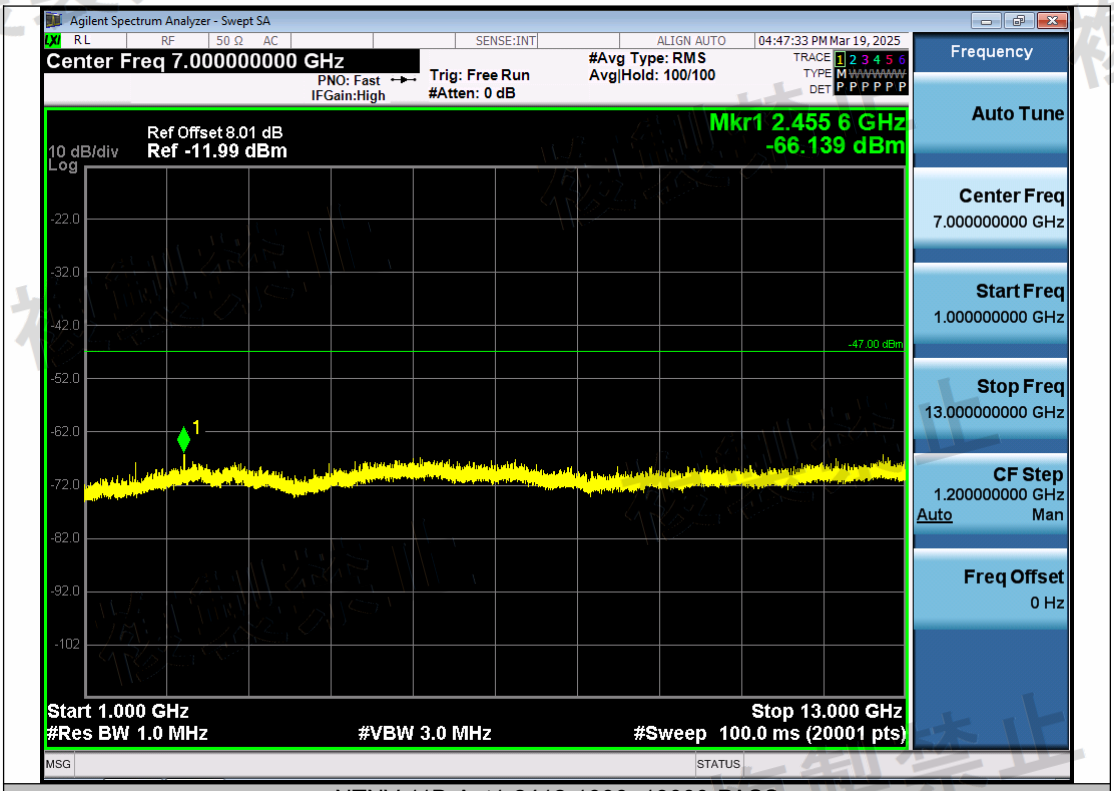
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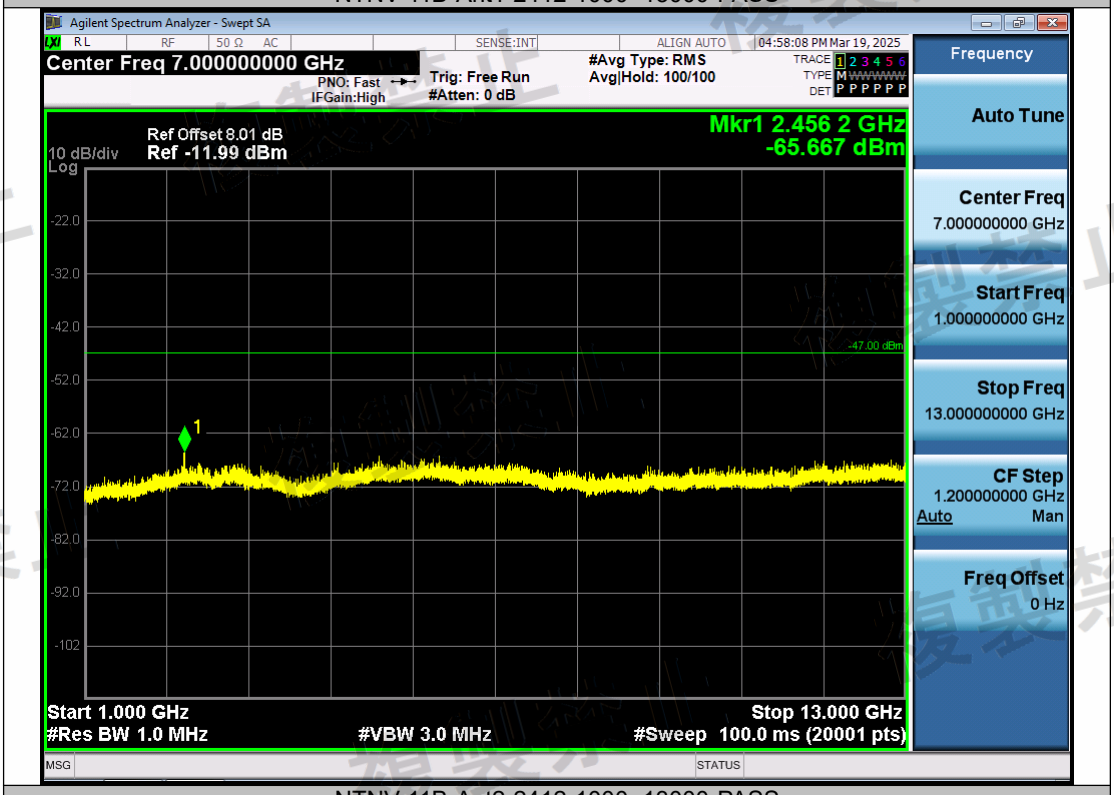
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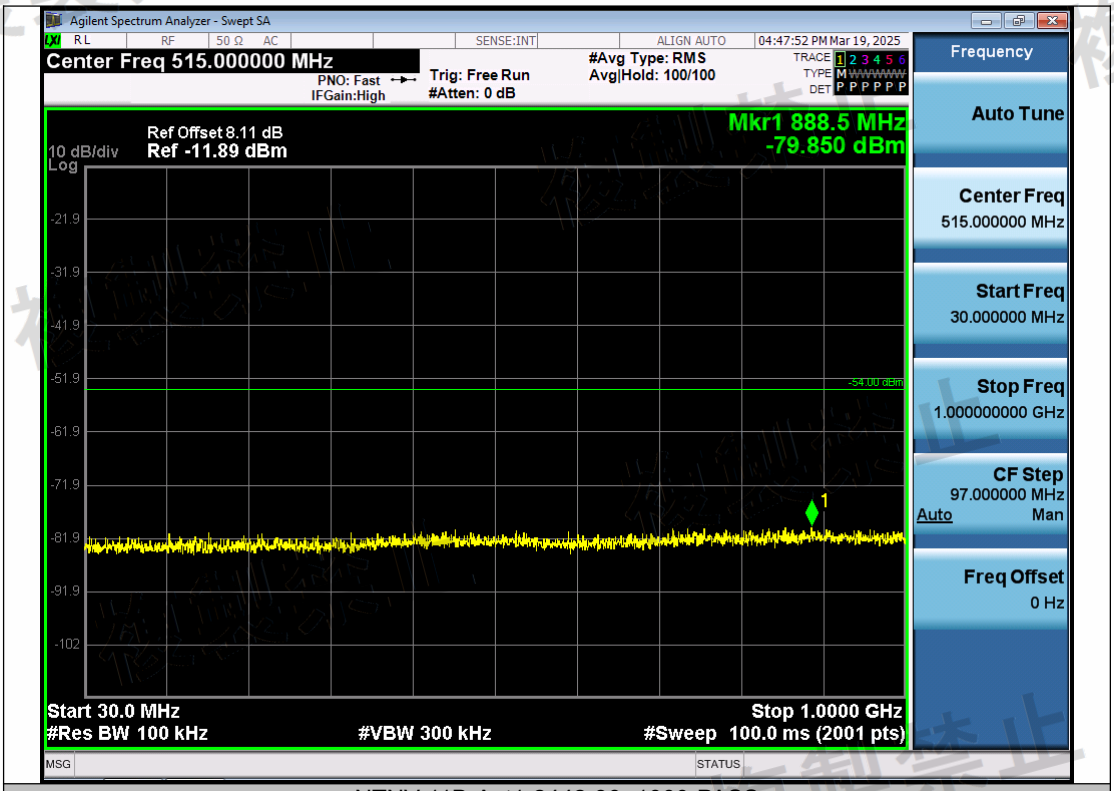
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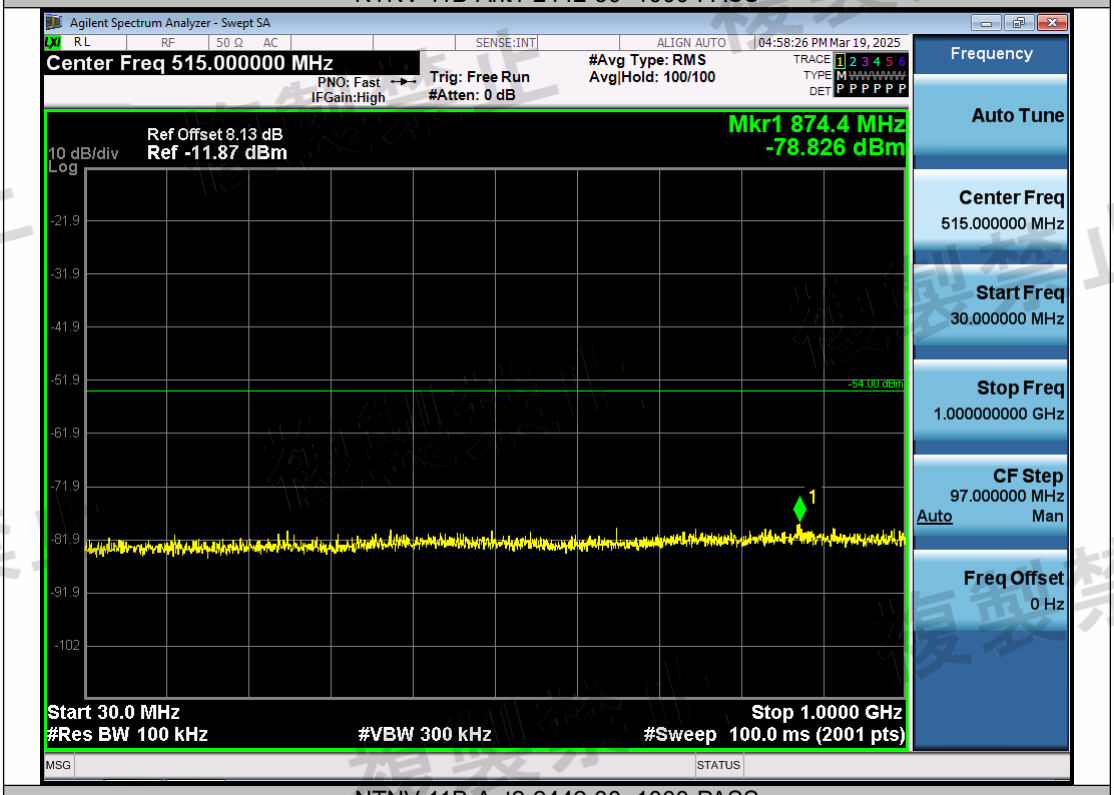
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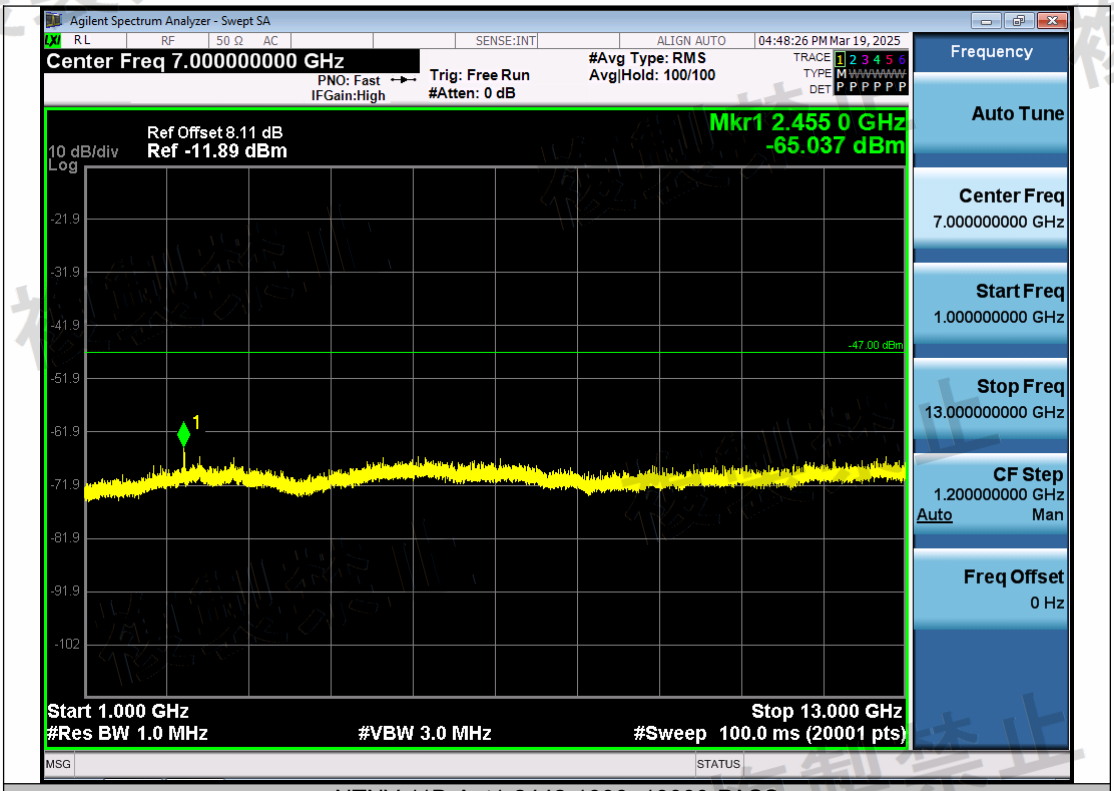
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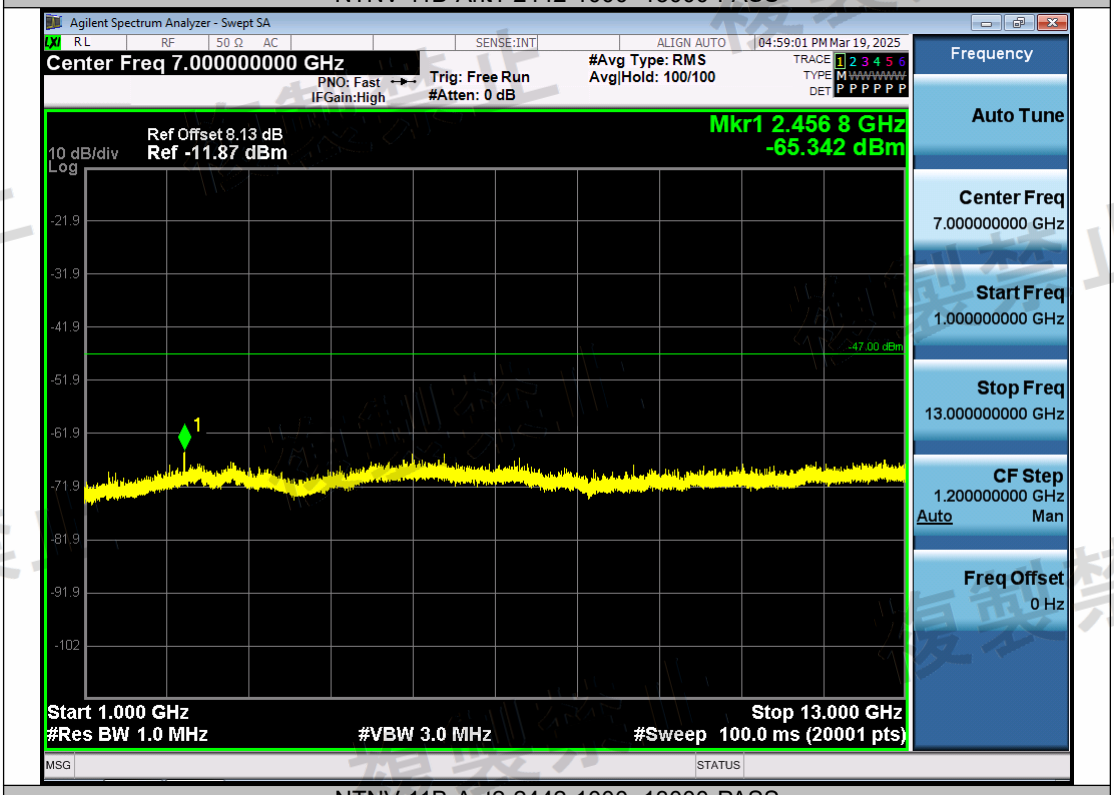
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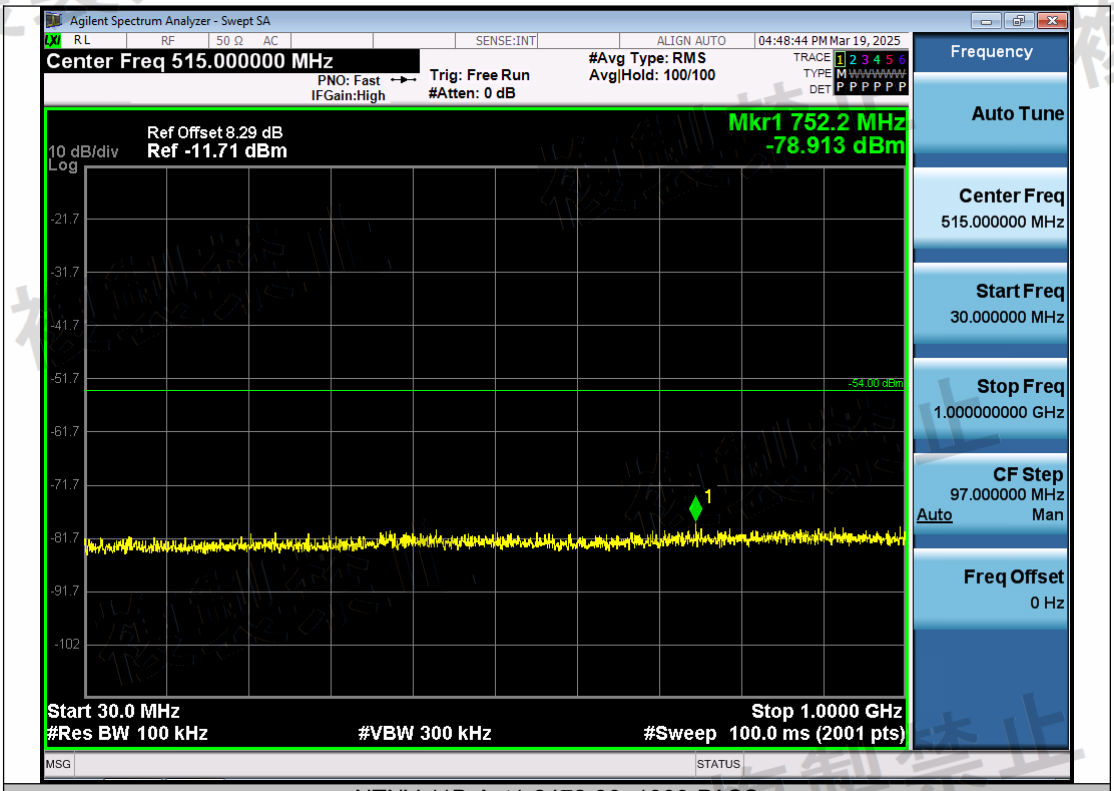
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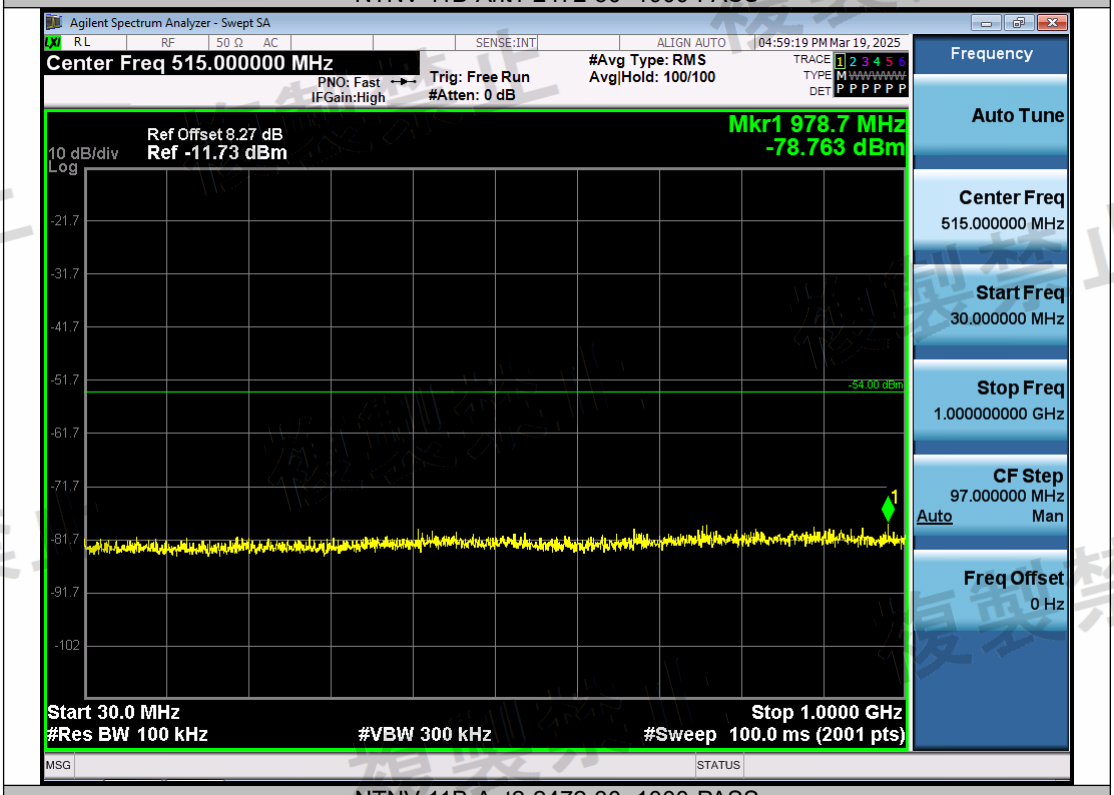
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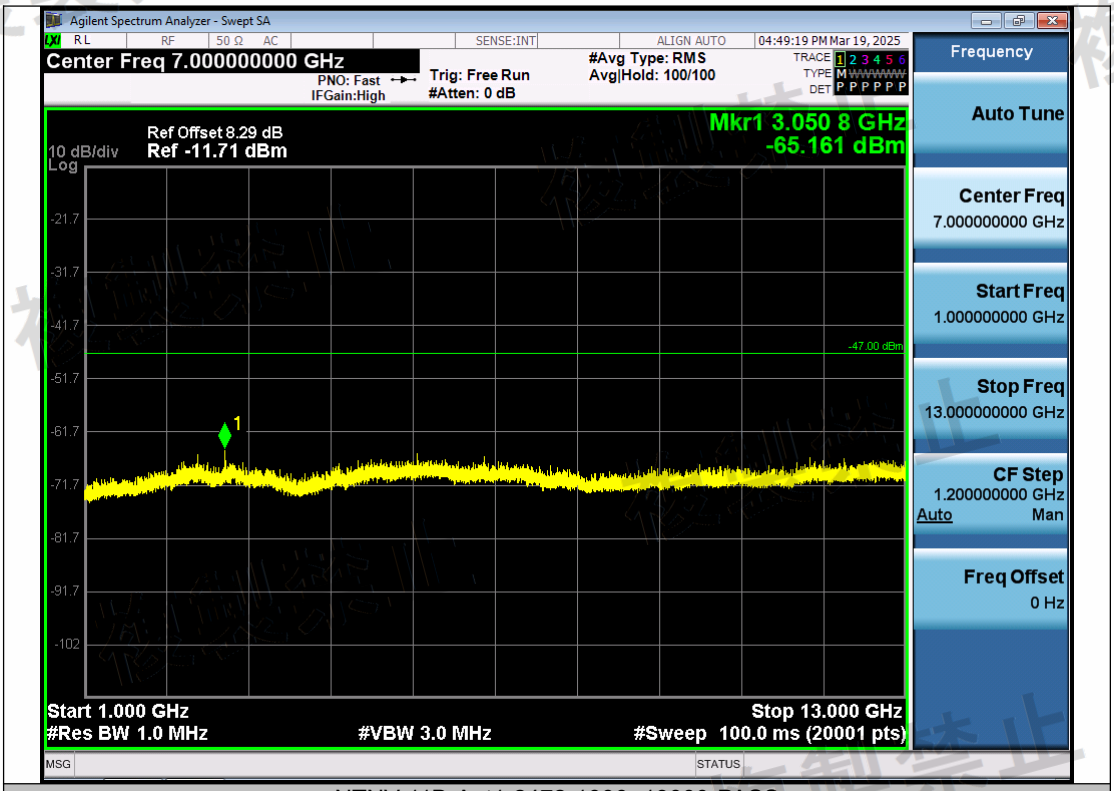
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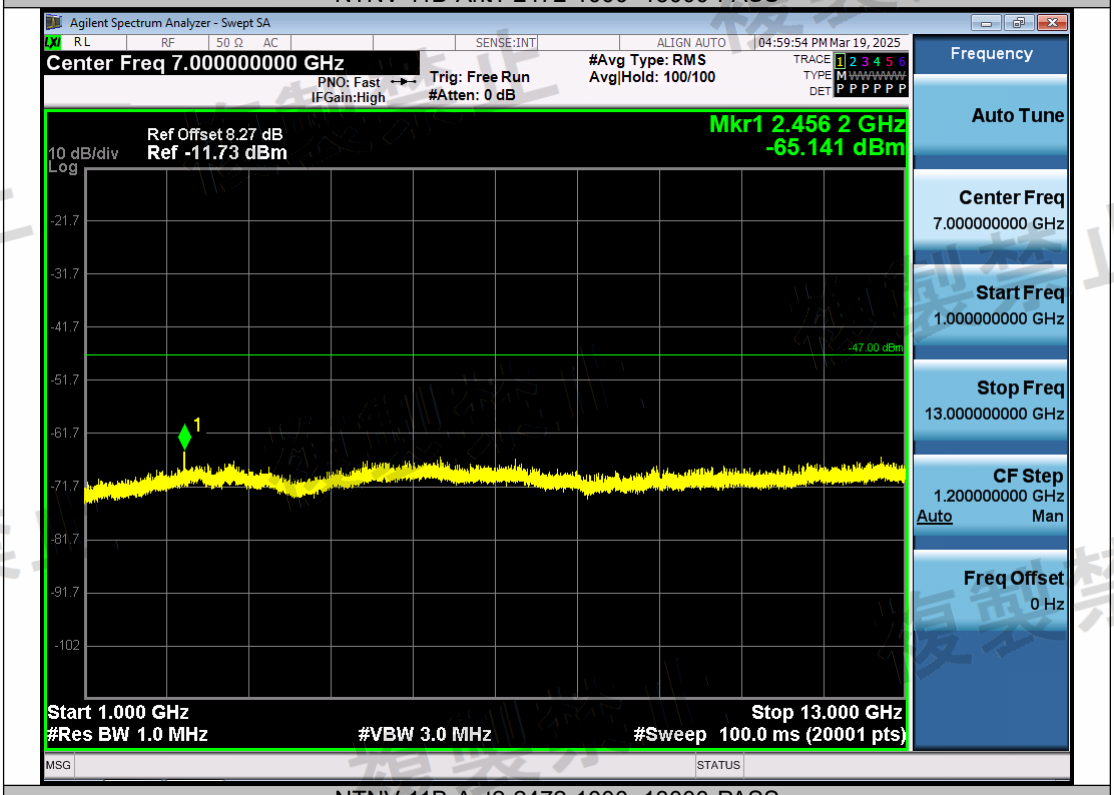
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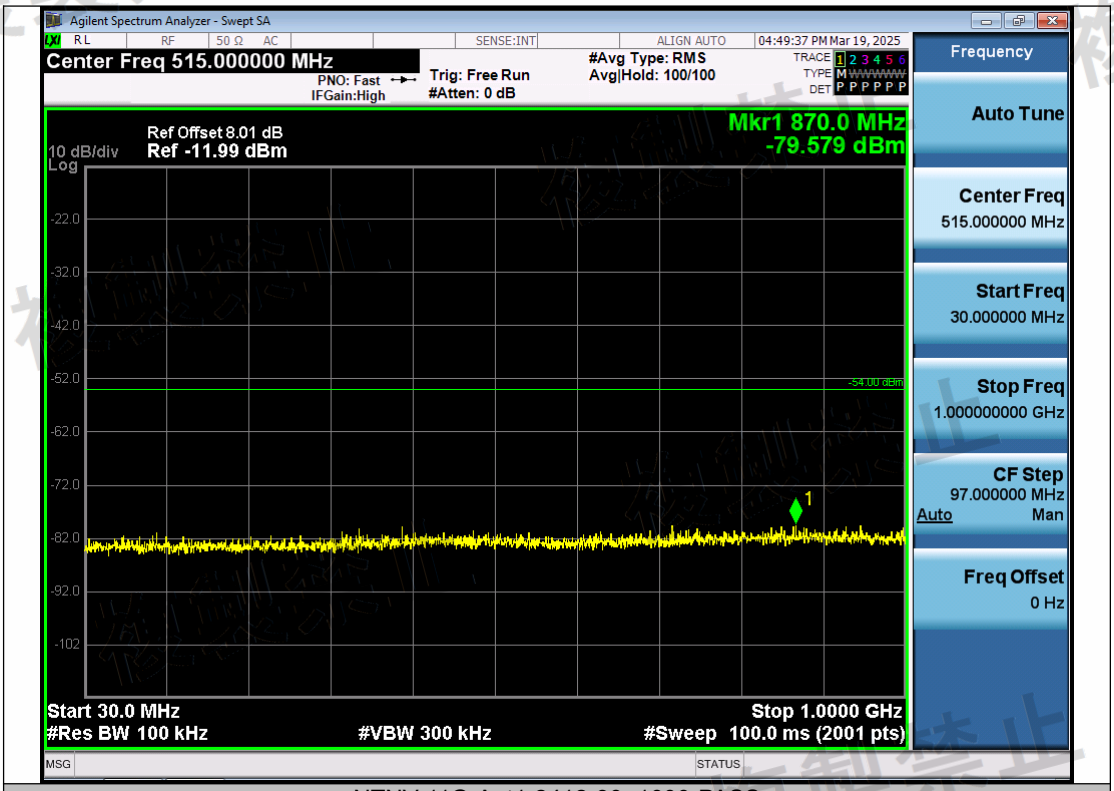
NTNV-11B-Ant2-2472-30~1000-PASS



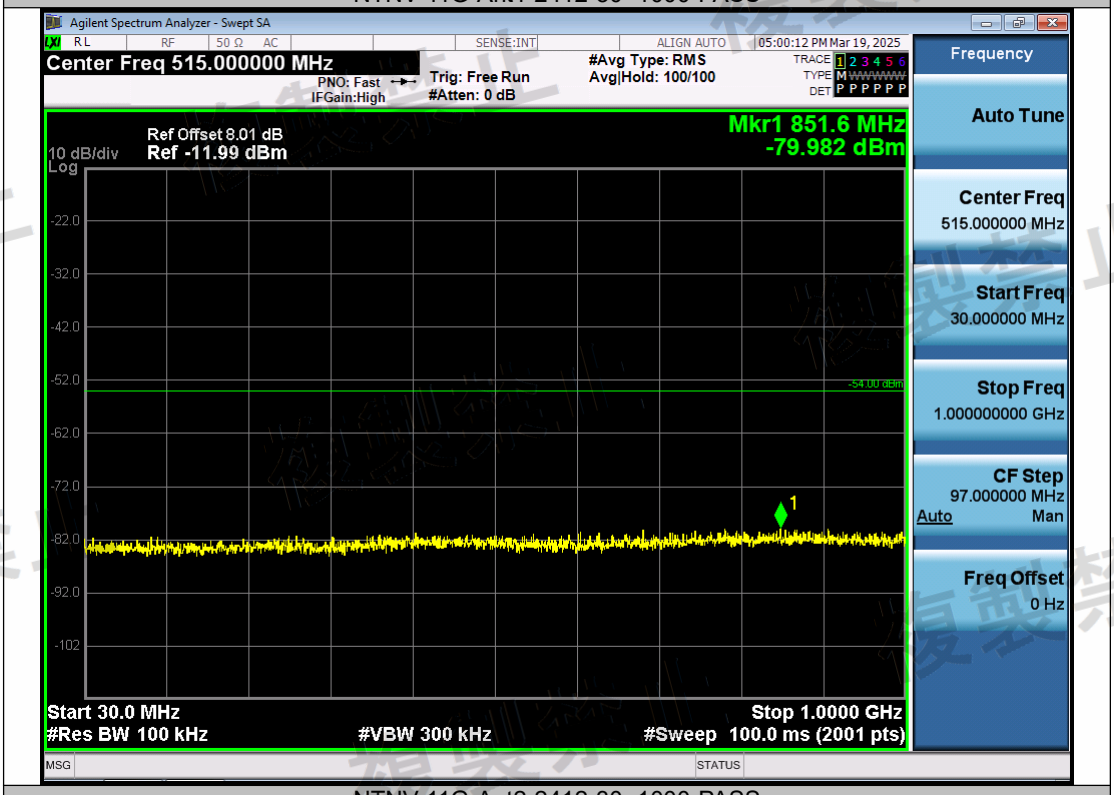
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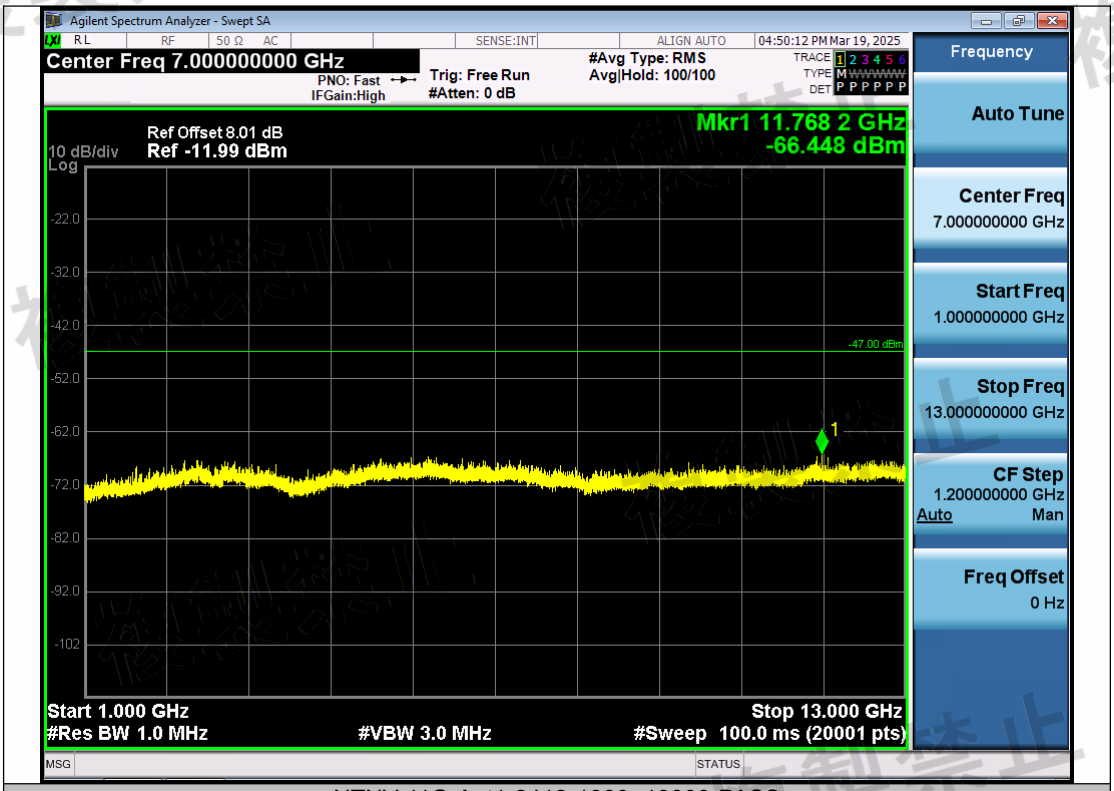
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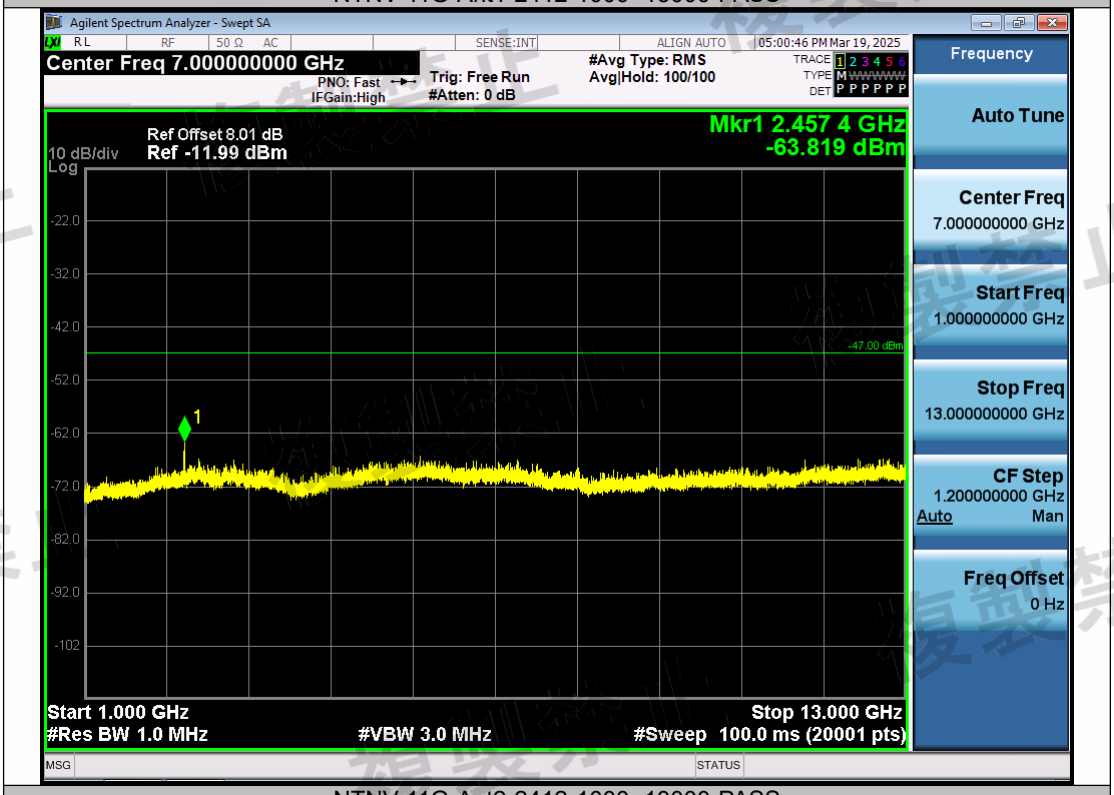
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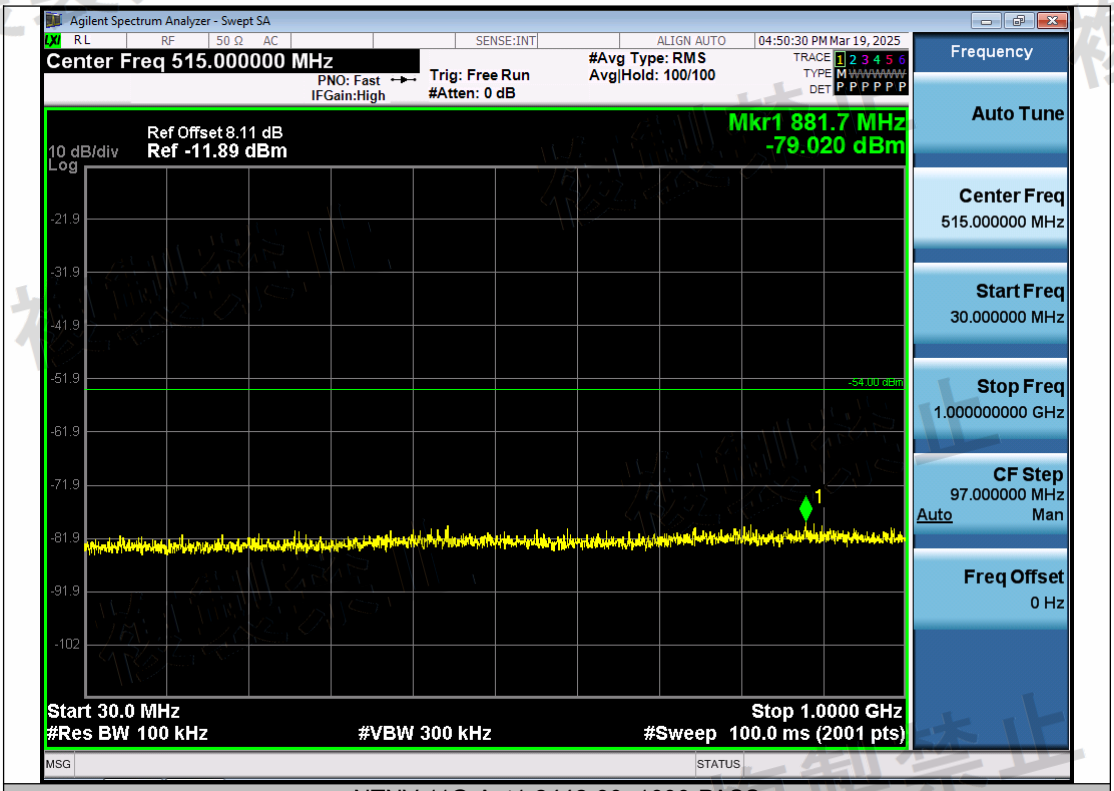
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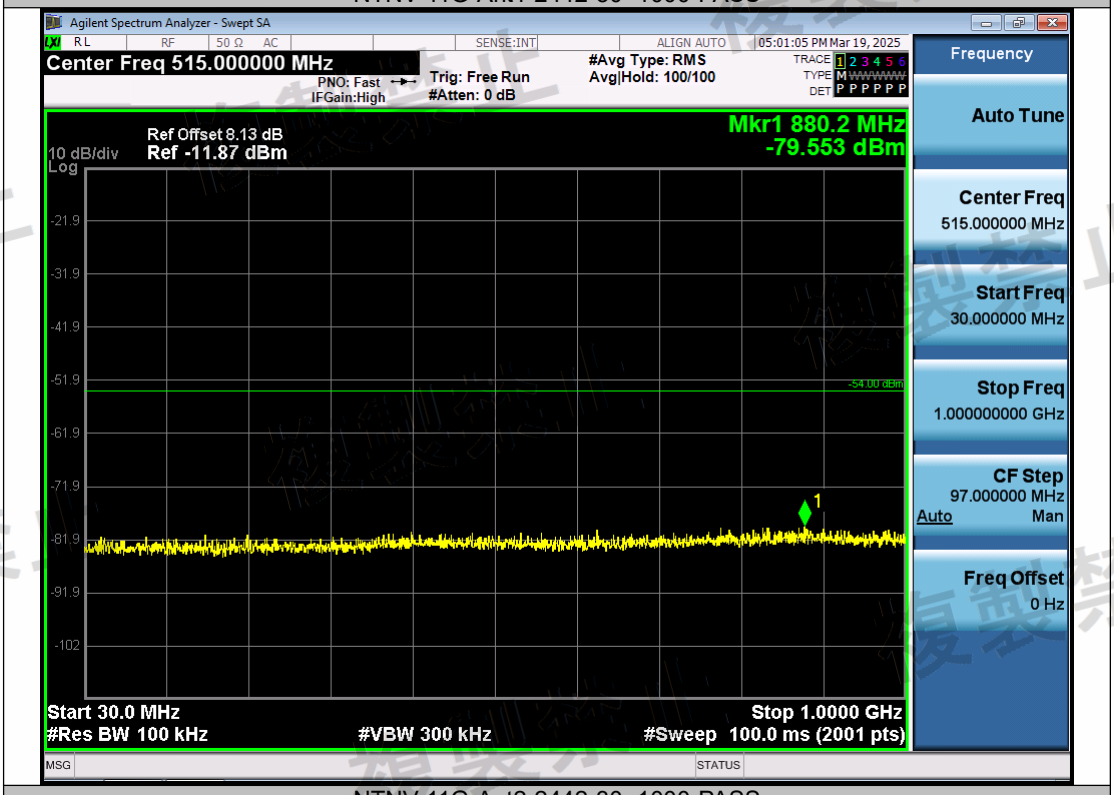
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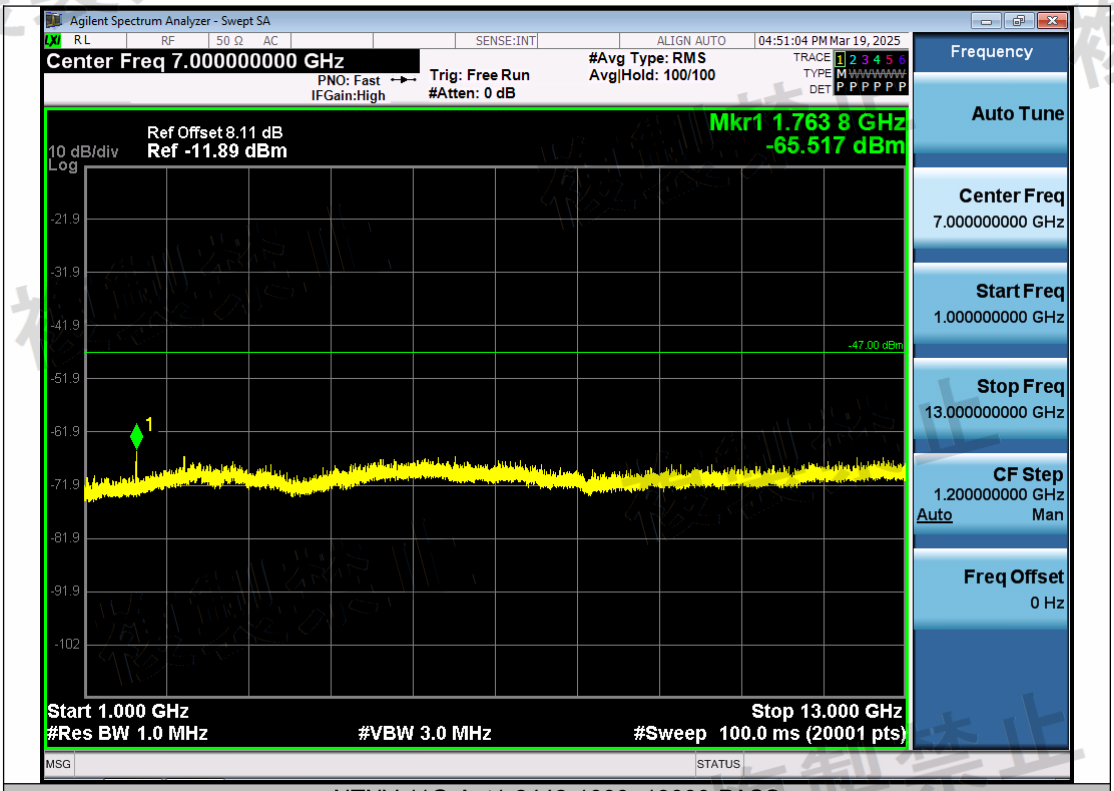
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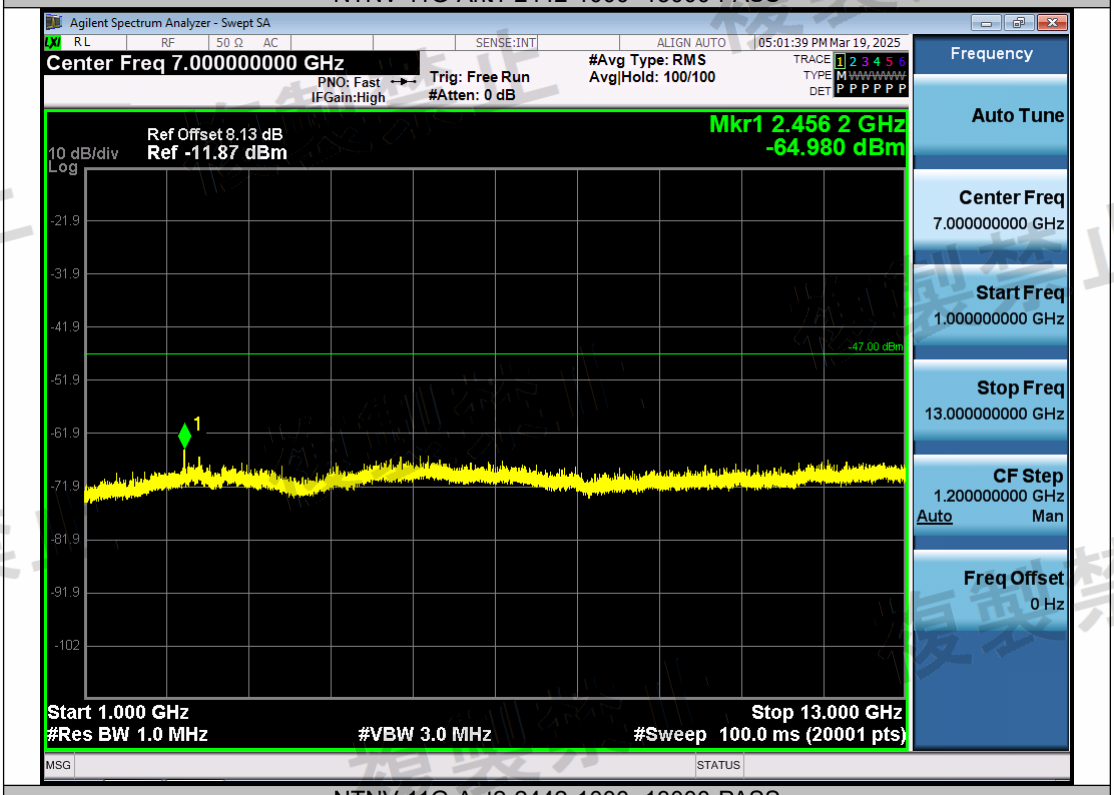
NTNV-11G-Ant1-2442-30~1000-PASS



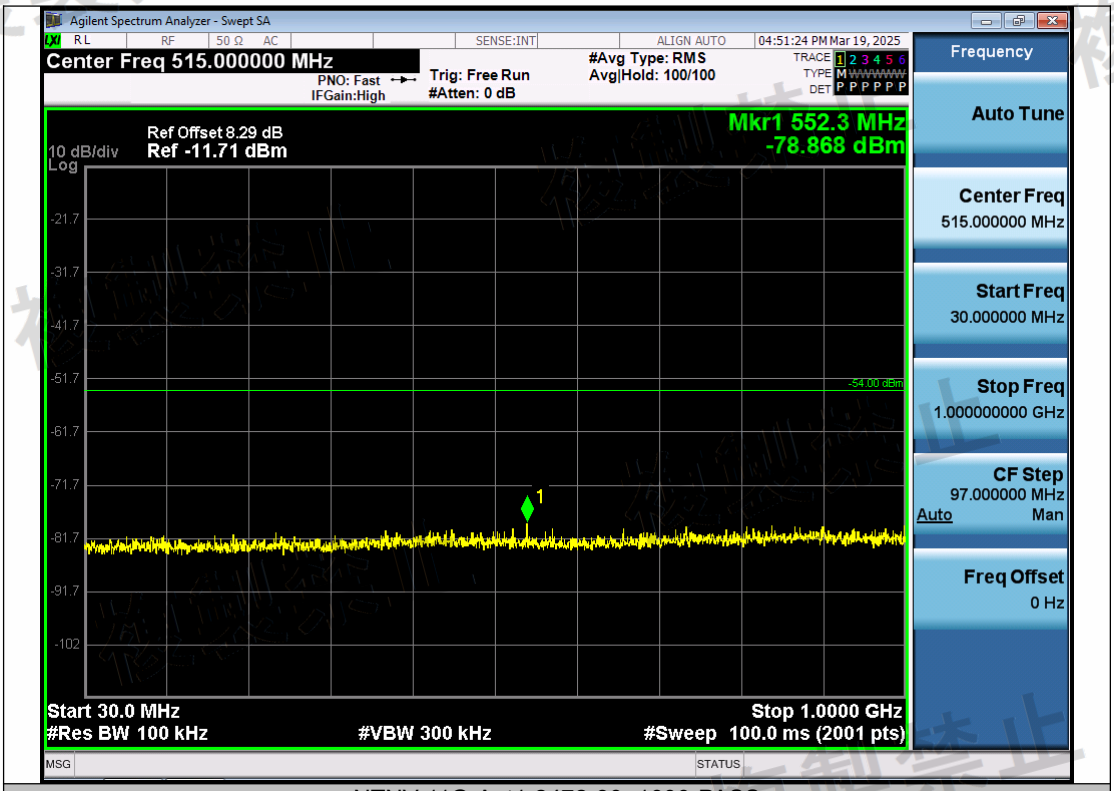
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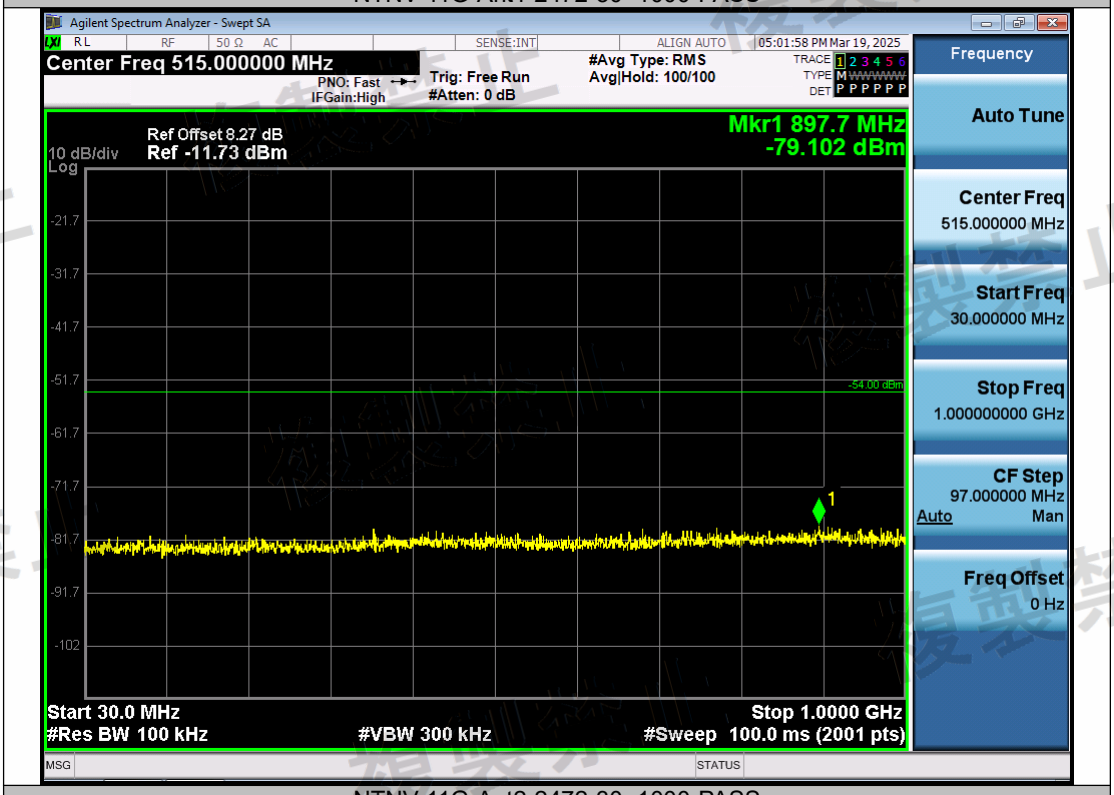
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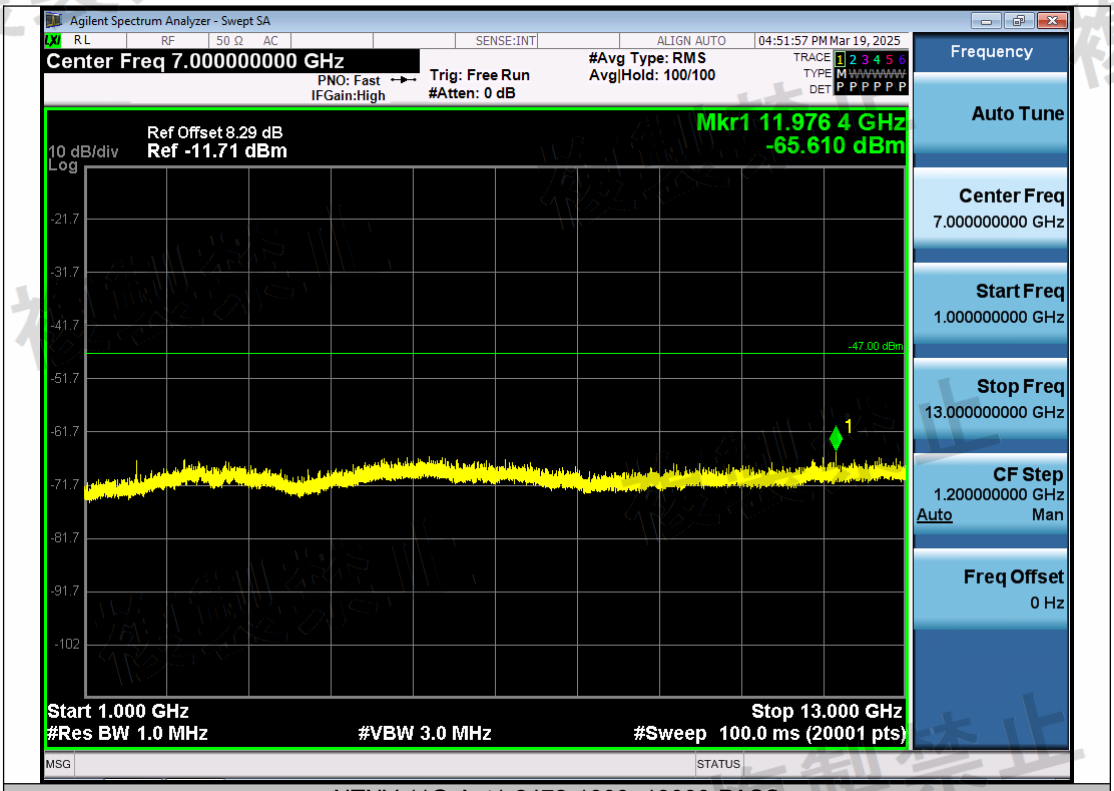
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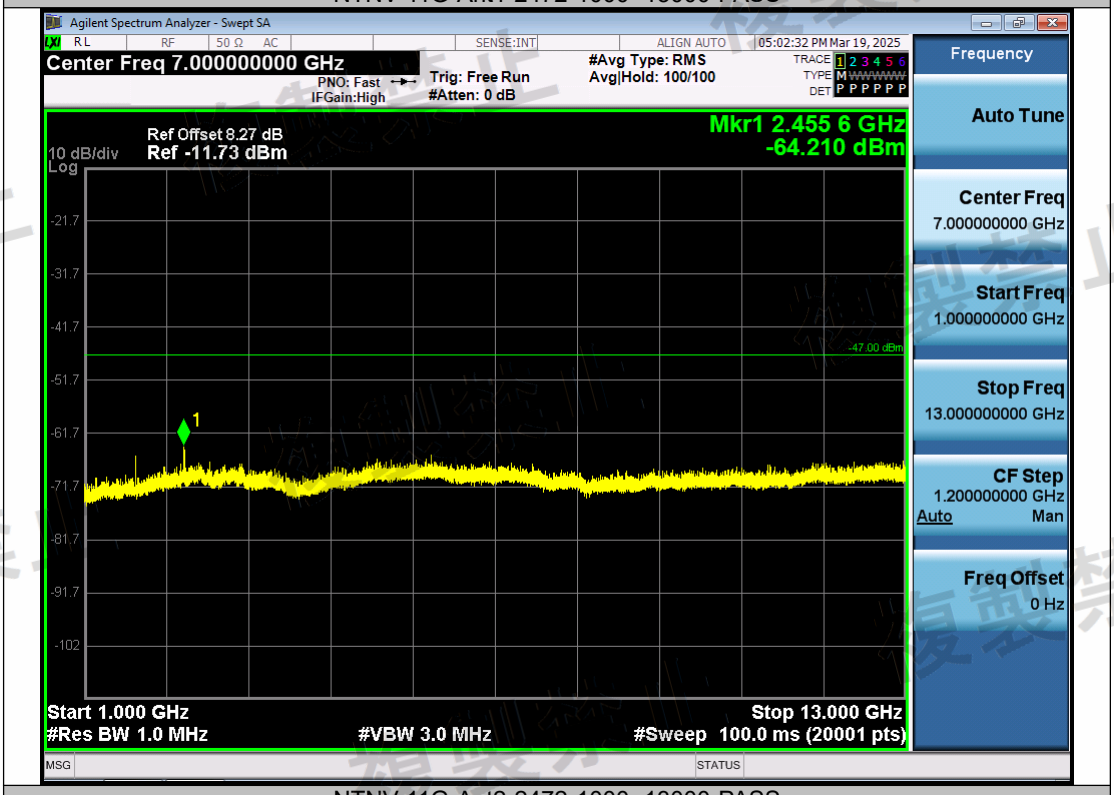
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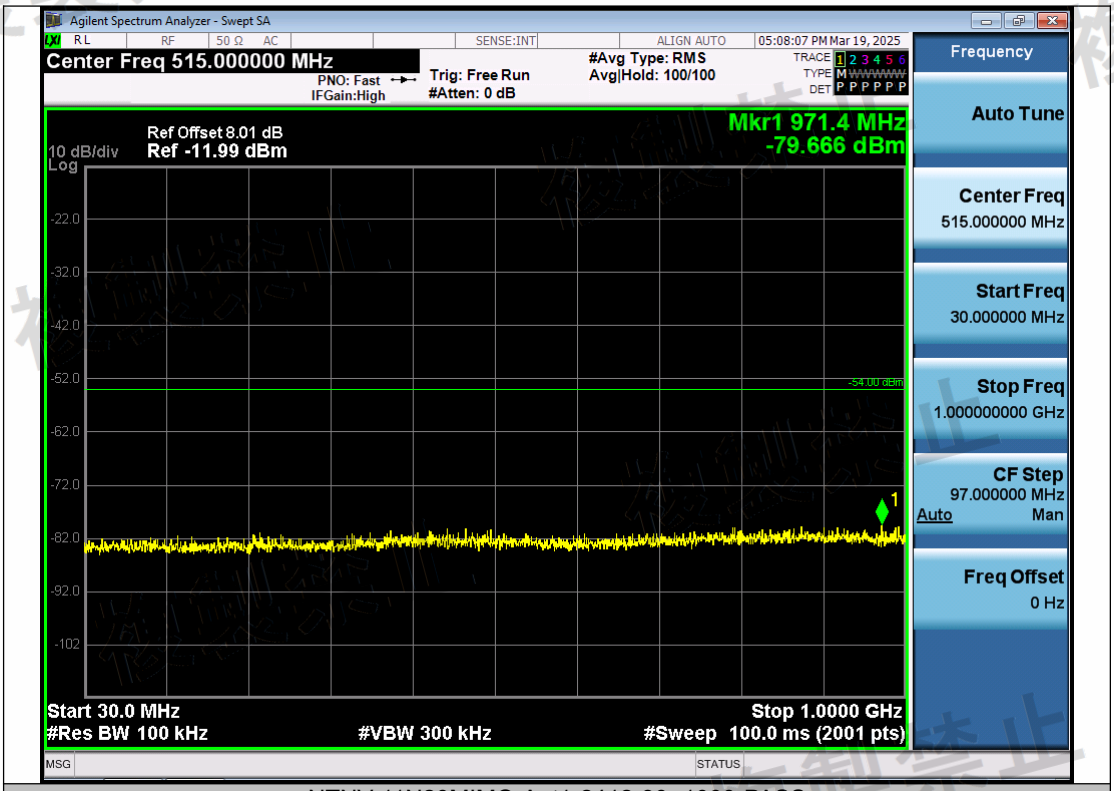
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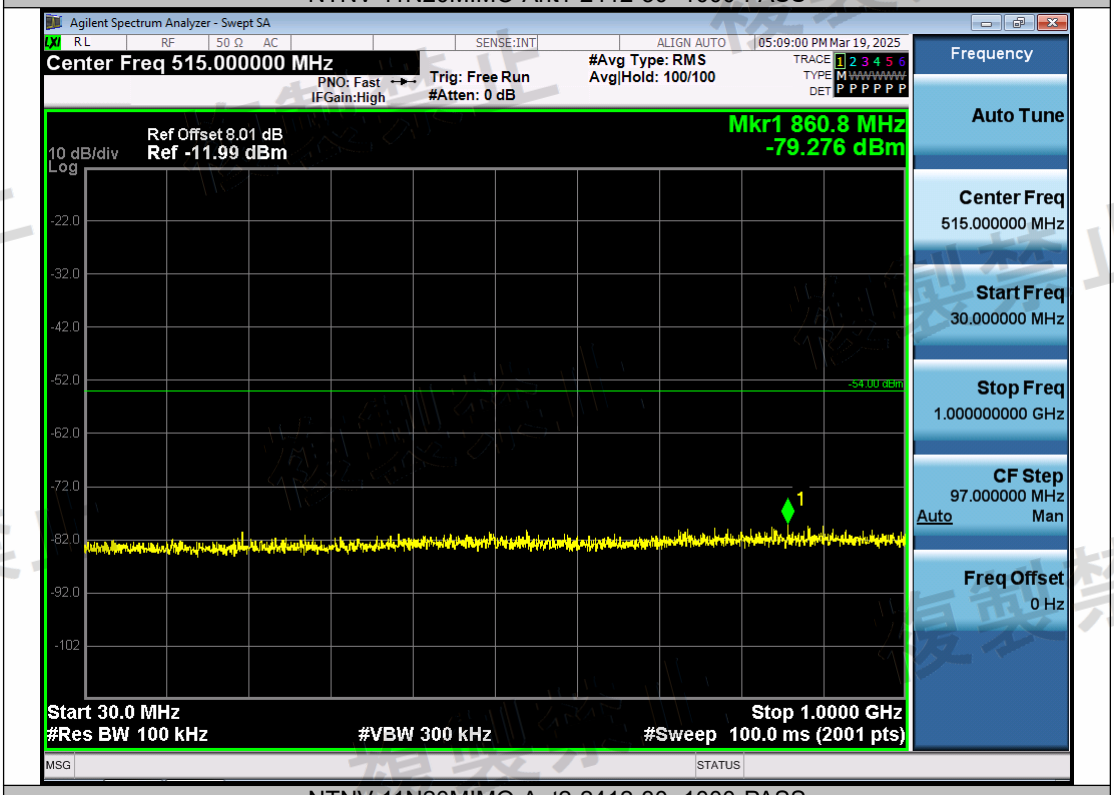
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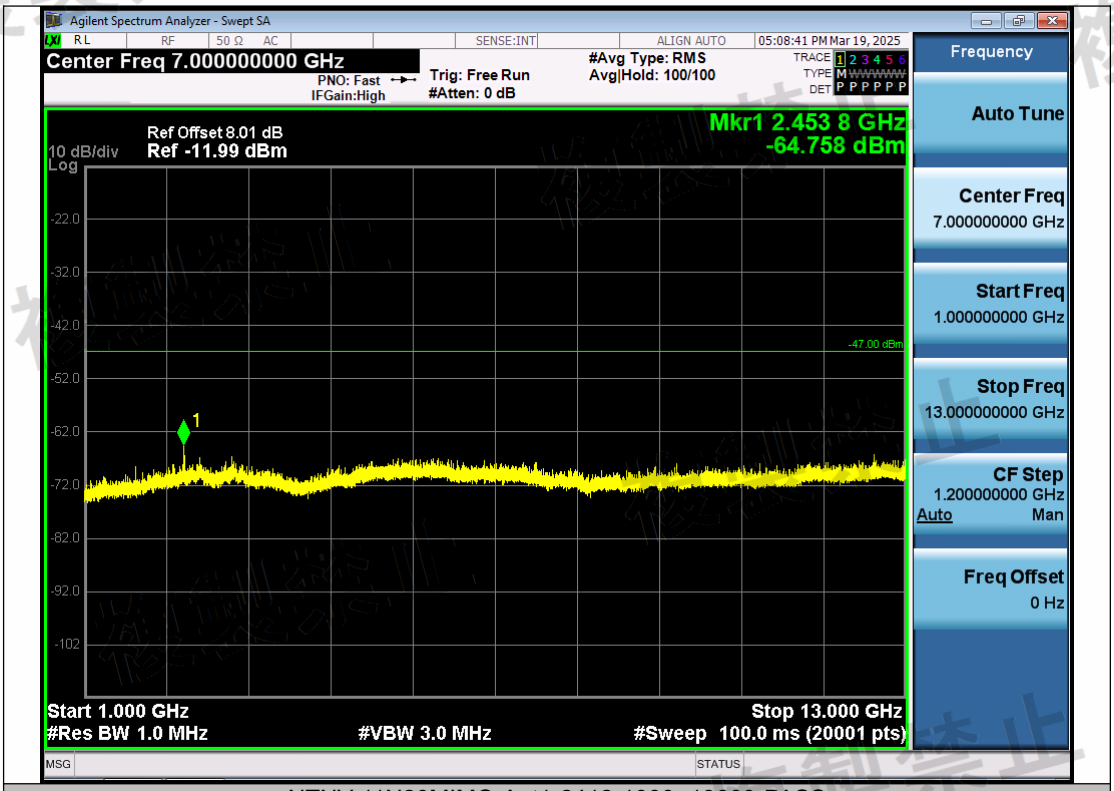
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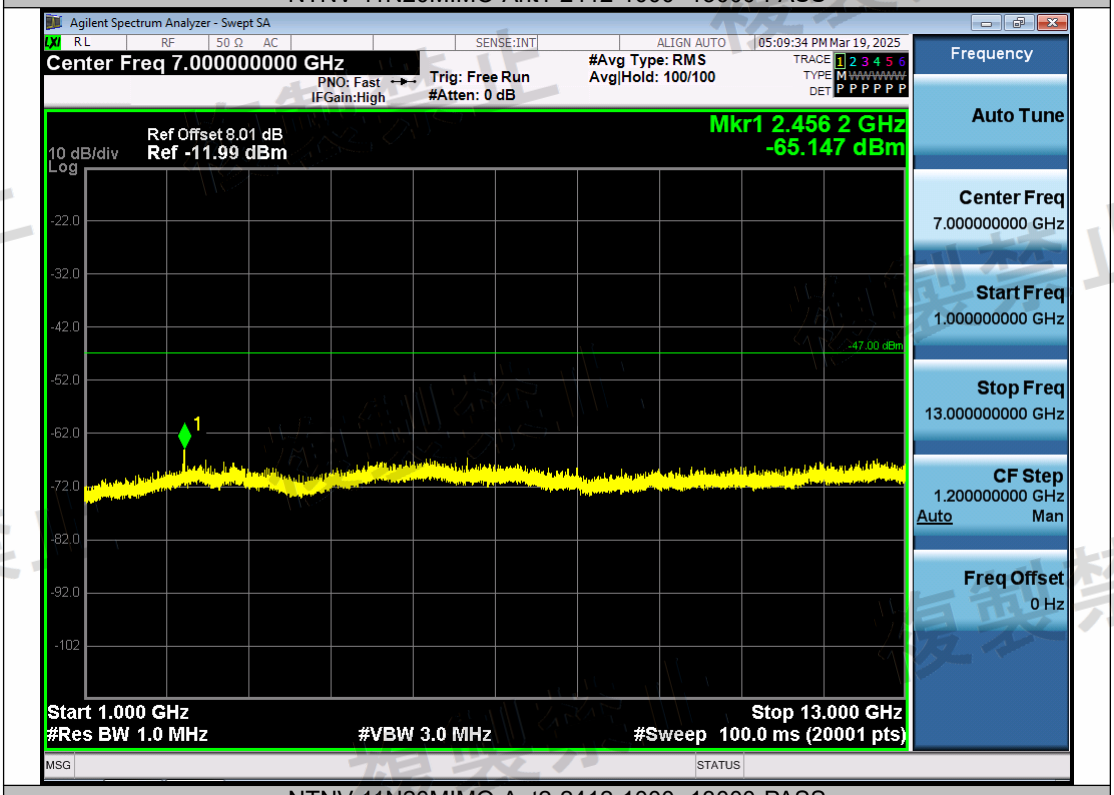
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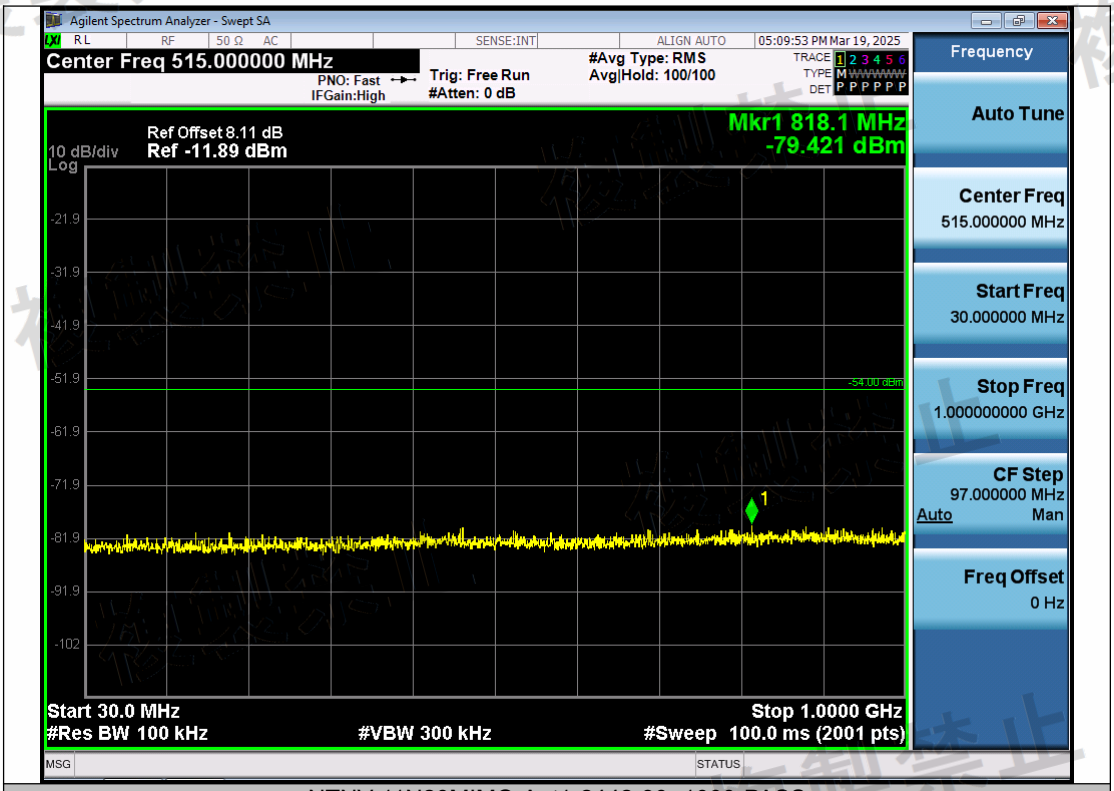
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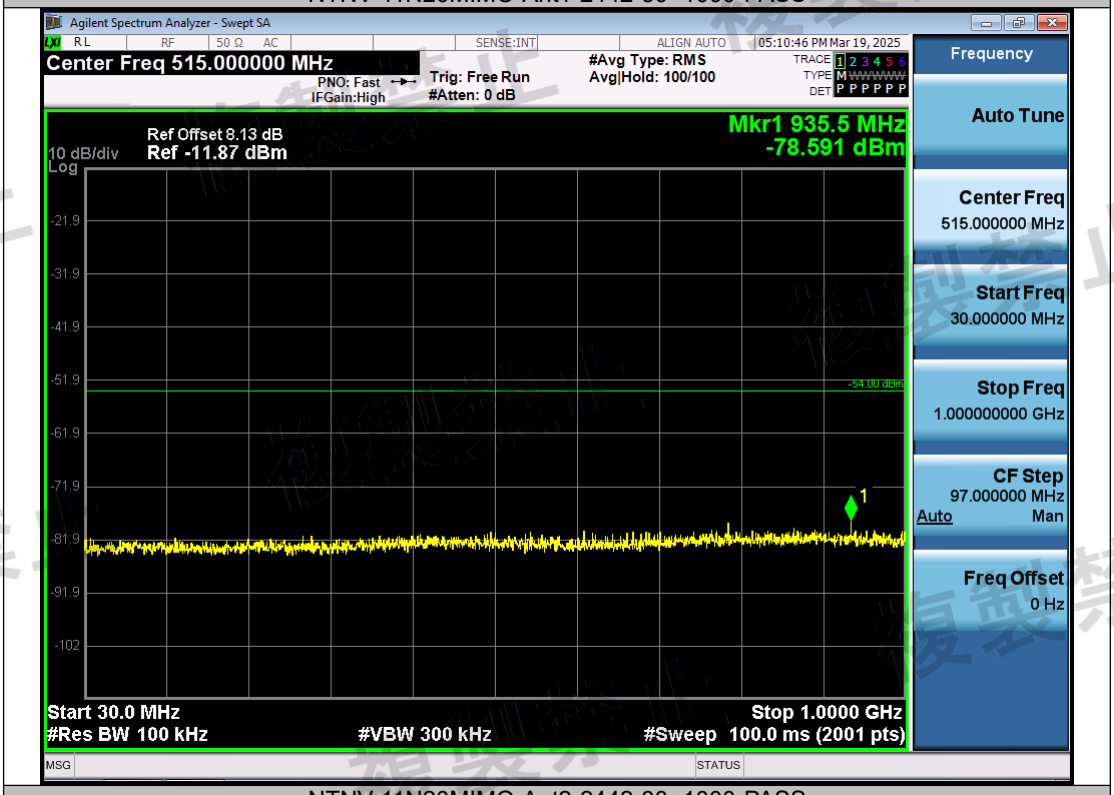
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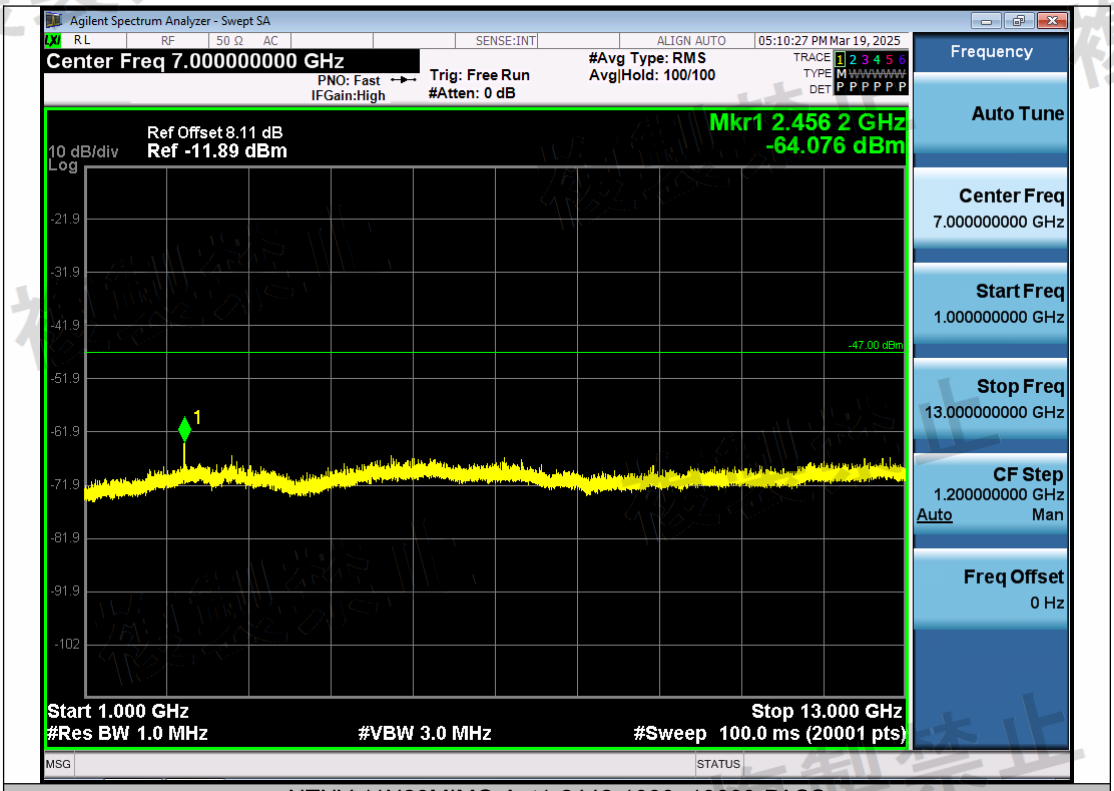
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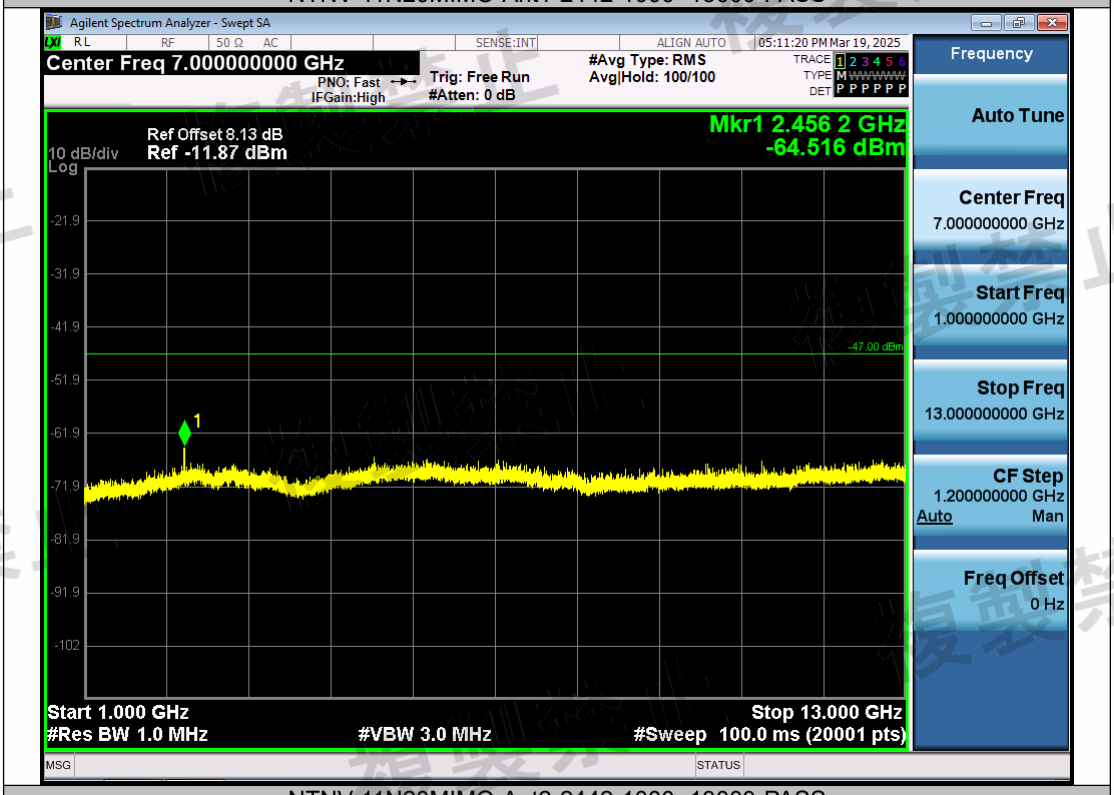
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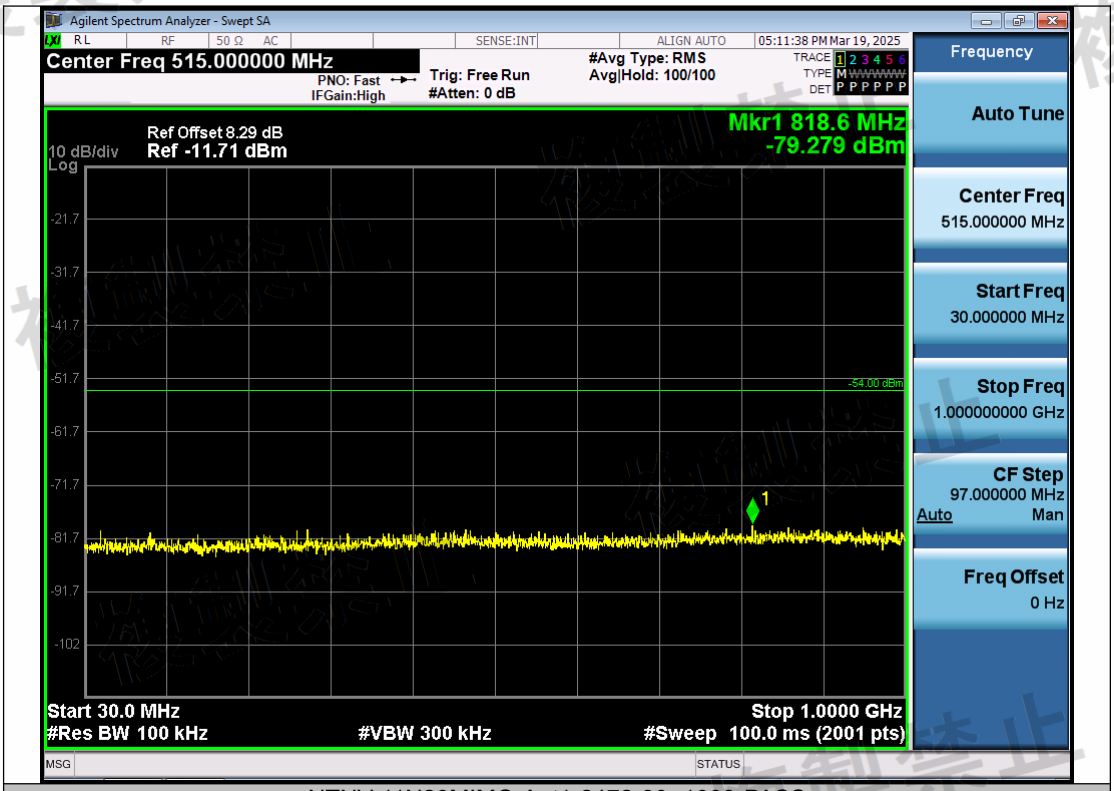
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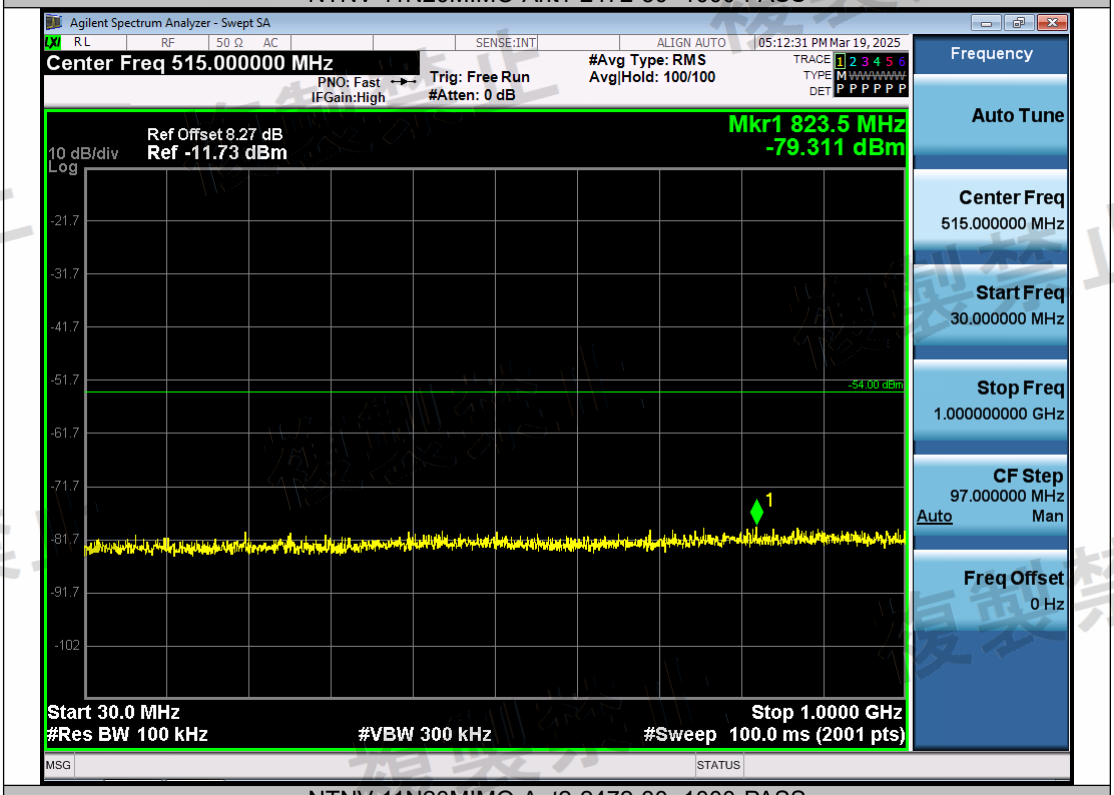
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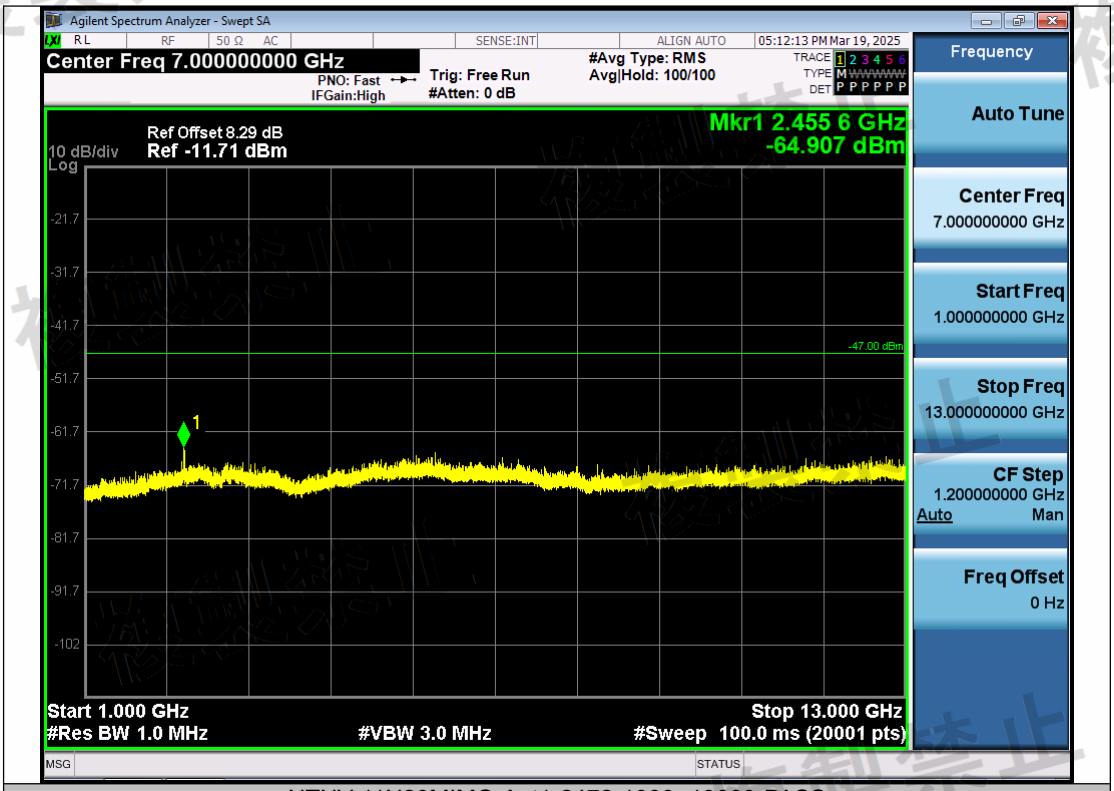
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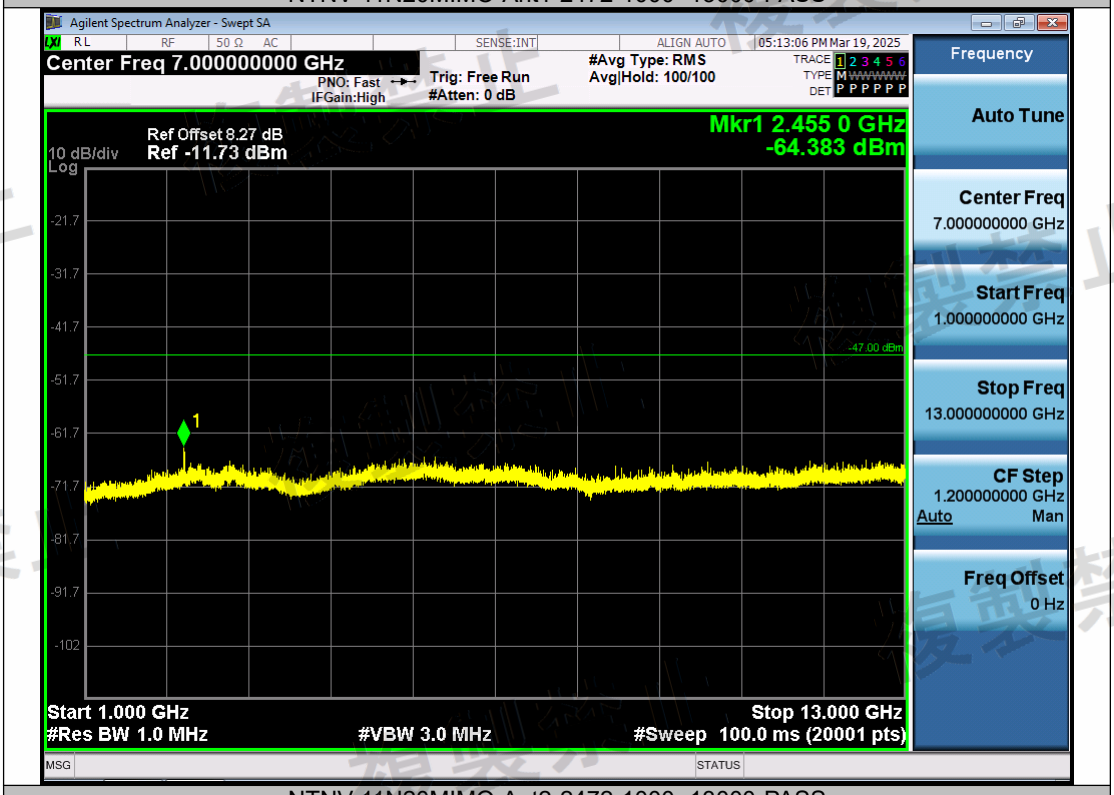
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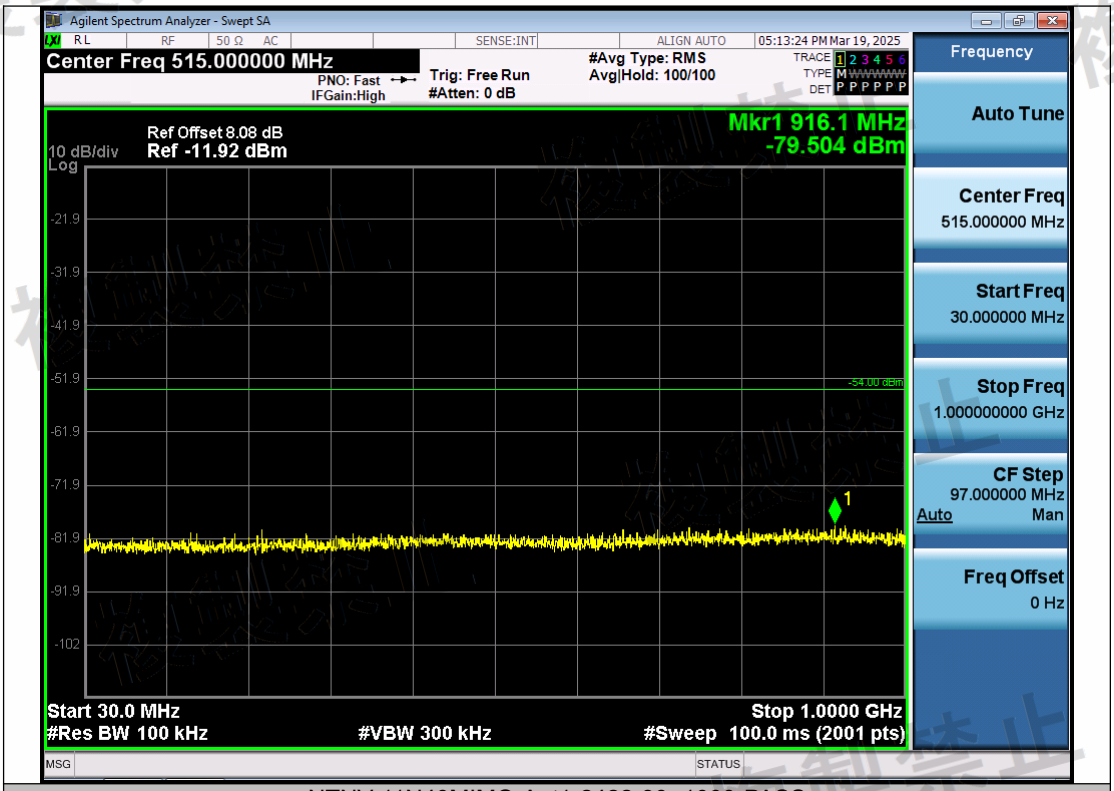
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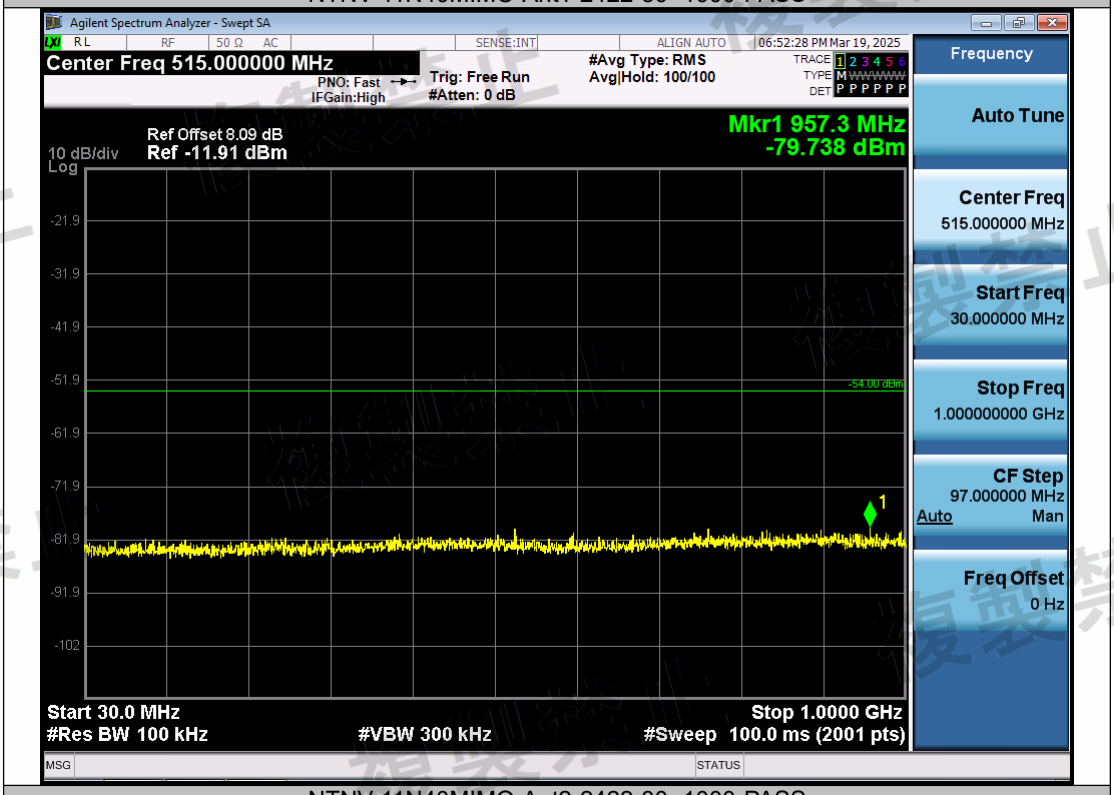
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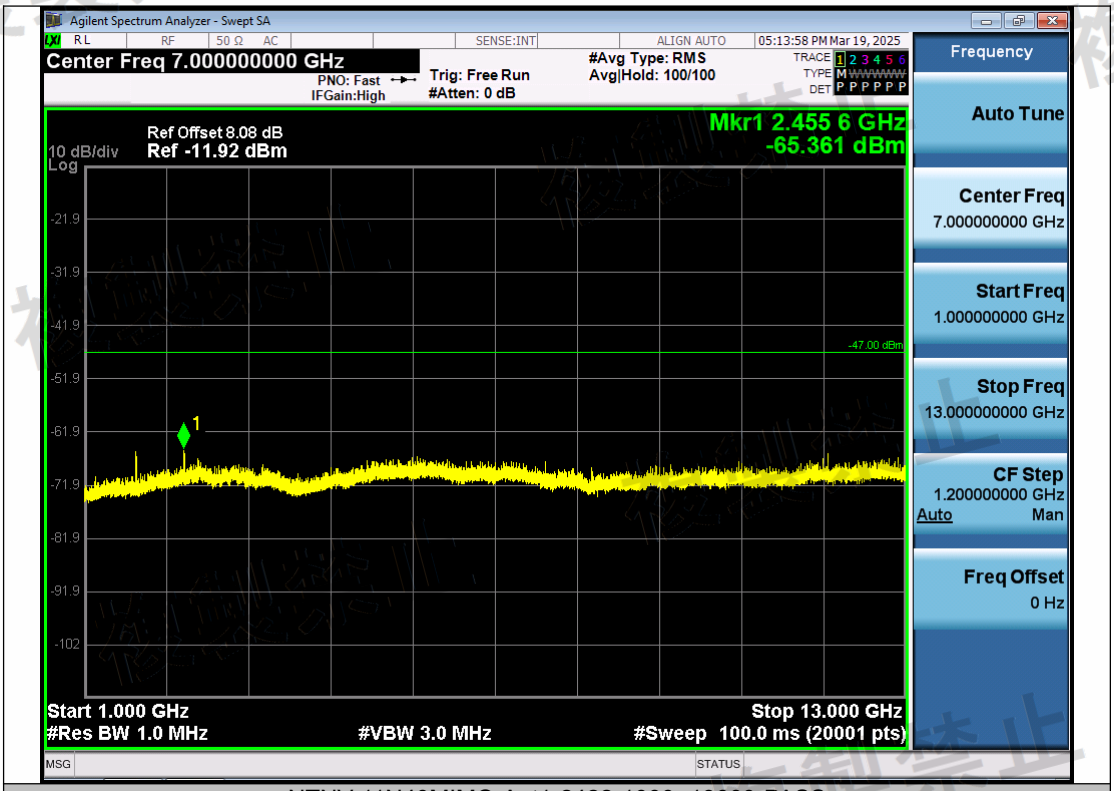
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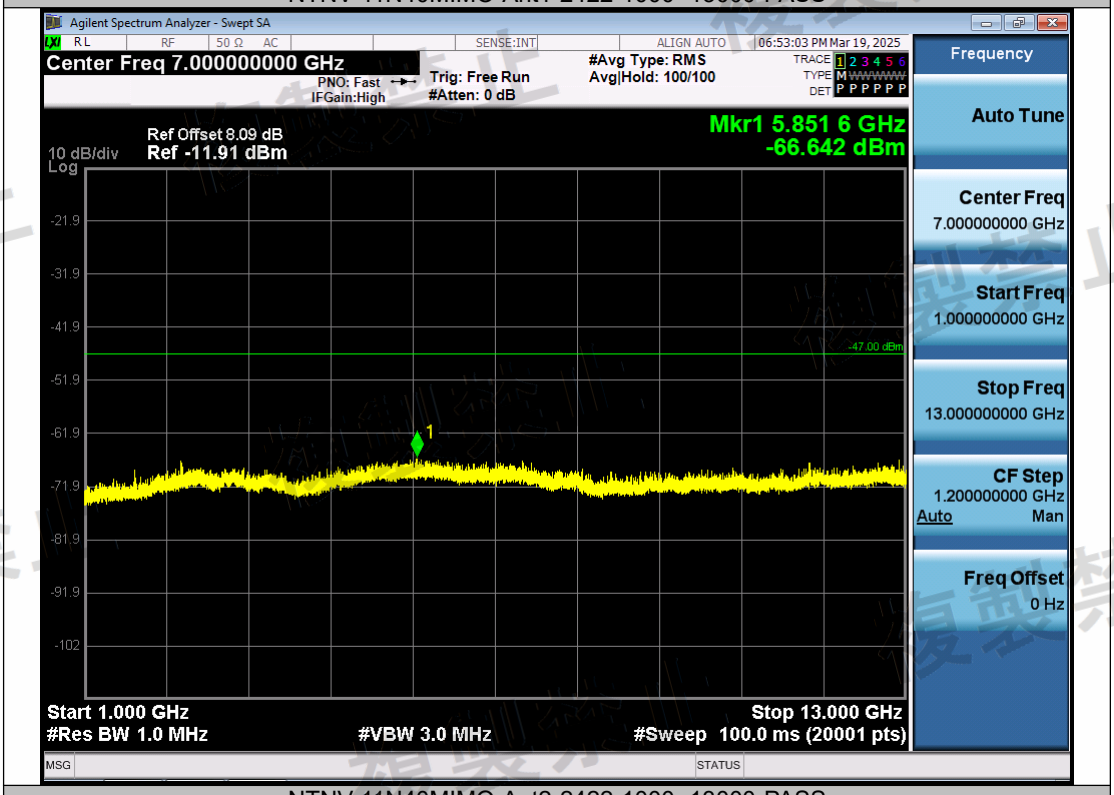
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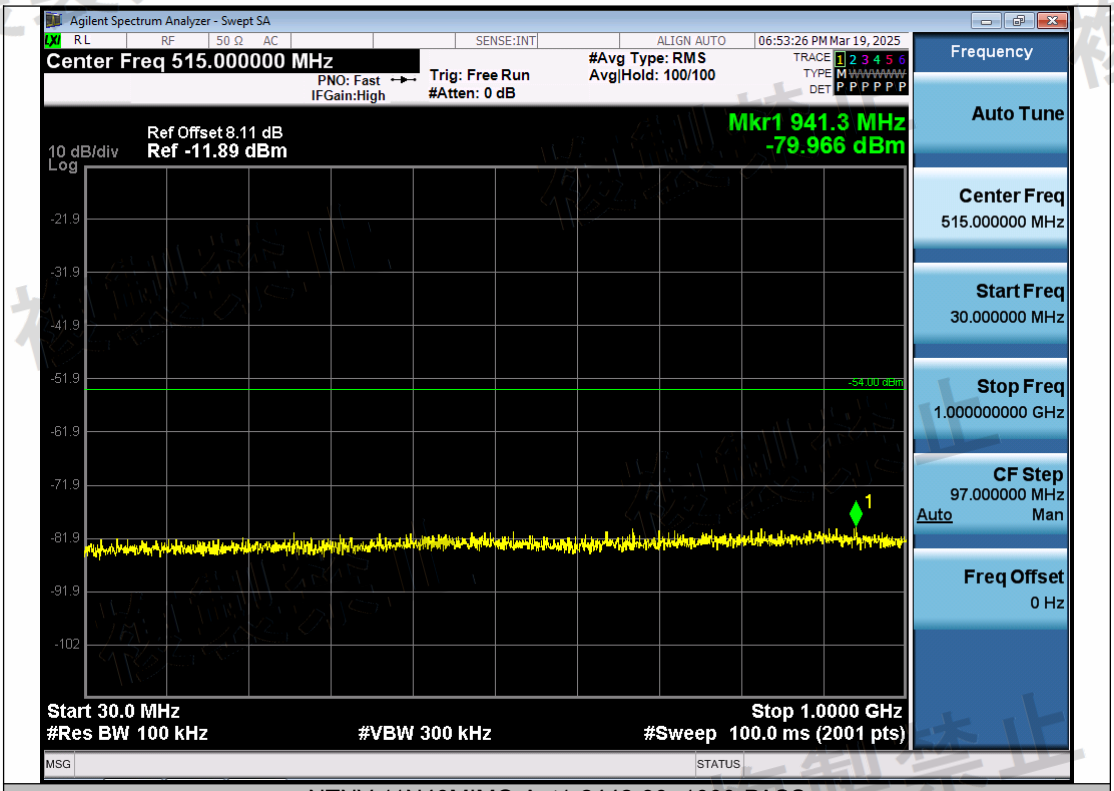
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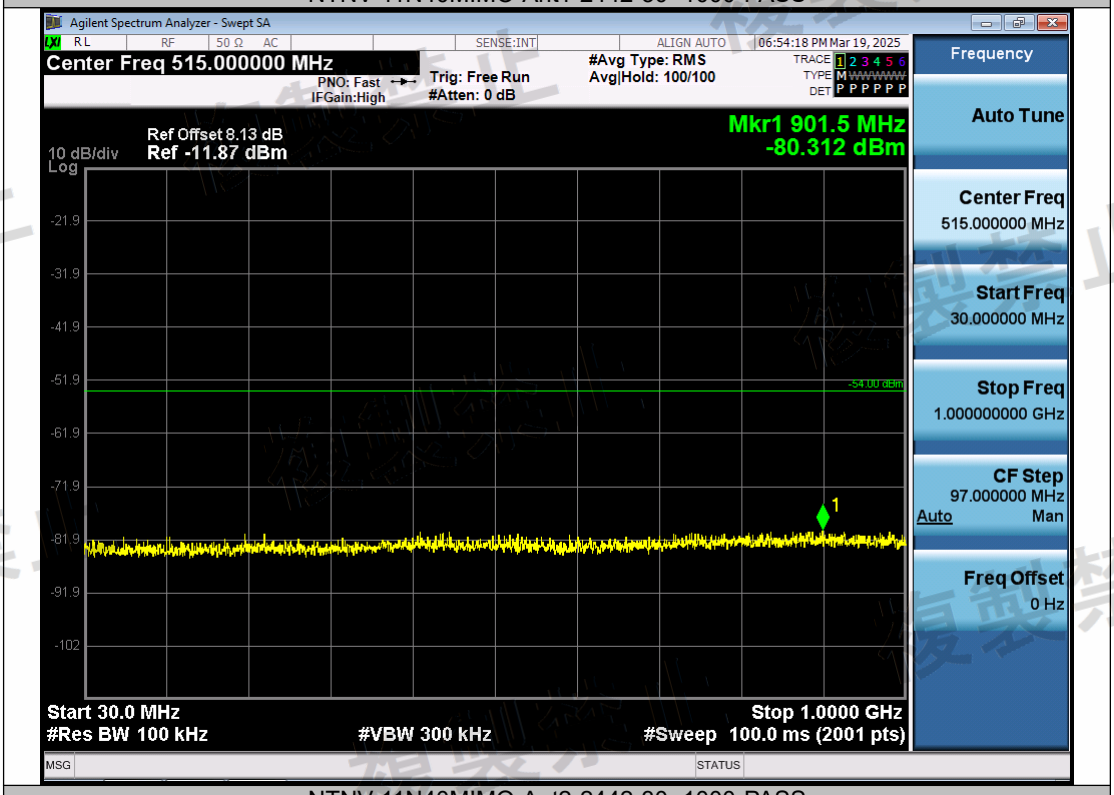
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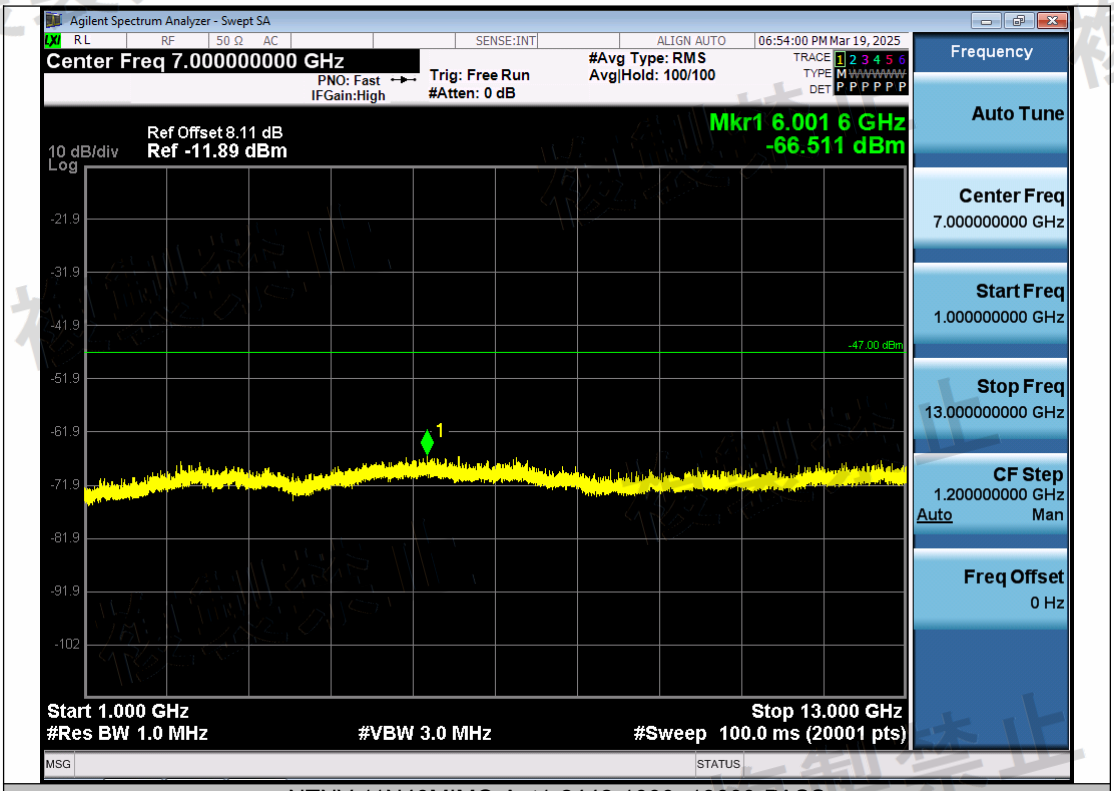
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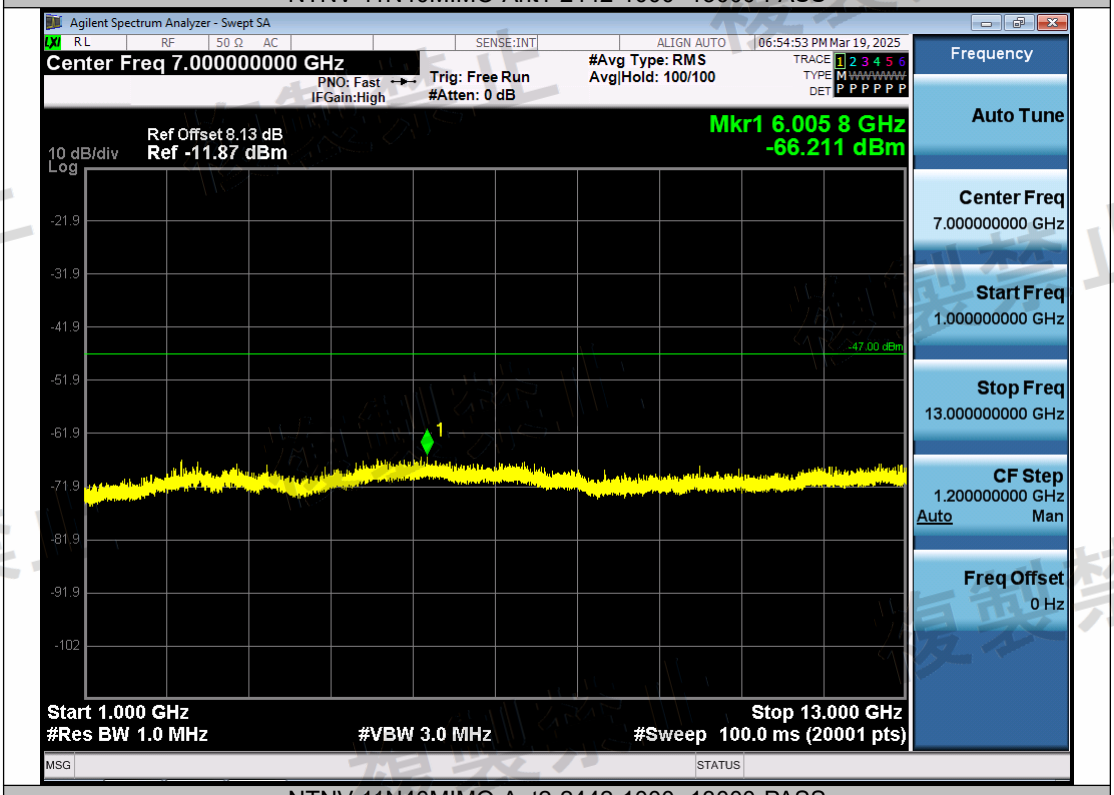
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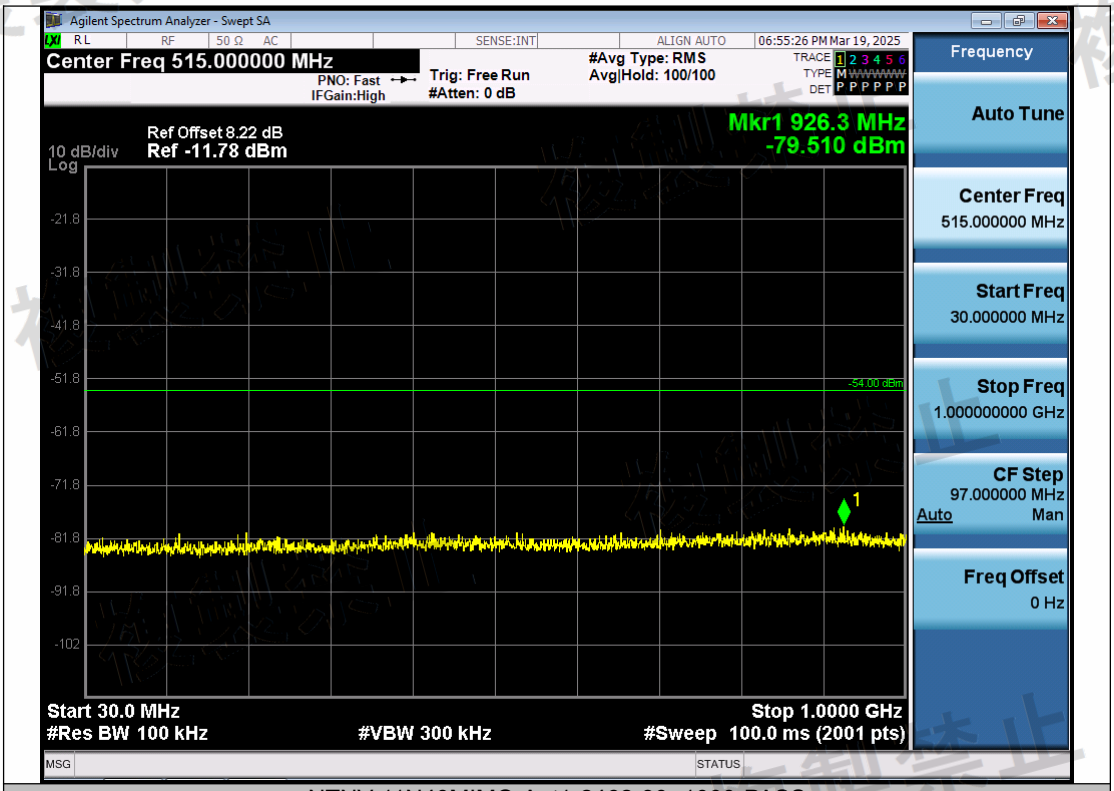
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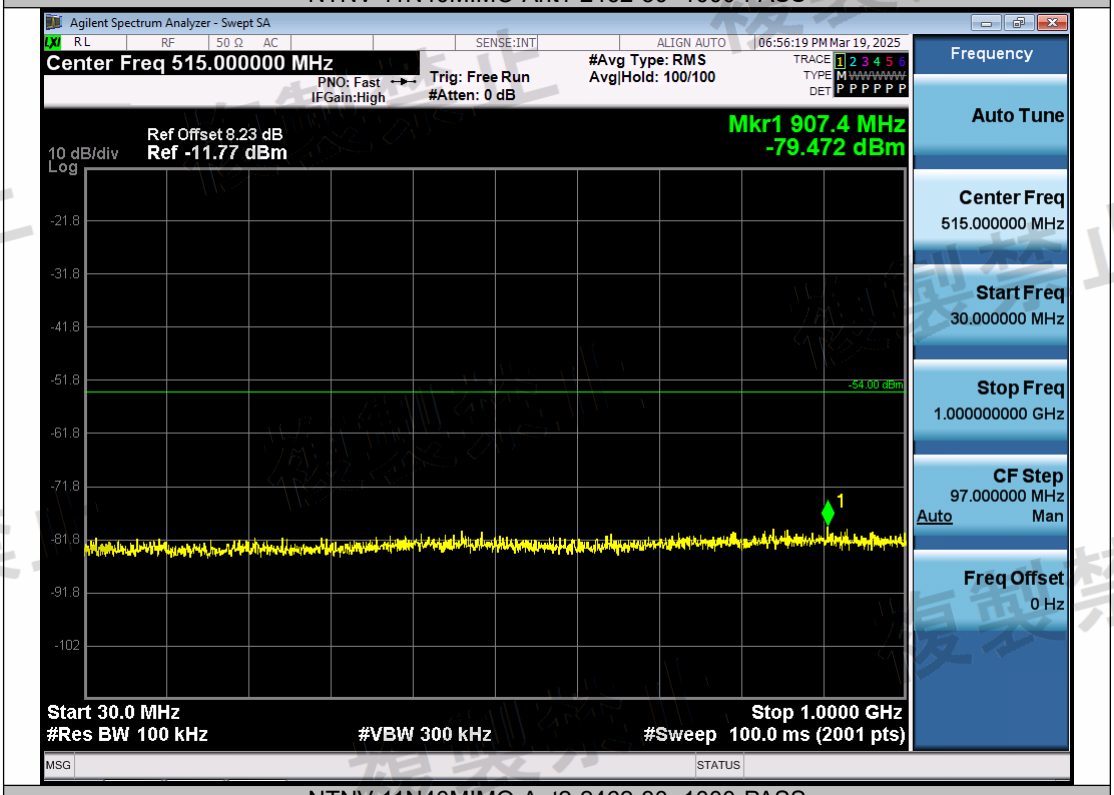
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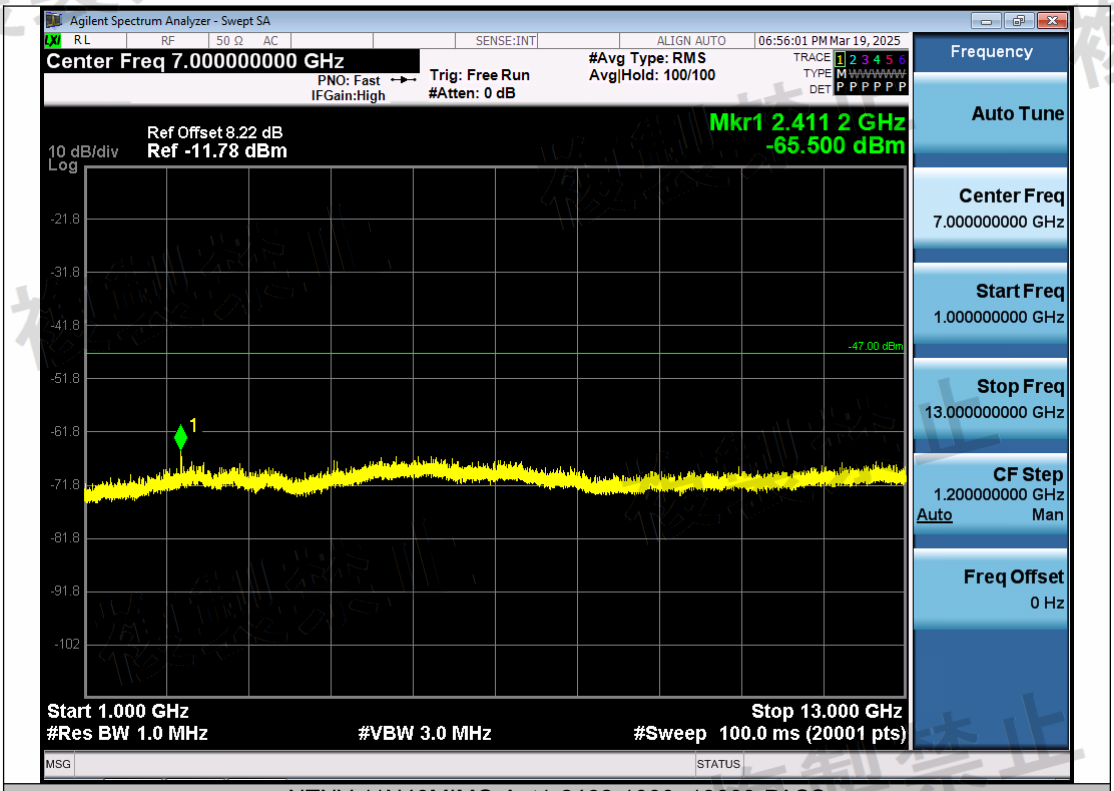
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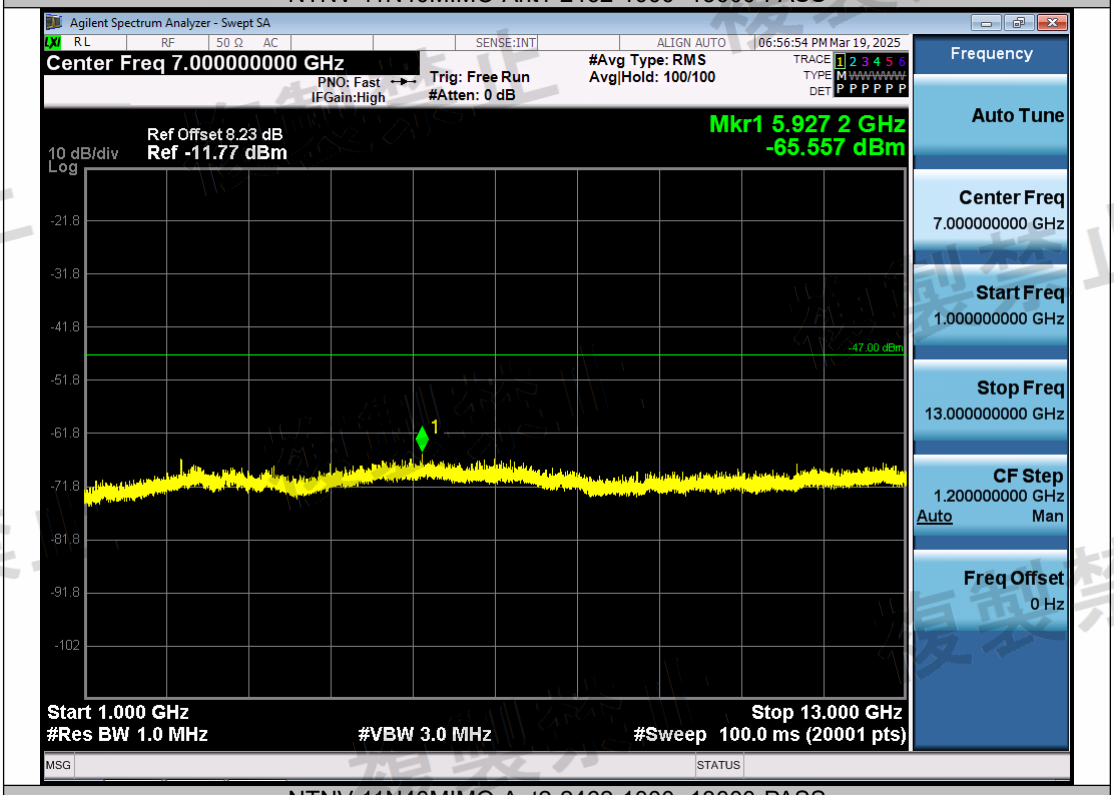
NTNV-11N40MIMO-Ant1-2462-30~1000-PASS



NTNV-11N40MIMO-Ant2-2462-30~1000-PASS



NTNV-11N40MIMO-Ant1-2462-1000~13000-PASS



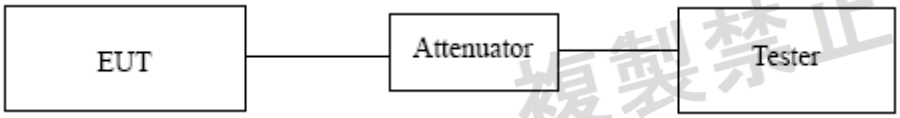
NTNV-11N40MIMO-Ant2-2462-1000~13000-PASS

7.6 INTERFERENCE PREVENTION FUNCTION

7.6.1 Standard Applicable

According to Item 19 of Article 2 Paragraph 1. The device shall have the function of automatic transmission or reception of identification code.

7.6.2 Test Setup Block Diagram



7.6.3 Test Procedure

1. Set the EUT in the usual operation condition

2. The radio equipment with automatic transmitting function of identification code

A. Transmit the assigned identification code from the radio equipment.
B. Confirm the identification code received by the demodulator.

3. The radio equipment with automatic receiving function of identification code

A. Transmit the assigned identification code from the opposite equipment.
B. Confirm that the usual communication is available.
C. Transmit the identification code distinct from the assigned one from the opposite equipment.
D. Confirm that the radio equipment is stopped or an indication is displayed as the identification code is different.

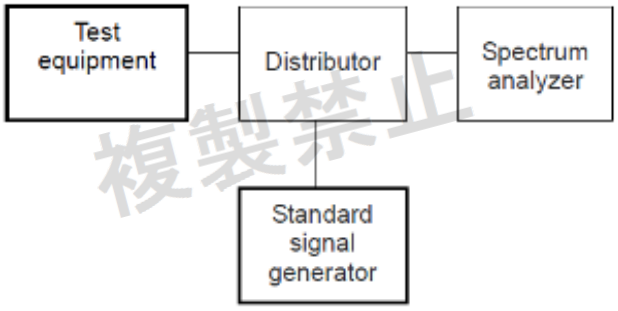
7.6.4 Summary of Test Results/Plots

Pass

Test Item	Test Result
Transmitting Function of Identification Code	The device have the function of automatic transmission or reception of identification code
Receiving Function of Identification Code	The device have the function of automatic transmission or reception of identification code

7.7 CARRIER SENSE CAPABILITY

7.7.1 Measurement system diagram



7.7.2 Condition of measuring instrument

(1) Set the standard signal generator as follows:
Carrier frequency: Center frequency of receiving frequency band of test equipment
Modulation: No modulation.(note1)
Output level: regulated level on antenna input of test equipment
Note 1: The un-modulated carrier in the center frequency, when the carrier sense function of test equipment is not worked, if necessary, change the frequency or modulate it.
(2) Set the spectrum analyzer as follows:
Center frequency: Center frequency of the bandwidth used.(note2)
Sweep frequency band: 50MHz(note2)
Resolution bandwidth: Approximately 1 MHz
Video bandwidth: Comparable level with resolution bandwidth
Trigger condition: Free-run
Detective mode: Positive peak
Note 2: Under 26MHz of OFDM or other modulated method that with transmit function, set sweep frequency band as 0Hz, detective mode as sample, center frequency as the carrier frequency from 13MHz to 19MHz.

7.7.3 Condition of test equipment

Set the test equipment at the test frequency and the test spread code, and set it to the receiving mode in the beginning. When using external test device, connect with the test equipment by line connection.

7.7.4 Measuring operation procedure

(1) Test with test equipment only:
A) Set the spectrum analyzer according to above (2).
B) Set the test equipment to the transmitting operation with the output of standard signal generator OFF, and confirm that it emits over 26MHz occupied frequency bandwidth OFDM radio wave, by using spectrum analyzer.
C) Set the test equipment to the receiving mode.
D) With the output of standard signal generator ON, set the test equipment to the transmitting operation, and confirm that it does not emit over 26MHz occupied frequency bandwidth OFDM radio wave, by using spectrum analyzer.

7.7.5 Test result

The unit does meet the requirements (Good).

Test Condition	Test Mode	Antenna	Frequency[MHz]	Result
NTNV	11B	Ant1	2412	Pass
		Ant2	2412	Pass
		Ant1	2442	Pass
		Ant2	2442	Pass
		Ant1	2472	Pass
		Ant2	2472	Pass
	11G	Ant1	2412	Pass
		Ant2	2412	Pass
		Ant1	2442	Pass
		Ant2	2442	Pass
		Ant1	2472	Pass
		Ant2	2472	Pass
	11N20	Ant1	2412	Pass
		Ant2	2412	Pass
		Ant1	2442	Pass
		Ant2	2442	Pass
		Ant1	2472	Pass
		Ant2	2472	Pass
	11N40	Ant1	2422	Pass
		Ant2	2422	Pass
		Ant1	2442	Pass
		Ant2	2442	Pass
		Ant1	2462	Pass
		Ant2	2462	Pass

7.8 RF ACCESSIBILITY

Standard requirement

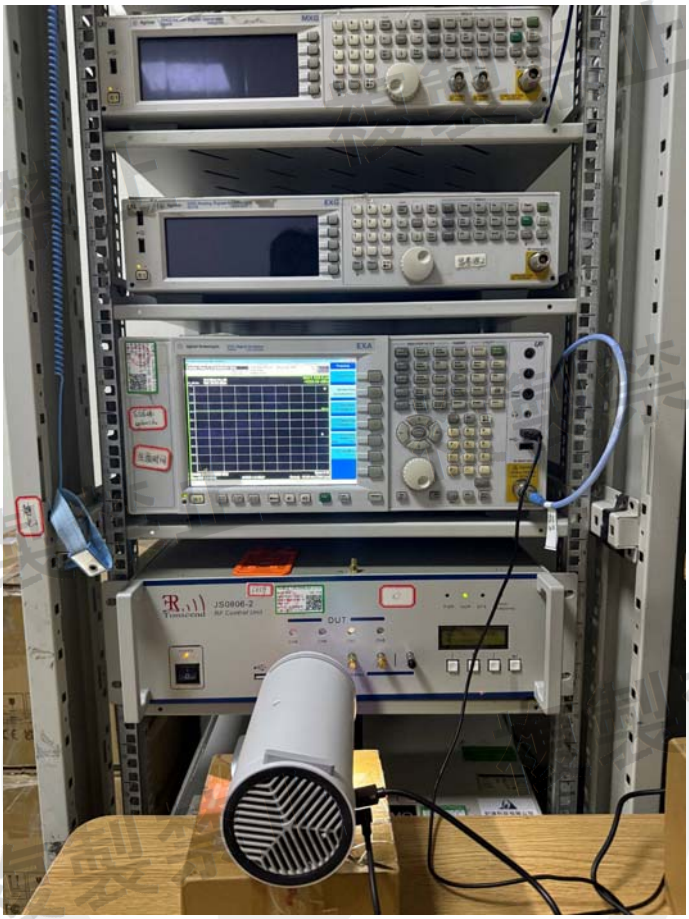
Article 49-20, paragraph 1 (a)

The EUT shall be constructed in such a way that sensitive RF parts, (like modulation and oscillator parts) cannot be reached easily by the user. These parts shall be covered by soldered metal caps or glue or by other mechanical covers. If the covers are fixed with screws, these shall be not the common type(s) like a Phillips, but special versions like Torx, so that the user cannot open the device with common tools.

☐	Sealed with special screws.
☐	Plastic chassis is being welded using ultrasonic waves.
☐	Chassis is glued using a special adhesive.
☐	Metal covers are spot-fused.
☐	Cover is specially interlocked.
☒	RF and Modulation components are covered with shielding case and this shielding case is soldered.
☐	Shield case is welded at RF and modulation parts, and ID-ROM is welded using the BGA Method.
☐	Shield case is welded at RF and modulation parts, and ID-ROM is glued at its lead with a special adhesive.
☐	Shield case is welded at RF and modulation parts, and ID-ROM is glued with anon-transparent laminating agent.
☐	RF and Modulation parts are mounted on PCB with surface mount technology, and there is no any adjustable parts on PCB or adjustable parts are not exposed.

Test result: Pass

8 APPENDIX PHOTOGRAPHS OF TEST SETUP



--- End of Report ---