Radio Test Report
ARIB STD-T71
MIC notice 88 Appendix 45

Client Information:

Applicant: Autel Intelligent Technology Corp., Ltd.

Applicant add.: Floor 2, Caihong Keji Building, 36 Hi-tech North Six Road, Songpingshan Community, Xili Sub-district, Nanshan District, Shenzhen City, China

Product Information:

Product Name: PROFESSIONAL SCAN TOOL

Model No.: MaxiDiag MD909 Pro

Serial Model : MaxiDiag MD906 Pro

Brand Name: AUTEL

Report No.: CTT2024123006R21T-03

Prepared By:

Shenzhen C-link Testing & Technology Co., Ltd.

Add. : No.709, Enhai Building, No.1 Hangkong Road, Sanwei Community, Hangcheng Street, Bao 'an District, Shenzhen, Guangdong, China

Date of Receipt: Dec. 30, 2024 Date of Test: Dec. 30, 2024~ Mar. 07, 2025

Date of Issue: Mar. 07, 2025 Test Result: Pass

This device has been tested and found to comply with the stated standard(s) above, which is (are) applicable only to the tested sample identified in the report.

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Reviewed by: Mary Ye **Approved by:** Brown Lu

Table of Contents

Page

1 . SUMMARY OF TEST RESULTS 5
1.1 TEST FACILITY 6
1.2 MEASUREMENT UNCERTAINTY 6
2 . GENERAL INFORMATION 7
2.1 GENERAL DESCRIPTION OF EUT 7
2.2 DESCRIPTION OF TEST MODES 9
2.3 TEST CONDITIONS 10
2.4 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED 10
2.5 DESCRIPTION OF SUPPORT UNITS 11
2.6 EQUIPMENTS LIST FOR ALL TEST ITEMS 12
3 . RF SHIELDING METHOD 13
4 . TEST RESULT FOR WIFI 14
4.1 FREQUENCY ERROR 14
4.2 LIMIT 14
4.3 MEASURING INSTRUMENTS AND SETTING 14
4.4 TEST PROCEDURES 14
4.5 TEST SETUP LAYOUT 14
5 . OCCUPIED BANDWIDTH MEASUREMENT (99% POWER BANDWIDTH) 19
5.1 LIMIT 19
5.2 TEST PROCEDURES 19
5.3 TEST SETUP LAYOUT 19
5.4 TEST DEVIATION 19
5.5 EUT OPERATION DURING TEST 19
5.6 TEST RESULT 20
6 . UNWANTED EMISSION STRENGTH MEASUREMENT 30
6.1 LIMIT 30
6.2 MEASURING INSTRUMENTS AND SETTING 30
6.2 . MEASURING INSTRUMENTS AND SETTING 30
6.3 . TEST PROCEDURES 31
6.4 . TEST SETUP LAYOUT 32
6.5 TEST DEVIATION 32

Table of Contents

Page

6.5 . TEST RESULT 33

7 . ADJACENT CHANNEL EMITTED POWER MEASUREMENT 77

7.1 LIMIT 77

7.2 TEST PROCEDURES 78

7.3 TEST SETUP 79

7.4 TEST DEVIATION 79

7.5 EUT OPERATION DURING TEST 79

8 . RF OUTPUT POWER / TOLERANCE 89

8.1 TEST DEVIATION 89

8.2 EUT OPERATION DURING TEST 89

8.3 TEST PROCEDURES 89

8.4 TEST SETUP 89

8.5 TEST RESULT 90

9 . E.I.R.P MEASUREMENT 105

9.1 LIMIT 105

9.2 TEST PROCEDURES 105

9.3 TEST SETUP LAYOUT 105

9.4 TEST DEVIATION 105

9.5 EUT OPERATION DURING TEST 105

9.6 TEST RESULT OF TRANSMISSION ANTENNA GAIN (EIRP ANTENNA POWER)105

10 SPURIOUS EMISSIONS FOR RECEIVER 108

10.1 TEST SETUP LAYOUT 108

10.2 TEST DEVIATION 108

10.3 TEST DEVIATION 108

10.4 TEST RESULT OF LIMITATION OF COLLATERAL EMISSION OF RECEIVER108

11 TRANSMISSION BURST LENGTH MEASUREMENT 121

11.1 MEASURING INSTRUMENTS 121

11.2 TEST PROCEDURES 121

11.3 TEST SETUP 121

11.4 TEST DEVIATION 121

11.5 EUT OPERATION DURING TEST 121

11.6TEST RESULT OF TRANSMISSION BURST LENGTH 121

Table of Contents

Page

12. RADIO INTERFERENCE PREVENTION CAPABILITY MEASUREMENT 128

12.1 LIMIT 128

12.2 MEASURING ID CODE SOFTWARE 128

12.3 TEST PROCEDURES 128

12.4 TEST SETUP LAYOUT 128

12.5 TEST DEVIATION 128

12.6 EUT OPERATION DURING TEST 128

12.7 TEST RESULT OF RADIO INTERFERENCE PREVENTION CAPABILIT 128

13 CARRIER SENSE CAPABILITY 129

14. EUT TEST PHOTO 130

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1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

MIC Notice No.88 Appendix No.45	Description of Test	Result
Article 3	Frequency Tolerance	Complies
Article 4	Occupied Bandwidth	Complies
Article 5	Unwanted Emission Strength	Complies
Article 6	Antenna Power Error	Complies
Article 6	E.I.R.P	Complies
Article 7	Adjacent channel Emitted Power	Complies
Article 8	Out-Band Leakage Power	Complies
Article 9	Secondary Radiated Emission Strength	Complies
Article 10	Transmission Burst Length	Complies
Article 11	Interference Prevention Function	Complies
Article 12	Carrier Sensing Function	Complies
Article 13,14	Dynamic Frequency Selection (DFS)	Not applicable (See Note 1)
Article 49.20.3	Construction Protection Confirmation	Please refer to Japan Radio Protection Declaration

Note:

1. It is unnecessary to testing, when the EUT only operate in W52 band.
2. The antenna gain has been compensated.

1.1 TEST FACILITY

Shenzhen C-link Testing &Technology Co., Ltd.
Add. : No.709, Enhai Building, No.1 Hangkong Road, Sanwei Community, Hangcheng Street, Bao 'an District, Shenzhen, Guangdong, China

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y ± U** · where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2** · providing a level of confidence of approximately **95** %.

No.	Item	Uncertainty
1	Frequency Error / 99% & 90% Bandwidth	± 0.85 x 10^{-7}
2	Antenna Power	± 0.70 dB
3	Spurious Emissions	± 0.80 dB
4	DC / AC Power Source	±1.4%

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Manufacturer:	Autel Intelligent Technology Corp., Ltd.
Manufacturer Address:	Floor 2, Caihong Keji Building, 36 Hi-tech North Six Road, Songpingshan Community, Xili Sub-district, Nanshan District, Shenzhen City, China
Equipment	PROFESSIONAL SCAN TOOL
Model Name	MaxiDiag MD909 Pro
Brand Name:	AUTEL
Derivative model No.:	MaxiDiag MD906 Pro
Model Difference	All the model are the same circuit and RF module, Only the model name and color are different.
Product Description	The EUT is a PROFESSIONAL SCAN TOOL Operation Frequency: 802.11a/n/ac: 5180.0MHz ~ 5240.0MHz Modulation Type: OFDM Number Of Channel: Please see Note 2. Antenna Designation: FPC Antenna Antenna Gain (dBi): 0.3dBi Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.
Channel List	Please refer to the Note 2.
Power Supply Range:	INPUT: DC5V DC 3.8V from battery
Battery:	Model No.:PT2011 3.8VDC, 5000mAh/19Wh
Adapter:	MODEL: GME10C-050200FUu Input:100-240V~ 50-60Hz 0.28A Output:5VDC 2A
Hard Ware Version:	DV2411_MAIN_V1
Soft Ware Version:	V01.01.00

Note:

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

802.11a& 802.11n& 802.11ac (20MHz):

2.

Frequency Channel							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	40	5200	44	5220	48	5240

802.11n& 802.11ac (40MHz):

Frequency Channel							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	46	5230				

802.11ac (80MHz):

Frequency Channel							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
42	5210						

2.2 DESCRIPTION OF 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	802.11a /n(20) /ac (20): CH36/ CH40/ CH 48,
Mode 2	802.11n(40)/ac(40): CH 38/ CH 46
Mode 3	802.11ac(80) : CH 42

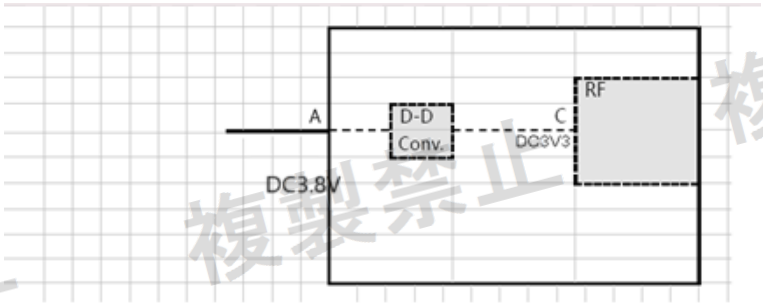
Final Test Mode	Description
Mode 1	802.11a /n(20) /ac (20): CH36/ CH40/ CH 48,
Mode 2	802.11n(40)/ac(40): CH 38/ CH 46
Mode 3	802.11ac(80) : CH 42

2.3 TEST CONDITIONS

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

Power supply: The EUT has the input voltage to the circuit of RF unit complies with output voltage limitation (±1%) against input voltage fluctuation (±10%).

So, all measurements were conducted at only rated voltage DC 3.8V.



Test below:
1: The fluctuation of C point is under ±1%, when input voltage from A point to the test equipment is fluctuated by ±10%.

The measurement result of the voltage fluctuation at RF circuit when DC 3.8V +/- 10%

DC 3.8V	DC3V3
3.8V	3.33V
4.2V	3.33V
3.5V	3.33V

Pre-test the EUT in all voltage mode at the DC 4.2V, DC 3.8V and DC3.5V and conducted to determine the worst-case mode, only the worst-case results (DC 3.8V) are recorded in this report.

The EUT has the input voltage to the circuit of RF unit complies with output voltage limitation (±1%) against input voltage fluctuation (±10%).

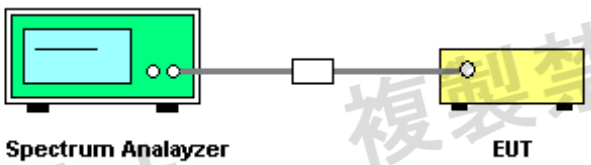
So, all measurements were conducted at only rated voltage DC 3.8V.

Temperature: 25.0 °C

Humidity: 75 % RH

Atmospheric Pressure: 1013 mbar

2.4 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



2.5 DESCRIPTION OF SUPPORT UNITS

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

Item	Equipment	Brand	Model/Type No.	Series No.	Note
E-1	PROFESSIONAL SCAN TOOL	AUTEL	MaxiDiag MD909 Pro	N/A	EUT

No.	Equipment	Manufacturer	EMC Compliance	Model No.	Serial No.	Power cord	Signal cord
1	Computer	Lenovo	N/A	TP00076A	N/A	N/A	N/A
2	USB TO TTL	FTDI	N/A	FT232RL	N/A	N/A	N/A
3	USB Line	UGREEN	N/A	USB3.0	N/A	N/A	N/A

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”.

2.6 EQUIPMENTS LIST FOR ALL TEST ITEMS

No	Test Equipment	Manufacturer	Model No	Serial No	Cal. Date	Cal. Due Date	Cal. Lab
1	SIGNAL Analyzer	Keysight	N9020A	MY53300466	2024.03.04	2025.03.03	Guangdong Zhongzhun Testing Co.,Ltd
2	RF Automatic Test System	MWRFtest	MV1 00-RFCB	/	2024.03.04	2025.03.03	

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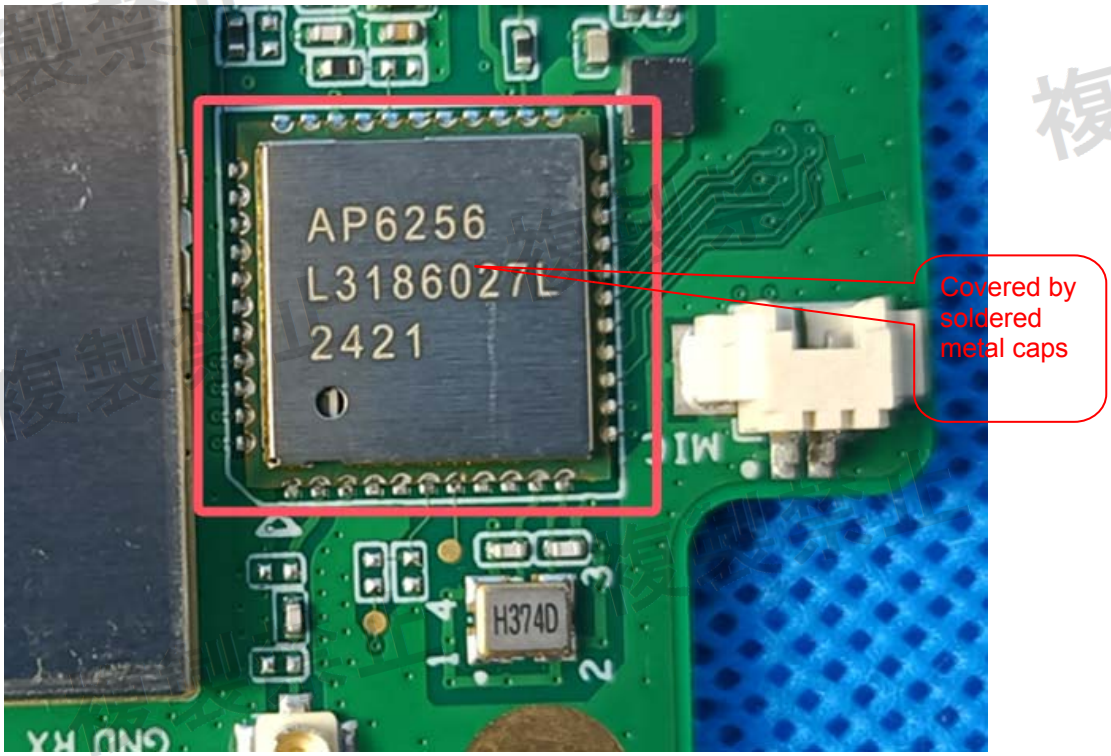
3. RF SHIELDING METHOD

We apply the product for Japan RF certification. We use covered by soldered metal caps for preventing end- user to access RF parts easily. The shiled can only be opened by forced, which will result in damaging the case.P lease refer to following for photo for details.



4. TEST RESULT FOR WIFI

4.1 FREQUENCY ERROR

4.2 LIMIT

Item	Limits
Frequency Error	+/-20ppm

4.3 MEASURING INSTRUMENTS AND SETTING

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

4.4 TEST PROCEDURES

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

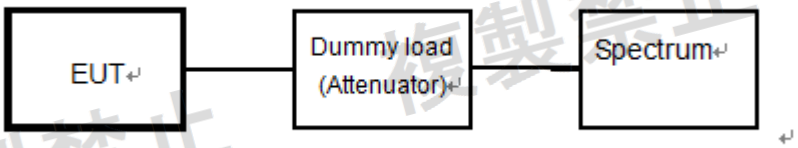
(2)In the case of burst waves, the measurement shall be done for enough time in order to obtain the enough measuring accuracy, and the average of the measured values becomes the final value.

(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.

In the case of modulated signal, if there is no specific spectrum measurable by a spectrum analyzer but a specific dip is observed, it is allowed to measure the frequency with the signal generator (synthesized). That is, observe a signal of the signal generator concurrently (or alternately) with the tested signal using the spectrum analyzer while setting the frequency of the signal generator to the position of the dip on the screen of the spectrum analyzer, and determine the frequency of the signal generator at the time as a measured value.

4.5 TEST SETUP LAYOUT



4.1.5. EUT OPERATION DURING TEST

The EUT was placed on the test table and programmed in un-modulation function.

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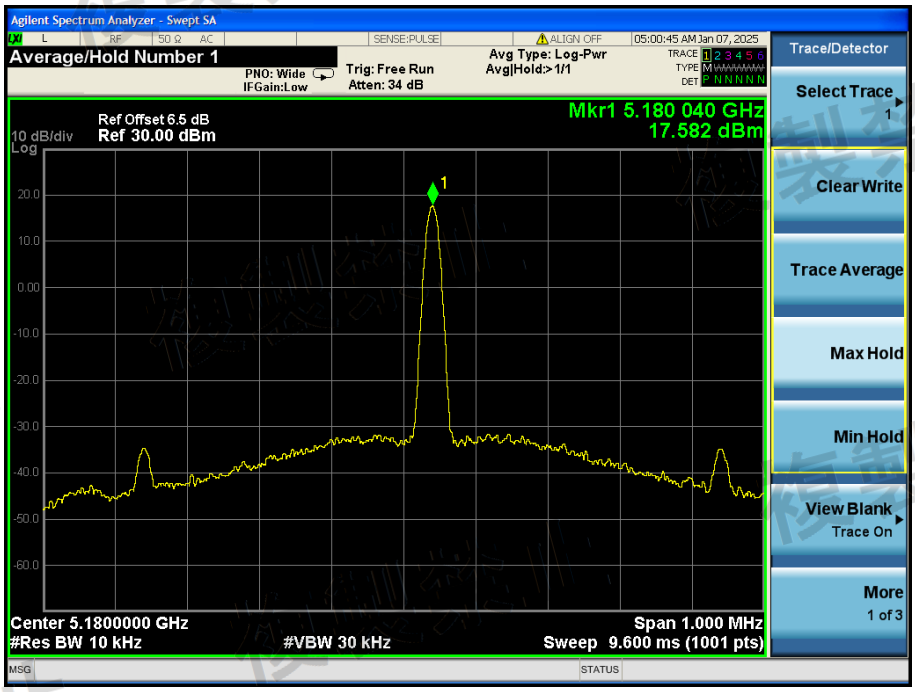
4.5.1 TEST RESULT

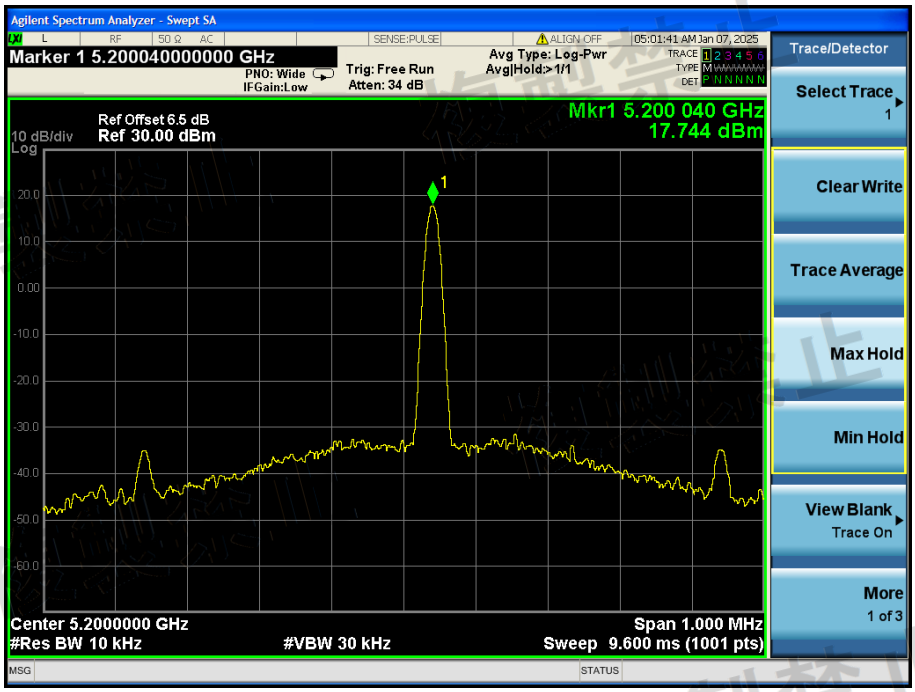
EUT：	PROFESSIONAL SCAN TOOL	Model No.:	MaxiDiag MD909 Pro
Temperature:	25^{0}C	Test Date:	Jan. 07,2025
Humidity:	55 % RH	Tested by:	Jack Li
Atmospheric Pressure:	1013 mbar	Test Voltage	Normal Voltage

Test Voltage	Test Frequency (MHz)	Measured Frequency (MHz)	Frequency Error(ppm)	Limit (ppm)	P/F
Normal Voltage	5180	5180.040	+0.77	+/-20	PASS
	5200	5200.040	+0.77	+/-20	PASS
	5240	5240.041	+0.78	+/-20	PASS
	5190	5190.040	+0.77	+/-20	PASS
	5230	5230.041	+0.78	+/-20	PASS
	5210	5210.040	+0.77	+/-20	PASS

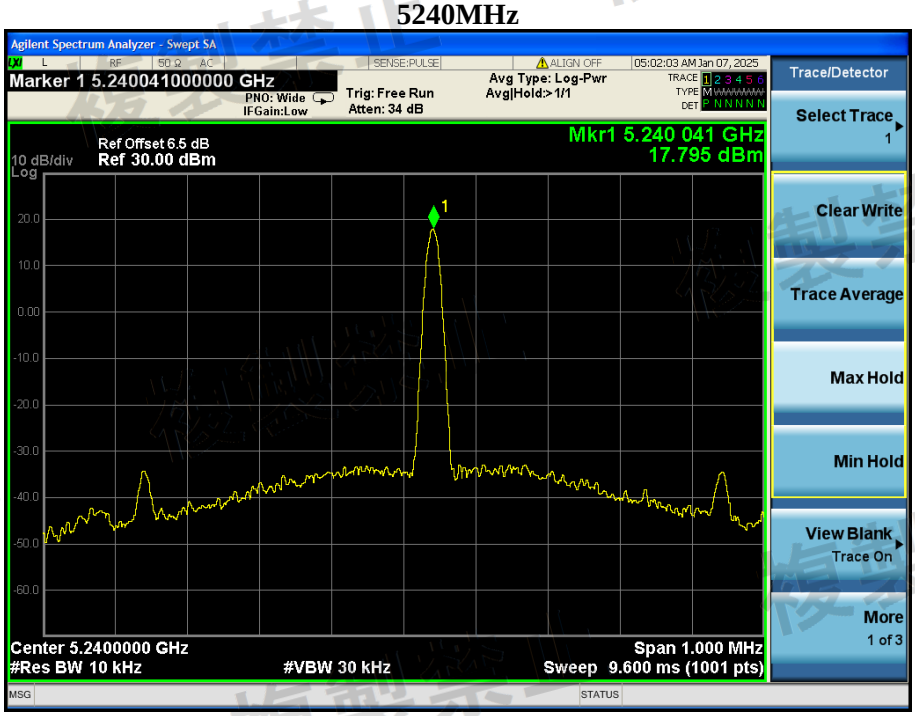
5180MHz



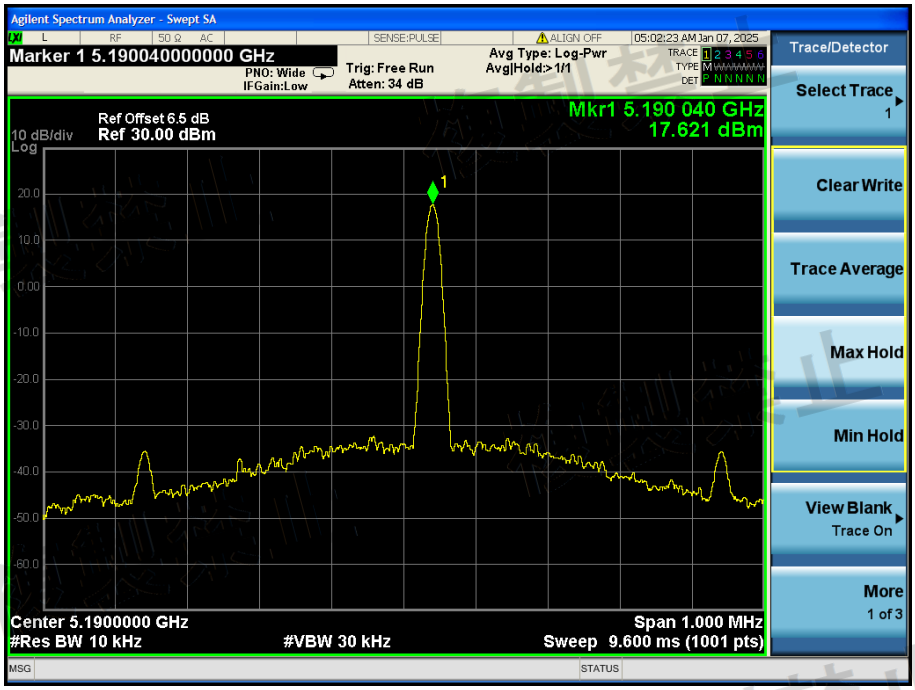
5200MHz



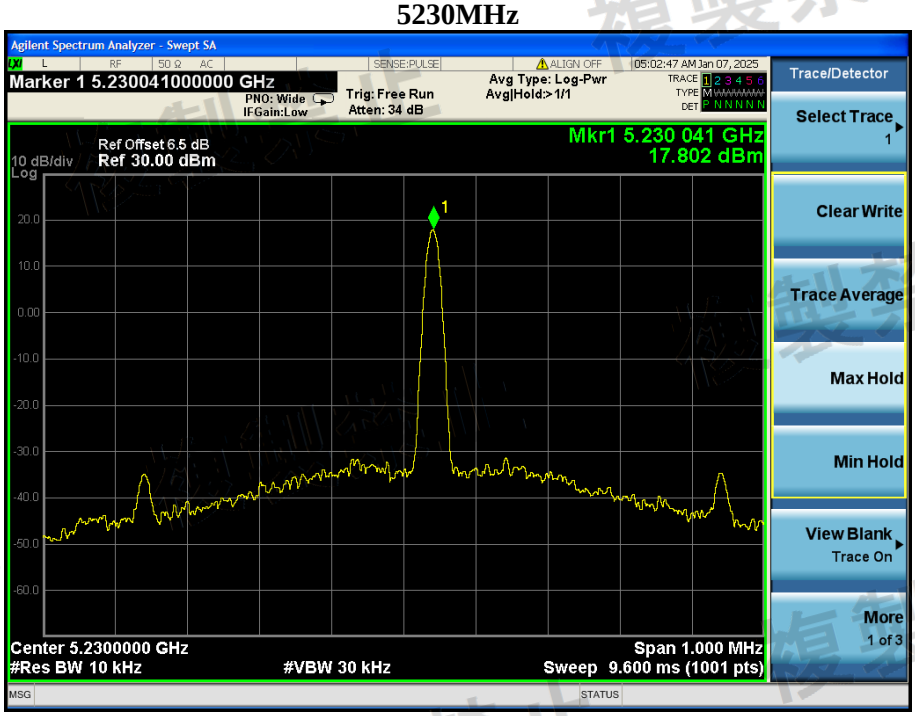
5240MHz



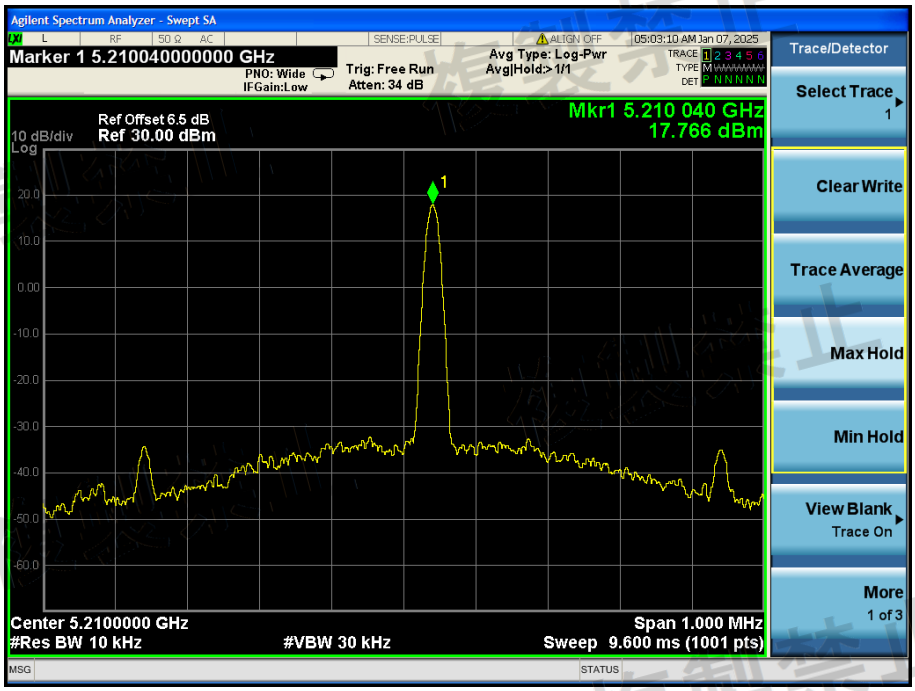
5190MHz



5230MHz



5210MHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 5.210040000000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 34 dB
Avg Type: Log-Pwr
Avg|Hold:>1/1
05:03:10 AM Jan 07, 2025
Ref Offset 6.5 dB
10 dB/div
Ref 30.00 dBm
Log
Mkr1 5.210 040 GHz
17.766 dBm
Center 5.2100000 GHz
#Res BW 10 kHz
#VBW 30 kHz
Span 1.000 MHz
Sweep 9.600 ms (1001 pts)
Trace/Detector
Select Trace 1
Clear Write
Trace Average
Max Hold
Min Hold
View Blank Trace On
More 1 of 3

5. OCCUPIED BANDWIDTH MEASUREMENT (99% POWER BANDWIDTH)

5.1 LIMIT

Test Item	Limits
Occupied Bandwidth	≦20 MHz (20MHz System for OFDM) ≦40 MHz (40MHz System for OFDM) ≦80 MHz (80MHz System for OFDM) ≦160 MHz (160MHz System for OFDM)

5.2 TEST PROCEDURES

The device under test is connected to the spectrum analyzer through a radio frequency cable and the settings are as follows:

1. EUT have transmitted the maximum modulation signal and fixed channelize.
2. SA set to 99% of occupied bandwidth to measure occupied bandwidth.
3. Resolution bandwidth: Limited to 3% or less of the allowable value specified in equipment regulations.
4. Video bandwidth: Comparable to the resolution bandwidth.
5. Span: Spanning from approximately twice to 3.5 times the allowable value as per equipment regulations.
6. ATT: 30dB /Ref:20dBm (actual sample power adjustment is for reference only)
7. Sweep time = The minimum duration ensuring measurement accuracy, accounting for burst wave scenarios where at least one burst occurs per sample. / Sweep Mode: Continuous sweep
8. Detect mode=Positive peak
9. Trace mode=Max hold
10. Record the result for Occupied Bandwidth Measurements in report..

5.3 TEST SETUP LAYOUT

5.4 TEST DEVIATION

There is no deviation with the original standard.

5.5 EUT OPERATION DURING TEST

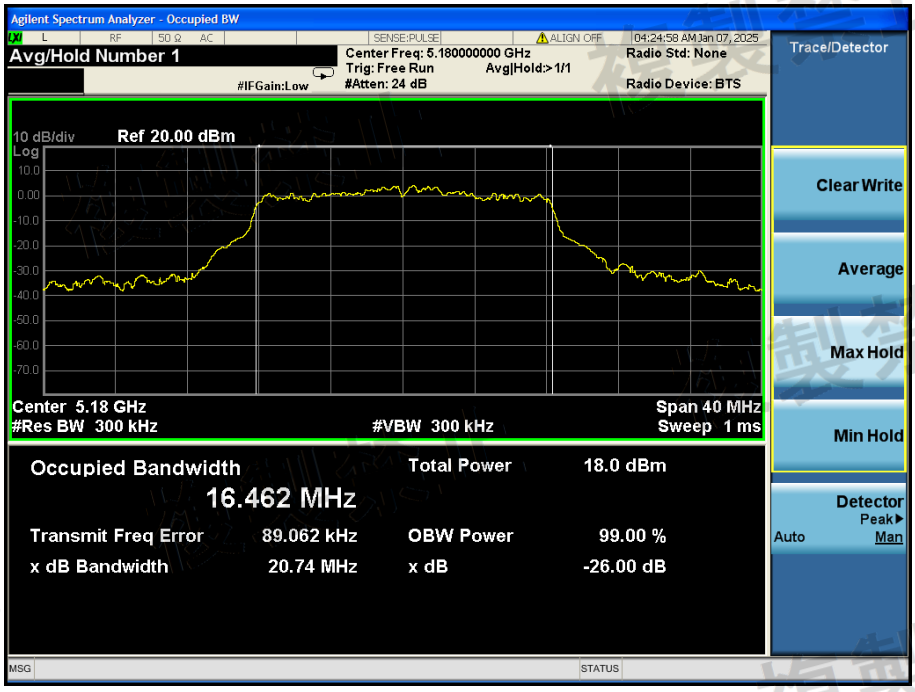
The EUT was programmed to be in continuously transmitting mode.

5.6 TEST RESULT

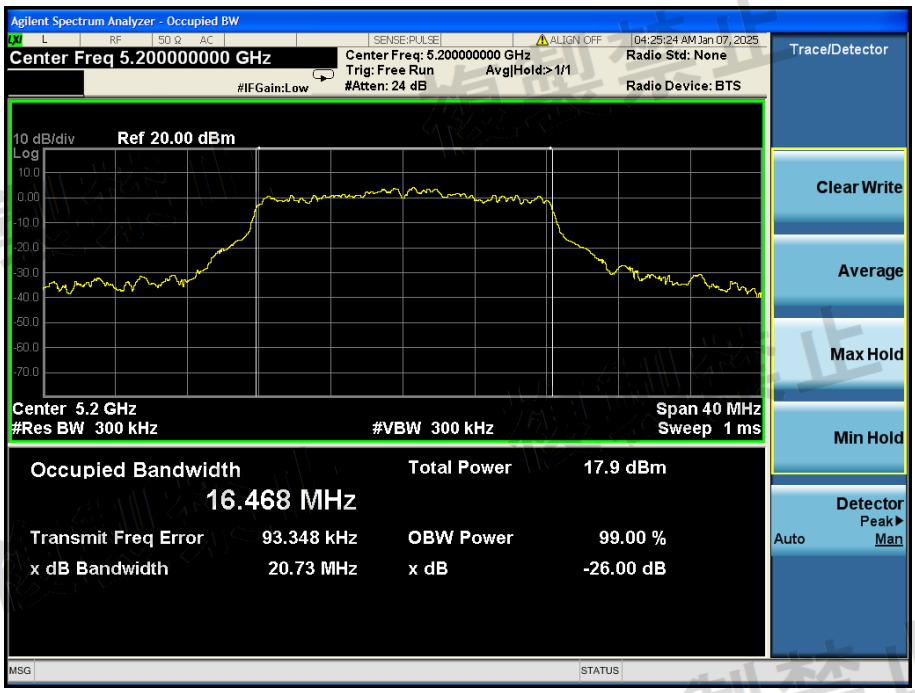
EUT:	PROFESSIONAL SCAN TOOL	Model No.:	MaxiDiag MD909 Pro
Temperature:	25°C	Test Date:	Jan. 07,2025
Humidity:	55 % RH	Tested by:	Jack Li
Atmospheric Pressure:	1013 mbar	Test Voltage	Normal Voltage
Operation Mode:	Normal Voltage-a mode		

Test Voltage	Test Frequency (MHz)	Occupied Bandwidth(MHz)
Normal Voltage	5180	16.462
	5200	16.468
	5240	16.468

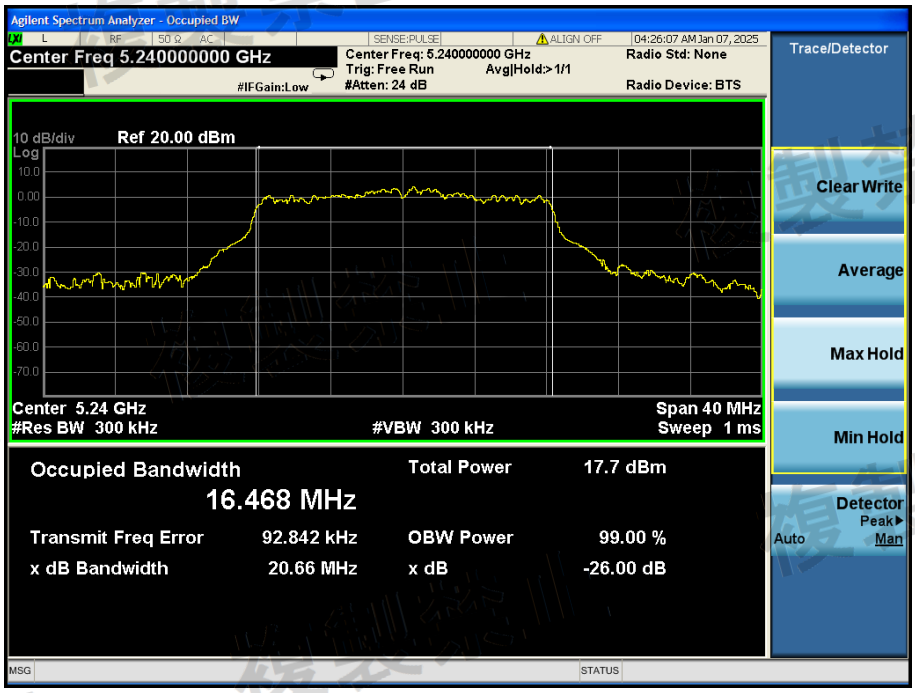
CH36-Occupied Bandwidth (99%)-a Mode



CH40-Occupied Bandwidth (99%)-a Mode



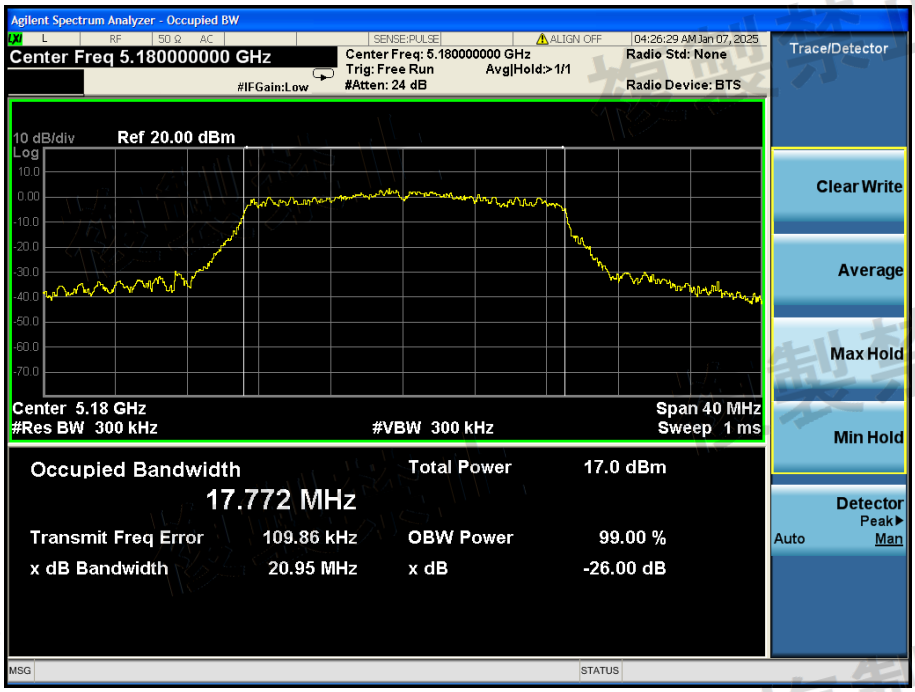
CH48-Occupied Bandwidth (99%)-a Mode



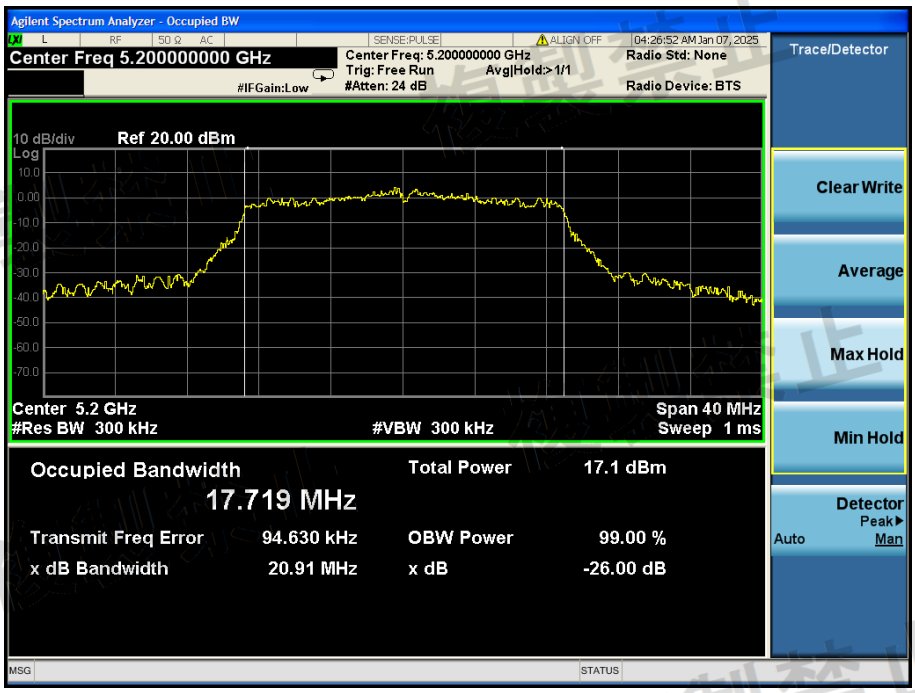
EUT：	PROFESSIONAL SCAN TOOL	Model No.:	MaxiDiag MD909 Pro
Temperature:	25^{0}C	Test Date:	Jan. 07,2025
Humidity:	55 % RH	Tested by:	Jack Li
Atmospheric Pressure:	1013 mbar	Test Voltage	Normal Voltage
Operation Mode:	Normal Voltage-n mode(20MHz)		

Test Voltage	Test Frequency (MHz)	Occupied Bandwidth(MHz)
Normal Voltage	5180	17.772
	5200	17.719
	5240	17.782

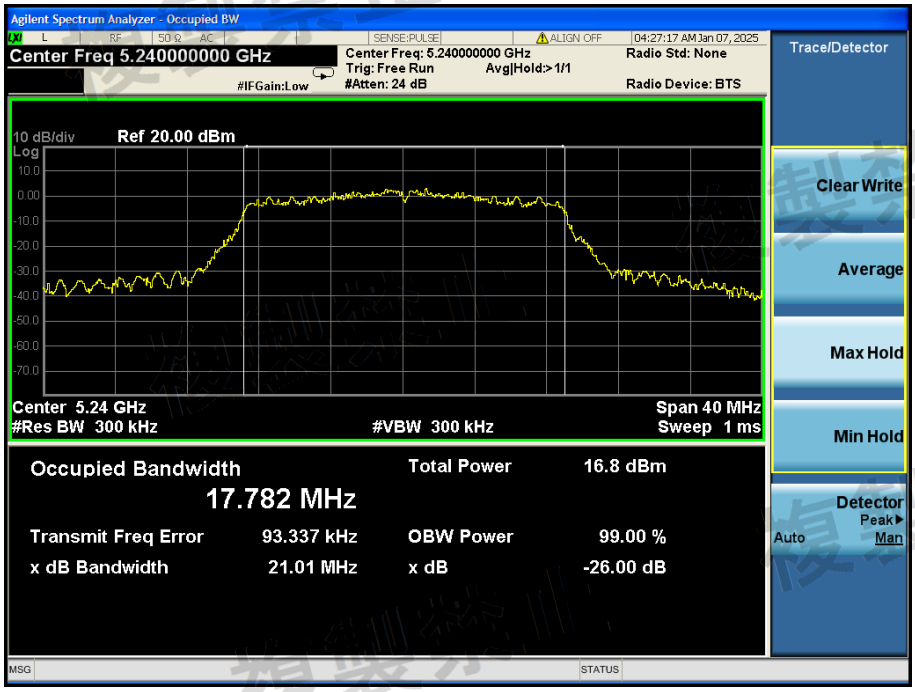
CH36-Occupied Bandwidth (99%)-n(20) Mode



CH40-Occupied Bandwidth (99%)-n(20) Mode



CH48-Occupied Bandwidth (99%)-n(20) Mode

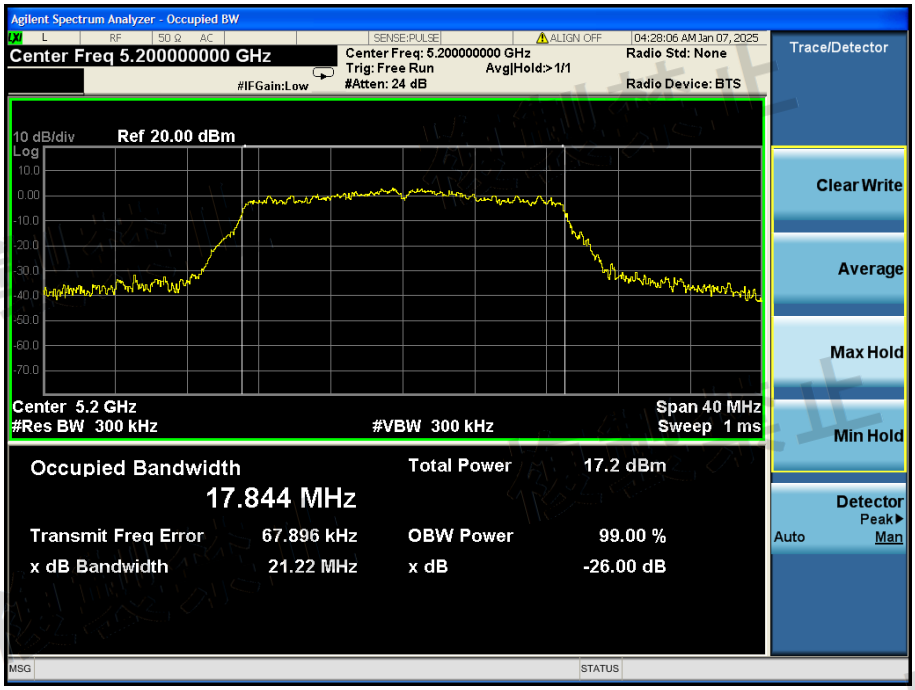


EUT：	PROFESSIONAL SCAN TOOL	Model No.:	MaxiDiag MD909 Pro
Temperature:	25^{0}C	Test Date:	Jan. 07,2025
Humidity:	55 % RH	Tested by:	Jack Li
Atmospheric Pressure:	1013 mbar	Test Voltage	Normal Voltage
Operation Mode:	Normal Voltage- ac mode(20MHz)		

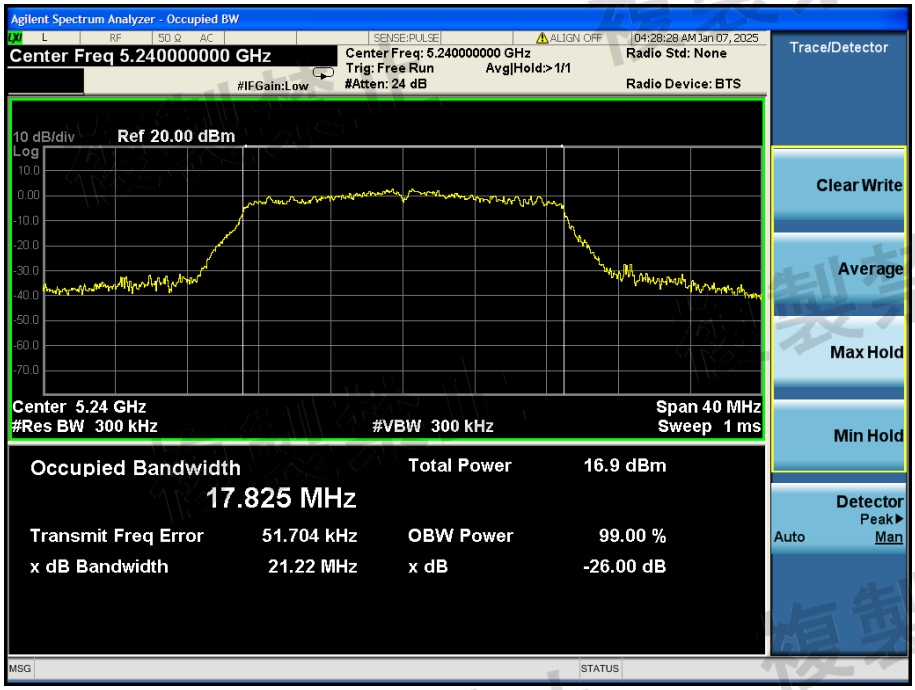
Test Voltage	Test Frequency (MHz)	Occupied Bandwidth(MHz)
Normal Voltage	5180	17.836
	5200	17.844
	5240	17.825

CH36-Occupied Bandwidth (99%)-ac(20) Mode

CH40-Occupied Bandwidth (99%)-ac(20) Mode



CH48-Occupied Bandwidth (99%)-ac(20) Mode

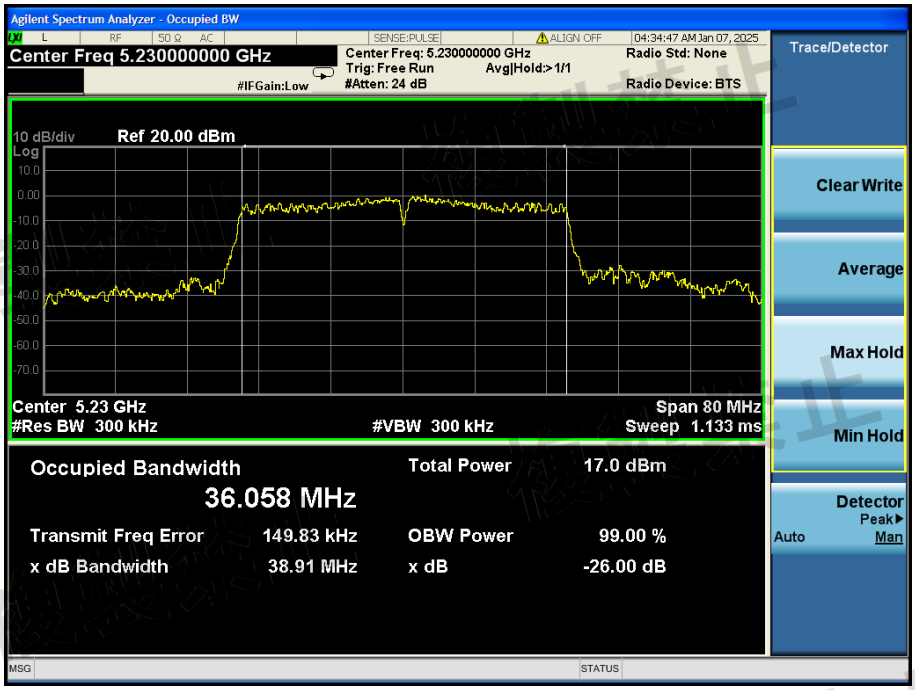


EUT：	PROFESSIONAL SCAN TOOL	Model No.:	MaxiDiag MD909 Pro
Temperature:	25^{0}C	Test Date:	Jan. 07,2025
Humidity:	55 % RH	Tested by:	Jack Li
Atmospheric Pressure:	1013 mbar	Test Voltage	Normal Voltage
Operation Mode:	Normal Voltage-n(40MHz) mode		

Test Voltage	Test Frequency (MHz)	Occupied Bandwidth(MHz)
Normal Voltage	5190	36.093
	5230	36.058

CH38-Occupied Bandwidth (99%)-n(40) Mode

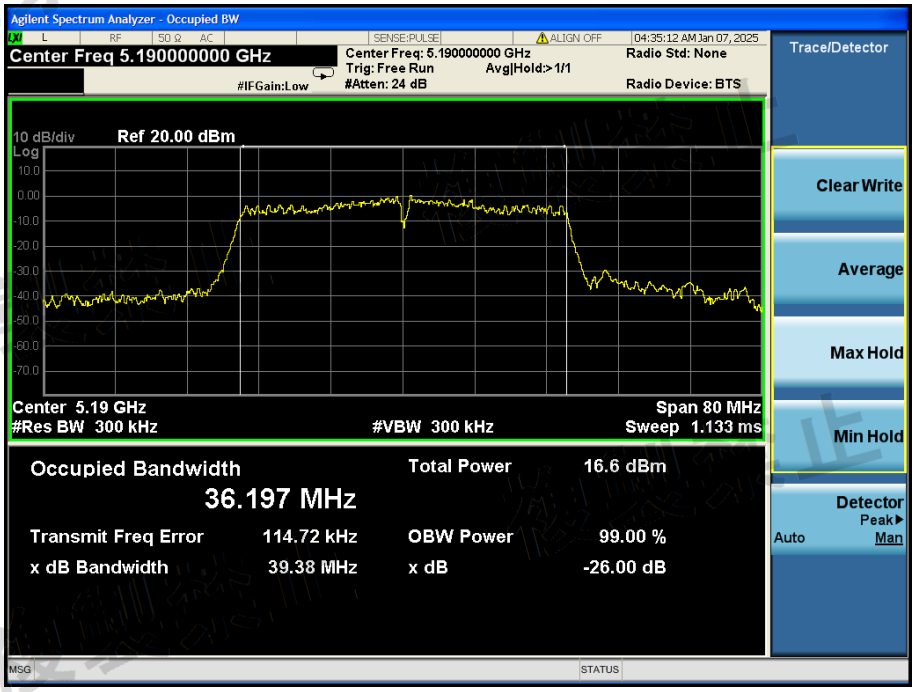
CH46-Occupied Bandwidth (99%)-n(40) Mode



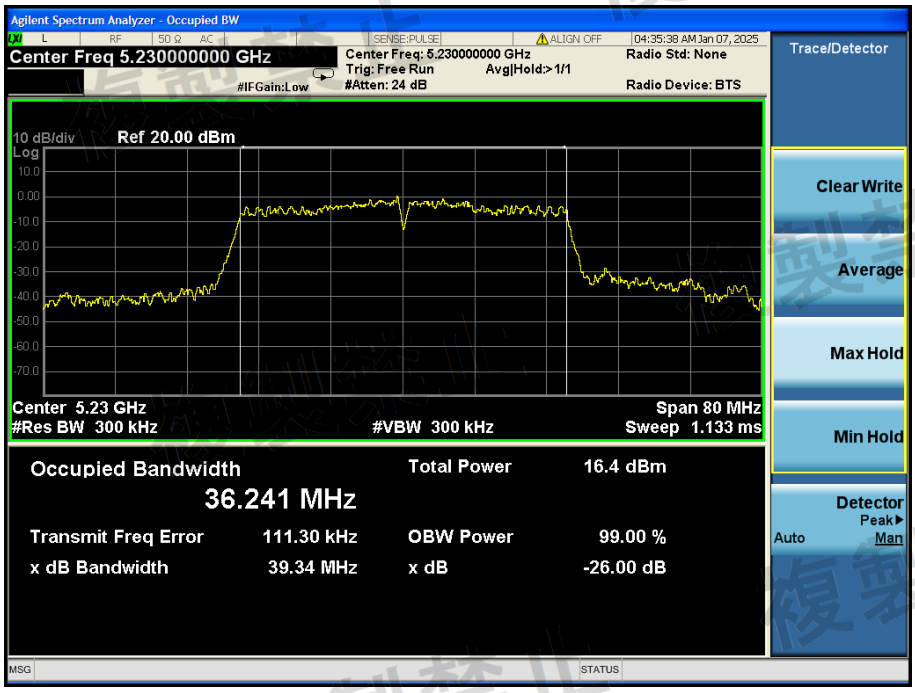
EUT：	PROFESSIONAL SCAN TOOL	Model No.:	MaxiDiag MD909 Pro
Temperature:	25^{0}C	Test Date:	Jan. 07,2025
Humidity:	55 % RH	Tested by:	Jack Li
Atmospheric Pressure:	1013 mbar	Test Voltage	Normal Voltage
Operation Mode:	Normal Voltage-ac(40MHz) mode		

Test Voltage	Test Frequency (MHz)	Occupied Bandwidth(MHz)
Normal Voltage	5190	36.197
	5230	36.241

CH38-Occupied Bandwidth (99%)-ac(40) Mode



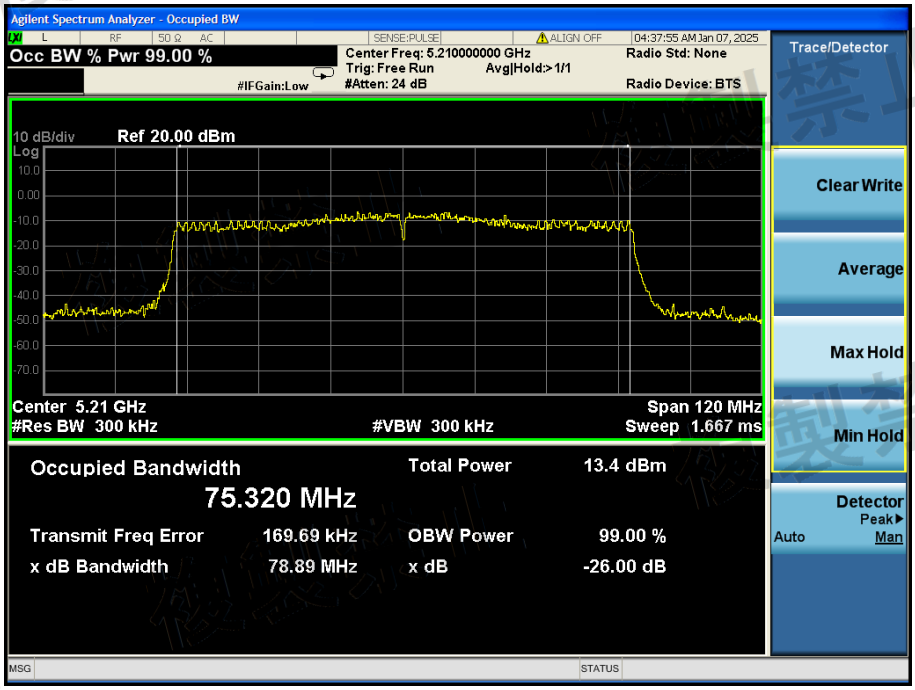
CH46-Occupied Bandwidth (99%)-n(40) Mode



EUT：	PROFESSIONAL SCAN TOOL	Model No.:	MaxiDiag MD909 Pro
Temperature:	25^{0}C	Test Date:	Jan. 07,2025
Humidity:	55 % RH	Tested by:	Jack Li
Atmospheric Pressure:	1013 mbar	Test Voltage	Normal Voltage
Operation Mode:	Normal Voltage-ac mode(80MHz)		

Test Voltage	Test Frequency (MHz)	Occupied Bandwidth(MHz)
Normal Voltage	5210	75.320

CH38-Occupied Bandwidth (99%)-ac(80) Mode



6. UNWANTED EMISSION STRENGTH MEASUREMENT

6.1 LIMIT

20MHz System	
OBW: 18MHz or less	OBW: 18-20 MHz
5142MHz or less: 2.5μW/MHz	5142MHz or less: 2.5μW/MHz
5142 - 5150MHz: 15μW/MHz	5142 - 5150MHz: 15μW/MHz
--	5250 – 5250.2MHz: $10^{1-(8/3)(f-9.75)}$ mW/MHz
5250 - 5251MHz: $10^{1-(f-9)}$ mW/MHz	5250.2 - 5251MHz: $10^{1-(f-9)}$ mW/MHz
5251 - 5260MHz: $10^{-1-(8/90)(f-11)}$ mW/MHz	5251 - 5260MHz: $10^{-1-(8/90)(f-11)}$ mW/MHz
5260 - 5266.7MHz: $10^{-1.8-(6/50)(f-20)}$ mW/MHz	5260 - 5266.7MHz: $10^{-1.8-(6/50)(f-20)}$ mW/MHz
5266.7MHz or more: 2.5μW/MHz	5266.7MHz or more: 2.5μW/MHz
f = MHz, Difference from 5240 (MHz)	

40MHz System	80MHz System
5141.6MHz or less: 2.5μW/MHz	5123.2MHz or less: 2.5μW/MHz
5141.6 - 5150MHz: 15μW/MHz	5123.2 - 5150MHz: 15μW/MHz
5250 - 5251MHz: $10^{1-(f-20)+\log(1/2)}$ mW/MHz	5250 - 5251MHz: $10^{1-(f-40)+\log(1/4)}$ mW/MHz
5251 - 5270MHz: $10^{-(8/190)(f-21)-1+\log(1/2)}$ mW/MHz	5251 - 5290MHz: $10^{-(8/390)(f-41)-1+\log(1/4)}$ mW/MHz
5270 – 5278.4MHz: $10^{-(3/50)(f-40)-1.8+\log(1/2)}$ mW/MHz	5290 – 5296.7MHz: $10^{-(3/100)(f-80)-1.8+\log(1/4)}$ mW/MHz
5278.4MHz or more: 2.5μW/MHz	5296.7MHz or more: 2.5μW/MHz
f = MHz, Difference from 5230 (MHz)	f = MHz, Difference from 5210 (MHz)

6.2 MEASURING INSTRUMENTS AND SETTING

Please refer to section 3.6 in this report. The following table is the setting of Spectrum Analyzer.

6.2. MEASURING INSTRUMENTS AND SETTING

Please refer to section 3.6 in this report. The following table is the setting of Spectrum Analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
RB / VB	Below 1GHz: 1MHz Above 1Ghz: 1MHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

6.3. TEST PROCEDURES

1. UT have transmitted the maximum modulation signal and fixed channelize.
2. Sweep frequency range: From 30MHz to 26GHz

- Exclude the following frequency ranges from the sweep frequency range:

➢ Occupied bandwidth ≤ 18MHz:
5.2GHz band: From 5,140MHz to 5,360MHz
5.3GHz band: From 5,140MHz to 5,360MHz
5.6GHz band: From 5,460MHz to 5,740MHz

➢ Occupied bandwidth > 18MHz and ≤ 19MHz:
5.2GHz band: From 5,135MHz to 5,365MHz
5.3GHz band: From 5,135MHz to 5,365MHz
5.6GHz band: From 5,455MHz to 5,745MHz

➢ Occupied bandwidth > 19MHz and ≤ 38MHz:
5.2GHz band: From 5,100MHz to 5,400MHz
5.3GHz band: From 5,100MHz to 5,400MHz
5.6GHz band: From 5,420MHz to 5,760MHz

➢ Occupied bandwidth > 38MHz and ≤ 78MHz:
5.2GHz band: From 5,020MHz to 5,480MHz
5.3GHz band: From 5,020MHz to 5,480MHz
5.6GHz band: From 5,340MHz to 5,800MHz

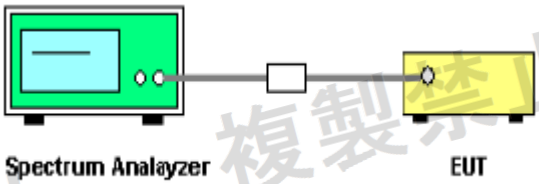
➢ Occupied bandwidth > 78MHz:
5.2GHz band: From 4,916MHz to 5,584MHz
5.3GHz band: From 4,916MHz to 5,584MHz
5.6GHz band: From 5,236MHz to 5,904MHz

3. Resolution bandwidth: 1MHz; Video bandwidth: Comparable to the resolution bandwidth
4. Y-axis scale: 10dB/Div; Input level: Set to achieve maximum dynamic range
5. Sweep time: Minimum time ensuring measurement accuracy (For burst waves, it can be determined as "(Sweep frequency range (MHz) / Resolution bandwidth (MHz)) × Burst period (s)")
6. Data points: 400 points or more; Sweep mode: Single sweep; Detection mode: Positive peak
7. The cable loss and antenna gain had been edited in the “Input Correction” of the Spectrum Analyzer. In case of MIMO mode, the 10*log(N) also had been edited in the “Input Correction” of the Spectrum Analyzer. N is the number of transmit antenna.
8. Convert from dBm to μW: $P(\mu W) = 1000 * 10^{[P(dBm)/10]}$

When configuring the spectrum analyzer for unwanted emission amplitude measurement, follow these settings:

a. Center frequency: Unwanted emission frequency (the frequency being investigated); Span: 0Hz
b. Sweep time: Minimum time ensuring measurement accuracy (For burst waves, it should be at least the duration of one burst)
c. Data points: 400 points or more; Sweep mode: Single sweep;

6.4. TEST SETUP LAYOUT



6.5 TEST DEVIATION

There is no deviation with the original standard.

6.5. TEST RESULT

Tx Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Range (MHz)	Emission Frequency (MHz)	Max Value (dBm/MHz)	Max Value (uW/MHz)	Limit Start(uW/MHz)	Limit Stop (uW/MHz)	Verdict
NVNT	a	5180	Ant1	30-5142	35.11	-40.65	0.0861	2.5	2.5	Pass
NVNT	a	5180	Ant1	5142-5150	5149.54	-42.2	0.0603	15	15	Pass
NVNT	a	5180	Ant1	5250-5251	5250.06	-46.97	0.0201	1000	100	Pass
NVNT	a	5180	Ant1	5251-5260	5254.02	-46.95	0.0202	100	15.85	Pass
NVNT	a	5180	Ant1	5260-5266.7	5262.97	-47.54	0.0176	15.85	2.49	Pass
NVNT	a	5180	Ant1	5266.7-26000	26000	-34.49	0.3556	2.5	2.5	Pass
NVNT	a	5200	Ant1	30-5142	40.22	-40.42	0.0908	2.5	2.5	Pass
NVNT	a	5200	Ant1	5142-5150	5146.95	-47	0.02	15	15	Pass
NVNT	a	5200	Ant1	5250-5251	5250.61	-46.59	0.0219	1000	100	Pass
NVNT	a	5200	Ant1	5251-5260	5251.23	-45.82	0.0262	100	15.85	Pass
NVNT	a	5200	Ant1	5260-5266.7	5260.18	-46.92	0.0203	15.85	2.49	Pass
NVNT	a	5200	Ant1	5266.7-26000	25958.53	-35.08	0.3105	2.5	2.5	Pass
NVNT	a	5240	Ant1	30-5142	35.11	-43.06	0.0494	2.5	2.5	Pass
NVNT	a	5240	Ant1	5142-5150	5149.54	-47.2	0.0191	15	15	Pass
NVNT	a	5240	Ant1	5250-5251	5250.02	-11.54	70.1455	1000	100	Pass
NVNT	a	5240	Ant1	5251-5260	5251	-18.35	14.6218	100	15.85	Pass
NVNT	a	5240	Ant1	5260-5266.7	5262.12	-33.51	0.4457	15.85	2.49	Pass
NVNT	a	5240	Ant1	5266.7-26000	5266.7	-33.61	0.4355	2.5	2.5	Pass
NVNT	n20	5180	Ant1	30-5142	40.22	-38.62	0.1374	2.5	2.5	Pass
NVNT	n20	5180	Ant1	5142-5150	5149.34	-42.42	0.0573	15	15	Pass
NVNT	n20	5180	Ant1	5250-5251	5250.97	-47.4	0.0182	1000	100	Pass
NVNT	n20	5180	Ant1	5251-5260	5251.64	-47.45	0.018	100	15.85	Pass
NVNT	n20	5180	Ant1	5260-5266.7	5262.91	-46.71	0.0213	15.85	2.49	Pass
NVNT	n20	5180	Ant1	5266.7-26000	26000	-34.43	0.3606	2.5	2.5	Pass
NVNT	n20	5200	Ant1	30-5142	35.11	-34.68	0.3404	2.5	2.5	Pass
NVNT	n20	5200	Ant1	5142-5150	5148.66	-46.68	0.0215	15	15	Pass
NVNT	n20	5200	Ant1	5250-5251	5250.84	-46.74	0.0212	1000	100	Pass
NVNT	n20	5200	Ant1	5251-5260	5253.36	-46.17	0.0242	100	15.85	Pass
NVNT	n20	5200	Ant1	5260-5266.	5265.76	-47	0.02	15.85	2.49	Pass

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NVNT	n20	5200	Ant1	5266.7-26000	25979.27	-34.62	0.3451	2.5	2.5	Pass
NVNT	n20	5240	Ant1	30-5142	2447.98	-39.01	0.1256	2.5	2.5	Pass
NVNT	n20	5240	Ant1	5142-5150	5146.69	-46.97	0.0201	15	15	Pass
NVNT	n20	5240	Ant1	5250-5251	5250	-11.29	74.3019	1000	100	Pass
NVNT	n20	5240	Ant1	5251-5260	5251.18	-20.01	9.977	100	15.85	Pass
NVNT	n20	5240	Ant1	5260-5266.7	5262.8	-34.24	0.3767	15.85	2.49	Pass
NVNT	n20	5240	Ant1	5266.7-26000	25979.27	-34.36	0.3664	2.5	2.5	Pass
NVNT	n40	5190	Ant1	30-5141.6	2447.79	-39.01	0.1256	2.5	2.5	Pass
NVNT	n40	5190	Ant1	5141.6-5150	5149.66	-40.62	0.0867	15	15	Pass
NVNT	n40	5190	Ant1	5250-5251	5250.17	-47.4	0.0182	500	50	Pass
NVNT	n40	5190	Ant1	5251-5270	5265.71	-46.88	0.0205	50	7.92	Pass
NVNT	n40	5190	Ant1	5270-5278.4	5273.92	-47.47	0.0179	7.92	2.48	Pass
NVNT	n40	5190	Ant1	5278.4-26000	26000	-34.31	0.3707	2.5	2.5	Pass
NVNT	n40	5230	Ant1	30-5141.6	35.11	-38.13	0.1538	2.5	2.5	Pass
NVNT	n40	5230	Ant1	5141.6-5150	5148.92	-45.35	0.0292	15	15	Pass
NVNT	n40	5230	Ant1	5250-5251	5250.02	-12.36	58.0764	500	50	Pass
NVNT	n40	5230	Ant1	5251-5270	5251	-16.44	22.6986	50	7.92	Pass
NVNT	n40	5230	Ant1	5270-5278.4	5276.02	-33.4	0.4571	7.92	2.48	Pass
NVNT	n40	5230	Ant1	5278.4-26000	25958.56	-34.31	0.3707	2.5	2.5	Pass
NVNT	ac20	5180	Ant1	30-5142	35.11	-39.48	0.1127	2.5	2.5	Pass
NVNT	ac20	5180	Ant1	5142-5150	5149.64	-41.53	0.0703	15	15	Pass
NVNT	ac20	5180	Ant1	5250-5251	5250.57	-47.62	0.0173	1000	100	Pass
NVNT	ac20	5180	Ant1	5251-5260	5256.68	-47.53	0.0177	100	15.85	Pass
NVNT	ac20	5180	Ant1	5260-5266.7	5263.83	-47.29	0.0187	15.85	2.49	Pass
NVNT	ac20	5180	Ant1	5266.7-26000	26000	-35.05	0.3126	2.5	2.5	Pass
NVNT	ac20	5200	Ant1	30-5142	35.11	-35.67	0.271	2.5	2.5	Pass
NVNT	ac20	5200	Ant1	5142-5150	5146.22	-46.93	0.0203	15	15	Pass
NVNT	ac20	5200	Ant1	5250-5251	5250.38	-47.1	0.0195	1000	100	Pass
NVNT	ac20	5200	Ant1	5251-5260	5252.23	-47.15	0.0193	100	15.85	Pass
NVNT	ac20	5200	Ant1	5260-5266.7	5264.44	-47.04	0.0198	15.85	2.49	Pass
NVNT	ac20	5200	Ant1	5266.7-260	25854.87	-34.07	0.3917	2.5	2.5	Pass

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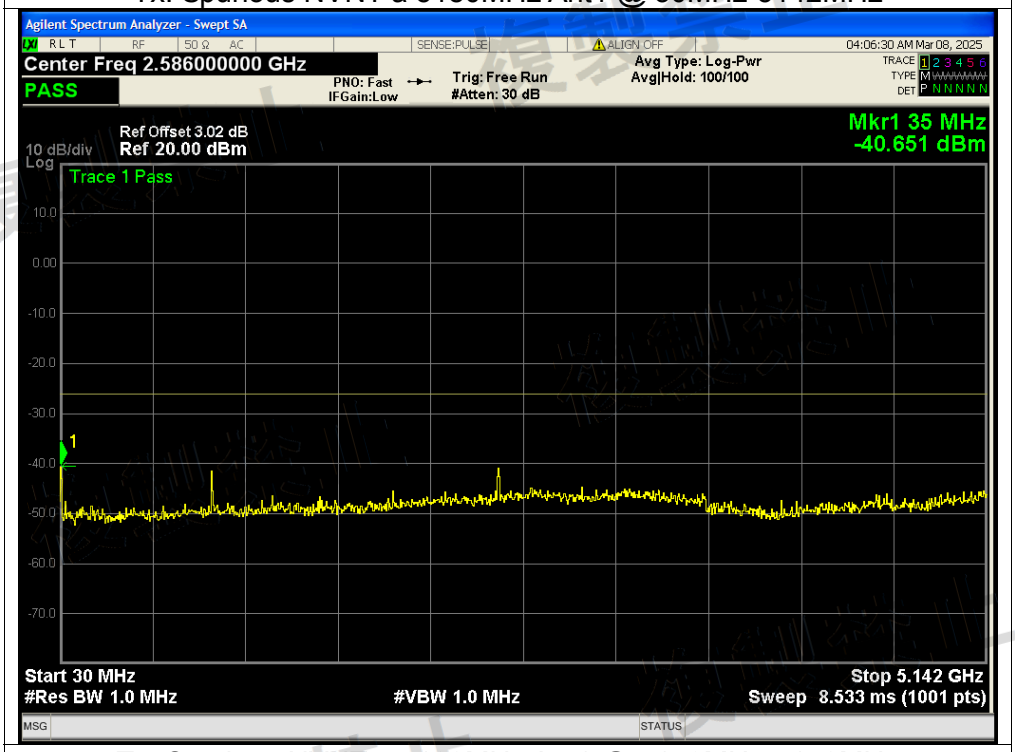
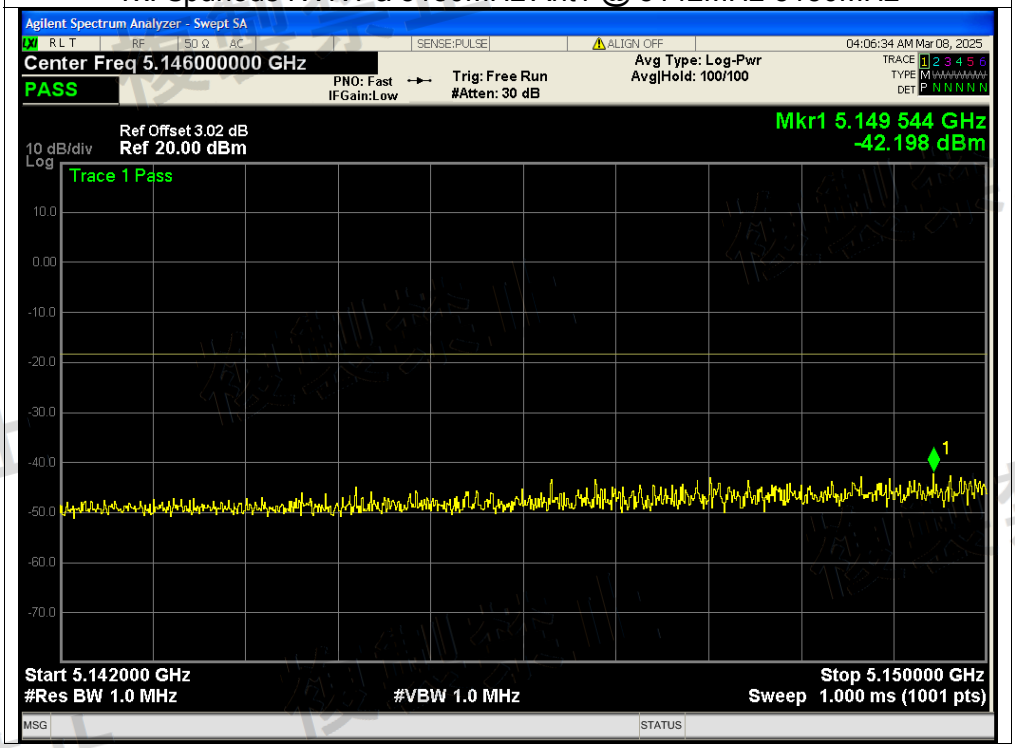
NVNT	ac20	5240	Ant1	30-5142	35.11	-37.96	0.16	2.5	2.5	Pass
NVNT	ac20	5240	Ant1	5142-5150	5145.07	-47.61	0.0173	15	15	Pass
NVNT	ac20	5240	Ant1	5250-5251	5250.02	-11.12	77.2681	1000	100	Pass
NVNT	ac20	5240	Ant1	5251-5260	5251	-18.97	12.6765	100	15.85	Pass
NVNT	ac20	5240	Ant1	5260-5266.7	5263.1	-34.69	0.3396	15.85	2.49	Pass
NVNT	ac20	5240	Ant1	5266.7-26000	25979.27	-34.32	0.3698	2.5	2.5	Pass
NVNT	ac40	5190	Ant1	30-5141.6	35.11	-41.28	0.0745	2.5	2.5	Pass
NVNT	ac40	5190	Ant1	5141.6-5150	5148.82	-40.92	0.0809	15	15	Pass
NVNT	ac40	5190	Ant1	5250-5251	5251	-46.72	0.0213	500	50	Pass
NVNT	ac40	5190	Ant1	5251-5270	5254.65	-47.58	0.0175	50	7.92	Pass
NVNT	ac40	5190	Ant1	5270-5278.4	5276.31	-47.73	0.0169	7.92	2.48	Pass
NVNT	ac40	5190	Ant1	5278.4-26000	25979.28	-34.78	0.3327	2.5	2.5	Pass
NVNT	ac40	5230	Ant1	30-5141.6	2447.79	-40.98	0.0798	2.5	2.5	Pass
NVNT	ac40	5230	Ant1	5141.6-5150	5145.49	-46.6	0.0219	15	15	Pass
NVNT	ac40	5230	Ant1	5250-5251	5250.03	-12.82	52.2396	500	50	Pass
NVNT	ac40	5230	Ant1	5251-5270	5251	-17.66	17.1396	50	7.92	Pass
NVNT	ac40	5230	Ant1	5270-5278.4	5270.38	-33.67	0.4295	7.92	2.48	Pass
NVNT	ac40	5230	Ant1	5278.4-26000	5278.4	-33.47	0.4498	2.5	2.5	Pass
NVNT	ac80	5210	Ant1	30-5123.2	35.09	-40.16	0.0964	2.5	2.5	Pass
NVNT	ac80	5210	Ant1	5123.2-5150	5134.67	-43.56	0.0441	15	15	Pass
NVNT	ac80	5210	Ant1	5250-5251	5250.02	-27.34	1.845	250	25	Pass
NVNT	ac80	5210	Ant1	5251-5290	5251.2	-32.57	0.5534	25	3.96	Pass
NVNT	ac80	5210	Ant1	5290-5296.7	5296.55	-43.52	0.0445	3.96	2.49	Pass
NVNT	ac80	5210	Ant1	5296.7-26000	26000	-34.59	0.3475	2.5	2.5	Pass

Note: The antenna gain has been compensated.

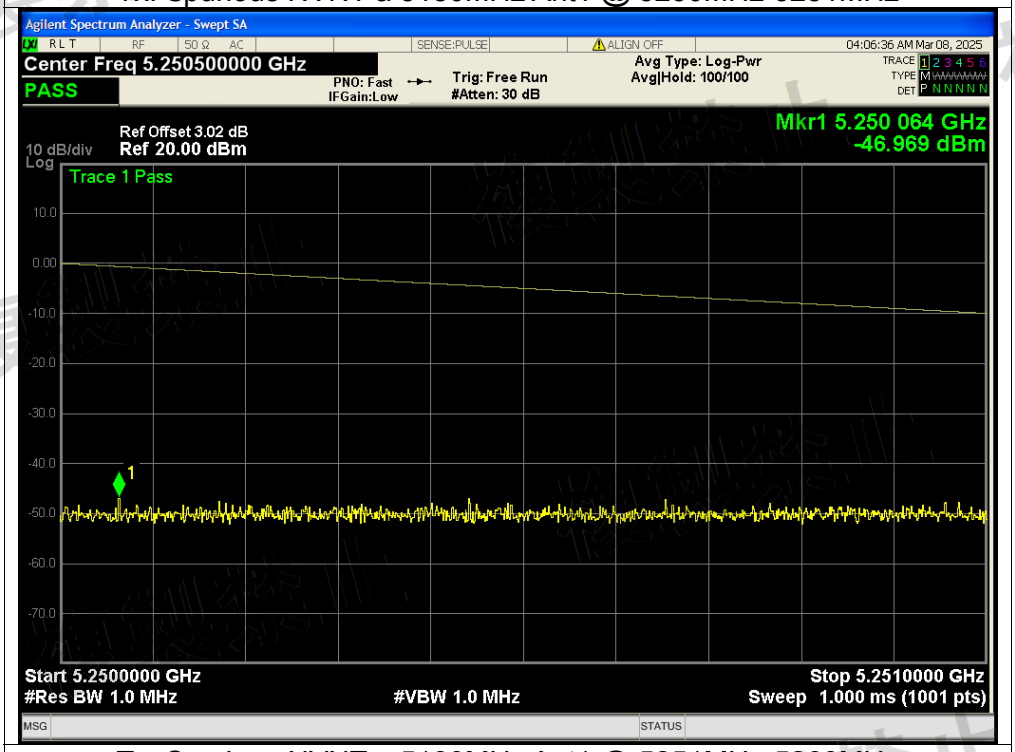
Test Graphs
Tx. Spurious NVNT a 5180MHz Ant1 @ 30MHz-5142MHz



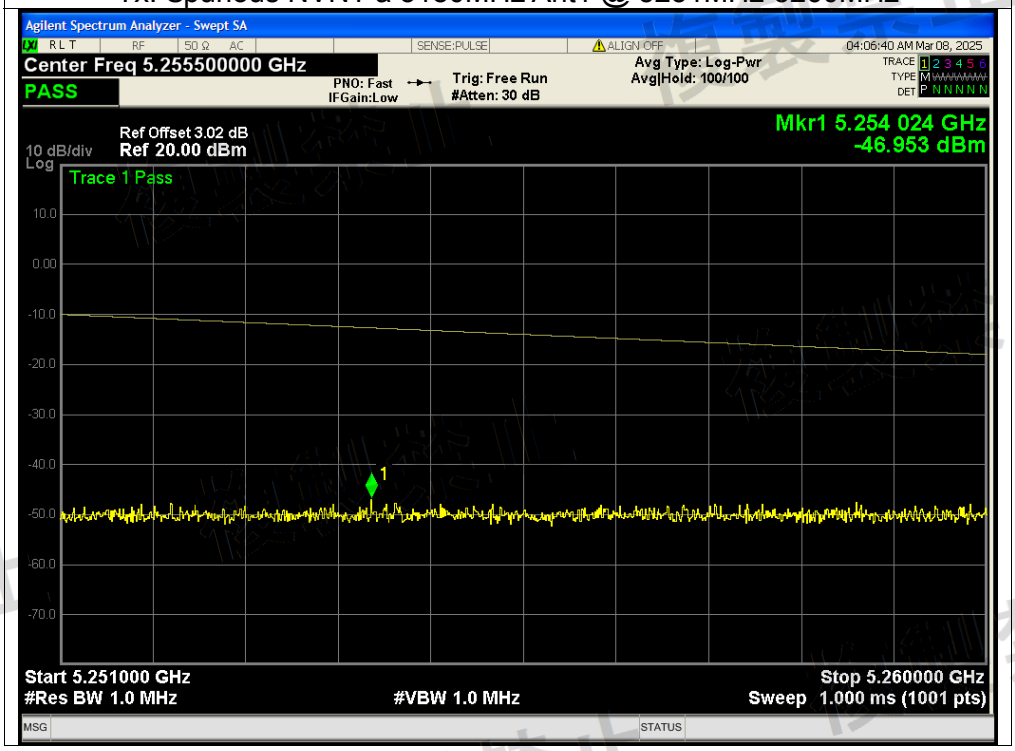
Tx. Spurious NVNT a 5180MHz Ant1 @ 5142MHz-5150MHz



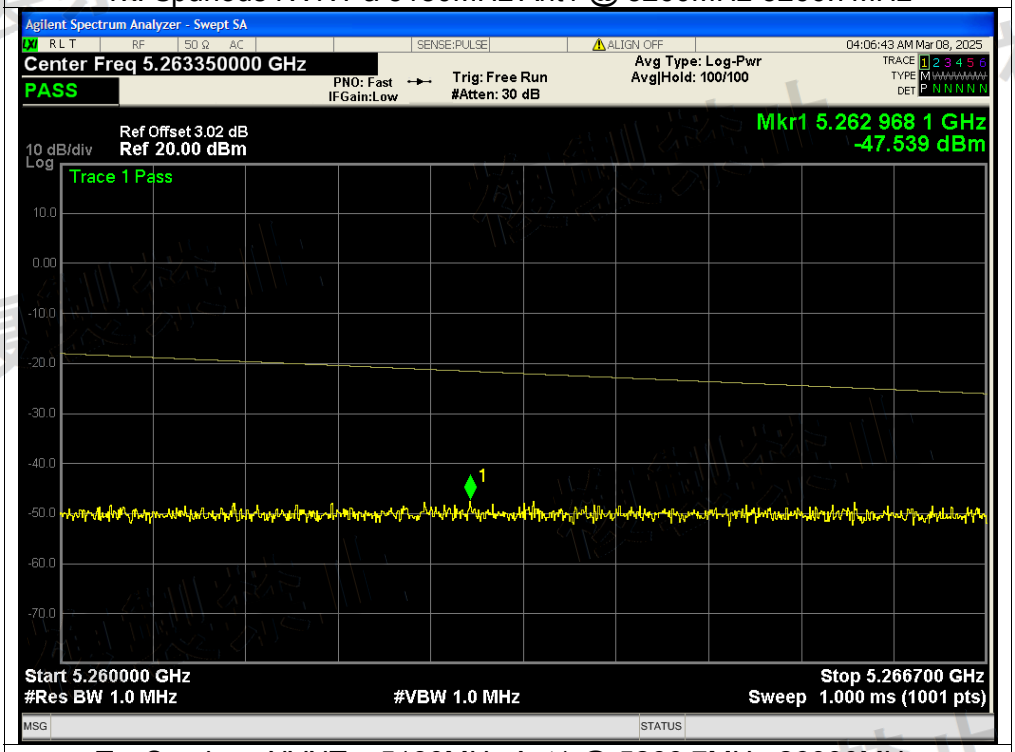
Tx. Spurious NVNT a 5180MHz Ant1 @ 5250MHz-5251MHz



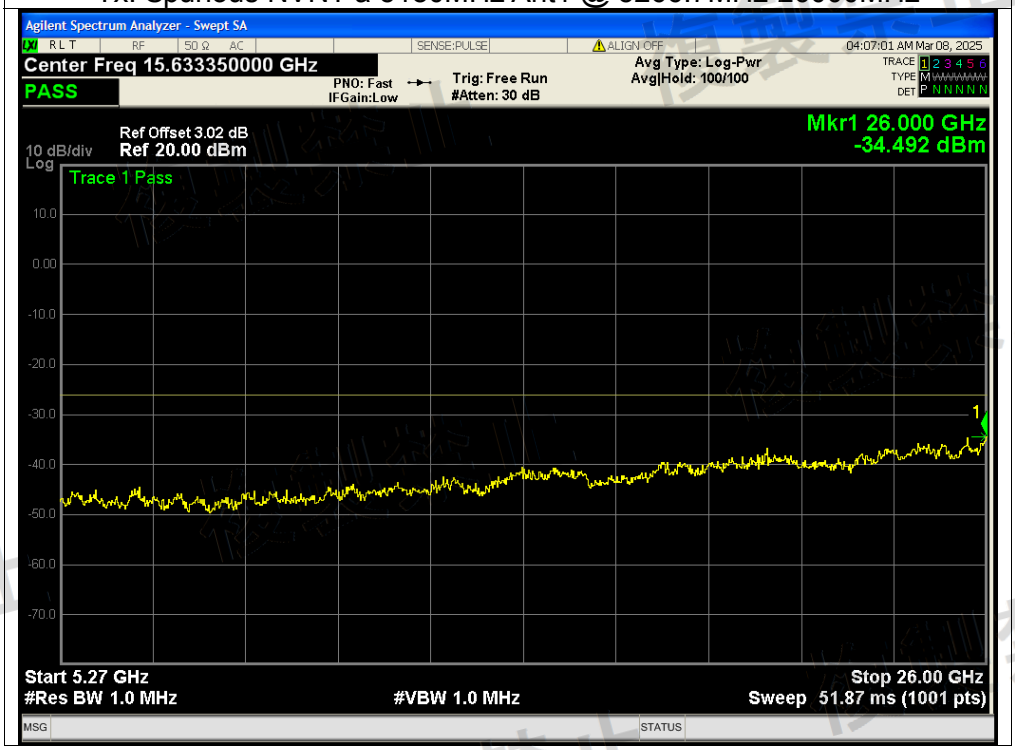
Tx. Spurious NVNT a 5180MHz Ant1 @ 5251MHz-5260MHz



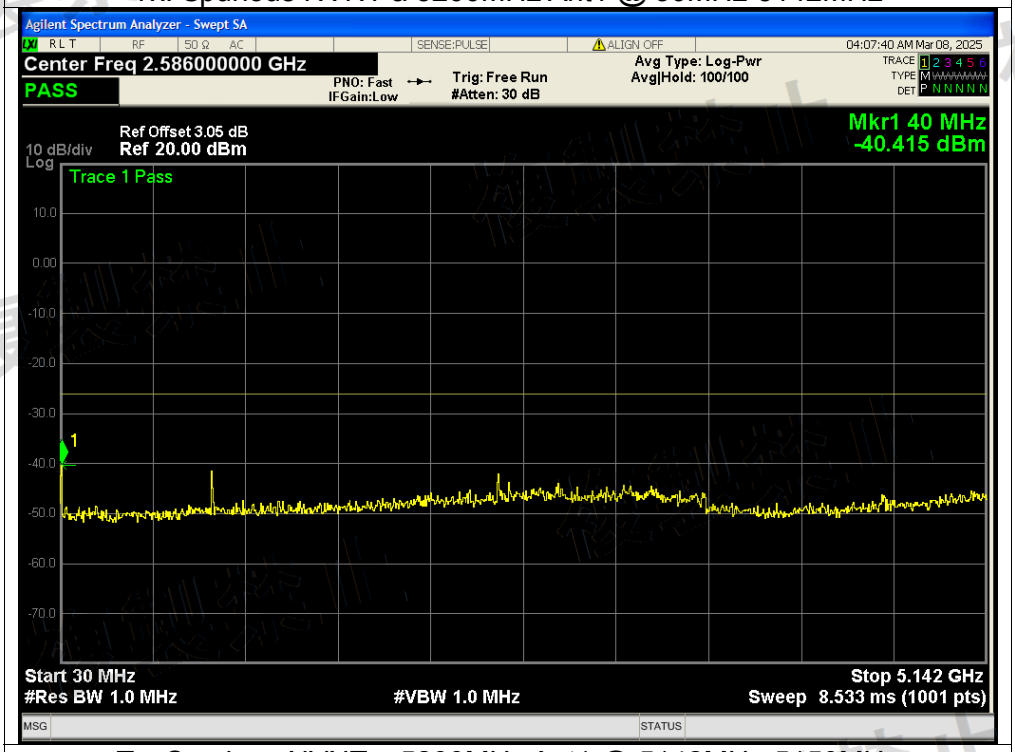
Tx. Spurious NVNT a 5180MHz Ant1 @ 5260MHz-5266.7MHz



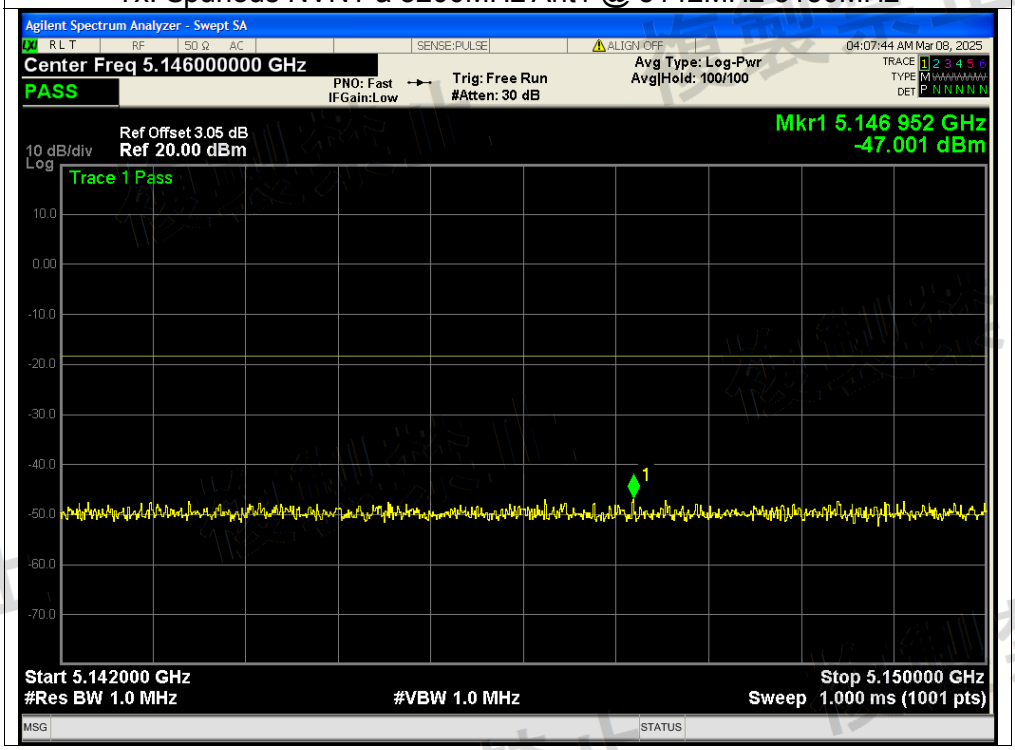
Tx. Spurious NVNT a 5180MHz Ant1 @ 5266.7MHz-26000MHz



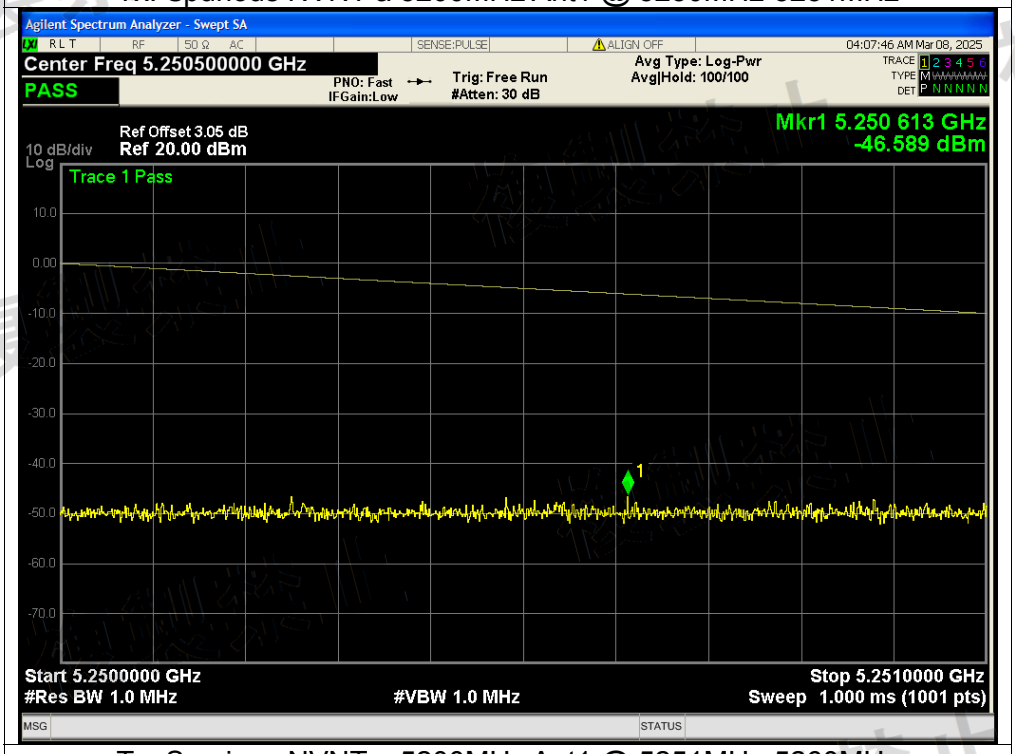
Tx. Spurious NVNT a 5200MHz Ant1 @ 30MHz-5142MHz



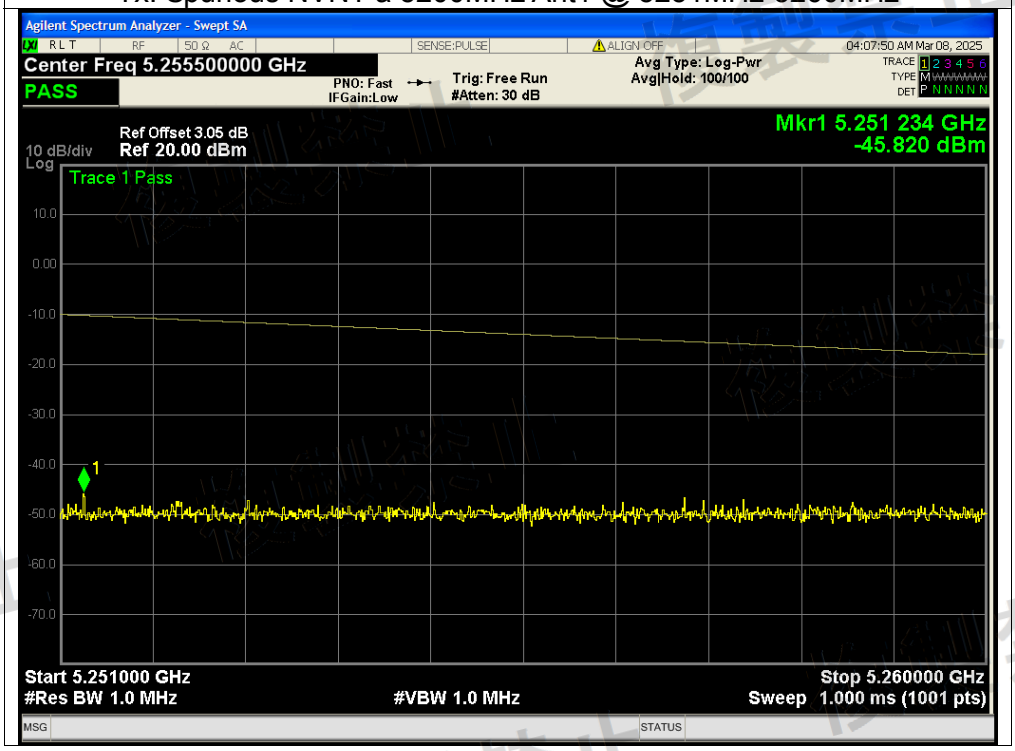
Tx. Spurious NVNT a 5200MHz Ant1 @ 5142MHz-5150MHz



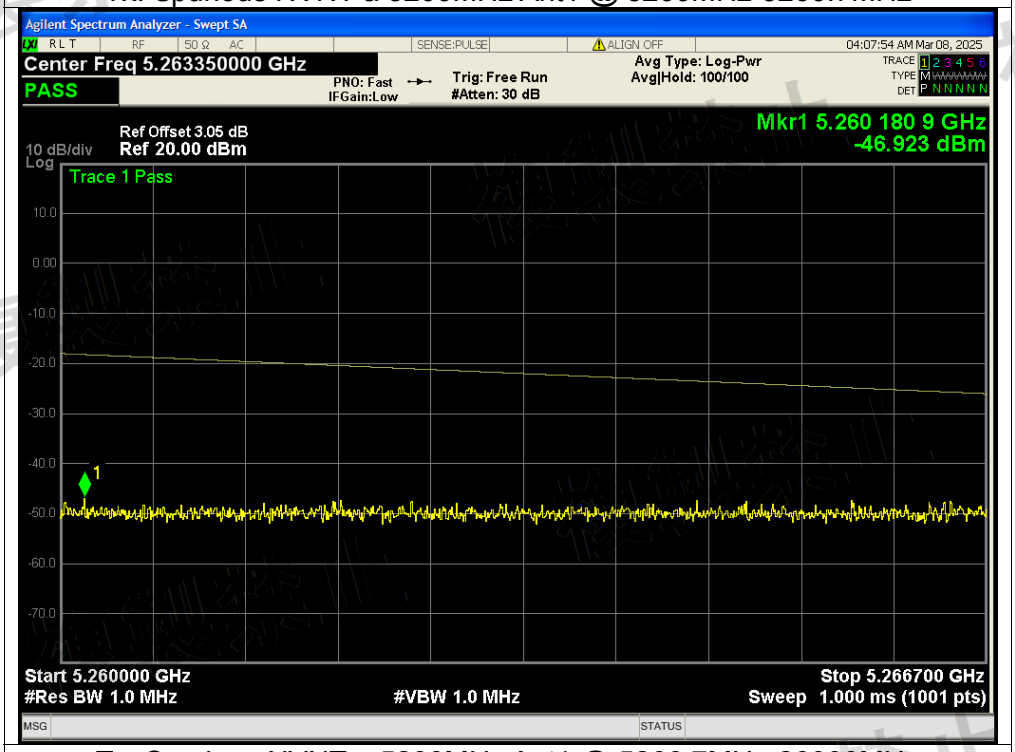
Tx. Spurious NVNT a 5200MHz Ant1 @ 5250MHz-5251MHz



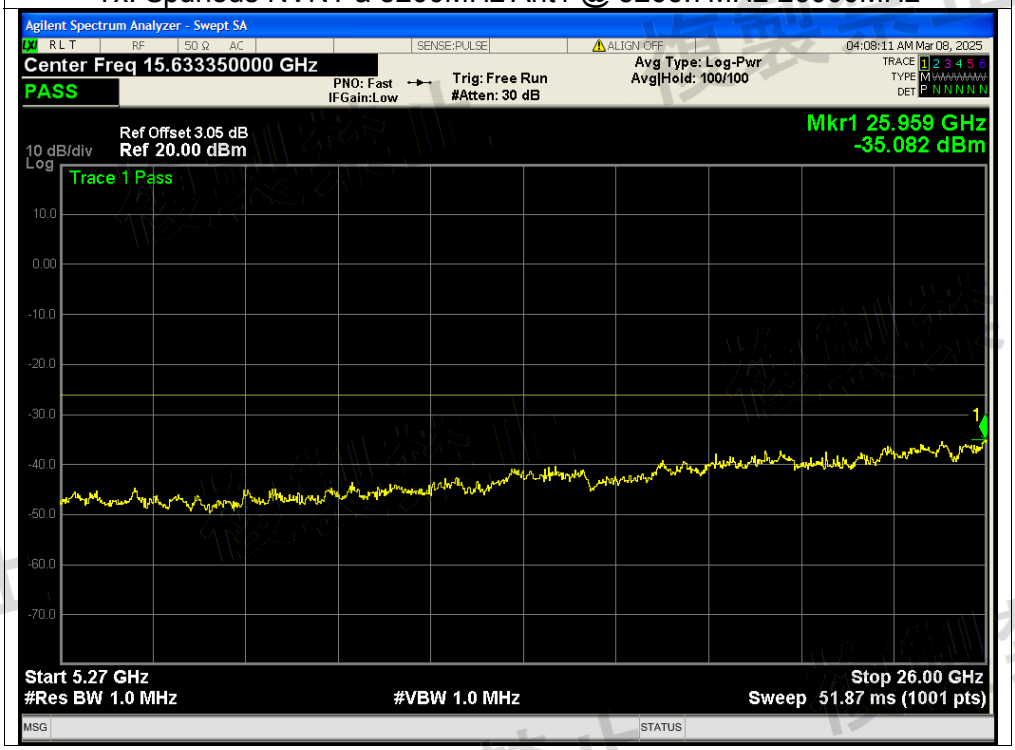
Tx. Spurious NVNT a 5200MHz Ant1 @ 5251MHz-5260MHz



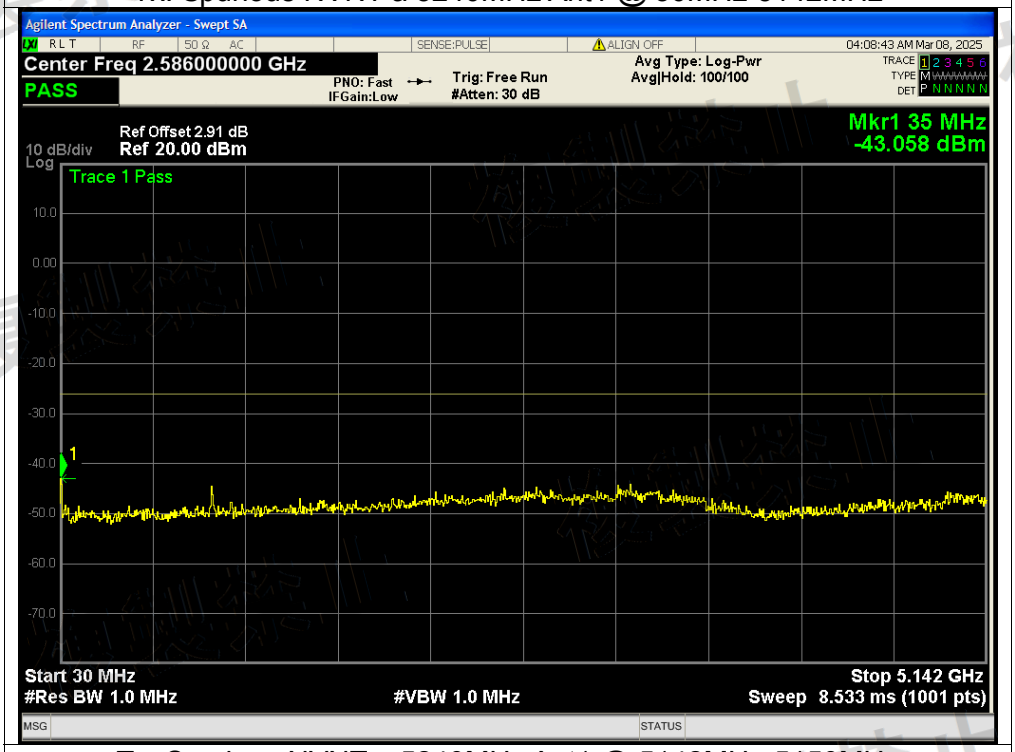
Tx. Spurious NVNT a 5200MHz Ant1 @ 5260MHz-5266.7MHz



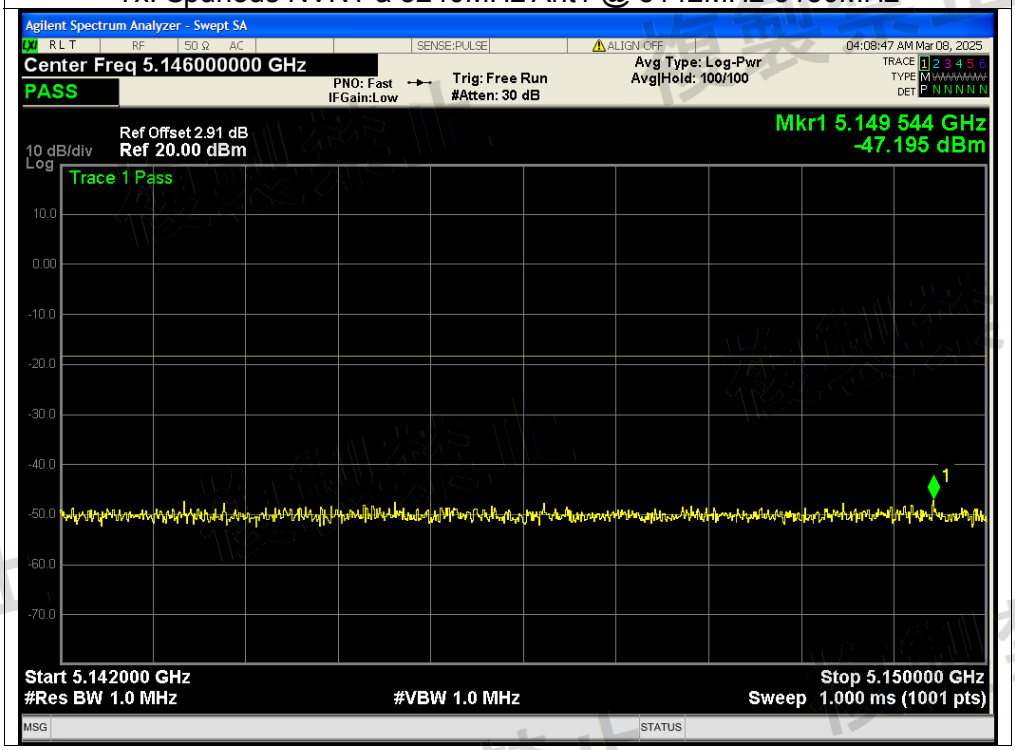
Tx. Spurious NVNT a 5200MHz Ant1 @ 5266.7MHz-26000MHz



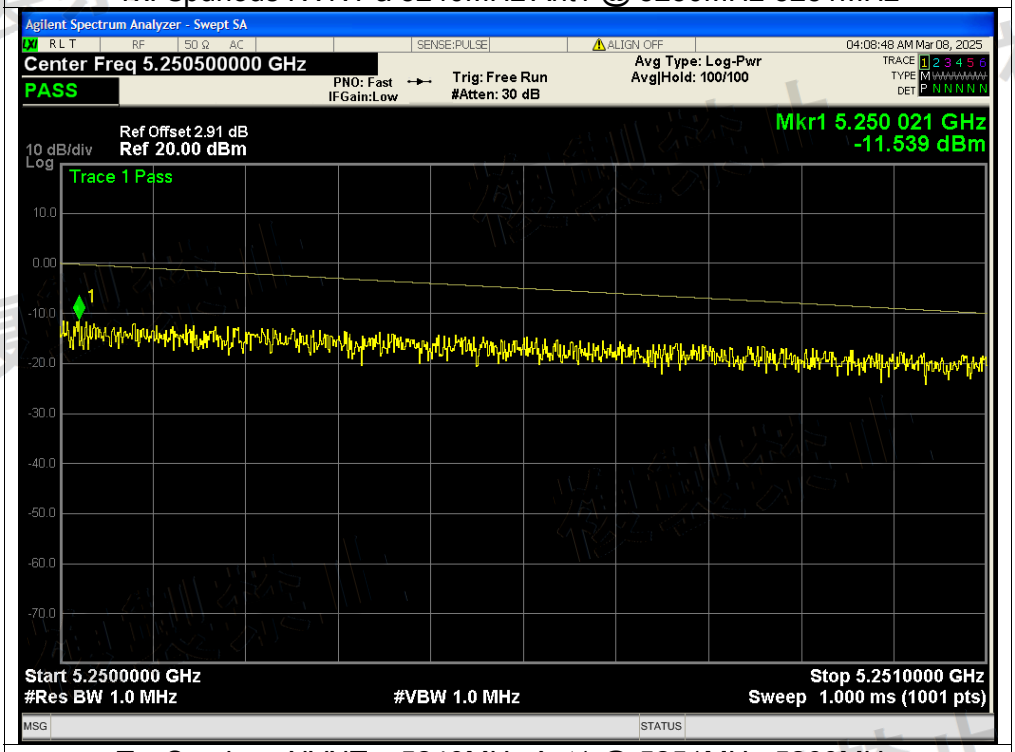
Tx. Spurious NVNT a 5240MHz Ant1 @ 30MHz-5142MHz



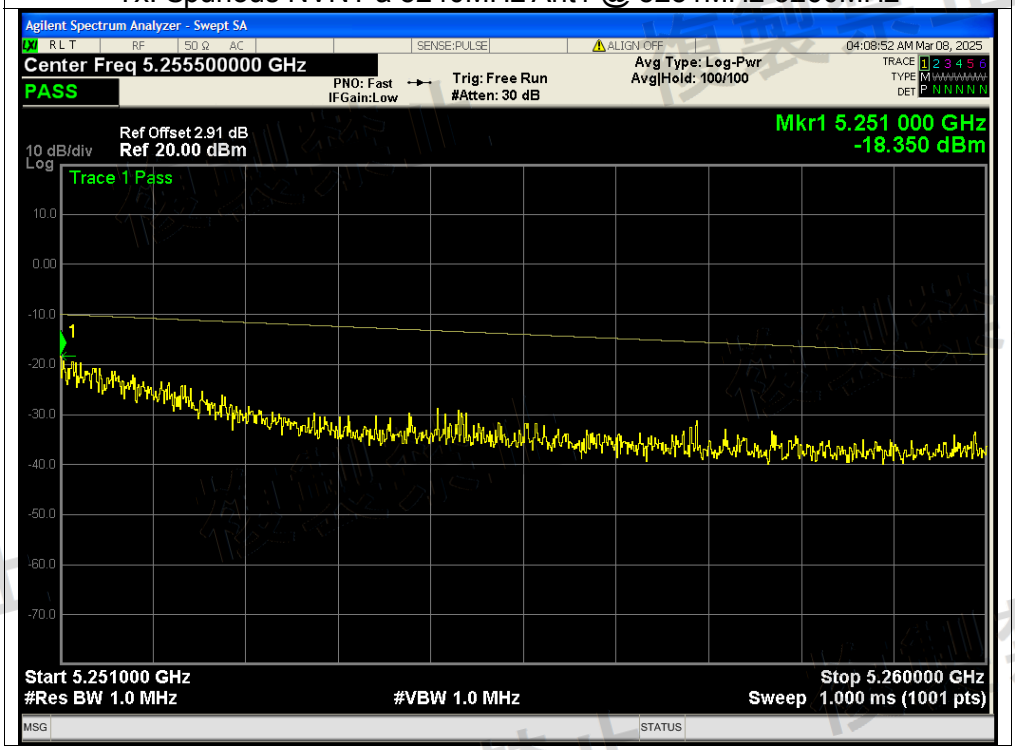
Tx. Spurious NVNT a 5240MHz Ant1 @ 5142MHz-5150MHz



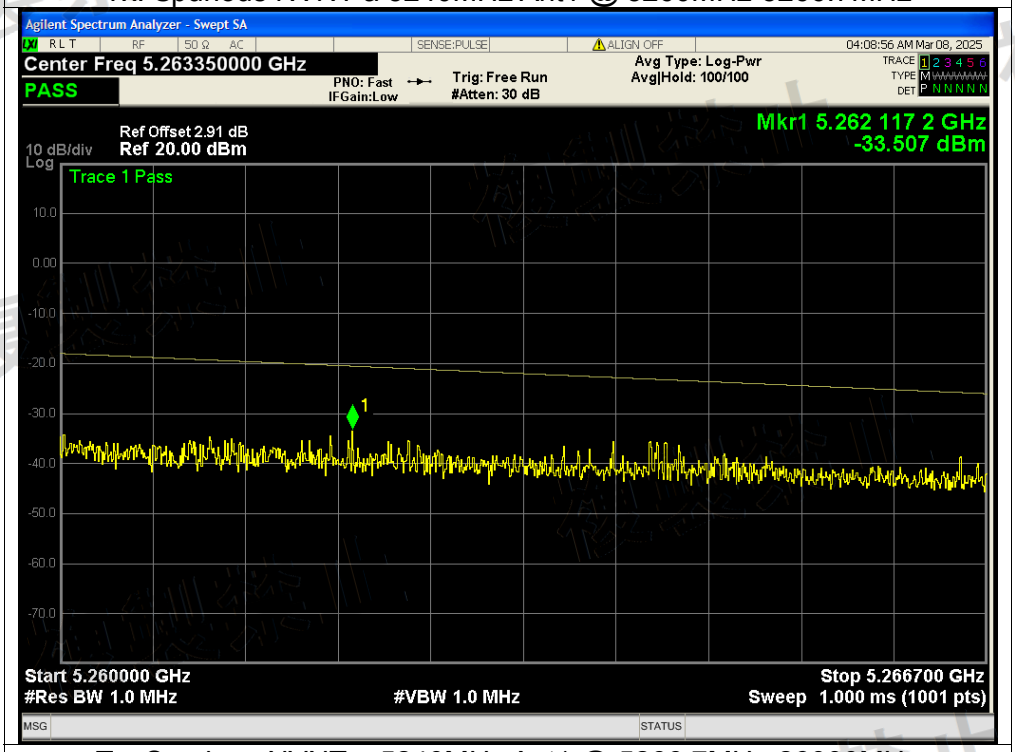
Tx. Spurious NVNT a 5240MHz Ant1 @ 5250MHz-5251MHz



Tx. Spurious NVNT a 5240MHz Ant1 @ 5251MHz-5260MHz

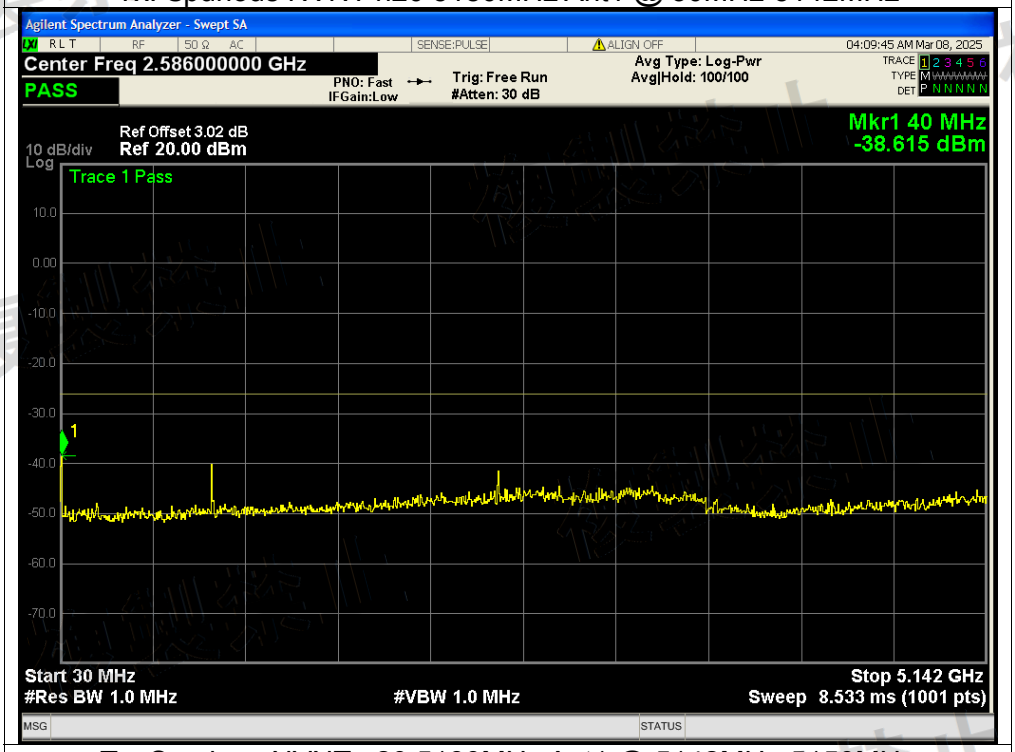


Tx. Spurious NVNT a 5240MHz Ant1 @ 5260MHz-5266.7MHz



Tx. Spurious NVNT a 5240MHz Ant1 @ 5266.7MHz-26000MHz

Tx. Spurious NVNT n20 5180MHz Ant1 @ 30MHz-5142MHz



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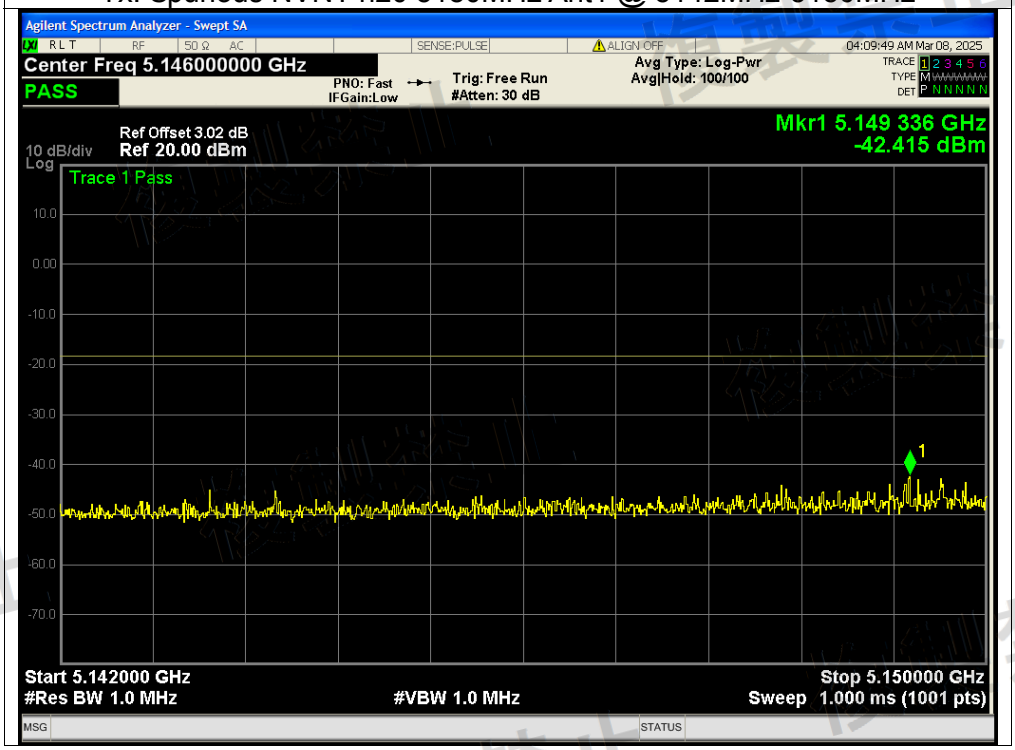

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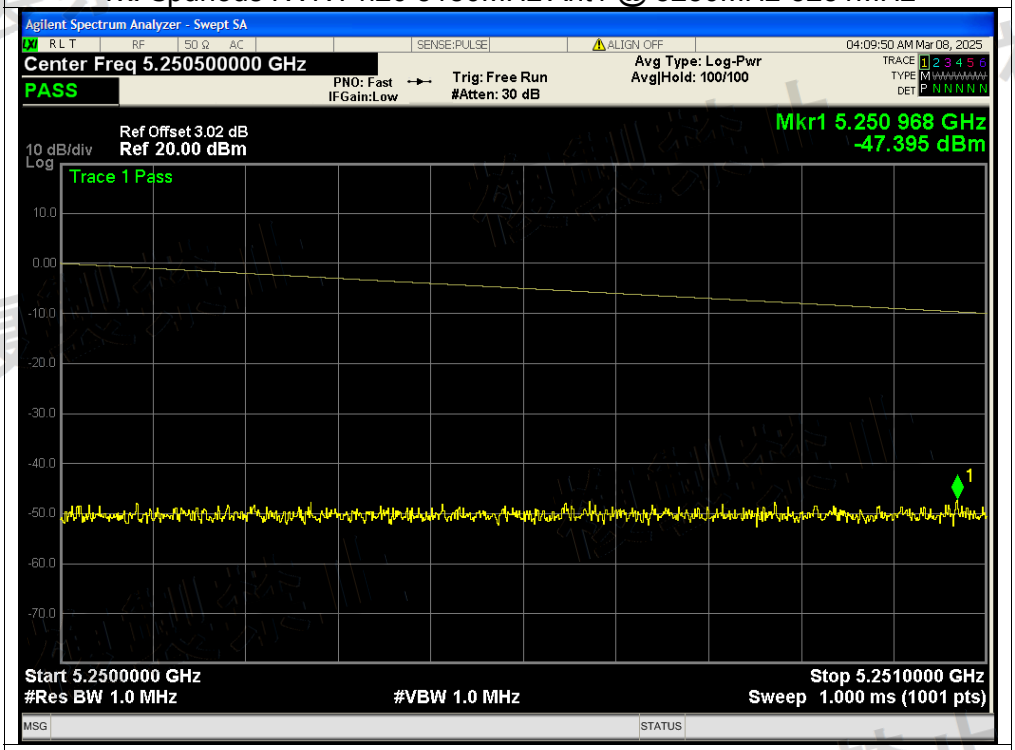
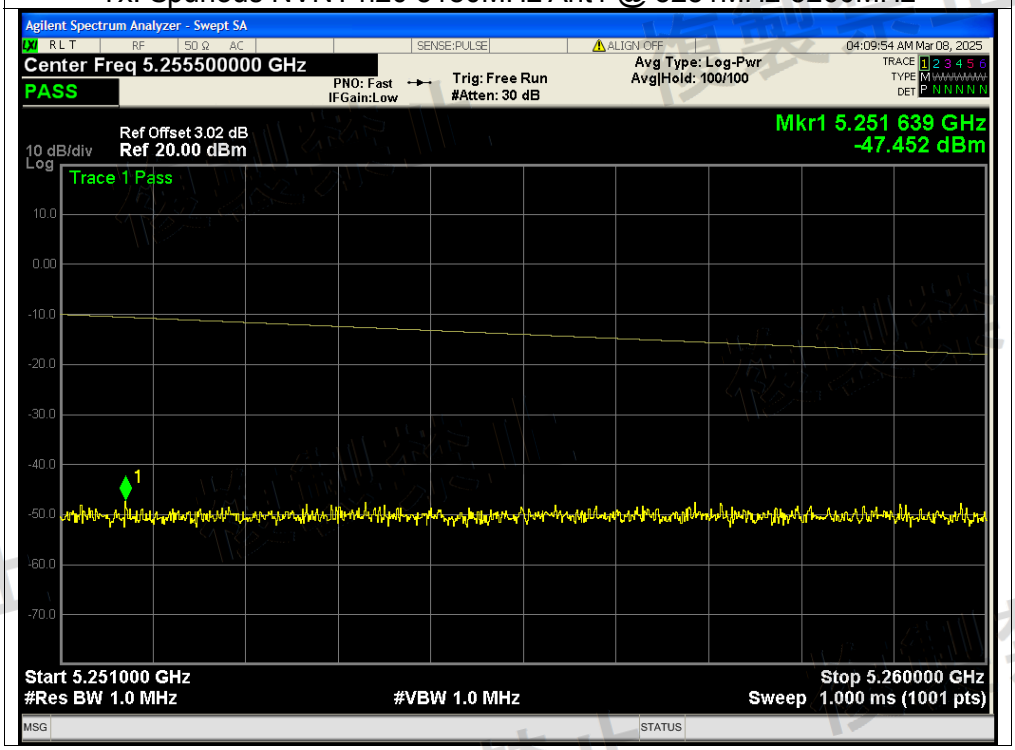


Tx. Spurious NVNT n20 5180MHz Ant1 @ 5251MHz-5260MHz



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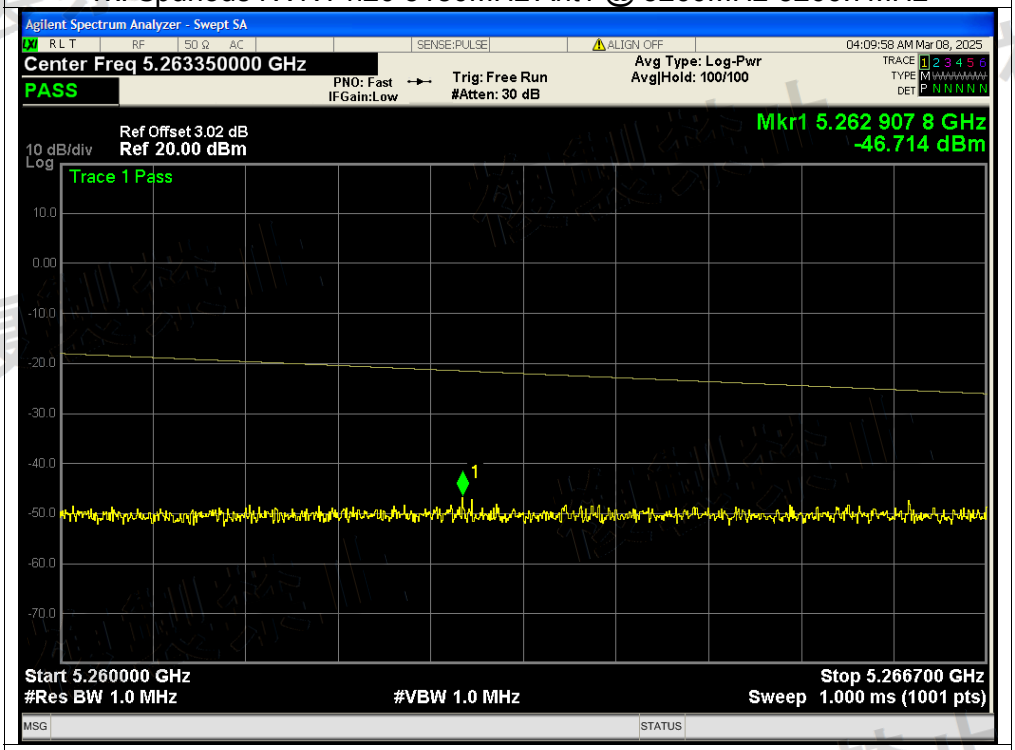
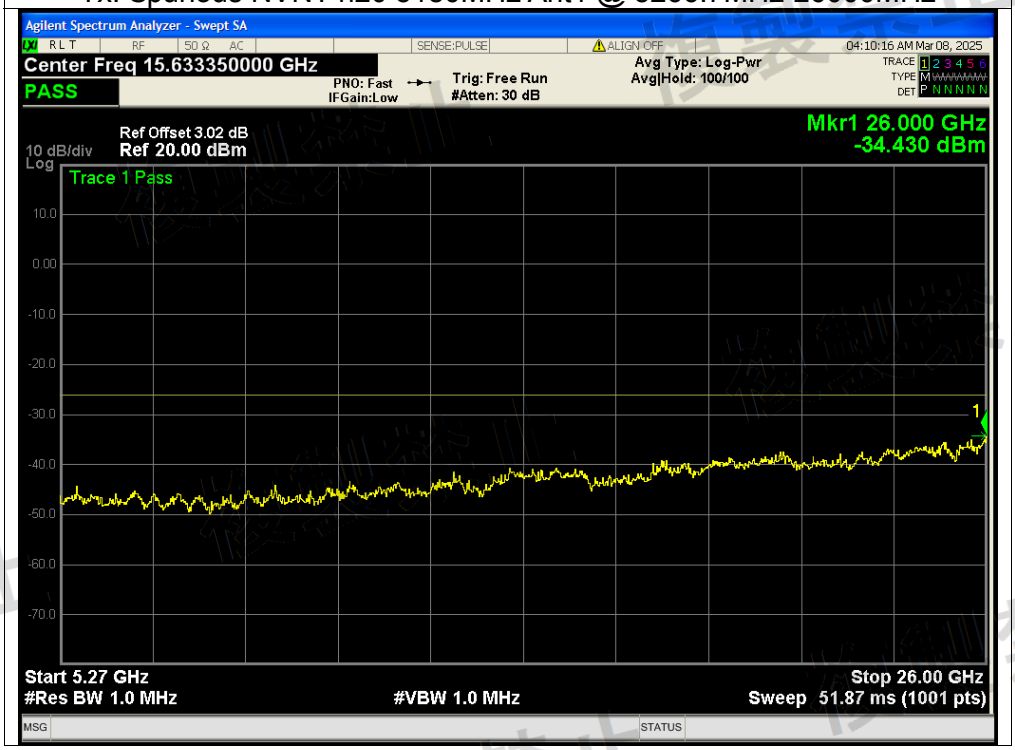
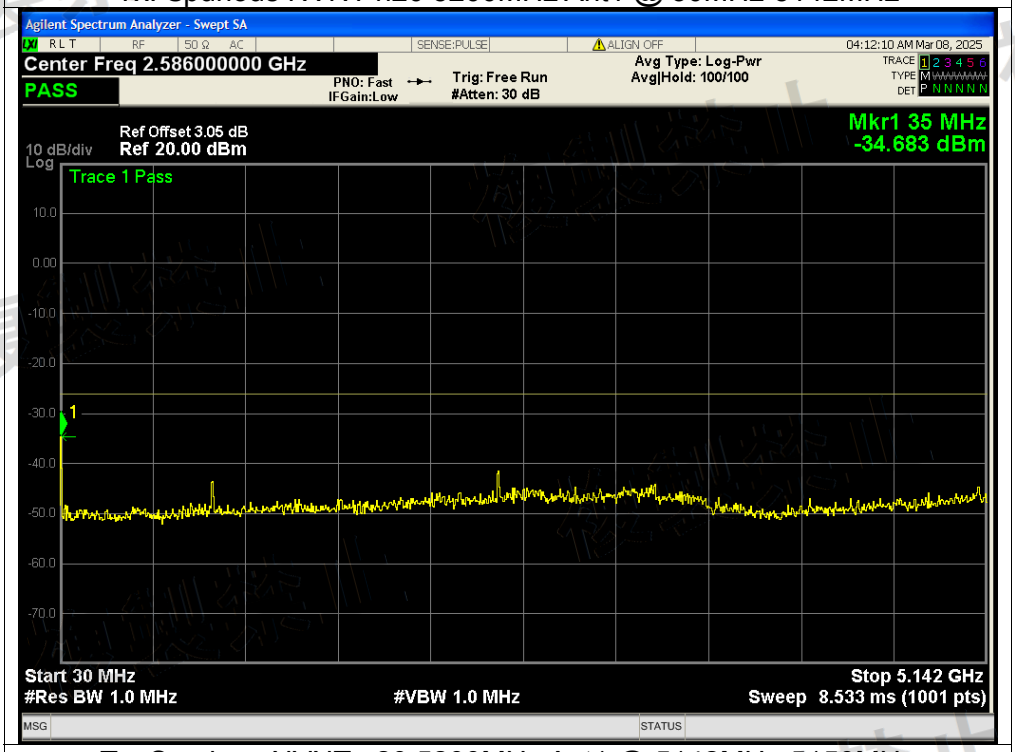


Tx. Spurious NVNT n20 5180MHz Ant1 @ 5266.7MHz-26000MHz



Tx. Spurious NVNT n20 5200MHz Ant1 @ 30MHz-5142MHz



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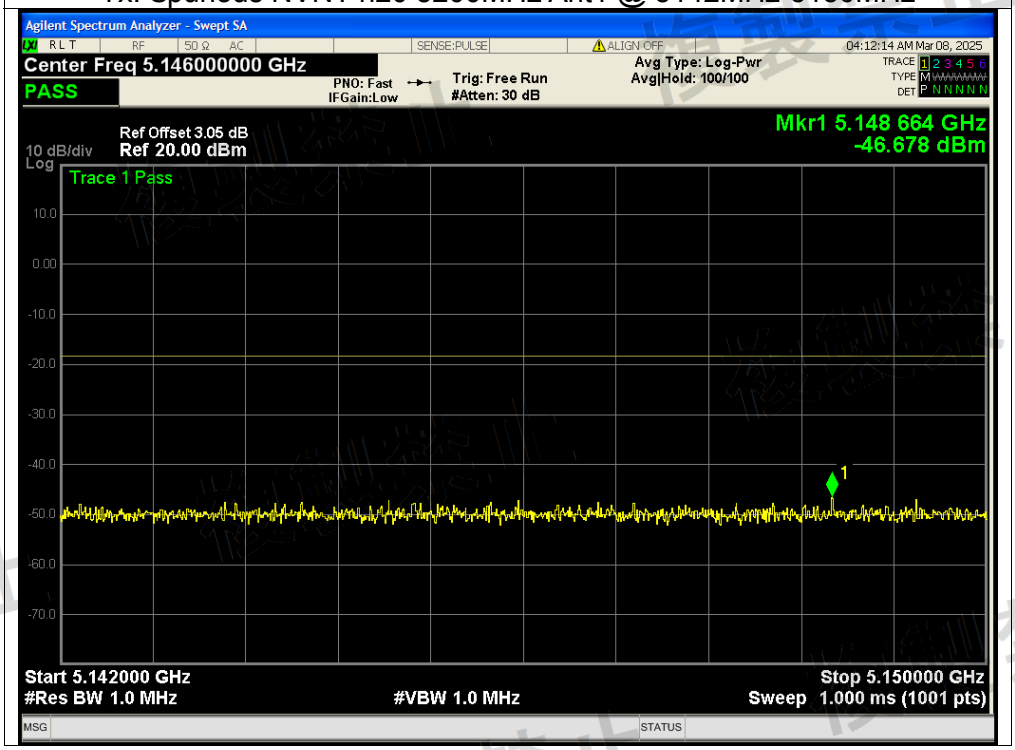
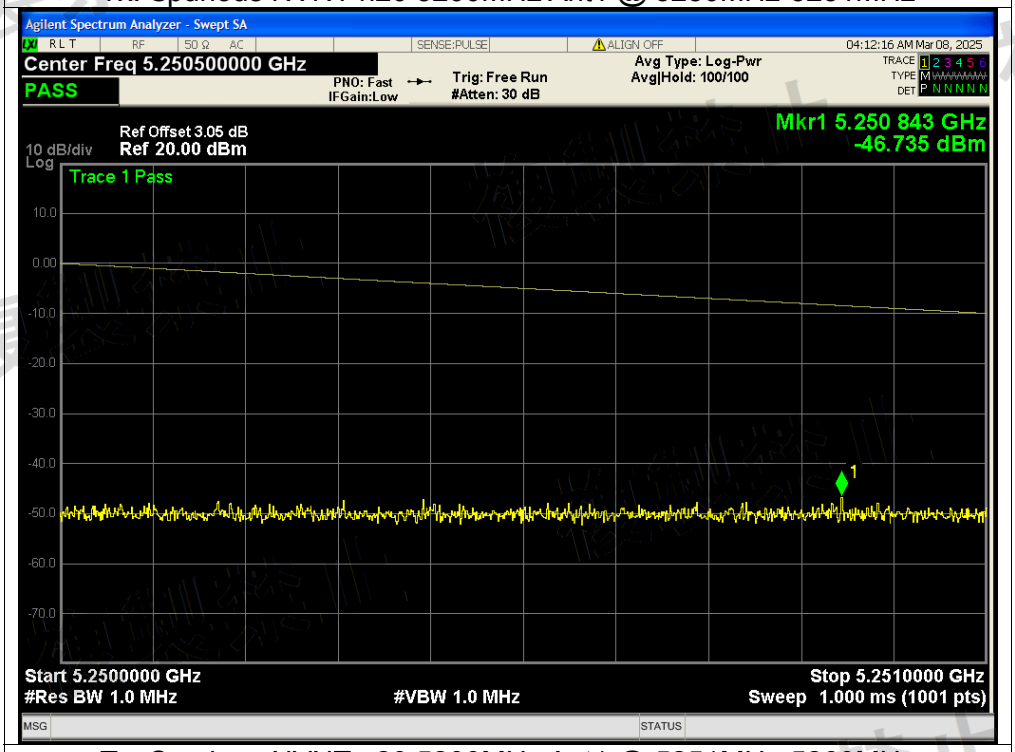
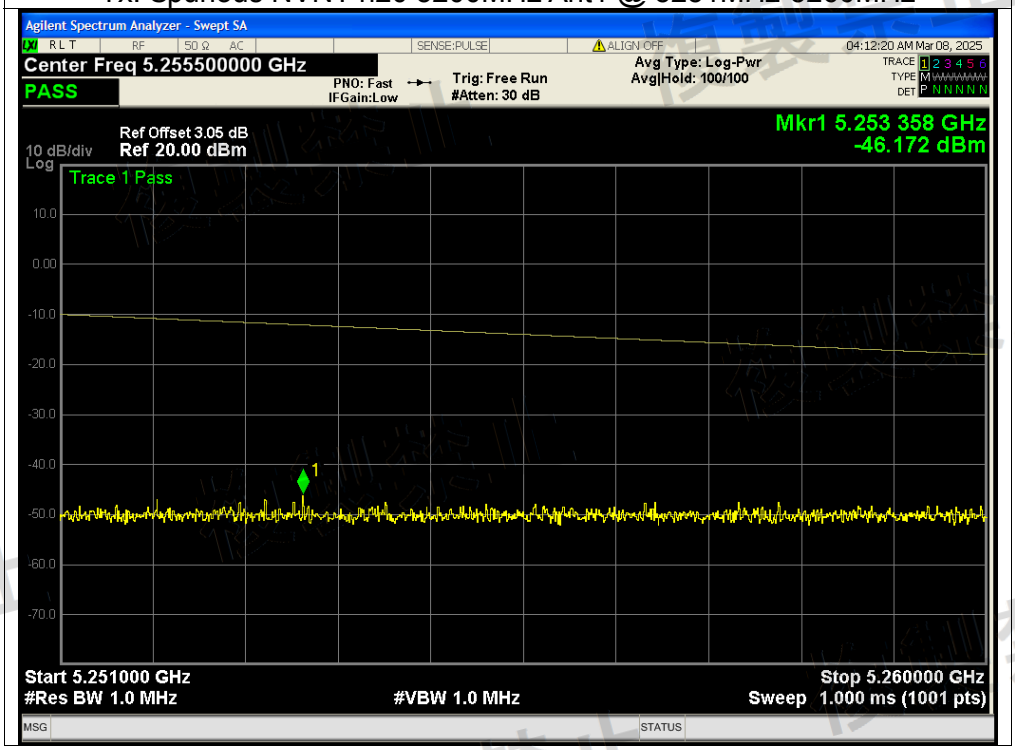


Tx. Spurious NVNT n20 5200MHz Ant1 @ 5250MHz-5251MHz



Tx. Spurious NVNT n20 5200MHz Ant1 @ 5251MHz-5260MHz



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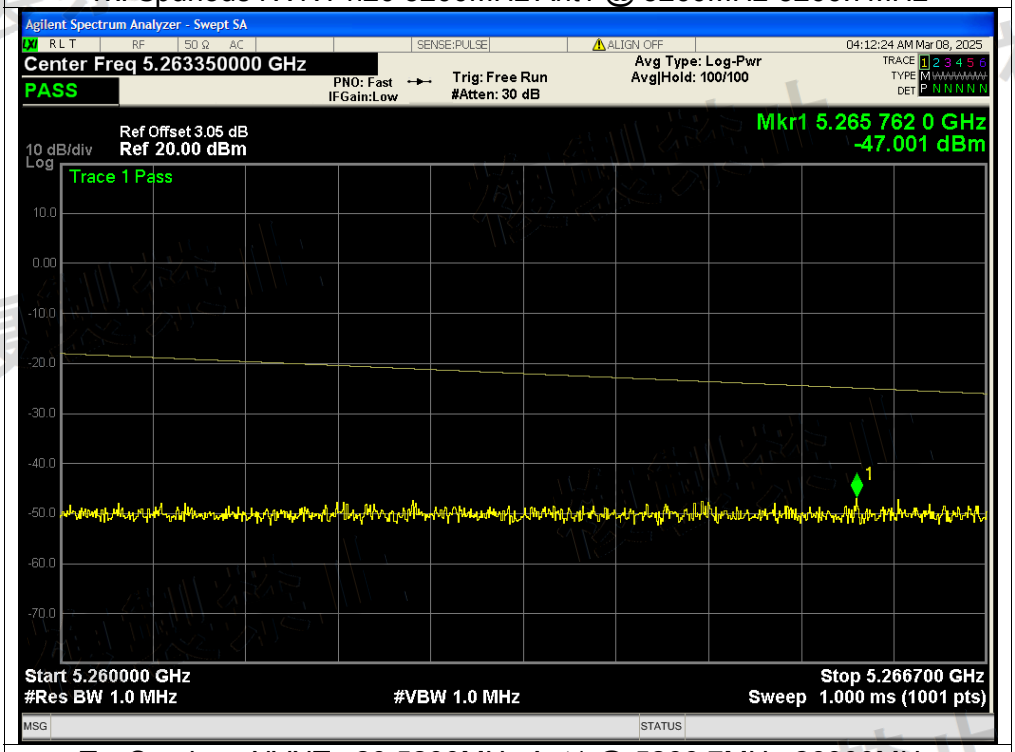
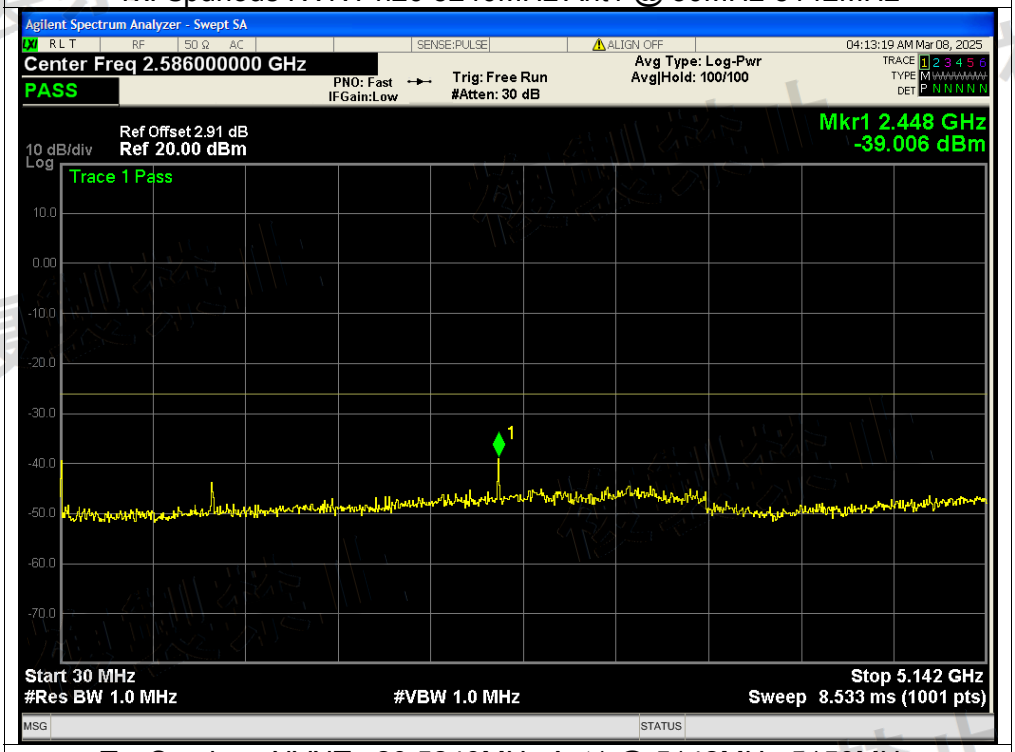
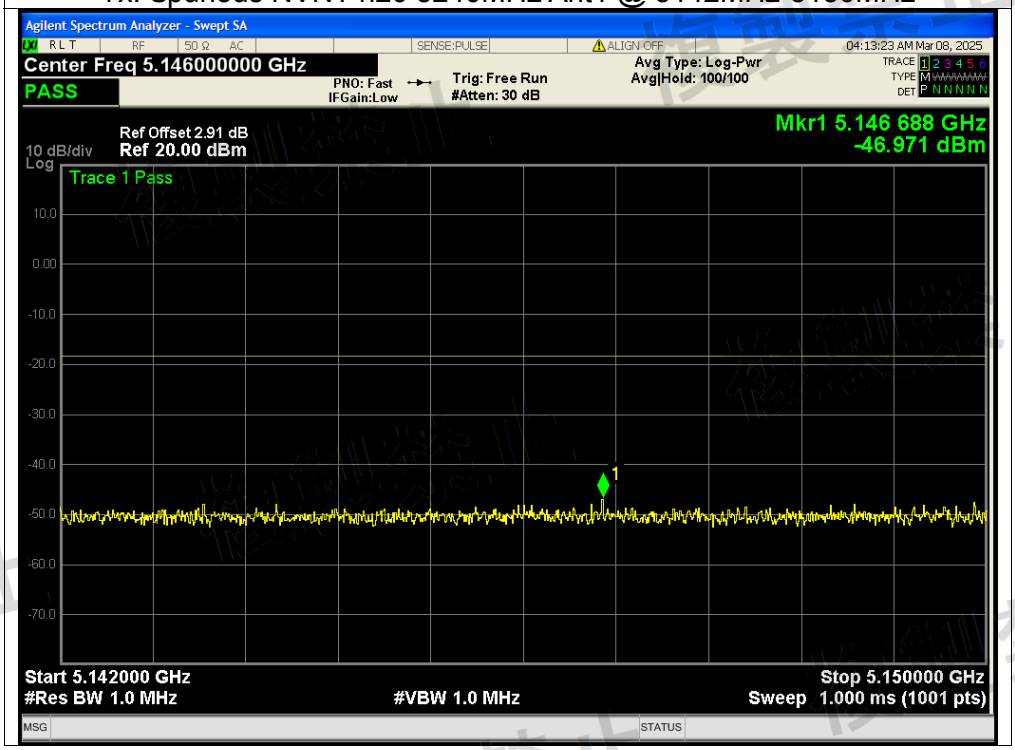


Tx. Spurious NVNT n20 5200MHz Ant1 @ 5266.7MHz-26000MHz

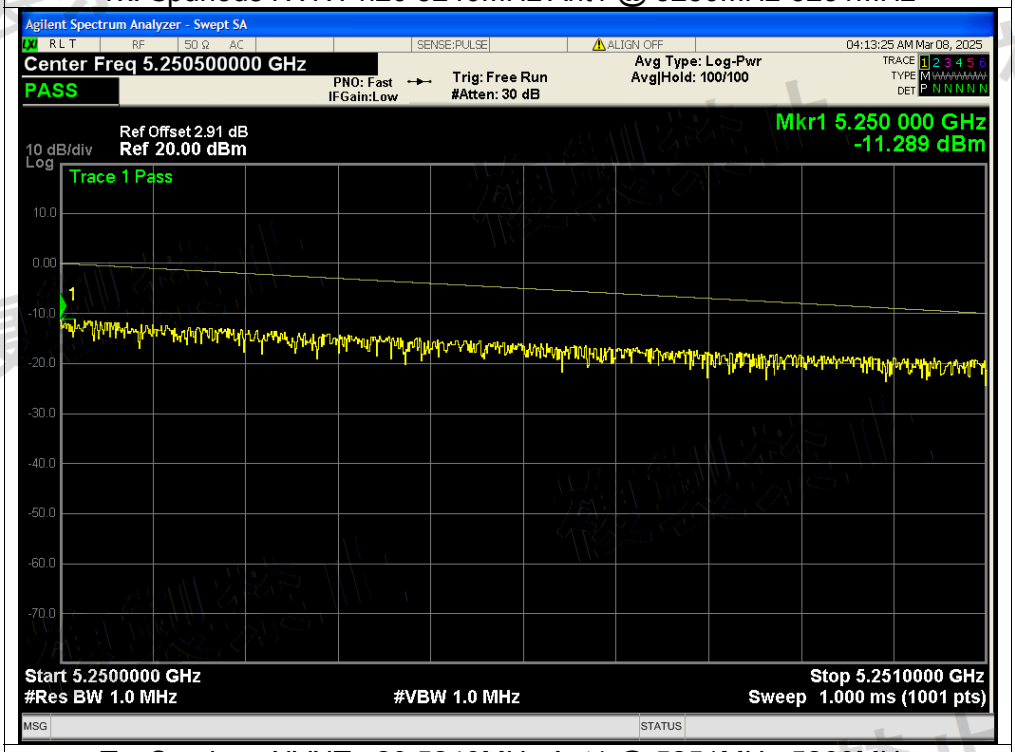
Tx. Spurious NVNT n20 5240MHz Ant1 @ 30MHz-5142MHz



Tx. Spurious NVNT n20 5240MHz Ant1 @ 5142MHz-5150MHz

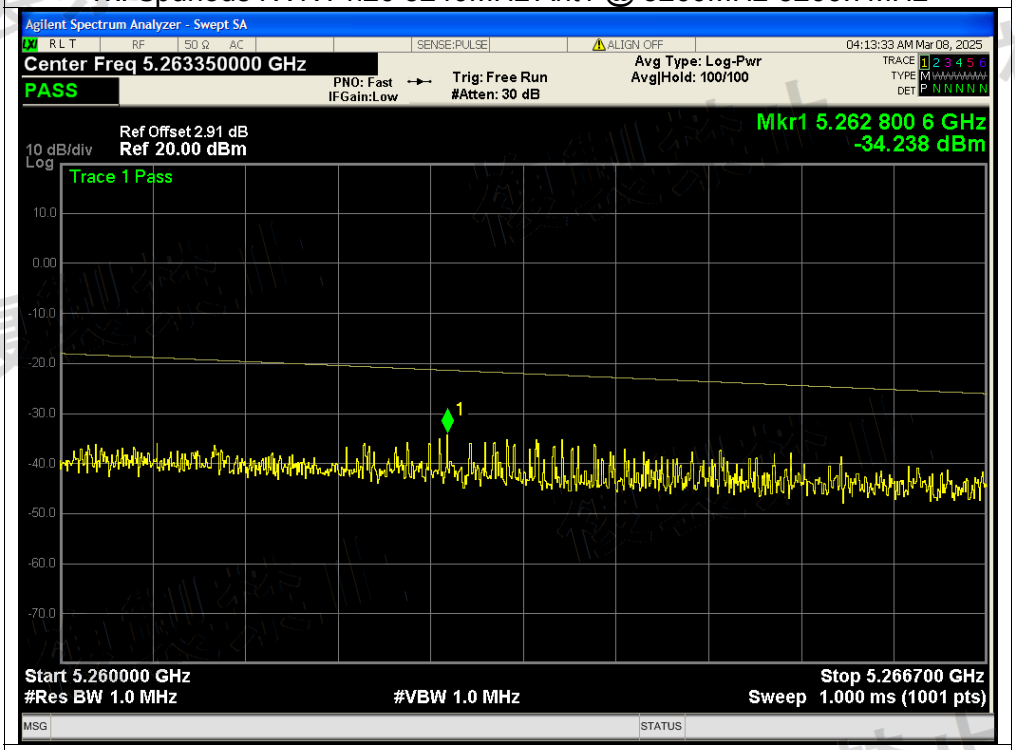


Tx. Spurious NVNT n20 5240MHz Ant1 @ 5250MHz-5251MHz



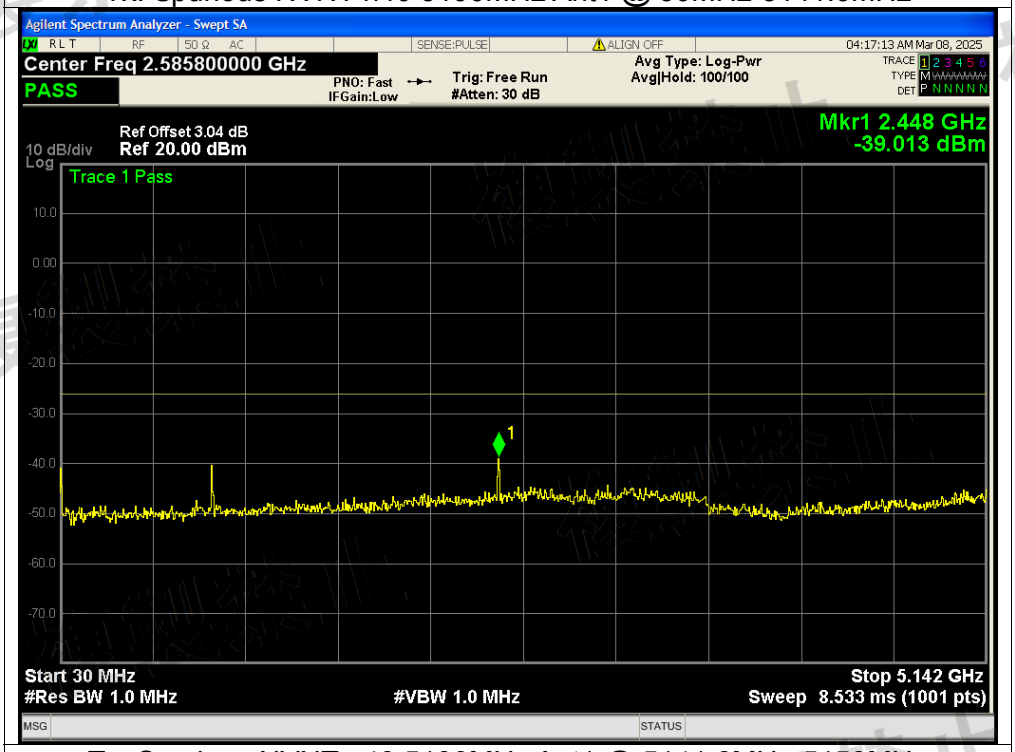
Tx. Spurious NVNT n20 5240MHz Ant1 @ 5251MHz-5260MHz

Tx. Spurious NVNT n20 5240MHz Ant1 @ 5260MHz-5266.7MHz



Tx. Spurious NVNT n20 5240MHz Ant1 @ 5266.7MHz-26000MHz

Tx. Spurious NVNT n40 5190MHz Ant1 @ 30MHz-5141.6MHz



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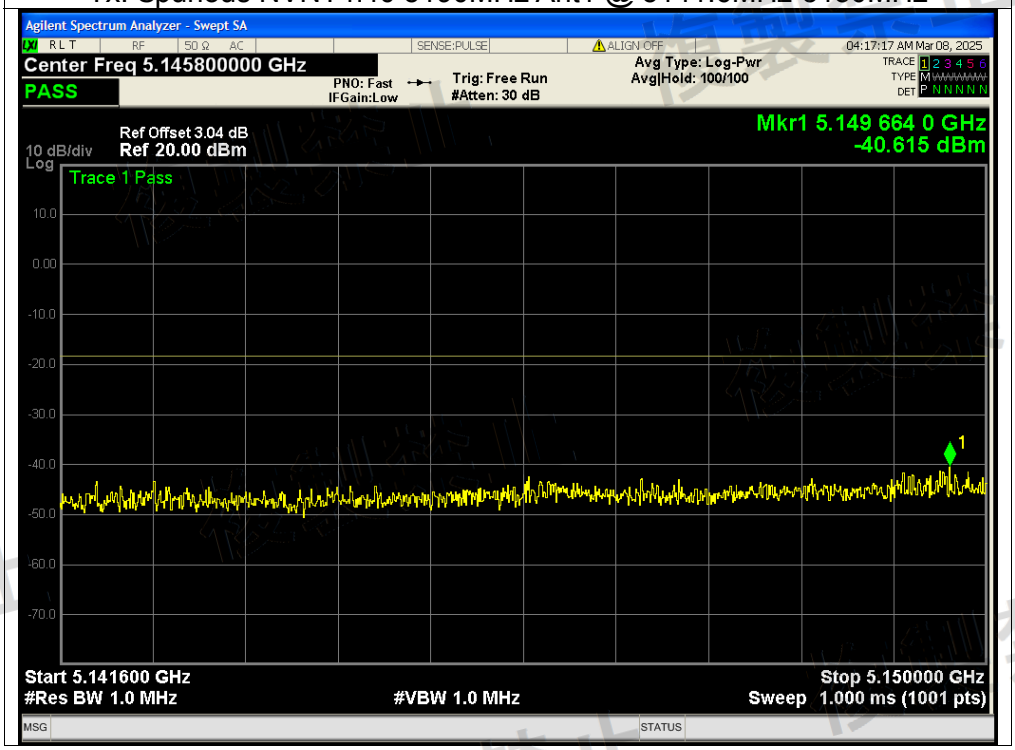
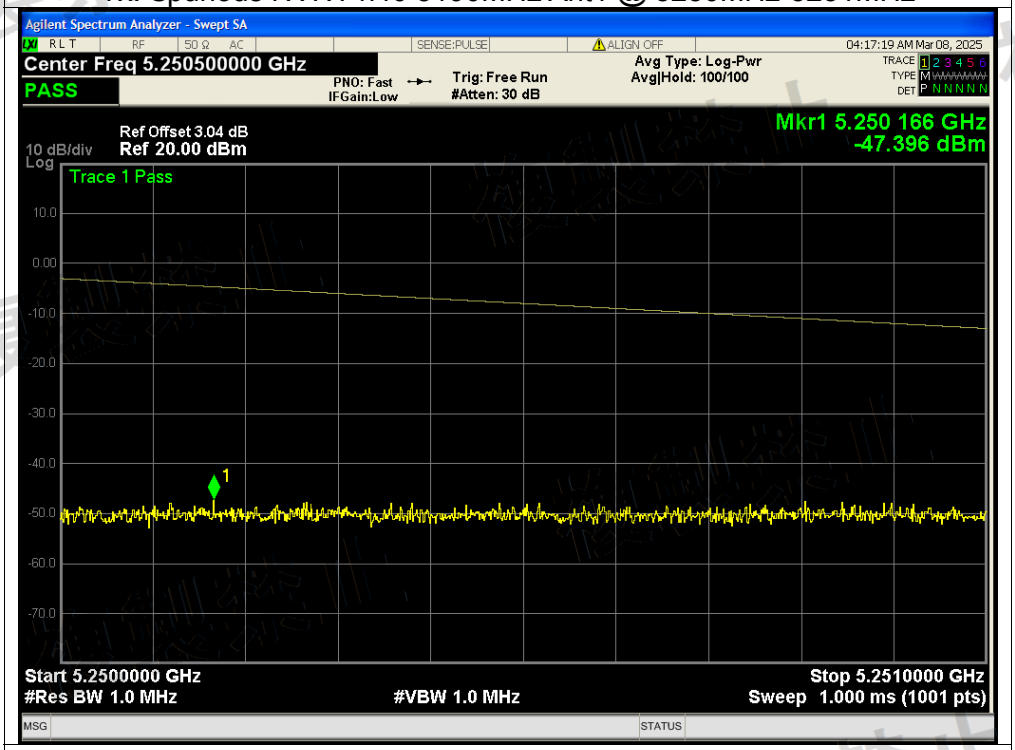


Tx. Spurious NVNT n40 5190MHz Ant1 @ 5250MHz-5251MHz



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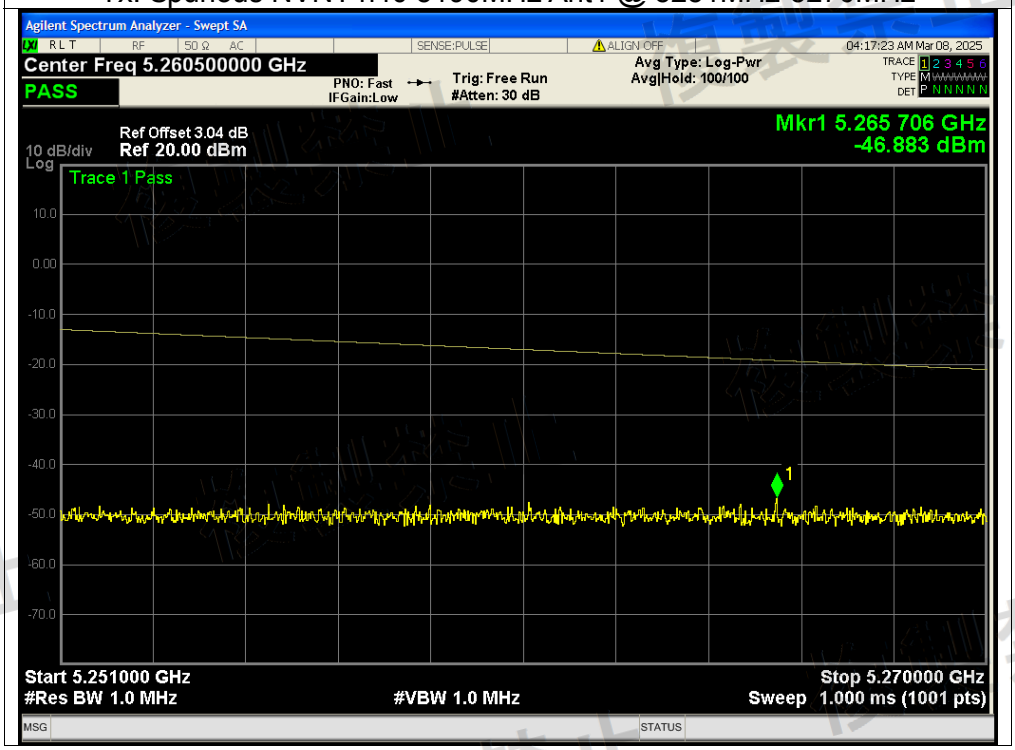
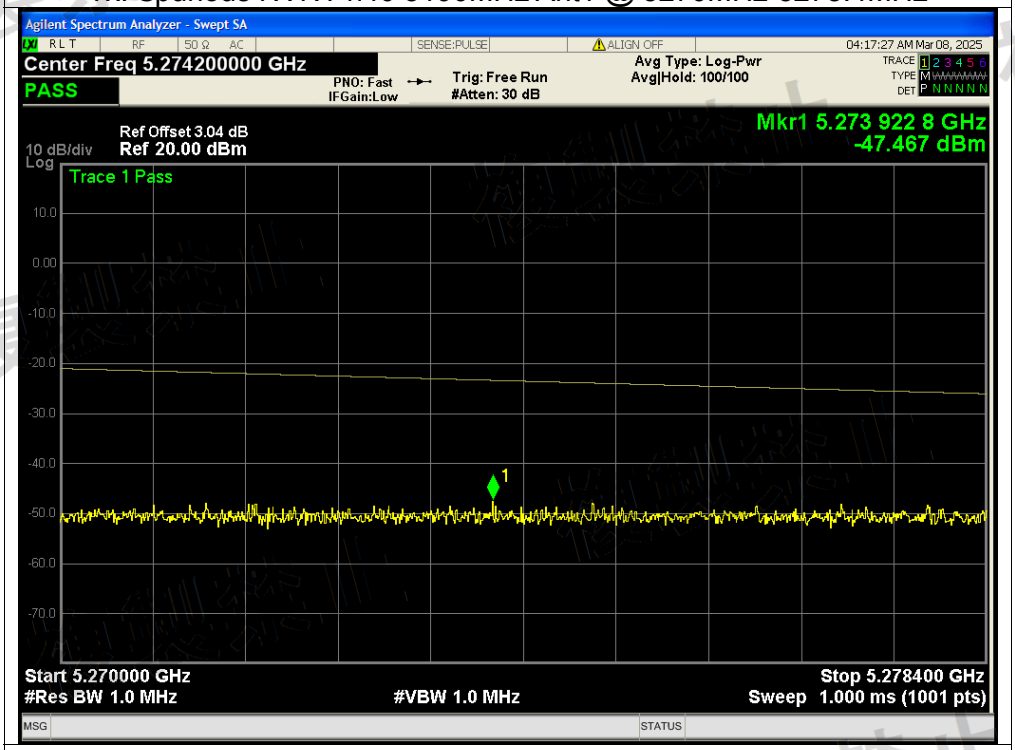


Tx. Spurious NVNT n40 5190MHz Ant1 @ 5270MHz-5278.4MHz



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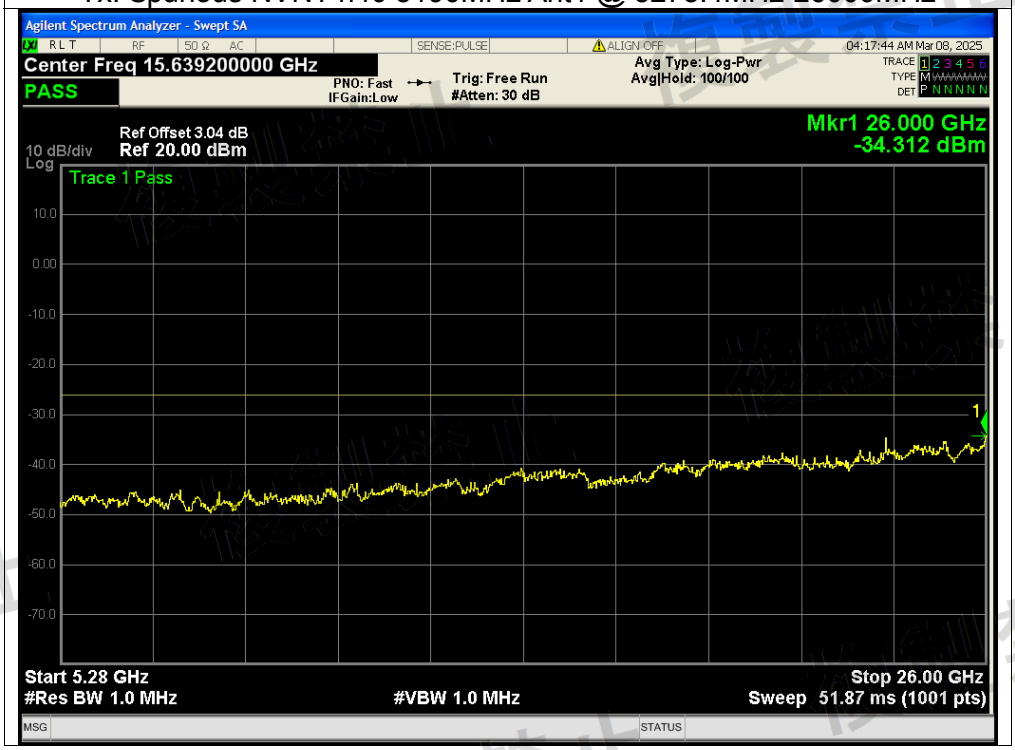

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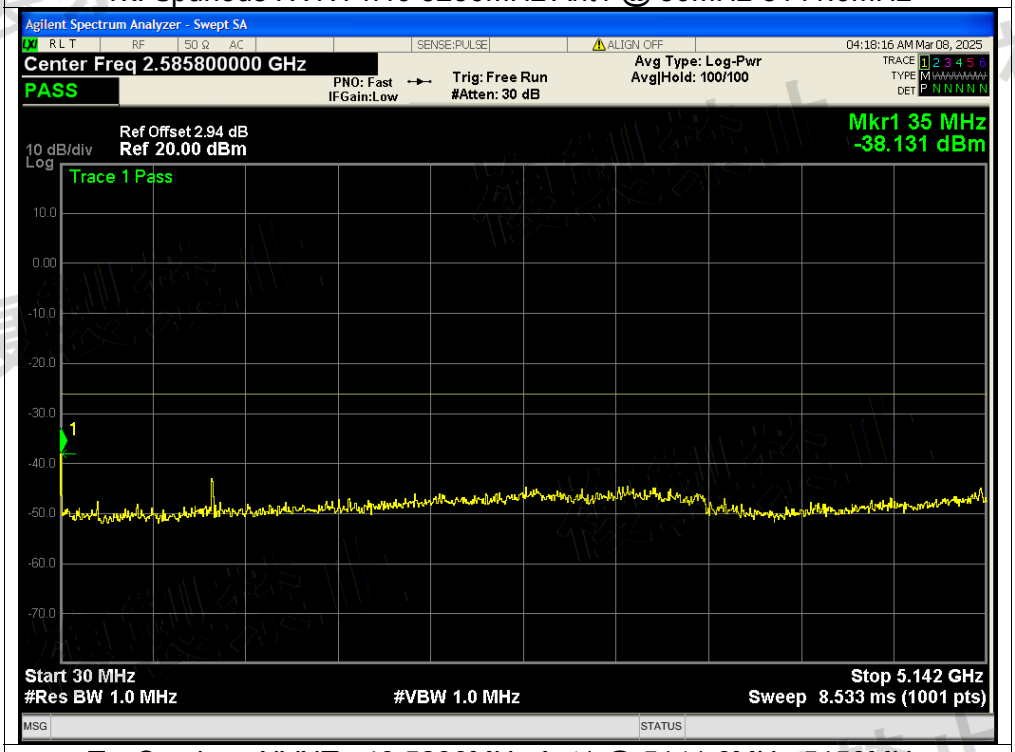

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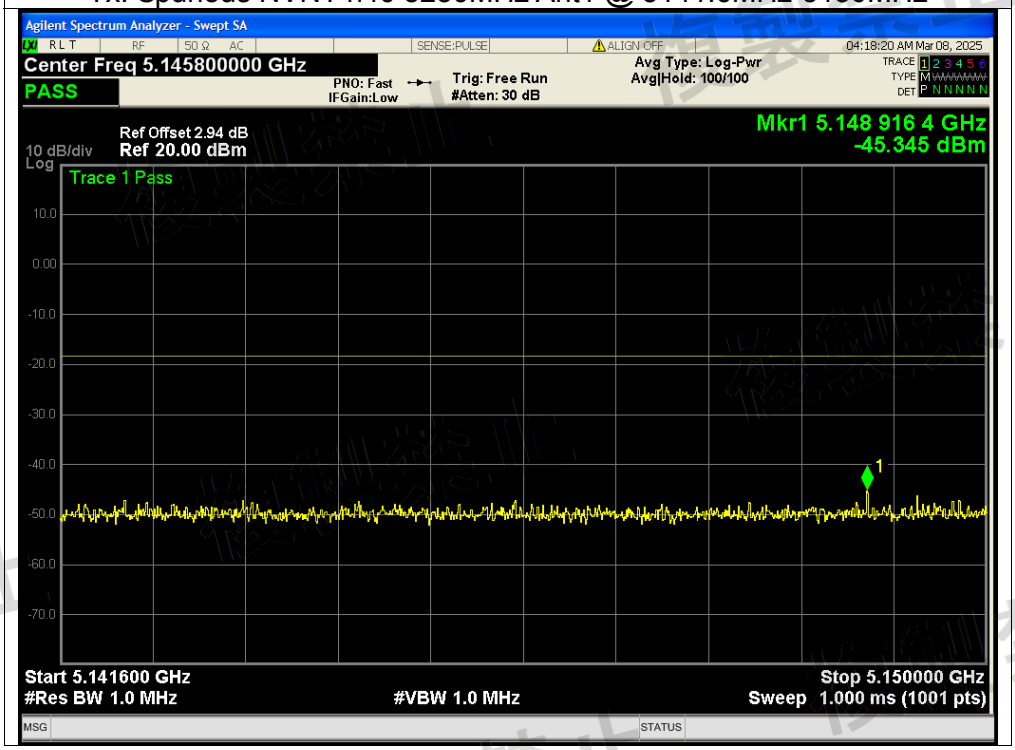
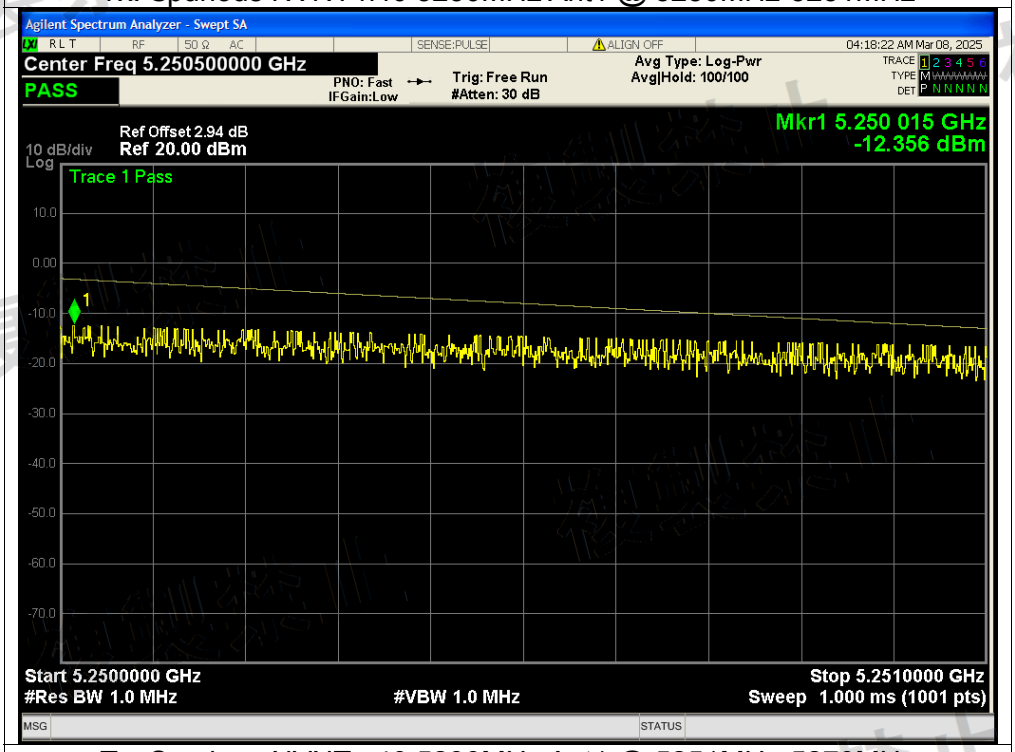


Tx. Spurious NVNT n40 5230MHz Ant1 @ 5250MHz-5251MHz



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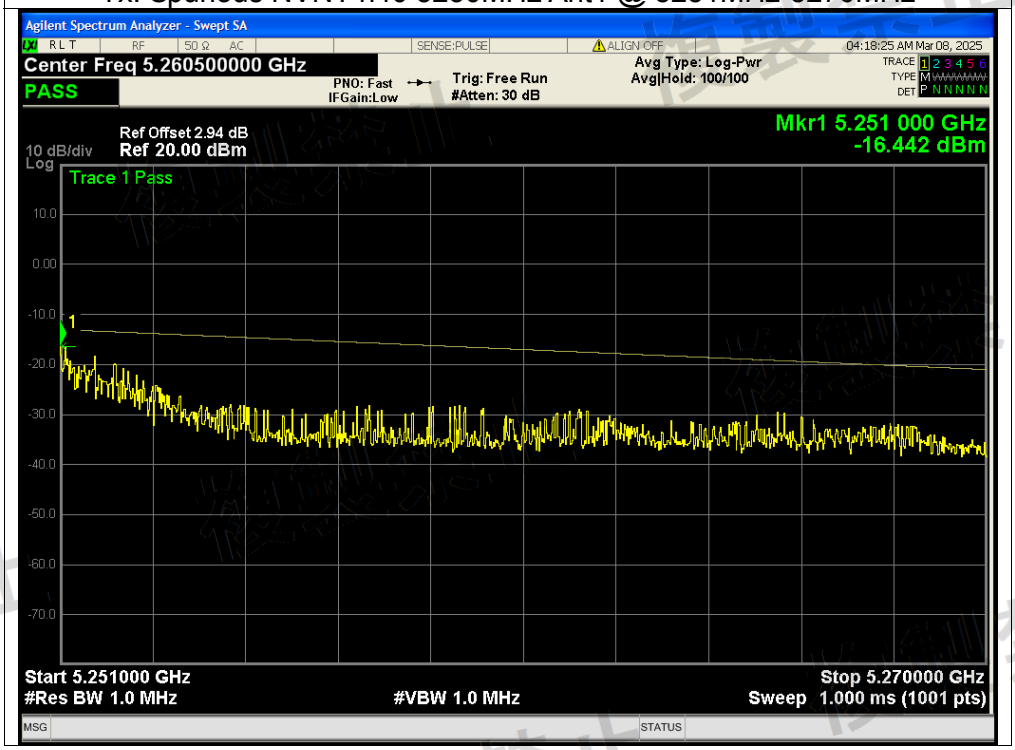

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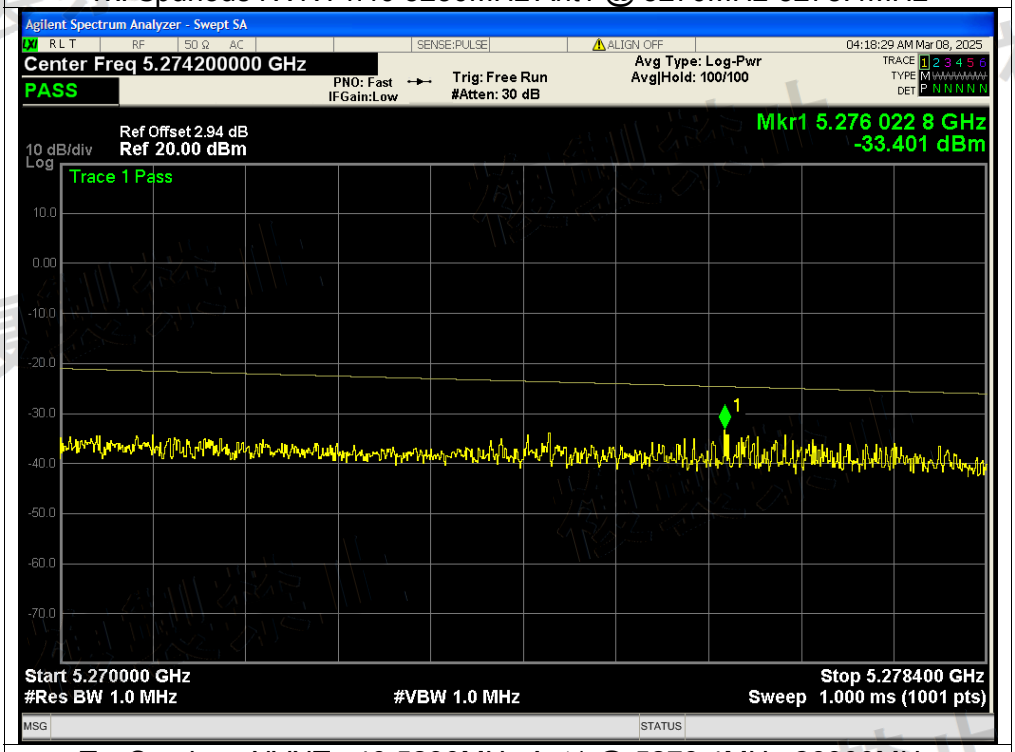
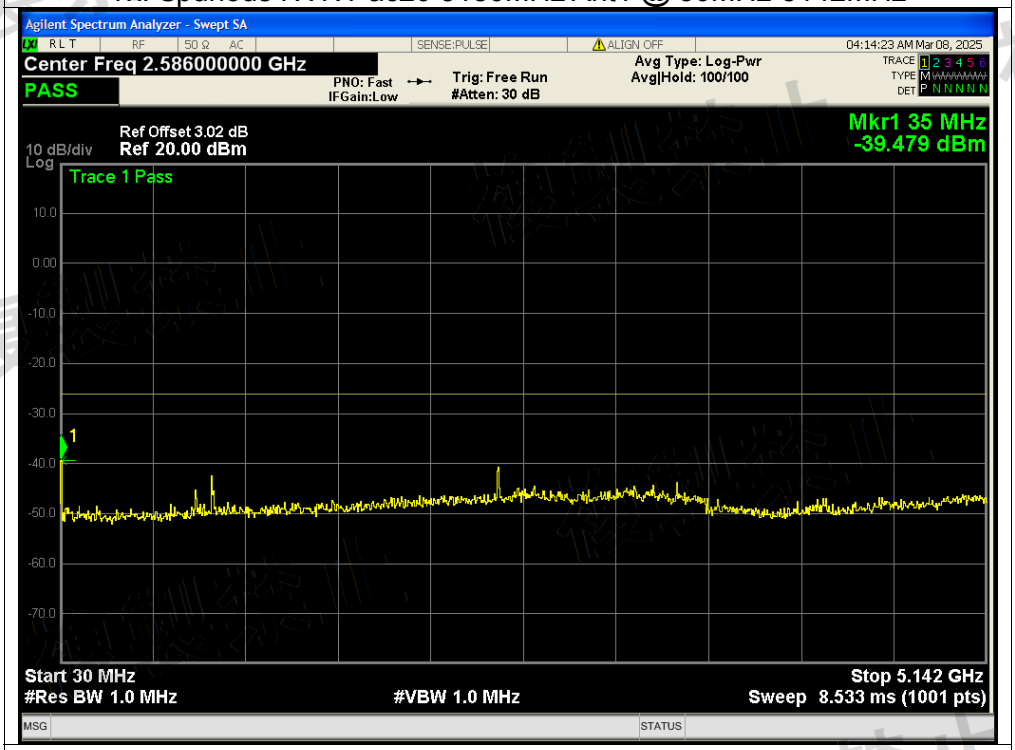
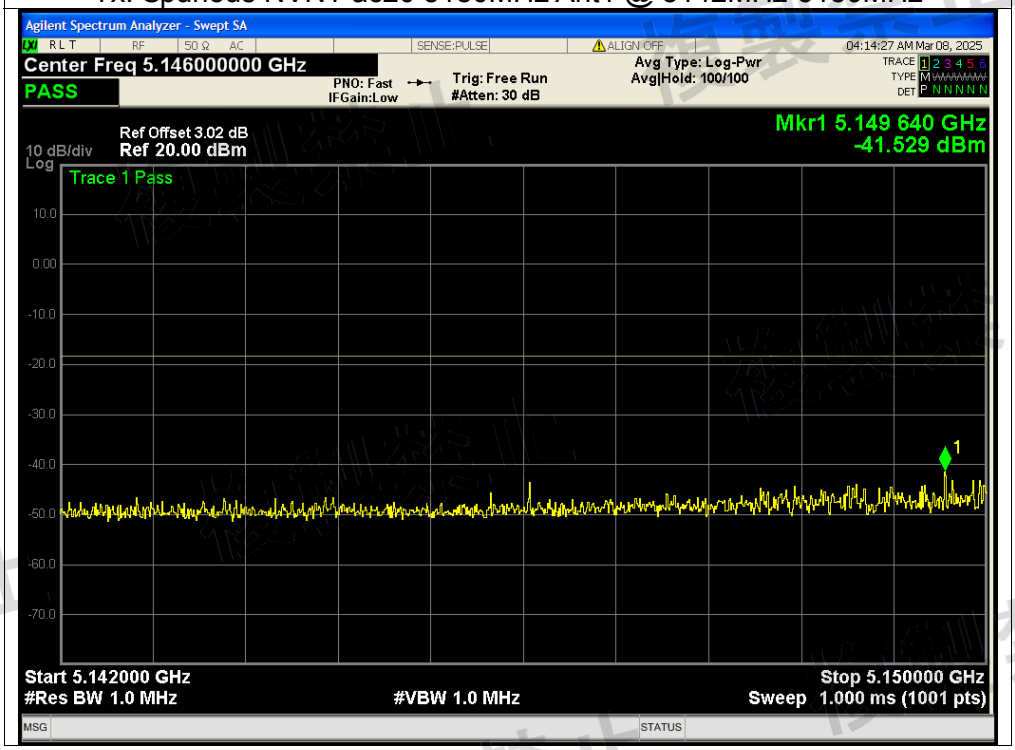


Tx. Spurious NVNT n40 5230MHz Ant1 @ 5278.4MHz-26000MHz

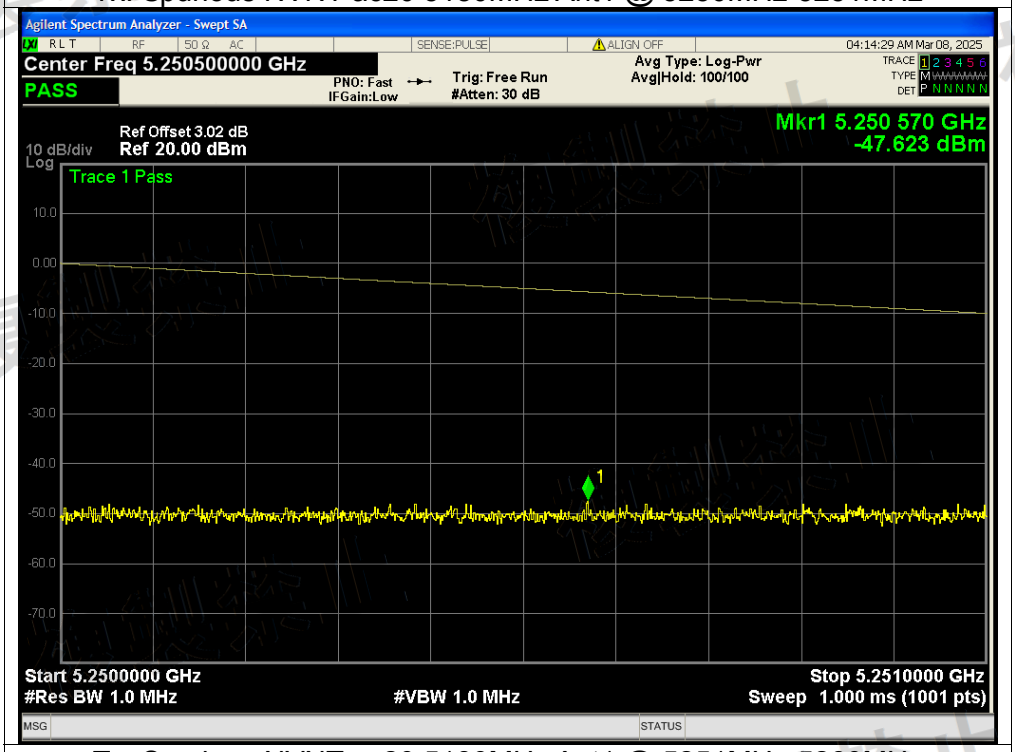
Tx. Spurious NVNT ac20 5180MHz Ant1 @ 30MHz-5142MHz



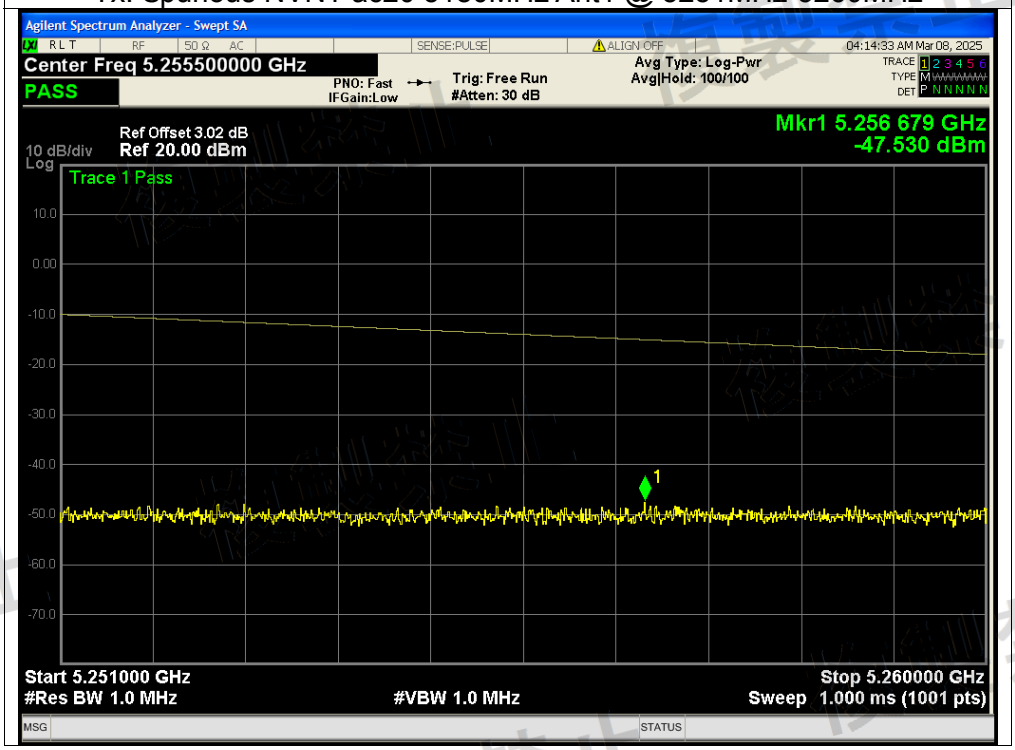
Tx. Spurious NVNT ac20 5180MHz Ant1 @ 5142MHz-5150MHz



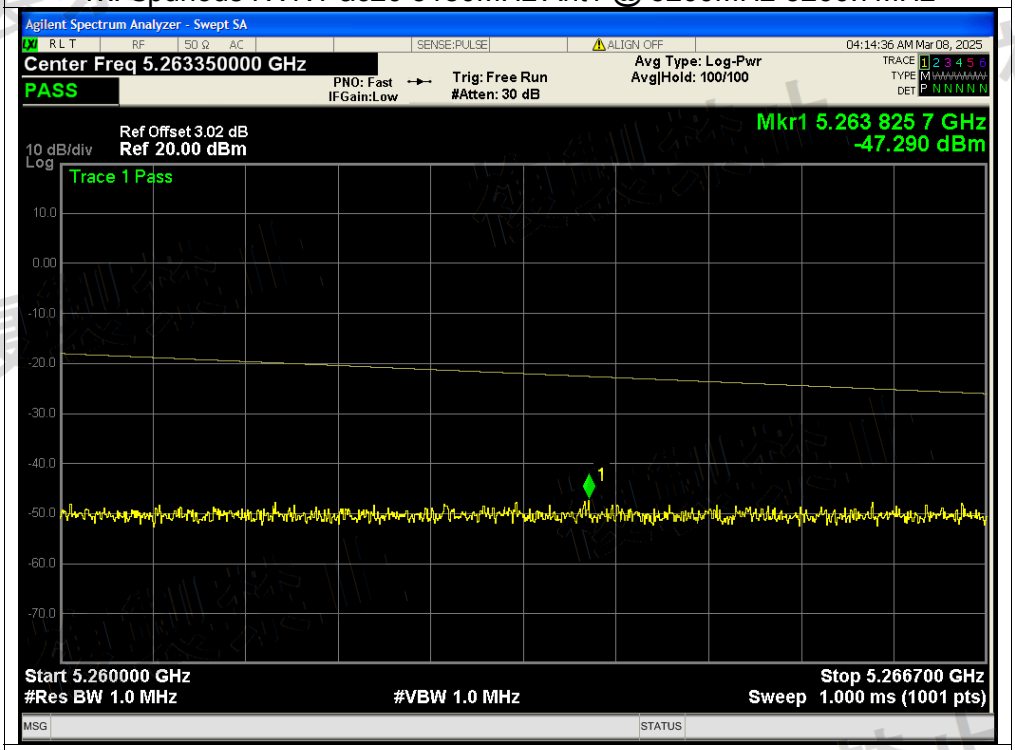
Tx. Spurious NVNT ac20 5180MHz Ant1 @ 5250MHz-5251MHz



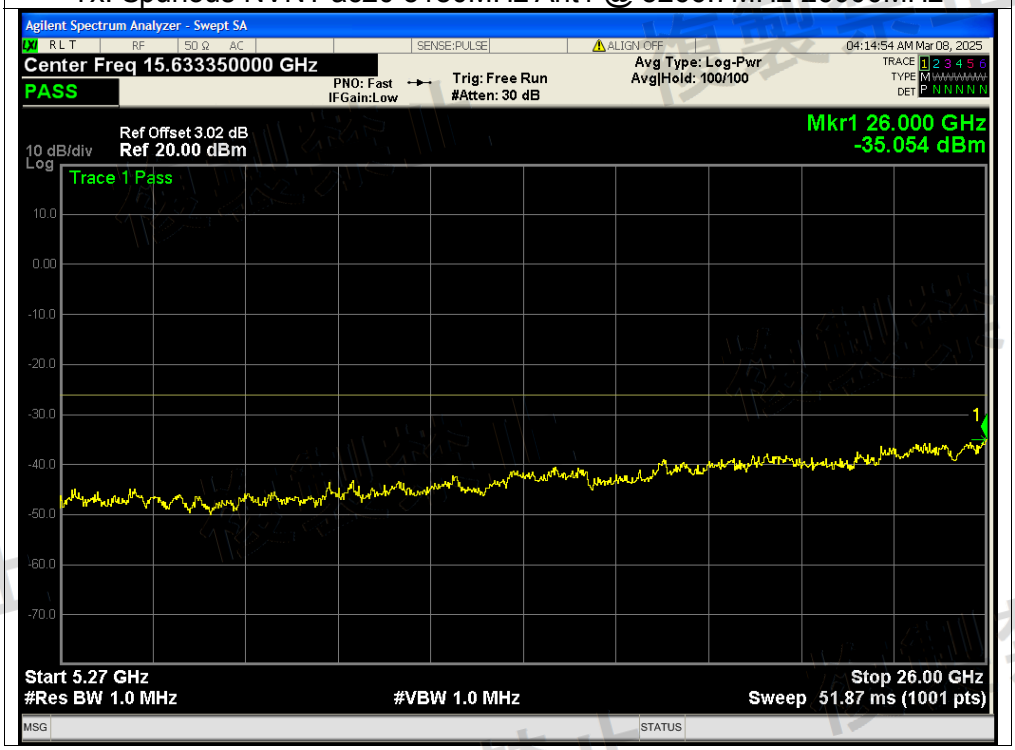
Tx. Spurious NVNT ac20 5180MHz Ant1 @ 5251MHz-5260MHz



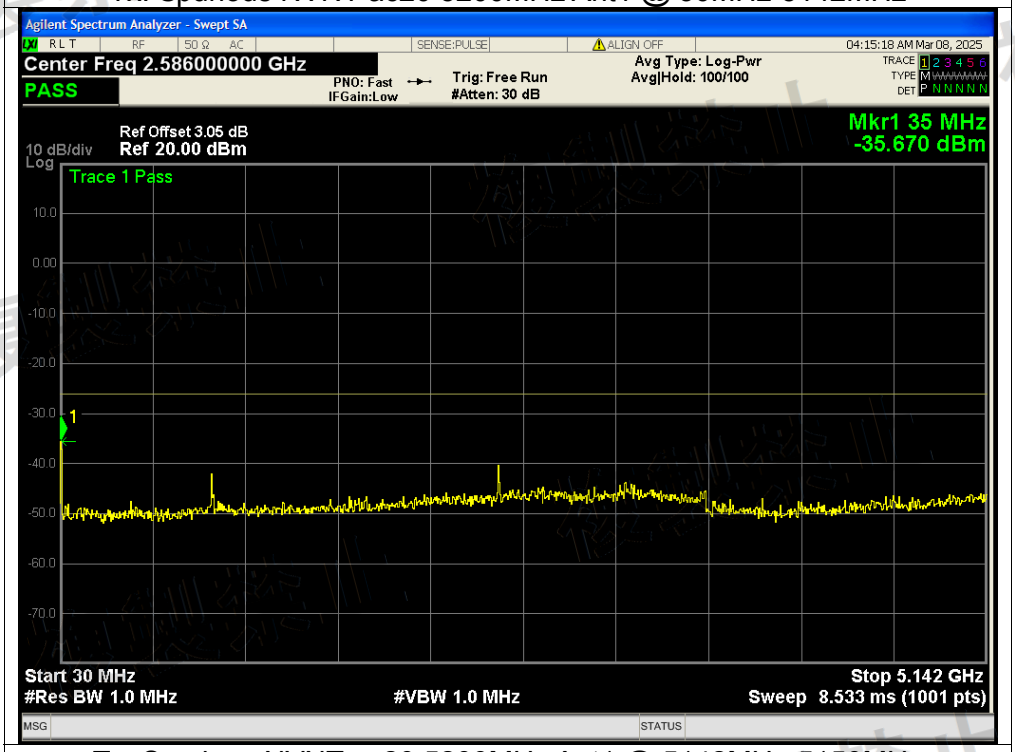
Tx. Spurious NVNT ac20 5180MHz Ant1 @ 5260MHz-5266.7MHz



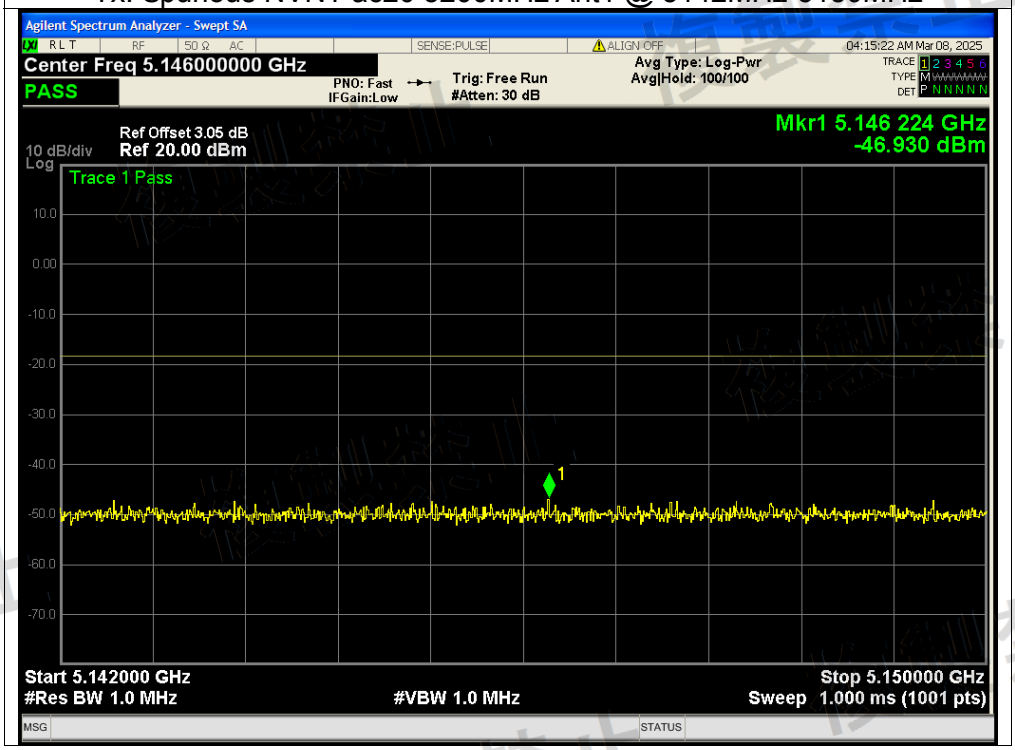
Tx. Spurious NVNT ac20 5180MHz Ant1 @ 5266.7MHz-26000MHz



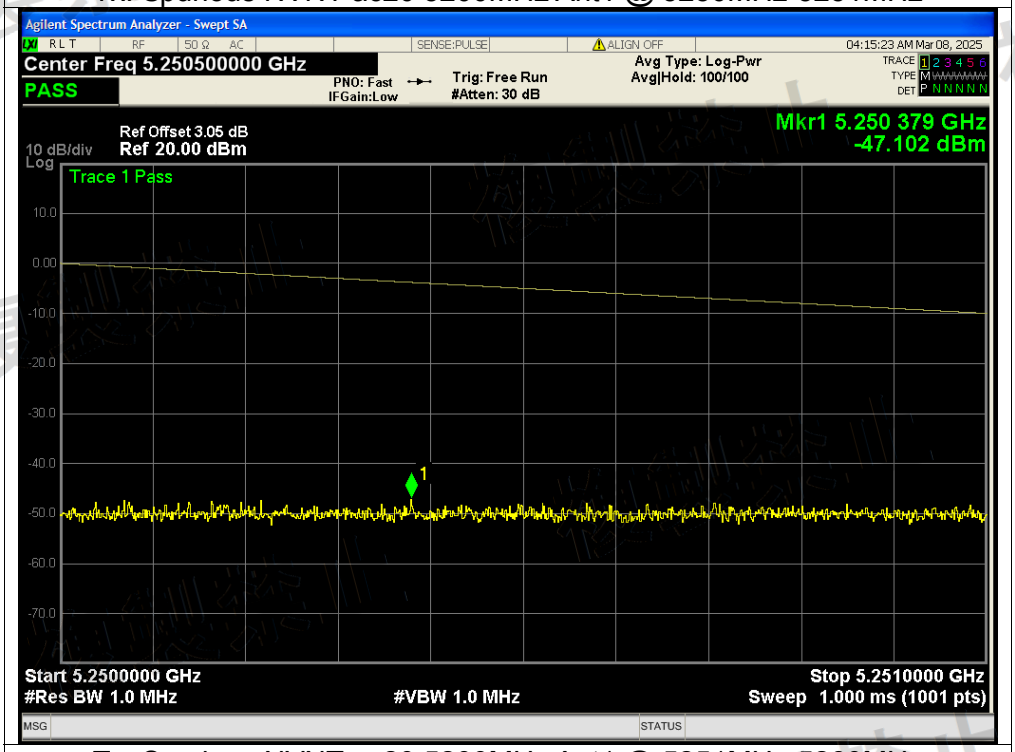
Tx. Spurious NVNT ac20 5200MHz Ant1 @ 30MHz-5142MHz



Tx. Spurious NVNT ac20 5200MHz Ant1 @ 5142MHz-5150MHz



Tx. Spurious NVNT ac20 5200MHz Ant1 @ 5250MHz-5251MHz



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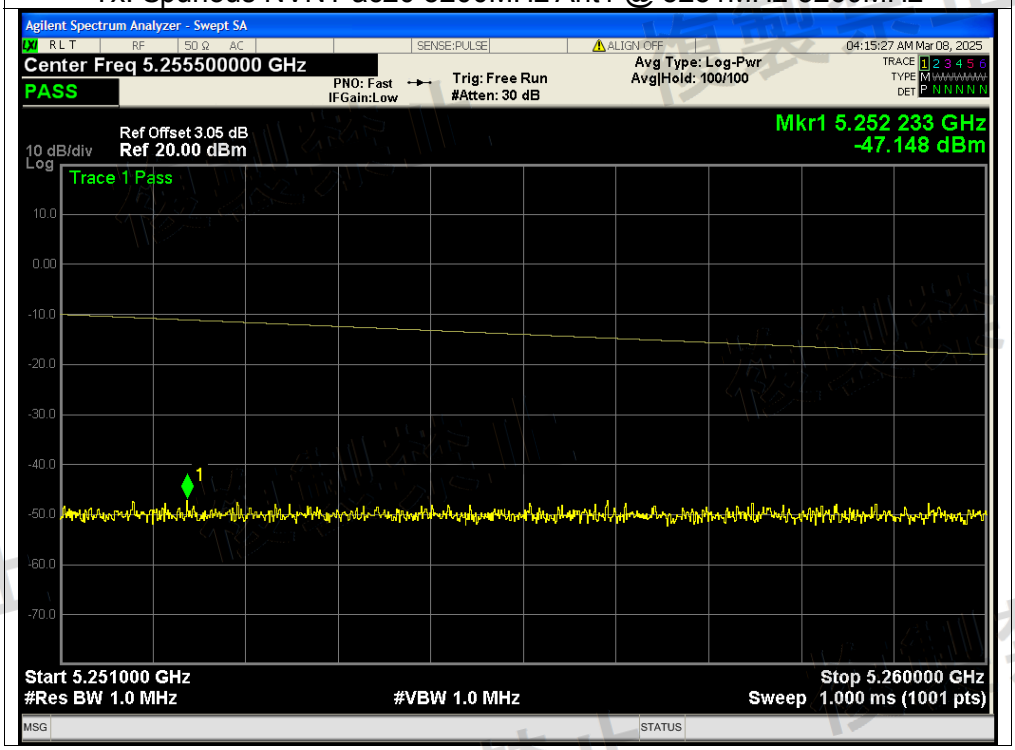
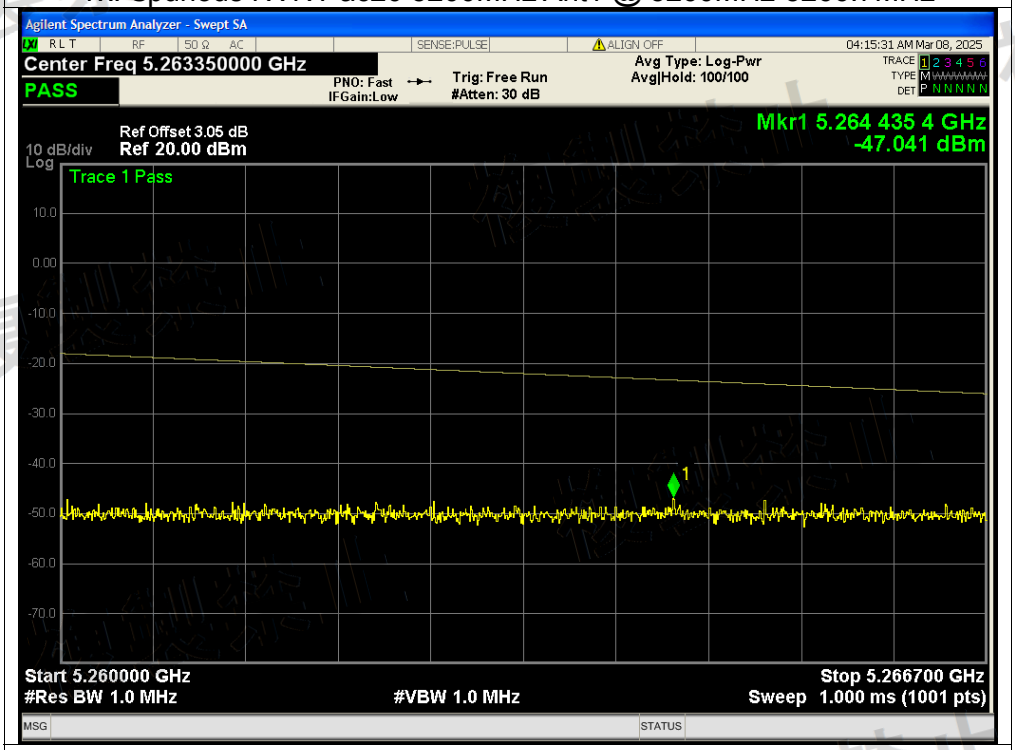
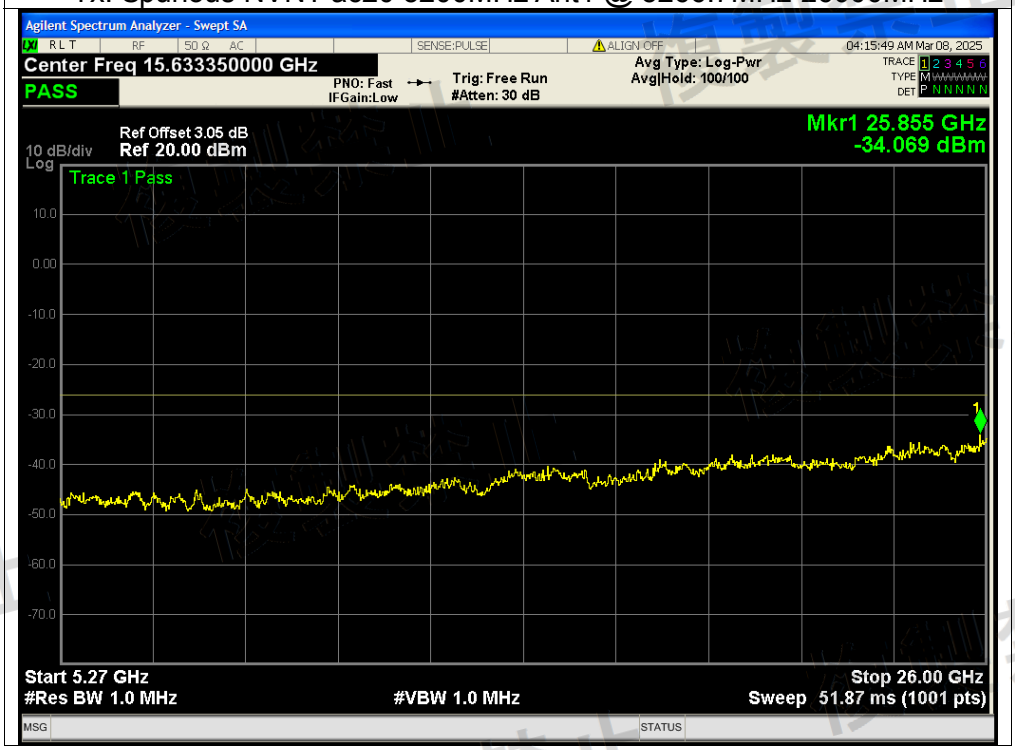


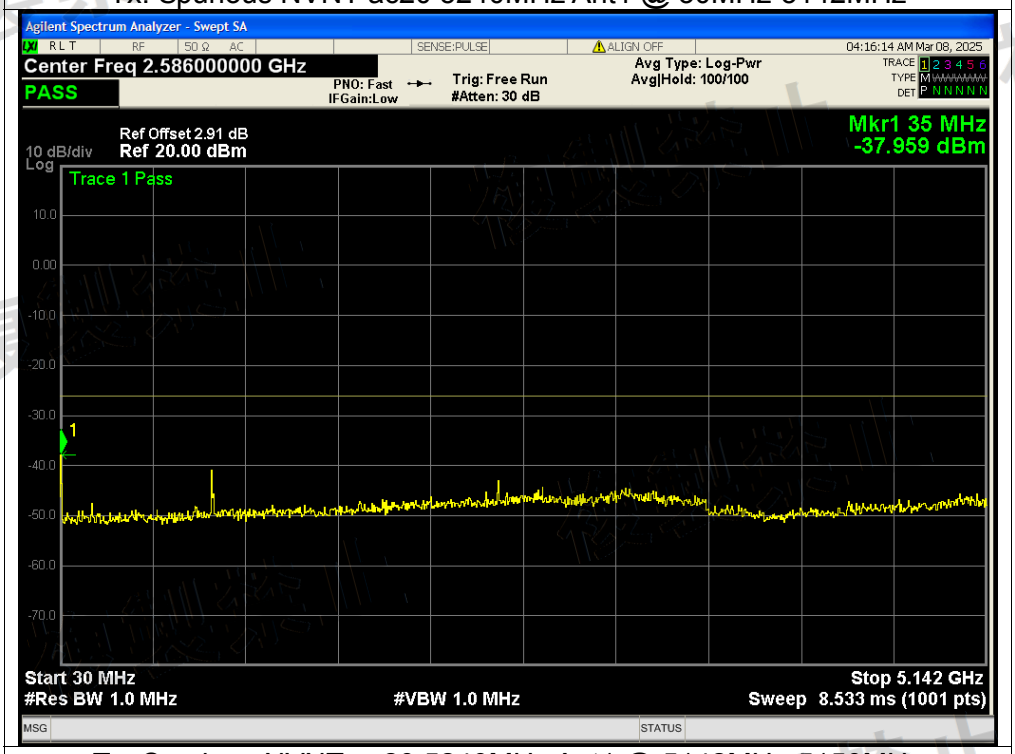
Tx. Spurious NVNT ac20 5200MHz Ant1 @ 5260MHz-5266.7MHz



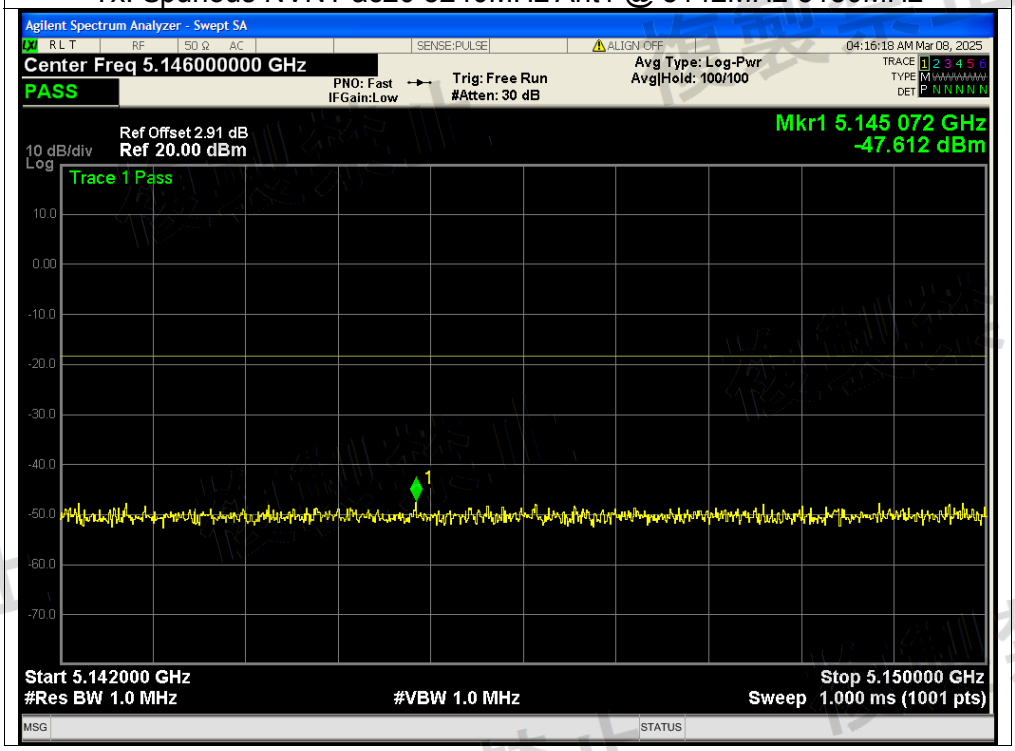
Tx. Spurious NVNT ac20 5200MHz Ant1 @ 5266.7MHz-26000MHz



Tx. Spurious NVNT ac20 5240MHz Ant1 @ 30MHz-5142MHz



Tx. Spurious NVNT ac20 5240MHz Ant1 @ 5142MHz-5150MHz



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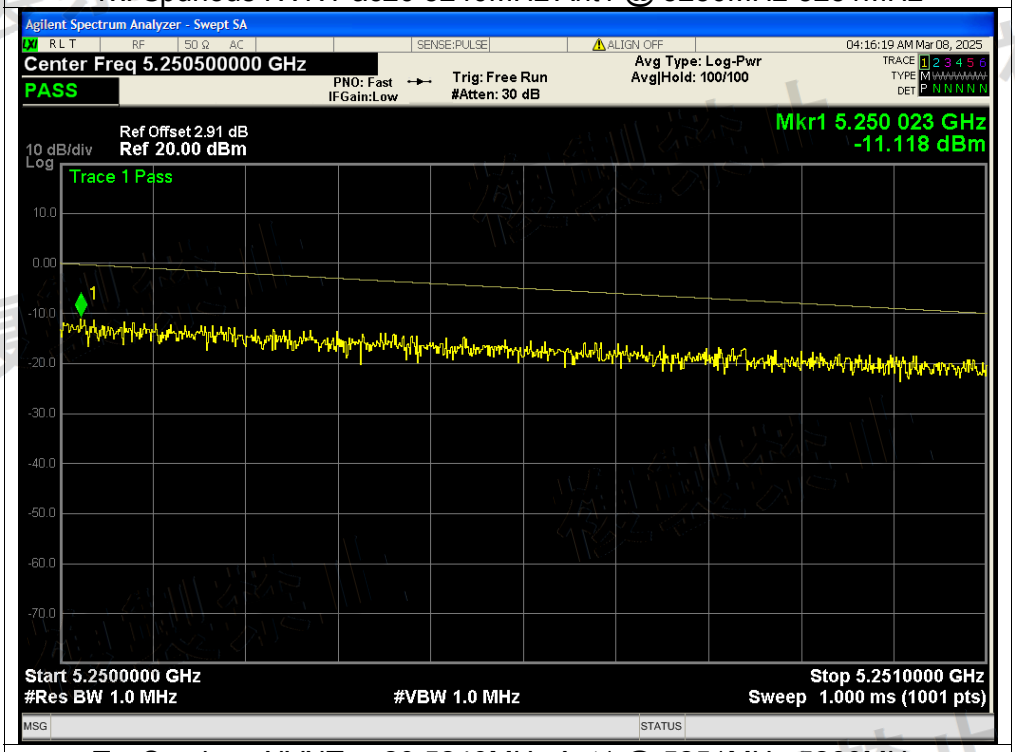
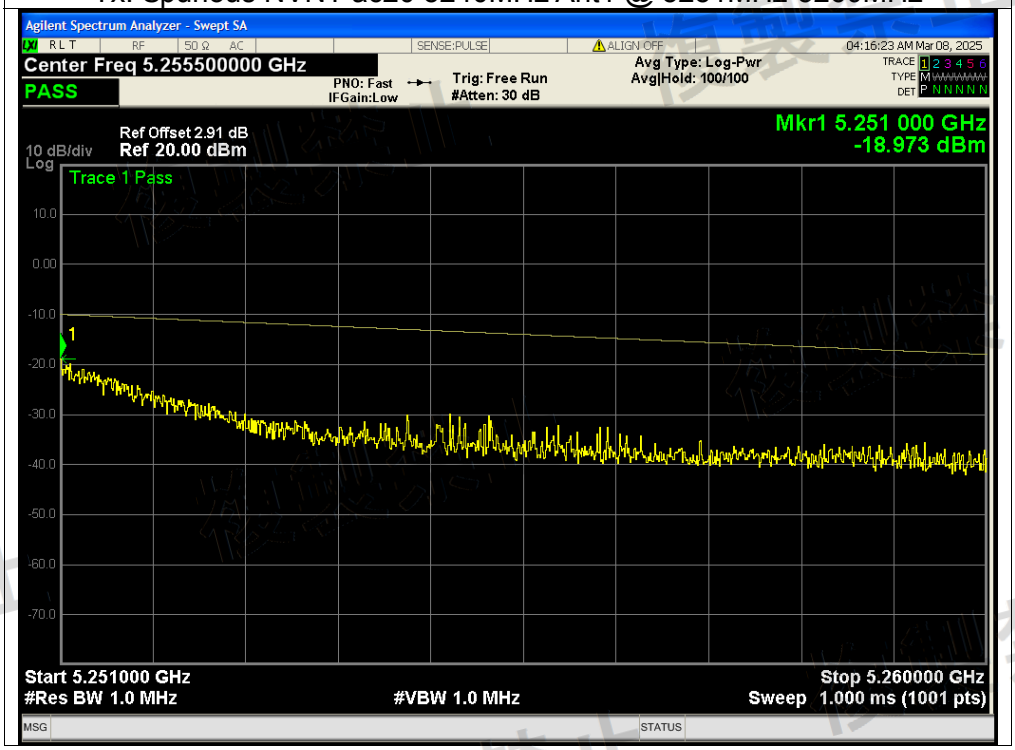
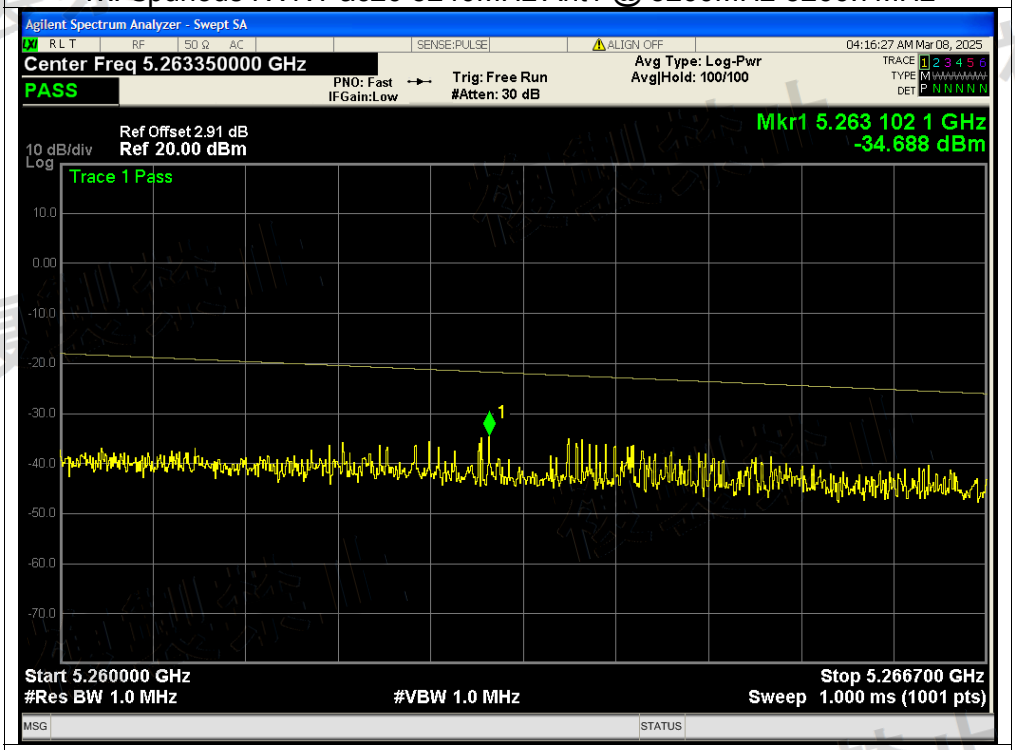


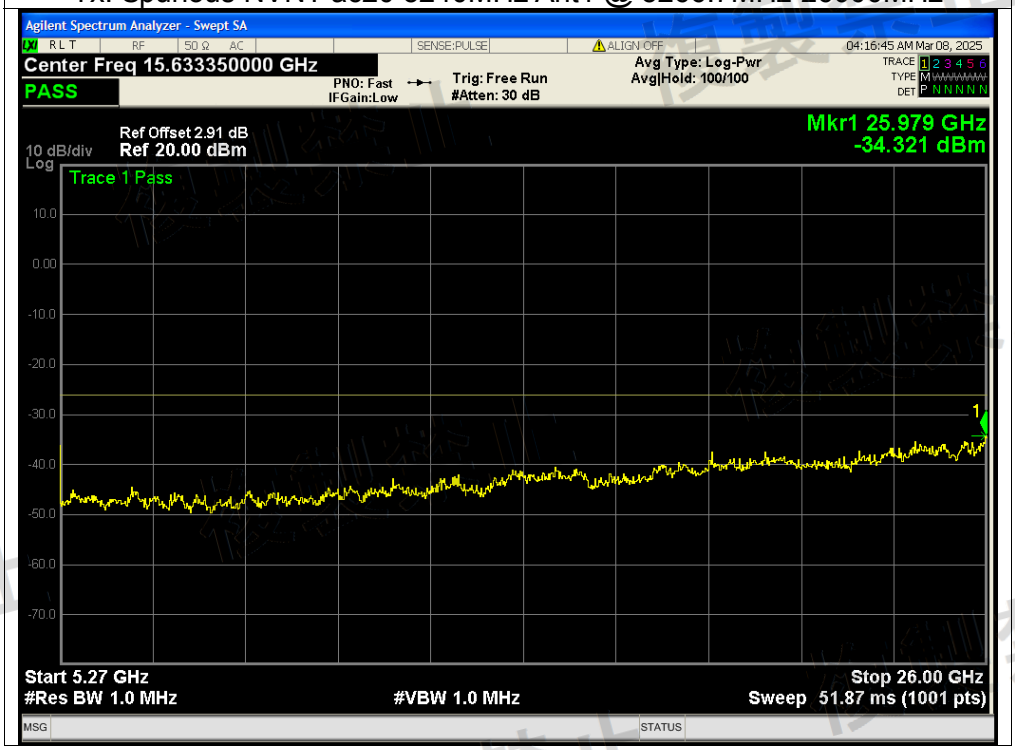
Tx. Spurious NVNT ac20 5240MHz Ant1 @ 5251MHz-5260MHz



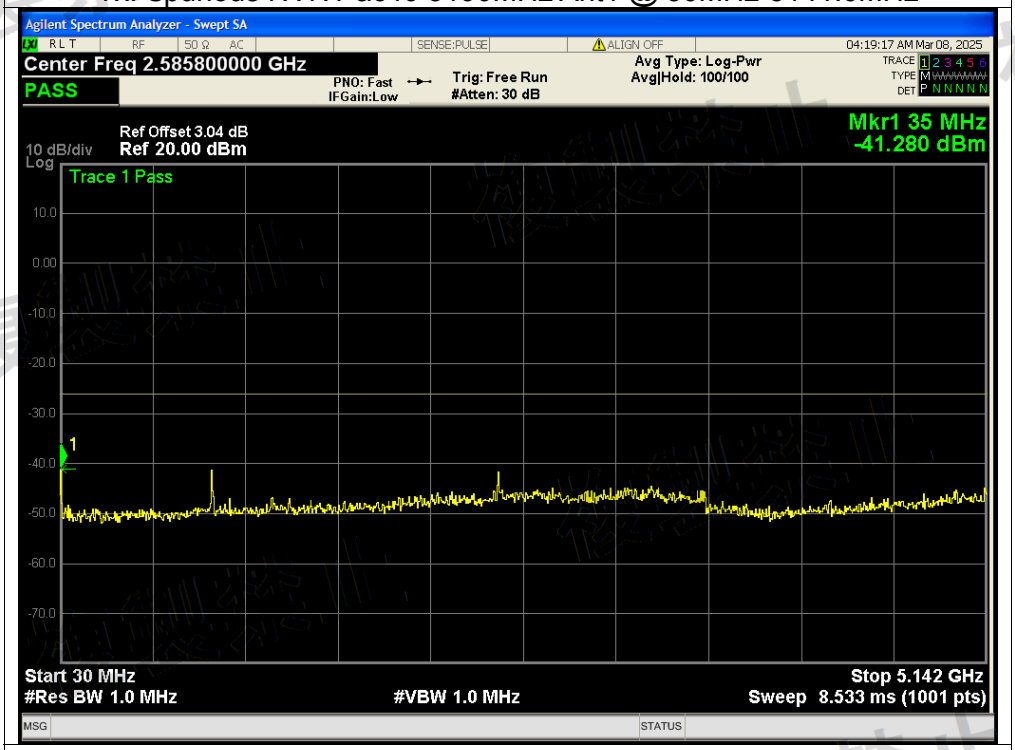
Tx. Spurious NVNT ac20 5240MHz Ant1 @ 5260MHz-5266.7MHz



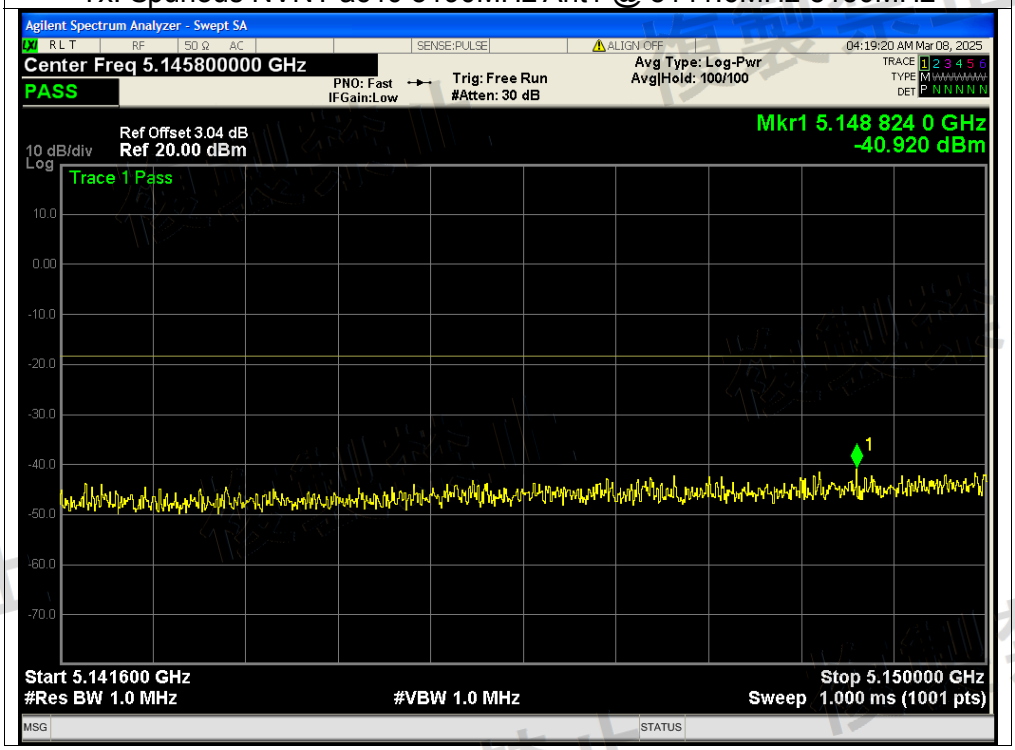
Tx. Spurious NVNT ac20 5240MHz Ant1 @ 5266.7MHz-26000MHz



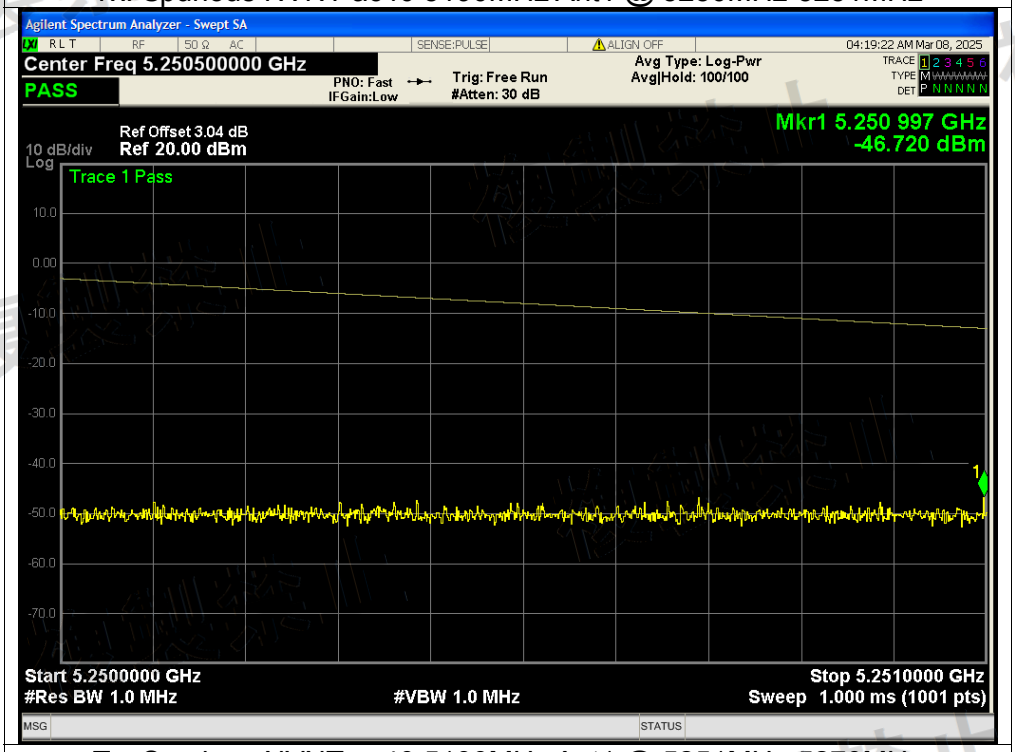
Tx. Spurious NVNT ac40 5190MHz Ant1 @ 30MHz-5141.6MHz



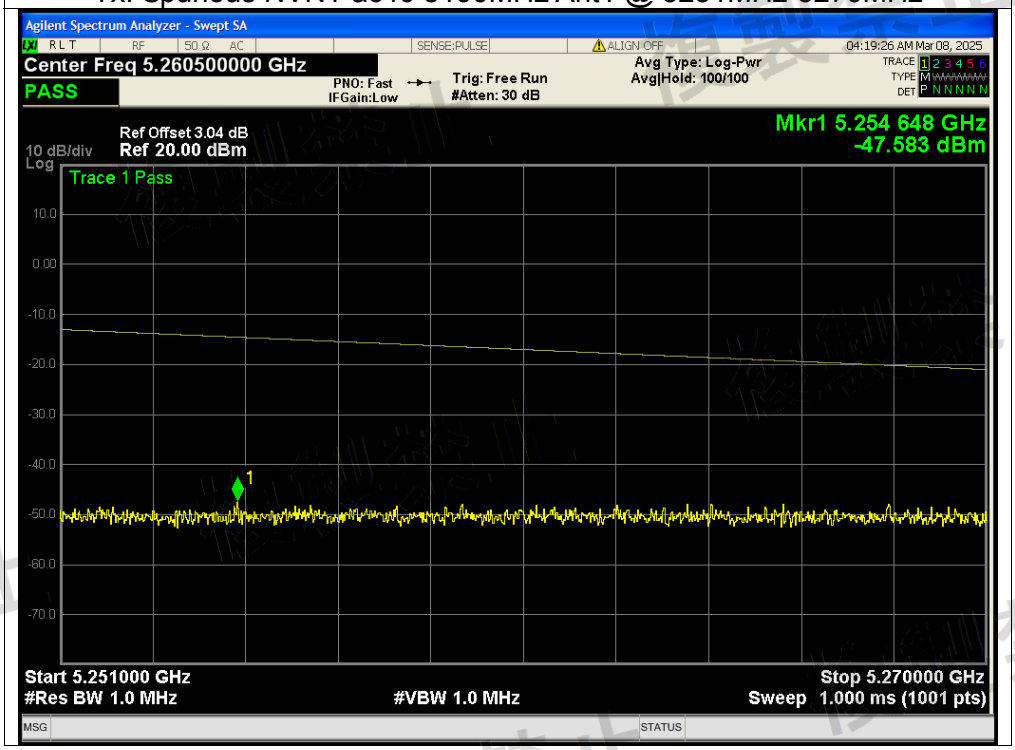
Tx. Spurious NVNT ac40 5190MHz Ant1 @ 5141.6MHz-5150MHz



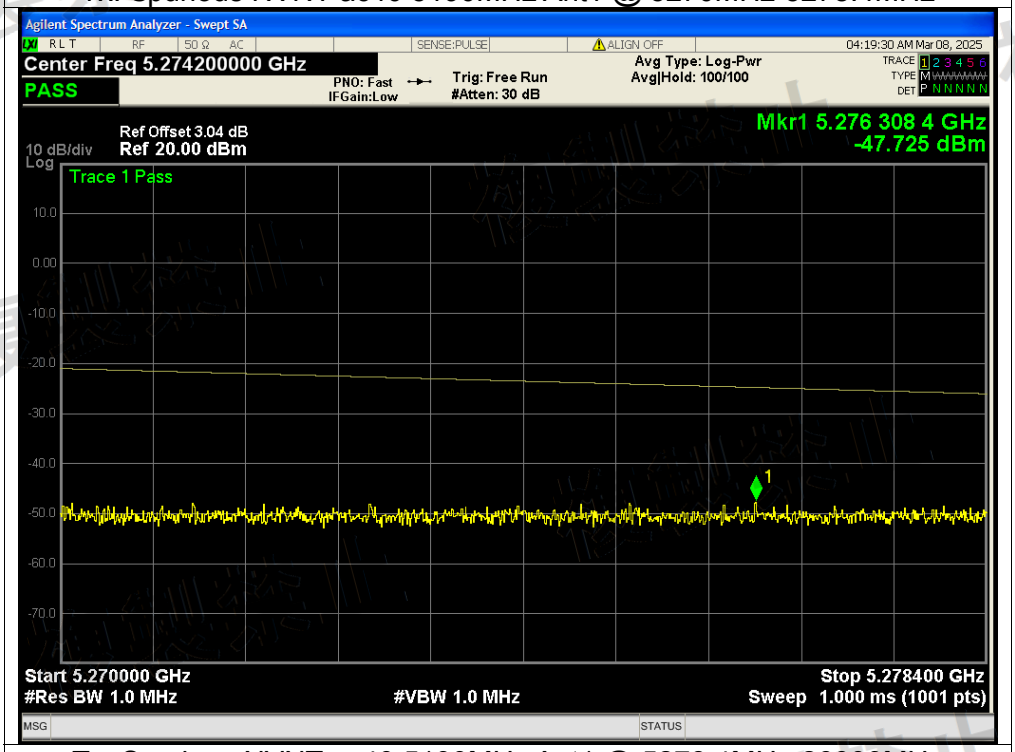
Tx. Spurious NVNT ac40 5190MHz Ant1 @ 5250MHz-5251MHz



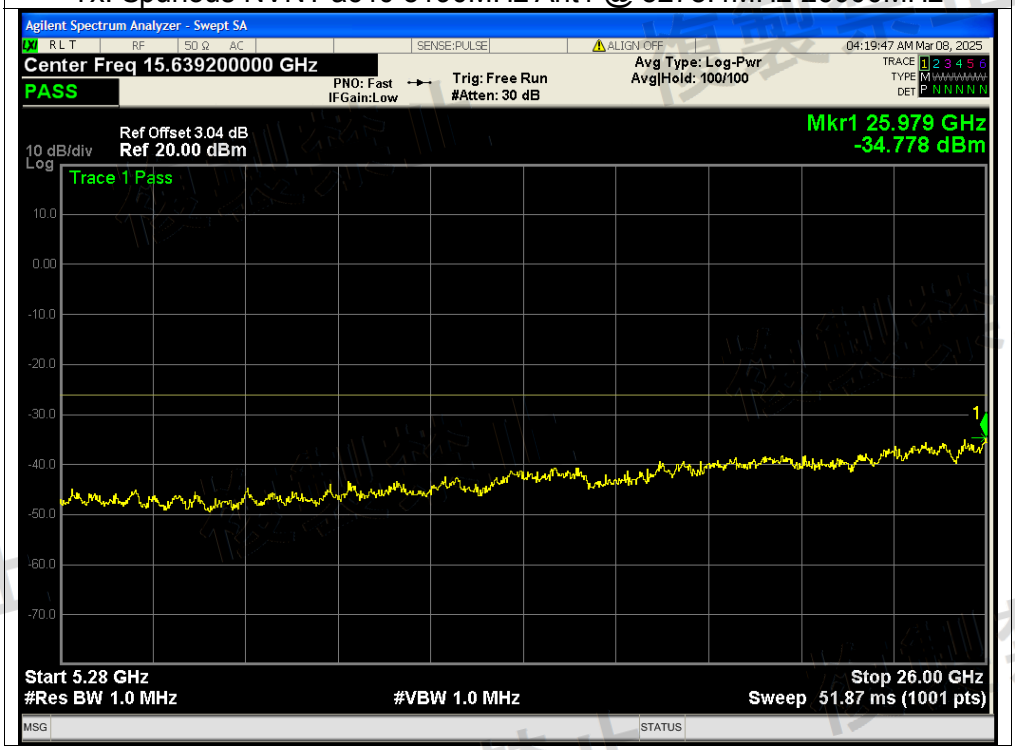
Tx. Spurious NVNT ac40 5190MHz Ant1 @ 5251MHz-5270MHz



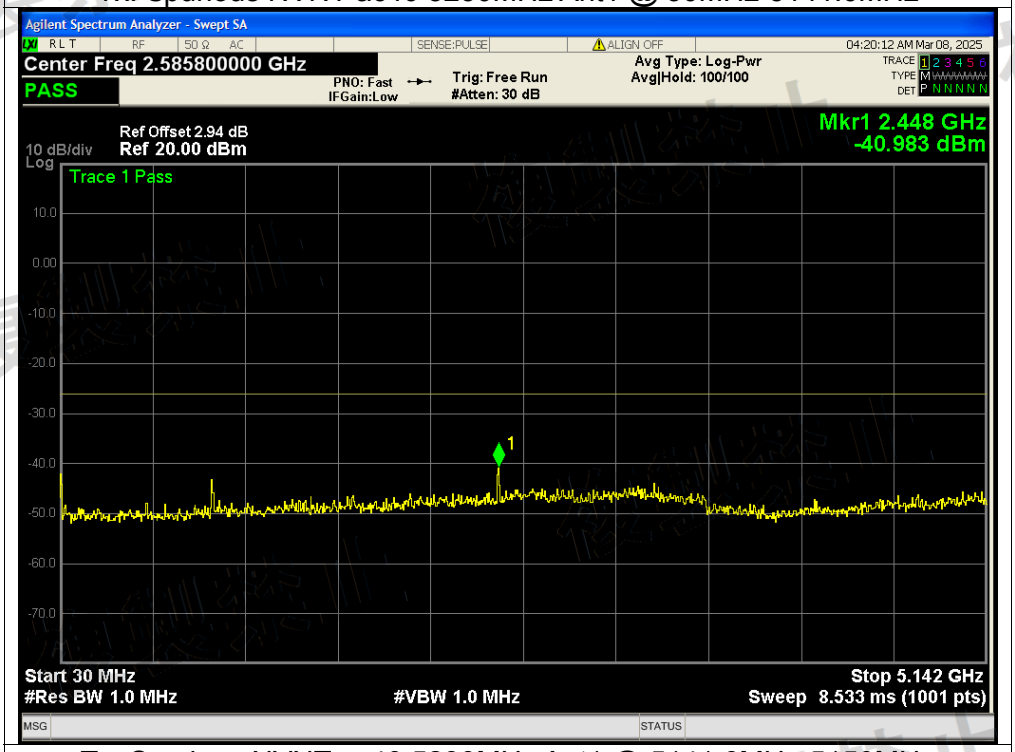
Tx. Spurious NVNT ac40 5190MHz Ant1 @ 5270MHz-5278.4MHz



Tx. Spurious NVNT ac40 5190MHz Ant1 @ 5278.4MHz-26000MHz



Tx. Spurious NVNT ac40 5230MHz Ant1 @ 30MHz-5141.6MHz



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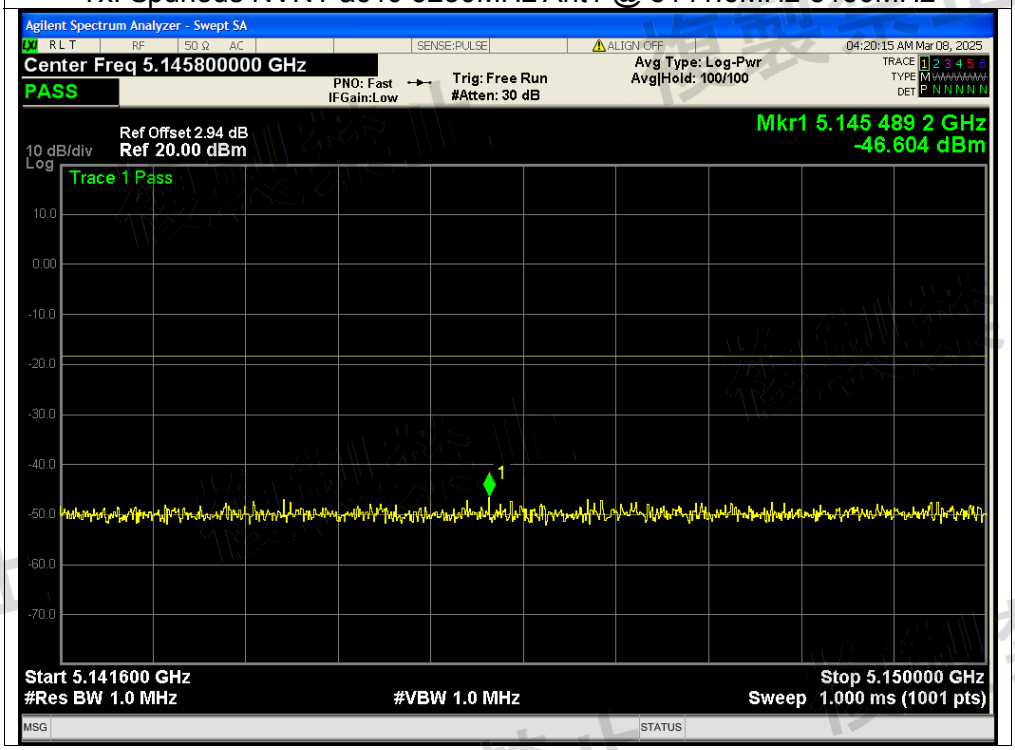
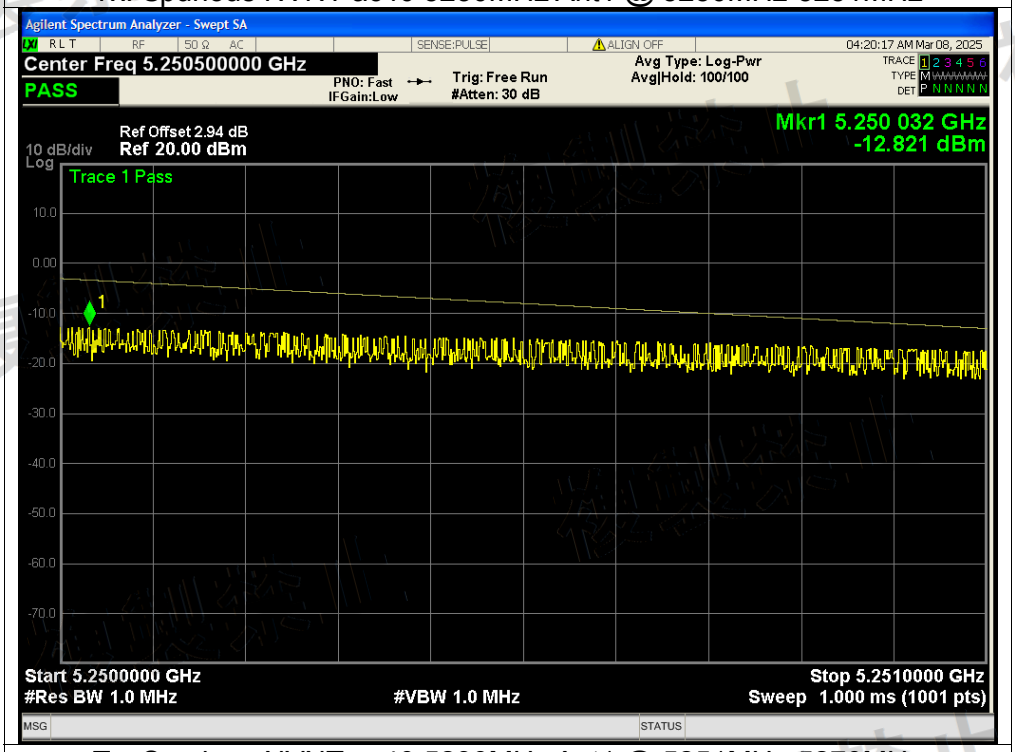
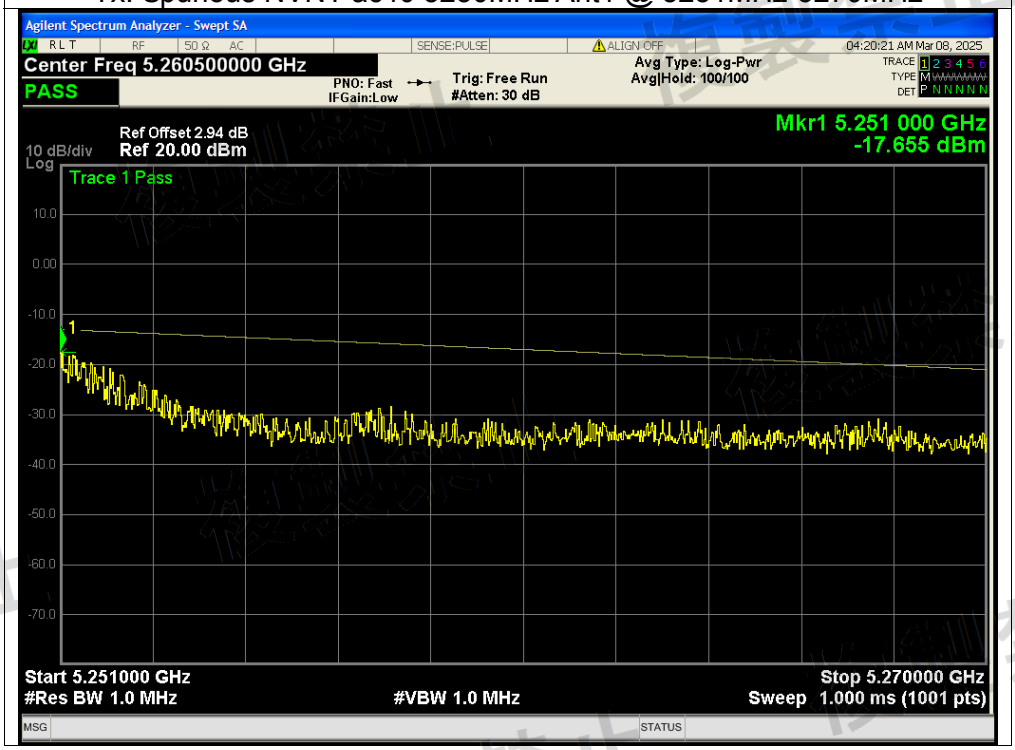


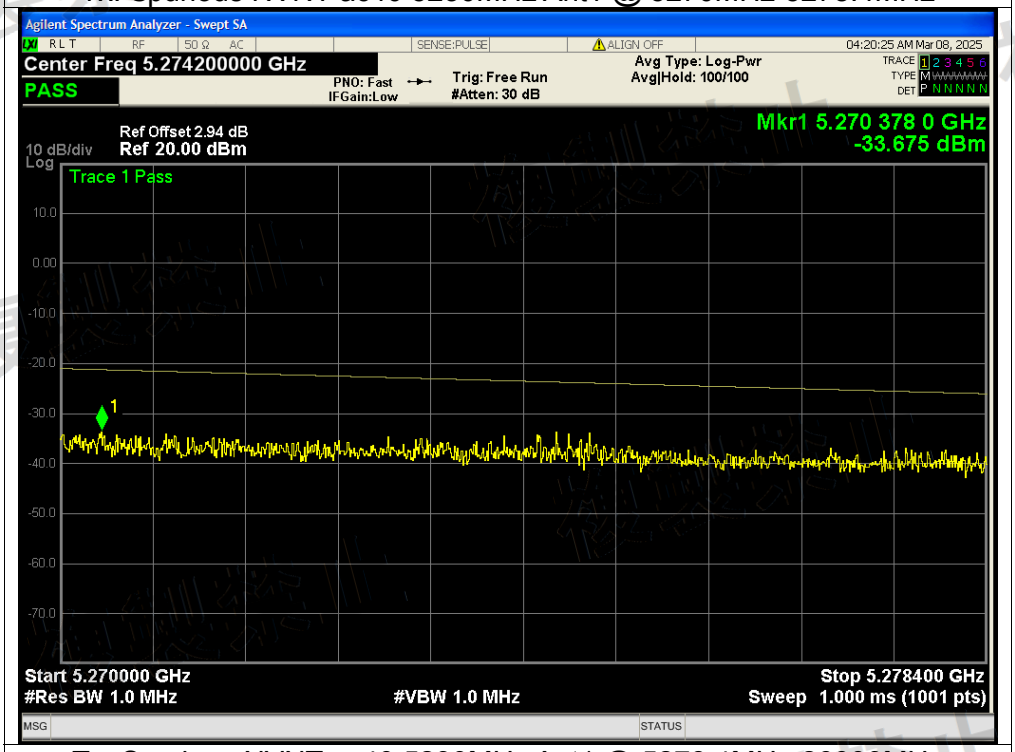
Tx. Spurious NVNT ac40 5230MHz Ant1 @ 5250MHz-5251MHz



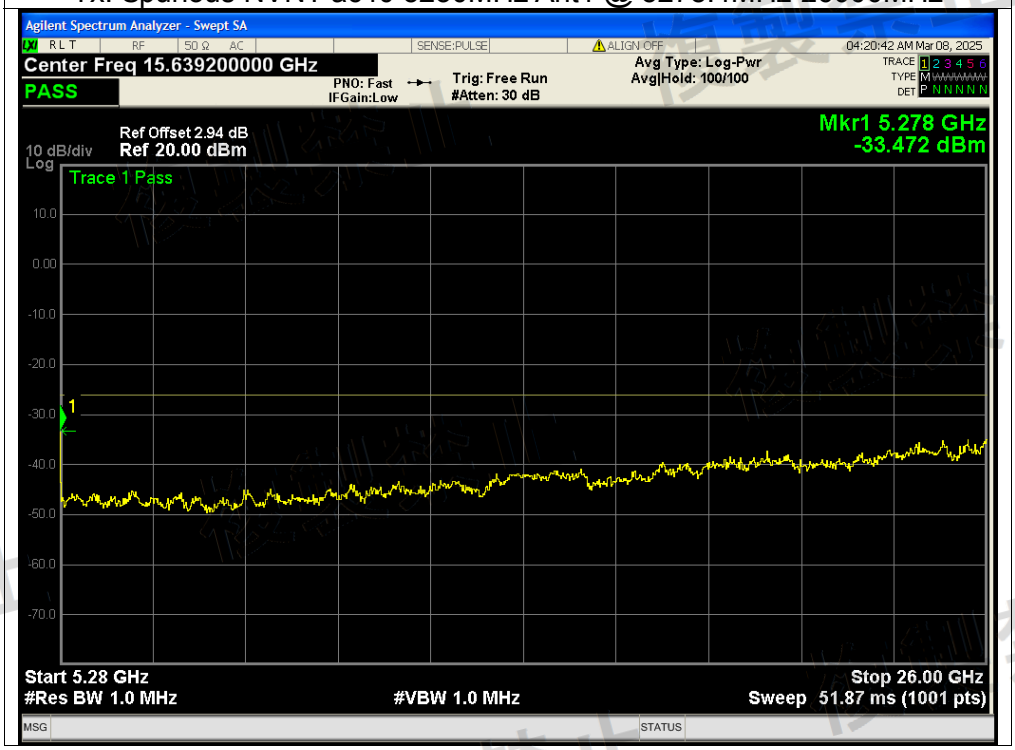
Tx. Spurious NVNT ac40 5230MHz Ant1 @ 5251MHz-5270MHz



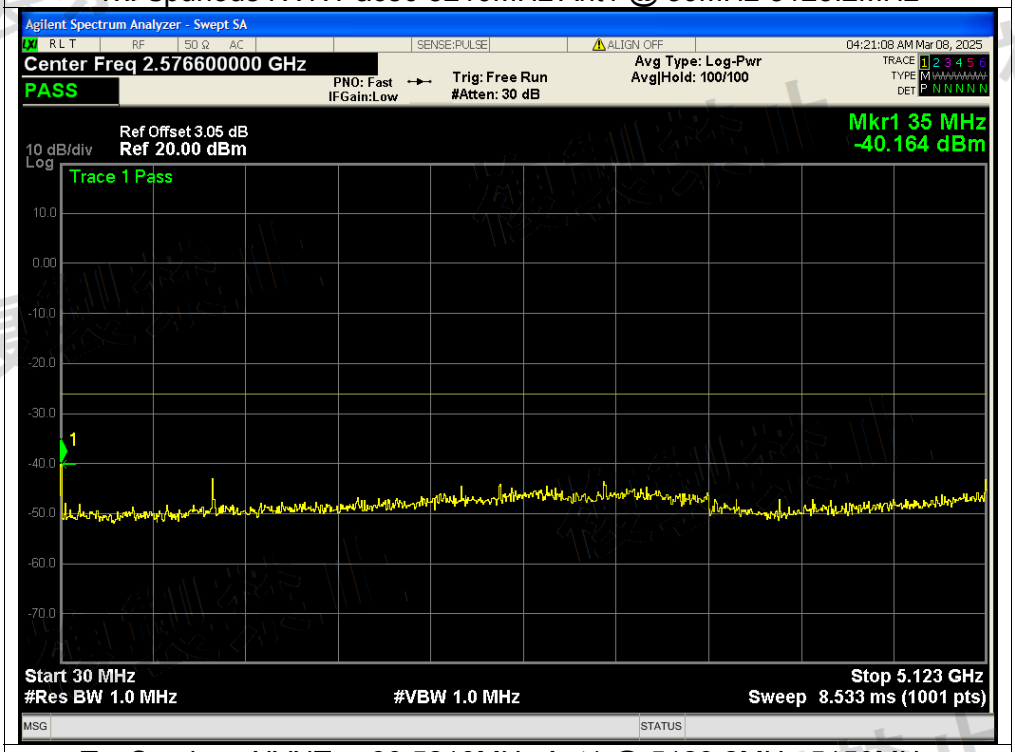
Tx. Spurious NVNT ac40 5230MHz Ant1 @ 5270MHz-5278.4MHz



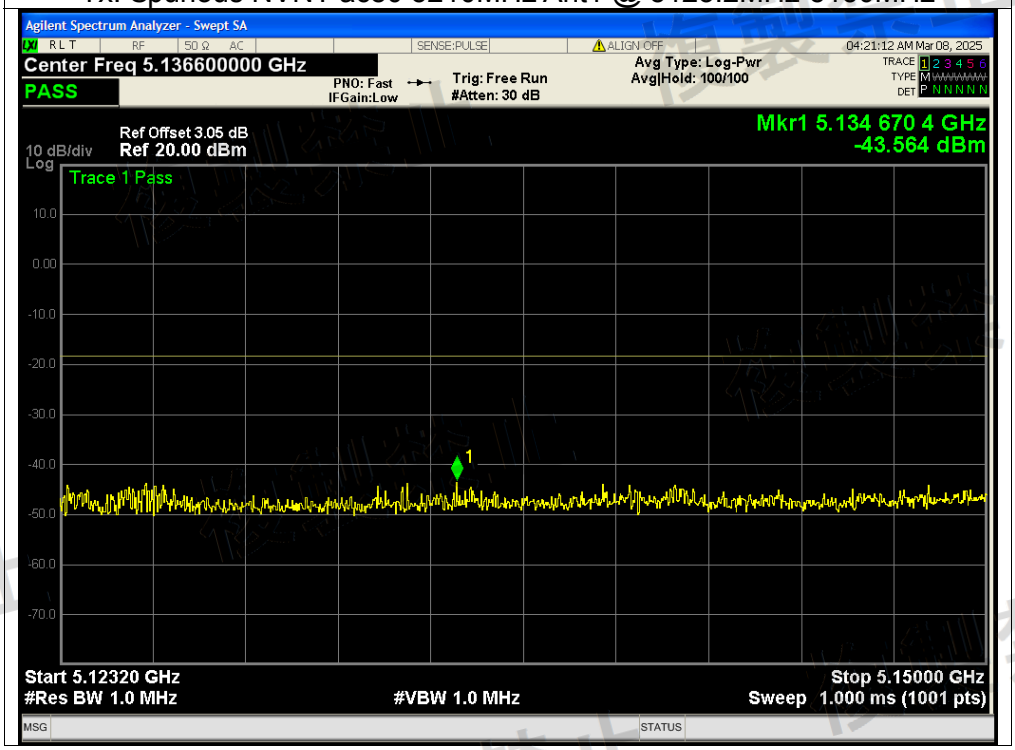
Tx. Spurious NVNT ac40 5230MHz Ant1 @ 5278.4MHz-26000MHz



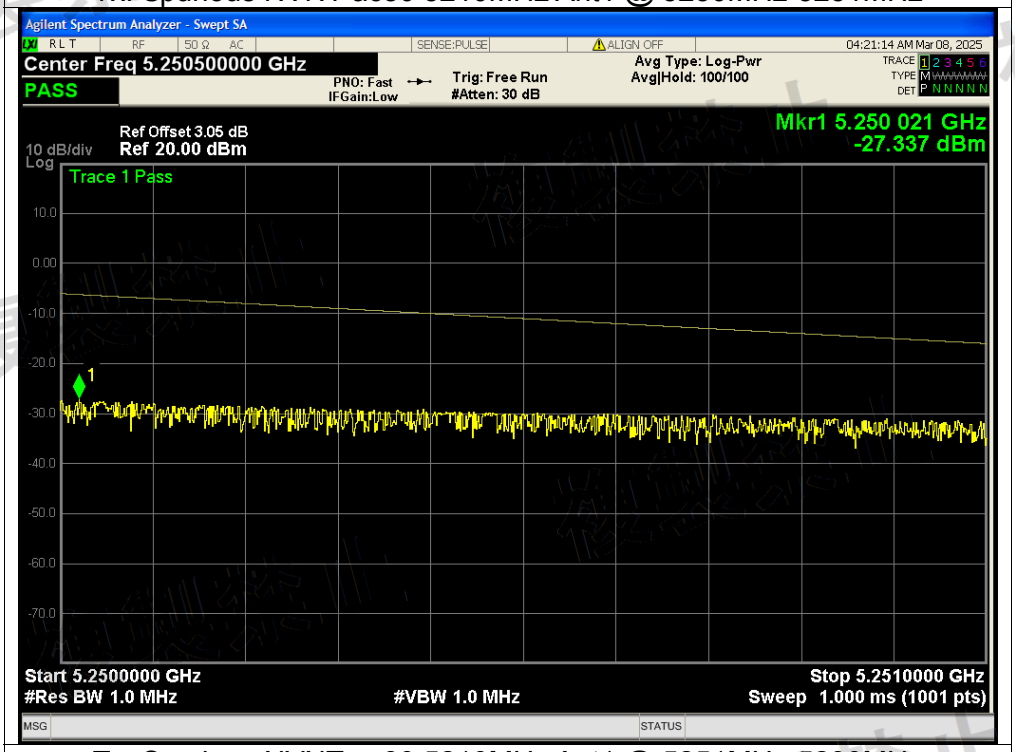
Tx. Spurious NVNT ac80 5210MHz Ant1 @ 30MHz-5123.2MHz



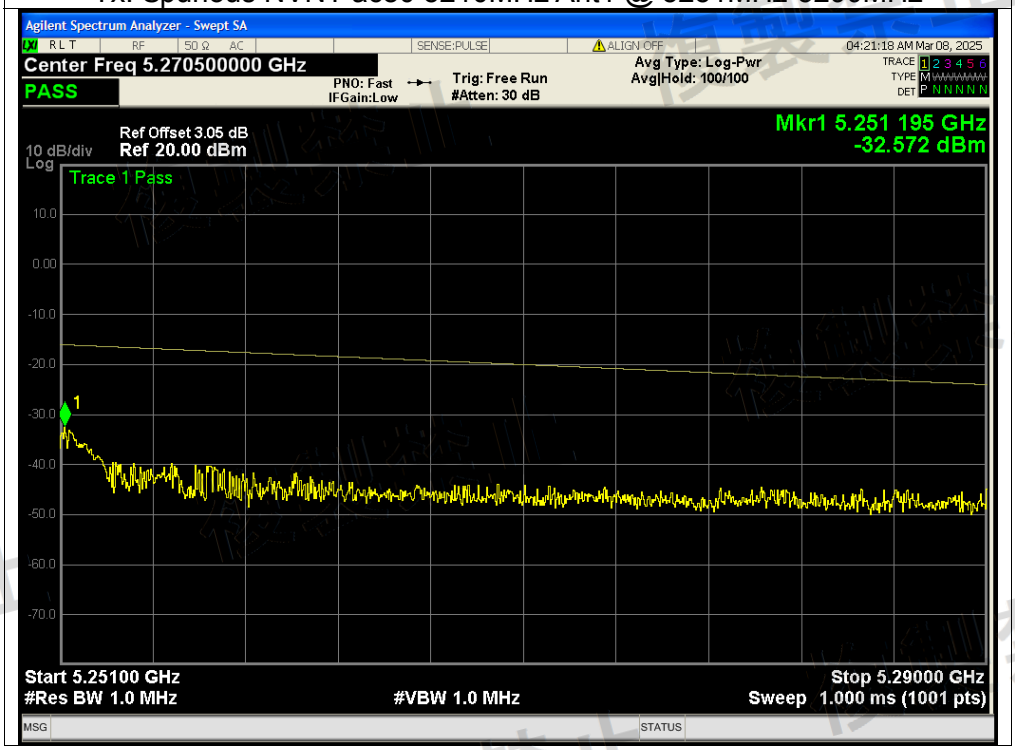
Tx. Spurious NVNT ac80 5210MHz Ant1 @ 5123.2MHz-5150MHz



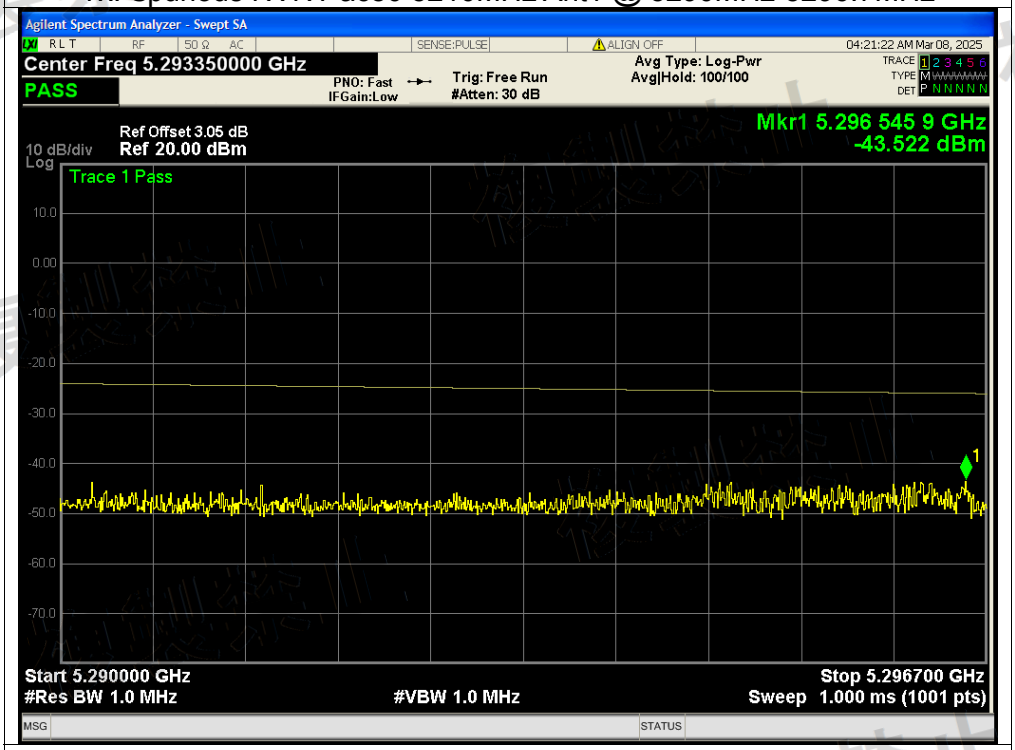
Tx. Spurious NVNT ac80 5210MHz Ant1 @ 5250MHz-5251MHz



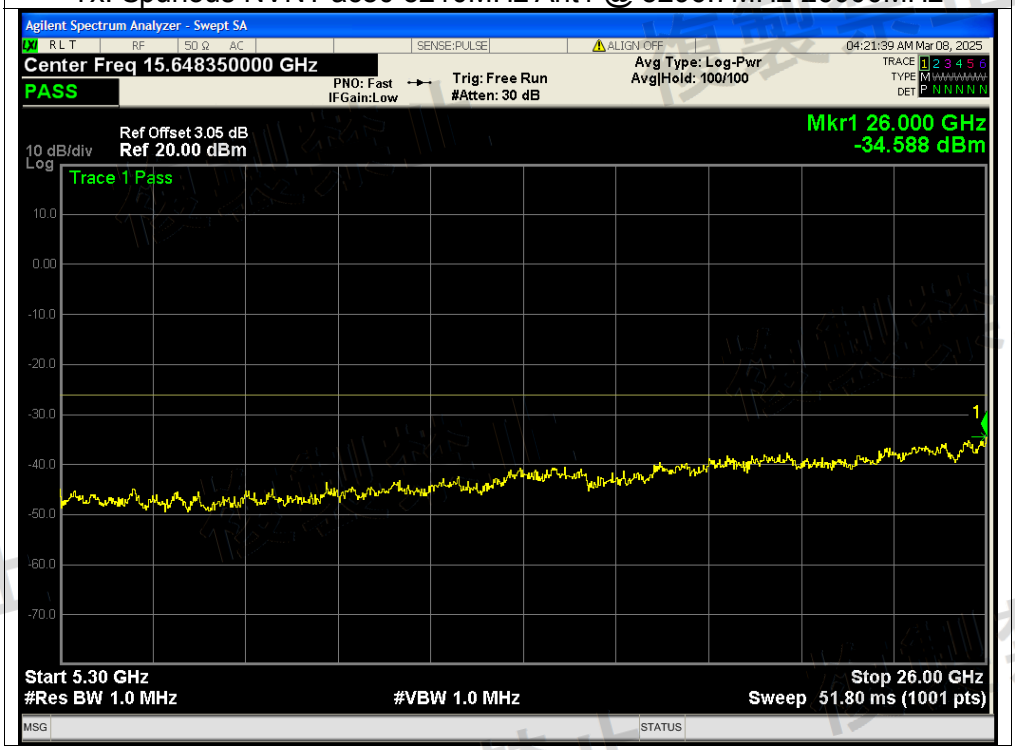
Tx. Spurious NVNT ac80 5210MHz Ant1 @ 5251MHz-5290MHz



Tx. Spurious NVNT ac80 5210MHz Ant1 @ 5290MHz-5296.7MHz



Tx. Spurious NVNT ac80 5210MHz Ant1 @ 5296.7MHz-26000MHz



7. ADJACENT CHANNEL EMITTED POWER MEASUREMENT

7.1 LIMIT

Item	LIMIT
Adjacent channel leakage power	≦-25dBc (within +/-10MHz band at +/- 20MHz spacing) OBW ≤20MHz ≦-40dBc (within +/-10MHz band at +/- 40MHz spacing) OBW ≤20MHz
	≦-25dBc (within +/-20MHz band at +/- 40MHz spacing) 20MHz<OBW ≤40MHz ≦-40dBc (within +/-20MHz band at +/- 80MHz spacing) 20MHz<OBW ≤40MHz
	≦-25dBc (within +/-40MHz band at +/- 80MHz spacing) 40MHz<OBW ≤80MHz

7.2 TEST PROCEDURES

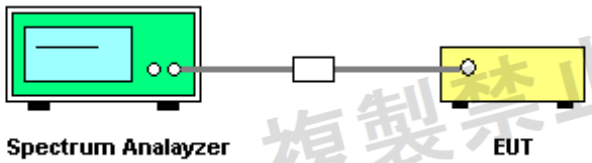
1. EUT has the continuous reception mode and fixed only one channelize.

2 .SA set RBW: 300KHz and VBW: 300KHz, Span 100MHz (BW=20MHz/200MHz(BW=40MHz),RMS Detector, trace Maximum Hold and use ACLR Option.

3. Frequency spacing and measuring bandwidth be specified in section 3.6.1.

4. Reporting the worst value

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.

EUT：	PROFESSIONAL SCAN TOOL	Model No.:	MaxiDiag MD909 Pro
Temperature:	25^{0}C	Test Date:	Jan. 01,2025
Humidity:	55 % RH	Tested by:	Jack Li
Atmospheric Pressure:	1013 mbar	Test Voltage	Normal Voltage

802.11a

Voltage	TEST CONDITION	5180MHz	5200MHz	5240MHz	LIMIT(dBc)
Vnormal	+20MHz	-31.86	-33.02	-32.31	≦-25
	-20MHz	-32.93	-34.78	-34.26	≦-25
	+40MHz	-45.19	-47.03	-48.06	≦-40
	-40MHz	-44.65	-46.72	-47.69	≦-40

802.11n(20)

Voltage	TEST CONDITION	5180MHz	5200MHz	5240MHz	LIMIT(dBc)
Vnormal	+20MHz	-35.32	-34.62	-35.09	≦-25
	-20MHz	-35.82	-35.95	-35.57	≦-25
	+40MHz	-50.36	-49.71	-50.14	≦-40
	-40MHz	-50.22	-49.59	-50.31	≦-40

802.11ac(20)

Voltage	TEST CONDITION	5180MHz	5200MHz	5240MHz	LIMIT(dBc)
Vnormal	+20MHz	-33.79	-34.25	-33.90	≦-25
	-20MHz	-34.46	-34.66	-34.54	≦-25
	+40MHz	-49.37	-49.47	-49.39	≦-40
	-40MHz	-48.80	-48.98	-48.87	≦-40

802.11n(40)

Voltage	TEST CONDITION	5190 MHz	5230 MHz	LIMIT (dBc)
Vnormal	+40MHz	-34.32	-34.89	≦-25
	-40MHz	-38.15	-36.65	≦-25
	+80MHz	-48.79	-46.97	≦-40
	-80MHz	-49.19	-47.05	≦-40

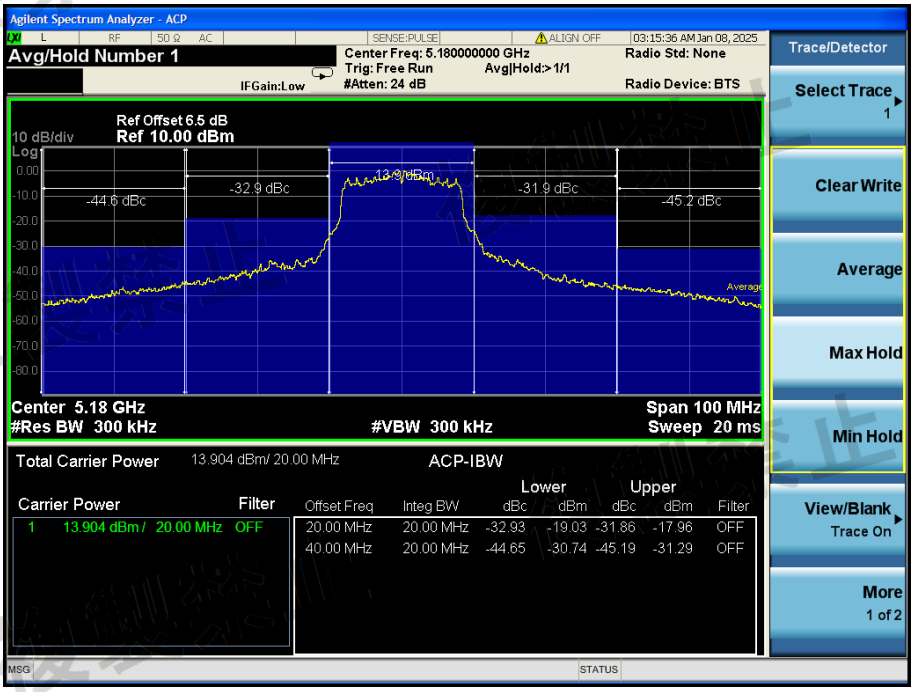
802.11ac(40)

Voltage	TEST CONDITION	5190 MHz	5230 MHz	LIMIT (dBc)
Vnormal	+40MHz	-36.40	-35.81	≦-25
	-40MHz	-38.37	-38.29	≦-25
	+80MHz	-47.58	-46.90	≦-40
	-80MHz	-47.87	-47.27	≦-40

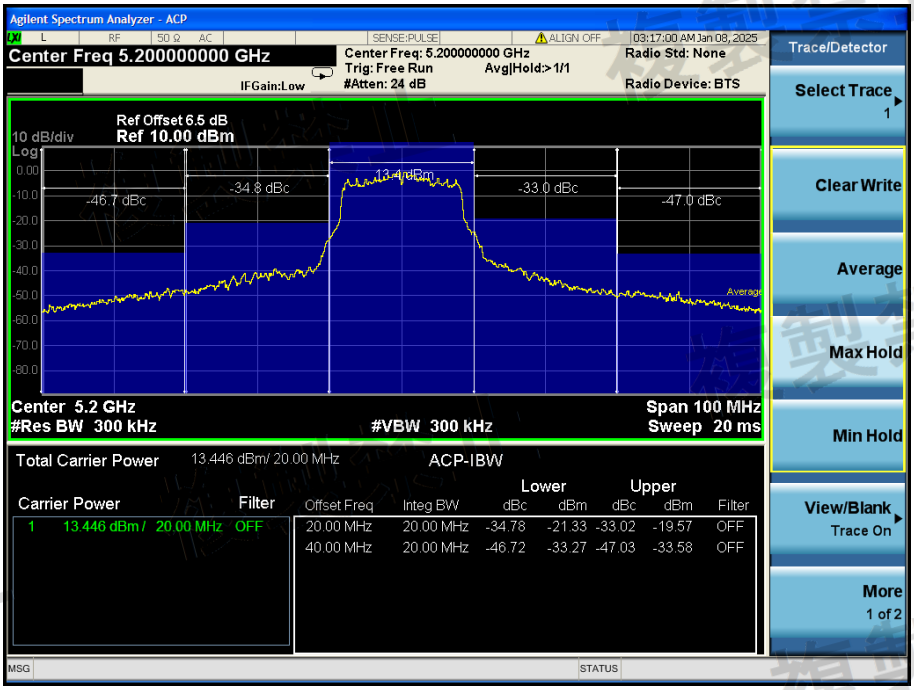
802.11ac (80)

Voltage	TEST CONDITION	ac 5210 MHz	LIMIT (dBc)
Vnormal	+80MHz	-45.76	≦-25
	-80MHz	-46.66	≦-25

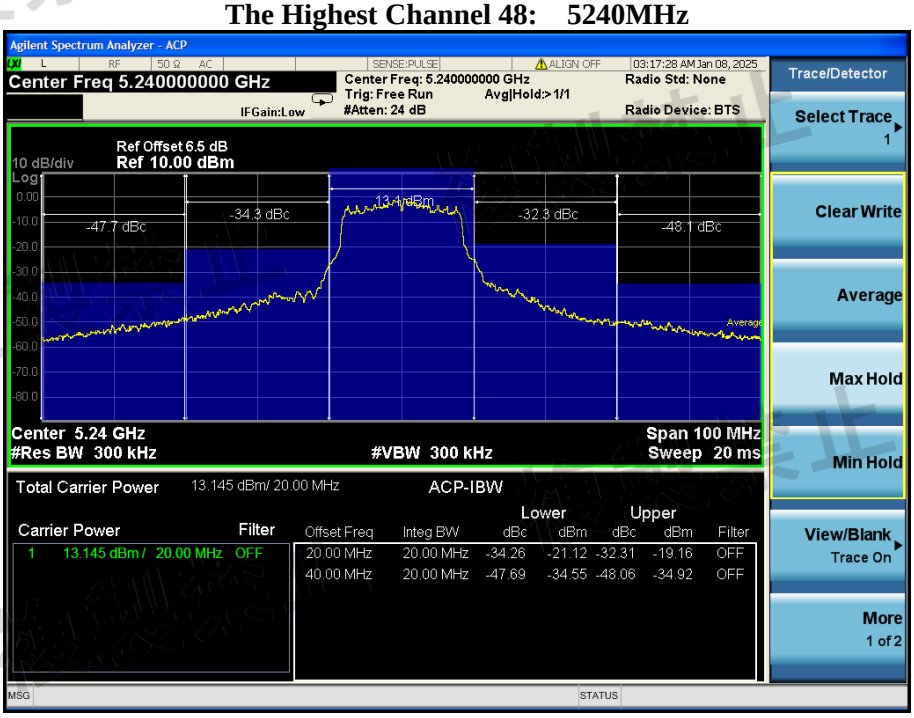
802.11a (5.15GHz-5.25GHz)
The Lowest Channel 36: 5180MHz



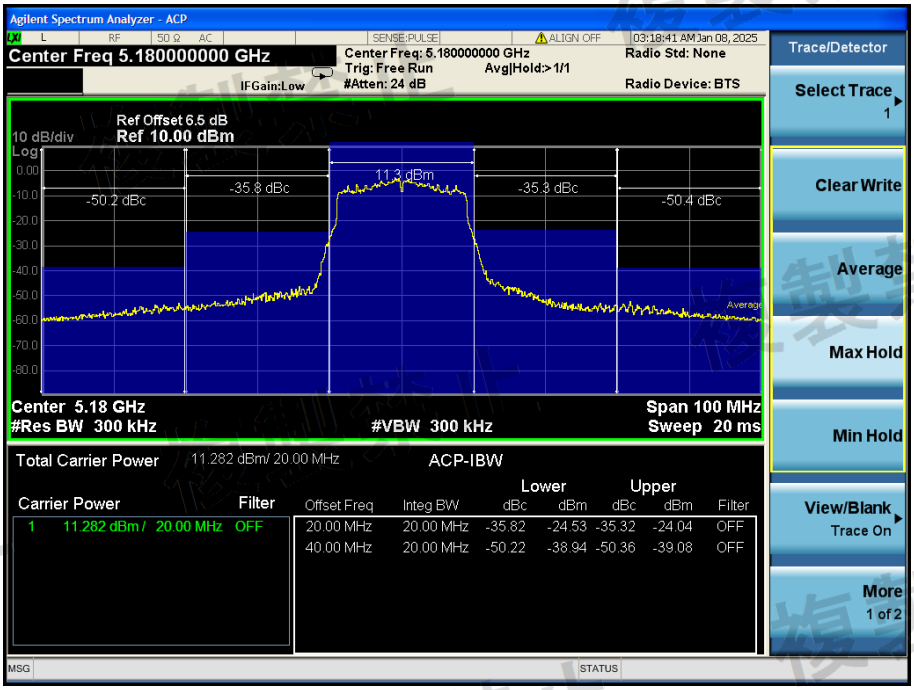
802.11a (5.15GHz-5.25GHz)
The Middle Channel 40: 5200MHz



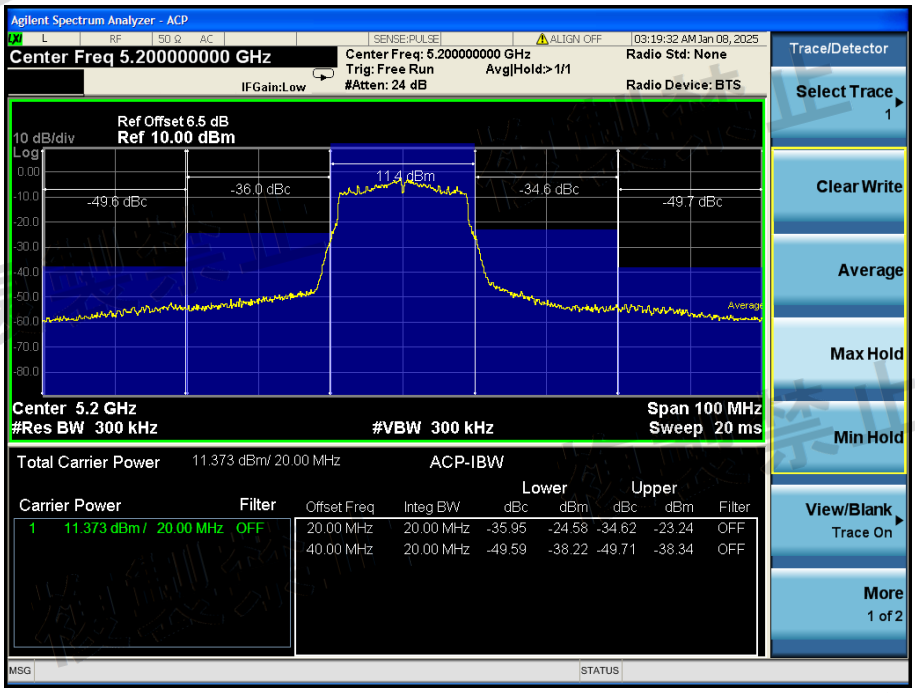
802.11a (5.15GHz-5.25GHz)
The Highest Channel 48: 5240MHz



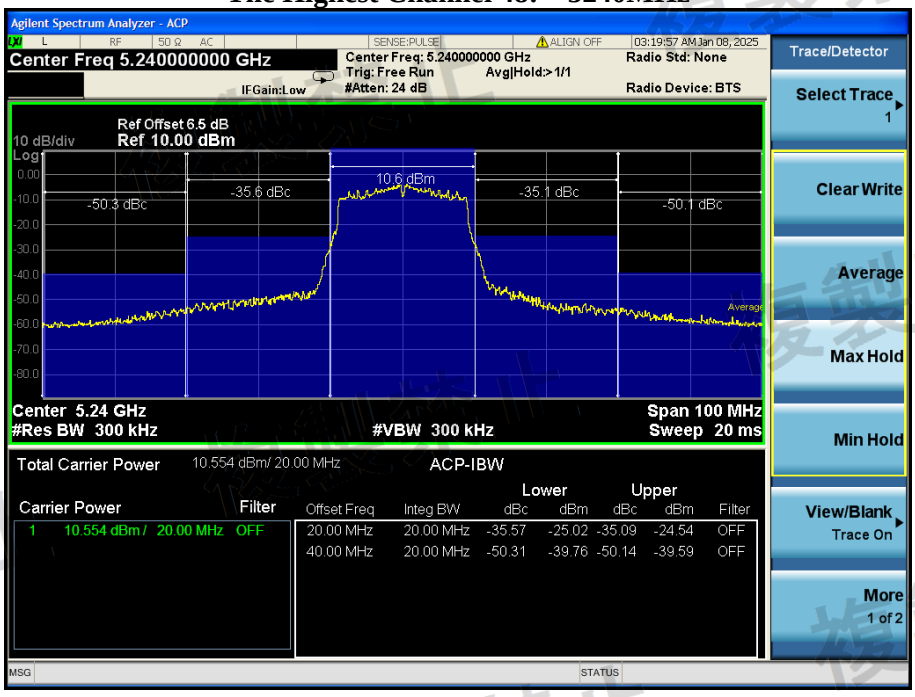
802.11n(20M) (5.15GHz-5.25GHz)
The Lowest Channel 36: 5180MHz



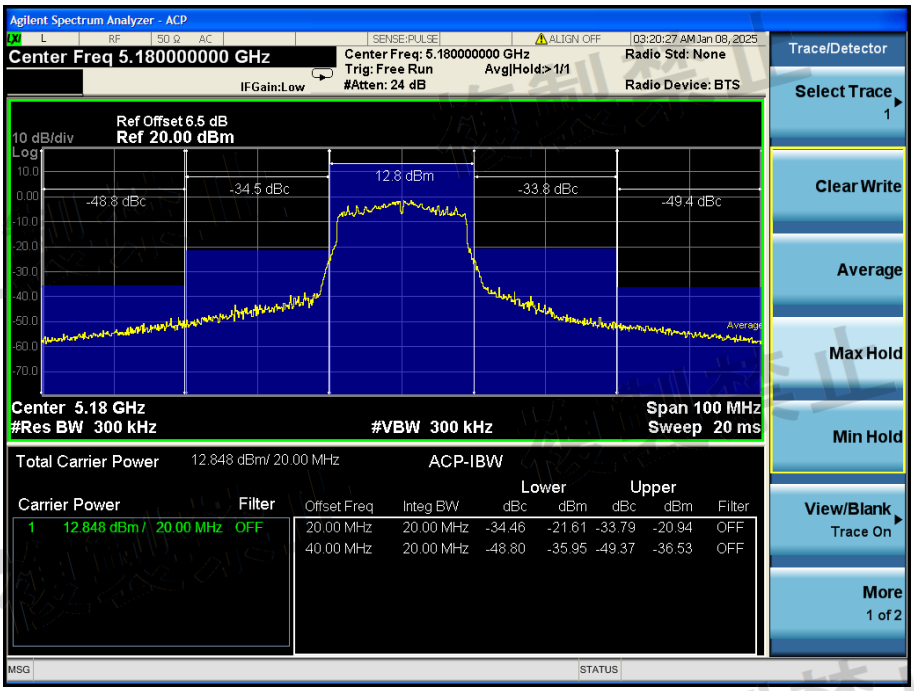
802.11n(20M) (5.15GHz-5.25GHz)
The Middle Channel 40: 5200MHz



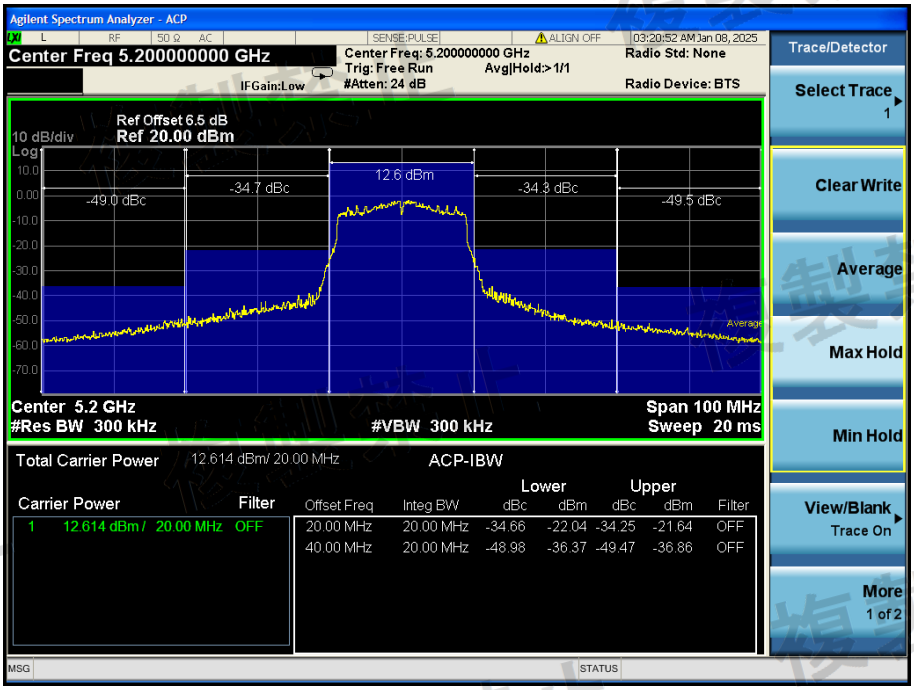
802.11n(20M) (5.15GHz-5.25GHz)
The Highest Channel 48: 5240MHz



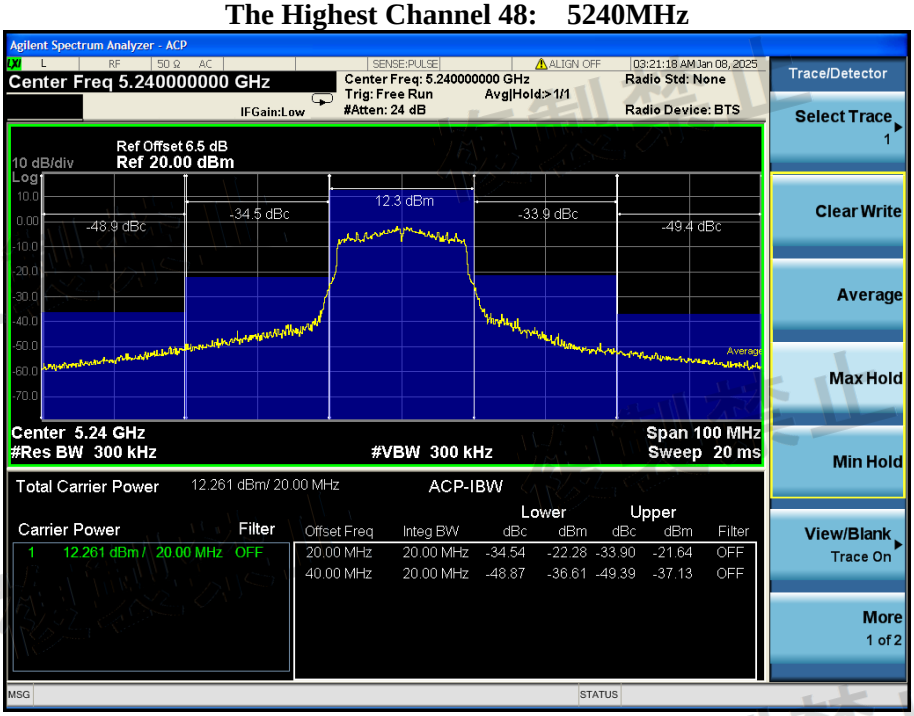
802.11ac (5.15GHz-5.25GHz)
The Lowest Channel 36: 5180MHz



802.11ac (5.15GHz-5.25GHz)
The Middle Channel 40: 5200MHz

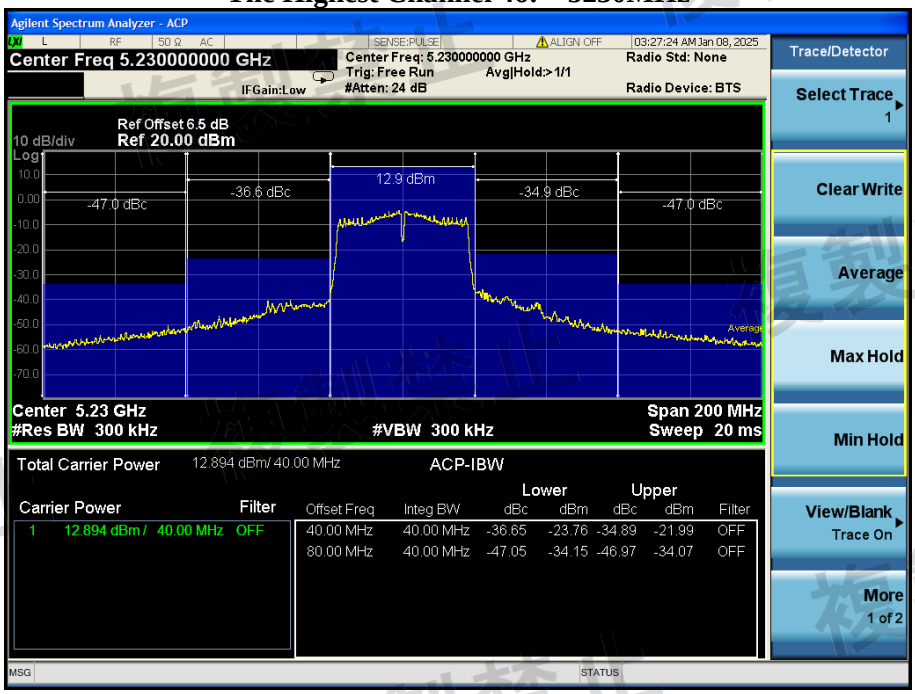


802.11ac (5.15GHz-5.25GHz)
The Highest Channel 48: 5240MHz



802.11n(40M) (5.15GHz-5.25GHz)
The Lowest Channel 38: 5190MHz

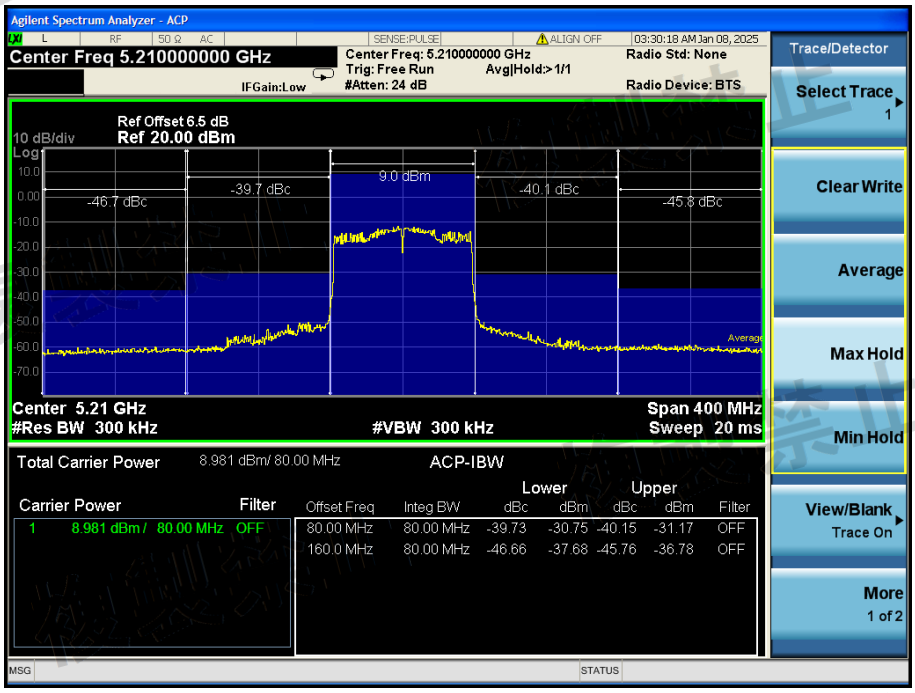
802.11n(40M) (5.15GHz-5.25GHz)
The Highest Channel 46: 5230MHz



802.11ac(40M) (5.15GHz-5.25GHz)
The Lowest Channel 38: 5190MHz

802.11ac(40M) (5.15GHz-5.25GHz)
The Highest Channel 46: 5230MHz

802.11ac(80M) (5.15GHz-5.25GHz)
The Lowest Channel 42: 5210MHz



8. RF OUTPUT POWER / TOLERANCE

Band	Item	20MHz system		40MHz system	80MHz system	160MHz system
W52&W53	Antenna Power	DSSS,etc	OFDM	OFDM		
		10mW/MHz(DSSS) 10mW(other)	10mW/MHz	5mW/MHz	2.5mW/MHz	1.25mW/MHz
	Antenna Power Error	+20%, -80% (Base on manufacturer declare antenna power density)				
	E.I.R.P.(W52)	10mW/MHz		5mW/MHz	2.5mW/MHz	1.25mW/MHz
	E.I.R.P.(W53)	10mW/MHz With TPC 5mW/MHz Without TPC		5mW/MHz With TPC 2.5mW/MHz Without TPC	2.5mW/MHz With TPC 1.25mW/MHz Without TPC	1.25mW/MHz With TPC 0.625mW/MHz Without TPC
W56	Antenna Power	10mW/MHz(DSSS) 10mW(other)	10mW/MHz	5mW/MHz	2.5mW/MHz	1.25mW/MHz
	Antenna Power Error	+50%, -50% (Base on manufacturer declare antenna power density)				
	E.I.R.P.	50mW/MHz With TPC 25mW/MHz Without TPC		25mW/MHz With TPC 12.5mW/MHz Without TPC	12.5mW/MHz With TPC 6.25mW/MHz Without TPC	6.25mW/MHz With TPC 3.125mW/MHz Without TPC

8.1 TEST DEVIATION

There is no deviation with the original standard.

8.2 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously transmitting mode.

8.3 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously transmitting mode.

8.4 TEST SETUP

The test procedure contained in this option 1 shall be as follows:
Step 1:
Connect the UUT to the spectrum analyser and use the following settings:
• Centre Frequency: The centre frequency of the channel under test.
• Resolution BW: 1 MHz.
• Video BW: 3 MHz.
• Span: Wide enough to cover the complete power envelope of the signal of the UUT.
• Detector: Peak.
• Trace Mode: Max Hold.
Step 2:
When the trace is complete, find the peak value of the power envelope and record the frequency.
Step 3:
Make the following changes to the settings of the spectrum analyser:
• Centre Frequency: Equal to the frequency recorded in step 2.
• Span:0 MHz.
• Resolution BW: 1 MHz.
• Video BW: 1 MHz.
• Sweep time: 1 minute.
• Detector: Average (see note).
• Trace Mode: Max Hold.

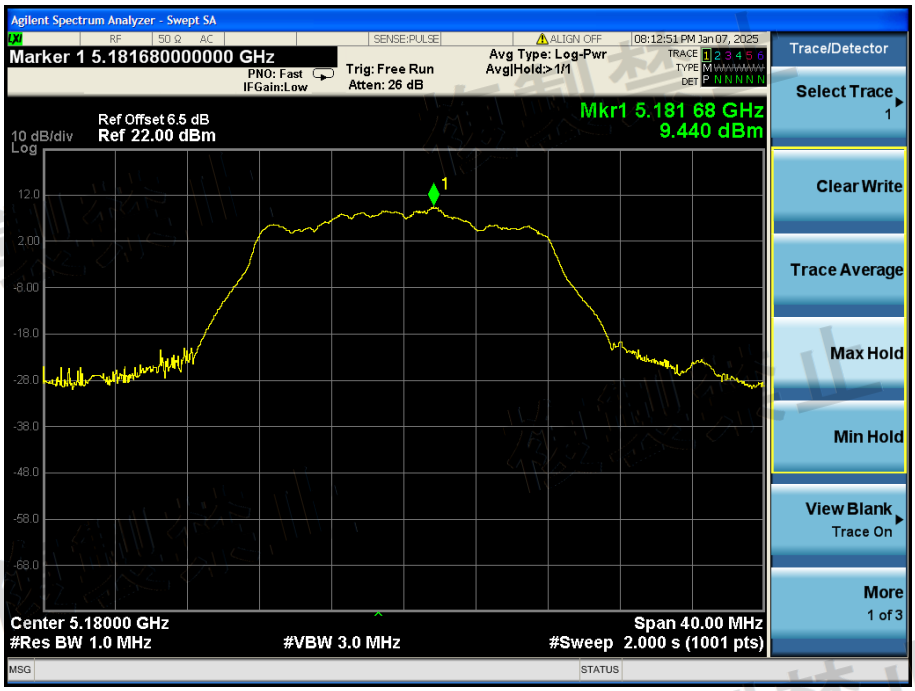
8.5 TEST RESULT

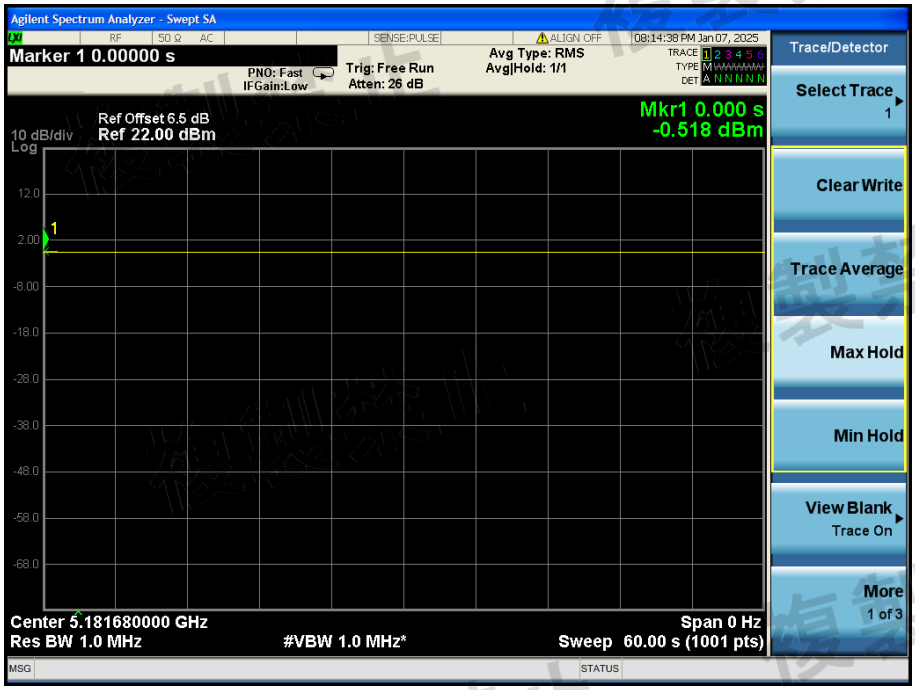
EUT：	PROFESSIONAL SCAN TOOL	Model No.:	MaxiDiag MD909 Pro
Temperature:	25^{0}C	Test Date:	Jan. 07,2025
Humidity:	55 % RH	Tested by:	Jack Li
Atmospheric Pressure:	1013 mbar	Test Voltage	Normal Voltage

Mode	Freq (MHz)	Antenna Power (dBm/MHz)	Antenna Power (mW/MHz)	Declared Power (mW/MHz)	Tolerance (%)	Upper Limit (%)	Lower Limit (%)	Verdict
a	5180	-0.518	0.89	2.0	-55.50	20	-80	Pass
a	5200	-0.815	0.83	2.0	-58.50	20	-80	Pass
a	5240	-1.136	0.77	2.0	-61.50	20	-80	Pass
N20	5180	-1.667	0.68	2.0	-66.00	20	-80	Pass
N20	5200	-1.853	0.65	2.0	-67.50	20	-80	Pass
N20	5240	-2.367	0.58	2.0	-71.00	20	-80	Pass
ac20	5180	-1.797	0.66	2.0	-67.00	20	-80	Pass
ac20	5200	-1.919	0.64	2.0	-68.00	20	-80	Pass
ac20	5240	-2.336	0.58	2.0	-71.00	20	-80	Pass
N40	5190	-5.918	0.26	1.0	-74.00	20	-80	Pass
N40	5230	-6.117	0.24	1.0	-76.00	20	-80	Pass
ac40	5190	-6.033	0.25	1.0	-75.00	20	-80	Pass
ac40	5230	-6.265	0.24	1.0	-76.00	20	-80	Pass
ac80	5210	-14.006	0.04	0.1	-60.0	20	-80	Pass

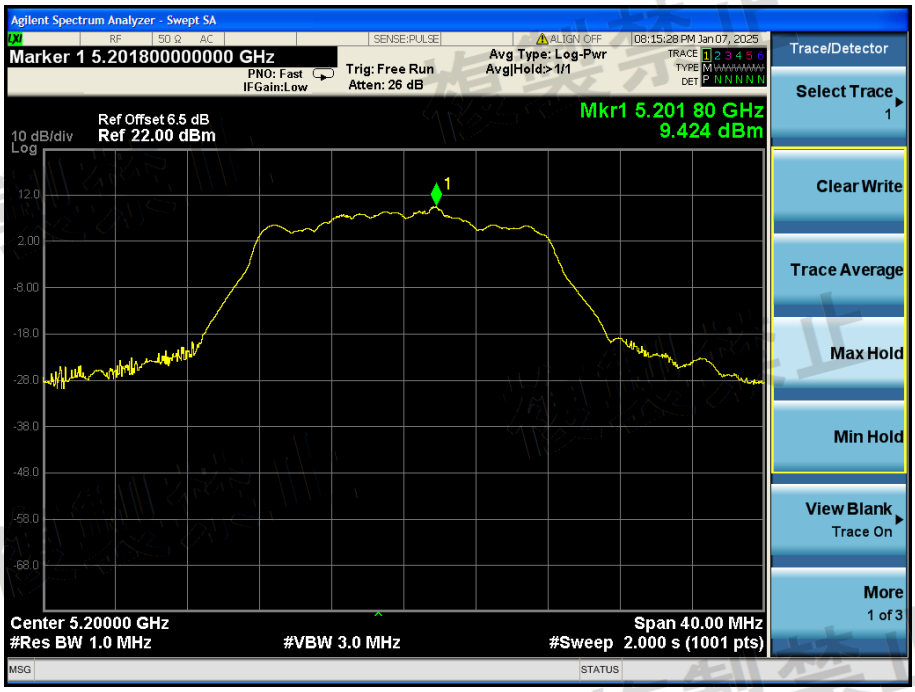
複製禁止

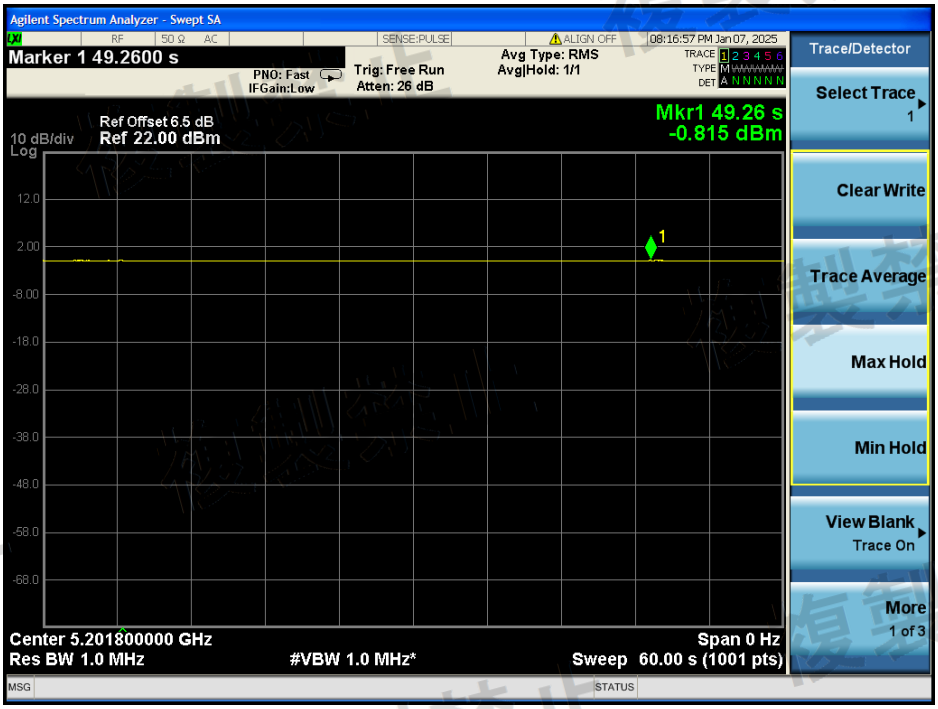
802.11a (5.15GHz-5.25GHz)
The Lowest Channel 36: 5180MHz



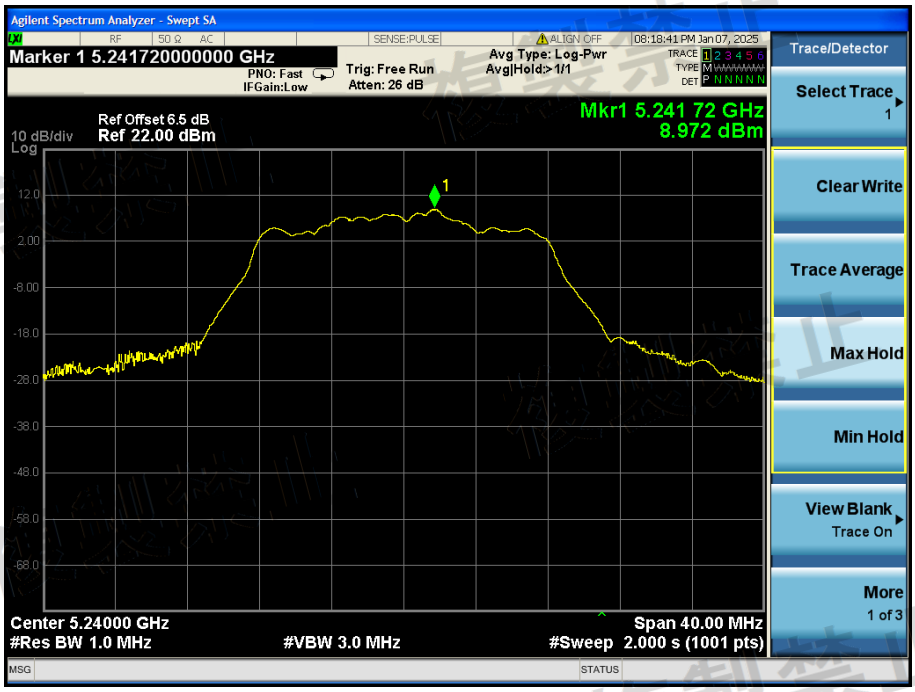


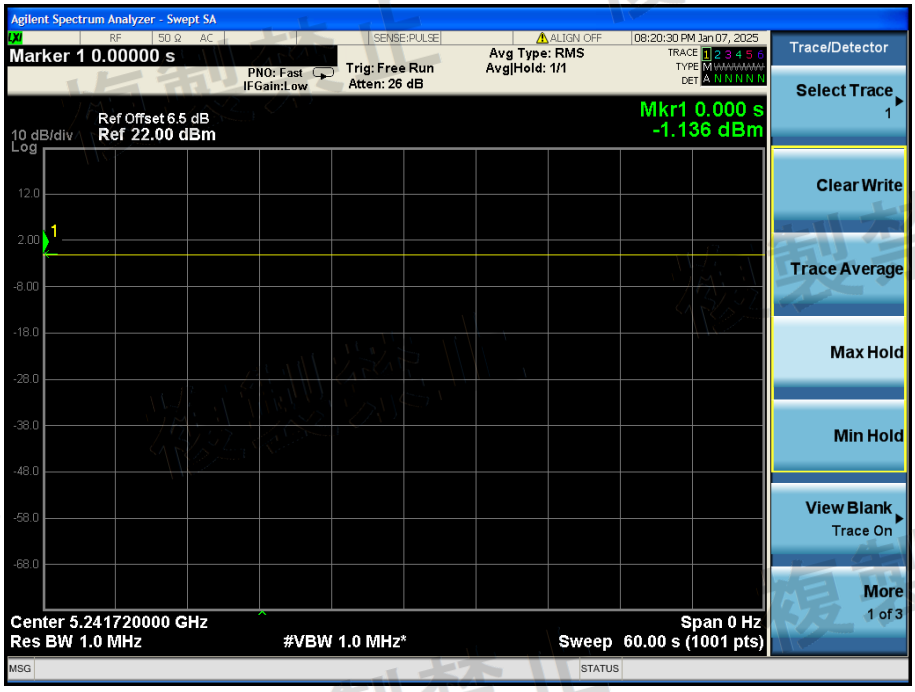
802.11a (5.15GHz-5.25GHz)
The Middle Channel 40: 5200MHz



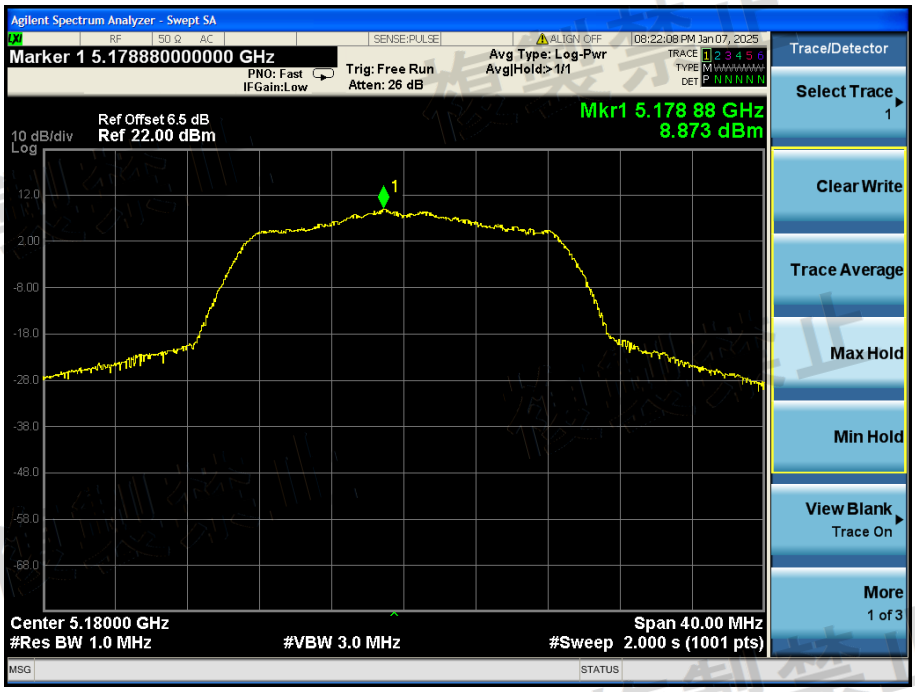


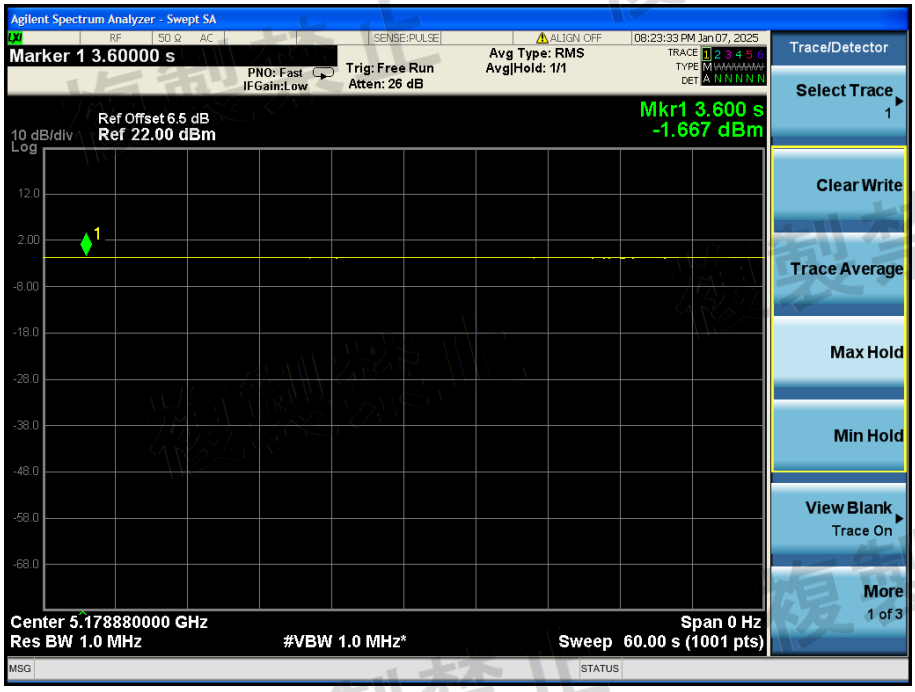
802.11a (5.15GHz-5.25GHz)
The Highest Channel 48: 5240MHz



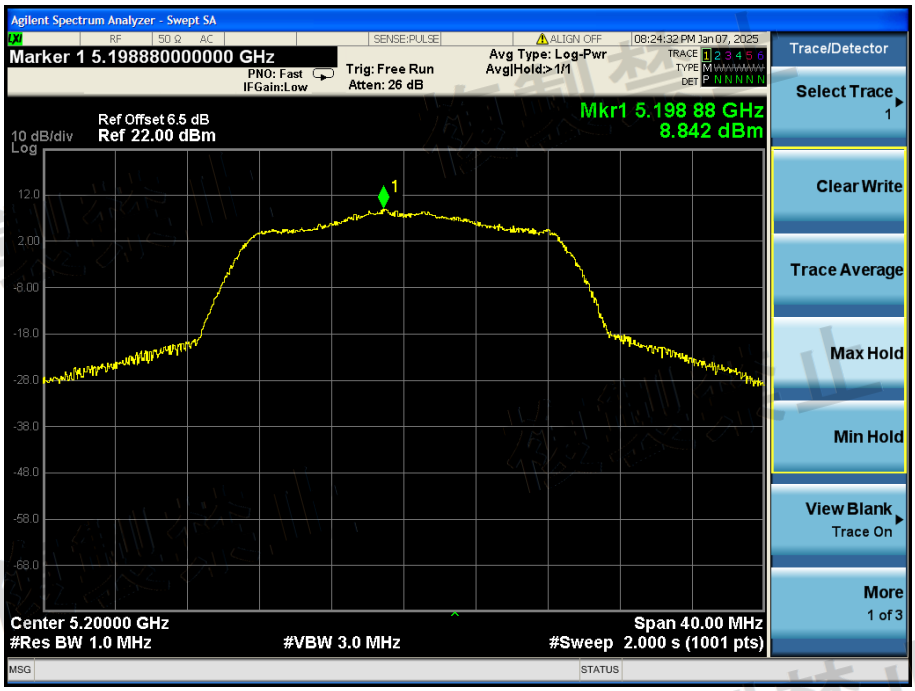


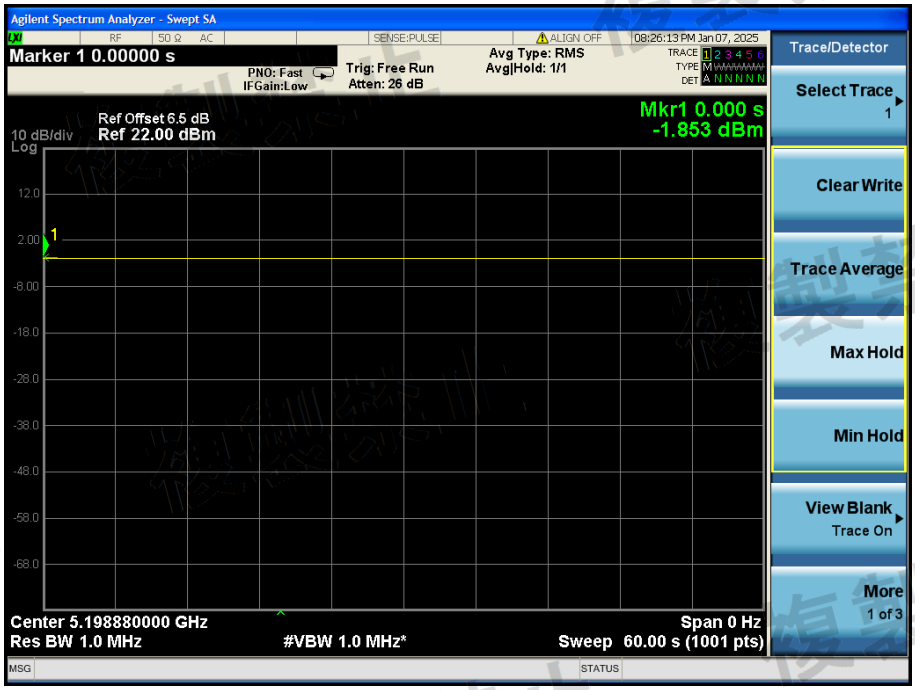
802.11n(20M) (5.15GHz-5.25GHz)
The Lowest Channel 36: 5180MHz



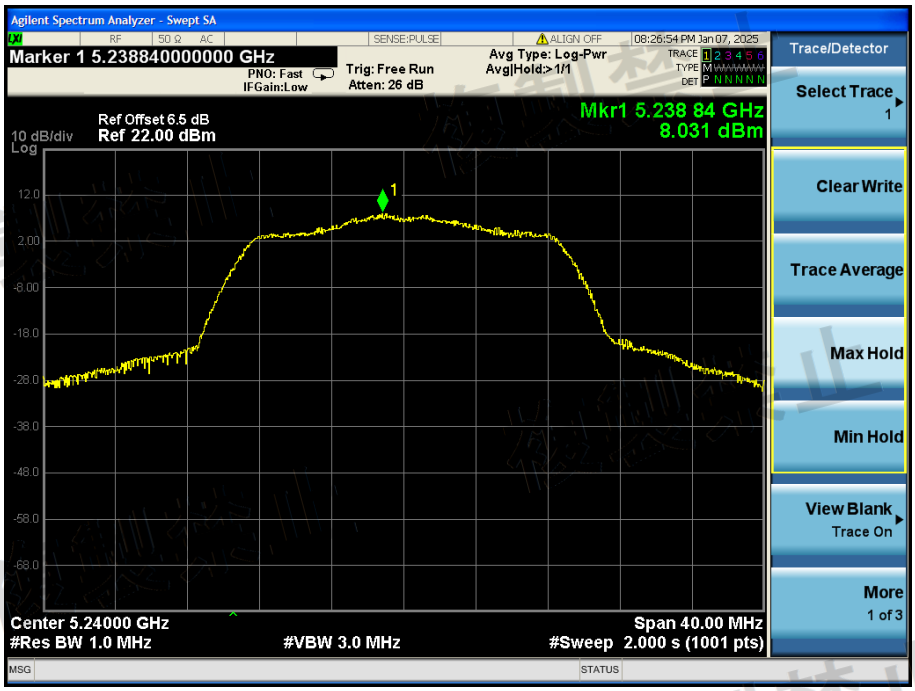


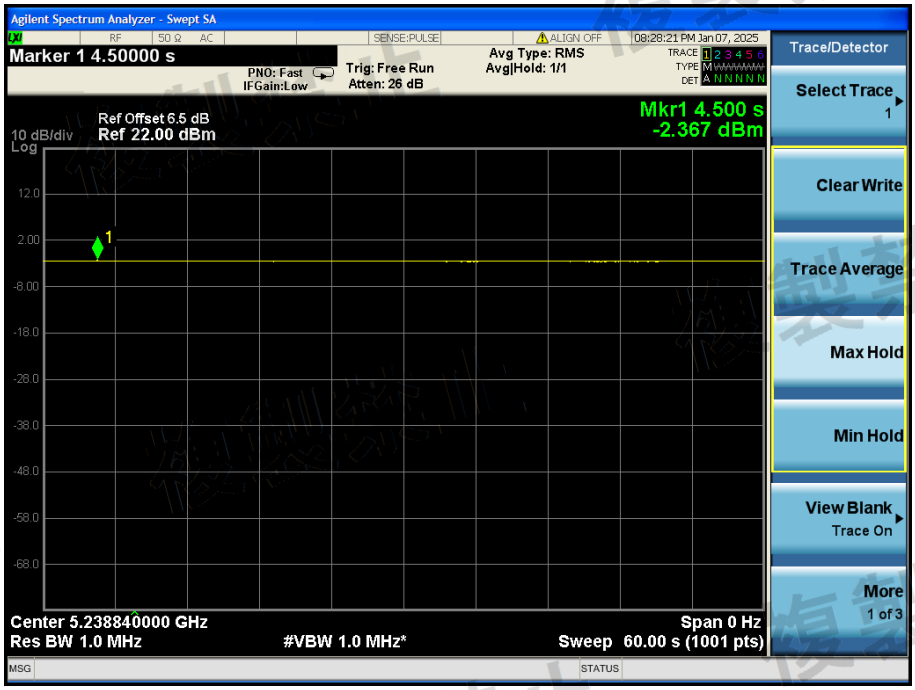
802.11n(20M) (5.15GHz-5.25GHz)
The Middle Channel 40: 5200MHz



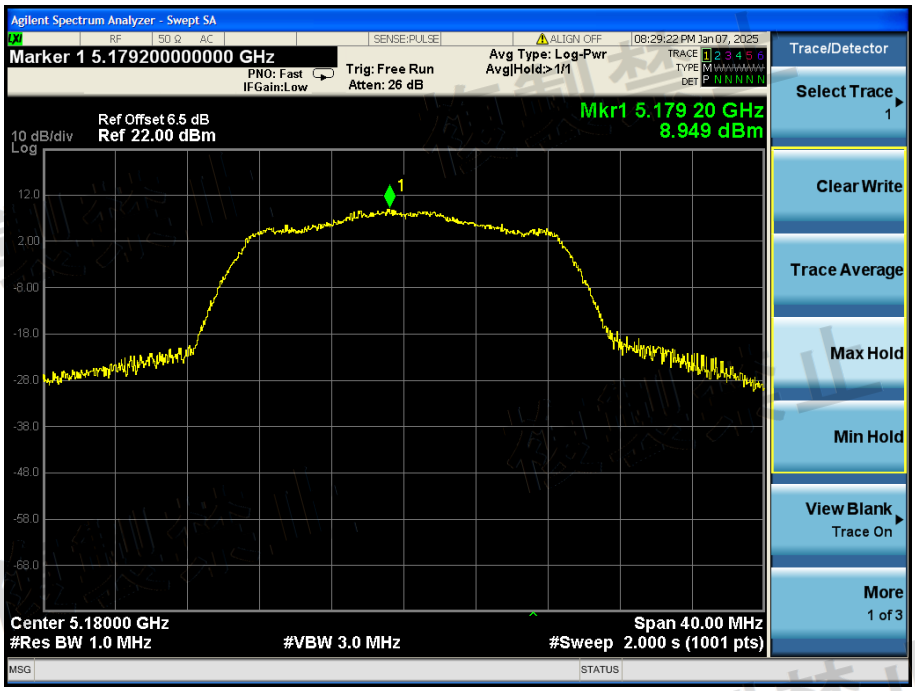


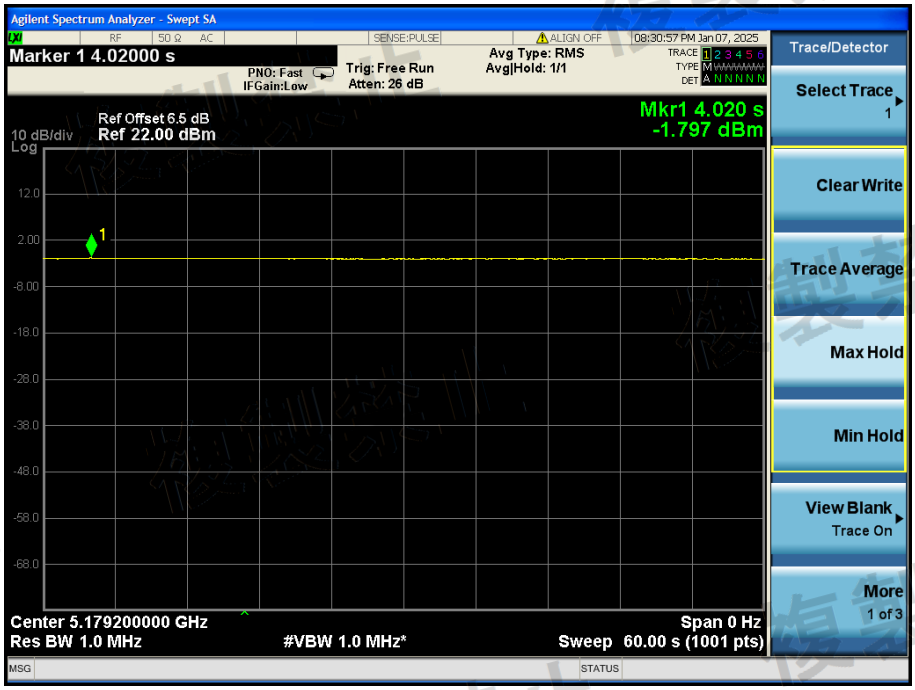
802.11n(20M) (5.15GHz-5.25GHz)
The Highest Channel 48: 5240MHz



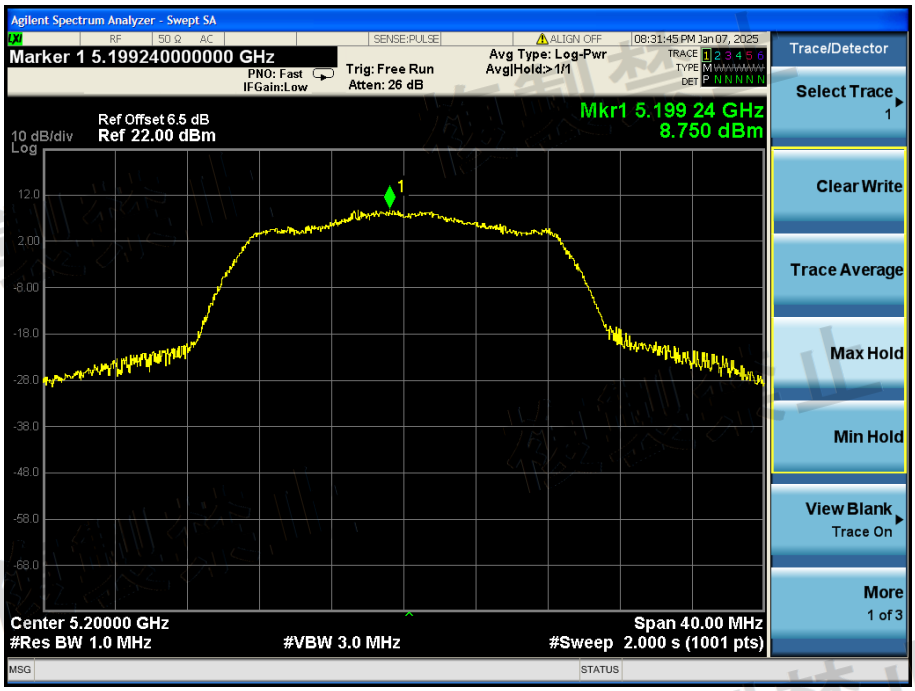


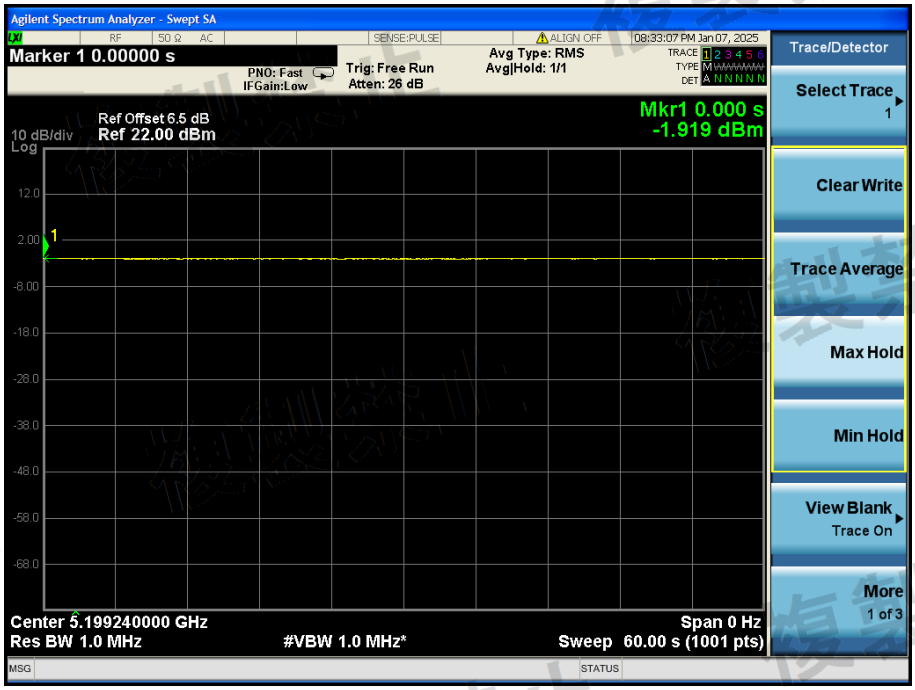
802.11ac (5.15GHz-5.25GHz)
The Lowest Channel 36: 5180MHz



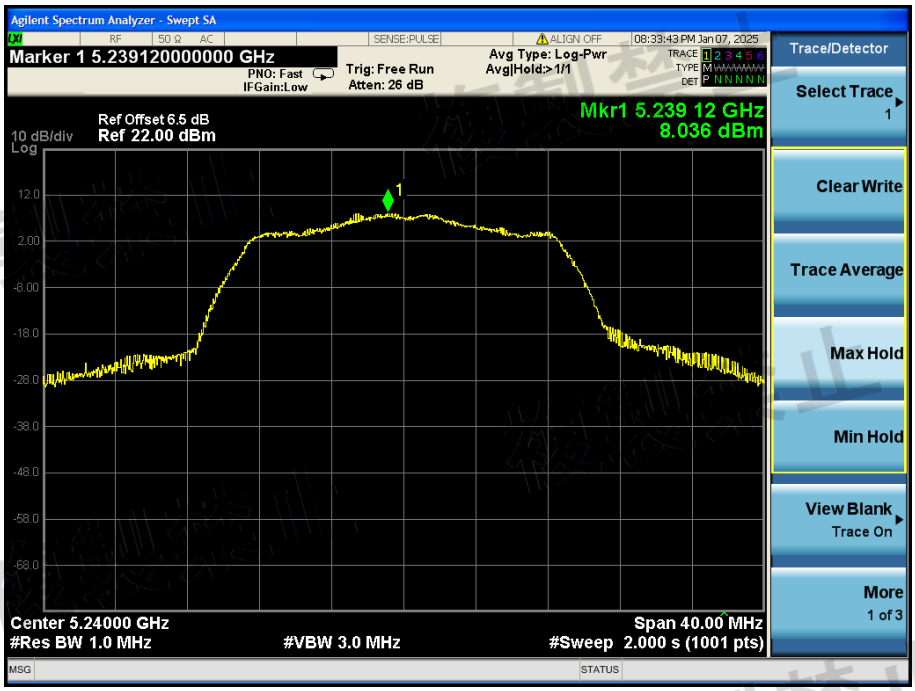


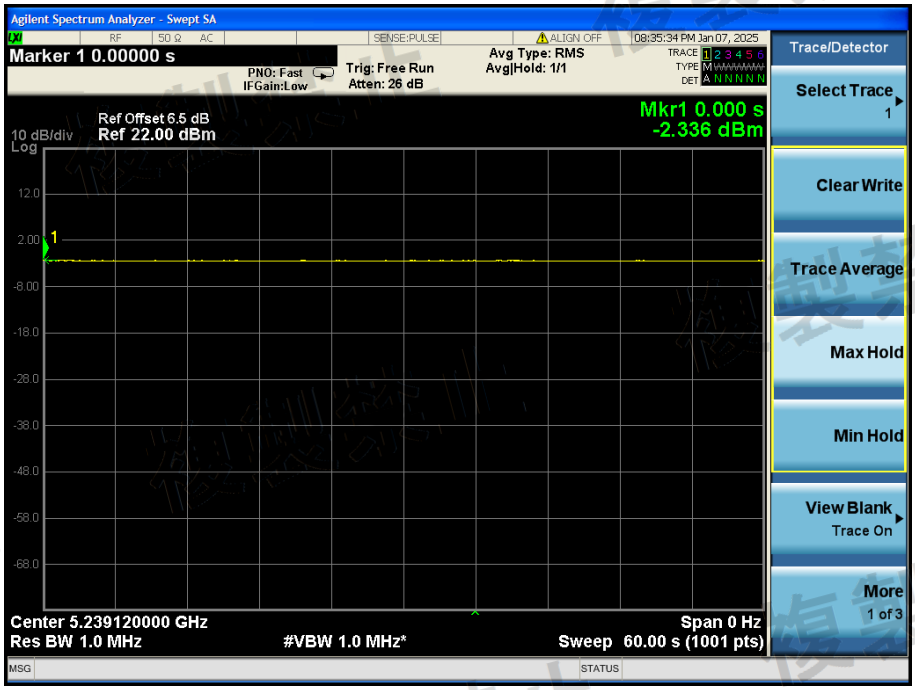
802.11ac (5.15GHz-5.25GHz)
The Middle Channel 40: 5200MHz



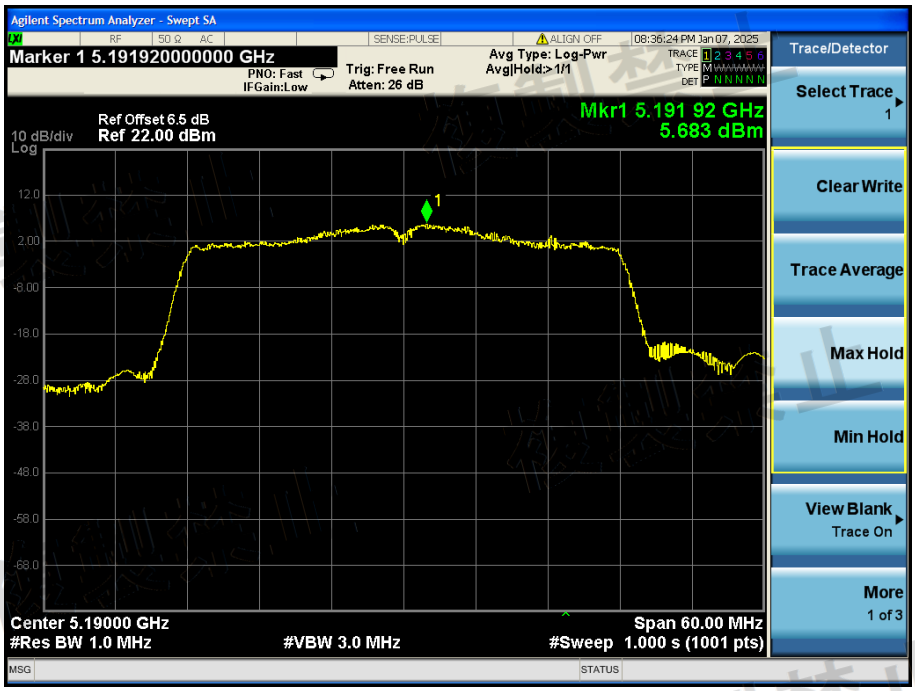


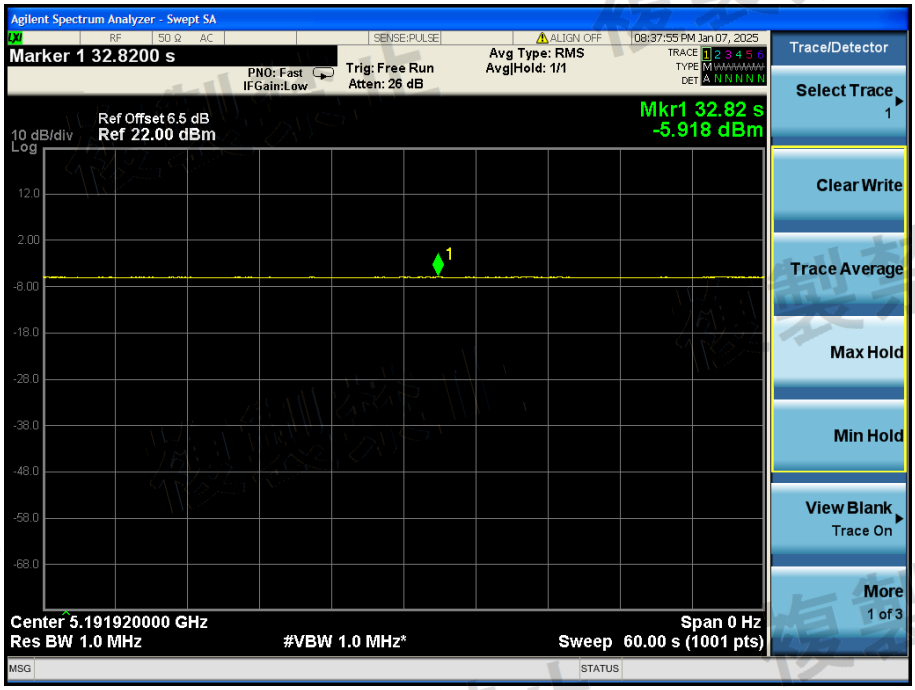
802.11ac (5.15GHz-5.25GHz)
The Highest Channel 48: 5240MHz



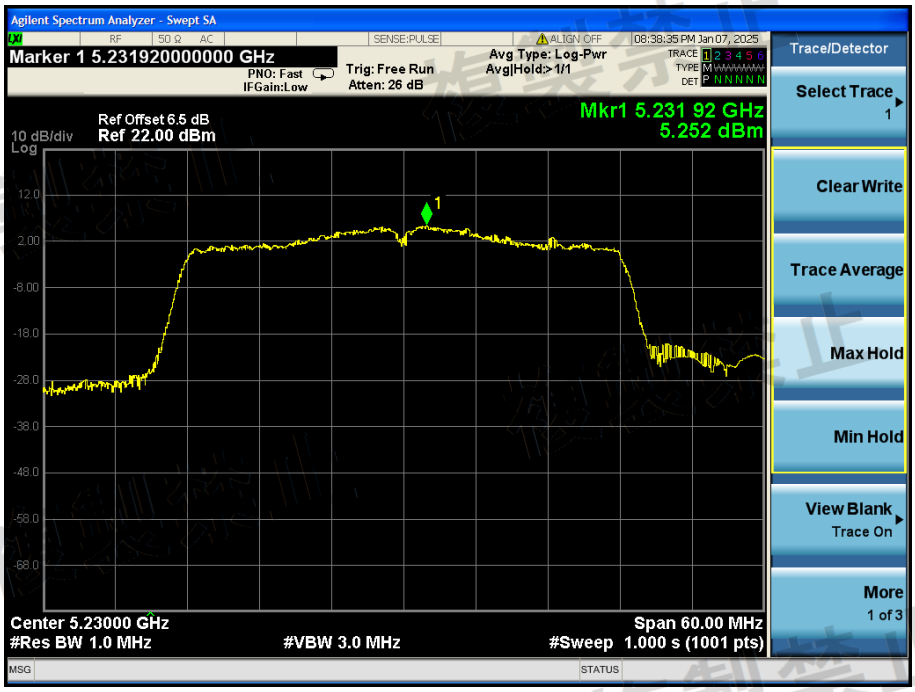


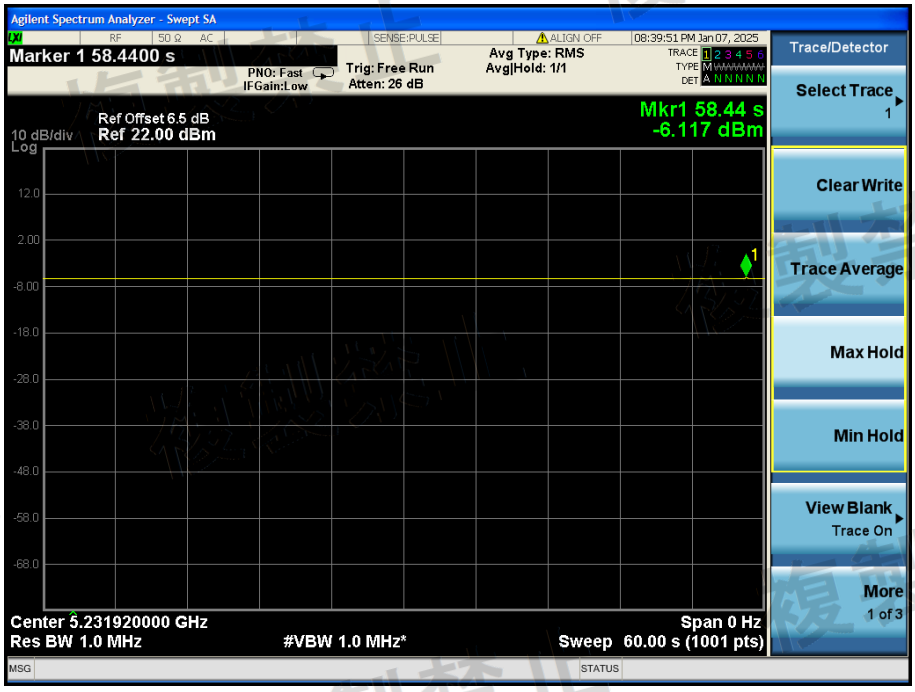
802.11n(40M) (5.15GHz-5.25GHz)
The Lowest Channel 38: 5190MHz



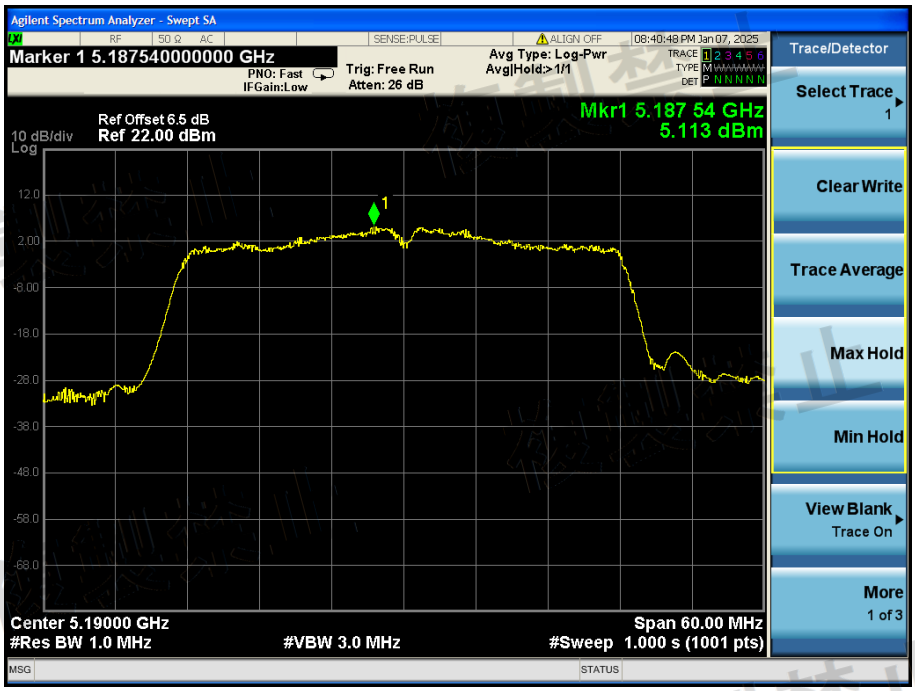


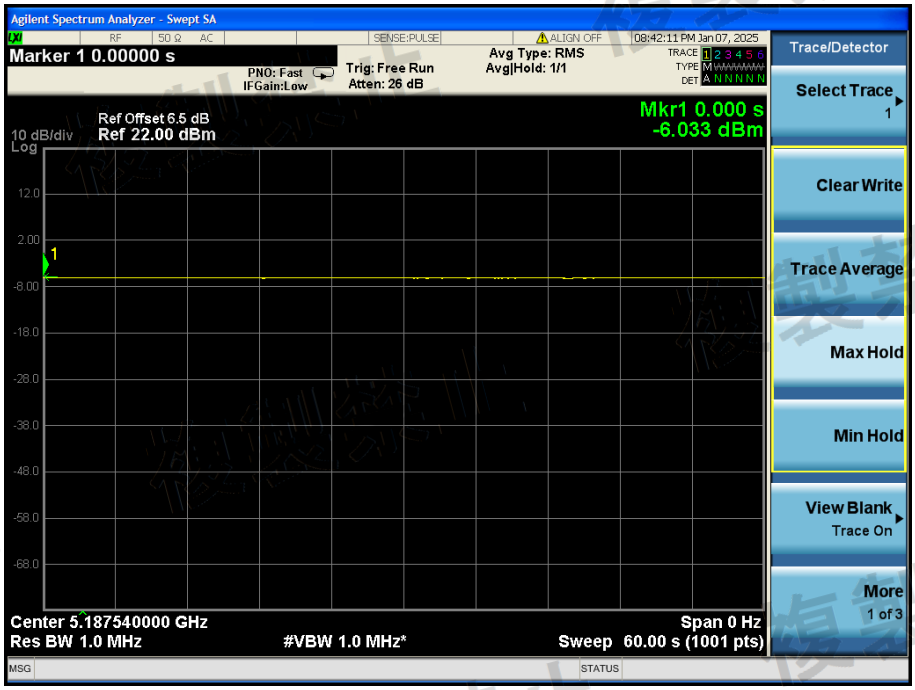
802.11n(40M) (5.15GHz-5.25GHz)
The Highest Channel 46: 5230MHz



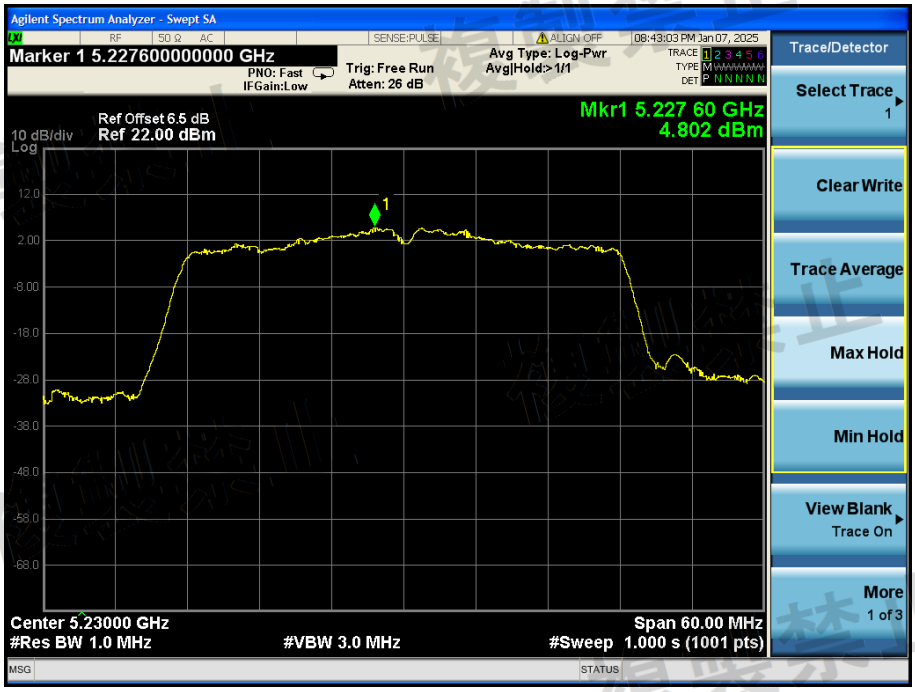


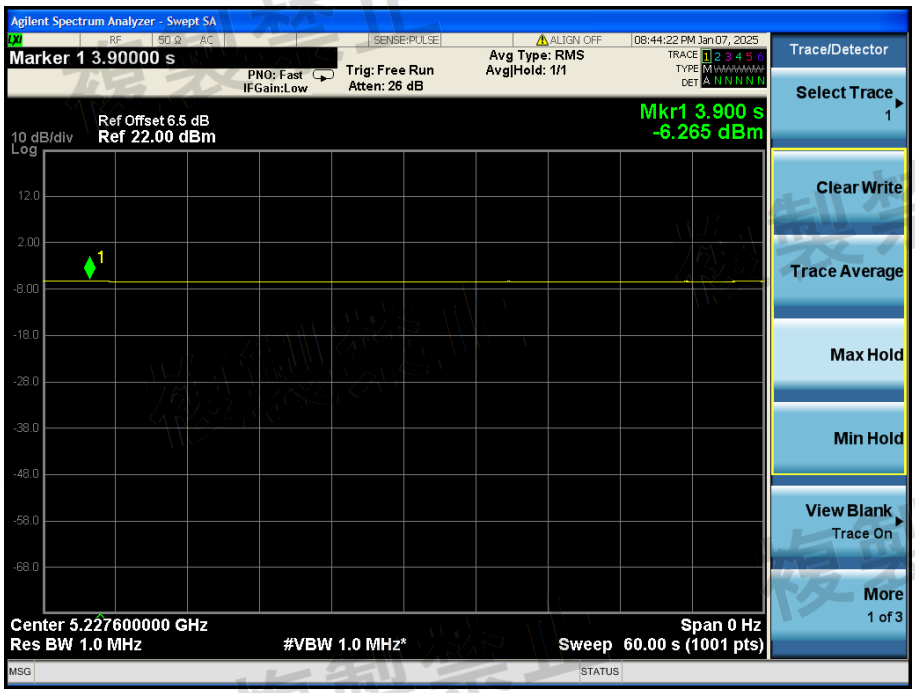
802.11ac(40M) (5.15GHz-5.25GHz)
The Lowest Channel 38: 5190MHz



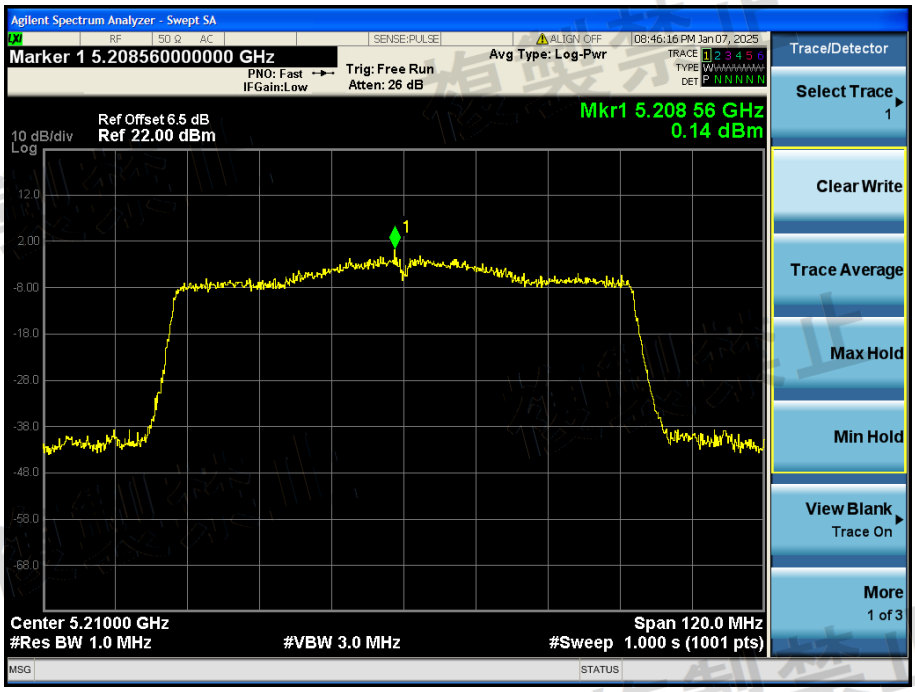


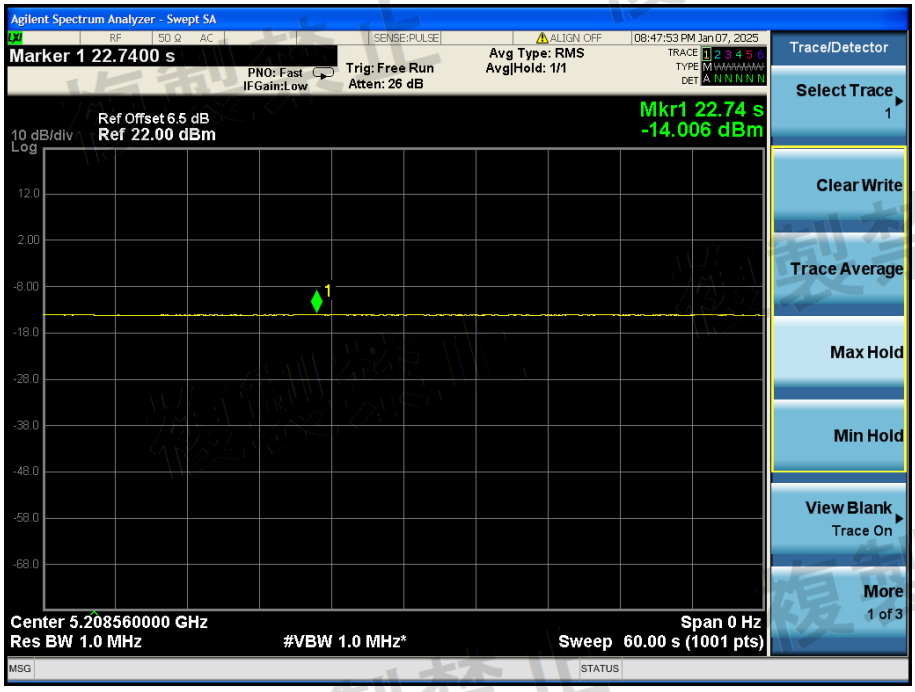
802.11ac(40M) (5.15GHz-5.25GHz)
The Highest Channel 46: 5230MHz





802.11ac(80M) (5.15GHz-5.25GHz)
The Lowest Channel 42: 5210MHz





9. E.I.R.P MEASUREMENT

9.1 LIMIT

Mode	Limits
11a,11n,11ac 20MHz	≤10mW/MHz
11n,11ac 40MHz	≤5mW/MHz
11n,11ac 80 MHz	≤2.5mW/MHz

9.2 TEST PROCEDURES

EIRP Power= Conducted power + antenna gain.

9.3 TEST SETUP LAYOUT

Please refer to Section 8.4 of this test report.

9.4 TEST DEVIATION

There is no deviation with the original standard.

9.5 EUT OPERATION DURING TEST

The EUT was programmed to be in normal transmitting mode.

9.6 TEST RESULT OF TRANSMISSION ANTENNA GAIN (EIRP ANTENNA POWER)

EUT：	PROFESSIONAL SCAN TOOL	Model No.:	MaxiDiag MD909 Pro
Temperature:	25^{0}C	Test Date:	Jan. 07,2025
Humidity:	55 % RH	Tested by:	Jack Li
Atmospheric Pressure:	1013 mbar	Test Voltage	Normal Voltage

Normal Voltage-a mode

Frequency	power density	EIRP	EIRP	**Limits**
	(dBm/MHz)	(dBm/MHz)	(mW/MHz)	(mW/MHz)
5180MHz	-0.518	-0.218	0.95	≤10
5200MHz	-0.815	-0.515	0.89	≤10
5240MHz	-1.136	-0.836	0.82	≤10

Normal Voltage-n(20) mode

Frequency	power density	EIRP	EIRP	**Limits**
	(dBm/MHz)	(dBm/MHz)	(mW/MHz)	(mW/MHz)
5180MHz	-1.667	-1.367	0.73	≤10
5200MHz	-1.853	-1.553	0.70	≤10
5240MHz	-2.367	-2.067	0.62	≤10

Normal Voltage-ac(20) mode

Frequency	power density	EIRP	EIRP	**Limits**
	(dBm/MHz)	(dBm/MHz)	(mW/MHz)	(mW/MHz)
5180MHz	-1.797	-1.497	0.71	≤10
5200MHz	-1.919	-1.619	0.69	≤10
5240MHz	-2.336	-2.036	0.63	≤10

Normal Voltage-n(40) mode

Frequency	power density	EIRP	EIRP	**Limits**
	(dBm/MHz)	(dBm/MHz)	(mW/MHz)	(mW/MHz)
5190MHz	-5.918	-5.618	0.27	≤5
5230MHz	-6.117	-5.817	0.26	≤5

Normal Voltage-ac(40) mode

Frequency	power density	EIRP	EIRP	**Limits**
	(dBm/MHz)	(dBm/MHz)	(mW/MHz)	(mW/MHz)
5190MHz	-6.033	-5.733	0.27	≤5
5230MHz	-6.265	-5.965	0.25	≤5

Normal Voltage-ac(80) mode

Frequency	power density	EIRP	EIRP	**Limits**
	(dBm/MHz)	(dBm/MHz)	(mW/MHz)	(mW/MHz)
5210MHz	-14.006	-13.706	0.04	≤2.5

Note: E.I.R.P. (dBm/MHz) = Antenna Power (dBm/MHz) + Antenna Gain (dBi).

10 SPURIOUS EMISSIONS FOR RECEIVER

Limit

Item	Limits
Rx Spurious Emission	≤4nW (f<1GHz)
	≤20nW (1GHz≤f)

Test Procedure

1. EUT have the continuous reception mode and fixed only one channelize.

2. SA set RBW:100KHz and VBW: 100KHz. Then adjust to start frequency 30MHz and stop frequency 1000MHz. Search to mark peak reading value + cable loss shall be less than 4nW.

3. SA set RBW: 1MHz and VBW: 1MHz. Then adjust to start frequency 1000MHz and stop frequency 12500MHz. Search to mark peak reading value + cable loss shall be less than 20nW.

4. If power level of lower emissions are more than 1/10 of limit (.0.4nW for f < 1GHz, 2nW for f >=1GHz), 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.

10.1 TEST SETUP LAYOUT

10.2 TEST DEVIATION

There is no deviation with the original standard.

10.3 TEST DEVIATION

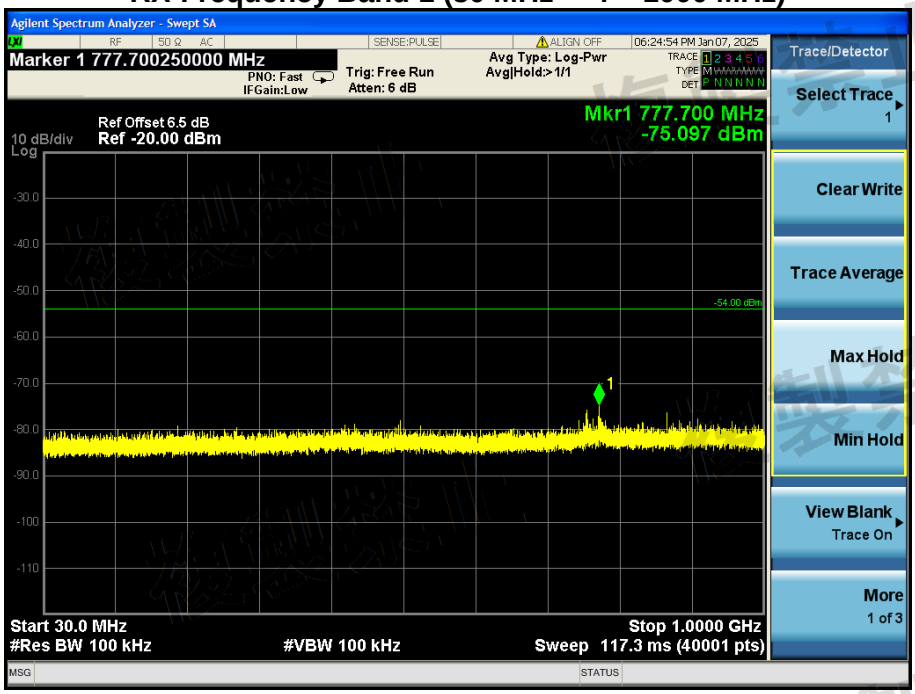
The EUT was programmed to be in continuously reception mode.

10.4 TEST RESULT OF LIMITATION OF COLLATERAL EMISSION OF RECEIVER

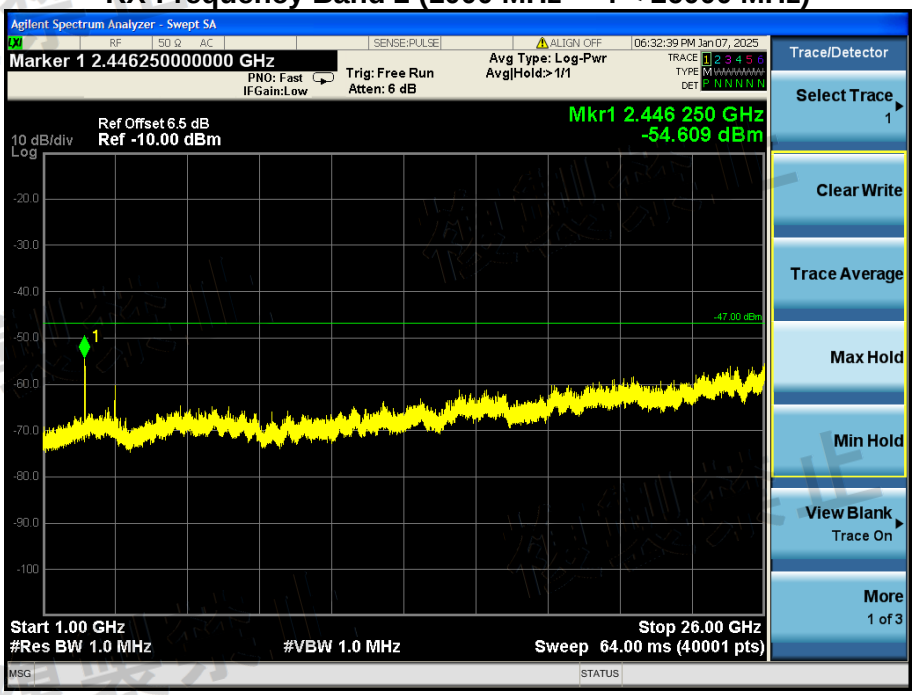
EUT：	PROFESSIONAL SCAN TOOL	Model No.:	MaxiDiag MD909 Pro
Temperature:	25°C	Test Date:	Jan. 07,2025
Humidity:	55 % RH	Tested by:	Jack Li
Atmospheric Pressure:	1013 mbar	Test Voltage	Normal Voltage
Operation Mode:	Normal Voltage-a mode		

Test channel	Test Frequency (MHz)	Test Result			Unit	Limit
		Normal Voltage	High Voltage	Low Voltage		
		3.8V DC	N/A	N/A		
(5180~5240 MHz)	777.700	-75.097	N/A	N/A	dBm	(1) Below 1 GHz : -54dBm (2) 1 GHz to 26GHz : -47dBm
	2446.250	-54.609	N/A	N/A		

RX-Frequency Band 1 (30 MHz ≦ f < 1000 MHz)



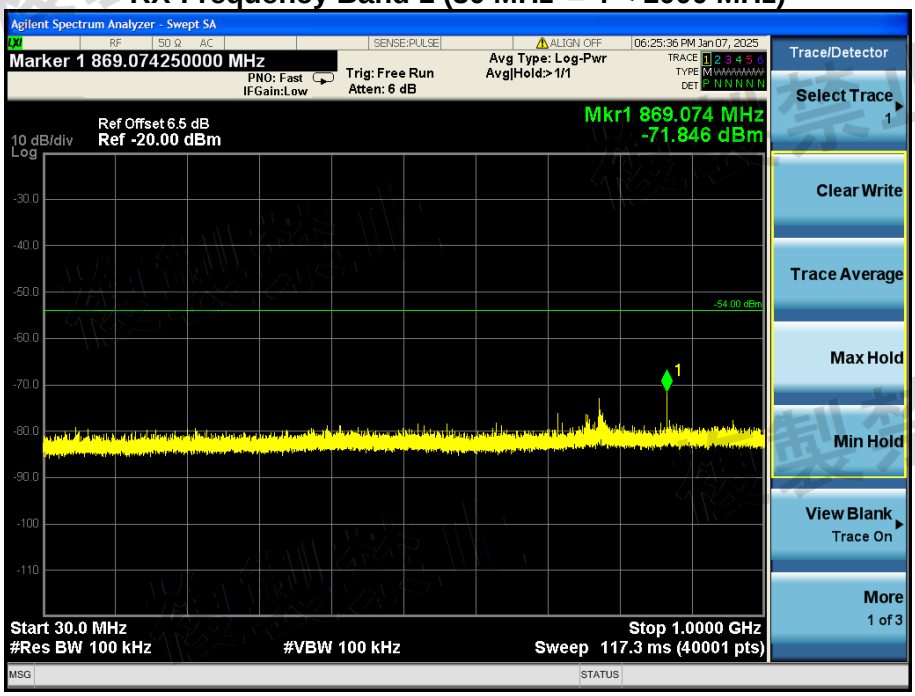
RX-Frequency Band 2 (1000 MHz ≦ f < 26000 MHz)



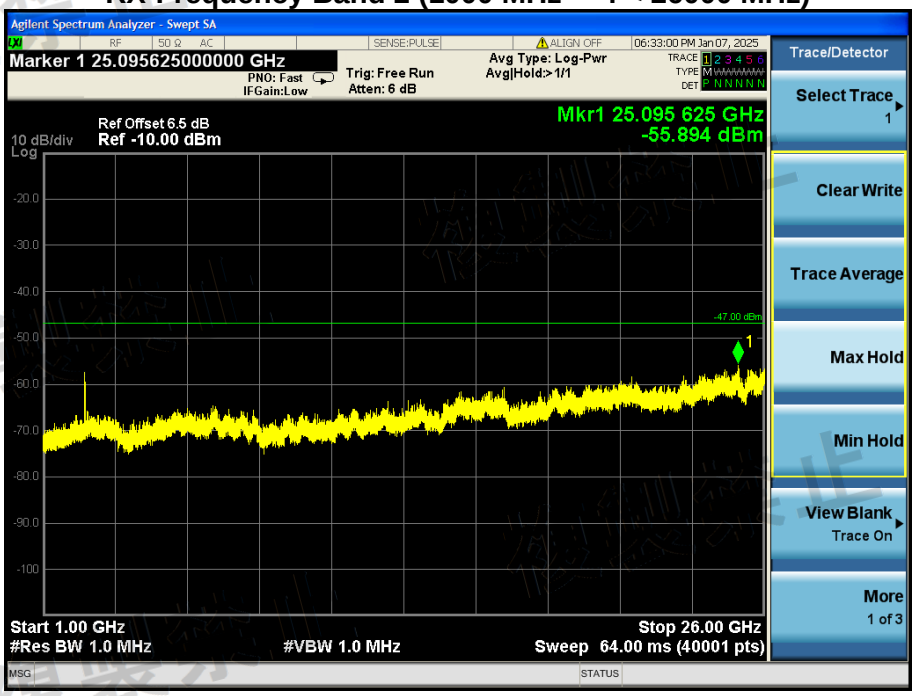
EUT：	PROFESSIONAL SCAN TOOL	Model No.:	MaxiDiag MD909 Pro
Temperature:	25^{0}C	Test Date:	Jan. 07,2025
Humidity:	55 % RH	Tested by:	Jack Li
Atmospheric Pressure:	1013 mbar	Test Voltage	Normal Voltage
Operation Mode:	Normal Voltage-n20 mode		

Test channel	Test Frequency (MHz)	Test Result			Unit	Limit
		Normal Voltage	High Voltage	Low Voltage		
		3.8V DC	N/A	N/A		
(5180~5240 MHz)	869.074	-71.846	N/A	N/A	dBm	(1) Below 1 GHz : -54dBm (2) 1 GHz to 26GHz : -47dBm
	25095.625	-55.894	N/A	N/A		

RX-Frequency Band 1 (30 MHz ≦ f < 1000 MHz)



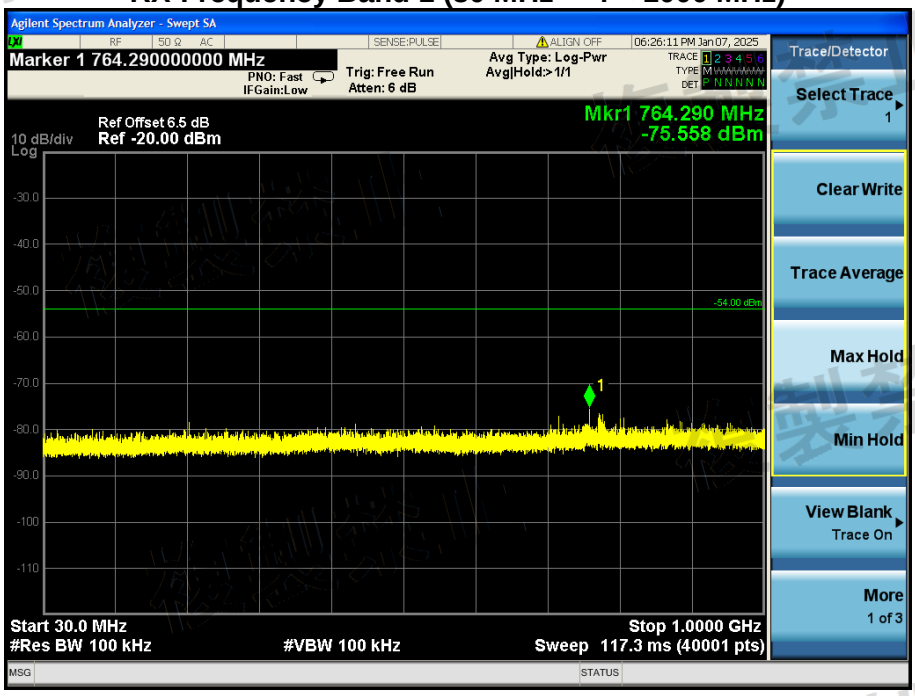
RX-Frequency Band 2 (1000 MHz ≦ f < 26000 MHz)



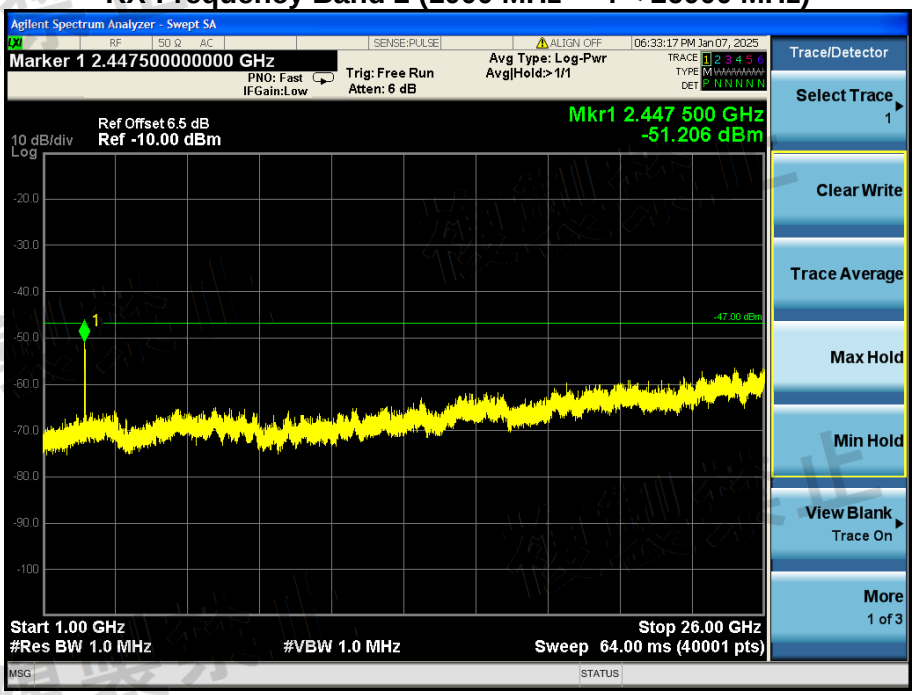
EUT：	PROFESSIONAL SCAN TOOL	Model No.:	MaxiDiag MD909 Pro
Temperature:	25^{0}C	Test Date:	Jan. 07,2025
Humidity:	55 % RH	Tested by:	Jack Li
Atmospheric Pressure:	1013 mbar	Test Voltage	Normal Voltage
Operation Mode:	Normal Voltage-ac20 mode		

Test channel	Test Frequency (MHz)	Test Result			Unit	Limit
		Normal Voltage	High Voltage	Low Voltage		
		3.8V DC	N/A	N/A		
(5180~5240 MHz)	764.290	-75.558	N/A	N/A	dBm	(1) Below 1 GHz : -54dBm (2) 1 GHz to 26GHz : -47dBm
	2447.500	-51.206	N/A	N/A		

RX-Frequency Band 1 (30 MHz ≦ f < 1000 MHz)



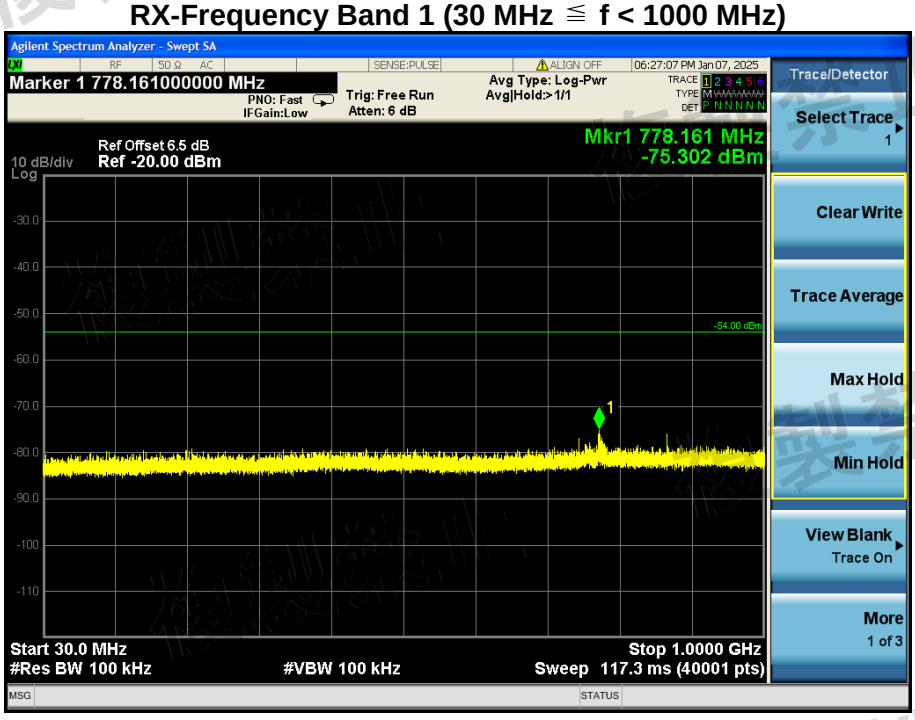
RX-Frequency Band 2 (1000 MHz ≦ f < 26000 MHz)



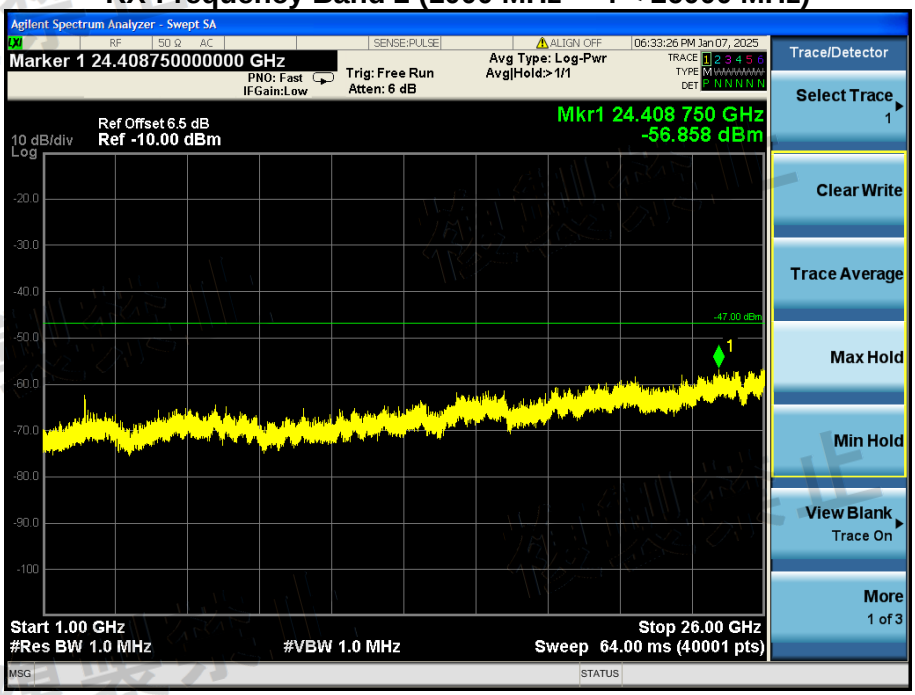
EUT：	PROFESSIONAL SCAN TOOL	Model No.:	MaxiDiag MD909 Pro
Temperature:	25^{0}C	Test Date:	Jan. 07,2025
Humidity:	55 % RH	Tested by:	Jack Li
Atmospheric Pressure:	1013 mbar	Test Voltage	Normal Voltage
Operation Mode:	Normal Voltage-n(40) mode		

Test channel	Test Frequency (MHz)	Test Result			Unit	Limit
		Normal Voltage	High Voltage	Low Voltage		
		3.8V DC	N/A	N/A		
(5180~5240 MHz)	778.161	-75.302	N/A	N/A	dBm	(1) Below 1 GHz : -54dBm (2) 1 GHz to 26GHz : -47dBm
	24408.750	-56.858	N/A	N/A		

RX-Frequency Band 1 (30 MHz ≦ f < 1000 MHz)



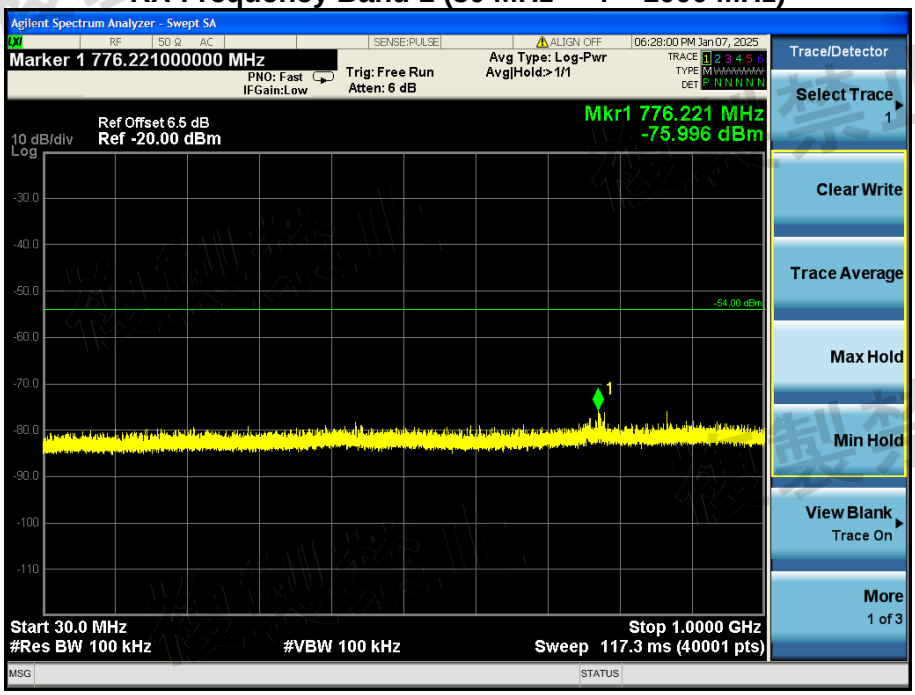
RX-Frequency Band 2 (1000 MHz ≦ f < 26000 MHz)



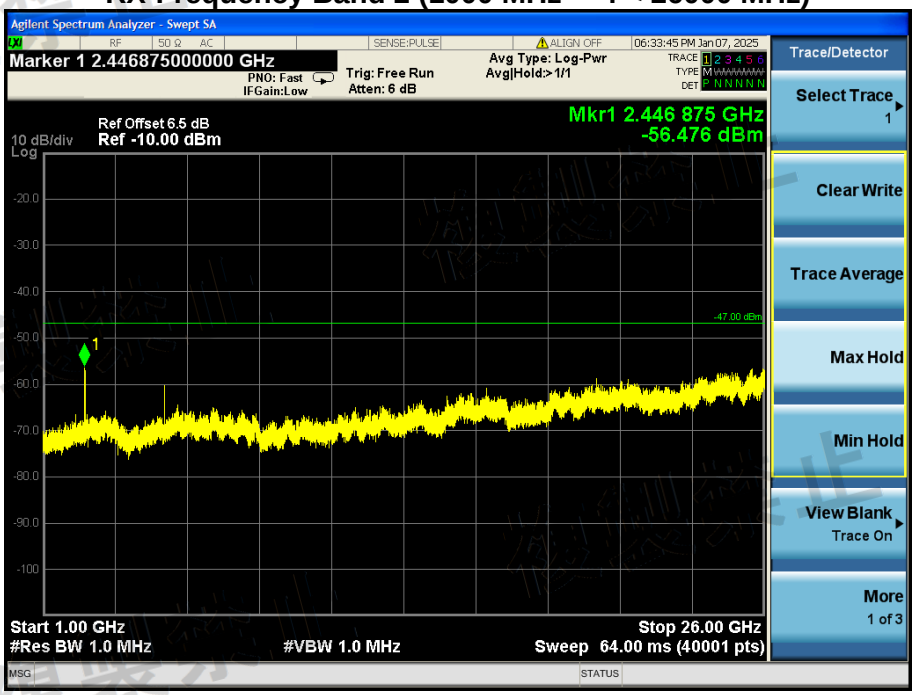
EUT：	PROFESSIONAL SCAN TOOL	Model No.:	MaxiDiag MD909 Pro
Temperature:	25°C	Test Date:	Jan. 07,2025
Humidity:	55 % RH	Tested by:	Jack Li
Atmospheric Pressure:	1013 mbar	Test Voltage	Normal Voltage
Operation Mode:	Normal Voltage-ac(40) mode		

Test channel	Test Frequency (MHz)	Test Result			Unit	Limit
		Normal Voltage	High Voltage	Low Voltage		
		3.8V DC	N/A	N/A		
(5180~5240 MHz)	776.221	-75.996	N/A	N/A	dBm	(1) Below 1 GHz : -54dBm (2) 1 GHz to 26GHz : -47dBm
	2446.875	-56.476	N/A	N/A		

RX-Frequency Band 1 (30 MHz ≦ f < 1000 MHz)



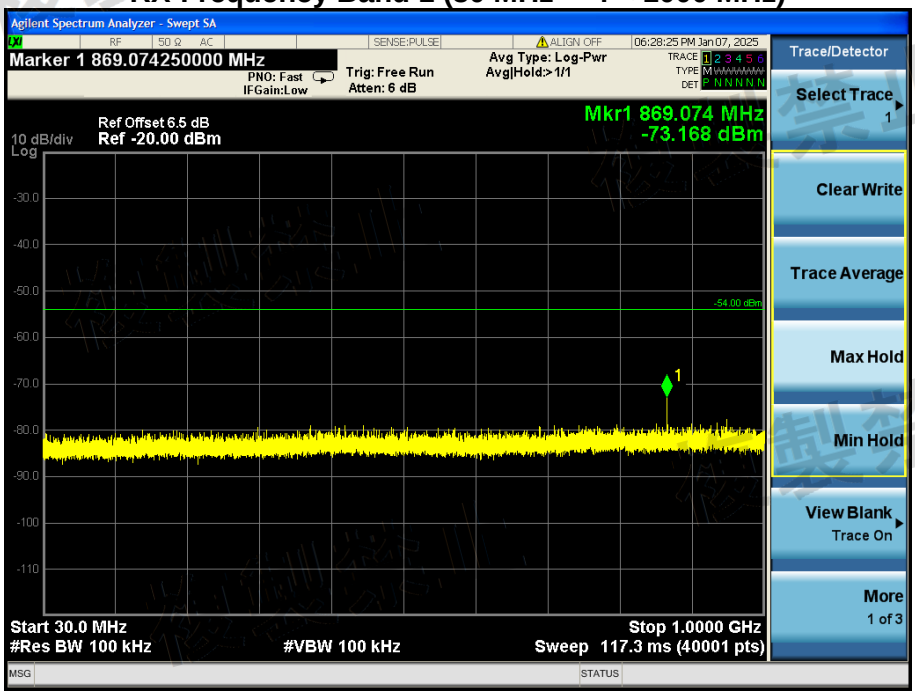
RX-Frequency Band 2 (1000 MHz ≦ f < 26000 MHz)



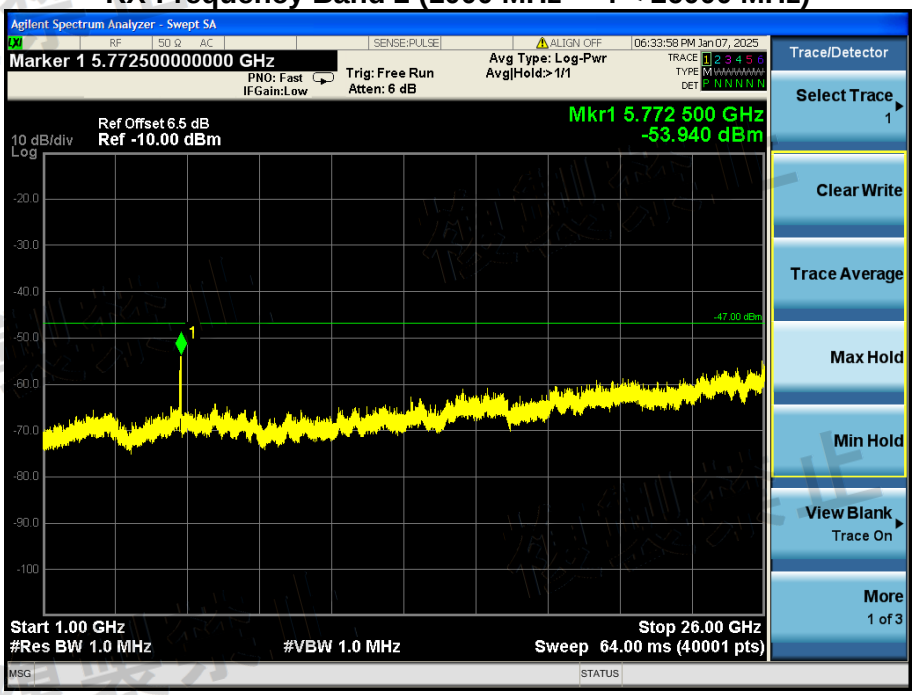
EUT：	PROFESSIONAL SCAN TOOL	Model No.:	MaxiDiag MD909 Pro
Temperature:	25°C	Test Date:	Jan. 07,2025
Humidity:	55 % RH	Tested by:	Jack Li
Atmospheric Pressure:	1013 mbar	Test Voltage	Normal Voltage
Operation Mode:	Normal Voltage-ac(80) mode		

Test channel	Test Frequency (MHz)	Test Result			Unit	Limit
		Normal Voltage	High Voltage	Low Voltage		
		3.8V DC	N/A	N/A		
(5180~5240 MHz)	869.074	-73.168	N/A	N/A	dBm	(1) Below 1 GHz : -54dBm (2) 1 GHz to 26GHz : -47dBm
	5772.500	-53.940	N/A	N/A		

RX-Frequency Band 1 (30 MHz ≦ f < 1000 MHz)



RX-Frequency Band 2 (1000 MHz ≦ f < 26000 MHz)



11 TRANSMISSION BURST LENGTH MEASUREMENT

LIMITS OF BURST LENGTH

Item	Limits
Transmission Burst	≤8ms

11.1 MEASURING INSTRUMENTS

See list of measuring instruments of this test report.

11.2 TEST PROCEDURES

1. Setting of SA is following as: RBW: 1MHz/VBW:1MHz /Sweep Mode:Single sweep/Detect mode: Positive peak/Zero Span I Sweet time: more than burst length.
2. Measure the maximum time duration of one burst length.

11.3 TEST SETUP

Spectrum Analyzer

EUT

11.4 TEST DEVIATION

There is no deviation with the original standard.

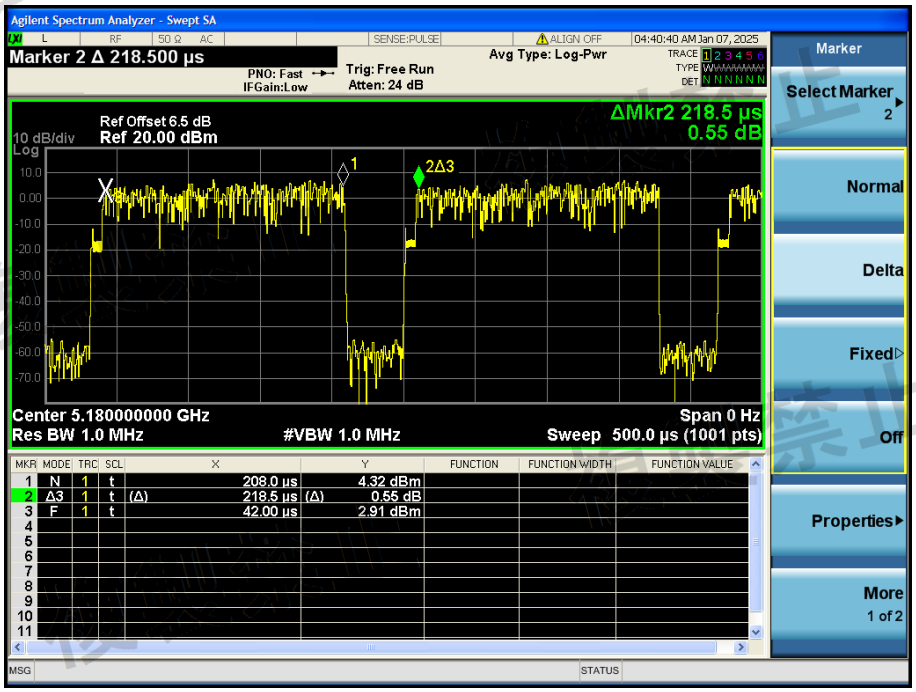
11.5 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously transmitting mode.

11.6 TEST RESULT OF TRANSMISSION BURST LENGTH

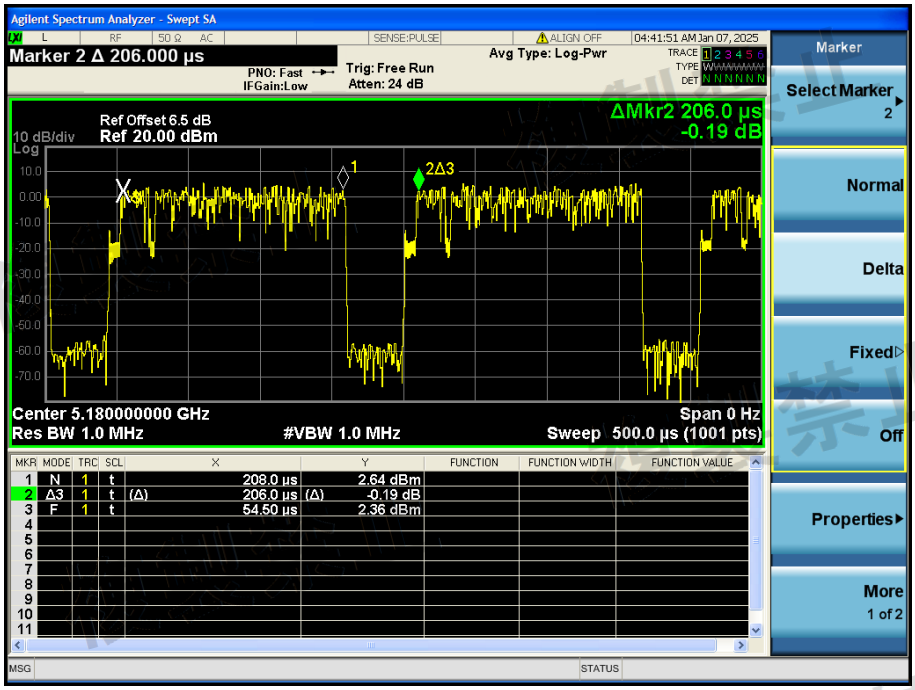
EUT：	PROFESSIONAL SCAN TOOL	Model No.:	MaxiDiag MD909 Pro
Temperature:	25°C	Test Date:	Jan. 07,2025
Humidity:	55 % RH	Tested by:	Jack Li
Atmospheric Pressure:	1013 mbar	Test Voltage	Normal Voltage
Operation Mode:	Normal Voltage-a mode		

CH36



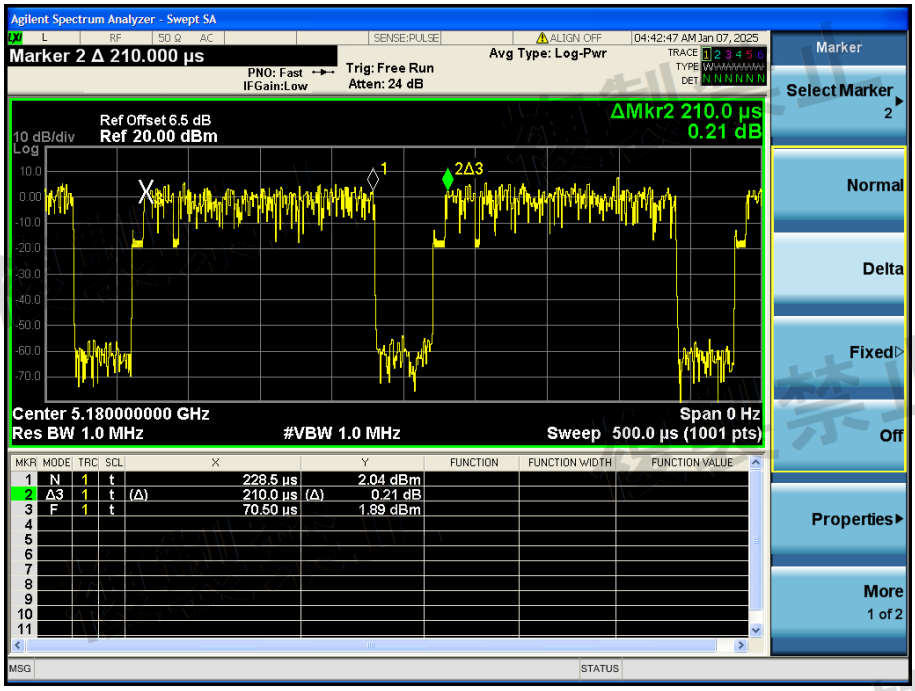
EUT：	PROFESSIONAL SCAN TOOL	Model No.:	MaxiDiag MD909 Pro
Temperature:	25^{0}C	Test Date:	Jan. 07,2025
Humidity:	55 % RH	Tested by:	Jack Li
Atmospheric Pressure:	1013 mbar	Test Voltage	Normal Voltage
Operation Mode:	Normal Voltage-N(20) mode		

CH36



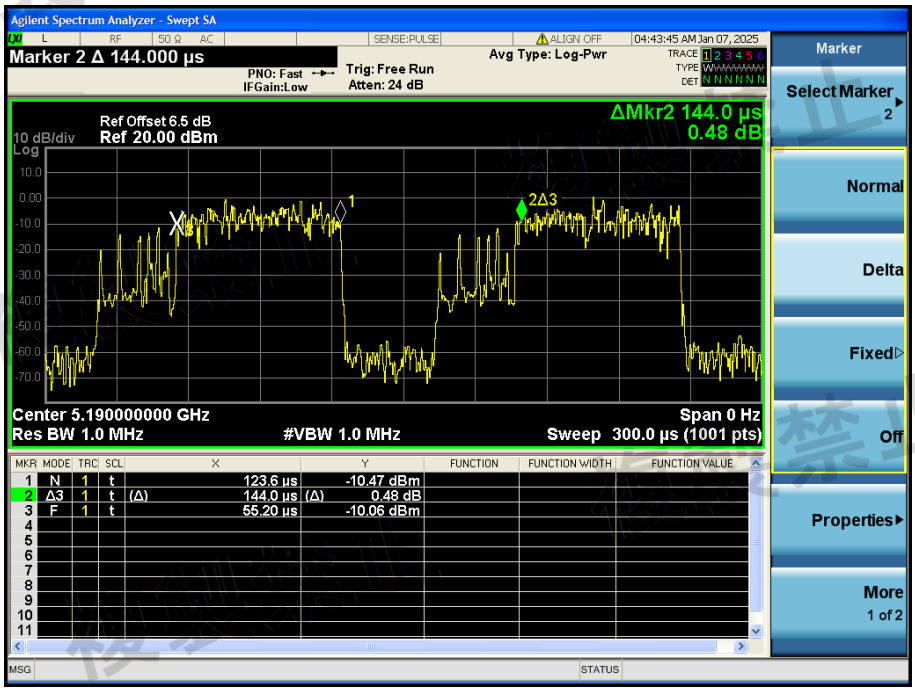
EUT：	PROFESSIONAL SCAN TOOL	Model No.:	MaxiDiag MD909 Pro
Temperature:	25°C	Test Date:	Jan. 07,2025
Humidity:	55 % RH	Tested by:	Jack Li
Atmospheric Pressure:	1013 mbar	Test Voltage	Normal Voltage
Operation Mode:	Normal Voltage-AC(20) mode		

CH36



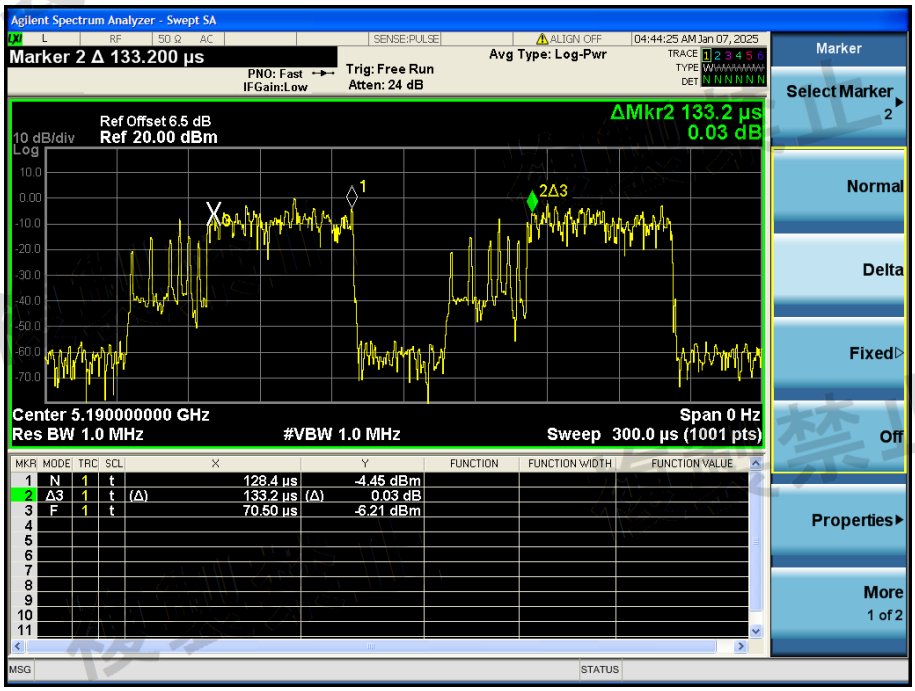
EUT：	PROFESSIONAL SCAN TOOL	Model No.:	MaxiDiag MD909 Pro
Temperature:	25°C	Test Date:	Jan. 07,2025
Humidity:	55 % RH	Tested by:	Jack Li
Atmospheric Pressure:	1013 mbar	Test Voltage	Normal Voltage
Operation Mode:	Normal Voltage-n(40) mode		

CH38



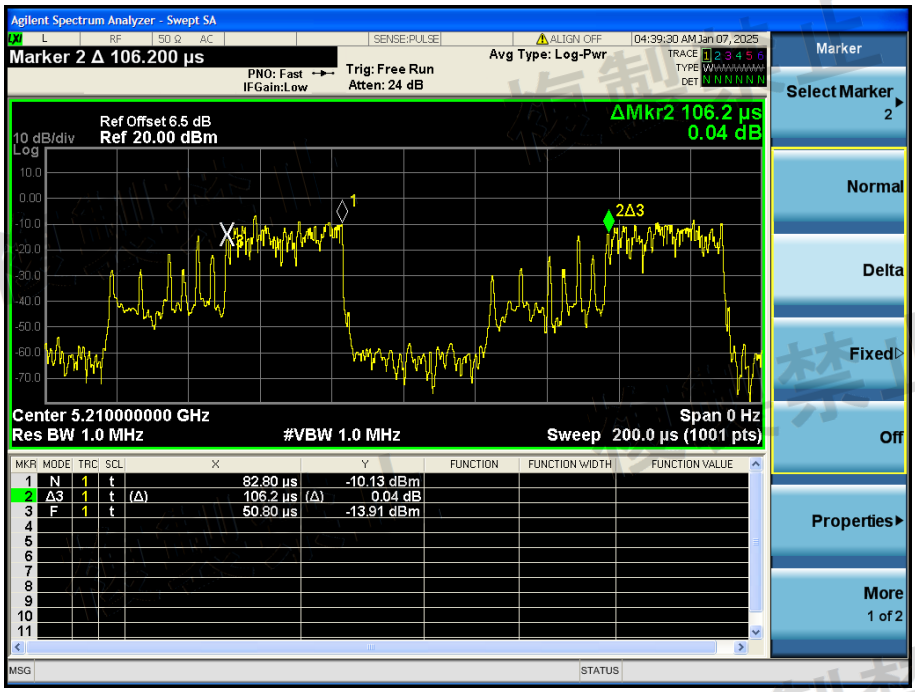
EUT：	PROFESSIONAL SCAN TOOL	Model No.:	MaxiDiag MD909 Pro
Temperature:	25°C	Test Date:	Jan. 07,2025
Humidity:	55 % RH	Tested by:	Jack Li
Atmospheric Pressure:	1013 mbar	Test Voltage	Normal Voltage
Operation Mode:	Normal Voltage-ac(40) mode		

CH38



EUT：	PROFESSIONAL SCAN TOOL	Model No.:	MaxiDiag MD909 Pro
Temperature:	25^{0}C	Test Date:	Jan. 07,2025
Humidity:	55 % RH	Tested by:	Jack Li
Atmospheric Pressure:	1013 mbar	Test Voltage	Normal Voltage
Operation Mode:	Normal Voltage-ac(80) mode		

CH42



12. RADIO INTERFERENCE PREVENTION CAPABILITY MEASUREMENT

12.1 LIMIT

Item	Limits
Identification code	≧48 bits

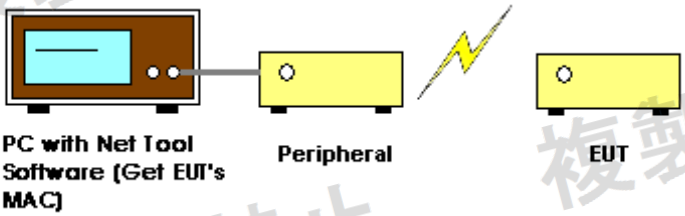
12.2 MEASURING ID CODE SOFTWARE

Item	Limits
MAC IP List	MAC Scan

12.3 TEST PROCEDURES

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

12.4 TEST SETUP LAYOUT



12.5 TEST DEVIATION

There is no deviation with the original standard.

12.6 EUT OPERATION DURING TEST

The EUT was programmed to be in normal transmitting mode.

12.7 TEST RESULT OF RADIO INTERFERENCE PREVENTION CAPABILIT

EUT：	PROFESSIONAL SCAN TOOL	Model No.:	MaxiDiag MD909 Pro
Temperature:	25^{0}C	Test Date:	Jan. 07,2025
Humidity:	55 % RH	Tested by:	Jack Li
Atmospheric Pressure:	1013 mbar	Test Voltage	Normal Voltage

MAC Address: 02: 00: 00: 00: 00: 00

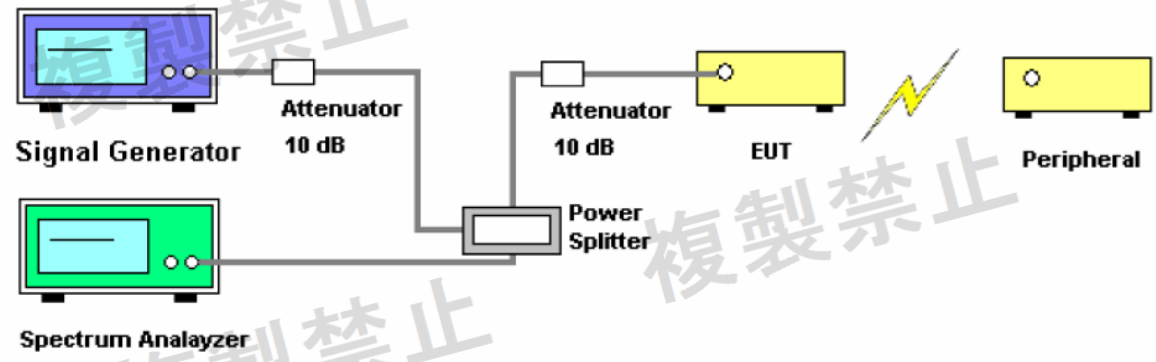
13 CARRIER SENSE CAPABILITY

Limit

EUT stop RF transmission signal after carrier inject to EUT

Test Procedure

Measurement System Diagram

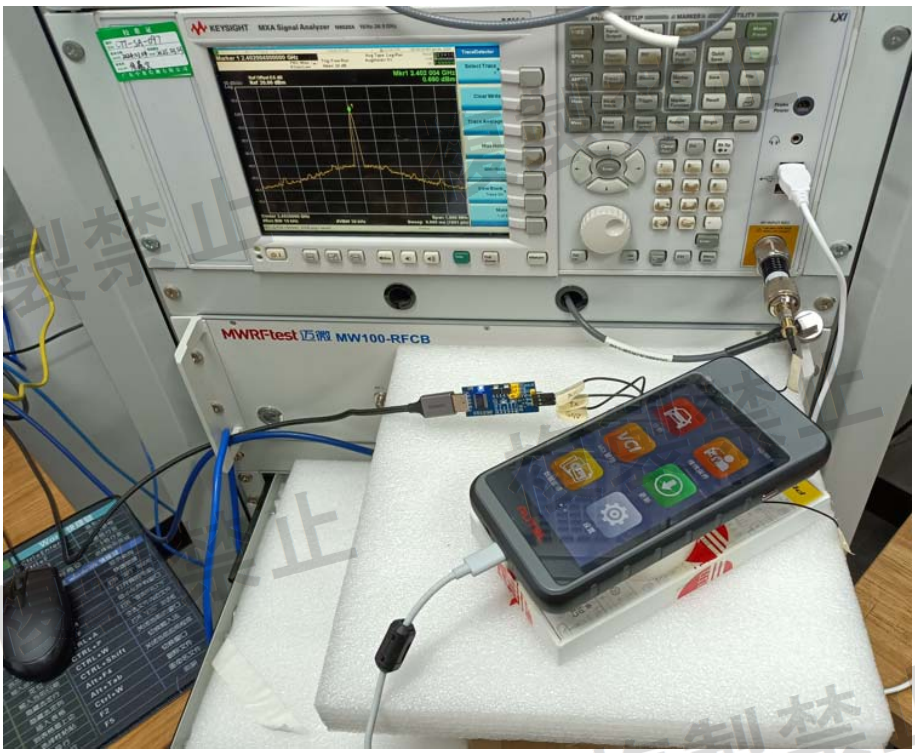


1. SG adjusted the frequency as same as the EUT transmitted signal and emitted the absence of modulation from SG and power level is (on 22.79+G-20*log(f)dBm)(G is the antenna gain, f is the test frequency).
2. turn off the RF signal of the SG.
3. EUT have transmitted the maximum modulation signal and fixed channelize.
4. Setting of SA :RBW/VBW=1MHz/1MHz,Span=50MHz,Sweep time=auto, Sweep mode=continuous, Detect mode=positive peak
5. SG RF signal on.
6. EUT shall be stop the transmitted any signal and SG RF signal off, the EUT will be continuous transmitted signal.

Result:

Mode	Normal Voltage
802.11a	OK
802.11n20	OK
802.11 n40	OK
802.11ac20	OK
802.11 ac40	OK
802.11 ac80	OK

Pin=22.79+Gr-20*log(freq_MHz)[dBm]
Limit:100mw/m eirp
Confirmed at -50dBm
Result:OK

14. EUT TEST PHOTO

Measurement Photos