



Part 15C

TEST REPORT

Product Name	GPON ONU
Model Name	I-240W-A
FCC ID	2ADZRI240WA
Client	Alcatel-Lucent Shanghai Bell Co., Ltd.
Manufacturer	Shenzhen ZOWEE Technology Co.,Ltd. Bao'an Branch
Date of issue	July 9, 2015

TA Technology (Shanghai) Co., Ltd.

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

Report No.:RBA1505-0061RF

Page 2 of 124

GENERAL SUMMARY

Reference Standard(s)	FCC CFR47 Part 15C (2013) 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 D01 DTS Meas Guidance v03r01 Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247
Conclusion	This 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
Comment	The test result only responds to the measured sample.

Approved by Kai Xu
Kai Xu
Director

Revised by Lingling Kang
Lingling Kang
RF Manager

Performed by Changxu Wan
Changxu Wan
RF Engineer

TABLE OF CONTENT

1. General Information	4
1.1. Notes of the test report	4
1.2. Testing laboratory	5
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. Test Mode	8
2.2. Summary of test results	9
2.3. Peak Power Output –Conducted.....	10
2.4. Occupied Bandwidth (6dB)	12
2.5. Band Edge Compliance	20
2.6. Spurious Radiated Emissions in the restricted band.....	25
2.7. Power Spectral Density.....	36
2.8. Spurious RF Conducted Emissions	47
2.9. Radiates Emission	61
2.10. Conducted Emissions	112
2. Main Test Instruments	121
ANNEX A: EUT Appearance and Test Setup.....	122
A.1 EUT Appearance	122
A.2 Test Setup	123

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 4 of 124

1. General Information

1.1. Notes of the test report

TA Technology (Shanghai) Co., Ltd. has obtained the accreditation of China National Accreditation Service for Conformity Assessment (CNAS), and accreditation number: L2264.

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements. The site recognition number is 428261.

TA Technology (Shanghai) Co., Ltd. has been listed by industry Canada to perform electromagnetic emission measurement. The site recognition number is 8510A.

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. The sample under test was selected by the Client. This report only refers to the item that has undergone the test.

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of **TA Technology (Shanghai) Co., Ltd.**

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

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 5 of 124

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: Xu Kai
Telephone: +86-021-50791141/2/3
Fax: +86-021-50791141/2/3-8000
Website: <http://www.ta-shanghai.com>
E-mail: xukai@ta-shanghai.com

1.3. Applicant Information

Company: Alcatel-Lucent Shanghai Bell CO. Ltd.
6B602,388 Ningqiao Road Pudong,Shanghai
Address: 201206
P.R. China

1.4. Manufacturer Information

Company: Shenzhen ZOWEE Technology Co.,Ltd. Bao'an Branch
Zowee Factory, TongFuYu Industrial Zone. Songgang Street Bao'an
Address: District, Shenzhen, Guangdong,
518105
P.R. China

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

Report No.:RBA1505-0061RF

Page 6 of 124

1.5. Information of EUT

General information

Model Name:	I-240W-A
Hardware Version:	3FE54861ACAA
Software Version:	3FE54869
Antenna Type:	External Antenna
Device Operating Configurations:	
Network Standards:	802.11b, 802.11g, 802.11n(HT20/HT40); (tested)
Test Modulation:	(802.11b)DSSS; 802.11g/11n(HT20/HT40) OFDM
Power Supply:	Adapter
Max Conducted Power:	26.13 dBm
Operating Frequency Range(s)	2412MHz~ 2462MHz (802.11b /g/n HT20)
	2422MHz~ 2452MHz (802.11n HT40)
Tested Frequency Range(s)	2400MHz~ 2483.5 MHz

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 7 of 124

Auxiliary Equipment Details

AE2: Adapter

Name:	Power Adapter
Model:	DSA-24PFD-15L FUS 120200
Manufacturer:	DEE VAN ENTERPRISE CO.,LTD.

1.6. Test Date

The test performed from May 14, 2015 to May 25, 2015.

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 8 of 124

2. Test Information

2.1. Test Mode

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

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.

In order to find the worst case condition, Pre-tests are needed at the presence of different data rate declared in basic standard IEEE802.11. Preliminary tests has been done on all the configuration for confirming worst case. Data rate below means worst-case rate of each test item.

Results of test modes, data rates and test channels are shown as following table.

The EUT was programmed to be in continuously transmitting mode and the transmit duty cycle is not less than 98%.

/	Test items	Chain	Mode	Date rate	Test channel
Conducted test cases	peak power output-conducted	chain0	802.11b	1Mbps	1、6、11
			802.11g	6Mbps	1、6、11
			802.11n(HT20)	MCS0	1、6、11
			802.11n(HT40)	MCS0	3、6、9
		simultaneous on	802.11n(HT20)	MCS8	1、6、11
			802.11n(HT40)	MCS8	3、6、9
	Minimum 6dB bandwidth	chain0	802.11b	1Mbps	1、6、11
			802.11g	6Mbps	1、6、11
			802.11n(HT20)	MCS8	1、6、11
			802.11n(HT40)	MCS8	3、6、9
	Band edge compliance	chain0	802.11b	1Mbps	1、11
			802.11g	6Mbps	1、11
			802.11n(HT20)	MCS8	1、11
			802.11n(HT40)	MCS8	3、9
	Power spectral density	chain0	802.11b	1Mbps	1、6、11
			802.11g	6Mbps	1、6、11
			802.11n(HT20)	MCS0	1、6、11
			802.11n(HT40)	MCS0	3、6、9
		simultaneous on	802.11n(HT20)	MCS8	1、6、11
			802.11n(HT40)	MCS8	3、6、9
	Conducted suprious emission	chain0	802.11b	1Mbps	1、6、11
			802.11g	6Mbps	1、6、11
			802.11n(HT20)	MCS8	1、6、11
			802.11n(HT40)	MCS8	3、6、9
	Conducted	simultaneous on	802.11b	1Mbps	6

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 9 of 124

Radiated test cases	emission		802.11g	6Mbps	6
			802.11n(HT20)	MCS8	6
			802.11n(HT40)	MCS8	6
	Spurious radiated emission in the restricted band	simultaneous on	802.11b	1Mbps	1、11
			802.11g	6Mbps	1、11
			802.11n(HT20)	MCS8	1、11
			802.11n(HT40)	MCS8	3、9
	Radiated emission	simultaneous on	802.11b	1Mbps	1、6、11
			802.11g	6Mbps	1、6、11
			802.11n(HT20)	MCS8	1、6、11
			802.11n(HT40)	MCS8	3、6、9

2.2. 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.:RBA1505-0061RF

Page 10 of 124

2.3. Peak Power Output –Conducted

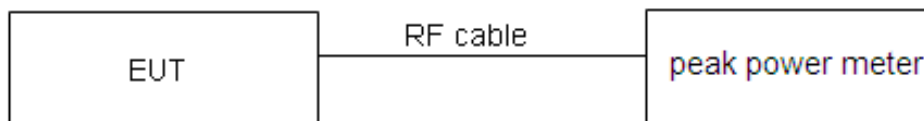
Ambient condition

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 5.2.1 Maximum Peak Conducted Output Power Level Method in KDB 558074 D01 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.:RBA1505-0061RF

Page 11 of 124

Test Results:

Network Standards	Carrier frequency (MHz)	Peak Output Power (dBm)	Conclusion
802.11b	2412	24.03	PASS
	2437	23.65	PASS
	2462	23.05	PASS
802.11g	2412	21.56	PASS
	2437	23.15	PASS
	2462	22.23	PASS
802.11n HT20	2412	20.96	PASS
	2437	22.83	PASS
	2462	21.82	PASS
802.11n HT40	2422	19.08	PASS
	2437	22.31	PASS
	2452	20.49	PASS

MIMO:

Network Standards	Carrier frequency (MHz)	Peak Output Power (dBm)	Conclusion
802.11n HT20	2412	26.13	PASS
	2437	25.91	PASS
	2462	24.77	PASS
802.11n HT40	2422	25.43	PASS
	2437	25.31	PASS
	2452	25.03	PASS

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

Report No.:RBA1505-0061RF

Page 12 of 124

2.4. Occupied Bandwidth (6dB)

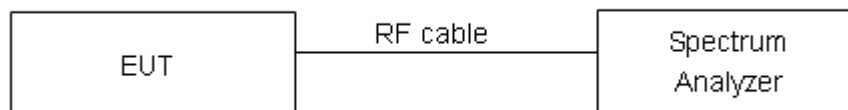
Ambient condition

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.:RBA1505-0061RF

Page 13 of 124

Test Results:

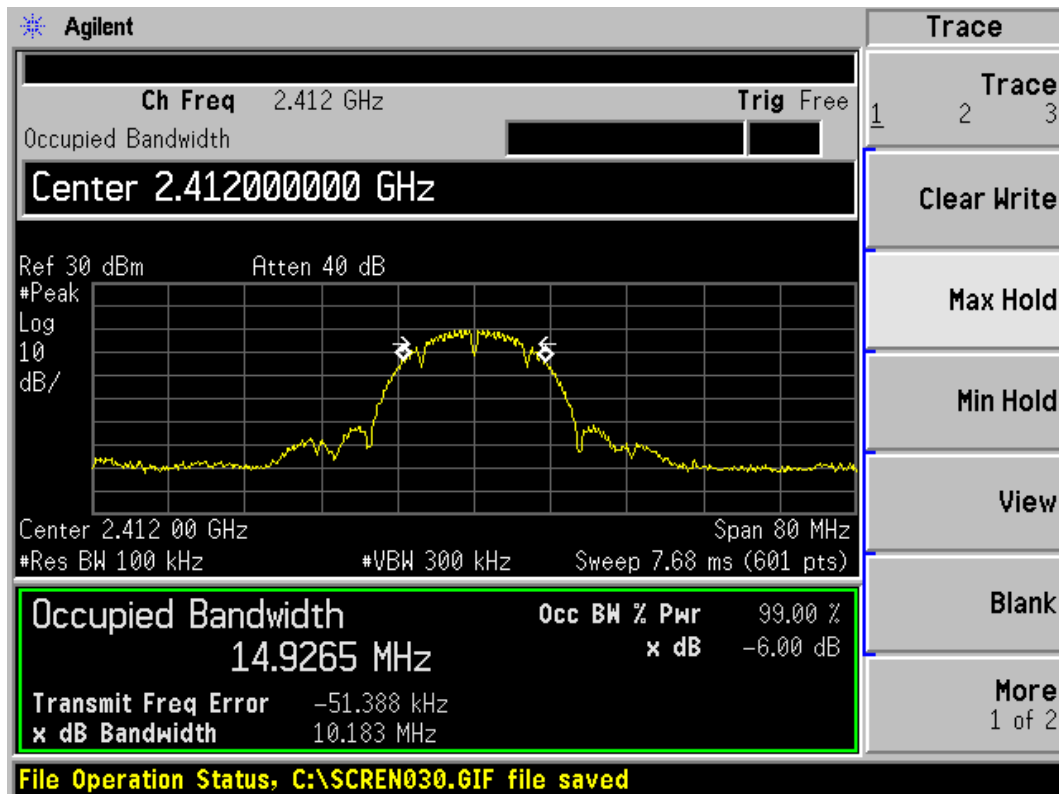
Network Standards	Carrier frequency (MHz)	Minimum 6 dB bandwidth (MHz)	Conclusion
802.11b	2412	10.183	PASS
	2437	10.149	PASS
	2462	10.200	PASS
802.11g	2412	16.638	PASS
	2437	16.647	PASS
	2462	16.644	PASS
802.11n HT20	2412	17.845	PASS
	2437	17.851	PASS
	2462	17.839	PASS
802.11n HT40	2422	36.559	PASS
	2437	36.561	PASS
	2452	36.561	PASS

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

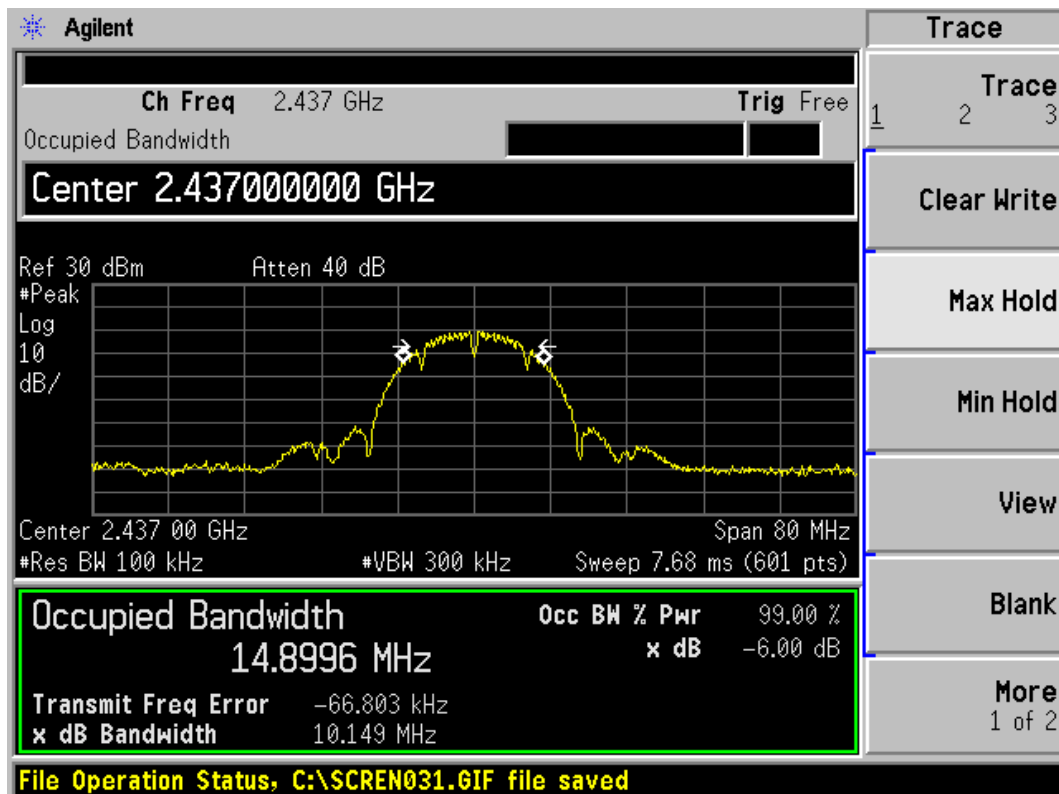
Report No.:RBA1505-0061RF

Page 14 of 124

Antenna1:
802.11b



802.11b, Carrier frequency (MHz): 2412

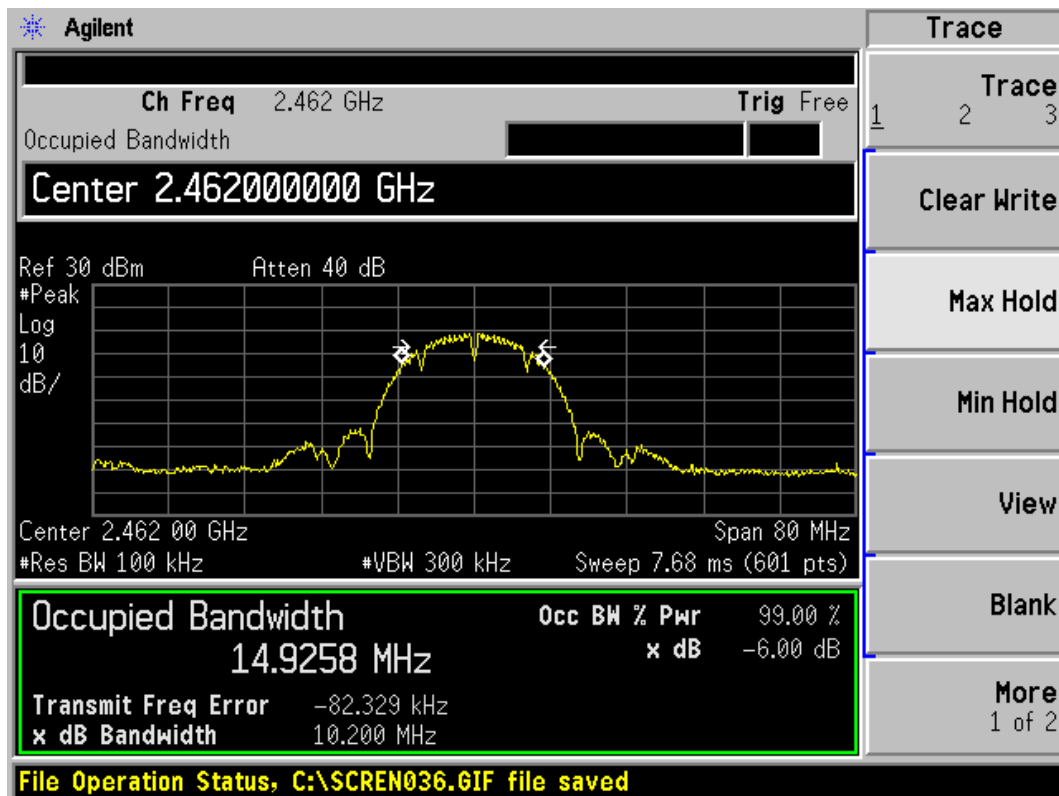


802.11b, Carrier frequency (MHz): 2437

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

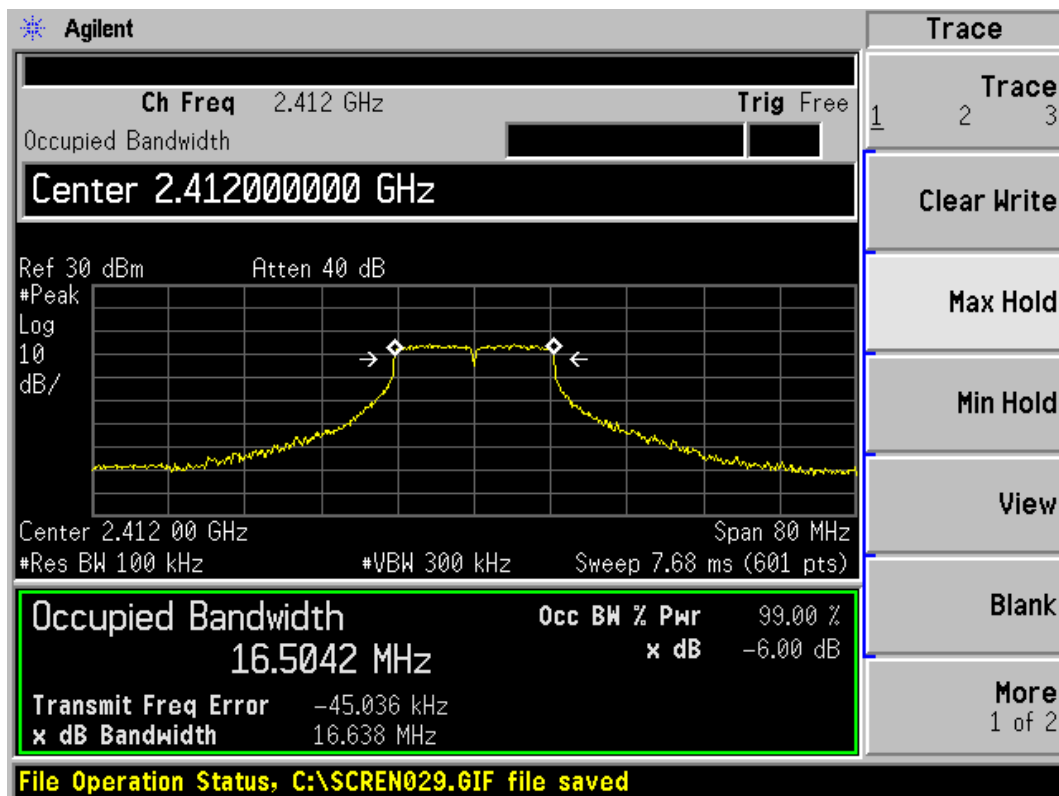
Report No.:RBA1505-0061RF

Page 15 of 124



802.11b, Carrier frequency (MHz):2462

802.11g

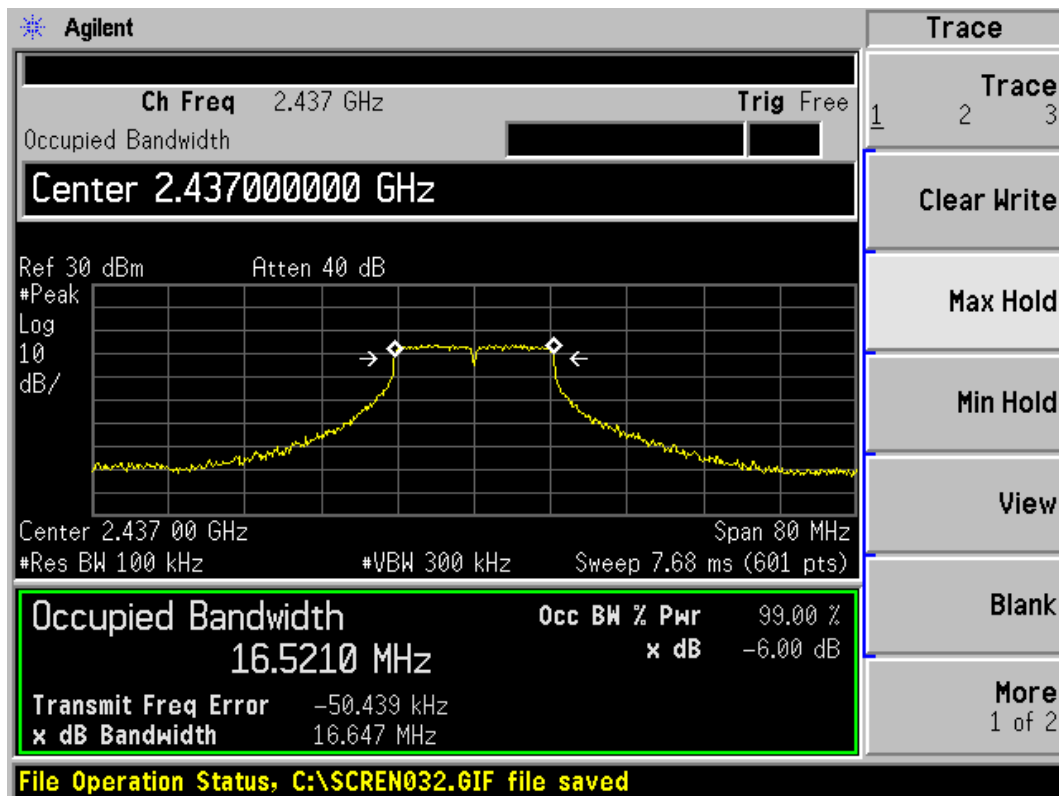


802.11g, Carrier frequency (MHz): 2412

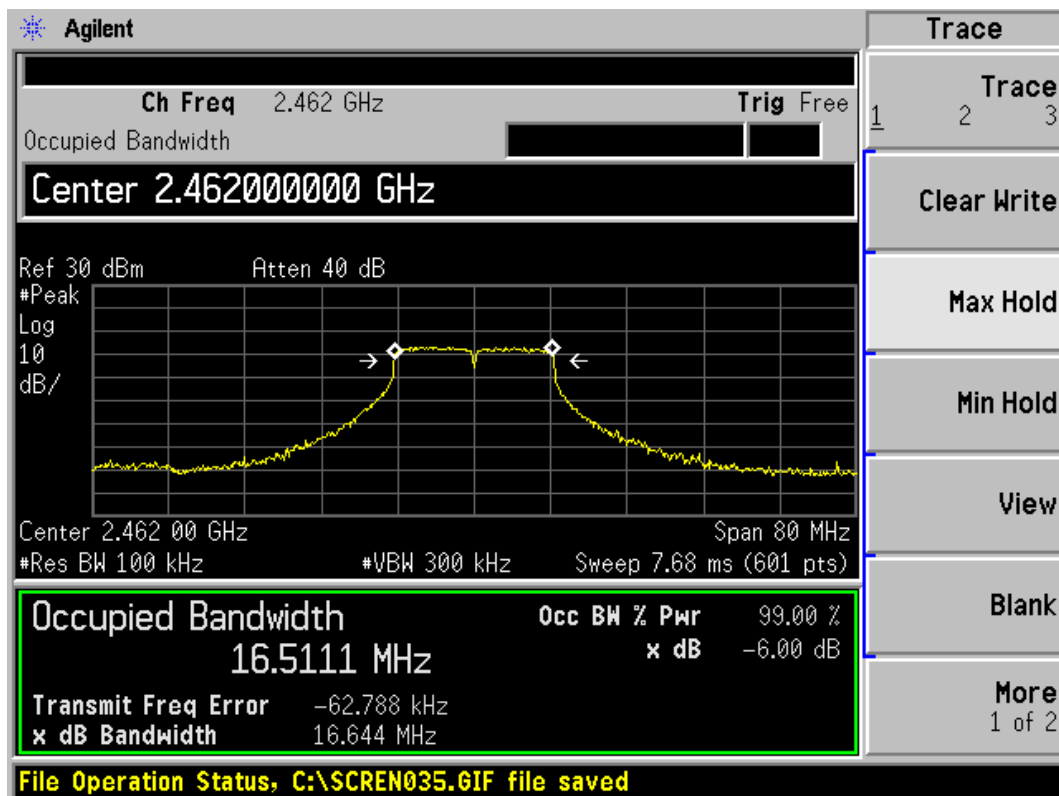
TA Technology (Shanghai) Co., Ltd.
Test Report

Report No.:RBA1505-0061RF

Page 16 of 124



802.11g, Carrier frequency (MHz): 2437



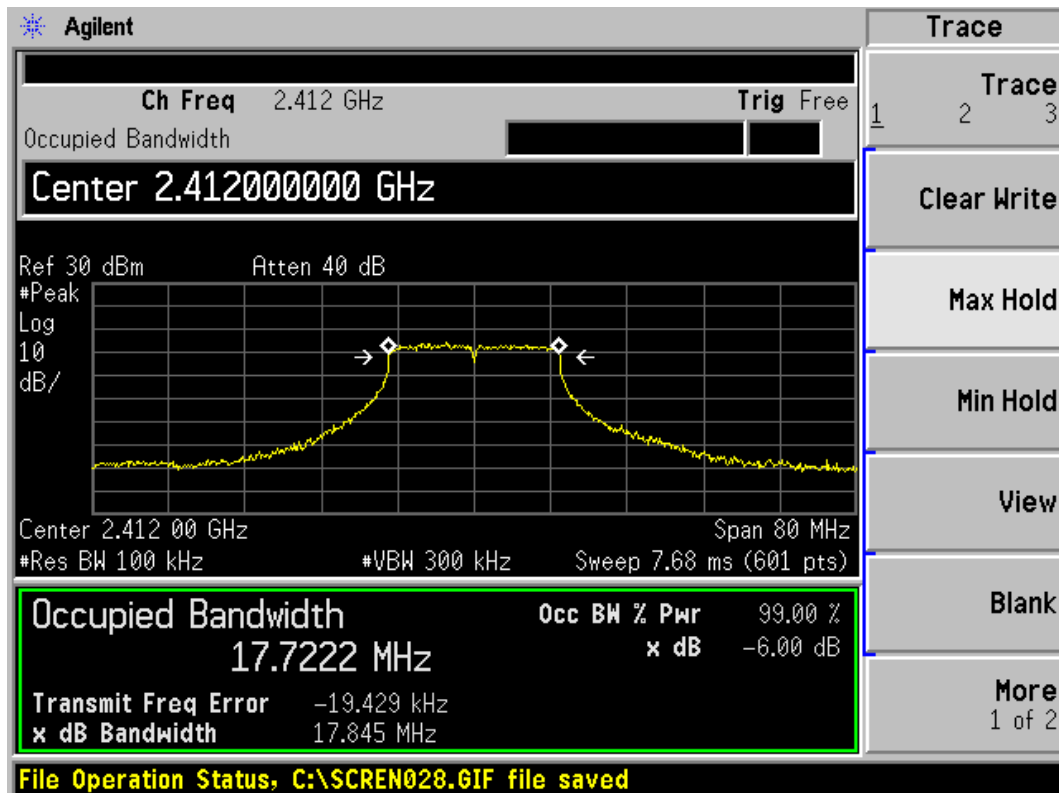
802.11g, Carrier frequency (MHz): 2462

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

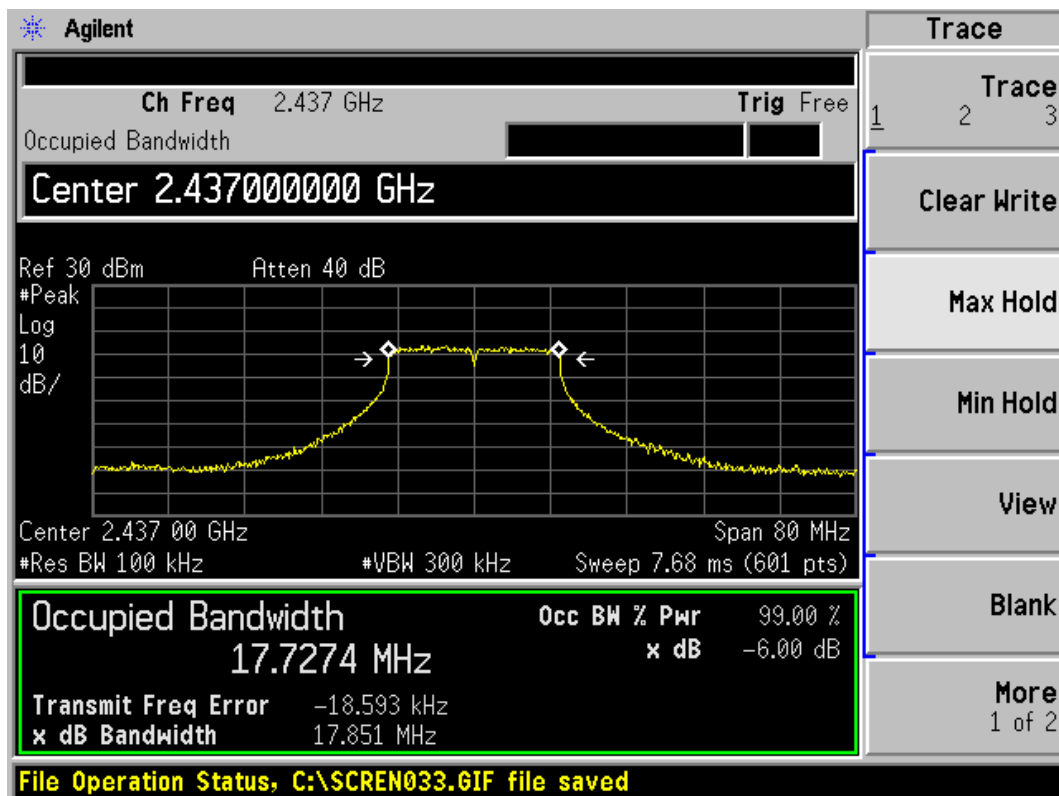
Report No.:RBA1505-0061RF

Page 17of 124

802.11n (HT20)



802.11n, Carrier frequency (MHz): 2412

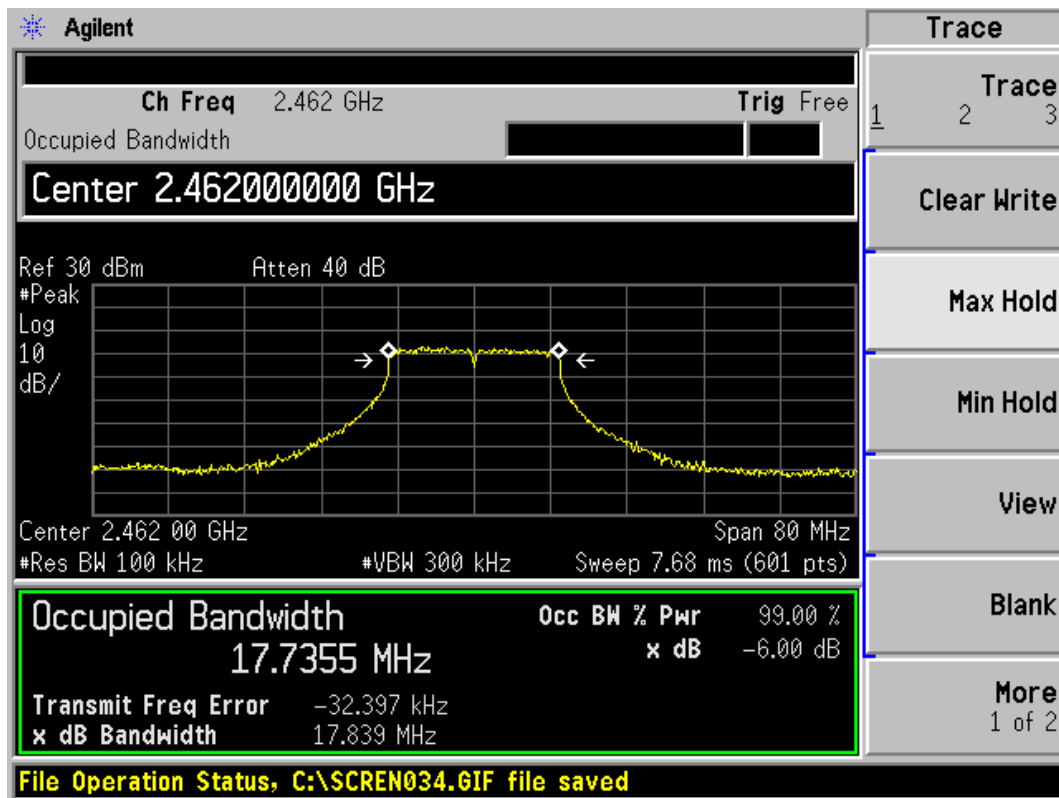


802.11n, Carrier frequency (MHz): 2437

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

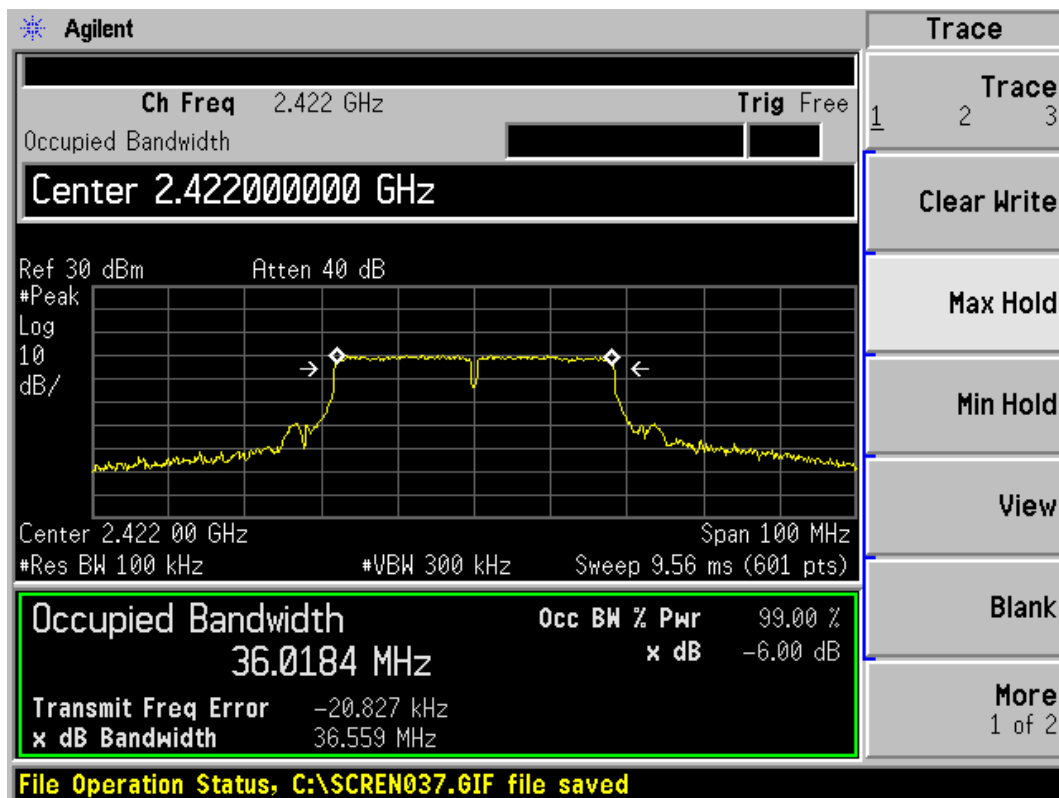
Report No.:RBA1505-0061RF

Page 18 of 124



802.11n, Carrier frequency (MHz):2462

802.11n(HT40)

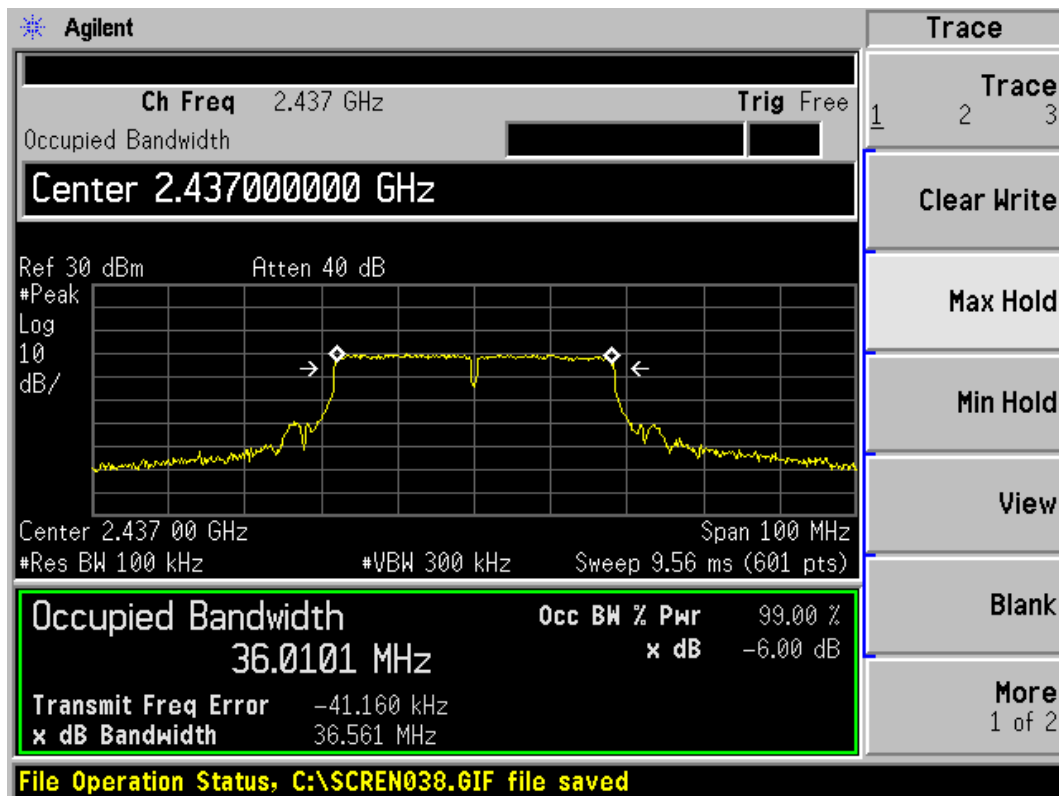


802.11n, Carrier frequency (MHz): 2422

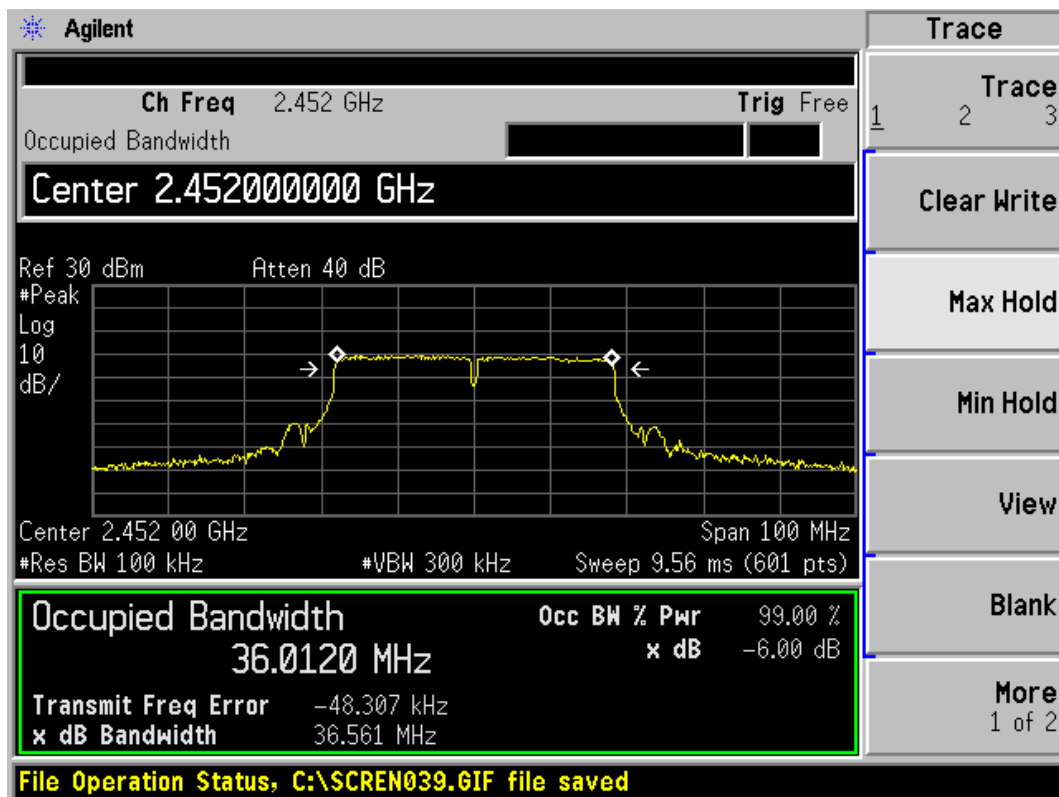
TA Technology (Shanghai) Co., Ltd.
Test Report

Report No.:RBA1505-0061RF

Page 19of 124



802.11n, Carrier frequency (MHz): 2437



802.11n, Carrier frequency (MHz):2452

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

Report No.:RBA1505-0061RF

Page 20 of 124

2.5. Band Edge Compliance

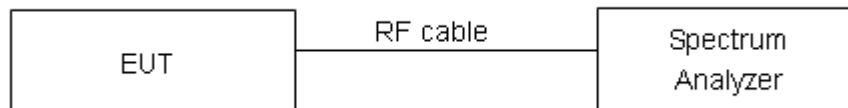
Ambient condition

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.”

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

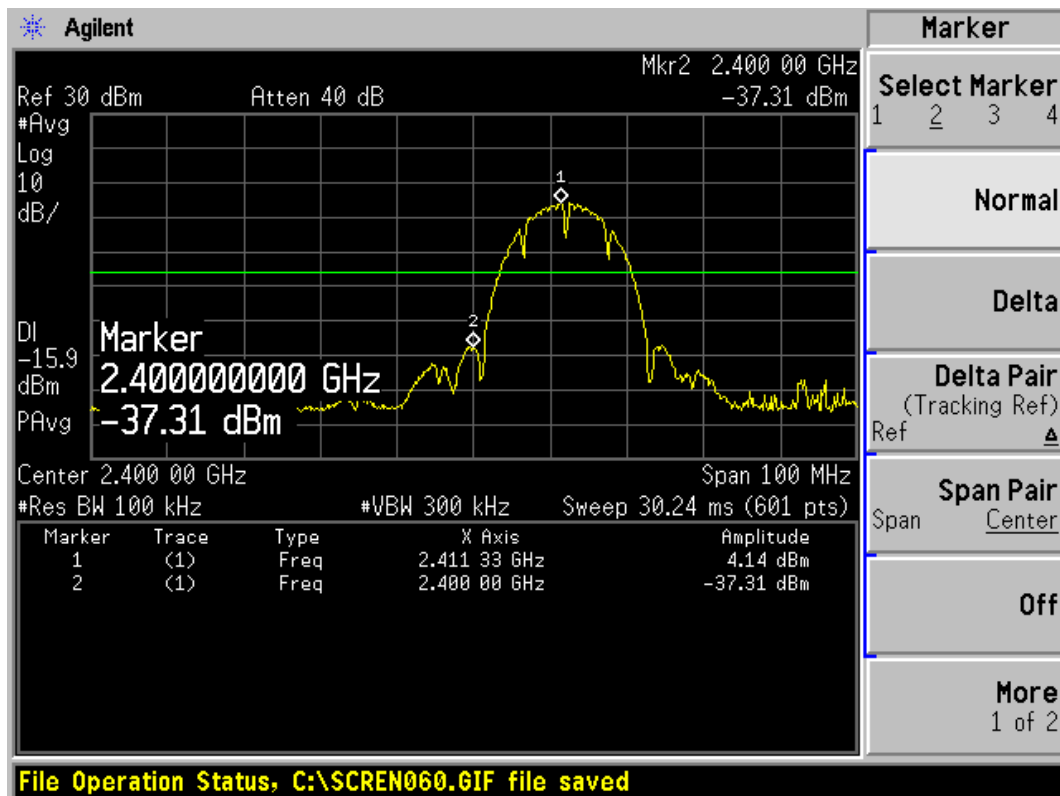
TA Technology (Shanghai) Co., Ltd. Test Report

Report No.:RBA1505-0061RF

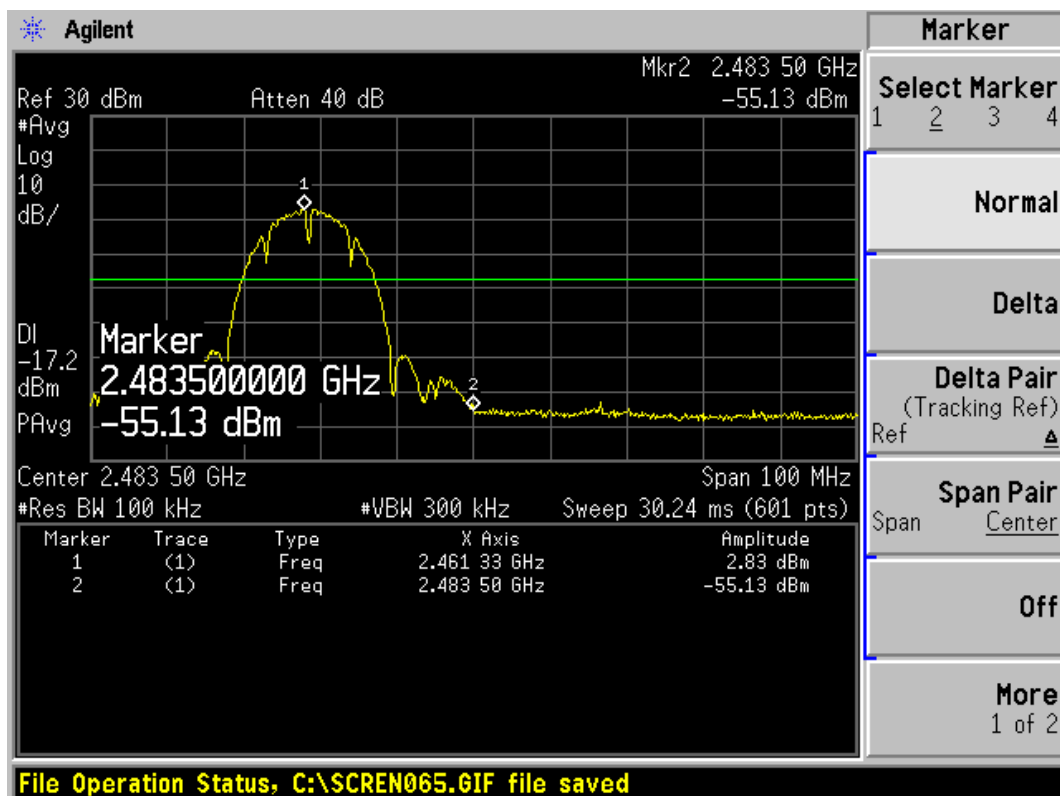
Page 21 of 124

Test Results: PASS

802.11b



802.11b, Channel No.1



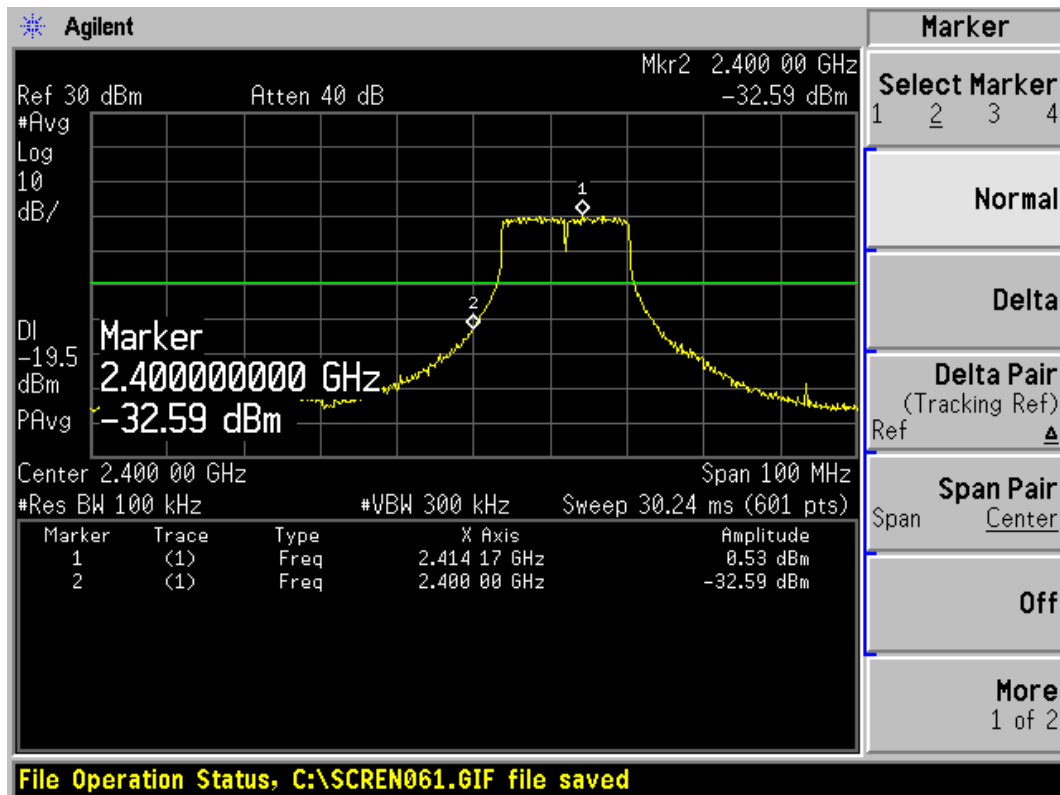
802.11b, Channel No. 11

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

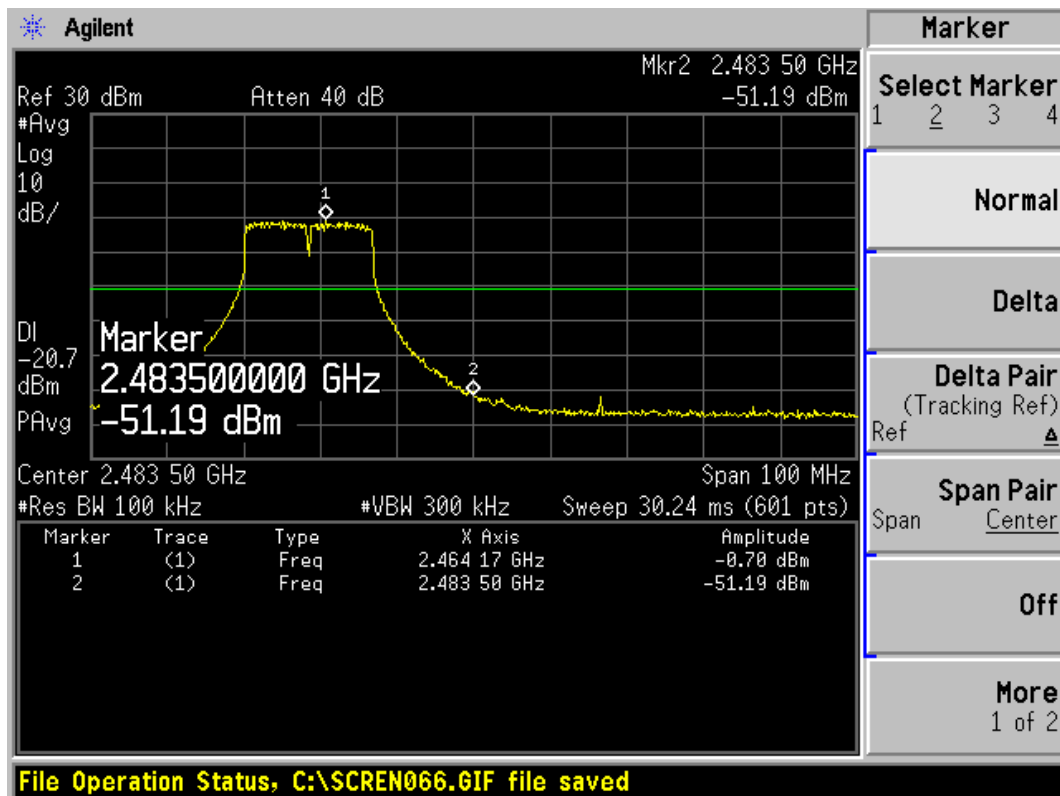
Report No.:RBA1505-0061RF

Page 22 of 124

802.11g



802.11g, Channel No.1



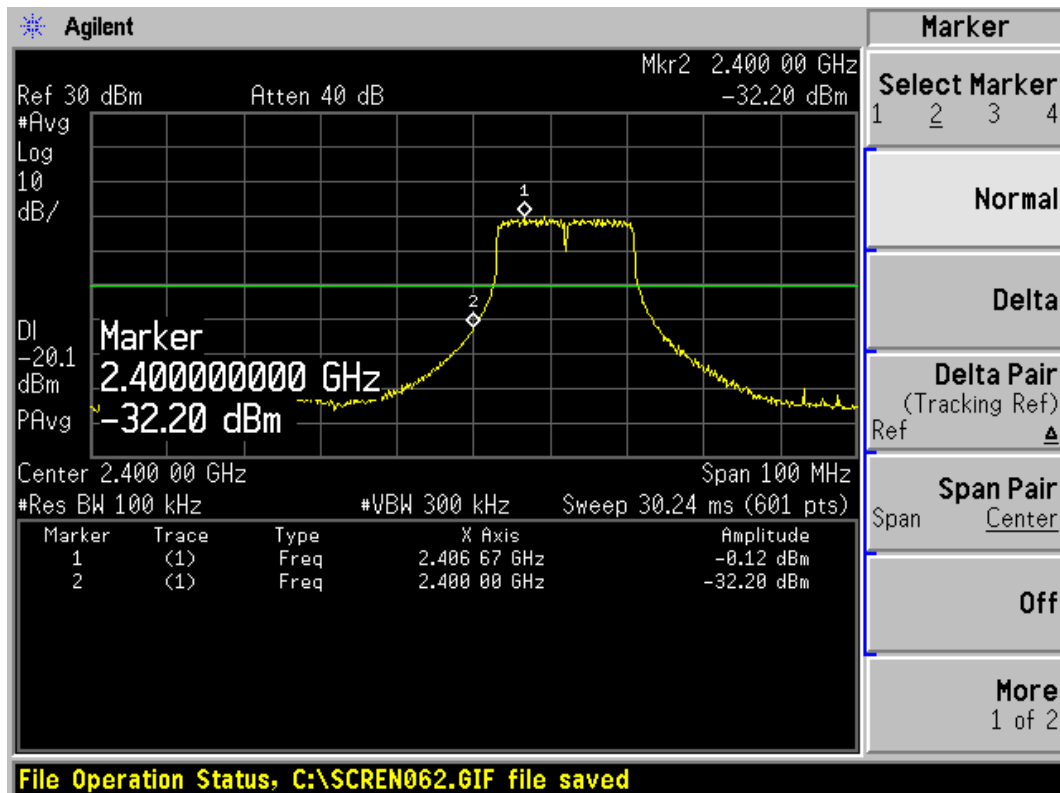
802.11g, Channel No. 11

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

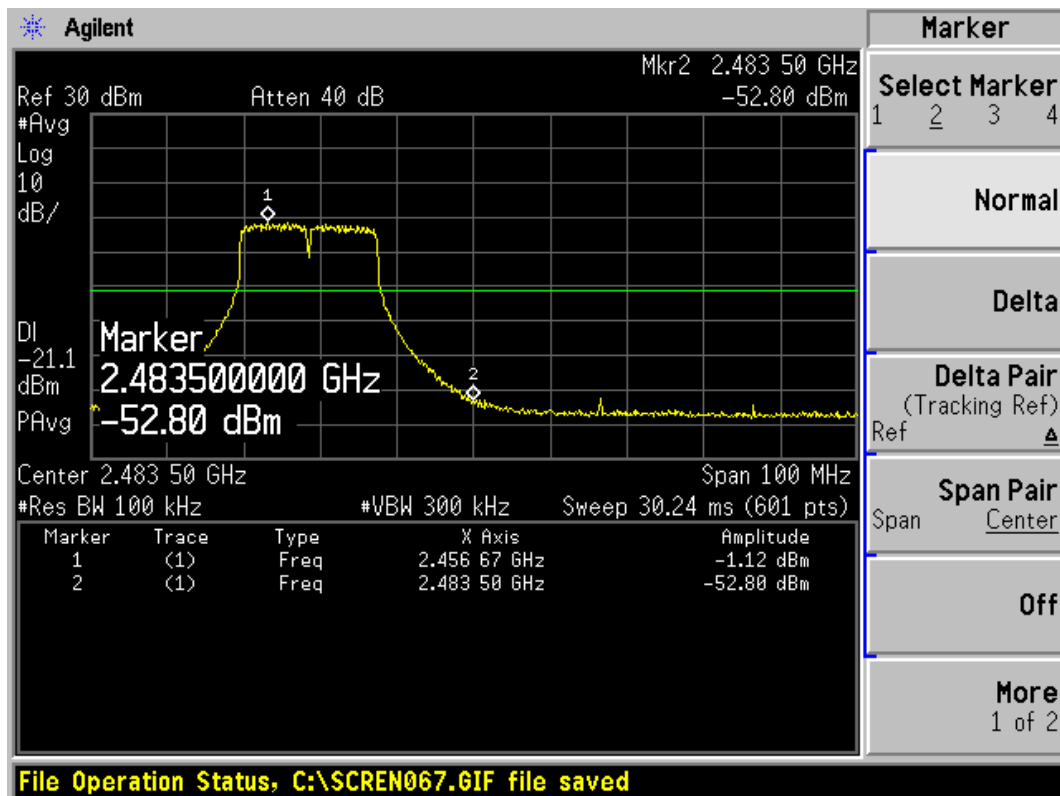
Report No.:RBA1505-0061RF

Page 23 of 124

802.11n (HT20)



802.11n, Channel No.1



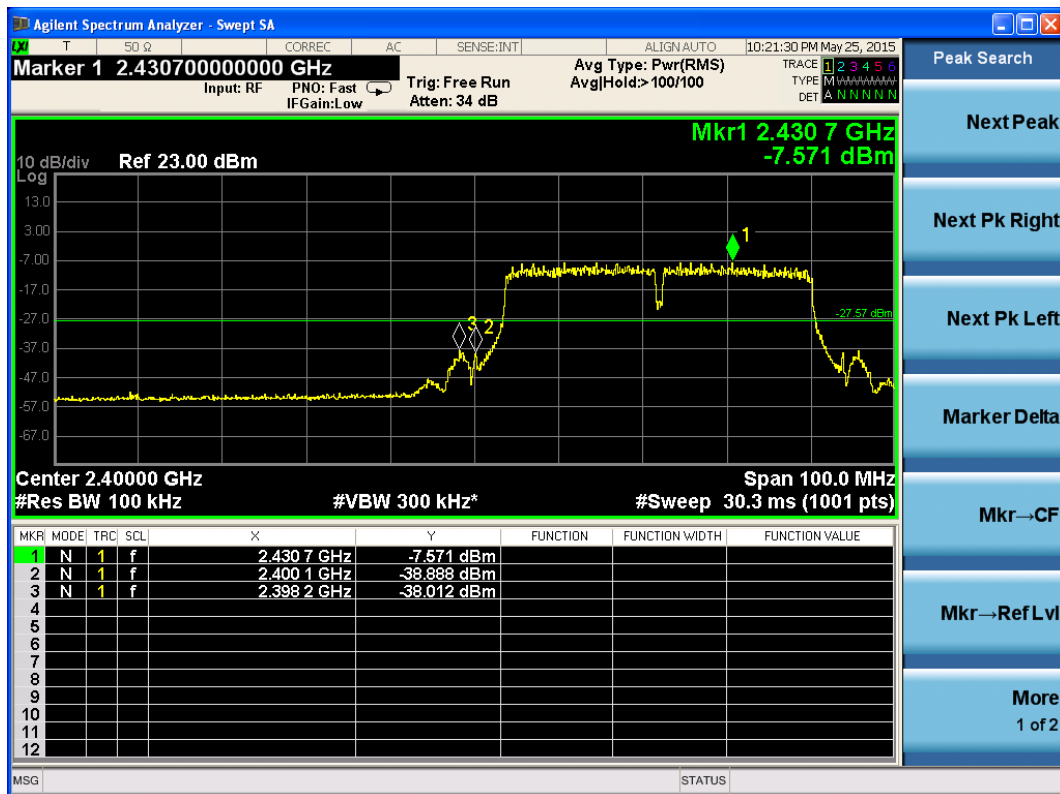
802.11n, Channel No. 11

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

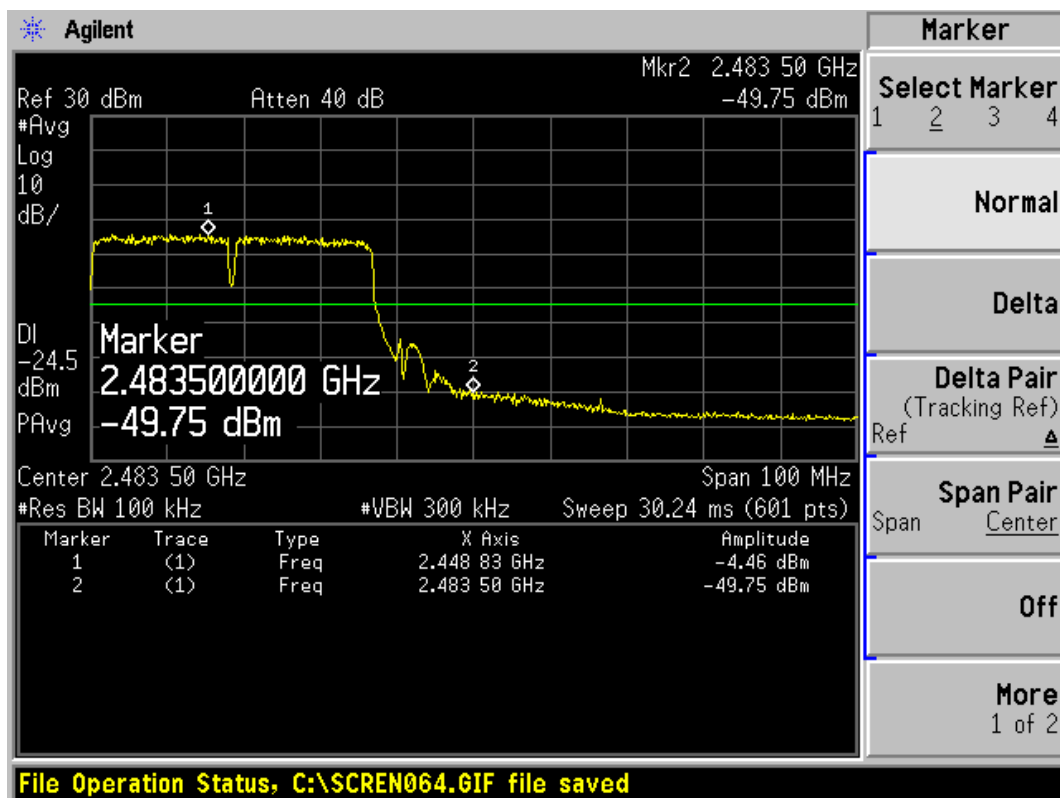
Report No.:RBA1505-0061RF

Page 24 of 124

802.11n (HT40)



802.11n, Channel No.3



802.11n, Channel No.9

2.6. 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. Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, and the emissions less than 20 dB below the permissible value are reported.

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**.

The field strength of spurious 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 (Y axis) and the antenna is vertical.

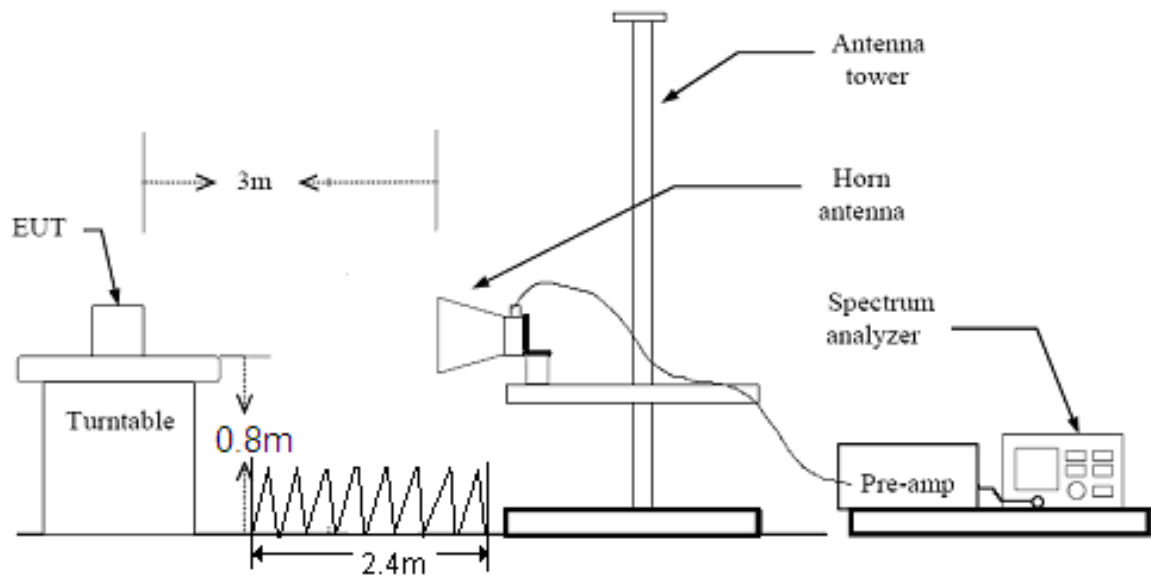
The test is in transmitting mode.

Test setup

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

Report No.:RBA1505-0061RF

Page 26 of 124



Note: Area side:2.4mX3.6m

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			

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

Report No.:RBA1505-0061RF

Page 27 of 124

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

§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

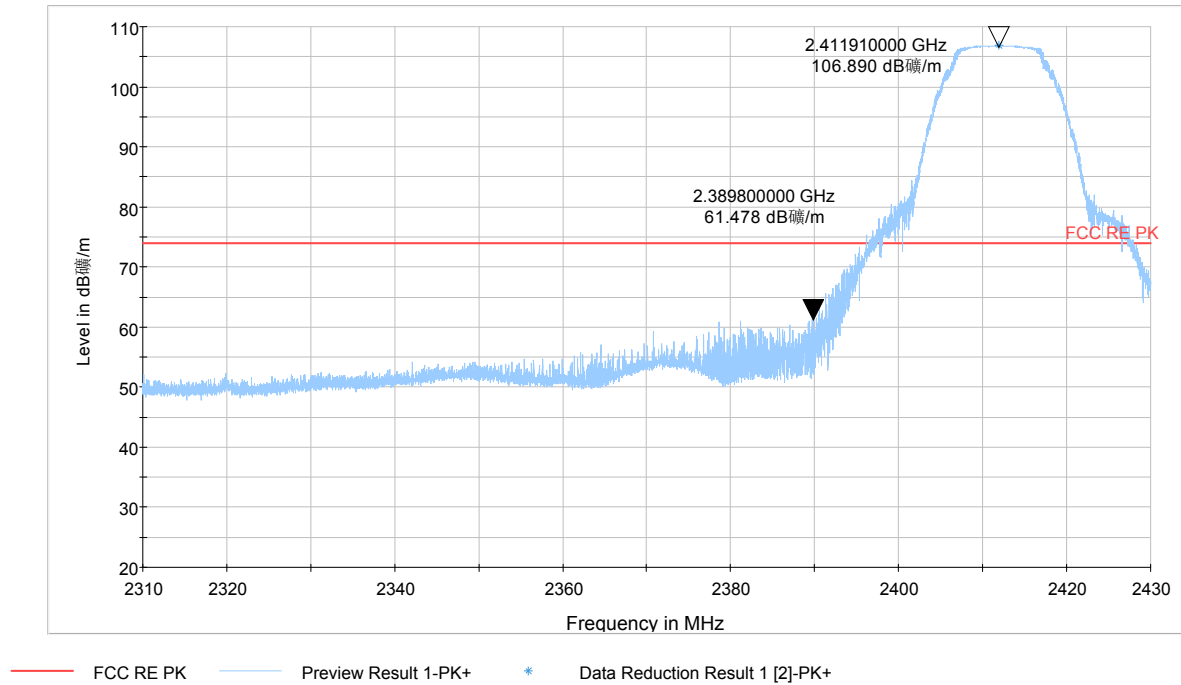
Report No.:RBA1505-0061RF

Page 28 of 124

Test Results:PASS

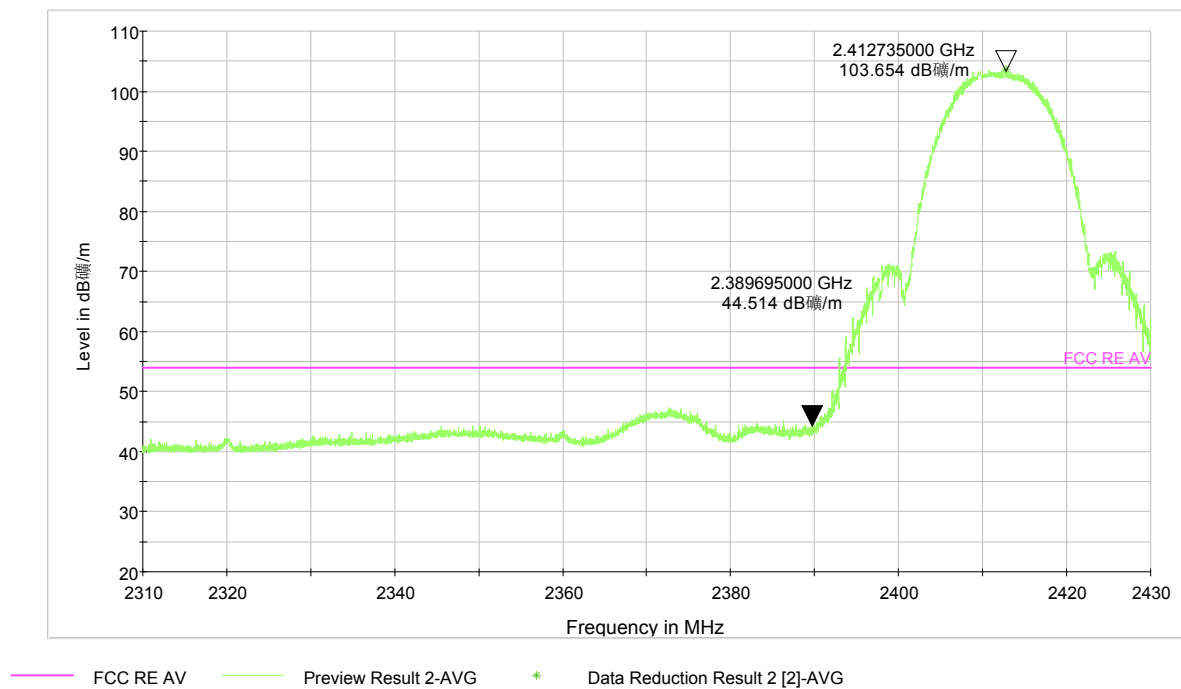
802.11b-Channel 1:

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.

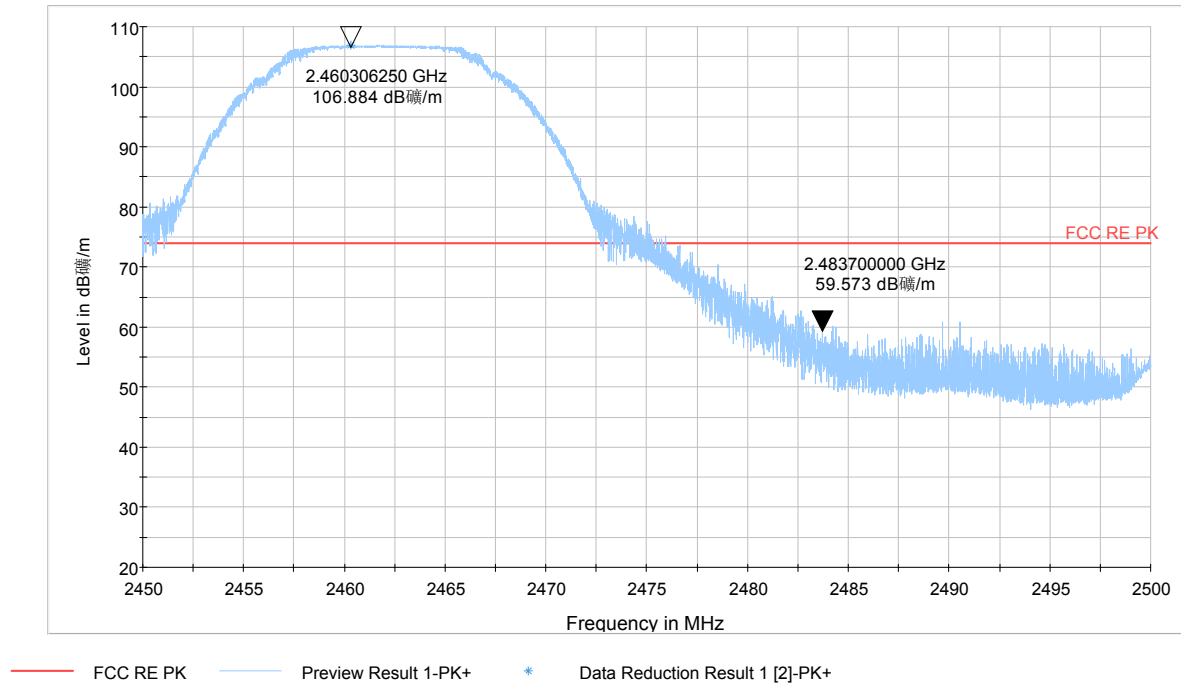
Test Report

Report No.:RBA1505-0061RF

Page 29of 124

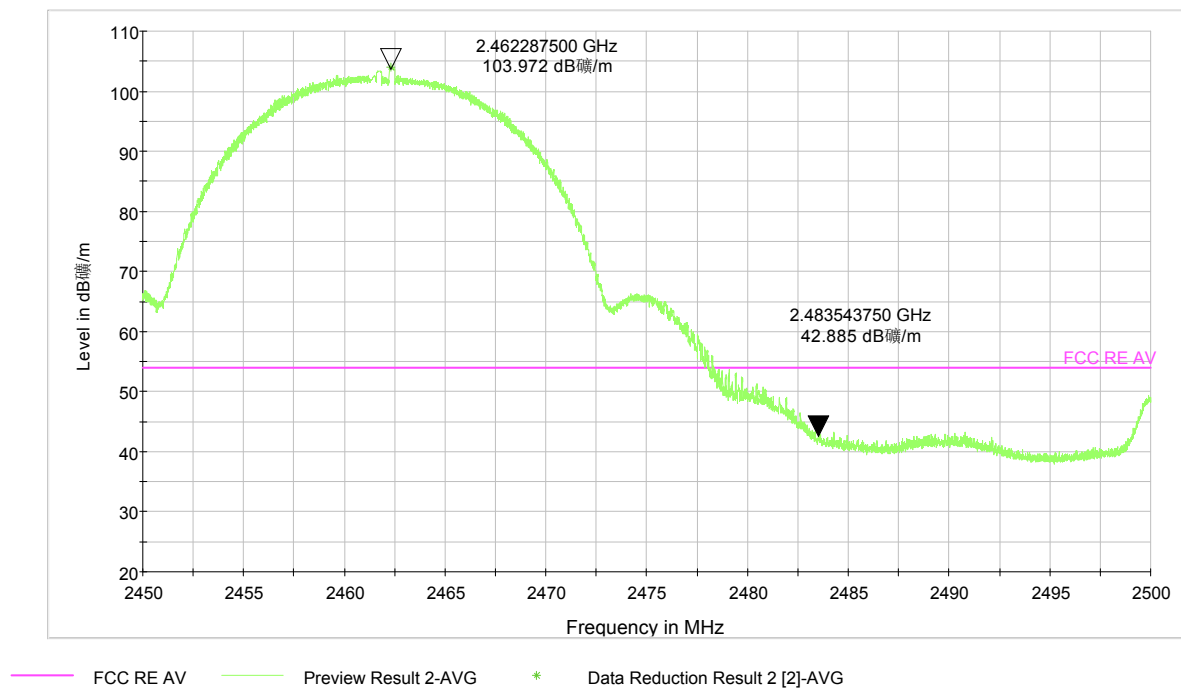
802.11b-Channel 11:

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.

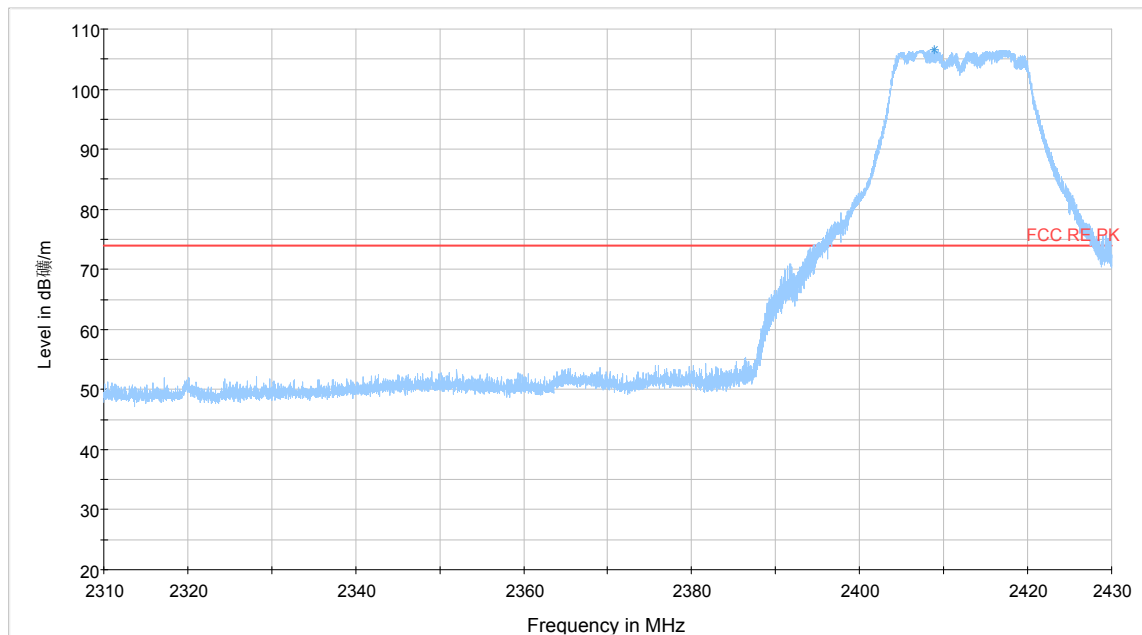
Test Report

Report No.:RBA1505-0061RF

Page 30 of 124

802.11g-Channel 1:

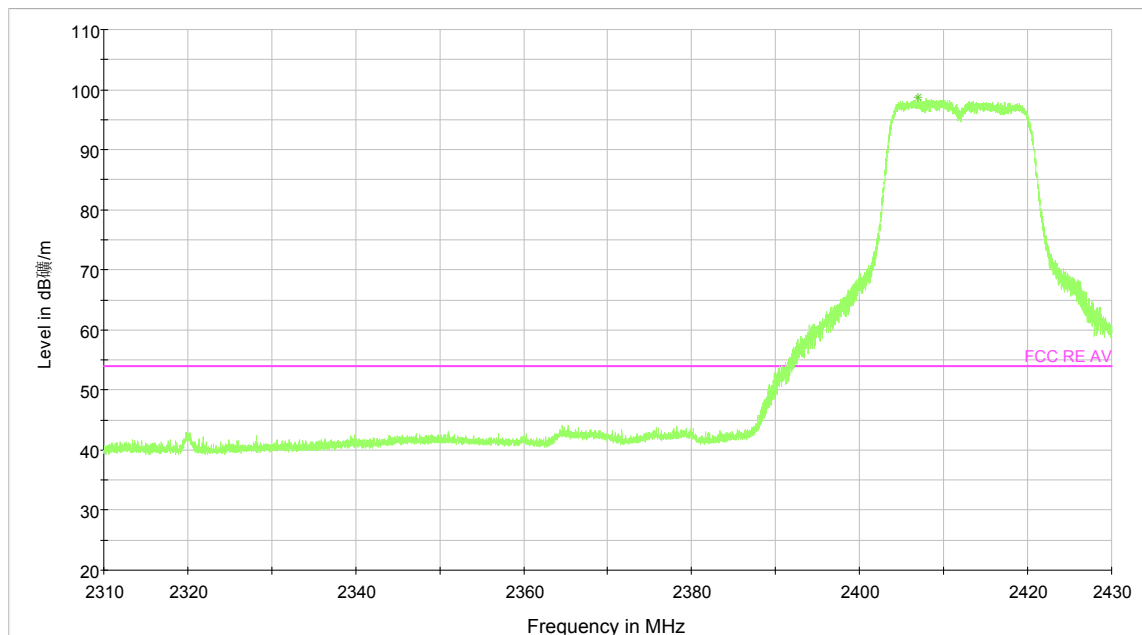
Peak



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.

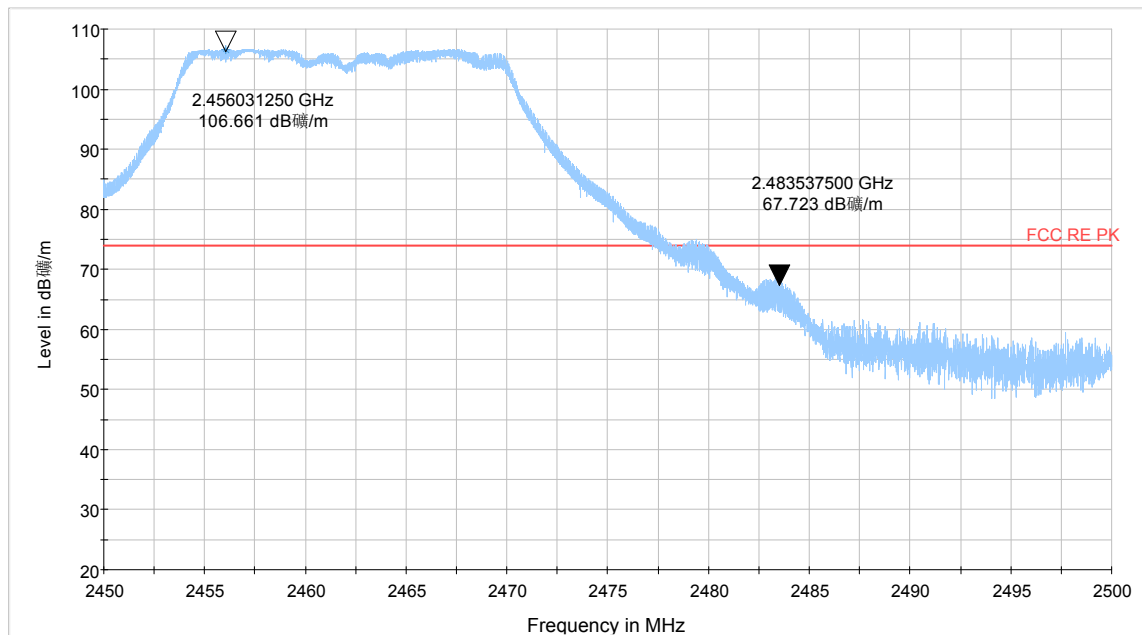
Test Report

Report No.:RBA1505-0061RF

Page 31 of 124

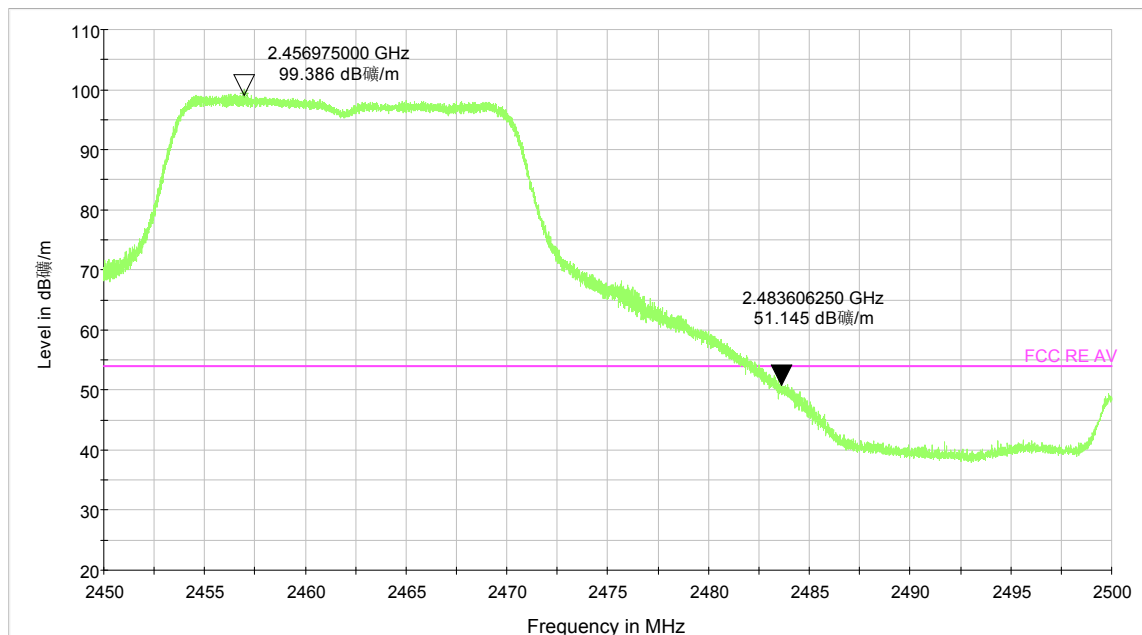
802.11g-Channel 11:

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.

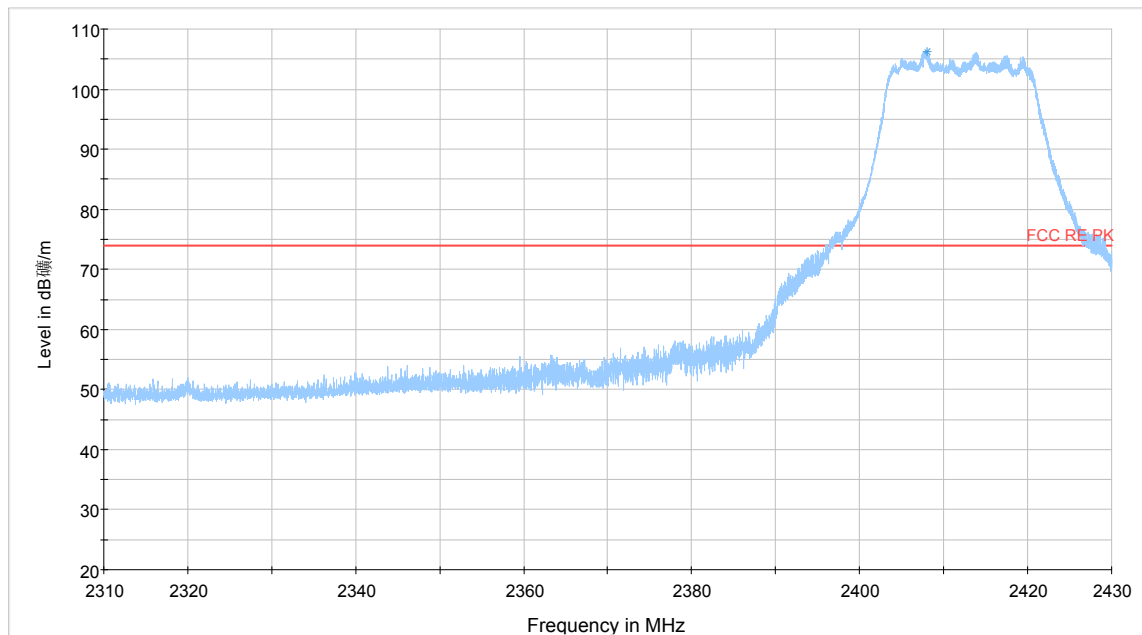
Test Report

Report No.:RBA1505-0061RF

Page 32of 124

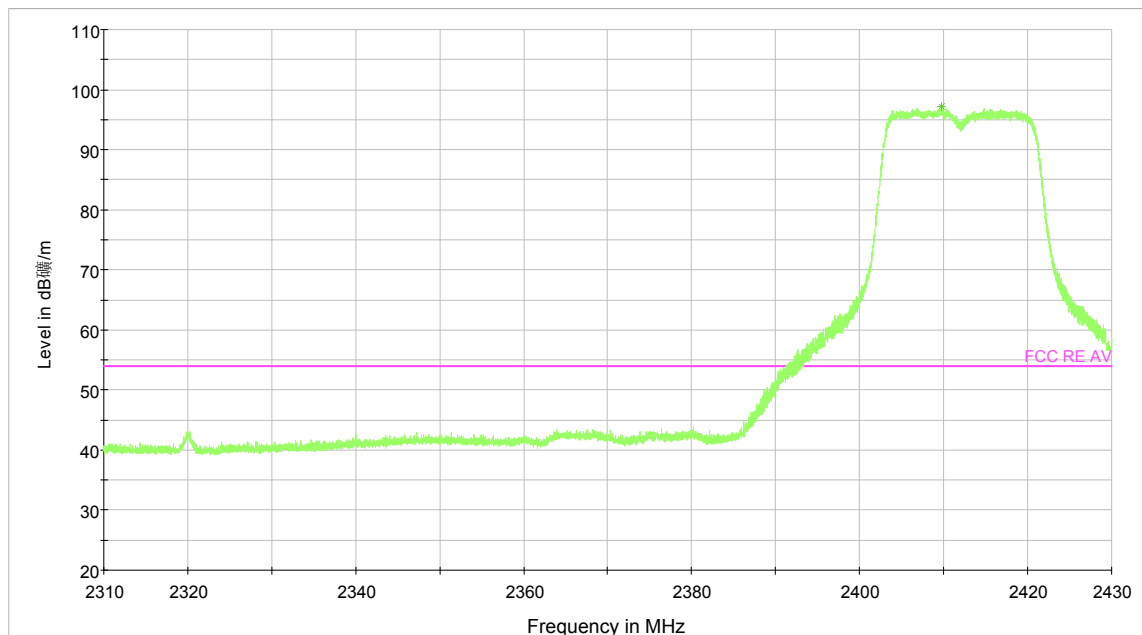
802.11n-Channel 1(HT20):

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.

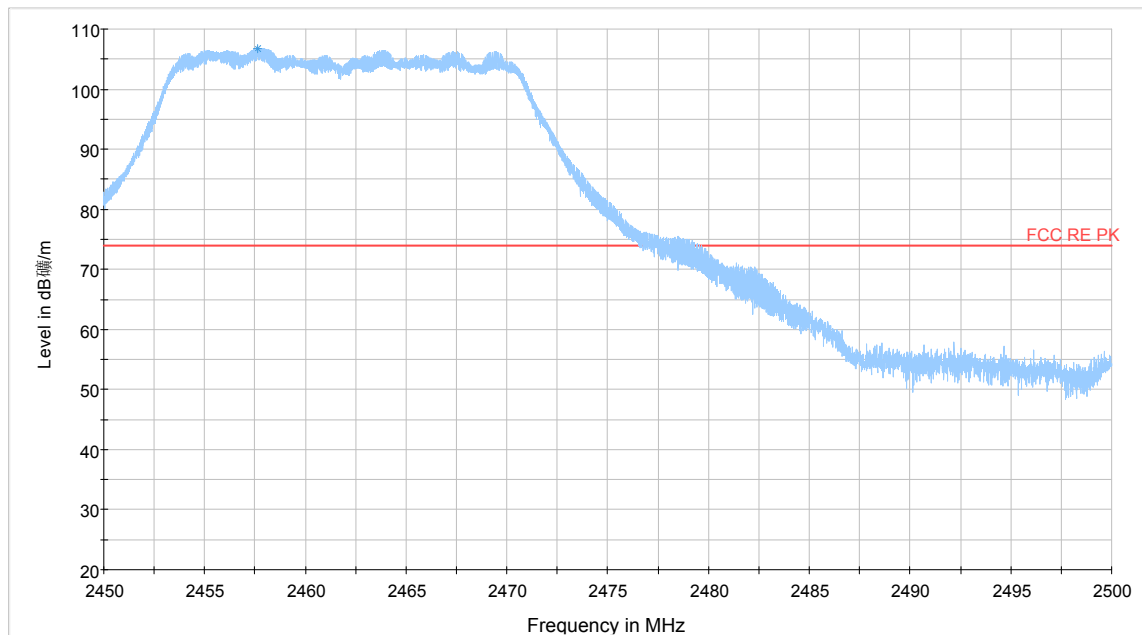
Test Report

Report No.:RBA1505-0061RF

Page 33 of 124

802.11n-Channel 11(HT20):

Peak

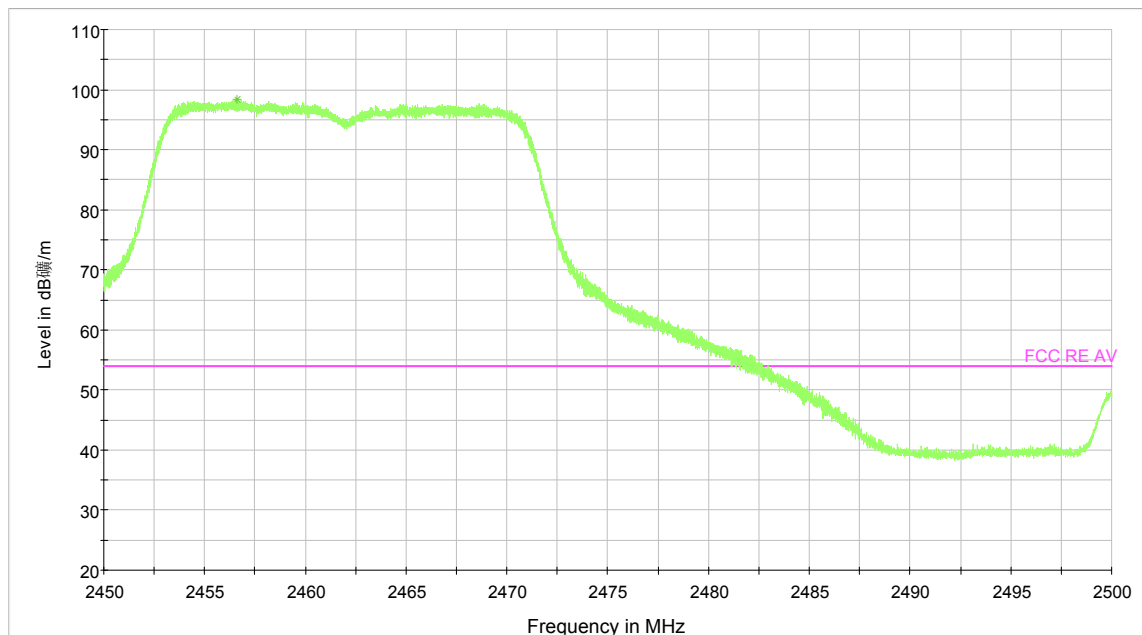


— FCC RE PK — Preview Result 1-PK+ * Data Reduction Result 1 [2]-PK+

Note: The signal beyond the limit is carrier

Channel 11

Average



— FCC RE AV — Preview Result 2-AVG * Data Reduction Result 2 [2]-AVG

Note: The signal beyond the limit is carrier

Channel 11

TA Technology (Shanghai) Co., Ltd.

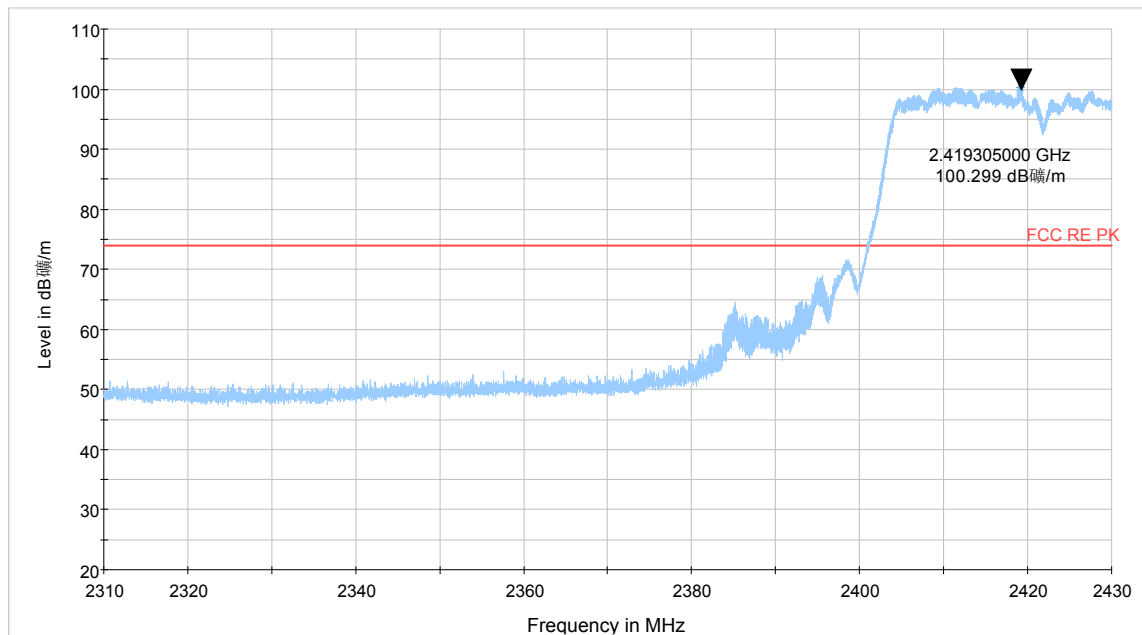
Test Report

Report No.:RBA1505-0061RF

Page 34 of 124

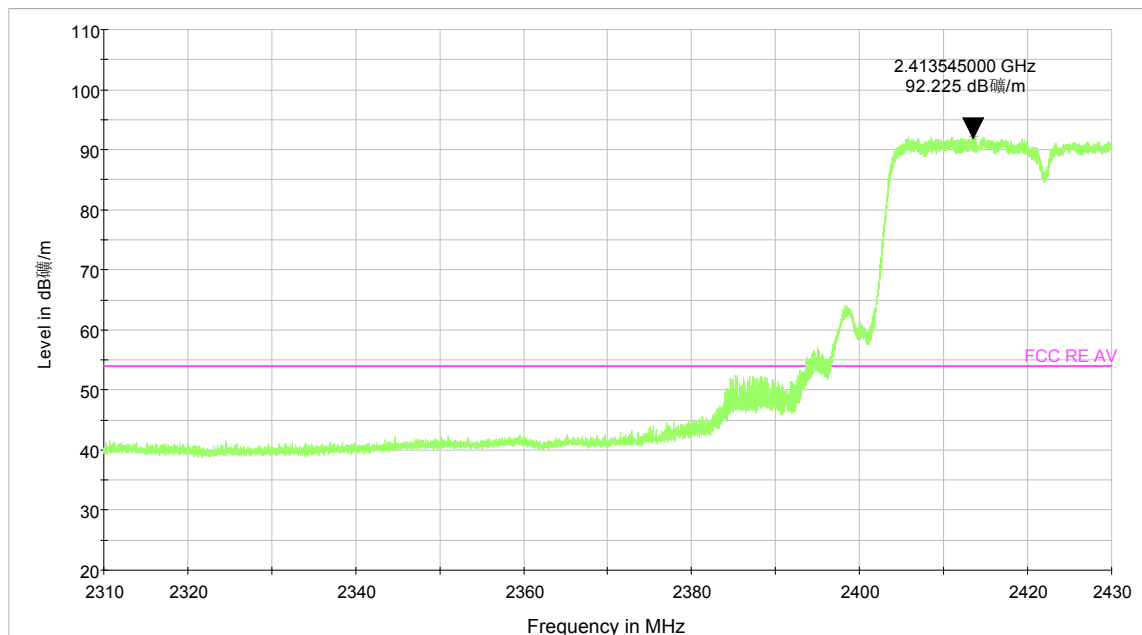
802.11n-Channel 3(HT40):

Peak



Note: The signal beyond the limit is carrier
Channel 3

Average



Note: The signal beyond the limit is carrier
Channel 3

TA Technology (Shanghai) Co., Ltd.

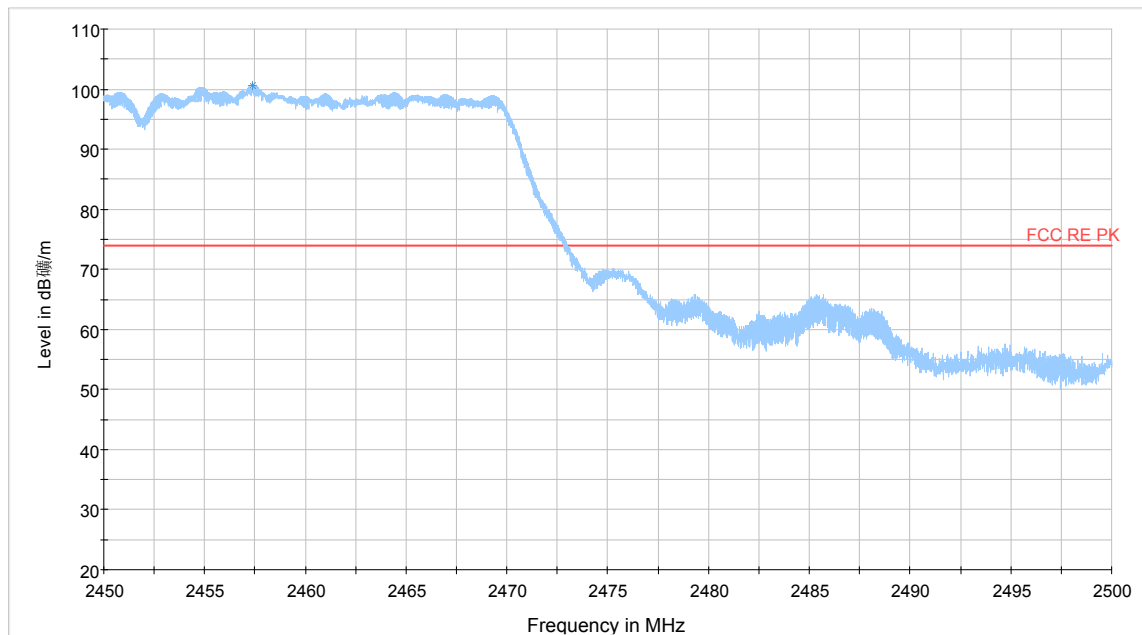
Test Report

Report No.:RBA1505-0061RF

Page 35of 124

802.11n-Channel 9(HT40):

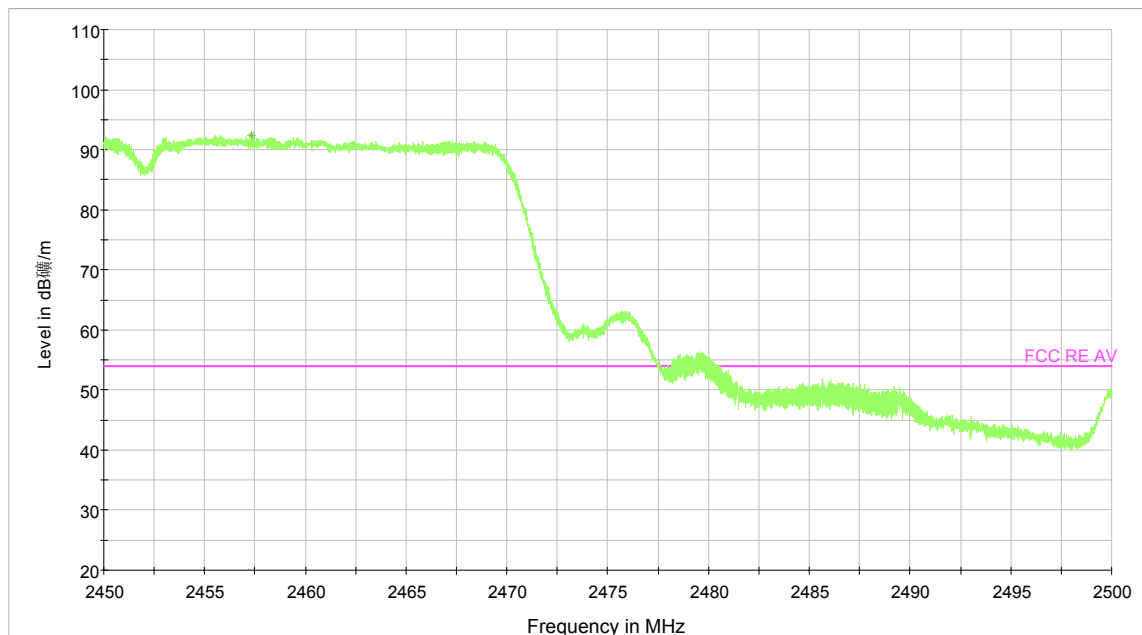
Peak



Note: The signal beyond the limit is carrier

Channel 9

Average



Note: The signal beyond the limit is carrier

Channel 9

2.7. Power Spectral Density

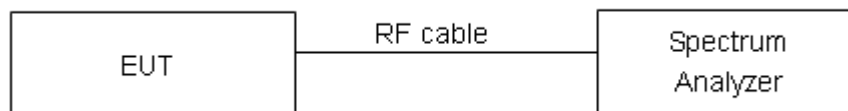
Ambient condition

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 3 kHz and VBW is set to 10 kHz on spectrum analyzer. Set the span to at least 1.5 times the DTS channel bandwidth. Sweep time = auto couple. Trace mode = max hold. 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.:RBA1505-0061RF

Page 37 of 124

Test Results:

Network Standards	Channel Number	Power Spectral Density dBm / 3kHz	Conclusion
802.11b	1	-9.01	PASS
	6	-9.16	PASS
	11	-10.16	PASS
802.11g	1	-8.81	PASS
	6	-9.17	PASS
	11	-9.96	PASS
802.11n HT20	1	-9.13	PASS
	6	-9.51	PASS
	11	-10.59	PASS
802.11n HT40	3	-17.498	PASS
	6	-11.25	PASS
	9	-10.56	PASS

MIMO

Network Standards	Channel Number	Power Spectral Density dBm / 3kHz	Conclusion
802.11n HT20	1	-5.36	PASS
	6	-5.33	PASS
	11	-6.92	PASS
802.11n HT40	3	-4.80	PASS
	6	-4.86	PASS
	9	-6.05	PASS

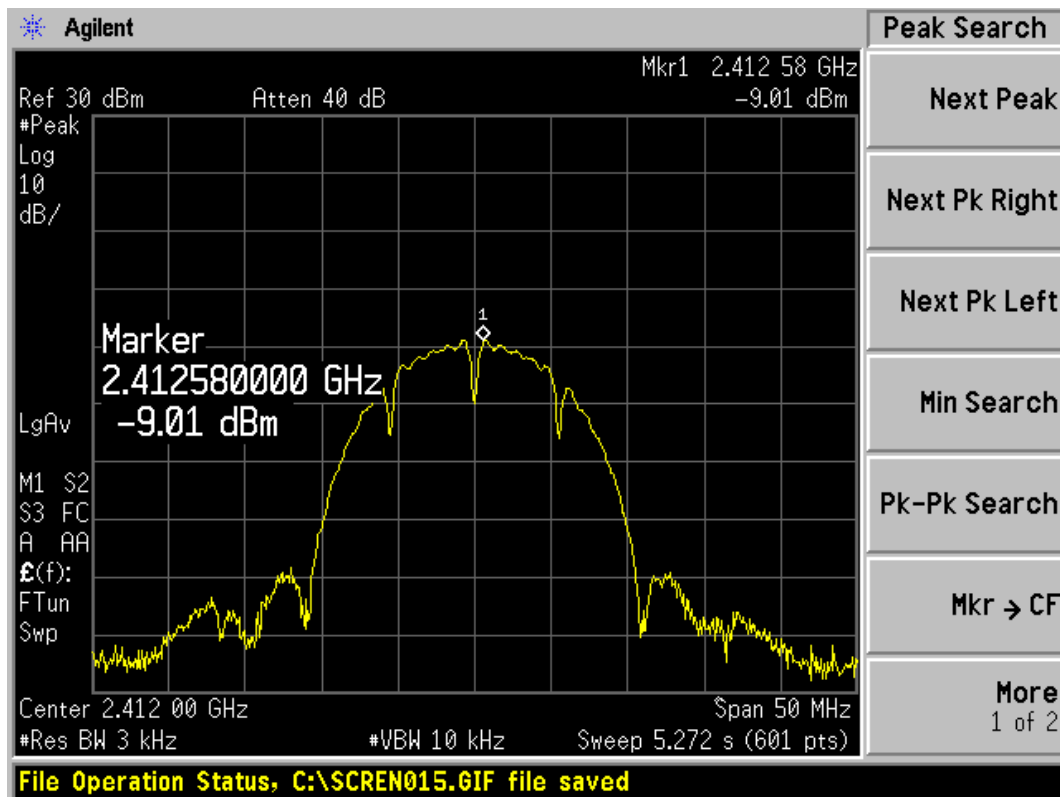
TA Technology (Shanghai) Co., Ltd.
Test Report

Report No.:RBA1505-0061RF

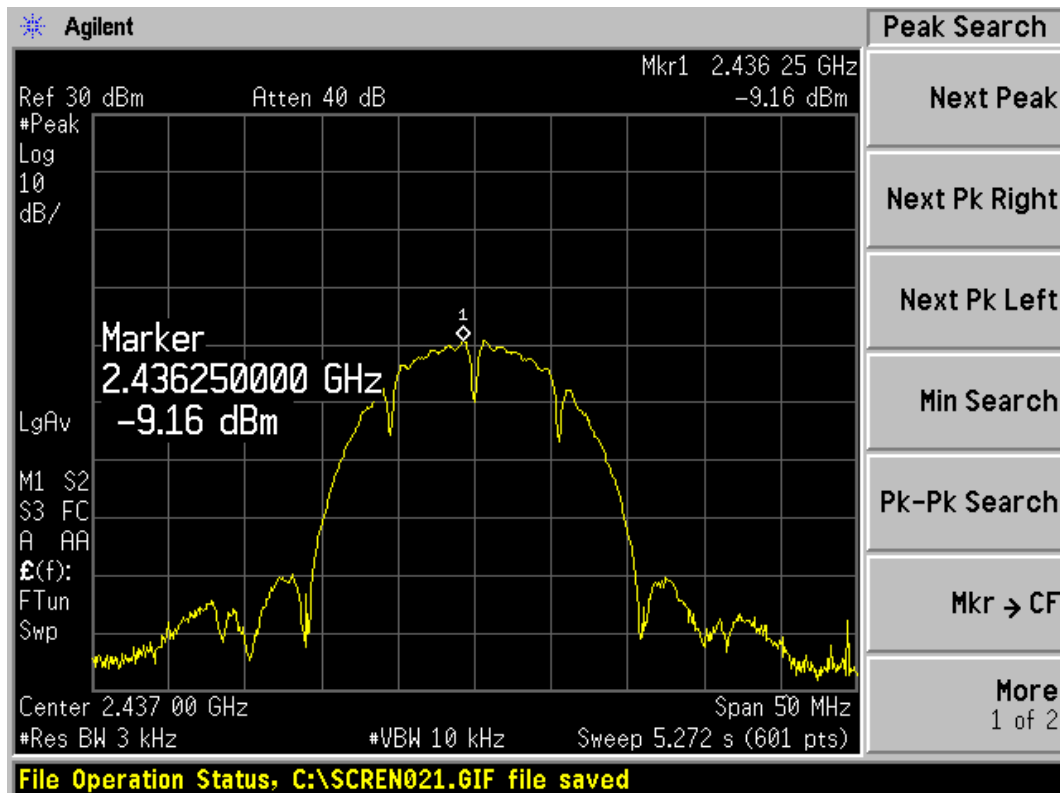
Page 38 of 124

Antenna1:

802.11b



802.11b, Channel No. 1

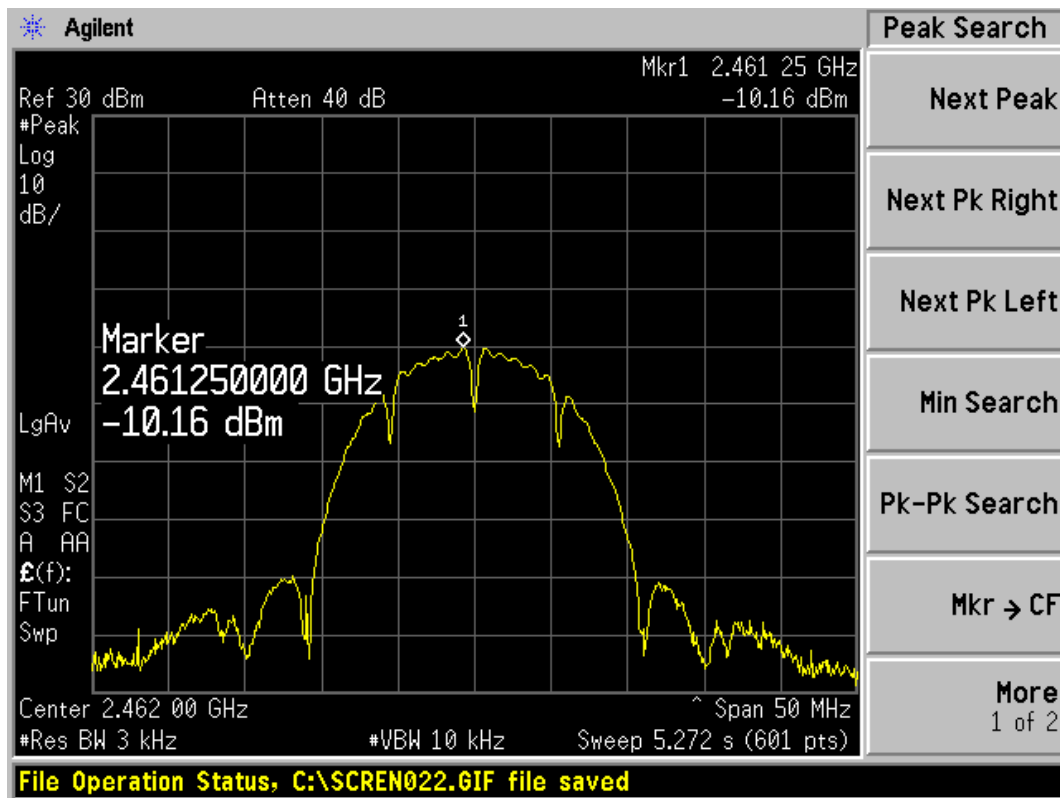


802.11b, Channel No. 6

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

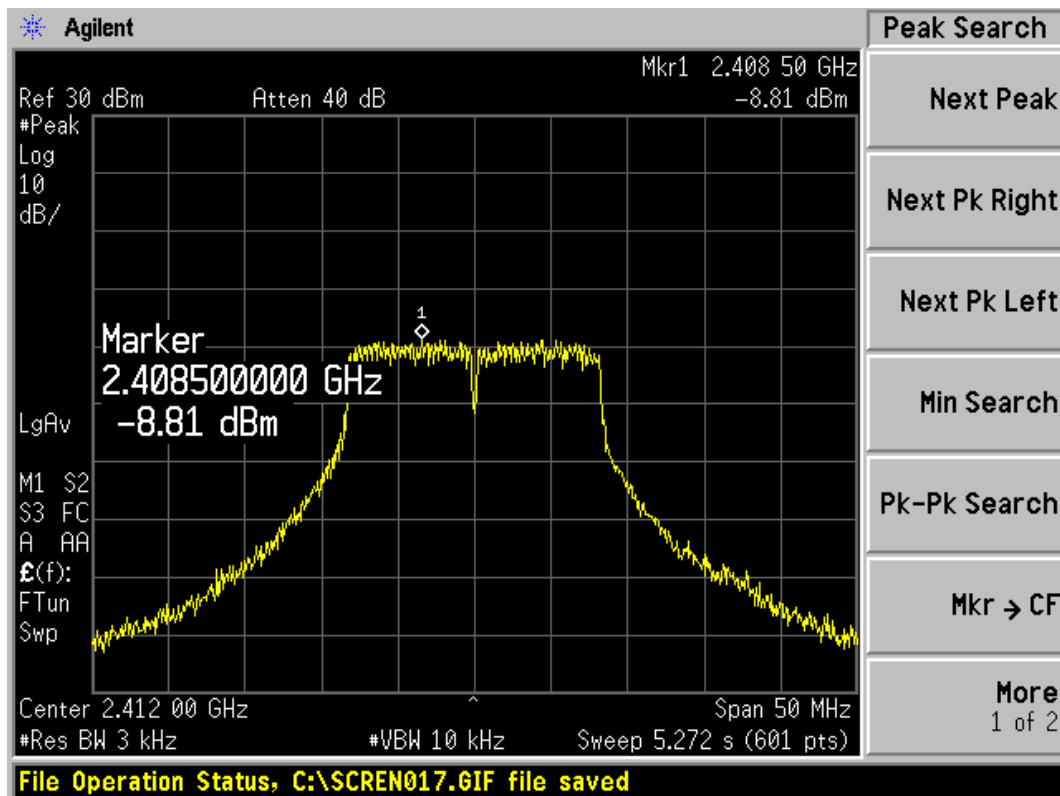
Report No.:RBA1505-0061RF

Page 39 of 124



802.11b, Channel No. 11

802.11g

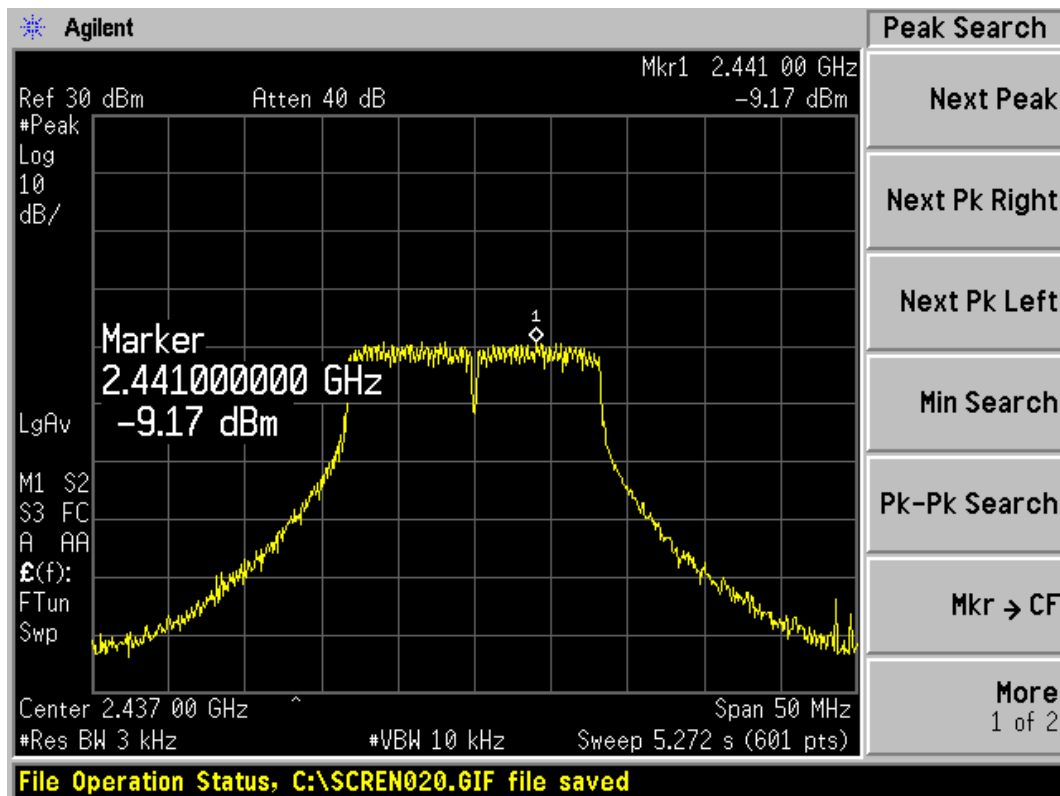


802.11g, Channel No. 1

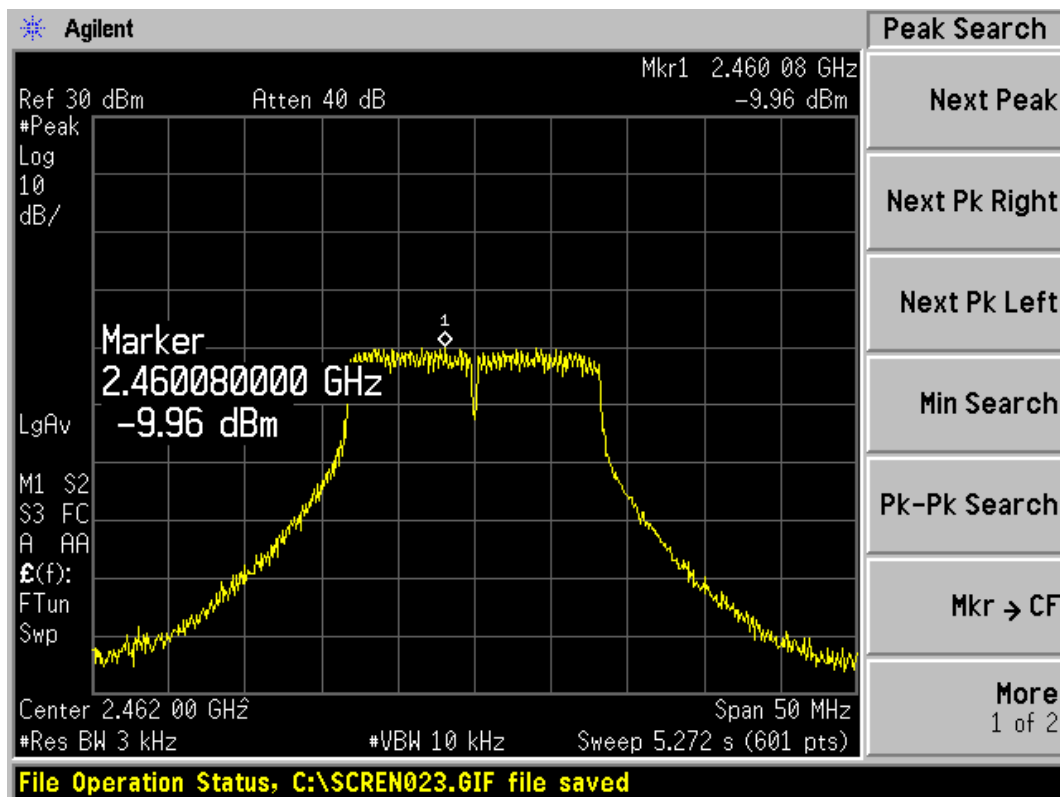
TA Technology (Shanghai) Co., Ltd.
Test Report

Report No.:RBA1505-0061RF

Page 40 of 124



802.11g, Channel No. 6



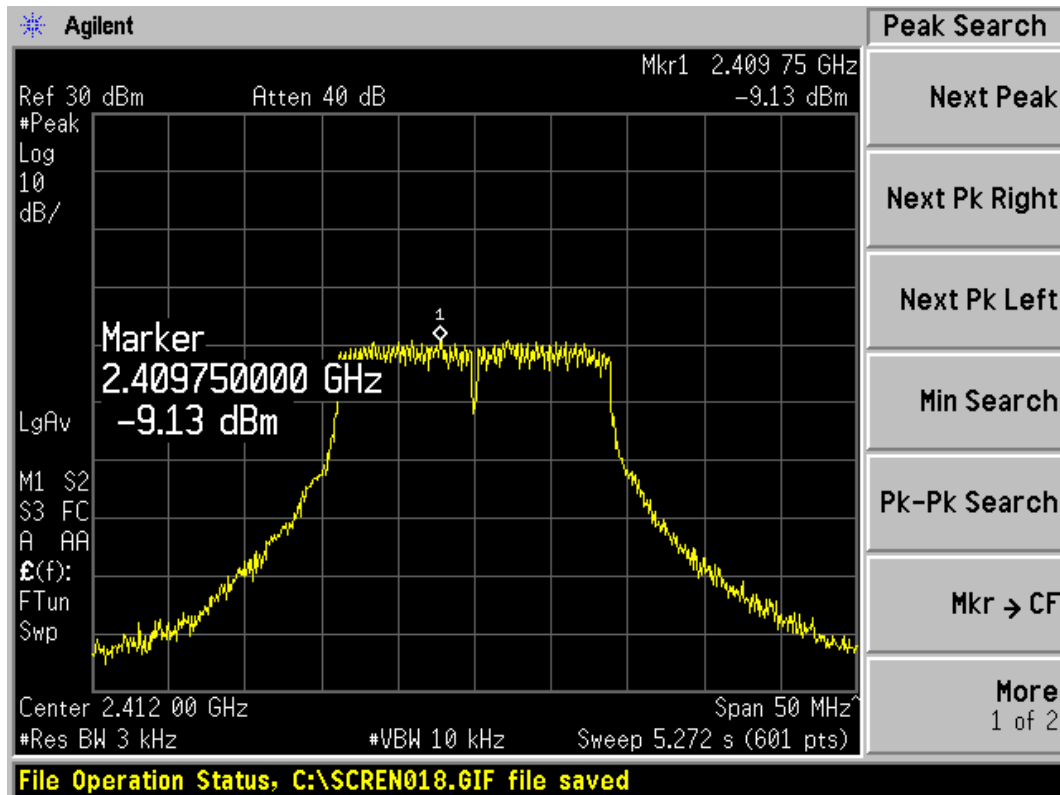
802.11g, Channel No. 11

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

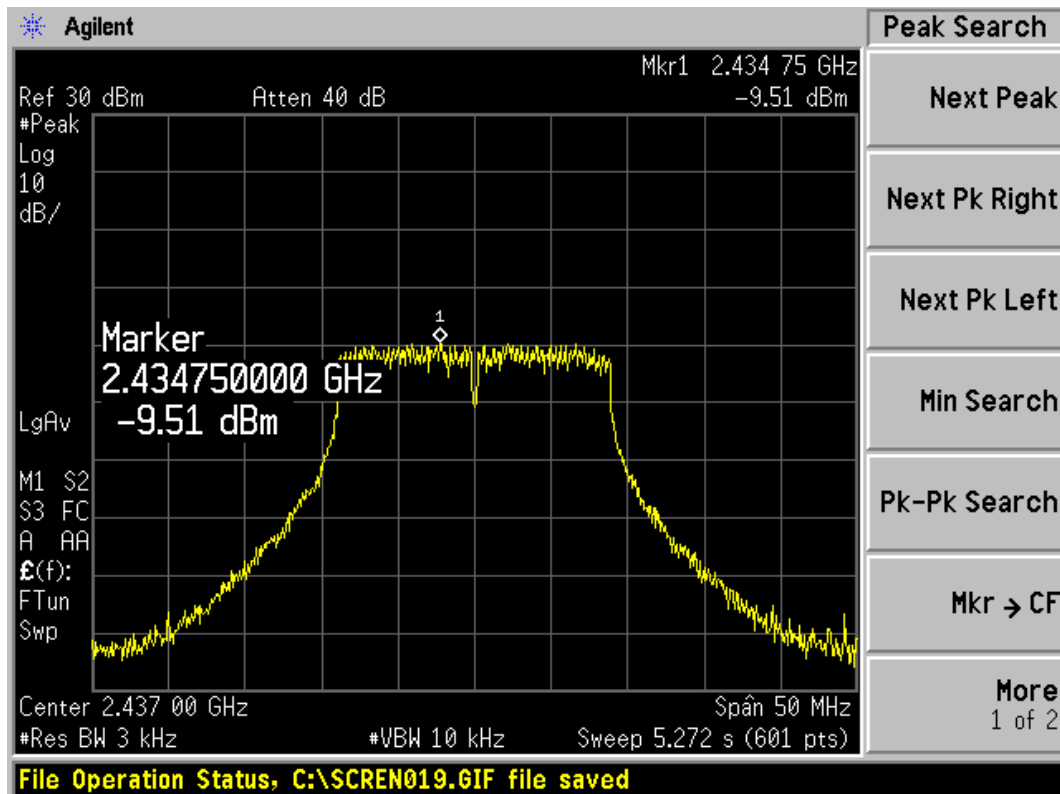
Report No.:RBA1505-0061RF

Page 41 of 124

802.11n (HT20)



802.11n, Channel No. 1

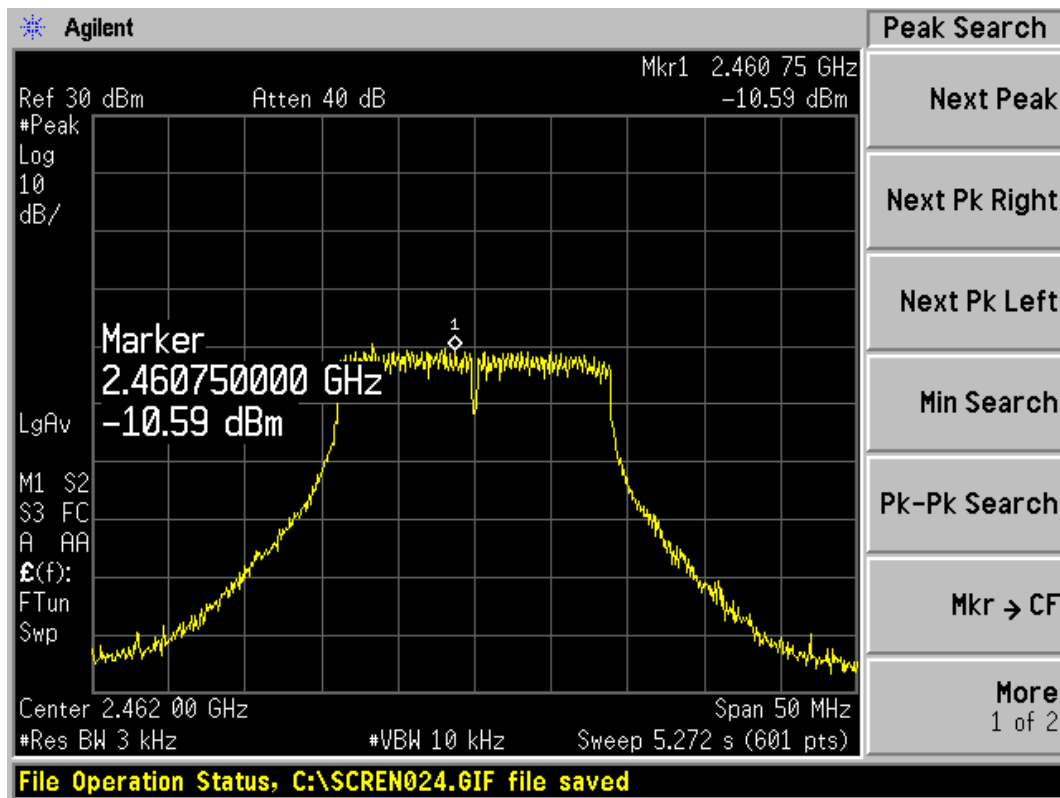


802.11n, Channel No. 6

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

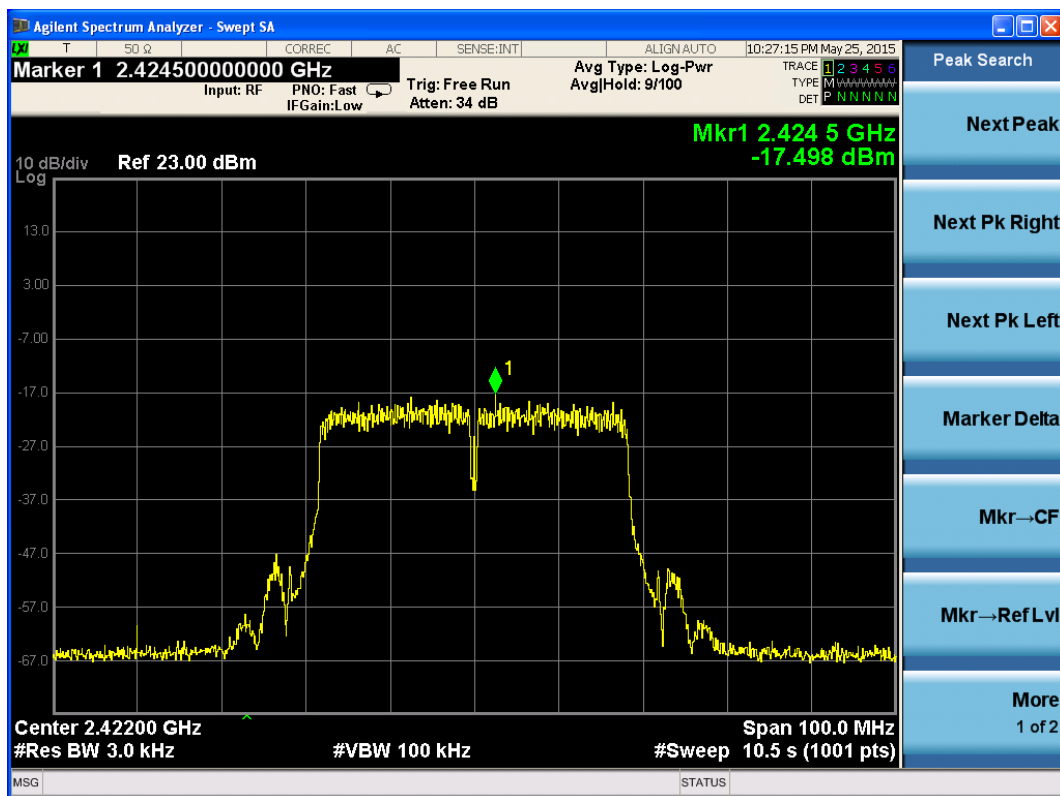
Report No.:RBA1505-0061RF

Page 42 of 124



802.11n, Channel No. 11

802.11n (HT40)

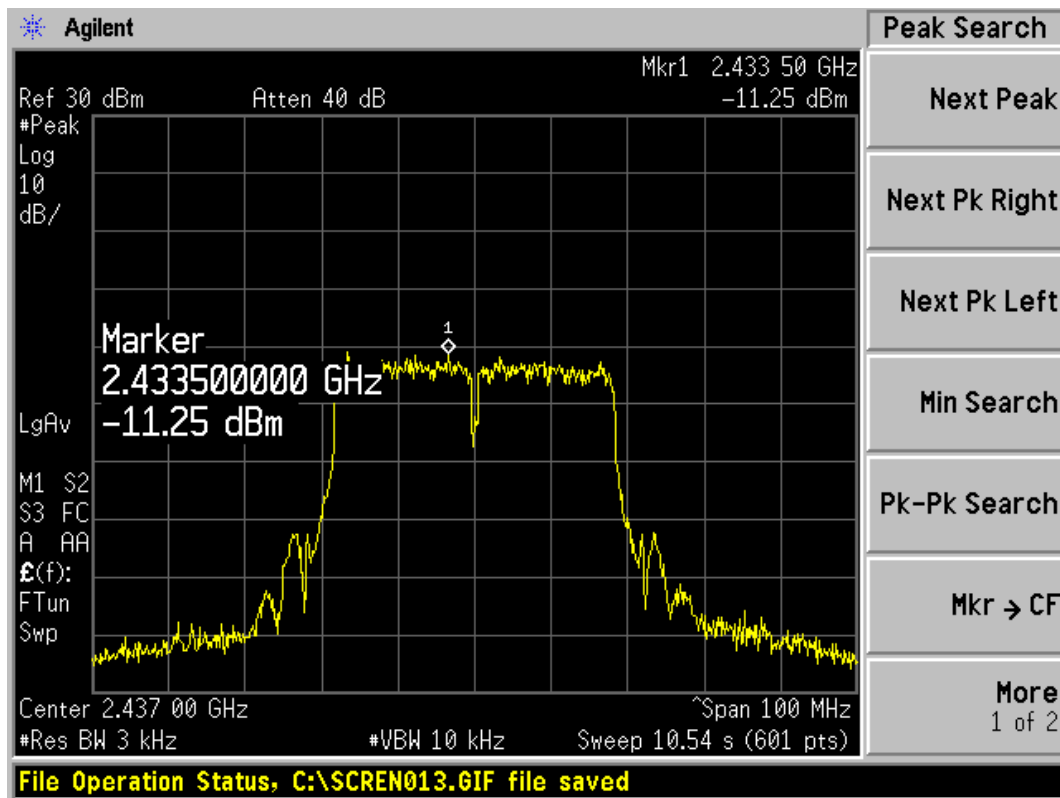


802.11n, Channel No. 3

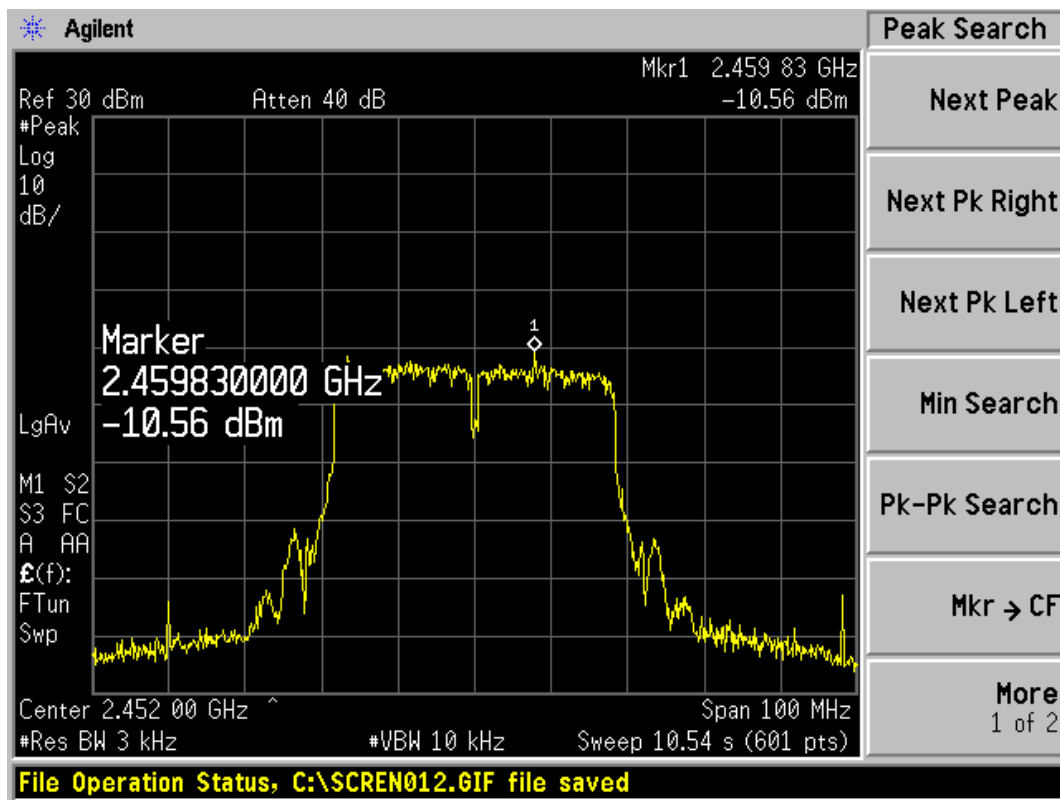
TA Technology (Shanghai) Co., Ltd.
Test Report

Report No.:RBA1505-0061RF

Page 43 of 124



802.11n, Channel No. 6



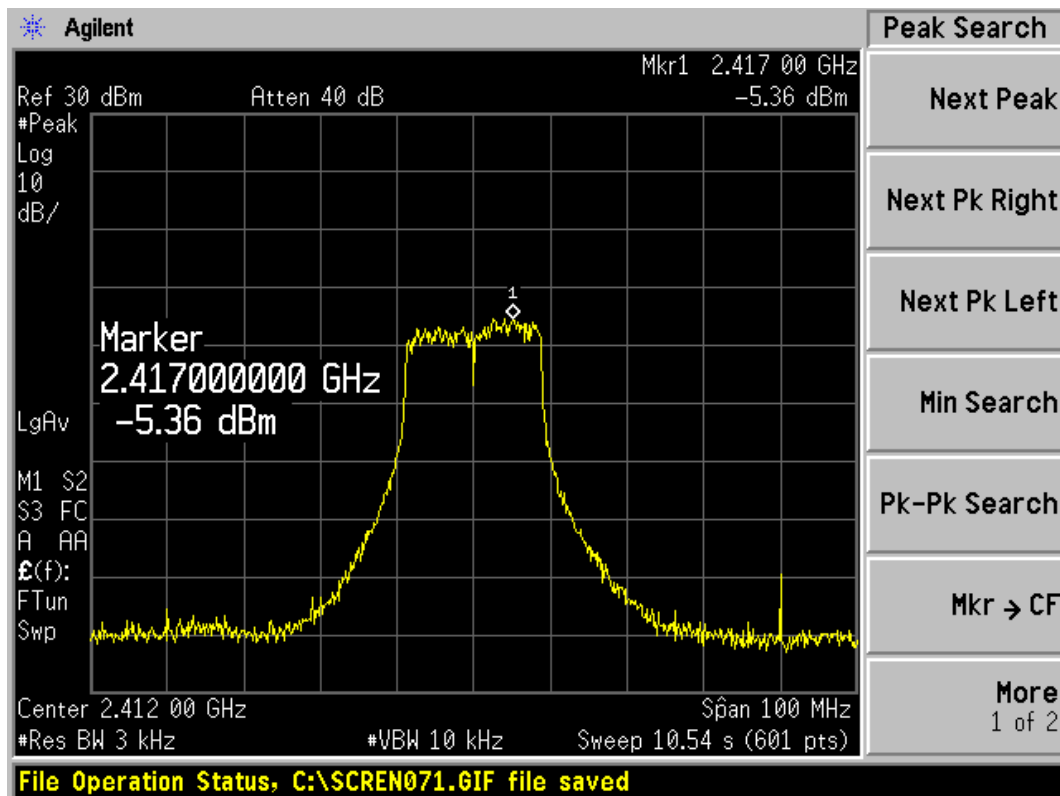
802.11n, Channel No. 9

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

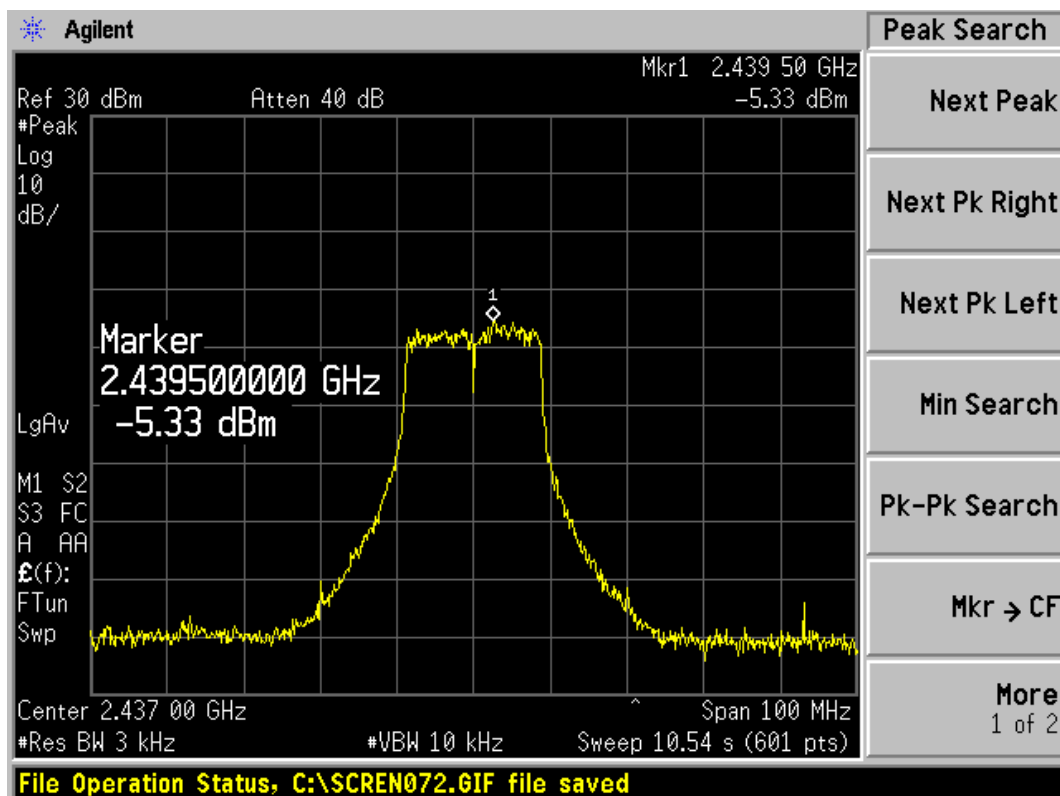
Report No.:RBA1505-0061RF

Page 44 of 124

MIMO:
N20



802.11n, Channel No. 1

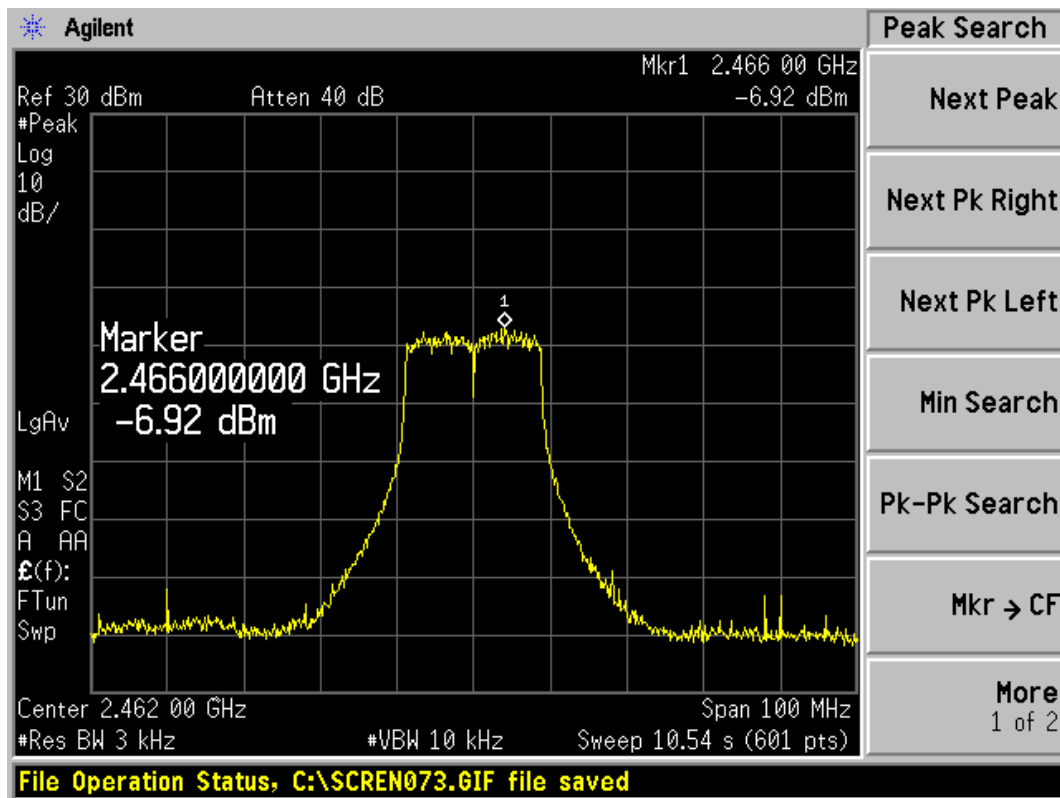


802.11n, Channel No. 6

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

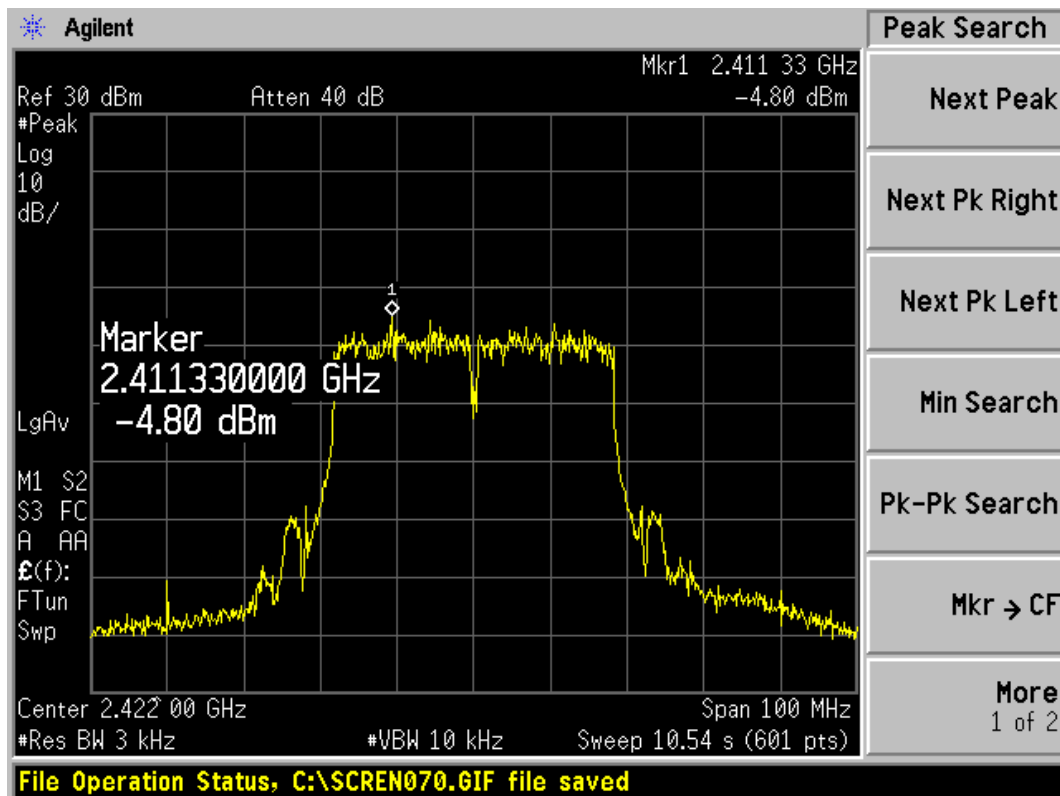
Report No.:RBA1505-0061RF

Page 45 of 124



802.11n, Channel No. 11

N40

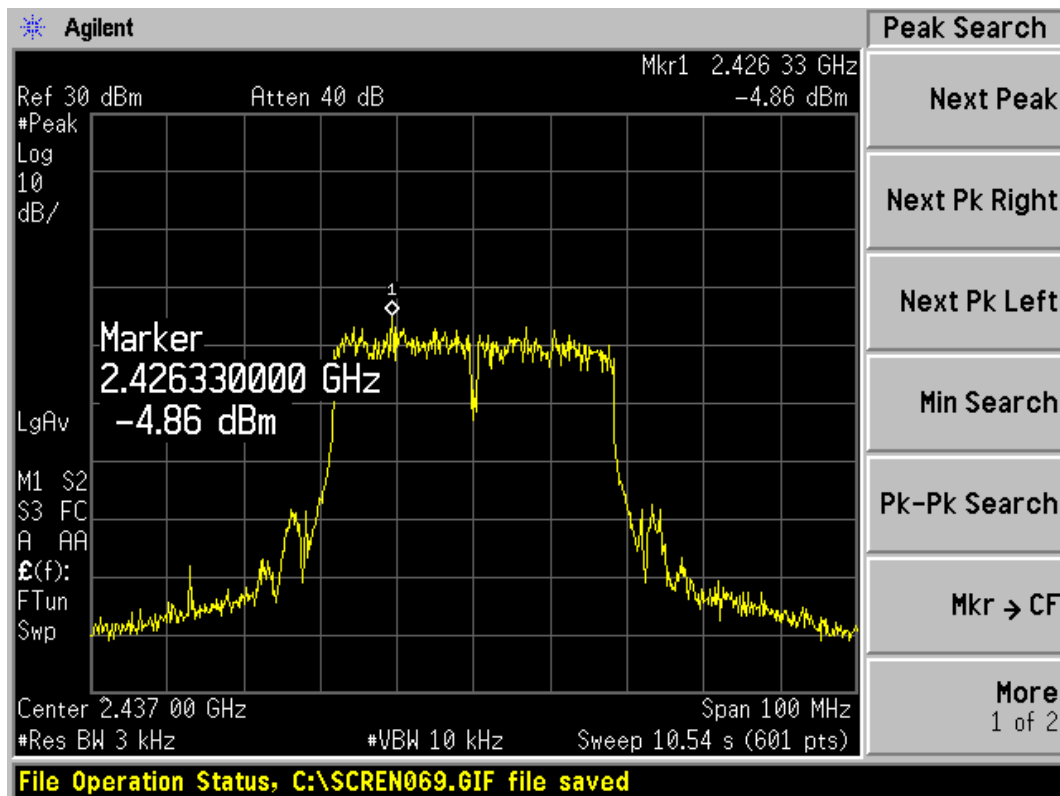


802.11n, Channel No. 3

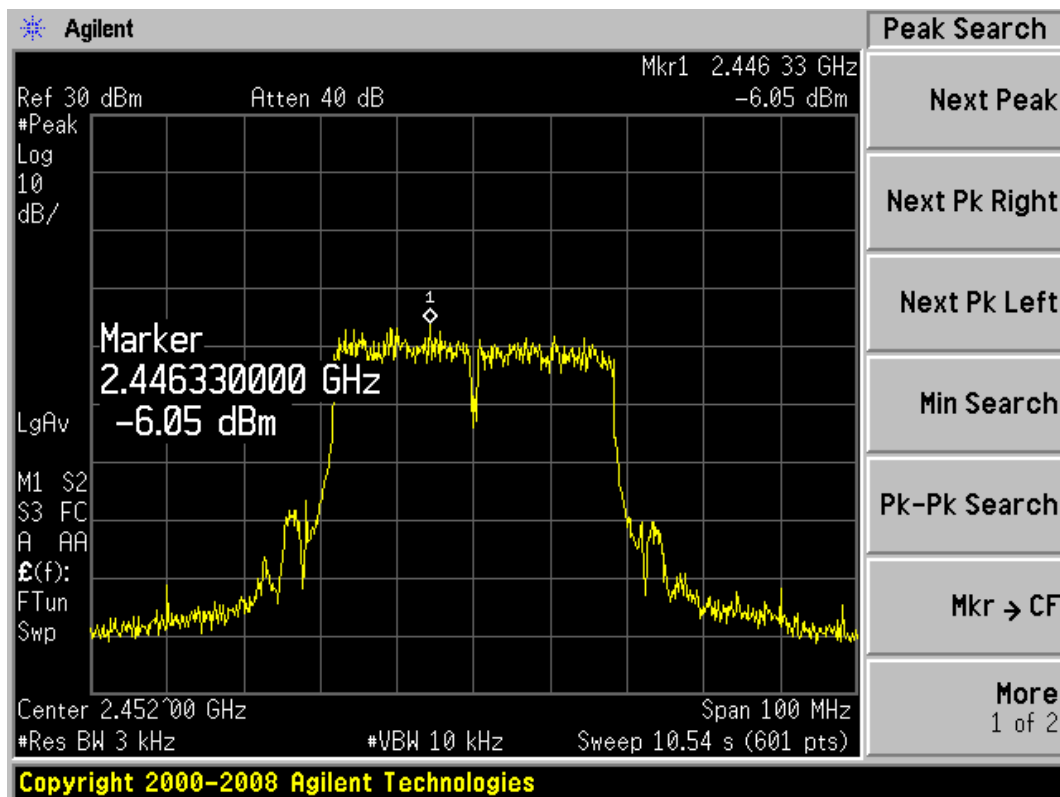
TA Technology (Shanghai) Co., Ltd.
Test Report

Report No.:RBA1505-0061RF

Page 46 of 124



802.11n, Channel No. 6



802.11n, Channel No. 9

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

Report No.:RBA1505-0061RF

Page 47 of 124

2.8. 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 WIFI test set via a power splitter with a known loss. The spectrum analyzer scans from 30MHz to the 10th harmonic of the carrier. The peak detector is used. RBW and VBW are set to 100 kHz, Sweep is set to ATUO. The test is in transmitting 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.”

Network Standards	Carrier frequency (MHz)	Reference value (dBm)	Limit
802.11b	2412	1.735	≤ -18.265
	2437	-7.123	≤ -27.123
	2462	-1.111	≤ -21.111
802.11g	2412	-4.555	≤ -24.555
	2437	-8.547	≤ -28.547
	2462	-5.082	≤ -25.082
802.11n HT20	2412	-4.912	≤ -24.912
	2437	-8.601	≤ -28.601
	2462	-5.783	≤ -25.783

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

Report No.:RBA1505-0061RF

Page 48 of 124

802.11n HT40	2422	-8.222	≤-28.222
	2437	-10.133	≤-30.133
	2452	-9.269	≤-29.269

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.

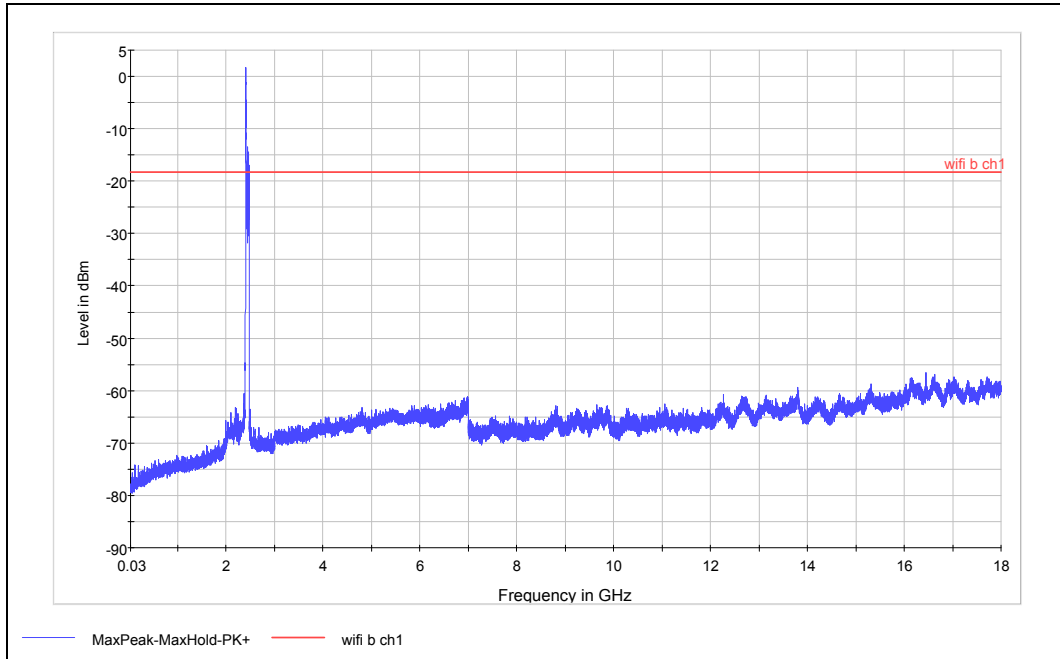
Test Report

Report No.:RBA1505-0061RF

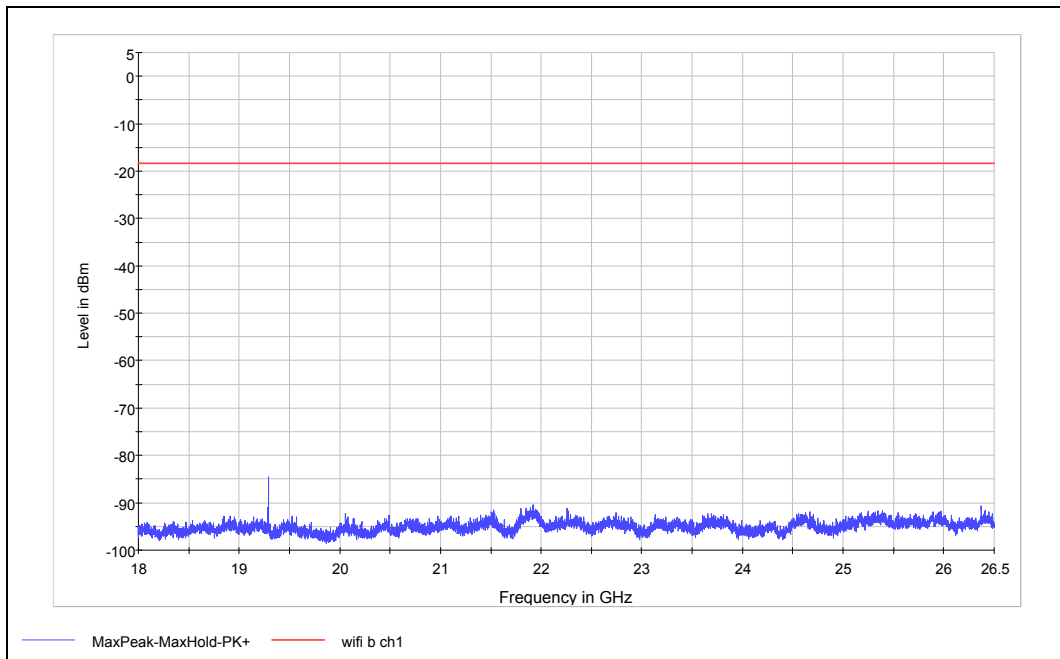
Page 49 of 124

Test Results:

802.11b CH1



Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
8	19295.2	-84.64	-18.26	66.38

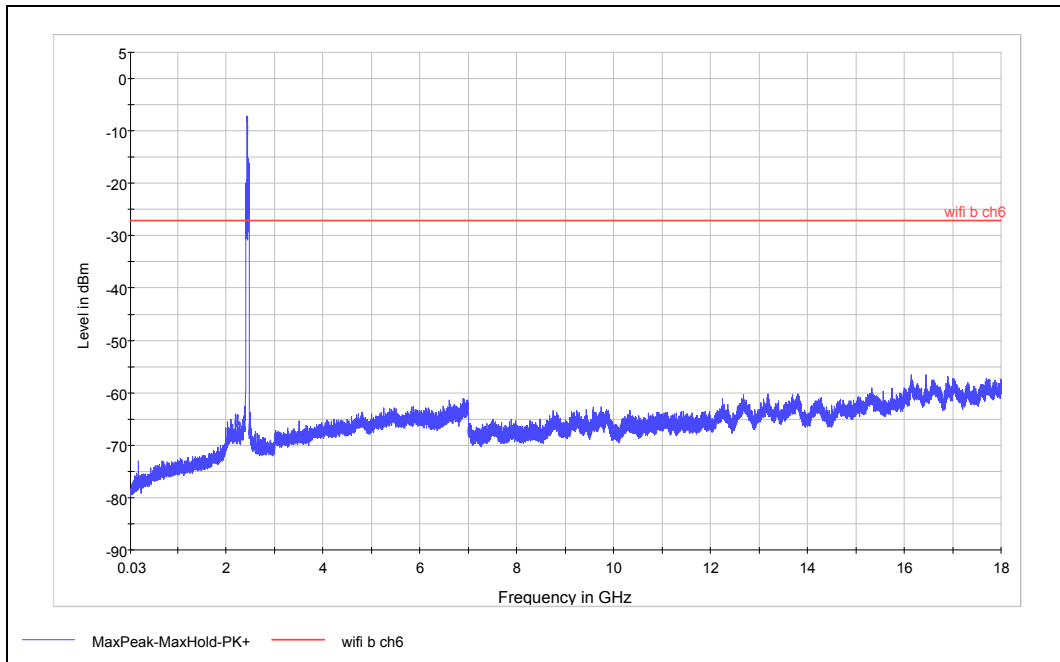
TA Technology (Shanghai) Co., Ltd.

Test Report

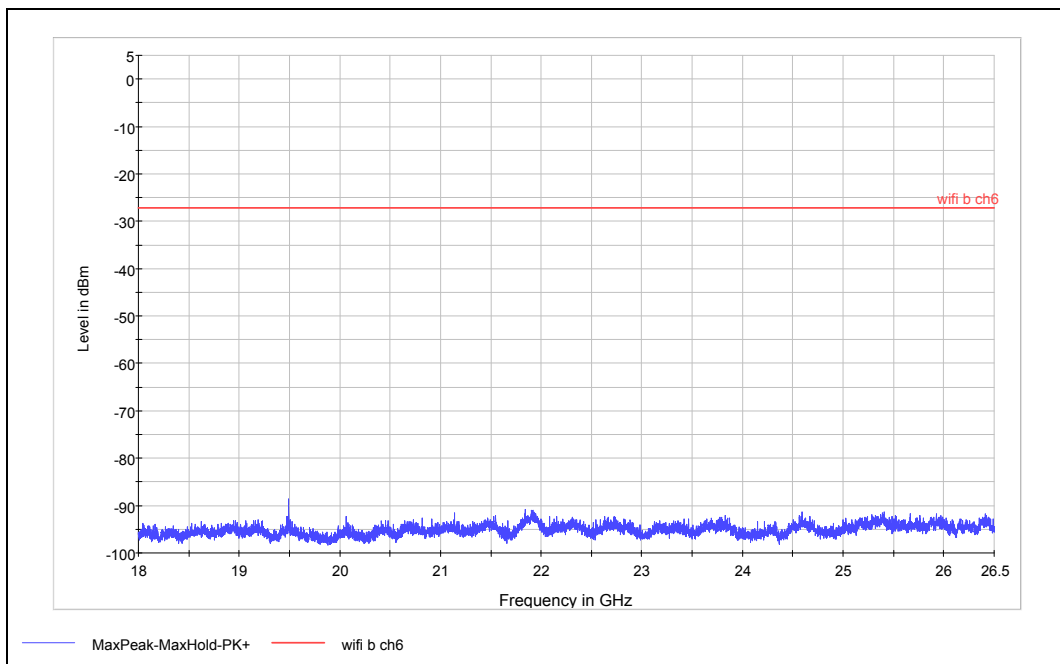
Report No.:RBA1505-0061RF

Page 50 of 124

802.11b CH6



Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
8	19494.9	-88.67	-27.12	61.55

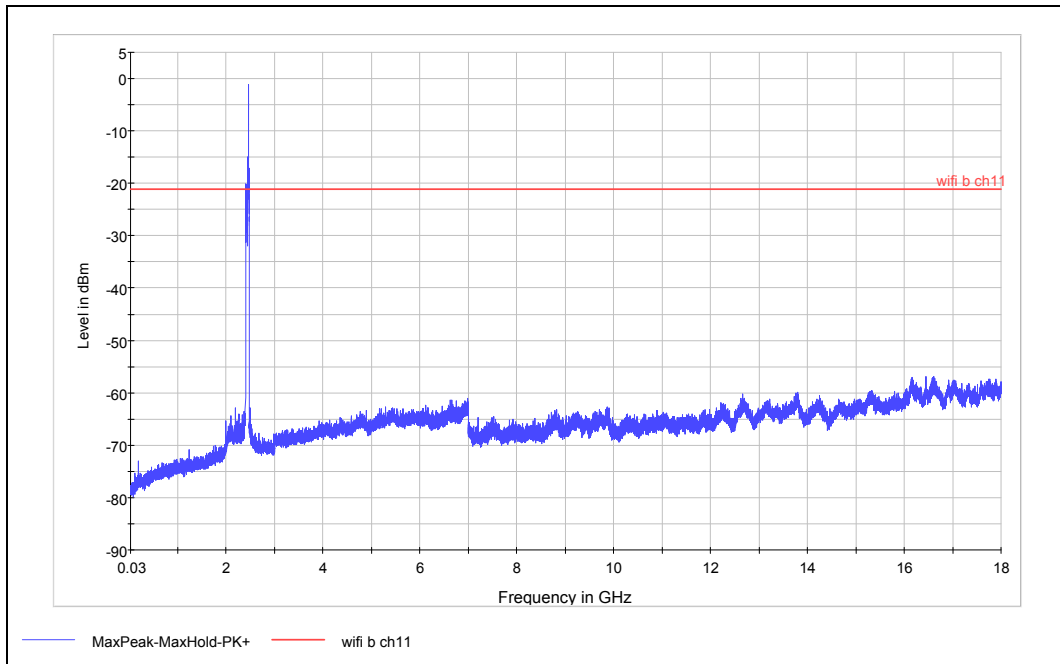
TA Technology (Shanghai) Co., Ltd.

Test Report

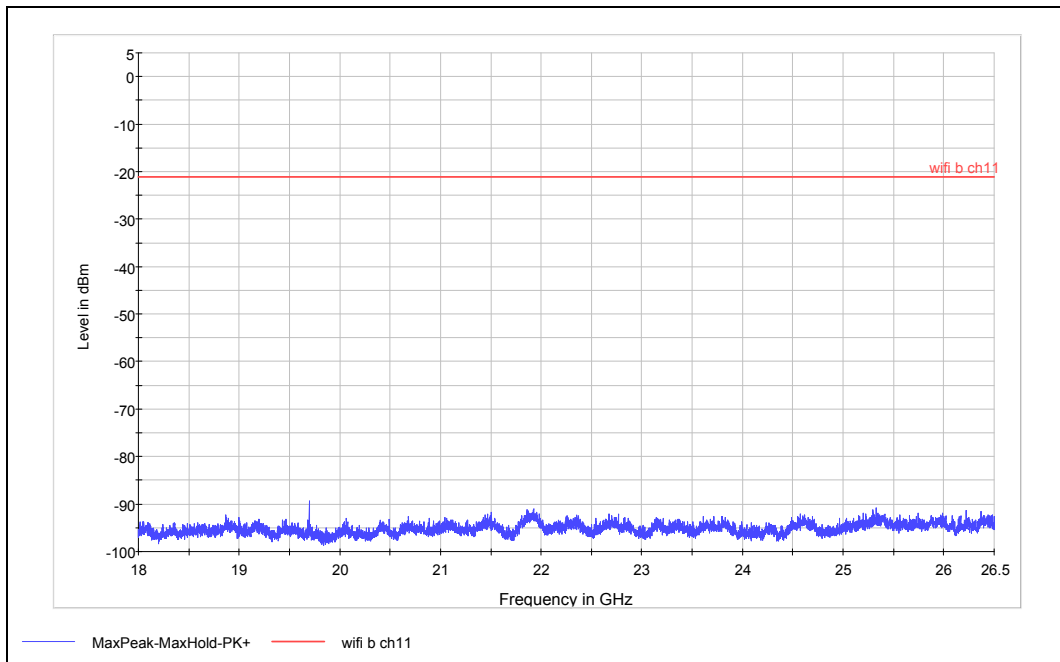
Report No.:RBA1505-0061RF

Page 51 of 124

802.11b CH11



Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
8	19675.8	-89.26	-21.11	68.15

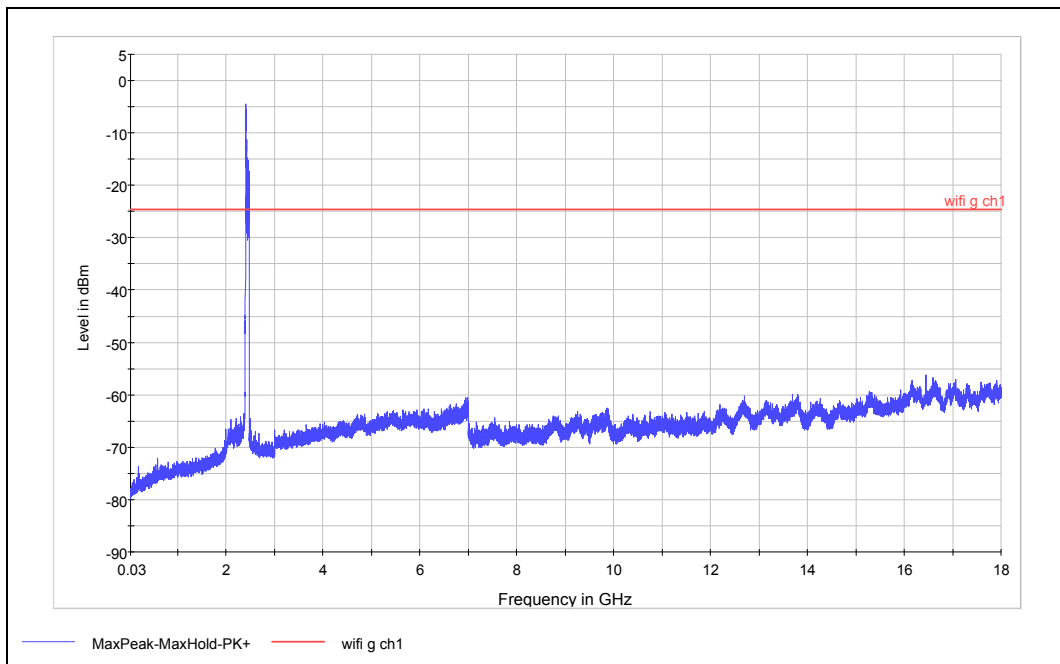
TA Technology (Shanghai) Co., Ltd.

Test Report

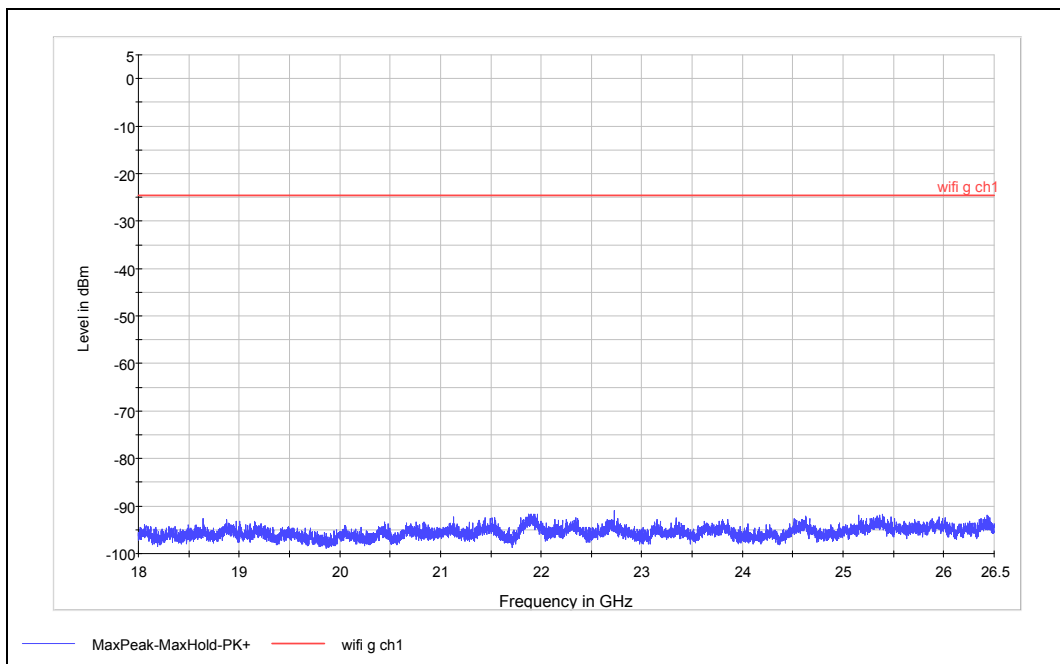
Report No.:RBA1505-0061RF

Page 52 of 124

802.11g CH1



Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

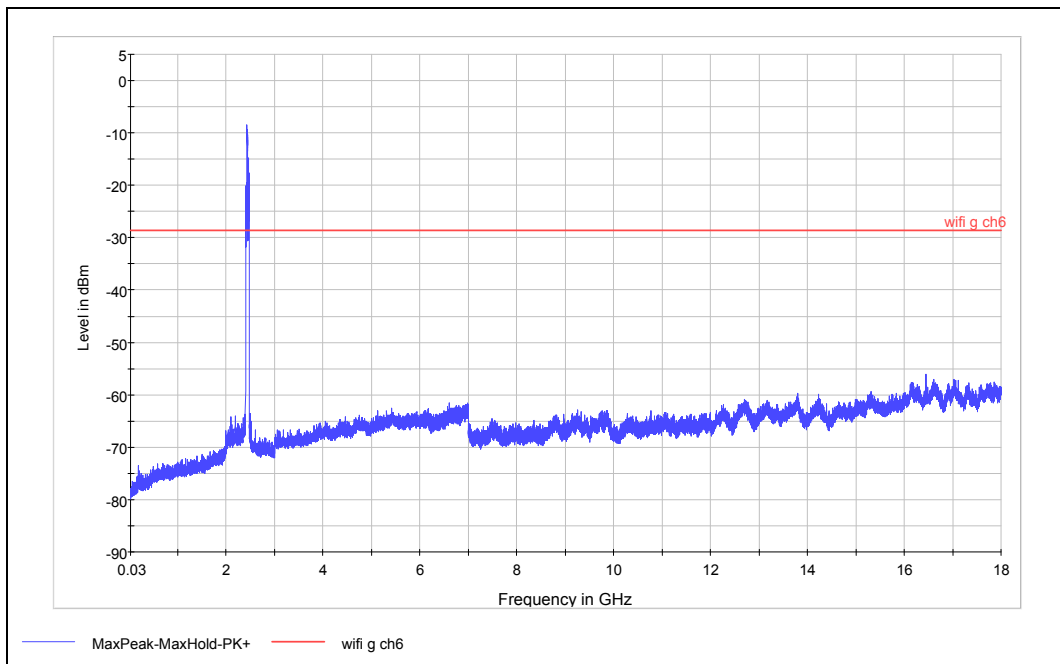
TA Technology (Shanghai) Co., Ltd.

Test Report

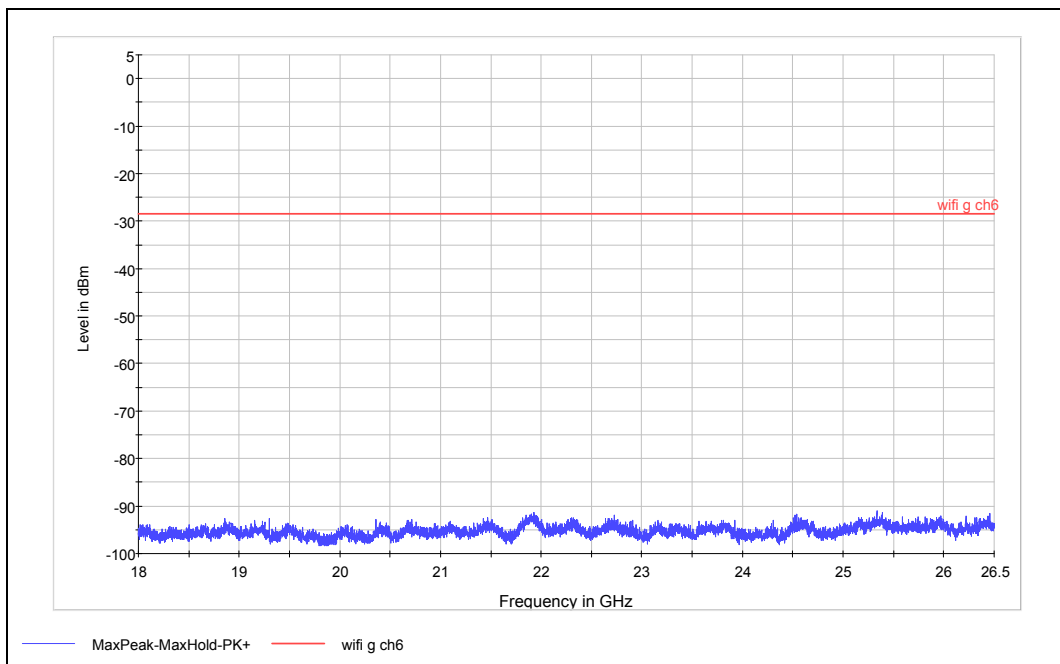
Report No.:RBA1505-0061RF

Page 53 of 124

802.11g CH6



Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

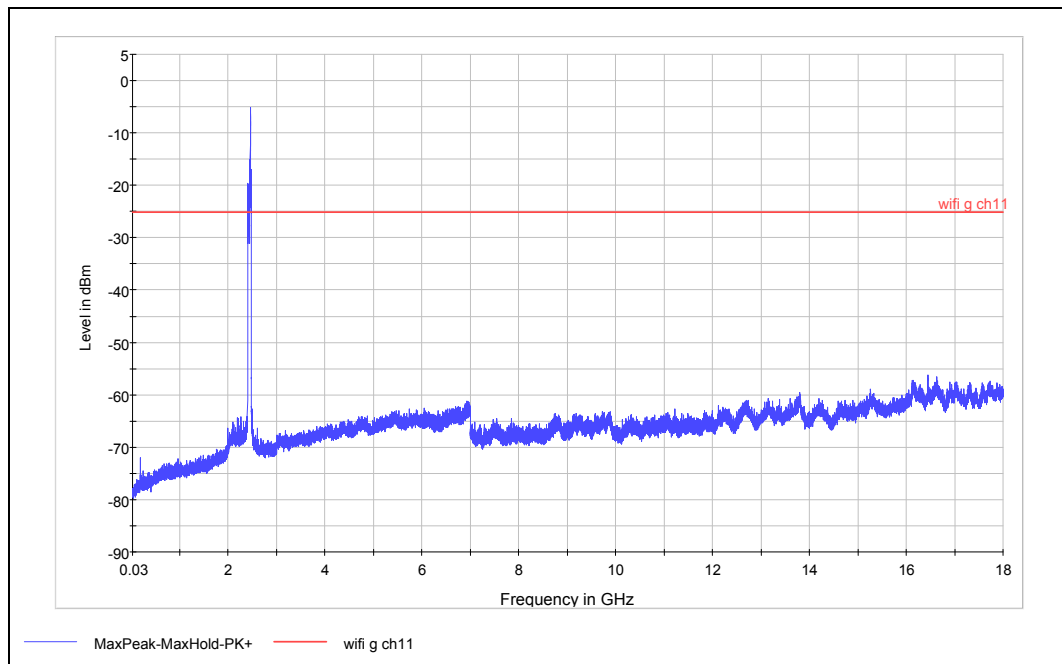
TA Technology (Shanghai) Co., Ltd.

Test Report

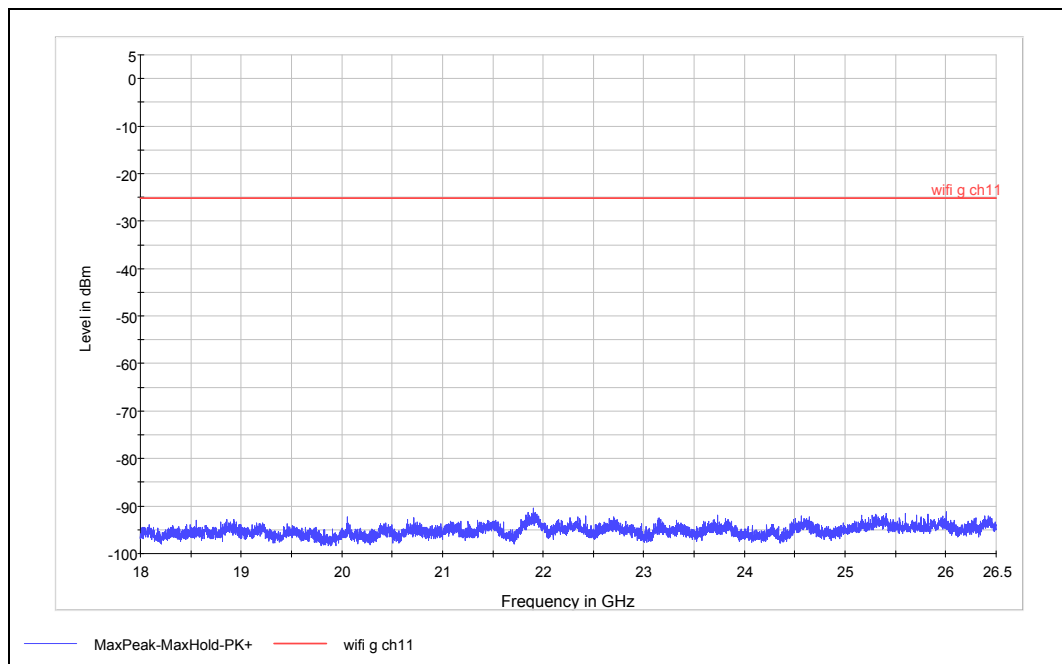
Report No.:RBA1505-0061RF

Page 54 of 124

802.11g CH11



Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

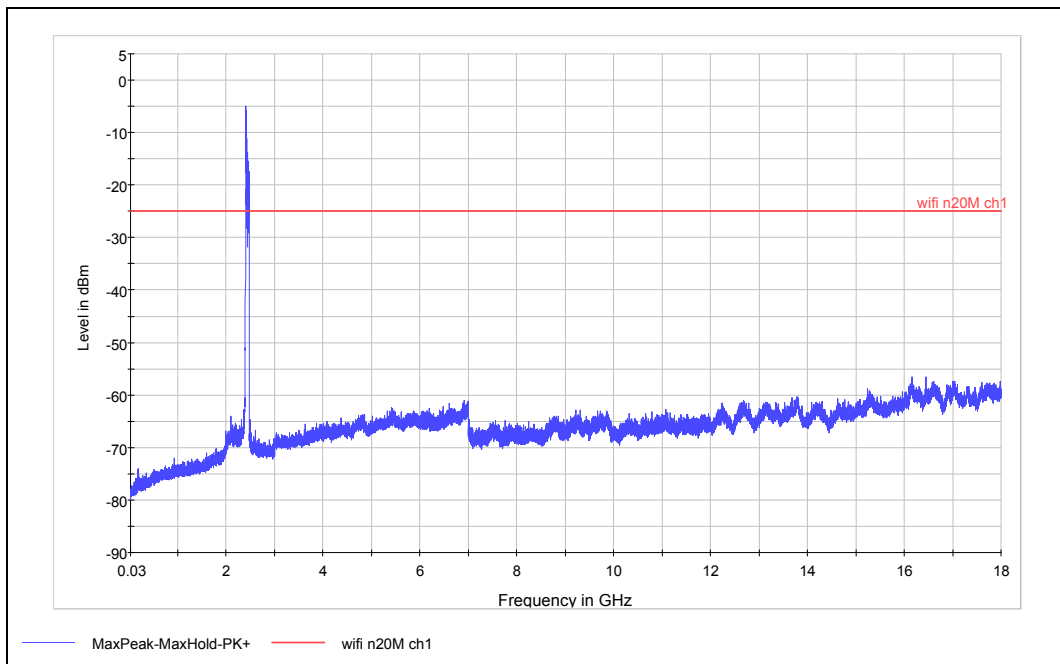
TA Technology (Shanghai) Co., Ltd.

Test Report

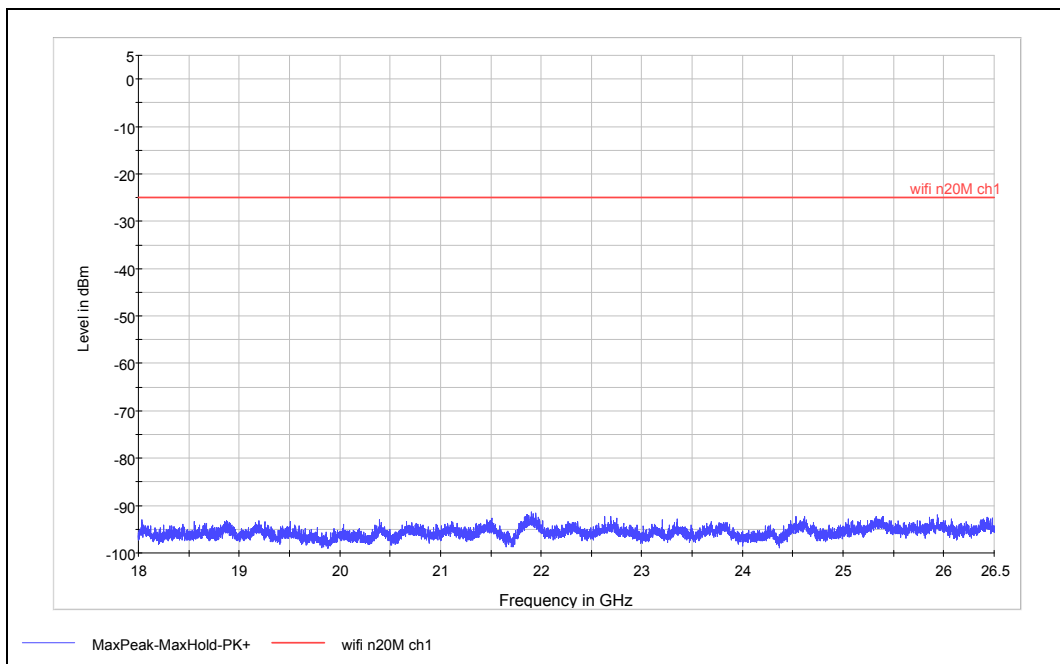
Report No.:RBA1505-0061RF

Page 55of 124

802.11n(HT20) CH1



Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

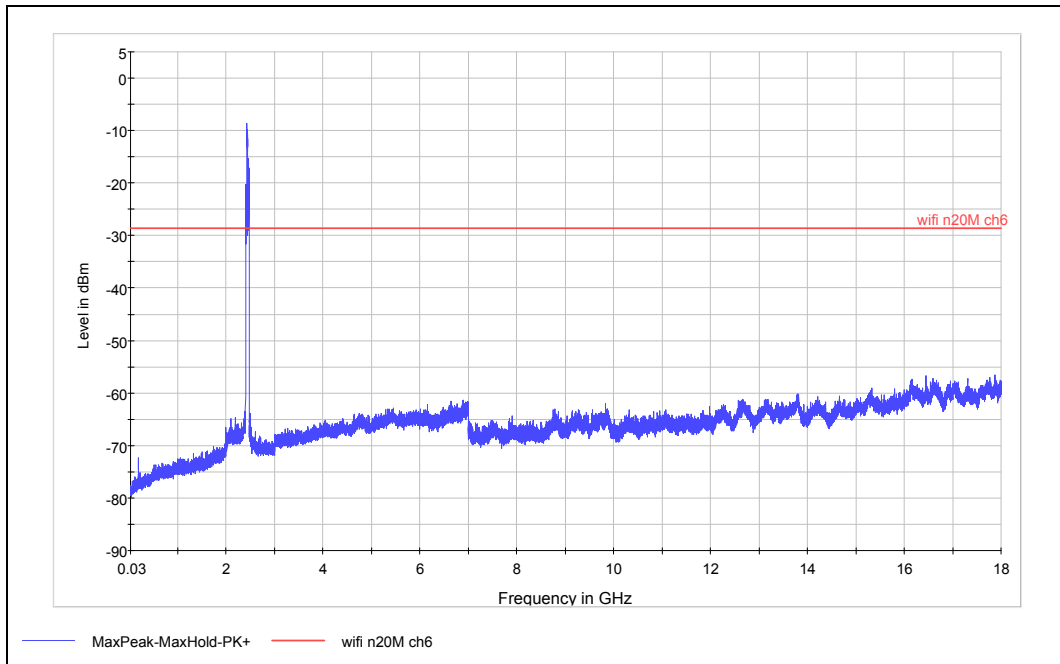
TA Technology (Shanghai) Co., Ltd.

Test Report

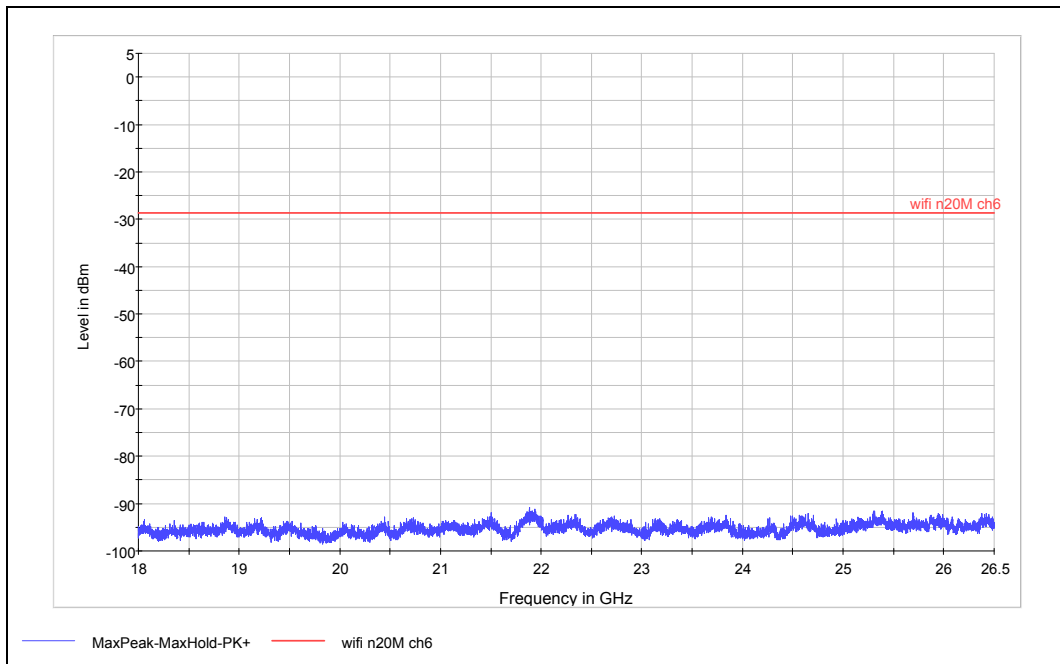
Report No.:RBA1505-0061RF

Page 56of 124

802.11n(HT20) CH6



Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

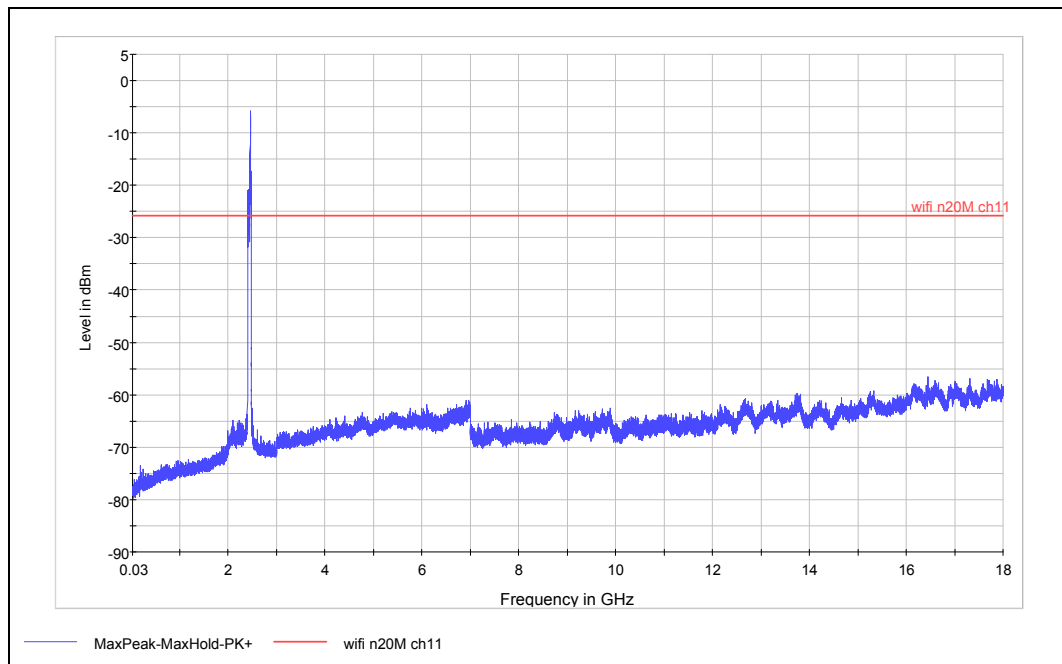
TA Technology (Shanghai) Co., Ltd.

Test Report

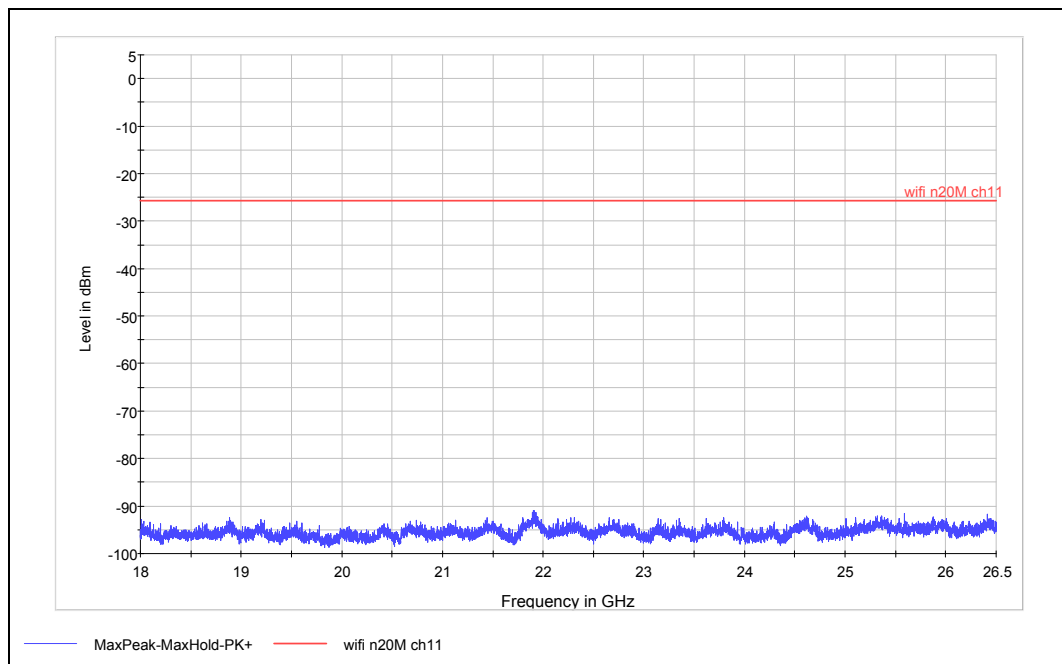
Report No.:RBA1505-0061RF

Page 57 of 124

802.11n(HT20) CH11



Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

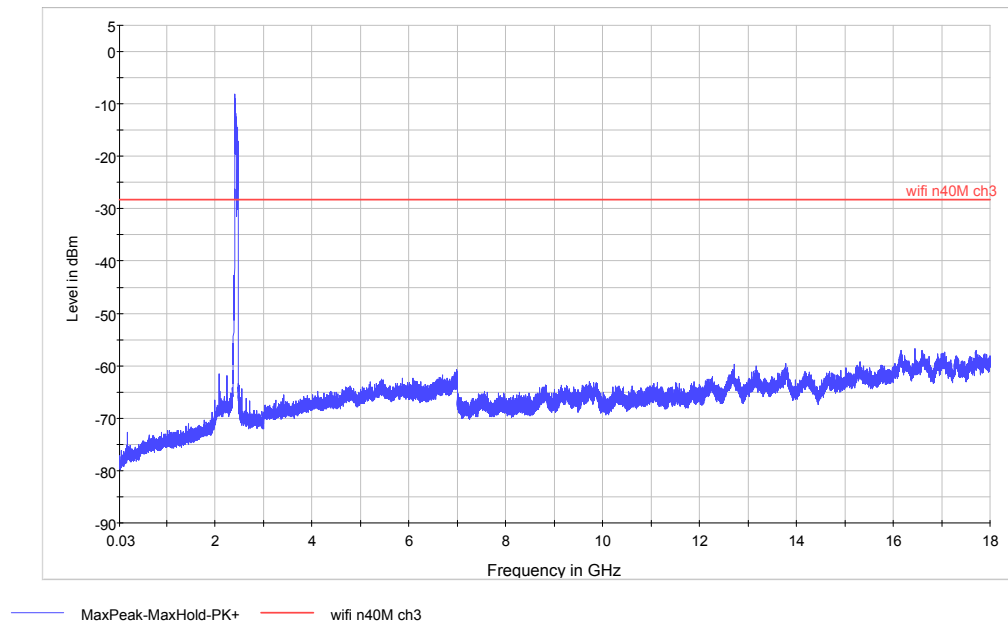
TA Technology (Shanghai) Co., Ltd.

Test Report

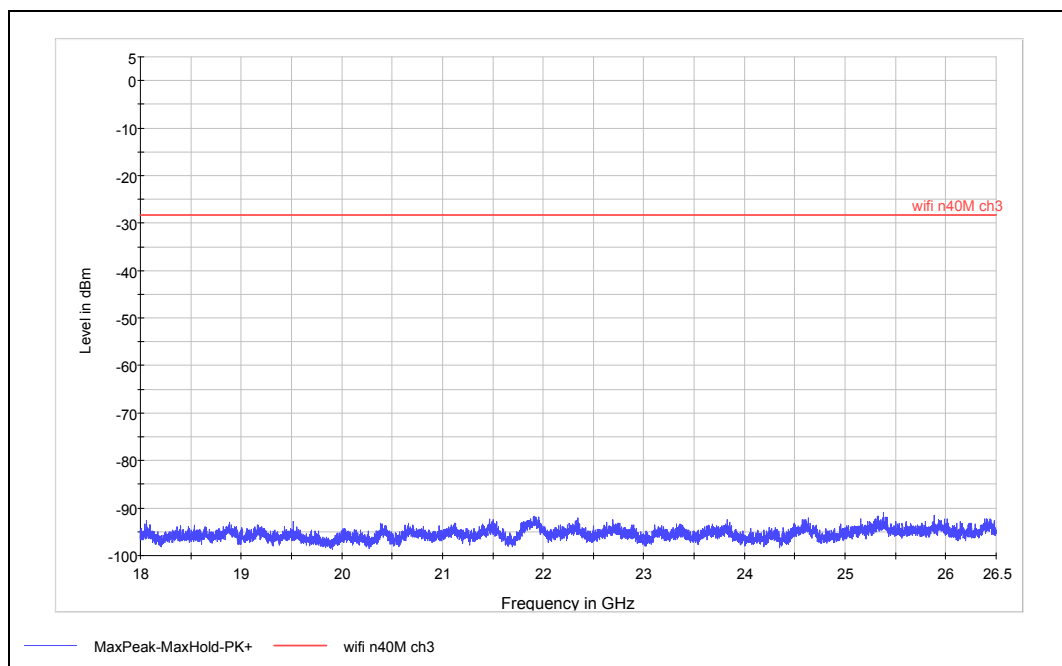
Report No.:RBA1505-0061RF

Page 58of 124

802.11n(HT40) CH3



Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

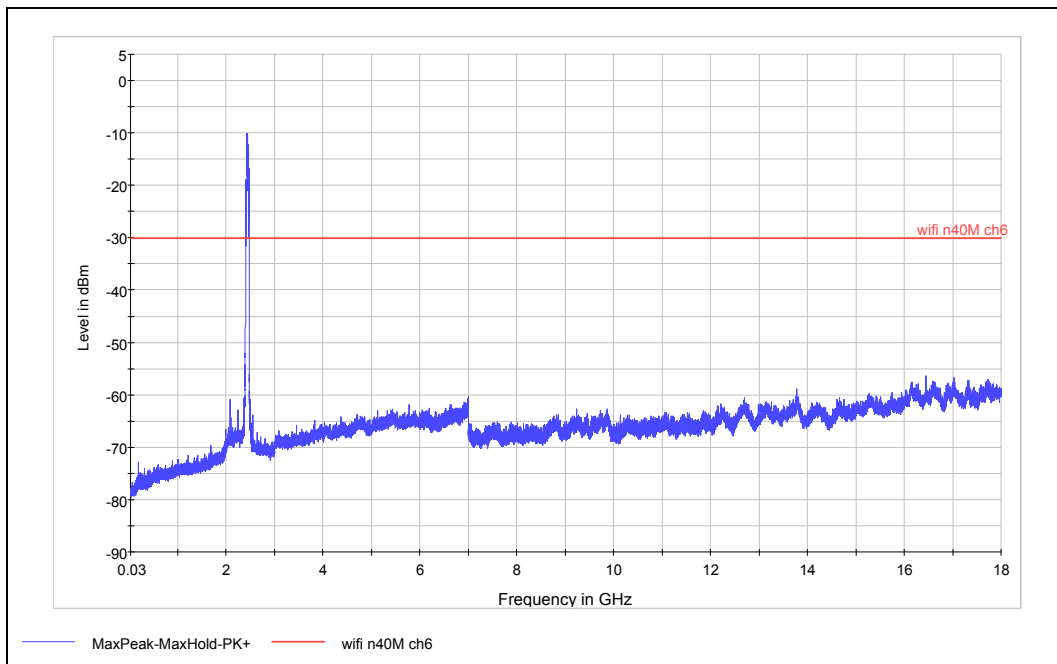
TA Technology (Shanghai) Co., Ltd.

Test Report

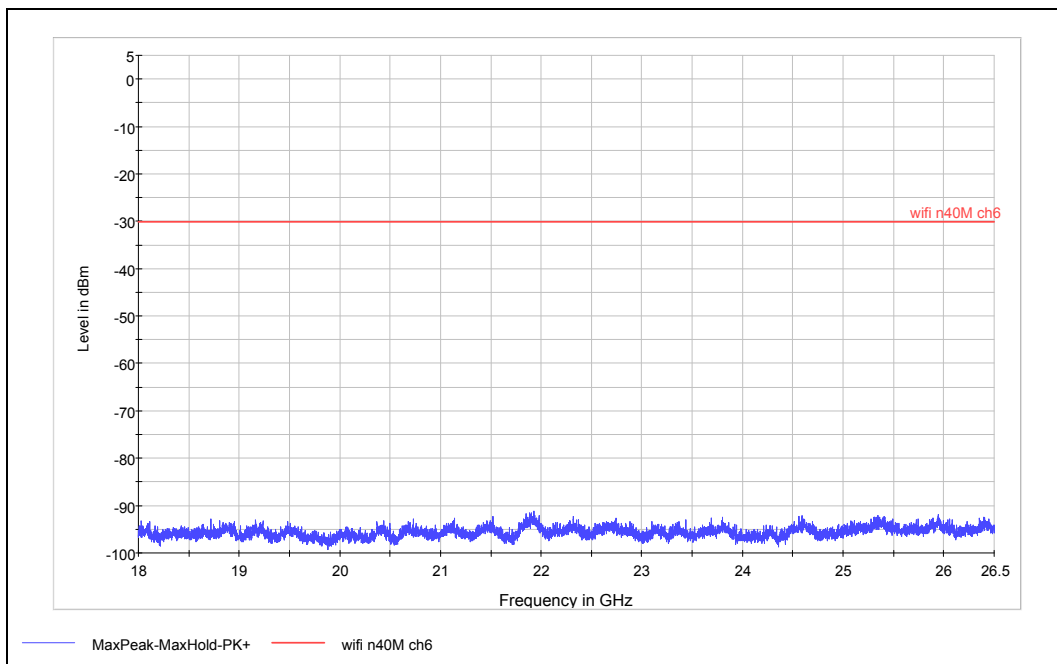
Report No.:RBA1505-0061RF

Page 59 of 124

802.11n(HT40) CH6



Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

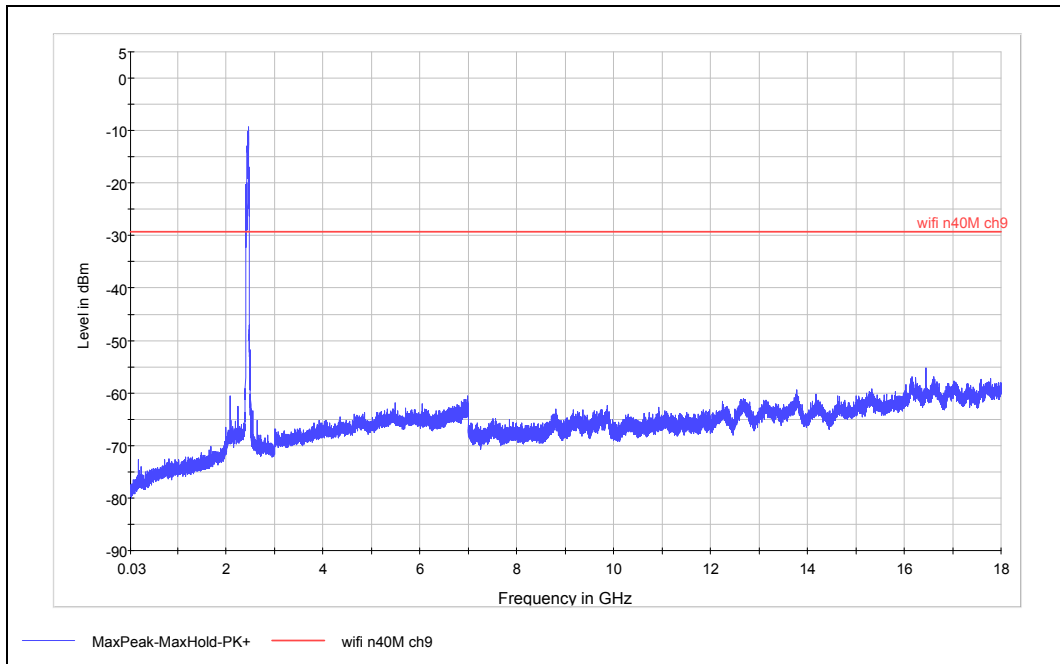
TA Technology (Shanghai) Co., Ltd.

Test Report

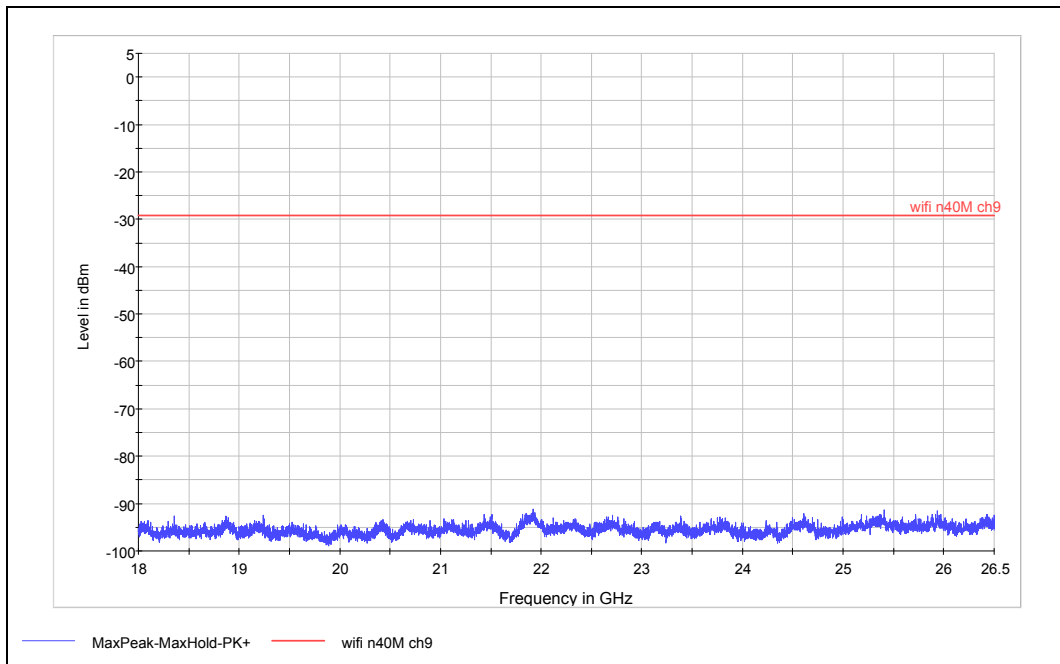
Report No.:RBA1505-0061RF

Page 60 of 124

802.11n(HT40) CH9



Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

2.9. 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 the 10th harmonic of the carrier, and the emissions less than 20 dB below the permissible value are reported.

During the test, below 30MHz, the center of the loop shall be 1 meters; above 30MHz, 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.

The test is in transmitting mode.

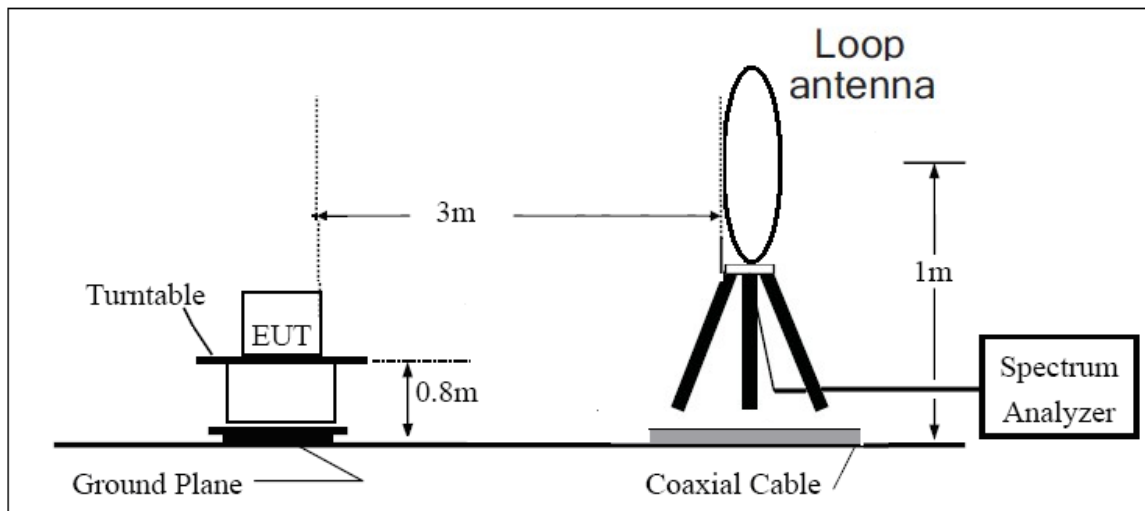
TA Technology (Shanghai) Co., Ltd.
Test Report

Report No.:RBA1505-0061RF

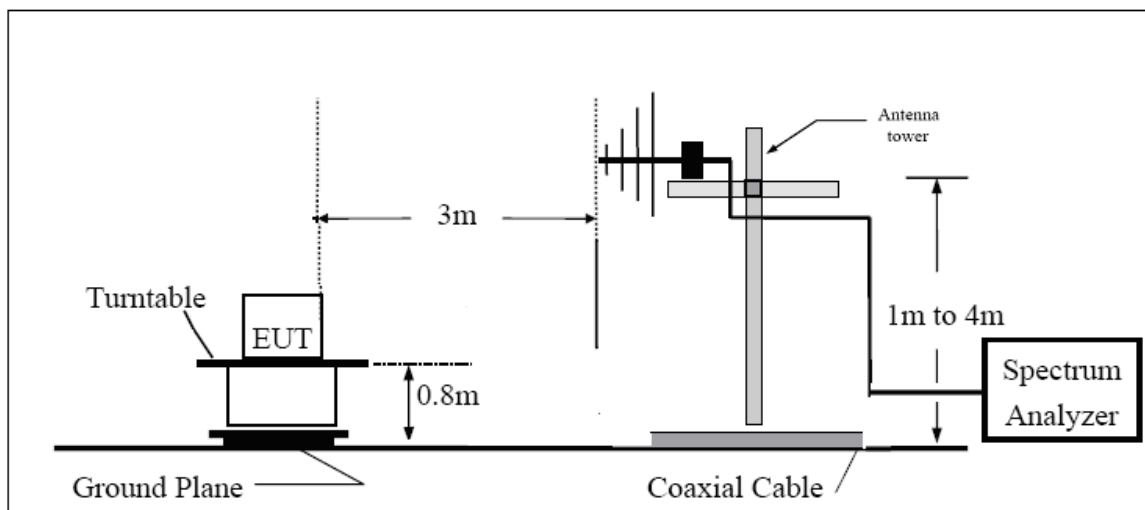
Page 62of 124

Test setup

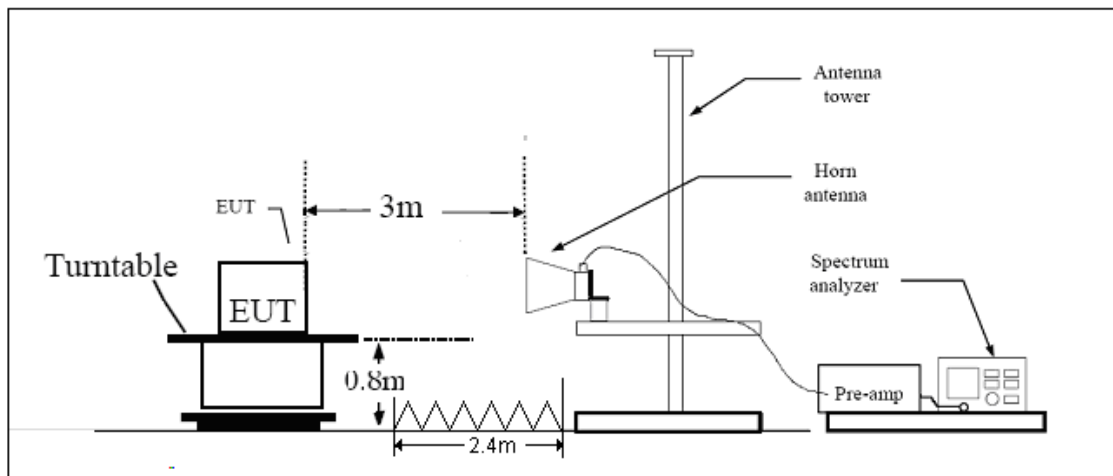
9KHz~~~ 30MHz



30MHz~~~ 1GHz



Above 1GHz



Note: Area side:2.4mX3.6m

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

Report No.:RBA1505-0061RF

Page 63 of 124

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
9KHz-30MHz	3.55 dB
30MHz-200MHz	4.19 dB
200MHz-1GHz	3.63 dB
Above 1GHz	3.68 dB

TA Technology (Shanghai) Co., Ltd.

Test Report

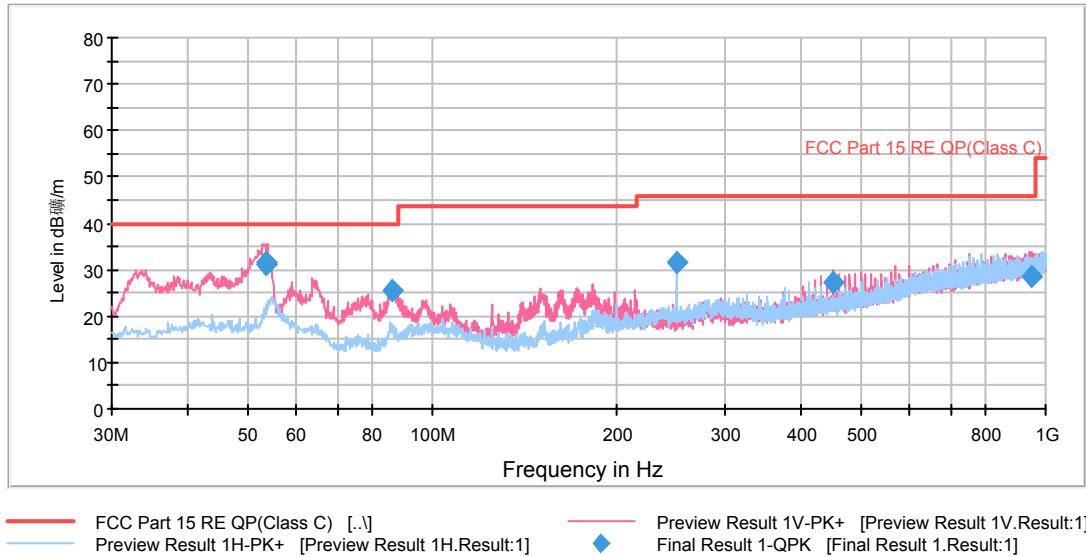
Report No.:RBA1505-0061RF

Page 64 of 124

Test result

802.11b CH1

RE 0.03-1GHz QP Class B



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBμV/m) in the test plot =(level in dBuV/m)

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)
53.356250	31.1	100.0	V	49.0	18.3	-12.8	8.9	40.0
53.366250	31.6	100.0	V	69.0	18.8	-12.8	8.4	40.0
86.020000	25.6	113.0	V	59.0	15.0	-10.6	14.4	40.0
249.988750	31.4	125.0	H	326.0	17.3	-14.1	14.6	46.0
450.656250	27.1	100.0	V	0.0	8.1	-19.0	18.9	46.0
950.281250	28.5	100.0	V	229.0	2.5	-26.0	17.5	46.0

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

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

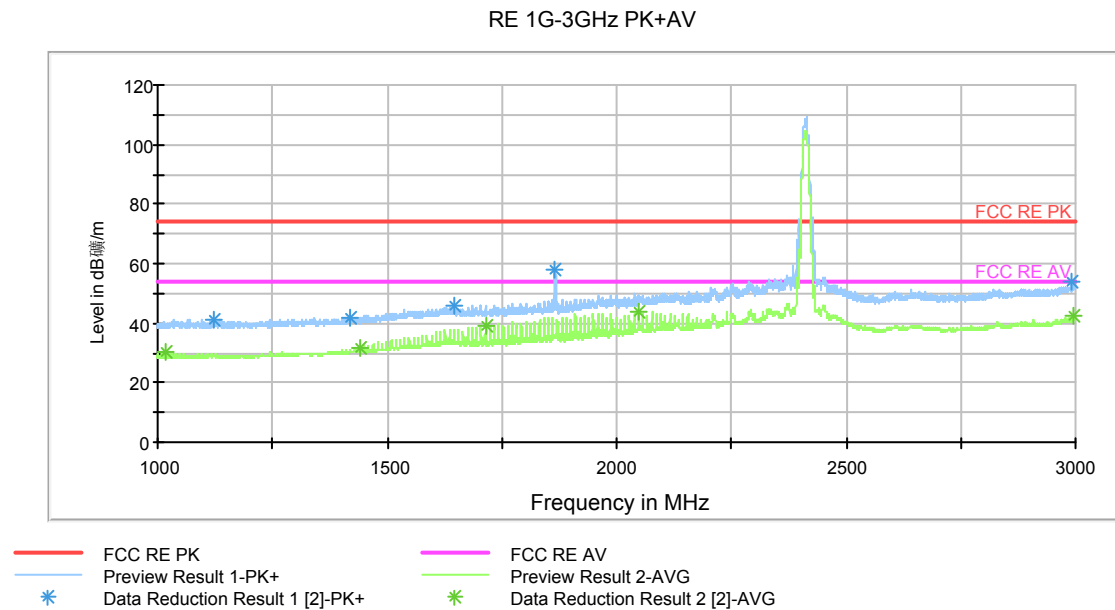
3. Margin = Limit – Quasi-Peak

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 65of 124



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBμV/m) in the test plot =(level in dBuV/m)

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)	Margin (dB)	Limit (dBuV/m)
1019.000000	38.8	202.0	V	0.0	28.8	-10.0	35.2	74
1440.000000	40.6	202.0	V	333.0	32.6	-8.0	33.4	74
1714.250000	45.6	202.0	V	307.0	40.1	-5.5	28.4	74
2047.500000	48.6	302.0	V	296.0	45.6	-3.0	25.4	74
2997.750000	51.3	202.0	V	116.0	49.9	-1.4	22.7	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1019.000000	30.3	202.0	V	0.0	20.3	-10.0	23.7	54
1440.000000	31.5	202.0	V	333.0	23.5	-8.0	22.5	54
1714.250000	39.4	202.0	V	307.0	33.9	-5.5	14.6	54
2047.500000	43.9	302.0	V	296.0	40.9	-3.0	10.1	54
2997.750000	42.3	202.0	V	116.0	40.9	-1.4	11.7	54

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

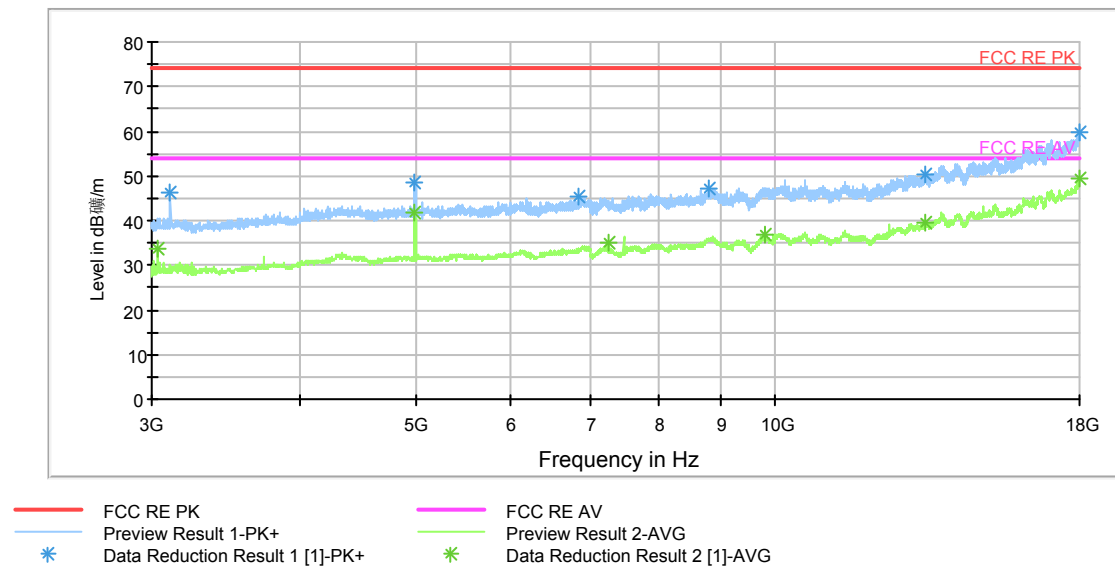
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 66of 124

RE 3-18GHz PK+AV



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBuV/m) in the test plot =(level in dBuV/m)

Note: The signal beyond the limit is harmonic of carrier.

Radiates Emission from 3GHz to 18GHz

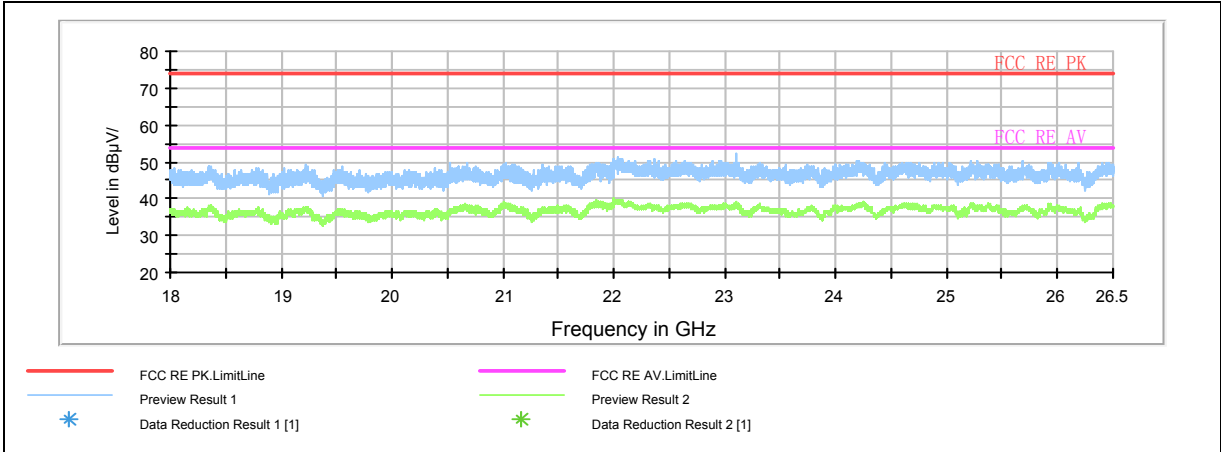
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3035.625000	40.1	150.0	V	320.0	37.9	-2.2	33.9	74
4976.250000	48.7	150.0	V	46.0	45.9	-2.8	25.3	74
7237.500000	44.4	150.0	V	0.0	36.7	-7.7	29.6	74
9793.125000	46.3	150.0	H	160.0	35.0	-11.3	27.7	74
13342.500000	49.0	200.0	V	268.0	34.6	-14.4	25.0	74
17985.000000	58.9	200.0	H	19.0	34.4	-24.5	15.1	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3035.625000	33.6	150.0	V	320.0	31.4	-2.2	20.4	54
4976.250000	42.0	150.0	V	46.0	39.2	-2.8	12.0	54
7237.500000	35.1	150.0	V	0.0	27.4	-7.7	18.9	54
9793.125000	36.8	150.0	H	160.0	25.5	-11.3	17.2	54
13342.500000	39.7	200.0	V	268.0	25.3	-14.4	14.3	54
17985.000000	49.4	200.0	H	19.0	24.9	-24.5	4.6	54

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

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



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBμV/m)in the test plot =(level in dBuv/m)

Radiates Emission from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd.

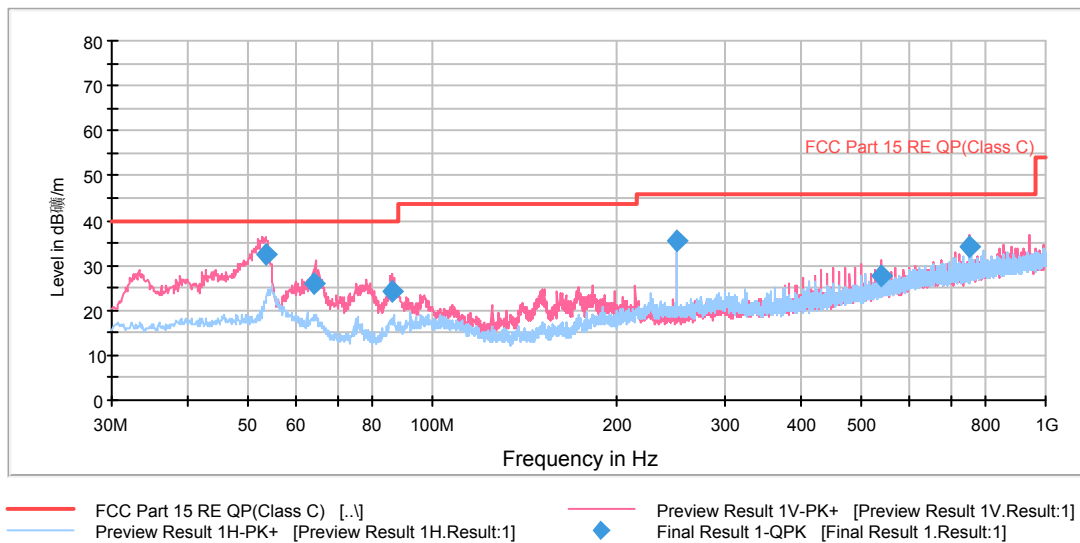
Test Report

Report No.:RBA1505-0061RF

Page 68of 124

802.11b CH6

RE 0.03-1GHz QP Class C



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBuV/m) in the test plot =(level in dBuV/m)

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)
53.362500	32.3	100.0	V	132.0	19.5	-12.8	7.7	40.0
64.315000	26.1	100.0	V	136.0	15.3	-10.8	13.9	40.0
86.017500	24.1	113.0	V	67.0	13.5	-10.6	15.9	40.0
249.988750	35.4	125.0	H	337.0	21.3	-14.1	10.6	46.0
538.805000	27.5	100.0	V	350.0	6.7	-20.8	18.5	46.0
750.022500	34.3	100.0	V	282.0	10.7	-23.6	11.7	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

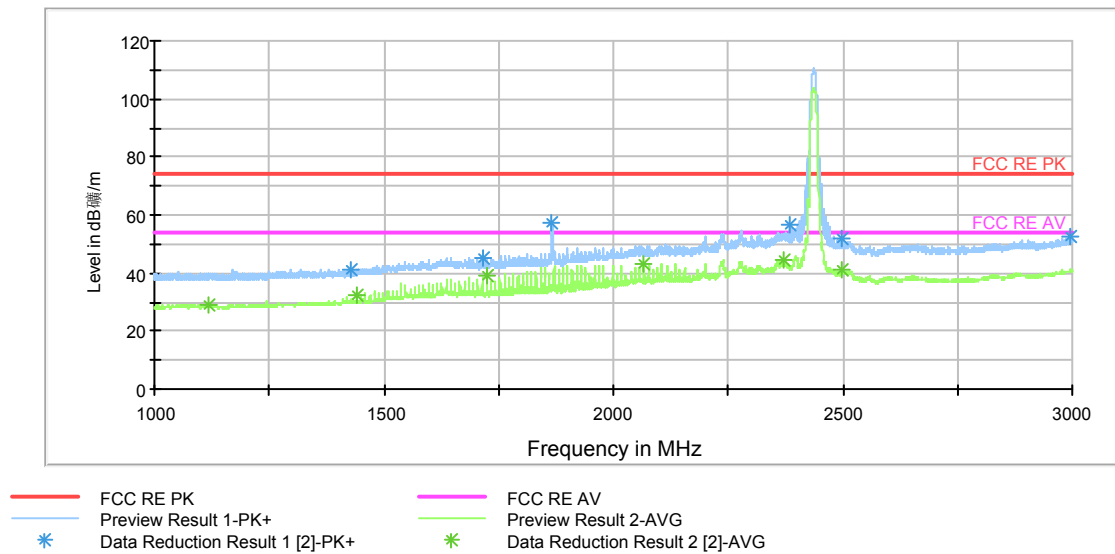
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 69 of 124

RE 1G-3GHz PK+AV



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBuV/m) in the test plot =(level in dBuV/m)

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)	Margin (dB)	Limit (dBuV/m)
1116.750000	38.6	150.0	V	0.0	28.8	-9.8	35.4	74
1440.000000	40.0	150.0	V	325.0	32.0	-8.0	34.0	74
1724.000000	44.5	150.0	V	313.0	38.8	-5.7	29.5	74
2067.000000	48.3	150.0	V	313.0	45.3	-3.0	25.7	74
2370.750000	51.8	150.0	V	348.0	49.5	-2.3	22.2	74
2499.750000	49.6	150.0	V	354.0	48.7	-0.9	24.4	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1116.750000	29.2	150.0	V	0.0	19.4	-9.8	24.8	54
1440.000000	32.4	150.0	V	325.0	24.4	-8.0	21.6	54
1724.000000	38.9	150.0	V	313.0	33.2	-5.7	15.1	54
2067.000000	43.0	150.0	V	313.0	40.0	-3.0	11.0	54
2370.750000	44.5	150.0	V	348.0	42.2	-2.3	9.5	54
2499.750000	41.4	150.0	V	354.0	40.5	-0.9	12.6	54

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

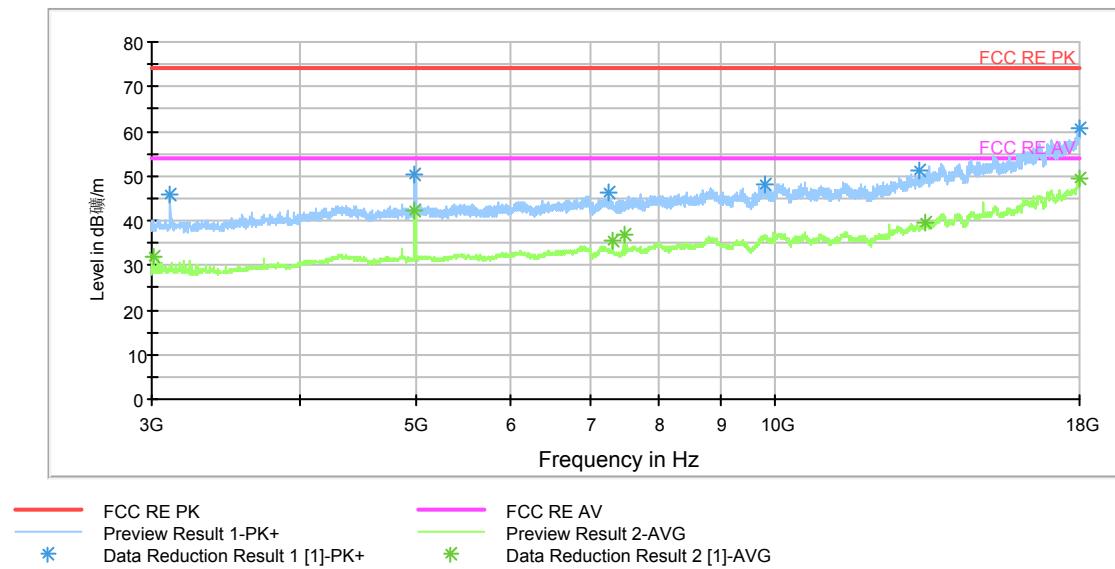
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 70 of 124

RE 3-18GHz PK+AV



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBμV/m) in the test plot =(level in dBuV/m)

Radiates Emission from 3GHz to 18GHz

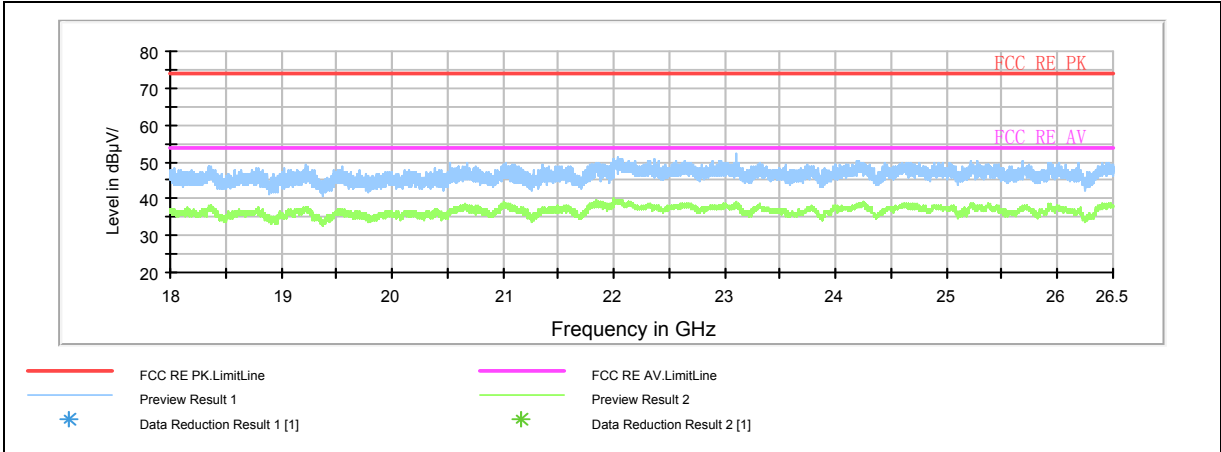
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3007.500000	40.0	200.0	V	321.0	37.3	-2.7	34.0	74
4976.250000	50.4	150.0	V	46.0	47.6	-2.8	23.6	74
7310.625000	43.4	150.0	V	37.0	36.0	-7.4	30.6	74
7464.375000	43.7	150.0	V	312.0	37.0	-6.7	30.3	74
13350.000000	49.4	150.0	V	0.0	34.9	-14.5	24.6	74
17996.250000	59.4	150.0	V	329.0	34.8	-24.6	14.6	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3007.500000	32.0	200.0	V	321.0	29.3	-2.7	22.0	54
4976.250000	42.1	150.0	V	46.0	39.3	-2.8	11.9	54
7310.625000	35.7	150.0	V	37.0	28.3	-7.4	18.3	54
7464.375000	36.9	150.0	V	312.0	30.2	-6.7	17.1	54
13350.000000	39.7	150.0	V	0.0	25.2	-14.5	14.3	54
17996.250000	49.6	150.0	V	329.0	25.0	-24.6	4.4	54

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

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



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBμV/m)in the test plot =(level in dBuv/m)

Radiates Emission from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd.

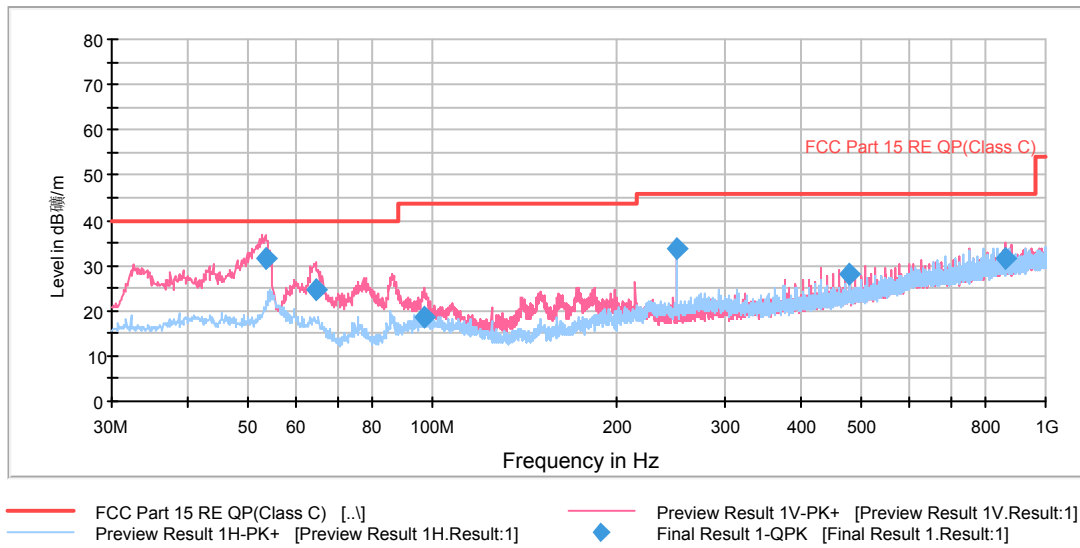
Test Report

Report No.:RBA1505-0061RF

Page 72 of 124

802.11b CH11

RE 0.03-1GHz QP Class C



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBuV/m) in the test plot =(level in dBuV/m)

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)
53.361250	31.6	100.0	V	180.0	-68.4	-12.8	8.4	40.0
64.436250	24.8	100.0	V	170.0	-75.2	-10.8	15.2	40.0
97.091250	18.5	125.0	V	0.0	-106.5	-12.9	25.0	43.5
249.987500	33.9	100.0	H	358.0	-66.1	-14.1	12.1	46.0
480.040000	28.2	100.0	V	356.0	-71.8	-19.5	17.8	46.0
862.098750	31.7	113.0	V	0.0	-81.3	-25.1	14.3	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

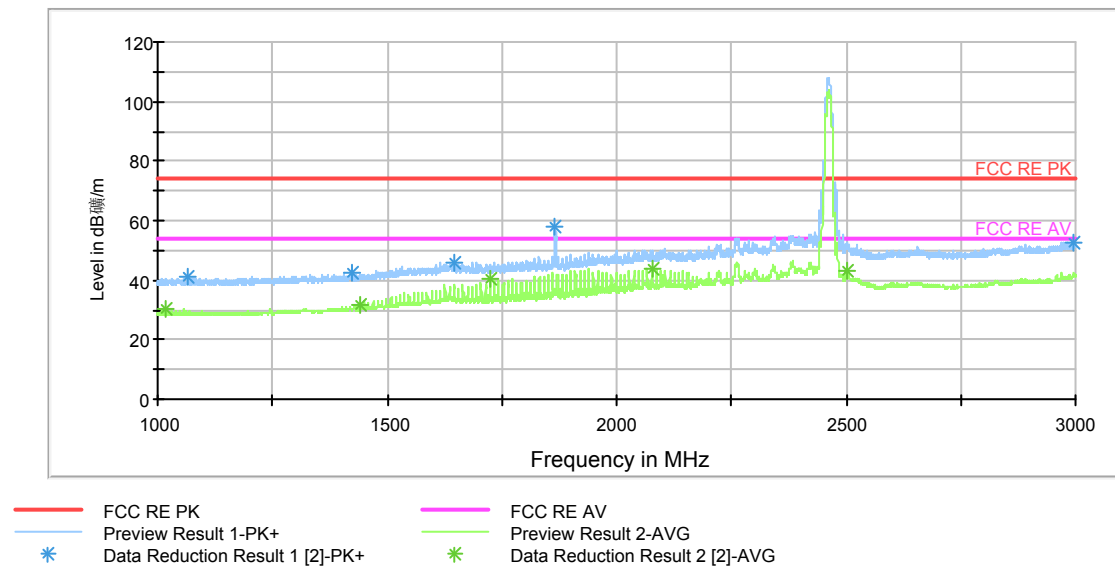
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 73 of 124

RE 1G-3GHz PK+AV



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBuV/m) in the test plot =(level in dBuV/m)

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)	Margin (dB)	Limit (dBuV/m)
1018.500000	38.5	102.0	H	348.0	28.4	-10.1	35.5	74
1440.000000	40.4	202.0	V	0.0	32.4	-8.0	33.6	74
1724.250000	45.2	202.0	V	272.0	39.5	-5.7	28.8	74
2077.000000	48.5	202.0	V	267.0	45.5	-3.0	25.5	74
2503.000000	51.3	102.0	V	0.0	50.4	-0.9	22.7	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1018.500000	30.4	102.0	H	348.0	20.3	-10.1	23.6	54
1440.000000	31.6	202.0	V	0.0	23.6	-8.0	22.4	54
1724.250000	40.5	202.0	V	272.0	34.8	-5.7	13.5	54
2077.000000	43.8	202.0	V	267.0	40.8	-3.0	10.2	54
2503.000000	43.2	102.0	V	0.0	42.3	-0.9	10.8	54

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

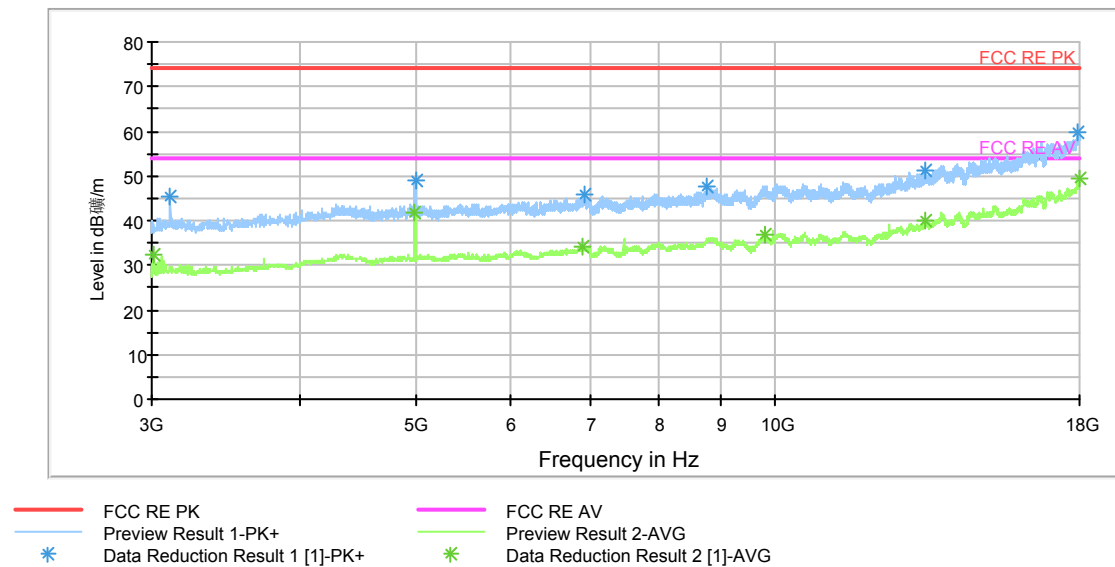
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 74 of 124

RE 3-18GHz PK+AV



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBμV/m) in the test plot =(level in dBuV/m)

Radiates Emission from 3GHz to 18GHz

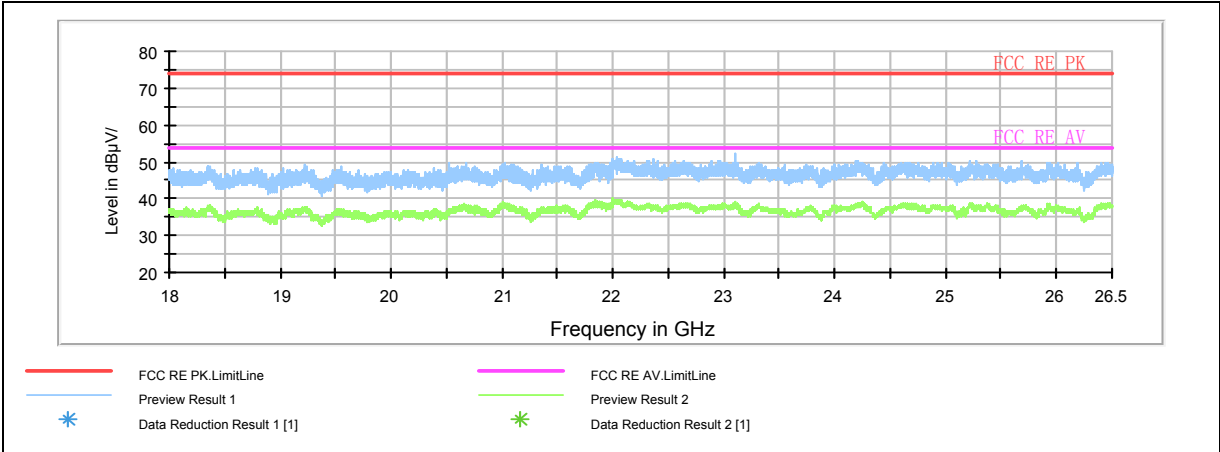
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3016.875000	38.4	150.0	V	325.0	35.9	-2.5	35.6	74
4976.250000	48.3	150.0	V	44.0	45.5	-2.8	25.7	74
6890.625000	44.2	150.0	V	179.0	38.5	-5.7	29.8	74
9806.250000	46.2	200.0	V	130.0	34.9	-11.3	27.8	74
13351.875000	48.8	200.0	H	133.0	34.3	-14.5	25.2	74
17990.625000	59.4	200.0	V	359.0	34.9	-24.5	14.6	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3016.875000	32.4	150.0	V	325.0	29.9	-2.5	21.6	54
4976.250000	41.7	150.0	V	44.0	38.9	-2.8	12.3	54
6890.625000	34.4	150.0	V	179.0	28.7	-5.7	19.6	54
9806.250000	36.7	200.0	V	130.0	25.4	-11.3	17.3	54
13351.875000	39.8	200.0	H	133.0	25.3	-14.5	14.2	54
17990.625000	49.5	200.0	V	359.0	25.0	-24.5	4.5	54

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

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



Note: This graph displays the maximum values of horizontal and vertical by software
Note: a font (Level in dBuV/m)in the test plot =(level in dBuv/m)
Radiates Emission from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd.

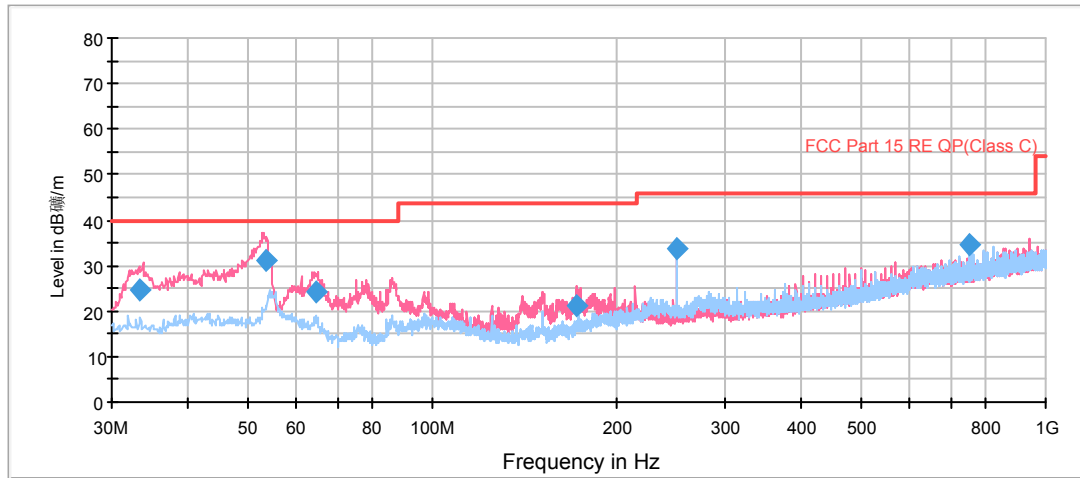
Test Report

Report No.:RBA1505-0061RF

Page 76 of 124

802.11g CH1

RE 0.03-1GHz QP Class C



— FCC Part 15 RE QP(Class C) [..]
 — Preview Result 1H-PK+ [Preview Result 1H.Result:1] ◆ Preview Result 1V-PK+ [Preview Result 1V.Result:1]
 — Final Result 1-QPK [Final Result 1.Result:1]

Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBuV/m) in the test plot =(level in dBuV/m)

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)
33.278750	24.6	100.0	V	314.0	12.7	-11.9	15.4	40.0
53.437500	31.3	100.0	V	114.0	18.5	-12.8	8.7	40.0
64.393750	24.2	100.0	V	167.0	13.4	-10.8	15.8	40.0
172.462500	21.1	100.0	V	0.0	10.7	-10.4	22.4	43.5
249.987500	33.9	125.0	H	334.0	19.8	-14.1	12.1	46.0
749.982500	34.6	100.0	V	320.0	11.0	-23.6	11.4	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

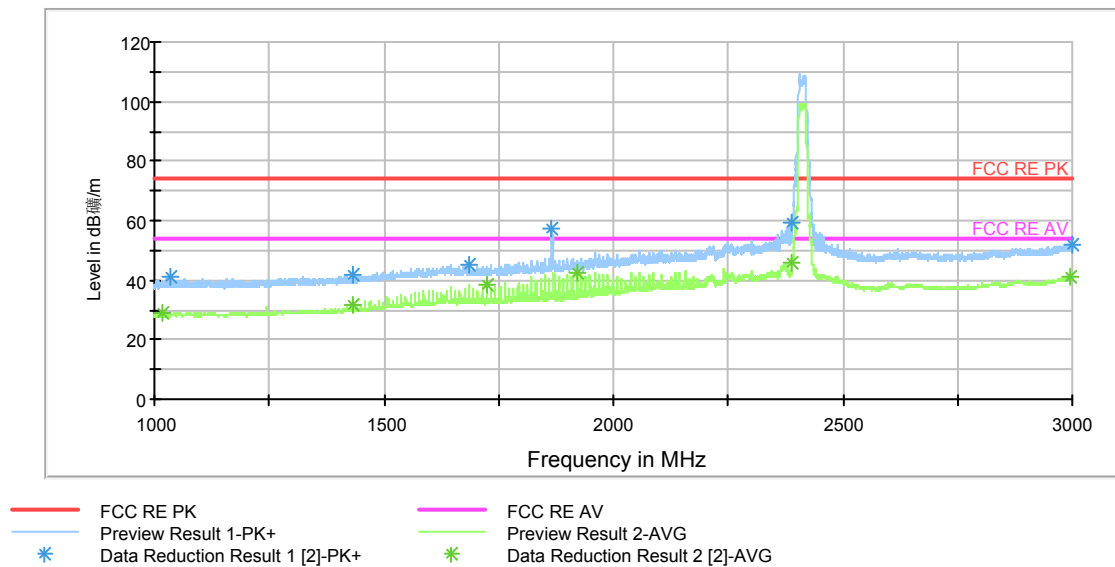
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 77of 124

RE 1G-3GHz PK+AV



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBuV/m) in the test plot =(level in dBuV/m)

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)	Margin (dB)	Limit (dBuV/m)
1018.500000	38.5	150.0	V	339.0	28.4	-10.1	35.5	74
1430.250000	41.3	150.0	V	339.0	33.2	-8.1	32.7	74
1724.500000	43.7	150.0	V	316.0	38.0	-5.7	30.3	74
1920.250000	46.7	150.0	V	316.0	42.3	-4.4	27.3	74
2390.000000	57.5	150.0	V	350.0	55.3	-2.2	16.5	74
2997.000000	50.7	150.0	V	231.0	49.3	-1.4	23.3	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1018.500000	29.3	150.0	V	339.0	19.2	-10.1	24.7	54
1430.250000	31.5	150.0	V	339.0	23.4	-8.1	22.5	54
1724.500000	38.5	150.0	V	316.0	32.8	-5.7	15.5	54
1920.250000	42.8	150.0	V	316.0	38.4	-4.4	11.2	54
2390.000000	46.0	150.0	V	350.0	43.8	-2.2	8.0	54
2997.000000	41.1	150.0	V	231.0	39.7	-1.4	12.9	54

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

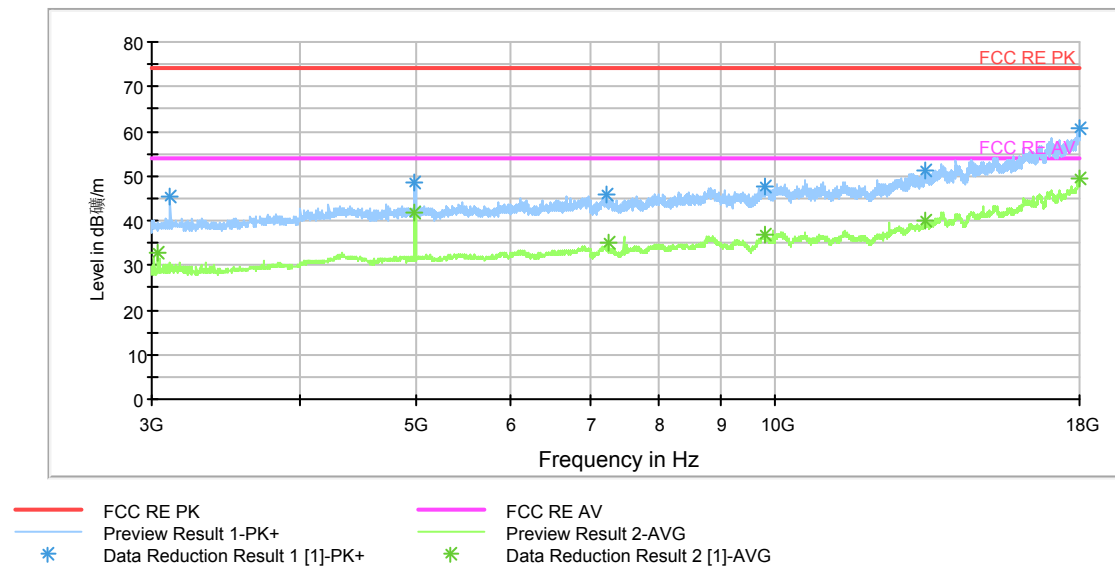
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 78of 124

RE 3-18GHz PK+AV



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBuV/m) in the test plot =(level in dBuV/m)

Radiates Emission from 3GHz to 18GHz

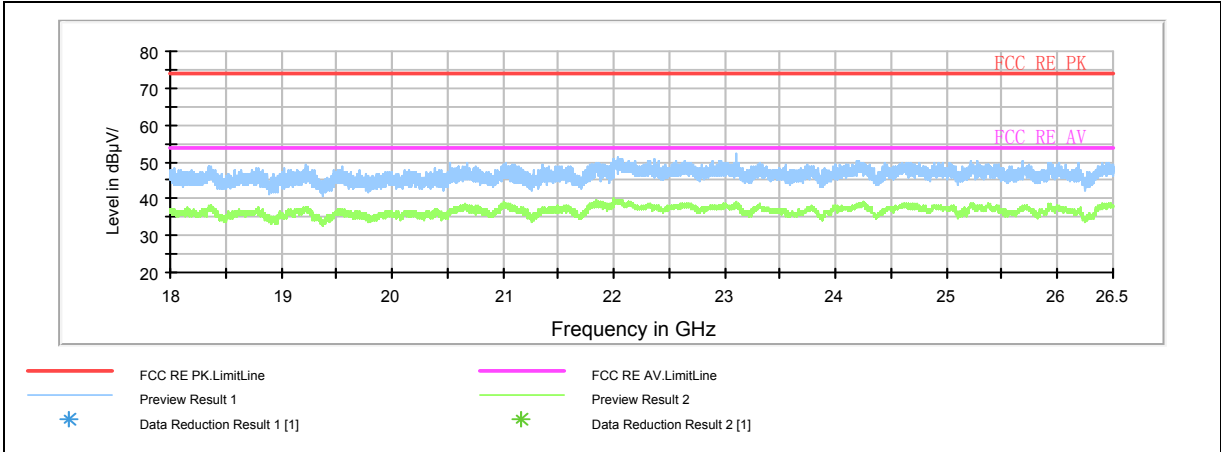
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3035.625000	39.8	200.0	V	318.0	37.6	-2.2	34.2	74
4976.250000	48.7	150.0	V	45.0	45.9	-2.8	25.3	74
7235.625000	43.6	150.0	V	0.0	35.9	-7.7	30.4	74
9787.500000	46.6	150.0	V	344.0	35.4	-11.2	27.4	74
13350.000000	50.5	200.0	V	327.0	36.0	-14.5	23.5	74
17994.375000	59.6	200.0	V	327.0	35.0	-24.6	14.4	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3035.625000	32.8	200.0	V	318.0	30.6	-2.2	21.2	54
4976.250000	41.8	150.0	V	45.0	39.0	-2.8	12.2	54
7235.625000	34.8	150.0	V	0.0	27.1	-7.7	19.2	54
9787.500000	36.9	150.0	V	344.0	25.7	-11.2	17.1	54
13350.000000	40.1	200.0	V	327.0	25.6	-14.5	13.9	54
17994.375000	49.4	200.0	V	327.0	24.8	-24.6	4.6	54

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

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



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBuV/m)in the test plot =(level in dBuv/m)

Radiates Emission from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd.

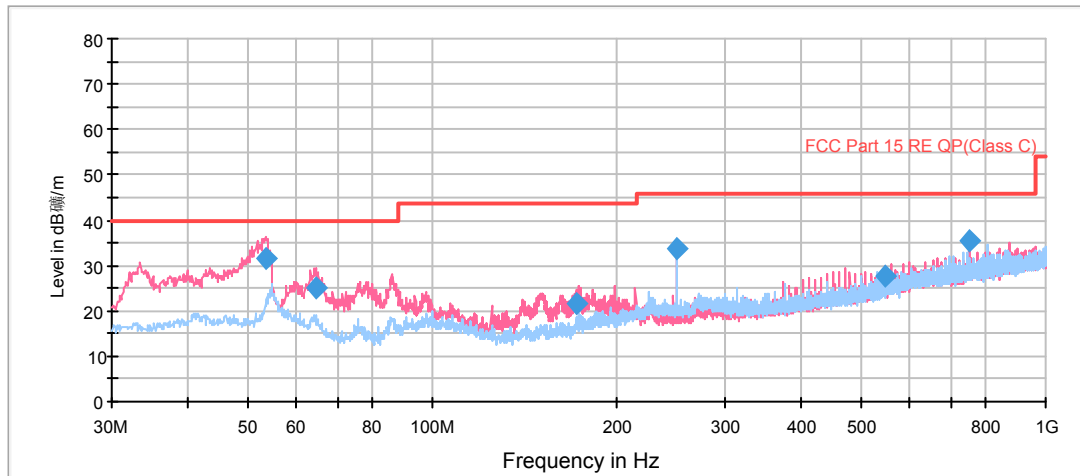
Test Report

Report No.:RBA1505-0061RF

Page 80 of 124

802.11g CH6

RE 0.03-1GHz QP Class C



— FCC Part 15 RE QP(Class C) [..]
 — Preview Result 1H-PK+ [Preview Result 1H.Result:1]
 ◆ Final Result 1-QPK [Final Result 1.Result:1]

Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBuV/m) in the test plot =(level in dBuV/m)

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)
53.361250	31.6	100.0	V	173.0	18.8	-12.8	8.4	40.0
64.433750	25.0	100.0	V	145.0	14.2	-10.8	15.0	40.0
172.462500	21.5	100.0	V	0.0	11.1	-10.4	22.0	43.5
249.987500	33.9	113.0	H	335.0	19.8	-14.1	12.1	46.0
548.586250	27.7	100.0	V	356.0	6.7	-21.0	18.3	46.0
750.023750	35.6	100.0	V	324.0	12.0	-23.6	10.4	46.0

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

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

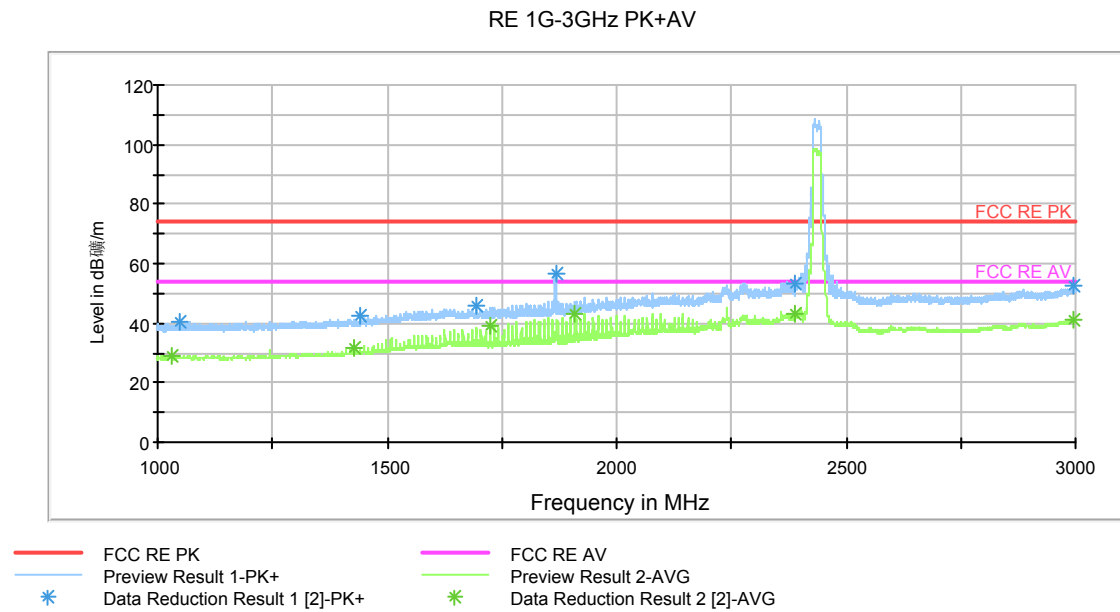
3. Margin = Limit – Quasi-Peak

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 81of 124



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBuV/m) in the test plot =(level in dBuV/m)

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)	Margin (dB)	Limit (dBuV/m)
1028.750000	38.6	150.0	V	335.0	28.6	-10.0	35.4	74
1430.000000	40.5	150.0	V	329.0	32.4	-8.1	33.5	74
1724.250000	44.9	150.0	V	306.0	39.2	-5.7	29.1	74
1910.250000	47.1	150.0	V	318.0	43.0	-4.1	26.9	74
2389.750000	51.1	150.0	V	300.0	48.9	-2.2	22.9	74
2997.750000	50.5	150.0	V	306.0	49.1	-1.4	23.5	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1028.750000	29.3	150.0	V	335.0	19.3	-10.0	24.7	54
1430.000000	31.9	150.0	V	329.0	23.8	-8.1	22.1	54
1724.250000	38.9	150.0	V	306.0	33.2	-5.7	15.1	54
1910.250000	43.2	150.0	V	318.0	39.1	-4.1	10.8	54
2389.750000	43.0	150.0	V	300.0	40.8	-2.2	11.0	54
2997.750000	41.2	150.0	V	306.0	39.8	-1.4	12.8	54

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

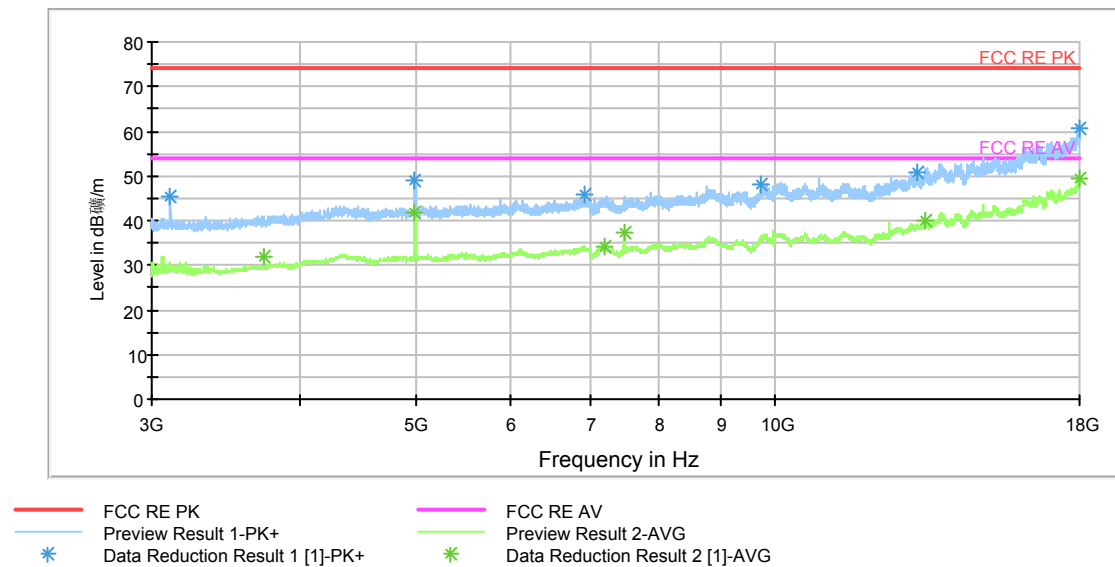
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 82of 124

RE 3-18GHz PK+AV



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBμV/m) in the test plot =(level in dBuV/m)

Radiates Emission from 3GHz to 18GHz

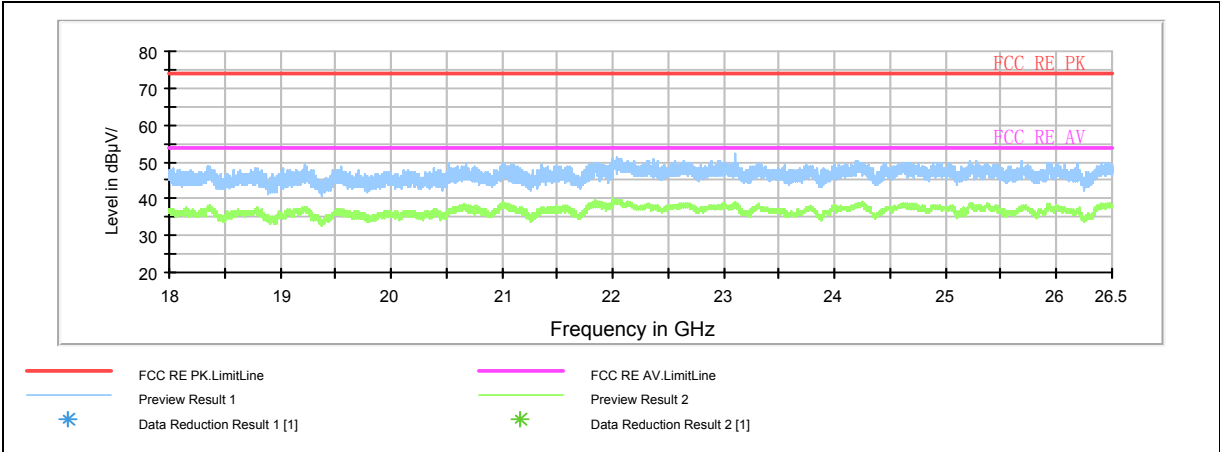
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3731.250000	40.9	200.0	V	125.0	40.8	-0.1	33.1	74
4976.250000	48.9	150.0	V	46.0	46.1	-2.8	25.1	74
7192.500000	42.6	150.0	V	234.0	34.9	-7.7	31.4	74
7464.375000	45.2	150.0	V	311.0	38.5	-6.7	28.8	74
13351.875000	48.7	200.0	V	328.0	34.2	-14.5	25.3	74
18000.000000	60.5	200.0	V	243.0	35.8	-24.7	13.5	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3731.250000	31.9	200.0	V	125.0	31.8	-0.1	22.1	54
4976.250000	41.9	150.0	V	46.0	39.1	-2.8	12.1	54
7192.500000	34.3	150.0	V	234.0	26.6	-7.7	19.7	54
7464.375000	37.1	150.0	V	311.0	30.4	-6.7	16.9	54
13351.875000	39.9	200.0	V	328.0	25.4	-14.5	14.1	54
18000.000000	49.3	200.0	V	243.0	24.6	-24.7	4.7	54

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

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



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBuV/m)in the test plot =(level in dBuv/m)

Radiates Emission from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd.

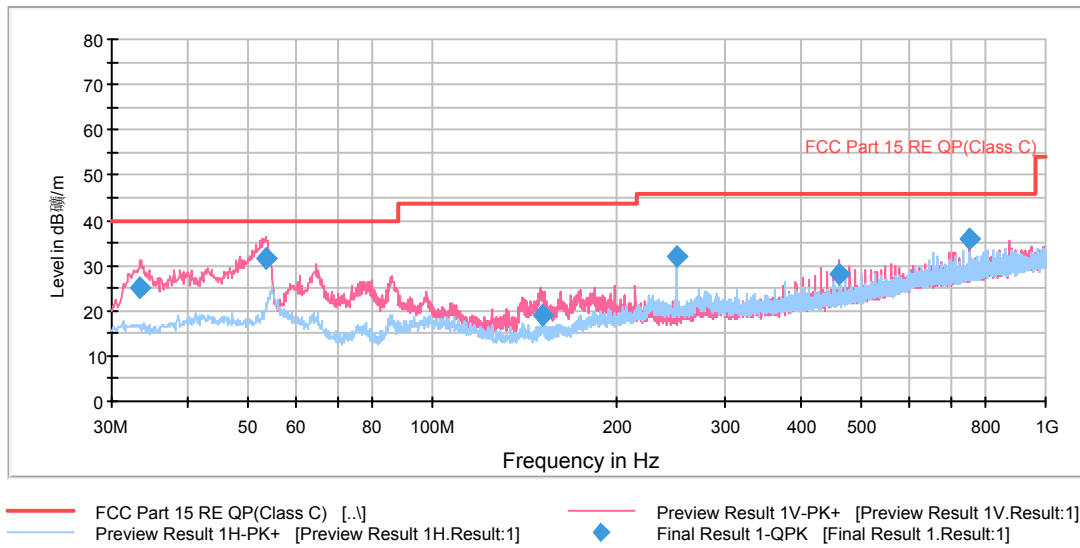
Test Report

Report No.:RBA1505-0061RF

Page 84of 124

802.11g CH11

RE 0.03-1GHz QP Class C



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBuV/m) in the test plot =(level in dBuV/m)

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)
33.275000	25.2	100.0	V	346.0	13.3	-11.9	14.8	40.0
53.402500	31.7	100.0	V	106.0	18.9	-12.8	8.3	40.0
151.001250	19.1	100.0	V	0.0	9.9	-9.2	24.4	43.5
249.987500	32.1	125.0	H	295.0	18.0	-14.1	13.9	46.0
460.437500	28.1	100.0	V	0.0	9.0	-19.1	17.9	46.0
750.023750	35.9	100.0	V	323.0	12.3	-23.6	10.1	46.0

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

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

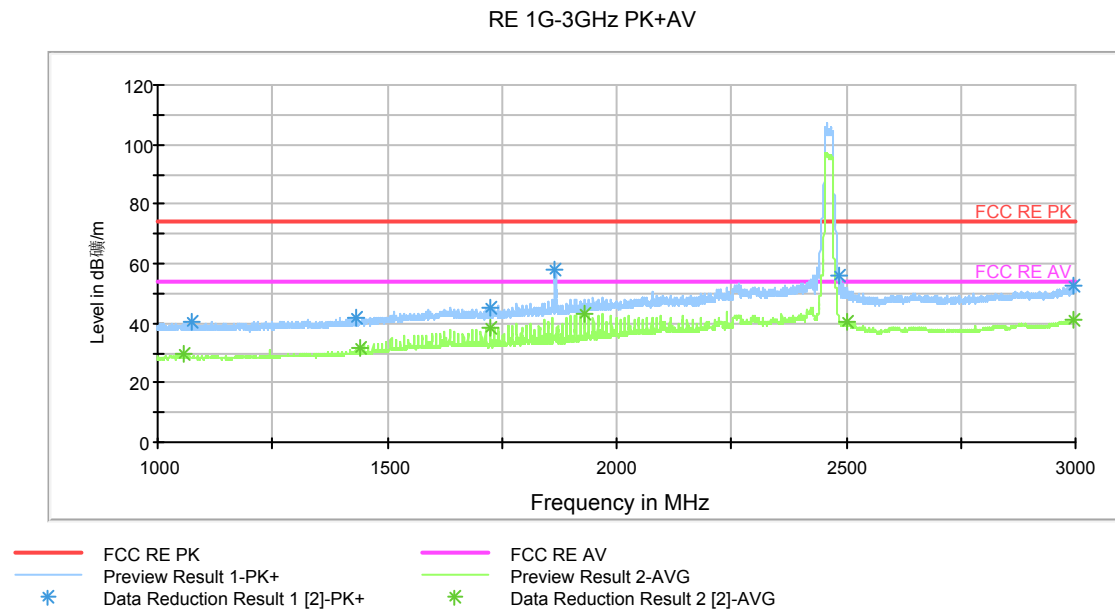
3. Margin = Limit – Quasi-Peak

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 85 of 124



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBuV/m) in the test plot =(level in dBuV/m)

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)	Margin (dB)	Limit (dBuV/m)
1057.750000	38.1	150.0	V	359.0	28.2	-9.9	35.9	74
1440.250000	40.7	150.0	V	20.0	32.7	-8.0	33.3	74
1724.250000	43.4	150.0	V	325.0	37.7	-5.7	30.6	74
1929.750000	47.9	150.0	V	319.0	44.0	-3.9	26.1	74
2500.250000	51.0	150.0	V	336.0	50.1	-0.9	23.0	74
2997.500000	50.9	150.0	V	313.0	49.5	-1.4	23.1	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1057.750000	29.6	150.0	V	359.0	19.7	-9.9	24.4	54
1440.250000	31.7	150.0	V	20.0	23.7	-8.0	22.3	54
1724.250000	38.2	150.0	V	325.0	32.5	-5.7	15.8	54
1929.750000	43.1	150.0	V	319.0	39.2	-3.9	10.9	54
2500.250000	40.3	150.0	V	336.0	39.4	-0.9	13.7	54
2997.500000	41.3	150.0	V	313.0	39.9	-1.4	12.7	54

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

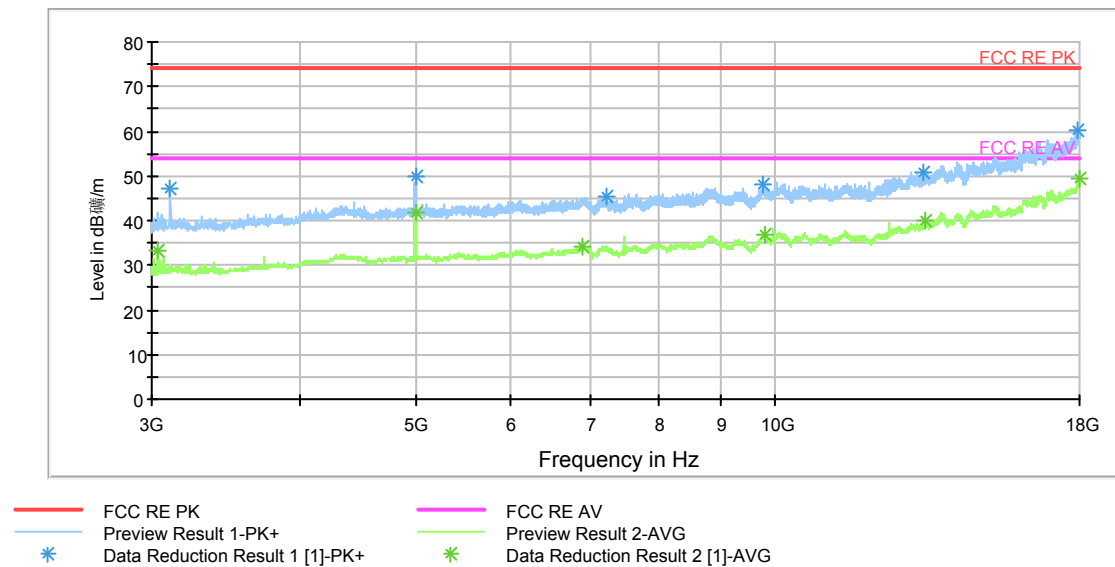
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 86of 124

RE 3-18GHz PK+AV



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBuV/m) in the test plot =(level in dBuV/m)

Radiates Emission from 3GHz to 18GHz

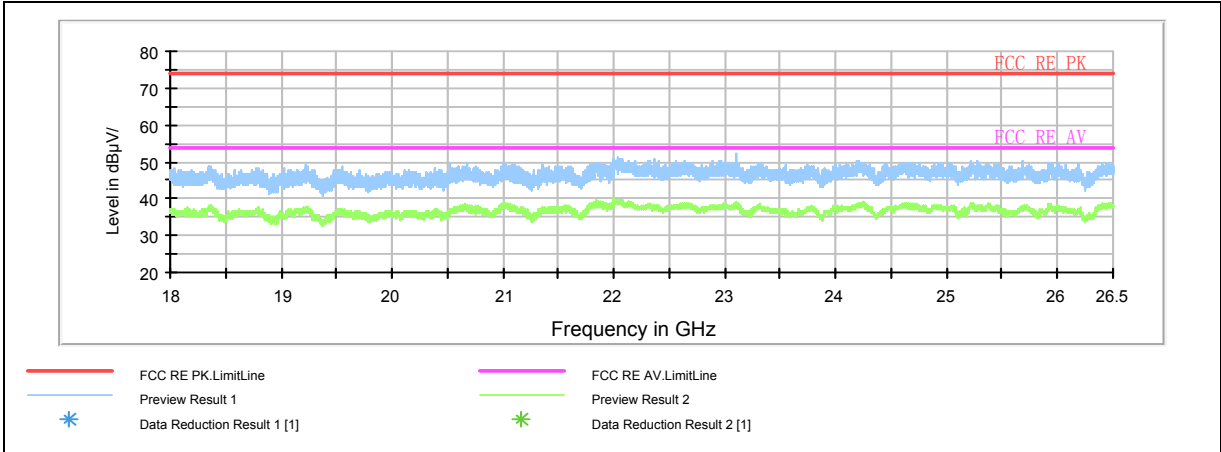
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3035.625000	41.9	150.0	V	316.0	39.7	-2.2	32.1	74
4998.750000	49.8	150.0	H	0.0	47.1	-2.7	24.2	74
6901.875000	43.7	150.0	V	349.0	37.9	-5.8	30.3	74
9798.750000	46.5	150.0	H	34.0	35.2	-11.3	27.5	74
13344.375000	49.7	150.0	H	17.0	35.2	-14.5	24.3	74
17996.250000	59.7	200.0	H	68.0	35.1	-24.6	14.3	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3035.625000	33.3	150.0	V	316.0	31.1	-2.2	20.7	54
4998.750000	41.8	150.0	H	0.0	39.1	-2.7	12.2	54
6901.875000	34.2	150.0	V	349.0	28.4	-5.8	19.8	54
9798.750000	36.8	150.0	H	34.0	25.5	-11.3	17.2	54
13344.375000	39.9	150.0	H	17.0	25.4	-14.5	14.1	54
17996.250000	49.4	200.0	H	68.0	24.8	-24.6	4.6	54

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

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



Note: This graph displays the maximum values of horizontal and vertical by software
Note: a font (Level in dBuV/m)in the test plot =(level in dBuV/m)
Radiates Emission from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd.

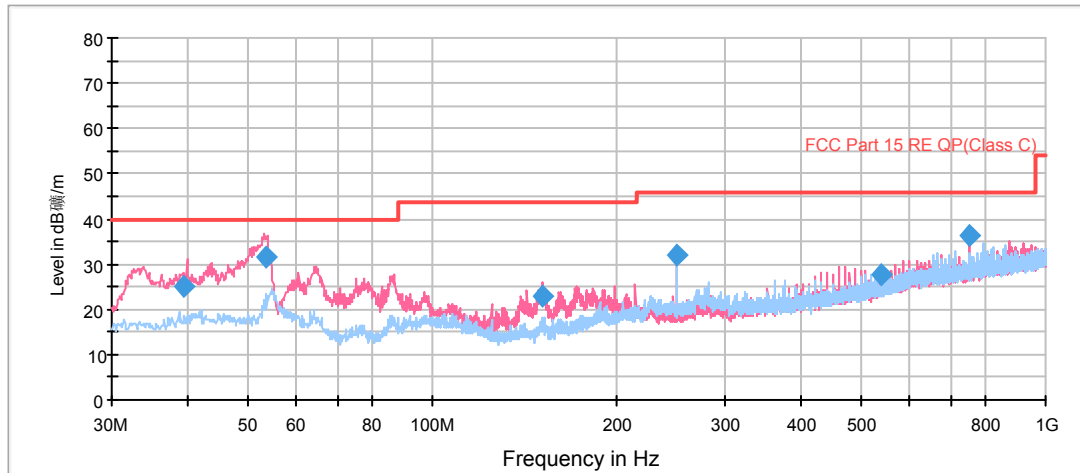
Test Report

Report No.:RBA1505-0061RF

Page 88of 124

802.11n(HT20) CH1

RE 0.03-1GHz QP Class C



— FCC Part 15 RE QP(Class C) [...] Preview Result 1V-PK+ [Preview Result 1V.Result:1]
 — Preview Result 1H-PK+ [Preview Result 1H.Result:1] ◆ Final Result 1-QPK [Final Result 1.Result:1]

Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBuV/m) in the test plot =(level in dBuV/m)

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)
39.261250	25.0	100.0	V	324.0	12.0	-13.0	15.0	40.0
53.360000	31.7	100.0	V	126.0	18.9	-12.8	8.3	40.0
151.486250	23.0	100.0	V	355.0	13.8	-9.2	20.5	43.5
249.987500	32.0	100.0	H	292.0	17.9	-14.1	14.0	46.0
538.805000	27.5	100.0	V	345.0	6.7	-20.8	18.5	46.0
750.022500	36.5	100.0	V	324.0	12.9	-23.6	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

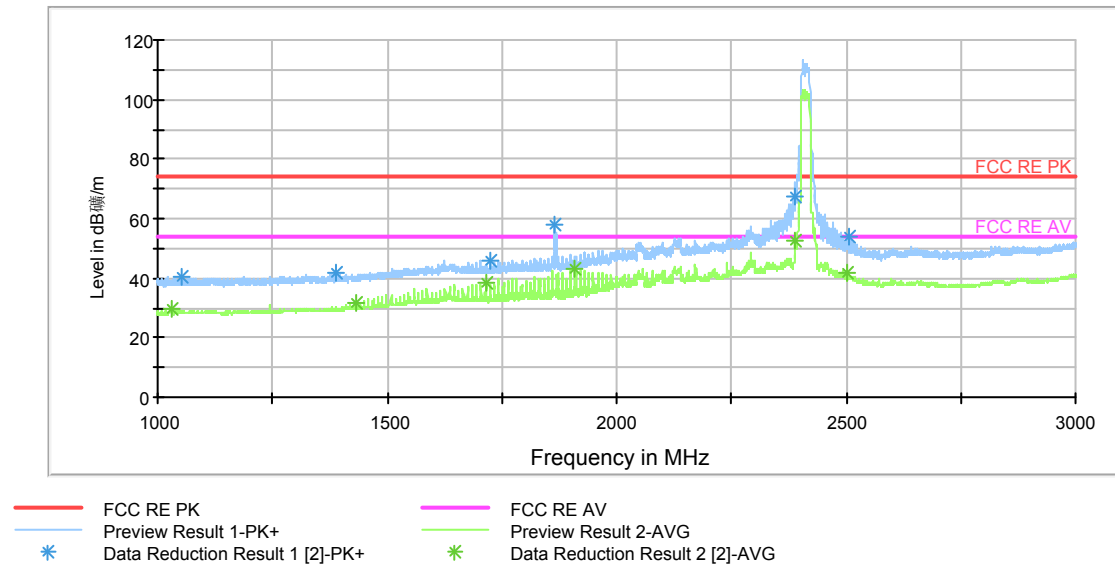
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 89 of 124

RE 1G-3GHz PK+AV



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBuV/m) in the test plot =(level in dBuV/m)

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)	Margin (dB)	Limit (dBuV/m)
1028.500000	38.6	150.0	V	347.0	28.6	-10.0	35.4	74
1430.250000	40.6	200.0	V	325.0	32.5	-8.1	33.4	74
1714.250000	44.7	200.0	V	302.0	39.2	-5.5	29.3	74
1910.250000	47.3	150.0	V	319.0	43.2	-4.1	26.7	74
2389.000000	65.2	150.0	V	347.0	63.0	-2.2	8.8	74
2500.000000	51.5	150.0	V	0.0	50.6	-0.9	22.5	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1028.500000	29.4	150.0	V	347.0	19.4	-10.0	24.6	54
1430.250000	31.4	200.0	V	325.0	23.3	-8.1	22.6	54
1714.250000	38.6	200.0	V	302.0	33.1	-5.5	15.4	54
1910.250000	43.2	150.0	V	319.0	39.1	-4.1	10.8	54
2389.000000	52.4	150.0	V	347.0	50.2	-2.2	1.6	54
2500.000000	41.7	150.0	V	0.0	40.8	-0.9	12.3	54

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

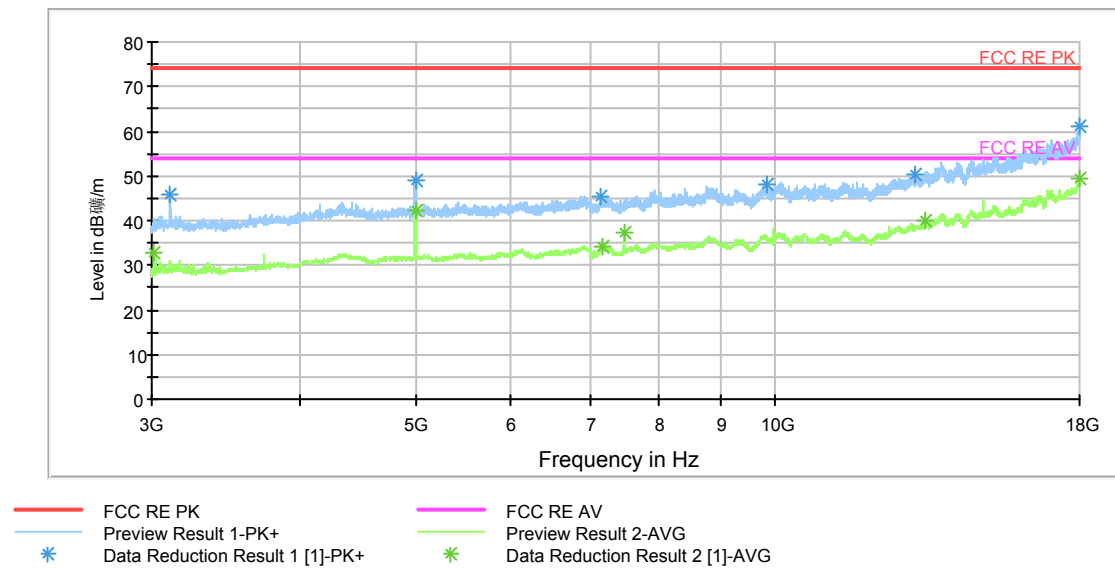
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 90 of 124

RE 3-18GHz PK+AV



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBμV/m) in the test plot =(level in dBuV/m)

Radiates Emission from 3GHz to 18GHz

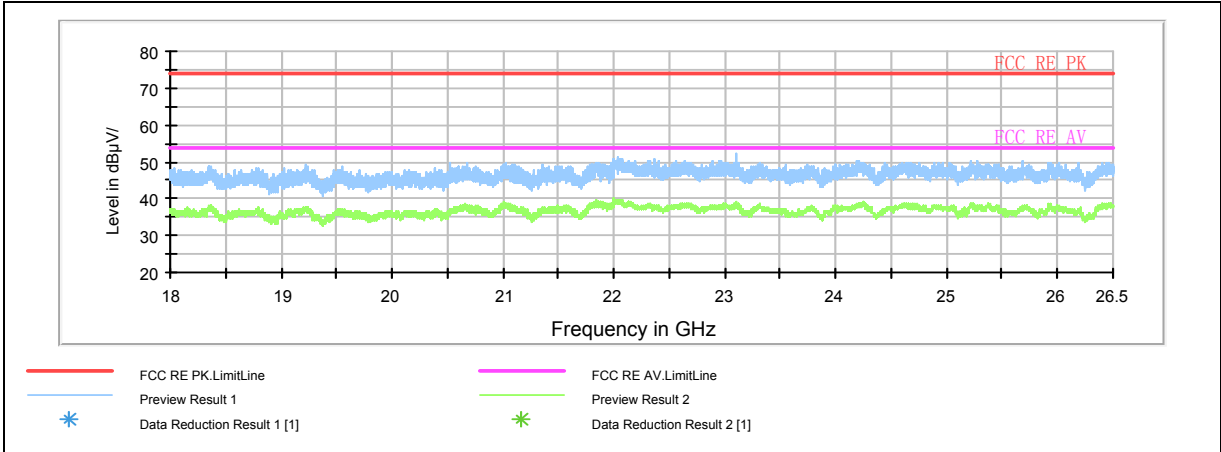
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3016.875000	40.3	150.0	V	319.0	37.8	-2.5	33.7	74
4998.750000	49.1	150.0	H	0.0	46.4	-2.7	24.9	74
7177.500000	43.3	150.0	V	132.0	35.7	-7.6	30.7	74
7464.375000	44.6	200.0	V	310.0	37.9	-6.7	29.4	74
13350.000000	50.3	200.0	H	151.0	35.8	-14.5	23.7	74
17996.250000	59.3	200.0	V	310.0	34.7	-24.6	14.7	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3016.875000	32.9	150.0	V	319.0	30.4	-2.5	21.1	54
4998.750000	42.4	150.0	H	0.0	39.7	-2.7	11.6	54
7177.500000	34.3	150.0	V	132.0	26.7	-7.6	19.7	54
7464.375000	37.3	200.0	V	310.0	30.6	-6.7	16.7	54
13350.000000	39.8	200.0	H	151.0	25.3	-14.5	14.2	54
17996.250000	49.7	200.0	V	310.0	25.1	-24.6	4.3	54

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

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



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBμV/m)in the test plot =(level in dBuv/m)

Radiates Emission from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd.

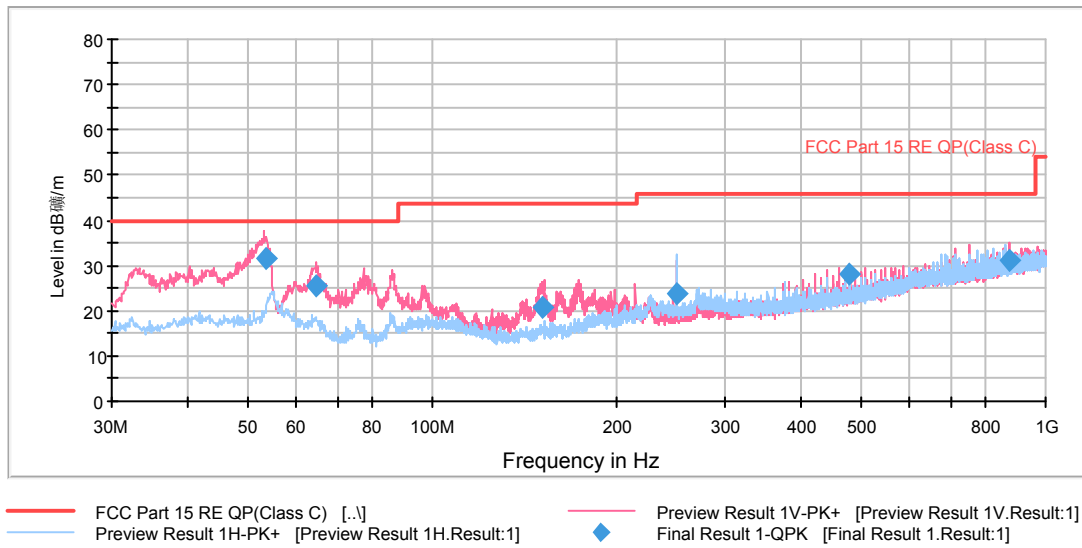
Test Report

Report No.:RBA1505-0061RF

Page 92of 124

802.11n(HT20) CH6

RE 0.03-1GHz QP Class C



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBuV/m) in the test plot =(level in dBuV/m)

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)
53.358750	31.4	100.0	V	215.0	18.6	-12.8	8.6	40.0
64.437500	25.7	100.0	V	142.0	14.9	-10.8	14.3	40.0
151.497500	20.5	100.0	V	0.0	11.3	-9.2	23.0	43.5
249.988750	23.8	100.0	H	0.0	9.7	-14.1	22.2	46.0
480.040000	28.1	100.0	V	347.0	8.6	-19.5	17.9	46.0
871.880000	31.0	114.0	V	0.0	5.7	-25.3	15.0	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

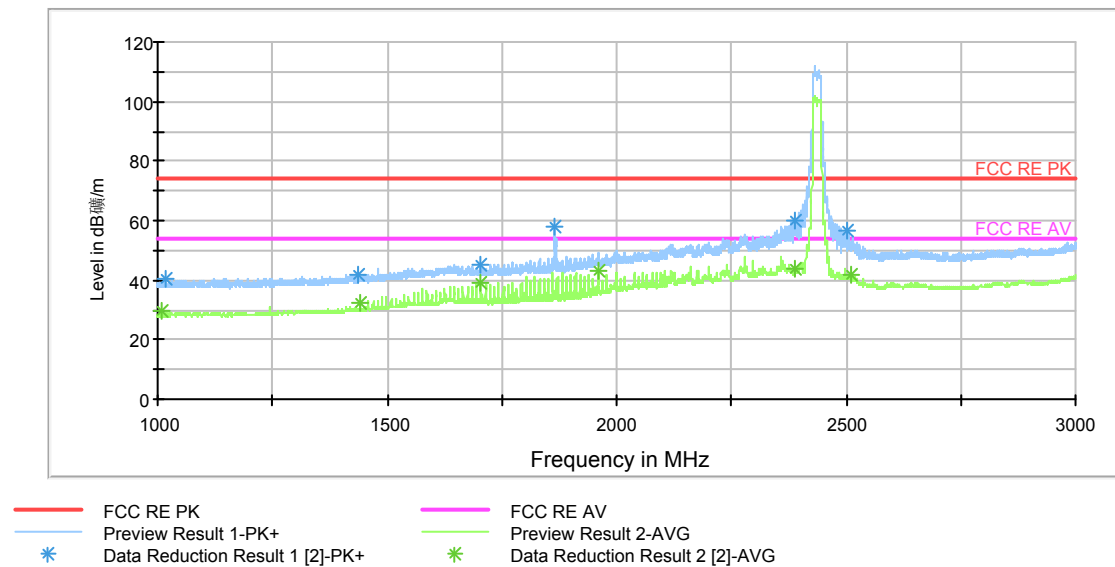
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 93of 124

RE 1G-3GHz PK+AV



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBuV/m) in the test plot =(level in dBuV/m)

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)	Margin (dB)	Limit (dBuV/m)
1009.000000	37.6	150.0	V	341.0	27.4	-10.2	36.4	74
1440.000000	40.2	200.0	V	330.0	32.2	-8.0	33.8	74
1704.250000	44.2	150.0	V	310.0	38.7	-5.5	29.8	74
1959.500000	47.4	150.0	V	318.0	44.3	-3.1	26.6	74
2388.750000	58.0	150.0	V	40.0	55.8	-2.2	16.0	74
2510.000000	50.3	200.0	V	335.0	49.4	-0.9	23.7	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1009.000000	29.3	150.0	V	341.0	19.1	-10.2	24.7	54
1440.000000	32.5	200.0	V	330.0	24.5	-8.0	21.5	54
1704.250000	38.9	150.0	V	310.0	33.4	-5.5	15.1	54
1959.500000	42.8	150.0	V	318.0	39.7	-3.1	11.2	54
2388.750000	43.9	150.0	V	40.0	41.7	-2.2	10.1	54
2510.000000	42.0	200.0	V	335.0	41.1	-0.9	12.0	54

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

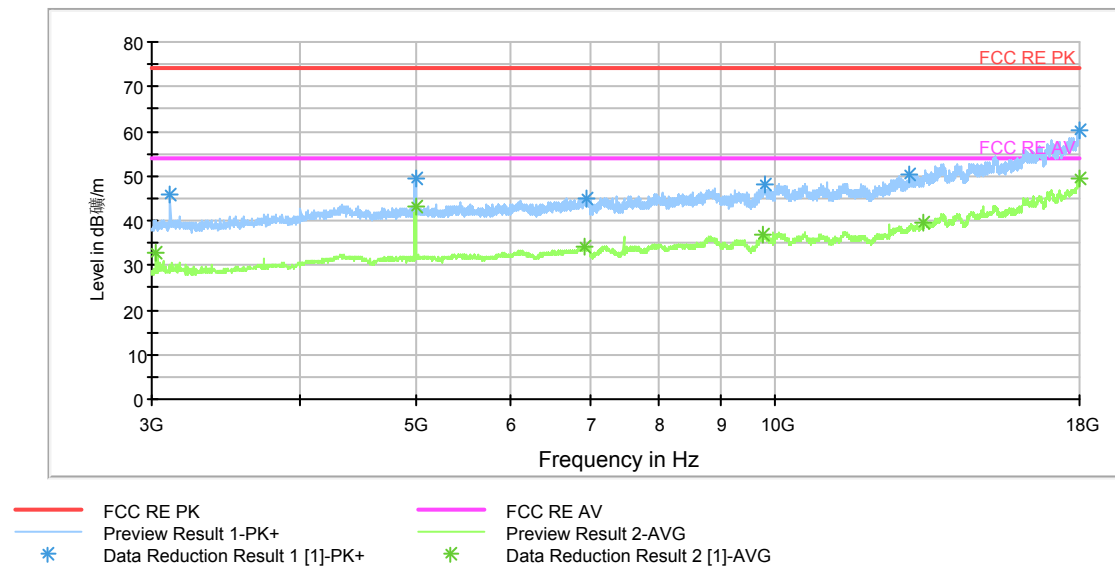
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 94of 124

RE 3-18GHz PK+AV



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBμV/m) in the test plot =(level in dBuV/m)

Radiates Emission from 3GHz to 18GHz

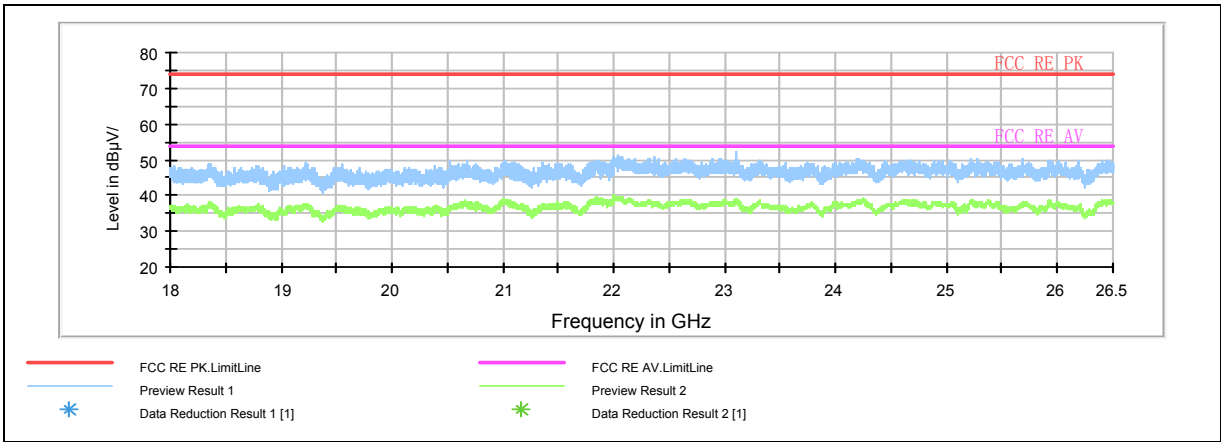
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3026.250000	40.0	200.0	V	322.0	37.6	-2.4	34.0	74
4998.750000	49.3	150.0	H	0.0	46.6	-2.7	24.7	74
6922.500000	44.8	150.0	H	81.0	39.1	-5.7	29.2	74
9757.500000	45.6	150.0	V	150.0	34.9	-10.7	28.4	74
13331.250000	49.1	150.0	V	357.0	34.8	-14.3	24.9	74
17981.250000	57.9	200.0	H	81.0	33.5	-24.4	16.1	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3026.250000	32.8	200.0	V	322.0	30.4	-2.4	21.2	54
4998.750000	43.0	150.0	H	0.0	40.3	-2.7	11.0	54
6922.500000	34.4	150.0	H	81.0	28.7	-5.7	19.6	54
9757.500000	36.9	150.0	V	150.0	26.2	-10.7	17.1	54
13331.250000	39.7	150.0	V	357.0	25.4	-14.3	14.3	54
17981.250000	49.3	200.0	H	81.0	24.9	-24.4	4.7	54

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

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



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBμV/m)in the test plot =(level in dBuv/m)

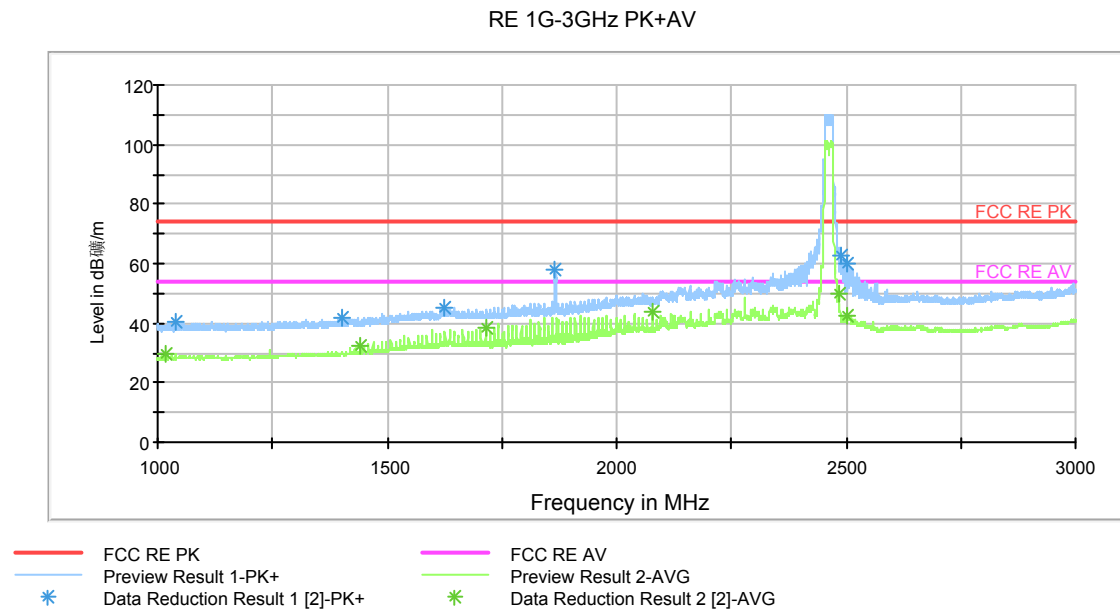
Radiates Emission from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 97of 124



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBuV/m) in the test plot =(level in dBuV/m)

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)	Margin (dB)	Limit (dBuV/m)
1018.750000	37.9	150.0	V	357.0	27.8	-10.1	36.1	74
1440.000000	39.7	200.0	V	286.0	31.7	-8.0	34.3	74
1714.750000	44.4	150.0	V	310.0	38.9	-5.5	29.6	74
2076.750000	48.7	150.0	V	310.0	45.7	-3.0	25.3	74
2483.500000	64.0	150.0	V	357.0	63.1	-0.9	10.0	74
2500.250000	57.8	200.0	V	0.0	56.9	-0.9	16.2	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1018.750000	29.9	150.0	V	357.0	19.8	-10.1	24.1	54
1440.000000	32.4	200.0	V	286.0	24.4	-8.0	21.6	54
1714.750000	38.1	150.0	V	310.0	32.6	-5.5	15.9	54
2076.750000	43.6	150.0	V	310.0	40.6	-3.0	10.4	54
2483.500000	50.0	150.0	V	357.0	49.1	-0.9	4.0	54
2500.250000	42.7	200.0	V	0.0	41.8	-0.9	11.3	54

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

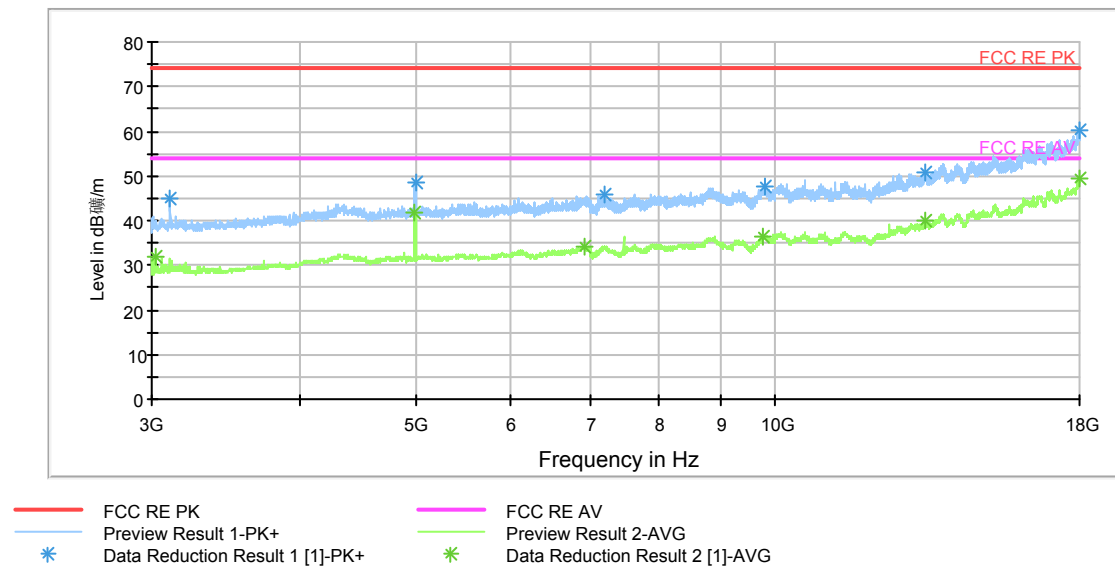
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 98of 124

RE 3-18GHz PK+AV



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBuV/m) in the test plot =(level in dBuV/m)

Radiates Emission from 3GHz to 18GHz

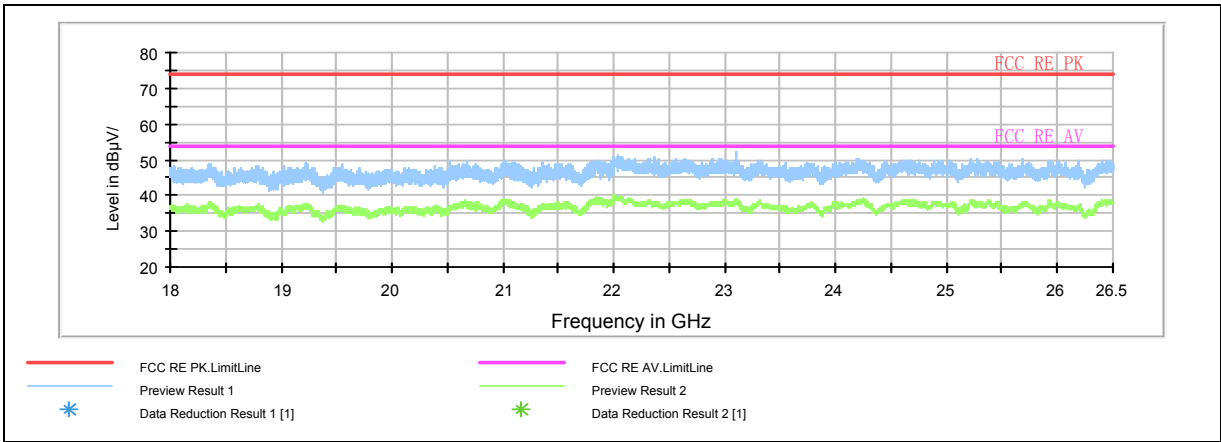
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3026.250000	39.3	150.0	V	317.0	36.9	-2.4	34.7	74
4976.250000	48.7	150.0	V	45.0	45.9	-2.8	25.3	74
6915.000000	43.2	150.0	H	228.0	37.5	-5.7	30.8	74
9783.750000	46.3	200.0	H	0.0	35.2	-11.1	27.7	74
13348.125000	49.0	150.0	V	27.0	34.5	-14.5	25.0	74
17998.125000	60.0	200.0	H	202.0	35.3	-24.7	14.0	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3026.250000	32.1	150.0	V	317.0	29.7	-2.4	21.9	54
4976.250000	41.9	150.0	V	45.0	39.1	-2.8	12.1	54
6915.000000	34.3	150.0	H	228.0	28.6	-5.7	19.7	54
9783.750000	36.6	200.0	H	0.0	25.5	-11.1	17.4	54
13348.125000	39.8	150.0	V	27.0	25.3	-14.5	14.2	54
17998.125000	49.5	200.0	H	202.0	24.8	-24.7	4.5	54

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

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



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBμV/m)in the test plot =(level in dBuv/m)

Radiates Emission from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd.

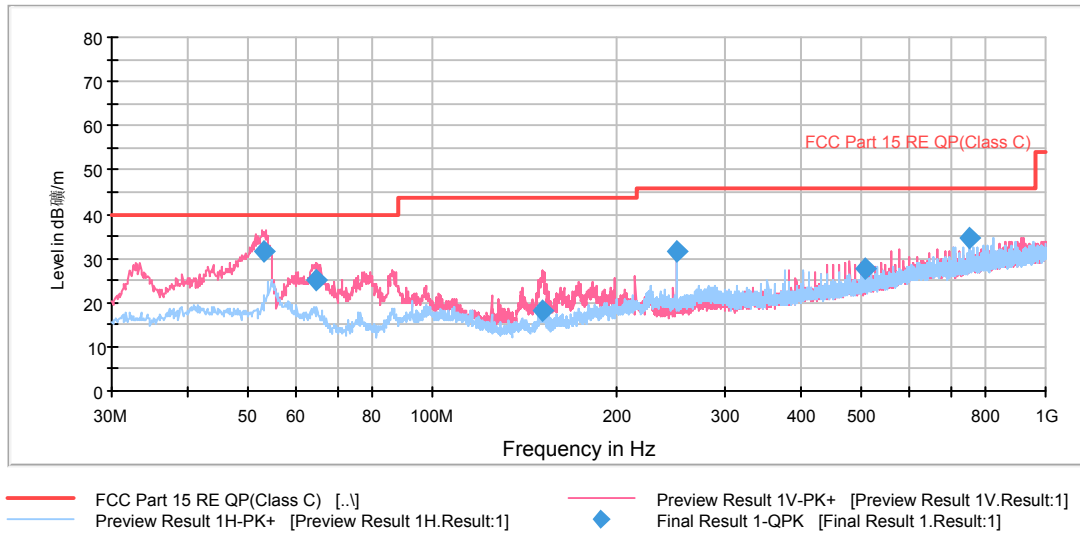
Test Report

Report No.:RBA1505-0061RF

Page 100 of 124

802.11n(HT40) CH3

RE 0.03-1GHz QP Class C



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBuV/m) in the test plot =(level in dBuV/m)

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)
53.273750	31.6	100.0	V	155.0	18.8	12.8	8.4	40.0
64.558750	25.2	100.0	V	0.0	14.5	10.7	14.8	40.0
151.486250	18.4	100.0	V	0.0	9.2	9.2	25.1	43.5
249.988750	31.6	125.0	V	349.0	17.5	14.1	14.4	46.0
509.422500	27.8	100.0	V	353.0	7.7	20.1	18.2	46.0
750.022500	34.8	100.0	V	294.0	11.2	23.6	11.2	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

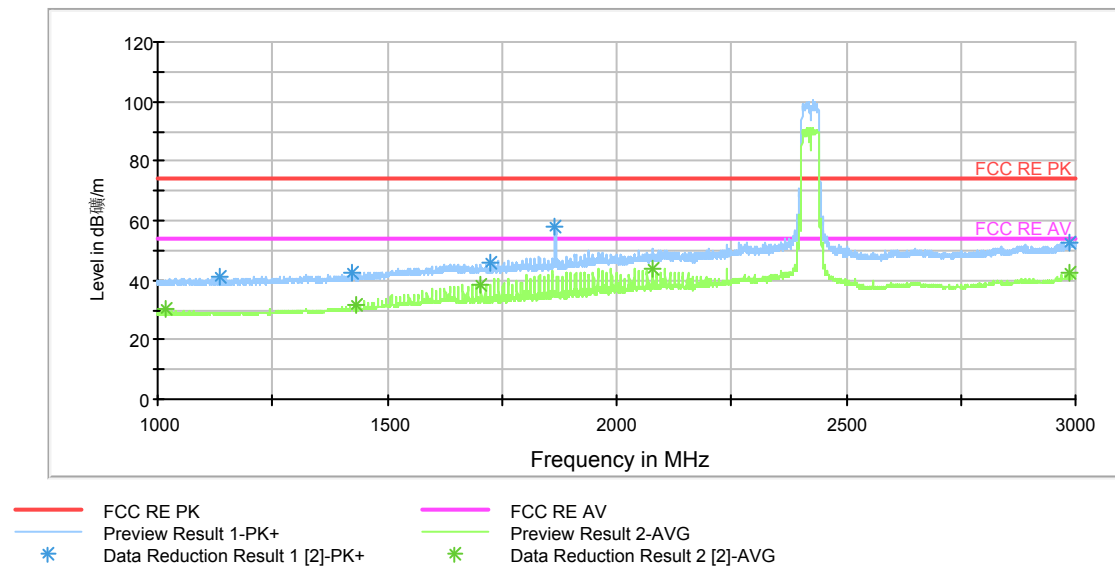
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 101 of 124

RE 1G-3GHz PK+AV



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBuV/m) in the test plot =(level in dBuV/m)

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)	Margin (dB)	Limit (dBuV/m)
1018.750000	40.0	202.0	V	0.0	29.9	-10.1	34.0	74
1430.500000	40.2	102.0	V	341.0	32.1	-8.1	33.8	74
1704.500000	45.0	202.0	V	279.0	39.5	-5.5	29.0	74
2080.000000	50.6	102.0	V	0.0	47.6	-3.0	23.4	74
2988.000000	50.9	202.0	V	0.0	49.5	-1.4	23.1	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1018.750000	30.3	202.0	V	0.0	20.2	-10.1	23.7	54
1430.500000	31.5	102.0	V	341.0	23.4	-8.1	22.5	54
1704.500000	38.7	202.0	V	279.0	33.2	-5.5	15.3	54
2080.000000	44.1	102.0	V	0.0	41.1	-3.0	9.9	54
2988.000000	42.4	202.0	V	0.0	41.0	-1.4	11.6	54

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

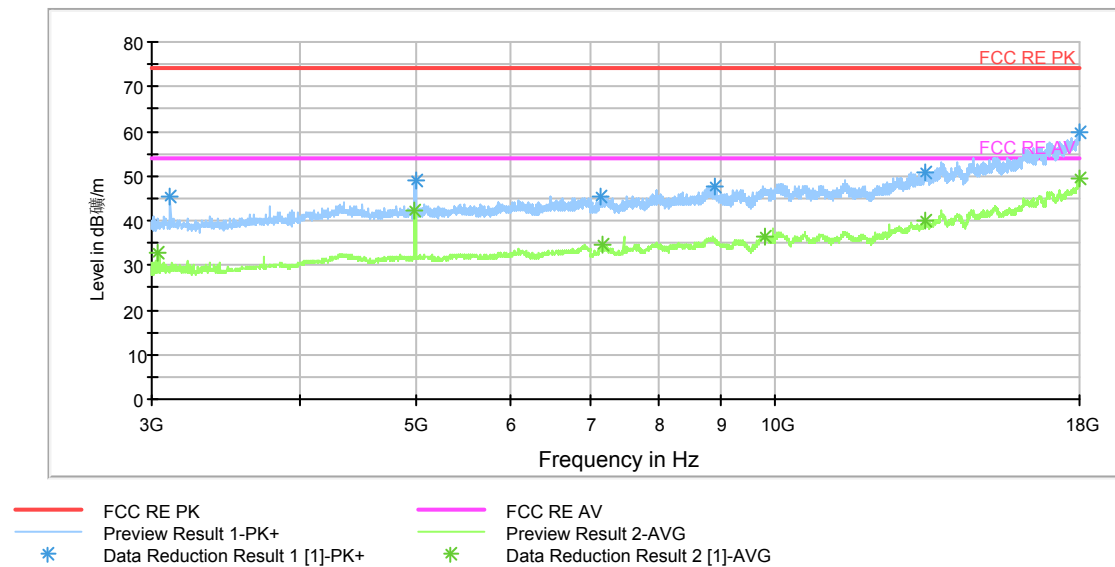
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 102 of 124

RE 3-18GHz PK+AV



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBμV/m) in the test plot =(level in dBuV/m)

Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3035.625000	40.3	150.0	V	325.0	38.1	-2.2	33.7	74
4976.250000	48.6	150.0	V	45.0	45.8	-2.8	25.4	74
7158.750000	43.1	150.0	H	0.0	35.6	-7.5	30.9	74
9815.625000	46.9	150.0	V	198.0	35.7	-11.2	27.1	74
13351.875000	49.4	200.0	V	291.0	34.9	-14.5	24.6	74
18000.000000	59.6	150.0	H	139.0	34.9	-24.7	14.4	74

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

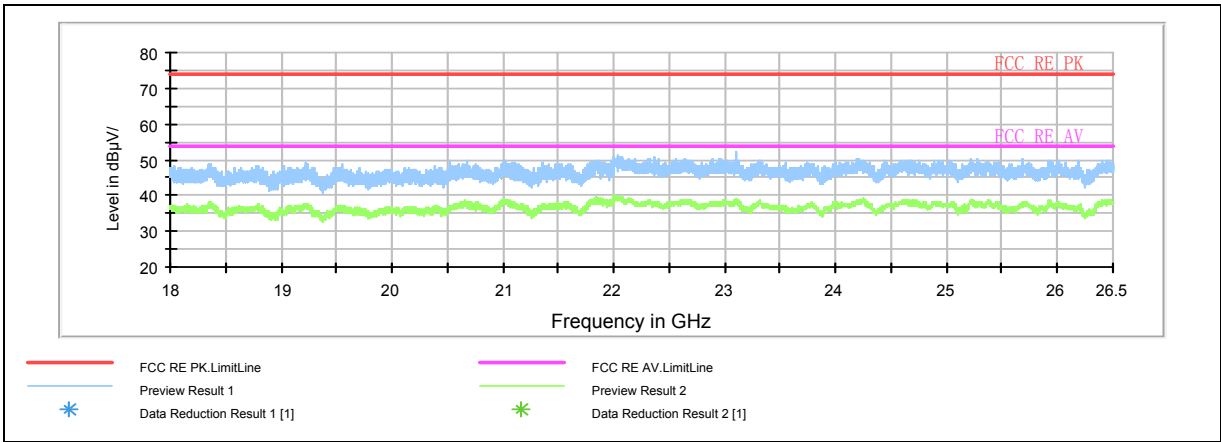
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3035.625000	32.7	150.0	V	325.0	30.5	-2.2	21.3	54
4976.250000	42.1	150.0	V	45.0	39.3	-2.8	11.9	54
7158.750000	34.5	150.0	H	0.0	27.0	-7.5	19.5	54
9815.625000	36.6	150.0	V	198.0	25.4	-11.2	17.4	54
13351.875000	40.0	200.0	V	291.0	25.5	-14.5	14.0	54
18000.000000	49.6	150.0	H	139.0	24.9	-24.7	4.4	54

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

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

Report No.:RBA1505-0061RF

Page 103of 124



Note: This graph displays the maximum values of horizontal and vertical by software
Note: a font (Level in dBμV/m)in the test plot =(level in dBuv/m)
Radiates Emission from 18GHz to 26.5GHz

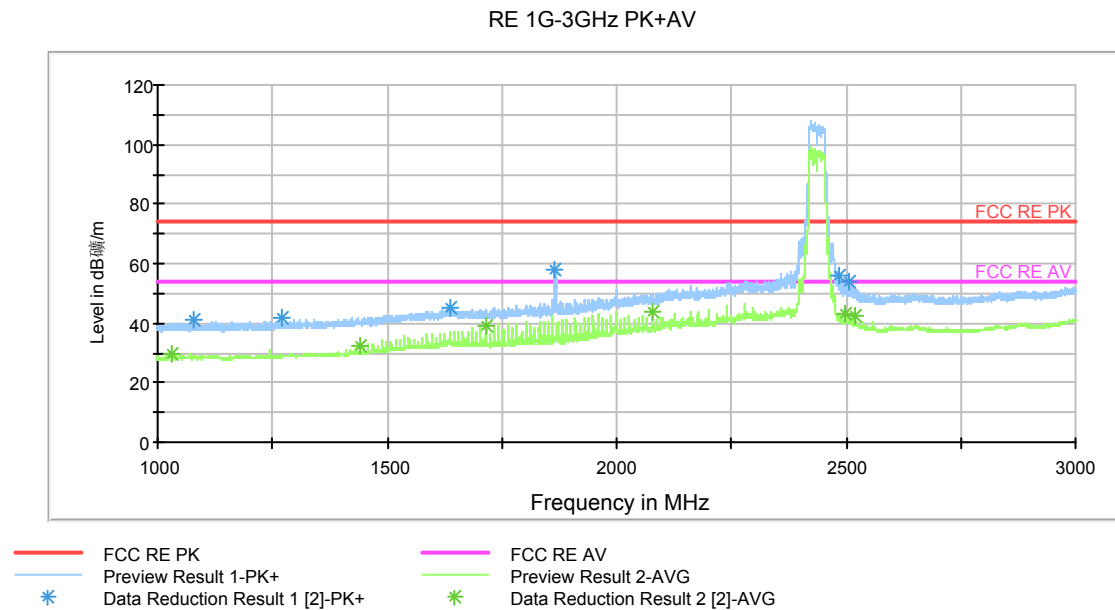
802.11n(HT40) CH6

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 105 of 124



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBuV/m) in the test plot =(level in dBuV/m)

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)	Margin (dB)	Limit (dBuV/m)
1028.750000	37.5	150.0	V	338.0	27.5	-10.0	36.5	74
1440.000000	40.4	200.0	V	332.0	32.4	-8.0	33.6	74
1714.500000	44.6	150.0	V	312.0	39.1	-5.5	29.4	74
2080.000000	50.1	200.0	V	353.0	47.1	-3.0	23.9	74
2497.250000	50.7	150.0	V	5.0	50.0	-0.7	23.3	74
2520.000000	51.3	150.0	V	0.0	50.4	-0.9	22.7	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1028.750000	29.8	150.0	V	338.0	19.8	-10.0	24.2	54
1440.000000	32.3	200.0	V	332.0	24.3	-8.0	21.7	54
1714.500000	39.0	150.0	V	312.0	33.5	-5.5	15.0	54
2080.000000	44.1	200.0	V	353.0	41.1	-3.0	9.9	54
2497.250000	43.4	150.0	V	5.0	42.7	-0.7	10.6	54
2520.000000	42.8	150.0	V	0.0	41.9	-0.9	11.2	54

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

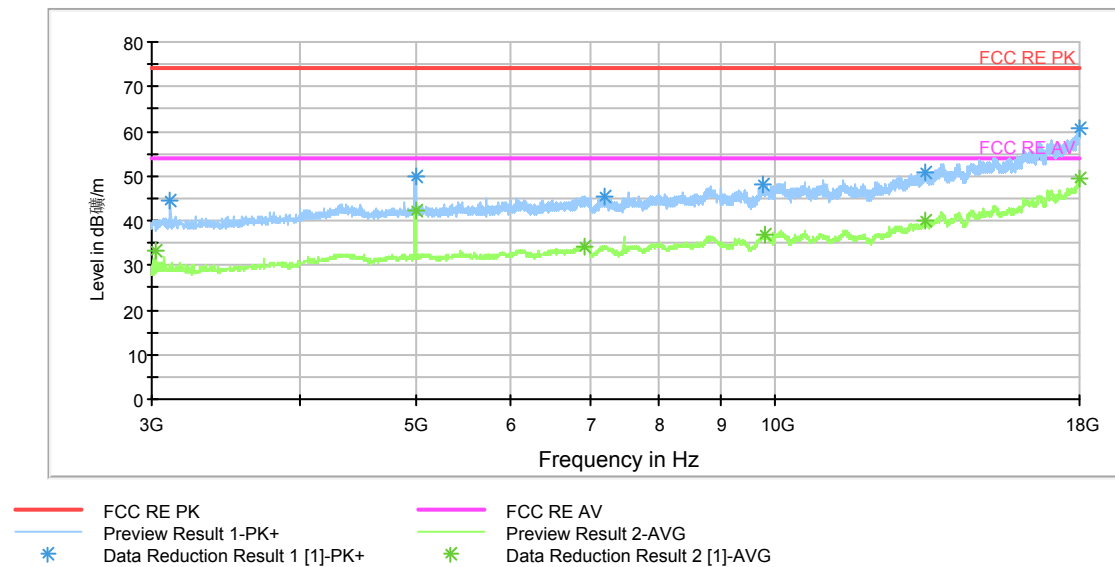
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 106of 124

RE 3-18GHz PK+AV



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBuV/m) in the test plot =(level in dBuV/m)

Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3026.250000	40.1	200.0	V	314.0	37.7	-2.4	33.9	74
4998.750000	49.1	150.0	H	15.0	46.4	-2.7	24.9	74
6926.250000	43.5	150.0	H	135.0	37.8	-5.7	30.5	74
9785.625000	46.0	150.0	H	270.0	34.9	-11.1	28.0	74
13342.500000	50.4	150.0	V	173.0	36.0	-14.4	23.6	74
17986.875000	58.9	150.0	V	314.0	34.4	-24.5	15.1	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3026.250000	33.2	200.0	V	314.0	30.8	-2.4	20.8	54
4998.750000	42.3	150.0	H	15.0	39.6	-2.7	11.7	54
6926.250000	34.4	150.0	H	135.0	28.7	-5.7	19.6	54
9785.625000	36.9	150.0	H	270.0	25.8	-11.1	17.1	54
13342.500000	40.1	150.0	V	173.0	25.7	-14.4	13.9	54
17986.875000	49.4	150.0	V	314.0	24.9	-24.5	4.6	54

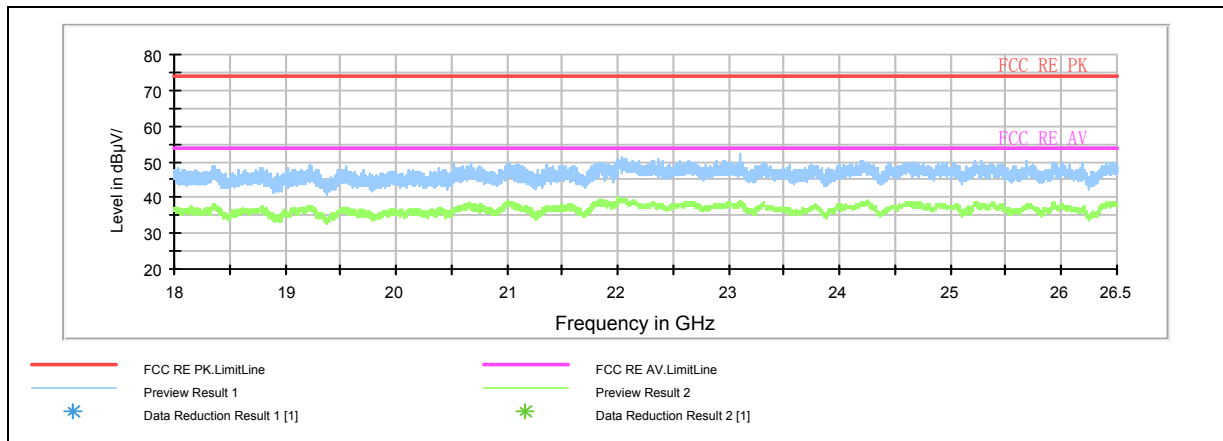
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 107 of 124



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBμV/m) in the test plot =(level in dBuv/m)

Radiates Emission from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd.

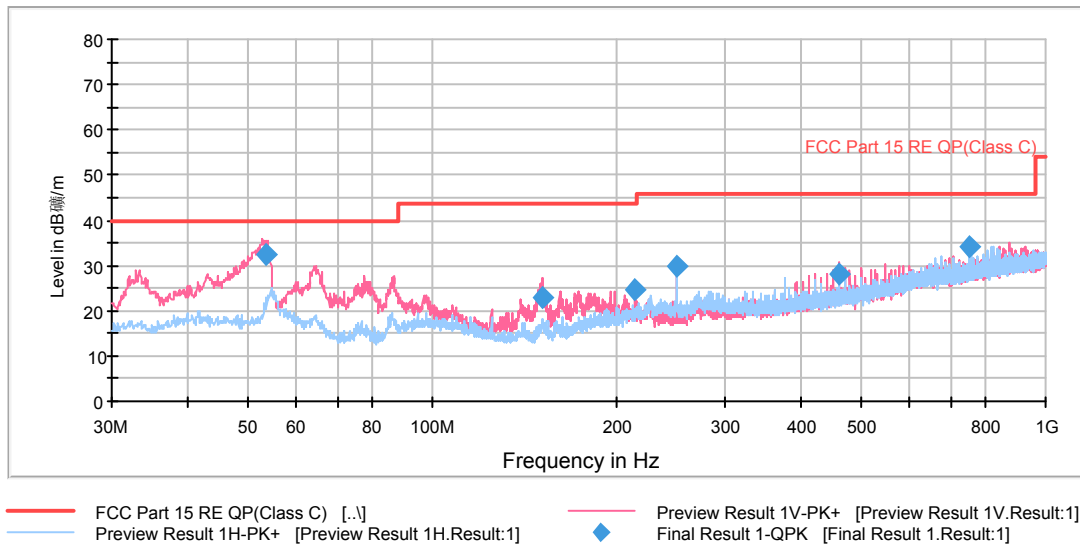
Test Report

Report No.:RBA1505-0061RF

Page 108of 124

802.11n(HT40) CH9

RE 0.03-1GHz QP Class C



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBuV/m) in the test plot =(level in dBuV/m)

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)
53.356250	32.3	100.0	V	222.0	19.5	-12.8	7.7	40.0
151.487500	23.0	100.0	V	352.0	13.8	-9.2	20.5	43.5
214.501250	24.5	100.0	V	0.0	11.9	-12.6	19.0	43.5
249.987500	30.1	125.0	H	298.0	16.0	-14.1	16.0	46.0
460.437500	28.1	100.0	V	352.0	9.0	-19.1	17.9	46.0
750.022500	34.0	100.0	V	332.0	10.4	-23.6	12.0	46.0

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

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

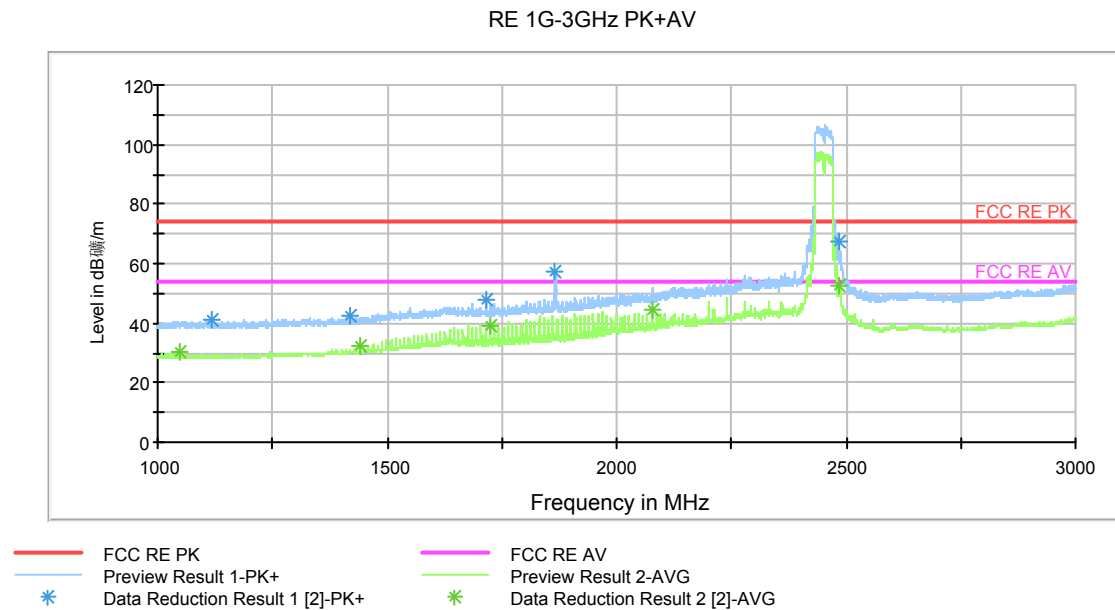
3. Margin = Limit – Quasi-Peak

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 109 of 124



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBuV/m) in the test plot =(level in dBuV/m)

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)	Margin (dB)	Limit (dBuV/m)
1048.250000	38.5	100.0	H	0.0	28.6	-9.9	35.5	74
1440.000000	40.4	202.0	V	328.0	32.4	-8.0	33.6	74
1724.000000	44.5	202.0	V	291.0	38.8	-5.7	29.5	74
2079.750000	50.6	202.0	V	188.0	47.6	-3.0	23.4	74
2485.250000	66.4	100.0	V	5.0	65.6	-0.8	7.6	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1048.250000	30.1	100.0	H	0.0	20.2	-9.9	23.9	54
1440.000000	32.1	202.0	V	328.0	24.1	-8.0	21.9	54
1724.000000	39.4	202.0	V	291.0	33.7	-5.7	14.6	54
2079.750000	44.6	202.0	V	188.0	41.6	-3.0	9.4	54
2485.250000	52.5	100.0	V	5.0	51.7	-0.8	1.5	54

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

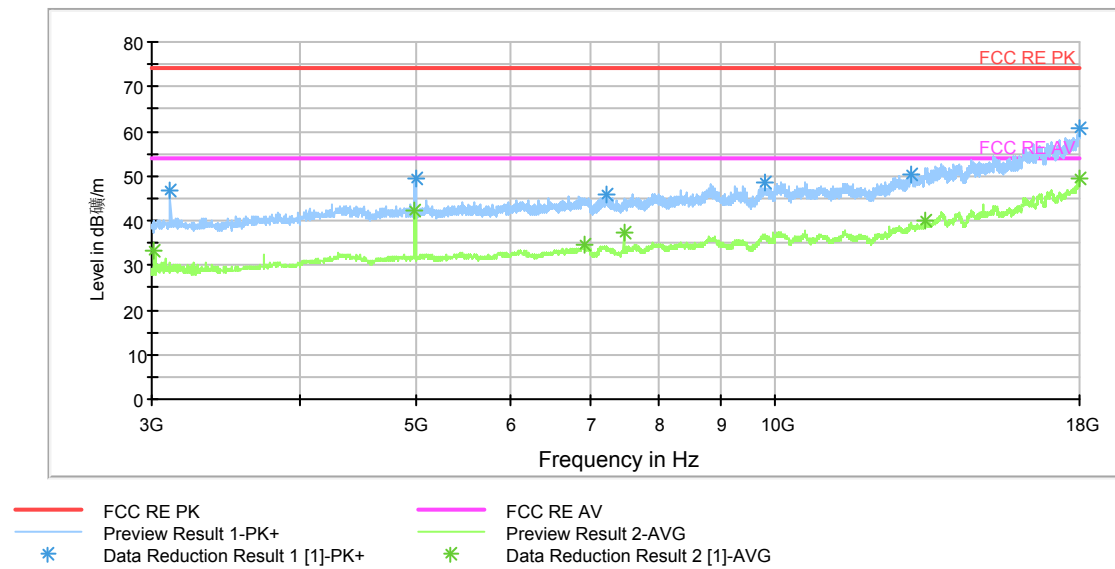
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 110 of 124

RE 3-18GHz PK+AV



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBuV/m) in the test plot =(level in dBuV/m)

Radiates Emission from 3GHz to 18GHz

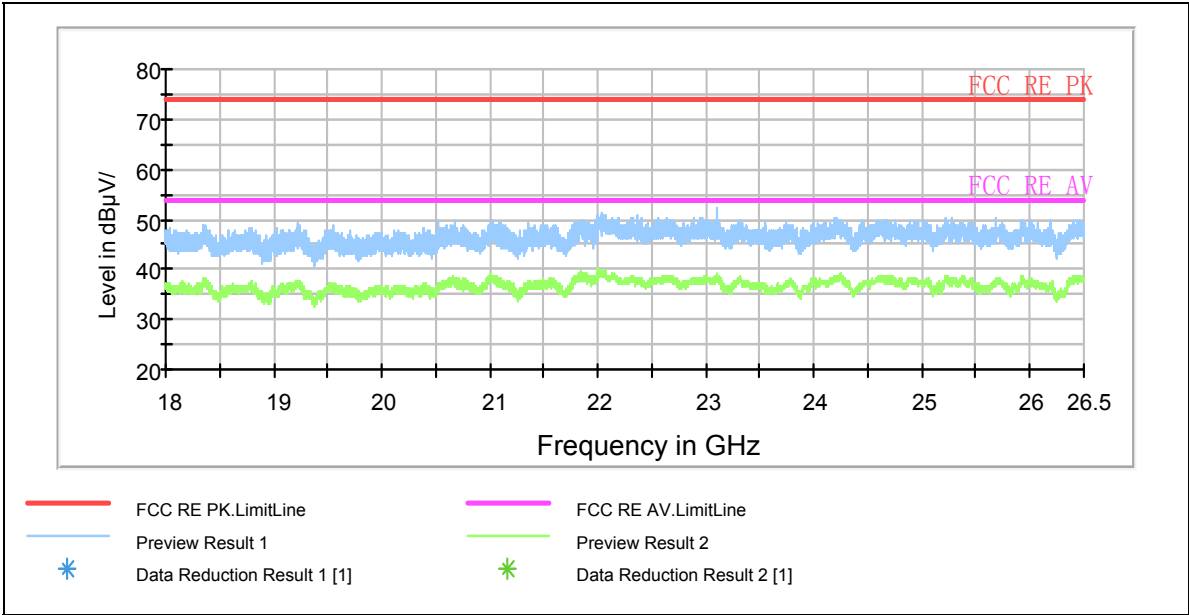
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3016.875000	39.9	150.0	V	312.0	37.4	-2.5	34.1	74
4976.250000	48.4	150.0	V	0.0	45.6	-2.8	25.6	74
6924.375000	44.1	150.0	H	240.0	38.4	-5.7	29.9	74
7464.375000	44.9	200.0	V	312.0	38.2	-6.7	29.1	74
13351.875000	50.1	200.0	H	163.0	35.6	-14.5	23.9	74
17996.250000	59.3	150.0	V	346.0	34.7	-24.6	14.7	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3016.875000	33.0	150.0	V	312.0	30.5	-2.5	21.0	54
4976.250000	42.2	150.0	V	0.0	39.4	-2.8	11.8	54
6924.375000	34.4	150.0	H	240.0	28.7	-5.7	19.6	54
7464.375000	37.3	200.0	V	312.0	30.6	-6.7	16.7	54
13351.875000	40.0	200.0	H	163.0	25.5	-14.5	14.0	54
17996.250000	49.3	150.0	V	346.0	24.7	-24.6	4.7	54

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

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



Note: This graph displays the maximum values of horizontal and vertical by software

Note: a font (Level in dBμV/m)in the test plot =(level in dBuv/m)

Radiates Emission from 18GHz to 26.5GHz

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 112 of 124

2.10. Conducted Emissions

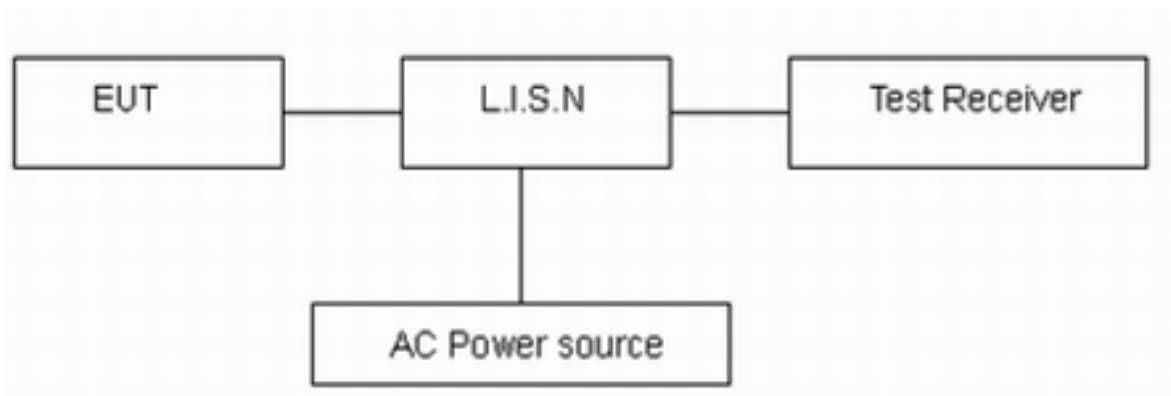
Ambient condition

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 transmitting mode.

Test setup



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

Limits

Frequency (MHz)	Conducted Limits(dB μ V)	
	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.

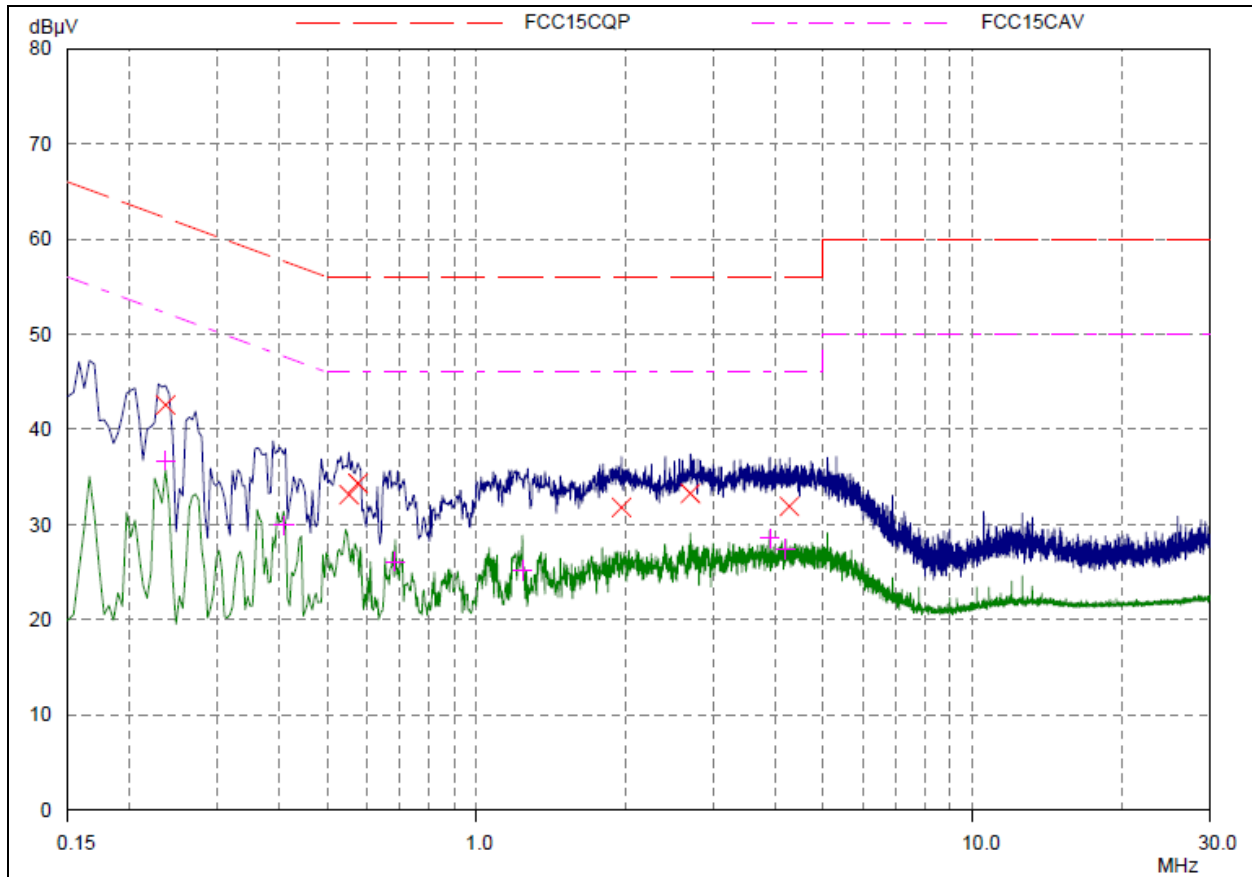
Test Report

Report No.:RBA1505-0061RF

Page 113 of 124

Test Results:

802.11b CH6



Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.23593	42.59	62.24	19.65	L1	gnd
0.55234	33.15	56.00	22.85	L1	gnd
0.57578	34.34	56.00	21.66	L1	gnd
1.95859	31.82	56.00	24.18	L1	gnd
2.69687	33.28	56.00	22.72	L1	gnd
4.275	31.92	56.00	24.08	L1	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.23593	36.72	52.24	15.52	L1	gnd
0.40781	29.94	47.69	17.75	L1	gnd
0.68515	26.09	46.00	19.91	L1	gnd
1.23593	25.18	46.00	20.82	L1	gnd
3.9	28.55	46.00	17.45	L1	gnd
4.19687	27.44	46.00	18.56	L1	gnd

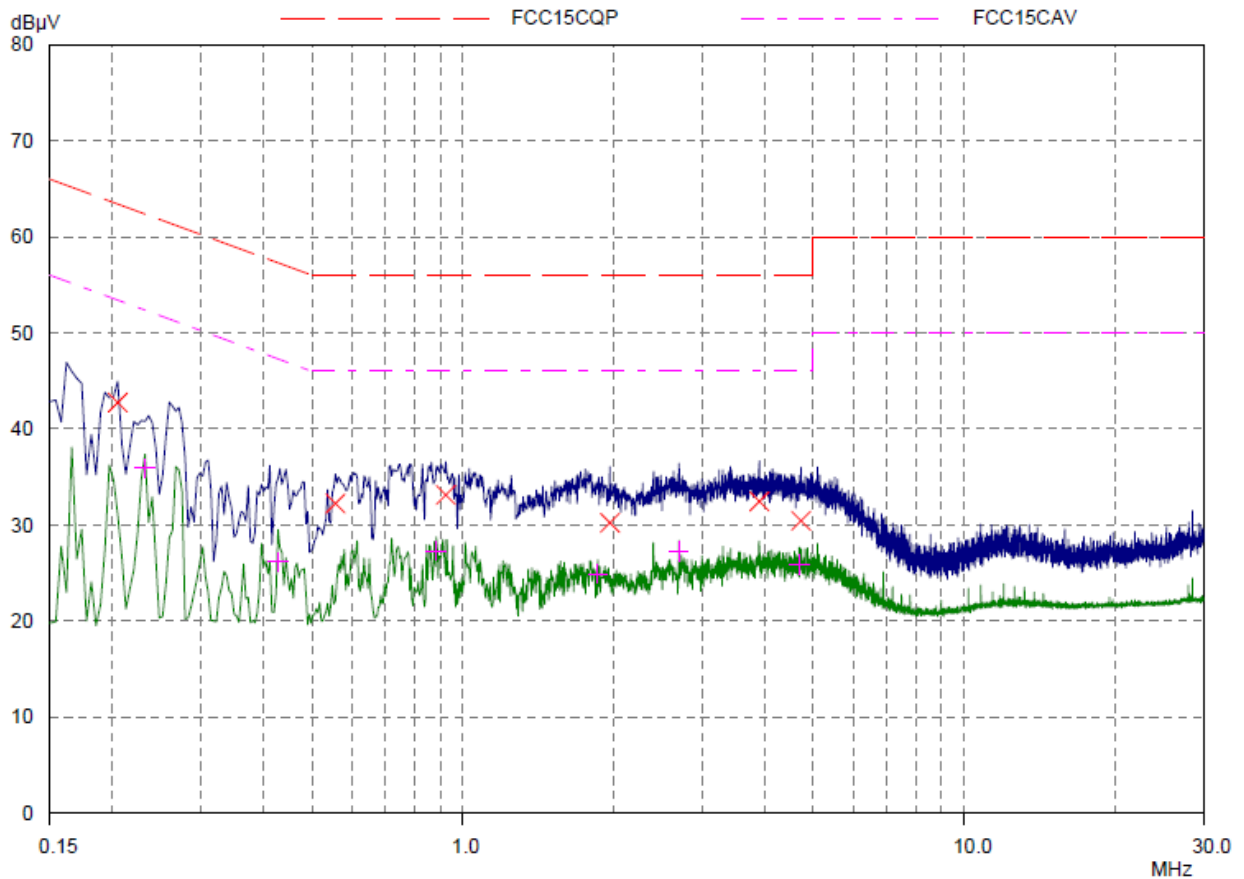
L Line

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 114 of 124



Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.20468	42.76	63.42	20.66	N	gnd
0.55625	32.25	56.00	23.75	N	gnd
0.92343	33.14	56.00	22.86	N	gnd
1.9625	30.24	56.00	25.76	N	gnd
3.9	32.46	56.00	23.54	N	gnd
4.72421	30.44	56.00	25.56	N	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.23203	35.91	52.38	16.47	N	gnd
0.42734	26.14	47.30	21.16	N	gnd
0.88437	27.33	46.00	18.67	N	gnd
1.85703	24.91	46.00	21.09	N	gnd
2.69687	27.26	46.00	18.74	N	gnd
4.68125	25.85	46.00	20.15	N	gnd

N Line

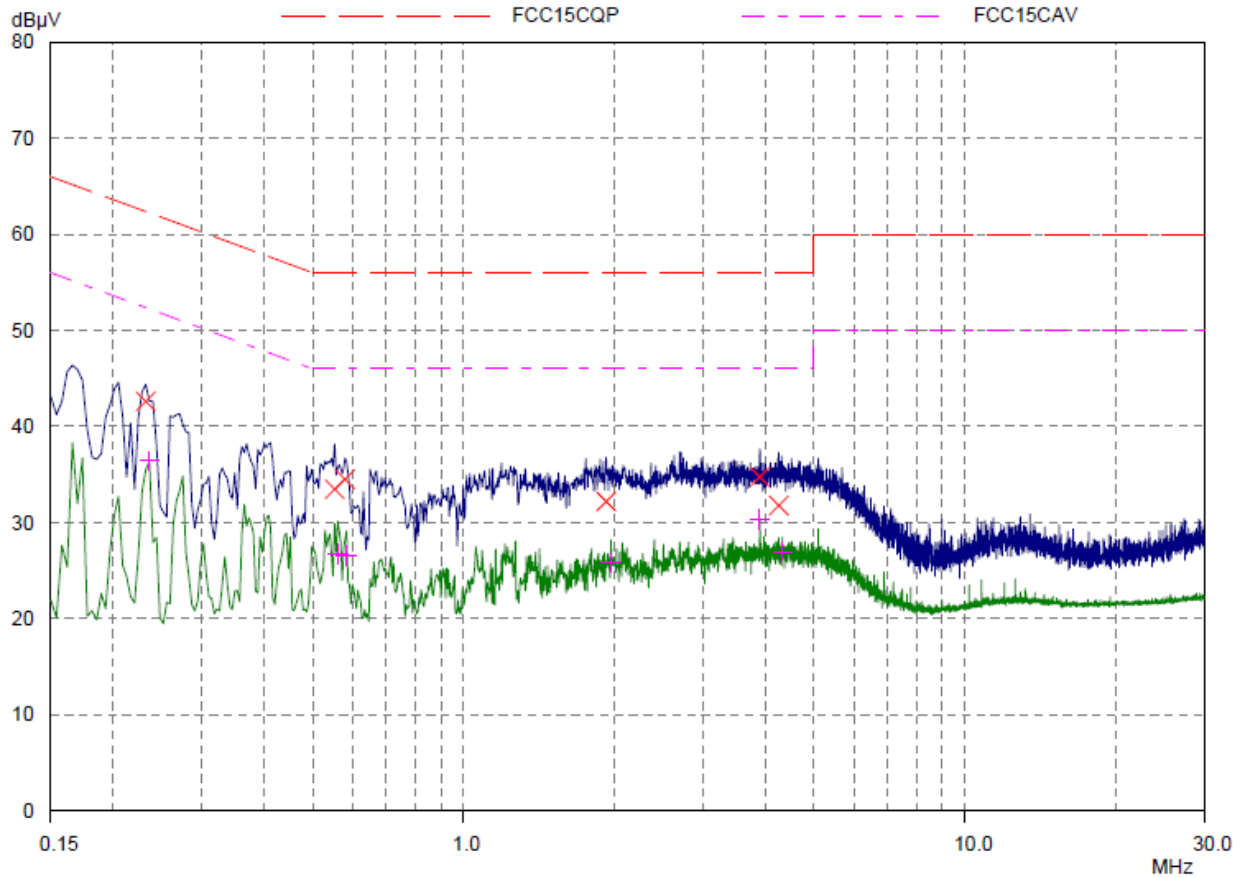
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 115 of 124

802.11g CH6



Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.23203	42.62	62.38	19.76	L1	gnd
0.55234	33.47	56.00	22.53	L1	gnd
0.57968	34.50	56.00	21.50	L1	gnd
1.92343	32.19	56.00	23.81	L1	gnd
3.89609	34.76	56.00	21.24	L1	gnd
4.25156	31.78	56.00	24.22	L1	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.23593	36.42	52.24	15.82	L1	gnd
0.56015	26.77	46.00	19.23	L1	gnd
0.58359	26.56	46.00	19.44	L1	gnd
1.9664	25.81	46.00	20.19	L1	gnd
3.89609	30.34	46.00	15.66	L1	gnd
4.32187	26.96	46.00	19.04	L1	gnd

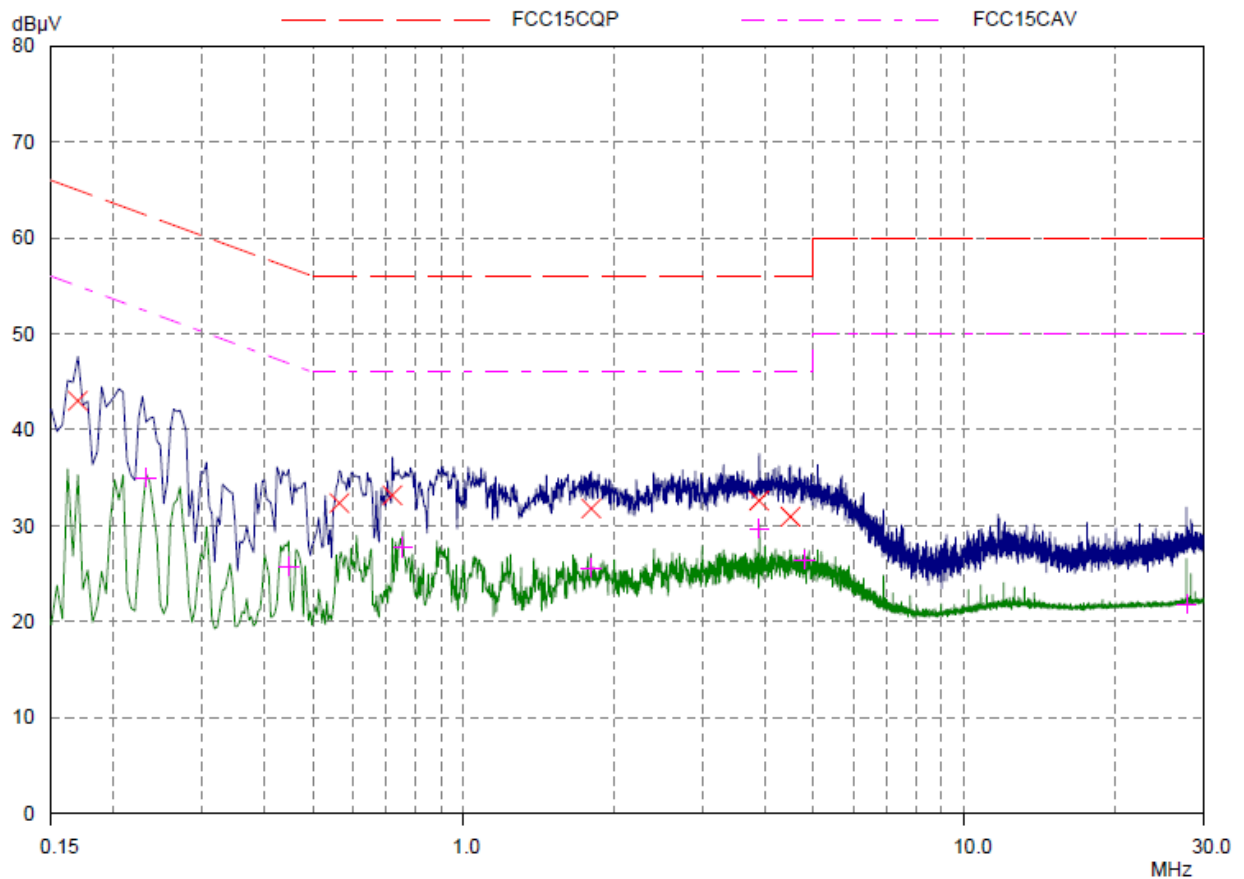
L Line

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 116 of 124



Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.16953	43.02	64.98	21.96	N	gnd
0.56406	32.36	56.00	23.64	N	gnd
0.72031	33.17	56.00	22.83	N	gnd
1.79843	31.79	56.00	24.21	N	gnd
3.89218	32.62	56.00	23.38	N	gnd
4.49375	30.94	56.00	25.06	N	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.23203	35.03	52.38	17.35	N	gnd
0.44687	25.77	46.93	21.16	N	gnd
0.75546	27.74	46.00	18.26	N	gnd
1.79453	25.62	46.00	20.38	N	gnd
3.89609	29.68	46.00	16.32	N	gnd
4.79453	26.44	46.00	19.56	N	gnd
27.78671	21.83	50.00	28.17	N	gnd

N Line

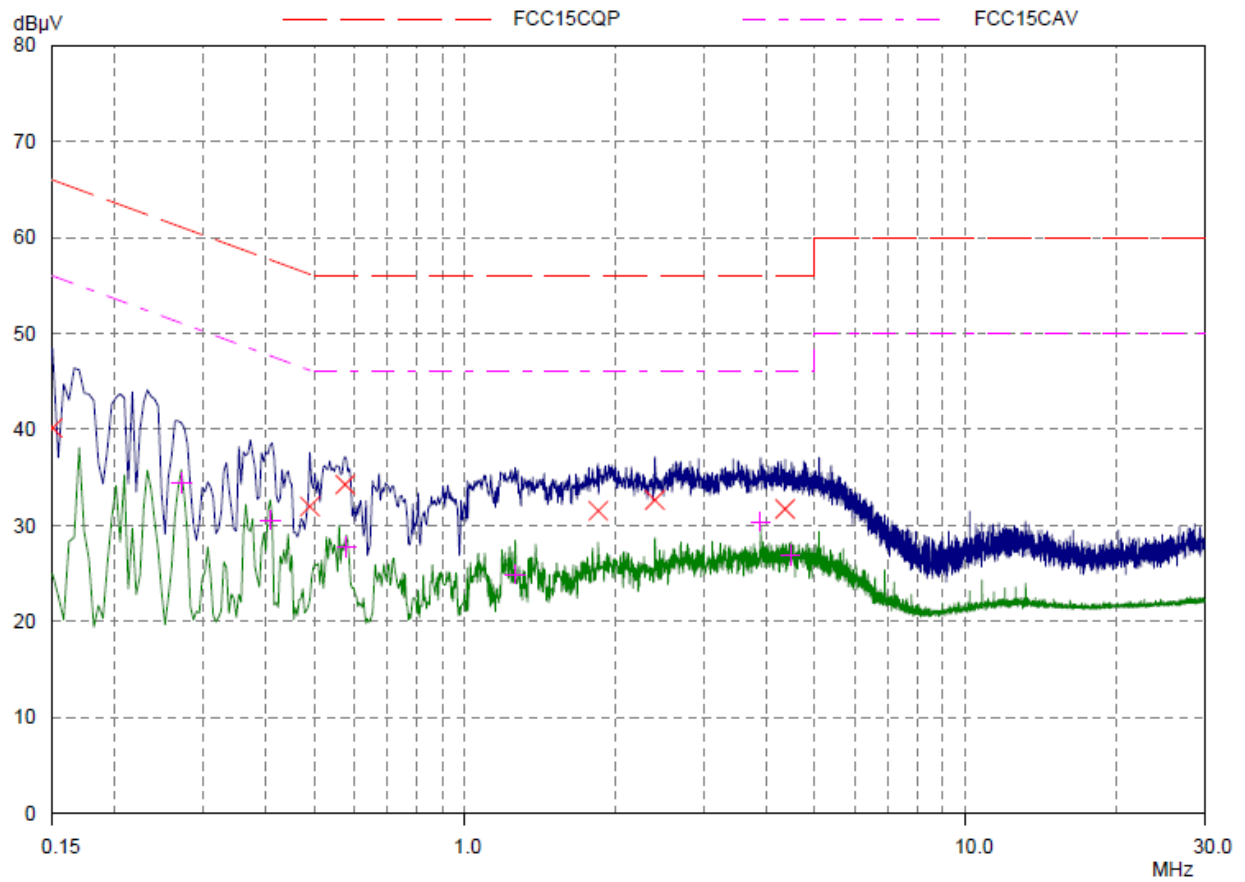
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 117 of 124

802.11n (HT20) CH6



Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.15	40.16	66.00	25.84	L1	gnd
0.48984	31.97	56.17	24.20	L1	gnd
0.57578	34.28	56.00	21.72	L1	gnd
1.84531	31.54	56.00	24.46	L1	gnd
2.39609	32.65	56.00	23.35	L1	gnd
4.36093	31.72	56.00	24.28	L1	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.27109	34.45	51.08	16.63	L1	gnd
0.40781	30.58	47.69	17.11	L1	gnd
0.57968	27.74	46.00	18.26	L1	gnd
1.25937	24.93	46.00	21.07	L1	gnd
3.89609	30.39	46.00	15.61	L1	gnd
4.47031	26.92	46.00	19.08	L1	gnd

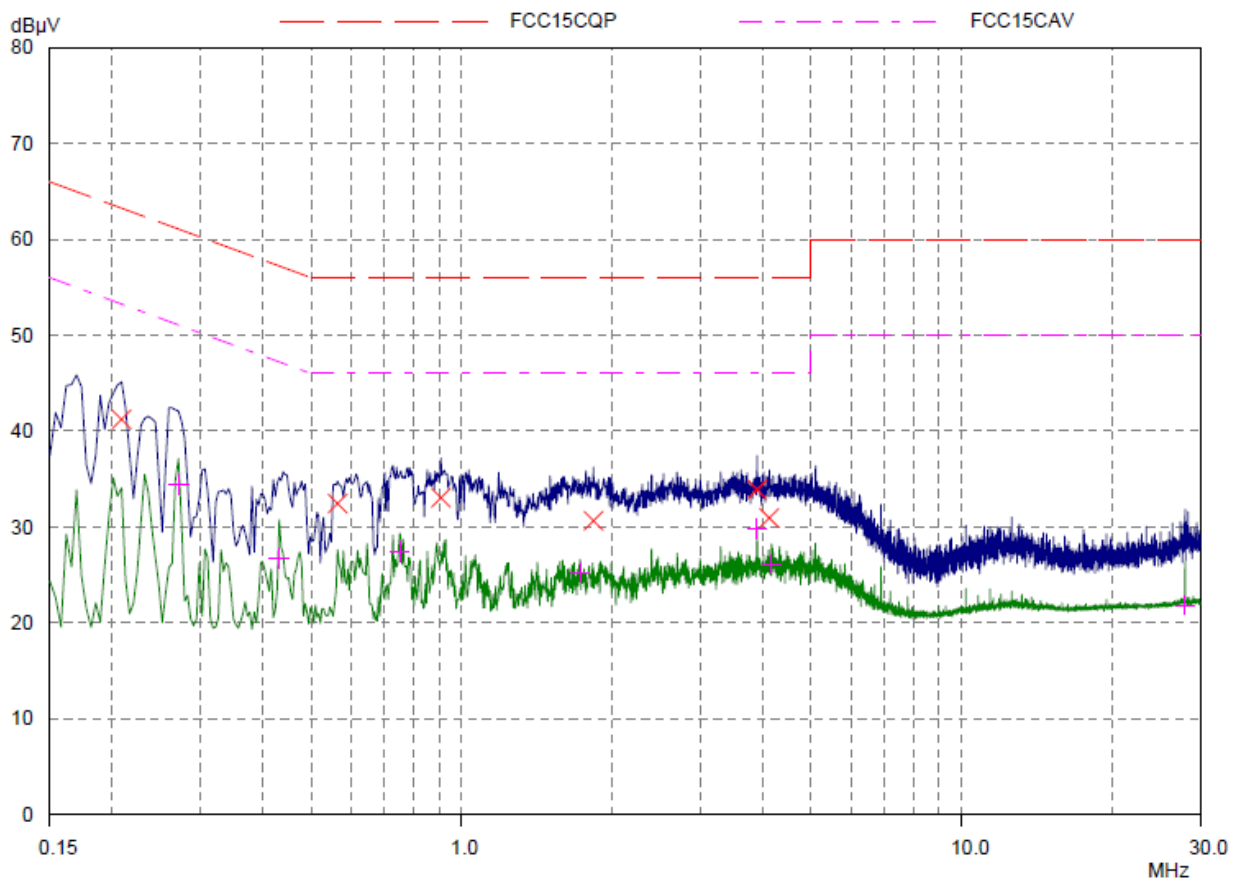
L Line

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 118 of 124



Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.20859	41.21	63.26	22.05	N	gnd
0.56406	32.44	56.00	23.56	N	gnd
0.90781	33.05	56.00	22.95	N	gnd
1.83359	30.65	56.00	25.35	N	gnd
3.89609	33.90	56.00	22.10	N	gnd
4.11875	30.94	56.00	25.06	N	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.27109	34.40	51.08	16.68	N	gnd
0.43125	26.71	47.23	20.52	N	gnd
0.75156	27.42	46.00	18.58	N	gnd
1.72421	25.27	46.00	20.73	N	gnd
3.89609	29.78	46.00	16.22	N	gnd
4.16561	26.10	46.00	19.90	N	gnd
27.97421	21.84	50.00	28.16	N	gnd

N Line

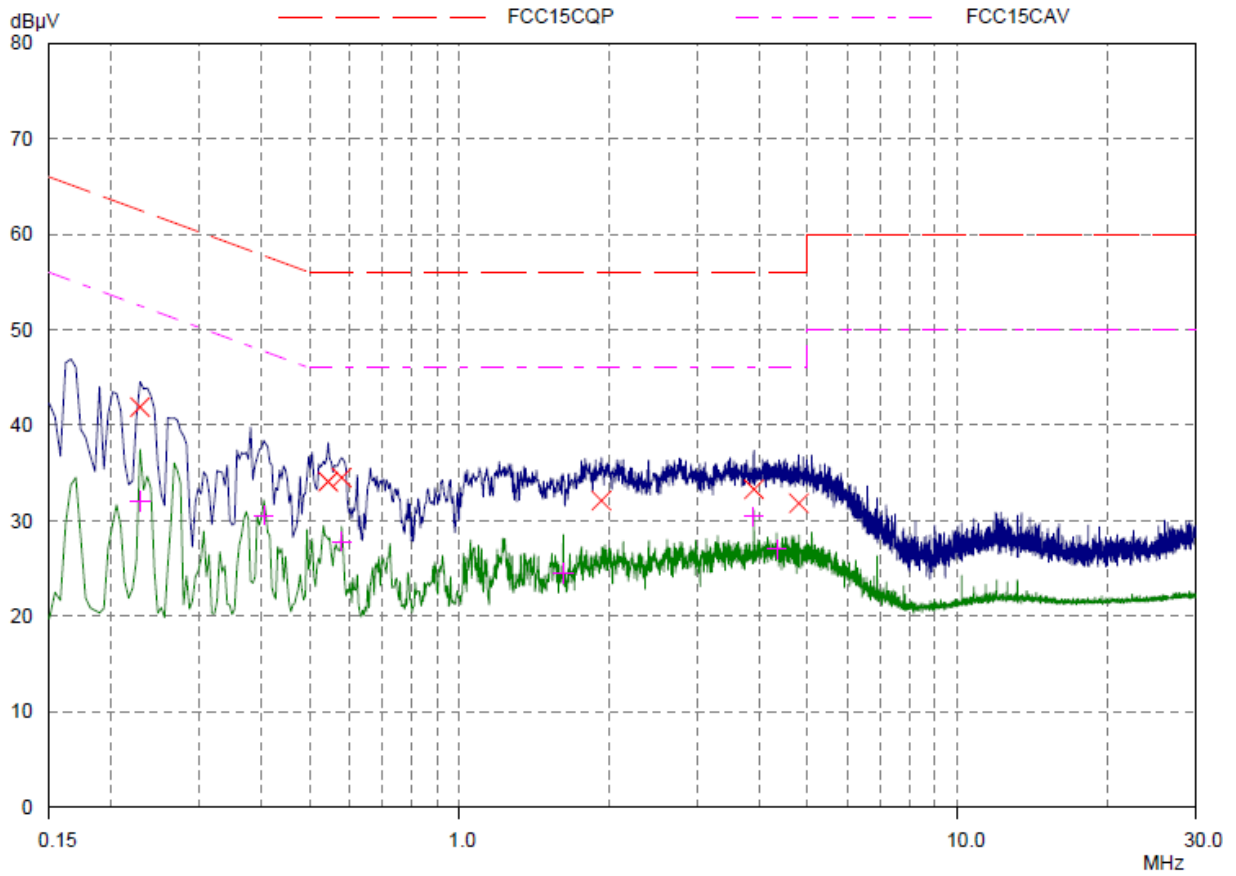
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 119 of 124

802.11n (HT40) CH6



Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.22812	41.91	62.52	20.61	L1	gnd
0.54453	34.09	56.00	21.91	L1	gnd
0.57968	34.52	56.00	21.48	L1	gnd
1.92734	32.11	56.00	23.89	L1	gnd
3.9	33.30	56.00	22.70	L1	gnd
4.79843	31.83	56.00	24.17	L1	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.22812	32.02	52.52	20.50	L1	gnd
0.4039	30.57	47.77	17.20	L1	gnd
0.57968	27.81	46.00	18.19	L1	gnd
1.61484	24.50	46.00	21.50	L1	gnd
3.89609	30.44	46.00	15.56	L1	gnd
4.32968	27.03	46.00	18.97	L1	gnd

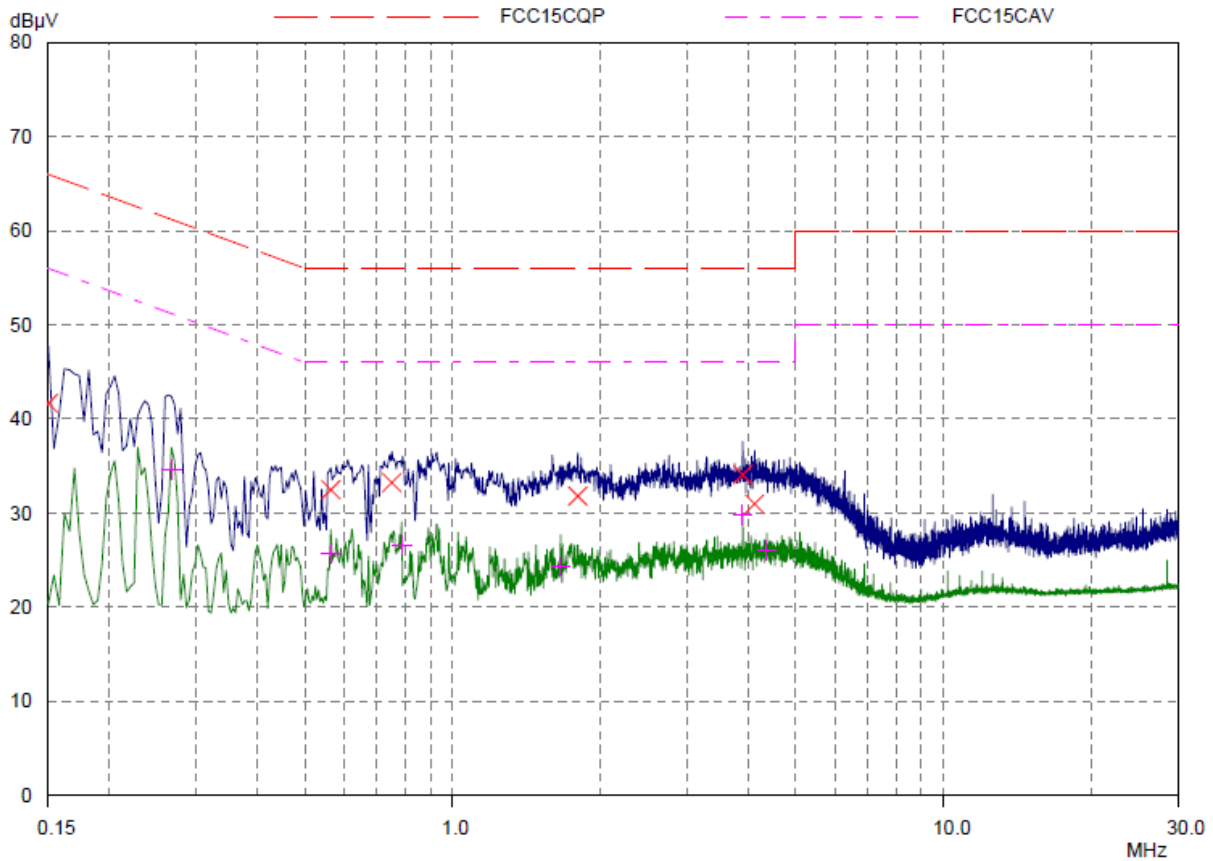
L Line

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.:RBA1505-0061RF

Page 120 of 124



Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.15	41.66	66.00	24.34	N	gnd
0.56406	32.48	56.00	23.52	N	gnd
0.75156	33.23	56.00	22.77	N	gnd
1.79843	31.81	56.00	24.19	N	gnd
3.89609	34.08	56.00	21.92	N	gnd
4.11875	30.98	56.00	25.02	N	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.26718	34.61	51.21	16.60	N	gnd
0.56406	25.67	46.00	20.33	N	gnd
0.78671	26.62	46.00	19.38	N	gnd
1.65781	24.28	46.00	21.72	N	gnd
3.89609	29.83	46.00	16.17	N	gnd
4.36093	26.05	46.00	19.95	N	gnd

N Line

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

Report No.:RBA1505-0061RF

Page 121 of 124

2. Main Test Instruments

No.	Name	Type	Manufacturer	Serial Number	Calibration Date	Expiration Time	Valid Period
01	EMI Test Receiver	ESCI	R&S	100948	2015-04-26	2016-04-25	1 year
02	Loop Antenna	FMZB15 16	SCHWARZBE CK	237	2014-06-29	2017-06-28	3 years
03	TRILOG Broadband Antenna	VULB 9163	Schwarzbeck	9163-201	2013-11-25	2016-11-24	3 years
04	Double Ridged Waveguide Horn Antenna	HF907	R&S	100126	2012-07-02	2015-07-01	3 years
05	Standard Gain Horn	3160-09	ETS-Lindgren	00102644	2013-05-20	2016-05-19	3 years
06	EMI Test Receiver	ESCS30	R&S	100138	2014-12-17	2015-12-16	1 year
07	LISN	ENV216	R&S	101171	2014-12-17	2015-12-16	1 year
08	Spectrum Analyzer	E4445A	Agilent	MY461811 46	2015-04-26	2016-04-25	1 year
09	MOB COMMS DC SUPPLY	66319D	Agilent	MY43004 105	2015-04-26	2016-04-25	1 year
10	Peak Power Meter	8990B	Agilent	51000109	2014-05-30	2015-05-29	1 year
11	Wideband Power Sensors	N1923A	Agilent	MY51220 004	2014-05-30	2015-05-29	1 year
12	Spectrum Analyzer	FSV30	R&S	100815	2014-12-17	2015-12-16	1 year

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

ANNEX A: EUT Appearance and Test Setup

A.1 EUT Appearance



a: EUT



b: Adapter

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.:RBA1505-0061RF

Page 124 of 124



Picture 3 Conducted Emission Test Setup