

TEST REPORT

Reference No...... : WTF25D06158010W
Applicant..... : MagicScoop Technologies Inc.
Address..... : 3154 Glendale Blvd Suite 1097, Los Angeles, CA 90039, USA
Manufacturer..... : Shenzhen Gingerway Technologies Co., Ltd.
Address..... : Room 321, Fenghuangcheng Building, No.15, Keji North 1st Road,
Nanshan, Shenzhen, Guangdong, China
Product..... : Self-Cleaning Cat Litter Box
Model(s)..... : M1 Pro, M1 Performance
Standards..... : Article 2 Paragraph 1 of Item 19,
Article 2 Paragraph 1 of Item 19-2,
MIC Notice No.88 Appendix No.43
MIC Notice No.88 Appendix No.44
Date of Receipt sample : 2024-03-18
Date of Test : 2024-03-18 to 2024-04-09
Date of Issue..... : 2025-06-24
Test Result..... : Pass

Remarks:

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.

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Page 1 of 63

2 Contents

	Page
1 COVER PAGE	1
2 CONTENTS	2
3 REVISION HISTORY	3
4 GENERAL INFORMATION	4
4.1 General Description of E.U.T.	4
4.2 Details of E.U.T.	4
4.3 Channel List.....	4
4.4 General condition	5
4.5 Test Equipment	8
5 TEST SUMMARY	9
6 MEASUREMENTS OF TRANSMITTING EQUIPMENT	10
6.1 Antenna Power and Antenna Power Tolerances	10
6.2 Frequency Tolerance	13
6.3 Occupied Frequency Bandwidth	18
6.4 Spread Bandwidth	27
6.5 Process Gain	36
6.6 Spurious Emission Intensity	37
6.7 Carrier Sense Capability	51
7 MEASUREMENTS OF RECEIVING EQUIPMENT	53
7.1 Secondary Radiated Emissions	53
8 MEASUREMENTS OF CONTROLLING EQUIPMENT	60
8.1 Interference prevention function.....	60
9 TEST SETUP VIEW	62
10 PHOTOGRAPHS - CONSTRUCTIONAL DETAILS	63

3 Revision History

Test Report No.	Date of Receipt Sample	Date of Test	Date of Issue	Purpose	Comment	Approved
WTF25D06158010W	2024-03-18	2024-03-18 to 2024-04-09	2025-06-24	Version 1	Updated	Valid
Note: This report is based on WTF24D03045256W001 to update model. The update will not affect the test and is considered to meet the test requirements without further testing.						

4 General Information

4.1 General Description of E.U.T.

Product:		Self-Cleaning Cat Litter Box
Model(s):		M1 Pro, M1 Performance
Model Description:		Only the model names are different. The model M1 Pro was tested in this report.
Hardware version:		V3.2
Software version:		V5.8
Radio type:		WLAN
WLAN	Technical:	2.4G-802.11b/g/n HT20/n HT40
	Modulation:	DSSS, OFDM
	Frequency range:	802.11b/g/n HT20: 2412~2472MHz 802.11n HT40: 2422~2462MHz 802.11b: 2484MHz
	Output power:	802.11b: 2.58mW/MHz 802.11g: 0.14mW/MHz 802.11n (HT20): 0.68mW/MHz 802.11n (HT40): 0.35mW/MHz
	Antenna installation:	PCB printed antenna
	Antenna gain:	1.5dBi
	Note:	#: The antenna gain is provided by the applicant, and the applicant should be responsible for its authenticity, WALTERK lab has not verified the authenticity of its information.

4.2 Details of E.U.T.

Ratings: DC 12V $\overline{\text{---}}$ 1000mA from adapter
(INPUT: 100-240V- 50/60Hz 0.5A Max)

Adapter: Manufacturer: Shenzhen Sunshine Technological Co.,Ltd.
MODEL: XSD-1201000NJPD

4.3 Channel List

Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
1	2412	2	2417	3	2422	4	2427
5	2432	6	2437	7	2442	8	2447
9	2452	10	2457	11	2462	12	2467
13	2472	14	2484				

4.4 General condition

Ambient Condition: 25 °C 54 %RH

4.4.1 Environmental condition of test site

Voltage fluctuation

1. In the case of a characteristic test in the technical regulations conformity certification

The power supply supplies the voltage rating.

2. Other cases

The power supply supplies the voltage rating and the voltage rating $\pm 10\%$. However, when it can be confirmed that the change of the input voltage to the wireless part circuit of the testing machine is $\pm 1\%$ or less when the input voltage to the testing machine from the external source changes at $\pm 10\%$, examines it only by the voltage rating.

Temperature Test

1. Place the device to be tested in the temperature and humidity test tank in the non-operation state and set the temperature of the temperature and humidity test tank to a low temperature while in this condition.

*Low temperature; Of 0 °C, -10 °C, and -20 °C, use the minimum value within the range of the specification of the device to be tested.

*High temperature; Of 40 °C, 50 °C, and 60 °C, use the highest value within the range of the specification of the device to be tested.

2. Leave it in this condition for 1 hour.

3. After the time mentioned in "1.2." above has elapsed, apply the prescribed power supply voltage to operate the device to be tested in the temperature and humidity test tank.

4. Measure the frequency of the device to be tested using the test equipment to confirm.

Humidity Test

1. Place the device to be tested in the temperature and humidity test tank in the non-operating state. While this condition remains, set the temperature to 35 °C and the relative humidity to 95 % or the maximum humidity in the specification of the device to be tested in the temperature and humidity test tank.

2. Leave it in this condition for 4 hours.

3. After the time mentioned in 2.3.3.2 has elapsed, the setting of the temperature and humidity test tank is changed back to the normal temperature and normal humidity and, after confirming that there

is no condensation; operate the device to be tested by applying the prescribed power supply voltage (Refer to section 2.1 of Chapter1).

4. Measure the frequency of the device to be tested using the testing equipment.

Vibration

1. The total amplitude of vibrations is 3 mm. and the frequency of the vibrations are to range from a minimum number of vibrations to 500 vibrations/min. up and down, left to right, and back and forth for 15 minutes each.(The sweep cycle of the frequency of vibrations is to be performed for 10 minutes. Frequency of vibration is swept and the frequency of vibration is changed in the order of a minimum number of vibrations, 500 vibrations/min, and the minimum number of vibrations. That is, 1.5 cycles of the frequency of the vibrations will be swept in 15minutes.)

2. The total amplitude of vibration is to be 1 mm. Frequency of vibrations is to range from 500 vibrations /min to 1800 vibrations /min. Up and down, left to right, and back and forth for 15 minutes each. (The sweep cycle of the frequency of vibrations is to be 10 minutes. The frequency of vibrations is swept and the frequency of vibrations is changed in the order of 500 vibrations /min., 1800 vibrations /min., and 500 vibrations/min. That is, 1.5 cycles of the frequency of vibrations will be swept in 15 minutes.)

(*1) This test item is to be used only for objects that do not move and do not vibrate. If the above is written in the construction design document, this test item is not to be performed

Note:

Note: NH: Normal Humidity: 54%

HH: High Humidity: 95%

NT: Normal Temperature: 25.2℃

NV: Normal Voltage: 100VAC

LV: Low Voltage: 90VAC

HV: High Voltage: 110VAC

4.4.2 Test Mode

All test mode(s) and condition(s) mentioned were considered and evaluated respectively by performing full tests, the worst data were recorded and reported.

Have been confirmed the fluctuation of power supply to the RF circuit of EUT (excluding power source) is equal to or less than +/-1% when the power supply to the product varies at +/-10% by Manufacturer.

AC Input	RF_IC Input	Rate of fluctuation(%)
100V	3.3V	0.0
90V	3.3V	0.0
110V	3.3V	0.0

Test mode	Low channel	Middle channel	High channel
Transmitting(802.11b/g/n20)	2412MHz	2442MHz	2472MHz
Transmitting(802.11n40)	2422MHz	2442MHz	2462MHz
Receiving(802.11b/g/n20)	2412MHz	2442MHz	2472MHz
Receiving(802.11n40)	2422MHz	2442MHz	2462MHz
Transmitting(802.11b)	2484MHz	/	/
Receiving (802.11b)	2484MHz	/	/
Normal Operation	2422MHz	2442MHz	2462MHz

4.5 Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Calibration Date	Calibration Due Date
1	EXA Signal Analyzer	Malaysia Keysight	N9010A	MY50520207	2023-04-24	2024-04-23
2	Spectrum Analyzer	R&S	FSP30	100091	2023-04-24	2024-04-23
3	DC power supply	Agilent	E3640A	MY40006693	2023-04-24	2024-04-23
4	Temperature & Humidity Chamber	Agilent	TH-1P-B	WIT-05121302	2023-11-13	2024-11-12
5	Temperature/ Humidity Meter	Agilent	ZC1-2	TR7-TH	2023-05-29	2024-05-28
6	ESG VECTOR SIGNAL GENERATOR	Malaysia Keysight	E4438C	MY45092536	2023-04-24	2024-04-23

Remark:

(a) Calibration conducted by the National Institute of Information and Communications Technology (NICT) in Japan (hereinafter referred to as "NICT") or a designated calibration agency under Article 102-18 paragraph (1) in JRL.

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

(c) Calibration conducted in countries except Japan, which shall be equivalent to the calibration conducted by the NICT or a designated calibration agency under Article 102-18 paragraph (1).

(d) Calibration, etc. conducted by using measuring instruments and other equipment listed in the right column of appended table No. 3, which shall have been given any type of calibration, etc. listed above from (a) to (C) From JRL Article 24-2, paragraph 4, Item 2

5 Test Summary

Test Items	Result
Transmitting equipment	
Antenna Power	PASS
Tolerances for Antenna Power	PASS
Frequency Tolerance	PASS
Transmission Rate	N/A
Occupied Frequency Bandwidth	PASS
Spread Bandwidth	PASS
Process Gain	PASS*
Spurious emission intensity	PASS
Half-power beam width	Note1
Carrier sense function	PASS
Receiving equipment	
Secondary Radiated Emissions	PASS
Controlling equipment	
Interference prevention function	PASS
N/A is an abbreviation for Not Applicable. * means only applicable for 802.11b 2484MHz. Note1: For 2412-2472MHz : The max EIRP is 5.61dBm/MHz (antenna power dBm + antenna gain dBi) that is less than 12.14dBm/MHz. For 2484MHz: The max ERP is 2.54dBm/MHz (antenna power dBm + antenna gain dBi - 2.15) that is less than 12.14dBm/MHz.	

6 Measurements of Transmitting Equipment

6.1 Antenna Power and Antenna Power Tolerances

6.1.1 Test Requirement

Article 2 Paragraph 1 of Item 19, Article 2 Paragraph 1 of Item 19-2.

6.1.2 Limit

a. The antenna power of a transmitting equipment (with a frequency band of 2,427 - 2,470.75 MHz, for spread spectrum systems using FH systems, hybrid systems of DS and FH, or hybrid systems of FH and OFDM) shall be such that the mean power within a bandwidth of 1 MHz is 3 mW or less in the case of modulation using a standard coding test signal with the same transmission rate as that of the modulation signal.

b. The antenna power of a transmitting equipment using a spread spectrum system other than any of those in "a" and the OFDM system shall be such that the mean power within a bandwidth of 1 MHz is 10 mW or less for the 20MHz system and 5 mW or less for the 40MHz system in the case of modulation using a standard coding test signal with the same transmission rate as that of the modulation signal.

c. The antenna power of a transmitting equipment using systems other than any of those in "a" or "b" shall be 10 mW or less for the 20MHz system and 5 mW or less for the 40MHz system.

For 2412-2472MHz, upper limit of the tolerance for antenna power shall be 20%.

For 2484MHz, upper and lower limits of the tolerance for antenna power shall be 20% and -80%, respectively.

6.1.3 Measuring Instruments and setting

Please refer to section 4 in this report. The following table is the setting of the spectrum.

6.1.4 Test Procedures

Step 1

Connect the UUT to the spectrum analyzer and use the following settings:

Center Frequency: The center frequency of the UUT test channel

RBW: 1MHz

VBW: 1MHz

Span: Wide enough to cover the total power envelope of the signal of the UUT

Detector: Peak

Trance Mode: Max Hold

Find the Peak value for the power envelope and record the frequency.

Step 2

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Change the spectrum analyzer and use the following settings:

Center Frequency: Record frequency of step 1.

RBW: 1MHz

VBW: 1MHz

Span: 0Hz

Sweep time: enough to capture the signal burst.

Detector: RMS

Capture the burst signal power and record it.

6.1.5 Capture the burst signal power and record it. Test Setup Layout



6.1.6 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

6.1.7 Test Result

Modulation	Channel	Antenna Power (dBm/MHz)	Test Result for Antenna Power (mW/MHz)	Antenna power Limit (mW/MHz)	Declared Antenna Power (mW/MHz)	Tolerance(%)
802.11b	Low	3.39	2.18	10.00	2.58	-15.28
	Middle	3.02	2.00	10.00	2.58	-22.20
	High	4.11	2.58	10.00	2.58	0.00
802.11g	Low	-2.31	0.59	10.00	0.74	-20.57
	Middle	-2.29	0.59	10.00	0.74	-20.20
	High	-1.31	0.74	10.00	0.74	0.00
802.11n-HT20	Low	-2.78	0.53	10.00	0.68	-23.03
	Middle	-2.54	0.56	10.00	0.68	-18.53
	High	-1.65	0.68	10.00	0.68	0.00
802.11n-HT40	Low	-5.99	0.25	5.00	0.35	-27.89
	Middle	-6.03	0.25	5.00	0.35	-28.68
	High	-4.57	0.35	5.00	0.35	0.00
802.11b (2484MHz)	14CH	3.19	2.08	10.00	2.58	-19.13

Note:

1. For 2412-2472MHz :

The max EIRP is 5.61dBm/MHz (antenna power dBm + antenna gain dBi) that is less than 12.14dBm/MHz.

2. For 2484MHz:

The max ERP is 2.54dBm/MHz (antenna power dBm + antenna gain dBi - 2.15) that is less than 12.14dBm/MHz.

6.2 Frequency Tolerance

6.2.1 Test Requirement

Article 2 Paragraph 1 of Item 19, Article 2 Paragraph 1 of Item 19-2.

6.2.2 Limit

According to Article 2-1, the Tolerance of frequency: $\pm 50 \times 10^{-6}$.

6.2.3 Measuring Instruments and setting

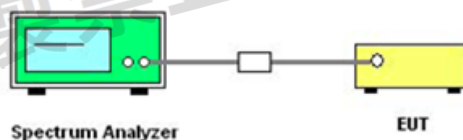
Please refer to section 4 in this report. The following table is the setting of the spectrum.

Spectrum Parameter	Setting
Span Frequency	500 kHz
RB/VB	10 kHz / 10 kHz

6.2.4 Test Procedures

- 1 Frequency accuracy of SA shall be less than 10% of limits tolerance (5ppm)
- 2 Setting of SA is following as: RB:10kHz / VB:10kHz / SPAN: 500kHz
- 3 Center Frequency: The center frequency of testing for EUT
- 4 Sweep time: Auto
- 5 Detect mode: Positive peak
- 6 EUT have transmitted absence of modulation signal and fixed channelize. f is using the mark cursor to mark the peak frequency value, f_c is declaring of channel frequency. Then the frequency error formula is $(f_c - f) / f_c \times 10^6 \text{ ppm}$ and the limit is less than $\pm 50 \text{ ppm}$

6.2.5 Test Setup Layout



6.2.6 Test Deviation

There is no deviation with the original standard.

6.2.7 EUT Operation during Test

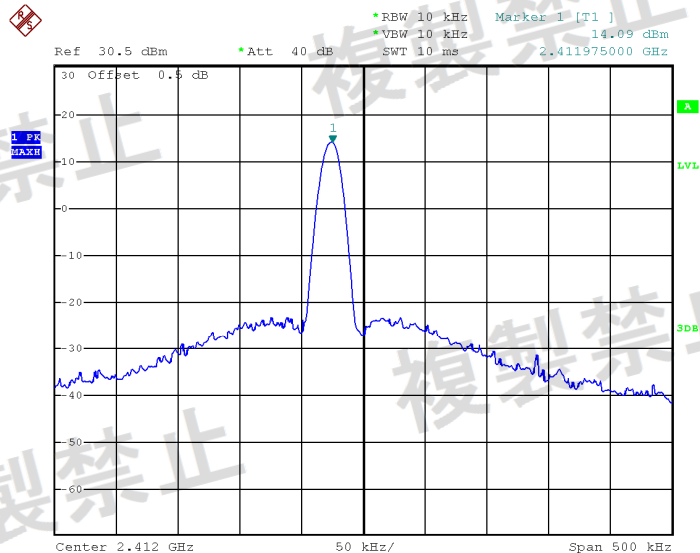
The EUT was placed on the test table and programmed in un-modulation function.

6.2.8 Test Result

Frequency (MHz)	Result (MHz)	Tolerance (kHz)	Tolerance (ppm)	Limit
2412.000	2411.975	-25	-10.36	±50
2422.000	2421.973	-27	-11.15	±50
2442.000	2441.972	-28	-11.47	±50
2462.000	2461.972	-28	-11.37	±50
2472.000	2471.971	-29	-11.73	±50
2484.000	2483.972	-28	-11.27	±50

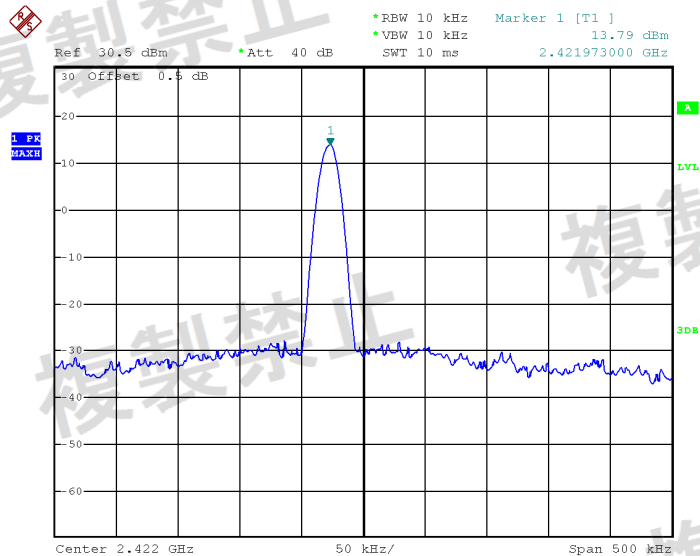
Test Plots

Channel 2412MHz



Date: 9.APR.2024 11:00:05

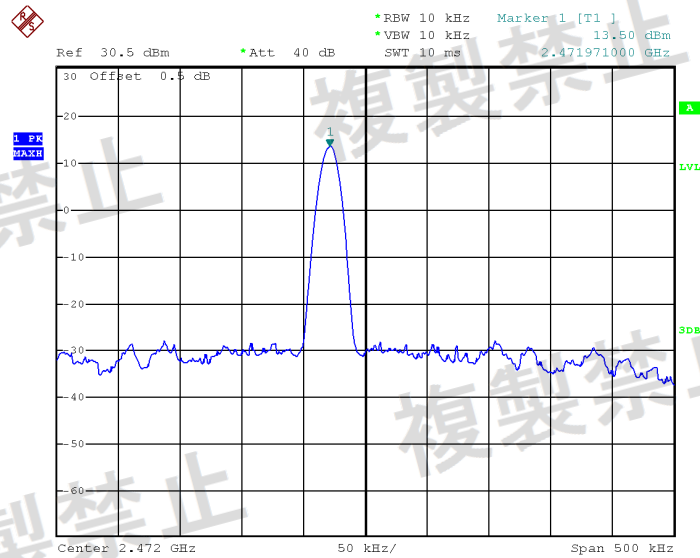
Channel 2422MHz



Date: 9.APR.2024 11:00:34

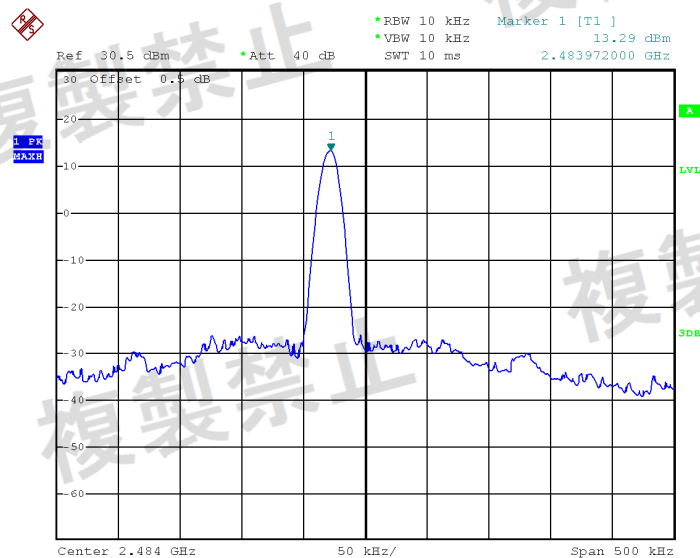


Channel 2472MHz



Date: 9.APR.2024 11:02:22

Channel 2484MHz



Date: 9.APR.2024 11:02:53

6.3 Occupied Frequency Bandwidth

6.3.1 Test Requirement

Article 2 Paragraph 1 of Item 19, Article 2 Paragraph 1 of Item 19-2.

6.3.2 Limit

According to Radio Law of Japan item 19 of Article 2 Paragraph 1, permissible value for occupied bandwidth using the FH system, a hybrid system combining DS and FH systems, or a hybrid system combining FH 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 for the 20MHz system, for the 40MHz system, shall be 26-40MHz.

6.3.3 Measuring Instruments and setting

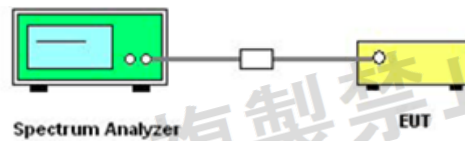
Please refer to section 4 in this report. The following table is the setting of the spectrum.

Spectrum Parameter	Setting
Span Frequency	30MHz/60MHz
RB/VB	300 kHz

6.3.4 Test Procedures

- 1 Setting of SA is following as: RB:300kHz / VB:300kHz / SPAN: 30MHz;60MHz / Sweep time: Auto /Sweep Mode: Continuous sweep / Detect mode: Positive peak / Trace mode: Max hold
- 2 EUT have transmitted the maximum modulation signal and fixed channelize (For DSSS or OFDM Device) or continuous maximum power of hopping mode (For FHSS Device). SA set to 99% of occupied bandwidth to measure occupied bandwidth. The limit is less than 26MHz (For DSSS or OFDM Device) or 83.5MHz (For FHSS Device).
- 3 SA set to 90% of occupied bandwidth to measure Spread Spectrum Bandwidth and must greater than 500kHz.
- 4 Spread Spectrum Factor = Spread Spectrum Bandwidth / modulation rate of EUT.
- 5 Spread Spectrum Factor limit is greater than 5

6.3.5 Test Setup Layout



6.3.6 Test Deviation

There is no deviation with the original standard.

6.3.7 EUT Operation during Test

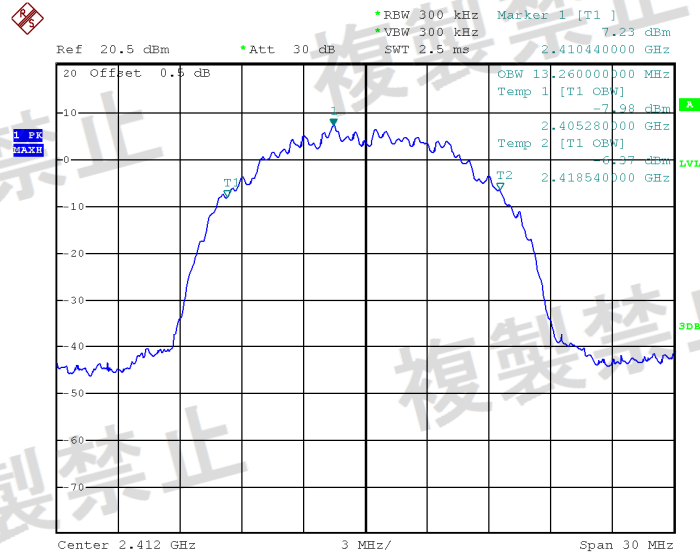
The EUT was programmed to be in continuously transmitting mode.

6.3.8 Test Result

Modulation	Channel	Occupied Frequency Bandwidth (MHz)	Limit (MHz)
802.11b	Low	13.26	< 26
	Middle	13.20	< 26
	High	13.32	< 26
802.11g	Low	16.50	< 26
	Middle	16.50	< 26
	High	16.50	< 26
802.11n-HT20	Low	17.34	< 26
	Middle	17.34	< 26
	High	17.34	< 26
802.11n-HT40	Low	34.56	26-40
	Middle	34.56	26-40
	High	34.56	26-40
802.11b (2484MHz)	14CH	19.02	< 26

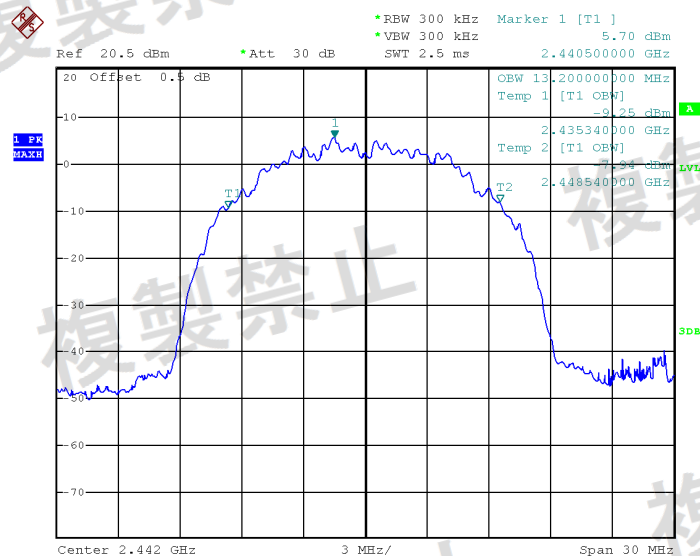
Test Plots

802.11b: Low Channel



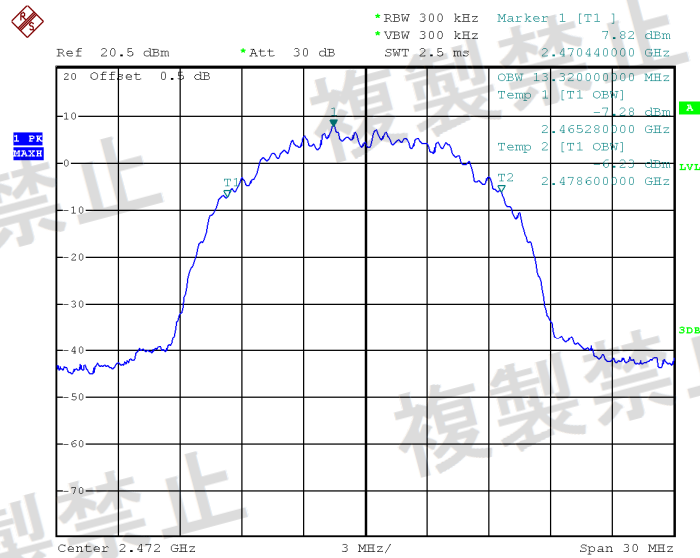
Date: 27.MAR.2024 16:15:25

802.11b: Middle Channel



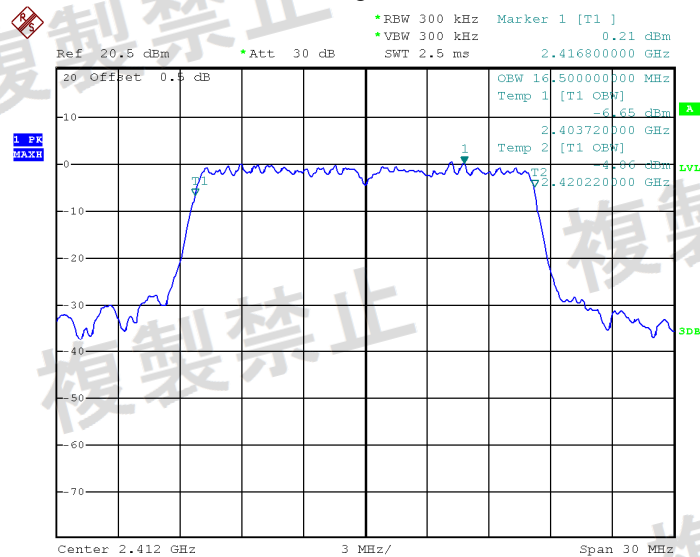
Date: 27.MAR.2024 16:20:41

802.11b: High Channel



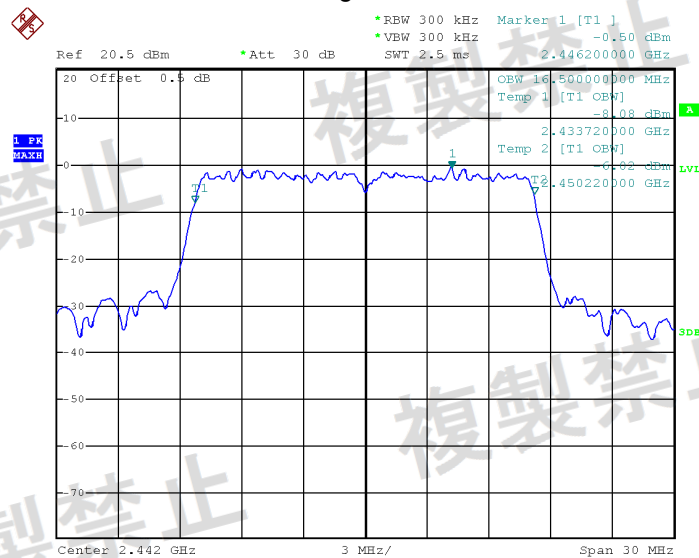
Date: 27.MAR.2024 16:19:42

802.11g: Low Channel



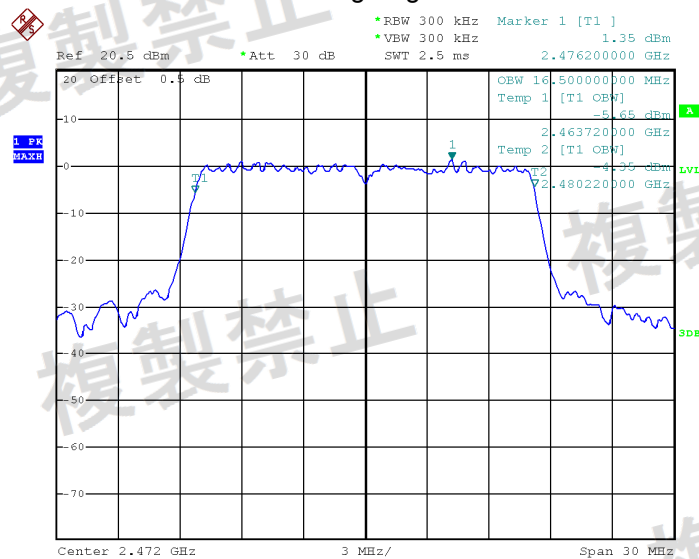
Date: 27.MAR.2024 16:23:55

802.11g: Middle Channel



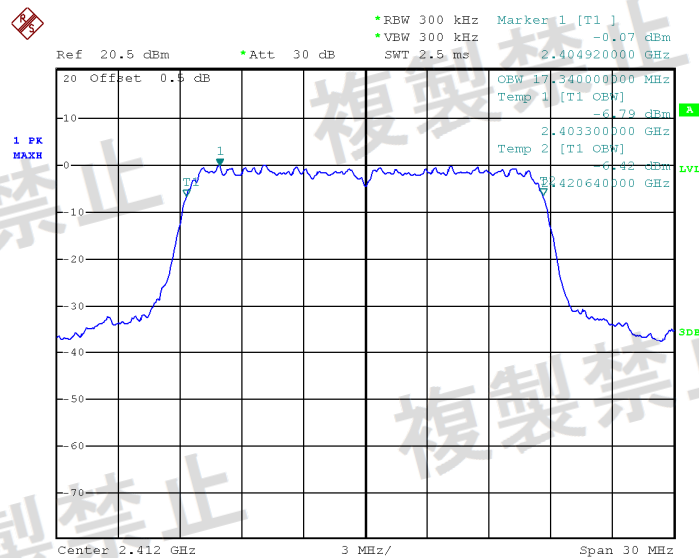
Date: 27.MAR.2024 16:23:14

802.11g: High Channel



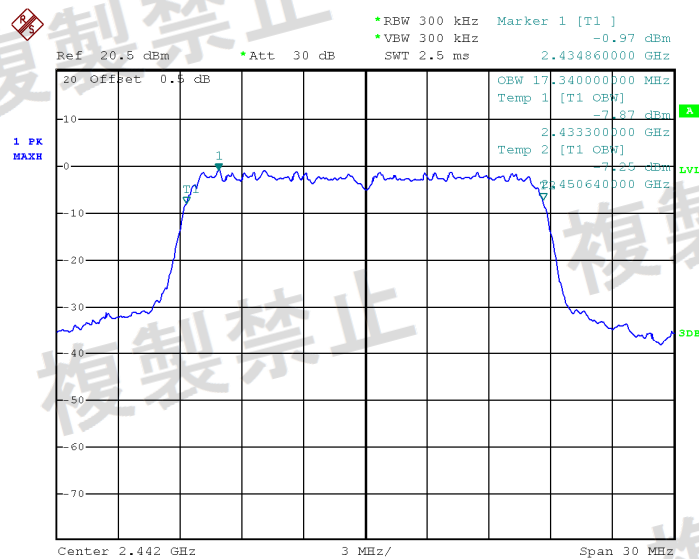
Date: 27.MAR.2024 16:22:37

802.11n-HT20: Low Channel



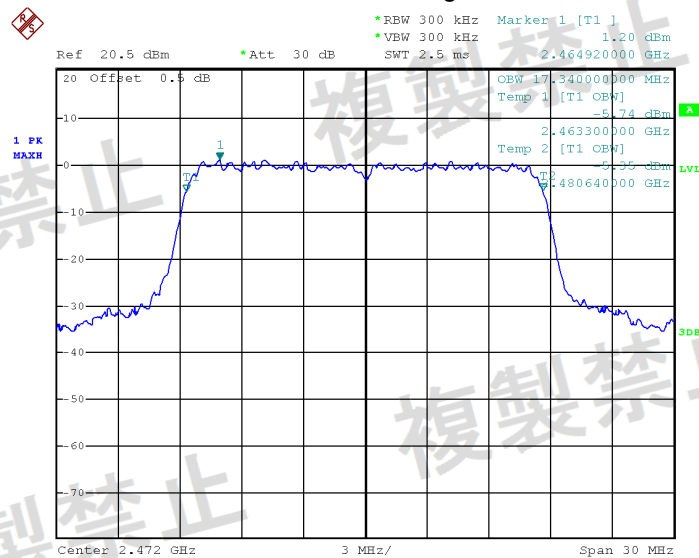
Date: 27.MAR.2024 16:56:37

802.11n-HT20: Middle Channel



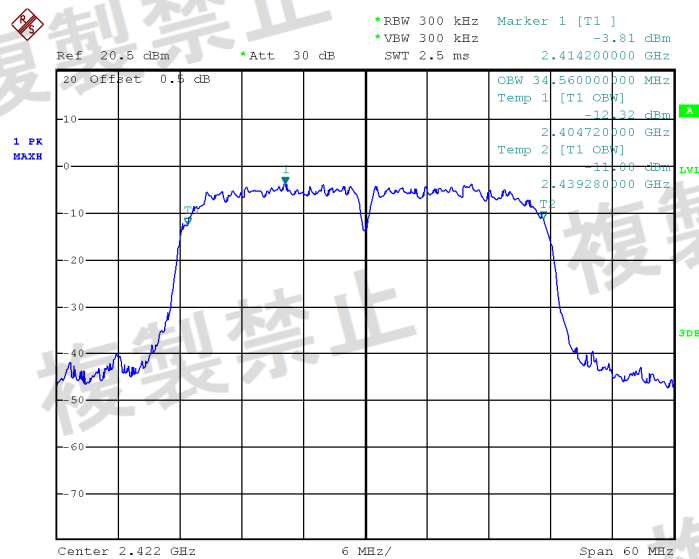
Date: 27.MAR.2024 16:58:08

802.11n-HT20: High Channel



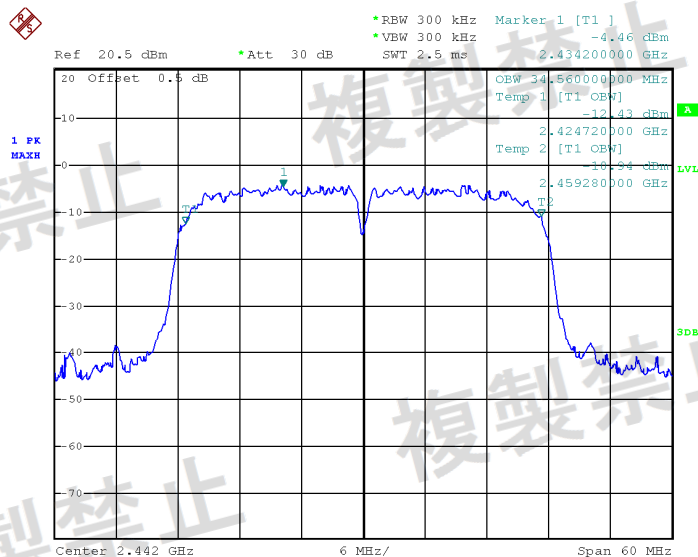
Date: 27.MAR.2024 16:58:44

802.11n-HT40: Low Channel



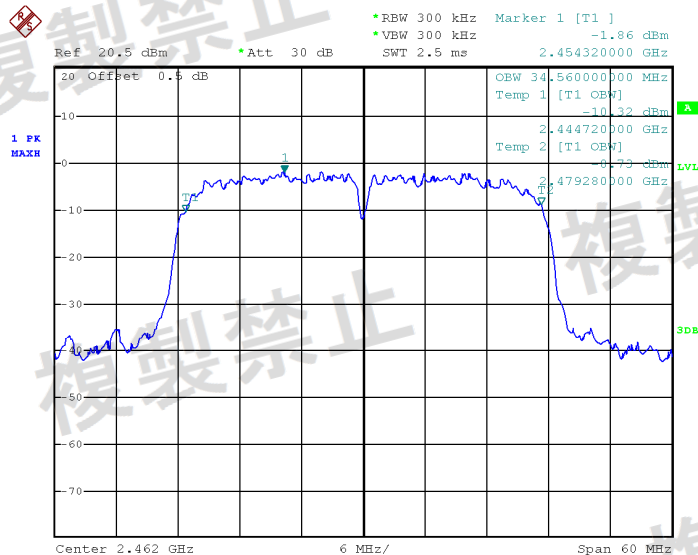
Date: 27.MAR.2024 16:52:43

802.11n-HT40: Middle Channel



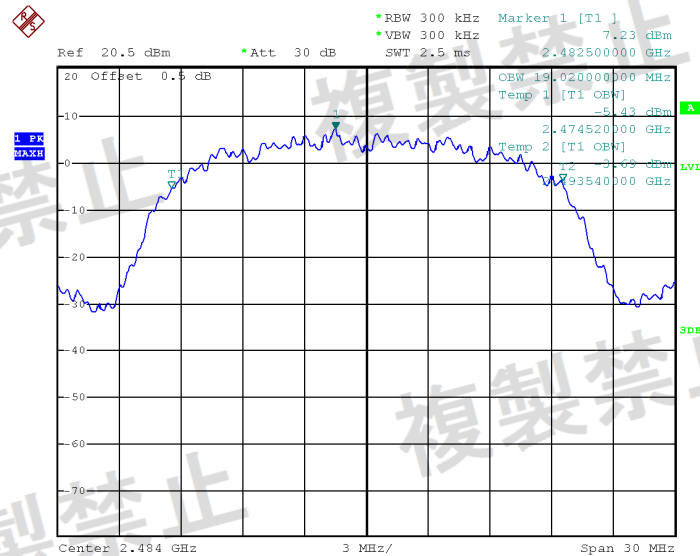
Date: 27.MAR.2024 16:52:16

802.11n-HT40: High Channel



Date: 27.MAR.2024 16:51:45

802.11b(2484MHz): Low Channel



Date: 2.APR.2024 11:17:07

6.4 Spread Bandwidth

6.4.1 Test Requirement

Article 2 Paragraph 1 of Item 19, Article 2 Paragraph 1 of Item 19-2.

6.4.2 Limit

According to Article 2-1, in spread spectrum systems, spread bandwidth (which refers to a frequency bandwidth with an upper limit and lower limit such that each of the mean powers radiated above the upper frequency limit and below the lower frequency limit is equal to 5 % of the total mean power radiated).

Article 2 Paragraph 1 of Item 19-2: This shall be 500 kHz or more.

6.4.3 Measuring Instruments and setting

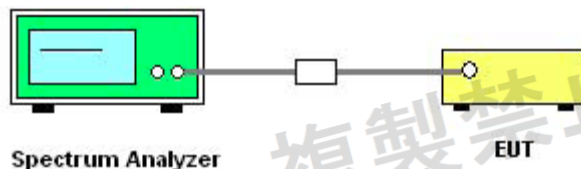
Please refer to section 4 in this report. The following table is the setting of the spectrum.

Spectrum Parameter	Setting
Span Frequency	30MHz/60MHz
RB/VB	300 kHz

6.4.4 Test Procedures

- Setting of SA is following as: RB:300kHz / VB:300kHz / SPAN: 30MHz;60MHz / Sweep time: Auto /Sweep Mode: Continuous sweep / Detect mode: Positive peak / Trace mode: Max hold
- EUT have transmitted the maximum modulation signal and fixed channelize (For DSSS or OFDM Device) or continuous maximum power of hopping mode (For FHSS Device). SA set to 99% of occupied bandwidth to measure occupied bandwidth. The limit is less than 26MHz (For DSSS or OFDM Device) or 83.5MHz (For FHSS Device).
- SA set to 90% of occupied bandwidth to measure Spread Spectrum Bandwidth and must greater than 500kHz.
- Spread Spectrum Factor = Spread Spectrum Bandwidth / modulation rate of EUT.
- Spread Spectrum Factor limit is greater than 5

6.4.5 Test Setup Layout



6.4.6 Test Deviation

There is no deviation with the original standard.

Waltek Testing Group Co., Ltd.

<http://www.waltek.com.cn>

6.4.7 EUT Operation during Test

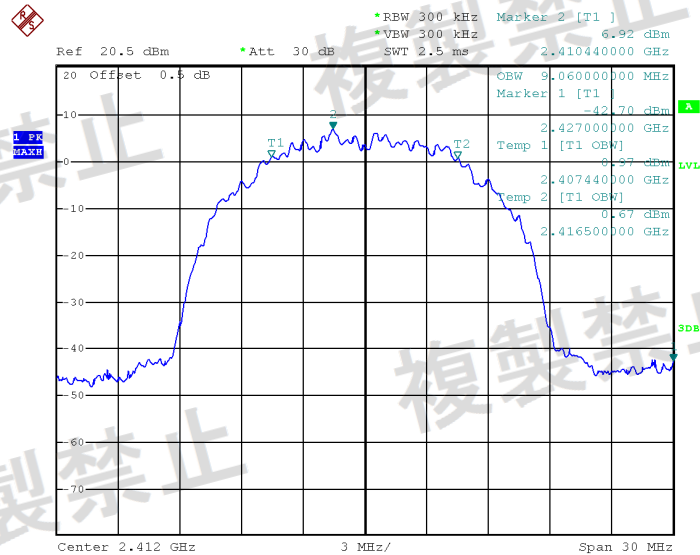
The EUT was programmed to be in continuously transmitting mode.

6.4.8 Test Result

Modulation	Channel	Spread Bandwidth (MHz)	Limit (MHz)
802.11b	Low	9.060	N/A
	Middle	9.060	N/A
	High	9.060	N/A
802.11g	Low	14.700	N/A
	Middle	14.700	N/A
	High	14.700	N/A
802.11n-HT20	Low	15.360	N/A
	Middle	15.300	N/A
	High	15.300	N/A
802.11n-HT40	Low	29.280	N/A
	Middle	29.400	N/A
	High	29.280	N/A
802.11b (2484MHz)	Low	14.400	> 0.5

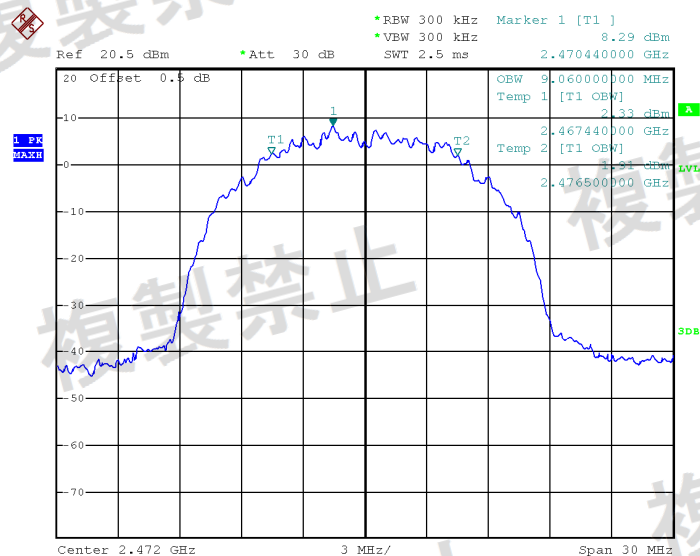
Test Plots

802.11b: Low Channel



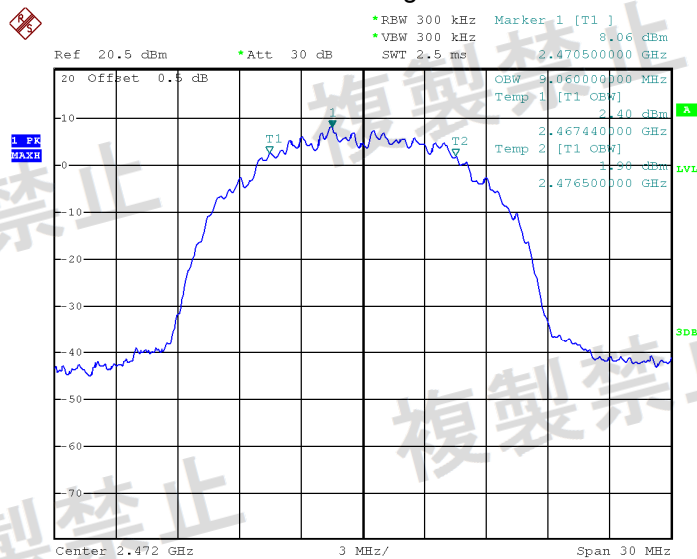
Date: 27.MAR.2024 16:37:26

802.11b: Middle Channel



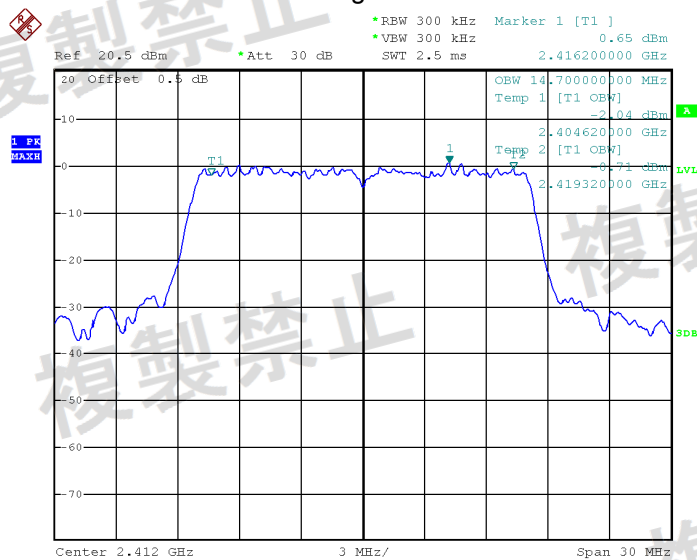
Date: 27.MAR.2024 16:34:16

802.11b: High Channel



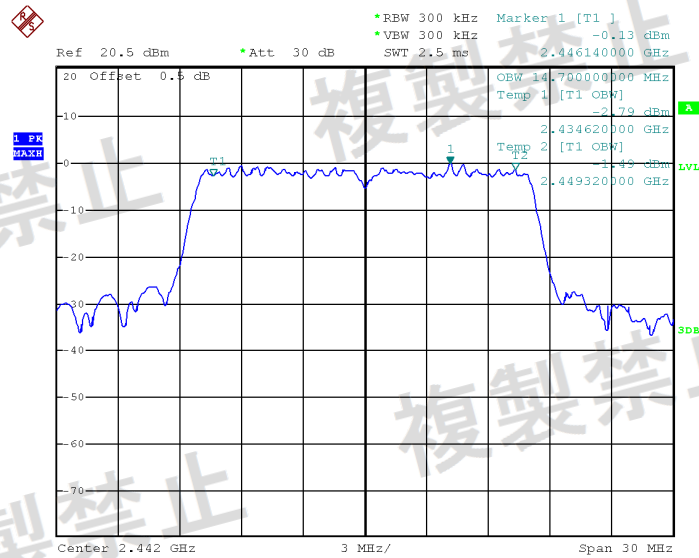
Date: 27.MAR.2024 16:36:39

802.11g: Low Channel



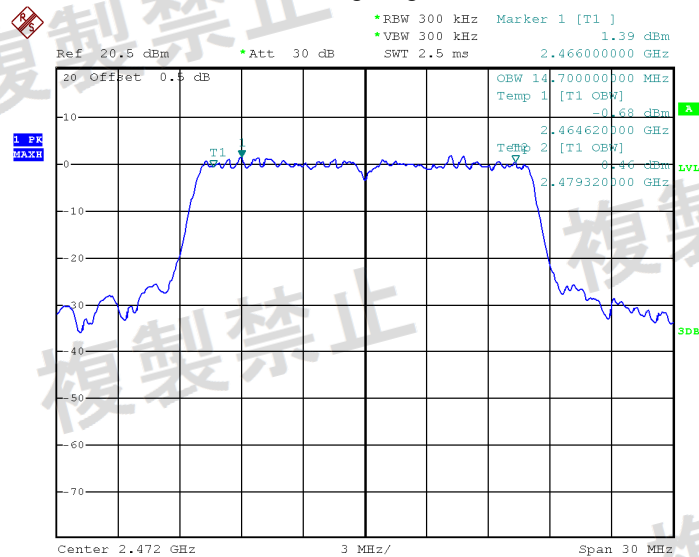
Date: 27.MAR.2024 16:27:55

802.11g: Middle Channel



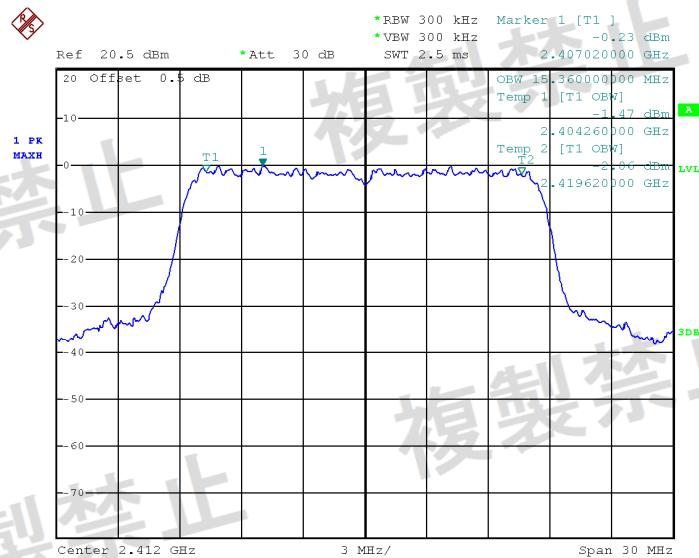
Date: 27.MAR.2024 16:28:54

802.11g: High Channel



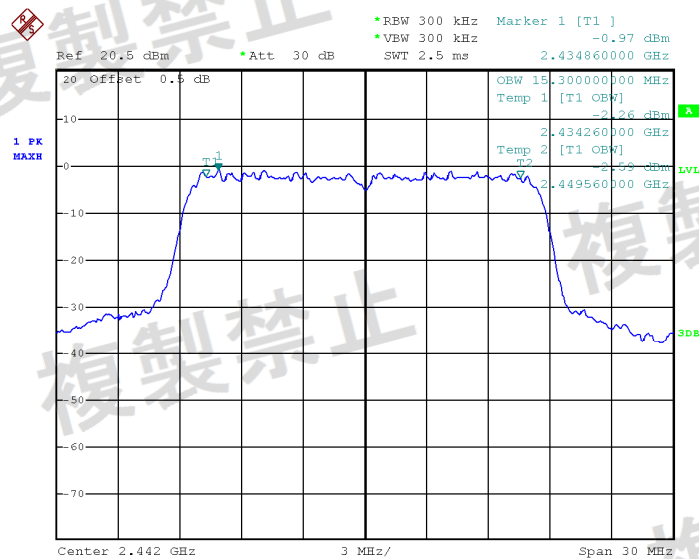
Date: 27.MAR.2024 16:29:41

802.11n-HT20: Low Channel



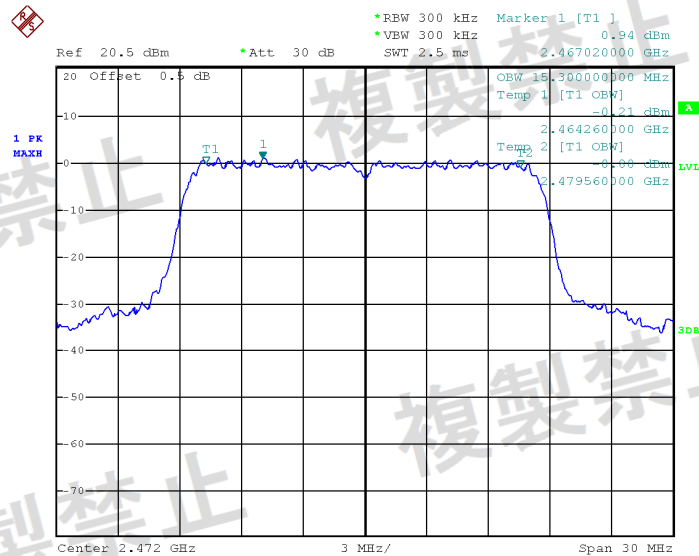
Date: 27.MAR.2024 16:57:07

802.11n-HT20: Middle Channel



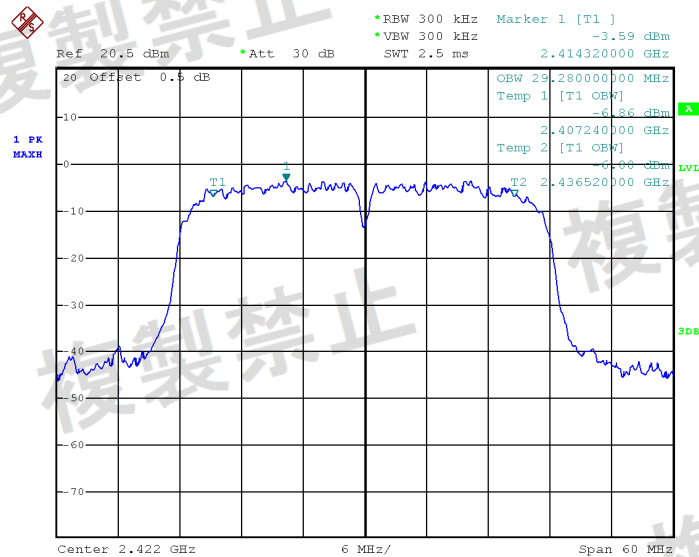
Date: 27.MAR.2024 16:57:44

802.11n-HT20: High Channel



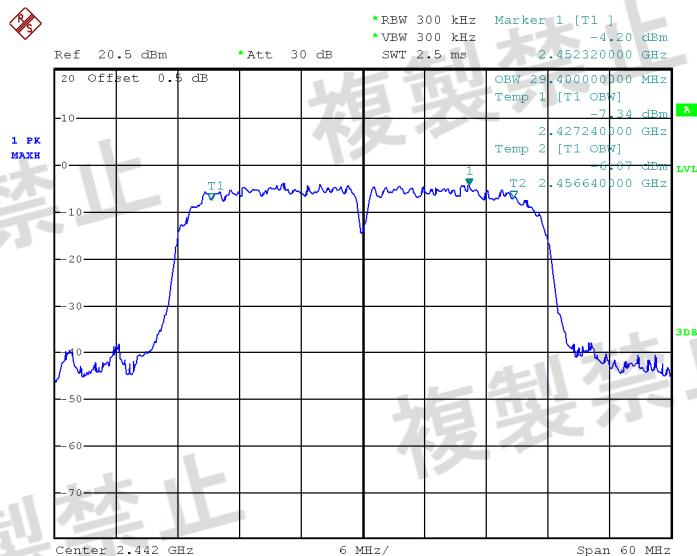
Date: 27.MAR.2024 16:59:13

802.11n-HT40: Low Channel



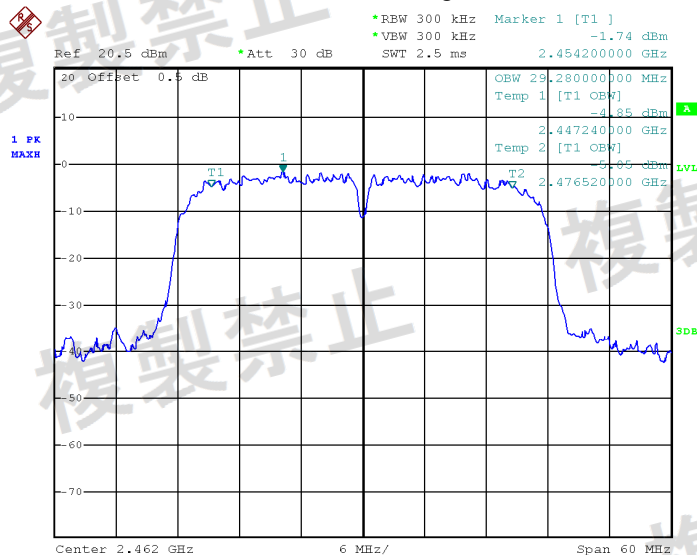
Date: 27.MAR.2024 16:49:21

802.11n-HT40: Middle Channel



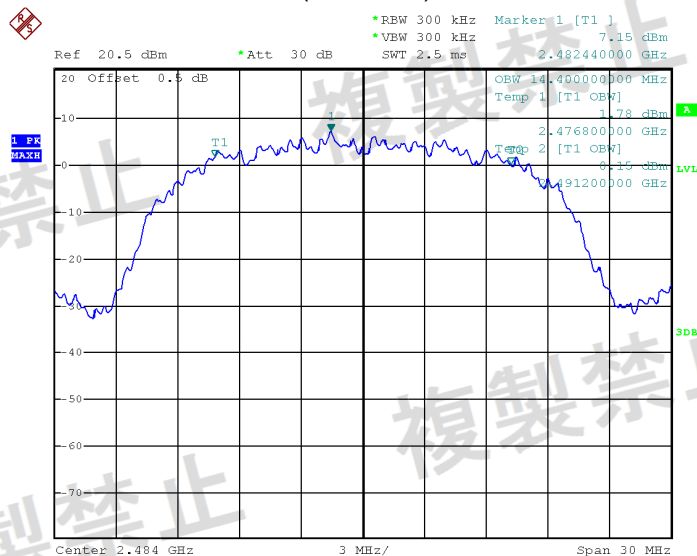
Date: 27.MAR.2024 16:49:57

802.11n-HT40: High Channel



Date: 27.MAR.2024 16:50:41

802.11b(2484MHz): Low Channel



Date: 2.APR.2024 11:17:28

6.5 Process Gain

6.5.1 Test Requirement

Article 2 Paragraph 1 of Item 19-2:

Process gain (value obtained by dividing the spread bandwidth by a frequency equal to the transmission rate of the modulation signal; this also applies hereafter) in the spread spectrum system shall be 10 or more.

6.5.2 Result

Result= Spread bandwidth/ Transmission rate of the modulation signal

Modulation	Spread bandwidth (Mhz)	Transmission rate of the modulation signal(Mbps)	Result
DSSS (802.11b(2484MHz))	14.400	1.375	10.473

6.6 Spurious Emission Intensity

6.6.1 Test Requirement

Article 2 Paragraph 1 of Item 19, Article 2 Paragraph 1 of Item 19-2.

6.6.2 Limit

According to Article 2-1, 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: a. $2,387\text{MHz} \leq f \leq 2,400\text{MHz}$ and $2,483.5\text{MHz} < f \leq 2,496.5\text{MHz}$ 25 $\mu\text{W}/\text{MHz}$ or less b. $2,387\text{MHz} > f$ and $2,496.5\text{MHz} < f$ 2.5 $\mu\text{W}/\text{MHz}$ or less.

6.6.3 Measuring Instruments and setting

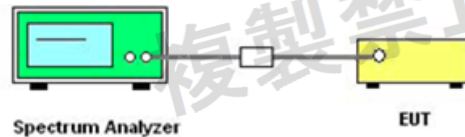
Please refer to section 4 in this report. The following table is the setting of the spectrum.

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

6.6.4 Test Procedures

- 1 EUT have transmitted the maximum modulation signal and fixed channelize.
- 2 Setting of SA is following as: RB/VB: 100KHz(below 1GHz);1MHz(Above 1GHz)/ Sweep time: Auto / Sweep Mode: Continuous sweep / Detect mode: Positive peak / Trace mode: Max hold
- 3 Setting of SA is following as 30MHz and stop frequency 2387MHz Then to mark peak reading value + cable loss shall be less than 2.5 $\mu\text{W}/\text{MHz}$.
- 4 SA adjusted to start frequency 2387MHz and stop frequency 2400MHz. Then to mark peak reading value + cable loss shall be less than 25 $\mu\text{W}/\text{MHz}$.
- 5 SA adjusted to start frequency 2483.5MHz and stop frequency 2496.5MHz Then to mark peak reading value + cable loss shall be less than 25 $\mu\text{W}/\text{MHz}$
- 6 SA adjusted to start frequency 2496.5MHz and stop frequency 12500MHz Then to mark peak reading value + cable loss shall be less than 2.5 $\mu\text{W}/\text{MHz}$
- 7 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.

6.6.5 Test Setup Layout



6.6.6 Test Deviation

There is no deviation with the original standard.

6.6.7 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

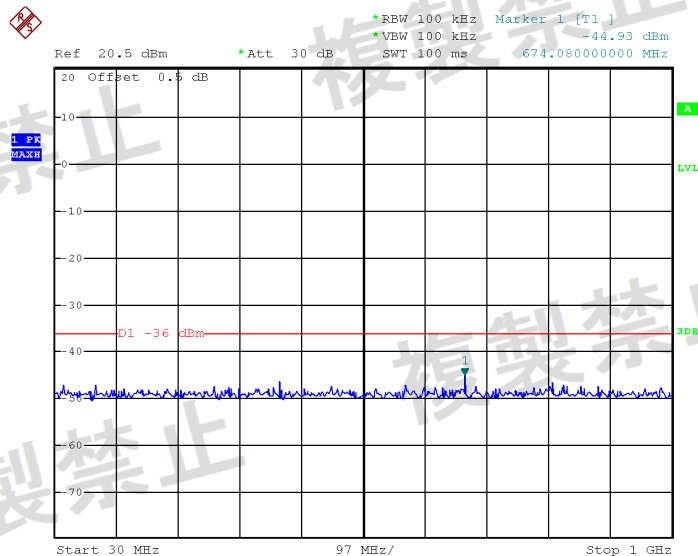
6.6.8 Test Result

Modulation	Channel	Test Mode	Test Result
802.11b	Low	Transmitting	PASS
	Middle	Transmitting	PASS
	High	Transmitting	PASS
802.11g	Low	Transmitting	PASS
	Middle	Transmitting	PASS
	High	Transmitting	PASS
802.11n-HT20	Low	Transmitting	PASS
	Middle	Transmitting	PASS
	High	Transmitting	PASS
802.11n-HT40	Low	Transmitting	PASS
	Middle	Transmitting	PASS
	High	Transmitting	PASS
802.11b (2484MHz)	14CH	Transmitting	PASS
Remark: Only the worst case was reported(802.11n HT20 and 802.11b(2484MHz))			

Modulation	Channel	Band (GHz)	Frequency (GHz)	Max Value (dBm)	Max Value ($\mu\text{W}/\text{MHz}$)	Limit ($\mu\text{W}/\text{MHz}$)
802.11n- HT20	Low	0.03-1	0.6740800	-44.93	0.32	2.5
		1-2.387	2.3759040	-47.94	0.02	2.5
		2.387-2.4	2.3967760	-41.38	0.07	25
		2.4835-2.4965	2.4888300	-49.63	0.01	25
		2.4965-12.5	7.3181870	-36.31	0.23	2.5
	Middle	0.03-1	0.3830800	-45.74	0.27	2.5
		1-2.387	1.2607560	-49.23	0.01	2.5
		2.387-2.4	2.3999740	-47.32	0.02	25
		2.4835-2.4965	2.4942700	-50.18	0.01	25
		2.4965-12.5	7.3181870	-37.03	0.20	2.5
	High	0.03-1	0.3830800	-46.10	0.25	2.5
		1-2.387	2.3426160	-48.91	0.01	2.5
		2.387-2.4	2.3931360	-47.61	0.17	25
		2.4835-2.4965	2.4837340	-37.54	0.18	25
		2.4965-12.5	7.2981800	-37.77	0.17	2.5
802.11b (2484MHz)	14CH	0.03-1	0.7458600	-38.92	1.28	2.5
		1-2.387	2.4463360	-33.61	0.44	2.5
		2.387-2.4	2.4707920	-24.21	3.79	25
		2.4835-2.4965	2.4984040	-26.89	2.05	25
		2.4965-12.5	2.5100000	-35.60	0.28	2.5

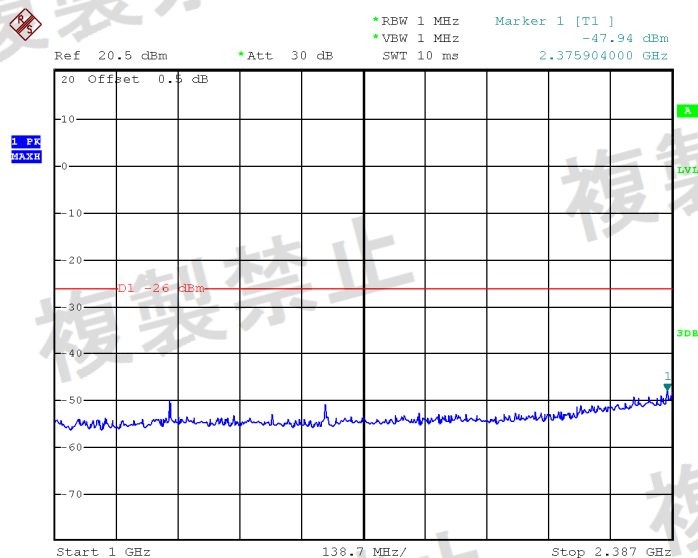
Test Plots (802.11n HT20)

Low Channel Band 1 0.03-1GHz



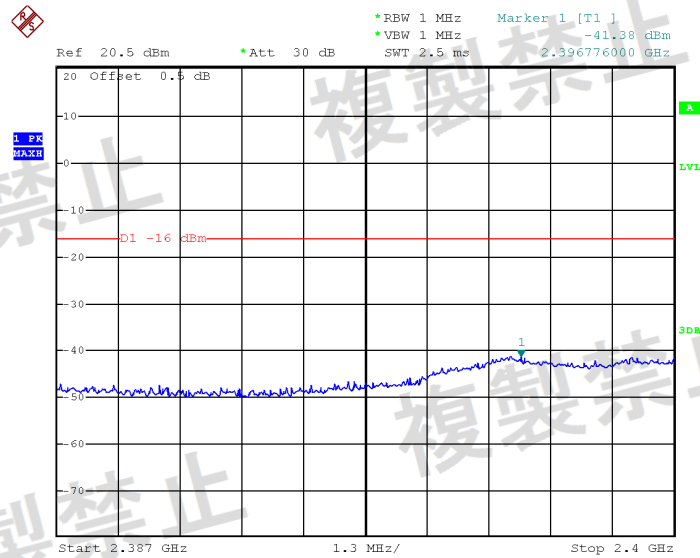
Date: 2.APR.2024 11:21:36

Low Channel Band 2 1-2.387GHz



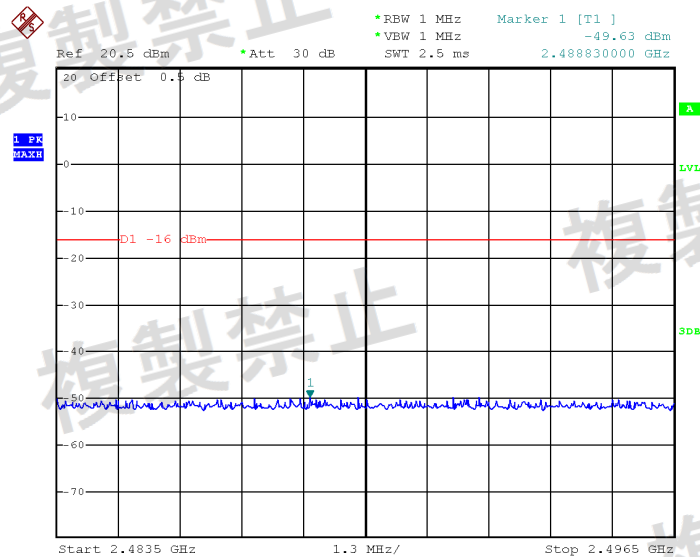
Date: 2.APR.2024 11:22:11

Low Channel Band 3 2.387-2.4GHz



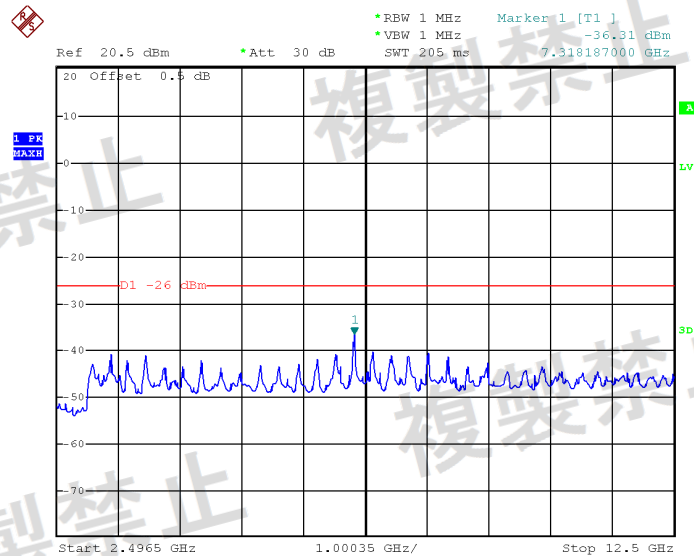
Date: 2.APR.2024 11:22:41

Low Channel Band 4 2.4835-2.497GHz



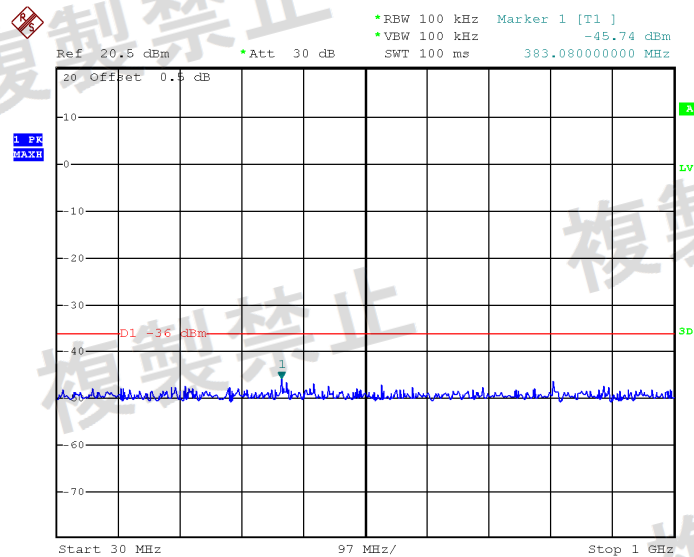
Date: 2.APR.2024 11:23:08

Low Channel Band 5 2.497-12.5GHz



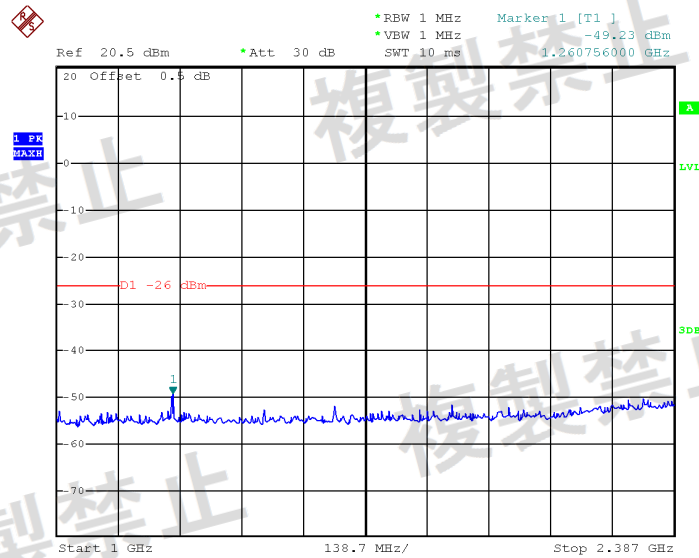
Date: 2.APR.2024 11:23:36

Middle Channel Band 1 0.03-1GHz



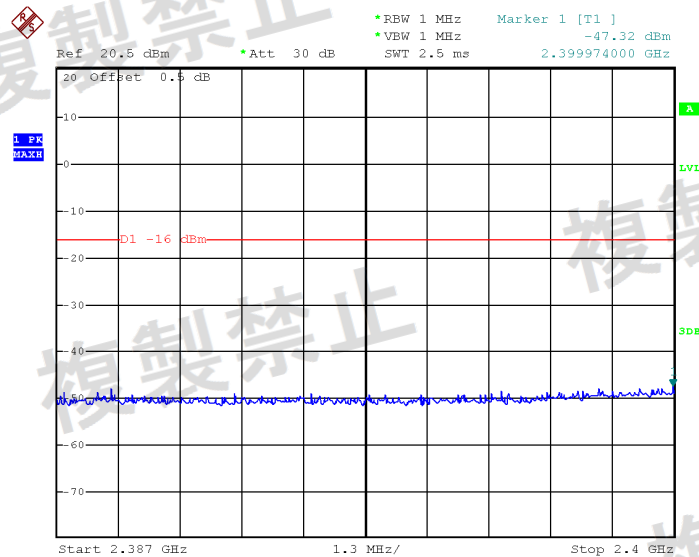
Date: 2.APR.2024 11:25:51

Middle Channel Band 2 1-2.387GHz



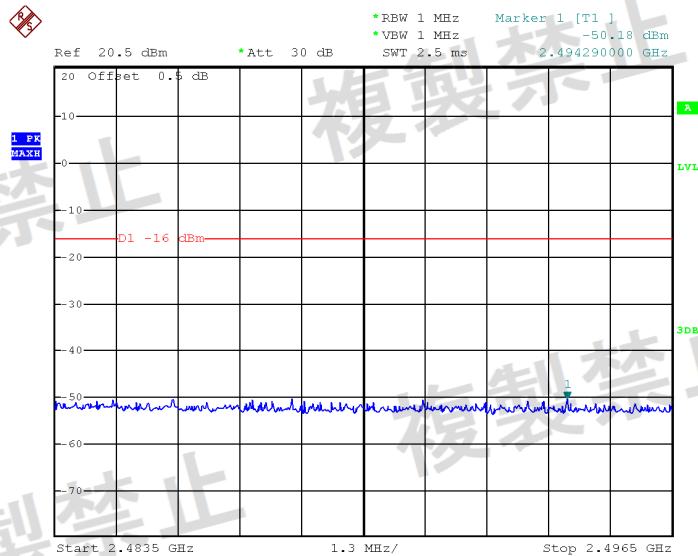
Date: 2.APR.2024 11:27:06

Middle Channel Band 3 2.387-2.4GHz



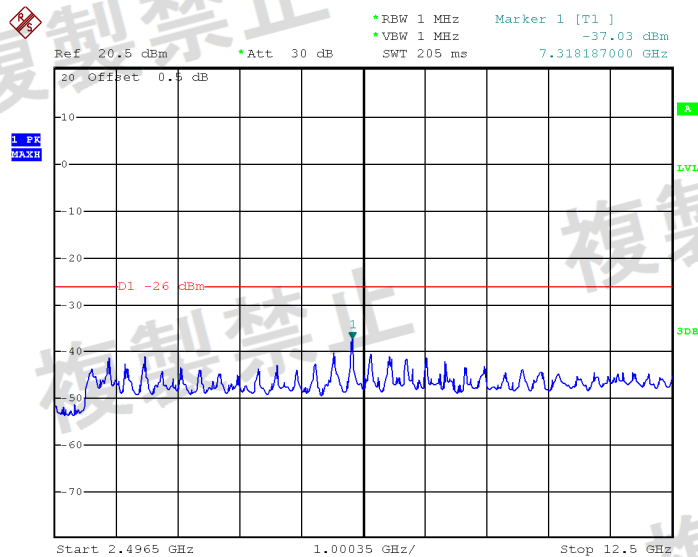
Date: 2.APR.2024 11:27:35

Middle Channel Band 4 2.4835-2.497GHz



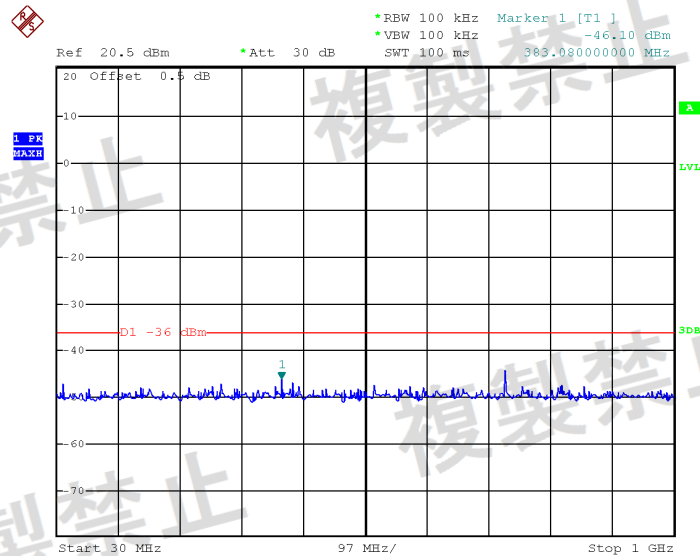
Date: 2.APR.2024 11:27:50

Middle Channel Band 5 2.497-12.5GHz



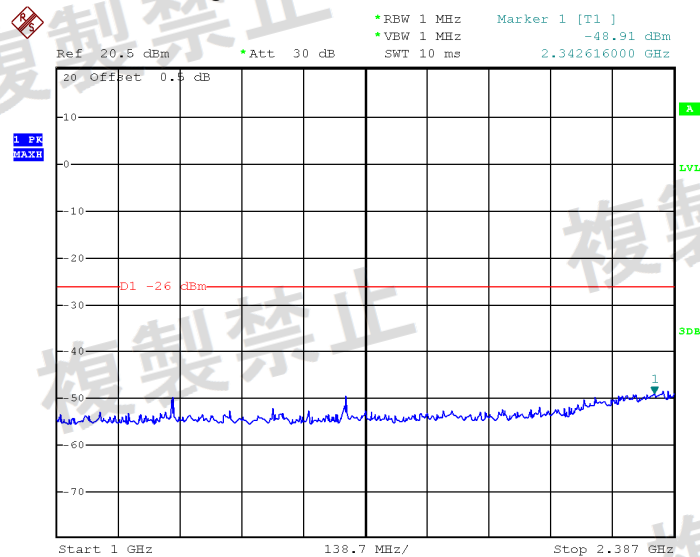
Date: 2.APR.2024 11:28:14

High Channel Band 1 0.03-1GHz



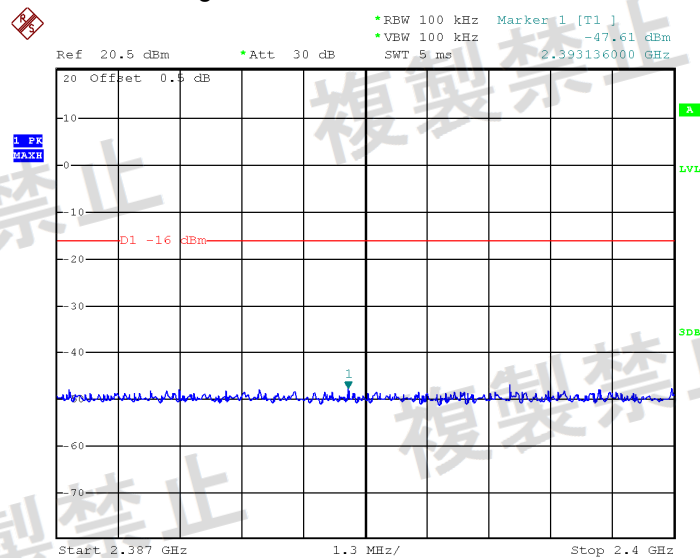
Date: 2.APR.2024 11:29:06

High Channel Band 2 1-2.387GHz



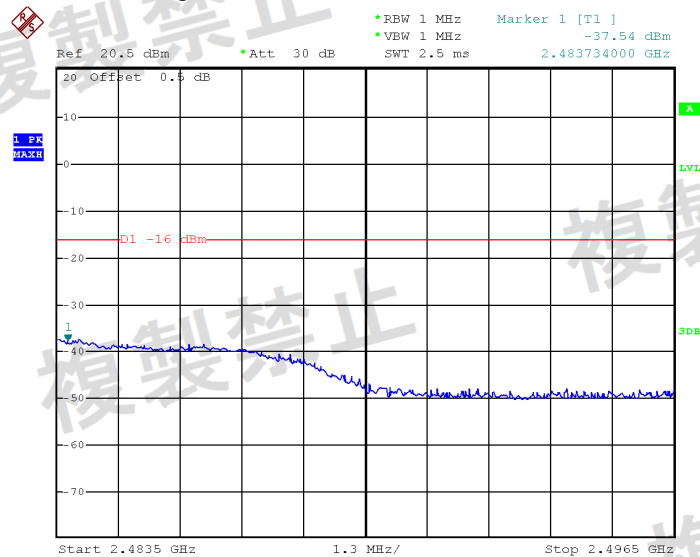
Date: 2.APR.2024 11:30:36

High Channel Band 3 2.387-2.4GHz



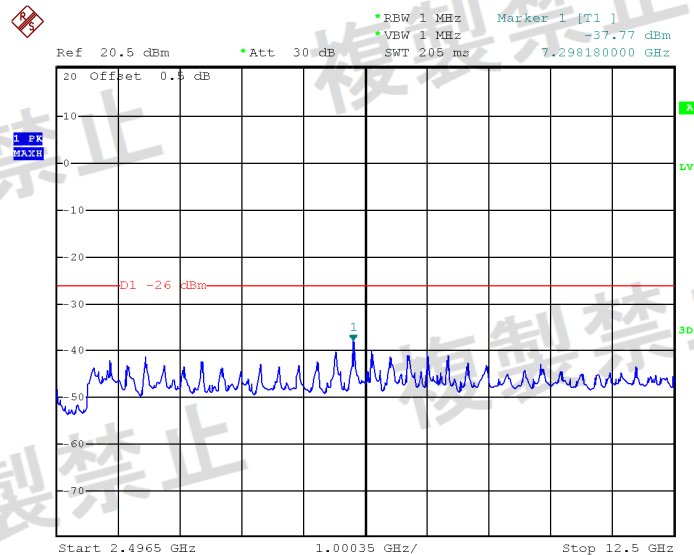
Date: 2.APR.2024 11:29:43

High Channel Band 4 2.4835-2.497GHz



Date: 2.APR.2024 11:31:43

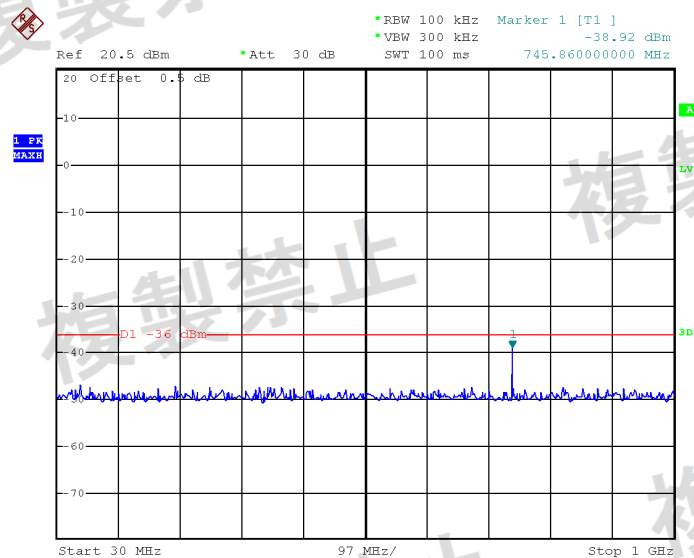
High Channel Band 5 2.497-12.5GHz



Date: 2.APR.2024 11:32:19

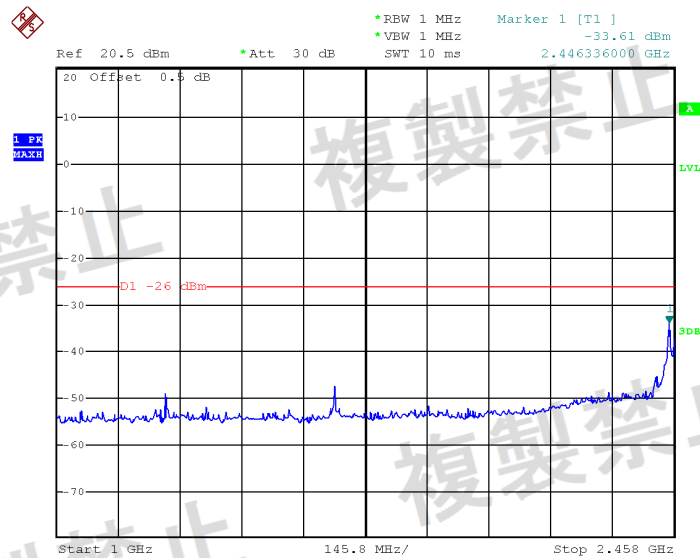
802.11b(2484MHz)

14CH Band 1 0.03-1GHz



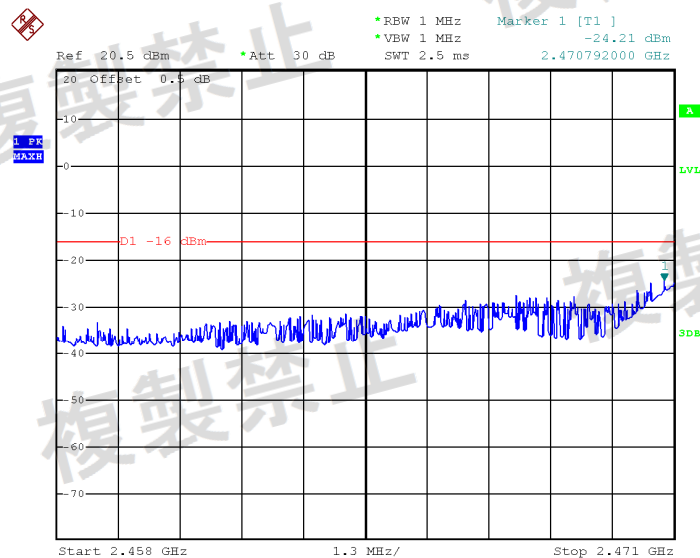
Date: 9.APR.2024 11:03:53

14CH Band 2 1-2.458GHz



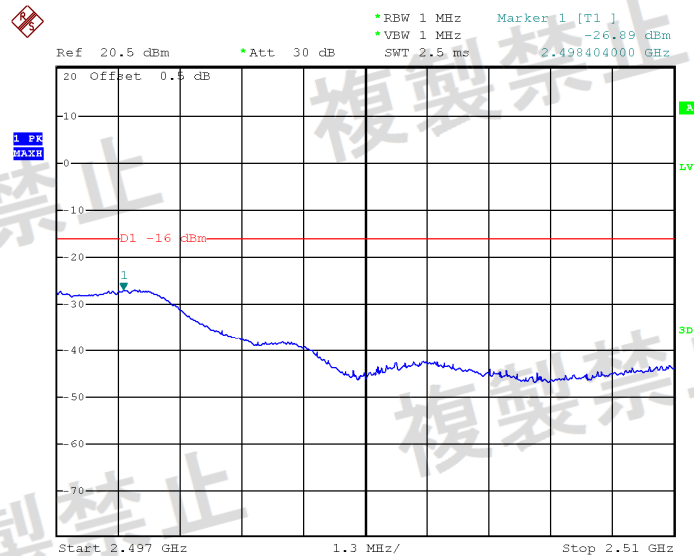
Date: 2.APR.2024 18:23:50

14CH Band 3 2.458-2.471GHz



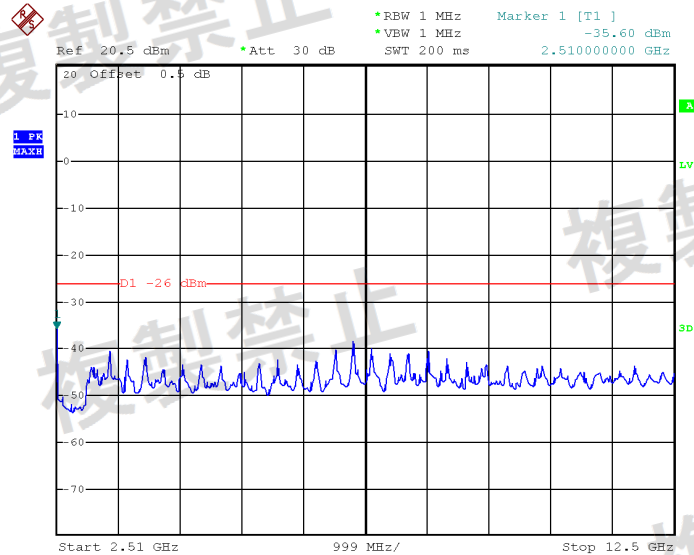
Date: 4.SEP.2023 16:03:45

14CH Band 4 2.497-2.51GHz



Date: 2.APR.2024 18:35:12

14CH Band 5 2.51-12.5GHz



Date: 2.APR.2024 18:25:53

6.7 Carrier Sense Capability

6.7.1 Test Requirement

Article 2 Paragraph 1 of Item 19.

6.7.2 Limit

EUT stop RF transmission signal after carrier inject to EUT.

6.7.3 Measuring Instruments and Setting

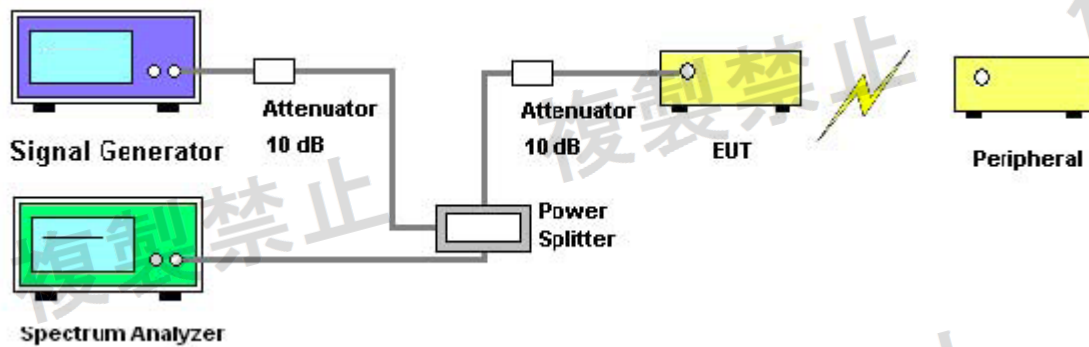
Please refer to section 4 in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
RB/VB	1MHz
Span	0MHz
Sweep	Continuous
Detector	Peak
Trigger mode	Video

6.7.4 Test Procedures

- 1 SSG adjusted the frequency as same as the EUT transmitted signal and emitted the absence of modulation from SSG and power level is $(On\ 22.79 + Gr - 20 \cdot \log(f)) [dBm]$ (Gr: dBi; f: MHz). Then turn off the RF signal of SSG.
- 2 EUT have transmitted the maximum modulation signal and fixed channelize.
- 3 Setting of SA is following as: RB:1MHz / VB:1MHz / SPAN: 50MHz / AT: 10dB / Ref: 0dBm / Sweep time: Auto / Sweep Mode: Continuous sweep / Detect mode: Positive peak.
- 4 SSG RF Signal On.
- 5 EUT shall be stop the transmitted any signal and SSG RF Signal Off. Then EUT will be continuous transmitted signal.

6.7.5 Test Setup Layout



6.7.6 Test Deviation

There is no deviation with the original standard.

6.7.7 EUT Operation during Test

The EUT was programmed to be in normal operation mode.

6.7.8 Test Result

Test Result: Compliant

7 Measurements of Receiving Equipment

7.1 Secondary Radiated Emissions

7.1.1 Test Requirement

Article 2 Paragraph 1 of Item 19, Article 2 Paragraph 1 of Item 19-2.

7.1.2 Limit

According to Article 2-1, 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.

7.1.3 Measuring Instruments and setting

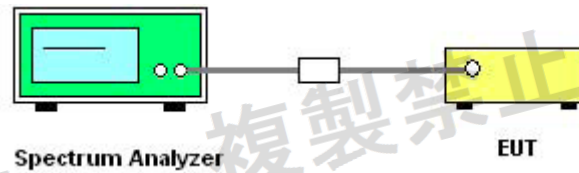
Please refer to section 4 in this report. The following table is the setting of the spectrum.

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

7.1.4 Test Procedures

- 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) / 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

7.1.5 Test Setup Layout



7.1.6 Test Deviation

There is no deviation with the original standard.

7.1.7 EUT Operation during Test

The EUT was programmed to be in receiving mode.

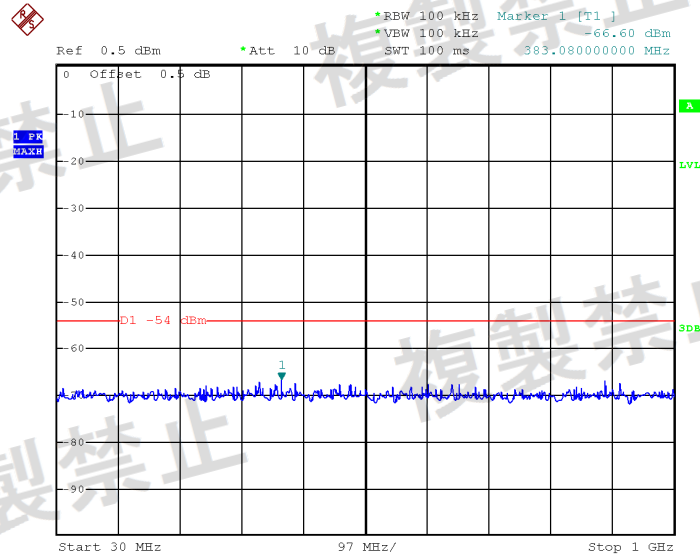
7.1.8 Test Result

Modulation	Channel	Test Mode	Test Result
802.11b	Low	Receiving	PASS
	Middle	Receiving	PASS
	High	Receiving	PASS
802.11g	Low	Receiving	PASS
	Middle	Receiving	PASS
	High	Receiving	PASS
802.11n-HT20	Low	Receiving	PASS
	Middle	Receiving	PASS
	High	Receiving	PASS
802.11n-HT40	Low	Receiving	PASS
	Middle	Receiving	PASS
	High	Receiving	PASS
802.11b (2484MHz)	14CH	Receiving	PASS
Remark: Only the worst case was reported(802.11n HT20 and 802.11b(2484MHz))			

Modulation	Channel	Band (GHz)	Frequency (GHz)	Max Value (dBm)	Max Value (nW)	Limit (nW)
802.11n-HT20	Low	0.03-1	0.383080	-66.60	0.22	4
		1-12.5	7.302000	-58.28	1.49	20
	Middle	0.03-1	0.383080	-65.58	0.28	4
		1-12.5	7.302000	-58.57	1.39	20
	High	0.03-1	0.854500	-66.75	0.21	4
		1-12.5	7.302000	-57.56	1.75	20
802.11b (2484MHz)	14CH	0.03-1	0.383080	-64.28	0.37	4
		1-12.5	7.302000	-56.95	2.02	20

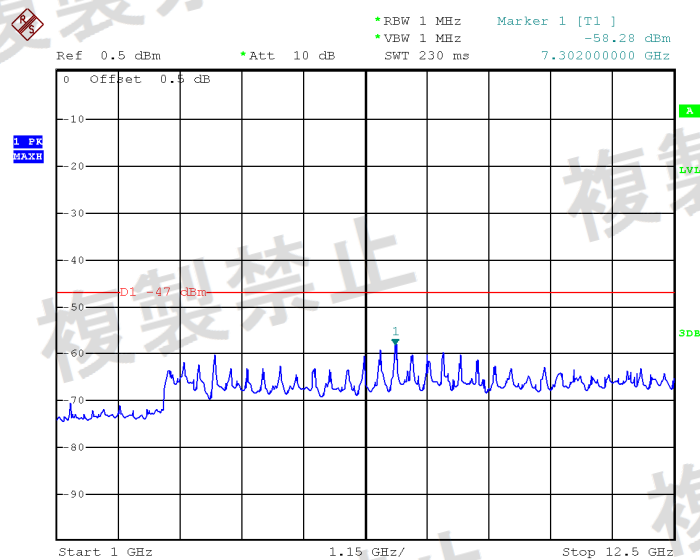
Test Plot 802.11n HT20

Low Channel Band 1 0.03-1GHz



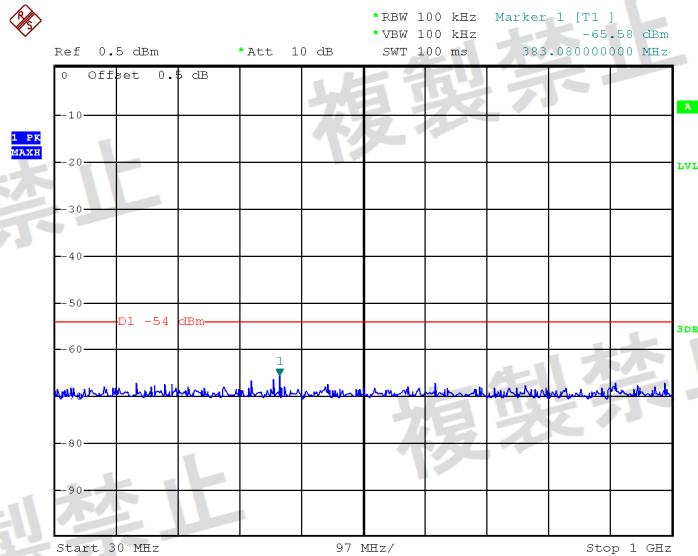
Date: 2.APR.2024 15:16:10

Low Channel Band 2 1-12.5GHz



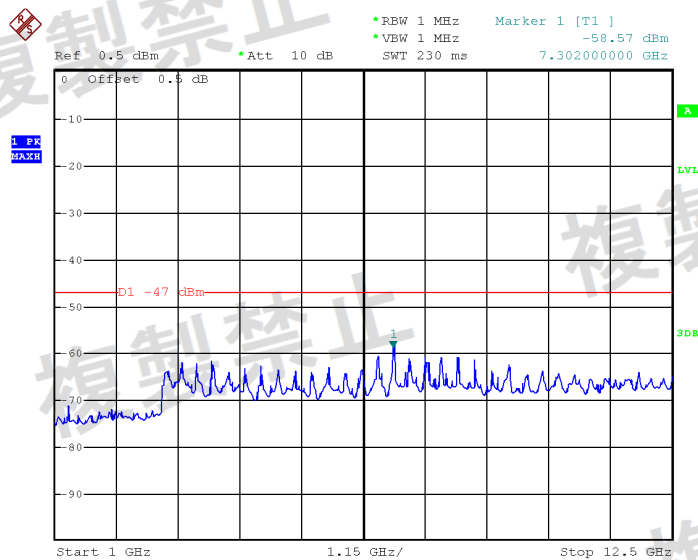
Date: 2.APR.2024 15:17:16

Middle Channel Band 1 0.03-1GHz



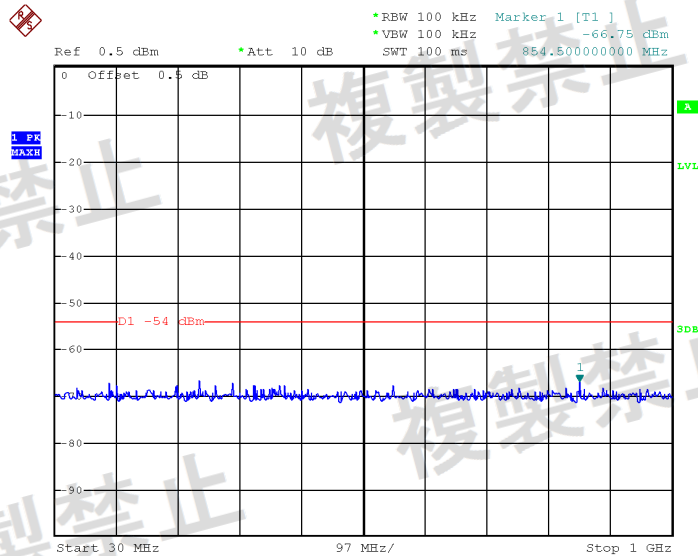
Date: 2.APR.2024 15:17:43

Middle Channel Band 2 1-12.5GHz



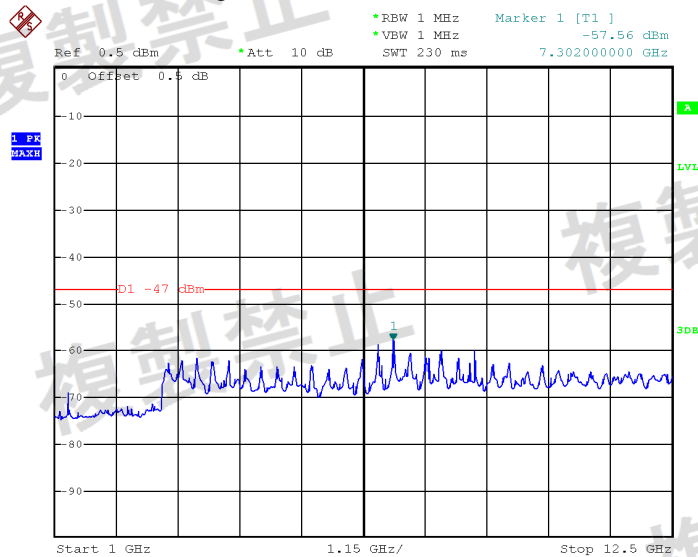
Date: 2.APR.2024 15:18:07

High Channel Band 1 0.03-1GHz



Date: 2.APR.2024 15:18:55

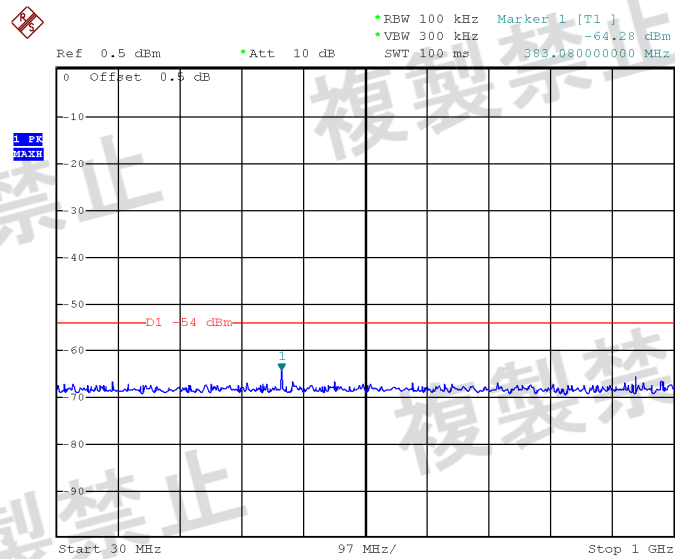
High Channel Band 2 1-12.5GHz



Date: 2.APR.2024 15:18:33

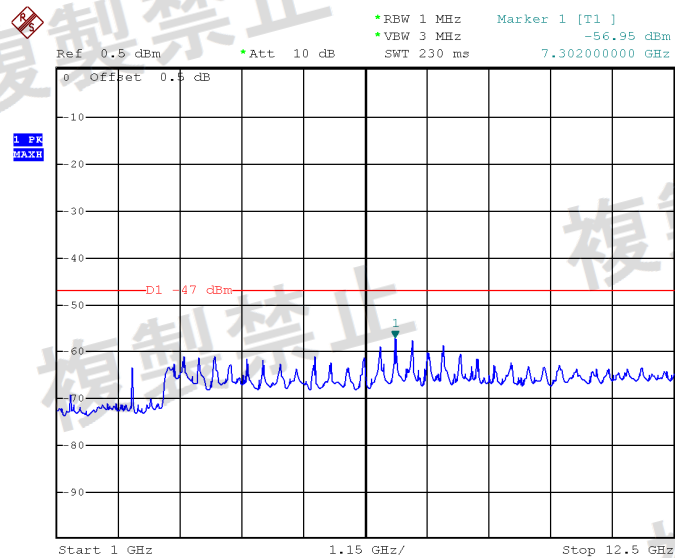
802.11b(2484MHz)

14CH Band 1 0.03-1GHz



Date: 9.APR.2024 10:55:45

14CH Band 2 1-12.5GHz



Date: 9.APR.2024 10:56:48

8 Measurements of Controlling Equipment

8.1 Interference prevention function

8.1.1 Test Requirement

ARIB STD-T66, Clause 3.4.1 (1)

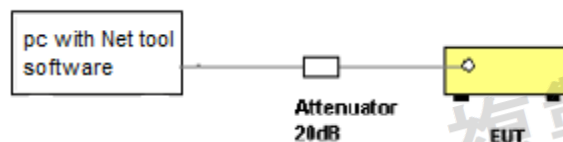
8.1.2 Conditions etc. of test equipment

- (1) The demodulator shall be able to demodulate the transmitting signal from the radio equipment and display contents of the identification code.
- (2) The opposite equipment shall be able to transmit the identification code as same as the transmitting signal from the radio equipment

8.1.3 Test Procedure

- (1) The radio equipment with automatic transmitting function of identification code A. Transmit the assigned identification code from the radio equipment. B. Confirm the identification code received by the demodulator.
- (2) The radio equipment with automatic receiving function of identification code A. Transmit the assigned identification code from the opposite equipment.

8.1.4 Test Setup Layout



8.1.5 Test Deviation

There is no deviation with the original standard.

8.1.6 EUT Operation during Test

The EUT was programmed to be in normal operation mode.

8.1.7 Test Result

Item	Modulation	Test mode	Results
Identification code	802.11b	Normal Operation	PASS
Identification code	802.11g	Normal Operation	PASS
Identification code	802.11n-HT20	Normal Operation	PASS
Identification code	802.11n-HT40	Normal Operation	PASS
Identification code	802.11b(2484MHz)	Normal Operation	PASS

EUT BD Address: 06:C8:9E:A9:ED:99

Plot:

dd-wrt.com ... control panel

Firmware: DD-WRT v24-sp2 (08/14/14) kongac
Time: 01:19:18 up 19 min, load average: 0.16, 0.16, 0.13
WAN IPv4: 0.0.0.0

Setup Wireless Services Security Access Restrictions NAT / QoS Administration Status

Router WAN LAN Wireless Bandwidth Syslog Sys-Info

Wireless

Wireless Status

Interface: wlo

MAC Address: [E8:FC:AF:8C:7D:34](#)

Radio: Radio is On

Mode: AP

Network: N-Only

SSID: dd-wrt

Channel: 11

TX Power: Auto

Rate: 130 Mbps

Encryption - Interface wlo: Disabled

Help more...

MAC Address:
This is the router's MAC address, as seen on your local, wireless network.

Network:
As selected from the wireless tab, this will display the wireless mode (Mixed, G-Only, B-Only or Disabled) used by the network.

OUI Search:
By clicking on any MAC address, you will obtain the organizationally unique identifier of the network interface (IEEE Standards OUI database search).

Wireless Packet Info

Received (RX)	202 OK, no error	100%
Transmitted (TX)	930 OK, 1 errors	100%

Wireless Nodes

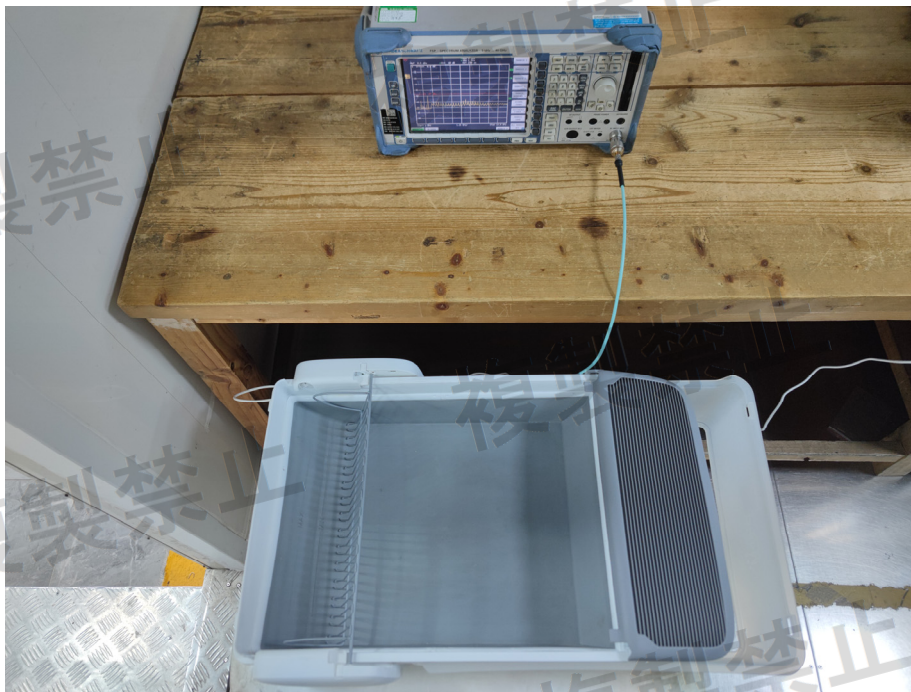
Clients

MAC Address	Interface	Uptime	Tx Rate	Rx Rate	Signal	Noise	SNR	Signal Quality
06:C8:9E:A9:ED:99	eth1	0:01:46	1M	1M	-39	-92	53	68%

Site Survey Wiviz survey

Auto-Refresh is On

9 Test Setup View



10 Photographs - Constructional Details

Note: Please refer to appendix: Appendix-M1 Pro-Photos.

===== End of Report =====