



Part 15C

TEST REPORT

Product Name	WiFi USB dongle
Model	SWM9001
FCC ID	A7N-SWM9001
Client	Suzhou-CAS Semiconductor Integrated Technology Co.,Ltd

TA Technology (Shanghai) Co., Ltd.

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

Report No.: RZA1112-2067RF01R3

Page 2 of 72

GENERAL SUMMARY

Product Name	WiFi USB dongle	Model	SWM9001
FCC ID	A7N-SWM9001	Report No.	RZA1112-2067RF01R3
Client	Suzhou-CAS Semiconductor Integrated Technology Co.,Ltd		
Manufacturer	Suzhou-CAS Semiconductor Integrated Technology Co.,Ltd		
Reference Standard(s)	FCC CFR47 Part 15C (2010-12) Radio Frequency Devices 15.205 Restricted bands of operation; 15.207 Conducted limits; 15.209 Radiated emission limits; general requirements; 15.247 Operation within the bands 902-928 MHz,2400-2483.5 MHz, and 5725-5850MHz. 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. (2009) KDB 558074 Measurement of Digital Transmission Systems Operating under Section 15.247 (2005)		
Conclusion	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. General Judgment: Pass  (Stamp) Date of issue: February 16th, 2012		
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)	11
2.4. Band Edge Compliance	16
2.5. Spurious Radiated Emissions in the restricted band.....	19
2.6. Power Spectral Density.....	25
2.7. Spurious RF Conducted Emissions	30
2.8. Radiates Emission	41
2.9. Conducted Emissions	56
2. Main Test Instruments	69
ANNEX A: EUT Appearance and Test Setup.....	70
A.1 EUT Appearance	70
A.2 Test Setup	71

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 dose 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.: RZA1112-2067RF01R3

Page 5 of 72

1.3. Applicant Information

Company: Suzhou-CAS Semiconductor Integrated Technology Co.,Ltd
Address: 9B, Science Plaza, 1355 JinJiHu Avenue, Suzhou Industrial Park
City: Suzhou
Postal Code: 215021
Country: P.R.China
Contact: Gu Ming
Telephone: +86-512-62621949
Fax: +86-512-62620027

1.4. Manufacturer Information

Company: Suzhou-CAS Semiconductor Integrated Technology Co.,Ltd
Address: 9B, Science Plaza, 1355 JinJiHu Avenue, Suzhou Industrial Park
City: Suzhou
Postal Code: 215021
Country: P.R.China
Telephone: +86-512-62621949
Fax: +86-512-62620027

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

Report No.: RZA1112-2067RF01R3

Page 6 of 72

1.5. Information of EUT

General information

Name of EUT:	WiFi USB dongle
IMEI:	/
Hardware Version:	/
Software Version:	/
Antenna Type:	Internal Antenna
Device Operating Configurations:	
Network Standards:	802.11b, 802.11g; (tested)
Test Modulation:	BPSK/QPSK/CCK for 11b & BPSK/QPSK/16QAM/64QAM for 11g
Max. Conducted Power	802.11b: 16.46dBm 802.11g: 16.36dBm
Extreme Voltage:	Minimum: 4.5 V Maximum: 5.5 V
Extreme Temperature:	Lowest: -40°C Highest: +80°C
Operating Frequency Range(s)	2400MHz~ 2483.5 MHz

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.: RZA1112-2067RF01R3

Page 7 of 72

Auxiliary Equipment Details

AE1: Notebook PC

Model: 1310

Manufacturer: DELL

S/N: /

Equipment Under Test (EUT) is WiFi USB dongle. The detail about these is in chapter 1.5 in this report. The EUT supports WiFi function.

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 February 5, 2012 to February 10, 2012.

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

Report No.: RZA1112-2067RF01R3

Page 8 of 72

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

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.: RZA1112-2067RF01R3

Page 9 of 72

2.2. Peak Power Output –Conducted

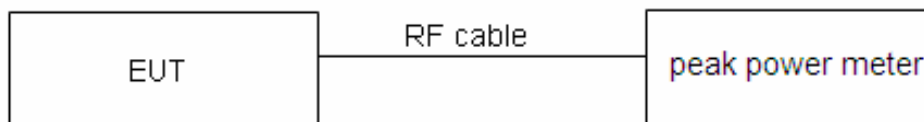
Ambient condition

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	$\leq 1\text{W}$ (30dBm)
-------------------	--------------------------

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

Report No.: RZA1112-2067RF01R3

Page 10 of 72

Test Results: Pass

Network Standards	Rate (Mbps)	Peak Output Power (dBm)		
		CH 1	CH 6	CH 11
802.11b	1	15.77	15.73	16.46
	2	15.7	15.68	16.42
	5.5	15.86	15.73	15.9
	11	15.64	16.05	15.78
802.11g	6	15.73	15.84	13.97
	9	15.86	15.73	13.83
	12	15.84	15.64	14.07
	18	16.36	16.03	13.94
	24	16.34	16.06	14.08
	36	16.28	16.18	14.01
	48	16.15	15.74	13.95
	54	16.26	15.77	13.9

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

Report No.: RZA1112-2067RF01R3

Page 11 of 72

2.3. Occupied Bandwidth (6dB)

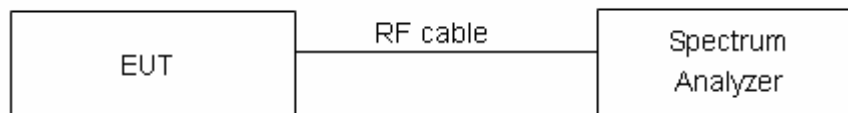
Ambient condition

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
------------------------	-----------

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

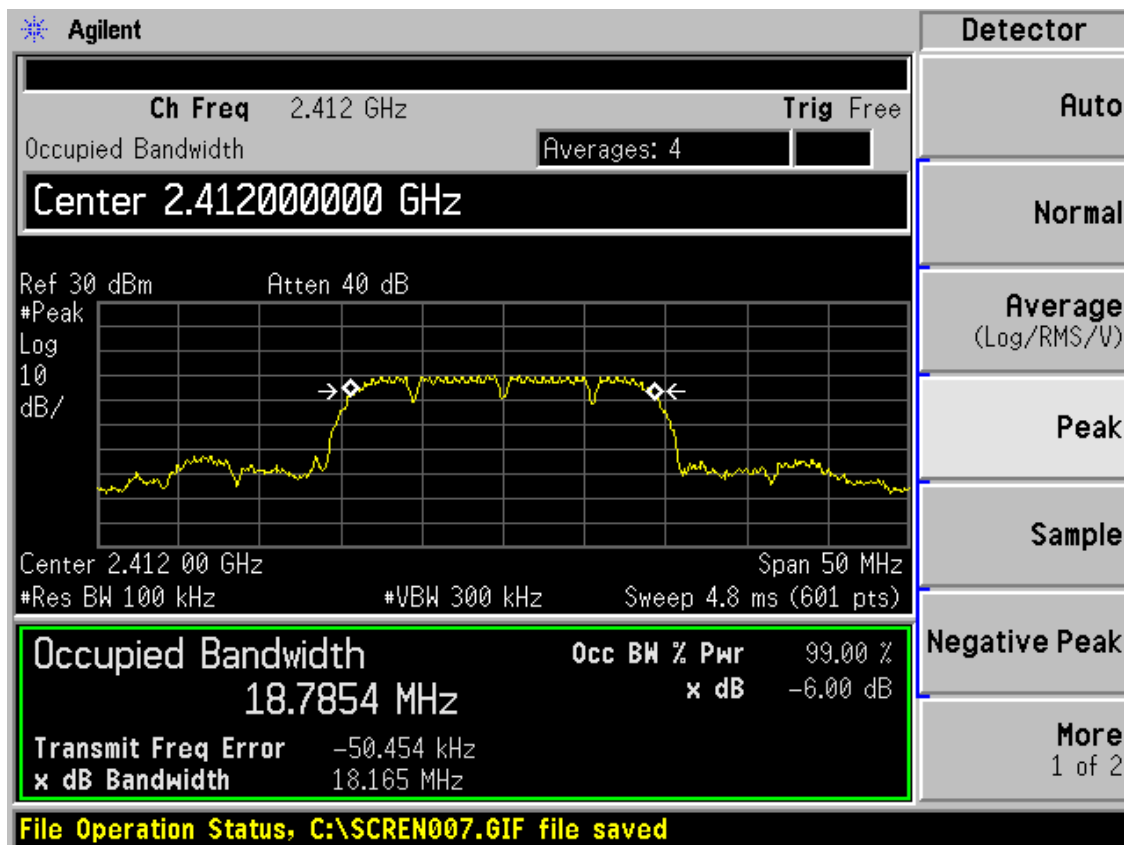
Report No.: RZA1112-2067RF01R3

Page 12 of 72

Test Results:

Network Standards	Carrier frequency (MHz)	Minimum 6 dB bandwidth (MHz)	Conclusion
802.11b	2412	18.165	PASS
	2437	18.388	PASS
	2462	18.169	PASS
802.11g	2412	16.479	PASS
	2437	16.776	PASS
	2462	16.511	PASS

802.11b

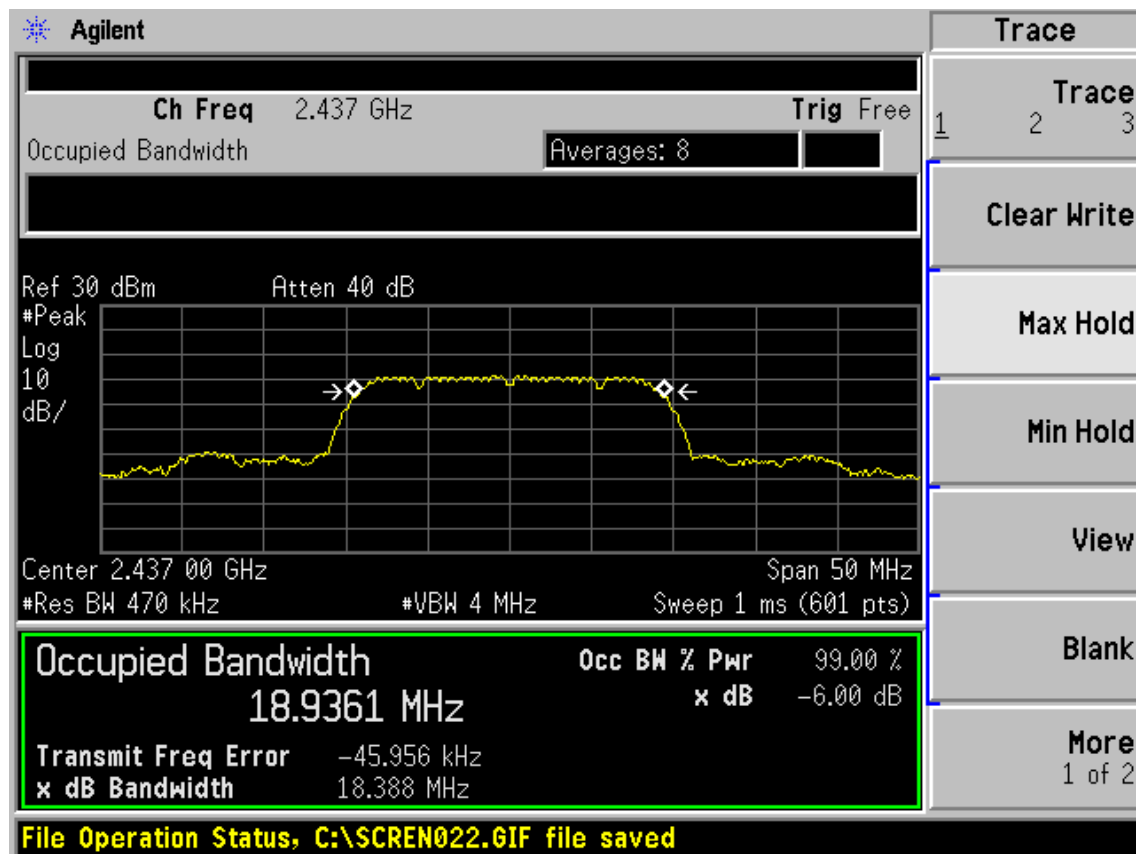


802.11b, Carrier frequency (MHz): 2412

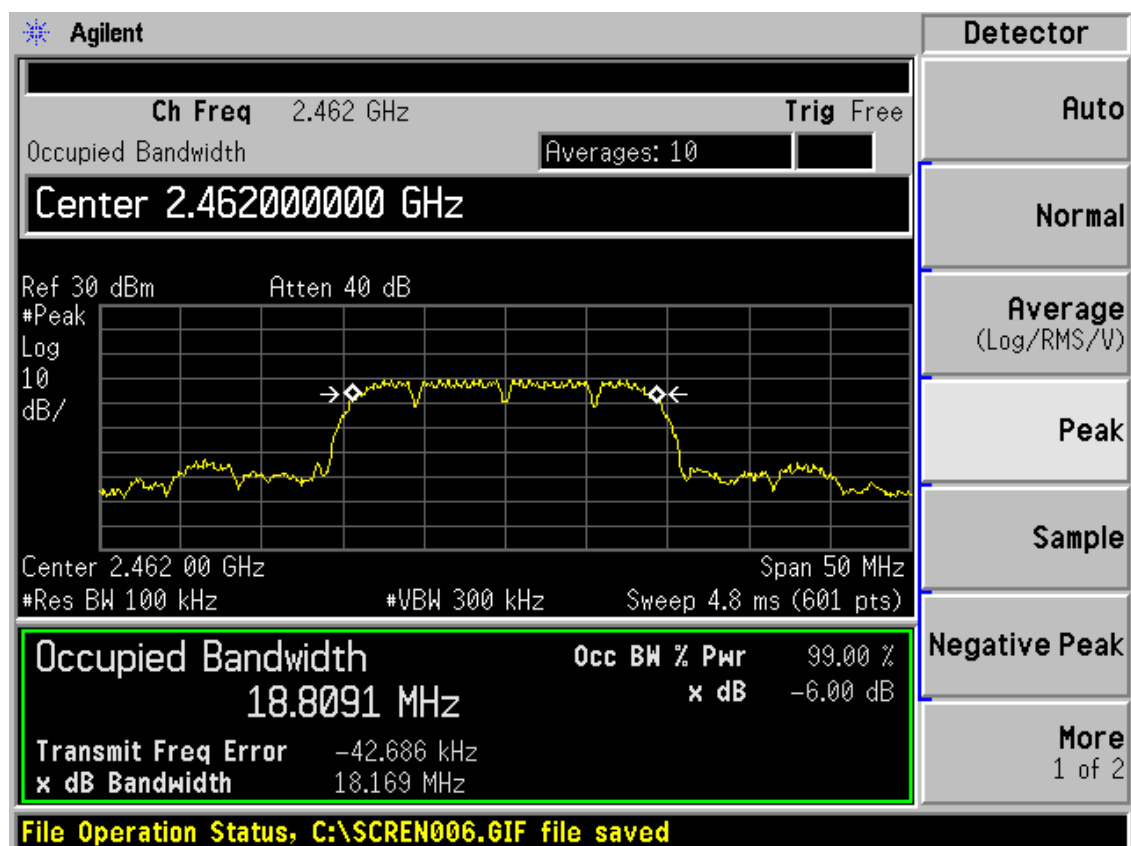
TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RZA1112-2067RF01R3

Page 13 of 72



802.11b, Carrier frequency (MHz): 2437



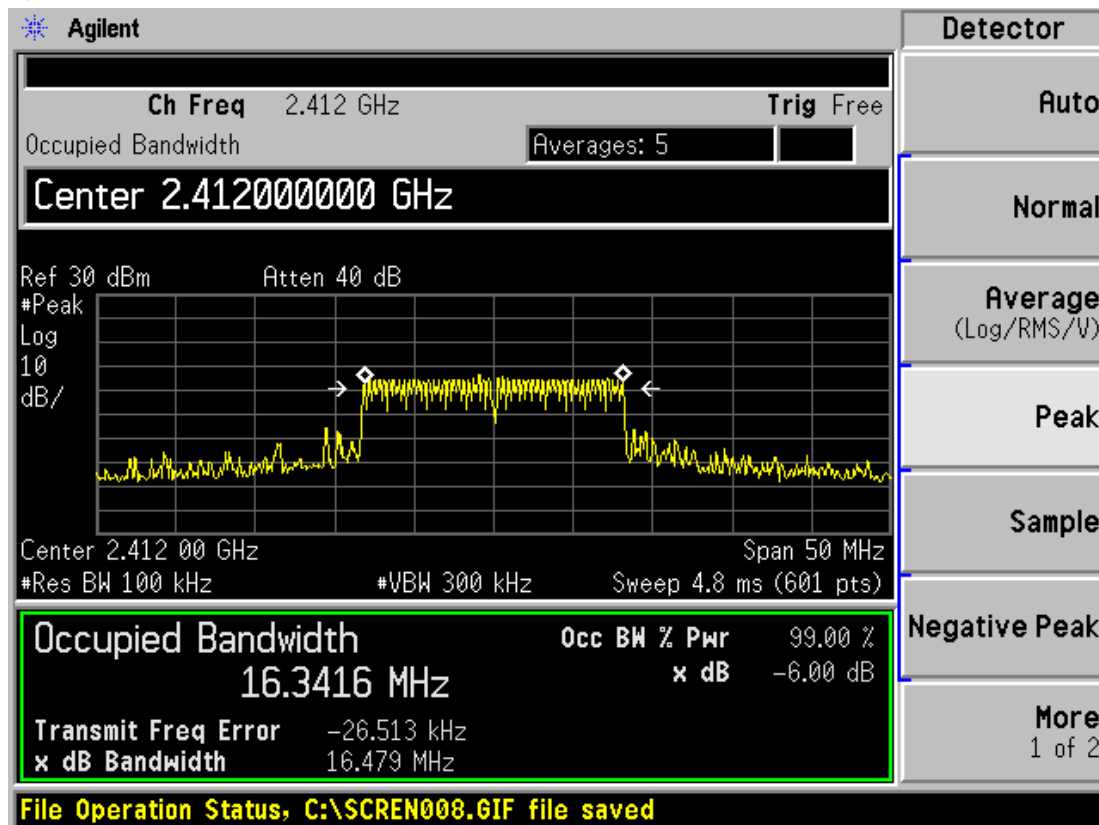
802.11b, Carrier frequency (MHz):2462

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

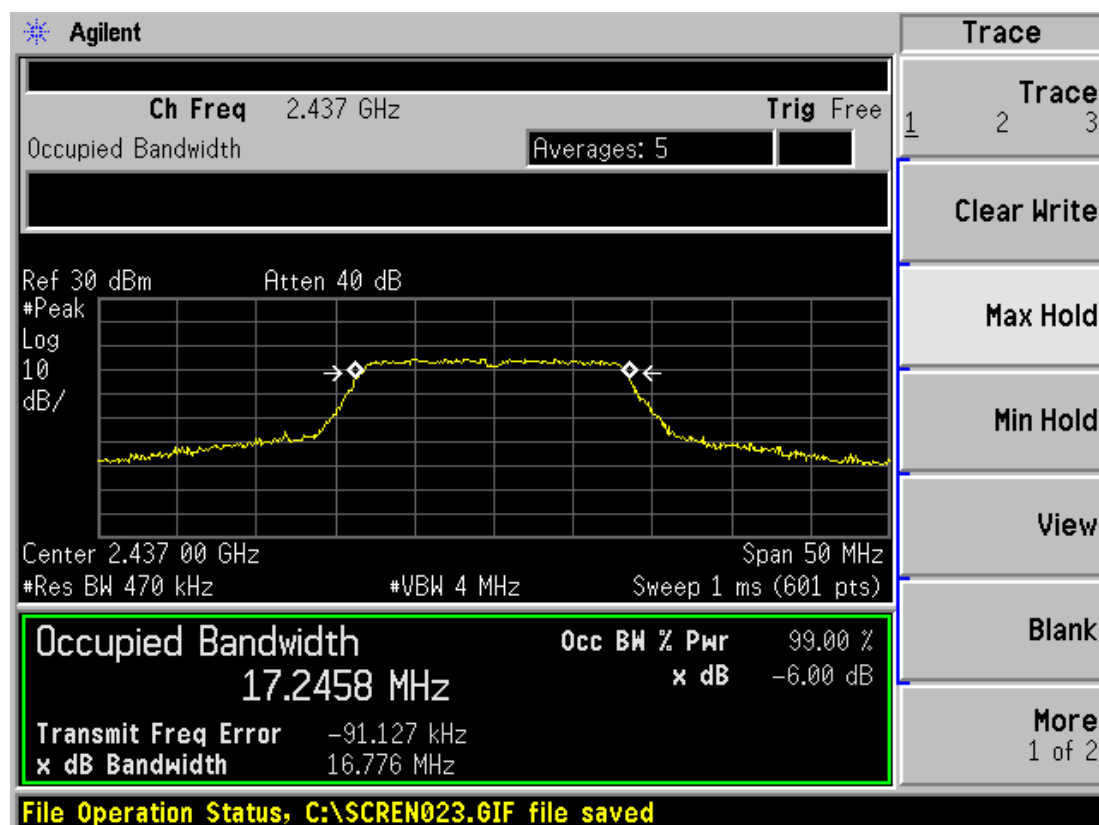
Report No.: RZA1112-2067RF01R3

Page 14 of 72

802.11g



802.11g, Carrier frequency (MHz): 2412

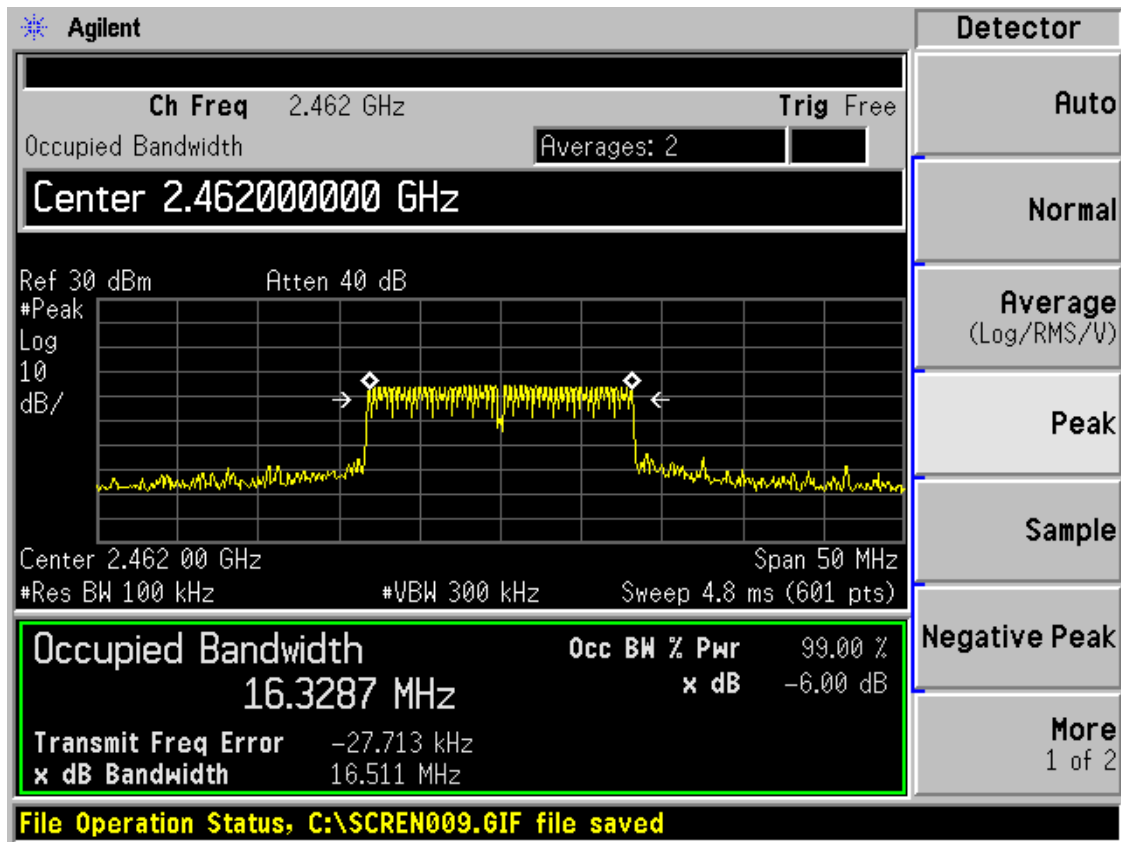


802.11g, Carrier frequency (MHz): 2437

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

Report No.: RZA1112-2067RF01R3

Page 15 of 72



802.11g, Carrier frequency (MHz):2462

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

Report No.: RZA1112-2067RF01R3

Page 16 of 72

2.4. Band Edge Compliance

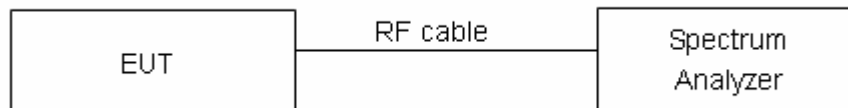
Ambient condition

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
-------	--------------

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

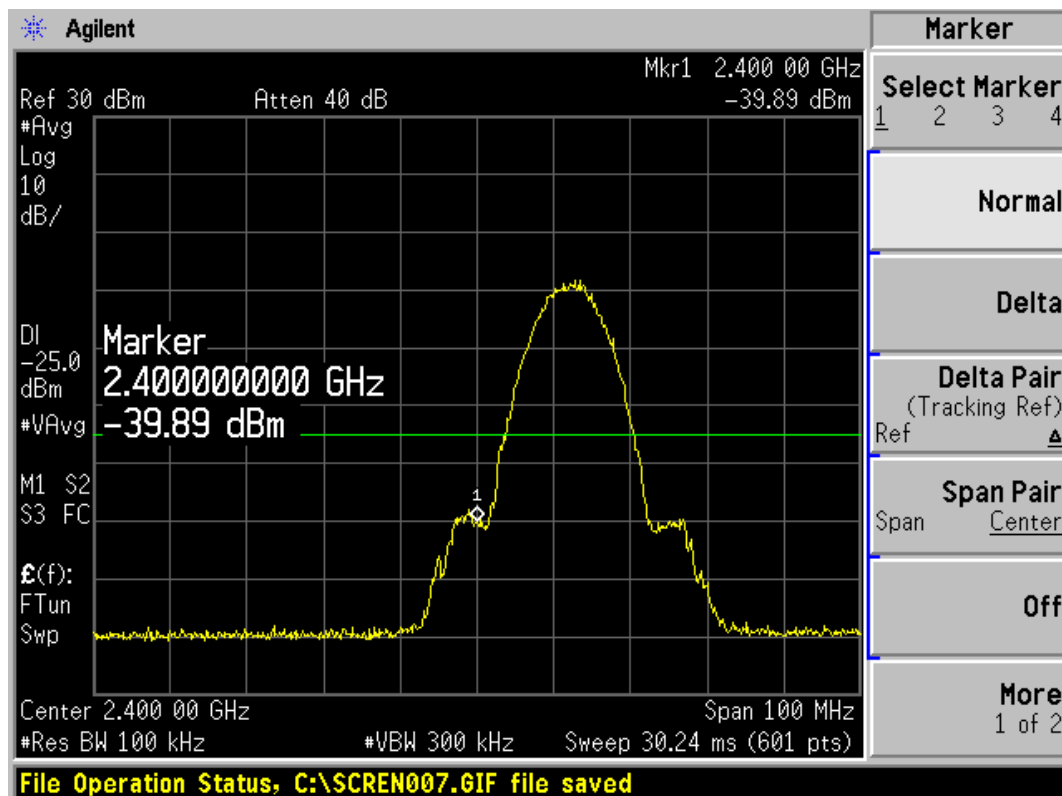
TA Technology (Shanghai) Co., Ltd.
Test Report

Report No.: RZA1112-2067RF01R3

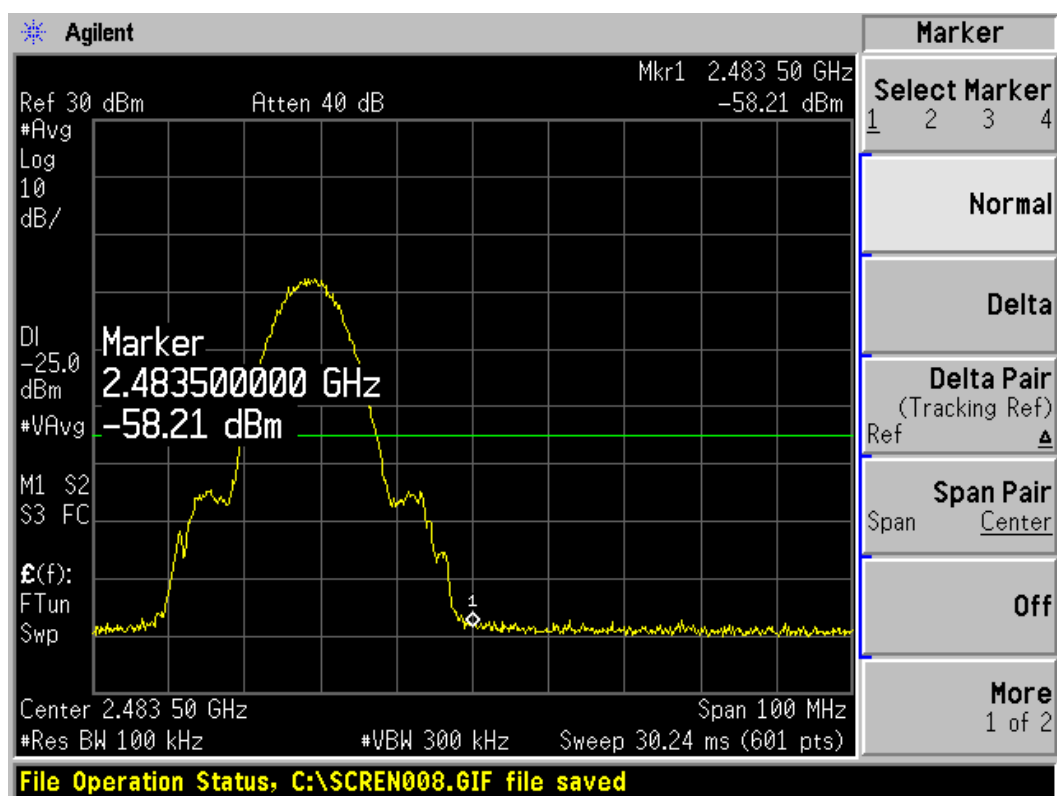
Page 17 of 72

Test Results: PASS

802.11b



802.11b, Channel No.: 1



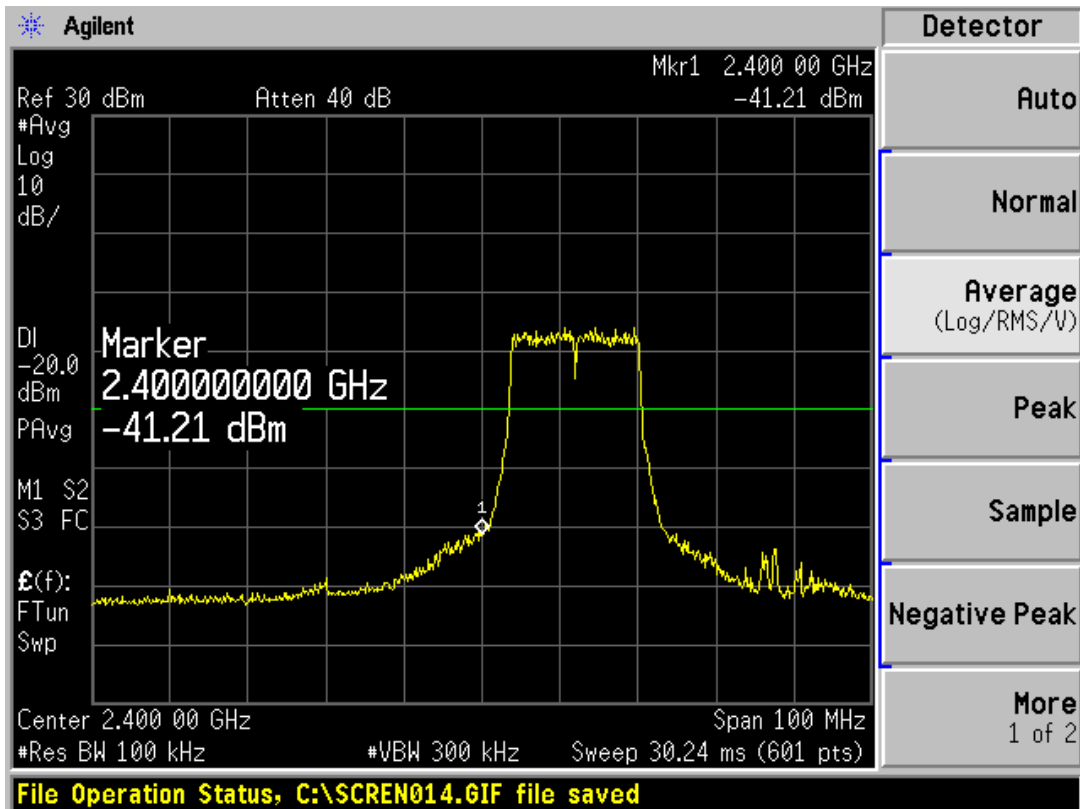
802.11b, Channel No.: 11

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

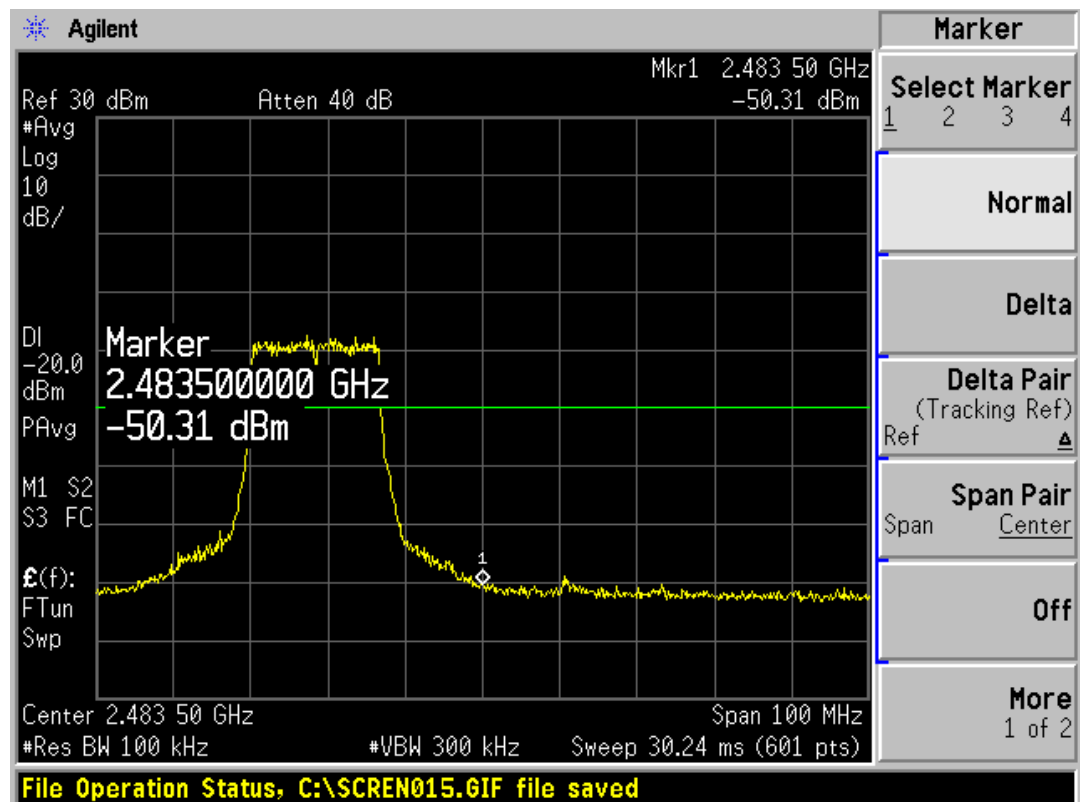
Report No.: RZA1112-2067RF01R3

Page 18 of 72

802.11g



802.11g, Channel No.: 1



802.11g, 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:

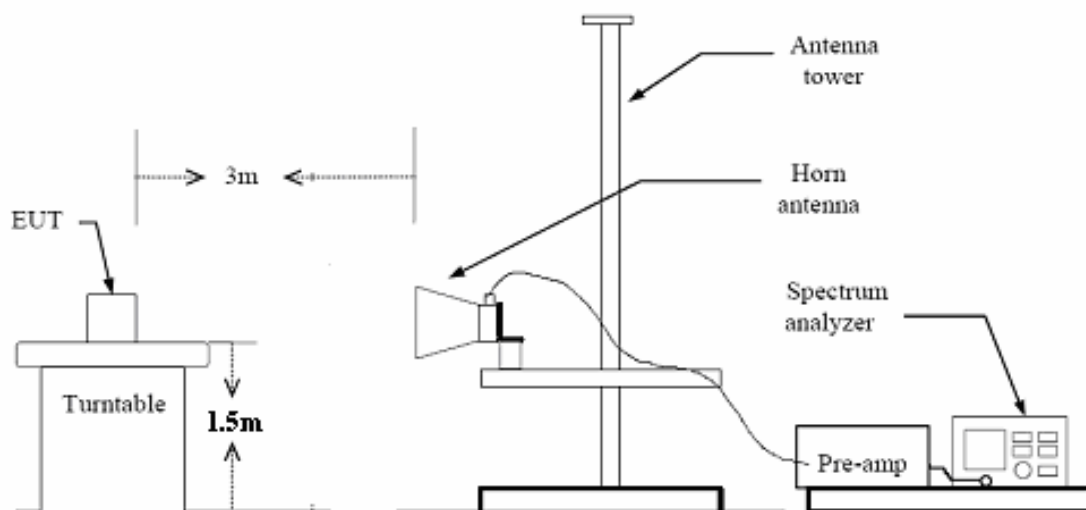
- (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
- (b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO

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

EUT in X-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

Report No.: RZA1112-2067RF01R3

Page 20 of 72

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.

TA Technology (Shanghai) Co., Ltd.

Test Report

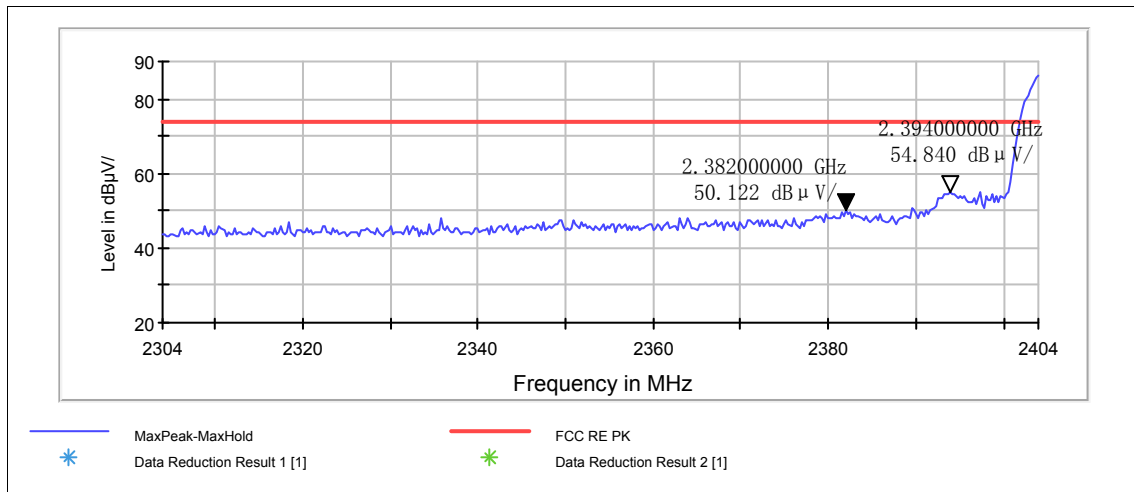
Report No.: RZA1112-2067RF01R3

Page 21 of 72

Test Results: PASS

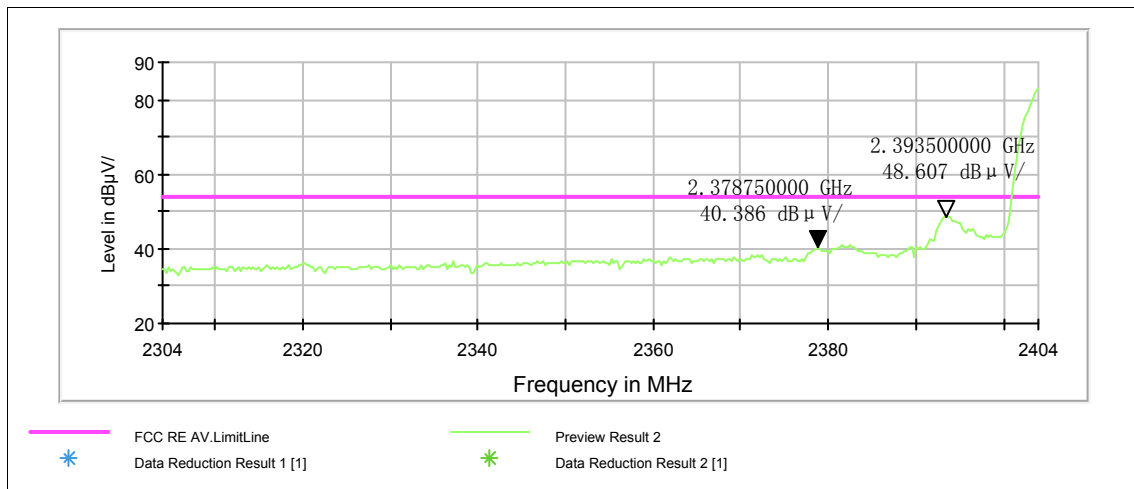
802.11b-Channel 1:

Peak



Note: The signal beyond the limit is carrier
Channel 1

Average



Note: The signal beyond the limit is carrier
Channel 1

TA Technology (Shanghai) Co., Ltd.

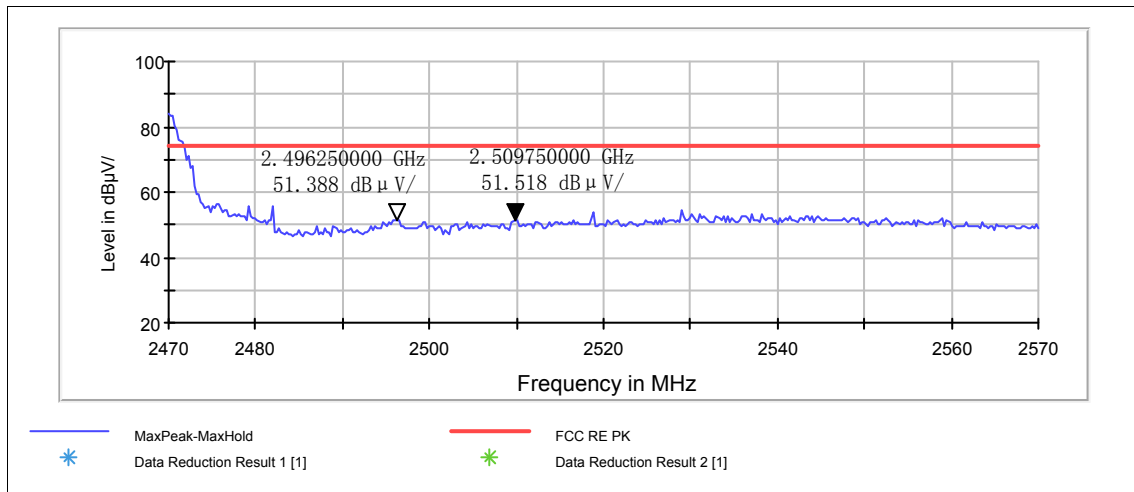
Test Report

Report No.: RZA1112-2067RF01R3

Page 22 of 72

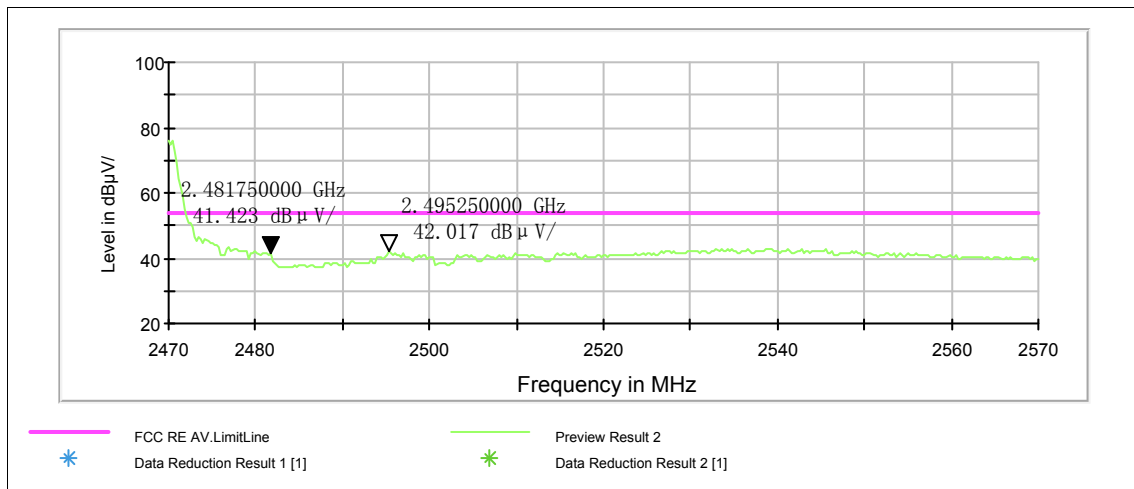
802.11b-Channel 11:

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.

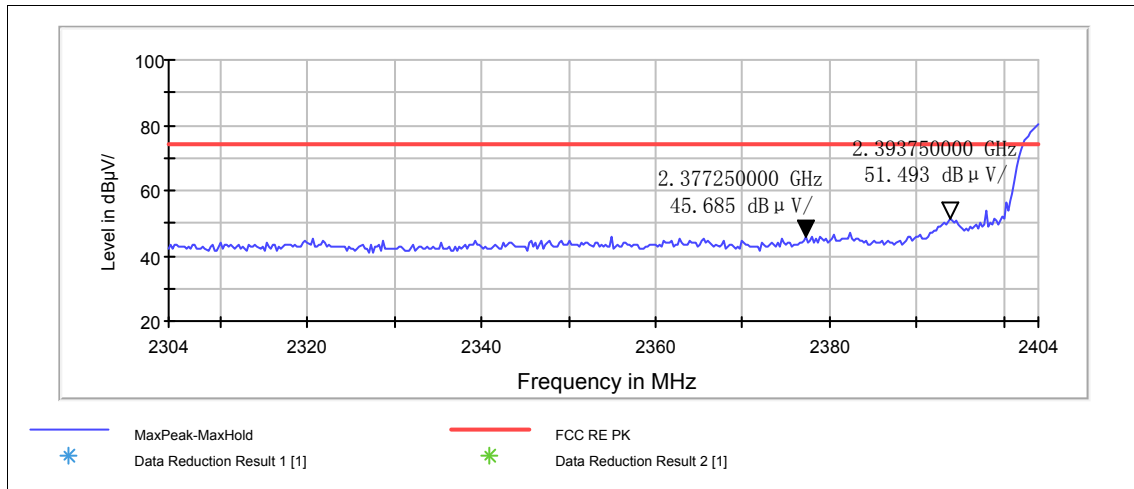
Test Report

Report No.: RZA1112-2067RF01R3

Page 23 of 72

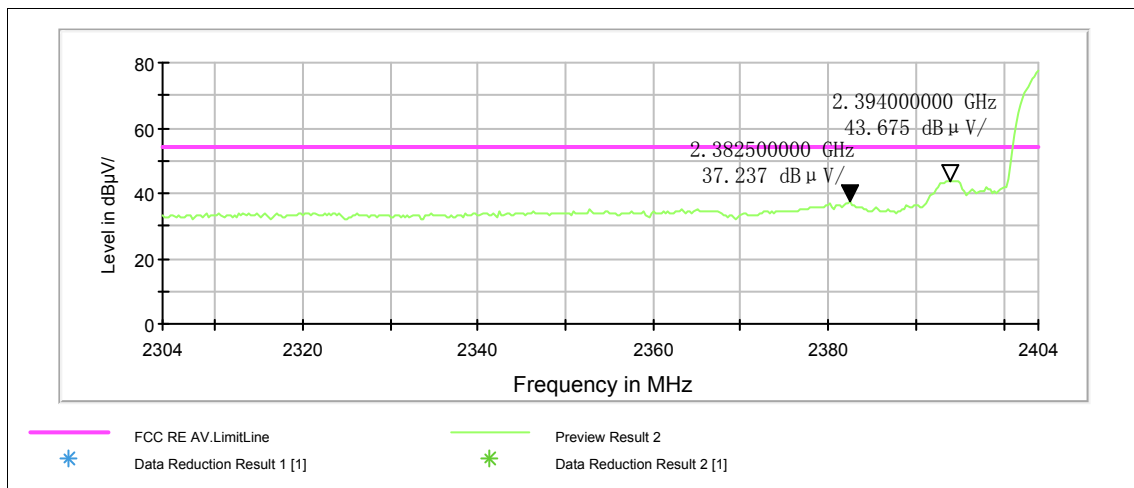
802.11g-Channel 1:

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.

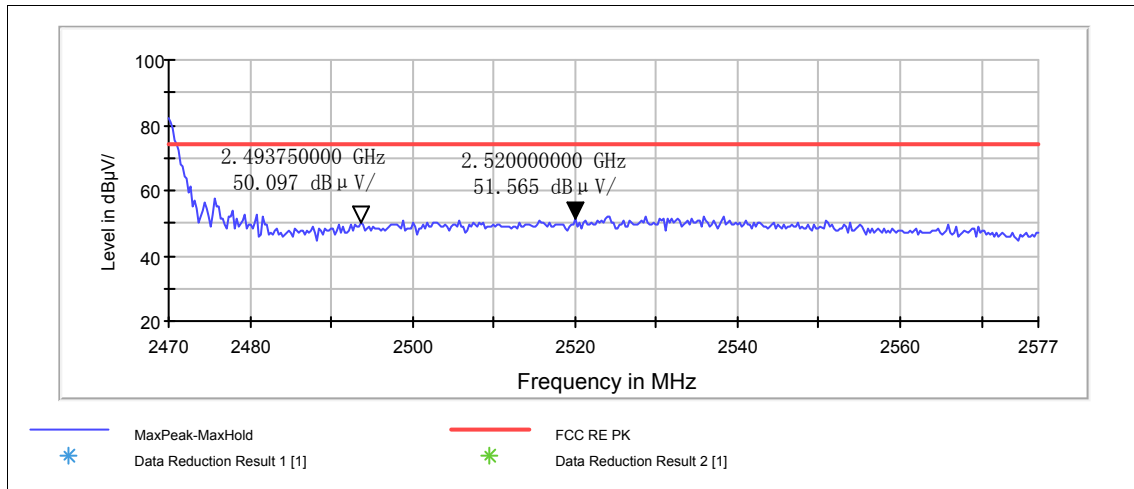
Test Report

Report No.: RZA1112-2067RF01R3

Page 24 of 72

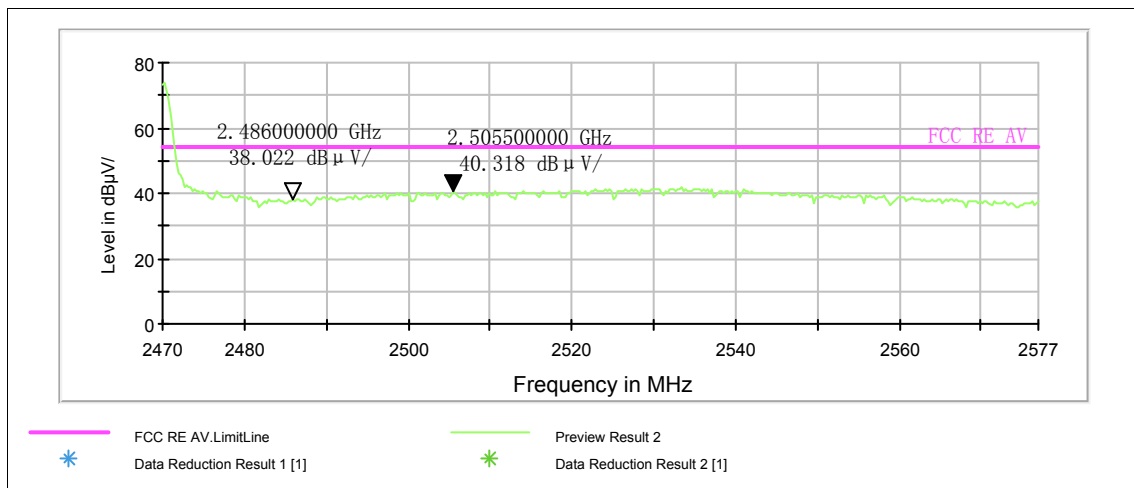
802.11g-Channel 11:

Peak



Note: The signal beyond the limit is carrier
Channel 11

Average



Note: The signal beyond the limit is carrier
Channel 11

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

Report No.: RZA1112-2067RF01R3

Page 25 of 72

2.6. Power Spectral Density

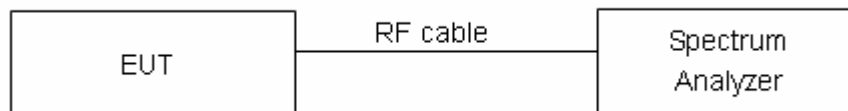
Ambient condition

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	$\leq 8 \text{ dBm} / 3\text{kHz}$
--------	------------------------------------

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

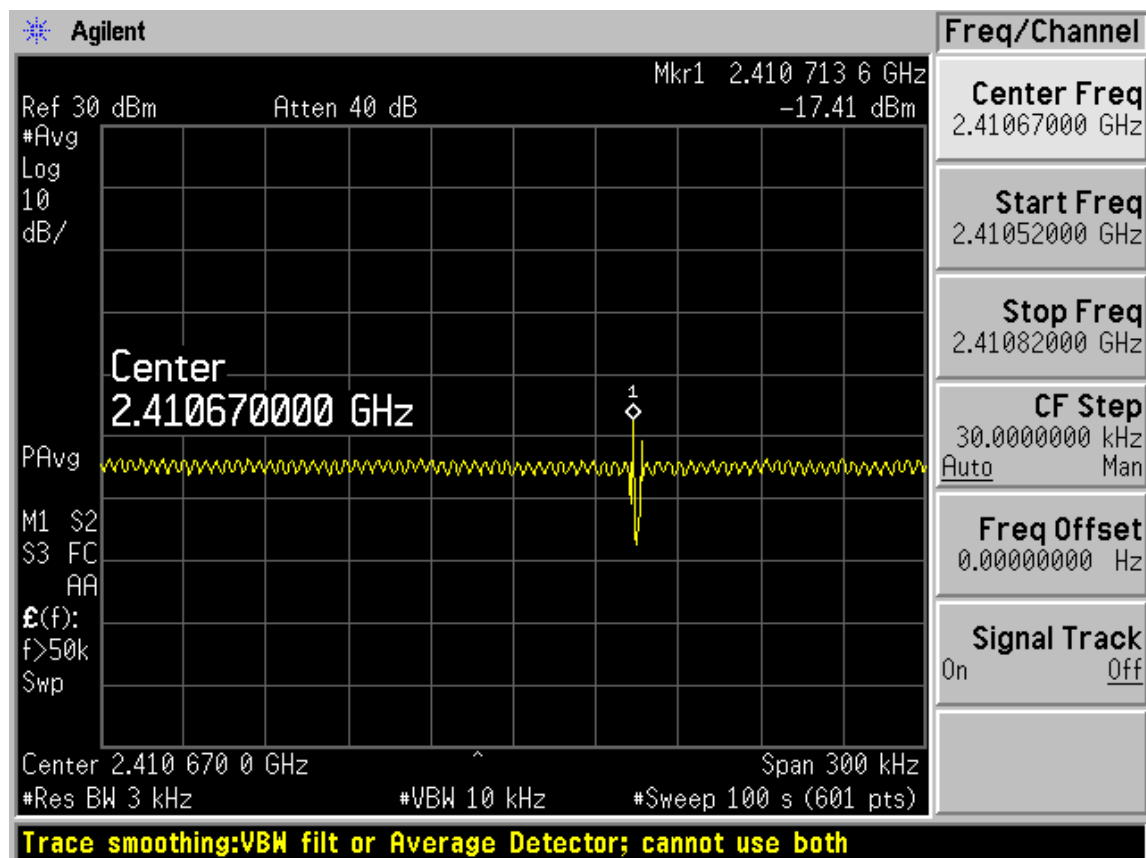
Report No.: RZA1112-2067RF01R3

Page 26 of 72

Test Results:

Network Standards	Channel Number	Power Spectral Density dBm / 3kHz	Conclusion
802.11b	1	-17.41	PASS
	6	-22.66	PASS
	11	-22.90	PASS
802.11g	1	-23.04	PASS
	6	-23.16	PASS
	11	-24.50	PASS

802.11b

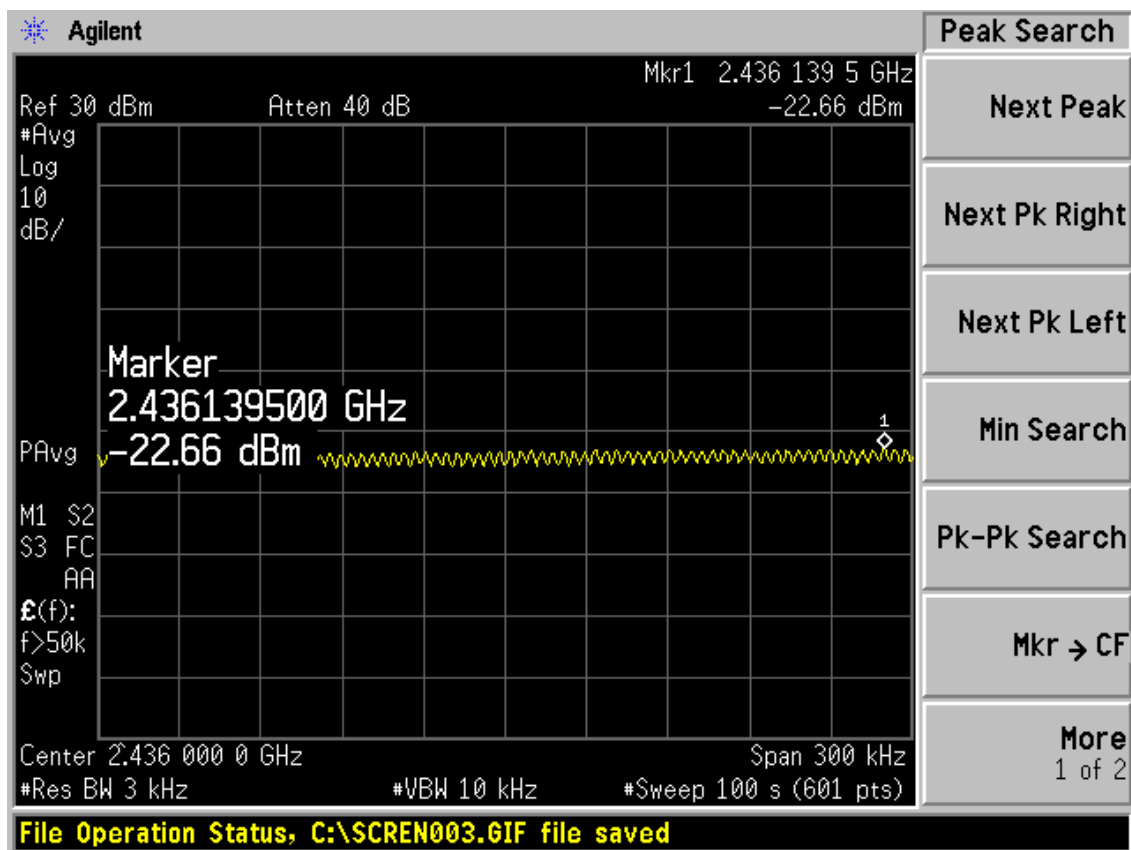


802.11b, Channel No.: 1

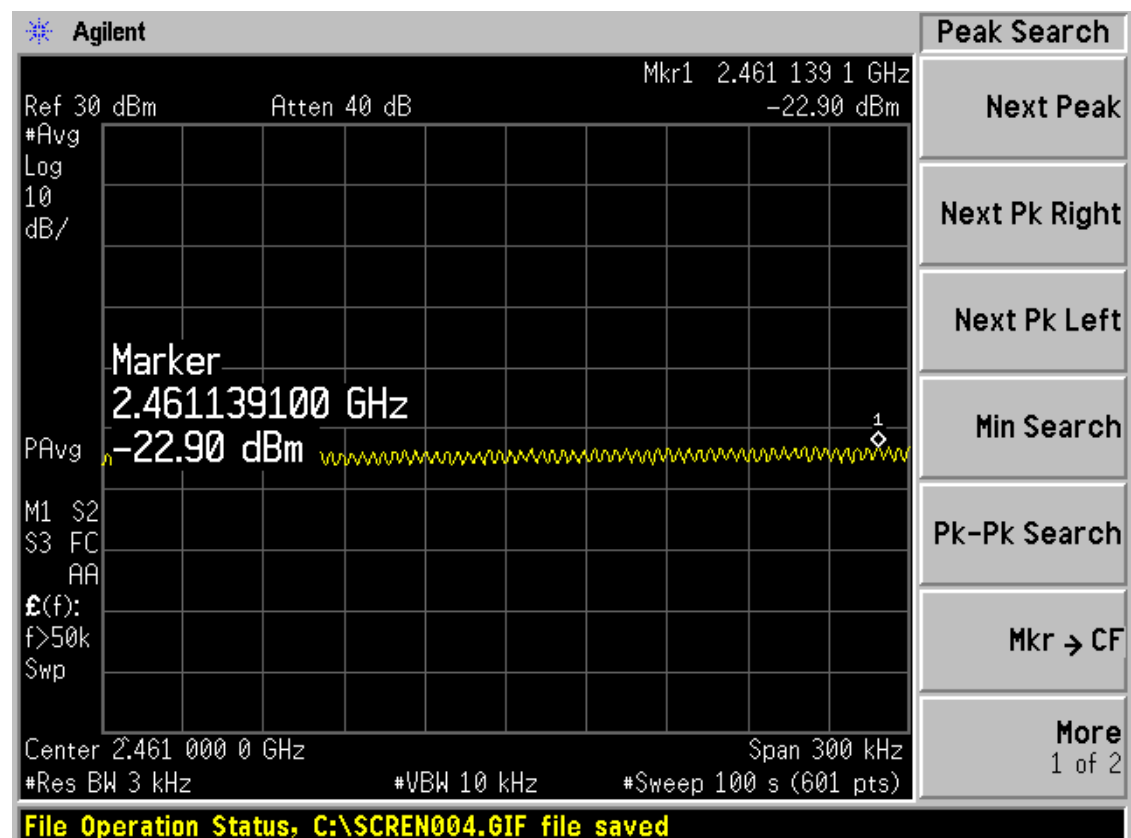
TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RZA1112-2067RF01R3

Page 27 of 72



802.11b, Channal No.: 6



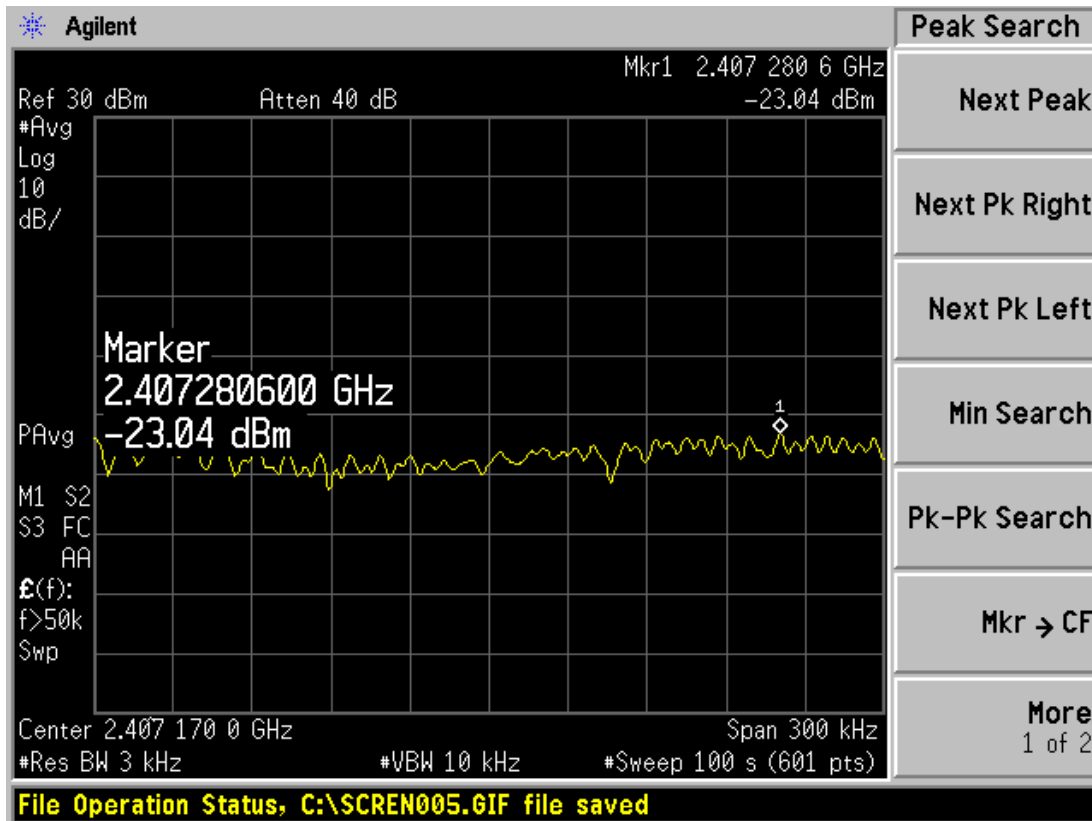
802.11b, Channal No.: 11

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

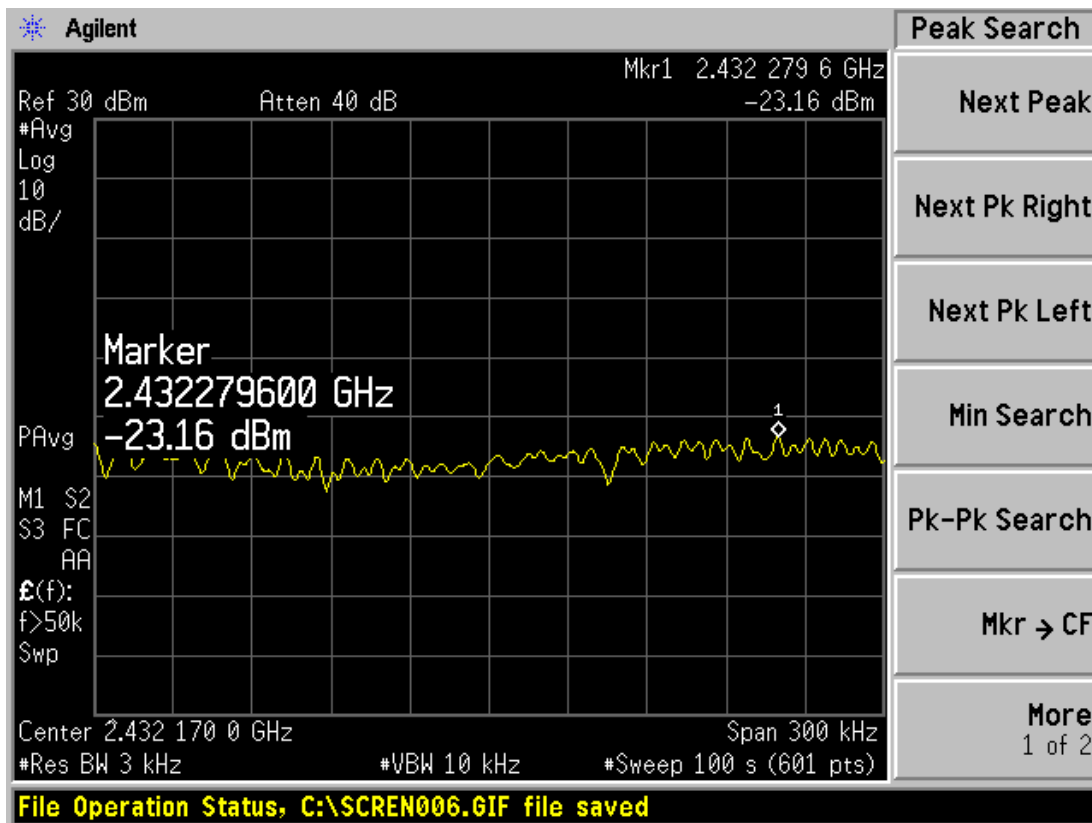
Report No.: RZA1112-2067RF01R3

Page 28 of 72

802.11g



802.11g, Channal No.: 1

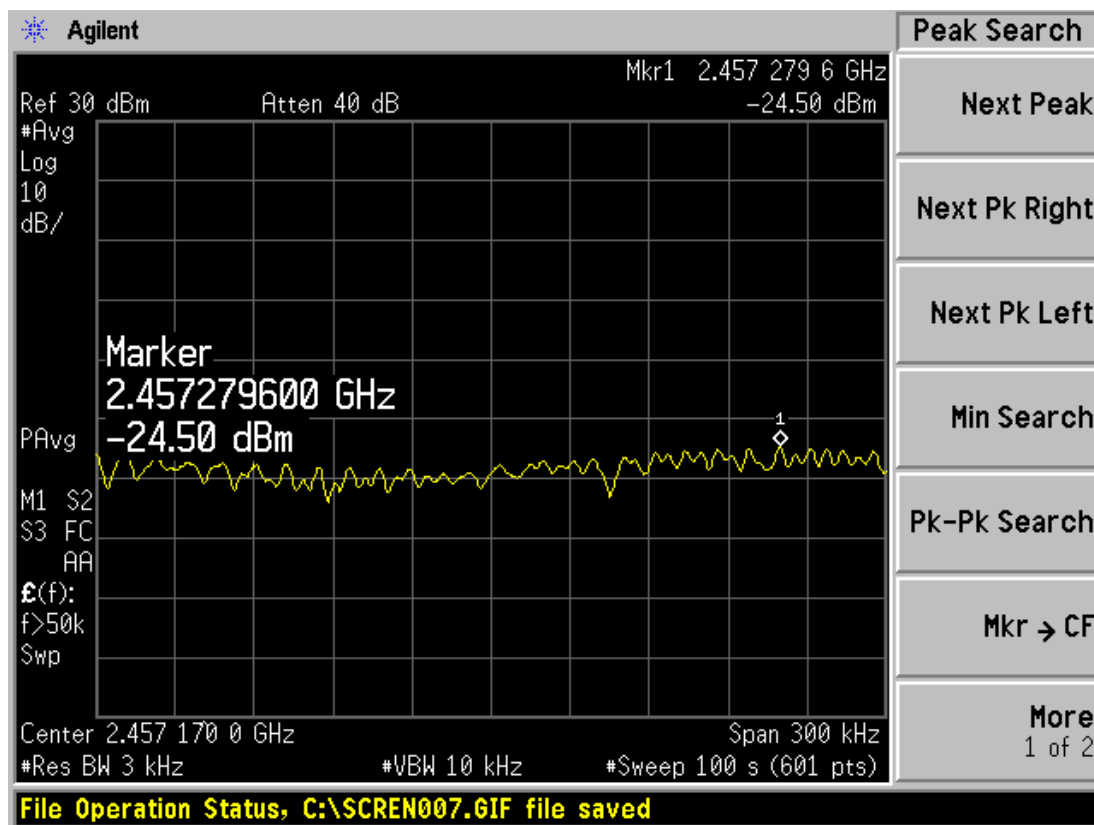


802.11g, Channal No.: 6

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

Report No.: RZA1112-2067RF01R3

Page 29 of 72



802.11g, Channal No.: 11

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

Report No.: RZA1112-2067RF01R3

Page 30 of 72

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) specifies 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."

Network Standards	Carrier frequency (MHz)	Reference value (dBm)	Limit
802.11b	2412	15.77	≤ -4.23
	2437	15.73	≤ -4.27
	2462	16.46	≤ -3.54
802.11g	2412	16.36	≤ -3.64
	2437	16.03	≤ -3.97
	2462	13.94	≤ -6.06

Measurement Uncertainty

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

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

Report No.: RZA1112-2067RF01R3

Page 31 of 72

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

TA Technology (Shanghai) Co., Ltd.

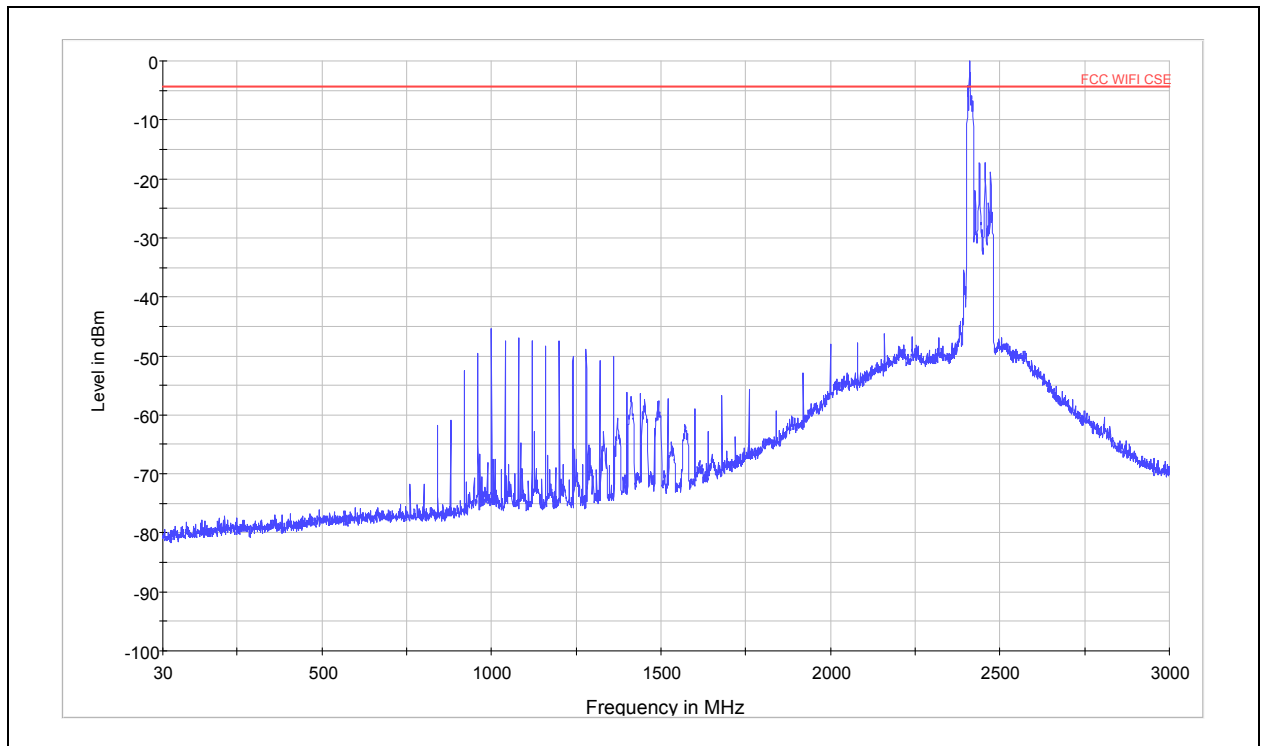
Test Report

Report No.: RZA1112-2067RF01R3

Page 32 of 72

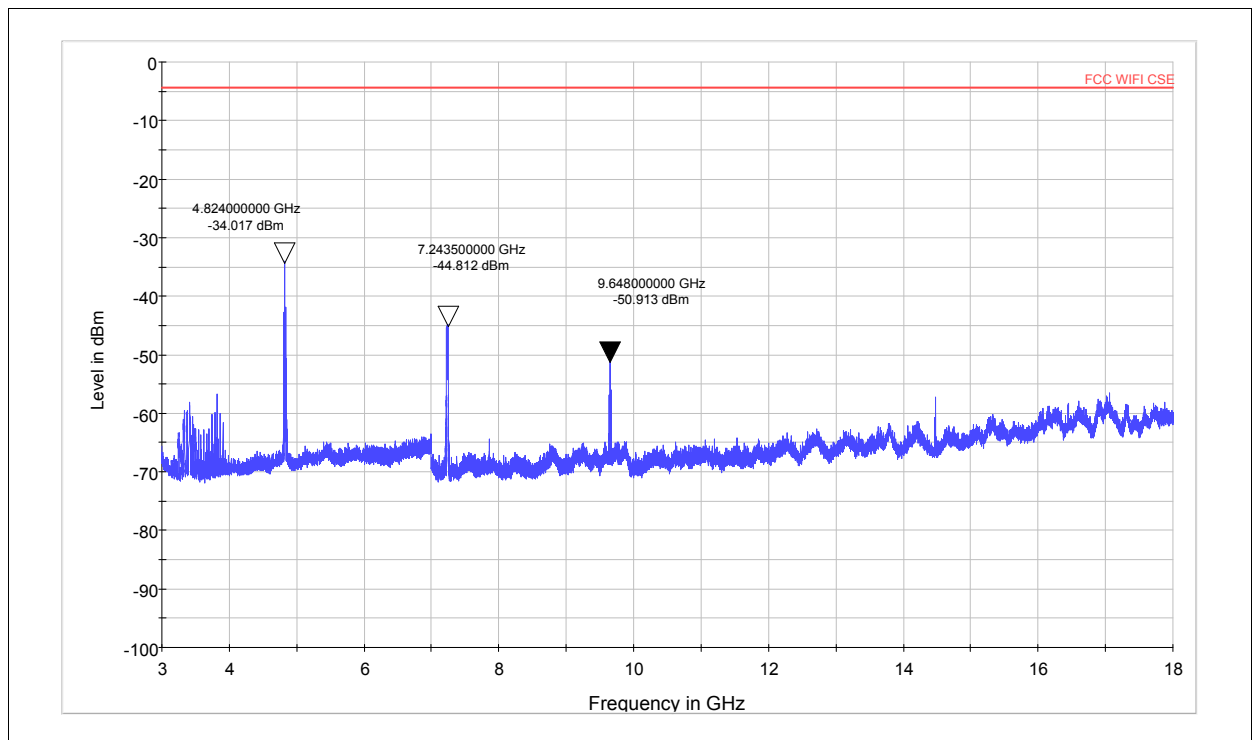
Test Results:

802.11b CH1



Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 3GHz



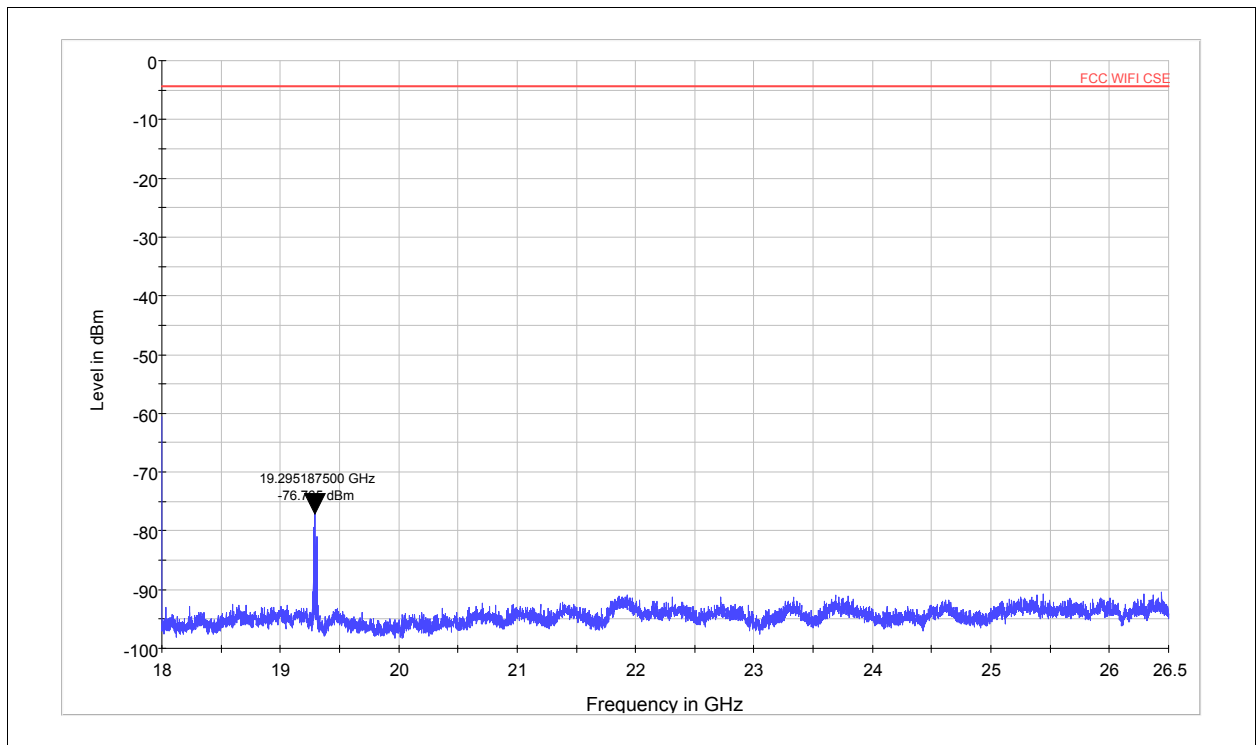
Spurious RF conducted emissions from 3GHz to 18GHz

TA Technology (Shanghai) Co., Ltd.

Test Report

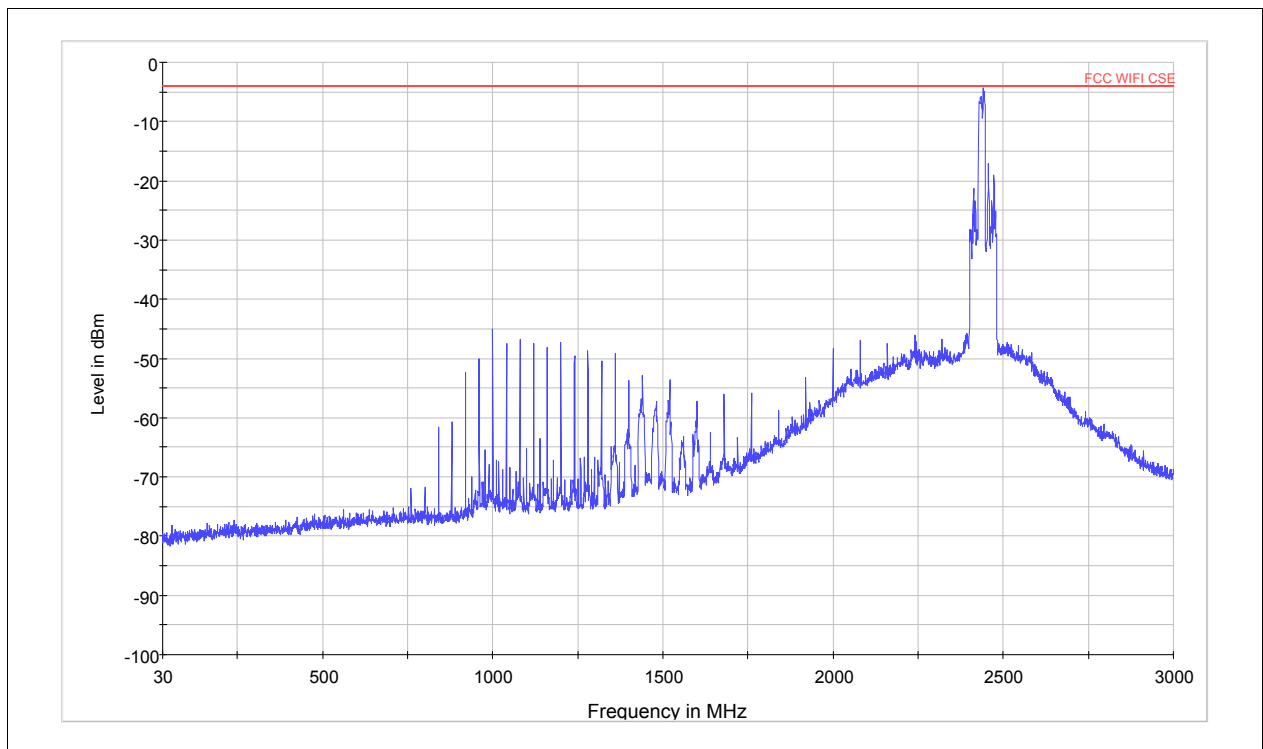
Report No.: RZA1112-2067RF01R3

Page 33 of 72



Spurious RF conducted emissions from 18GHz to 26.5GHz

802.11b CH6



Note: The signal beyond the limit is carrier

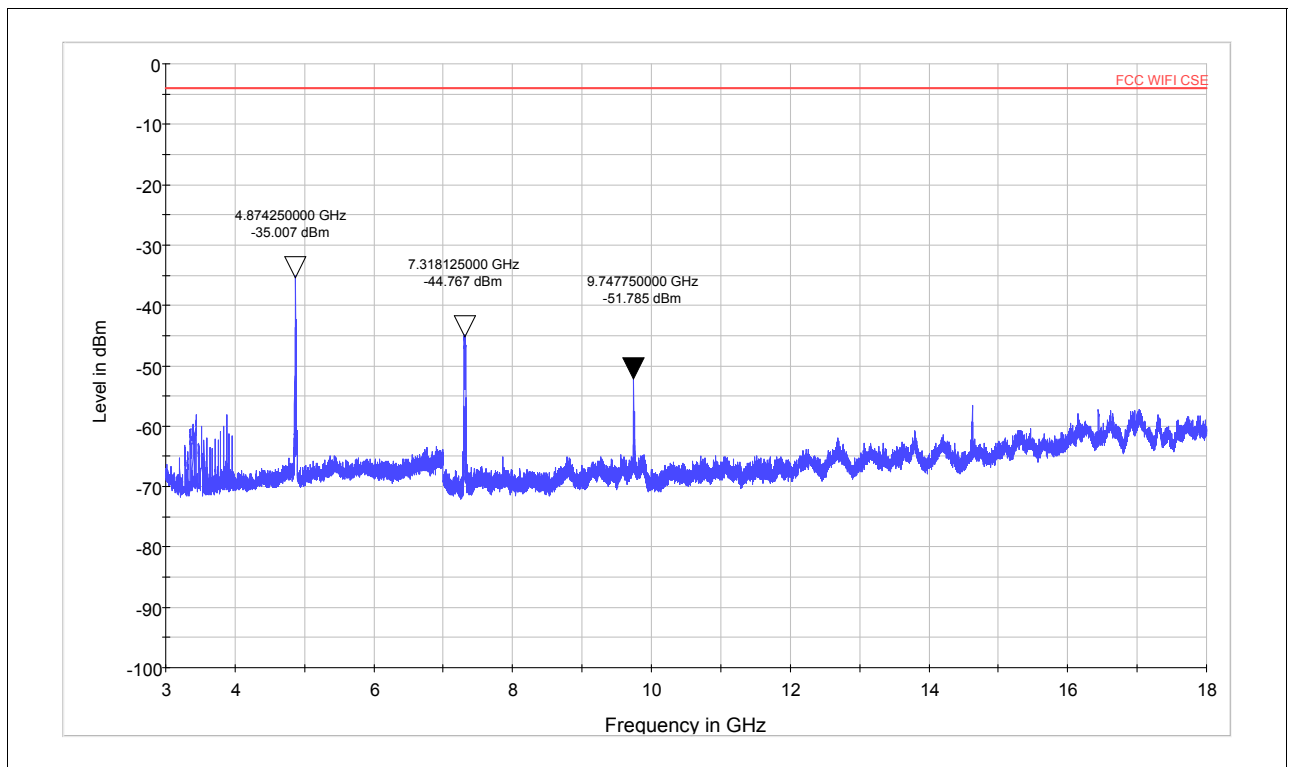
Spurious RF conducted emissions from 30MHz to 3GHz

TA Technology (Shanghai) Co., Ltd.

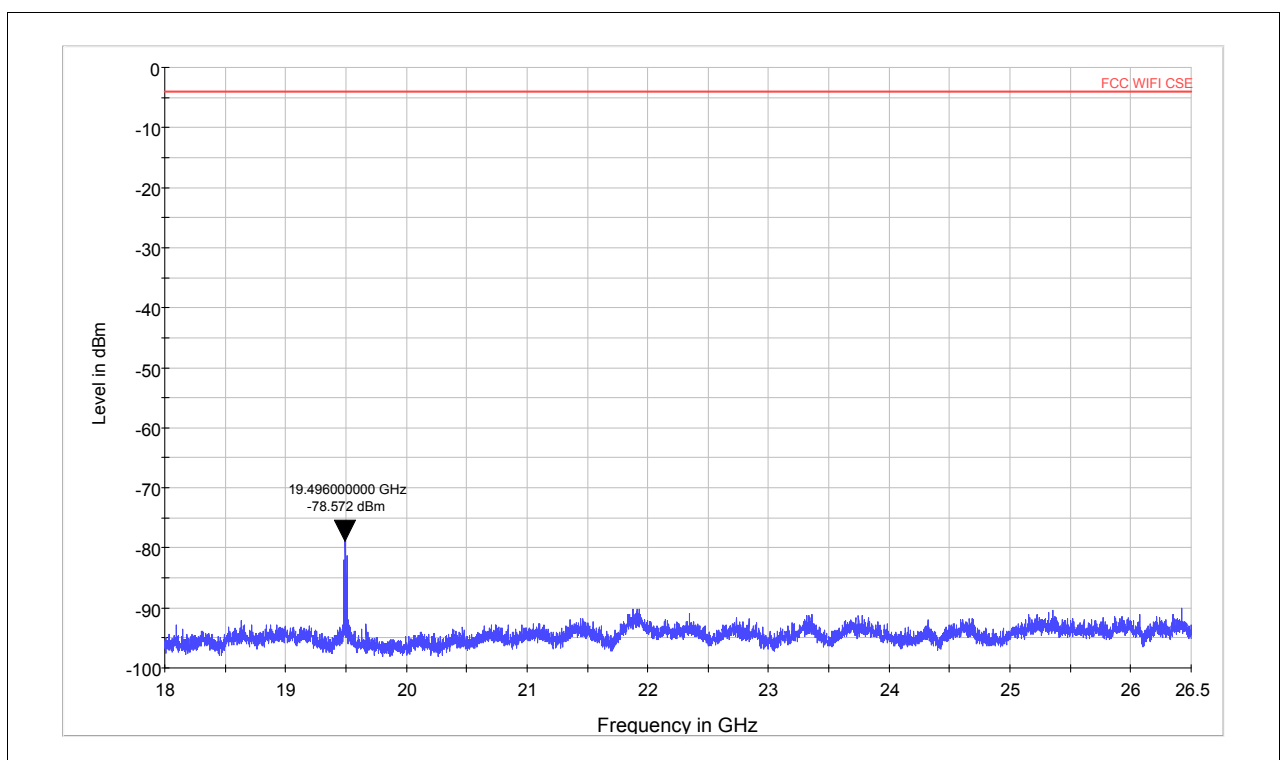
Test Report

Report No.: RZA1112-2067RF01R3

Page 34 of 72



Spurious RF conducted emissions from 3GHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

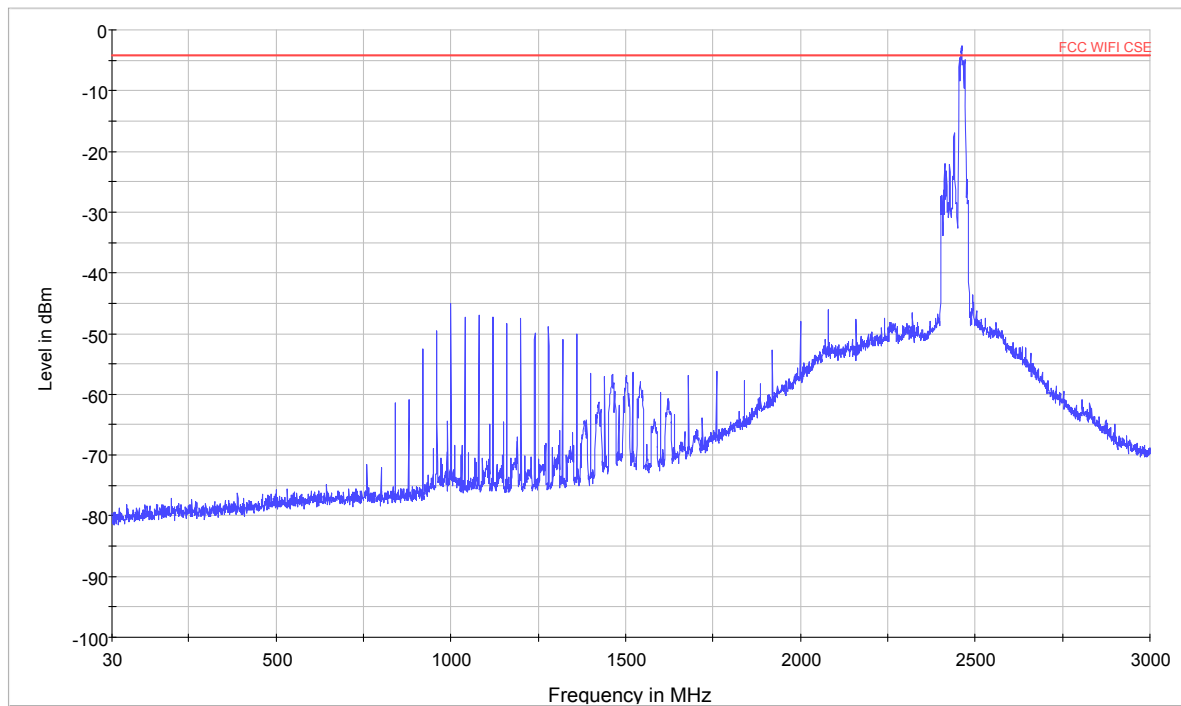
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.: RZA1112-2067RF01R3

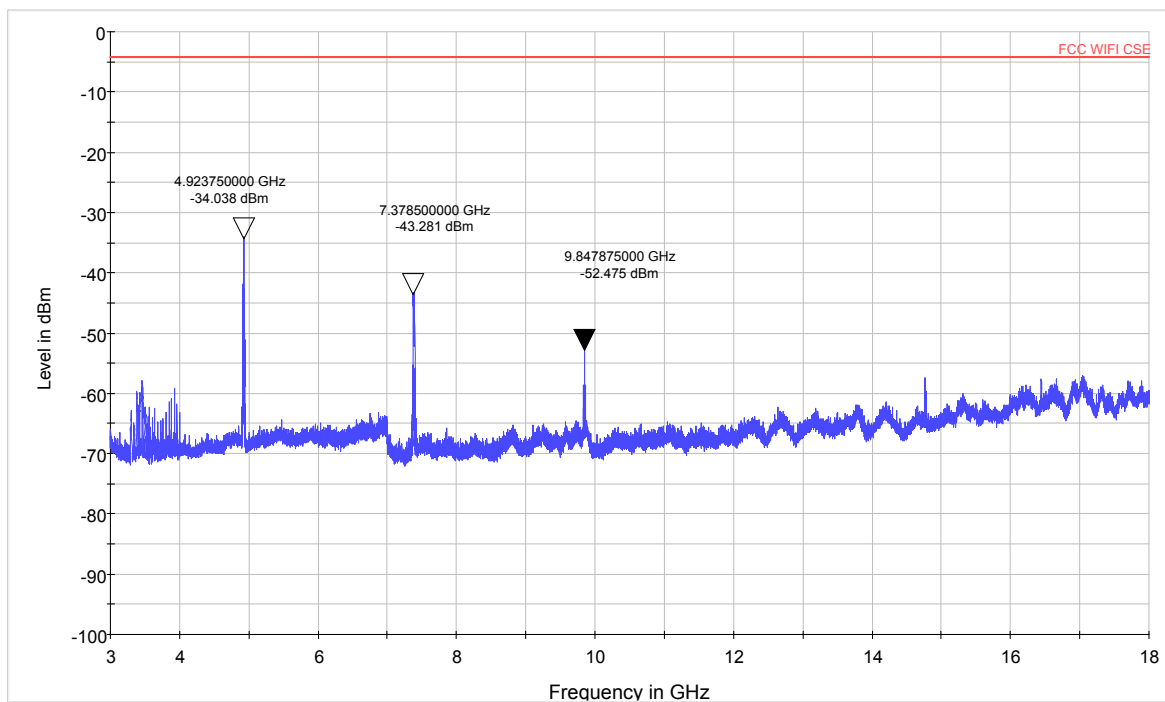
Page 35 of 72

802.11b CH11



Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 3GHz

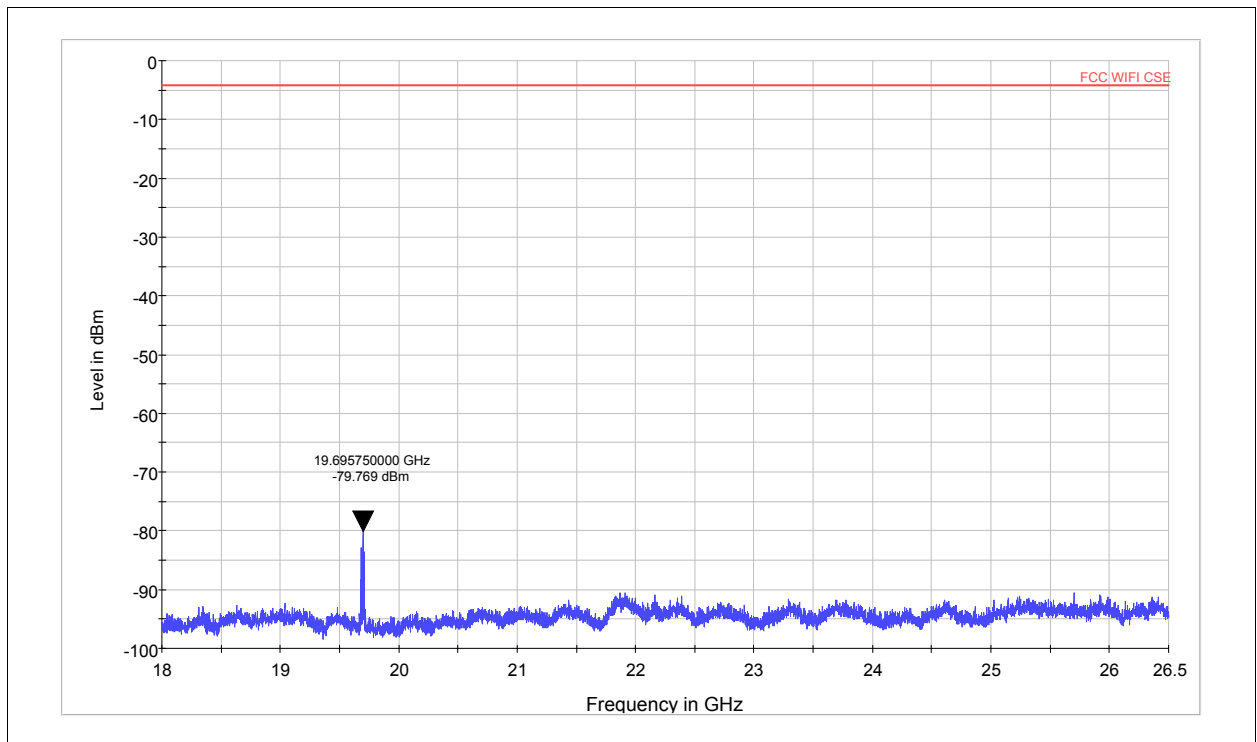


Spurious RF conducted emissions from 3GHz to 18GHz

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

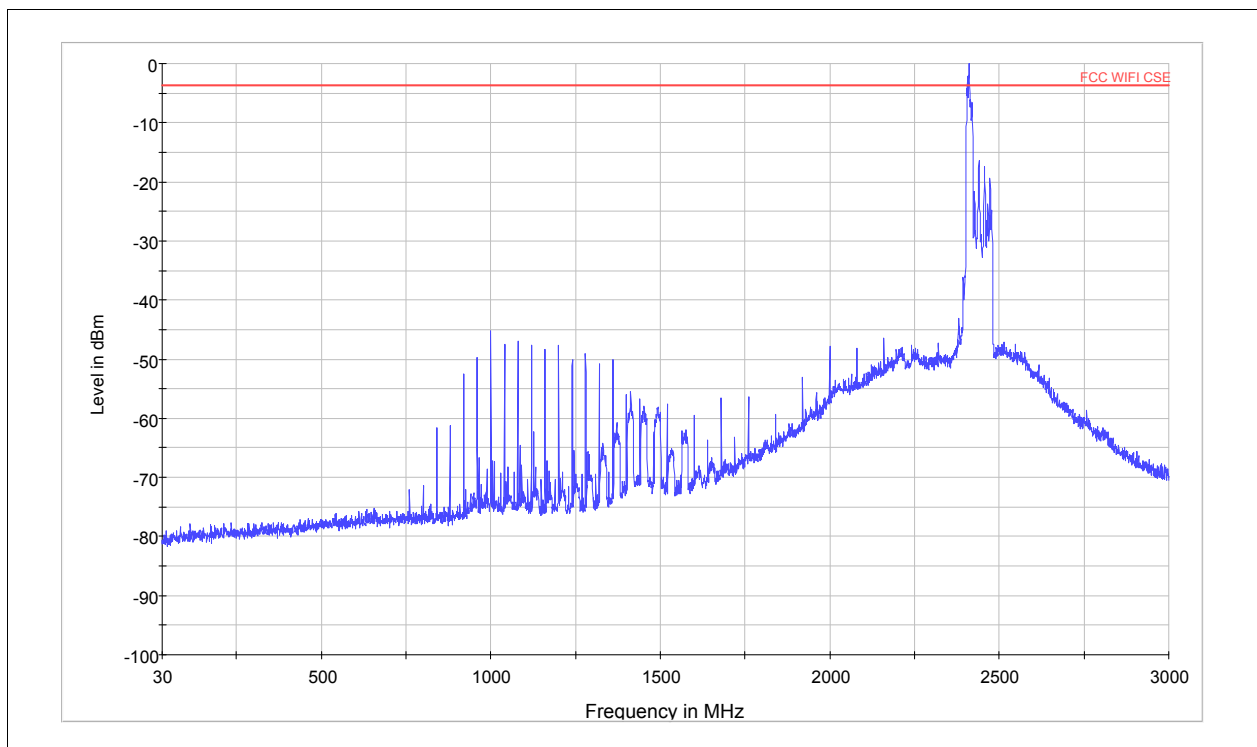
Report No.: RZA1112-2067RF01R3

Page 36 of 72



Spurious RF conducted emissions from 18GHz to 26.5GHz

802.11g CH1



Note: The signal beyond the limit is carrier

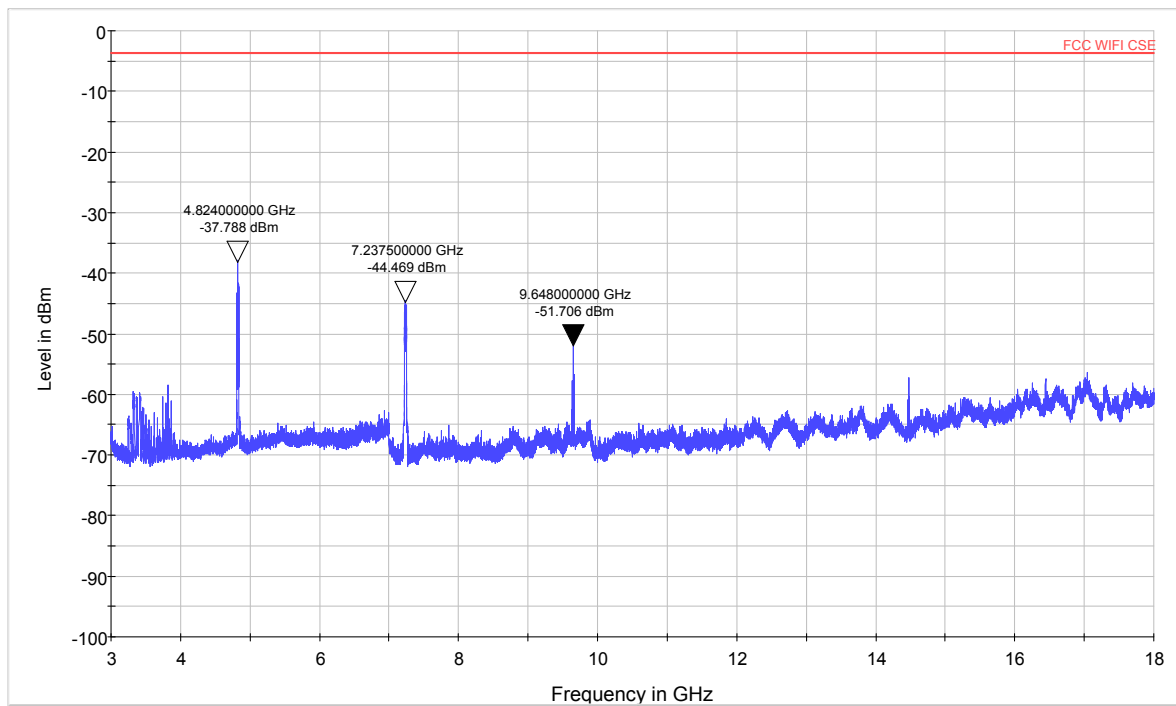
Spurious RF conducted emissions from 30MHz to 3GHz

TA Technology (Shanghai) Co., Ltd.

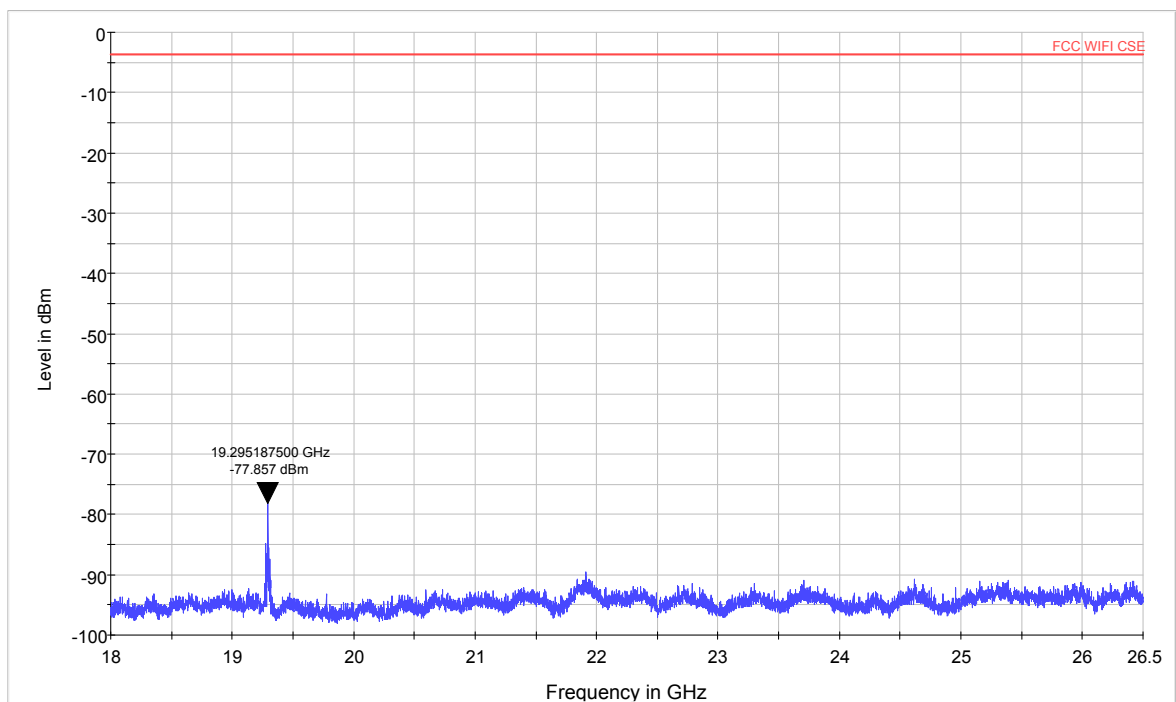
Test Report

Report No.: RZA1112-2067RF01R3

Page 37 of 72



Spurious RF conducted emissions from 3GHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

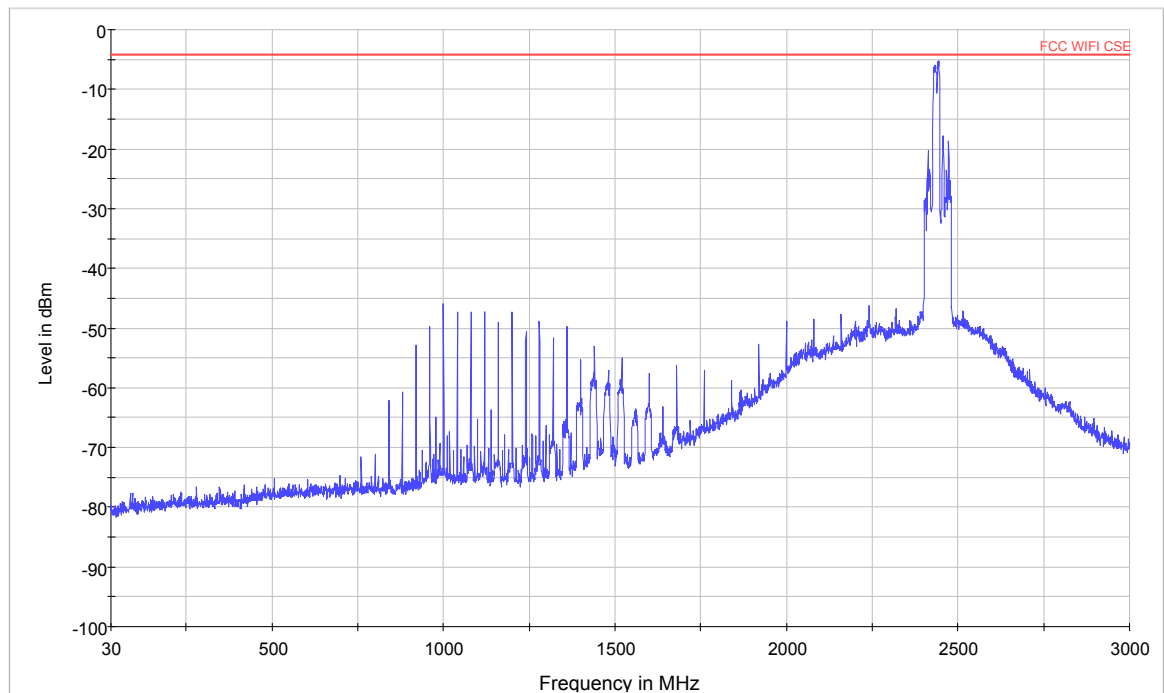
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.: RZA1112-2067RF01R3

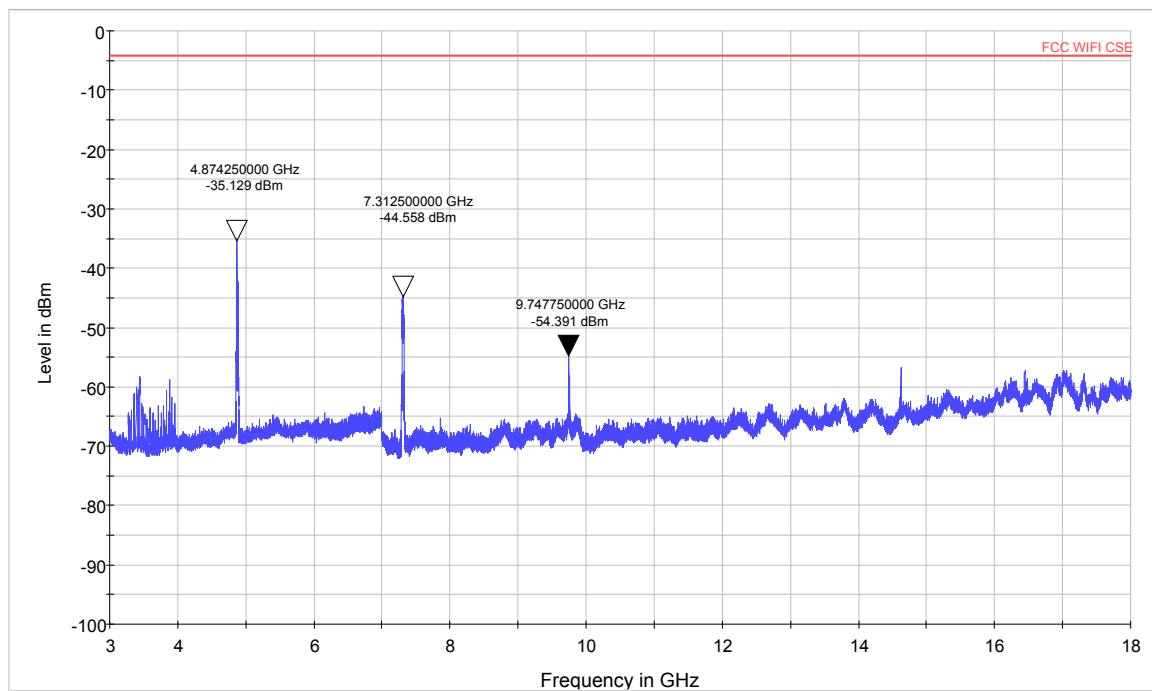
Page 38 of 72

802.11g CH6



Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 3GHz

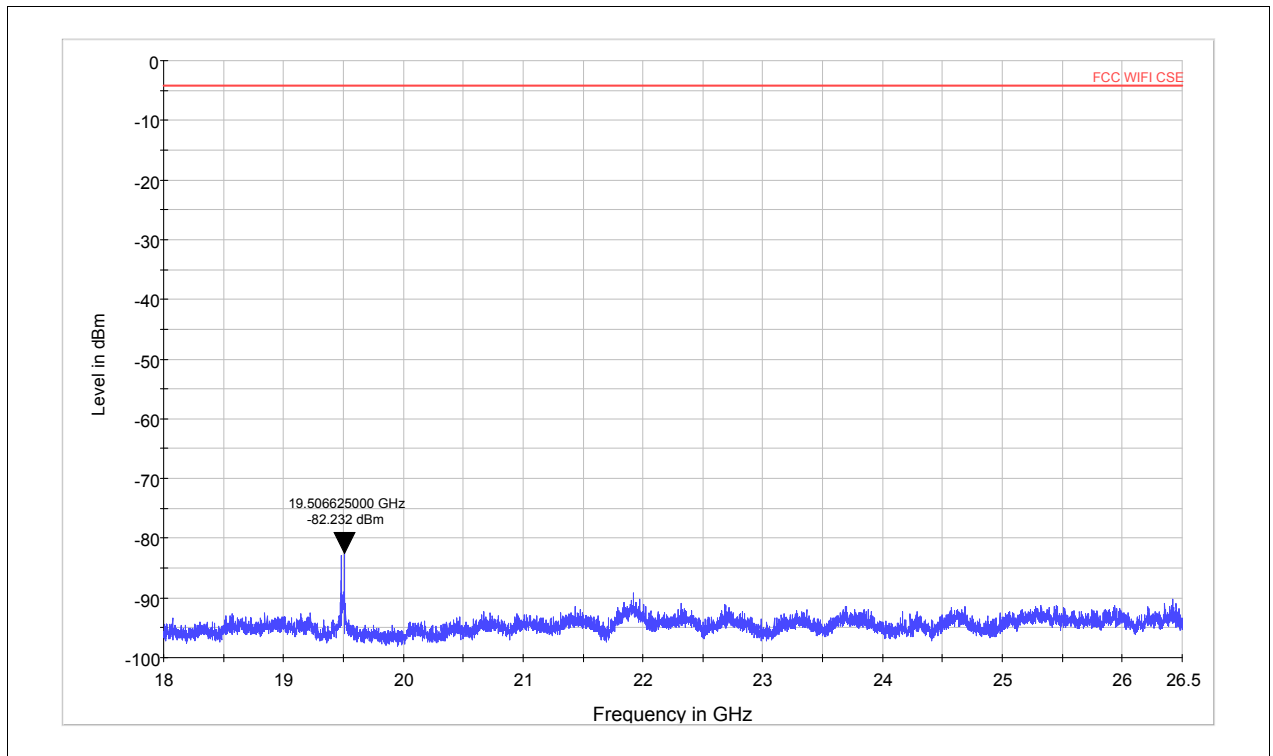


Spurious RF conducted emissions from 3GHz to 18GHz

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

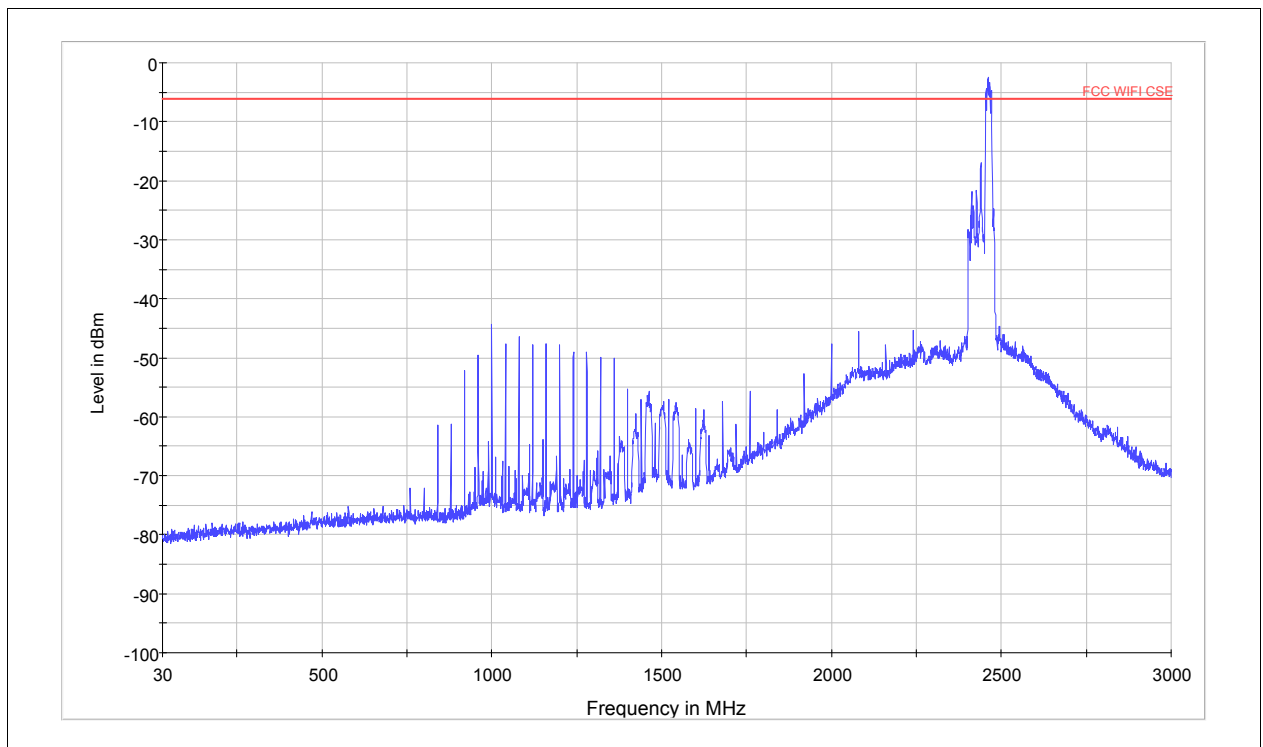
Report No.: RZA1112-2067RF01R3

Page 39 of 72



Spurious RF conducted emissions from 18GHz to 26.5GHz

802.11g CH11



Note: The signal beyond the limit is carrier

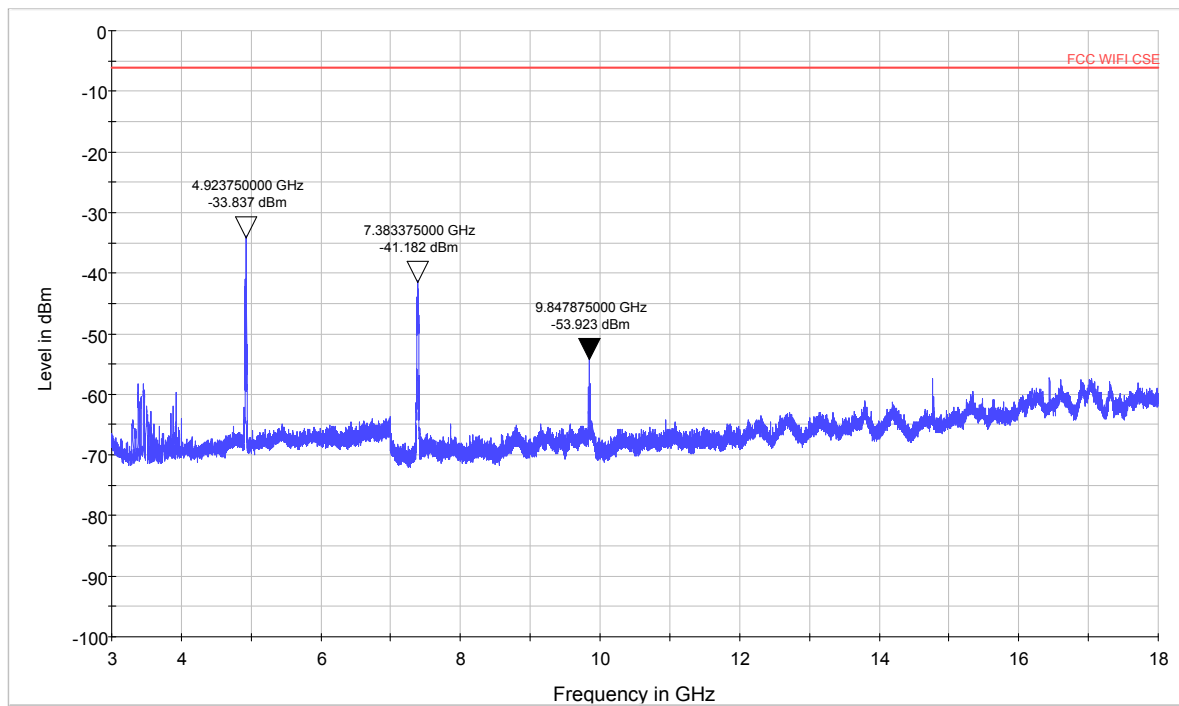
Spurious RF conducted emissions from 30MHz to 3GHz

TA Technology (Shanghai) Co., Ltd.

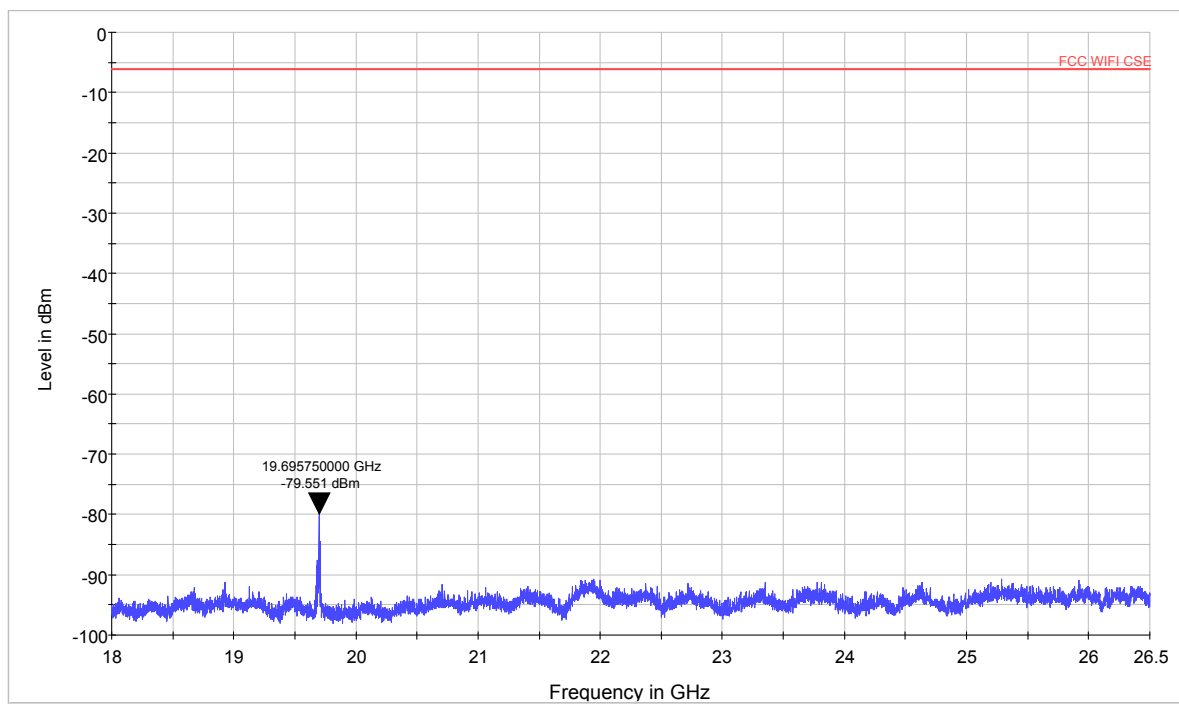
Test Report

Report No.: RZA1112-2067RF01R3

Page 40 of 72



Spurious RF conducted emissions from 3GHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

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

Report No.: RZA1112-2067RF01R3

Page 41 of 72

2.8. Radiates 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 C63.4-2009. 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 9kHz to 26GHz, and the emissions less than 20 dB below the permissible value are reported. 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 lie-down position (X axis) and the worst case was recorded. The following test plot including the maximum values combine horizontal with vertical polarization.

The test is in transmit mode.

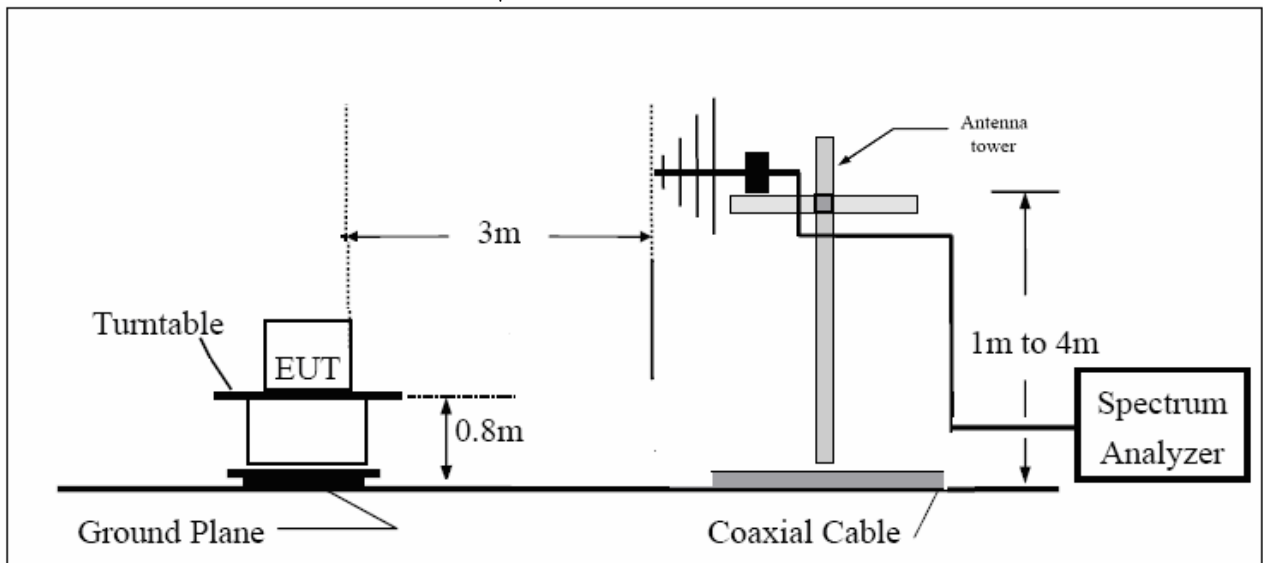
TA Technology (Shanghai) Co., Ltd.
Test Report

Report No.: RZA1112-2067RF01R3

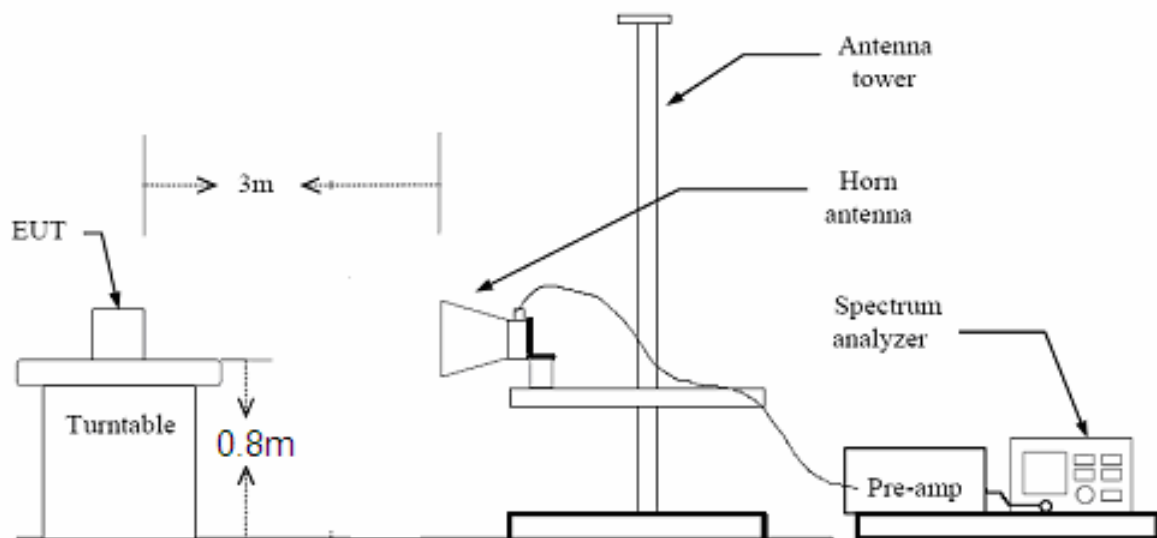
Page 42 of 72

Test setup

Below 1GHz



Above 1GHz



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

Report No.: RZA1112-2067RF01R3

Page 43 of 72

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)
0.009–0.490	2400/F(kHz)	/
0.490–1.705	24000/F(kHz)	/
1.705–30.0	30	/
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.

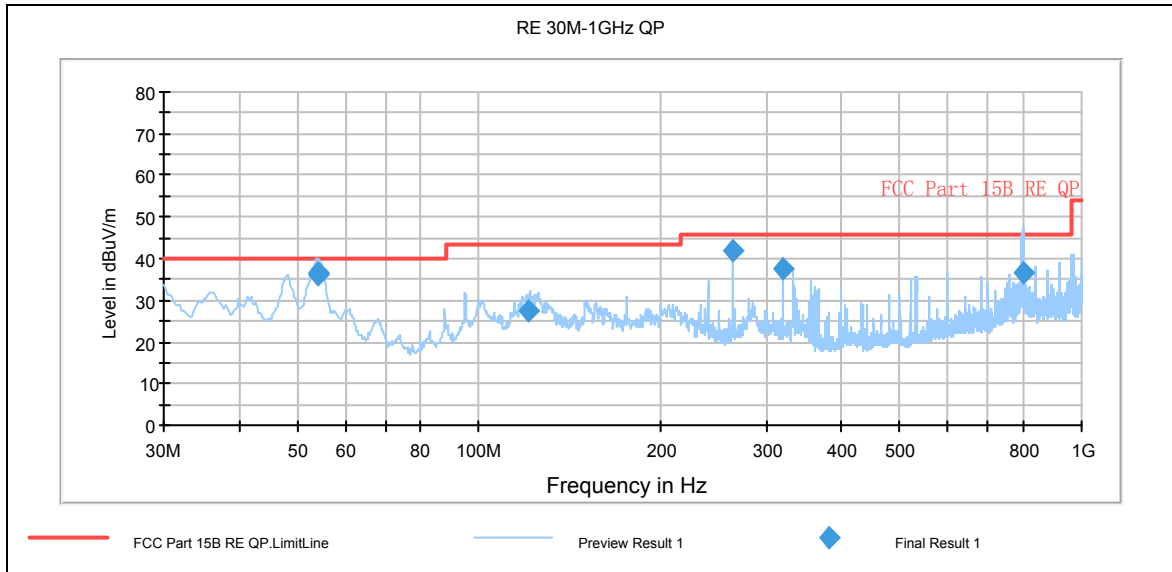
Test Report

Report No.: RZA1112-2067RF01R3

Page 44 of 72

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)
53.899413	36.4	100.0	V	128.0	61.2	-24.8	3.6	40.0
54.142519	36.0	100.0	V	75.0	60.9	-24.9	4.0	40.0
121.158944	27.3	100.0	V	270.0	56.9	-29.6	16.2	43.5
263.992500	42.0	100.0	H	257.0	68.8	-26.8	4.0	46.0
319.990000	37.6	125.0	V	22.0	63.1	-25.5	8.4	46.0
799.402500	36.5	100.0	V	293.0	53.6	-17.1	9.5	46.0

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

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

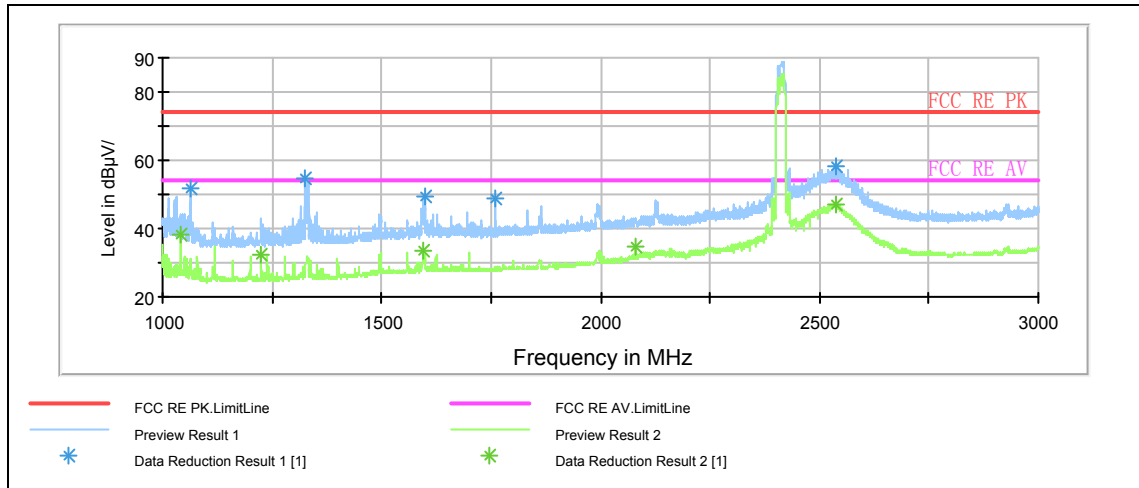
3. Margin = Limit – Quasi-Peak

TA Technology (Shanghai) Co., Ltd.

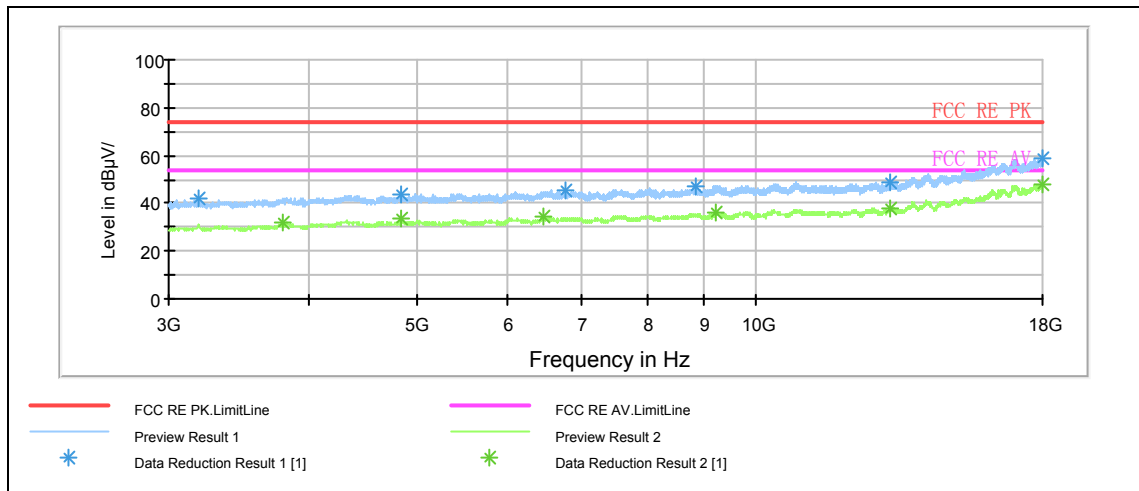
Test Report

Report No.: RZA1112-2067RF01R3

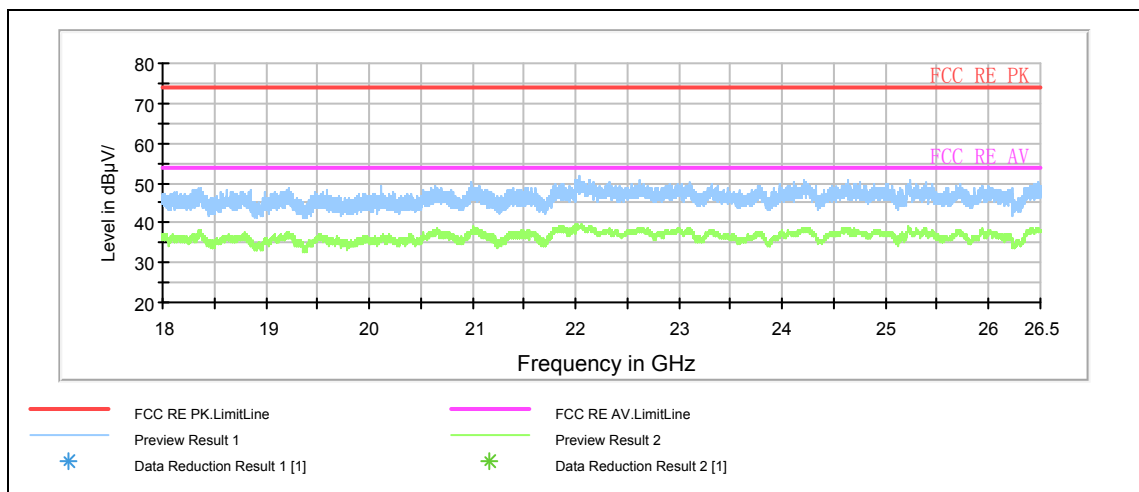
Page 45 of 72



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



Radiates Emission from 3GHz to 18GHz



Radiates Emission from 18GHz to 26.5GHz

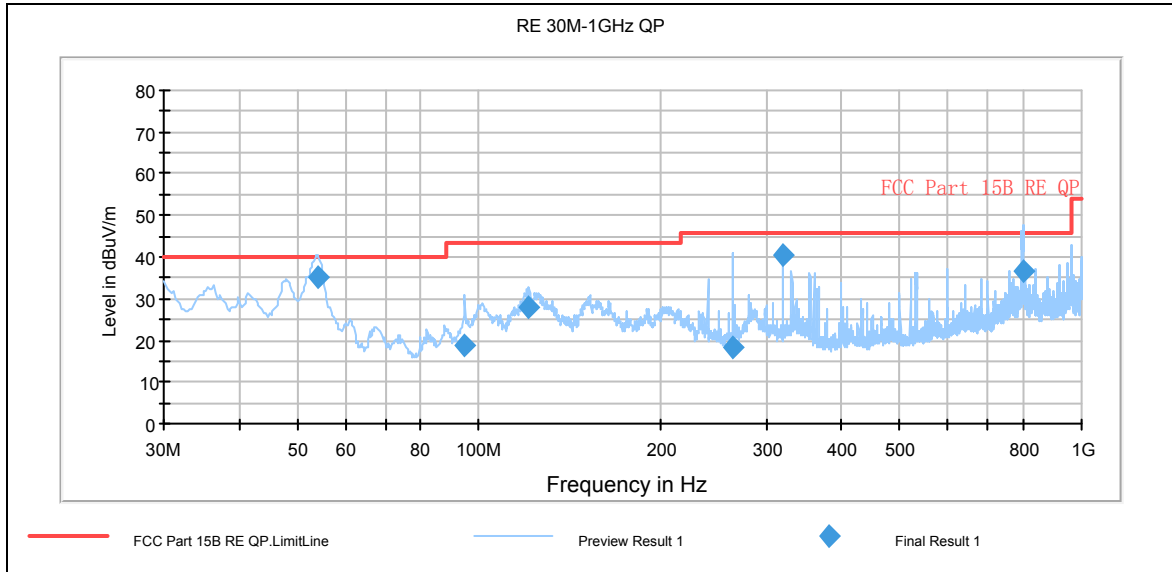
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.: RZA1112-2067RF01R3

Page 46 of 72

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)
54.032481	35.4	100.0	V	70.0	60.3	-24.9	4.6	40.0
94.741263	19.0	100.0	V	272.0	46	-27.0	24.5	43.5
120.877050	28.0	100.0	V	272.0	57.6	-29.6	15.5	43.5
264.072500	18.3	100.0	H	258.0	45.1	-26.8	27.7	46.0
319.990000	40.6	100.0	H	227.0	66.1	-25.5	5.4	46.0
799.404500	36.7	100.0	V	297.0	53.8	-17.1	9.3	46.0

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

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

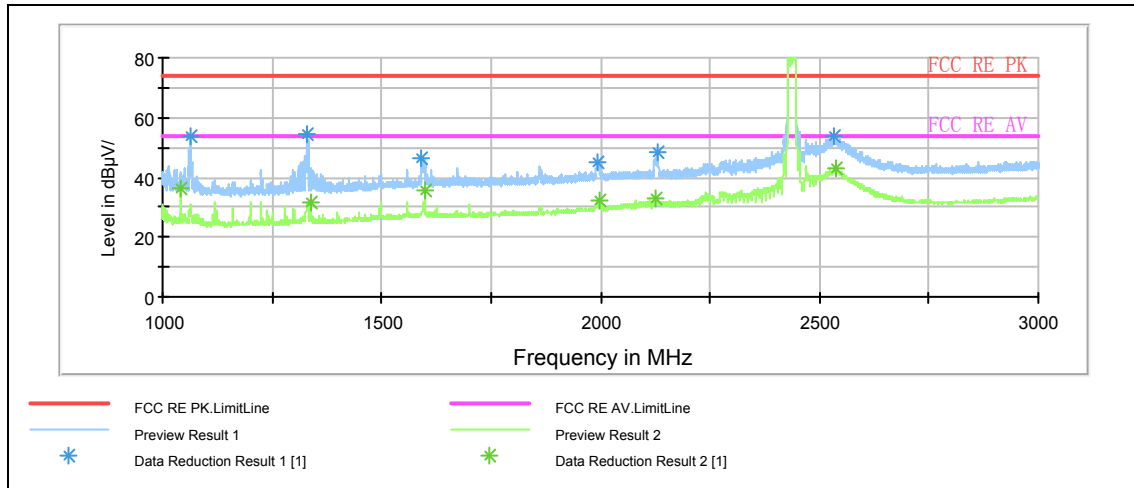
3. Margin = Limit – Quasi-Peak

TA Technology (Shanghai) Co., Ltd.

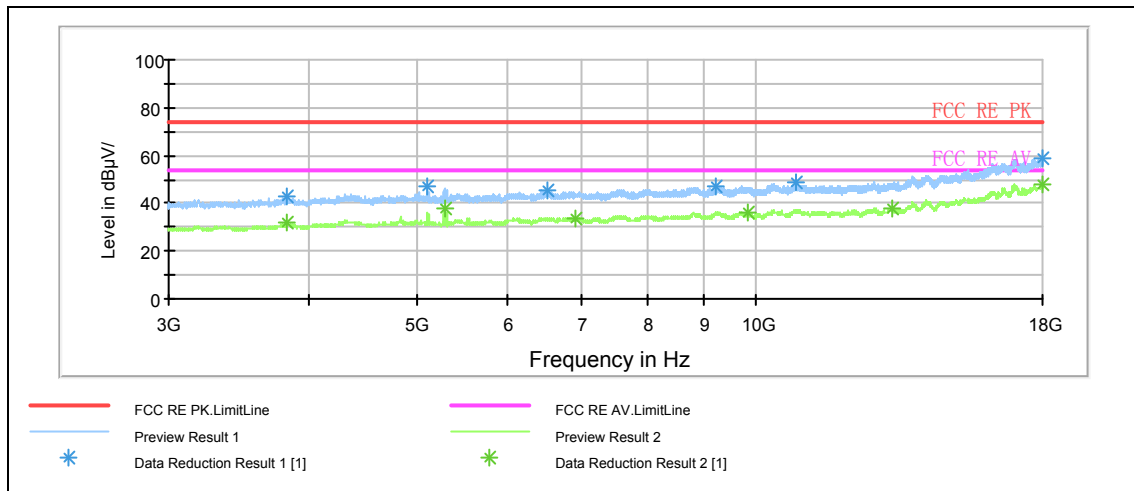
Test Report

Report No.: RZA1112-2067RF01R3

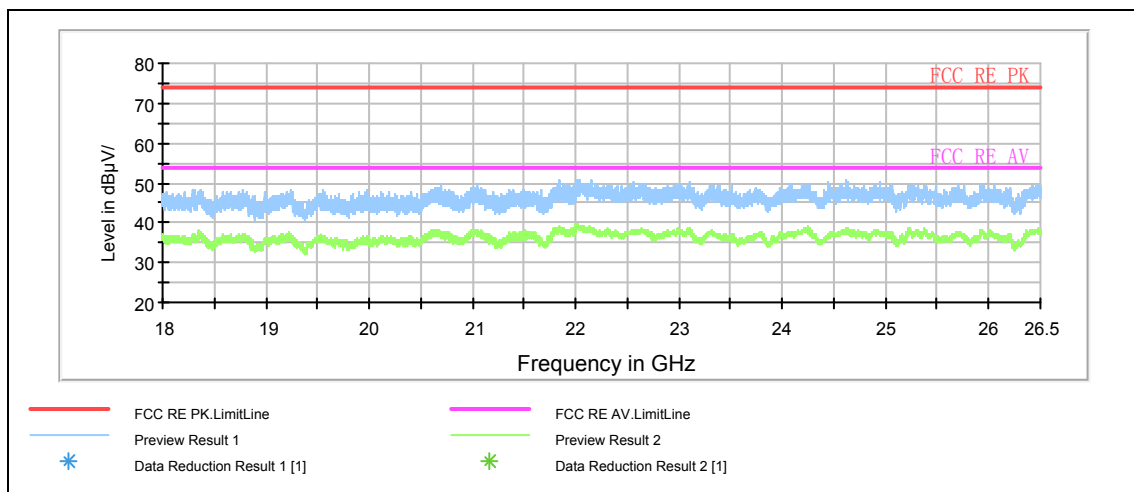
Page 47 of 72



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



Radiates Emission from 3GHz to 18GHz



Radiates Emission from 18GHz to 26.5GHz

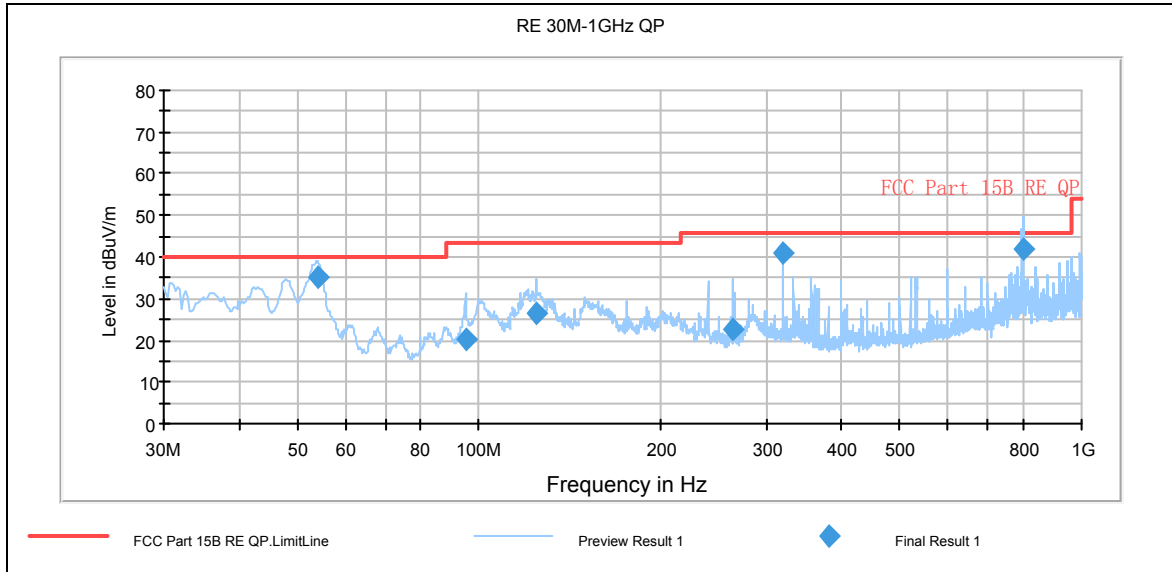
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.: RZA1112-2067RF01R3

Page 48 of 72

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)
53.899413	35.2	100.0	V	106.0	60	-24.8	4.8	40.0
94.994419	20.1	200.0	H	295.0	47.1	-27.0	23.4	43.5
124.823562	26.6	121.0	V	114.0	56.7	-30.1	16.9	43.5
263.992500	22.6	175.0	V	6.0	49.4	-26.8	23.4	46.0
319.990000	41.1	100.0	H	224.0	66.6	-25.5	4.9	46.0
799.416000	42.0	121.0	V	26.0	59.1	-17.1	4.0	46.0

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

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

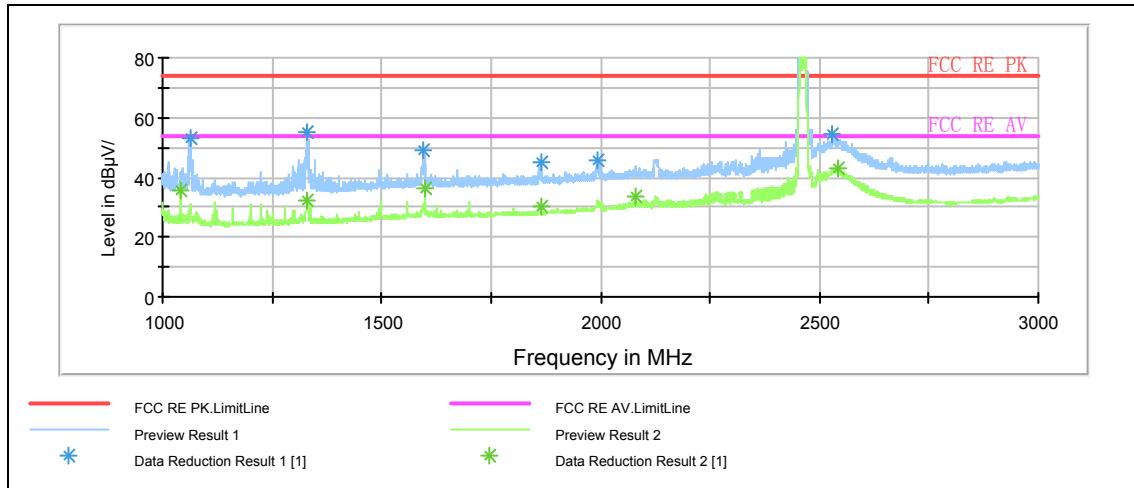
3. Margin = Limit – Quasi-Peak

TA Technology (Shanghai) Co., Ltd.

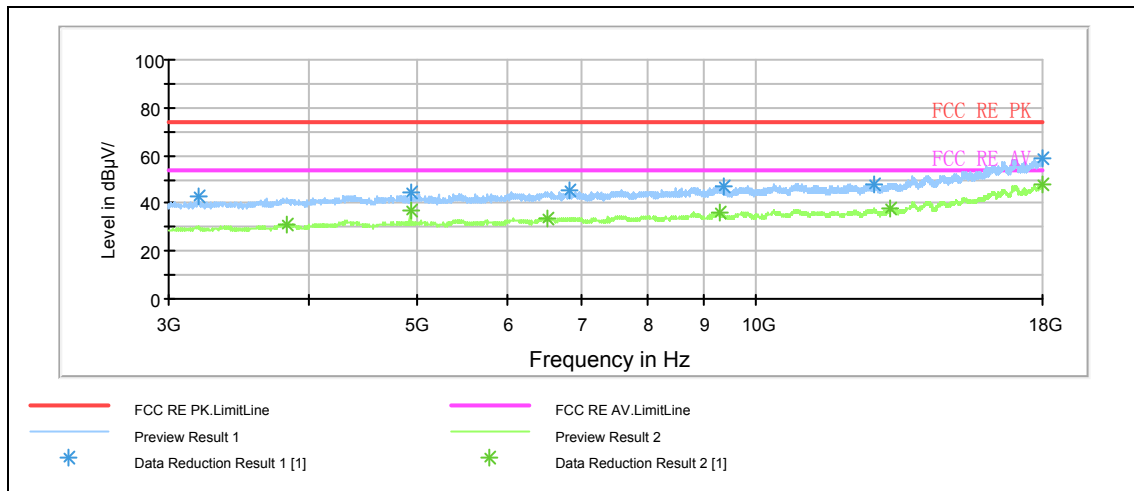
Test Report

Report No.: RZA1112-2067RF01R3

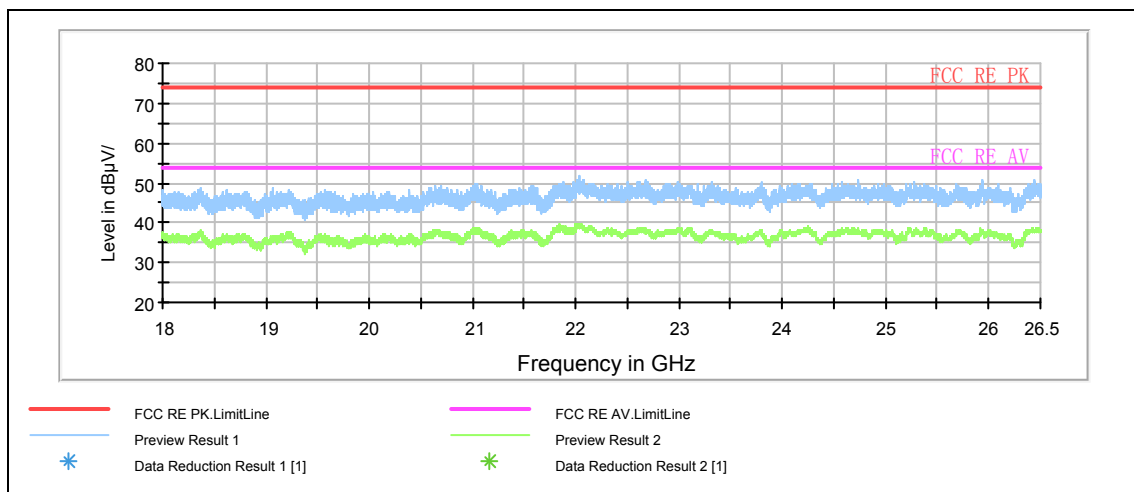
Page 49 of 72



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



Radiates Emission from 3GHz to 18GHz



Radiates Emission from 18GHz to 26.5GHz

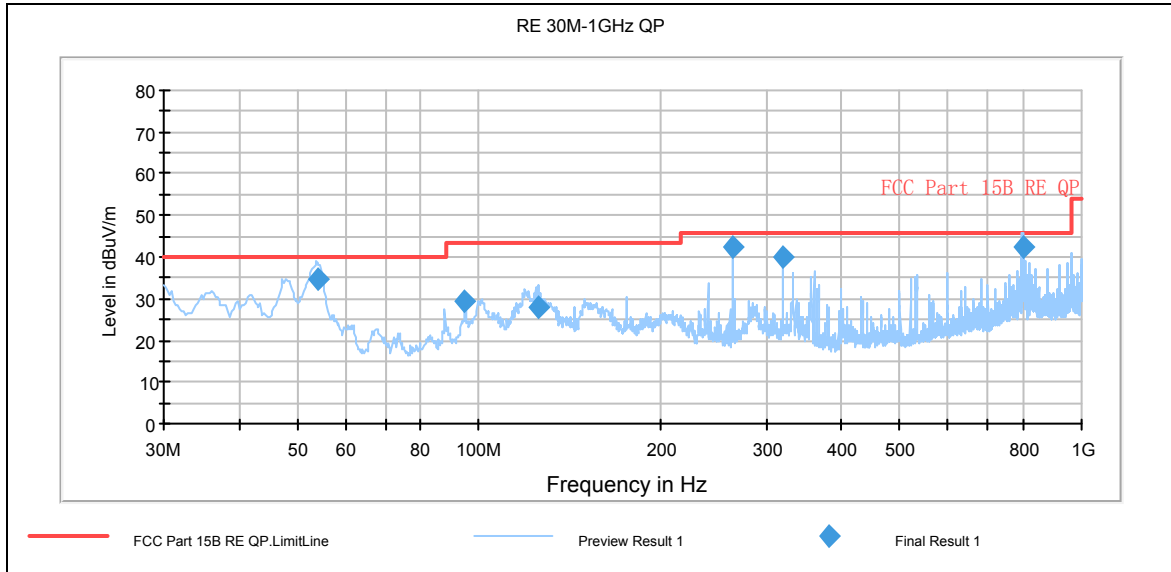
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.: RZA1112-2067RF01R3

Page 50 of 72

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)
53.899413	34.5	100.0	V	83.0	59.3	-24.8	5.5	40.0
94.910631	29.5	208.0	H	277.0	56.5	-27.0	14.0	43.5
125.791138	27.9	100.0	V	144.0	58.1	-30.2	15.6	43.5
263.992500	42.2	100.0	H	259.0	69	-26.8	3.8	46.0
319.990000	39.8	100.0	H	223.0	65.3	-25.5	6.2	46.0
799.402500	42.3	120.0	V	42.0	59.4	-17.1	3.7	46.0

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

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

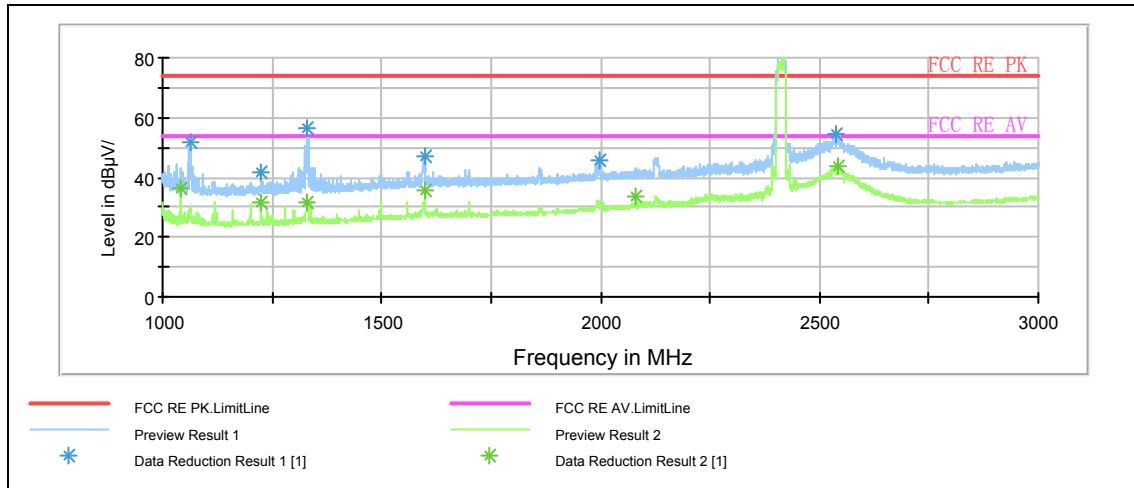
3. Margin = Limit – Quasi-Peak

TA Technology (Shanghai) Co., Ltd.

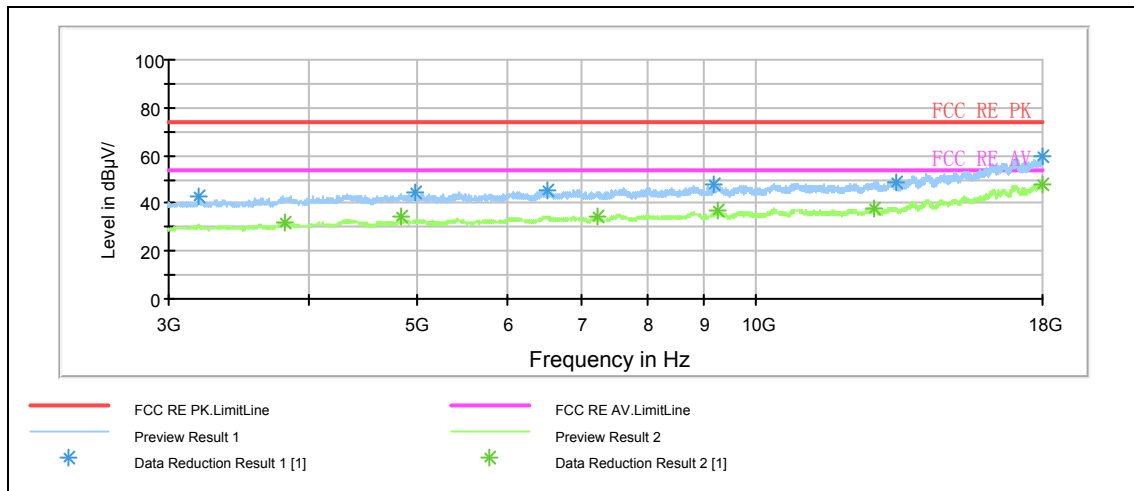
Test Report

Report No.: RZA1112-2067RF01R3

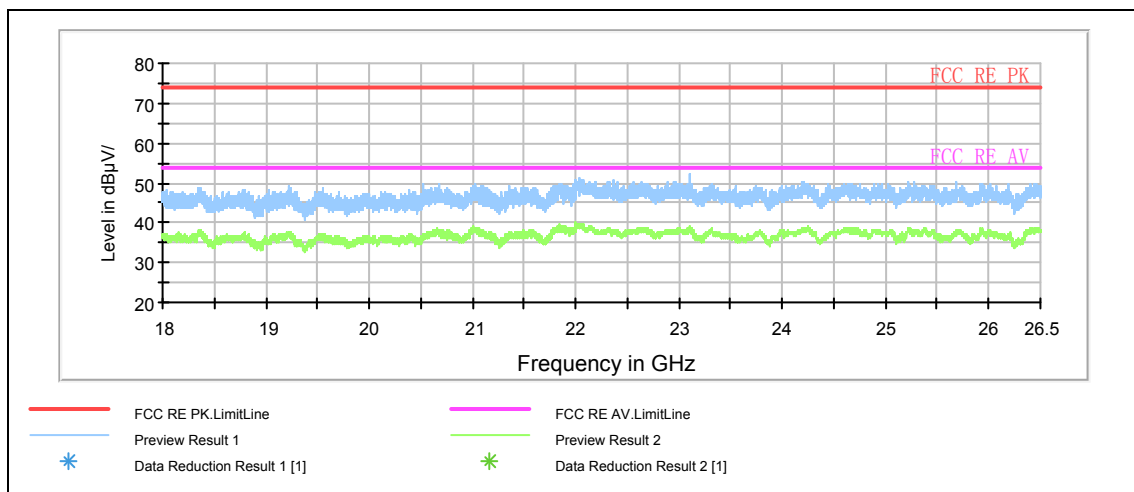
Page 51 of 72



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



Radiates Emission from 3GHz to 18GHz



Radiates Emission from 18GHz to 26.5GHz

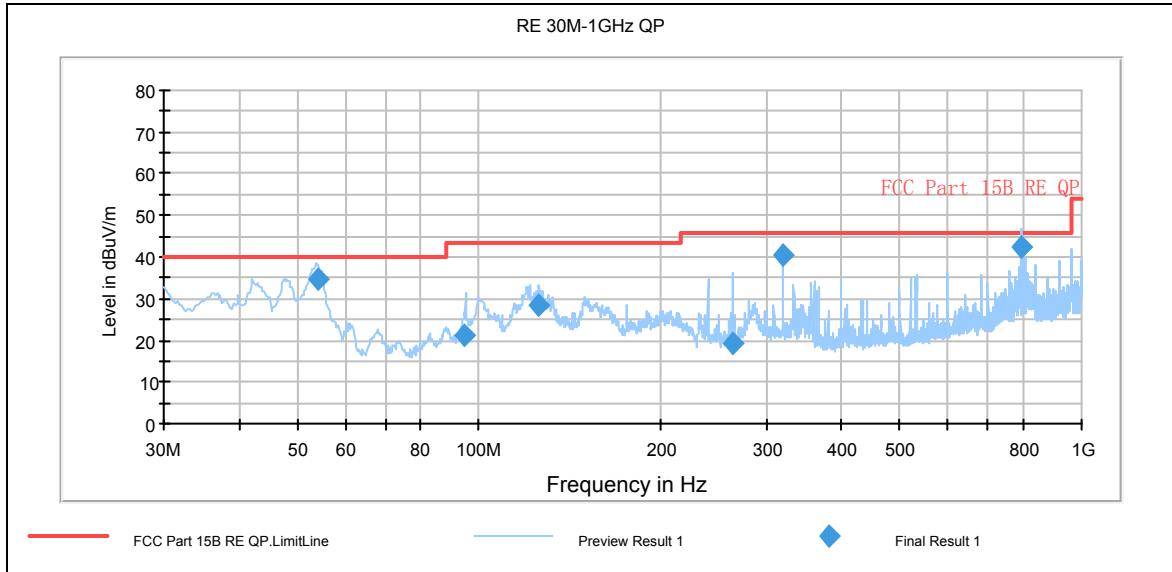
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.: RZA1112-2067RF01R3

Page 52 of 72

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)
53.899413	34.8	100.0	V	68.0	59.6	-24.8	5.2	40.0
94.752525	21.2	225.0	H	283.0	48.2	-27.0	22.3	43.5
125.914925	28.4	100.0	V	120.0	58.6	-30.2	15.1	43.5
263.952500	19.5	120.0	H	316.0	46.3	-26.8	26.5	46.0
319.990000	40.4	100.0	H	231.0	65.9	-25.5	5.6	46.0
796.553000	42.4	120.0	V	31.0	59.5	-17.1	3.6	46.0

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

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

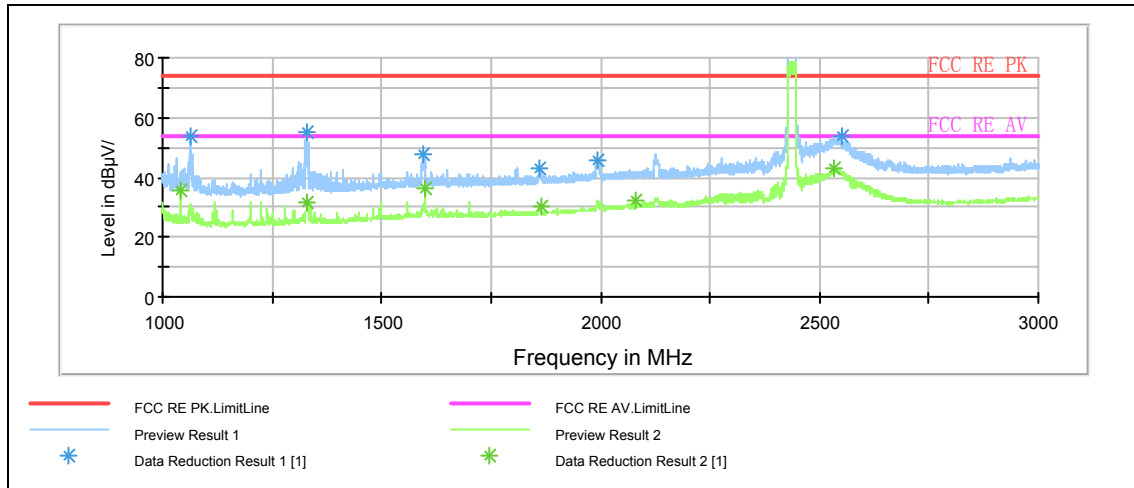
3. Margin = Limit – Quasi-Peak

TA Technology (Shanghai) Co., Ltd.

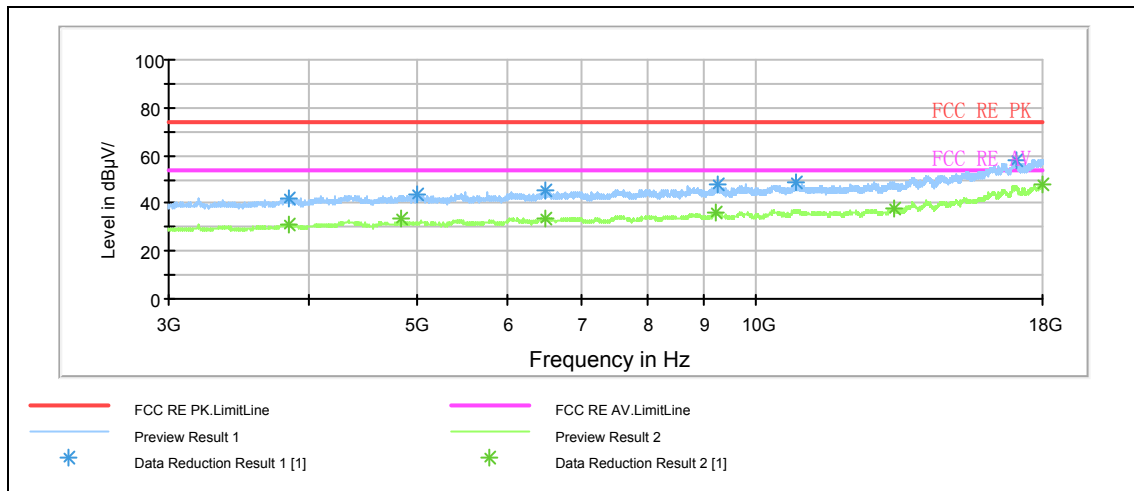
Test Report

Report No.: RZA1112-2067RF01R3

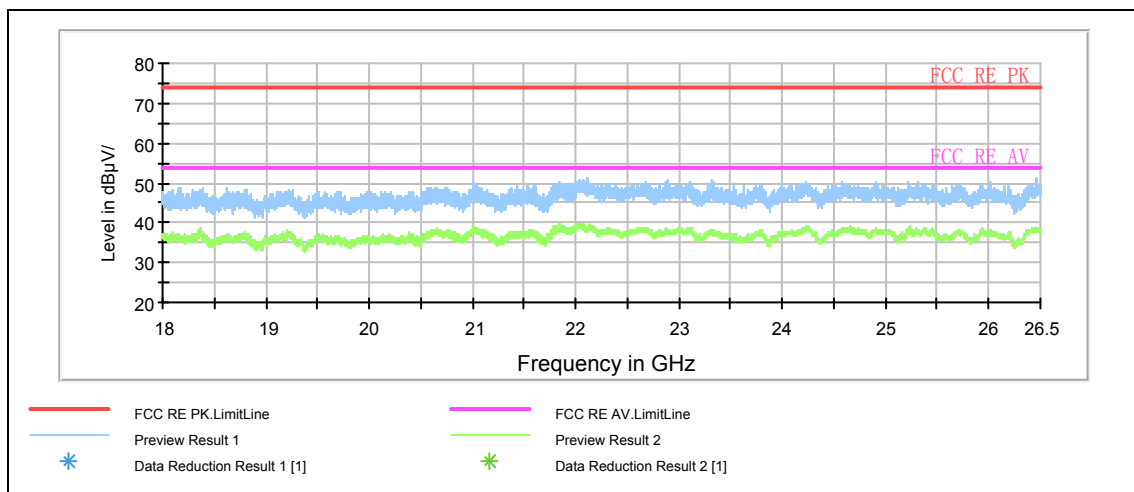
Page 53 of 72



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



Radiates Emission from 3GHz to 18GHz



Radiates Emission from 18GHz to 26.5GHz

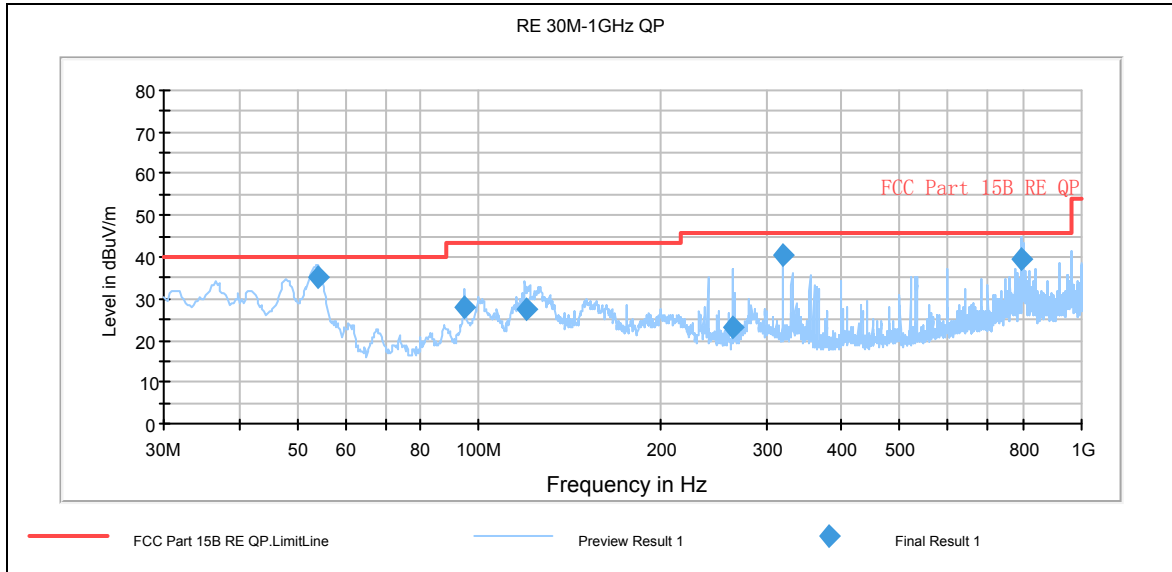
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.: RZA1112-2067RF01R3

Page 54 of 72

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)
53.992481	35.0	100.0	V	115.0	59.8	-24.8	5.0	40.0
94.741263	28.0	225.0	H	272.0	55	-27.0	15.5	43.5
119.501900	27.6	100.0	V	290.0	56.9	-29.3	15.9	43.5
263.992500	23.0	125.0	H	69.0	49.8	-26.8	23.0	46.0
319.990000	40.5	100.0	H	230.0	66	-25.5	5.5	46.0
796.555000	39.3	120.0	V	0.0	56.4	-17.1	6.7	46.0

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

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

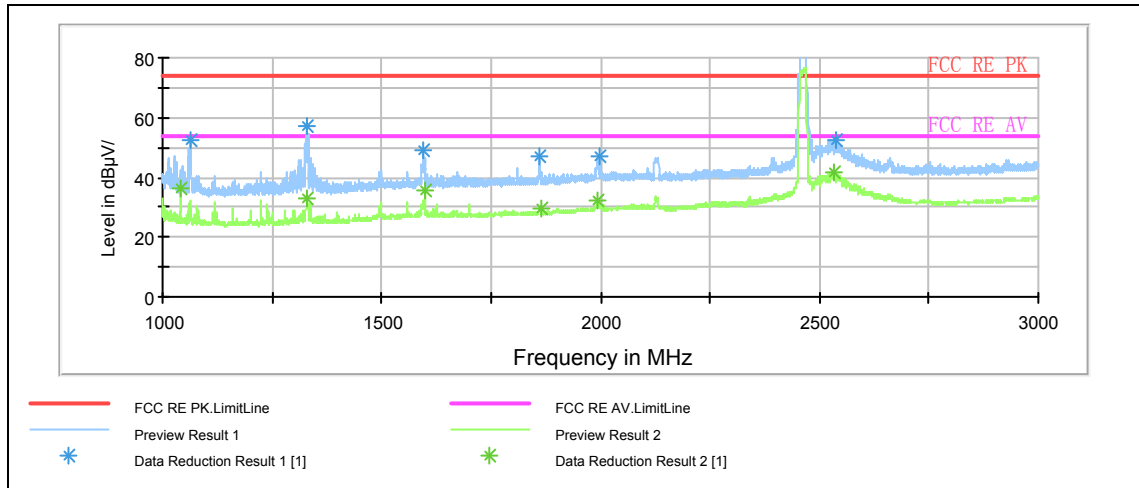
3. Margin = Limit – Quasi-Peak

TA Technology (Shanghai) Co., Ltd.

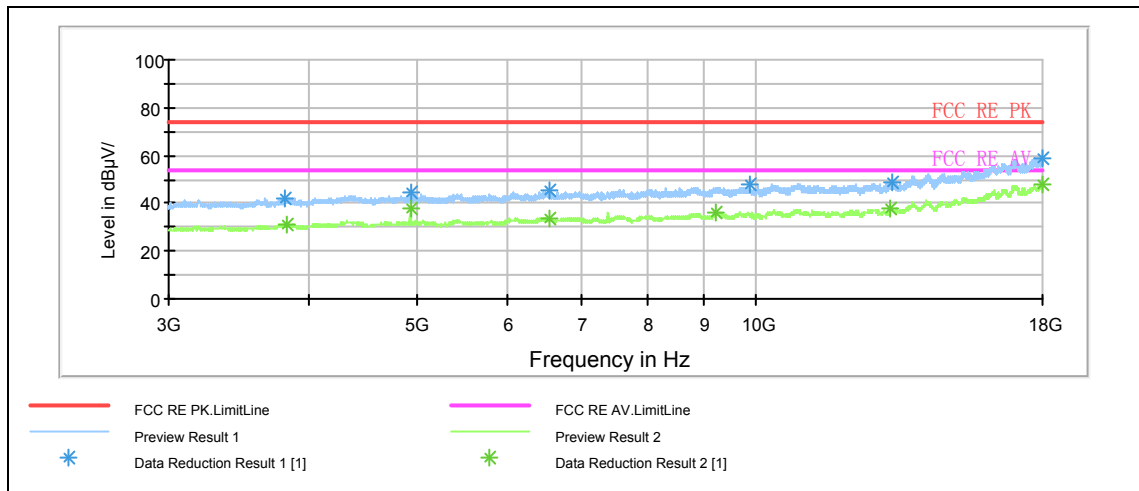
Test Report

Report No.: RZA1112-2067RF01R3

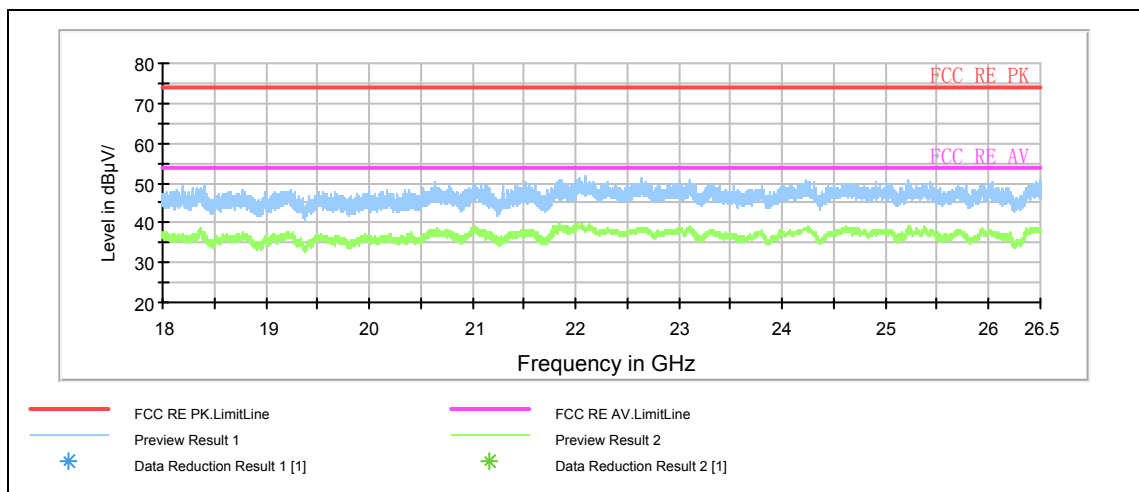
Page 55 of 72



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



Radiates Emission from 3GHz to 18GHz



Radiates Emission from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.: RZA1112-2067RF01R3

Page 56 of 72

2.9. Conducted Emissions

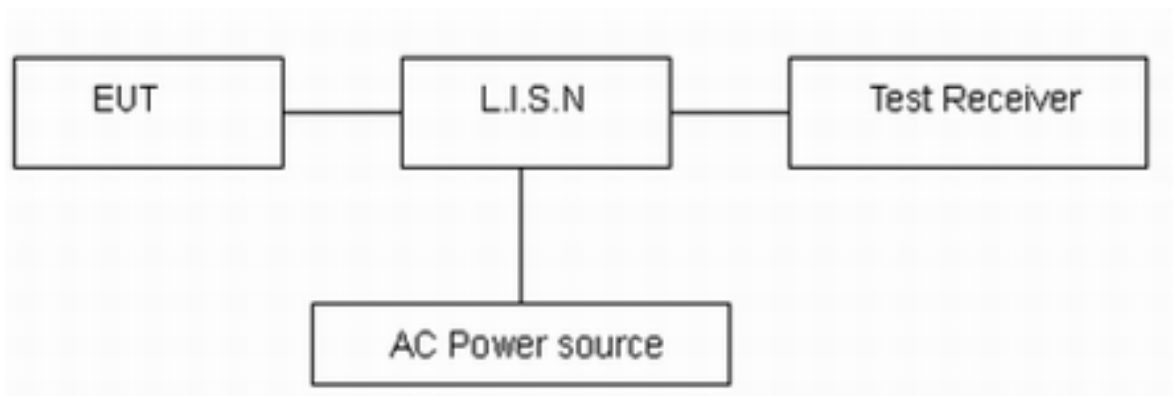
Ambient condition

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 ANSIC63.4-2009. 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 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.		

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.

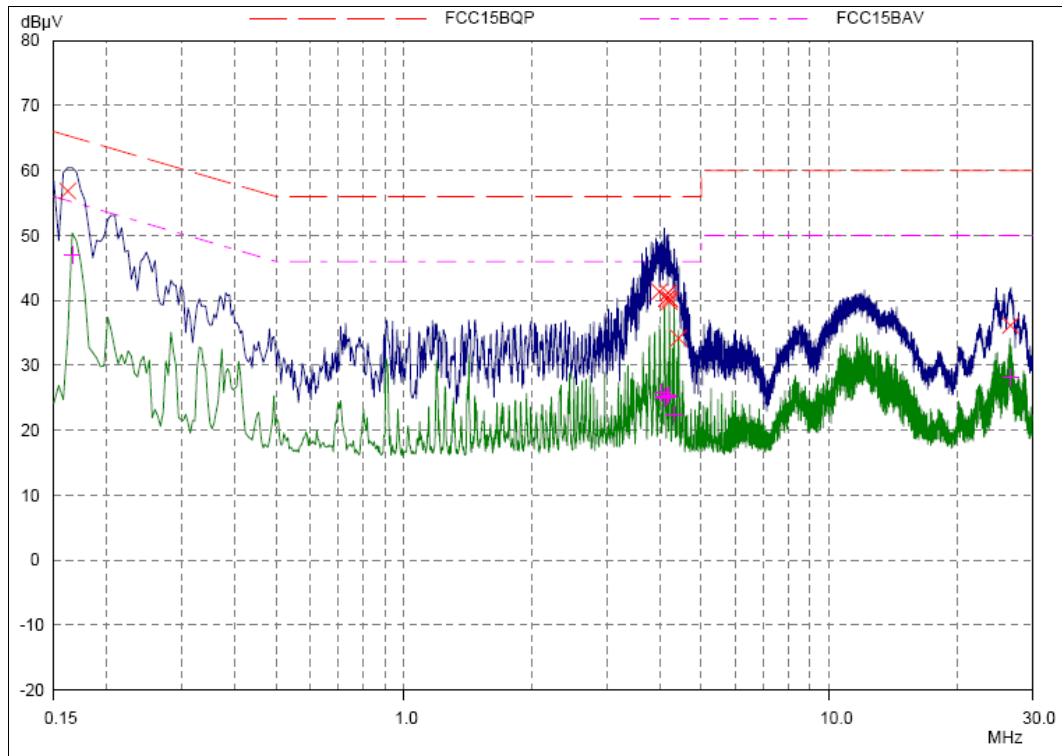
Test Report

Report No.: RZA1112-2067RF01R3

Page 57 of 72

Test Results:

802.11b CH1



L Line

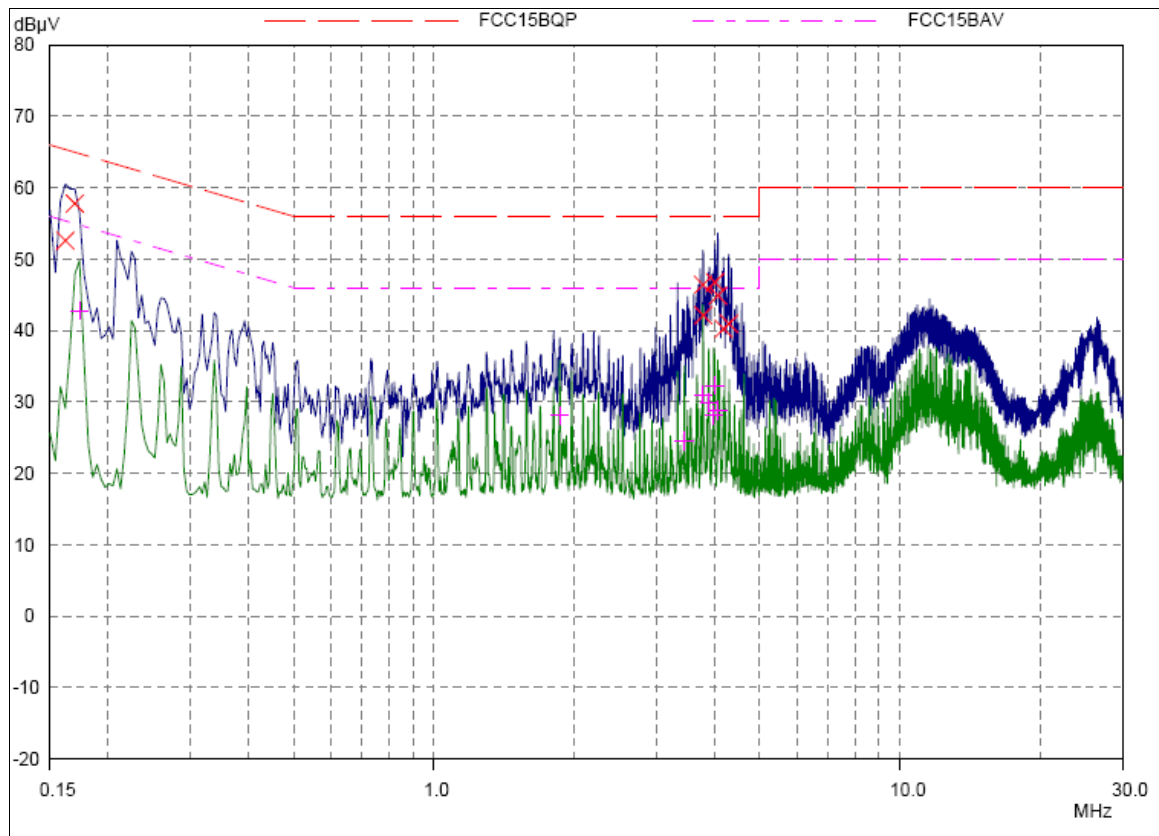
Final Measurement Results				
Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -
0.16171	56.86	65.38	8.52	L1
3.98593	41.36	56.00	14.64	L1
4.14217	40.30	56.00	15.70	L1
4.17342	41.16	56.00	14.84	L1
4.20468	39.80	56.00	16.20	L1
4.2125	40.22	56.00	15.78	L1
4.41953	34.18	56.00	21.82	L1
26.66953	36.14	60.00	23.86	L1
Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -
0.16562	47.05	55.18	8.13	L1
4.04453	25.84	46.00	20.16	L1
4.0914	25.24	46.00	20.76	L1
4.0953	24.93	46.00	21.07	L1
4.15	25.16	46.00	20.84	L1
4.19296	25.47	46.00	20.53	L1
4.31406	22.51	46.00	23.49	L1
26.732	28.21	50.00	21.79	L1

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.: RZA1112-2067RF01R3

Page 58 of 72



N Line

Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -
0.16171	52.60	65.38	12.78	N
0.16953	57.80	64.98	7.18	N
3.775	46.42	56.00	9.58	N
3.78281	42.16	56.00	13.84	N
4.00546	46.78	56.00	9.22	N
4.06405	44.94	56.00	11.06	N
4.18125	40.28	56.00	15.72	N
4.29062	40.98	56.00	15.02	N

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -
0.17343	42.83	54.79	11.96	N
1.86093	28.10	46.00	17.90	N
3.44296	24.52	46.00	21.48	N
3.775	31.03	46.00	14.97	N
3.88828	29.85	46.00	16.15	N
3.98203	28.21	46.00	17.79	N
4.00155	32.34	46.00	13.66	N
4.06405	28.79	46.00	17.21	N

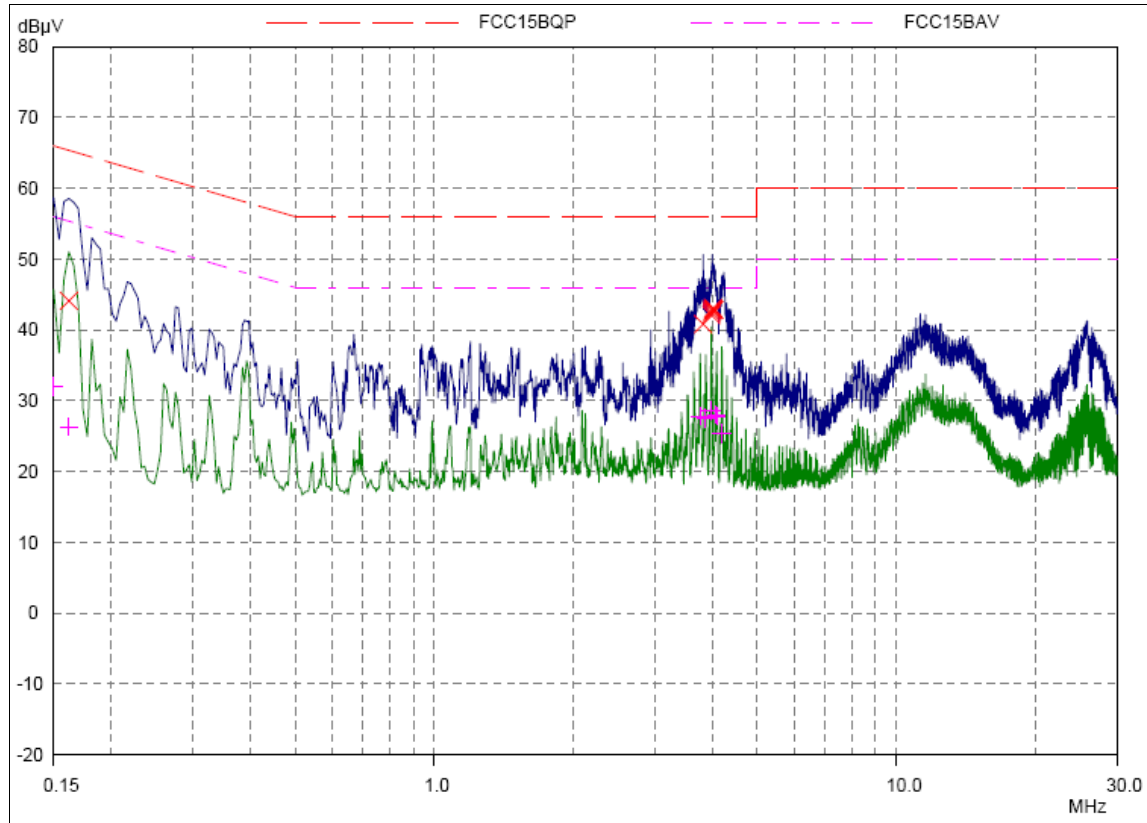
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.: RZA1112-2067RF01R3

Page 59 of 72

802.11b CH6



L Line

Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -
0.16171	44.14	65.38	21.24	L1
3.81406	40.84	56.00	15.16	L1
3.97421	42.12	56.00	13.88	L1
3.98203	42.48	56.00	13.52	L1
3.99375	42.74	56.00	13.26	L1
4.01328	43.08	56.00	12.92	L1
4.025	42.86	56.00	13.14	L1
4.0328	42.84	56.00	13.16	L1

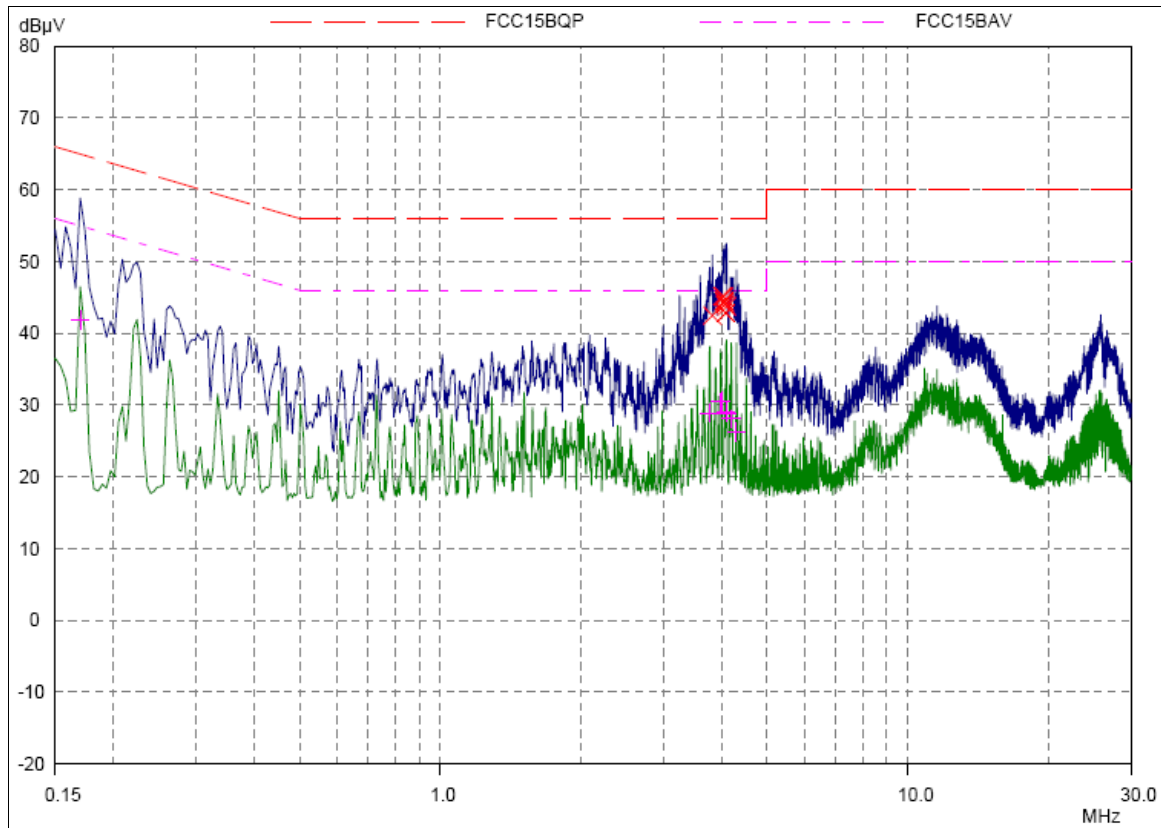
Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -
0.15	32.00	56.00	24.00	L1
0.16171	26.32	55.38	29.06	L1
3.75937	27.82	46.00	18.18	L1
3.86484	27.53	46.00	18.47	L1
3.97421	28.63	46.00	17.37	L1
4.07578	28.04	46.00	17.96	L1
4.08359	27.82	46.00	18.18	L1
4.18515	25.39	46.00	20.61	L1

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.: RZA1112-2067RF01R3

Page 60 of 72



N Line

Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -
3.81406	42.48	56.00	13.52	N
4.01717	45.18	56.00	10.82	N
4.0328	45.08	56.00	10.92	N
4.04453	44.54	56.00	11.46	N
4.05234	44.38	56.00	11.62	N
4.06015	44.00	56.00	12.00	N
4.07578	42.84	56.00	13.16	N
4.0953	43.76	56.00	12.24	N

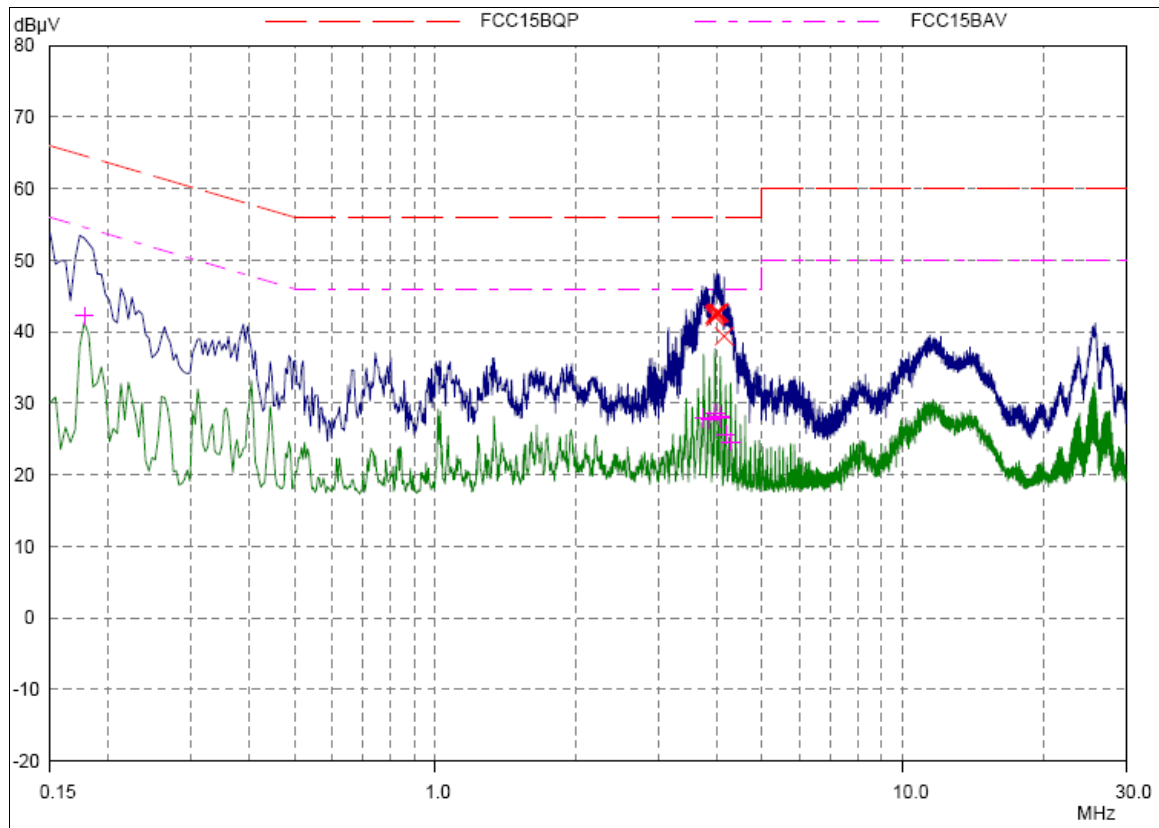
Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -
0.16953	41.89	54.98	13.09	N
3.77109	28.89	46.00	17.11	N
3.97421	30.46	46.00	15.54	N
3.98593	30.54	46.00	15.46	N
4.08359	29.14	46.00	16.86	N
4.0953	28.89	46.00	17.11	N
4.18905	28.10	46.00	17.90	N
4.29843	26.26	46.00	19.74	N

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

Report No.: RZA1112-2067RF01R3

Page 61 of 72

802.11b CH11



L Line

Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -
3.94687	42.38	56.00	13.62	L1
3.9625	42.06	56.00	13.94	L1
3.98593	42.50	56.00	13.50	L1
3.99375	42.58	56.00	13.42	L1
4.00936	42.66	56.00	13.34	L1
4.025	42.62	56.00	13.38	L1
4.04842	42.64	56.00	13.36	L1
4.14609	39.38	56.00	16.62	L1

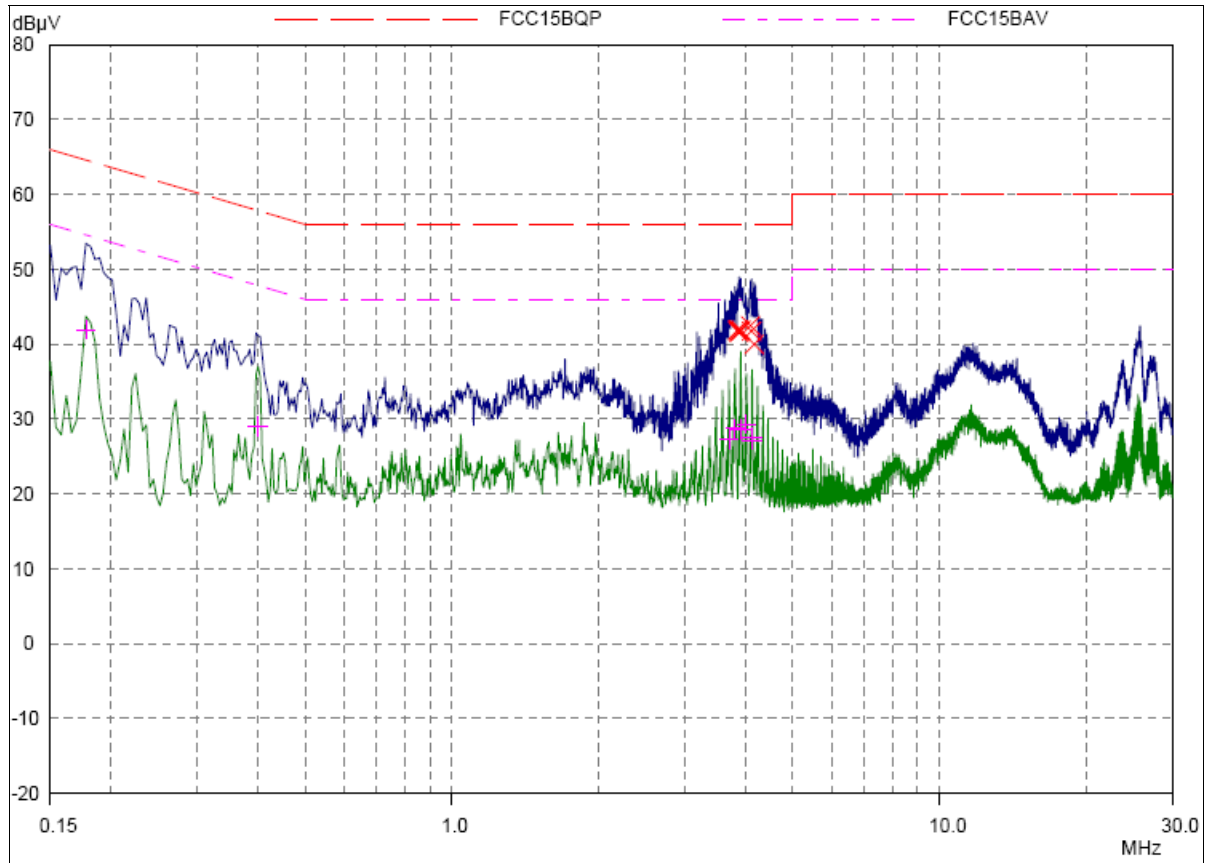
Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -
0.17734	42.24	54.61	12.37	L1
3.74765	27.93	46.00	18.07	L1
3.85703	27.64	46.00	18.36	L1
3.9625	28.69	46.00	17.31	L1
4.06015	28.15	46.00	17.85	L1
4.06796	27.99	46.00	18.01	L1
4.17342	25.62	46.00	20.38	L1
4.2789	24.60	46.00	21.40	L1

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.: RZA1112-2067RF01R3

Page 62 of 72



N Line

Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -
3.85703	41.82	56.00	14.18	N
3.86484	41.98	56.00	14.02	N
3.87656	41.56	56.00	14.44	N
3.89609	41.80	56.00	14.20	N
3.91171	41.90	56.00	14.10	N
4.0914	42.48	56.00	13.52	N
4.11092	41.76	56.00	14.24	N
4.16561	40.00	56.00	16.00	N

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -
0.17734	41.93	54.61	12.68	N
0.4	29.04	47.85	18.81	N
3.69687	27.29	46.00	18.71	N
3.80625	28.74	46.00	17.26	N
3.91171	28.63	46.00	17.37	N
4.01328	29.29	46.00	16.71	N
4.11875	27.59	46.00	18.41	N
4.12655	27.23	46.00	18.77	N

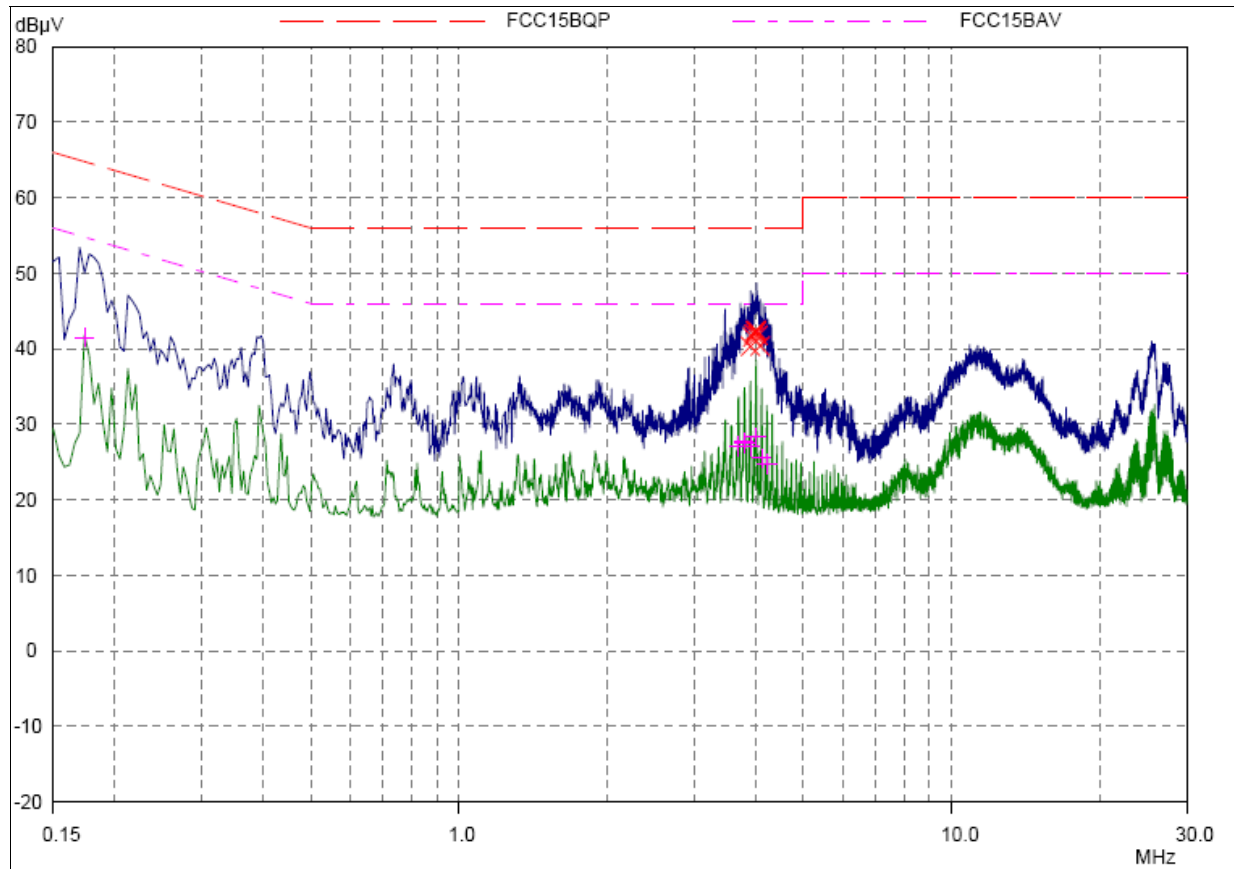
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.: RZA1112-2067RF01R3

Page 63 of 72

802.11g CH1



L Line

Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -
3.9039	40.32	56.00	15.68	L1
3.94296	41.56	56.00	14.44	L1
3.9664	41.94	56.00	14.06	L1
3.99375	42.36	56.00	13.64	L1
4.00546	42.44	56.00	13.56	L1
4.01717	42.38	56.00	13.62	L1
4.04061	41.80	56.00	14.20	L1
4.08359	40.36	56.00	15.64	L1

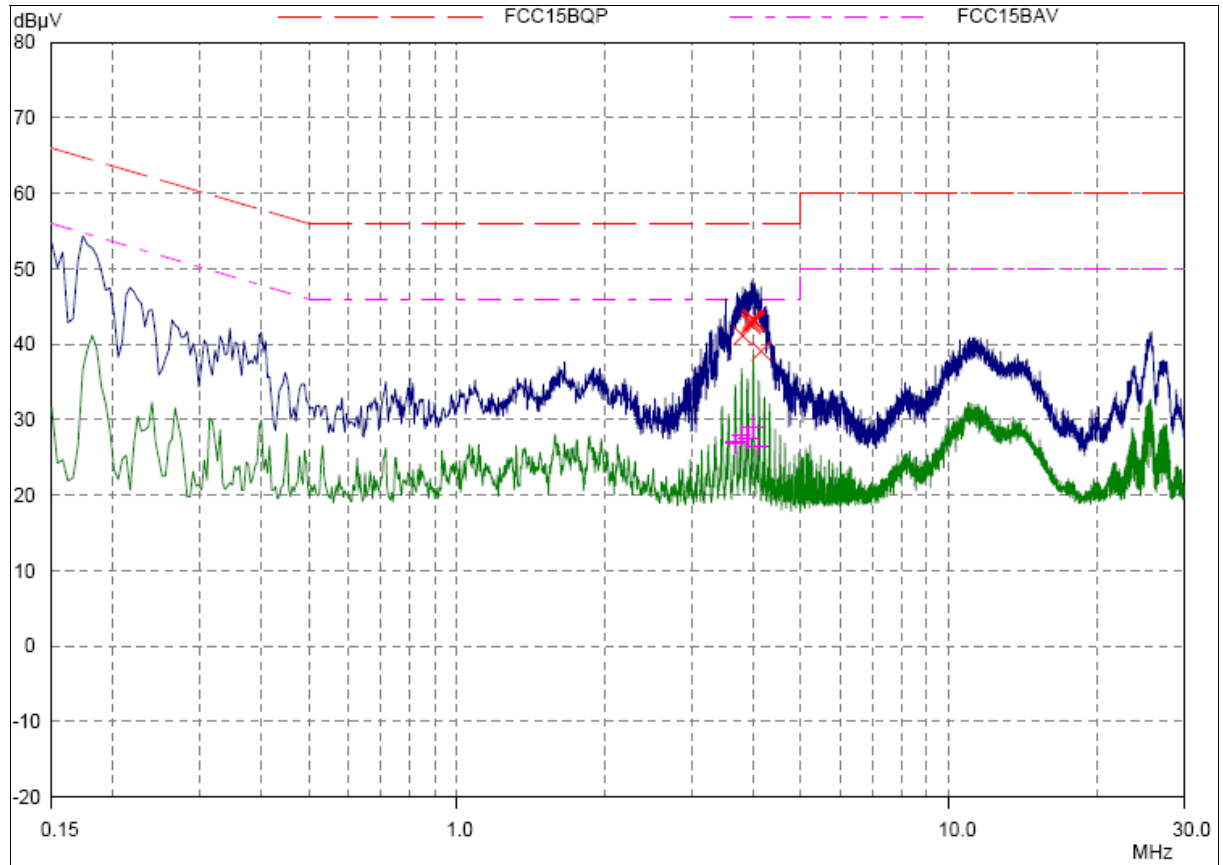
Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -
0.17343	41.56	54.79	13.23	L1
3.69296	27.16	46.00	18.84	L1
3.78671	27.70	46.00	18.30	L1
3.79453	27.53	46.00	18.47	L1
3.9	27.10	46.00	18.90	L1
4.00546	28.32	46.00	17.68	L1
4.11092	25.54	46.00	20.46	L1
4.2125	24.77	46.00	21.23	L1

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.: RZA1112-2067RF01R3

Page 64 of 72



N Line

Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -
3.81015	41.16	56.00	14.84	N
3.95468	42.64	56.00	13.36	N
3.97031	42.90	56.00	13.10	N
3.97812	43.34	56.00	12.66	N
4.00936	43.26	56.00	12.74	N
4.025	43.12	56.00	12.88	N
4.0328	43.04	56.00	12.96	N
4.15	39.08	56.00	16.92	N

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -
3.67343	26.85	46.00	19.15	N
3.68125	27.04	46.00	18.96	N
3.78671	27.99	46.00	18.01	N
3.89218	27.53	46.00	18.47	N
3.9	27.53	46.00	18.47	N
3.99375	28.94	46.00	17.06	N
4.00155	29.09	46.00	16.91	N
4.10311	26.53	46.00	19.47	N

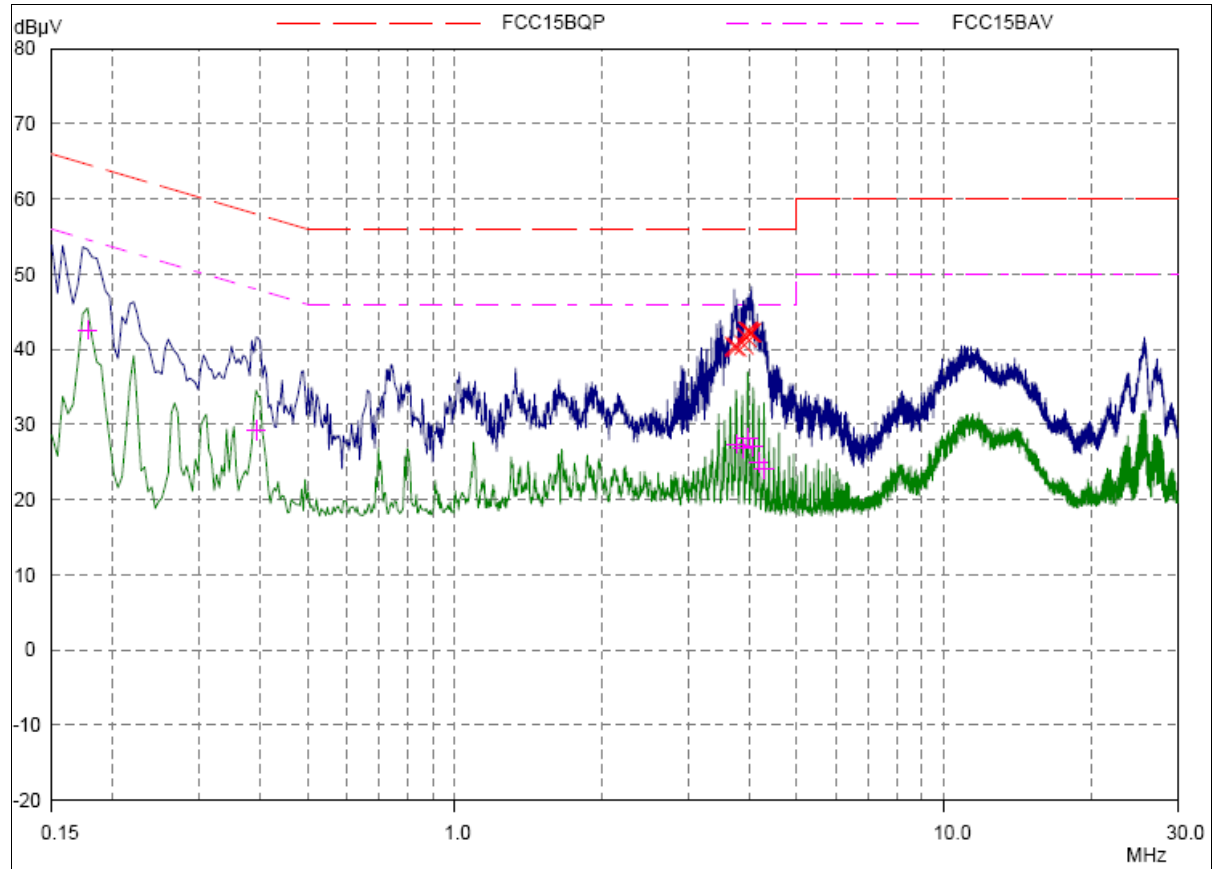
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.: RZA1112-2067RF01R3

Page 65 of 72

802.11g CH6



L Line

Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -
3.72421	40.38	56.00	15.62	L1
3.77109	40.32	56.00	15.68	L1
3.9039	40.58	56.00	15.42	L1
3.95078	41.56	56.00	14.44	L1
3.97421	42.42	56.00	13.58	L1
3.98984	42.36	56.00	13.64	L1
4.025	42.20	56.00	13.80	L1
4.03671	42.22	56.00	13.78	L1

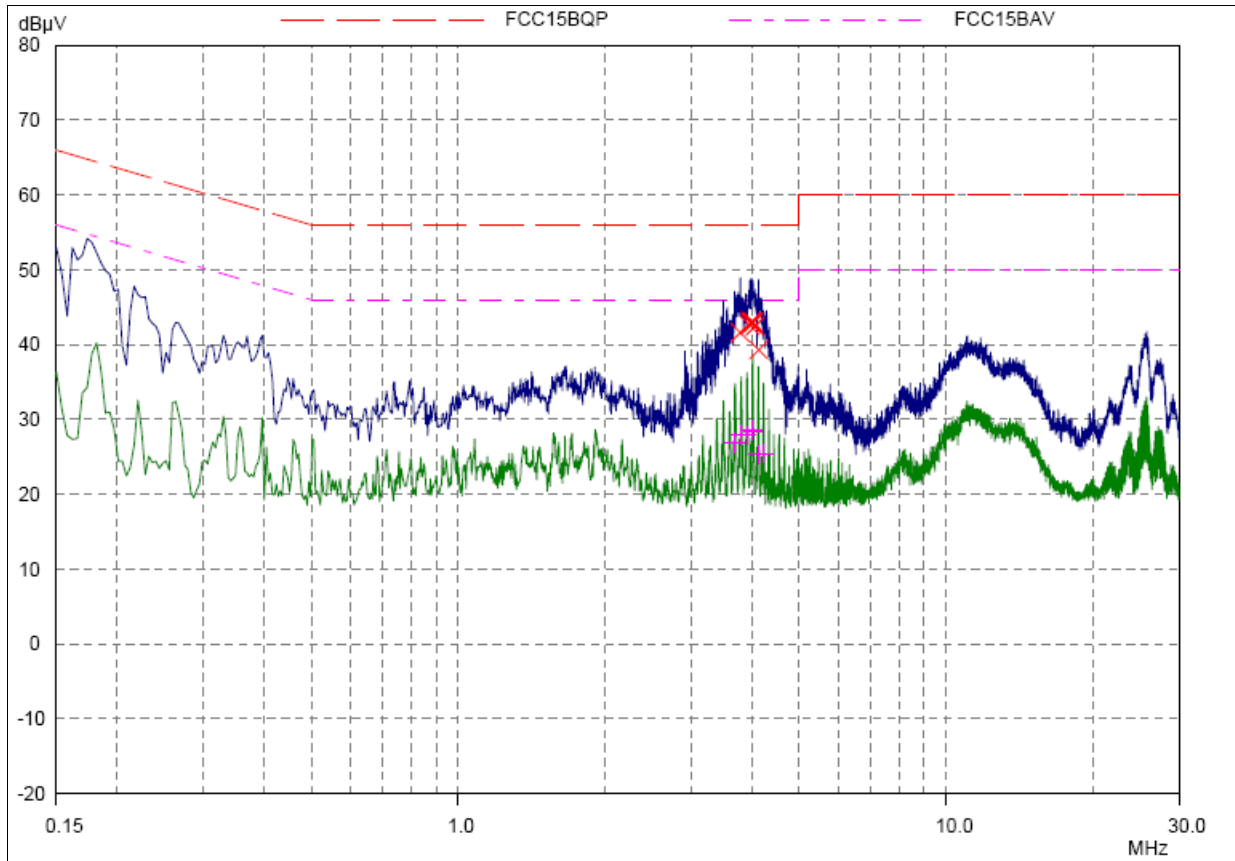
Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -
0.17734	42.58	54.61	12.03	L1
0.39218	29.24	48.02	18.78	L1
3.75156	27.41	46.00	18.59	L1
3.86875	26.79	46.00	19.21	L1
3.9664	28.26	46.00	17.74	L1
4.06796	27.04	46.00	18.96	L1
4.17342	24.93	46.00	21.07	L1
4.28281	24.09	46.00	21.91	L1

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.: RZA1112-2067RF01R3

Page 66 of 72



N Line

Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -
3.78281	41.62	56.00	14.38	N
3.95859	42.58	56.00	13.42	N
3.97812	42.92	56.00	13.08	N
3.98593	43.08	56.00	12.92	N
4.01328	42.98	56.00	13.02	N
4.02109	43.02	56.00	12.98	N
4.05625	42.46	56.00	13.54	N
4.12265	39.32	56.00	16.68	N

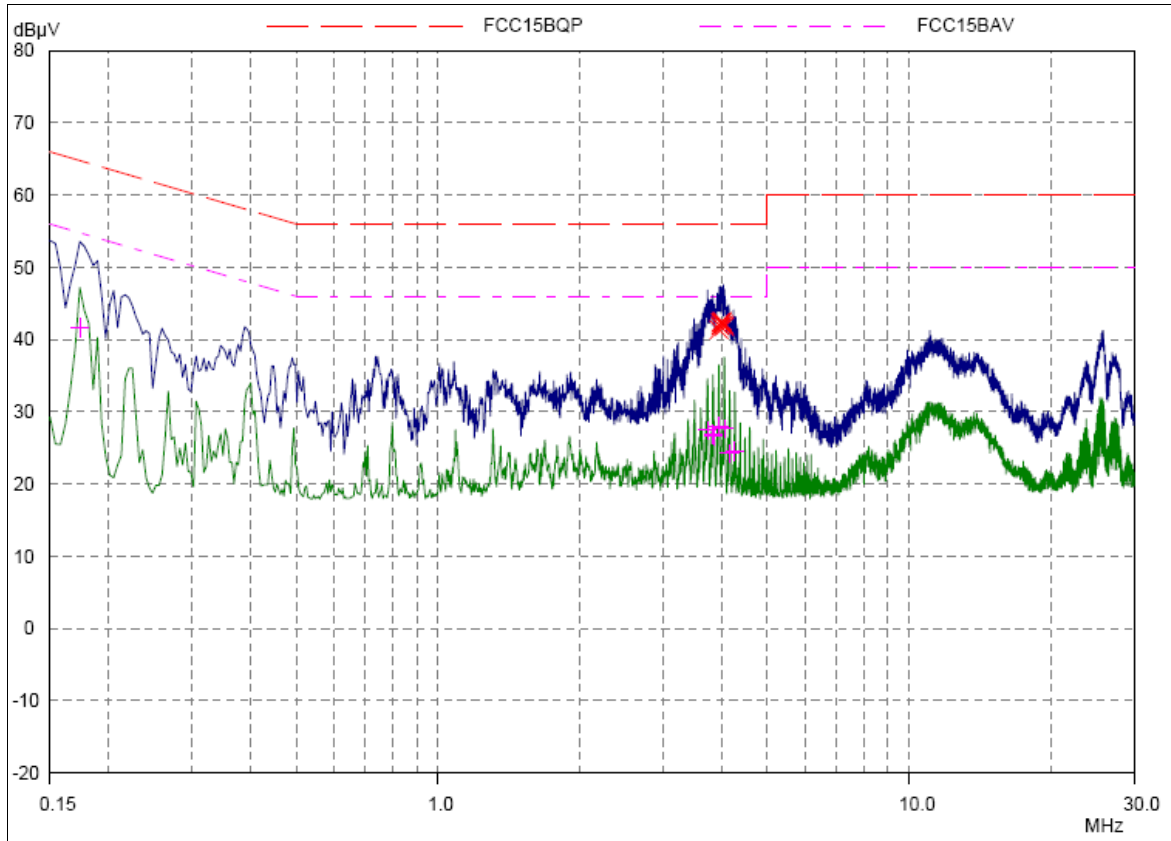
Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -
3.68515	26.85	46.00	19.15	N
3.69296	26.98	46.00	19.02	N
3.79843	27.93	46.00	18.07	N
3.9	27.87	46.00	18.13	N
4.00546	28.58	46.00	17.42	N
4.01328	28.48	46.00	17.52	N
4.11484	25.32	46.00	20.68	N
4.22031	25.47	46.00	20.53	N

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

Report No.: RZA1112-2067RF01R3

Page 67 of 72

802.11g CH11



L Line

Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -
3.94687	41.38	56.00	14.62	L1
3.97031	41.88	56.00	14.12	L1
3.97812	42.32	56.00	13.68	L1
3.98593	42.34	56.00	13.66	L1
4.00155	42.46	56.00	13.54	L1
4.01328	42.46	56.00	13.54	L1
4.0328	42.12	56.00	13.88	L1
4.04842	41.84	56.00	14.16	L1

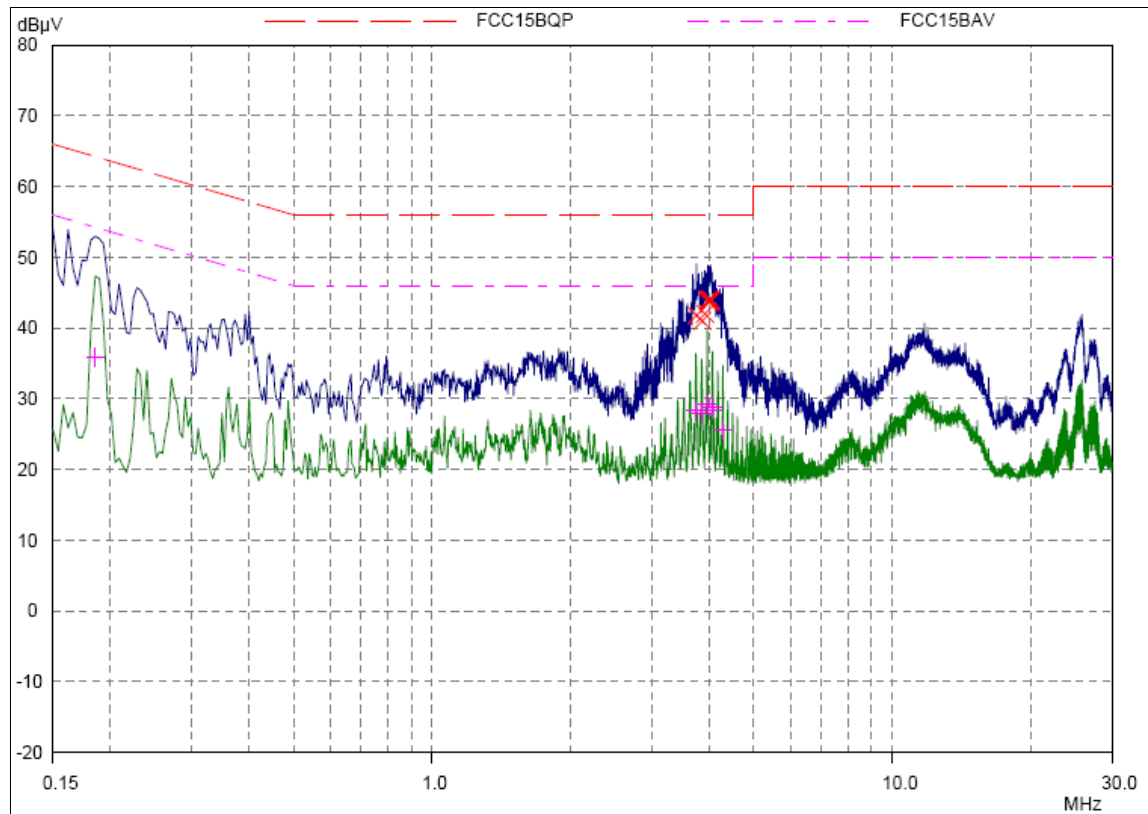
Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -
0.17343	41.61	54.79	13.18	L1
3.72812	27.47	46.00	18.53	L1
3.82968	26.85	46.00	19.15	L1
3.8414	26.72	46.00	19.28	L1
3.94296	27.93	46.00	18.07	L1
4.04842	27.64	46.00	18.36	L1
4.1539	24.27	46.00	21.73	L1
4.25937	24.52	46.00	21.48	L1

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.: RZA1112-2067RF01R3

Page 68 of 72



N Line

Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -
3.75156	41.80	56.00	14.20	N
3.86093	41.02	56.00	14.98	N
3.91562	42.02	56.00	13.98	N
3.97031	43.82	56.00	12.18	N
3.98203	43.86	56.00	12.14	N
3.99765	44.04	56.00	11.96	N
4.02109	43.80	56.00	12.20	N
4.0328	43.96	56.00	12.04	N

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -
0.18515	35.87	54.25	18.38	N
3.73984	28.32	46.00	17.68	N
3.84921	27.93	46.00	18.07	N
3.85703	27.87	46.00	18.13	N
3.95859	29.33	46.00	16.67	N
4.06015	28.89	46.00	17.11	N
4.06796	28.48	46.00	17.52	N
4.2789	25.54	46.00	20.46	N

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

Report No.: RZA1112-2067RF01R3

Page 69 of 72

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	Loop Antenna	FMZB1516	SCHWARZBECK	237	2010-06-29	Two years
03	TRILOG Broadband Antenna	VULB 9163	Schwarzbeck	391	2011-05-14	Two years
04	Double Ridged Waveguide Horn Antenna	HF907	R&S	100126	2011-07-01	Two years
05	PSG Analog Signal Generator	E8257D	Agilent	MY49281101	2011-06-29	One year
06	ESG Vector Signal Generator	E4438C	Agilent	MY49070900	2011-07-01	One year
07	Spectrum Analyzer	E4445A	Agilent	MY46181146	2011-06-07	One year
08	Power Splitter	SHX-GF2-2-13	Hua Xiang	10120101	NA	NA
09	MOB COMMS DC SUPPLY	66319D	Agilent	MY43004105	2011-06-30	One year
10	Power Sensor	E9304A	Agilent	MY50220022	2011-06-01	One year
11	Power Meter	E4418B	Agilent	MY50000623	2011-06-07	One year
12	Vibration table	ESS-050-120	dongling	D1007126	2010-08-23	Three years
13	Universal Radio Communication Tester	E5515C	Agilent	MY48367192	2011-06-04	One year
14	Peak Power Analyzer	8990B	Agilent	51000109	2011-06-01	One year
15	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



Picture 1 Constituents of EUT

A.2 Test Setup



a: Below 1GHz



b: Above 1GHz

Picture 2 Radiated Emission Test Setup

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

Report No.: RZA1112-2067RF01R3

Page 72 of 72



Picture 3 Conducted Emission Test Setup