EMTEK
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TEST REPORT

Product Name : **Turntable**

Model Number : **TAFT1, TAFT1/11, TAFT1/10, TAFT1/12, TAFT1/61, TAFT1/73, TAFT1/98**

Prepared for	:	MMD Hong Kong Holding Limited
Address	:	Units 1208-11, 12th Floor, C-Bons International Center, 108 Wai Yip Street, Kwun Tong, Kowloon, Hong Kong
Prepared by	:	EMTEK (DONGGUAN) CO., LTD.
Address	:	Room 111&112,Building 8,-1&2/F., Office Building2,Zone A,Zhongda Marine Biotechnology Research and Development Base, No.9,Xincheng Avenue, Songshan Lake High-Tech Industrial Development Zone, Dongguan, Guangdong, China TEL: +86-0769-22807078 FAX: +86-0769-22807079

Report Number	:	EDG2605200198E00201R
Date of sample receipt	:	May 20, 2026
Date(s) of Tests	:	May 20, 2026 to June 08, 2026
Date of issue	:	June 08, 2026

TEST RESULT CERTIFICATION

Applicant	:	MMD Hong Kong Holding Limited
Address	:	Units 1208-11, 12th Floor, C-Bons International Center, 108 Wai Yip Street, Kwun Tong, Kowloon, Hong Kong
Manufacturer	:	MMD Hong Kong Holding Limited
Address	:	Units 1208-11, 12th Floor, C-Bons International Center, 108 Wai Yip Street, Kwun Tong, Kowloon, Hong Kong
Factory	:	ZhongShan City Li Tai Electronic Industrial Co., Ltd.
Address	:	3rd Industrial District, Wuguishan Town, ZhongShan City, GuangDong, China
EUT	:	Turntable
Model Name	:	TAFT1, TAFT1/11, TAFT1/10, TAFT1/12, TAFT1/61, TAFT1/73, TAFT1/98 (Note: Only the model of TAFT1/11 was tested, since the electrical circuit design, layout, components used and internal wiring are identical, only the color of appearance, model name and country code diferent.)
Trademark	:	PHILIPS or

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 (DONGGUAN) 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 (DONGGUAN) 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 : May 20, 2026 to June 08, 2026

Prepared by : Warren Deng

Warren Deng /Editor

Reviewer : Jessica Zhang

Jessica Zhang /Supervisor

Approved & Authorized Signer :

Sam Lv / Manager

Modified Information

Version	Report No.	Revision Date	Summary
V1.0	EDG2605200198E00201R	/	Original Report

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1 EUT TECHNICAL DESCRIPTION

Characteristics	Description
BT Version	BT V5.4
Data Rate	1Mbps for GFSK modulation 2Mbps for π/4-DQPSK modulation 3Mbps for 8DPSK modulation
Modulation:	GFSK modulation for BR(1Mbps) π/4-DQPSK modulation for EDR(2Mbps) 8DPSK modulation for EDR (3Mbps)
Operating Frequency Range(s):	2402-2480MHz
Number of Channels:	79 channels
Rated Antenna Power:	0.01 mW/MHz
Antenna Type :	FPC Antenna
Antenna Gain:	4.14 dBi
Power Supply:	100V-240V~50/60Hz
Hardware version:	V1.0
Software version:	V39
Temperature Range	0°C ~ +40°C

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

2 SUMMARY OF TEST RESULT

MIC RULES	DESCRIPTION OF TEST	RESULT
Item 19	RF Output Power	PASS
Item 19	Frequency Tolerance	PASS
Item 19	Occupied Bandwidth /Spreading Bandwidth/Spread Factor	PASS
Item 19	Holding time of hopping frequency	PASS
Item 19	Transmitter Spurious Emissions	PASS
Item 19	Receiver Spurious Emissions	PASS
Item 19	Interference Prevention Function	PASS
Item 19	Carrier Sending Function	N/A

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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.	Cal. Interval	Calibration Method
Wireless Connectivity Tester	R&S	CMW270	102543	2026/4/23	1Year	c
Automatic Control Unit	Tonscend	JS0806-2	21I8060480	2026/4/23	1Year	c
Signal Analyzer	KEYSIGHT	N9010B	MY60242456	2026/4/23	1Year	c
Analog Signal Generator	KEYSIGHT	N5173B	MY61252625	2026/4/23	1Year	c
UP/DOWN-Converter	R&S	CMW-Z800A	100274	2026/4/23	1Year	c
Vector Signal Generator	KEYSIGHT	N5182B	MY61252674	2026/4/23	1Year	c
Frequency Extender	KEYSIGHT	N5182BX07	MY59362541	2026/4/23	1Year	c
Temperature&Humidity test chamber	ESPEC	EL-02KA	12107166	2026/4/23	1 Year	c
6 db attenuator	AR-WORLDWIDE	6dB/50FH-006-100	324011	2026/4/23	1 Year	c

Calibration agency : Guangzhou LiSai Metrology & Test Co., Ltd.

Address : Address: No.8.South Street ShiJi Institute Guangzhou.Guangdong.China

Calibration Method:

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

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

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

d) Calibration conducted by using measuring instruments and other equipment listed Table attached hereto, which shall have been given any of calibration, etc. listed above from a) to c).

Remark: *Each piece of equipment is scheduled for calibration once a year.*

For measurement cables(It is from the antenna end of EUT to the test port of test equipment.)

Equipment	Manufacturer	cable loss	Application frequency band	Measurement data of line loss comes from	Last Cal.	Cal. Interval
measurement cable	Provided by the applicant	0.5 dBm	2400-2500MHz	Manufacturers claim themselves.	N/A	N/A

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, and then record on this report.

Those data rates (1Mbps for BR GFSK modulation; 2Mbps for EDR π/4-DQPSK modulation; 3Mbps for EDR 8DPSK modulation) were used for all tests.

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

Frequency and Channel list for BT:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	39	2441	…	…
1	2403	40	2442	76	2478
2	2404	41	2443	77	2479
…	…	…	…	78	2480
Note: fc=2402MHz+k×1MHz k=0 to 78					

3.4 SUPPORT EQUIPMENT

EUT Cable List and Details			
Description	Manufacturer	Model	Serial Number
/	/	/	/

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

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
Notebook	Lenovo	E46L	11S168003748Z0LR06E0HG
/	/	/	/

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.*

4 FACILITIES AND ACCREDITATIONS

4.1 FACILITIES

All measurement facilities used to collect the measurement data are located at:

EMTEK (DONGGUAN) CO., LTD.
Room 111&112,Building 8,-1&2/F., Office Building2,Zone A,Zhongda Marine Biotechnology Research and Development Base, No.9,Xincheng Avenue, Songshan Lake High-Tech Industrial Development Zone, Dongguan, Guangdong, China

4.2 LABORATORY ACCREDITATIONS AND LISTINGS

Site Description		
EMC Lab.	:	**Accredited by CNAS** The Certificate Registration Number is L2291. The Laboratory has been assessed and proved to be in compliance with CNAS-CL01 (identical to ISO/IEC 17025:2017) **Accredited by FCC** Designation Number: CN1451 Test Firm Registration Number: 846861 **Accredited by A2LA** The Certificate Number is 4321.01. Accredited by Industry Canada The Conformity Assessment Body Identifier is CN0008
Name of Firm	:	EMTEK (DONGGUAN) CO., LTD.
Site Location	:	Room 111&112,Building 8,-1&2/F., Office Building2,Zone A,Zhongda Marine Biotechnology Research and Development Base, No.9,Xincheng Avenue, Songshan Lake High-Tech Industrial Development Zone, Dongguan, Guangdong, China

5 TEST SYSTEM UNCERTAINTY

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

Parameter	Uncertainty
Radio Frequency	±1ppm
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%

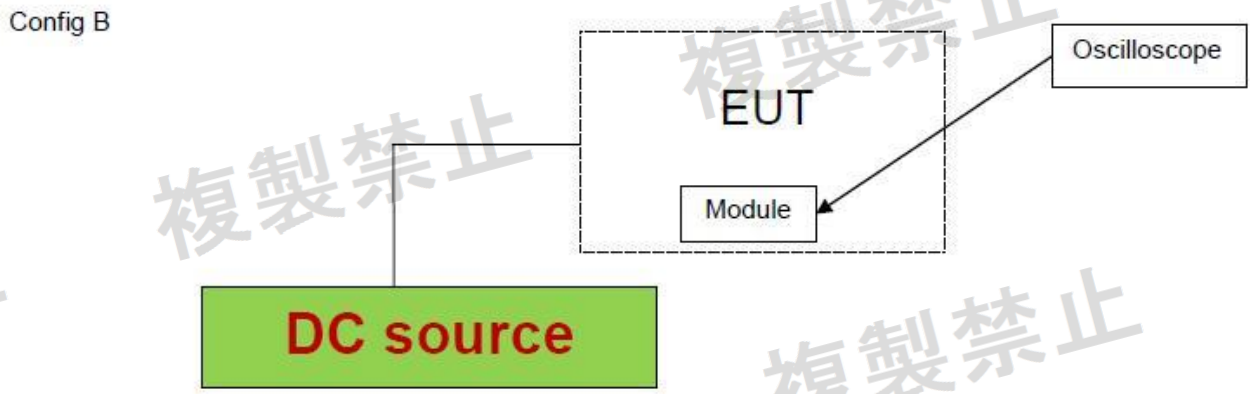
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6 WIRELESS MODULE VOLTAGE TEST IN EXTREME CONDITIONS

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 Voltage	AC 90V	AC 100	AC 110V
Module Test voltage	3.31	3.30	3.31
Module Ratedvoltage	3.30	3.30	3.30
The Range of Module Voltage (%)	0.3	0	0.3

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

7 TEST REQUIREMENTS

7.1 FREQUENCY TOLERANCE

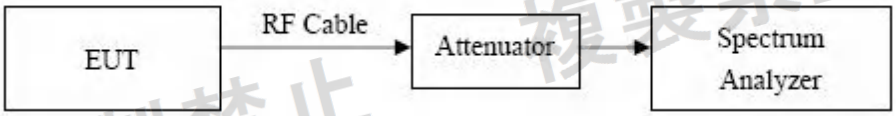
7.1.1 Applicable Standard

According to Item 19 of Article 2 Paragraph 1.

7.1.2 Conformance Limit

For the 2.4 GHz bands it shall be better than 50 ppm under the operational conditions

7.1.3 Test Setup Block Diagram



7.1.4 Test Procedure

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.
When there is a fluctuation of +/-10% input voltage from external power to the test equipment. In case the test equipment is designed to function only within the specified fluctuation range of +/-10% for the voltage source tests shall be conducted applying the rated voltage and a respective specified maximum/minimum value of fluctuation range.
Set the EUT on the test frequency and transmit.
Stop the modulation (stop the spreading), set on “continuous transmission of no-modulated radiation” in principle. If impossible, on “continuous burst transmission of no-modulated radiation”, or a modulation mode to generate a specific frequency spectrum so that the frequency can be measured using a spectrum analyzer (example: a wave of the sub-carrier).
In case of no-modulation (consecutive or continuous burst), direct measurement is conducted with the frequency meter.
In case of burst wave, the measurement is conducted for a time period to achieve a sufficient accuracy. The mean value is employed as the measurement value.
In case of a test mode generating specific frequency spectrum, the spectrum frequency is measured with the spectrum analyzer.

7.1.5 Environmental Conditions

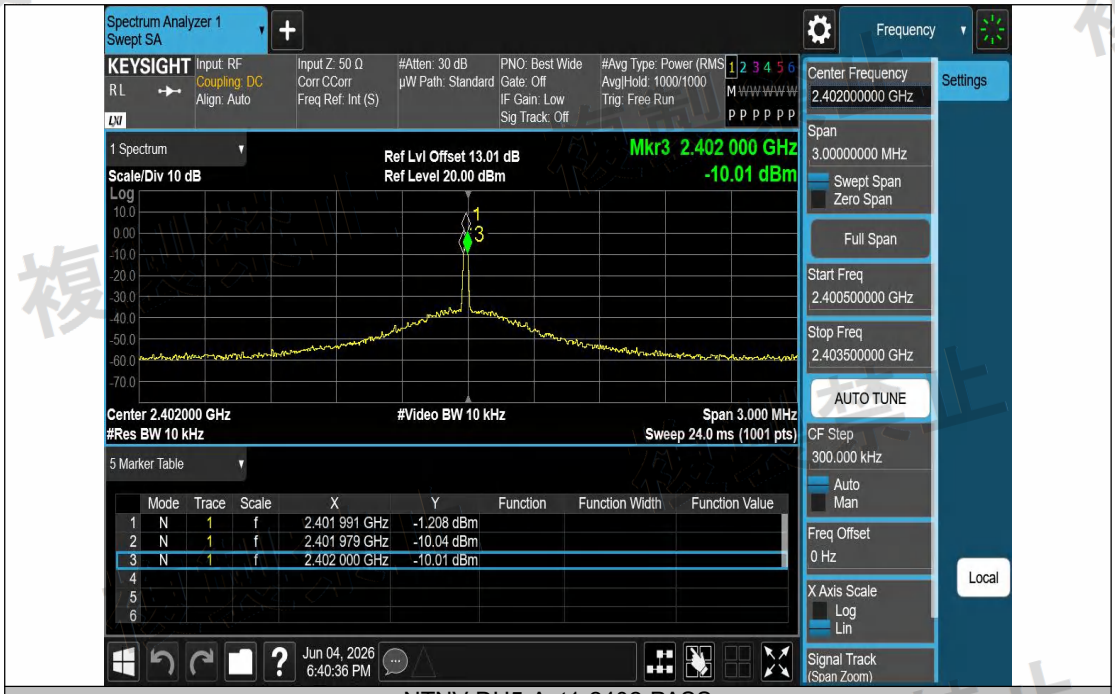
Temperature:	25°C
Relative Humidity:	45%
ATM Pressure:	1011 mbar

7.1.6 Test Results

All the modes were tested and recorded,the results of the test item are good.

Test Condition	Test Mode	Antenna	Frequency[MHz]	CenterFreq [MHz]	Result[ppm]	Limit[ppm]	Verdict
NTNV	DH5	Ant1	2402	2402.000	0.000000	±50	PASS
NTNV	DH5	Ant1	2441	2440.994	-2.458009	±50	PASS
NTNV	DH5	Ant1	2480	2479.991	-3.629032	±50	PASS
NTNV	2DH5	Ant1	2402	2402.003	+1.248959	±50	PASS
NTNV	2DH5	Ant1	2441	2440.994	-2.458009	±50	PASS
NTNV	2DH5	Ant1	2480	2479.991	-3.629032	±50	PASS
NTNV	3DH5	Ant1	2402	2401.997	-1.248959	±50	PASS
NTNV	3DH5	Ant1	2441	2440.994	-2.458009	±50	PASS
NTNV	3DH5	Ant1	2480	2479.991	-3.629032	±50	PASS

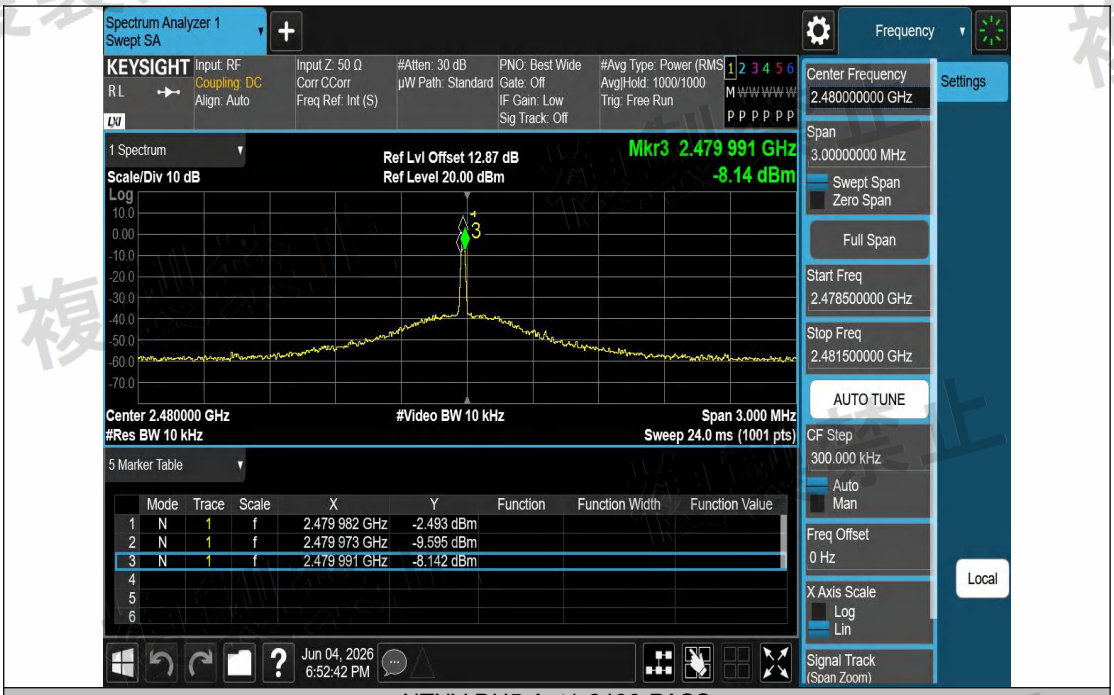
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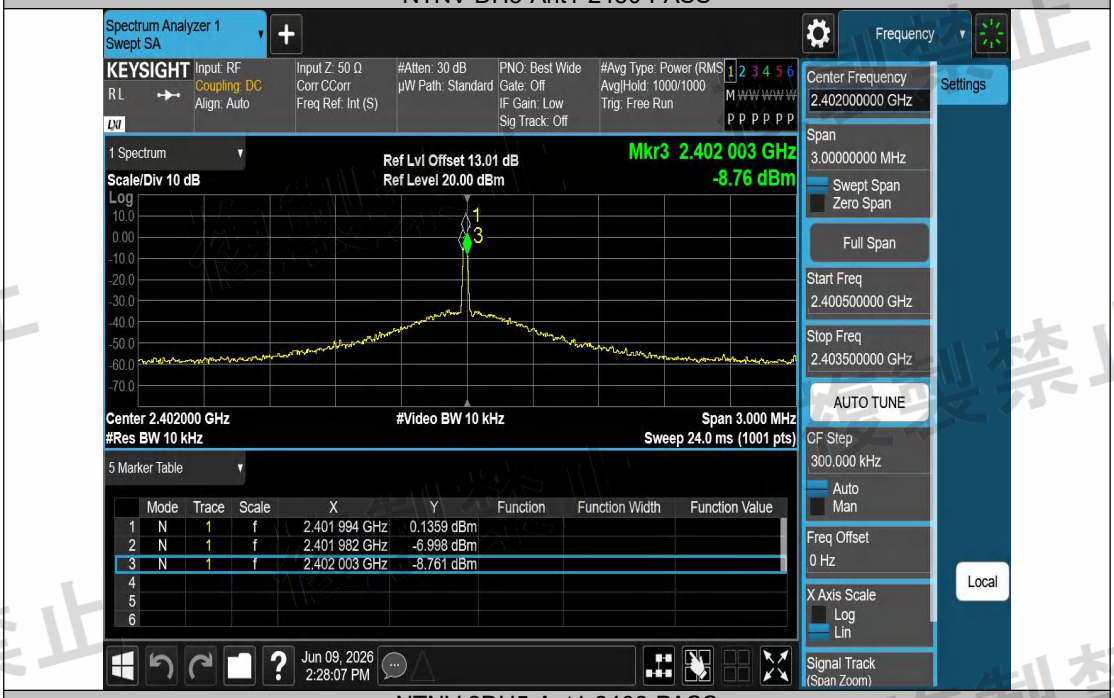
NTNV-DH5-Ant1-2402-PASS



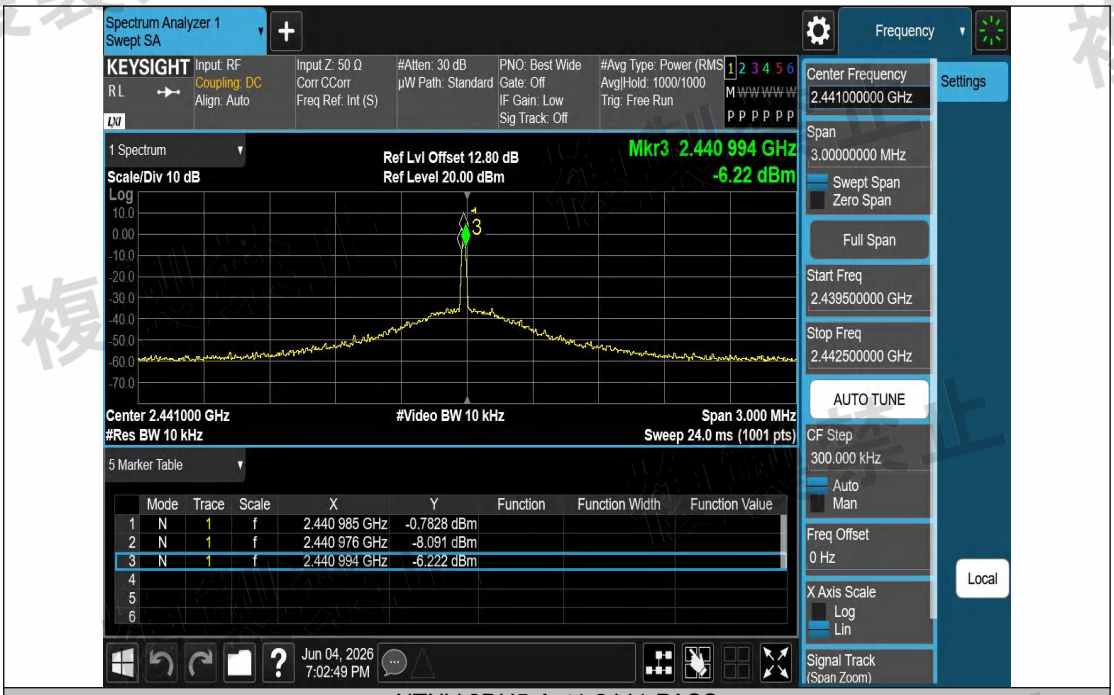
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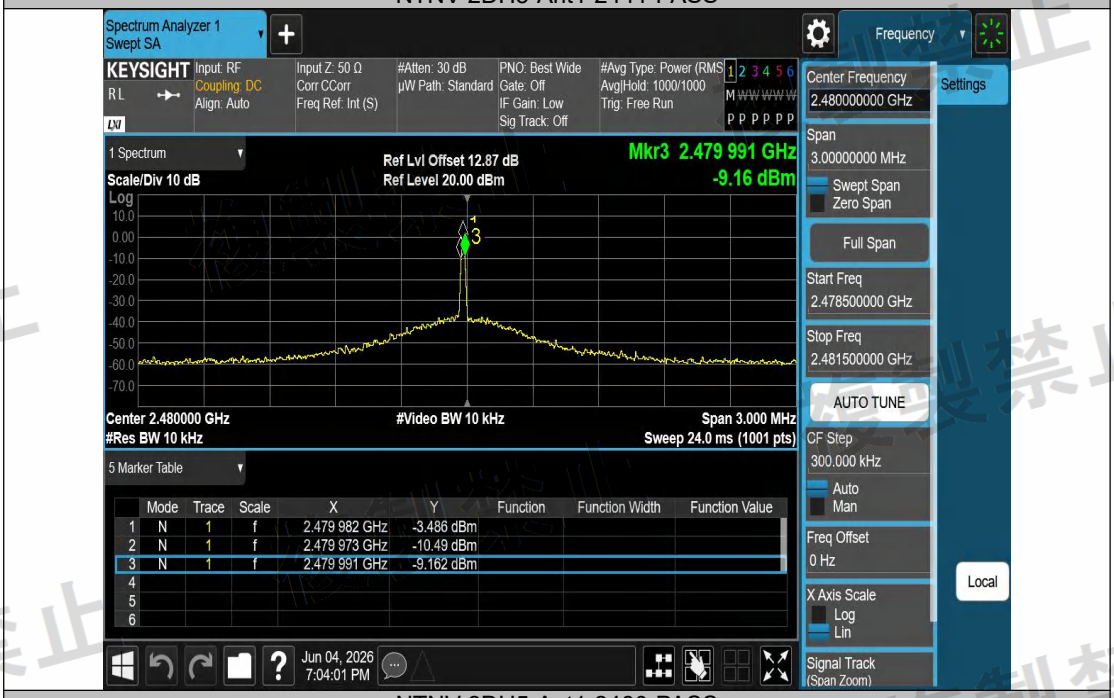
NTNV-DH5-Ant1-2480-PASS



NTNV-2DH5-Ant1-2402-PASS



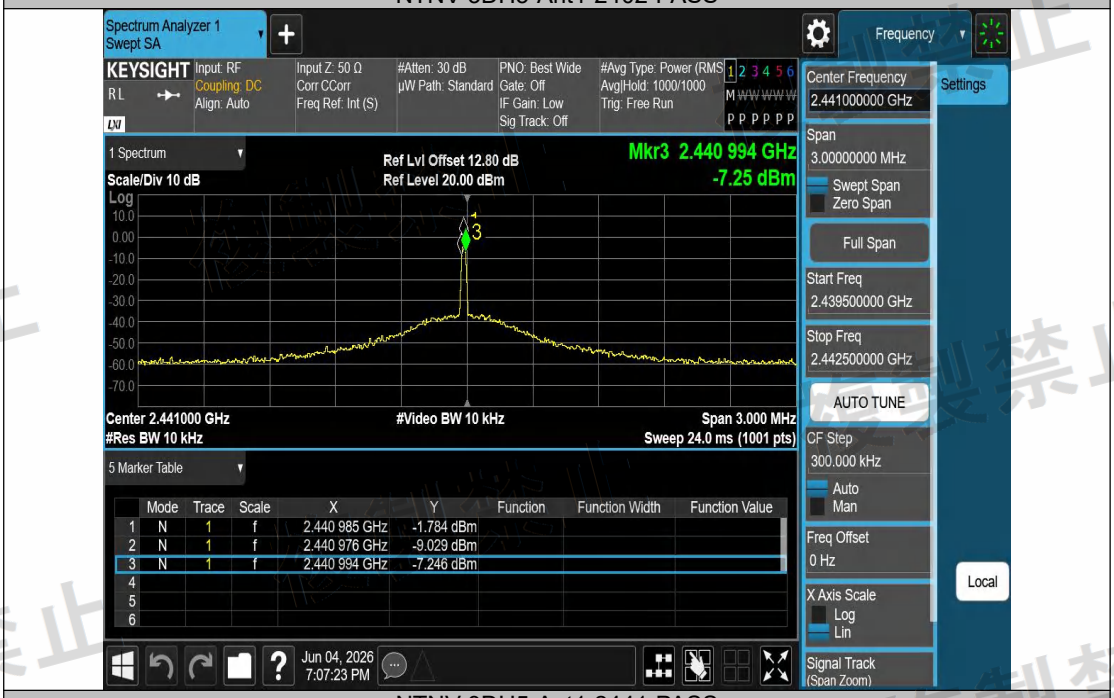
NTNV-2DH5-Ant1-2441-PASS



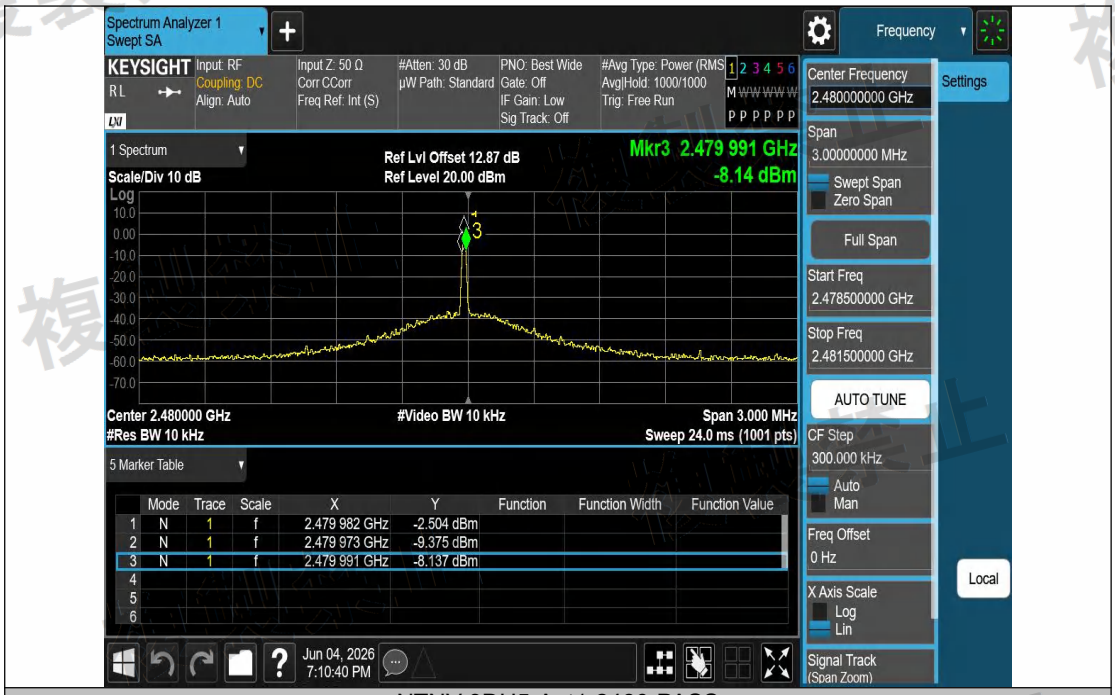
NTNV-2DH5-Ant1-2480-PASS



NTNV-3DH5-Ant1-2402-PASS



NTNV-3DH5-Ant1-2441-PASS



NTNV-3DH5-Ant1-2480-PASS

7.2 OCCUPIED BANDWIDTH & SPREADING BANDWIDTH

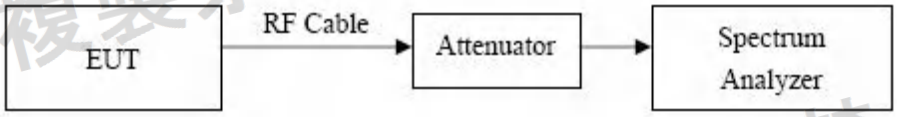
7.2.1 Applicable Standard

According to Item 19 of Article 2 Paragraph 1.

7.2.2 Conformance Limit

Permissible value for occupied bandwidth using the FH system, a hybrid systems combining DS and FH systems or hybrid system combining FH and OFDM systems shall be 83.5MHz or less,
In spread spectrum systems, spread bandwidth (which refers to a frequency bandwidth with an upper limit and lower limit such that each of the mean powers radiated above the upper frequency limit and below the lower frequency limit is equal to 5% of the total mean power radiated ,this also applies hereafter) shall be 500kHz or more.

7.2.3 Test Setup Block Diagram



7.2.4 Test Procedure

Spectrum analyzer is set as below

Central Frequency	Test frequency
Sweeping Bandwidth	2 to 3.5 times the allowable value (SPAN=160MHz)
Resolution Bandwidth	Lower than 3 % of allowable value (RBW=10kHz)
Video Bandwidth	Same level as Resolution 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

The measured value of the spectrum analyzer is processed by the computer internally or externally
Conditions of EUT
Set the test frequency and the modulation is performed with the standard coded test signal. In case of OFDM with burst wave, the modulation is conducted to minimize the rate of the time that the number of sub-carrier is less (short preamble).
After a repetition of sweep so that no variation is found, values of all the data points are loaded into the array variable on the computer.
For all the data, the dB values are converted to antilogarithm of power dimension.
Power summation of all the data is estimated and stored as “total power value”.
Starting with the data of the minimum frequency, the power is summed sequentially, and the limiting data point where the value achieves 0.5% of the total power is sensed. The limiting point is converted to frequency, stored as “lower limit”.
Starting with the data of the maximum frequency, the power is summed sequentially, and the limiting data

point where the value achieves 0.5% of the total power is sensed. The limiting point is converted to frequency, stored as “upper limit”

7.2.5 Environmental Conditions

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

7.2.6 Test Results

All the modes were tested and recorded,the results of the test item are good.

Occupied Bandwidth (99% Emission bandwidth)

Test Condition	Test Mode	Antenna	Frequency[MHz]	Result [MHz]	Limit [MHz]	Verdict
NTNV	DH5	Ant1	2402	2.596	≤83.5	PASS
NTNV	DH5	Ant1	2441	2.655	≤83.5	PASS
NTNV	DH5	Ant1	2480	3.205	≤83.5	PASS
NTNV	2DH5	Ant1	2402	2.898	≤83.5	PASS
NTNV	2DH5	Ant1	2441	2.867	≤83.5	PASS
NTNV	2DH5	Ant1	2480	3.101	≤83.5	PASS
NTNV	3DH5	Ant1	2402	2.873	≤83.5	PASS
NTNV	3DH5	Ant1	2441	2.908	≤83.5	PASS
NTNV	3DH5	Ant1	2480	3.053	≤83.5	PASS

Test Condition	Test Mode	Antenna	Frequency[MHz]	Result [MHz]	Limit [MHz]	Verdict
NTNV	DH5	Ant1	Hop	78.786	≤83.5	PASS
NTNV	2DH5	Ant1	Hop	78.849	≤83.5	PASS
NTNV	3DH5	Ant1	Hop	78.842	≤83.5	PASS

Spread Bandwidth (90% Emission bandwidth) & Spread Factor

Test Condition	Test Mode	Antenna	Frequency[MHz]	Result [MHz]	Limit [MHz]	Spread Factor	Limit	Verdict
NTNV	DH1	Ant1	Hop	70.925	≥0.5	70.925	>5	PASS
NTNV	DH3	Ant1	Hop	70.892	≥0.5	70.892	>5	PASS
NTNV	DH5	Ant1	Hop	70.897	≥0.5	70.897	>5	PASS
NTNV	2DH1	Ant1	Hop	70.375	≥0.5	70.375	>5	PASS
NTNV	2DH3	Ant1	Hop	70.693	≥0.5	70.693	>5	PASS
NTNV	2DH5	Ant1	Hop	71.040	≥0.5	71.040	>5	PASS
NTNV	3DH1	Ant1	Hop	70.998	≥0.5	70.998	>5	PASS
NTNV	3DH3	Ant1	Hop	71.040	≥0.5	71.040	>5	PASS
NTNV	3DH5	Ant1	Hop	70.890	≥0.5	70.890	>5	PASS

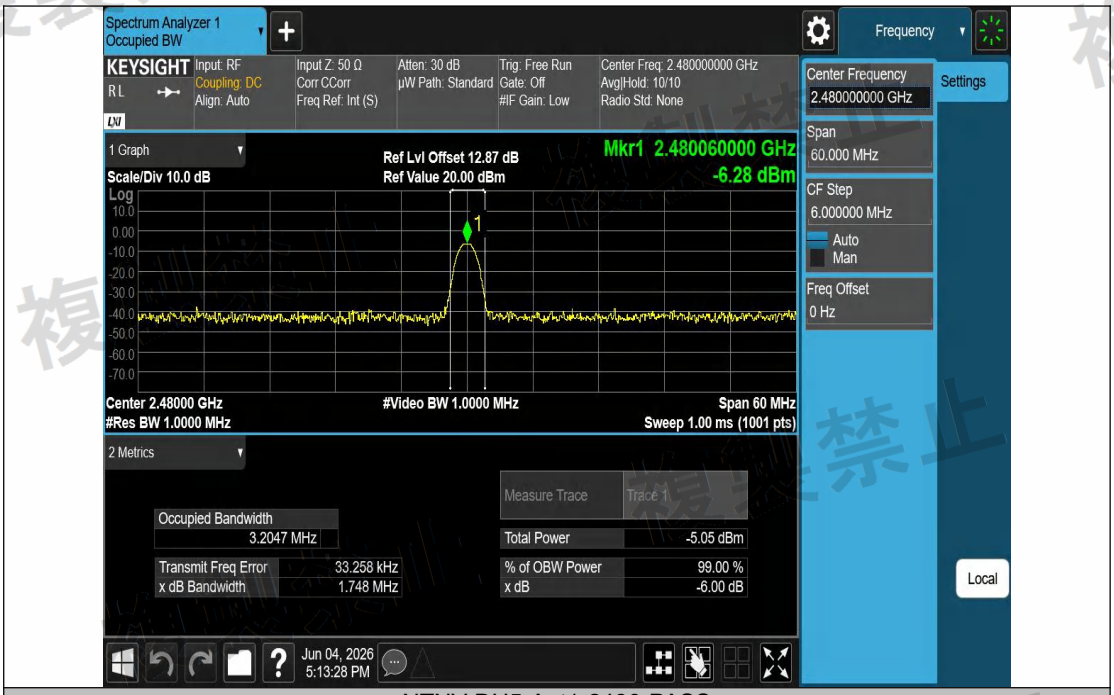
99% Emission bandwidth



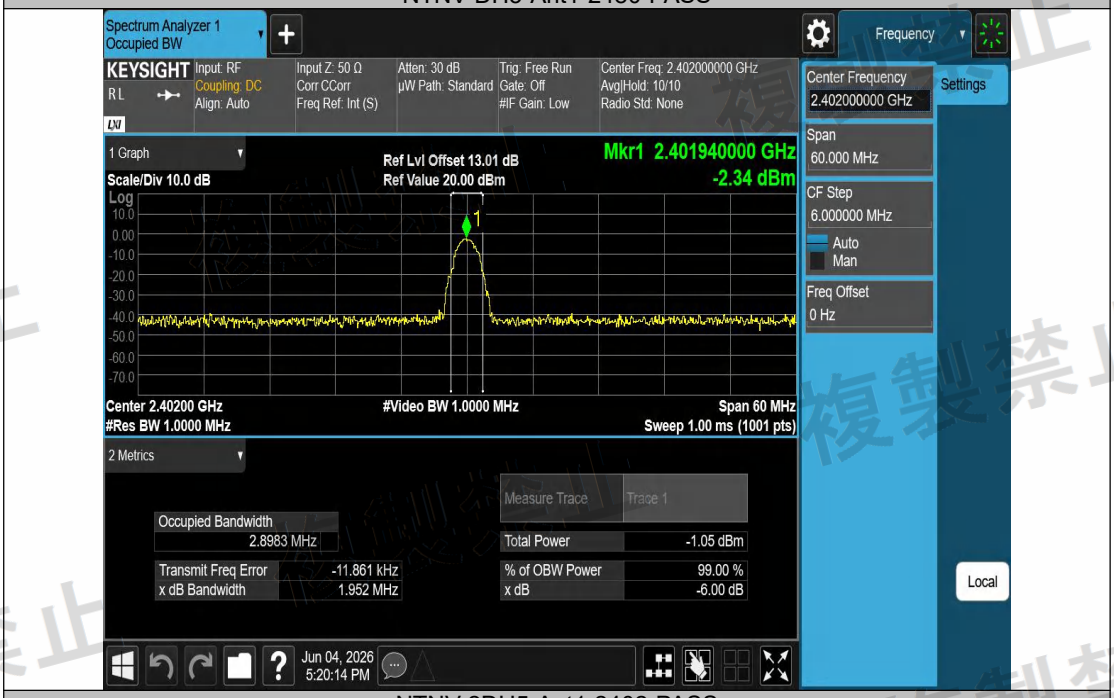
NTNV-DH5-Ant1-2402-PASS



NTNV-DH5-Ant1-2441-PASS



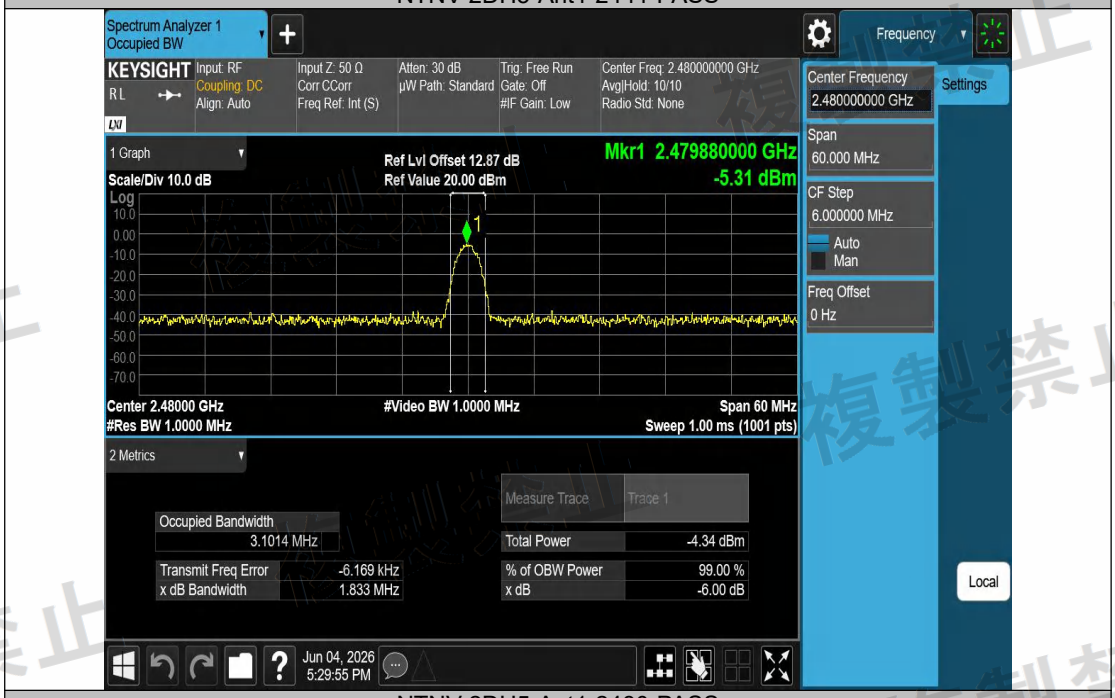
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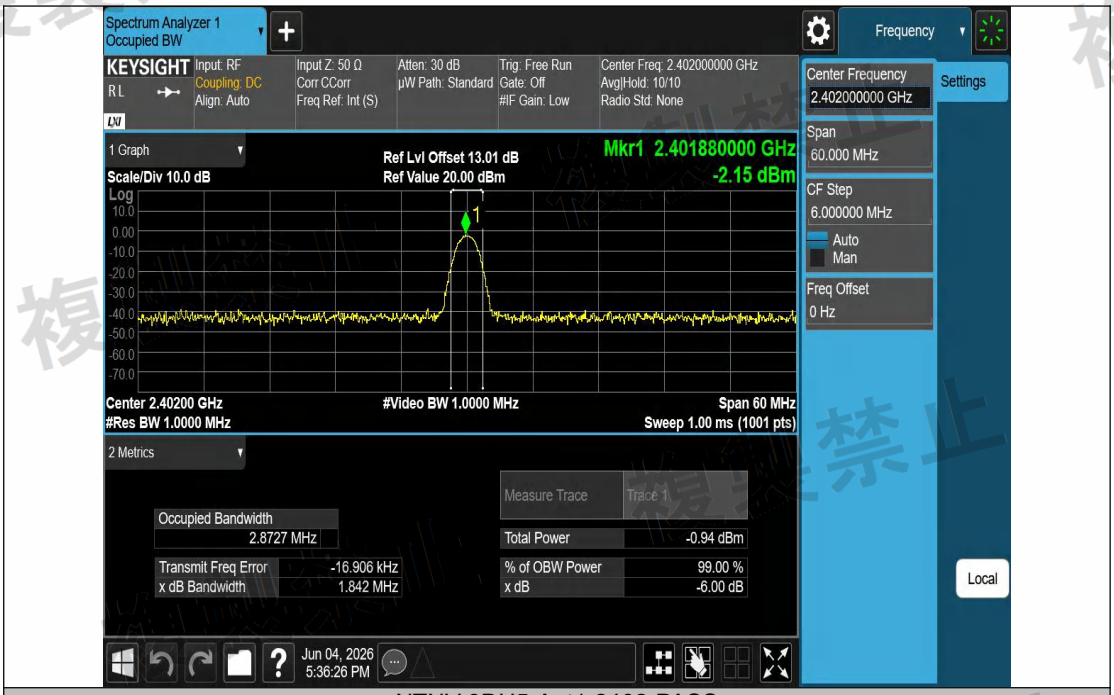
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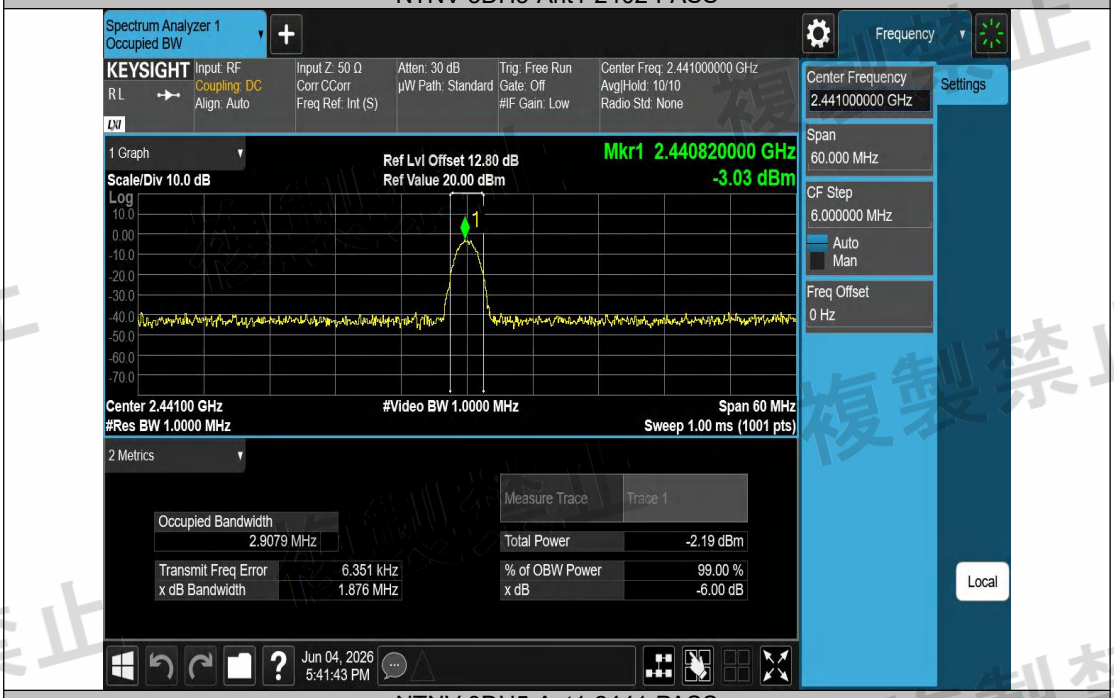
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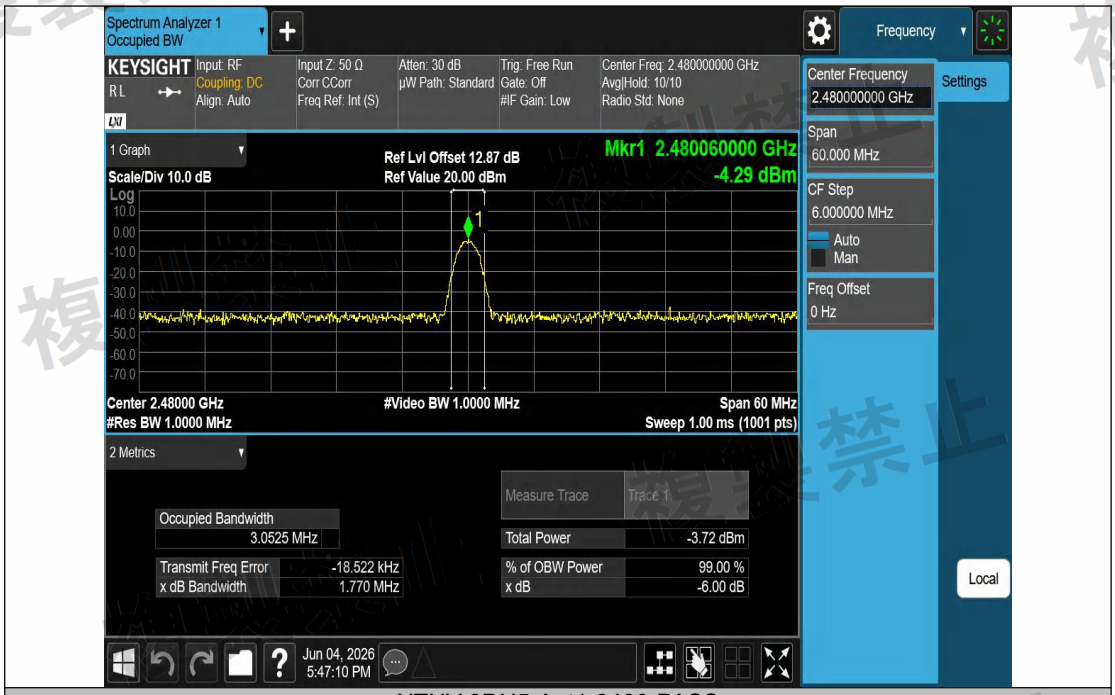
NTNV-2DH5-Ant1-2480-PASS



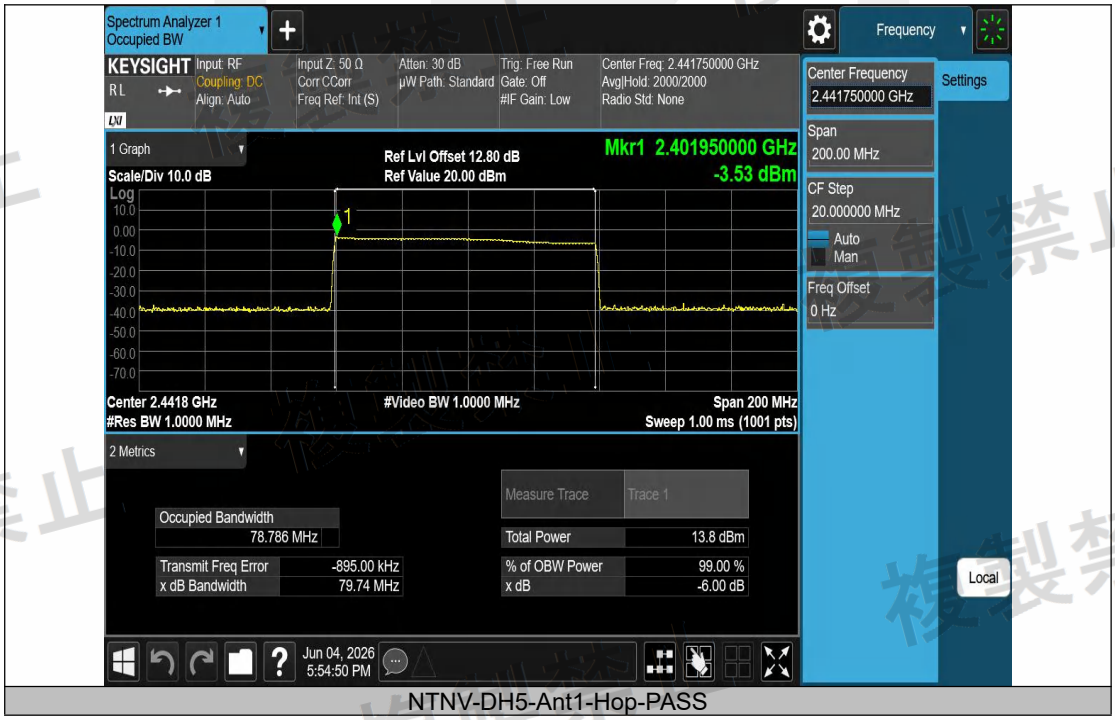
NTNV-3DH5-Ant1-2402-PASS



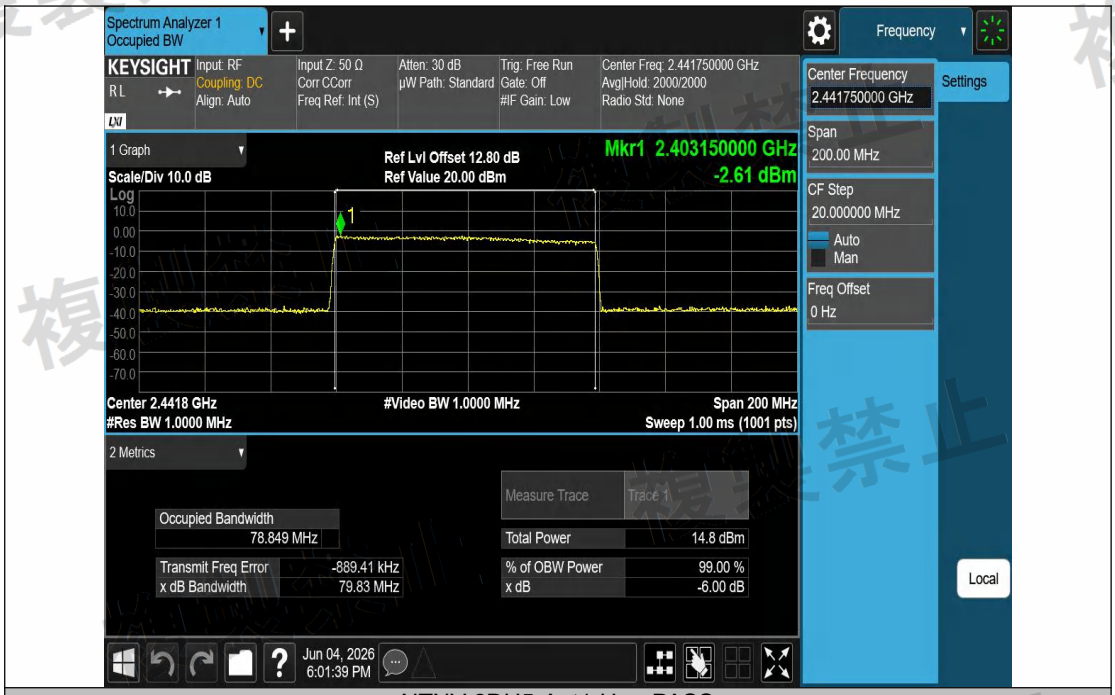
NTNV-3DH5-Ant1-2441-PASS



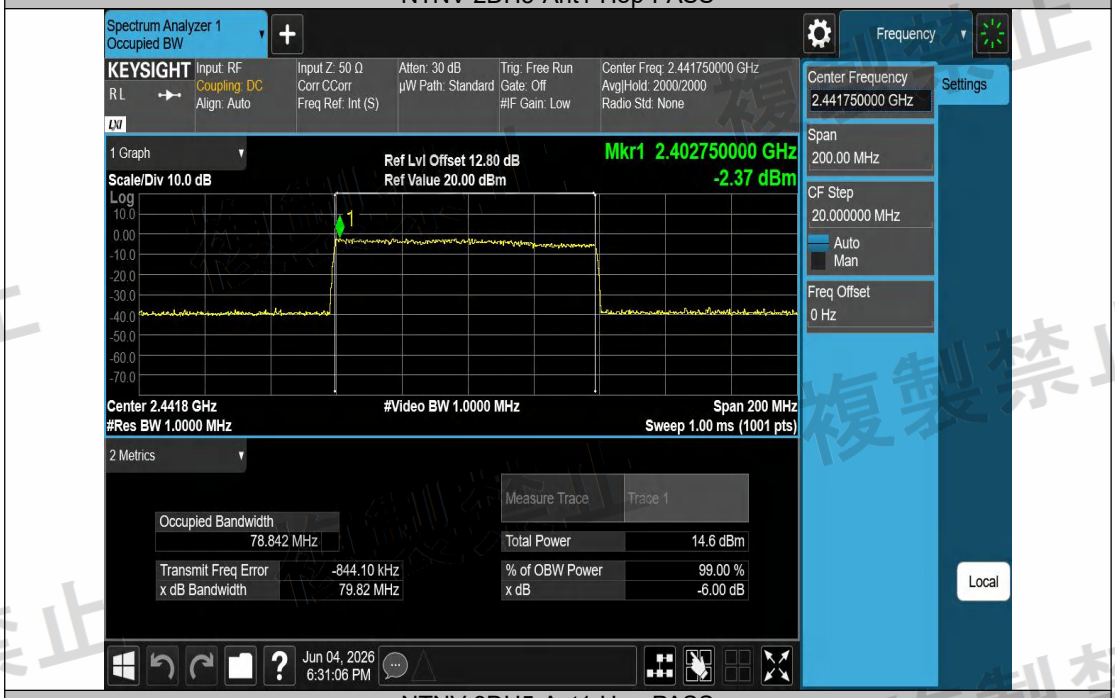
NTNV-3DH5-Ant1-2480-PASS



NTNV-DH5-Ant1-Hop-PASS

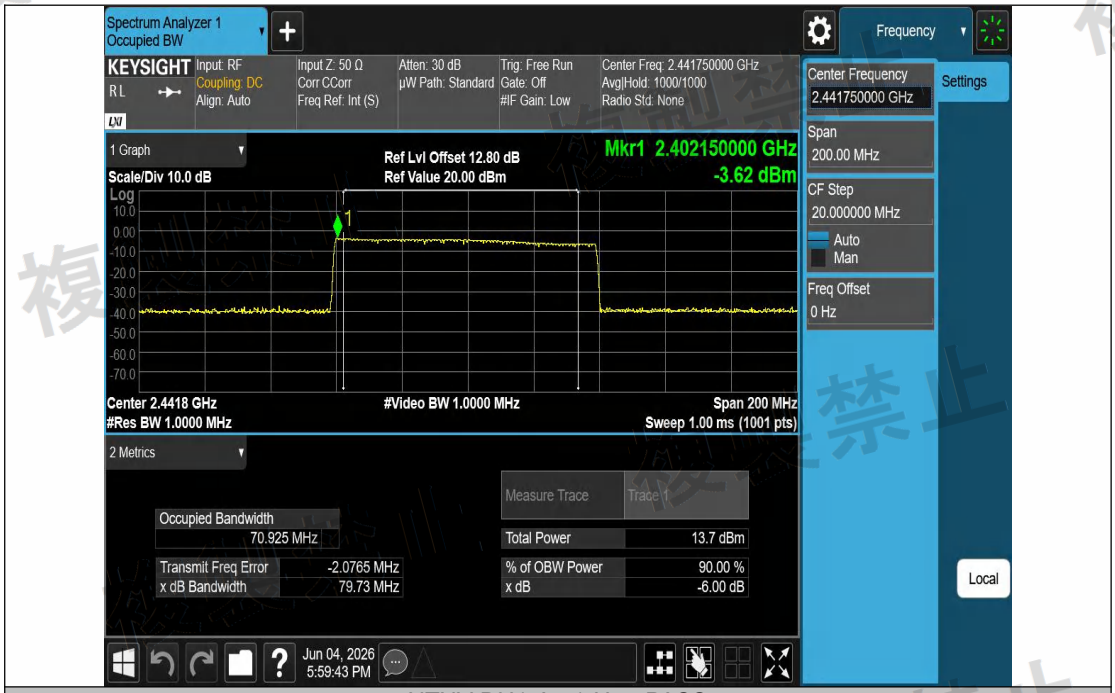


NTNV-2DH5-Ant1-Hop-PASS

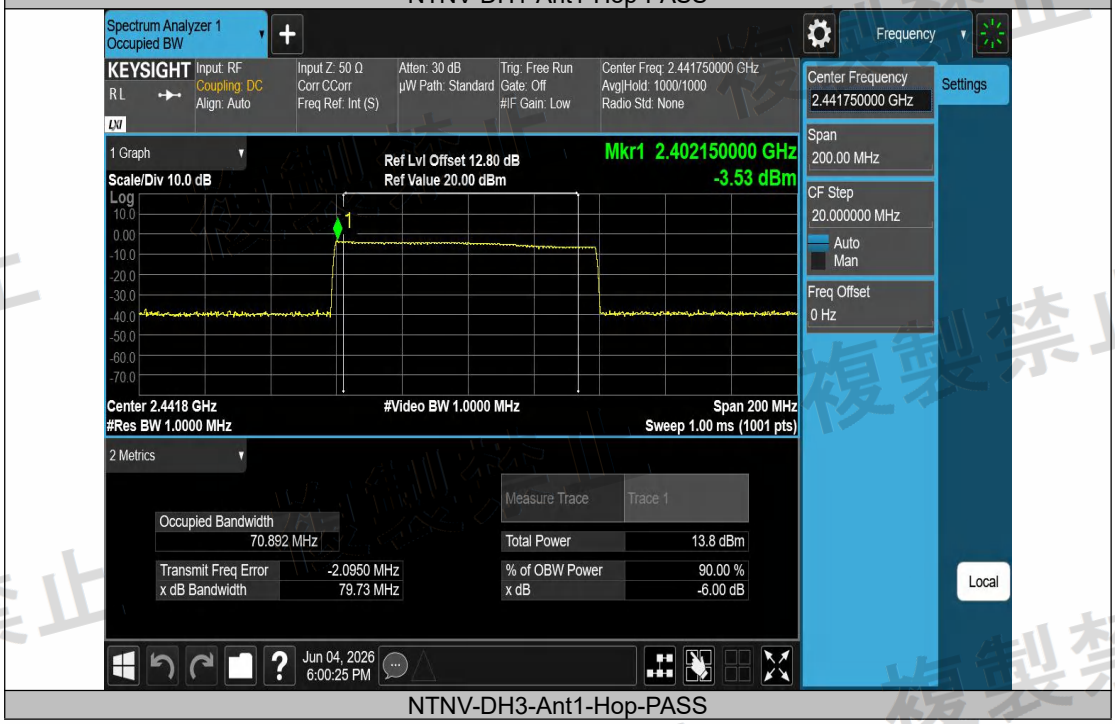


NTNV-3DH5-Ant1-Hop-PASS

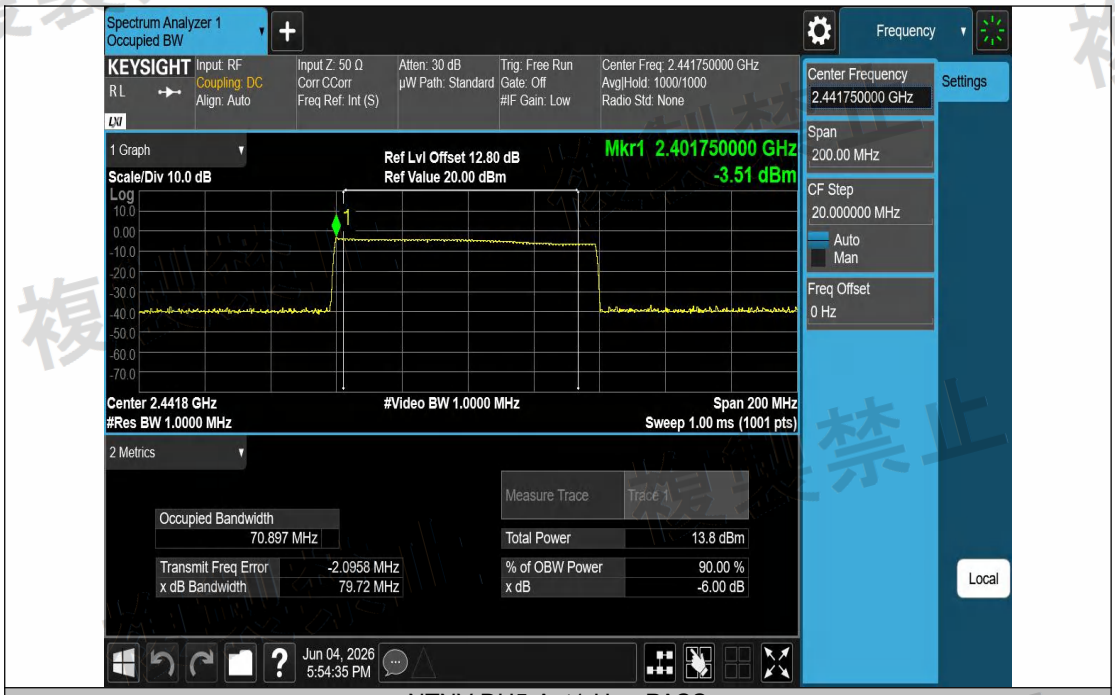
Spread Bandwidth



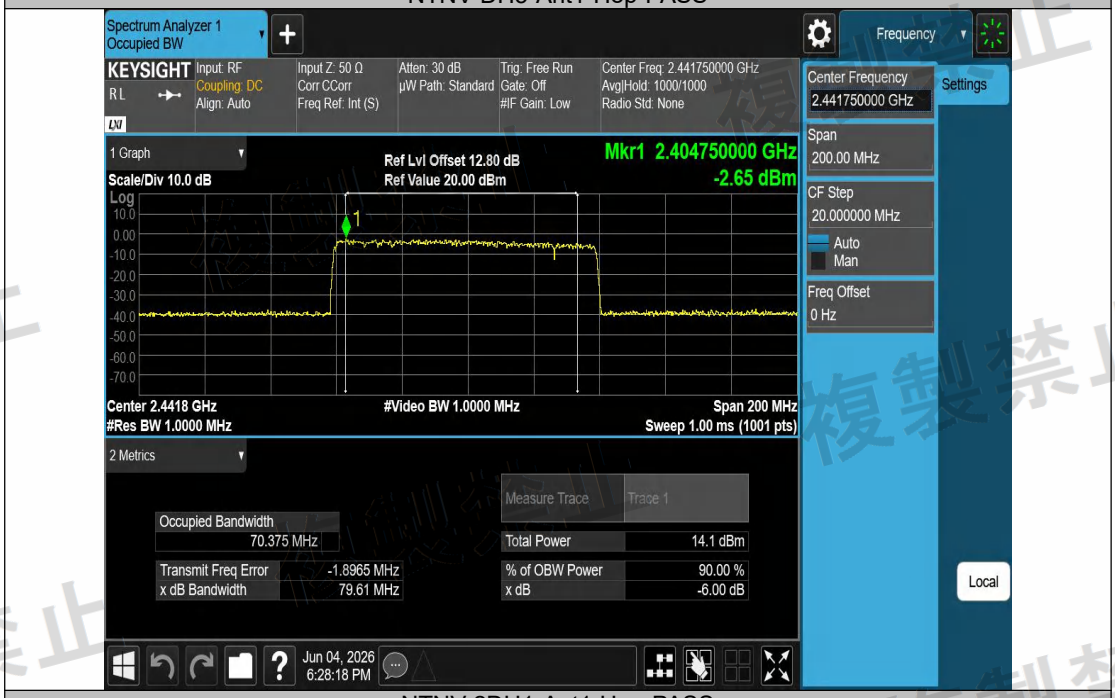
NTNV-DH1-Ant1-Hop-PASS



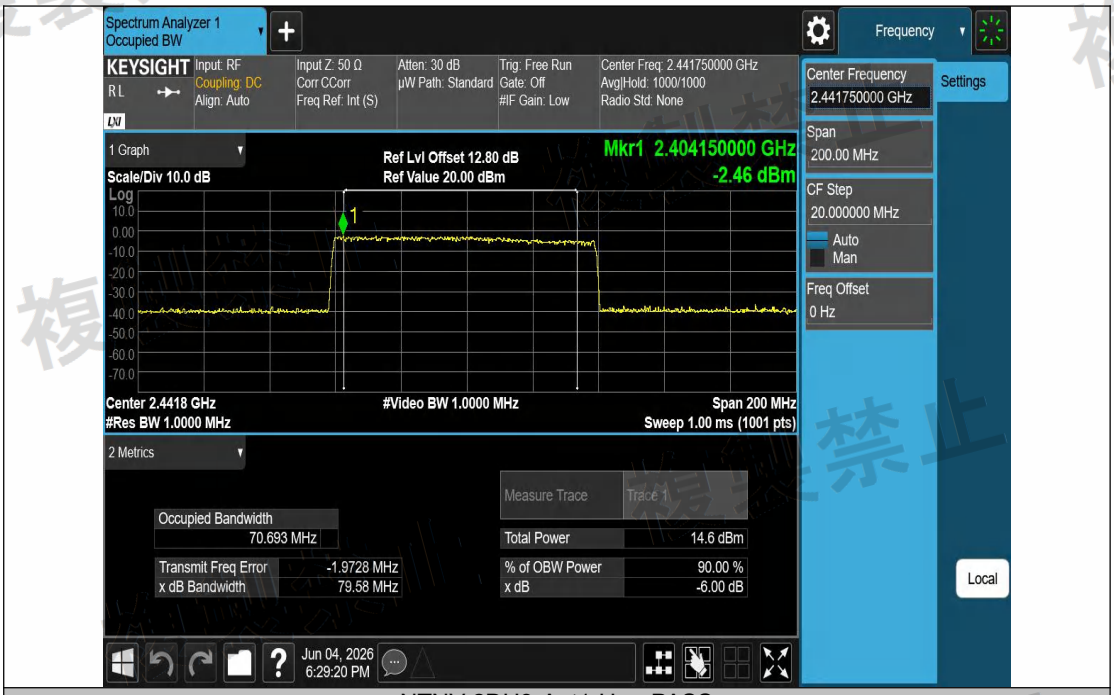
NTNV-DH3-Ant1-Hop-PASS



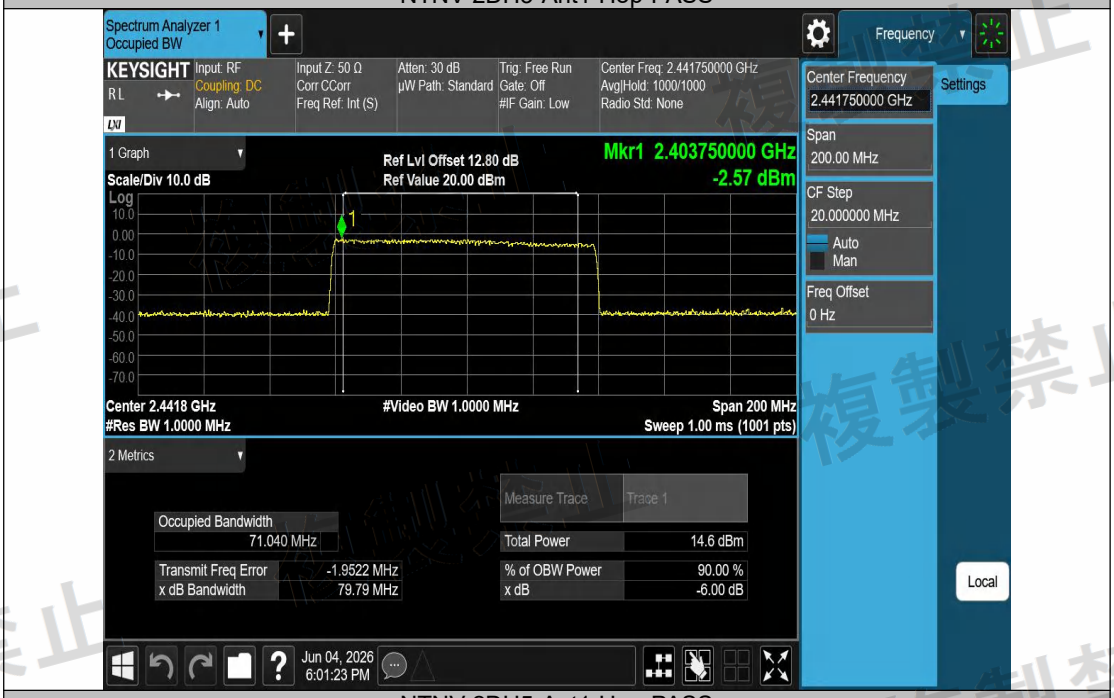
NTNV-DH5-Ant1-Hop-PASS



NTNV-2DH1-Ant1-Hop-PASS



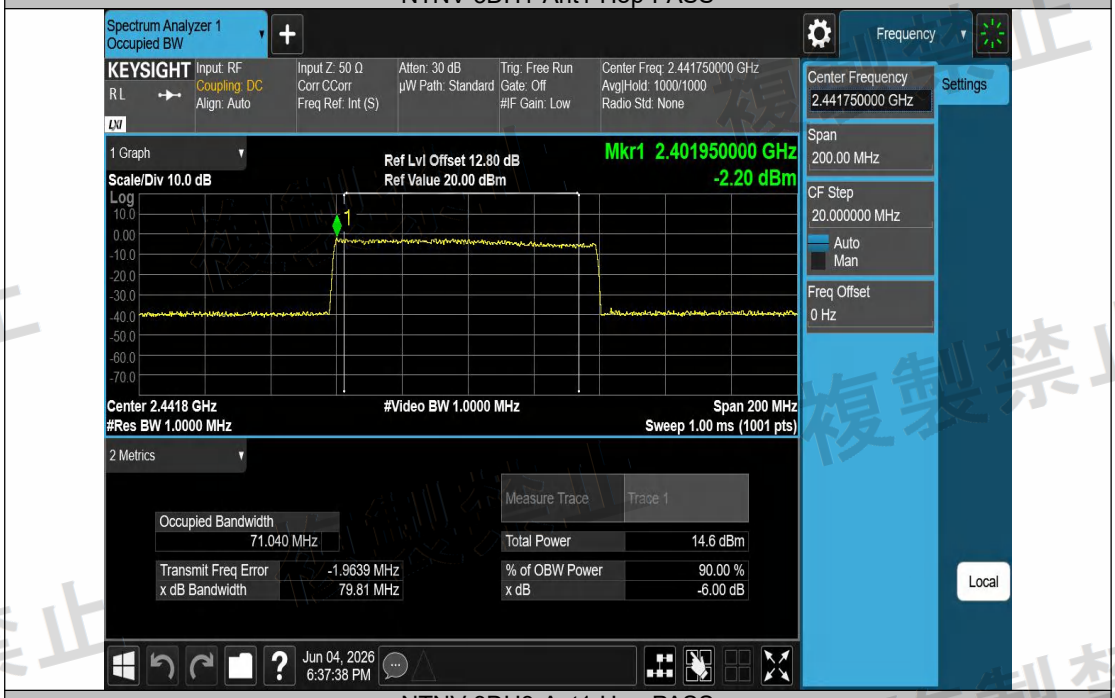
NTNV-2DH3-Ant1-Hop-PASS



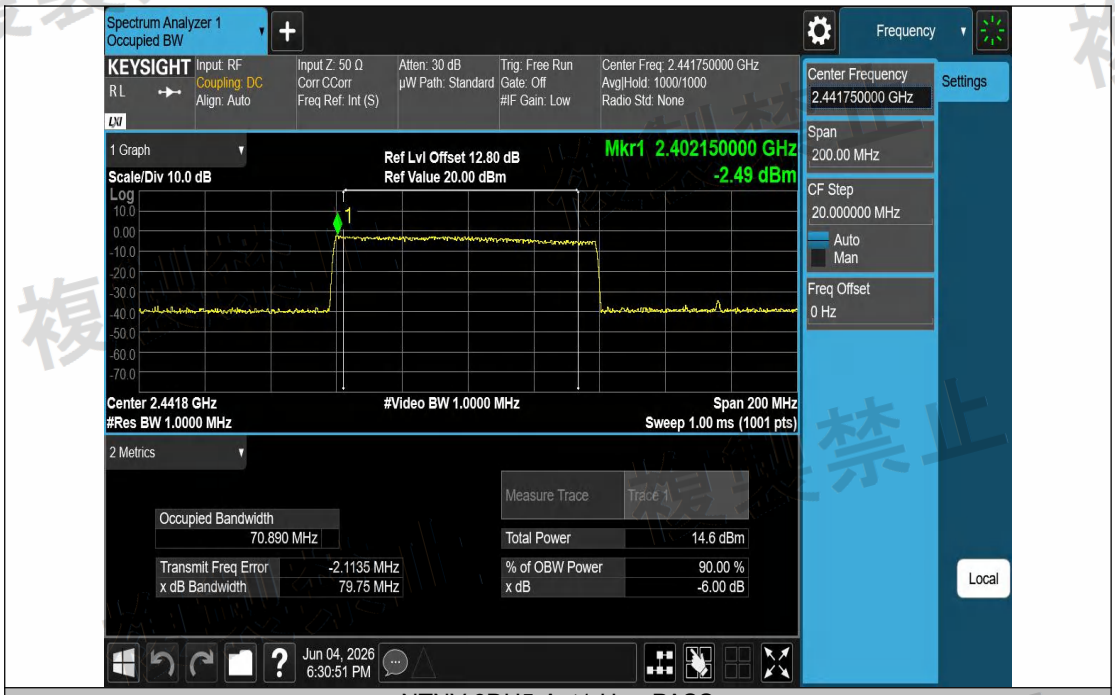
NTNV-2DH5-Ant1-Hop-PASS



NTNV-3DH1-Ant1-Hop-PASS



NTNV-3DH3-Ant1-Hop-PASS



NTNV-3DH5-Ant1-Hop-PASS

7.3 HOPPING FREQUENCY STAYING TIME (DWELL TIME)

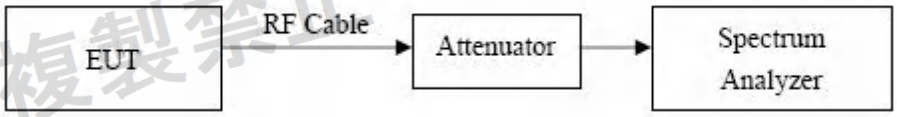
7.3.1 Applicable Standard

According to Item 19 of Article 2 Paragraph 1.

7.3.2 Conformance Limit

Frequency dwell time (time during which radio waves continue to be emitted at a specified frequency) of a transmitting equipment using the FH system shall be 0.4 seconds or less. When a simple system (except hybrid system) is used ,total frequency dwell time at an arbitrary frequency within the time period obtained by multiplying 0.4 seconds by the process gain shall be 0.4 seconds or less.

7.3.3 Test Setup Block Diagram



7.3.4 Test Procedure

Set the EUT at the test frequency with test spreading code(Frequency Hopping), then modulation is performed with standard PN test signal
Spectrum analyzer is set as below

Central Frequency	Measurement hopping frequency
Sweep Frequency Bandwidth	0 MHz
Resolution Bandwidth	Approx. 1 MHz
Video Bandwidth	Same level as resolution bandwidth
Y-Axis Scale	10 dB/Div
Sweep Time	Hopping period
Sweep Mode	Single sweep
Trigger Condition	Video trigger
Phase-Detection Mode	Positive peak

Set the spectrum analyzer as in 2 above, wait for the hopping signal at the frequency to hop to.
Read the staying time from the trajectory on the screen at the frequency to hop in the hopping period by using marker, confirm the summation of the staying time to be less than 0.4 seconds.
In the same manner as (2), read the integral of the staying time at the frequency to hop in the hopping period.
Calculate the total of the frequency staying time at the frequency to hop to as described in the equation below.
Repeat the measurement for each frequency to hop.

7.3.5 Environmental Conditions

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

7.3.6 Test Results

All the modes were tested and recorded,the results of the test item are good.

Test Condition	Test Mode	Antenna	Frequency[MHz]	SBW[MHz]	Duty Cycle[%]	Result[s]	Limit [s]	Verdict
NTNV	DH1	Ant1	Hop	70.925	32.8	0.118	≤0.4	PASS
NTNV	DH3	Ant1	Hop	70.892	66.8	0.240	≤0.4	PASS
NTNV	DH5	Ant1	Hop	70.897	77.6	0.279	≤0.4	PASS
NTNV	2DH1	Ant1	Hop	70.375	33.6	0.120	≤0.4	PASS
NTNV	2DH3	Ant1	Hop	70.693	66.8	0.239	≤0.4	PASS
NTNV	2DH5	Ant1	Hop	71.04	77.87	0.280	≤0.4	PASS
NTNV	3DH1	Ant1	Hop	70.998	33.6	0.121	≤0.4	PASS
NTNV	3DH3	Ant1	Hop	71.04	66.8	0.240	≤0.4	PASS
NTNV	3DH5	Ant1	Hop	70.89	77.87	0.280	≤0.4	PASS

NOTE: Result[s]=0.4*SBW/79



NTNV-DH1-Ant1-2441



NTNV-DH3-Ant1-2441



NTNV-DH5-Ant1-2402



NTNV-DH5-Ant1-2441



NTNV-DH5-Ant1-2480



NTNV-2DH1-Ant1-2441



NTNV-2DH3-Ant1-2441



NTNV-2DH5-Ant1-2402



NTNV-2DH5-Ant1-2441



NTNV-2DH5-Ant1-2480



NTNV-3DH1-Ant1-2441



NTNV-3DH3-Ant1-2441



NTNV-3DH5-Ant1-2402



NTNV-3DH5-Ant1-2441



NTNV-3DH5-Ant1-2480

7.4 POWER TO ANTENNA (CONDUCTED)

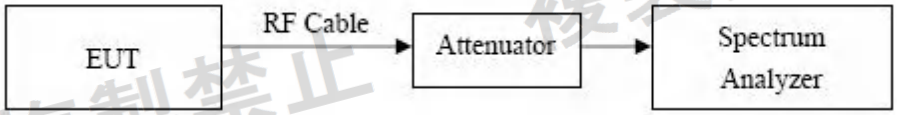
7.4.1 Applicable Standard

According to Item 19 of Article 2 Paragraph 1.

7.4.2 Conformance Limit

The maximum permit antenna power is 3mW/MHz for DSSS the maximum permit antenna power is 10mW, and the maximum permit tolerance is +20%

7.4.3 Test Setup Block Diagram



7.4.4 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 (VBW=6MHz)
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
Frequency hopping system or combined systems of direct spread and frequency hopping:
a. Connect the high frequency power meter to the output of the attenuator and measure the total power (without bandwidth limitation)
b. Divide the total power by the spread bandwidth to find the “average” power per MHz.
c. Confirm that frequency distribution of the hopping frequencies is homogeneous according to the supporting data. If frequency distribution of the frequencies is not homogeneous, consider other measurement or correction methods based on the supporting data.
d. Set the antenna power as follows:
- Continuous waves: value in b.
- Burst waves: value in b. 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)
.

7.4.5 Environmental Conditions

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

7.4.6 Test Results

All the modes were tested and recorded,the results of the test item are good.

Test Condition	TestMode	Antenna	Freq(MHz)	Result (dBm)	Result (mW)	90% BW (MHz)	Result (mW/MHz)	Limit (mW/MHz)	Verdict
NTNV	DH5	Ant1	Hop	-1.28	0.7447	70.897	0.0105	≤3	PASS
NTNV	2DH5	Ant1	Hop	-1.28	0.7447	71.040	0.0105	≤3	PASS
NTNV	3DH5	Ant1	Hop	-1.62	0.6887	70.890	0.0097	≤3	PASS

Test Condition	Test Mode	Antenna	Freq(MHz)	Power (mW/MHz)	RatedPower (mW/MHz)	Result (%)	Limit (%)	Verdict
NTNV	DH5	Ant1	Hop	0.0105	0.01	5.00	+20	PASS
NTNV	2DH5	Ant1	Hop	0.0105	0.01	5.00	+20	PASS
NTNV	3DH5	Ant1	Hop	0.0097	0.01	-3.00	+20	PASS

Test Condition	TestMode	Antenna	Freq(MHz)	Power (dBm/MHz)	EIRP(dBm/MHz)	Limit(dBm/MHz)	Verdict
NTNV	DH5	Ant1	Hop	-19.79	-15.65	≤6.91	PASS
NTNV	2DH5	Ant1	Hop	-19.79	-15.65	≤6.91	PASS
NTNV	3DH5	Ant1	Hop	-20.13	-15.99	≤6.91	PASS

Note: Tolerance = (Output Power – Rated Output Power) / Rated Output Power * 100%

7.5 SPURIOUS EMISSIONS INTENSITY

7.5.1 Applicable Standard

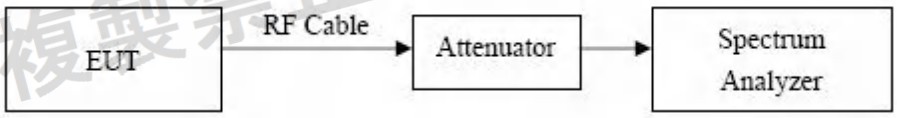
According to Item 19 of Article 2 Paragraph 1.

7.5.2 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:

a. 2,387MHz ≤ f ≤ 2,400MHz and 2,483.5MHz < f ≤ 2,496.5MHz 25 μW(-16dB) or less
b. 2,387MHz > f and 2,496.5MHz < f 2.5 μW(-26dB) or less

7.5.3 Test Setup Block Diagram



7.5.4 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
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

1. Respectively mark the maximum results in the above sweep bandwidth.

7.5.5 Environmental Conditions

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

7.5.6 Test Results

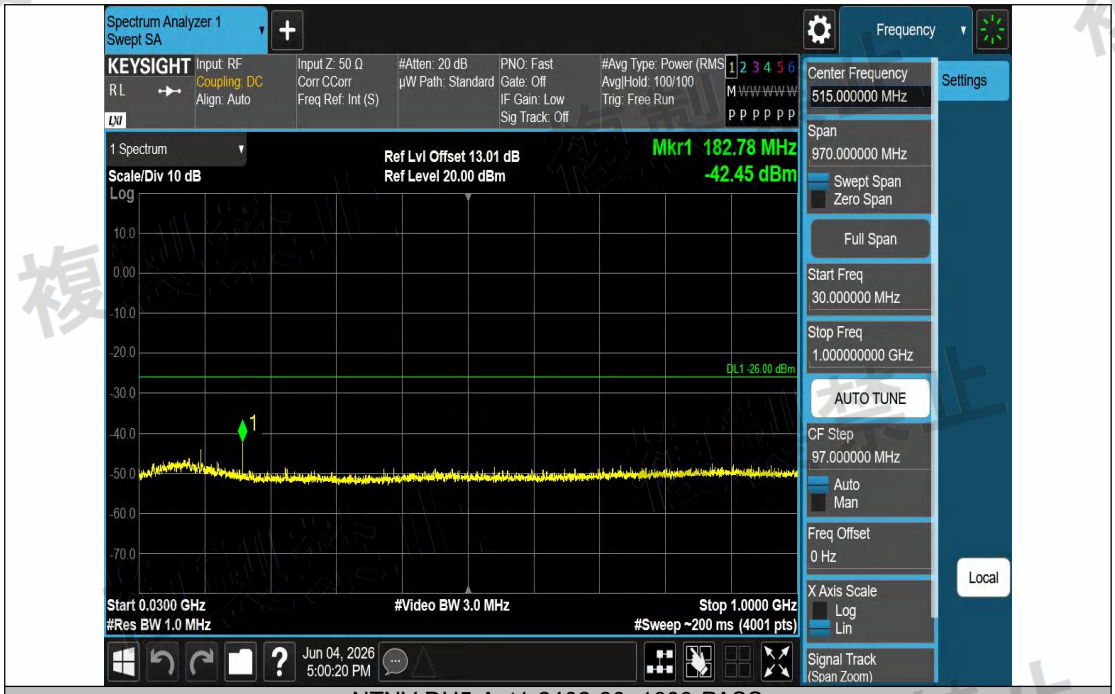
All the modes were tested and recorded,the results of the test item are good.

Test Condition	Test Mode	Antenna	Frequency[MHz]	Freq.Range [MHz]	Freq. [MHz]	Result [dBm/MHz]	Limit [dBm/MHz]	Result [μW/MHz]	Limit [μW/MHz]	Verdict
NTNV	DH5	Ant1	2402	30~1000	182.78	-42.45	≤-26	0.05689	≤2.5	PASS
NTNV	DH5	Ant1	2402	1000~2387	2317.65	-23.27	≤-26	4.70977	≤2.5	See table below
NTNV	DH5	Ant1	2402	2387~2400	2392.99	-35.95	≤-16	0.25410	≤25	PASS
NTNV	DH5	Ant1	2402	2483.5~2496.5	2484.04	-35.27	≤-16	0.29717	≤25	PASS
NTNV	DH5	Ant1	2402	2496.5~3000	2622.07	-45.84	≤-26	0.02606	≤2.5	PASS
NTNV	DH5	Ant1	2402	3000~13000	11414.00	-43.33	≤-26	0.04645	≤2.5	PASS
NTNV	DH5	Ant1	2441	30~1000	118.27	-45.62	≤-26	0.02742	≤2.5	PASS
NTNV	DH5	Ant1	2441	1000~2387	2320.77	-24.60	≤-26	3.46737	≤2.5	See table below
NTNV	DH5	Ant1	2441	2387~2400	2395.43	-36.22	≤-16	0.23878	≤25	PASS
NTNV	DH5	Ant1	2441	2483.5~2496.5	2496.24	-35.67	≤-16	0.27102	≤25	PASS
NTNV	DH5	Ant1	2441	2496.5~3000	2844.04	-45.99	≤-26	0.02518	≤2.5	PASS
NTNV	DH5	Ant1	2441	3000~13000	12212.50	-43.48	≤-26	0.04487	≤2.5	PASS
NTNV	DH5	Ant1	2480	30~1000	305.97	-39.18	≤-26	0.12078	≤2.5	PASS
NTNV	DH5	Ant1	2480	1000~2387	2320.42	-24.84	≤-26	3.28095	≤2.5	See table below
NTNV	DH5	Ant1	2480	2387~2400	2395.04	-35.17	≤-16	0.30409	≤25	PASS
NTNV	DH5	Ant1	2480	2483.5~2496.5	2489.90	-35.56	≤-16	0.27797	≤25	PASS
NTNV	DH5	Ant1	2480	2496.5~3000	2667.01	-45.77	≤-26	0.02649	≤2.5	PASS
NTNV	DH5	Ant1	2480	3000~13000	3724.00	-43.05	≤-26	0.04955	≤2.5	PASS
NTNV	DH5	Ant1	Hop	30~1000	107.36	-59.18	≤-26	0.00121	≤2.5	PASS
NTNV	DH5	Ant1	Hop	1000~2387	2319.38	-37.57	≤-26	0.17498	≤2.5	PASS
NTNV	DH5	Ant1	Hop	2387~2400	2388.16	-48.89	≤-16	0.01291	≤25	PASS
NTNV	DH5	Ant1	Hop	2483.5~2496.5	2484.06	-48.03	≤-16	0.01574	≤25	PASS
NTNV	DH5	Ant1	Hop	2496.5~3000	2666.38	-58.32	≤-26	0.00147	≤2.5	PASS

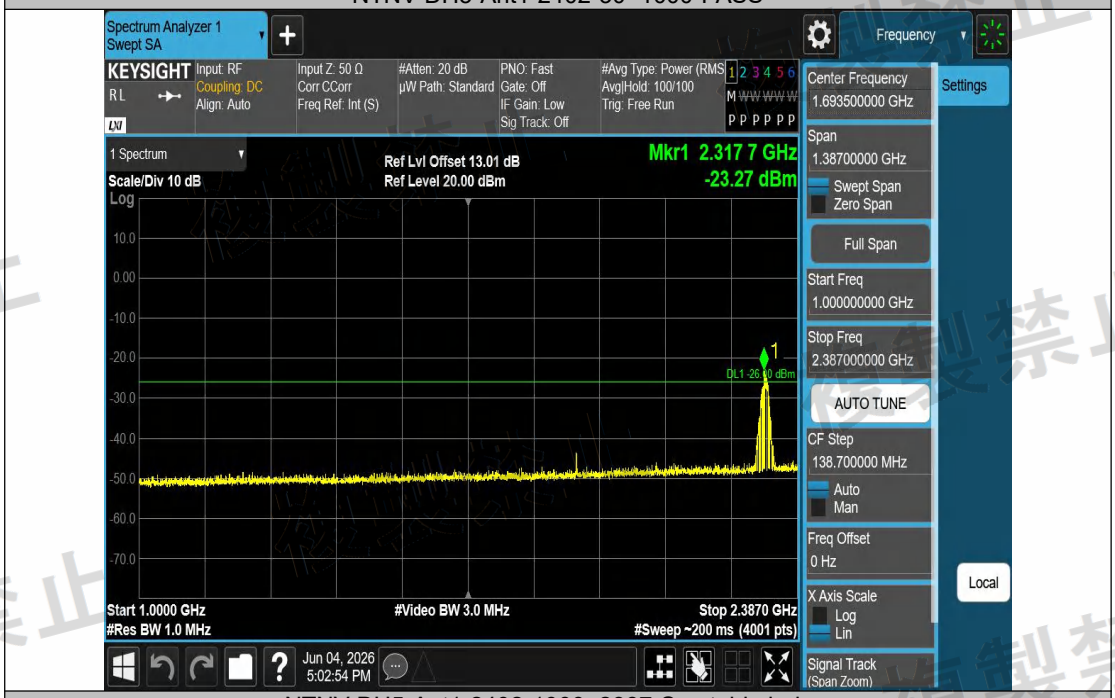
NTNV	DH5	Ant1	Hop	3000~13000	4805.50	-37.48	≤-26	0.17865	≤2.5	PASS
NTNV	2DH5	Ant1	2402	30~1000	492.69	-38.63	≤-26	0.13709	≤2.5	PASS
NTNV	2DH5	Ant1	2402	1000~2387	2318.34	-24.52	≤-26	3.53183	≤2.5	See table below
NTNV	2DH5	Ant1	2402	2387~2400	2387.68	-35.38	≤-16	0.28973	≤25	PASS
NTNV	2DH5	Ant1	2402	2483.5~2496.5	2484.07	-35.68	≤-16	0.27040	≤25	PASS
NTNV	2DH5	Ant1	2402	2496.5~3000	2667.34	-45.73	≤-26	0.02673	≤2.5	PASS
NTNV	2DH5	Ant1	2402	3000~13000	10549.50	-43.26	≤-26	0.04721	≤2.5	PASS
NTNV	2DH5	Ant1	2441	30~1000	431.10	-41.58	≤-26	0.06950	≤2.5	PASS
NTNV	2DH5	Ant1	2441	1000~2387	2317.65	-24.92	≤-26	3.22107	≤2.5	See table below
NTNV	2DH5	Ant1	2441	2387~2400	2397.86	-35.58	≤-16	0.27669	≤25	PASS
NTNV	2DH5	Ant1	2441	2483.5~2496.5	2486.53	-35.64	≤-16	0.27290	≤25	PASS
NTNV	2DH5	Ant1	2441	2496.5~3000	2658.50	-45.97	≤-26	0.02529	≤2.5	PASS
NTNV	2DH5	Ant1	2441	3000~13000	4764.50	-43.42	≤-26	0.04550	≤2.5	PASS
NTNV	2DH5	Ant1	2480	30~1000	491.48	-37.25	≤-26	0.18836	≤2.5	PASS
NTNV	2DH5	Ant1	2480	1000~2387	2320.77	-24.86	≤-26	3.26588	≤2.5	See table below
NTNV	2DH5	Ant1	2480	2387~2400	2389.45	-35.62	≤-16	0.27416	≤25	PASS
NTNV	2DH5	Ant1	2480	2483.5~2496.5	2485.46	-35.36	≤-16	0.29107	≤25	PASS
NTNV	2DH5	Ant1	2480	2496.5~3000	2683.65	-45.95	≤-26	0.02541	≤2.5	PASS
NTNV	2DH5	Ant1	2480	3000~13000	3959.00	-43.19	≤-26	0.04797	≤2.5	PASS
NTNV	2DH5	Ant1	Hop	30~1000	306.69	-52.44	≤-26	0.00570	≤2.5	PASS
NTNV	2DH5	Ant1	Hop	1000~2387	2319.73	-37.31	≤-26	0.18578	≤2.5	PASS
NTNV	2DH5	Ant1	Hop	2387~2400	2399.99	-43.39	≤-16	0.04581	≤25	PASS
NTNV	2DH5	Ant1	Hop	2483.5~2496.5	2494.85	-48.20	≤-16	0.01514	≤25	PASS
NTNV	2DH5	Ant1	Hop	2496.5~3000	2746.44	-58.86	≤-26	0.00130	≤2.5	PASS
NTNV	2DH5	Ant1	Hop	3000~13000	4804.00	-35.98	≤-26	0.25235	≤2.5	PASS
NTNV	3DH5	Ant1	2402	30~1000	104.21	-46.13	≤-26	0.02438	≤2.5	PASS
NTNV	3DH5	Ant1	2402	1000~2387	2316.61	-23.70	≤-26	4.26580	≤2.5	See table below
NTNV	3DH5	Ant1	2402	2387~2400	2399.65	-35.88	≤-16	0.25823	≤25	PASS
NTNV	3DH5	Ant1	2402	2483.5~2496.5	2486.24	-35.75	≤-16	0.26607	≤25	PASS
NTNV	3DH5	Ant1	2402	2496.5~3000	2608.08	-45.24	≤-26	0.02992	≤2.5	PASS
NTNV	3DH5	Ant1	2402	3000~13000	4859.00	-43.02	≤-26	0.04989	≤2.5	PASS
NTNV	3DH5	Ant1	2441	30~1000	490.75	-42.10	≤-26	0.06166	≤2.5	PASS
NTNV	3DH5	Ant1	2441	1000~2387	2320.77	-24.83	≤-26	3.28852	≤2.5	See table below
NTNV	3DH5	Ant1	2441	2387~2400	2392.75	-35.97	≤-16	0.25293	≤25	PASS
NTNV	3DH5	Ant1	2441	2483.5~2496.5	2485.67	-35.83	≤-16	0.26122	≤25	PASS
NTNV	3DH5	Ant1	2441	2496.5~3000	2560.34	-45.84	≤-26	0.02606	≤2.5	PASS
NTNV	3DH5	Ant1	2441	3000~13000	10013.00	-43.27	≤-26	0.04710	≤2.5	PASS
NTNV	3DH5	Ant1	2480	30~1000	109.54	-45.57	≤-26	0.02773	≤2.5	PASS
NTNV	3DH5	Ant1	2480	1000~2387	2319.38	-25.11	≤-26	3.08319	≤2.5	See table below
NTNV	3DH5	Ant1	2480	2387~2400	2389.27	-35.57	≤-16	0.27733	≤25	PASS
NTNV	3DH5	Ant1	2480	2483.5~2496.5	2490.62	-35.42	≤-16	0.28708	≤25	PASS
NTNV	3DH5	Ant1	2480	2496.5~3000	2586.80	-44.88	≤-26	0.03251	≤2.5	PASS
NTNV	3DH5	Ant1	2480	3000~13000	11405.50	-43.15	≤-26	0.04842	≤2.5	PASS
NTNV	3DH5	Ant1	Hop	30~1000	184.47	-48.65	≤-26	0.01365	≤2.5	PASS
NTNV	3DH5	Ant1	Hop	1000~2387	2321.12	-37.17	≤-26	0.19187	≤2.5	PASS
NTNV	3DH5	Ant1	Hop	2387~2400	2399.98	-41.99	≤-16	0.06324	≤25	PASS
NTNV	3DH5	Ant1	Hop	2483.5~2496.5	2493.39	-48.53	≤-16	0.01403	≤25	PASS
NTNV	3DH5	Ant1	Hop	2496.5~3000	2612.68	-42.58	≤-26	0.05521	≤2.5	PASS
NTNV	3DH5	Ant1	Hop	3000~13000	4803.50	-36.04	≤-26	0.24889	≤2.5	PASS

Test Condition	Test Mode	Antenna	Frequency[MHz]	Freq. [MHz]	Result [dBm/MHz]	Limit [dBm/MHz]	Result [μW/MHz]	Limit [μW/MHz]	Verdict
NTNV	DH5	Ant1	2402	2317.65	-57.15	≤-26	0.00193	≤2.5	PASS
NTNV	DH5	Ant1	2441	2320.77	-57.51	≤-26	0.00177	≤2.5	PASS
NTNV	DH5	Ant1	2480	2320.42	-57.73	≤-26	0.00169	≤2.5	PASS
NTNV	2DH5	Ant1	2402	2318.34	-57.17	≤-26	0.00192	≤2.5	PASS
NTNV	2DH5	Ant1	2441	2317.65	-57.49	≤-26	0.00178	≤2.5	PASS
NTNV	2DH5	Ant1	2480	2320.77	-57.70	≤-26	0.00170	≤2.5	PASS
NTNV	3DH5	Ant1	2402	2316.61	-57.16	≤-26	0.00192	≤2.5	PASS
NTNV	3DH5	Ant1	2441	2320.77	-57.49	≤-26	0.00178	≤2.5	PASS
NTNV	3DH5	Ant1	2480	2319.38	-57.75	≤-26	0.00168	≤2.5	PASS

複製禁止



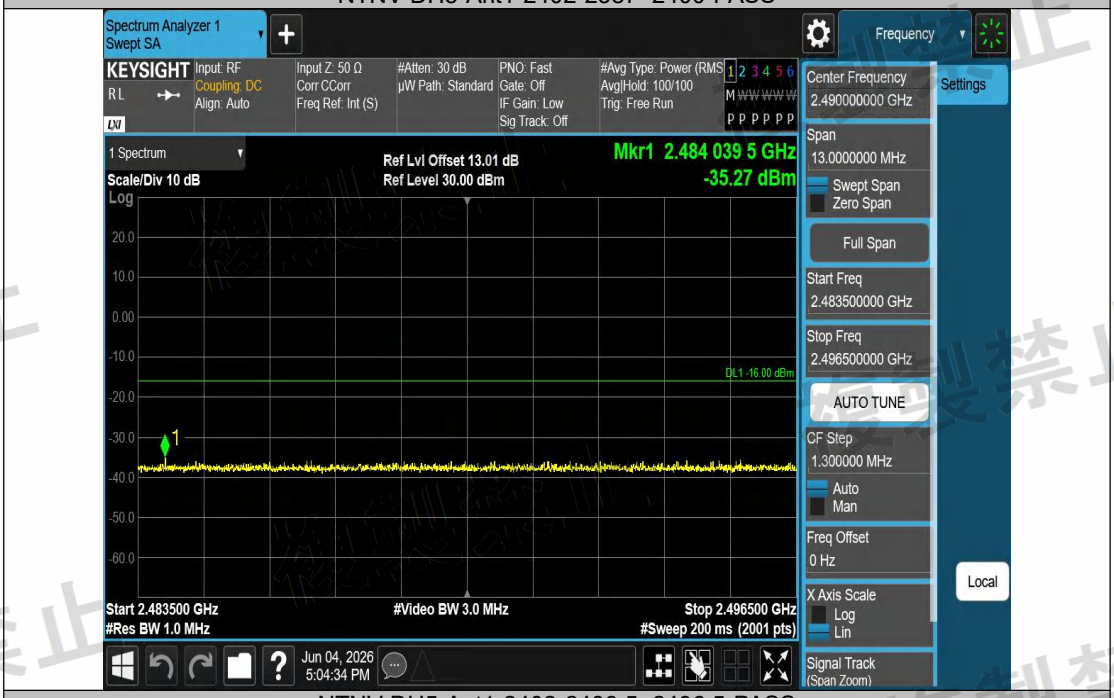
NTNV-DH5-Ant1-2402-30~1000-PASS



NTNV-DH5-Ant1-2402-1000~2387-See table below



NTNV-DH5-Ant1-2402-2387~2400-PASS



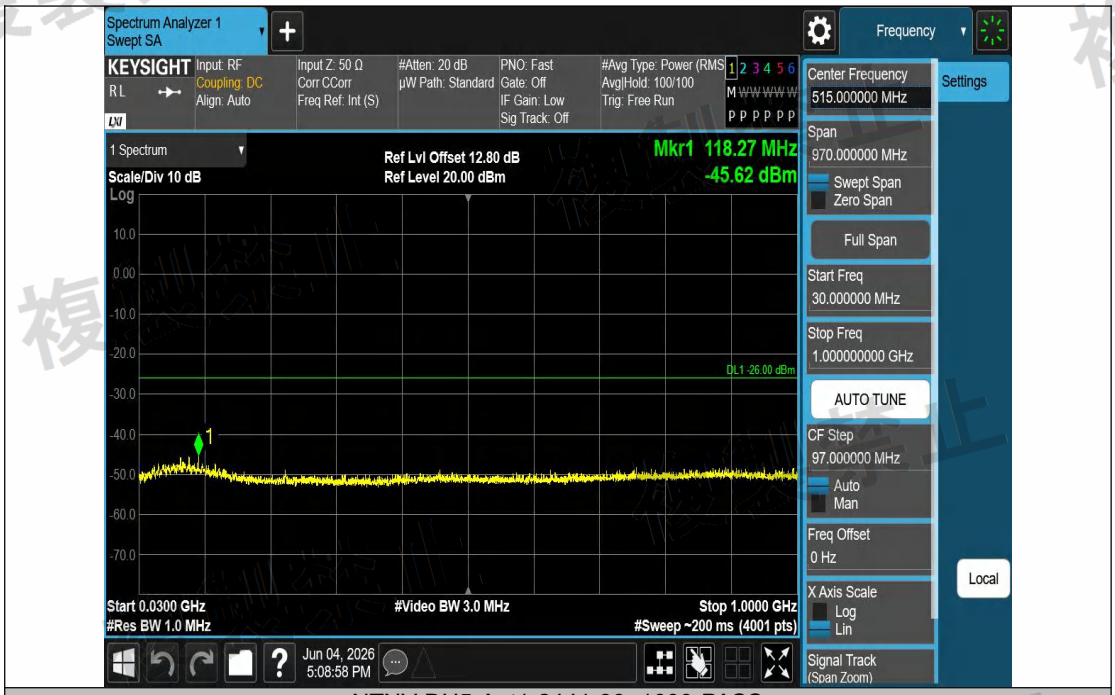
NTNV-DH5-Ant1-2402-2483.5~2496.5-PASS



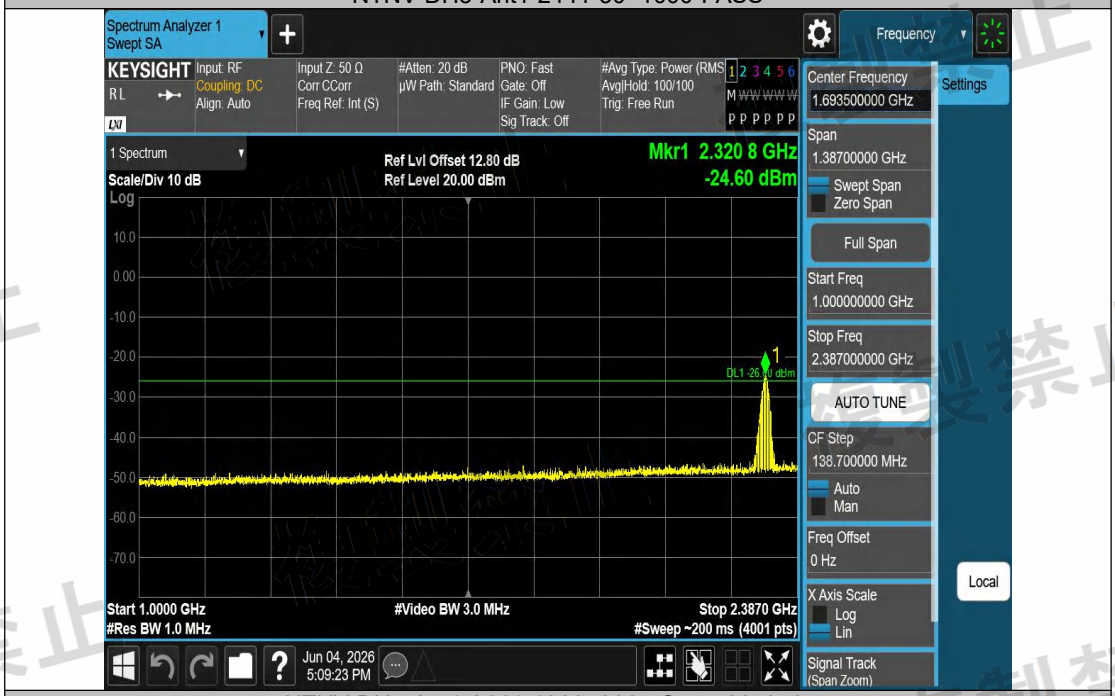
NTNV-DH5-Ant1-2402-2496.5~3000-PASS



NTNV-DH5-Ant1-2402-3000~13000-PASS



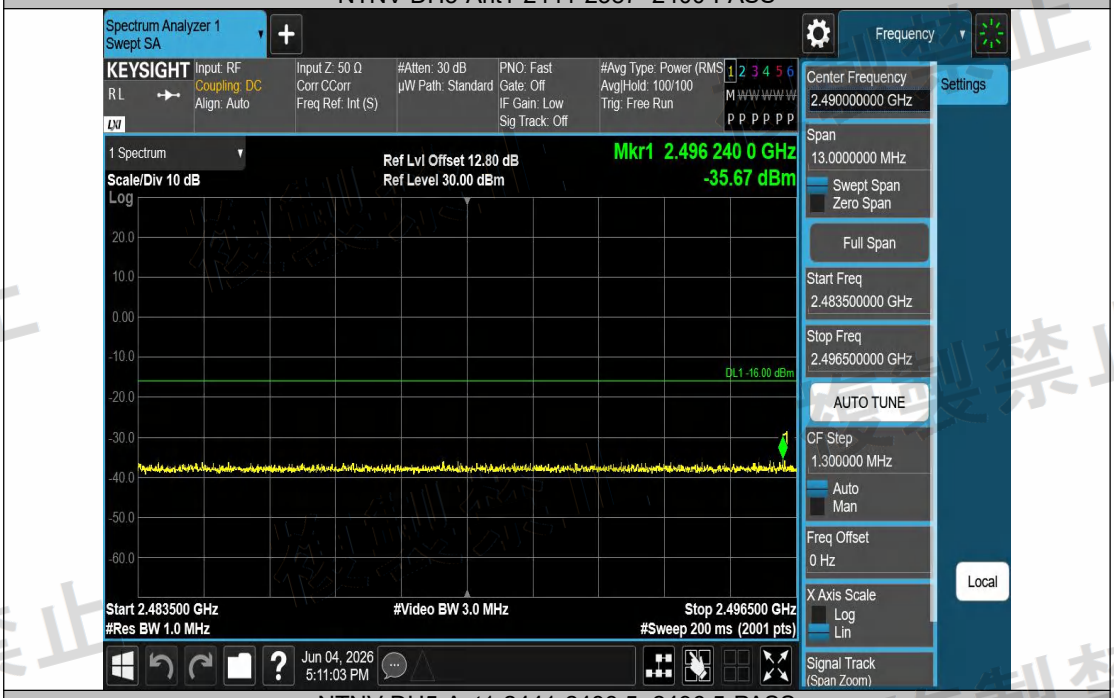
NTNV-DH5-Ant1-2441-30~1000-PASS



NTNV-DH5-Ant1-2441-1000~2387-See table below



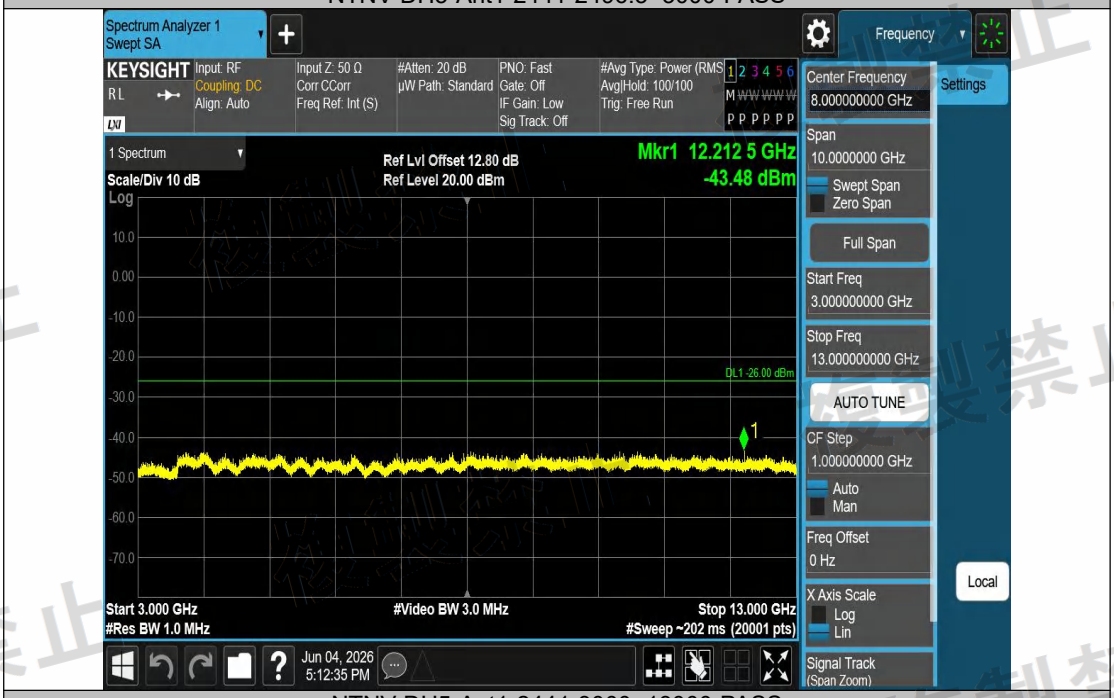
NTNV-DH5-Ant1-2441-2387~2400-PASS



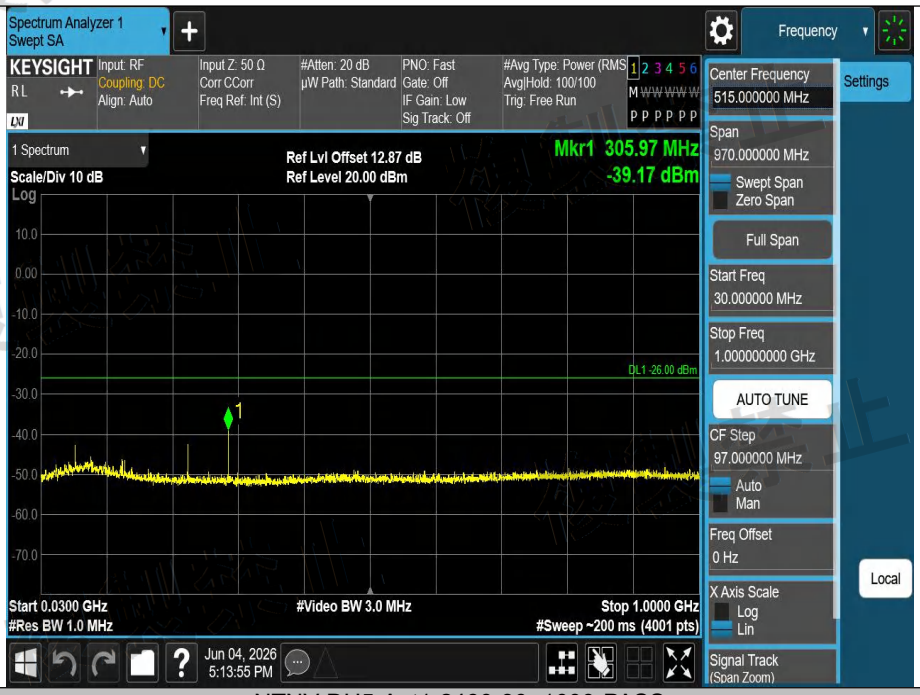
NTNV-DH5-Ant1-2441-2483.5~2496.5-PASS



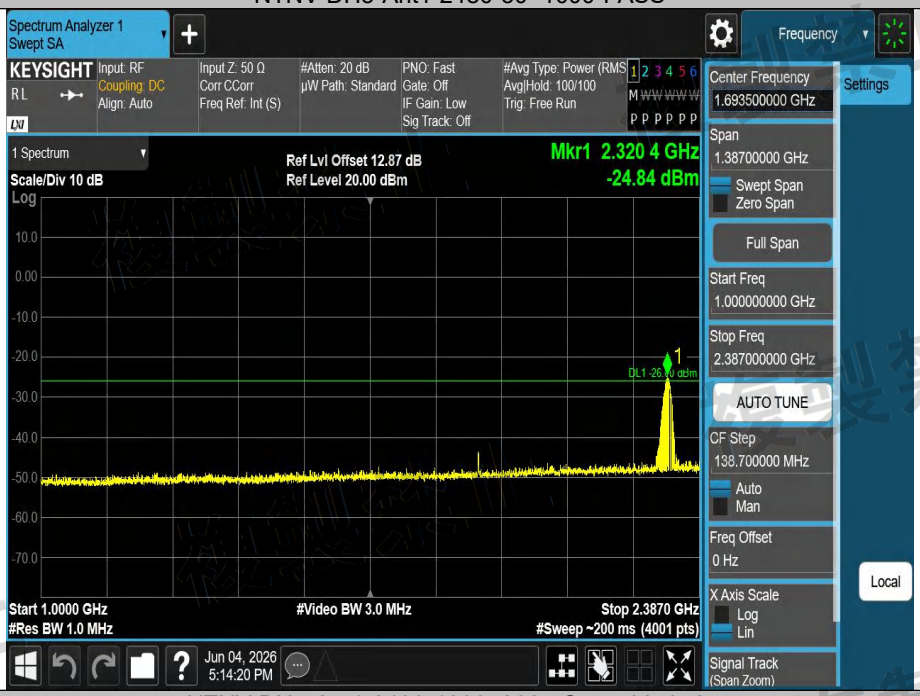
NTNV-DH5-Ant1-2441-2496.5~3000-PASS



NTNV-DH5-Ant1-2441-3000~13000-PASS



NTNV-DH5-Ant1-2480-30~1000-PASS



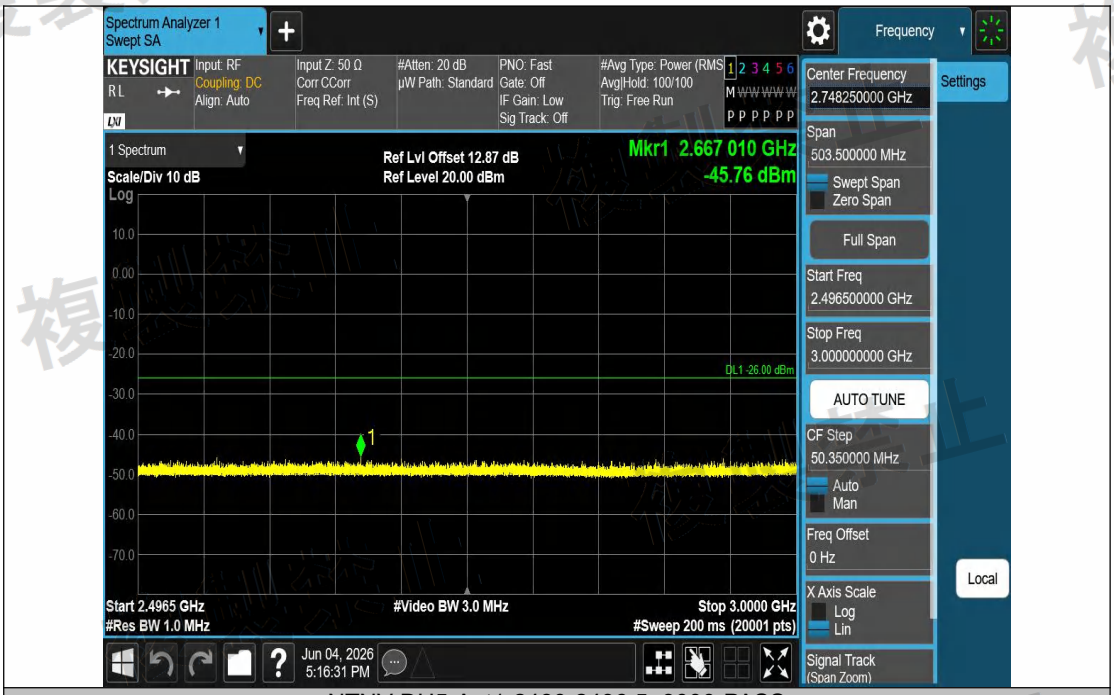
NTNV-DH5-Ant1-2480-1000~2387-See table below



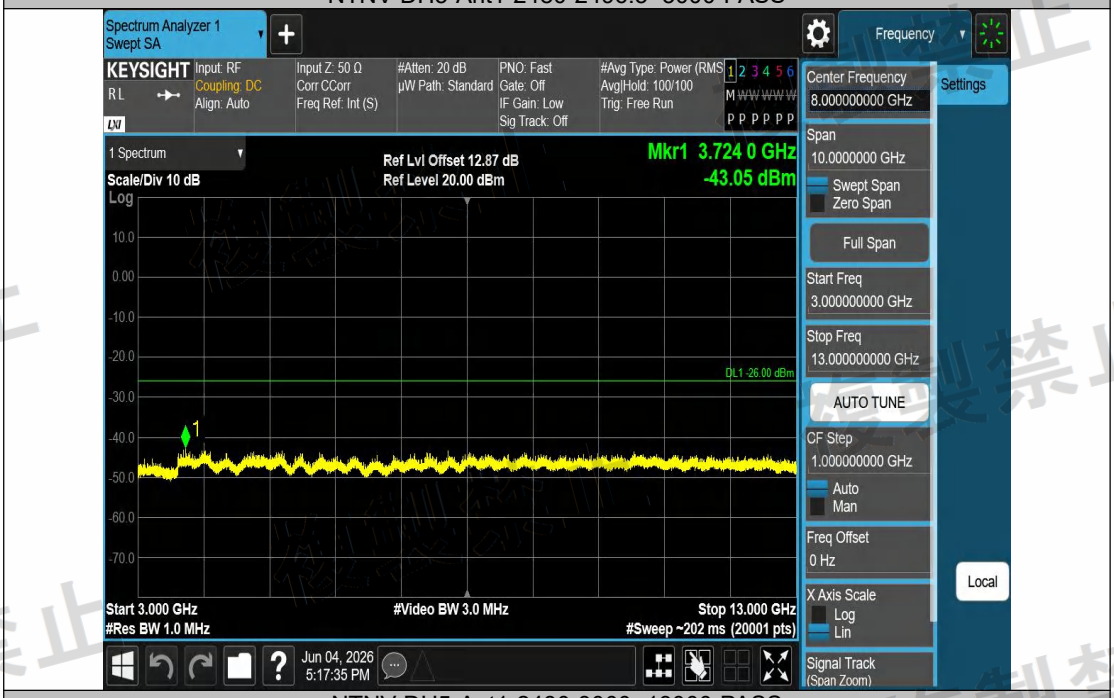
NTNV-DH5-Ant1-2480-2387~2400-PASS



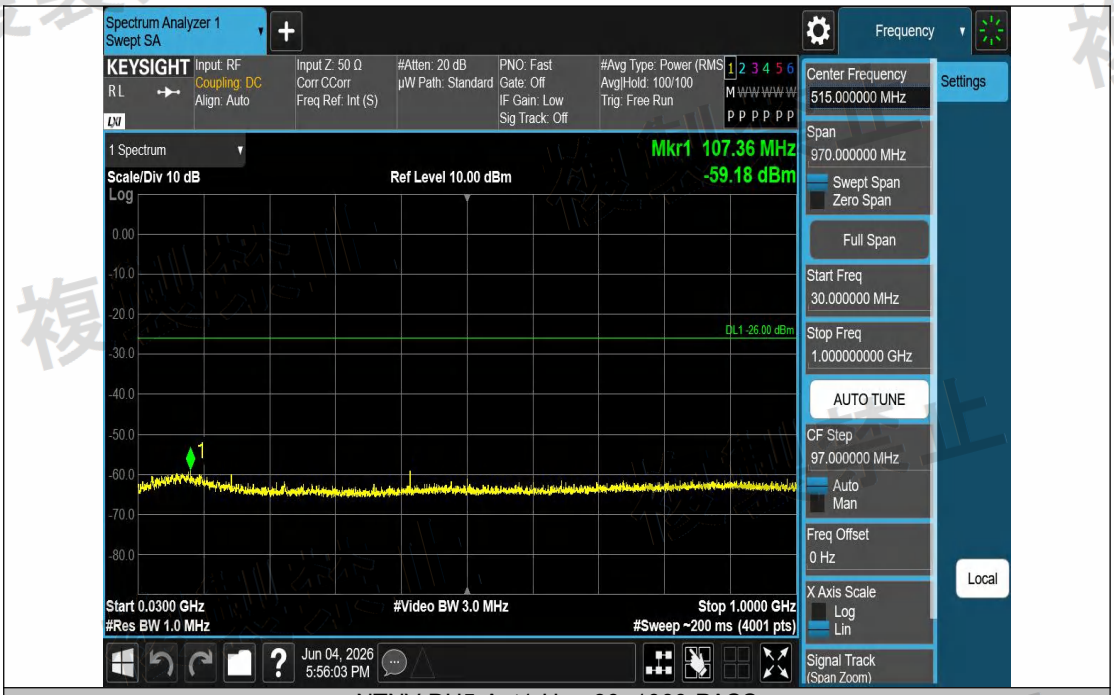
NTNV-DH5-Ant1-2480-2483.5~2496.5-PASS



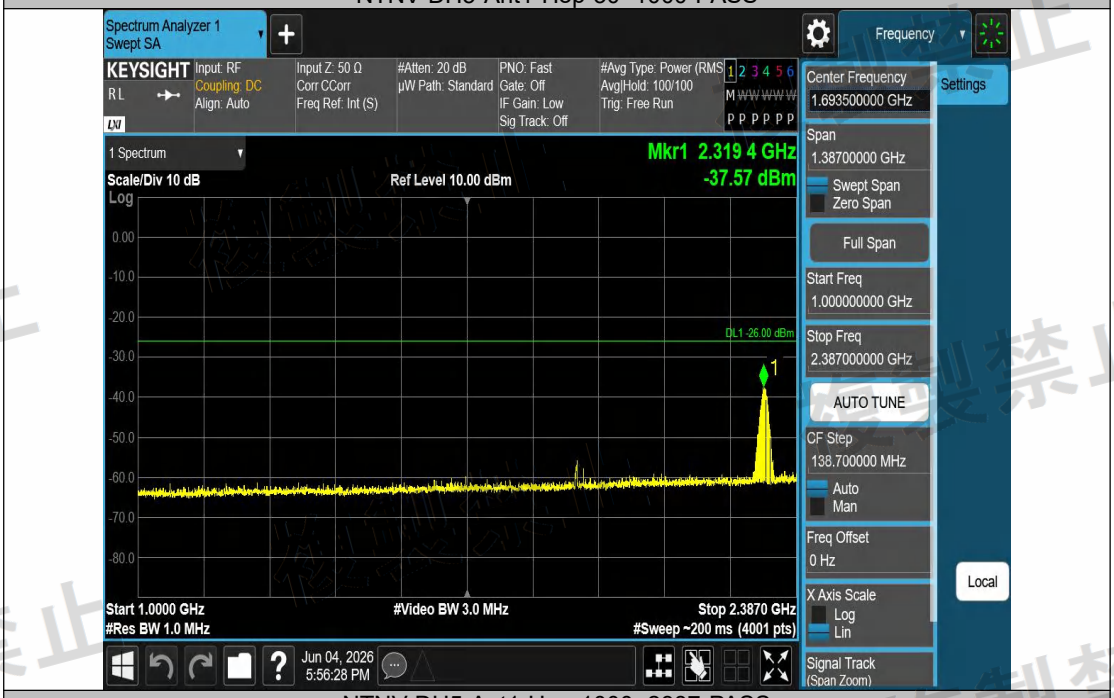
NTNV-DH5-Ant1-2480-2496.5~3000-PASS



NTNV-DH5-Ant1-2480-3000~13000-PASS



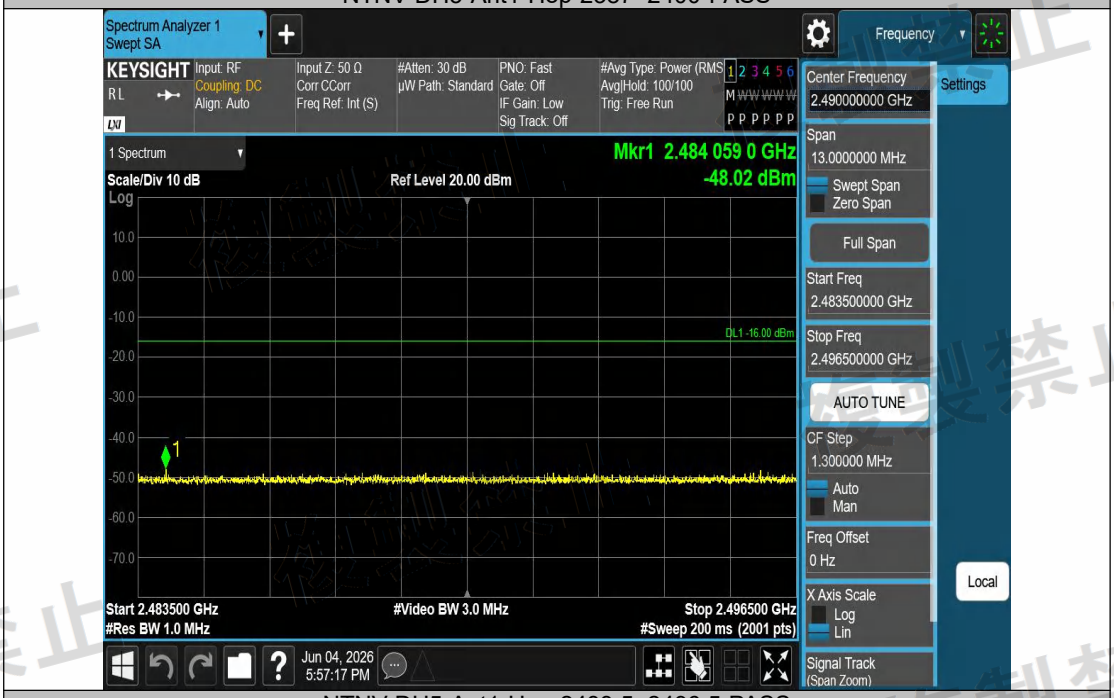
NTNV-DH5-Ant1-Hop-30~1000-PASS



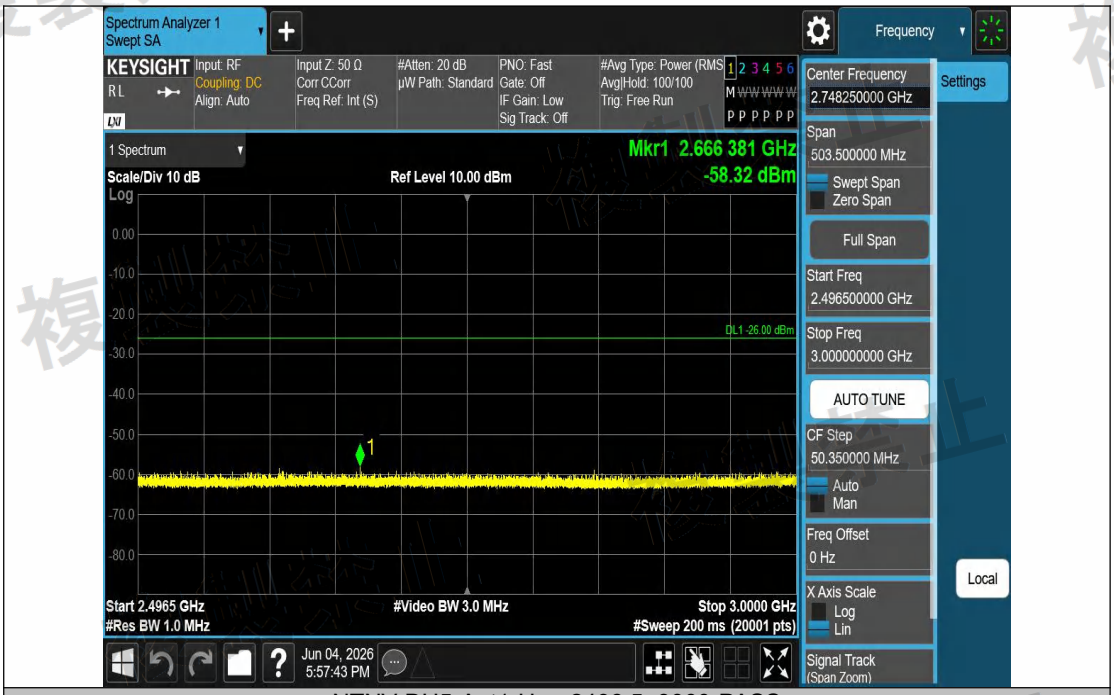
NTNV-DH5-Ant1-Hop-1000~2387-PASS



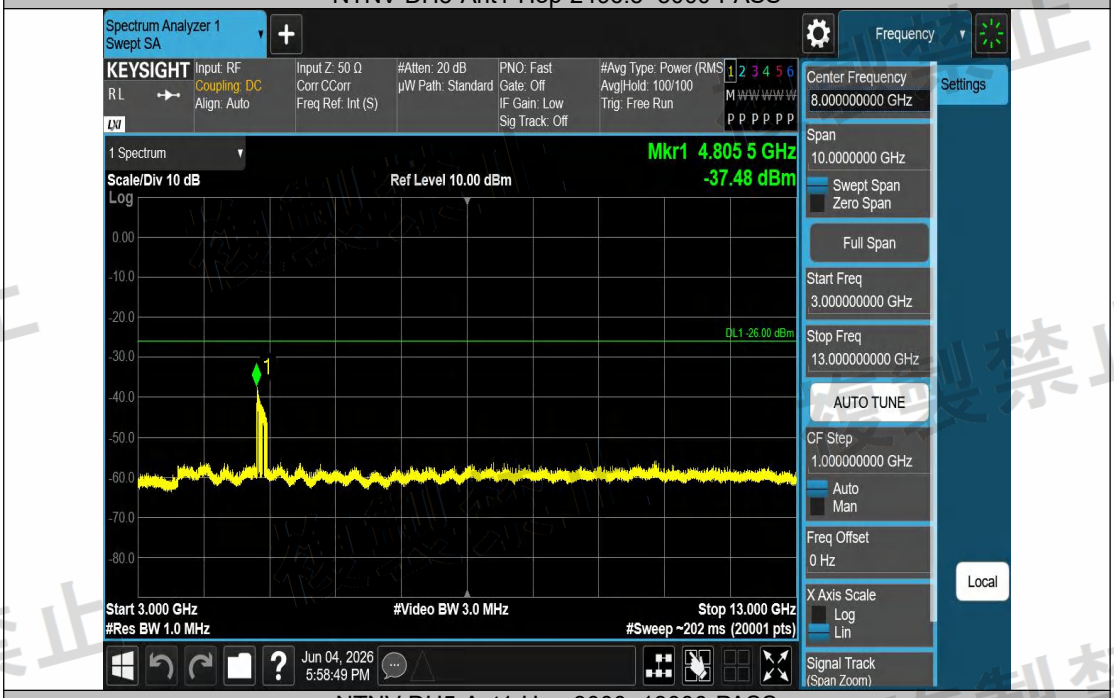
NTNV-DH5-Ant1-Hop-2387~2400-PASS



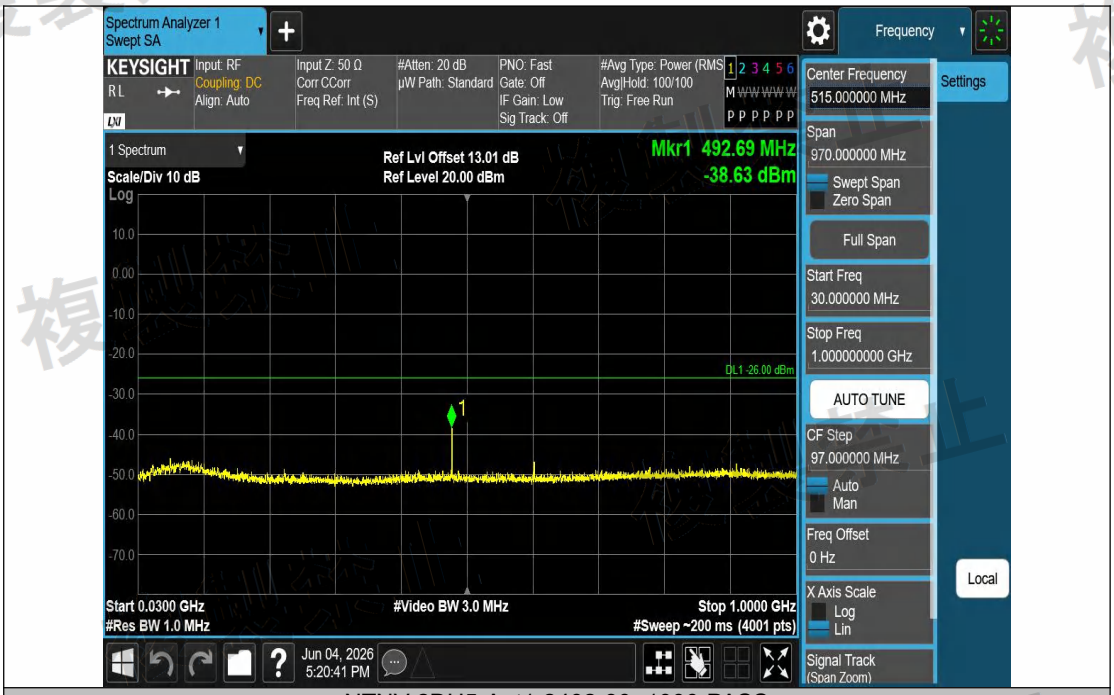
NTNV-DH5-Ant1-Hop-2483.5~2496.5-PASS



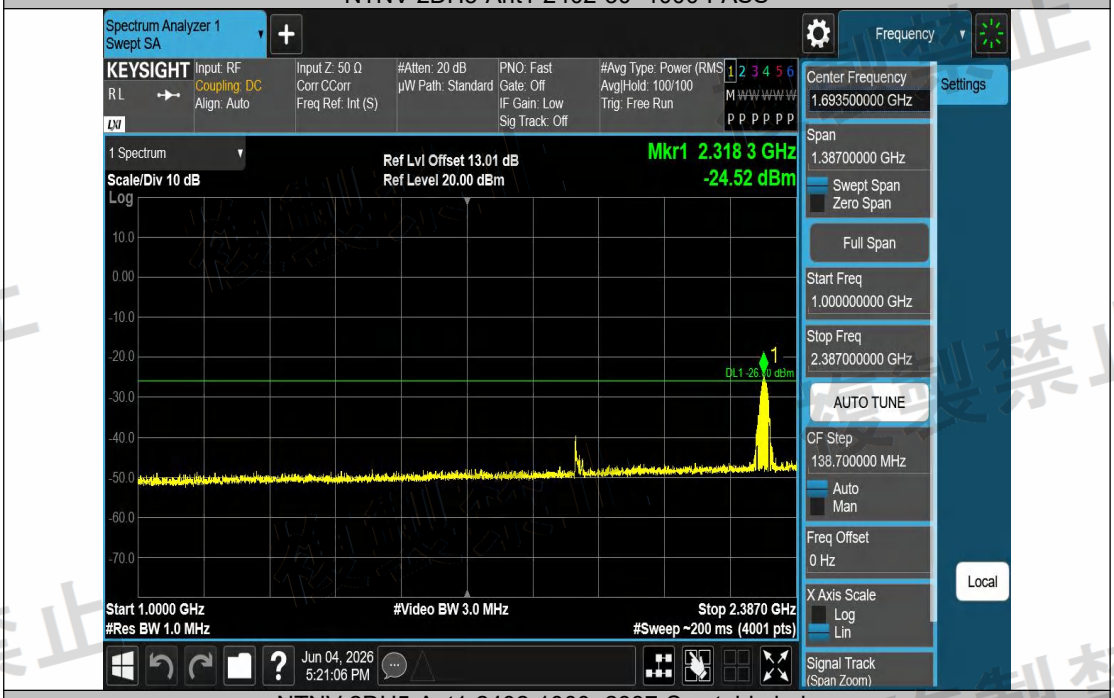
NTNV-DH5-Ant1-Hop-2496.5~3000-PASS



NTNV-DH5-Ant1-Hop-3000~13000-PASS



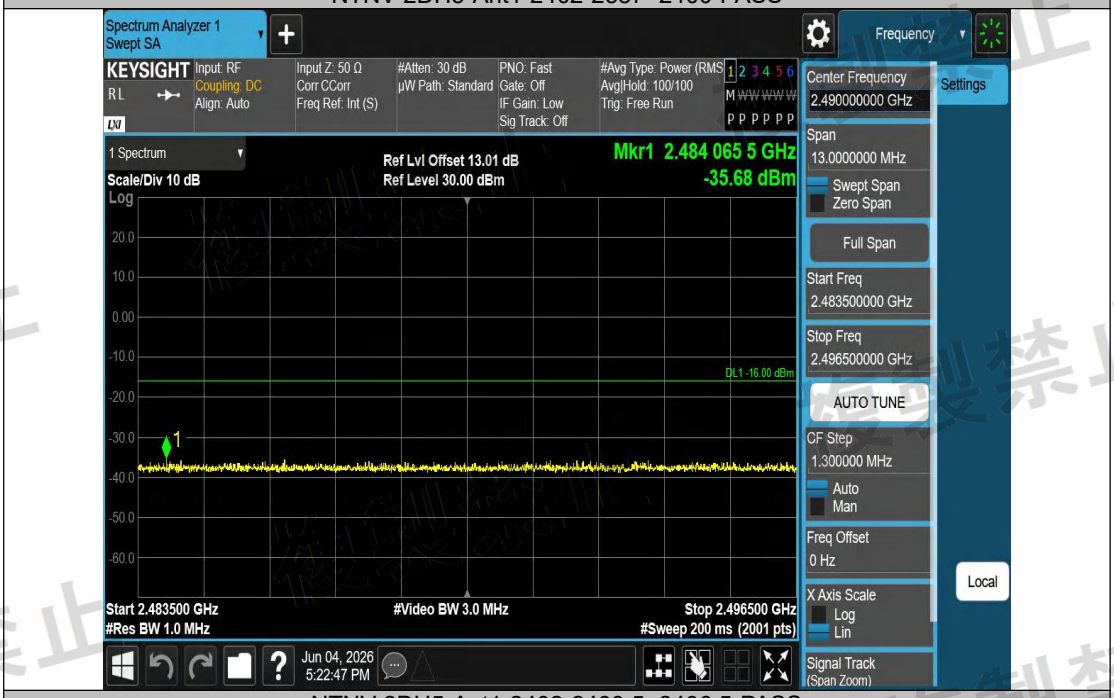
NTNV-2DH5-Ant1-2402-30~1000-PASS



NTNV-2DH5-Ant1-2402-1000~2387-See table below



NTNV-2DH5-Ant1-2402-2387~2400-PASS



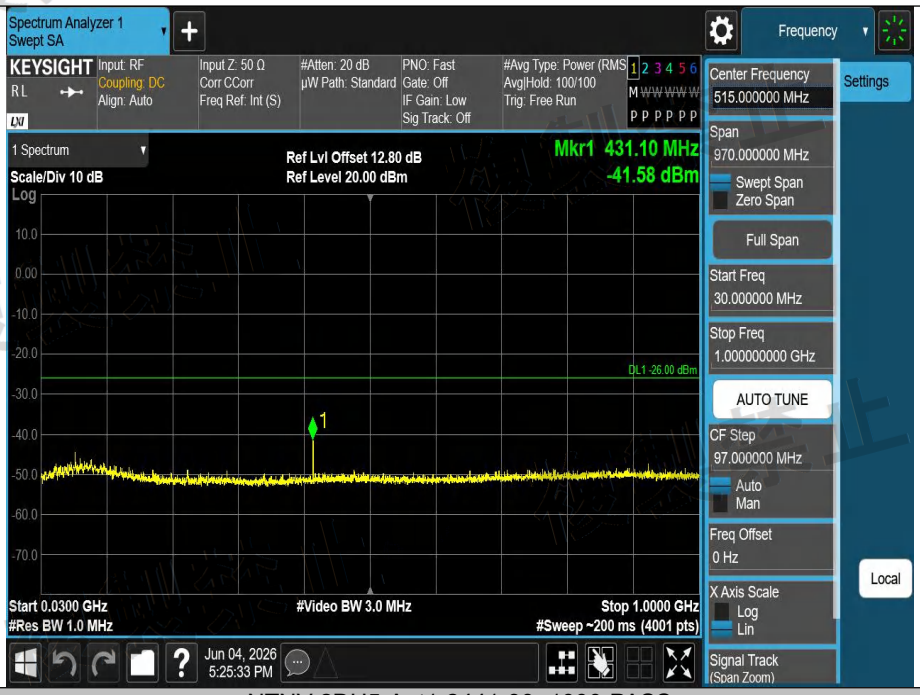
NTNV-2DH5-Ant1-2402-2483.5~2496.5-PASS



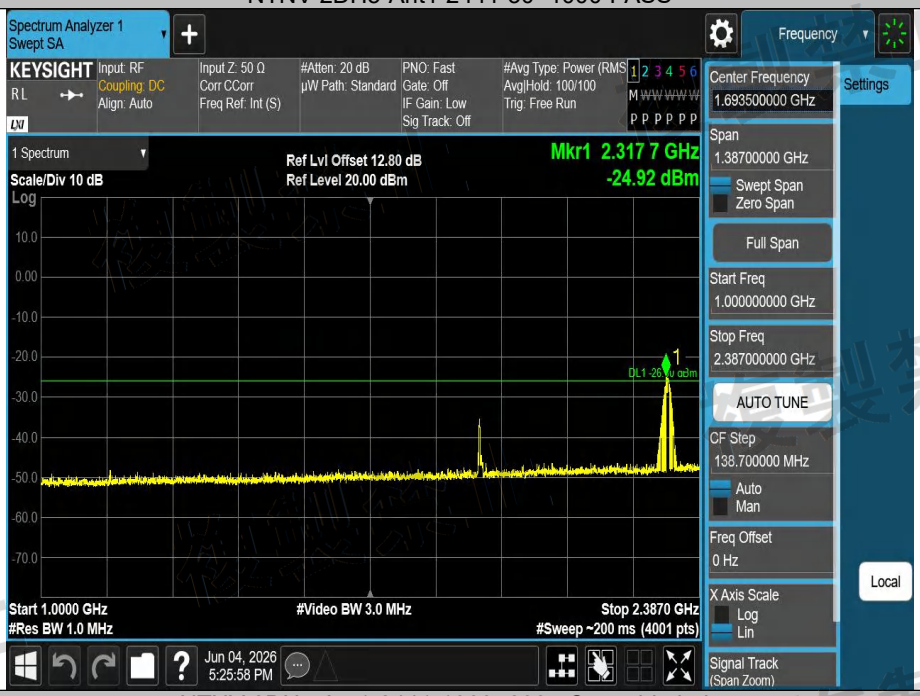
NTNV-2DH5-Ant1-2402-2496.5~3000-PASS



NTNV-2DH5-Ant1-2402-3000~13000-PASS



NTNV-2DH5-Ant1-2441-30~1000-PASS



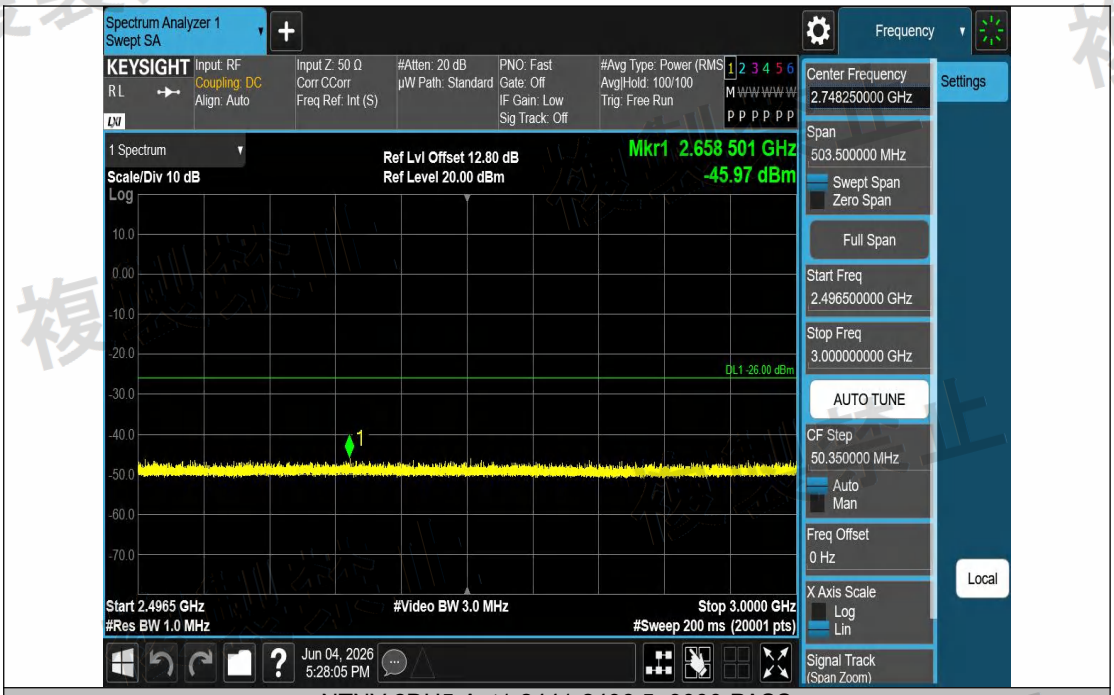
NTNV-2DH5-Ant1-2441-1000~2387-See table below



NTNV-2DH5-Ant1-2441-2387~2400-PASS



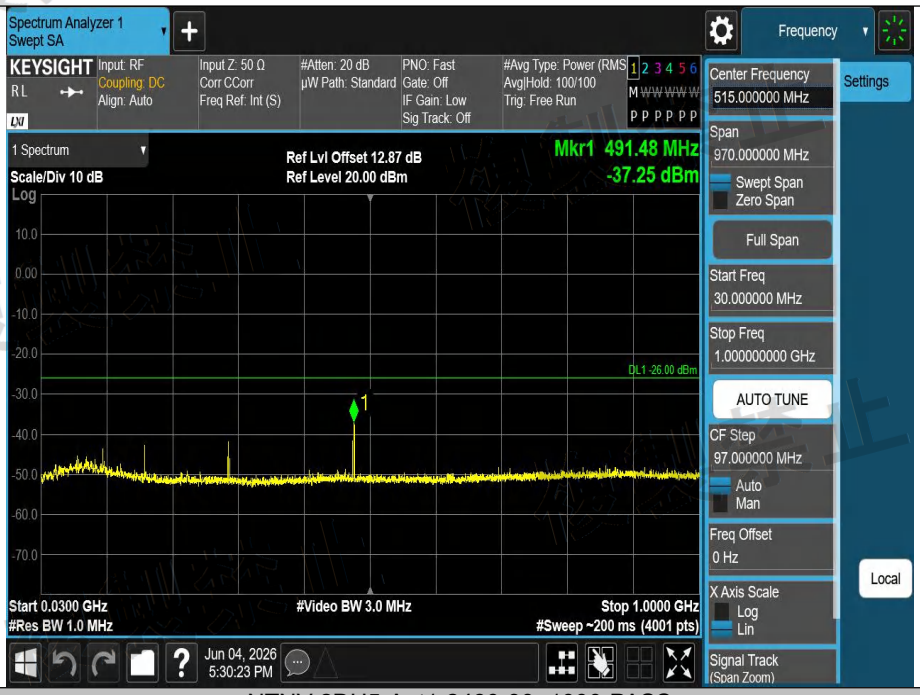
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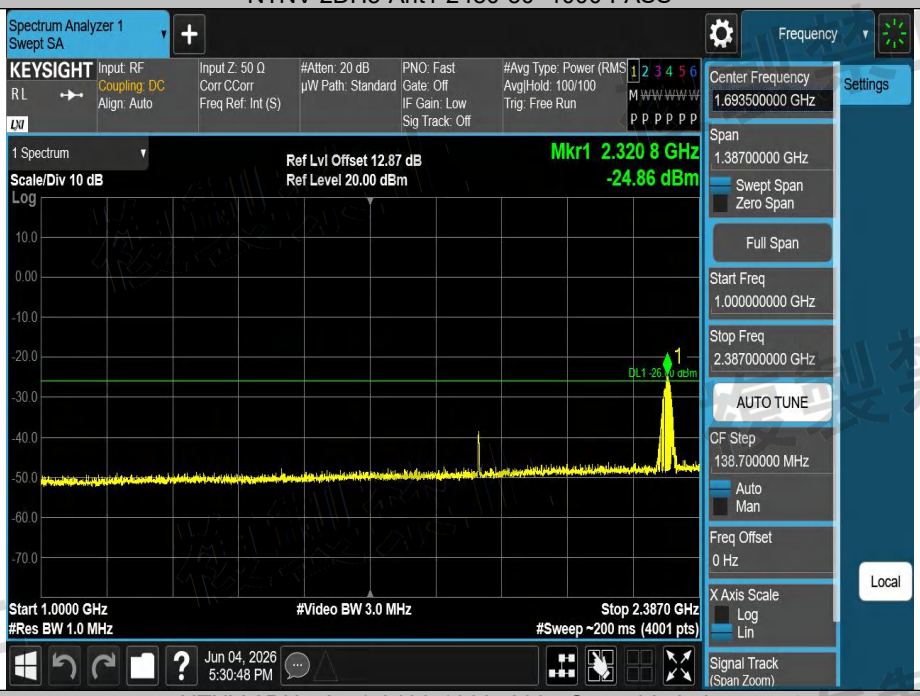
NTNV-2DH5-Ant1-2441-2496.5~3000-PASS



NTNV-2DH5-Ant1-2441-3000~13000-PASS



NTNV-2DH5-Ant1-2480-30~1000-PASS



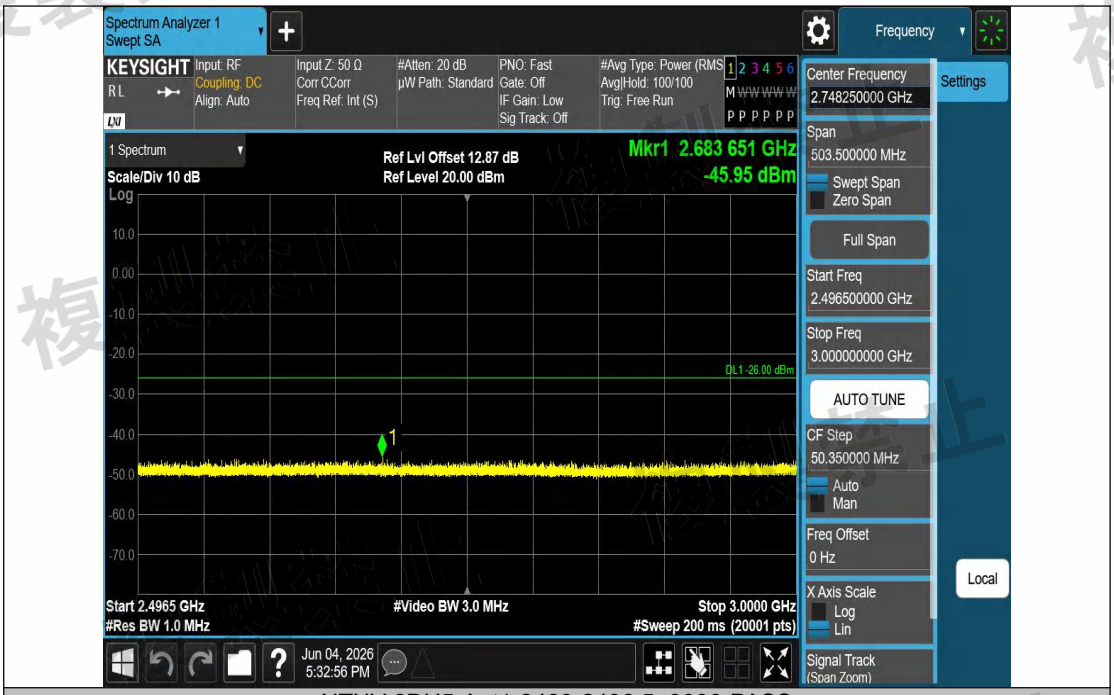
NTNV-2DH5-Ant1-2480-1000~2387-See table below



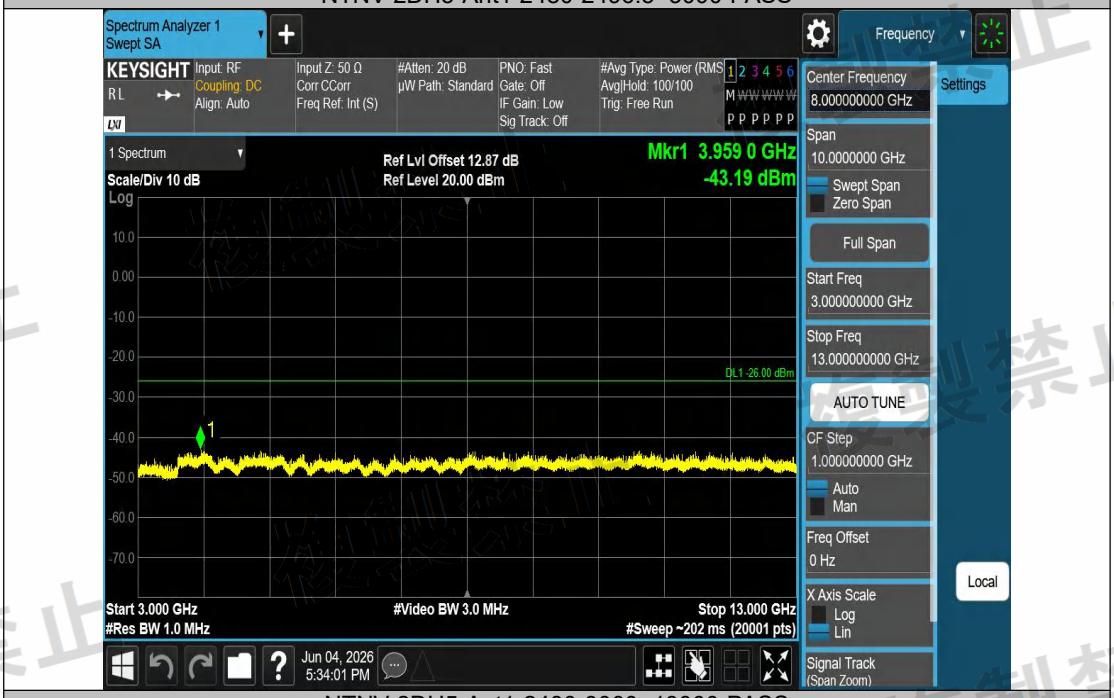
NTNV-2DH5-Ant1-2480-2387~2400-PASS



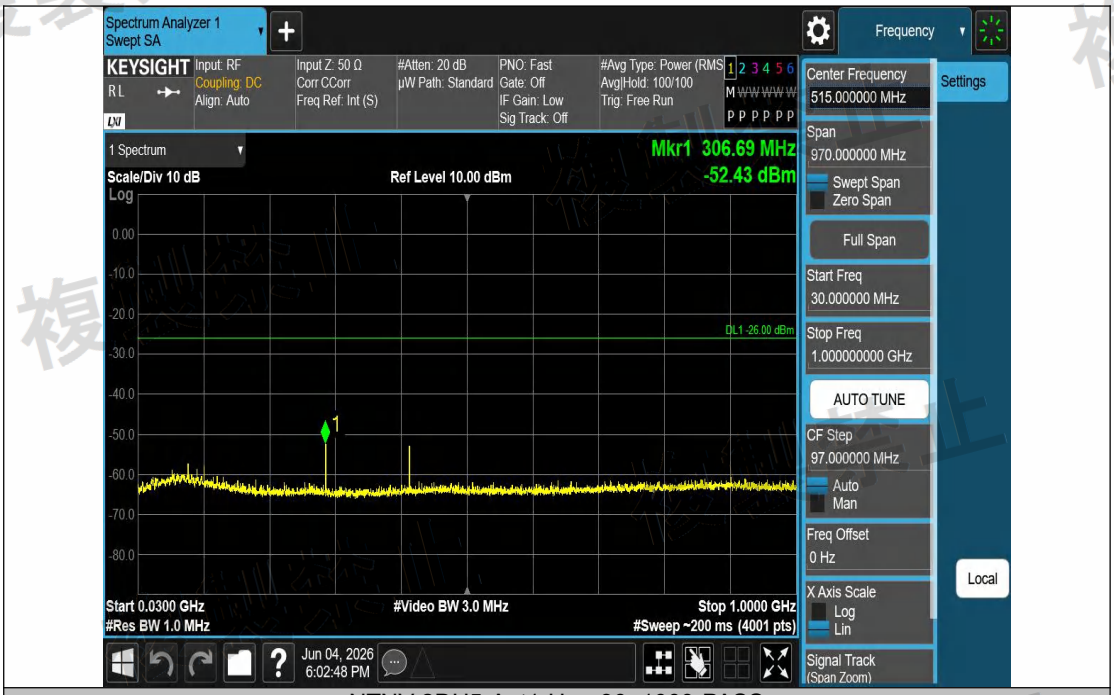
NTNV-2DH5-Ant1-2480-2483.5~2496.5-PASS



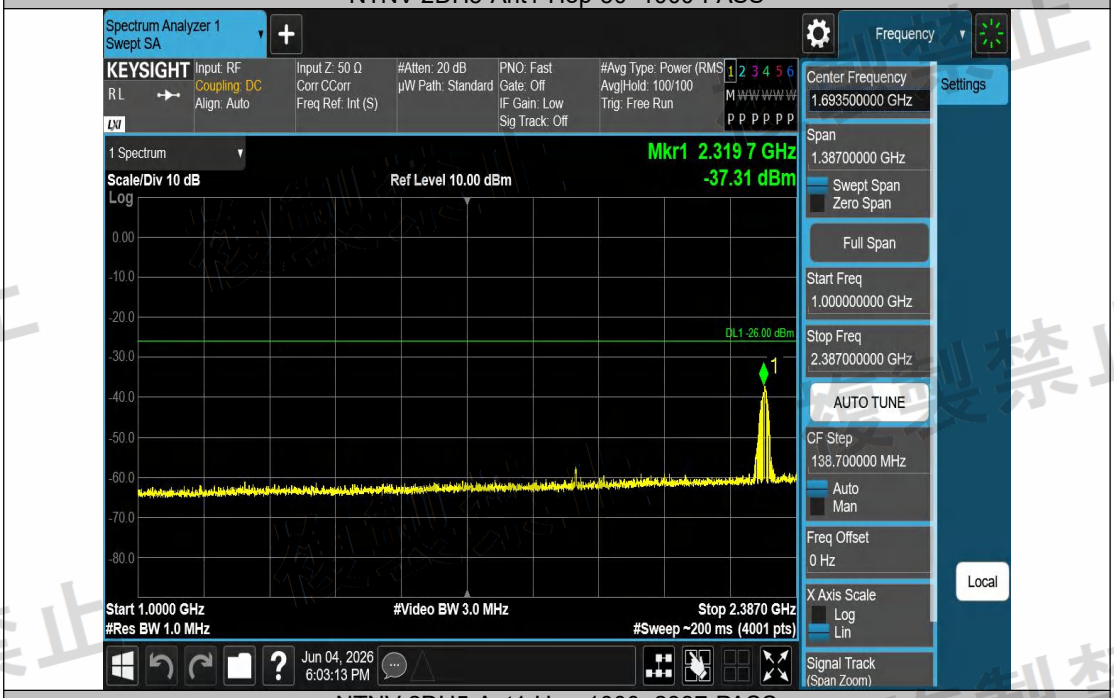
NTNV-2DH5-Ant1-2480-2496.5~3000-PASS



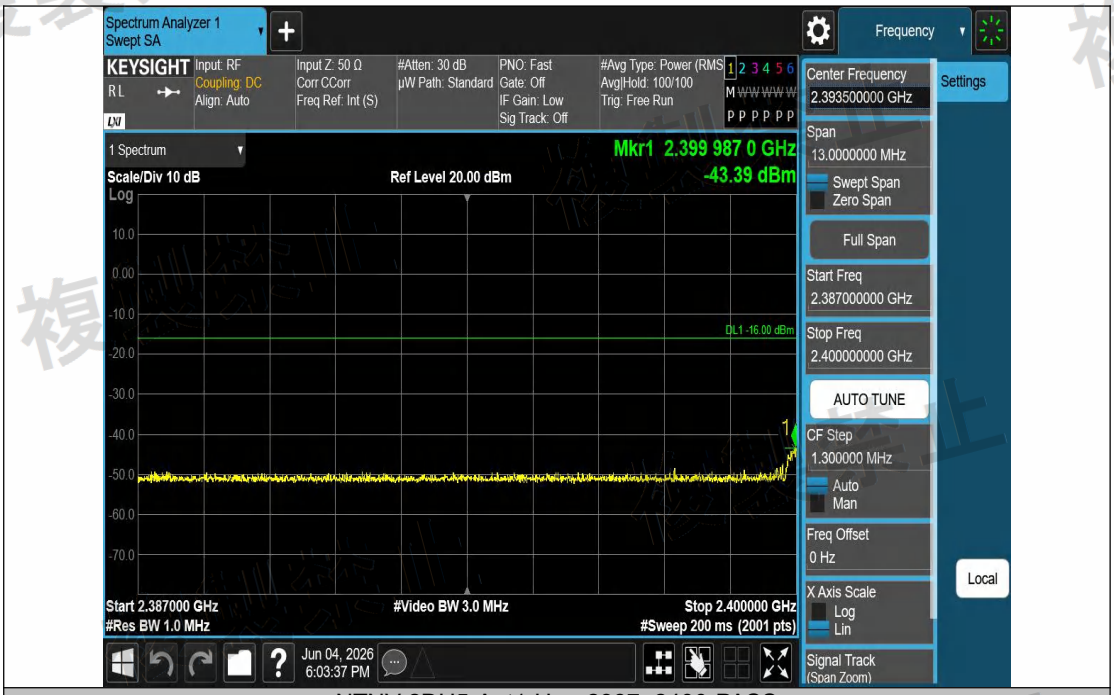
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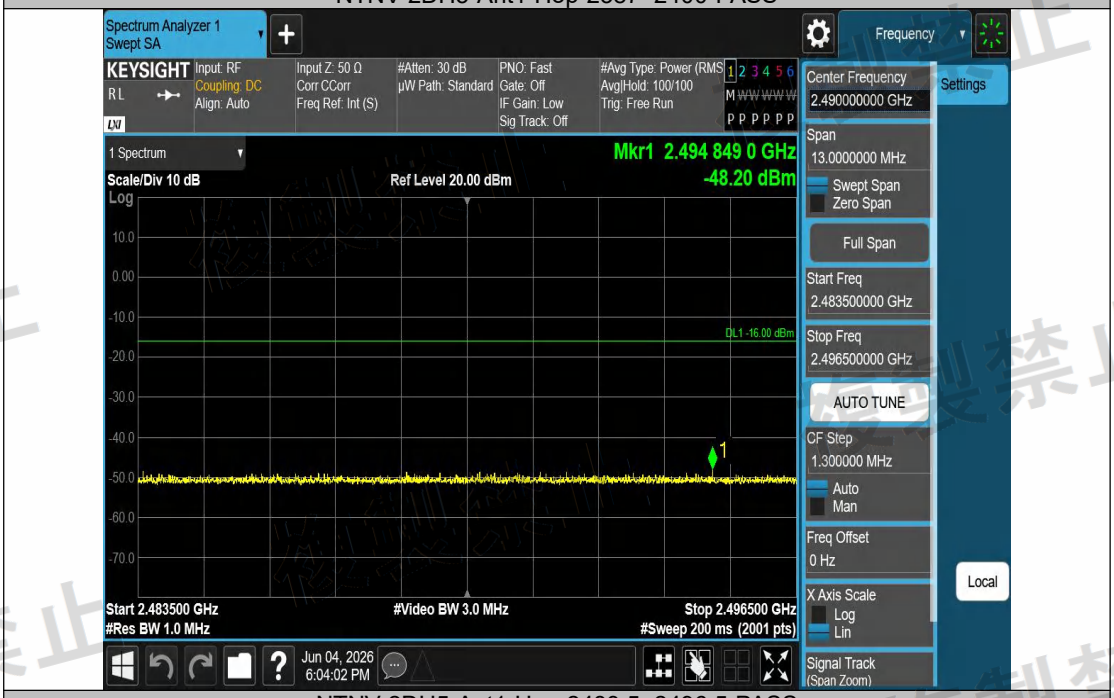
NTNV-2DH5-Ant1-Hop-30~1000-PASS



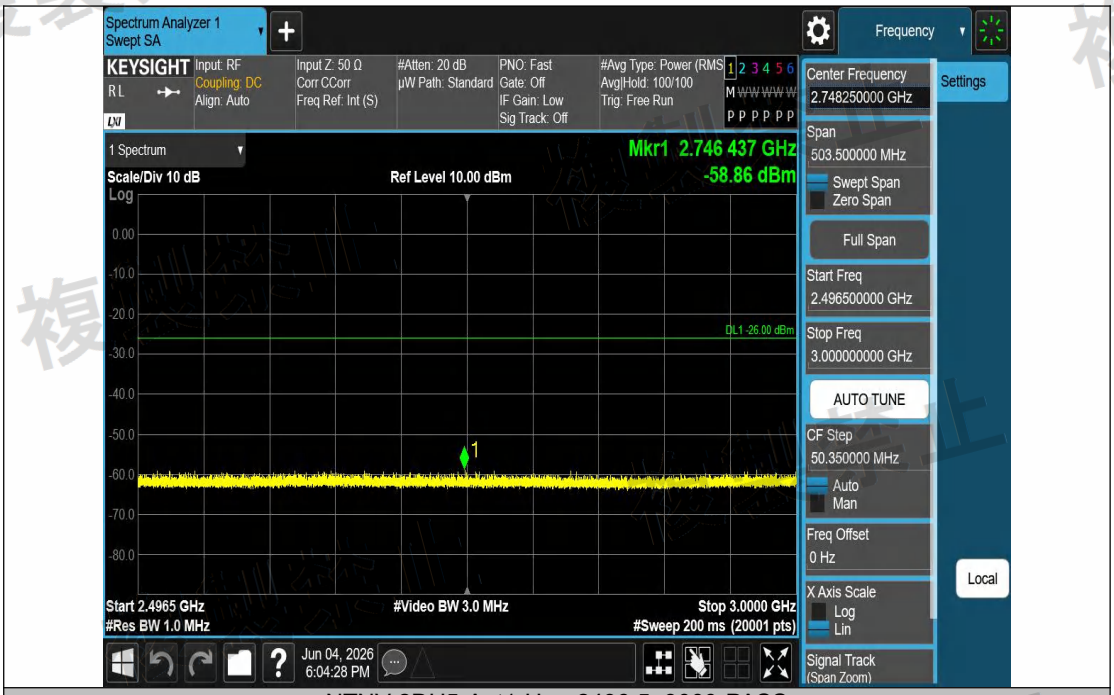
NTNV-2DH5-Ant1-Hop-1000~2387-PASS



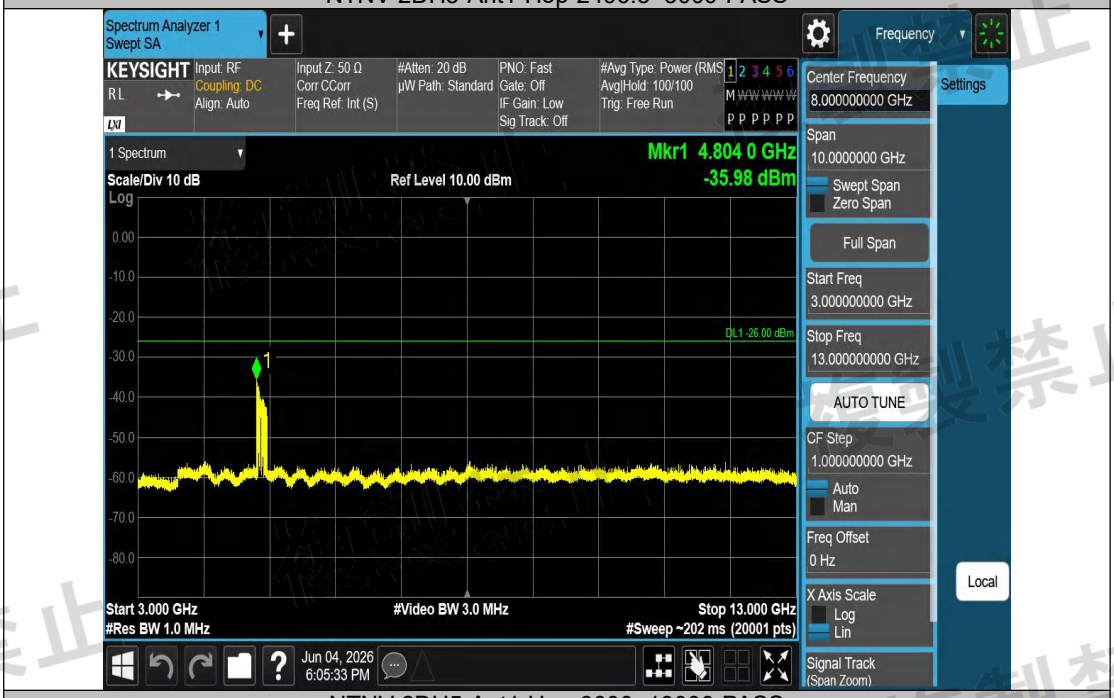
NTNV-2DH5-Ant1-Hop-2387~2400-PASS



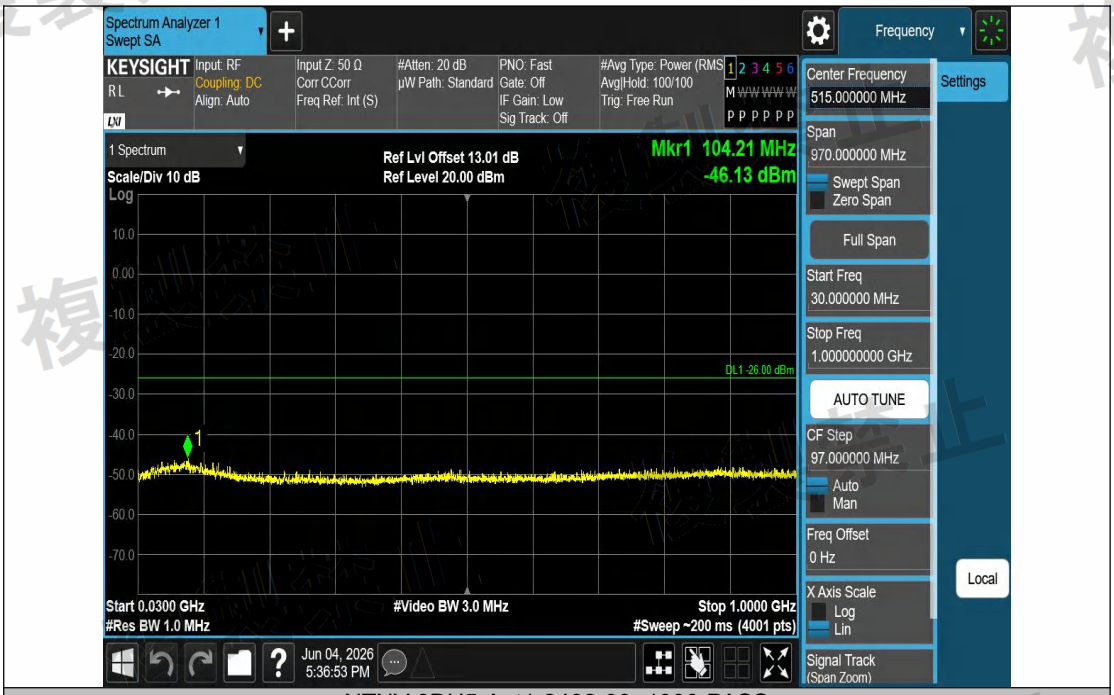
NTNV-2DH5-Ant1-Hop-2483.5~2496.5-PASS



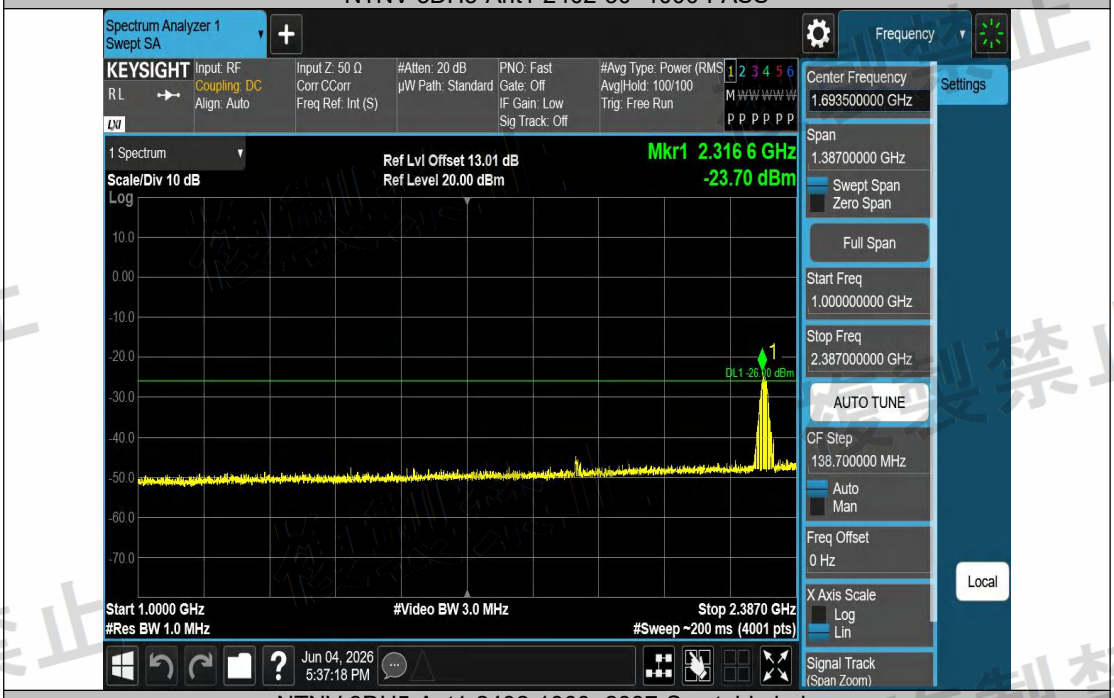
NTNV-2DH5-Ant1-Hop-2496.5~3000-PASS



NTNV-2DH5-Ant1-Hop-3000~13000-PASS



NTNV-3DH5-Ant1-2402-30~1000-PASS



NTNV-3DH5-Ant1-2402-1000~2387-See table below



NTNV-3DH5-Ant1-2402-2387~2400-PASS



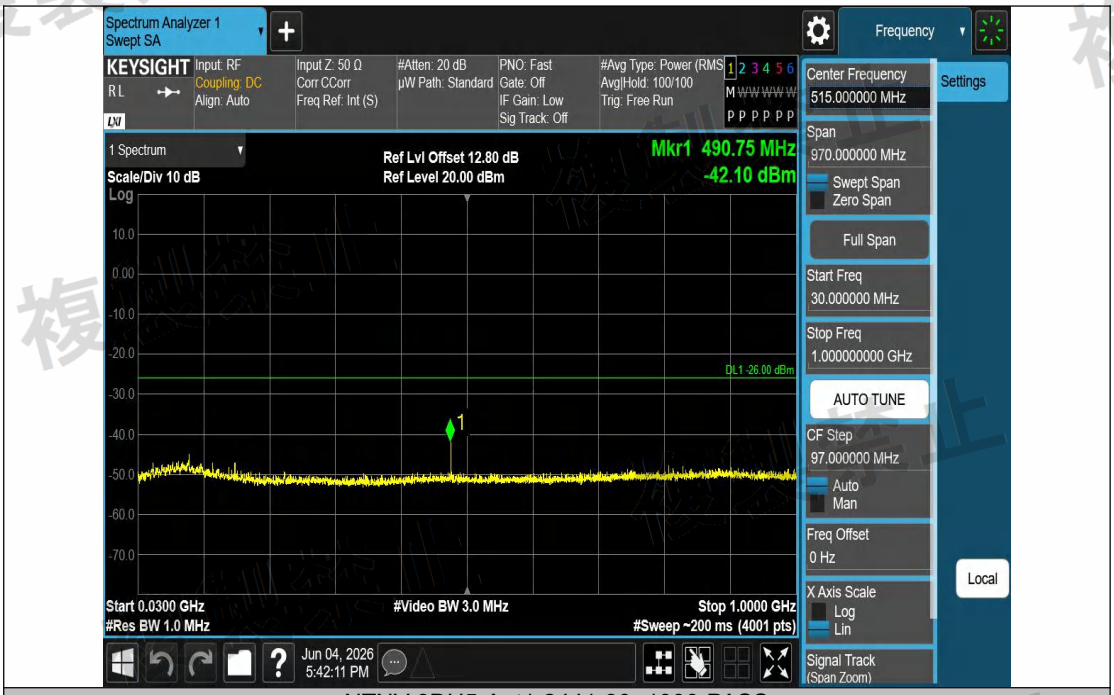
NTNV-3DH5-Ant1-2402-2483.5~2496.5-PASS



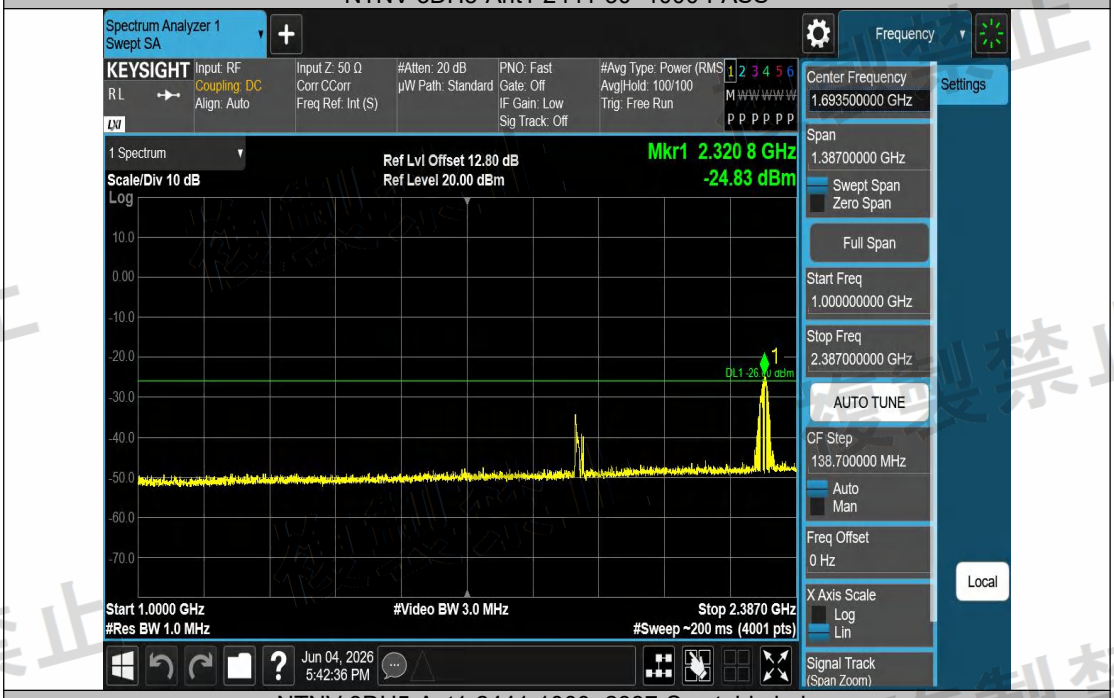
NTNV-3DH5-Ant1-2402-2496.5~3000-PASS



NTNV-3DH5-Ant1-2402-3000~13000-PASS



NTNV-3DH5-Ant1-2441-30~1000-PASS



NTNV-3DH5-Ant1-2441-1000~2387-See table below



NTNV-3DH5-Ant1-2441-2387~2400-PASS



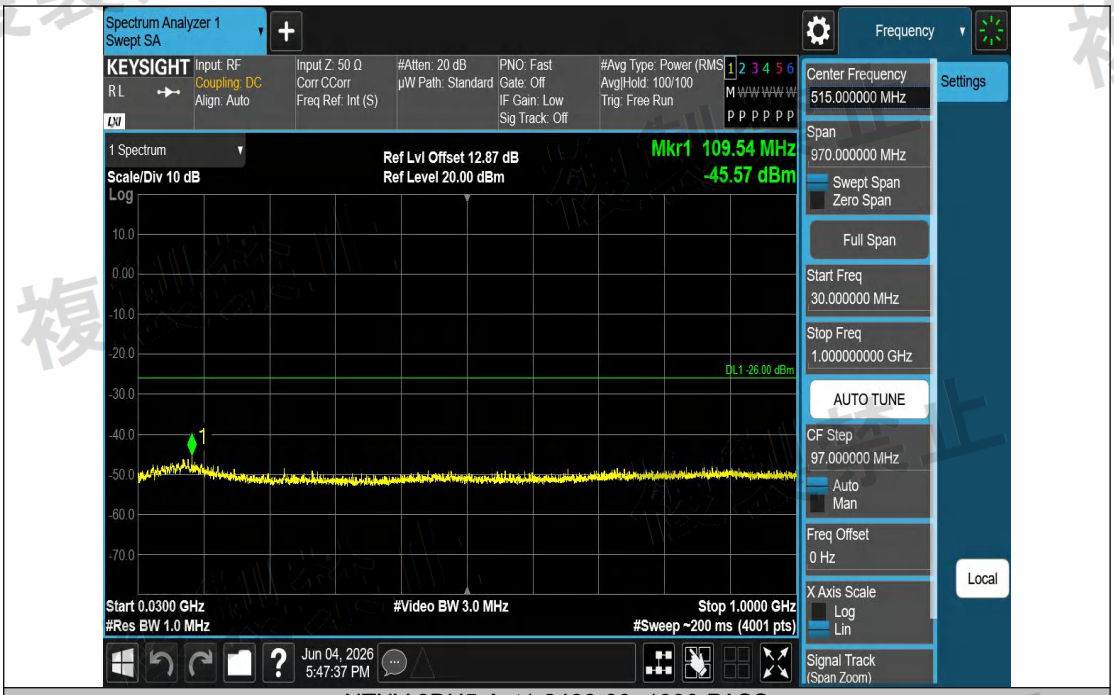
NTNV-3DH5-Ant1-2441-2483.5~2496.5-PASS



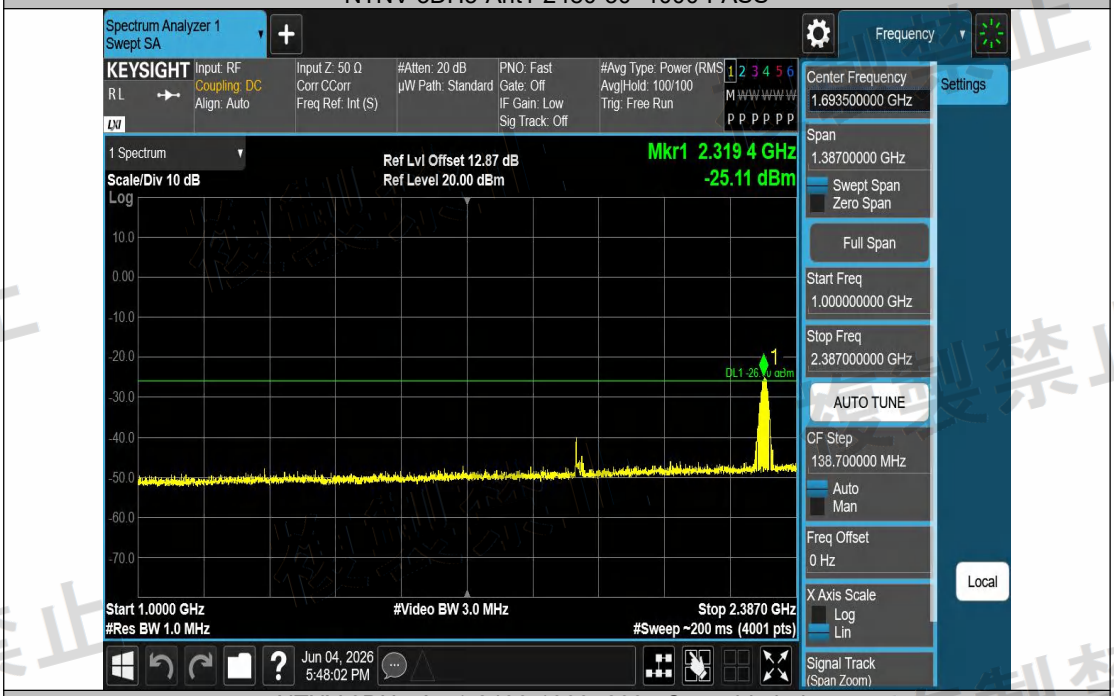
NTNV-3DH5-Ant1-2441-2496.5~3000-PASS



NTNV-3DH5-Ant1-2441-3000~13000-PASS



NTNV-3DH5-Ant1-2480-30~1000-PASS



NTNV-3DH5-Ant1-2480-1000~2387-See table below



NTNV-3DH5-Ant1-2480-2387~2400-PASS



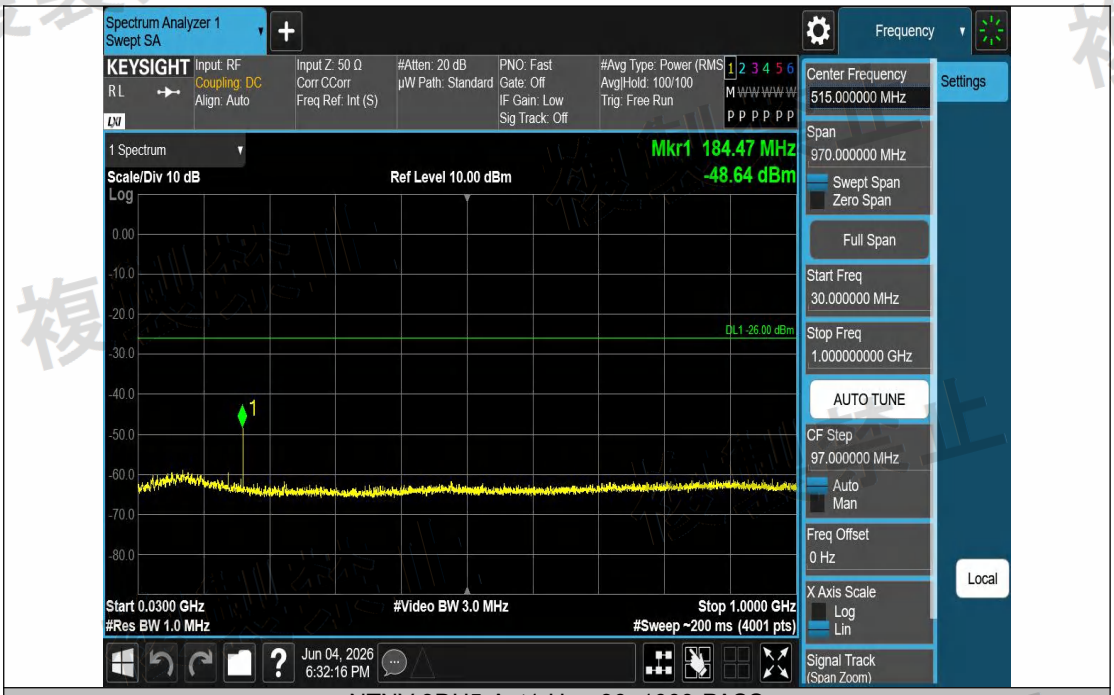
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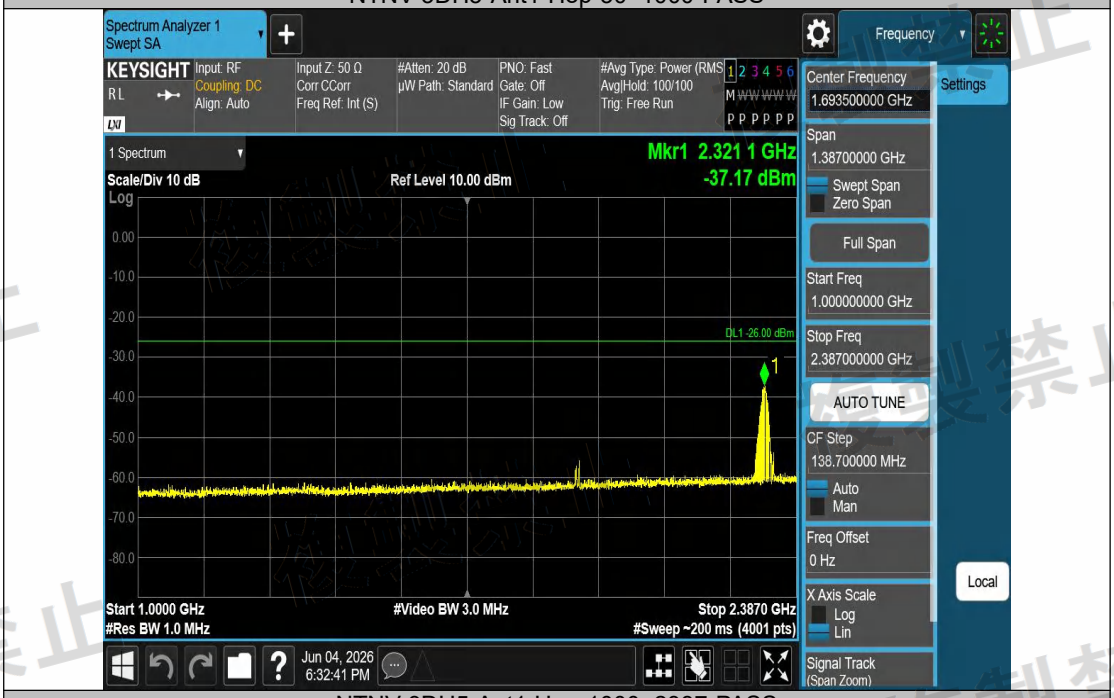
NTNV-3DH5-Ant1-2480-2496.5~3000-PASS



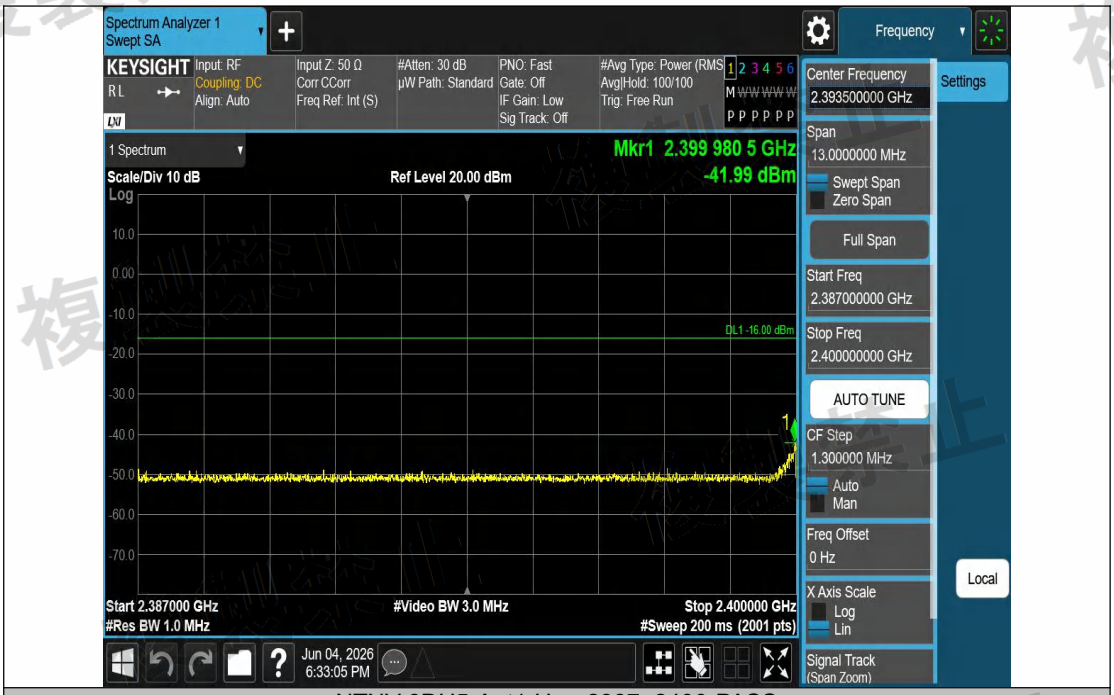
NTNV-3DH5-Ant1-2480-3000~13000-PASS



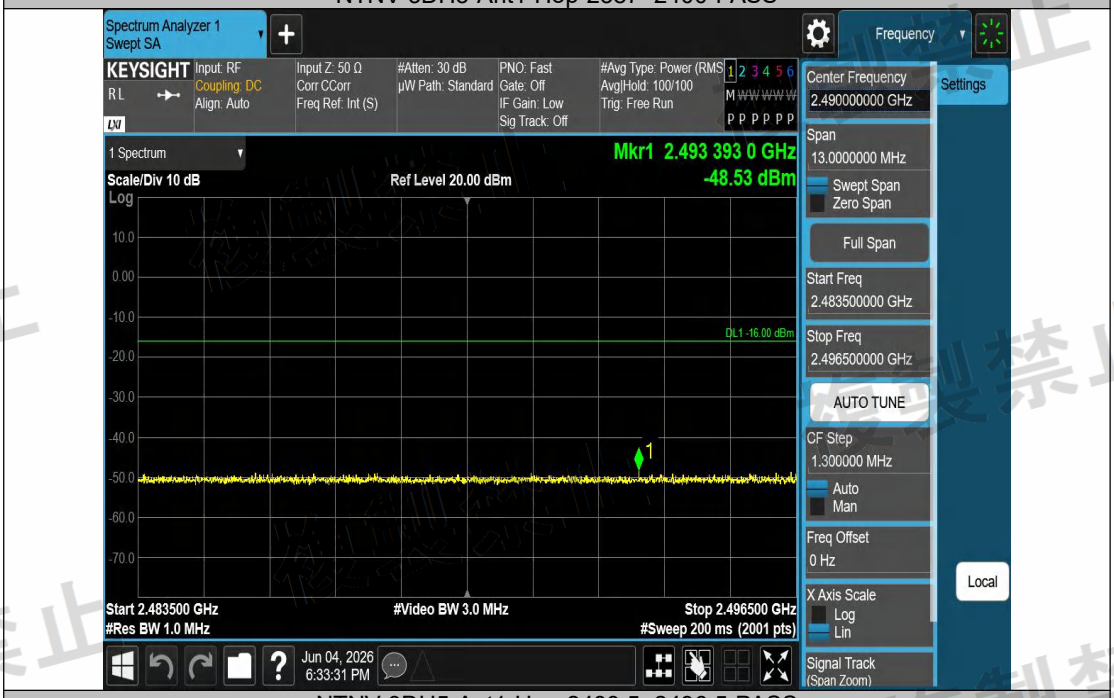
NTNV-3DH5-Ant1-Hop-30~1000-PASS



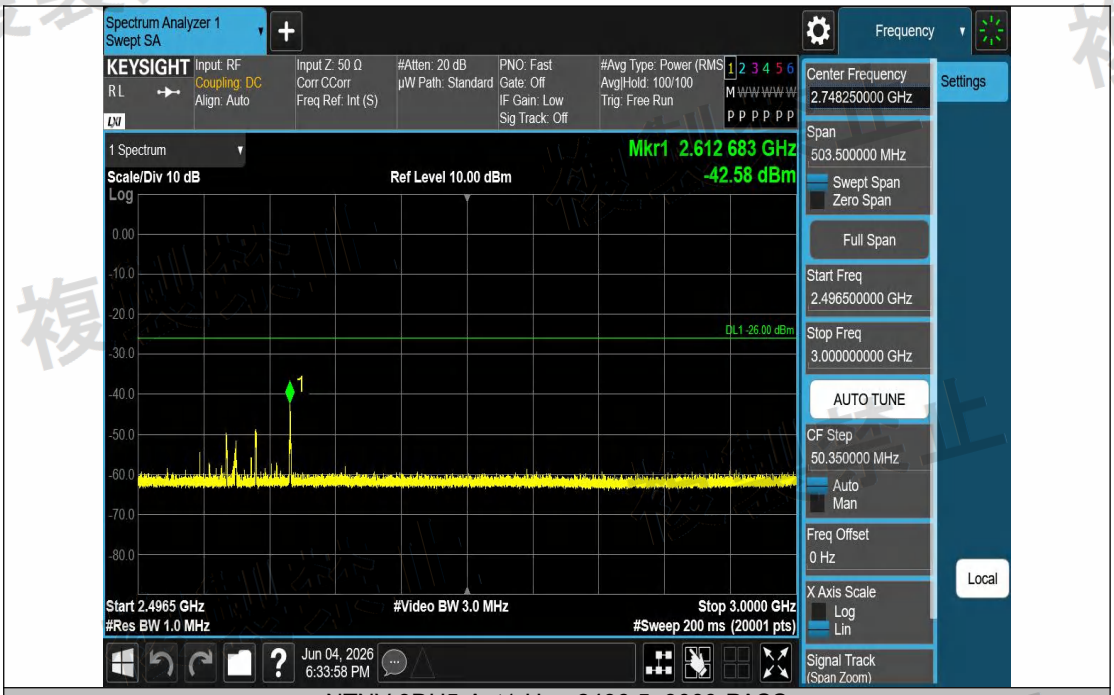
NTNV-3DH5-Ant1-Hop-1000~2387-PASS



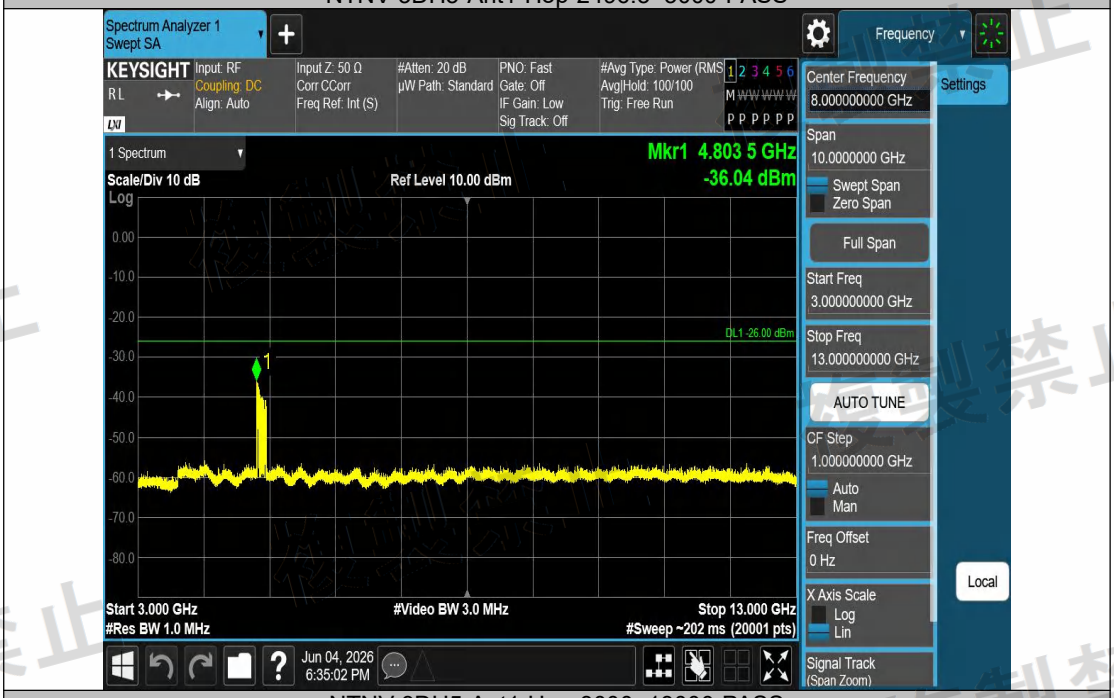
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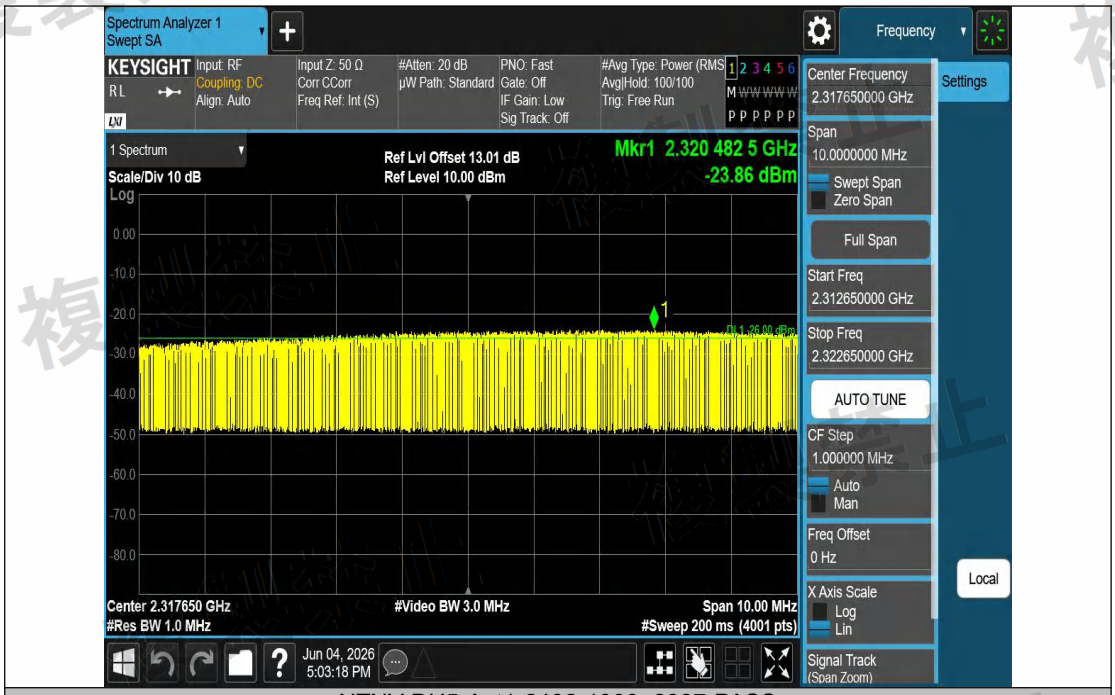
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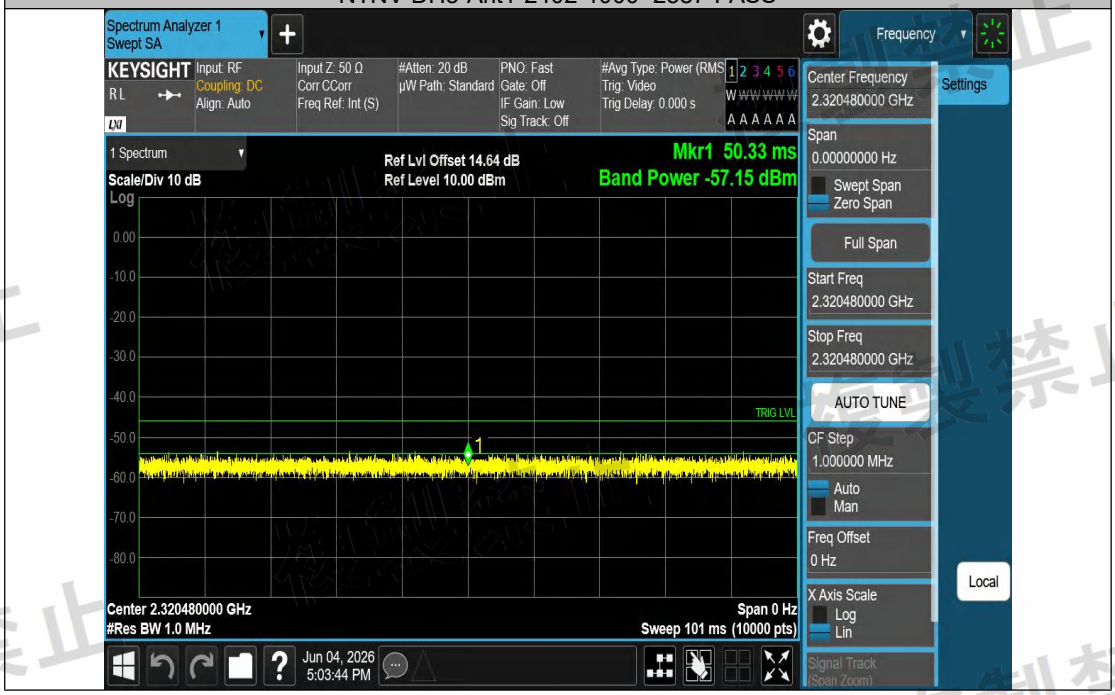
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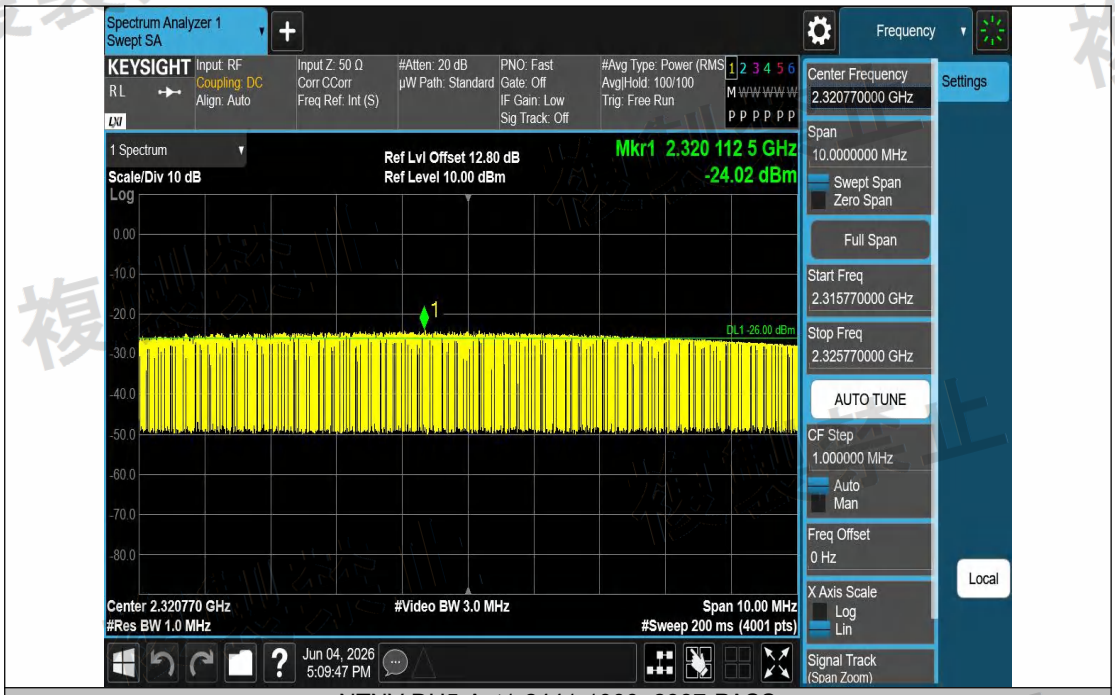


NTNV-3DH5-Ant1-Hop-3000~13000-PASS

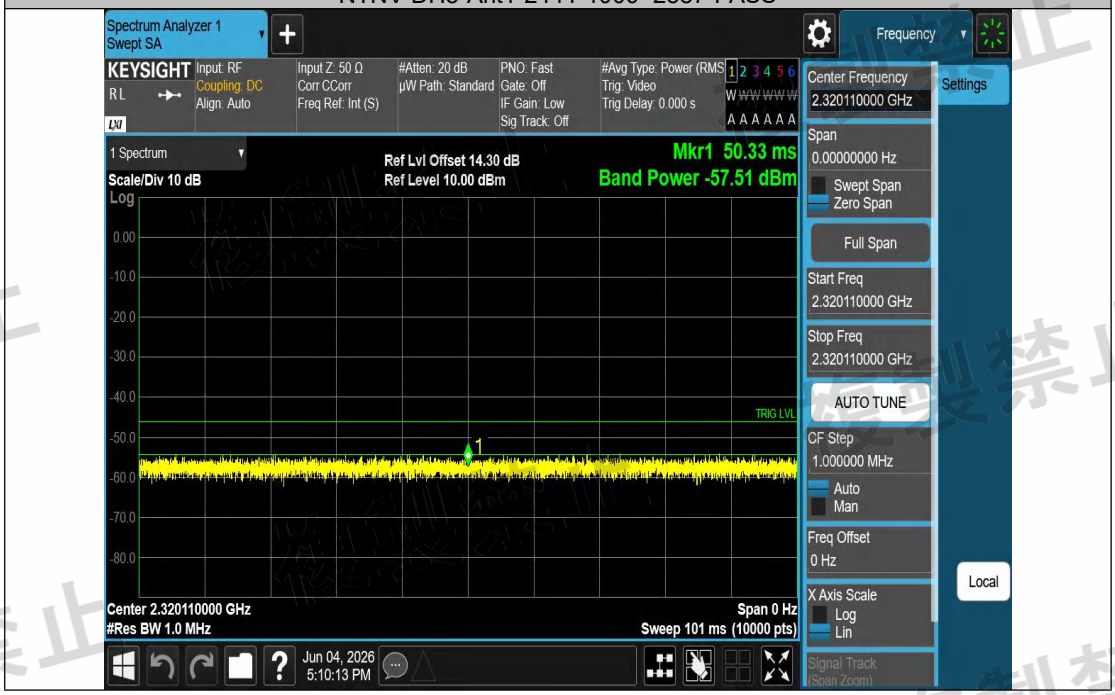


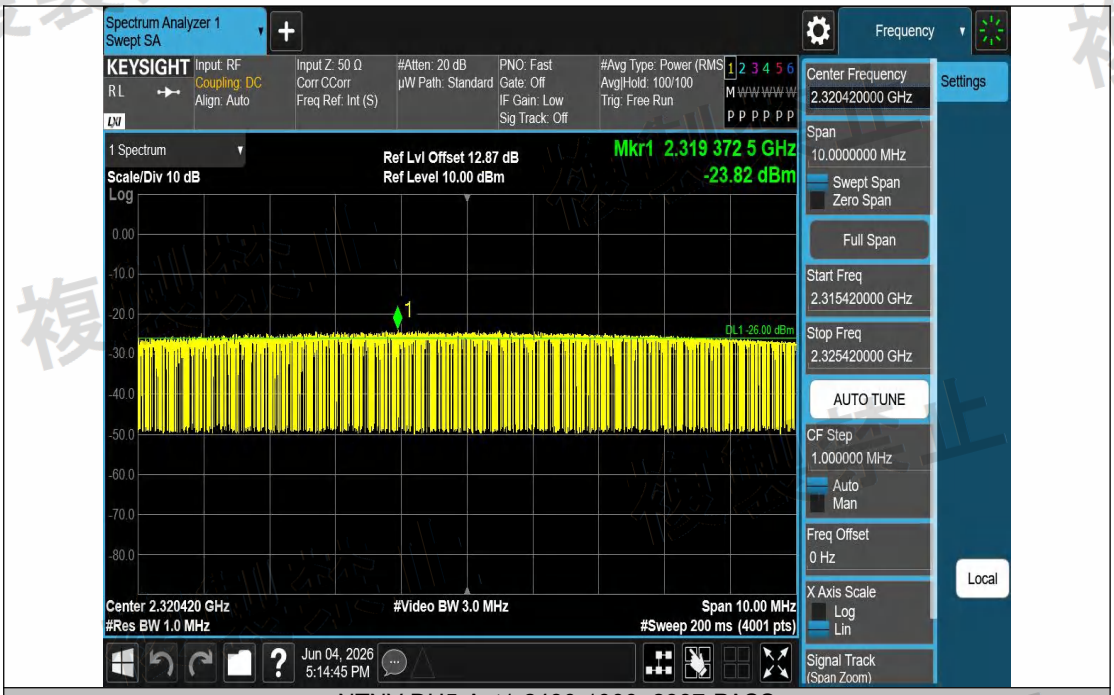
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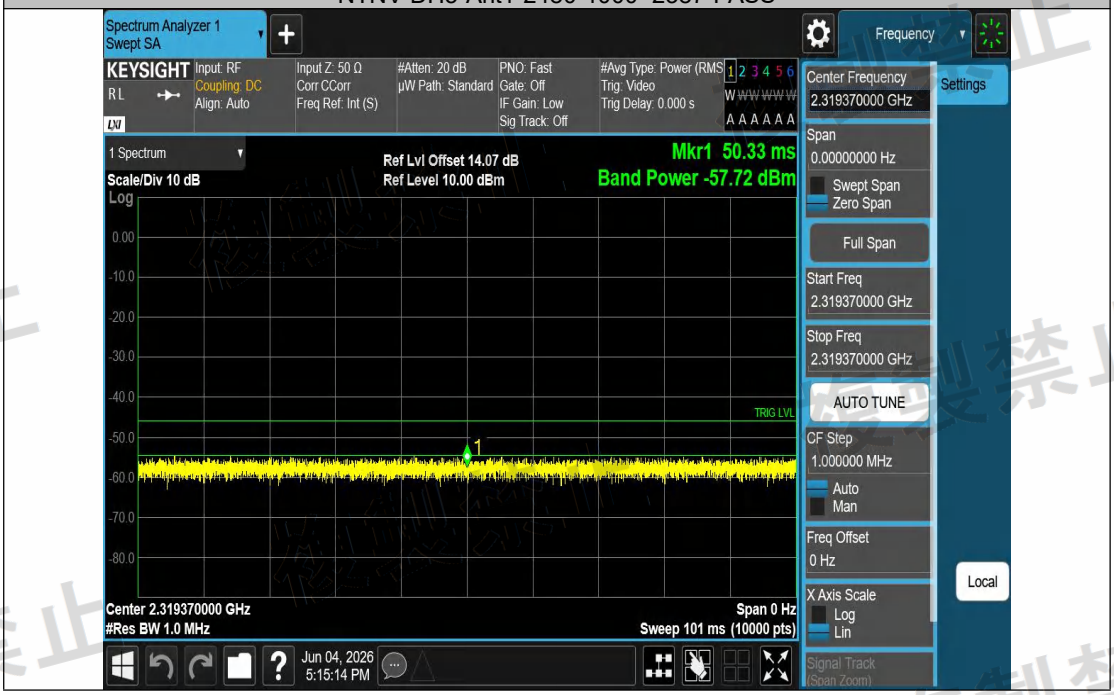


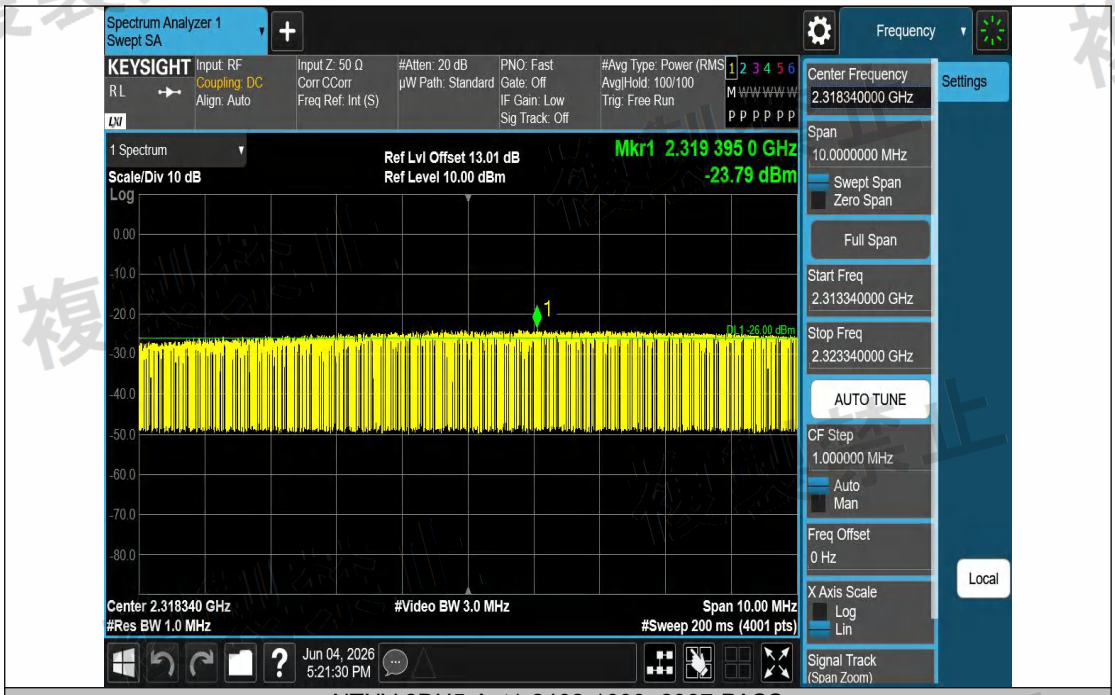
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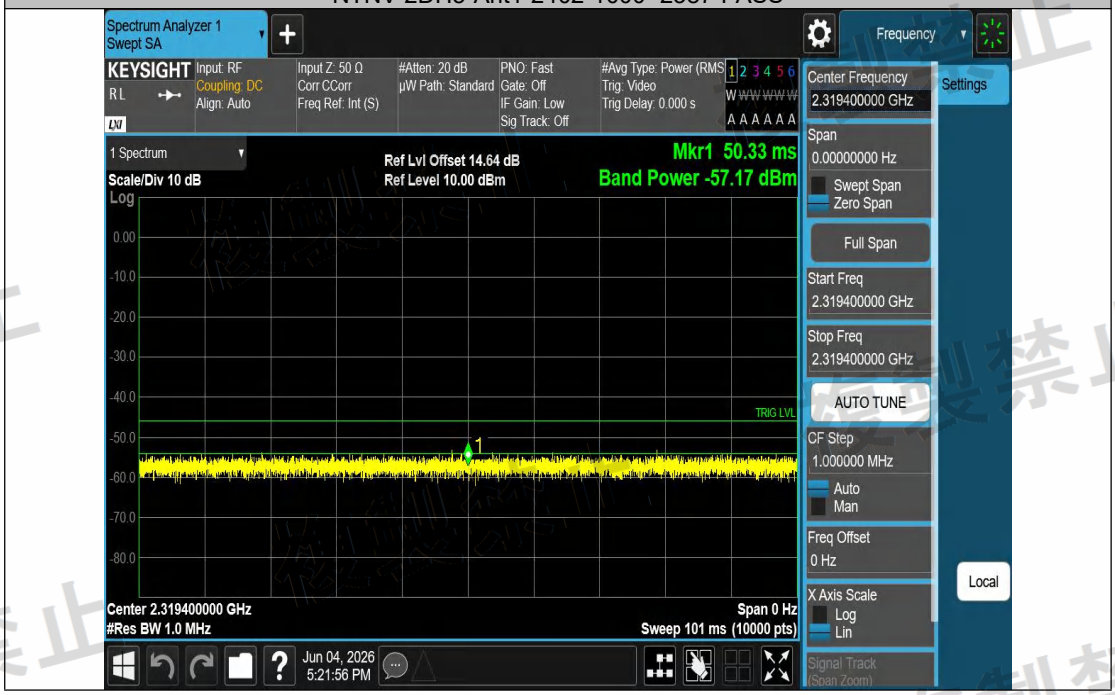


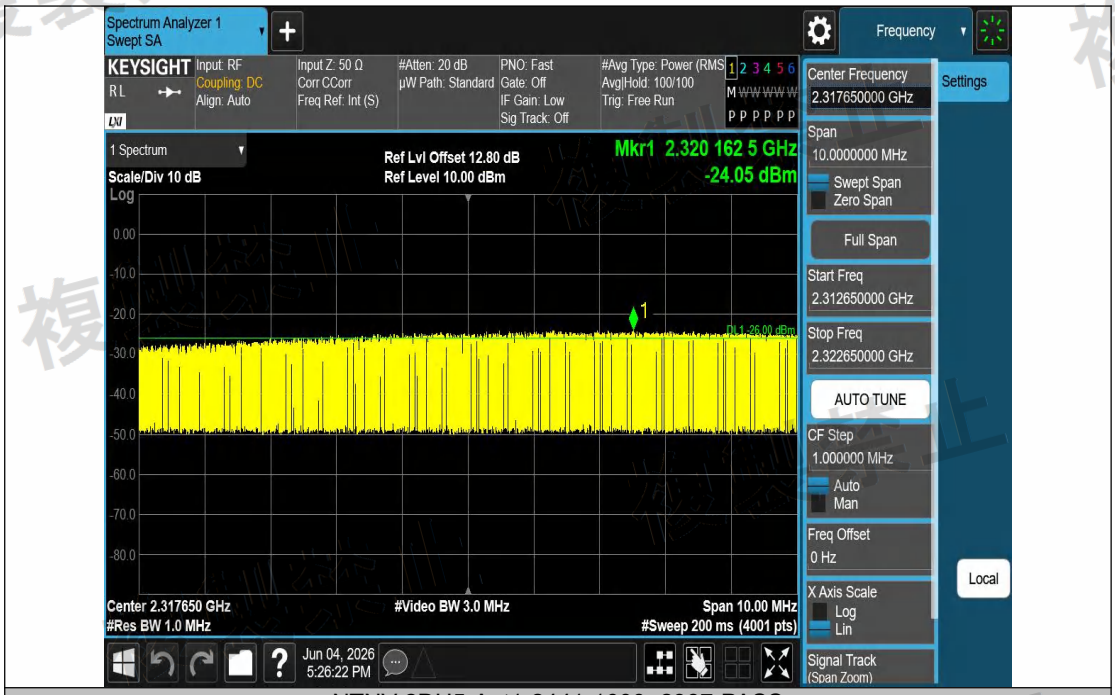
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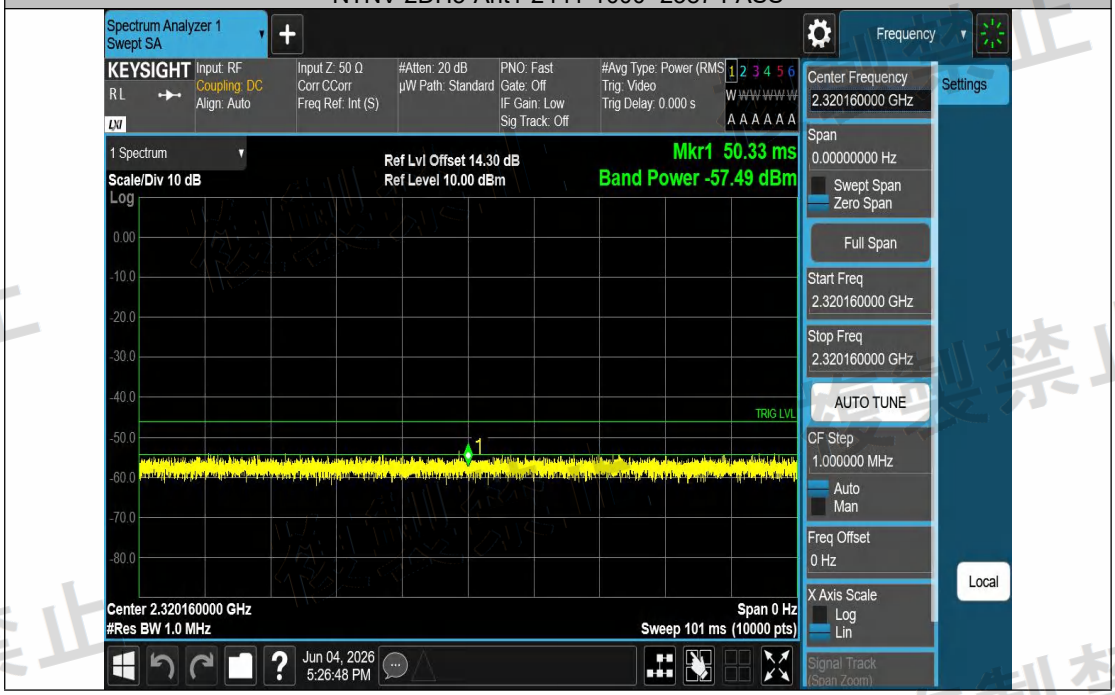


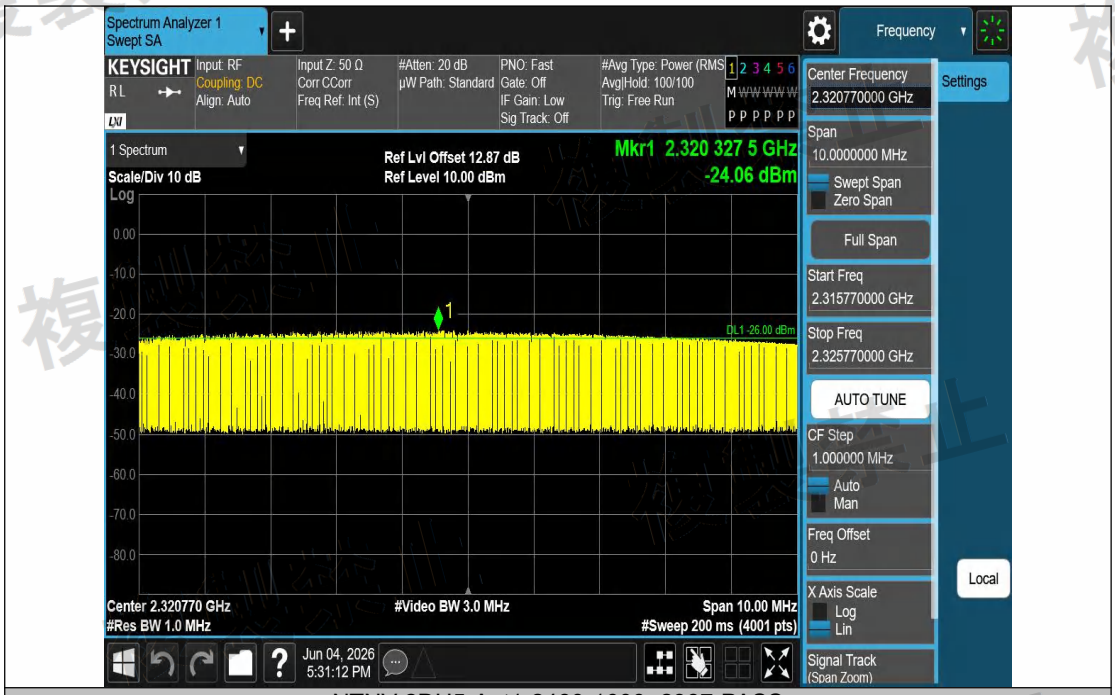
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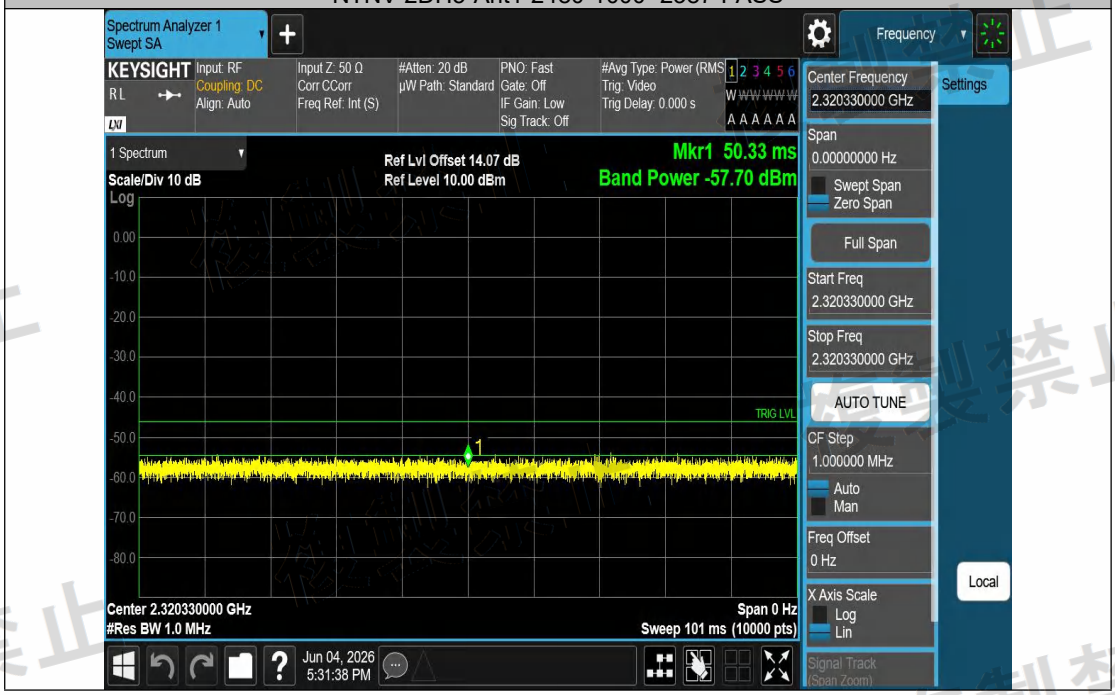


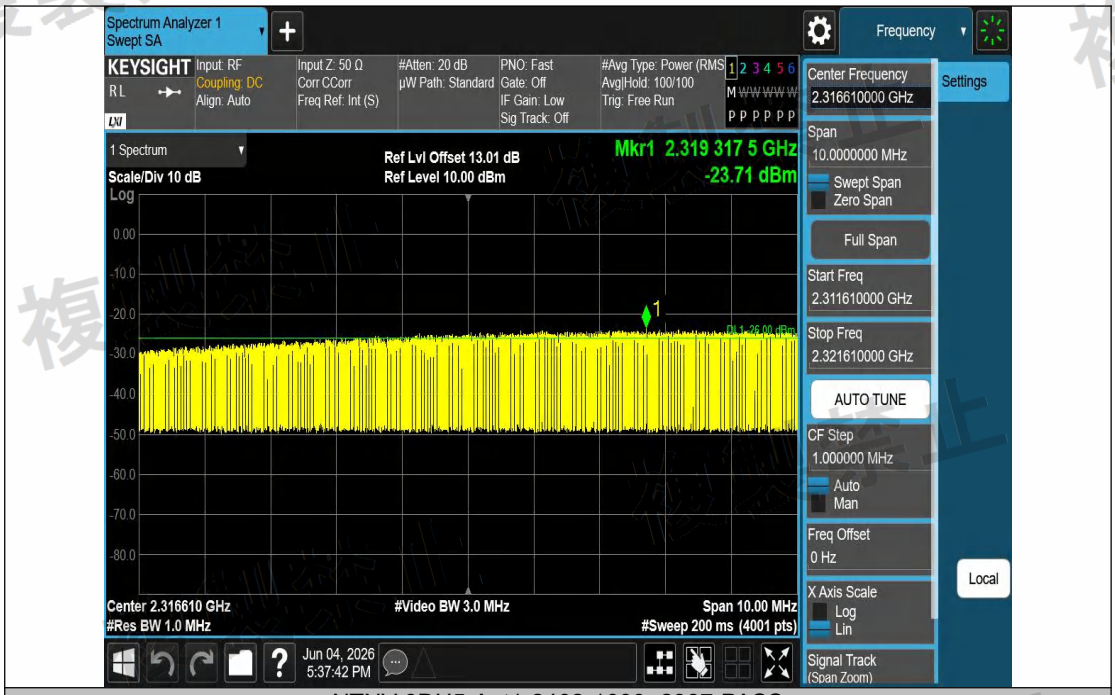
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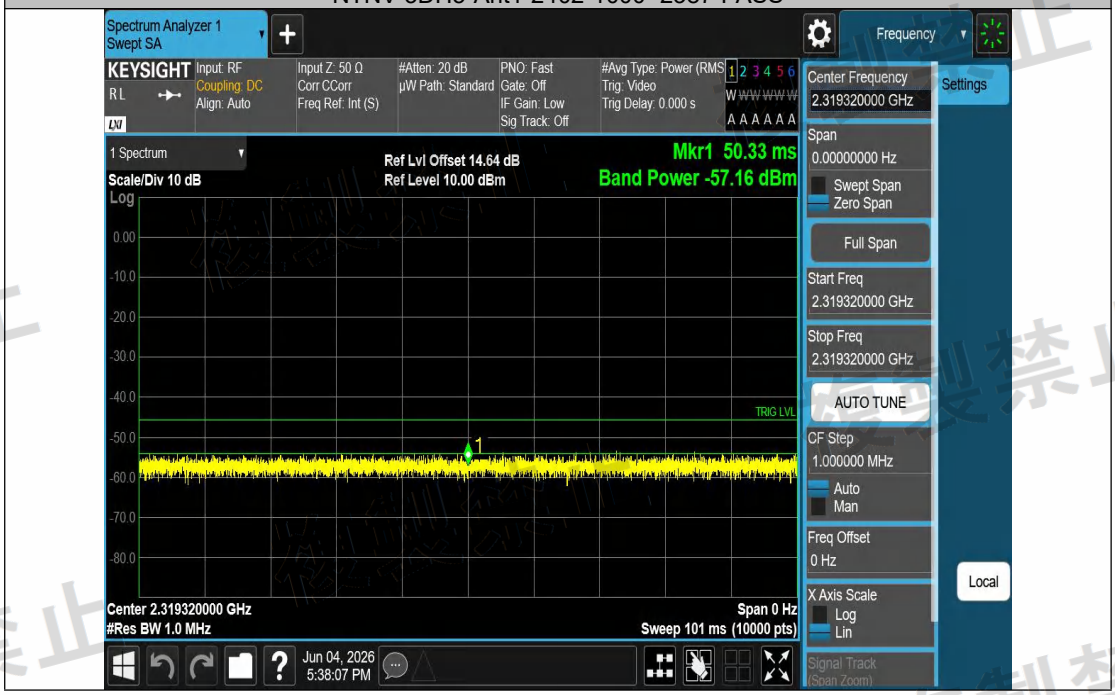


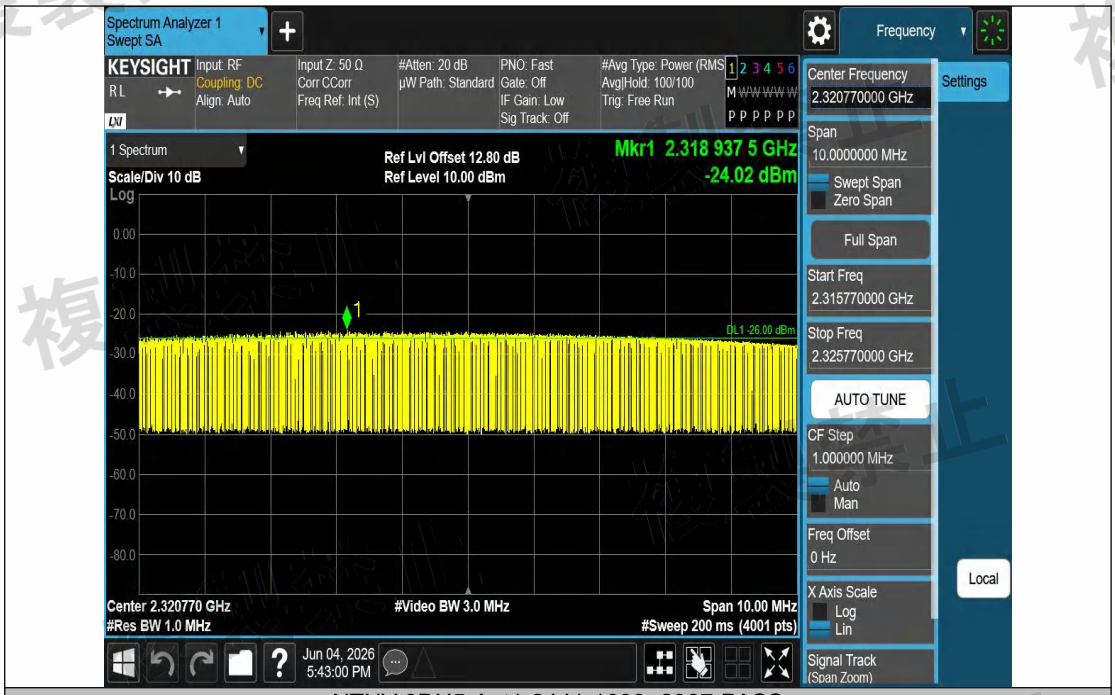
NTNV-2DH5-Ant1-2480-1000~2387-PASS



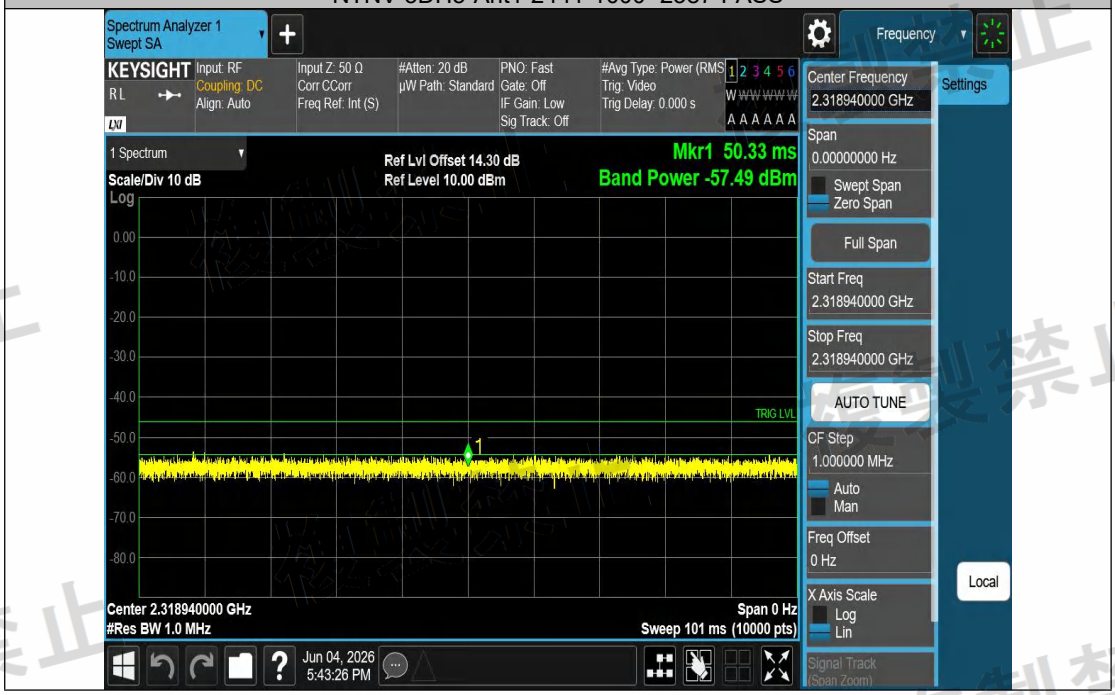


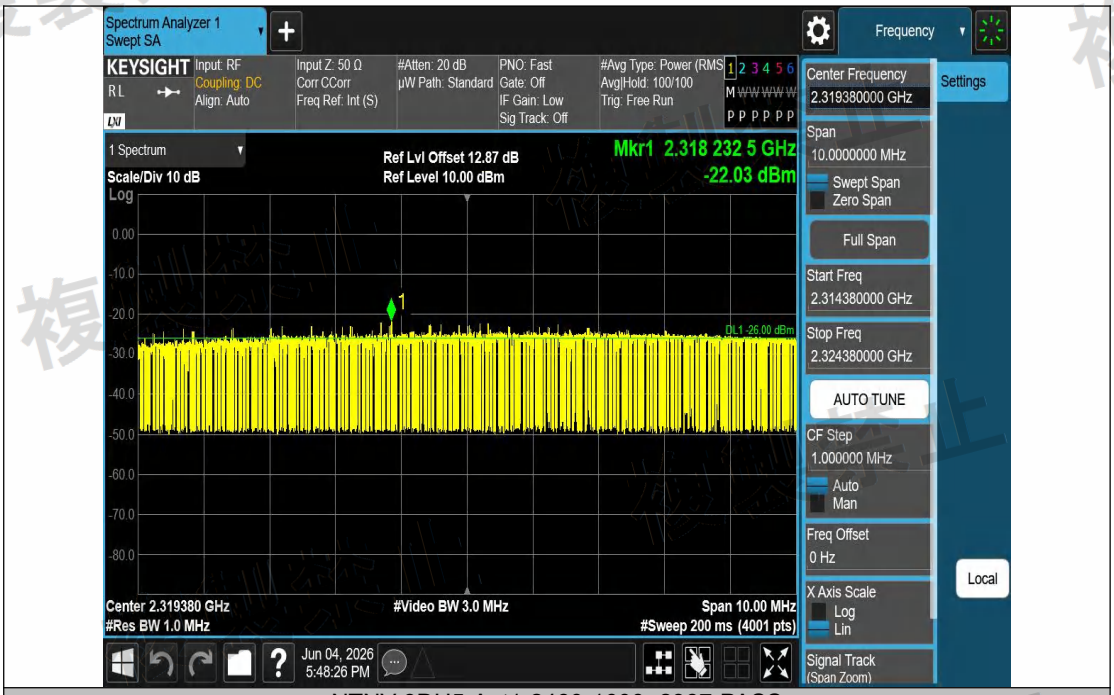
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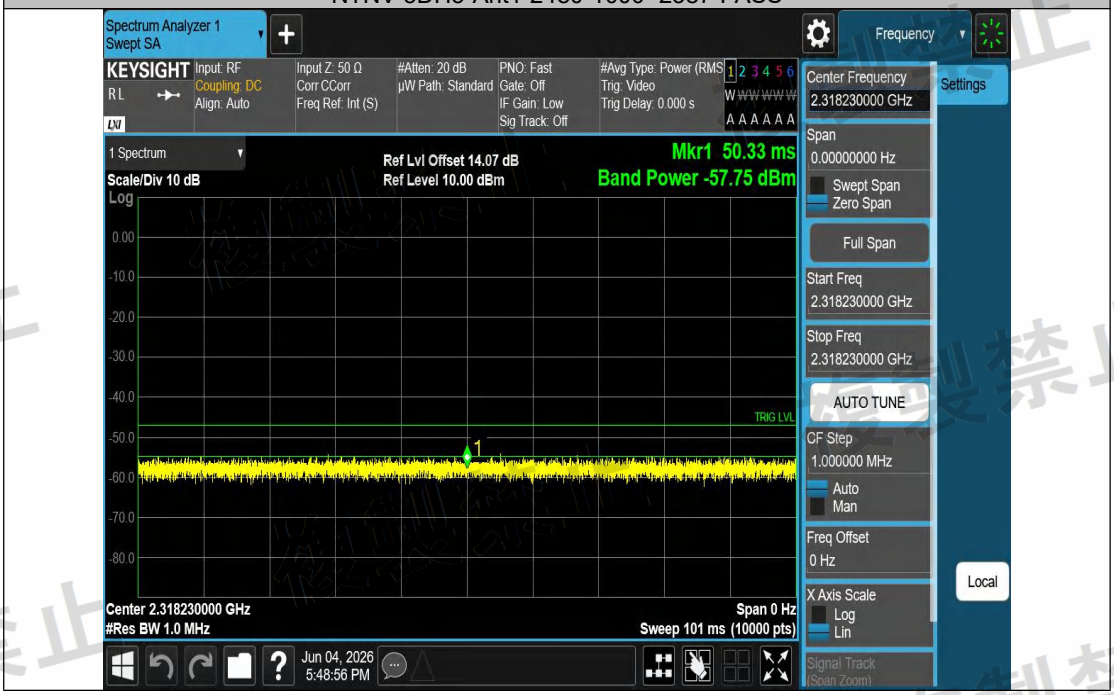


NTNV-3DH5-Ant1-2441-1000~2387-PASS





NTNV-3DH5-Ant1-2480-1000~2387-PASS



7.6 COLLATERAL EMISSIONS OF RECEIVER

7.6.1 Applicable Standard

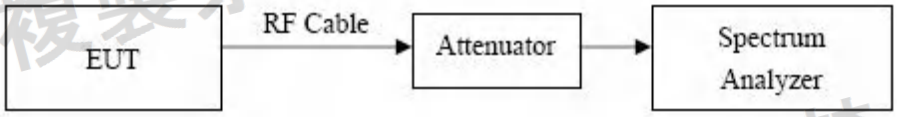
According to Item 19 of Article 2 Paragraph 1.

7.6.2 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, 4 nW (-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

7.6.3 Test Setup Block Diagram



7.6.4 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).

7.6.5 Environmental Conditions

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

7.6.6 Test Results

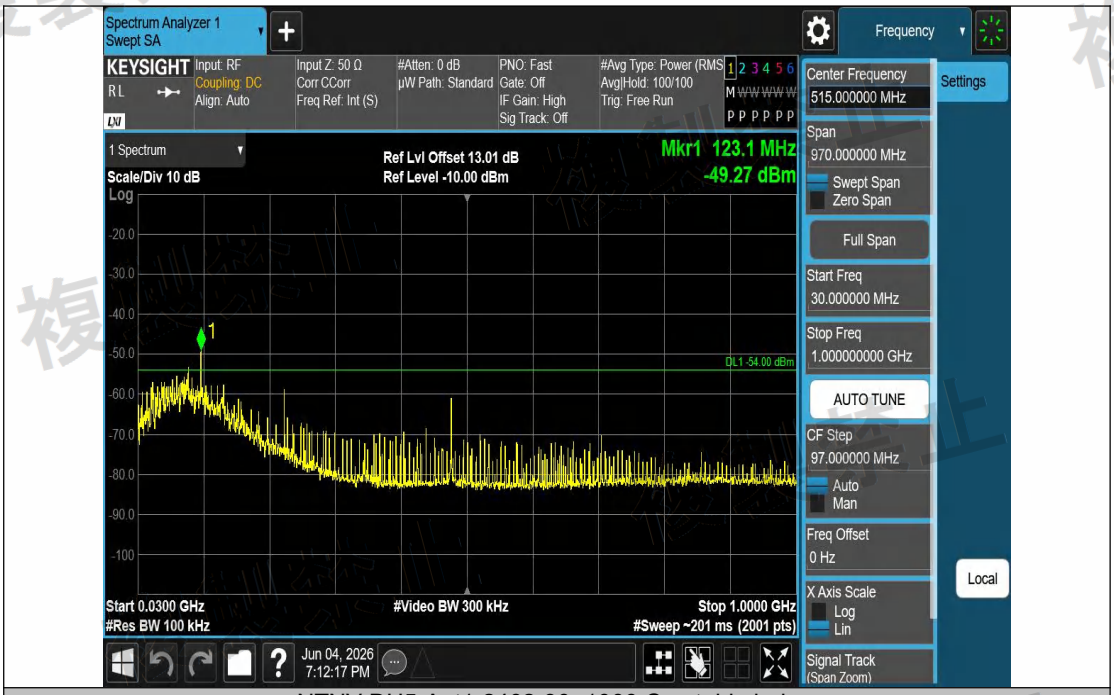
All the modes were tested and recorded,the results of the test item are good.

Test Condition	Test Mode	Antenna	Frequency[MHz]	Freq.Range [MHz]	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [nW]	Limit [nW]	Verdict
NTNV	DH5	Ant1	2402	30~1000	123.12	-49.28	≤-54	11.80321	≤4	See table below
NTNV	DH5	Ant1	2402	1000~12500	10578.93	-61.44	≤-47	0.71779	≤20	PASS
NTNV	DH5	Ant1	2441	30~1000	122.64	-49.58	≤-54	11.01539	≤4	See table below
NTNV	DH5	Ant1	2441	1000~12500	8891.88	-61.75	≤-47	0.66834	≤20	PASS
NTNV	DH5	Ant1	2480	30~1000	122.64	-49.36	≤-54	11.58777	≤4	See table below
NTNV	DH5	Ant1	2480	1000~12500	3976.78	-61.86	≤-47	0.65163	≤20	PASS
NTNV	DH5	Ant1	Hop	30~1000	122.64	-62.52	≤-54	0.55976	≤4	See table below
NTNV	DH5	Ant1	Hop	1000~12500	4014.15	-75.90	≤-47	0.02570	≤20	PASS
NTNV	2DH5	Ant1	2402	30~1000	123.12	-49.40	≤-54	11.48154	≤4	See table below
NTNV	2DH5	Ant1	2402	1000~12500	4035.43	-61.15	≤-47	0.76736	≤20	PASS
NTNV	2DH5	Ant1	2441	30~1000	122.64	-30.17	≤-54	961.61228	≤4	See table below
NTNV	2DH5	Ant1	2441	1000~12500	3985.98	-62.16	≤-47	0.60814	≤20	PASS
NTNV	2DH5	Ant1	2480	30~1000	122.64	-49.53	≤-54	11.14295	≤4	See table below
NTNV	2DH5	Ant1	2480	1000~12500	10555.93	-62.29	≤-47	0.59020	≤20	PASS
NTNV	2DH5	Ant1	Hop	30~1000	122.64	-62.35	≤-54	0.58210	≤4	See table below
NTNV	2DH5	Ant1	Hop	1000~12500	3997.48	-76.47	≤-47	0.02254	≤20	PASS
NTNV	3DH5	Ant1	2402	30~1000	123.12	-49.19	≤-54	12.05036	≤4	See table below
NTNV	3DH5	Ant1	2402	1000~12500	4018.75	-61.48	≤-47	0.71121	≤20	PASS
NTNV	3DH5	Ant1	2441	30~1000	368.53	-44.05	≤-54	39.35501	≤4	See table

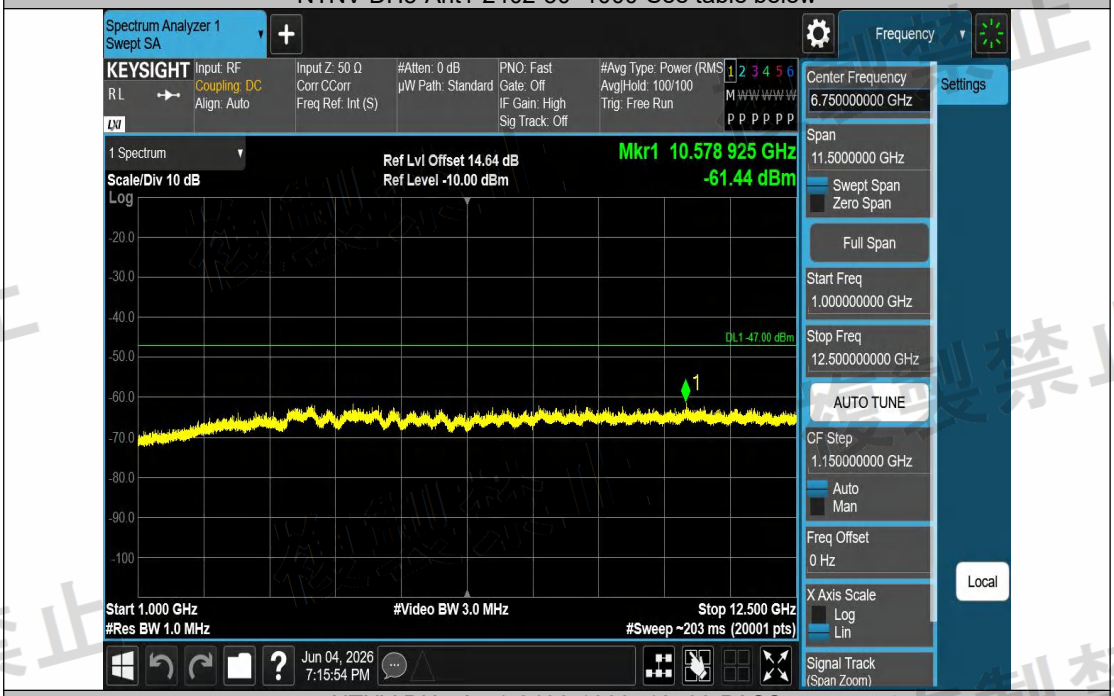
										below
NTNV	3DH5	Ant1	2441	1000~12500	4007.25	-62.30	≤-47	0.58884	≤20	PASS
NTNV	3DH5	Ant1	2480	30~1000	123.12	-49.62	≤-54	10.91440	≤4	See table below
NTNV	3DH5	Ant1	2480	1000~12500	9790.03	-61.90	≤-47	0.64565	≤20	PASS
NTNV	3DH5	Ant1	Hop	30~1000	123.12	-62.40	≤-54	0.57544	≤4	See table below
NTNV	3DH5	Ant1	Hop	1000~12500	5160.70	-76.43	≤-47	0.02275	≤20	PASS

Test Condition	Test Mode	Antenna	Frequency[MHz]	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [nW]	Limit [nW]	Verdict
NTNV	DH5	Ant1	2402	123.12	-80.36	≤-54	0.00920	≤4	PASS
NTNV	DH5	Ant1	2402	196.84	-91.75	≤-54	0.00067	≤4	PASS
NTNV	DH5	Ant1	2402	245.83	-91.37	≤-54	0.00073	≤4	PASS
NTNV	DH5	Ant1	2402	491.72	-91.00	≤-54	0.00079	≤4	PASS
NTNV	DH5	Ant1	2441	122.64	-80.74	≤-54	0.00843	≤4	PASS
NTNV	DH5	Ant1	2441	209.94	-92.07	≤-54	0.00062	≤4	PASS
NTNV	DH5	Ant1	2441	245.83	-91.44	≤-54	0.00072	≤4	PASS
NTNV	DH5	Ant1	2441	491.72	-90.99	≤-54	0.00080	≤4	PASS
NTNV	DH5	Ant1	2480	122.64	-71.06	≤-54	0.07834	≤4	PASS
NTNV	DH5	Ant1	2480	181.81	-91.91	≤-54	0.00064	≤4	PASS
NTNV	DH5	Ant1	2480	196.36	-92.06	≤-54	0.00062	≤4	PASS
NTNV	DH5	Ant1	2480	245.83	-92.19	≤-54	0.00060	≤4	PASS
NTNV	DH5	Ant1	2480	491.72	-91.38	≤-54	0.00073	≤4	PASS
NTNV	DH5	Ant1	Hop	122.64	-106.04	≤-54	0.00002	≤4	PASS
NTNV	2DH5	Ant1	2402	123.12	-80.24	≤-54	0.00946	≤4	PASS
NTNV	2DH5	Ant1	2402	210.91	-91.23	≤-54	0.00075	≤4	PASS
NTNV	2DH5	Ant1	2402	235.16	-91.81	≤-54	0.00066	≤4	PASS
NTNV	2DH5	Ant1	2402	245.83	-91.47	≤-54	0.00071	≤4	PASS
NTNV	2DH5	Ant1	2402	375.32	-91.68	≤-54	0.00068	≤4	PASS
NTNV	2DH5	Ant1	2402	491.72	-91.29	≤-54	0.00074	≤4	PASS
NTNV	2DH5	Ant1	2441	122.64	-80.84	≤-54	0.00824	≤4	PASS
NTNV	2DH5	Ant1	2441	172.11	-91.77	≤-54	0.00067	≤4	PASS
NTNV	2DH5	Ant1	2441	197.81	-91.94	≤-54	0.00064	≤4	PASS

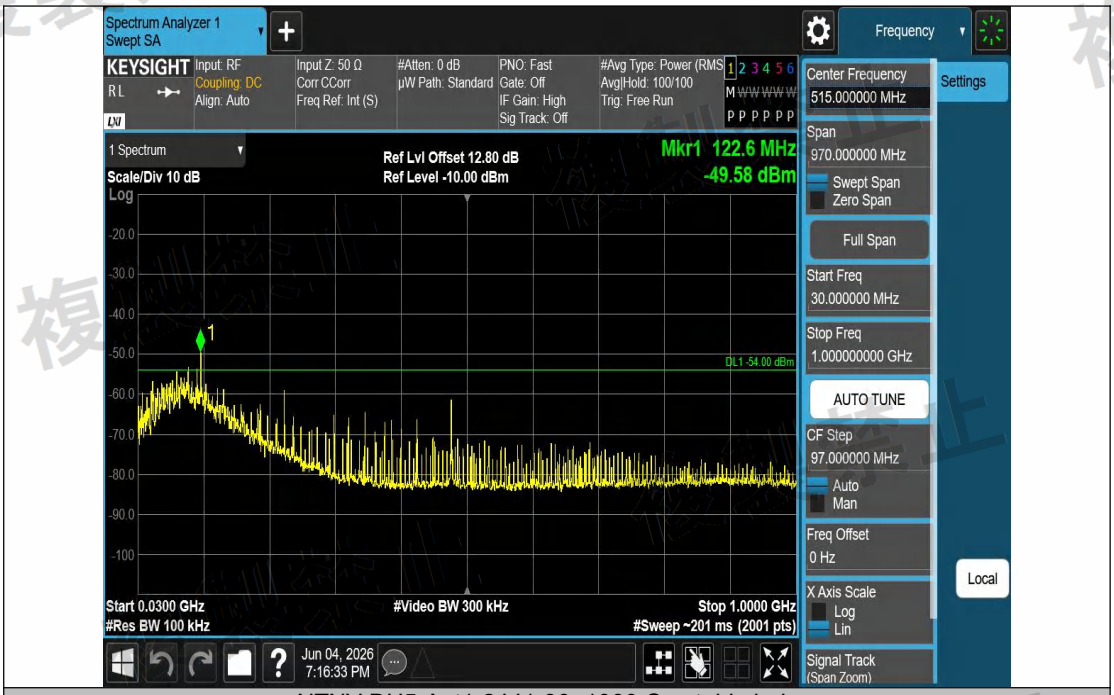
NTNV	2DH5	Ant1	2441	217.21	-91.79	≤-54	0.00066	≤4	PASS
NTNV	2DH5	Ant1	2441	245.83	-91.88	≤-54	0.00065	≤4	PASS
NTNV	2DH5	Ant1	2441	491.72	-91.42	≤-54	0.00072	≤4	PASS
NTNV	2DH5	Ant1	2480	122.64	-80.95	≤-54	0.00804	≤4	PASS
NTNV	2DH5	Ant1	2480	200.72	-92.17	≤-54	0.00061	≤4	PASS
NTNV	2DH5	Ant1	2480	245.83	-92.05	≤-54	0.00062	≤4	PASS
NTNV	2DH5	Ant1	2480	445.65	-91.30	≤-54	0.00074	≤4	PASS
NTNV	2DH5	Ant1	2480	491.72	-91.30	≤-54	0.00074	≤4	PASS
NTNV	2DH5	Ant1	Hop	122.64	-94.57	≤-54	0.00035	≤4	PASS
NTNV	2DH5	Ant1	Hop	369.50	-106.30	≤-54	0.00002	≤4	PASS
NTNV	3DH5	Ant1	2402	123.12	-80.26	≤-54	0.00942	≤4	PASS
NTNV	3DH5	Ant1	2402	172.11	-91.37	≤-54	0.00073	≤4	PASS
NTNV	3DH5	Ant1	2402	245.83	-91.55	≤-54	0.00070	≤4	PASS
NTNV	3DH5	Ant1	2402	491.72	-90.81	≤-54	0.00083	≤4	PASS
NTNV	3DH5	Ant1	2441	122.64	-80.84	≤-54	0.00824	≤4	PASS
NTNV	3DH5	Ant1	2441	172.11	-91.82	≤-54	0.00066	≤4	PASS
NTNV	3DH5	Ant1	2441	205.57	-91.71	≤-54	0.00067	≤4	PASS
NTNV	3DH5	Ant1	2441	245.83	-91.83	≤-54	0.00066	≤4	PASS
NTNV	3DH5	Ant1	2441	368.53	-91.74	≤-54	0.00067	≤4	PASS
NTNV	3DH5	Ant1	2441	420.43	-91.40	≤-54	0.00072	≤4	PASS
NTNV	3DH5	Ant1	2441	493.66	-91.38	≤-54	0.00073	≤4	PASS
NTNV	3DH5	Ant1	2480	123.12	-70.80	≤-54	0.08318	≤4	PASS
NTNV	3DH5	Ant1	2480	169.68	-91.85	≤-54	0.00065	≤4	PASS
NTNV	3DH5	Ant1	2480	210.42	-91.76	≤-54	0.00067	≤4	PASS
NTNV	3DH5	Ant1	2480	245.83	-92.01	≤-54	0.00063	≤4	PASS
NTNV	3DH5	Ant1	2480	491.72	-91.64	≤-54	0.00069	≤4	PASS
NTNV	3DH5	Ant1	2480	552.83	-91.60	≤-54	0.00069	≤4	PASS
NTNV	3DH5	Ant1	Hop	123.12	-94.10	≤-54	0.00039	≤4	PASS



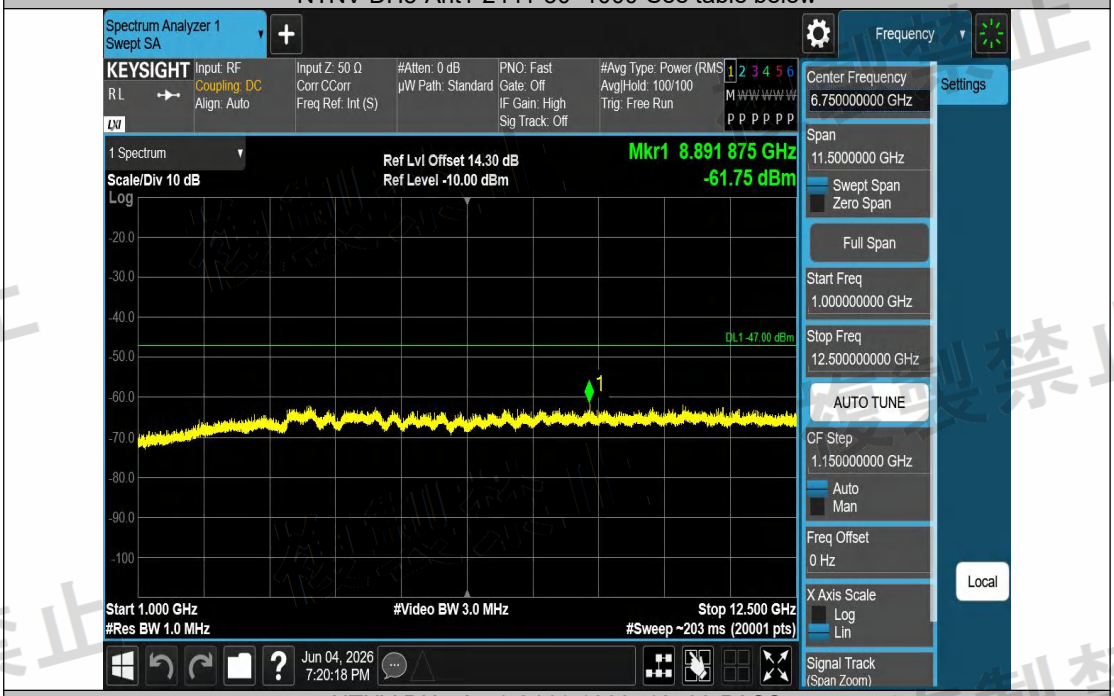
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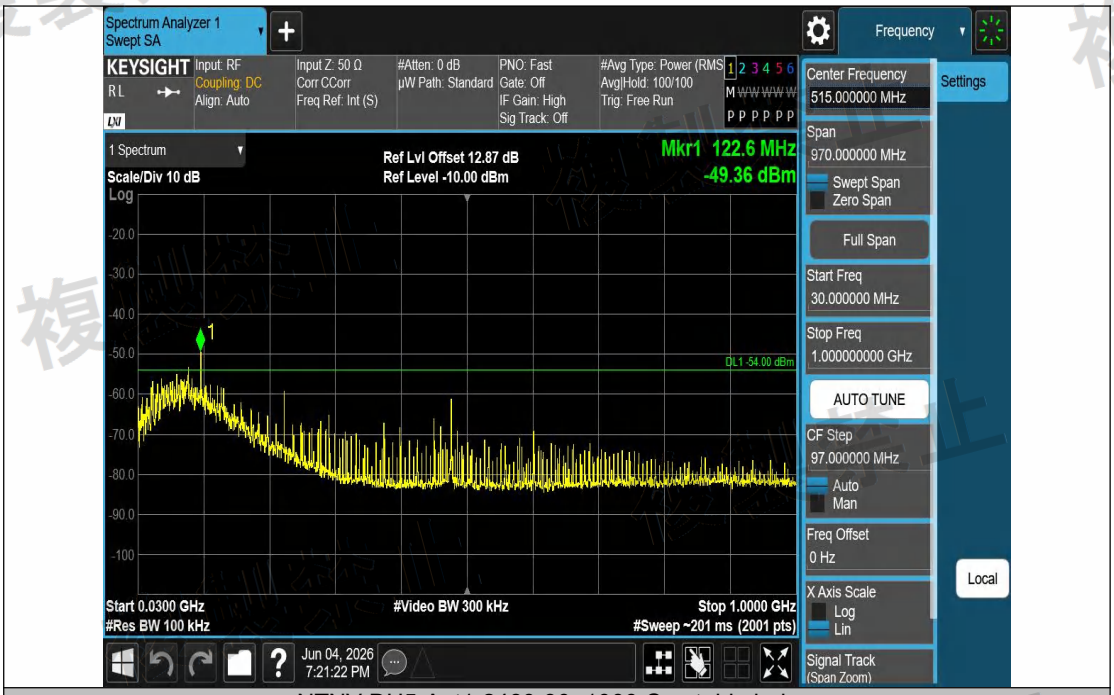
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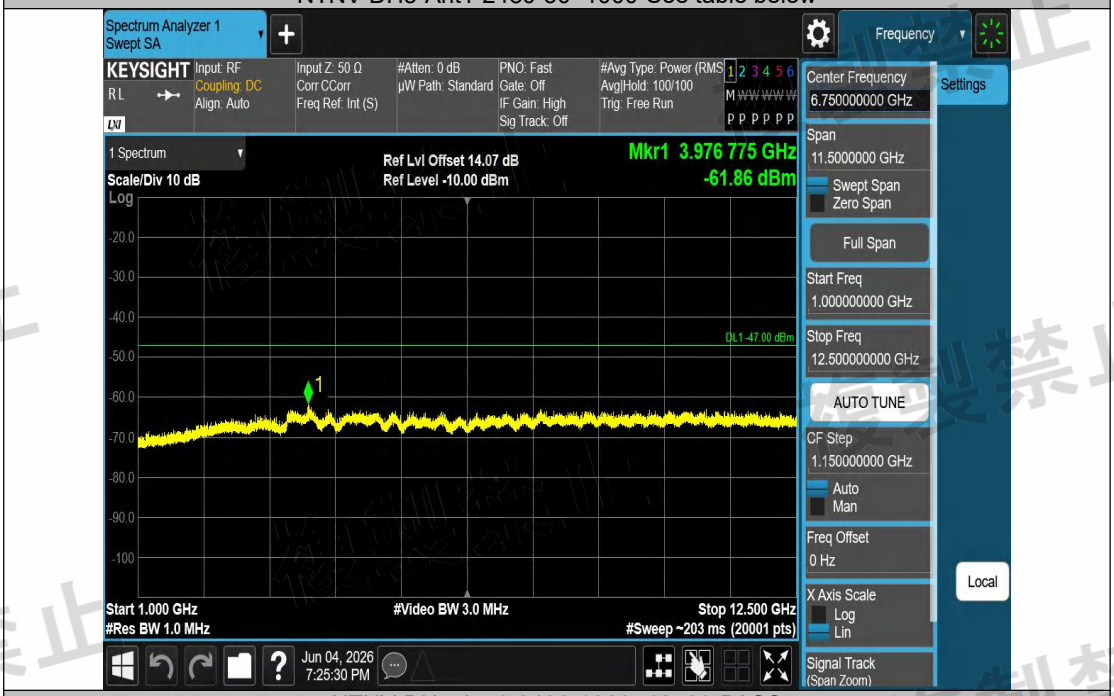
NTNV-DH5-Ant1-2441-30~1000-See table below



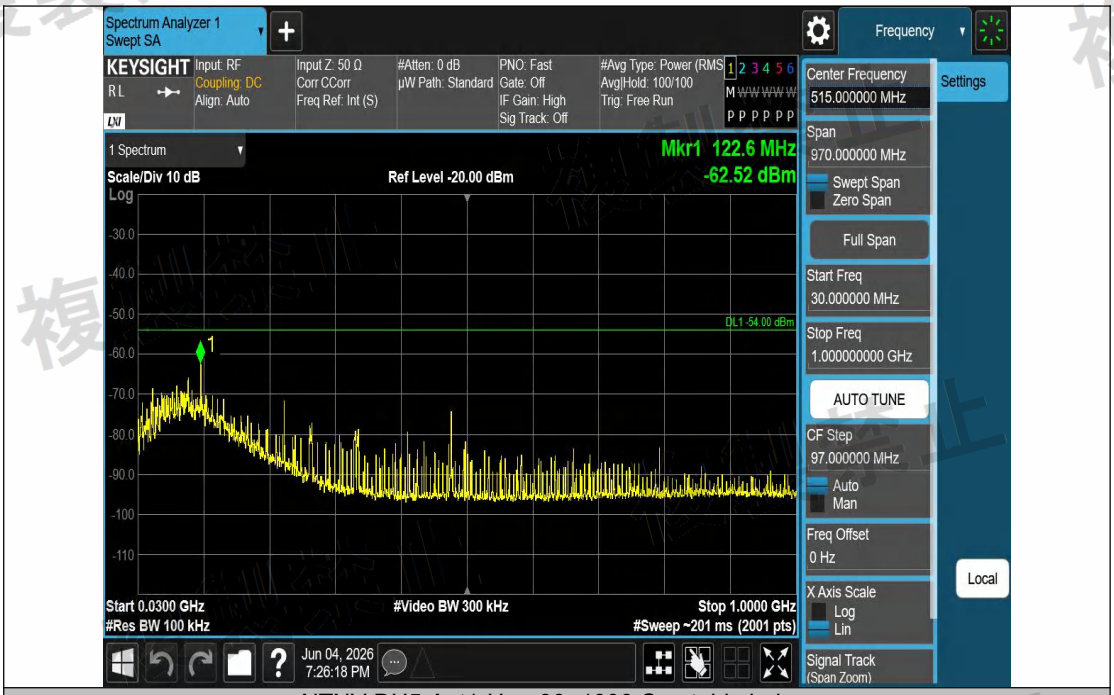
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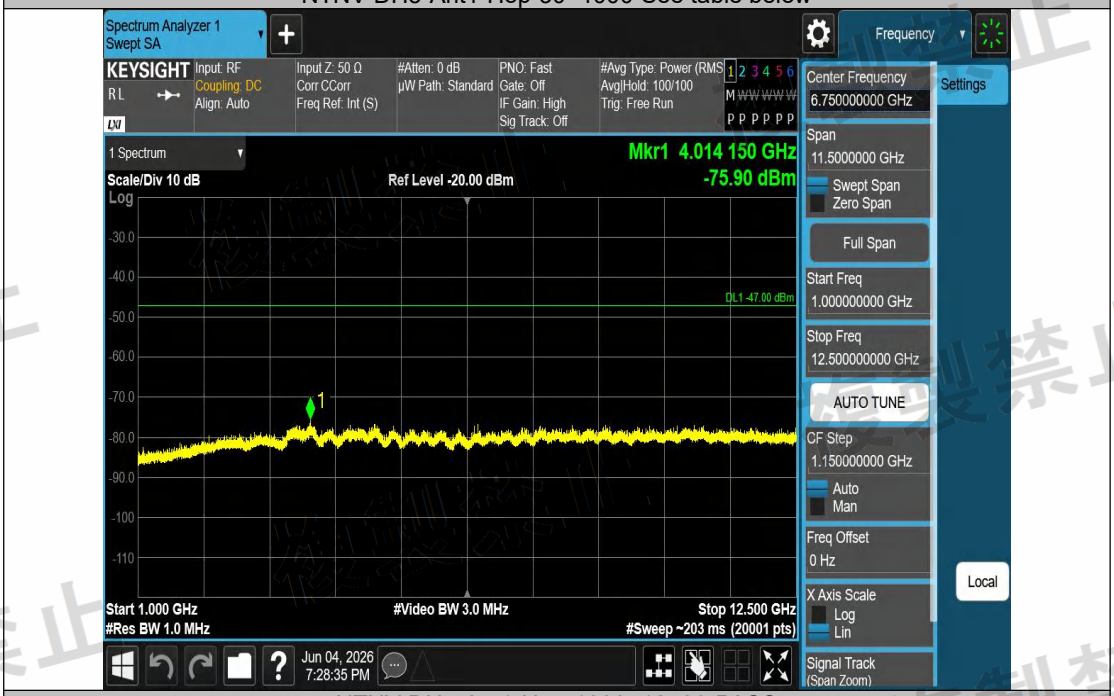
NTNV-DH5-Ant1-2480-30~1000-See table below



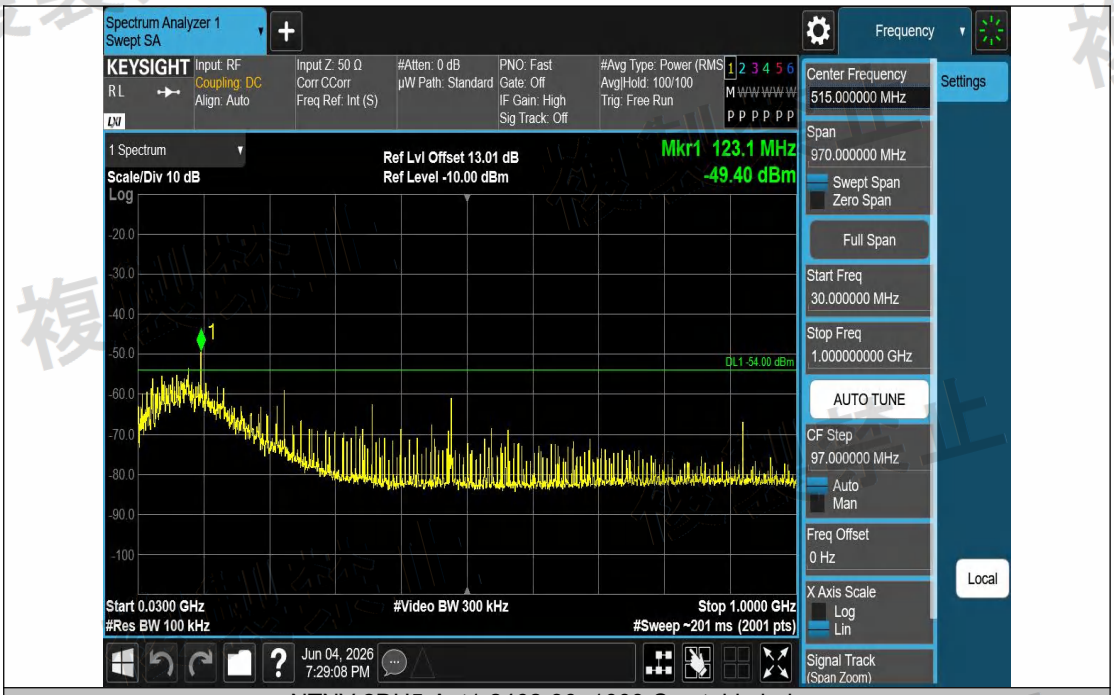
NTNV-DH5-Ant1-2480-1000~12500-PASS



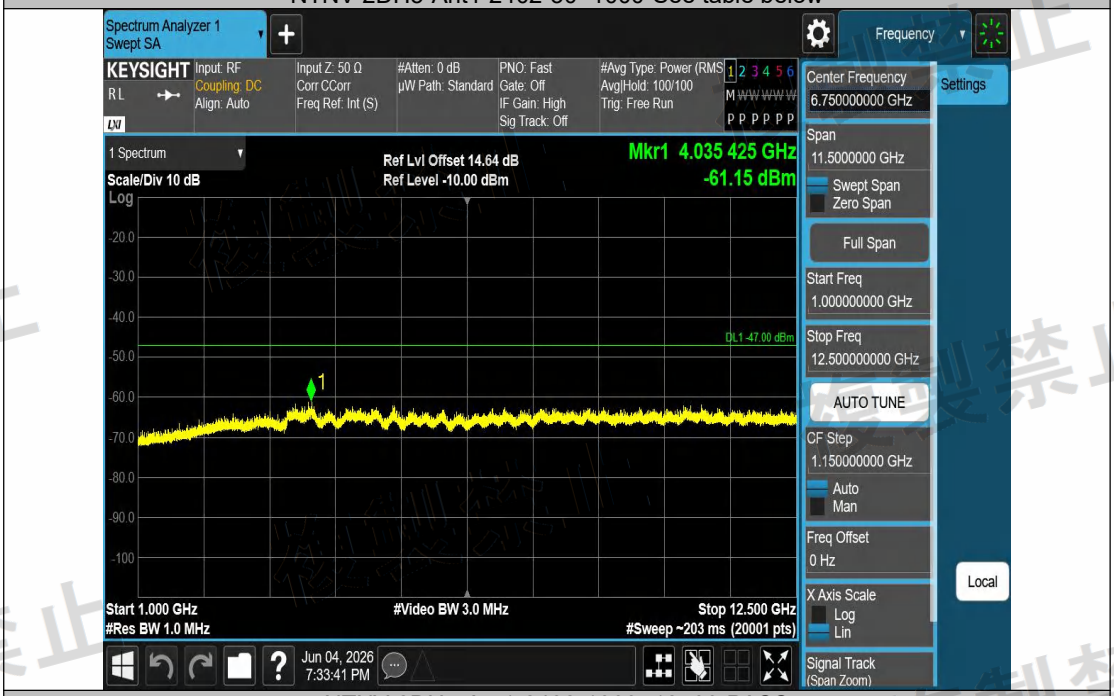
NTNV-DH5-Ant1-Hop-30~1000-See table below



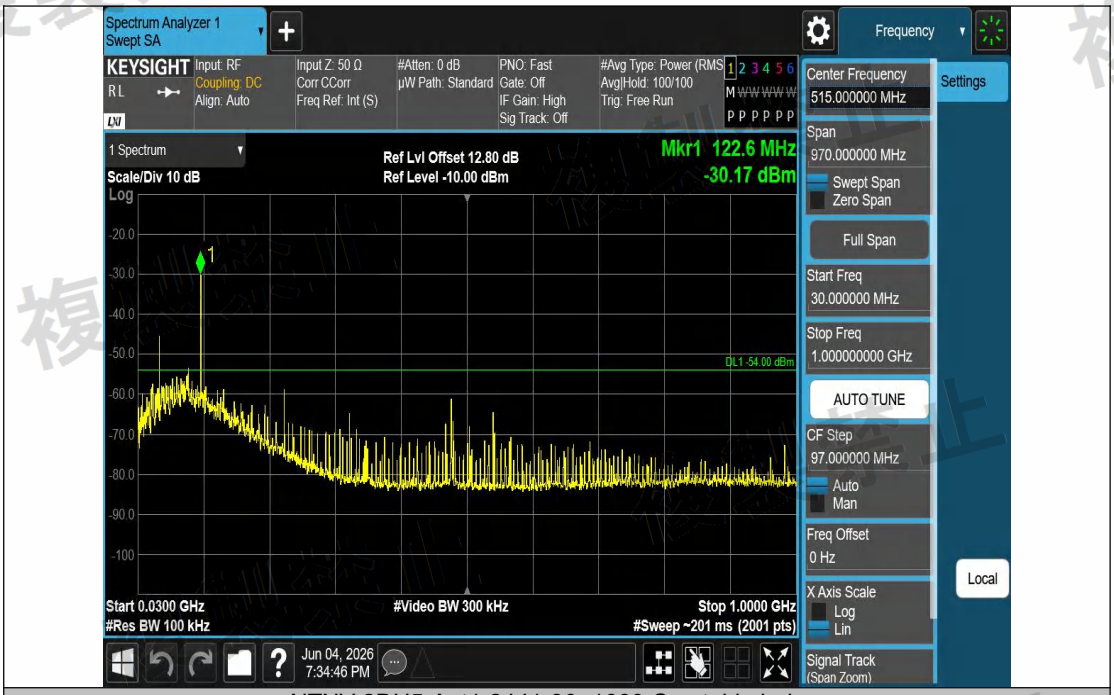
NTNV-DH5-Ant1-Hop-1000~12500-PASS



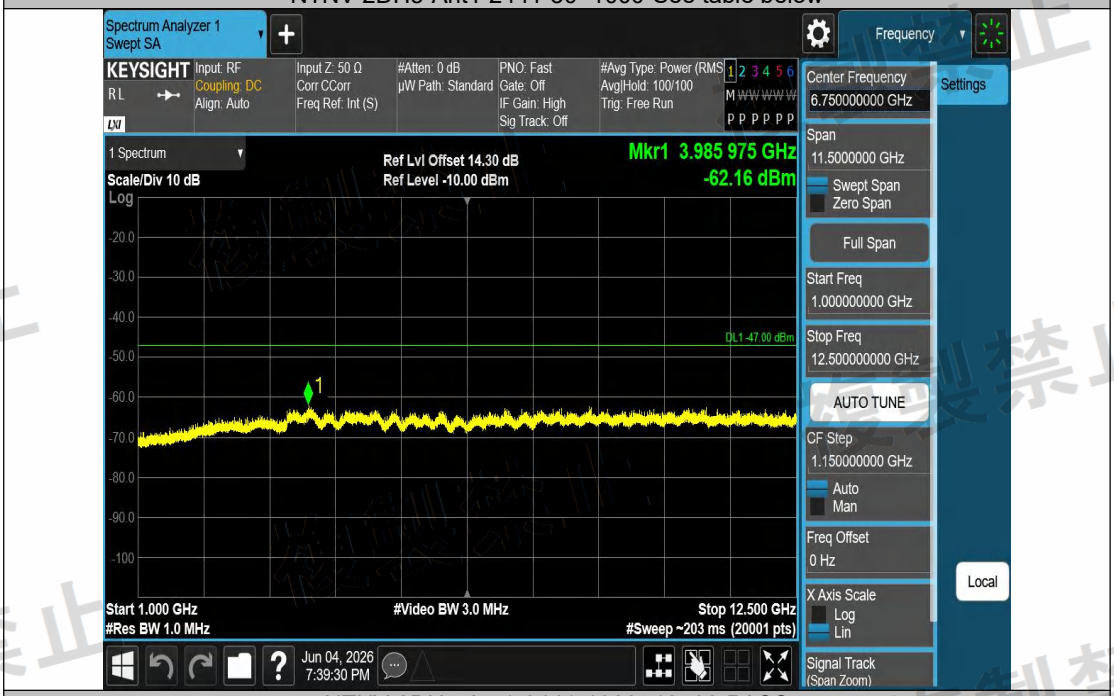
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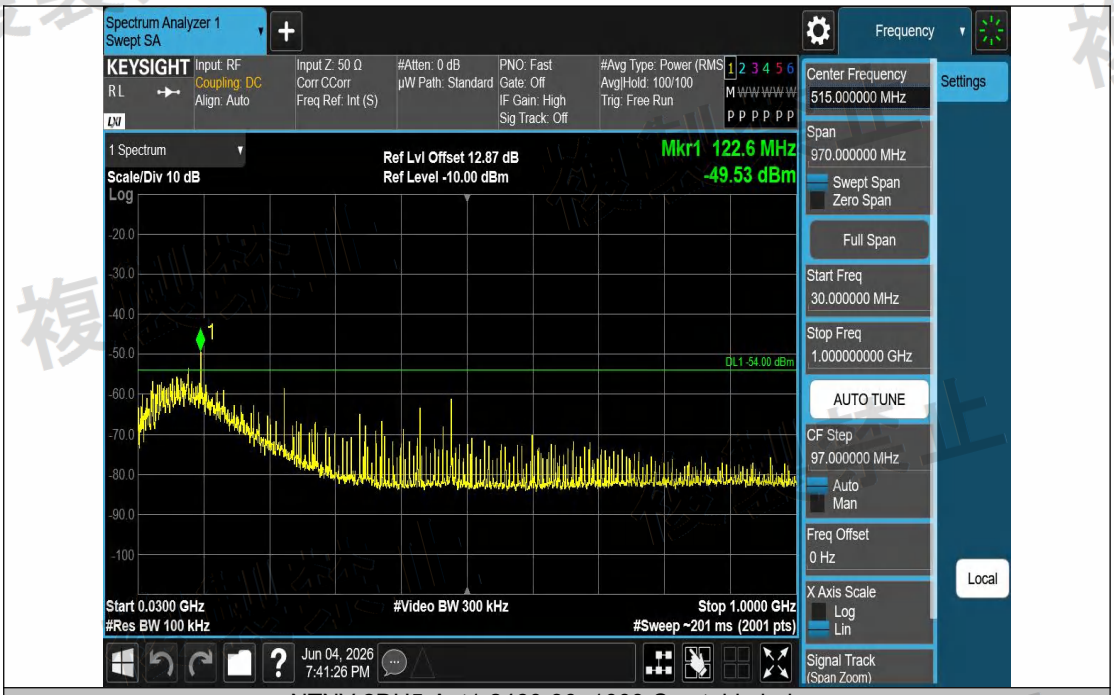
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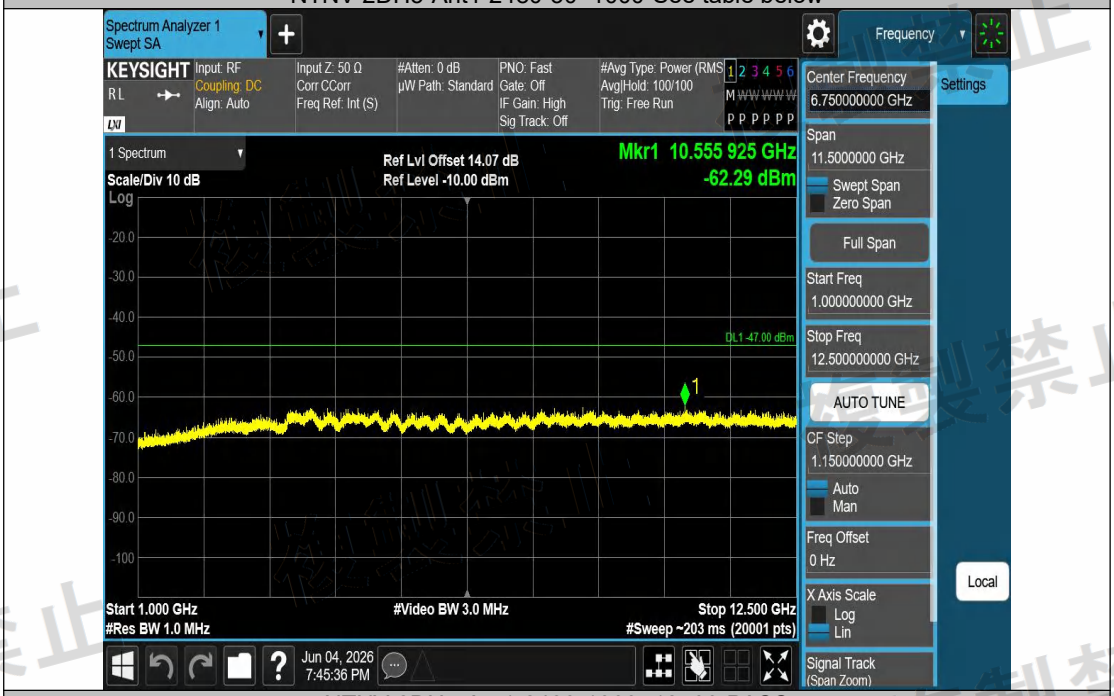
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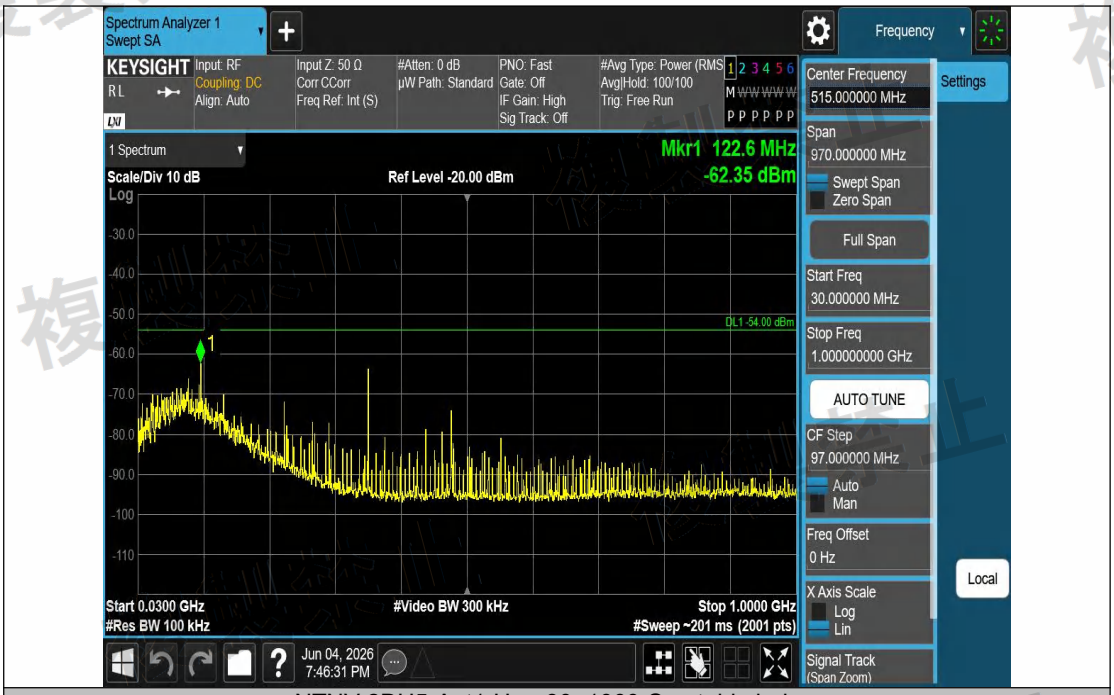
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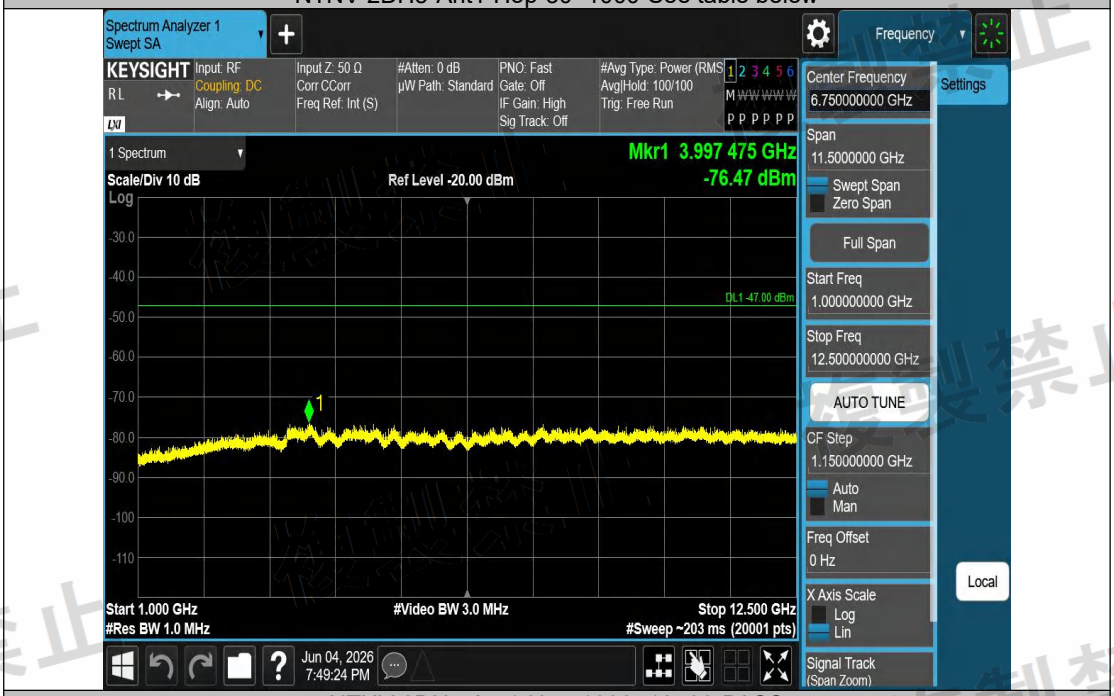
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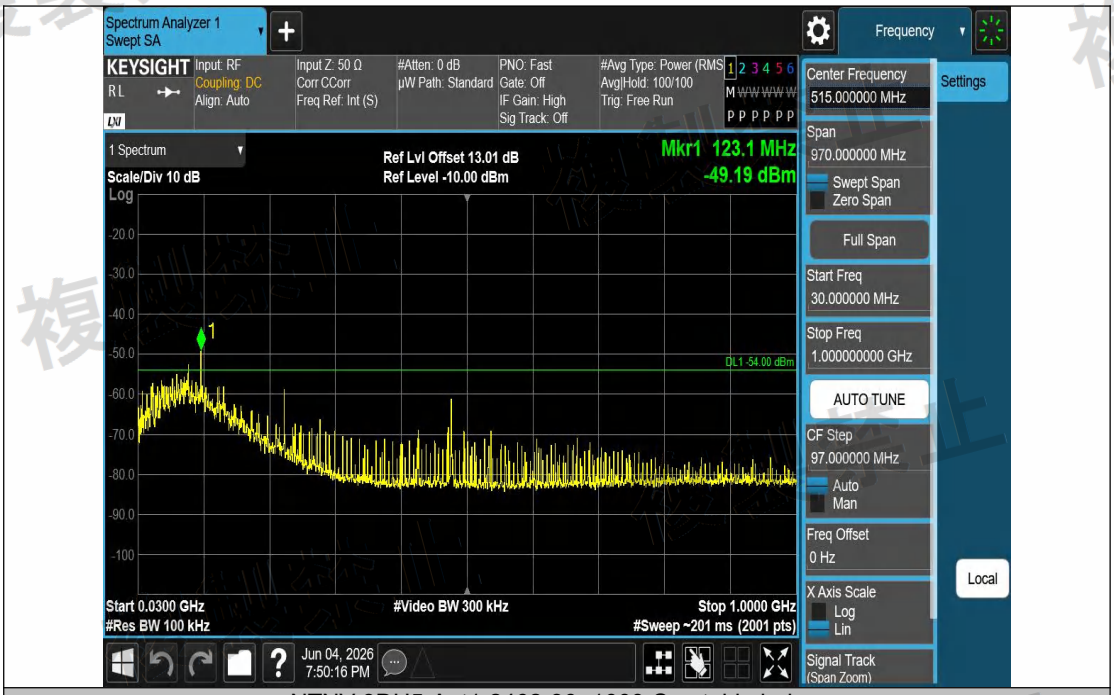
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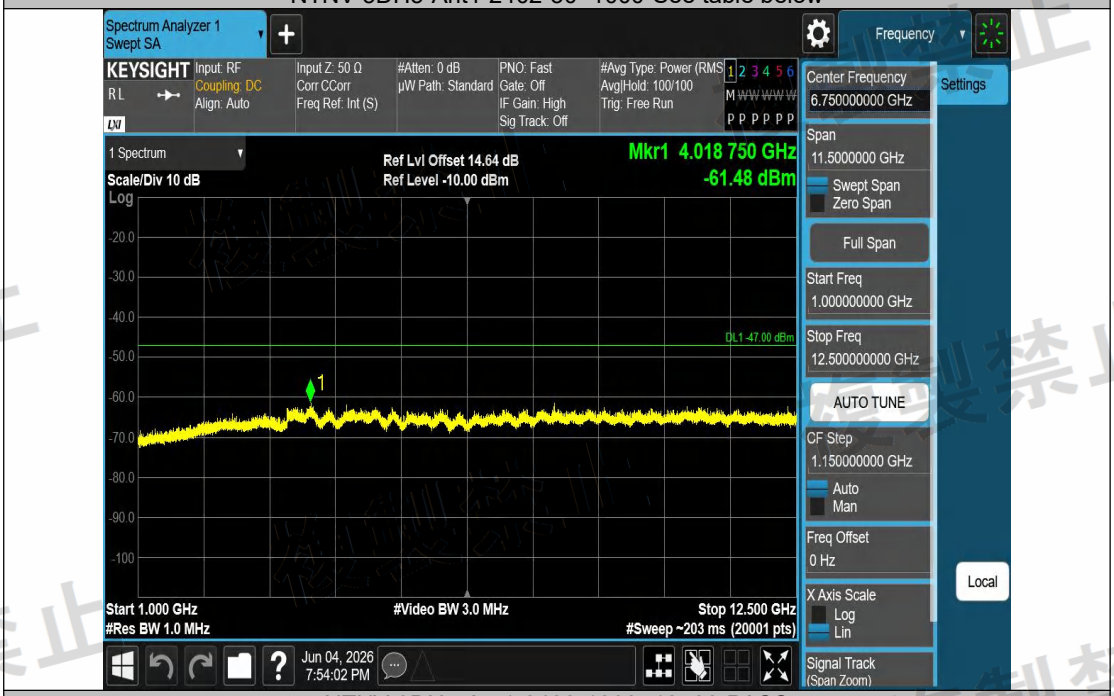
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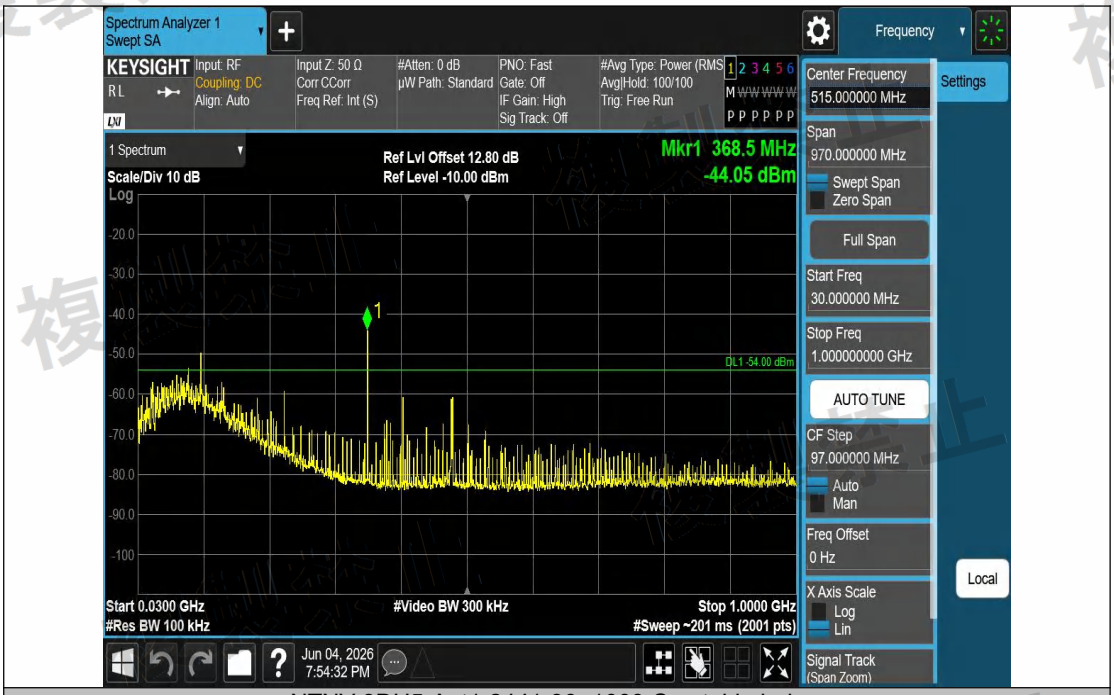
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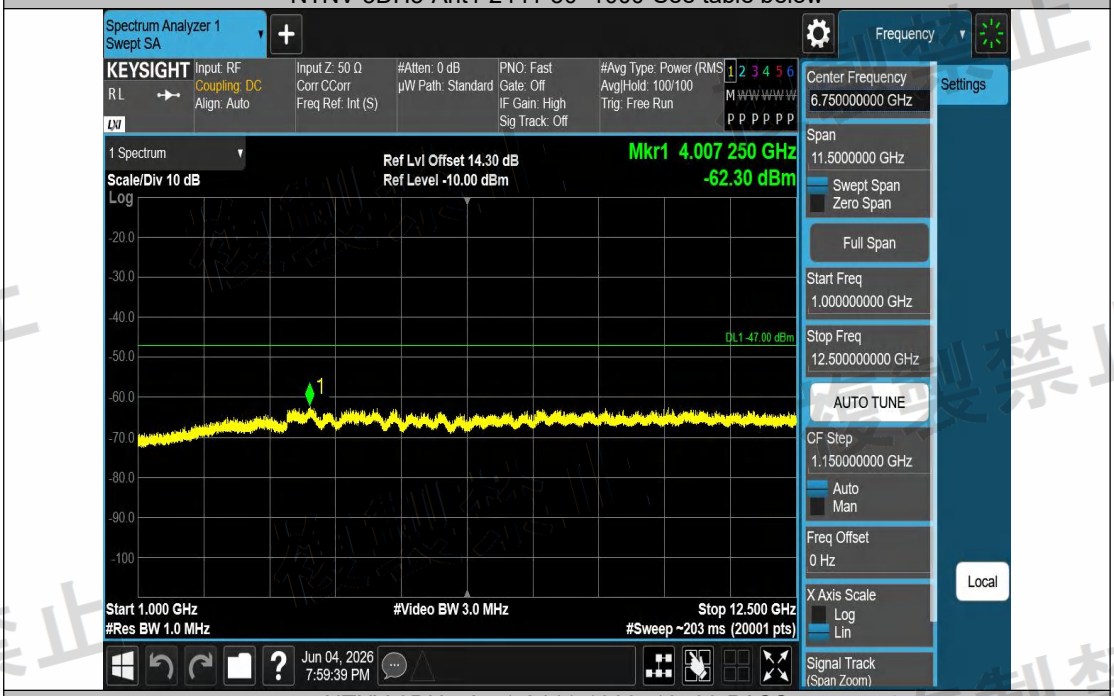
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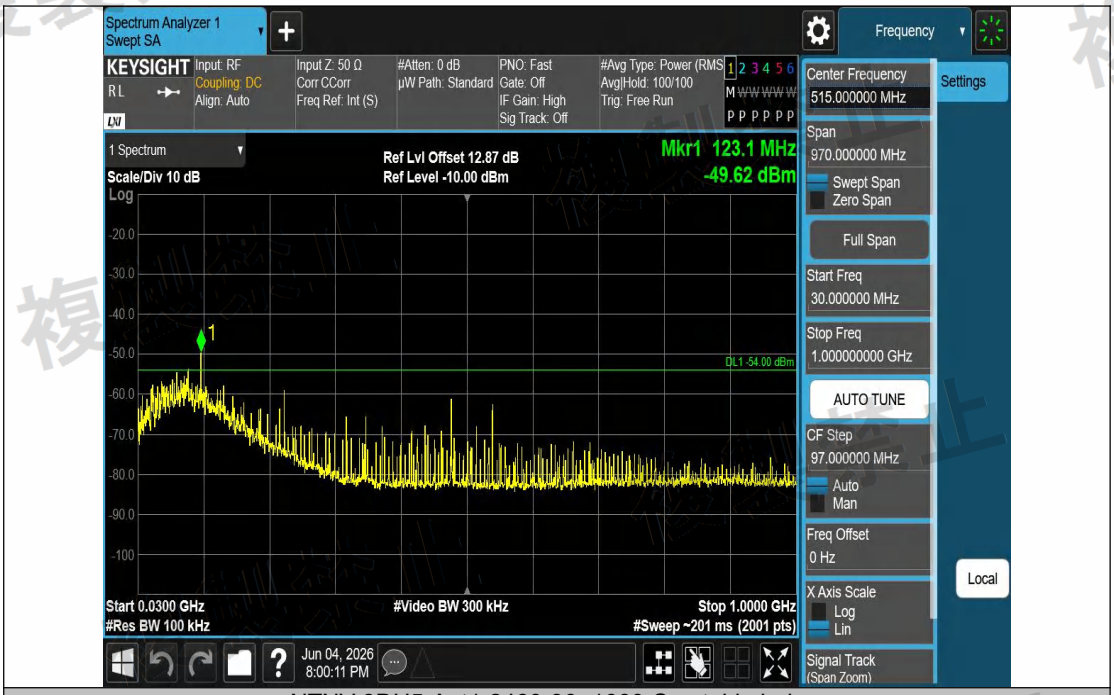
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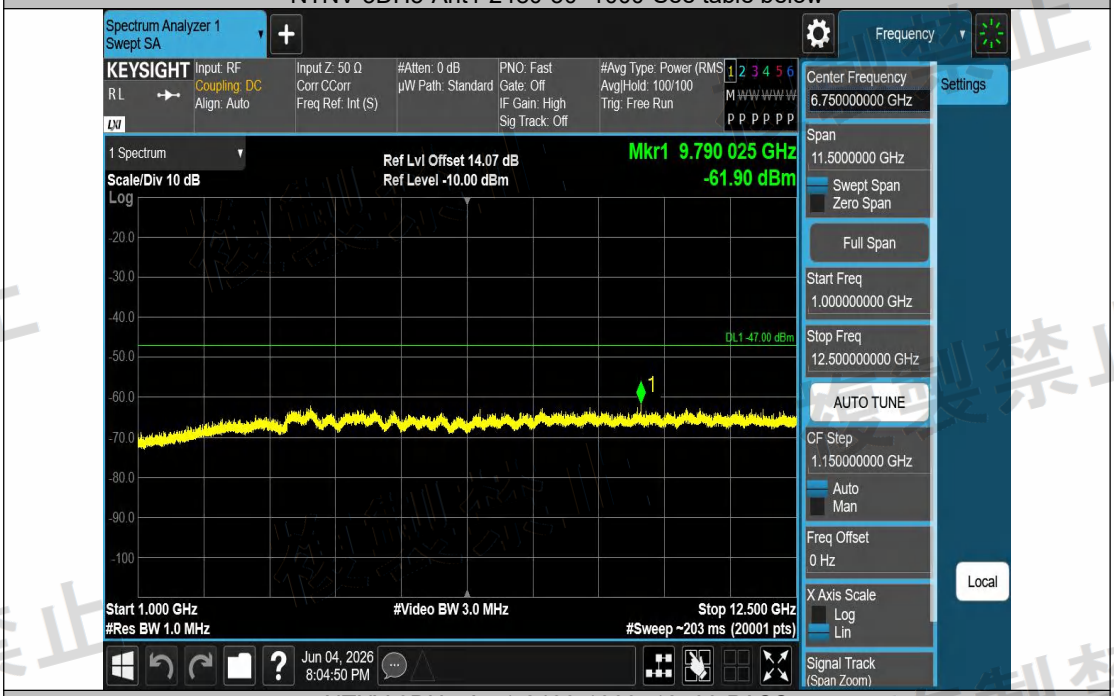
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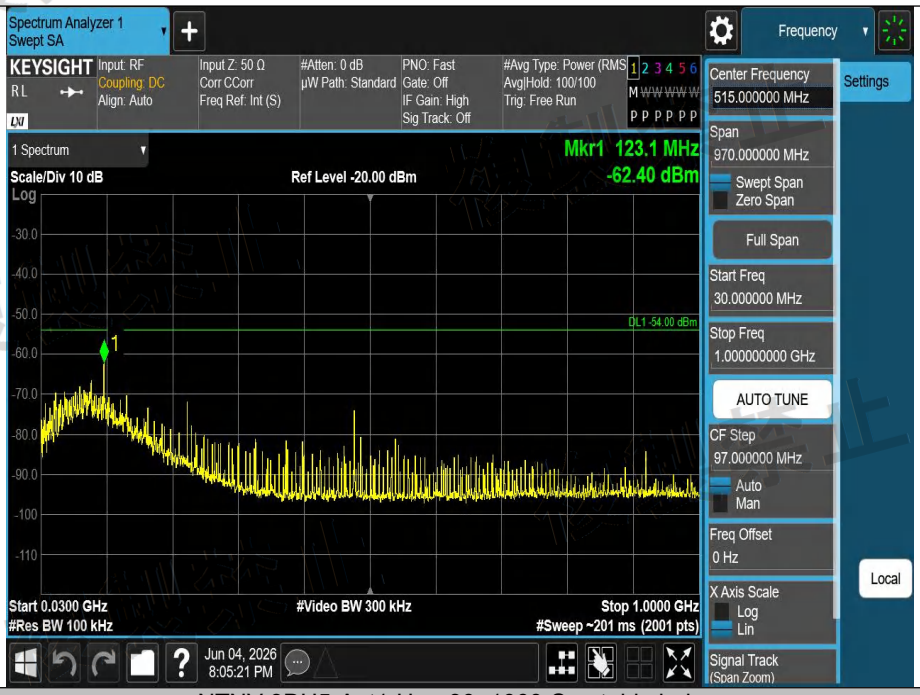
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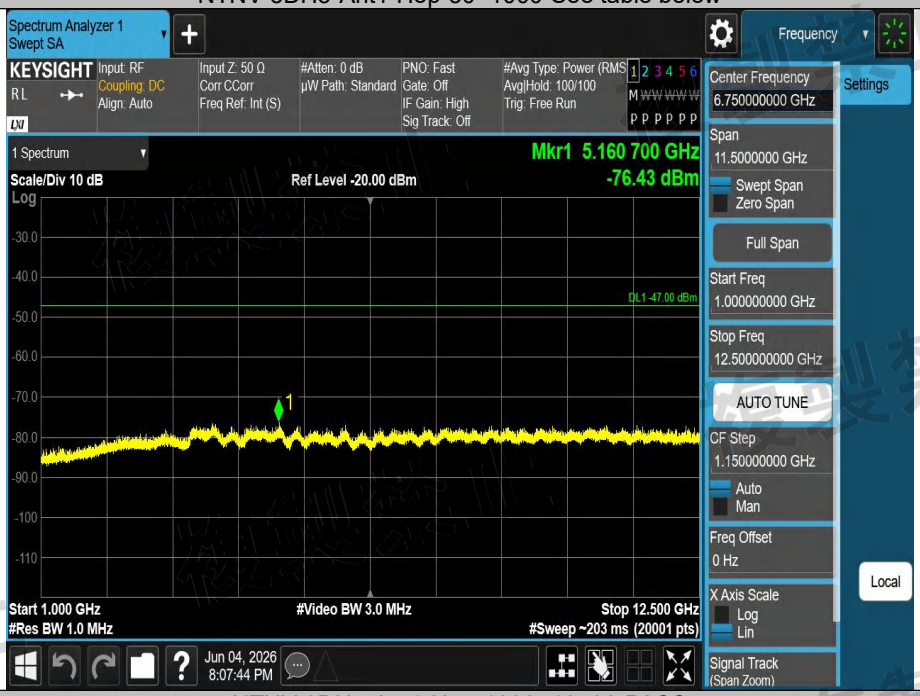
NTNV-3DH5-Ant1-2480-30~1000-See table below



NTNV-3DH5-Ant1-2480-1000~12500-PASS



NTNV-3DH5-Ant1-Hop-30~1000-See table below

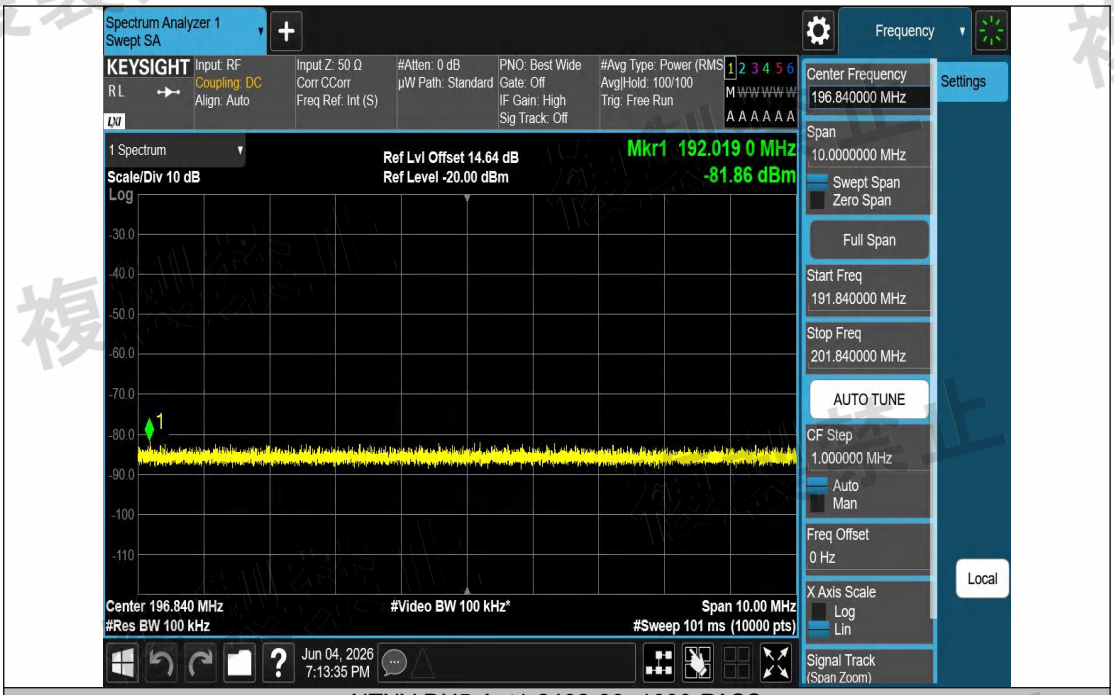


NTNV-3DH5-Ant1-Hop-1000~12500-PASS



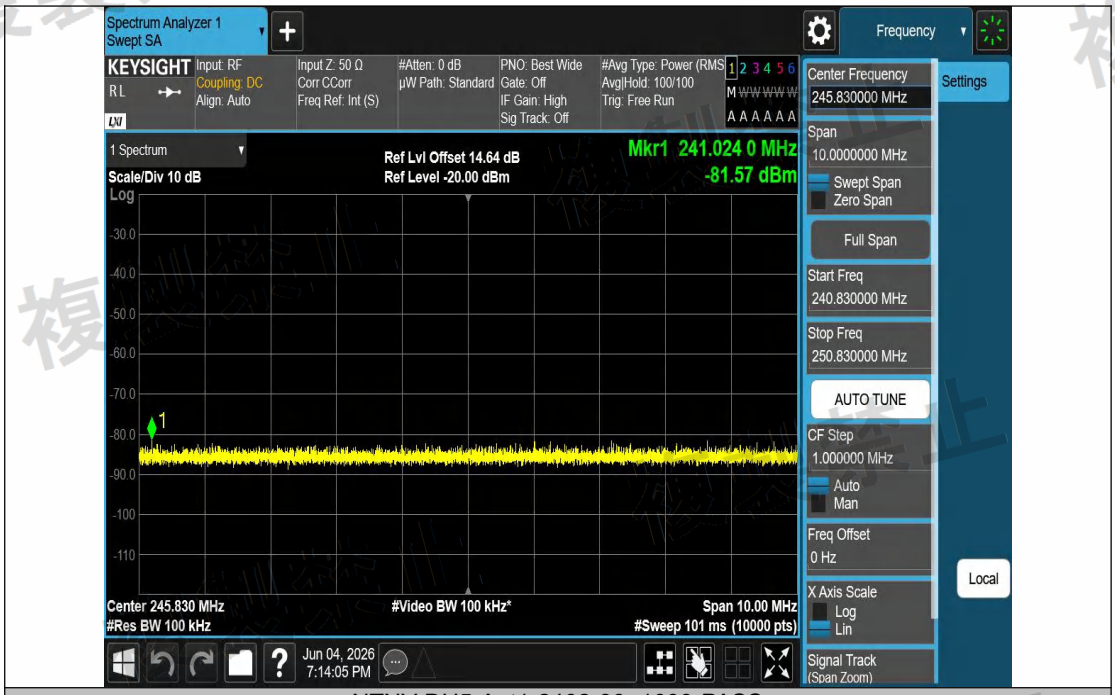
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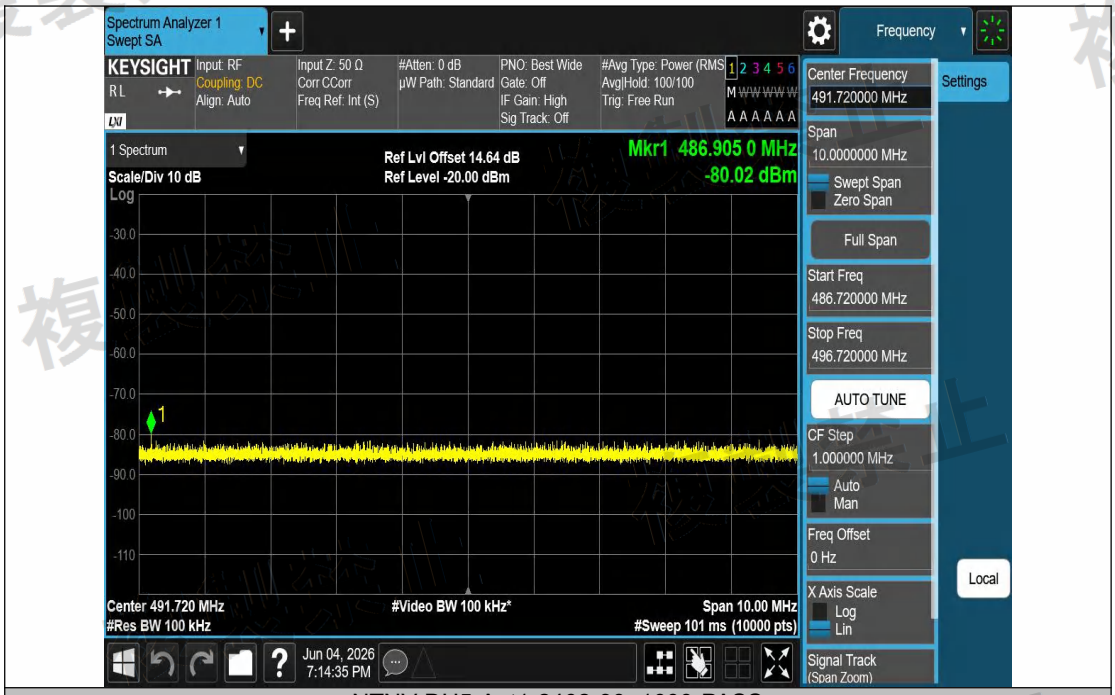
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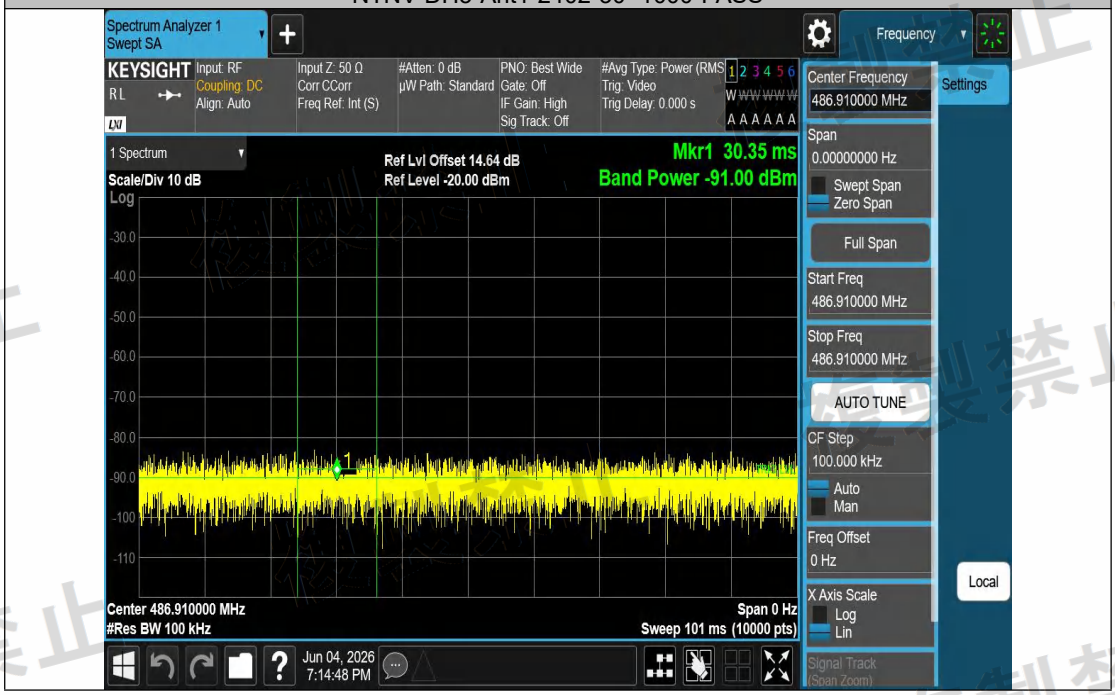


NTNV-DH5-Ant1-2402-30~1000-PASS





NTNV-DH5-Ant1-2402-30~1000-PASS





NTNV-DH5-Ant1-2441-30~1000-PASS

