



Report No.: ET-26073263E01

MIC TEST REPORT

Applicant: Beijing Sansierhou Cultural Communication Co., Ltd.
Address of Applicant: Unit 608, 5th Floor, Building 202, Jiangfu Jiayuan North Lane, Chaoyang District, Beijing, China
Manufacturer/Factory: Beijing Sansierhou Cultural Communication Co., Ltd.
Address of Manufacturer: Unit 608, 5th Floor, Building 202, Jiangfu Jiayuan North Lane, Chaoyang District, Beijing, China
Factory: Zhongshan Leetac Electronics Technology Co., Ltd.
Address of Factory: No. 15, Danli Road, South District, Zhongshan City, Guangdong Province, China
Product Name: PLAY Multifunction Bluetooth Turntable
Model No.: TLP-01, TLP-02, TLP-03, TLP-04, TLP-SP1, TLP-SP2, TLP-SP3, TLP-SP4

Trade Mark:

TINYL

Applicable standards: MIC notification No. 88 of 2004, annex 43 Article 2, Paragraph 1, Item 19

Date of Test: Jul.09, 2026- Jul.27, 2026

Date of report issued: Jul.27, 2026

Remark:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full without prior written permission of the company.

The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

Prepared By

Shenzhen ETR Standard Technology Co., Ltd.

Address: No.103, No.10, Phase I, Zone 3, Xinxing Industrial Park, Xinxing, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

Compiled by:

Yuan Fan

Project Engineer

Reviewed by:

Can Kong

Project Manager

Approved by:

Smith Chen

Authorized Signature



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ET-26073263E01	Original	Jul.27, 2026

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1 Test Summary

Item	Description of Test	Result	Test by
1	Frequency Tolerance	Pass	Oliver Wang
2	Antenna Power	Pass	Oliver Wang
3	Antenna Power Tolerances	Pass	Oliver Wang
4	E.I.R.P	Pass	Oliver Wang
5	Occupied Bandwidth	Pass	Oliver Wang
6	E.I.R.P Unwanted Emission Strength	Pass	Oliver Wang
7	Secondary Radiated Emission Strength	Pass	Oliver Wang
8	Carrier sensing function(1)	N/A,note2	/
9	Carrier sensing function(2)	N/A,note3	/
10	Antenna Absolute Gain	N/A	/
11	Half power beam angle	N/A	/
12	Dwell time	Pass	Oliver Wang
13	Interference Prevention Function	Pass	Oliver Wang

note1: Not Applicable.
note2: Not apply to this device, since EIRP does not require compensation through Antenna power.
note3: apply for the Occupied bandwidth within 26MHz-40MHz.

N/A: Not Applicable.

Pass: The EUT complies with the essential requirements in the standard.

Note: Compliance determination rules

- 1).The Compliance determination of test results does not take into account measurement uncertainty. Measurement results are determined based on regulatory limitations or requirements specified by the applicant/manufacture. If measurement uncertainty is taken into account, the applicant/manufacture will bear all possible risks of non-compliance.
- 2).The measurement uncertainty please refer to each test result in the "Measurement Uncertainty"

Measurement Uncertainty

Test Item	Measurement Uncertainty	Notes
Bandwidth	$\pm 0.72\%$	(1)
Antenna Power	$\pm 0.67\text{dB}$	(1)
Frequency Tolerance	$\pm 6 \times 10^{-7}$	(1)
Conducted spurious emission	$\pm 0.64\text{dB}$	(1)
Spurious emissions, radiated($>1\text{G}$)	$\pm 4.88\text{dB}$	(1)
Spurious emissions, radiated($<1\text{G}$)	$\pm 4.16\text{dB}$	(1)
Time	$\pm 0.03\%$	(1)

Note (1): The measurement uncertainty is for coverage factor of $k=2$ and a level of confidence of 95%.



2 General Information

2.1 General Description of EUT

Product Name:	PLAY Multifunction Bluetooth Turntable
Model No.:	TLP-01, TLP-02, TLP-03, TLP-04, TLP-SP1, TLP-SP2, TLP-SP3, TLP-SP4
Difference of Model:	All models have the same electrical design (i.e. circuit design, PCB layout, RF module/circuit, antenna type and position, components on PCB, etc.), mechanical structure and design are the same, only the model name and color are different
Tested of Model:	TLP-01
Hardware version:	N/A
Software version:	N/A
Power supply:	AC 100-240V 50/60Hz
Adapter information:	N/A
Battery:	N/A
Radio Technology:	BT
Frequency range:	2402MHz-2480MHz
Modulation technology:	GFSK, $\pi/4$ -DQPSK
Antenna Type:	PCB antenna
Antenna gain:	-0.58dBi
Note: 1. Other information please Reference user manual. 2. Antenna information is provided by applicant, Testing lab is not responsible for the accuracy of the information.	

2.2 Operation Channel List

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	20	2422	40	2442	60	2462
01	2403	21	2423	41	2443	61	2463
02	2404	22	2424	42	2444	62	2464
03	2405	23	2425	43	2445	63	2465
04	2406	24	2426	44	2446	64	2466
05	2407	25	2427	45	2447	65	2467
06	2408	26	2428	46	2448	66	2468
07	2409	27	2429	47	2449	67	2469
08	2410	28	2430	48	2450	68	2470
09	2411	29	2431	49	2451	69	2471
10	2412	30	2432	50	2452	70	2472
11	2413	31	2433	51	2453	71	2473
12	2414	32	2434	52	2454	72	2474
13	2415	33	2435	53	2455	73	2475
14	2416	34	2436	54	2456	74	2476
15	2417	35	2437	55	2457	75	2477
16	2418	36	2438	56	2458	76	2478
17	2419	37	2439	57	2459	77	2479
18	2420	38	2440	58	2460	78	2480
19	2421	39	2441	59	2461	/	/

2.3 Test Frequency

Low	2402MHz
Middle	2441MHz
High	2480MHz

2.4 Test mode

Transmitting mode	Keep the EUT in continuously TX/RX mode
Remark: The test software was used to control EUT work in Continuous TX and RX mode, and select test channel, the test voltage was tuned from 90% to 110% of the nominal rated supply voltage.	

2.5 Description of Support Units

No.	Description	Manufacturer	Model	Serial Number	Certification or SDOC

2.6 Environmental conditions

Temperature range:	24.1℃
Humidity range:	51%
Pressure range:	101.2kPa



2.7 Test voltage

Voltage Fluctuation test	Normal Voltage	+10% of Normal Voltage	-10% of Normal Voltage
AC Power	100V	110V	90V
RF Chip	3.3V	3.3V	3.3V

Note:

$\text{Voltage Variation (\%)} = (\text{Output high or Low Voltage} - \text{Output Normal Voltage}) / \text{Output Normal Voltage} * 100$

During the input supply voltage to the EUT from the power source is varied by +/- 10%, fluctuation of power supply to the RF circuit of EUT (excluding power source) is equal to or less than +/-1%, so only operated in normal voltage to test all regulations.

2.8 Test Facility

Test laboratory:	Shenzhen ETR Standard Technology Co., Ltd.
CNAS Registration No.:	L11864
Laboratory location:	No.103, No.10, Phase I, Zone 3, Xinxing Industrial Park, Xinhe, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Telephone:	+86 755 85259392

2.9 Additional Instructions

Test Software	Manufacturer-Specific Serial Commands
Power level setup	Default



3 Test Instruments list

Item	Equipment name	Manufacturer	Model	Serial No.	Calibration date	Due date
1	Spectrum analyzer	KEYSIGHT	N9020A	MY55370280	2026.3.05	2027.3.04
3	Signal generator	Agilent	N5182A	MY49060455	2026.3.05	2027.3.04
4	Oscilloscope	Tektronix	TDS3032B	B03245	2026.4.21	2027.4.20
5	DC Power Supply	LongWei	PS-305DF	170804961	2026.4.21	2027.4.20
6	Power Sensor	Keysight	U2021XA	MY54111006	2025.3.06	2027.3.05

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

2. Test Instruments Calibration Information

Used	Calibration Company: Abbreviation	Full Name of-calibration company
☒	CCIC	CCIC(Shenzhen)Metrology & Testing service Co. Ltds
☒	GRG	GRG METROLOGY & TEST GROUP CO.,LTD.
Calibration Information (Article 24-2, Paragraph 4 of the Radio Act)		
☐	(a) Calibration, conducted by the National institute of information and communication Technology (NICT) or a designated 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 designated 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 of the Radio Act, which is to have been calibrated as described in (a) through (c) above.	

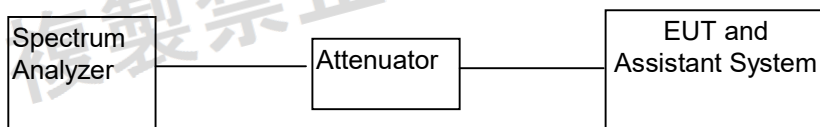
4 Test results and Measurement Data

4.1 Frequency Tolerance

4.1.1 Limit

-/+ 50ppm

4.1.2 Block diagram of test setup



4.1.3 Test Procedures

- (1) Configure EUT and assistant system according to clause 2.3.
- (2) Set EUT to work in carrier Tx mode as described in clause 2.4
- (3) Connect the EUT's antenna port to the Spectrum Analyzer by suitable attenuator, set the Spectrum Analyzer as below:

Centre Frequency: The centre frequency of the channel under test.

Resolution BW: 10 KHz.

Video BW: 10 KHz.

Span: 1MHz.

Detector: Peak.

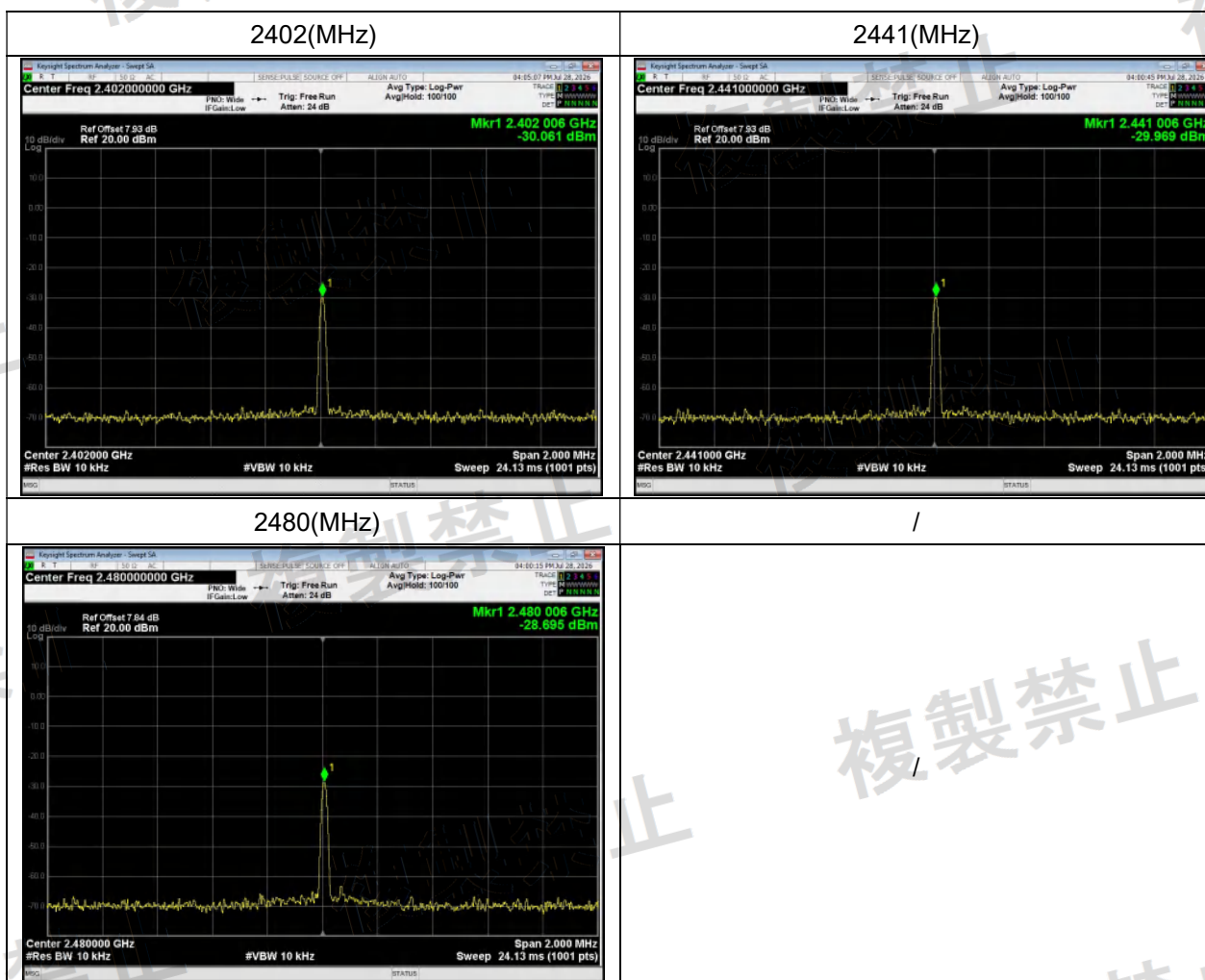
Trace Mode: Max Hold.

- (4) When the trace is complete, find the peak value of the power envelope and record the frequency.

4.1.4 Test Result

Mode	Frequency	Measured	Tolerance	Result	Limit
		MHz	MHz	ppm	ppm (-/+)
Tx Mode	2402MHz	2402.006	0.006	2.50	50
	2441MHz	2441.006	0.006	2.46	50
	2480MHz	2480.006	0.006	2.42	50
Conclusion: PASS					

Test plots:

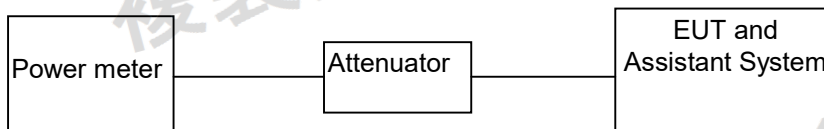


4.2 Antenna power and Antenna Power Tolerance &E.I.R.P

4.2.1 Limit

Item	Limits
Antenna Power Density	(1)FHSS 2427-2470.75MHz: 3mW/MHz or less 2400-2483.5MHz: 10mW/MHz or less (2) DSSS ,OFDM Occupied Bandwidth Within 26MHz: 10mW/MHz or less Occupied Bandwidth 26- 40MHz: 5mW/MHz or less (3) Other : 10mW
Antenna Power Tolerance	+20%
E.I.R.P	6.91dBm/MHz

4.2.2 Block diagram of test setup



4.2.3 Test Procedure

1. Connect the EUT to the Power meter
2. EUT set hopping mode
3. Reading power meter value and recorded.
4. Antenna power = Reading value/ Spread bandwidth

4.2.4 Test Result

Mode	Reading (dBm)	Reading (mW)	Spread bandwidth (MHz)	Antenna power (mW/MHz)	Power Limit (mW/MHz)	Antenna power tolerance (%)	Limit of tolerance (%)
DH1	2.46	1.76	70.786	0.025	3	-75.00	+20
DH3	2.29	1.69	71.204	0.024	3	-76.00	+20
DH5	2.18	1.65	70.608	0.023	3	-77.00	+20
2DH1	1.39	1.38	70.958	0.019	3	-81.00	+20
2DH3	0.83	1.21	70.441	0.017	3	-83.00	+20
2DH5	0.72	1.18	71.378	0.017	3	-83.00	+20

Note:

- The declared output power is 0.1mW/MHz.
- Spread bandwidth refer 4.4 clause.

E.I.R.P

Mode	Antenna power (mW/MHz)	Antenna power (dBm/MHz)	Antenna Gain (dBi)	E.I.R.P (dBm/MHz)	Limit (dBm/MHz)
DH1	0.025	-16.02	-0.58	-16.60	6.91
DH3	0.024	-16.20	-0.58	-16.78	6.91
DH5	0.023	-16.38	-0.58	-16.96	6.91
2DH1	0.019	-17.21	-0.58	-17.79	6.91
2DH3	0.017	-17.70	-0.58	-18.28	6.91
2DH5	0.017	-17.70	-0.58	-18.28	6.91

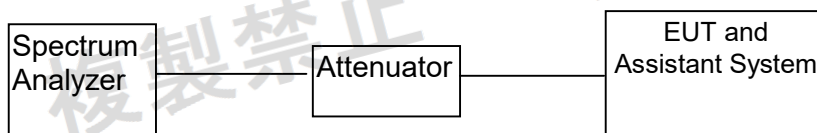
4.3 Occupied Frequency Bandwidth

4.3.1 Limits

Item	Limits
Occupied Band Width:	FHSS $\leq$ 83.5MHz; OFDM1,DSSS $\leq$ 26MHz; OFDM2(802.11n40) $\leq$ 40MHz; Others $\leq$ 26MHz

Permissible value for occupied bandwidth using the FHSS system, a hybrid system combining DSSS and FHSS systems, or a hybrid system combining FHSS and OFDM systems shall be 83.5 MHz or less, while necessary bandwidth (minimum occupied bandwidth sufficient to ensure information transmission of required quality at a required transmission rate for the system used under specified conditions for a given emission type) using a system other than any of the above shall be 26 MHz or less.

4.3.2 Block diagram of test setup



4.3.3 Test Procedures

- (1) Configure EUT and assistant system according clause 2.3
- (2) Set EUT work in hopping mode.
- (3) Connected the EUT's antenna port to the Spectrum Analyzer by suitable attenuator, set the Spectrum Analyzer as below:

Centre Frequency: 2441MHz

Resolution BW: 1MHz

Video BW: 1MHz

Span: 120MHz

Span: Wide enough to cover the complete power envelope of the signal of the EUT.

Detector: Peak.

Trace Mode: Max Hold.

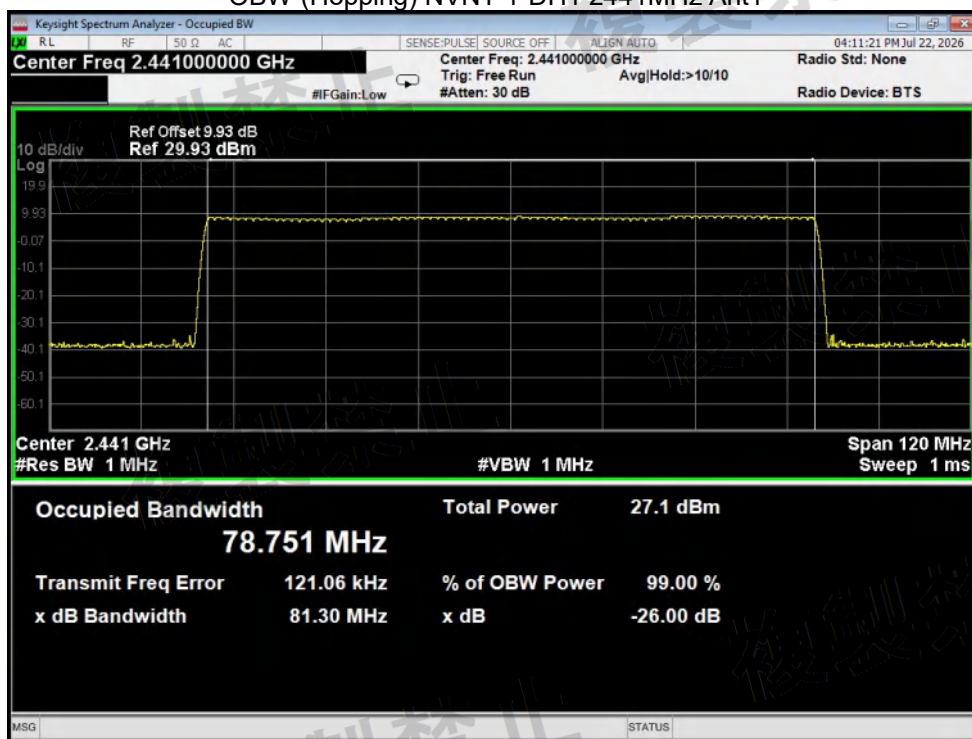
- (4) When the trace is complete, measure the occupied bandwidth (99% bandwidth) with spectrum analyzer's bandwidth measure function.

4.3.4 Test Result

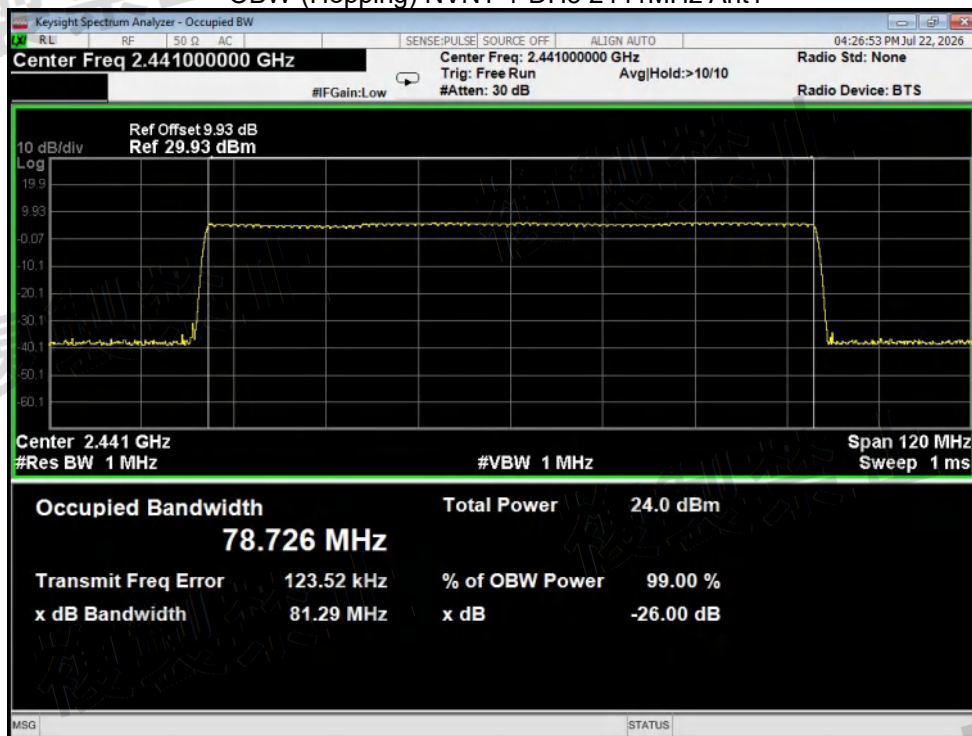
Mode		Condition	Result	Limit
			(MHz)	(MHz)
GFSK	DH1	Normal	78.751	≧ 83.5
	DH3		78.726	≧ 83.5
	DH5		78.692	≧ 83.5
π/4-DQPSK	2DH1	Normal	78.743	≧ 83.5
	2DH3		78.780	≧ 83.5
	2DH5		78.736	≧ 83.5
Conclusion: PASS				

Test plots:

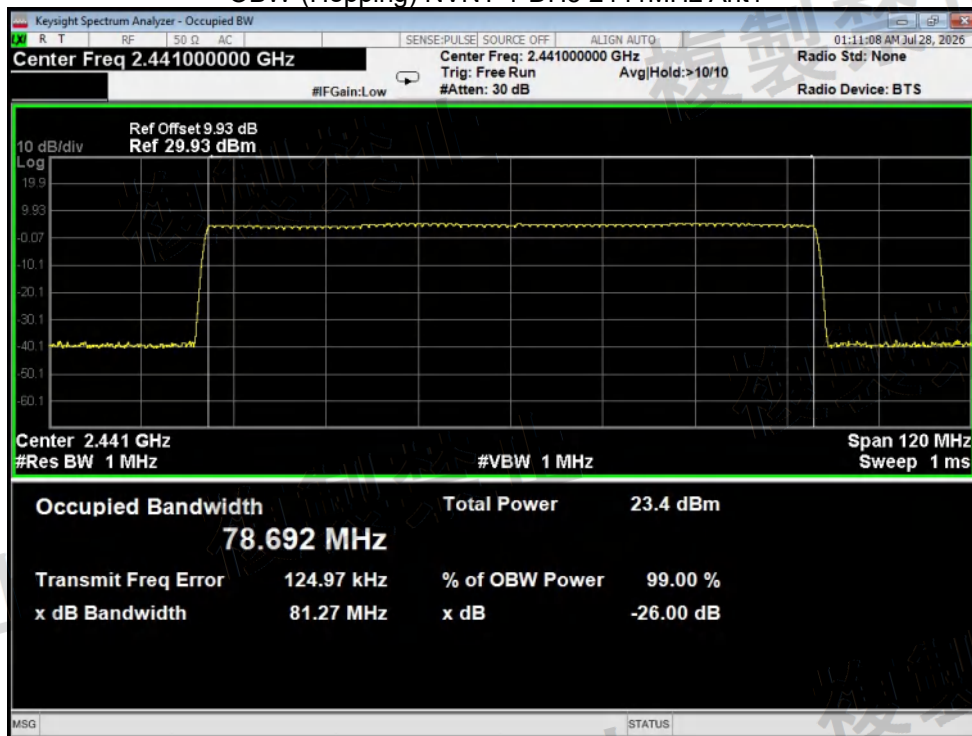
OBW (Hopping) NVNT 1-DH1 2441MHz Ant1



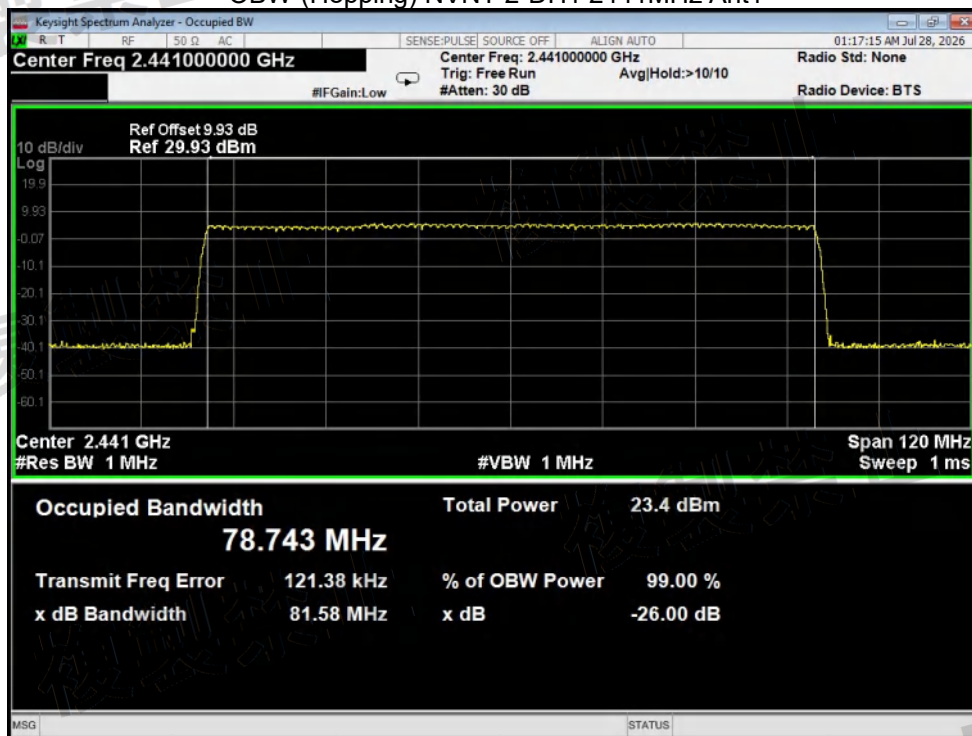
OBW (Hopping) NVNT 1-DH3 2441MHz Ant1



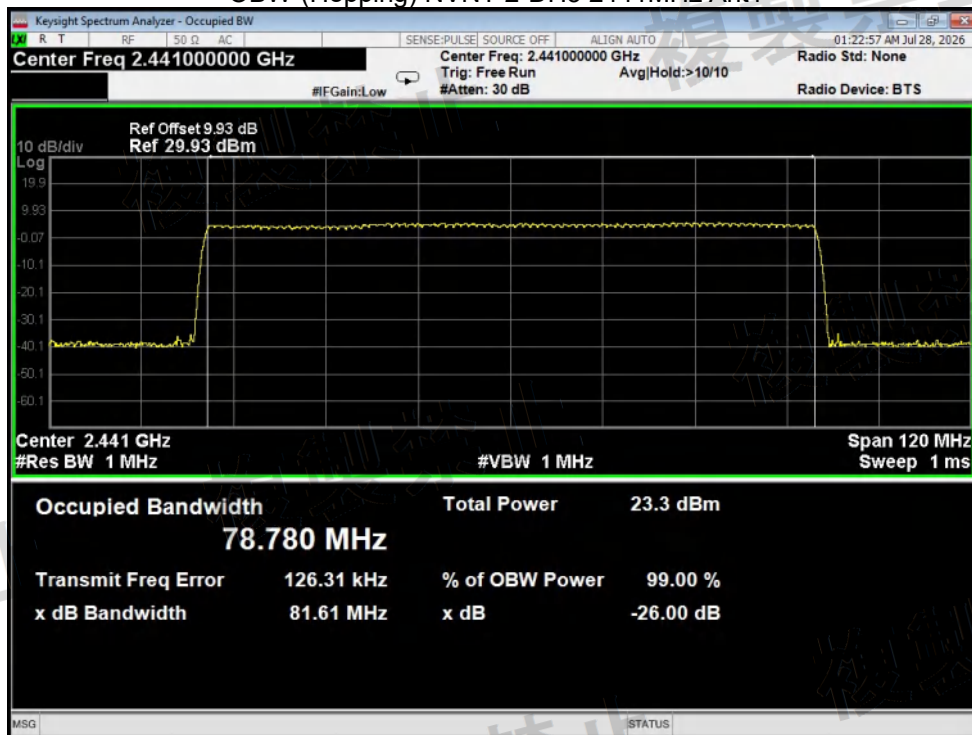
OBW (Hopping) NVNT 1-DH5 2441MHz Ant1



OBW (Hopping) NVNT 2-DH1 2441MHz Ant1

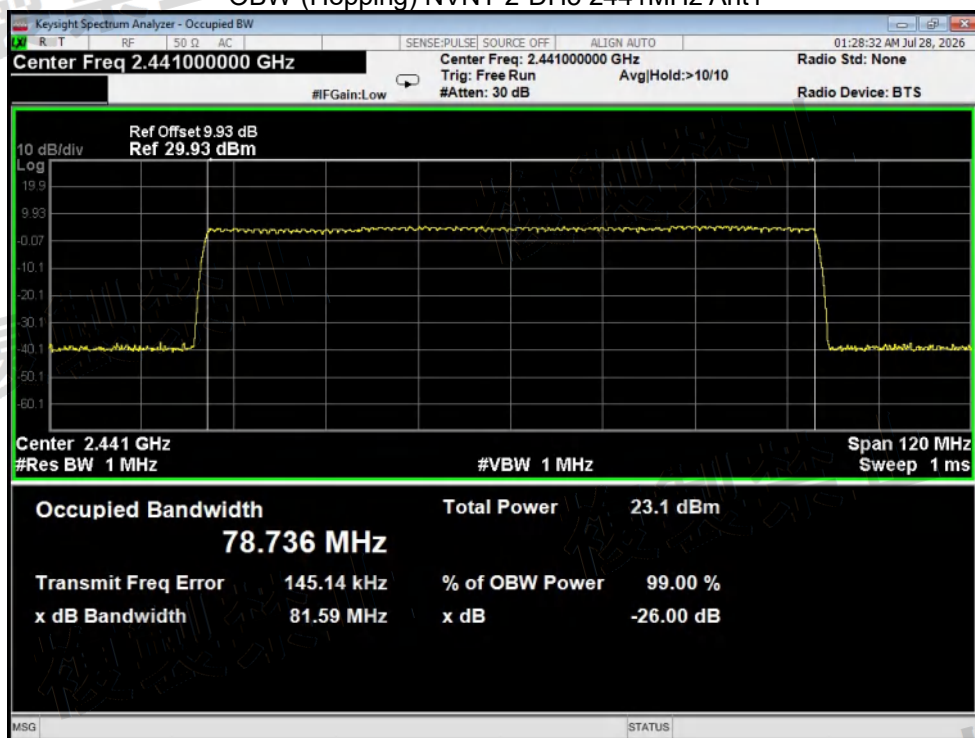


OBW (Hopping) NVNT 2-DH3 2441MHz Ant1





OBW (Hopping) NVNT 2-DH5 2441MHz Ant1

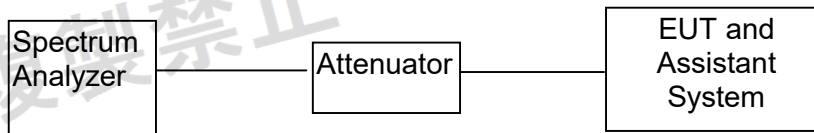


4.4 Spreading Bandwidth

4.4.1 Limits

N/A

4.4.2 Block Diagram of Test Setup



4.4.3 Test Procedures

- (1) Configure EUT and assistant system according clause 2.3 and 4.4.2
- (2) Set EUT work in hopping mode.
- (3) Connected the EUT's antenna port to the Spectrum Analyzer by suitable attenuator, set the Spectrum Analyzer as below:

Centre Frequency: 2441MHz

Resolution BW: 300KHz

Video BW: 300KHz

Span: 120MHz

Span: Wide enough to cover the complete power envelope of the signal of the EUT.

Detector: Peak.

Trace Mode: Max Hold.

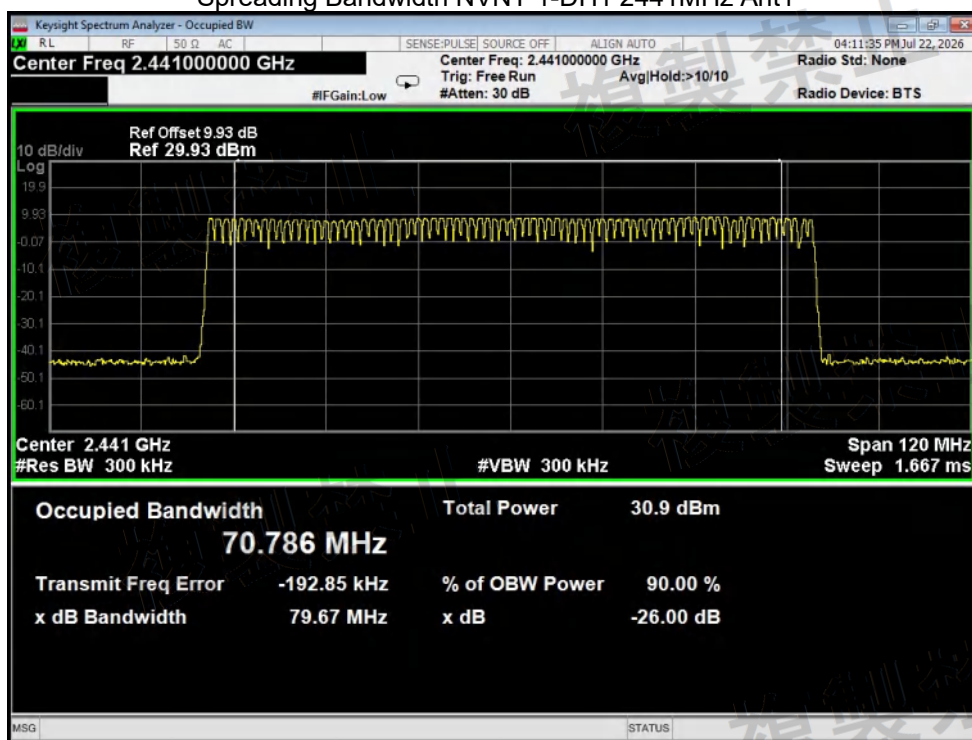
- (4) When the trace is complete, measure the occupied bandwidth (90% bandwidth) with spectrum analyzer's bandwidth measure function.

4.4.4 Test Result

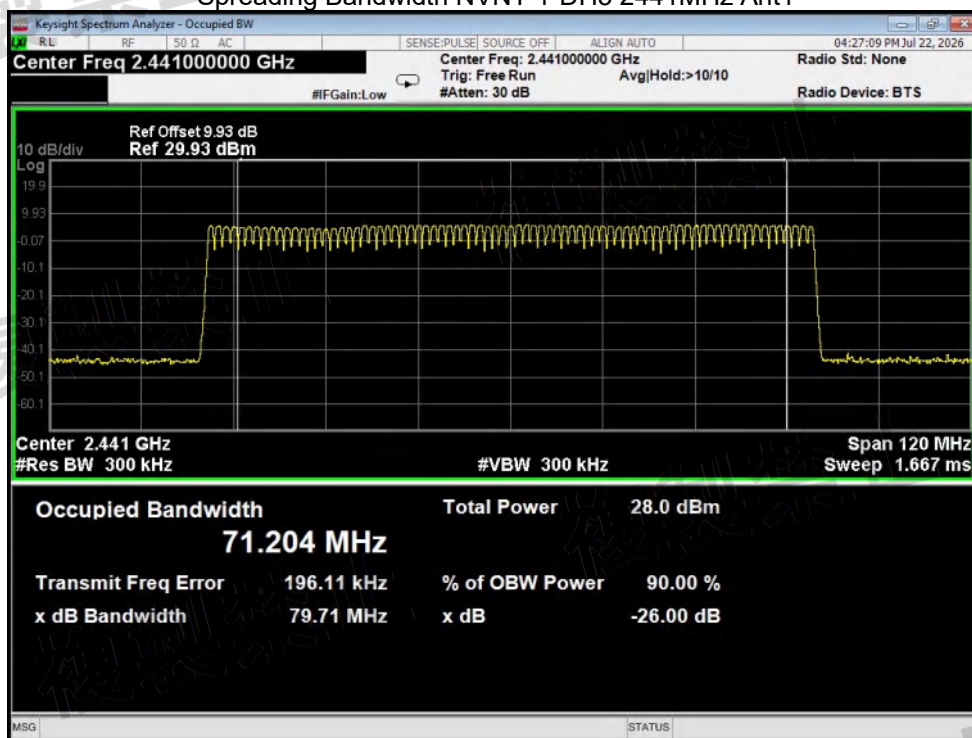
Mode		Condition	Spreading Bandwidth (MHz)	Limit
GFSK	DH1	Normal	70.786	/
	DH3		71.204	
	DH5		70.608	
$\pi/4$ -DQPSK	2DH1	Normal	70.958	
	2DH3		70.441	
	2DH5		71.378	

Test plots:

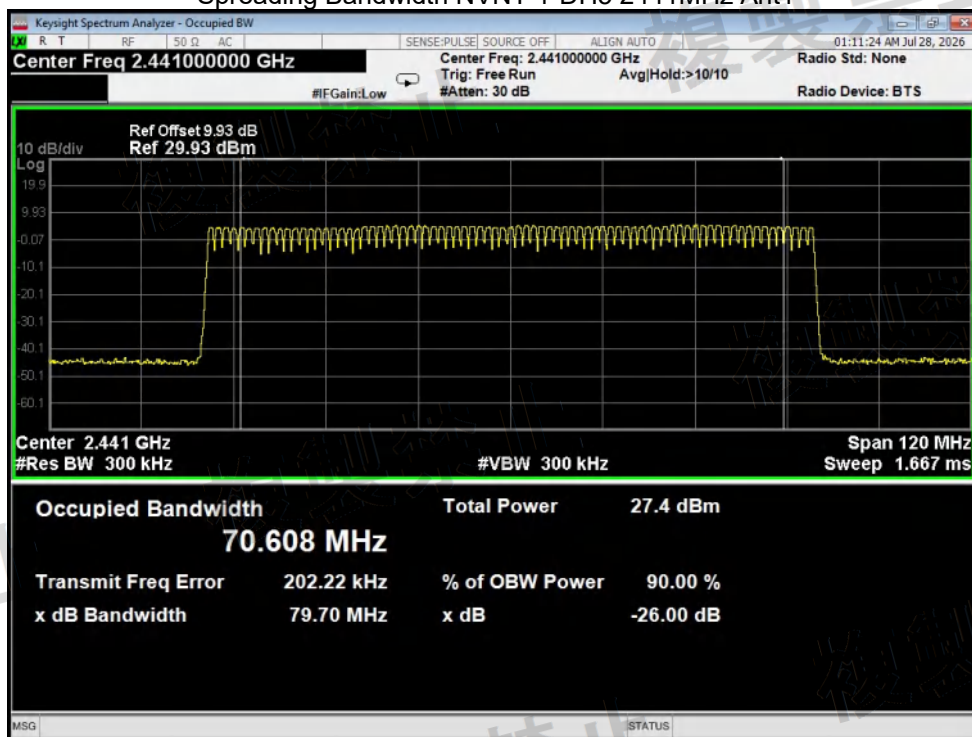
Spreading Bandwidth NVNT 1-DH1 2441MHz Ant1



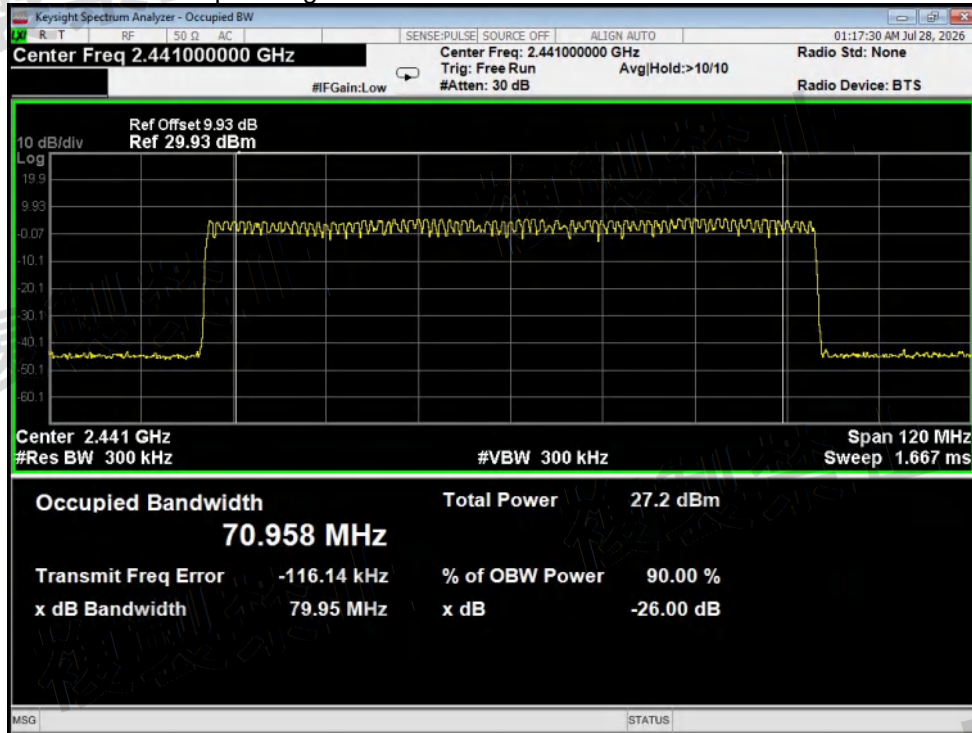
Spreading Bandwidth NVNT 1-DH3 2441MHz Ant1



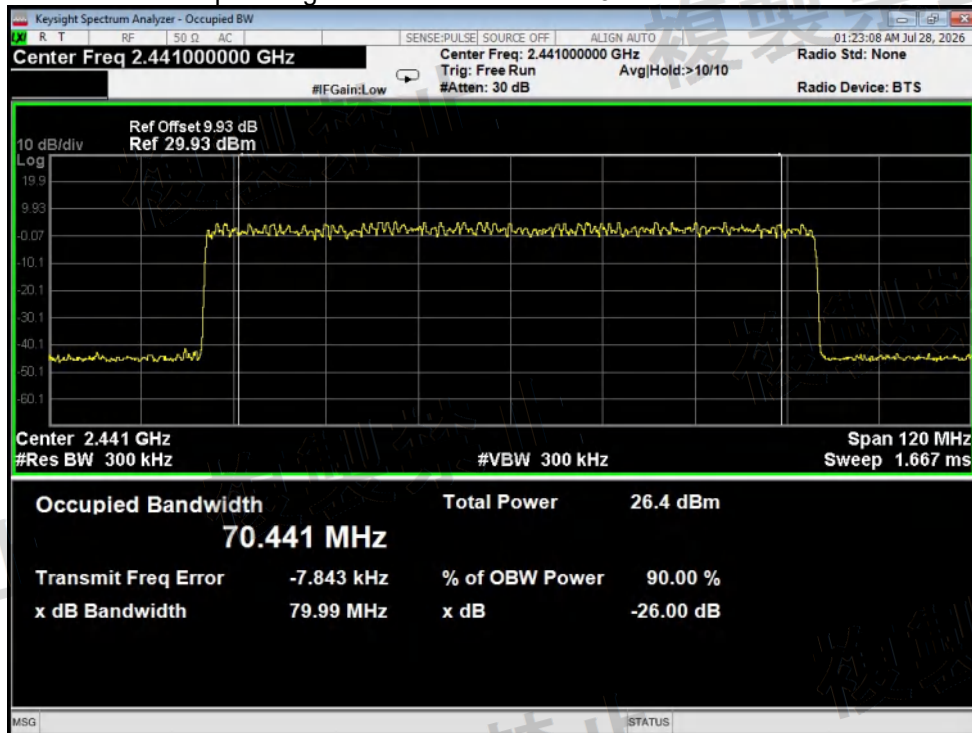
Spreading Bandwidth NVNT 1-DH5 2441MHz Ant1



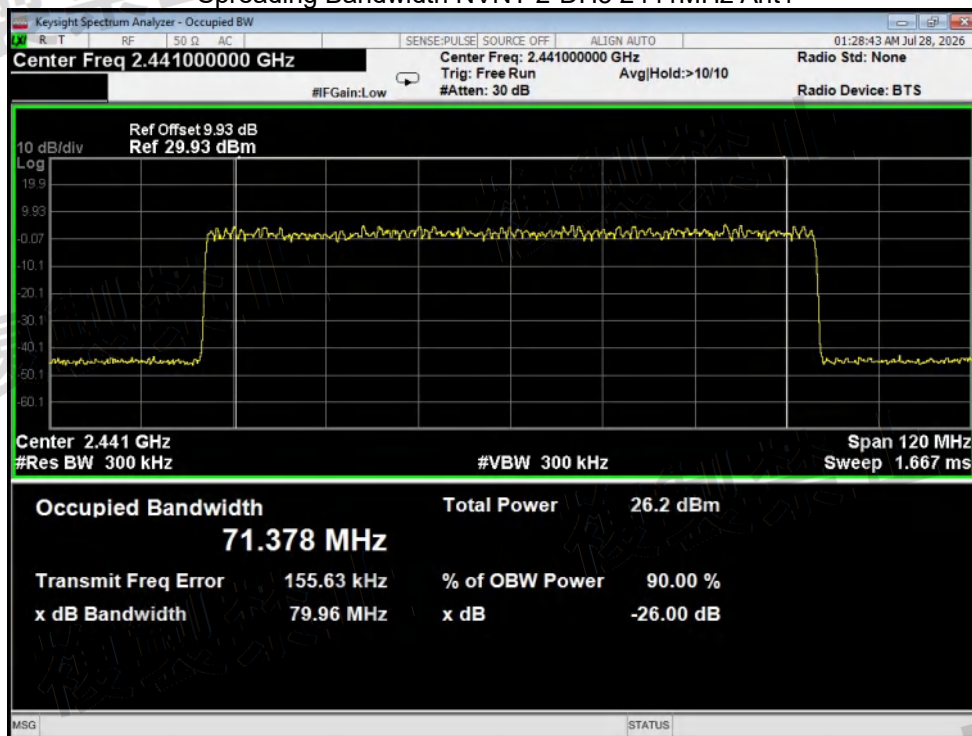
Spreading Bandwidth NVNT 2-DH1 2441MHz Ant1



Spreading Bandwidth NVNT 2-DH3 2441MHz Ant1



Spreading Bandwidth NVNT 2-DH5 2441MHz Ant1



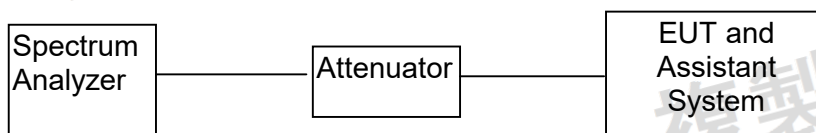
4.5 Unwanted Emission Strength (conducted)

4.5.1 Limits

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

Unwanted Emission Strength	2.5 μ W/MHz or less (30MHz< f ≤2387MHz)
	25 μ W/MHz or less (2387MHz< f ≤2400MHz)
	25 μ W/MHz or less (2483.5MHz≤ f <2496.5MHz)
	2.5 μ W/MHz or less (2496.5MHz≤ f <12500MHz)
<i>Note: 30MHz-2387 MHz: 2.5 μW (-26 dBm)/MHz or less. When 30M~1GHz, RBW is set to 100kHz, the limit should be reduced by $10\log(1M/100k)$ accordingly.</i> <i>Then limit=-26dBm-10log(1M/100k)=-36dBm=0.25μW</i>	

4.5.2 Block Diagram of Test Setup



4.5.3 Test Procedures

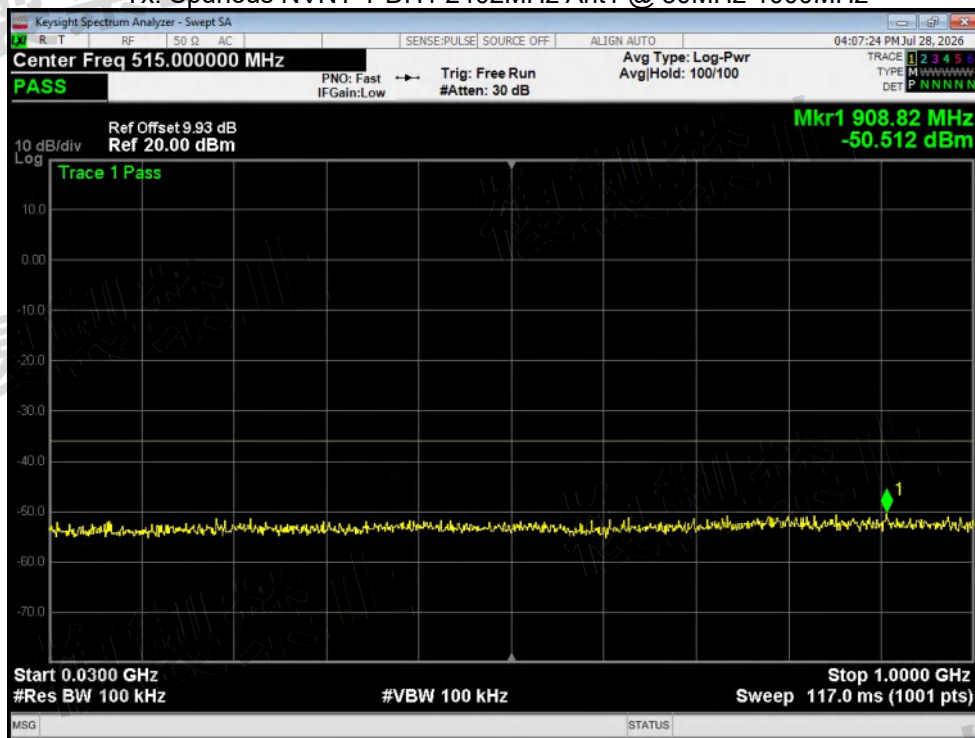
- (1) Configure EUT and assistant system according clause 2.3 and 7.3
- (2) Set EUT work in test mode as described in clause 2.4
- (3) Connected the EUT's antenna port to the Spectrum Analyzer by suitable attenuator, set the Spectrum Analyzer as below:
 - Resolution BW: Below 1GHz RB:100KHz
 - Above 1GHz RB:1MHz
 - Video BW: Below 1GHz RB:100KHz
 - Above 1GHz RB:1MHz
 - Detector: Peak.
 - Trace Mode: Max Hold.
- (4)All the emissions from 30MHz to 13GHz were measured and record.



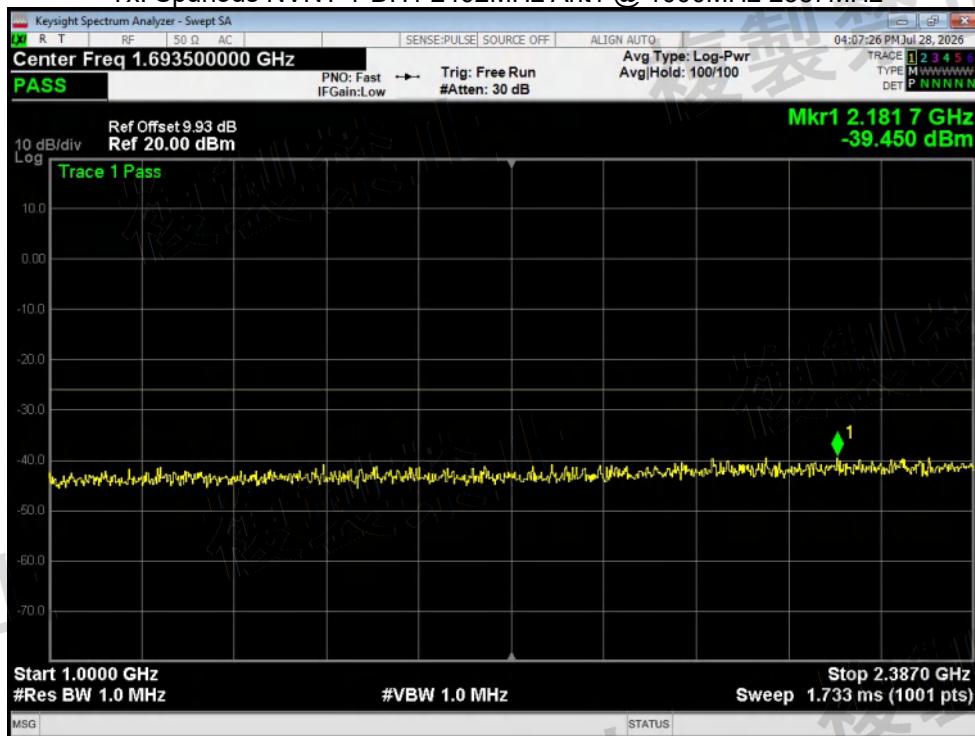
Condition	Mode	Frequency (MHz)	Range (MHz)	Emission Frequency (MHz)	Max Value (dBm)	Max Value (μ W/MHz)	Limit (μ W/MHz)	Verdict
NVNT	1-DH1	2402	30-1000	908.82	-50.512	0.009	2.5	Pass
NVNT	1-DH1	2402	1000-2387	2181.724	-39.45	0.114	2.5	Pass
NVNT	1-DH1	2402	2387-2400	2391.212	-38.905	0.129	25	Pass
NVNT	1-DH1	2402	2483.5-2496.5	2491.664	-38.198	0.151	25	Pass
NVNT	1-DH1	2402	2496.5-13000	3504.836	-37.895	0.162	2.5	Pass
NVNT	1-DH1	2441	30-1000	373.38	-50.386	0.009	2.5	Pass
NVNT	1-DH1	2441	1000-2387	2151.21	-39.389	0.115	2.5	Pass
NVNT	1-DH1	2441	2387-2400	2392.135	-38.678	0.136	25	Pass
NVNT	1-DH1	2441	2483.5-2496.5	2495.564	-38.257	0.149	25	Pass
NVNT	1-DH1	2441	2496.5-13000	12789.93	-37.429	0.181	2.5	Pass
NVNT	1-DH1	2480	30-1000	754.59	-50.749	0.008	2.5	Pass
NVNT	1-DH1	2480	1000-2387	2241.365	-38.612	0.138	2.5	Pass
NVNT	1-DH1	2480	2387-2400	2388.092	-38.227	0.150	25	Pass
NVNT	1-DH1	2480	2483.5-2496.5	2488.986	-38.605	0.138	25	Pass
NVNT	1-DH1	2480	2496.5-13000	12590.364	-38.198	0.151	2.5	Pass
NVNT	2-DH1	2402	30-1000	829.28	-49.295	0.012	2.5	Pass
NVNT	2-DH1	2402	1000-2387	2180.337	-39.457	0.113	2.5	Pass
NVNT	2-DH1	2402	2387-2400	2397.491	-39.367	0.116	25	Pass
NVNT	2-DH1	2402	2483.5-2496.5	2489.298	-38.6	0.138	25	Pass
NVNT	2-DH1	2402	2496.5-13000	2654.053	-38.056	0.156	2.5	Pass
NVNT	2-DH1	2441	30-1000	791.45	-50.008	0.010	2.5	Pass
NVNT	2-DH1	2441	1000-2387	2227.495	-39	0.126	2.5	Pass
NVNT	2-DH1	2441	2387-2400	2398.947	-39.199	0.120	25	Pass
NVNT	2-DH1	2441	2483.5-2496.5	2493.016	-38.308	0.148	25	Pass
NVNT	2-DH1	2441	2496.5-13000	12348.783	-36.588	0.219	2.5	Pass
NVNT	2-DH1	2480	30-1000	994.18	-50.4	0.009	2.5	Pass
NVNT	2-DH1	2480	1000-2387	2152.597	-39.256	0.119	2.5	Pass
NVNT	2-DH1	2480	2387-2400	2399.883	-39.013	0.126	25	Pass
NVNT	2-DH1	2480	2483.5-2496.5	2493.9	-37.986	0.159	25	Pass
NVNT	2-DH1	2480	2496.5-13000	2706.57	-38.091	0.155	2.5	Pass

Note: All mode have been test, show the worst case mode (DH1,2DH1) in report.

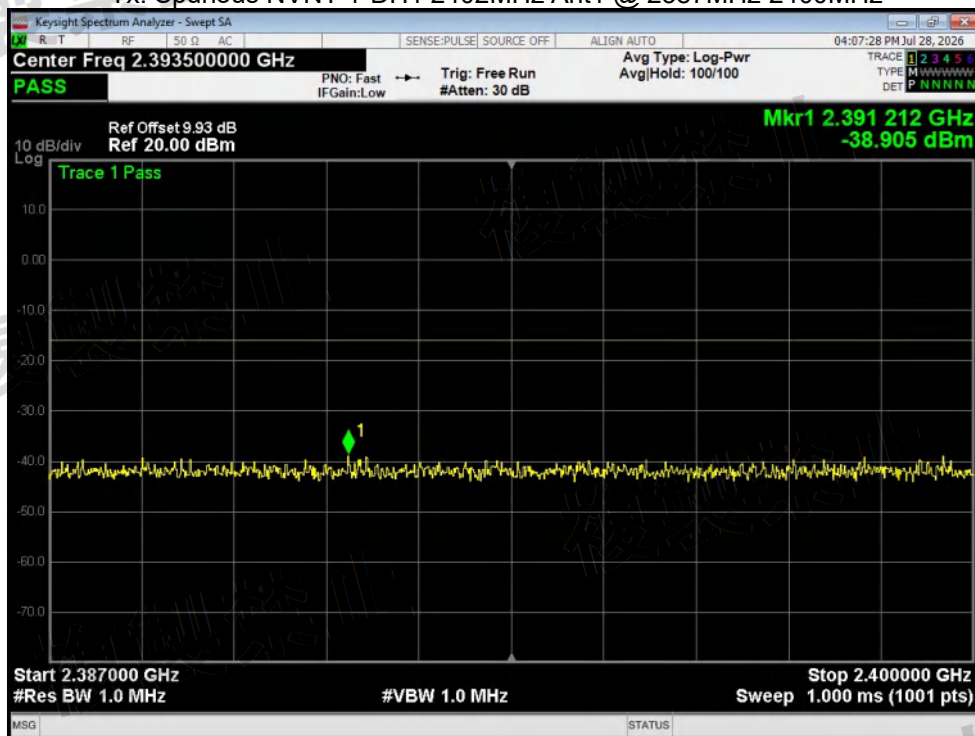
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 @ 30MHz-1000MHz



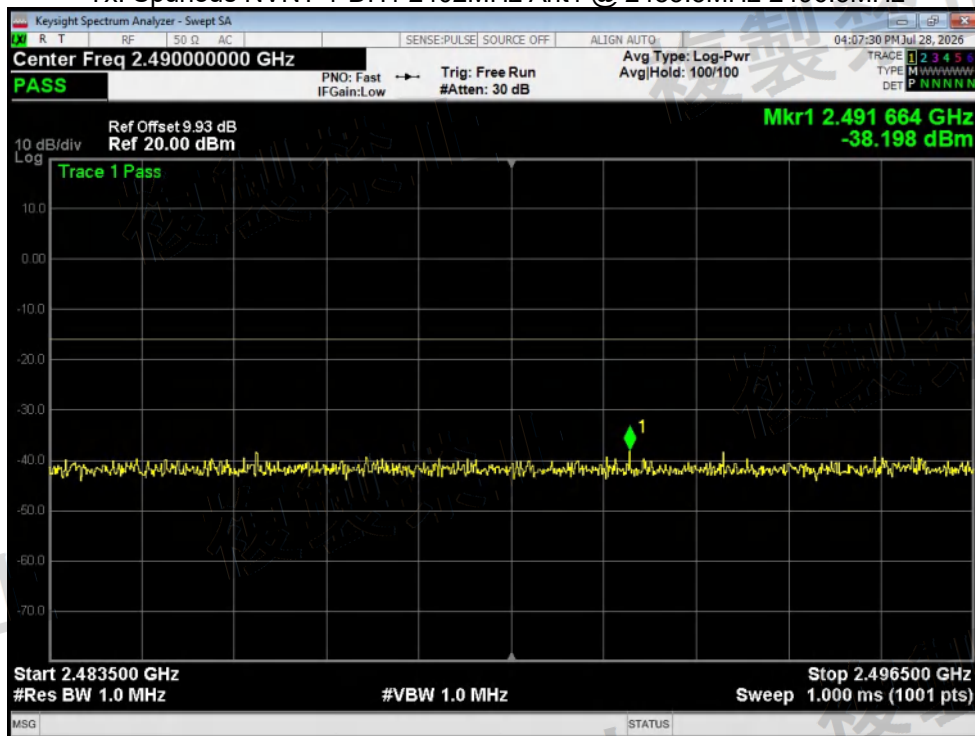
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 @ 1000MHz-2387MHz



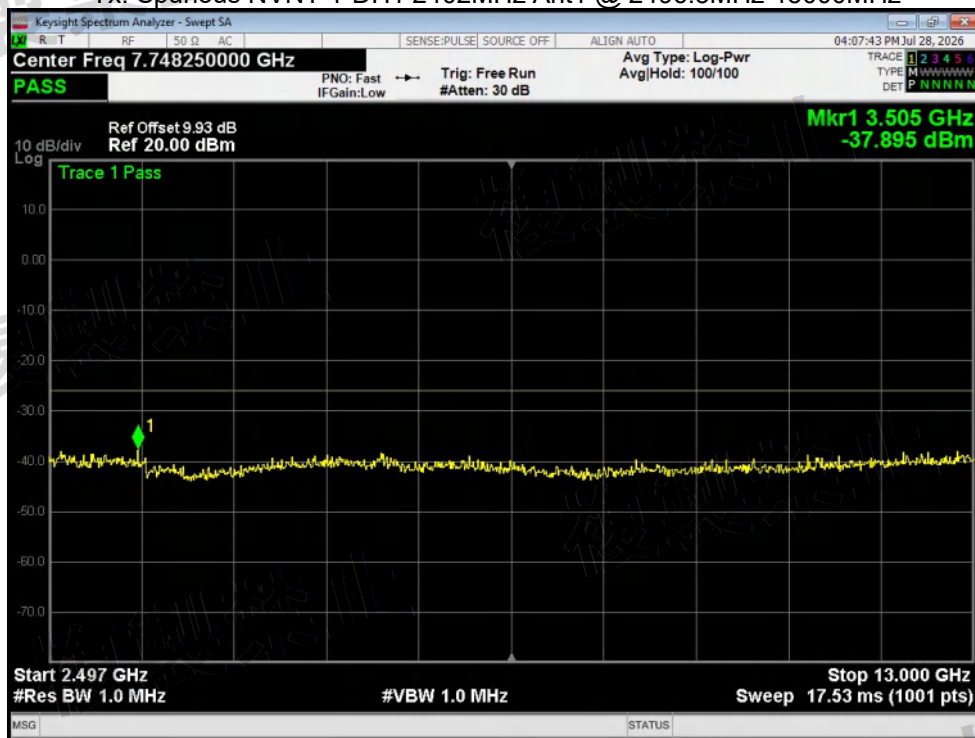
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 @ 2387MHz-2400MHz



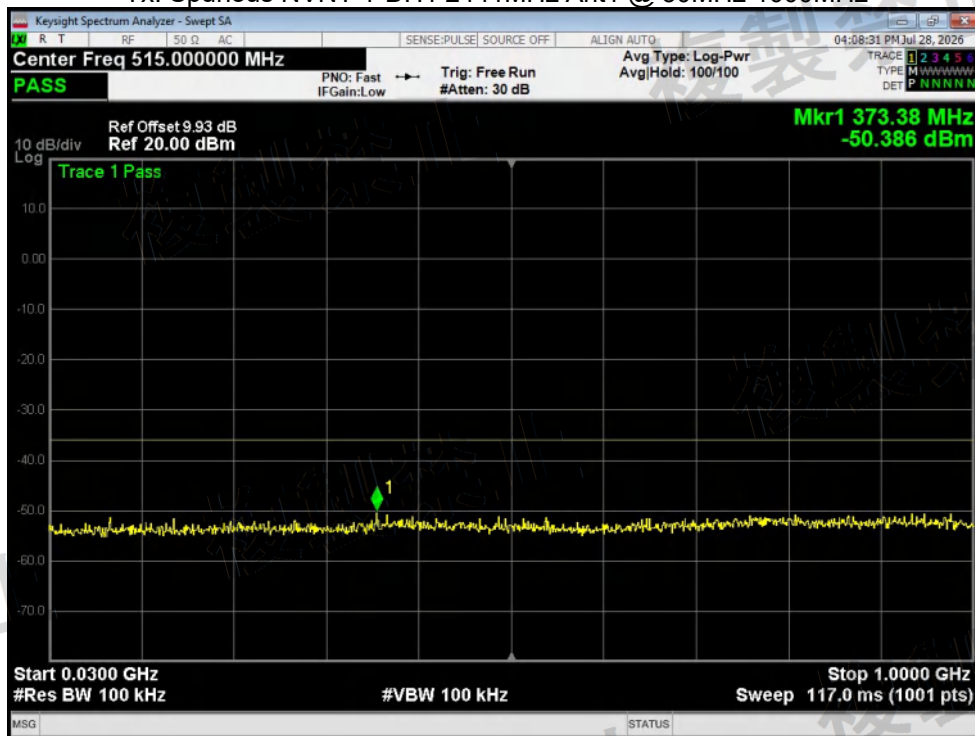
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 @ 2483.5MHz-2496.5MHz



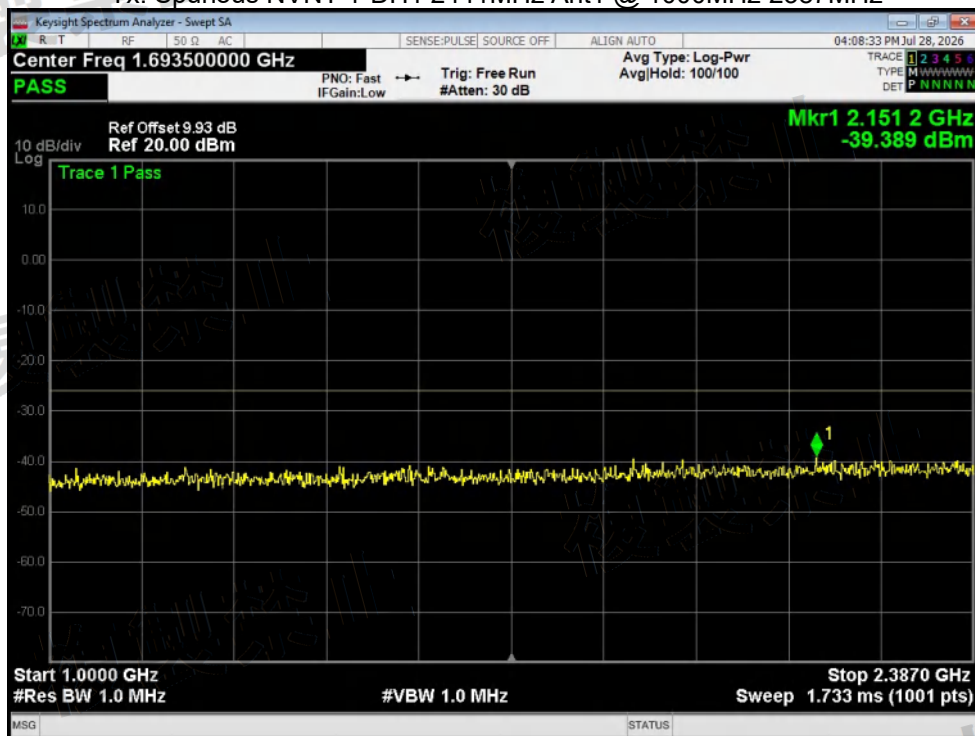
Tx. Spurious NVNT 1-DH1 2402MHz Ant1 @ 2496.5MHz-13000MHz



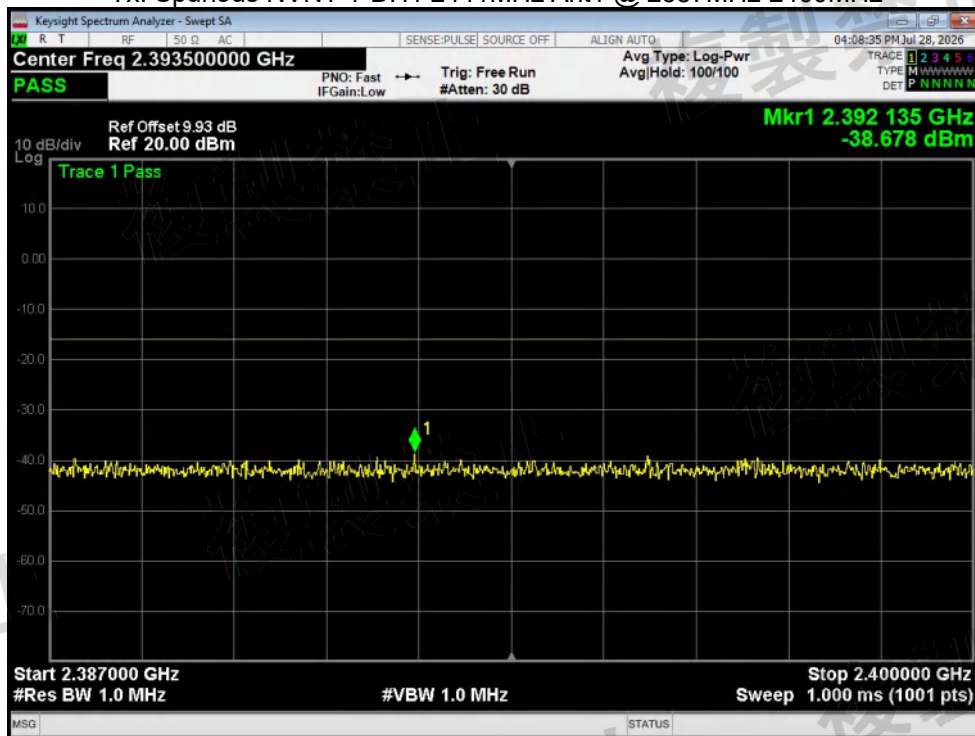
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 @ 30MHz-1000MHz



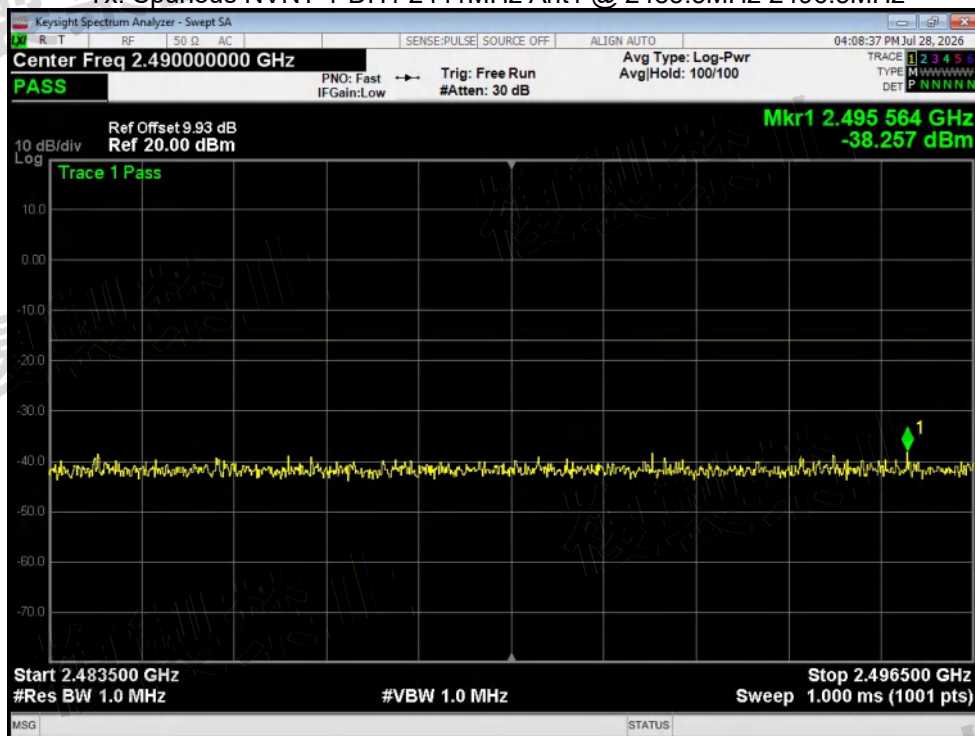
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 @ 1000MHz-2387MHz



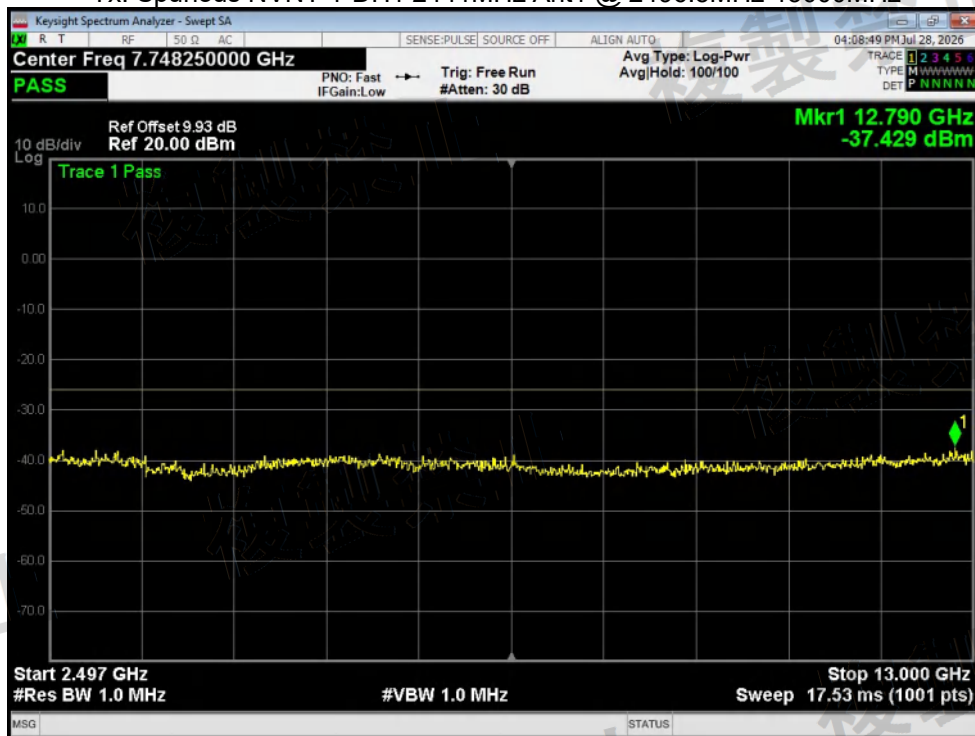
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 @ 2387MHz-2400MHz



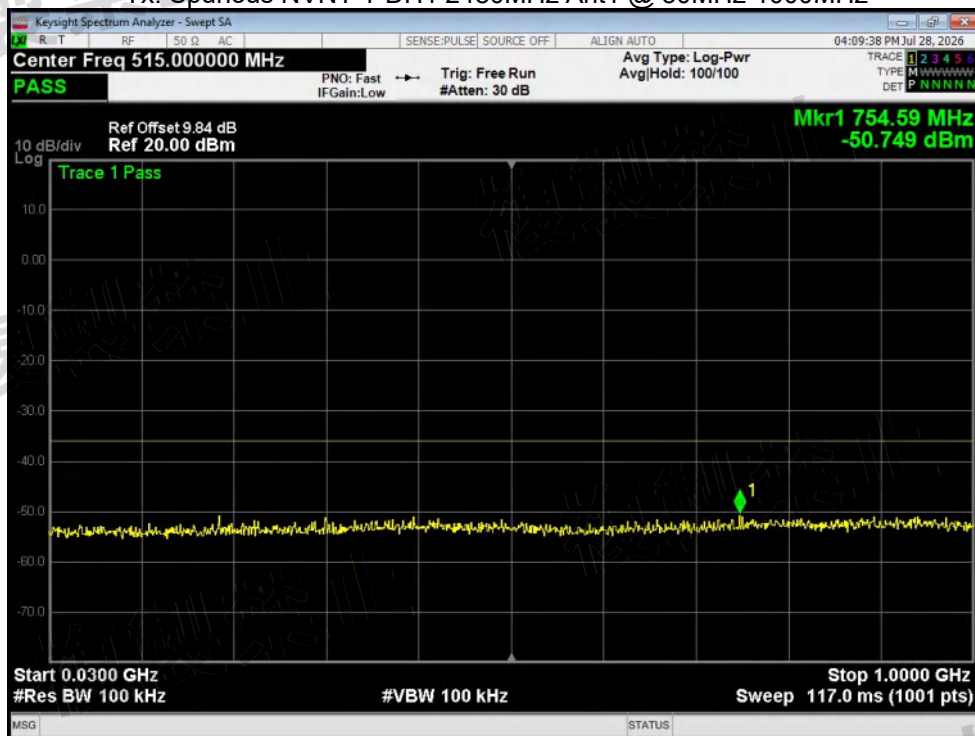
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 @ 2483.5MHz-2496.5MHz



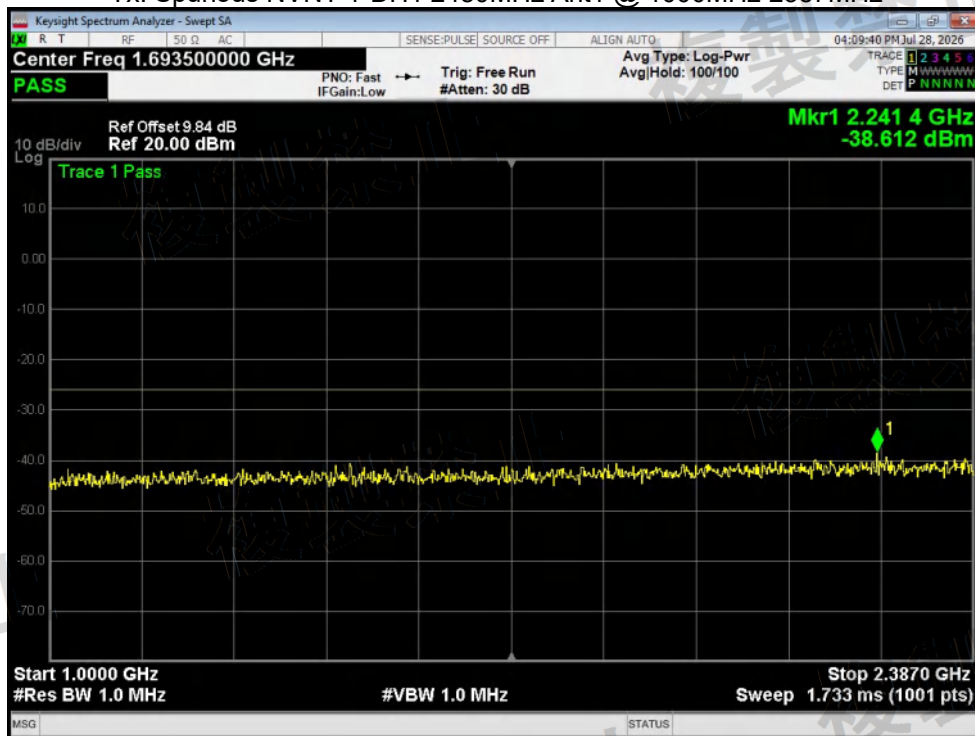
Tx. Spurious NVNT 1-DH1 2441MHz Ant1 @ 2496.5MHz-13000MHz



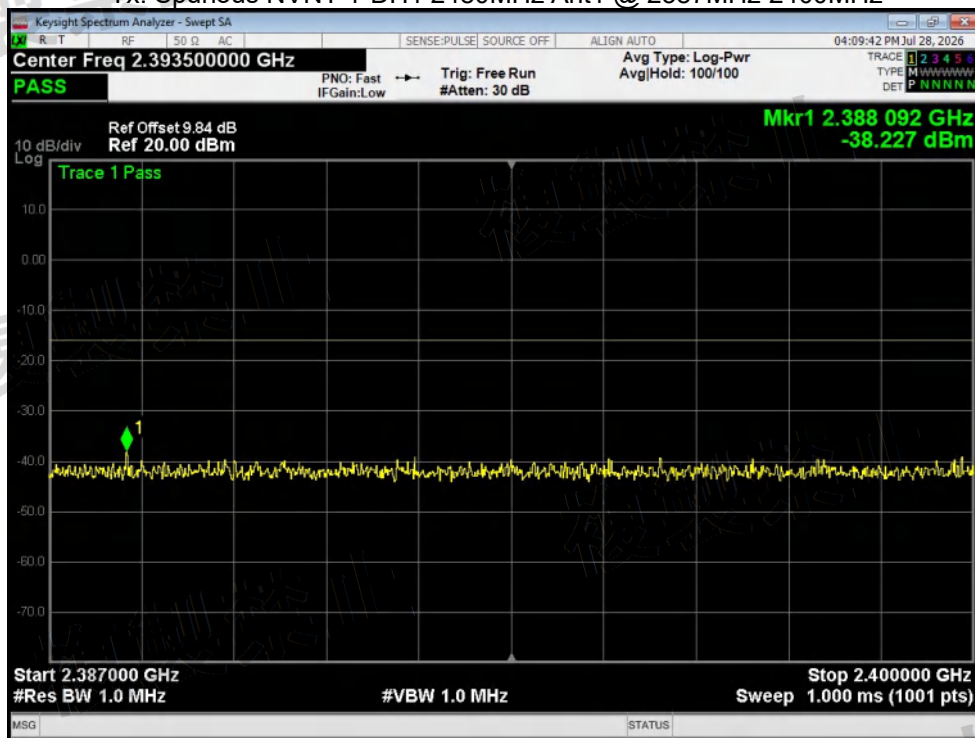
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 @ 30MHz-1000MHz



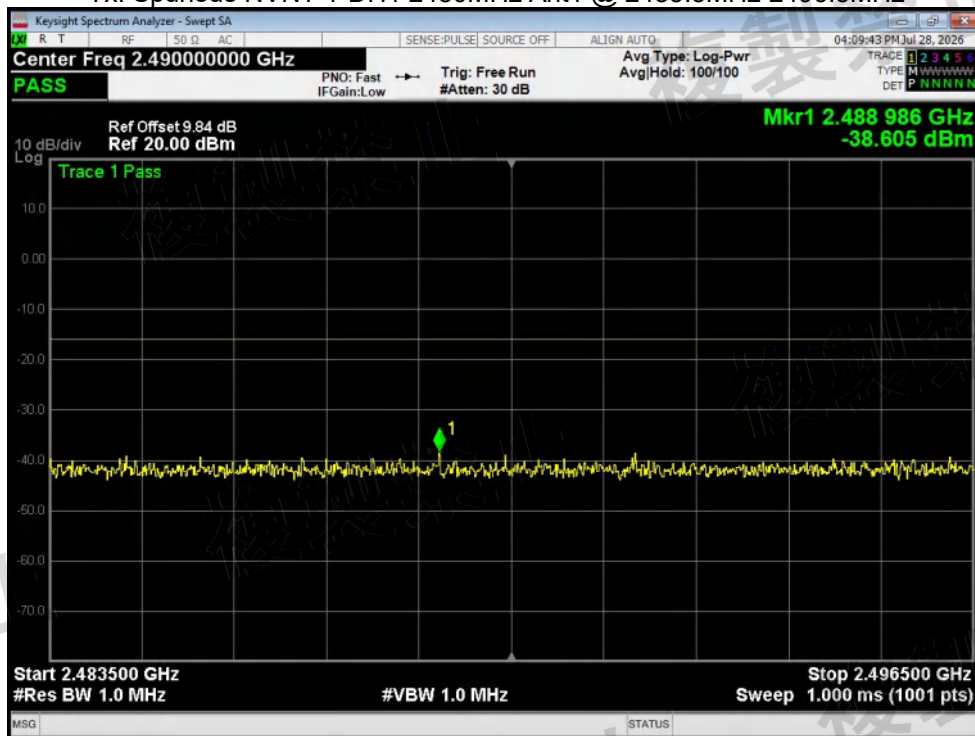
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 @ 1000MHz-2387MHz



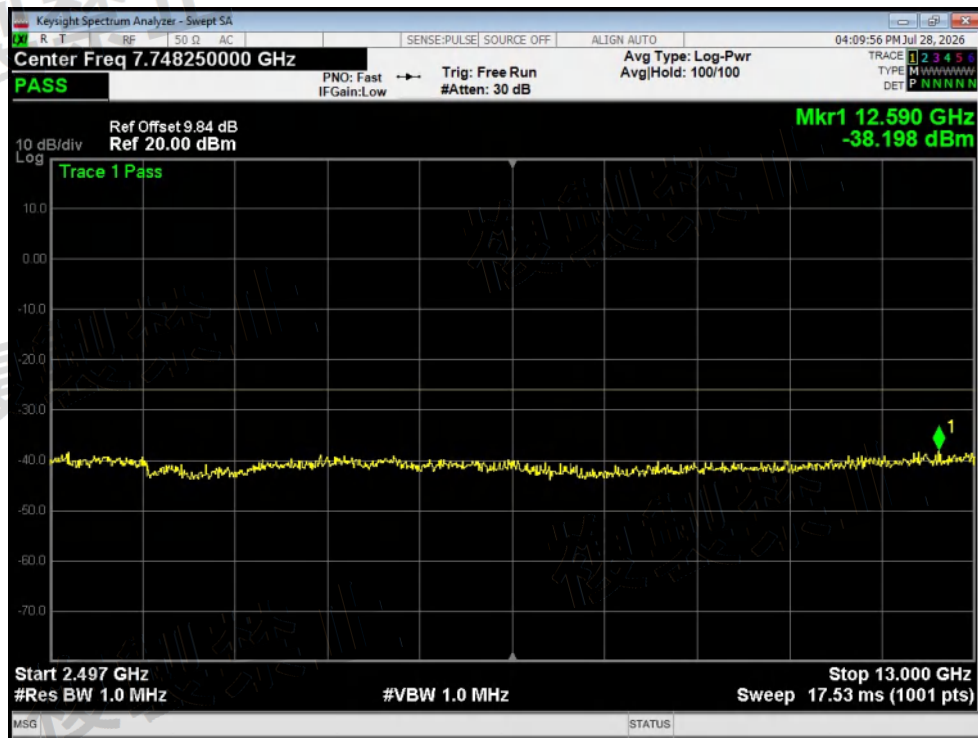
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 @ 2387MHz-2400MHz



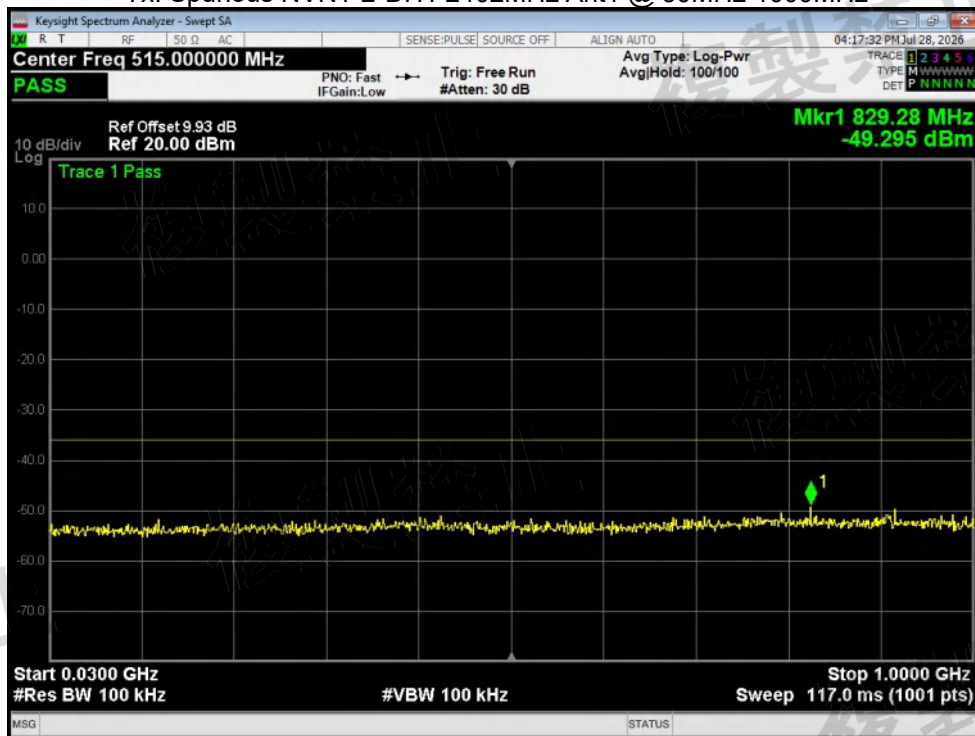
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 @ 2483.5MHz-2496.5MHz



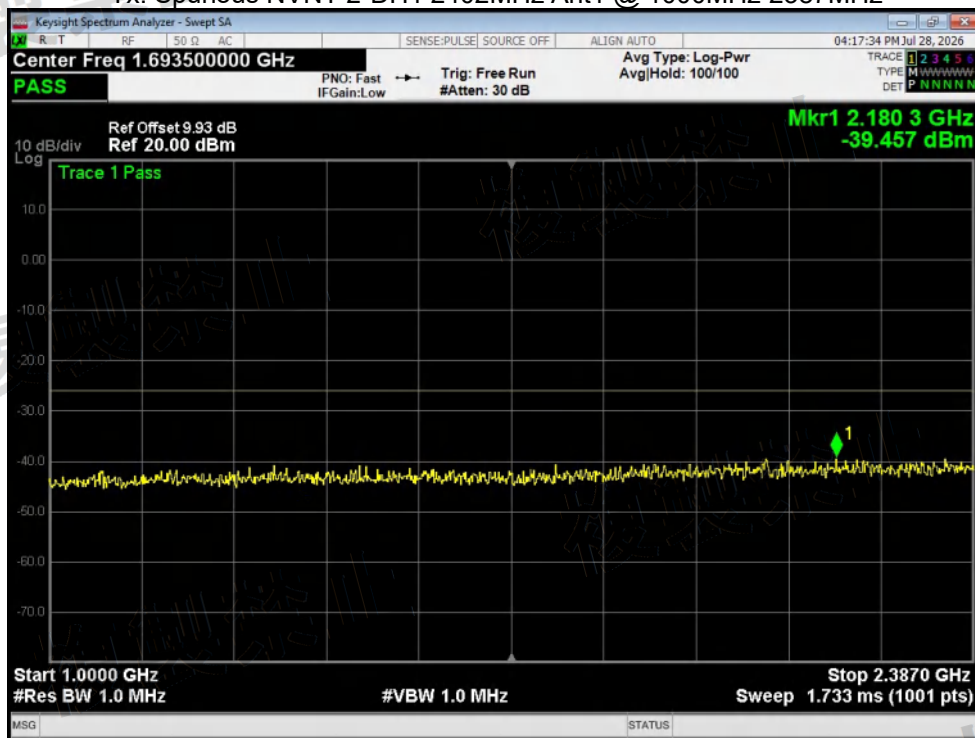
Tx. Spurious NVNT 1-DH1 2480MHz Ant1 @ 2496.5MHz-13000MHz



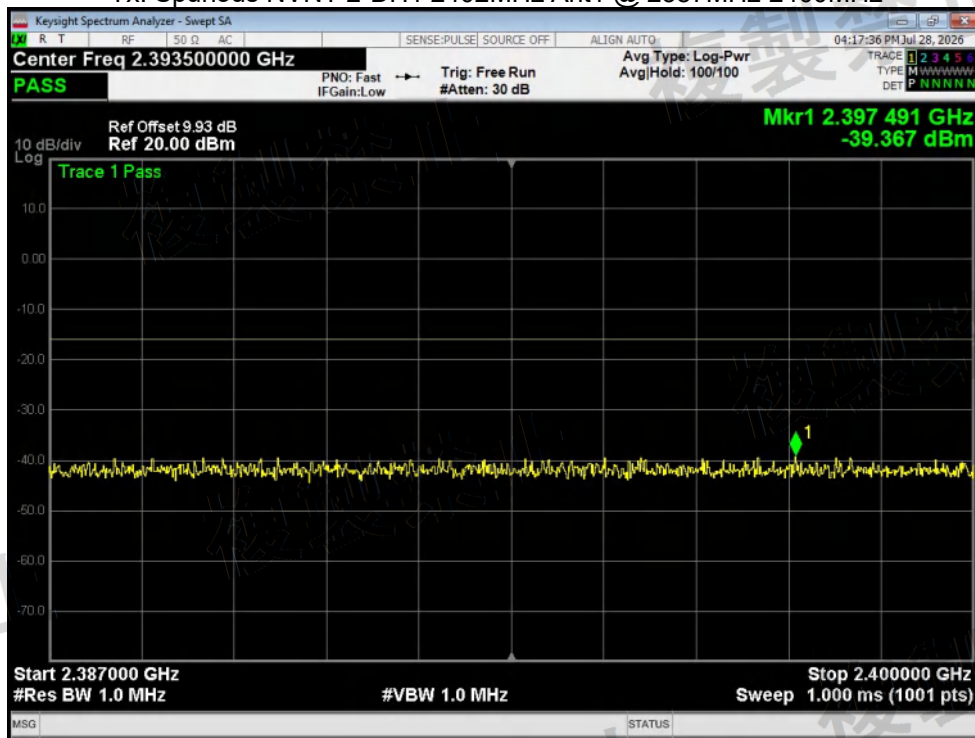
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 @ 30MHz-1000MHz



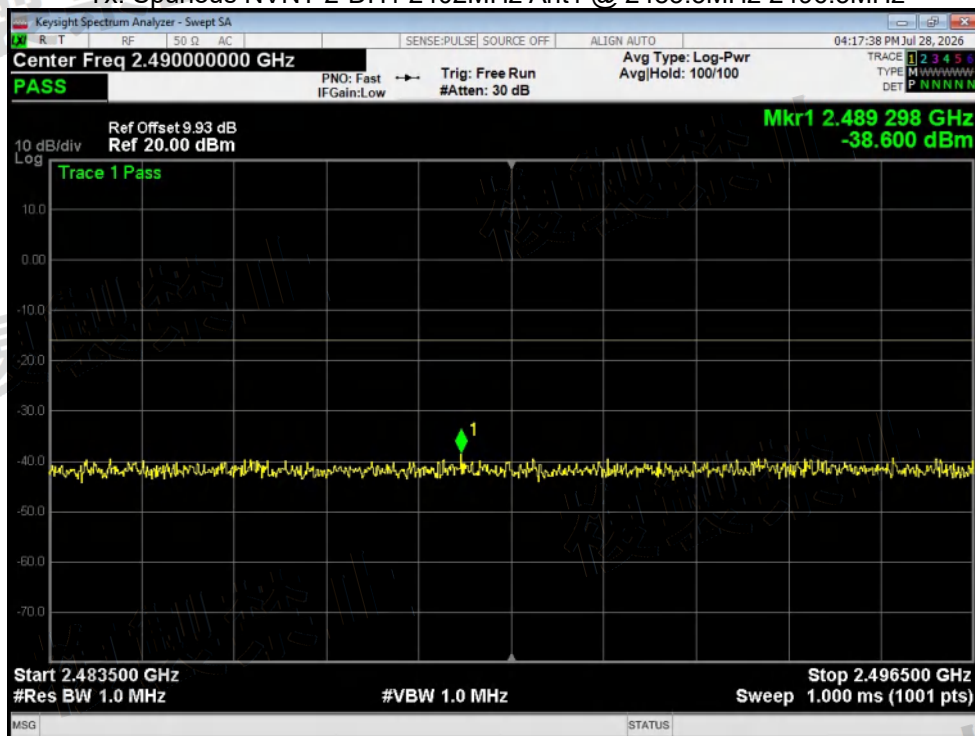
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 @ 1000MHz-2387MHz



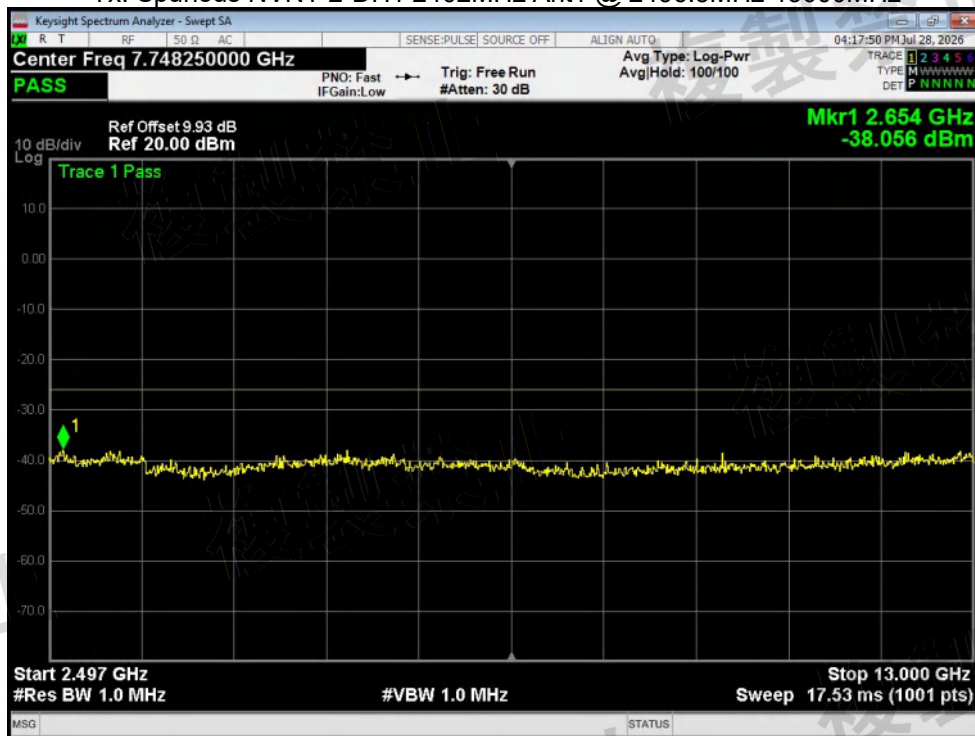
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 @ 2387MHz-2400MHz



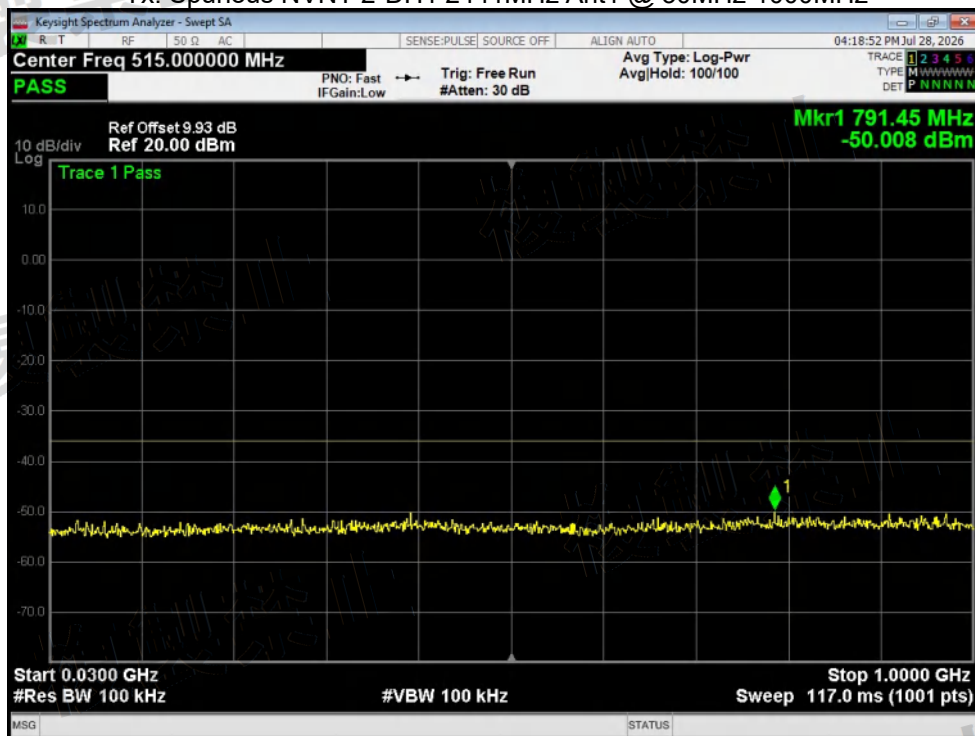
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 @ 2483.5MHz-2496.5MHz



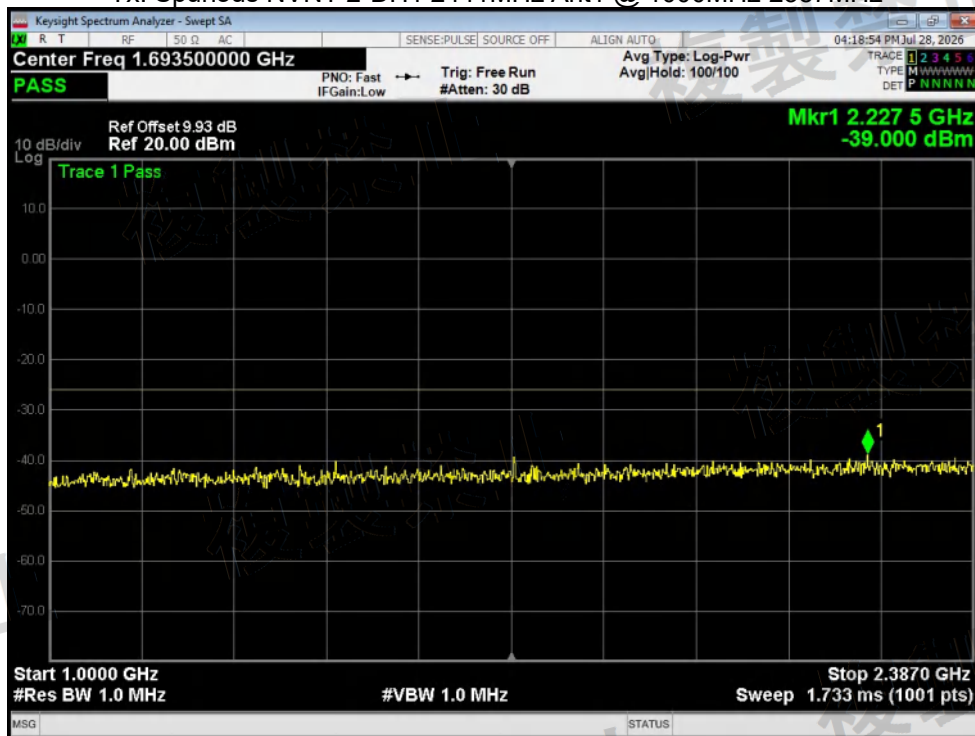
Tx. Spurious NVNT 2-DH1 2402MHz Ant1 @ 2496.5MHz-13000MHz



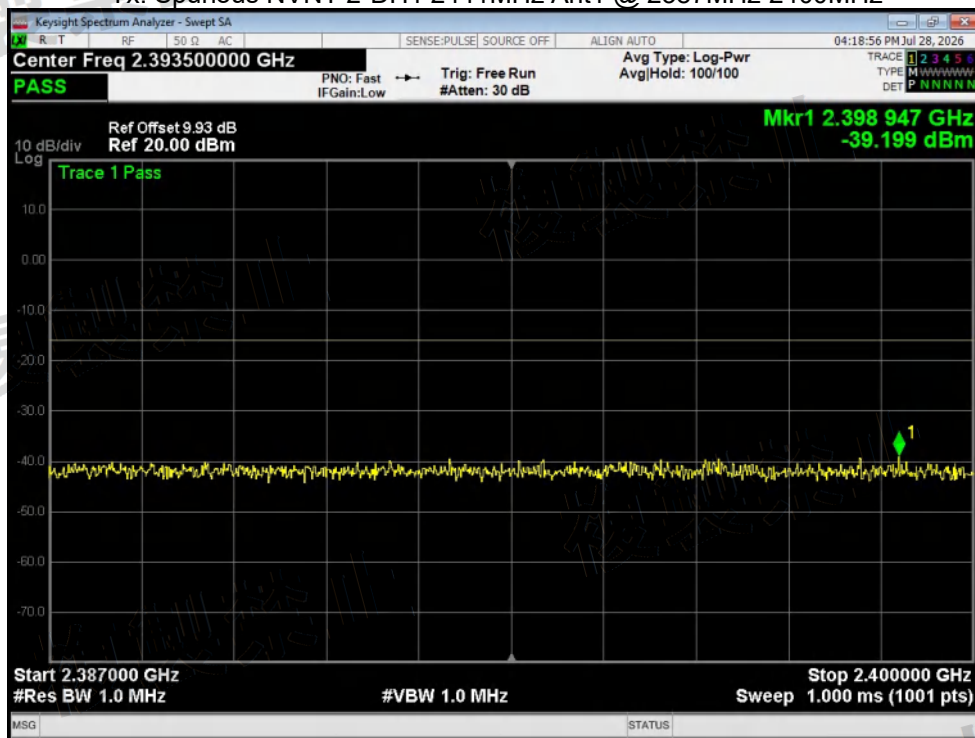
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 @ 30MHz-1000MHz



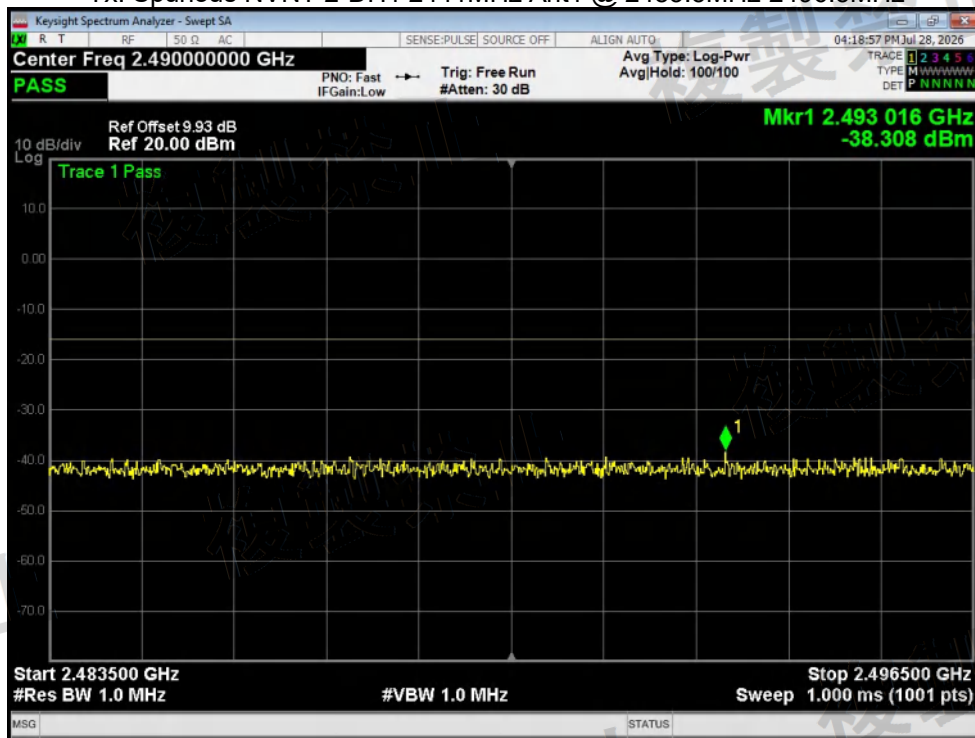
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 @ 1000MHz-2387MHz



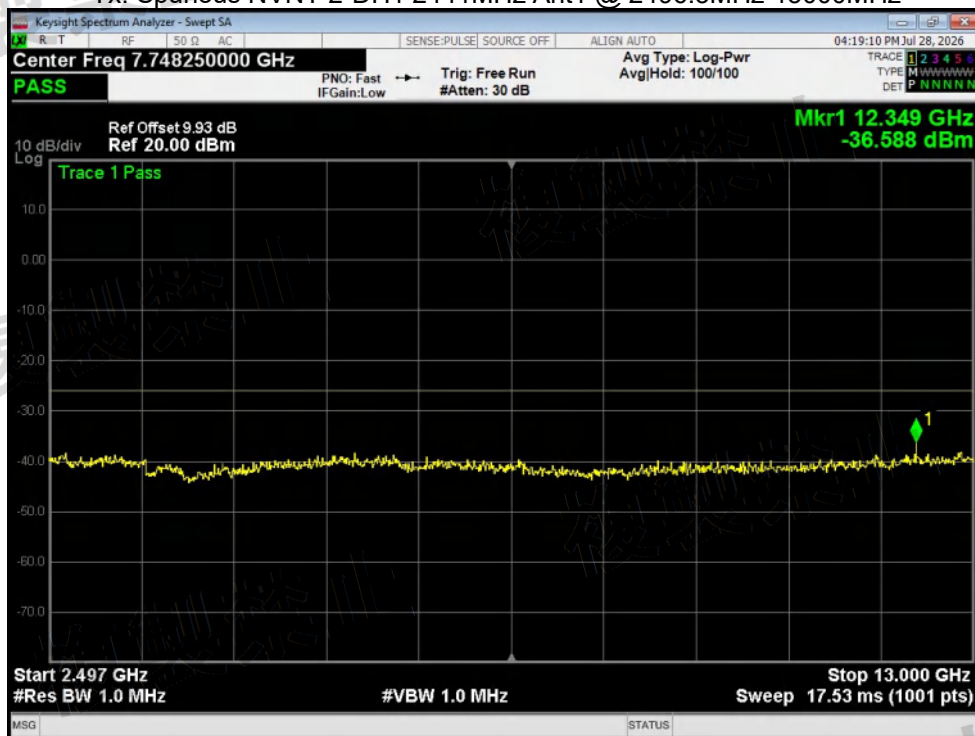
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 @ 2387MHz-2400MHz



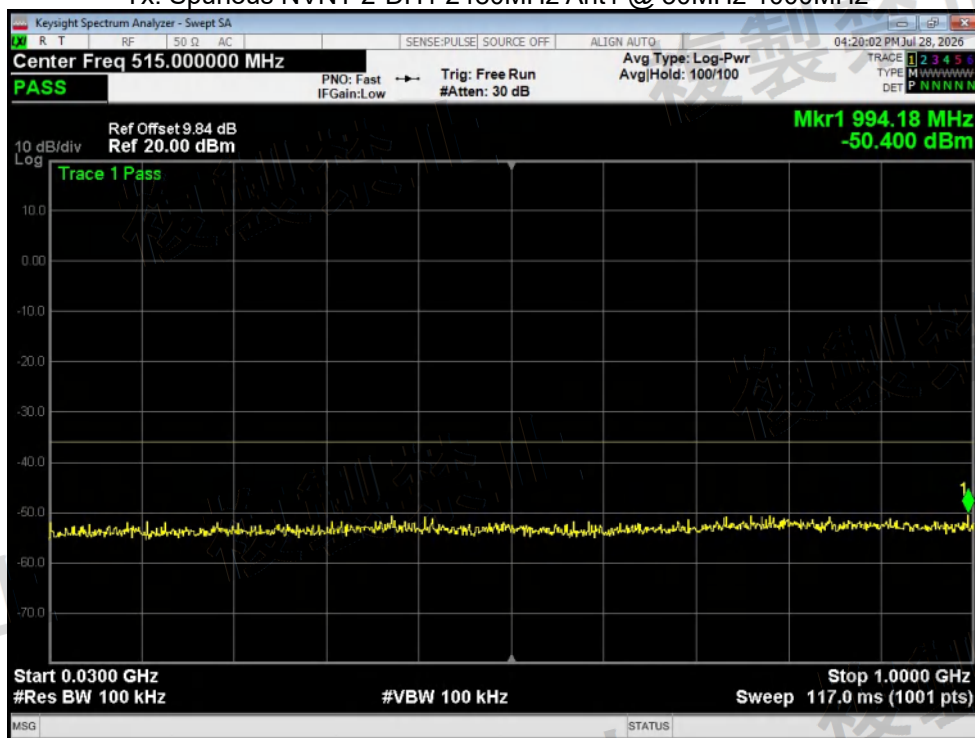
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 @ 2483.5MHz-2496.5MHz



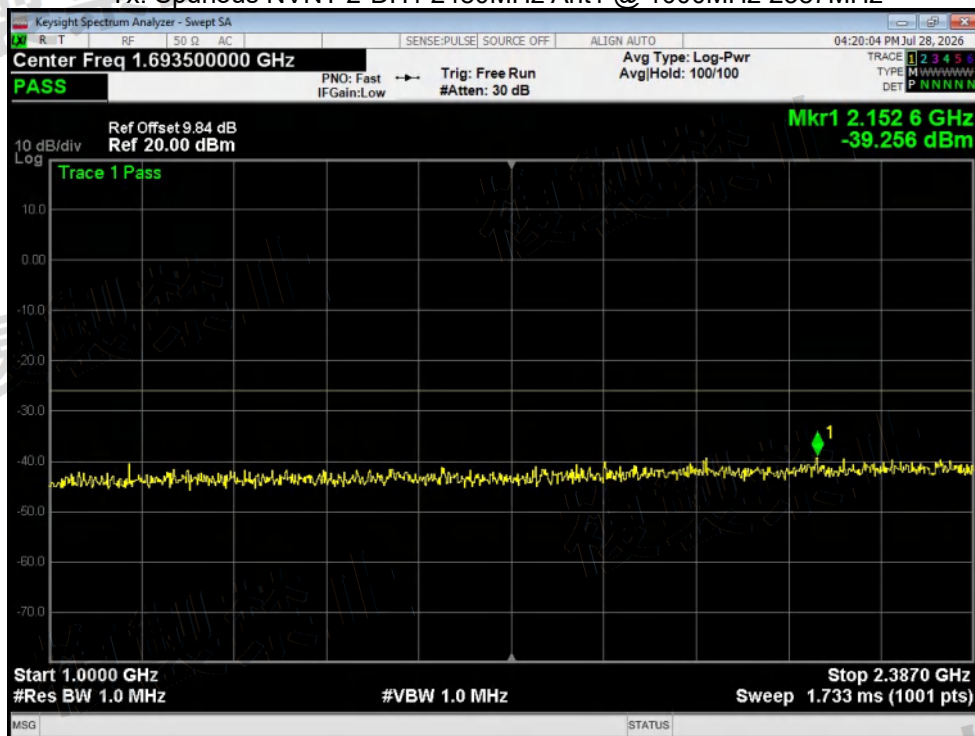
Tx. Spurious NVNT 2-DH1 2441MHz Ant1 @ 2496.5MHz-13000MHz



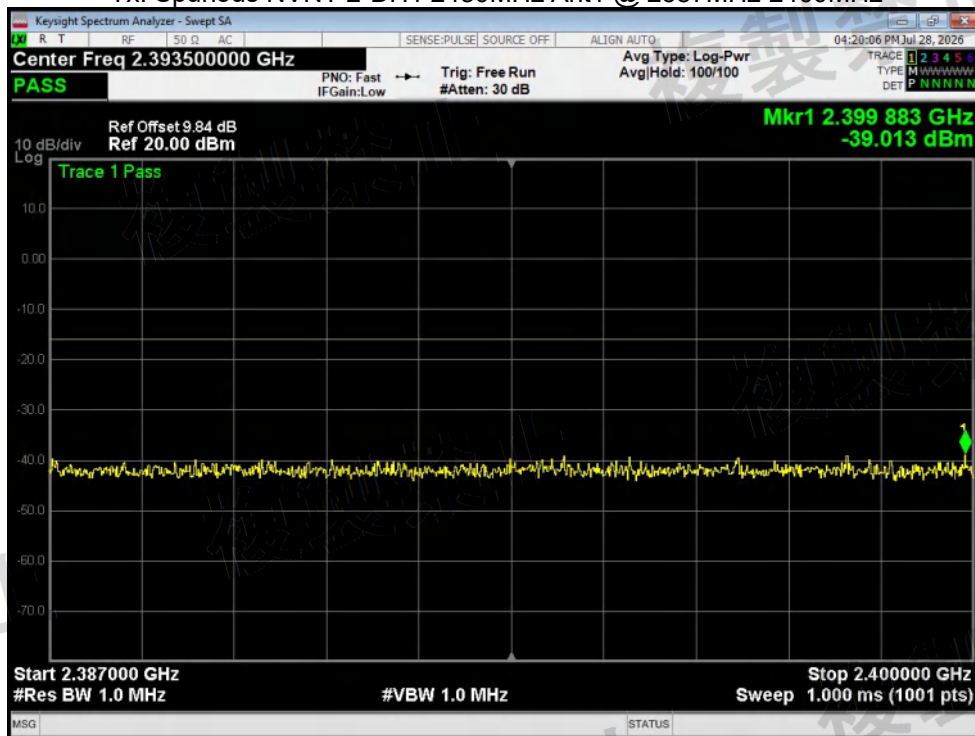
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 @ 30MHz-1000MHz



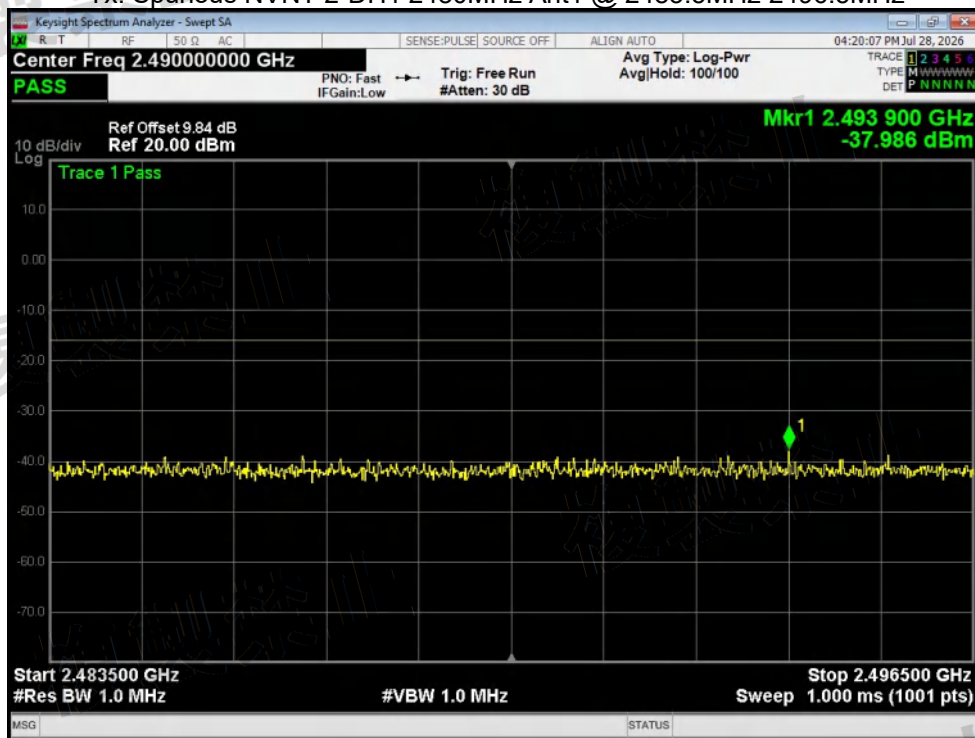
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 @ 1000MHz-2387MHz



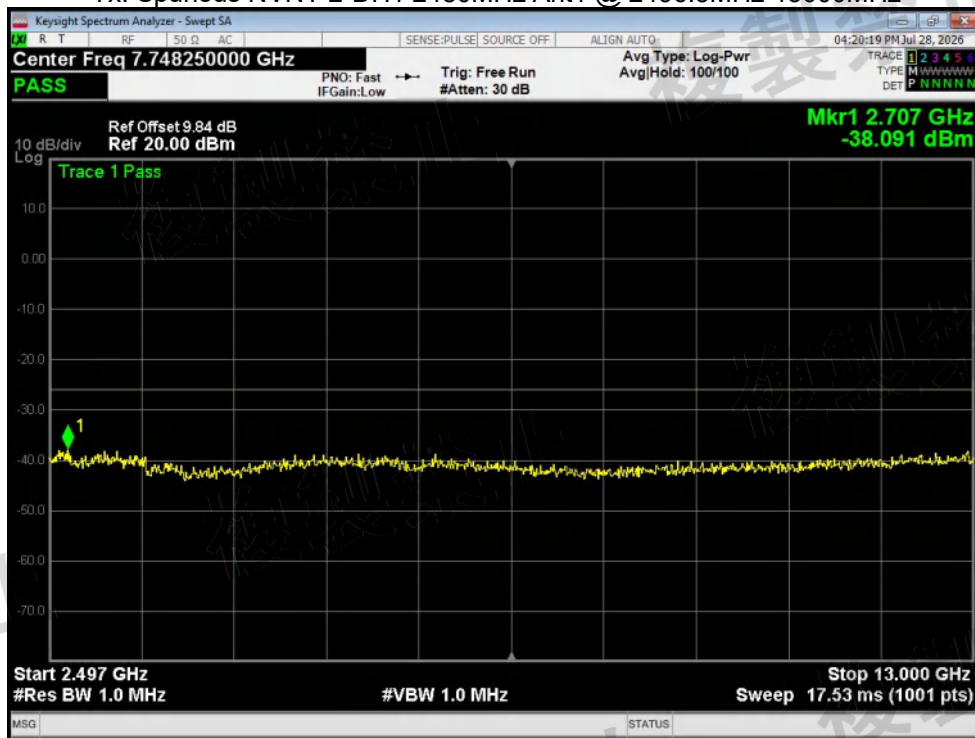
Tx. Spurious NVNT 2-DH1 2480MHz Ant1 @ 2387MHz-2400MHz



Tx. Spurious NVNT 2-DH1 2480MHz Ant1 @ 2483.5MHz-2496.5MHz



Tx. Spurious NVNT 2-DH1 2480MHz Ant1 @ 2496.5MHz-13000MHz

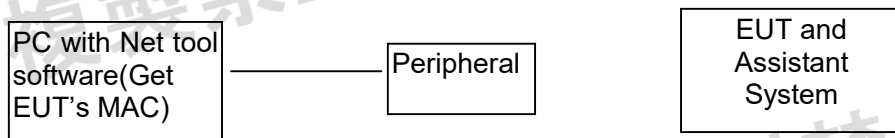


4.6 Interference prevention function

4.6.1 Limits

Item	Limits
Identification	≥48 bits

4.6.2 Block Diagram of Test Setup



4.6.3 Test Procedures

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

4.6.4 Test Result

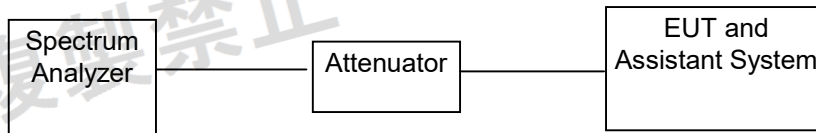
EUT:	PLAY Multifunction Bluetooth Turntable	Pressure:	1012 hPa
Temperature:	24.5°C	Humidity:	52%RH
MAC	00:28:16:0E:88:E1		
Test result:	PASS		

4.7 Dwell time

4.7.1 Limits

Item	Limits
Dwell time	0.4s or less

4.7.2 Block Diagram of Test Setup



4.7.3 Test Procedures

1. EUT set hopping mode.
2. Connected the EUT's antenna port to the Spectrum Analyzer by suitable attenuator, set the Spectrum Analyzer as below:
 - Resolution BW: 1MHz
 - Video BW: 1MHz
 - Span: zero
 - Detector: Peak.
 - Trace Mode: Max Hold.
 - Trigger: Video trigger
 - Reading the one Burs sending time
3. set the Spectrum Analyzer as below:
 - Resolution BW: 1MHz
 - Video BW: 1MHz
 - Span: zero
 - Detector: Peak.
 - Trace Mode: Max Hold.
 - Sweep: spreading Bandwidth x 0.4s
 - Reading the Burst Number
4. Calculate dwell time follow below formula:
$$\text{Dwell time} = \text{one Burs sending time} \times \text{Burst Number}$$

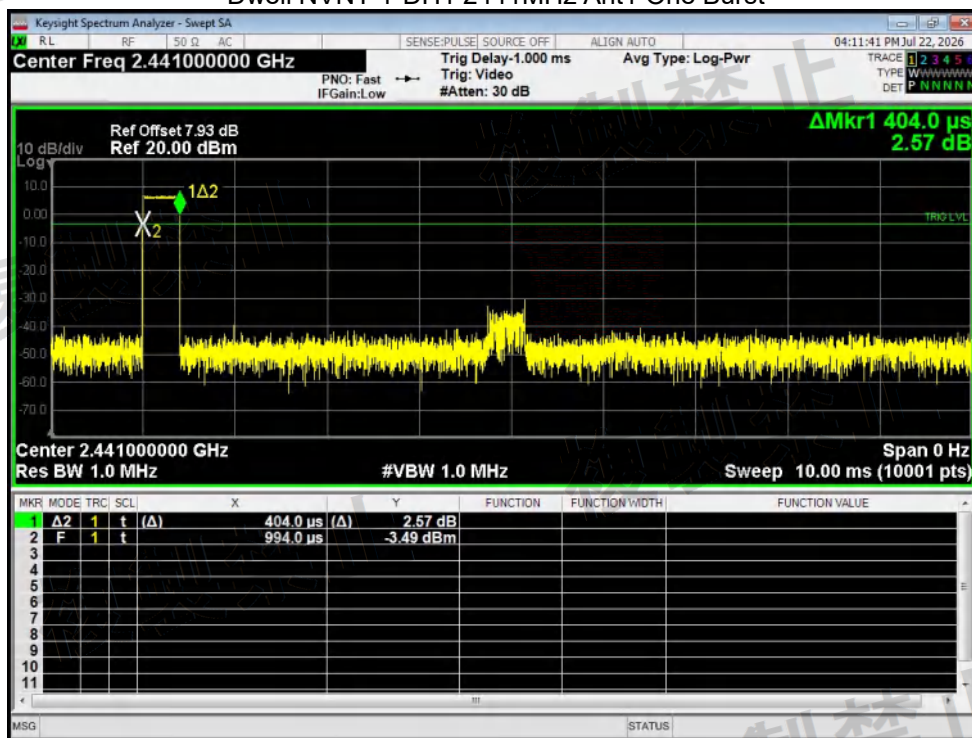


Test Result

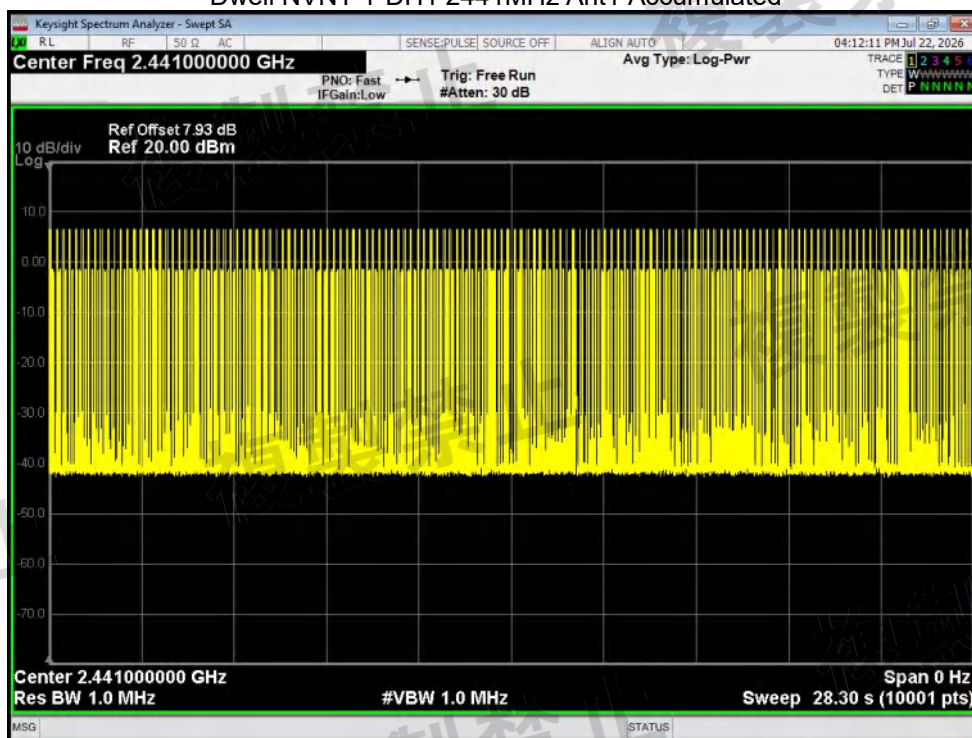
Mode	Data Packet	one Burs sending time (ms)	Burst Number (Test period time)	Dwell time (ms)	Limit(s)	Result
GFSK	DH1	0.404	287	115.948	<0.4	Pass
	DH3	1.661	142	235.862	<0.4	Pass
	DH5	2.909	86	250.174	<0.4	Pass
$\pi/4$ DQPSK	2DH1	0.415	286	118.69	<0.4	Pass
	2DH3	1.666	153	254.898	<0.4	Pass
	2DH5	2.914	90	262.26	<0.4	Pass

Test plots:

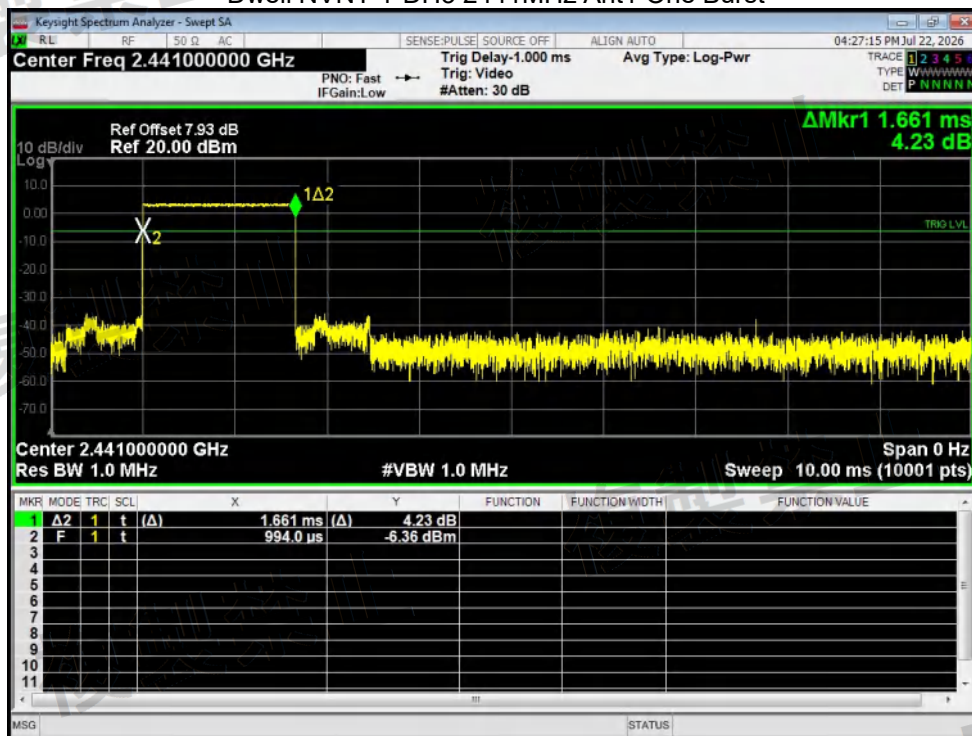
Dwell NVNT 1-DH1 2441MHz Ant1 One Burst



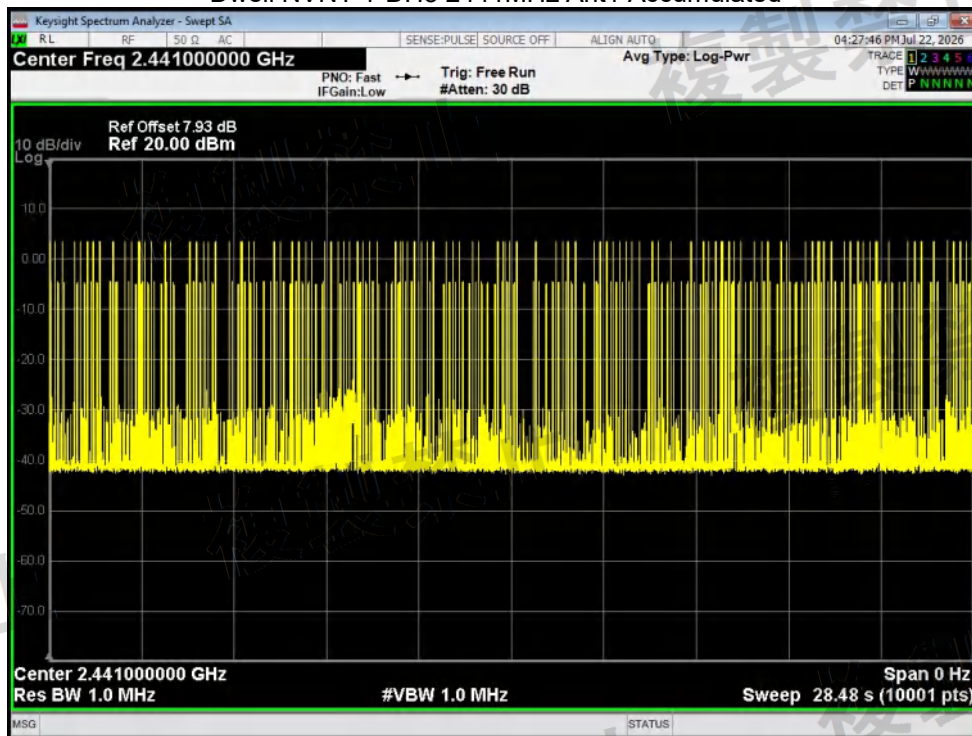
Dwell NVNT 1-DH1 2441MHz Ant1 Accumulated



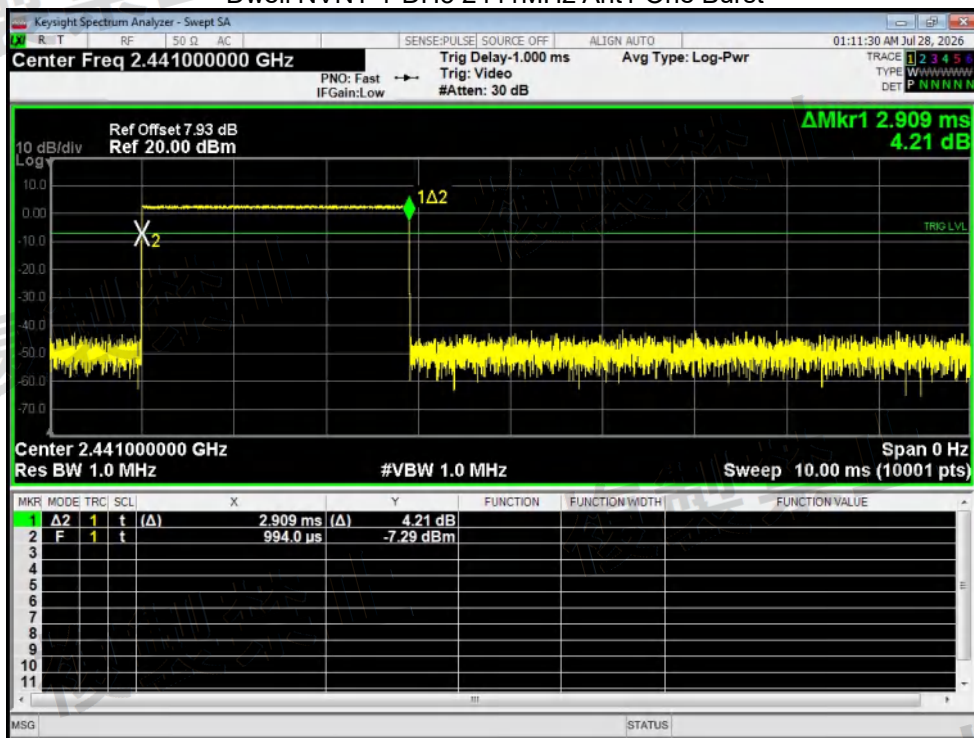
Dwell NVNT 1-DH3 2441MHz Ant1 One Burst



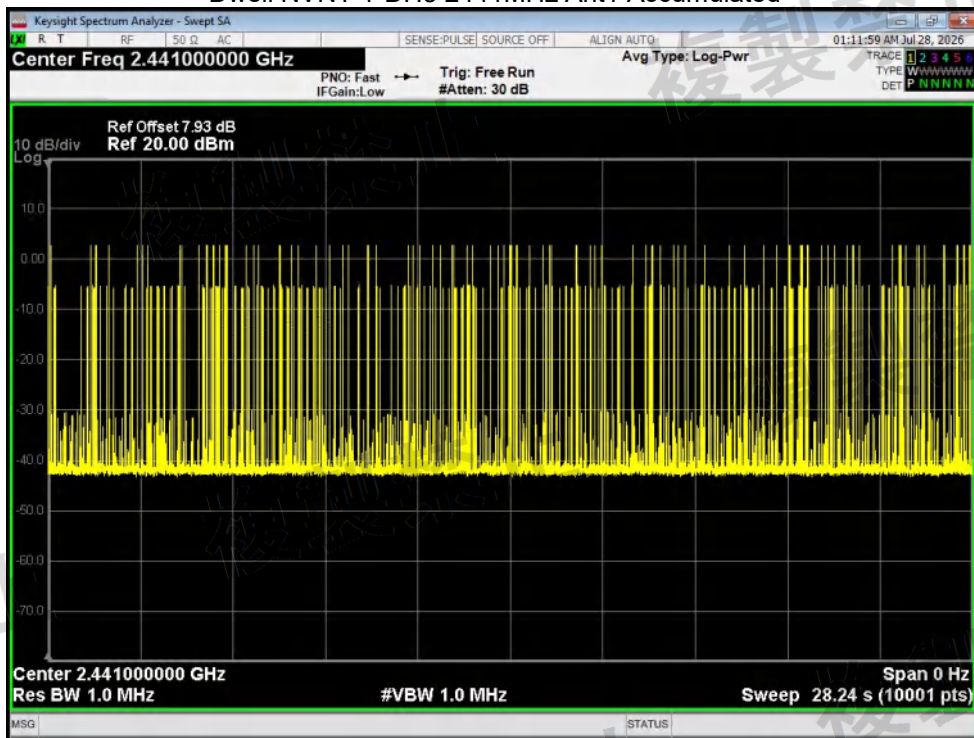
Dwell NVNT 1-DH3 2441MHz Ant1 Accumulated



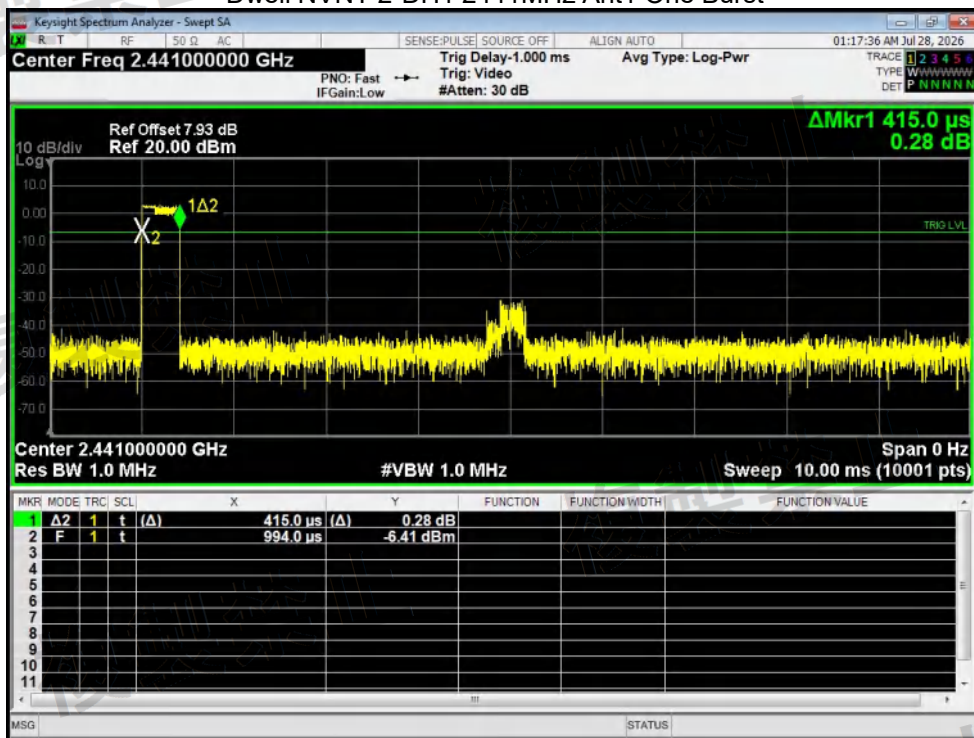
Dwell NVNT 1-DH5 2441MHz Ant1 One Burst



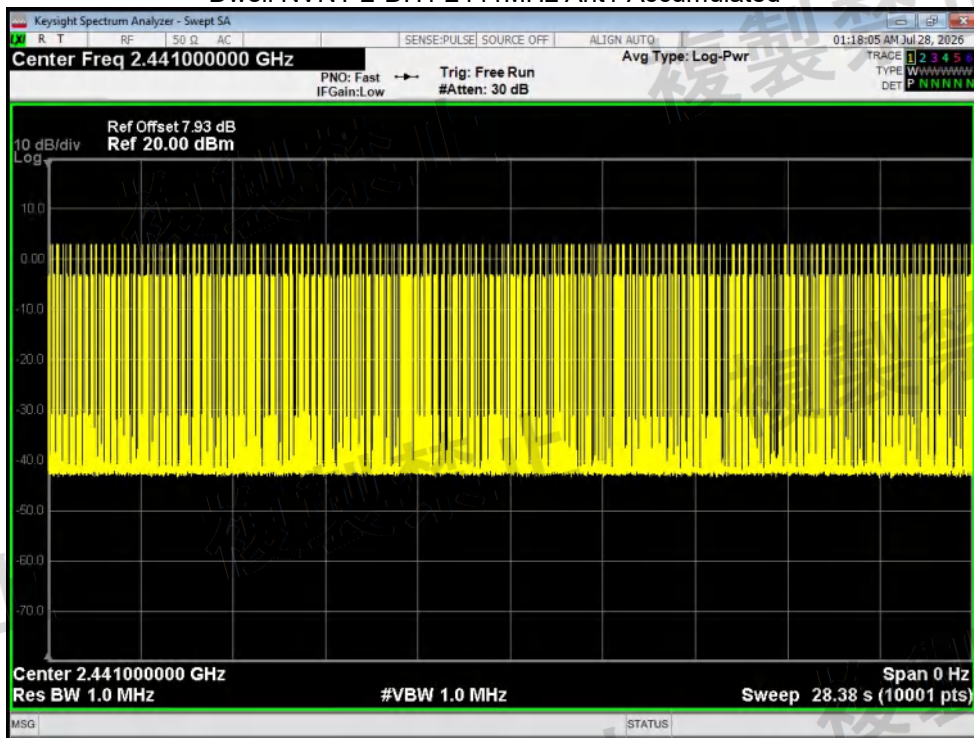
Dwell NVNT 1-DH5 2441MHz Ant1 Accumulated



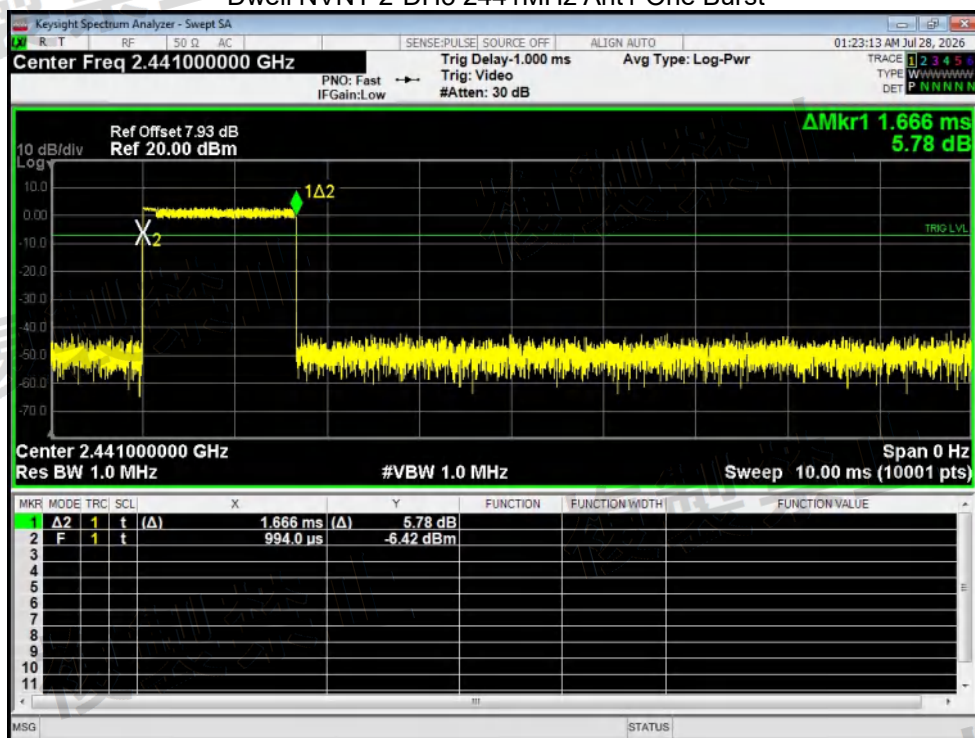
Dwell NVNT 2-DH1 2441MHz Ant1 One Burst



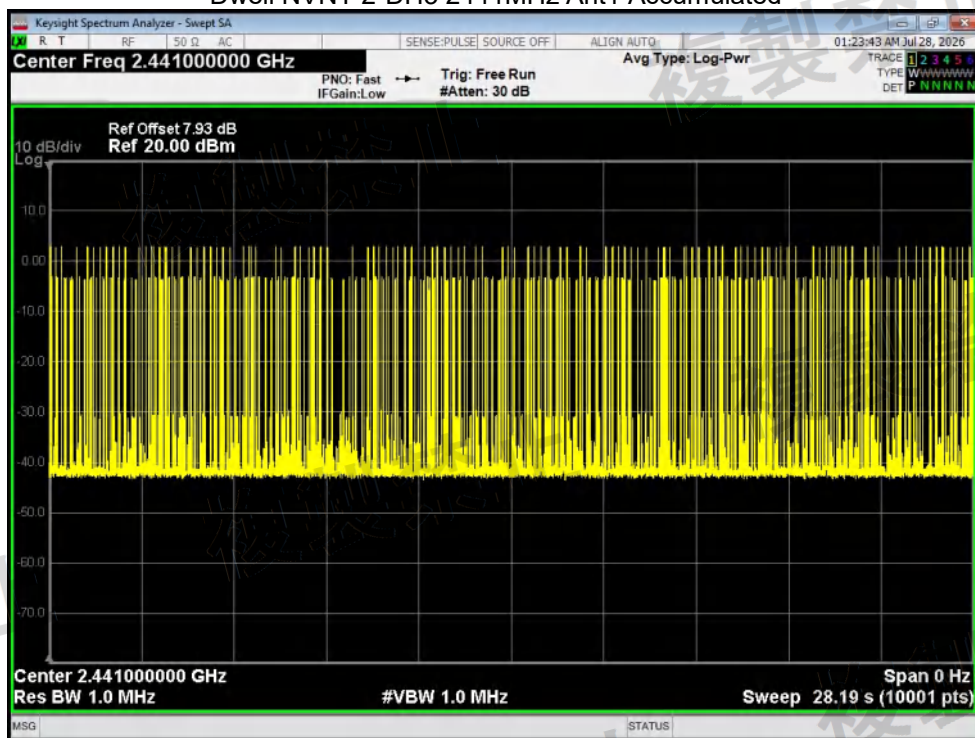
Dwell NVNT 2-DH1 2441MHz Ant1 Accumulated



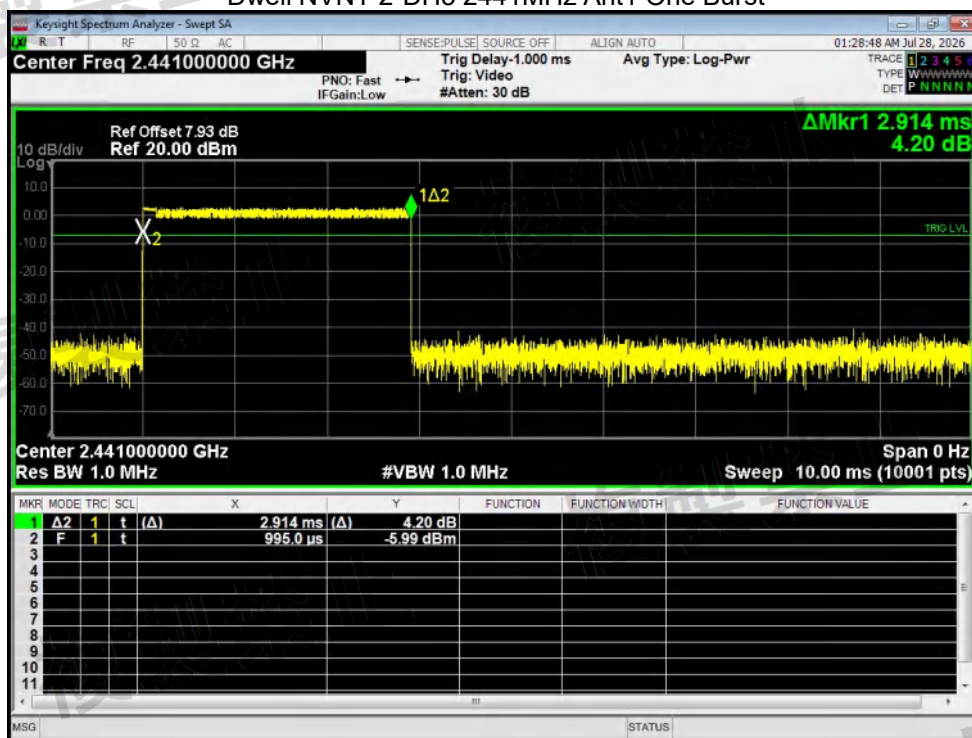
Dwell NVNT 2-DH3 2441MHz Ant1 One Burst



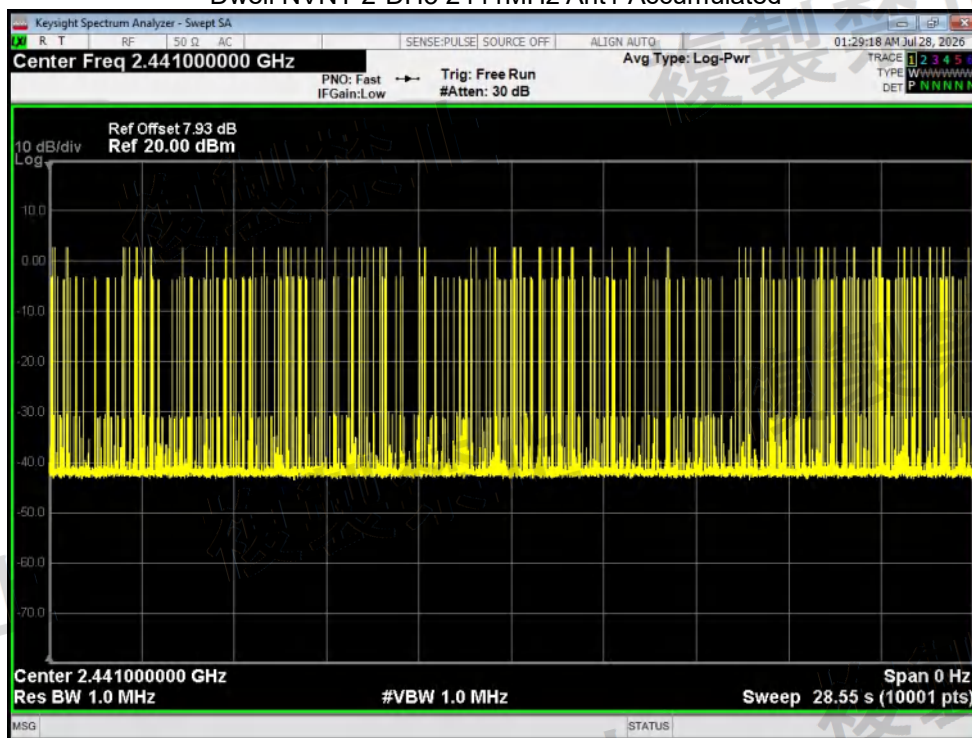
Dwell NVNT 2-DH3 2441MHz Ant1 Accumulated



Dwell NVNT 2-DH5 2441MHz Ant1 One Burst



Dwell NVNT 2-DH5 2441MHz Ant1 Accumulated



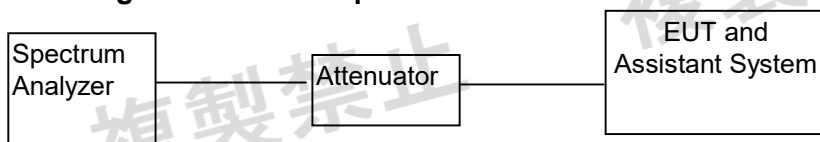
4.8 Secondary Radiated Emissions

4.8.1 Limits

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

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

4.8.2 Block diagram of test setup



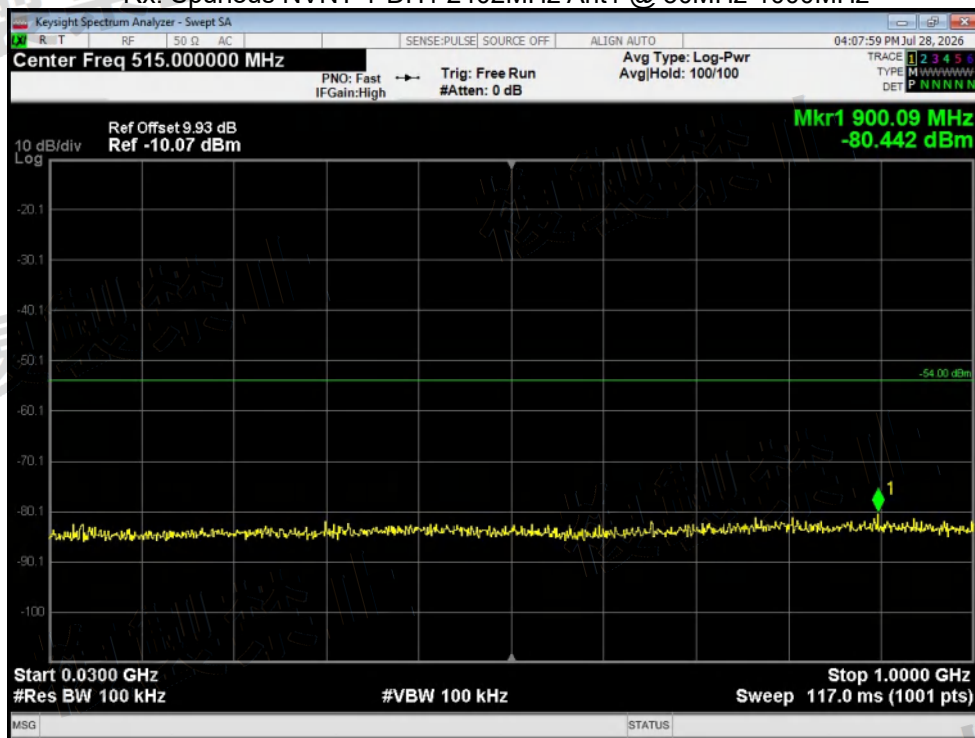
4.8.3 Test Procedure

1. EUT have the continuous reception mode
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 $f < 1\text{GHz}$, 2nW for $f \geq 1\text{GHz}$), all those are to be indicated in the 2nd and 3rd lines. If others are 1/10 or less more of the limit, no necessary to be indicated.

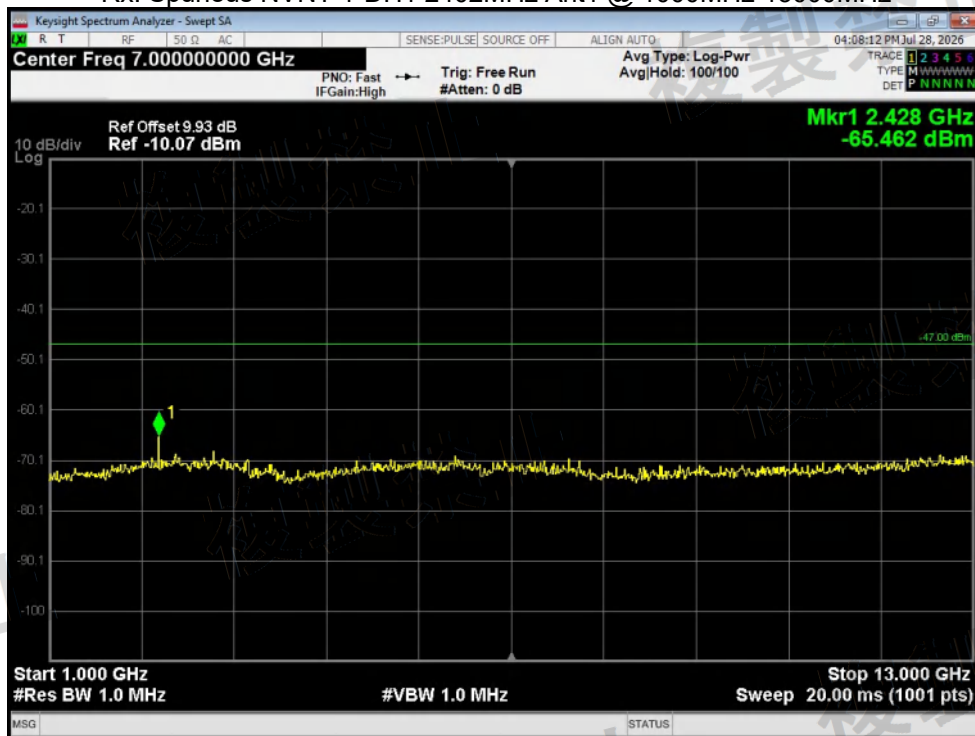
4.8.4 Test result

Condition	Mode	Frequency (MHz)	Range (MHz)	Emission Frequency (MHz)	Max Value (dBm)	Max Value (nW)	Limit (nW)	Verdict
NVNT	GFSK	2402	30-1000	900.09	-80.442	0.009	4	Pass
NVNT		2402	1000-13000	2428	-65.462	0.284	20	Pass
NVNT		2441	30-1000	919.49	-81.164	0.008	4	Pass
NVNT		2441	1000-13000	2620	-68.161	0.153	20	Pass
NVNT		2480	30-1000	786.6	-81.334	0.007	4	Pass
NVNT		2480	1000-13000	2428	-67.462	0.179	20	Pass
NVNT	$\pi/4$ -DQPSK	2402	30-1000	928.22	-80.867	0.008	4	Pass
NVNT		2402	1000-13000	12916	-68.566	0.139	20	Pass
NVNT		2441	30-1000	767.2	-80.945	0.008	4	Pass
NVNT		2441	1000-13000	5776	-67.767	0.167	20	Pass
NVNT		2480	30-1000	876.81	-80.99	0.008	4	Pass
NVNT		2480	1000-13000	5536	-68.61	0.138	20	Pass

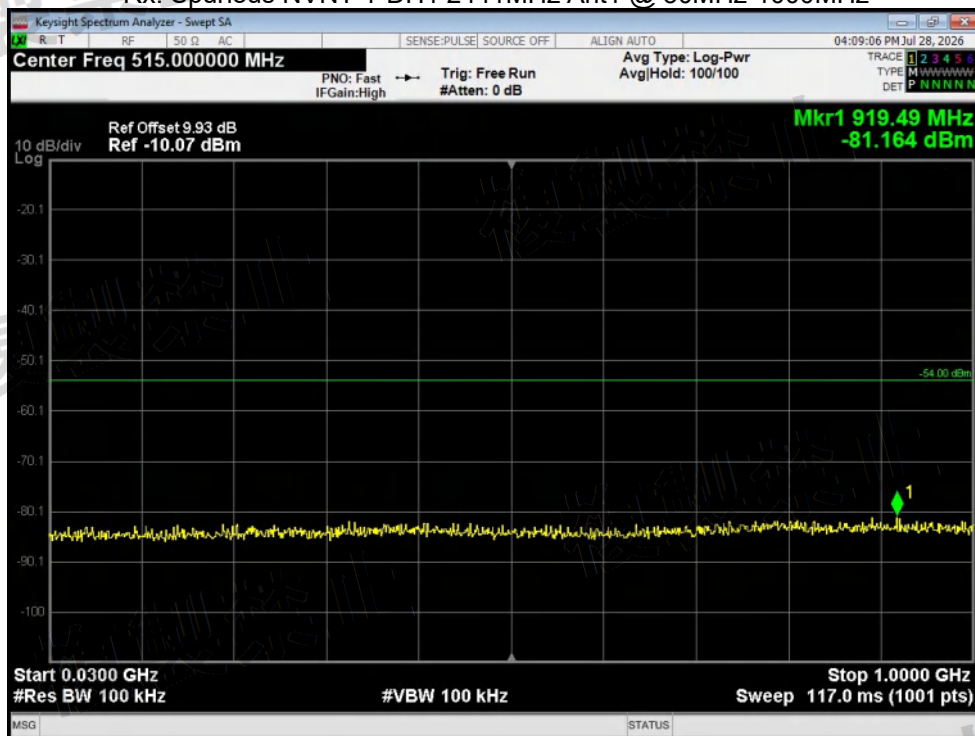
Rx. Spurious NVNT 1-DH1 2402MHz Ant1 @ 30MHz-1000MHz



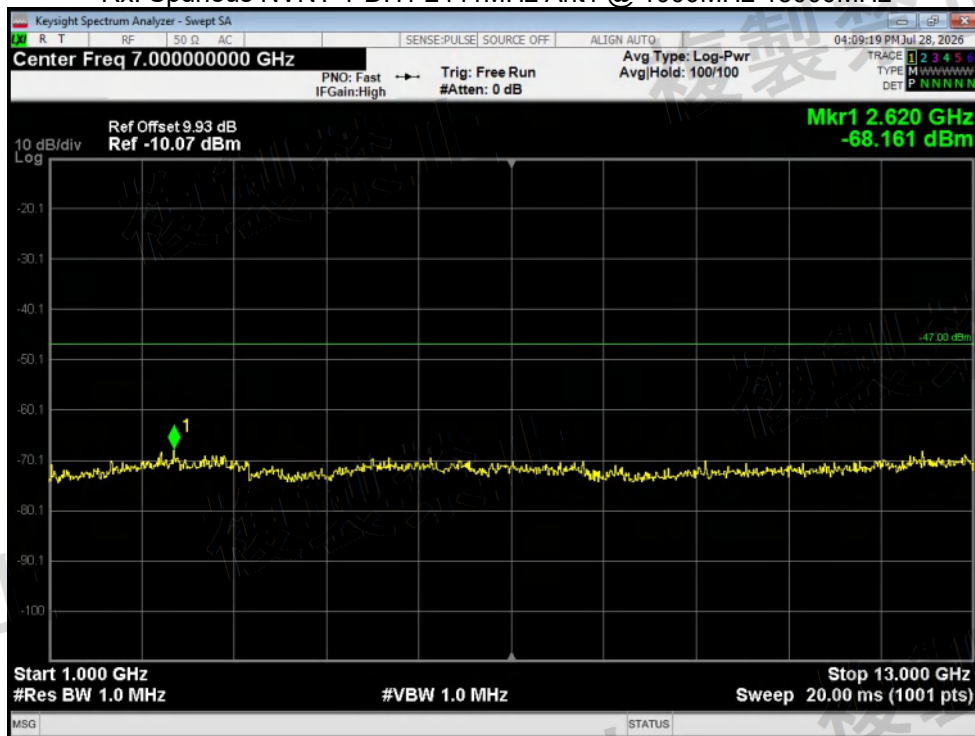
Rx. Spurious NVNT 1-DH1 2402MHz Ant1 @ 1000MHz-13000MHz



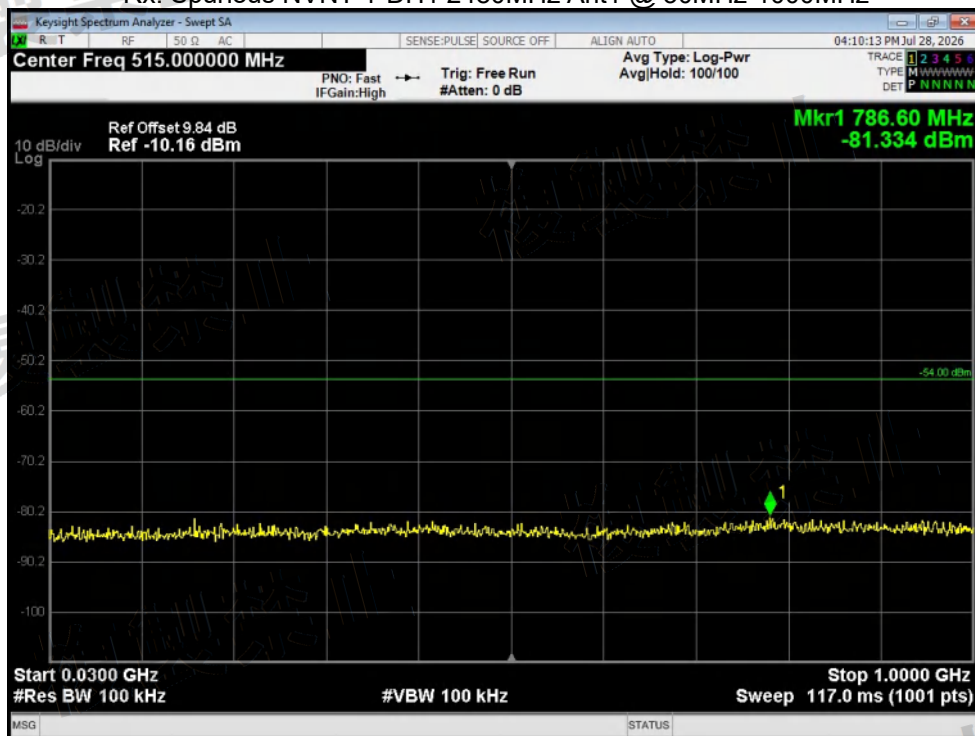
Rx. Spurious NVNT 1-DH1 2441MHz Ant1 @ 30MHz-1000MHz



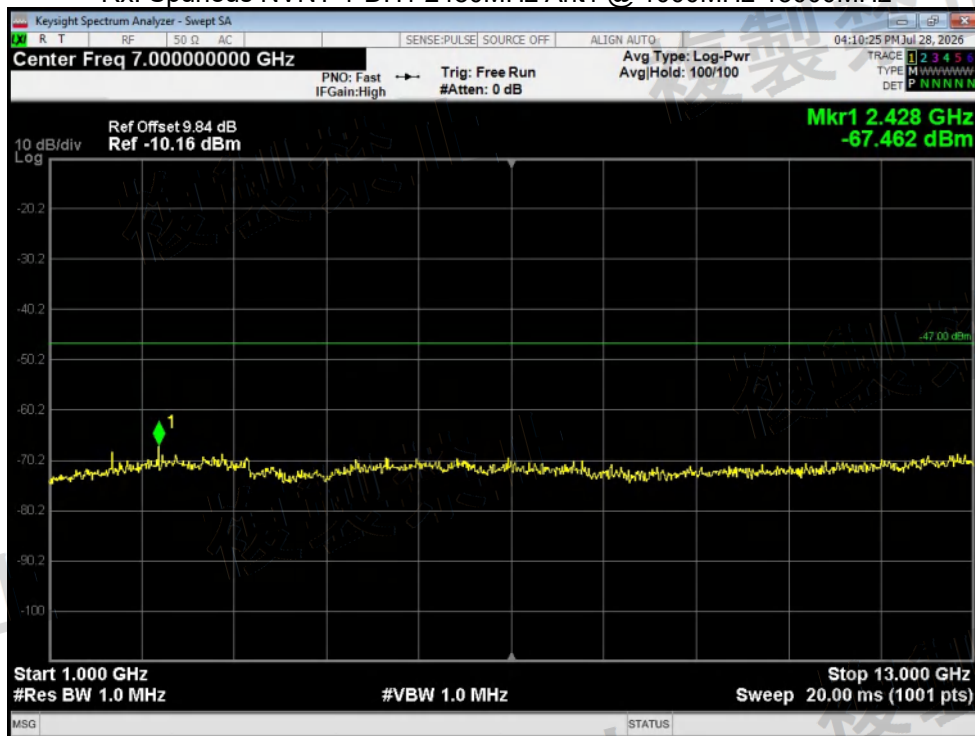
Rx. Spurious NVNT 1-DH1 2441MHz Ant1 @ 1000MHz-13000MHz



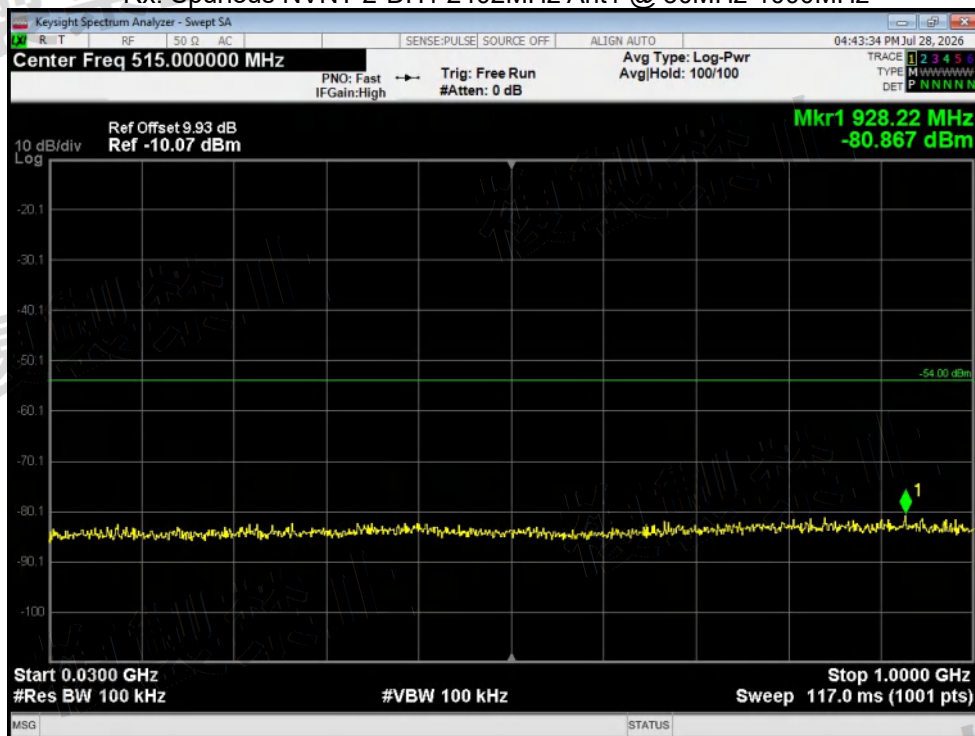
Rx. Spurious NVNT 1-DH1 2480MHz Ant1 @ 30MHz-1000MHz



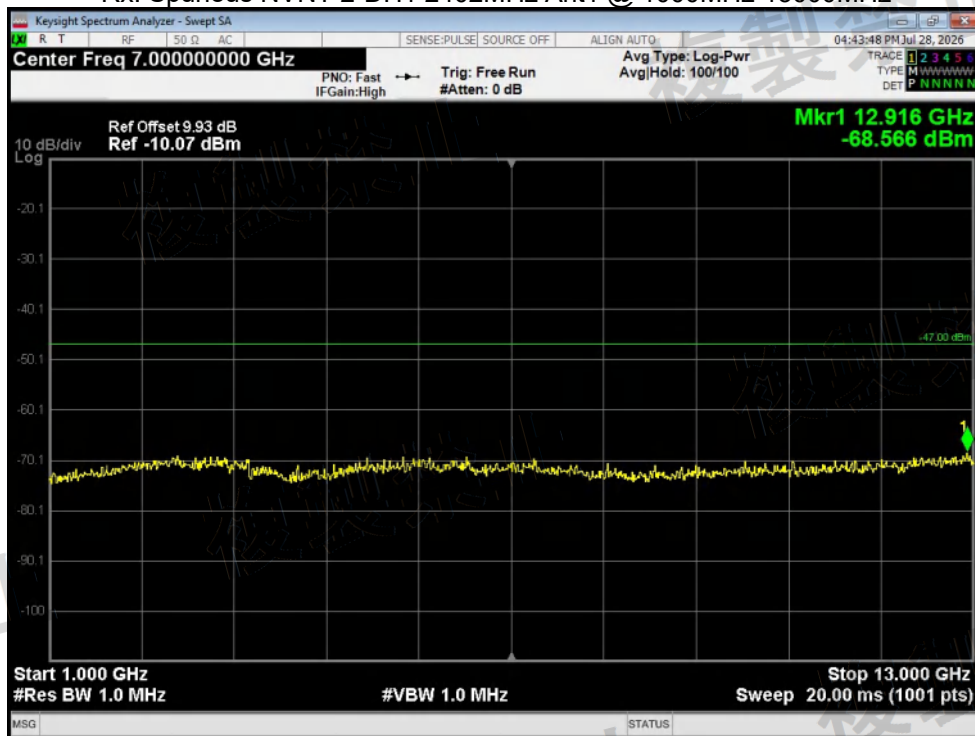
Rx. Spurious NVNT 1-DH1 2480MHz Ant1 @ 1000MHz-13000MHz



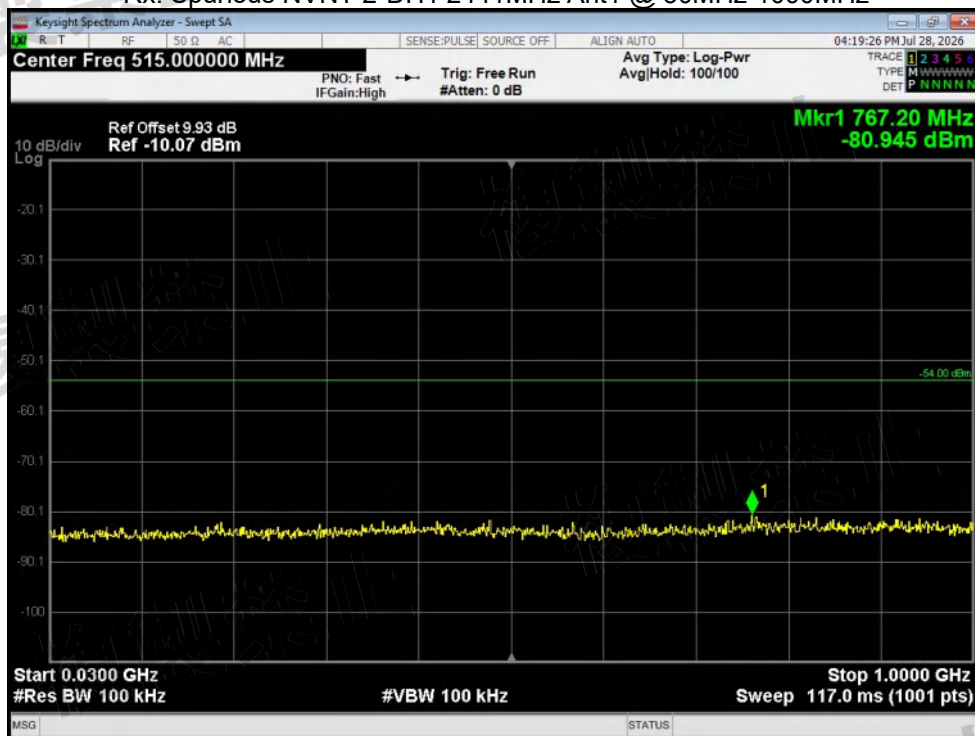
Rx. Spurious NVNT 2-DH1 2402MHz Ant1 @ 30MHz-1000MHz



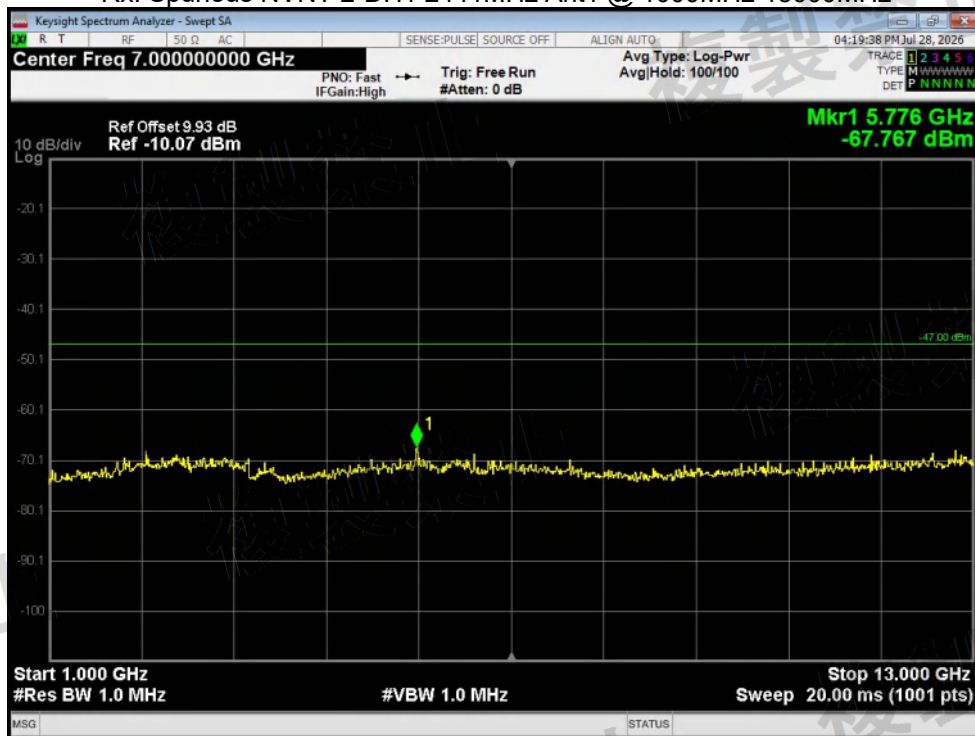
Rx. Spurious NVNT 2-DH1 2402MHz Ant1 @ 1000MHz-13000MHz



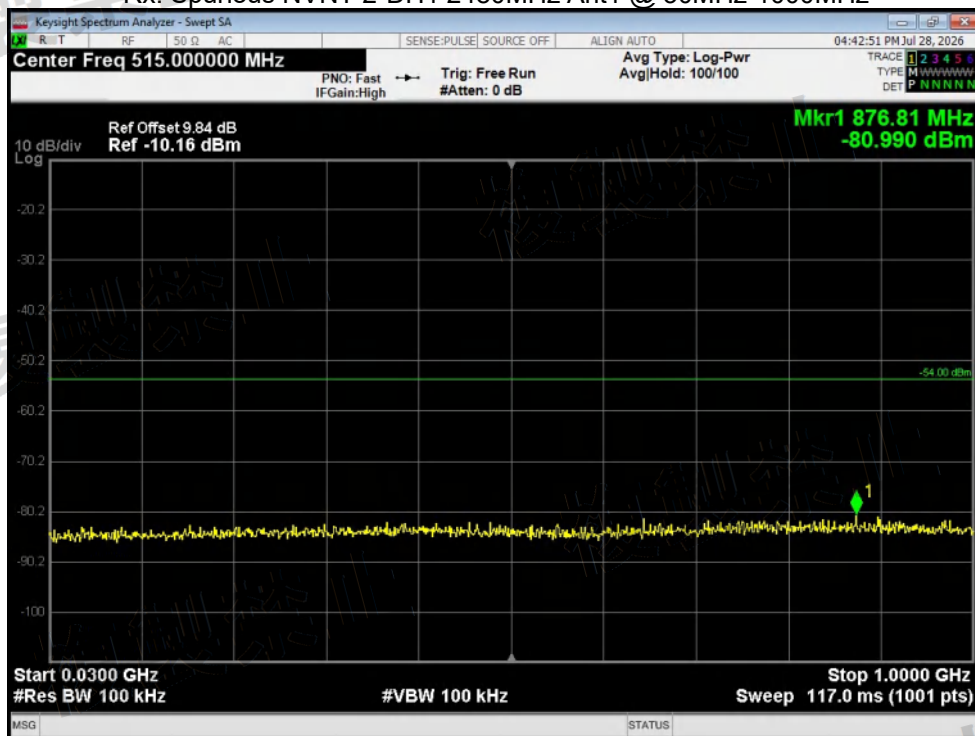
Rx. Spurious NVNT 2-DH1 2441MHz Ant1 @ 30MHz-1000MHz



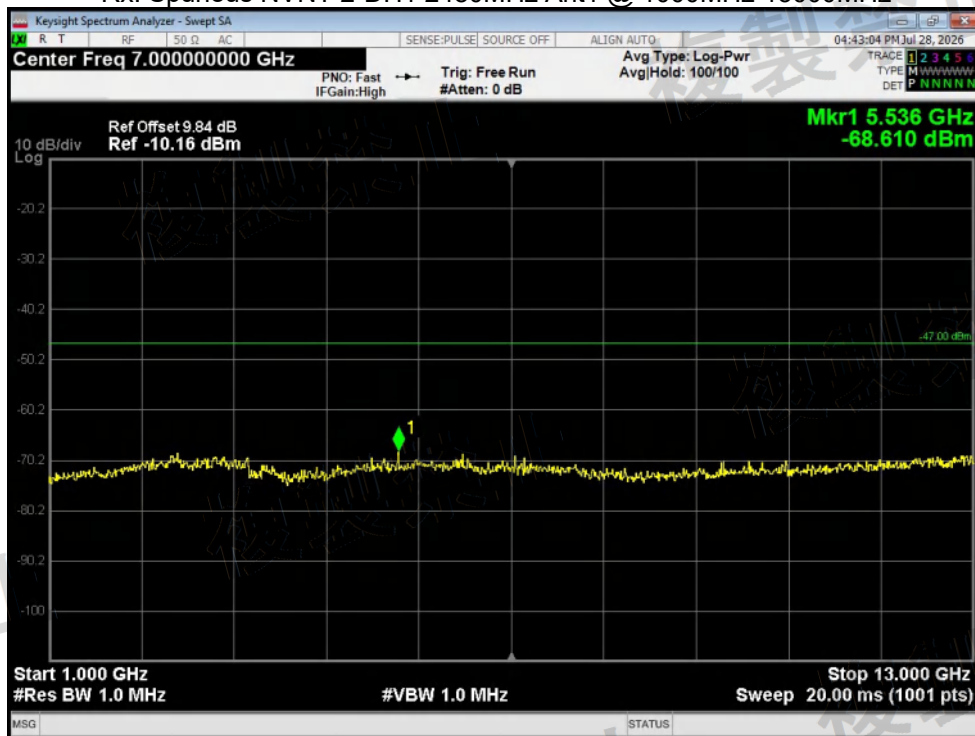
Rx. Spurious NVNT 2-DH1 2441MHz Ant1 @ 1000MHz-13000MHz



Rx. Spurious NVNT 2-DH1 2480MHz Ant1 @ 30MHz-1000MHz



Rx. Spurious NVNT 2-DH1 2480MHz Ant1 @ 1000MHz-13000MHz

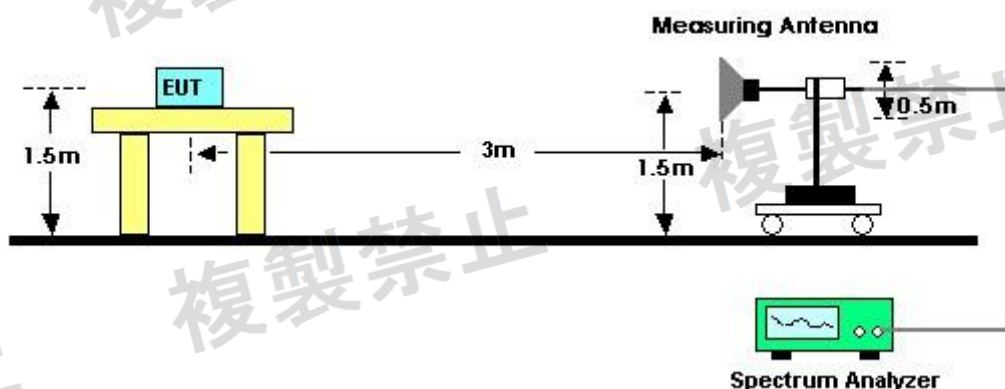


4.9 Antenna Absolute Gain Measurement

4.9.1 Limit

Modulation	Frequency band	Antenna power	Max EIRP	
			Non-directional	Beam directional ^{Note1}
DS	2,400-2,483.5MHz	10mW/MHz	12.14dBm/MHz	22.14dBm/MHz
OFDM1 ^{Note2}	2,400-2,483.5MHz	10mW/MHz	12.14dBm/MHz	22.14dBm/MHz
OFDM2	2,400-2,483.5MHz	5mW/MHz	9.14dBm/MHz	19.14dBm/MHz
FH,DS-FH,FH-OFDM	2,400-2,483.5MHz	3mW/MHz	6.91dBm/MHz	16.91dBm/MHz
	2,427-2,470.75MHz	10mW/MHz	12.14dBm/MHz	22.14dBm/MHz
Other than those above	2,400-2,483.5MHz	10mW	12.14dBm	22.14dBm

4.9.2 Block diagram of test setup



4.9.3 Test Procedure

Step 1

Set the test equipment at test frequency, and in continuous transmitting mode or intermittent burst mode (constant frequency and constant burst time). Stop the spread.

Step 2

Set the height and direction of test equipment and measurement antenna approximately facing each other.

Step 3

In the frequency derived in D), change the height of the measurement antenna from the ground by $\pm 50\text{cm}$ with a central focus on the antenna of test equipment. Search the location that the power is maximum by adjusting the direction of measurement antenna. Set the indicator of spectrum analyzer at this point as "E".

Step 4

Remove the test equipment from the turntable, set the opening of substitution antenna at the same location as the opening of the test equipment, and receive by outputting radio wave of the same frequency from the standard signal generator for substitution.

Step 5

Adjust at the maximum power point, turning the substitution antenna.

Step 6

Change the height of the measurement antenna from the ground by $\pm 50\text{cm}$ with a central focus on the substitution antenna, and adjust the direction of measurement antenna to the location that the received power is maximum.

Step 7

Adjust output of standard signal generator and record the power P_s that is equal to "E". Or record P_s by counting backward from the difference with "E" as the close value to "E" (within $\pm 1\text{dB}$).

Step 8

EIRP is derived from the following calculating formula:

$$\text{EIRP} = G_s - L_f + P_s$$

G_s ; Absolute gain of substitution antenna (dBi).

L_f ; Loss of electric supply line between standard signal generator and substitution antenna (dB).

P_s ; Output of standard signal generator (dBm).

Step 9

Spectrum Analyzer as below:

Centre Frequency: centre frequency of the channel Under test.

Frequency Span: 0Hz

Resolution BW: 1MHz

Video BW: 3MHz

Detector: Peak.

Sweep mode: Continuous sweep

4.9.4 Test Result

N/A .

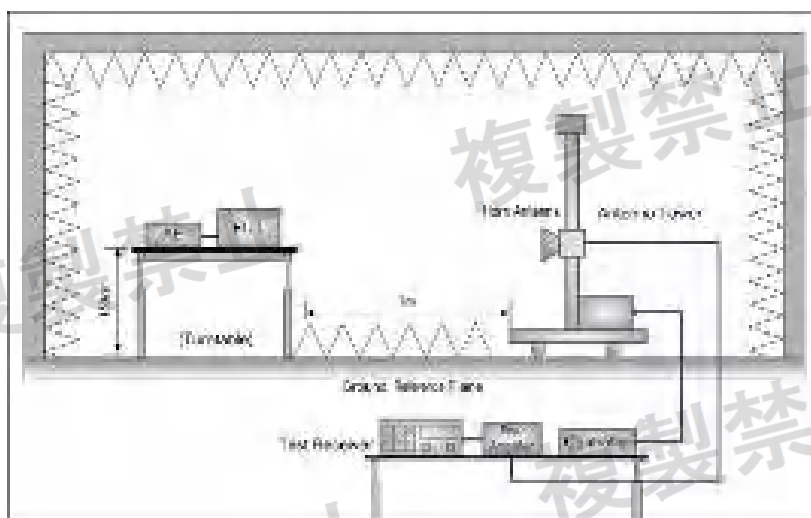
The EIRP less than 6.91dBm/MHz.

4.10 Half Power Beam Angle

4.10.1 Limit

Item	Limits
3dB antenna beam width	360/A (If $A < 1$; then $A = 1$) $A = \{ \text{EIRP Power [mW]} / 16.36 \text{ for DS, OFDM} \}$ or $A = \{ \text{EIRP Power [mW]} / 4.9 \text{ for FH} \}$

4.10.2 Block diagram of test setup



4.10.3 Test Procedure

1. Set EUT and measuring antenna at the same height and roughly facing each other.
2. Set spectrum analyzer with RBW=1 MHz, VBW=1 KHz, Y scale=5 dB, Detector=Peak, Trace mode=Max Hold, and tune reference level to observe receiving signal position.
3. Rotate directions of the EUT horizontally and vertically to find the maximum receiving power.
4. Move the measuring antenna height up and down within $\pm 50\text{cm}$ of EUT height and swing it to find the maximum output of measuring antenna. The output level at the spectrum analyzer is read as "E"
5. Calculate permitted radiation angle in horizontal and vertical using EIRP measured in another test method.
6. Calculate 3dB antenna beam width by the formula below $360/A$ (If $A < 1$; then $A = 1$). $A = \{ \text{EIRP Power [mW]} / 16.36 \text{ for DS, OFDM} \}$ or $A = \{ \text{EIRP Power [mW]} / 4.9 \text{ for FH} \}$

4.10.4 Test Result

N/A.

The EIRP less than 6.91dBm/MHz.



5 Test Setup Photo

Reference to the file No.: ET-26073263SP for details.

6 EUT Constructional Details

Reference to the file No.: ET-26073263EP and ET-26073263IP for details.

-----End-----

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