



JAPAN TEST REPORT

Report No:FCS202507400W01

Issued for

Applicant:	Shenzhen AoMeiRui Lighting Co.,Ltd
Address:	A231, Building 1, Hongpai Industrial Park, QiaotouCommunity,Fuhai Street, Bao'an District, Shenzhen City,GuangdongProvince, China
Product Name:	Wireless Lavalier Microphone
Brand Name:	ZealSound/Haomuren
Test Model Name:	M6
Series Model:	m6,m6c,m6s,m6s-ww-jp,m6c-ww-jp,m6s-ww-2jp, m6c-ww-2jp,m6-jp-ww
Test Standard:	Article 2 Paragraph 1 of Item 19, annex 43 and annex 1
Issued By: Flux Compliance Service Laboratory Add: Room 105 Floor Bao hao Technology Building 1 NO.15 Gong ye West Road Hi-Tech Industrial, Song shan lake Dongguan Tel: 769-27280901 Fax:769-27280901 http://www.FCS-lab.com	



TEST RESULT CERTIFICATION

Applicant's Name.....: Shenzhen AoMeiRui Lighting Co.,Ltd
Address.....: A231, Building 1, Hongpai Industrial Park,
QiaotouCommunity,Fuhai Street, Bao'an District, Shenzhen
City,GuangdongProvince, China
Manufacture's Name.....: Shenzhen AoMeiRui Lighting Co.,Ltd
Address.....: A231, Building 1, Hongpai Industrial Park,
QiaotouCommunity,Fuhai Street, Bao'an District, Shenzhen
City,GuangdongProvince, China

Test Specification:

Standard.....: Article 2 Paragraph 1 of Item 19, annex 43 and annex 1

Product Description

Product Name.....: Wireless Lavalier Microphone
Trade Mark.....: ZealSound/Haomuren
Test Model Name.....: M6
Series Model.....: See the first page of the report

This device described above has been tested by FCS, the test results show that the equipment under test (EUT) is in compliance with Article 2 Paragraph 1 of Item 19, annex 43 and annex 1 requirements. And it is applicable only to the tested sample identified in the report.

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Testing.....:

Date (s) of performance of tests.....: July 24,2025~August 15, 2025

Date of Issue.....: August 15, 2025

Test Result.....: Pass

Tested by

Carl Wu

(Carl Wu)

Reviewed by

Mike Tan

(Mike Tan)

Approved by

Jack Wang

(Jack Wang)





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Revision History

Rev.	Issue Date	Report NO.	Effect Page	Contents
00	August 15, 2025	FCS202507400W01	N/A	Initial Issue

1. SUMMARY OF TEST RESULTS

Rule Section	Description of Test	Result	judgement
3.2(4)	Frequency Error	--	PASS
3.2(7),(8)	Occupied Bandwidth (99%) Spread-spectrum Bandwidth (90%)	--	PASS
3.2(6)	Unwanted Emission Intensity	--	PASS
3.2(3)	Power Error	--	PASS
3.3	Limitation of Collateral Emission of Receiver	--	PASS
3.6	Transmission Radiation power	--	PASS
3.2	Transmission Radiation Angle Width (3DB Beamwidth)	N/A	N/A
3.4	Radio Interference Prevention Capability	--	PASS
3.2(9)	Spreading Factor	--	Justed reported
Note(2)	Carrier Sense Capability	--	N/A
3.7	Construction Protection Confirmation	--	PASS
3.2(11)	Dwell Time	--	PASS

NOTE:

(1) N/A means test is not applicable in this Test Report

(2) This project is not suitable for FHSS technology.

(3) Section 4.17 Radio Equipment of Radio Stations of a Low-Power Data Communication System (Article 49.20)



1.1 TEST FACTORY

Company Name:	Flux Compliance Service Laboratory
Address:	Room 105 Floor Bao hao Technology Building 1 NO.15 Gong ye West Road Hi-Tech Industrial, Song shan lake Dongguan
Telephone:	+86-769-27280901
Fax:	+86-769-27280901
FCC Test Firm Registration Number: 514908 Designation number: CN0127 A2LA accreditation number: 5545.01	

1.2 MEASUREMENT UNCERTAINTY

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

No.	Item	Uncertainty
1	RF output power, conducted	$\pm 0.71\text{dB}$
2	Unwanted Emissions, conducted	$\pm 2.98\text{ dB}$
3	Conducted Emission (9KHz-150KHz)	$\pm 4.13\text{ dB}$
4	Conducted Emission (150KHz-30MHz)	$\pm 4.74\text{ dB}$
5	All emissions,radiated(<1G) 30MHz-1000MHz	$\pm 3.2\text{ dB}$
6	All emissions,radiated (1GHz -18GHz)	$\pm 3.66\text{ dB}$
7	All emissions,radiated (18GHz -40GHz)	$\pm 4.31\text{ dB}$
8	Frequency Error	$\pm 2\text{ppm}$
9	Occupied bandwidth	4(%)

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF THE EUT

Equipment	Wireless Lavalier Microphone	
Band Name	ZealSound/Haomuren	
Model Name	M6	
Series Model	See the first page of the report	
Model Difference	PCB board, structure and internal of these model(s) are the same, only differing in appearance and color. So no additional models were tested	
Product Description	Operation Frequency:	2402~2480 MHz
	Modulation Technology:	☒ GFSK ☒ Pi/4 DQPSK ☒ 8DPSK
	Bluetooth version	BT V5.4
	Number Of Channel:	☒ 79 CH ☒ EDR ☒ BR
	Data rate:	1Mbps
	Antenna Type	Chip Antenna
	Antenna Gain(Peak):	2.25dBi
Channel List	Please refer to the Note 2.	
Power supply	INPUT:DC 5V, 1A	
Battery	Charging Compartment Battery Capacity:3.7V,250mAh,0.925Wh	
Hardware version	V1.0	
software version	V1.0	

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

2. Channel List

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2402MHz	21	2422MHz	41	2442MHz	61	2462MHz
2	2403MHz	22	2423MHz	42	2443MHz	62	2463MHz
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
19	2420MHz	39	2440MHz	59	2460MHz	79	2480MHz
20	2421MHz	40	2441MHz	60	2461MHz		

3. Table for Filed Antenna

Ant.	Antenna Brand	Antenna Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
1	N/A	N/A	Chip Antenna	N/A	2.25	Antenna

2.2 DESCRIPTION OF THE TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	TX -GFSK
Mode 2	TX-Pi/4 DQPSK
Mode 3	TX-8DPSK
Mode 4	unmodulated carrier
Mode 5	RX

Note:

- 1.All modes were tested and only the worst case scenario is shown in the report
2. The data of both earphones were tested. The left earphone data was the worst. All tests were performed with the left earphone.

2.3 TEST CONDITIONS

The BT module was tested while in a continuous transmitter/receiver mode.

The EUT was tuned to a low, middle, and high channel for all tests. The voltage fluctuation of the RF module section of the product does not exceed 1%, so only the data under normal conditions needs to be tested.

EUT and Module Power tables				
EUT Setup Value (Vdc)		Normal	Hight(+10%)	Low(-10%)
		5V	5.5V	4.5V
Module Vdd Power		Normal	Hight	Low
		3.3	3.3	3.3
Measurement Value (Vdc)		3.3	3.3	3.3
Voltage error (%)	Result	Ref. level	0	0
	Limit	----	±1	
Judgment		----	Pass	Pass

2.4 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product

Run software name: FCC_assist_1.0.2.2

2.5 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Mode 1:



2.6 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

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

Item	Equipment	Mfr/Brand	Model/Type No.	Serial No.	Note
1	Notebook	Lenovo	ThinkPad E495	N/A	N/A

Item	Shielded Type	Ferrite Core	Length	Note

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.
- (3) “YES” is means “shielded” “with core”; “NO” is means “unshielded” “without core”.

2.7 EQUIPMENTS LIST FOR ALL TEST ITEMS

Test Equipment

Radiation Test equipment

Kind of Equipment	Manufacturer	Type No.	Company No.	Last calibration	Calibrated until
EMI Test Receiver	R&S	ESRP 3	FCS-E001	2024.08.28	2025.08.27
Signal Analyzer	R&S	FSV40-N	FCS-E012	2024.08.28	2025.08.27
Active loop Antenna	ZHINAN	ZN30900C	FCS-E013	2024.08.28	2025.08.27
Bilog Antenna	SCHWARZBECK	VULB 9168	FCS-E002	2024.08.28	2025.08.27
Horn Antenna	SCHWARZBECK	BBHA 9120D	FCS-E003	2024.08.28	2025.08.27
SHF-EHF Horn Antenna (18G-40GHz)	A-INFO	LB-180400-KF	FCS-E018	2024.08.28	2025.08.27
Pre-Amplifier(0.1M-3G Hz)	EMCI	EM330N	FCS-E004	2024.08.28	2025.08.27
Pre-Amplifier (1G-18GHz)	N/A	TSAMP-0518SE	FCS-E014	2024.08.28	2025.08.27
Pre-Amplifier (18G-40GHz)	TERA-MW	TRLA-0400	FCS-E019	2024.08.28	2025.08.27
Temperature & Humidity	HTC-1	victor	FCS-E005	2024.08.28	2025.08.27

Conduction Test equipment

Kind of Equipment	Manufacturer	Type No.	Company No.	Last calibration	Calibrated until
EMI Test Receiver	R&S	ESPI	FCS-E020	2024.08.28	2025.08.27
LISN	R&S	ENV216	FCS-E007	2024.08.28	2025.08.27
LISN	ETS	3810/2NM	FCS-E009	2024.08.28	2025.08.27
Temperature & Humidity	HTC-1	victor	FCS-E008	2024.08.28	2025.08.27

RF Connected Test

Kind of Equipment	Manufacturer	Type No.	Company No.	Last calibration	Calibrated until
MXA SIGNAL Analyzer	Keysight	N9020A	FCS-E015	2024.08.28	2025.08.27
Spectrum Analyzer	Agilent	E4447A	MY50180039	2024.08.28	2025.08.27
Spectrum Analyzer	R&S	FSV-40	101499	2024.08.28	2025.08.27

Remark:

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

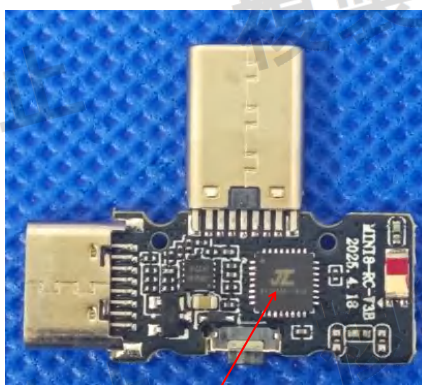
From JRL Article 24-2, paragraph 4, Item 2

Test Equipment Calibration

All of the test equipment is effective use and calibration certification institution, GRGT, the address is 163 tianhe district in huangpu road xiping cloud road .Guangzhou,China

3. CONSTRUCTION PROTECTION CONFIRMATION

*Our products apply for Japanese radio frequency (rf) certification, The high-frequency section and modulation section use SMT technology, not easy to change.
The chip has 24 chip pins and a pin distance of 1.5 mm.*



4. FREQUENCY ERROR

4.1 LIMIT

Item	Limits
Frequency Error	$\pm 50\text{ppm}$

4.2 TEST PROCEDURES

The following table is the setting of Spectrum Analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
RB / VB	10KHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

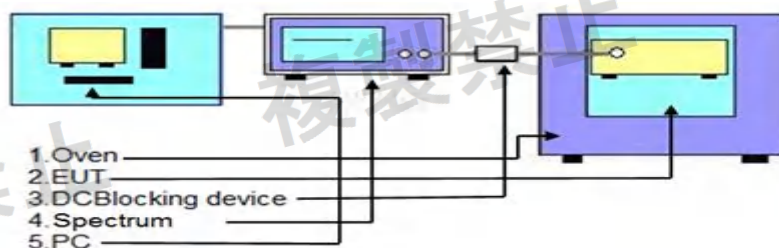
(1) In the case of unmodulated signal (continuous or continuous burst), measure the frequency directly by a frequency meter.

(2) In the case of burst waves, the measurement shall be done for enough time in order to obtain the enough measuring accuracy, and the average of the measured values becomes the final value.

(3) In the case of a test mode with a specific frequency spectrum, measure the frequency of the specific spectrum by a spectrum analyzer.

(4) In the cases above, if the frequency equivalent to the test frequency is not directly measured in principle, it shall be obtained by necessary calculation.

4.3 TEST SETUP





4.4 TEST RESULT

Temperature:	25°C	Humidity:	55 % RH
Pressure	101kPa		

GFSK

Test Conditions		Channel	F _c	Tolerance	Limit
		MHz	MHz	ppm	(ppm)
V nom (V)	DC 5V	2402	2402.005	2.08	±50
		2441	2441.006	2.46	±50
		2480	2480.007	2.82	±50

NTNV_DH5_Ant1_2402





NTNV_DH5_Ant1_2441



NTNV_DH5_Ant1_2480



5. ANTENNA POWER

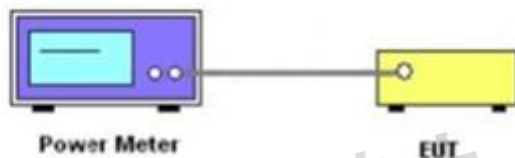
5.1 LIMIT

Item	Limits
Antenna Power Density	$\leq 3\text{mW/MHz}$ (FH form 2400 – 2483.5 MHz) $\leq 10\text{mW/MHz}$ (OFDM,DS from 2400~2483.5MHz,802.11b/g/n HT20) $\leq 5\text{mW/MHz}$ (OFDM,DS from 2400~2483.5MHz,802.11n HT40) $\leq 10\text{mW}$ (Other from 2400~2483.5MHz)
Power Error	+20%(Base on manufacturer declare power)

5.2 TEST PROCEDURE

1. EUT turn to test frequency channel and keep continuous transmitting
2. Reading the output power from the Power meter as P_{EUT}

5.3 TEST SETUP



5.3 TEST DEVIATION

There is no deviation with the original standard.



5.4 TEST RESULT

Temperature:	25°C	Humidity:	55 % RH
Pressure	101kPa		

Test Condition	ANT	Test Mode	Freq. (MHz)	Total FHSS power (dBm)	Result (mW)	Spread bandwidth (MHz)	Result (mW/MHz)	Limit (mW/MHz)	declared Antenna Power (mW/MHz)	Tolerance (%)	Verdict
NTNV	ANT	DH5	Hop	2.56	1.80	70.107	0.0257	≤3	0.05	-48.6	PASS
		2DH5	Hop	2.62	1.83	70.207	0.0261	≤3	0.05	-47.8	PASS
		3DH5	Hop	2.78	1.90	70.097	0.0271	≤3	0.05	-45.8	PASS
Note: Result [mW/MHz] = Total FHSS power [mW] / Spread bandwidth [MHz] Tolerance +20%(Base on manufacturer declare Antenna Power Density)											



6. EIRP POWER

6.1 LIMIT

Item	Limits
Radiation power EIRP	FH form 2400 – 2483.5 MHz ,EIRP $\leq$ 6.91dBm/MHz CCK/OFDM/DBPSK (2400~2483.5MHz) OFDM or DS other than (802.11b/g/n HT20) EIRP $\leq$ 12.14 dBm/MHz OFDM or DS other than (802.11n HT40) EIRP $\leq$ 9.13dBm/MHz Other from 2400~2483.5MHz: 12.14 dBm or less

6.2 TEST RESULT

Temperature:	25°C	Humidity:	55 % RH
Pressure	101kPa		

Test Condition	Test Mode	Antenna Power (mW/MHz)	Antenna Power (dBm/MHz)	Gain(dBi)	EIRP output (dBm/MHz)	Limit
NTNV	DH5	0.0257	-15.90	2.25	-13.65	6.91
	2DH5	0.0261	-15.83	2.25	-13.58	6.91
	3DH5	0.0271	-15.67	2.25	-13.42	6.91

7. OCCUPIED BANDWITH (99%)&SPREAD BANDWITH (90%)

7.1 LIMIT

Item	Limits
Occupied Band Width:	$\leq 83.5\text{MHz}$ (FH;FH+DS;FH+OFDM) $\leq 26\text{MHz}$ (Others)

7.2 TEST PROCEDURE

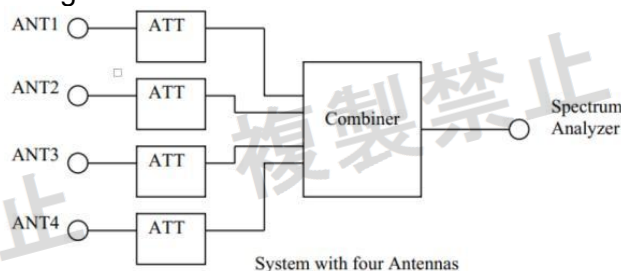
Center Frequency:	Test frequency
Span:	2 - 3.5 times the technical standard
RBW:	Within 3% of the technical standard
VBW:	Same as RBW
Sweep time:	Auto
Sweep data points:	1001 or greater
Detector mode:	Positive peak
Indication mode:	Max hold
BW setting:	99%(OCCUPIED BANDWITH) 90%(SPREAD BANDWITH)

(1) Measure the signal bandwidth using a spectrum analyzer.

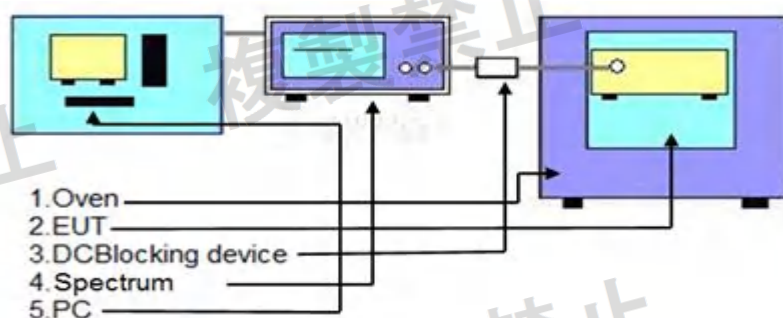
(2) For multiple antenna systems:

a) Each antenna shall be individually measured

b) If the measured occupied bandwidth for any antenna exceeds [(Occupied Bandwidth Limit) – 100kHz] then, in addition, the occupied bandwidth shall be measured with all antennas combined – see diagram below:



7.3 TEST SETUP



7.4 TEST DEVIATION

There is no deviation with the original standard.

7.5 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously transmitting mode.

**7.6 TEST RESULT**

Temperature:	25°C	Humidity:	55 % RH
Pressure	101kPa		

OCCUPIED BANDWITH

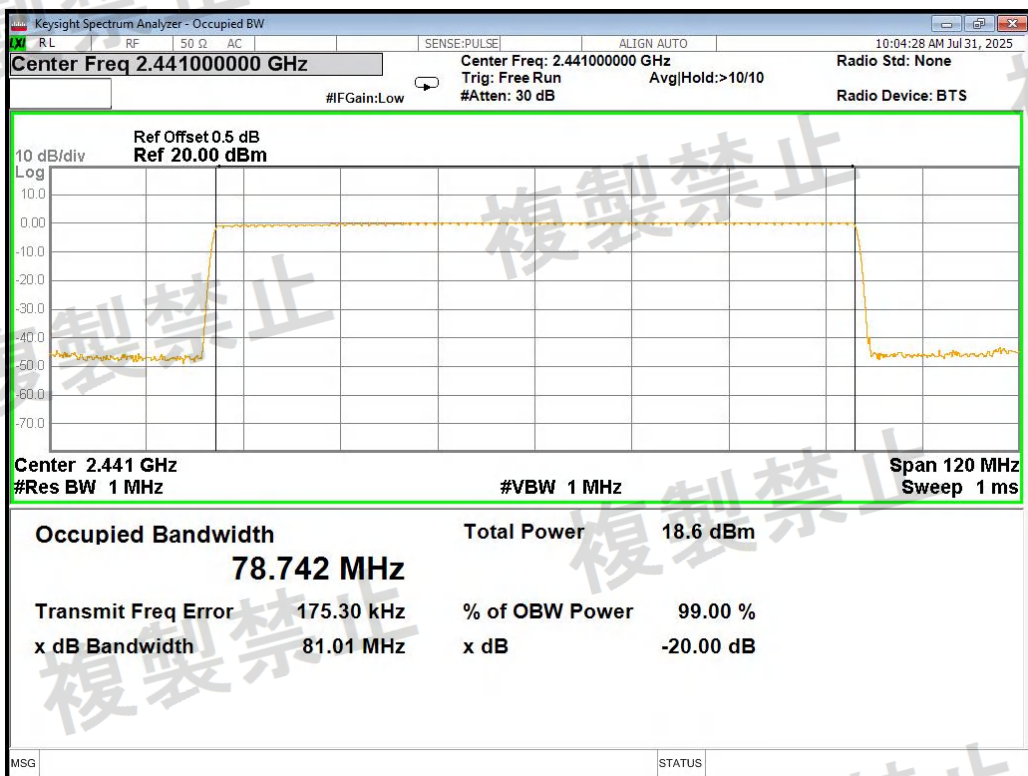
Test Condition	Test Mode	Freq. [MHz]	Result [MHz]	Limit [MHz]	Verdict
NTNV	DH5	Hop	78.742	≤83.5	PASS
	2DH5	Hop	78.852	≤83.5	PASS
	3DH5	Hop	78.741	≤83.5	PASS

SPREAD BANDWITH

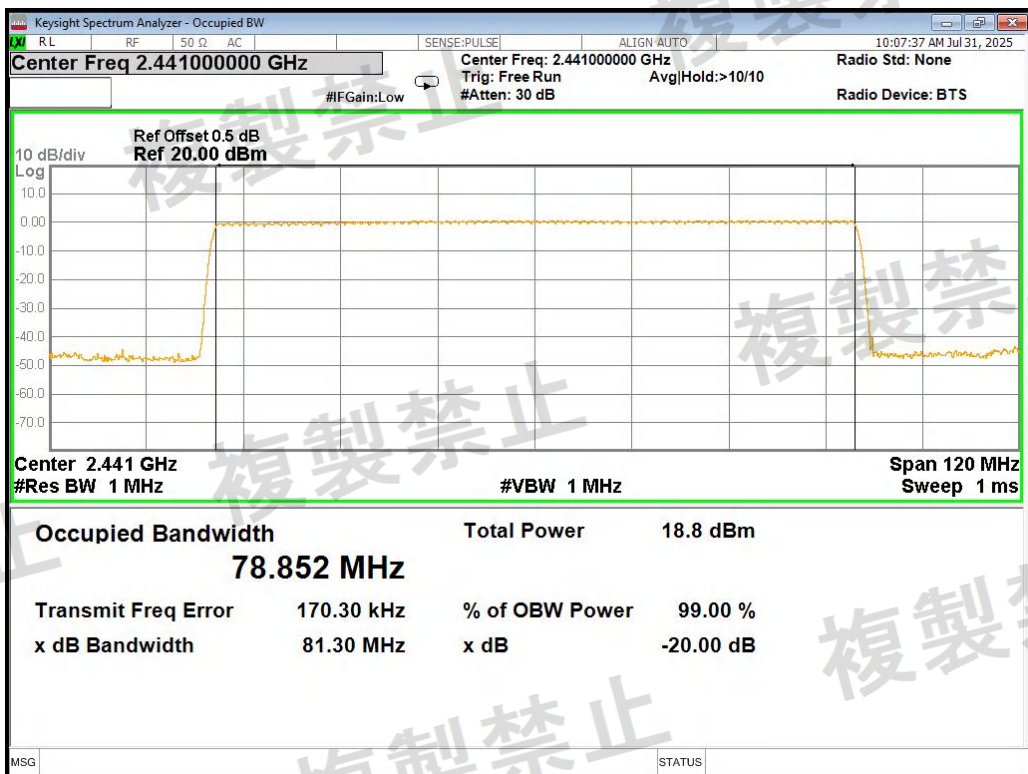
Test Condition	Test Mode	Freq. [MHz]	Result [MHz]
NTNV	DH5	Hop	70.107
	2DH5	Hop	70.207
	3DH5	Hop	70.097



OCCUPIED BANDWITH NTNV_DH5_Ant1_Hop

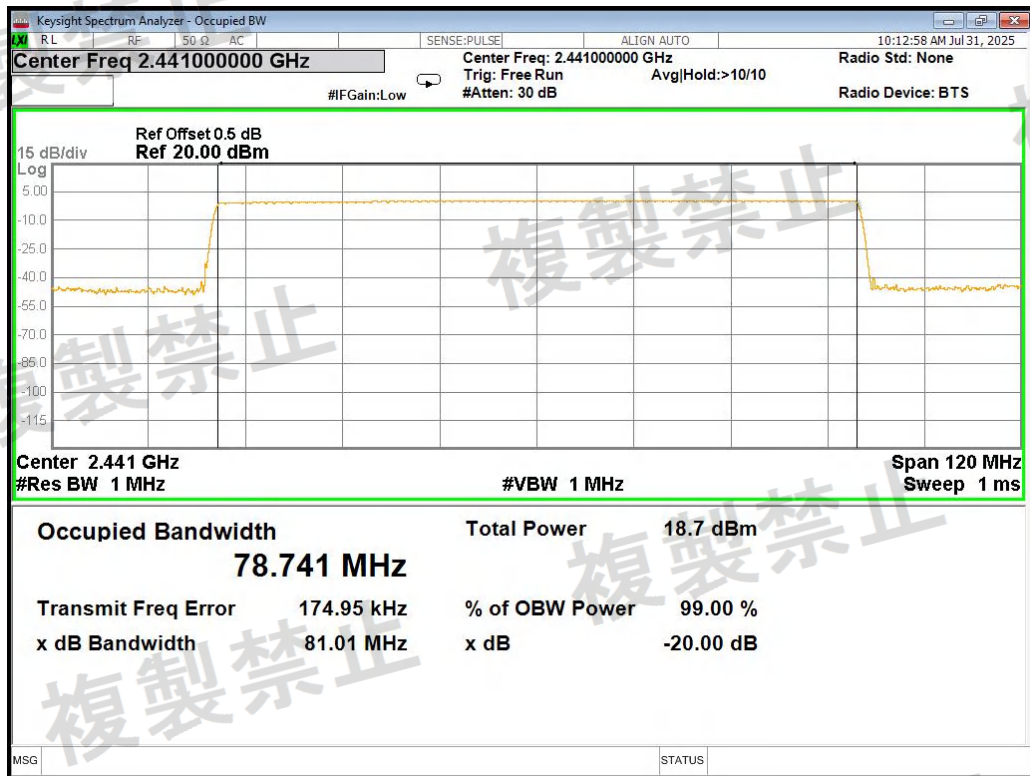
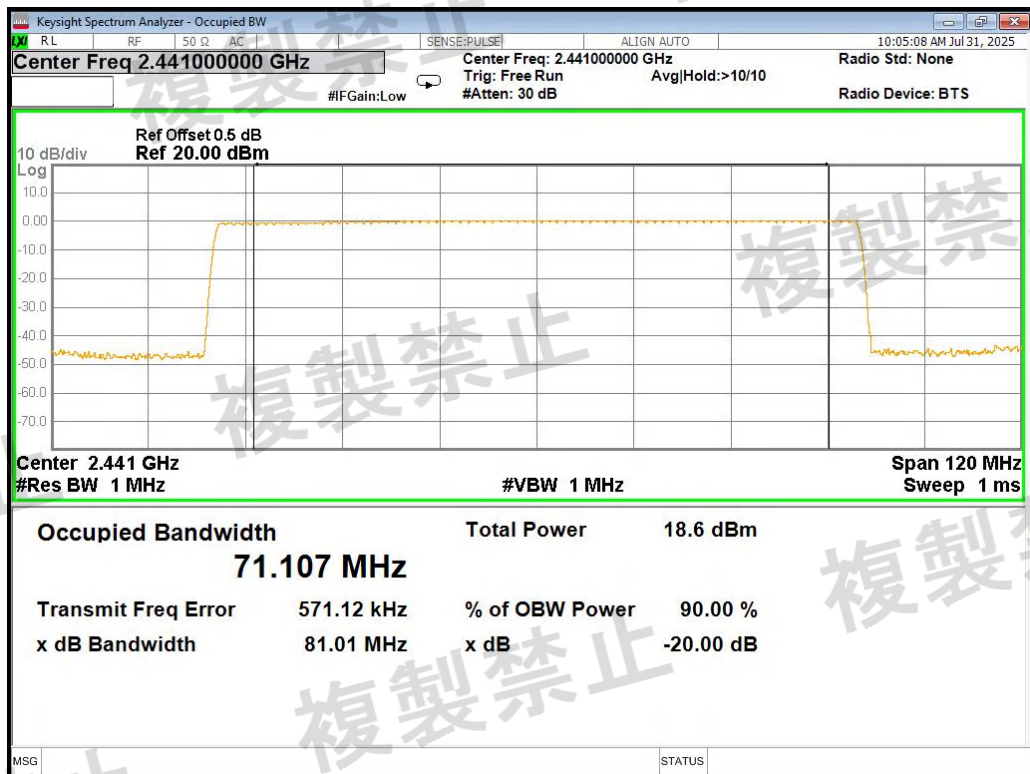


NTNV_2DH5_Ant1_Hop

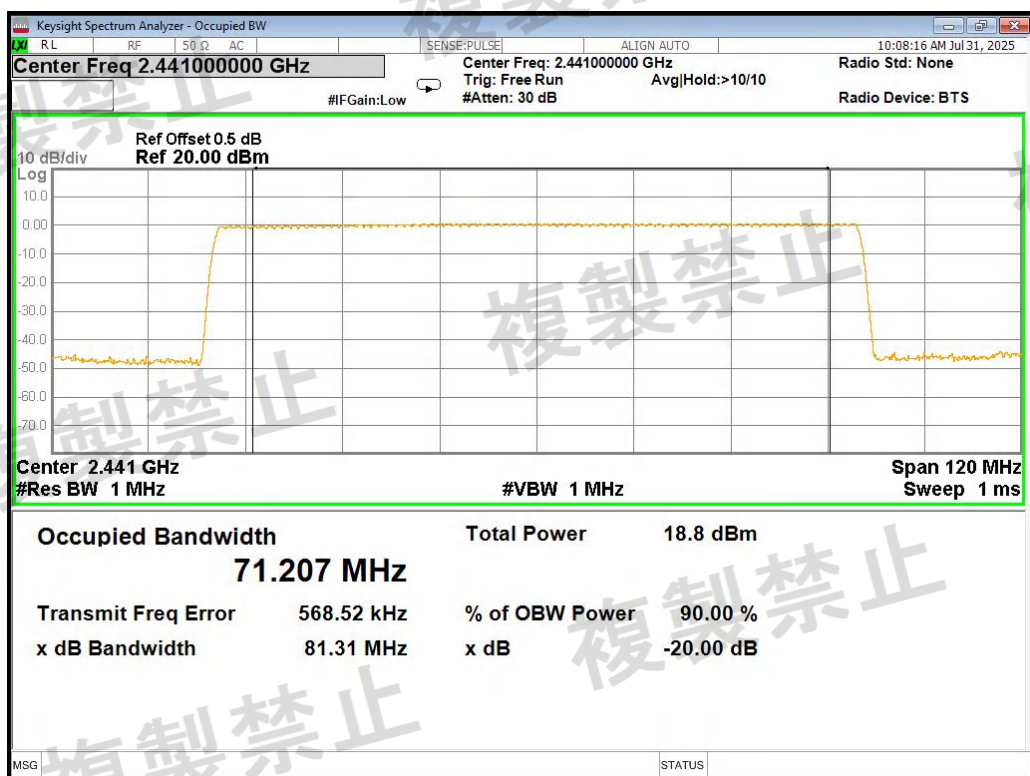




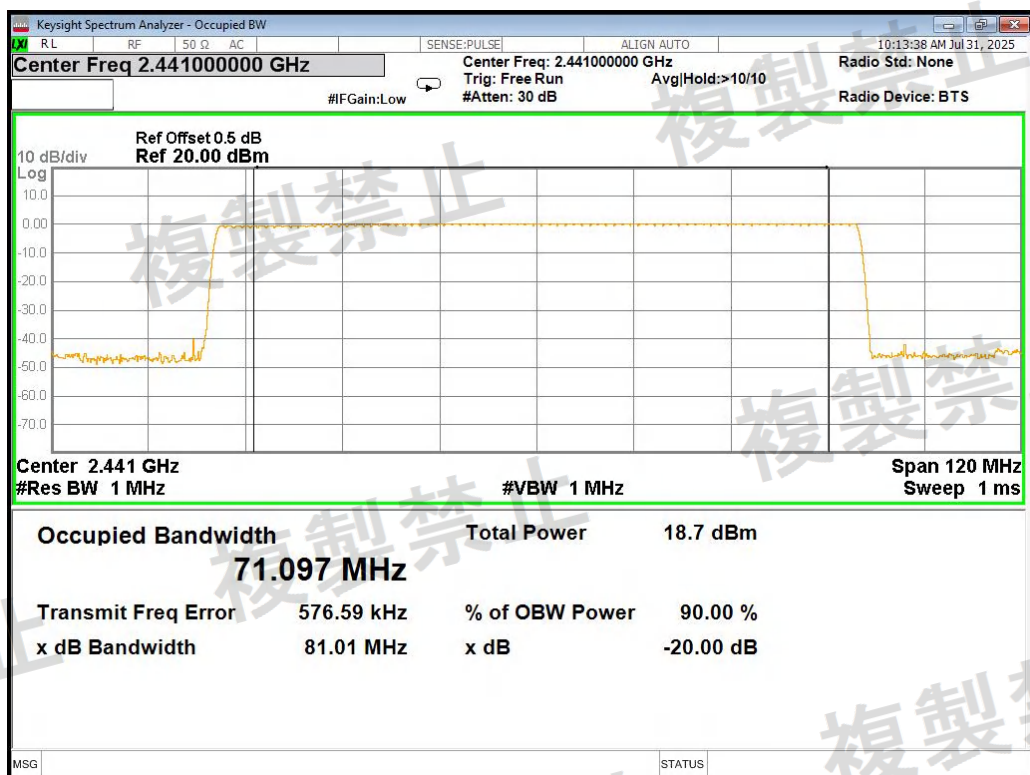
NTNV_3DH5_Ant1_Hop

SPREAD BANDWIDTH
NTNV_1DH5_Ant1_Hop

NTNV_2DH5_Ant1_Hop



NTNV_3DH5_Ant1_Hop



8. UNWANTED EMISSION INTENSITY MEASUREMENT

8.1 LIMIT

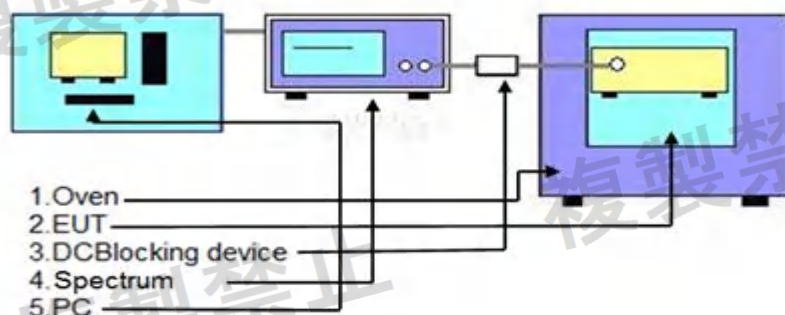
Item	Limits
TX Spurious Emission	$\leq 2.5 \mu\text{W}$ ($30\text{MHz} \leq f \leq 1000\text{MHz}$)
	$\leq 2.5 \mu\text{W}$ ($1000\text{MHz} < f \leq 2387\text{MHz}$)
	$\leq 25 \mu\text{W}$ ($2387\text{MHz} < f \leq 2400\text{MHz}$)
	$\leq 25 \mu\text{W}$ ($2483.5\text{MHz} \leq f < 2496.5\text{MHz}$)
	$\leq 2.5\mu\text{W}$ ($2496.5\text{MHz} \leq f < 12500\text{MHz}$)

8.2 TEST PROCEDURE

Spectrum Parameter	Setting
Attenuation	Auto
RB / VB	30-1000MHz: 1 MHz/3 MHz
	Above 1GHz: 1 MHz/3 MHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

- EUT have transmitted the maximum modulation signal and fixed channelize.
- Setting of SA is following as: Below 1GHz RB:1MHz / VB:3MHz
Above 1GHz RB:1MHz / VB:3MHz / AT: 10dB Ref: 0dBm / Sweep time: Auto
Sweep Mode: Continuous sweep / Detect mode: Positive peak
Trace mode: Max hold
- Setting of SA is following as 30MHz and stop frequency 1000MHz Then to mark peak reading value + cable loss shall be less than 0.25 μW .
- Setting of SA is following as 1000MHz and stop frequency 2387MHz Then to mark peak reading value + cable loss shall be less than 2.5 μW .
- SA adjusted to start frequency 2387MHz and stop frequency 2400MHz. Then to mark peak reading value + cable loss shall be less than 25 μW .
- SA adjusted to start frequency 2483.5MHz and stop frequency 2496.5MHz Then to mark peak reading value + cable loss shall be less than 25 μW
- SA adjusted to start frequency 2496.5MHz and stop frequency 12750MHz Then to mark peak reading value + cable loss shall be less than 2.5 μW
- Measure side band spurious as follows: For 2.4GHz band: 2374MHz~2400MHz and 2483.5MHz~2509.5MHz RBW = VBW = 30kHz, Result_Value = Measured_Value + 15.2 [dBm]
- If the Result_Value is over the requirement, take total sum of 1MHz band centered at the spur frequency like ACLP measurement as Result_Value.

8.3 TEST SETUP



8.4 TEST DEVIATION

There is no deviation with the original standard.

**8.5 TEST RESULT**

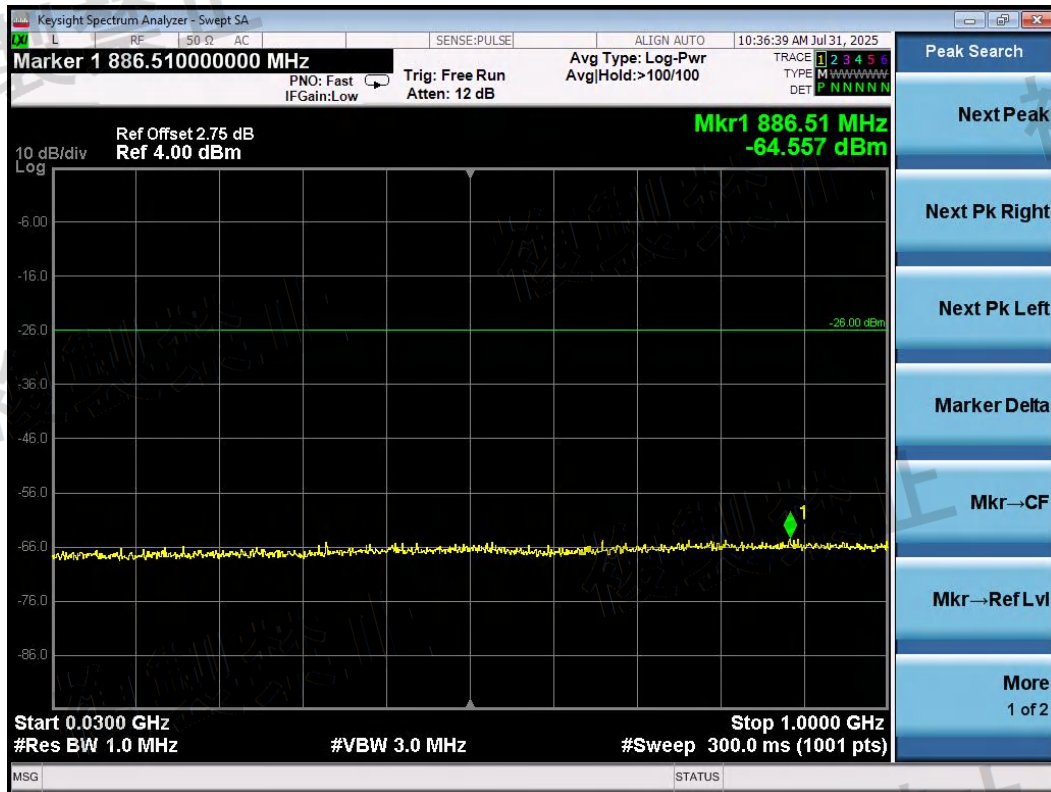
Temperature:	25°C	Humidity:	55 % RH
Pressure	101kPa		



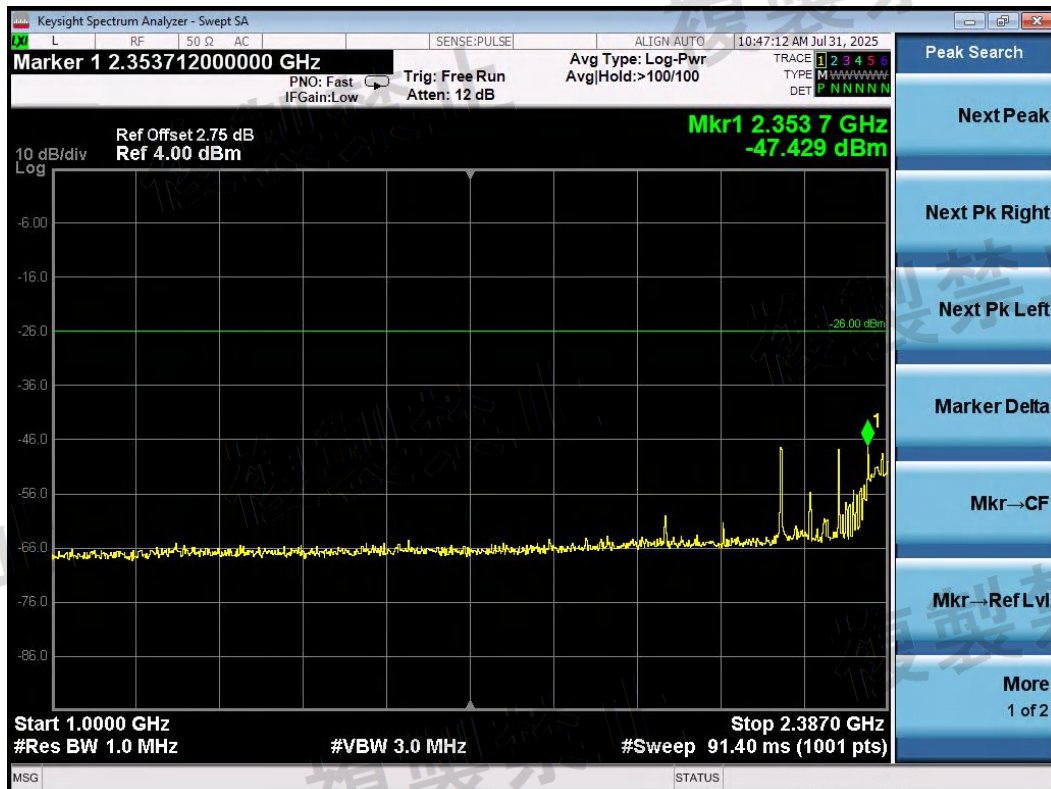
Test Condition	Test Mode	Antenna	Freq. [MHz]	Freq.Range [MHz]	Result [dBm]	Limit [dBm]	Result [μW]	Limit [μW]	Verdict
NTNV	DH5	Ant1	2402	30~1000	-64.557	≤-26	0.00001	≤2.5	PASS
				1000~2387	-47.429	≤-26	0.00002	≤2.5	PASS
				2387~2400	-34.852	≤-16	0.00033	≤25	PASS
				2483.5~2496.5	-59.402	≤-16	0.00001	≤25	PASS
				2496.5~13000	-46.170	≤-26	0.00002	≤2.5	PASS
			2441	30~1000	-64.679	≤-26	0.00001	≤2.5	PASS
				1000~2387	-45.533	≤-26	0.00003	≤2.5	PASS
				2387~2400	-44.732	≤-16	0.00003	≤25	PASS
				2483.5~2496.5	-58.165	≤-16	0.00001	≤25	PASS
				2496.5~13000	-45.903	≤-26	0.00003	≤2.5	PASS
			2480	30~1000	-63.715	≤-26	0.00001	≤2.5	PASS
				1000~2387	-44.030	≤-26	0.00004	≤2.5	PASS
				2387~2400	-62.431	≤-16	0.00001	≤25	PASS
				2483.5~2496.5	-60.147	≤-16	0.00001	≤25	PASS
				2496.5~13000	-45.137	≤-26	0.00003	≤2.5	PASS
	2DH5	Ant1	2402	30~1000	-63.966	≤-26	0.00001	≤2.5	PASS
				1000~2387	-47.540	≤-26	0.00002	≤2.5	PASS
				2387~2400	-31.167	≤-16	0.00076	≤25	PASS
				2483.5~2496.5	-59.807	≤-16	0.00001	≤25	PASS
				2496.5~13000	-44.723	≤-26	0.00003	≤2.5	PASS
			2441	30~1000	-64.233	≤-26	0.00001	≤2.5	PASS
				1000~2387	-46.441	≤-26	0.00002	≤2.5	PASS
				2387~2400	-45.051	≤-16	0.00003	≤25	PASS
				2483.5~2496.5	-57.622	≤-16	0.00001	≤25	PASS
				2496.5~13000	-49.653	≤-26	0.00001	≤2.5	PASS
			2480	30~1000	-64.344	≤-26	0.00001	≤2.5	PASS
				1000~2387	-44.063	≤-26	0.00004	≤2.5	PASS
				2387~2400	-62.145	≤-16	0.00001	≤25	PASS
				2483.5~2496.5	-56.960	≤-16	0.00001	≤25	PASS
				2496.5~13000	-45.306	≤-26	0.00003	≤2.5	PASS
	3DH5	Ant1	2402	30~1000	-63.946	≤-26	0.00001	≤2.5	PASS
				1000~2387	-47.185	≤-26	0.00002	≤2.5	PASS
				2387~2400	-34.861	≤-16	0.00033	≤25	PASS
				2483.5~2496.5	-59.978	≤-16	0.00001	≤25	PASS
				2496.5~13000	-43.000	≤-26	0.00005	≤2.5	PASS
			2441	30~1000	-63.932	≤-26	0.00001	≤2.5	PASS
				1000~2387	-46.523	≤-26	0.00002	≤2.5	PASS
				2387~2400	-44.922	≤-16	0.00003	≤25	PASS
				2483.5~2496.5	-57.841	≤-16	0.00001	≤25	PASS
				2496.5~13000	-44.397	≤-26	0.00004	≤2.5	PASS
			2480	30~1000	-63.993	≤-26	0.00001	≤2.5	PASS
				1000~2387	-44.288	≤-26	0.00004	≤2.5	PASS
				2387~2400	-61.312	≤-16	0.00001	≤25	PASS
				2483.5~2496.5	-54.679	≤-16	0.00001	≤25	PASS
				2496.5~13000	-48.223	≤-26	0.00002	≤2.5	PASS



NTNV_DH5_Ant1_2402_30~1000



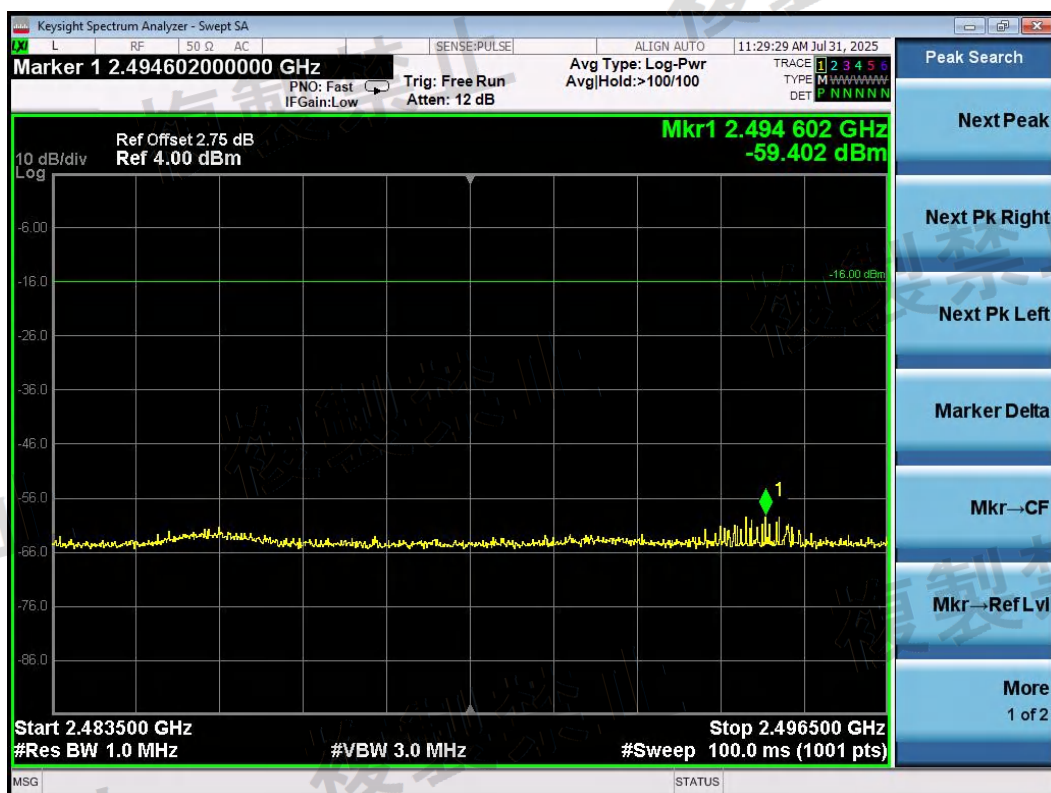
NTNV_DH5_Ant1_2402_1000~2387



NTNV_DH5_Ant1_2402_2387~2400

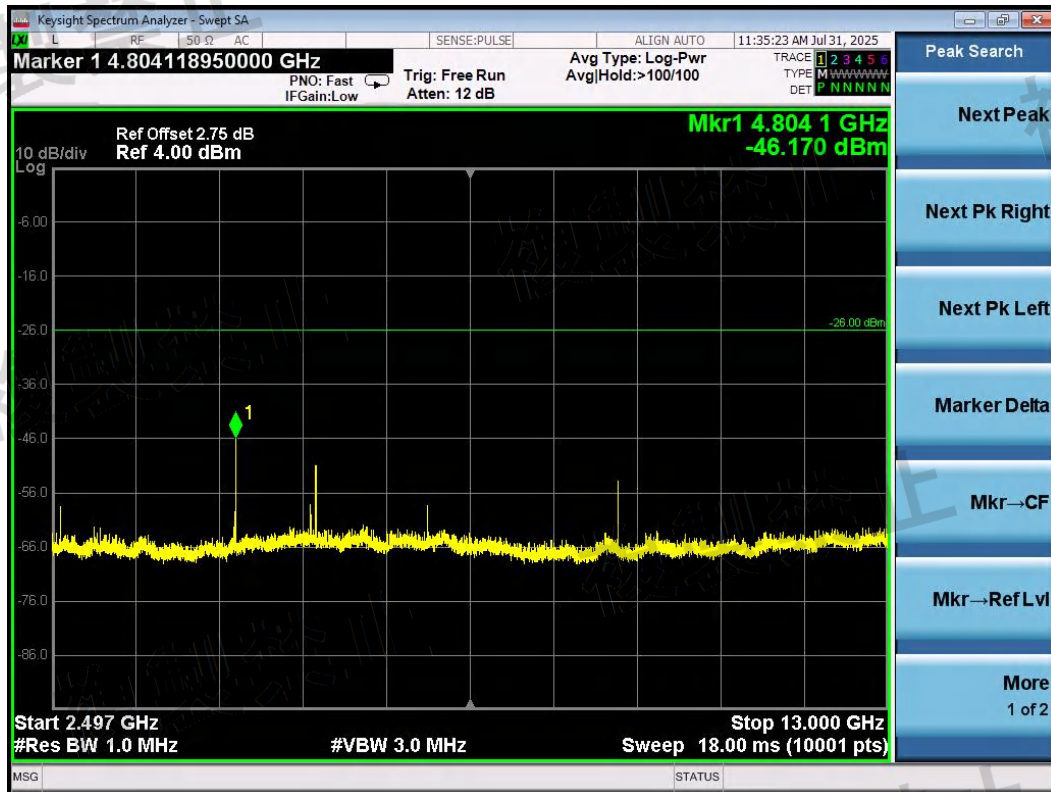


NTNV_DH5_Ant1_2402_2483.5~2496.5

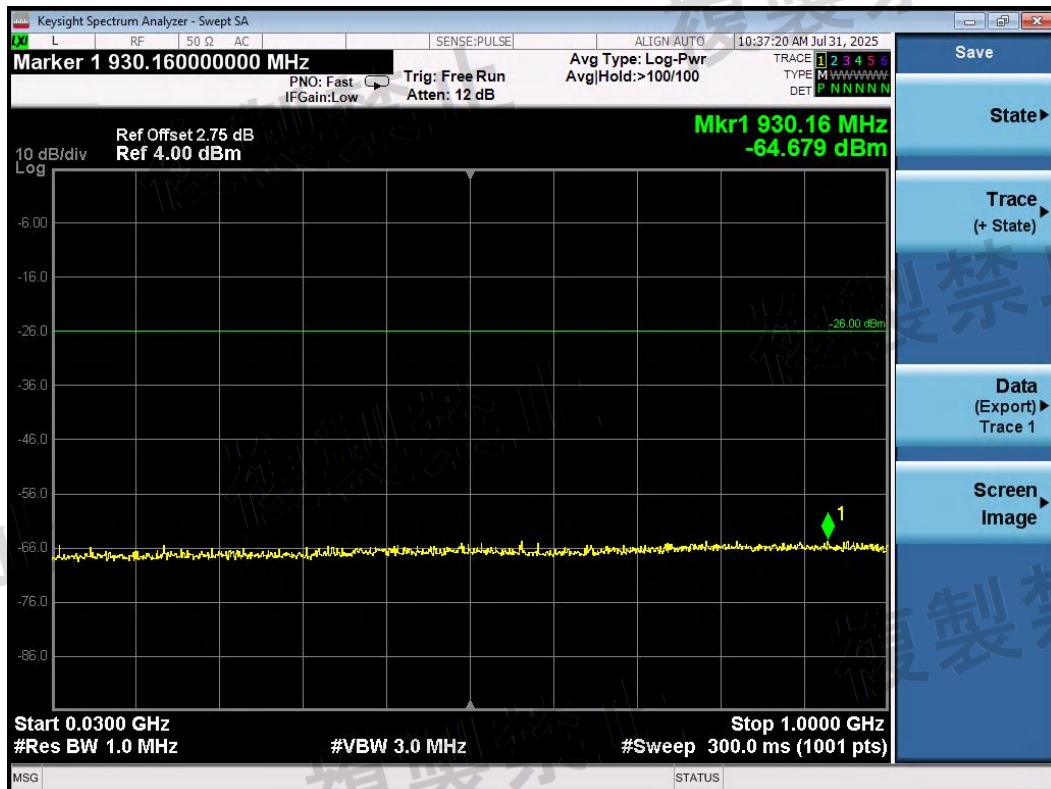




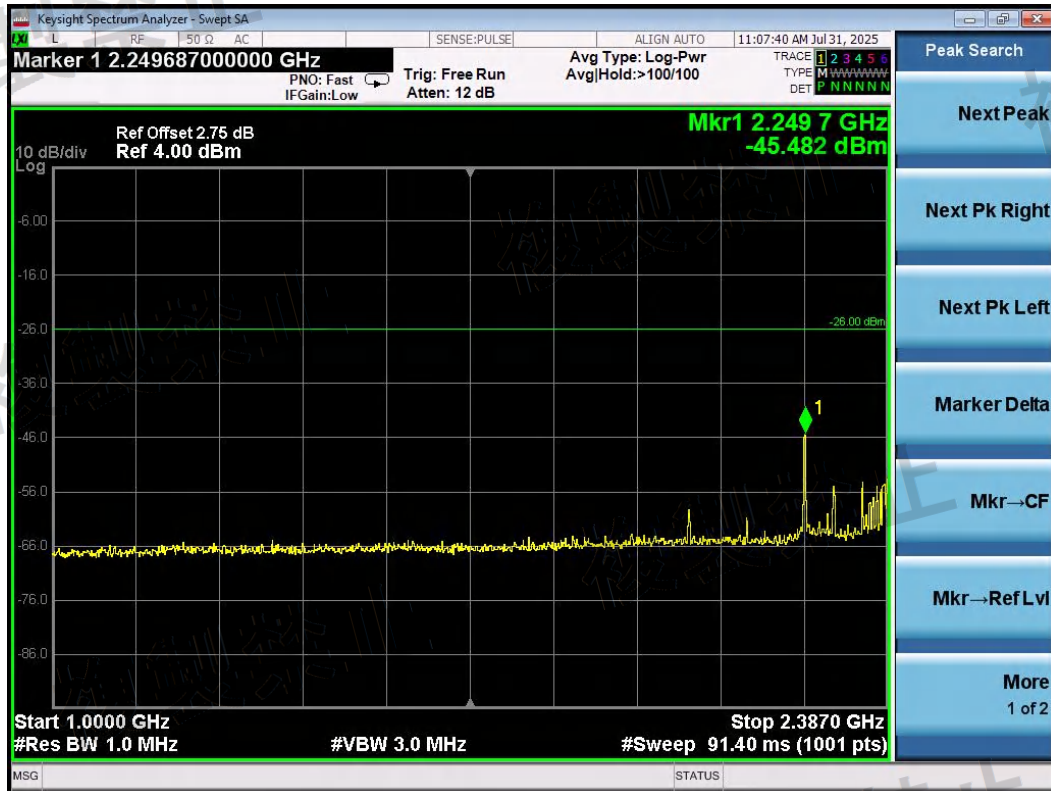
NTNV_DH5_Ant1_2402_2496.5~13000



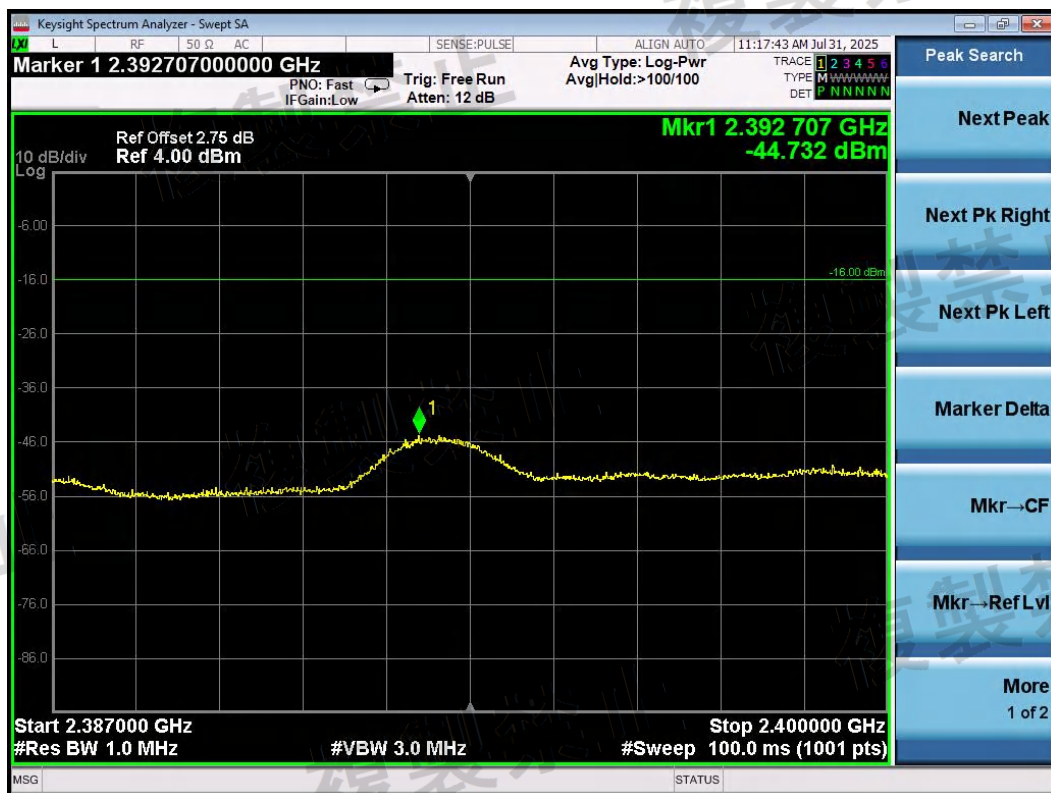
NTNV_DH5_Ant1_2441_30~1000



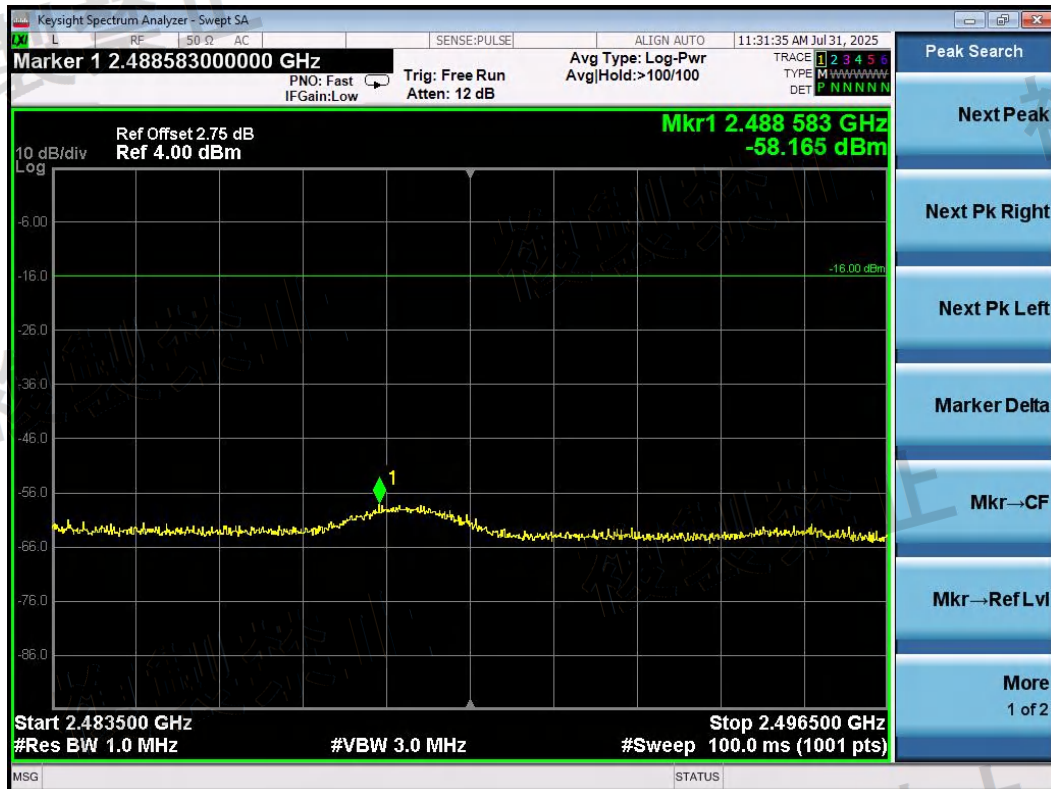
NTNV_DH5_Ant1_2441_1000~2387



NTNV_DH5_Ant1_2441_2387~2400



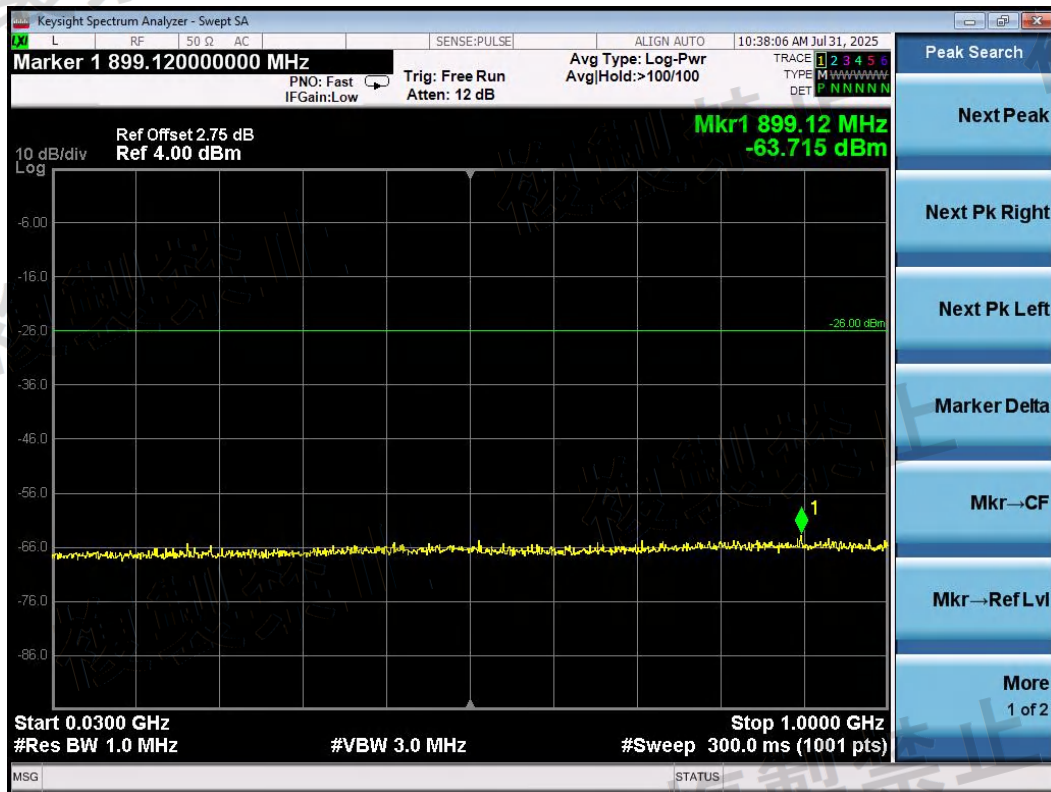
NTNV_DH5_Ant1_2441_2483.5~2496.5



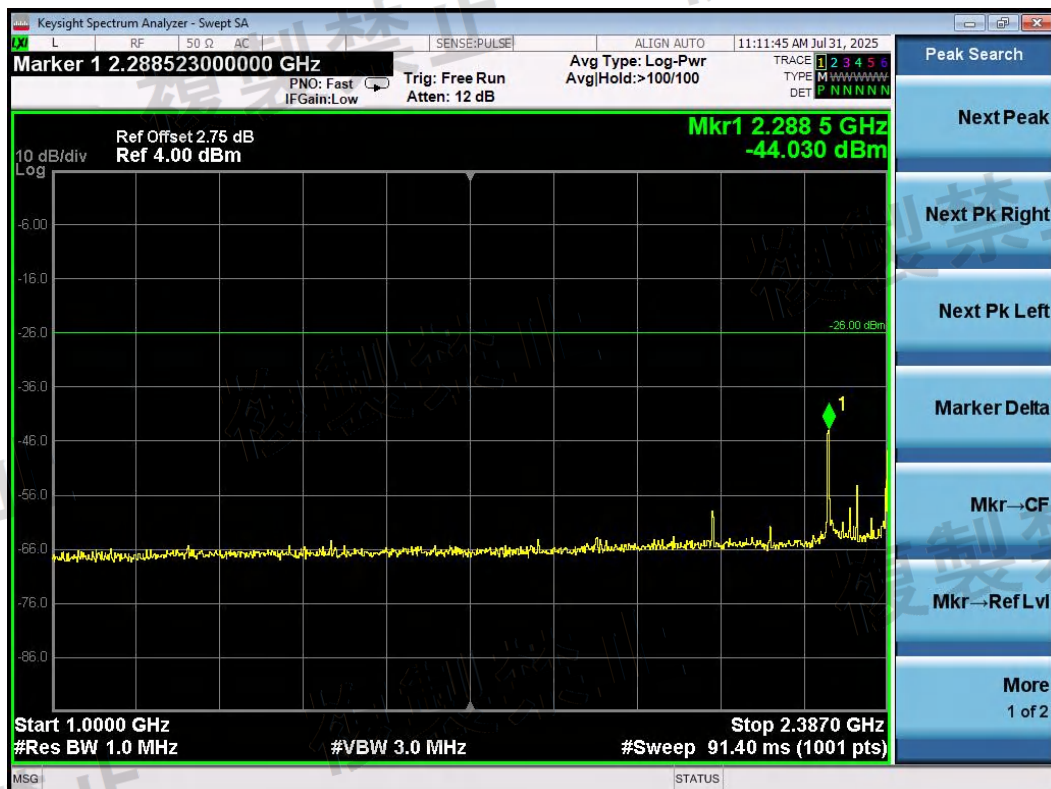
NTNV_DH5_Ant1_2441_2496.5~13000

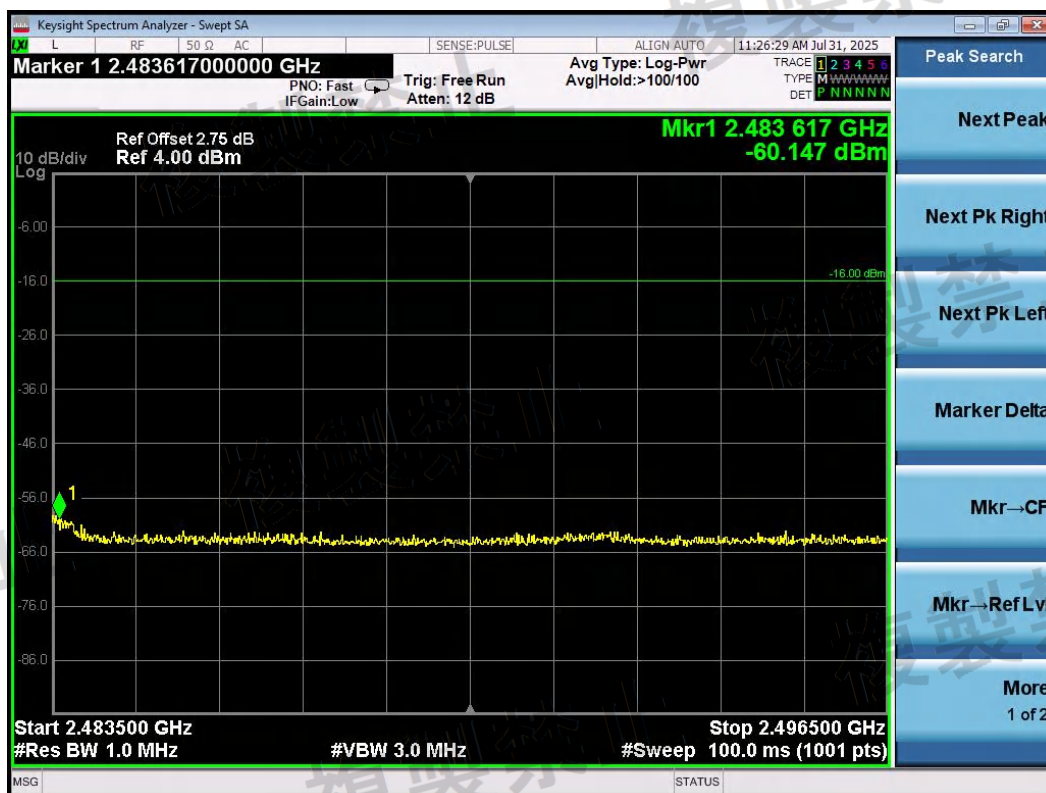


NTNV_DH5_Ant1_2480_30~1000

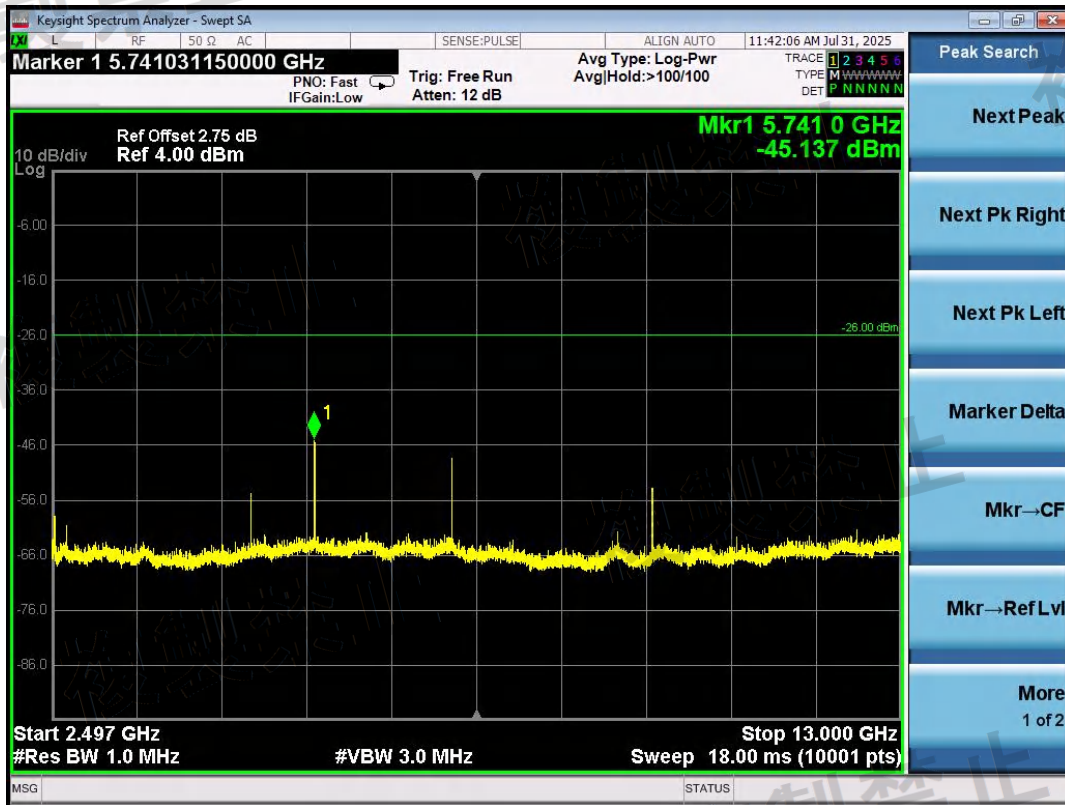


NTNV_DH5_Ant1_2480_1000~2387

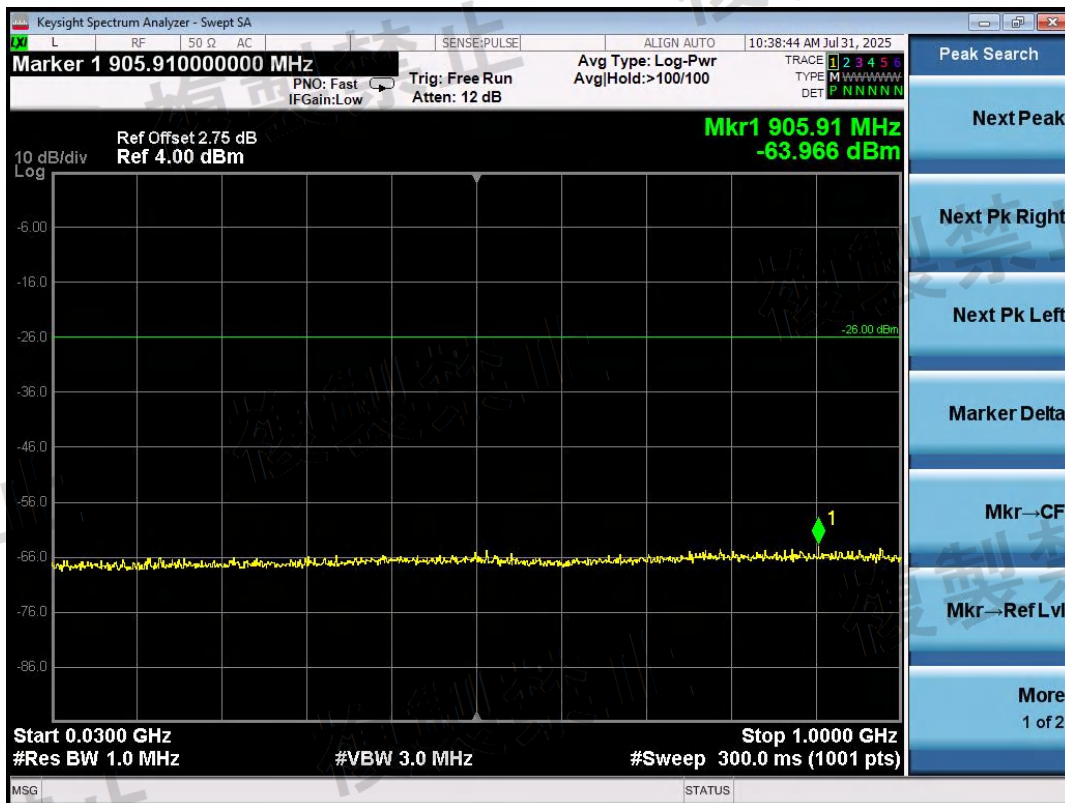




NTNV_DH5_Ant1_2480_2496.5~13000

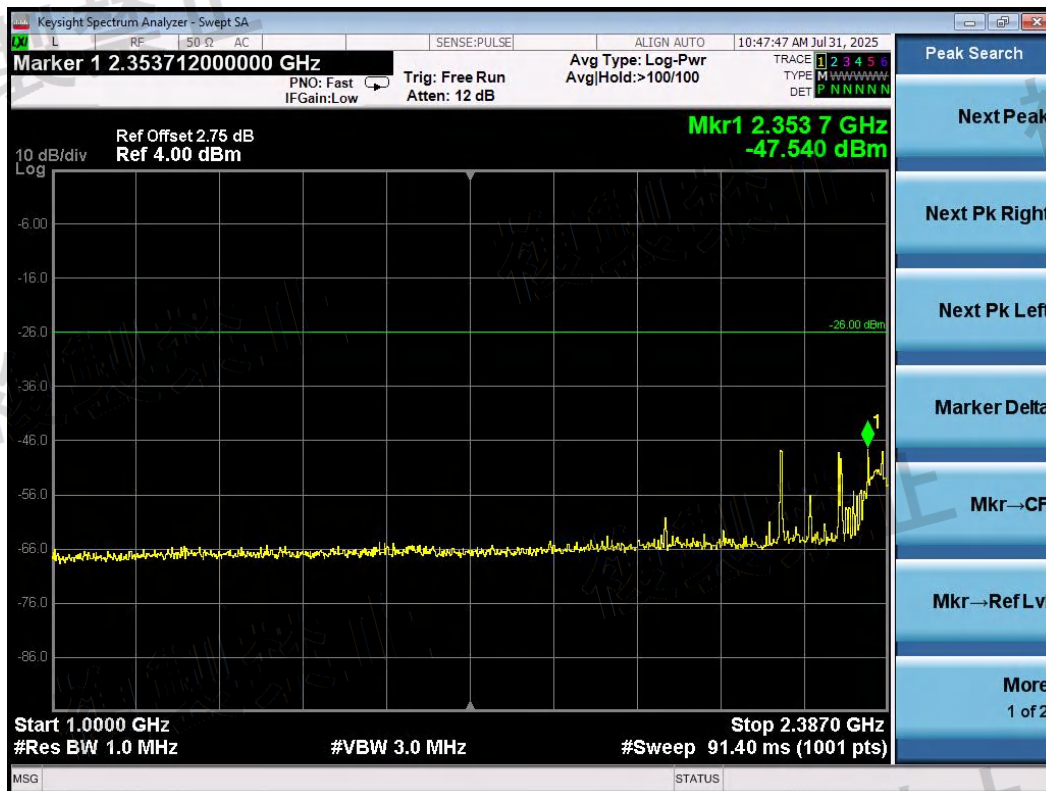


NTNV_2DH5_Ant1_2402_30~1000





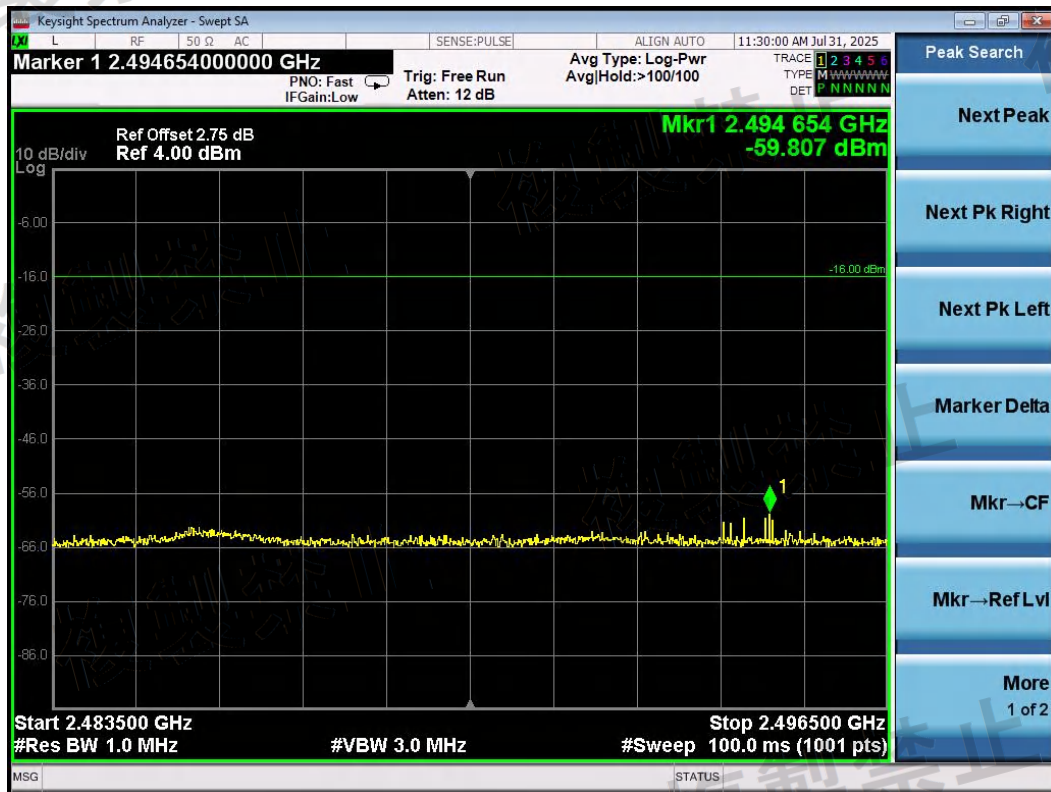
NTNV_2DH5_Ant1_2402_1000~2387



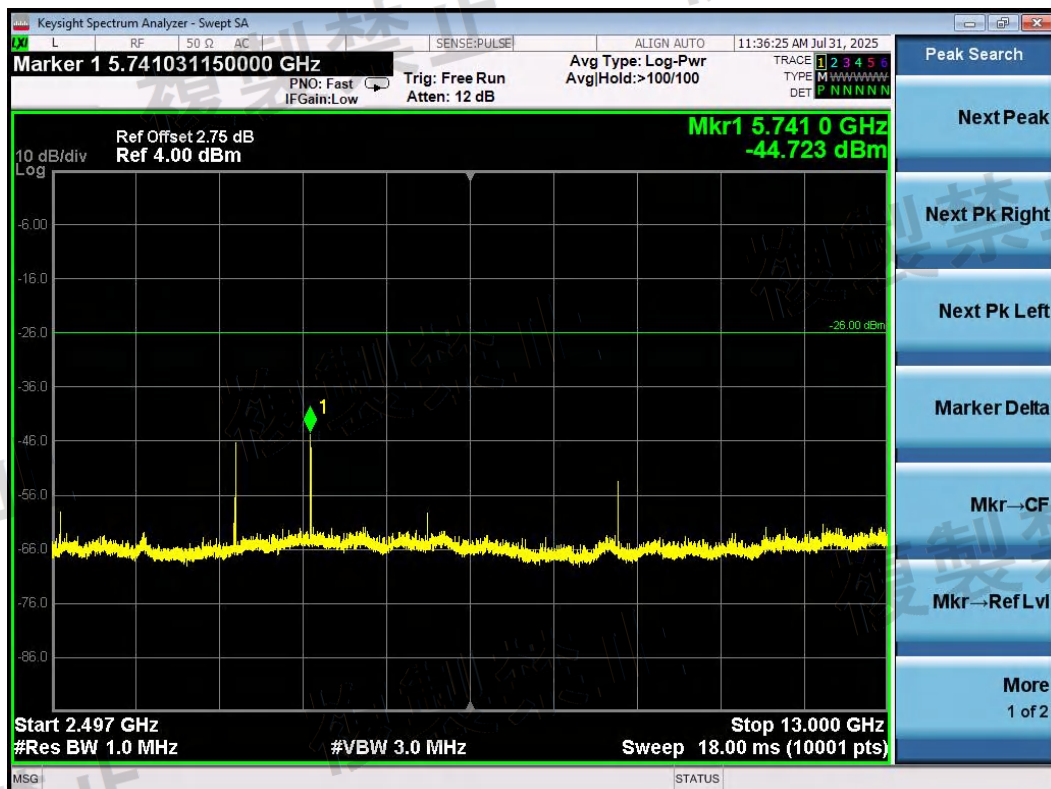
NTNV_2DH5_Ant1_2402_2387~2400



NTNV_2DH5_Ant1_2402_2483.5~2496.5

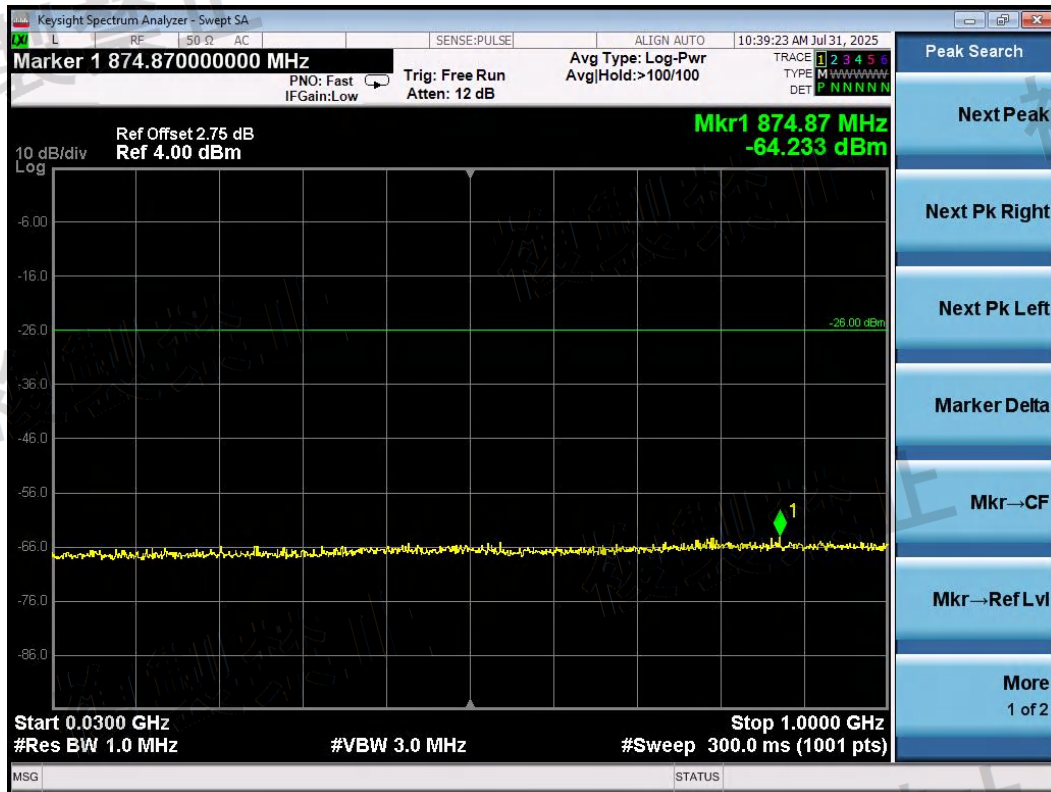


NTNV_2DH5_Ant1_2402_2496.5~13000





NTNV_2DH5_Ant1_2441_30~1000



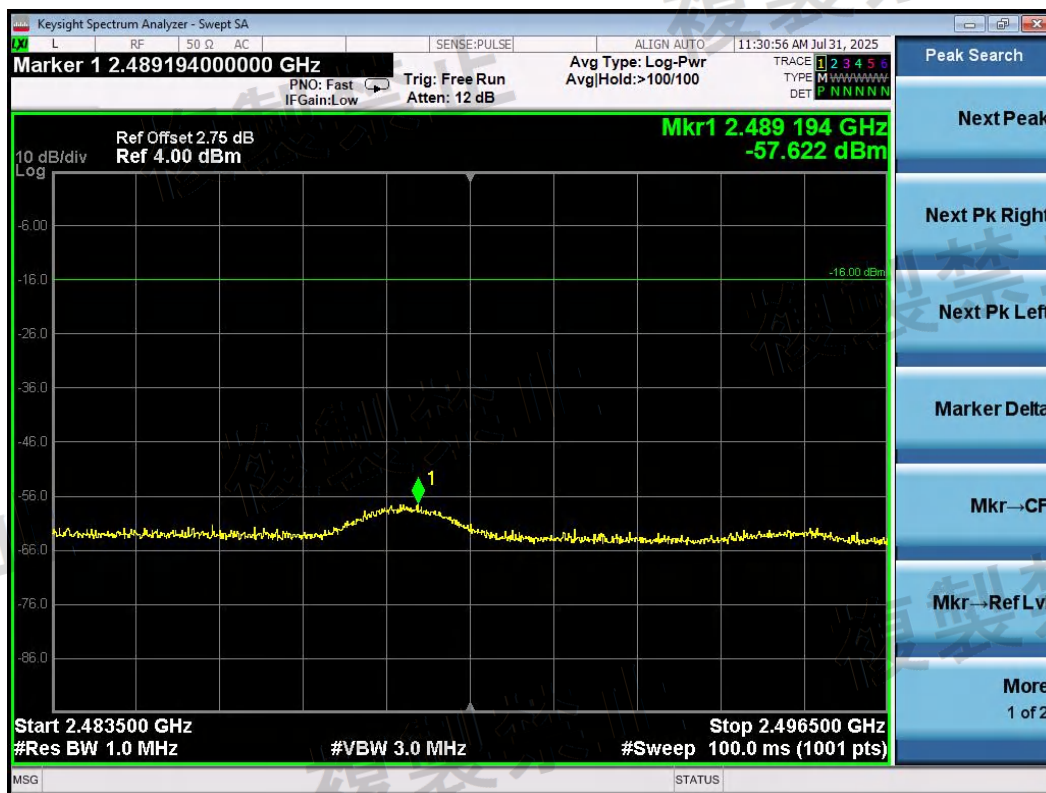
NTNV_2DH5_Ant1_2441_1000~2387



NTNV_2DH5_Ant1_2441_2387~2400

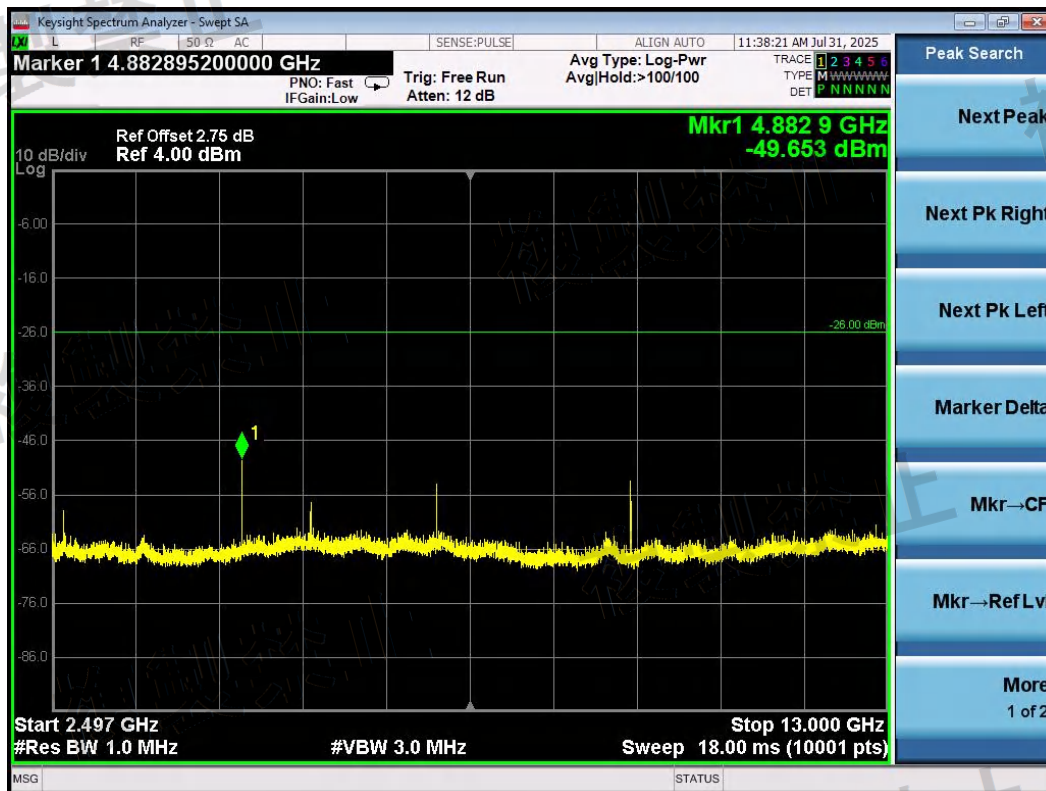


NTNV_2DH5_Ant1_2441_2483.5~2496.5

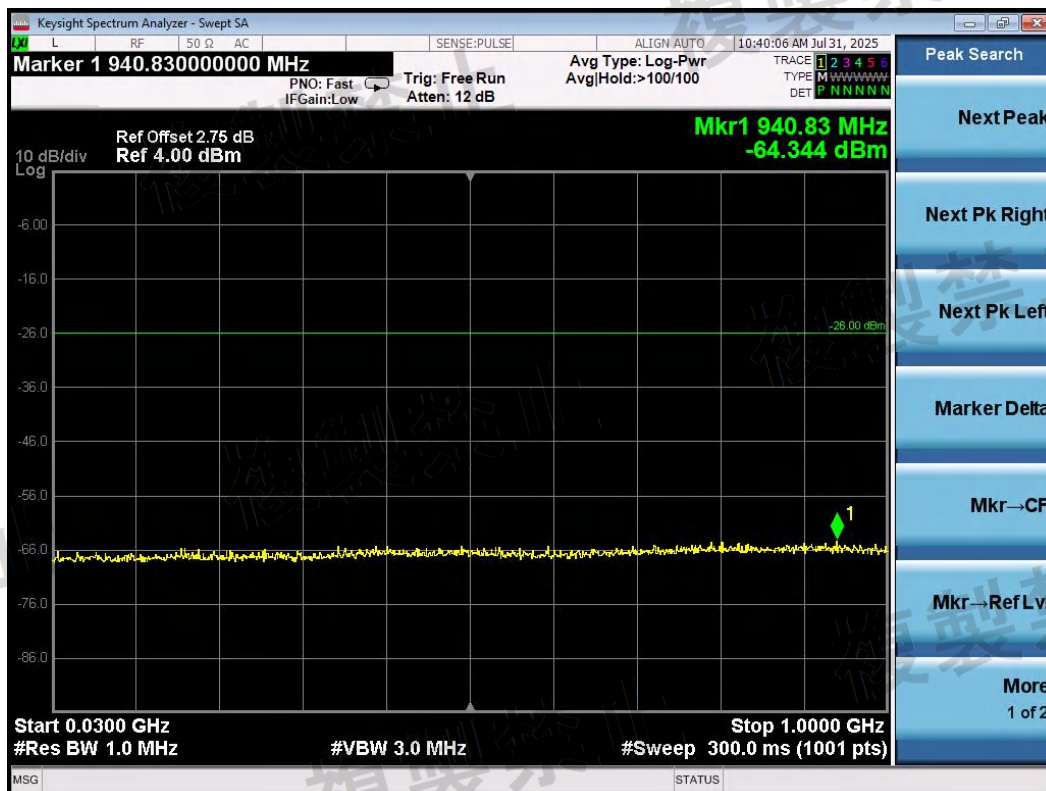




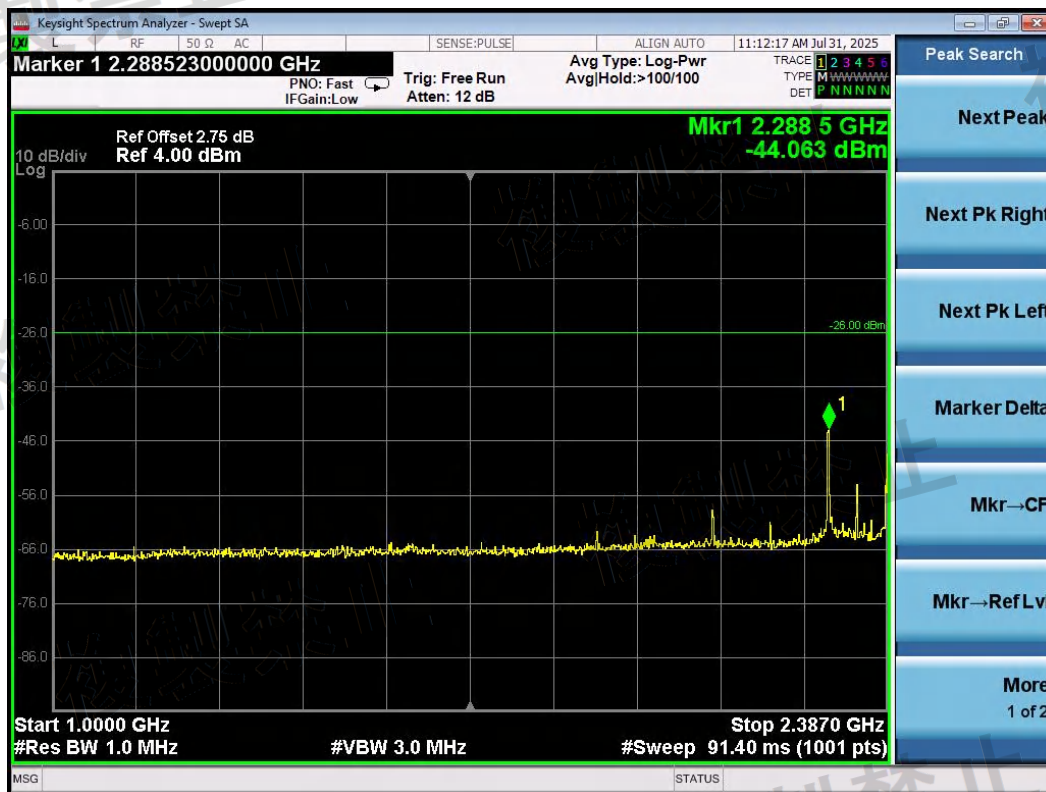
NTNV_2DH5_Ant1_2441_2496.5~13000



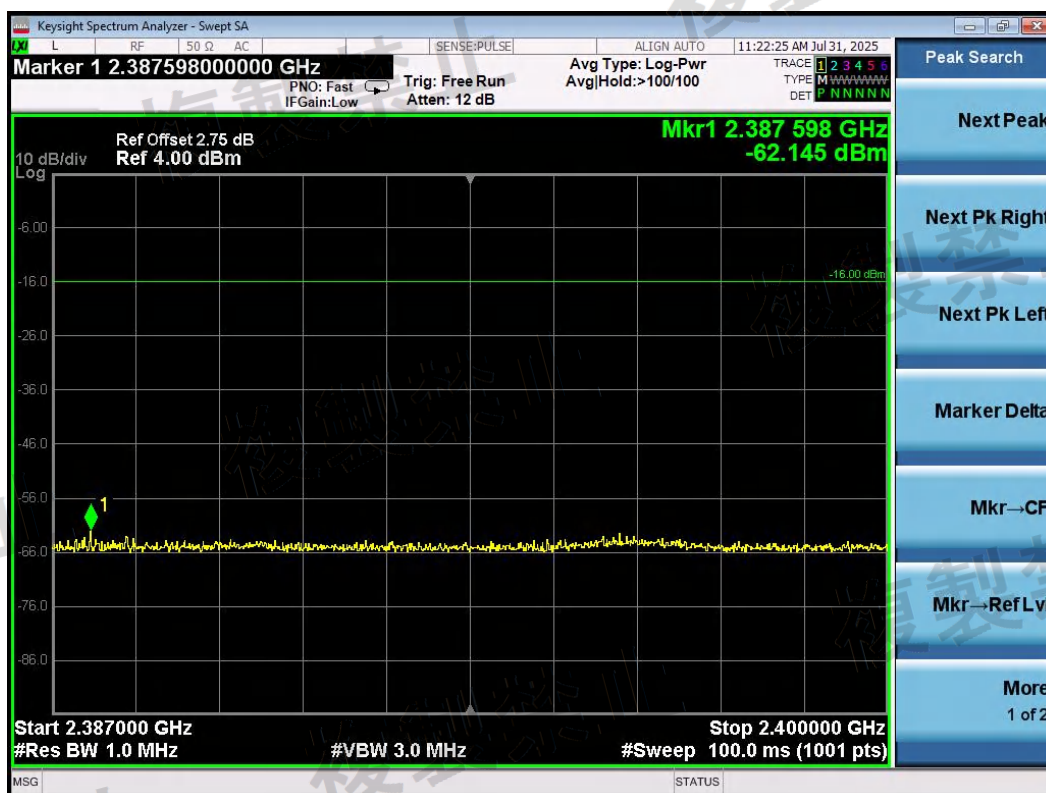
NTNV_2DH5_Ant1_2480_30~1000



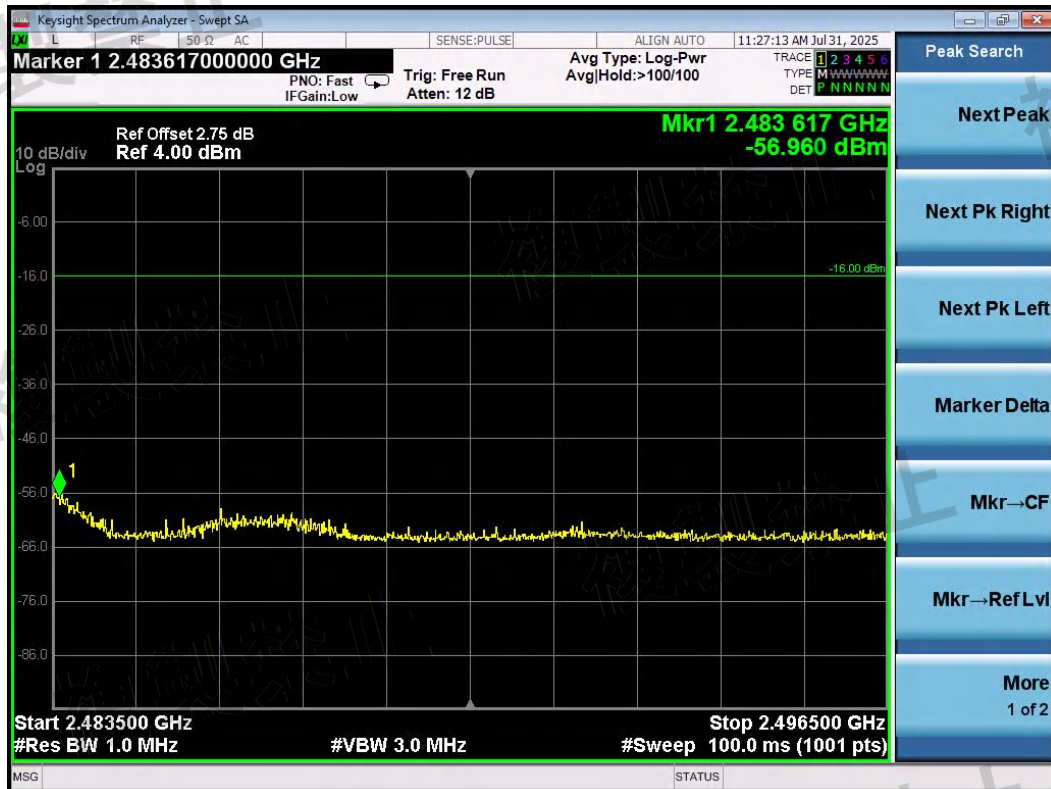
NTNV_2DH5_Ant1_2480_1000~2387



NTNV_2DH5_Ant1_2480_2387~2400



NTNV_2DH5_Ant1_2480_2483.5~2496.5

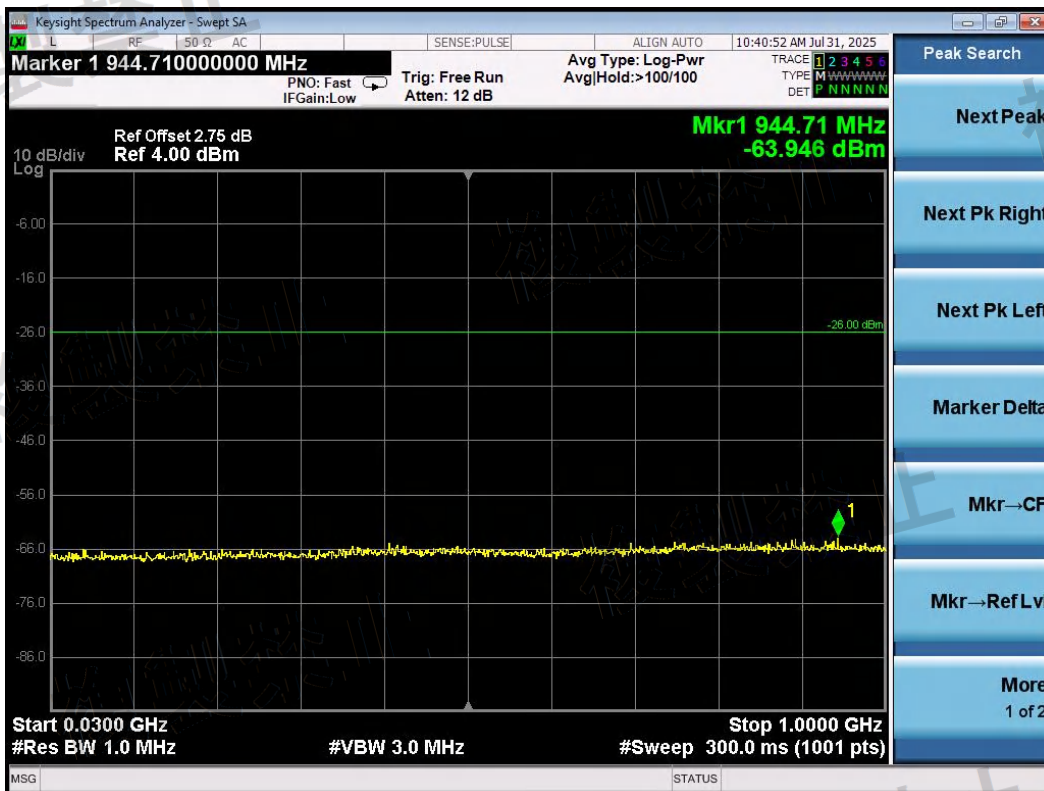


NTNV_2DH5_Ant1_2480_2496.5~13000

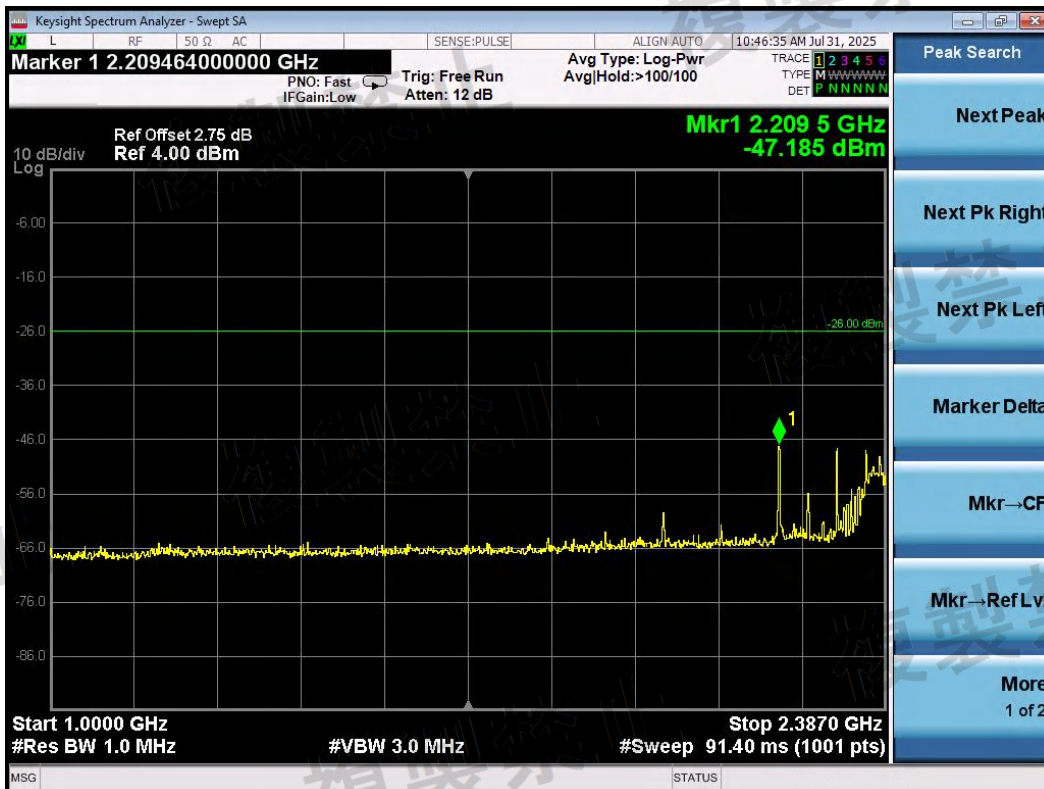




NTNV_3DH5_Ant1_2402_30~1000



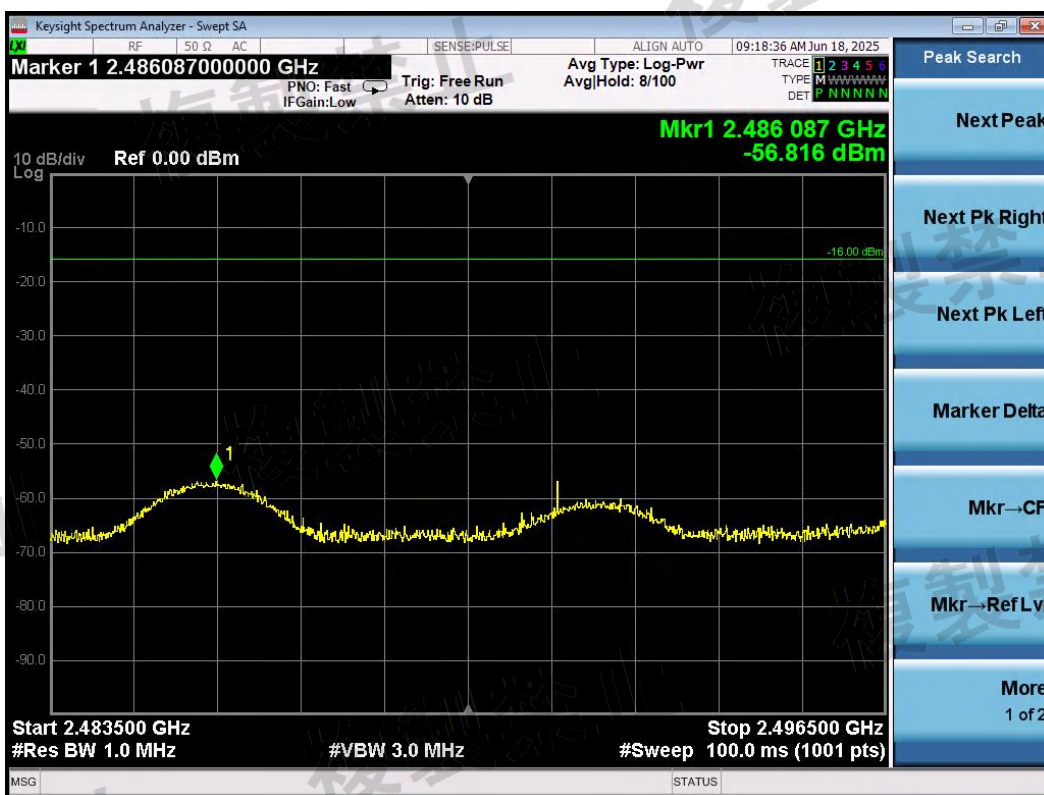
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NTNV_3DH5_Ant1_2402_2387~2400

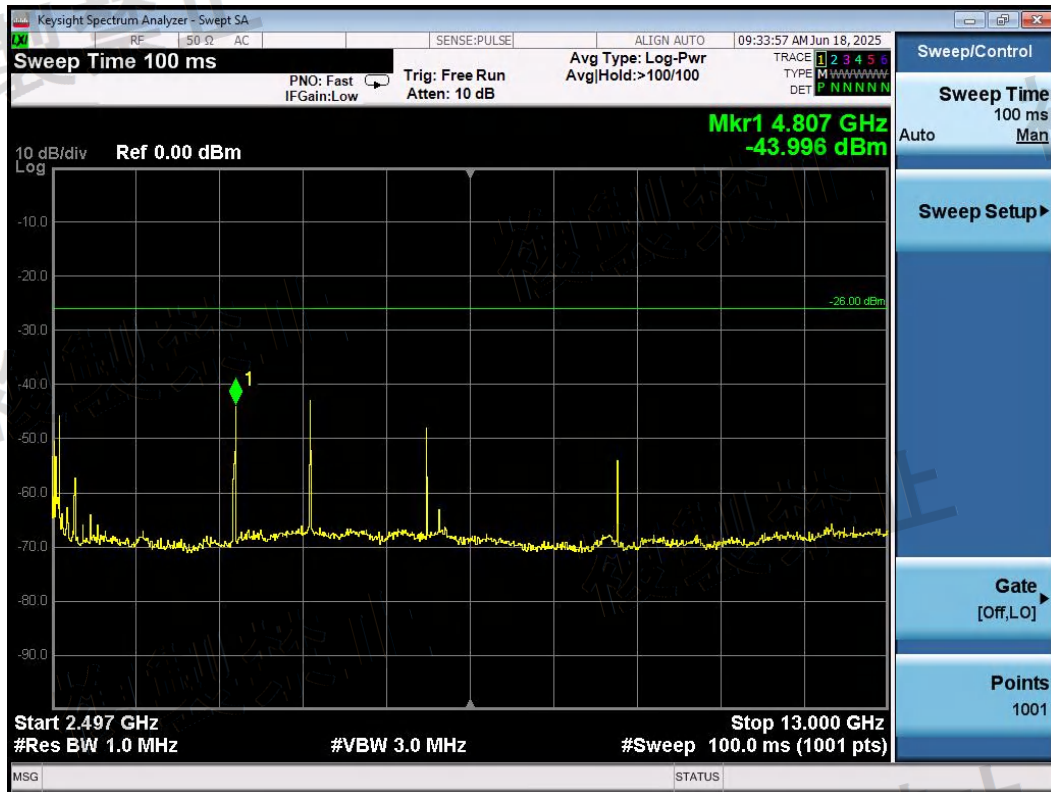


NTNV_3DH5_Ant1_2402_2483.5~2496.5

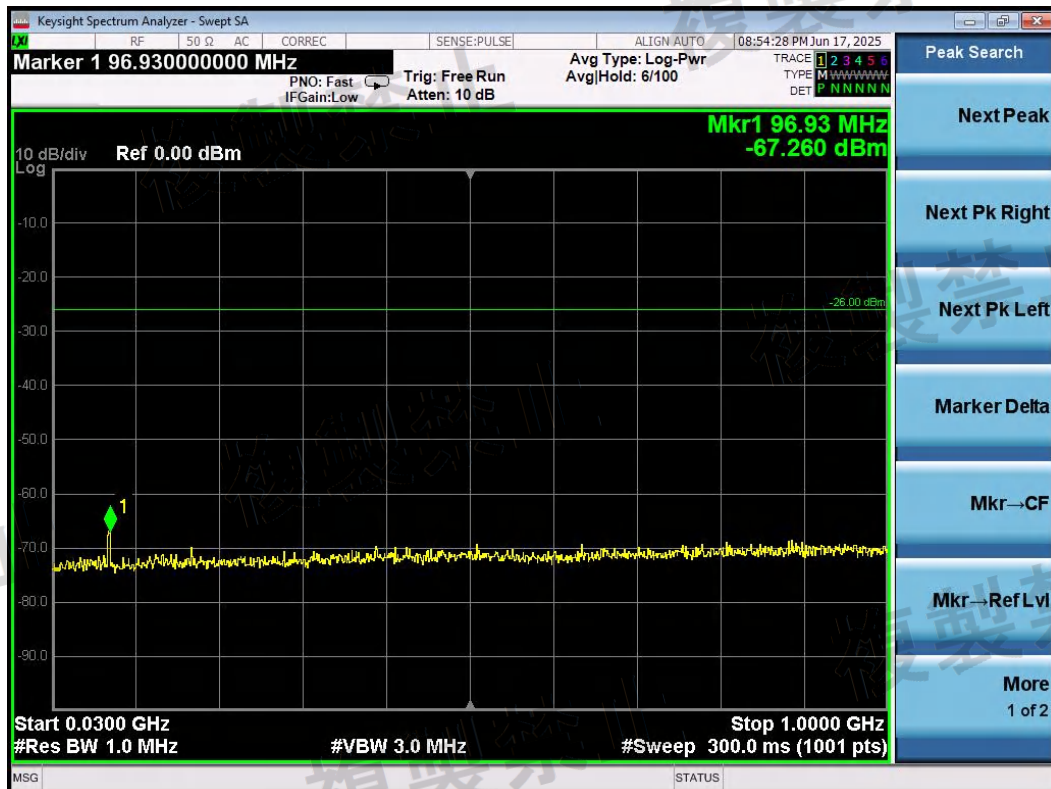




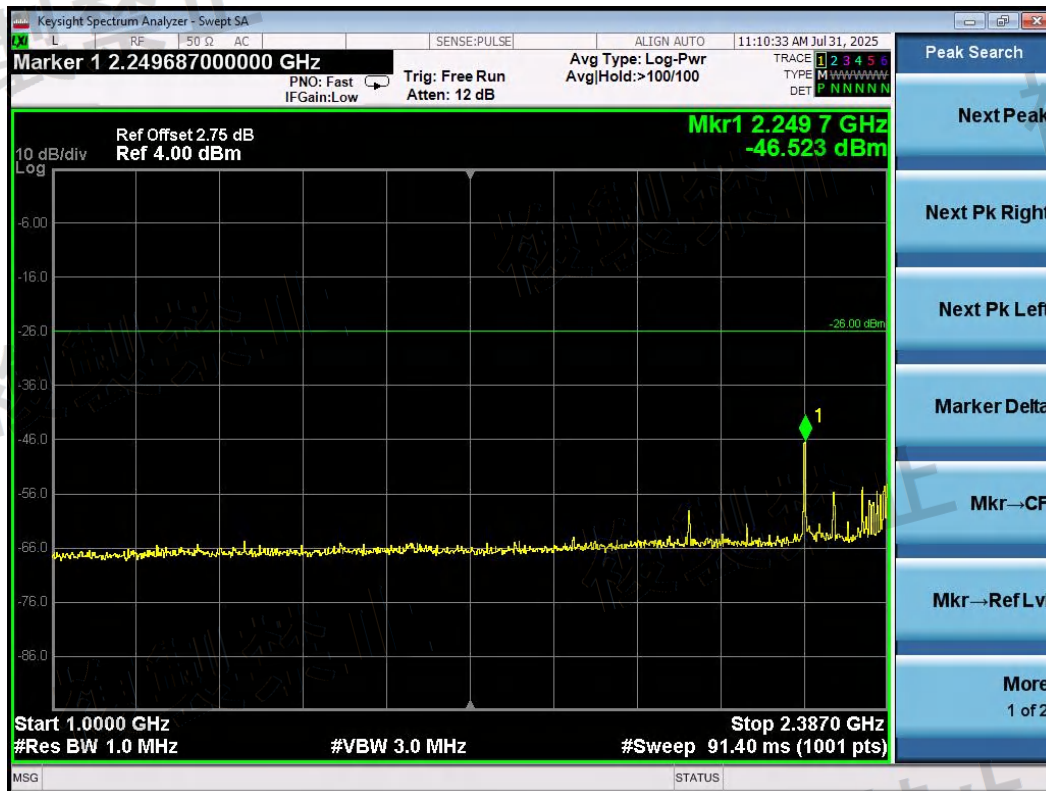
NTNV_3DH5_Ant1_2402_2496.5~13000



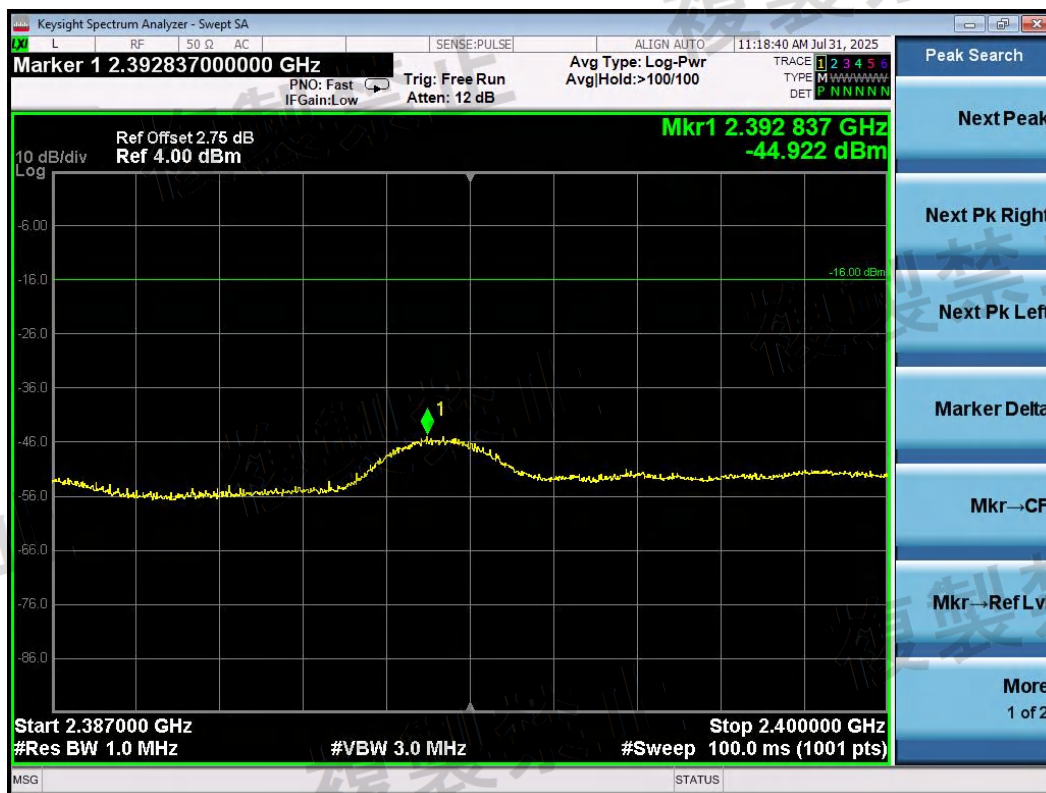
NTNV_3DH5_Ant1_2441_30~1000



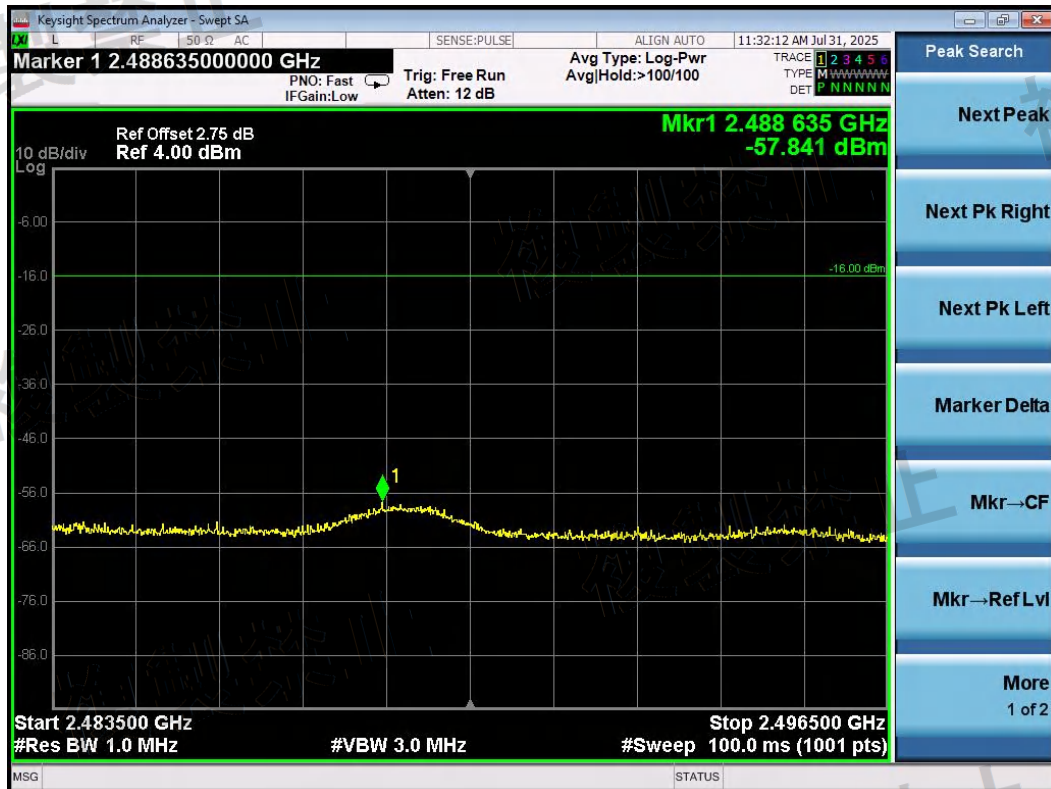
NTNV_3DH5_Ant1_2441_1000~2387



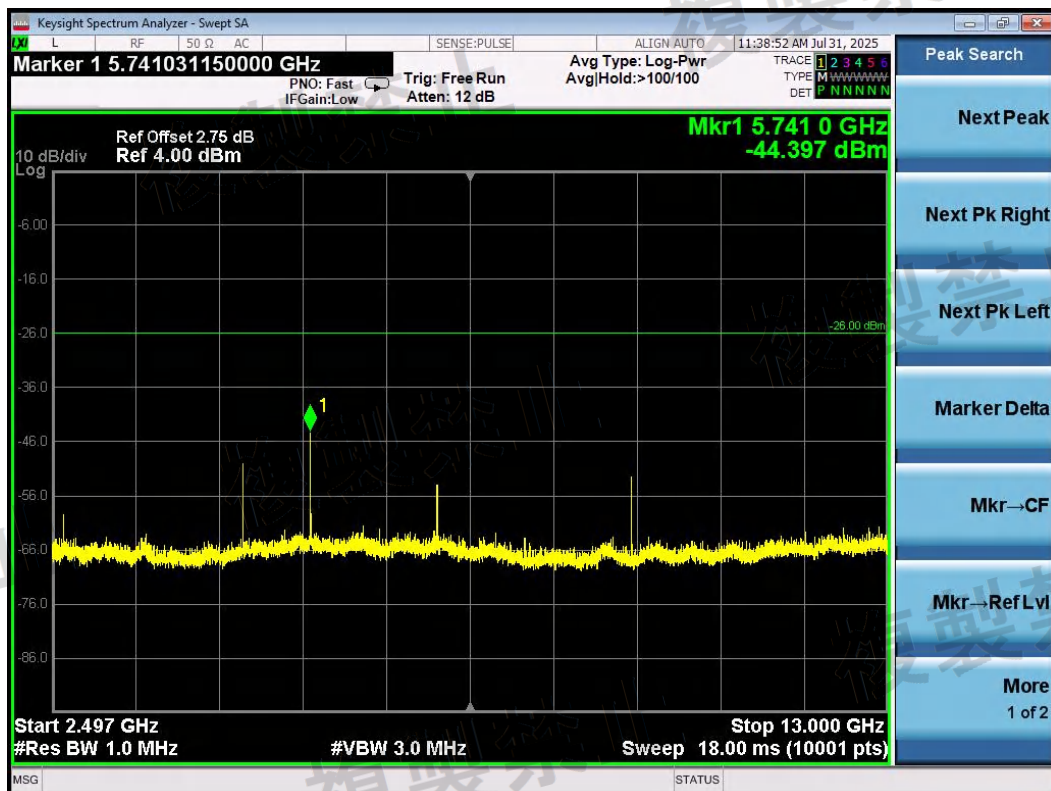
NTNV_3DH5_Ant1_2441_2387~2400



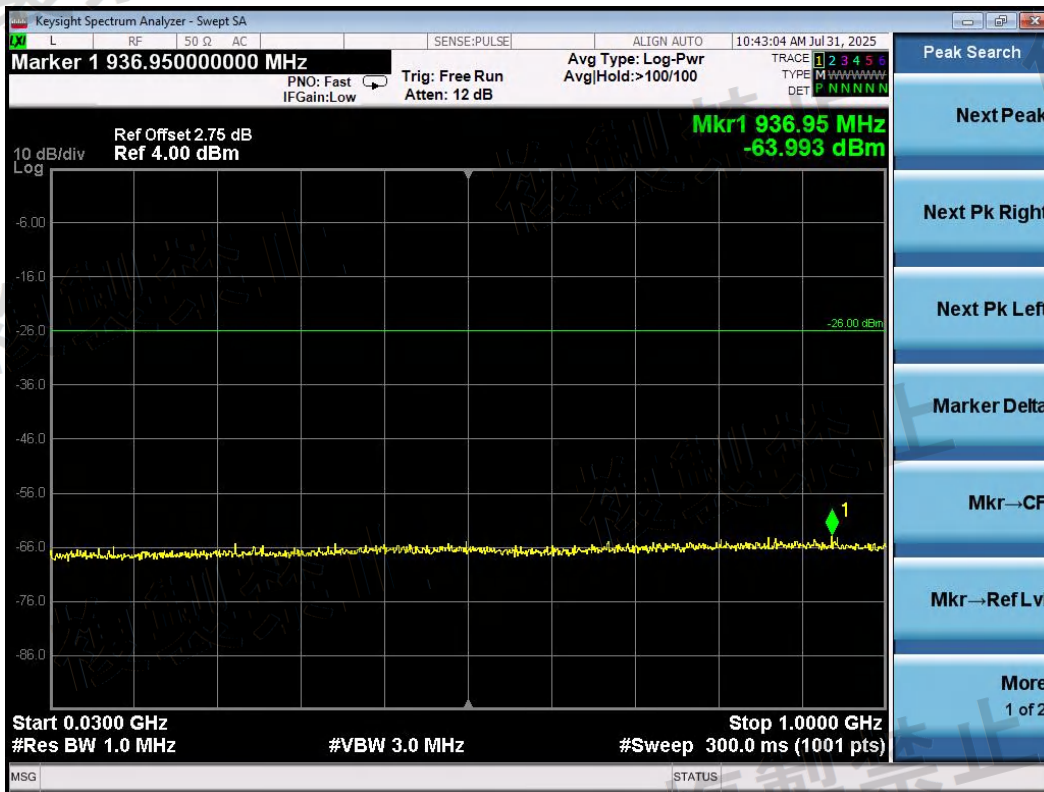
NTNV_3DH5_Ant1_2441_2483.5~2496.5



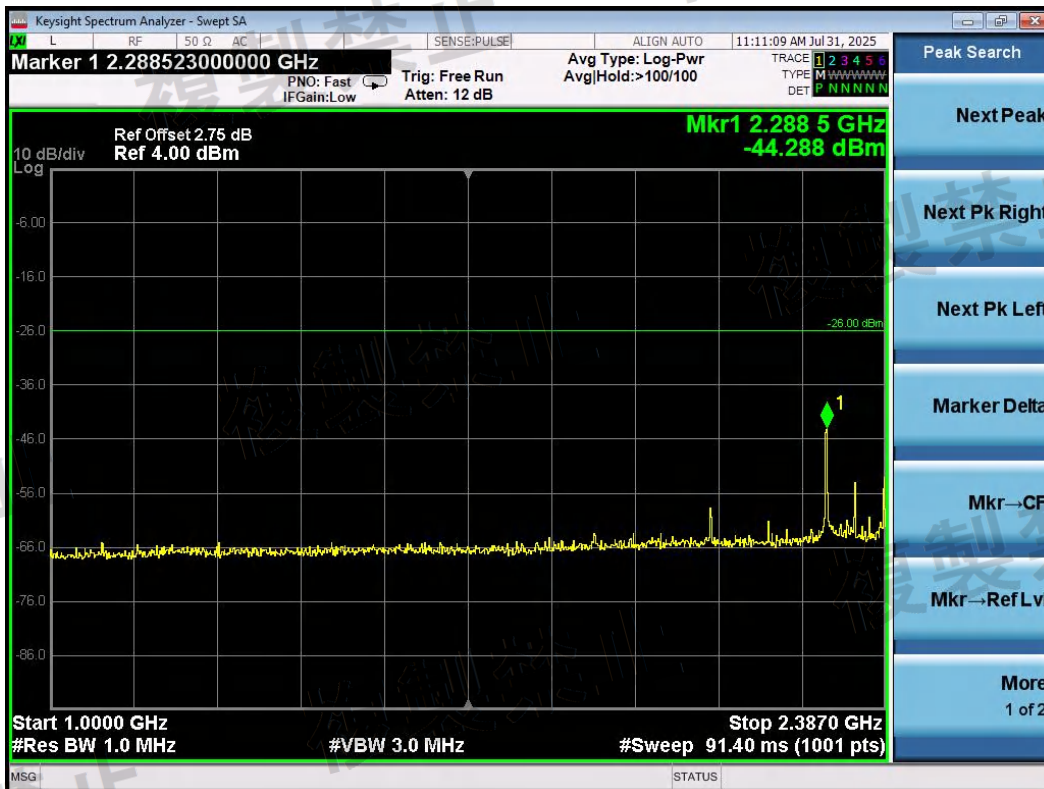
NTNV_3DH5_Ant1_2441_2496.5~13000



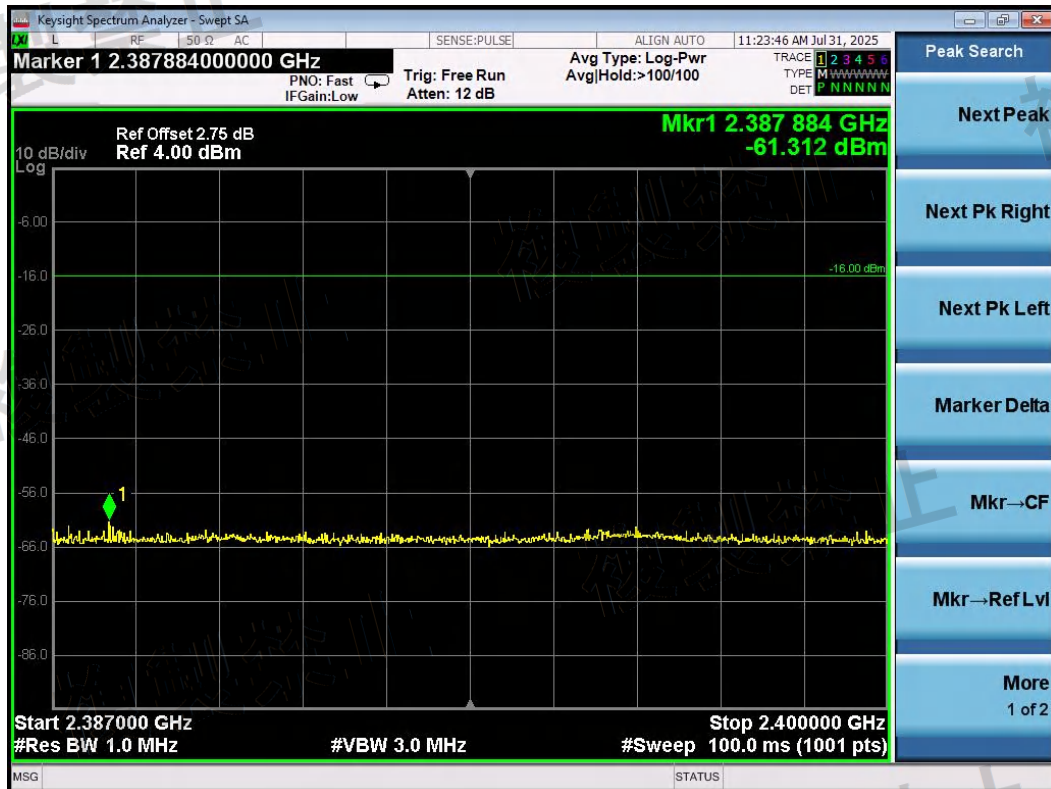
NTNV_3DH5_Ant1_2480_30~1000



NTNV_3DH5_Ant1_2480_1000~2387



NTNV_3DH5_Ant1_2480_2387~2400

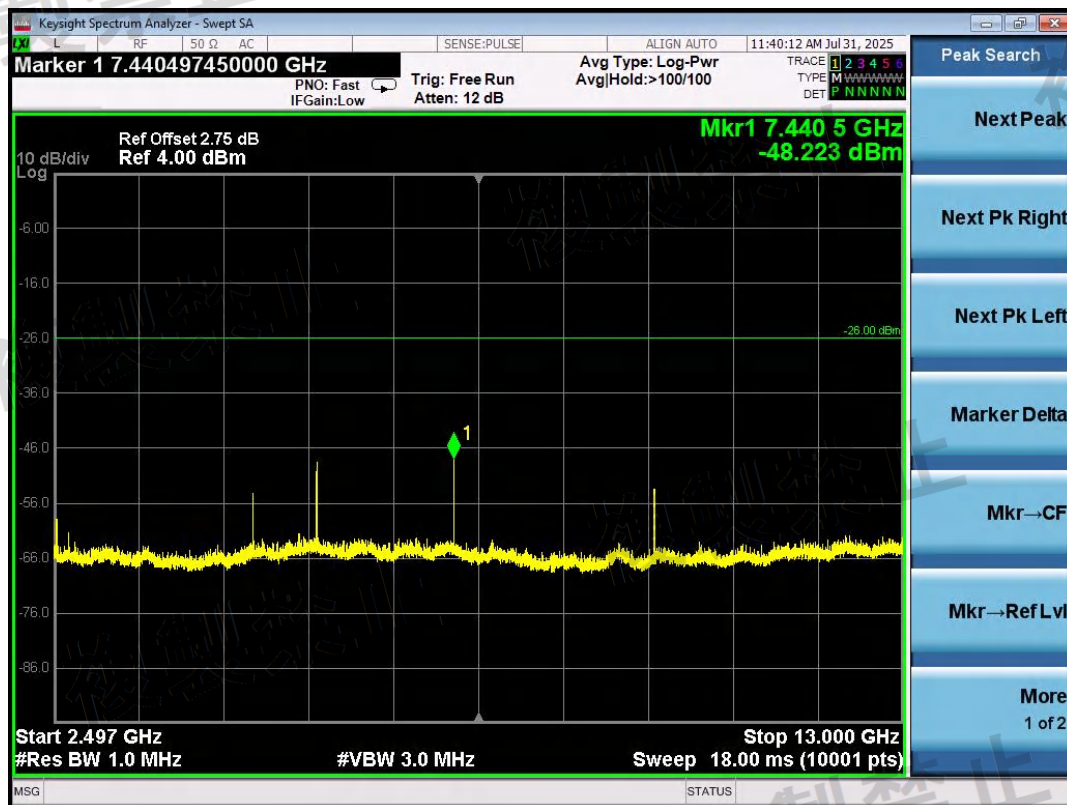


NTNV_3DH5_Ant1_2480_2483.5~2496.5





NTNV_3DH5_Ant1_2480_2496.5~13000



9. IMITATION OF COLLATERAL EMISSION OF RECEIVER MEASUREMENT

9.1 LIMIT

Item	Limits
RX Spurious Emission:	$\leq 4\text{nW}$ ($f < 1\text{GHz}$)
	$\leq 20\text{nW}$ ($1\text{GHz} \leq f$)

9.2 TEST PROCEDURES

Spectrum Parameter	Setting
Attenuation	Auto
RB	100 kHz (below 1GHz emissions) 1 MHz (above 1GHz emissions)
VB	300 kHz (below 1GHz emissions) 3 MHz (above 1GHz emissions)
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

- EUT have the continuous reception mode and fixed only one channelize.
- Setting of SA is following as RB / VB: 100 kHz/300kHz (below 1GHz emissions) / 1 MHz/3MHz (above 1GHz emissions) / AT: 10dB / Ref: 0dBm / Sweep time: Auto / Sweep Mode: Continuous sweep / Detect mode: Positive peak / Trace mode: Max hold
- SA set RB: 100kHz and VB: 100kHz. Then adjust to start frequency 30MHz and stop frequency 1000MHz. Search to mark peak reading value + cable loss shall be less than 4nW
- SA set RB: 1MHz and VB: 1MHz. Then adjust to start frequency 1000MHz and stop frequency 12500MHz. Search to mark peak reading value + cable loss shall be less than 20nW
- If power level of lower emissions are more than 1/10 of limit (.0.4nW for $f < 1\text{GHz}$, 2nW for $f \geq 1\text{GHz}$), all those are to be indicated in the 2nd and 3rd lines. If others are 1/10 or less more of the limit, no necessary to be indicated.



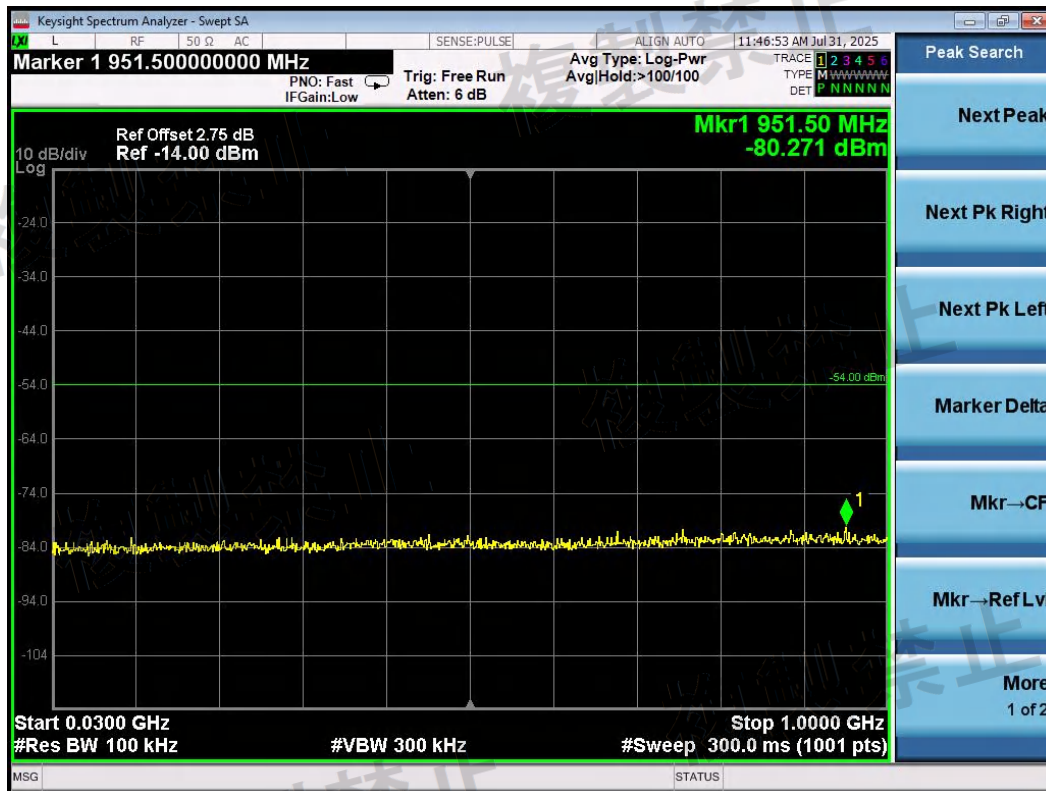
9.3 TEST RESULT

Temperature:	25°C	Humidity:	55 % RH
Pressure	101kPa		

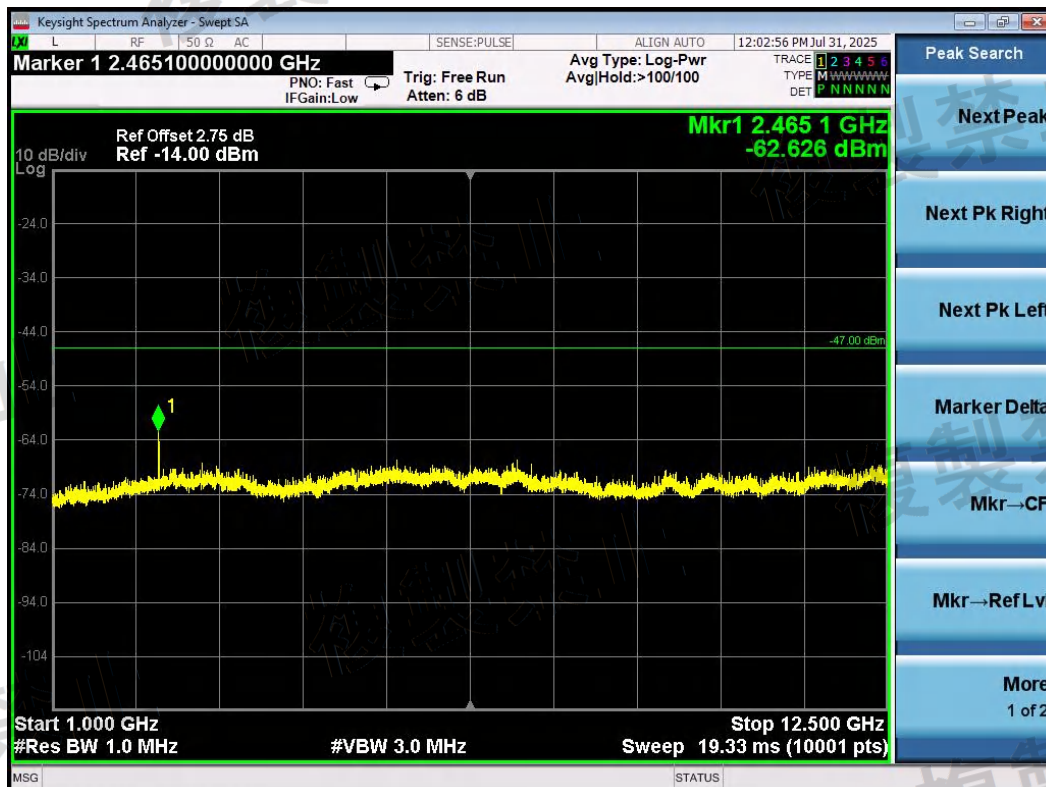
Test Condition	Test Mode	Antenna	Freq. [MHz]	Freq.Range [MHz]	Result [dBm]	Limit [dBm]	Result [nW]	Limit [nW]	Verdict
NTNV	DH5	Ant1	2402	30~1000	-80.271	≤-54	0.00001	≤4	PASS
				1000~12500	-62.626	≤-47	0.00001	≤20	PASS
			2441	30~1000	-80.130	≤-54	0.00001	≤4	PASS
				1000~12500	-61.267	≤-47	0.00001	≤20	PASS
			2480	30~1000	-80.464	≤-54	0.00001	≤4	PASS
				1000~12500	-56.525	≤-47	0.00001	≤20	PASS
	2DH5	Ant1	2402	30~1000	-80.243	≤-54	0.00001	≤4	PASS
				1000~12500	-55.918	≤-47	0.00001	≤20	PASS
			2441	30~1000	-80.561	≤-54	0.00001	≤4	PASS
				1000~12500	-61.027	≤-47	0.00001	≤20	PASS
			2480	30~1000	-80.822	≤-54	0.00001	≤4	PASS
				1000~12500	-48.643	≤-47	0.00001	≤20	PASS
	3DH5	Ant1	2402	30~1000	-80.448	≤-54	0.00001	≤4	PASS
				1000~12500	-55.883	≤-47	0.00001	≤20	PASS
			2441	30~1000	-80.613	≤-54	0.00001	≤4	PASS
				1000~12500	-58.471	≤-47	0.00001	≤20	PASS
			2480	30~1000	-80.550	≤-54	0.00001	≤4	PASS
				1000~12500	-66.562	≤-47	0.00001	≤20	PASS

RX Test the worst mode

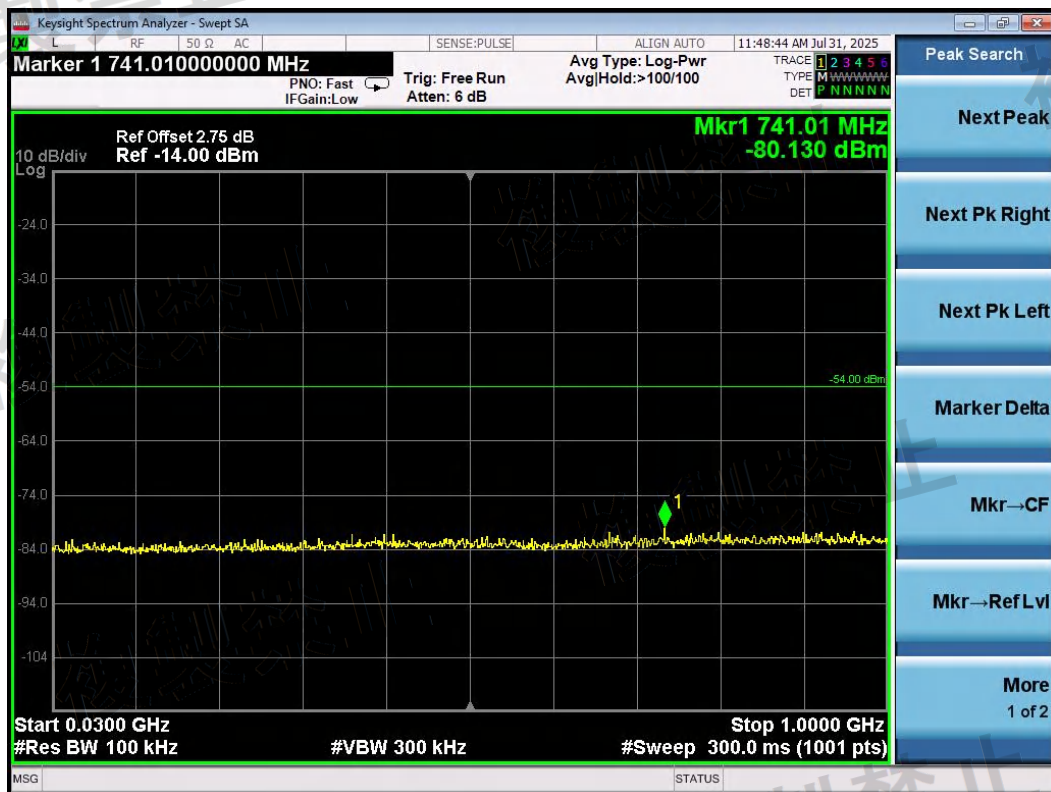
NTNV_DH5_Ant1_2402_30~1000



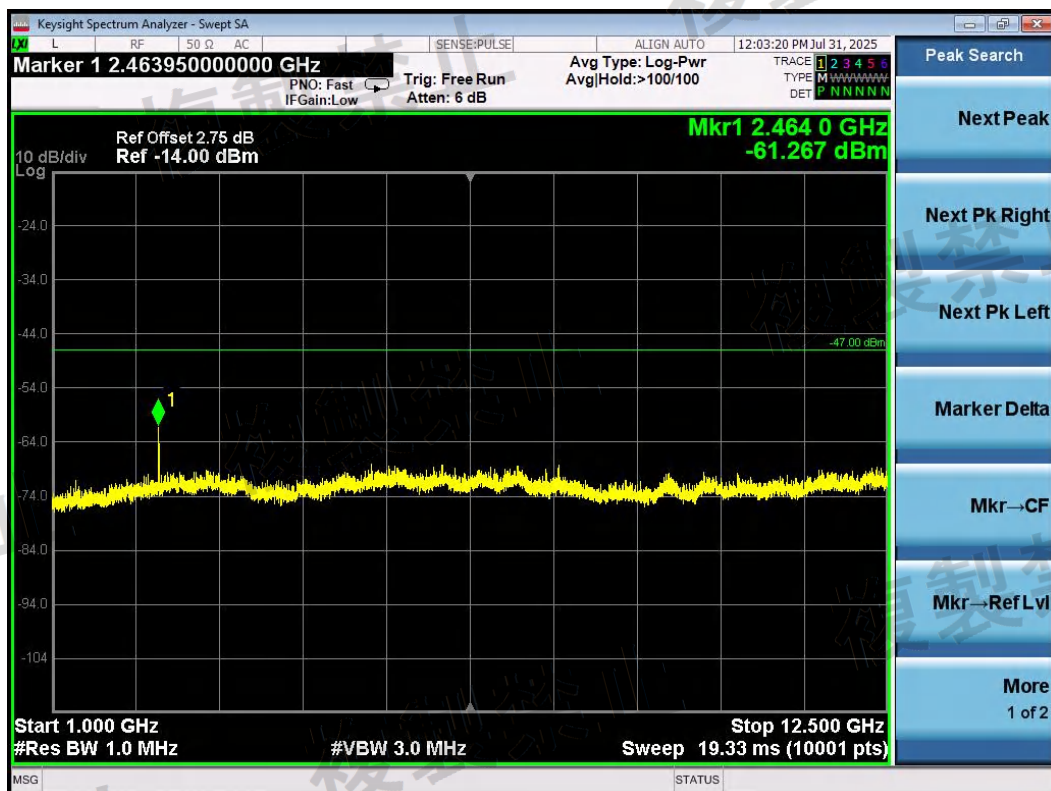
NTNV_DH5_Ant1_2402_1000~12500



NTNV_DH5_Ant1_2441_30~1000

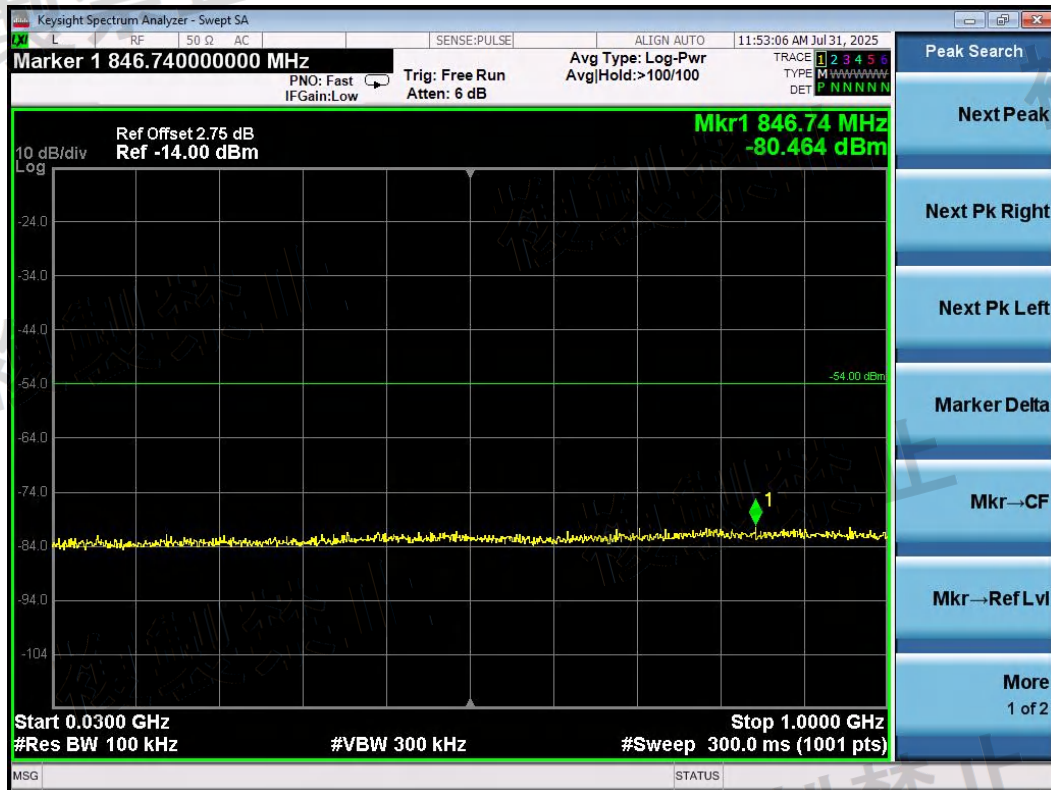


NTNV_DH5_Ant1_2441_1000~12500

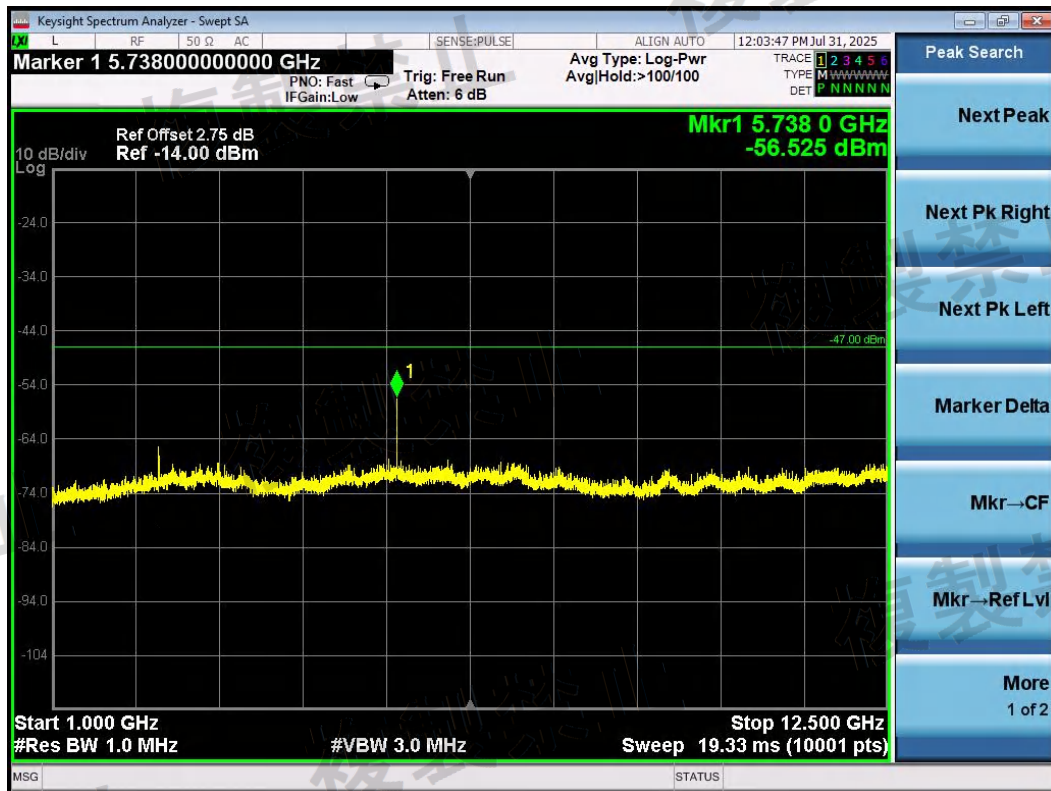




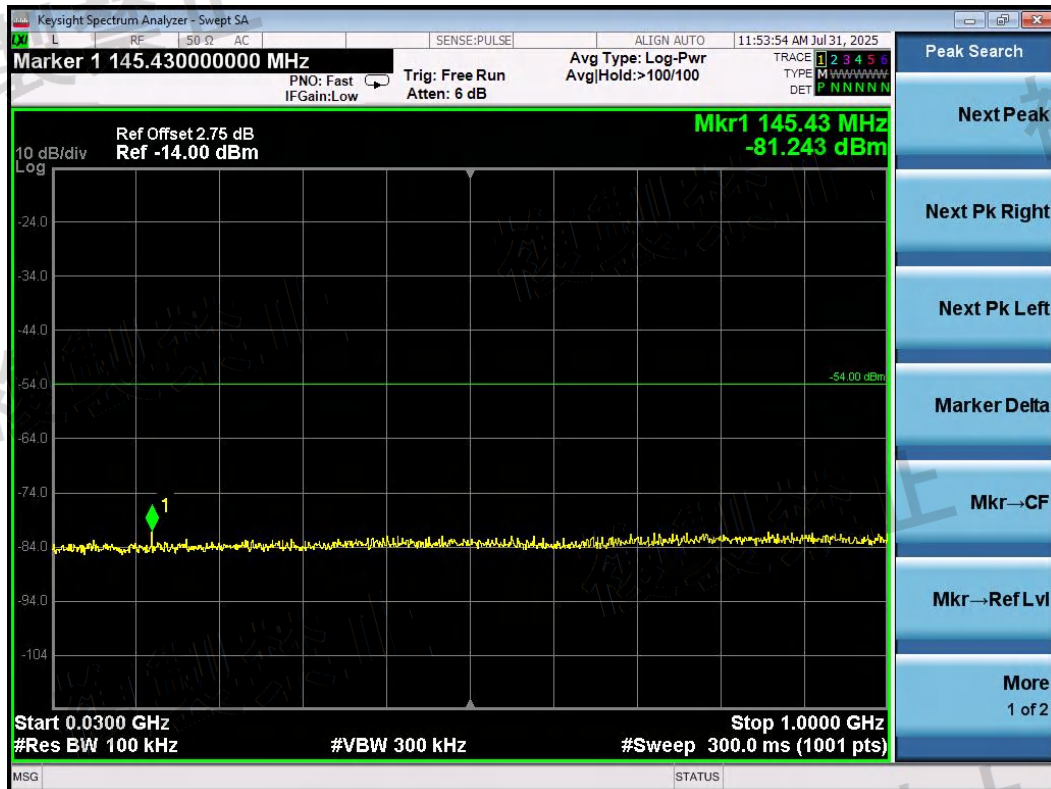
NTNV_DH5_Ant1_2480_30~1000



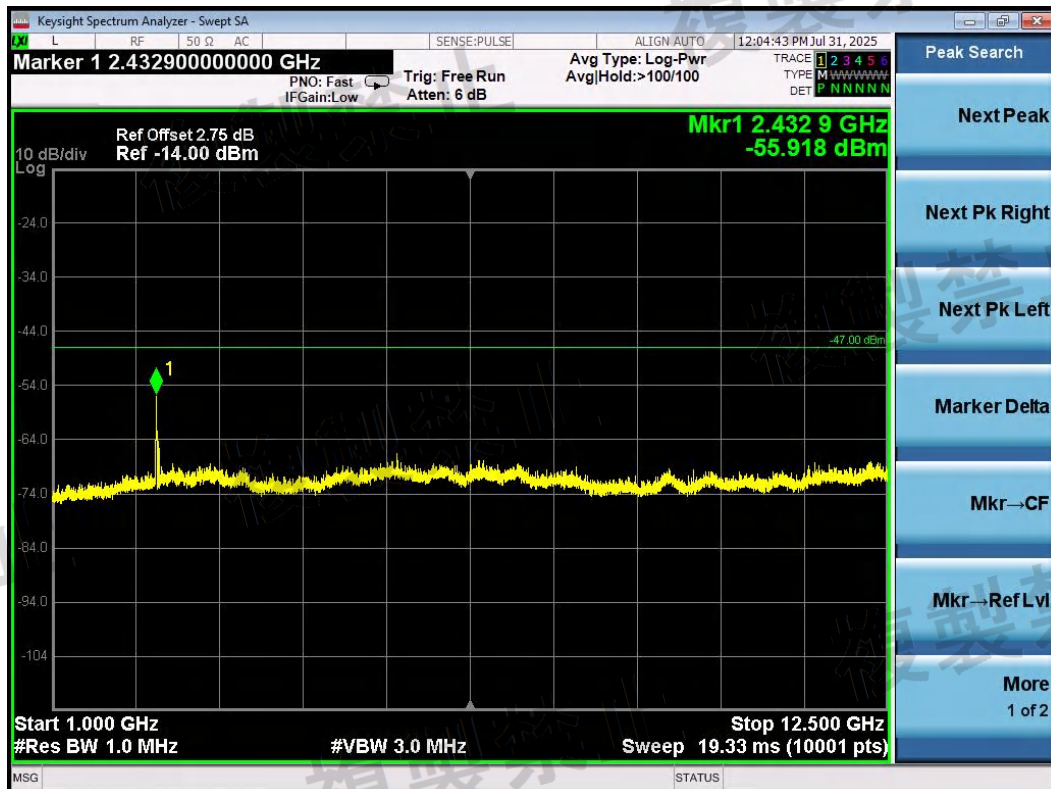
NTNV_DH5_Ant1_2480_1000~12500



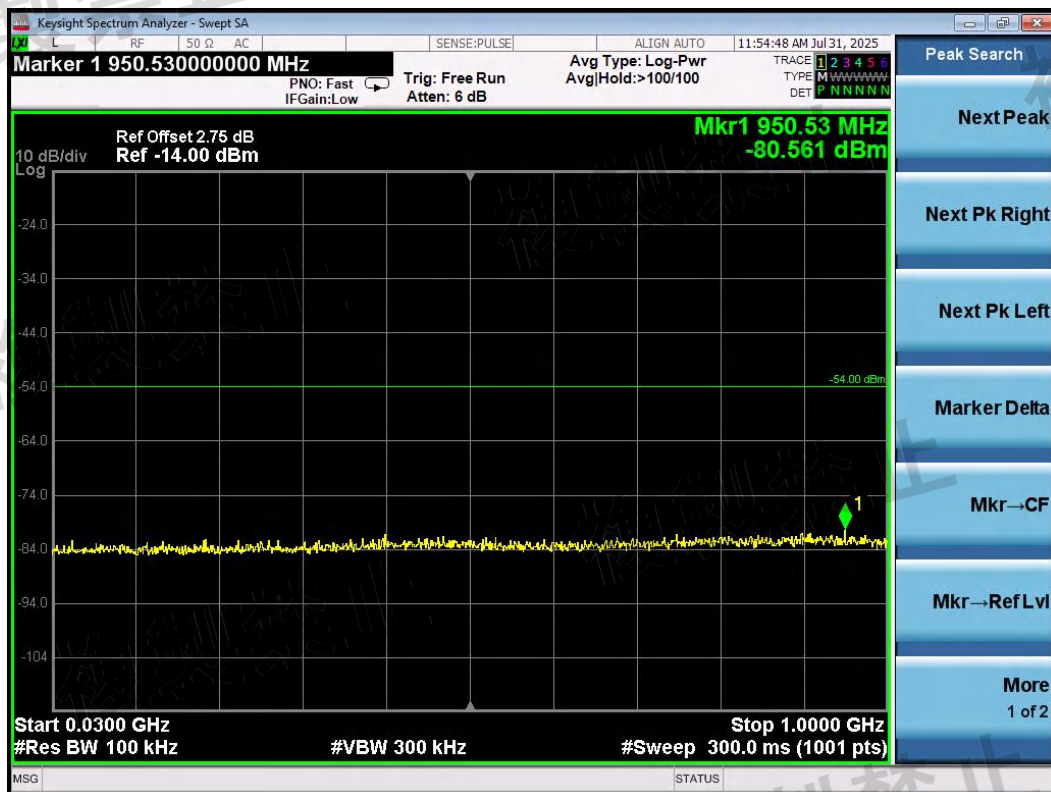
NTNV_2DH5_Ant1_2402_30~1000



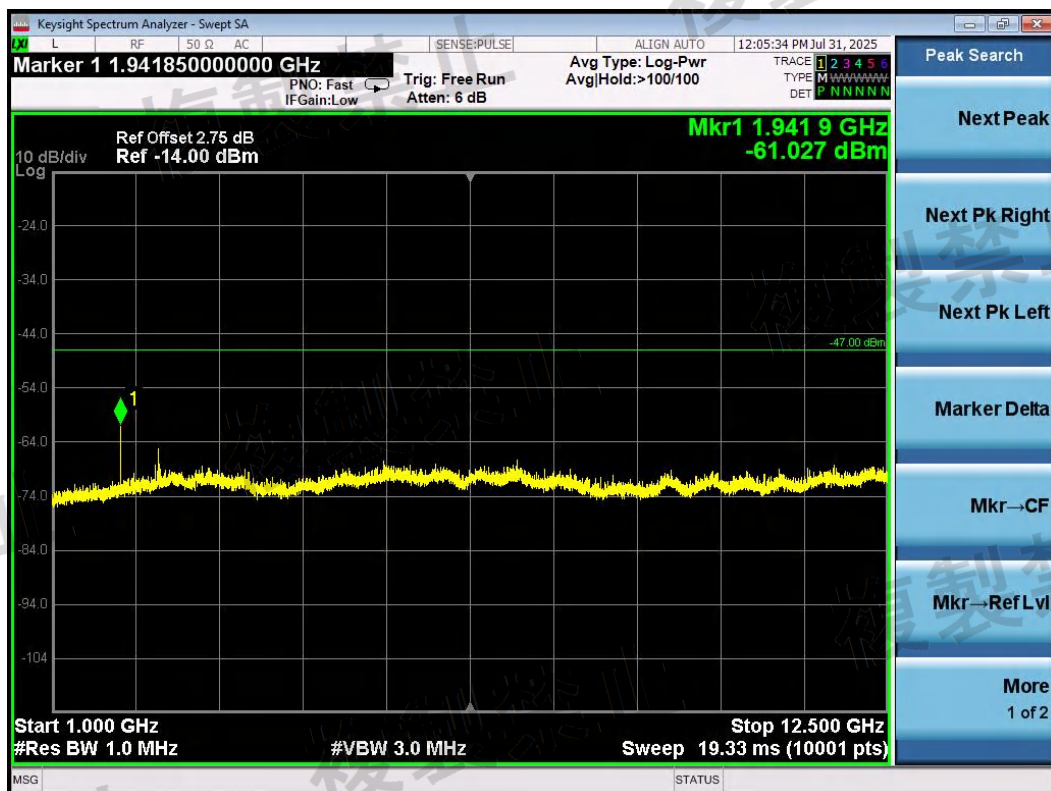
NTNV_2DH5_Ant1_2402_1000~12500



NTNV_2DH5_Ant1_2441_30~1000

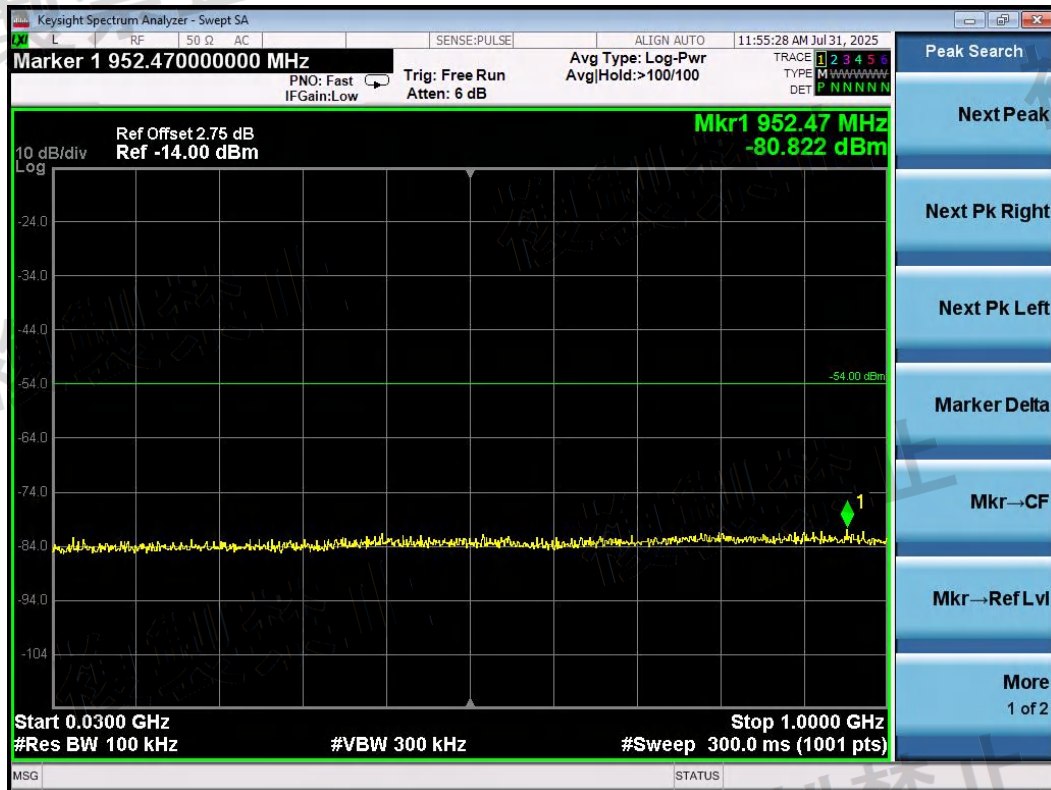


NTNV_2DH5_Ant1_2441_1000~12500

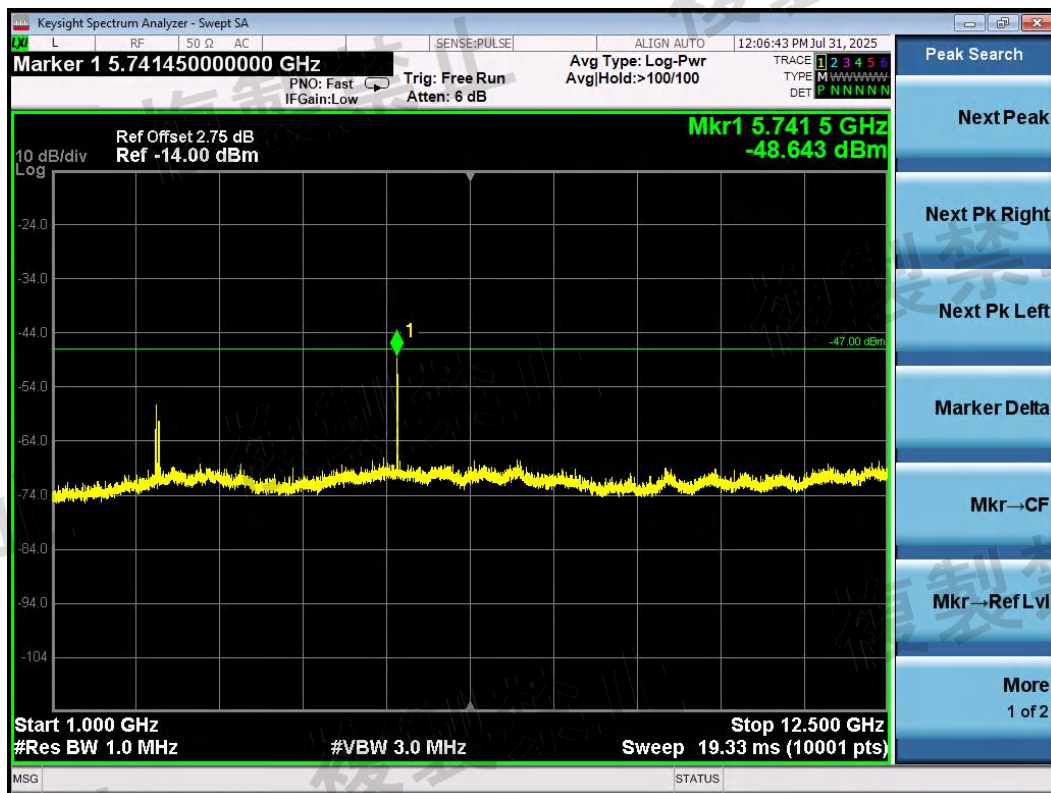




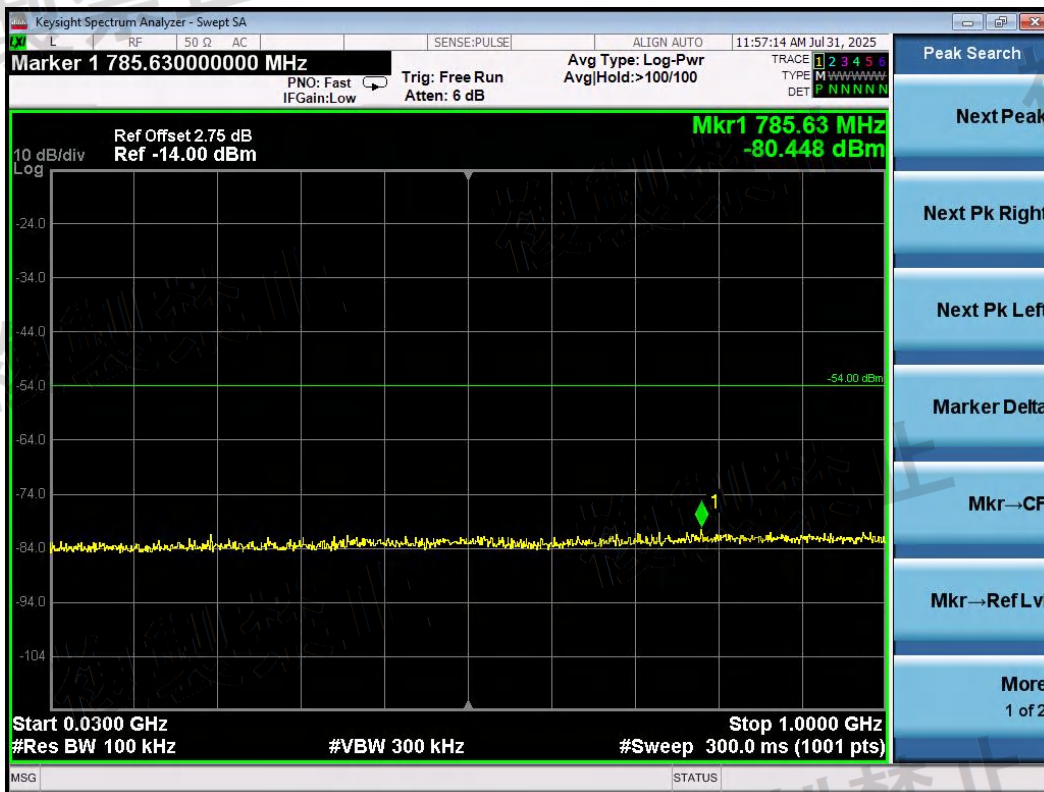
NTNV_2DH5_Ant1_2480_30~1000



NTNV_2DH5_Ant1_2480_1000~12500



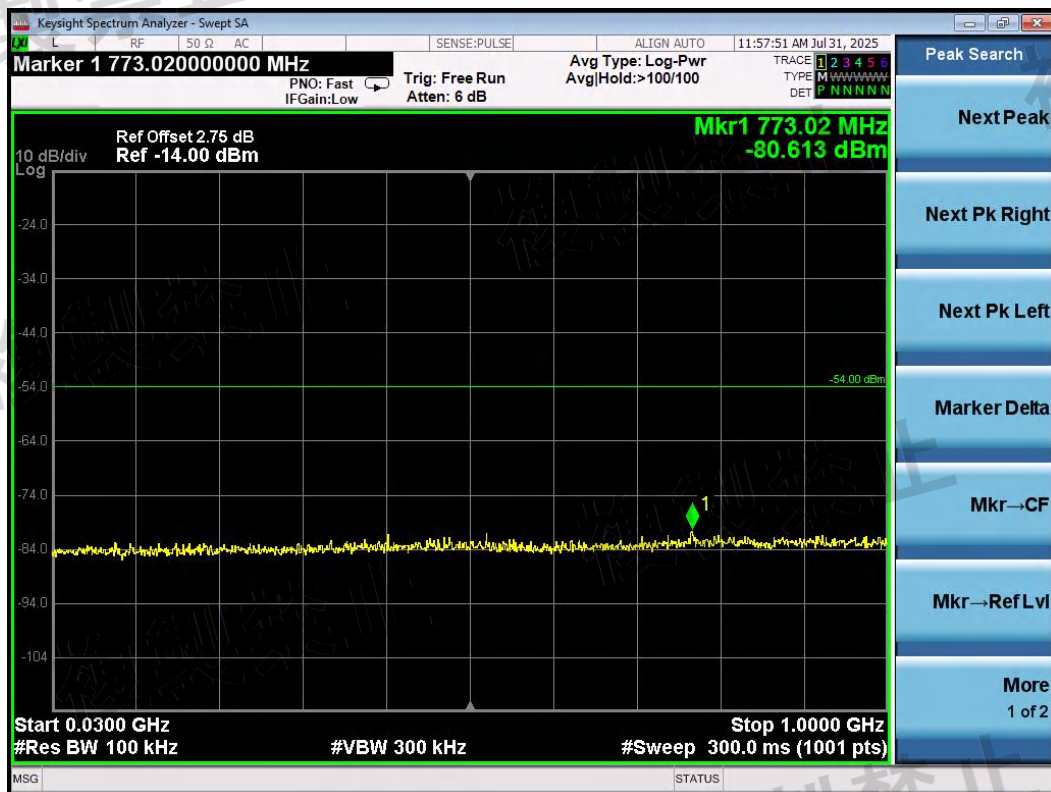
NTNV_3DH5_Ant1_2402_30~1000



NTNV_3DH5_Ant1_2402_1000~12500



NTNV_3DH5_Ant1_2441_30~1000

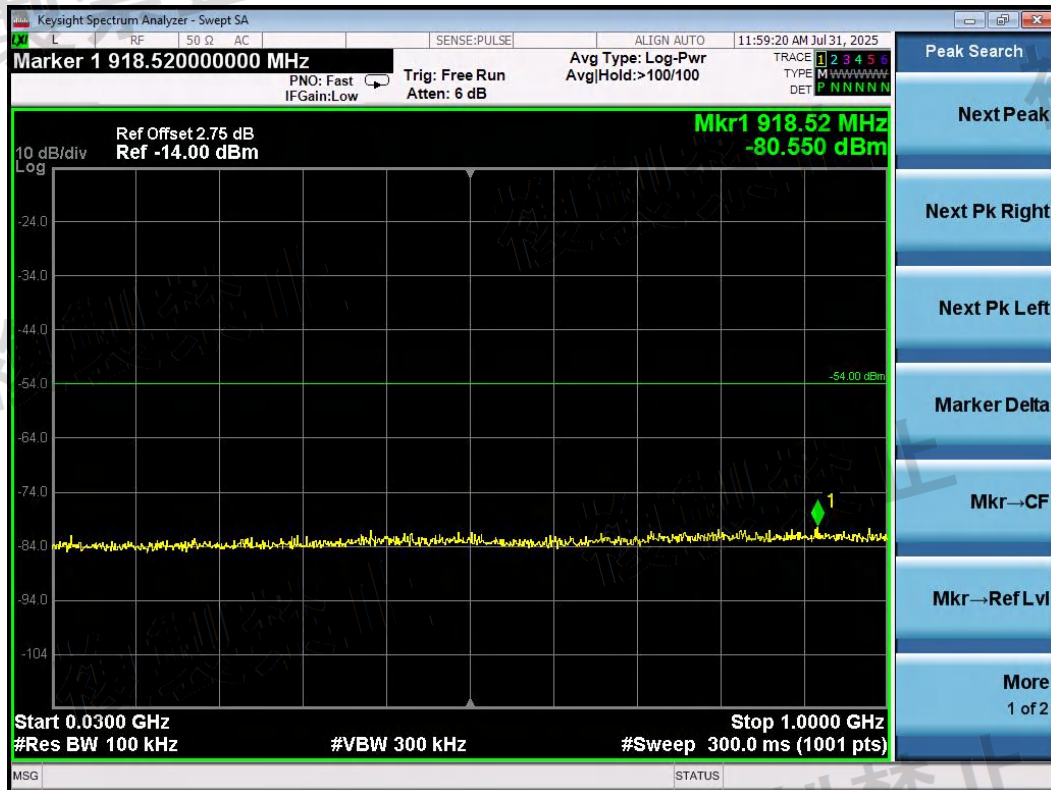


NTNV_3DH5_Ant1_2441_1000~12500

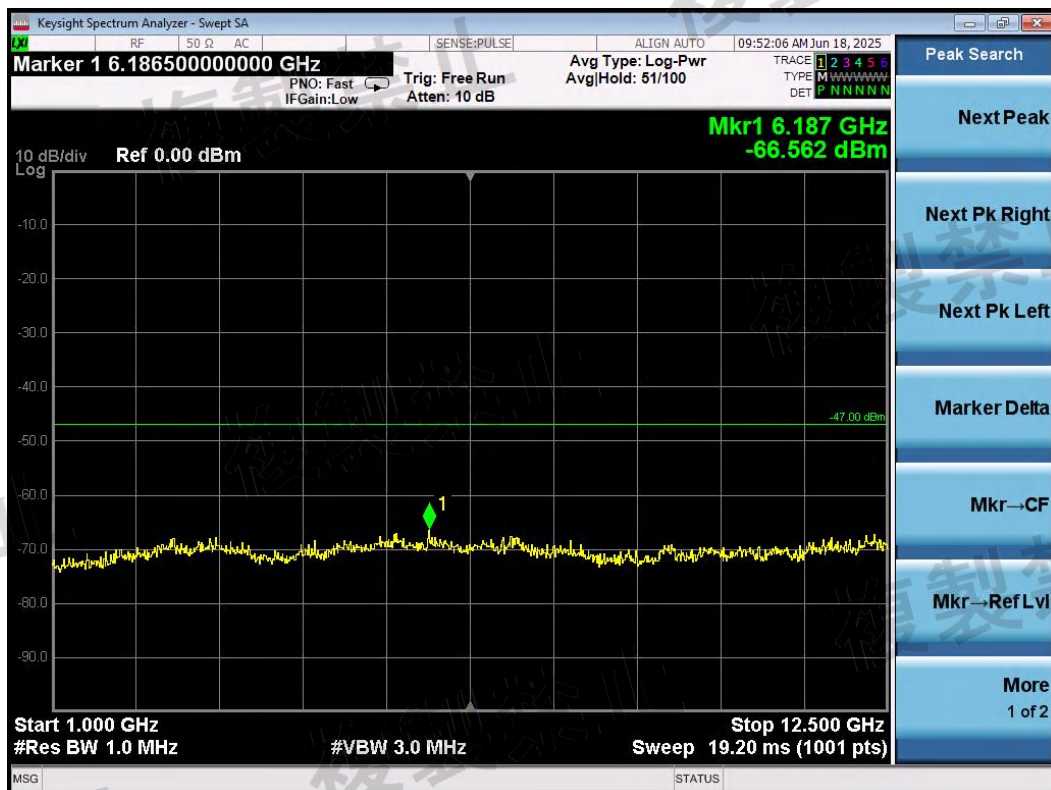




NTNV_3DH5_Ant1_2480_30~1000



NTNV_3DH5_Ant1_2480_1000~12500



10. DWELL TIME

10.1 LIMIT

Item	Limits
Hopping Freq. Dwell Time	$\leq 0.4 \text{ sec (In } 0.4 \text{ sec} \times \text{ spreading rate)}$

10.2 TEST PROCEDURES

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	0 MHz
RB	1 MHz
VB	1 MHz
Detector	Peak
Trace	Max Hold
Sweep	Continuous

- The transmitter output (antenna port) was connected to the spectrum analyzer
- Set RBW of spectrum analyzer to 1MHz and VBW to 1MHz.
- Use a video trigger with the trigger level set to enable triggering only on full pulses.
- Sweep Time is more than once pulse time.
- Set the center frequency on any frequency would be measure and set the frequency span to zero span.
- Measure the maximum time duration of one single pulse.
- Set the EUT for DH5, DH3 and DH1 packet transmitting.
- Measure the maximum time duration of one single pulse.
- Dwell time = $[\text{spreading rate}/79] \times \text{duty-cycle} \times 0.4 \text{ seconds}$. (to be determined for each mode, DH1, DH3, DH5)

10.3 TEST SETUP



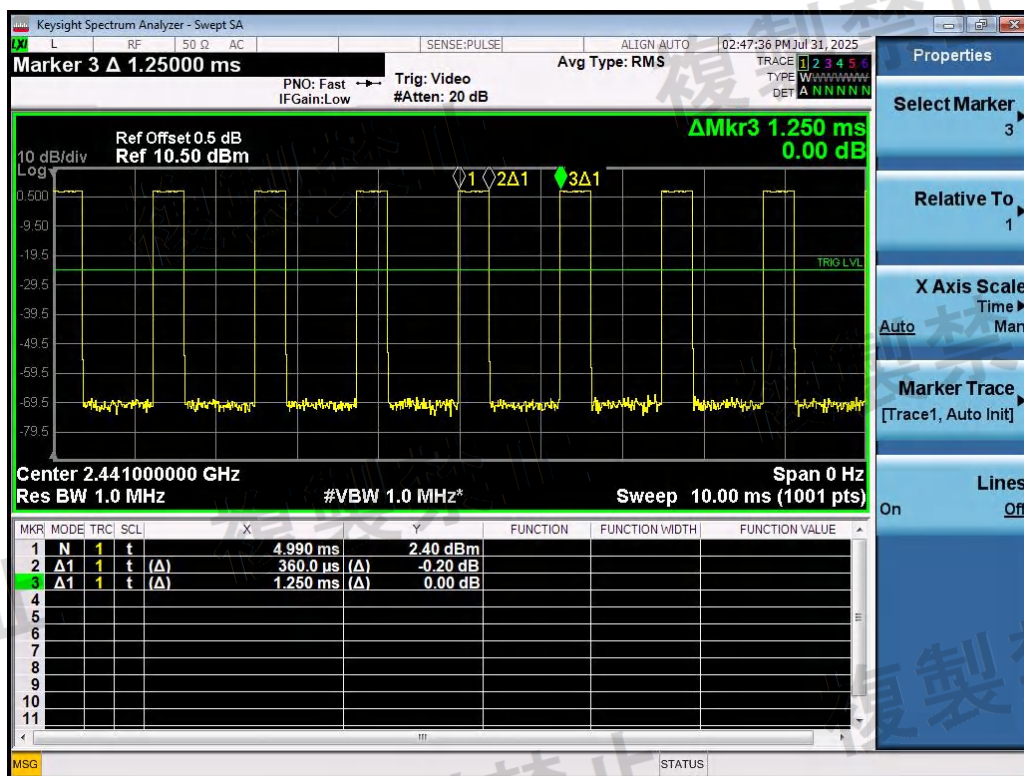


10.4 TEST RESULT

Temperature:	25°C	Humidity:	55 % RH
Pressure	101kPa		

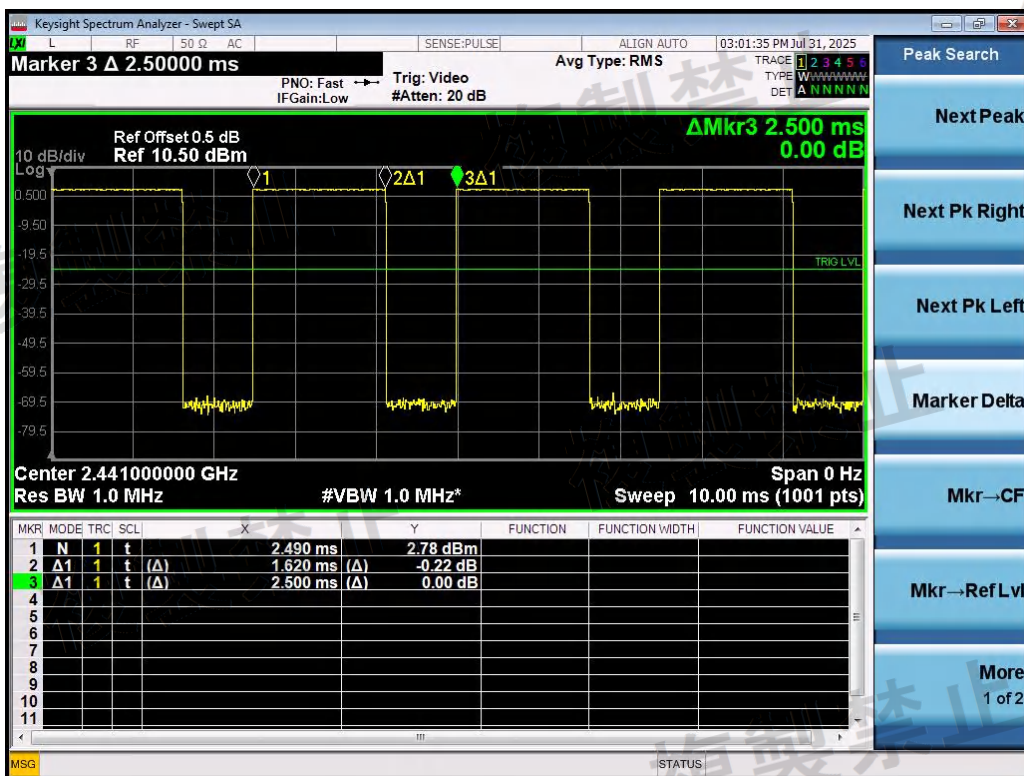
Test Condition	Test Mode	Antenna	Freq. [MHz]	T_ON [ms]	Period [ms]	Result [s]	Limit [s]	Verdict
NTNV	DH1	Ant1	2441	0.360	1.250	0.102	≤0.4	PASS
	DH3	Ant1	2441	1.620	2.500	0.230	≤0.4	PASS
	DH5	Ant1	2441	2.870	3.750	0.272	≤0.4	PASS
	2DH1	Ant1	2441	0.380	1.250	0.108	≤0.4	PASS
	2DH3	Ant1	2441	1.630	2.500	0.232	≤0.4	PASS
	2DH5	Ant1	2441	2.870	3.750	0.272	≤0.4	PASS
	3DH1	Ant1	2441	0.380	1.250	0.108	≤0.4	PASS
	3DH3	Ant1	2441	1.600	2.500	0.227	≤0.4	PASS
	3DH5	Ant1	2441	2.350	3.750	0.222	≤0.4	PASS

NTNV_DH1_Ant1_Hop

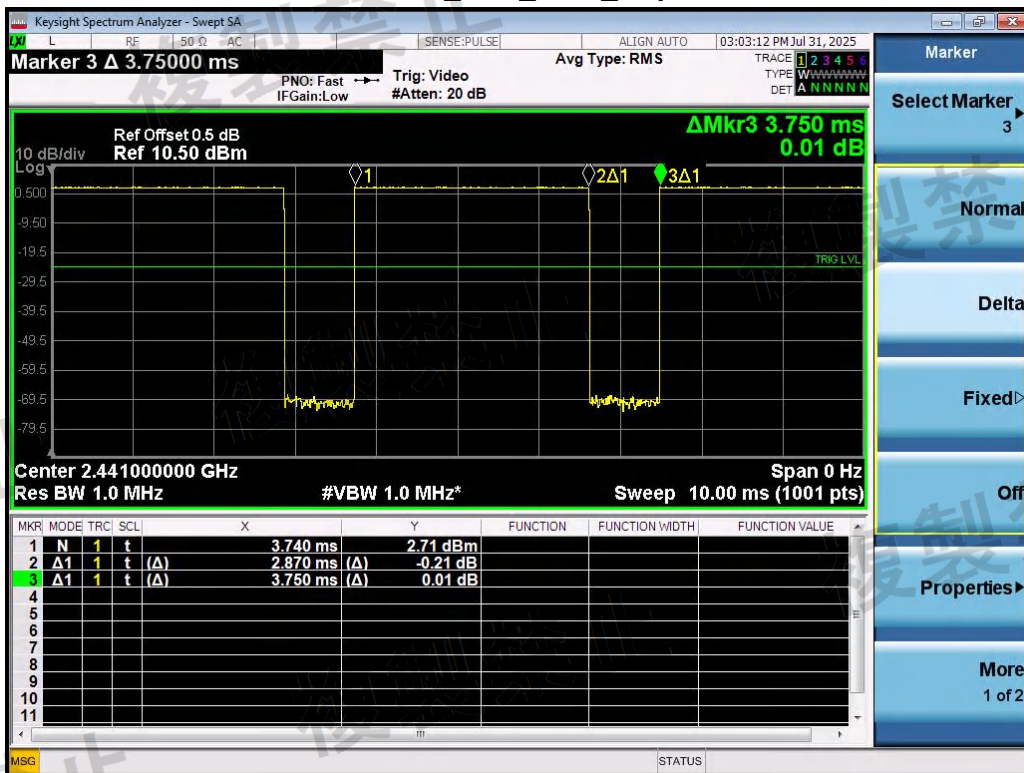




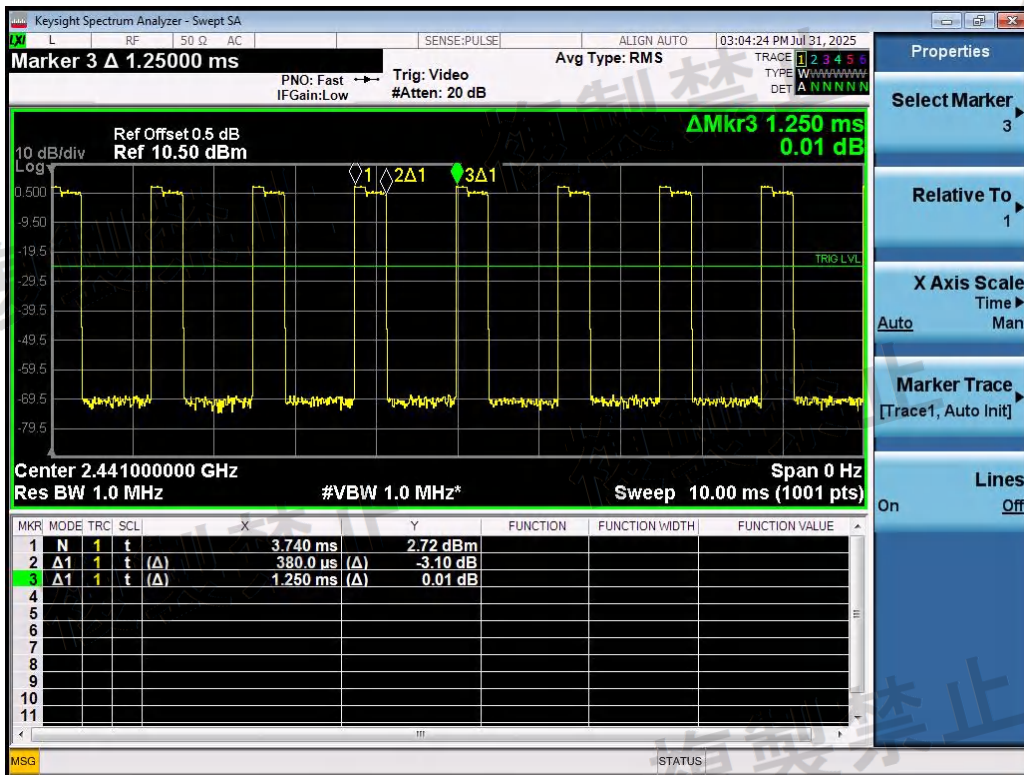
NTNV_DH3_Ant1_Hop



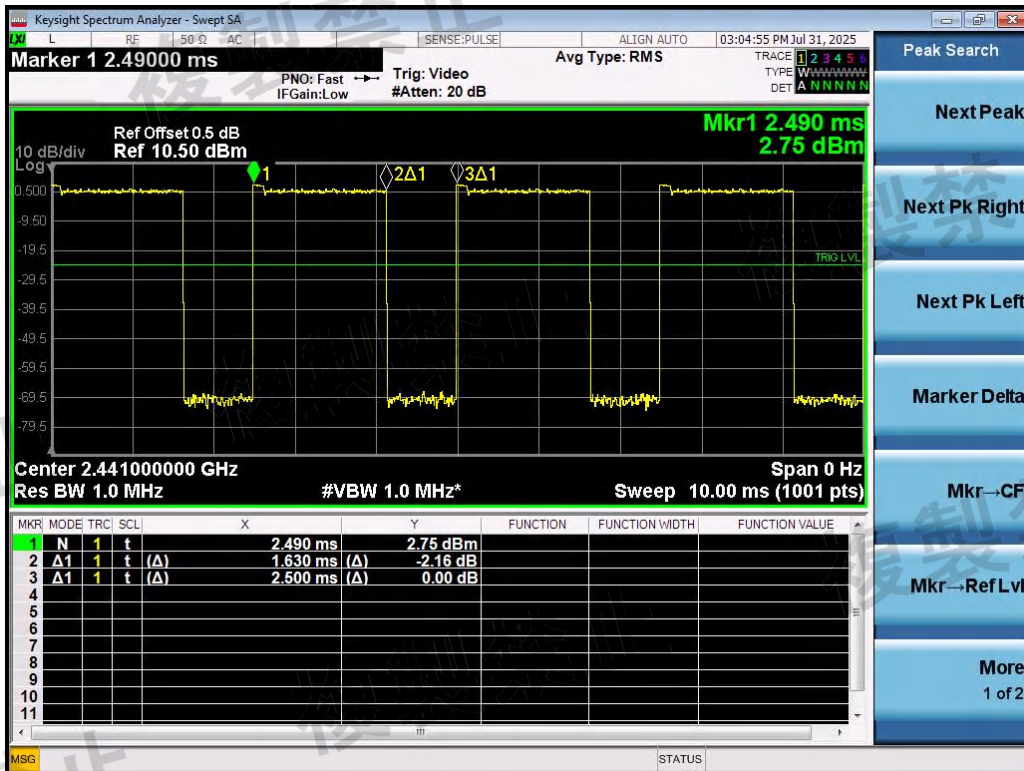
NTNV_DH5_Ant1_Hop



NTNV_2DH1_Ant1_Hop

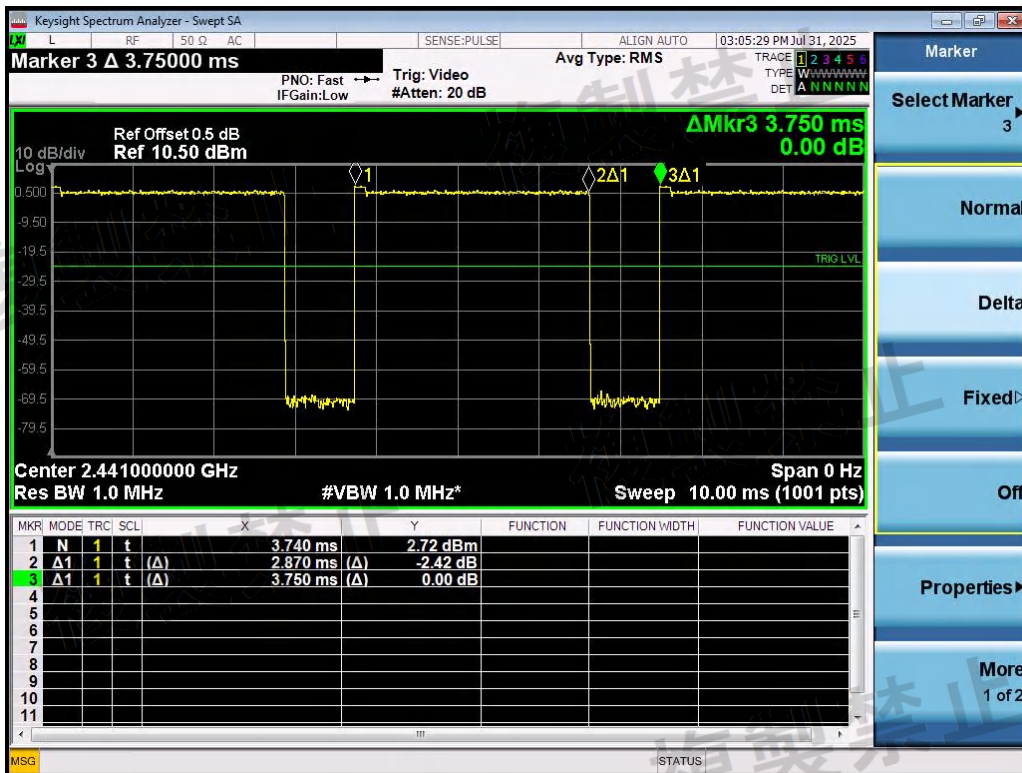


NTNV_2DH3_Ant1_Hop

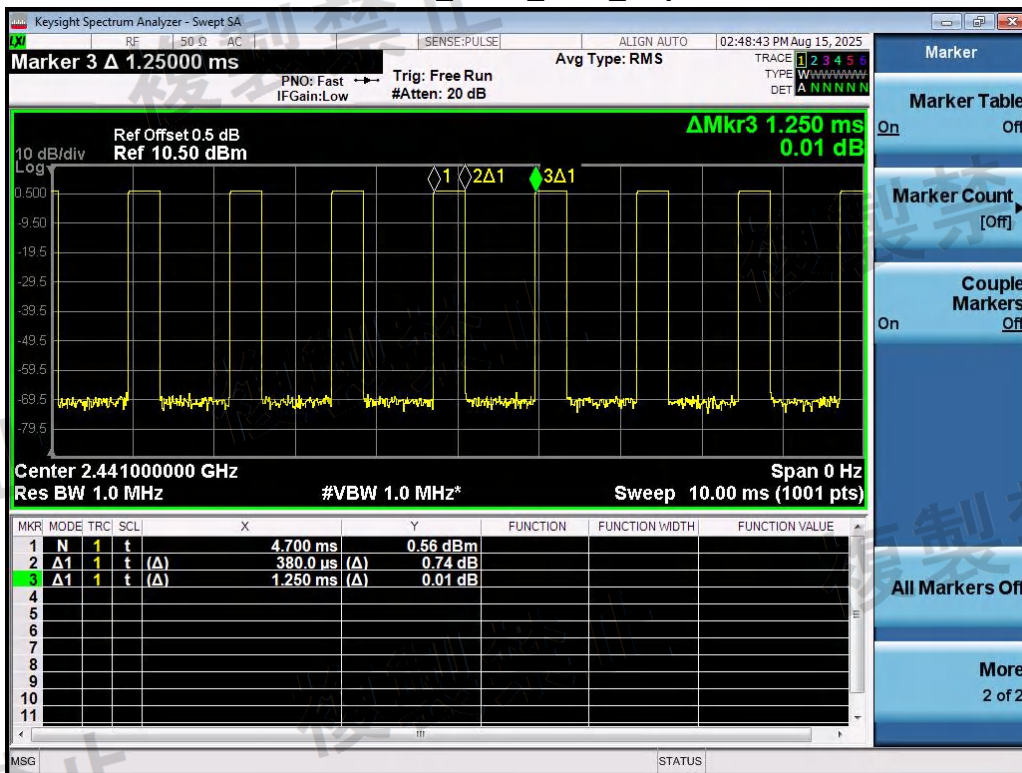




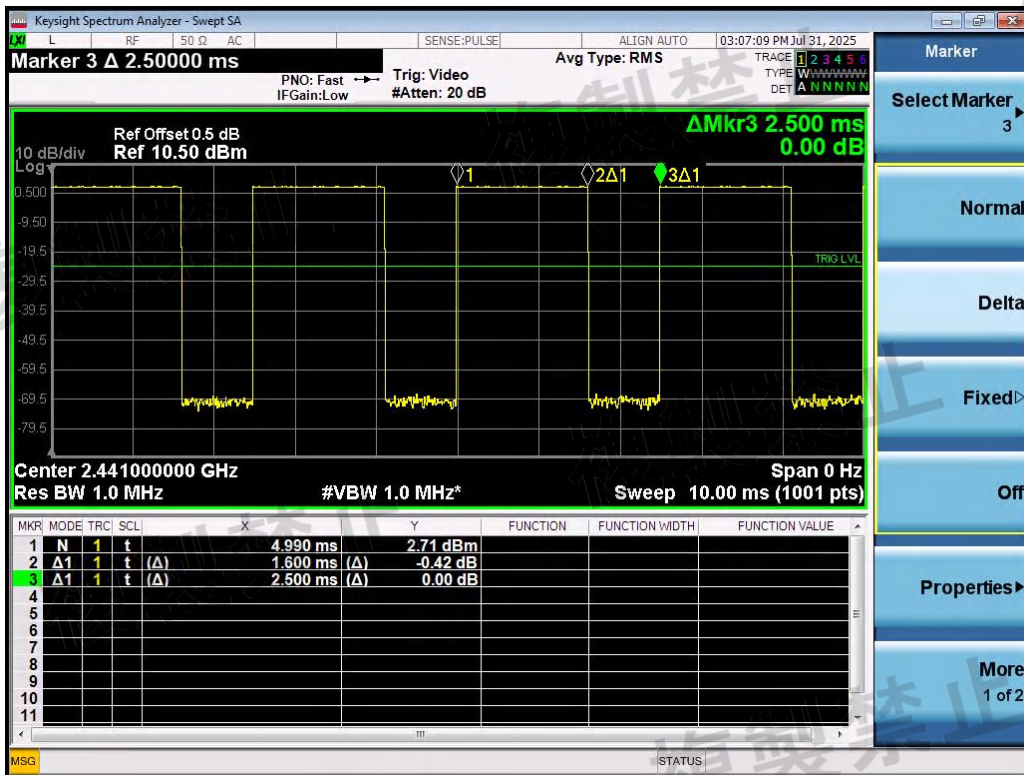
NTNV_2DH5_Ant1_Hop



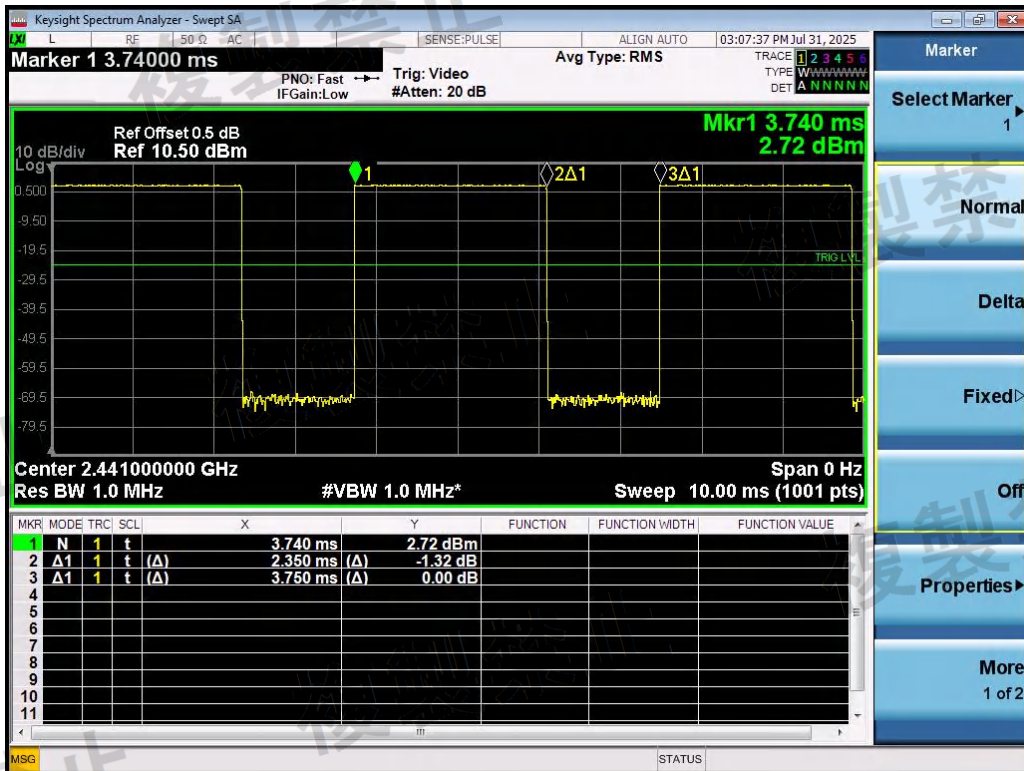
NTNV_3DH1_Ant1_Hop



NTNV_3DH3_Ant1_Hop



NTNV_3DH5_Ant1_Hop



Duty-cycle = [on time/total time] x 100%

Dwell time = [spreading rate/79] x duty-cycle x 0.4 seconds

11. TRANSMISSION RADIATION ANGLE WIDTH (3DB BEAMWIDTH) MEASUREMENT

11.1 LIMIT

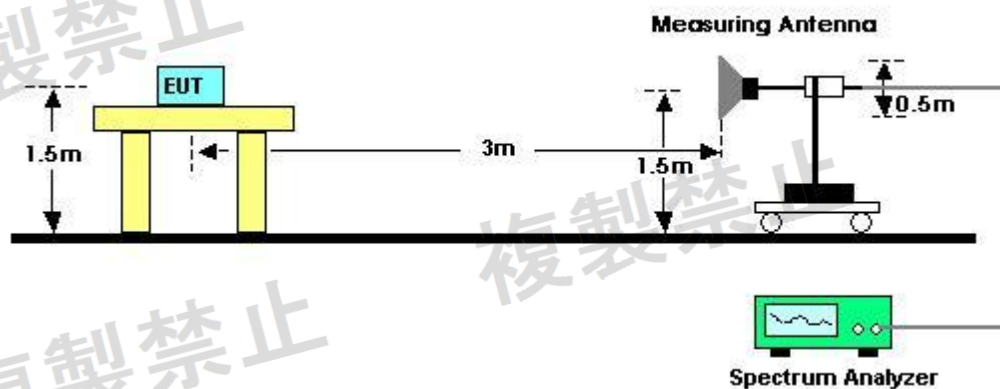
Item	Limits
3dB antenna beam width	$e \leq 360/A$ (The A is 10 in maximum) $A = \{EIRP \text{ Power [mW/MHz]} / \{2.14\text{dBi} + \text{output power (10mW /MHz, 3mW/MHz)}\}\}$ Shall be 1 when A is lower than 1
Note: This test item is not applied for radio equipment with equivalent isotropic radiation power lower than 12.14dBm/MHz, but Antenna Power(Conducted) limit is 10 mW/MHz (10 dBm/MHz), So the test item will not be applied to the transmission antenna which has a gain of 2.14dBi or less	

11.2 TEST PROCEDURES

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	0 MHz
RB	1 MHz
VB	1 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

1. Set EUT and measuring antenna at the same height and roughly facing each other.
2. Set spectrum analyzer with condition in section 4.7.2 and tune reference level to observe receiving signal position.
3. Rotate directions of the EUT horizontally and vertically to find the maximum receiving power.
4. Move the measuring antenna height up and down within $\pm 50\text{cm}$ of EUT height and swing it to find the maximum output of measuring antenna. "E" is the half-power beam width (angle between two points at which radiated power becomes 1/2)
5. Calculate permitted radiation angle in horizontal and vertical using EIRP measured in another test method.
6. Calculate 3dB antenna beam width by the formula below $360/A$ (If $A < 1$; then $A = 1$).
 $A = \{EIRP \text{ Power [mW/MHz]} / \{2.14\text{dBi} + \text{output power (10mW /MHz, 3mW/MHz)}\}\}$
 Shall be 1 when A is lower than 1

11.3 TEST SETUP



11.4 TEST DEVIATION

There is no deviation with the original standard.

11.5 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously transmitting mode.

11.6 TEST RESULT

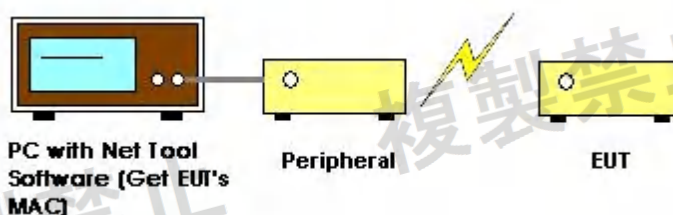
EIRP is less than 6.91dBm/MHz, Not applicable for this test item.

12. RADIO INTERFERENCE PREVENTION CAPABILITY MEASUREMENT

12.1 TEST PROCEDURES

1. In the case that the EUT has the function of automatically transmitting the identification code: a. Transmit the predetermined identification codes from EUT. b. Check the transmitted identification codes with the demodulator.
2. In the case of receiving the identification code: a. Transmit the predetermined identification codes from the counterpart. b. Check if communication is normal. c. Transmit the signals other than predetermined ID codes from the counterpart. d. Check if the EUT stops the transmission, or if it displays that identification codes are different from the predetermined ones.

12.2 TEST SETUP



12.3 TEST DEVIATION

There is no deviation with the original standard.

12.4 EUT OPERATION DURING TEST

The EUT was programmed to be in normal transmitting mode.

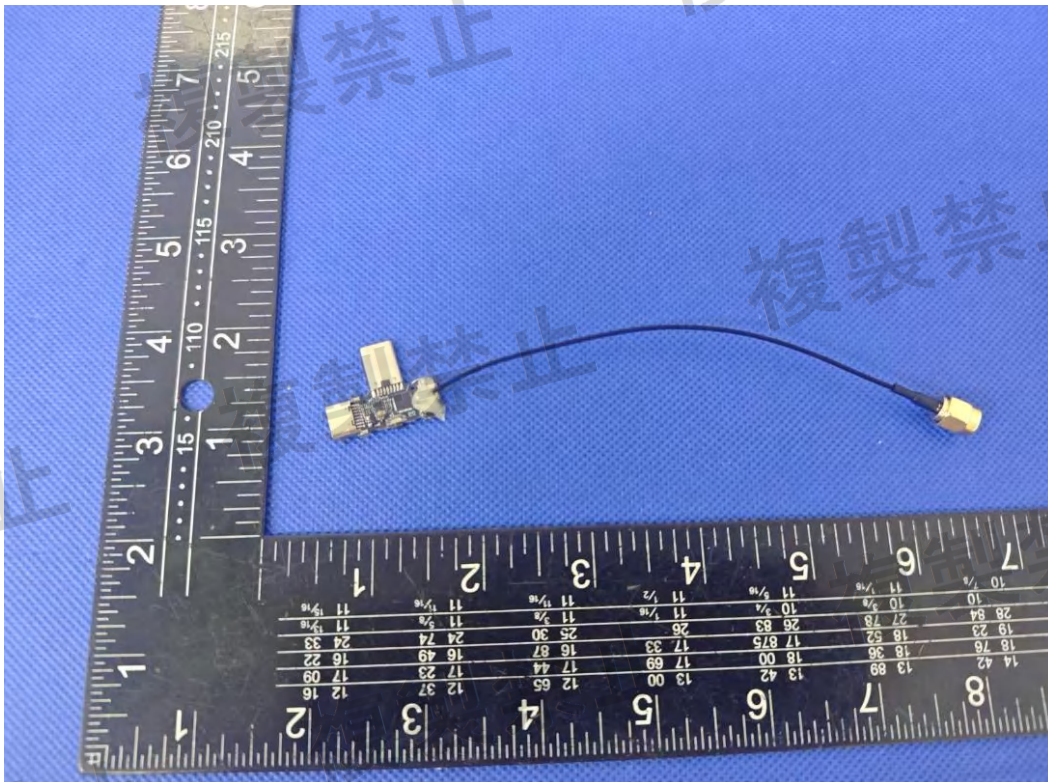
12.5 TEST RESULT OF RADIO INTERFERENCE PREVENTION CAPABILITY

MAC address of BT device: 33:C1:63:CC:BD:12

Note: test result comment: Good.

13. EUT TEST PHOTO

Measurement Photos



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