



Part 15C

TEST REPORT

Product Name	DC-HSDPA Portable WiFi Router
Model	GP03
FCC ID	FDI-04610108-0
Client	BUFFALO


TA Technology (Shanghai) Co., Ltd.

TA Technology (Shanghai) Co., Ltd.
Test Report

Report No.: RZA1110-1740RF03R1

Page 2 of 128

GENERAL SUMMARY

Product Name	DC-HSDPA Portable WiFi Router	Model	GP03
FCC ID	FDI-04610108-0	Report No.	RZA1110-1740RF03R1
Client	BUFFALO		
Manufacturer	Shanghai Longcheer 3g Technology Co., Ltd		
Reference Standard(s)	<p>FCC CFR47 Part 15C (2010-12) Radio Frequency Devices</p> <p>15.205 Restricted bands of operation;</p> <p>15.207 Conducted limits;</p> <p>15.209 Radiated emission limits; general requirements;</p> <p>15.247 Operation within the bands 902-928 MHz,2400-2483.5 MHz, and 5725-5850MHz.</p> <p>ANSI C63.4 Methods of Measurement of Radio-Noise Emission from Low-Voltage Electrical and Electronic Equipment in the Range of 9 KHz to 40GHz. (2003)</p> <p>KDB 558074 Measurement of Digital Transmission Systems Operating under Section 15.247 (2005)</p>		
Conclusion	<p>This portable wireless equipment has been measured in all cases requested by the relevant standards. Test results in Chapter 2 of this test report are below limits specified in the relevant standards.</p> <p>General Judgment: Pass</p> <div style="text-align: right;">  <p>(Stamp) Date of issue: November 11th,2011</p> </div>		
Comment	The test result only responds to the measured sample.		

Approved by 杨伟中
Director

Revised by 徐凯
RF Manager

Performed by 王
RF Engineer

TABLE OF CONTENT

1. General Information	4
1.1. Notes of the test report	4
1.2. Testing laboratory	4
1.3. Applicant Information	5
1.4. Manufacturer Information	5
1.5. Information of EUT	6
1.6. Test Date	7
2. Test Information	8
2.1. Summary of test results	8
2.2. Peak Power Output –Conducted.....	9
2.3. Occupied Bandwidth (6dB)	12
2.4. Band Edge Compliance	27
2.5. Spurious Radiated Emissions in the restricted band.....	36
2.6. Power Spectral Density.....	46
2.7. Spurious RF Conducted Emissions	61
2.8. Radiated Emission.....	87
2.9. Conducted Emissions	117
2. Main Test Instruments	125
ANNEX A: EUT Appearance and Test Setup.....	126
A.1 EUT Appearance	126
A.2 Test Setup	128

1. General Information

1.1. Notes of the test report

TA Technology (Shanghai) Co., Ltd. guarantees the reliability of the data presented in this test report, which is the results of measurements and tests performed for the items under test on the date and under the conditions stated in this test report and is based on the knowledge and technical facilities available at TA Technology (Shanghai) Co., Ltd. at the time of execution of the test.

TA Technology (Shanghai) Co., Ltd. is liable to the client for the maintenance by its personnel of the confidentiality of all information related to the items under test and the results of the test. This report only refers to the item that has undergone the test.

This report standalone does not constitute or imply by its own an approval of the product by the certification Bodies or competent Authorities. This report cannot be used partially or in full for publicity and/or promotional purposes without previous written approval of **TA Technology (Shanghai) Co., Ltd.** and the Accreditation Bodies, if it applies.

If the electrical report is inconsistent with the printed one, it should be subject to the latter.

1.2. Testing laboratory

Company: TA Technology (Shanghai) Co., Ltd.
Address: No.145, Jintang Rd, Tangzhen Industry Park, Pudong
City: Shanghai
Post code: 201201
Country: P. R. China
Contact: Yang Weizhong
Telephone: +86-021-50791141/2/3
Fax: +86-021-50791141/2/3-8000
Website: <http://www.ta-shanghai.com>
E-mail: yangweizhong@ta-shanghai.com

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.: RZA1110-1740RF03R1

Page 5 of 128

1.3. Applicant Information

Company: BUFFALO
Address: AKAMONDORI Bldg., 30-20, Ohsu 3-chome, Naka-ku, Nagoya
460-8315, Japan
City: Nagoya
Postal Code: 460-8315
Country: Japan
Contact: Kenjiro Nishimura
Telephone: +81-50-5830-8816
Fax: +81-50-5830-8869

1.4. Manufacturer Information

Company: Shanghai Longcheer 3g Technology Co., Ltd
Address: No.1, Building 5, 299 Bisheng Rd, Zhangjiang Hi-Tech Park, Pudong,
Shanghai, P.R. China
City: Shanghai
Postal Code: /
Country: P.R. China
Telephone: +86-29-81881999*8100
Fax: +86-29-81882000

TA Technology (Shanghai) Co., Ltd.
Test Report

Report No.: RZA1110-1740RF03R1

Page 6 of 128

1.5. Information of EUT

General information

Name of EUT:	DC-HSDPA Portable WiFi Router
SN:	/
Hardware Version:	ES3
Software Version:	Master_Alpha2.5
Antenna Type:	Internal Antenna
Device Operating Configurations:	
Network Standards:	802.11b, 802.11g, 802.11n(HT20/HT40); (tested)
Test Modulation:	(802.11b)CCK; (802.11g/n)OFDM
Power Supply:	Battery or Adapter
Max. Conducted Power	15.43 dBm
Extreme Voltage:	Minimum: 3.5 V Maximum: 4.2 V
Extreme Temperature:	Lowest:0°C Highest: +45°C
Operating Frequency Range(s)	2400MHz~ 2483.5 MHz

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.: RZA1110-1740RF03R1

Page 7 of 128

Auxiliary Equipment Details

AE1: Battery

Model: 1UF103450P

Manufacturer: TOCAD

S/N: /

AE2: Adapter

Model: LEI_FU05-9050100-A1

Manufacturer: LEIDER

S/N: /

Equipment Under Test (EUT) is DC-HSDPA Portable WiFi Router. The detail about these is in chapter 1.5 in this report. The EUT supports WiFi.

The sample under test was selected by the Client.

Components list please refer to documents of the manufacturer.

1.6. Test Date

The test is performed from October 25,2011 to October 30,2011.

TA Technology (Shanghai) Co., Ltd.
Test Report

Report No.: RZA1110-1740RF03R1

Page 8 of 128

2. Test Information

2.1. Summary of test results

Number	Summary of measurements of results	Clause in FCC rules	Verdict
1	Peak Power Output –Conducted	15.247(b)(3)	PASS
2	Minimum 6dB bandwidth	15.247(a)(2)	PASS
3	Band Edges compliance	15.247(d)	PASS
4	Spurious Radiated Emissions in the restricted band	15.247(d),15.205,15.209	PASS
5	Power spectral Density	15.247(e)	PASS
6	Conducted Spurious Emission	15.247	PASS
7	Radiates Emission	15.247(d),15.205,15.209	PASS
8	Conducted Emissions	15.207,15.107	PASS

2.2. Peak Power Output –Conducted

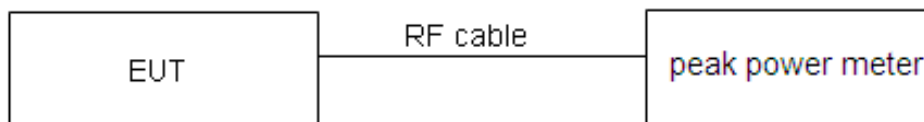
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~ 25°C	45% ~ 50%	101.5kPa

Methods of Measurement

During the process of the testing, The EUT was connected to the peak power meter through an external attenuator and a known loss cable. The EUT is max power transmission with proper modulation. We use the Power Output Option 1 in KDB 558074 for this test.

Test Setup



Limits

Rule Part 15.247 (b) (3) specifies that " For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt."

Peak Output Power	≤ 1W (30dBm)
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Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 0.44$ dB.

TA Technology (Shanghai) Co., Ltd.

Test Report

Test Results: Pass

WAN 0

Network Standards	Rate (Mbps)	Peak Output Power (dBm)		
		CH 1	CH 6	CH 11
802.11b	1	13.85	13.91	13.75
	2	13.57	13.58	13.42
	5.5	13.68	13.63	13.48
	11	13.52	13.72	13.47
802.11g	6	14.56	14.81	14.57
	9	14.12	14.52	14.35
	12	14.17	14.64	14.41
	18	14.52	14.58	14.42
	24	14.13	14.54	14.32
	36	14.42	14.42	14.29
	48	14.41	14.38	14.19
	54	14.38	14.42	14.28
802.11n HT20	MCS0	14.58	14.62	14.42
	MCS1	14.48	14.48	14.27
	MCS2	14.49	14.51	14.25
	MCS3	14.35	14.52	14.23
	MCS4	14.43	14.49	14.24
	MCS5	14.45	14.53	14.31
	MCS6	14.51	14.51	14.28
	MCS7	14.48	14.52	14.32
Network Standards	Rate (Mbps)	Peak Output Power (dBm)		
		CH 3	CH 6	CH 9
802.11n HT40	MCS0	14.52	14.39	14.43
	MCS1	14.48	14.25	14.26
	MCS2	14.31	14.32	14.15
	MCS3	14.04	14.07	14.06
	MCS4	14.33	14.22	14.13
	MCS5	14.22	14.33	14.36
	MCS6	14.07	14.19	14.23
	MCS7	14.16	14.28	14.05

- Note:1.The following testing items should be tested at the data rate with the maximum output power.
2. The maximum output power values are marked in bold.

TA Technology (Shanghai) Co., Ltd.

Test Report

WAN 1

Network Standards	Rate (Mbps)	Peak Output Power (dBm)		
		CH 1	CH 6	CH 11
802.11b	1	13.91	13.93	13.96
	2	13.85	13.73	13.87
	5.5	13.76	13.9	13.94
	11	13.87	13.91	13.95
802.11g	6	14.95	14.71	14.36
	9	14.74	14.53	14.07
	12	14.81	14.57	14.17
	18	14.86	14.62	14.21
	24	14.78	14.56	14.23
	36	14.65	14.43	14.26
	48	14.56	14.32	14.13
	54	14.83	14.5	14.11
802.11n HT20	MCS0	14.88	14.57	14.16
	MCS1	14.59	14.32	14.07
	MCS2	14.65	14.36	14.15
	MCS3	14.46	14.41	14.08
	MCS4	14.59	14.42	14.05
	MCS5	14.65	14.37	13.98
	MCS6	14.57	14.42	14.01
	MCS7	14.47	14.35	14.06
Network Standards	Rate (Mbps)	Peak Output Power (dBm)		
		CH 3	CH 6	CH 9
802.11n HT40	MCS0	14.96	15.43	15.09
	MCS1	14.91	15.31	14.91
	MCS2	14.75	15.28	14.98
	MCS3	14.83	15.33	14.75
	MCS4	14.74	15.25	15.04
	MCS5	14.75	15.36	14.92
	MCS6	14.81	15.32	14.83
	MCS7	14.71	15.14	14.59

Note:1.The following testing items should be tested at the data rate with the maximum output power.

2. The maximum output power values are marked in bold.

2.3. Occupied Bandwidth (6dB)

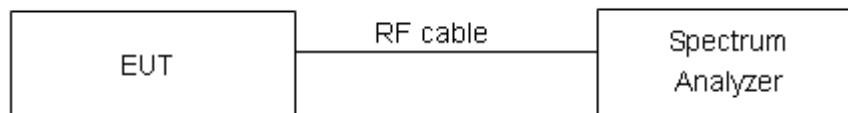
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable. RBW is set to 100 kHz, VBW is set to 300 kHz on spectrum analyzer.

Test Setup



Limits

Rule Part 15.247 (a) (2) specifies that “Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.”

minimum 6 dB bandwidth	≥ 500 kHz
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Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 936$ Hz.

TA Technology (Shanghai) Co., Ltd.
Test Report

Report No.: RZA1110-1740RF03R1

Page 13 of 128

Test Results:

WAN 0

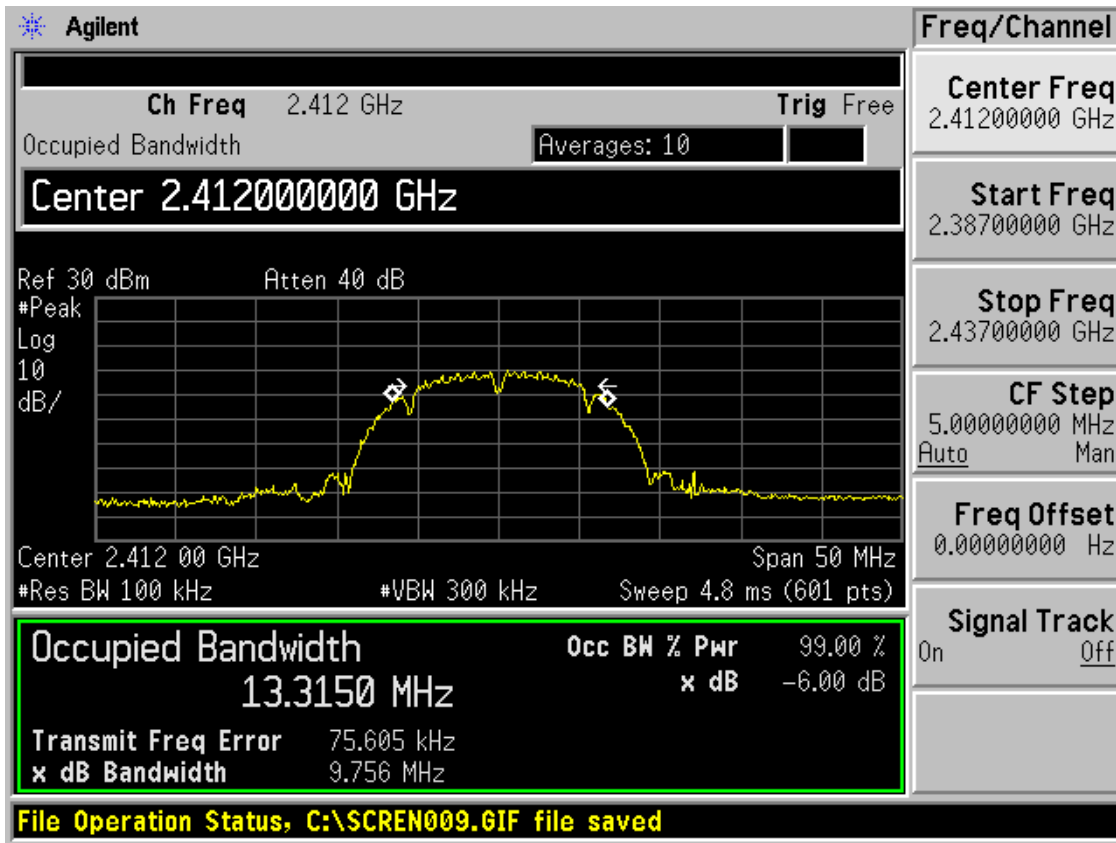
Network Standards	Channal Number	Minimum 6 dB bandwidth (MHz)	Conclusion
802.11b	1	9.756	PASS
	6	9.994	PASS
	11	9.982	PASS
802.11g	1	16.624	PASS
	6	16.647	PASS
	11	16.638	PASS
802.11n HT20	1	17.866	PASS
	6	17.862	PASS
	11	17.840	PASS
802.11n HT40	3	36.705	PASS
	6	36.502	PASS
	9	32.240	PASS

TA Technology (Shanghai) Co., Ltd. Test Report

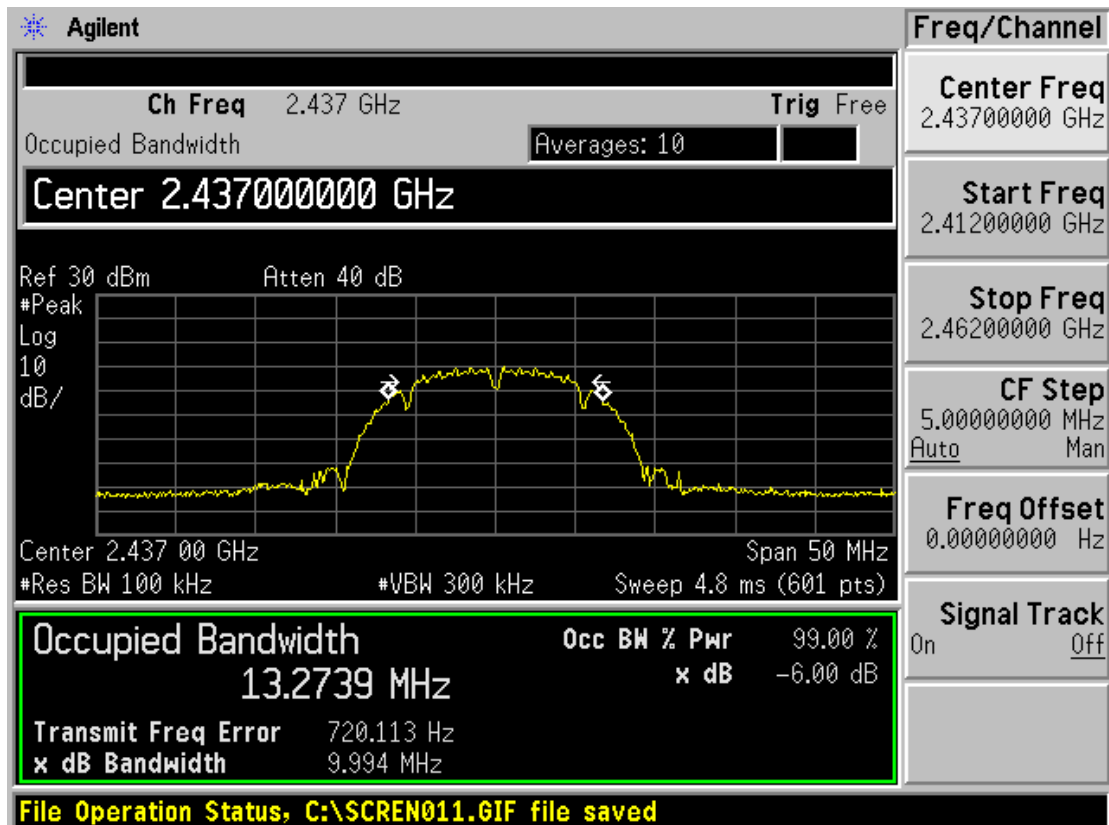
Report No.: RZA1110-1740RF03R1

Page 14of 128

802.11b



802.11b, CH 1

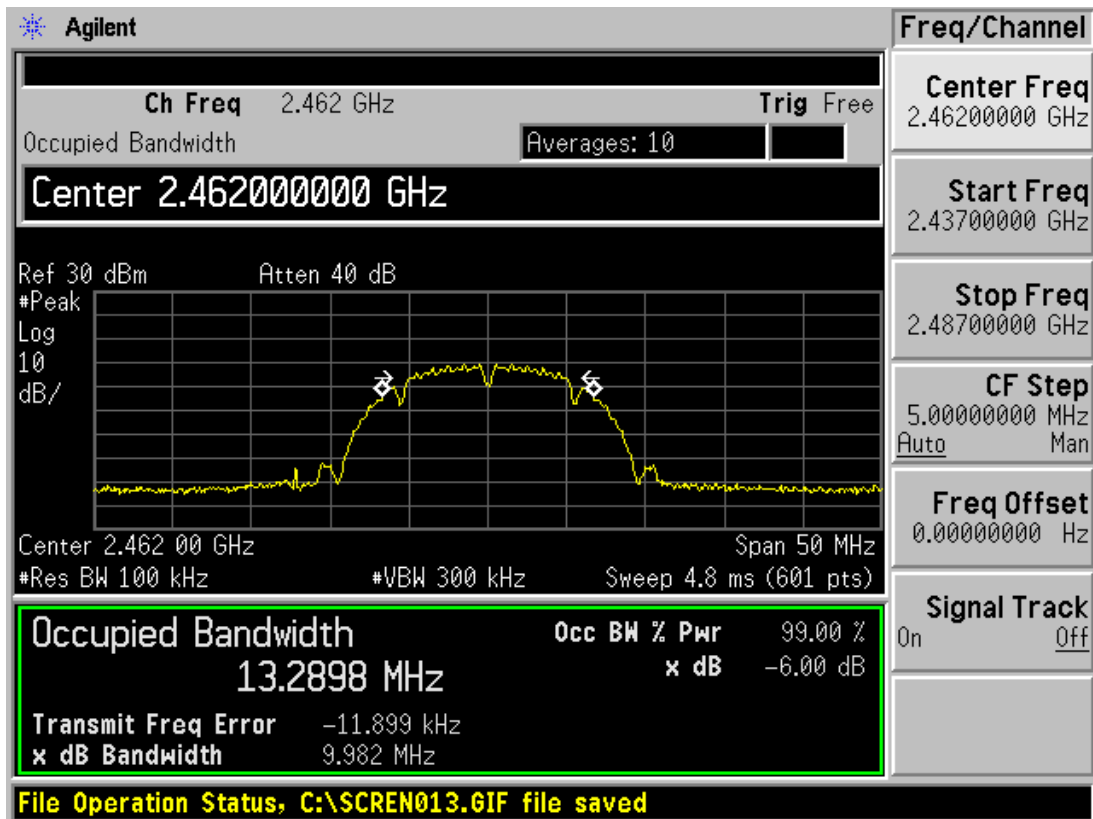


802.11b, CH 6

TA Technology (Shanghai) Co., Ltd. Test Report

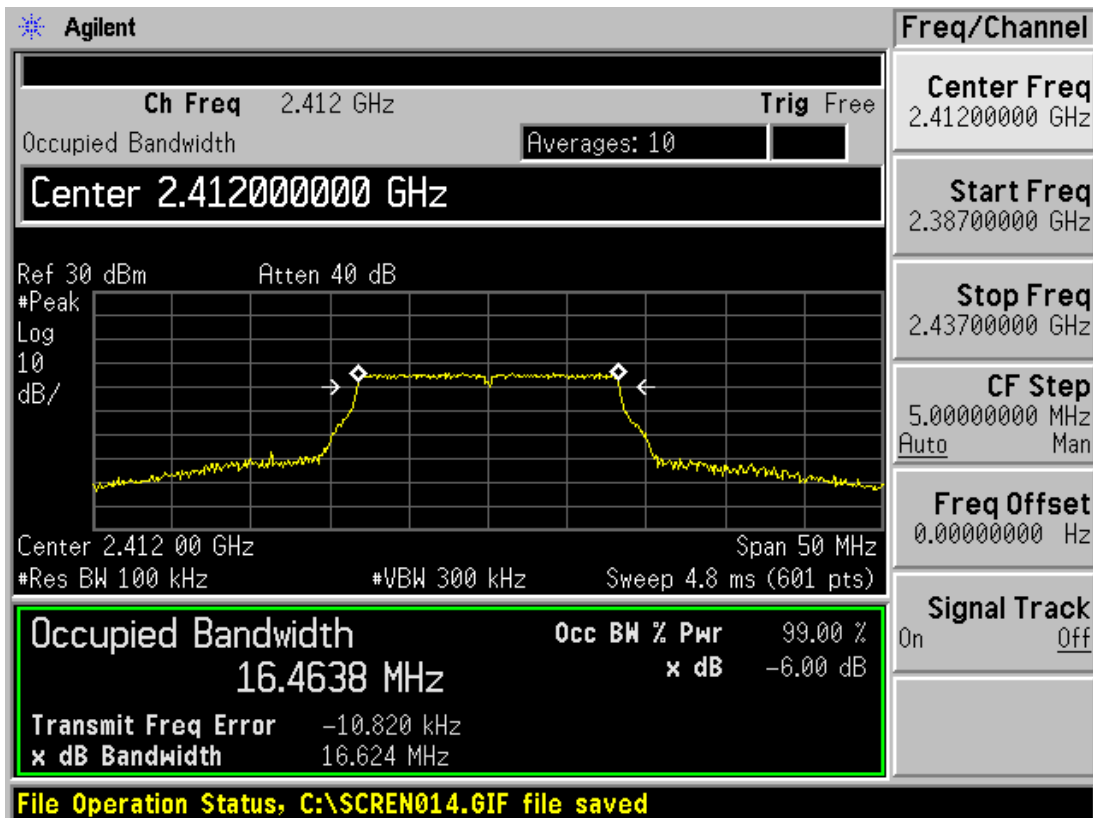
Report No.: RZA1110-1740RF03R1

Page 15 of 128



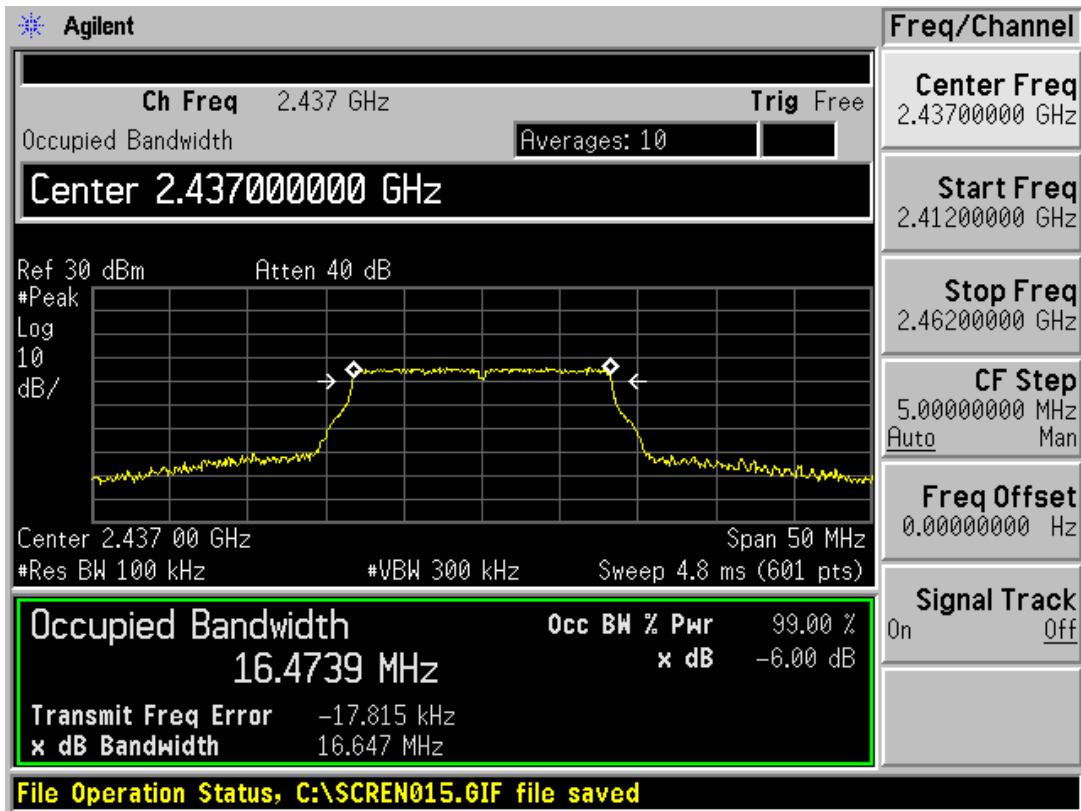
802.11b, CH 11

802.11g

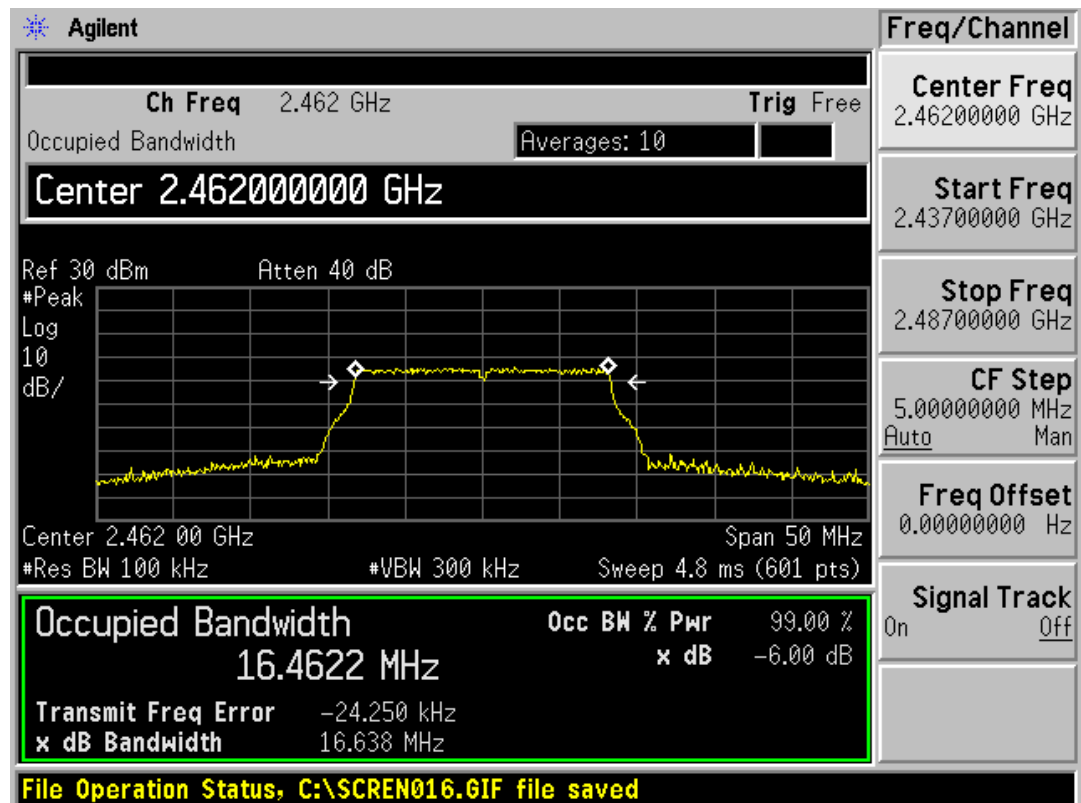


802.11g, CH 1

TA Technology (Shanghai) Co., Ltd. Test Report



802.11g, CH 6



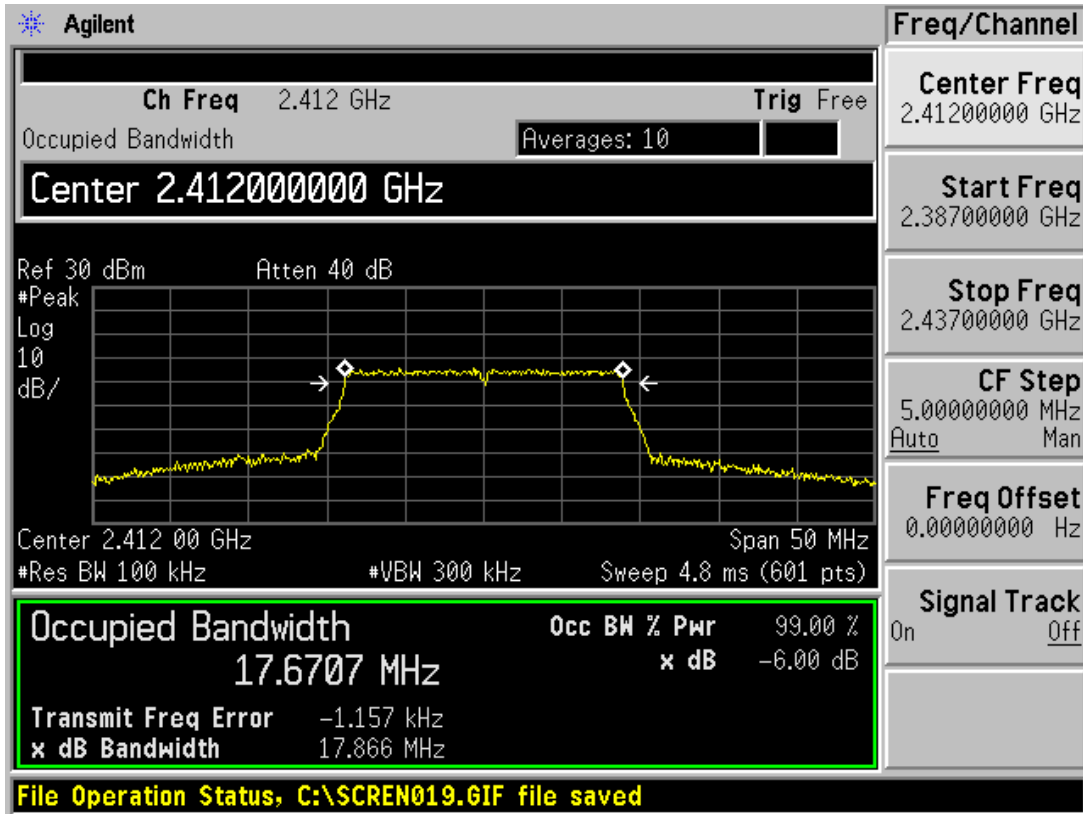
802.11g, CH 11

TA Technology (Shanghai) Co., Ltd. Test Report

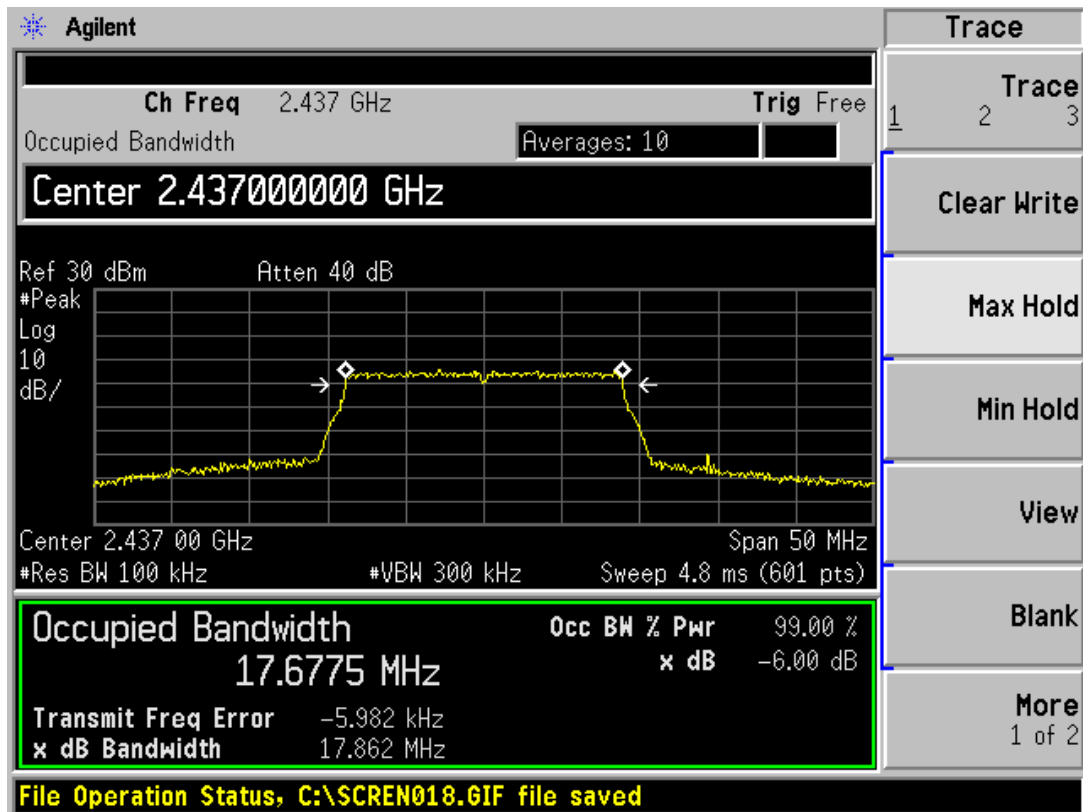
Report No.: RZA1110-1740RF03R1

Page 17 of 128

802.11n(HT20)



802.11n, CH 1

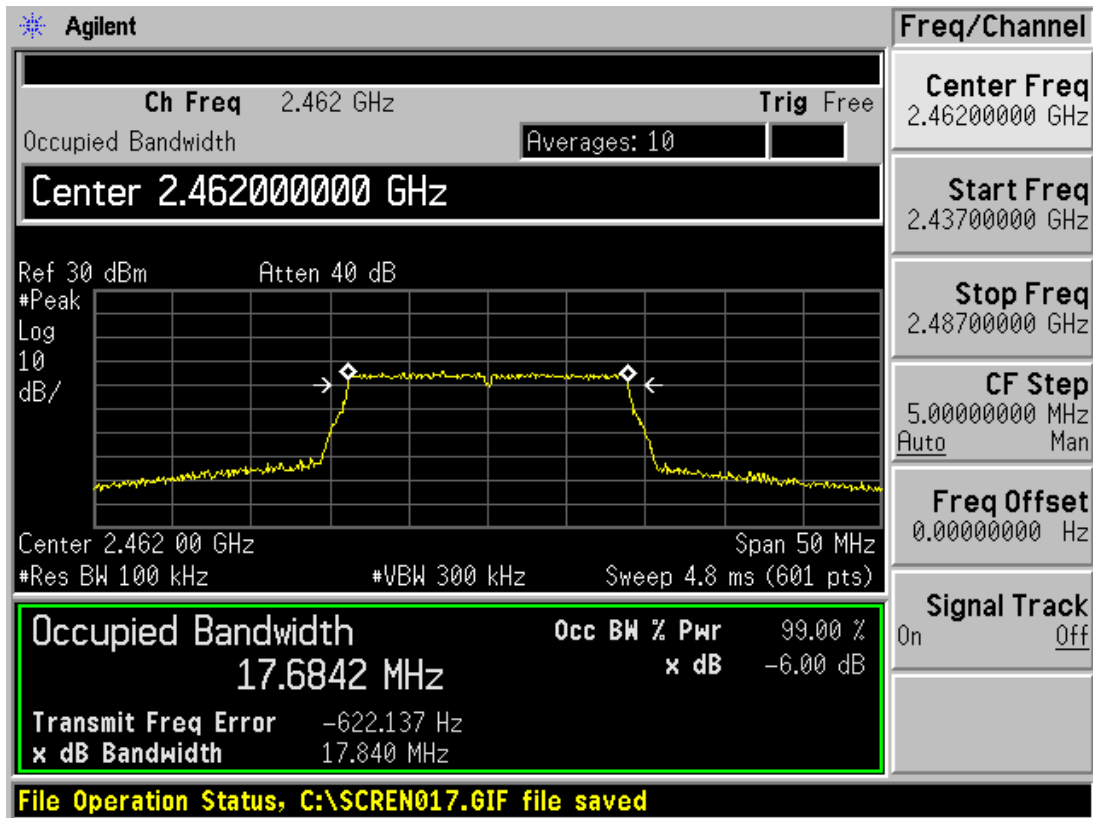


802.11n, CH 6

TA Technology (Shanghai) Co., Ltd. Test Report

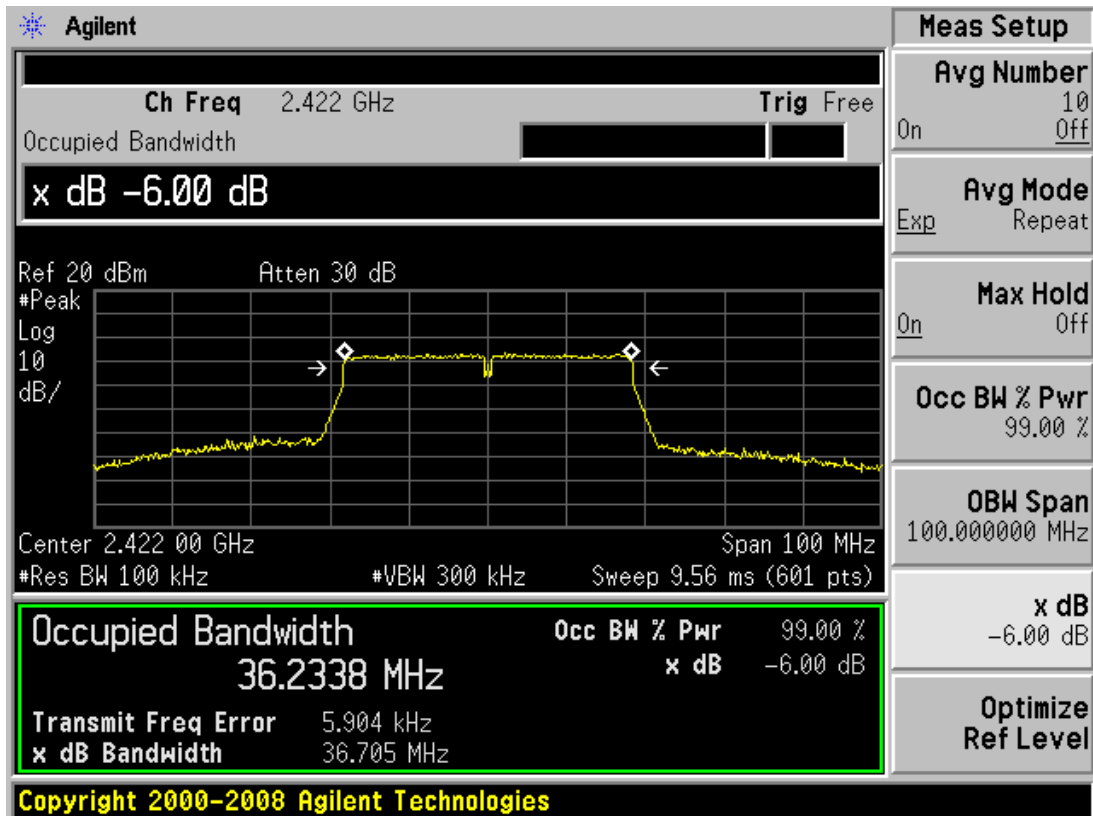
Report No.: RZA1110-1740RF03R1

Page 18of 128



802.11n, CH 11

802.11n(HT40)

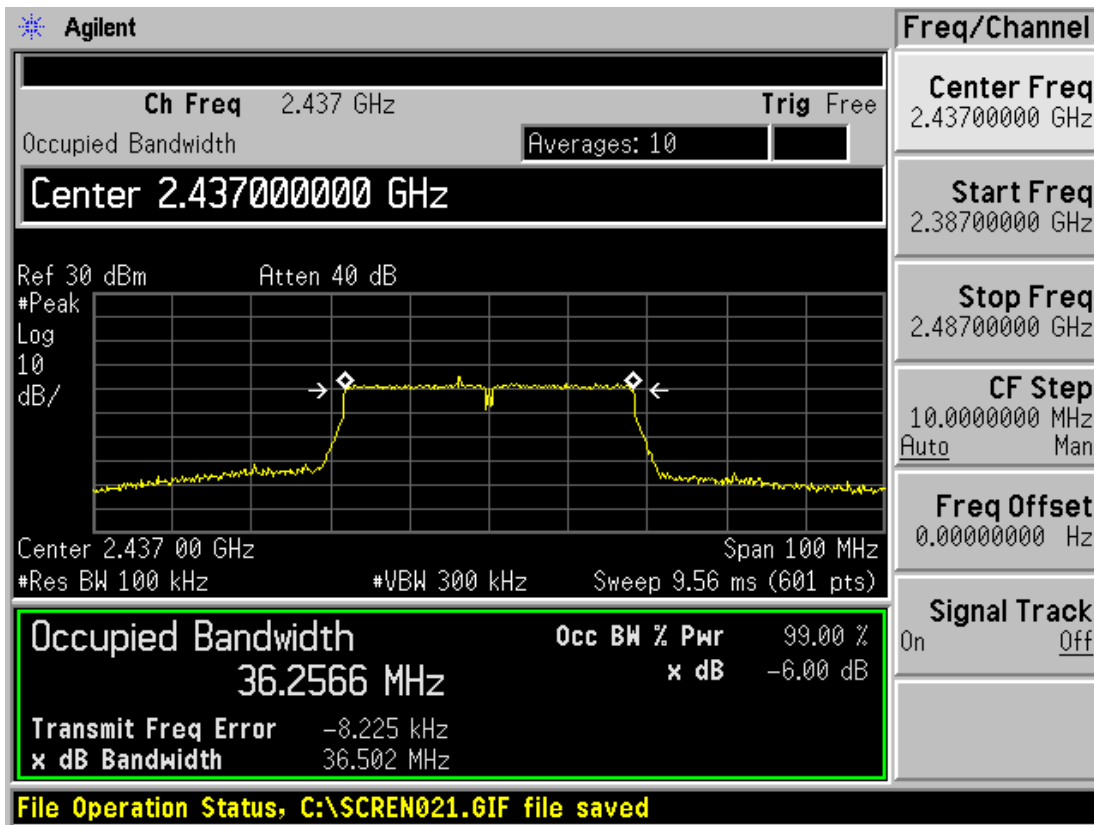


802.11n, CH 3

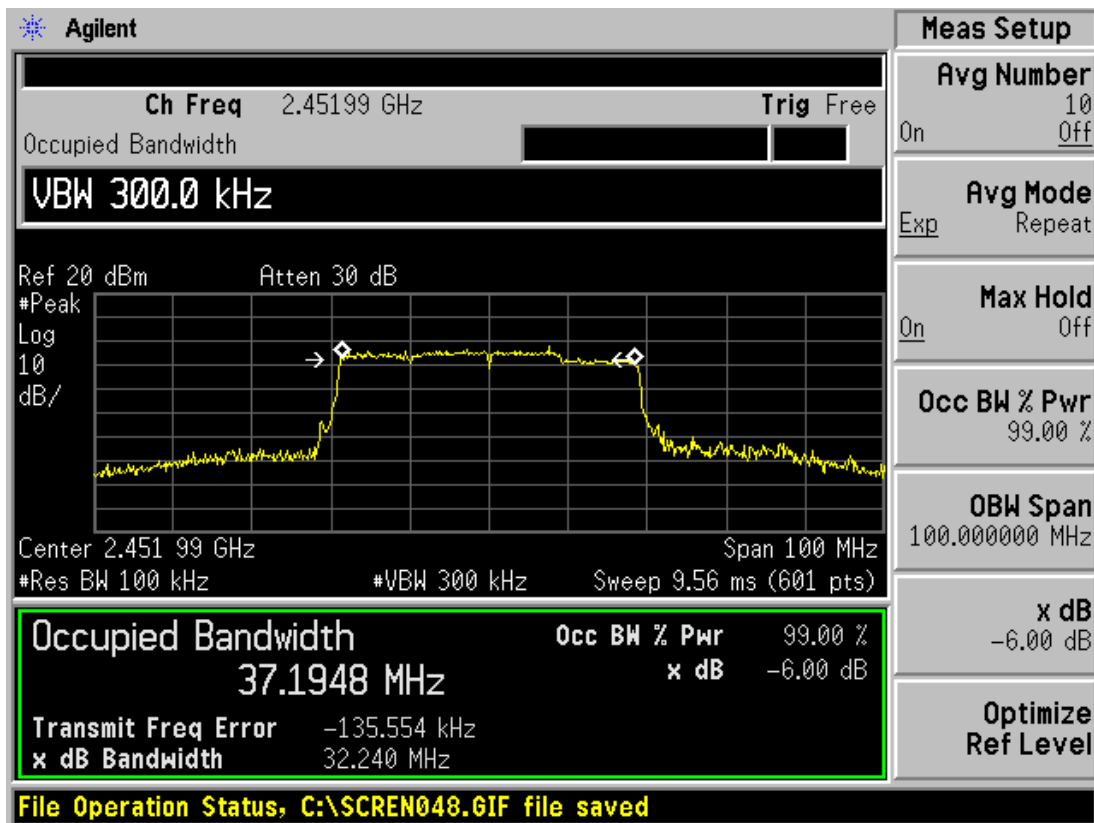
TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RZA1110-1740RF03R1

Page 19 of 128



802.11n, CH 6



802.11n, CH 9

TA Technology (Shanghai) Co., Ltd. Test Report

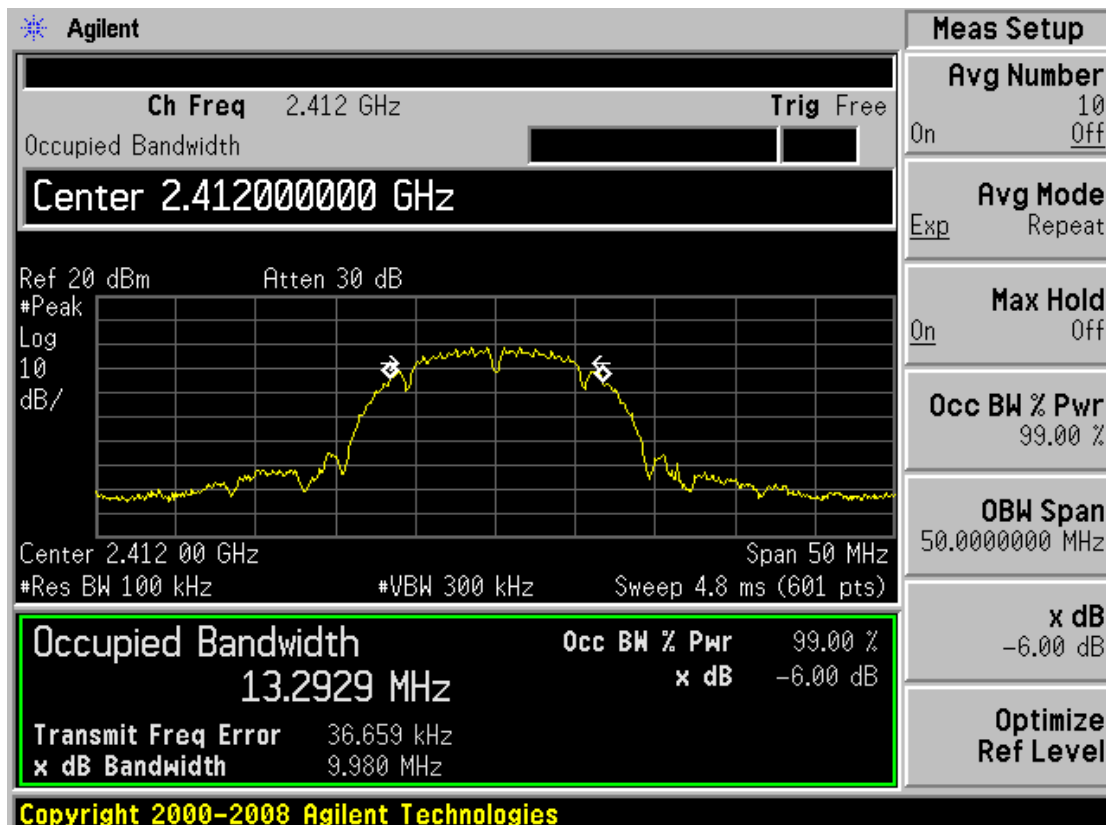
Report No.: RZA1110-1740RF03R1

Page 20 of 128

WAN 1

Network Standards	Channel Number	Minimum 6 dB bandwidth (MHz)	Conclusion
802.11b	1	9.980	PASS
	6	9.979	PASS
	11	9.974	PASS
802.11g	1	16.638	PASS
	6	16.620	PASS
	11	16.642	PASS
802.11n HT20	1	17.874	PASS
	6	17.888	PASS
	11	17.868	PASS
802.11n HT40	3	36.701	PASS
	6	36.697	PASS
	9	36.733	PASS

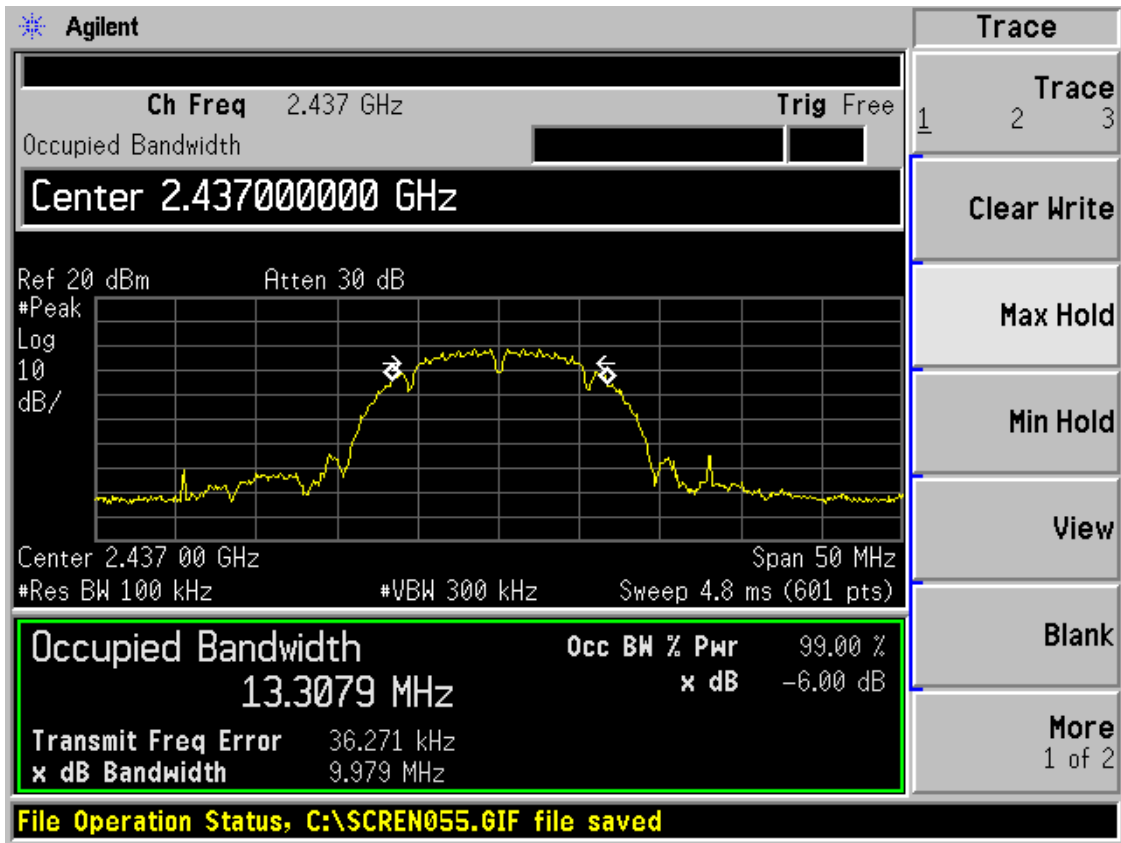
802.11b



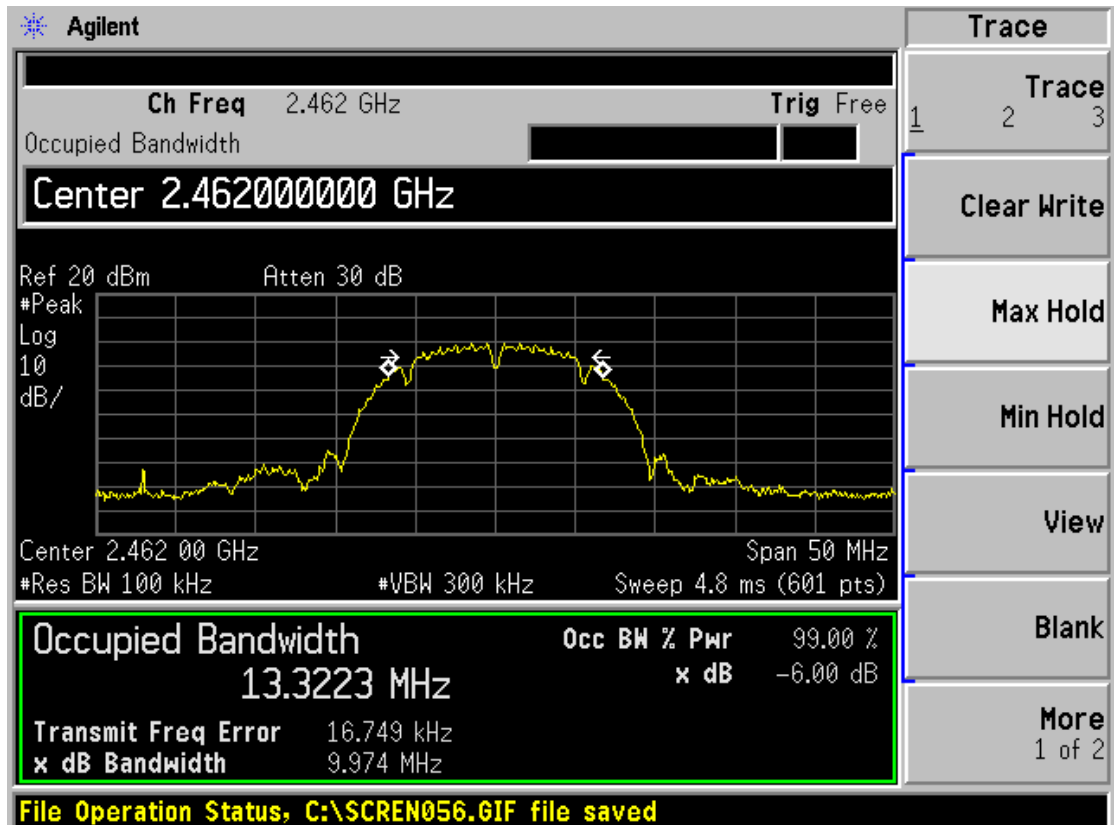
TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RZA1110-1740RF03R1

Page 21 of 128



802.11b, CH 6



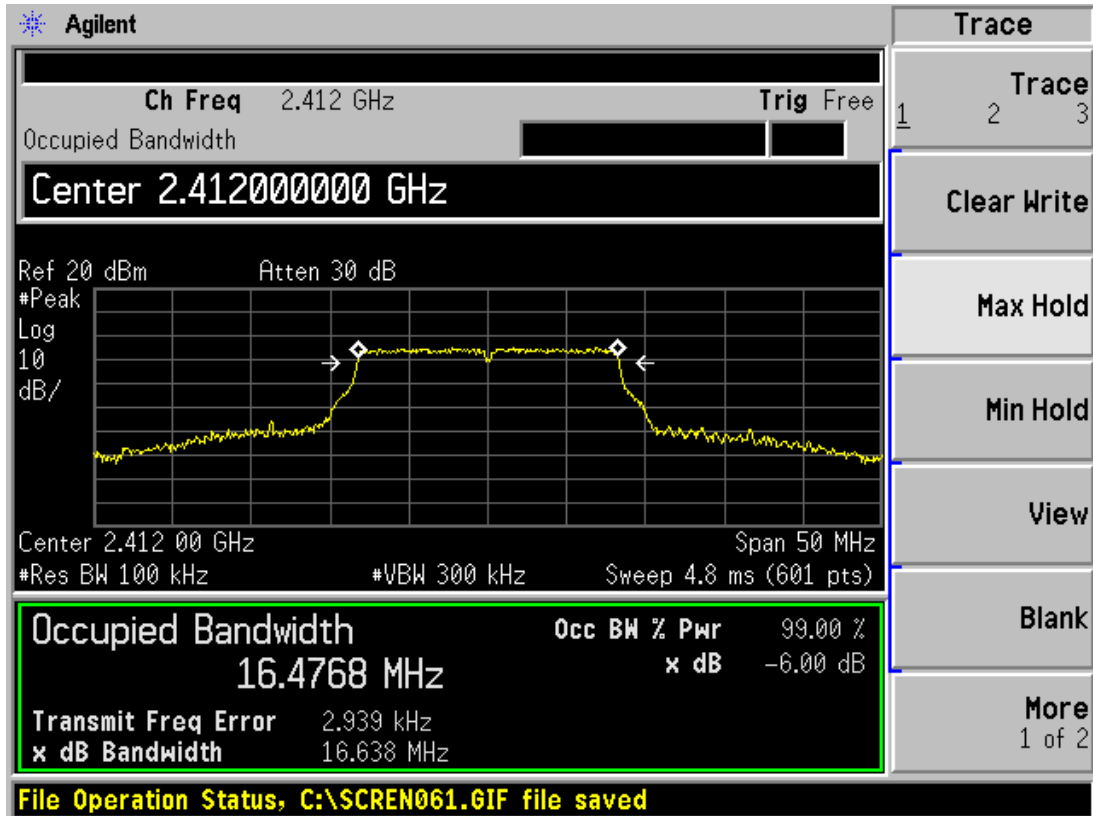
802.11b, CH 11

TA Technology (Shanghai) Co., Ltd. Test Report

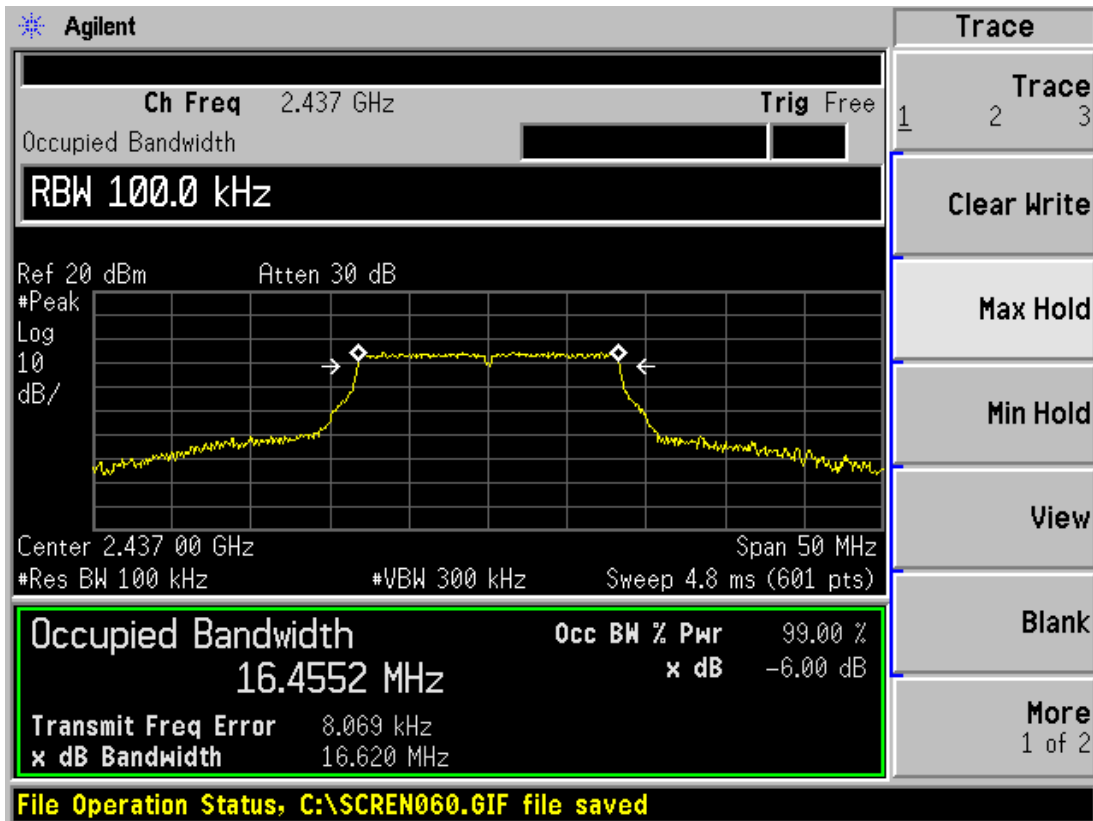
Report No.: RZA1110-1740RF03R1

Page 22of 128

802.11g



802.11g, CH 1

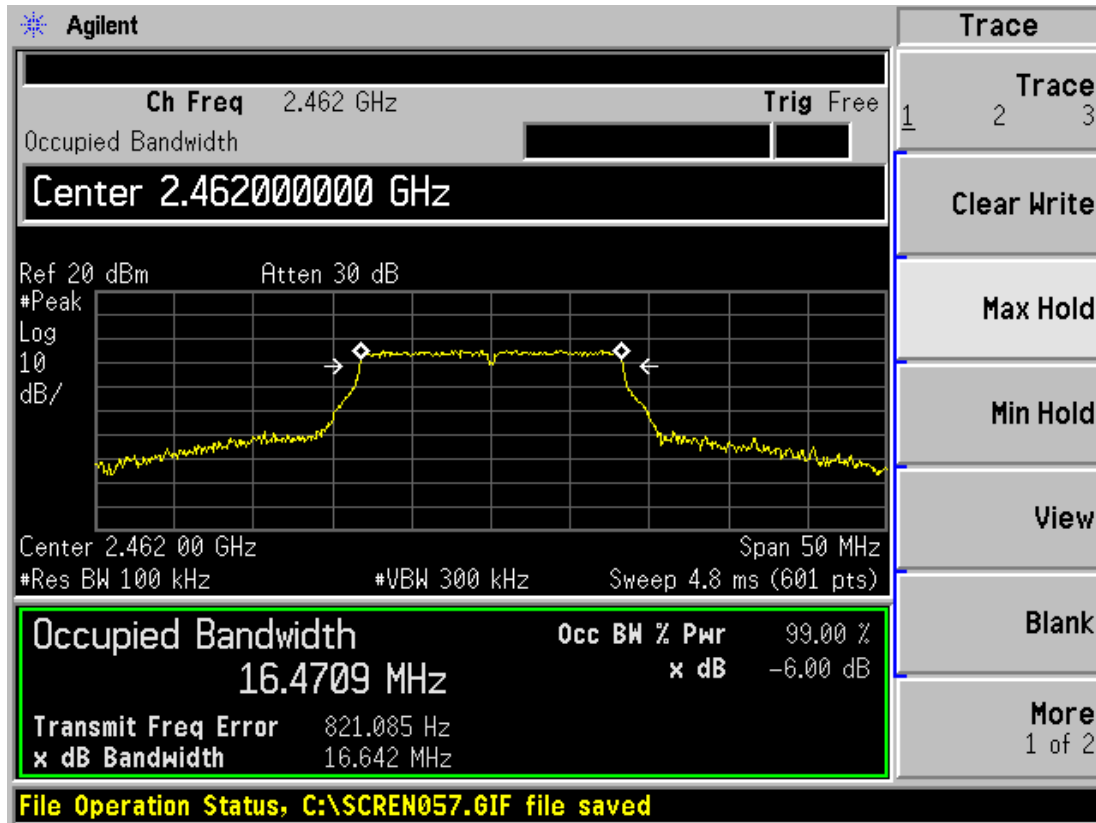


802.11g, CH 6

TA Technology (Shanghai) Co., Ltd. Test Report

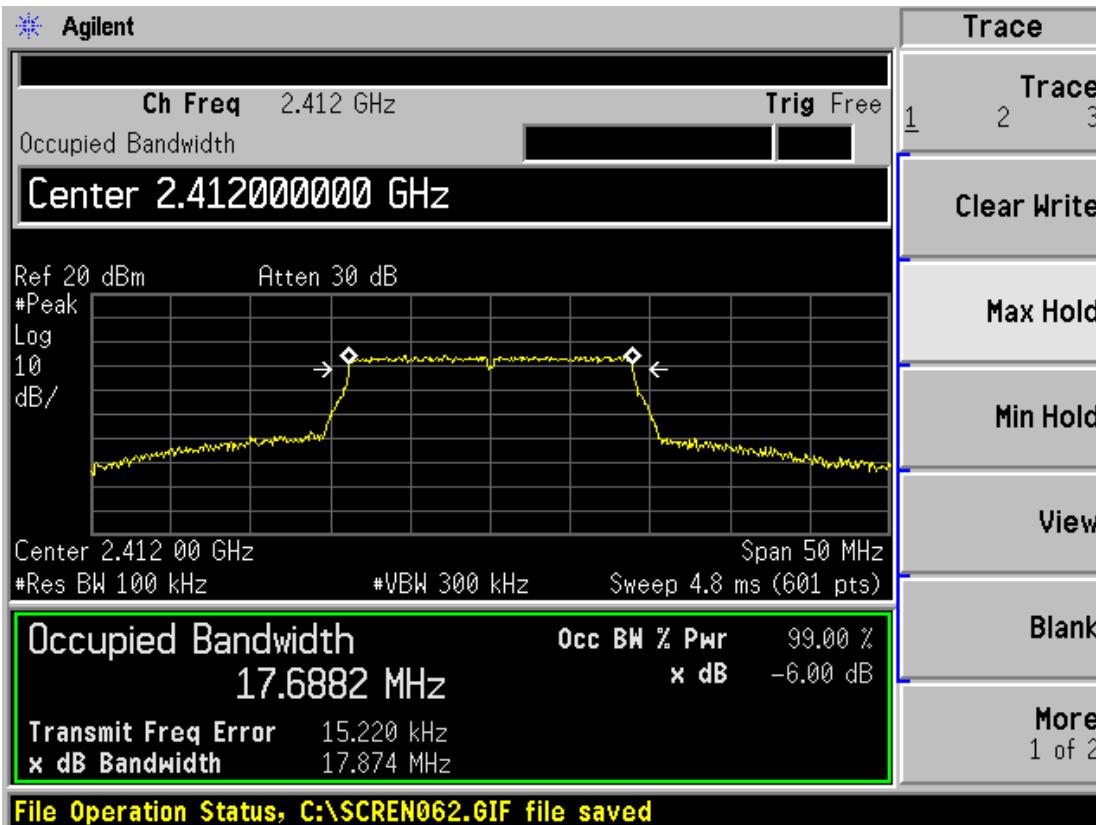
Report No.: RZA1110-1740RF03R1

Page 23of 128



802.11g, CH 11

802.11n(HT20)

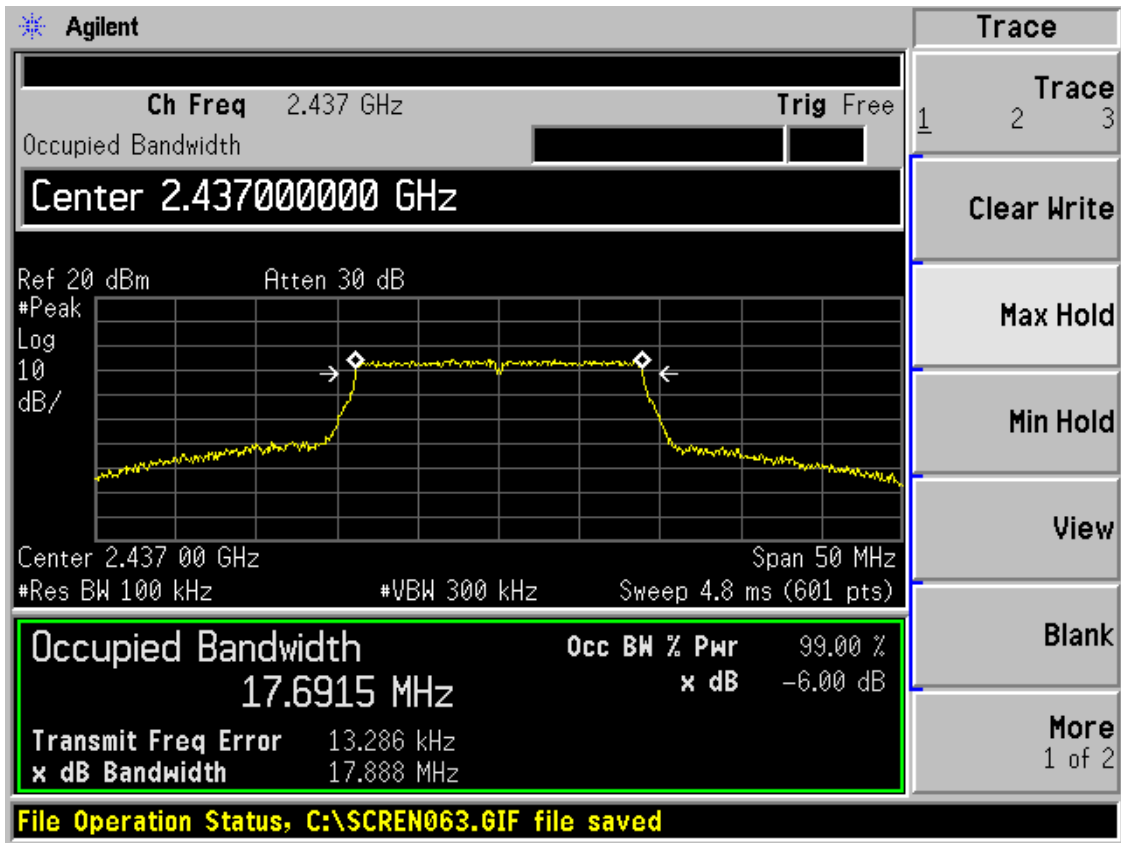


802.11n, CH 1

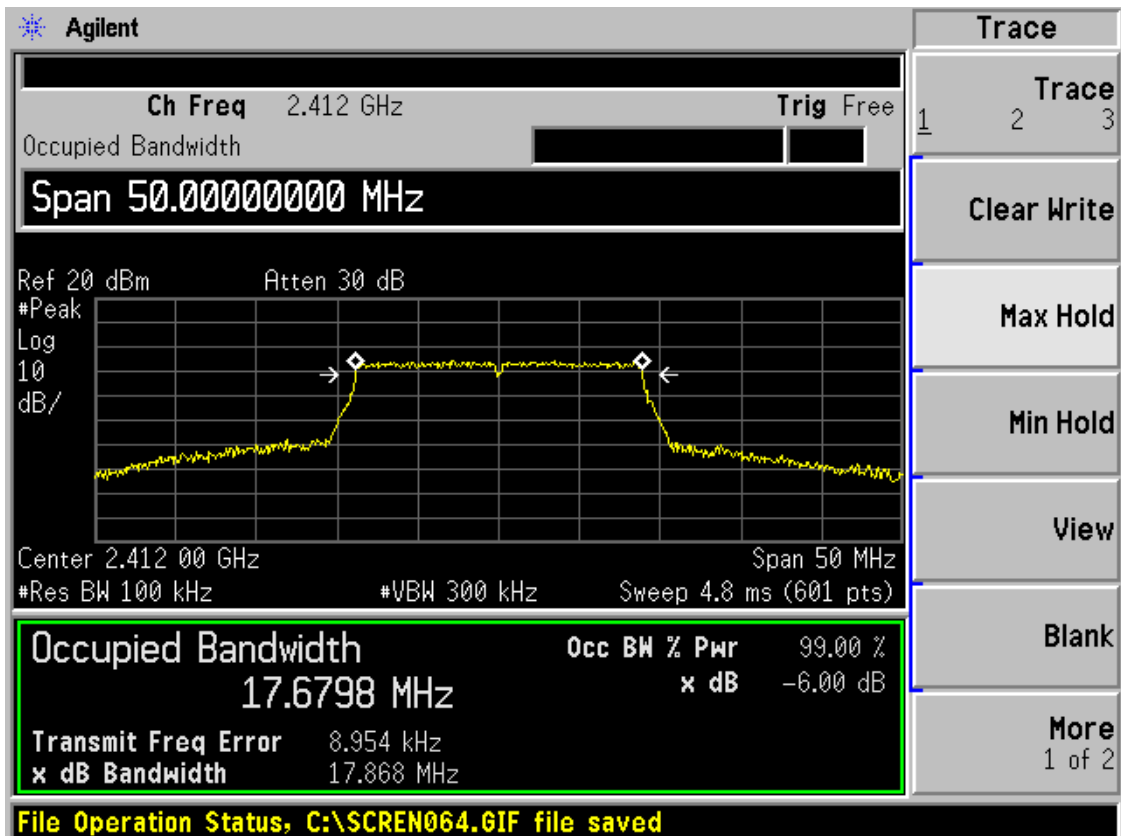
TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RZA1110-1740RF03R1

Page 24 of 128



802.11n, CH 6



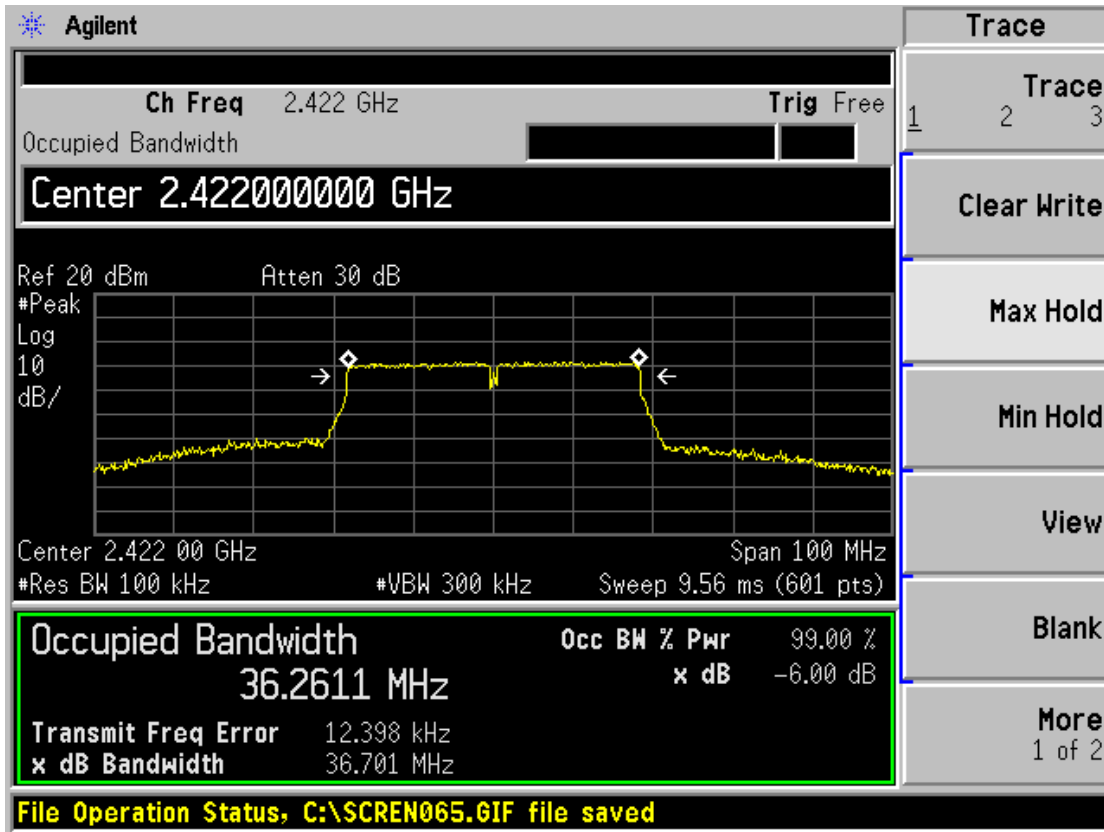
802.11n, CH 11

TA Technology (Shanghai) Co., Ltd. Test Report

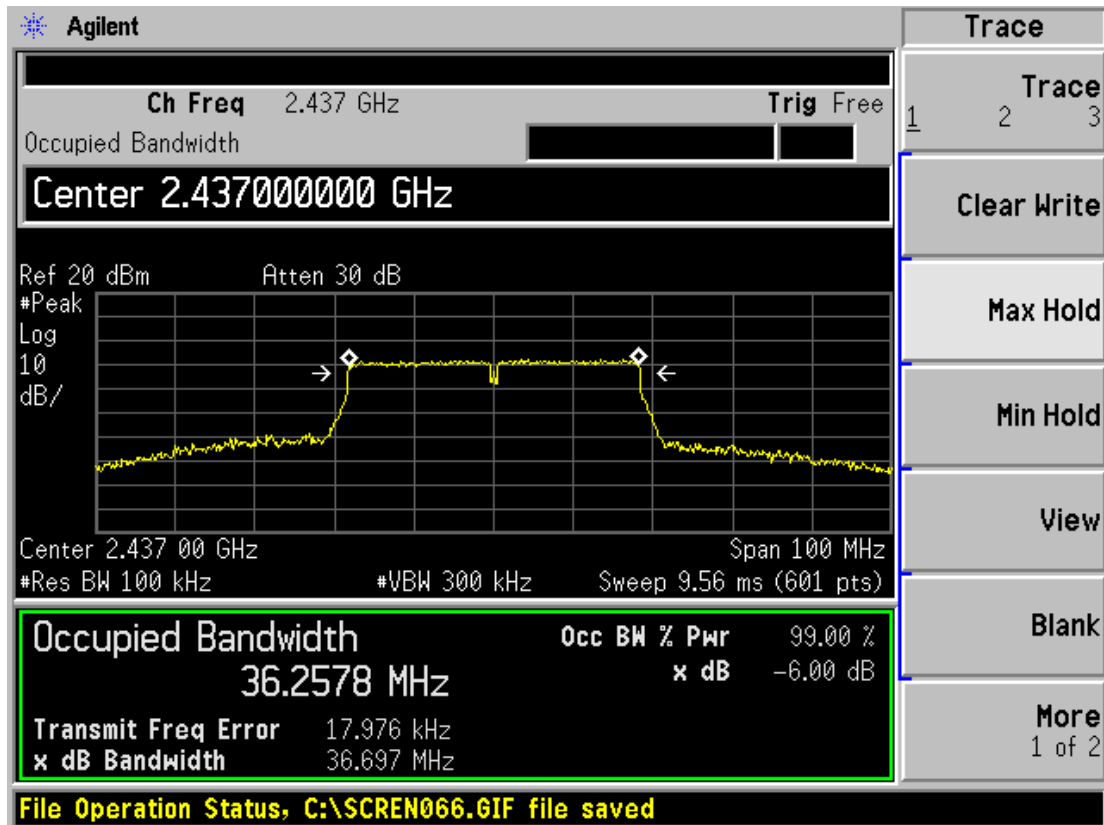
Report No.: RZA1110-1740RF03R1

Page 25 of 128

802.11n(HT40)



802.11n, CH 3

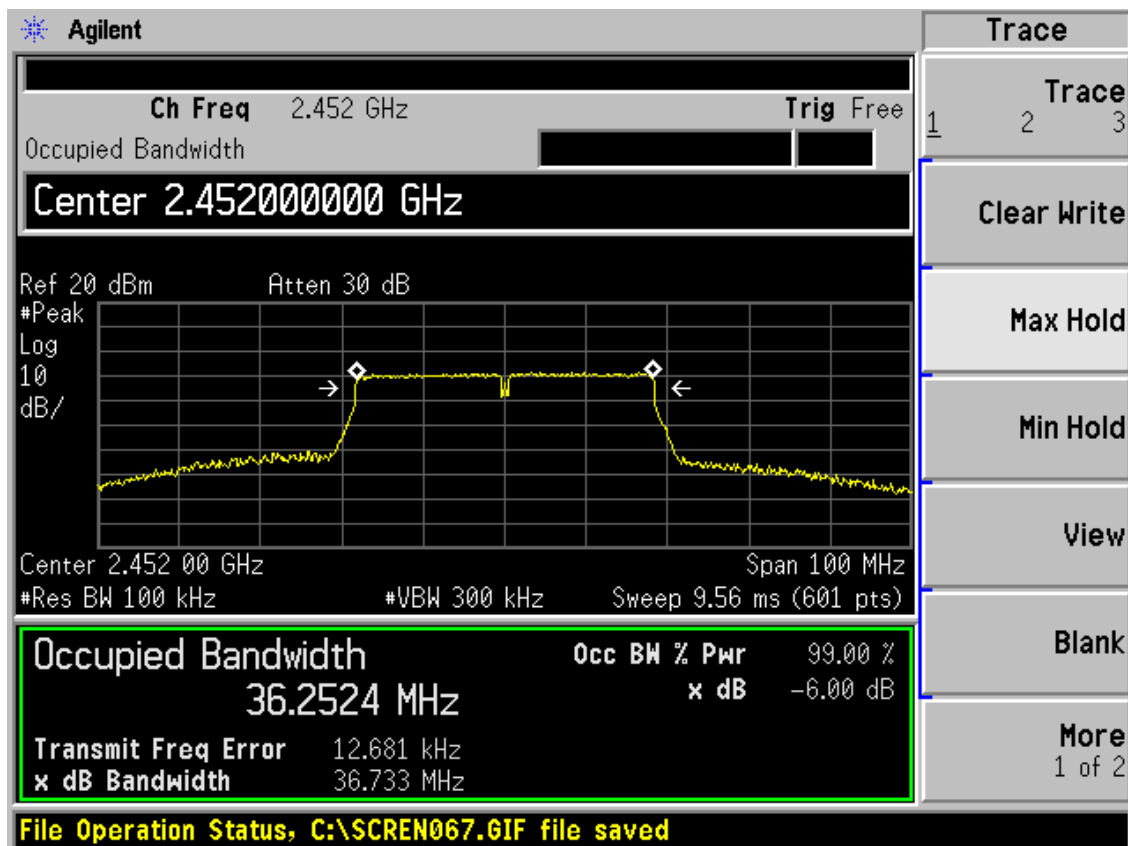


802.11n, CH 6

TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RZA1110-1740RF03R1

Page 26 of 128



802.11n, CH 9

2.4. Band Edge Compliance

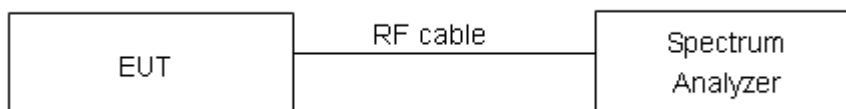
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable the band edge of the lowest and highest channels were measured. The peak detector is used and RBW is set to 100kHz and VBW is set to 300kHz on spectrum analyzer. Spectrum analyzer plots are included on the following pages.

Test Setup



Limits

Rule Part 15.247(d) specifies that “In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.”

Limit	≥ 20 dB
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Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

Frequency	Uncertainty
2GHz-3GHz	1.407 dB

TA Technology (Shanghai) Co., Ltd. Test Report

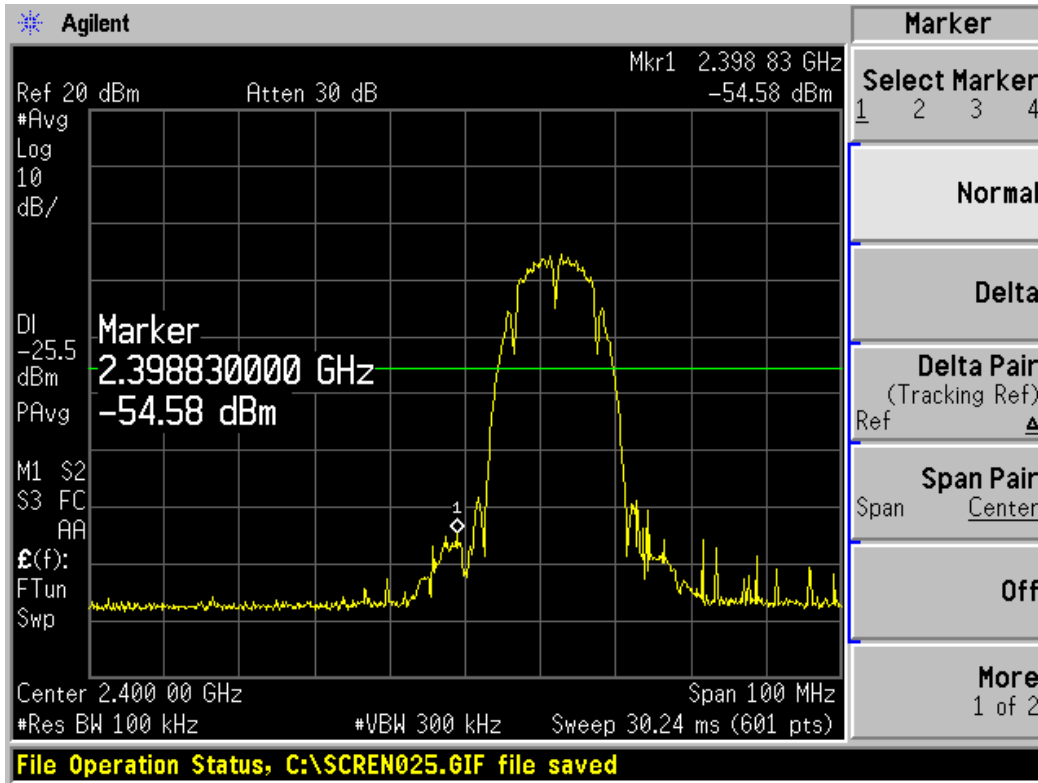
Report No.: RZA1110-1740RF03R1

Page 28of 128

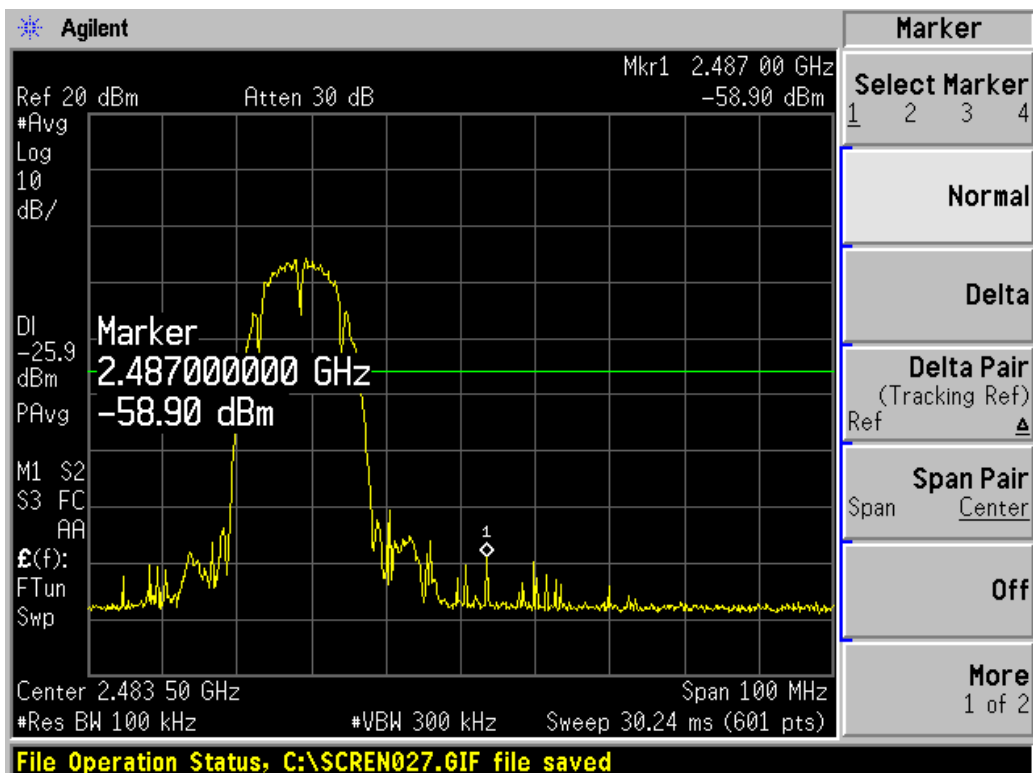
Test Results: PASS

WAN 0

802.11b



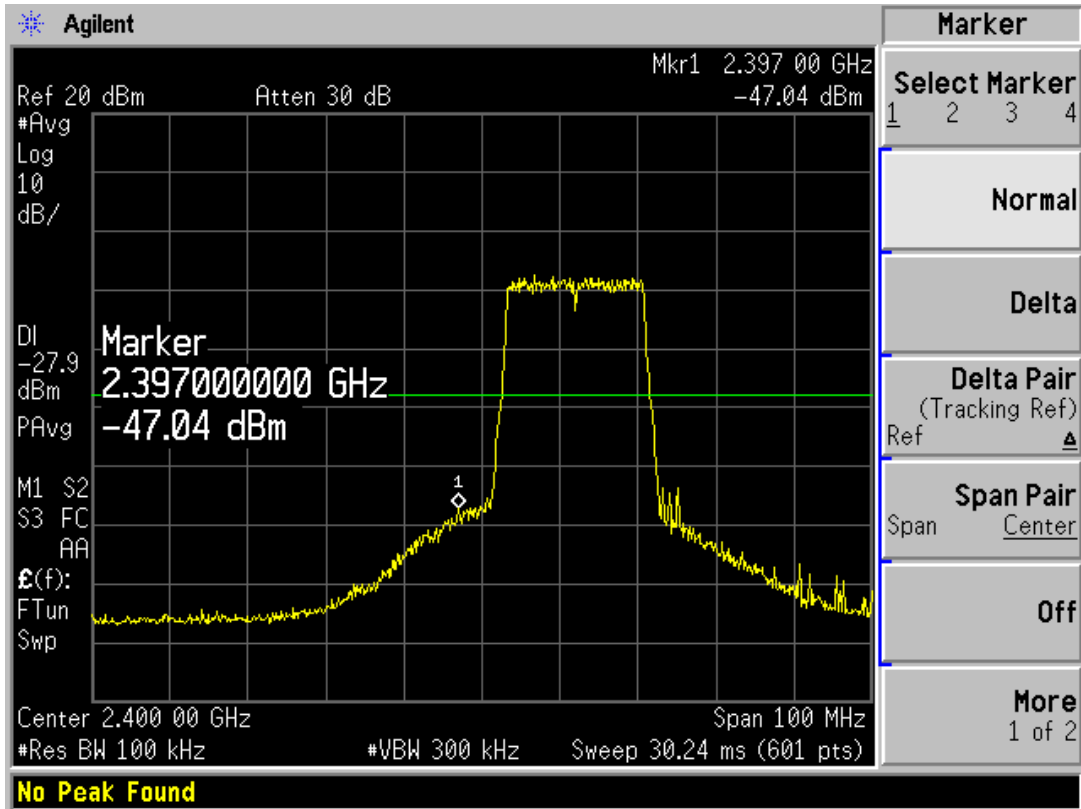
802.11b, Channel No.: 1



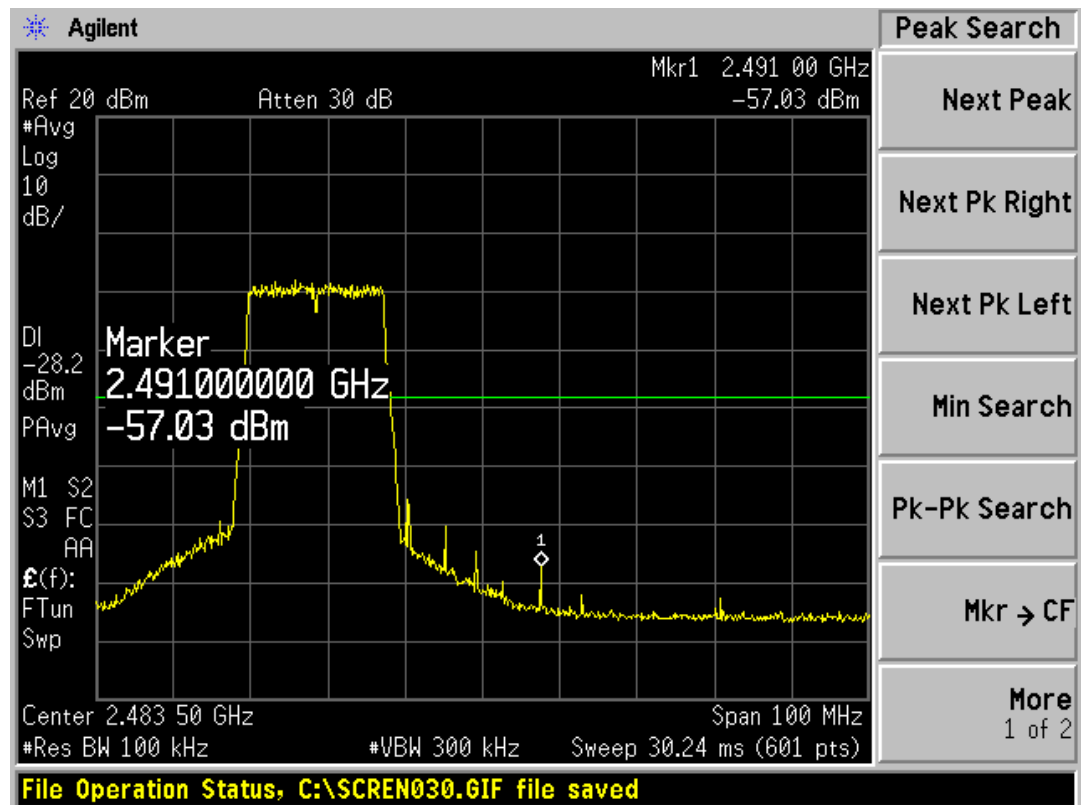
802.11b, Channel No.: 11

TA Technology (Shanghai) Co., Ltd. Test Report

802.11n(HT20)



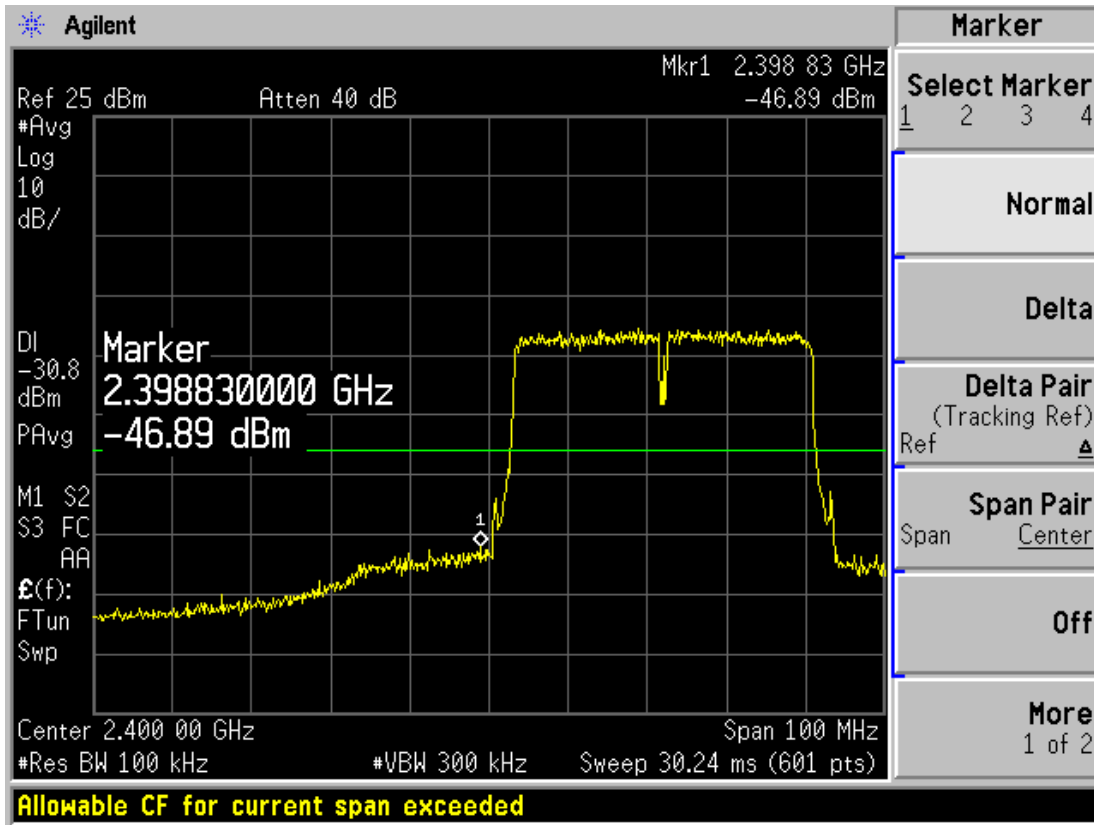
802.11n, Channel No.: 1



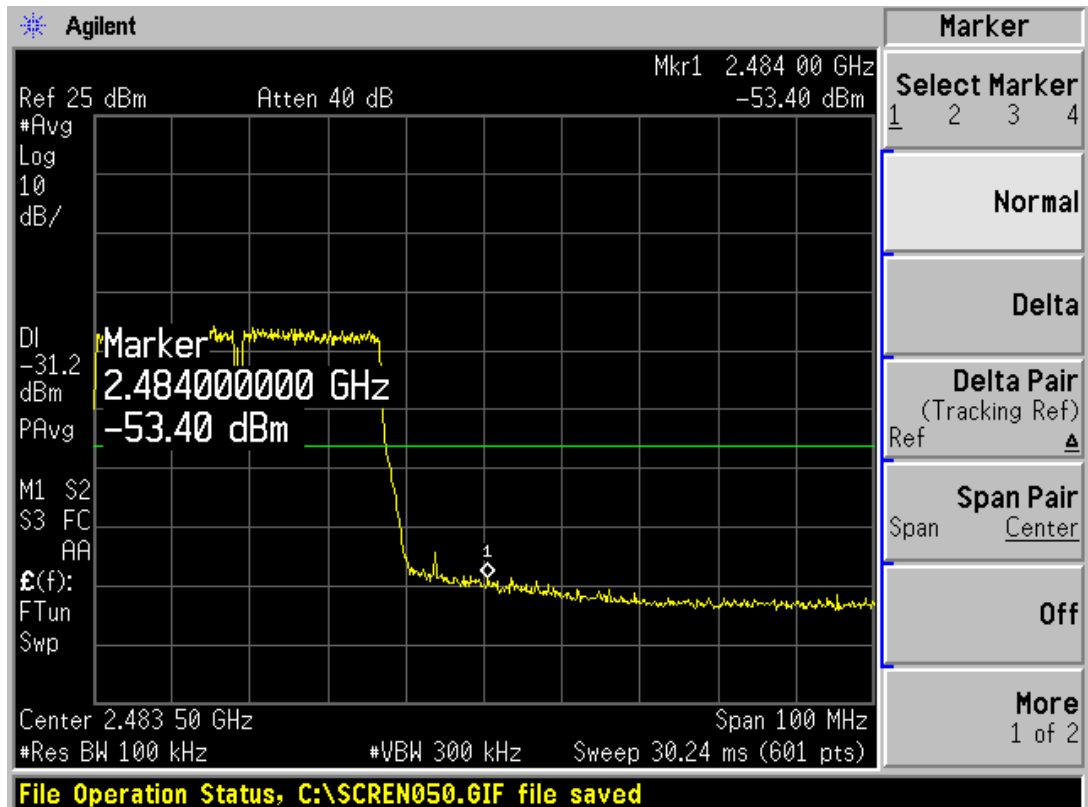
802.11n, Channel No.: 11

TA Technology (Shanghai) Co., Ltd. Test Report

802.11n(HT40)



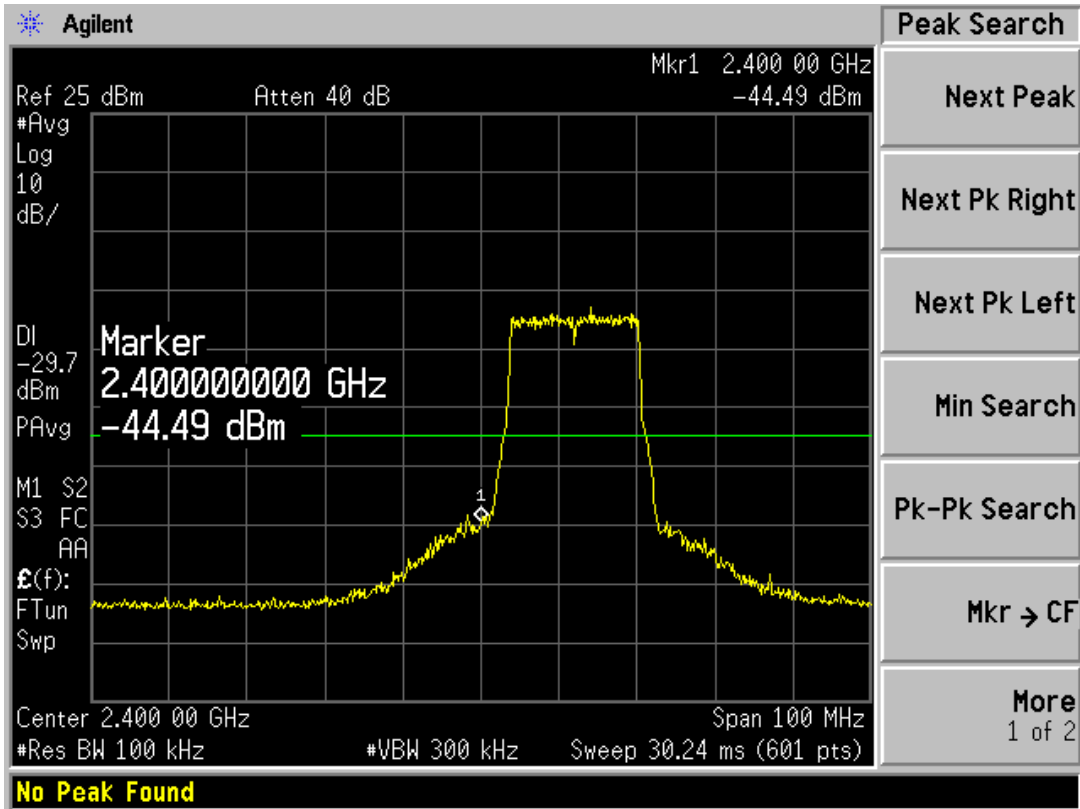
802.11n, Channel No.: 3



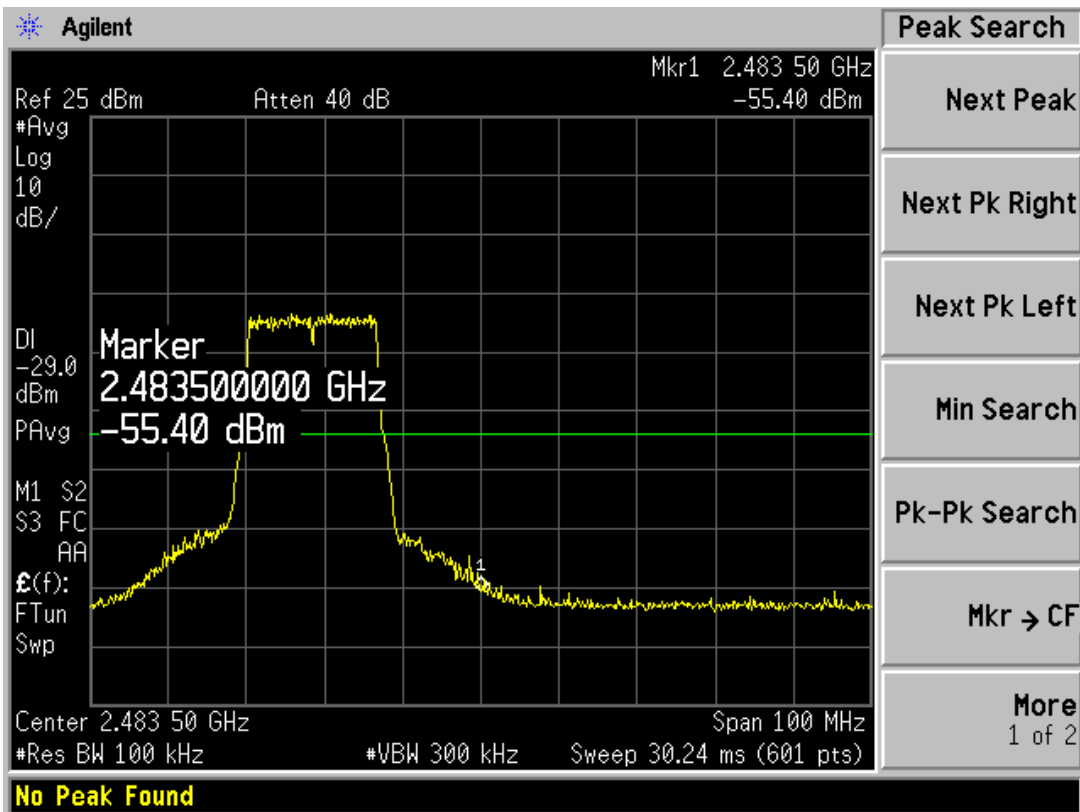
802.11n, Channel No.: 9

TA Technology (Shanghai) Co., Ltd. Test Report

802.11g



802.11g, Channel No.: 1



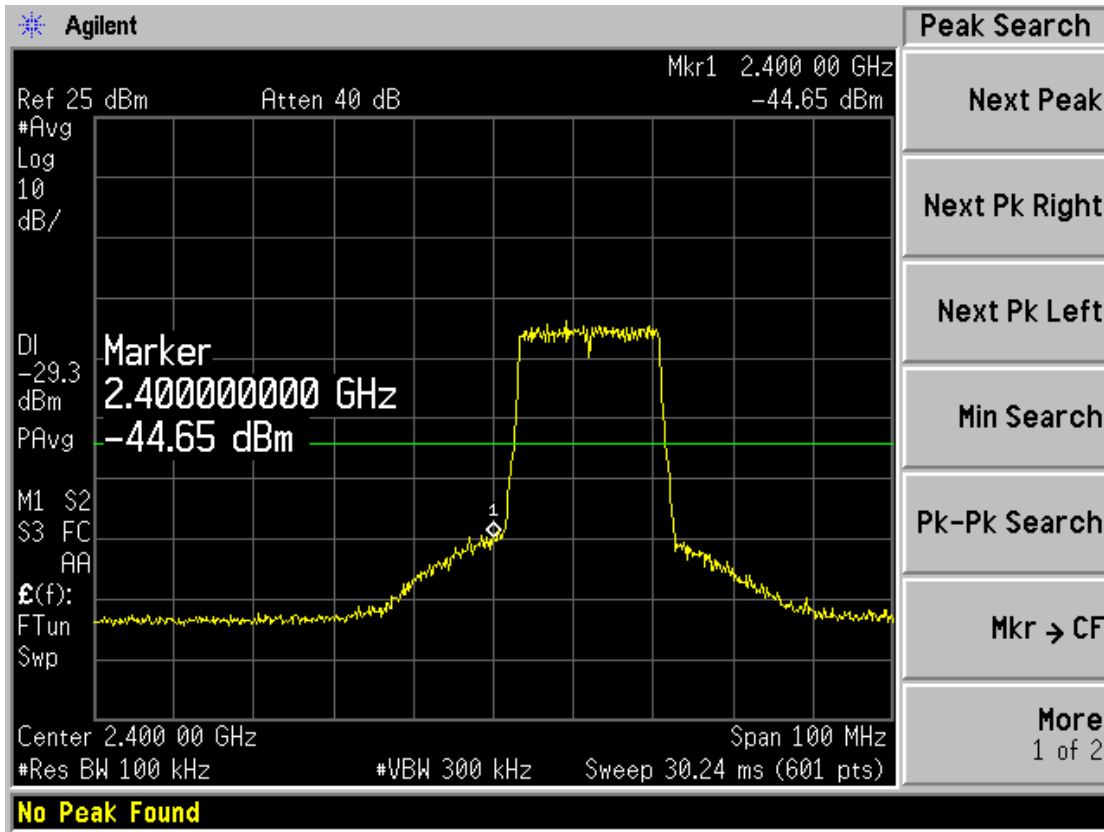
802.11g, Channel No.: 11

TA Technology (Shanghai) Co., Ltd. Test Report

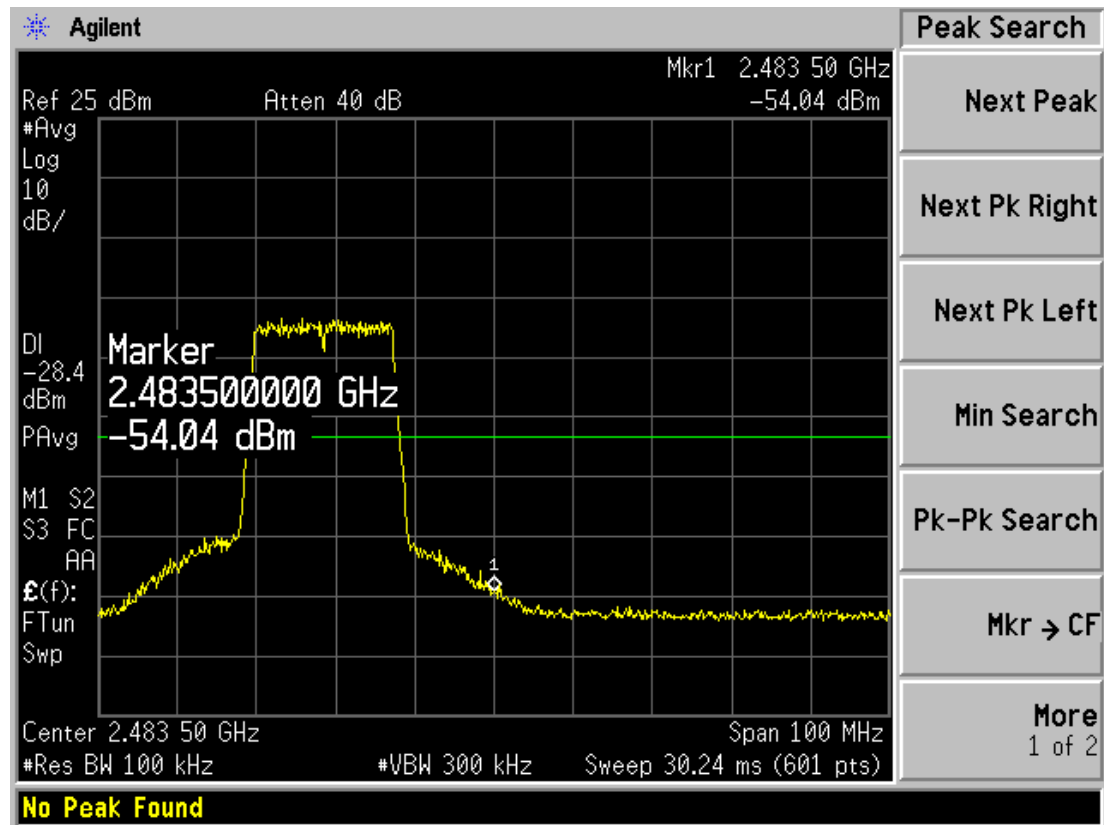
Report No.: RZA1110-1740RF03R1

Page 34 of 128

802.11n(HT20)



802.11n, Channel No.: 1



802.11n, Channel No.: 11

2.5. Spurious Radiated Emissions in the restricted band

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. RBW is set to 100kHz. The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.

Set the spectrum analyzer in the following:

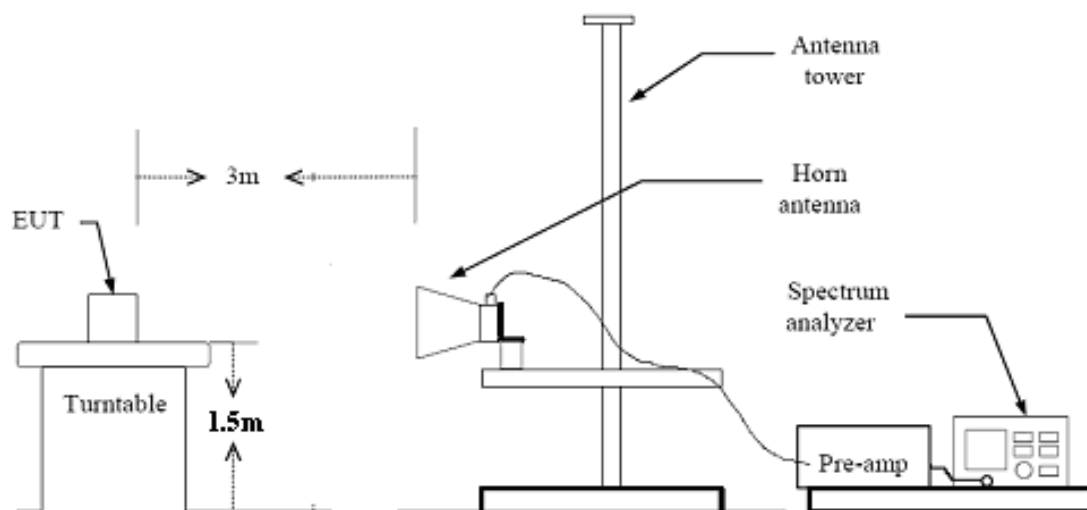
- (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
- (b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO

This setting method can refer to **KDB 558074**.

EUT in Z-axis orientation is the worst case, the test is only for this case.

The test is in transmit mode.

Test setup



TA Technology (Shanghai) Co., Ltd. Test Report

Limits

Spurious Radiated Emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)
13.36 - 13.41			

Limit in restricted band

Frequency of emission (MHz)	Field strength(uV/m)	Field strength(dBuV/m)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above960	500	54

§15.35(b)

There is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

Peak Limit=74 dBuV/m

Average Limit=54 dBuV/m

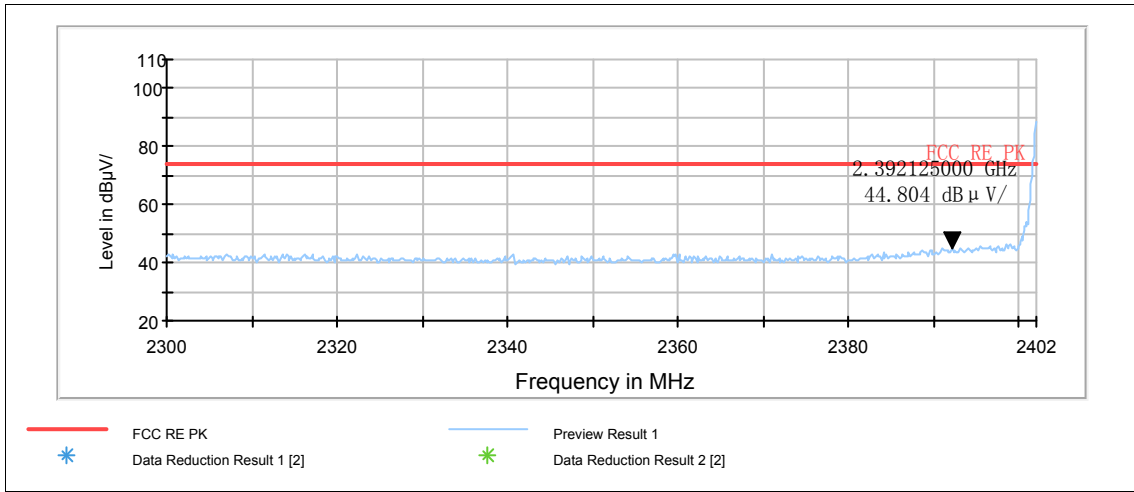
Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$, $U = 3.55$ dB.

Test Results: PASS

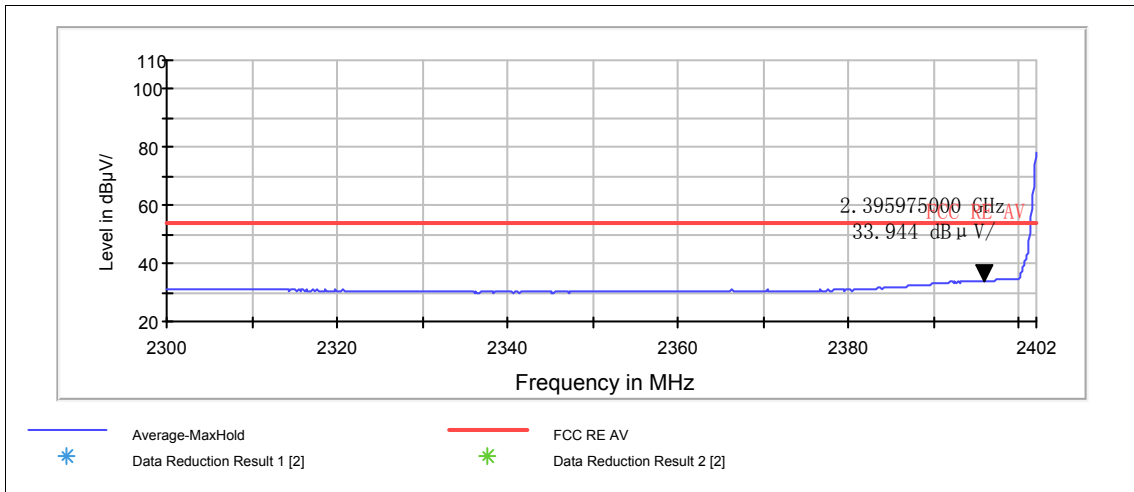
802.11b-Channel 1:

Peak



Note: The signal beyond the limit is carrier
Channel 1

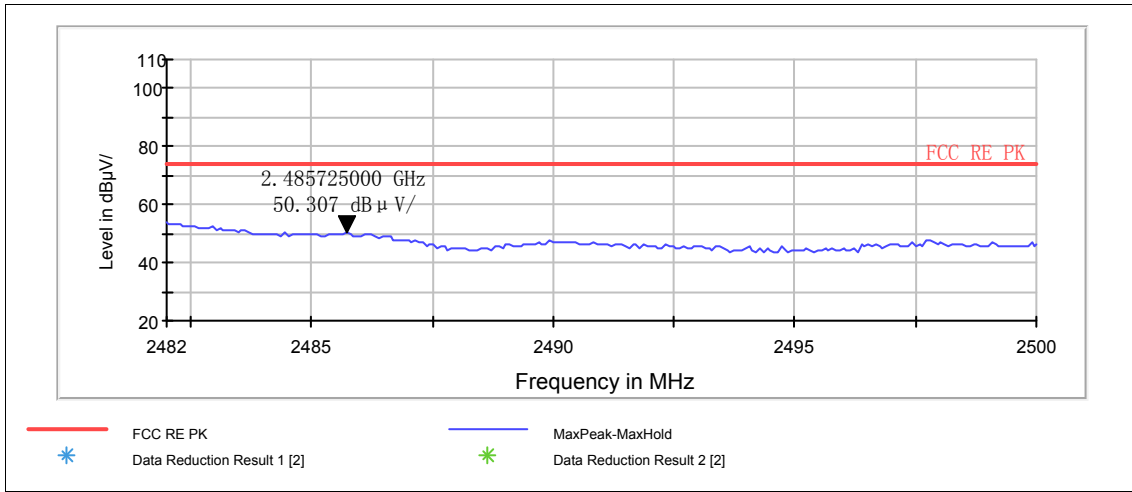
Average



Note: The signal beyond the limit is carrier
Channel 1

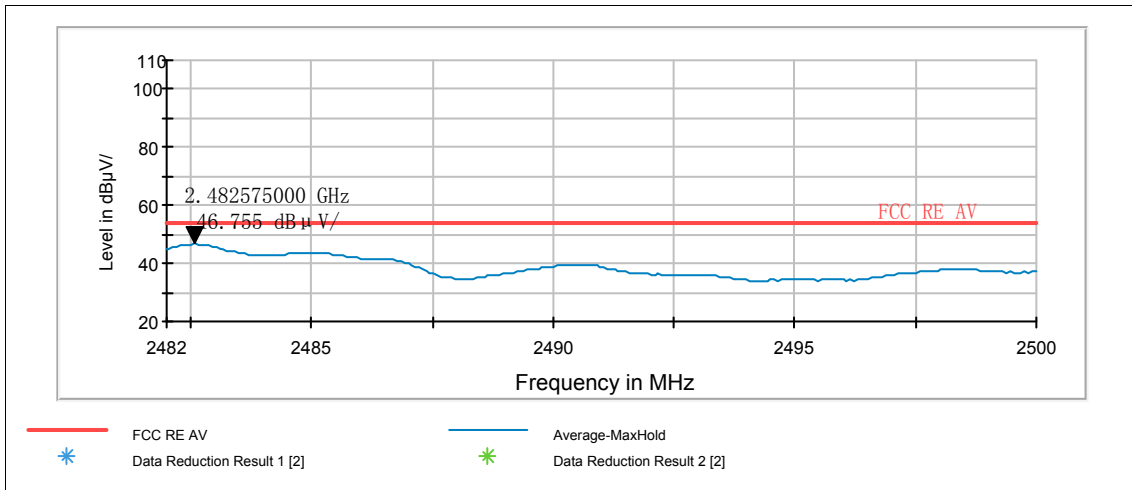
802.11b-Channel 11:

Peak



Note: The signal beyond the limit is carrier
Channel 11

Average

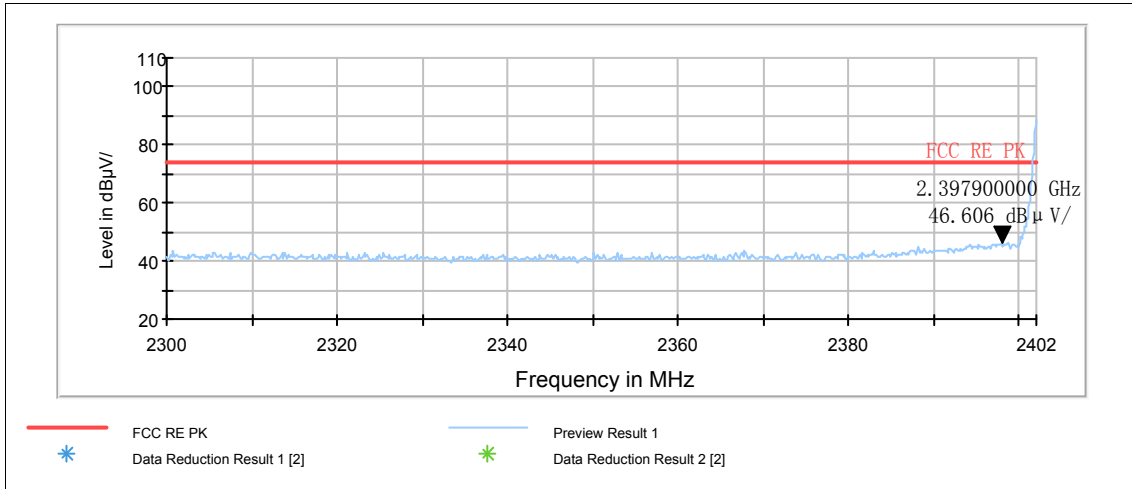


Note: The signal beyond the limit is carrier
Channel 11

TA Technology (Shanghai) Co., Ltd. Test Report

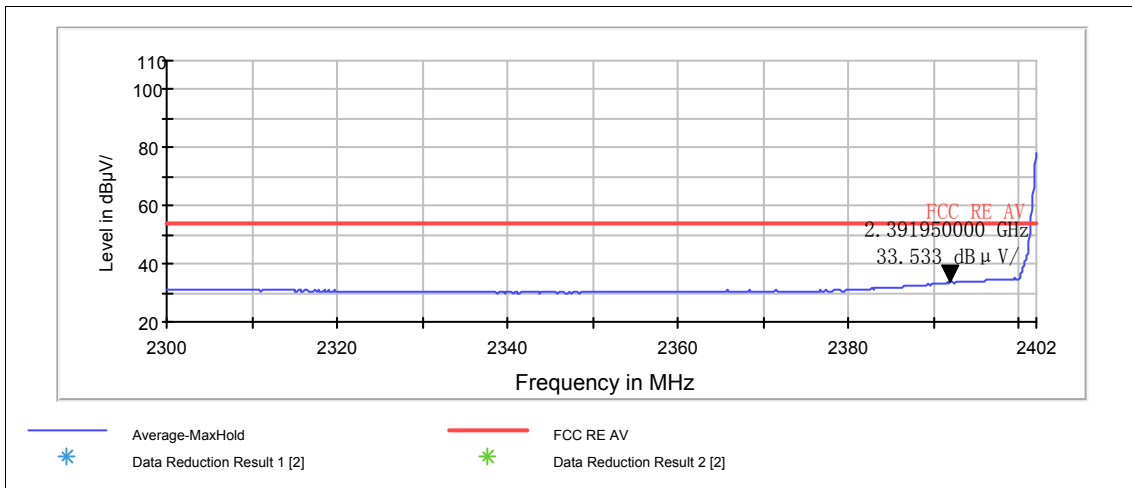
802.11g-Channel 1:

Peak



Note: The signal beyond the limit is carrier
Channel 1

Average

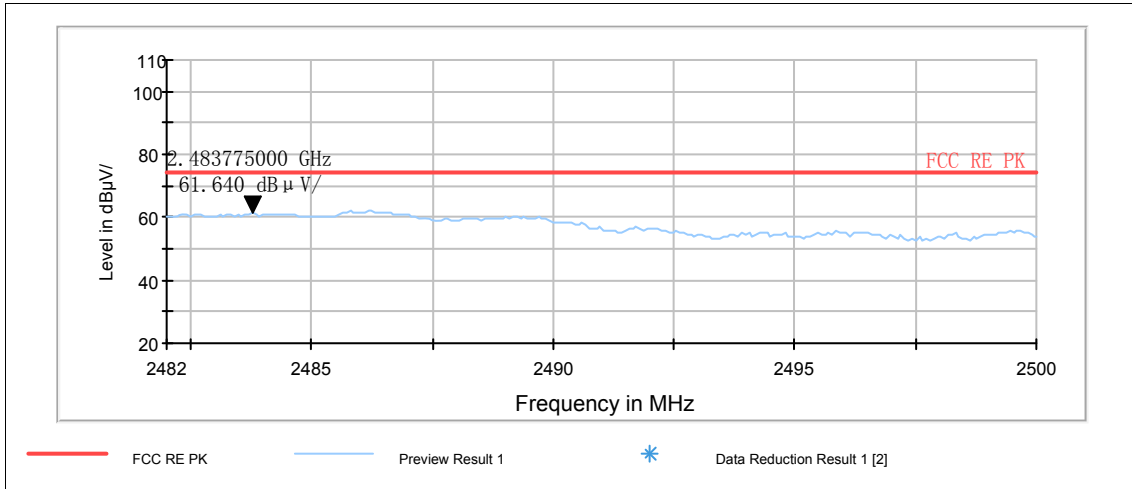


Note: The signal beyond the limit is carrier
Channel 1

TA Technology (Shanghai) Co., Ltd. Test Report

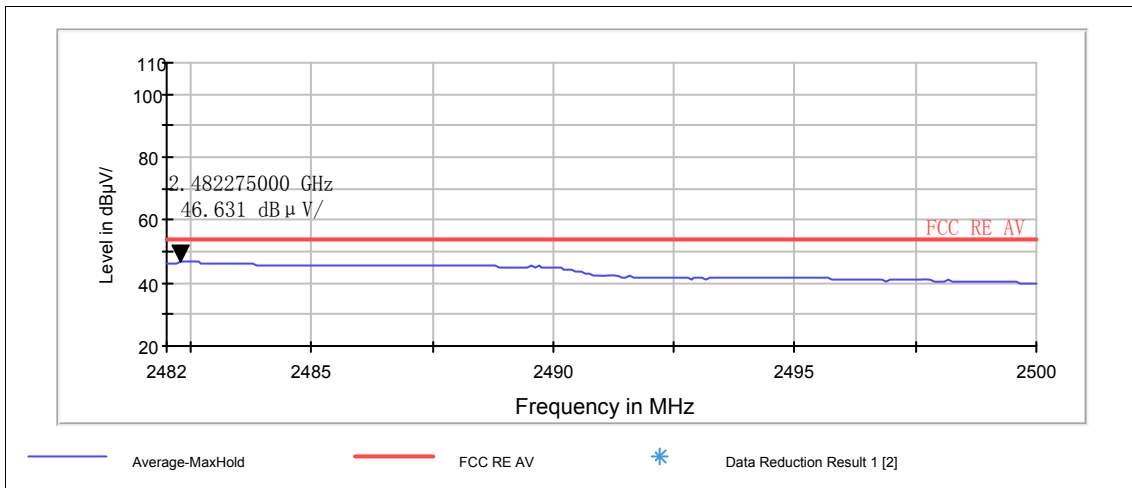
802.11g-Channel 11:

Peak



Note: The signal beyond the limit is carrier
Channel 11

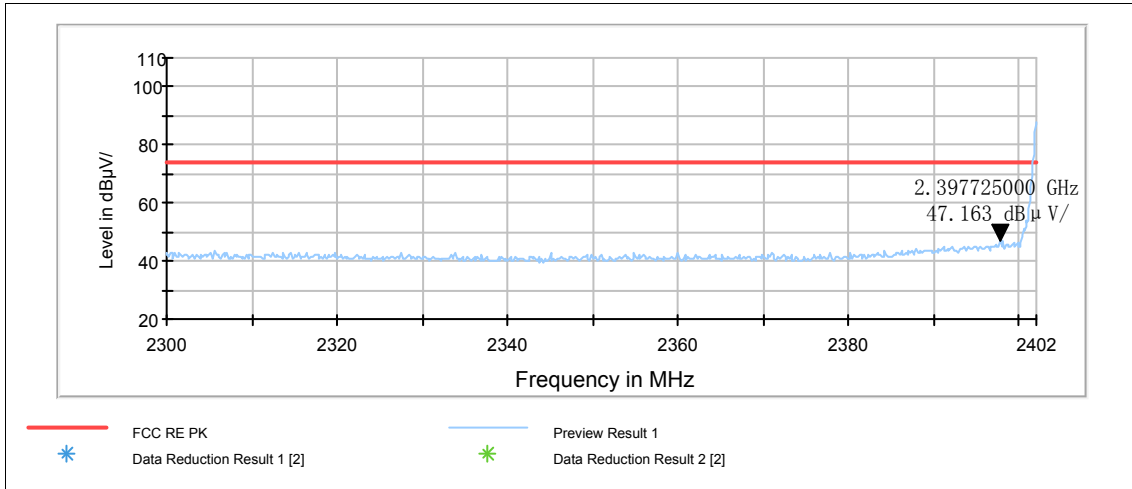
Average



Note: The signal beyond the limit is carrier
Channel 11

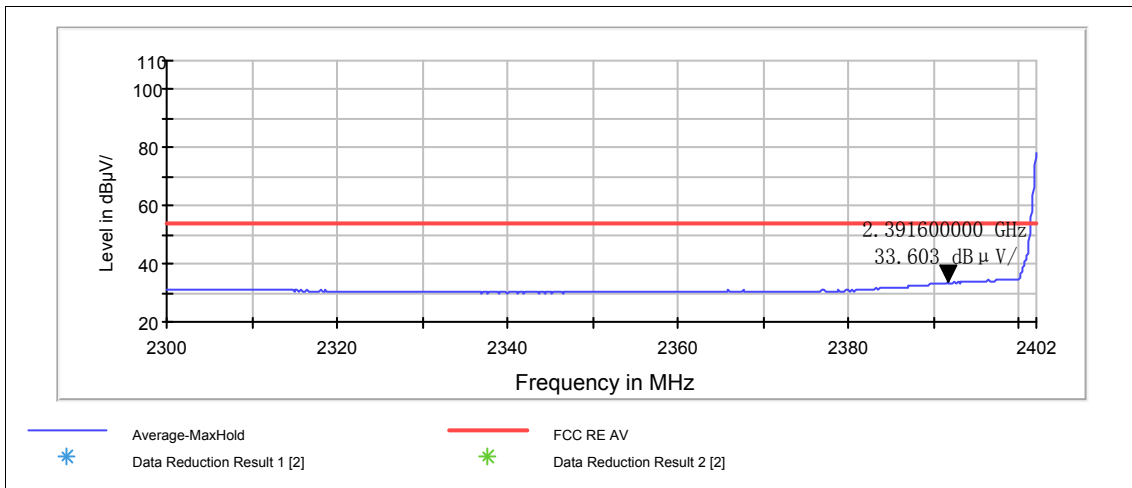
802.11n(HT20)-Channel 1:

Peak



Note: The signal beyond the limit is carrier
Channel 1

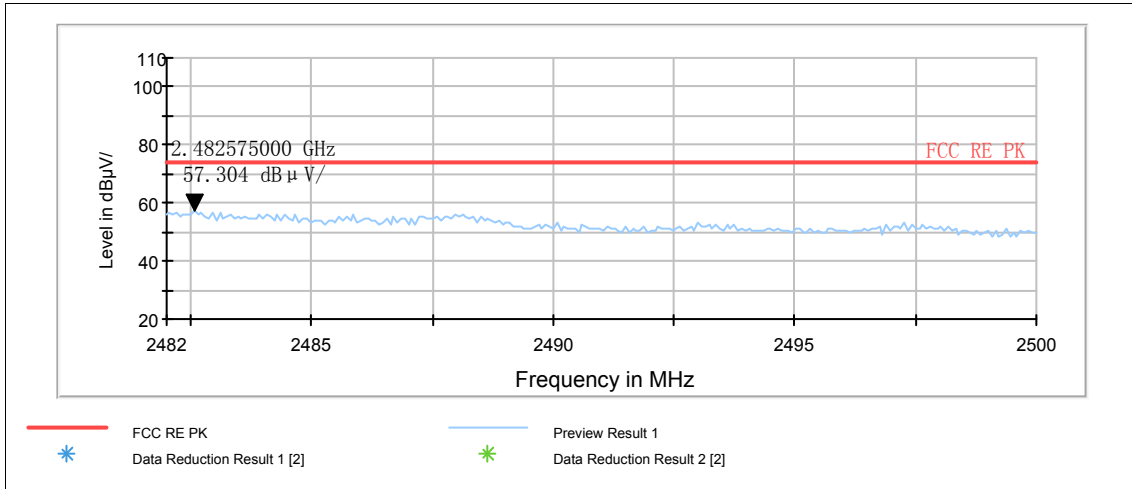
Average



Note: The signal beyond the limit is carrier
Channel 1

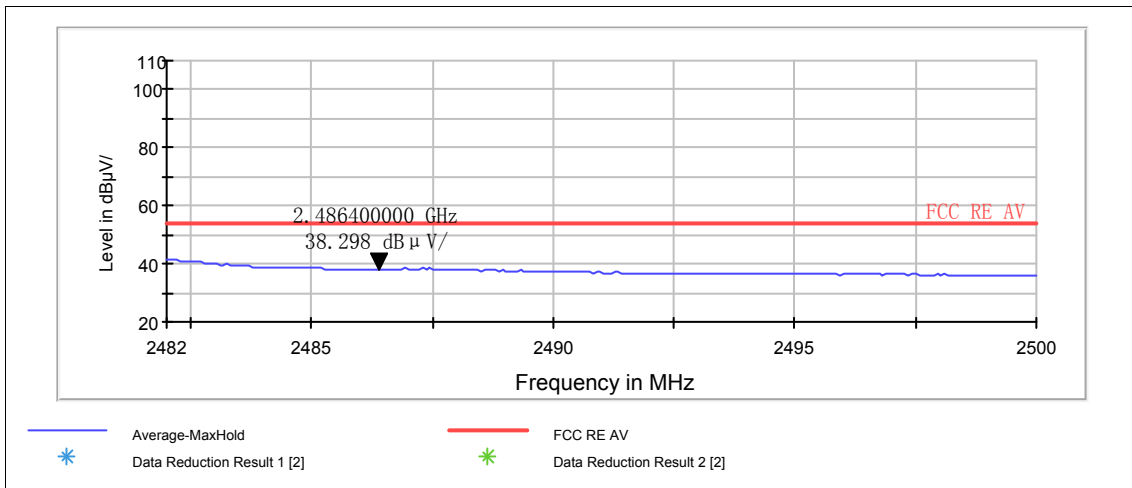
802.11n(HT20)-Channel 11:

Peak



Note: The signal beyond the limit is carrier
Channel 11

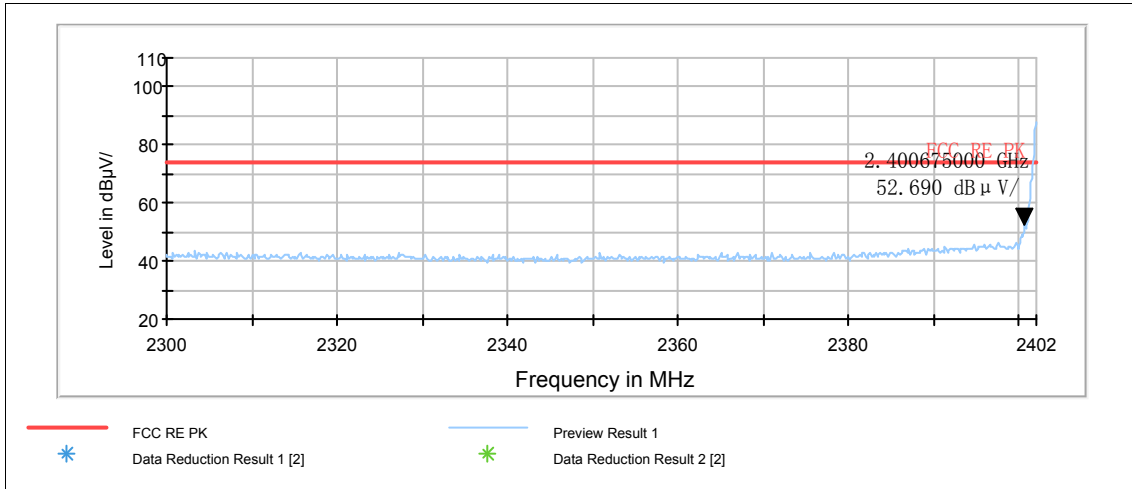
Average



Note: The signal beyond the limit is carrier
Channel 11

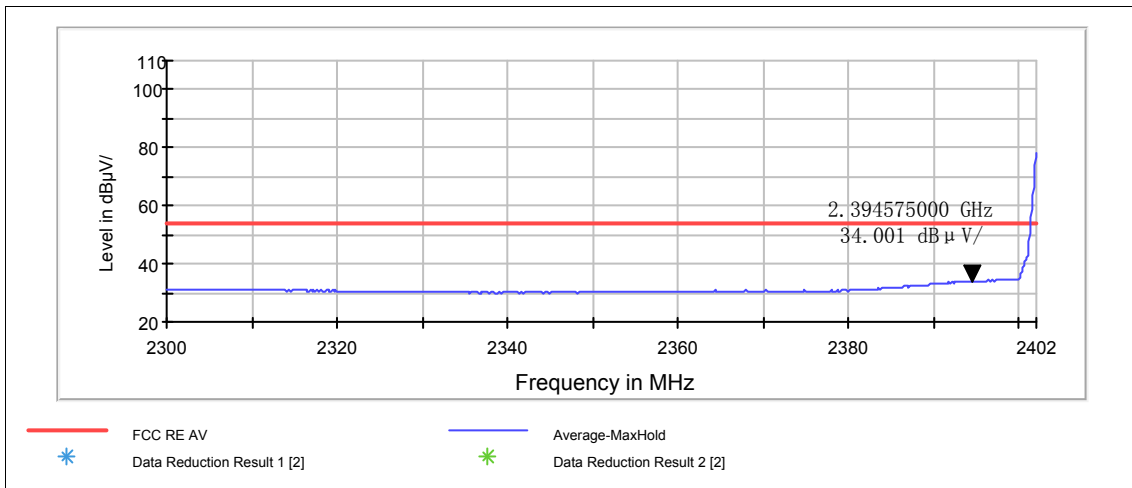
802.11n(HT40)-Channel 3:

Peak



Note: The signal beyond the limit is carrier
Channel 1

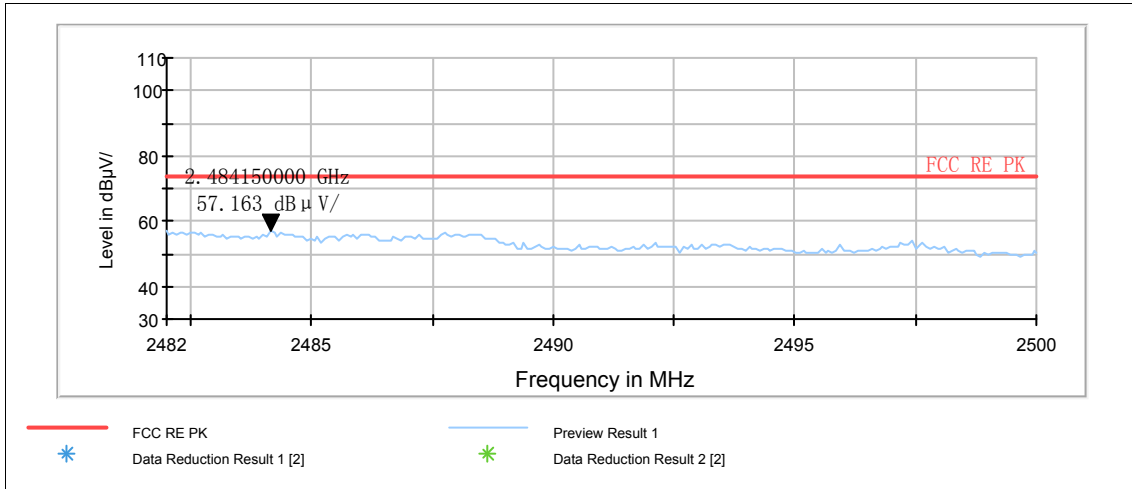
Average



Note: The signal beyond the limit is carrier
Channel 1

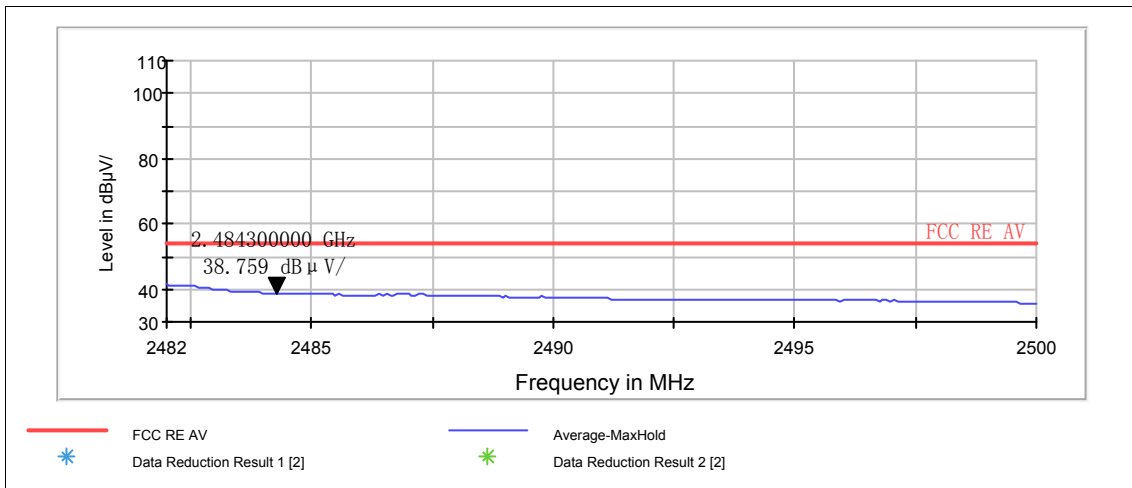
802.11n(HT40)-Channel 9:

Peak



Note: The signal beyond the limit is carrier
Channel 11

Average



Note: The signal beyond the limit is carrier
Channel 11

2.6. Power Spectral Density

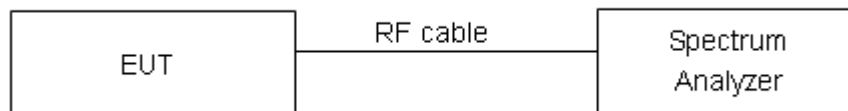
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable. RBW is set to 3kHz and VBW is set to 10kHz on spectrum analyzer. Set the span is 300kHz and the sweep time is 100s. The peak power spectral density is recorded.

Test setup



Limits

Rule Part 15.247(e) specifies that " For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. "

Limits	$\leq 8 \text{ dBm} / 3\text{kHz}$
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Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 0.75\text{dB}$.

TA Technology (Shanghai) Co., Ltd.
Test Report

Report No.: RZA1110-1740RF03R1

Page 47 of 128

Test Results:

WAN 0

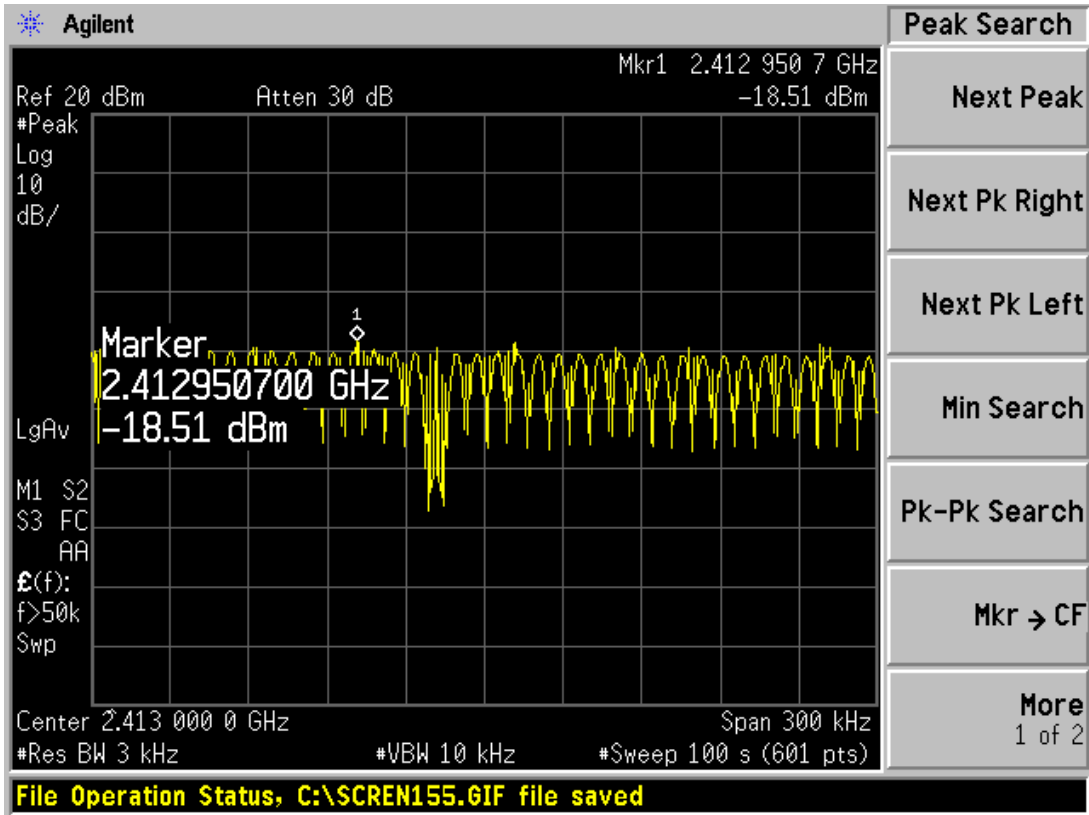
Network Standards	Channal Number	Power Spectral Density dBm / 3kHz	Conclusion
802.11b	1	-18.51	PASS
	6	-18.70	PASS
	11	-19.04	PASS
802.11g	1	-20.14	PASS
	6	-19.85	PASS
	11	-20.55	PASS
802.11n HT20	1	-20.53	PASS
	6	-18.63	PASS
	11	-20.70	PASS
802.11n HT40	3	-21.95	PASS
	6	-21.93	PASS
	9	-23.49	PASS

TA Technology (Shanghai) Co., Ltd. Test Report

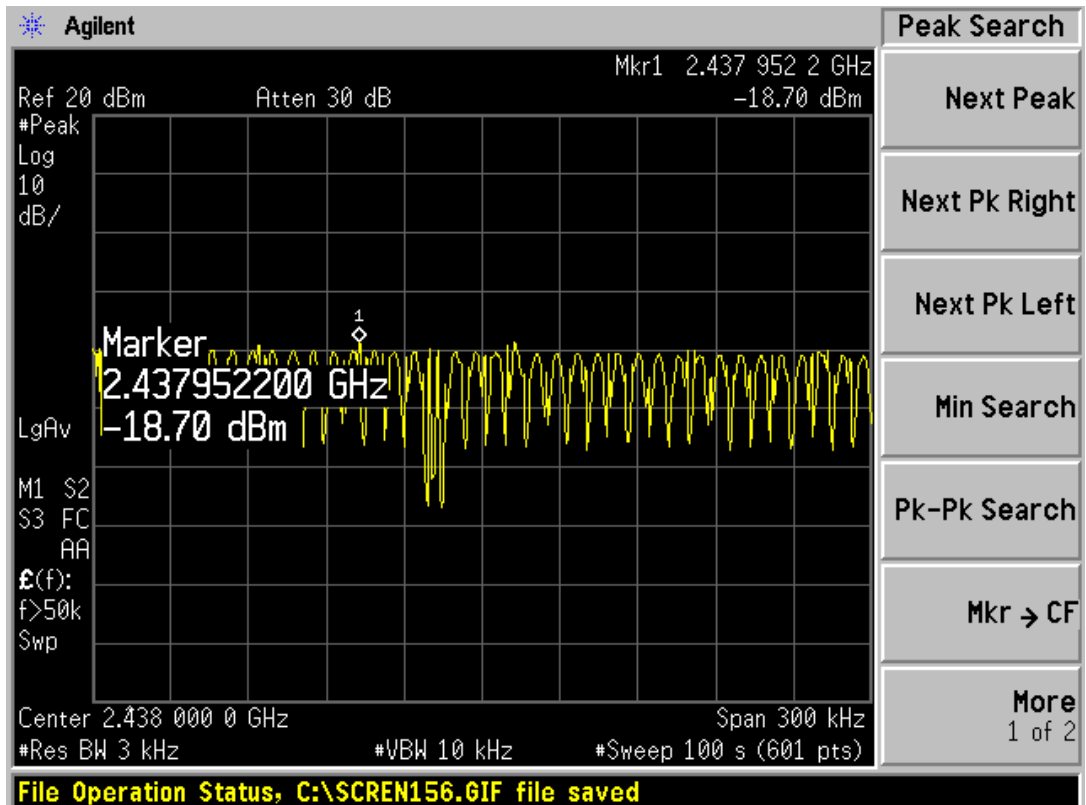
Report No.: RZA1110-1740RF03R1

Page 48of 128

802.11b

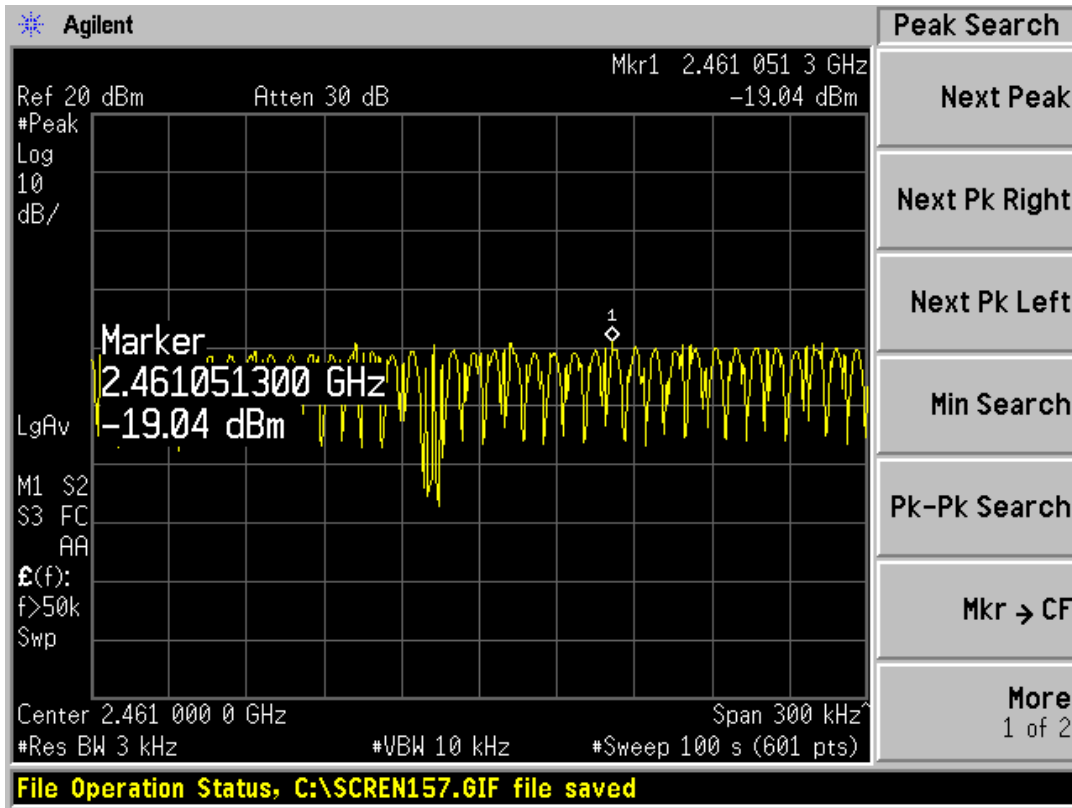


802.11b, Channel No.: 1



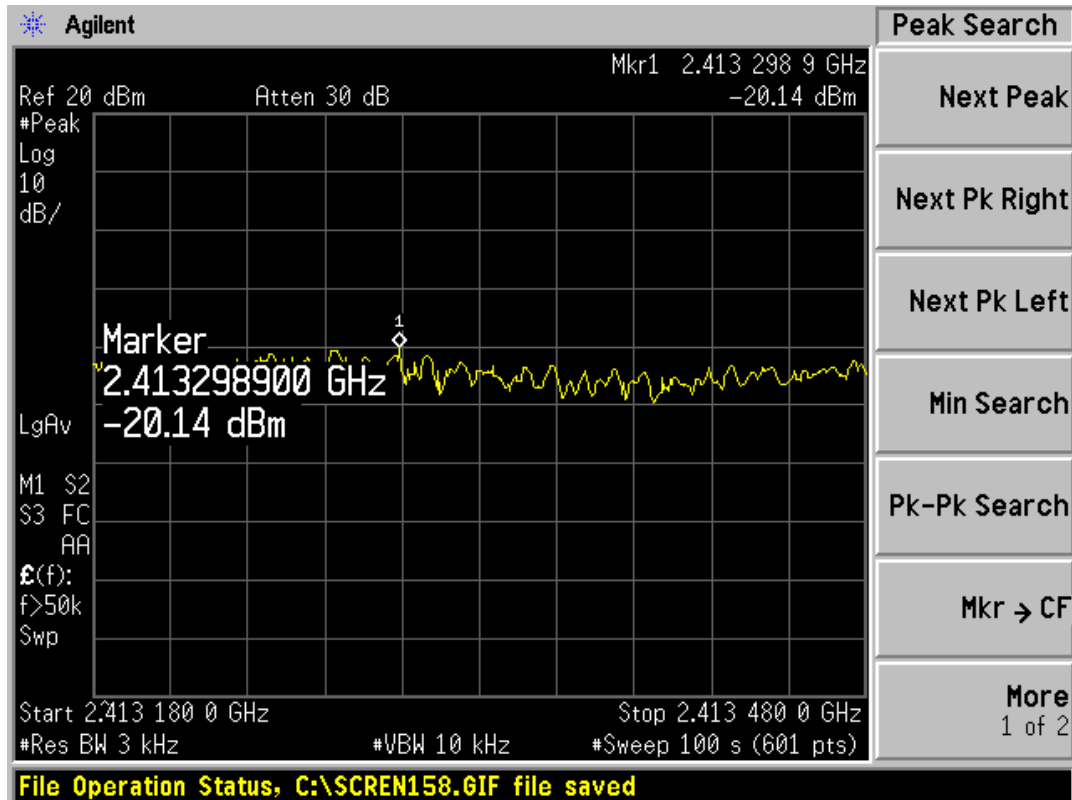
802.11b, Channel No.: 6

TA Technology (Shanghai) Co., Ltd.
Test Report



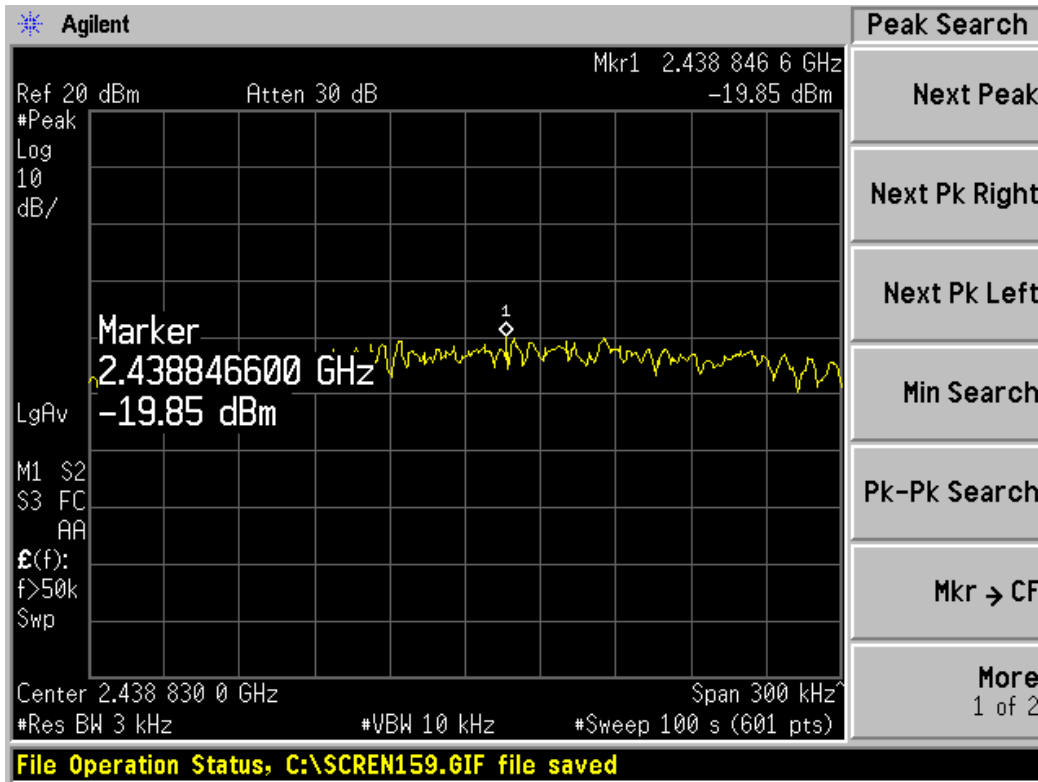
802.11b, Channel No.: 11

802.11g

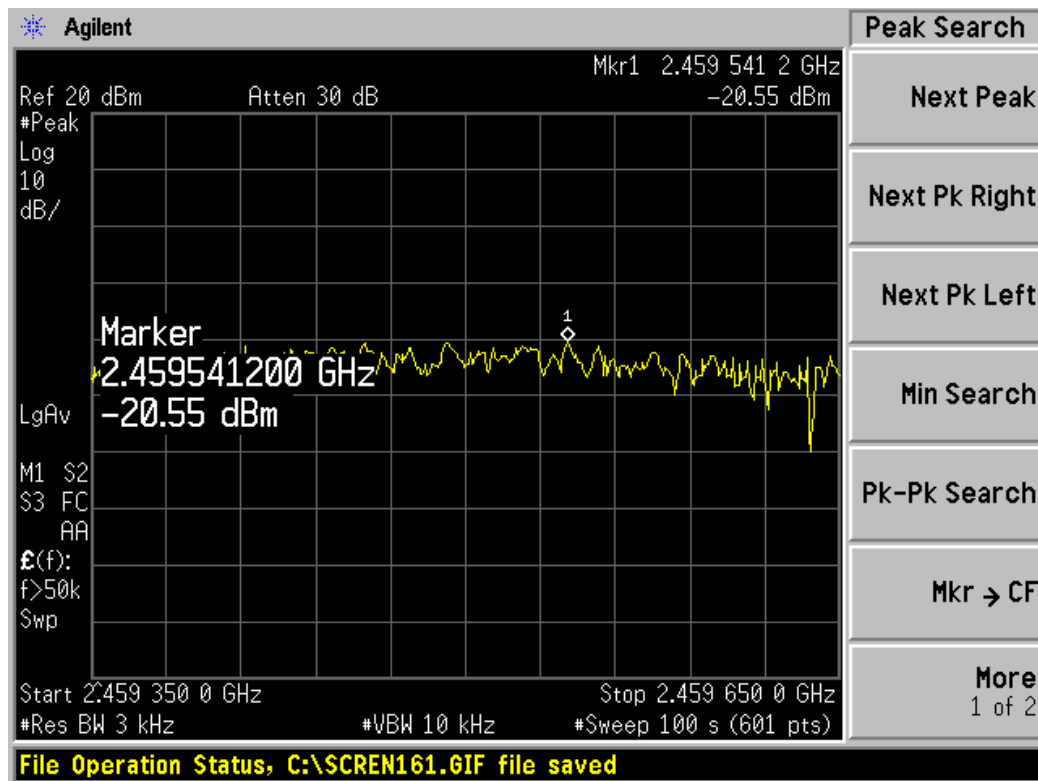


802.11g, Channel No.: 1

TA Technology (Shanghai) Co., Ltd. Test Report



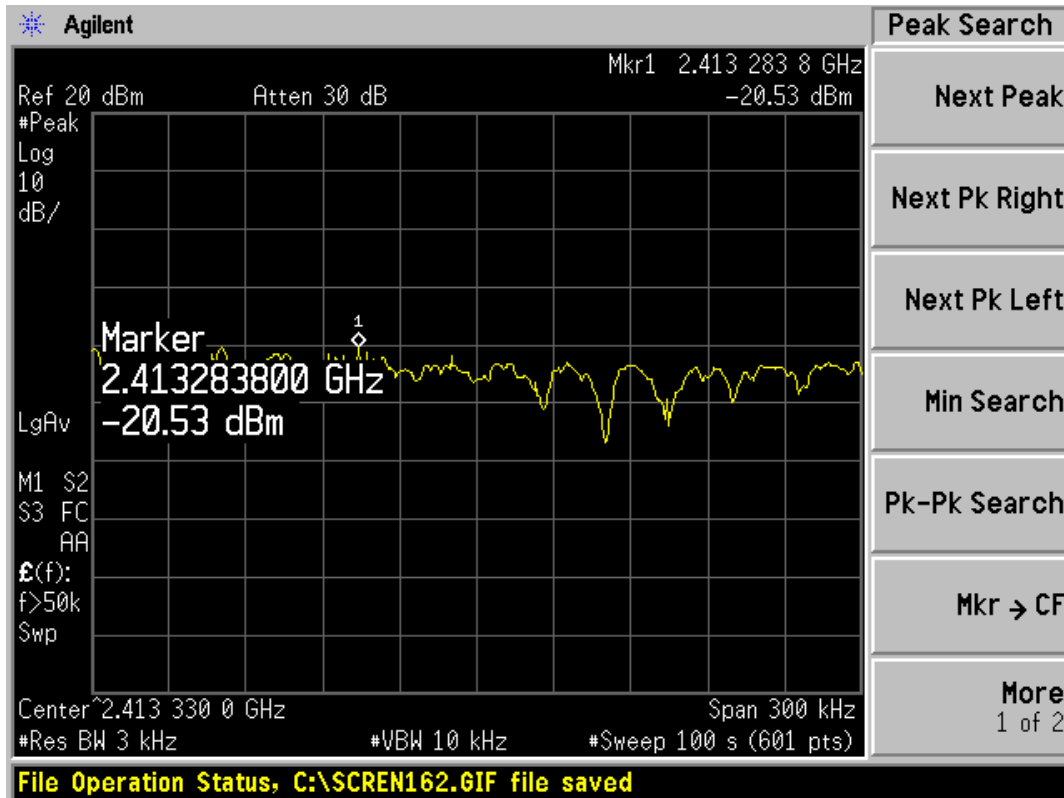
802.11g, Channel No.: 6



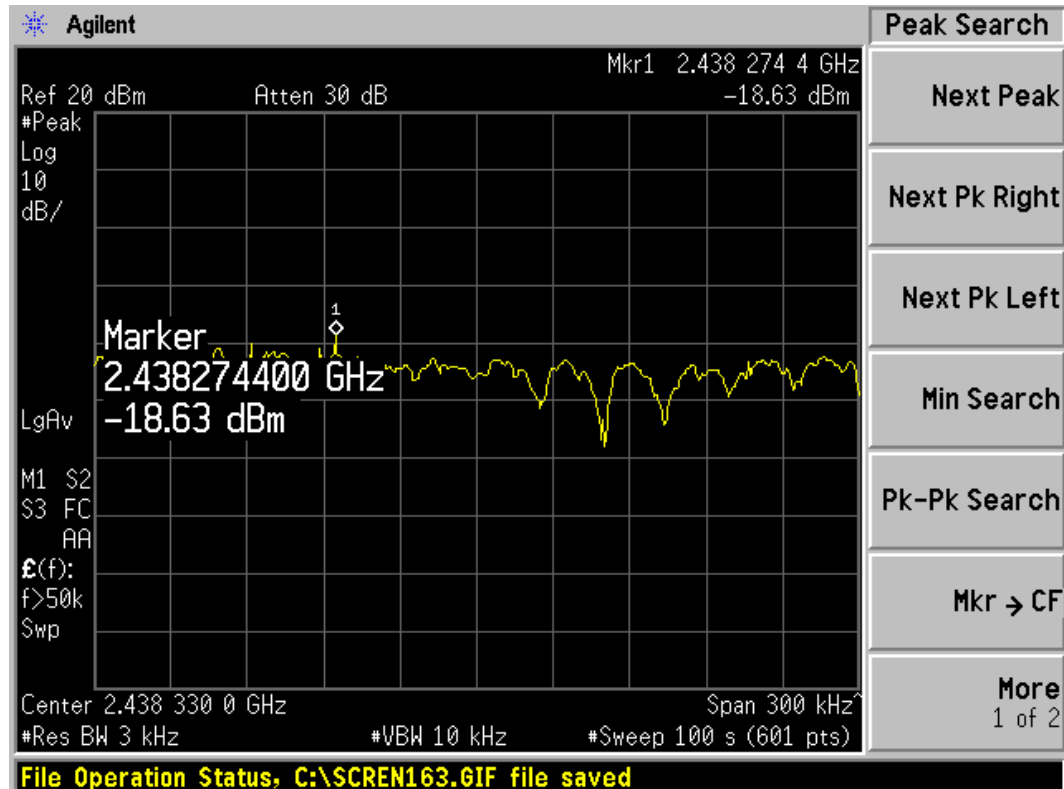
802.11g, Channel No.: 11

TA Technology (Shanghai) Co., Ltd. Test Report

802.11n(HT20)

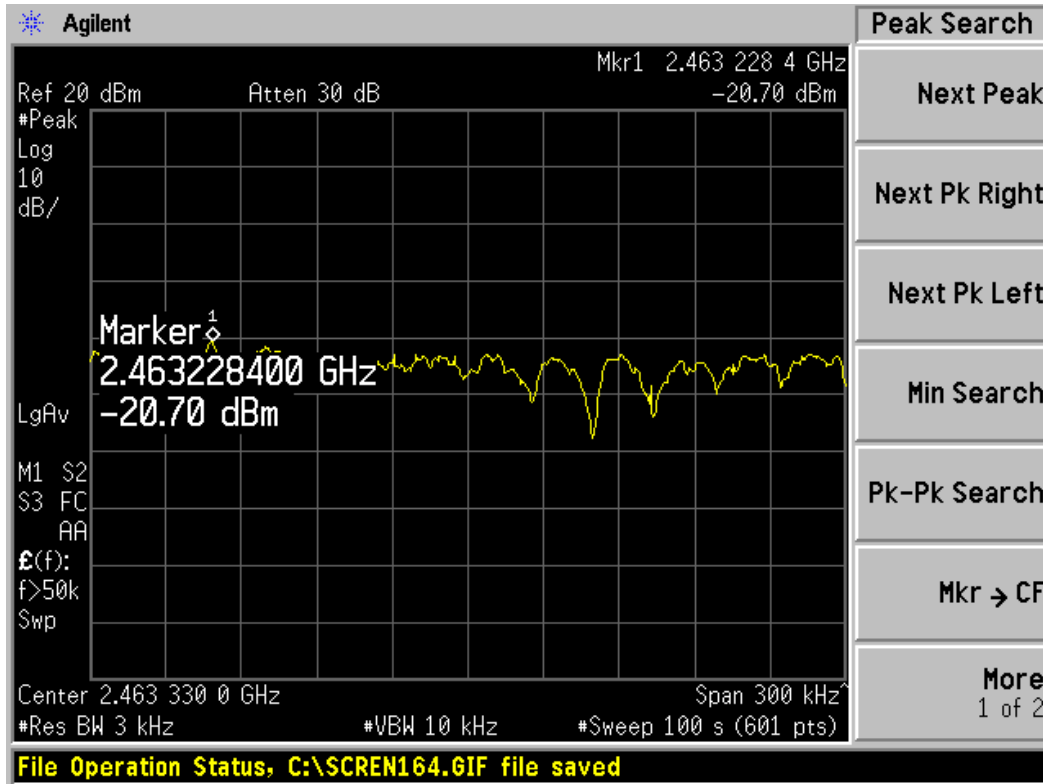


802.11n, Channel No.: 1



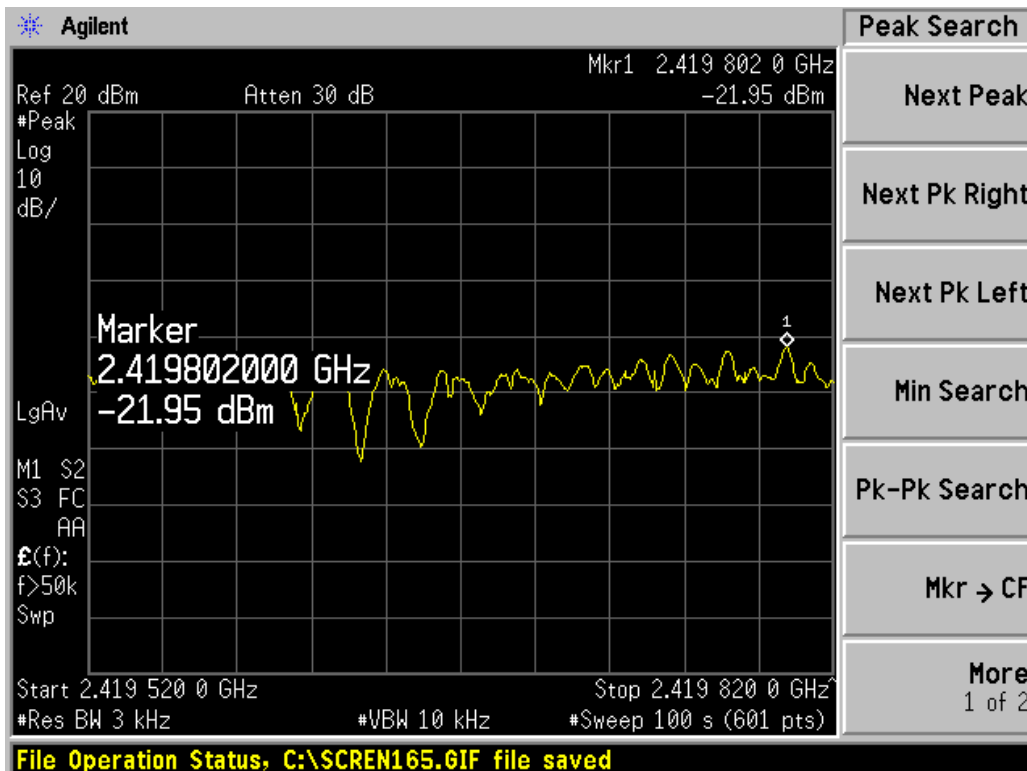
802.11n, Channel No.: 6

TA Technology (Shanghai) Co., Ltd. Test Report



802.11n, Channel No.: 11

802.11n(HT40)

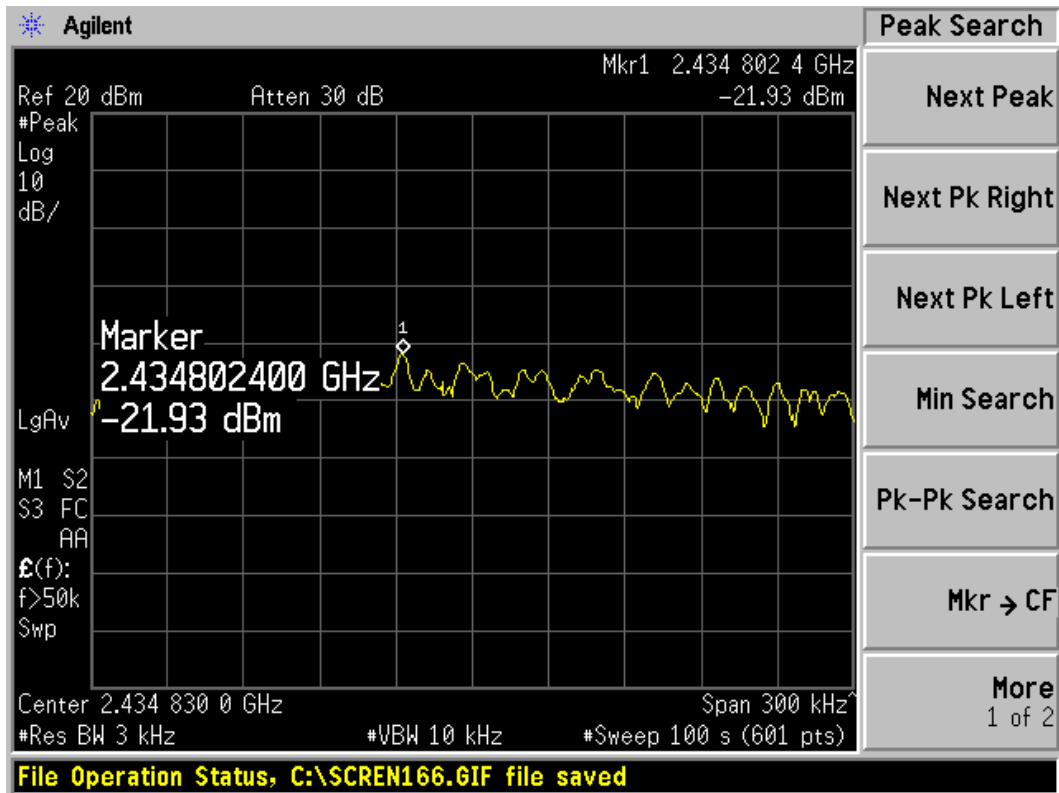


802.11n, Channel No.: 3

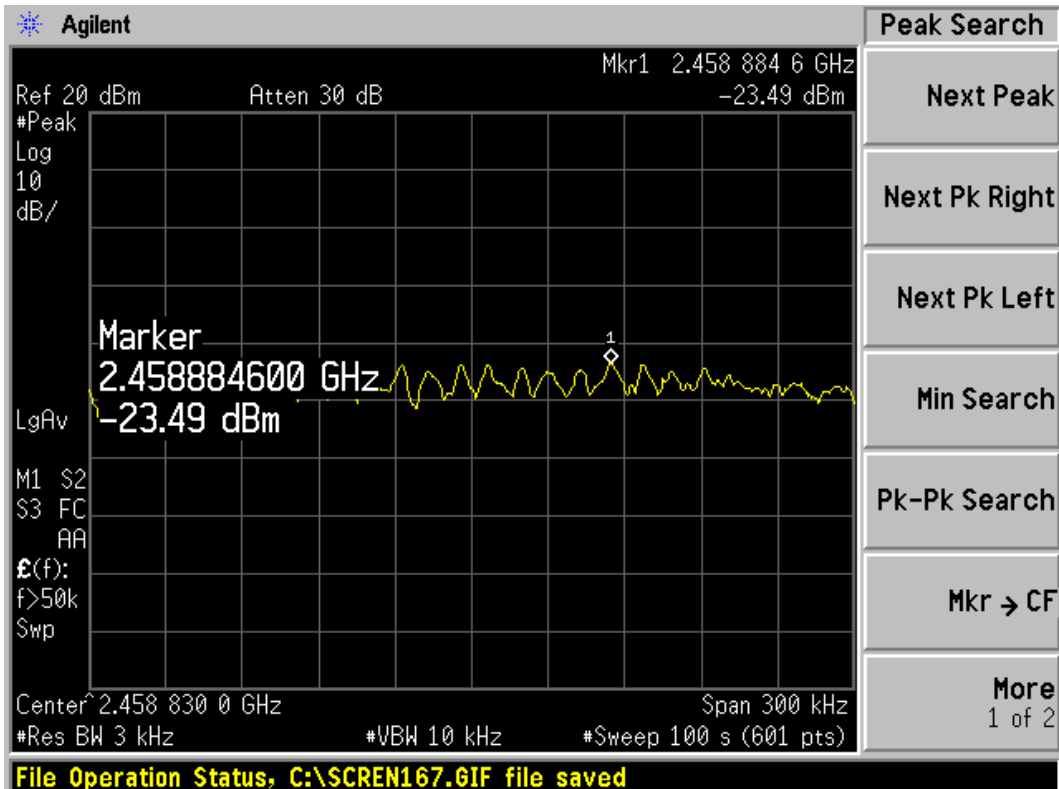
TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RZA1110-1740RF03R1

Page 53 of 128



802.11n, Channel No.: 6



802.11n, Channel No.: 9

TA Technology (Shanghai) Co., Ltd.
Test Report

Report No.: RZA1110-1740RF03R1

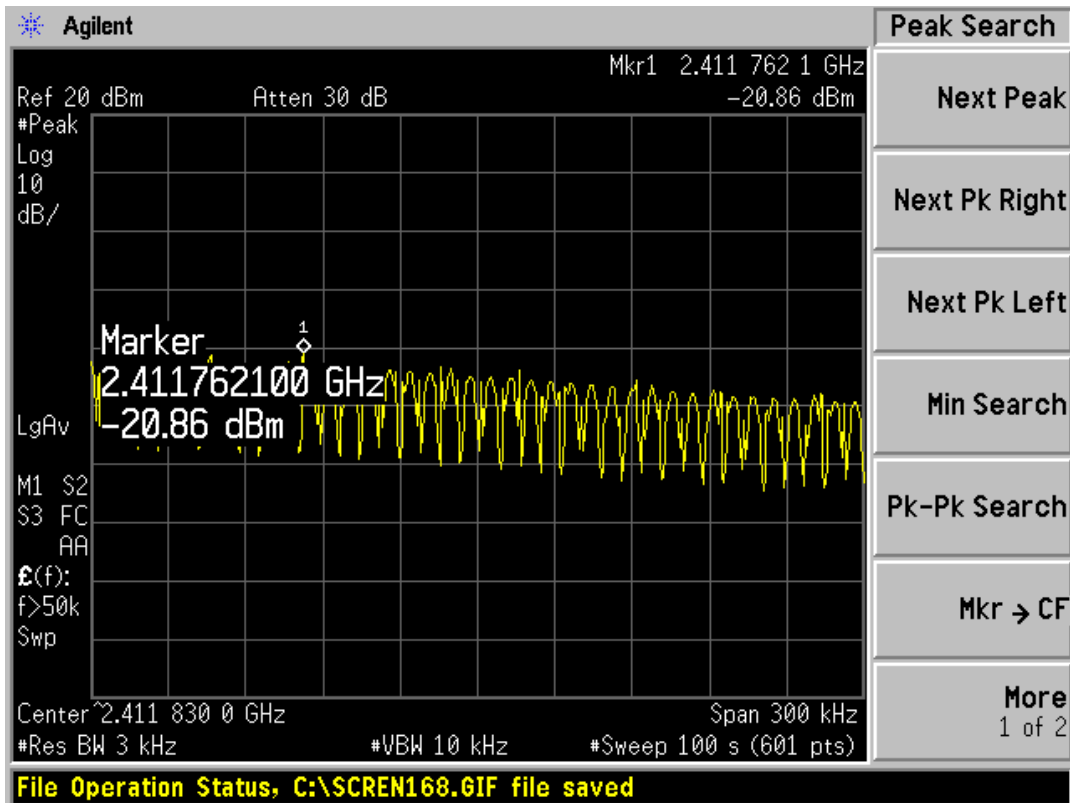
Page 54 of 128

WAN 1

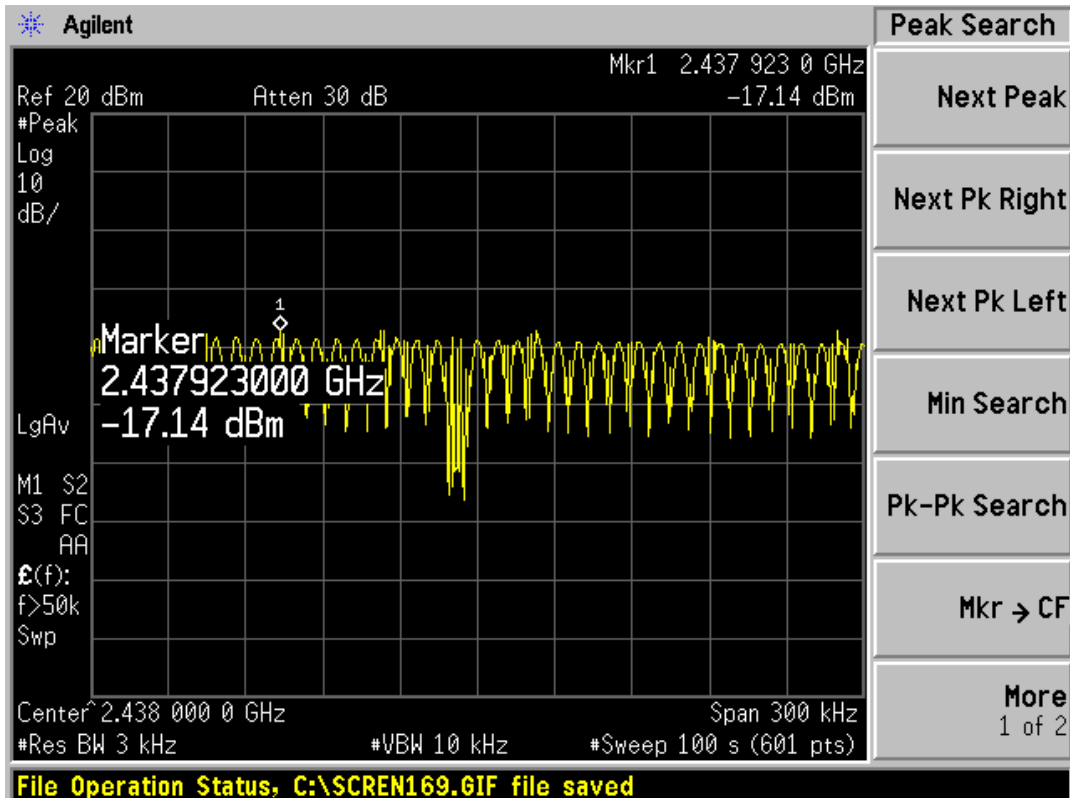
Network Standards	Channal Number	Power Spectral Density dBm / 3kHz	Conclusion
802.11b	1	-20.86	PASS
	6	-17.14	PASS
	11	-16.94	PASS
802.11g	1	-19.04	PASS
	6	-18.56	PASS
	11	-18.46	PASS
802.11n HT20	1	-19.11	PASS
	6	-17.54	PASS
	11	-18.00	PASS
802.11n HT40	3	-22.54	PASS
	6	-20.42	PASS
	9	-21.79	PASS

TA Technology (Shanghai) Co., Ltd. Test Report

802.11b



802.11b, Channel No.: 1

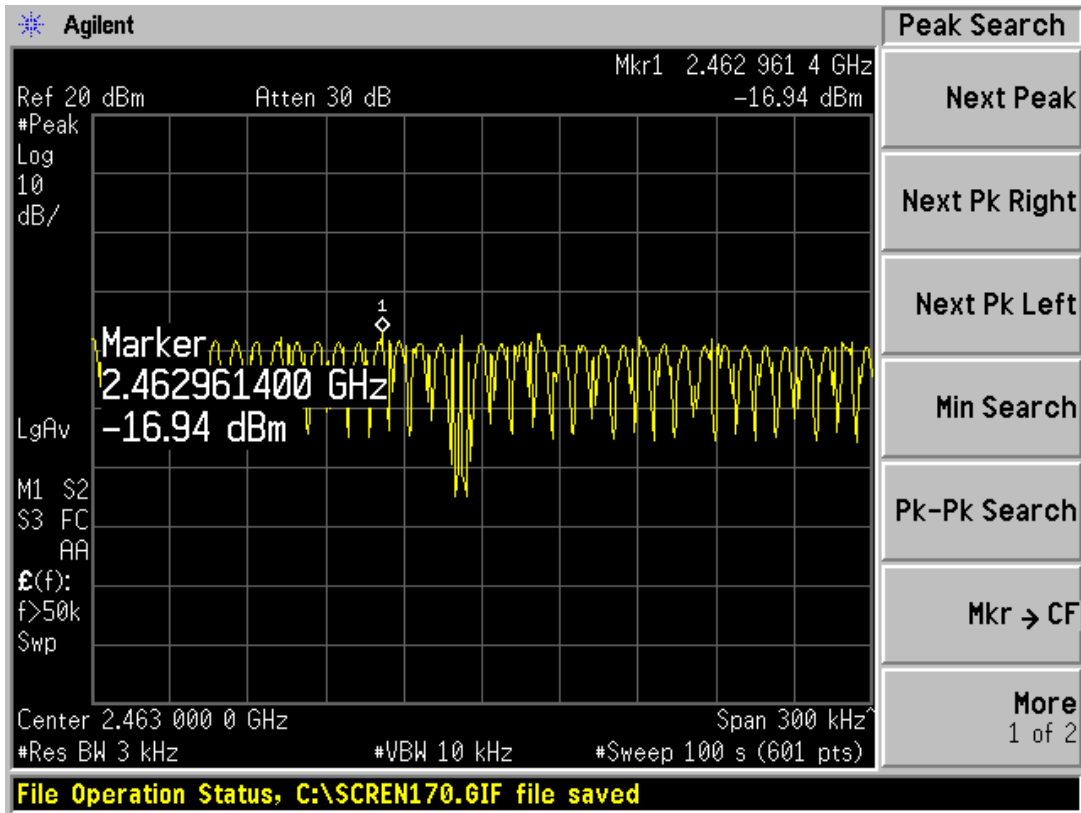


802.11b, Channel No.: 6

TA Technology (Shanghai) Co., Ltd.
Test Report

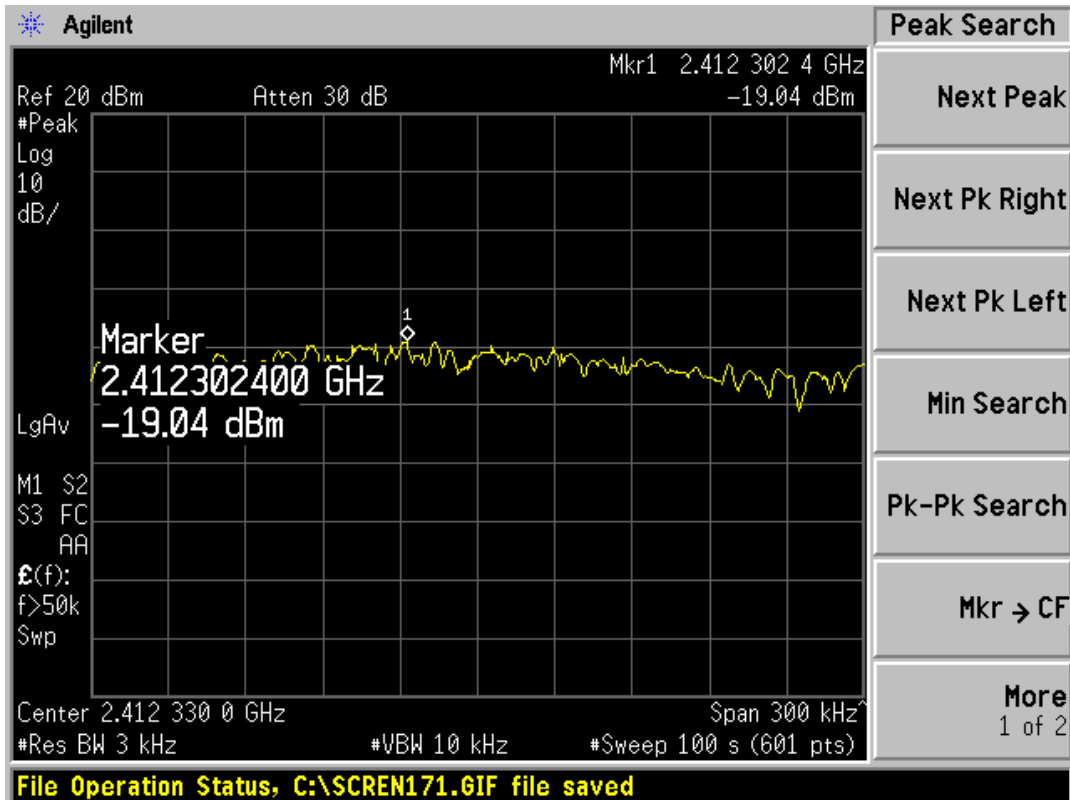
Report No.: RZA1110-1740RF03R1

Page 56of 128



802.11b, Channal No.: 11

802.11g

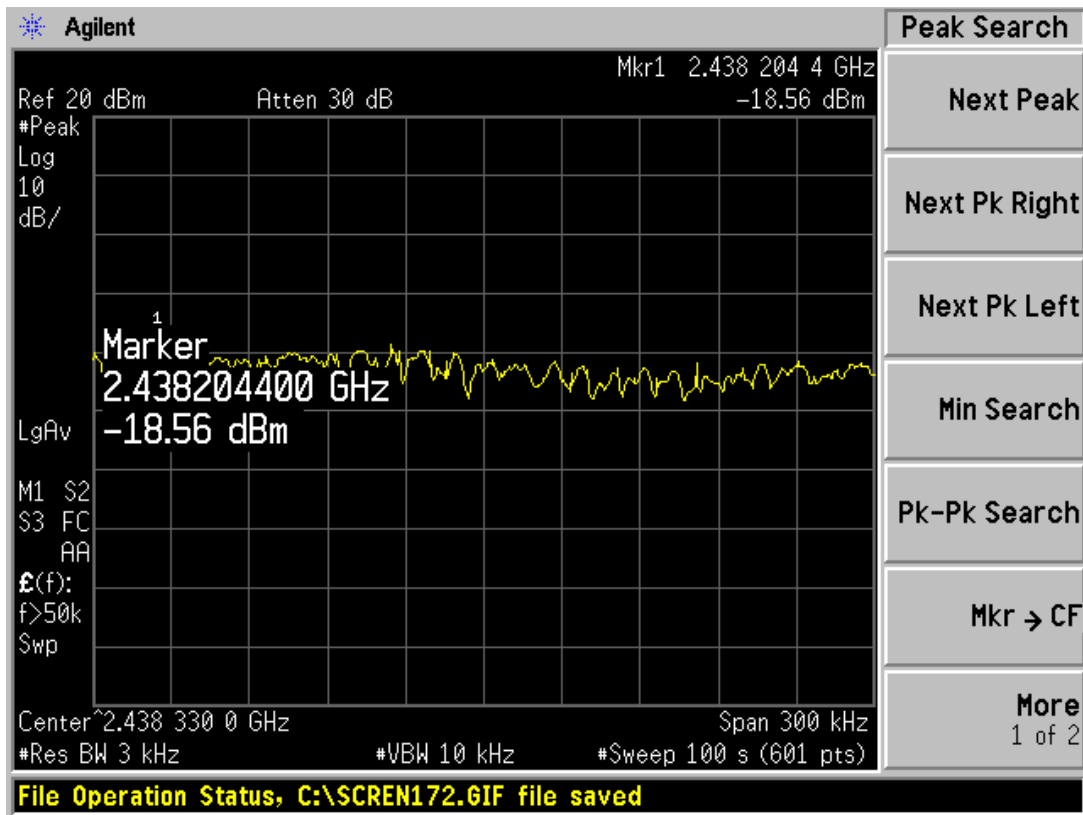


802.11g, Channal No.: 1

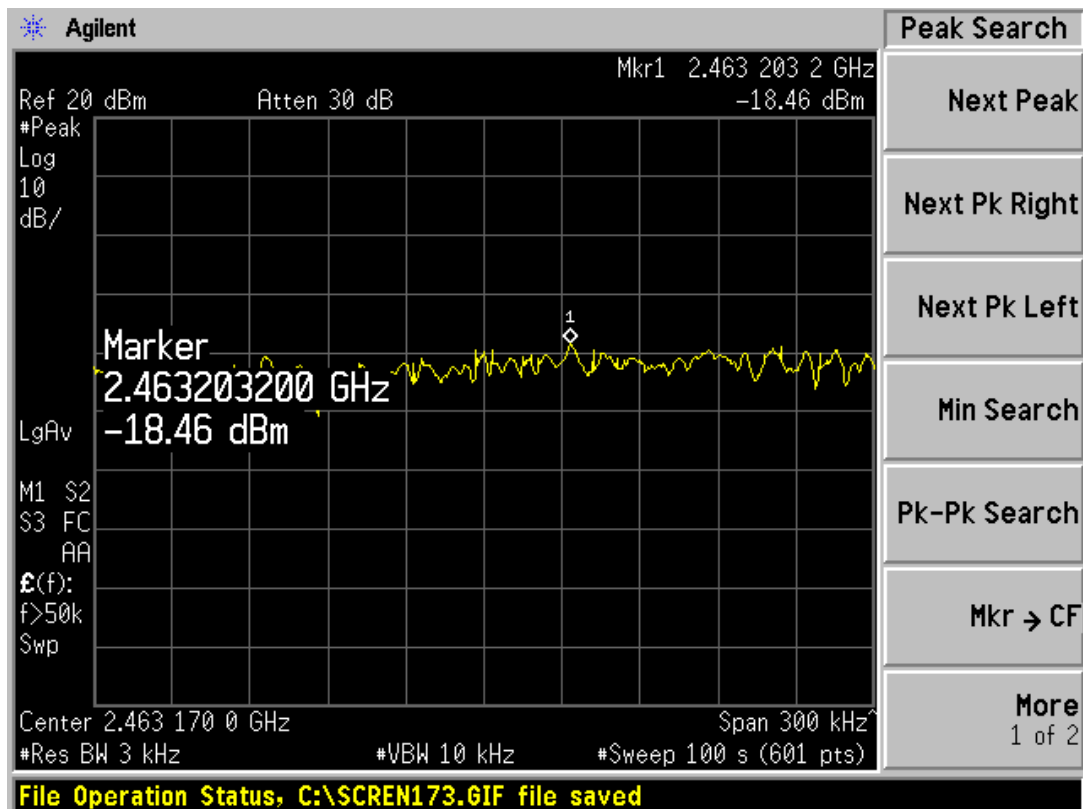
TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RZA1110-1740RF03R1

Page 57 of 128



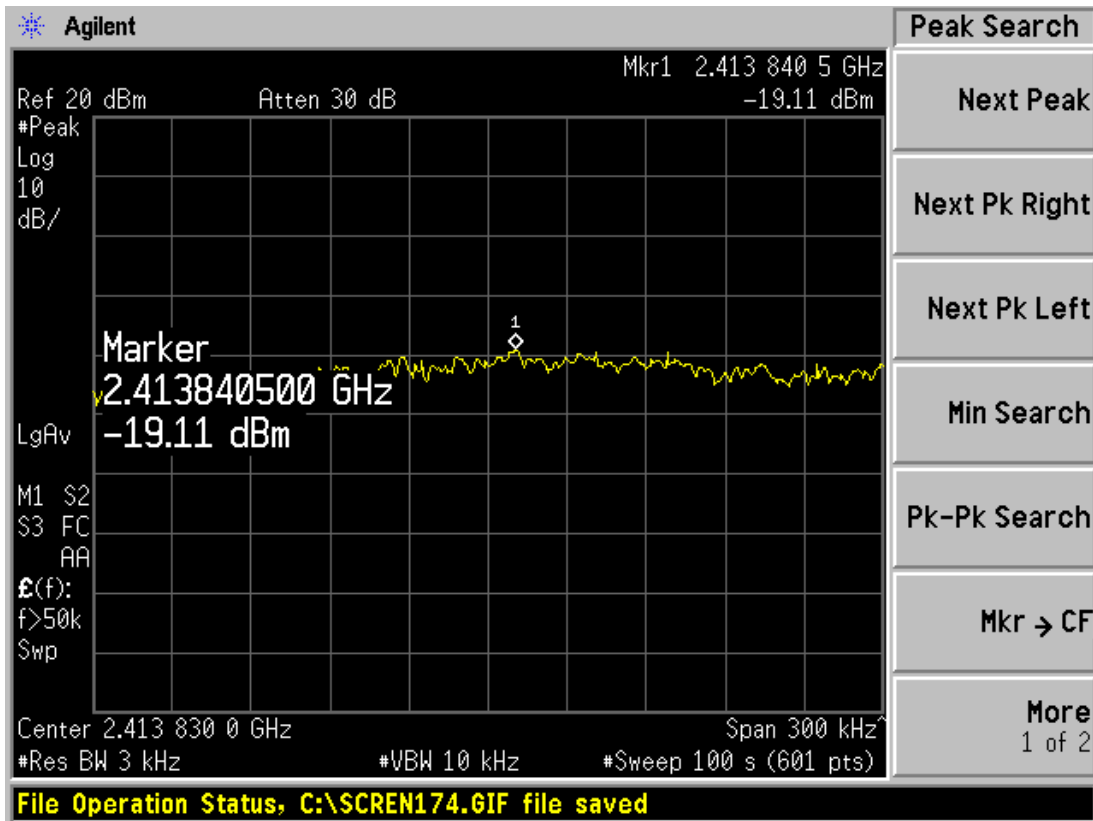
802.11g, Channel No.: 6



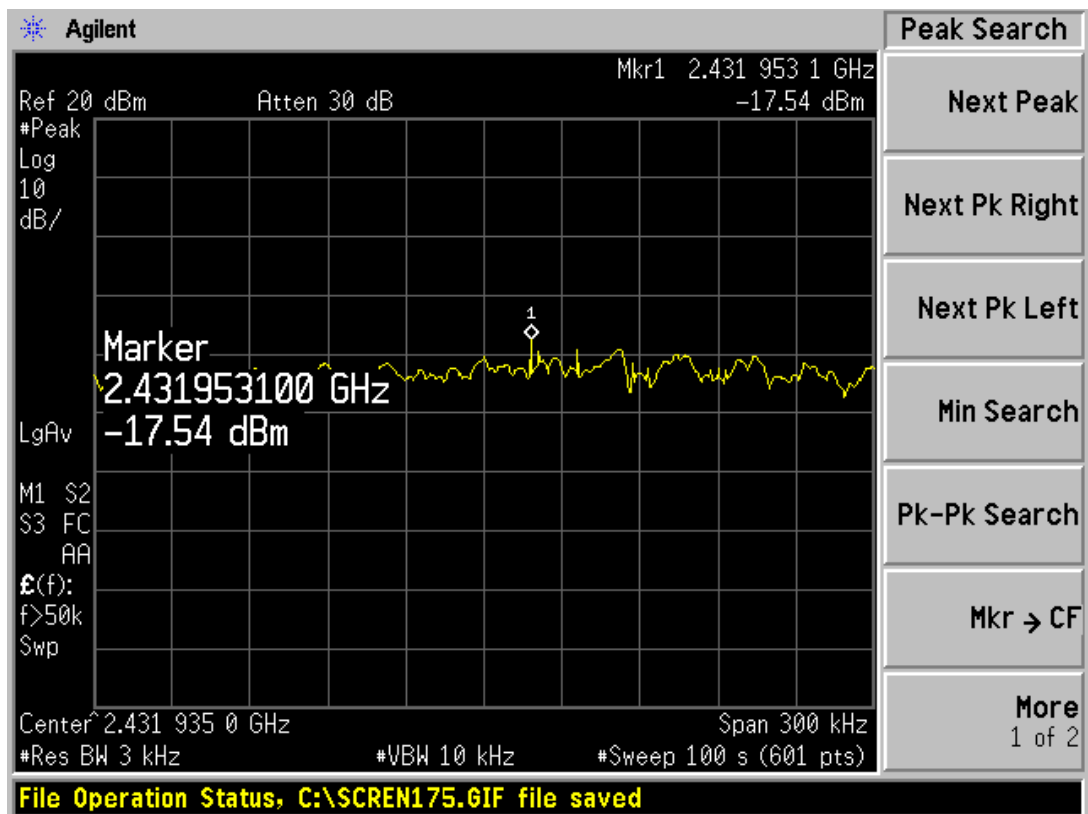
802.11g, Channel No.: 11

TA Technology (Shanghai) Co., Ltd. Test Report

802.11n(HT20)

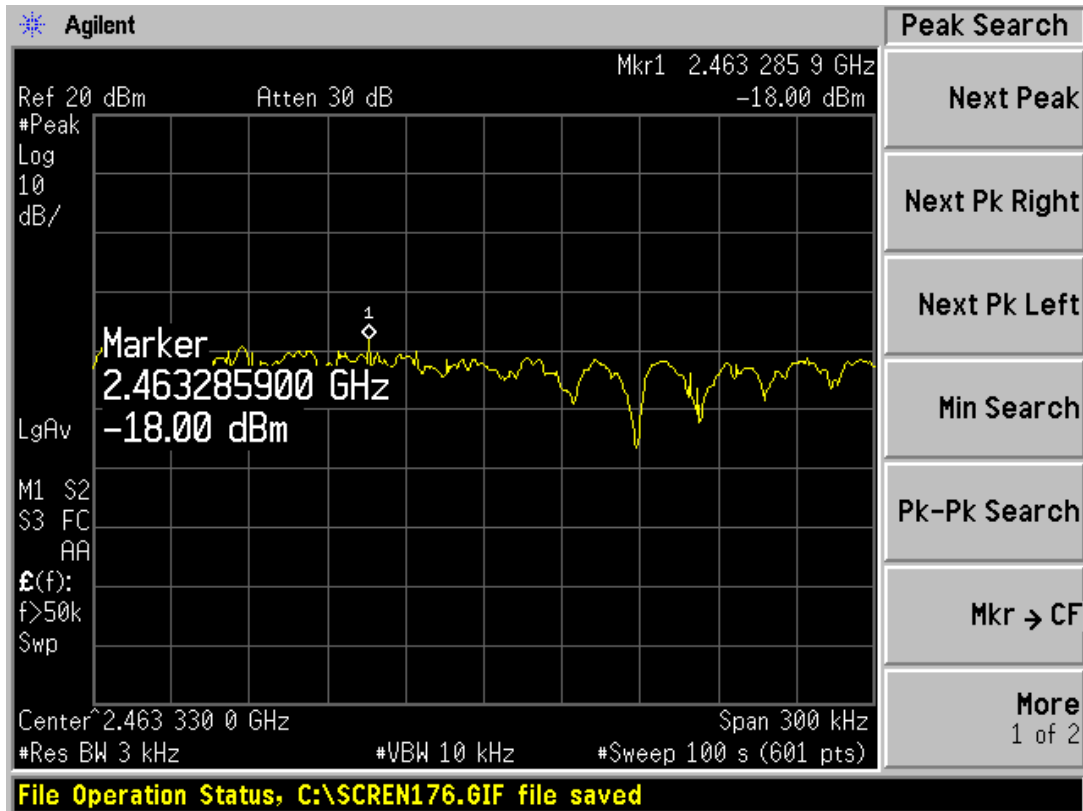


802.11n, Channal No.: 1



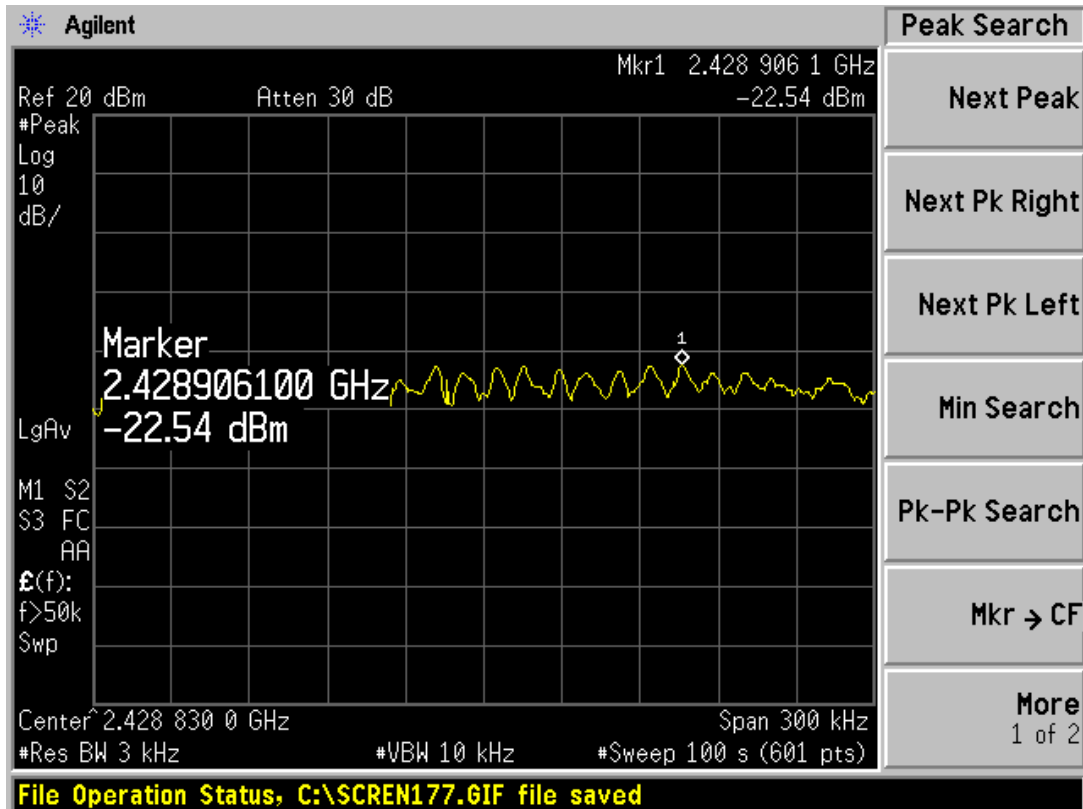
802.11n, Channal No.: 6

TA Technology (Shanghai) Co., Ltd. Test Report



802.11n, Channel No.: 11

802.11n(HT40)

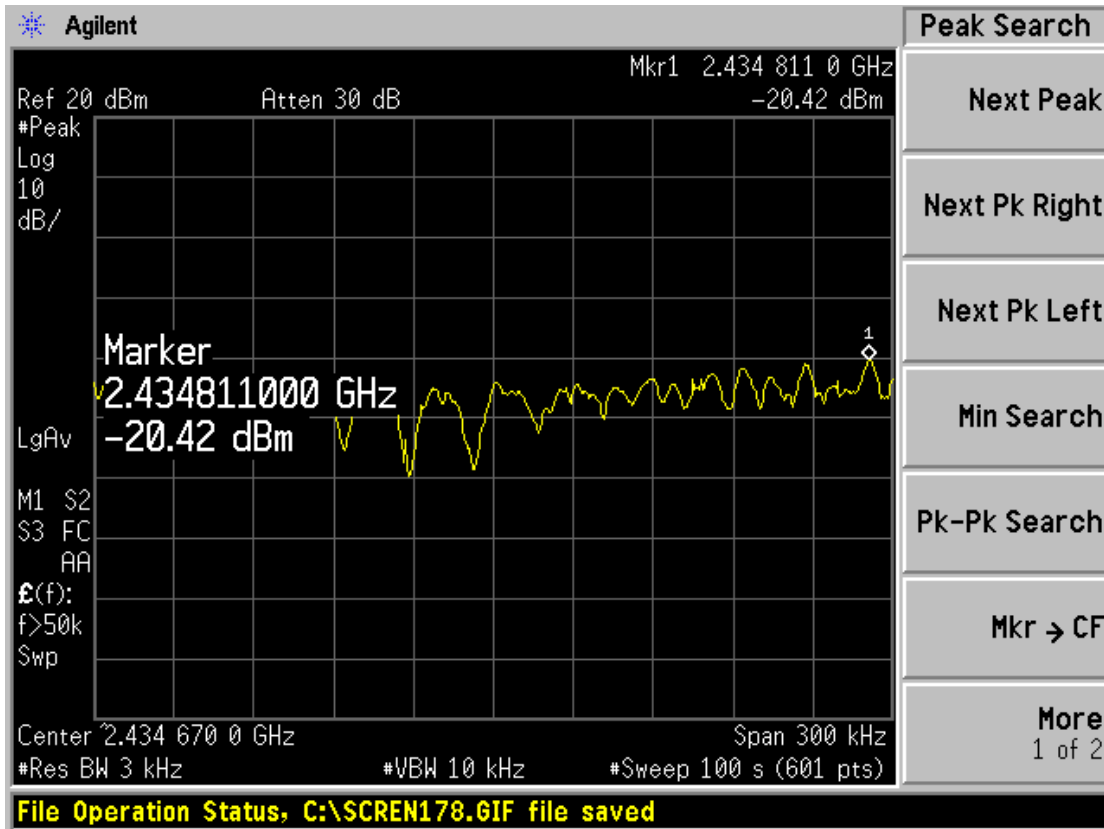


802.11n, Channel No.: 3

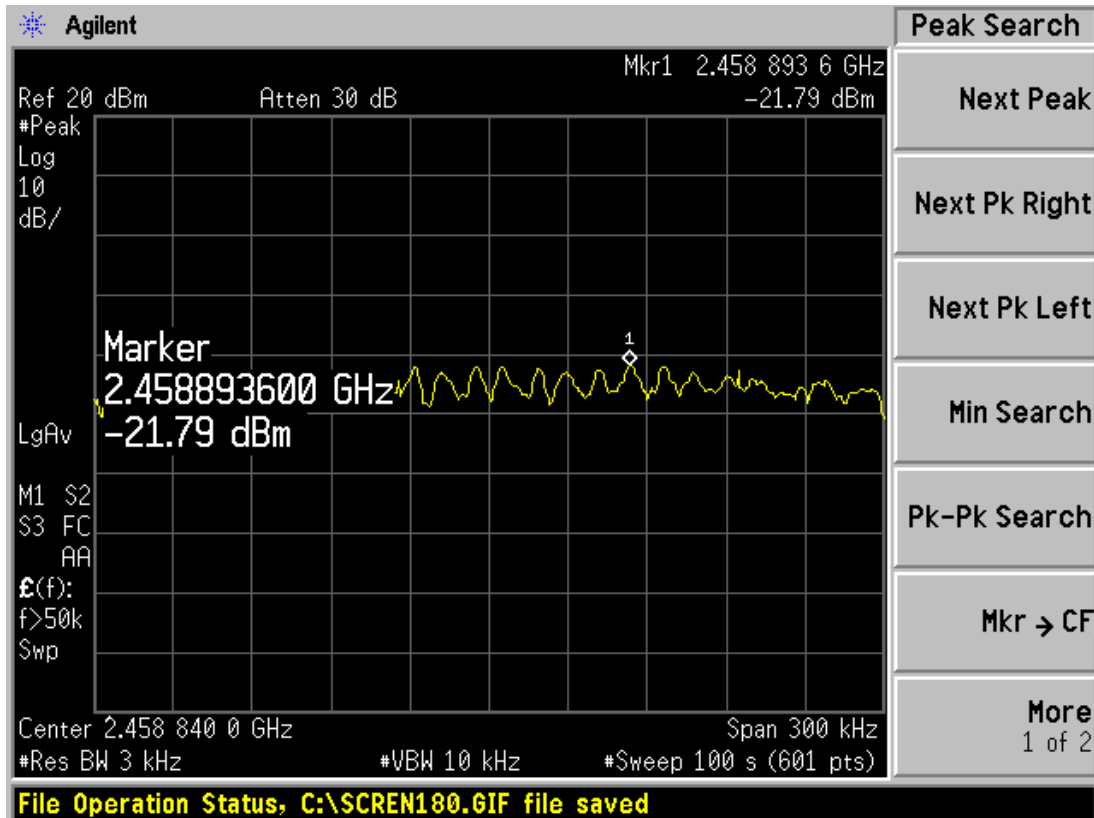
TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RZA1110-1740RF03R1

Page 60 of 128



802.11n, Channel No.: 6



802.11n, Channel No.: 9

2.7. Spurious RF Conducted Emissions

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss. The spectrum analyzer scans from 30MHz to 26.5GHz. The peak detector is used. RBW and VBW are set to 100 kHz, Sweep is set to ATUO.

The test is in transmit mode.

Test setup



Limits

Rule Part 15.247(d) pacifies that “In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.”

WAN 0

Network Standards	Channal Number	Reference value (dBm)	Limit
802.11b	1	13.85	≤-6.15
	6	13.91	≤-6.09
	11	13.75	≤-6.25
802.11g	1	14.56	≤-5.44
	6	14.81	≤-5.19
	11	14.57	≤-5.43
802.11n HT20	1	14.58	≤-5.42
	6	14.62	≤-5.38
	11	14.42	≤-5.58

TA Technology (Shanghai) Co., Ltd.
Test Report

Report No.: RZA1110-1740RF03R1

Page 62 of 128

802.11n HT40	3	14.52	≤ -5.48
	6	14.39	≤ -5.61
	9	14.43	≤ -5.57

WAN 1

Network Standards	Channal Number	Reference value (dBm)	Limit
802.11b	1	13.91	≤ -6.09
	6	13.93	≤ -6.07
	11	13.96	≤ -6.04
802.11g	1	14.95	≤ -5.05
	6	14.71	≤ -5.29
	11	14.36	≤ -5.64
802.11n HT20	1	14.88	≤ -5.12
	6	14.57	≤ -5.43
	11	14.16	≤ -5.84
802.11n HT40	3	14.96	≤ -5.04
	6	15.43	≤ -4.57
	9	15.09	≤ -4.91

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

Frequency	Uncertainty
100kHz-2GHz	0.684 dB
2GHz-26.5GHz	1.407 dB

TA Technology (Shanghai) Co., Ltd. Test Report

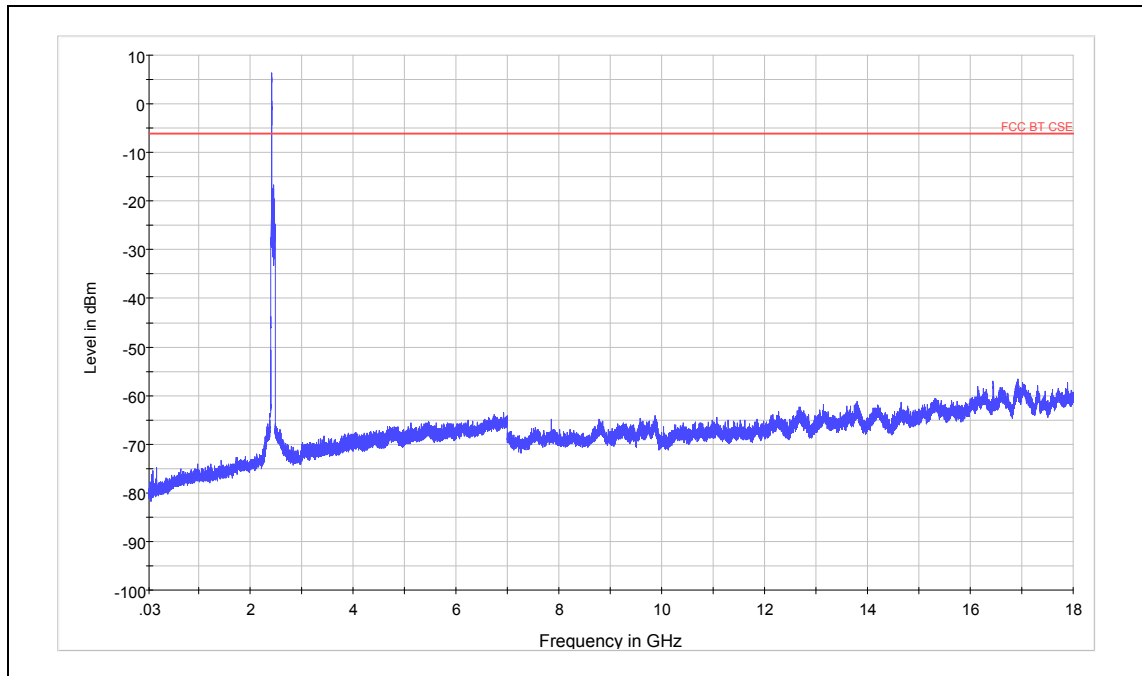
Report No.: RZA1110-1740RF03R1

Page 63 of 128

Test Results:

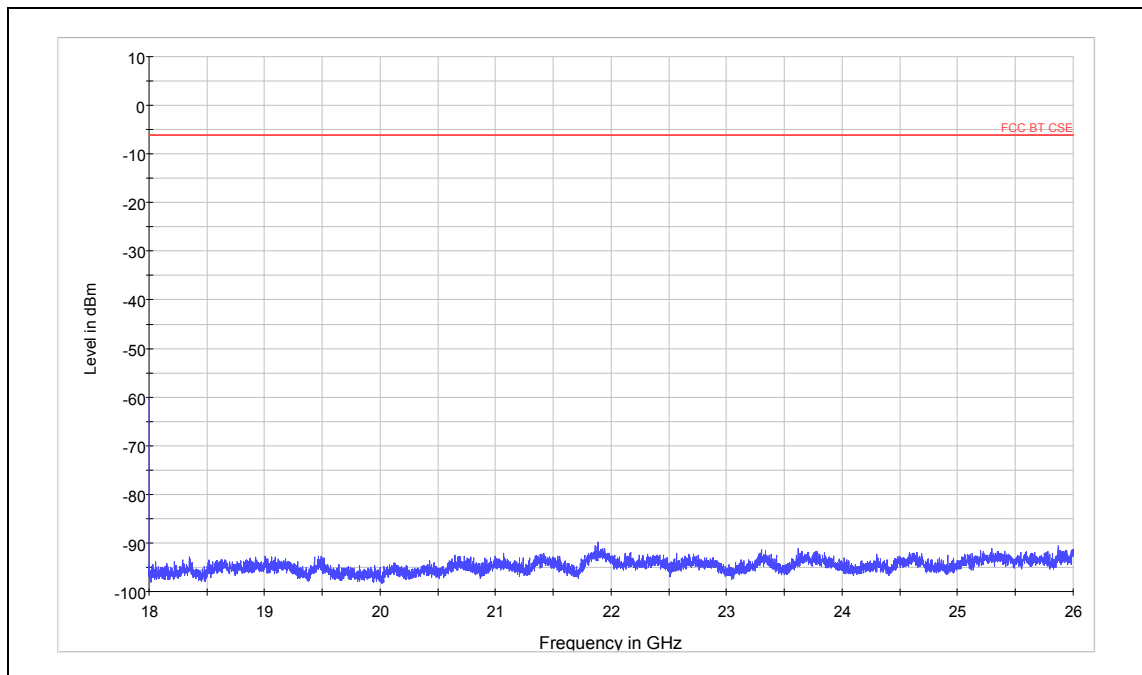
WAN 0

802.11b CH1



Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



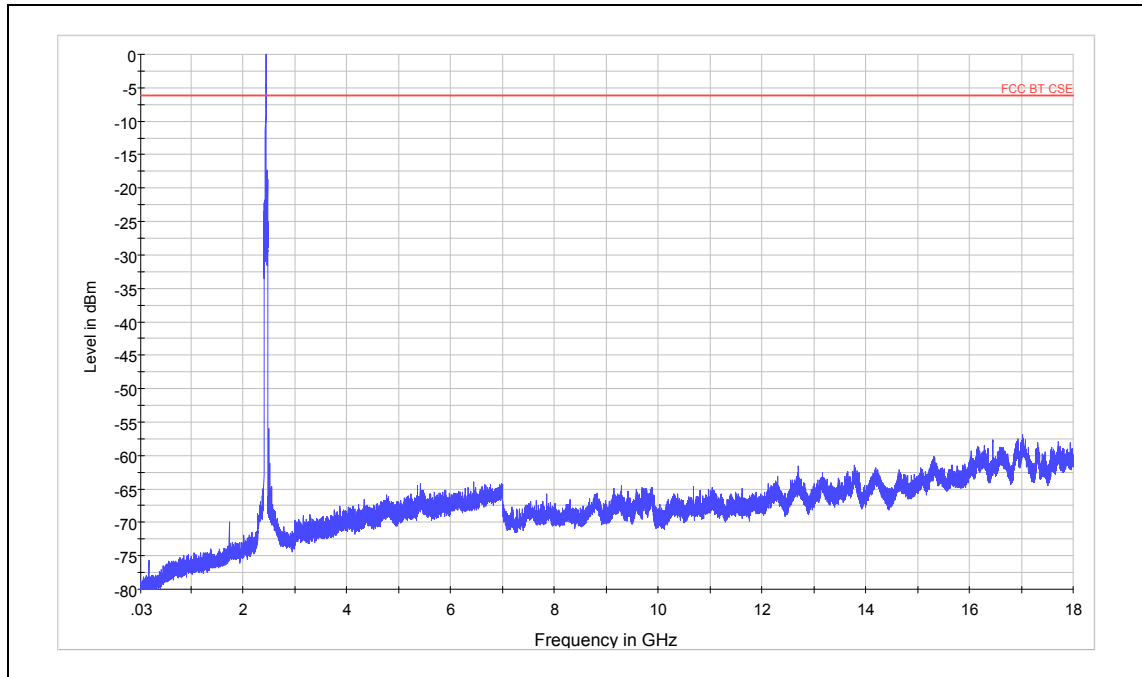
Spurious RF conducted emissions from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RZA1110-1740RF03R1

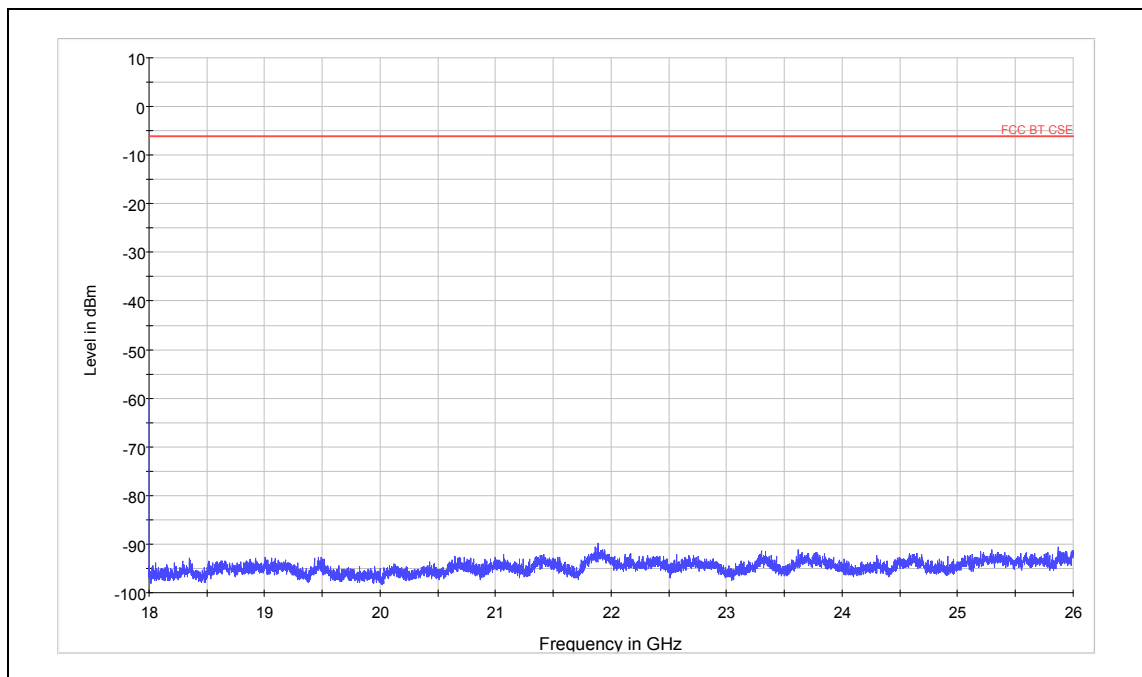
Page 64 of 128

802.11b CH6



Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



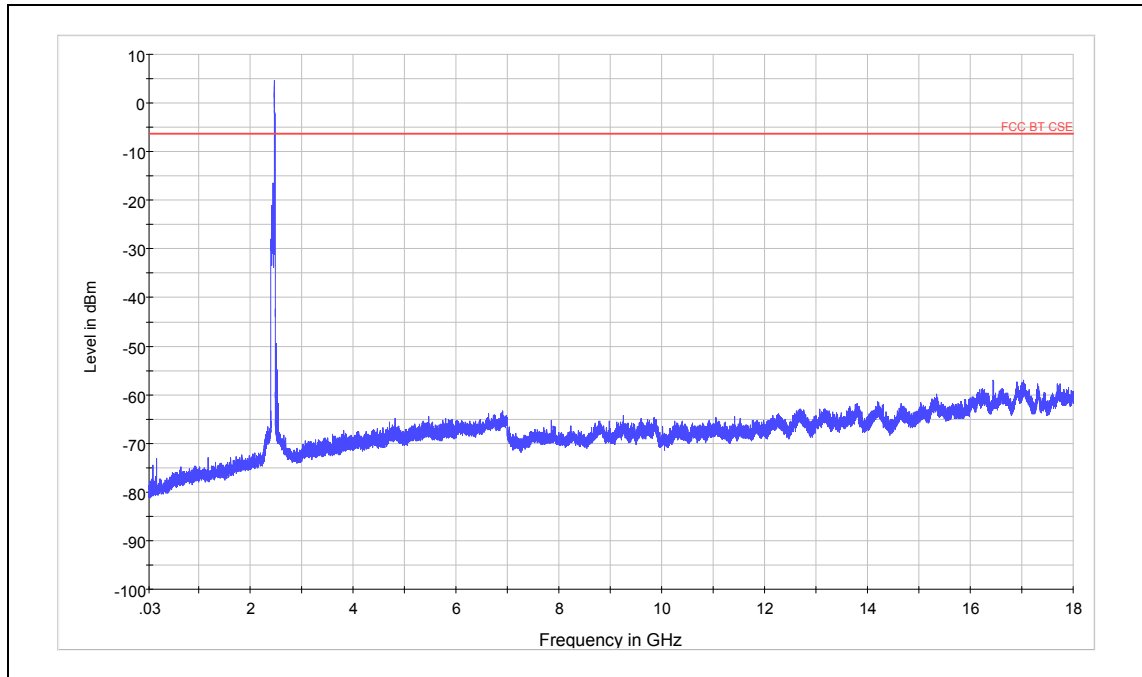
Spurious RF conducted emissions from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RZA1110-1740RF03R1

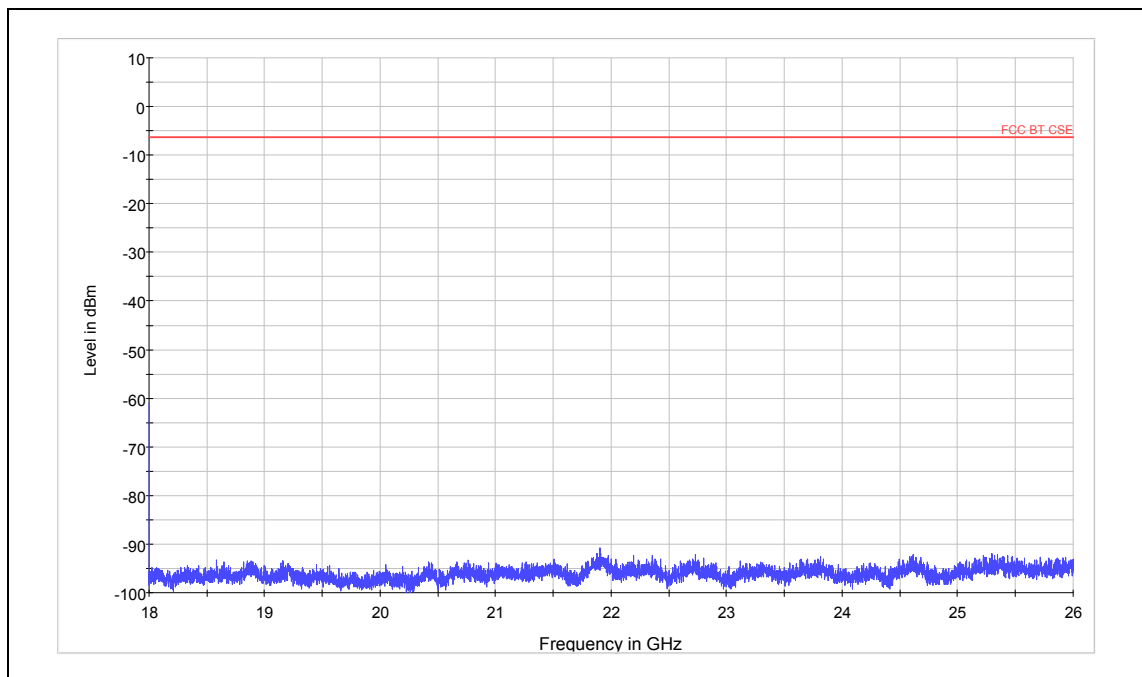
Page 65 of 128

802.11b CH11



Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



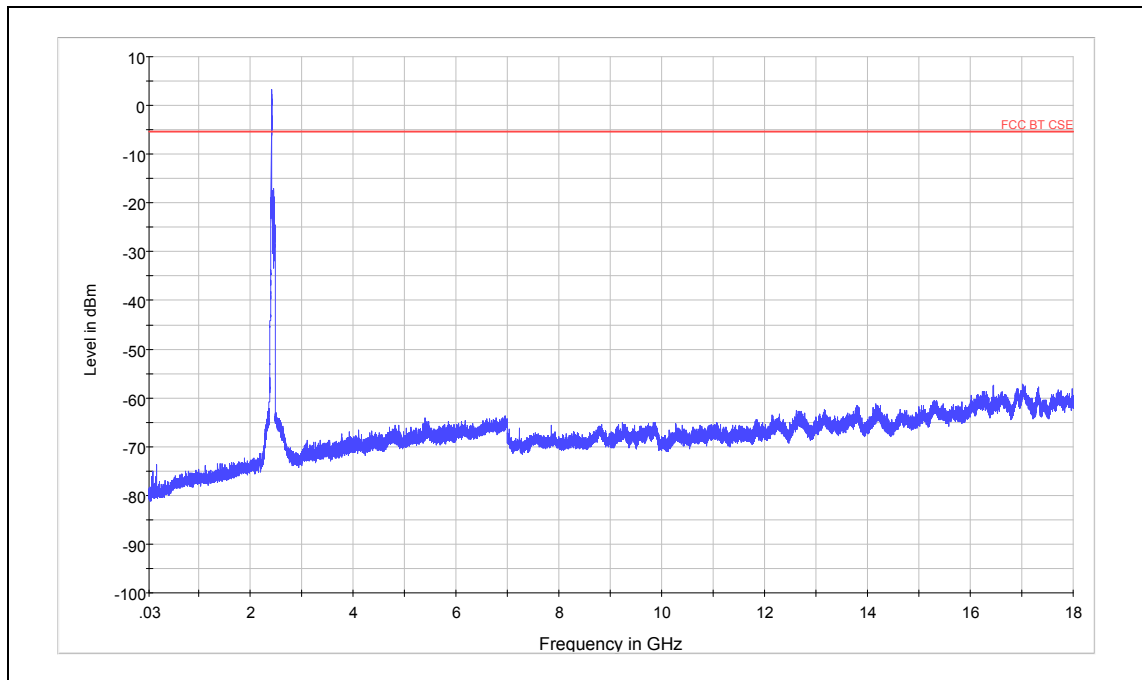
Spurious RF conducted emissions from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RZA1110-1740RF03R1

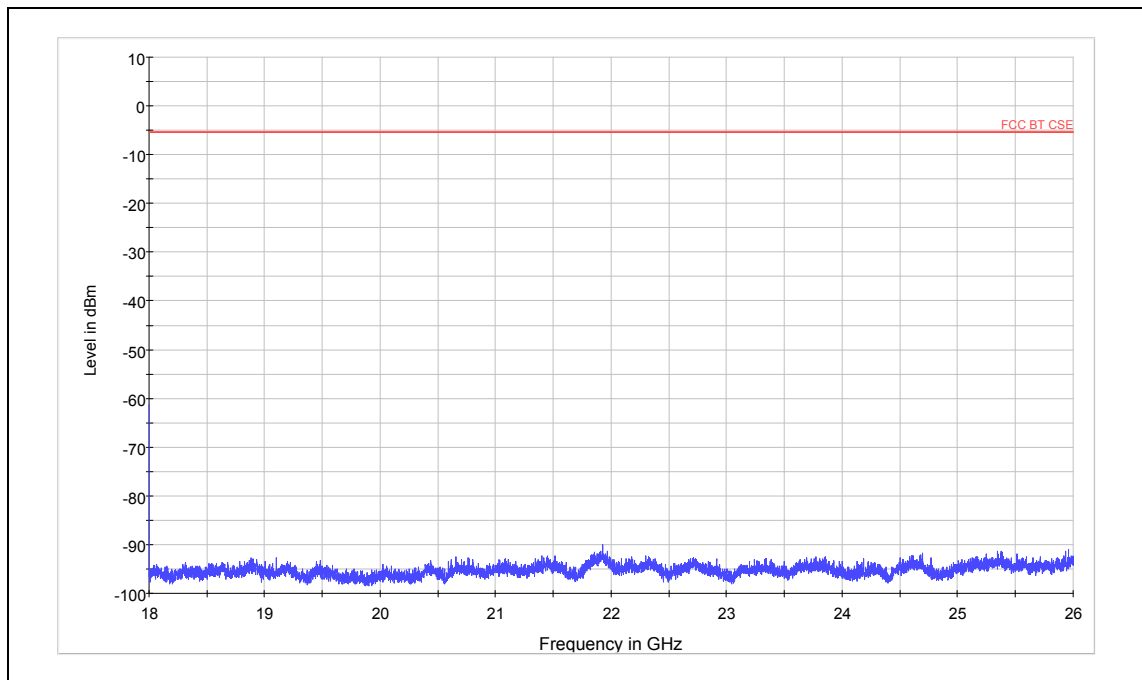
Page 66 of 128

802.11g CH1



Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



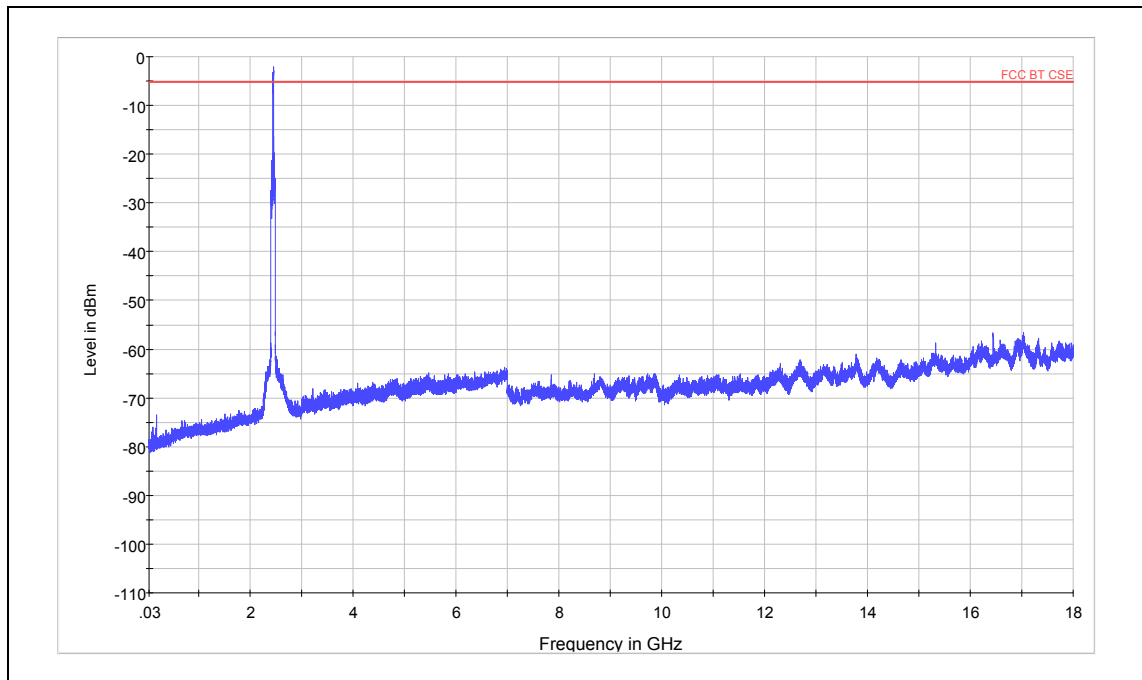
Spurious RF conducted emissions from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RZA1110-1740RF03R1

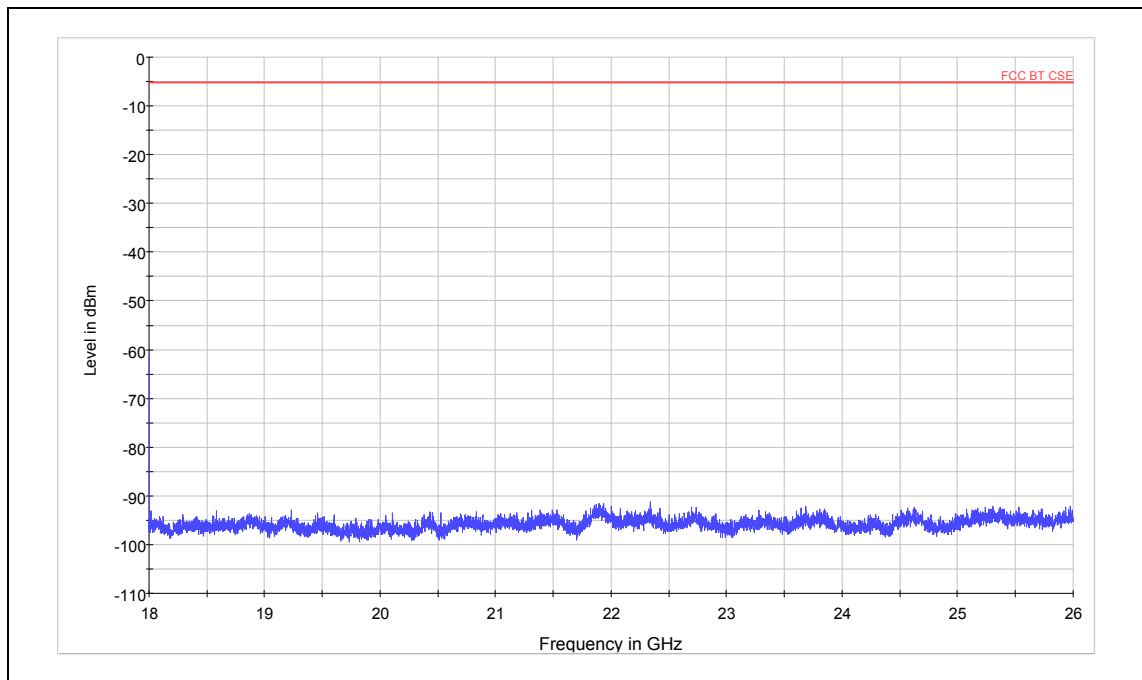
Page 67 of 128

802.11g CH6



Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



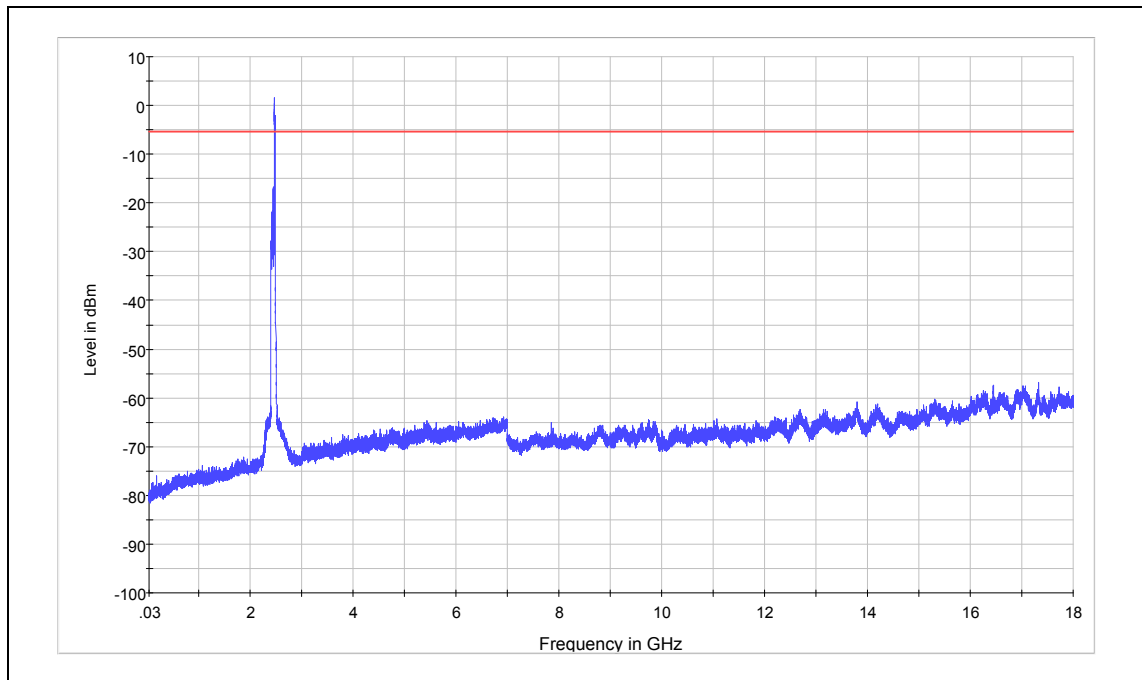
Spurious RF conducted emissions from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RZA1110-1740RF03R1

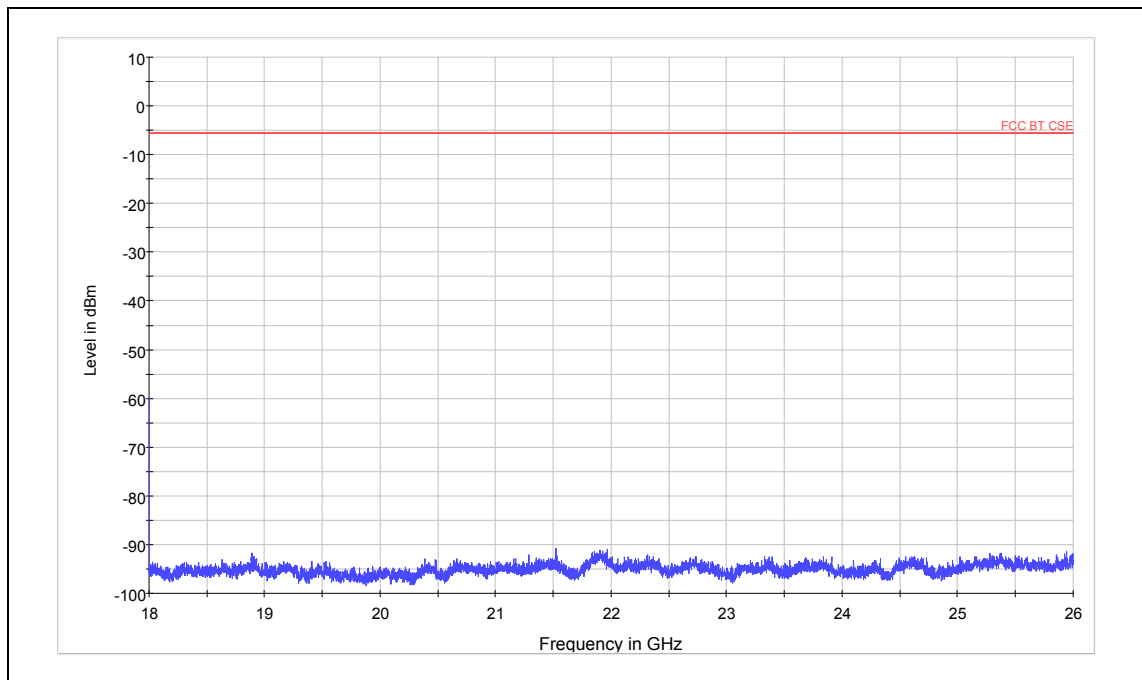
Page 68 of 128

802.11g CH11



Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



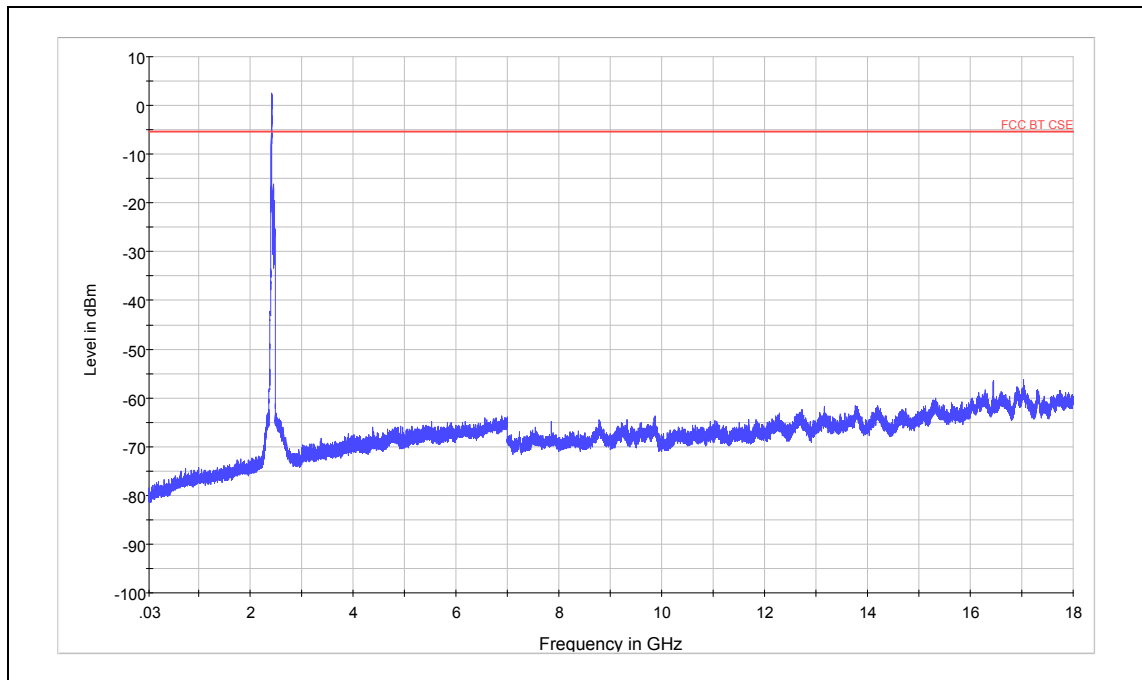
Spurious RF conducted emissions from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RZA1110-1740RF03R1

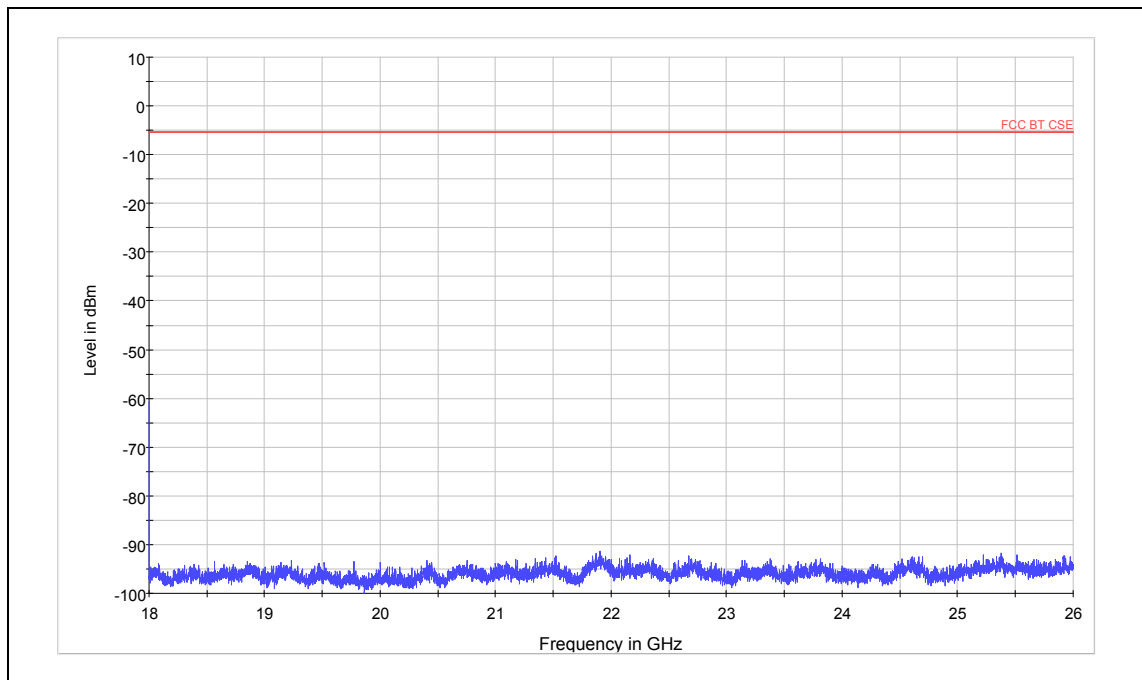
Page 69 of 128

802.11n(HT20) CH1



Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



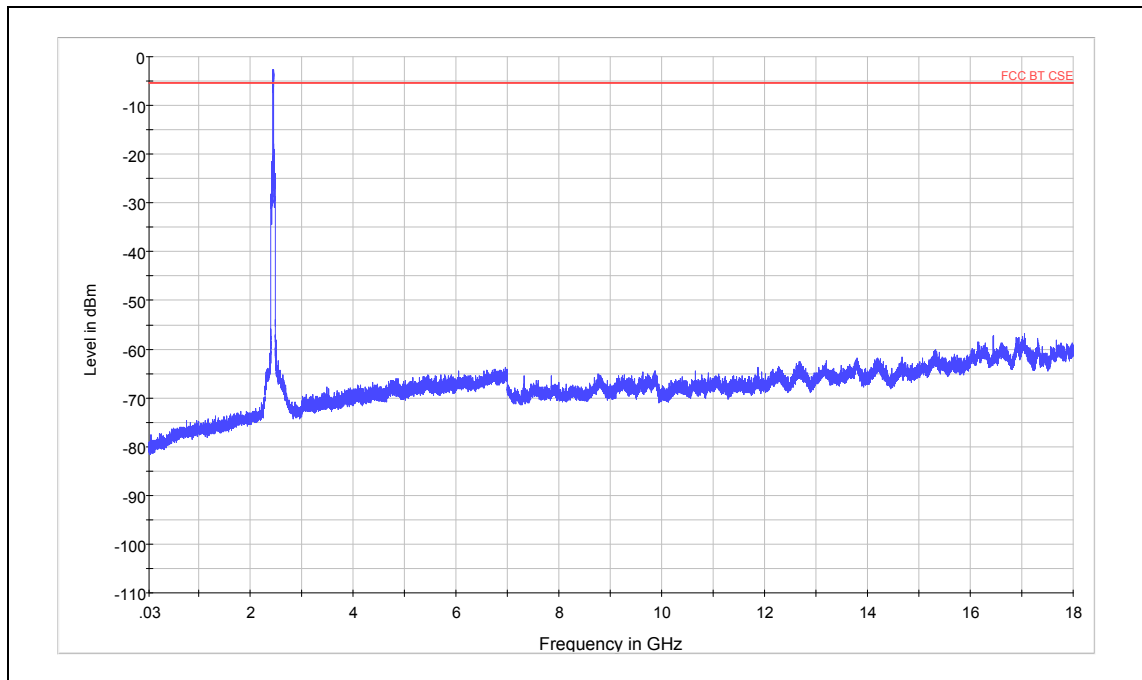
Spurious RF conducted emissions from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RZA1110-1740RF03R1

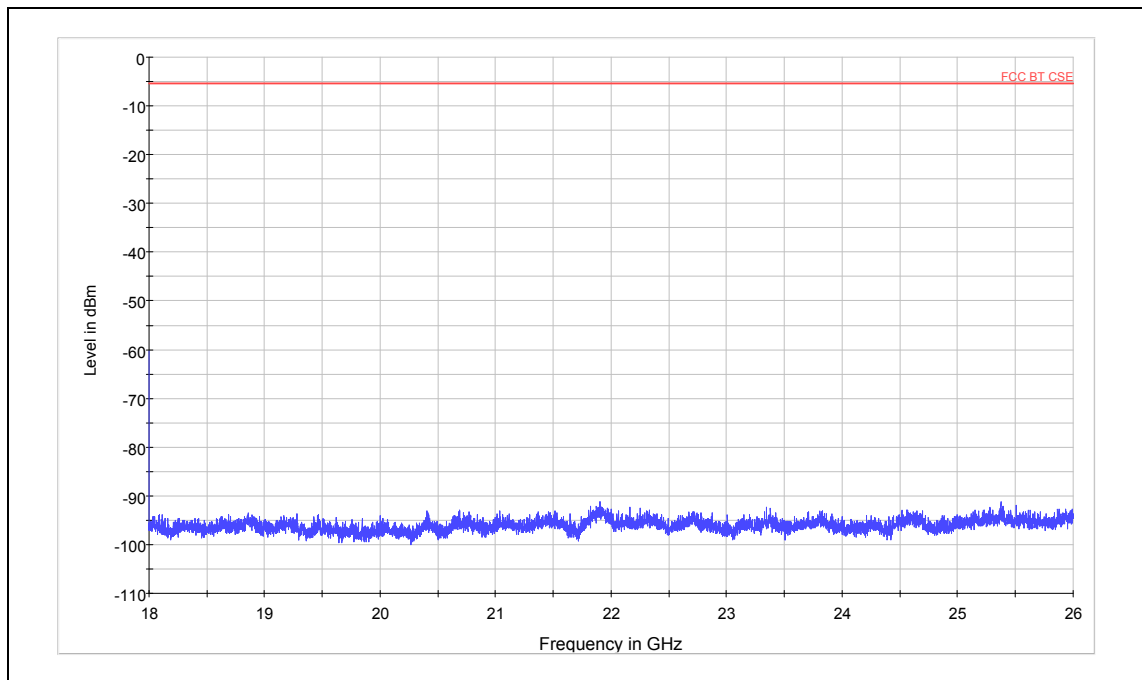
Page 70 of 128

802.11n(HT20) CH6



Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



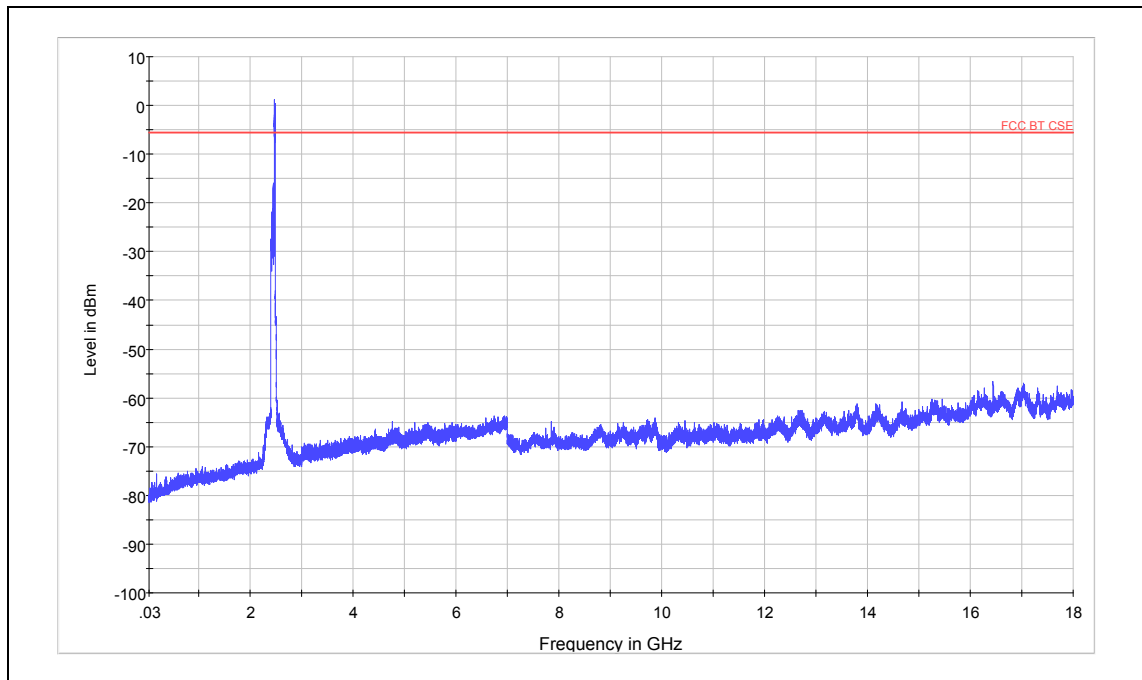
Spurious RF conducted emissions from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RZA1110-1740RF03R1

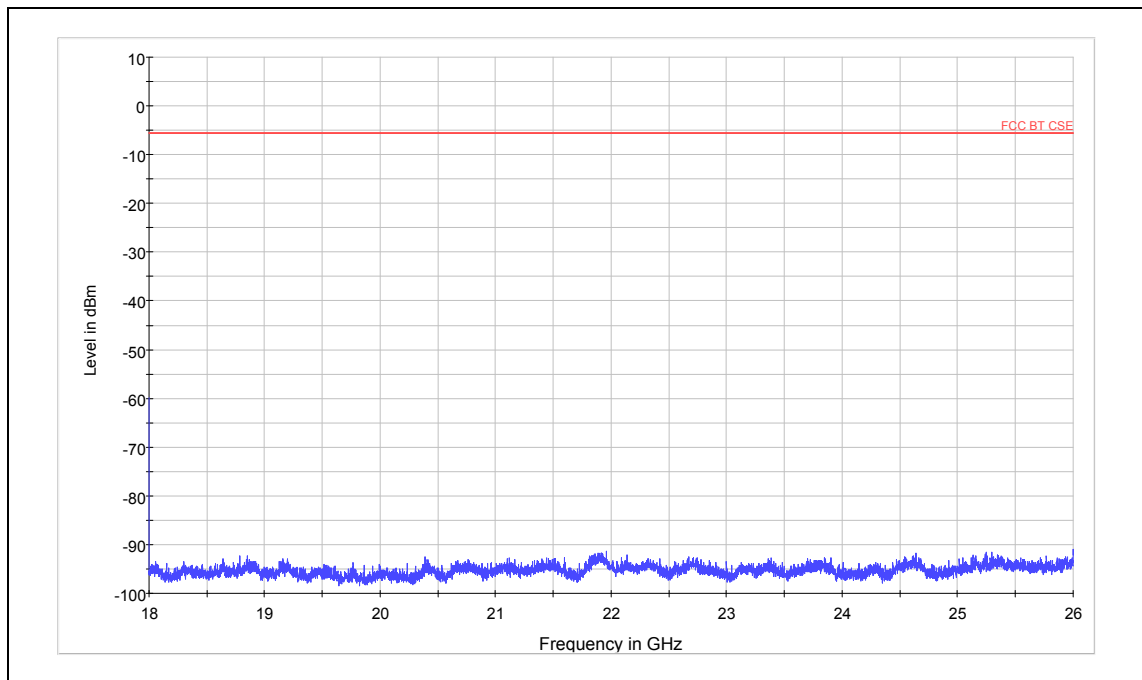
Page 71 of 128

802.11n(HT20) CH11



Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



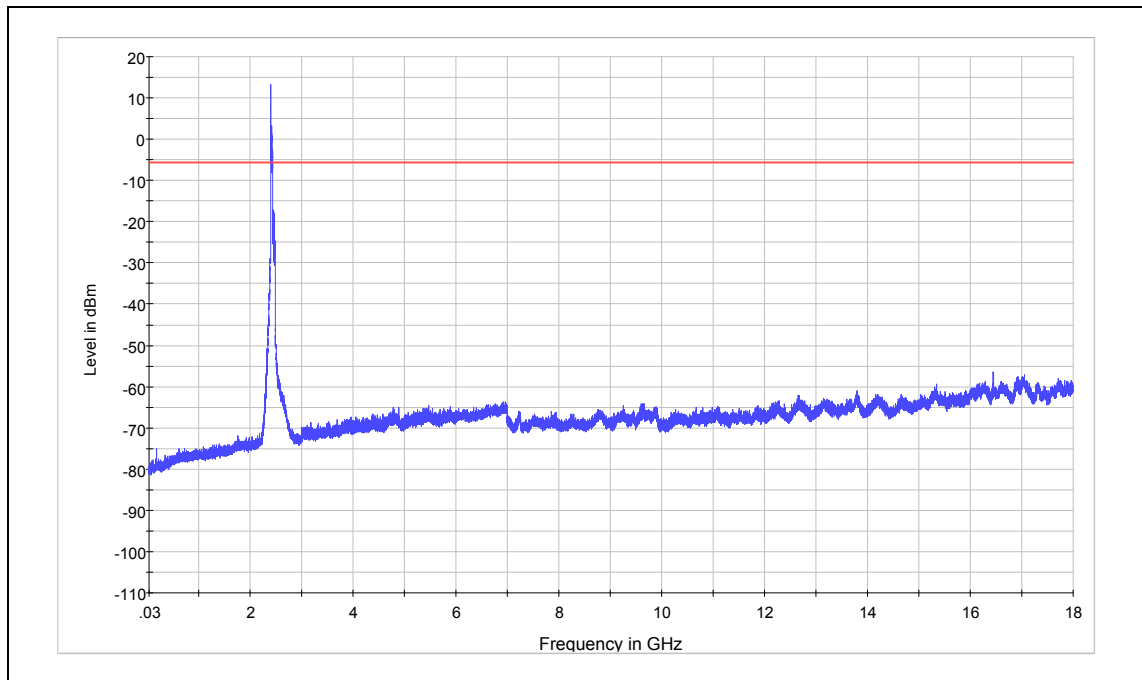
Spurious RF conducted emissions from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RZA1110-1740RF03R1

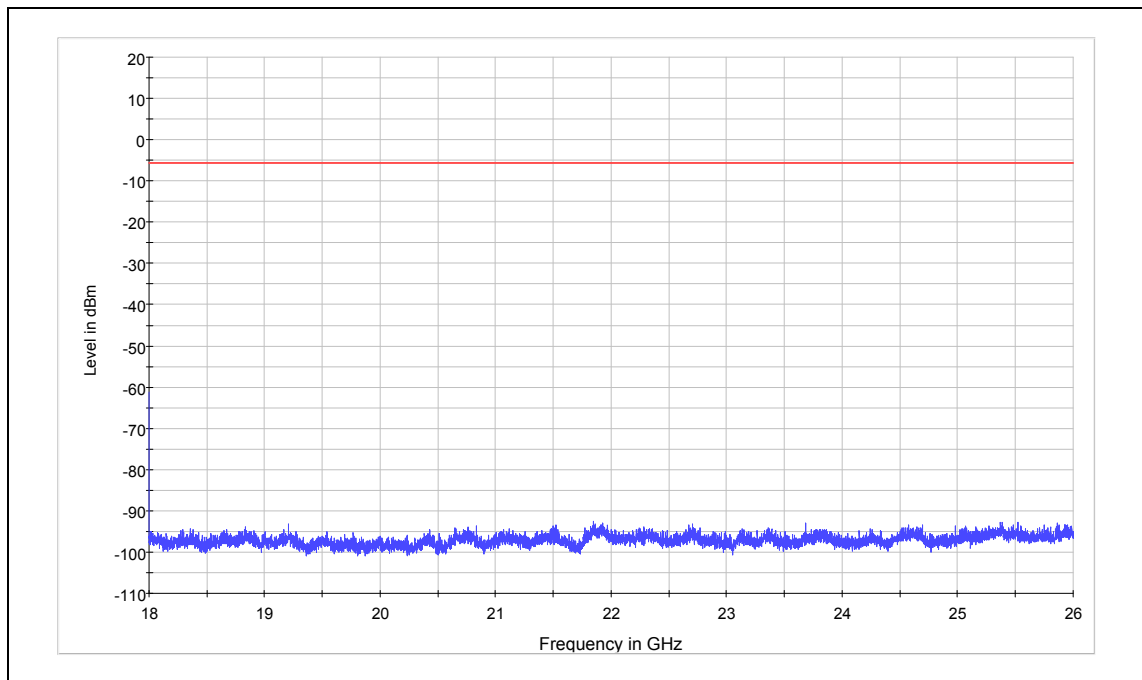
Page 72 of 128

802.11n(HT40) CH3



Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



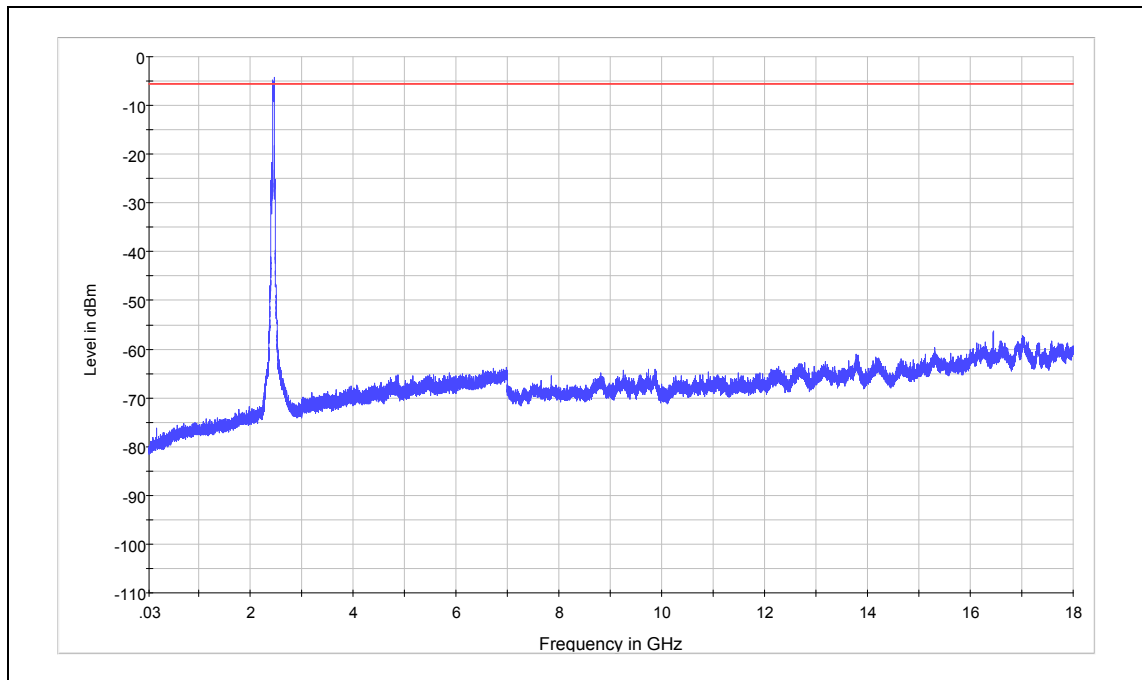
Spurious RF conducted emissions from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RZA1110-1740RF03R1

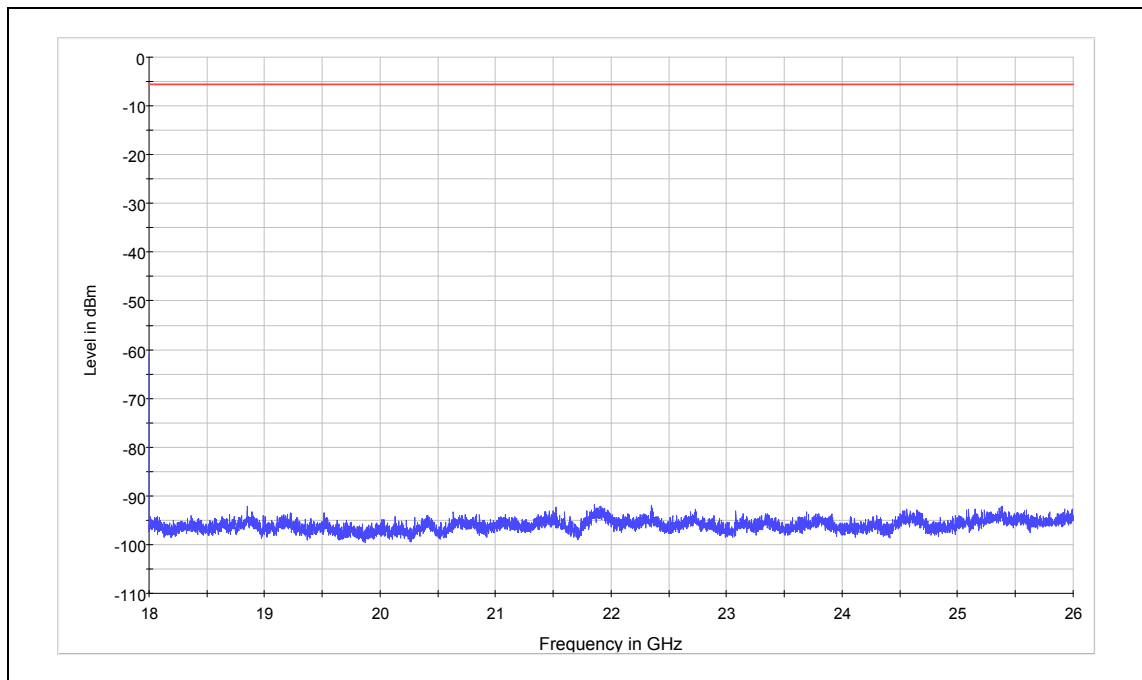
Page 73 of 128

802.11n(HT40) CH6



Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



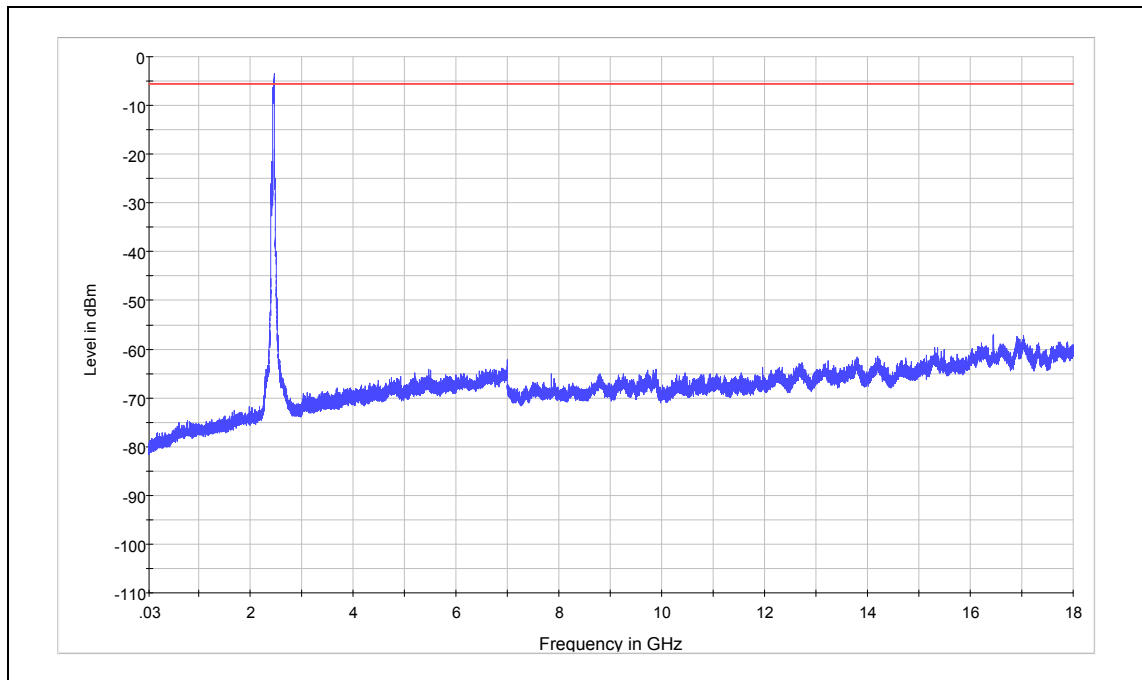
Spurious RF conducted emissions from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RZA1110-1740RF03R1

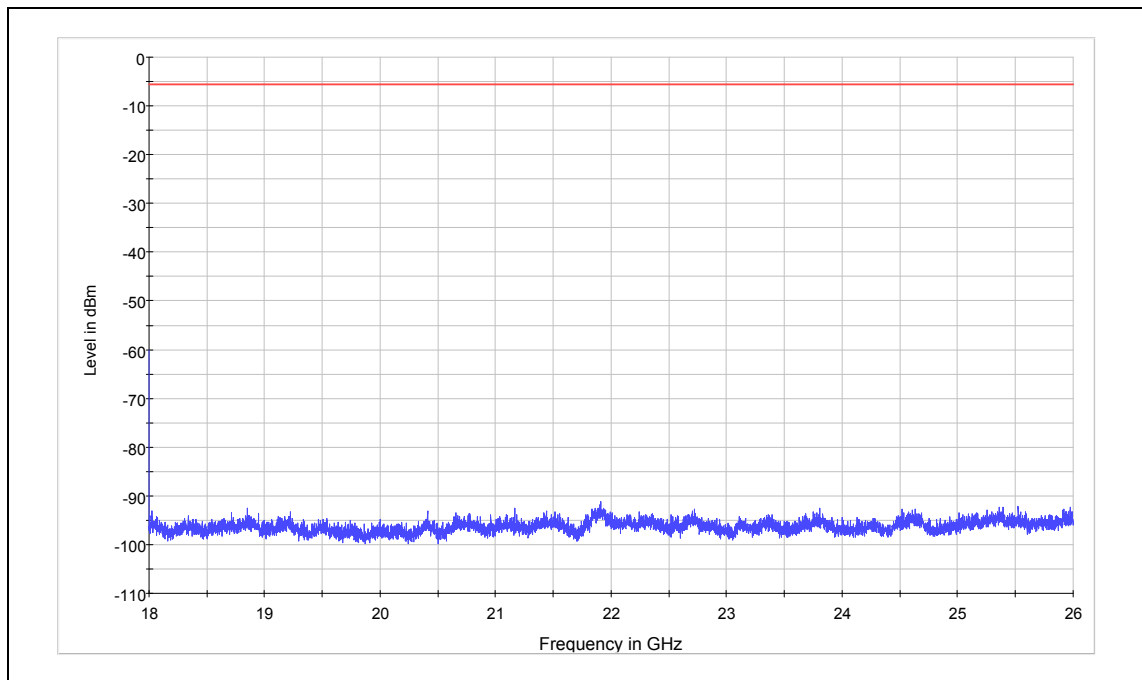
Page 74 of 128

802.11n(HT40) CH9



Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

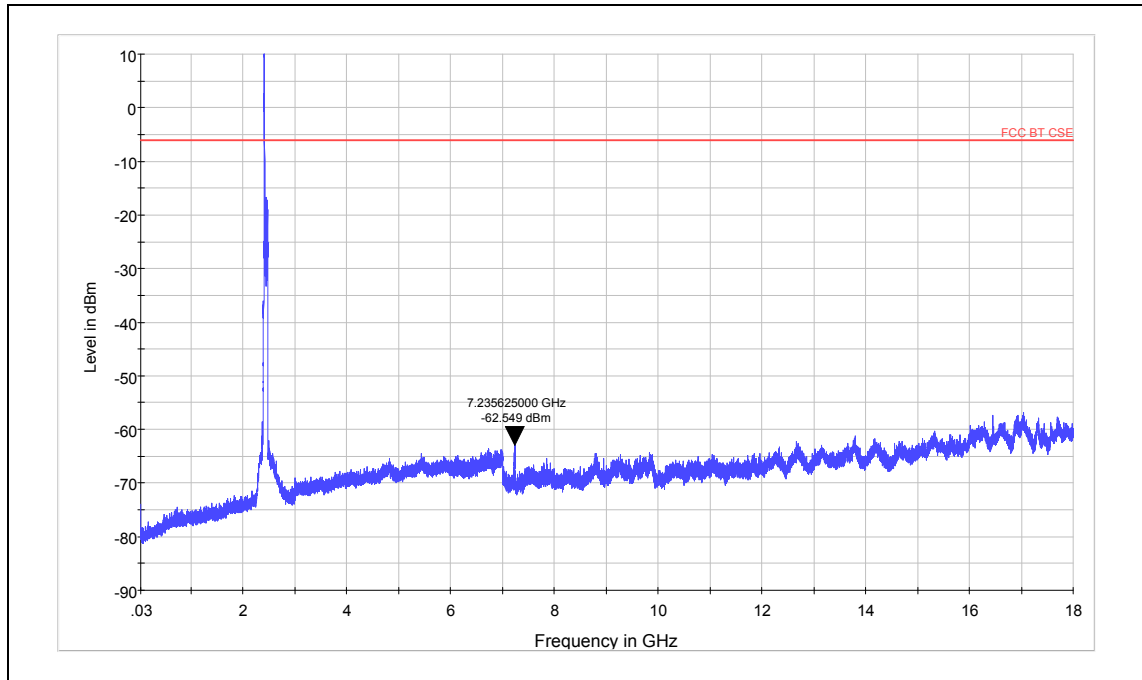
TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RZA1110-1740RF03R1

Page 75 of 128

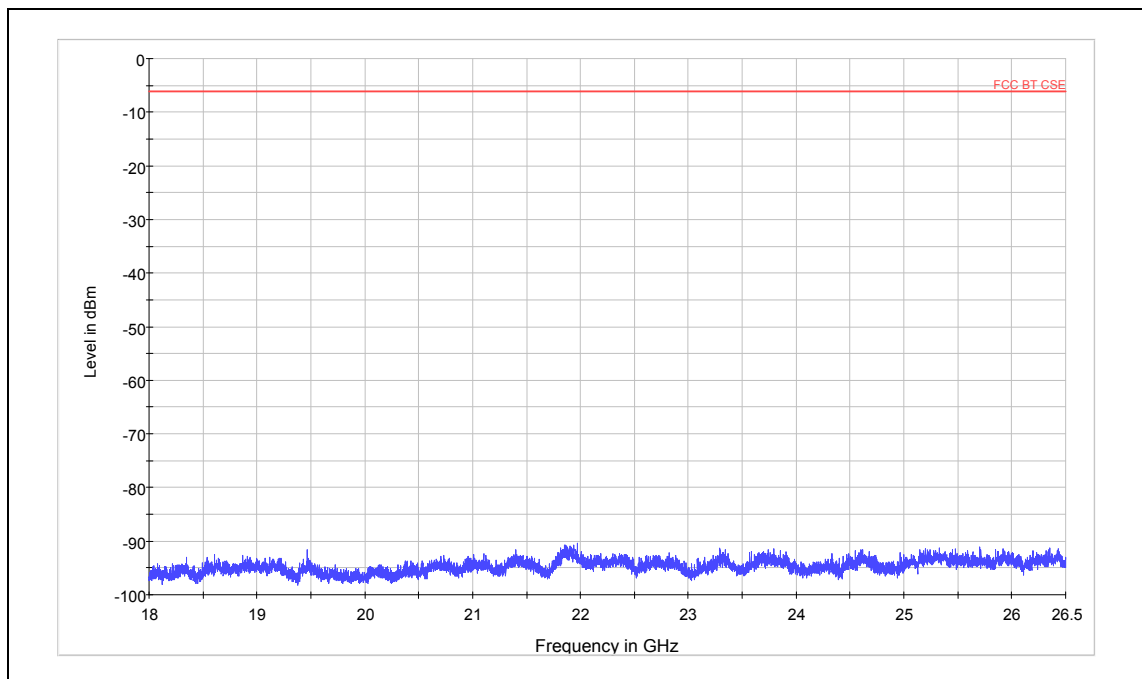
WAN 1

802.11b CH1



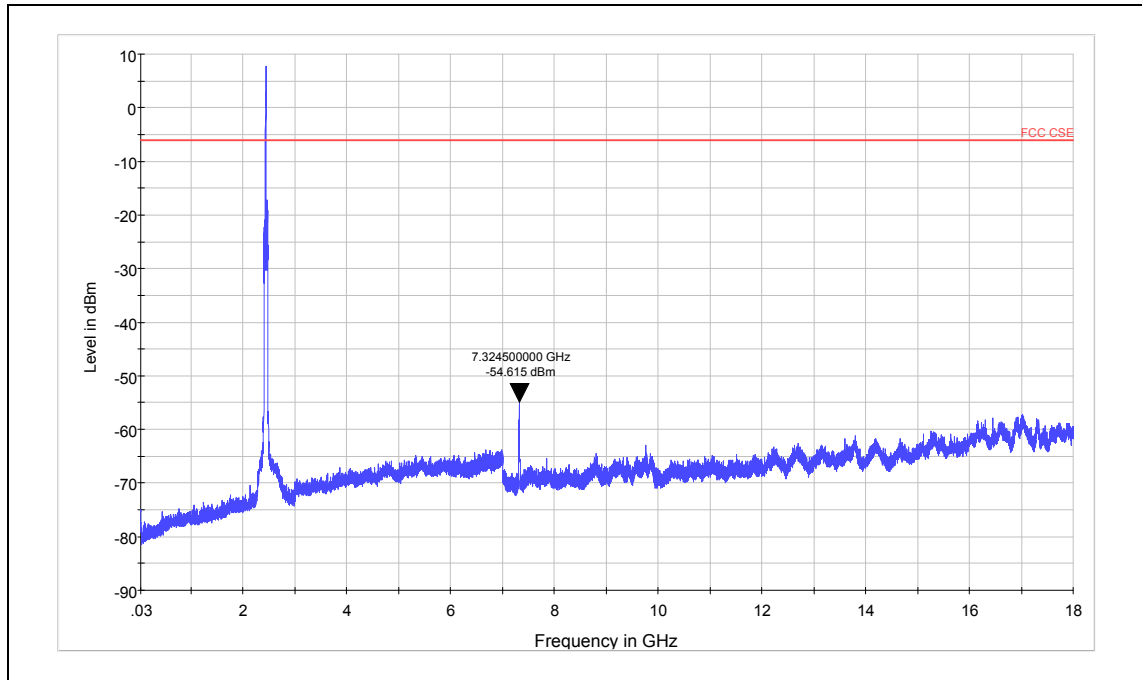
Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



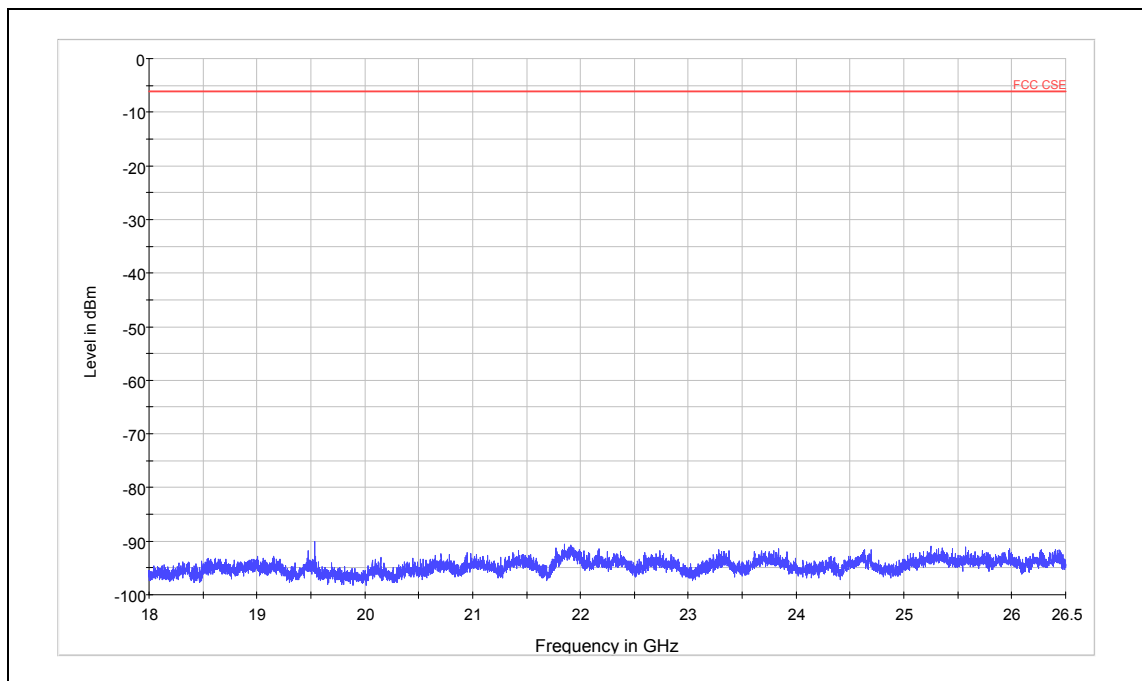
Spurious RF conducted emissions from 18GHz to 26.5GHz

802.11b CH6



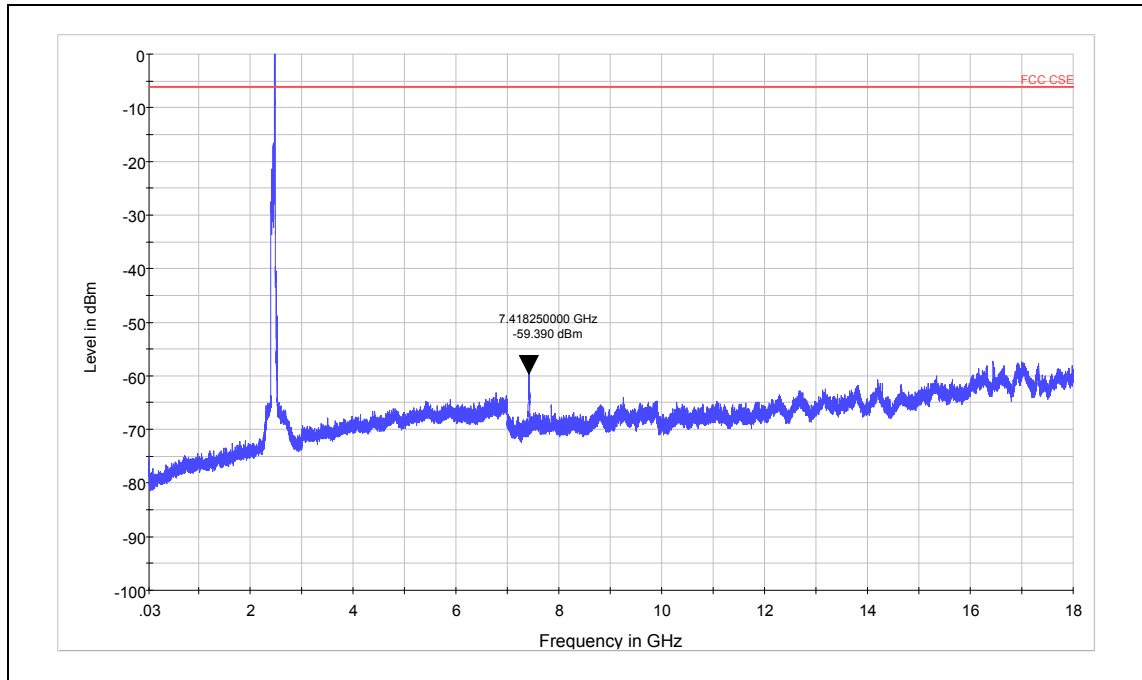
Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



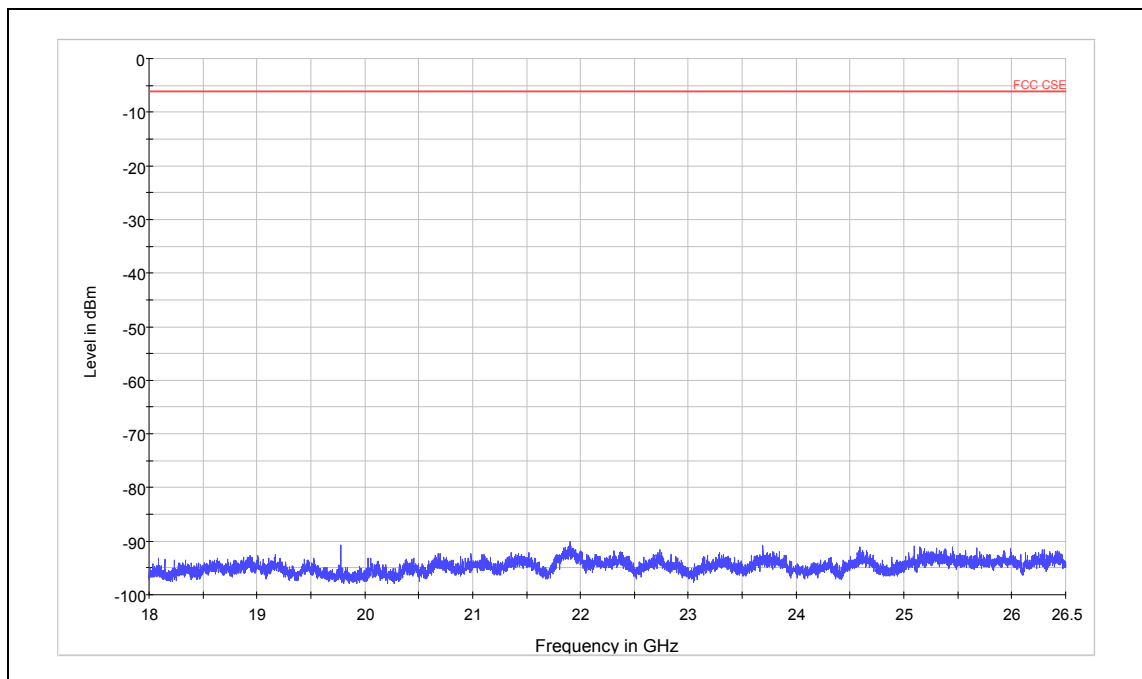
Spurious RF conducted emissions from 18GHz to 26.5GHz

802.11b CH11



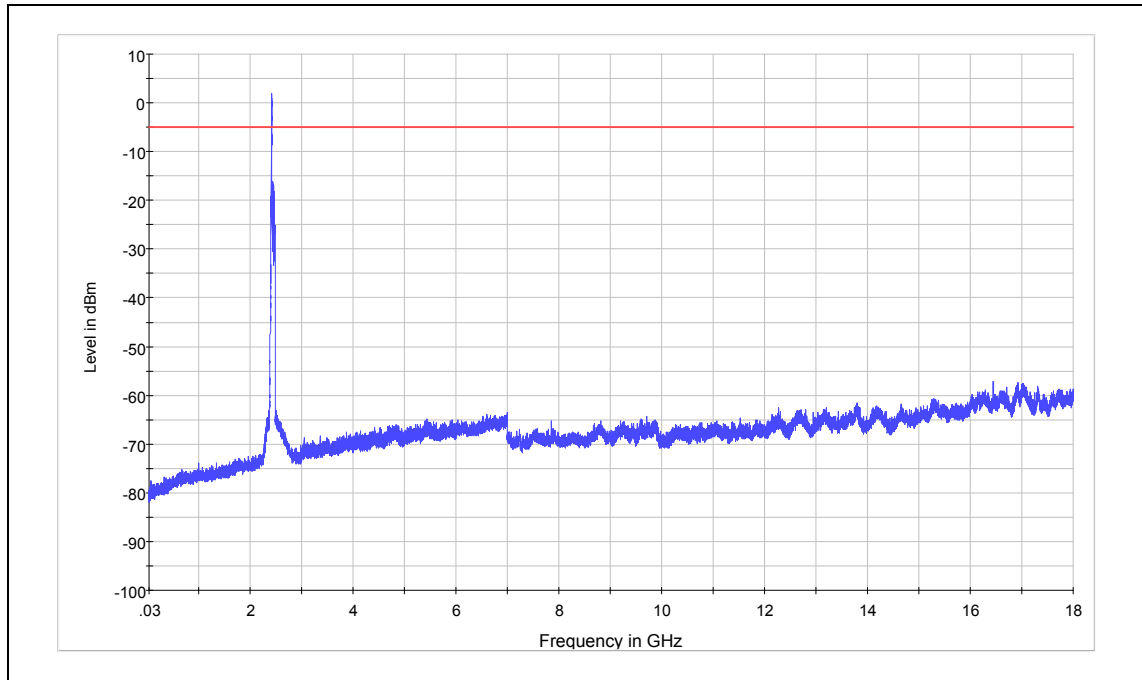
Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



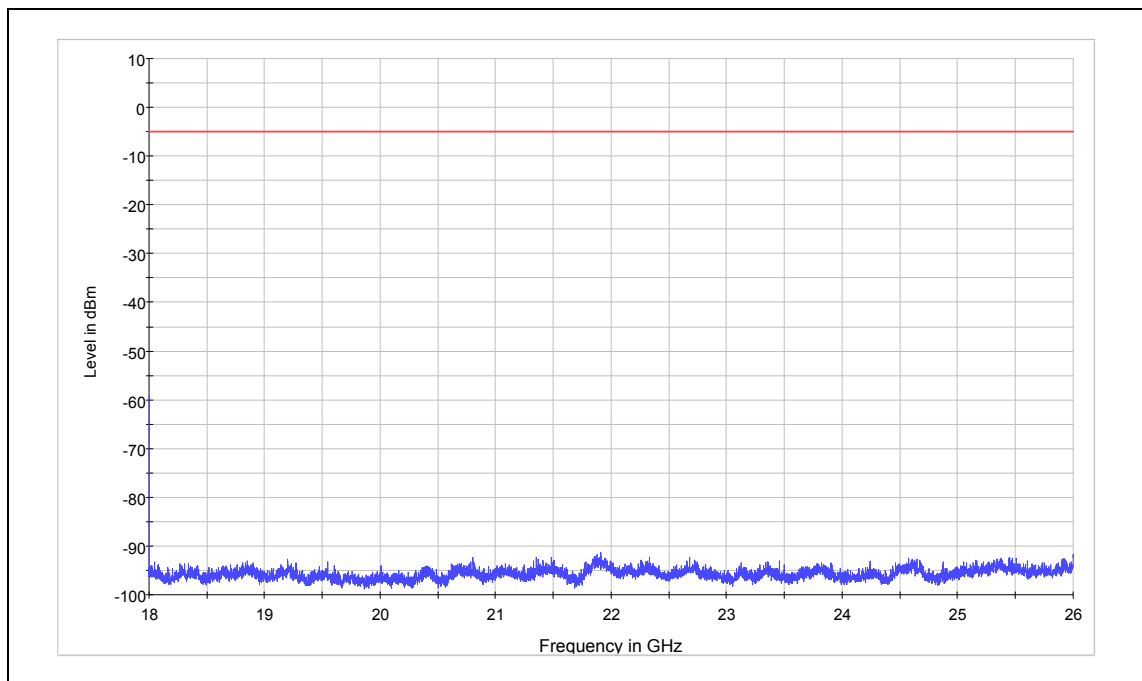
Spurious RF conducted emissions from 18GHz to 26.5GHz

802.11g CH1



Note: The signal beyond the limit is carrier

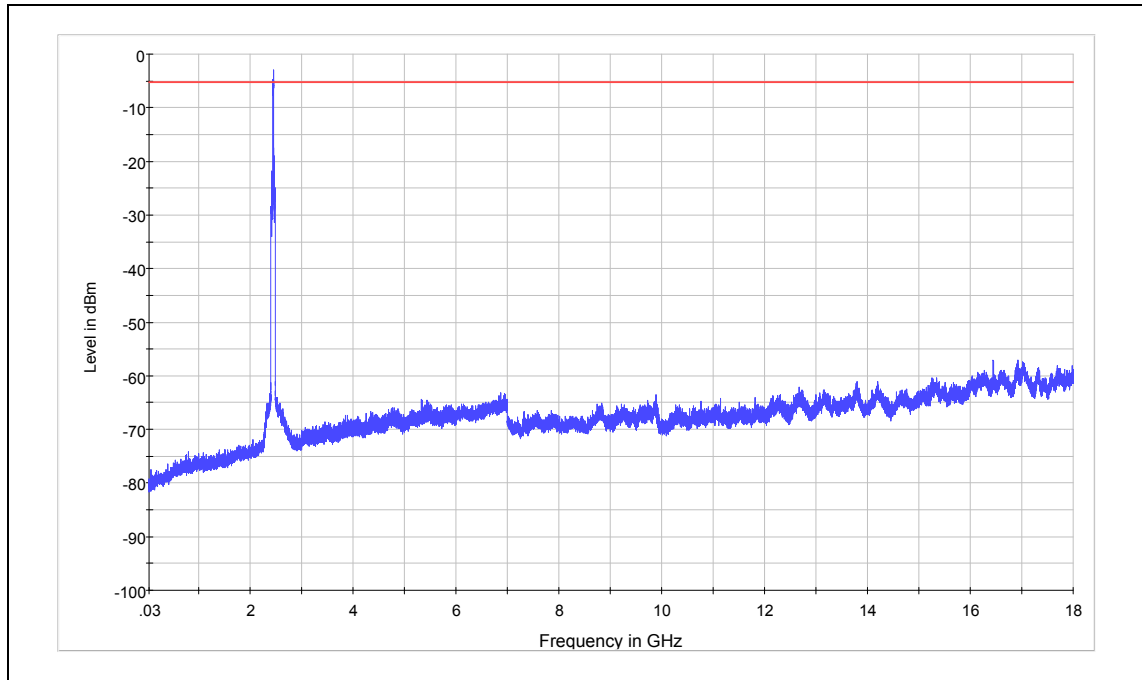
Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

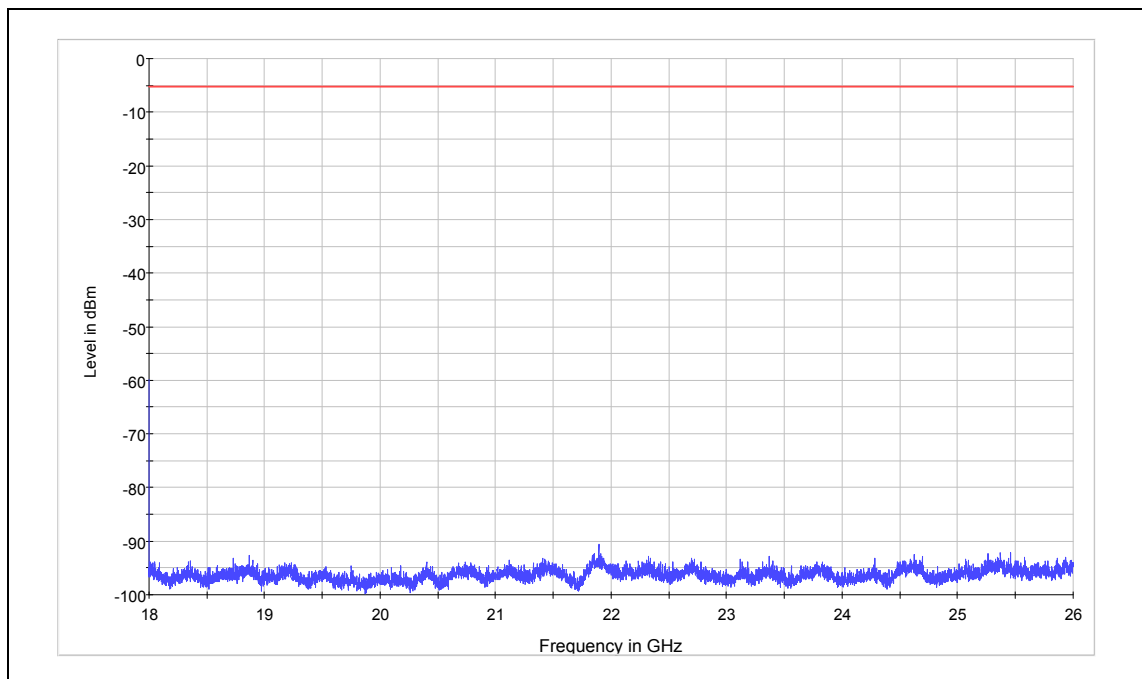
TA Technology (Shanghai) Co., Ltd. Test Report

802.11g CH6



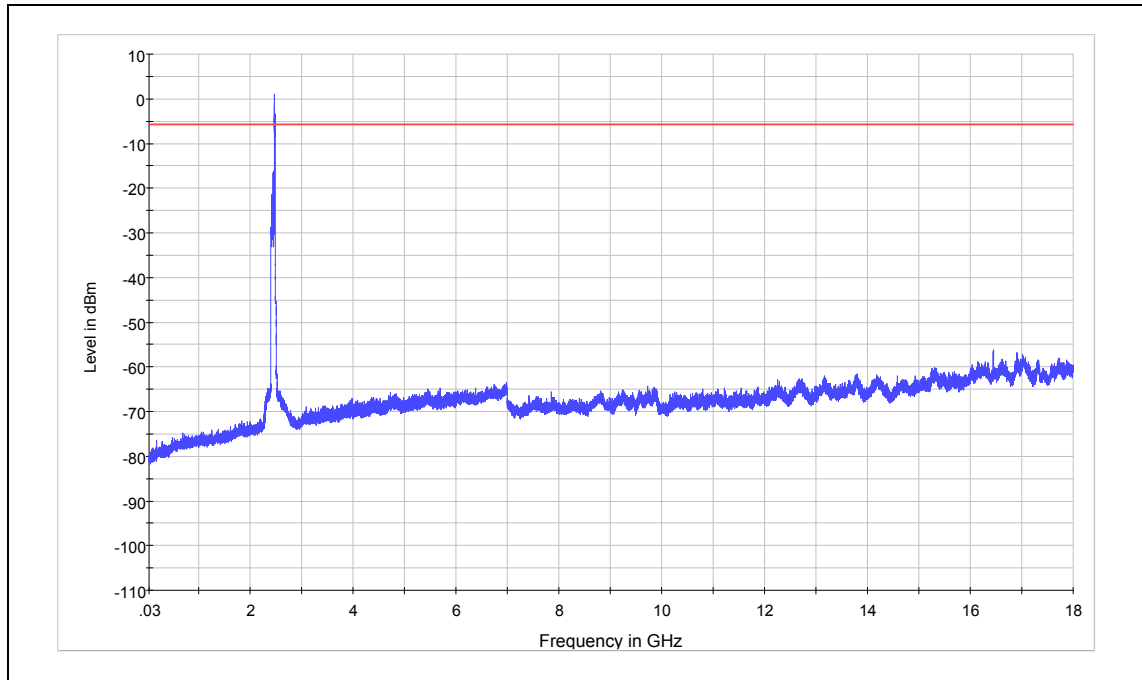
Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



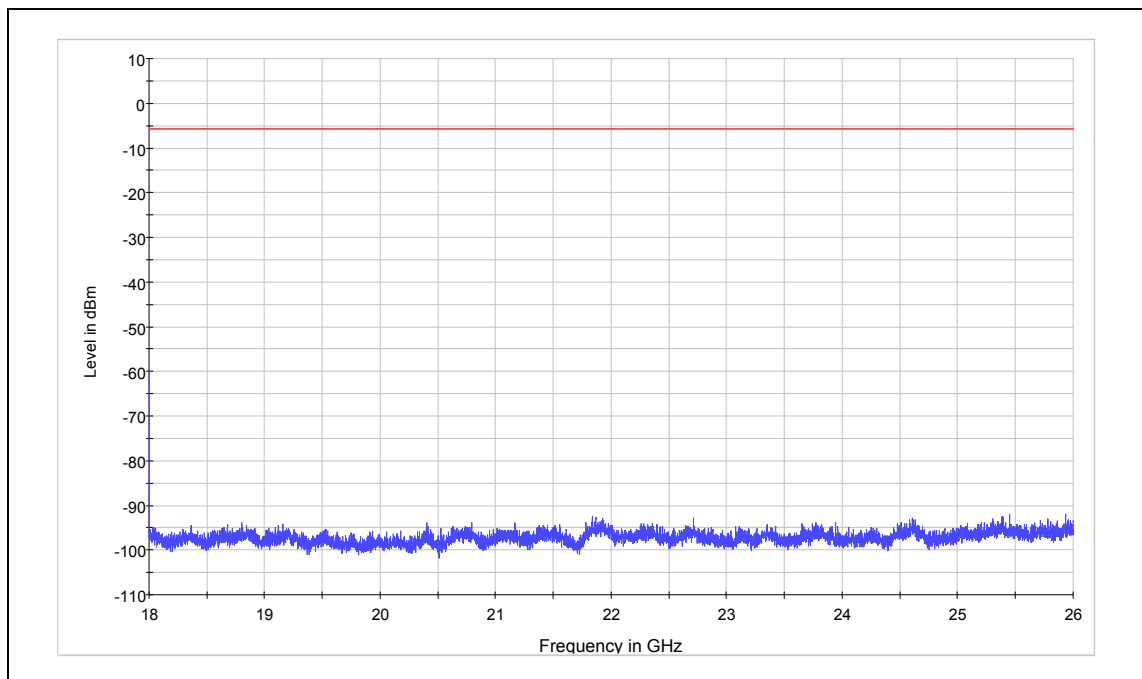
Spurious RF conducted emissions from 18GHz to 26.5GHz

802.11g CH11



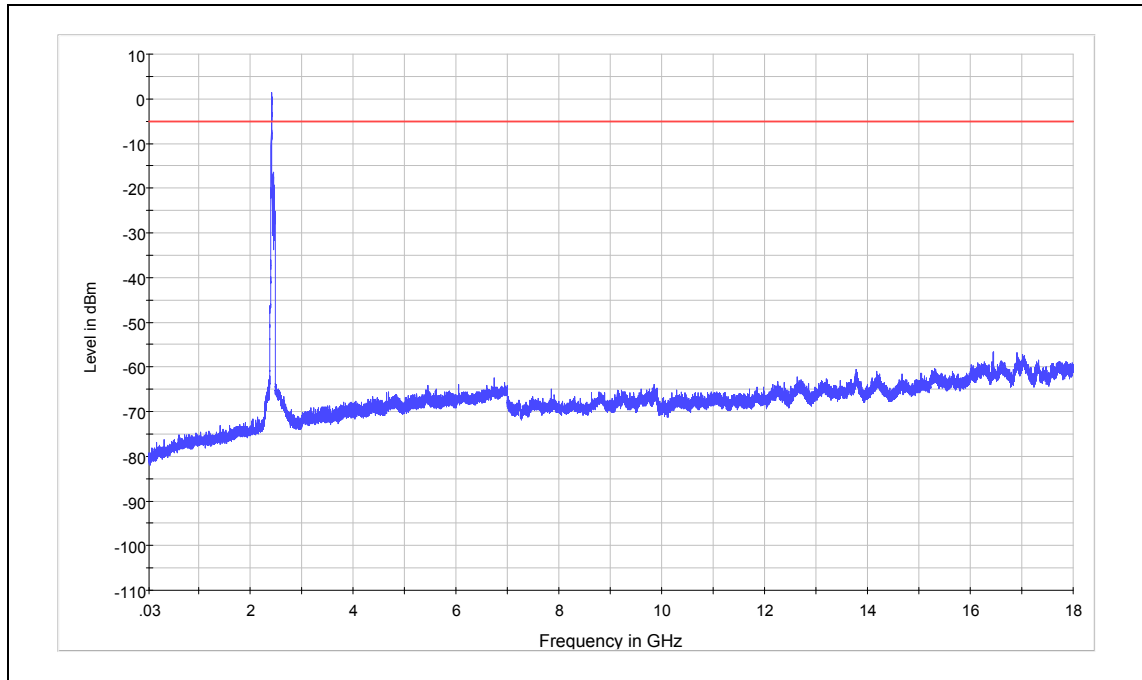
Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



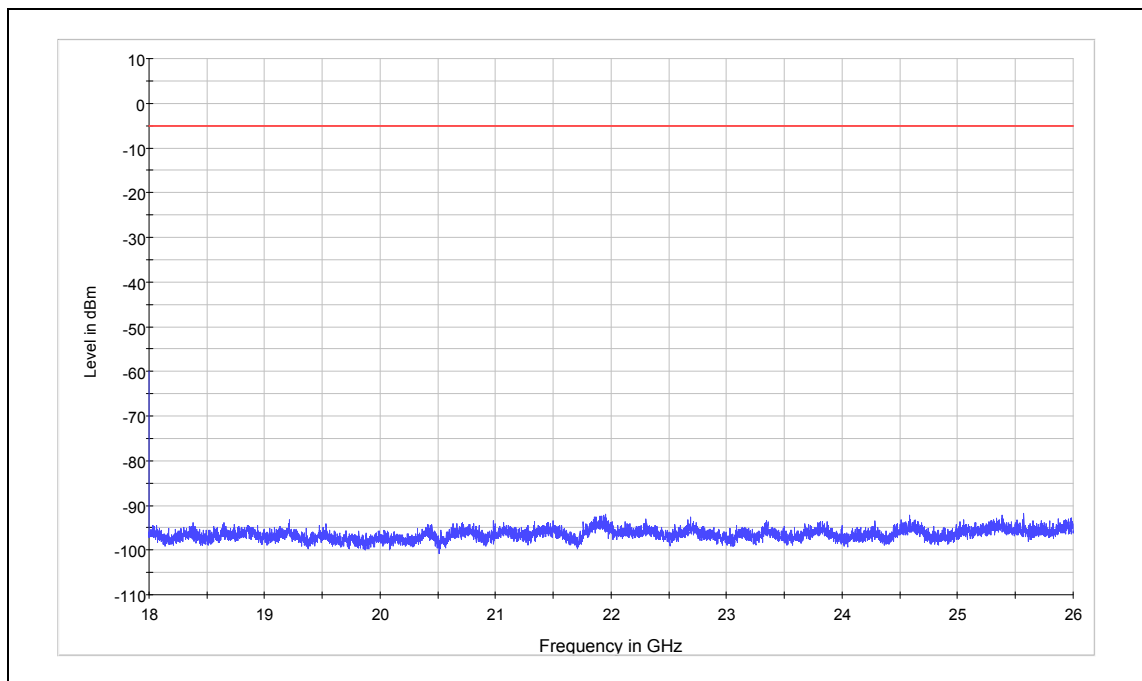
Spurious RF conducted emissions from 18GHz to 26.5GHz

802.11n(HT20) CH1



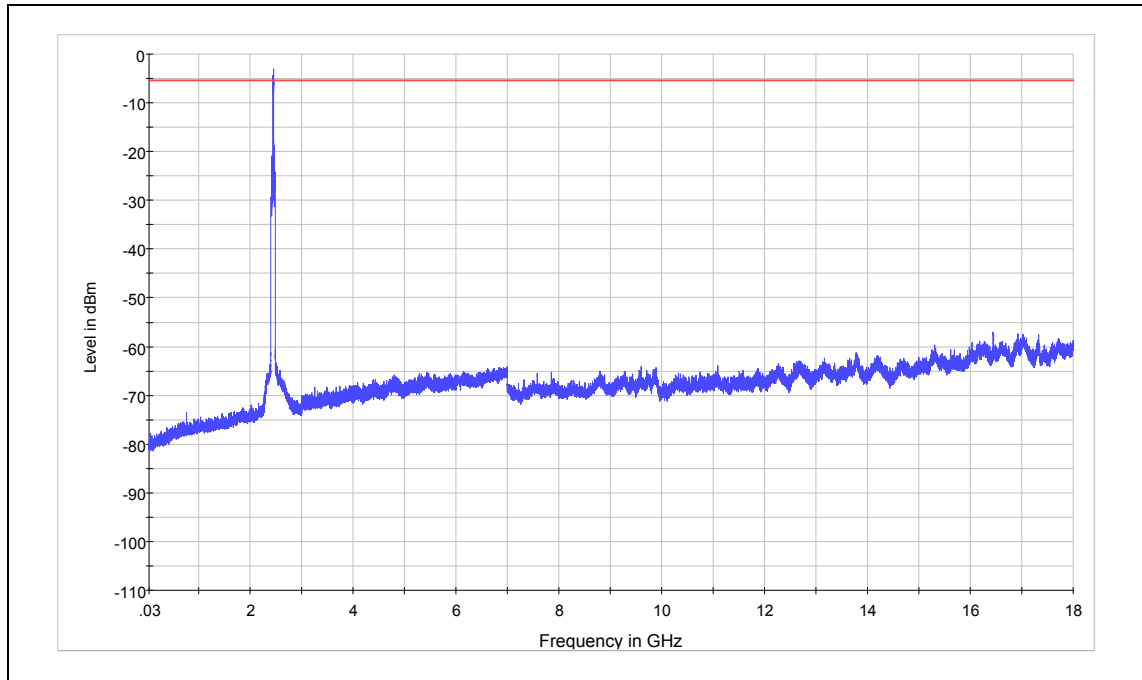
Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



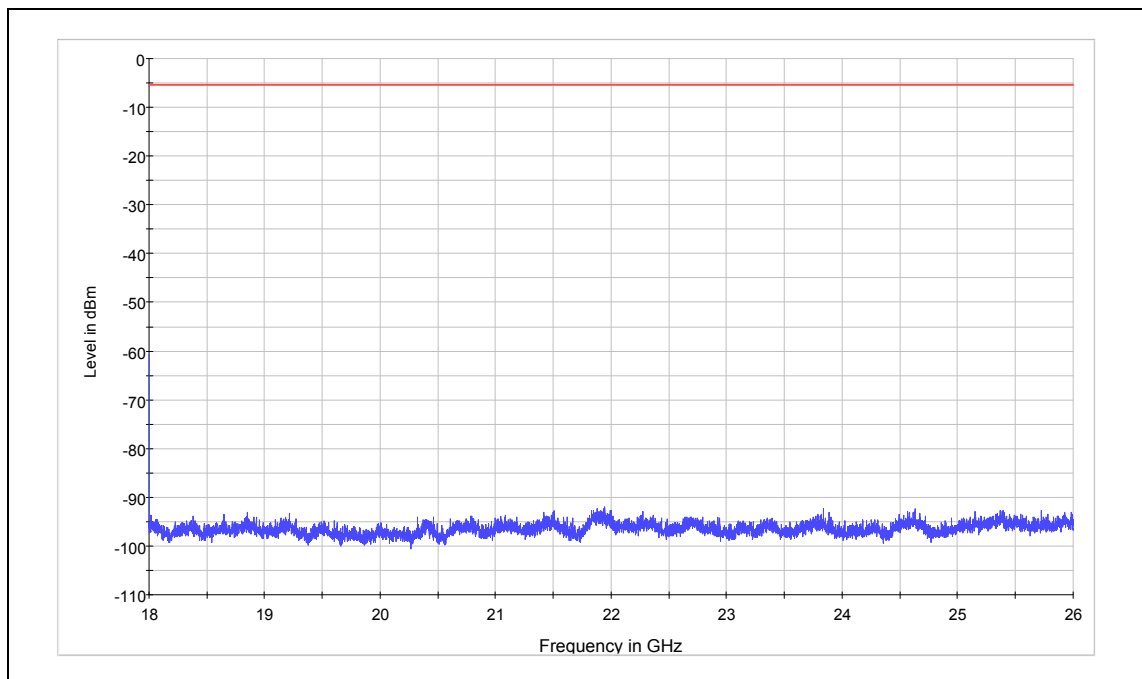
Spurious RF conducted emissions from 18GHz to 26.5GHz

802.11n(HT20) CH6



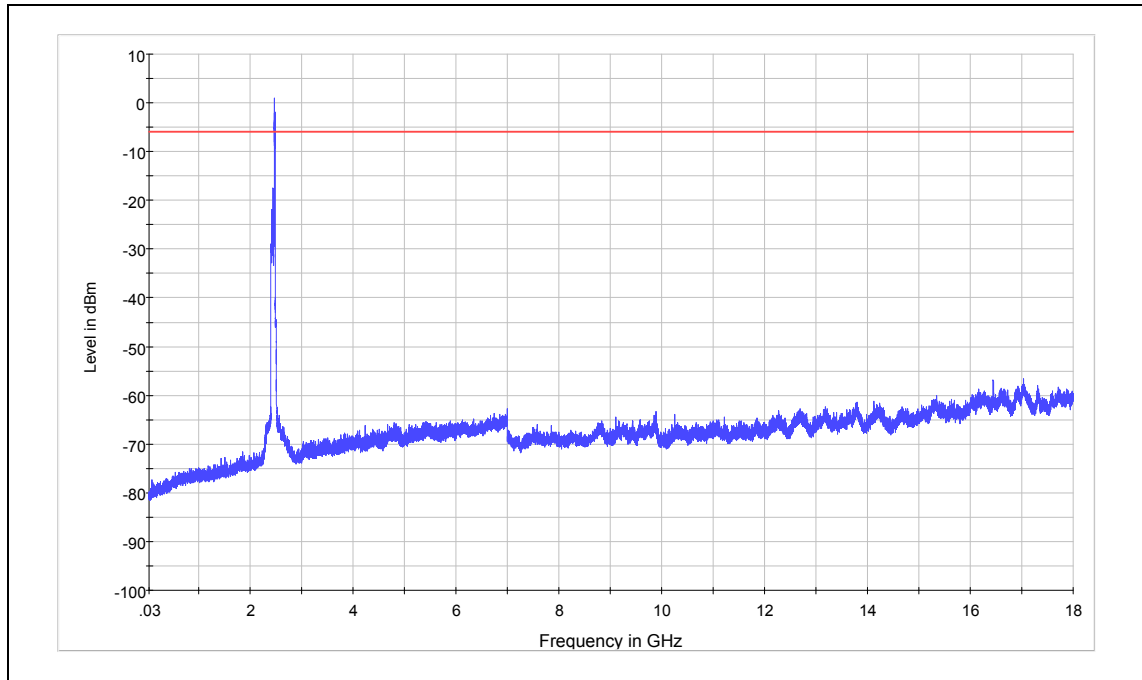
Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



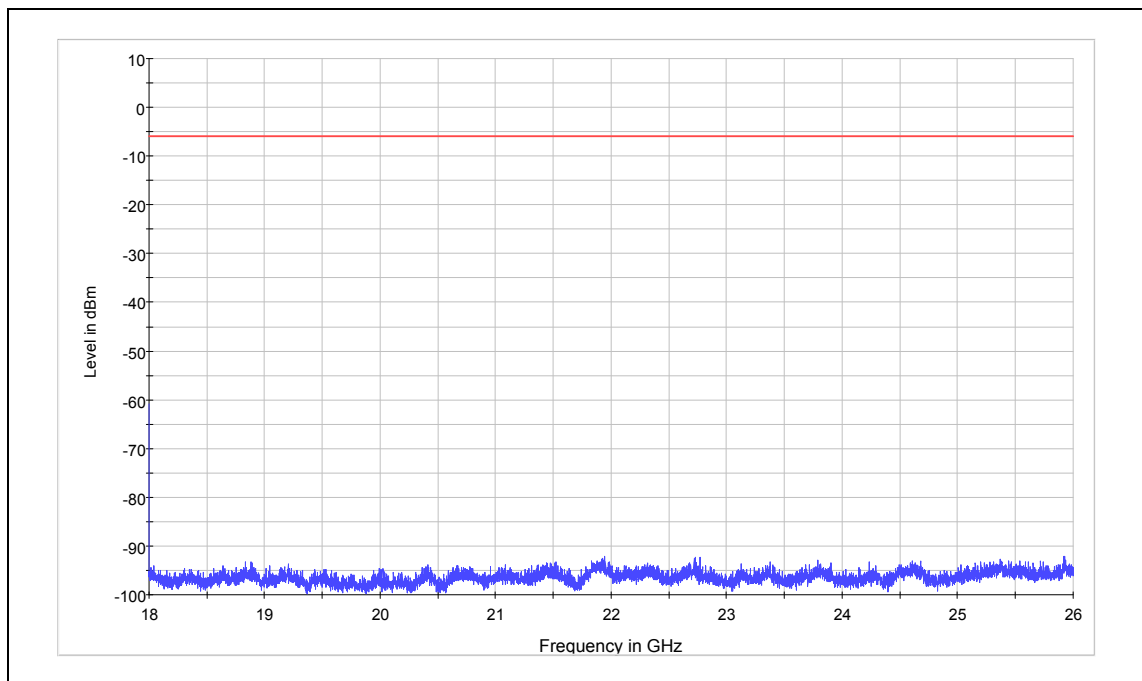
Spurious RF conducted emissions from 18GHz to 26.5GHz

802.11n(HT20) CH11



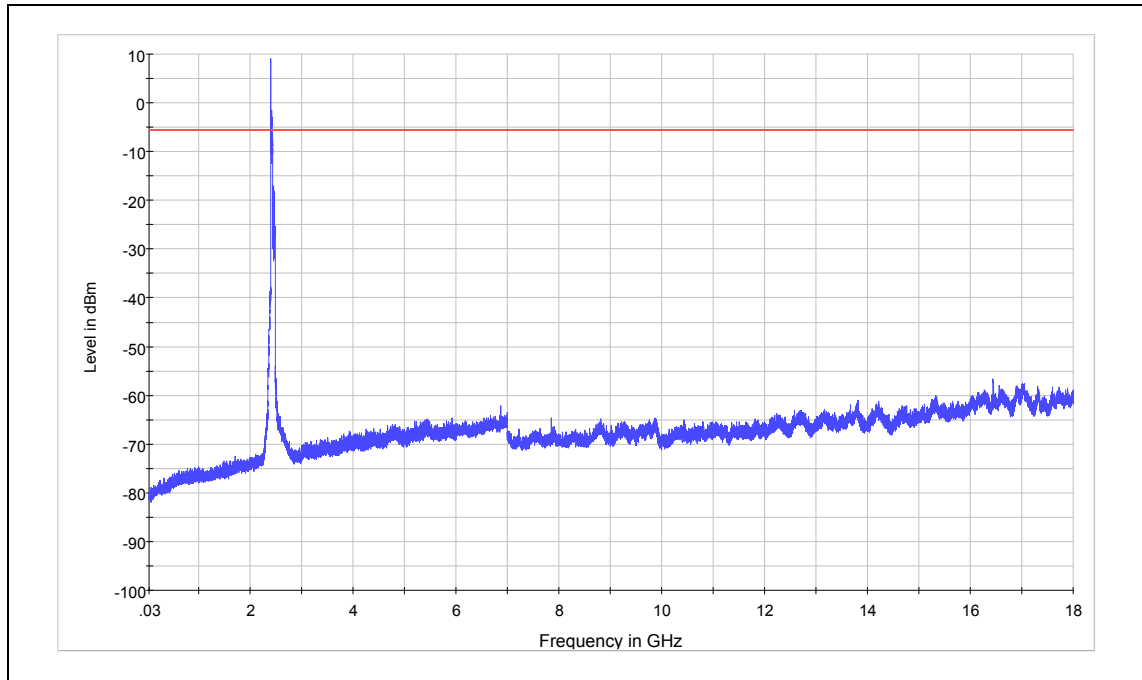
Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



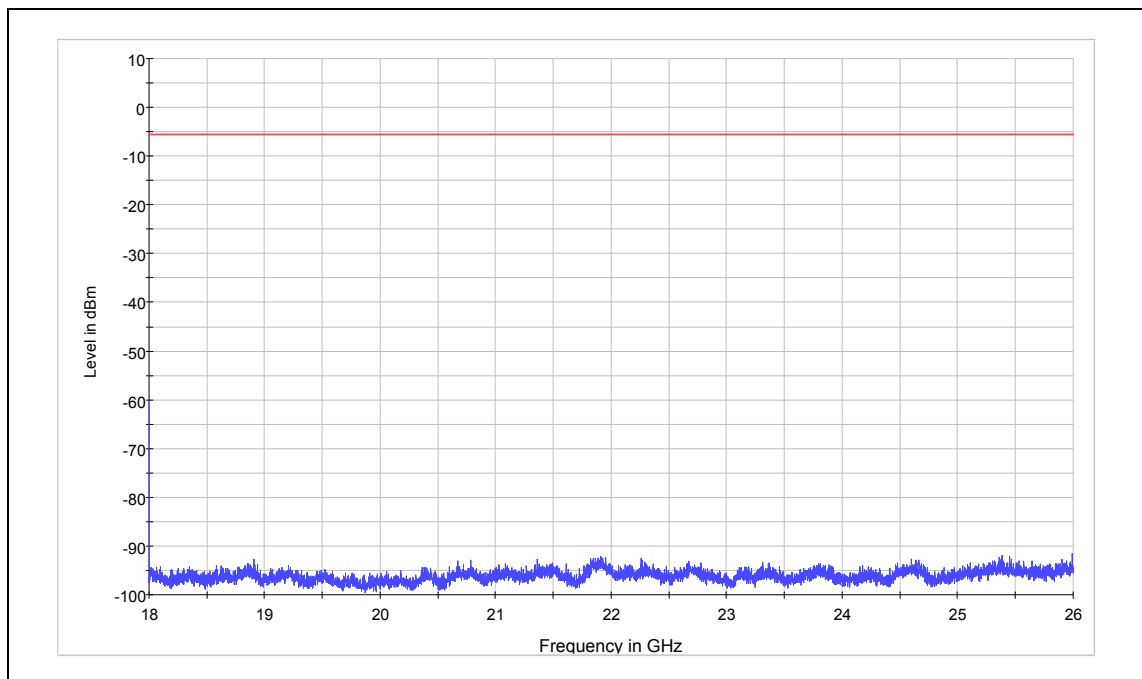
Spurious RF conducted emissions from 18GHz to 26.5GHz

802.11n(HT40) CH3



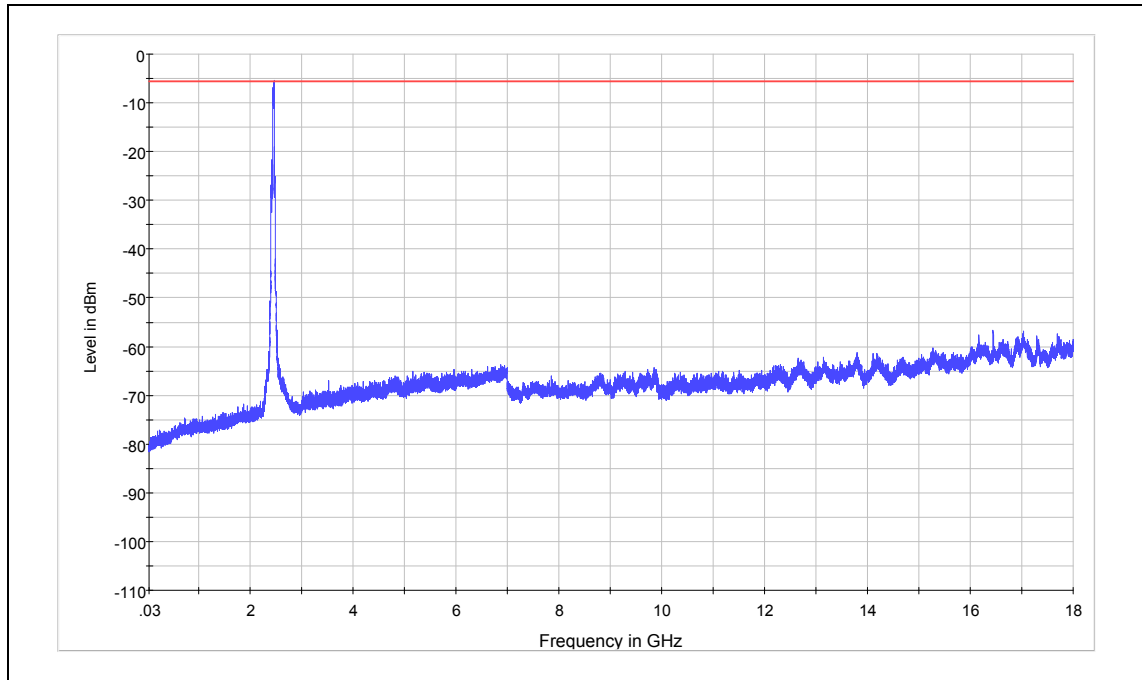
Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



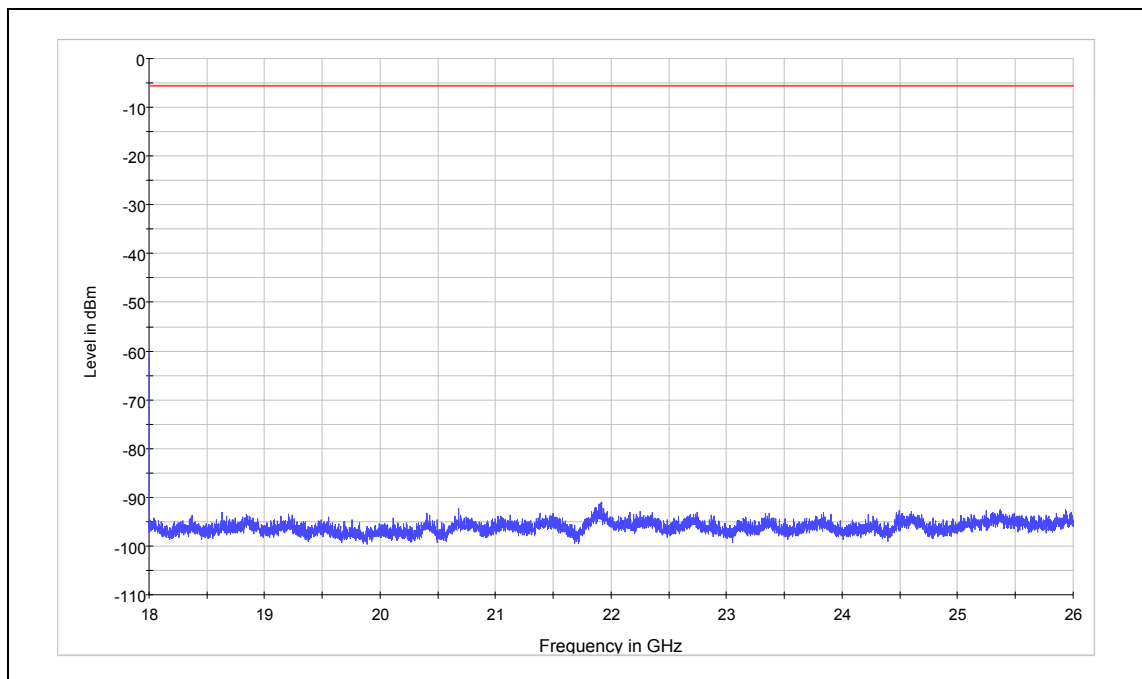
Spurious RF conducted emissions from 18GHz to 26.5GHz

802.11n(HT40) CH6



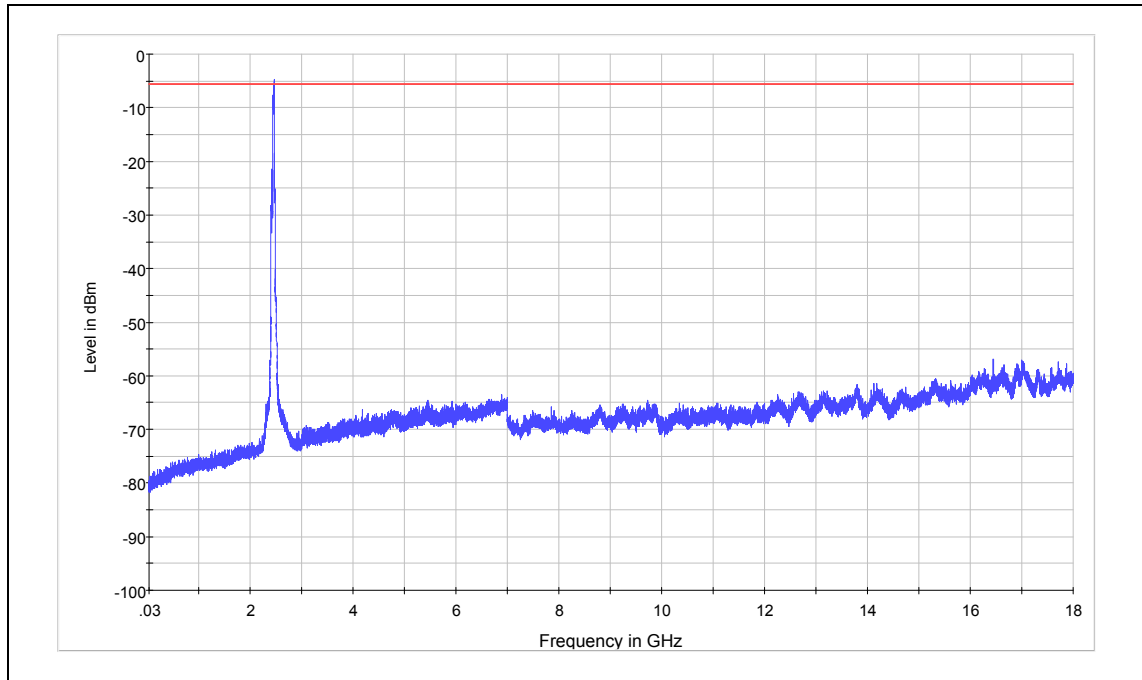
Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



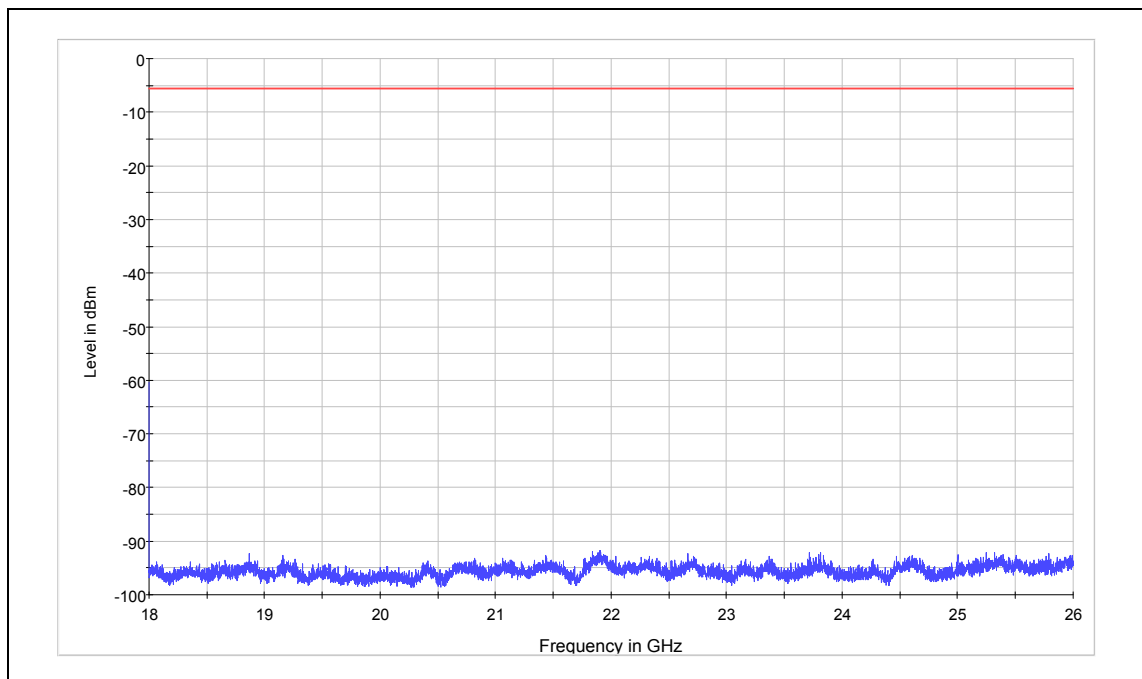
Spurious RF conducted emissions from 18GHz to 26.5GHz

802.11n(HT40) CH9



Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

2.8. Radiated Emission

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The test set-up was made in accordance to the general provisions of ANSI C63.4-2003. The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The radiated emissions measurements were made in a typical installation configuration. Sweep the whole frequency band through the range from 30MHz to 26GHz During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.

Set the spectrum analyzer in the following:

Below 1GHz (detector: Peak and Quasi-Peak)

RBW=100kHz / VBW=300kHz / Sweep=AUTO

Above 1GHz(detector: Peak):

(a) PEAK: RBW=1MHz VBW=3MHz/ Sweep=AUTO

(b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO

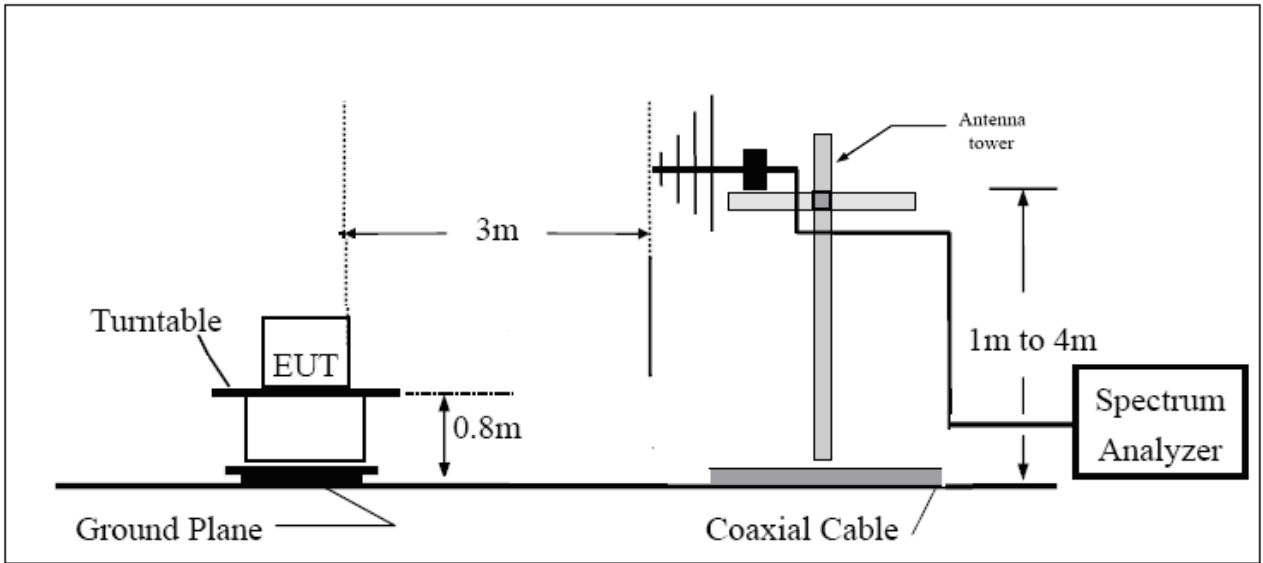
The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Z axis) and the worst case was recorded. Then this mode was measured in the following mode: EUT with cradle and EUT without cradle. The worst emission was found in EUT with cradle mode and the worst case was recorded.

The test is in transmit mode.

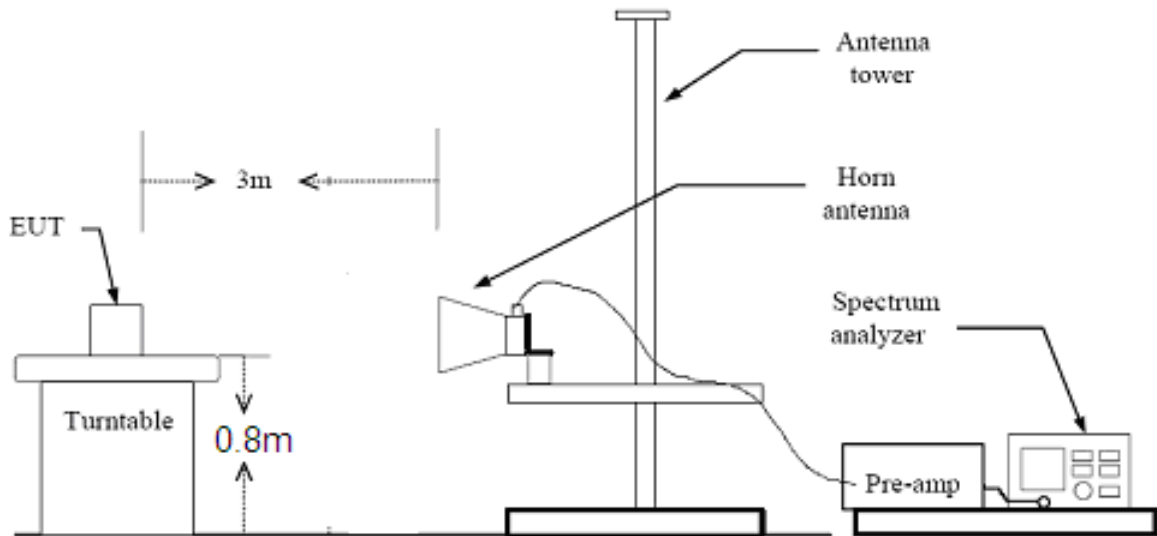
Test setup

Below 1GHz

TA Technology (Shanghai) Co., Ltd.
Test Report



Above 1GHz



TA Technology (Shanghai) Co., Ltd.
Test Report

Report No.: RZA1110-1740RF03R1

Page 89 of 128

Limits

Rule Part 15.247(d) specifies that “In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).”

Limit in restricted band

Frequency of emission (MHz)	Field strength(uV/m)	Field strength(dBuV/m)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above960	500	54

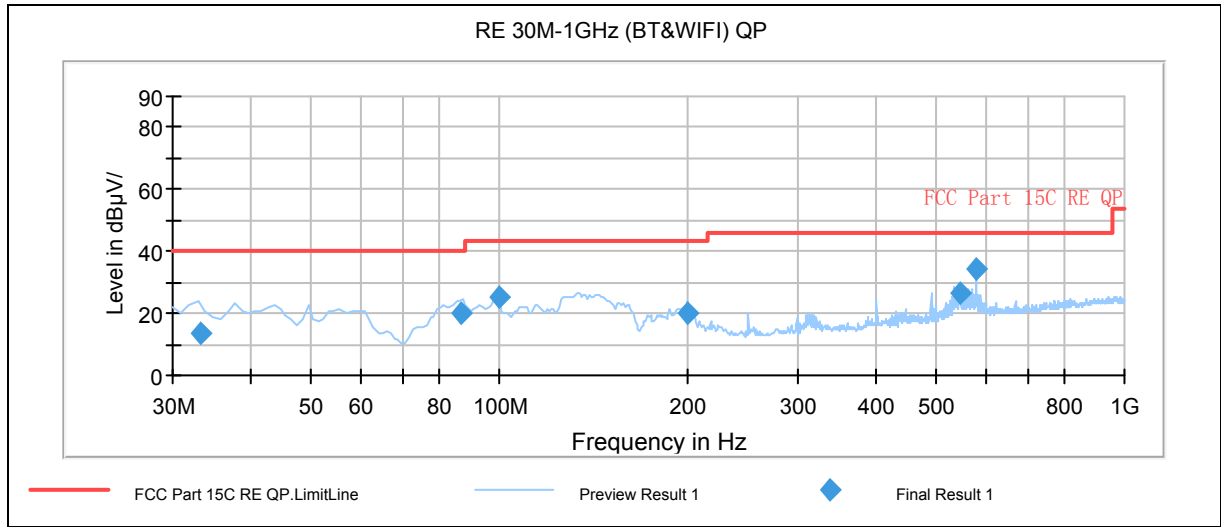
Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

Frequency	Uncertainty
30MHz-200MHz	4.19 dB
200MHz-1GHz	3.63 dB
1GHz – 6GHz	3.68 dB

TA Technology (Shanghai) Co., Ltd. Test Report

Test result
802.11b CH1

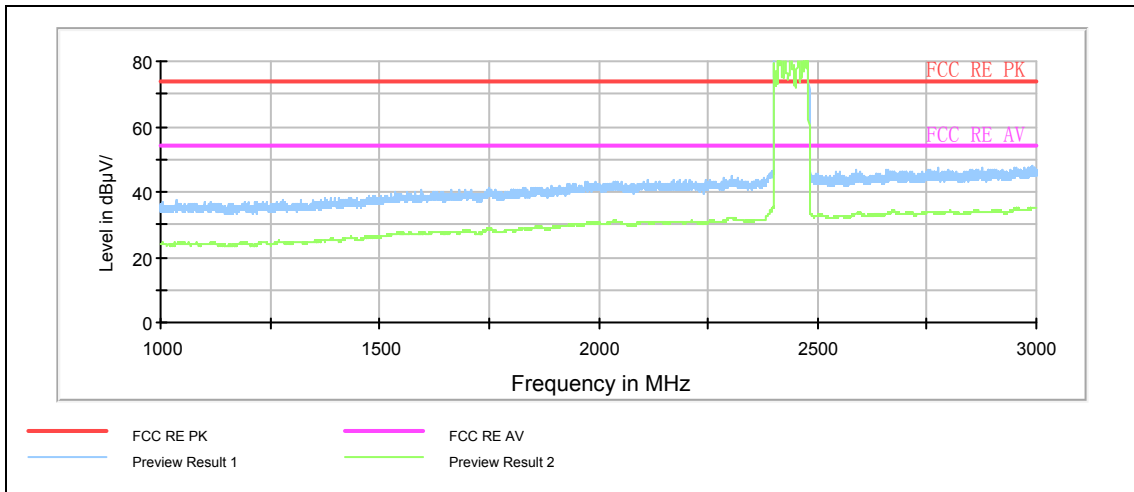


Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
33.150000	13.6	100.0	V	130.0	43.6	37.9	26.4	40.0
86.630000	19.8	222.0	H	0.0	47.5	49.8	20.2	40.0
100.000000	25.4	100.0	V	0.0	55.8	53.1	18.1	43.5
200.030000	20.2	100.0	V	0.0	42.3	50.6	23.3	43.5
546.000000	26.4	100.0	V	337.0	47.4	48.5	19.6	46.0
579.430000	34.0	100.0	V	331.0	34	55	12.0	46.0

- Remark:**
1. Quasi-Peak = Reading value + Correction factor
 2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)
 3. Margin = Limit – Quasi-Peak

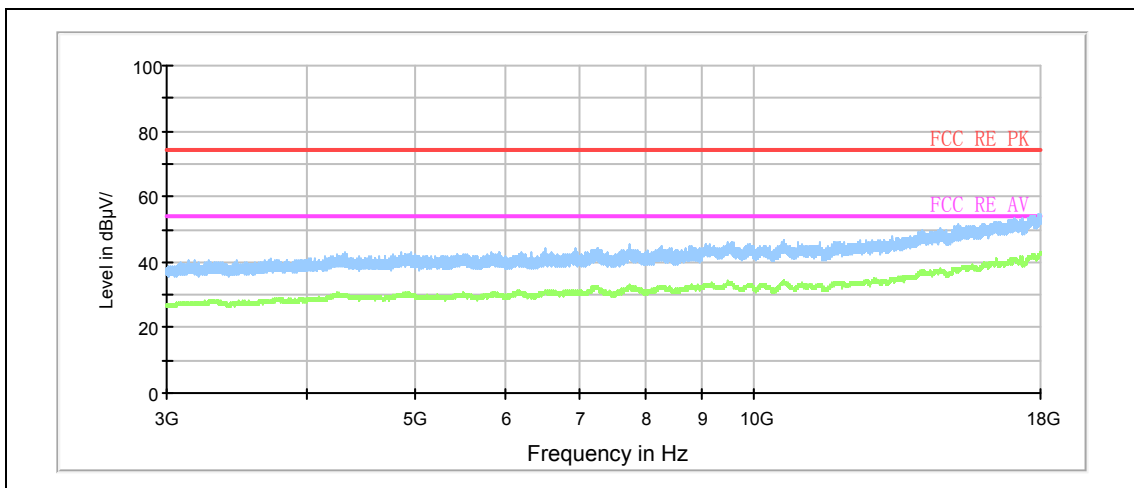
TA Technology (Shanghai) Co., Ltd. Test Report



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

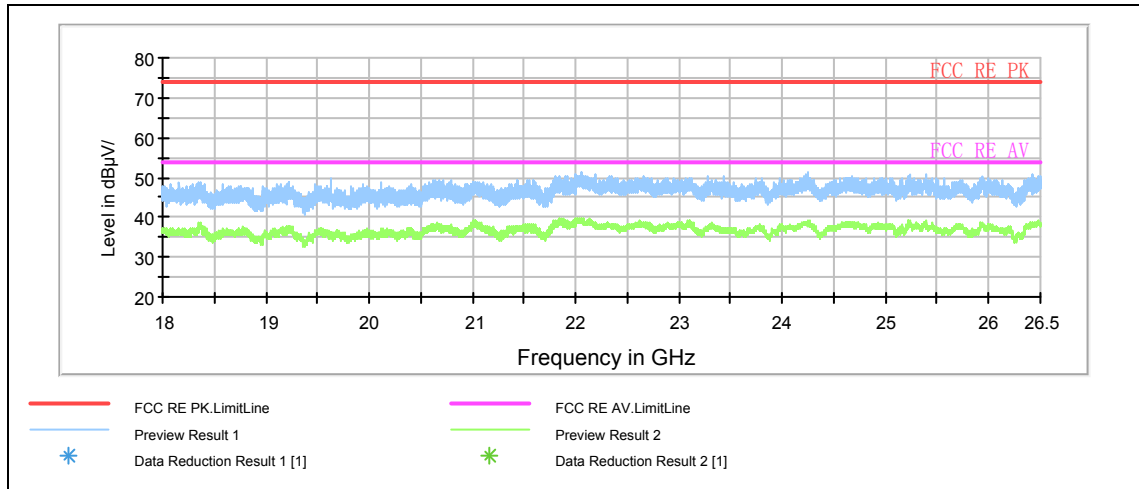
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)
2313.2	42.75	100	V	0	49.74	-6.99
2375.5	42.63	100	H	90	49.59	-6.96
2378.125	43.07	100	V	0	49.99	-6.92
2601.825	45.20	100	V	270	50.35	-5.15
2602.95	44.39	100	H	45	49.55	-5.17
2604.15	44.55	100	H	0	49.73	-5.19

Remark: 1. Peak = Reading value + Correction factor
2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)



Radiates Emission from 3GHz to 18GHz

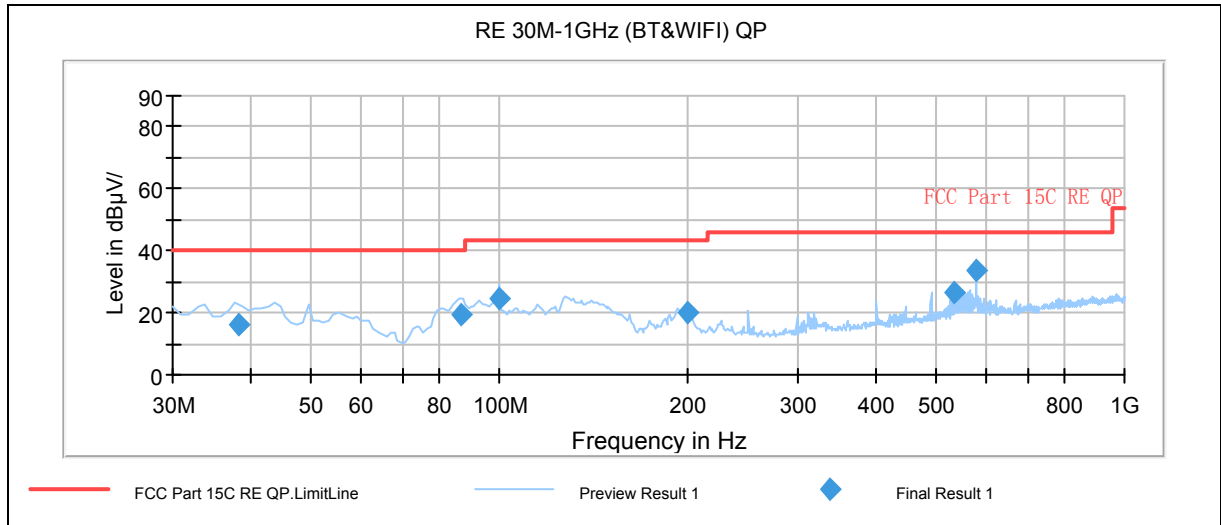
TA Technology (Shanghai) Co., Ltd. Test Report



Radiates Emission from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd. Test Report

802.11b CH6



Radiates Emission from 30MHz to 1GHz

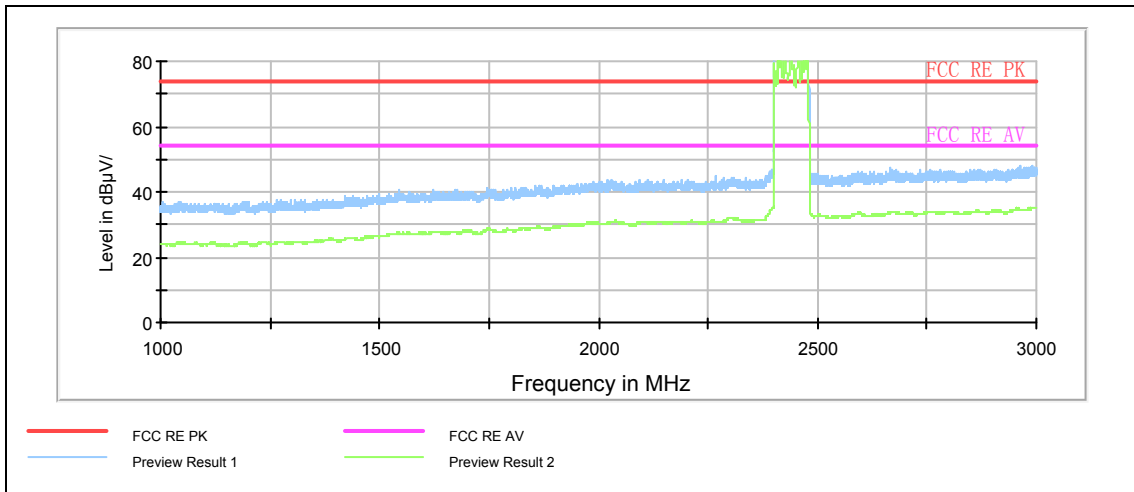
Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
38.280000	16.0	100.0	V	45.0	40.2	-24.2	24.0	40.0
86.780000	19.5	225.0	H	5.0	49.4	-29.9	20.5	40.0
100.000000	24.9	100.0	V	5.0	52.6	-27.7	18.6	43.5
200.030000	20.2	100.0	V	16.0	50.6	-30.4	23.3	43.5
534.850000	26.5	100.0	V	279.0	48.7	-22.2	19.5	46.0
579.430000	33.7	100.0	V	334.0	54.7	-21.0	12.3	46.0

Remark: 1. Quasi-Peak = Reading value + Correction factor

2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)

3. Margin = Limit – Quasi-Peak

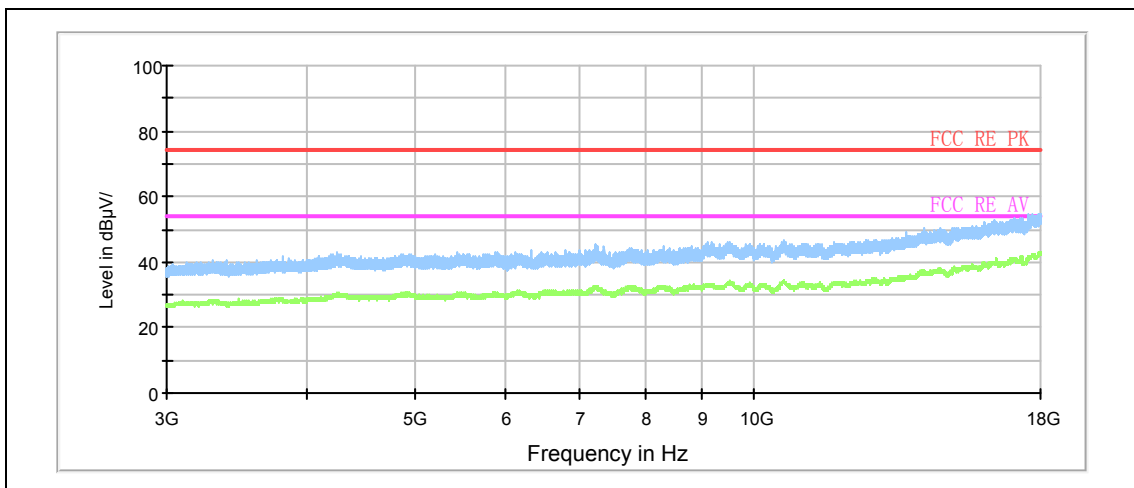
TA Technology (Shanghai) Co., Ltd. Test Report



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

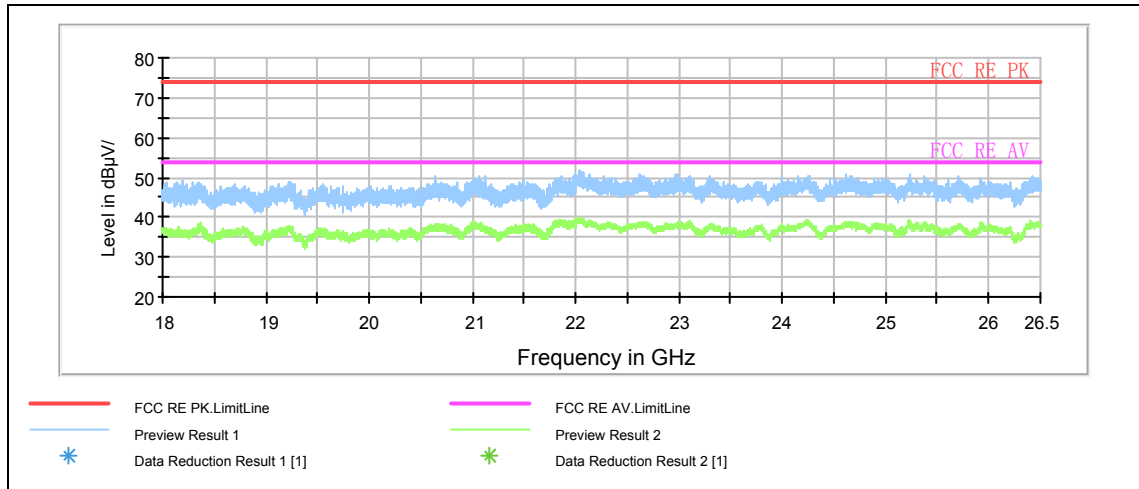
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)
1855.925	42.00	100	V	0	51.73	-9.73
2230.95	42.10	100	V	45	50.03	-7.92
2724.15	44.91	100	H	0	50.23	-5.32
2816.25	45.24	100	H	0	50.40	-5.16
2913.525	46.32	100	V	315	50.58	-4.26
2977.425	45.68	100	H	0	48.89	-3.21

Remark: 1. Peak = Reading value + Correction factor
2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)



Radiates Emission from 3GHz to 18GHz

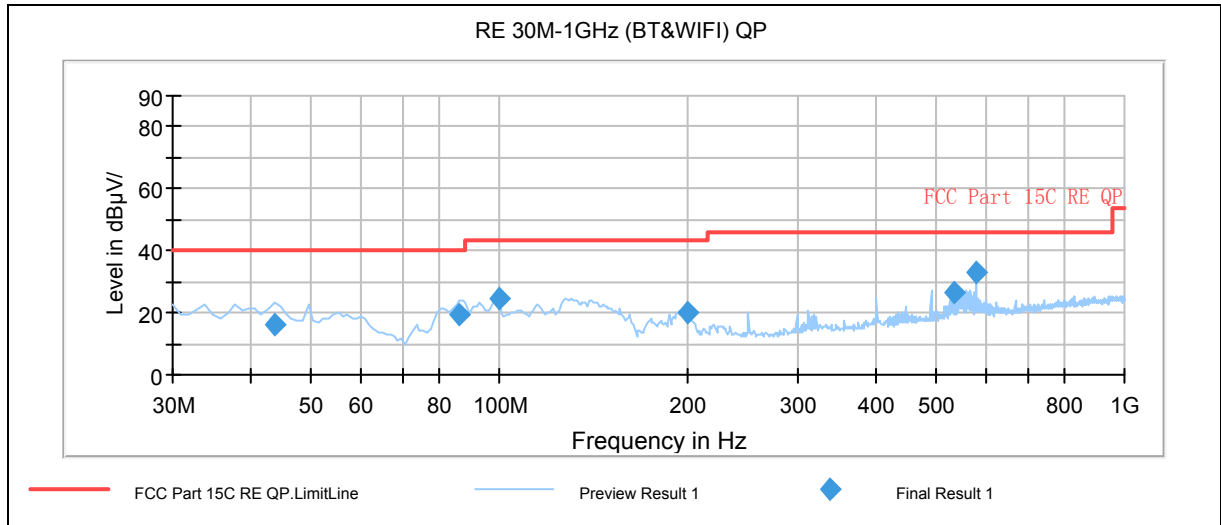
TA Technology (Shanghai) Co., Ltd. Test Report



Radiates Emission from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd. Test Report

802.11b CH11



Radiates Emission from 30MHz to 1GHz

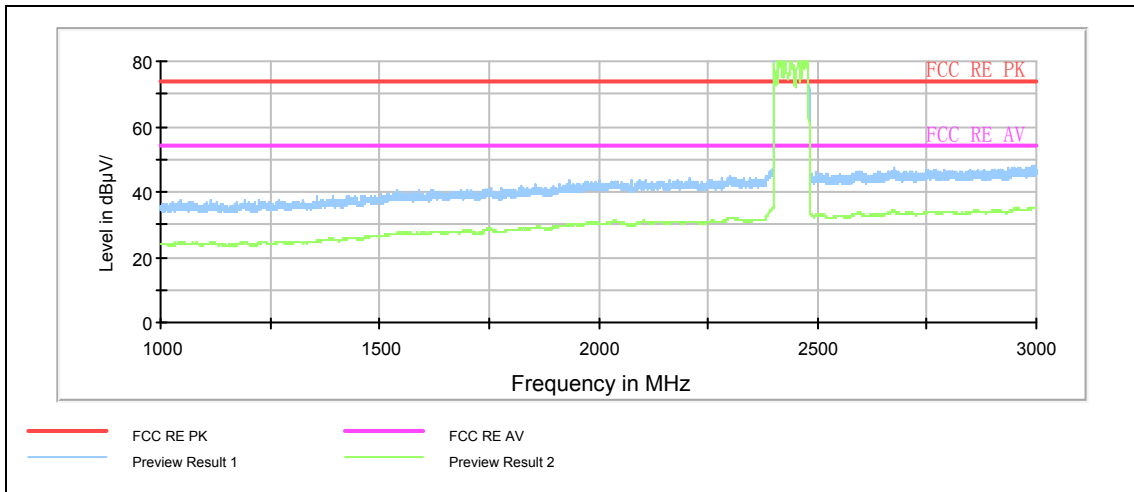
Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
43.820000	16.2	100.0	V	338.0	40.8	-24.6	23.8	40.0
86.500000	19.4	220.0	H	0.0	49.4	-30.0	20.6	40.0
100.000000	24.4	100.0	V	90.0	52.1	-27.7	19.1	43.5
200.030000	20.2	100.0	V	0.0	50.6	-30.4	23.3	43.5
534.850000	26.6	100.0	V	277.0	48.8	-22.2	19.4	46.0
579.430000	33.0	100.0	V	338.0	54	-21.0	13.0	46.0

Remark: 1. Quasi-Peak = Reading value + Correction factor

2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)

3. Margin = Limit – Quasi-Peak

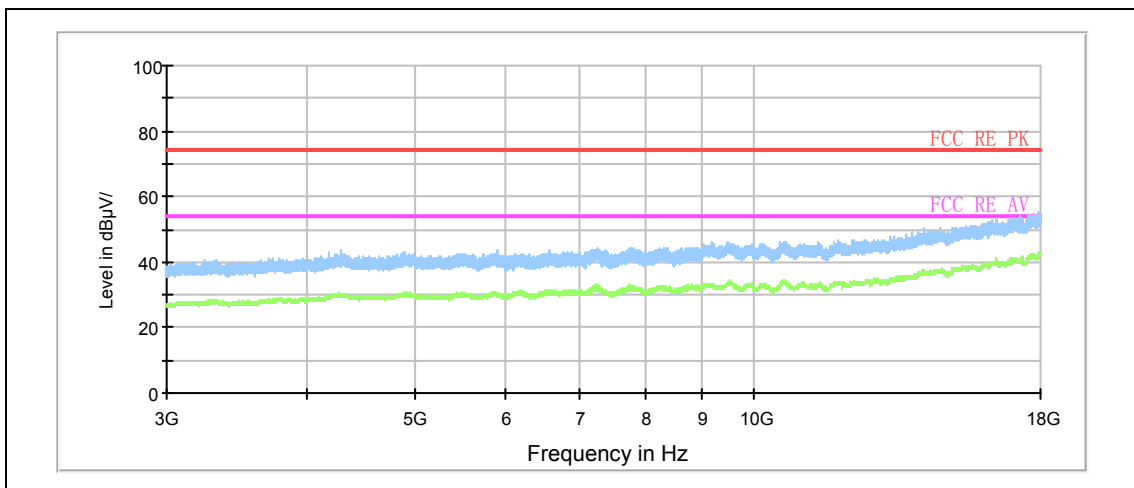
TA Technology (Shanghai) Co., Ltd. Test Report



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

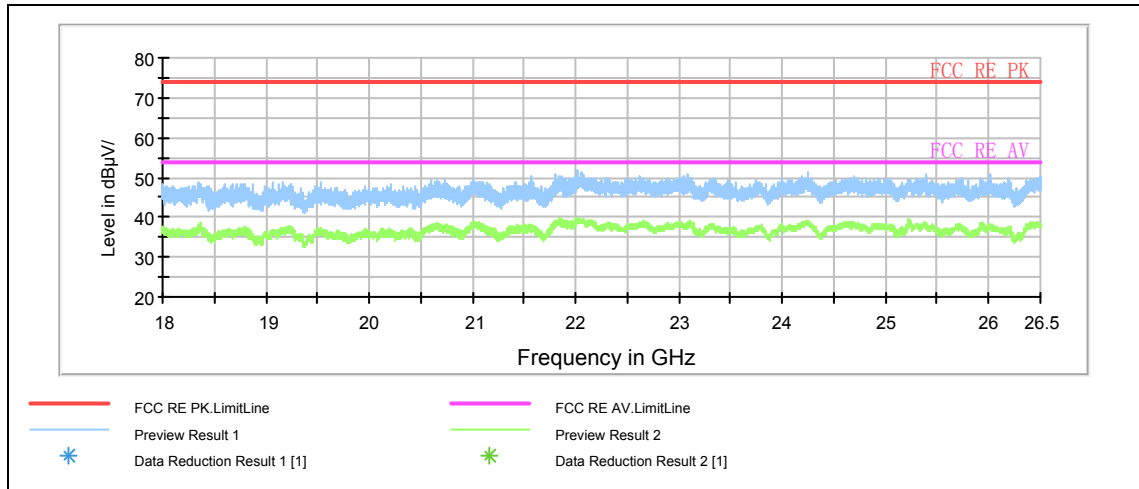
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)
2131.9	41.72	153	H	180	49.73	-8.01
2391.25	44.38	153	V	0	49.24	-4.87
2585.7	43.38	153	V	180	48.64	-5.26
2586.15	44.67	153	V	0	49.93	-5.26
2586.825	44.64	153	H	180	49.90	-5.25
2911.95	45.57	153	H	180	49.83	-4.27

Remark: 1. Peak = Reading value + Correction factor
2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)



Radiates Emission from 3GHz to 18GHz

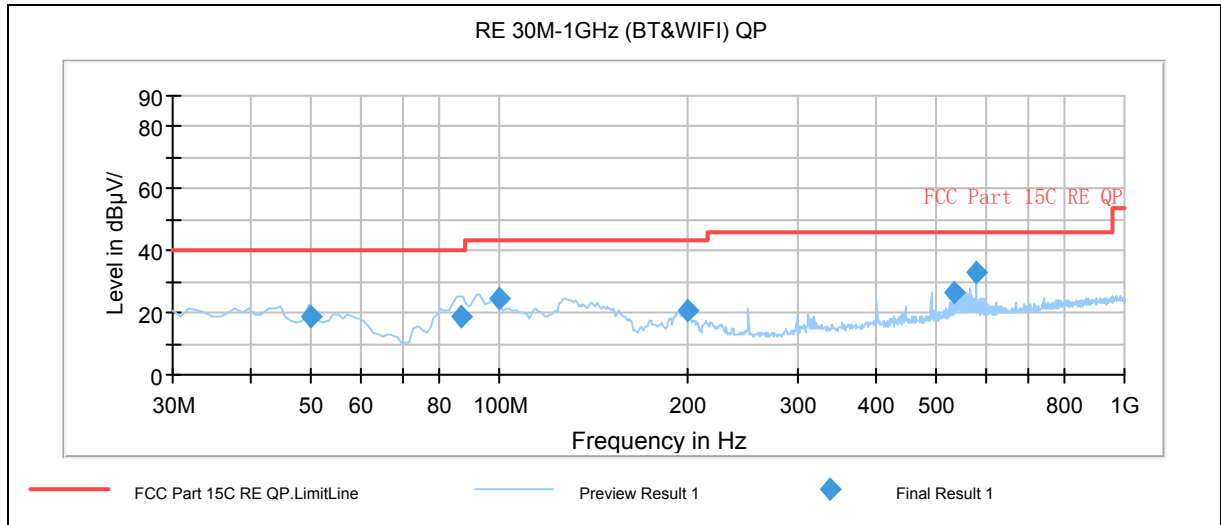
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Radiates Emission from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd. Test Report

802.11g CH1

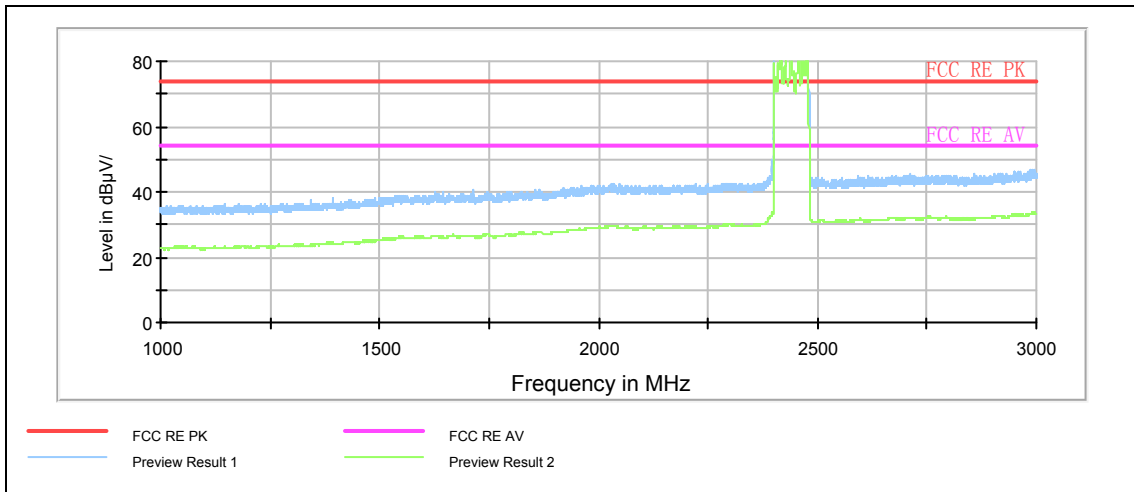


Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
50.000000	18.9	100.0	V	180.0	44.5	-25.6	21.1	40.0
86.820000	18.7	200.0	H	0.0	48.6	-29.9	21.3	40.0
100.000000	24.5	100.0	V	89.0	52.2	-27.7	19.0	43.5
200.030000	20.5	100.0	V	14.0	50.9	-30.4	23.0	43.5
534.880000	26.9	100.0	V	276.0	49.1	-22.2	19.1	46.0
579.430000	33.0	100.0	V	338.0	54	-21.0	13.0	46.0

- Remark:**
1. Quasi-Peak = Reading value + Correction factor
 2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)
 3. Margin = Limit – Quasi-Peak

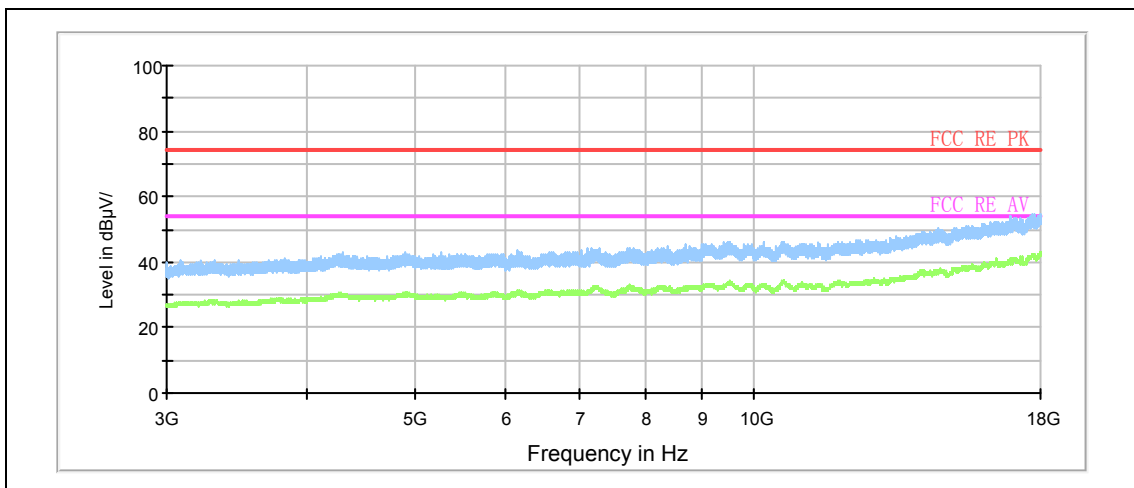
TA Technology (Shanghai) Co., Ltd. Test Report



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

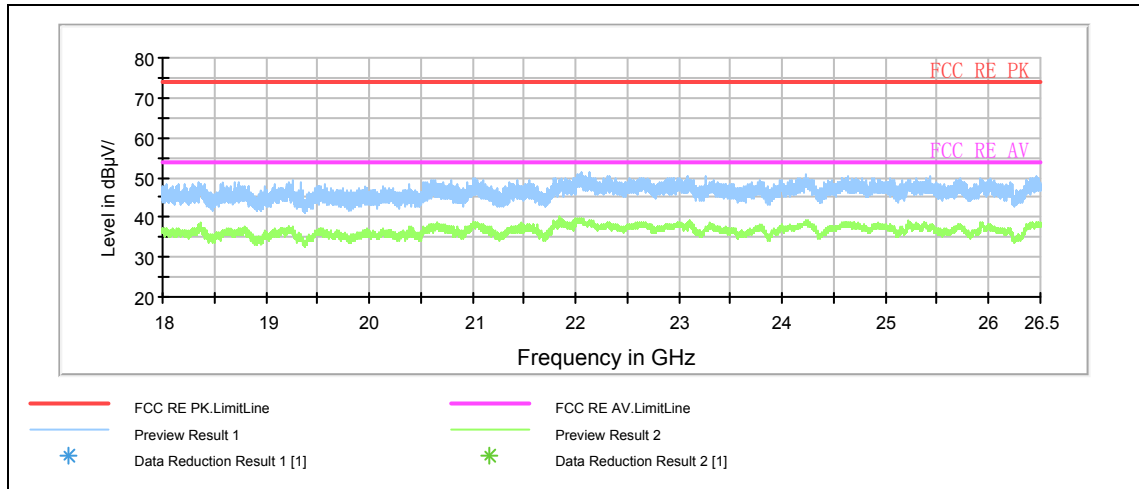
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)
1504.525	37.96	153	H	135	50.11	-12.15
2028.3	41.47	153	V	0	49.44	-7.97
2617.95	42.96	153	H	225	48.38	-5.42
2766.9	43.29	153	H	0	48.13	-4.84
2871.675	43.38	153	V	225	48.00	-4.62
2952.9	44.45	153	V	180	48.08	-3.63

Remark: 1. Peak = Reading value + Correction factor
2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)



Radiates Emission from 3GHz to 18GHz

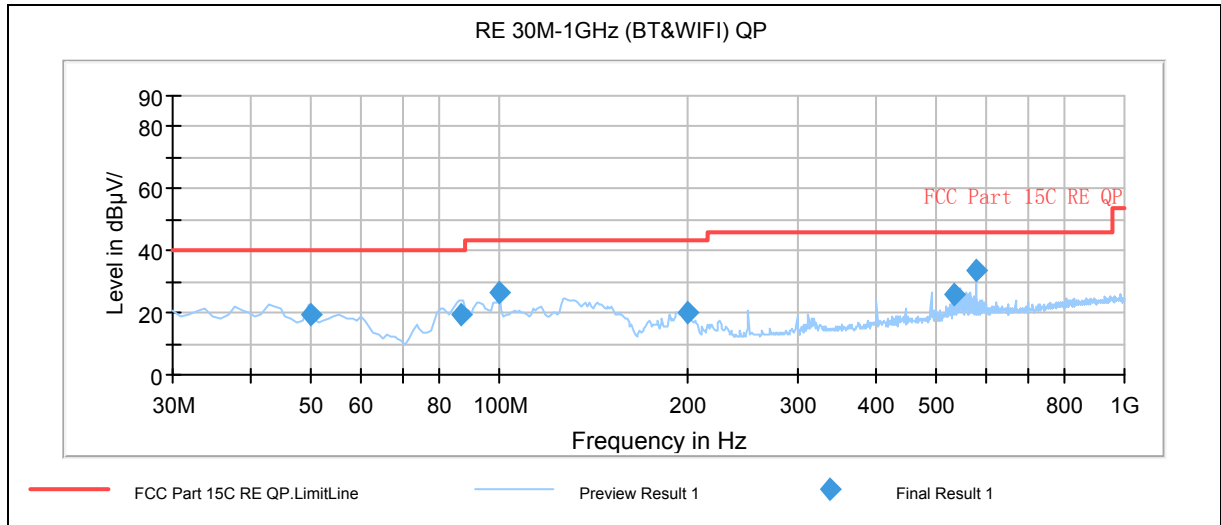
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Radiates Emission from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd. Test Report

802.11g CH6



Radiates Emission from 30MHz to 1GHz

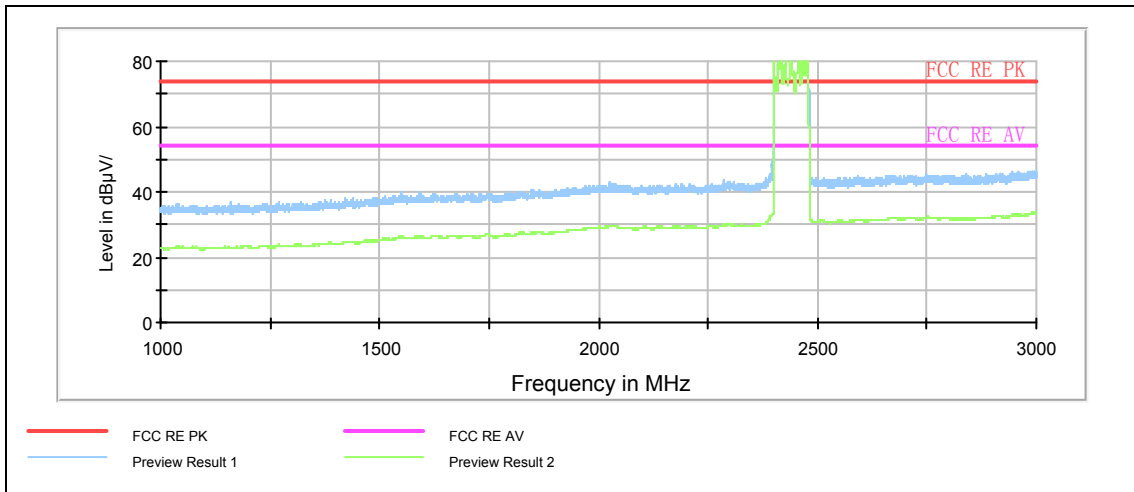
Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
50.000000	19.2	100.0	V	231.0	44.8	-25.6	20.8	40.0
86.780000	19.6	225.0	H	356.0	49.5	-29.9	20.4	40.0
100.000000	26.3	100.0	V	95.0	54	-27.7	17.2	43.5
200.030000	20.3	100.0	V	20.0	50.7	-30.4	23.2	43.5
534.850000	26.0	100.0	V	337.0	48.2	-22.2	20.0	46.0
579.430000	33.8	100.0	V	333.0	54.8	-21.0	12.2	46.0

Remark: 1. Quasi-Peak = Reading value + Correction factor

2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)

3. Margin = Limit – Quasi-Peak

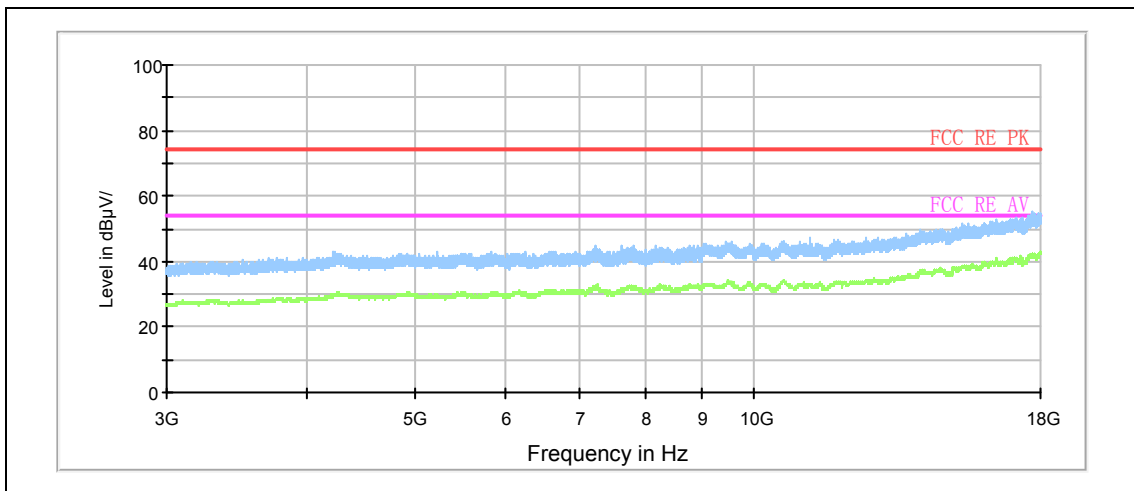
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Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

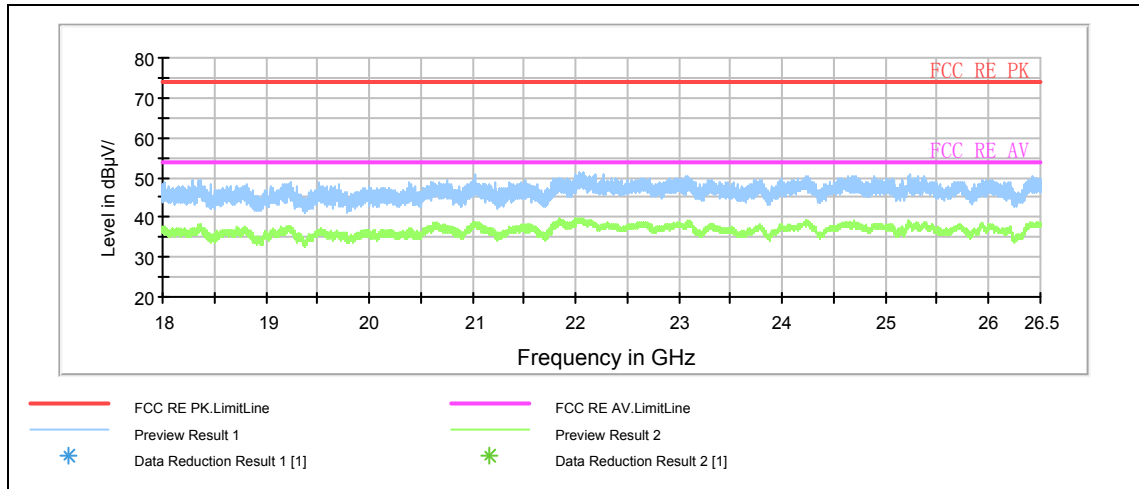
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)
1863.1	38.57	153	H	90	48.20	-9.63
2353.975	41.19	153	H	90	48.47	-7.28
2626.725	42.76	153	H	90	48.29	-5.54
2743.575	43.31	153	V	315	48.22	-4.91
2893.2	43.35	153	V	315	47.76	-4.42
2968.05	44.29	153	V	180	47.63	-3.34

Remark: 1. Peak = Reading value + Correction factor
2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)



Radiates Emission from 3GHz to 18GHz

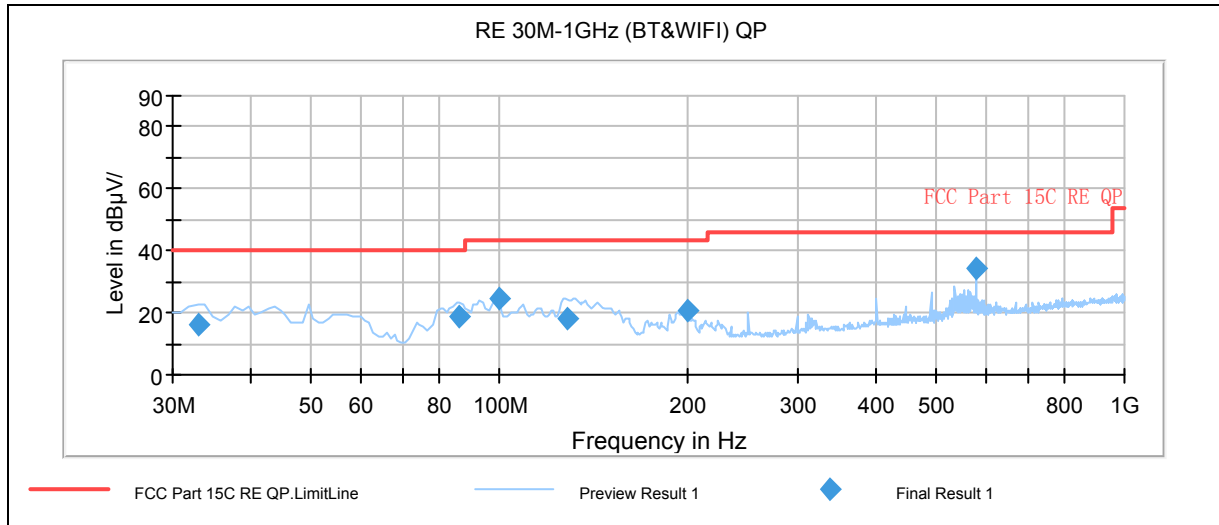
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Radiates Emission from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd. Test Report

802.11g CH11

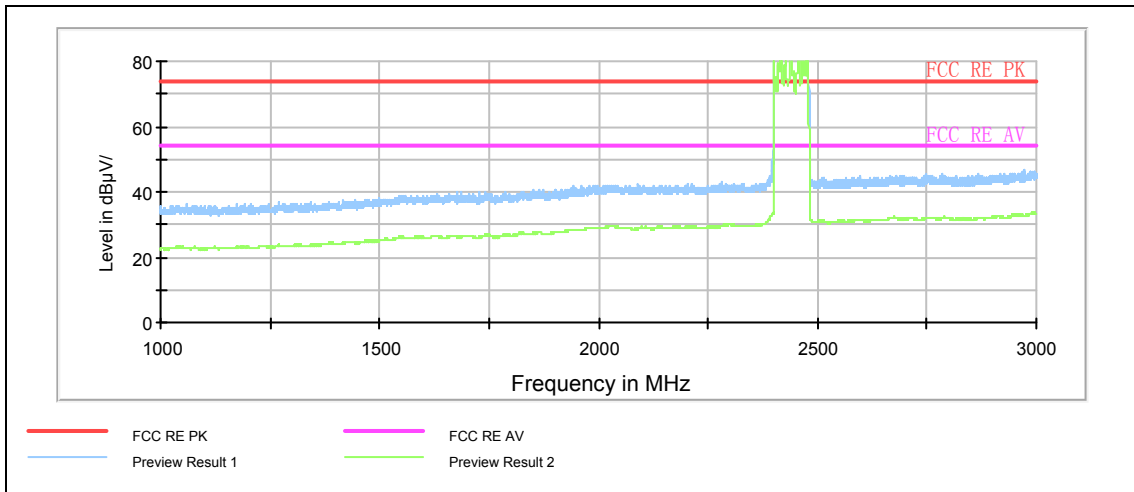


Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
33.070000	16.2	100.0	V	0.0	40.5	-24.3	23.8	40.0
86.020000	18.5	120.0	V	87.0	48.7	-30.2	21.5	40.0
100.000000	24.9	100.0	V	79.0	52.6	-27.7	18.6	43.5
128.420000	18.4	100.0	V	249.0	50.4	-32.0	25.1	43.5
200.030000	20.8	100.0	V	5.0	51.2	-30.4	22.7	43.5
579.430000	34.0	100.0	V	331.0	55	-21.0	12.0	46.0

- Remark:**
1. Quasi-Peak = Reading value + Correction factor
 2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)
 3. Margin = Limit – Quasi-Peak

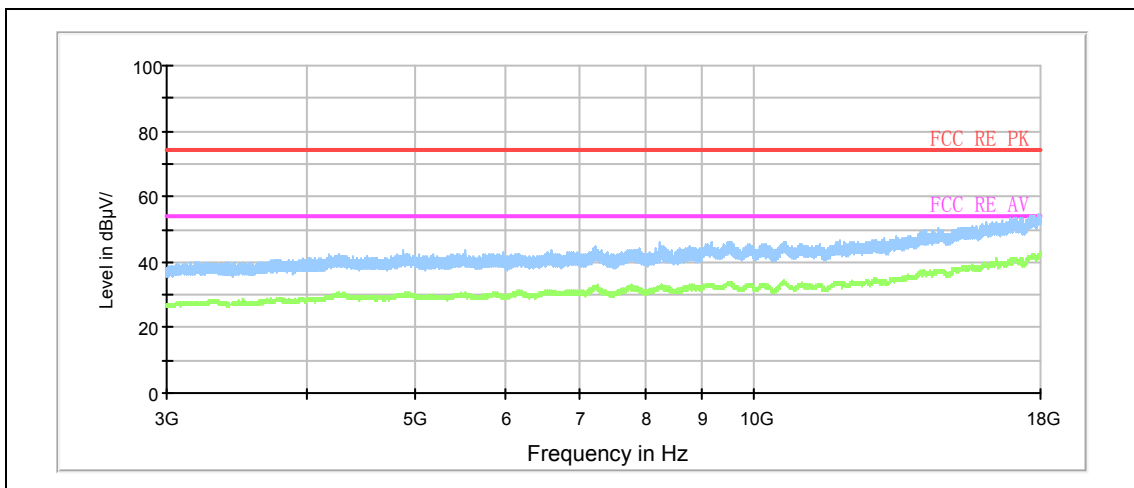
TA Technology (Shanghai) Co., Ltd. Test Report



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

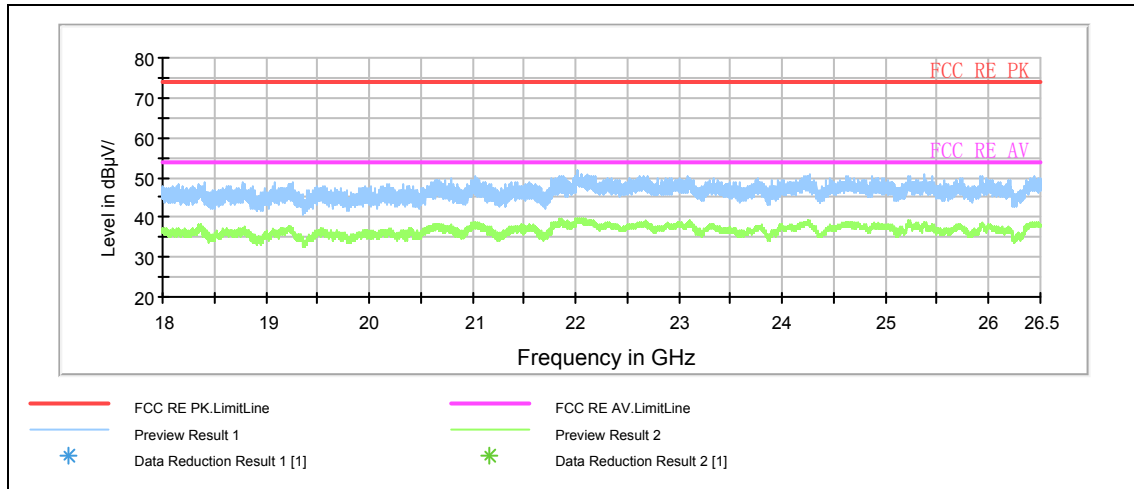
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)
1900.9	40.48	153	H	0	50.18	-9.71
2345.05	41.09	153	V	90	48.47	-7.38
2501.475	42.66	153	V	0	48.29	-5.64
2679.675	43.92	153	H	45	48.81	-4.89
2765.85	43.51	153	H	180	48.34	-4.83
2928.375	44.09	153	V	135	48.22	-4.13

Remark: 1. Peak = Reading value + Correction factor
2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)



Radiates Emission from 3GHz to 18GHz

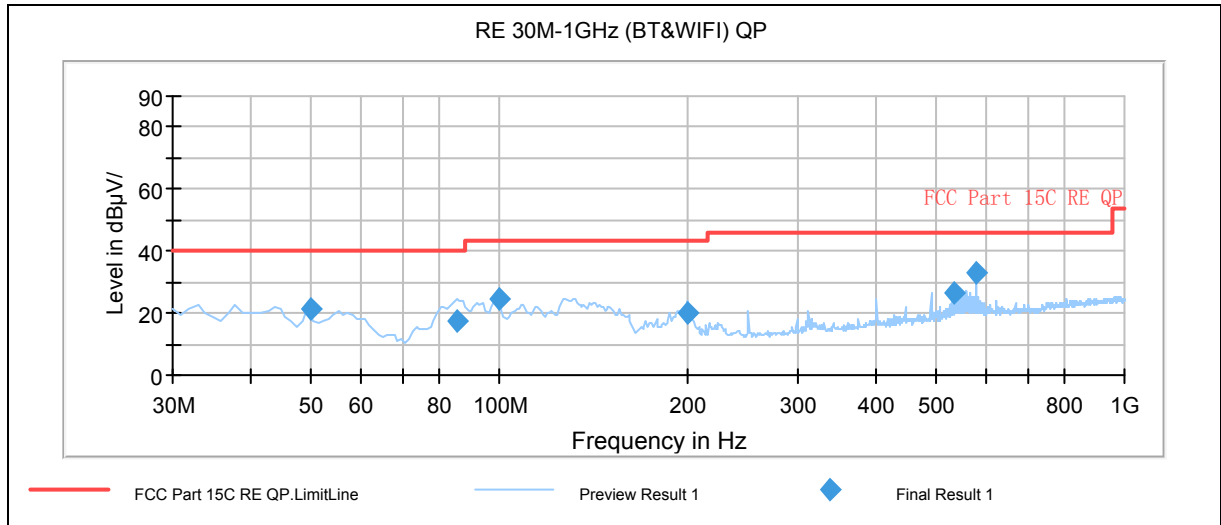
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Radiates Emission from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd. Test Report

802.11n CH1



Radiates Emission from 30MHz to 1GHz

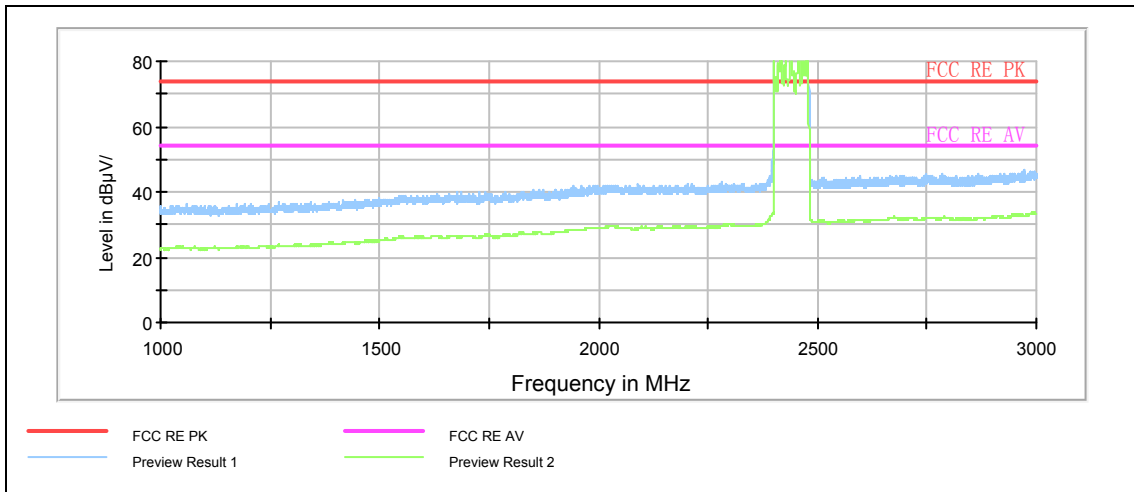
Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
50.000000	21.2	100.0	V	243.0	46.8	-25.6	18.8	40.0
85.810000	17.8	100.0	V	116.0	48.1	-30.3	22.2	40.0
100.000000	24.3	100.0	V	90.0	52	-27.7	19.2	43.5
200.030000	20.4	100.0	V	5.0	50.8	-30.4	23.1	43.5
534.880000	26.4	100.0	V	279.0	48.6	-22.2	19.6	46.0
579.420000	32.8	100.0	V	337.0	53.8	-21.0	13.2	46.0

Remark: 1. Quasi-Peak = Reading value + Correction factor

2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)

3. Margin = Limit – Quasi-Peak

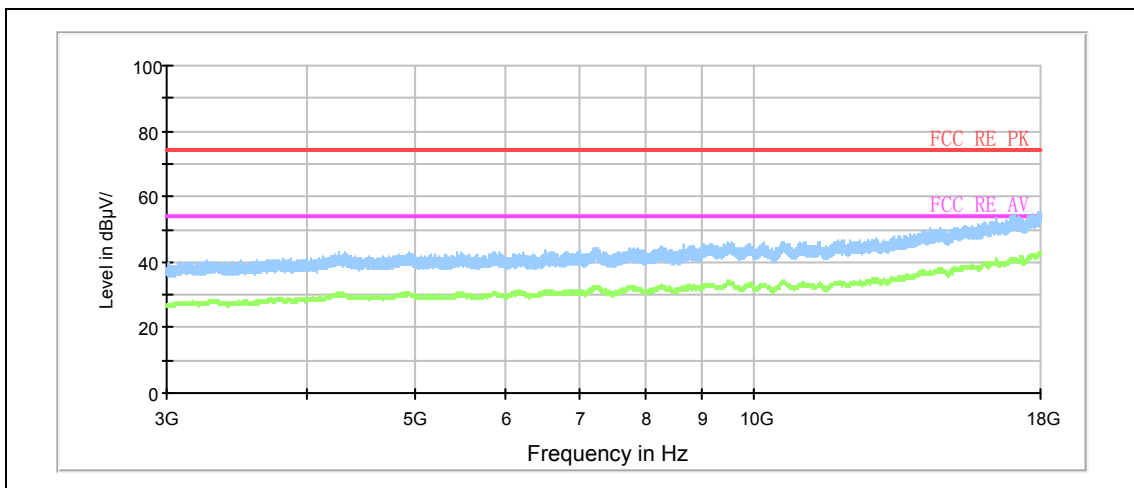
TA Technology (Shanghai) Co., Ltd. Test Report



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

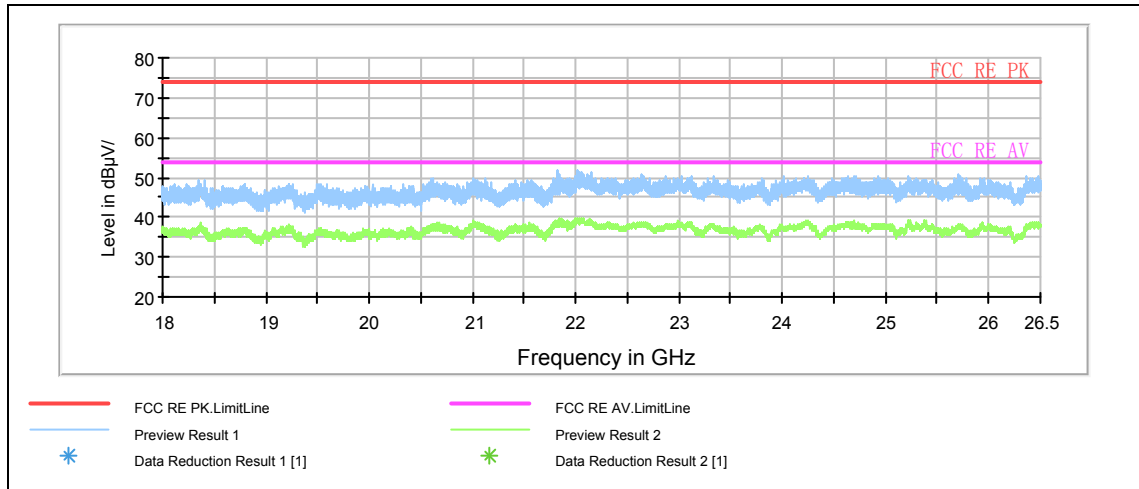
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)
1932.225	40.08	153	H	180	48.79	-8.70
2650.35	42.79	153	H	315	48.24	-5.46
2737.125	44.38	153	V	225	49.43	-5.05
2849.625	42.78	153	V	180	47.61	-4.83
2943.075	44.71	153	V	90	48.55	-3.83
2988.75	44.71	153	H	180	48.01	-3.30

Remark: 1. Peak = Reading value + Correction factor
2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)



Radiates Emission from 3GHz to 18GHz

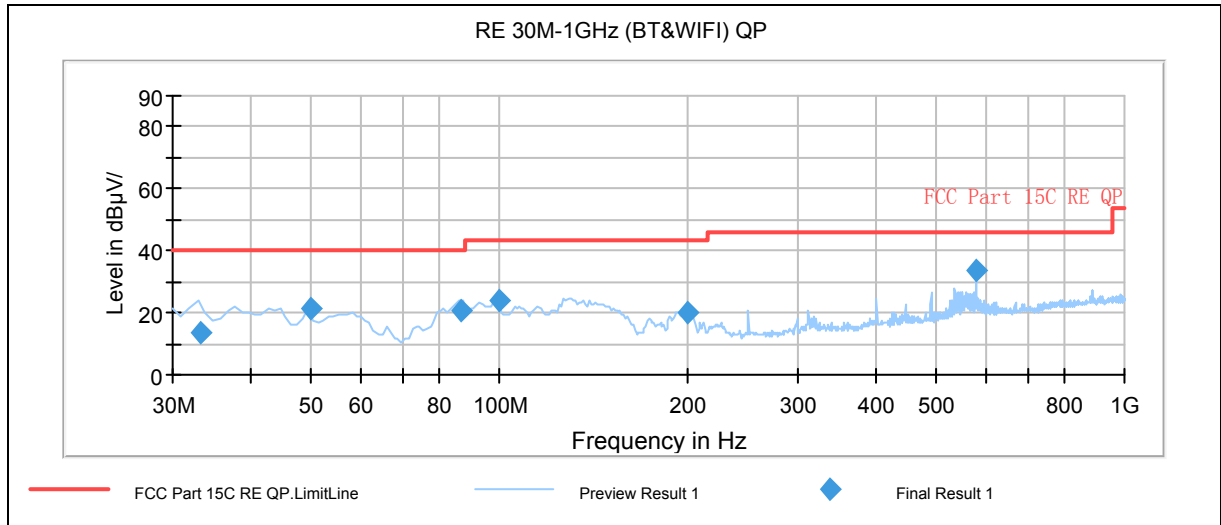
TA Technology (Shanghai) Co., Ltd. Test Report



Radiates Emission from 18GHz to 26.5GHz

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802.11n CH6



Radiates Emission from 30MHz to 1GHz

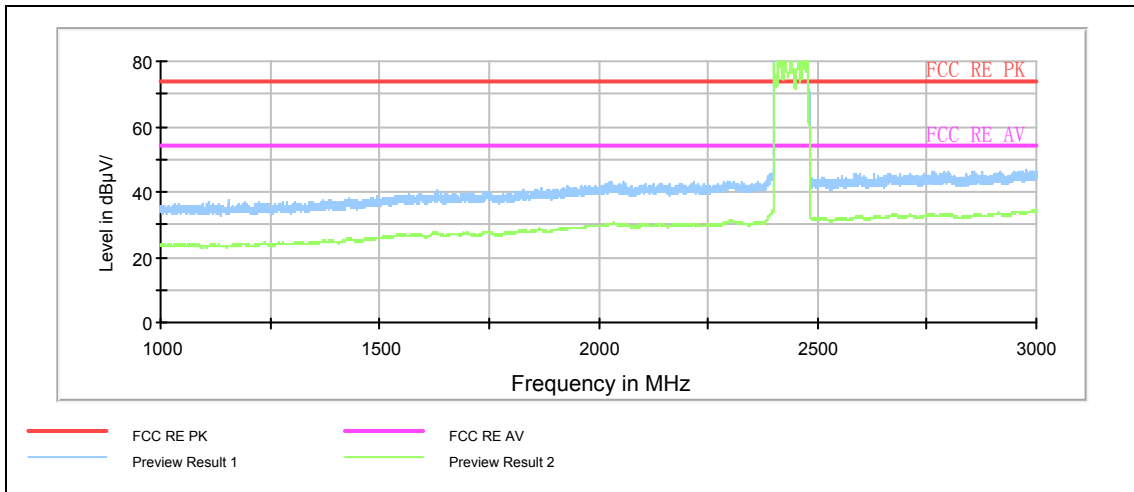
Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
33.150000	13.8	100.0	V	5.0	38.1	-24.3	26.2	40.0
50.000000	21.3	100.0	V	245.0	46.9	-25.6	18.7	40.0
86.540000	20.6	221.0	H	0.0	50.6	-30.0	19.4	40.0
100.000000	24.2	100.0	V	347.0	51.9	-27.7	19.3	43.5
200.030000	20.3	100.0	V	14.0	50.7	-30.4	23.2	43.5
579.430000	33.9	100.0	V	332.0	54.9	-21.0	12.1	46.0

Remark: 1. Quasi-Peak = Reading value + Correction factor

2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)

3. Margin = Limit – Quasi-Peak

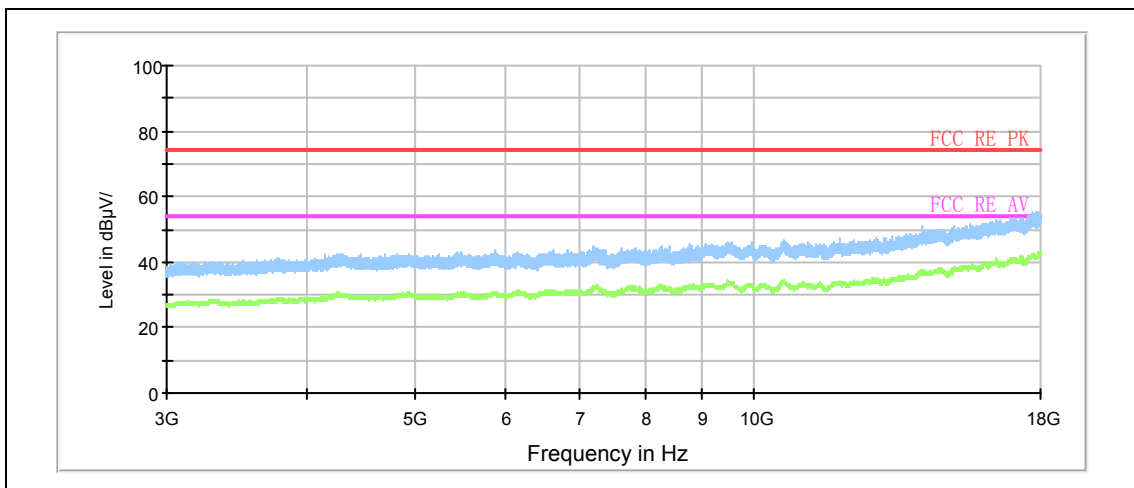
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Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

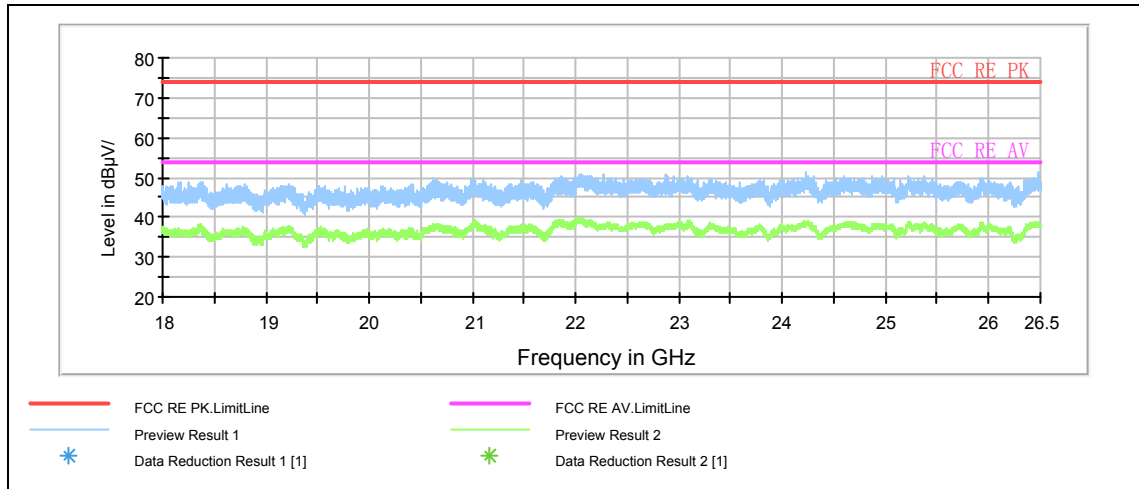
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)
1761.775	38.61	100	V	0	49.13	-10.52
2104.425	41.92	100	V	180	49.83	-7.91
2680.65	43.27	100	H	180	48.16	-4.90
2774.625	43.59	100	H	45	48.44	-4.85
2878.2	44.18	100	V	180	48.74	-4.56
2960.4	45.33	100	H	315	48.82	-3.49

Remark: 1. Peak = Reading value + Correction factor
2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)



Radiates Emission from 3GHz to 18GHz

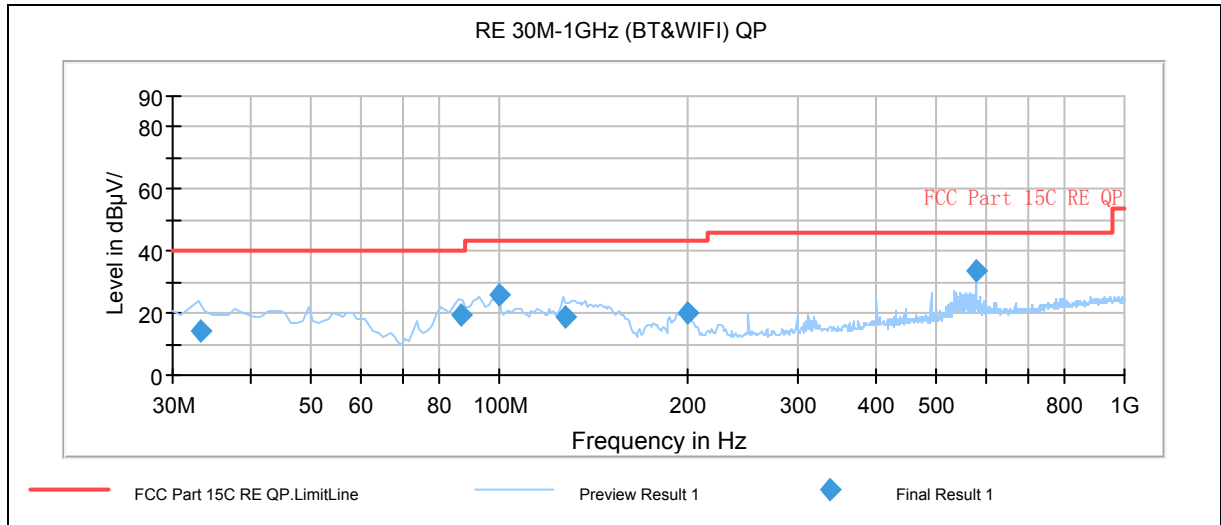
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Radiates Emission from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd. Test Report

802.11n CH11

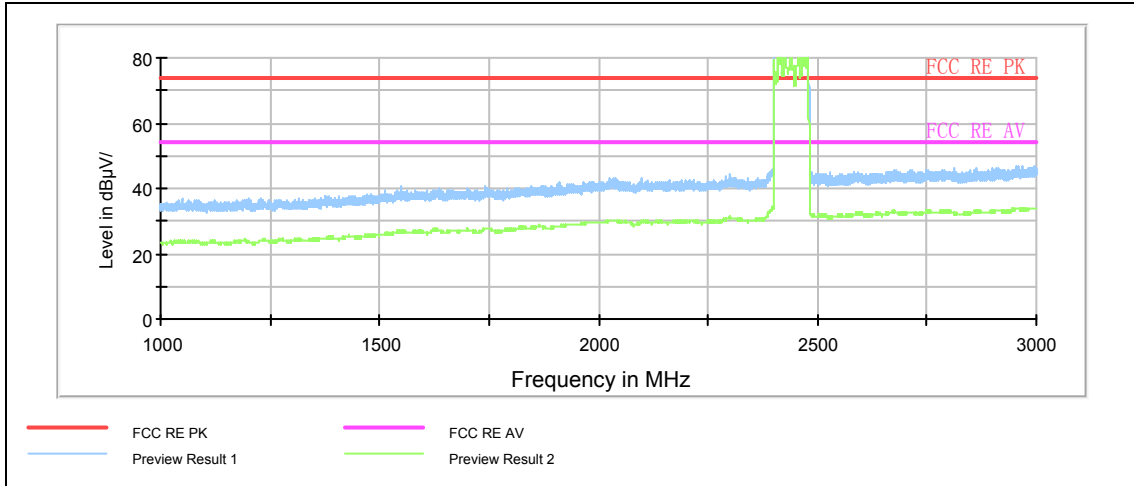


Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
33.150000	14.4	125.0	V	0.0	38.7	-24.3	25.6	40.0
86.700000	19.5	200.0	H	170.0	49.5	-30.0	20.5	40.0
100.000000	25.6	100.0	V	86.0	53.3	-27.7	17.9	43.5
127.600000	18.7	100.0	V	250.0	50.6	-31.9	24.8	43.5
200.030000	20.1	100.0	V	5.0	50.5	-30.4	23.4	43.5
579.430000	33.4	100.0	V	337.0	54.4	-21.0	12.6	46.0

- Remark:**
1. Quasi-Peak = Reading value + Correction factor
 2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)
 3. Margin = Limit – Quasi-Peak

TA Technology (Shanghai) Co., Ltd. Test Report

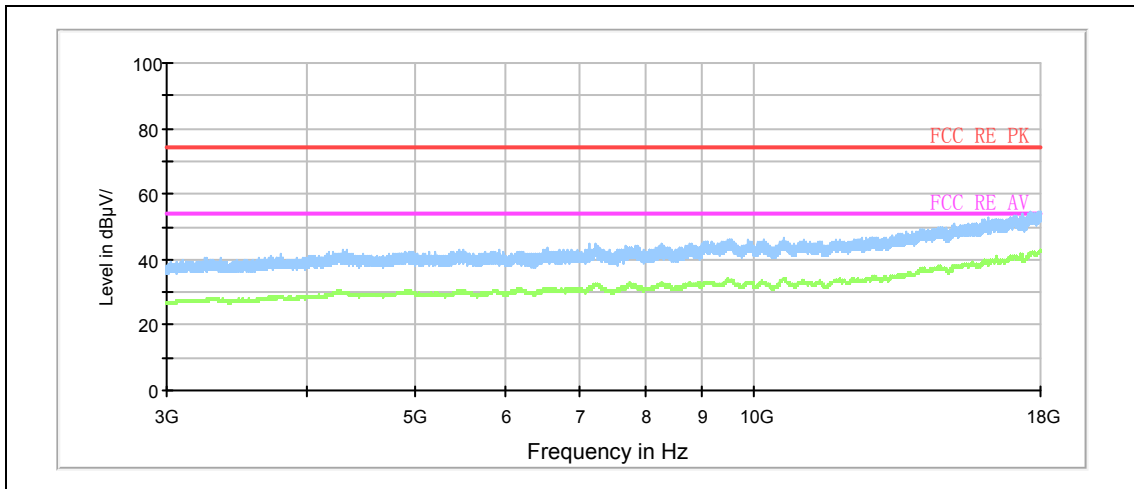


Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)
2126.825	40.53	100	V	180	48.52	-7.99
2643.15	42.74	100	H	0	48.21	-5.47
2724.15	43.45	100	H	180	48.77	-5.32
2795.55	43.35	100	H	315	48.08	-4.73
2961.975	45.33	100	V	180	48.79	-3.46
2994.225	45.68	100	V	90	49.02	-3.34

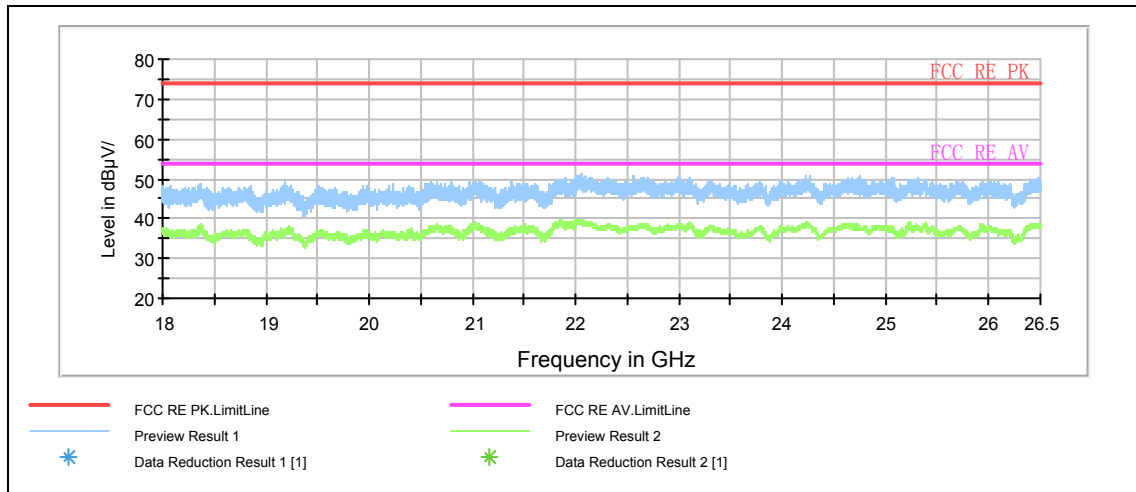
Remark: 1. Peak = Reading value + Correction factor

2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)



Radiates Emission from 3GHz to 18GHz

TA Technology (Shanghai) Co., Ltd. Test Report



Radiates Emission from 18GHz to 26.5GHz

2.9. Conducted Emissions

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

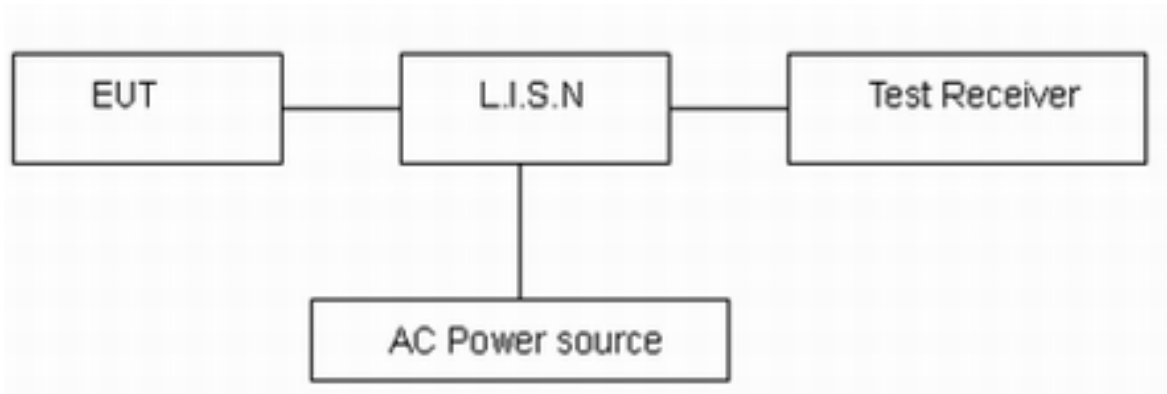
Method of Measurement

The EUT IS placed on a non-metallic table of 80cm height above the horizontal metal reference ground plane. During the test, the EUT was operating in its typical mode. The test method is according to ANSIC63.4-2003. Connect the AC power line of the EUT to the LISN Use EMI receiver to detect the average and Quasi-peak value. RBW is set to 9kHz, VBW is set to 30kHz The measurement result should include both L line and N line.

The conducted emission was measured in the following mode: EUT with cradle and EUT without cradle. The worst emission was found in EUT with cradle mode and the worst case was recorded.

The test is in transmit mode.

Test setup



Note: AC Power source is used to change the voltage from 220V/50Hz to 110V/60Hz.

Limits

Frequency (MHz)	Conducted Limits(dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56 *	56 to 46 *
0.5 - 5	56	46
5 - 30	60	50

*: Decreases with the logarithm of the frequency.

TA Technology (Shanghai) Co., Ltd.
Test Report

Report No.: RZA1110-1740RF03R1

Page 118 of 128

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$, $U = 2.69$ dB.

TA Technology (Shanghai) Co., Ltd.

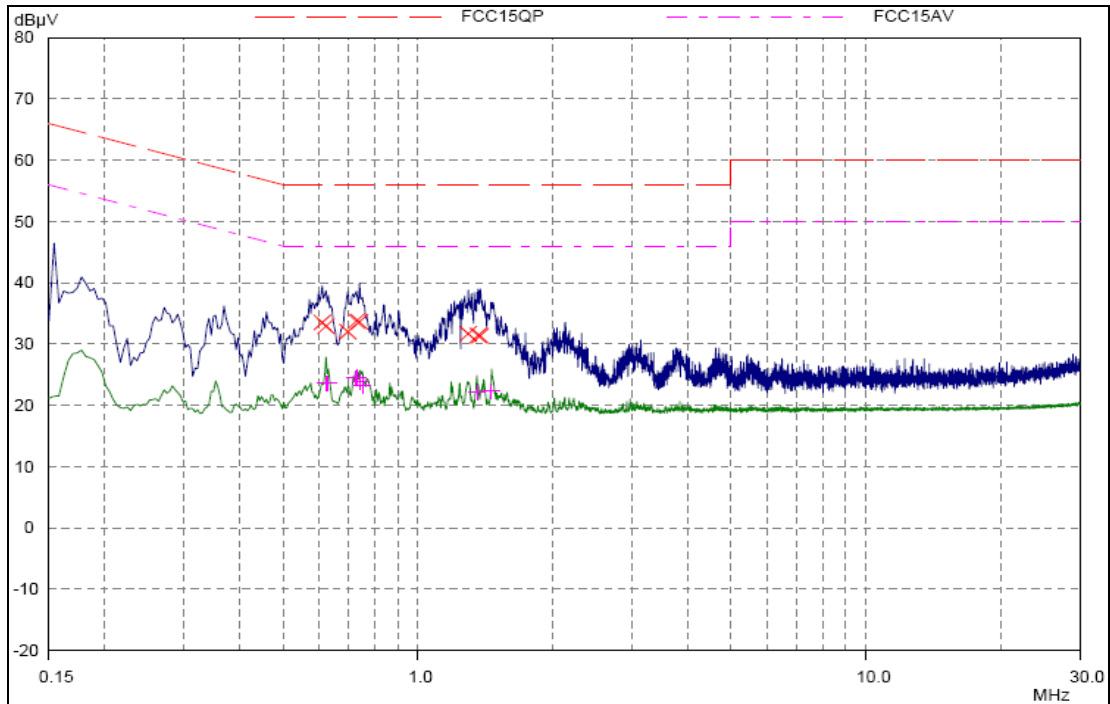
Test Report

Report No.: RZA1110-1740RF03R1

Page 119 of 128

Test Results:

802.11b



Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.61093	33.54	56.00	22.46	L1
0.62265	32.94	56.00	23.06	L1
0.69687	32.02	56.00	23.98	L1
0.72812	33.76	56.00	22.24	L1
0.73984	33.64	56.00	22.36	L1
1.29453	31.70	56.00	24.30	L1
1.36093	31.42	56.00	24.58	L1
1.37656	31.34	56.00	24.66	L1

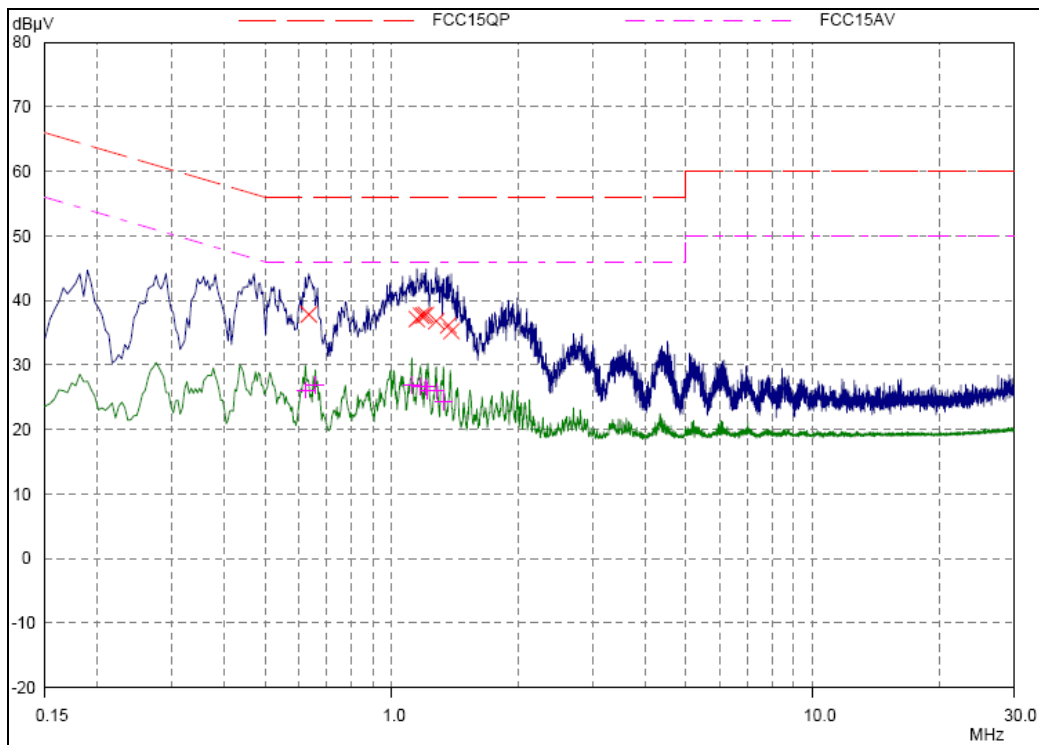
Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.62265	23.60	46.00	22.40	L1
0.63046	23.60	46.00	22.40	L1
0.72421	24.44	46.00	21.56	L1
0.73203	24.60	46.00	21.40	L1
0.74375	23.92	46.00	22.08	L1
0.75156	23.17	46.00	22.83	L1
1.35312	22.13	46.00	23.87	L1
1.45859	22.35	46.00	23.65	L1

L Line

TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RZA1110-1740RF03R1

Page 120 of 128



Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.63437	37.84	56.00	18.16	N
1.14609	37.12	56.00	18.88	N
1.17343	37.64	56.00	18.36	N
1.18906	37.66	56.00	18.34	N
1.20468	37.78	56.00	18.22	N
1.275	36.80	56.00	19.20	N
1.36093	36.14	56.00	19.86	N
1.38437	35.24	56.00	20.76	N

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.62265	26.12	46.00	19.88	N
0.65781	26.91	46.00	19.09	N
1.11484	26.91	46.00	19.09	N
1.16953	26.72	46.00	19.28	N
1.20468	26.59	46.00	19.41	N
1.2164	26.05	46.00	19.95	N
1.275	25.98	46.00	20.02	N
1.32578	24.35	46.00	21.65	N

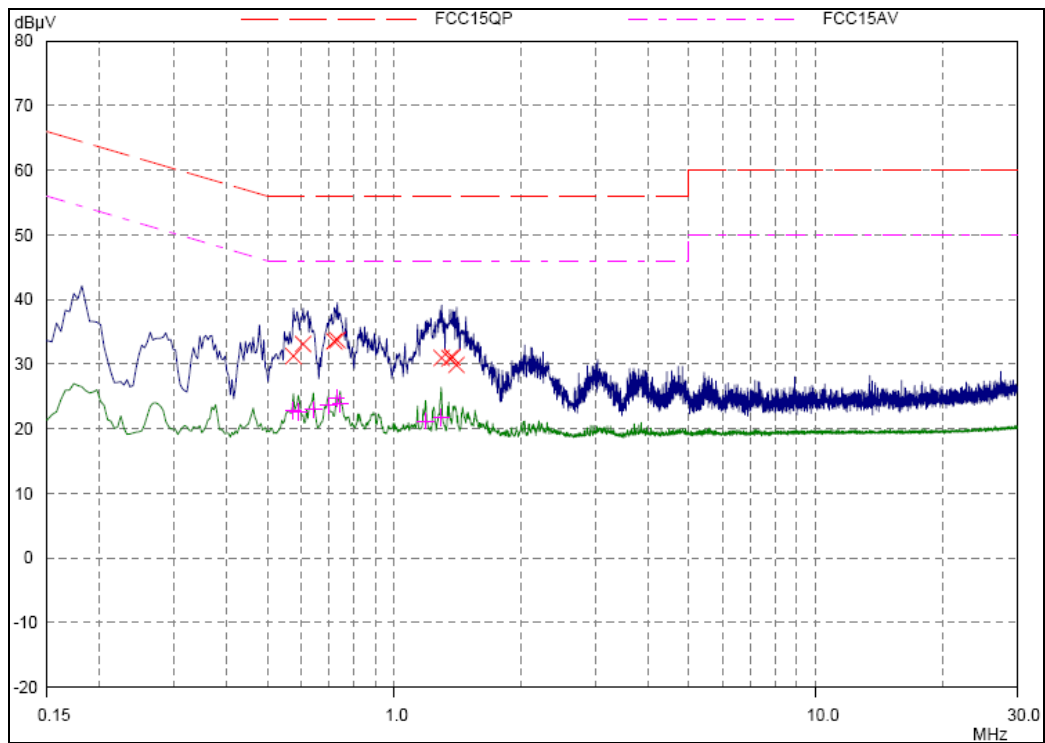
N Line

TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RZA1110-1740RF03R1

Page 121 of 128

802.11g



Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.57578	31.26	56.00	24.74	L1
0.60703	33.10	56.00	22.90	L1
0.72031	33.54	56.00	22.46	L1
0.73203	33.72	56.00	22.28	L1
1.29453	30.98	56.00	25.02	L1
1.35312	30.92	56.00	25.08	L1
1.37265	31.10	56.00	24.90	L1
1.4039	29.90	56.00	26.10	L1

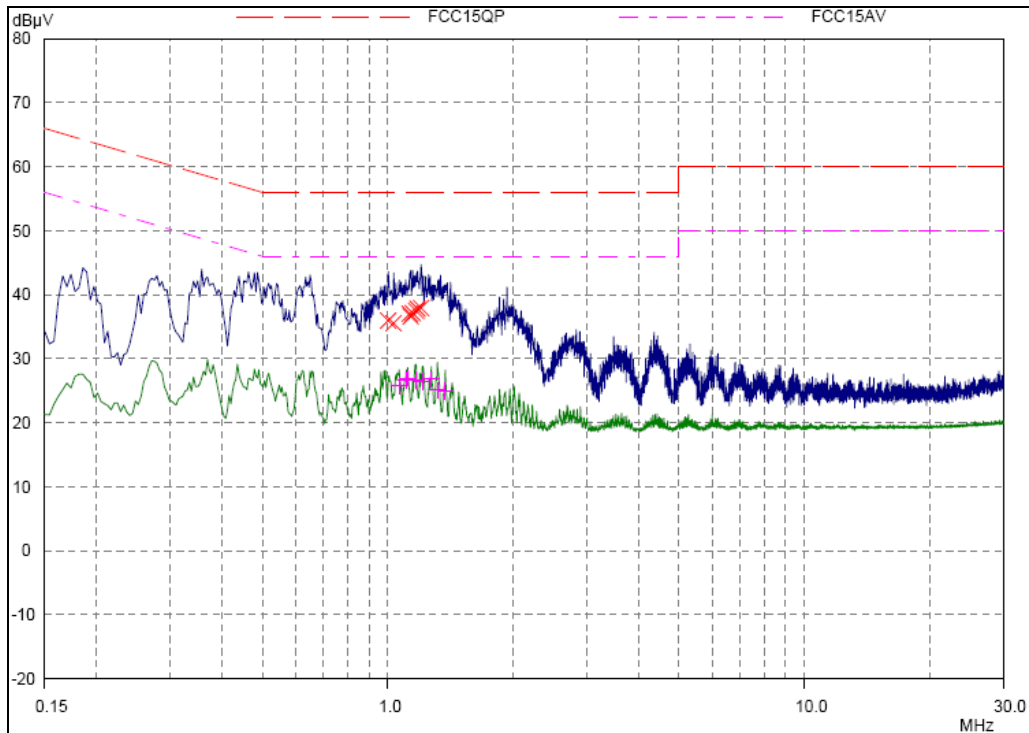
Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.57578	22.82	46.00	23.18	L1
0.5914	22.67	46.00	23.33	L1
0.64218	22.97	46.00	23.03	L1
0.69687	23.64	46.00	22.36	L1
0.72812	24.77	46.00	21.23	L1
0.74375	23.96	46.00	22.04	L1
1.18515	21.21	46.00	24.79	L1
1.29062	21.80	46.00	24.20	L1

L Line

TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RZA1110-1740RF03R1

Page 122 of 128



Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
1.00156	35.96	56.00	20.04	N
1.03281	35.56	56.00	20.44	N
1.12656	37.04	56.00	18.96	N
1.13437	36.62	56.00	19.38	N
1.14609	37.14	56.00	18.86	N
1.16953	37.48	56.00	18.52	N
1.17734	37.84	56.00	18.16	N
1.20078	37.94	56.00	18.06	N

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
1.06406	25.76	46.00	20.24	N
1.10703	26.72	46.00	19.28	N
1.11484	26.98	46.00	19.02	N
1.16562	26.66	46.00	19.34	N
1.2125	26.46	46.00	19.54	N
1.27109	26.79	46.00	19.21	N
1.31406	25.09	46.00	20.91	N
1.37265	24.93	46.00	21.07	N

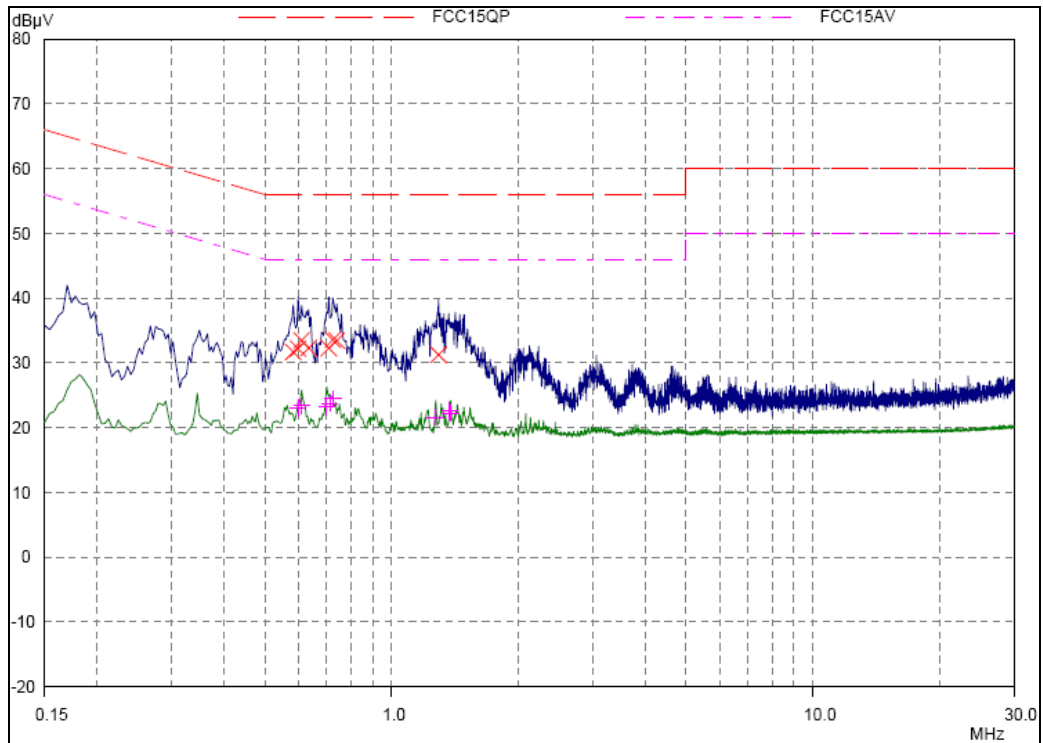
N Line

TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RZA1110-1740RF03R1

Page 123 of 128

802.11n



Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.58359	31.70	56.00	24.30	L1
0.59921	32.20	56.00	23.80	L1
0.61093	33.50	56.00	22.50	L1
0.63437	32.30	56.00	23.70	L1
0.70859	32.28	56.00	23.72	L1
0.72421	33.60	56.00	22.40	L1
0.73984	33.44	56.00	22.56	L1
1.29062	31.26	56.00	24.74	L1

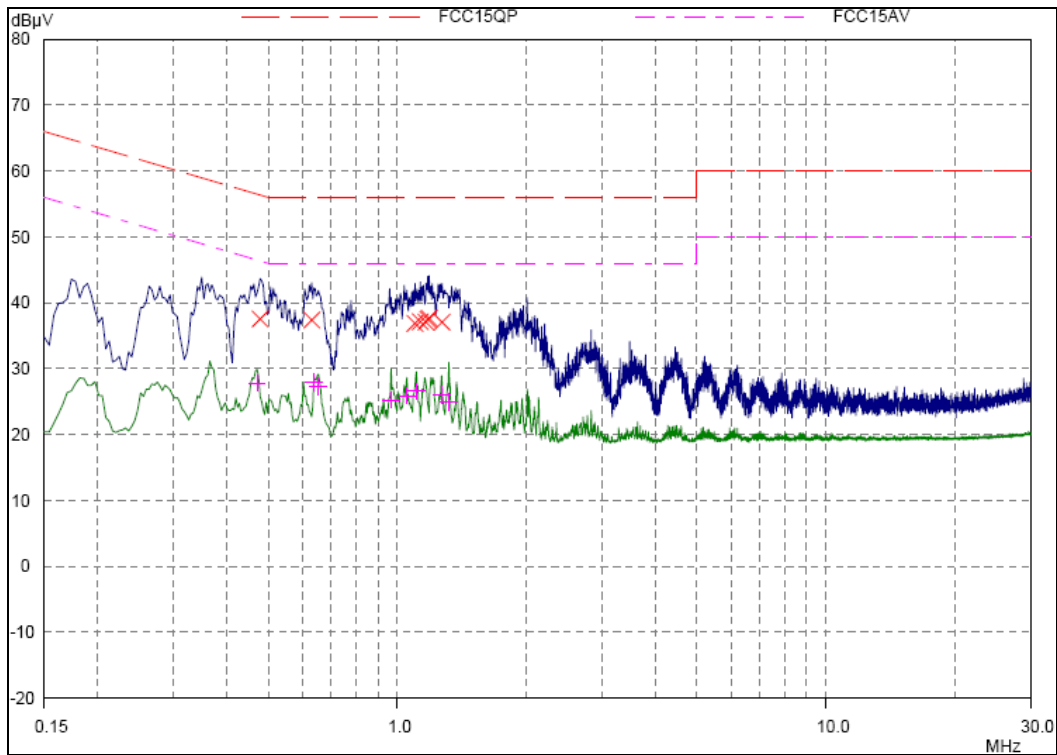
Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.59921	23.02	46.00	22.98	L1
0.61093	23.36	46.00	22.64	L1
0.70078	23.22	46.00	22.78	L1
0.7125	23.78	46.00	22.22	L1
0.72421	24.44	46.00	21.56	L1
1.27109	21.62	46.00	24.38	L1
1.37265	22.61	46.00	23.39	L1
1.38046	22.24	46.00	23.76	L1

L Line

TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RZA1110-1740RF03R1

Page 124 of 128



Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.47812	37.56	56.37	18.81	N
0.63046	37.38	56.00	18.62	N
1.09921	36.90	56.00	19.10	N
1.13046	37.12	56.00	18.88	N
1.16562	37.08	56.00	18.92	N
1.17734	37.48	56.00	18.52	N
1.18515	37.66	56.00	18.34	N
1.27109	37.08	56.00	18.92	N

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.47031	27.82	46.51	18.69	N
0.63828	27.99	46.00	18.01	N
0.6539	27.35	46.00	18.65	N
0.9664	25.24	46.00	20.76	N
1.05234	25.91	46.00	20.09	N
1.10703	26.59	46.00	19.41	N
1.26718	26.05	46.00	19.95	N
1.31796	24.93	46.00	21.07	N

N Line

TA Technology (Shanghai) Co., Ltd.
Test Report

Report No.: RZA1110-1740RF03R1

Page 125 of 128

2. Main Test Instruments

No.	Name	Type	Manufacturer	Serial Number	Calibration Date	Valid Period
01	EMI Test Receiver	ESCI	R&S	100948	2011-06-30	One year
02	TRILOG Broadband Antenna	VULB 9163	Schwarzbeck	391	2011-05-14	Two years
03	Double Ridged Waveguide Horn Antenna	HF907	R&S	100126	2011-07-01	Two years
04	PSG Analog Signal Generator	E8257D	Agilent	MY49281101	2011-06-29	One year
05	ESG Vector Signal Generator	E4438C	Agilent	MY49070900	2011-07-01	One year
06	Spectrum Analyzer	E4445A	Agilent	MY46181146	2011-06-07	One year
07	Power Splitter	SHX-GF2-2-13	Hua Xiang	10120101	NA	NA
08	MOB COMMS DC SUPPLY	66319D	Agilent	MY43004105	2011-06-30	One year
09	Power Sensor	E9304A	Agilent	MY50220022	2011-06-01	One year
10	Power Meter	E4418B	Agilent	MY50000623	2011-06-07	One year
11	Vibration table	ESS-050-120	dongling	D1007126	2010-08-23	Three years
12	Universal Radio Communication Tester	E5515C	Agilent	MY48367192	2011-06-04	One year
13	Peak Power Analyzer	8990B	Agilent	51000109	2011-06-01	One year
14	Wideband Power Sensors	N1923A	Agilent	MY51220004	2011-06-01	One year

*****END OF REPORT BODY*****

ANNEX A: EUT Appearance and Test Setup

A.1 EUT Appearance



a: EUT



b:Battery



c:Charger

Picture 1 Constituents of EUT

A.2 Test Setup



Picture 2 Radiated Emission Test Setup



Picture 3 Conducted Emission Test Setup