TEST REPORT

Report Number.....:	**ZKT-260625L1774E-2**
Date of Test.....:	Jun. 3, 2026 to Jun. 23, 2026
Date of issue.....:	Jun. 23, 2026
Test Result .....:	PASS
Testing Laboratory.....:	**Shenzhen ZKT Technology Co., Ltd.**
Address .....:	1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China
Applicant's name .....:	**Shenzhen Chuangtong Yigou Technology Co., Ltd.**
Address .....:	22nd Floor, Tower A, Sunac Zhihui Building, Intersection of Longsheng Road & Jinglong Jianshe Road, Shangfen Community, Minzhi Sub-district, Longhua District, Shenzhen, Guangdong, P.R. China
Manufacturer's name .....:	**SHENZHEN LESHIDA ELECTRONICS CO., LTD.**
Address .....:	501, Building A1, Weiye Innovation Industrial Zone, Nanchang Baoyuan Road, Nanchang Community, Xixiang Street, Baoan District, Shenzhen
Test specification:	
Standard.....:	Article 2, Paragraph 1, Item 19-3 Article 2, Paragraph1, item 78 MIC Notice No.88 Annex 1 MIC Notice No.88 Appendix 45
Test procedure.....:	/
Non-standard test method .....:	N/A

This device described above has been tested by ZKT, and the test results show that the equipment under test (EUT) is in compliance with the Telec requirements. And it is applicable only to the tested sample identified in the report.

This report shall not be reproduced except in full, without the written approval of ZKT, this document may be altered or revised by ZKT, personal only, and shall be noted in the revision of the document.

Product name.....:	AI BOX
Trademark .....:	/
Model/Type reference.....:	Q1AS
Model difference.....:	/
Ratings.....:	Input: 5 V⎓ 1A

Testing procedure and testing location:

Testing Laboratory.....:	**Shenzhen ZKT Technology Co., Ltd.**
Address.....:	1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China
Tested by (name + signature).....:	Jim Liu
Reviewer (name + signature).....:	Jackson Fang
Approved (name + signature).....:	Lake Xie

Table of Contents

Page

1. Version 4

2.TSUMMARY OF TEST RESULTS 5

2.1 TEST FACILITY 6

2.2 MEASUREMENT UNCERTAINTY 6

3.GENERAL INFORMATION 7

3.1 GENERAL DESCRIPTION OF EUT 7

3.2 Description of test modes 8

3.3 TEST CONDITIONS 8

3.4 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED 8

3.5 DESCRIPTION OF SUPPORT UNITS (CONDUCTED MODE) 9

3.6 EQUIPMENTS LIST FOR ALL TEST ITEMS 10

3.7 Testing software 10

4.RF SHIELDING METHOD 11

5.TEST RESULTS 12

5.1 FREQUENCY ERROR MEASUREMENT 12

5.2 Occupied Bandwidth and Spread Bandwidth MEASUREMENT 13

5.3 Unwanted Emission Strength + Out-Band Leakage Power MEASUREMENT 14

5.4 ANTENNA POWER and tolerance MEASUREMENT 16

5.5 secondary radiated emissions MEASUREMENT 18

5.6 Transmitter Burst Length Measurement 20

5.7 Interference Prevention Function MEASUREMENT 21

5.8. Carrier Sense Capability MEASUREMENT 22

5.9 Adjacent Channel Emitted Power Measurement 24

6. APPENDIX 5.2G WIFI 25

7. EUT TEST PHOTO 118

8. EUT Constructional Details 118

1. Version

Report No.	Version	Description	Approved
ZKT-260625L1774E-2	Rev.01	Initial issue of report	Jun. 23, 2026

複製禁止

2.TSUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

Part	Description of Test	Result
1	Frequency Error	Complies
2	Occupied Bandwidth (99%)	Complies
3	Unwanted Emission Intensity + Out-Band Leakage Power	Complies
4	Antenna Power and Tolerance	Complies
5	Secondary Radiated Emissions	Complies
6	Transmitter Burst Length	Complies
7	Interference Prevention Function	Complies
8	Carrier Sense Capability	Complies
9	Adjacent Channel Emitted Power	Complies
10	Construction Protection Confirmation	Complies
11	Spread Bandwidth	Complies
12	Dynamic Frequency Selection	N/A

NOTE:

(1)Test method reference: MIC Notice No.88 Appendix No.45

(2)" N/A" denotes test is not applicable in this Test Report

2.1 TEST FACILITY

Shenzhen ZKT Technology Co., Ltd.
Add. :1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an Distric Shenzhen, China

FCC Test Firm Registration Number: 927491

Designation Number: CN1431

IC Registered No.: 27033

CAB identifier: CN0110

Designation Number: CN0110

2.2 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	Conducted Emission Test	±3.2dB
2	Radiated Emission Test	±4.7dB
3	RF power, conducted	±0.16dB
4	Spurious emissions, conducted	±0.21dB
5	All emissions, radiated(<1G)	±4.68dB
6	All emissions, radiated(>1G)	±5.0dB
7	frequency error ppm	±0.5ppm
8	Occupied bandwidth	±1.8dB

3.GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Product Name:	AI BOX
Test Model No.:	Q1AS
Hardware Version:	V1.0
Software Version:	V1.0
Operation Frequency	5180-5240MHz
Channel Bandwidth	IEEE 802.11a: 20MHz IEEE 802.11n: 20MHz / 40MHz IEEE 802.11ac: 20MHz / 40MHz
Modulation Technology	Orthogonal Frequency Division Muilplexing(OFDM)
Modulation Type	16QAM, 64QAM, 256QAM, BPSK, QPSK
Rated power:	1mW/MHz
Antenna Type	PCB Antenna
Antenna Gain	0.6dBi
Channel Number	4 Channel for 20MHz bandwidth(5180-5240MHz) 2 Channel for 40MHz bandwidth(5190-5230MHz)
Power supply:	Input: 5 V⎓1A

Note:

1. Only the WIFI was tested according the standard requirement.

2. Please refer to Appendix I for the photographs of the EUT. For more details, please refer to the User's manual of the EUT.

Channel List				
Frequency Band	Channel No.	Frequency(MHz)	Channel No.	Frequency(MHz)
5180~5240MHz	36	5180	44	5220
	38	5190	46	5230
	40	5200	48	5240
For 802.11a/n(HT20)/ac(VHT20), Channel 36, 40 and 48 were tested. For 802.11n(HT40)/ac(VHT40), Channel 38 and 46 were tested.				

3.2 Description of test modes

Software used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

The EUT was tuned to a low, middle, and high channel for all tests. For all test case pre/scans were completed in all Modes to determine worst case levels. test software RTL_tool used for controlling the EUT.

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 power parameters of OFDM.

Test Software: Adb V1.0	
Test Mode	*Power Level*
802.11a/n/ ac20 (20MHz)	*Default*
802.11n/ ac40 (40MHz)	*Default*

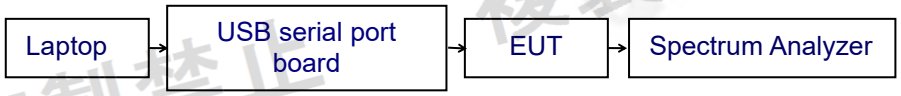
3.3 TEST CONDITIONS

Supply Voltage			
	Input Voltage (Vdc)	Voltage at the input of the RF Circuit (Vdc)	Tolerance (%)
Normal	5	3.3	
+10%	5.5	3.3	0
-10%	4.5	3.3	0

Others	
Temperature (°C)	25.4
Relative humidity	51 %.
ATM Pressure:	1019 mbar

Note 1: When the input voltage is reduced or increased by 10%, the regulator voltage changes of less than 1%.So the following test items are conducted in the normal voltage.

3.4 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



3.5 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.	Series No.	Note
E-1	Laptop	Lenovo (Beijing) Co., Ltd	ThinkPad E480	/	AE
E-2	USB serial port board	/	/	/	AE

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”.

3.6 EQUIPMENTS LIST FOR ALL TEST ITEMS

Item	Equipment	Manufacturer	Type No.	Serial No.	Firmware Version	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	KEYSIGHT	N9020A	MY55370835	A.17.05	Sep. 20, 2025	Sep. 19, 2026
2	Spectrum Analyzer (10kHz-39.9GHz)	R&S	FSV40-N	100363	1.71 SP2	Sep. 20, 2025	Sep. 19, 2026
3	Test Cable	N/A	RF-01	N/A	N/A	May. 25, 2026	May. 24, 2027
4	Test Cable	N/A	RF-02	N/A	N/A	May. 25, 2026	May. 24, 2027
5	Test Cable	N/A	RF-03	N/A	N/A	May. 25, 2026	May. 24, 2027
6	ESG Signal Generator	Agilent	E4421B	N/A	B.03.84	Sep. 19, 2025	Sep. 18, 2026
7	Signal Generator	Agilent	N5182A	N/A	A.01.87	Sep. 20, 2025	Sep. 19, 2026
8	Magnetic Field Probe Tester	Narda	ELT-400	0-0344/M-1752	N/A	Sep. 25, 2025	Sep. 24, 2026
9	SHIELD BOX	TESCOM	TC-5970C	5970C015553	N/A	Dec. 18, 2025	Dec. 17, 2026
10	Wideband Radio Communication Test	R&S	CMW500	106504	V 3.7.22	Sep. 28, 2025	Sep. 27, 2026
11	MWRF Power Meter Test system	MW	MW100-RFCB	N/A	N/A	Sep. 19, 2025	Sep. 18, 2026
12	D.C. Power Supply	LongWei	TPR-6405D	N/A	N/A	\	\
13	RF Software	MW	MTS8310	V2.0.0.0	N/A	\	\

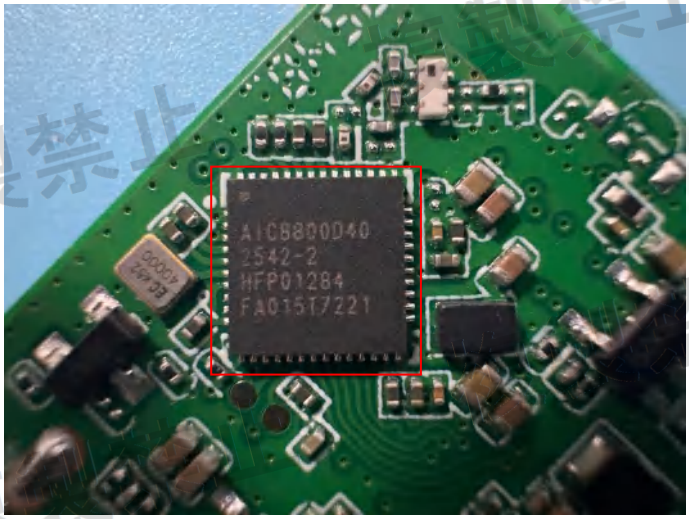
Measuring Equipment CalibrationInformatione		
Used	Calibration Company Abbreviatione	Full Name of-calibration company
☒	/	GUANGZHOU NEM METROLOGY&TEST TECHNOLOGY CO.,LTD.
☒	/	/
Calibration Information (Article 24-2,Paragraph 4 ofthe Radio Act)		
☐	a)Calibration Conducted by the National Institute of Information and Connicqions Tesignay (NICT) or a designatde calibration agency under Article 102-18-1 of the Radio Act.	
☐	b) Calibration conducted based on the regulations of Article 135 or 144 of the Measurement Act.	
☒	(c) Calibration conducted in foreign countries, which is equivalent to calibration conducted by the NICT or a desiqnated calibration agency under Article 102-18-1 of the Radio Act.	
☐	(d)Calibration, etc. conducted by using measuring instruments and other facilities listed at the bottom of appended table 3 ofthe Radio Act, which is to have been calibrated as described in (a) through (c) above.	

3.7 Testing software

Project	**Software name**	**Edition**
RF Conducted	MTS 8310	2.0.0.0

4.RF SHIELDING METHOD

All RF control circuits are integrated in the IC, which is a QFN package. The number of pins is greater than 10, and the spacing between pins is less than 1mm.
Note:-Number of pins:56>10
-Spacing between pins:0.3mm<1mm



5.TEST RESULTS

5.1 FREQUENCY ERROR MEASUREMENT

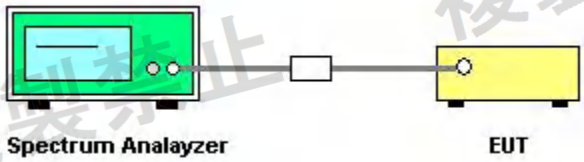
5.1.1 LIMIT

Item	Limits
Frequency Tolerance	±20ppm

5.1.2 TEST PROCEDURES

1. Frequency accuracy of SA shall be less than 10% of limits tolerance (5ppm)
2. Setting of SA is following as: RB:10kHz / VB:10kHz / SPAN: 1MHz / AT: 30dB / Ref: 20dBm
3. Center Frequency: The center frequency of testing for EUT
4. Sweep time: Auto
5. Sweep mode: Continuous sweep
6. Detect mode: Positive peak
7. Mark function: Frequency Counter (Resolution 100Hz)
8. EUT have transmitted absence of modulation signal and fixed channelize. f is using the mark cursor to mark the peak frequency value，fc is declaring of channel frequency. Then the frequency error formula is $(fc-f)/fc\times10^6$ ppm and the limit is less than ±20ppm

5.1.3 TEST SETUP LAYOUT



5.1.4 TEST DEVIATION

There is no deviation with the original standard.

5.1.5 EUT OPERATION DURING TEST

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

5.1.6 TEST RESULTS

Please refer to APPENDIX 5.2G WIFI

5.2 Occupied Bandwidth and Spread Bandwidth MEASUREMENT

5.2.1 LIMIT

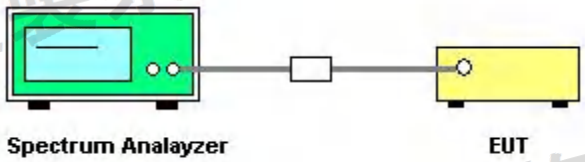
Item	Limits		
Occupied Bandwidth	Modulation	Bandwidth System	Limits
	DSSS	20MHz system	<18MHz
	OFDM	20MHz system	<20MHz
		40MHz system	<40MHz
		80MHz system	<80MHz

Item	Limits
Spread Bandwidth	≥500kHz

5.2.2 TEST PROCEDURES

1. Setting of SA is following as: RB: 100kHz (99%BW)/300KHz(90%BW) / VB:300kHz / SPAN: 40/80/160MHz / AT: Auto Ref: Auto / Sweep time: Auto / Sweep Mode: Continuous sweep / Detect mode: Positive peak / Trace mode: Max hold
2 . EUT have transmitted the maximum modulation signal and fixed channelize (For DSSS or OFDM Device) or continuous maximum power of hopping mode(For FHSS Device).
SA set to 99% of Occupied bandwidth to measure occupied bandwidth.
3. SA set to 90% of Occupied bandwidth to measure Spread Spectrum Bandwidth and must greater than 500kHz.

5.2.3 TEST SETUP LAYOUT



5.2.4 TEST DEVIATION

There is no deviation with the original standard.

5.2.5 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously transmitting mode.

5.2.6 TEST RESULTS

Please refer to APPENDIX 5.2G WIFI

5.3 UNWANTED EMISSION STRENGTH + OUT-BAND LEAKAGE POWER MEASUREMENT

5.3.1 LIMIT

* Attachment 1 (Unwanted Emission Strength)

W52			
20MHz system		40MHz system	80MHz system
OBW : 18MHz or less	OBW : 18 - 20 MHz		
5,142 MHz or less : 2.5 μW/MHz	5,142 MHz or less : 2.5 μW/MHz	5,141.6 MHz or less : 2.5 μW/MHz	5,123.2 MHz or less : 2.5 μW/MHz
5,142 - 5,150 MHz : 15 μW/MHz	5,142 - 5,150 MHz : 15 μW/MHz	5,141.6 - 5,150 MHz : 15 μW/MHz	5,123.2 - 5,150 MHz : 15 μW/MHz
	5,250 - 5,250.2 MHz : $10^{1-(8/3)(f-9.75)}$mW/MHz		
5,250 - 5,251 MHz : $10^{1-(f-9)}$mW/MHz	5,250.2 - 5,251 MHz : $10^{1-(f-9)}$mW/MHz	5,250 - 5,251 MHz : $10^{-(f-20)+log(1/2)}$mW/MHz	5,250 - 5,251 MHz : $10^{-(f-40)+log(1/4)}$mW/MHz
5,251 - 5,260 MHz : $10^{1-(8/90)(f-11)}$mW/MHz	5,251 - 5,260 MHz : $10^{1-(8/90)(f-11)}$mW/MHz	5,251 - 5,270 MHz : $10^{-(8/190)(f-21)-1+log(1/2)}$mW/MHz	5,251 - 5,290 MHz : $10^{-(8/390)(f-41)-1+log(1/4)}$mW/MHz
5,260 - 5,266.7 MHz : $10^{1.8-(6/50)(f-20)}$mW/MHz	5,260 - 5,266.7 MHz : $10^{1.8-(6/50)(f-20)}$mW/MHz	5,270 - 5,278.4 MHz : $10^{-(3/50)(f-40)-1.8+log(1/2)}$mW/MHz	5,290 - 5,296.7 MHz : $10^{-(3/100)(f-80)-1.8+log(1/4)}$mW/MHz
5,266.7 MHz or more : 2.5 μW/MHz	5,266.7 MHz or more : 2.5 μW/MHz	5,278.4 MHz or more : 2.5 μW/MHz	5,296.7 MHz or more : 2.5 μW/MHz
f = MHz, Difference from 5240 (MHz)	f = MHz, Difference from 5240 (MHz)	f = MHz, Difference from 5230 (MHz)	f = MHz, Difference from 5210 (MHz)

20MHz system	40MHz system	80MHz system
5,142 MHz or less : 0.5 μW/MHz	5,141.6 MHz or less : 0.5 μW/MHz	5,123.2 MHz or less : 0.5 μW/MHz
5,142 - 5,150 MHz : 3 μW/MHz	5,141.6 - 5,150 MHz : 3 μW/MHz	5,123.2 - 5,150 MHz : 3 μW/MHz
5,250 - 5,250.2 MHz : $0.2 \times 10^{1-(8/3)(f-9.75)}$mW/MHz		
5,250.2 - 5,251 MHz : $0.2 \times 10^{1-(f-9)}$mW/MHz	5,250 - 5,251 MHz : $0.2 \times 10^{-(f-20)+log(1/2)}$mW/MHz	5,250 - 5,251 MHz : $0.2 \times 10^{-(f-40)+log(1/4)}$mW/MHz
5,251 - 5,260 MHz : $0.2 \times 10^{1-(8/90)(f-11)}$mW/MHz	5,251 - 5,270 MHz : $0.2 \times 10^{-(8/190)(f-21)-1+\log(1/2)}$mW/MHz	5,251 - 5,290 MHz : $0.2 \times 10^{-(8/390)(f-41)-1+\log(1/4)}$mW/MHz
5,260 - 5,266.7 MHz : $0.2 \times 10^{1.8-(6/50)(f-20)}$mW/MHz	5,270 - 5,278.4 MHz : $0.2 \times 10^{-(3/50)(f-40)-1.8+\log(1/2)}$mW/MHz	5,290 - 5,296.7 MHz : $0.2 \times 10^{-(3/100)(f-80)-1.8+\log(1/4)}$mW/MHz
5,266.7 - 5,365 MHz : 0.5 μW/MHz	5,278.4 - 5,400 MHz : 0.5 μW/MHz	5,296.7 - 5,480 MHz : 0.5 μW/MHz
*5,365 MHz or more : 0.5 μW/MHz	*5,400 MHz or more : 0.5 μW/MHz	*5,480 MHz or more : 0.5 μW/MHz
f = MHz, Difference from 5240 (MHz)	f = MHz, Difference from 5230 (MHz)	f = MHz, Difference from 5210 (MHz)

The limit value is defined by the E.I.R.P.

5.3.2 MEASURING INSTRUMENTS AND SETTING

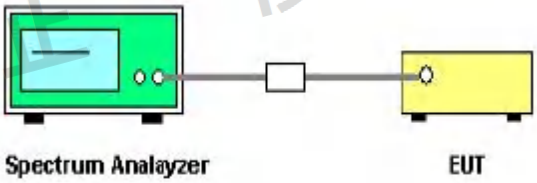
Please refer to section 3.6 in this report. The following table is the setting of Spectrum Analyzer.

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

5.3.3 TEST PROCEDURES

1. EUT have transmitted the maximum modulation signal and fixed channelize.
2. Setting of SA is following as: Below 1GHz RB:1MHz / VB:1MHz
Above 1GHz RB:1MHz / VB:1MHz / AT: 10dB Ref: 0dBm / Sweep time: Auto
Sweep Mode: Continuous sweep / Detect mode: Positive peak
Trace mode: Max hold

5.3.4 TEST SETUP LAYOUT



5.3.5 TEST DEVIATION

There is no deviation with the original standard.

5.3.6 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously transmitting mode.
Add the antenna gain and line loss to the spectrometer compensation value during testing

5.3.7 TEST RESULT

Please refer to APPENDIX 5.2G WIFI

5.4 ANTENNA POWER AND TOLERANCE MEASUREMENT

5.4.1 LIMIT

Item	W52 Limits			
Antenna Power	BAND	20MHz	40MHz	80MHz
	Output power	2mW/MHz	1mW/MHz	0.5mW/MHz
	EIRP	2mW/MHz	1mW/MHz	0.5mW/MHz
Antenna Power tolerance	+20%, -80% (Base on manufacturer declare antenna power density)			

W56 Limits					
item	20MHz system		40MHz system	80MHz system	160MHz system
Antenna Pwer	DSSS,etc	OFDM	OFDM	OFDM	OFDM
	10mW/MHz	10mW/MHz	5mW/MHz	2.5mW/MHz	1.25mW/MHz
Antenna power Tolerance	+50%, -50%				
EIRP	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	1.25mW/MHz: with TPC 0.625mW/MHz: without TPC

5.4.2 MEASURING INSTRUMENTS AND SETTING

Please refer to section 5 in this report. The following table is the setting of Spectrum Analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
RB / VB	1 MHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

5.4.3 TEST PROCEDURES

1. The EUT was directly connected to the Power meter

2. Antenna Power Error is definition that actual measure antenna power tolerance between + 20% to - 80% for W52, + 50% to - 50% for W56 power range that base on manufacturer declare the conducted power density.

5.4.4 TEST SETUP LAYOUT

5.4.5 EST DEVIATION

There is no deviation with the original standard.

5.4.6 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously transmitting mode.

5.4.7 TEST RESULT

PLEASE REFER TO THE APPENDIX A.2 FOR 5G WIFI RF TEST DATA.

5.5 SECONDARY RADIATED EMISSIONS MEASUREMENT

5.5.1 LIMIT

Item	Limits
RX Spurious Emission:	≦4nW for below 1GHz
	≦20nW for above 1GHz

5.5.2 MEASURING INSTRUMENTS AND SETTING

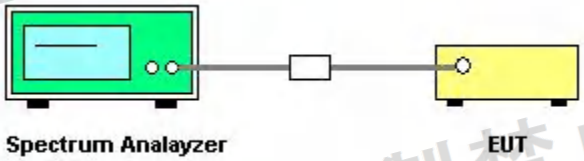
Please refer to section 3.6 in this report. The following table is the setting of Spectrum Analyzer.

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

5.5.3 TEST PROCEDURES

1. EUT have the continuous reception mode and fixed only one channelize.
2. Setting of SA is following as RB / VB: 100 kHz (below 1GHz emissions) / 1 MHz (above 1GHz emissions) /
AT: 10dB / Ref: 0dBm / Sweep time: Auto / Sweep Mode: Continuous sweep / Detect mode: Positive peak / Trace mode: Max hold
3. 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
4. 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
5. 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.

5.5.4 TEST SETUP LAYOUT



5.5.5 TEST DEVIATION

There is no deviation with the original standard.

5.5.6 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously reception mode.

5.5.7 TEST RESULT

Please refer to APPENDIX 5.2G WIFI

5.6 TRANSMITTER BURST LENGTH MEASUREMENT

5.6.1 LIMIT

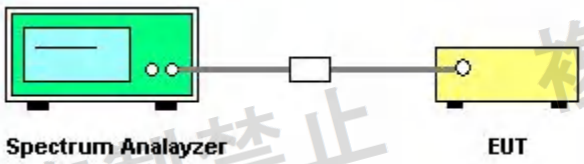
Item	Limits
Transmitter Burst Length	≤8ms

5.6.2 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
Center frequency	Test frequency
Sweep bandwidth	0Hz
Resoluble bandwidth	1MHz
Video bandwidth	equivalent to resoluble bandwidth
Sweep Time	Minimum time to assure measuring accuracy
Y-axis scale	10dB/Div.
Detection mode	Positive peak
Trigger condition	Rising up of level

5.6.3 TEST SETUP LAYOUT



5.6.4 TEST DEVIATION

There is no deviation with the original standard.

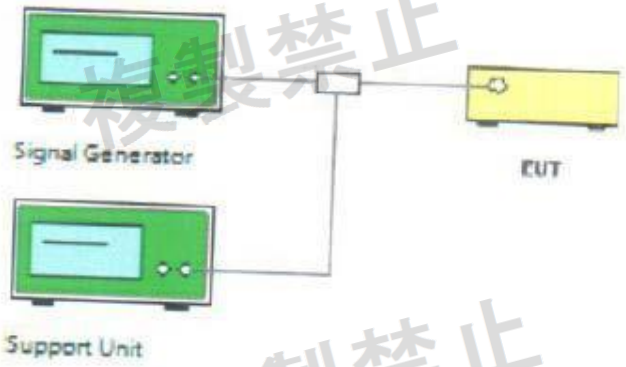
5.6.5 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously transmitting mode.

5.6.6 RESULTS

Please refer to APPENDIX 5.2G WIFI

5.7 INTERFERENCE PREVENTION FUNCTION MEASUREMENT

Test condition:	Test diffusion code and modulate with standard coding test signal
Test setup:	
Test Procedures:	1. The EUT continuous connected with support unit. 2. Signal generator transmitted interference signal to the EUT. 3. Check the EUT must be automatic cessation of transmitting
Test Instruments:	Refer to section 3.2 for details
Test results:	Pass Transmitter: The transmitting mode (the identification code is more than 48 bits) of EUT is on normal operating, the interference prevention function is good. Receiver: The transmitting mode of EUT is on normal operating, the interference prevention function is good.

WIFI Device Address: 20:DA:20:35:21:E1

5.8. CARRIER SENSE CAPABILITY MEASUREMENT

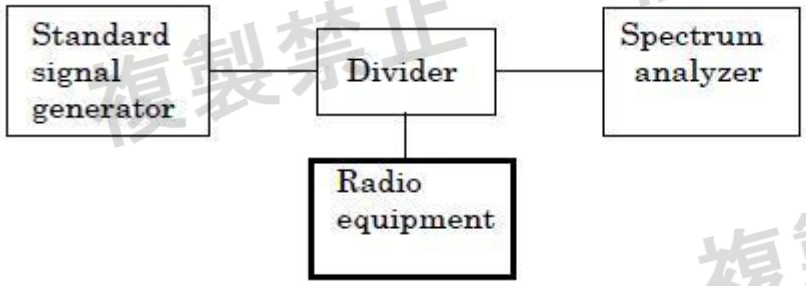
5.8.1 LIMIT

EUT stop RF transmission signal after carrier inject to EUT

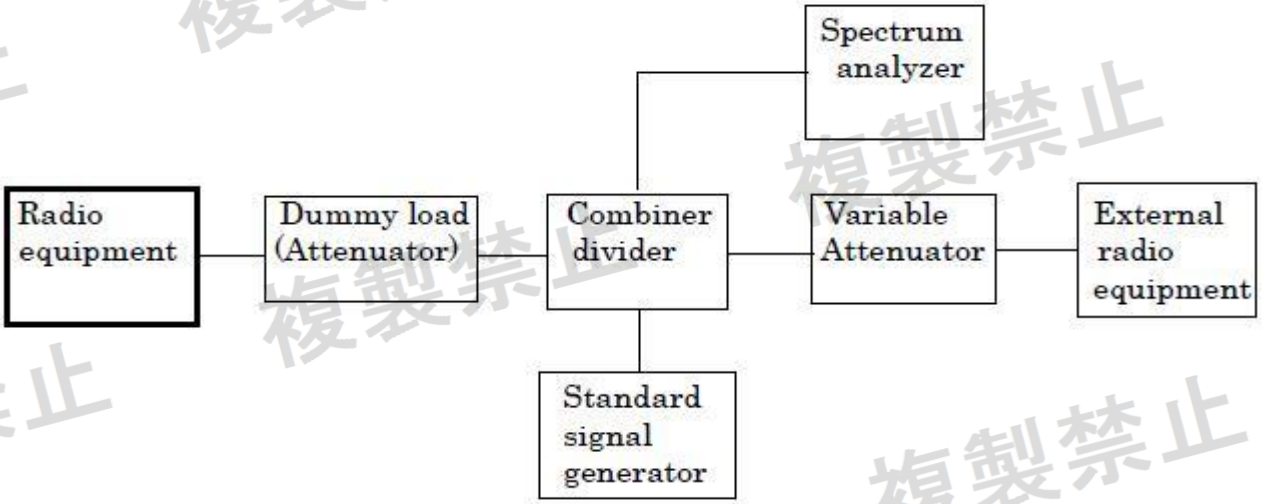
5.8.2 TEST PROCEDURE

System Diagram

(1) Test performed with the radio equipment to be tested only



(2) Test performed using the external radio equipment



Test procedure

(1) Test performed with the radio equipment to be tested only

A. Set the standard signal generator in non-transmission condition and the radio equipment to be tested in transmission condition, and confirm transmission of radiowave by means of the spectrum analyzer.

B. Set the radio equipment to be tested in receiving condition.

C. Set the standard signal generator in transmission condition and the radio equipment to be tested in transmission condition, and confirm non-transmission of radiowave by means of the spectrum analyzer.

(2) Test performed using the external radio equipment

A. Set the standard signal generator in non-transmission condition.

B. Connect the radio equipment to be tested with the external equipment by means of the line and confirm transmission of radiowave of test frequency by means of the spectrum analyzer.

C. Set the radio equipment to be tested in receiving condition.

D. Set the standard signal generator in transmission condition and the radio equipment to be tested in transmission condition, and confirm non-transmission of radio wave by means of the spectrum analyzer.

Note: 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).

5.8.3 TEST RESULT

Test Mode	Test Result
802.11a	Pass
802.11n(HT20)	Pass
802.11ac(VHT20)	Pass
802.11n(HT40)	Pass
802.11ac(VHT40)	Pass

Note: 1.this test item only applies to those modes with bandwidth greater than 20MHz;
after a carrier signal 22.79+Gr-20*log(f)[dBm] was injected into EUT, it stopped transmission.

2. The EUT has three carriers in the test

5.9 ADJACENT CHANNEL EMITTED POWER MEASUREMENT

5.9.1 LIMIT

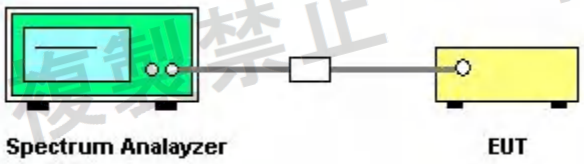
<table>
<tr><td rowspan="2">Adjacent Channel Emitted Power</td><td>OBW ≦ 18MHz
Fc ± 20MHz
±9MHz BW : -25dBc</td><td>18MHz < OBW ≦ 20MHz
Fc ± 20MHz
±10MHz BW : -25dBc</td><td>Fc ± 40MHz
±20MHz BW : -25dBc</td><td rowspan="2">Fc ± 80MHz
±40MHz BW : -25dBc</td></tr>
<tr><td>OBW ≦ 18MHz
Fc ± 40MHz
±9MHz BW : -40dBc</td><td>18MHz < OBW ≦ 20MHz
Fc ± 40MHz
±10MHz BW : -40dBc</td><td>Fc ± 80MHz
±20MHz BW : -40dBc</td></tr>
</table>

5.9.2 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
Center frequency	Frequency indicated in the test procedure
Sweep frequency width	18MHz
Resoluble bandwidth	300kHz
Video bandwidth	300kHz
Y-axis scale	10dB/Div.
Input level	Value to be maximum dynamic range
Data points	More than 400 points
Sweep mode	Continuous sweep
Detection mode	Sample (Positive peak in case of burst wave)

5.9.3 TEST SETUP LAYOUT



5.9.4 TEST DEVIATION

There is no deviation with the original standard.

5.9.5 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously transmitting mode.

5.9.6 TEST RESULTS

Please refer to APPENDIX 5.2G WIFI

6. APPENDIX 5.2G WIFI

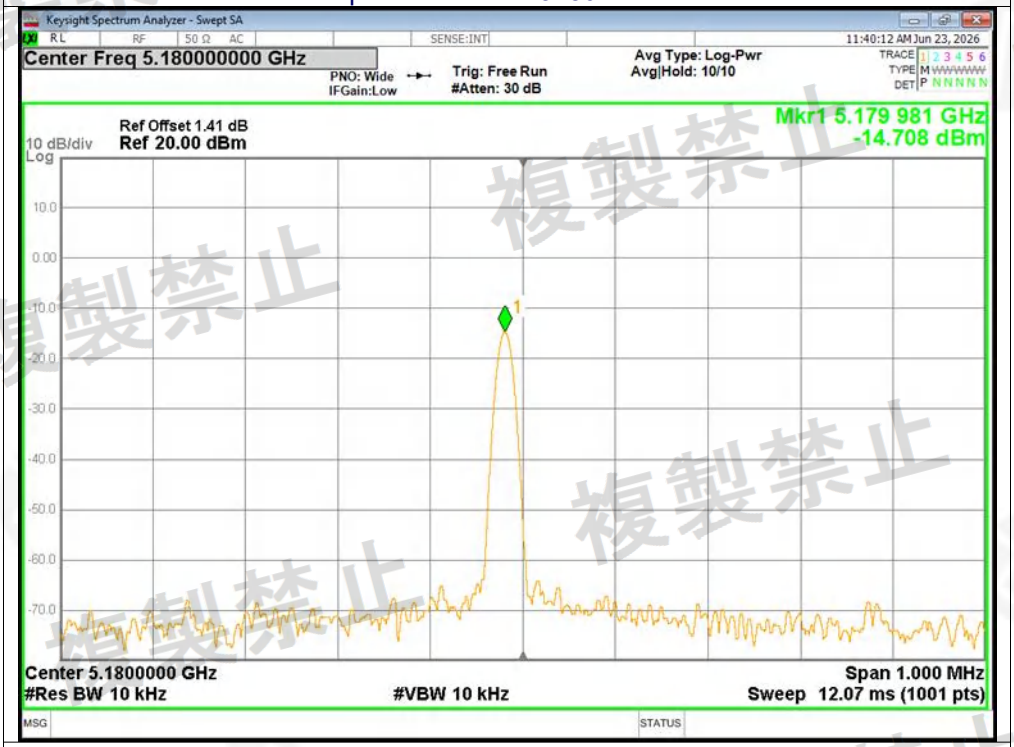
Frequency Error

Frequency (MHz)	Antenna	Measured Frequency (MHz)	Frequency Error (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
5180	Ant1	5179.981	-19000	-3.67	20	Pass
5200	Ant1	5199.981	-19000	-3.65	20	Pass
5240	Ant1	5239.98	-20000	-3.82	20	Pass
5190	Ant1	5189.983	-17000	-3.28	20	Pass
5230	Ant1	5229.98	-20000	-3.82	20	Pass

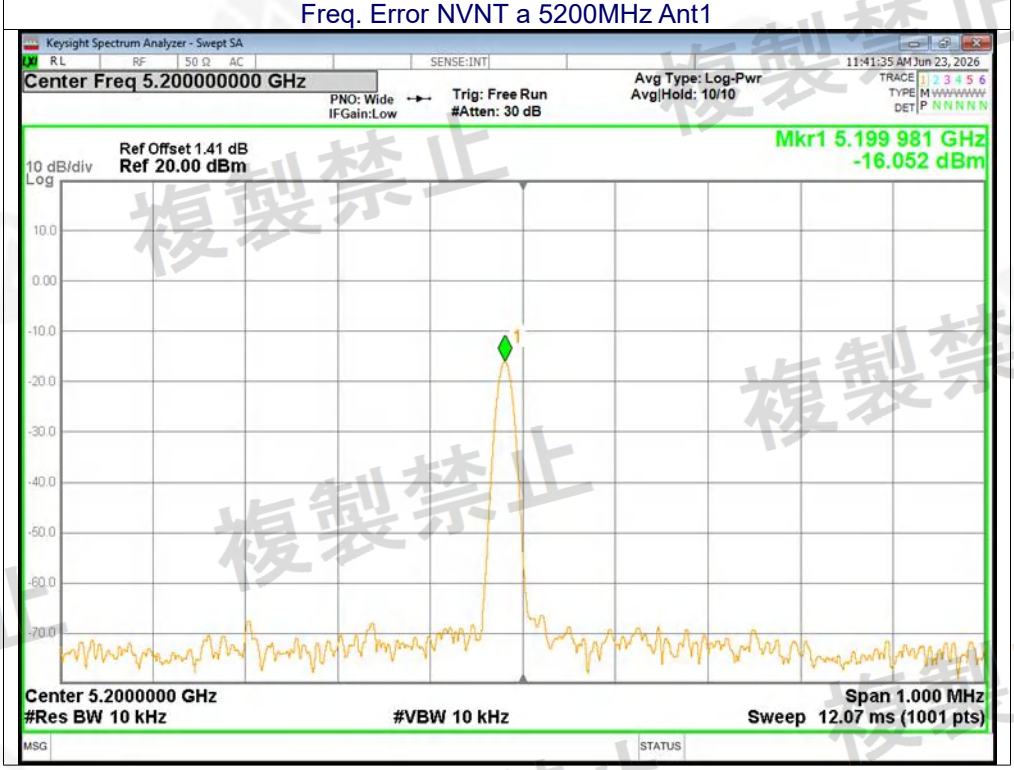
複製禁止

Test Graphs

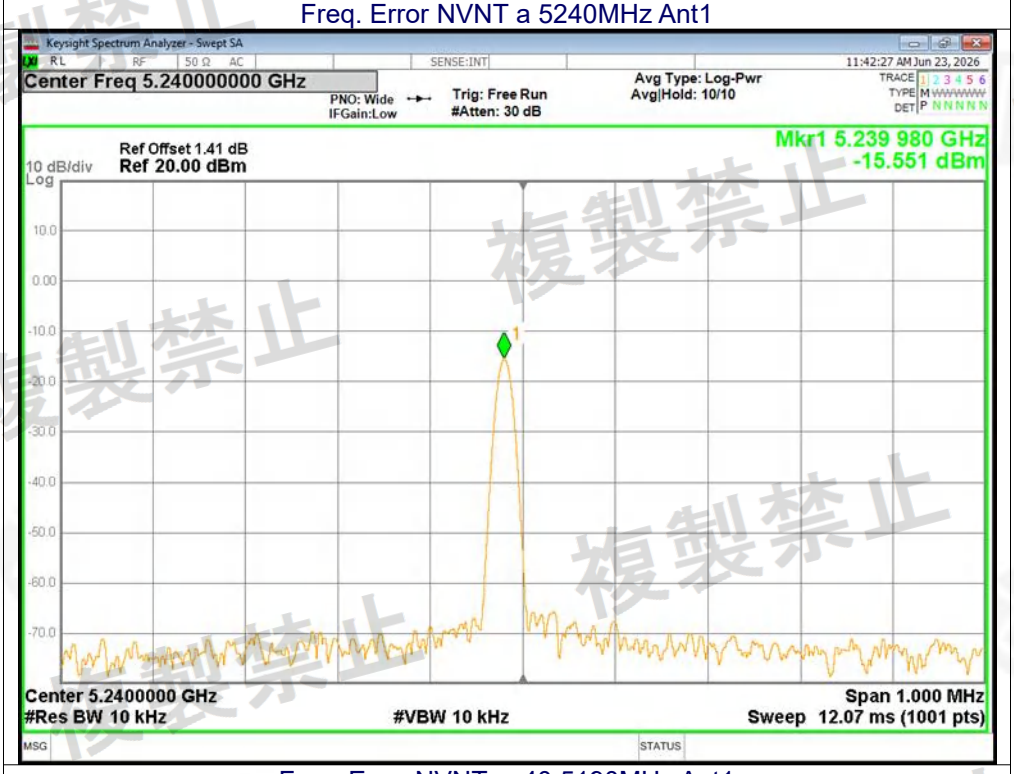
Freq. Error NVNT a 5180MHz Ant1



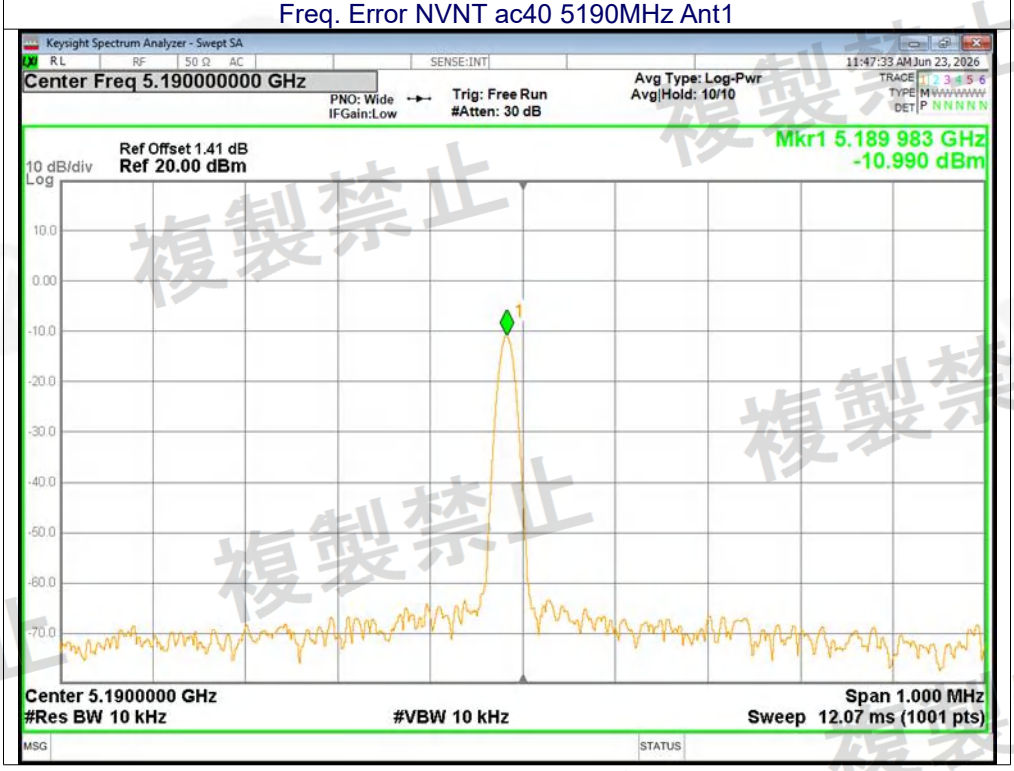
Freq. Error NVNT a 5200MHz Ant1



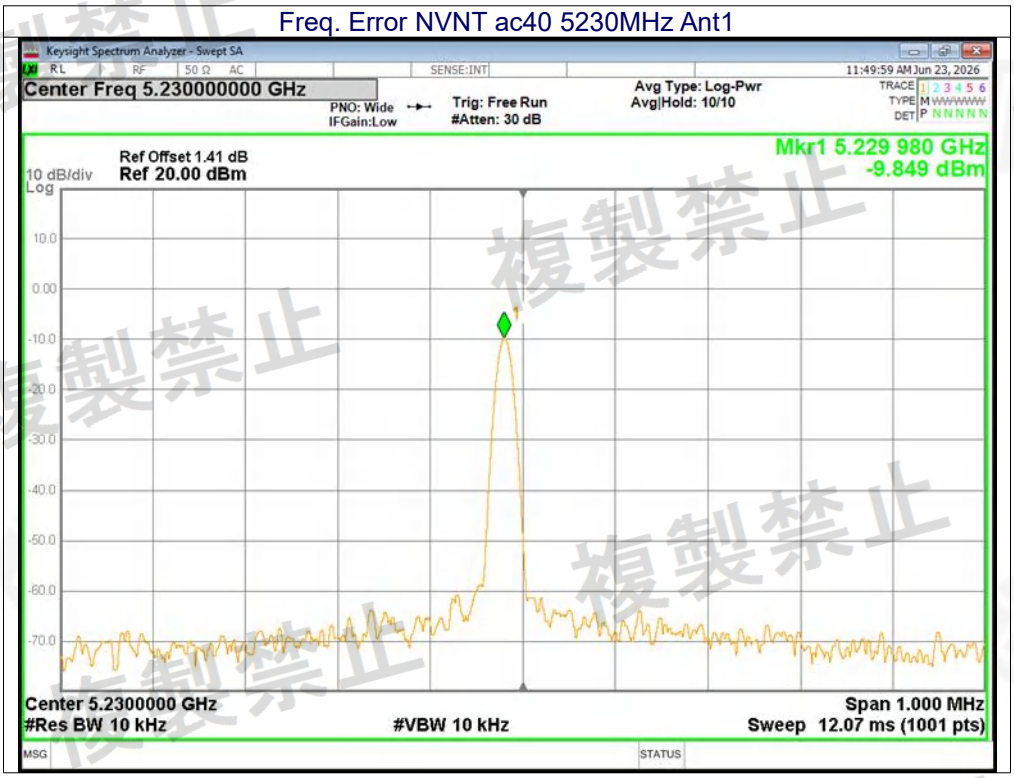
Freq. Error NVNT a 5240MHz Ant1



Freq. Error NVNT ac40 5190MHz Ant1



Freq. Error NVNT ac40 5230MHz Ant1



Antenna and EIRP Power

Mode	Frequency (MHz)	Power (dBm/MHz)	Antenna Power (mW/MHz)	Rated Power (mW/MHz)	Limit (mW/MHz)	Tolerance (%)	Upper Limit (%)	Upper Limit (%)	Verdict
a	5180	-3.03	0.5	1	2	-50.00	-80	20	Pass
a	5200	-5.37	0.29	1	2	-71.00	-80	20	Pass
a	5240	-4.51	0.35	1	2	-65.00	-80	20	Pass
n20	5180	-4.07	0.39	1	2	-61.00	-80	20	Pass
n20	5200	-3.73	0.42	1	2	-58.00	-80	20	Pass
n20	5240	-2.81	0.52	1	2	-48.00	-80	20	Pass
n40	5190	-6.02	0.25	1	1	-75.00	-80	20	Pass
n40	5230	-5.27	0.3	1	1	-70.00	-80	20	Pass
ac20	5180	-4.23	0.38	1	2	-62.00	-80	20	Pass
ac20	5200	-2.89	0.51	1	2	-49.00	-80	20	Pass
ac20	5240	-3.16	0.48	1	2	-52.00	-80	20	Pass
ac40	5190	-5.43	0.29	1	1	-71.00	-80	20	Pass
ac40	5230	-4.74	0.34	1	1	-66.00	-80	20	Pass

複製禁止

EIRP Power

Mode	Frequency (MHz)	Antenna	Antenna Power (dBm/MHz)	Gain (dBi)	EIRP Power (dBm/MHz)	EIRP Power (mW/MHz)	Limit (mW/MHz)	Verdict
a	5180	Ant1	-3.03	0.6	-2.43	0.57	2	Pass
a	5200	Ant1	-5.37	0.6	-4.77	0.33	2	Pass
a	5240	Ant1	-4.51	0.6	-3.91	0.41	2	Pass
n20	5180	Ant1	-4.07	0.6	-3.47	0.45	2	Pass
n20	5200	Ant1	-3.73	0.6	-3.13	0.49	2	Pass
n20	5240	Ant1	-2.81	0.6	-2.21	0.60	2	Pass
n40	5190	Ant1	-6.02	0.6	-5.42	0.29	1	Pass
n40	5230	Ant1	-5.27	0.6	-4.67	0.34	1	Pass
ac20	5180	Ant1	-4.23	0.6	-3.63	0.43	2	Pass
ac20	5200	Ant1	-2.89	0.6	-2.29	0.59	2	Pass
ac20	5240	Ant1	-3.16	0.6	-2.56	0.55	2	Pass
ac40	5190	Ant1	-5.43	0.6	-4.83	0.33	1	Pass
ac40	5230	Ant1	-4.74	0.6	-4.14	0.39	1	Pass

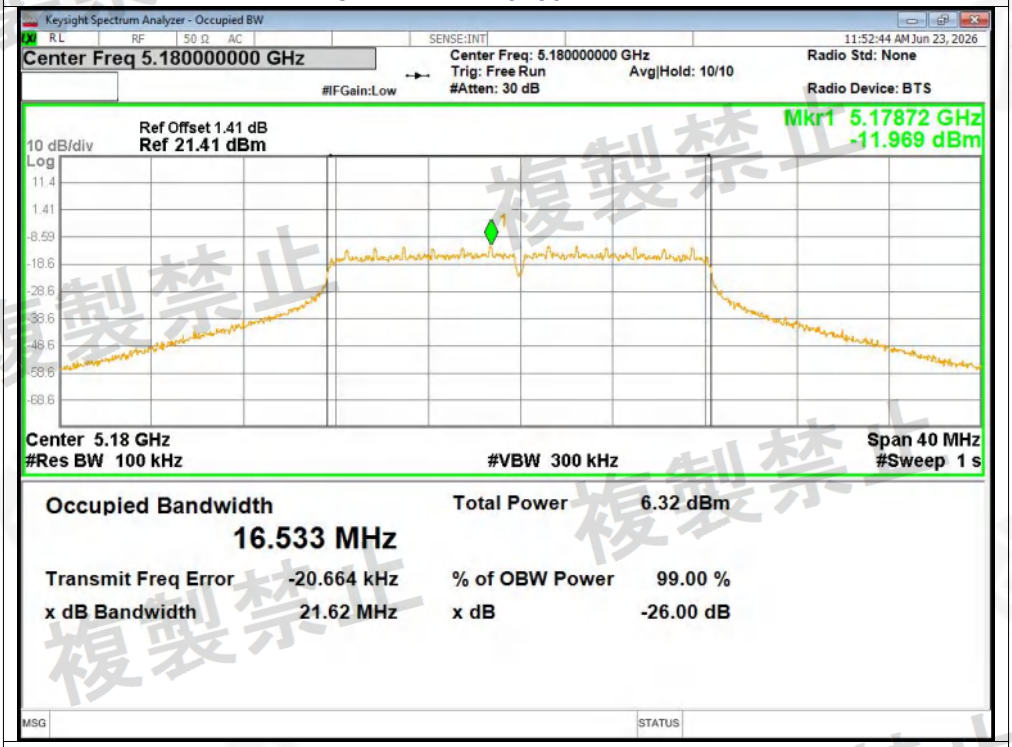
Occupied Channel Bandwidth

Mode	Frequency (MHz)	Antenna	99% OBW (MHz)	Limit (MHz)	Verdict
a	5180	Ant1	16.533	18	Pass
a	5200	Ant1	16.528	18	Pass
a	5240	Ant1	16.534	18	Pass
n20	5180	Ant1	17.741	20	Pass
n20	5200	Ant1	17.726	20	Pass
n20	5240	Ant1	17.73	20	Pass
n40	5190	Ant1	36.139	40	Pass
n40	5230	Ant1	36.135	40	Pass
ac20	5180	Ant1	17.735	20	Pass
ac20	5200	Ant1	17.708	20	Pass
ac20	5240	Ant1	17.725	20	Pass
ac40	5190	Ant1	36.151	40	Pass
ac40	5230	Ant1	36.146	40	Pass

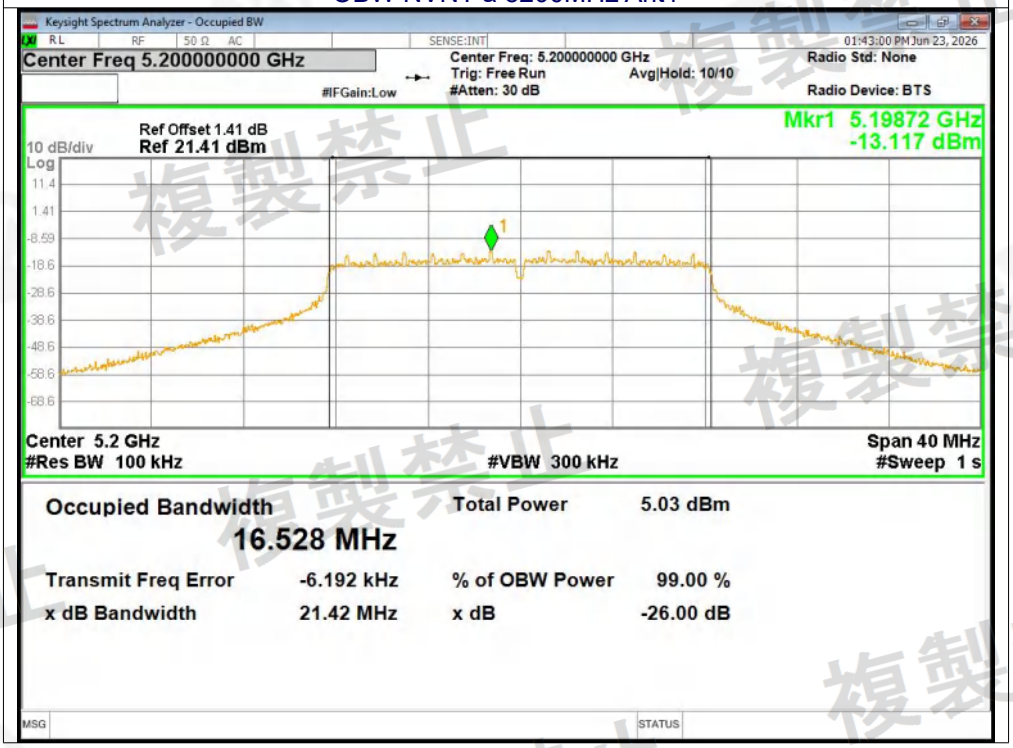
複製禁止

Test Graphs

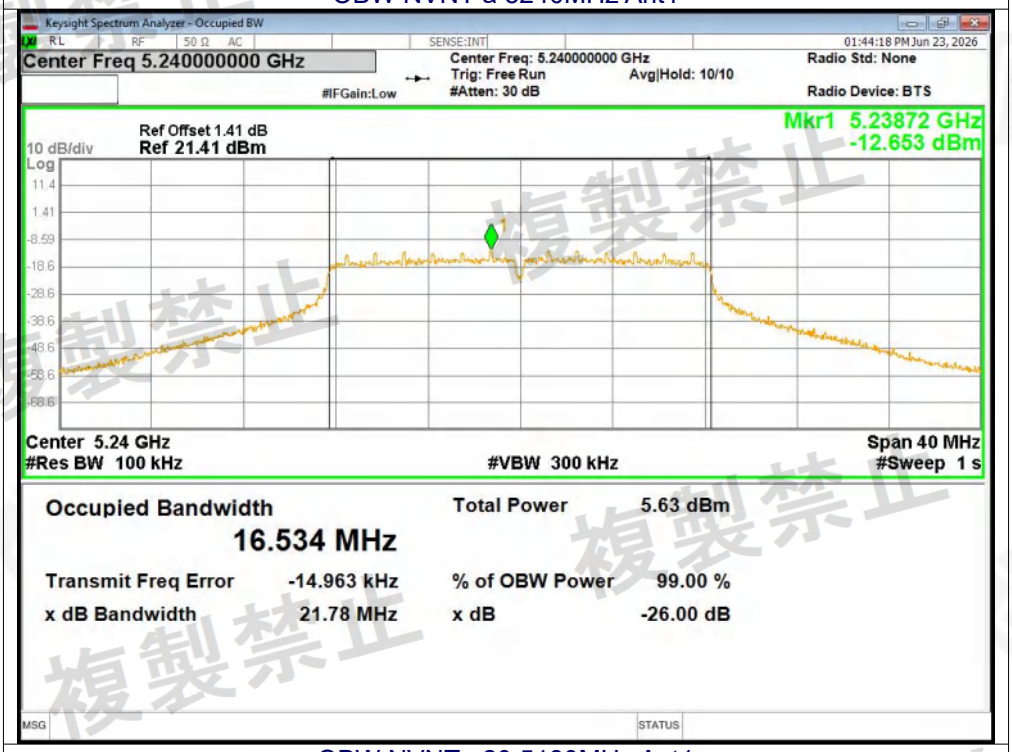
OBW NVNT a 5180MHz Ant1



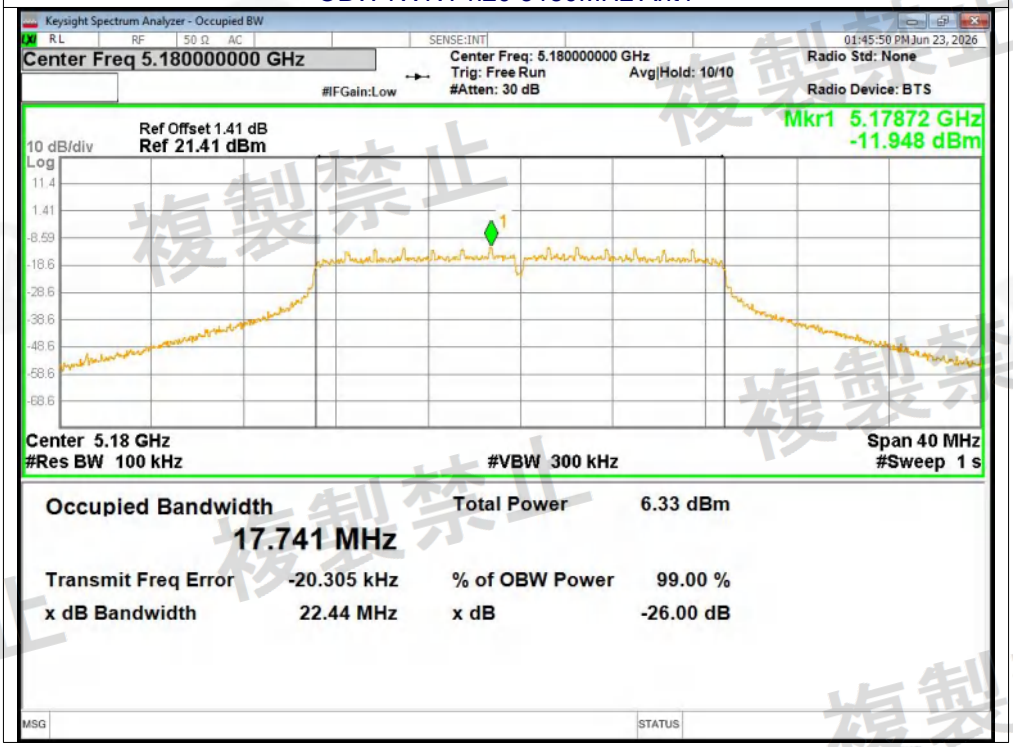
OBW NVNT a 5200MHz Ant1



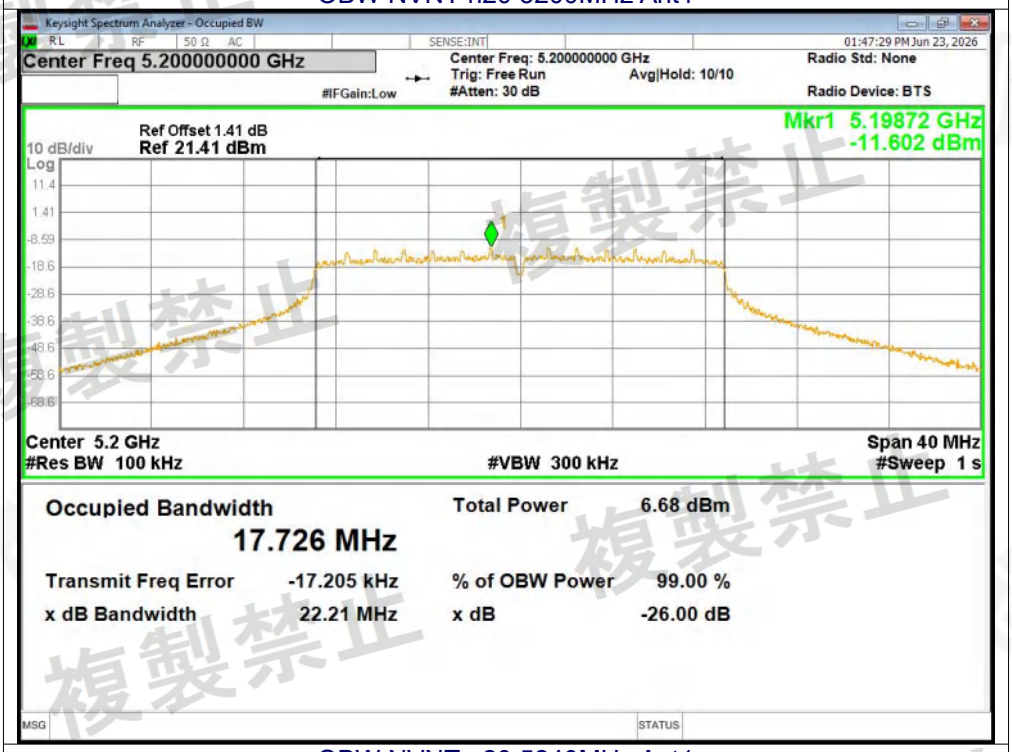
OBW NVNT a 5240MHz Ant1



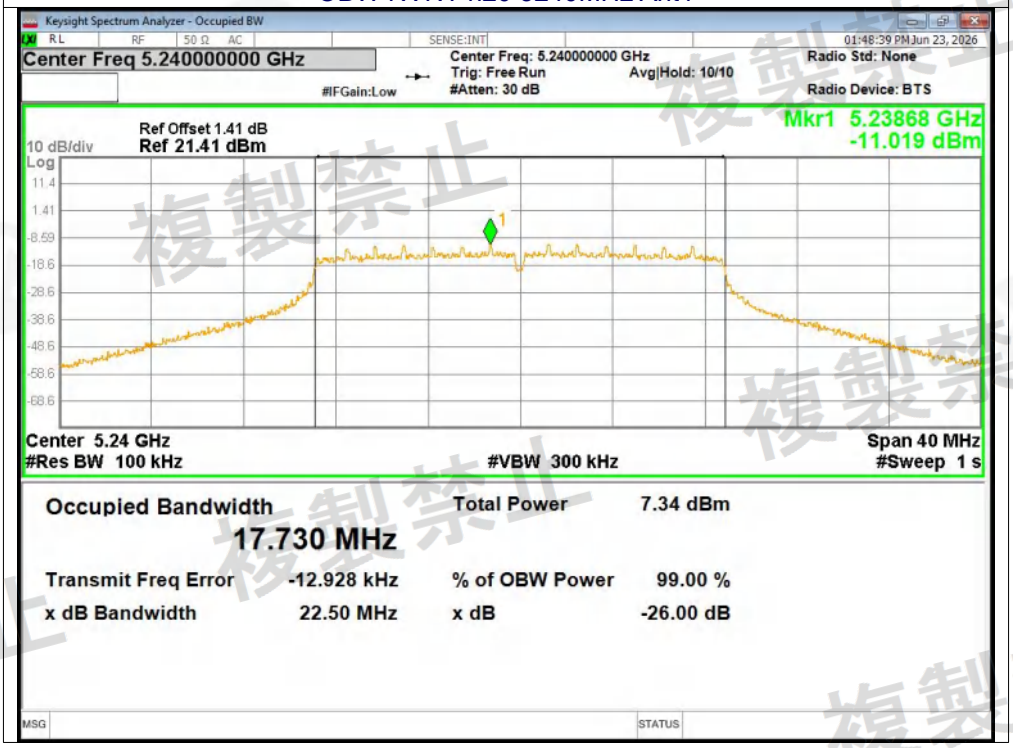
OBW NVNT n20 5180MHz Ant1



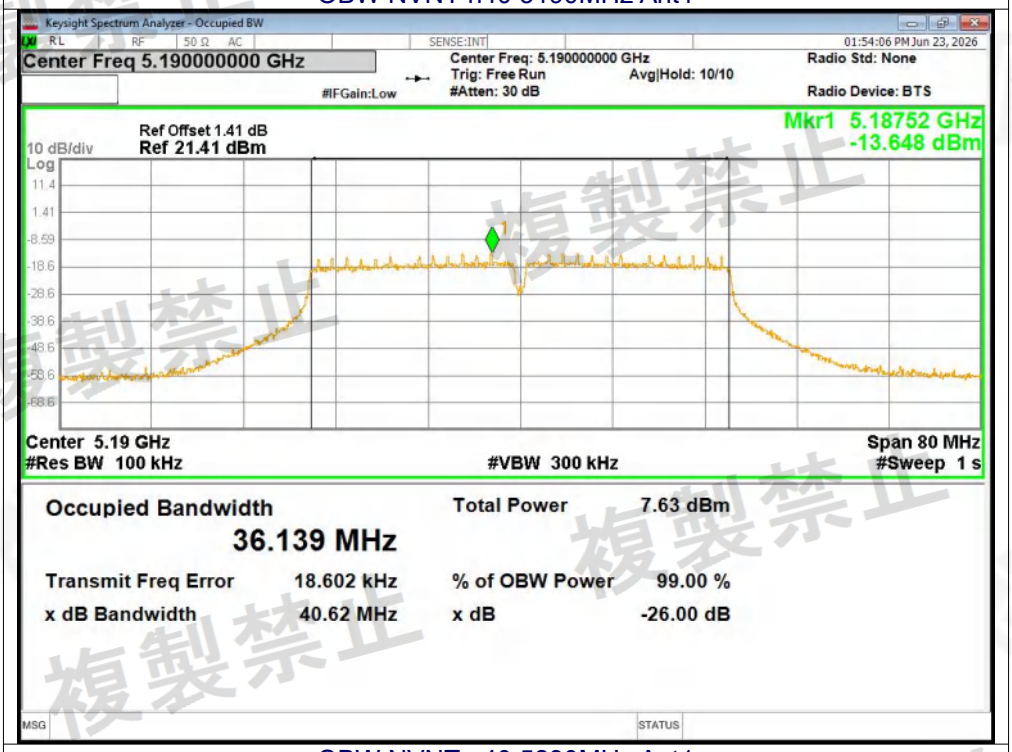
OBW NVNT n20 5200MHz Ant1



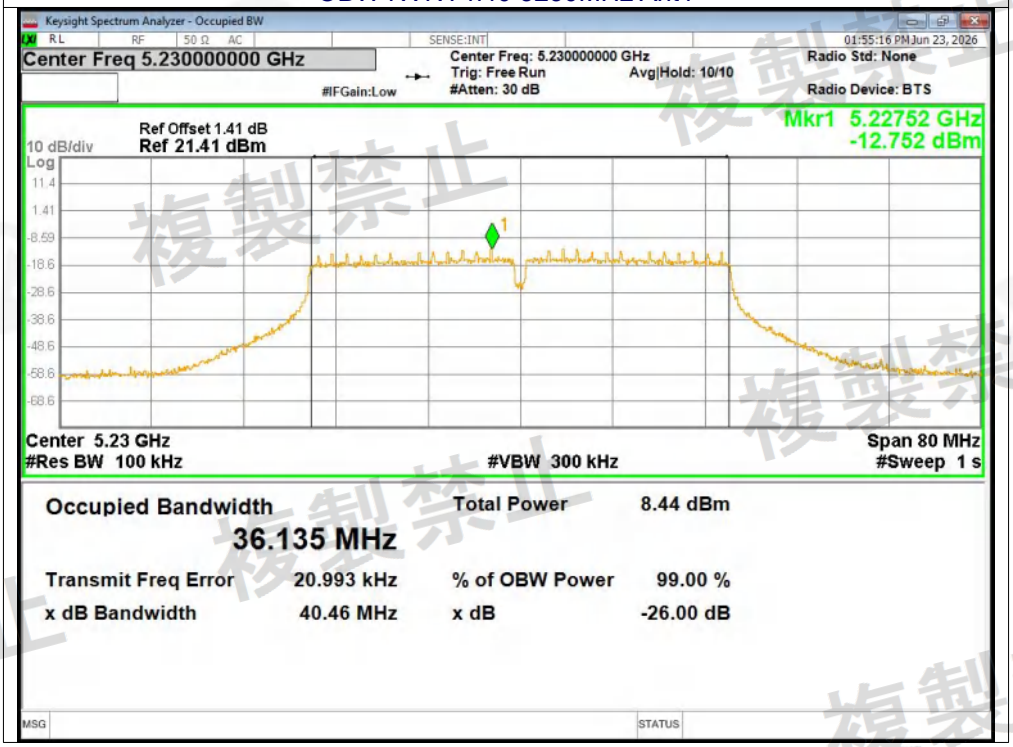
OBW NVNT n20 5240MHz Ant1



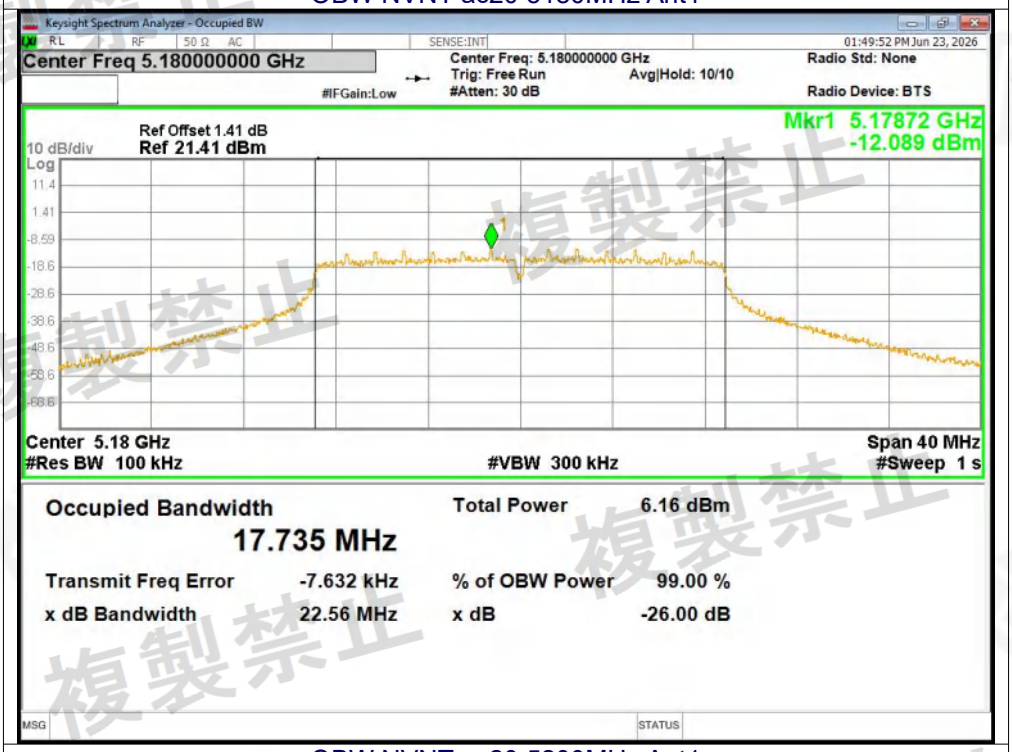
OBW NVNT n40 5190MHz Ant1



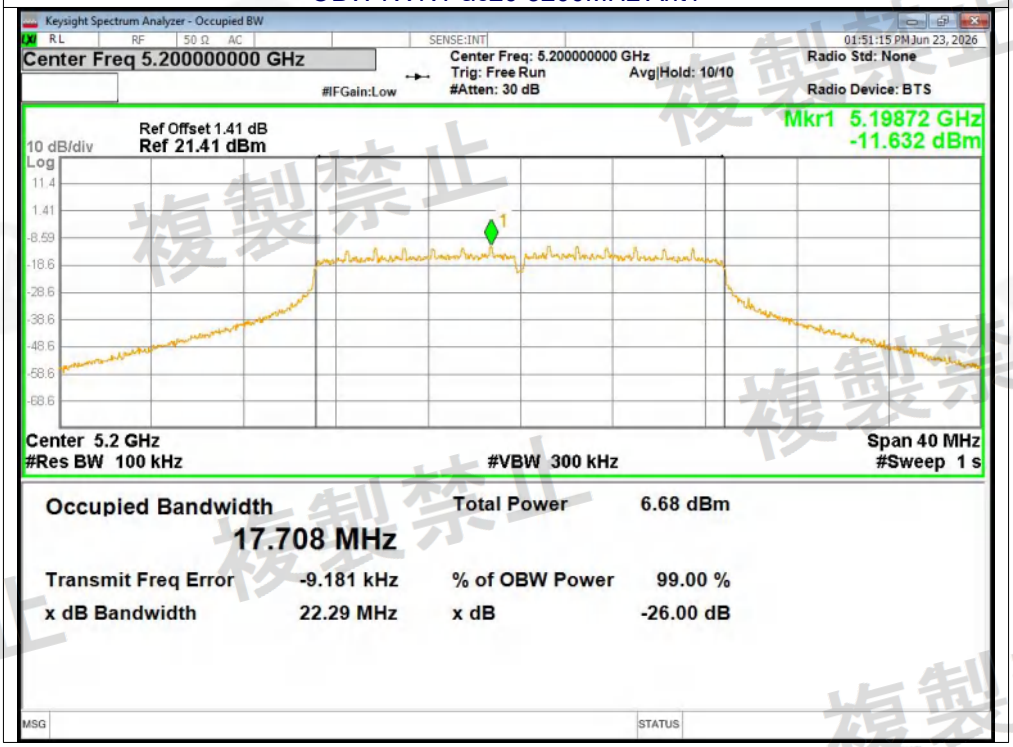
OBW NVNT n40 5230MHz Ant1



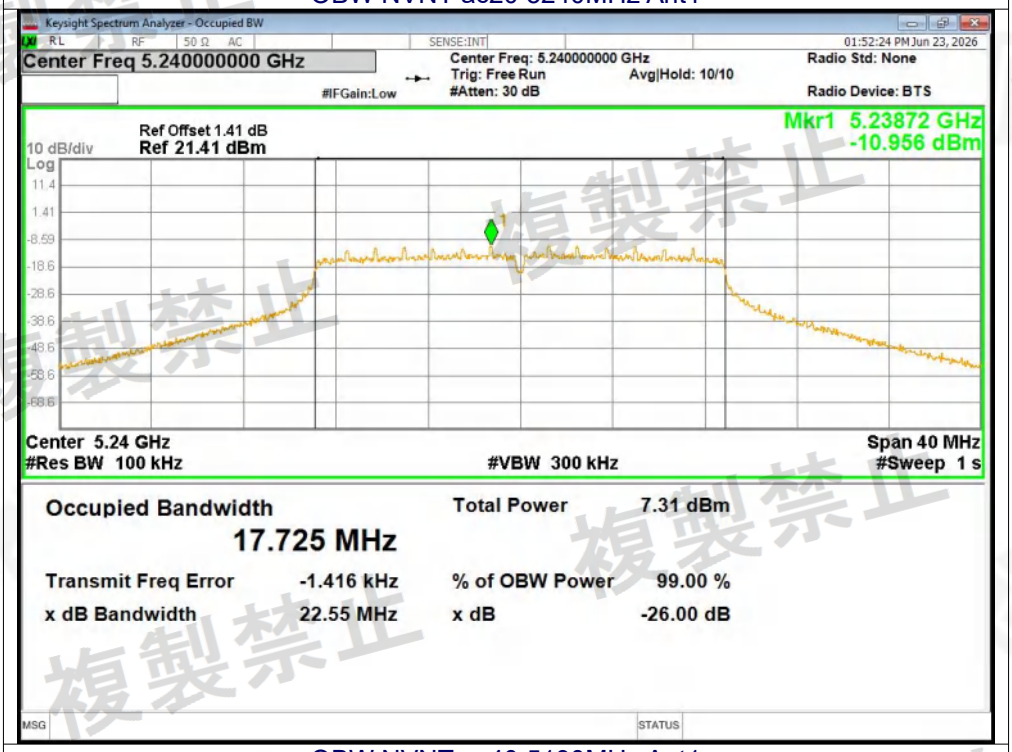
OBW NVNT ac20 5180MHz Ant1



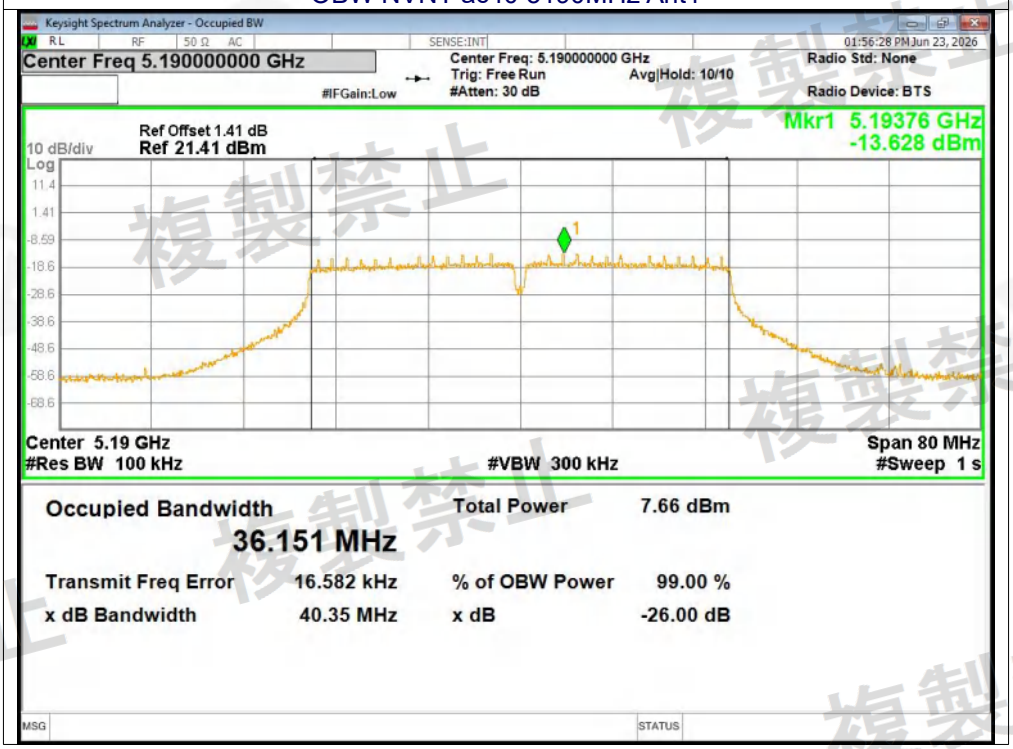
OBW NVNT ac20 5200MHz Ant1



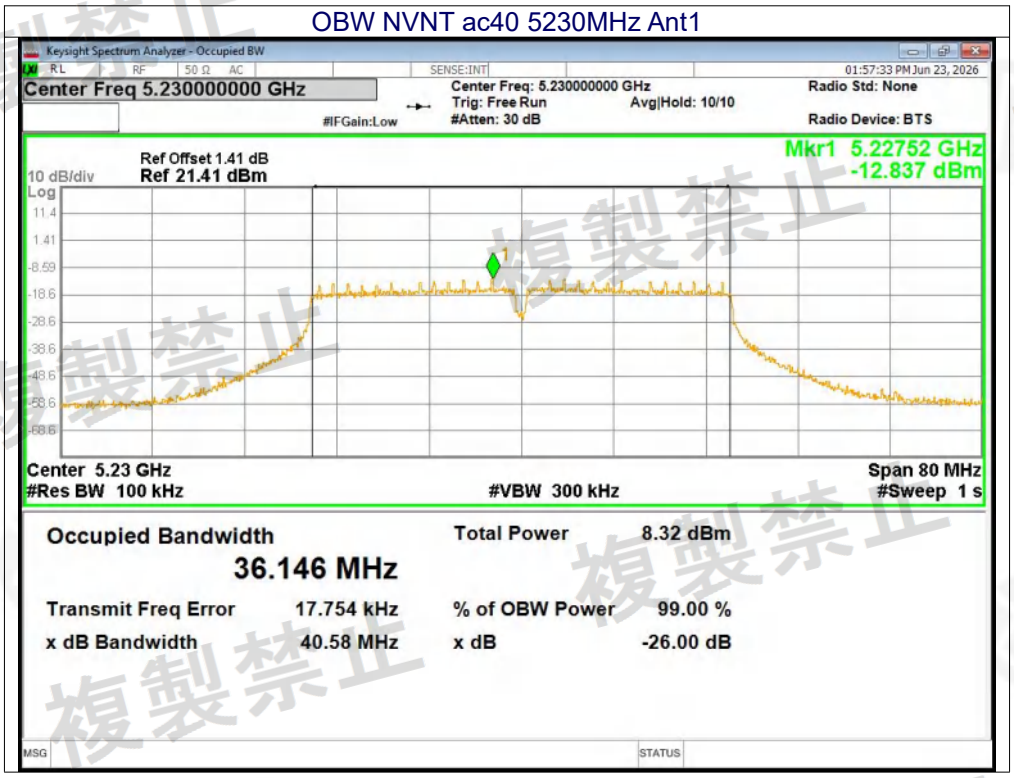
OBW NVNT ac20 5240MHz Ant1



OBW NVNT ac40 5190MHz Ant1



OBW NVNT ac40 5230MHz Ant1

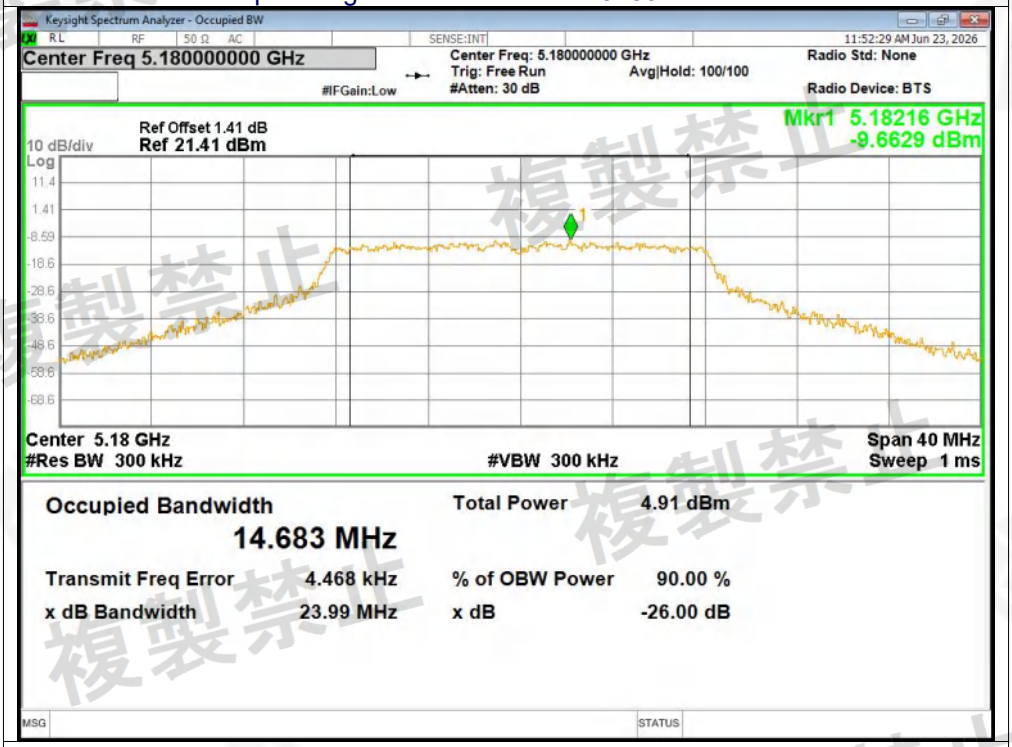


Spreading Bandwidth

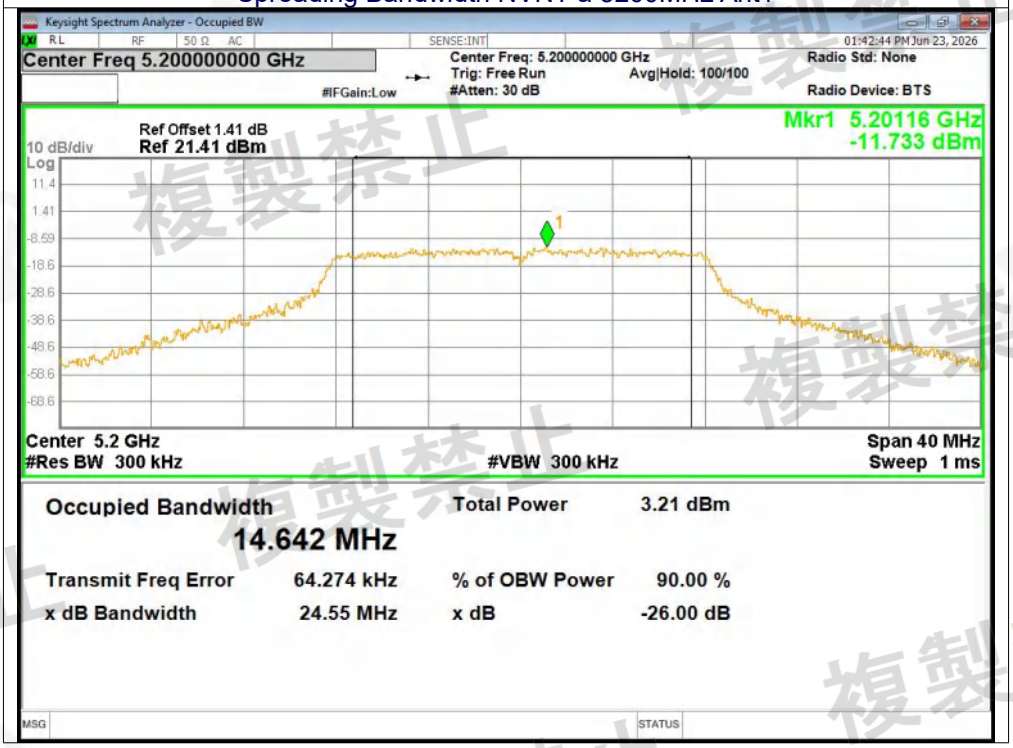
Mode	Frequency (MHz)	Antenna	90% OBW (MHz)	Verdict
a	5180	Ant1	14.683	Pass
a	5200	Ant1	14.642	Pass
a	5240	Ant1	14.652	Pass
n20	5180	Ant1	15.64	Pass
n20	5200	Ant1	15.773	Pass
n20	5240	Ant1	15.693	Pass
n40	5190	Ant1	32.301	Pass
n40	5230	Ant1	32.136	Pass
ac20	5180	Ant1	15.603	Pass
ac20	5200	Ant1	15.615	Pass
ac20	5240	Ant1	15.755	Pass
ac40	5190	Ant1	32.03	Pass
ac40	5230	Ant1	32.126	Pass

Test Graphs

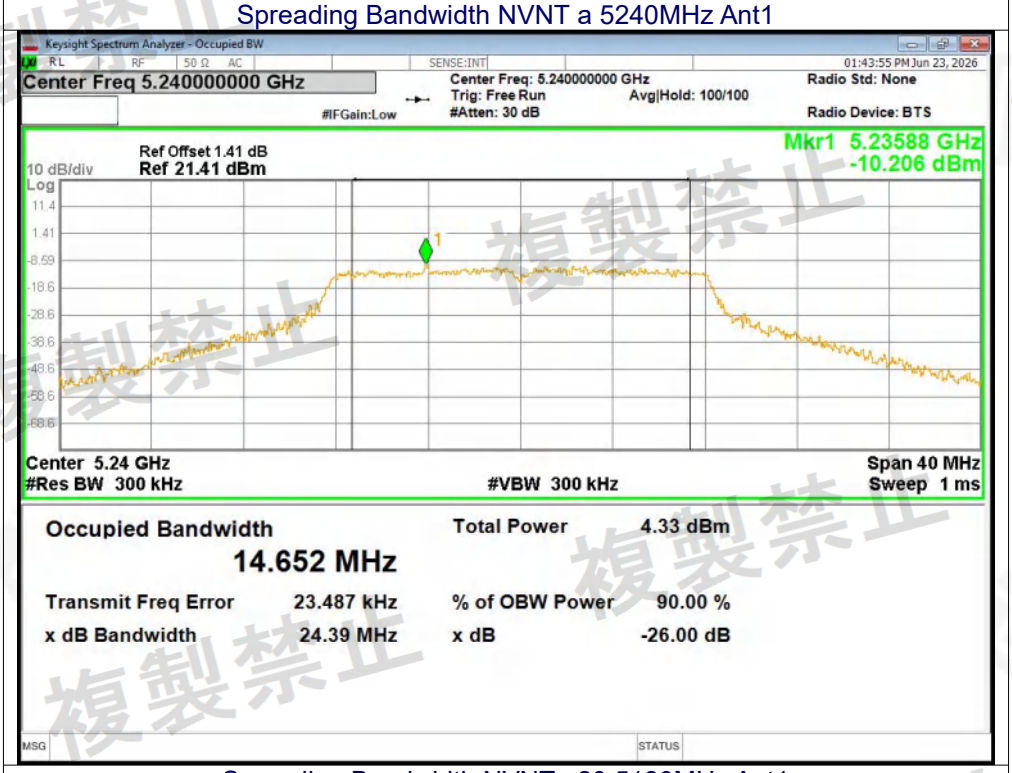
Spreading Bandwidth NVNT a 5180MHz Ant1



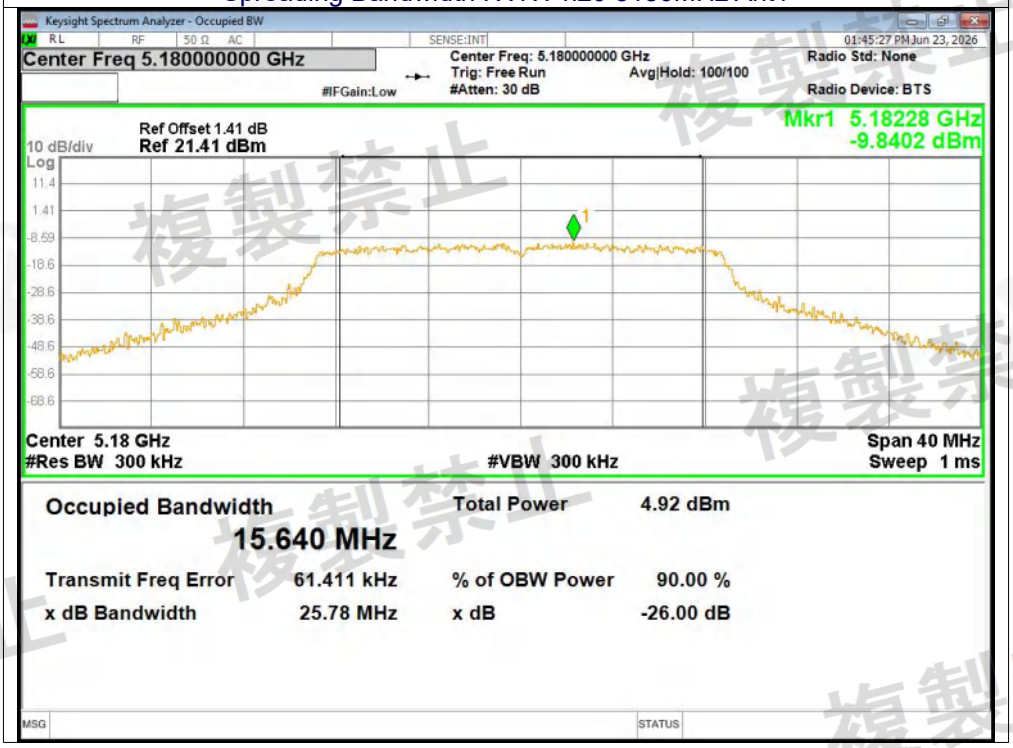
Spreading Bandwidth NVNT a 5200MHz Ant1



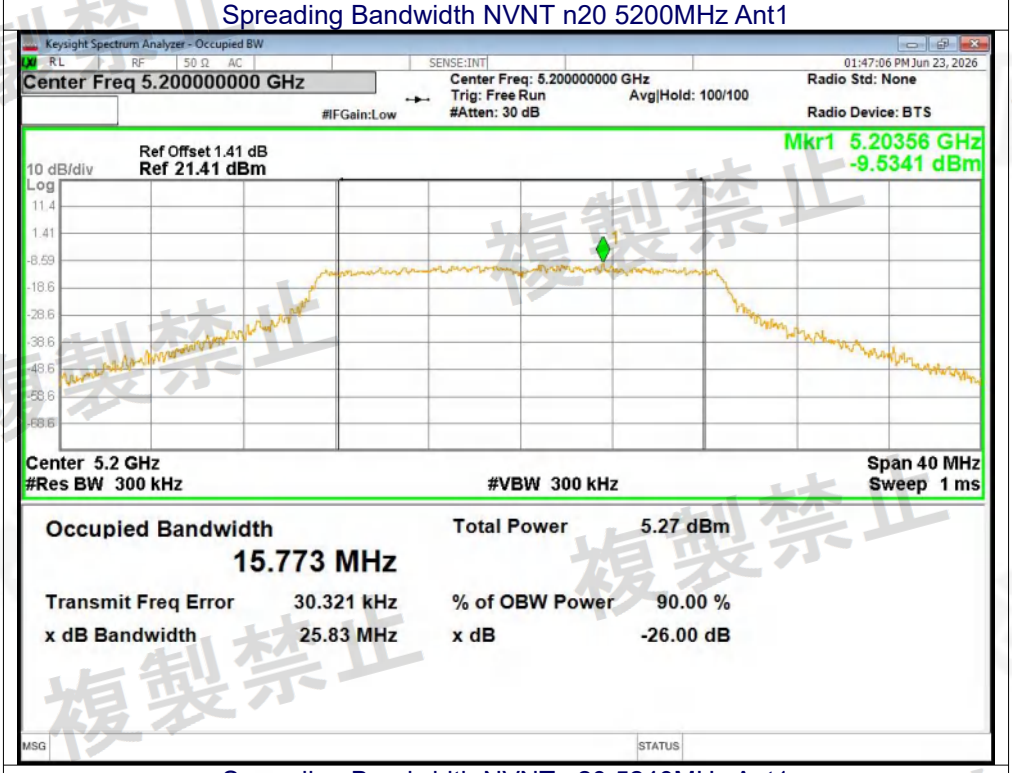
Spreading Bandwidth NVNT a 5240MHz Ant1



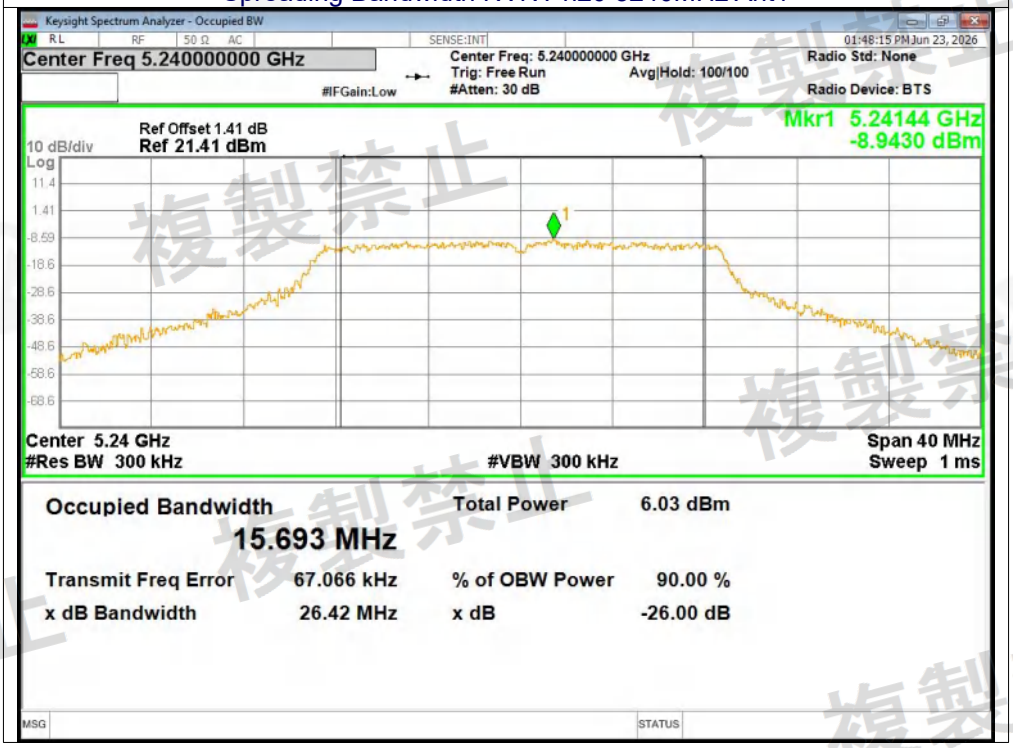
Spreading Bandwidth NVNT n20 5180MHz Ant1



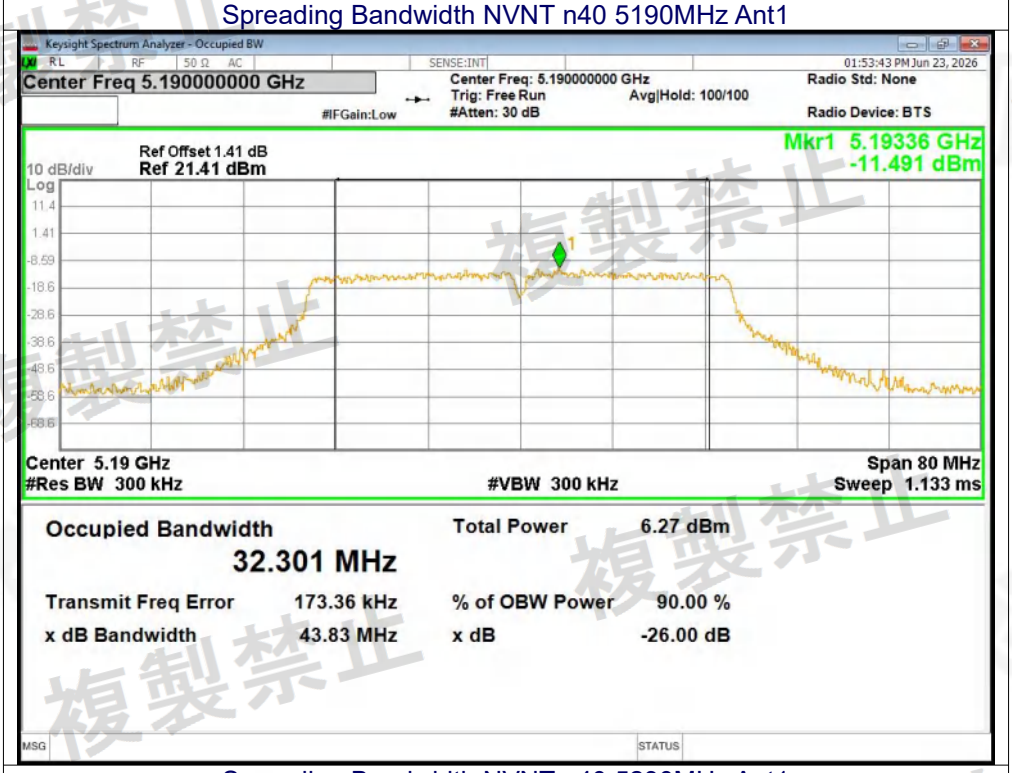
Spreading Bandwidth NVNT n20 5200MHz Ant1



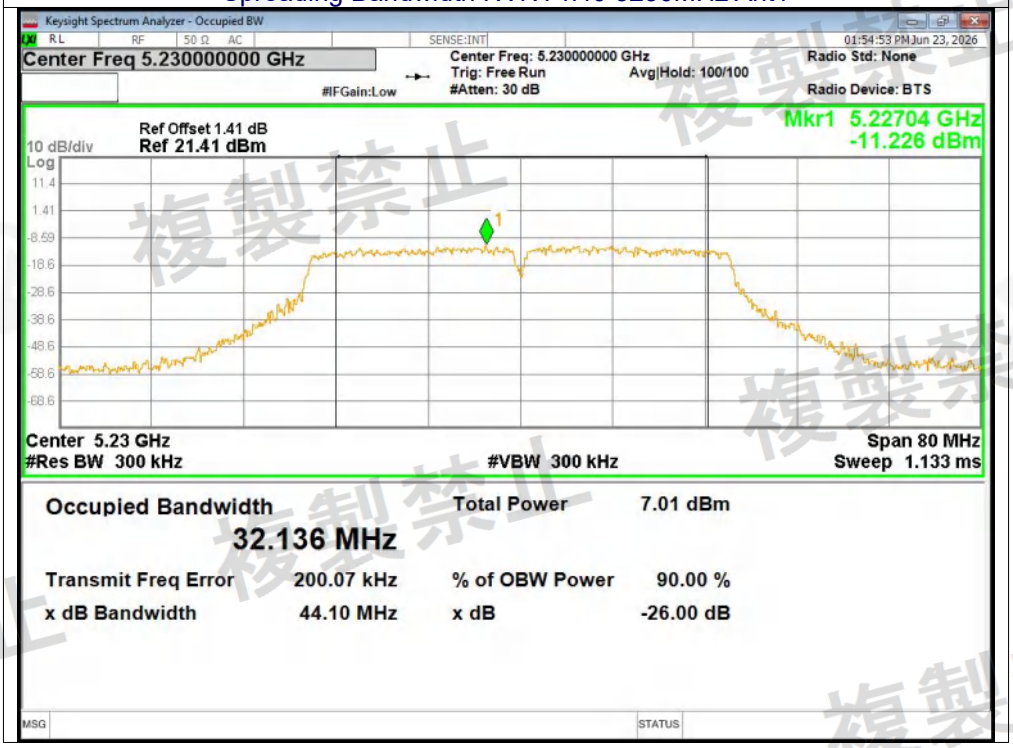
Spreading Bandwidth NVNT n20 5240MHz Ant1



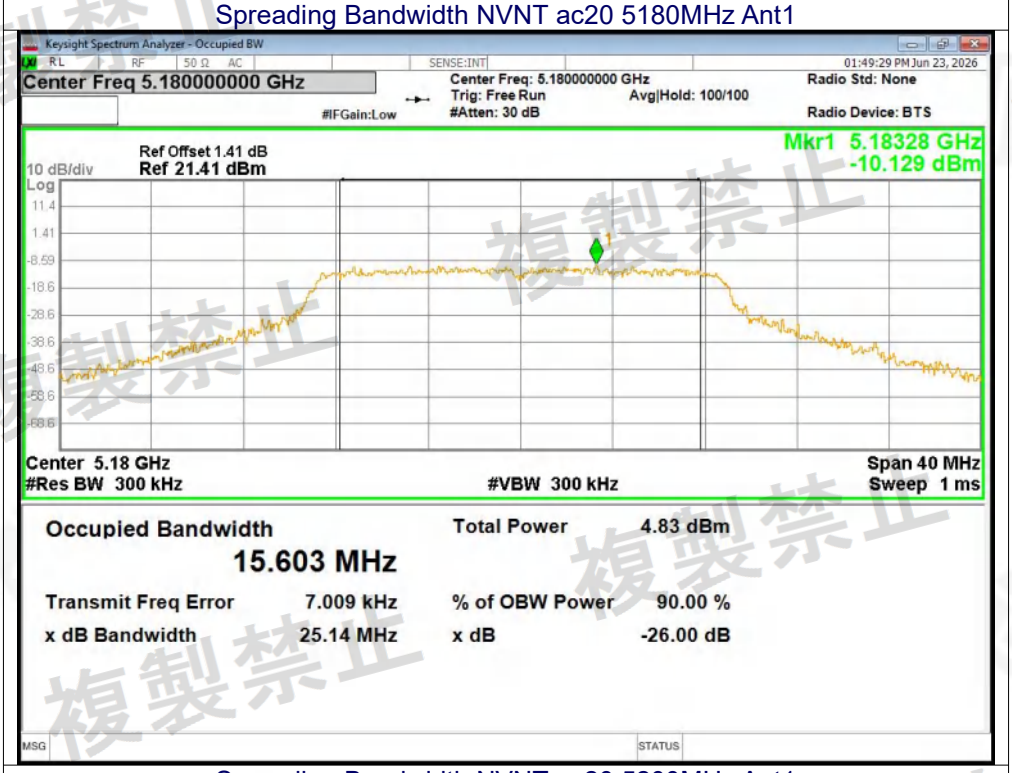
Spreading Bandwidth NVNT n40 5190MHz Ant1



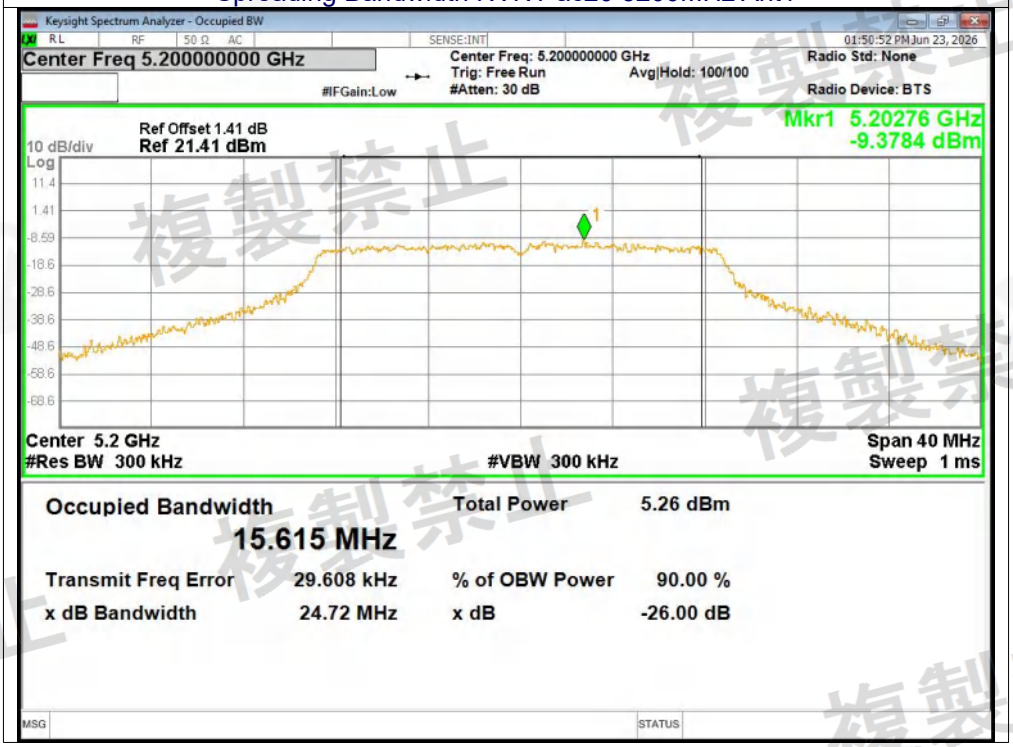
Spreading Bandwidth NVNT n40 5230MHz Ant1



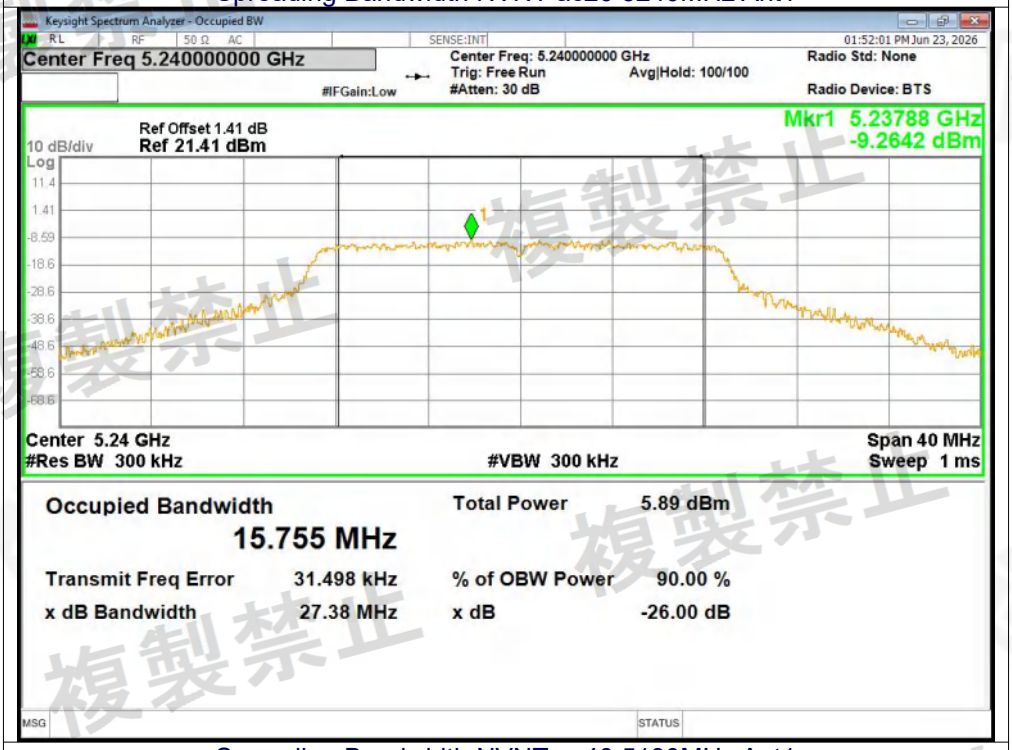
Spreading Bandwidth NVNT ac20 5180MHz Ant1



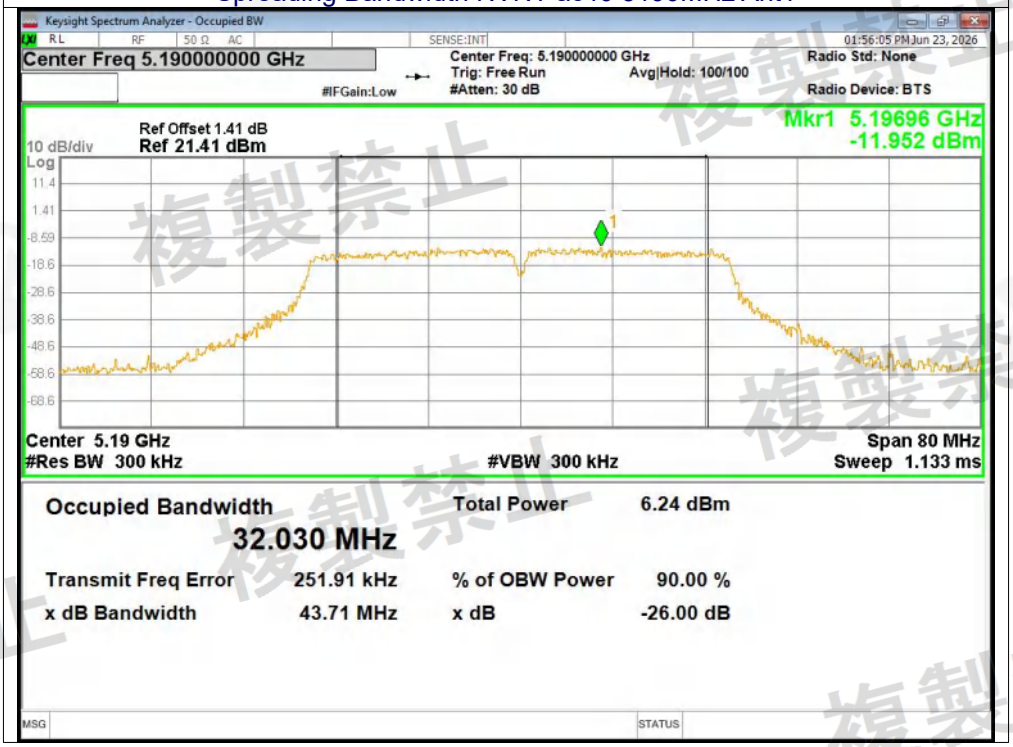
Spreading Bandwidth NVNT ac20 5200MHz Ant1



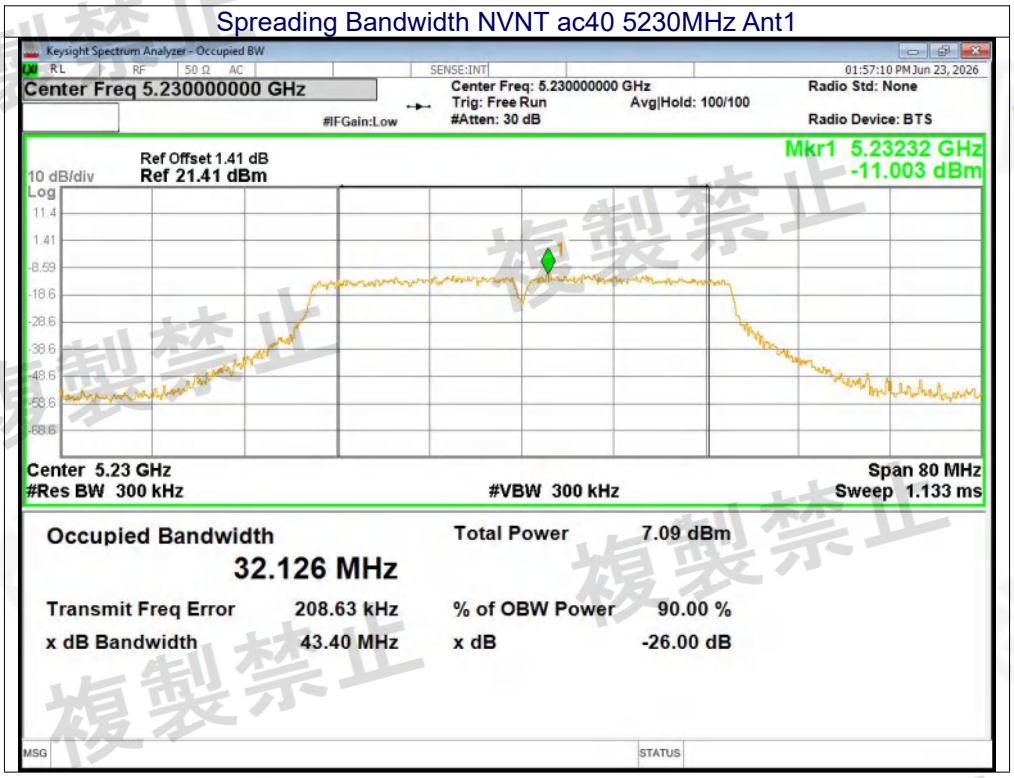
Spreading Bandwidth NVNT ac20 5240MHz Ant1



Spreading Bandwidth NVNT ac40 5190MHz Ant1



Spreading Bandwidth NVNT ac40 5230MHz Ant1



Tx Spurious Emission

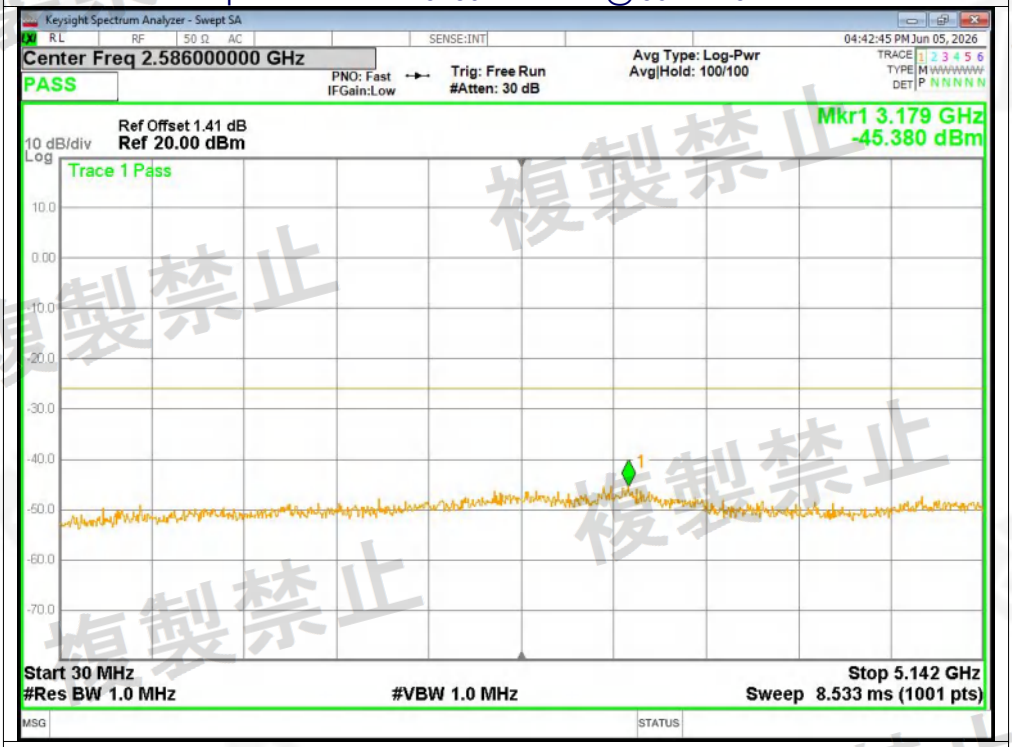
Mode	Frequency (MHz)	Range (MHz)	Emission Frequency (MHz)	Max Value (dBm)	Max Value (uW)	Limit Start (dBm)	Limit Stop (dBm)	Limit Start (uW)	Limit Stop (uW)	Verdict
a	5180	30-5142	3178.99	-45.38	0.03	-26	-26	0.5	0.5	Pass
a	5180	5142-5150	5143.38	-49.6	0.01	-18	-18	3	3	Pass
a	5180	5250-5251	5250.41	-48.69	0.01	0	-10	126	431	Pass
a	5180	5251-5260	5251.45	-49.08	0.01	-10	-18	3.2	20	Pass
a	5180	5260-5266.7	5261.99	-48.52	0.01	-18	-26	0.5	3.2	Pass
a	5180	5266.7-26000	24818.2	-37.93	0.16	-26	-26	0.5	0.5	Pass
a	5200	30-5142	3204.55	-45.66	0.03	-26	-26	0.5	0.5	Pass
a	5200	5142-5150	5142.61	-49.29	0.01	-18	-18	3	3	Pass
a	5200	5250-5251	5250.44	-49.29	0.01	0	-10	126	431	Pass
a	5200	5251-5260	5257.13	-48.75	0.01	-10	-18	3.2	20	Pass
a	5200	5260-5266.7	5265.82	-49.51	0.01	-18	-26	0.5	3.2	Pass
a	5200	5266.7-26000	24776.74	-37.86	0.16	-26	-26	0.5	0.5	Pass
a	5240	30-5142	2637.12	-44.99	0.03	-26	-26	0.5	0.5	Pass
a	5240	5142-5150	5142.82	-49.24	0.01	-18	-18	3	3	Pass
a	5240	5250-5251	5250.37	-48.48	0.01	0	-10	126	431	Pass
a	5240	5251-5260	5259.71	-48.64	0.01	-10	-18	3.2	20	Pass
a	5240	5260-5266.7	5266.04	-49.33	0.01	-18	-26	0.5	3.2	Pass
a	5240	5266.7-26000	24113.27	-38	0.16	-26	-26	0.5	0.5	Pass
n20	5180	30-5142	3061.42	-45.86	0.03	-26	-26	0.5	0.5	Pass
n20	5180	5142-5150	5149.12	-49.27	0.01	-18	-18	3	3	Pass
n20	5180	5250-5251	5250.63	-49.04	0.01	0	-10	126	431	Pass
n20	5180	5251-5260	5256.79	-48.59	0.01	-10	-18	3.2	20	Pass
n20	5180	5260-5266.7	5264.93	-49.75	0.01	-18	-26	0.5	3.2	Pass
n20	5180	5266.7-26000	24673.07	-37.73	0.17	-26	-26	0.5	0.5	Pass
n20	5200	30-5142	2703.58	-45.67	0.03	-26	-26	0.5	0.5	Pass
n20	5200	5142-5150	5142.68	-49.27	0.01	-18	-18	3	3	Pass
n20	5200	5250-5251	5250.47	-48.81	0.01	0	-10	126	431	Pass
n20	5200	5251-5260	5251.39	-47.47	0.02	-10	-18	3.2	20	Pass
n20	5200	5260-5266.7	5263.24	-49.28	0.01	-18	-26	0.5	3.2	Pass
n20	5200	5266.7-26000	24776.74	-38.29	0.15	-26	-26	0.5	0.5	Pass
n20	5240	30-5142	3173.88	-45.34	0.03	-26	-26	0.5	0.5	Pass
n20	5240	5142-5150	5144.7	-49.36	0.01	-18	-18	3	3	Pass
n20	5240	5250-5251	5250.16	-48.58	0.01	0	-10	126	431	Pass
n20	5240	5251-5260	5255.52	-48.36	0.01	-10	-18	3.2	20	Pass
n20	5240	5260-5266.7	5262.9	-49.61	0.01	-18	-26	0.5	3.2	Pass
n20	5240	5266.7-26000	24196.2	-38.28	0.15	-26	-26	0.5	0.5	Pass
n40	5190	30-5141.6	3183.86	-44.94	0.03	-26	-26	0.5	0.5	Pass
n40	5190	5141.6-5150	5142.82	-49.11	0.01	-18	-18	3	3	Pass
n40	5190	5250-5251	5250.68	-48.17	0.02	-3	-13	100	10	Pass
n40	5190	5251-5270	5267.59	-48.82	0.01	-13	-21	10	1.6	Pass
n40	5190	5270-5278.4	5277.25	-49.17	0.01	-21	-26	1.6	0.5	Pass
n40	5190	5278.4-26000	24135.06	-37.46	0.18	-26	-26	0.5	0.5	Pass
n40	5230	30-5141.6	3163.41	-45.92	0.03	-26	-26	0.5	0.5	Pass
n40	5230	5141.6-5150	5146.48	-49.28	0.01	-18	-18	3	3	Pass
n40	5230	5250-5251	5250.72	-48.43	0.01	-3	-13	100	10	Pass
n40	5230	5251-5270	5264.78	-48.35	0.01	-13	-21	10	1.6	Pass
n40	5230	5270-5278.4	5271.64	-49.47	0.01	-21	-26	1.6	0.5	Pass
n40	5230	5278.4-26000	24155.78	-37.39	0.18	-26	-26	0.5	0.5	Pass

Mode	Frequency (MHz)	Range (MHz)	Emission Frequency (MHz)	Max Value (dBm)	Max Value (uW)	Limit Start (dBm)	Limit Stop (dBm)	Limit Start (uW)	Limit Stop (uW)	Verdict
ac20	5180	30-5142	3163.66	-45.68	0.03	-26	-26	0.5	0.5	Pass
ac20	5180	5142-5150	5143.58	-49.46	0.01	-18	-18	3	3	Pass
ac20	5180	5250-5251	5250.29	-48.61	0.01	0	-10	126	431	Pass
ac20	5180	5251-5260	5256.61	-48.42	0.01	-10	-18	3.2	20	Pass
ac20	5180	5260-5266.7	5265.88	-49.6	0.01	-18	-26	0.5	3.2	Pass
ac20	5180	5266.7-26000	24175.47	-37.87	0.16	-26	-26	0.5	0.5	Pass
ac20	5200	30-5142	3132.98	-44.32	0.04	-26	-26	0.5	0.5	Pass
ac20	5200	5142-5150	5145.71	-49.06	0.01	-18	-18	3	3	Pass
ac20	5200	5250-5251	5250.66	-48.1	0.02	0	-10	126	431	Pass
ac20	5200	5251-5260	5256.1	-48.74	0.01	-10	-18	3.2	20	Pass
ac20	5200	5260-5266.7	5260.07	-49.68	0.01	-18	-26	0.5	3.2	Pass
ac20	5200	5266.7-26000	24776.74	-36.1	0.25	-26	-26	0.5	0.5	Pass
ac20	5240	30-5142	2672.9	-45.97	0.03	-26	-26	0.5	0.5	Pass
ac20	5240	5142-5150	5147.1	-49.9	0.01	-18	-18	3	3	Pass
ac20	5240	5250-5251	5250.64	-48.82	0.01	0	-10	126	431	Pass
ac20	5240	5251-5260	5253.26	-49.11	0.01	-10	-18	3.2	20	Pass
ac20	5240	5260-5266.7	5265.45	-49.12	0.01	-18	-26	0.5	3.2	Pass
ac20	5240	5266.7-26000	25295.07	-38.04	0.16	-26	-26	0.5	0.5	Pass
ac40	5190	30-5141.6	2054.19	-45.98	0.03	-26	-26	0.5	0.5	Pass
ac40	5190	5141.6-5150	5144.39	-49.74	0.01	-18	-18	3	3	Pass
ac40	5190	5250-5251	5250	-48.8	0.01	-3	-13	100	10	Pass
ac40	5190	5251-5270	5252.65	-48.99	0.01	-13	-21	10	1.6	Pass
ac40	5190	5270-5278.4	5274.21	-49.56	0.01	-21	-26	1.6	0.5	Pass
ac40	5190	5278.4-26000	24901.76	-38.29	0.15	-26	-26	0.5	0.5	Pass
ac40	5230	30-5141.6	3240.08	-45.75	0.03	-26	-26	0.5	0.5	Pass
ac40	5230	5141.6-5150	5146.2	-49.48	0.01	-18	-18	3	3	Pass
ac40	5230	5250-5251	5250.59	-49.18	0.01	-3	-13	100	10	Pass
ac40	5230	5251-5270	5256.61	-48.71	0.01	-13	-21	10	1.6	Pass
ac40	5230	5270-5278.4	5274.05	-49.33	0.01	-21	-26	1.6	0.5	Pass
ac40	5230	5278.4-26000	24756.7	-37.62	0.17	-26	-26	0.5	0.5	Pass

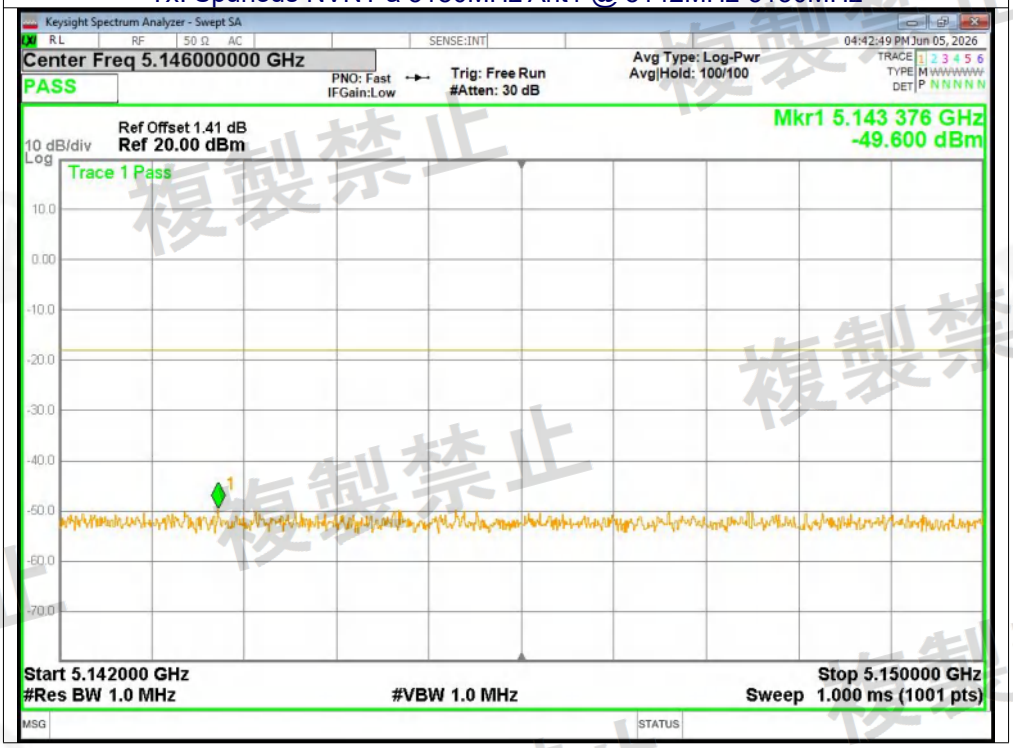
Note: Both limits are satisfied

Test Graphs

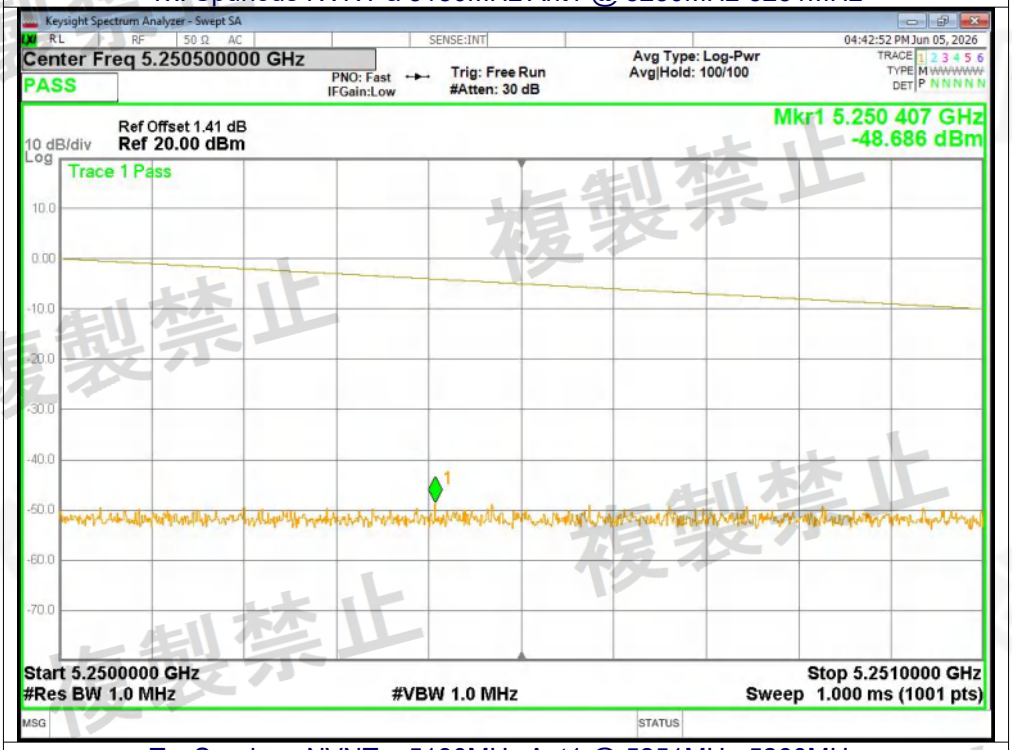
Tx. Spurious NVNT a 5180MHz Ant1 @ 30MHz-5142MHz



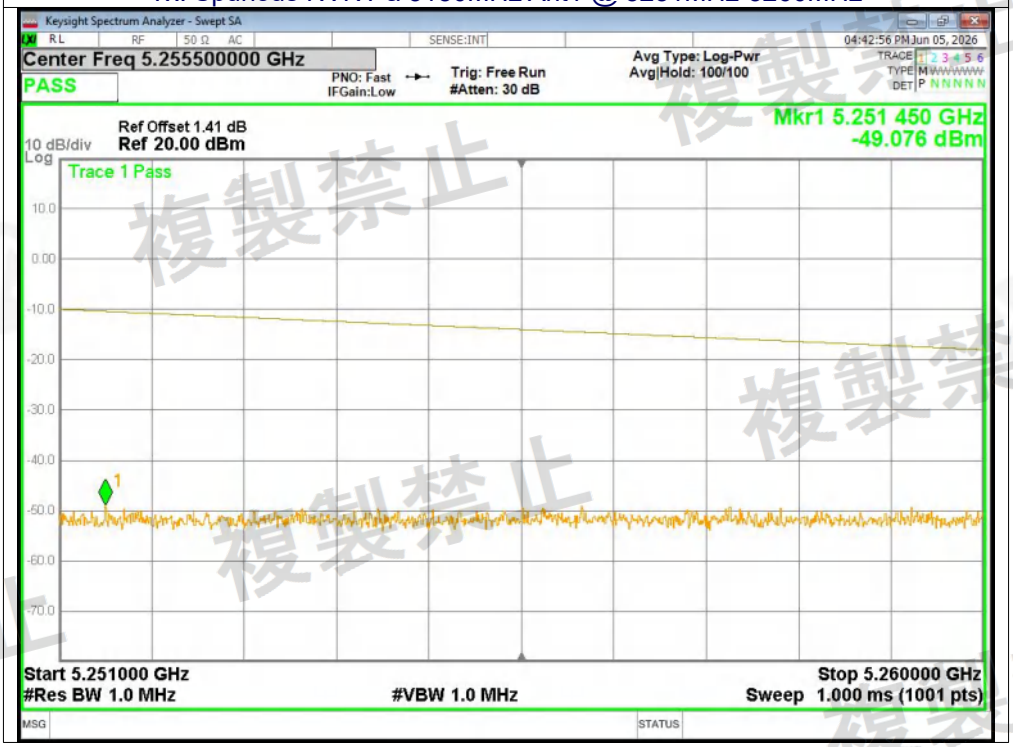
Tx. Spurious NVNT a 5180MHz Ant1 @ 5142MHz-5150MHz



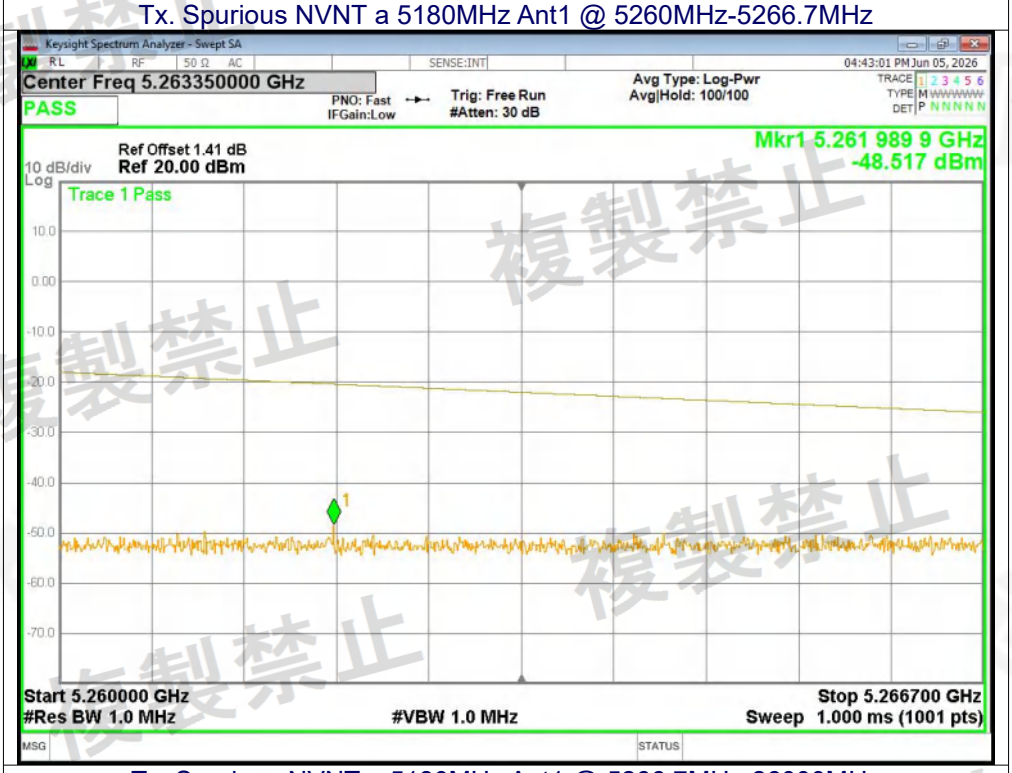
Tx. Spurious NVNT a 5180MHz Ant1 @ 5250MHz-5251MHz



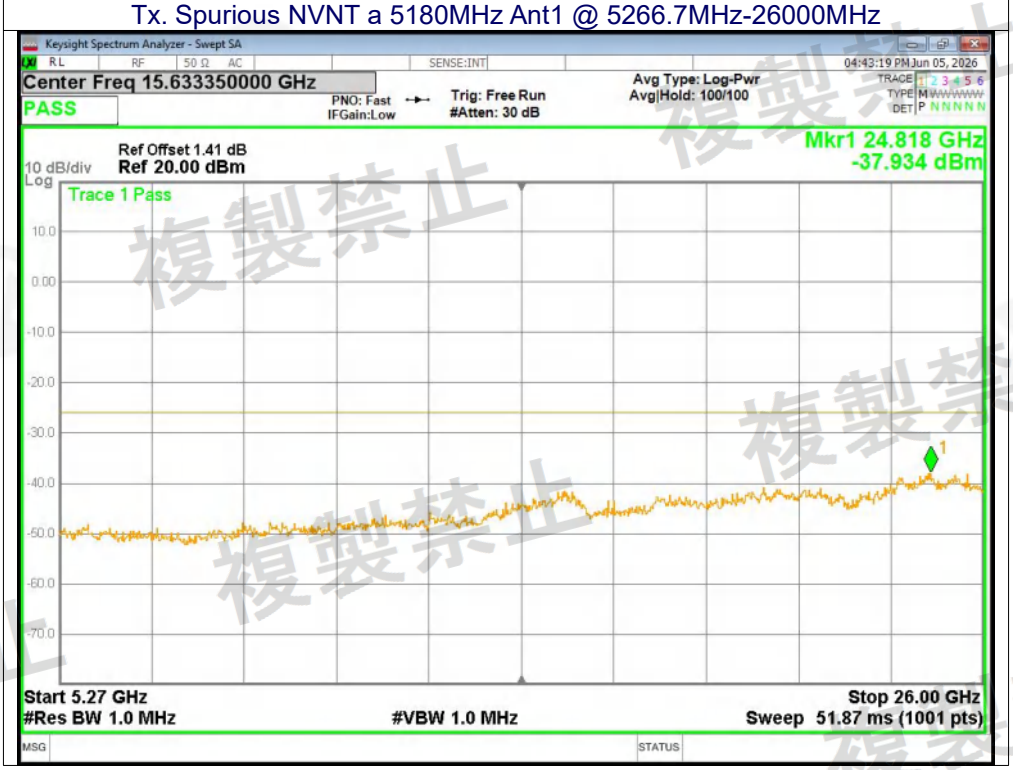
Tx. Spurious NVNT a 5180MHz Ant1 @ 5251MHz-5260MHz



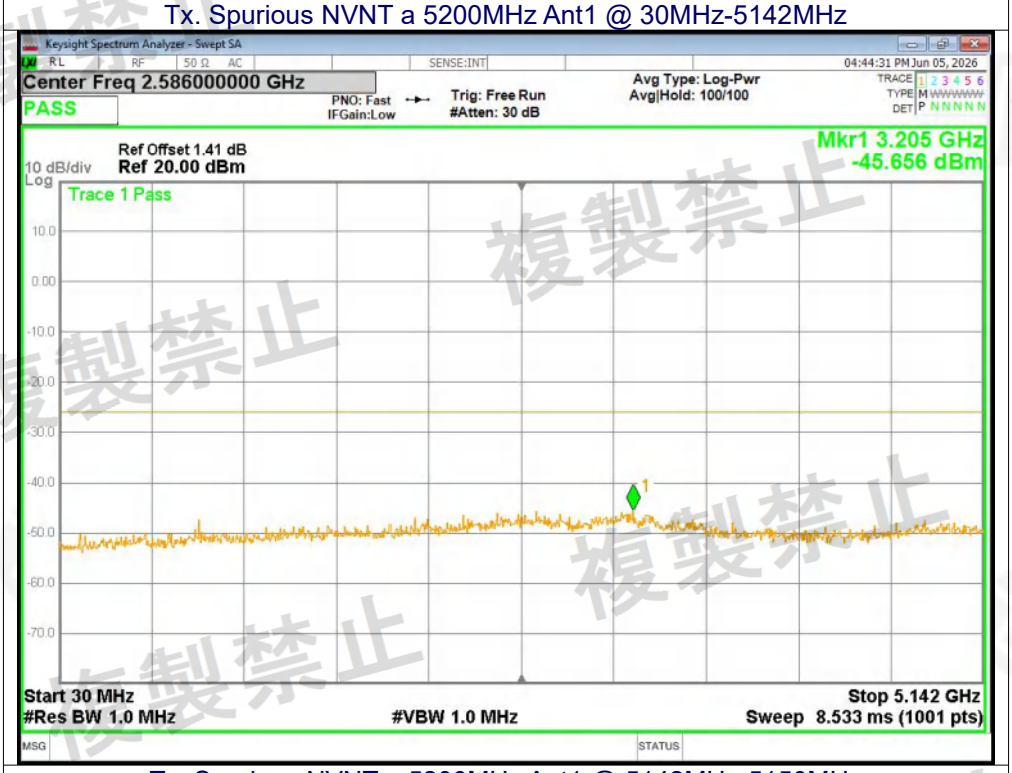
Tx. Spurious NVNT a 5180MHz Ant1 @ 5260MHz-5266.7MHz



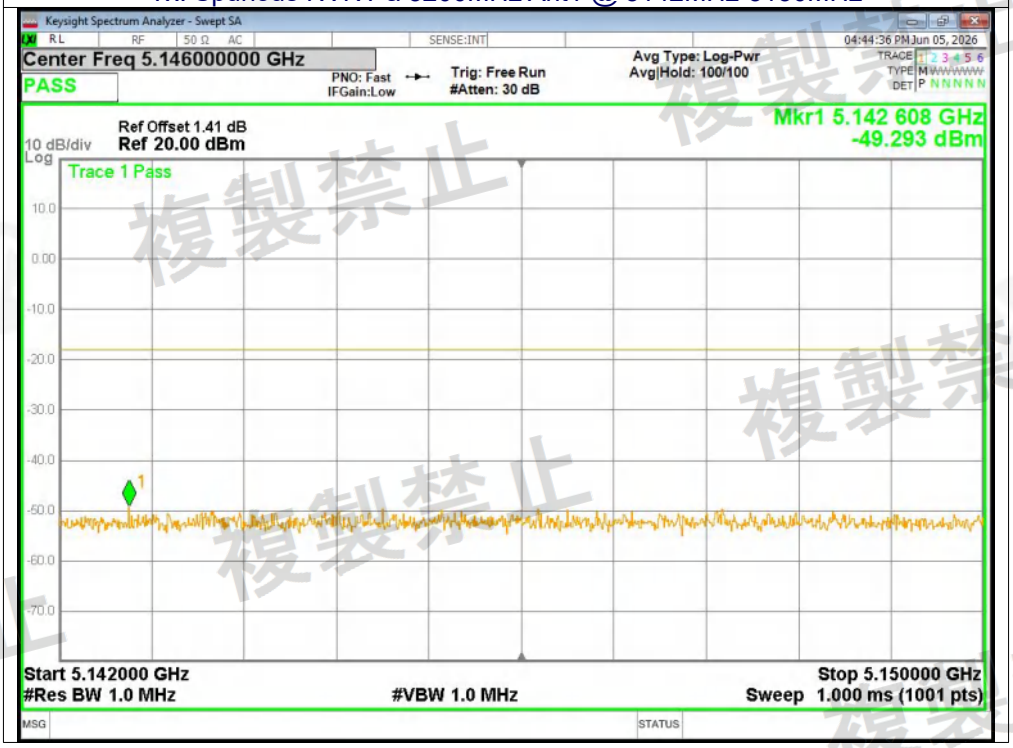
Tx. Spurious NVNT a 5180MHz Ant1 @ 5266.7MHz-26000MHz



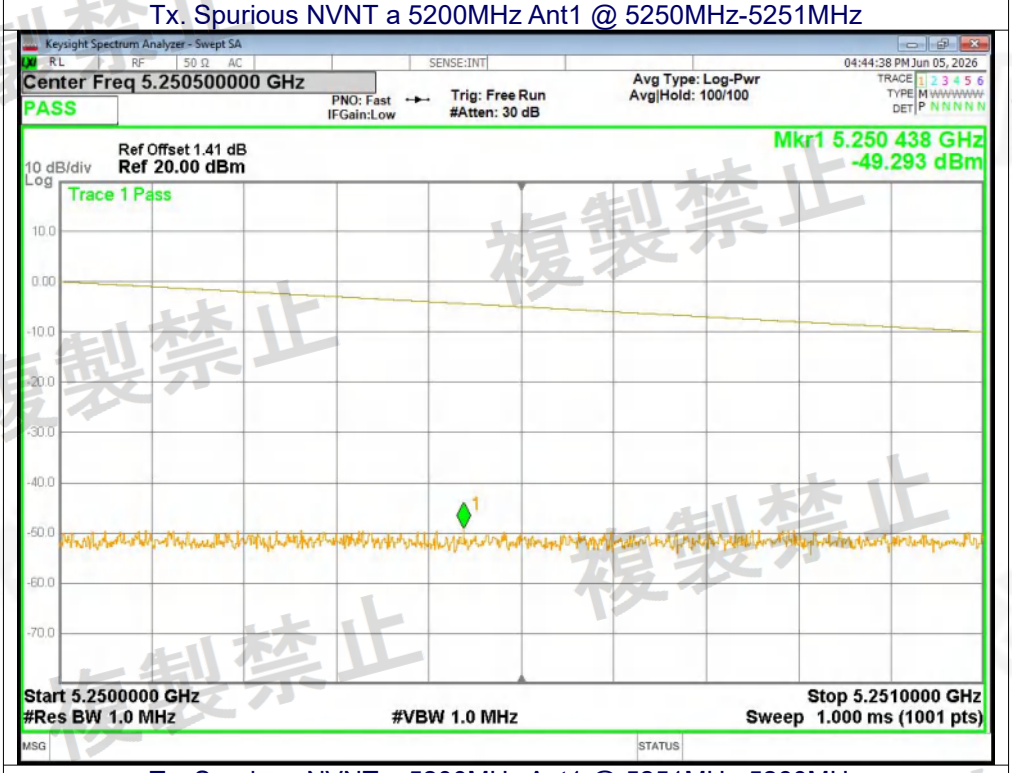
Tx. Spurious NVNT a 5200MHz Ant1 @ 30MHz-5142MHz



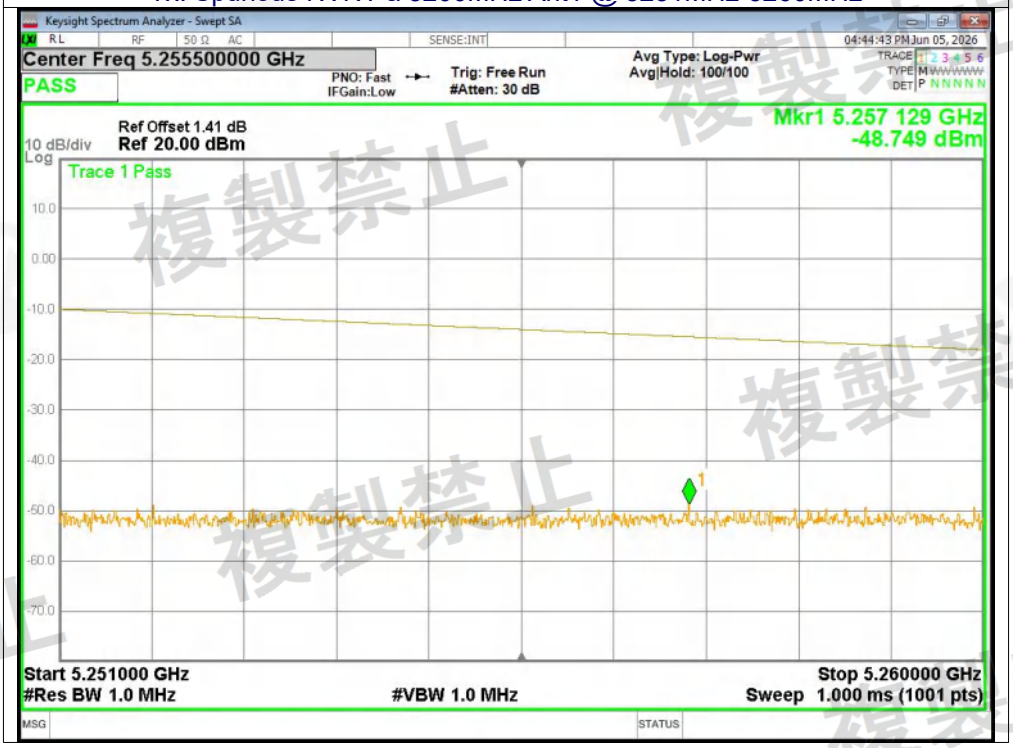
Tx. Spurious NVNT a 5200MHz Ant1 @ 5142MHz-5150MHz



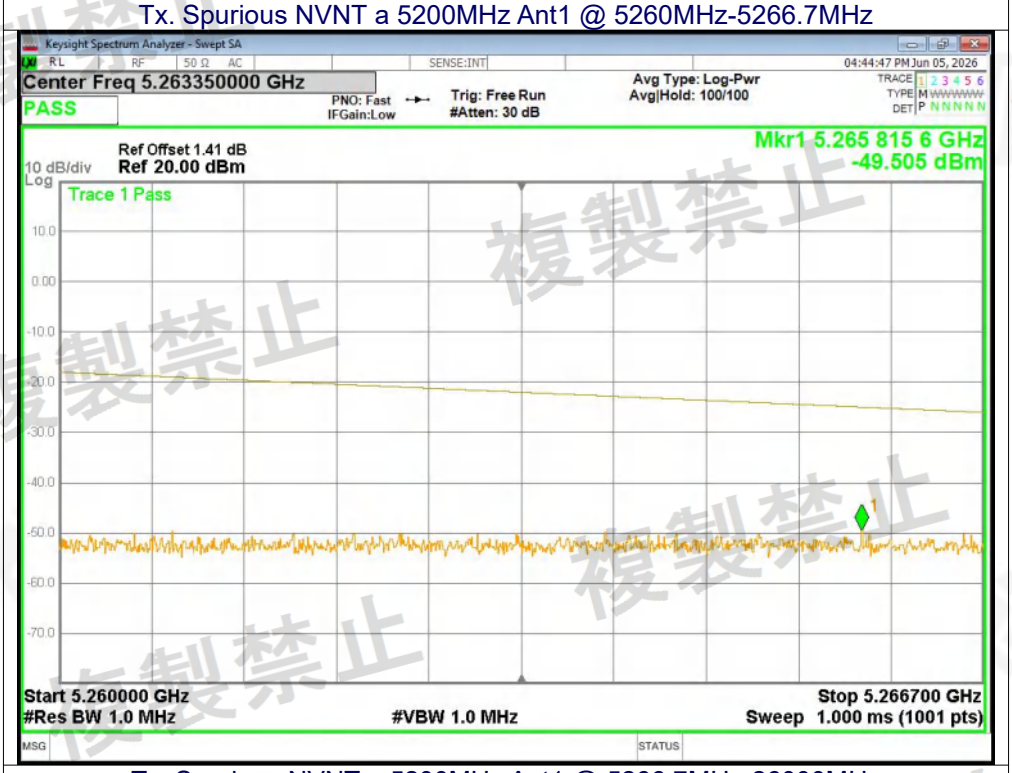
Tx. Spurious NVNT a 5200MHz Ant1 @ 5250MHz-5251MHz



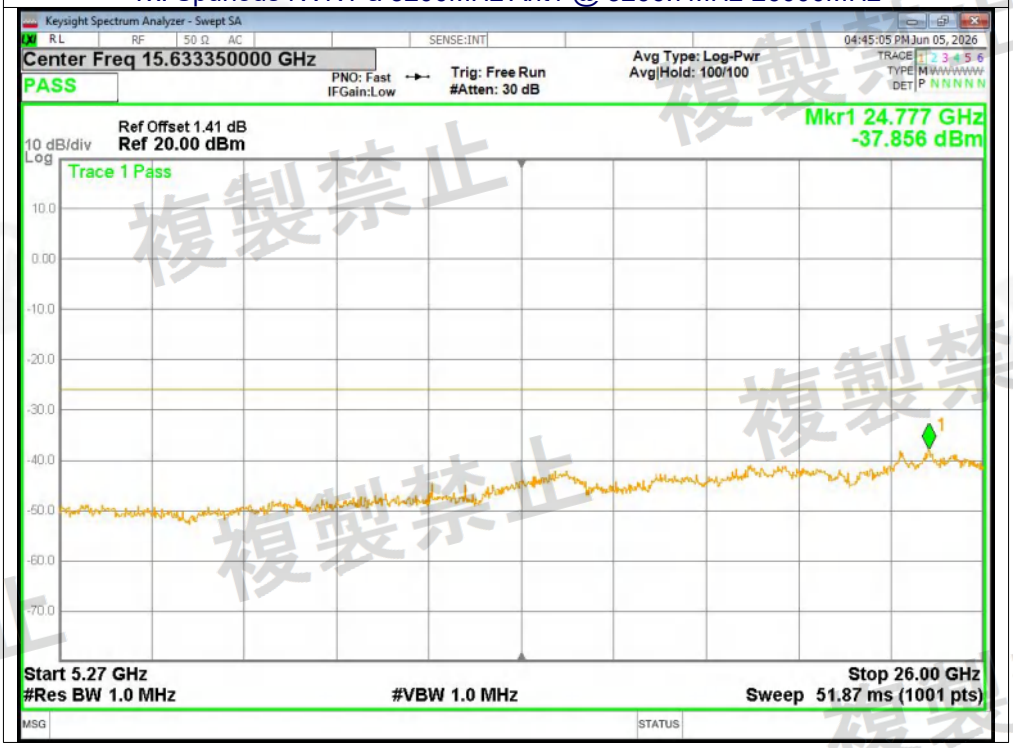
Tx. Spurious NVNT a 5200MHz Ant1 @ 5251MHz-5260MHz



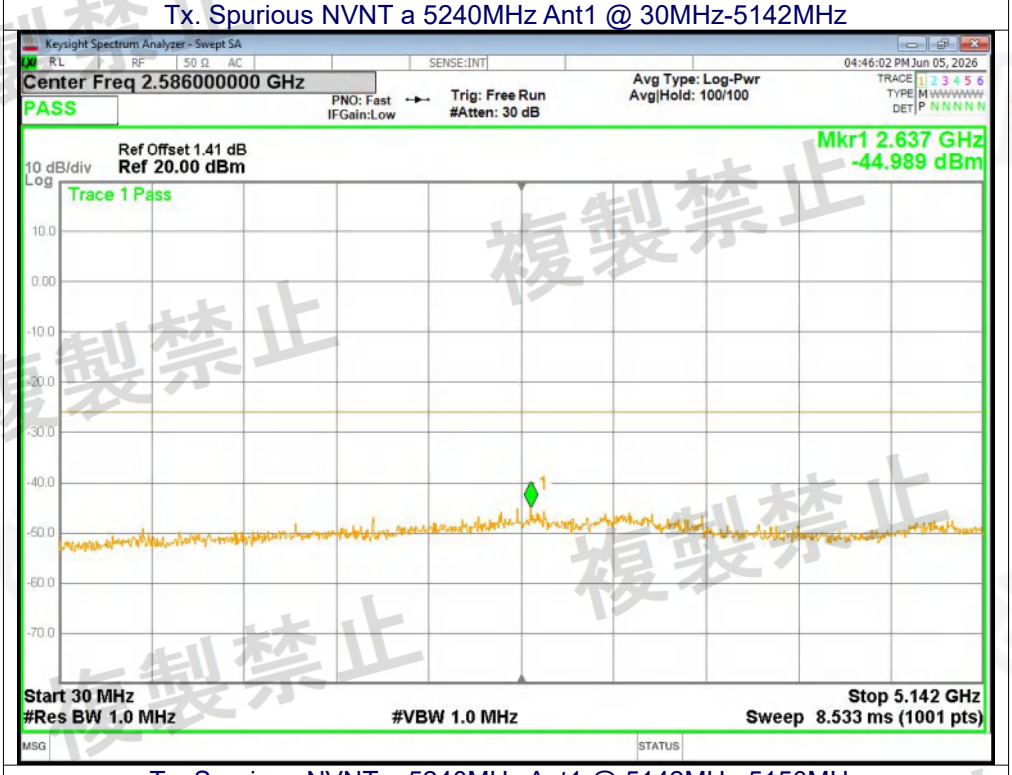
Tx. Spurious NVNT a 5200MHz Ant1 @ 5260MHz-5266.7MHz



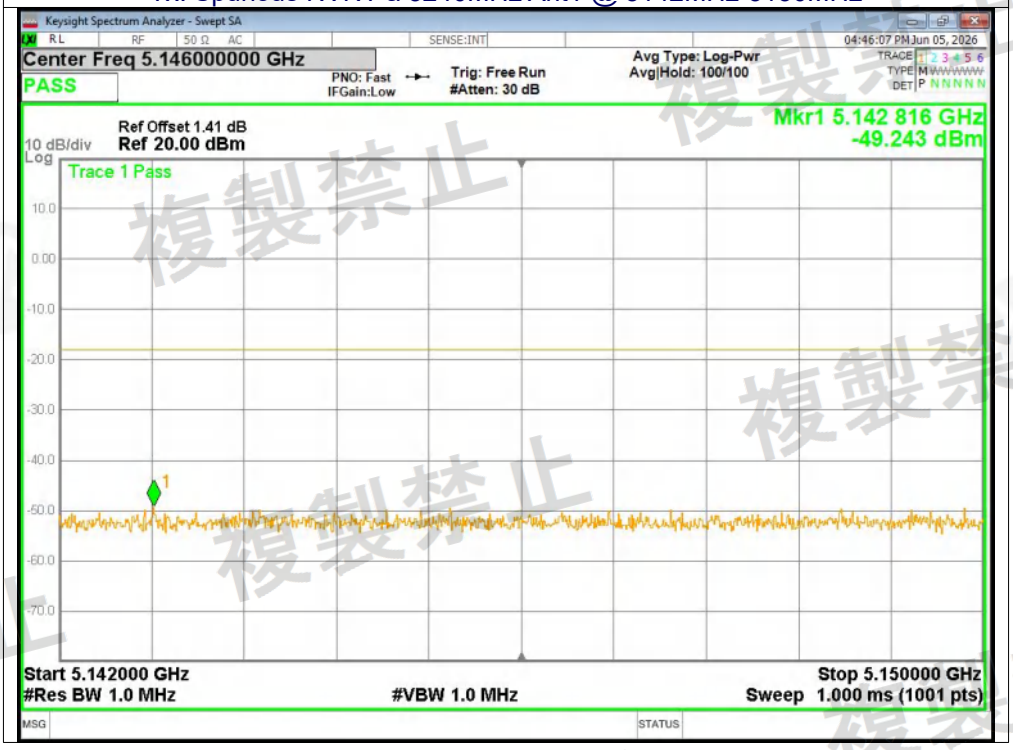
Tx. Spurious NVNT a 5200MHz Ant1 @ 5266.7MHz-26000MHz



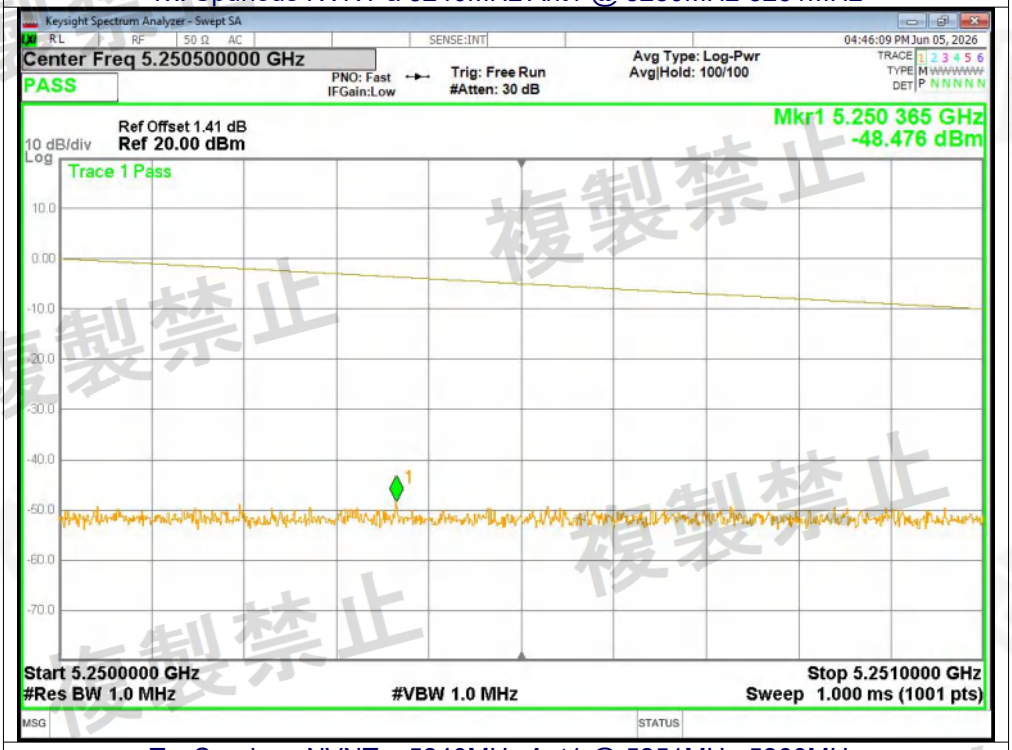
Tx. Spurious NVNT a 5240MHz Ant1 @ 30MHz-5142MHz



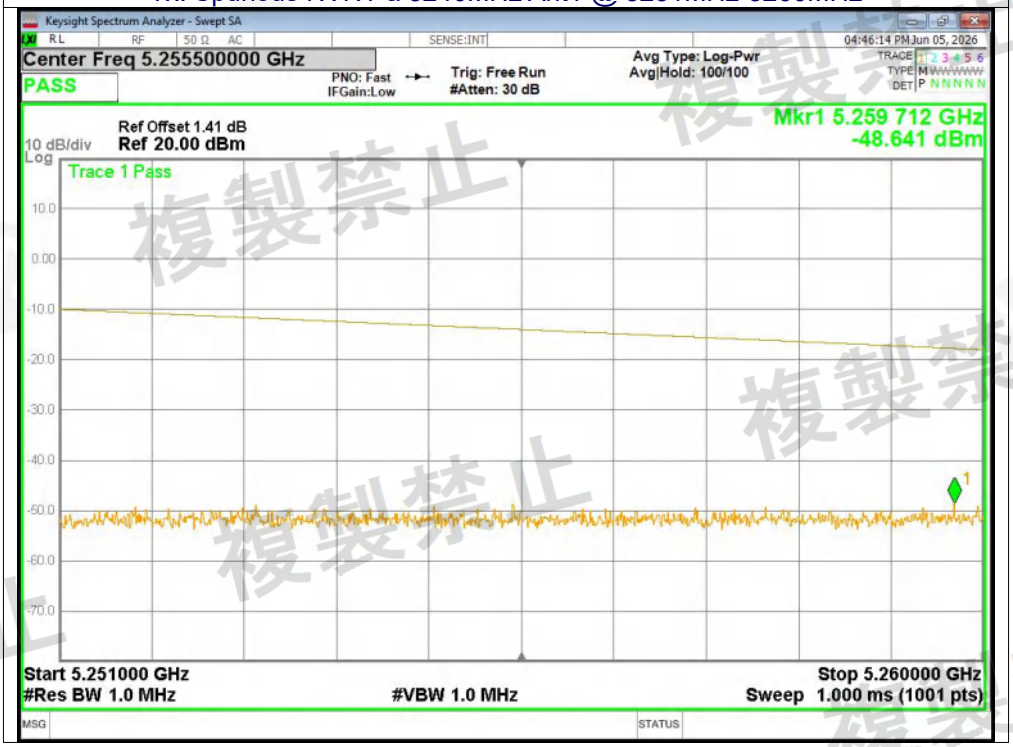
Tx. Spurious NVNT a 5240MHz Ant1 @ 5142MHz-5150MHz



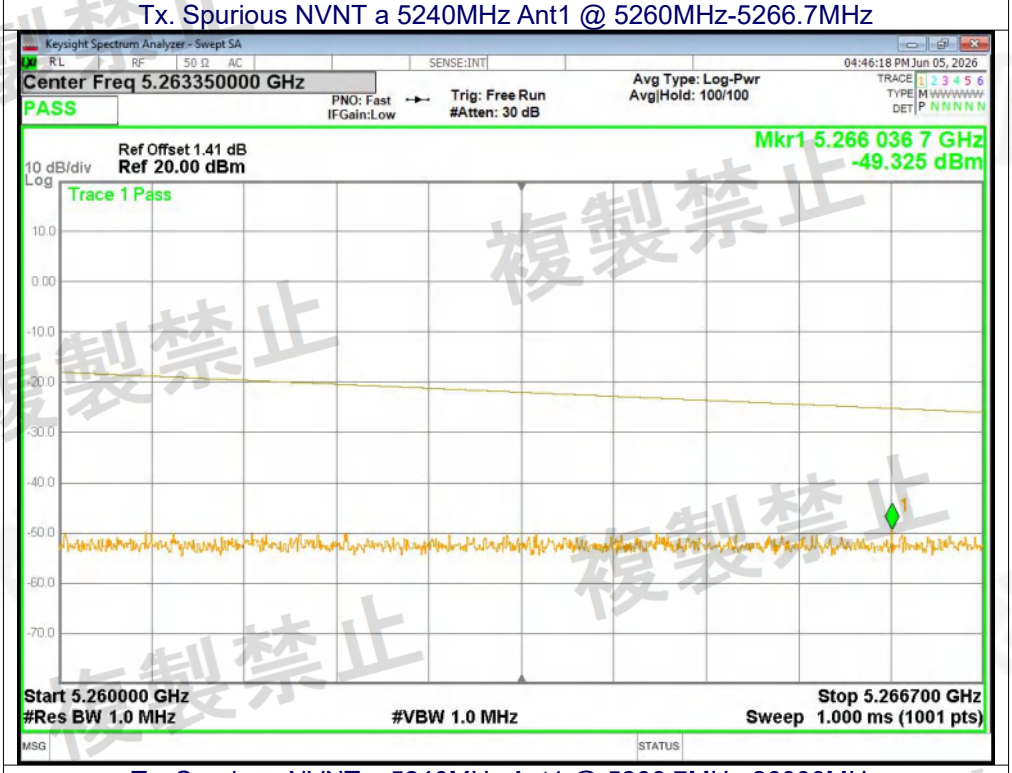
Tx. Spurious NVNT a 5240MHz Ant1 @ 5250MHz-5251MHz



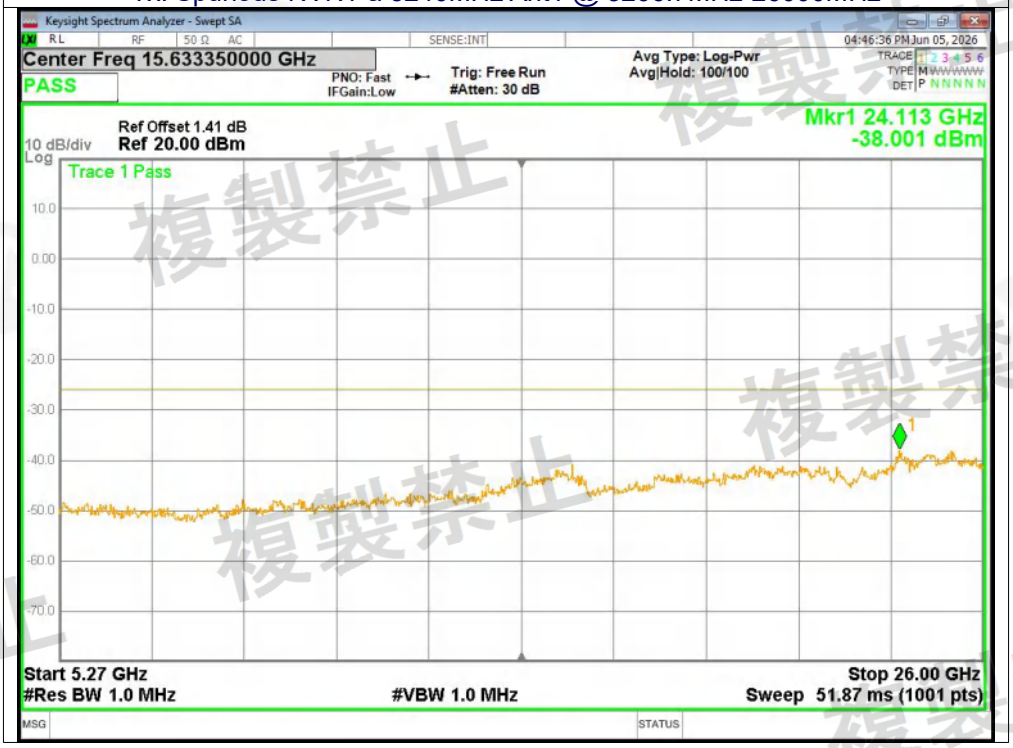
Tx. Spurious NVNT a 5240MHz Ant1 @ 5251MHz-5260MHz



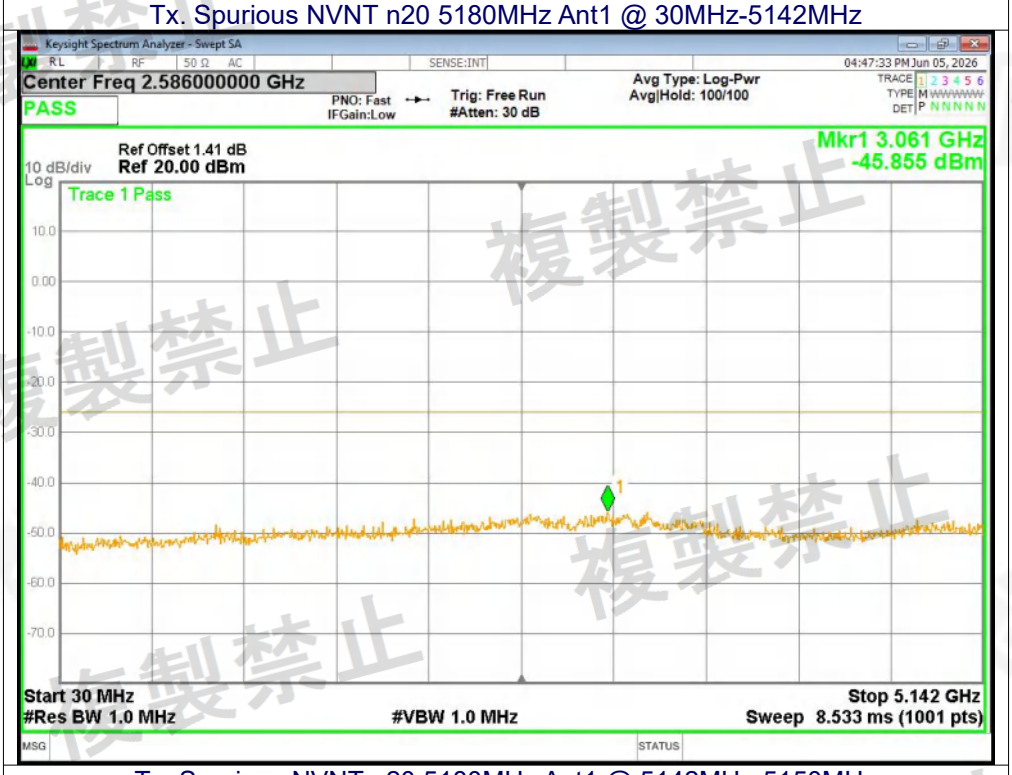
Tx. Spurious NVNT a 5240MHz Ant1 @ 5260MHz-5266.7MHz



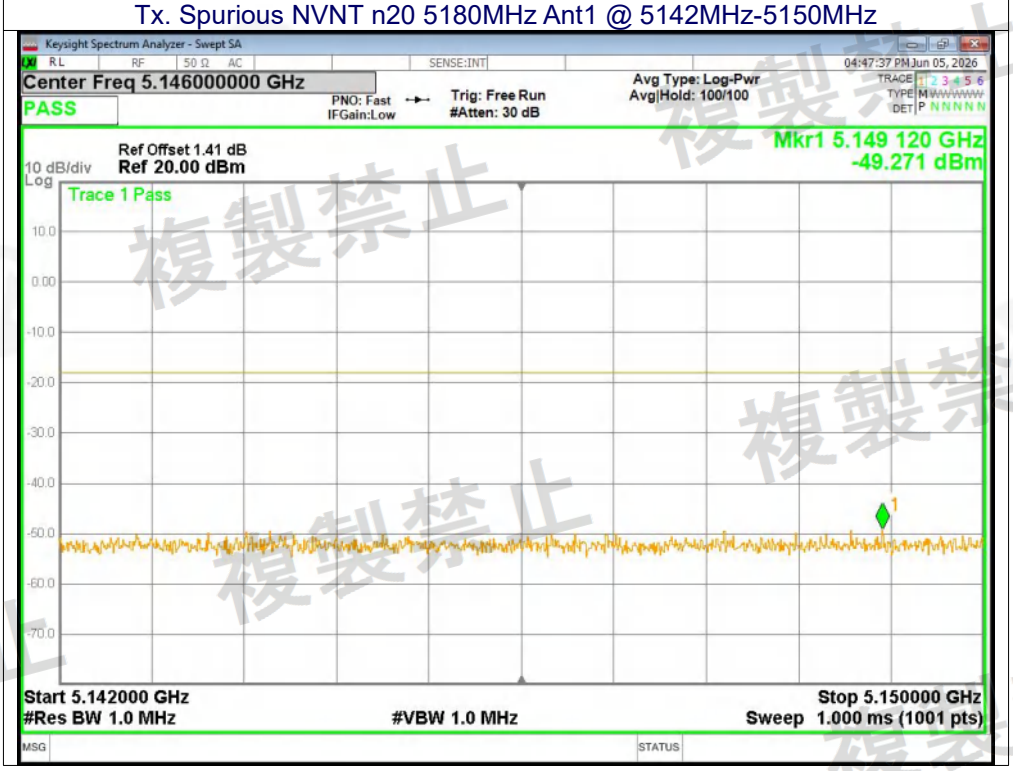
Tx. Spurious NVNT a 5240MHz Ant1 @ 5266.7MHz-26000MHz



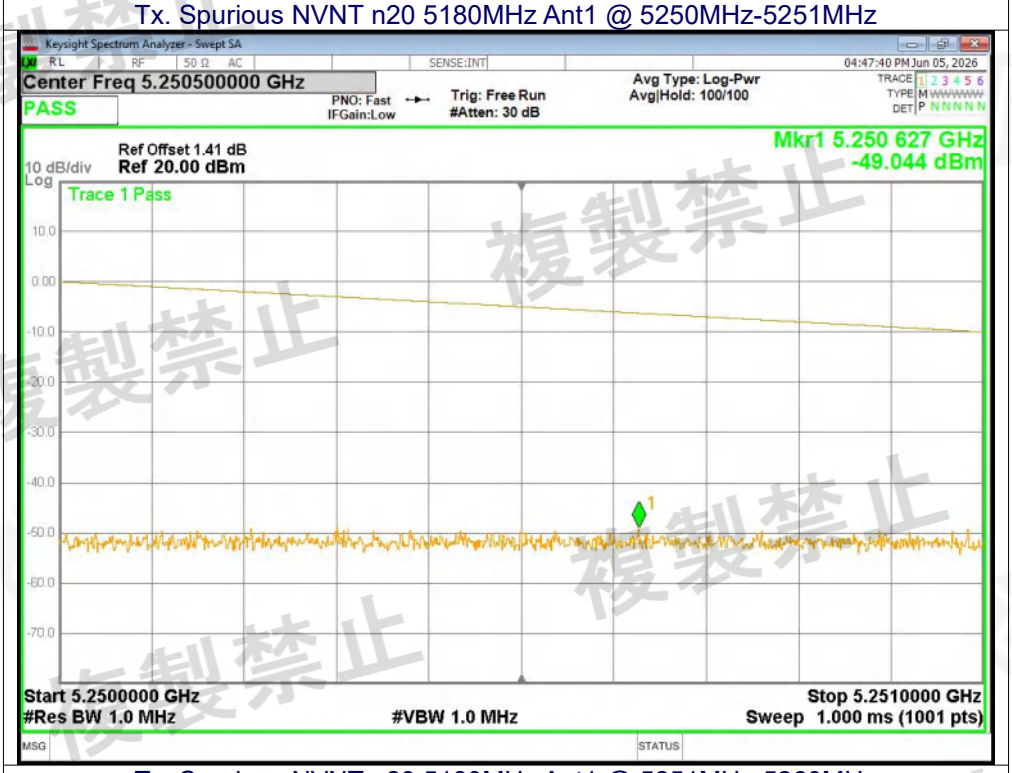
Tx. Spurious NVNT n20 5180MHz Ant1 @ 30MHz-5142MHz



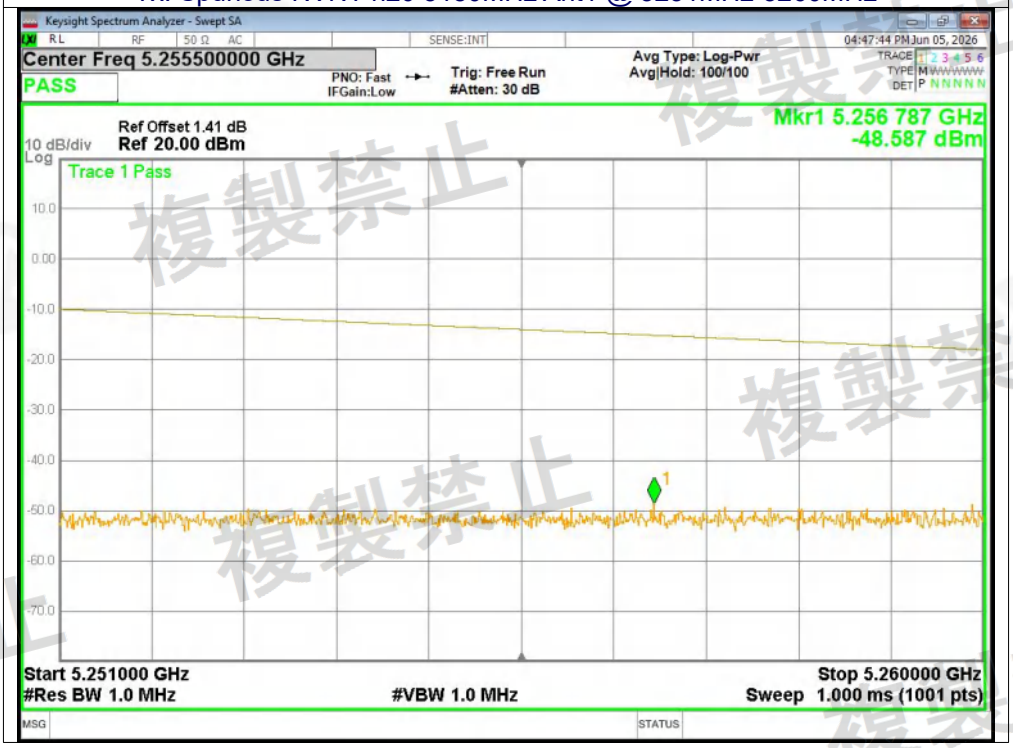
Tx. Spurious NVNT n20 5180MHz Ant1 @ 5142MHz-5150MHz



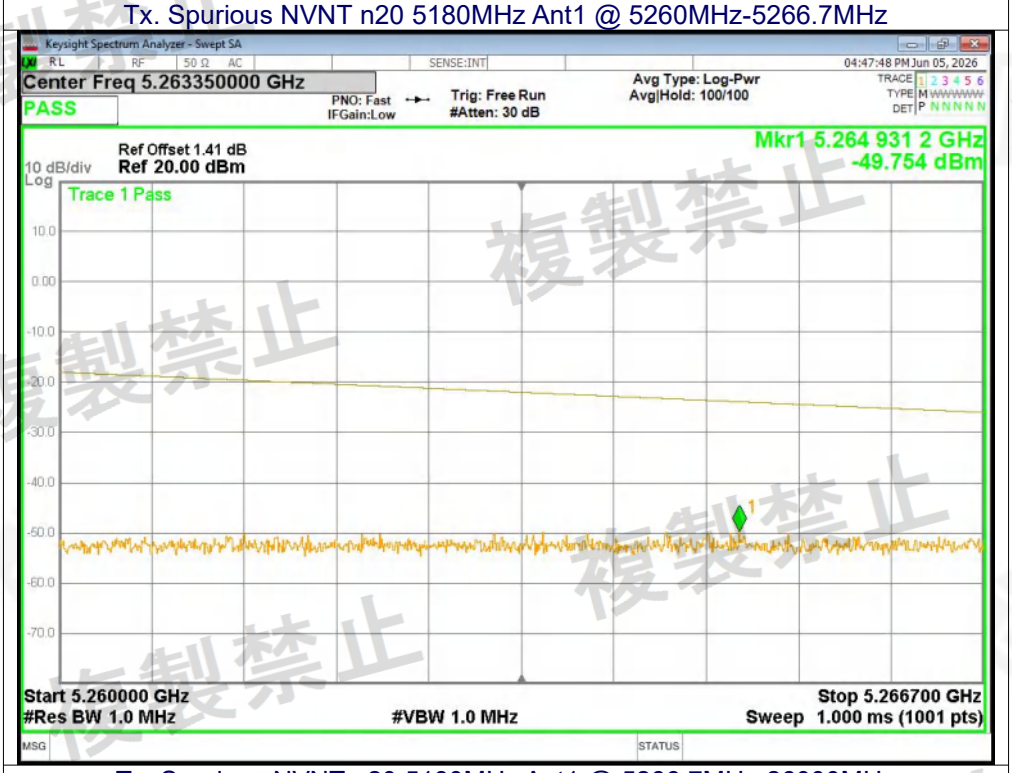
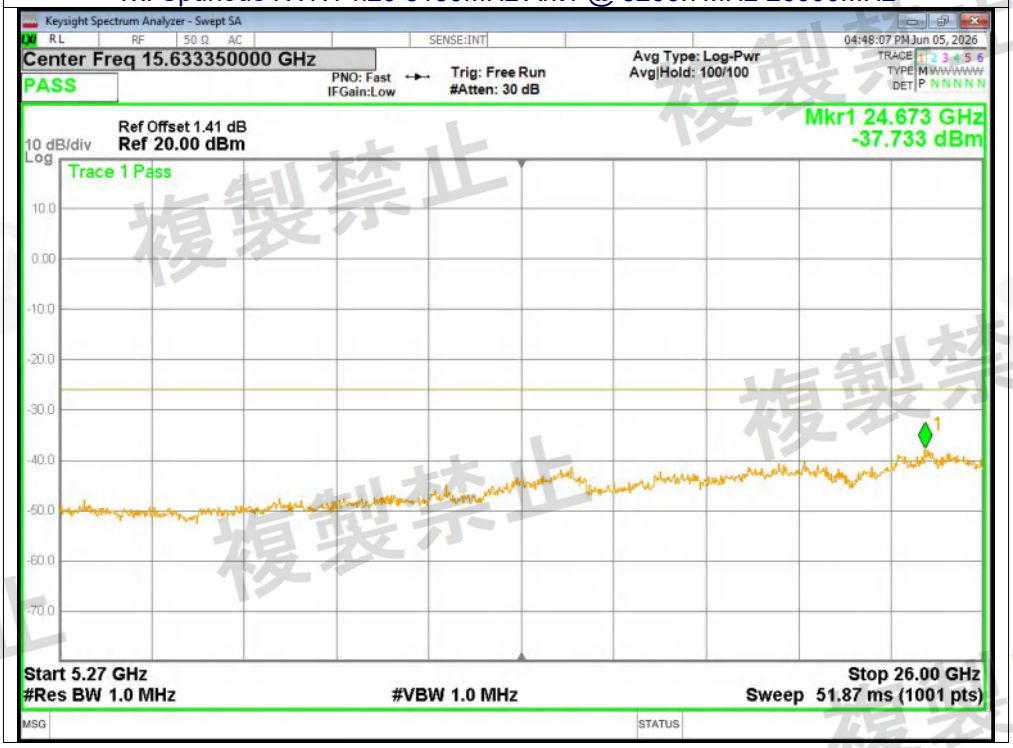
Tx. Spurious NVNT n20 5180MHz Ant1 @ 5250MHz-5251MHz



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



Tx. Spurious NVNT n20 5180MHz Ant1 @ 5260MHz-5266.7MHz



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