

Radio Test Report

Report No.: RJ180302C27C-1

Test Model: EMD1

Received Date: Jun. 21, 2018

Test Date: Jul. 05, 2018

Issued Date: Jul. 10, 2018

Applicant: EnGenius Technologies

Address: 1580 Scenic Avenue, Costa Mesa, CA92626

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

Lab Address: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C.)

Test Location: No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)



This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification. The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.

Table of Contents

Release Control Record	4
1 Certificate of Conformity	5
2 Summary of Test Results	6
2.1 Test Instruments	7
2.2 Measurement Uncertainty	7
2.3 Modification Record	7
3 General Information	8
3.1 General Description of EUT	8
3.2 Description of Test Modes	9
3.3 Test Conditions	9
3.4 Assembly	9
3.5 Test Setup	9
3.6 Antenna Specifications	10
3.6.1 Antenna Gain	10
3.6.2 Antenna Pattern	10
4 Test Results	11
4.1 Frequency Tolerance Measurement	11
4.1.1 Limits of Frequency Tolerance Measurement	11
4.1.2 Test Setup	11
4.1.3 Test Results	12
4.2 Occupied Bandwidth Measurement (99% Power Bandwidth)	20
4.2.1 Limits of Occupied Bandwidth Measurement	20
4.2.2 Test Setup	20
4.2.3 Test Results	20
4.3 Spurious Emissions for Transmitter Measurement	32
4.3.1 Limits of Spurious Emissions	32
4.3.2 Test Setup	33
4.3.3 Test Results	33
4.4 Out-band Leakage Power	58
4.4.1 Limits of Out-band Leakage Power (EIRP)	58
4.4.2 Test Setup	60
4.4.3 Test Results	61
4.5 Adjacent Channel Leakage Power	69
4.5.1 Limits of Adjacent Channel Leakage Power	69
4.5.2 Test Setup	69
4.5.3 Test Result	70
4.6 Antenna Power Measurement	74
4.6.1 Limits of Antenna Power	74
4.6.2 Test Setup	74
4.6.3 Test Results	75
4.7 Spurious Emission for Receiver	79
4.7.1 Limits of Spurious Emission for Receiver	79
4.7.2 Test Setup	79
4.7.3 Test Result	80
4.8 Burst Length	90
4.8.1 Limits of Burst Length	90
4.8.2 Test Setup	90
4.8.3 Test Result	90
4.9 Interference Prevention Function	102
4.9.1 Limits of Interference Prevention Function	102
4.9.2 Test Setup	102
4.9.3 Test Results	102
4.10 Carrier Sense Capability	103

4.10.1 Measuring System Block Diagram	103
4.10.2 Measuring Operation Procedures	103
4.10.3 Level of the Ambient Carrier	104
4.10.4 Test Result.....	104
4.11 Number of Carriers within 1 MHz Bandwidth in OFDM.....	105
4.11.1 Limit of Number of Carriers	105
4.11.2 Test Setup.....	105
4.11.3 Test Result.....	105
5 Photographs of the Test Configuration	106
Appendix - Information on the Testing Laboratories.....	107



Release Control Record

Issue No.	Description	Date Issued
RJ180302C27C-1	Original release.	Jul. 10, 2018

1 Certificate of Conformity

Product: AC1300 Dual-Band Mesh AP

Brand: EnGenius

Test Model: EMD1

Sample Status: Engineering sample


Applicant: EnGenius Technologies

Test Date: Jul. 05, 2018

Standards: ARIB STD-T71 (V6.1), MIC notice 88 Appendix 45
Certification Ordinance Article 2-1-19-3

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

Prepared by :


Suntee Liu / Specialist

Date:

Jul. 10, 2018

Approved by :


Bruce Chen / Project Engineer

Date:

Jul. 10, 2018

2 Summary of Test Results

The EUT has been tested according to the following specifications:

Notice 88 Appendix 45 Reference	ARIB STD-T71 Ref.	Report Reference	Parameter	Test Results (Note)
General Provisions				
C	3.1.2 (4)	4.1	Frequency tolerance	C
D	3.1.2 (11)	4.2	Occupied bandwidth	C
E	3.1.2 (8)	4.4	Spurious emissions	C
Transmitting Equipment				
F	3.1.2 (3)	4.6	Tolerance of antenna power	C
--	--	--	SAR	NA
Transmitting Antenna				
--	--	3.4	Type, configuration, etc. of transmitting antenna	C
--	--	3.5	Direction pattern of transmitting antenna	C
Receiving Equipment				
H	3.1.3 (1)	4.7	Spurious emissions of receiver	C
--	--	3.4	Refer to all articles for transmitting antenna	C
Operating Frequency				
--	3.1.8 (1)	3.4	High frequency / modulation section can not be opened easily	C
--	3.1.1(1)	3.1	Communication method	C
--	3.1.2 (1)	3.1	Modulation method	C
--	3.1.2 (6)	3.1	Signal transmission rate	C
--	3.1.2 (7)	4.8	Burst length	C
--	3.1.2 (2)	4.6	Antenna power	C
--	3.1.2 (5)	4.6	Isotropically radiated power	C
--	3.1.2 (1)	4.11	Number of carriers within 1 MHz bandwidth in OFDM	C
--	3.1.2 (10)	4.5	Out-band leakage power	C
--	3.1.2 (9)	4.5	Adjacent channel leakage power	C
--	3.1.4.1	4.9	Interference Prevention Function	C
--	3.1.7(1)	4.10	Carrier sense capability	C
--	--	--	Dynamic frequency selection	NA
Note 1: C = Conform NC = Not Conform NT = Not Tested NA = Not Applicable				

2.1 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration	Calibration Authority
Spectrum Analyzer / Rohde & Schwarz	FSP 40	100040	Aug. 18, 2017	Aug. 17, 2018	ETC
Signal Generator / Agilent	E4438C	MY49071692	Sep. 20, 2017	Sep. 19, 2018	ETC
Power Meter / Anritsu	ML2495A	0824012	Aug. 18, 2017	Aug. 17, 2018	ETC
Power Sensor / Anritsu	MA2411B	0738171	Aug. 18, 2017	Aug. 17, 2018	ETC
Power Splitter/ Agilent	11667B	52805	NA	NA	NA
Power Splitter/ Agilent	11667B	11628	NA	NA	NA

NOTE: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2.2 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in TR 100 028-1.

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

Parameter	Uncertainty
Occupied Bandwidth	491.896Hz
Spurious emissions	3.508dB
Output power density	2.889dB
Out of band radiated power	3.93dB
Frequency Tolerance	6805.18Hz

2.3 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	AC1300 Dual-Band Mesh AP
Brand	EnGenius
Test Model	EMD1
Sample Status	Engineering sample
Nominal Voltage	100-240Vac, 50-60Hz
Modulation Type	256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDM
Modulation Technology	OFDM
Transfer Rate	802.11a: 54/48/36/24/18/12/9/6Mbps 802.11n: up to 300Mbps 802.11ac: up to 867Mbps
Operating Frequency	5150~5250MHz
Number of Channel	802.11a/n(HT20)/ac(VHT20): 4 802.11n(HT40)/ac(VHT40): 2 802.11ac(VHT80): 1
Rated RF Output Power Density	Refer to Note
Conducted RF Output Power Density	Refer to Note
Radiated RF Output Power Density	Refer to Note
Antenna Type	Refer to item 3.6.1
Antenna Connector	Refer to item 3.6.1
Accessory Device	NA
Data Cable Supplied	NA

Note:

- The EUT incorporates a MIMO function. Physically, the EUT provides 2 completed transmitters and 2 receivers.

Modulation Mode	TX Function
802.11a	2TX
802.11n (HT20)	2TX
802.11n (HT40)	2TX
802.11ac (VHT20)	2TX
802.11ac (VHT40)	2TX
802.11ac (VHT80)	2TX

- The power table is listed as below.

	Rated power (mW/MHz)	Conducted RF output power density (mW/MHz)	Radiated RF output power density (mW/MHz)
W52			
802.11a	3	2.440	9.493
802.11n (HT20)	3	2.460	9.570
802.11n (HT40)	2	1.153	4.487
802.11ac (VHT80)	1	0.580	2.257

3.2 Description of Test Modes

Operated in 5150 ~ 5250MHz band (W52):

Modes	Channel	Freq. (MHz)
802.11a/n(HT20)/ ac(VHT20)	36	5180
	40	5200
	44	5220
	48	5240
802.11n(HT40)/ ac(VHT40)	38	5190
	46	5230
802.11ac(VHT80)	42	5210

By means of test software (QCARCT V 3.0.249.0) provided by manufacture, the power levels during the tests were set according to the following codes:

Operated in 5150 ~ 5250MHz band (W52):

802.11a		802.11n(HT20) / 802.11ac(VHT20)		802.11n(HT40) / 802.11ac(VHT40)		802.11ac(VHT80)	
Channel	Power Setting	Channel	Power Setting	Channel	Power Setting	Channel	Power Setting
36	12	36	12	38	11.5	42	11.5
40	11.5	40	11.5	46	11.5		
48	12	48	12				

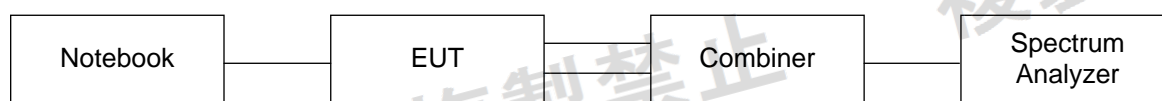
3.3 Test Conditions

Test Conditions	Voltage (Vac)
V_{normal}	100
$V_{max.}$	110
$V_{min.}$	90

3.4 Assembly

The EUT used ultrasonic welding to seal the product. Separating the two parts (i.e operating of the housing) was only possible by means of brute force.

3.5 Test Setup

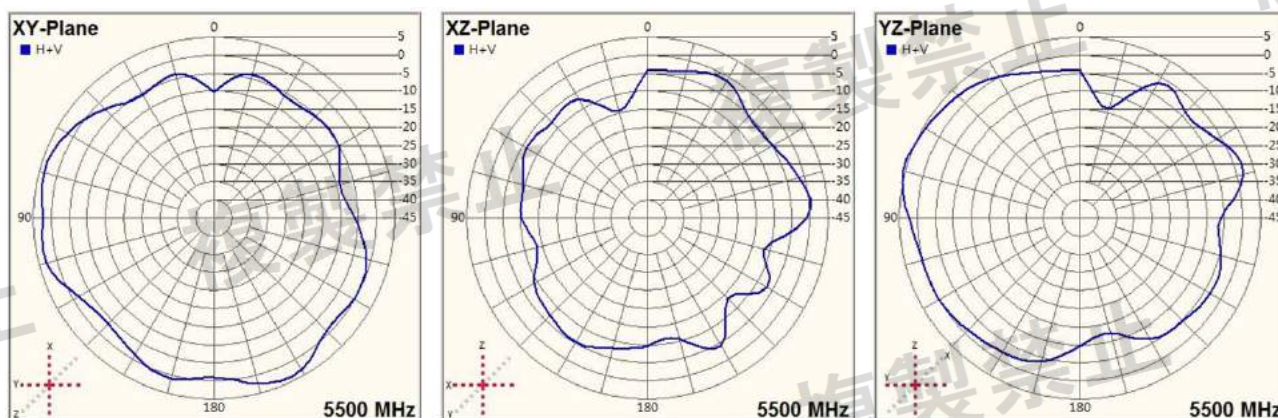


3.6 Antenna Specifications

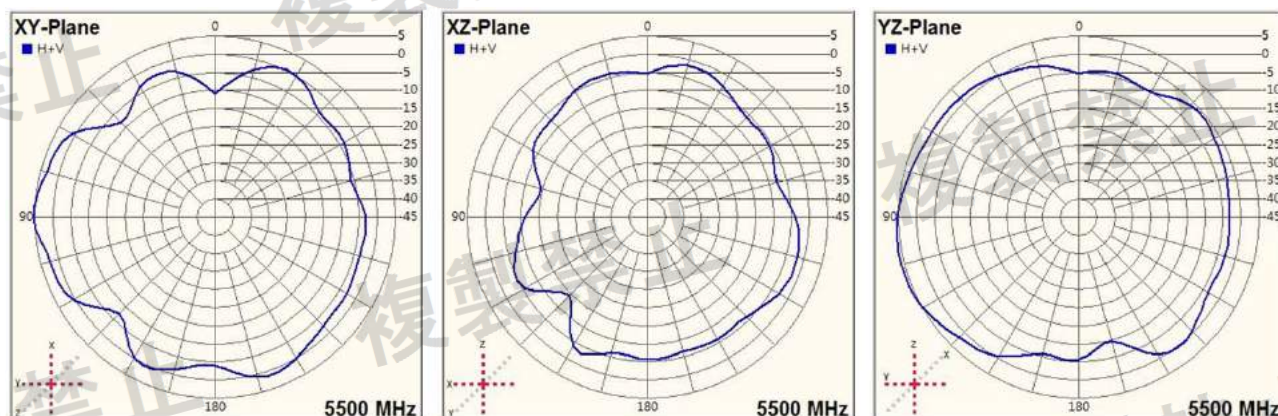
3.6.1 Antenna Gain

No.	Type	Connector	Gain(dBi)	
			2.4GHz	5GHz
1	PIFA	I-PEX	2.0	5.6
2	PIFA	I-PEX	2.2	5.9

3.6.2 Antenna Pattern



Ant 1_radiation pattern_5.50 GHz



Ant 2_radiation pattern_5.50 GHz

4 Test Results

4.1 Frequency Tolerance Measurement

4.1.1 Limits of Frequency Tolerance Measurement

Tolerance of frequency shall be +/- 20ppm.

4.1.2 Test Setup

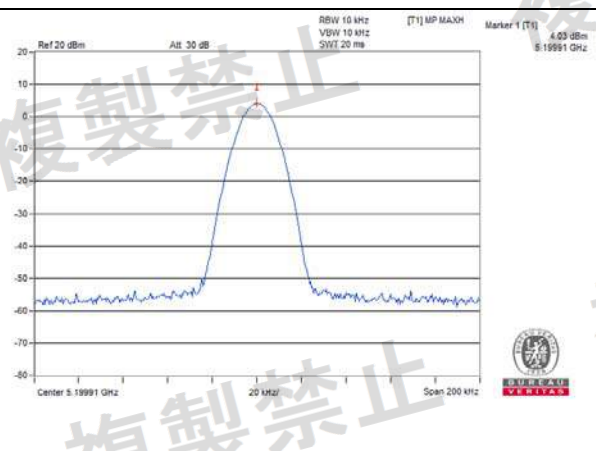
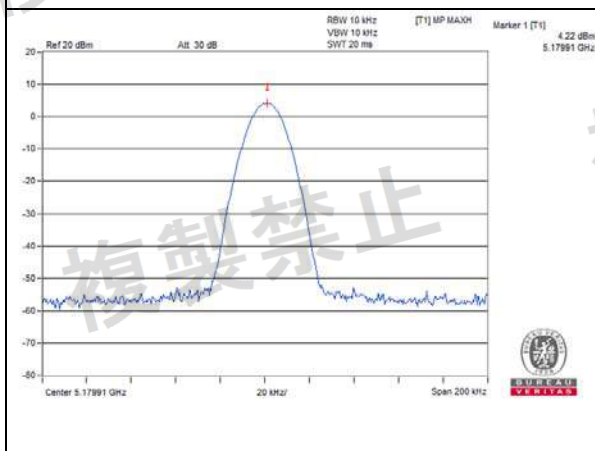


4.1.3 Test Results

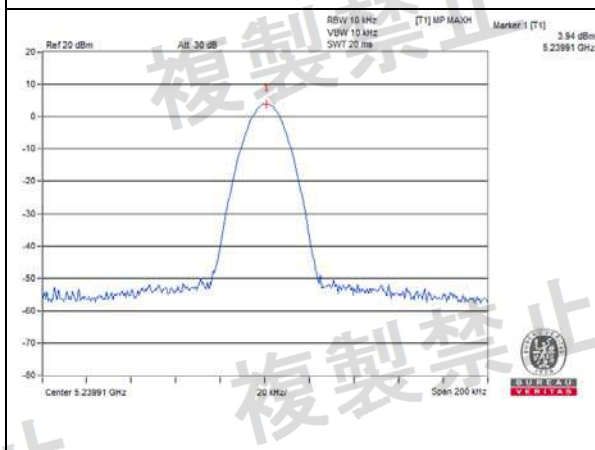
802.11a / 802.11n (HT20)

Environmental Conditions		25 deg.C, 68% RH					
Channel	Frequency (MHz)	Voltage _{normal}		Voltage _{max.}		Voltage _{min.}	
		Carrier frequency (MHz)	Frequency tolerance (ppm)	Carrier frequency (MHz)	Frequency tolerance (ppm)	Carrier frequency (MHz)	Frequency tolerance (ppm)
36	5180	5179.912000	-16.988	5179.912800	-16.833	5179.913200	-16.756
40	5200	5199.914000	-16.538	5199.914400	-16.461	5199.914400	-16.461
48	5240	5239.912800	-16.641	5239.914000	-16.412	5239.914000	-16.412

V_{normal}



Channel 36

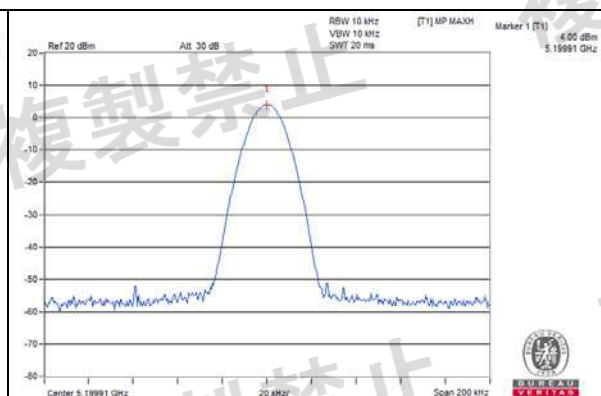
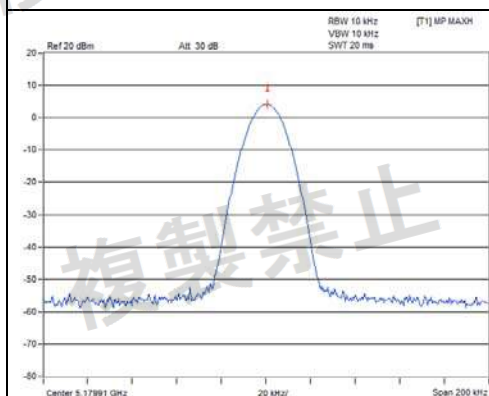


Channel 40

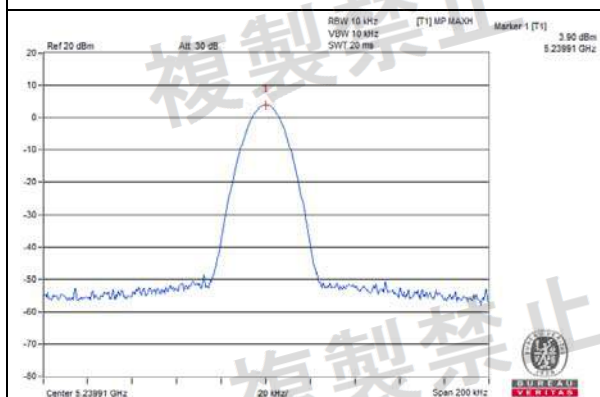
Channel 48

Measurement uncertainty: ± 206.50 Hz

V_{max}.



Channel 36

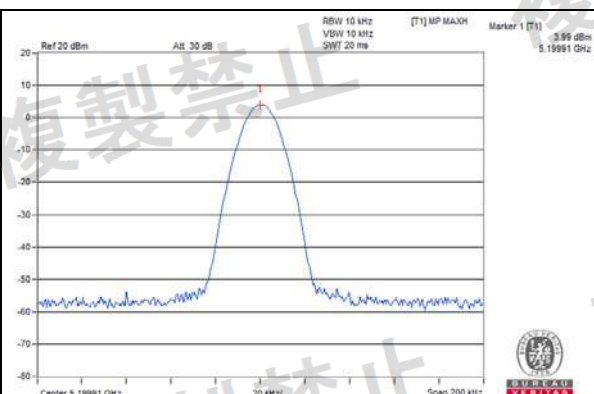
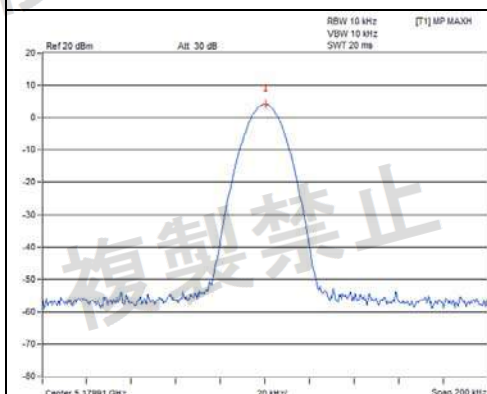


Channel 40

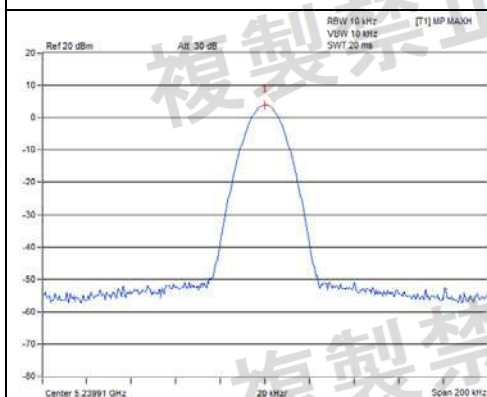
Channel 48

Measurement uncertainty: ± 206.50 Hz

V_{min}



Channel 36



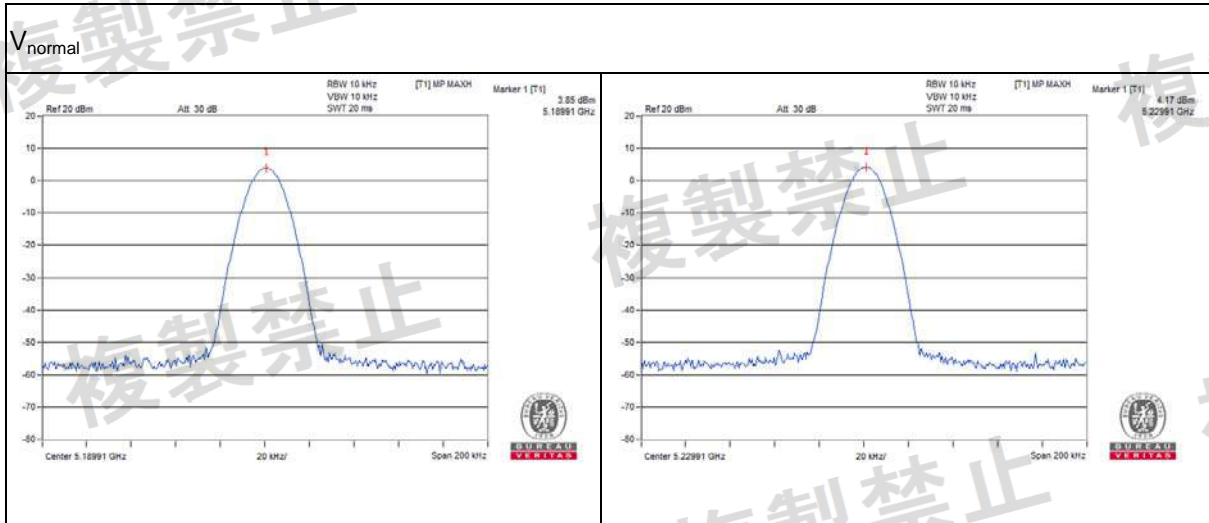
Channel 40

Channel 48

Measurement uncertainty: ± 206.50 Hz

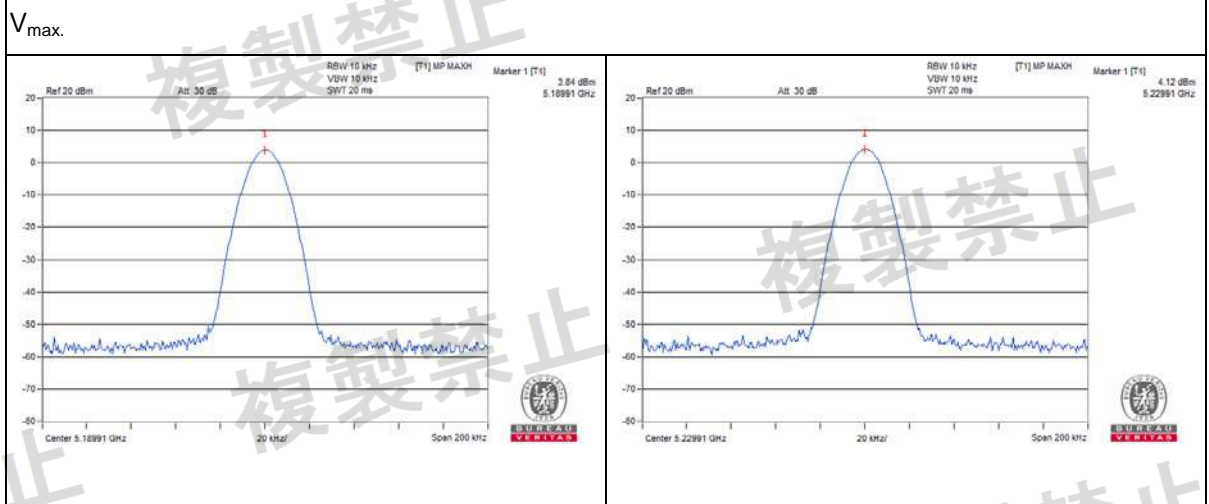
802.11n (HT40)

Environmental Conditions		25 deg.C, 68% RH					
Channel	Frequency (MHz)	Voltage _{normal}		Voltage _{max.}		Voltage _{min.}	
		Carrier frequency (MHz)	Frequency tolerance (ppm)	Carrier frequency (MHz)	Frequency tolerance (ppm)	Carrier frequency (MHz)	Frequency tolerance (ppm)
38	5190	5189.914800	-16.416	5189.914800	-16.416	5189.915200	-16.339
46	5230	5229.913600	-16.520	5229.914400	-16.367	5229.914800	-16.290



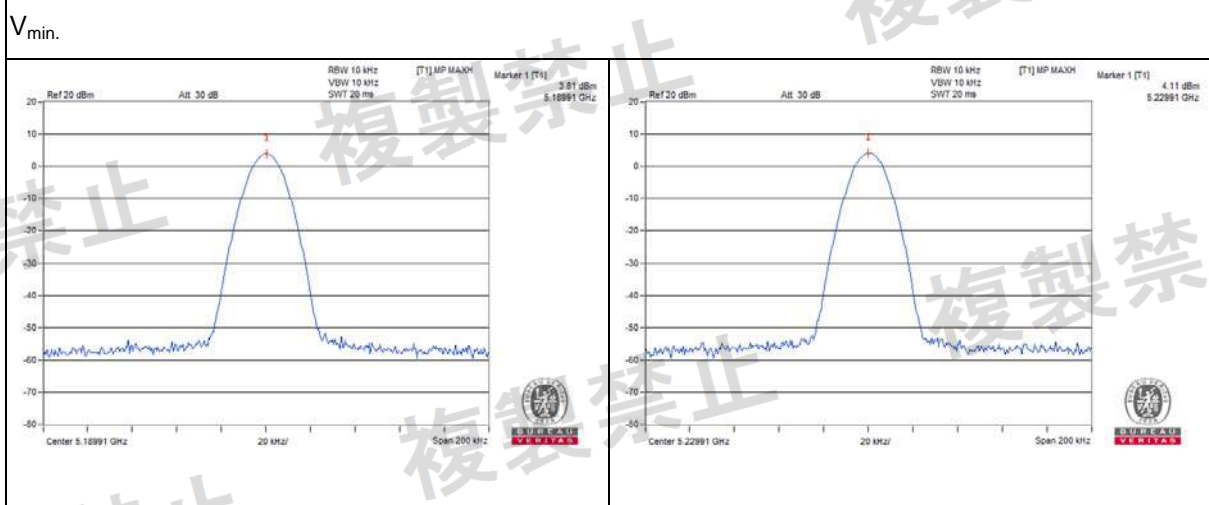
Channel 38

Channel 46



Channel 38

Channel 46



Channel 38

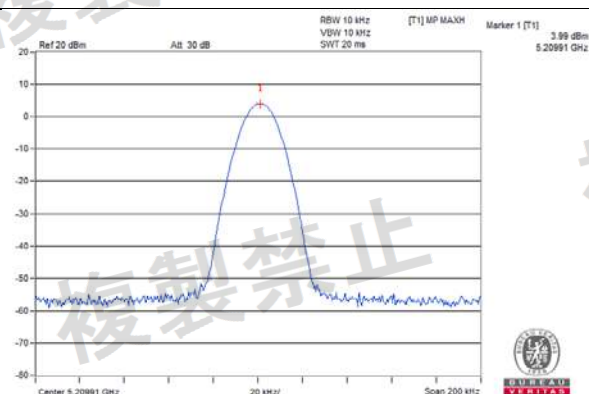
Channel 46

Measurement uncertainty: ± 206.50 Hz

802.11ac (VHT80)

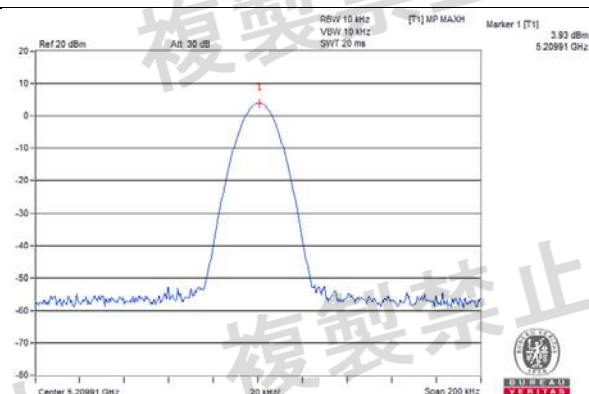
Environmental Conditions		25 deg.C, 68% RH					
Channel	Frequency (MHz)	Voltage _{normal}		Voltage _{max.}		Voltage _{min.}	
		Carrier frequency (MHz)	Frequency tolerance (ppm)	Carrier frequency (MHz)	Frequency tolerance (ppm)	Carrier frequency (MHz)	Frequency tolerance (ppm)
42	5210	5209.914000	-16.506	5209.915200	-16.276	5209.915600	-16.199

V_{normal}



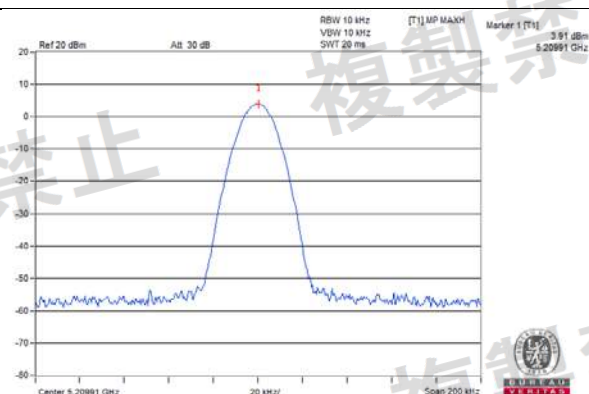
Channel 42

V_{max}.



Channel 42

V_{min}.



Channel 42

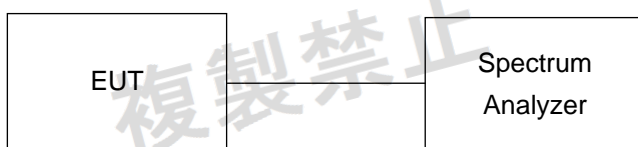
Measurement uncertainty: ± 206.50 Hz

4.2 Occupied Bandwidth Measurement (99% Power Bandwidth)

4.2.1 Limits of Occupied Bandwidth Measurement

Item	Operating Band	Limit	Remark
Occupied bandwidth	W52 & W53	<19MHz	802.11a/n(HT20)/ac(VHT20)
Occupied bandwidth	W56	<19.7MHz	802.11a/n(HT20)/ac(VHT20)
Occupied bandwidth	W52 & W53 & W56	<38MHz	802.11n(HT40)/ac(VHT40)
Occupied bandwidth	W52 & W53 & W56	<78MHz	802.11ac(VHT80)

4.2.2 Test Setup



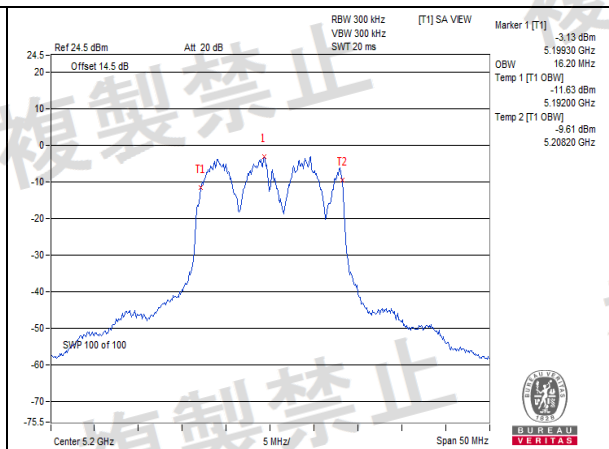
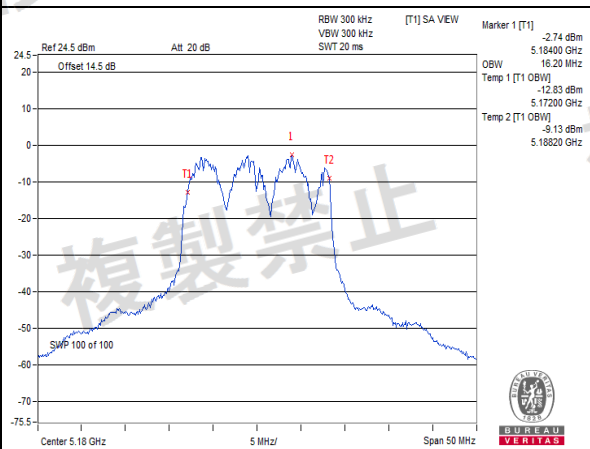
4.2.3 Test Results

802.11a

Environmental Conditions		25 deg.C, 68% RH		
Channel	Frequency (MHz)	V _{normal}	V _{max.}	V _{min.}
		Occupied Bandwidth (MHz)	Occupied Bandwidth (MHz)	Occupied Bandwidth (MHz)
36	5180	16.20	16.20	16.20
40	5200	16.20	16.20	16.20
48	5240	16.10	16.20	16.10

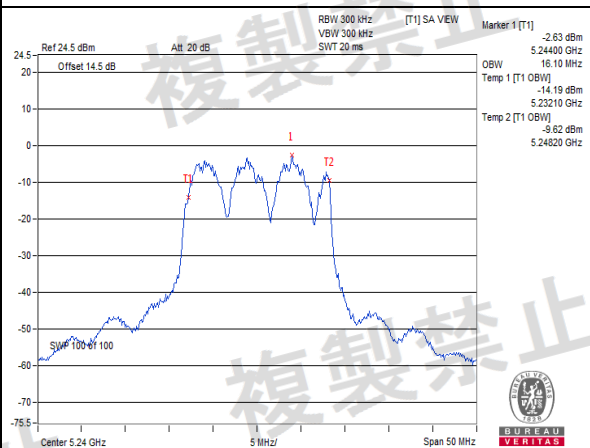
Note: For the test plots please refer to the below pages.

V_{normal}



Channel 36

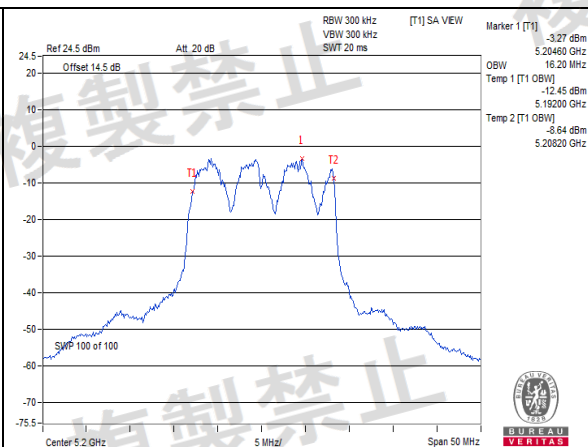
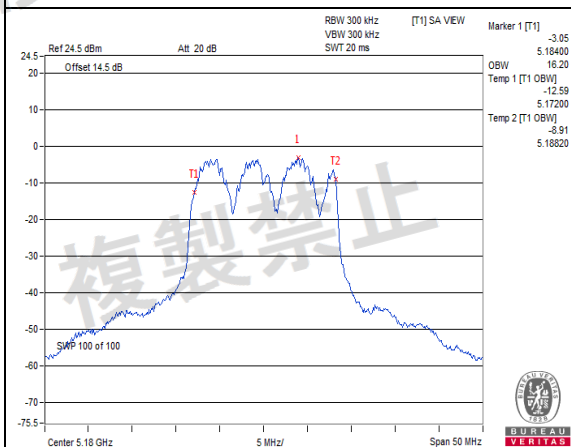
Channel 40



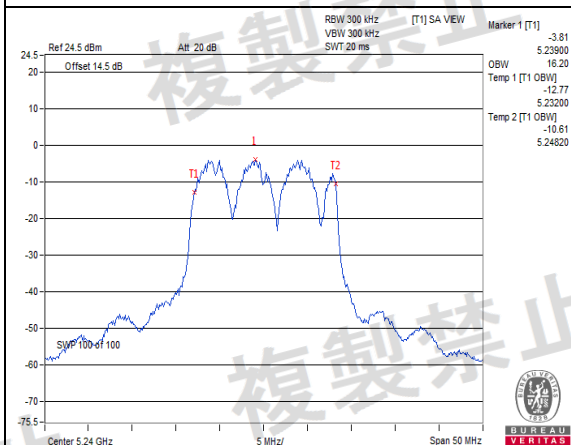
Channel 48

Measurement uncertainty: ± 206.50 Hz

V_{max}.



Channel 36

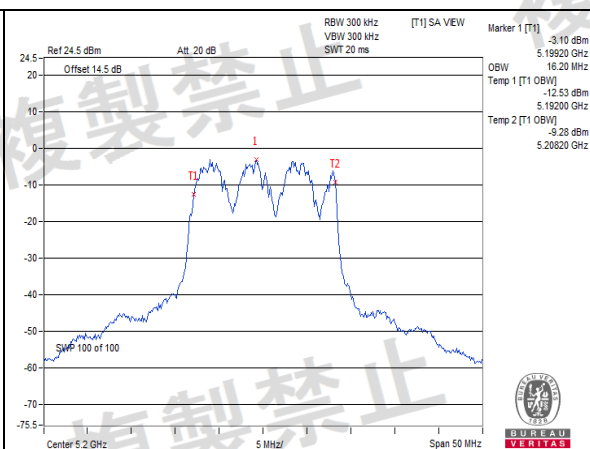
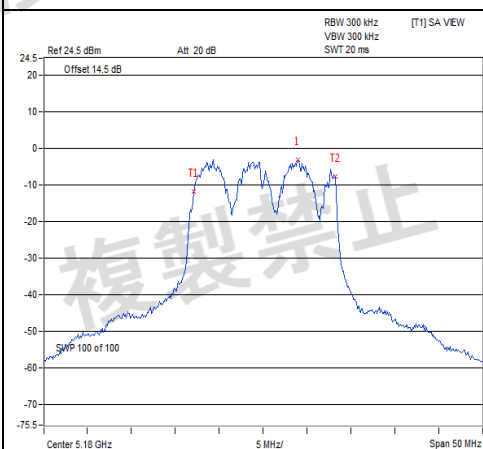


Channel 40

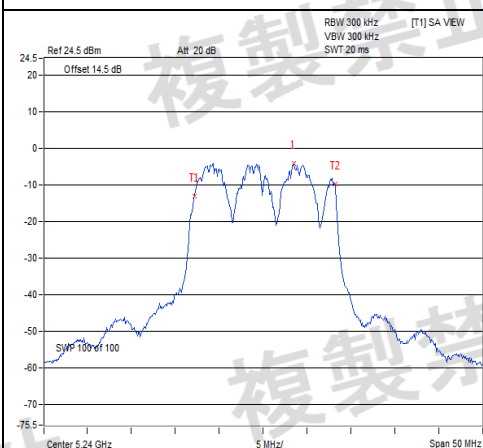
Channel 48

Measurement uncertainty: ± 206.50 Hz

V_{min}.



Channel 36



Channel 40

Channel 48

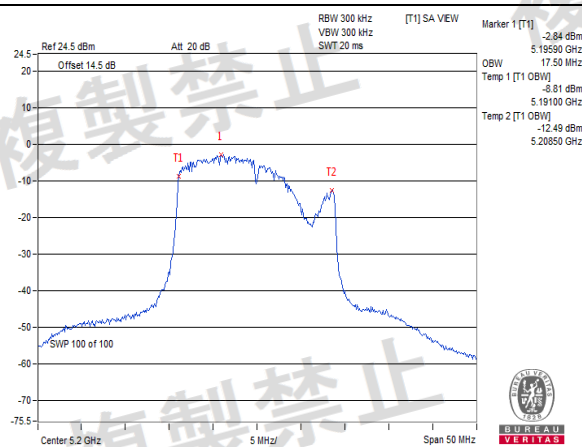
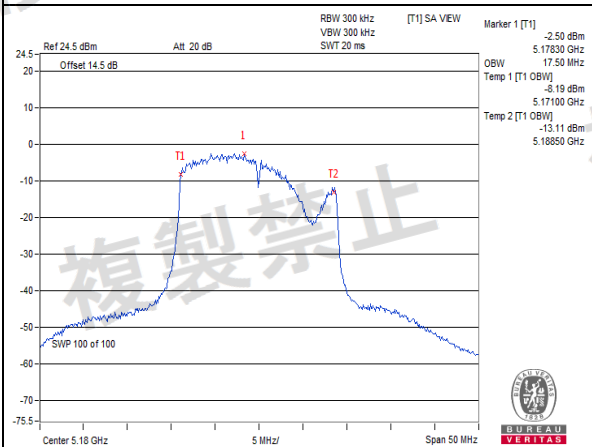
Measurement uncertainty: ± 206.50 Hz

802.11n (HT20)

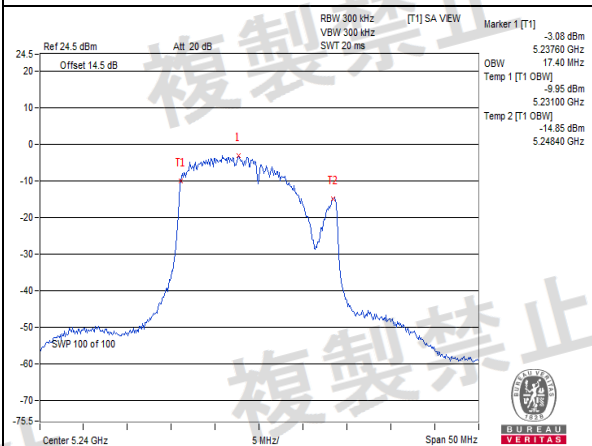
Environmental Conditions		25 deg.C, 68% RH		
Channel	Frequency (MHz)	V _{normal}	V _{max.}	V _{min.}
		Occupied Bandwidth (MHz)	Occupied Bandwidth (MHz)	Occupied Bandwidth (MHz)
36	5180	17.50	17.50	17.50
40	5200	17.50	17.40	17.50
48	5240	17.40	17.40	17.30

Note: For the test plots please refer to the below pages.

V_{normal}



Channel 36

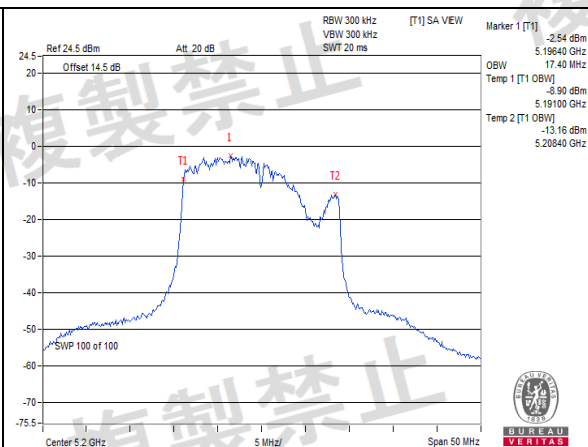
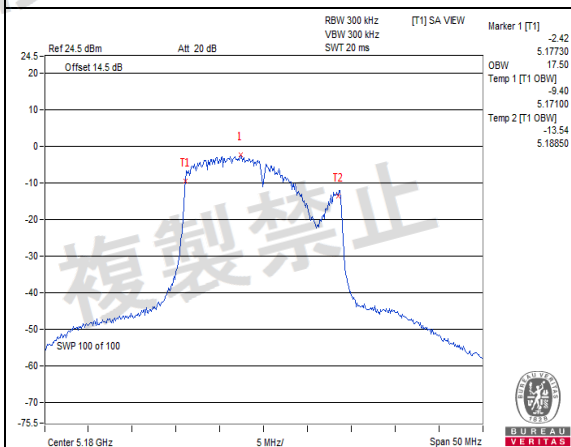


Channel 40

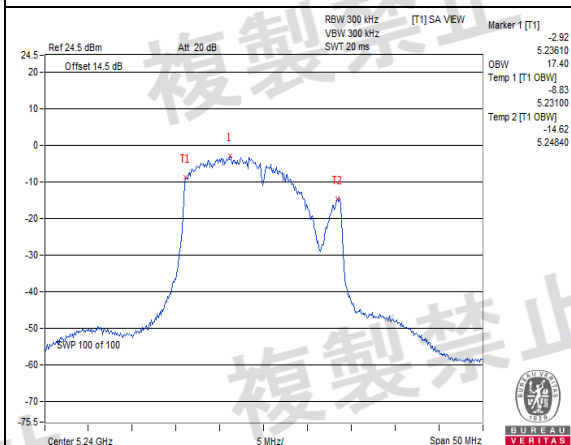
Channel 48

Measurement uncertainty: ± 206.50 Hz

V_{max}.



Channel 36

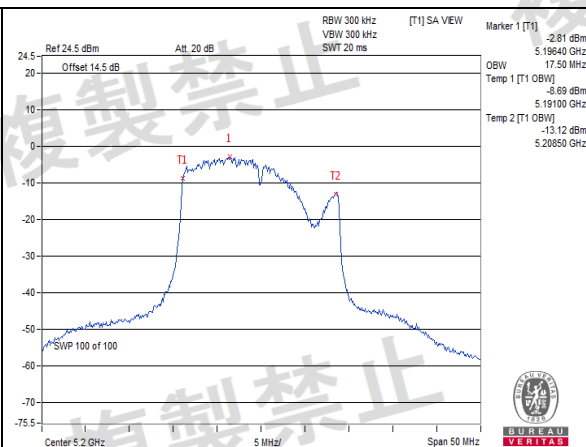
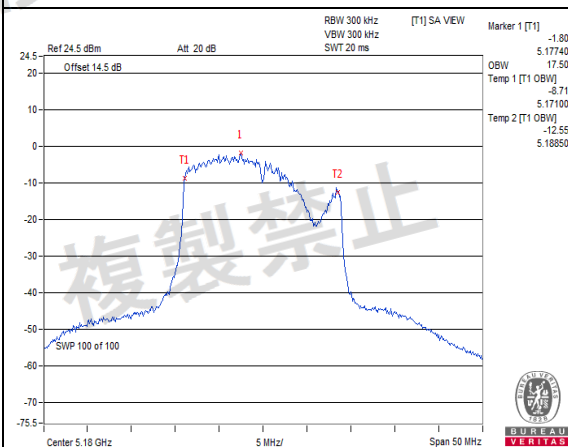


Channel 40

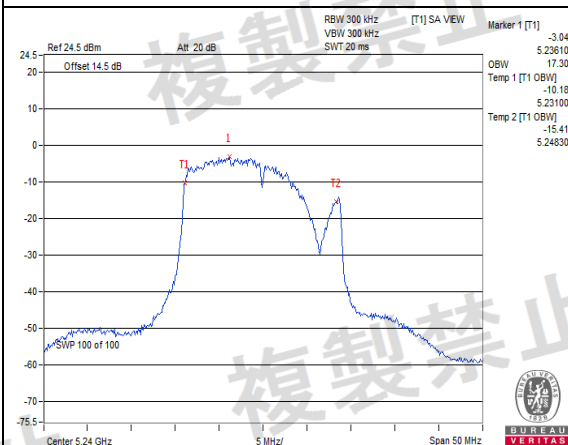
Channel 48

Measurement uncertainty: ± 206.50 Hz

V_{min}.



Channel 36



Channel 40

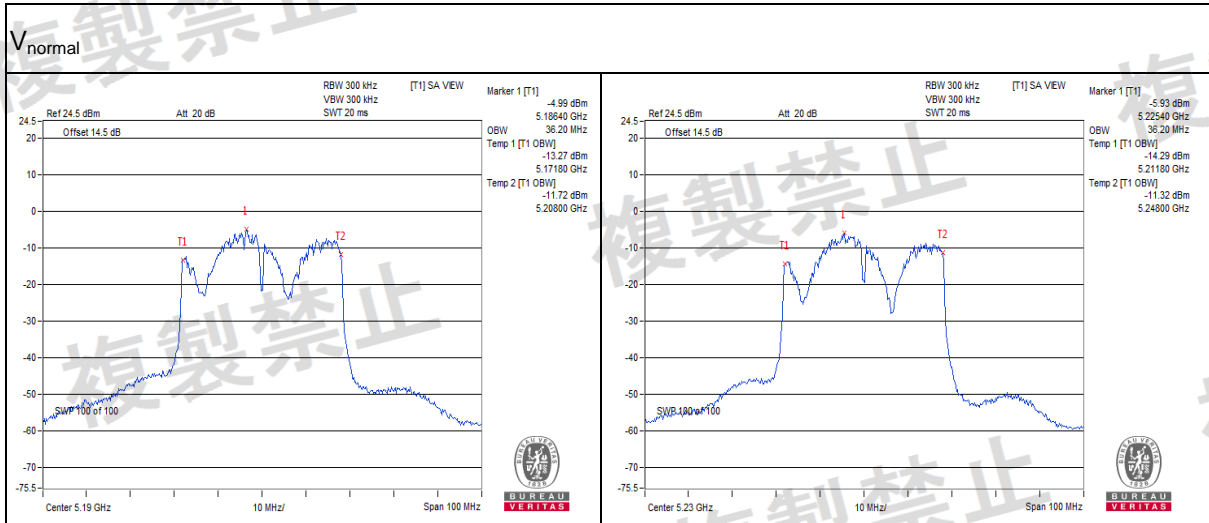
Channel 48

Measurement uncertainty: ± 206.50 Hz

802.11n (HT40)

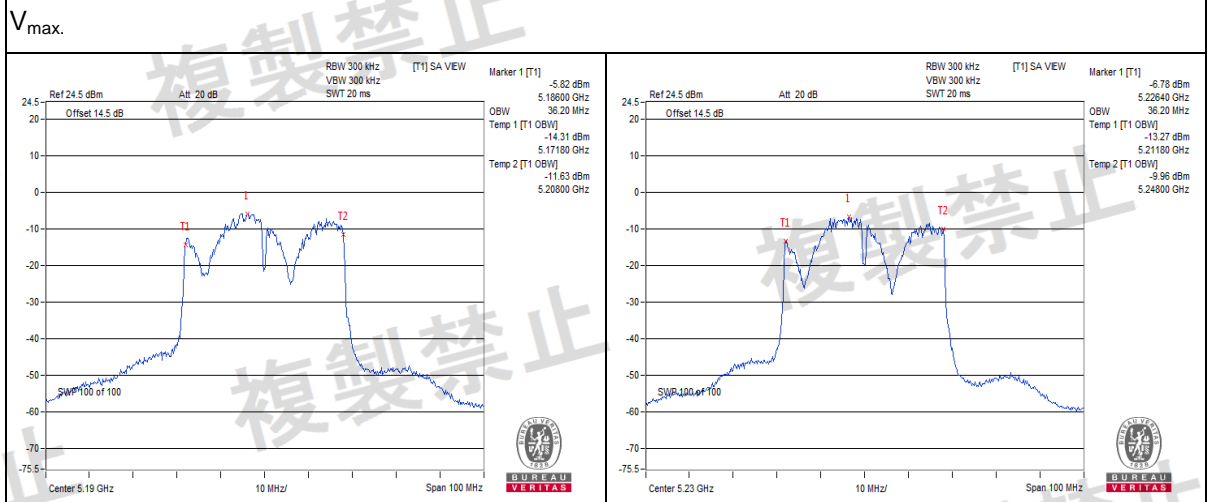
Environmental Conditions		25 deg.C, 68% RH		
Channel	Frequency (MHz)	V _{normal}	V _{max.}	V _{min.}
		Occupied Bandwidth (MHz)	Occupied Bandwidth (MHz)	Occupied Bandwidth (MHz)
38	5190	36.20	36.20	36.00
46	5230	36.20	36.20	36.20

Note: For the test plots please refer to the below pages.



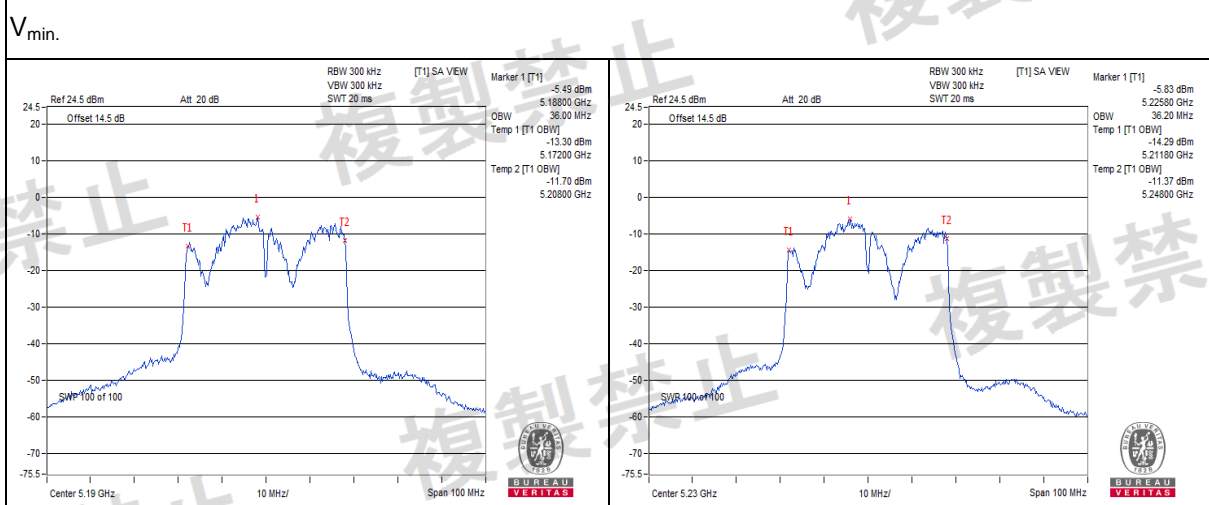
Channel 38

Channel 46



Channel 38

Channel 46



Channel 38

Channel 46

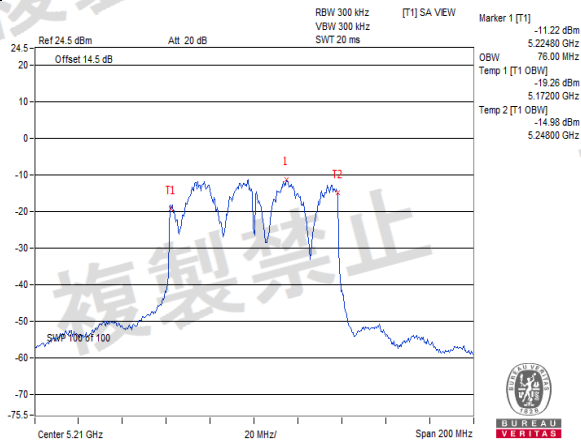
Measurement uncertainty: ± 206.50 Hz

802.11ac (VHT80)

Environmental Conditions		25 deg.C, 68% RH		
Channel	Frequency (MHz)	V _{normal}	V _{max.}	V _{min.}
		Occupied Bandwidth (MHz)	Occupied Bandwidth (MHz)	Occupied Bandwidth (MHz)
42	5210	76.00	75.60	76.00

Note: For the test plots please refer to the below pages.

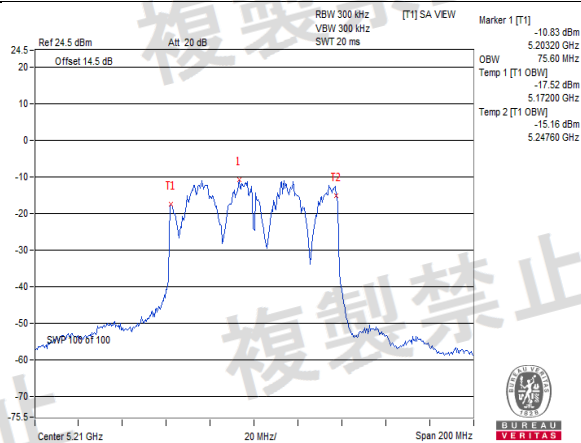
V_{normal}



Marker 1 [T1]
-11.22 dBm
5.22480 GHz
76.00 MHz
OBW
Temp 1 [T1 OBW]
-19.26 dBm
5.17200 GHz
Temp 2 [T1 OBW]
-14.98 dBm
5.24800 GHz

Channel 42

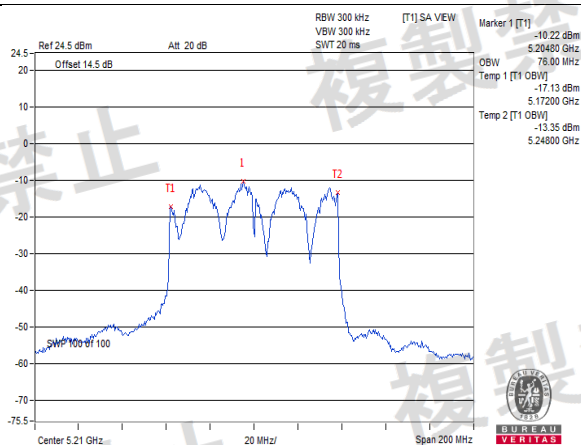
V_{max.}



Marker 1 [T1]
-10.83 dBm
5.20320 GHz
75.60 MHz
OBW
Temp 1 [T1 OBW]
-17.52 dBm
5.17200 GHz
Temp 2 [T1 OBW]
-15.16 dBm
5.24760 GHz

Channel 42

V_{min.}



Marker 1 [T1]
-10.22 dBm
5.20480 GHz
76.00 MHz
OBW
Temp 1 [T1 OBW]
-17.13 dBm
5.17200 GHz
Temp 2 [T1 OBW]
-13.35 dBm
5.24800 GHz

Channel 42

Measurement uncertainty: ± 206.50 Hz

4.3 Spurious Emissions for Transmitter Measurement

4.3.1 Limits of Spurious Emissions

W52 & W53 bands: 802.11a / 802.11n (HT20)

Frequencies (MHz)	Limit
OBW \leq 18MHz	
30.0MHz to 1000.0MHz	$\leq 0.25 \mu\text{W}/100\text{kHz}$
1000.0MHz to 5140.0MHz	$\leq 2.5 \mu\text{W}/\text{MHz}$
5360.0MHz to 26000.0MHz	$\leq 2.5 \mu\text{W}/\text{MHz}$
18MHz < OBW < 19MHz	
30.0MHz to 1000.0MHz	$\leq 0.25 \mu\text{W}/100\text{kHz}$
1000.0MHz to 5135.0MHz	$\leq 2.5 \mu\text{W}/\text{MHz}$
5365.0MHz to 26000.0MHz	$\leq 2.5 \mu\text{W}/\text{MHz}$

W52 & W53 bands: 802.11n (HT40)

Frequencies (MHz)	Limit
30.0MHz ~ 1000.0MHz	$\leq 0.25 \mu\text{W}/100\text{kHz}$
1000.0MHz ~ 5100.0MHz	$\leq 2.5 \mu\text{W}/\text{MHz}$
5400.0MHz ~ 26000.0MHz	$\leq 2.5 \mu\text{W}/\text{MHz}$

W52 & W53 bands: 802.11ac (VHT80)

Frequencies (MHz)	Limit
30.0MHz ~ 1000.0MHz	$\leq 0.25 \mu\text{W}/100\text{kHz}$
1000.0MHz ~ 5020.0MHz	$\leq 2.5 \mu\text{W}/\text{MHz}$
5480.0MHz ~ 26000.0MHz	$\leq 2.5 \mu\text{W}/\text{MHz}$

W56 band: 802.11a / 802.11n (HT20)

Frequencies (MHz)	Limit
30.0MHz to 1000.0MHz	$\leq 0.25 \mu\text{W}/100\text{kHz}$
1000.0MHz ~ 5455.0MHz	$\leq 2.5 \mu\text{W}/\text{MHz}$
5745.0MHz ~ 26000.0MHz	$\leq 2.5 \mu\text{W}/\text{MHz}$

W56 band: 802.11n (HT40)

Frequencies (MHz)	Limit
30.0MHz to 1000.0MHz	$\leq 0.25 \mu\text{W}/100\text{kHz}$
1000.0MHz ~ 5420.0MHz	$\leq 2.5 \mu\text{W}/\text{MHz}$
5760.0MHz ~ 26000.0MHz	$\leq 2.5 \mu\text{W}/\text{MHz}$

W56 band: 802.11ac (VHT80)

Frequencies (MHz)	Limit
30.0MHz to 1000.0MHz	$\leq 0.25 \mu\text{W}/100\text{kHz}$
1000.0MHz ~ 5340.0MHz	$\leq 2.5 \mu\text{W}/\text{MHz}$
5800.0MHz ~ 26000.0MHz	$\leq 2.5 \mu\text{W}/\text{MHz}$

4.3.2 Teset Setup



4.3.3 Test Results

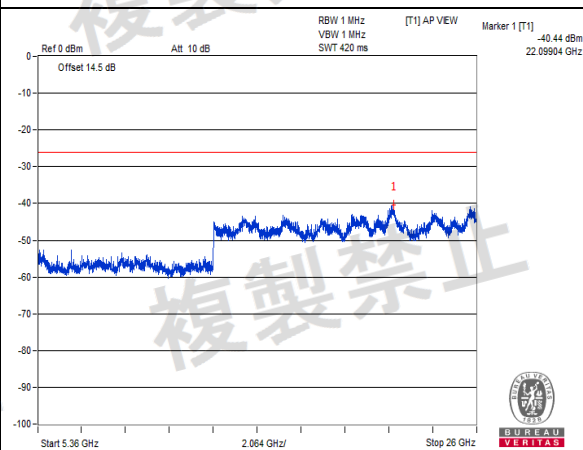
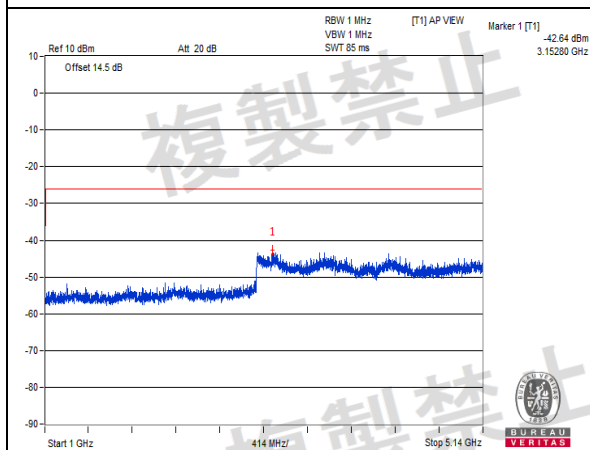
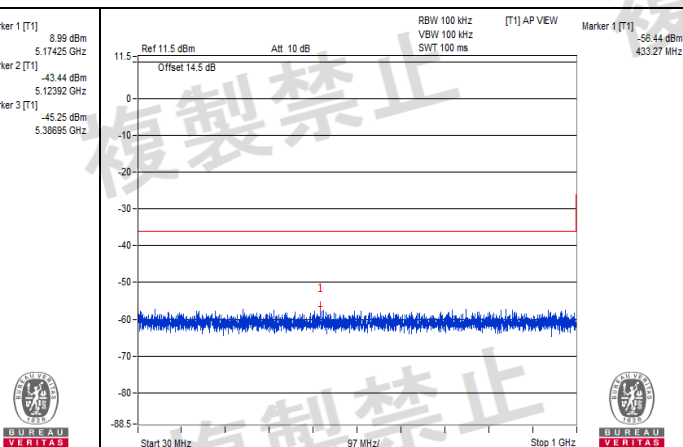
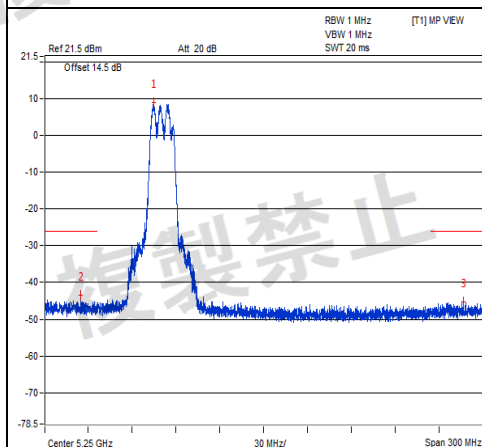
W52 Band:

802.11a

Environmental Conditions		25 deg.C, 68% RH					
Test Channel		CH36 (5180MHz)		CH48 (5240MHz)		Limit	Result
Test Condition	Frequency Range	Frequency (MHz)	Measured Value (uW)	Frequency (MHz)	Measured Value (uW)		
V _{normal}	30.0MHz ~ 1000.0MHz	433.270	0.0022	552.340	0.0019	0.25uW	PASS
	1000.0MHz ~ 5140.0MHz	3152.800	0.0544	3009.970	0.0478	2.5uW	PASS
	5360.0MHz ~ 26000.0MHz	22099.040	0.0903	22114.520	0.0881	2.5uW	PASS
V _{max.}	30.0MHz ~ 1000.0MHz	341.610	0.0020	159.010	0.0019	0.25uW	PASS
	1000.0MHz ~ 5140.0MHz	3057.580	0.0549	3125.890	0.0474	2.5uW	PASS
	5360.0MHz ~ 26000.0MHz	25742.000	0.0918	25736.840	0.0914	2.5uW	PASS
V _{min.}	30.0MHz ~ 1000.0MHz	392.290	0.0023	260.130	0.0019	0.25uW	PASS
	1000.0MHz ~ 5140.0MHz	3165.220	0.0517	3125.890	0.0498	2.5uW	PASS
	5360.0MHz ~ 26000.0MHz	22052.600	0.0897	22109.360	0.0899	2.5uW	PASS

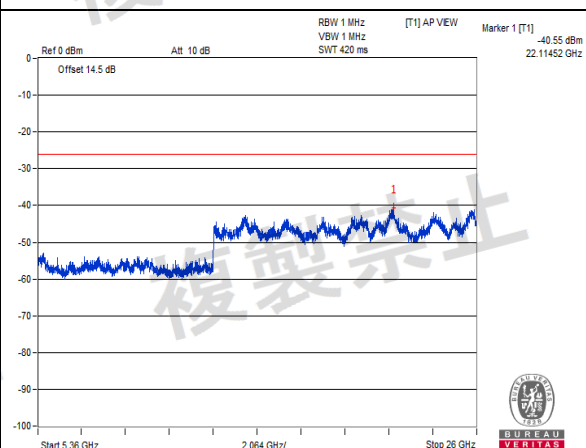
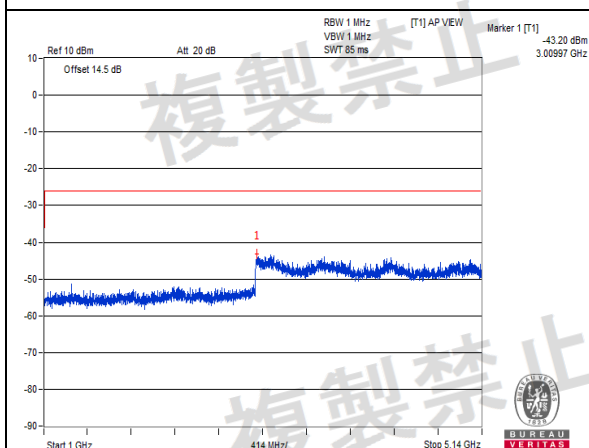
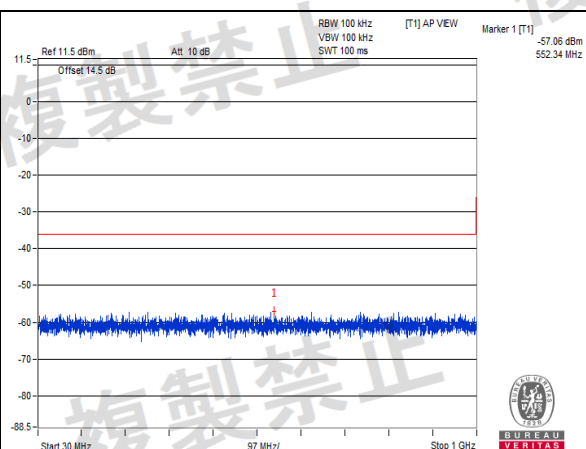
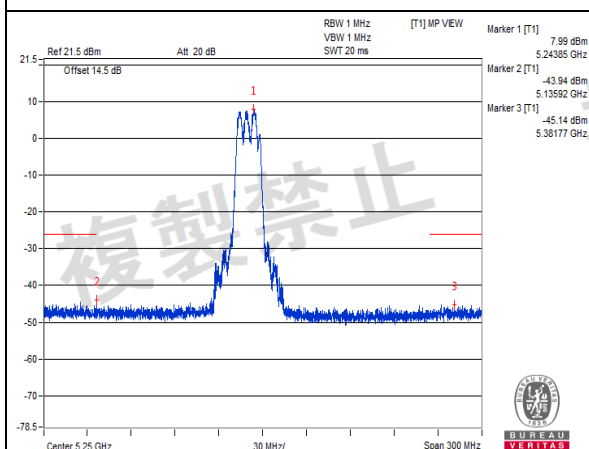
Note: 1. The worst value in each frequency range v.s. each channel has been marked by boldface.
2. The spectrum plots are attached on the following pages.

V normal
CH 36



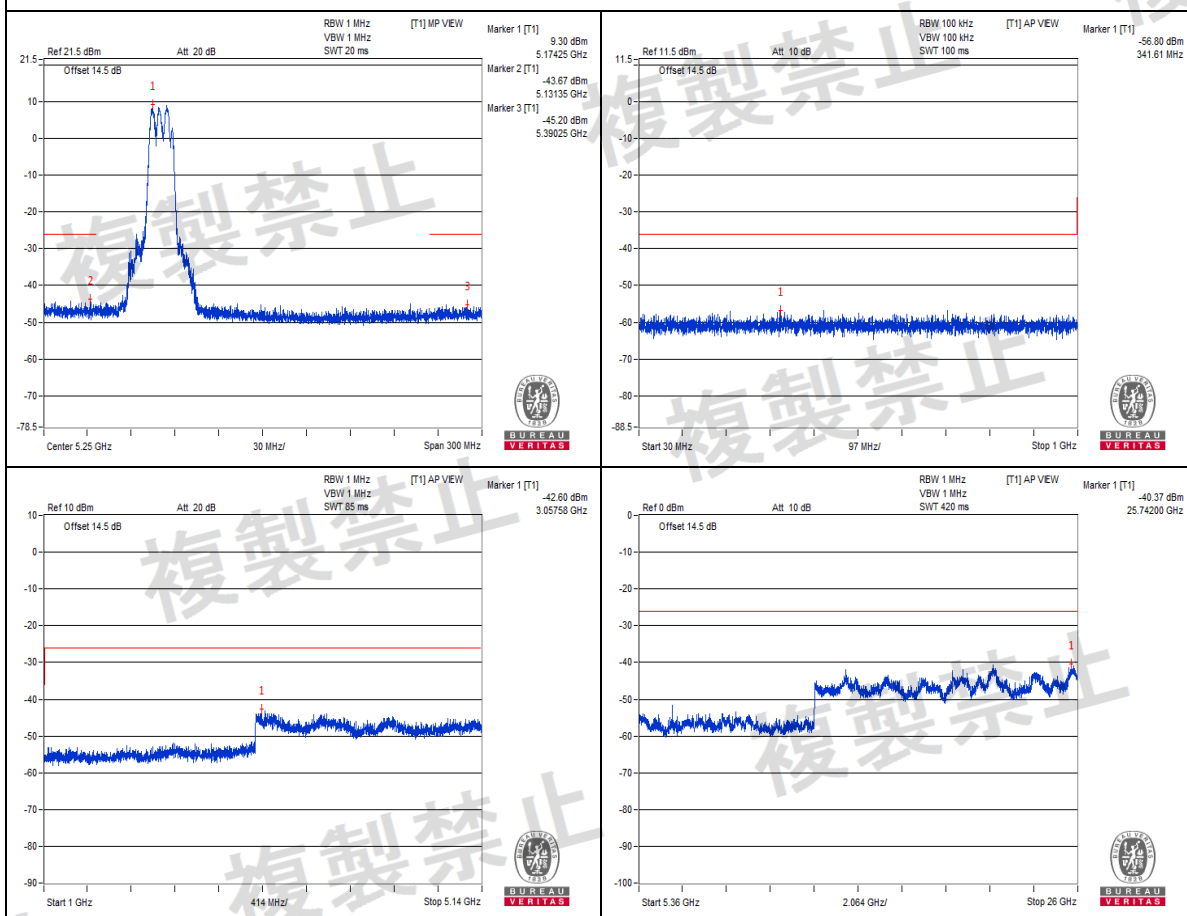
Measurement uncertainty: $\pm 3.93\text{dB}$

V normal
CH 48



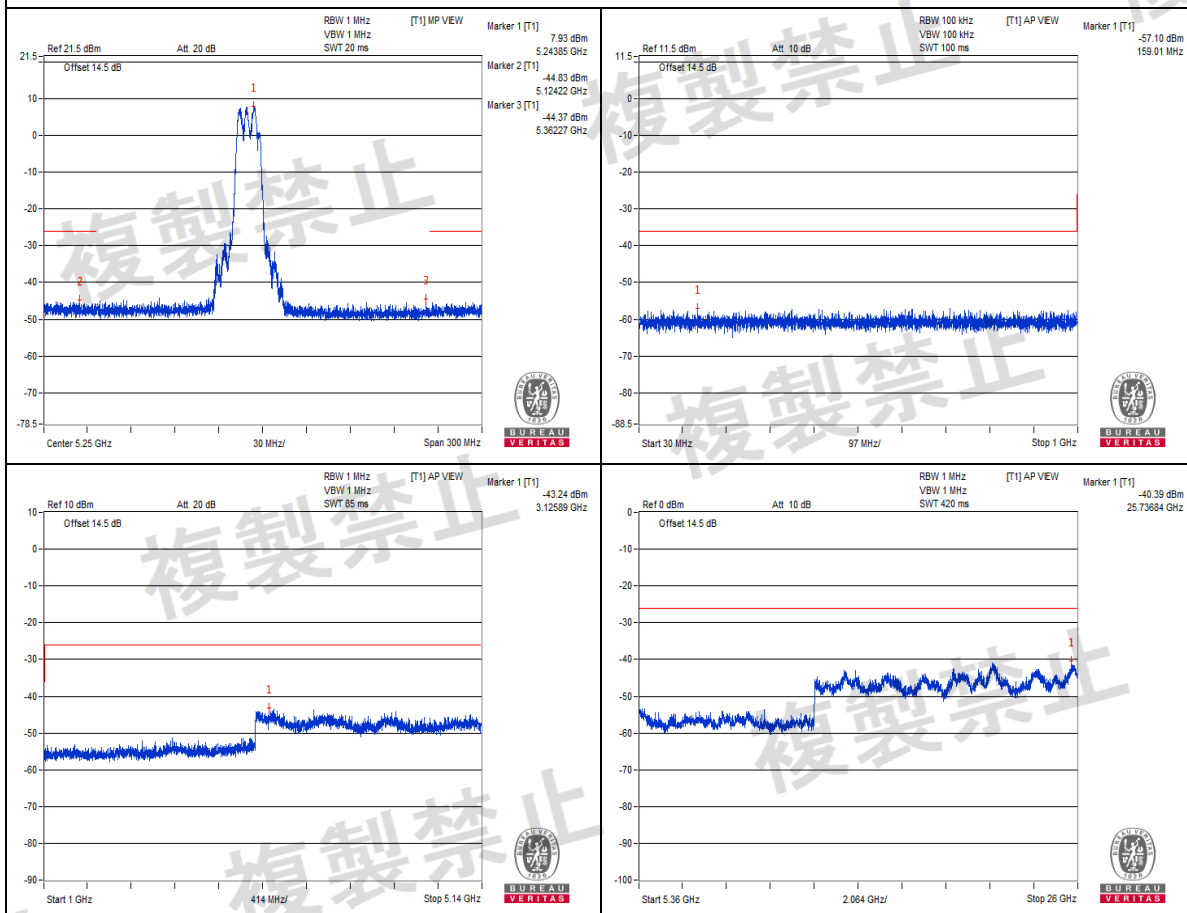
Measurement uncertainty: $\pm 3.93\text{dB}$

Vmax.
CH 36



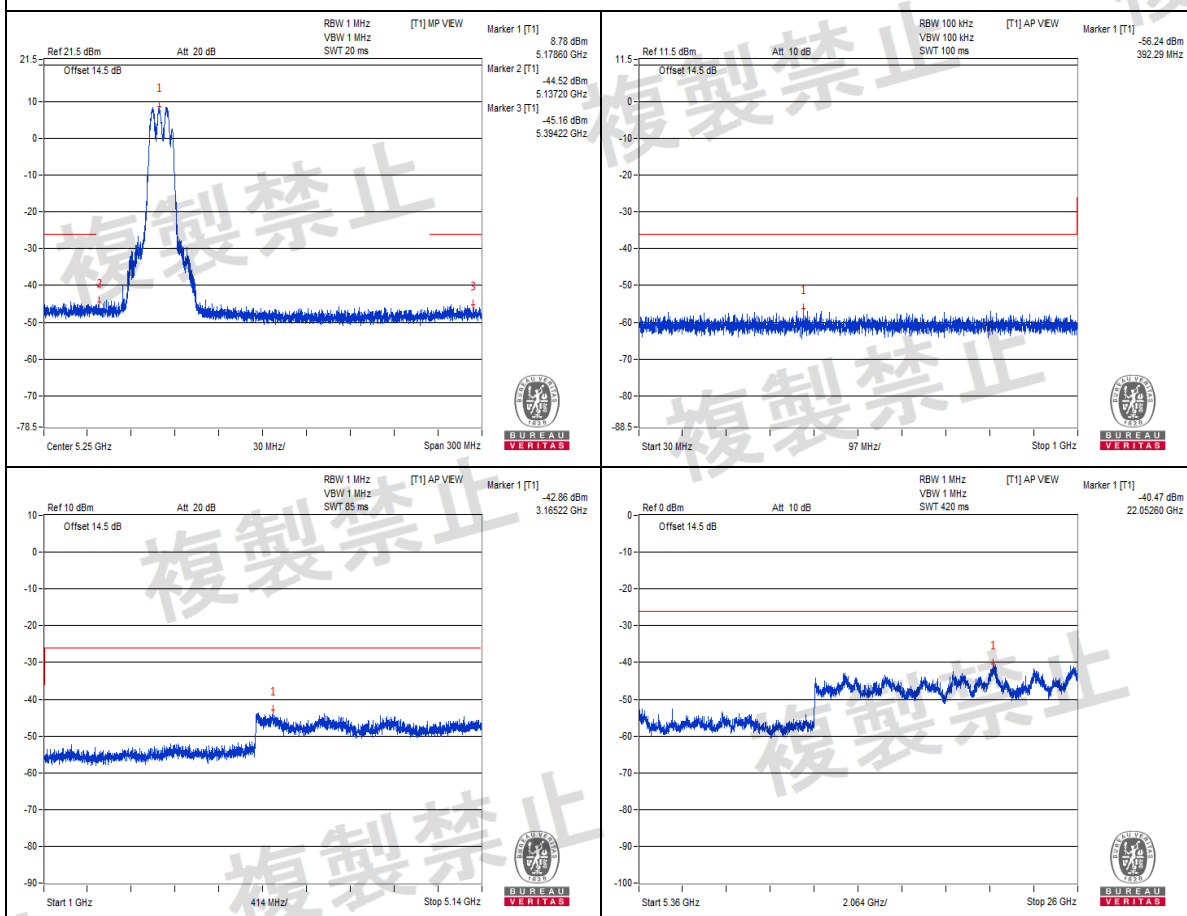
Measurement uncertainty: $\pm 3.93\text{dB}$

Vmax.
CH 48



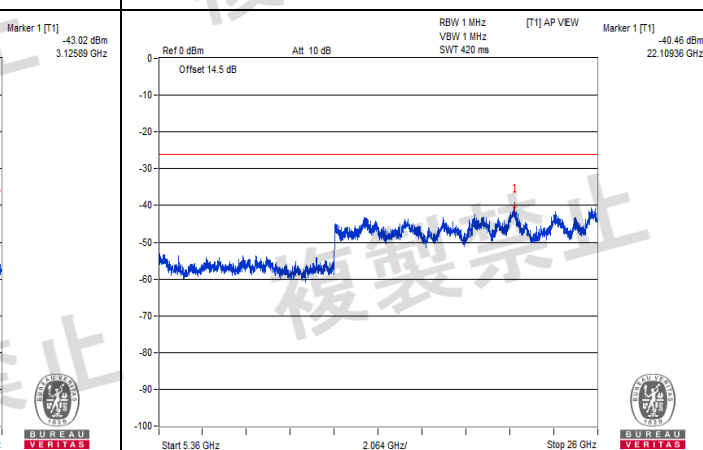
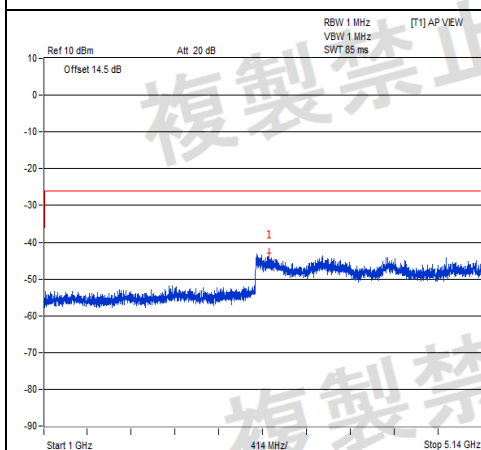
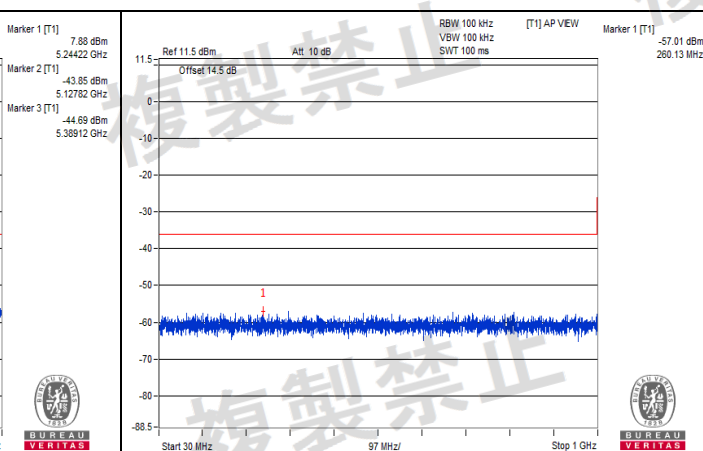
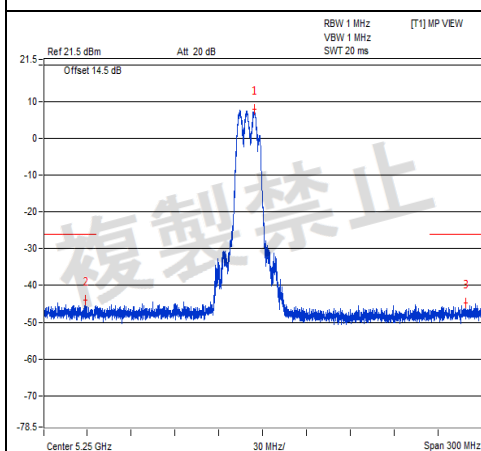
Measurement uncertainty: $\pm 3.93\text{dB}$

Vmin.
CH 36



Measurement uncertainty: $\pm 3.93\text{dB}$

Vmin.
CH 48



Measurement uncertainty: $\pm 3.93\text{dB}$

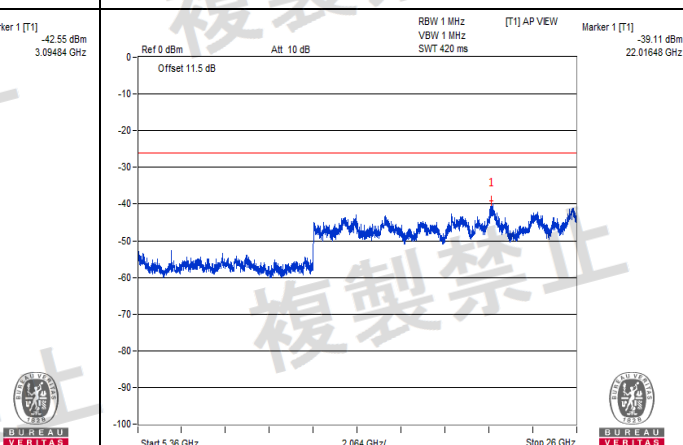
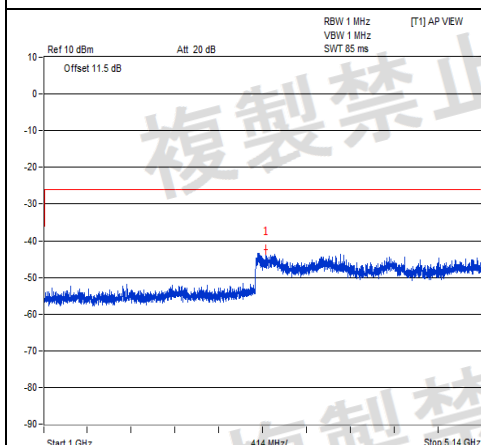
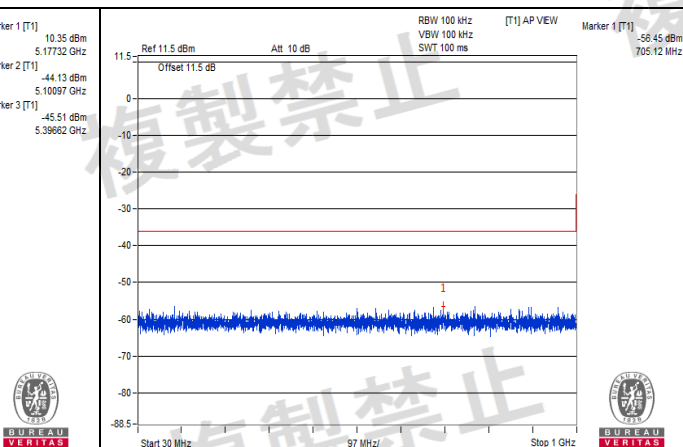
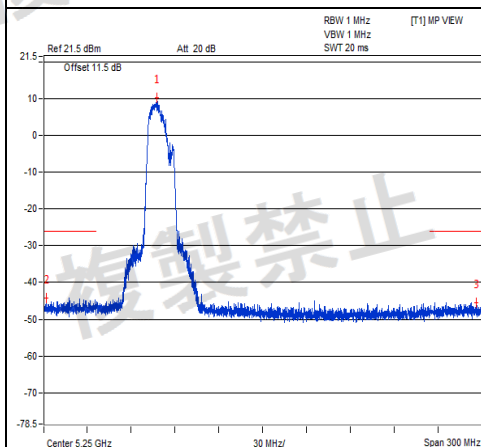
W52 Band:

802.11n (HT20)

Environmental Conditions		25 deg.C, 68% RH					
Test Channel		CH36 (5180MHz)		CH48 (5240MHz)		Limit	Result
Test Condition	Frequency Range	Frequency (MHz)	Measured Value (uW)	Frequency (MHz)	Measured Value (uW)		
V _{normal}	30.0MHz ~ 1000.0MHz	705.120	0.0022	138.880	0.0026	0.25uW	PASS
	1000.0MHz ~ 5140.0MHz	3094.840	0.0555	3006.860	0.0481	2.5uW	PASS
	5360.0MHz ~ 26000.0MHz	22016.480	0.1227	22047.440	0.0912	2.5uW	PASS
V _{max.}	30.0MHz ~ 1000.0MHz	177.680	0.0021	482.260	0.0021	0.25uW	PASS
	1000.0MHz ~ 5140.0MHz	3024.460	0.0413	3036.880	0.0481	2.5uW	PASS
	5360.0MHz ~ 26000.0MHz	22078.400	0.1088	22109.360	0.0891	2.5uW	PASS
V _{min.}	30.0MHz ~ 1000.0MHz	147.610	0.0022	361.010	0.0019	0.25uW	PASS
	1000.0MHz ~ 5140.0MHz	3027.560	0.0533	3137.270	0.0523	2.5uW	PASS
	5360.0MHz ~ 26000.0MHz	21959.720	0.0905	22062.920	0.0796	2.5uW	PASS

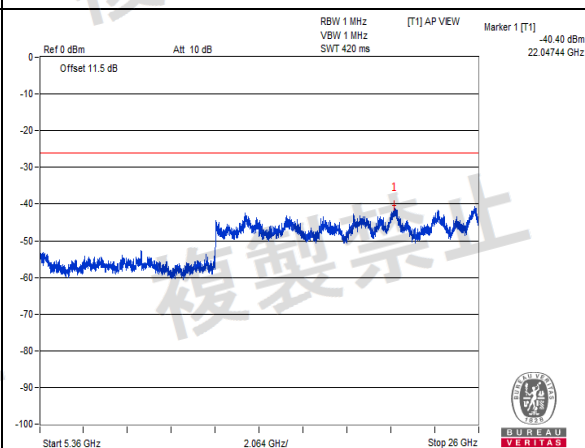
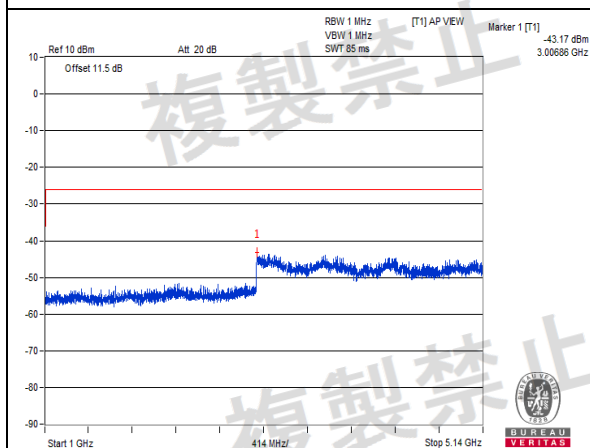
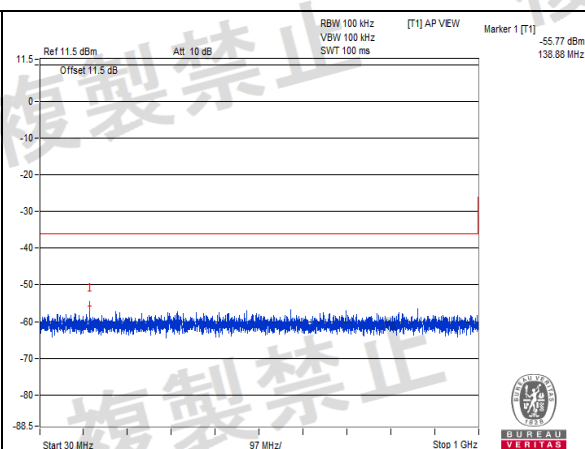
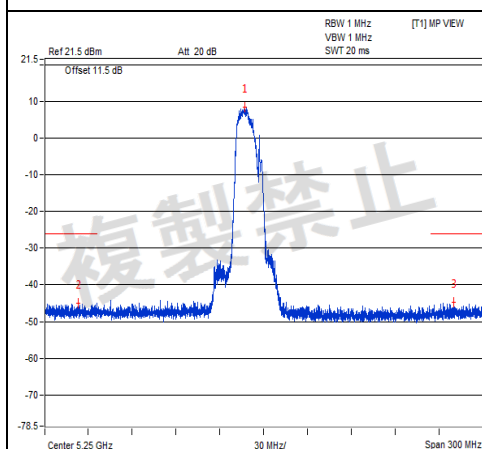
Note: 1. The worst value in each frequency range v.s. each channel has been marked by boldface.
2. The spectrum plots are attached on the following pages.

V normal
CH 36



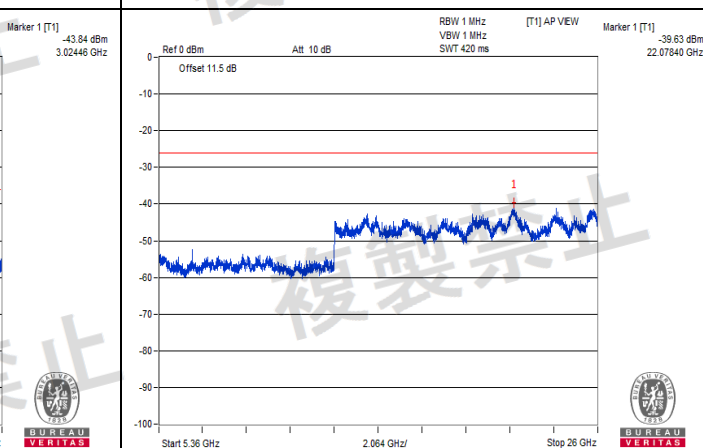
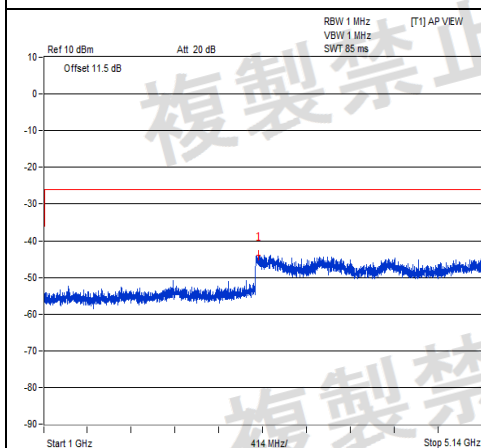
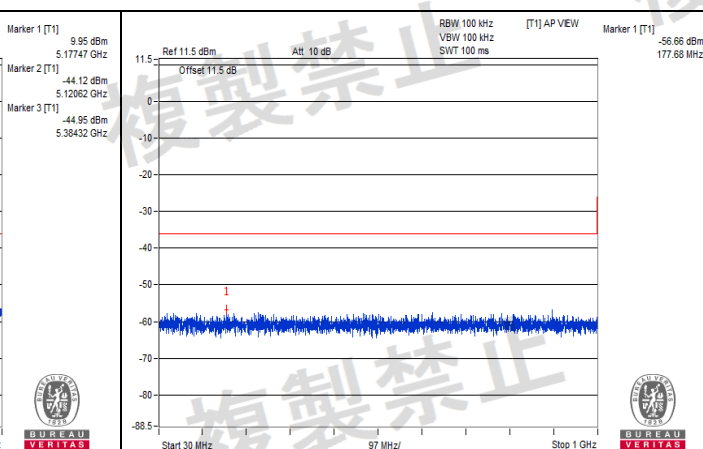
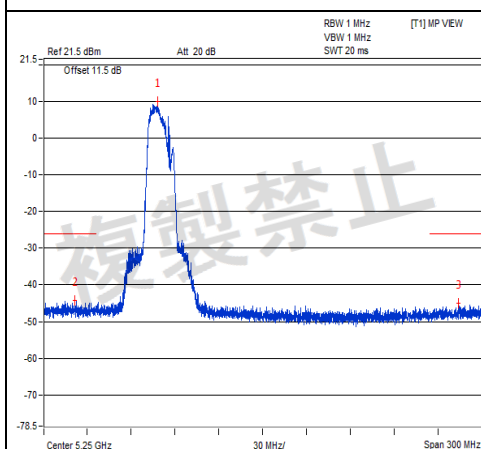
Measurement uncertainty: $\pm 3.93\text{dB}$

V normal
CH 48



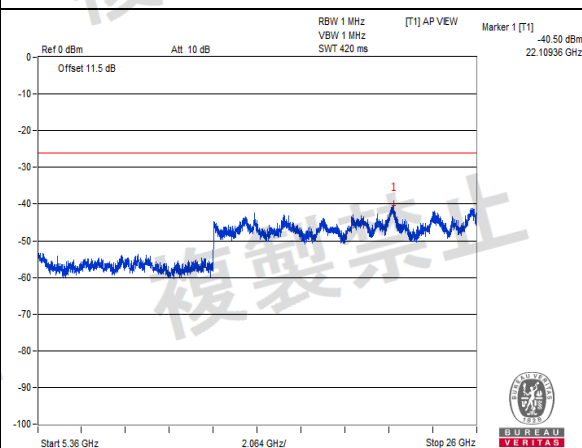
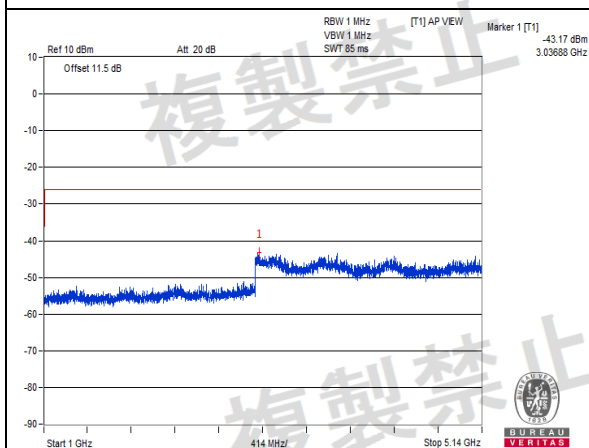
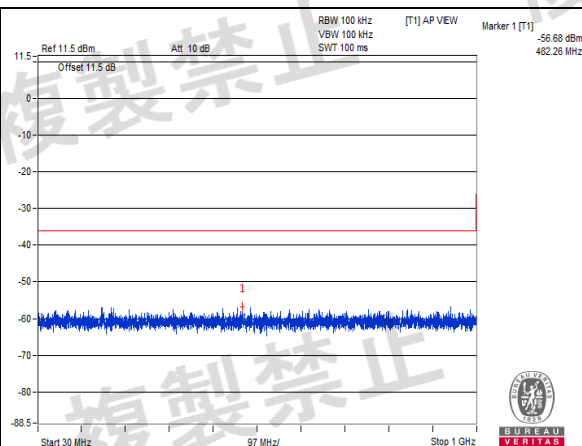
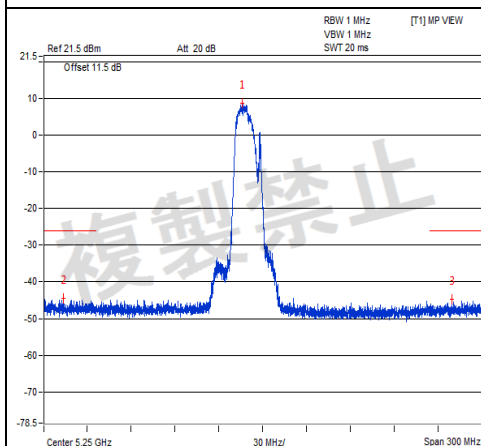
Measurement uncertainty: $\pm 3.93\text{dB}$

Vmax.
CH 36



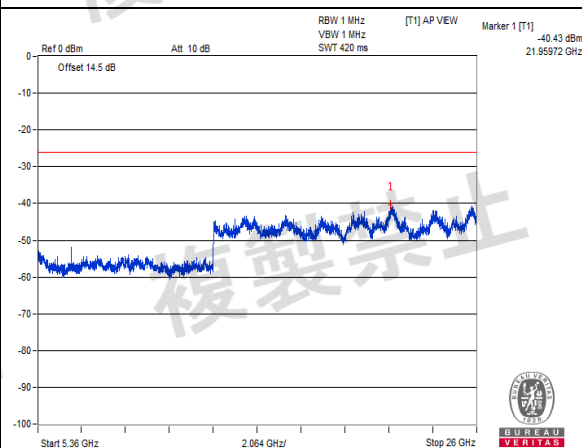
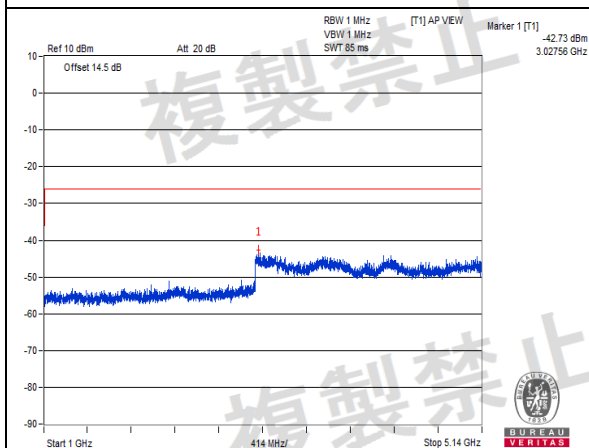
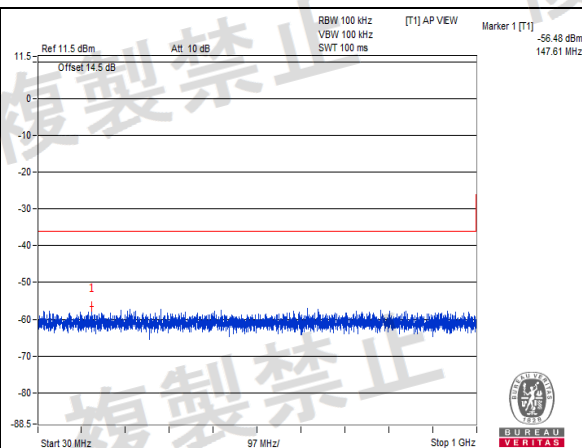
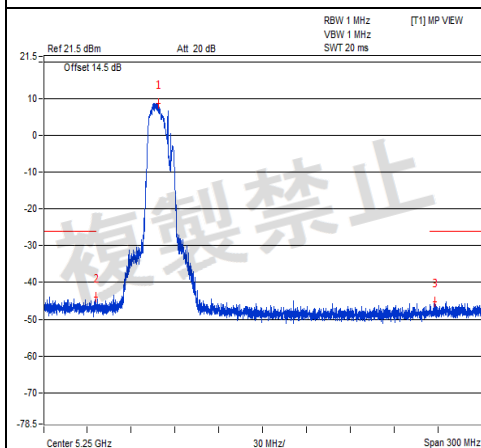
Measurement uncertainty: $\pm 3.93\text{dB}$

Vmax.
CH 48



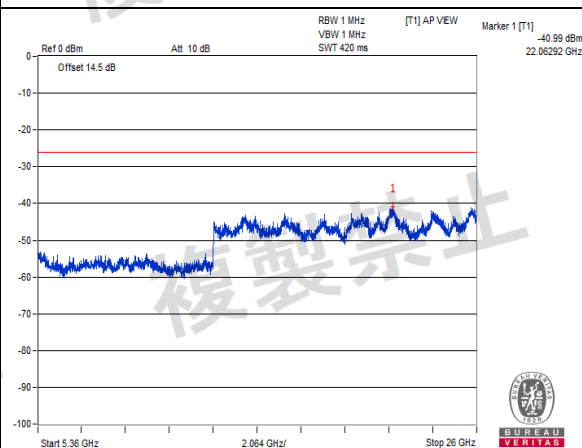
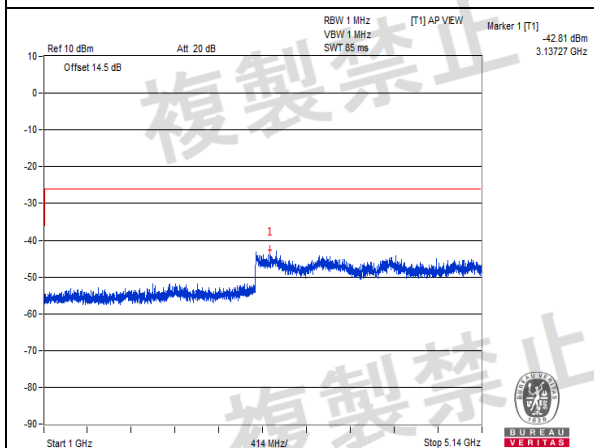
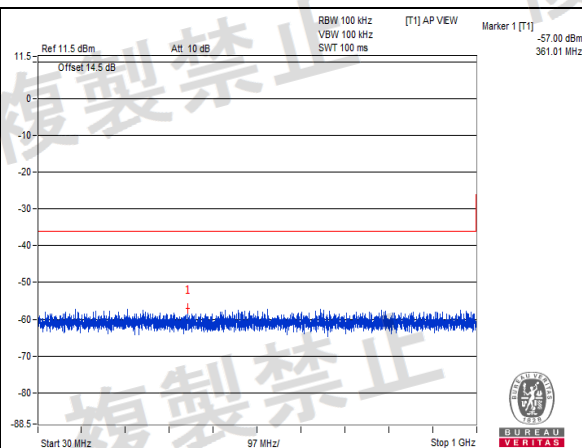
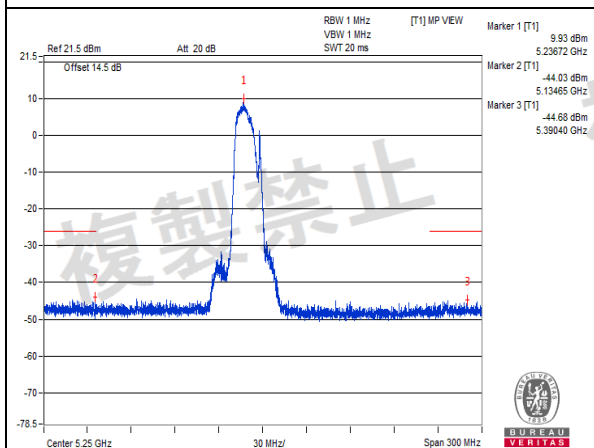
Measurement uncertainty: $\pm 3.93\text{dB}$

Vmin.
CH 36



Measurement uncertainty: $\pm 3.93\text{dB}$

Vmin.
CH 48



Measurement uncertainty: $\pm 3.93\text{dB}$

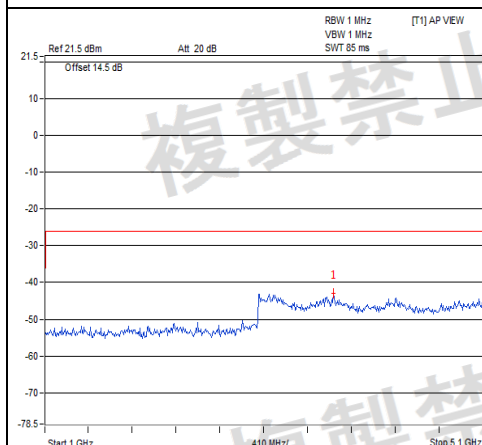
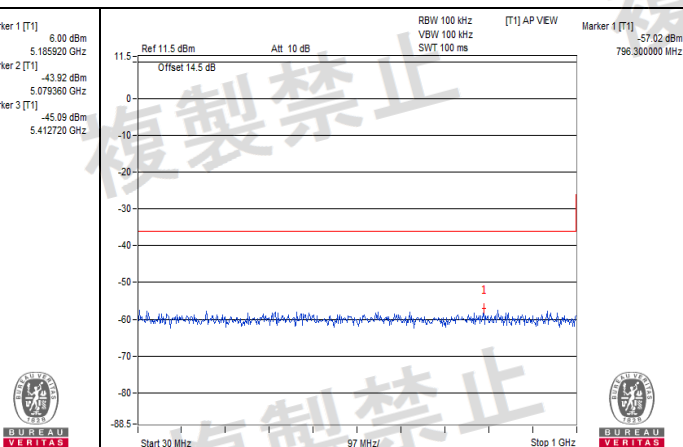
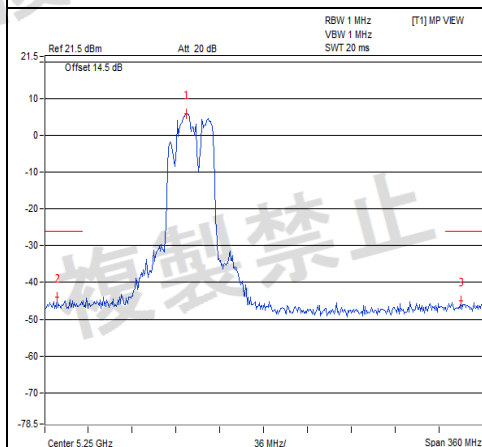
W52 Band:

802.11n (HT40)

Environmental Conditions		25 deg.C, 68% RH					
Test Channel		CH38 (5190MHz)		CH46 (5230MHz)		Limit	Result
Test Condition	Frequency Range	Frequency (MHz)	Measured Value (uW)	Frequency (MHz)	Measured Value (uW)		
V _{normal}	30.0MHz ~ 1000.0MHz	796.300	0.0019	256.980	0.0020	0.25uW	PASS
	1000.0MHz ~ 5100.0MHz	3706.000	0.0520	3017.200	0.0487	2.5uW	PASS
	5400.0MHz ~ 26000.0MHz	25917.600	0.0905	22003.600	0.0923	2.5uW	PASS
V _{max.}	30.0MHz ~ 1000.0MHz	833.160	0.0018	43.580	0.0021	0.25uW	PASS
	1000.0MHz ~ 5100.0MHz	3197.600	0.0528	3000.800	0.0422	2.5uW	PASS
	5400.0MHz ~ 26000.0MHz	25752.800	0.0861	22003.600	0.0941	2.5uW	PASS
V _{min.}	30.0MHz ~ 1000.0MHz	829.280	0.0019	214.300	0.0020	0.25uW	PASS
	1000.0MHz ~ 5100.0MHz	3173.000	0.0578	3025.400	0.0538	2.5uW	PASS
	5400.0MHz ~ 26000.0MHz	25835.200	0.0956	22044.800	0.0882	2.5uW	PASS

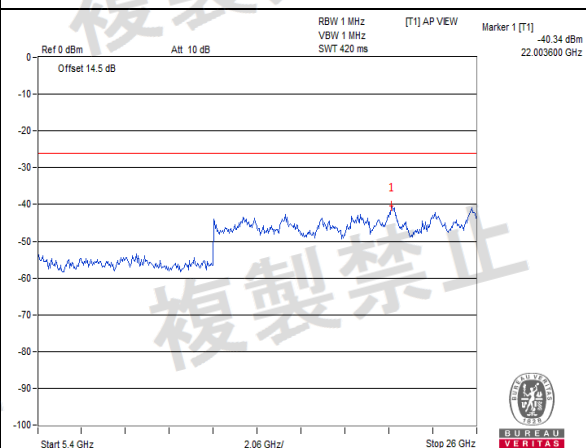
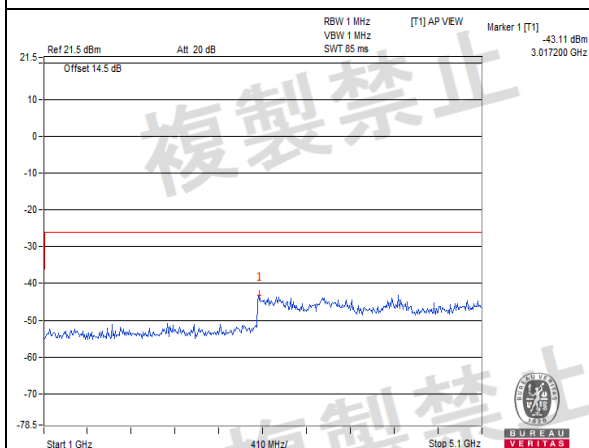
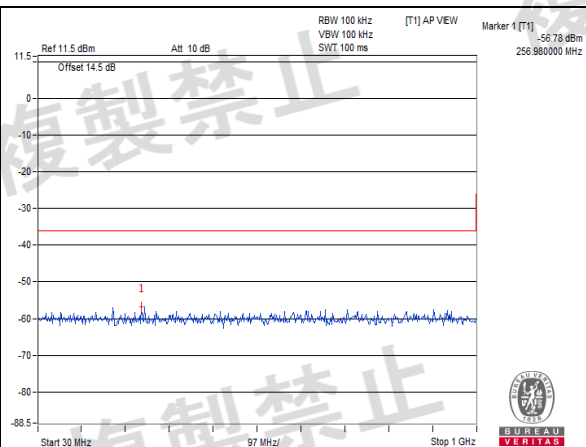
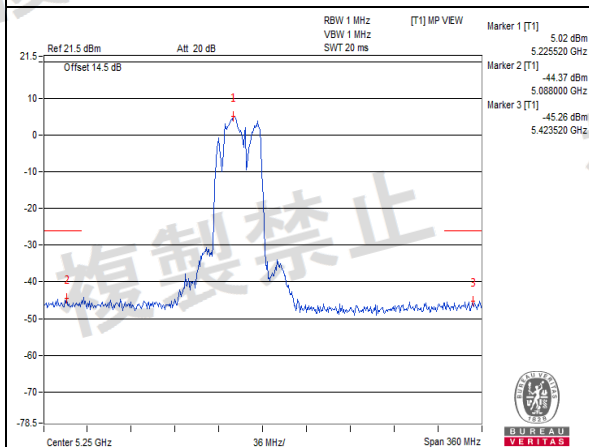
Note: 1. The worst value in each frequency range v.s. each channel has been marked by boldface.
2. The spectrum plots are attached on the following pages.

V normal
CH 38



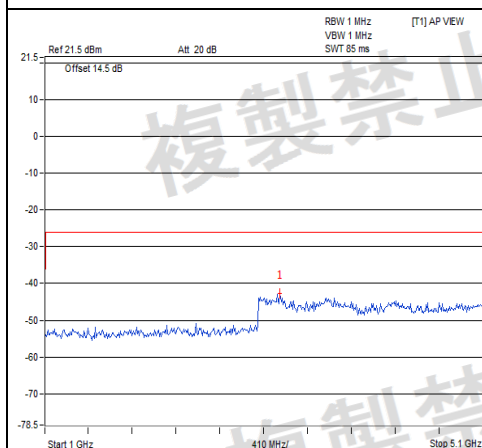
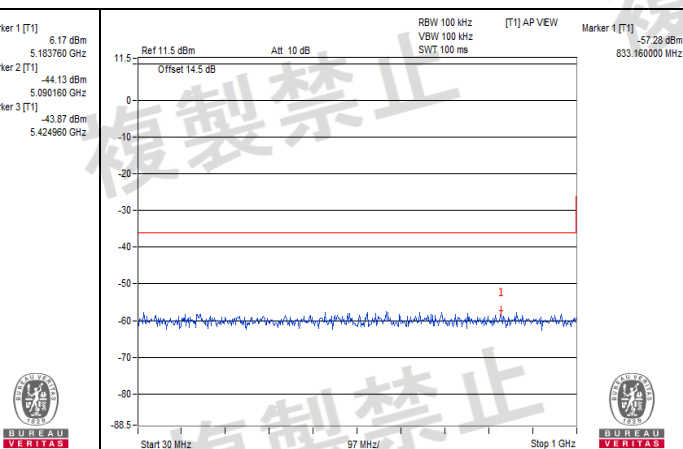
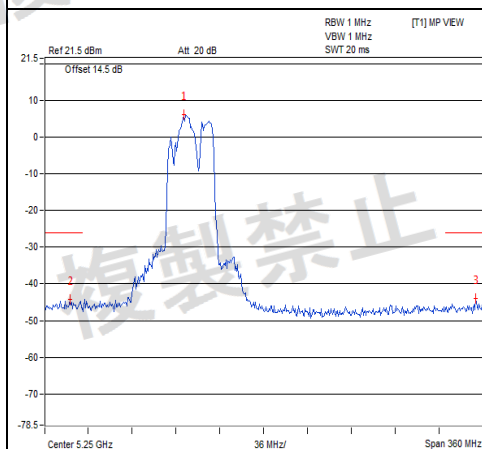
Measurement uncertainty: $\pm 3.93\text{dB}$

V normal
CH 46



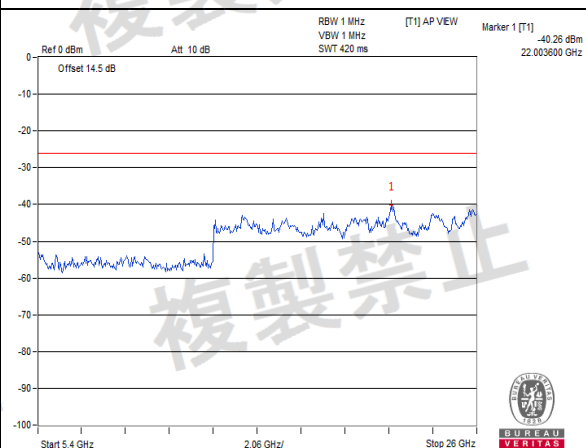
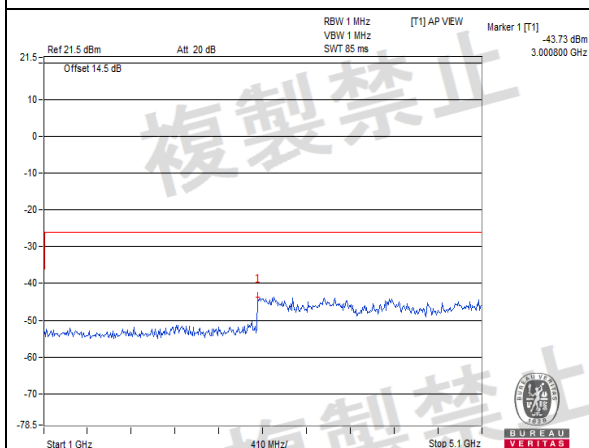
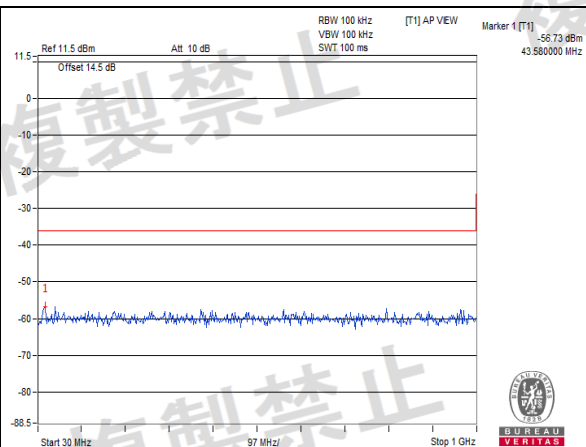
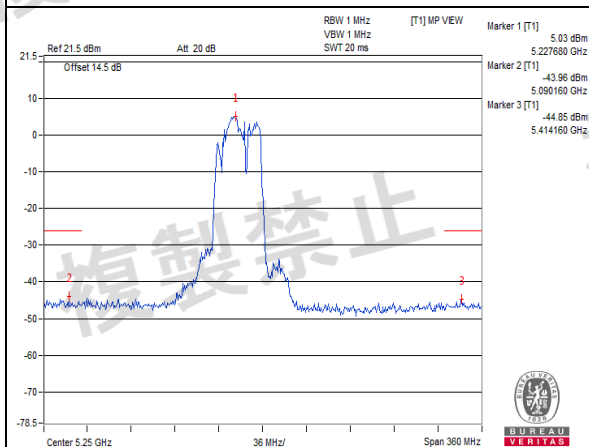
Measurement uncertainty: $\pm 3.93\text{dB}$

V max.
CH 38



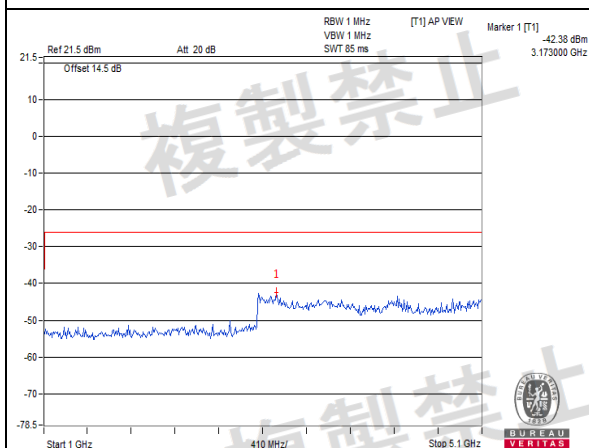
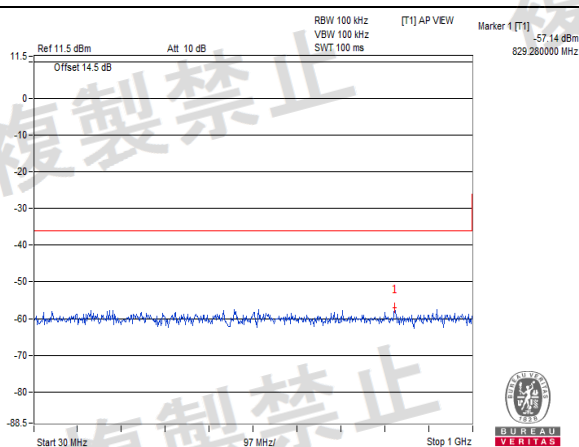
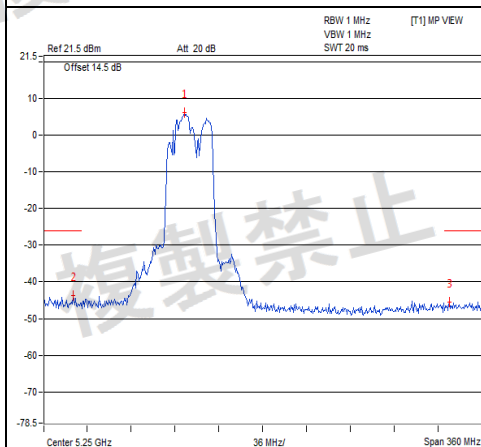
Measurement uncertainty: $\pm 3.93\text{dB}$

V_{max}
CH 46



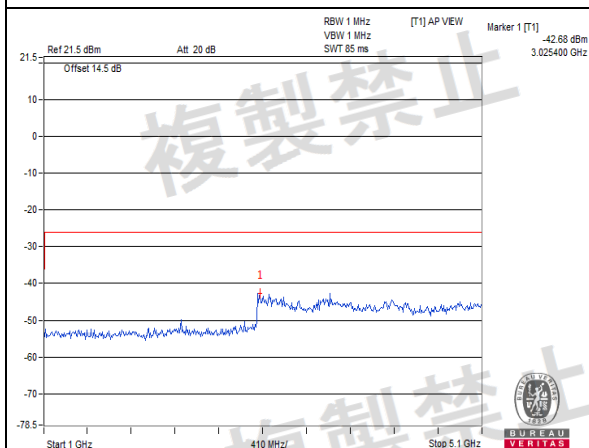
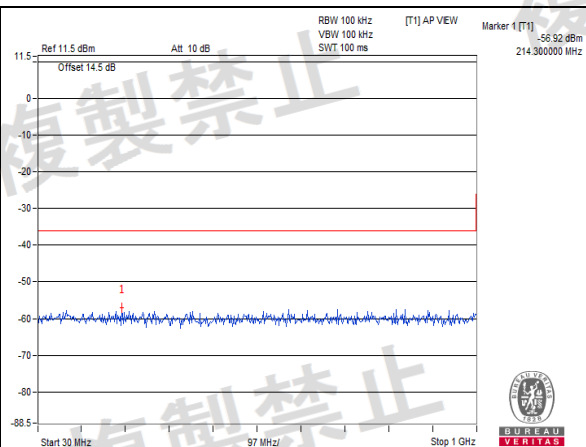
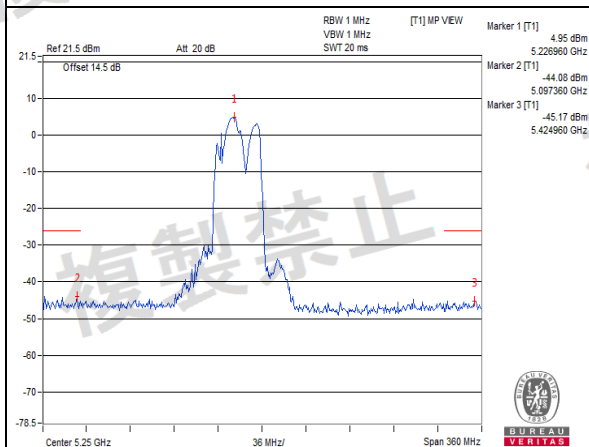
Measurement uncertainty: $\pm 3.93\text{dB}$

V min.
CH 38



Measurement uncertainty: $\pm 3.93\text{dB}$

V min.
CH 46



Measurement uncertainty: $\pm 3.93\text{dB}$

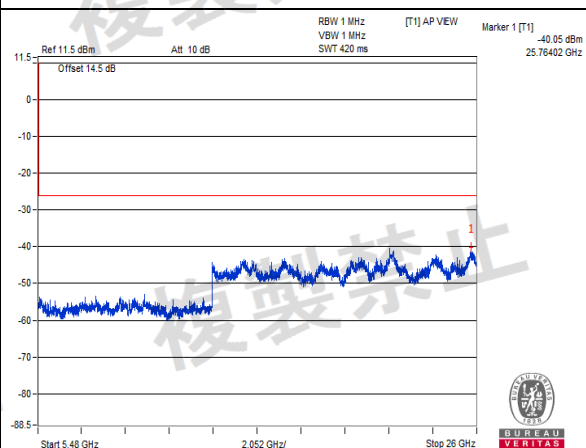
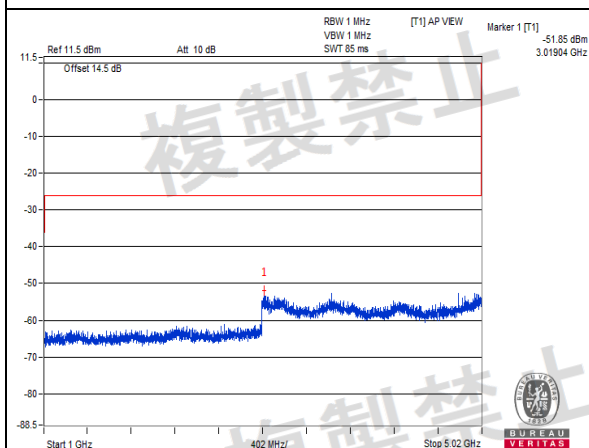
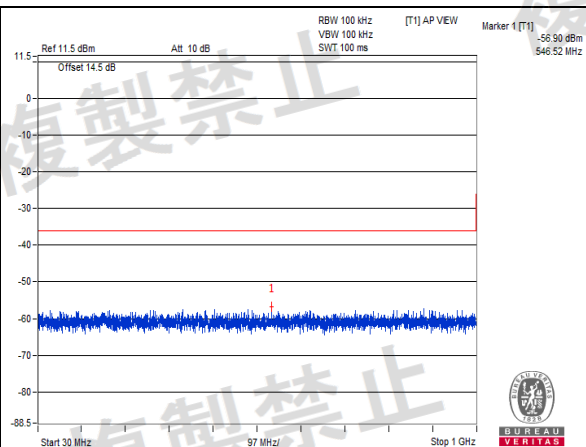
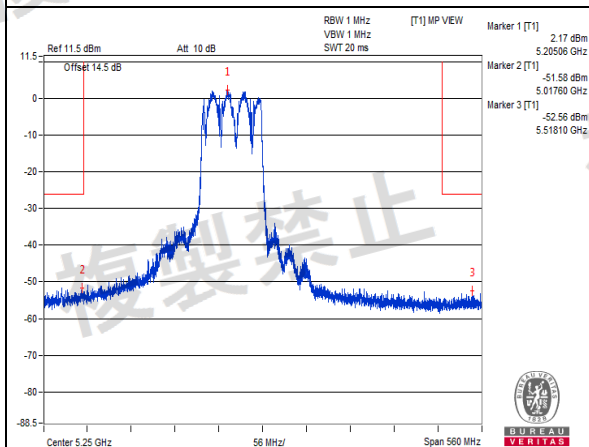
W52 Band:

802.11ac (VHT80)

Environmental Conditions		25 deg.C, 68% RH			
Test Channel		CH 42 (5210MHz)		Limit	Result
Test Condition	Frequency Range	Frequency (MHz)	Measured Value (uW)		
V _{normal}	30.0MHz ~ 1000.0MHz	546.520	0.0020	0.25uW	PASS
	1000.0MHz ~ 5020.0MHz	3019.040	0.0065	2.5uW	PASS
	5480.0MHz ~ 26000.0MHz	25764.020	0.0988	2.5uW	PASS
V _{max.}	30.0MHz ~ 1000.0MHz	478.860	0.0023	0.25uW	PASS
	1000.0MHz ~ 5020.0MHz	4992.860	0.0053	2.5uW	PASS
	5480.0MHz ~ 26000.0MHz	25666.550	0.0833	2.5uW	PASS
V _{min.}	30.0MHz ~ 1000.0MHz	791.200	0.0020	0.25uW	PASS
	1000.0MHz ~ 5020.0MHz	4991.860	0.0057	2.5uW	PASS
	5480.0MHz ~ 26000.0MHz	25794.800	0.0905	2.5uW	PASS

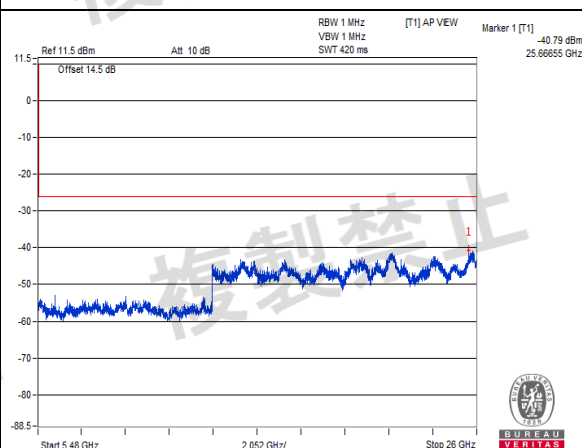
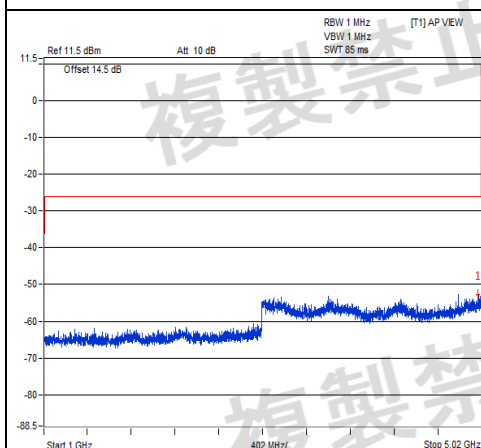
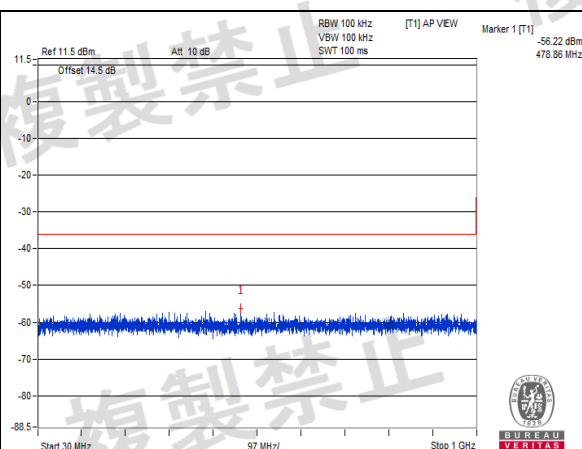
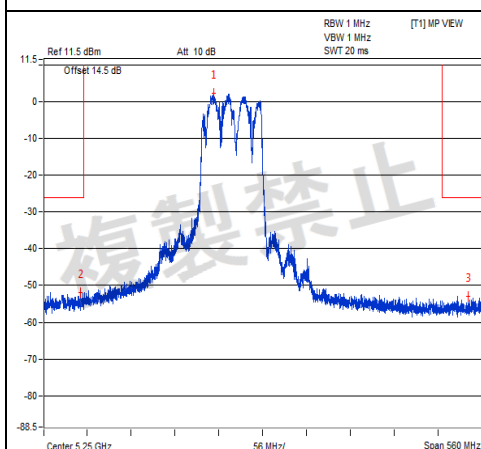
Note: 1. The worst value in each frequency range v.s. each channel has been marked by boldface.
2. The spectrum plots are attached on the following pages.

V normal
CH 42



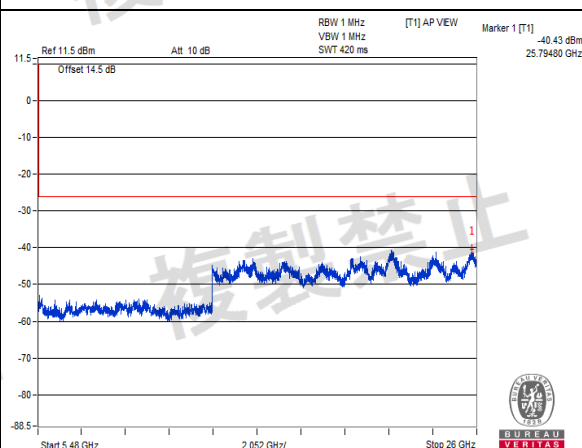
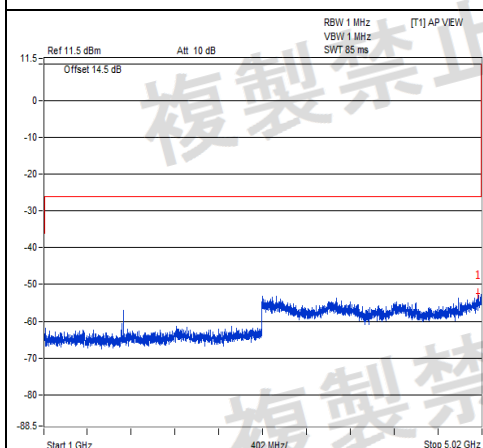
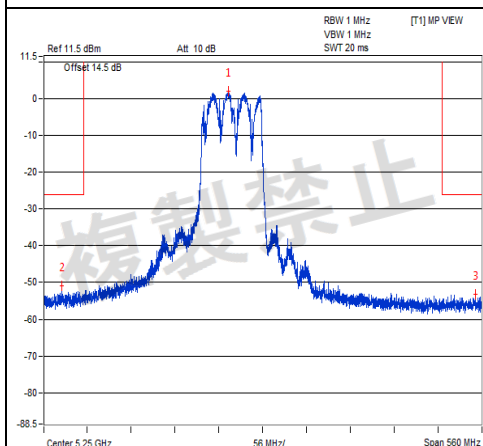
Measurement uncertainty: $\pm 3.93\text{dB}$

V_{max}
CH 42



Measurement uncertainty: $\pm 3.93\text{dB}$

V_{min}.
CH 42



Measurement uncertainty: $\pm 3.93\text{dB}$

4.4 Out-band Leakage Power

4.4.1 Limits of Out-band Leakage Power (EIRP)

W52 band: 802.11a / 802.11n (HT20)

Frequencies (MHz)	Limit
OBW \leq 18MHz	
$5140.0 \leq f_o \leq 5142.0\text{MHz}$	$\leq 2.5 \text{ uW/MHz}$
$5142.0 < f_o \leq 5150.0\text{MHz}$	$\leq 15.0 \text{ uW/MHz}$
$5250.0 \leq f_o < 5251.0\text{MHz}$	$\leq 10.0^{1-(f-9)} \text{ mW/MHz}$
$5251.0 \leq f_o < 5260.0\text{MHz}$	$\leq 10.0^{1-(8/90)(f-11)} \text{ mW/MHz}$
$5260.0 \leq f_o < 5266.7\text{MHz}$	$\leq 10.0^{1.8-(6/50)(f-20)} \text{ mW/MHz}$
$5266.7 \leq f_o \leq 5360.0\text{MHz}$	$\leq 2.5 \text{ }\mu\text{W/MHz}$
18MHz < OBW < 19MHz	
$5135.0 \leq f_o \leq 5142.0\text{MHz}$	$\leq 2.5 \text{ uW/MHz}$
$5142.0 < f_o \leq 5150.0\text{MHz}$	$\leq 15.0 \text{ uW/MHz}$
$5250.0 \leq f_o < 5251.0\text{MHz}$	$\leq 10.0^{1-(f-9)} \text{ mW/MHz}$
$5251.0 \leq f_o < 5260.0\text{MHz}$	$\leq 10.0^{1-(8/90)(f-11)} \text{ mW/MHz}$
$5260.0 \leq f_o < 5266.7\text{MHz}$	$\leq 10.0^{1.8-(6/50)(f-20)} \text{ mW/MHz}$
$5266.7 \leq f_o \leq 5365.0\text{MHz}$	$\leq 2.5 \text{ }\mu\text{W/MHz}$

W52 band: 802.11n (HT40)

Frequencies (MHz)	Limit
$5100.0 \leq f_o \leq 5141.6\text{MHz}$	$\leq 2.5 \text{ uW/MHz}$
$5141.6 < f_o \leq 5150.0\text{MHz}$	$\leq 15.0 \text{ uW/MHz}$
$5250.0 \leq f_o < 5251.0\text{MHz}$	$\leq 10.0^{-(f-20)+\log(1/2)} \text{ mW/MHz}$
$5251.0 \leq f_o < 5270.0\text{MHz}$	$\leq 10.0^{-(8/190)(f-21)-1+\log(1/2)} \text{ mW/MHz}$
$5270.0 \leq f_o < 5278.4\text{MHz}$	$\leq 10.0^{-(3/50)(f-40)-1.8+\log(1/2)} \text{ mW/MHz}$
$5278.4 \leq f_o \leq 5400.0\text{MHz}$	$\leq 2.5 \text{ }\mu\text{W/MHz}$

W52 band: 802.11ac (VHT80)

Frequencies (MHz)	Limit
$5020.0 \leq f_o \leq 5123.2\text{MHz}$	$\leq 2.5 \text{ uW/MHz}$
$5123.2 < f_o \leq 5150.0\text{MHz}$	$\leq 15.0 \text{ uW/MHz}$
$5250.0 \leq f_o < 5251.0\text{MHz}$	$\leq 10.0^{-(f-40)+\log(1/4)} \text{ mW/MHz}$
$5251.0 \leq f_o < 5290.0\text{MHz}$	$\leq 10.0^{-(8/390)(f-41)-1+\log(1/4)} \text{ mW/MHz}$
$5290.0 \leq f_o < 5296.7\text{MHz}$	$\leq 10.0^{-(3/100)(f-80)-1.8+\log(1/4)} \text{ mW/MHz}$
$5296.7 \leq f_o \leq 5480.0\text{MHz}$	$\leq 2.5 \text{ }\mu\text{W/MHz}$

W53 band: 802.11a / 802.11n (HT20)

Frequencies (MHz)	Limit
OBW \leq 18MHz	
$5140.0 \leq f_o \leq 5233.3\text{MHz}$	$\leq 2.5 \mu\text{W/MHz}$
$5233.3 < f_o \leq 5240.0\text{MHz}$	$\leq 10.0^{-1.8-(6/50)(f-20)} \text{mW/MHz}$
$5240.0 < f_o \leq 5249.0\text{MHz}$	$\leq 10.0^{-1-(8/90)(f-11)} \text{mW/MHz}$
$5249.0 < f_o \leq 5250.0\text{MHz}$	$\leq 10.0^{1-(f-9)} \text{mW/MHz}$
$5350.0 \leq f_o \leq 5360.0\text{MHz}$	$\leq 2.5 \mu\text{W/MHz}$
18MHz < OBW < 19MHz	
$5135.0 \leq f_o \leq 5233.3\text{MHz}$	$\leq 2.5 \mu\text{W/MHz}$
$5233.3 < f_o \leq 5240.0\text{MHz}$	$\leq 10.0^{-1.8-(6/50)(f-20)} \text{mW/MHz}$
$5240.0 < f_o \leq 5249.0\text{MHz}$	$\leq 10.0^{-1-(8/90)(f-11)} \text{mW/MHz}$
$5249.0 < f_o \leq 5250.0\text{MHz}$	$\leq 10.0^{1-(f-9)} \text{mW/MHz}$
$5350.0 \leq f_o \leq 5365.0\text{MHz}$	$\leq 2.5 \mu\text{W/MHz}$

W53 band: 802.11n (HT40)

Frequencies (MHz)	Limit
$5100.0 \leq f_o \leq 5210.0\text{MHz}$	$\leq 2.5 \mu\text{W/MHz}$
$5210.0 < f_o \leq 5221.6\text{MHz}$	$\leq 2.5 \mu\text{W/MHz}$
$5221.6 < f_o \leq 5230.0\text{MHz}$	$\leq 10.0^{-(3/50)(f-40)-1.8+\log(1/2)} \text{mW/MHz}$
$5230.0 < f_o \leq 5249.0\text{MHz}$	$\leq 10.0^{-(8/190)(f-21)-1+\log(1/2)} \text{mW/MHz}$
$5249.0 < f_o \leq 5250.0\text{MHz}$	$\leq 10.0^{-(f-20)+\log(1/2)} \text{mW/MHz}$
$5350.0 \leq f_o < 5358.4\text{MHz}$	$\leq 15 \mu\text{W/MHz}$
$5358.4 \leq f_o \leq 5400.0\text{MHz}$	$\leq 2.5 \mu\text{W/MHz}$

W53 band: 802.11ac (VHT80)

Frequencies (MHz)	Limit
$5020.0 \leq f_o \leq 5203.3\text{MHz}$	$\leq 2.5 \mu\text{W/MHz}$
$5203.3 < f_o \leq 5210.0\text{MHz}$	$\leq 10.0^{-(3/100)(f-80)-1.8+\log(1/4)} \text{mW/MHz}$
$5210.0 < f_o \leq 5249.0\text{MHz}$	$\leq 10.0^{-(8/390)(f-41)-1+\log(1/4)} \text{mW/MHz}$
$5249.0 < f_o \leq 5250.0\text{MHz}$	$\leq 10.0^{-(f-40)+\log(1/4)} \text{mW/MHz}$
$5350.0 \leq f_o < 5376.8\text{MHz}$	$\leq 15 \mu\text{W/MHz}$
$5376.8 \leq f_o \leq 5480.0\text{MHz}$	$\leq 2.5 \mu\text{W/MHz}$

W56 band: 802.11a / 802.11n (HT20)

Frequencies (MHz)	Limit
$5455 \leq f_o \leq 5460\text{MHz}$	$\leq 2.5 \mu\text{W/MHz}$
$5460 < f_o \leq 5470\text{MHz}$	$\leq 12.5 \mu\text{W/MHz}$
$5725 \leq f_o < 5740\text{MHz}$	$\leq 12.5 \mu\text{W/MHz}$
$5740 \leq f_o \leq 5745\text{MHz}$	$\leq 2.5 \mu\text{W/MHz}$

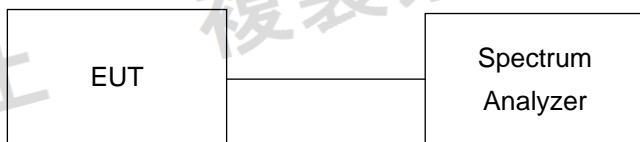
W56 band: 802.11n (HT40)

Frequencies (MHz)	Limit
$5420 \leq f_o \leq 5460\text{MHz}$	$\leq 12.5 \mu\text{W/MHz}$
$5460 < f_o \leq 5470\text{MHz}$	$\leq 50 \mu\text{W/MHz}$
$5725 \leq f_o \leq 5760\text{MHz}$	$\leq 12.5 \mu\text{W/MHz}$

W56 band: 802.11ac (VHT80)

Frequencies (MHz)	Limit
$5340 \leq f_o \leq 5460\text{MHz}$	$\leq 12.5 \mu\text{W/MHz}$
$5460 < f_o \leq 5469.5\text{MHz}$	$\leq 50 \mu\text{W/MHz}$
$5469.5 < f_o \leq 5470\text{MHz}$	$\leq 51.2 \mu\text{W/MHz}$
$5725 \leq f_o \leq 5800\text{MHz}$	$\leq 12.5 \mu\text{W/MHz}$

4.4.2 Test Setup



4.4.3 Test Results

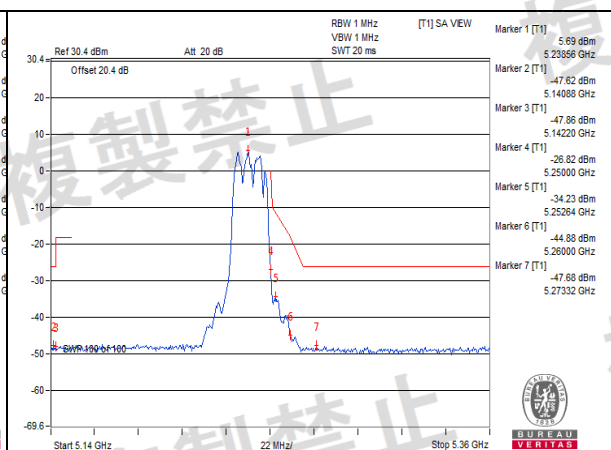
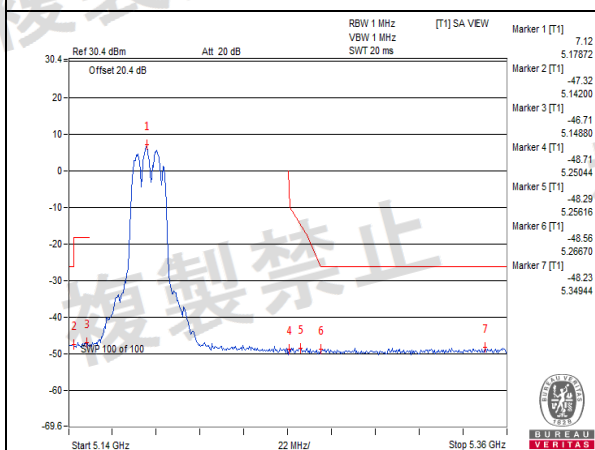
W52 Band:

802.11a

Environmental Conditions		25 deg.C, 68% RH			
Test Channel		CH36 (5180MHz)		CH48 (5240MHz)	
Test Condition	Frequency Band	Frequency (MHz)	Measured Value (uW/MHz)	Frequency (MHz)	Measured Value (uW/MHz)
V _{normal}	5140.0 ≤ fo ≤ 5142.0 MHz	5142.00	0.018535	5140.88	0.017298
	5142.0 < fo ≤ 5150.0 MHz	5148.80	0.021330	5142.20	0.016368
	5250.0 ≤ fo < 5251.0 MHz	5250.44	0.013459	5250.00	2.079697
	5251.0 ≤ fo < 5260.0 MHz	5256.16	0.014825	5252.64	0.377572
	5260.0 ≤ fo < 5266.7 MHz	5266.70	0.013932	5260.00	0.032509
	5266.7 ≤ fo ≤ 5360.0 MHz	5349.44	0.015031	5273.32	0.017061
V _{max.}	5140.0 ≤ fo ≤ 5142.0 MHz	5141.76	0.017906	5140.00	0.017338
	5142.0 < fo ≤ 5150.0 MHz	5149.68	0.020045	5147.48	0.017947
	5250.0 ≤ fo < 5251.0 MHz	5251.00	0.013521	5250.00	2.393316
	5251.0 ≤ fo < 5260.0 MHz	5251.32	0.015171	5253.08	0.309030
	5260.0 ≤ fo < 5266.7 MHz	5264.08	0.013740	5260.00	0.035563
	5266.7 ≤ fo ≤ 5360.0 MHz	5359.12	0.014588	5274.20	0.015740
V _{min.}	5140.0 ≤ fo ≤ 5142.0 MHz	5140.88	0.019454	5140.00	0.016444
	5142.0 < fo ≤ 5150.0 MHz	5148.36	0.021777	5143.08	0.018155
	5250.0 ≤ fo < 5251.0 MHz	5250.88	0.014158	5250.00	1.896706
	5251.0 ≤ fo < 5260.0 MHz	5254.84	0.015631	5253.08	0.383707
	5260.0 ≤ fo < 5266.7 MHz	5264.08	0.013583	5260.00	0.033806
	5266.7 ≤ fo ≤ 5360.0 MHz	5356.92	0.015101	5266.72	0.018030

Note: 1. The worst value in each frequency range v.s. each channel has been marked by boldface
 2. The spectrum plots are attached on the following page.

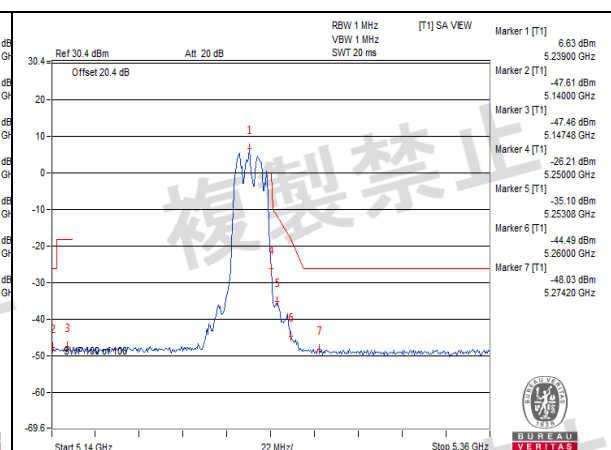
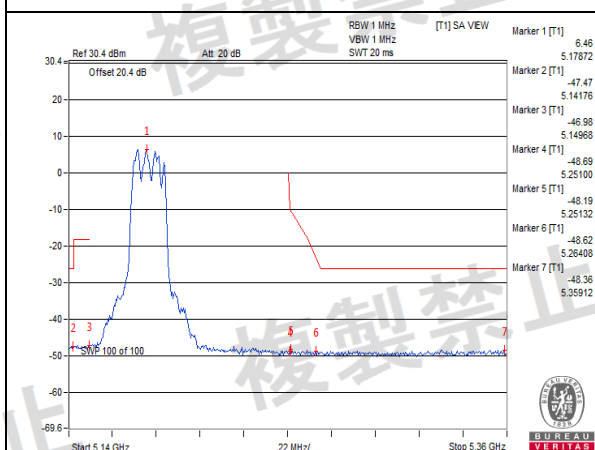
V_{normal}



Channel 36

Channel 48

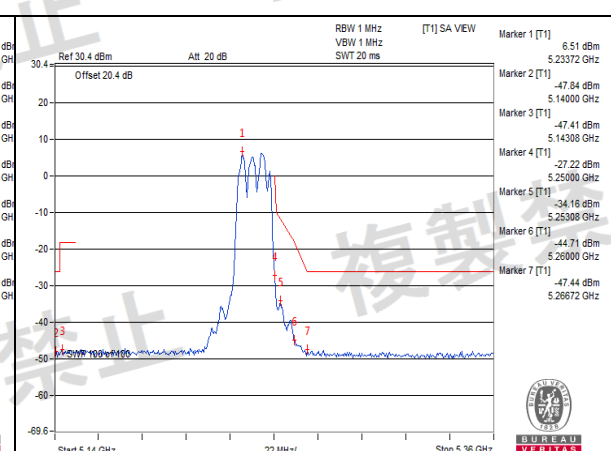
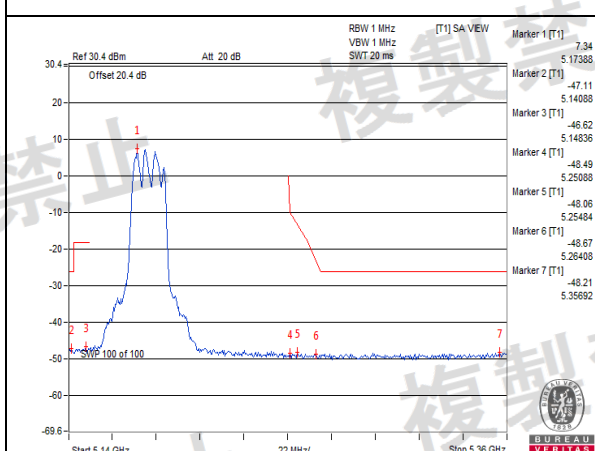
V_{max}



Channel 36

Channel 48

V_{min}



Channel 36

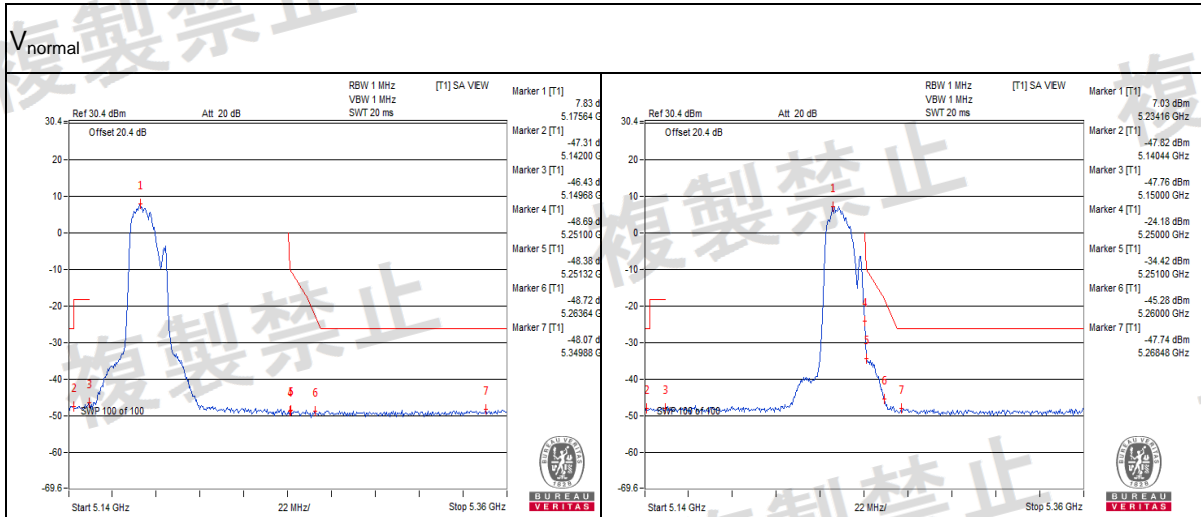
Channel 48

Measurement uncertainty: ± 206.50 Hz

W52 Band:
802.11n (HT20)

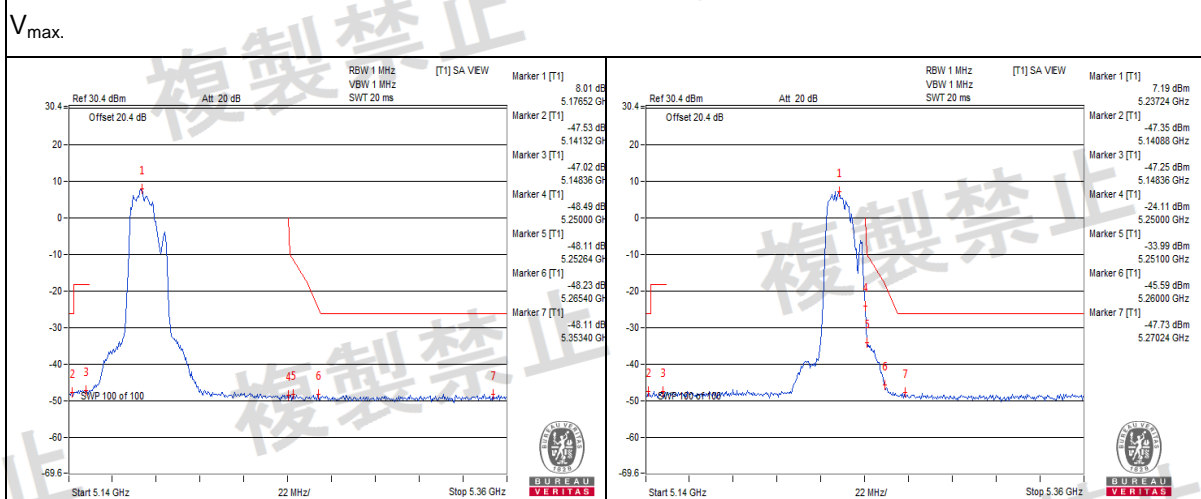
Environmental Conditions		25 deg.C, 68% RH			
Test Channel		CH36 (5180MHz)		CH48 (5240MHz)	
Test Condition	Frequency Band	Frequency (MHz)	Measured Value (uW/MHz)	Frequency (MHz)	Measured Value (uW/MHz)
V_{normal}	5140.0 ≤ fo ≤ 5142.0 MHz	5142.00	0.018578	5140.44	0.016520
	5142.0 < fo ≤ 5150.0 MHz	5149.68	0.022751	5150.00	0.016749
	5250.0 ≤ fo < 5251.0 MHz	5251.00	0.013521	5250.00	3.819443
	5251.0 ≤ fo < 5260.0 MHz	5251.32	0.014521	5251.00	0.361410
	5260.0 ≤ fo < 5266.7 MHz	5263.64	0.013428	5260.00	0.029648
	5266.7 ≤ fo ≤ 5360.0 MHz	5349.88	0.015596	5268.48	0.016827
V_{max.}	5140.0 ≤ fo ≤ 5142.0 MHz	5141.32	0.017660	5140.88	0.018408
	5142.0 < fo ≤ 5150.0 MHz	5148.36	0.019861	5148.36	0.018836
	5250.0 ≤ fo < 5251.0 MHz	5250.00	0.014158	5250.00	3.881504
	5251.0 ≤ fo < 5260.0 MHz	5252.64	0.015453	5251.00	0.399025
	5260.0 ≤ fo < 5266.7 MHz	5265.40	0.015031	5260.00	0.027606
	5266.7 ≤ fo ≤ 5360.0 MHz	5353.40	0.015453	5270.24	0.016866
V_{min.}	5140.0 ≤ fo ≤ 5142.0 MHz	5140.88	0.020184	5141.32	0.017579
	5142.0 < fo ≤ 5150.0 MHz	5147.92	0.021677	5142.00	0.016904
	5250.0 ≤ fo < 5251.0 MHz	5250.00	0.016032	5250.00	3.917419
	5251.0 ≤ fo < 5260.0 MHz	5251.00	0.013900	5251.00	0.381944
	5260.0 ≤ fo < 5266.7 MHz	5264.08	0.013677	5260.12	0.029376
	5266.7 ≤ fo ≤ 5360.0 MHz	5351.64	0.015631	5281.24	0.017742

Note: 1. The worst value in each frequency range v.s. each channel has been marked by boldface
2. The spectrum plots are attached on the following page.



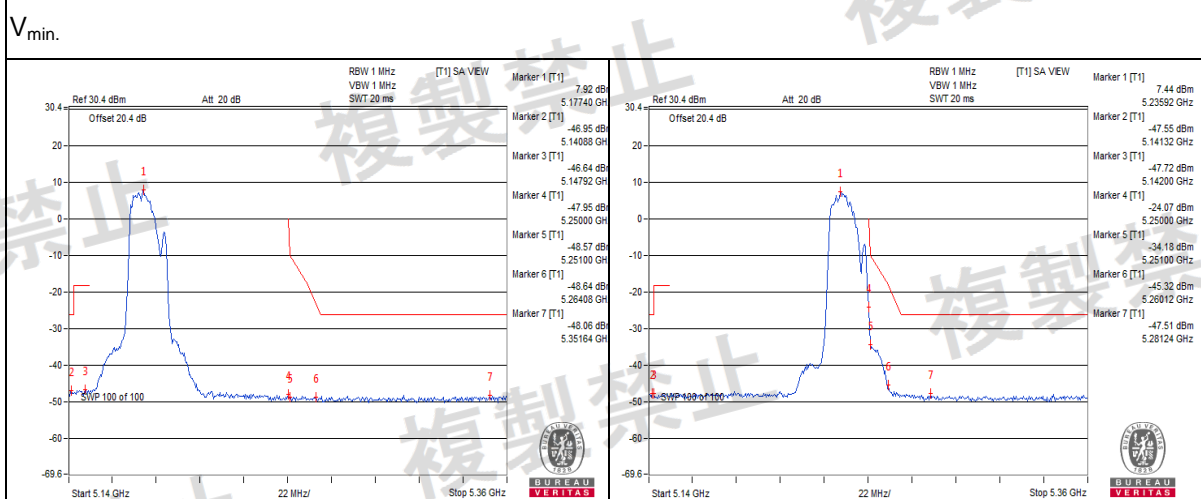
Channel 36

Channel 48



Channel 36

Channel 48



Channel 36

Channel 48

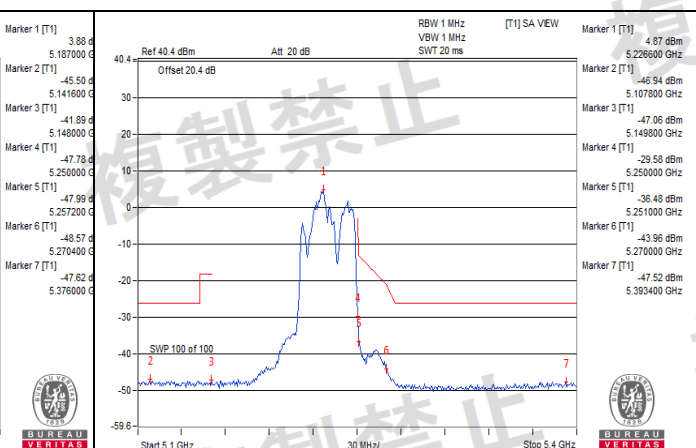
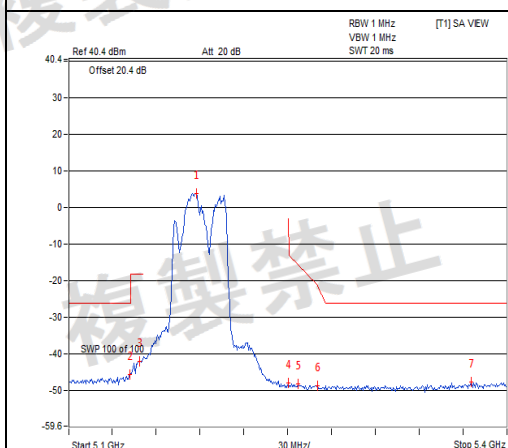
Measurement uncertainty: ± 206.50 Hz

W52 Band:
802.11n (HT40)

Environmental Conditions		25 deg.C, 68% RH			
Test Channel		CH38 (5190MHz)		CH46 (5230MHz)	
Test Condition	Frequency Band	Frequency (MHz)	Measured Value (uW/MHz)	Frequency (MHz)	Measured Value (uW/MHz)
V _{normal}	5100.0 ≤ fo ≤ 5141.6MHz	5141.60	0.028145	5107.80	0.020227
	5141.6 < fo ≤ 5150.0MHz	5148.00	0.064644	5149.80	0.019642
	5250.0 ≤ fo < 5251.0MHz	5250.00	0.016655	5250.00	1.099967
	5251.0 ≤ fo < 5270.0MHz	5257.20	0.015849	5251.00	0.224769
	5270.0 ≤ fo < 5278.4MHz	5270.40	0.013876	5270.00	0.040115
	5278.4 ≤ fo ≤ 5400.0MHz	5376.00	0.017267	5393.40	0.017691
V _{max.}	5100.0 ≤ fo ≤ 5141.6MHz	5141.60	0.025891	5113.20	0.019505
	5141.6 < fo ≤ 5150.0MHz	5150.00	0.070199	5148.00	0.018514
	5250.0 ≤ fo < 5251.0MHz	5250.00	0.016372	5250.00	0.970465
	5251.0 ≤ fo < 5270.0MHz	5251.20	0.016185	5251.00	0.188505
	5270.0 ≤ fo < 5278.4MHz	5277.60	0.014966	5270.00	0.038588
	5278.4 ≤ fo ≤ 5400.0MHz	5399.40	0.017378	5395.80	0.017716
V _{min.}	5100.0 ≤ fo ≤ 5141.6MHz	5141.40	0.027553	5118.00	0.019079
	5141.6 < fo ≤ 5150.0MHz	5148.60	0.084182	5145.60	0.017337
	5250.0 ≤ fo < 5251.0MHz	5250.60	0.016035	5250.00	0.906077
	5251.0 ≤ fo < 5270.0MHz	5253.60	0.015009	5251.00	0.252428
	5270.0 ≤ fo < 5278.4MHz	5273.40	0.014954	5270.00	0.039809
	5278.4 ≤ fo ≤ 5400.0MHz	5370.60	0.017231	5377.80	0.017498

Note: 1. The worst value in each frequency range v.s. each channel has been marked by boldface
2. The spectrum plots are attached on the following page.

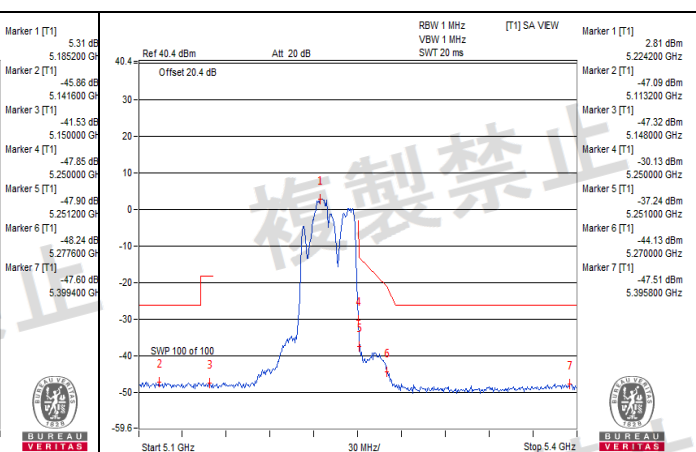
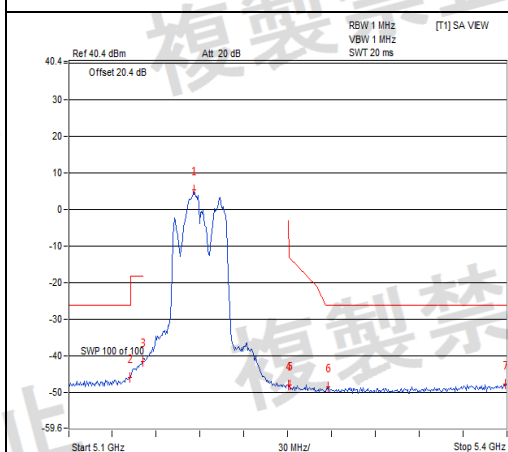
V_{normal}



Channel 38

Channel 46

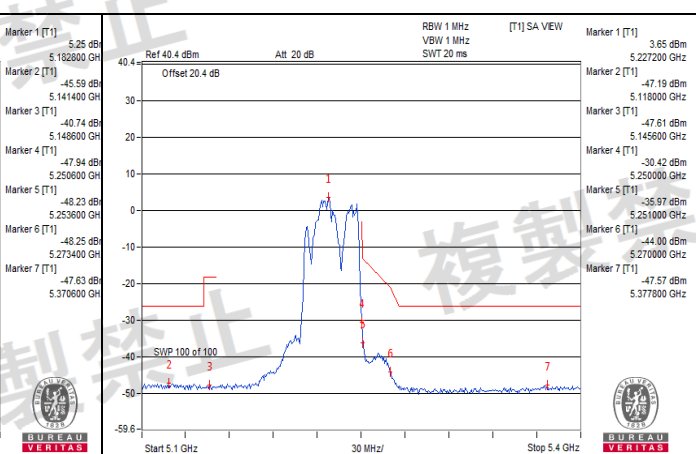
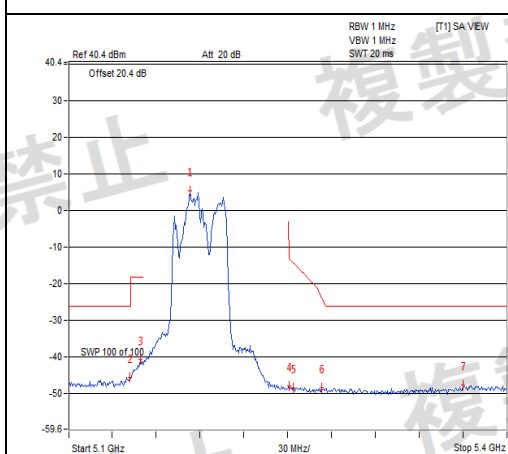
V_{max}



Channel 38

Channel 46

V_{min}



Channel 38

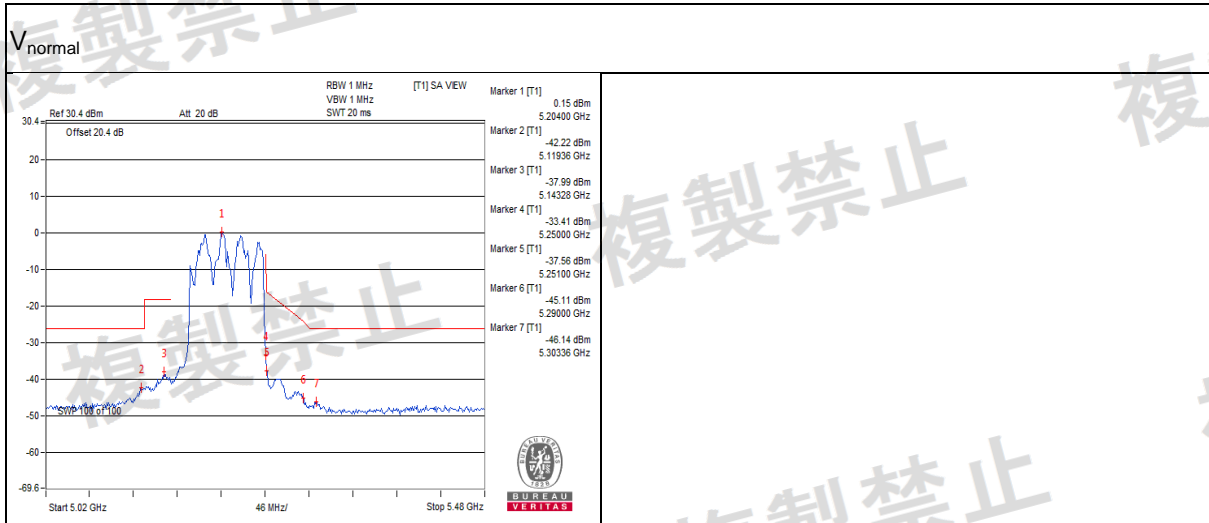
Channel 46

Measurement uncertainty: ± 206.50 Hz

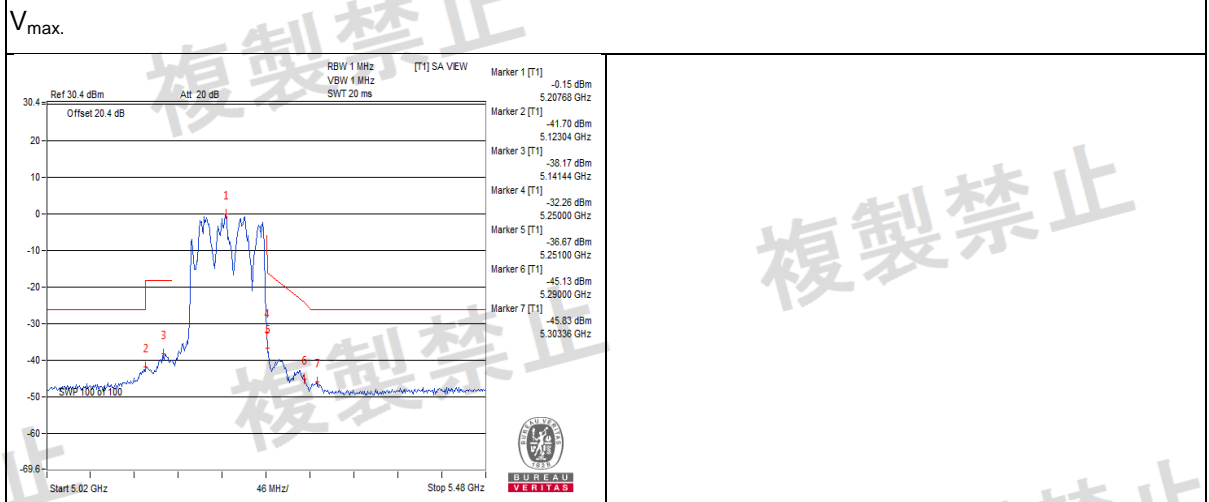
W52 Band:
802.11ac (VHT80)

Environmental Conditions		25 deg.C, 68% RH	
Test Channel		CH42 (5210MHz)	
Test Condition	Frequency Band	Frequency (MHz)	Measured Value (uW/MHz)
normal	$5020.0 \leq f_o \leq 5123.2\text{MHz}$	5119.36	0.059979
	$5123.2 < f_o \leq 5150.0\text{MHz}$	5143.28	0.158855
	$5250.0 \leq f_o < 5251.0\text{MHz}$	5250.00	0.456037
	$5251.0 \leq f_o < 5290.0\text{MHz}$	5251.00	0.175388
	$5290.0 \leq f_o < 5296.7\text{MHz}$	5290.00	0.030832
	$5296.7 \leq f_o \leq 5480.0\text{MHz}$	5303.36	0.024322
$V_{\max.}$	$5020.0 \leq f_o \leq 5123.2\text{MHz}$	5123.04	0.067608
	$5123.2 < f_o \leq 5150.0\text{MHz}$	5141.44	0.152405
	$5250.0 \leq f_o < 5251.0\text{MHz}$	5250.00	0.594292
	$5251.0 \leq f_o < 5290.0\text{MHz}$	5251.00	0.215278
	$5290.0 \leq f_o < 5296.7\text{MHz}$	5290.00	0.030690
	$5296.7 \leq f_o \leq 5480.0\text{MHz}$	5303.36	0.026122
$V_{\min.}$	$5020.0 \leq f_o \leq 5123.2\text{MHz}$	5121.20	0.067298
	$5123.2 < f_o \leq 5150.0\text{MHz}$	5146.96	0.145881
	$5250.0 \leq f_o < 5251.0\text{MHz}$	5250.00	0.744732
	$5251.0 \leq f_o < 5290.0\text{MHz}$	5251.00	0.183654
	$5290.0 \leq f_o < 5296.7\text{MHz}$	5290.00	0.030549
	$5296.7 \leq f_o \leq 5480.0\text{MHz}$	5300.60	0.023550

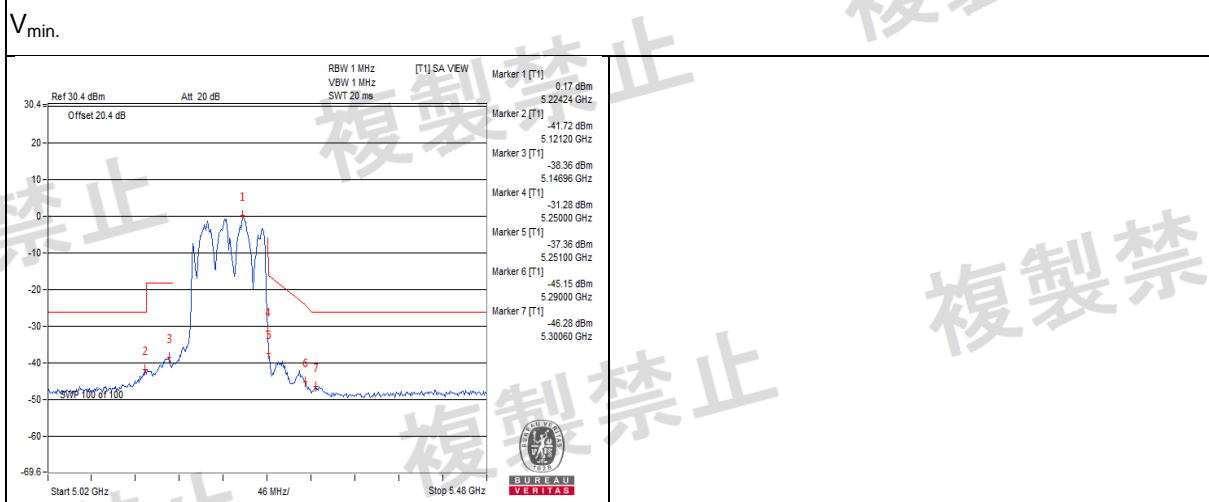
Note: 1. The worst value in each frequency range v.s. each channel has been marked by boldface
2. The spectrum plots are attached on the following page.



Channel 42



Channel 42



Channel 42

Measurement uncertainty: ± 206.50 Hz

4.5 Adjacent Channel Leakage Power

4.5.1 Limits of Adjacent Channel Leakage Power

802.11a / 802.11n (HT20):

Frequencies (MHz)	Limit
Mean Power 20MHz Distance of Carrier	$\geq 25\text{dBc}$
Mean Power 40MHz Distance of Carrier	$\geq 40\text{dBc}$

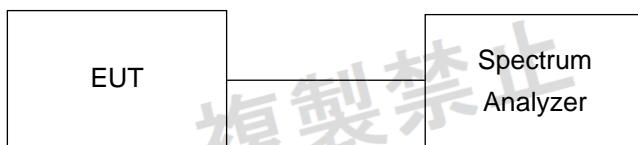
802.11n (HT40):

Frequencies (MHz)	Limit
Mean Power 40MHz Distance of Carrier	$\geq 25\text{dBc}$
Mean Power 80MHz Distance of Carrier	$\geq 40\text{dBc}$

802.11ac (VHT80):

Frequencies (MHz)	Limit
Mean Power 80MHz Distance of Carrier	$\geq 25\text{dBc}$

4.5.2 Test Setup



4.5.3 Test Result

W52 Band:

802.11a

Environmental Conditions		25 deg.C, 68% RH			
Voltage	Channel	Ch 36	Ch 40	Ch 48	Limit (dBc)
V _{nom}	Mean Power of Carrier (dBm)	20.50	20.20	19.66	-
	Mean Power +20MHz Distance of Carrier (dBc)	38.12	38.62	39.56	25
	Mean Power -20MHz Distance of Carrier (dBc)	36.89	37.17	37.76	25
	Mean Power +40MHz Distance of Carrier (dBc)	50.38	50.35	50.08	40
	Mean Power -40MHz Distance of Carrier (dBc)	49.69	49.58	49.36	40
V _{max.}	Mean Power of Carrier (dBm)	20.48	20.17	19.65	-
	Mean Power +20MHz Distance of Carrier (dBc)	38.10	38.61	39.49	25
	Mean Power -20MHz Distance of Carrier (dBc)	36.82	37.25	37.74	25
	Mean Power +40MHz Distance of Carrier (dBc)	50.38	50.35	50.10	40
	Mean Power -40MHz Distance of Carrier (dBc)	49.78	49.56	49.41	40
V _{min.}	Mean Power of Carrier (dBm)	20.46	20.18	19.60	-
	Mean Power +20MHz Distance of Carrier (dBc)	38.01	38.62	39.38	25
	Mean Power -20MHz Distance of Carrier (dBc)	36.85	37.22	37.70	25
	Mean Power +40MHz Distance of Carrier (dBc)	50.35	50.34	49.98	40
	Mean Power -40MHz Distance of Carrier (dBc)	49.74	49.54	49.30	40

W52 Band:
802.11n (HT20)

Environmental Conditions		25 deg.C, 68% RH			
Voltage	Channel	Ch 36	Ch 40	Ch 48	Limit (dBc)
V _{nom}	Mean Power of Carrier (dBm)	21.27	20.91	20.43	-
	Mean Power +20MHz Distance of Carrier (dBc)	38.77	39.30	40.52	25
	Mean Power -20MHz Distance of Carrier (dBc)	37.95	38.47	40.09	25
	Mean Power +40MHz Distance of Carrier (dBc)	51.18	51.13	50.81	40
	Mean Power -40MHz Distance of Carrier (dBc)	50.57	50.33	50.16	40
V _{max.}	Mean Power of Carrier (dBm)	21.26	20.90	20.54	-
	Mean Power +20MHz Distance of Carrier (dBc)	38.51	39.20	40.55	25
	Mean Power -20MHz Distance of Carrier (dBc)	37.91	38.46	40.12	25
	Mean Power +40MHz Distance of Carrier (dBc)	51.21	51.15	50.96	40
	Mean Power -40MHz Distance of Carrier (dBc)	50.55	50.28	50.29	40
V _{min.}	Mean Power of Carrier (dBm)	21.24	20.92	20.52	-
	Mean Power +20MHz Distance of Carrier (dBc)	38.58	39.23	40.58	25
	Mean Power -20MHz Distance of Carrier (dBc)	37.90	38.50	40.26	25
	Mean Power +40MHz Distance of Carrier (dBc)	51.19	51.12	50.98	40
	Mean Power -40MHz Distance of Carrier (dBc)	50.58	50.35	50.28	40

W52 Band:
802.11n (HT40)

Environmental Conditions		25 deg.C, 68% RH		
Voltage	Channel	CH 38	CH 46	Limit (dBc)
V _{nom}	Mean Power of Carrier (dBm)	21.19	20.59	-
	Mean Power +40MHz Distance of Carrier (dBc)	38.93	40.20	25
	Mean Power -40MHz Distance of Carrier (dBc)	37.01	37.60	25
	Mean Power +80MHz Distance of Carrier (dBc)	48.49	48.04	40
	Mean Power -80MHz Distance of Carrier (dBc)	46.82	46.92	40
V _{max.}	Mean Power of Carrier (dBm)	21.27	20.42	-
	Mean Power +40MHz Distance of Carrier (dBc)	38.88	39.89	25
	Mean Power -40MHz Distance of Carrier (dBc)	36.98	37.33	25
	Mean Power +80MHz Distance of Carrier (dBc)	48.56	47.85	40
	Mean Power -80MHz Distance of Carrier (dBc)	46.92	46.75	40
V _{min.}	Mean Power of Carrier (dBm)	21.27	20.54	-
	Mean Power +40MHz Distance of Carrier (dBc)	38.79	39.95	25
	Mean Power -40MHz Distance of Carrier (dBc)	36.92	37.45	25
	Mean Power +80MHz Distance of Carrier (dBc)	48.57	48.06	40
	Mean Power -80MHz Distance of Carrier (dBc)	46.93	46.87	40

W52 Band:
802.11ac (VHT80)

Environmental Conditions		25 deg.C, 68% RH	
Voltage	Channel	CH 42	Limit (dBc)
V _{nom}	Mean Power of Carrier (dBm)	20.97	-
	Mean Power +80MHz Distance of Carrier (dBc)	38.15	25
	Mean Power -80MHz Distance of Carrier (dBc)	34.78	25
V _{max.}	Mean Power of Carrier (dBm)	21.13	-
	Mean Power +80MHz Distance of Carrier (dBc)	38.11	25
	Mean Power -80MHz Distance of Carrier (dBc)	34.99	25
V _{min.}	Mean Power of Carrier (dBm)	21.16	-
	Mean Power +80MHz Distance of Carrier (dBc)	38.20	25
	Mean Power -80MHz Distance of Carrier (dBc)	34.92	25

4.6 Antenna Power Measurement

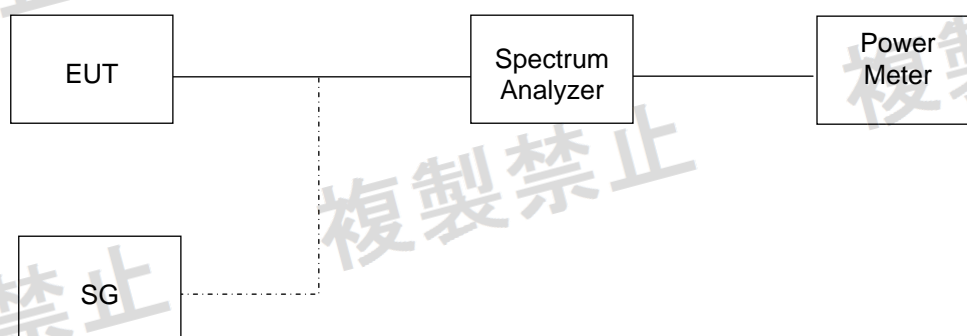
4.6.1 Limits of Antenna Power

W52 band			
Mode	802.11a / 802.11n (HT20)	802.11n (HT40)	802.11ac (VHT80)
Output power	10mW/MHz	5mW/MHz	2.5mW/MHz
E.I.R.P	10mW/MHz	5mW/MHz	2.5mW/MHz

W53 band			
Mode	802.11a / 802.11n (HT20)	802.11n (HT40)	802.11ac (VHT80)
Output power	10mW/MHz	5mW/MHz	2.5mW/MHz
E.I.R.P (with TPC)	10mW/MHz	5mW/MHz	2.5mW/MHz
E.I.R.P (without TPC)	5mW/MHz	2.5mW/MHz	1.25mW/MHz

W56 band			
Mode	802.11a / 802.11n (HT20)	802.11n (HT40)	802.11ac (VHT80)
Output power	10mW/MHz	5mW/MHz	2.5mW/MHz
E.I.R.P (with TPC)	50mW/MHz	25mW/MHz	12.5mW/MHz
E.I.R.P (without TPC)	25mW/MHz	12.5mW/MHz	6.25mW/MHz

4.6.2 Test Setup



4.6.3 Test Results

W52 bands: 802.11a

Environmental Conditions	25 deg.C, 68% RH		
Test Condition	Conducted RF Output Power Density (mW/MHz)		
	CH 36 5180MHz	CH 48 5240MHz	Max. Limit (mW/MHz)
V_{normal}	2.433	2.390	10
$V_{max.}$	2.440	2.395	10
$V_{min.}$	2.365	2.321	10
Rated Power	3mW/MHz		
Tolerance of Antenna Power	0.6mW/MHz ~ 3.6mW/MHz		

PIFA antenna with antenna gain: 5.9dBi

Environmental Conditions	25 deg.C, 68% RH		
Test Condition	Radiated RF Output Power Density (mW/MHz)		
	CH 36 5180MHz	CH 48 5240MHz	Max. Limit (mW/MHz)
V_{normal}	9.464	9.299	10
$V_{max.}$	9.493	9.318	10
$V_{min.}$	9.199	9.030	10

- Note: 1. The radiated RF output power density is a "calculated" value derived from the conducted value.
 2. Formula: Radiated RF output power density = Conducted RF output power density + Antenna Gain.

W52 bands: 802.11n (HT20)

Environmental Conditions	25 deg.C, 68% RH		
Test Condition	Conducted RF Output Power Density (mW/MHz)		
	CH 36 5180MHz	CH 48 5240MHz	Max. Limit (mW/MHz)
V_{normal}	2.377	2.452	10
$V_{max.}$	2.382	2.460	10
$V_{min.}$	2.306	2.381	10
Rated Power	3mW/MHz		
Tolerance of Antenna Power	0.6mW/MHz ~ 3.6mW/MHz		

PIFA antenna with antenna gain: 5.9dBi

Environmental Conditions	25 deg.C, 68% RH		
Test Condition	Radiated RF Output Power Density (mW/MHz)		
	CH 36 5180MHz	CH 48 5240MHz	Max. Limit (mW/MHz)
V_{normal}	9.249	9.541	10
$V_{max.}$	9.267	9.570	10
$V_{min.}$	8.971	9.264	10

- Note: 1. The radiated RF output power density is a "calculated" value derived from the conducted value.
 2. Formula: Radiated RF output power density = Conducted RF output power density + Antenna Gain.

W52 bands: 802.11n (HT40)

Environmental Conditions	25 deg.C, 68% RH		
Test Condition	Conducted RF Output Power Density (mW/MHz)		
	CH 38 5190MHz	CH 46 5230MHz	Max. Limit (mW/MHz)
V _{normal}	1.151	1.131	5
V _{max.}	1.153	1.134	5
V _{min.}	1.116	1.098	5
Rated Power	2mW/MHz		
Tolerance of Antenna Power	0.4mW/MHz ~ 2.4mW/MHz		

PIFA antenna with antenna gain: 5.9dBi

Environmental Conditions	25 deg.C, 68% RH		
Test Condition	Radiated RF Output Power Density (mW/MHz)		
	CH 38 5190MHz	CH 46 5230MHz	Max. Limit (mW/MHz)
V _{normal}	4.478	4.400	5
V _{max.}	4.487	4.413	5
V _{min.}	4.344	4.272	5

- Note: 1. The radiated RF output power density is a "calculated" value derived from the conducted value.
 2. Formula: Radiated RF output power density = Conducted RF output power density + Antenna Gain.

W52 bands: 802.11ac (VHT80)

Environmental Conditions	25 deg.C, 68% RH	
Test Condition	Conducted RF Output Power Density (mW/MHz)	
	CH 42 5210MHz	Max. Limit (mW/MHz)
V _{normal}	0.580	2.5
V _{max.}	0.580	2.5
V _{min.}	0.563	2.5
Rated Power	1mW/MHz	
Tolerance of Antenna Power	0.2mW/MHz ~ 1.2mW/MHz	

PIFA antenna with antenna gain: 5.9dBi

Environmental Conditions	25 deg.C, 68% RH	
Test Condition	Radiated RF Output Power Density (mW/MHz)	
	CH 42 5210MHz	Max. Limit (mW/MHz)
V _{normal}	2.255	2.5
V _{max.}	2.257	2.5
V _{min.}	2.192	2.5

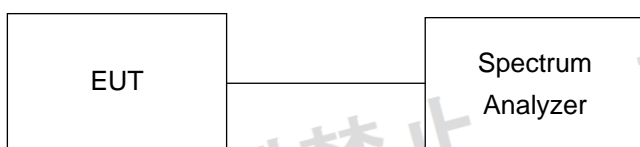
- Note: 1. The radiated RF output power density is a "calculated" value derived from the conducted value.
 2. Formula: Radiated RF output power density = Conducted RF output power density + Antenna Gain.

4.7 Spurious Emission for Receiver

4.7.1 Limits of Spurious Emission for Receiver

Frequencies (MHz)	Limit
Below 1GHz	$\leq 4\text{nW}$ (-54dBm)
Above 1GHz	$\leq 20\text{nW}$ (-47dBm)

4.7.2 Test Setup



4.7.3 Test Result

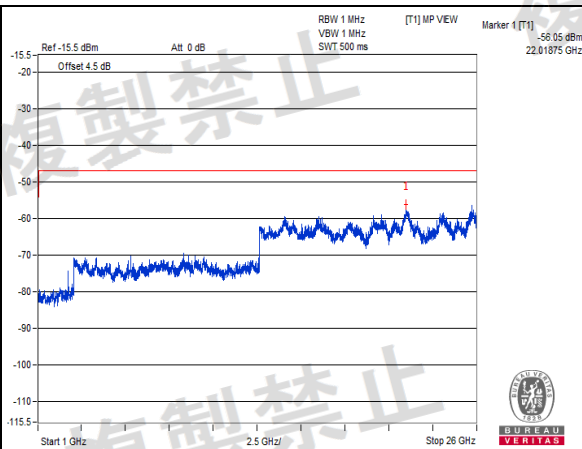
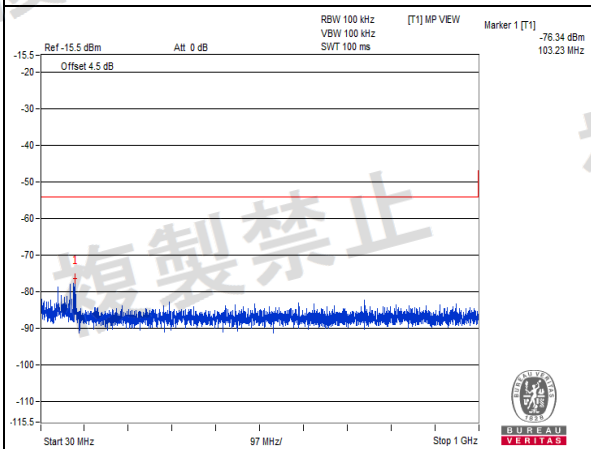
W52 bands:

802.11a

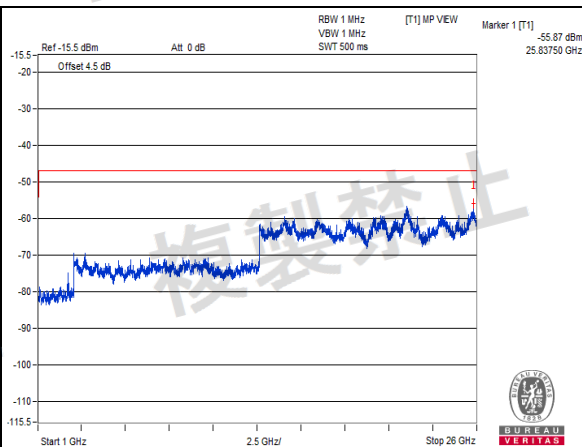
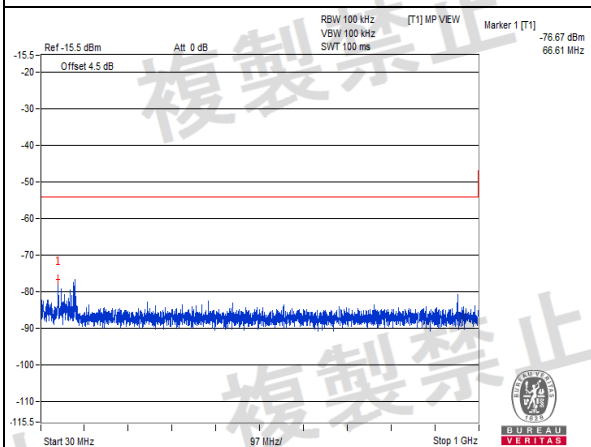
Environmental Conditions		25 deg.C, 68% RH					
Test Channel		CH36 (5180MHz)		CH 40 (5200MHz)		Limit	Result
Test Condition	Frequency Range	Frequency (MHz)	Measured Value (nW)	Frequency (MHz)	Measured Value (nW)		
V _{normal}	Below 1GHz	103.230	0.023227nW	66.610	0.021528nW	4nW	PASS
	Above 1GHz	22018.750	2.483133nW	25837.500	2.588213nW	20nW	PASS
V _{max.}	Below 1GHz	66.370	0.021878nW	100.560	0.02208nW	4nW	PASS
	Above 1GHz	22050.000	1.990673nW	25818.750	2.018366nW	20nW	PASS
V _{min.}	Below 1GHz	66.370	0.020417nW	66.610	0.017824nW	4nW	PASS
	Above 1GHz	25837.500	1.949845nW	22043.750	2.06063nW	20nW	PASS
Test Channel		CH48 (5240MHz)				Limit	Result
Test Condition	Frequency Range	Frequency (MHz)		Measured Value (nW)			
V _{normal}	Below 1GHz	93.050		0.016558nW		4nW	PASS
	Above 1GHz	25718.750		1.702159nW		20nW	PASS
V _{max.}	Below 1GHz	103.230		0.017947nW		4nW	PASS
	Above 1GHz	22162.500		2.338837nW		20nW	PASS
V _{min.}	Below 1GHz	731.550		0.13366nW		4nW	PASS
	Above 1GHz	21981.250		1.887991nW		20nW	PASS

Note: 1. The worst value in each frequency range v.s. each channel has been marked by boldface.
2. The spectrum plots are attached on the following pages.

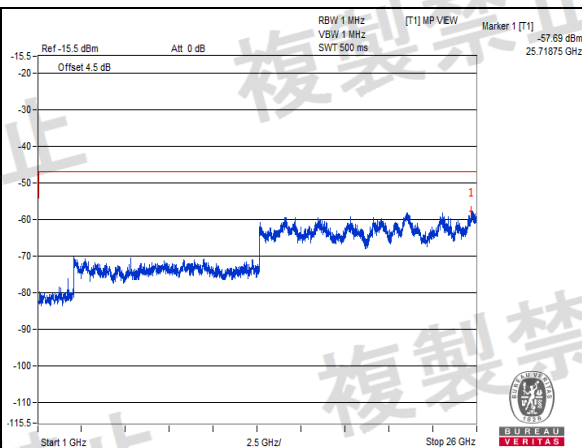
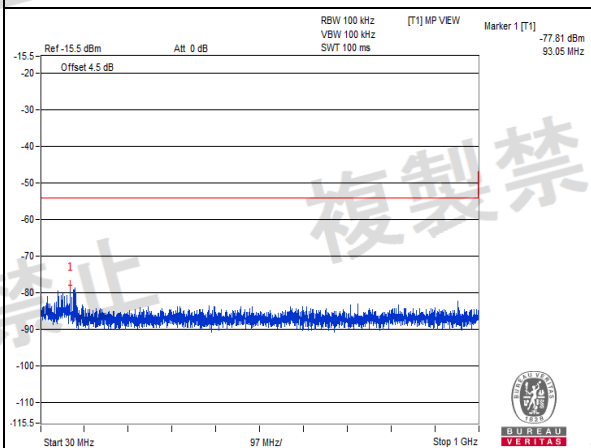
V_{normal}



Channel 36



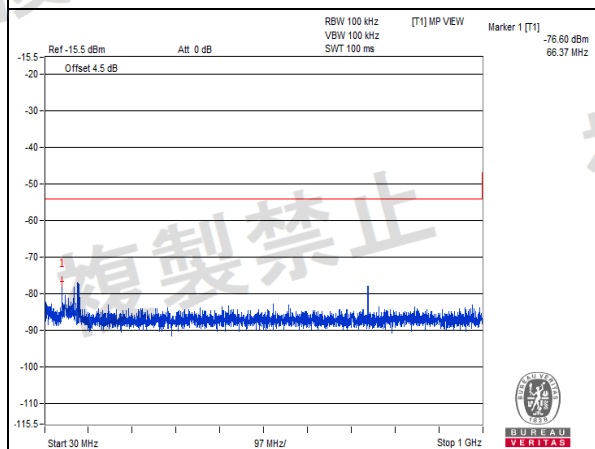
Channel 40



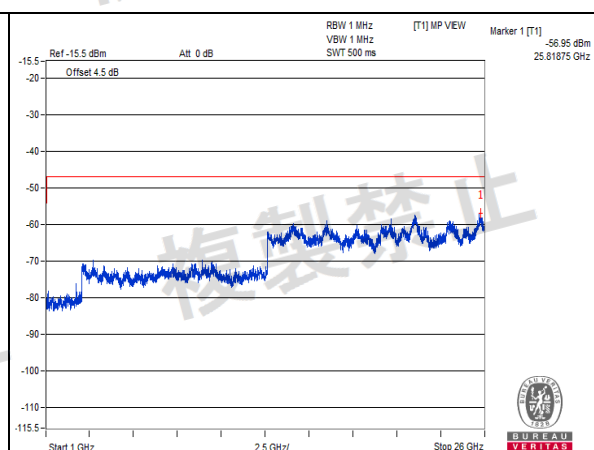
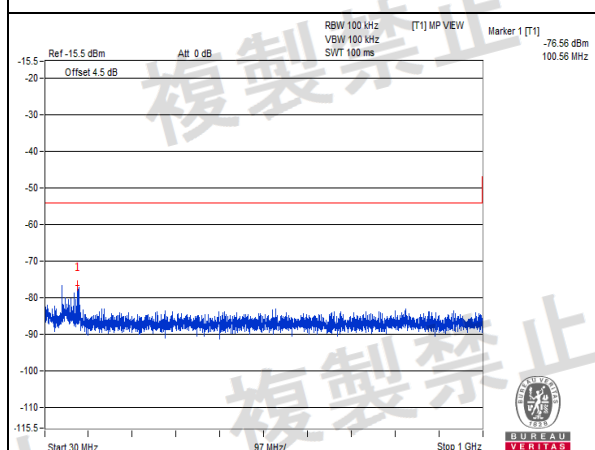
Channel 48

Measurement uncertainty: $\pm 3.93\text{dB}$

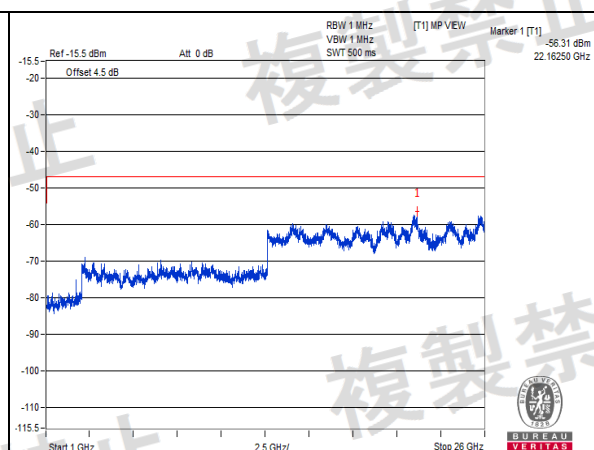
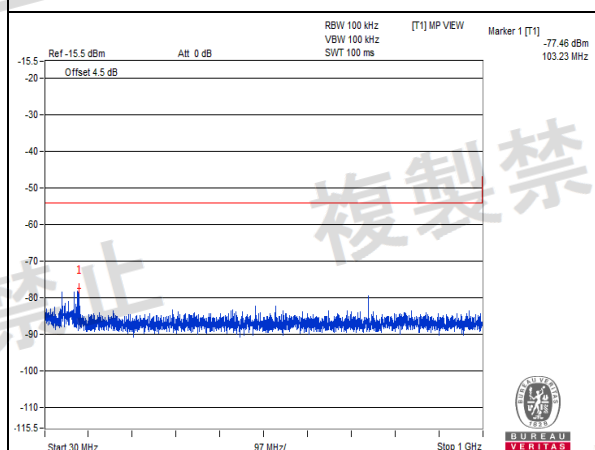
V_{max}



Channel 36



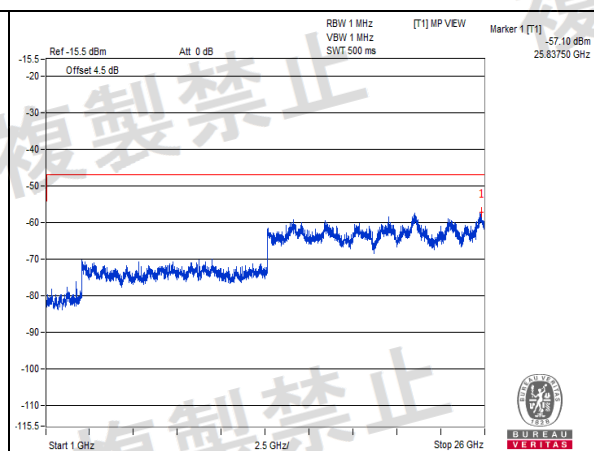
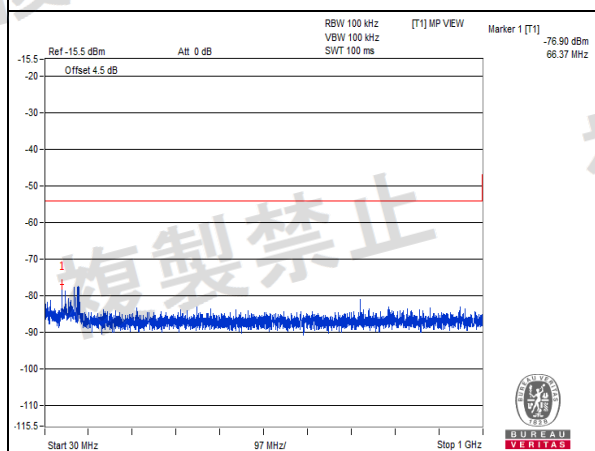
Channel 40



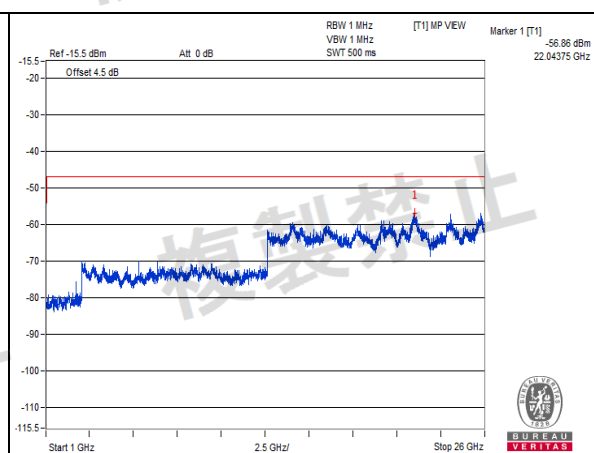
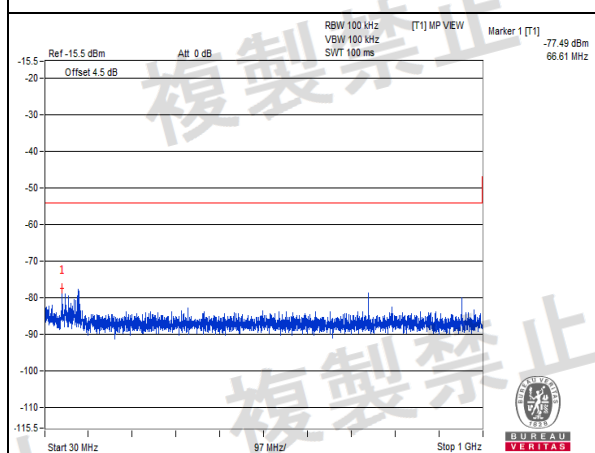
Channel 48

Measurement uncertainty: $\pm 3.93\text{dB}$

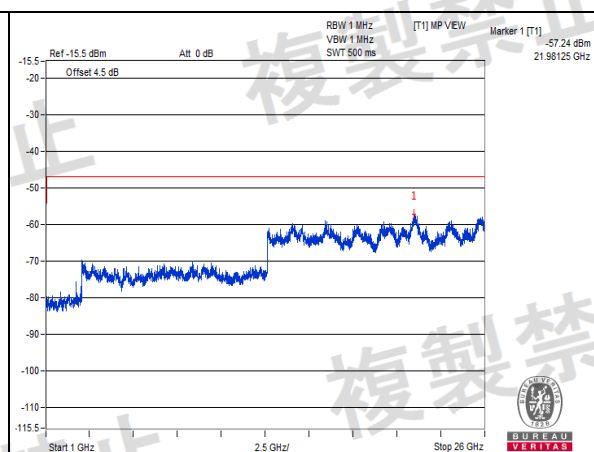
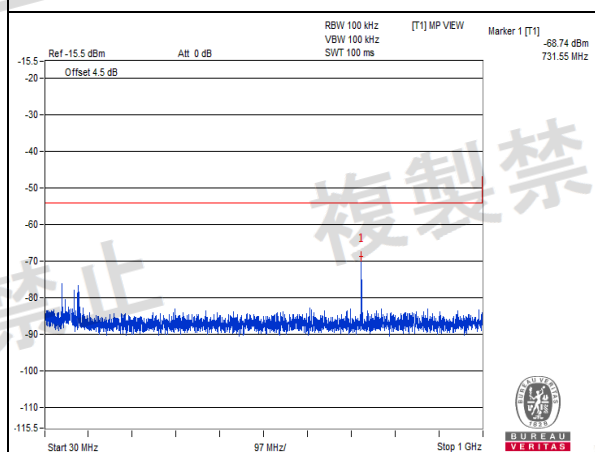
V_{min}.



Channel 36



Channel 40



Channel 48

Measurement uncertainty: $\pm 3.93\text{dB}$

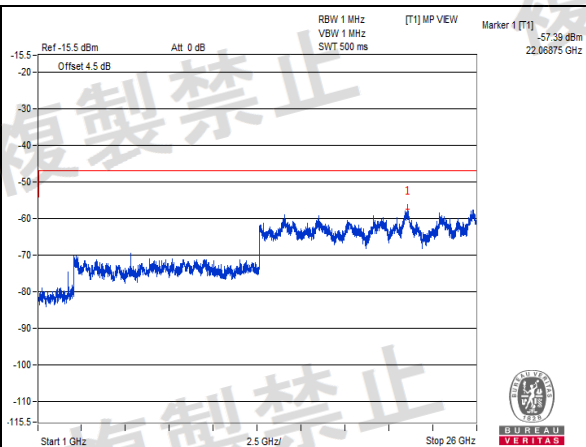
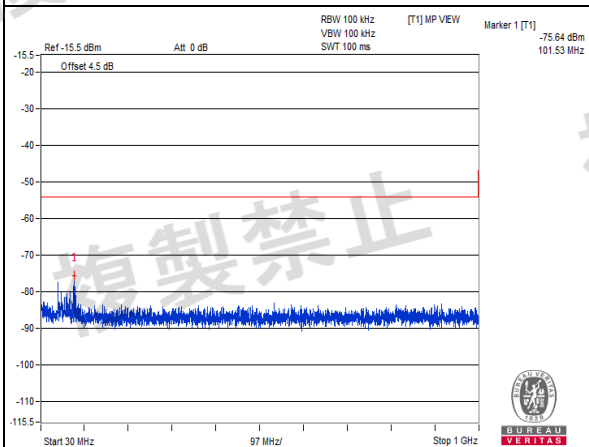
W52 bands:

802.11n (HT40)

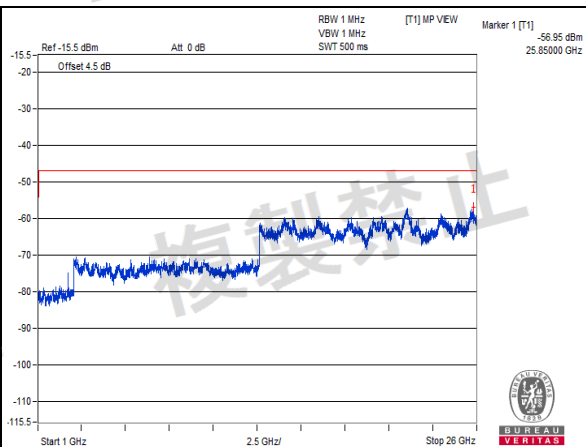
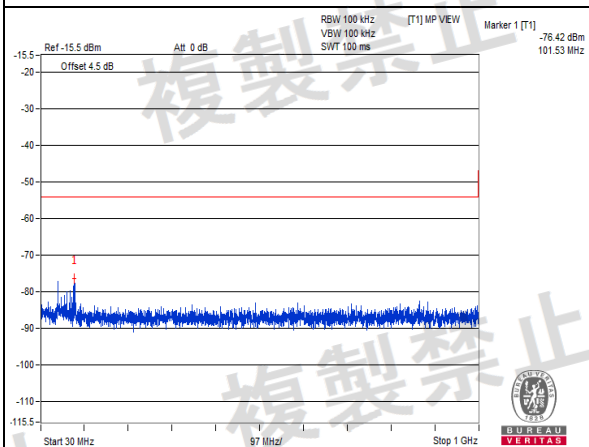
Environmental Conditions		25 deg.C, 68% RH					
Test Channel		CH38 (5190MHz)		CH46 (5230MHz)		Limit	Result
Test Condition	Frequency Range	Frequency (MHz)	Measured Value (nW)	Frequency (MHz)	Measured Value (nW)		
V_{normal}	Below 1GHz	101.530	0.02729nW	101.530	0.022803nW	4nW	PASS
	Above 1GHz	22068.750	1.823896nW	25850.000	2.018366nW	20nW	PASS
$V_{max.}$	Below 1GHz	103.960	0.018323nW	101.530	0.01977nW	4nW	PASS
	Above 1GHz	25693.750	1.798871nW	25793.750	1.949845nW	20nW	PASS
$V_{min.}$	Below 1GHz	101.530	0.023335nW	101.530	0.027102nW	4nW	PASS
	Above 1GHz	21962.500	2.355049nW	22043.750	1.981527nW	20nW	PASS

Note: 1. The worst value in each frequency range v.s. each channel has been marked by boldface.
2. The spectrum plots are attached on the following pages.

V_{normal}



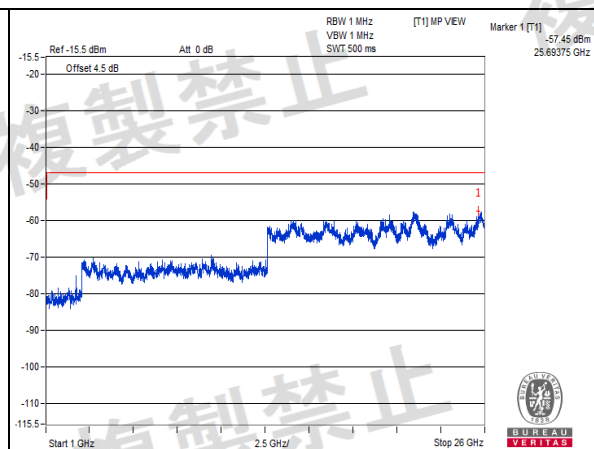
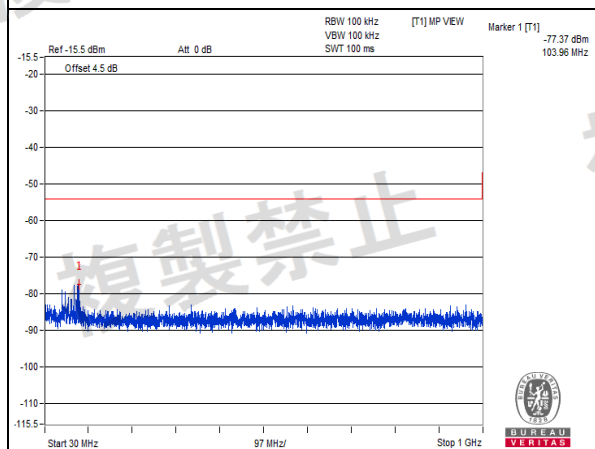
Channel 38



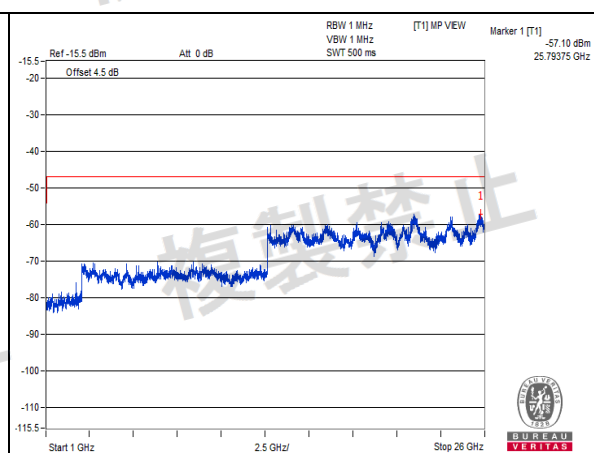
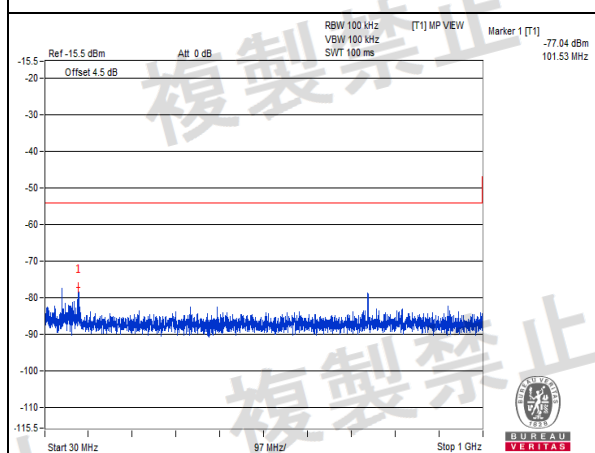
Channel 46

Measurement uncertainty: $\pm 3.93\text{dB}$

V_{max}



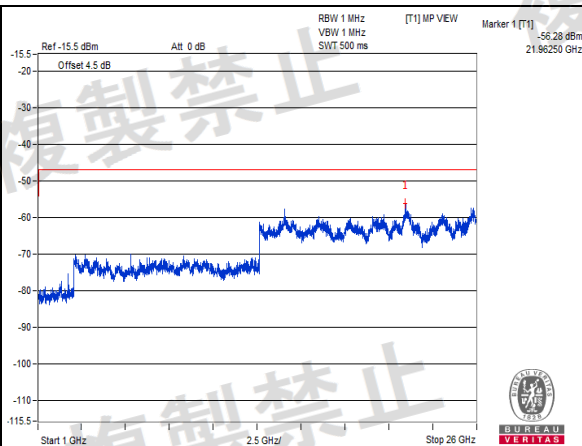
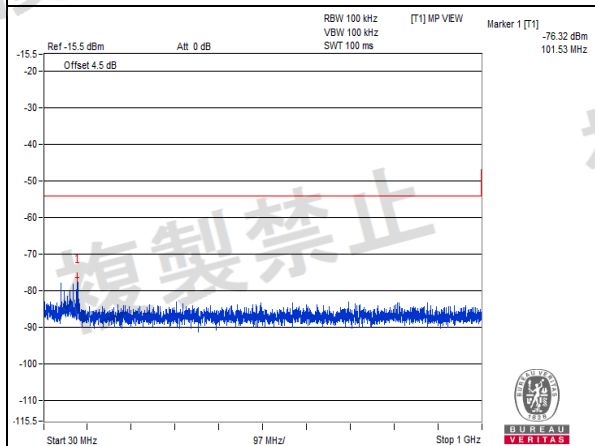
Channel 38



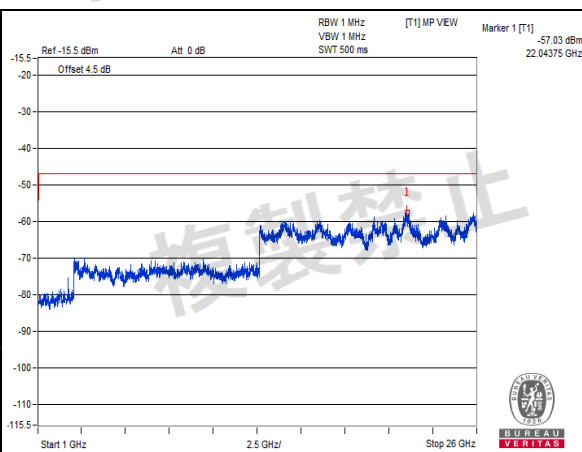
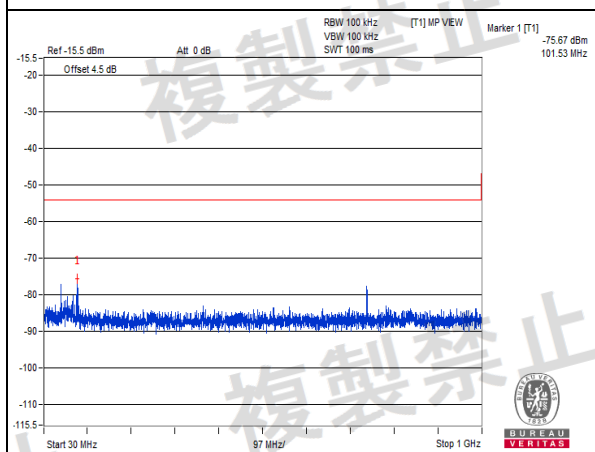
Channel 46

Measurement uncertainty: $\pm 3.93\text{dB}$

V_{min}.



Channel 38



Channel 46

Measurement uncertainty: $\pm 3.93\text{dB}$

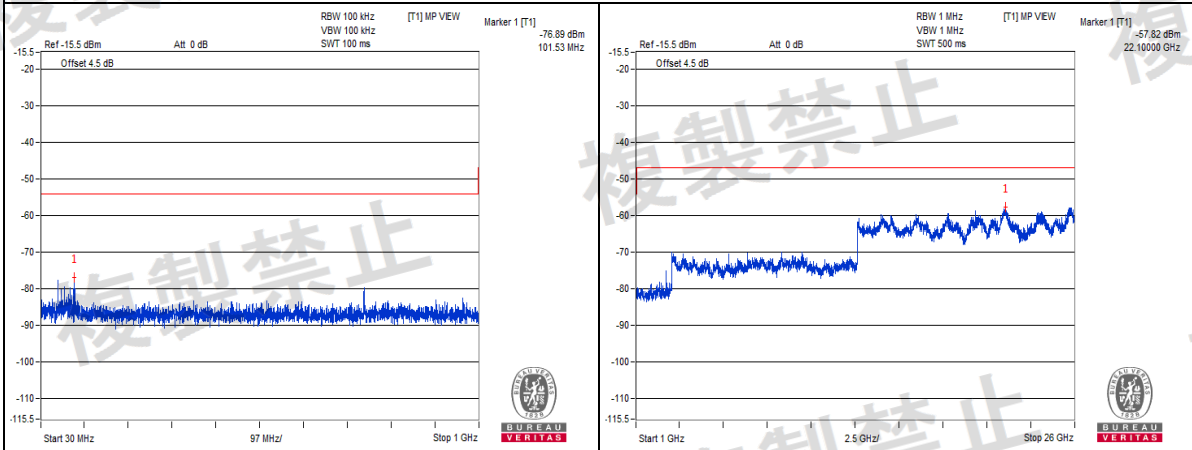
W52 bands:

802.11ac (VHT80)

Environmental Conditions		25 deg.C, 68% RH			
Test Channel		CH42 (5210MHz)		Limit	Result
Test Condition	Frequency Range	Frequency (MHz)	Measured Value (nW)		
V_{normal}	Below 1GHz	101.530	0.020464nW	4nW	PASS
	Above 1GHz	22100.000	1.651962nW	20nW	PASS
$V_{max.}$	Below 1GHz	66.610	0.016904nW	4nW	PASS
	Above 1GHz	25743.750	1.981527nW	20nW	PASS
$V_{min.}$	Below 1GHz	734.940	0.020045nW	4nW	PASS
	Above 1GHz	25825.000	2.811901nW	20nW	PASS

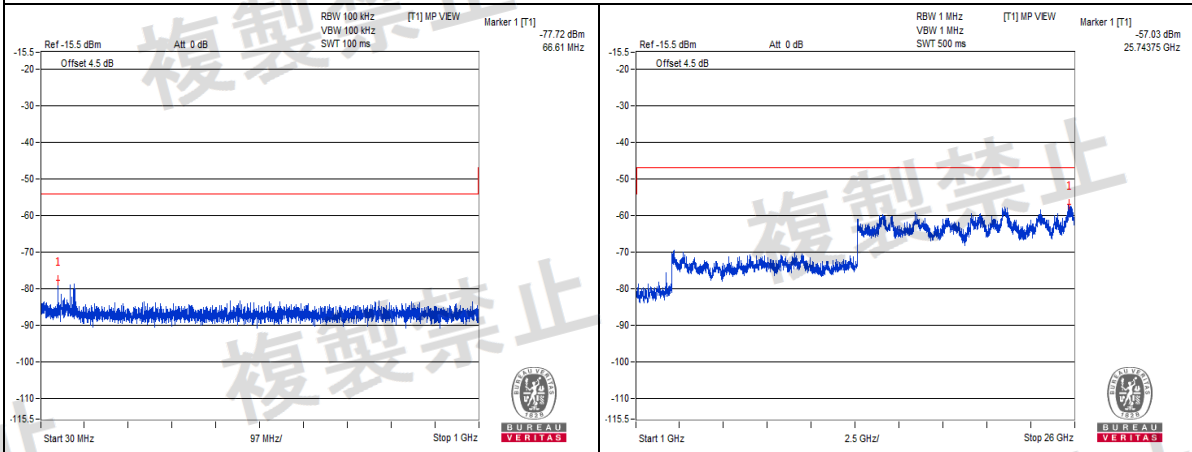
Note: 1. The worst value in each frequency range v.s. each channel has been marked by boldface.
2. The spectrum plots are attached on the following pages.

V_{normal}



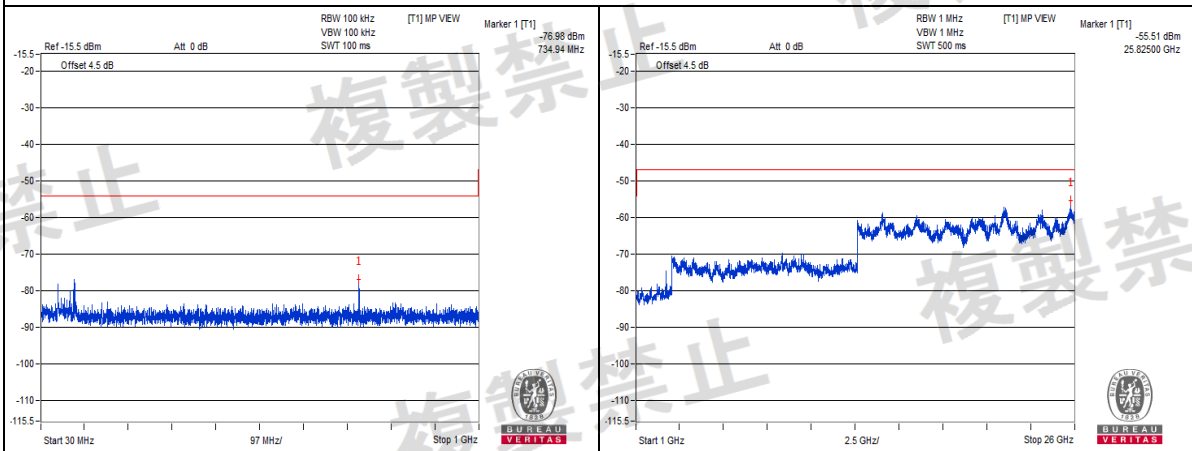
Channel 42

V_{max.}



Channel 42

V_{min.}



Channel 42

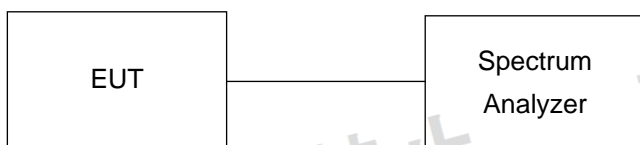
Measurement uncertainty: $\pm 3.93\text{dB}$

4.8 Burst Length

4.8.1 Limits of Burst Length

Frequencies (MHz)	Limit
Transmitter Operating	$\leq 4\text{ms}$

4.8.2 Test Setup



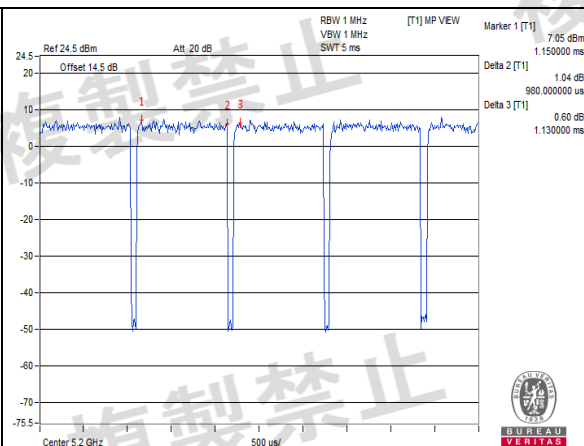
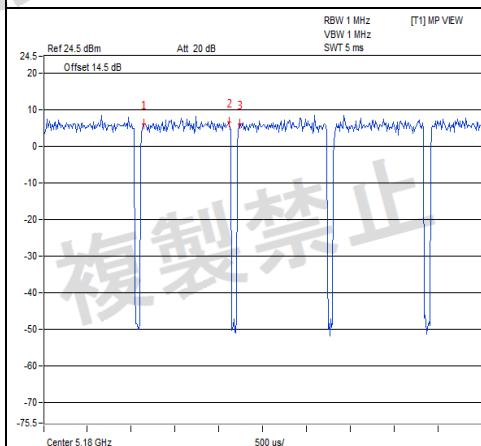
4.8.3 Test Result

W52 bands:

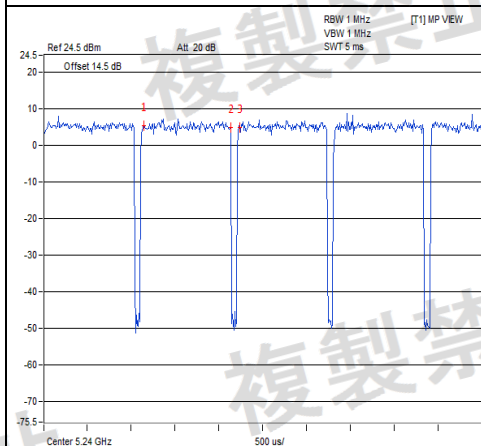
802.11a

Environmental Conditions	25 deg.C, 68% RH		
Test Condition	Burst Length (ms)		
	CH 36 5180MHz	CH 40 5200MHz	CH 48 5240MHz
V_{normal}	0.97	0.98	0.99
$V_{\text{max.}}$	0.99	0.99	0.99
$V_{\text{min.}}$	0.98	0.99	0.96

V_{normal}



Channel 36

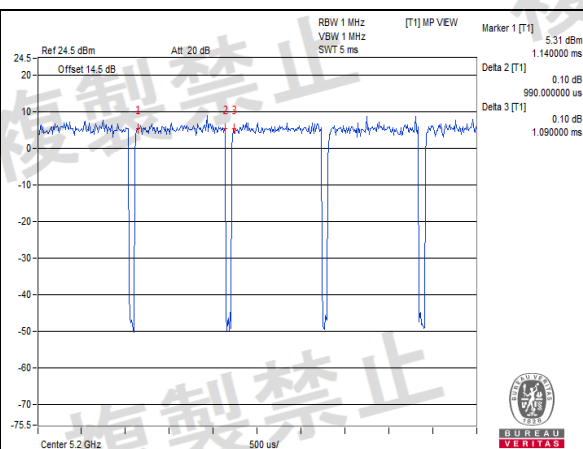
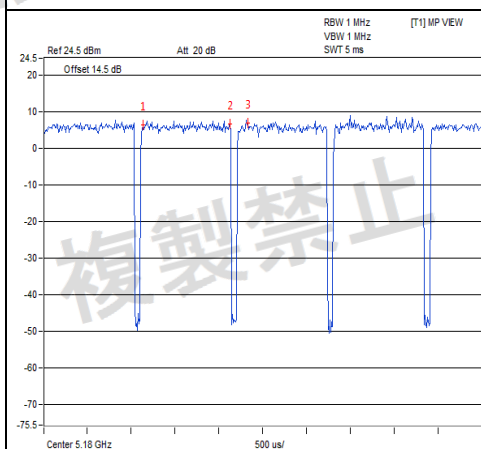


Channel 40

Channel 48

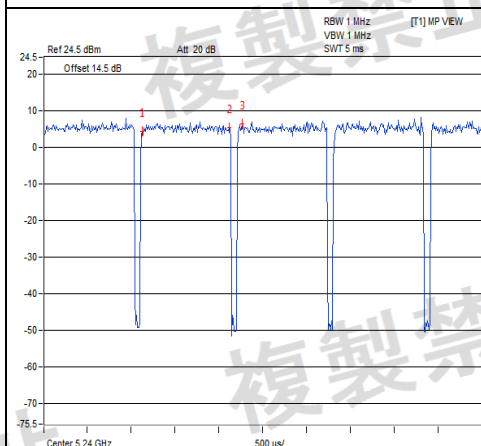
Measurement uncertainty: ± 0.01 dB

V_{max}



Channel 36

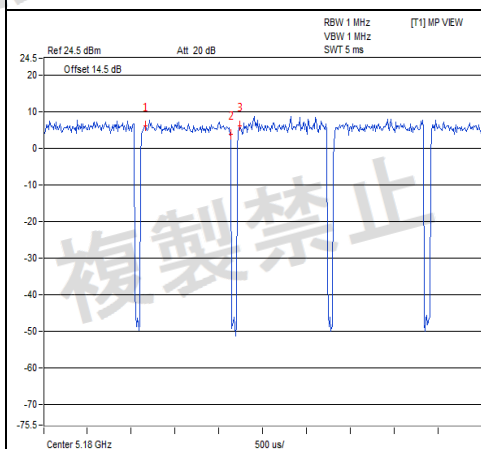
Channel 40



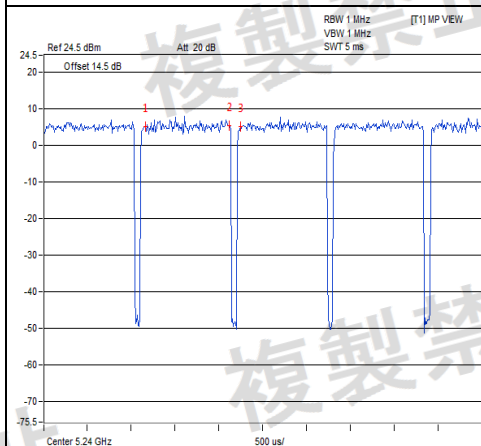
Channel 48

Measurement uncertainty: $\pm 0.01\text{dB}$

V_{min}

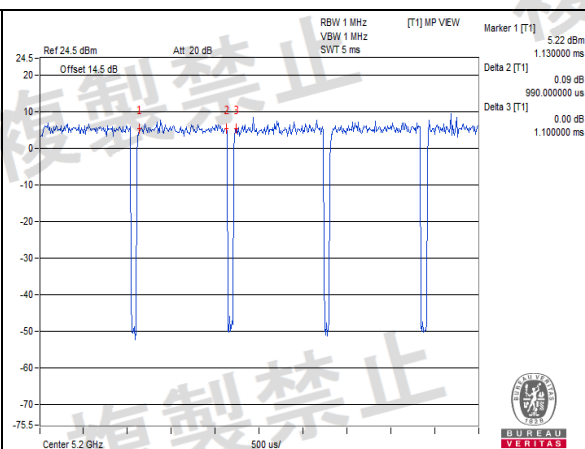


Channel 36



Channel 48

Measurement uncertainty: ± 0.01 dB

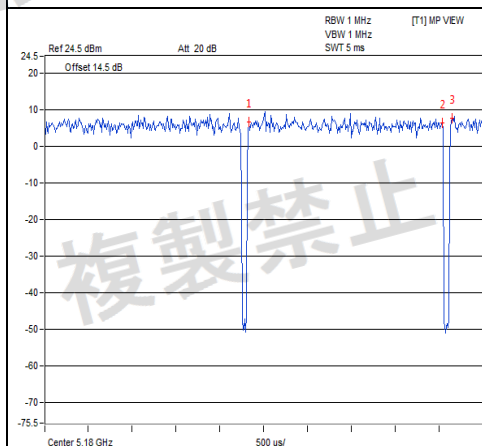


Channel 40

W52 bands:
802.11n (HT20)

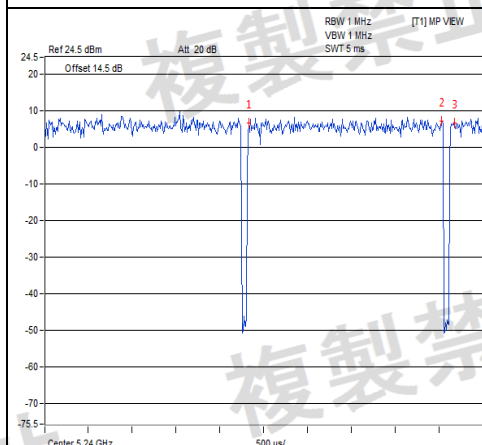
Environmental Conditions	25 deg.C, 68% RH		
Test Condition	Burst Length (ms)		
	CH 36 5180MHz	CH 40 5200MHz	CH 48 5240MHz
V _{normal}	2.21	2.21	2.20
V _{max.}	2.20	2.21	2.21
V _{min.}	2.22	2.21	2.22

V_{normal}



Channel 36

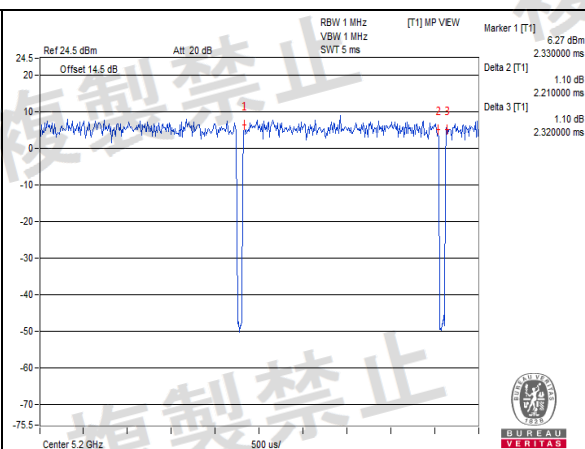
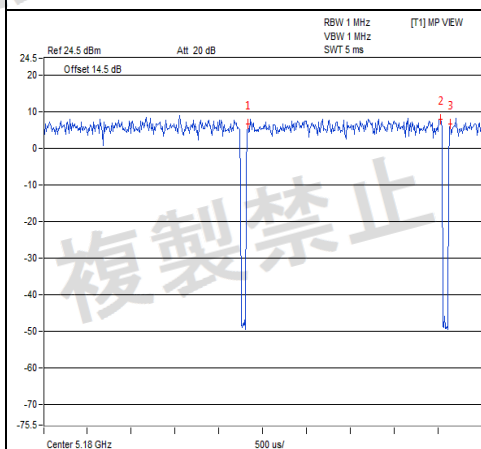
Channel 40



Channel 48

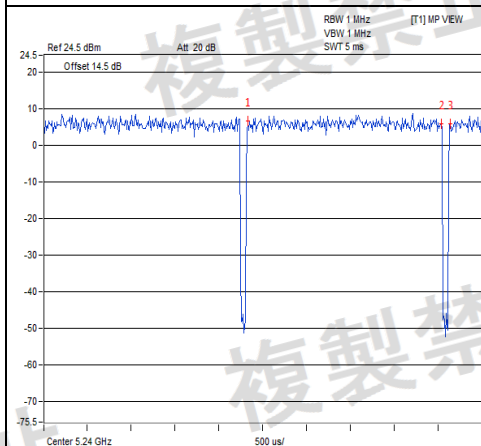
Measurement uncertainty: ± 0.01 dB

V_{max}



Channel 36

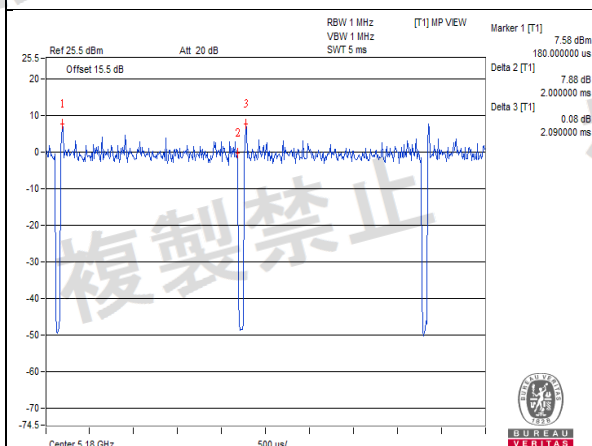
Channel 40



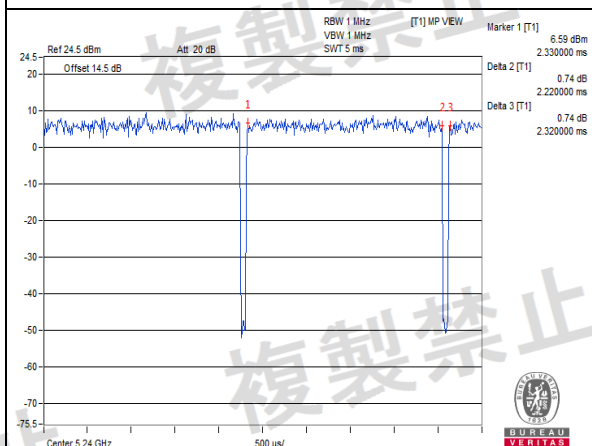
Channel 48

Measurement uncertainty: ± 0.01 dB

V_{min}



Channel 36



Channel 40

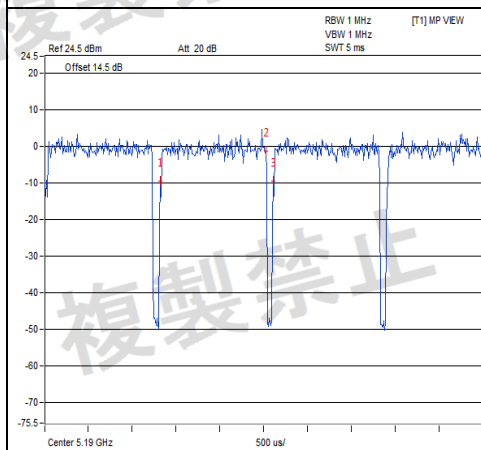
Channel 48

Measurement uncertainty: ± 0.01 dB

W52 bands:
802.11n (HT40)

Environmental Conditions	25 deg.C, 68% RH	
Test Condition	Burst Length (ms)	
	CH 38 5190MHz	CH 46 5230MHz
V _{normal}	1.21	1.20
V _{max.}	1.20	1.21
V _{min.}	1.22	1.20

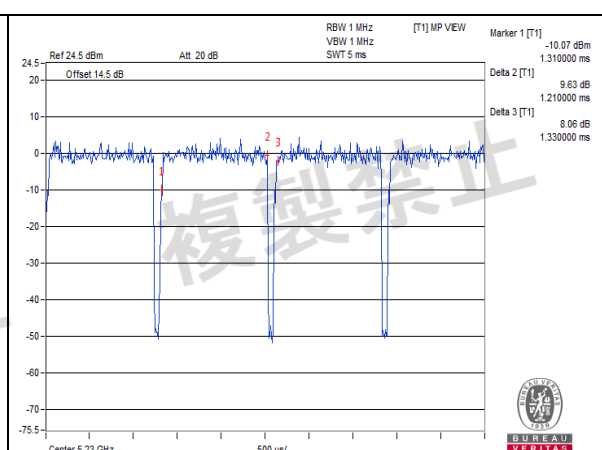
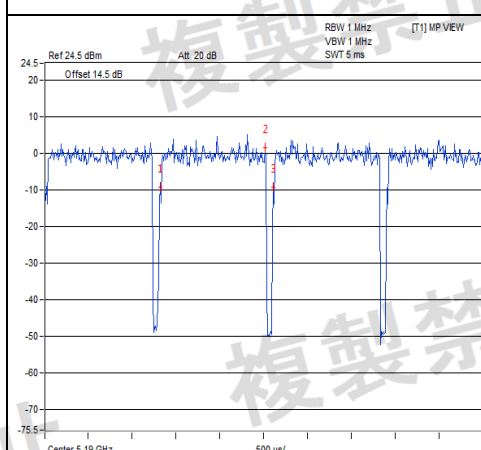
V_{normal}



Channel 38

Channel 46

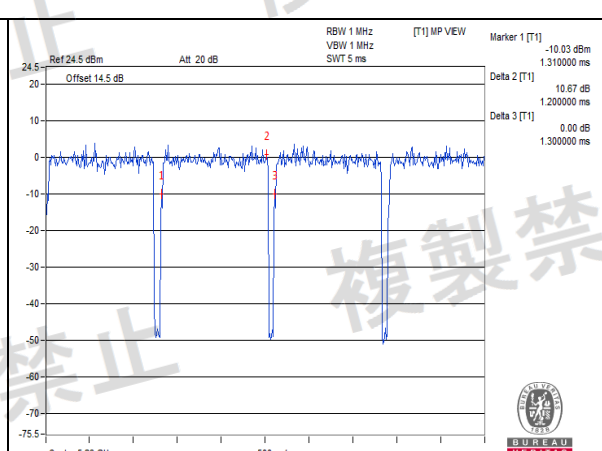
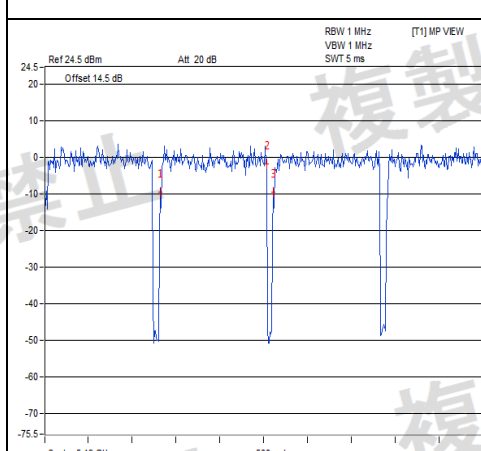
V_{max.}



Channel 38

Channel 46

V_{min.}



Channel 38

Channel 46

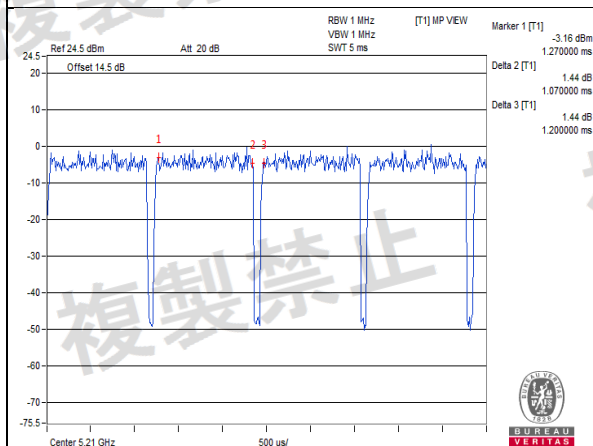
Measurement uncertainty: ± 0.01 dB

W52 bands:

802.11ac (VHT80)

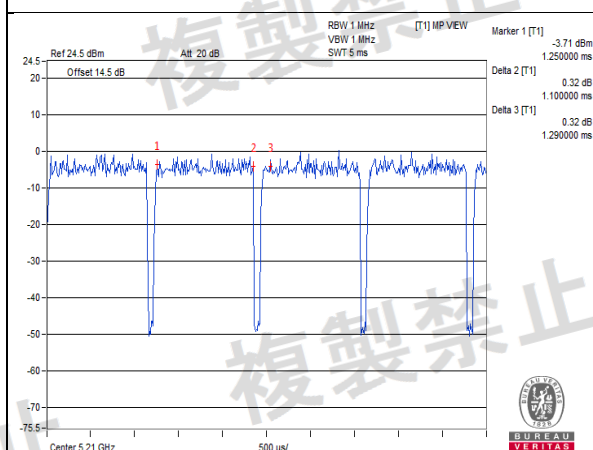
Environmental Conditions	25 deg.C, 68% RH
Test Condition	Burst Length (ms)
	CH 42 5210MHz
V _{normal}	1.07
V _{max.}	1.10
V _{min.}	1.09

V_{normal}



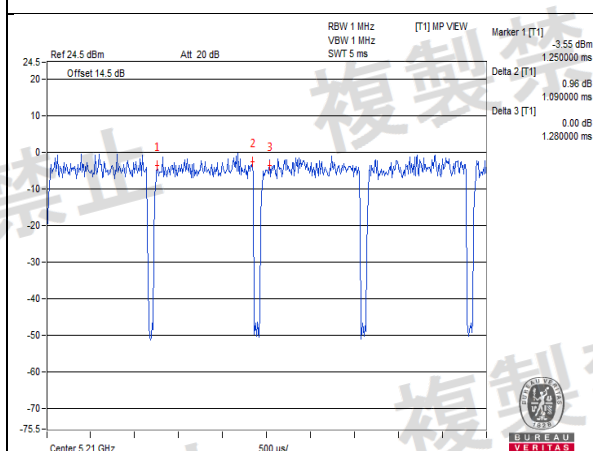
Channel 42

V_{max}.



Channel 42

V_{min}.



Channel 42

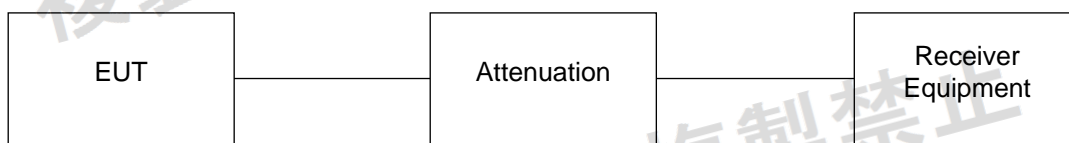
Measurement uncertainty: ± 0.01 dB

4.9 Interference Prevention Function

4.9.1 Limits of Interference Prevention Function

Radio equipment used mainly on the same premises and automatically transmits or receives identification code.

4.9.2 Test Setup

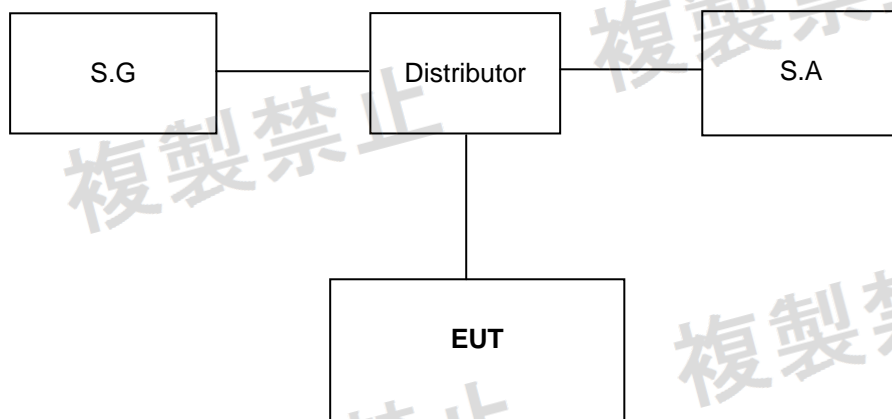


4.9.3 Test Results

Environmental Conditions	25 deg.C, 68% RH
Link Mode	Test Result
Normal	Pass

4.10 Carrier Sense Capability

4.10.1 Measuring System Block Diagram



4.10.2 Measuring Operation Procedures

- Turn the standard signal generator output OFF. Leave the equipment under test to be ready for transmission and verify the transmission with the spectrum analyzer.
- Set the equipment under test to the receiving state.
- Turn the standard signal generator ON and leave the equipment under test to be ready for transmission and verify with the spectrum analyzer that no transmission is being made.

4.10.3 Level of the Ambient Carrier

802.11a

Frequency (MHz)	Pcs (dBm)	C.F (dB)	S.G Level
5180	-45.90	11.13	-34.766595
5240	-46.00	11.15	-34.846626

Note:

Pcs (dBm) = 22.79 + Gr - 20log(F).

Gr: Antenna gain (W52 band: 5.6dBi).

F: Transmission frequency (MHz).

C.F = Distributor loss + cable loss.

802.11n (HT20)

Frequency (MHz)	Pcs (dBm)	C.F (dB)	S.G Level
5180	-45.90	11.15	-34.746595
5240	-46.00	11.16	-34.836626

Note:

Pcs (dBm) = 22.79 + Gr - 20log(F).

Gr: Antenna gain (W52 band: 5.6dBi).

F: Transmission frequency (MHz).

C.F = Distributor loss + cable loss.

802.11n (HT40)

Frequency (MHz)	Pcs (dBm)	C.F (dB)	S.G Level
5190	-45.91	11.15	-34.763347
5230	-45.98	11.16	-34.820034

Note:

Pcs (dBm) = 22.79 + Gr - 20log(F).

Gr: Antenna gain (W52 band: 5.6dBi).

F: Transmission frequency (MHz).

C.F = Distributor loss + cable loss.

802.11ac (VHT80)

Frequency (MHz)	Pcs (dBm)	C.F (dB)	S.G Level
5210	-45.946754	11.16	-34.786754

Note:

Pcs (dBm) = 22.79 + Gr - 20log(F).

Gr: Antenna gain (W52 band: 5.6dBi).

F: Transmission frequency (MHz).

C.F = Distributor loss + cable loss.

4.10.4 Test Result

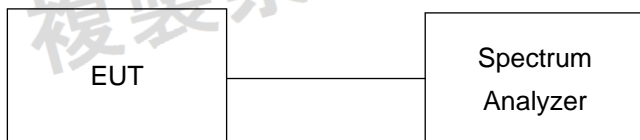
Pass

4.11 Number of Carriers within 1 MHz Bandwidth in OFDM

4.11.1 Limit of Number of Carriers

For each 1MHz bandwidth in OFDM, there should be at least 1 carrier.

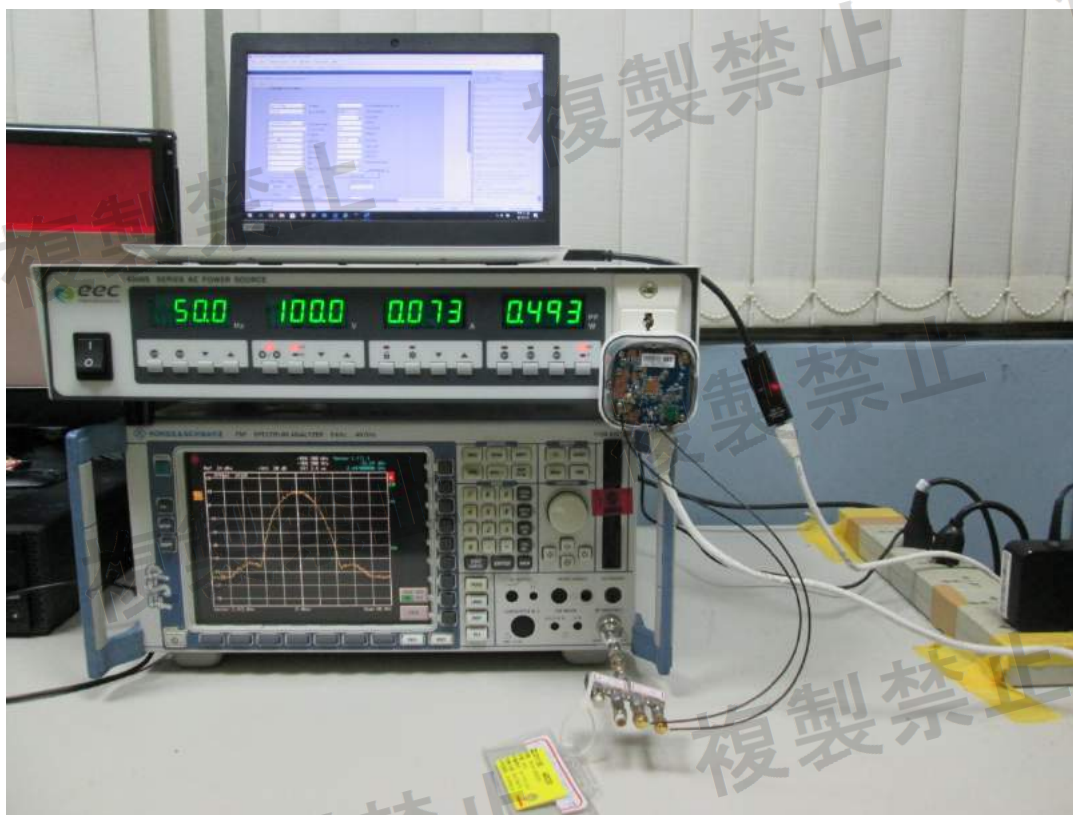
4.11.2 Test Setup



4.11.3 Test Result

About OFDM Technical, one OFDM Channel will have 52 sub-carriers. At present, we observe this product via the spectrum, and we know that there are 3 carriers in 1 MHz bandwidth in OFDM.

5 Photographs of the Test Configuration



Appendix - Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab

Tel: 886-3-6668565

Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab

Tel: 886-3-3183232

Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

The address and road map of all our labs can be found in our web site also.

--- END ---