



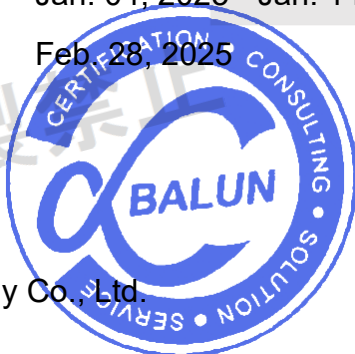
中国认可
国际互认
检测
TESTING
CNAS L6791

TEST REPORT

Applicant: Ugreen Group Limited
Address: Ugreen Building, Longcheng Industrial Park,
Longguanxi Road, Longhua, ShenZhen, China
Equipment Type: AC1300 USB High Gain Dual Band Wi-Fi Adapter
Model Name: CM493
Brand Name: **UGREEN**
Test Standard: MIC Notice No.88 Appendix No.43
Ordinance of MPT No.37, 1981:
Article 2 paragraph 1 item (19)
Sample Arrival Date: Jan. 03, 2025
Test Date: Jan. 04, 2025 - Jan. 14, 2025
Date of Issue: Feb. 28, 2025

ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.



Tested by: Julie Zhu

Checked by: Ye Hongji

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(Technical Director)

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Ye Hongji

Sunny Zou

Revision History

Version	Issue Date	Revisions
<u>Rev. 01</u>	<u>Feb. 28, 2025</u>	<u>Initial Issue</u>

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1. GENERAL INFORMATION

1.1 Test Laboratory

Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Phone Number	+86 755 6685 0100

1.2 Test Location

Name	Shenzhen BALUN Technology Co., Ltd.
Location	☒ Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
	☐ 1/F, Building B, Ganghongji High-tech Intelligent Industrial Park, No. 1008, Songbai Road, Yangguang Community, Xili Sub-district, Nanshan District, Shenzhen, Guangdong Province, P. R. China

2. PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Ugreen Group Limited
Address	Ugreen Building, Longcheng Industrial Park, Longguanxi Road, Longhua, ShenZhen, China

2.2 Manufacturer Information

Manufacturer	Ugreen Group Limited
Address	Ugreen Building, Longcheng Industrial Park, Longguanxi Road, Longhua, ShenZhen, China

2.3 Factory Information

Factory	Dingnan county Fulong Technology co., Ltd.
Address	Yingtangindustry park, Qinghua Blvd Liangfu industrydistrict, Lishitown, Dingnan, GanZhou, JiangXi province, P.R. China

2.4 General Description for Equipment under Test (EUT)

EUT Name	AC1300 USB High Gain Dual Band Wi-Fi Adapter
Model Name Under Test	CM493
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	N/A
Software Version	N/A
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

Remark:

- Product Number (P/N) code in the below table, for marketing purpose, will be marked on the marking plate.

50341	50341EU	50341UK	50341US	50341JP	50341CN	50341KC	50341A	50341B	50341C	50341P	50341X	50341U
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2.5 Technical Information

Network and Wireless connectivity	WIFI 802.11a, 802.11b, 802.11g, 802.11n and 802.11ac
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The requirement for the following technical information of the EUT was tested in this report:

Frequency Range	802.11b/g/n(20 MHz): 2.412 GHz - 2.472 GHz $f_c = 2412 \text{ MHz} + (N-1)*5 \text{ MHz}$, where - f_c = "Operating Frequency" in MHz, - N = "Channel Number" with the range from 1 to 13. 802.11n(40 MHz): 2.422 GHz - 2.462 GHz $f_c = 2412 \text{ MHz} + (N-1)*5 \text{ MHz}$, where - f_c = "Operating Frequency" in MHz, - N = "Channel Number" with the range from 3 to 11.	
Equipment Type (LBT / non- LBT)	Adaptive equipment LBT based Detect and Avoid	
Antenna Type	SISO-Antenna A SISO-Antenna B	Dipole Antenna
Antenna Gain	SISO-Antenna A SISO-Antenna B	4.67 dBi (In test items related to antenna gain, the final results reflect this figure. This value is provided by the applicant.)
Declare Max Rated Power Density	3.50 mW/MHz	

Mode	Antenna		
	SISO-Antenna A	SISO-Antenna B	MIMO
802.11b	√	√	√
802.11g	√	√	√
802.11n20	√	√	√
802.11n40	√	√	√
Note: All the configurations were tested, but only the worst case was reported in this report.			

Modulation technology	Modulation Type	Transfer Rate (Mbps)
DSSS (802.11b)	DBPSK	1
	DQPSK	2
	CCK	5.5/11
OFDM (802.11g)	BPSK	6/9
	QPSK	12/18
	16QAM	24/36
	64QAM	48/54
OFDM (802.11n-20 MHz)	BPSK	6.5/7.2
	QPSK	13/19.5/14.4/21.7
	16QAM	26/39/28.9/43.3
	64QAM	52/58.5/65/57.8/65/72.2
OFDM (802.11n-40 MHz)	BPSK	13.5/15
	QPSK	27/40.5/30/45
	16QAM	54/81/60/90
	64QAM	108/121.5/135/120/150

3. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

Part	Description	Channel		Test Mode	Data Rate	Verdict
5.1	Frequency Error	13/7/1	3/7/11	Un-modulation	/	Pass
5.2	Occupied Bandwidth	13/7/1	3/7/11	11b/11g/11n20/11n40	1/6/6.5/13.5 Mbps	Pass
5.3	Unwanted Emission Intensity	13/7/1	3/7/11	11b/11g/11n20/11n40	1/6/6.5/13.5 Mbps	Pass
5.4	Antenna Power Error	13/7/1	3/7/11	11b/11g/11n20/11n40	1/6/6.5/13.5 Mbps	Pass
5.5	Limitation of Collateral Emission of Receiver	13/7/1	3/7/11	11b/11g/11n20/11n40	1/6/6.5/13.5 Mbps	Pass
5.6	Carrier sensing function (1)	--	3/7/11	11n40	13.5 Mbps	Pass
5.7	Carrier sensing function (2)	13/7/1	3/7/11	11b/11g/11n20/11n40	1/6/6.5/13.5 Mbps	N/A
5.8	Transmission Antenna Gain (EIRP Antenna Power)	N/A	N/A	N/A	N/A	N/A ^{Note2}
5.9	Transmission Radiation Angle Width (3dB Beamwidth)	N/A	N/A	N/A	N/A	N/A ^{Note2}
5.10	Radio Interference Prevention Capability	--	--	--	--	Pass
5.11	Construction Protection Confirmation	--	--	--	--	Pass

Note 1: The tests were performed according to the method of measurements prescribed in MIC Ordinance Regulating Radio Equipment Section 4.17 of Article 49.20.

Note 2: When the EIRP is less than 12.14 dBm/MHz, it is not necessary.

The test channel corresponding to the frequency list

Mode	Channel	Channel Number	Frequency (MHz)
11b	HIGH/MIDDLE/LOW(H/M/L)	13/7/1	2472/2442/2412
11g	HIGH/MIDDLE/LOW(H/M/L)	13/7/1	2472/2442/2412
11n20	HIGH/MIDDLE/LOW(H/M/L)	13/7/1	2472/2442/2412
11n40	HIGH/MIDDLE/LOW(H/M/L)	11/7/3	2462/2442/2422

3.1 MEASUREMENT UNCERTAINTY

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2.

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

Parameters	Uncertainty
Frequency Error / 99% Bandwidth	$(3.2 \times f \times 10^{-6})$ Hz
Antenna Power	1.82 dB
TX-RX Spurious Emissions	1.84 dB
Transmission Antenna Gain	5.36 dB
Temperature	0.8°C
Humidity	4%
DC / AC Power Source	0.04%

Note: “ f ” is the nominal signal frequency in Hz.

4. GENERAL TEST CONFIGURATIONS

4.1 Test Environment Conditions

During the measurement, the normal environment conditions were within the listed ranges:

Relative Humidity (%)	46% to 59%	
Atmospheric Pressure (kPa)	100 kPa to 102 kPa	
Temperature	+21.1°C to +23.9°C	
Working Voltage of the EUT	NV (Normal Voltage)	5.0 V
	LV (Low Voltage)	4.5 V
	HV (High Voltage)	5.5 V

Note: When the input voltage deviation from the external power supply is $\pm 10\%$, and the voltage deviation provided to the radio part of the EUT (excluding the power circuit) is kept within $\pm 1\%$, only the normal voltage is used for testing.

Voltage fluctuation results:

External power supply	Rated operating voltage of EUT	Actual measured voltage of EUT	$\pm 1\%$ voltage operating range
4.500 V	3.300 V	3.297 V	3.267 V~3.333 V
5.000 V	3.300 V	3.301 V	3.267 V~3.333 V
5.500 V	3.300 V	3.303 V	3.267 V~3.333 V

4.2 Test Equipment List

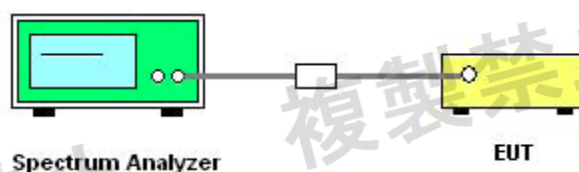
Description	Manufacturer	Model	Serial No.	Calibration Company	Calibration Address	Calibration By	Cal. Date	Cal. Due	Calibration Method
Spectrum Analyzer	KEYSIGHT	N9020A	MY50330200	Ti Testing & Certification Group Co., Ltd. Shenzhen Branch	103, Building B, Ganghongji High tech Intelligent Industrial Park, No. 1008 Songbai Road, Nanshan District, Shenzhen	He Weidong	2024.05.08	2025.05.07	c)
Power Sensor	KEYSIGHT	U2063XA	MY58000251	Ti Testing & Certification Group Co., Ltd. Shenzhen Branch	103, Building B, Ganghongji High tech Intelligent Industrial Park, No. 1008 Songbai Road, Nanshan District, Shenzhen	Zhang Suting	2024.07.04	2025.07.03	c)
Multimeter	Fluke	289	44860089	Ti Testing & Certification Group Co., Ltd. Shenzhen Branch	103, Building B, Ganghongji High tech Intelligent Industrial Park, No. 1008 Songbai Road, Nanshan District, Shenzhen	Huang Guoliang	2024.08.07	2025.08.06	c)
DC Power Supply	ITECH	IT6720	600103010687610007	Ti Testing & Certification Group Co., Ltd. Shenzhen Branch	103, Building B, Ganghongji High tech Intelligent Industrial Park, No. 1008 Songbai Road, Nanshan District, Shenzhen	Zhang Suting	2024.07.04	2025.07.03	c)

Note:

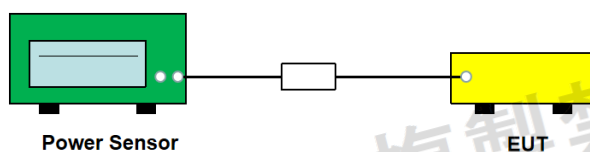
- a) Calibration conducted by the National Institute of Information and Communications Technology (NICT) (hereinafter referred to as "NICT") or a designated calibration agency under Article 102-18 paragraph (1)
- b) Correction conducted pursuant to the provisions of Article 135 or Article 144 of the Measurement Law (Law No. 51 of 1992)
- c) Calibration conducted in foreign countries, which shall be equivalent to the calibration conducted by the NICT or a designated calibration agency under Article 102-18 paragraph (1)
- d) Calibration conducted by using measuring instruments and other equipment listed in the right column of Table No. 3 attached hereto, which shall have been given any of calibration, etc. listed above from a) to c)

4.3 Description of Test Setup

4.3.1 For Antenna Port Test

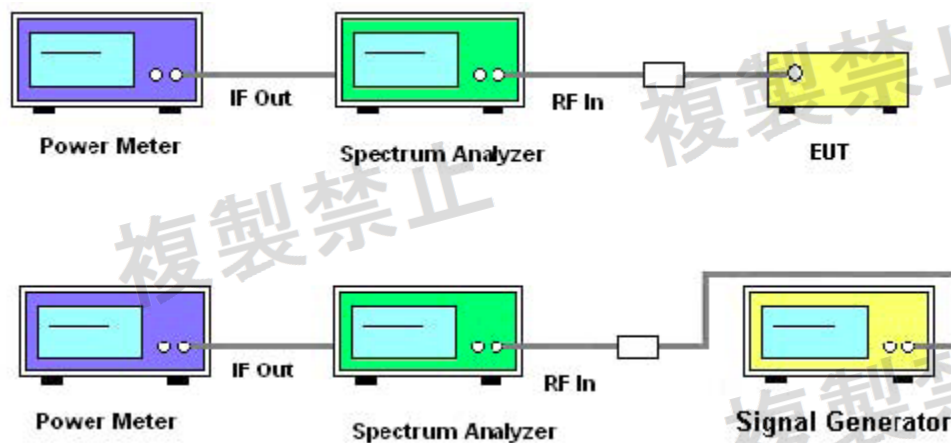


(Diagram 1)



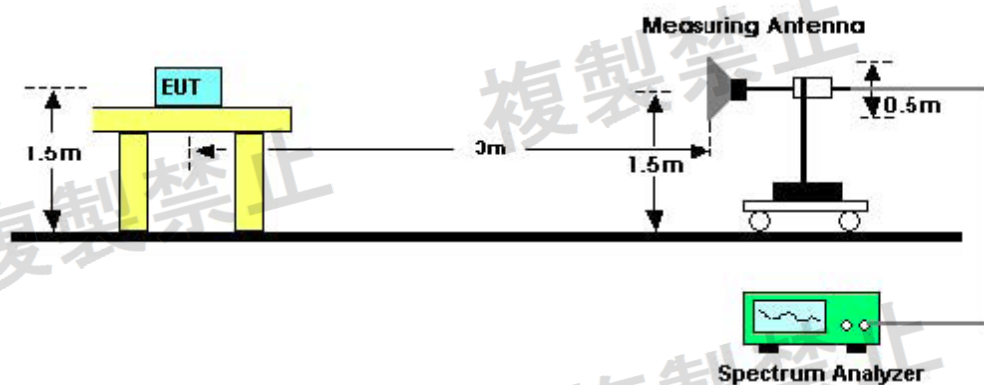
(Diagram 2)

4.3.2 For Antenna Power Error Test

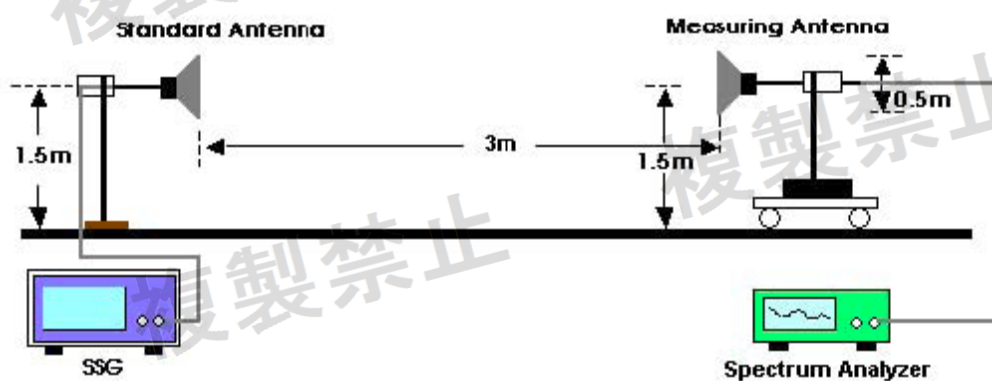


(Diagram 3)

4.3.3 For EIRP Antenna Power Test

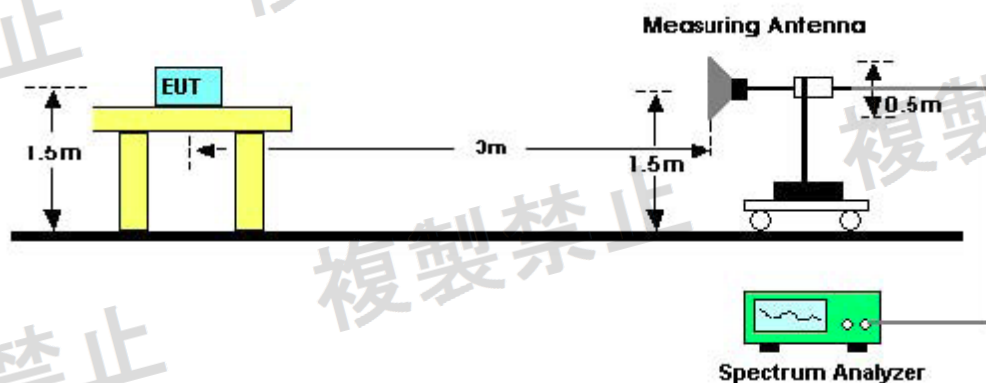


(Diagram 4)



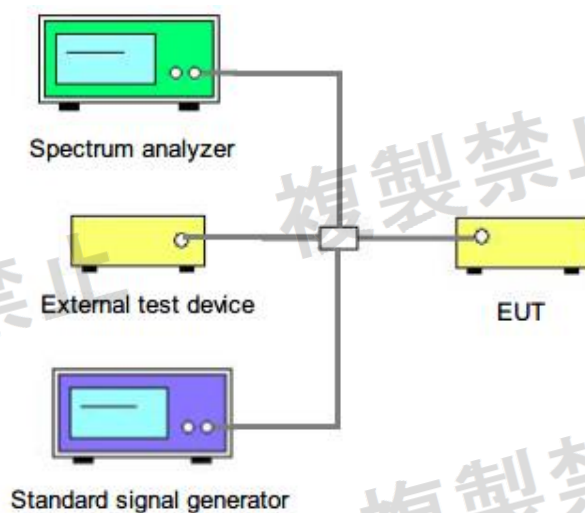
(Diagram 5)

4.3.4 For 3dB Beamwidth Test

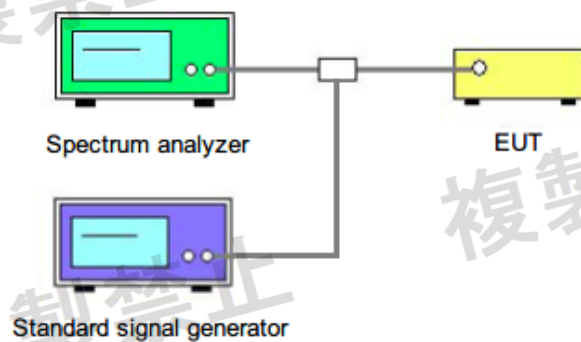


(Diagram 6)

4.3.5 For Carrier sensing function Test



(Diagram 7)



(Diagram 8)

5. TEST ITEMS

5.1 Frequency Error Measurement

5.1.1 Limit

Item	Limits
Frequency Tolerance	$\leq \pm 50$ ppm

5.1.2 Test Setup

See section 4.3.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX A.

5.1.3 Test Procedure

- 1 Frequency accuracy of SA shall be less than 10% of limits tolerance (5 ppm)
- 2 Setting of SA is following as: RB:1 kHz / VB:3 kHz / SPAN: 50 kHz
- 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 100 Hz)
- 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 $(f_c - f) / f_c \times 10^6$ ppm and the limit is less than ± 50 ppm

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 Result

Note: All antenna were pre tested, but only the worst case has been reported in this report.

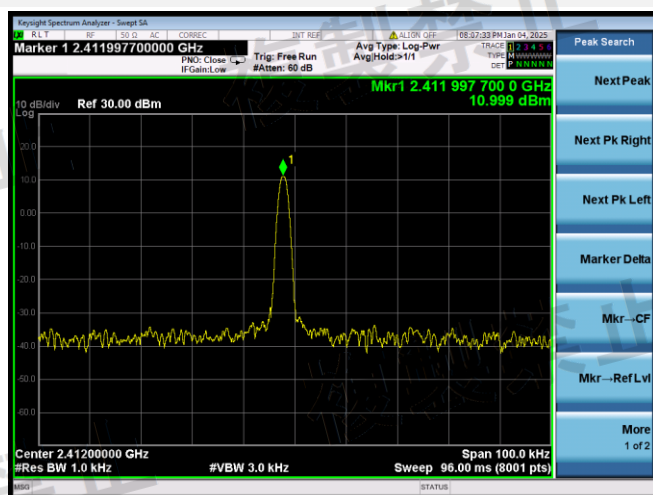
SISO-Antenna A

Test Data

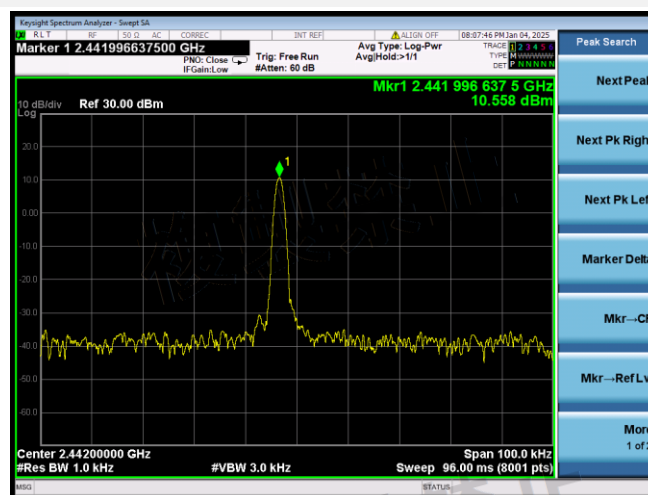
Mode	Test Voltage	Channel	Frequency fc (MHz)	Test Frequency (MHz)	Frequency Error ppm	Limit (ppm)	Verdict
20 MHz	NV	Low	2412	2411.99770	-0.95	±50	Pass
		Middle	2442	2441.99638	-1.48	±50	Pass
		High	2472	2471.99580	-1.70	±50	Pass
40 MHz	NV	Low	2422	2421.99510	-2.02	±50	Pass
		Middle	2442	2441.99426	-2.35	±50	Pass
		High	2462	2461.99369	-2.56	±50	Pass

Test Plots

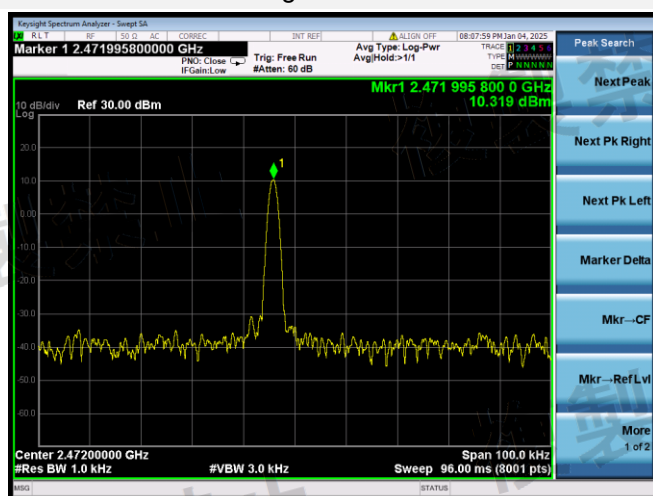
A.1.1 20 MHz NV Low Channel



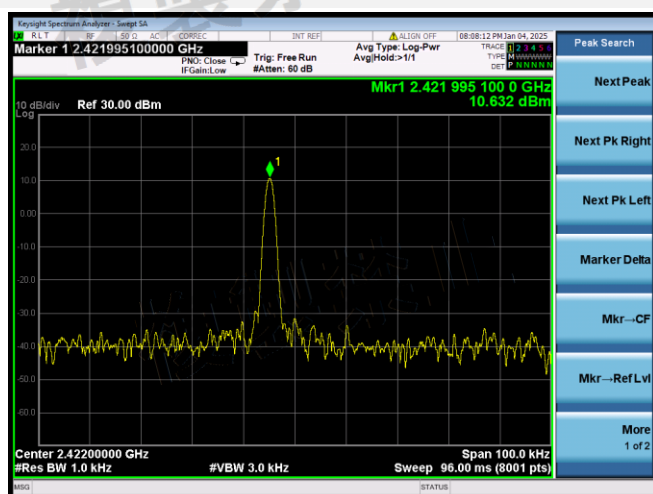
A.1.2 20 MHz NV Middle Channel



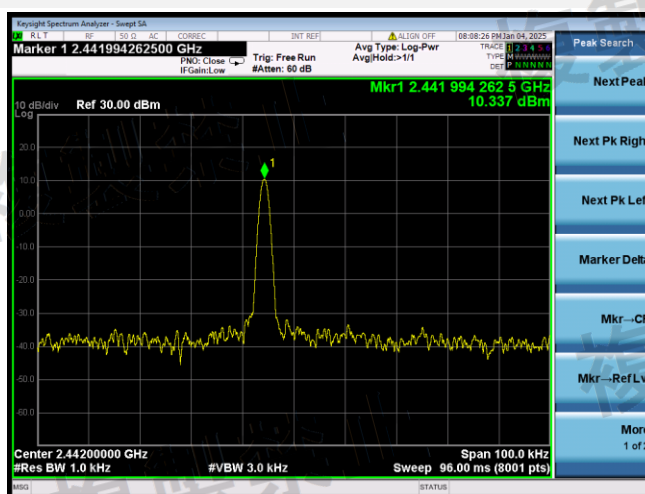
A.1.3 20 MHz NV High Channel



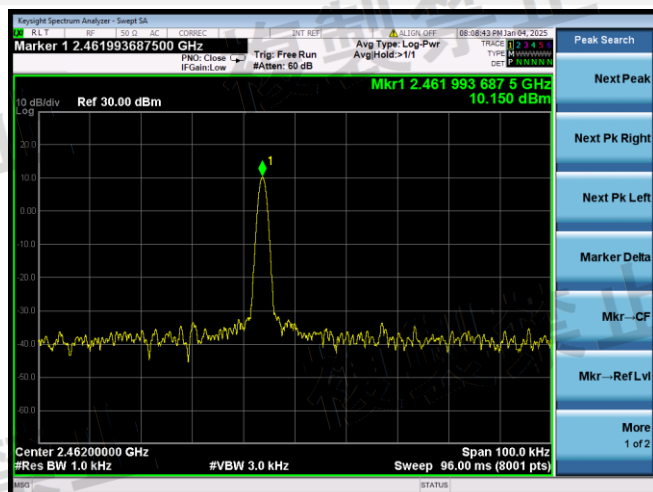
A.1.4 40 MHz NV Low Channel



A.1.5 40 MHz NV Middle Channel



A.1.6 40 MHz NV High Channel



5.2 Occupied Bandwidth

5.2.1 Limit

Item	Limits
Occupied Band Width	FHSS $\leq$ 83.5MHz; OFDM $\leq$ 40MHz, DSSS $\leq$ 26MHz; Others $\leq$ 26MHz

5.2.2 Test Setup

See section 4.3.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX A.

5.2.3 Test Procedure

- 1 Set the spectrum analyzer as follows:

Center frequency: Test frequency

Span: Approximately 2 to 3.5 times nominal bandwidth

Resolution bandwidth: Approximately 3% or less nominal bandwidth

Video bandwidth: equivalent to resolution bandwidth

Sweep time: auto

Sweep mode: Continuous sweep

Detection: Positive peak

Trace mode: Maximum hold

- 2 After repeating sweeps until the display shows steady data, store the values at all data points into the computer array variables.

- 3 Convert the dB values at all data points to antilogarithm on the power dimension.

- 4 Obtain sum total of the power at all data points, and store it as "total power".

- 5 Accumulate the power at each data point sequentially upward from the lowest frequency and obtain the limit data point where the accumulated power becomes 0.5% (5% for spreading bandwidth) of the "total power". Then convert the limit data point into frequency and store it as "lower limit frequency"

- 6 Accumulate the power at each data point sequentially downward from the highest frequency and obtain the limit data point where the accumulated power becomes 0.5% (5% for spreading bandwidth) of the "total power". Then convert the limit data point into frequency and store it as "upper limit frequency".

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 Result

Note: All antenna were pre tested, but only the worst case has been reported in this report.

SISO-Antenna ATest Data

802.11b

Results of Occupied Bandwidth	Channel	Test Voltage	Measured 99% Occupied Bandwidth (MHz)	Occupied Bandwidth Limit (MHz)	Verdict
	Low	NV	13.56	≤ 26	Pass
	Middle		13.66	≤ 26	Pass
	High		13.55	≤ 26	Pass

802.11g

Results of Occupied Bandwidth	Channel	Test Voltage	Measured 99% Occupied Bandwidth (MHz)	Occupied Bandwidth Limit (MHz)	Verdict
	Low	NV	16.46	≤ 40	Pass
	Middle		16.47	≤ 40	Pass
	High		16.44	≤ 40	Pass

802.11n-20 MHz

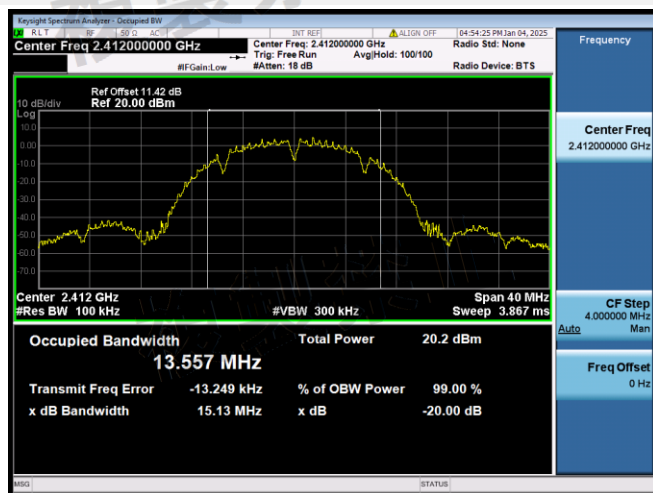
Results of Occupied Bandwidth	Channel	Test Voltage	Measured 99% Occupied Bandwidth (MHz)	Occupied Bandwidth Limit (MHz)	Verdict
	Low	NV	17.63	≤ 40	Pass
	Middle		17.62	≤ 40	Pass
	High		17.63	≤ 40	Pass

802.11n-40 MHz

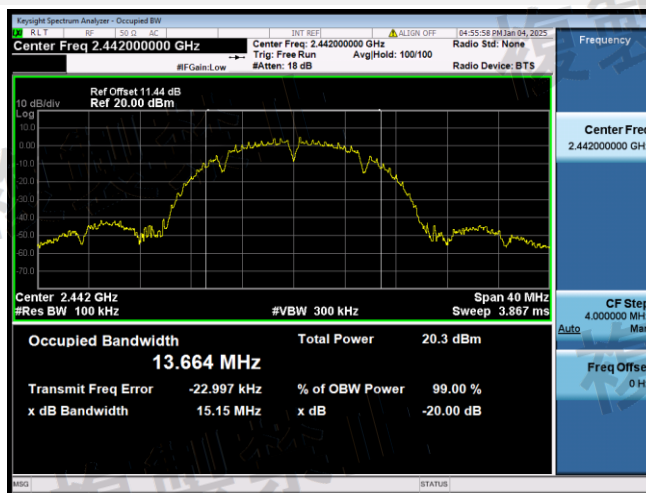
Results of Occupied Bandwidth	Channel	Test Voltage	Measured 99% Occupied Bandwidth (MHz)	Occupied Bandwidth Limit (MHz)	Verdict
	Low	NV	36.21	≤ 40	Pass
	Middle		36.27	≤ 40	Pass
	High		36.23	≤ 40	Pass

Test Plots (Occupied Bandwidth)

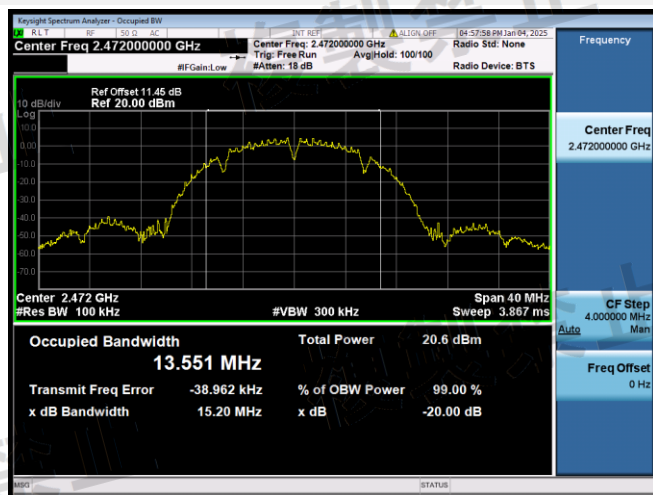
A.2.1 802.11b Low Channel NV



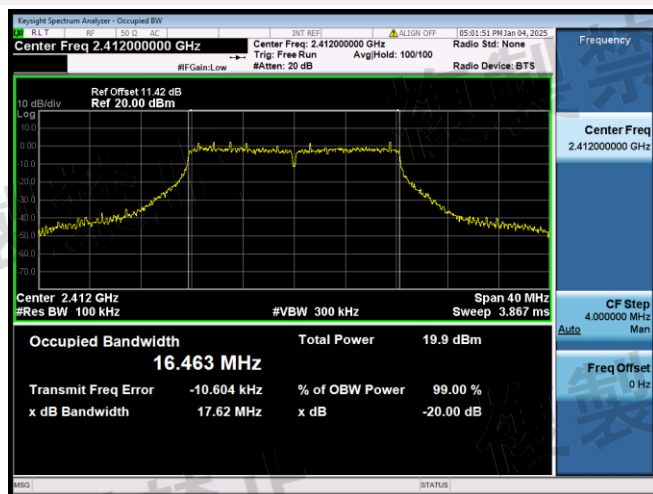
A.2.2 802.11b Middle Channel NV



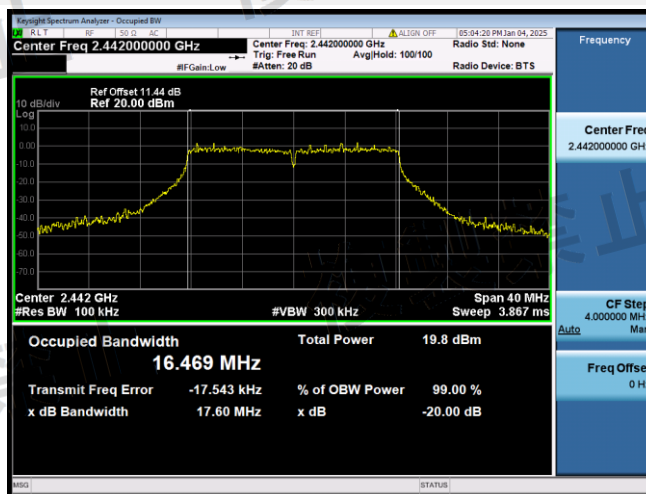
A.2.3 802.11b High Channel NV



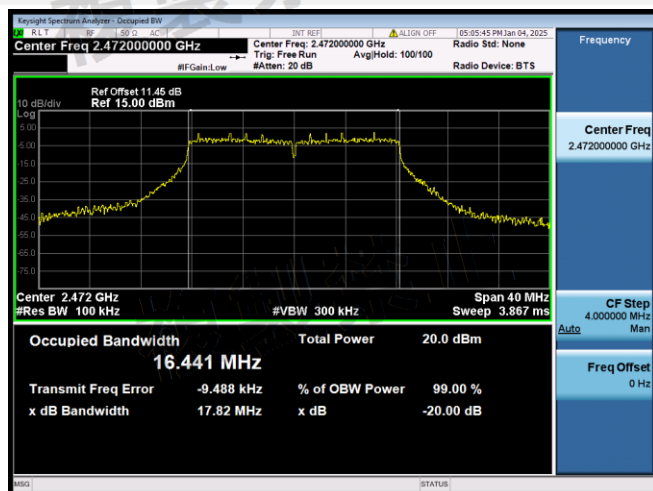
A.2.4 802.11g Low Channel NV



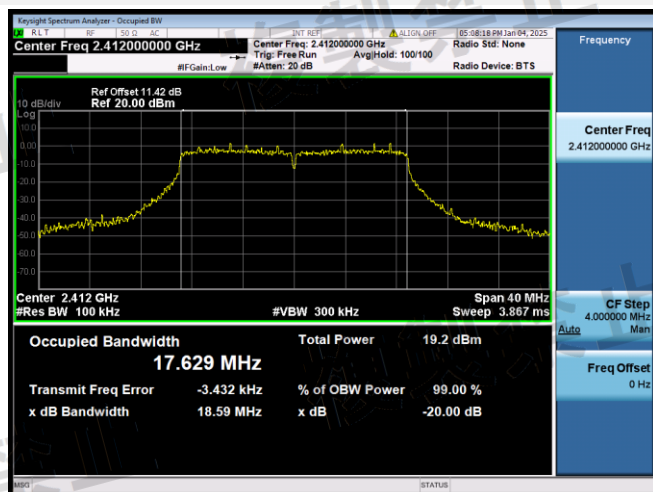
A.2.5 802.11g Middle Channel NV



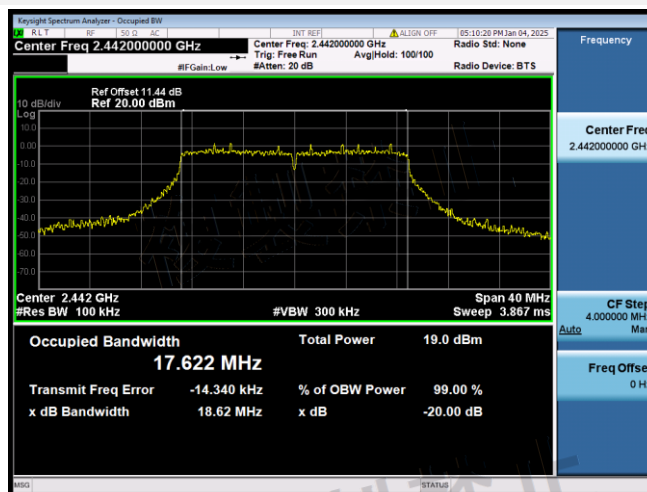
A.2.6 802.11g High Channel NV



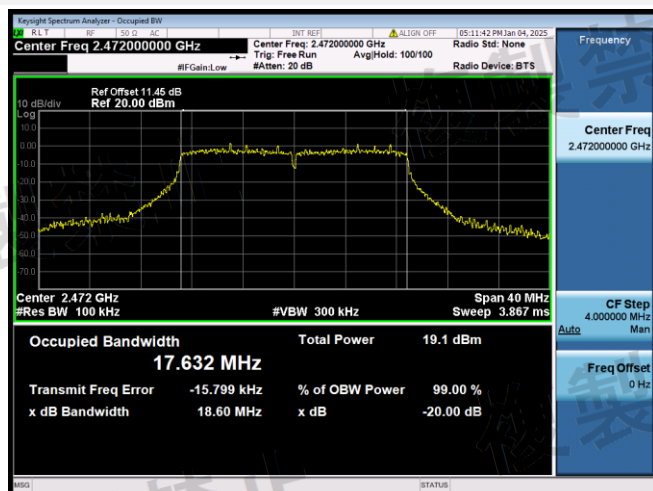
A.2.7 802.11n-20 Low Channel NV



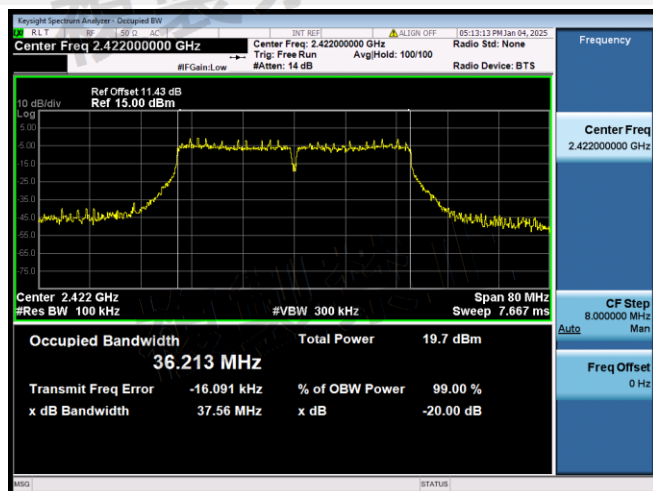
A.2.8 802.11n-20 Middle Channel NV



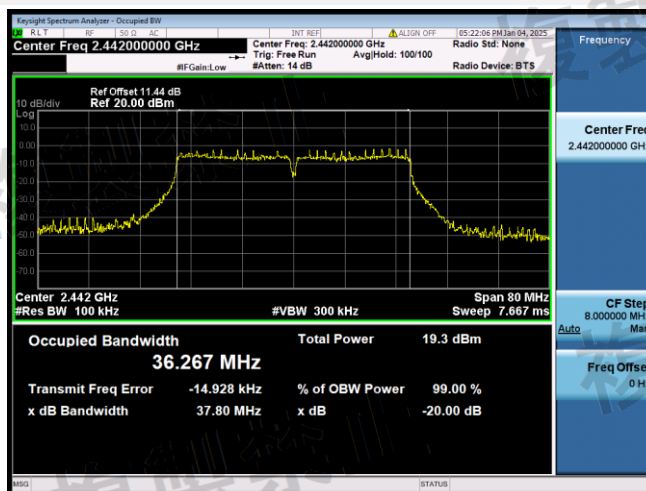
A.2.9 802.11n-20 High Channel NV



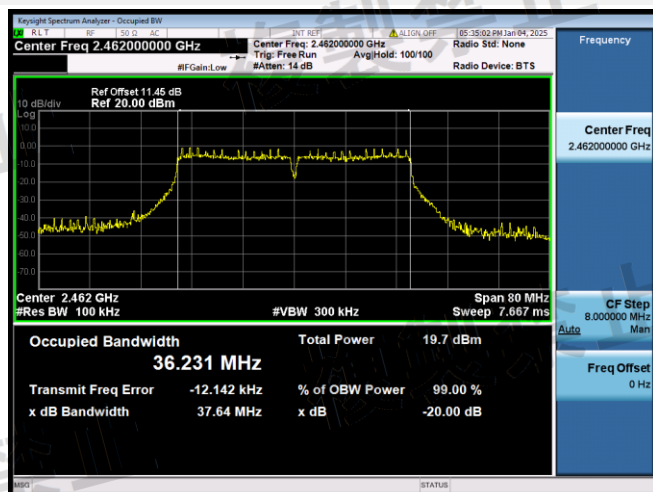
A.2.10 802.11n-40 Low Channel NV



A.2.11 802.11n-40 Middle Channel NV



A.2.12 802.11n-40 High Channel NV



5.3 Unwanted Emission Intensity Measurement

5.3.1 Limit

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

5.3.2 Test Setup

See section 4.3.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX A.

5.3.3 Test Procedure

- 1 EUT have transmitted the maximum modulation signal and fixed channelize.
- 2 Setting of SA is following as: RBW/VBW = 1MHz; / AT: 10dB / Ref: 0dBm / Sweep time: Auto / Sweep Mode: Continuous sweep / Detect mode: Positive peak / Trace mode: Max hold.
- 3 Setting of SA is following as 30 MHz and stop frequency 1000 MHz Then to mark peak reading value + cable loss shall be less than $2.5 \mu\text{W}/\text{MHz}$.
- 4 Setting of SA is following as 1000 MHz and stop frequency 2387 MHz Then to mark peak reading value + cable loss shall be less than $2.5 \mu\text{W}/\text{MHz}$.
- 5 SA adjusted to start frequency 2387 MHz and stop frequency 2400 MHz. Then to mark peak reading value + cable loss shall be less than $25 \mu\text{W}/\text{MHz}$.
- 6 SA adjusted to start frequency 2483.5 MHz and stop frequency 2496.5 MHz Then to mark peak reading value + cable loss shall be less than $25 \mu\text{W}/\text{MHz}$.
- 7 SA adjusted to start frequency 2496.5 MHz and stop frequency 12500 MHz Then to mark peak reading value + cable loss shall be less than $2.5 \mu\text{W}/\text{MHz}$.
- 8 Measure side band spurious as follows: For 2.4 GHz band: 2374 MHz~2400 MHz and 2483.5 MHz~2509.5 MHz RBW = VBW = 30 kHz, Result_Value = Measured_Value + 15.2 [dBm].
- 9 If the Result_Value is over the requirement, take total sum of 1MHz band centered at the spur frequency like ACLP measurement as Result_Value.

5.3.4 Test Deviation

There is no deviation with the original standard.

5.3.5 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

5.3.6 Test Result

Note: All antenna were pre tested, but only the worst case has been reported in this report.

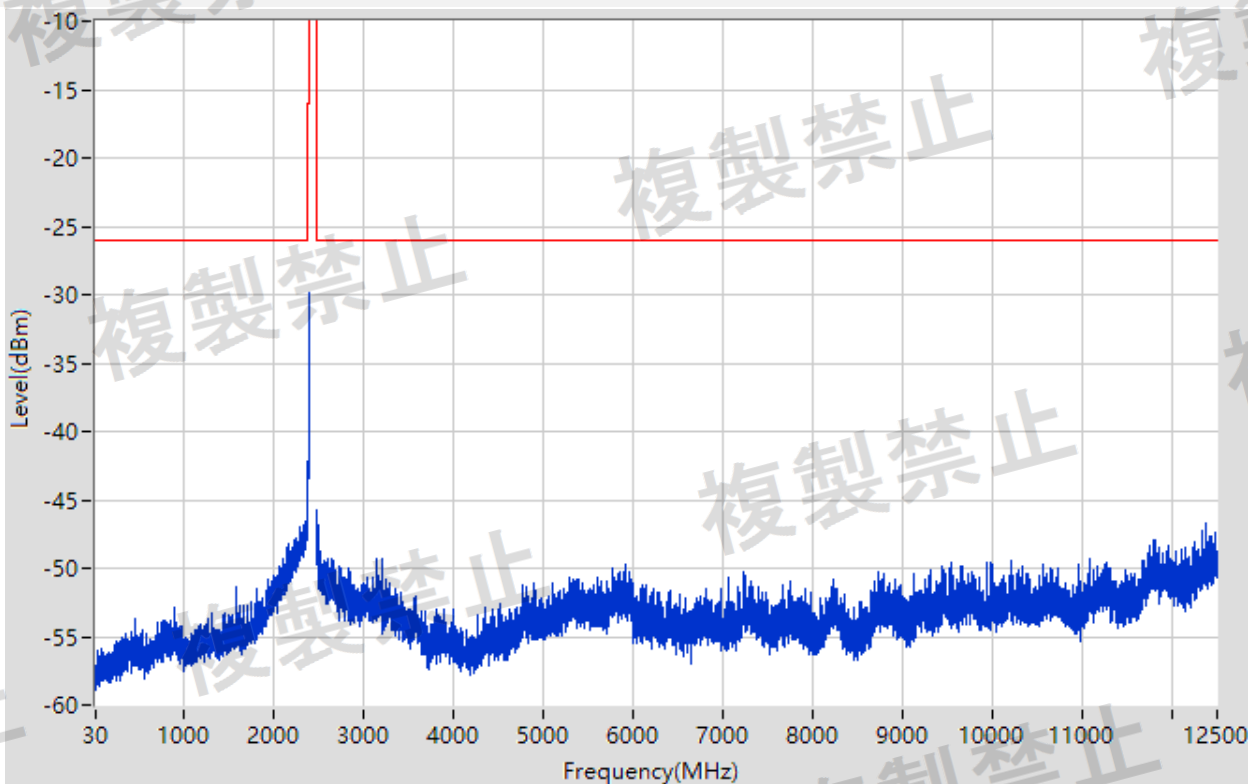
SISO-Antenna A

Test Data

Mode	Channel	Test Voltage	Refer to Plot	Verdict
802.11b	Low	NV	A.3.1	Pass
	Middle		A.3.2	Pass
	High		A.3.3	Pass
802.11g	Low	NV	A.3.4	Pass
	Middle		A.3.5	Pass
	High		A.3.6	Pass
802.11n-20 MHz	Low	NV	A.3.7	Pass
	Middle		A.3.8	Pass
	High		A.3.9	Pass
802.11n-40 MHz	Low	NV	A.3.10	Pass
	Middle		A.3.11	Pass
	High		A.3.12	Pass

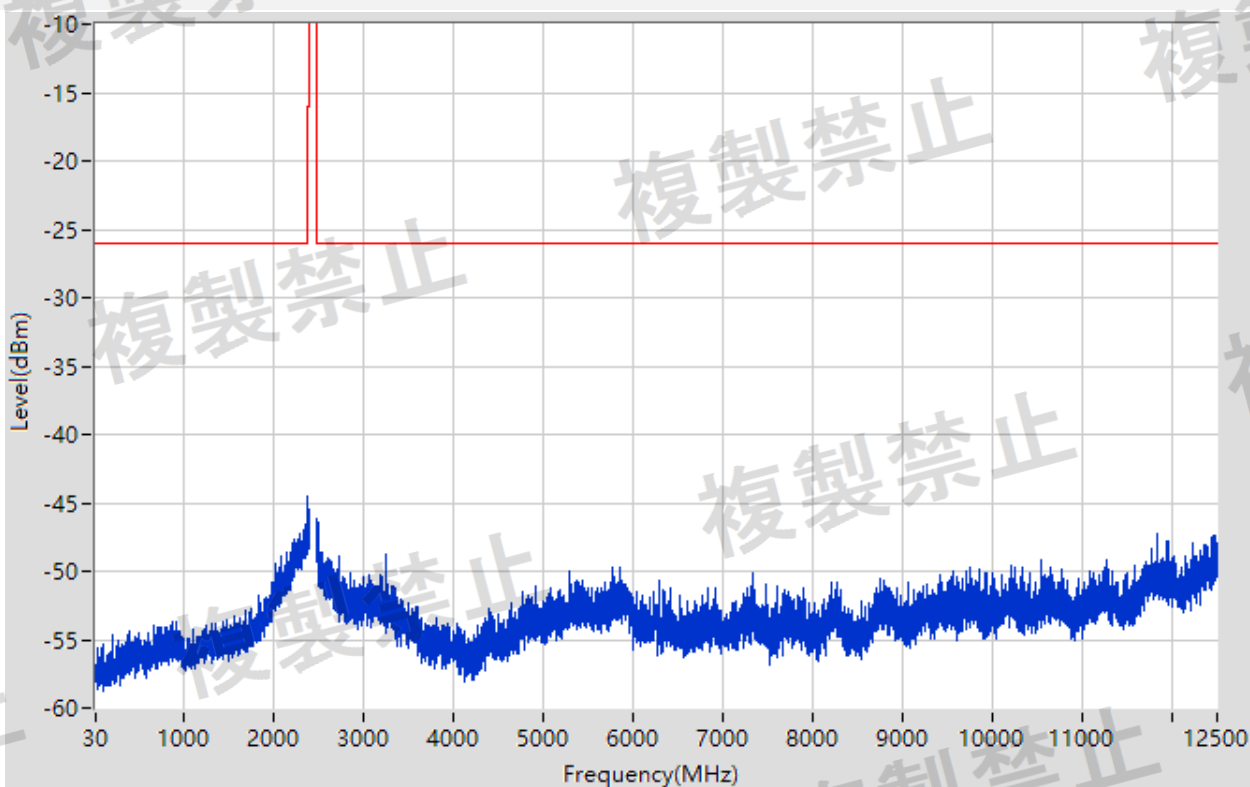
Test Plots

A.3.1 802.11b NV Low Channel



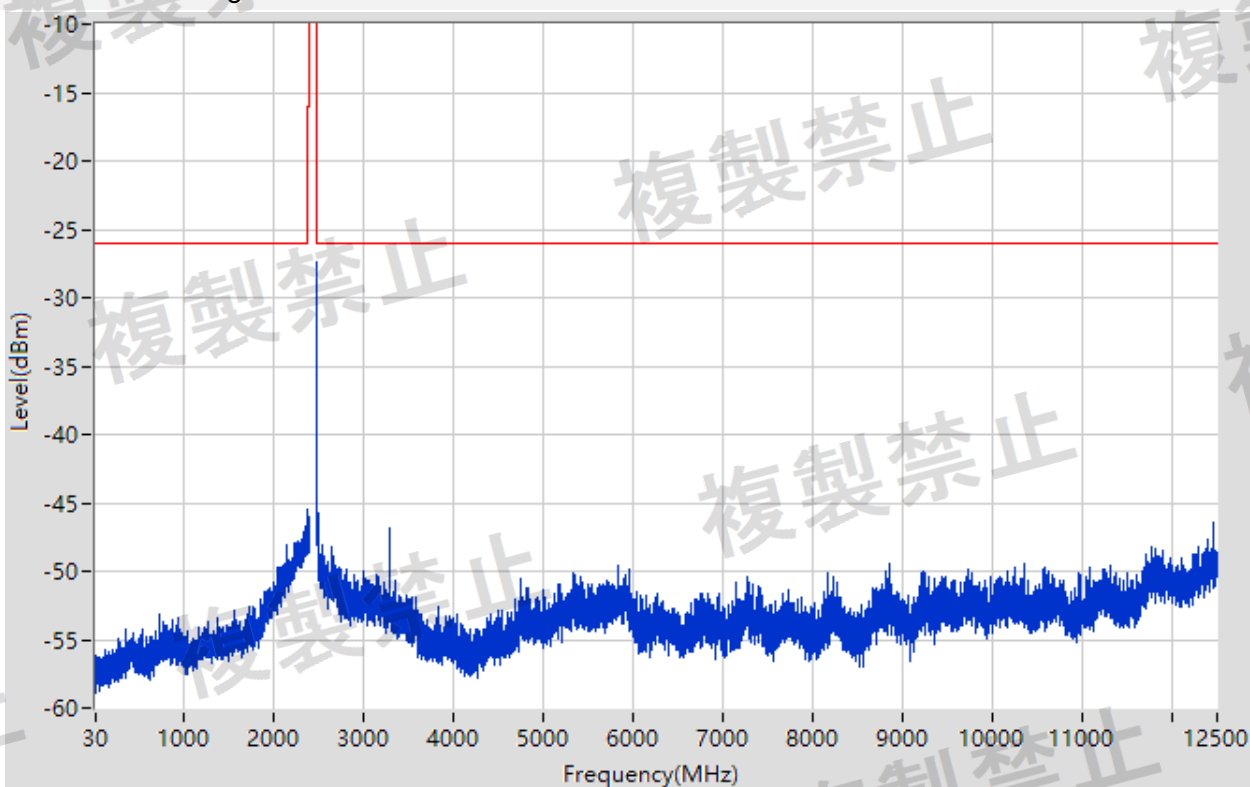
Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm/MHz)	Power (μW/MHz)	Limit (μW/MHz)	Verdict
30	1000	1	Peak	909	-52.9	0.005	2.5	Pass
1000	2374	1	Peak	2354	-46.53	0.022	2.5	Pass
2374	2387	1	Peak	2383.328	-44.73	0.034	2.5	Pass
2387	2400	1	Peak	2399.935	-29.82	1.043	25	Pass
2483.5	2496.5	1	Peak	2489.838	-45.77	0.026	25	Pass
2496.5	2509.5	1	Peak	2499.458	-46.85	0.021	2.5	Pass
2509.5	6000	1	Peak	2534.504	-48.74	0.013	2.5	Pass
6000	12500	1	Peak	12380	-46.65	0.022	2.5	Pass

A.3.2 802.11b NV Middle Channel



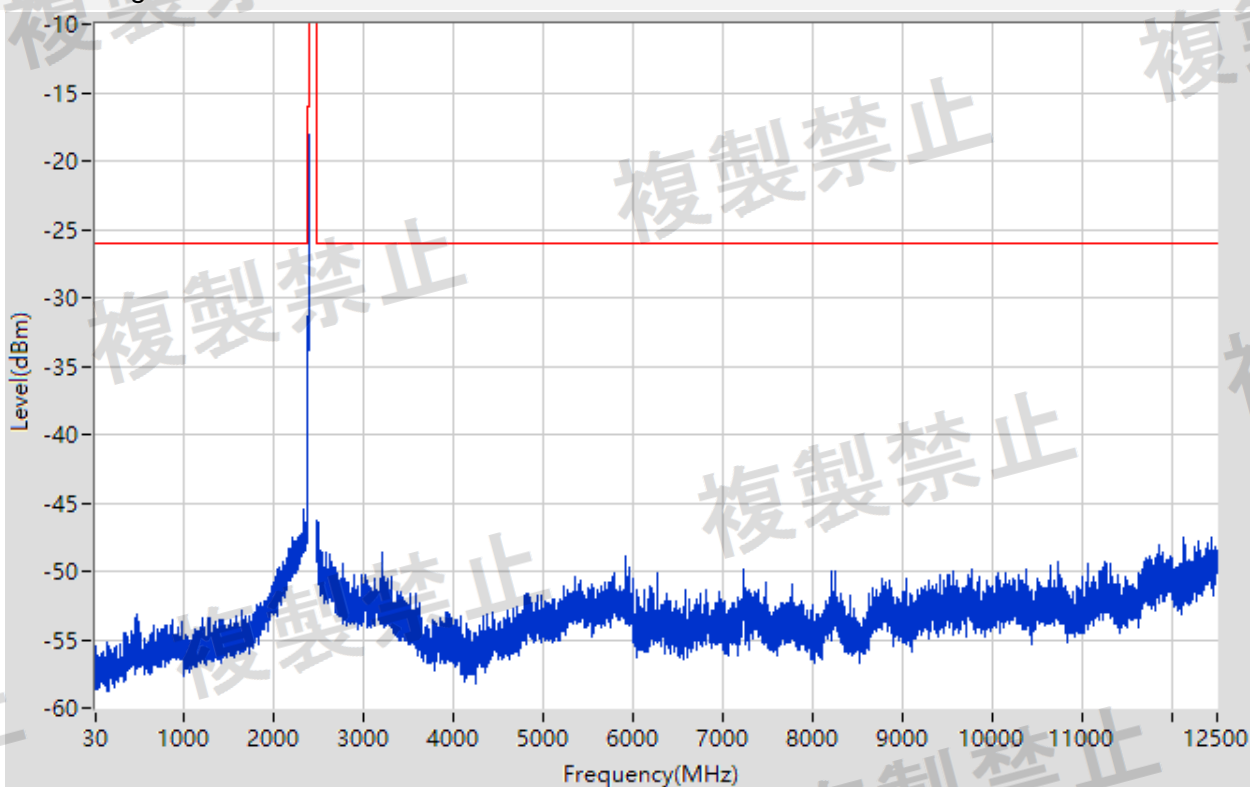
Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm/MHz)	Power (μW/MHz)	Limit (μW/MHz)	Verdict
30	1000	1	Peak	884	-53.65	0.004	2.5	Pass
1000	2374	1	Peak	2364	-46.58	0.022	2.5	Pass
2374	2387	1	Peak	2376.925	-44.58	0.035	2.5	Pass
2387	2400	1	Peak	2389.763	-44.64	0.034	25	Pass
2483.5	2496.5	1	Peak	2486.945	-46.23	0.024	25	Pass
2496.5	2509.5	1	Peak	2504.885	-46.39	0.023	2.5	Pass
2509.5	6000	1	Peak	2510.5	-48.04	0.016	2.5	Pass
6000	12500	1	Peak	11838	-47.26	0.019	2.5	Pass

A.3.3 802.11b NV High Channel



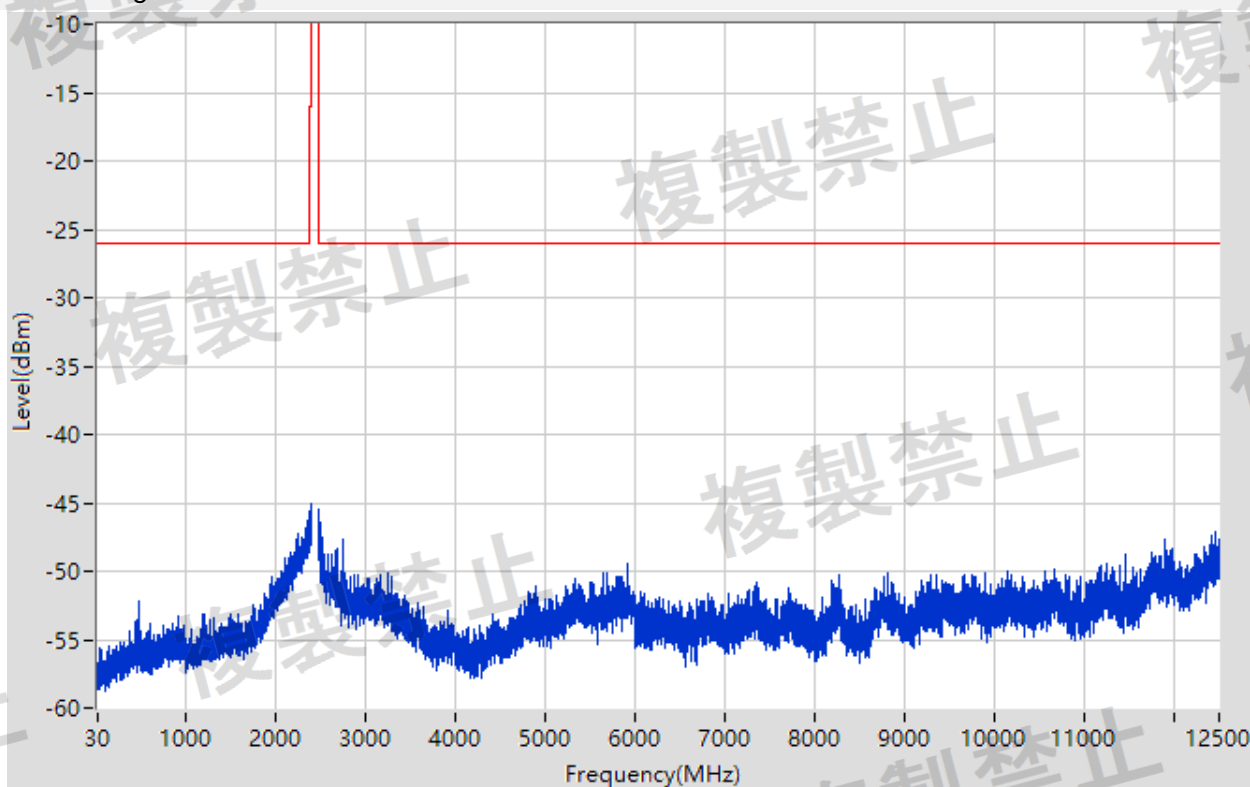
Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm/MHz)	Power (μW/MHz)	Limit (μW/MHz)	Verdict
30	1000	1	Peak	748	-53.22	0.005	2.5	Pass
1000	2374	1	Peak	2362	-46.71	0.021	2.5	Pass
2374	2387	1	Peak	2382.353	-45.49	0.028	2.5	Pass
2387	2400	1	Peak	2398.603	-46.03	0.025	25	Pass
2483.5	2496.5	1	Peak	2483.728	-27.44	1.801	25	Pass
2496.5	2509.5	1	Peak	2508.59	-45.74	0.027	2.5	Pass
2509.5	6000	1	Peak	3296.613	-46.8	0.021	2.5	Pass
6000	12500	1	Peak	12462	-46.42	0.023	2.5	Pass

A.3.4 802.11g NV Low Channel



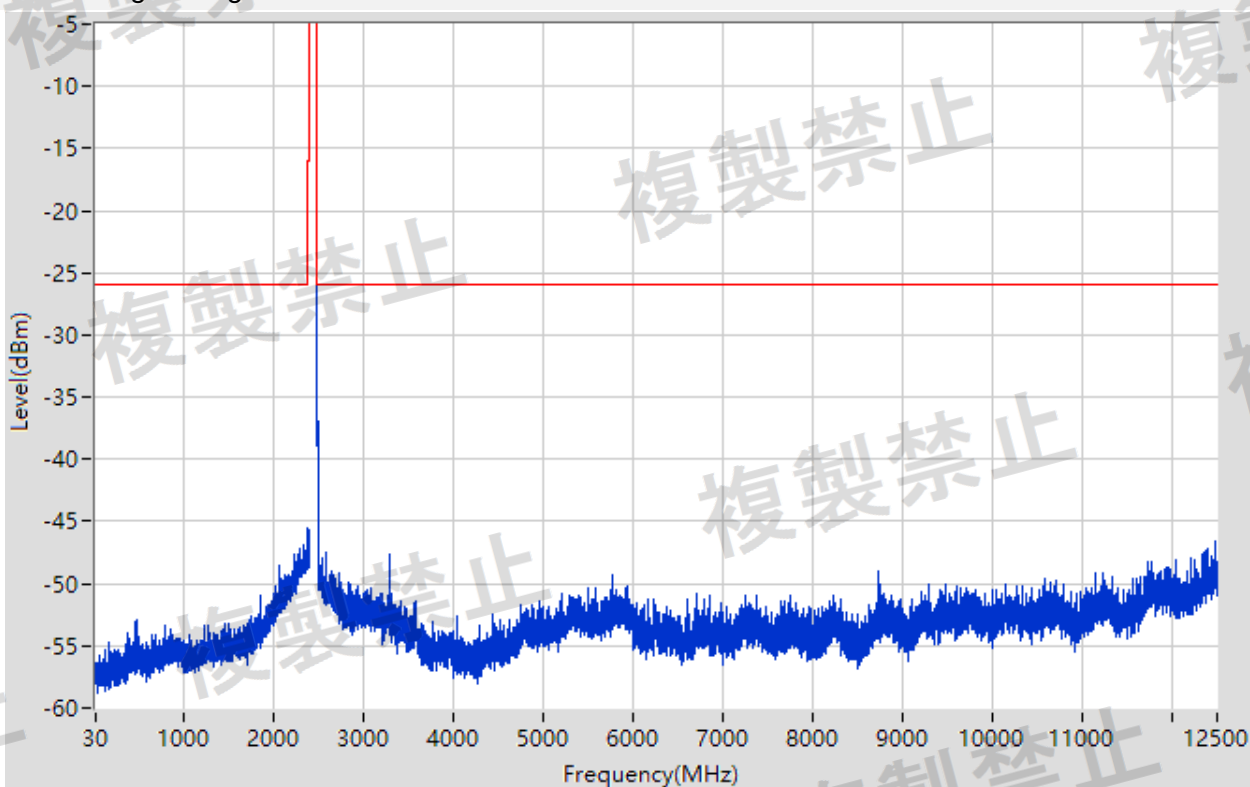
Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm/MHz)	Power (μW/MHz)	Limit (μW/MHz)	Verdict
30	1000	1	Peak	497	-53.17	0.005	2.5	Pass
1000	2374	1	Peak	2338	-45.48	0.028	2.5	Pass
2374	2387	1	Peak	2386.09	-33.2	0.478	2.5	Pass
2387	2400	1	Peak	2400	-18.12	15.407	25	N/A
			Sample		-36.114	0.245		PASS
2483.5	2496.5	1	Peak	2492.373	-46.24	0.024	25	Pass
2496.5	2509.5	1	Peak	2498.32	-46.41	0.023	2.5	Pass
2509.5	6000	1	Peak	2528.503	-48.51	0.014	2.5	Pass
6000	12500	1	Peak	12447	-47.57	0.017	2.5	Pass

A.3.5 802.11g NV Middle Channel



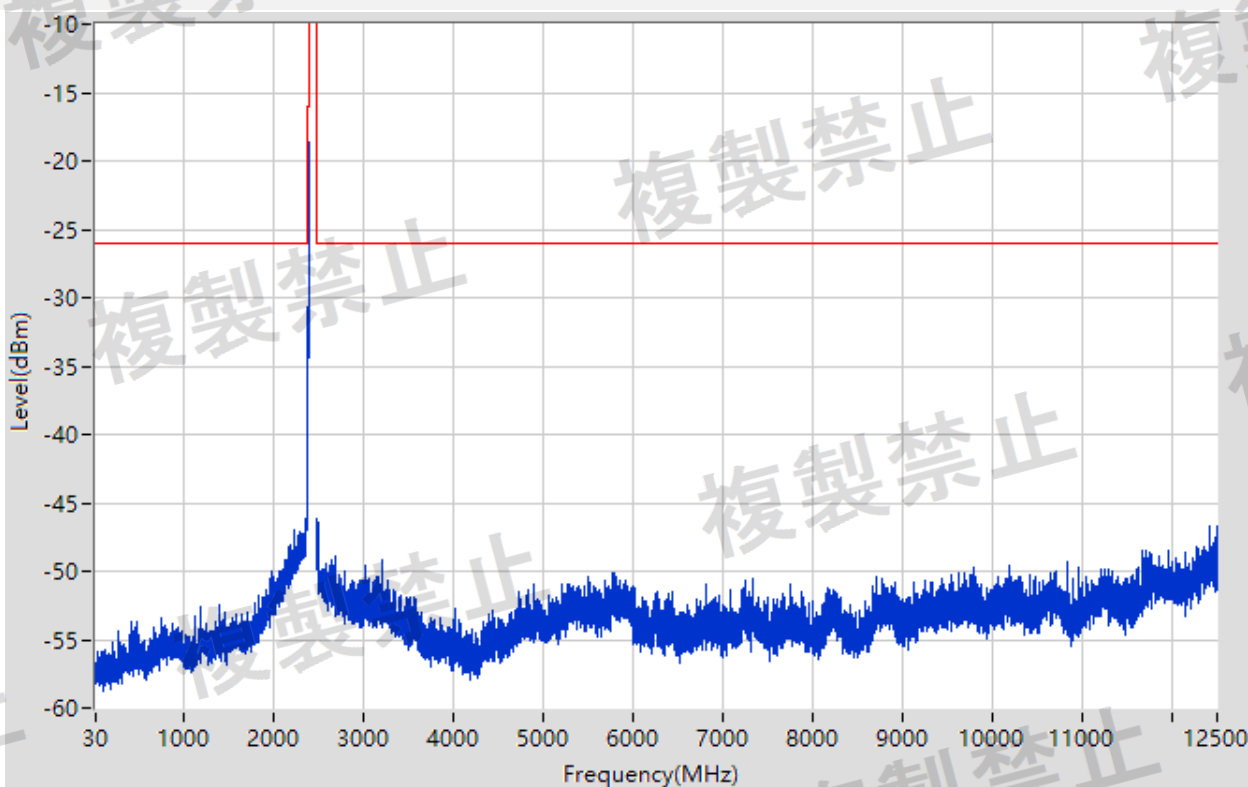
Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm/MHz)	Power (μW/MHz)	Limit (μW/MHz)	Verdict
30	1000	1	Peak	495	-52.21	0.006	2.5	Pass
1000	2374	1	Peak	2352	-46.29	0.024	2.5	Pass
2374	2387	1	Peak	2378.778	-45.56	0.028	2.5	Pass
2387	2400	1	Peak	2398.798	-45.12	0.031	25	Pass
2483.5	2496.5	1	Peak	2486.23	-45.53	0.028	25	Pass
2496.5	2509.5	1	Peak	2503.13	-46.5	0.022	2.5	Pass
2509.5	6000	1	Peak	2530.503	-47.54	0.018	2.5	Pass
6000	12500	1	Peak	12465	-47.12	0.019	2.5	Pass

A.3.6 802.11g NV High Channel



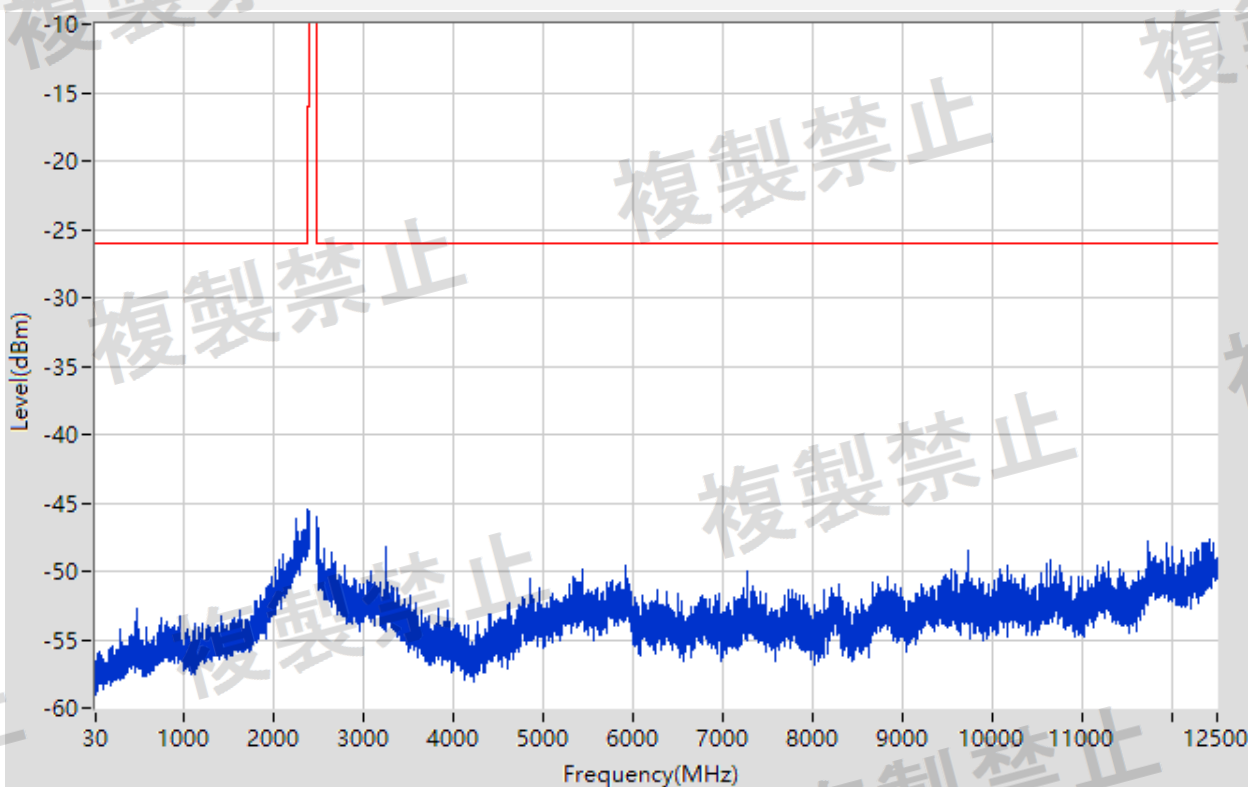
Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm/MHz)	Power (μW/MHz)	Limit (μW/MHz)	Verdict
30	1000	1	Peak	495	-52.88	0.005	2.5	Pass
1000	2374	1	Peak	2373	-46.81	0.021	2.5	Pass
2374	2387	1	Peak	2376.373	-45.55	0.028	2.5	Pass
2387	2400	1	Peak	2391.973	-45.65	0.027	25	Pass
2483.5	2496.5	1	Peak	2483.5	-14.87	32.612	25	N/A
			Sample		-35.492	0.282		PASS
2496.5	2509.5	1	Peak	2498.385	-36.96	0.201	2.5	Pass
2509.5	6000	1	Peak	2582.51	-47.51	0.018	2.5	Pass
6000	12500	1	Peak	12479	-46.52	0.022	2.5	Pass

A.3.7 802.11n-20MHz NV Low Channel



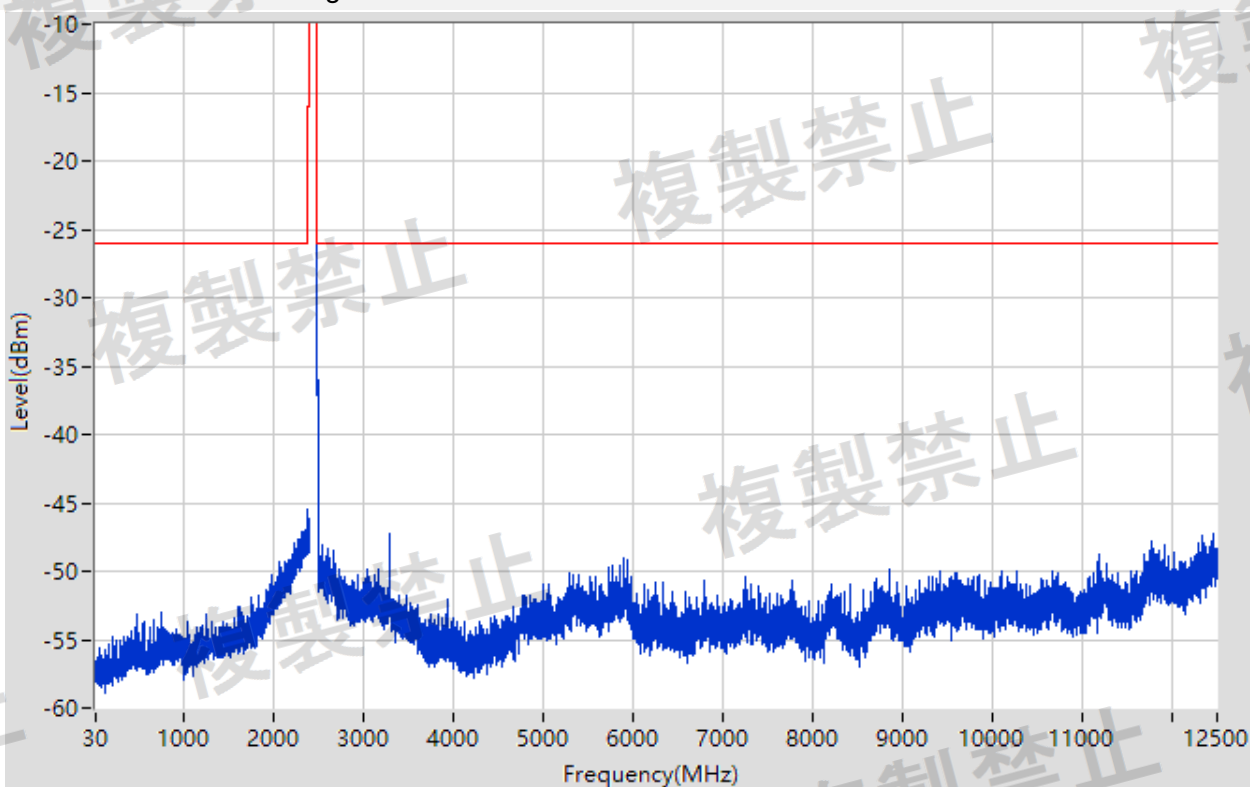
Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm/MHz)	Power (μW/MHz)	Limit (μW/MHz)	Verdict
30	1000	1	Peak	766	-53.48	0.004	2.5	Pass
1000	2374	1	Peak	2374	-45.56	0.028	2.5	Pass
2374	2387	1	Peak	2383.328	-34.73	0.336	2.5	Pass
2387	2400	1	Peak	2400	-18.61	13.781	25	N/A
			Sample		-35.078	0.31		PASS
2483.5	2496.5	1	Peak	2491.918	-46.23	0.024	25	Pass
2496.5	2509.5	1	Peak	2499.36	-46.42	0.023	2.5	Pass
2509.5	6000	1	Peak	2697.527	-48.94	0.013	2.5	Pass
6000	12500	1	Peak	12500	-46.67	0.022	2.5	Pass

A.3.8 802.11n-20MHz NV Middle Channel



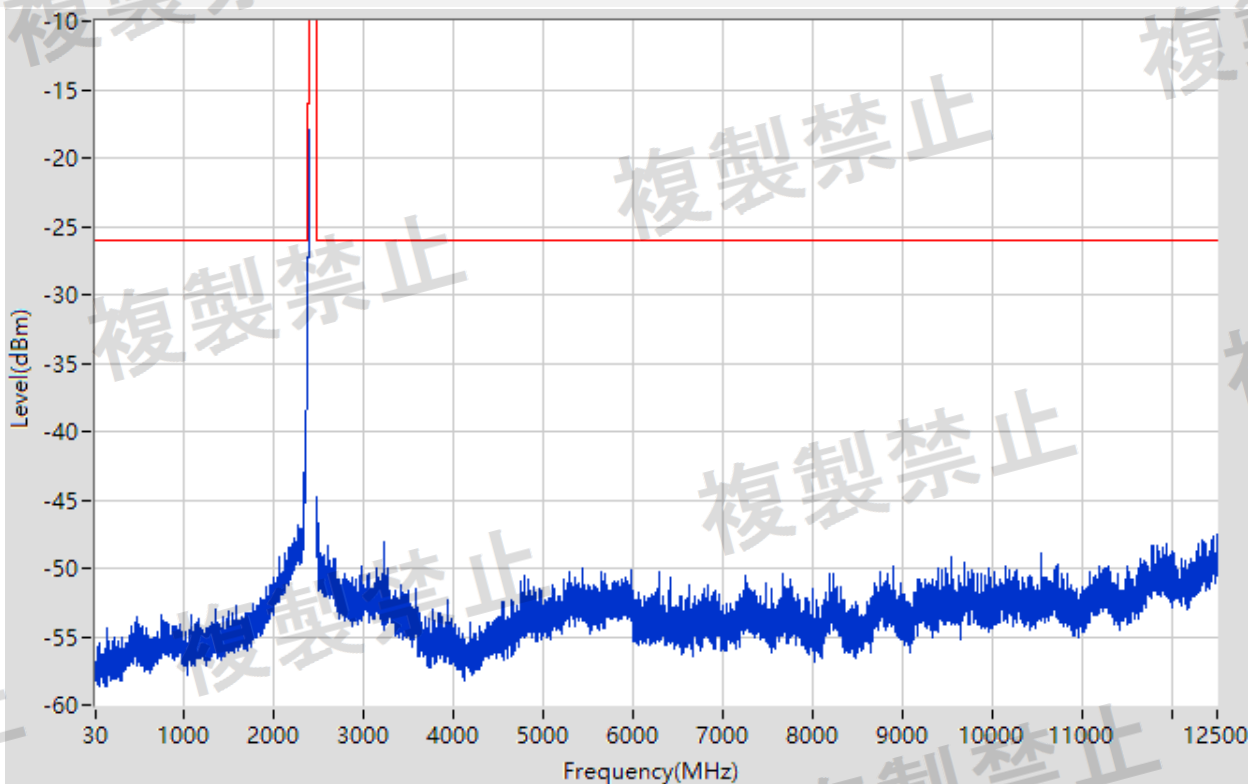
Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm/MHz)	Power (μW/MHz)	Limit (μW/MHz)	Verdict
30	1000	1	Peak	492	-52.76	0.005	2.5	Pass
1000	2374	1	Peak	2263	-46.23	0.024	2.5	Pass
2374	2387	1	Peak	2379.753	-45.41	0.029	2.5	Pass
2387	2400	1	Peak	2390.38	-45.49	0.028	25	Pass
2483.5	2496.5	1	Peak	2487.498	-46	0.025	25	Pass
2496.5	2509.5	1	Peak	2498.905	-46.79	0.021	2.5	Pass
2509.5	6000	1	Peak	3255.607	-48.27	0.015	2.5	Pass
6000	12500	1	Peak	12410	-47.7	0.017	2.5	Pass

A.3.9 802.11n-20MHz NV High Channel



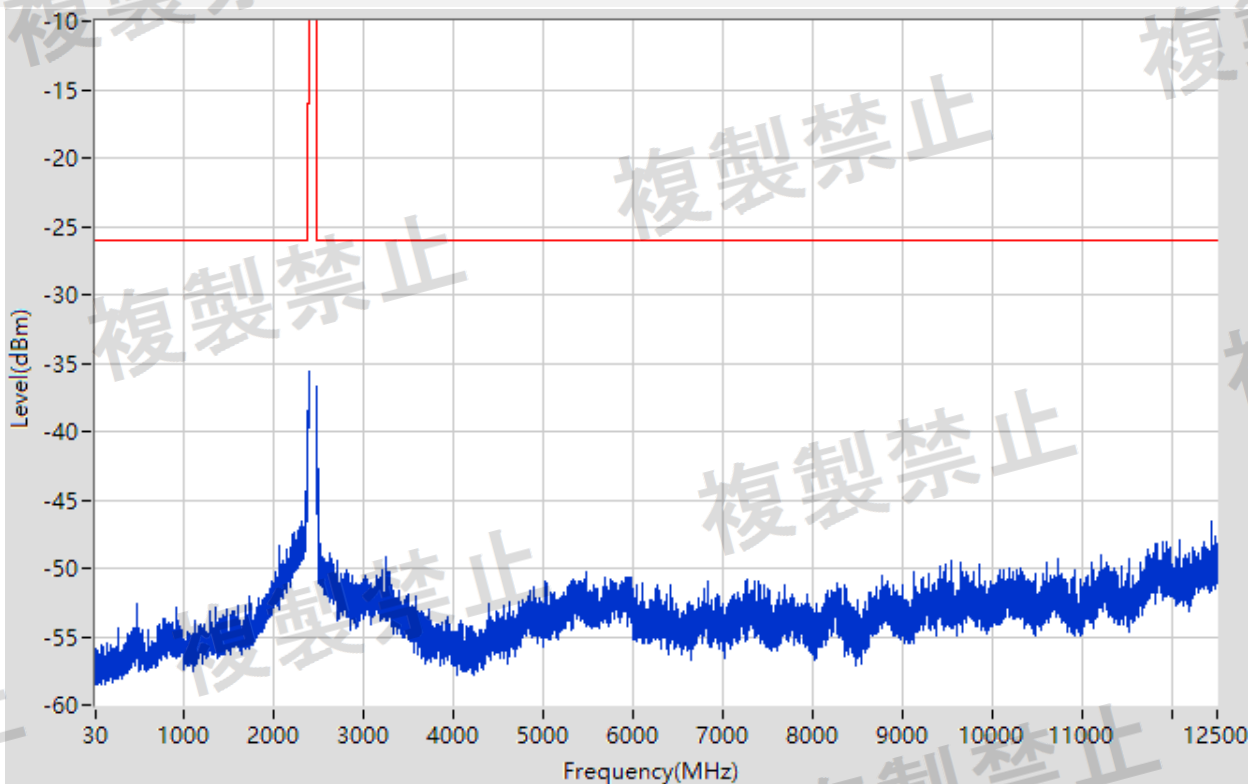
Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm/MHz)	Power (μW/MHz)	Limit (μW/MHz)	Verdict
30	1000	1	Peak	763	-52.99	0.005	2.5	Pass
1000	2374	1	Peak	2354	-47.01	0.020	2.5	Pass
2374	2387	1	Peak	2384.14	-45.46	0.028	2.5	Pass
2387	2400	1	Peak	2387.325	-45.55	0.028	25	Pass
2483.5	2496.5	1	Peak	2483.5	-16.69	21.413	25	N/A
			Sample		-35.355	0.291		PASS
2496.5	2509.5	1	Peak	2496.598	-35.69	0.270	2.5	Pass
2509.5	6000	1	Peak	3295.613	-47.31	0.019	2.5	Pass
6000	12500	1	Peak	12454	-47.29	0.019	2.5	Pass

A.3.10 802.11n-40MHz NV Low Channel



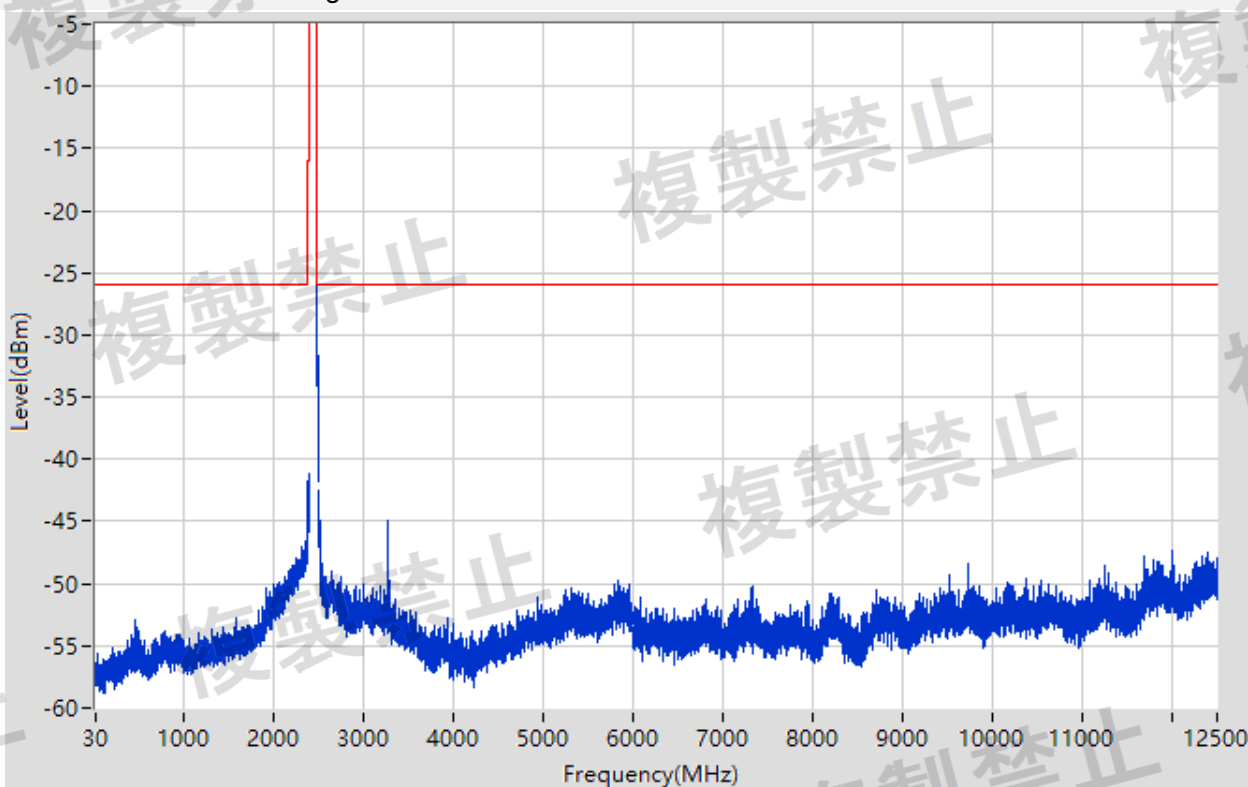
Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm/MHz)	Power (μW/MHz)	Limit (μW/MHz)	Verdict
30	1000	1	Peak	762	-53.47	0.004	2.5	Pass
1000	2374	1	Peak	2374	-37.36	0.184	2.5	Pass
2374	2387	1	Peak	2383.718	-31.87	0.650	2.5	Pass
2387	2400	1	Peak	2400	-17.96	16.010	25	N/A
			Sample		-36.069	0.247		PASS
2483.5	2496.5	1	Peak	2483.63	-44.81	0.033	25	Pass
2496.5	2509.5	1	Peak	2501.473	-46.7	0.021	2.5	Pass
2509.5	6000	1	Peak	3228.603	-48.05	0.016	2.5	Pass
6000	12500	1	Peak	12490	-47.58	0.017	2.5	Pass

A.3.11 802.11n-40MHz NV Middle Channel



Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm/MHz)	Power (μW/MHz)	Limit (μW/MHz)	Verdict
30	1000	1	Peak	487	-52.55	0.006	2.5	Pass
1000	2374	1	Peak	2370	-44.42	0.036	2.5	Pass
2374	2387	1	Peak	2386.903	-40.61	0.087	2.5	Pass
2387	2400	1	Peak	2397.953	-35.55	0.278	25	Pass
2483.5	2496.5	1	Peak	2483.5	-36.65	0.216	25	Pass
2496.5	2509.5	1	Peak	2498.255	-42.69	0.054	2.5	Pass
2509.5	6000	1	Peak	2533.503	-48.26	0.015	2.5	Pass
6000	12500	1	Peak	12433	-46.61	0.022	2.5	Pass

A.3.12 802.11n-40MHz NV High Channel



Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm/MHz)	Power (μW/MHz)	Limit (μW/MHz)	Verdict
30	1000	1	Peak	472	-52.94	0.005	2.5	Pass
1000	2374	1	Peak	2360	-46.62	0.022	2.5	Pass
2374	2387	1	Peak	2386.805	-43.2	0.048	2.5	Pass
2387	2400	1	Peak	2399.903	-41.23	0.075	25	Pass
2483.5	2496.5	1	Peak	2483.5	-14.33	36.878	25	N/A
			Sample		-37.056	0.197		PASS
2496.5	2509.5	1	Peak	2497.605	-31.7	0.676	2.5	Pass
2509.5	6000	1	Peak	2511.5	-42.46	0.057	2.5	Pass
6000	12500	1	Peak	12010	-47.41	0.018	2.5	Pass

5.4 Antenna Power Error Measurement

5.4.1 Limit

Item	Limits
Antenna Power Density	a) FH,FH+DS, or FH+OFDM form 2427 - 2470.75 MHz: ≤ 3 mW/MHz b) DS but other than a) from 2400~2483.5 MHz: ≤ 10 mW/MHz c) OFDM, but other than a): For OCB of 26MHz or less: ≤ 10 mW/MHz For OCB of over 26 MHz to 40 MHz: ≤ 5 mW/MHz d) Other than a), b) and c): ≤ 10 mW
Antenna Power Error	+20% (Base on manufacturer declare antenna power density)

5.4.2 Test Setup

See section 4.3.2 for test setup description for the antenna power error measurement. The photo of test setup please refer to ANNEX A.

5.4.3 Test Procedure

The following table is the setting of the spectrum.

Spectrum Parameter	Setting
Span Frequency	0MHz
RB/VB	1MHz
Detector	Positive Peak
Trace	Max hold
Sweep Time	Auto

Power Meter Parameter	Setting
Filter No.	Auto
Measurement time	0.135 s ~ 26 s

1 Measure equivalent noise bandwidth at 1 MHz resolution bandwidth of the spectrum analyzer and obtain a correction value used for correcting the resolution bandwidth into 1 MHz equivalent bandwidth. However, in case that the spreading bandwidth is 1 MHz or less, correction using the measured equivalent noise bandwidth is not required.

2 The attenuator shall be adjusted to supply an optimum input level to the spectrum analyzer.

3 Set the spectrum analyzer as follows to search for frequency giving the maximum antenna power:

Centre Frequency: Test frequency

Frequency sweep width: Approximately twice the occupied bandwidth

Resolution bandwidth: 1MHz

Video bandwidth: Approximately 3 times the resolution bandwidth (e.g. 3 MHz)

Y-axis scale: 10 dB / div

Sweep time: Minimum time to ensure the measuring accuracy (In case of burst wave, one burst shall be included in one sample at least.)

Trigger condition: Free-run

Number of data points: 1001 points or more

Sweep mode: Continuous sweep

Detection mode: Positive peak

Indication mode: Maximum hold

- 4 Set the spectrum analyzer as follows to measure antenna power. Prior to the measurement, calibrate indication of the power meter for the indication at EUT output in the condition that the power meter is connected to IF output of the spectrum analyzer.

Center frequency: A frequency giving the maximum power (searched frequency);

Frequency sweep width: 0 Hz;

Resolution bandwidth: 1 MHz;

Sweep mode: Continuous sweep.

- 5 When using the calculation function of the spectrum analyzer to measure antenna power, the settings of the spectrum analyzer are as follows:

Centre Frequency: Equal to the frequency recorded in step 2.

Frequency sweep width: 10 MHz

Operation bandwidth: 1 MHz

Resolution bandwidth: 30 kHz to 300 kHz

Video bandwidth: Approximately 3 times the resolution bandwidth

Y-axis scale: 10 dB / div

Sweep time: Integer multiple of burst period per sample

Trigger condition: Free-run

Number of data points: 1001 points or more

Sweep mode: Continuous sweep

Detection mode: RMS

Indication mode: RMS power, about 10 on average.

Measuring procedures (Antenna power)

- a. For orthogonal frequency division multiplexing system or spread spectrum system using direct sequence spreading:

(1) Set the spectrum analyzer according to 3.

(2) After repeating sweeps until spectrum fluctuation is not observed, measure the frequency giving the maximum power per 1 MHz.

(3) Set the spectrum analyzer according to 5.

(4) Antenna power shall be obtained as follows.

(a) For continuous wave; Values obtained from the operation of the spectrum analyzer.

(b) For burst wave; Mean power in burst that is calculated from the transmission time ratio and the values obtained from the operation in the same way as that for continuous wave:

Mean power in burst = values obtained from the operation of the spectrum analyzer / transmission time

ratio

where

Transmission time ratio = burst transmission time / burst repetition period

(5) When the EUT has plural modulation methods for sub-carriers in orthogonal frequency division multiplexing system, measure antenna power for each modulation method and use the maximum value as the measured value.

(6) When EUT has plural antenna terminals, conduct above measurement at each terminal.

b. For other systems

(1) Connect the power meter to the attenuator output and measure the total power (mW).

(2) Antenna power shall be obtained as follows.

(a) For continuous wave; Value obtained in (1)

(b) For burst wave; Mean power in burst that is calculated from the transmission time ratio and the value obtained in (1)

Mean power in burst = indicated value of power meter / transmission time ratio

(3) Measure antenna power per 1 MHz bandwidth (m W / MHz) in the same way as that in Measuring procedures a above.

(4) When EUT has plural antenna terminals, conduct above measurement at each terminal.

5.4.4 Test Deviation

There is no deviation with the original standard.

5.4.5 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

5.4.6 Test Result

SISO-Antenna A802.11b Test Result

Duty cycle = 0.993

Antenna Power Density PD = power value dBm (contains cable loss dB) + 10 log₁₀(1/ Duty cycle) dB

Manufacturer declares the conducted power density = 3.50 mW/MHz

Test Channel	Test Voltage	Power Value (dBm)	Antenna Power Density PD (dBm/ MHz)	Antenna Power Density PD (mW / MHz)	Antenna Power Error	Upper Limit (%)	Verdict
Low	NV	5.02	5.05	3.20	-8.60%	20	Pass
Middle		5.14	5.17	3.29	-6.04%	20	Pass
High		5.45	5.48	3.53	0.91%	20	Pass

EIRP Antenna Power

Test Channel	Test Voltage	Measured EIRP (dBm/ MHz)	Limit (dBm/MHz)	Verdict
Low	NV	9.72	12.14	Pass
Middle		9.84		Pass
High		10.15		Pass

802.11g Test Result

Duty cycle = 0.953

Antenna Power Density PD = power value dBm (contains cable loss dB) + 10 log₁₀(1/ Duty cycle) dB

Manufacturer declares the conducted power density = 2.00 mW/MHz

Test Channel	Test Voltage	Power Value (dBm)	Antenna Power Density PD (dBm/ MHz)	Antenna Power Density PD (mW / MHz)	Antenna Power Error	Upper Limit (%)	Verdict
Low	NV	2.19	2.40	1.74	-13.11%	20	Pass
Middle		2.13	2.34	1.71	-14.30%	20	Pass
High		2.27	2.48	1.77	-11.49%	20	Pass

EIRP Antenna Power

Test Channel	Test Voltage	Measured EIRP (dBm/ MHz)	Limit (dBm/MHz)	Verdict
Low	NV	7.07	12.14	Pass
Middle		7.01		Pass
High		7.15		Pass

802.11n-20 MHz Test Result

Duty cycle = 0.927

Antenna Power Density PD = power value dBm (contains cable loss dB) +10 log₁₀(1/ Duty cycle) dB

Manufacturer declares the conducted power density = 2.00 mW/MHz

Test Channel	Test Voltage	Power Value (dBm)	Antenna Power Density PD (dBm/ MHz)	Antenna Power Density PD (mW / MHz)	Antenna Power Error	Upper Limit (%)	Verdict
Low	NV	1.13	1.46	1.40	-30.02%	20	Pass
Middle		0.99	1.32	1.36	-32.24%	20	Pass
High		1.15	1.48	1.41	-29.70%	20	Pass

EIRP Antenna Power

Test Channel	Test Voltage	Measured EIRP (dBm/ MHz)	Limit (dBm/MHz)	Verdict
Low	NV	6.13	12.14	Pass
Middle		5.99		Pass
High		6.15		Pass

802.11n-40 MHz Test Result

Duty cycle = 0.911

Antenna Power Density PD = power value dBm (contains cable loss dB) +10 log₁₀(1/ Duty cycle) dB

Manufacturer declares the conducted power density = 1.00 mW/MHz

Test Channel	Test Voltage	Power Value (dBm)	Antenna Power Density PD (dBm/ MHz)	Antenna Power Density PD (mW / MHz)	Antenna Power Error	Upper Limit (%)	Verdict
Low	NV	-1.53	-1.12	0.77	-22.73%	20	Pass
Middle		-1.94	-1.54	0.70	-29.85%	20	Pass
High		-1.65	-1.24	0.75	-24.84%	20	Pass

EIRP Antenna Power

Test Channel	Test Voltage	Measured EIRP (dBm/ MHz)	Limit (dBm/MHz)	Verdict
Low	NV	3.55	9.13	Pass
Middle		3.13		Pass
High		3.43		Pass

SISO-Antenna B802.11b Test Result

Duty cycle = 0.993

Antenna Power Density PD = power value dBm (contains cable loss dB) +10 log₁₀(1/ Duty cycle) dB

Manufacturer declares the conducted power density = 3.50 mW/MHz

Test Channel	Test Voltage	Power Value (dBm)	Antenna Power Density PD (dBm/ MHz)	Antenna Power Density PD (mW / MHz)	Antenna Power Error	Upper Limit (%)	Verdict
Low	NV	4.35	4.38	2.74	-21.67%	20	Pass
Middle		4.58	4.62	2.90	-17.22%	20	Pass
High		4.89	4.92	3.10	-11.30%	20	Pass

EIRP Antenna Power

Test Channel	Test Voltage	Measured EIRP (dBm/ MHz)	Limit (dBm/MHz)	Verdict
Low	NV	9.05	12.14	Pass
Middle		9.29		Pass
High		9.59		Pass

802.11g Test Result

Duty cycle = 0.953

Antenna Power Density PD = power value dBm (contains cable loss dB) +10 log₁₀(1/ Duty cycle) dB

Manufacturer declares the conducted power density = 2.00 mW/MHz

Test Channel	Test Voltage	Power Value (dBm)	Antenna Power Density PD (dBm/ MHz)	Antenna Power Density PD (mW / MHz)	Antenna Power Error	Upper Limit (%)	Verdict
Low	NV	1.23	1.45	1.40	-30.18%	20	Pass
Middle		1.37	1.58	1.44	-28.06%	20	Pass
High		1.73	1.94	1.56	-21.84%	20	Pass

EIRP Antenna Power

Test Channel	Test Voltage	Measured EIRP (dBm/ MHz)	Limit (dBm/MHz)	Verdict
Low	NV	6.12	12.14	Pass
Middle		6.25		Pass
High		6.61		Pass

802.11n-20 MHz Test Result

Duty cycle = 0.927

Antenna Power Density PD = power value dBm (contains cable loss dB) +10 log₁₀(1/ Duty cycle) dB

Manufacturer declares the conducted power density = 2.00 mW/MHz

Test Channel	Test Voltage	Power Value (dBm)	Antenna Power Density PD (dBm/ MHz)	Antenna Power Density PD (mW / MHz)	Antenna Power Error	Upper Limit (%)	Verdict
Low	NV	0.37	0.70	1.17	-41.26%	20	Pass
Middle		0.60	0.93	1.24	-38.06%	20	Pass
High		0.46	0.79	1.20	-40.03%	20	Pass

EIRP Antenna Power

Test Channel	Test Voltage	Measured EIRP (dBm/ MHz)	Limit (dBm/MHz)	Verdict
Low	NV	5.37	12.14	Pass
Middle		5.60		Pass
High		5.46		Pass

802.11n-40 MHz Test Result

Duty cycle = 0.911

Antenna Power Density PD = power value dBm (contains cable loss dB) +10 log₁₀(1/ Duty cycle) dB

Manufacturer declares the conducted power density = 1.00 mW/MHz

Test Channel	Test Voltage	Power Value (dBm)	Antenna Power Density PD (dBm/ MHz)	Antenna Power Density PD (mW / MHz)	Antenna Power Error	Upper Limit (%)	Verdict
Low	NV	-2.63	-2.23	0.60	-40.16%	20	Pass
Middle		-2.69	-2.29	0.59	-40.98%	20	Pass
High		-2.77	-2.37	0.58	-42.06%	20	Pass

EIRP Antenna Power

Test Channel	Test Voltage	Measured EIRP (dBm/ MHz)	Limit (dBm/MHz)	Verdict
Low	NV	2.44	9.13	Pass
Middle		2.38		Pass
High		2.30		Pass

MIMO-Antenna A

802.11b Test Result

Duty cycle = 0.993

Antenna Power Density PD = power value dBm (contains cable loss dB) + 10 log₁₀(1/ Duty cycle) dB

Manufacturer declares the conducted power density = 2.00 mW/MHz

Test Channel	Test Voltage	Power Value (dBm)	Antenna Power Density PD (dBm/ MHz)	Antenna Power Density PD (mW / MHz)	Antenna Power Error	Upper Limit (%)	Verdict
Low	NV	1.61	1.64	1.46	-27.06%	20	Pass
Middle		1.66	1.69	1.48	-26.21%	20	Pass
High		1.62	1.66	1.47	-26.72%	20	Pass

EIRP Antenna Power

Test Channel	Test Voltage	Measured EIRP (dBm/ MHz)	Limit (dBm/MHz)	Verdict
Low	NV	6.31	12.14	Pass
Middle		6.36		Pass
High		6.33		Pass

802.11g Test Result

Duty cycle = 0.953

Antenna Power Density PD = power value dBm (contains cable loss dB) + 10 log₁₀(1/ Duty cycle) dB

Manufacturer declares the conducted power density = 1.00 mW/MHz

Test Channel	Test Voltage	Power Value (dBm)	Antenna Power Density PD (dBm/ MHz)	Antenna Power Density PD (mW / MHz)	Antenna Power Error	Upper Limit (%)	Verdict
Low	NV	-1.16	-0.95	0.80	-19.65%	20	Pass
Middle		-1.51	-1.30	0.74	-25.87%	20	Pass
High		-1.61	-1.40	0.72	-27.56%	20	Pass

EIRP Antenna Power

Test Channel	Test Voltage	Measured EIRP (dBm/ MHz)	Limit (dBm/MHz)	Verdict
Low	NV	3.72	12.14	Pass
Middle		3.37		Pass
High		3.27		Pass

802.11n-20 MHz Test Result

Duty cycle = 0.927

Antenna Power Density PD = power value dBm (contains cable loss dB) +10 log₁₀(1/ Duty cycle) dB

Manufacturer declares the conducted power density = 1.00 mW/MHz

Test Channel	Test Voltage	Power Value (dBm)	Antenna Power Density PD (dBm/ MHz)	Antenna Power Density PD (mW / MHz)	Antenna Power Error	Upper Limit (%)	Verdict
Low	NV	-2.42	-2.09	0.62	-38.20%	20	Pass
Middle		-2.76	-2.43	0.57	-42.85%	20	Pass
High		-2.95	-2.62	0.55	-45.30%	20	Pass

EIRP Antenna Power

Test Channel	Test Voltage	Measured EIRP (dBm/ MHz)	Limit (dBm/MHz)	Verdict
Low	NV	2.58	12.14	Pass
Middle		2.24		Pass
High		2.05		Pass

802.11n-40 MHz Test Result

Duty cycle = 0.911

Antenna Power Density PD = power value dBm (contains cable loss dB) +10 log₁₀(1/ Duty cycle) dB

Manufacturer declares the conducted power density = 0.50 mW/MHz

Test Channel	Test Voltage	Power Value (dBm)	Antenna Power Density PD (dBm/ MHz)	Antenna Power Density PD (mW / MHz)	Antenna Power Error	Upper Limit (%)	Verdict
Low	NV	-5.77	-5.37	0.29	-41.92%	20	Pass
Middle		-5.94	-5.54	0.28	-44.15%	20	Pass
High		-5.46	-5.05	0.31	-37.48%	20	Pass

EIRP Antenna Power

Test Channel	Test Voltage	Measured EIRP (dBm/ MHz)	Limit (dBm/MHz)	Verdict
Low	NV	-0.70	9.13	Pass
Middle		-0.87		Pass
High		-0.38		Pass

MIMO-Antenna B

802.11b Test Result

Duty cycle = 0.993

Antenna Power Density PD = power value dBm (contains cable loss dB) +10 log₁₀(1/ Duty cycle) dB

Manufacturer declares the conducted power density = 2.00 mW/MHz

Test Channel	Test Voltage	Power Value (dBm)	Antenna Power Density PD (dBm/ MHz)	Antenna Power Density PD (mW / MHz)	Antenna Power Error	Upper Limit (%)	Verdict
Low	NV	1.65	1.68	1.47	-26.38%	20	Pass
Middle		1.46	1.49	1.41	-29.54%	20	Pass
High		1.32	1.35	1.36	-31.77%	20	Pass

EIRP Antenna Power

Test Channel	Test Voltage	Measured EIRP (dBm/ MHz)	Limit (dBm/MHz)	Verdict
Low	NV	6.35	12.14	Pass
Middle		6.16		Pass
High		6.02		Pass

802.11g Test Result

Duty cycle = 0.953

Antenna Power Density PD = power value dBm (contains cable loss dB) +10 log₁₀(1/ Duty cycle) dB

Manufacturer declares the conducted power density = 1.00 mW/MHz

Test Channel	Test Voltage	Power Value (dBm)	Antenna Power Density PD (dBm/ MHz)	Antenna Power Density PD (mW / MHz)	Antenna Power Error	Upper Limit (%)	Verdict
Low	NV	-1.06	-0.85	0.82	-17.78%	20	Pass
Middle		-1.08	-0.87	0.82	-18.15%	20	Pass
High		-1.39	-1.18	0.76	-23.79%	20	Pass

EIRP Antenna Power

Test Channel	Test Voltage	Measured EIRP (dBm/ MHz)	Limit (dBm/MHz)	Verdict
Low	NV	3.82	12.14	Pass
Middle		3.80		Pass
High		3.49		Pass

802.11n-20 MHz Test Result

Duty cycle = 0.927

Antenna Power Density PD = power value dBm (contains cable loss dB) +10 log₁₀(1/ Duty cycle) dB

Manufacturer declares the conducted power density = 1.00 mW/MHz

Test Channel	Test Voltage	Power Value (dBm)	Antenna Power Density PD (dBm/ MHz)	Antenna Power Density PD (mW / MHz)	Antenna Power Error	Upper Limit (%)	Verdict
Low	NV	-2.32	-1.99	0.63	-36.76%	20	Pass
Middle		-2.12	-1.79	0.66	-33.78%	20	Pass
High		-2.25	-1.92	0.64	-35.73%	20	Pass

EIRP Antenna Power

Test Channel	Test Voltage	Measured EIRP (dBm/ MHz)	Limit (dBm/MHz)	Verdict
Low	NV	2.68	12.14	Pass
Middle		2.88		Pass
High		2.75		Pass

802.11n-40 MHz Test Result

Duty cycle = 0.911

Antenna Power Density PD = power value dBm (contains cable loss dB) +10 log₁₀(1/ Duty cycle) dB

Manufacturer declares the conducted power density = 0.50 mW/MHz

Test Channel	Test Voltage	Power Value (dBm)	Antenna Power Density PD (dBm/ MHz)	Antenna Power Density PD (mW / MHz)	Antenna Power Error	Upper Limit (%)	Verdict
Low	NV	-5.07	-4.66	0.34	-31.60%	20	Pass
Middle		-5.44	-5.04	0.31	-37.33%	20	Pass
High		-5.71	-5.31	0.29	-41.11%	20	Pass

EIRP Antenna Power

Test Channel	Test Voltage	Measured EIRP (dBm/ MHz)	Limit (dBm/MHz)	Verdict
Low	NV	0.01	9.13	Pass
Middle		-0.37		Pass
High		-0.64		Pass

MIMO802.11b Test Result

Duty cycle = 0.993

Antenna Power Density PD = power value dBm (contains cable loss dB) + 10 log₁₀(1/ Duty cycle) dB

Manufacturer declares the conducted power density = 3.50 mW/MHz

Test Channel	Test Voltage	Power Value (dBm)	Antenna Power Density PD (dBm/ MHz)	Antenna Power Density PD (mW / MHz)	Antenna Power Error	Upper Limit (%)	Verdict
Low	NV	4.64	4.67	2.93	-16.26%	20	Pass
Middle		4.57	4.60	2.88	-17.60%	20	Pass
High		4.48	4.52	2.83	-19.10%	20	Pass

EIRP Antenna Power

Test Channel	Test Voltage	Measured EIRP (dBm/ MHz)	Limit (dBm/MHz)	Verdict
Low	NV	9.34	12.14	Pass
Middle		9.27		Pass
High		9.19		Pass

802.11g Test Result

Duty cycle = 0.953

Antenna Power Density PD = power value dBm (contains cable loss dB) + 10 log₁₀(1/ Duty cycle) dB

Manufacturer declares the conducted power density = 2.00 mW/MHz

Test Channel	Test Voltage	Power Value (dBm)	Antenna Power Density PD (dBm/ MHz)	Antenna Power Density PD (mW / MHz)	Antenna Power Error	Upper Limit (%)	Verdict
Low	NV	1.90	2.11	1.63	-18.72%	20	Pass
Middle		1.72	1.93	1.56	-22.02%	20	Pass
High		1.51	1.72	1.49	-25.70%	20	Pass

EIRP Antenna Power

Test Channel	Test Voltage	Measured EIRP (dBm/ MHz)	Limit (dBm/MHz)	Verdict
Low	NV	6.78	12.14	Pass
Middle		6.60		Pass
High		6.39		Pass

802.11n-20 MHz Test Result

Duty cycle = 0.927

Antenna Power Density PD = power value dBm (contains cable loss dB) +10 log₁₀(1/ Duty cycle) dB

Manufacturer declares the conducted power density = 2.00 mW/MHz

Test Channel	Test Voltage	Power Value (dBm)	Antenna Power Density PD (dBm/ MHz)	Antenna Power Density PD (mW / MHz)	Antenna Power Error	Upper Limit (%)	Verdict
Low	NV	0.64	0.97	1.25	-37.49%	20	Pass
Middle		0.58	0.91	1.23	-38.34%	20	Pass
High		0.43	0.76	1.19	-40.44%	20	Pass

EIRP Antenna Power

Test Channel	Test Voltage	Measured EIRP (dBm/ MHz)	Limit (dBm/MHz)	Verdict
Low	NV	5.64	12.14	Pass
Middle		5.58		Pass
High		5.43		Pass

802.11n-40 MHz Test Result

Duty cycle = 0.911

Antenna Power Density PD = power value dBm (contains cable loss dB) +10 log₁₀(1/ Duty cycle) dB

Manufacturer declares the conducted power density = 1.00 mW/MHz

Test Channel	Test Voltage	Power Value (dBm)	Antenna Power Density PD (dBm/ MHz)	Antenna Power Density PD (mW / MHz)	Antenna Power Error	Upper Limit (%)	Verdict
Low	NV	-2.39	-1.99	0.63	-36.76%	20	Pass
Middle		-2.67	-2.27	0.59	-40.71%	20	Pass
High		-2.57	-2.17	0.61	-39.33%	20	Pass

EIRP Antenna Power

Test Channel	Test Voltage	Measured EIRP (dBm/ MHz)	Limit (dBm/MHz)	Verdict
Low	NV	2.68	9.13	Pass
Middle		2.40		Pass
High		2.50		Pass

5.5 Limitation of Collateral Emission of Receiver Measurement

5.5.1 Limit

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

5.5.2 Test Setup

See section 4.3.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX A.

5.5.3 Test Procedure

- 1 EUT has 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:10 dB / Ref: 0dBm / Sweep time: Auto / Sweep Mode: Continuous sweep / Detect mode: Positive peak / Trace mode: Max hold
- 3 SA set RB: 100 kHz and VB: 100 kHz. Then adjust to start frequency 30 MHz and stop frequency 1000 MHz. Search to mark peak reading value + cable loss shall be less than 4 nW
- 4 SA set RB: 1 MHz and VB: 1 MHz. Then adjust to start frequency 1000 MHz and stop frequency 12500 MHz. Search to mark peak reading value + cable loss shall be less than 20 nW
- 5 If power level of lower emissions are more than 1/10 of limit (0.4nW for $f < 1\text{GHz}$, 2 nW 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

5.5.4 Test Deviation

There is no deviation with the original standard.

5.5.5 EUT Operation during Test

The EUT was programmed to be in continuously receiving mode.

5.5.6 Test Result

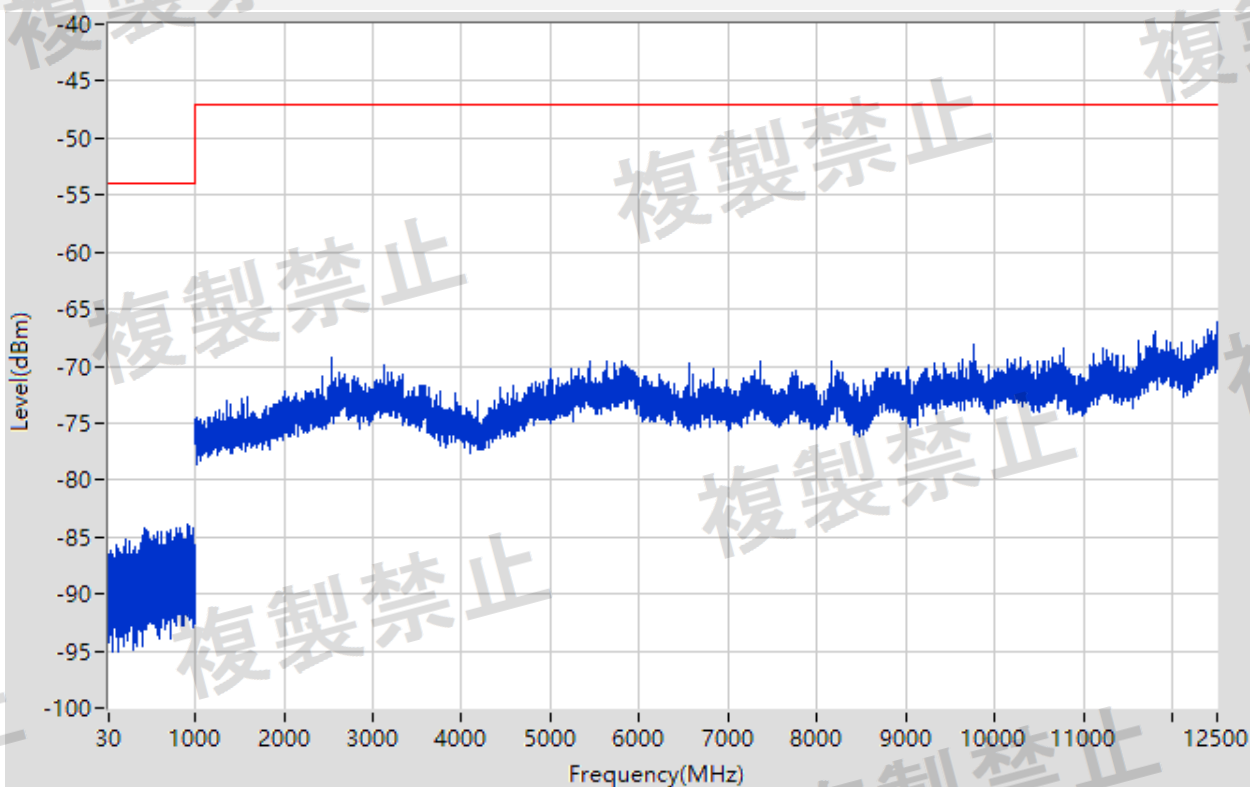
Note: All antenna were pre tested, but only the worst case has been reported in this report.

SISO-Antenna ATest Data

Mode	Channel	Test Voltage	Refer to Plot	Verdict
802.11b	Low	NV	A.5.1	Pass
	Middle		A.5.2	Pass
	High		A.5.3	Pass
802.11g	Low	NV	A.5.4	Pass
	Middle		A.5.5	Pass
	High		A.5.6	Pass
802.11n-20 MHz	Low	NV	A.5.7	Pass
	Middle		A.5.8	Pass
	High		A.5.9	Pass
802.11n-40 MHz	Low	NV	A.5.10	Pass
	Middle		A.5.11	Pass
	High		A.5.12	Pass

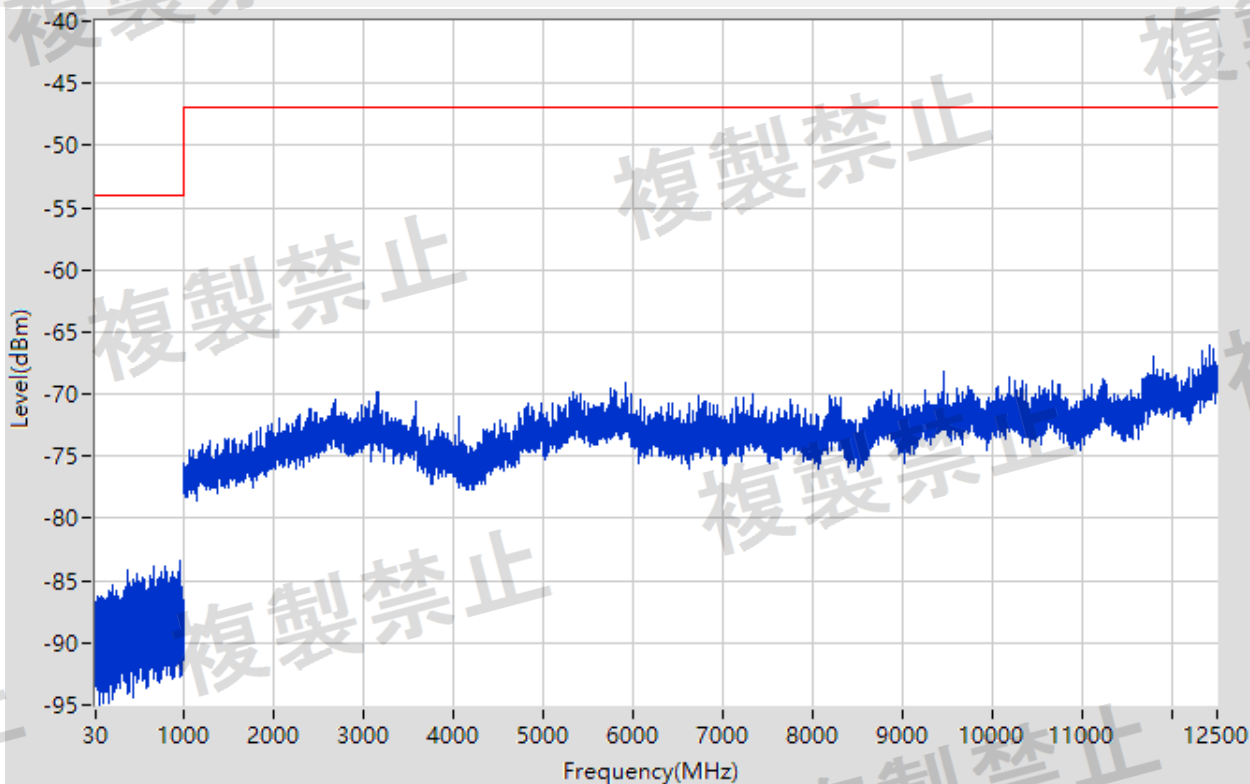
Test Plots

A.5.1 802.11b NV Low Channel



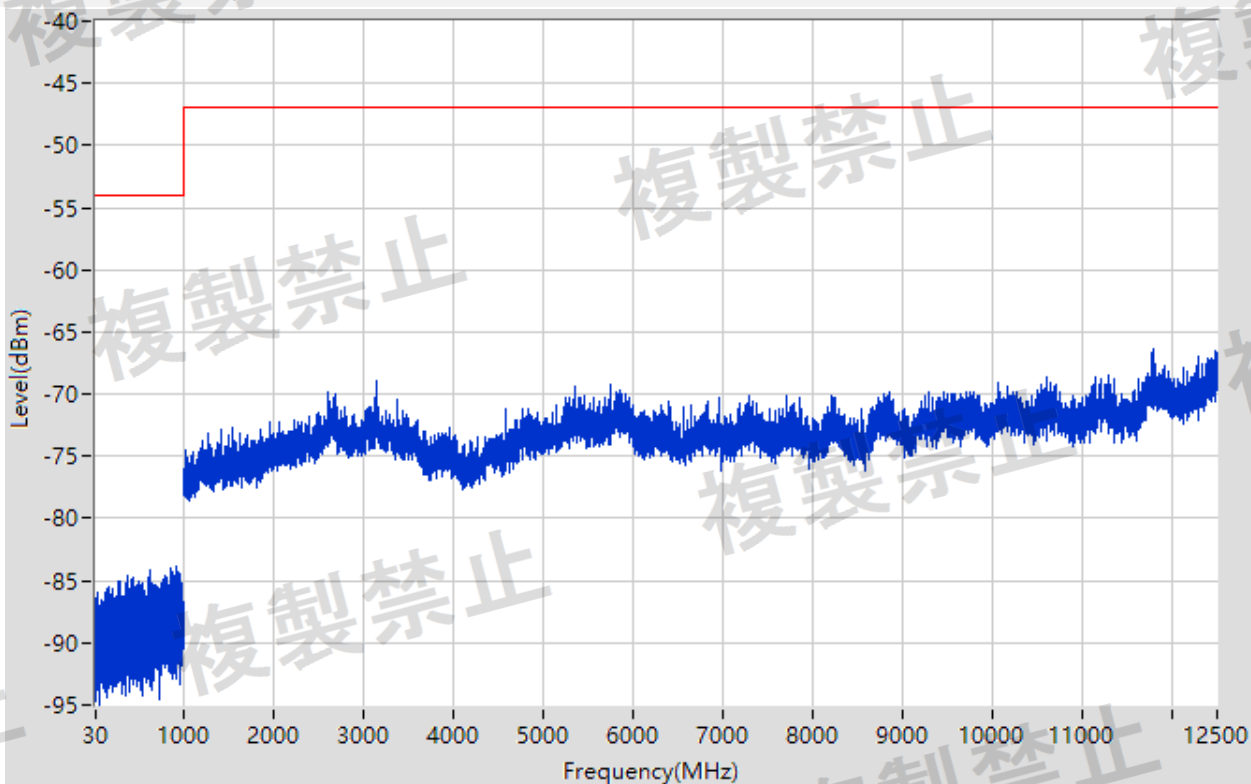
Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Power (nW)	Limit (dBm)	Limit (nW)	Margin (dB)	Verdict
30	1000	0.1	Peak	919.9	-83.82	0	-54	4.0	29.82	Pass
1000	6000	1	Peak	2533	-69.2	0.12	-47	20.0	22.2	Pass
6000	12500	1	Peak	12500	-66.2	0.24	-47	20.0	19.2	Pass

A.5.2 802.11b NV Middle Channel



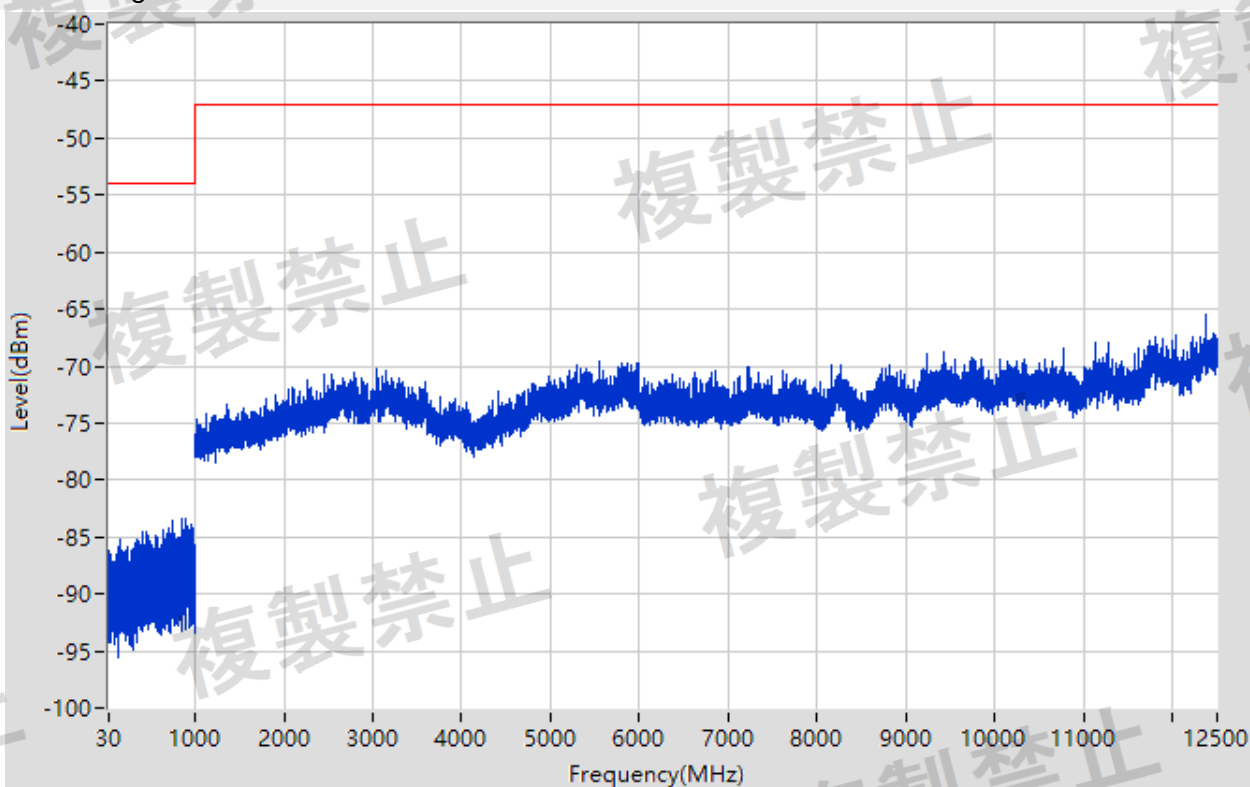
Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Power (nW)	Limit (dBm)	Limit (nW)	Margin (dB)	Verdict
30	1000	0.1	Peak	974.3	-83.42	0.01	-54	4.0	29.42	Pass
1000	6000	1	Peak	5930	-69.15	0.12	-47	20.0	22.15	Pass
6000	12500	1	Peak	12423	-66.06	0.25	-47	20.0	19.06	Pass

A.5.3 802.11b NV High Channel



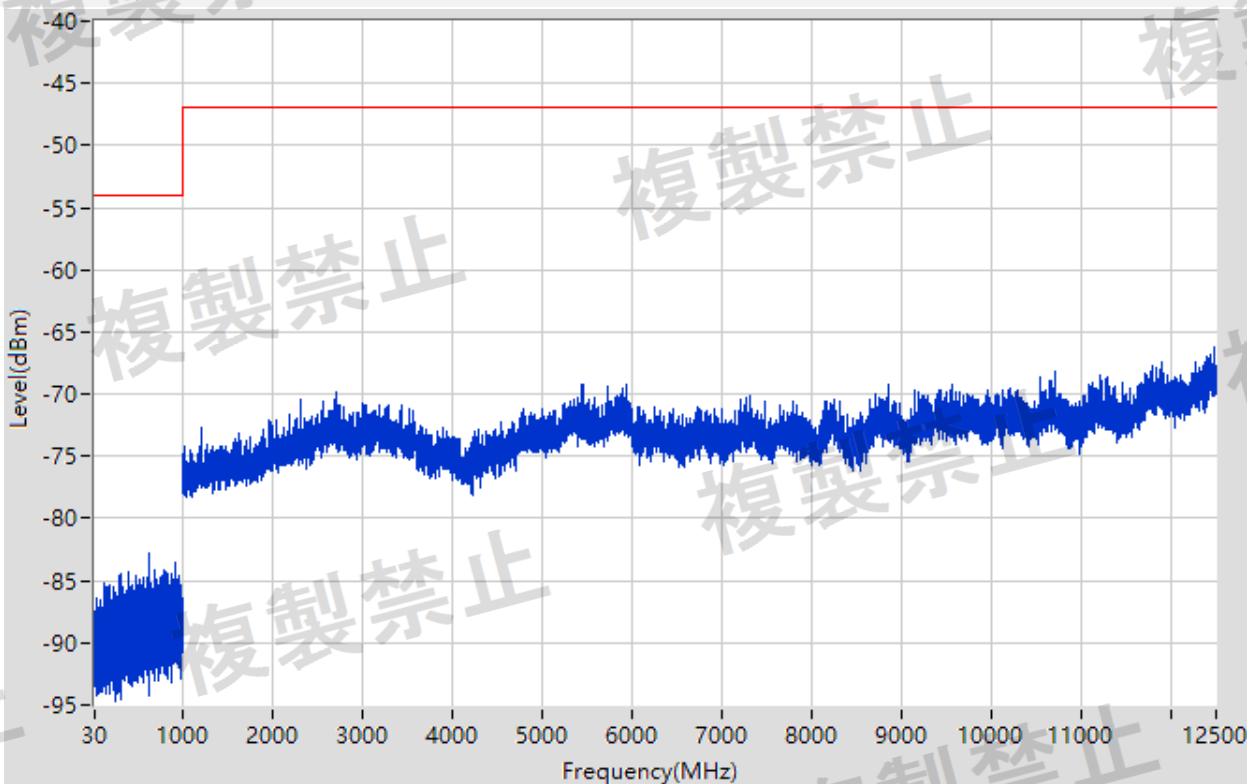
Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Power (nW)	Limit (dBm)	Limit (nW)	Margin (dB)	Verdict
30	1000	0.1	Peak	933.1	-83.87	0	-54	4.0	29.87	Pass
1000	6000	1	Peak	3161	-68.88	0.13	-47	20.0	21.88	Pass
6000	12500	1	Peak	11784	-66.4	0.23	-47	20.0	19.4	Pass

A.5.4 802.11g NV Low Channel



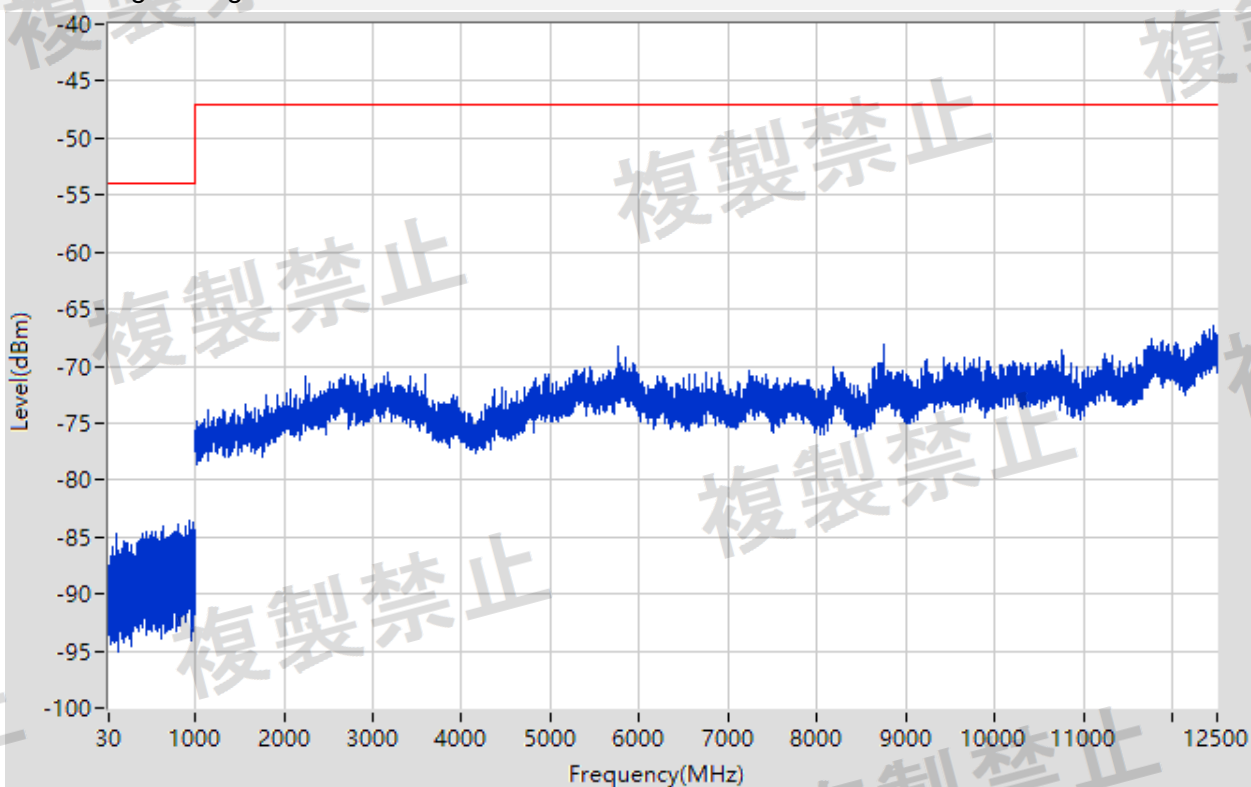
Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Power (nW)	Limit (dBm)	Limit (nW)	Margin (dB)	Verdict
30	1000	0.1	Peak	845.1	-83.38	0.01	-54	4.0	29.38	Pass
1000	6000	1	Peak	5547	-69.64	0.11	-47	20.0	22.64	Pass
6000	12500	1	Peak	12378	-65.49	0.28	-47	20.0	18.49	Pass

A.5.5 802.11g NV Middle Channel



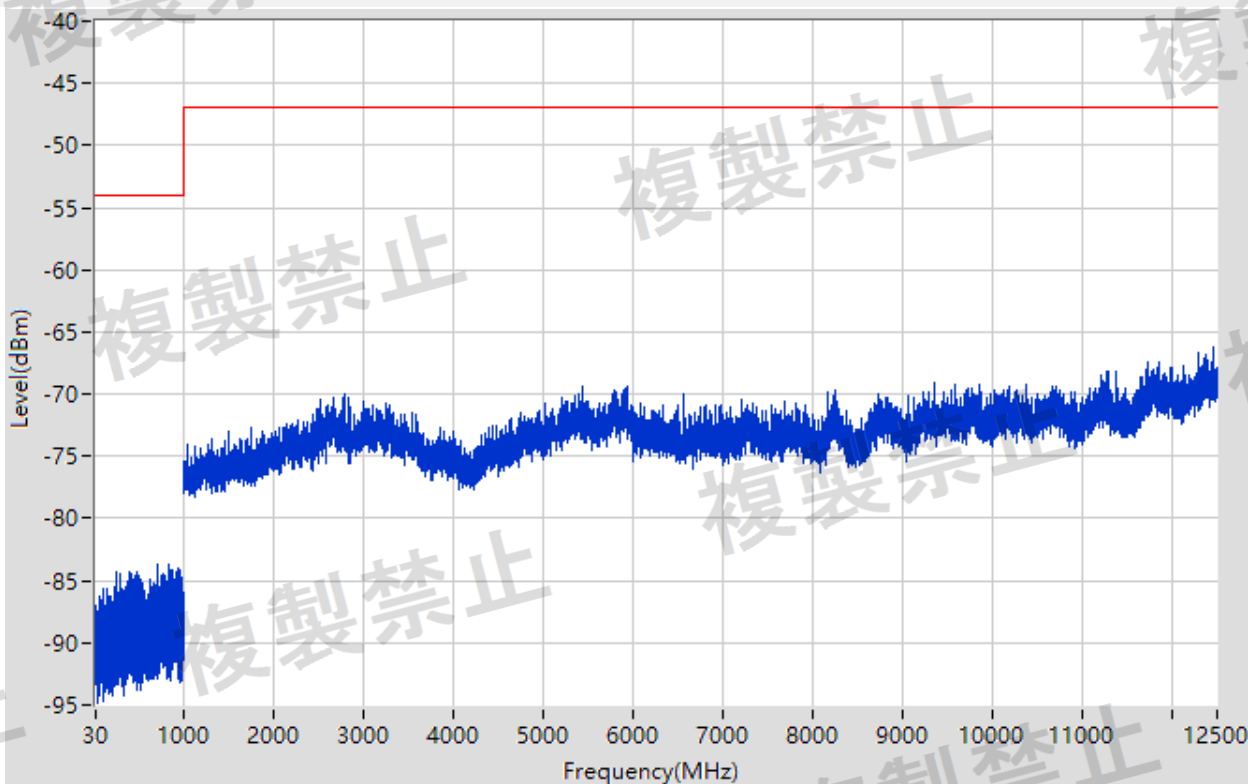
Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Power (nW)	Limit (dBm)	Limit (nW)	Margin (dB)	Verdict
30	1000	0.1	Peak	640	-82.86	0.01	-54	4.0	28.86	Pass
1000	6000	1	Peak	5446	-69.2	0.12	-47	20.0	22.2	Pass
6000	12500	1	Peak	12479	-66.26	0.24	-47	20.0	19.26	Pass

A.5.6 802.11g NV High Channel



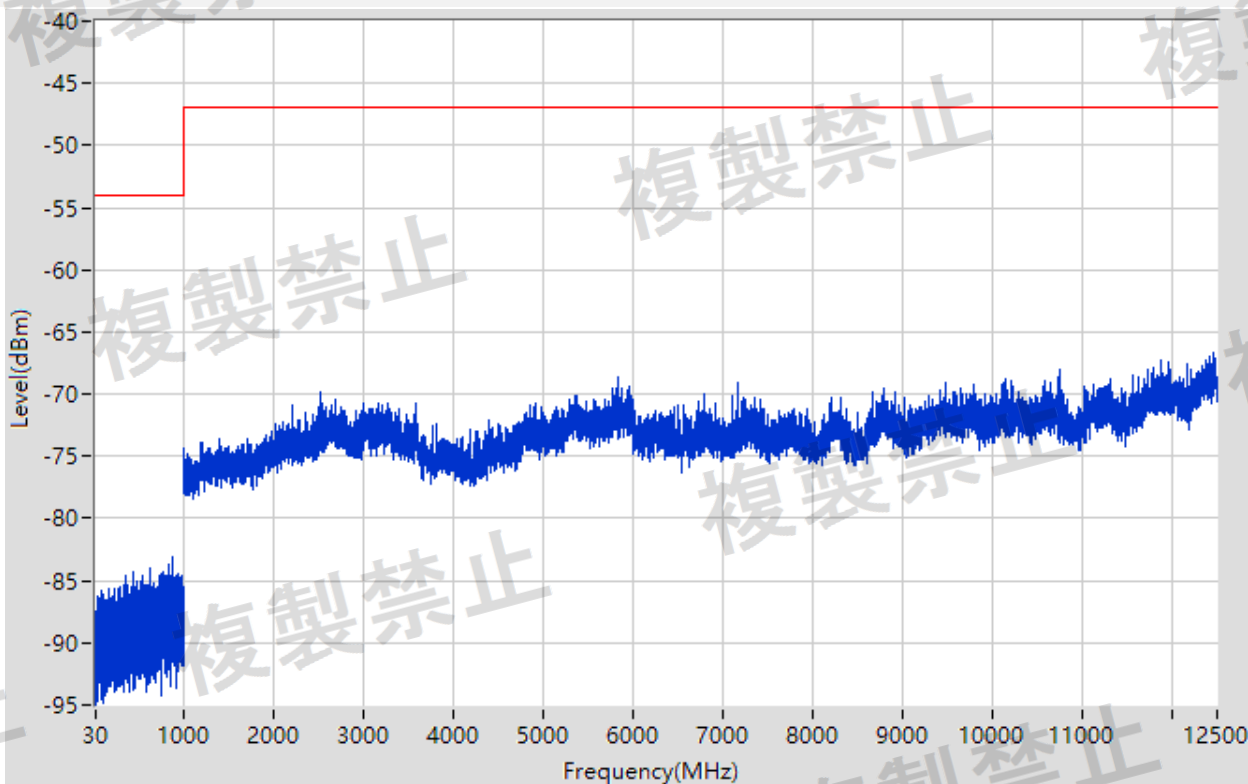
Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Power (nW)	Limit (dBm)	Limit (nW)	Margin (dB)	Verdict
30	1000	0.1	Peak	930	-83.49	0	-54	4.0	29.49	Pass
1000	6000	1	Peak	5762	-68.27	0.15	-47	20.0	21.27	Pass
6000	12500	1	Peak	12451	-66.54	0.22	-47	20.0	19.54	Pass

A.5.7 802.11n-20MHz NV Low Channel



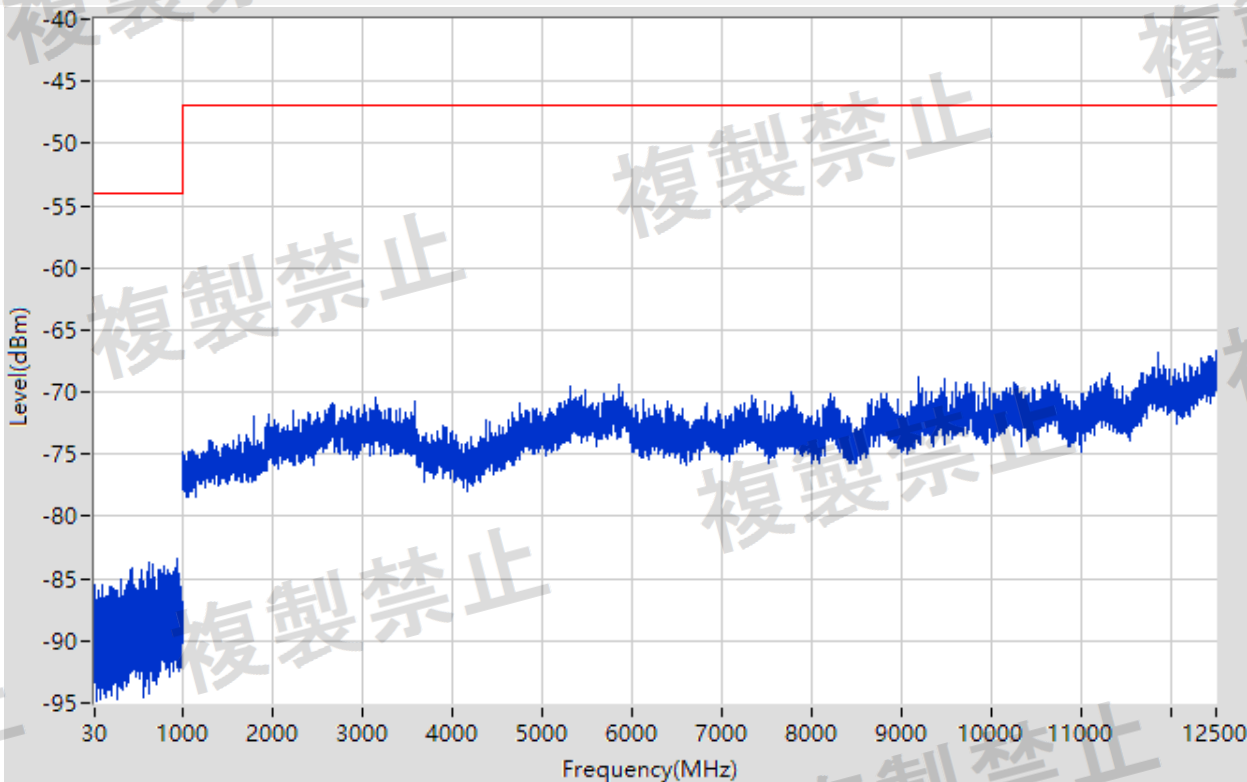
Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Power (nW)	Limit (dBm)	Limit (nW)	Margin (dB)	Verdict
30	1000	0.1	Peak	832.9	-83.67	0	-54	4.0	29.67	Pass
1000	6000	1	Peak	5941	-69.36	0.12	-47	20.0	22.36	Pass
6000	12500	1	Peak	12452	-66.23	0.24	-47	20.0	19.23	Pass

A.5.8 802.11n-20MHz NV Middle Channel



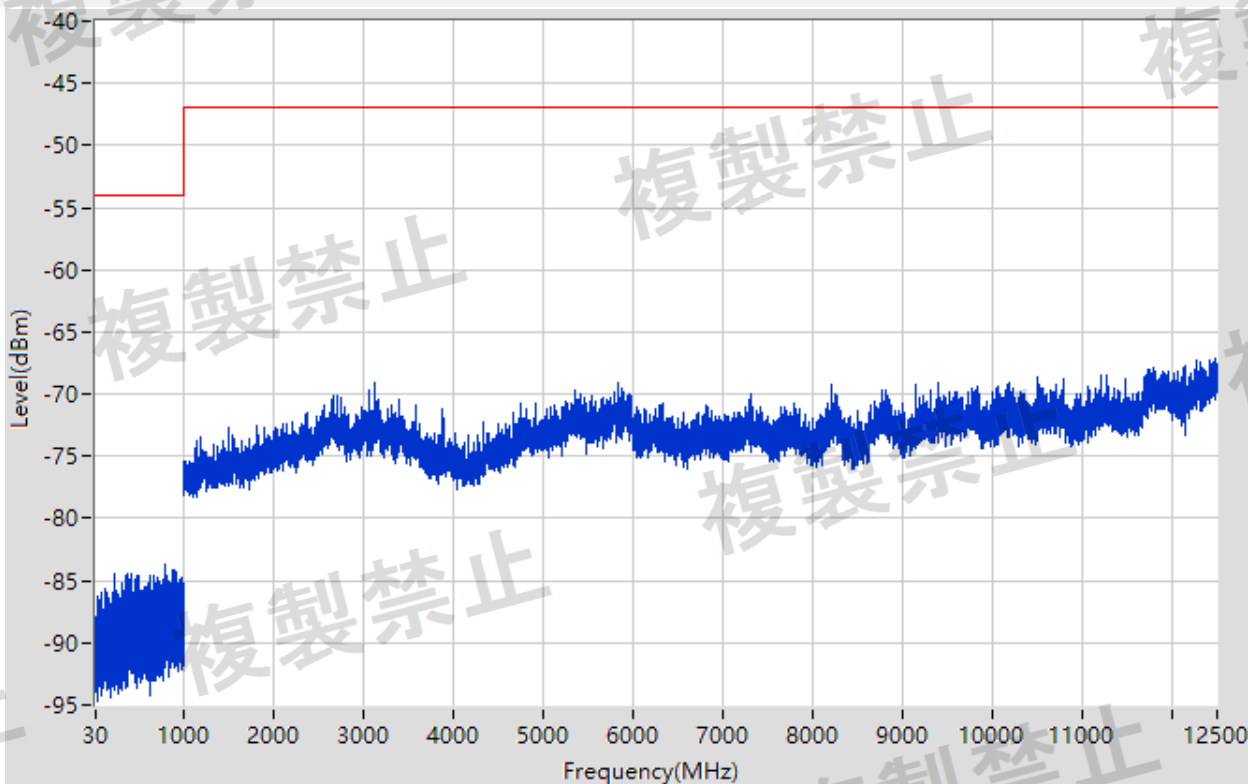
Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Power (nW)	Limit (dBm)	Limit (nW)	Margin (dB)	Verdict
30	1000	0.1	Peak	886.8	-83.11	0.01	-54	4.0	29.11	Pass
1000	6000	1	Peak	5843	-68.67	0.14	-47	20.0	21.67	Pass
6000	12500	1	Peak	12459	-66.73	0.21	-47	20.0	19.73	Pass

A.5.9 802.11n-20MHz NV High Channel



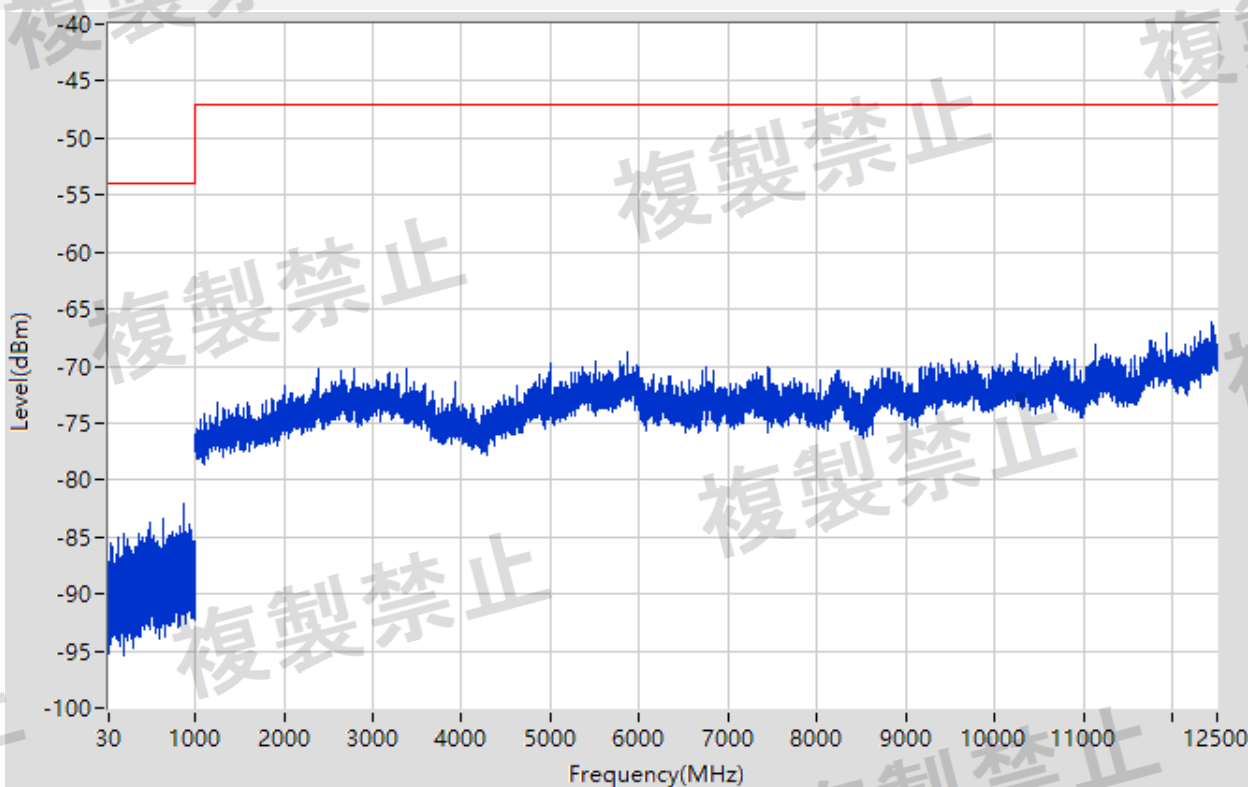
Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Power (nW)	Limit (dBm)	Limit (nW)	Margin (dB)	Verdict
30	1000	0.1	Peak	941.4	-83.37	0.01	-54	4.0	29.37	Pass
1000	6000	1	Peak	5865	-69.32	0.12	-47	20.0	22.32	Pass
6000	12500	1	Peak	12495	-66.65	0.22	-47	20.0	19.65	Pass

A.5.10 802.11n-40MHz NV Low Channel



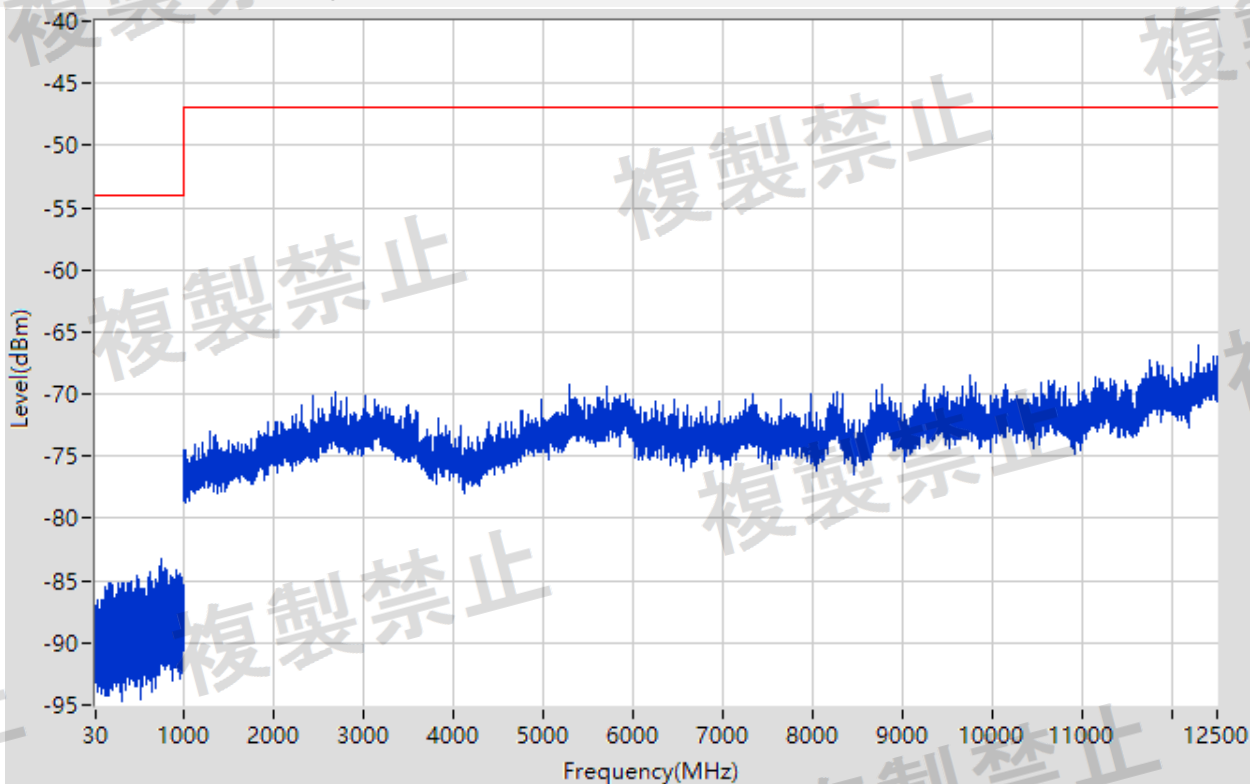
Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Power (nW)	Limit (dBm)	Limit (nW)	Margin (dB)	Verdict
30	1000	0.1	Peak	799.1	-83.63	0	-54	4.0	29.63	Pass
1000	6000	1	Peak	3142	-69.09	0.12	-47	20.0	22.09	Pass
6000	12500	1	Peak	12481	-67.15	0.19	-47	20.0	20.15	Pass

A.5.11 802.11n-40MHz NV Middle Channel



Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Power (nW)	Limit (dBm)	Limit (nW)	Margin (dB)	Verdict
30	1000	0.1	Peak	871.2	-82.06	0.01	-54	4.0	28.06	Pass
1000	6000	1	Peak	5861	-68.79	0.13	-47	20.0	21.79	Pass
6000	12500	1	Peak	12435	-66.17	0.24	-47	20.0	19.17	Pass

A.5.12 802.11n-40MHz NV High Channel



Start Frequency (MHz)	Stop Frequency (MHz)	RBW (MHz)	Detector	Frequency (MHz)	Power (dBm)	Power (nW)	Limit (dBm)	Limit (nW)	Margin (dB)	Verdict
30	1000	0.1	Peak	749.2	-83.26	0.01	-54	4.0	29.26	Pass
1000	6000	1	Peak	5294	-69.2	0.12	-47	20.0	22.2	Pass
6000	12500	1	Peak	12289	-66.01	0.25	-47	20.0	19.01	Pass

5.6 Carrier sensing function (1)

5.6.1 Limit

Radio equipment using OFDM method shall provide a carrier sensing function when the occupied bandwidth of its transmitting device is over 26 MHz and 40 MHz or less.

5.6.2 Test Setup

See section 4.3.1 Diagram 6 for test setup description for the antenna port. The photo of test setup please refer to ANNEX A.

5.6.3 Test Procedure

- 1 Set the spectrum analyzer as follows:
Center frequency: Center of frequency of test channel
Frequency sweep width: 50MHz
RBW: Approximately 1MHz
VBW: Approximately same as RBW
Y-axis scale: 10dB / div
Detection mode: Positive peak
- 2 Turn off the output of the standard signal generator. Set the standard signal generator as follows:
Carrier frequency: Center of reception frequency band of EUT
Modulation: No modulation
Output level: Specified level at antenna input of EUT
- 3 Make a line connection between the EUT and the external test device and confirm using the spectrum analyzer that the EUT is transmitting a test frequency signal of OFDM method which occupied bandwidth is over 26 MHz.
- 4 EUT is set to a test frequency and a test spreading code and put to reception state first. when using an external test device, a communication link between the EUT and the external test device is established.
- 5 Turn on the output of the standard signal generator, set the EUT to transmission state and confirm using the spectrum analyzer that the EUT does not transmit radio wave of OFDM method which occupied bandwidth is over 26 MHz.

5.6.4 Test Deviation

There is no deviation with the original standard.

5.6.5 EUT Operation during Test

EUT is set to a test frequency and a test spreading code and put to reception state first.

5.6.6 Test Result

Note: Only for orthogonal frequency division multiplexing (OFDM) system which occupied bandwidth is over 26MHz.

802.11n (40M)

Test Voltage	Channel	Test Result	Verdict
NV	Low	GOOD	Pass
	Middle	GOOD	Pass
	High	GOOD	Pass

5.7 Carrier sensing function (2)

5.7.1 Limit

Transmission device used for radio control of outdoor-use model-airplane (except frequency hopping system) shall provide a carrier sensing function that works at the start of the transmission.

5.7.2 Test Setup

See section 4.3.1 Diagram 7 for test setup description for the antenna port. The photo of test setup please refer to ANNEX A.

5.7.3 Test Procedure

- 1 Set the output level of standard signal generator to the specified level at antenna input of EUT, Set the standard signal generator as follows:
Carrier frequency: Center of reception frequency band of EUT
Modulation: No modulation
Output level: Specified level at antenna input of EUT
- 2 Set the EUT to reception state
- 3 Turn on the output of the standard signal generator.
- 4 Set the EUT to transmission state and confirm using the spectrum analyzer that the EUT does not transmit radio wave. Set the spectrum analyzer as follows:
Center frequency: Center of frequency of test channel
Frequency sweep width: 50MHz
RBW: Approximately 1MHz
VBW: Approximately same as RBW
Y-axis scale: 10dB / div
Detection mode: Positive peak
- 5 Set the EUT to reception state
- 6 Turn off the output of the standard signal generator.
- 7 Set the EUT to transmission state and confirm using the spectrum analyzer that the EUT is transmitting radio wave.

5.7.4 Test Deviation

There is no deviation with the original standard.

5.7.5 EUT Operation during Test

EUT is set to a test frequency.

5.7.6 Test Result

Because of the EUT is not a radio control of outdoor-use model-airplane, so this test item will not be applied.

5.8 Transmission Antenna Gain (EIRP Antenna Power) Measurement

5.8.1 Limit

Item	Non-directional antennal limits	Directional antennal limits
EIRP Power Density	a) FH,FH+DS, or FH+OFDM form 2427 - 2470.75 MHz: ≤ 6.91 dBm/MHz	a) FH,FH+DS, or FH+OFDM form 2427 - 2470.75 MHz: ≤ 16.91 dBm/MHz
	b) DS but other than a) from 2400~2483.5 MHz: ≤ 12.14 dBm/MHz	b) DS but other than a) from 2400~2483.5 MHz: ≤ 22.14 dBm/MHz
	c) OFDM, but other than a): For OCB of 26MHz or less: ≤ 12.14 dBm/MHz For OCB of over 26 MHz to 40 MHz: ≤ 9.14 dBm/MHz	c) OFDM, but other than a): For OCB of 26MHz or less: ≤ 22.14 dBm/MHz For OCB of over 26 MHz to 40 MHz: ≤ 19.14 dBm/MHz
	d) Other than a), b) and c): ≤ 12.14 dBm	d) Other than a), b) and c): ≤ 22.14 dBm
Note: This test item is not applied to EUT with EIRP Antenna power lower than 12.14 dBm/MHz.		

5.8.2 Test Setup

See section 4.3.4 for test setup description for the antenna port.

5.8.3 Test Procedure

- Set EUT and measuring antenna at the same height and roughly facing each other.
- Set spectrum analyzer with RBW=1MHz, VBW=1MHz, Detector=Peak, Trace mode=Max Hold, and tune reference level to observe receiving signal position.
- Move the measuring antenna height up and down within ± 50 cm of EUT height and swing it to find the maximum output of the measuring antenna. The output level at the spectrum analyzer is read as "E".
- Remove the EUT from the turn table and put the replacing antenna facing to measuring antenna at same height. Set the standard signal generator (SSG) at same frequency and transmit on then receive the signal
- Swing the replacing antenna give a maximum receiving level.
- Move the measuring antenna height up and down within ± 50 cm of replacing antenna height and swing it to find the maximum receiving level.
- Set SSG output power at P_t to give the equivalent output level of "E" or calculate P_t with SSG output which gives the nearest of "E" and difference (± 1 dB). Record the P_t .
- Calculate EIRP by the formula below $EIRP = G_t - L + P_t$.
 G_t : gain of replacing antenna (dBi)

L: feeder loss between SSG and replacing antenna

Pt: Output power of the SSG

9 If the antenna for the EUT has circular polarization, sum of V-field and H-field will be result if measuring antenna is linear polarization.

5.8.4 Test Deviation

There is no deviation with the original standard.

5.8.5 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

5.8.6 Test Result

Note: Not applicable.

5.9 Transmission Radiation Angle Width (3dB Beamwidth) Measurement

5.9.1 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 $A = \{\text{EIRP Power [mW]} / 4.9 \text{ for FH}\}$
This test item is not applied to EUT with EIRP Antenna power lower than 12.14 dBm/MHz.	

5.9.2 Test Setup

See section 4.3.4 for test setup description for the antenna port. The photo of test setup please refer to ANNEX A.

5.9.3 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 $A = \{\text{EIRP Power [mW]} / 4.9 \text{ for FH}\}$

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 Result

Note: Not applicable.

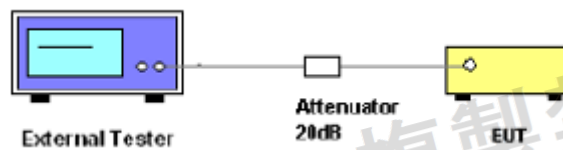
5.10 Radio Interference Prevention Capability Measurement

5.10.1 Limit

Item	Limits
Identification	≥ 48 bits

5.10.2 Test Setup

The photo of test setup please refer to ANNEX A.



5.10.3 Test Procedure

- 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.
- 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.

5.10.4 Test Deviation

There is no deviation with the original standard.

5.10.5 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

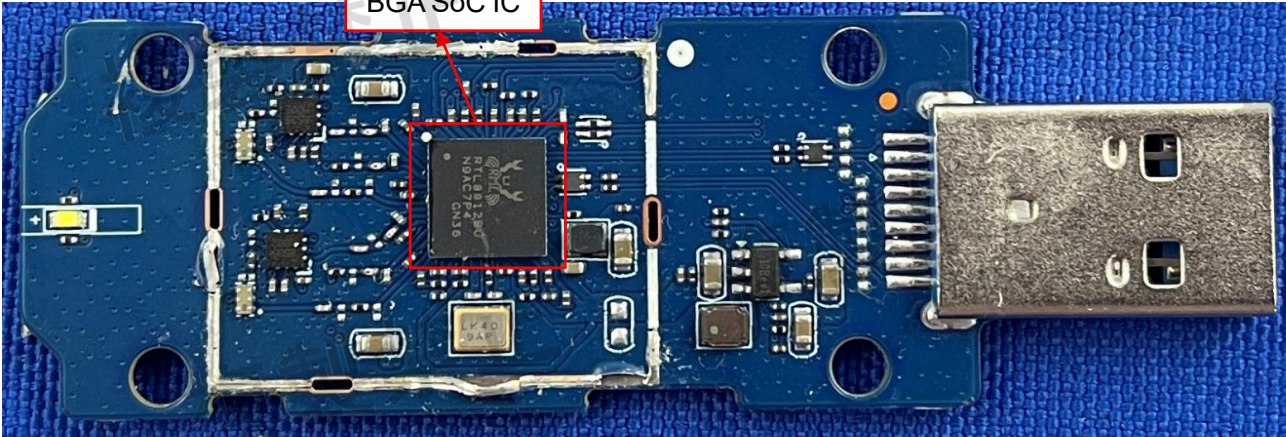
5.10.6 Test Result

MAC ID: 6C-1F-F7-30-39-79

Test Voltage	Test Result (ID Code)	Verdict
NV	GOOD	Pass

5.11 Construction Protection Confirmation Method

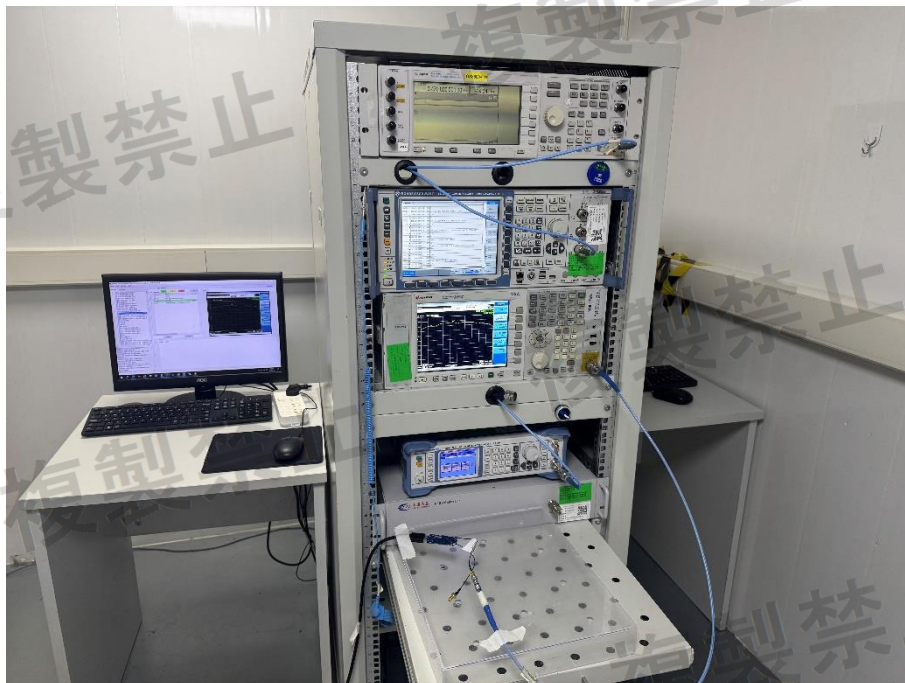
The RF and modulation portions are protected against illegal modification as following method:

Protected Method	Description
Structure protection	The RF Module is BGA SoC IC, and RF part is mounted on PCB with surface mount technology, can't be easily modified
Reference Photo	

ANNEX A TEST SETUP PHOTOS

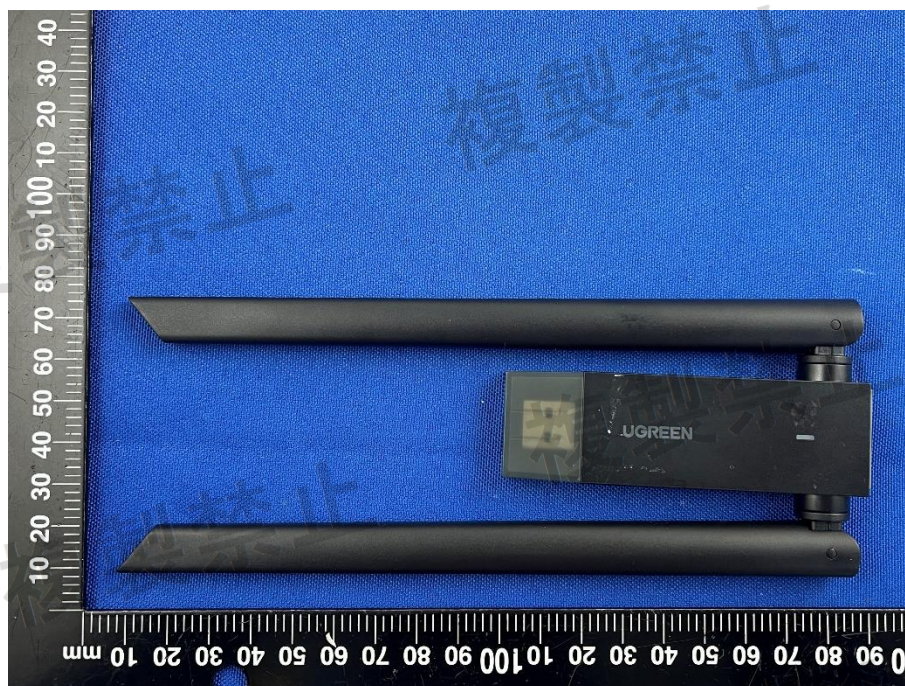
1 Conducted Test Photo

Conducted Test



ANNEX B EUT EXTERNAL PHOTOS

FRONT VIEW OF EUT



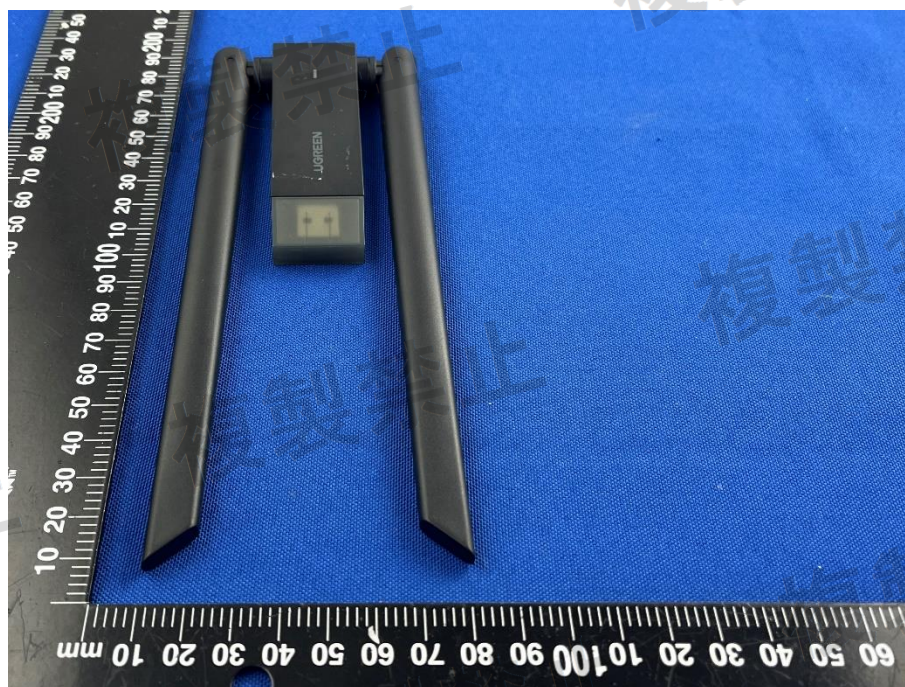
REAR VIEW OF EUT



LEFT VIEW OF EUT



RIGHT VIEW OF EUT



TOP VIEW OF EUT



BOTTOM VIEW OF EUT



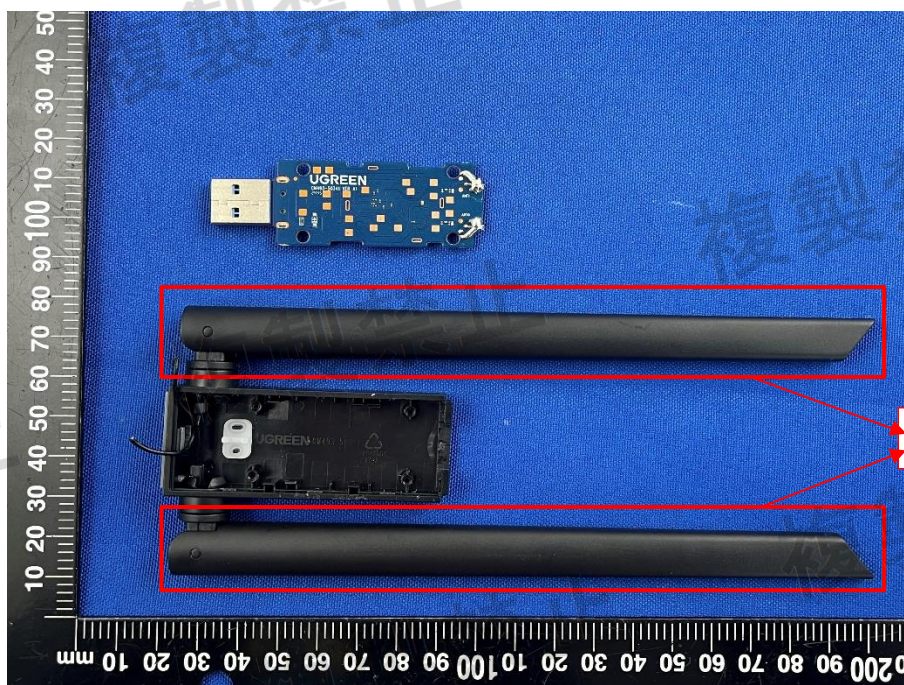


ANNEX C EUT INTERNAL PHOTOS

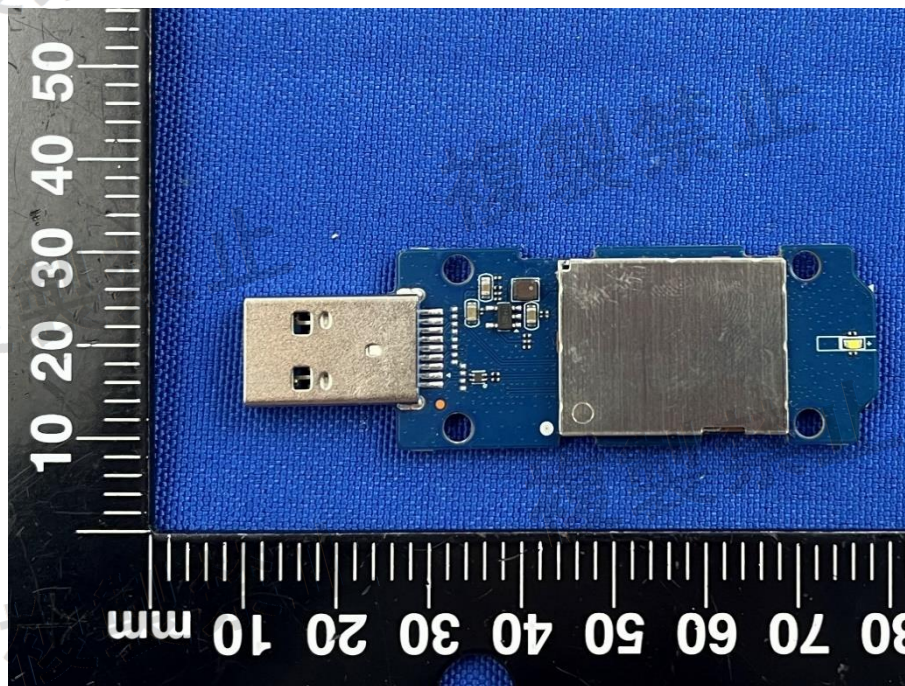
EUT UNCOVER VIEW 1



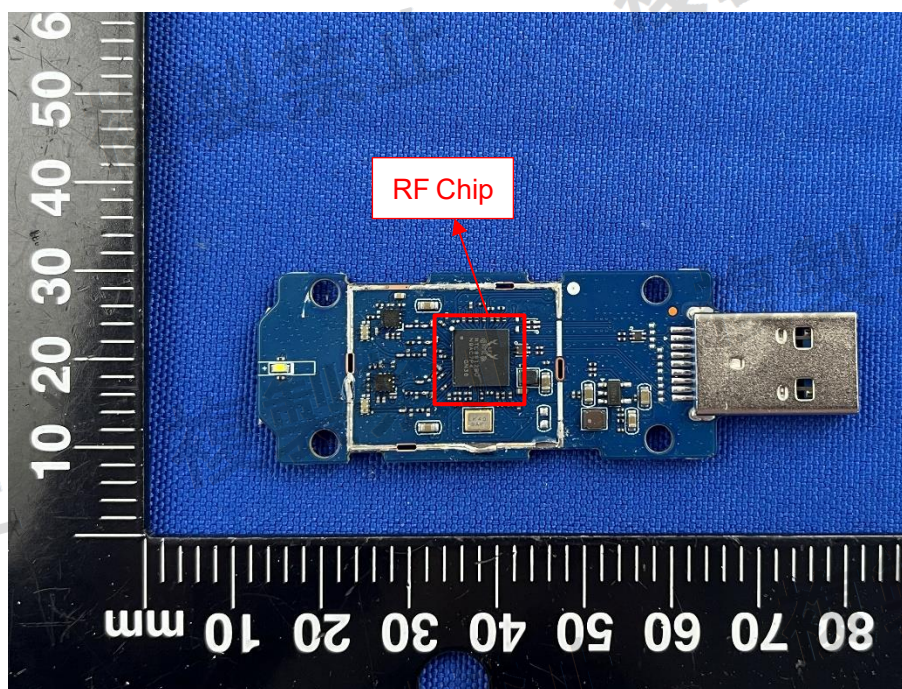
EUT UNCOVER VIEW 2



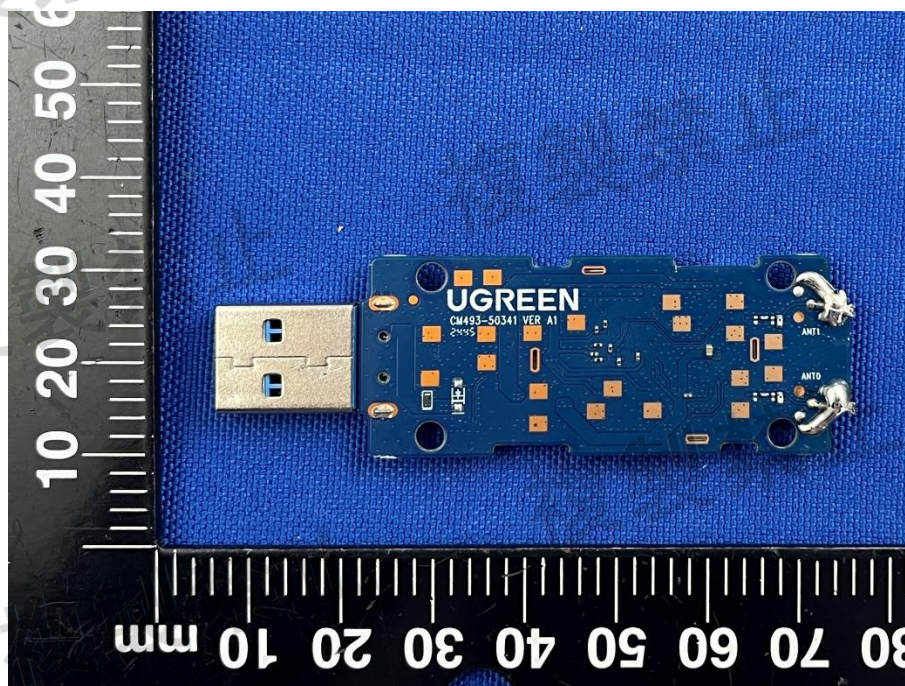
MAIN BOARD TOP VIEW (WITH SHIELDING)



MAIN BOARD TOP VIEW (WITHOUT SHIELDING)



MAIN BOARD REAR VIEW



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