

Radio Test Report

Report No.: RJ170613C26A

Test Model: SSP01a

Received Date: Jan. 22, 2018

Test Date: Apr. 25 ~ May 02, 2018

Issued Date: May 03, 2018

Applicant: SELTECH CORPORATION

Address: Green Nanpeidai Bldg. 7F 16-29 Nanpeidai-cho Shibuya-ku, 150-0036,
Tokyo Japan

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.)



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Table of Contents

Release Control Record	3
1 Certificate of Conformity	4
2 Summary of Test Results	5
2.1 Measurement Uncertainty	6
2.2 Modification Record	6
3 General Information	7
3.1 General Description of EUT	7
3.2 Description of Test Modes	8
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	11
4.2 Occupied Bandwidth Measurement (99% Power Bandwidth)	12
4.2.1 Limits of Occupied Bandwidth Measurement	12
4.2.2 Test Setup	12
4.2.3 Test Results	12
4.3 Spreading Bandwidth Measurement (90% Power Bandwidth)	34
4.3.1 Limits of Spreading Bandwidth and Spreading Factor Measurement	34
4.3.2 Test Setup	34
4.3.3 Test Results	34
4.4 Spurious Emissions for Transmitter Measurement	53
4.4.1 Limits of Spurious Emissions	53
4.4.2 Test Setup	53
4.4.3 Test Results	54
4.5 Antenna Power Measurement	87
4.5.1 Limits of Antenna Power	87
4.5.2 Test Setup	87
4.5.3 Test Results	88
4.6 Spurious Emissions for Receiver	91
4.6.1 Limits of Spurious Emissions for Receiver	91
4.6.2 Test Setup	91
4.6.3 Test Result	92
4.7 Interference Prevention Function	96
4.7.1 Limits of Interference Prevention Function	96
4.7.2 Test Setup	96
4.7.3 Test Results	96
4.8 Number of Carriers within 1 MHz Bandwidth in OFDM	97
4.8.1 Limit of Number of Carriers	97
4.8.2 Test Setup	97
4.8.3 Test Result	97
5 Test Instruments	98
6 Photographs of the Test Configuration	99
Appendix - Information on the Testing Laboratories	100

Release Control Record

Issue No.	Description	Date Issued
RJ170613C26A	Original release.	May 03, 2018

1 Certificate of Conformity

Product: Smart Speaker

Brand: SELTECH

Test Model: SSP01a

Sample Status: Engineering sample

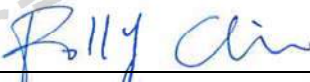
Applicant: SELTECH CORPORATION

Test Date: Apr. 25 ~ May 02, 2018

Standards: ARIB STD-T66 (V3.7), MIC notice 88 Appendix 43
Article 2 Paragraph 1 of Item 19

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 :


Polly Chien / Specialist

Date:

May 03, 2018

Approved by :


Bruce Chen / Project Engineer

Date:

May 03, 2018

2 Summary of Test Results

The EUT has been tested according to the following specifications:

Notice 88 Appendix 43 Reference	ARIB STD-T66 Ref.	Report Reference	Parameter	Test Results (Note)
General Provisions				
C	3.2 (4)	4.1	Frequency tolerance	C
D	3.2 (7)	4.2	Occupied bandwidth	C
E	3.2 (6)	4.4	Spurious emissions	C
Transmitting Equipment				
F	--	4.5	Antenna power	C
--	--	--	SAR	NA
Transmitting Antenna				
--	--	3.6	Type, configuration, etc. of transmitting antenna	C
--	--	3.6	Direction pattern of transmitting antenna	C
Receiving Equipment				
G	3.3 (1)	4.6	Spurious emissions of receiver	C
--	--	3.6	Refer to all articles for transmitting antenna	C
Operating Frequency 2400 to 2483.5MHz				
--	3.7 (1)	3.2	High Frequency	C
--	3.7 (1)	3.4	Modulation section cannot be opened easily	C
--	3.1 (1)	3.1	Communication method	C
--	3.2 (1)a	3.1	Modulation method	C
--	3.2 (1)a	3.1	Spread spectrum method	C
--	3.2 (2)	4.6	Antenna power	C
--	3.6 (2)	4.5	Absolute gain of transmitting antenna	C
--	3.6 (2)	4.5	Angular width of principal radiation (AWPR)	C
--	3.2 (10)	4.9	Number of carriers within 1 MHz bandwidth in OFDM	C
--	3.2 (8)	4.3	Spreading bandwidth	C
--	3.2 (9)	4.3	Spreading factor	C
--	3.2 (11)	--	Frequency retention time (FH employed)	NA
--	3.4.1(1)	4.8	Interference Prevention Function	C
--	3.4.1(3)	4.7	Carrier Sense Capability	NA
Note: C = Conform NC = Not Conform NT = Not Tested NA = Not Applicable				

2.1 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

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Smart Speaker
Brand	SELTECH
Test Model	SSP01a
Sample Status	Engineering sample
Nominal Voltage	12Vdc from adapter
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: 11/5.5/2/1Mbps 802.11g: 54/48/36/24/18/12/9/6Mbps 802.11n (HT20): up to 144Mbps
Operating Frequency	802.11b/g/n (HT20): 2412~2472MHz
Number of Channel	802.11b/g, 802.11n (HT20): 13
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 note
Antenna Connector	Refer to note
Accessory Device	Adapter
Data Cable Supplied	NA

Note:

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

Modulation Mode	TX Function
802.11b	1TX
802.11g	1TX
802.11n (HT20)	2TX

2. EUT consumes power from the following adapter.

Brand	KUANTECH
Model	KSASB0241200200VU
Input power	100-240Vac, 0.6A, 50-60Hz
Output power	12Vdc, 2000mA
Power Line	1m non-shielded cable with one ferrite core

3. The following antennas were provided to the EUT.

Item	Antenna Type	Connector	Gain (dBi)	
			2.4~2.5GHz	5~6GHz
Ant. 1	Dipole	i-pex(MHF)	3.39	3.56
Ant. 2	Dipole	i-pex(MHF)	3.29	2.86

4. The power table as below:

	Rated power (mW/MHz)	Conducted RF output power density (mW/MHz)	Radiated RF output power density (mW/MHz)
2.4GHz Band			
802.11b	7.00	7.41310	16.18080
802.11g	5.00	5.29663	11.56112
802.11n (HT20)	5.00	5.10081	11.13368

3.2 Description of Test Modes

13 channels are provided for 802.11b, 802.11g, 802.11n (HT20):

Channel	Freq. (MHz)	Channel	Freq. (MHz)
1	2412	8	2447
2	2417	9	2452
3	2422	10	2457
4	2427	11	2462
5	2432	12	2467
6	2437	13	2472
7	2442		

Note:

- The channels which were indicated in bold type of the above channel list were selected as representative test channel. Therefore only the data of the test channels were recorded in this report.

By means of test software (QRCT.exe) provided by manufacture, the power levels during the tests were set according to the following codes:

802.11b		802.11g	
Channel	Power Setting	Channel	Power Setting
1	16.5	1	18.5
7	16.5	7	18.5
13	16	13	18
802.11n (HT20)			
Channel	Power Setting		
1	16		
7	16		
13	15.5		

3.3 Test Conditions

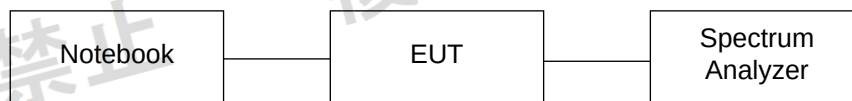
Test Conditions	Voltage (Vac)
V_{normal}	100
$V_{\text{max.}}$	110
$V_{\text{min.}}$	90

3.4 Assembly

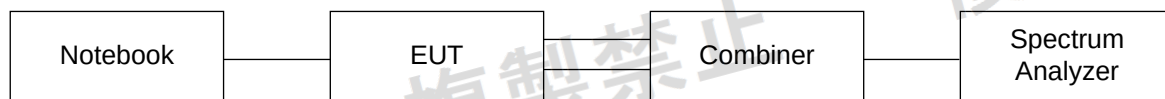
The EUT used a kind of particular screw, which could not operated by a tool bought in the market. Only means of brute force will be able to open.

3.5 Test Setup

1TX



2TX

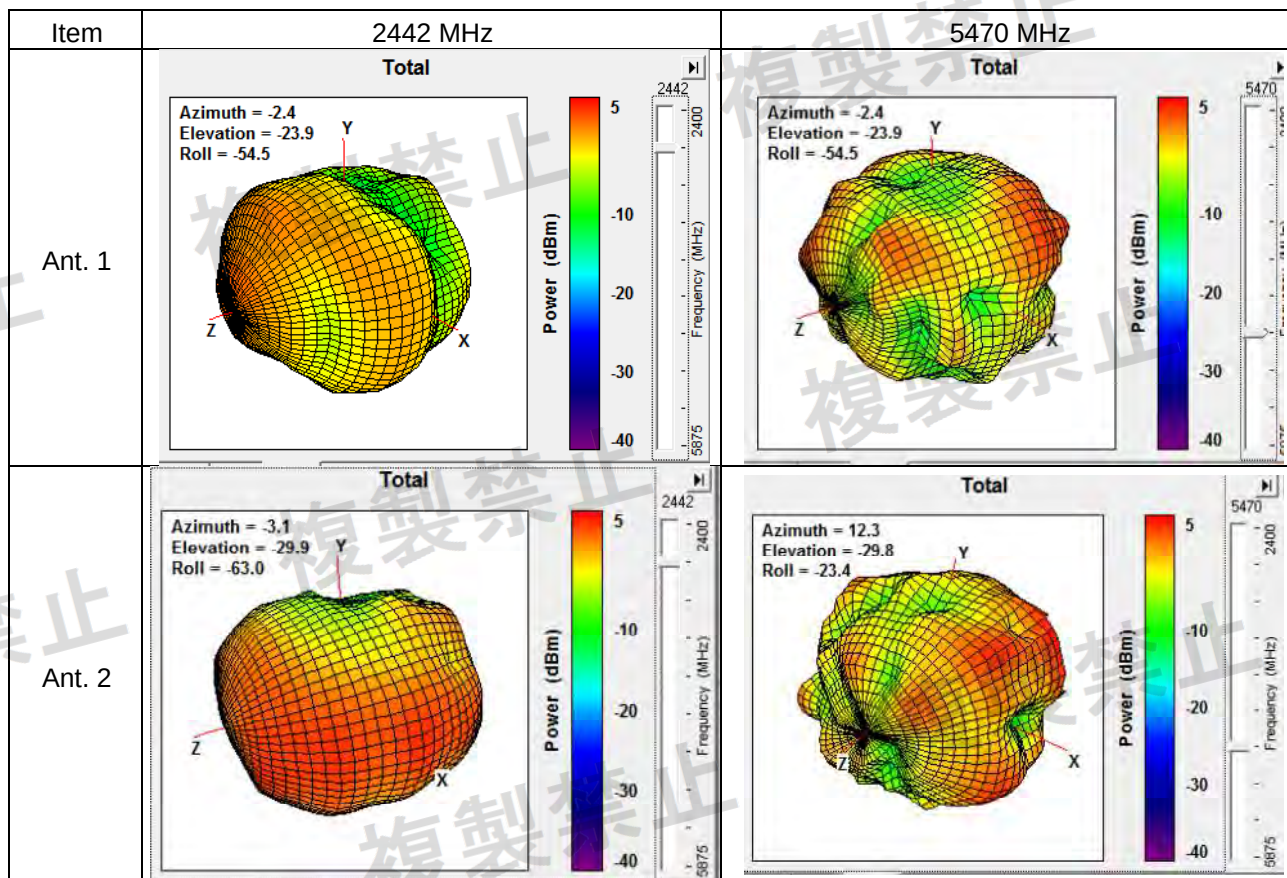


3.6 Antenna Specifications

3.6.1 Antenna Gain

Item	Antenna Type	Connector	Gain (dBi)	
			2.4~2.5GHz	5~6GHz
Ant. 1	Dipole	i-pex(MHF)	3.39	3.56
Ant. 2	Dipole	i-pex(MHF)	3.29	2.86

3.6.2 Antenna Pattern



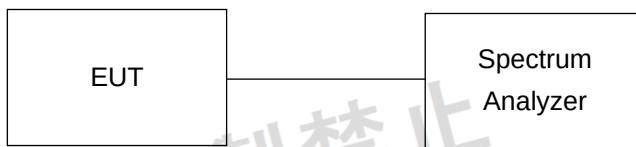
4 Test Results

4.1 Frequency Tolerance Measurement

4.1.1 Limits of Frequency Tolerance Measurement

Tolerance of frequency shall be +/- 50ppm

4.1.2 Test Setup



4.1.3 Test Results

802.11b / 802.11g / 802.11n (HT20)

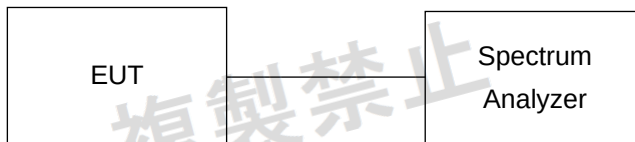
Environmental Conditions		24 deg.C, 70% RH					
Channel	Frequency (MHz)	Voltage _{normal}		Voltage _{max.}		Voltage _{min.}	
		Carrier frequency (MHz)	Frequency tolerance (ppm)	Carrier frequency (MHz)	Frequency tolerance (ppm)	Carrier frequency (MHz)	Frequency tolerance (ppm)
1	2412	2411.940000	-24.875	2411.940000	-24.875	2411.940000	-24.875
7	2442	2441.941600	-23.914	2441.941600	-23.914	2441.941200	-24.078
13	2472	2471.938000	-25.080	2471.938400	-24.919	2471.938800	-24.757

4.2 Occupied Bandwidth Measurement (99% Power Bandwidth)

4.2.1 Limits of Occupied Bandwidth Measurement

Item	Limit	Remark
Occupied bandwidth	<26MHz	For 802.11b, g & 802.11n (HT20)
Occupied bandwidth	<38MHz	For 802.11n (HT40)

4.2.2 Test Setup



4.2.3 Test Results

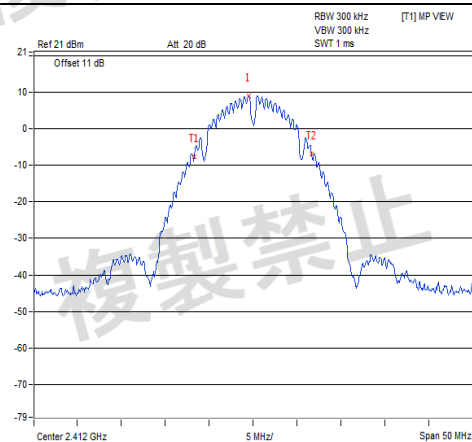
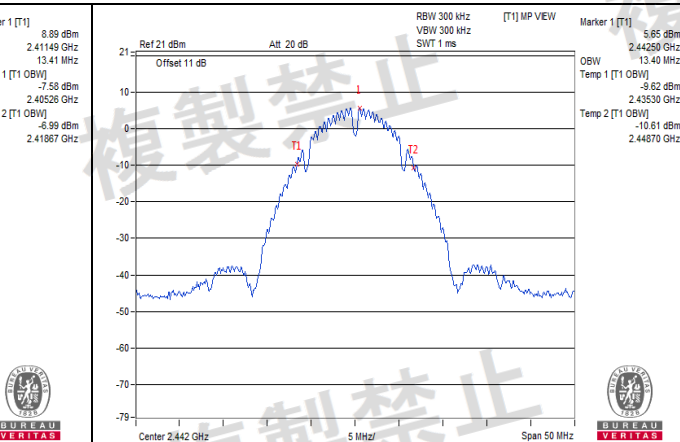
802.11b

Transmission Rate: 1M

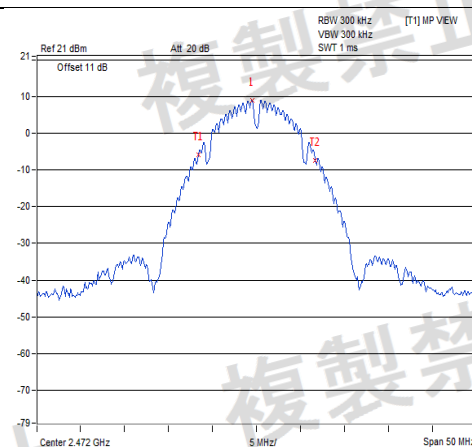
Environmental Conditions		24 deg.C, 70% RH		
Channel	Frequency (MHz)	V _{normal}	V _{max.}	V _{min.}
		Occupied Bandwidth (MHz)	Occupied Bandwidth (MHz)	Occupied Bandwidth (MHz)
1	2412	13.41	13.50	13.50
7	2442	13.40	13.40	13.50
13	2472	13.40	13.50	13.50

Note: 1. For the test plots please refer to the below pages.

Vnormal



Channel 1

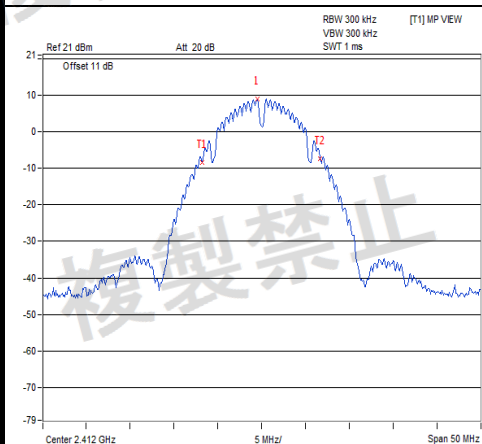
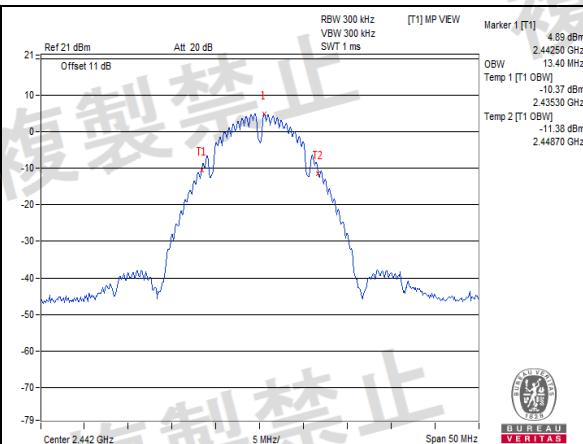


Channel 7

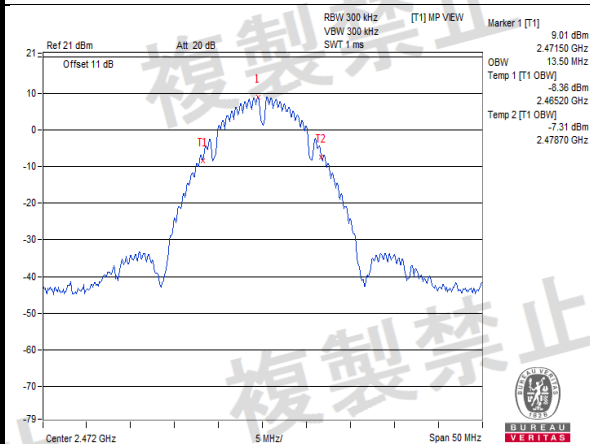
Channel 13

Measurement uncertainty: ± 206.50 Hz

V_{max}.



Channel 1

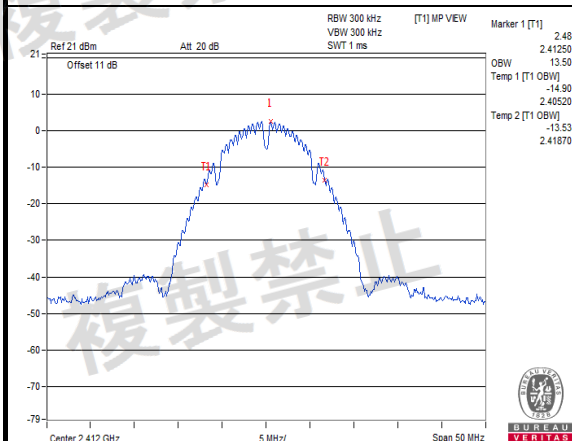
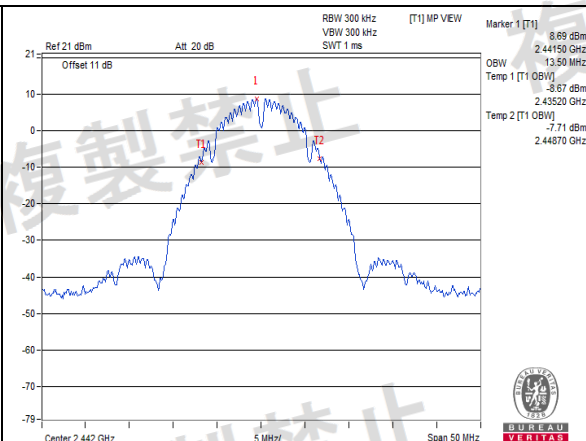


Channel 7

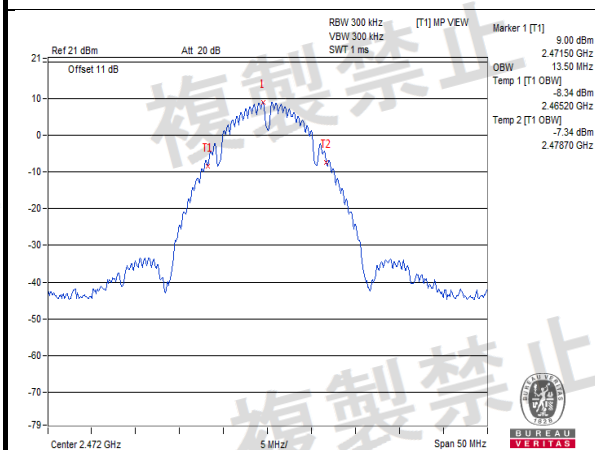
Channel 13

Measurement uncertainty: ± 206.50 Hz

V_{min}.



Channel 1



Channel 7

Channel 13

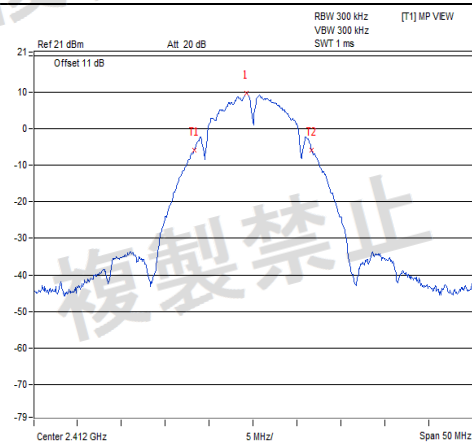
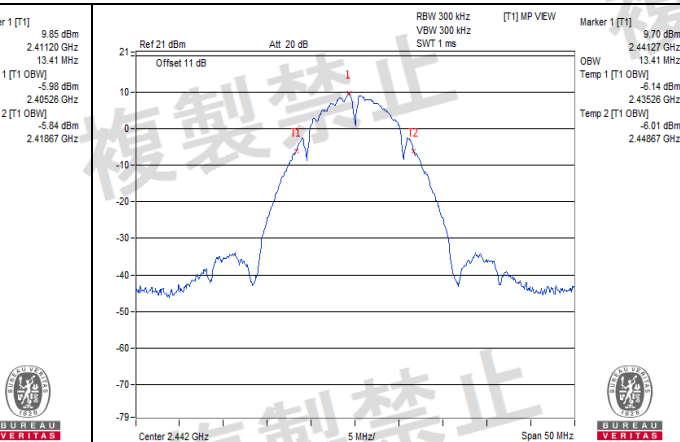
Measurement uncertainty: ± 206.50 Hz

Transmission Rate: 2M

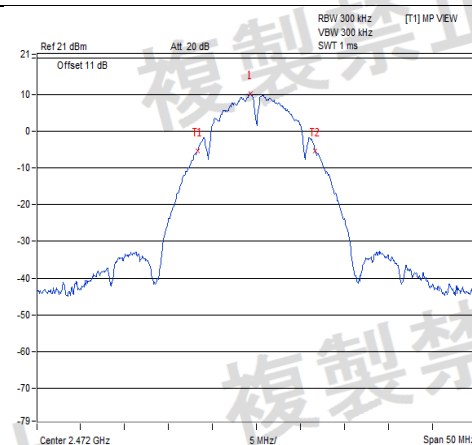
Environmental Conditions		24 deg.C, 70% RH		
Channel	Frequency (MHz)	V _{normal}	V _{max.}	V _{min.}
		Occupied Bandwidth (MHz)	Occupied Bandwidth (MHz)	Occupied Bandwidth (MHz)
1	2412	13.41	13.41	13.41
7	2442	13.41	13.41	13.41
13	2472	13.41	13.41	13.41

Note: 1. For the test plots please refer to the below pages.

Vnormal



Channel 1

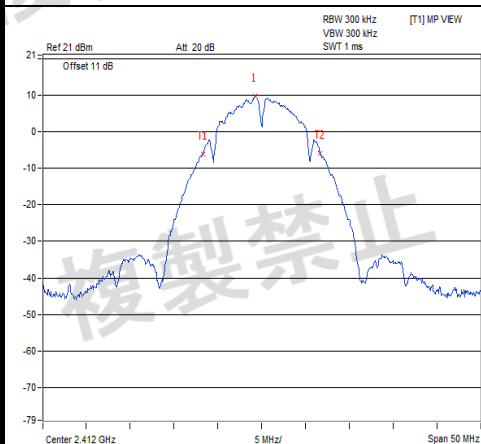
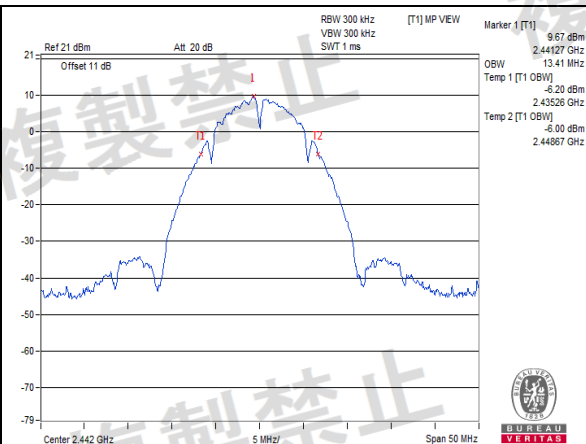


Channel 7

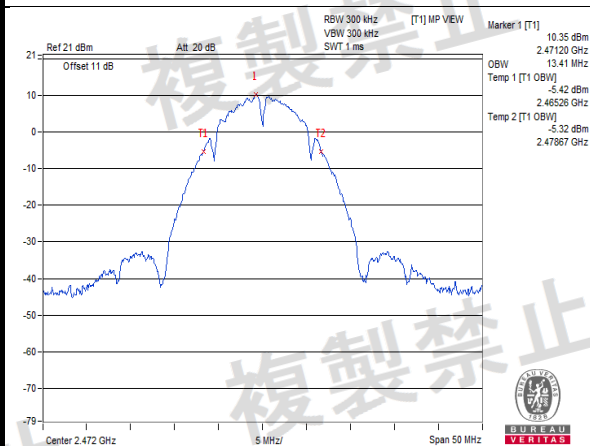
Channel 13

Measurement uncertainty: ± 206.50 Hz

V_{max}.



Channel 1

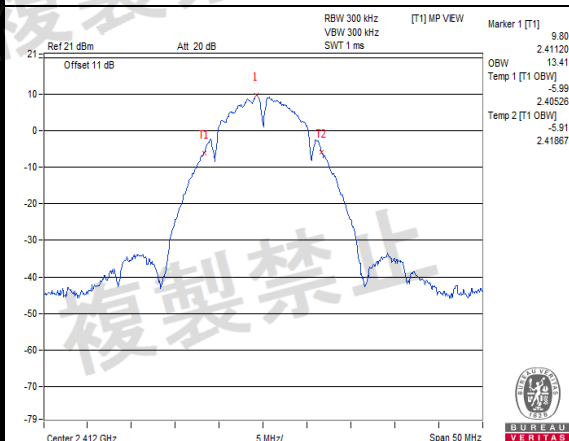
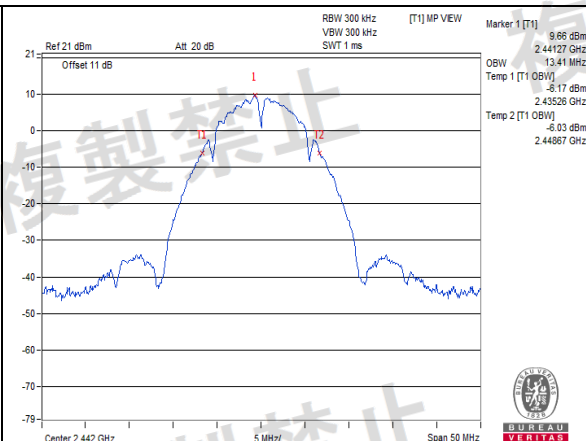


Channel 7

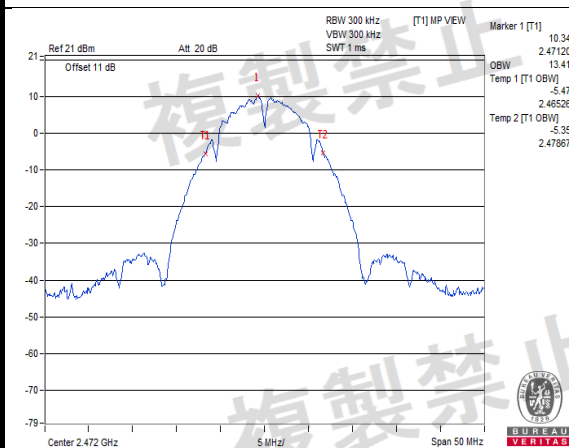
Channel 13

Measurement uncertainty: ± 206.50 Hz

V_{min}.



Channel 1



Channel 7

Channel 13

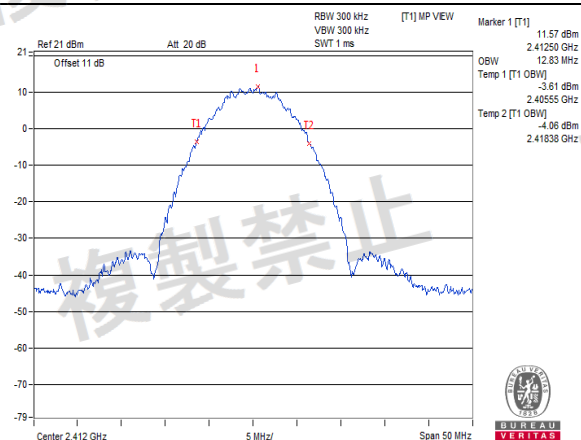
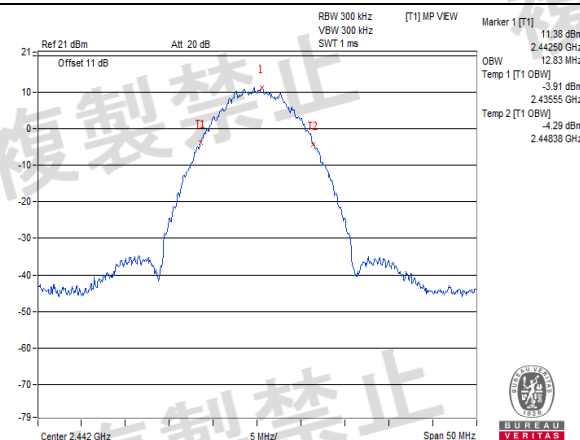
Measurement uncertainty: ± 206.50 Hz

Transmission Rate: 5.5M

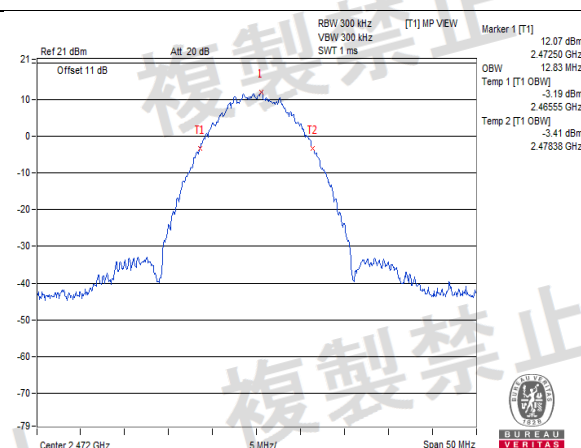
Environmental Conditions		24 deg.C, 70% RH		
Channel	Frequency (MHz)	V _{normal}	V _{max.}	V _{min.}
		Occupied Bandwidth (MHz)	Occupied Bandwidth (MHz)	Occupied Bandwidth (MHz)
1	2412	12.83	12.83	12.83
7	2442	12.83	12.83	12.83
13	2472	12.83	12.83	12.83

Note: 1. For the test plots please refer to the below pages.

Vnormal



Channel 1

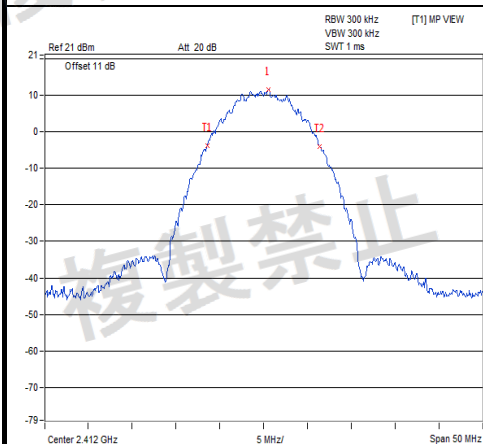
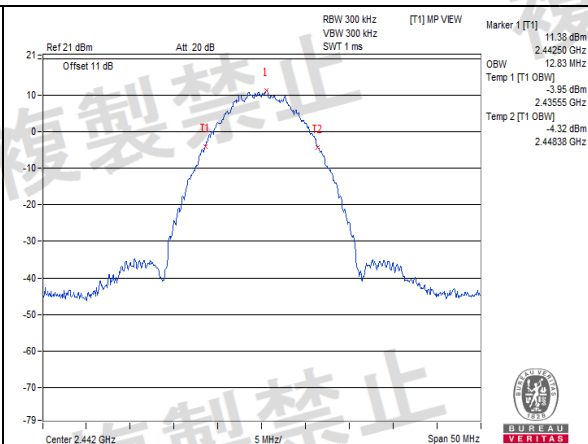


Channel 7

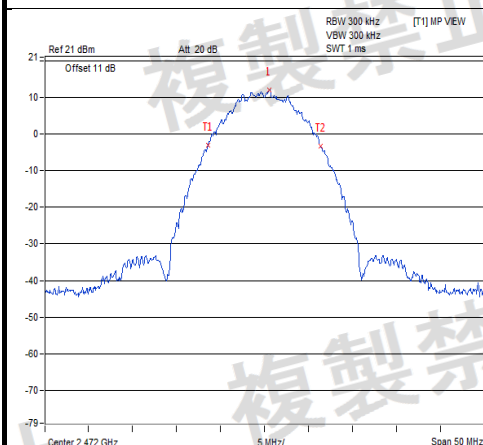
Channel 13

Measurement uncertainty: ± 206.50 Hz

V_{max}.



Channel 1

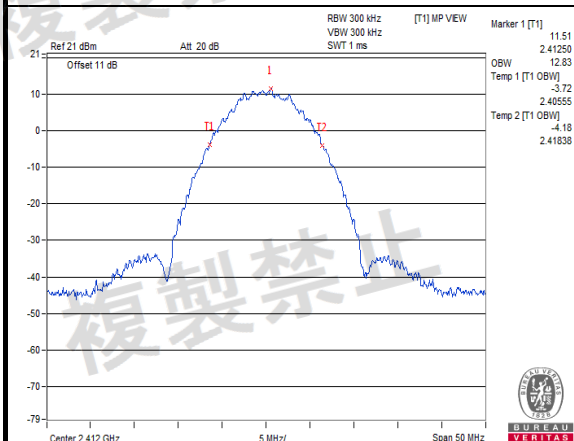
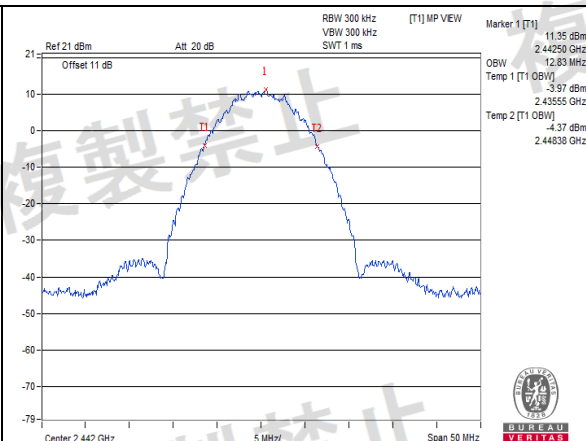


Channel 7

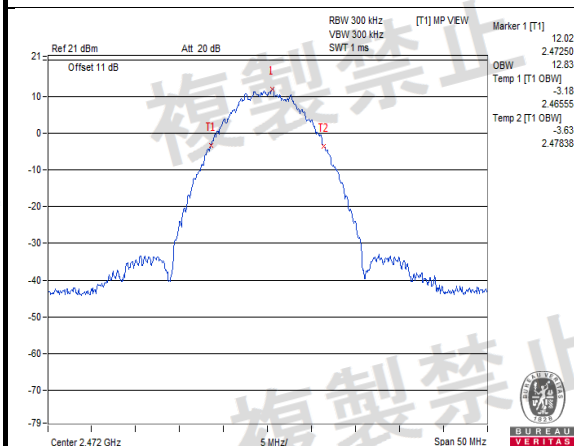
Channel 13

Measurement uncertainty: ± 206.50 Hz

V_{min}.



Channel 1



Channel 7

Channel 13

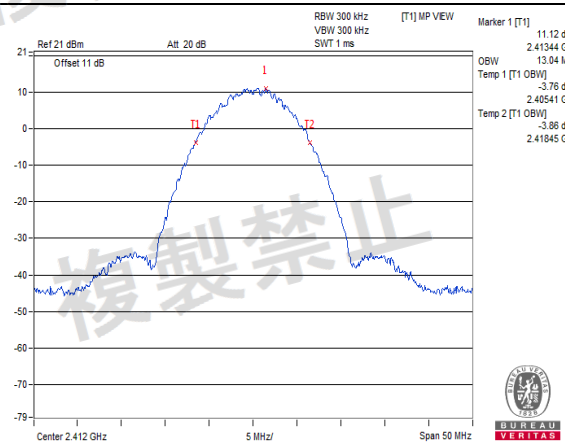
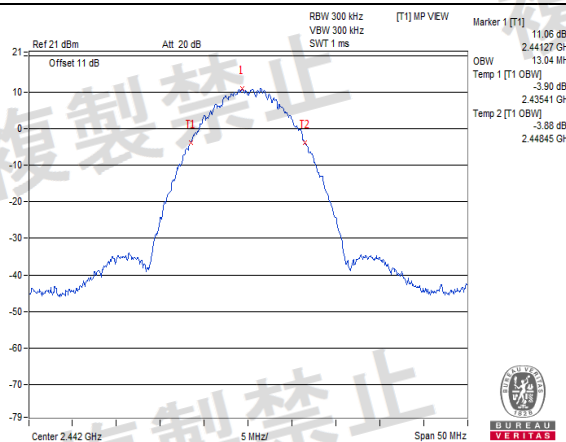
Measurement uncertainty: ± 206.50 Hz

Transmission Rate: 11M

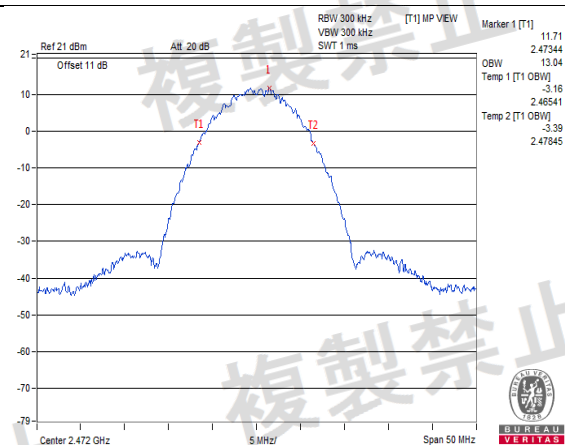
Environmental Conditions		24 deg.C, 70% RH		
Channel	Frequency (MHz)	V _{normal}	V _{max.}	V _{min.}
		Occupied Bandwidth (MHz)	Occupied Bandwidth (MHz)	Occupied Bandwidth (MHz)
1	2412	13.04	13.04	13.04
7	2442	13.04	13.04	13.04
13	2472	13.04	13.04	13.04

Note: 1. For the test plots please refer to the below pages.

Vnormal



Channel 1

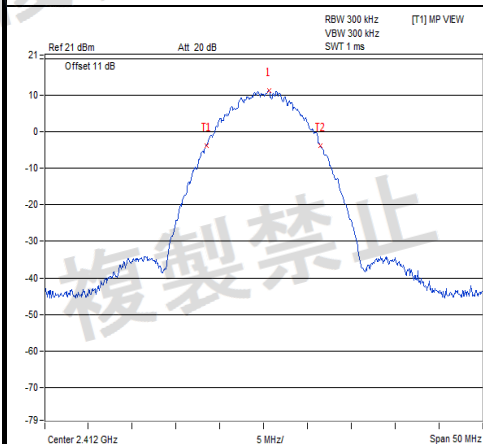
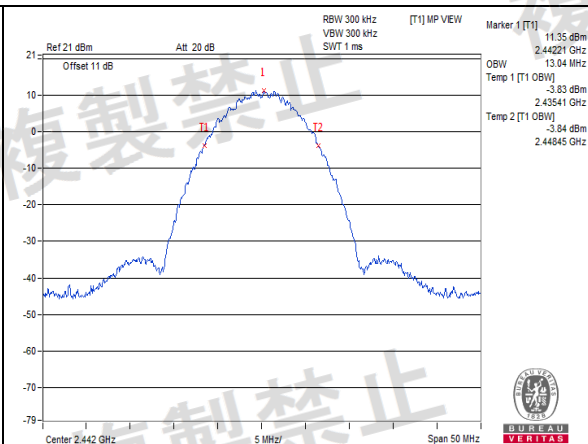


Channel 7

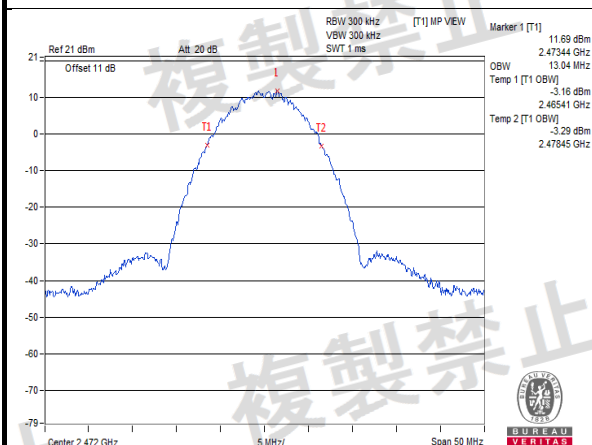
Channel 13

Measurement uncertainty: ± 206.50 Hz

V_{max}.



Channel 1

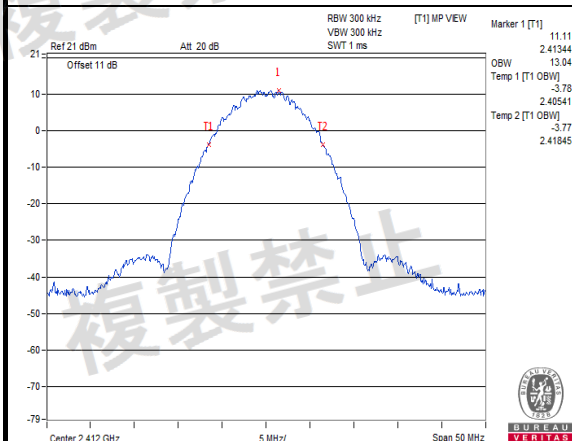
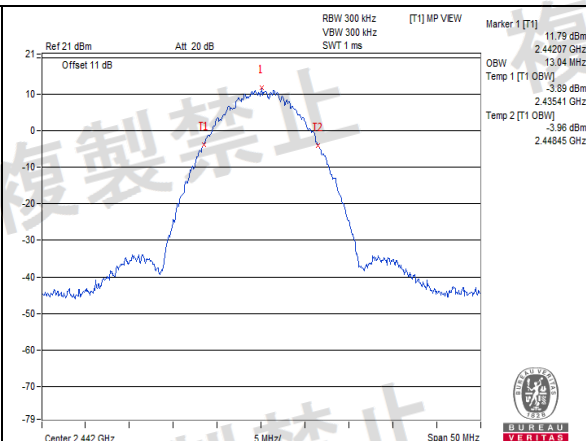


Channel 7

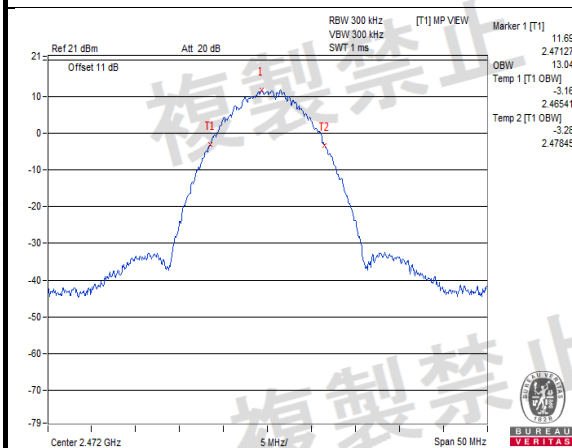
Channel 13

Measurement uncertainty: ± 206.50 Hz

V_{min}.



Channel 1



Channel 7

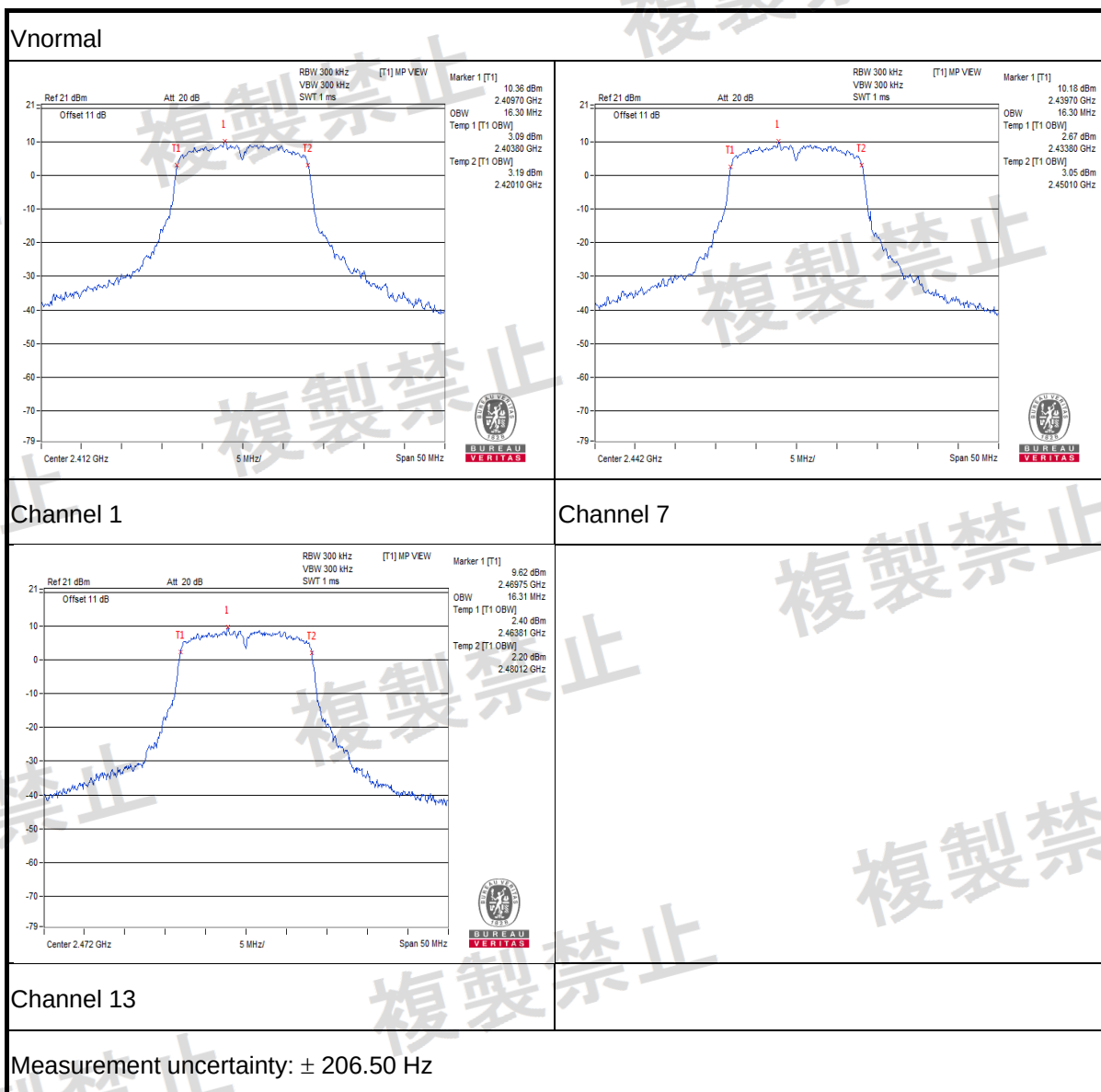
Channel 13

Measurement uncertainty: ± 206.50 Hz

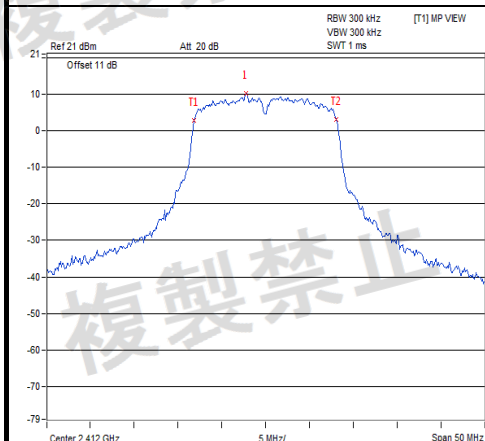
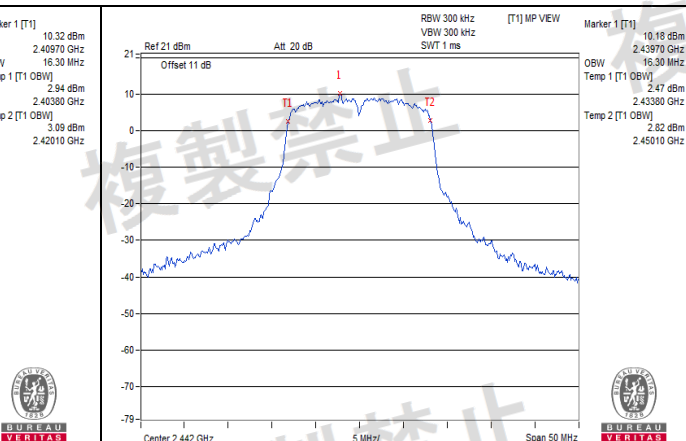
802.11g

Environmental Conditions		24 deg.C, 70% RH		
Channel	Frequency (MHz)	V _{normal}	V _{max.}	V _{min.}
		Occupied Bandwidth (MHz)	Occupied Bandwidth (MHz)	Occupied Bandwidth (MHz)
1	2412	16.30	16.30	16.30
7	2442	16.30	16.30	16.30
13	2472	16.31	16.30	16.30

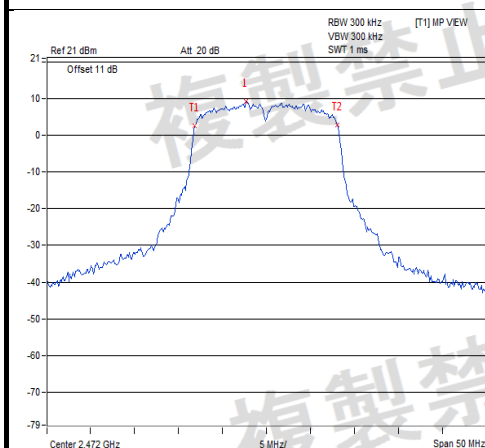
Note: 1. For the test plots please refer to the below pages.



V_{max}.



Channel 1

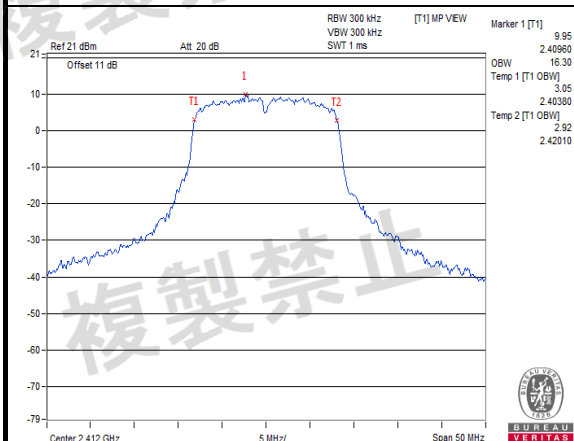
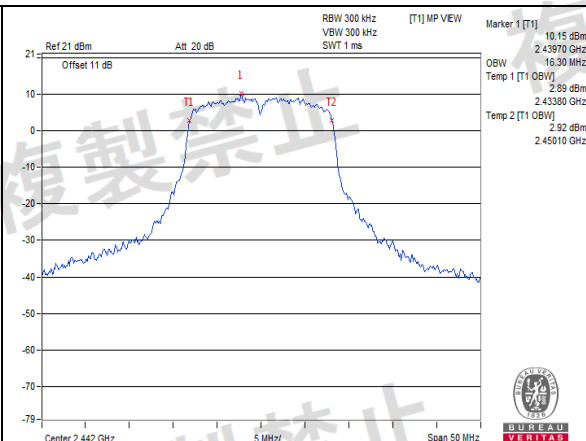


Channel 7

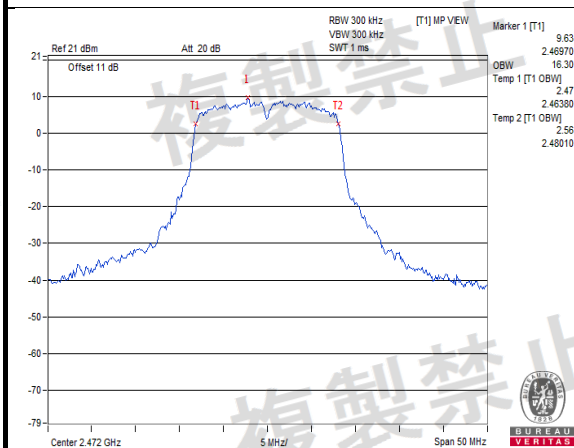
Channel 13

Measurement uncertainty: ± 206.50 Hz

V_{min}.



Channel 1



Channel 7

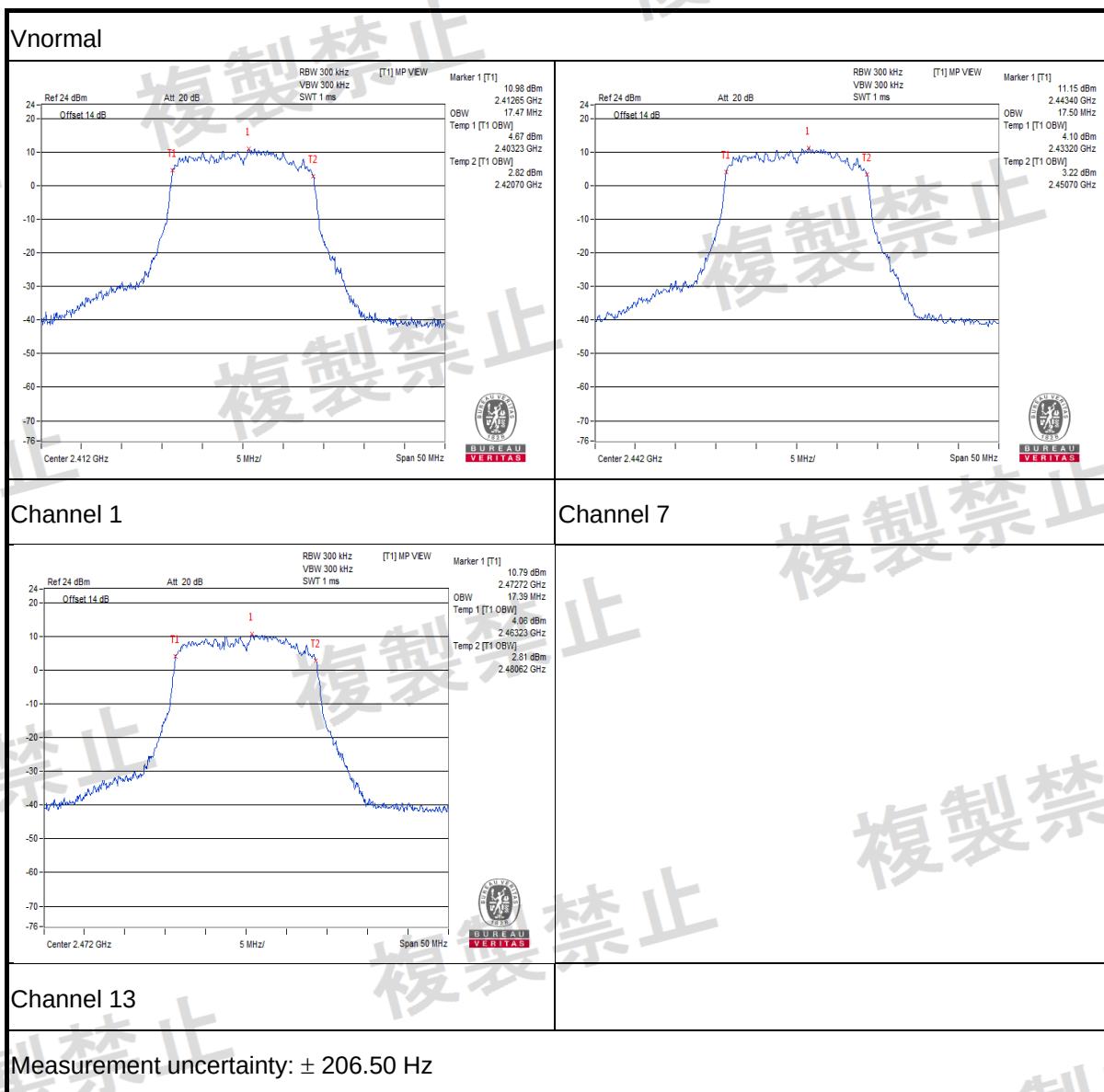
Channel 13

Measurement uncertainty: ± 206.50 Hz

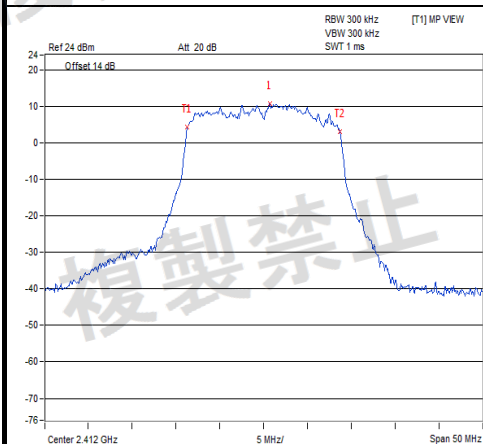
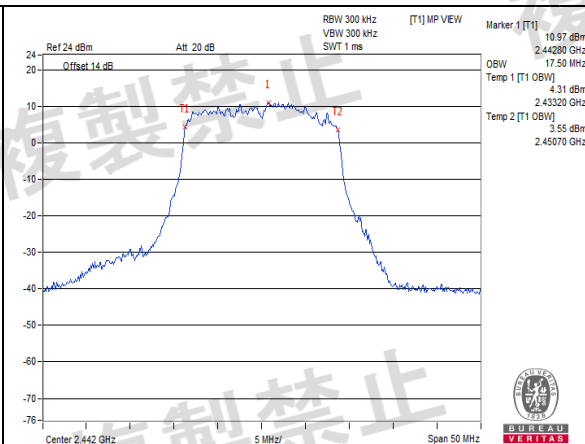
802.11n (HT20)

Environmental Conditions		24 deg.C, 70% RH		
Channel	Frequency (MHz)	V _{normal}	V _{max.}	V _{min.}
		Occupied Bandwidth (MHz)	Occupied Bandwidth (MHz)	Occupied Bandwidth (MHz)
1	2412	17.47	17.50	17.50
7	2442	17.50	17.50	17.50
13	2472	17.39	17.50	17.50

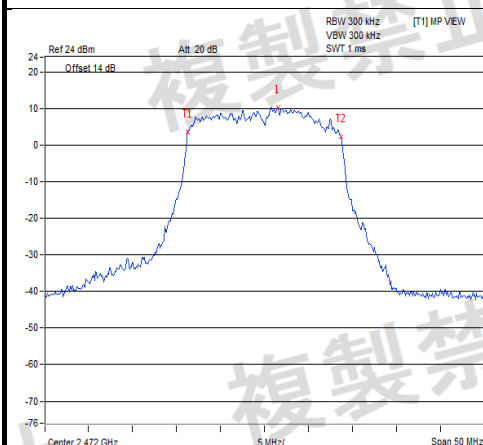
Note: 1. For the test plots please refer to the below pages.



V_{max}.



Channel 1

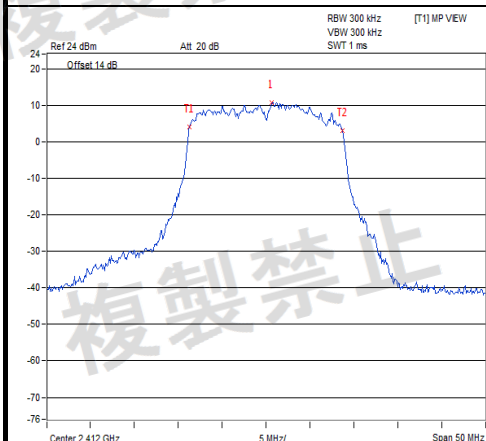
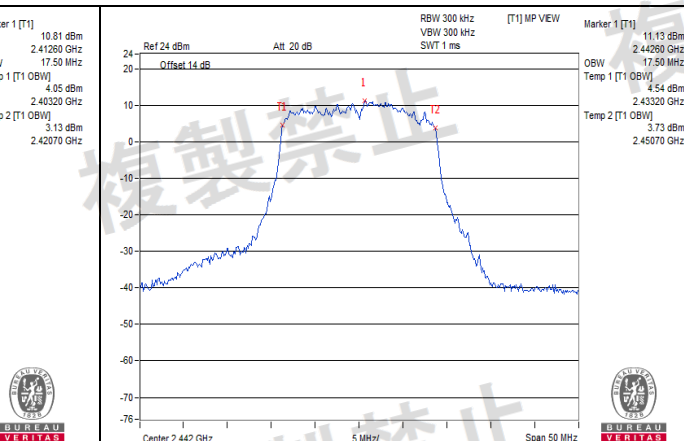


Channel 7

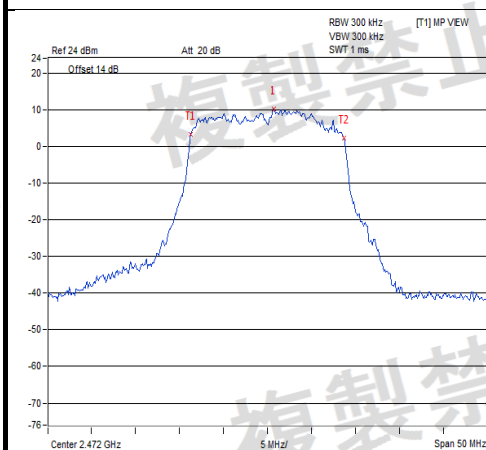
Channel 13

Measurement uncertainty: ± 206.50 Hz

V_{min}.



Channel 1



Channel 7

Channel 13

Measurement uncertainty: ± 206.50 Hz

4.3 Spreading Bandwidth Measurement (90% Power Bandwidth)

4.3.1 Limits of Spreading Bandwidth and Spreading Factor Measurement

Item	Limit	Remark
Spreading Bandwidth	$\geq 500\text{kHz}$	(For DSSS, FHSS)
Spreading Factor	≥ 5	Operating frequency 2400 to 2483.5MHz

4.3.2 Test Setup



4.3.3 Test Results

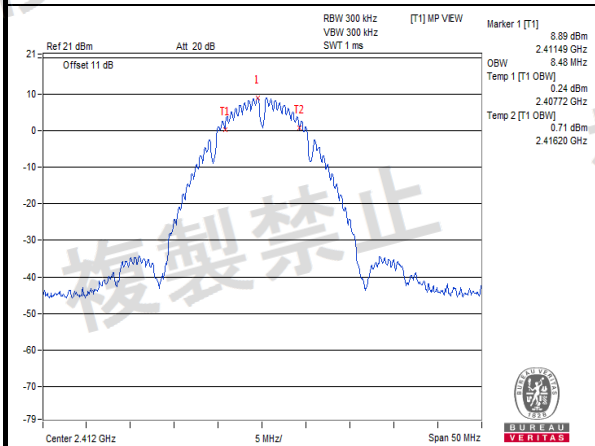
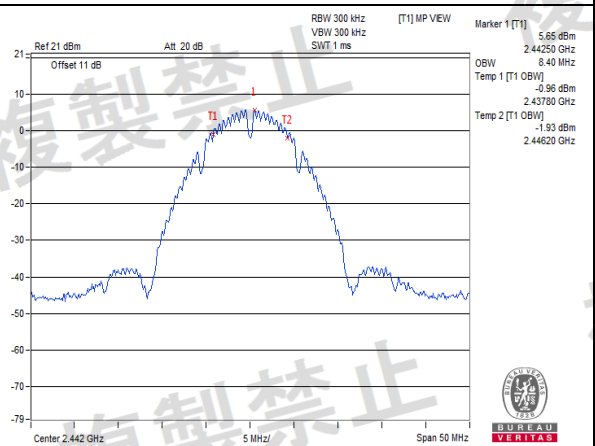
802.11b

Transmission Rate: 1M

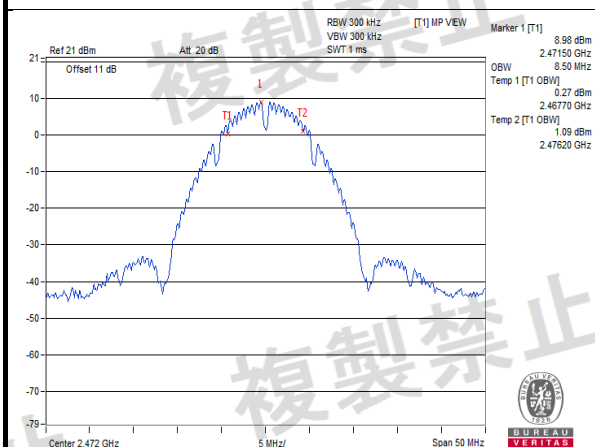
Environmental Conditions		24 deg.C, 70% RH					
Channel	Frequency (MHz)	V _{normal}		V _{max.}		V _{min.}	
		Occupied Bandwidth (MHz)	Spreading Factor	Occupied Bandwidth (MHz)	Spreading Factor	Occupied Bandwidth (MHz)	Spreading Factor
1	2412	8.48	8.48	8.50	8.50	8.50	8.50
7	2442	8.40	8.40	8.40	8.40	8.50	8.50
13	2472	8.50	8.50	8.50	8.50	8.50	8.50

- Note: 1. For the test plots please refer to the below pages.
 2. Spreading Factor: 90% channel power bandwidth / 1.

Vnormal



Channel 1



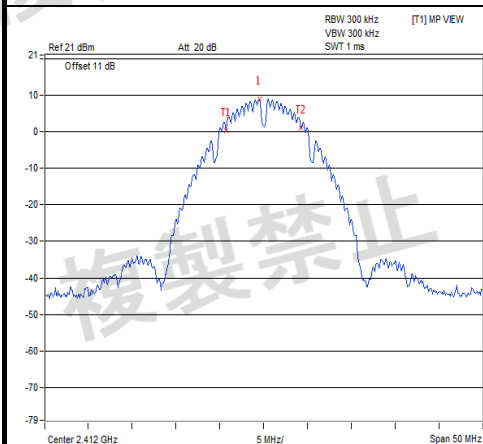
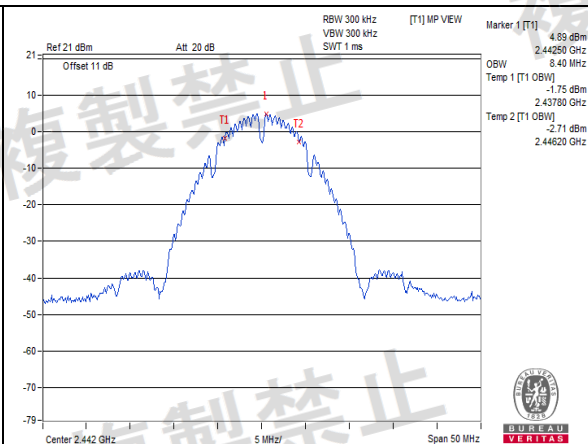
Channel 7



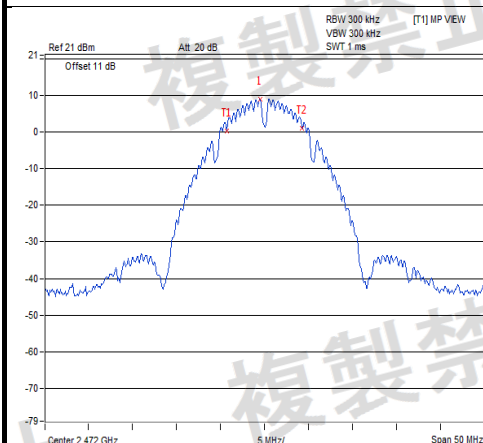
Channel 13

Measurement uncertainty: ± 206.50 Hz

V_{max}.



Channel 1

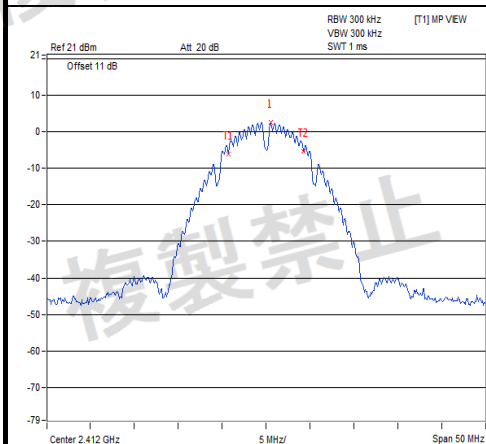
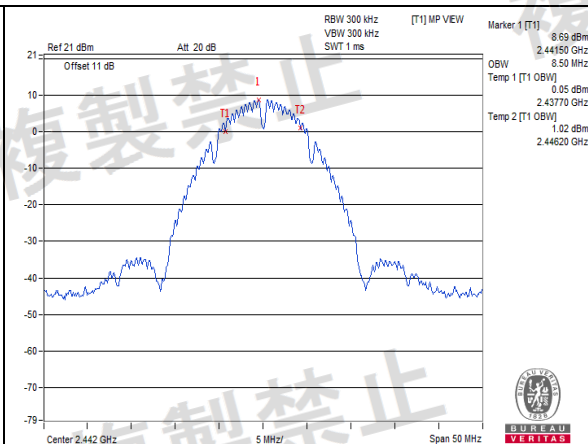


Channel 7

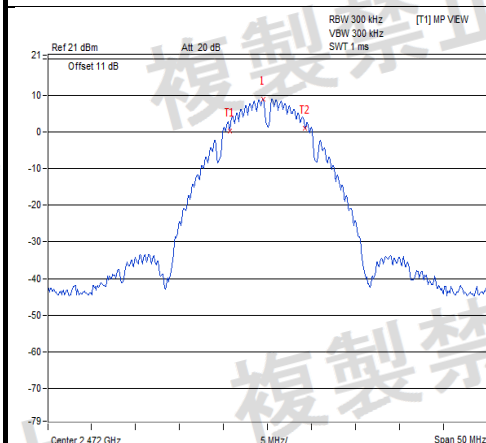
Channel 13

Measurement uncertainty: ± 206.50 Hz

V_{min}.



Channel 1



Channel 7

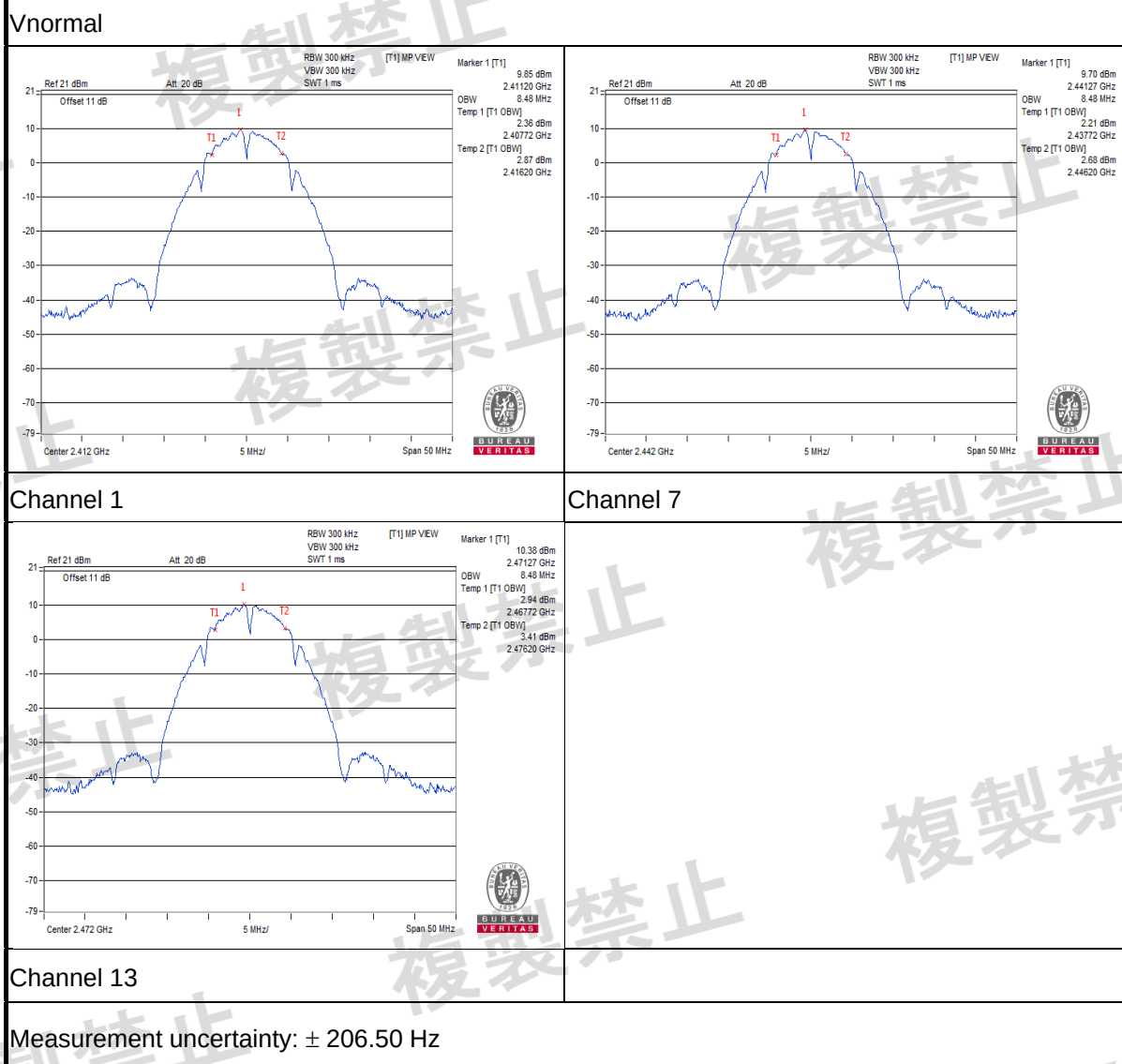
Channel 13

Measurement uncertainty: ± 206.50 Hz

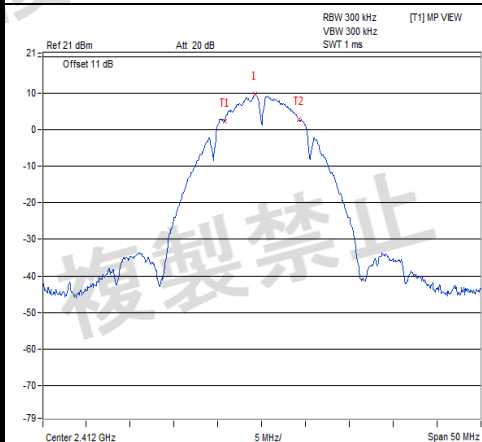
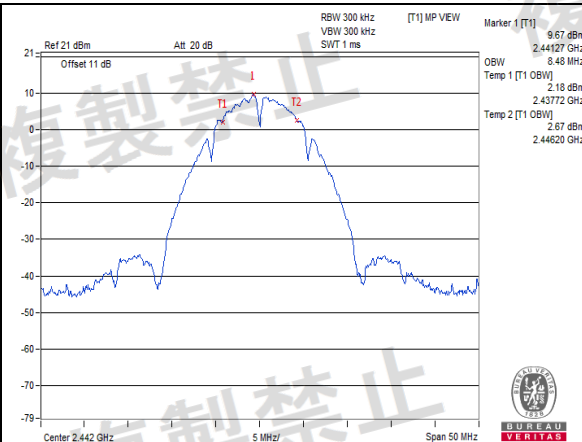
Transmission Rate: 2M

Environmental Conditions		24 deg.C, 70% RH					
Channel	Frequency (MHz)	V _{normal}		V _{max.}		V _{min.}	
		Occupied Bandwidth (MHz)	Spreading Factor	Occupied Bandwidth (MHz)	Spreading Factor	Occupied Bandwidth (MHz)	Spreading Factor
1	2412	8.48	8.48	8.48	8.48	8.48	8.48
7	2442	8.48	8.48	8.48	8.48	8.48	8.48
13	2472	8.48	8.48	8.48	8.48	8.48	8.48

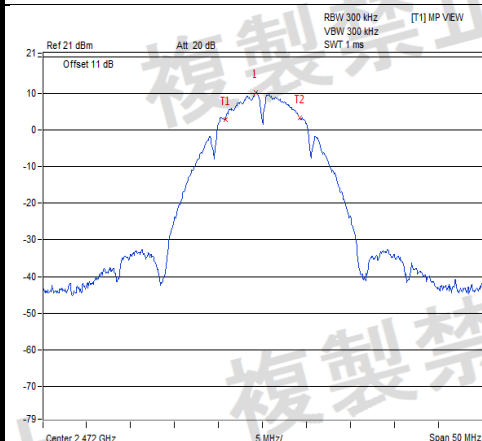
- Note: 1. For the test plots please refer to the below pages.
2. Spreading Factor: 90% channel power bandwidth / 1.



V_{max}.



Channel 1

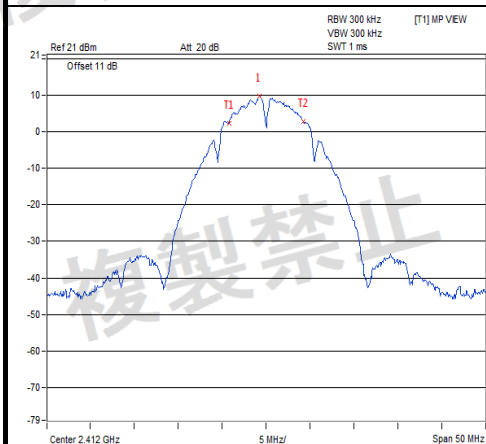
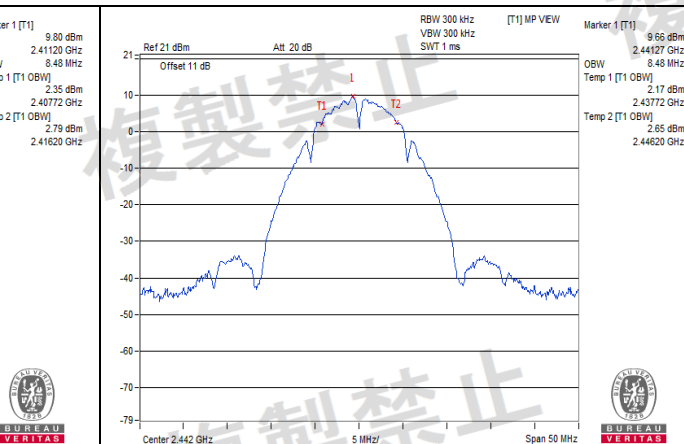


Channel 7

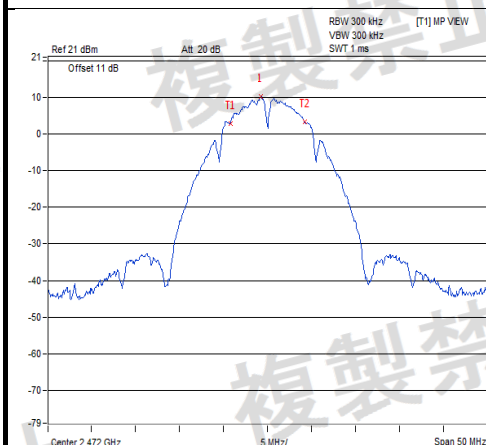
Channel 13

Measurement uncertainty: ± 206.50 Hz

V_{min}.



Channel 1



Channel 7

Channel 13

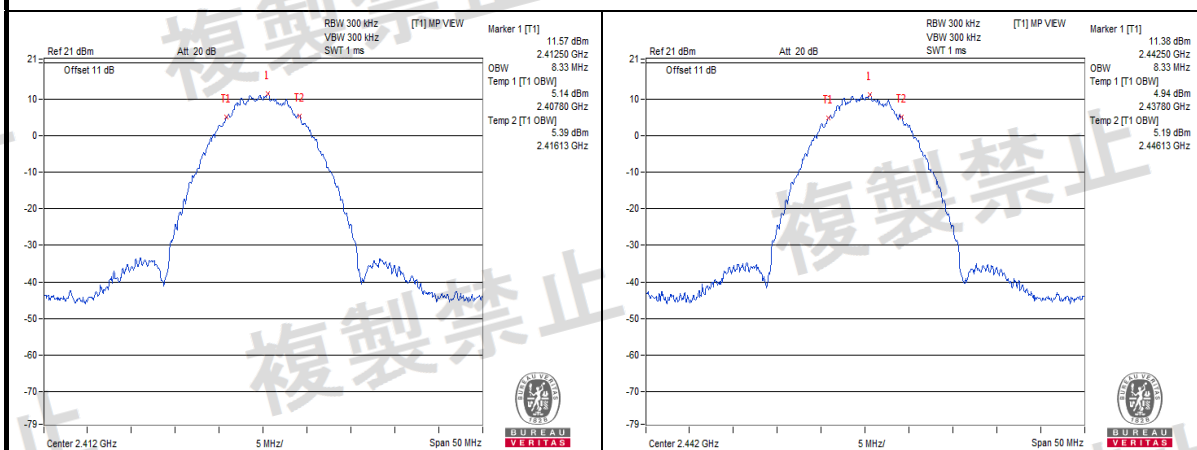
Measurement uncertainty: ± 206.50 Hz

Transmission Rate: 5.5M

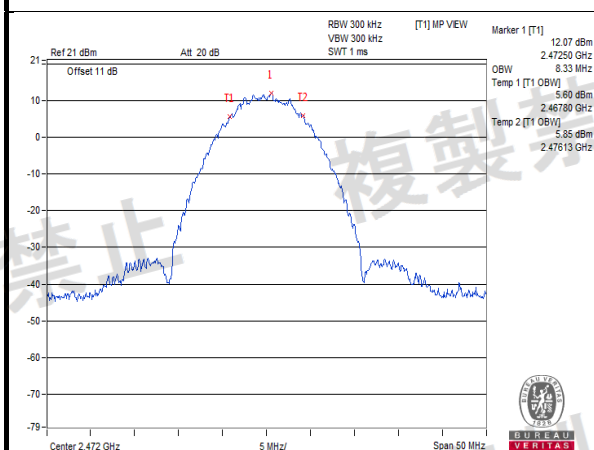
Environmental Conditions		24 deg.C, 70% RH					
Channel	Frequency (MHz)	V _{normal}		V _{max.}		V _{min.}	
		Occupied Bandwidth (MHz)	Spreading Factor	Occupied Bandwidth (MHz)	Spreading Factor	Occupied Bandwidth (MHz)	Spreading Factor
1	2412	8.33	6.05	8.33	6.05	8.33	6.05
7	2442	8.33	6.05	8.33	6.05	8.33	6.05
13	2472	8.33	6.05	8.33	6.05	8.33	6.05

- Note: 1. For the test plots please refer to the below pages.
2. Spreading Factor: 90% channel power bandwidth / 1.375.

V_{normal}



Channel 1



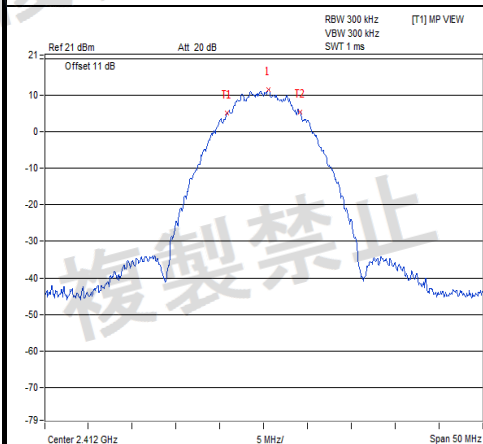
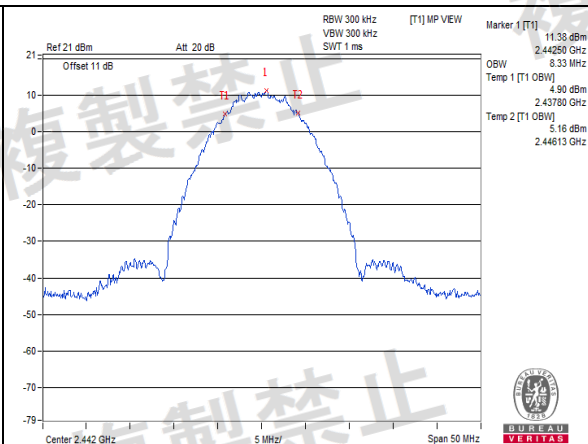
Channel 7



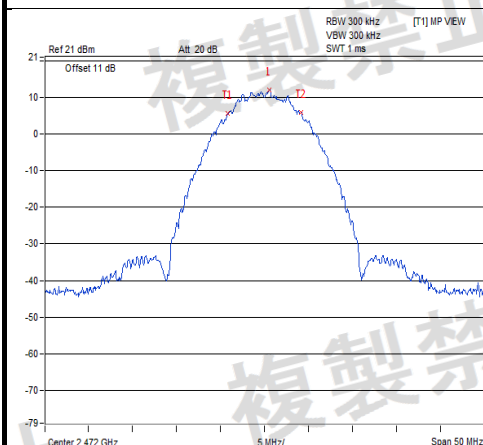
Channel 13

Measurement uncertainty: ± 206.50 Hz

V_{max}.



Channel 1

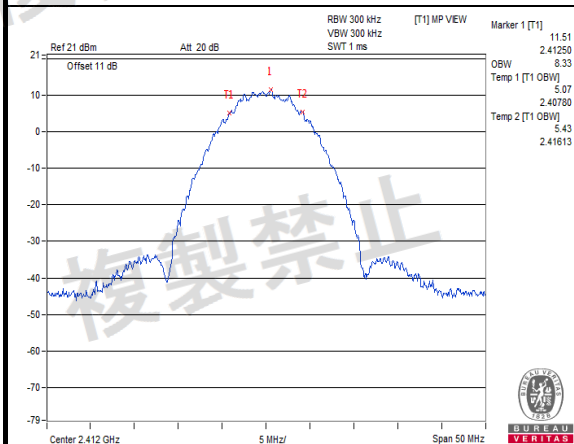
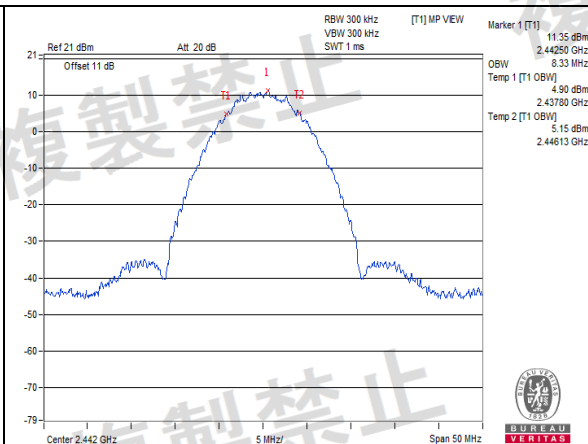


Channel 7

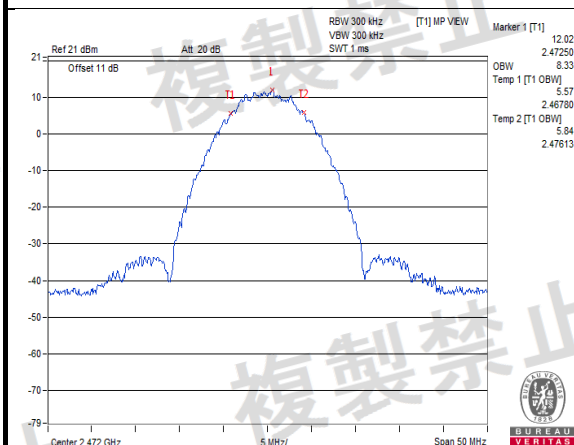
Channel 13

Measurement uncertainty: ± 206.50 Hz

V_{min}.



Channel 1



Channel 7

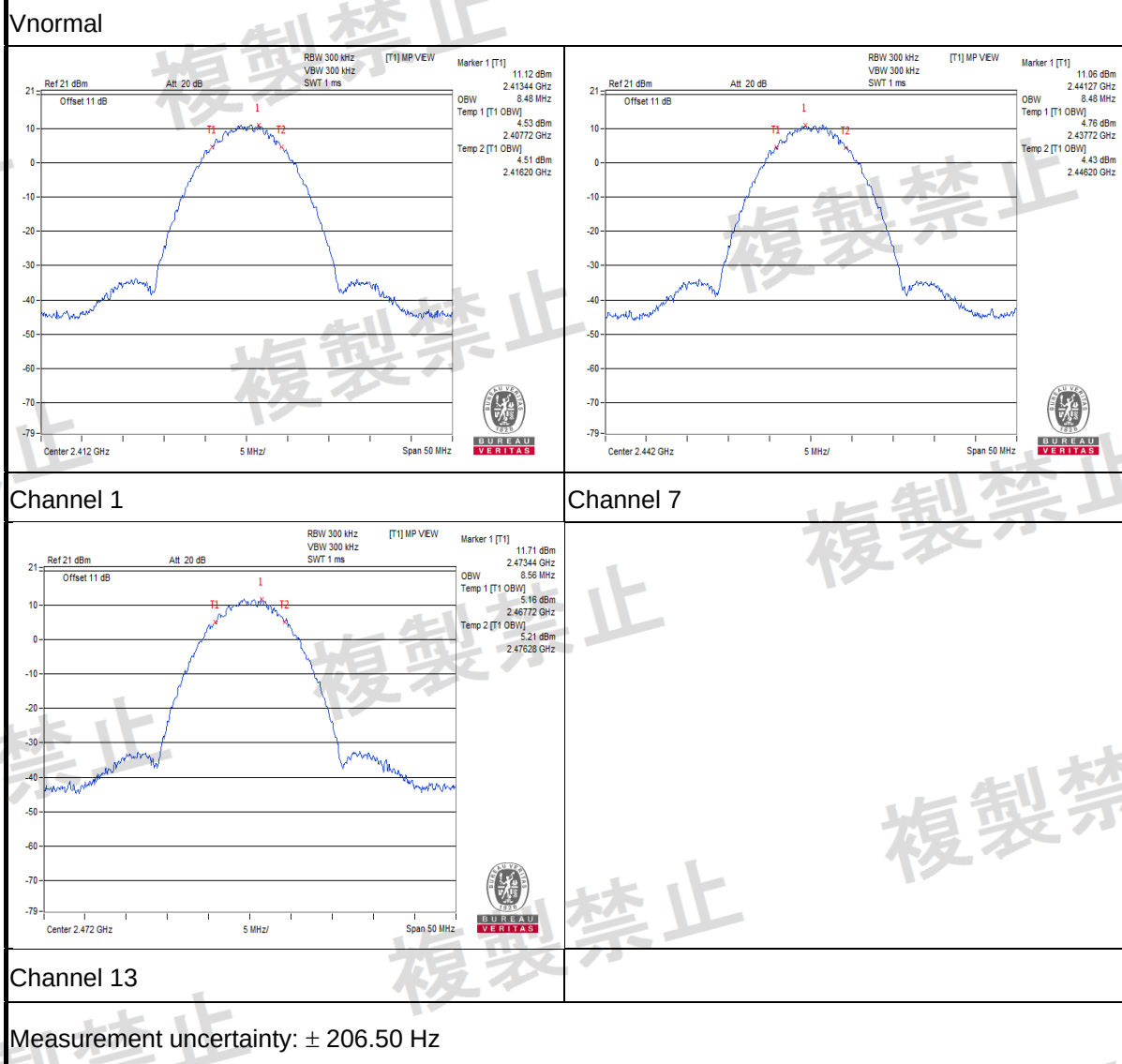
Channel 13

Measurement uncertainty: ± 206.50 Hz

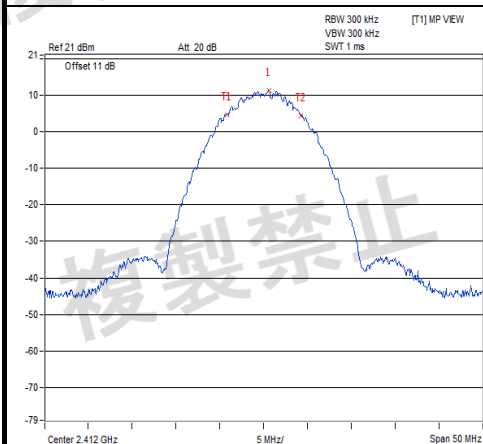
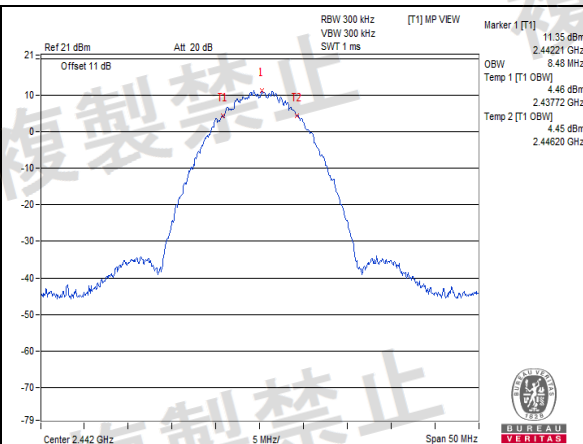
Transmission Rate: 11M

Environmental Conditions		24 deg.C, 70% RH					
Channel	Frequency (MHz)	V _{normal}		V _{max.}		V _{min.}	
		Occupied Bandwidth (MHz)	Spreading Factor	Occupied Bandwidth (MHz)	Spreading Factor	Occupied Bandwidth (MHz)	Spreading Factor
1	2412	8.48	6.16	8.48	6.16	8.48	6.16
7	2442	8.48	6.16	8.48	6.16	8.48	6.16
13	2472	8.56	6.22	8.48	6.16	8.48	6.16

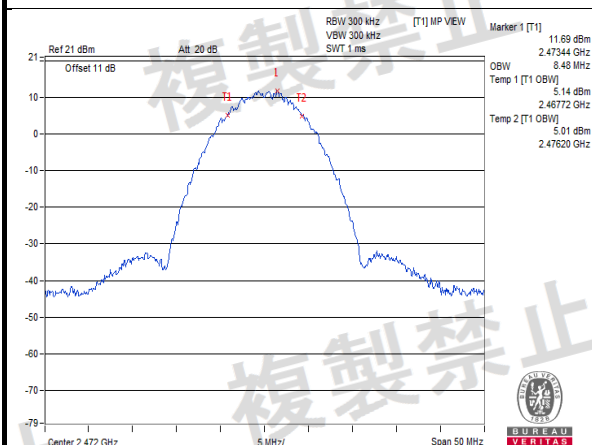
- Note: 1. For the test plots please refer to the below pages.
2. Spreading Factor: 90% channel power bandwidth / 1.375.



V_{max}.



Channel 1

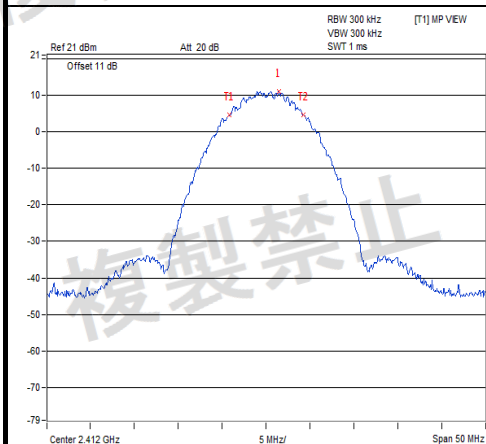
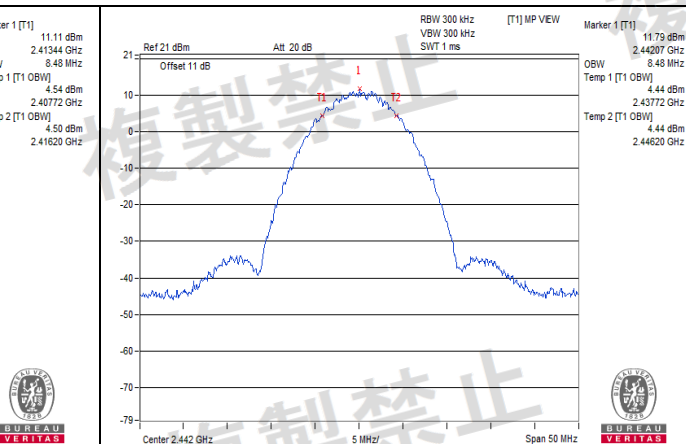


Channel 7

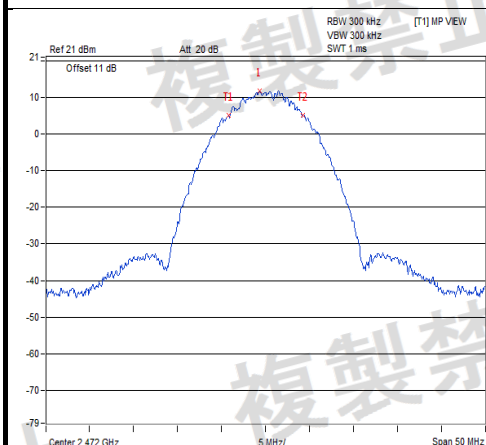
Channel 13

Measurement uncertainty: ± 206.50 Hz

V_{min}.



Channel 1



Channel 7

Channel 13

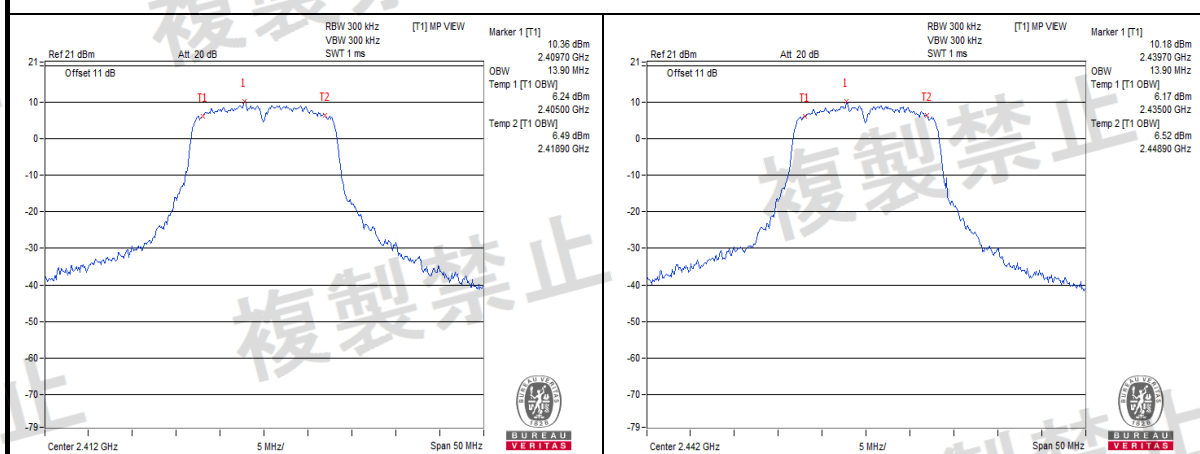
Measurement uncertainty: ± 206.50 Hz

802.11g

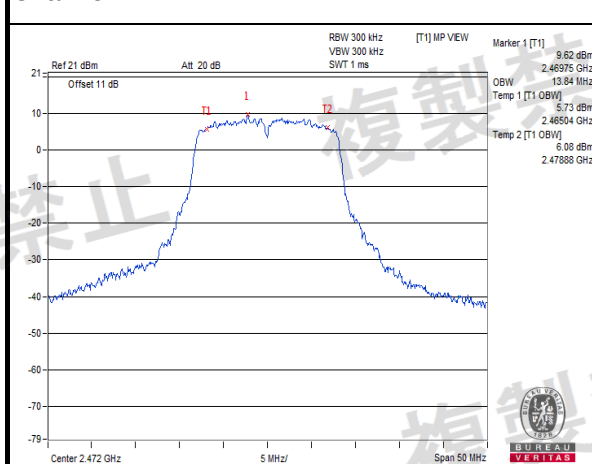
Environmental Conditions		24 deg.C, 70% RH					
Channel	Frequency (MHz)	V _{normal}		V _{max.}		V _{min.}	
		Occupied Bandwidth (MHz)	Spreading Factor	Occupied Bandwidth (MHz)	Spreading Factor	Occupied Bandwidth (MHz)	Spreading Factor
1	2412	13.90	9.26	13.90	9.26	13.90	9.26
7	2442	13.90	9.26	13.90	9.26	13.90	9.26
13	2472	13.84	9.22	13.90	9.26	13.90	9.26

- Note: 1. For the test plots please refer to the below pages.
2. Spreading Factor: 90% channel power bandwidth / 1.5.

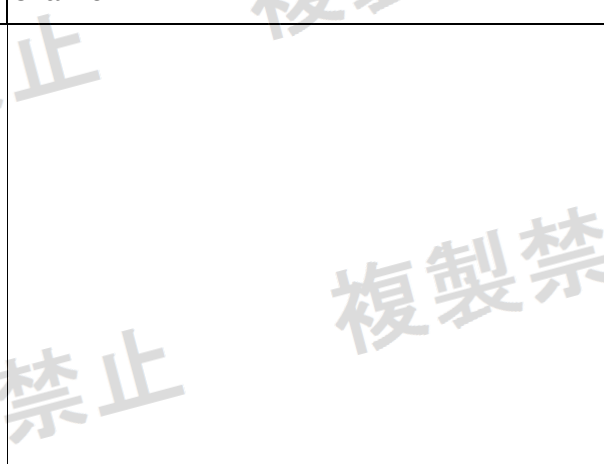
Vnormal



Channel 1



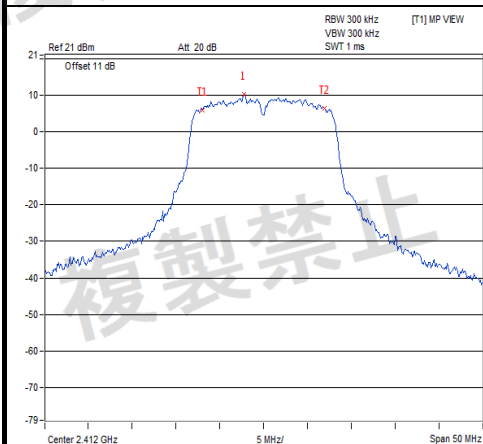
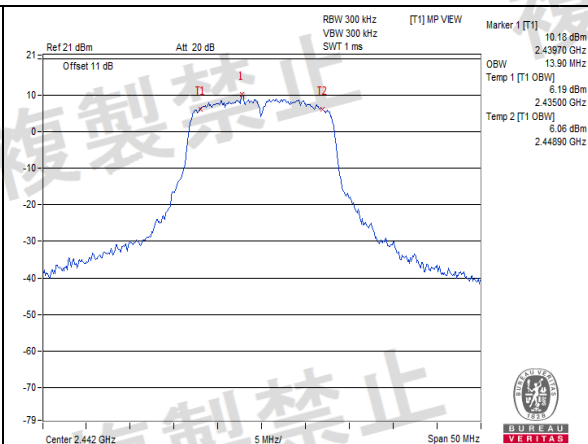
Channel 7



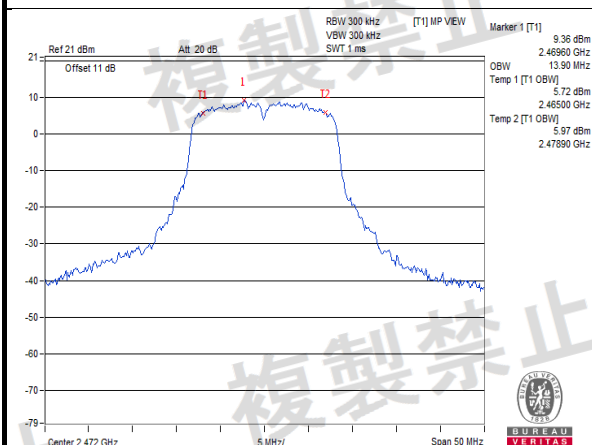
Channel 13

Measurement uncertainty: ± 206.50 Hz

V_{max}.



Channel 1

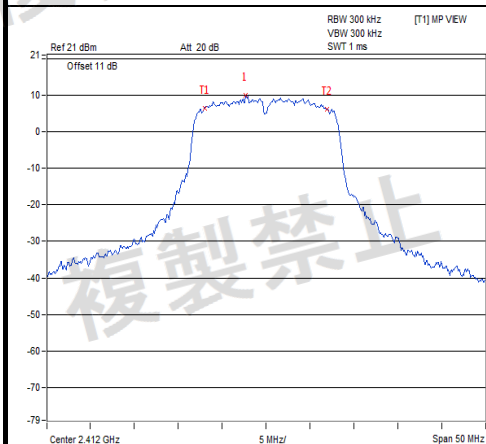
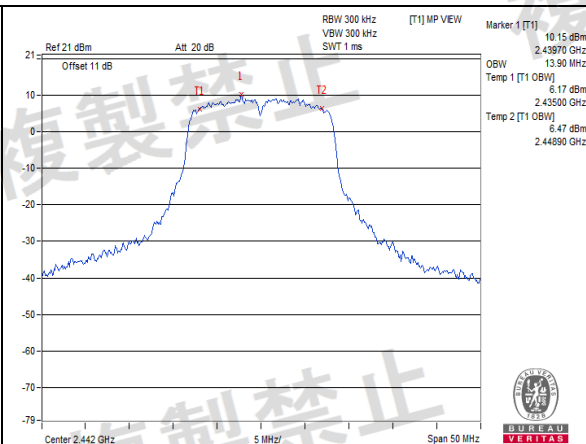


Channel 7

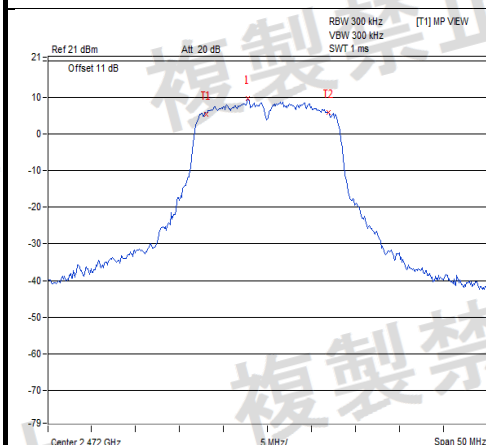
Channel 13

Measurement uncertainty: ± 206.50 Hz

V_{min}.



Channel 1



Channel 7

Channel 13

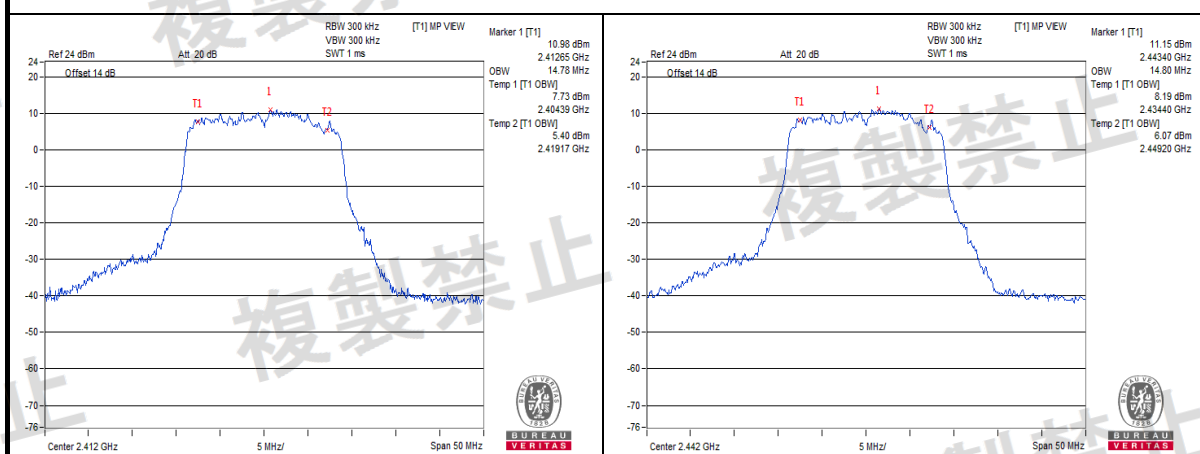
Measurement uncertainty: ± 206.50 Hz

802.11n (HT20)

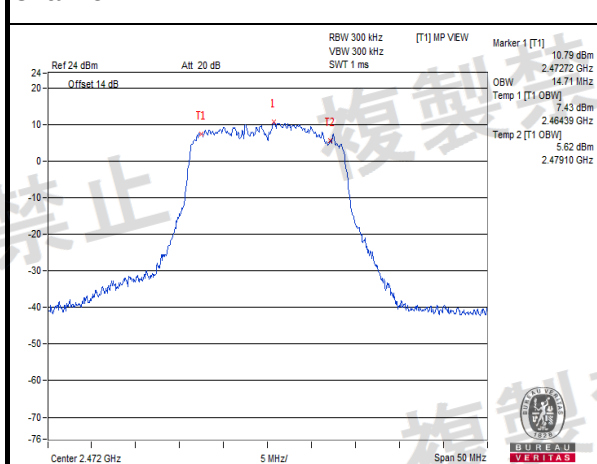
Environmental Conditions		24 deg.C, 70% RH					
Channel	Frequency (MHz)	V _{normal}		V _{max.}		V _{min.}	
		Occupied Bandwidth (MHz)	Spreading Factor	Occupied Bandwidth (MHz)	Spreading Factor	Occupied Bandwidth (MHz)	Spreading Factor
1	2412	14.78	9.85	14.80	9.86	14.80	9.86
7	2442	14.80	9.86	14.80	9.86	14.80	9.86
13	2472	14.71	9.80	14.70	9.80	14.70	9.80

- Note: 1. For the test plots please refer to the below pages.
2. Spreading Factor: 90% channel power bandwidth / 1.5.

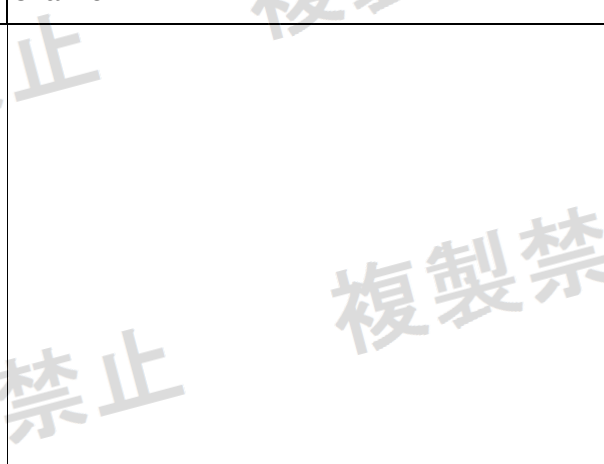
Vnormal



Channel 1



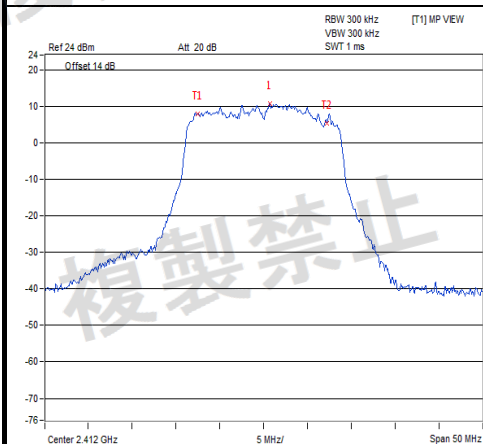
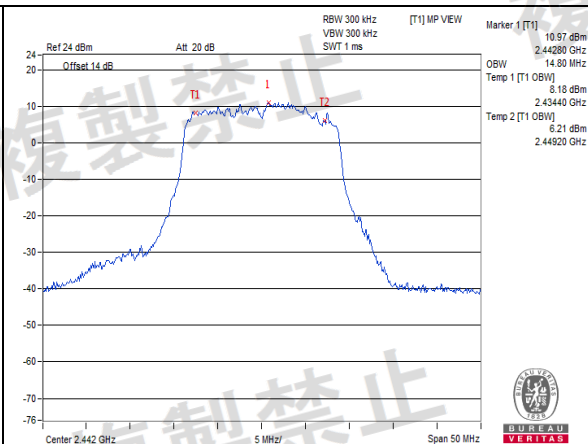
Channel 7



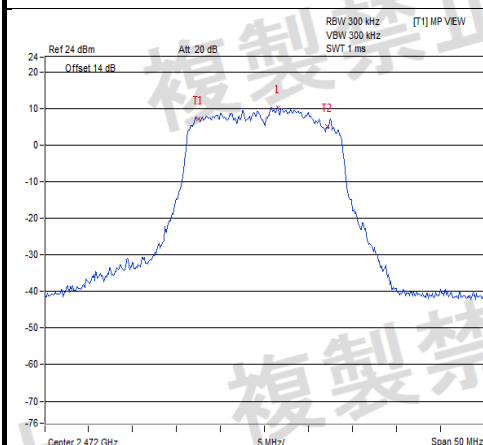
Channel 13

Measurement uncertainty: ± 206.50 Hz

V_{max}.



Channel 1

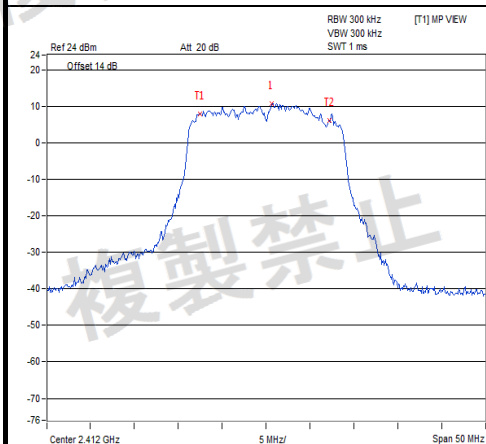
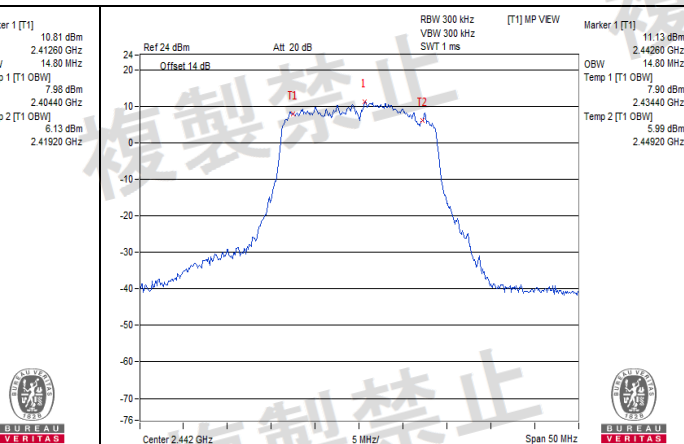


Channel 7

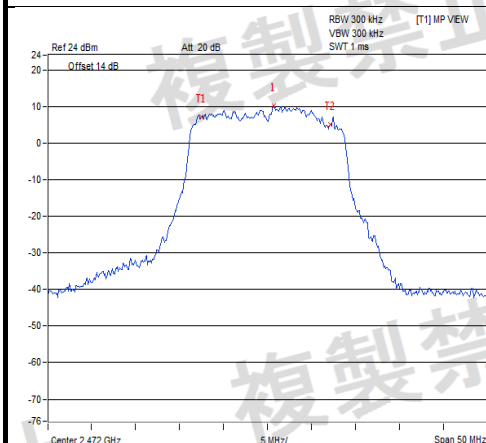
Channel 13

Measurement uncertainty: ± 206.50 Hz

V_{min}.



Channel 1



Channel 7

Channel 13

Measurement uncertainty: ± 206.50 Hz

4.4 Spurious Emissions for Transmitter Measurement

4.4.1 Limits of Spurious Emissions

Frequencies (MHz)	Limit
Operating frequency 2400 to 2483.5MHz	
30.0MHz to 1000.0MHz	$\leq 0.25 \mu\text{W}/100\text{kHz}$
1000.0MHz to 2387MHz	$\leq 2.5 \mu\text{W}/\text{MHz}$
2387.0MHz to 2400.0MHz	$\leq 25 \mu\text{W}/\text{MHz}$
2483.5MHz to 2496.5MHz	$\leq 25 \mu\text{W}/\text{MHz}$
2496.5MHz to 12500.0MHz	$\leq 2.5 \mu\text{W}/\text{MHz}$

4.4.2 Test Setup



4.4.3 Test Results

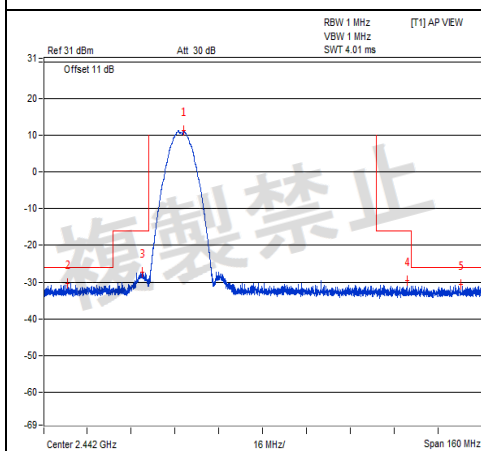
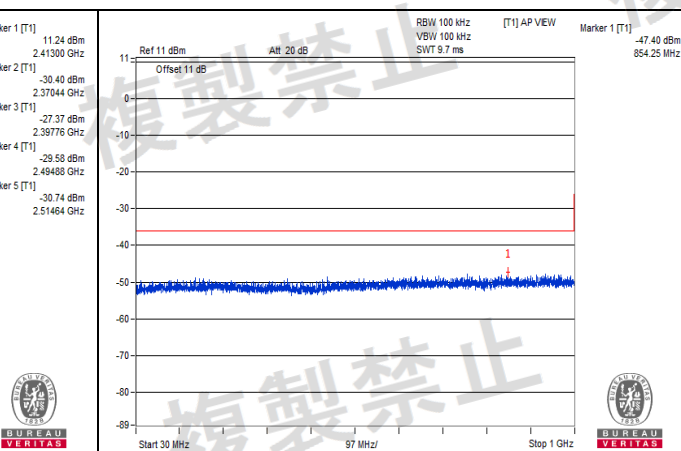
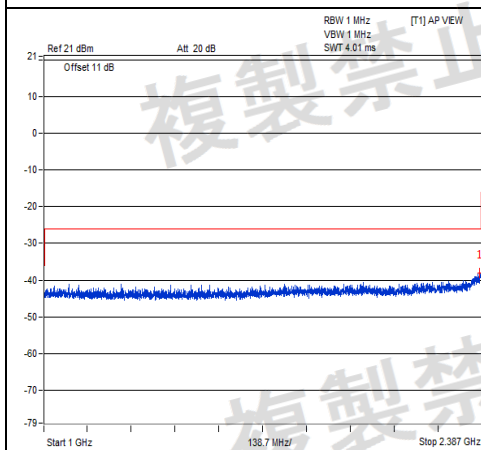
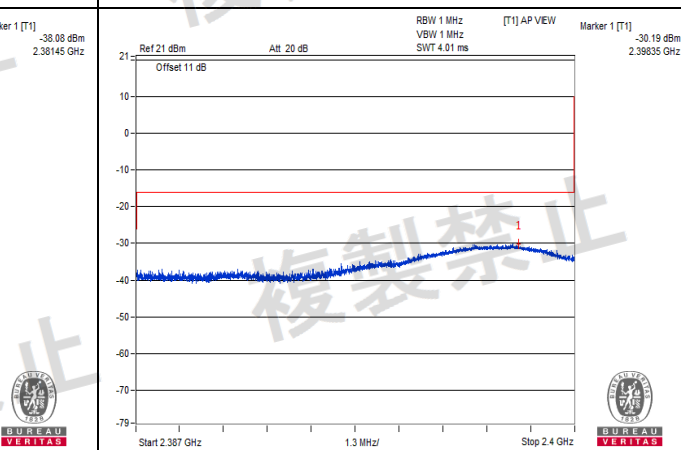
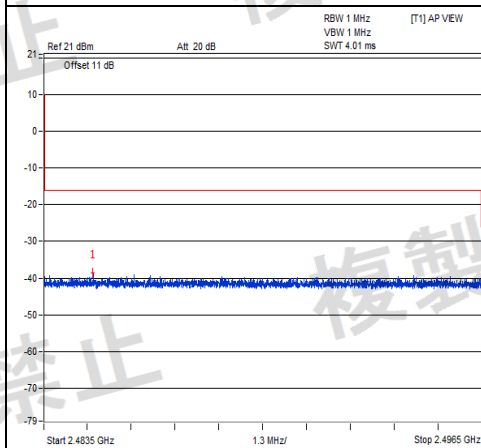
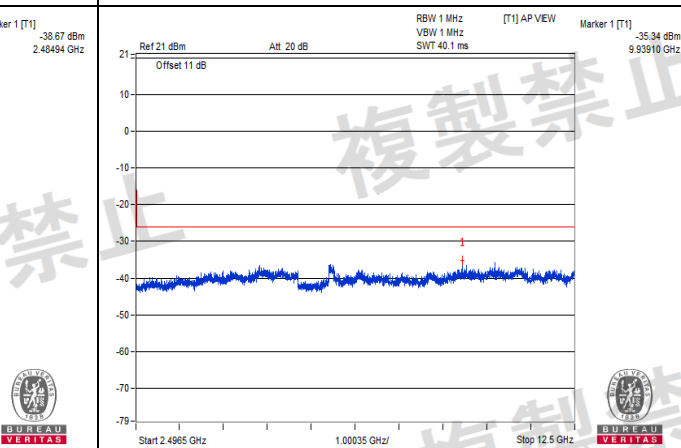
802.11b

Environmental Conditions		24 deg.C, 70% RH					
Test Channel		Channel 1 (2412MHz)		Channel 7 (2442MHz)		Limit	Result
Test Condition	Frequency Range	Frequency (MHz)	Measured Value	Frequency (MHz)	Measured Value		
V _{normal}	30.0MHz to 1000.0MHz	854.250	0.018197uW	688.380	0.020845uW	0.25uW	PASS
	1000.0MHz to 2387MHz	2381.450	0.155597uW	2229.570	0.092683uW	2.5uW	PASS
	2387.0MHz to 2400.0MHz	2398.350	0.957194uW	2399.760	0.145546uW	25uW	PASS
	2483.5MHz to 2496.5MHz	2484.940	0.135831uW	2491.730	0.146218uW	25uW	PASS
	2496.5MHz to 12500.0MHz	9939.100	0.292415uW	5497.550	0.215774uW	2.5uW	PASS
V _{max.}	30.0MHz to 1000.0MHz	942.280	0.021827uW	939.860	0.018365uW	0.25uW	PASS
	1000.0MHz to 2387MHz	2282.620	0.127938uW	2381.450	0.102802uW	2.5uW	PASS
	2387.0MHz to 2400.0MHz	2396.920	0.33037uW	2399.170	0.186638uW	25uW	PASS
	2483.5MHz to 2496.5MHz	2488.210	0.121619uW	2487.970	0.179473uW	25uW	PASS
	2496.5MHz to 12500.0MHz	6973.060	0.289068uW	4722.270	0.258226uW	2.5uW	PASS
V _{min.}	30.0MHz to 1000.0MHz	927.490	0.019187uW	921.670	0.018239uW	0.25uW	PASS
	1000.0MHz to 2387MHz	2379.020	0.115878uW	2382.140	0.134276uW	2.5uW	PASS
	2387.0MHz to 2400.0MHz	2397.800	0.550808uW	2397.850	0.193642uW	25uW	PASS
	2483.5MHz to 2496.5MHz	2489.700	0.129122uW	2492.220	0.190108uW	25uW	PASS
	2496.5MHz to 12500.0MHz	11239.550	0.249459uW	6975.560	0.286418uW	2.5uW	PASS

Test Channel		Channel 13 (2472MHz)		Limit	Result
Test Condition	Frequency Range	Frequency (MHz)	Measured Value		
V _{normal}	30.0MHz to 1000.0MHz	929.430	0.024099uW	0.25uW	PASS
	1000.0MHz to 2387MHz	2203.910	0.103514uW	2.5uW	PASS
	2387.0MHz to 2400.0MHz	2399.170	0.160694uW	25uW	PASS
	2483.5MHz to 2496.5MHz	2485.620	1.148154uW	25uW	PASS
	2496.5MHz to 12500.0MHz	6975.560	0.286418uW	2.5uW	PASS
V _{max.}	30.0MHz to 1000.0MHz	942.040	0.017947uW	0.25uW	PASS
	1000.0MHz to 2387MHz	2384.910	0.119399uW	2.5uW	PASS
	2387.0MHz to 2400.0MHz	2399.910	0.122462uW	25uW	PASS
	2483.5MHz to 2496.5MHz	2486.900	1.122018uW	25uW	PASS
	2496.5MHz to 12500.0MHz	10236.700	0.288403uW	2.5uW	PASS
V _{min.}	30.0MHz to 1000.0MHz	854.980	0.01932uW	0.25uW	PASS
	1000.0MHz to 2387MHz	2163.340	0.098855uW	2.5uW	PASS
	2387.0MHz to 2400.0MHz	2396.550	0.121899uW	25uW	PASS
	2483.5MHz to 2496.5MHz	2485.800	1.096478uW	25uW	PASS
	2496.5MHz to 12500.0MHz	11109.510	0.253513uW	2.5uW	PASS

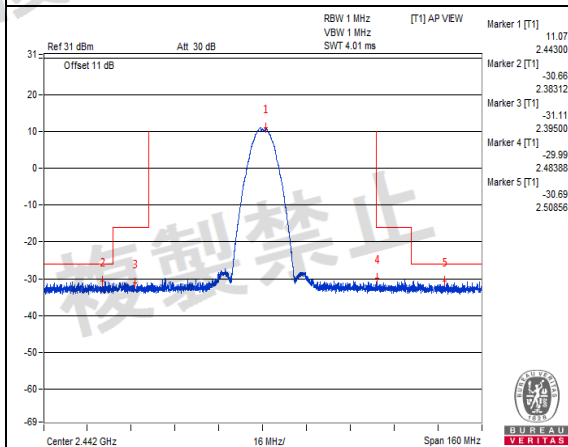
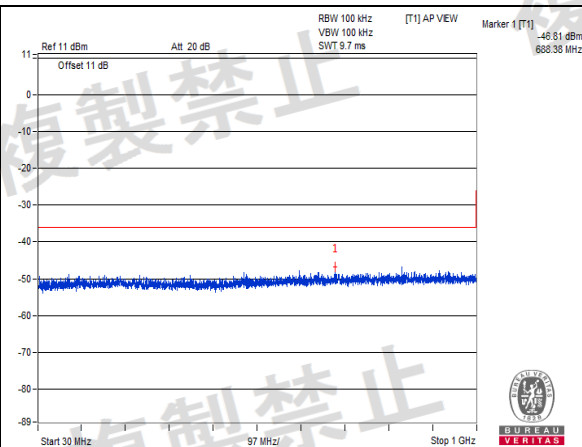
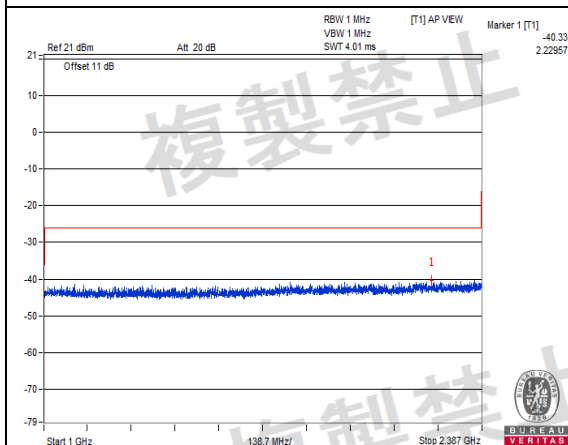
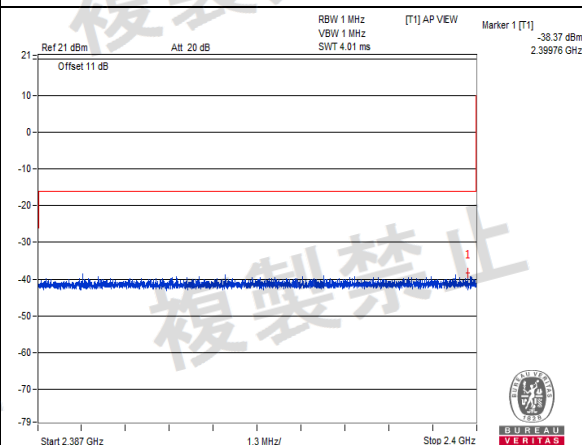
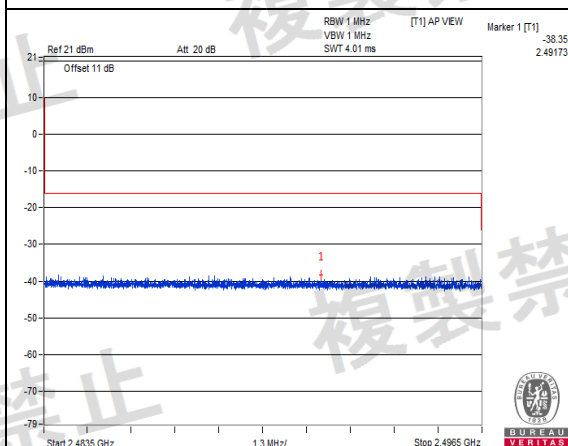
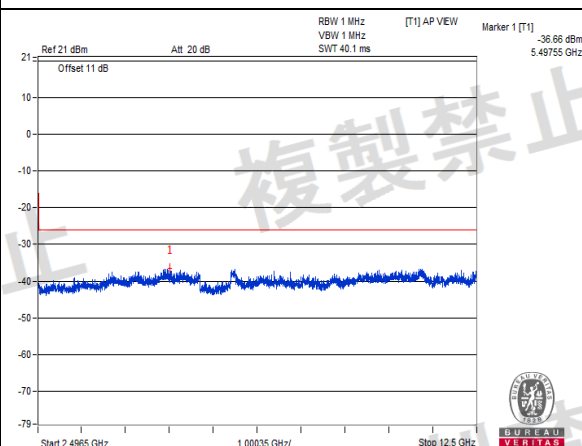
Note: 1. The worst value in each frequency range v.s. each channel has been marked by boldface.
2. The spectrum plots are attached on the following pages.

Vnormal Channel 1



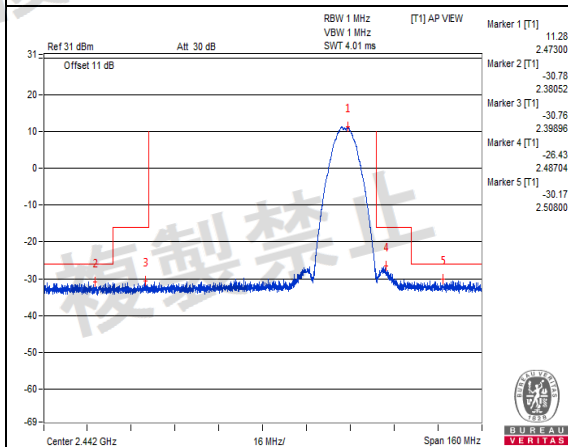
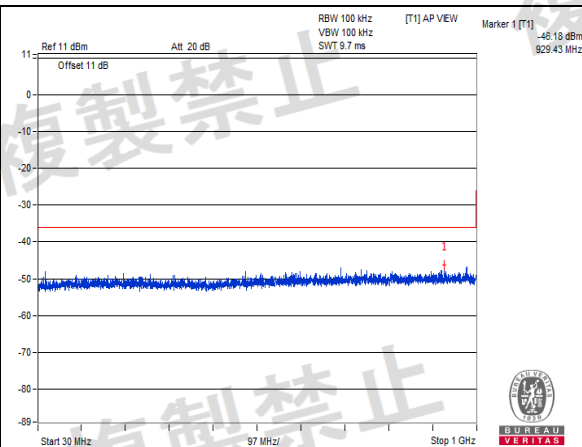
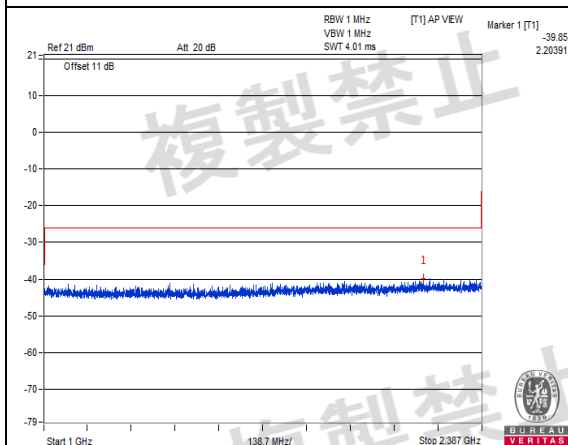
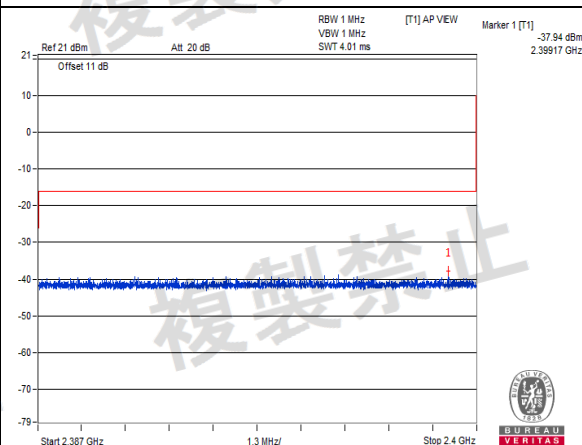
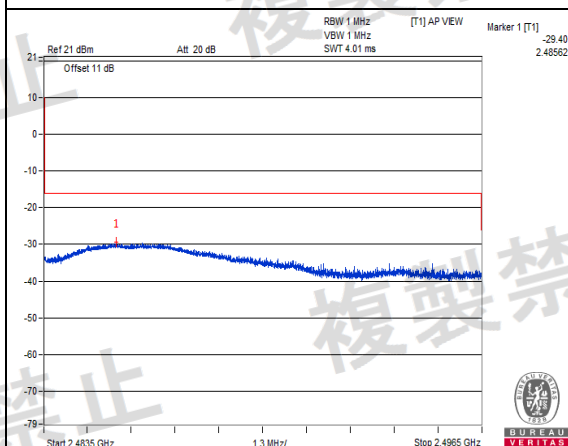
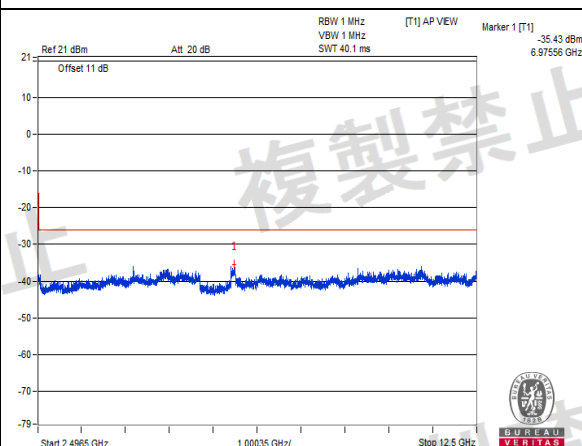
Measurement uncertainty: $\pm 3.93\text{dB}$

Vnormal Channel 7



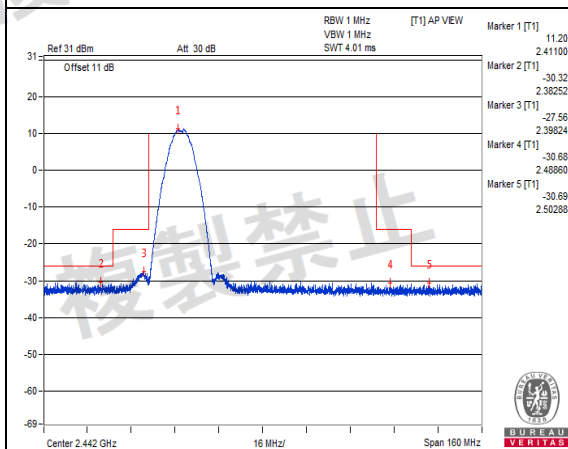
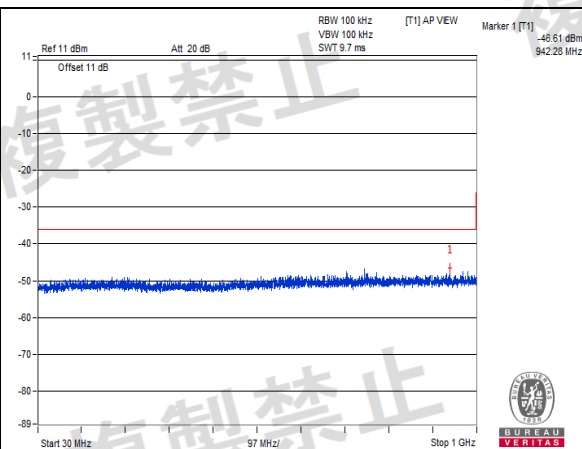
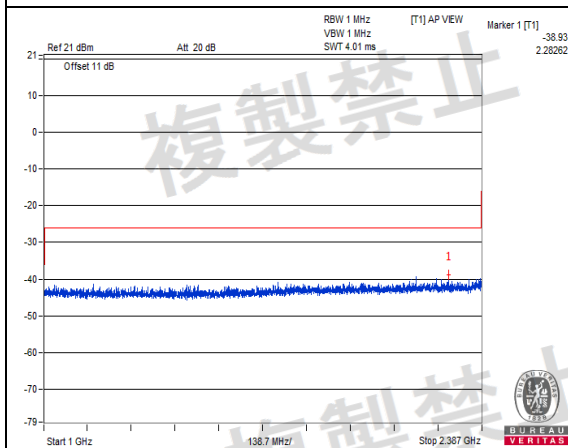
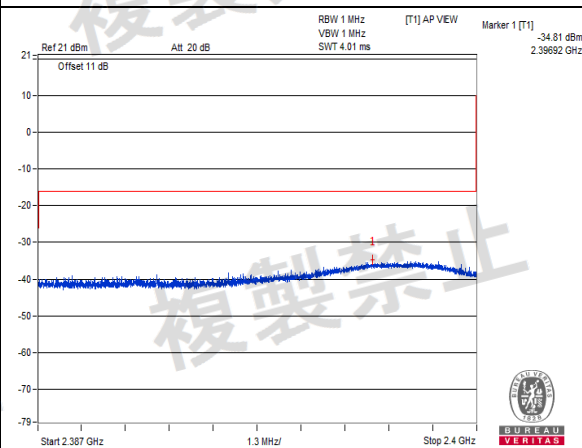
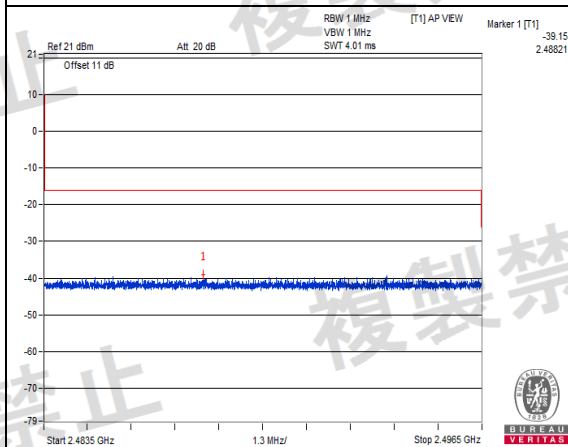
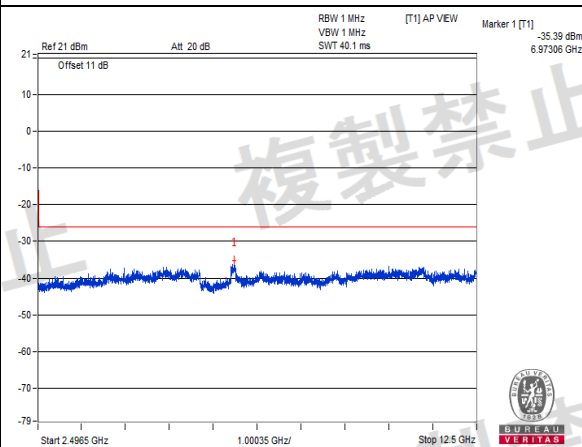
Measurement uncertainty: $\pm 3.93\text{dB}$

Vnormal Channel 13



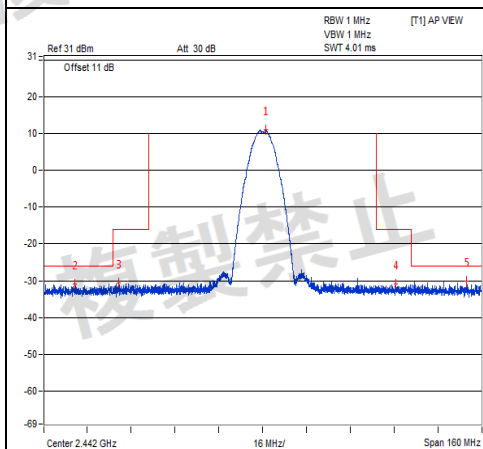
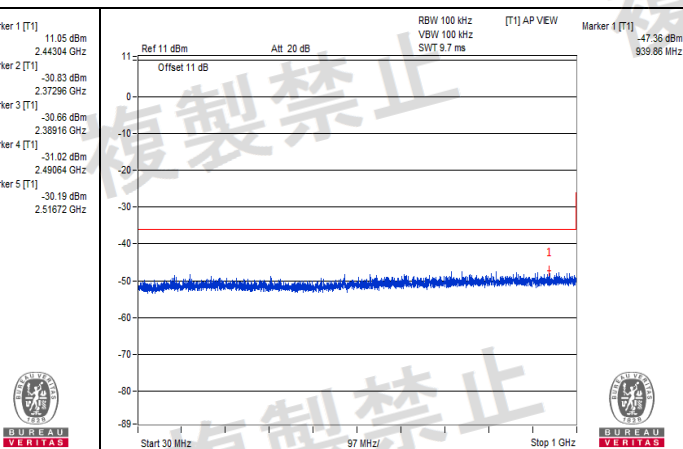
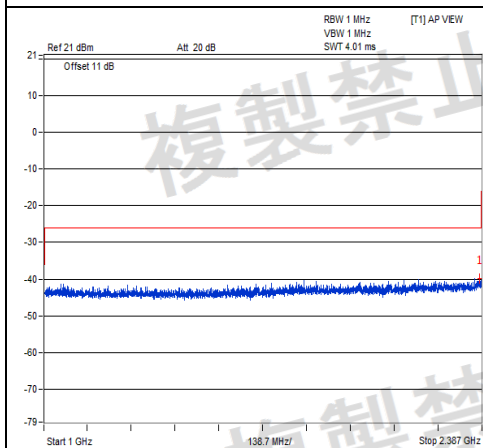
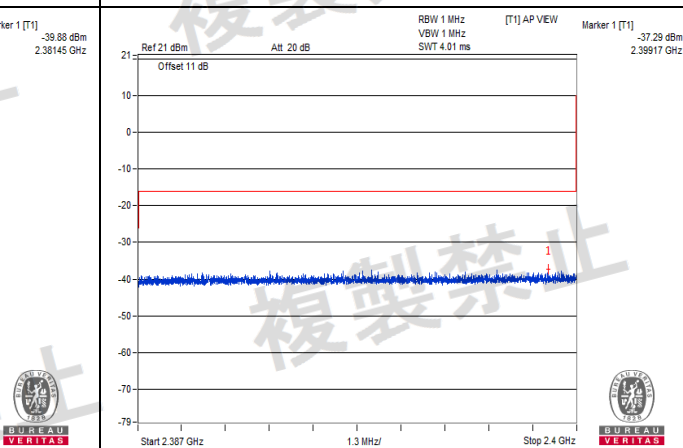
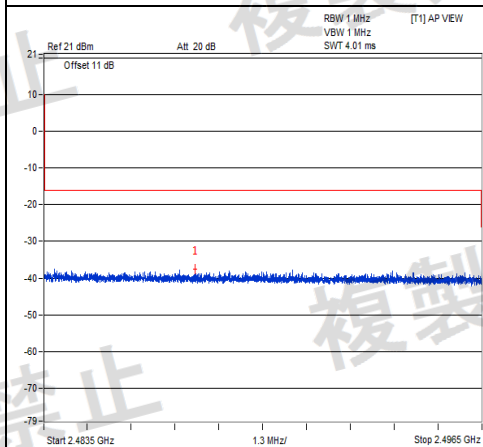
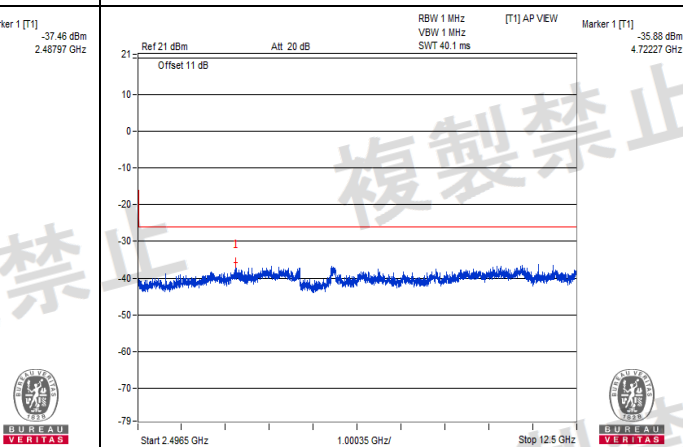
Measurement uncertainty: $\pm 3.93\text{dB}$

Vmax. Channel 1



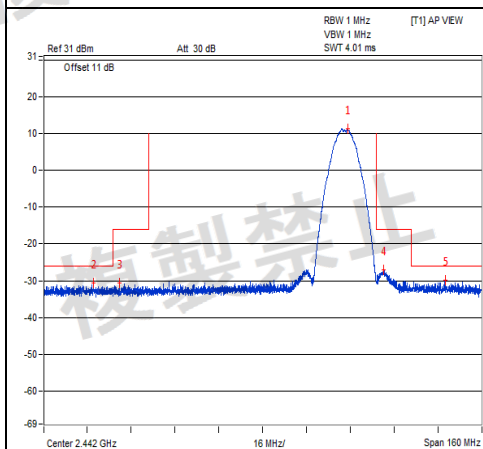
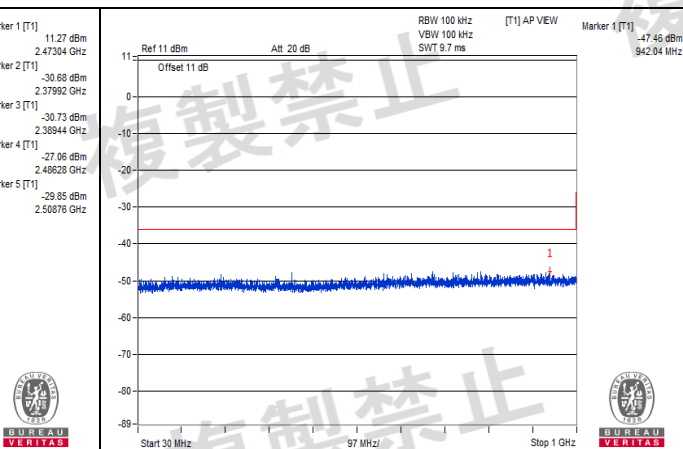
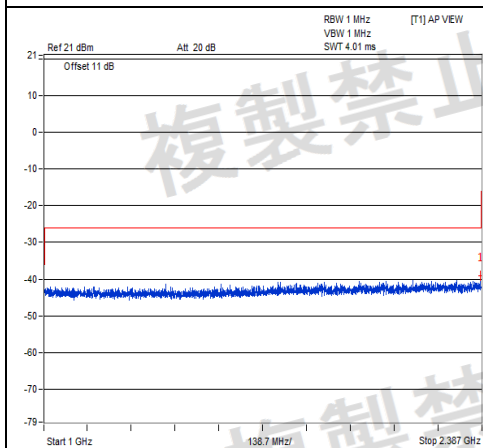
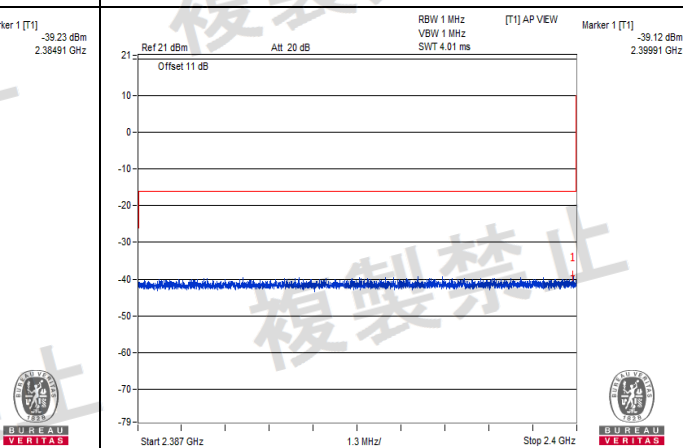
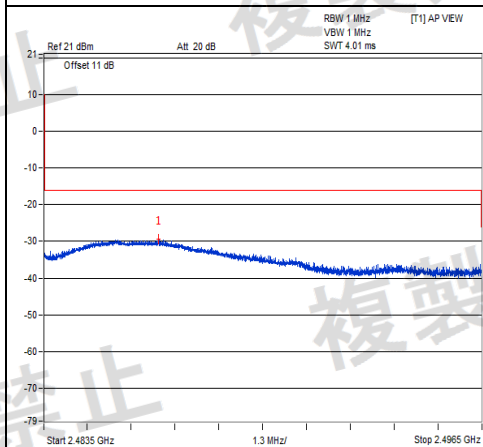
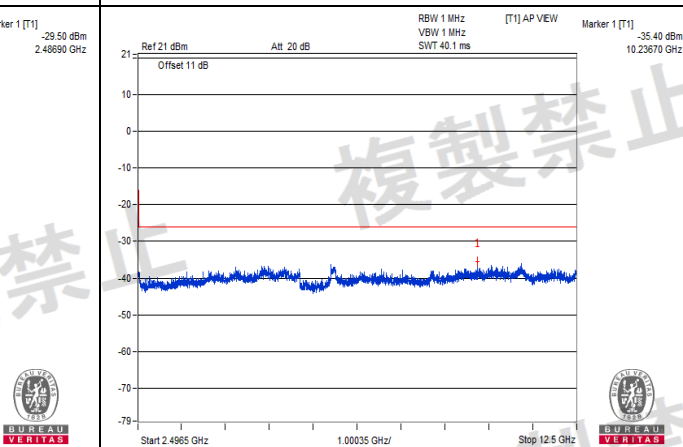
Measurement uncertainty: $\pm 3.93\text{dB}$

Vmax. Channel 7



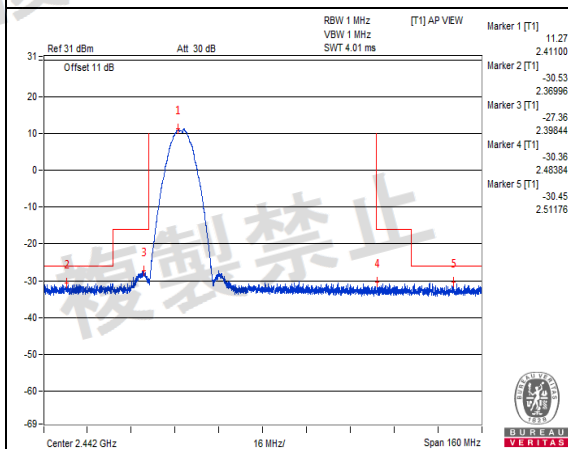
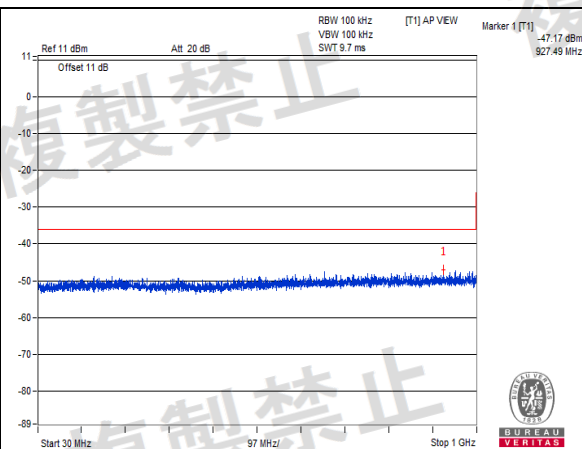
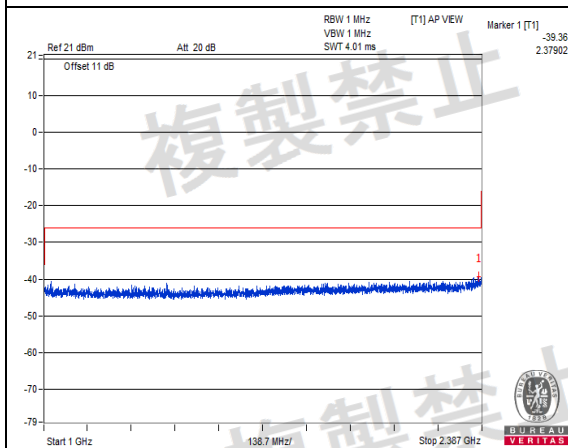
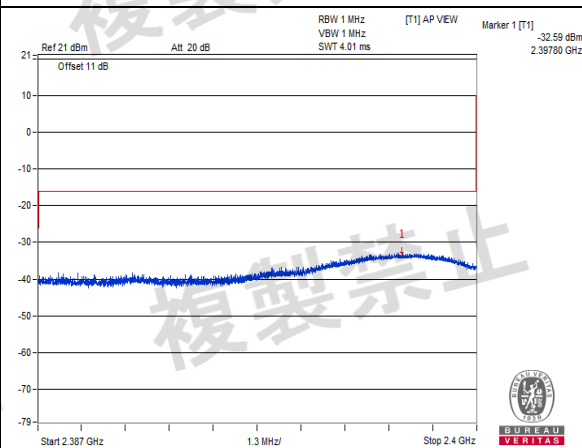
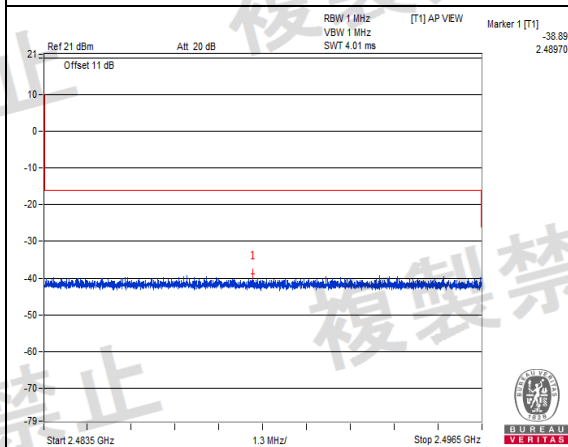
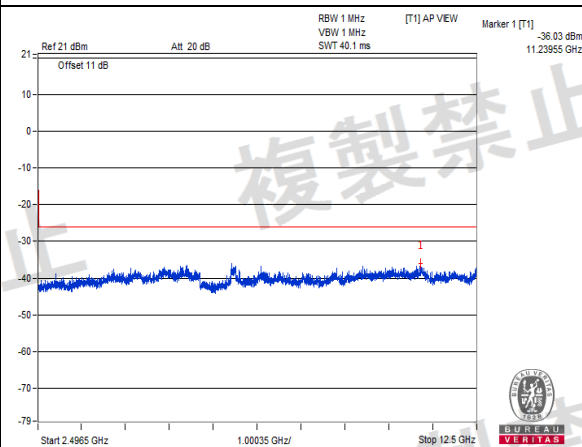
Measurement uncertainty: $\pm 3.93\text{dB}$

Vmax. Channel 13



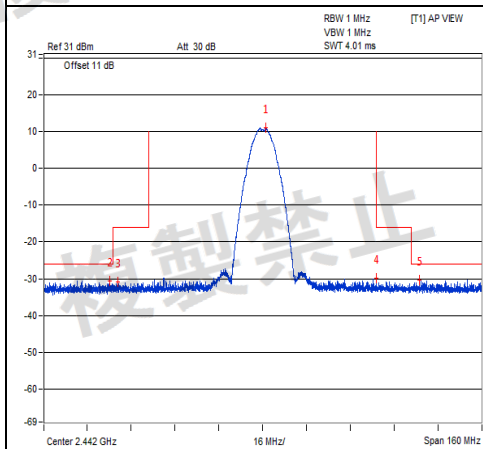
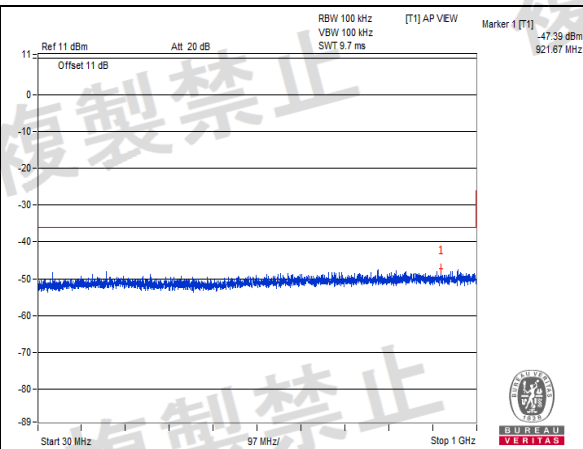
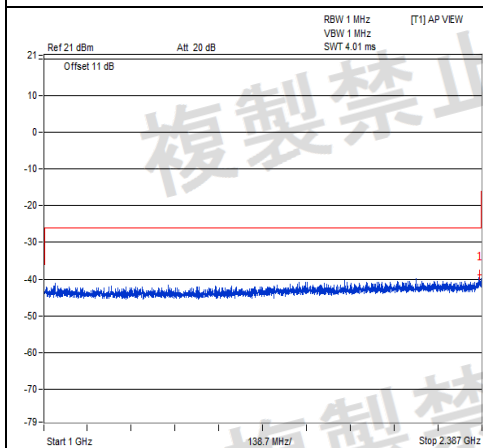
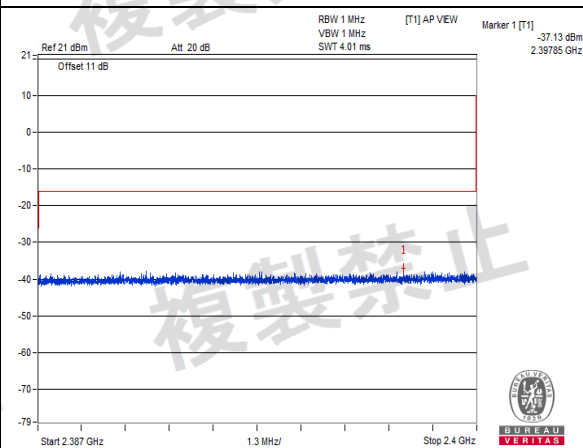
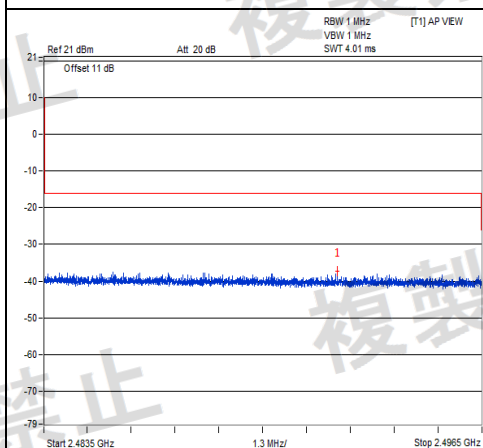
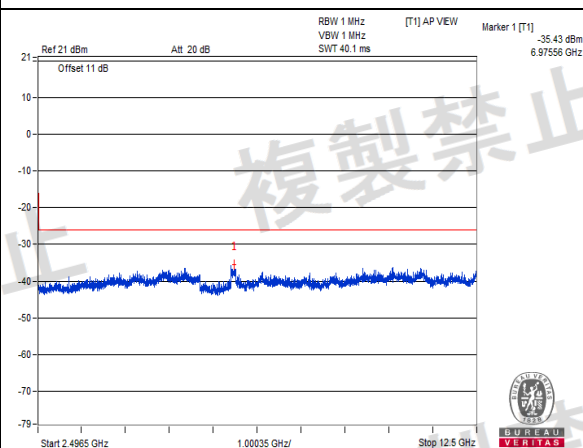
Measurement uncertainty: $\pm 3.93\text{dB}$

Vmin. Channel 1



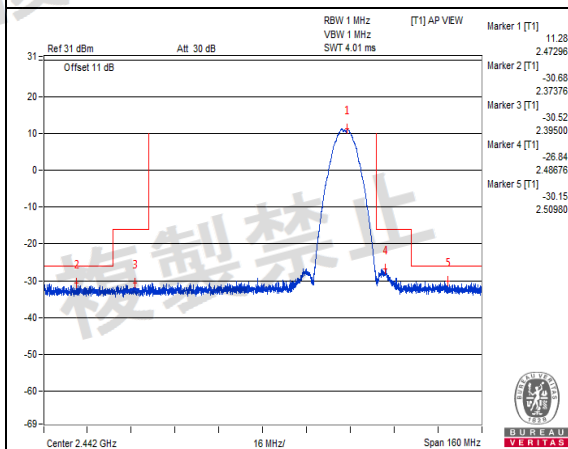
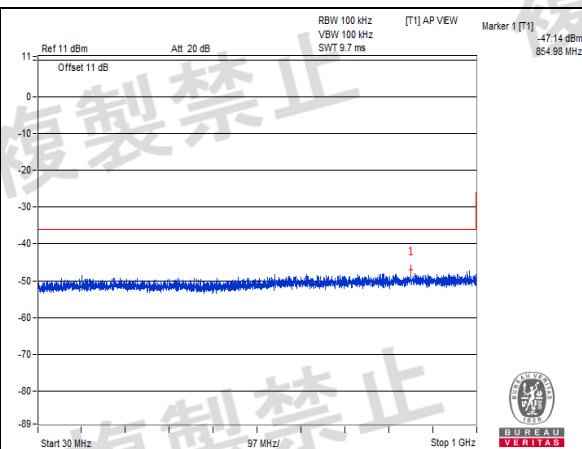
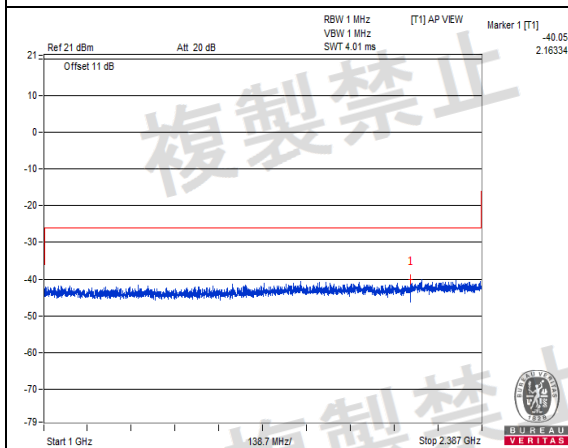
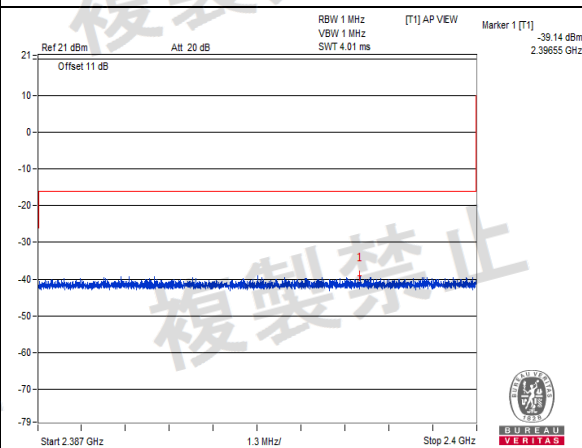
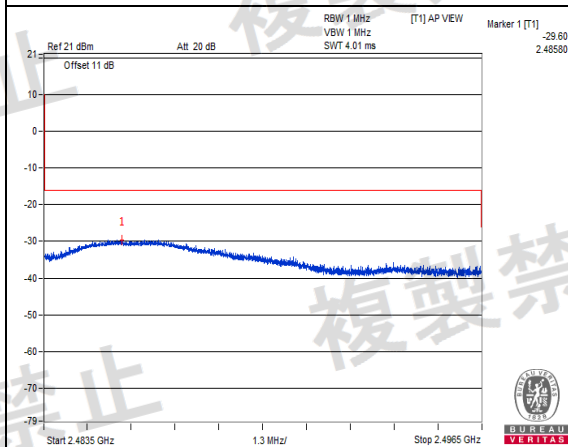
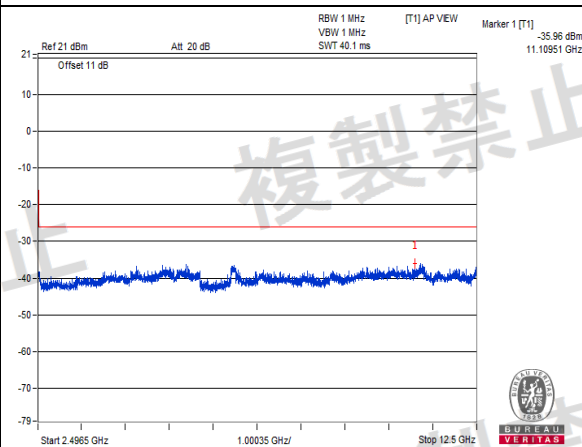
Measurement uncertainty: $\pm 3.93\text{dB}$

Vmin. Channel 7



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

Vmin. Channel 13



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

802.11g

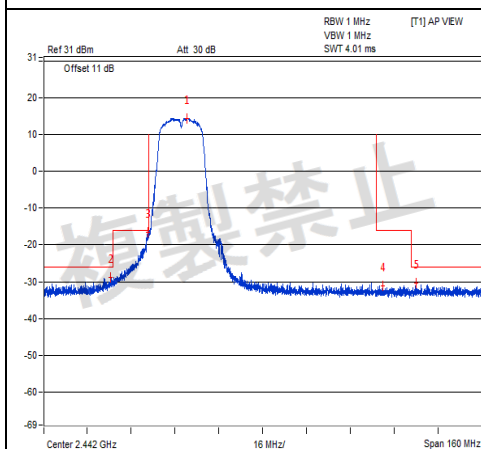
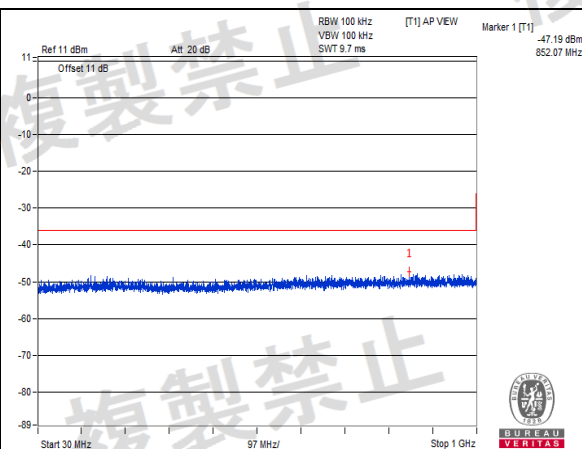
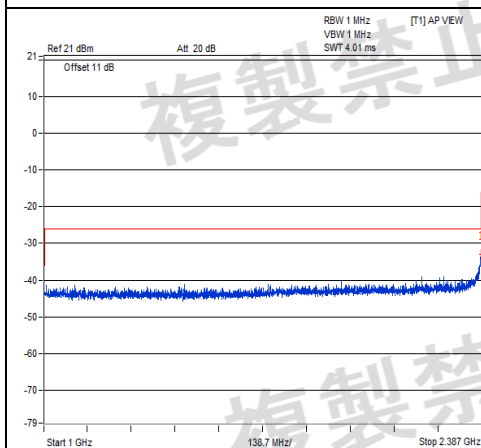
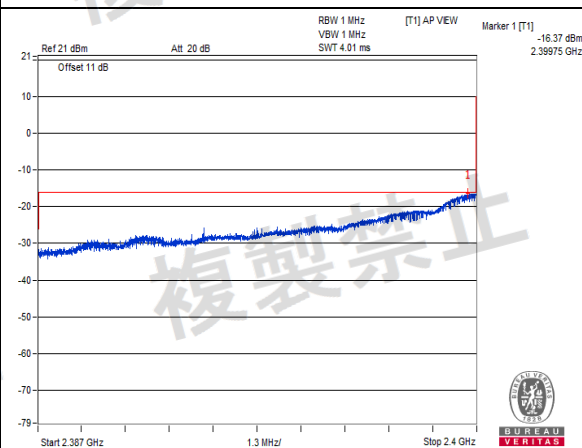
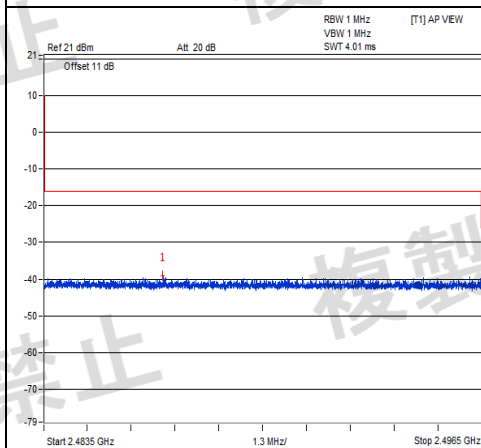
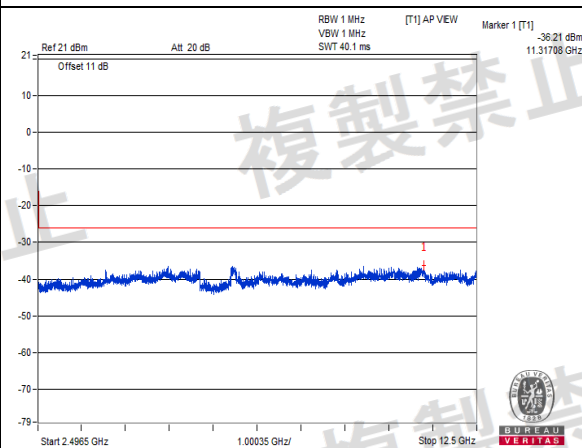
Environmental Conditions		24 deg.C, 70% RH					
Test Channel		Channel 1 (2412MHz)		Channel 7 (2442MHz)		Limit	Result
Test Condition	Frequency Range	Frequency (MHz)	Measured Value	Frequency (MHz)	Measured Value		
V _{normal}	30.0MHz to 1000.0MHz	852.070	0.019099uW	726.700	0.017865uW	0.25uW	PASS
	1000.0MHz to 2387MHz	2387.000	0.503501uW	2385.950	0.102094uW	2.5uW	PASS
	2387.0MHz to 2400.0MHz	2399.750	23.067472uW	2399.420	0.200909uW	25uW	PASS
	2483.5MHz to 2496.5MHz	2487.020	0.125026uW	2485.100	0.221309uW	25uW	PASS
	2496.5MHz to 12500.0MHz	11317.080	0.239332uW	5362.500	0.234423uW	2.5uW	PASS
V _{max.}	30.0MHz to 1000.0MHz	746.340	0.021478uW	632.370	0.01888uW	0.25uW	PASS
	1000.0MHz to 2387MHz	2384.910	0.524807uW	2228.530	0.110408uW	2.5uW	PASS
	2387.0MHz to 2400.0MHz	2399.920	24.043628uW	2399.090	0.232274uW	25uW	PASS
	2483.5MHz to 2496.5MHz	2489.570	0.137404uW	2484.320	0.212814uW	25uW	PASS
	2496.5MHz to 12500.0MHz	6938.050	0.243781uW	10579.320	0.273527uW	2.5uW	PASS
V _{min.}	30.0MHz to 1000.0MHz	868.560	0.019679uW	576.590	0.017498uW	0.25uW	PASS
	1000.0MHz to 2387MHz	2386.650	0.588844uW	2386.650	0.109396uW	2.5uW	PASS
	2387.0MHz to 2400.0MHz	2399.970	22.335722uW	2396.160	0.209411uW	25uW	PASS
	2483.5MHz to 2496.5MHz	2485.190	0.132434uW	2488.620	0.237137uW	25uW	PASS
	2496.5MHz to 12500.0MHz	6928.050	0.263633uW	11229.550	0.26485uW	2.5uW	PASS

Note: 1. The worst value in each frequency range v.s. each channel has been marked by boldface.

Test Channel		Channel 13 (2472MHz)		Limit	Result
Test Condition	Frequency Range	Frequency (MHz)	Measured Value		
V _{normal}	30.0MHz to 1000.0MHz	986.170	0.018836uW	0.25uW	PASS
	1000.0MHz to 2387MHz	2166.810	0.101859uW	2.5uW	PASS
	2387.0MHz to 2400.0MHz	2397.320	0.142233uW	25uW	PASS
	2483.5MHz to 2496.5MHz	2483.540	15.275661uW	25uW	PASS
	2496.5MHz to 12500.0MHz	11284.570	0.267301uW	2.5uW	PASS
V _{max.}	30.0MHz to 1000.0MHz	896.690	0.020845uW	0.25uW	PASS
	1000.0MHz to 2387MHz	2169.580	0.100693uW	2.5uW	PASS
	2387.0MHz to 2400.0MHz	2399.660	0.11995uW	25uW	PASS
	2483.5MHz to 2496.5MHz	2483.660	21.527817uW	25uW	PASS
	2496.5MHz to 12500.0MHz	6905.540	0.236048uW	2.5uW	PASS
V _{min.}	30.0MHz to 1000.0MHz	878.020	0.018072uW	0.25uW	PASS
	1000.0MHz to 2387MHz	2252.460	0.100231uW	2.5uW	PASS
	2387.0MHz to 2400.0MHz	2393.170	0.147911uW	25uW	PASS
	2483.5MHz to 2496.5MHz	2483.580	17.33804uW	25uW	PASS
	2496.5MHz to 12500.0MHz	6918.040	0.298538uW	2.5uW	PASS

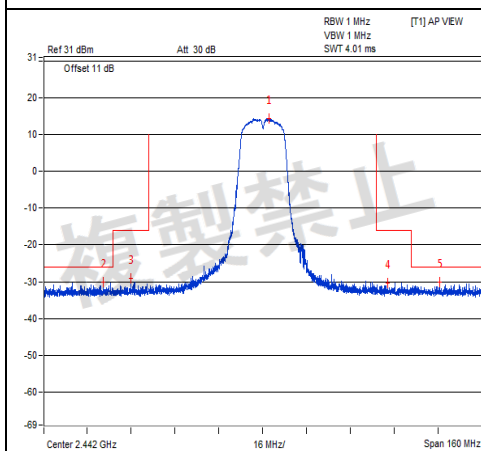
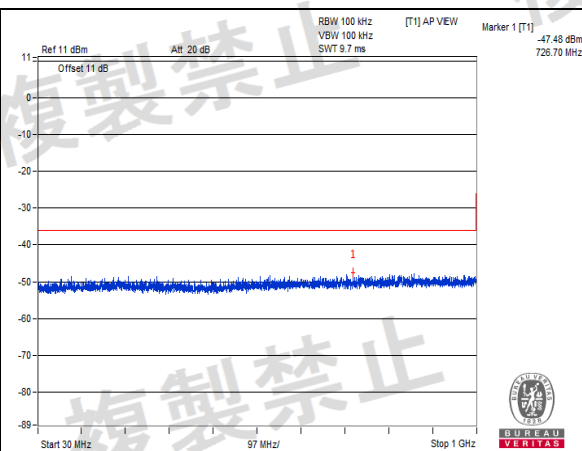
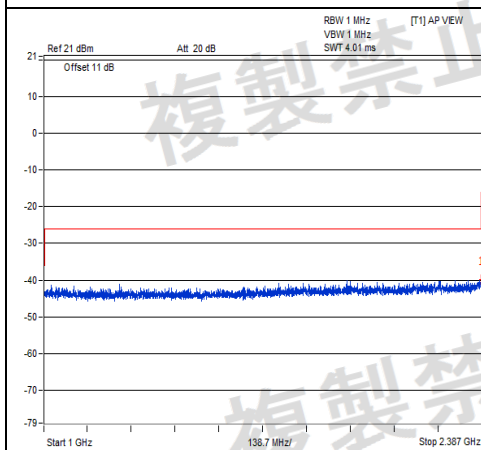
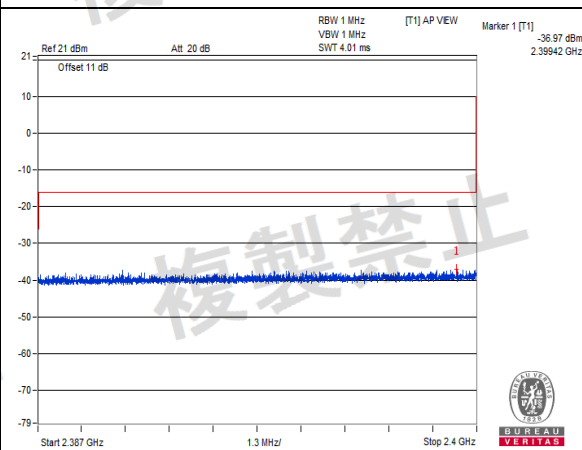
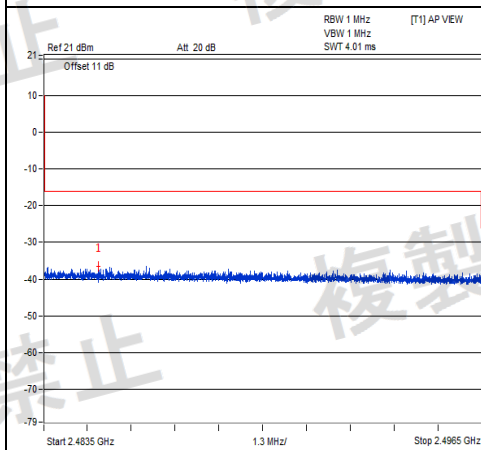
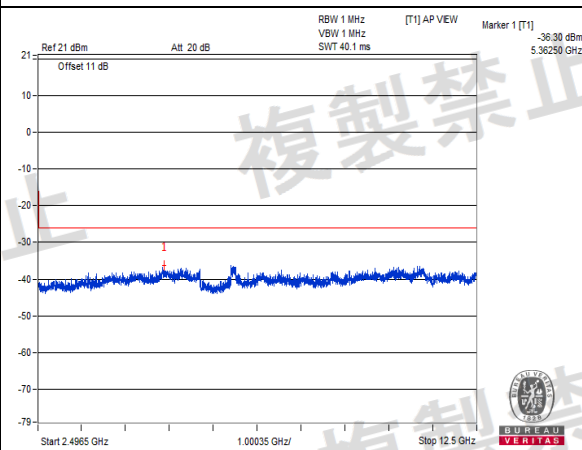
Note: 1. The worst value in each frequency range v.s. each channel has been marked by boldface.
2. The spectrum plots are attached on the following pages.

Vnormal Channel 1



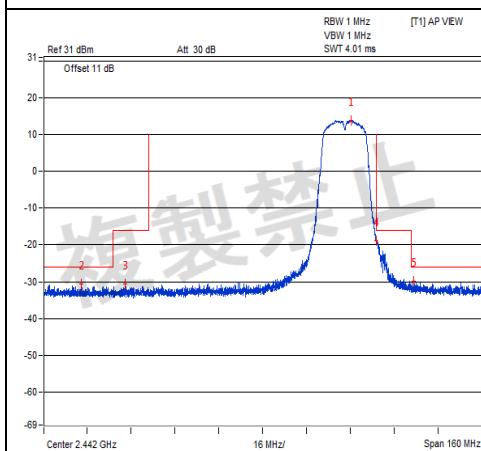
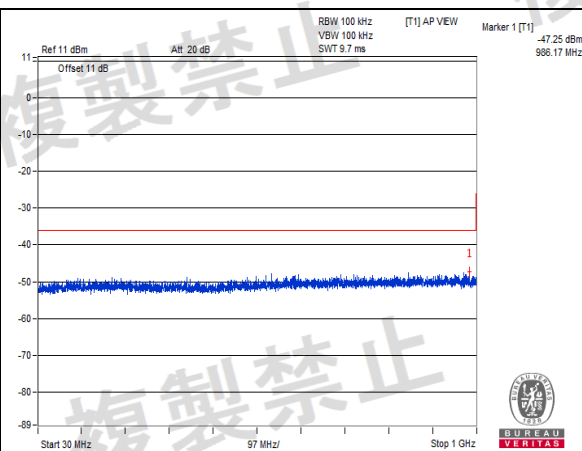
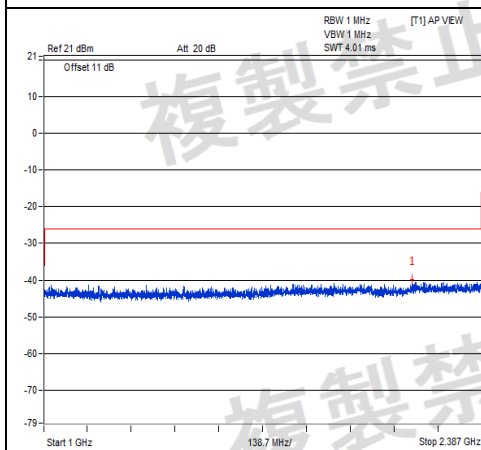
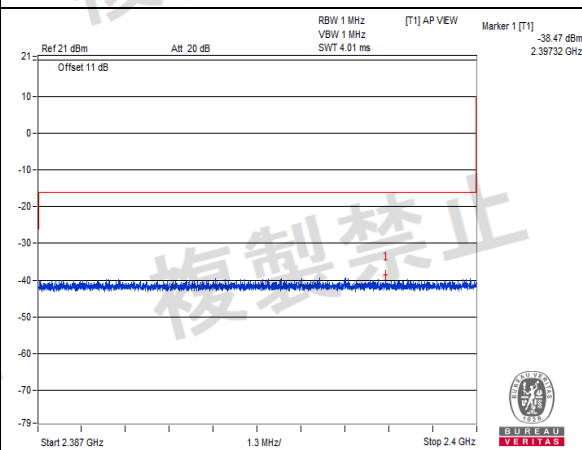
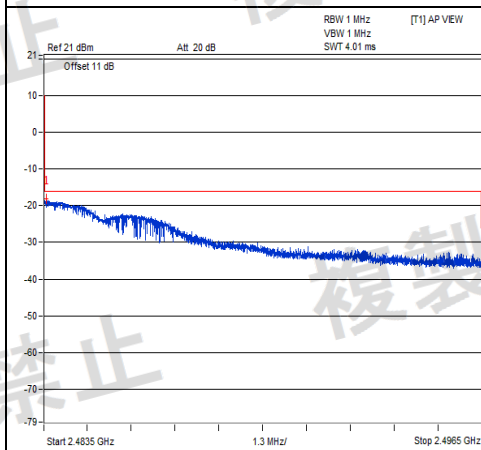
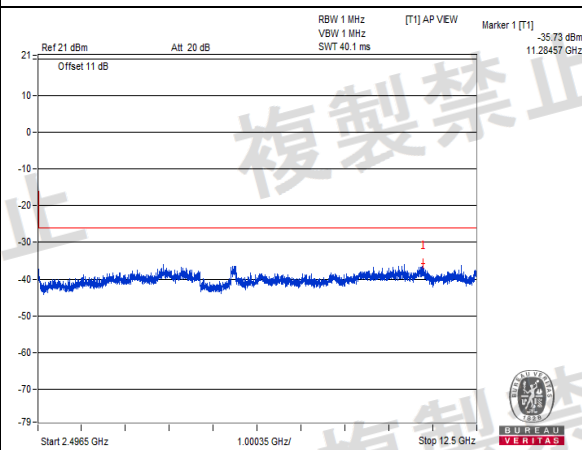
Measurement uncertainty: ± 3.93 dB

Vnormal Channel 7



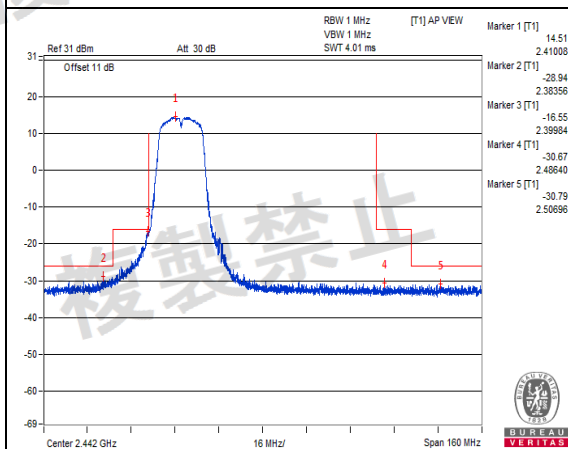
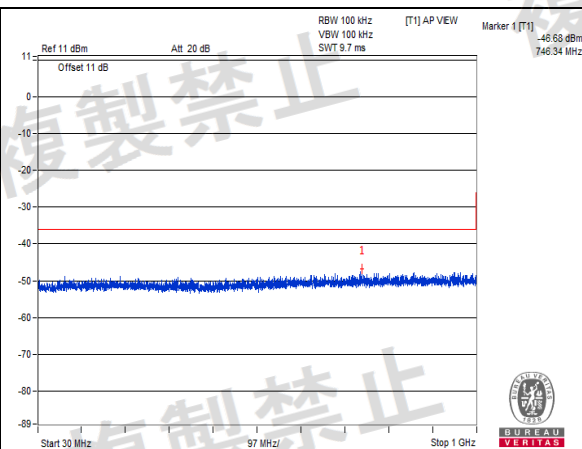
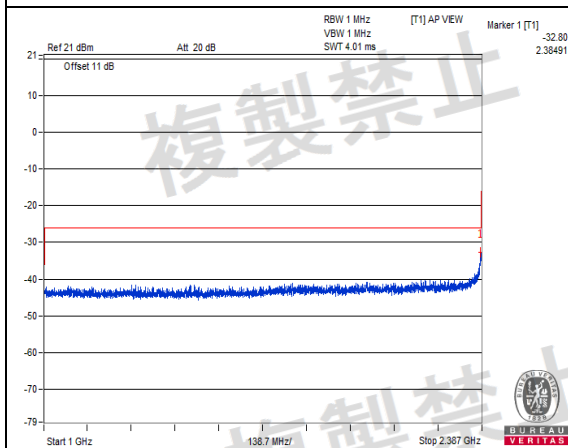
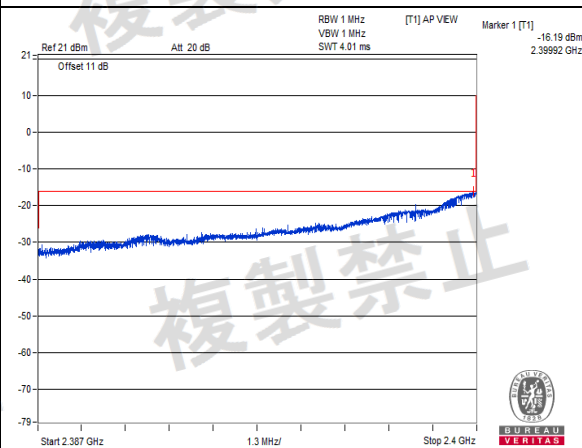
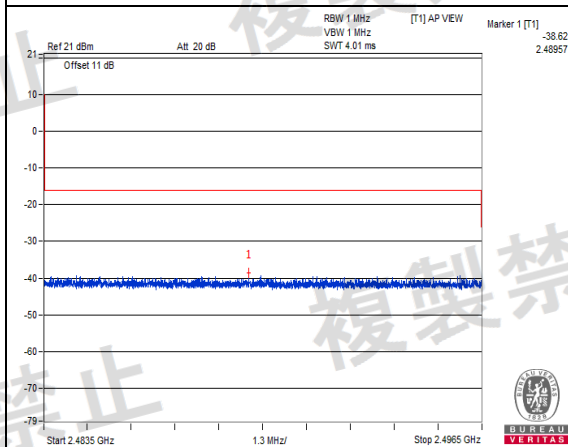
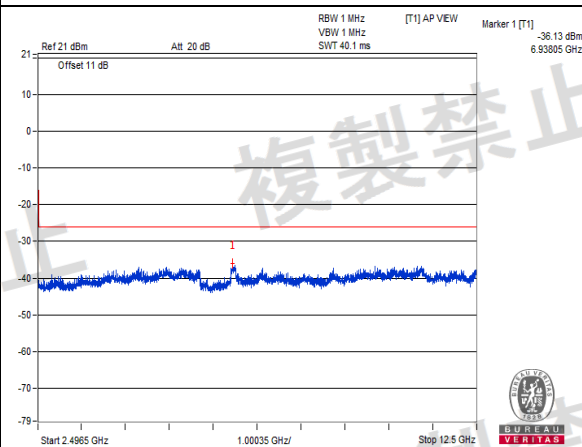
Measurement uncertainty: $\pm 3.93\text{dB}$

Vnormal Channel 13



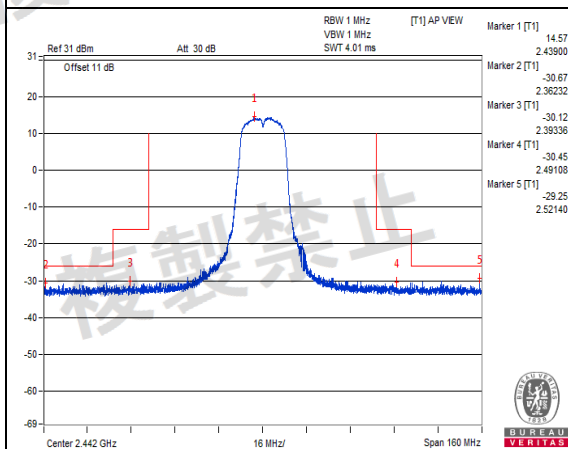
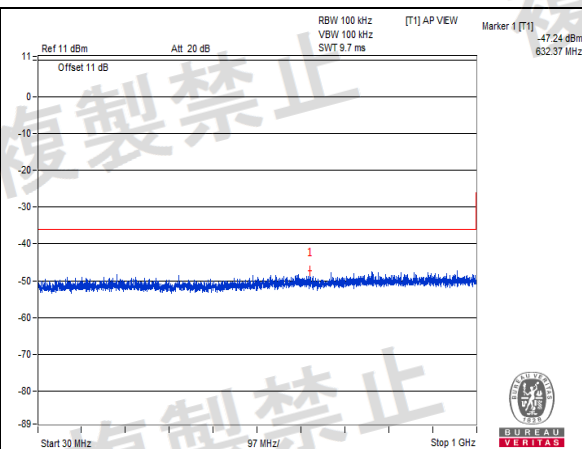
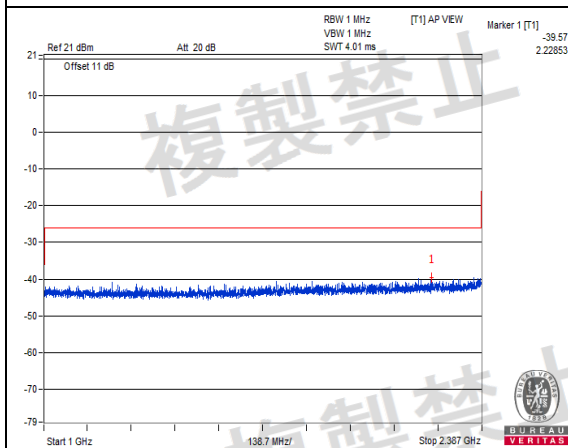
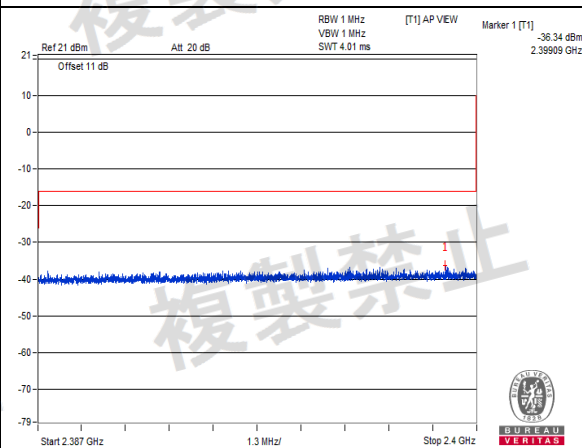
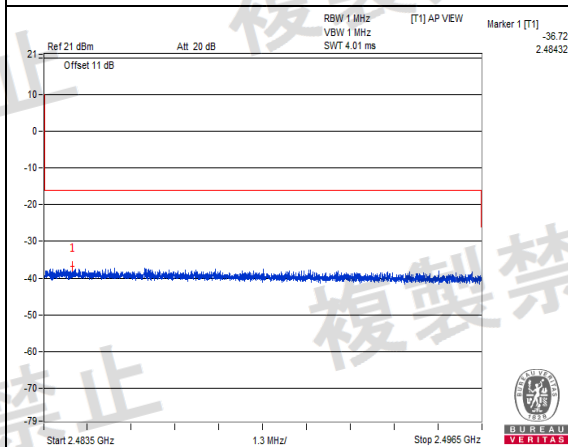
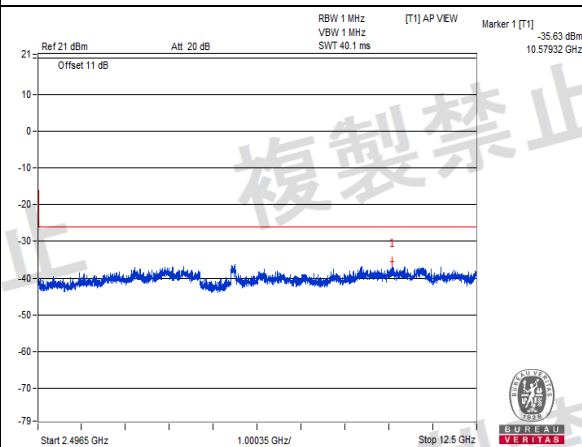
Measurement uncertainty: ± 3.93 dB

Vmax. Channel 1



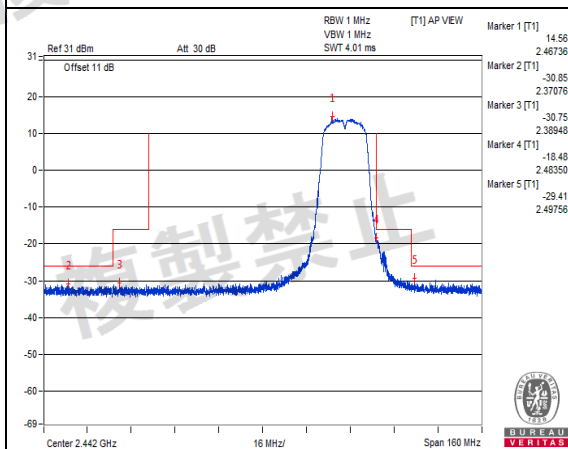
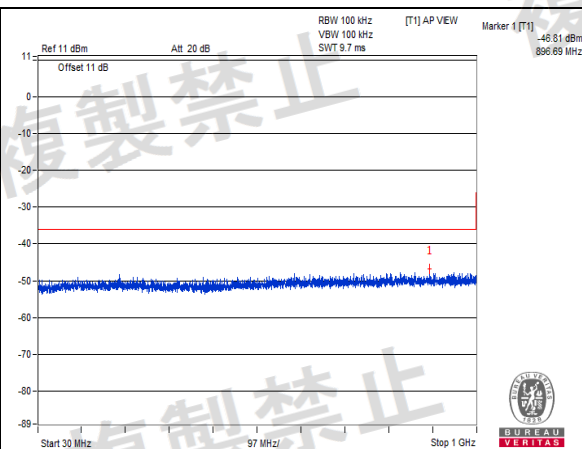
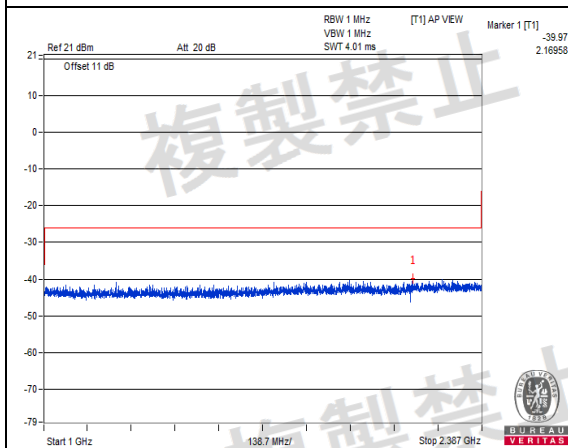
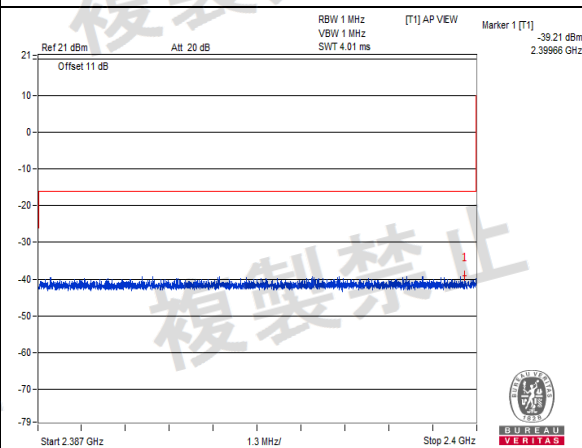
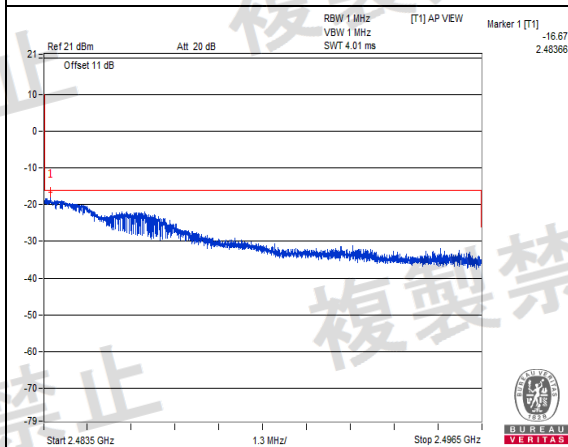
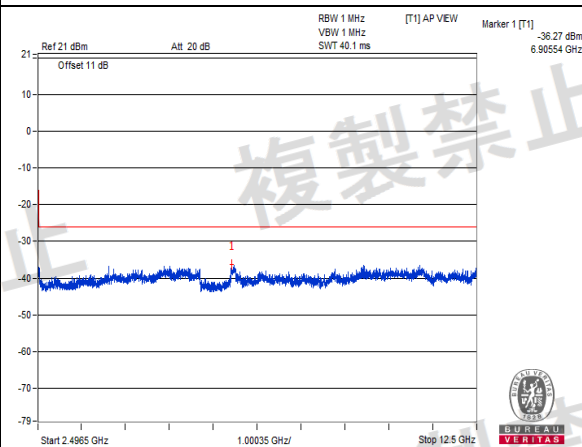
Measurement uncertainty: $\pm 3.93\text{dB}$

Vmax. Channel 7



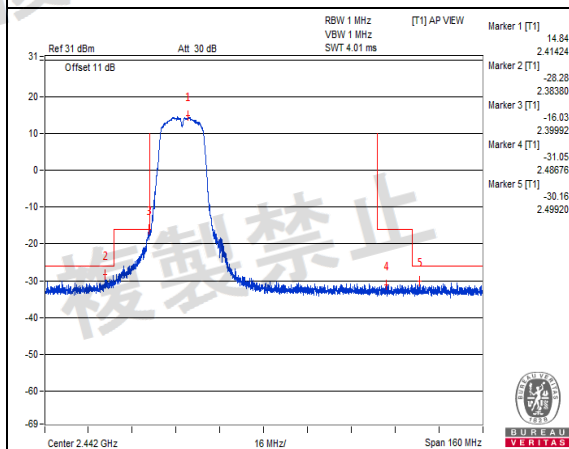
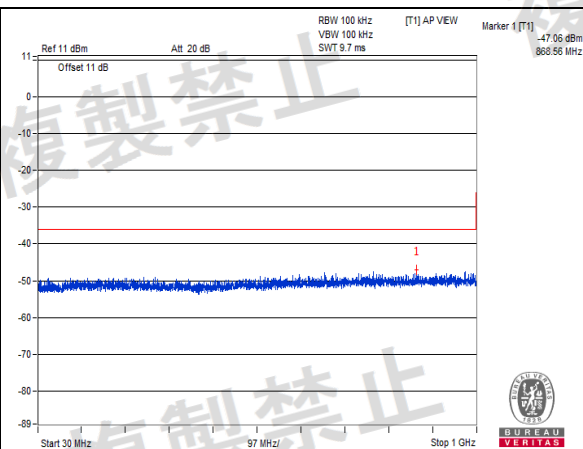
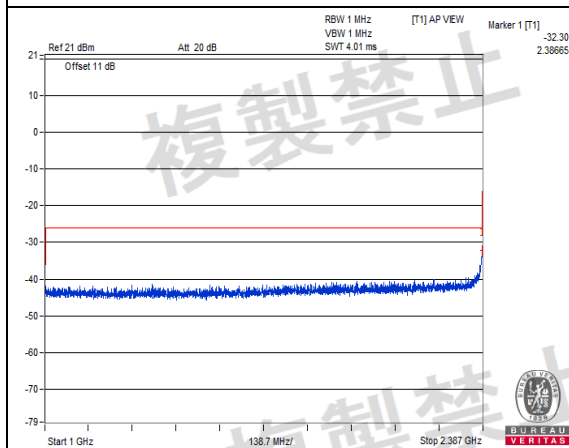
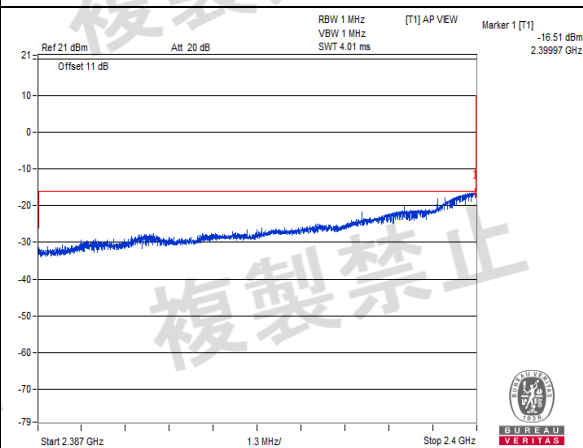
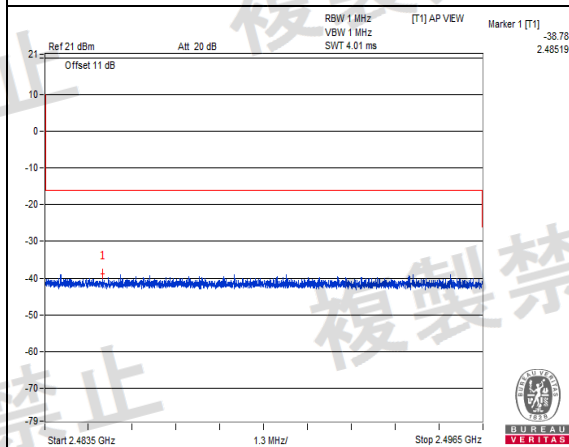
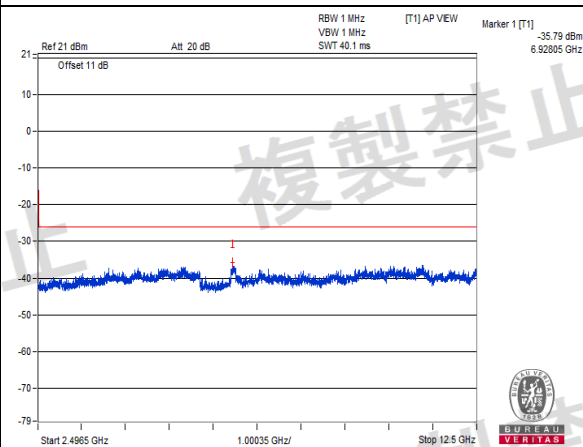
Measurement uncertainty: $\pm 3.93\text{dB}$

Vmax. Channel 13



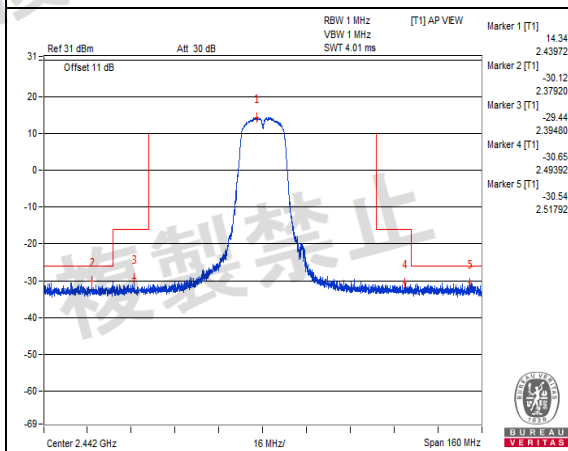
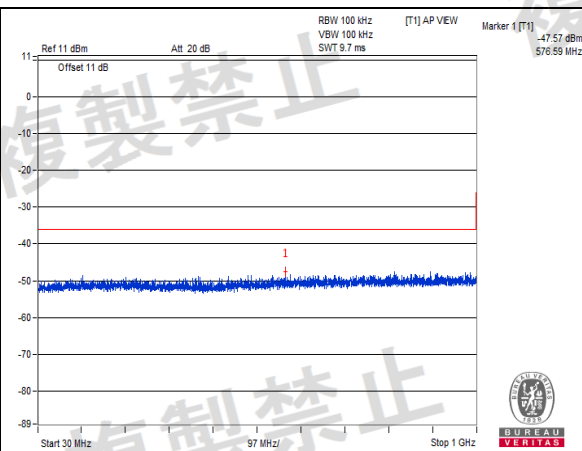
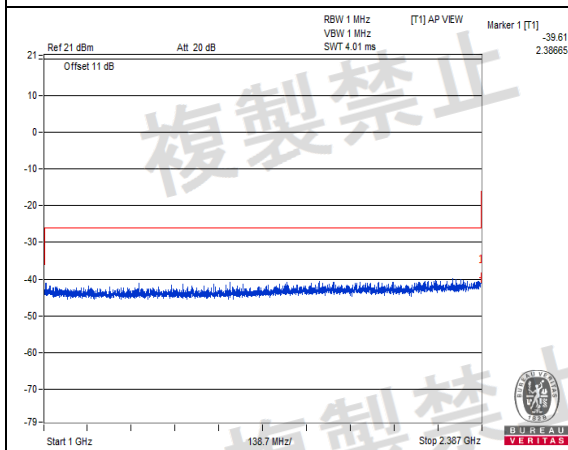
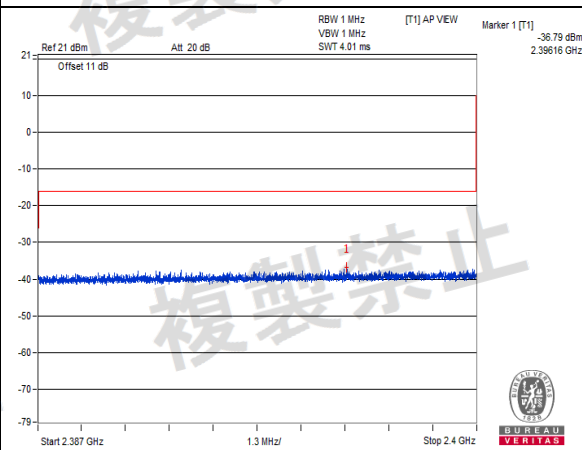
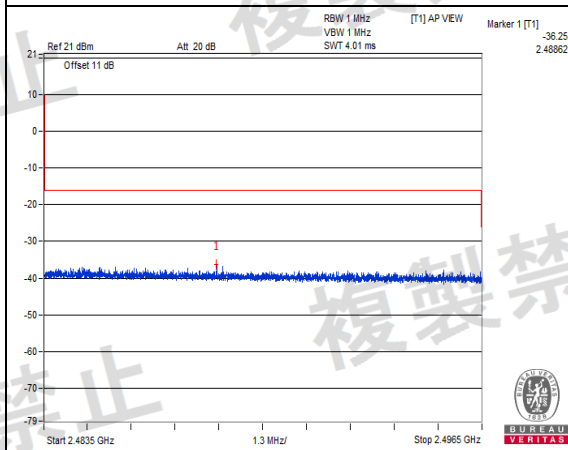
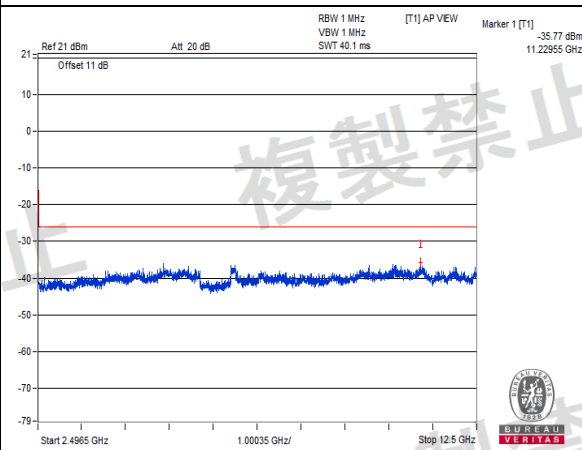
Measurement uncertainty: $\pm 3.93\text{dB}$

Vmin. Channel 1



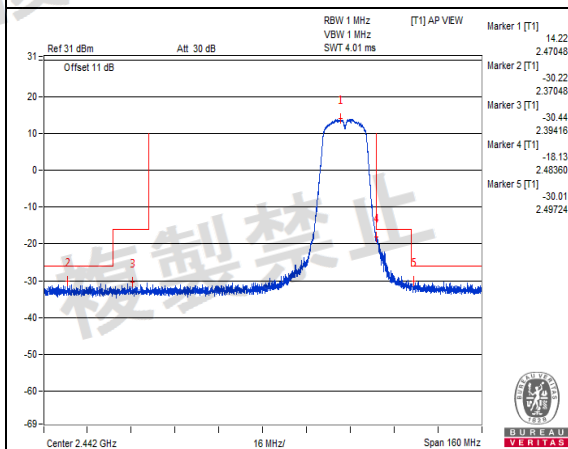
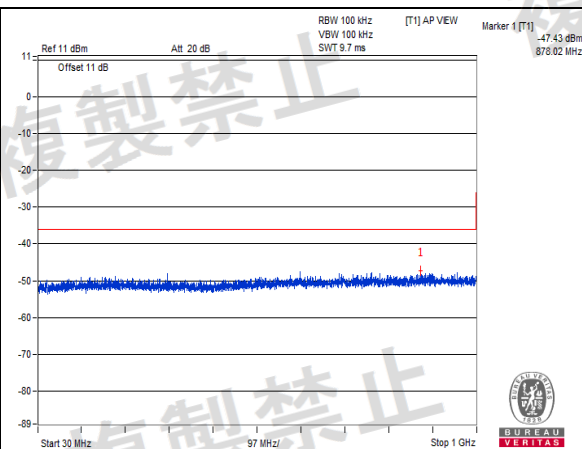
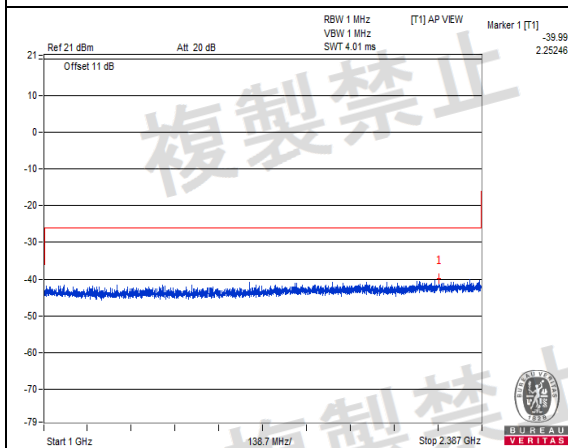
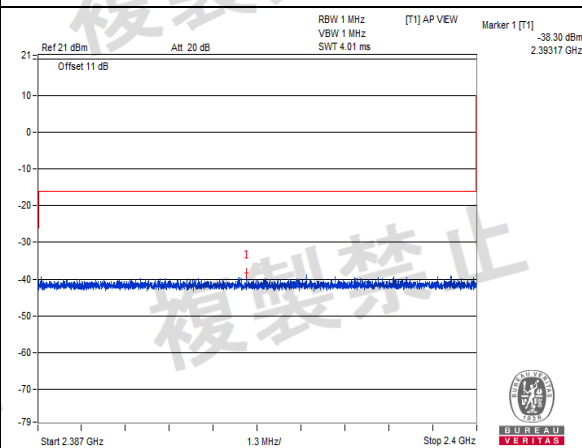
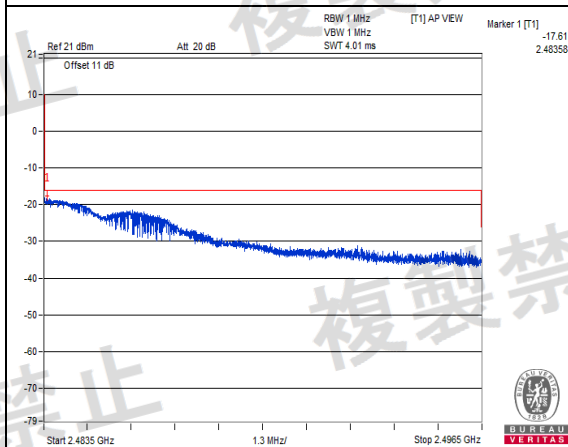
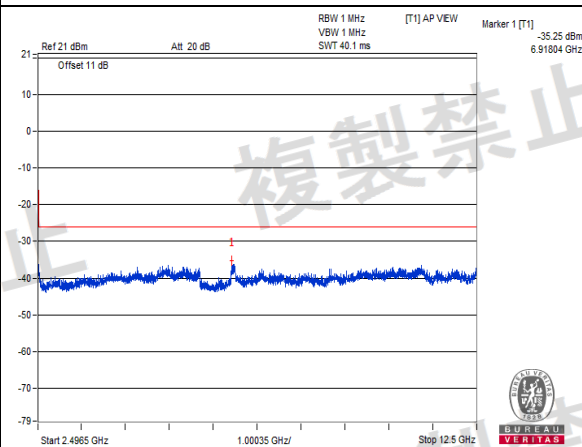
Measurement uncertainty: $\pm 3.93\text{dB}$

Vmin. Channel 7



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

Vmin. Channel 13



Measurement uncertainty: ± 3.93 dB

802.11n (HT20)

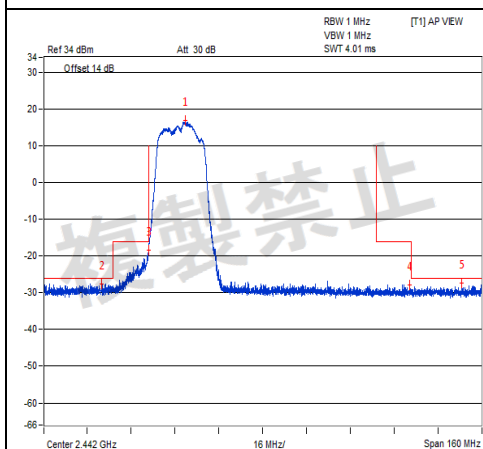
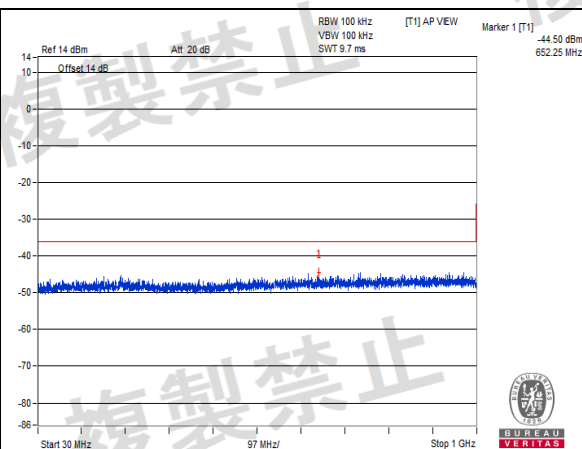
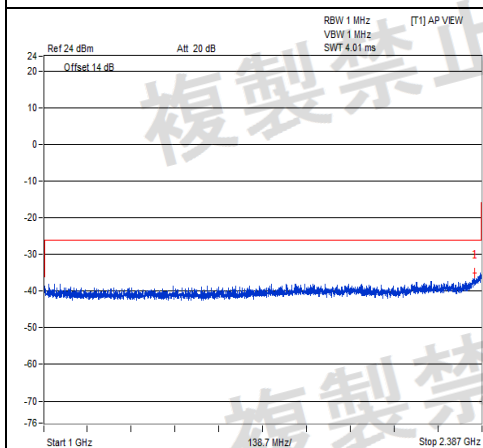
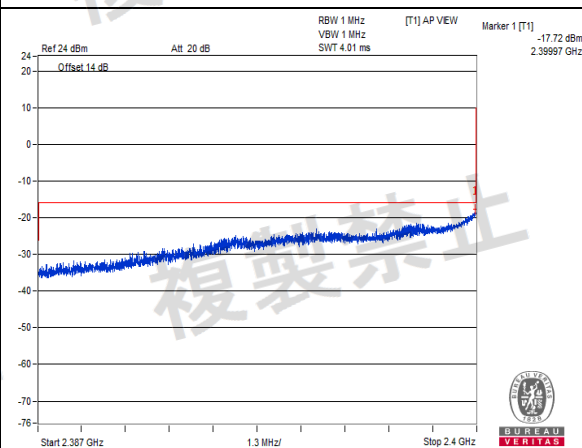
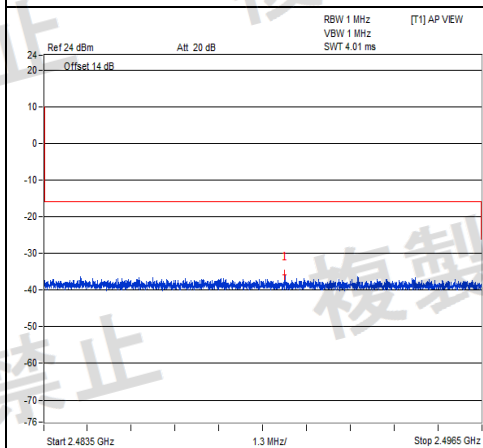
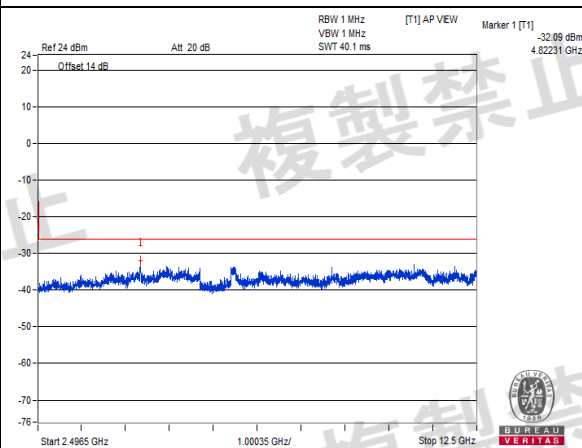
Environmental Conditions		24 deg.C, 70% RH					
Test Channel		Channel 1 (2412MHz)		Channel 7 (2442MHz)		Limit	Result
Test Condition	Frequency Range	Frequency (MHz)	Measured Value	Frequency (MHz)	Measured Value		
V _{normal}	30.0MHz to 1000.0MHz	652.250	0.035481uW	907.360	0.036475uW	0.25uW	PASS
	1000.0MHz to 2387MHz	2366.880	0.319154uW	2288.170	0.21727uW	2.5uW	PASS
	2387.0MHz to 2400.0MHz	2399.970	16.904409uW	2398.360	0.359749uW	25uW	PASS
	2483.5MHz to 2496.5MHz	2490.650	0.266073uW	2488.390	0.386367uW	25uW	PASS
	2496.5MHz to 12500.0MHz	4822.310	0.618016uW	4882.330	0.567545uW	2.5uW	PASS
V _{max.}	30.0MHz to 1000.0MHz	798.240	0.034356uW	897.420	0.039719uW	0.25uW	PASS
	1000.0MHz to 2387MHz	2382.490	0.3155uW	2370.700	0.253513uW	2.5uW	PASS
	2387.0MHz to 2400.0MHz	2399.980	15.100802uW	2394.260	0.360579uW	25uW	PASS
	2483.5MHz to 2496.5MHz	2484.700	0.242661uW	2484.850	0.356451uW	25uW	PASS
	2496.5MHz to 12500.0MHz	4827.310	0.572796uW	4882.330	0.674528uW	2.5uW	PASS
V _{min.}	30.0MHz to 1000.0MHz	995.870	0.034435uW	982.050	0.045394uW	0.25uW	PASS
	1000.0MHz to 2387MHz	2372.080	0.306902uW	2385.610	0.205116uW	2.5uW	PASS
	2387.0MHz to 2400.0MHz	2400.000	13.614447uW	2398.410	0.381066uW	25uW	PASS
	2483.5MHz to 2496.5MHz	2487.380	0.253513uW	2487.230	0.387258uW	25uW	PASS
	2496.5MHz to 12500.0MHz	4819.810	0.654636uW	11264.560	0.522396uW	2.5uW	PASS

Note: 1. The worst value in each frequency range v.s. each channel has been marked by boldface.

Test Channel		Channel 13 (2472MHz)		Limit	Result
Test Condition	Frequency Range	Frequency (MHz)	Measured Value		
V _{normal}	30.0MHz to 1000.0MHz	959.500	0.033884uW	0.25uW	PASS
	1000.0MHz to 2387MHz	2294.070	0.199526uW	2.5uW	PASS
	2387.0MHz to 2400.0MHz	2397.680	0.236592uW	25uW	PASS
	2483.5MHz to 2496.5MHz	2483.530	18.281002uW	25uW	PASS
	2496.5MHz to 12500.0MHz	6160.280	0.474242uW	2.5uW	PASS
V _{max.}	30.0MHz to 1000.0MHz	903.480	0.039811uW	0.25uW	PASS
	1000.0MHz to 2387MHz	2261.120	0.20797uW	2.5uW	PASS
	2387.0MHz to 2400.0MHz	2394.630	0.233346uW	25uW	PASS
	2483.5MHz to 2496.5MHz	2483.540	19.906733uW	25uW	PASS
	2496.5MHz to 12500.0MHz	6968.060	0.685488uW	2.5uW	PASS
V _{min.}	30.0MHz to 1000.0MHz	845.770	0.035156uW	0.25uW	PASS
	1000.0MHz to 2387MHz	2288.520	0.206538uW	2.5uW	PASS
	2387.0MHz to 2400.0MHz	2397.920	0.263027uW	25uW	PASS
	2483.5MHz to 2496.5MHz	2483.910	18.578045uW	25uW	PASS
	2496.5MHz to 12500.0MHz	6918.040	0.509331uW	2.5uW	PASS

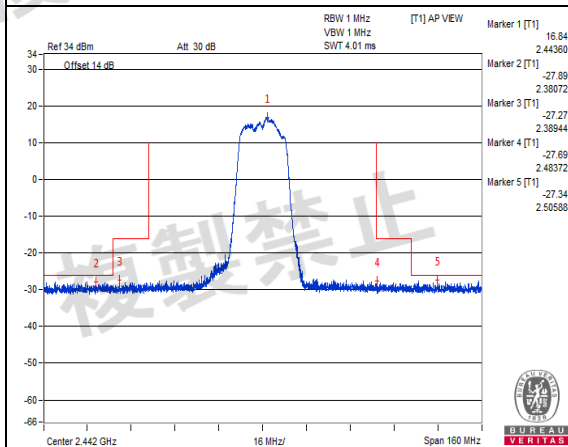
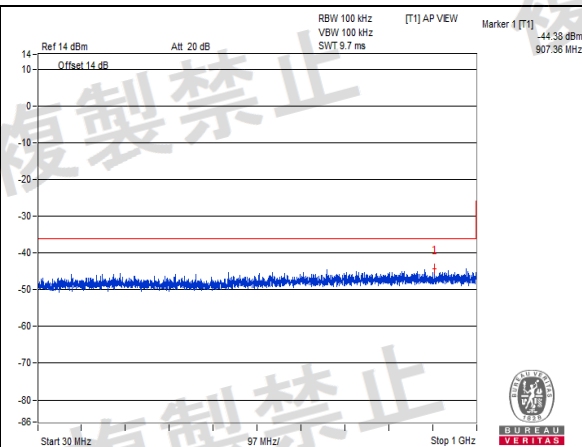
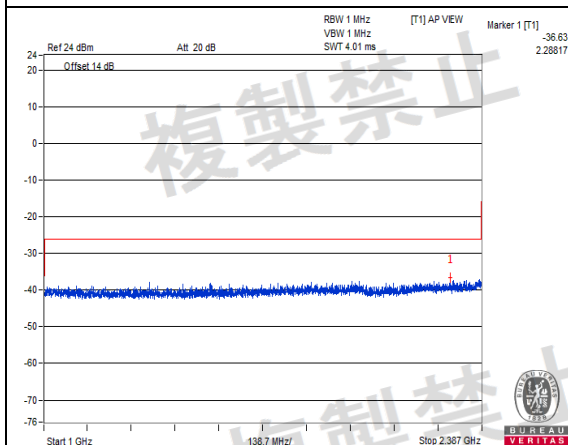
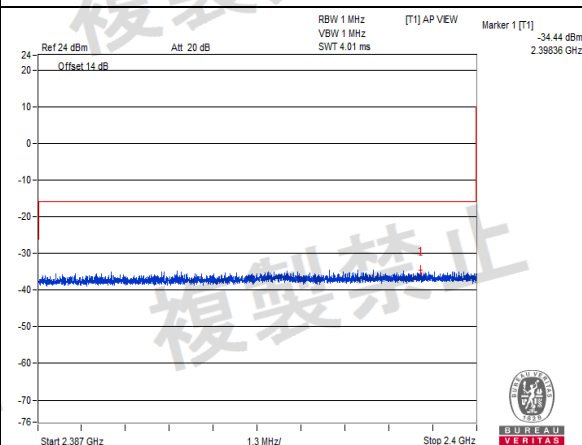
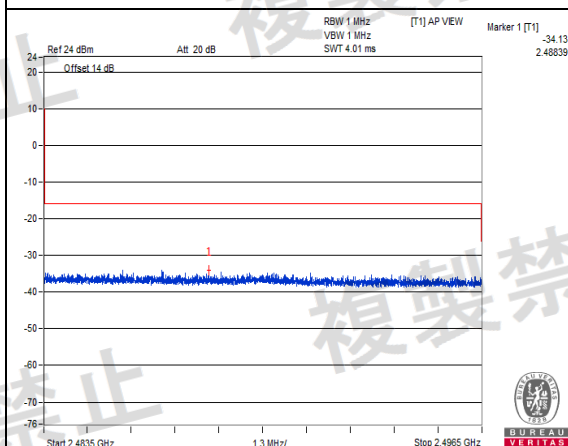
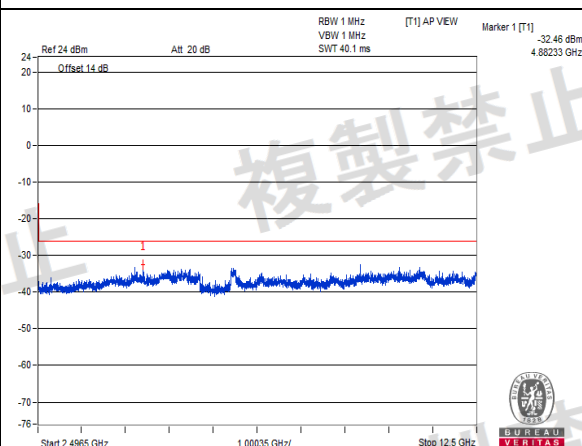
Note: 1. The worst value in each frequency range v.s. each channel has been marked by boldface.
2. The spectrum plots are attached on the following pages.

Vnormal Channel 1



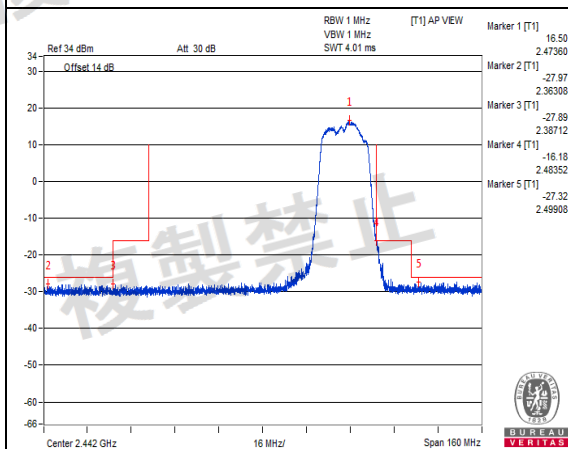
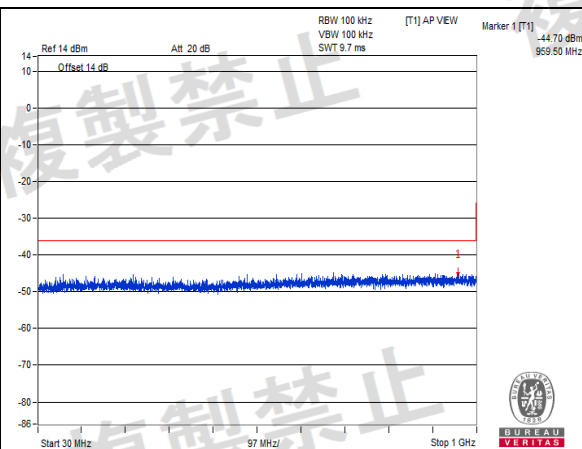
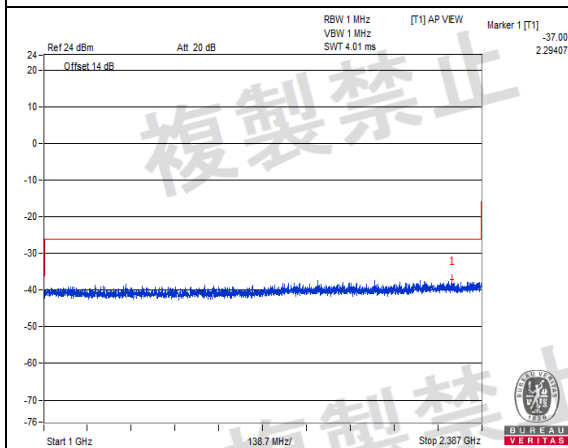
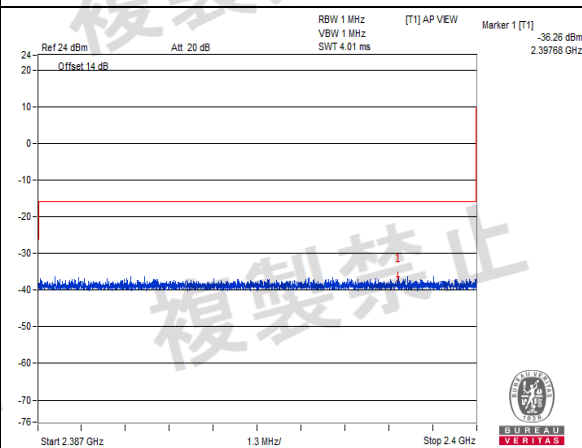
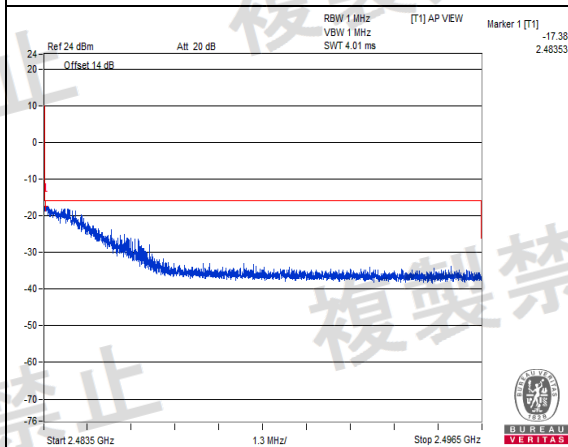
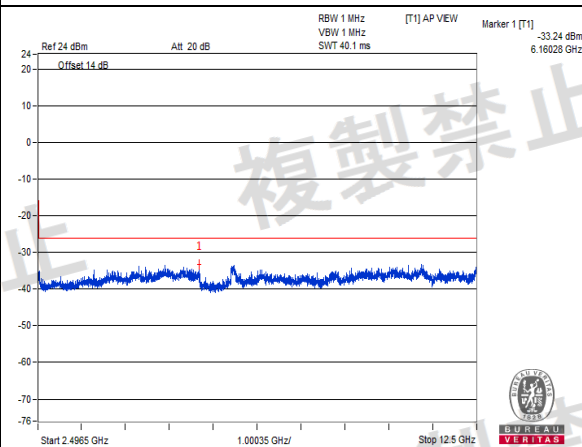
Measurement uncertainty: $\pm 3.93\text{dB}$

Vnormal Channel 7



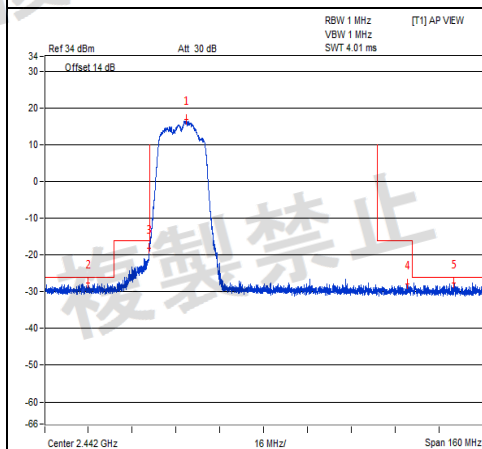
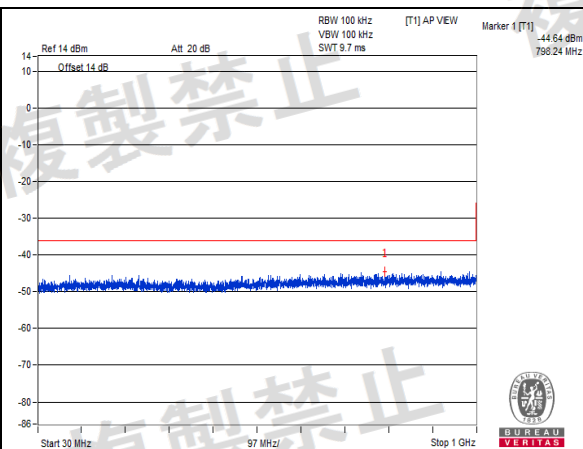
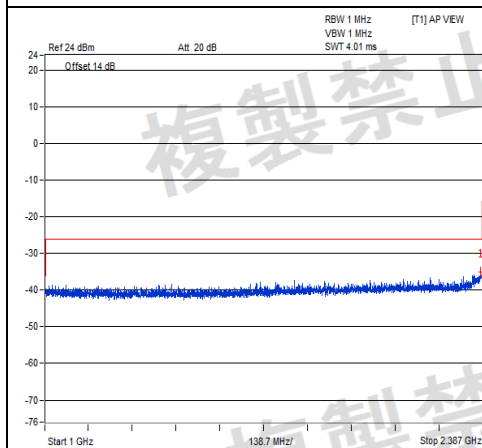
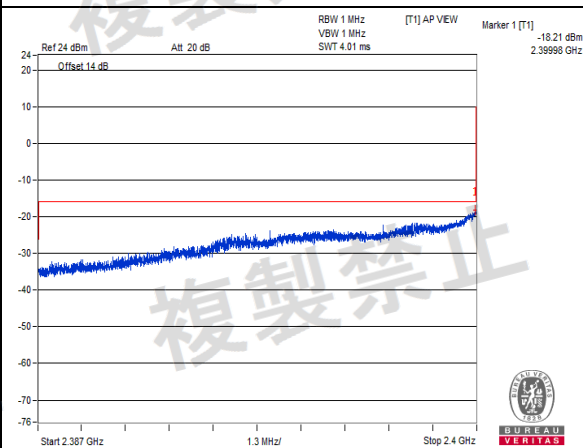
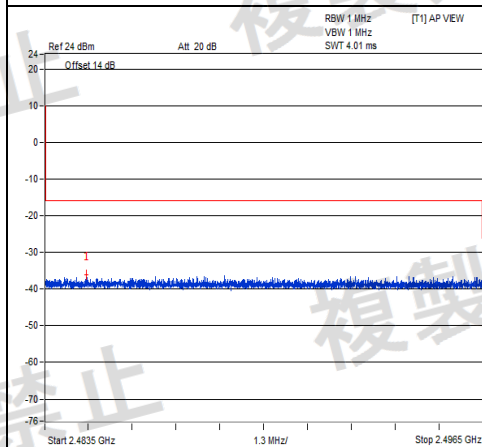
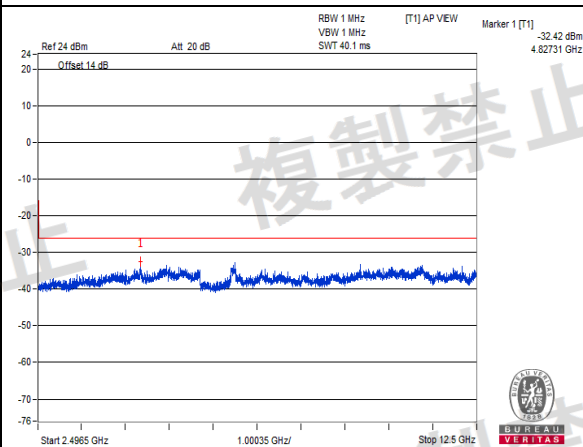
Measurement uncertainty: $\pm 3.93\text{dB}$

Vnormal Channel 13



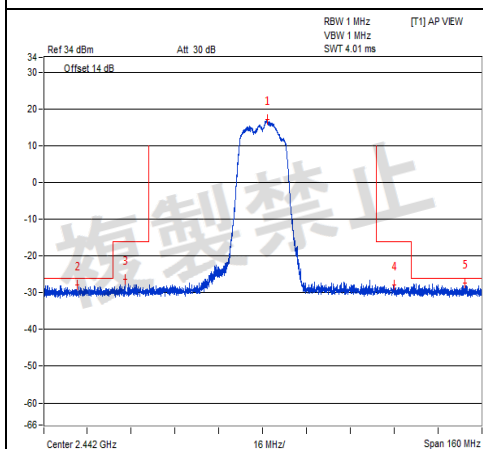
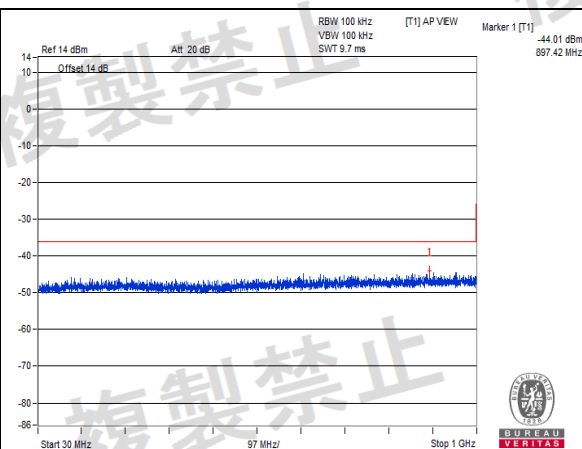
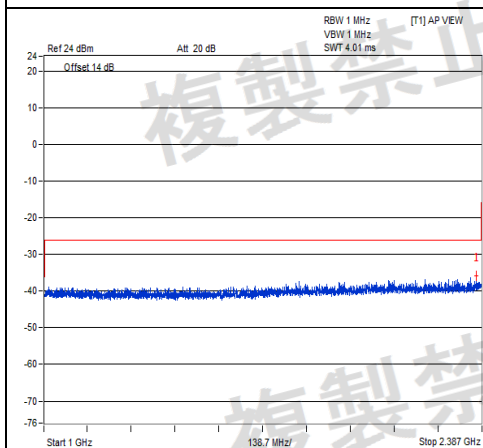
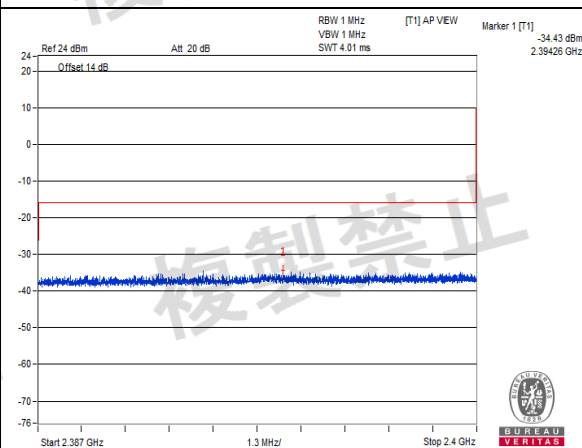
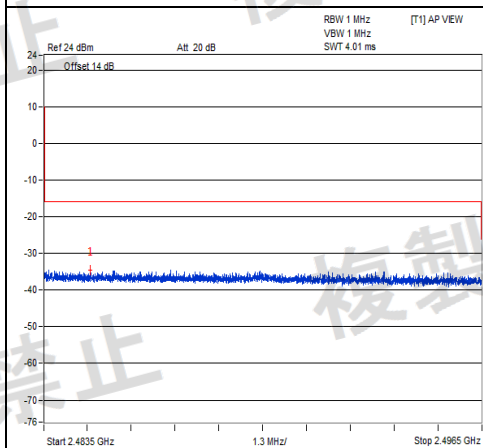
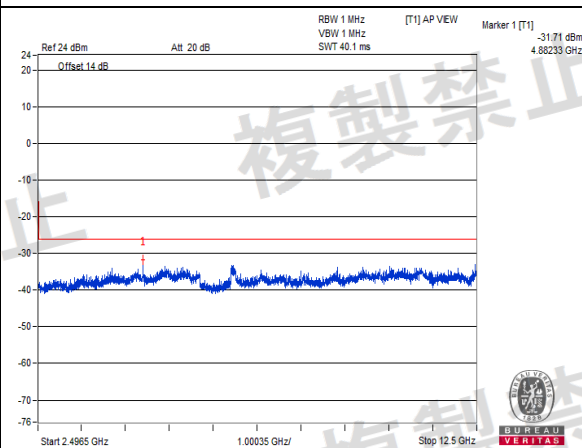
Measurement uncertainty: $\pm 3.93\text{dB}$

Vmax. Channel 1



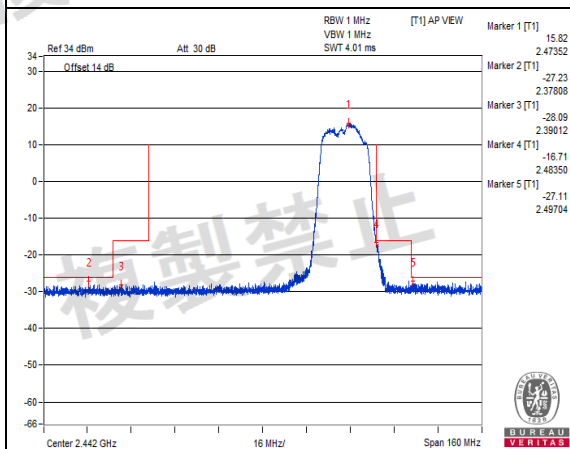
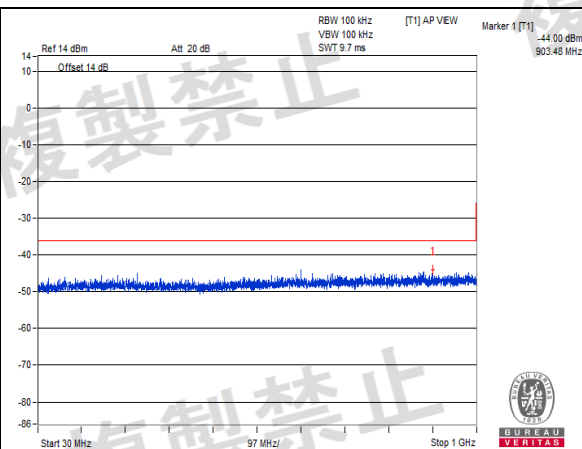
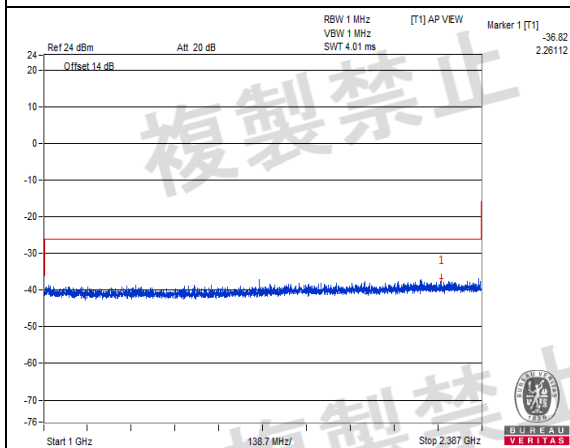
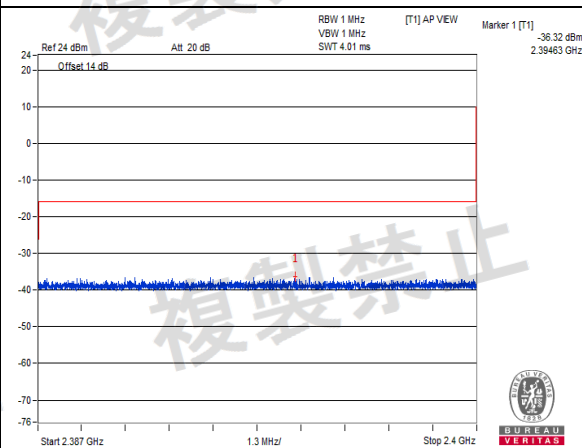
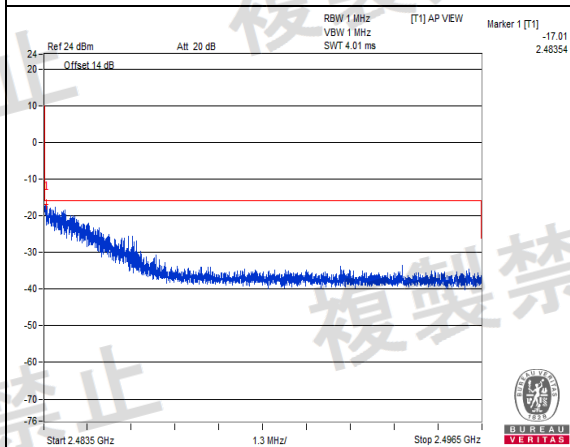
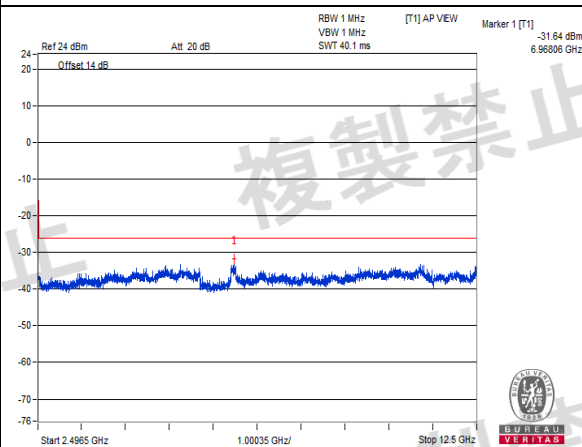
Measurement uncertainty: $\pm 3.93\text{dB}$

Vmax.
Channel 7



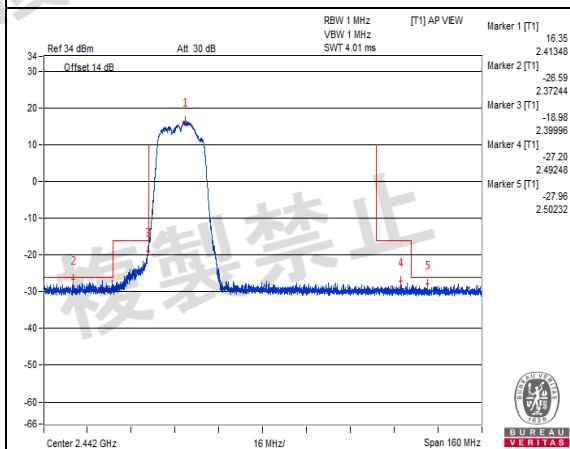
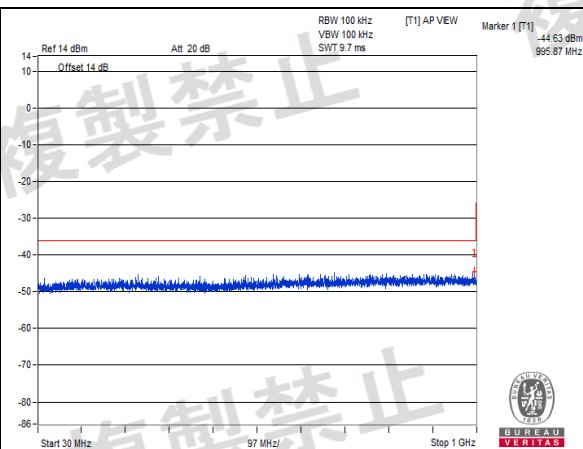
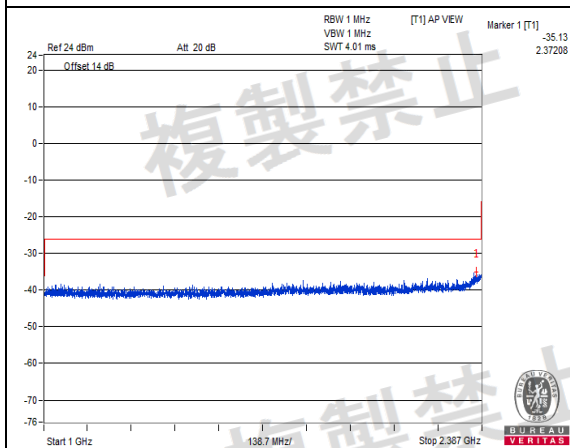
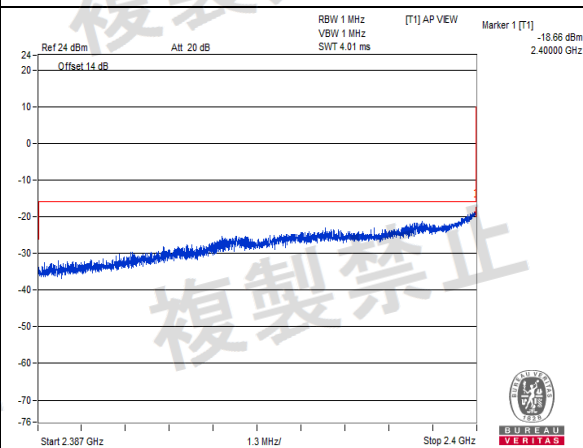
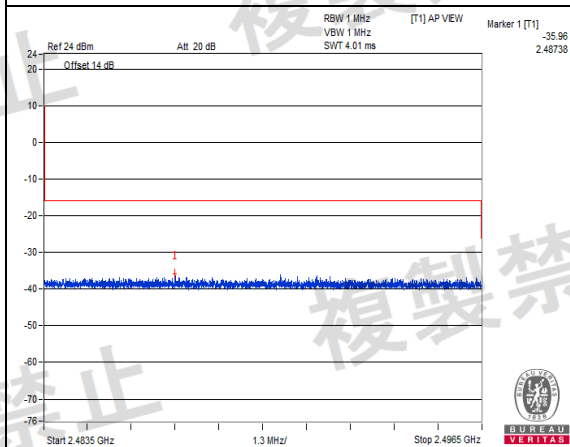
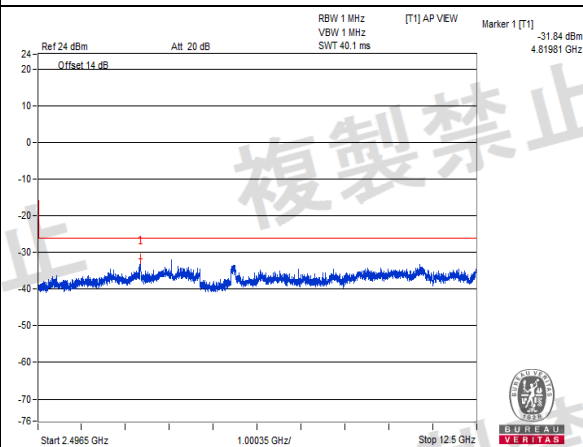
Measurement uncertainty: ± 3.93 dB

Vmax. Channel 13



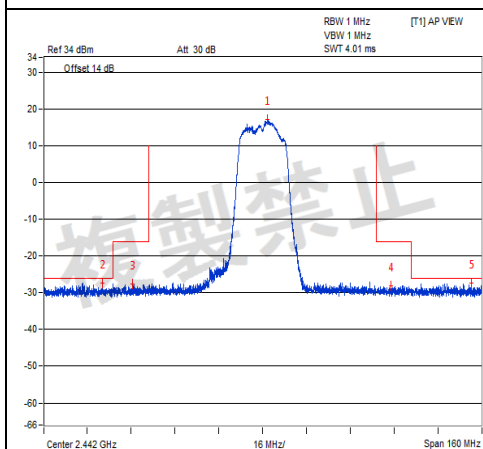
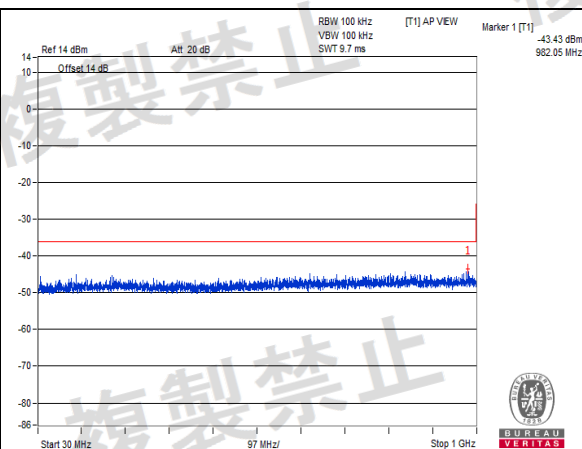
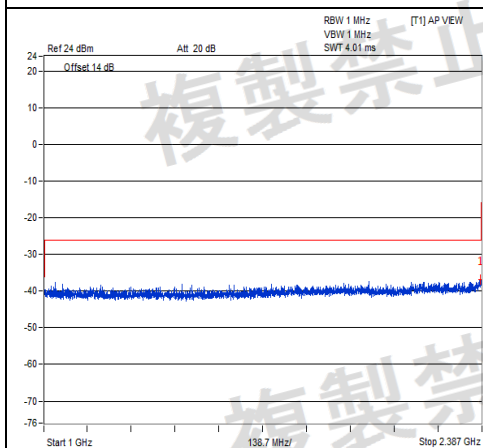
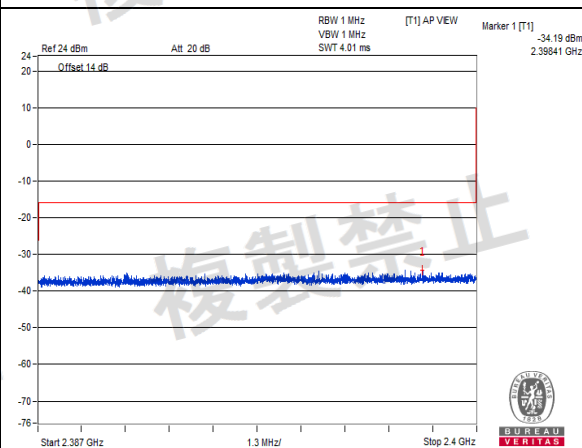
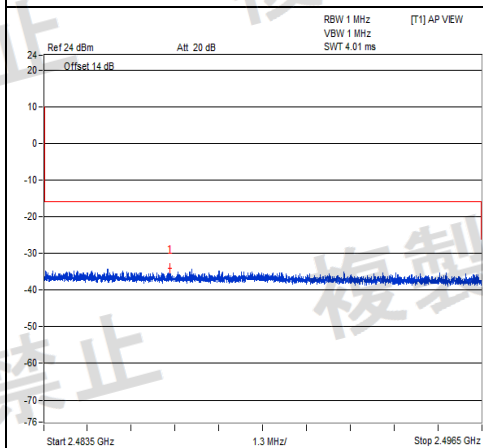
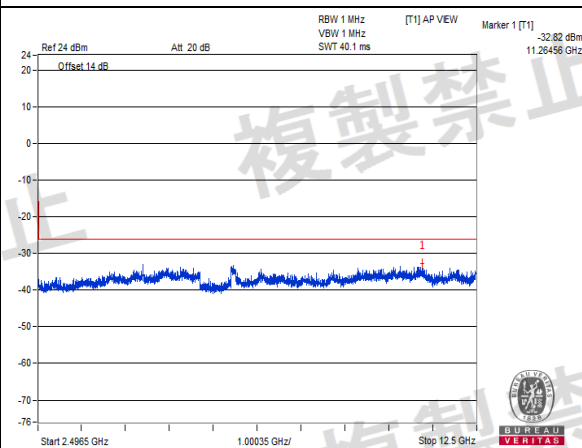
Measurement uncertainty: $\pm 3.93\text{dB}$

Vmin. Channel 1



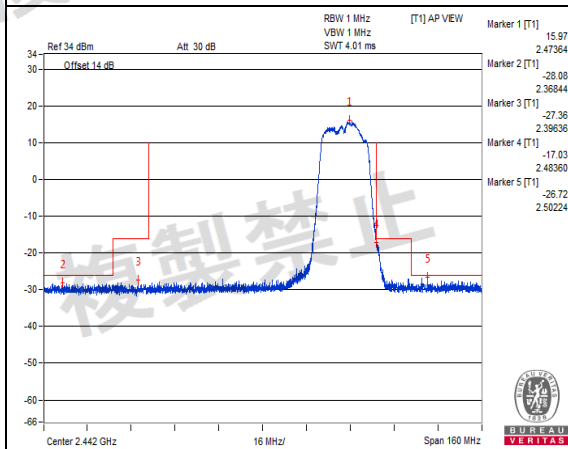
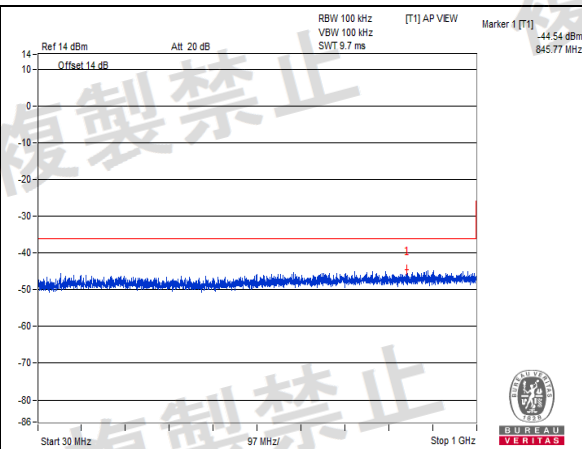
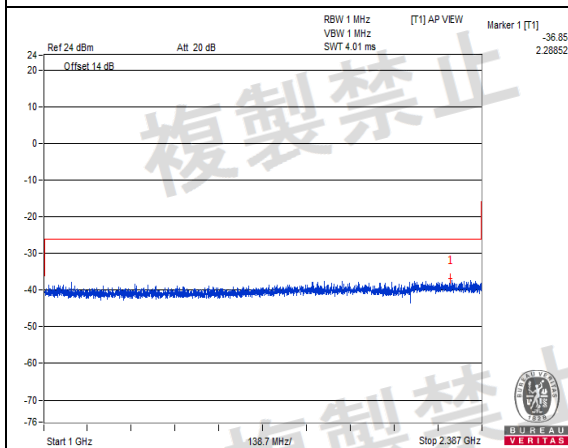
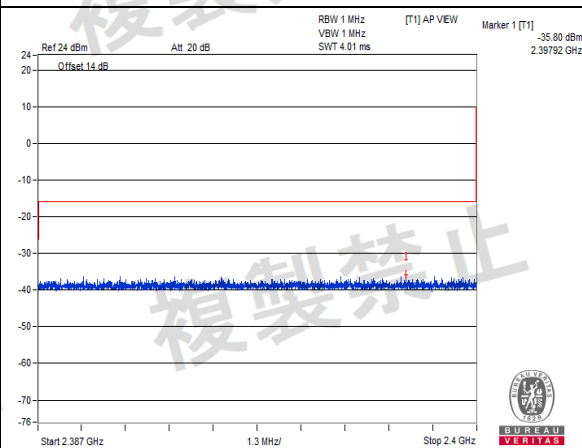
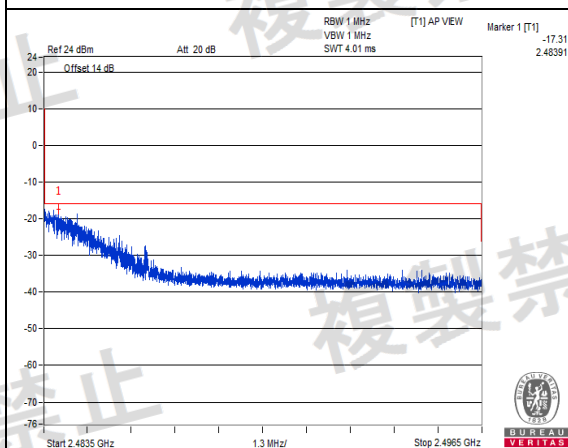
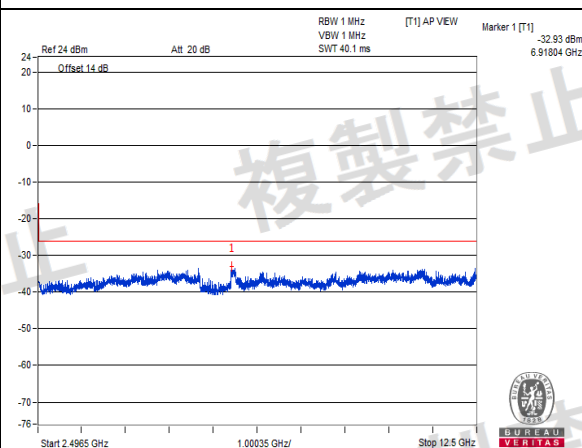
Measurement uncertainty: $\pm 3.93\text{dB}$

Vmin. Channel 7



Measurement uncertainty: ± 3.93 dB

Vmin. Channel 13



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

4.5 Antenna Power Measurement

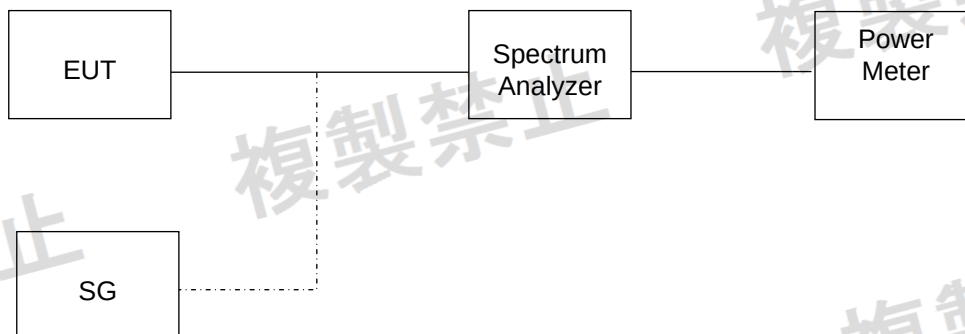
4.5.1 Limits of Antenna Power

Modulation System	Frequency Band Used	Antenna Power (Max.)	EIRP (Max.)	
			Omni-Directional Case	Directional Case
DS	2400 – 2483.5 MHz	10mW/MHz	12.14 dBm/MHz (16.368 mW/MHz)	22.14 dBm/MHz (163.68 mW/MHz)
OFDM (Note 1)	2400 – 2483.5 MHz	10mW/MHz	12.14 dBm/MHz (16.368 mW/MHz)	22.14 dBm/MHz (163.68 mW/MHz)
OFDM (Note 2)	2400 – 2483.5 MHz	5mW/MHz	9.14dBm/MHz (8.20mW/MHz)	19.14dBm/MHz (82.04mW/MHz)

Note:

1. Occupied bandwidth is less than 26MHz
2. Occupied bandwidth is more than 26MHz and less than 38MHz
3. The half-power beam width for directional antenna shall be $360/A$ degrees or less, where A is a ratio which causes the EIRP concerned to exceed the omnidirectional EIRP upper limit.
4. Tolerance of antenna power shall be +20% (upper value) and -80% (lower value).

4.5.2 Test Setup



4.5.3 Test Results

802.11b

Environmental Conditions	24 deg.C, 70% RH			
Test Condition	Conducted RF Output Power Density (mW/MHz)			
	Channel 1 (2412MHz)	Channel 7 (2442MHz)	Channel 13 (2472MHz)	Max. Limit (mW/MHz)
V _{normal}	7.06318	6.82339	7.39605	10
V _{max.}	7.06318	6.83912	7.41310	10
V _{min.}	7.03072	6.79204	7.32825	10
Rated Power	7.00mW/MHz			
Tolerance of Antenna Power	1.40mW/MHz ~ 8.40mW/MHz			

NOTE: Output power tolerance (%) = $\{(7.41310 - 7.00) / 7.00\} * 100 = 5.90$ (%).

Dipole antenna with antenna gain: 3.39dBi

Environmental Conditions	24 deg.C, 70% RH			
Test Condition	Radiated RF Output Power Density (mW/MHz)			
	Channel 1 (2412MHz)	Channel 7 (2442MHz)	Channel 13 (2472MHz)	Max. Limit (mW/MHz)
V_{normal}	15.41700	14.89361	16.14359	16.368
$V_{max.}$	15.41700	14.92794	16.18080	16.368
$V_{min.}$	15.34617	14.82518	15.99558	16.368

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.

802.11g

Environmental Conditions	24 deg.C, 70% RH			
Test Condition	Conducted RF Output Power Density (mW/MHz)			
	Channel 1 (2412MHz)	Channel 7 (2442MHz)	Channel 13 (2472MHz)	Max. Limit (mW/MHz)
V _{normal}	5.28445	5.19996	5.28445	10
V _{max.}	5.28445	5.21195	5.29663	10
V _{min.}	5.26017	5.17607	5.27230	10
Rated Power	5.00mW/MHz			
Tolerance of Antenna Power	1.00mW/MHz ~ 6.00mW/MHz			

NOTE: Output power tolerance (%) = $\{(5.29663 - 5.00) / 5.00\} * 100 = 5.93$ (%).

Dipole antenna with antenna gain: 3.39dBi

Environmental Conditions	24 deg.C, 70% RH			
Test Condition	Radiated RF Output Power Density (mW/MHz)			
	Channel 1 (2412MHz)	Channel 7 (2442MHz)	Channel 13 (2472MHz)	Max. Limit (mW/MHz)
V _{normal}	11.53453	11.35011	11.53453	16.368
V _{max.}	11.53453	11.37627	11.56112	16.368
V _{min.}	11.48154	11.29796	11.50800	16.368

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.

802.11n (HT20)

Environmental Conditions	24 deg.C, 70% RH			
Test Condition	Conducted RF Output Power Density (mW/MHz)			
	Channel 1 (2412MHz)	Channel 7 (2442MHz)	Channel 13 (2472MHz)	Max. Limit (mW/MHz)
V _{normal}	4.74280	4.90537	5.08907	10
V _{max.}	4.74829	4.91061	5.10081	10
V _{min.}	4.73189	4.87846	5.07184	10
Rated Power	5.00mW/MHz			
Tolerance of Antenna Power	1.00mW/MHz ~ 6.00mW/MHz			

NOTE: Output power tolerance (%) = $\{(5.10081 - 5.00) / 5.00\} * 100 = 2.02$ (%).

Dipole antenna with antenna gain: 3.39dBi

Environmental Conditions	24 deg.C, 70% RH			
Test Condition	Radiated RF Output Power Density (mW/MHz)			
	Channel 1 (2412MHz)	Channel 7 (2442MHz)	Channel 13 (2472MHz)	Max. Limit (mW/MHz)
V _{normal}	10.35225	10.70709	11.10807	16.368
V _{max.}	10.36423	10.71854	11.13368	16.368
V _{min.}	10.32844	10.64836	11.07046	16.368

Note: 1. The radiated RF output power density is a "calculated" value derived from the conducted value.

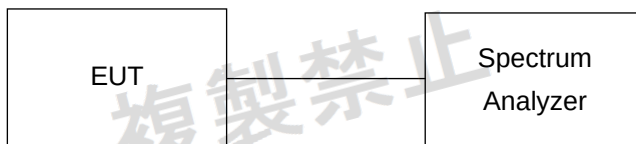
2. Formula: Radiated RF output power density = Conducted RF output power density + Antenna Gain.

4.6 Spurious Emissions for Receiver

4.6.1 Limits of Spurious Emissions for Receiver

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

4.6.2 Test Setup



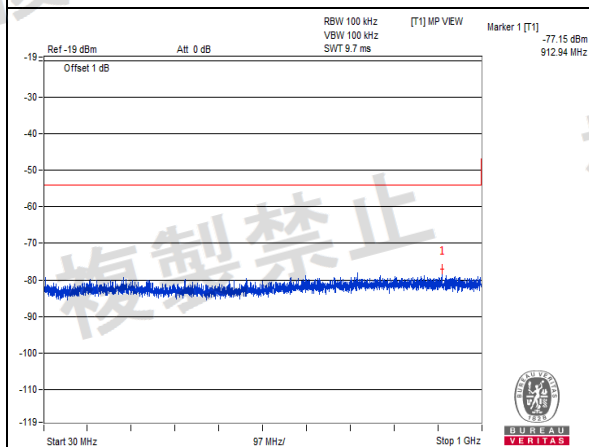
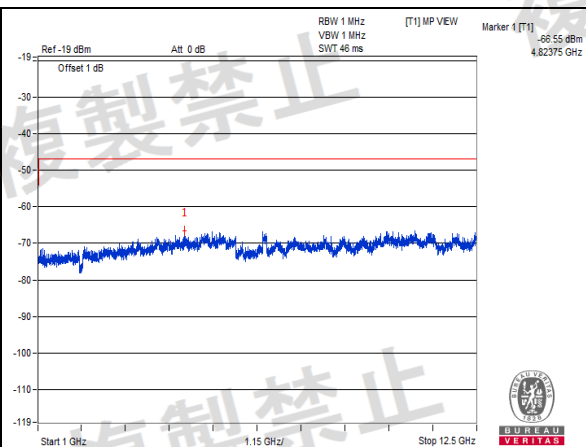
4.6.3 Test Result

802.11b / 802.11g and 802.11n (HT20)

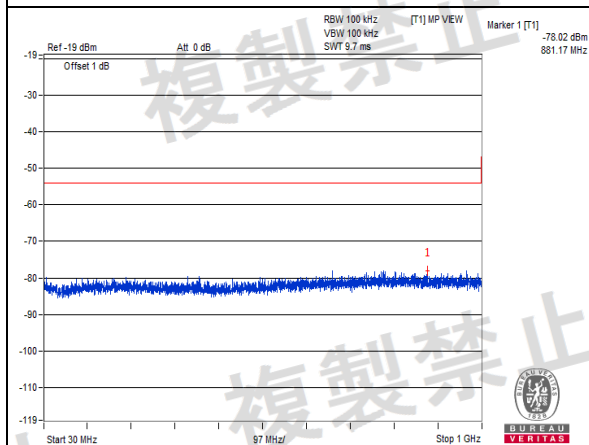
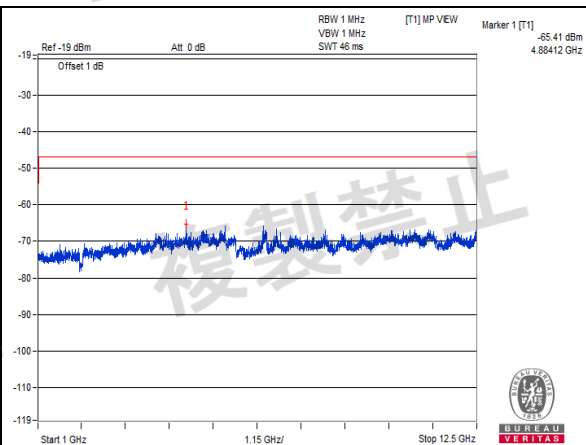
Environmental Conditions		24 deg.C, 70% RH					
Test Channel		Channel 1 (2412MHz)		Channel 7 (2442MHz)		Limit	Result
Test Condition	Frequency Range	Frequency (MHz)	Measured Value	Frequency (MHz)	Measured Value		
V _{normal}	Below 1GHz	912.940	0.019275nW	881.170	0.015776nW	4nW	PASS
	Above 1GHz	4823.750	0.221309nW	4884.120	0.28774nW	20nW	PASS
V _{max.}	Below 1GHz	655.650	0.019011nW	719.670	0.016069nW	4nW	PASS
	Above 1GHz	10812.370	0.263633nW	6982.870	0.261818nW	20nW	PASS
V _{min.}	Below 1GHz	811.820	0.015101nW	995.870	0.016293nW	4nW	PASS
	Above 1GHz	10884.250	0.235505nW	10283.370	0.263027nW	20nW	PASS
Test Channel		Channel 13 (2472MHz)				Limit	Result
Test Condition	Frequency Range	Frequency (MHz)		Measured Value			
V _{normal}	Below 1GHz	842.370		0.017298nW		4nW	PASS
	Above 1GHz	10680.120		0.25527nW		20nW	PASS
V _{max.}	Below 1GHz	881.660		0.014322nW		4nW	PASS
	Above 1GHz	10869.870		0.271644nW		20nW	PASS
V _{min.}	Below 1GHz	758.220		0.016293nW		4nW	PASS
	Above 1GHz	11292.500		0.253513nW		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.

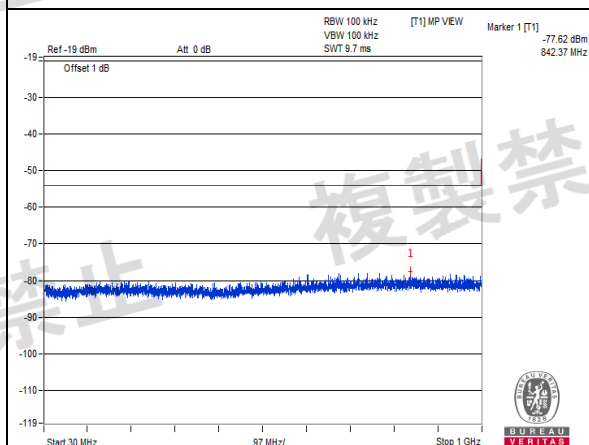
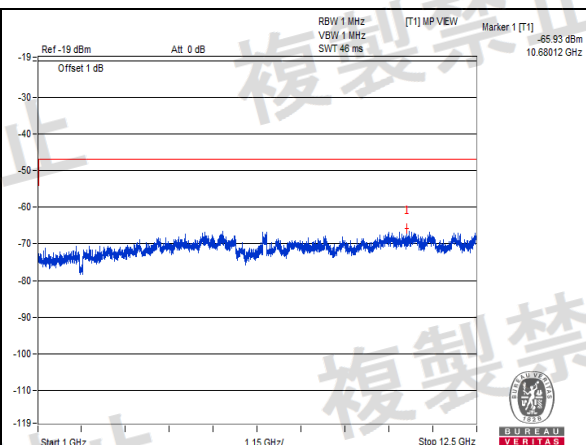
Vnormal



Channel 1



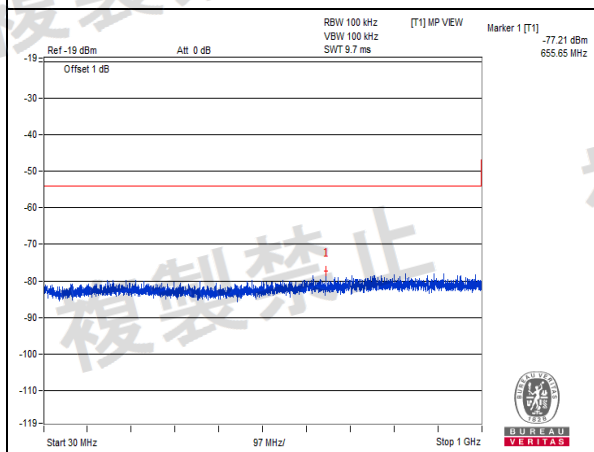
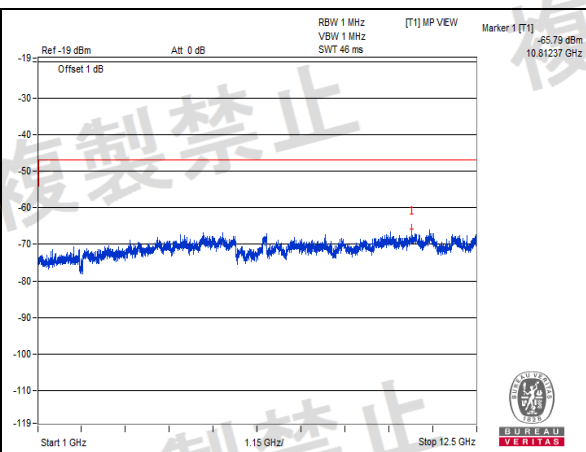
Channel 7



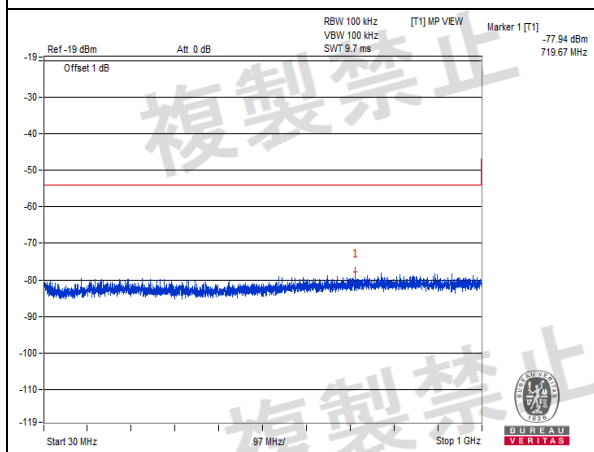
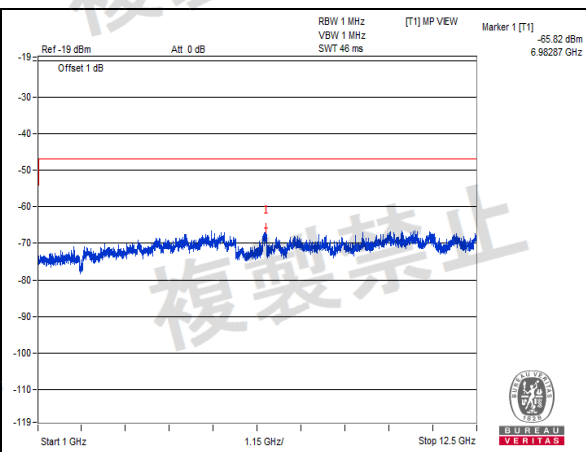
Channel 13

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

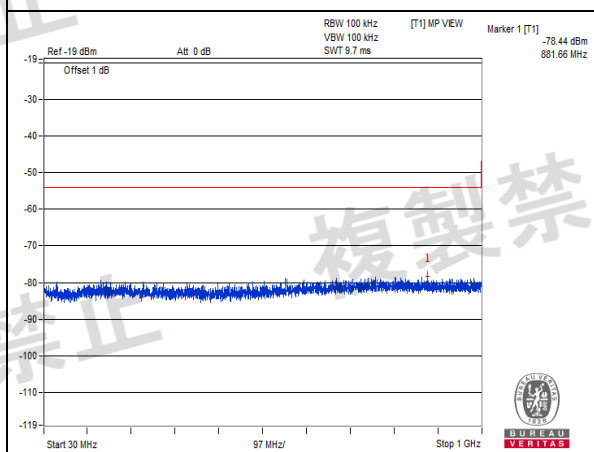
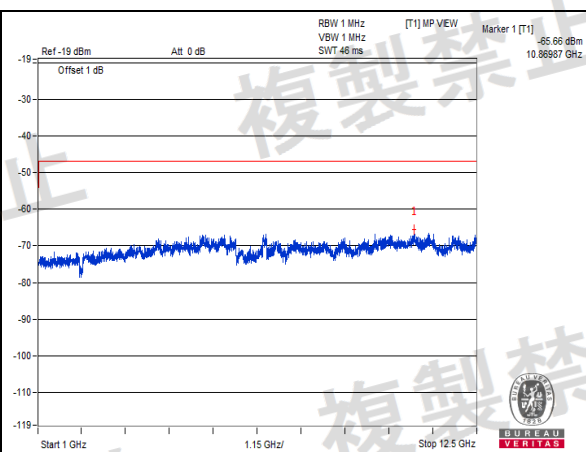
Vmax.



hannel 1



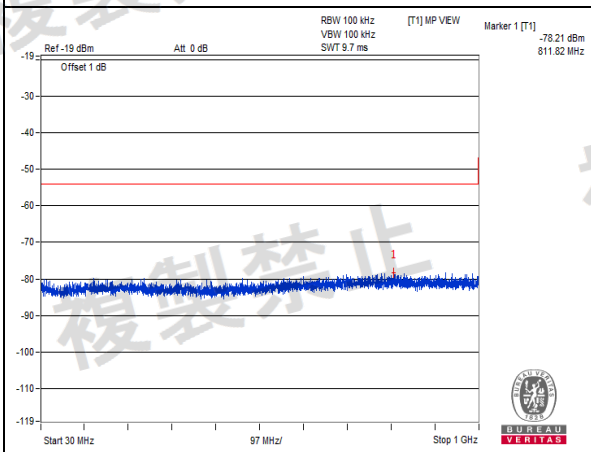
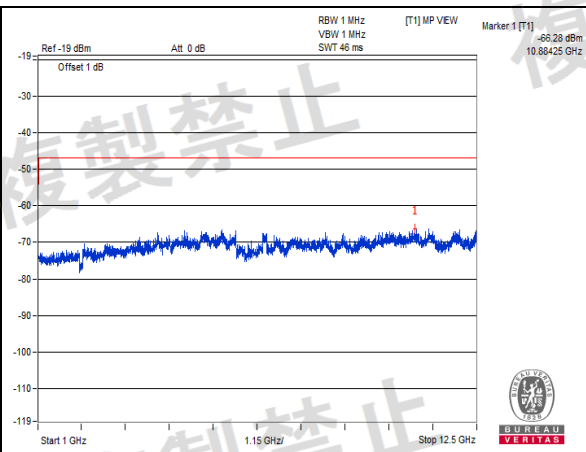
Channel 7



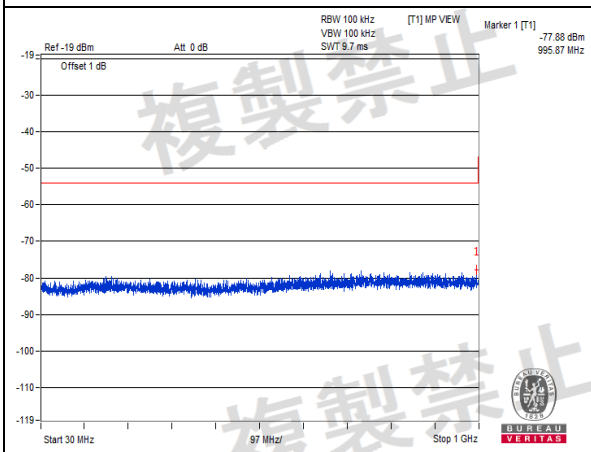
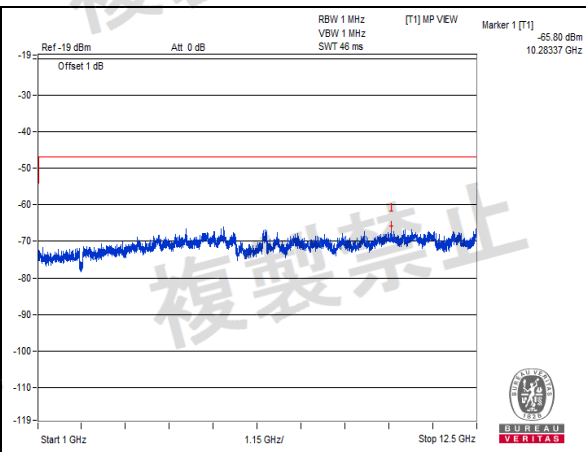
Channel 13

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

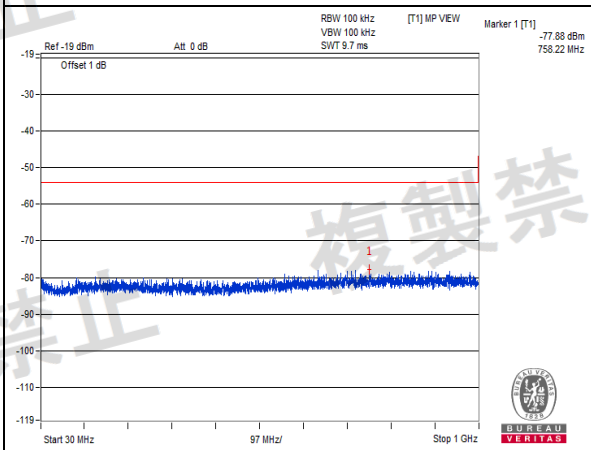
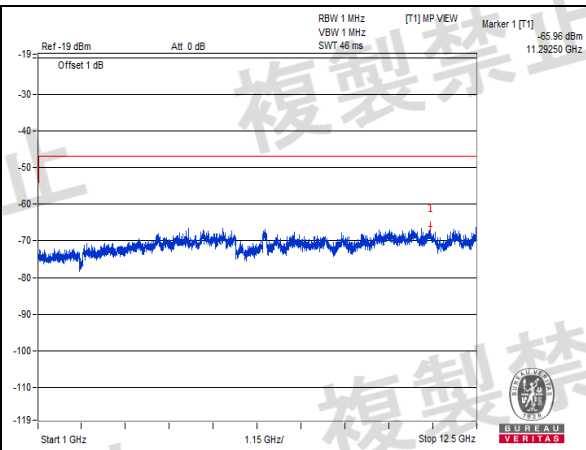
V_{min}.



Channel 1



Channel 7



Channel 13

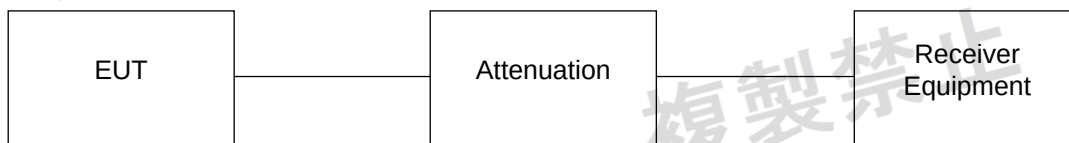
Measurement uncertainty: $\pm 3.93\text{dB}$

4.7 Interference Prevention Function

4.7.1 Limits of Interference Prevention Function

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

4.7.2 Test Setup



4.7.3 Test Results

Environmental Conditions	24 deg.C, 70% RH
Link Mode	Test Result
WiFi	PASS

4.8 Number of Carriers within 1 MHz Bandwidth in OFDM

4.8.1 Limit of Number of Carriers

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

4.8.2 Test Setup



4.8.3 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 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 / Anritsu	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
Splitters / Combiners Woken Technology	0120A04208001S	NA	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.

6 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: 886-3-5935343

Fax: 886-3-5935342

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.

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