



Part 15C

TEST REPORT

Product Name CDMA/LTE smartphone

Model M931

FCC ID QISM931

Client Huawei Technologies Co., Ltd.

TA Technology (Shanghai) Co., Ltd.

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

Report No.: RHA1209-0083RF05R2

Page 2of 145

GENERAL SUMMARY

Product Name	CDMA/LTE smartphone	Model	M931
FCC ID	QISM931		
Report No.	RHA1209-0083RF04R2		
Client	Huawei Technologies Co., Ltd.		
Manufacturer	Huawei Technologies Co., Ltd.		
Reference Standard(s)	<p>FCC CFR47 Part 15C (2010-12) Radio Frequency Devices 15.205 Restricted bands of operation; 15.207 Conducted limits; 15.209 Radiated emission limits; general requirements; 15.247 Operation within the bands 902-928 MHz,2400-2483.5 MHz, and 5725-5850MHz.</p> <p>ANSI C63.4 Methods of Measurement of Radio-Noise Emission from Low-Voltage Electrical and Electronic Equipment in the Range of 9 KHz to 40GHz. (2009)</p> <p>KDB 558074 D01 DTS Meas Guidance v01 Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247</p>		
Conclusion	<p>This portable wireless equipment has been measured in all cases requested by the relevant standards. Test results in Chapter 2 of this test report are below limits specified in the relevant standards.</p> <p>General Judgment: Pass</p> <div style="text-align: right;">  (Stamp) Date of issue: December 17th, 2012 </div>		
Comment	The test result only responds to the measured sample.		

Approved by 杨伟中
Director

Revised by 徐凯
RF Manager

Performed by 王号
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. Summary of test results	8
2.2. Peak Power Output –Conducted.....	9
2.3. Occupied Bandwidth (6dB)	11
2.4. Band Edge Compliance	17
2.5. Spurious Radiated Emissions in the restricted band.....	22
2.6. Power Spectral Density.....	30
2.7. Spurious RF Conducted Emissions	36
2.8. Radiates Emission	47
2.9. Conducted Emissions	104
2. Main Test Instruments	141
ANNEX A: EUT Appearance and Test Setup.....	142
A.1 EUT Appearance	142
A.2 Test Setup	144

1. General Information

1.1. Notes of the test report

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

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

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

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.

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

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

Report No.: RHA1209-0083RF05R2

Page 5 of 145

1.2. Testing laboratory

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

1.3. Applicant Information

Company: Huawei Technologies Co., Ltd.
Address: Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian,
Longgang District
City: Shenzhen
Postal Code: 518129
Country: P.R. China

1.4. Manufacturer Information

Company: Huawei Technologies Co., Ltd.
Address: Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian,
Longgang District
City: Shenzhen
Postal Code: 518129
Country: P.R.China

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

Report No.: RHA1209-0083RF05R2

Page 6 of 145

1.5. Information of EUT

General information

Name of EUT:	CDMA/LTE smartphone
IMEI:	99000135008222
Hardware Version:	Ver.D
Software Version:	M931V100R001C177B107
Antenna Type:	Internal Antenna
Device Operating Configurations:	
Network Standards:	802.11b, 802.11g, 802.11n(HT20); (tested)
Test Modulation:	(802.11b)DSSS; (802.11g)OFDM
Power Supply:	Battery or Adapter
Max Conducted Power	3.8V
Extreme Voltage:	Minimum: 3.5V Maximum: 4.2V
Extreme Temperature:	Lowest: -10°C Highest: +55°C
Operating Frequency Range(s)	2400MHz~ 2483.5 MHz

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

Report No.: RHA1209-0083RF05R2

Page 7 of 145

Auxiliary Equipment Details

AE1: Battery 1

Model: HB5N1HA
Manufacturer: Huawei Technologies Co., Ltd.
S/N: UWDC320XBGN1407

AE2: Battery 2

Model: HB5N1HA
Manufacturer: Huawei Technologies Co., Ltd.
S/N: MAIC702X03600810

AE2: Adapter 1

Model: HW-050100U1W
Manufacturer: Huawei Technologies Co., Ltd.
S/N: TPAC41985003

AE3: Adapter 2

Model: HW-050100U1W
Manufacturer: Huawei Technologies Co., Ltd.
S/N: HKAB829B329

Equipment Under Test (EUT) is CDMA/LTE smartphone with internal antenna. The detail about these is in chapter 1.5 in this report. The EUT supports WiFi.

The sample under test was selected by the Client.

Components list please refer to documents of the manufacturer.

1.6. Test Date

The test performed from September 20, 2012 to September 25, 2012.

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

Report No.: RHA1209-0083RF05R2

Page 8 of 145

2. Test Information

2.1. Summary of test results

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

2.2. Peak Power Output –Conducted

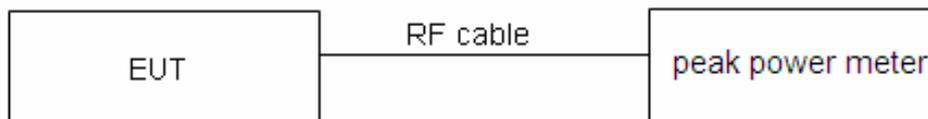
Ambient condition

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

Methods of Measurement

During the process of the testing, The EUT was connected to the peak power meter through an external attenuator and a known loss cable. The EUT is max power transmission with proper modulation. We use 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

Test Results: Pass

Network Standards	Data Rate	Peak Output Power (dBm)		
		CH 1	CH 6	CH 11
802.11b	1 Mbps	18.09	18.27	17.92
	2 Mbps	18.20	18.22	17.98
	5.5 Mbps	18.22	18.33	17.96
	11 Mbps	18.23	18.29	17.94
802.11g	6 Mbps	16.87	15.58	16.74
	9 Mbps	16.92	15.56	16.63
	12 Mbps	16.85	15.66	16.62
	18 Mbps	16.92	15.58	16.58
	24 Mbps	16.96	15.63	16.57
	36 Mbps	16.94	15.62	16.63
	48 Mbps	16.98	15.57	16.66
	54 Mbps	16.95	15.54	16.85
802.11n HT20	MCS0	16.07	15.80	15.73
	MCS1	15.96	15.69	15.78
	MCS2	15.72	15.45	15.55
	MCS3	15.62	15.26	15.25
	MCS4	15.07	15.19	14.78
	MCS5	14.87	14.72	14.49
	MCS6	14.68	14.58	14.33
	MCS7	14.49	14.48	14.35

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

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

2.3. Occupied Bandwidth (6dB)

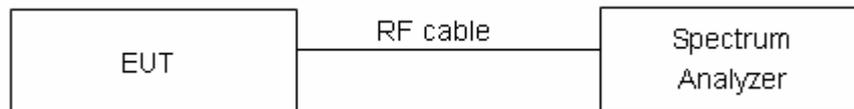
Ambient condition

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

Method of Measurement

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable. RBW is set to 200 kHz((RBW) = 1-5 % of (EBW)), VBW is set to 620 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

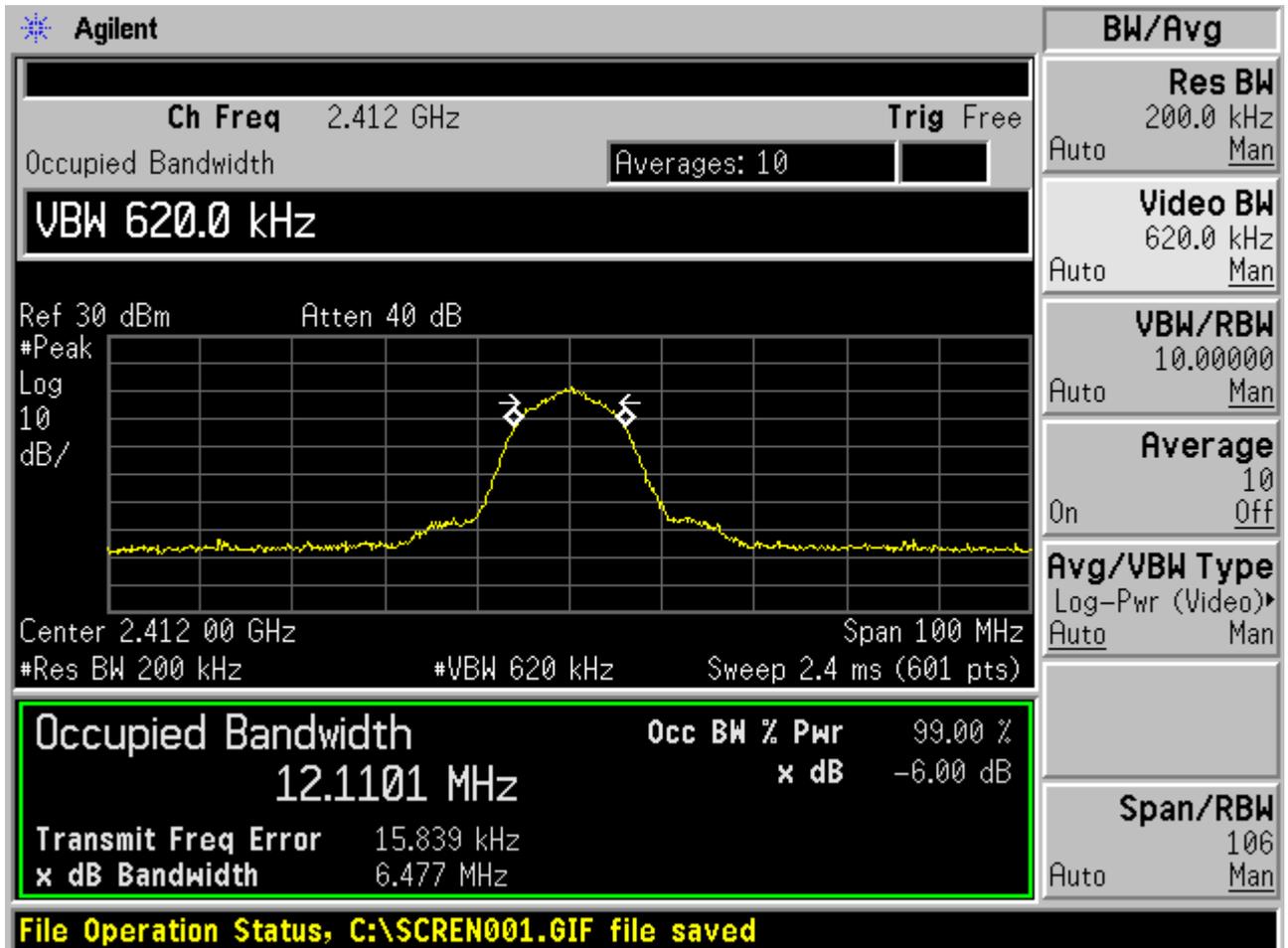
Report No.: RHA1209-0083RF05R2

Page 12 of 145

Test Results:

Network Standards	Carrier frequency (MHz)	Minimum 6 dB bandwidth (MHz)	Conclusion
802.11b	2412	6.477	PASS
	2437	6.524	PASS
	2462	7.201	PASS
802.11g	2412	16.577	PASS
	2437	16.626	PASS
	2462	16.609	PASS
802.11n HT20	2412	17.897	PASS
	2437	17.808	PASS
	2462	17.815	PASS

802.11b

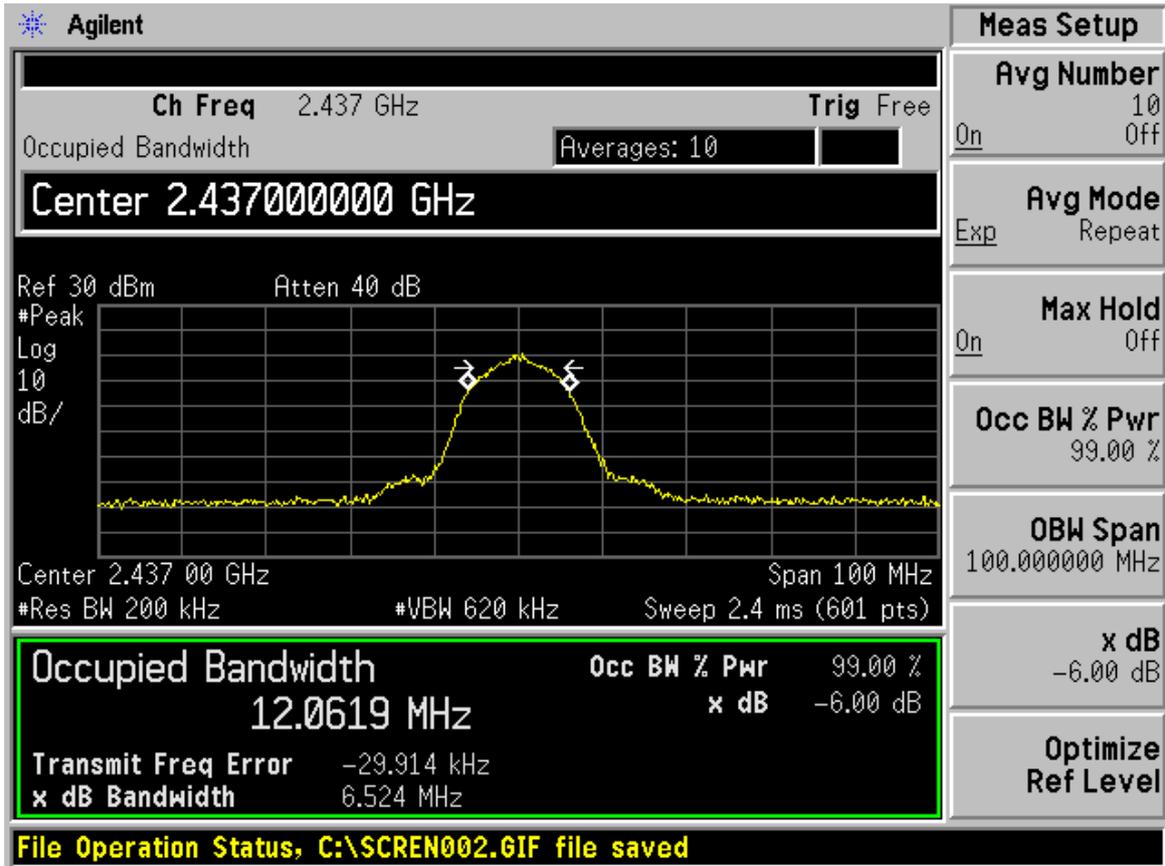


802.11b, Carrier frequency (MHz): 2412

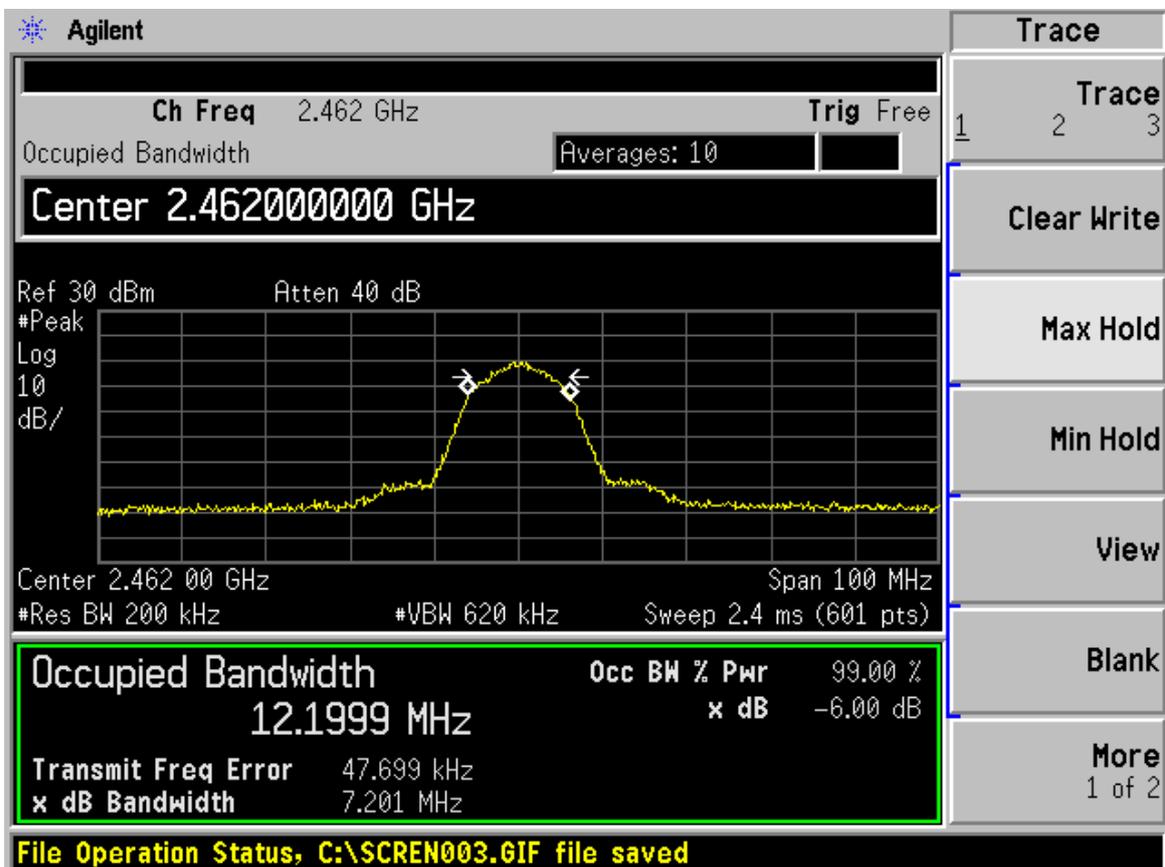
TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RHA1209-0083RF05R2

Page 13 of 145



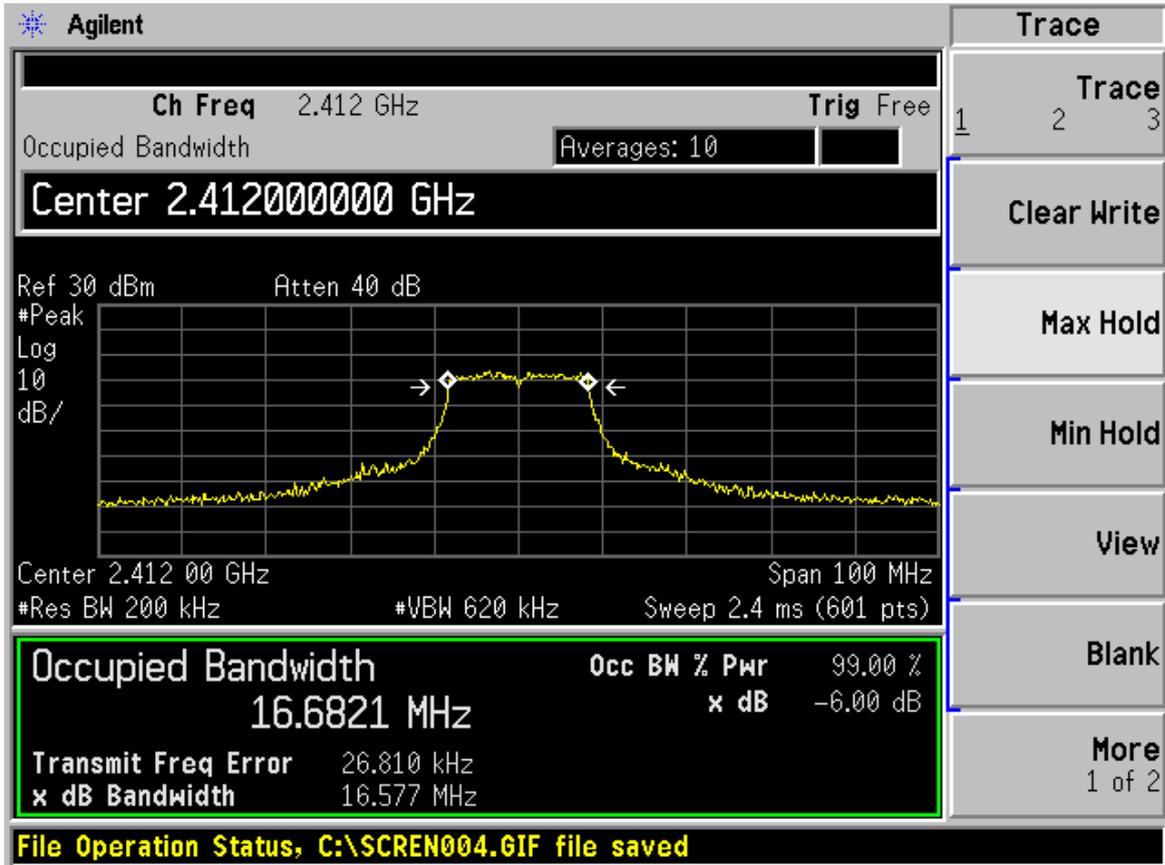
802.11b, Carrier frequency (MHz): 2437



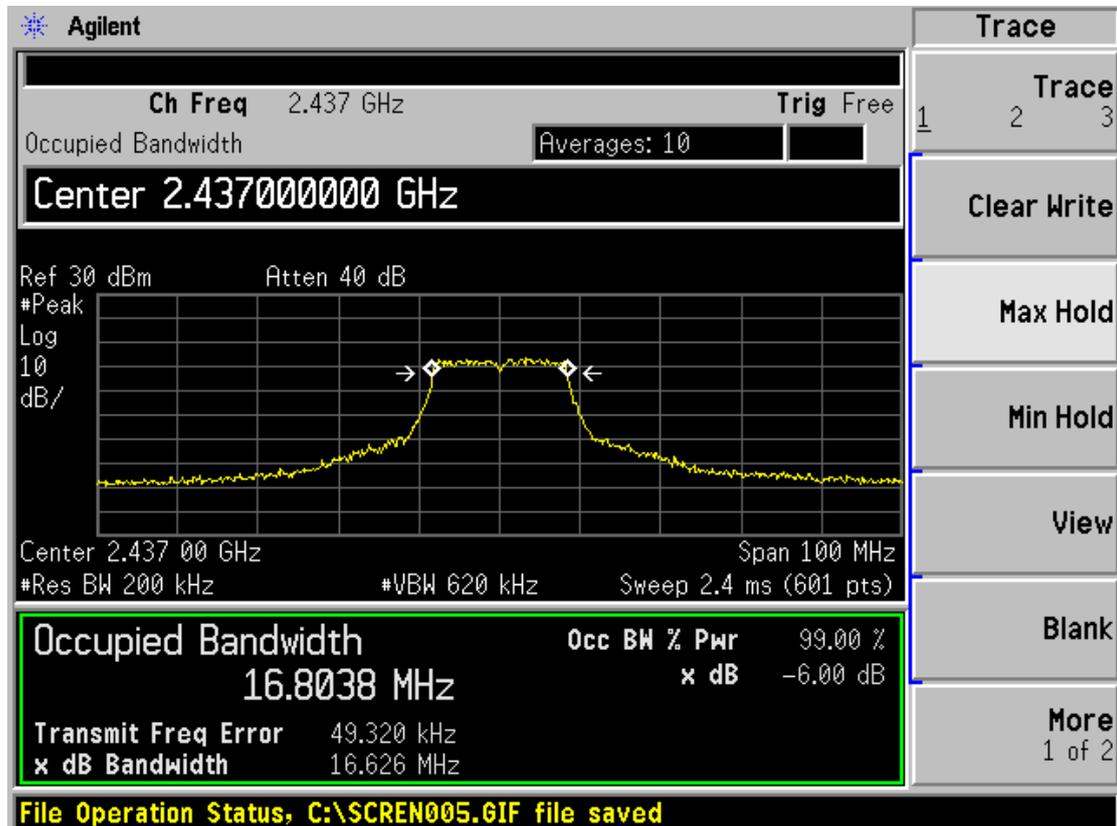
802.11b, Carrier frequency (MHz): 2462

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

802.11g

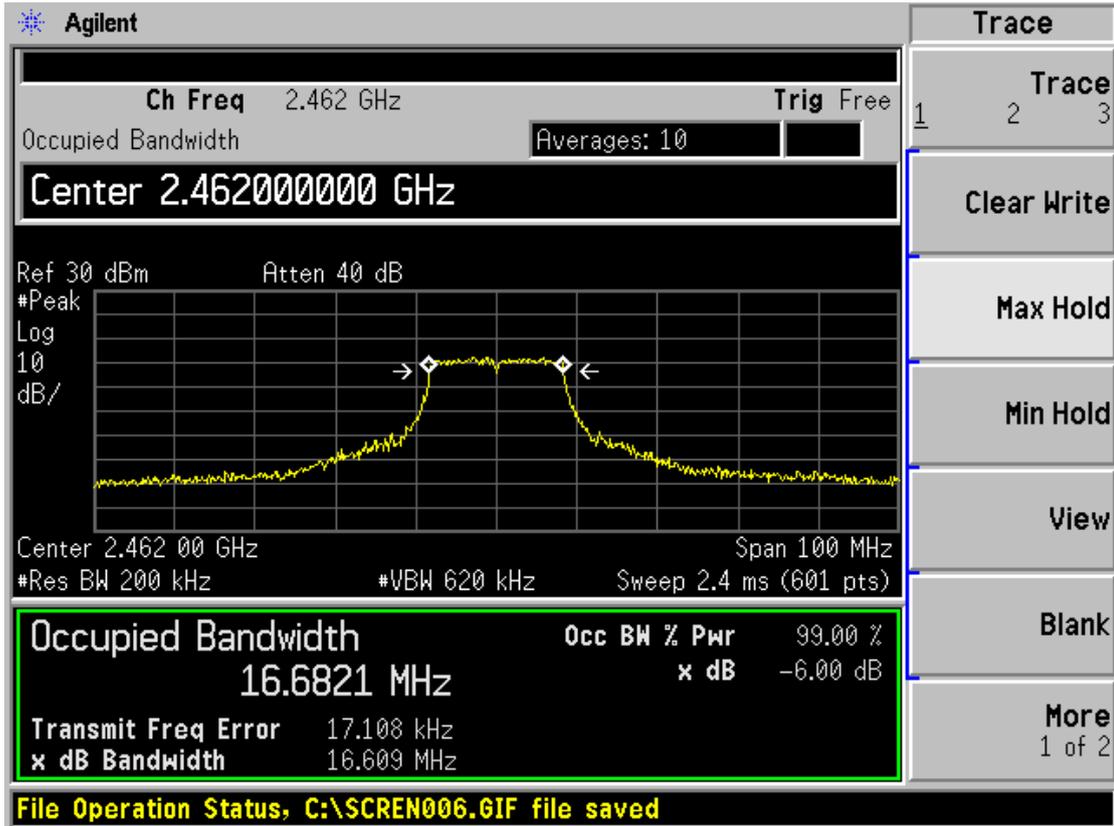


802.11g, Carrier frequency (MHz): 2412



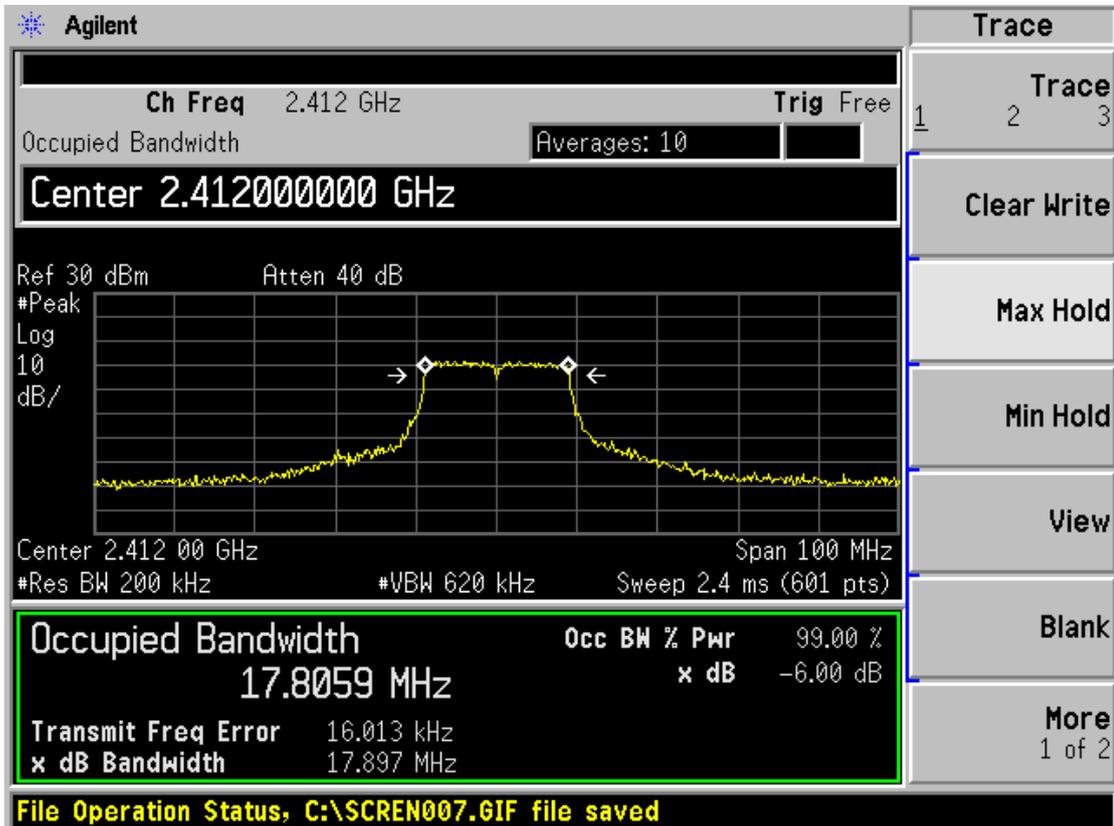
802.11g, Carrier frequency (MHz): 2437

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



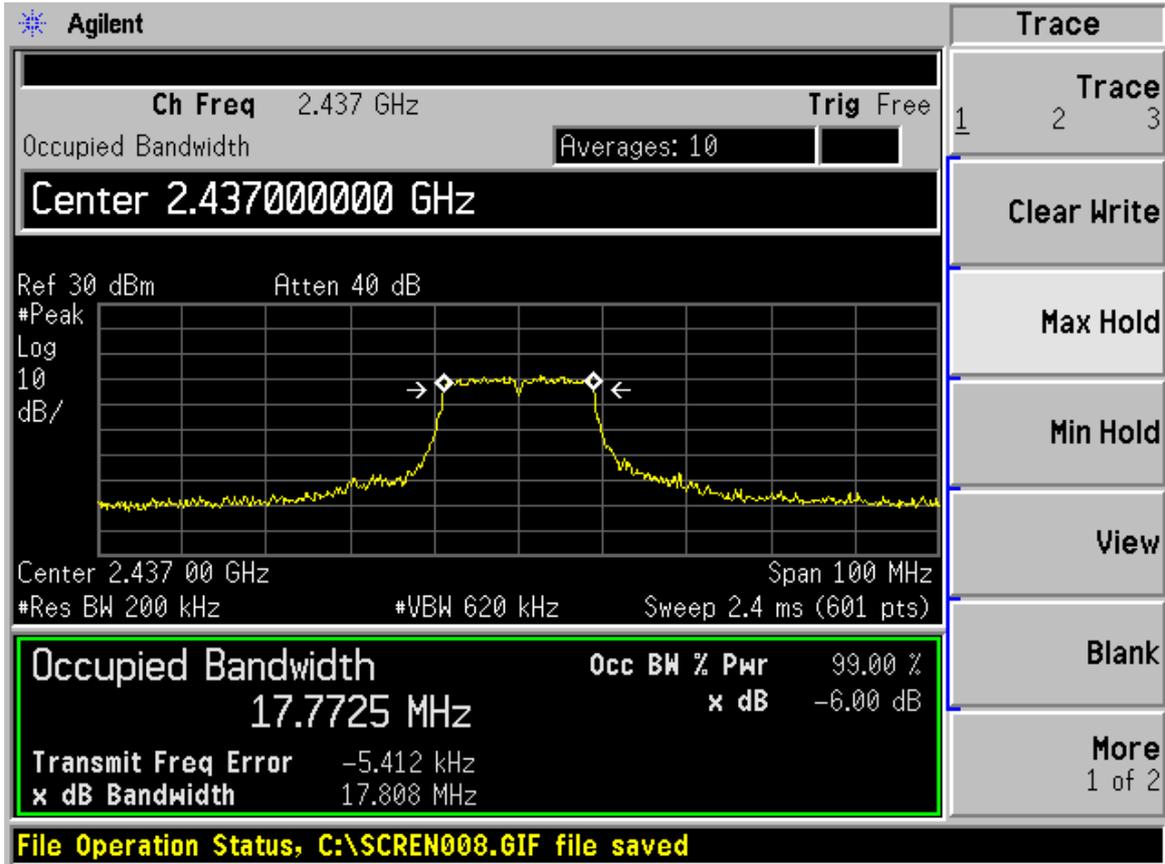
802.11g, Carrier frequency (MHz):2462

802.11n

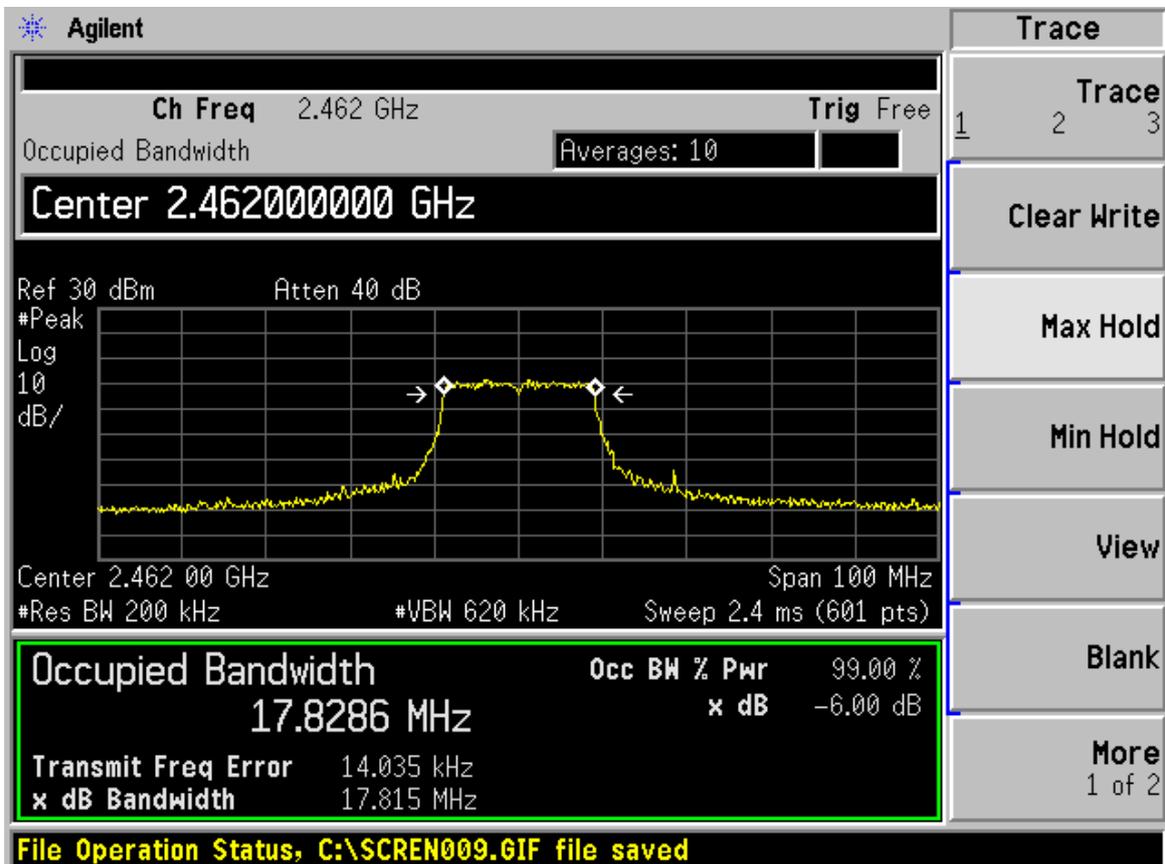


802.11n, Carrier frequency (MHz): 2412

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



802.11n, Carrier frequency (MHz): 2437



802.11n, Carrier frequency (MHz):2462

2.4. Band Edge Compliance

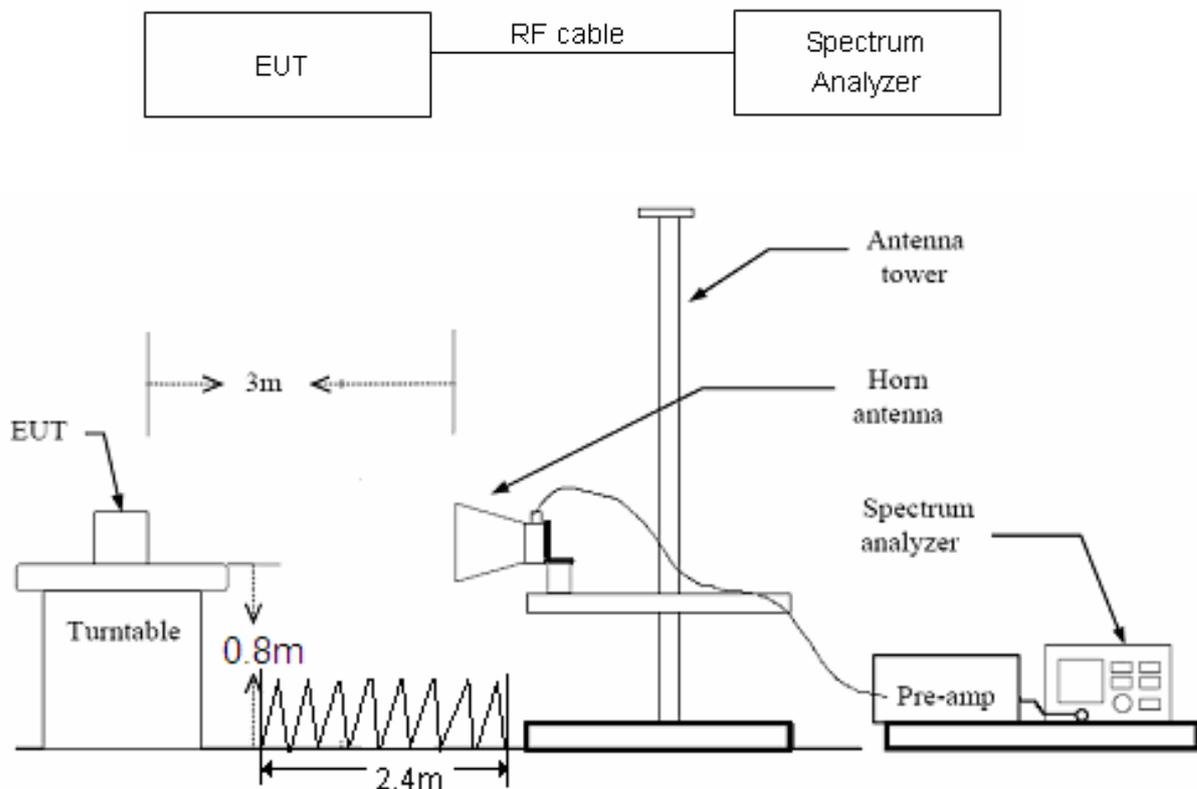
Ambient condition

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

Method of Measurement

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable the band edge of the lowest and highest channels were measured. The peak detector is used and RBW is set to 200kHz and VBW is set to 620kHz on spectrum analyzer. Spectrum analyzer plots are included on the following pages.

Test Setup



Note: Area side:2.4mX3.6m

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

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

Report No.: RHA1209-0083RF05R2

Page 18 of 145

dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.”

Limit	≥ 20 dB
-------	--------------

Measurement Uncertainty

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

Frequency	Uncertainty
2GHz-3GHz	1.407 dB

2.5. Spurious Radiated Emissions in the restricted band

Ambient condition

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

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

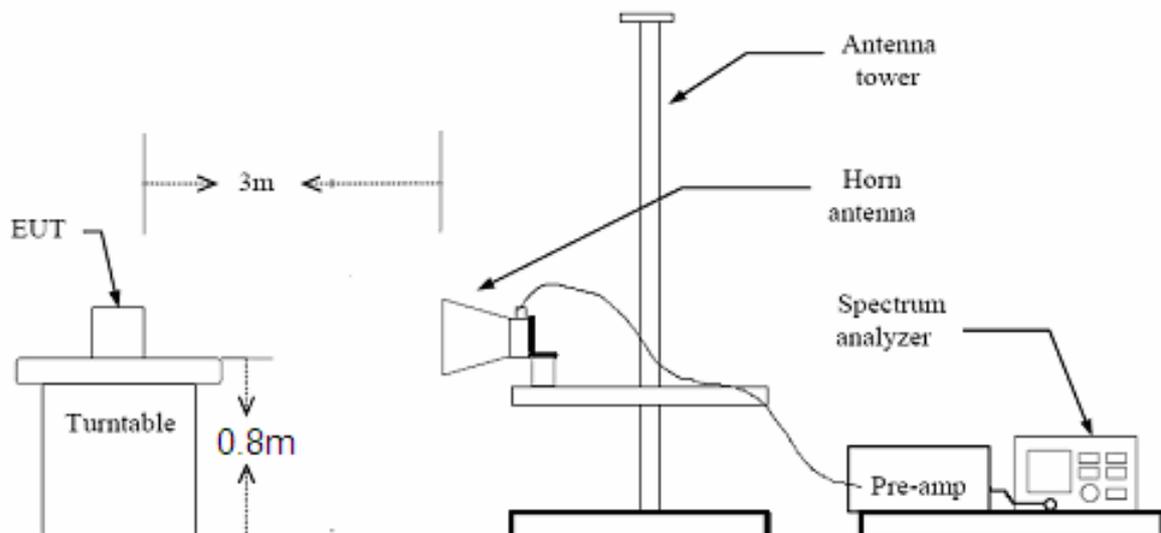
Set the spectrum analyzer in the following:

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

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

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

Test setup



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

Limits

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

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

Limit in restricted band

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

§15.35(b)

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

Peak Limit=74 dBuV/m

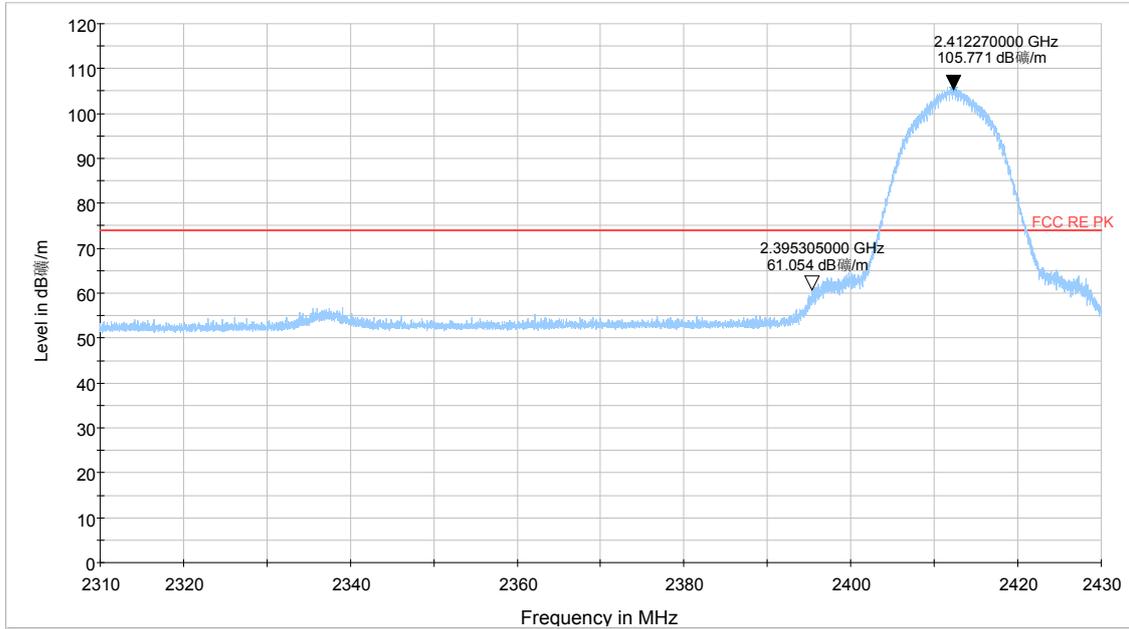
Average Limit=54 dBuV/m

Measurement Uncertainty

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

Test Results: PASS
802.11b-Channel 1:

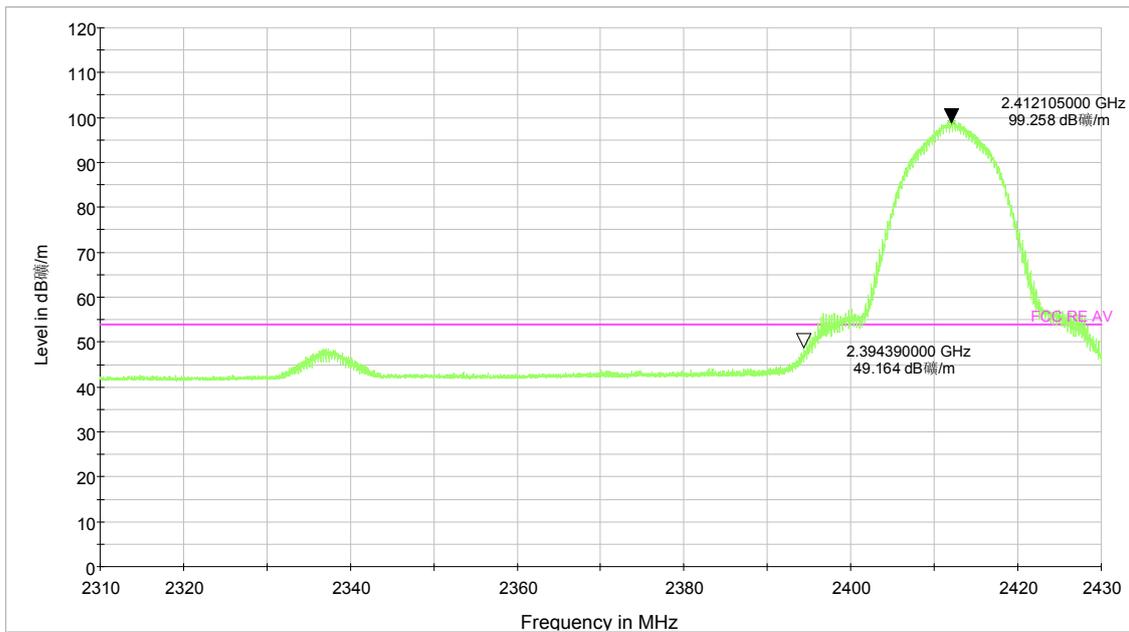
Peak



— FCC RE PK.LimitLine — Preview Result 1 * Data Reduction Result 1 [2]

Note: The signal beyond the limit is carrier
Channel 1

Average

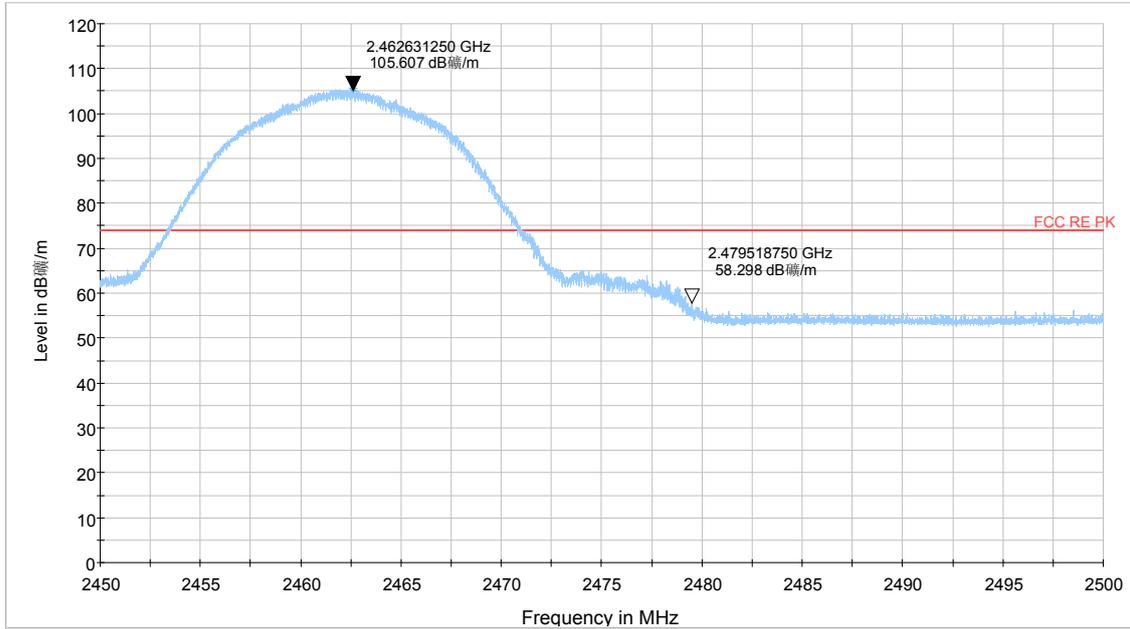


— FCC RE AV.LimitLine — Preview Result 2 * Data Reduction Result 2 [2]

Note: The signal beyond the limit is carrier
Channel 1

802.11b-Channel 11:

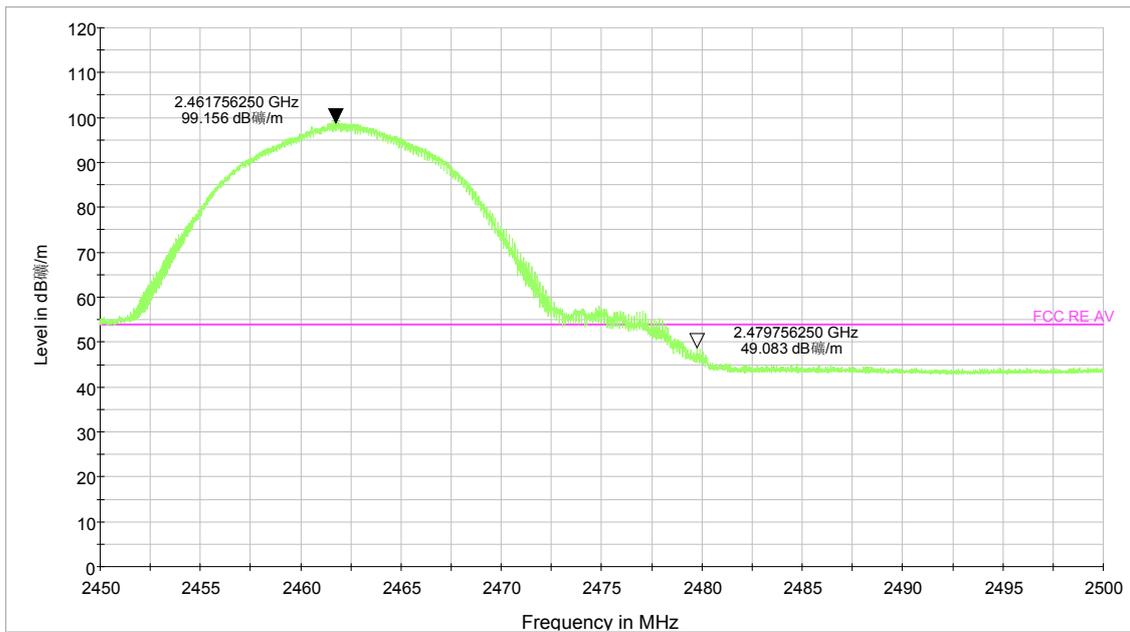
Peak



— FCC RE PK.LimitLine — Preview Result 1 * Data Reduction Result 1 [2]

Note: The signal beyond the limit is carrier
Channel 11

Average

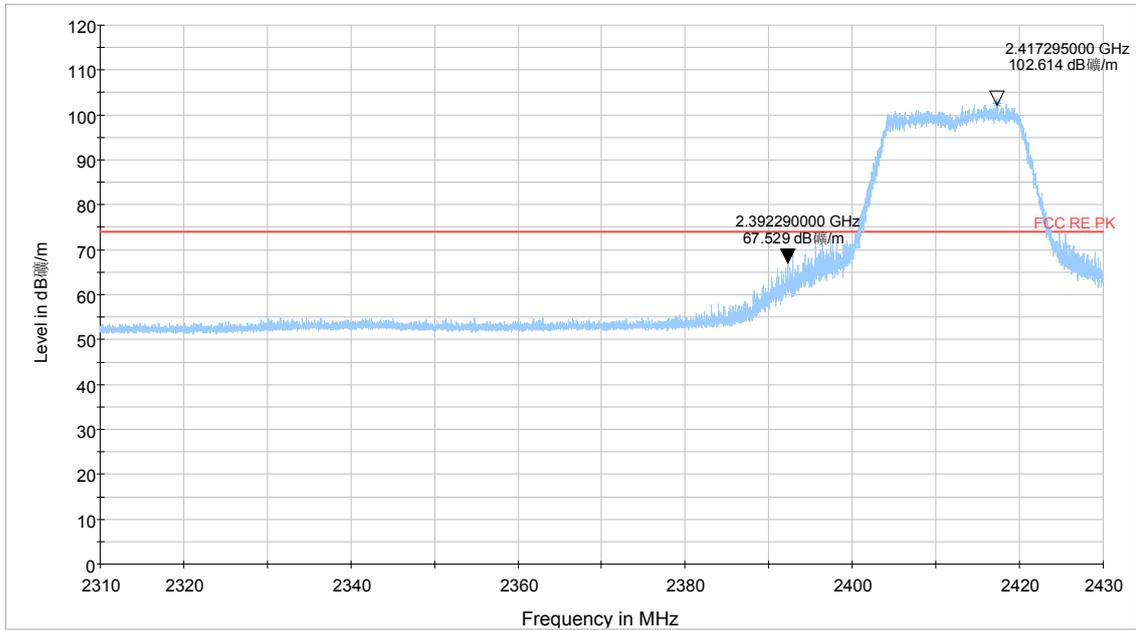


— FCC RE AV.LimitLine — Preview Result 2 * Data Reduction Result 2 [2]

Note: The signal beyond the limit is carrier
Channel 11

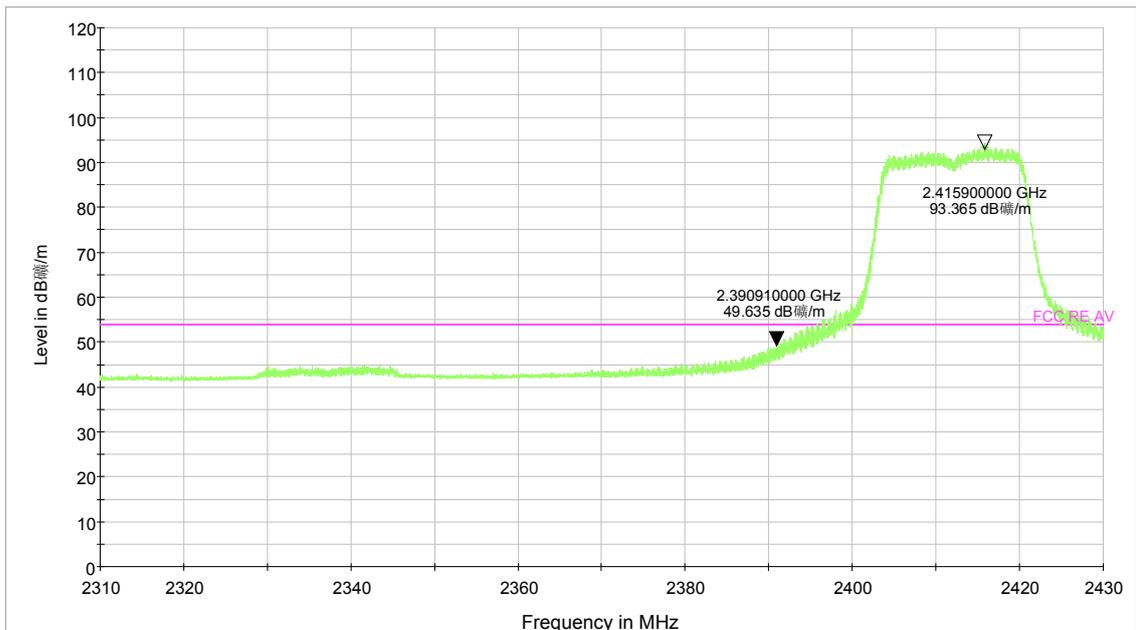
802.11g-Channel 1:

Peak



Note: The signal beyond the limit is carrier
Channel 1

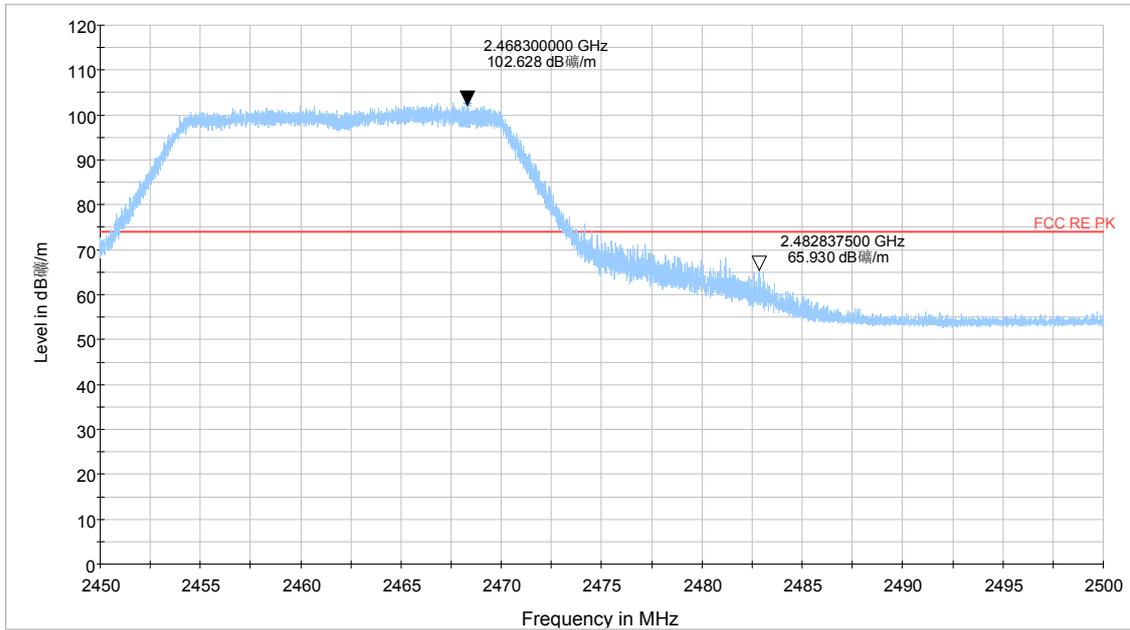
Average



Note: The signal beyond the limit is carrier
Channel 1

802.11g-Channel 11:

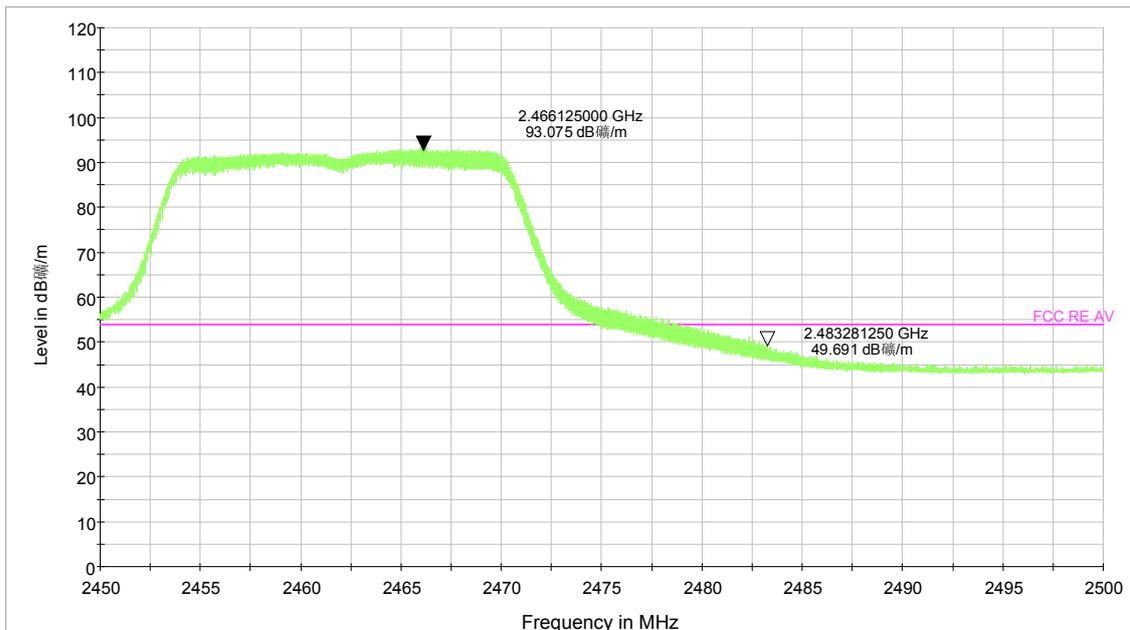
Peak



— FCC RE PK.LimitLine — Preview Result 1 * Data Reduction Result 1 [2]

Note: The signal beyond the limit is carrier
Channel 11

Average

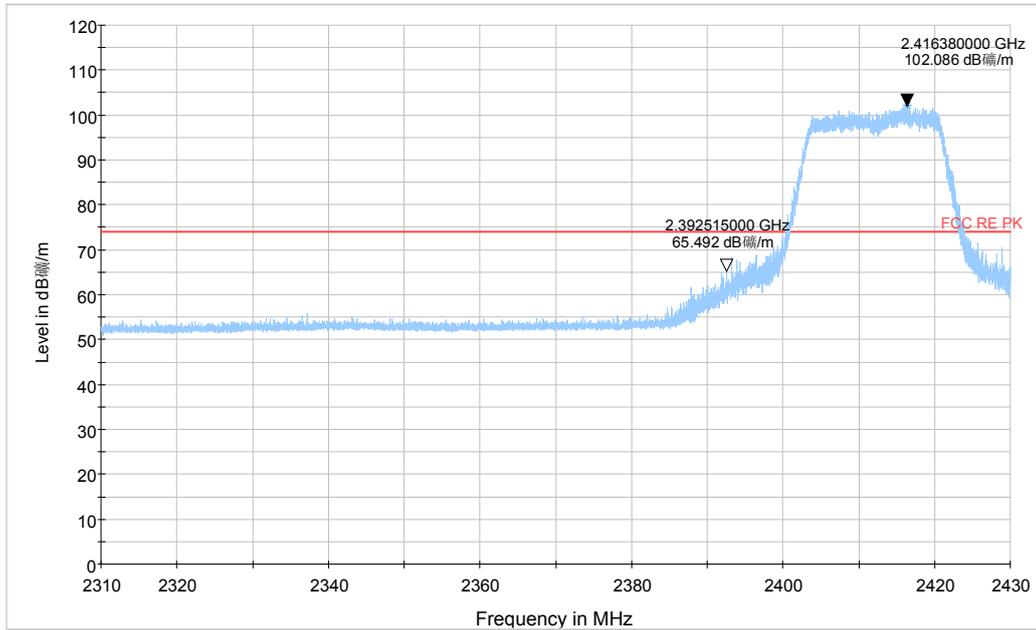


— FCC RE AV.LimitLine — Preview Result 2 * Data Reduction Result 2 [2]

Note: The signal beyond the limit is carrier
Channel 11

802.11n-Channel 1:

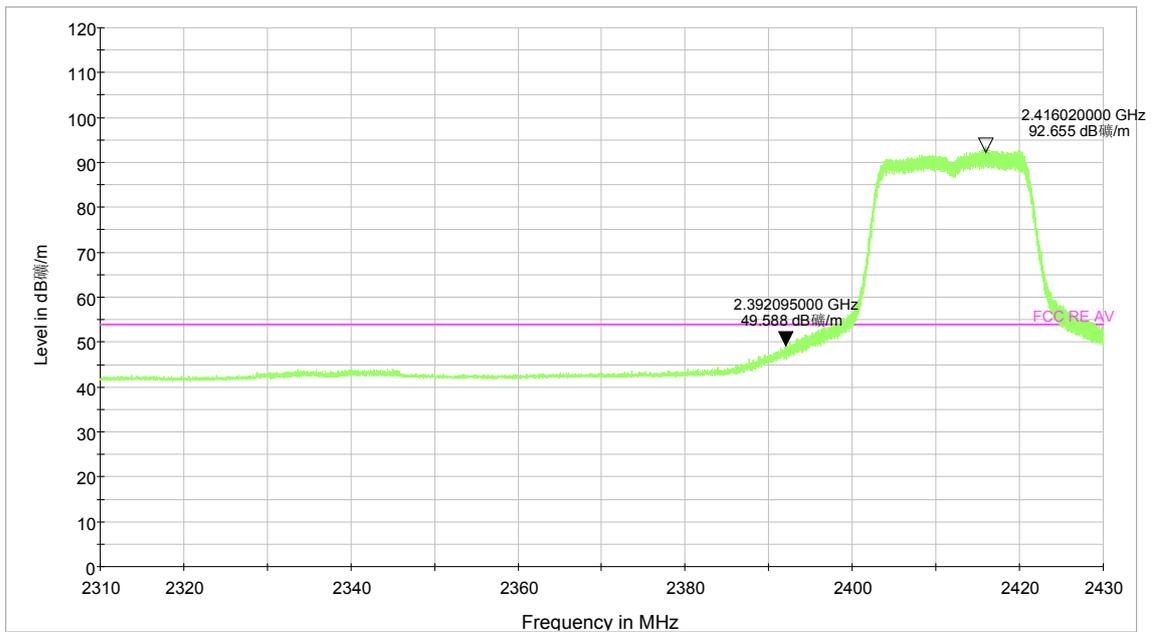
Peak



— FCC RE PK.LimitLine — Preview Result 1 * Data Reduction Result 1 [2]

Note: The signal beyond the limit is carrier
Channel 1

Average

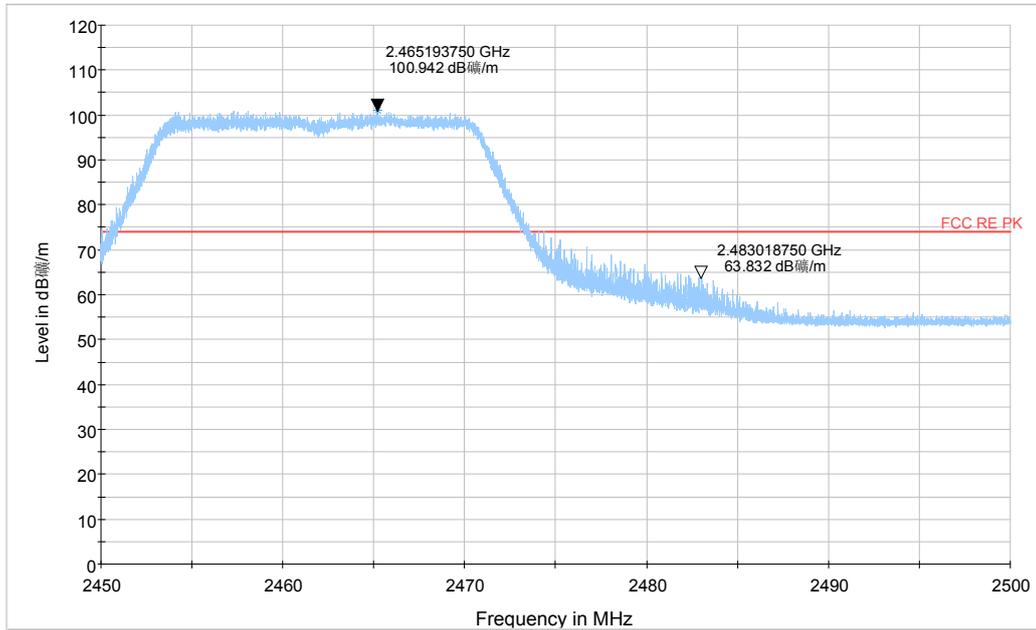


— FCC RE AV.LimitLine — Preview Result 2 * Data Reduction Result 2 [2]

Note: The signal beyond the limit is carrier
Channel 1

802.11n-Channel 11:

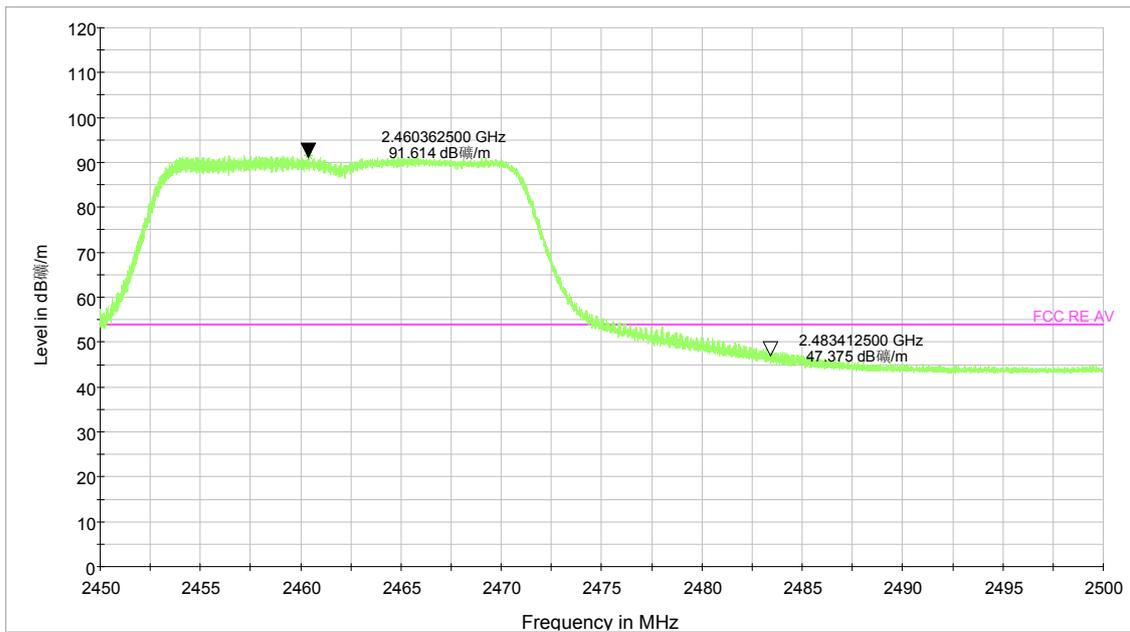
Peak



— FCC RE PK.LimitLine — Preview Result 1 * Data Reduction Result 1 [2]

Note: The signal beyond the limit is carrier
Channel 11

Average



— FCC RE AV.LimitLine — Preview Result 2 * Data Reduction Result 2 [2]

Note: The signal beyond the limit is carrier
Channel 11

2.6. Power Spectral Density

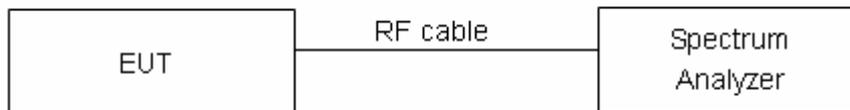
Ambient condition

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

Method of Measurement

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable. RBW is set to 100kHz and VBW is set to 300kHz on spectrum analyzer. Set the span is 1MHz and the sweep time is 10s. The peak power spectral density is recorded. Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where $BWCF = 10\log(3\text{ kHz}/100\text{kHz}) = -15.2\text{ dB}$.

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

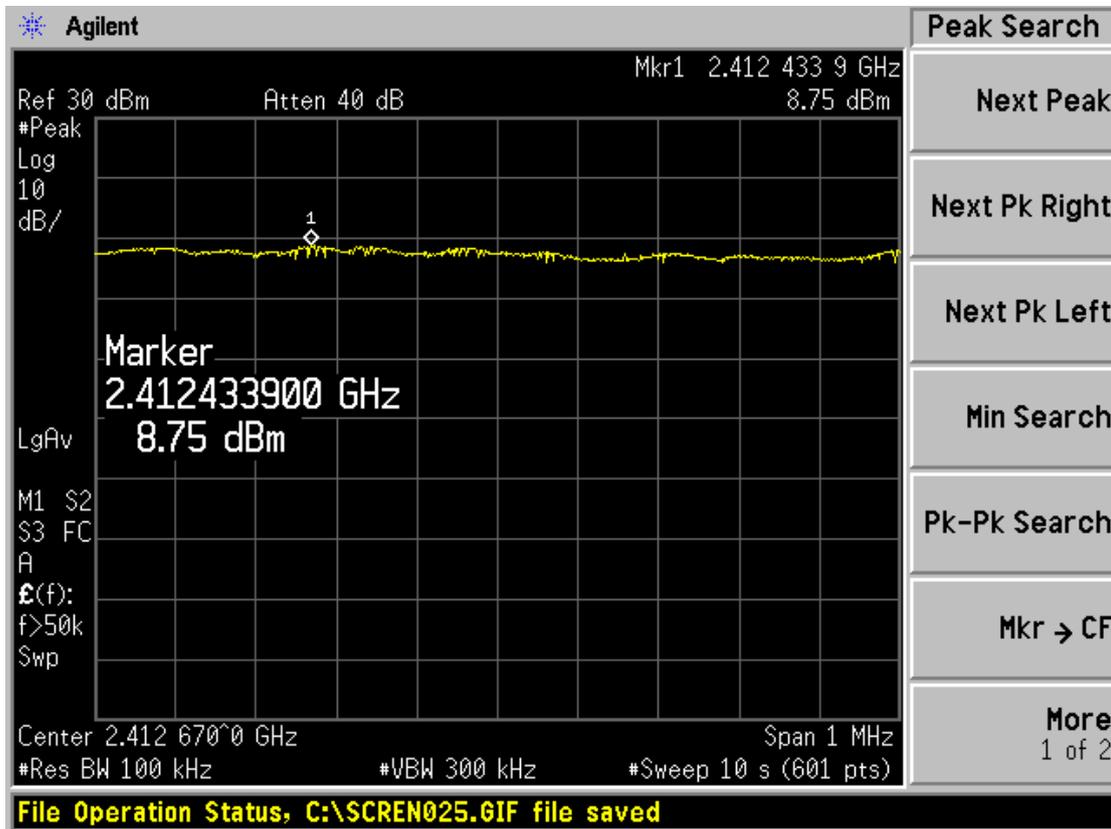
Report No.: RHA1209-0083RF05R2

Page 31 of 145

Test Results:

Network Standards	Channel Number	Power Spectral Density dBm / 3kHz	Conclusion
802.11b	1	-6.45	PASS
	6	-6.83	PASS
	11	-6.95	PASS
802.11g	1	-13.40	PASS
	6	-15.00	PASS
	11	-13.86	PASS
802.11n HT20	1	-14.52	PASS
	6	-15.32	PASS
	11	-14.59	PASS

802.11b

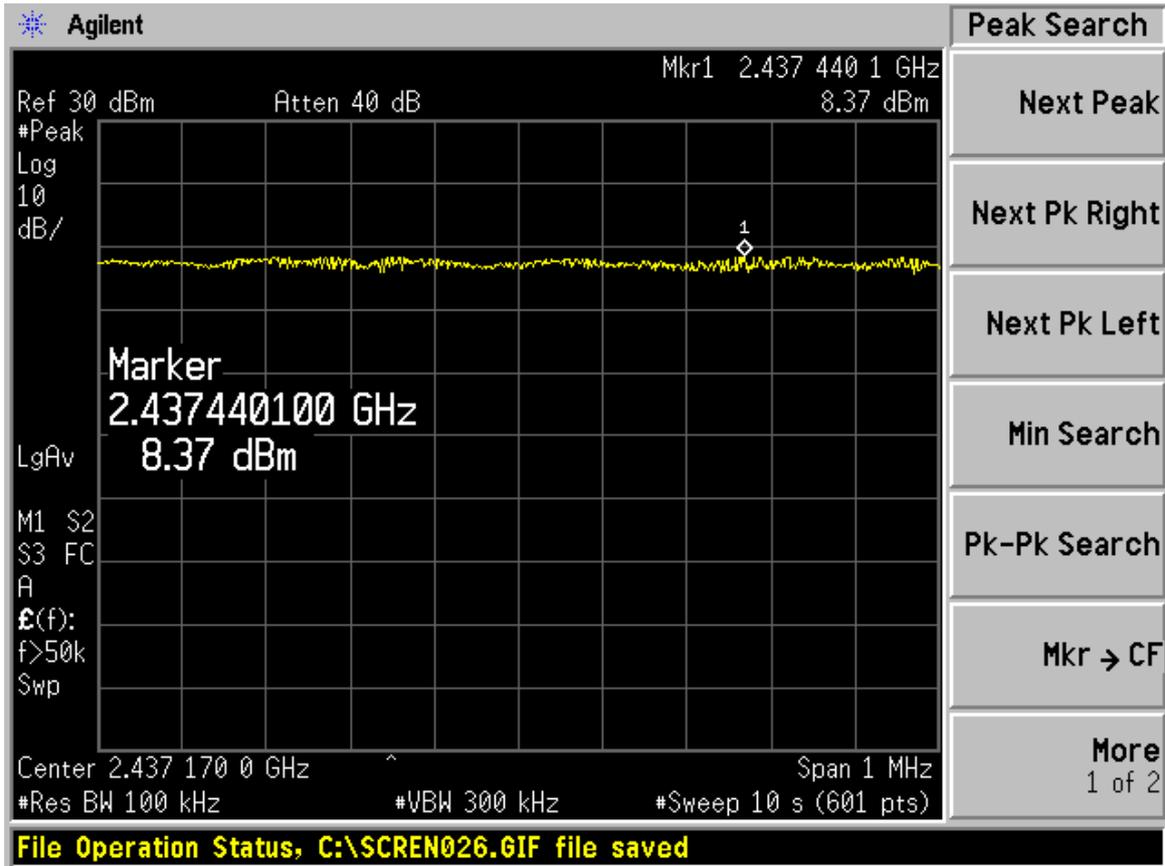


802.11b, Channel No.: 1

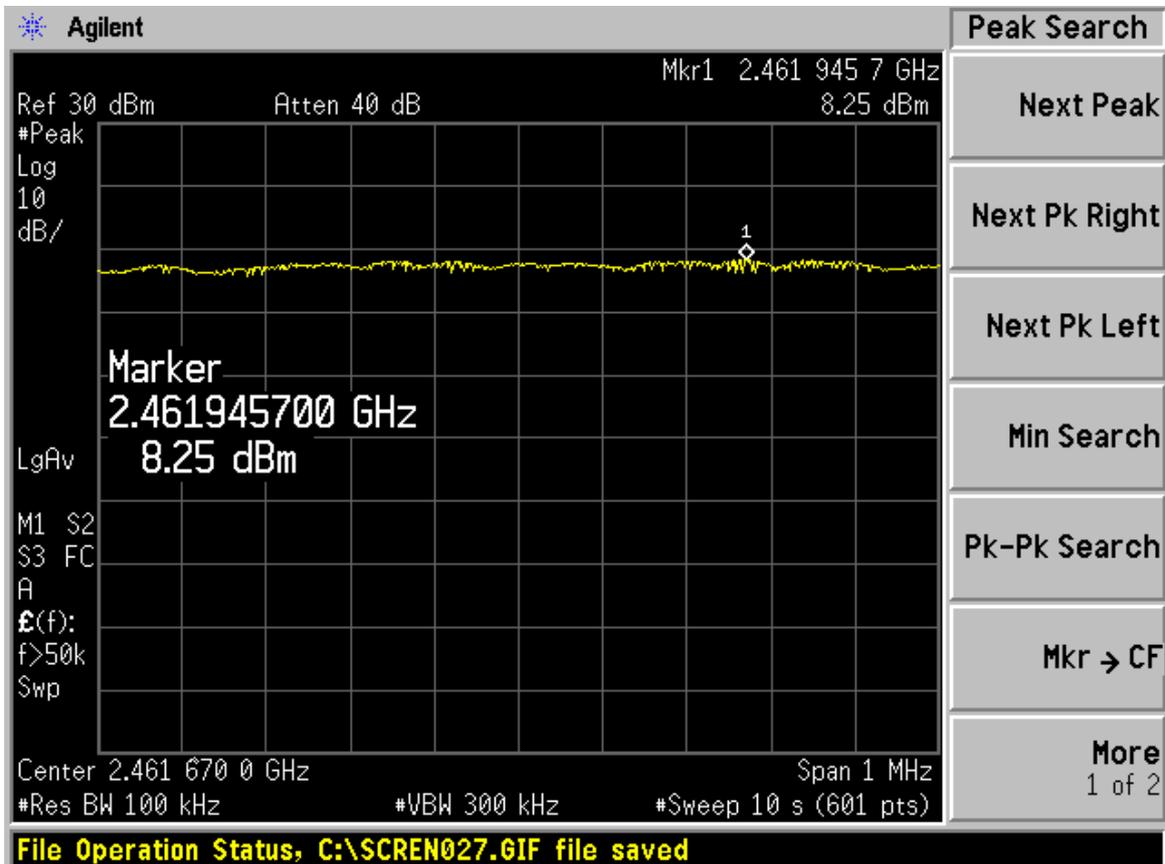
TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RHA1209-0083RF05R2

Page 32 of 145



802.11b, Channel No.: 6



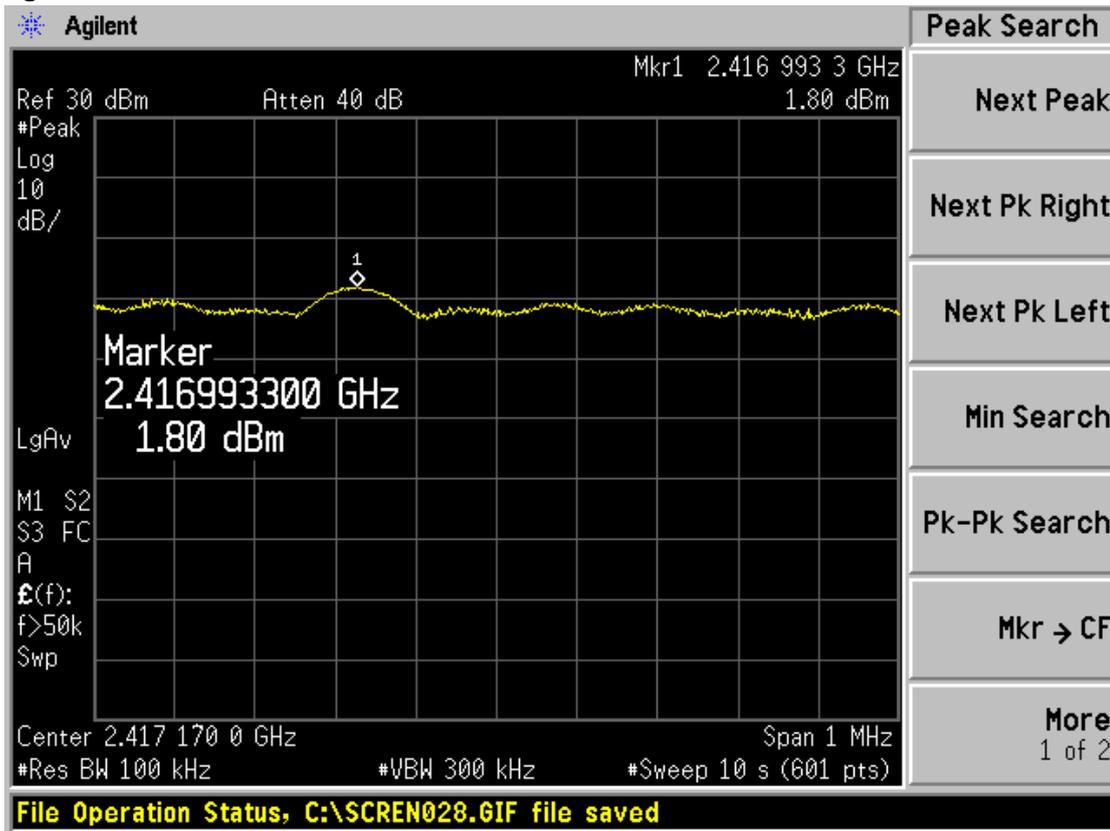
802.11b, Channel No.: 11

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

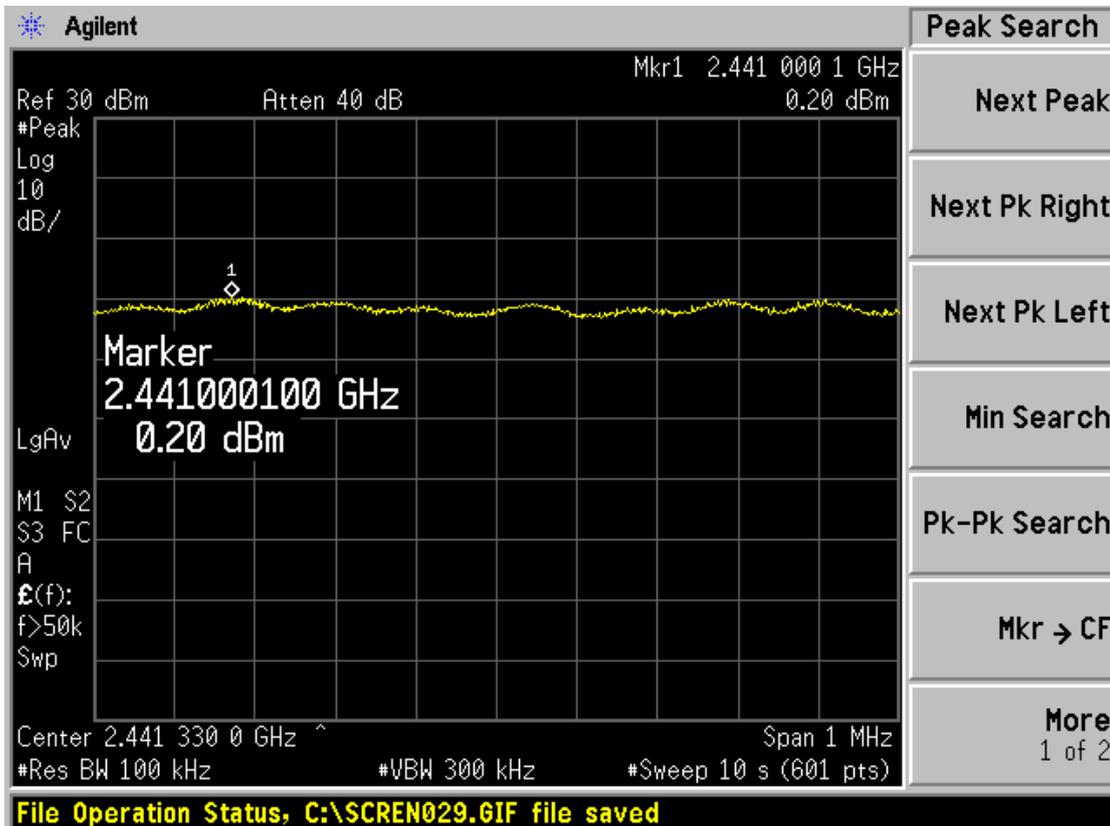
Report No.: RHA1209-0083RF05R2

Page 33 of 145

802.11g



802.11g, Channel No.: 1

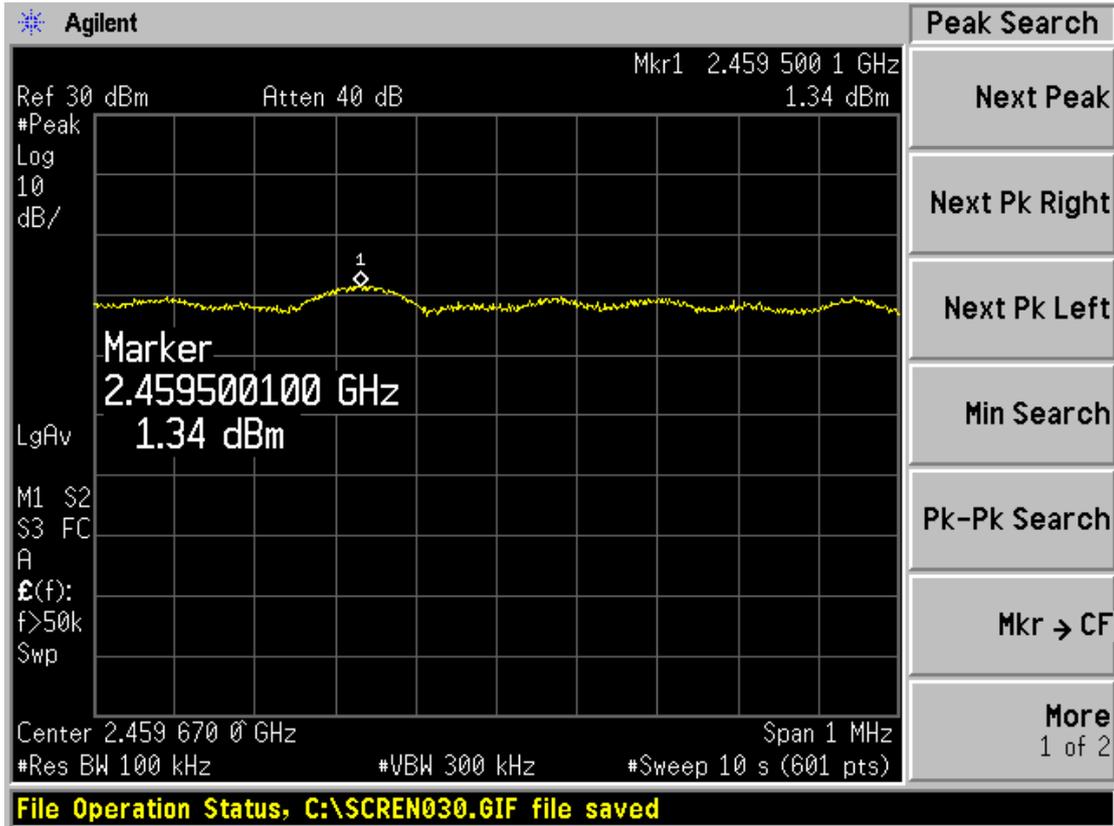


802.11g, Channel No.: 6

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

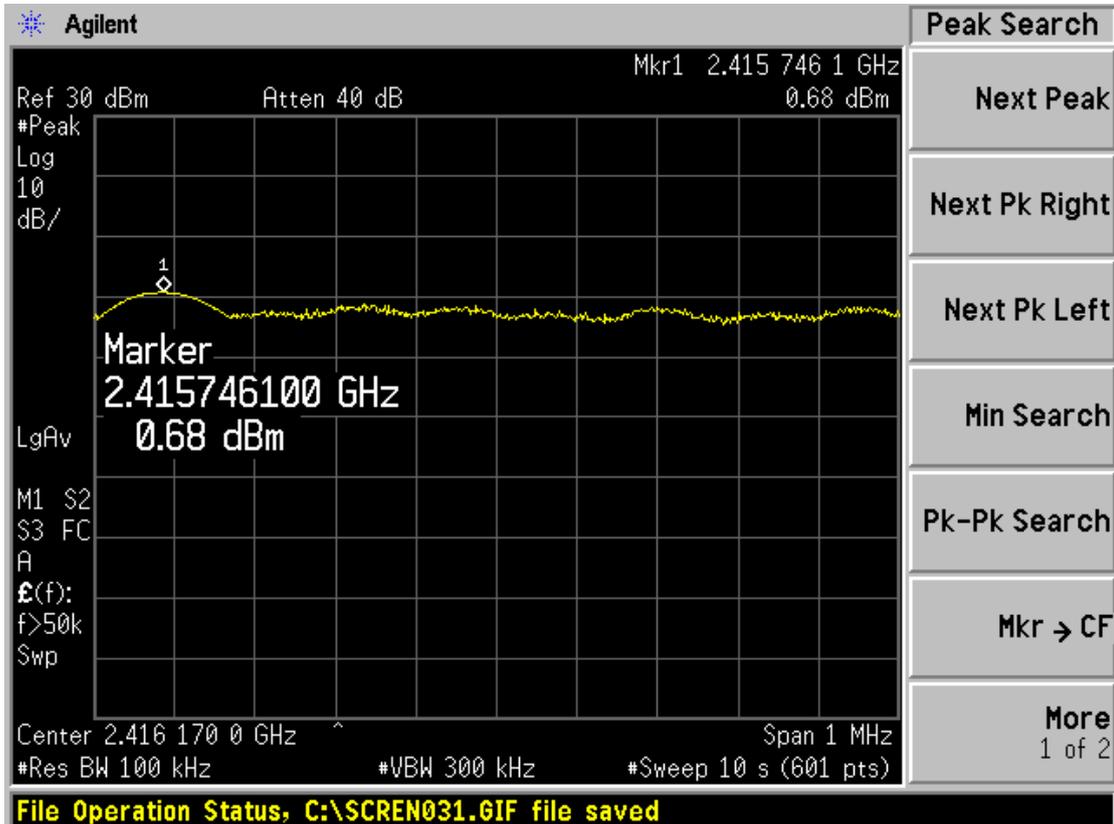
Report No.: RHA1209-0083RF05R2

Page 34 of 145



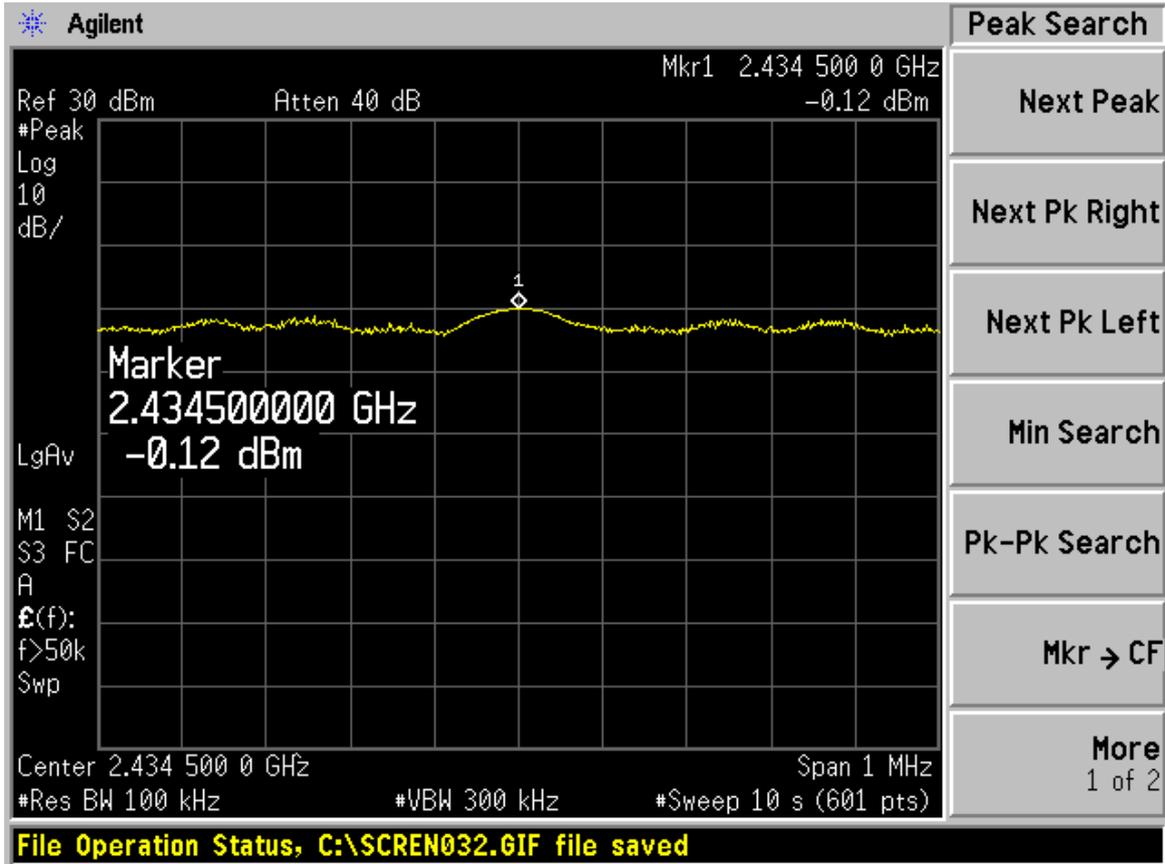
802.11g, Channel No.: 11

802.11n

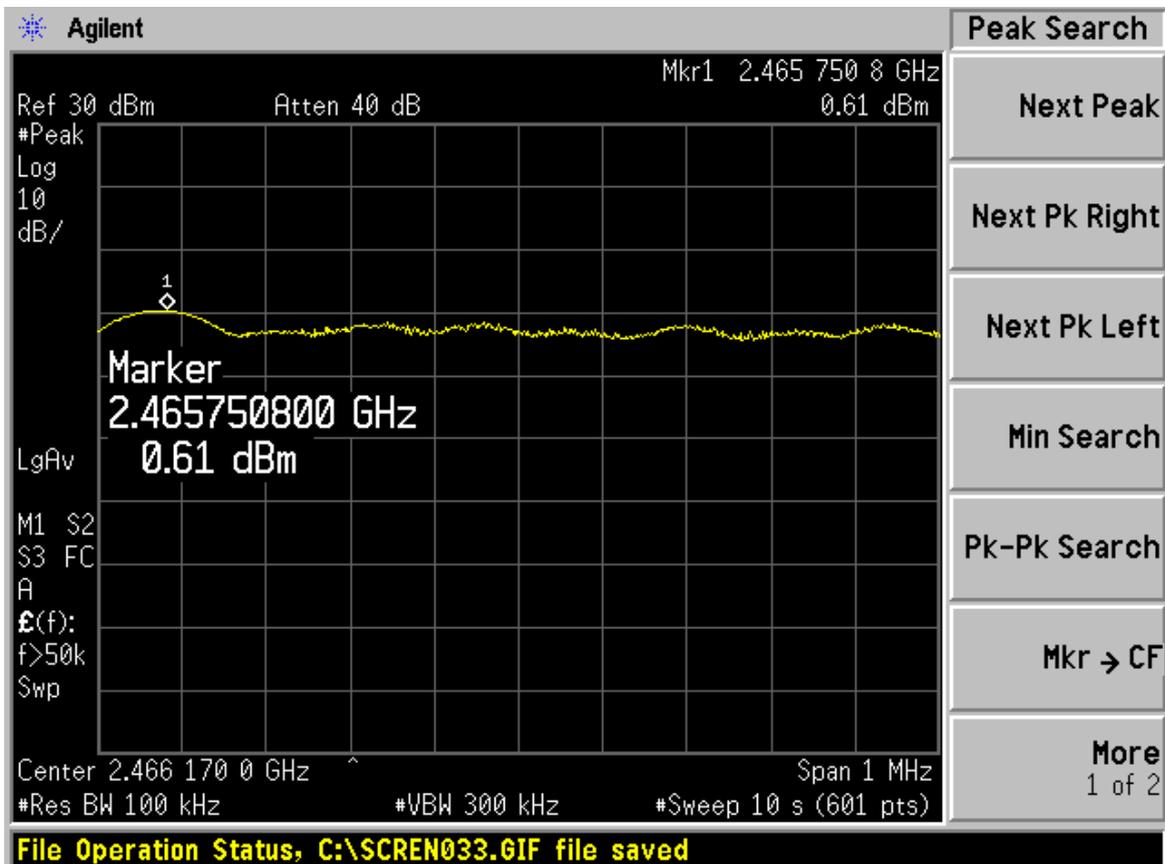


802.11n, Channel No.: 1

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



802.11n, Channel No.: 6



802.11n, Channel No.: 11

2.7. Spurious RF Conducted Emissions

Ambient condition

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

Method of Measurement

The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss. The spectrum analyzer scans from 30MHz to 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 transmit mode.

Test setup



Limits

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

Network Standards	Carrier frequency (MHz)	Reference value (dBm)	Limit
802.11b	2412	18.23	≤-1.77
	2437	18.29	≤-1.71
	2462	17.94	≤-2.06
802.11g	2412	16.98	≤-3.02
	2437	15.57	≤-4.43
	2462	16.66	≤-3.34
802.11n HT20	2412	16.07	≤-3.93
	2437	15.80	≤-4.20
	2462	15.73	≤-4.27

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

Report No.: RHA1209-0083RF05R2

Page 37 of 145

Measurement Uncertainty

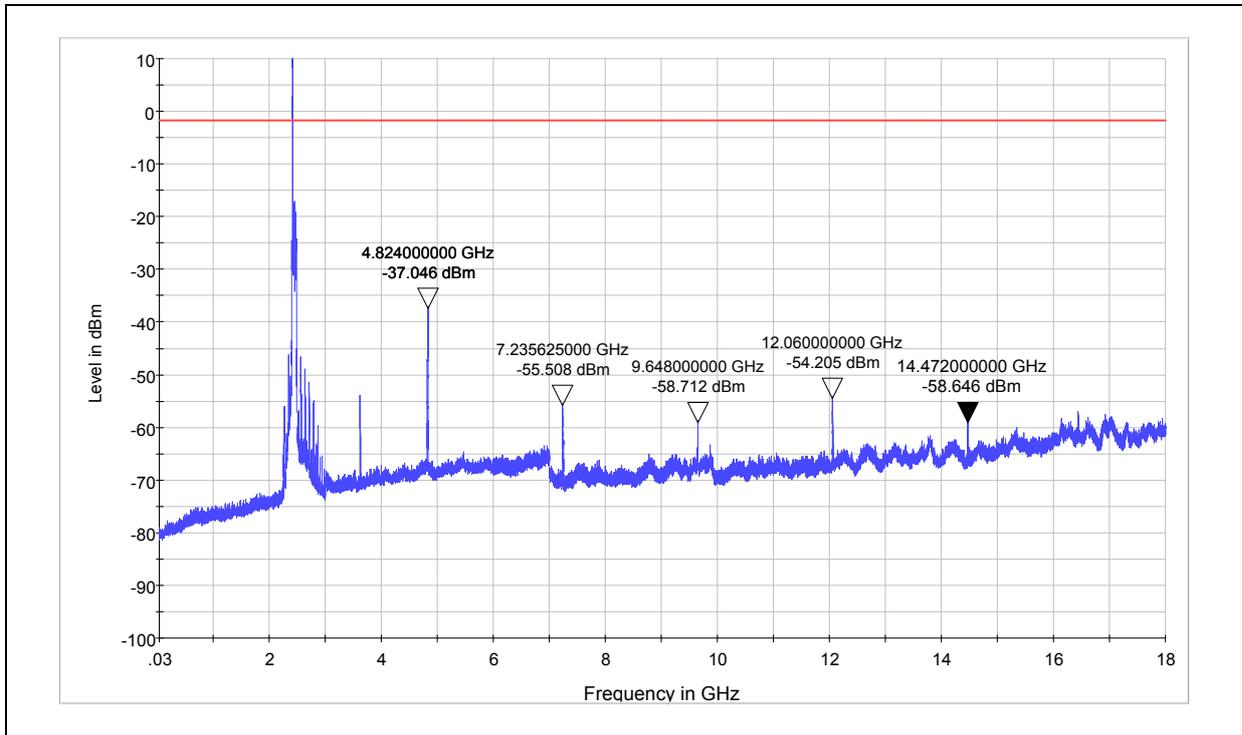
The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

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

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

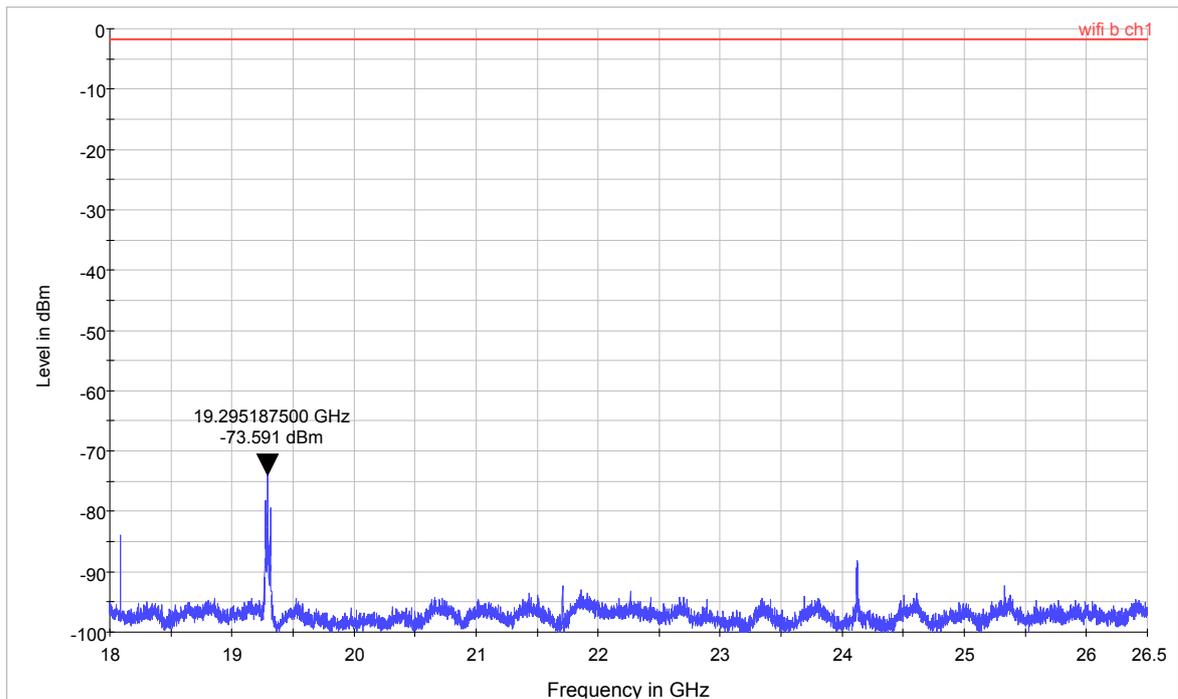
Test Results:

802.11b CH1



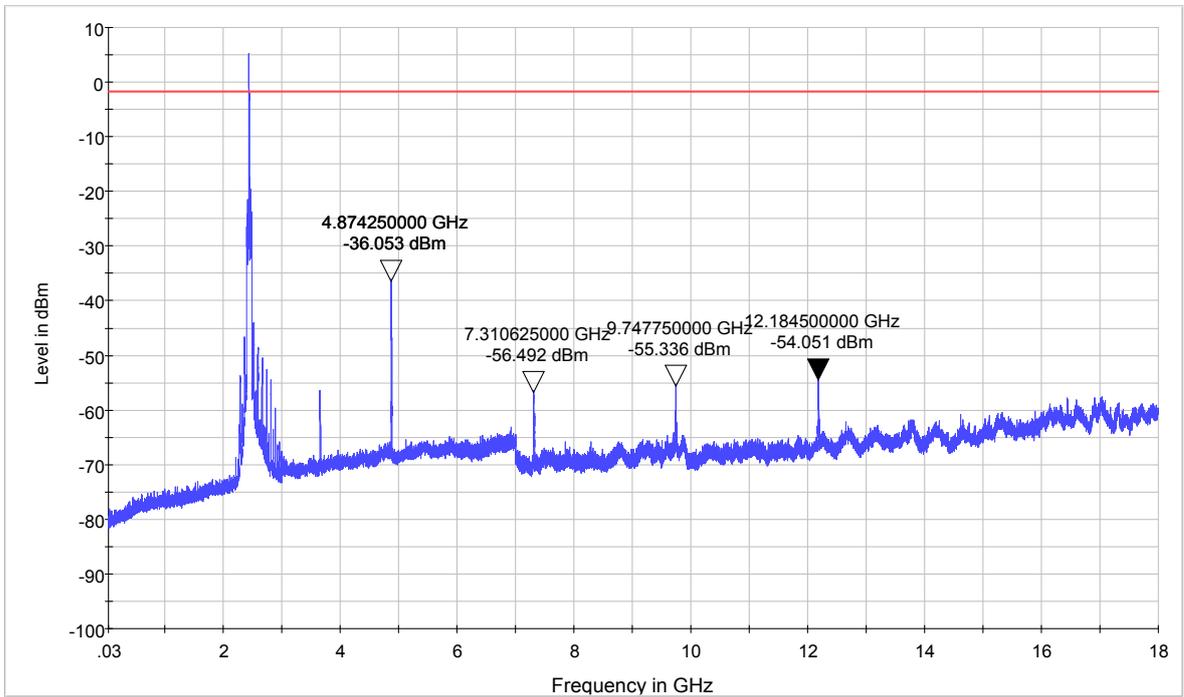
Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



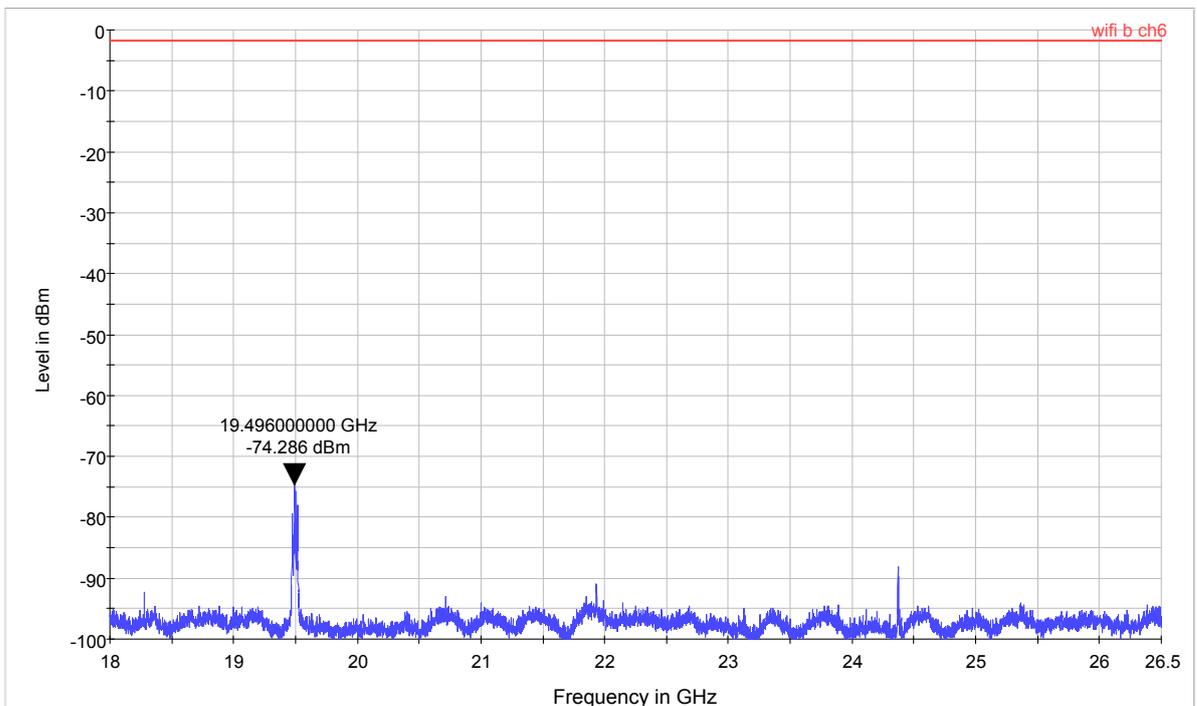
Spurious RF conducted emissions from 18GHz to 26.5GHz

802.11b CH6



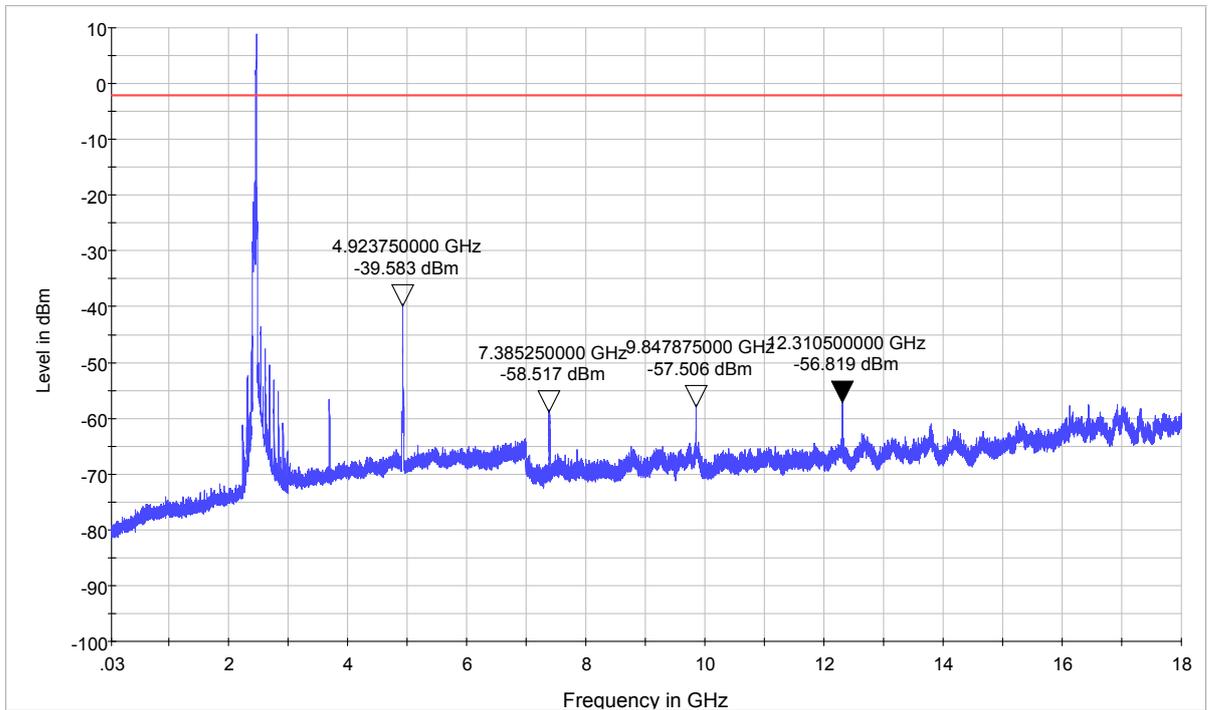
Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



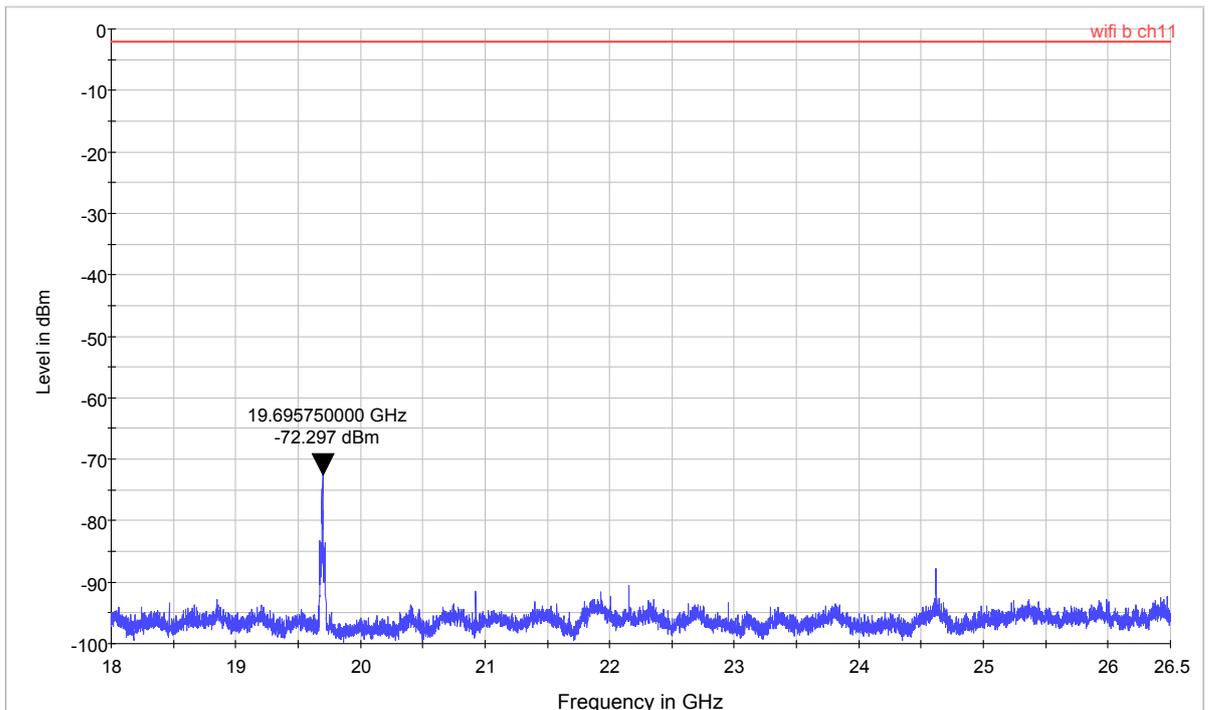
Spurious RF conducted emissions from 18GHz to 26.5GHz

802.11b CH11



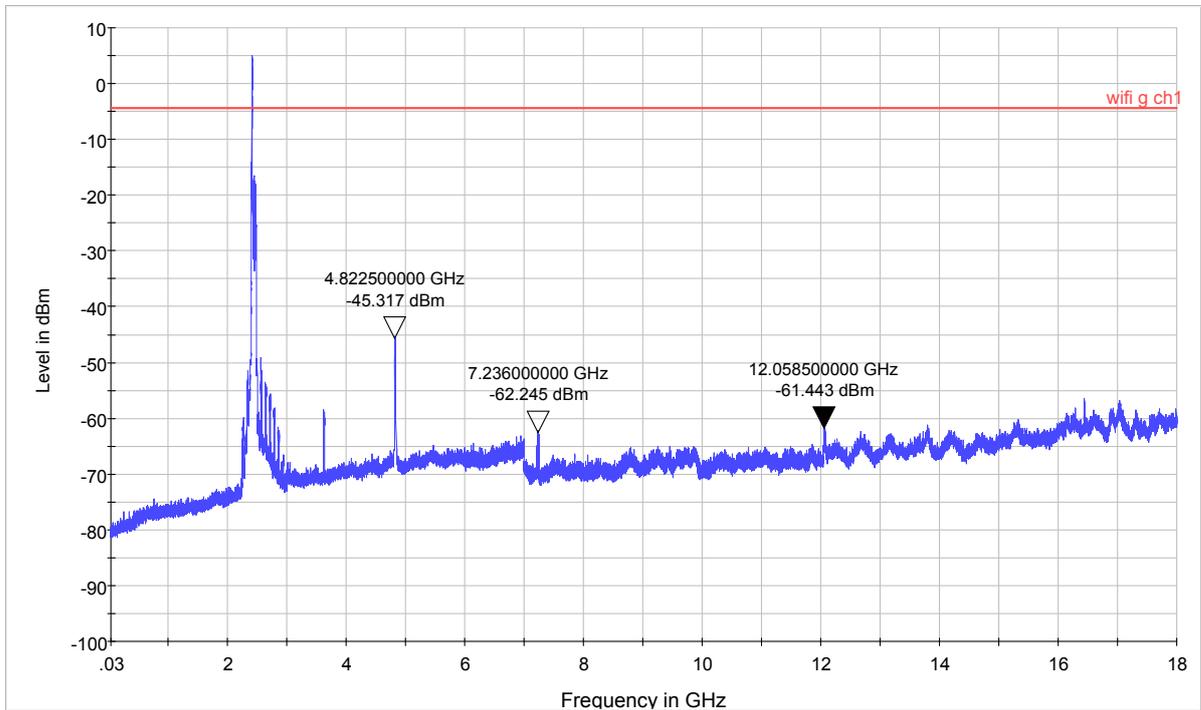
Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



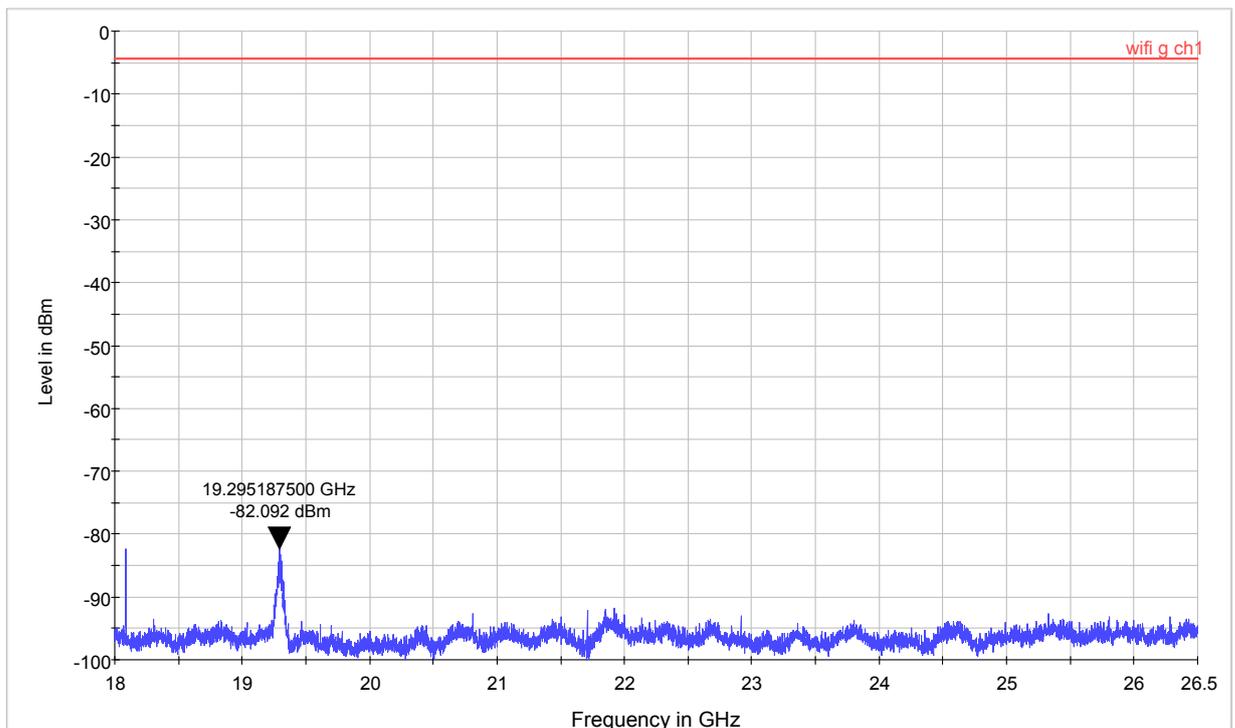
Spurious RF conducted emissions from 18GHz to 26.5GHz

802.11g CH1



Note: The signal beyond the limit is carrier

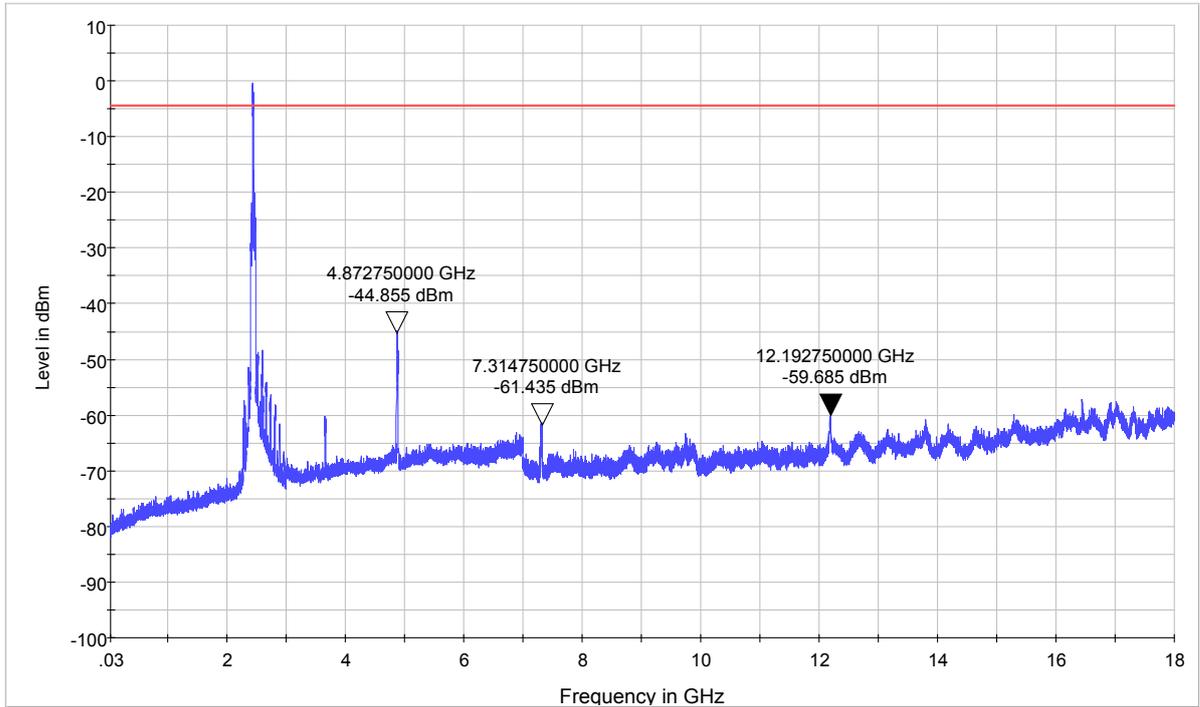
Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

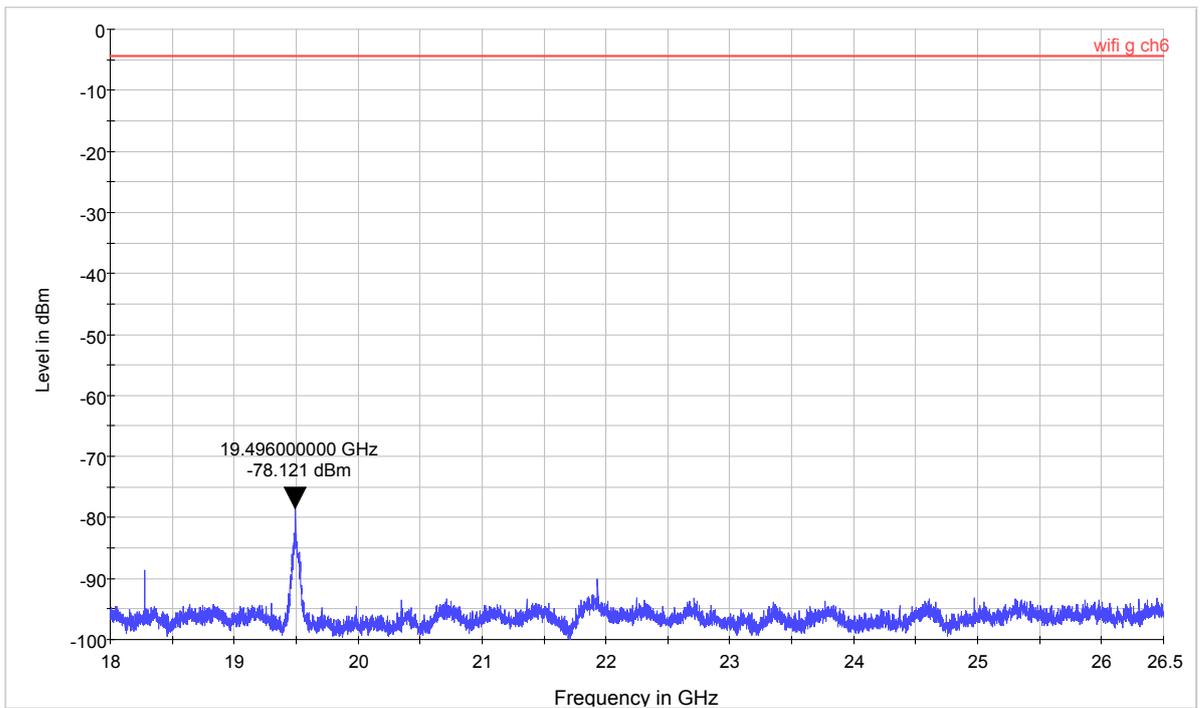
TA Technology (Shanghai) Co., Ltd. Test Report

802.11g CH6



Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



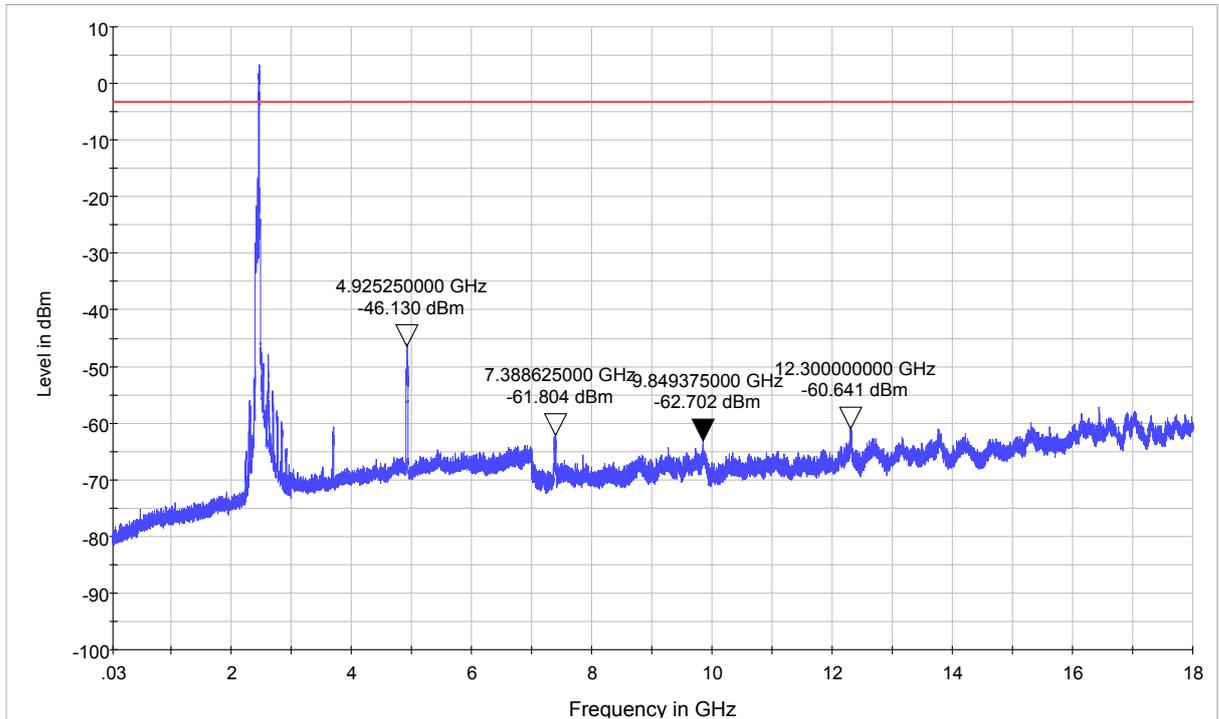
Spurious RF conducted emissions from 18GHz to 26.5GHz

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

Report No.: RHA1209-0083RF05R2

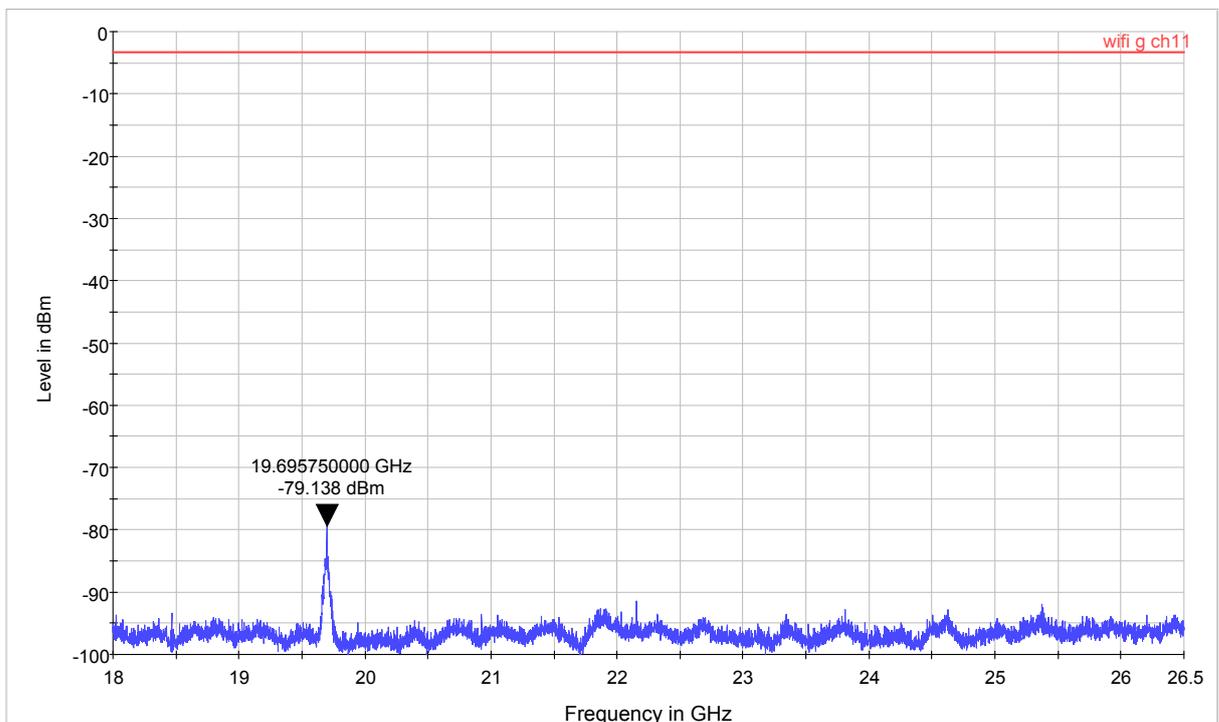
Page 43 of 145

802.11g CH11



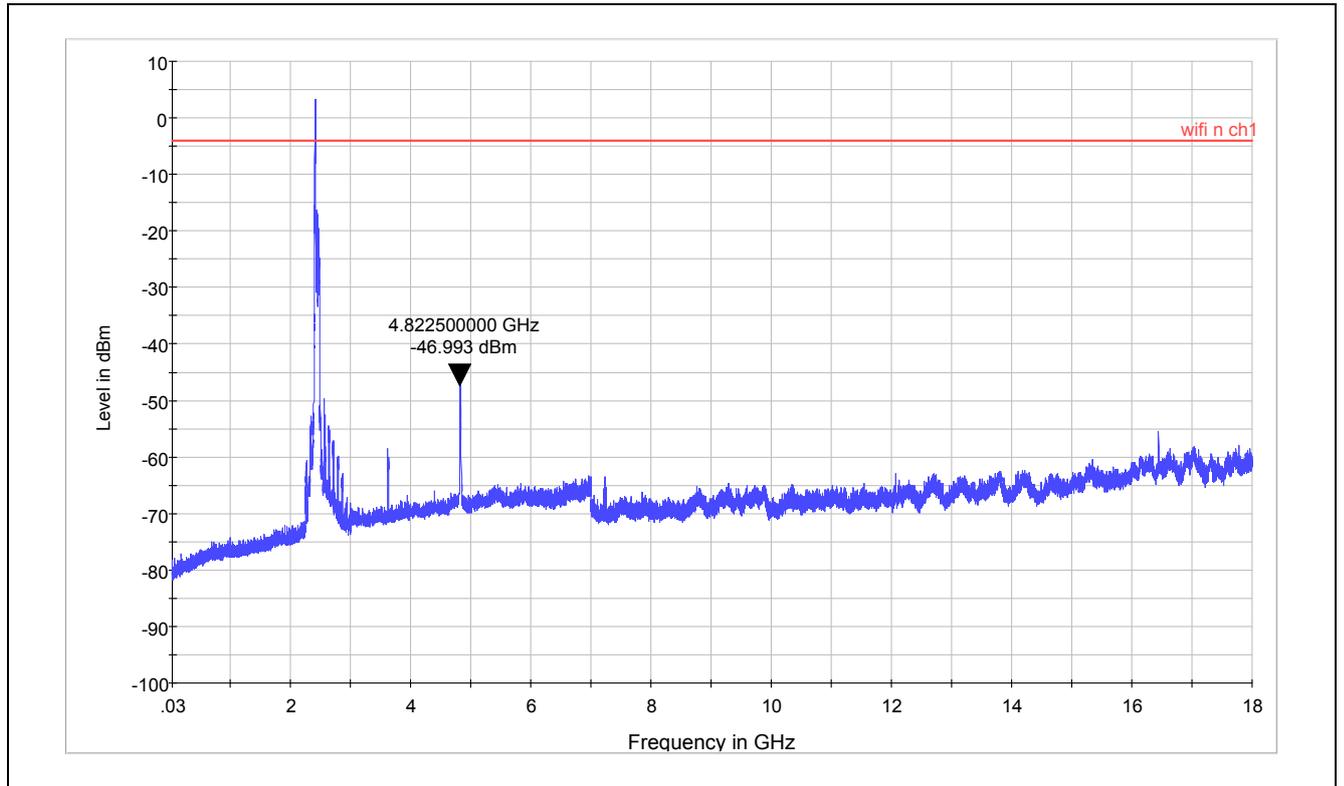
Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



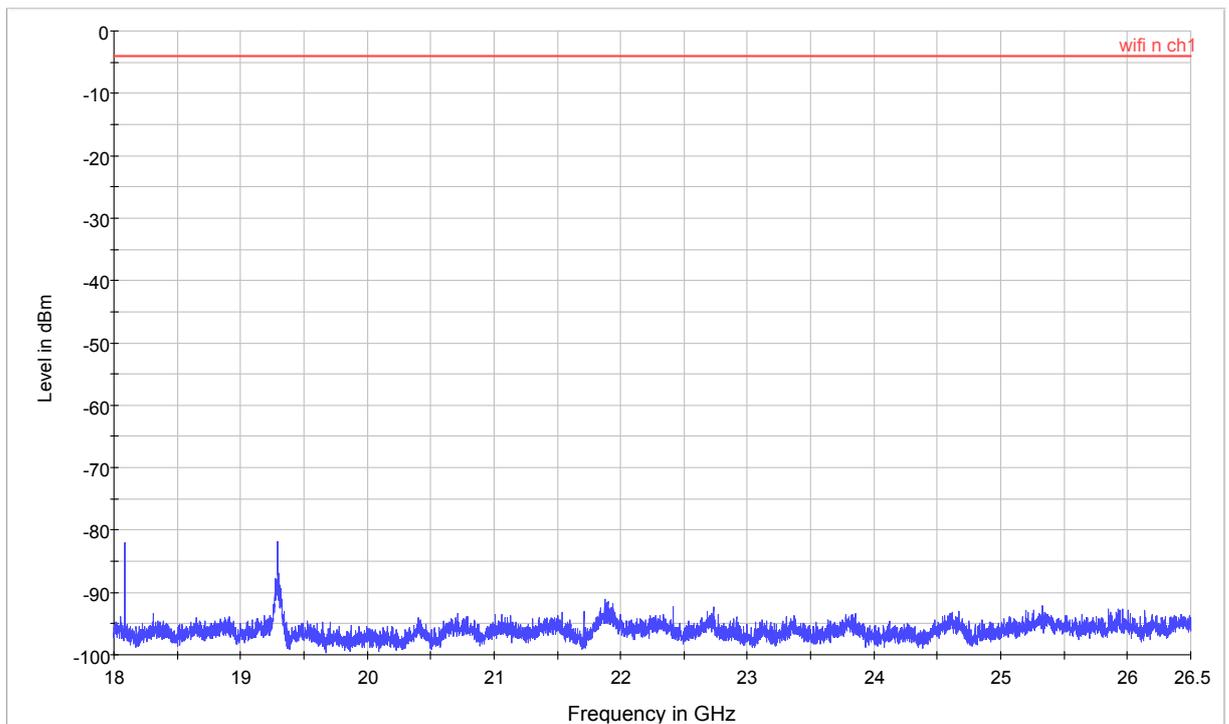
Spurious RF conducted emissions from 18GHz to 26.5GHz

802.11n CH1



Note: The signal beyond the limit is carrier

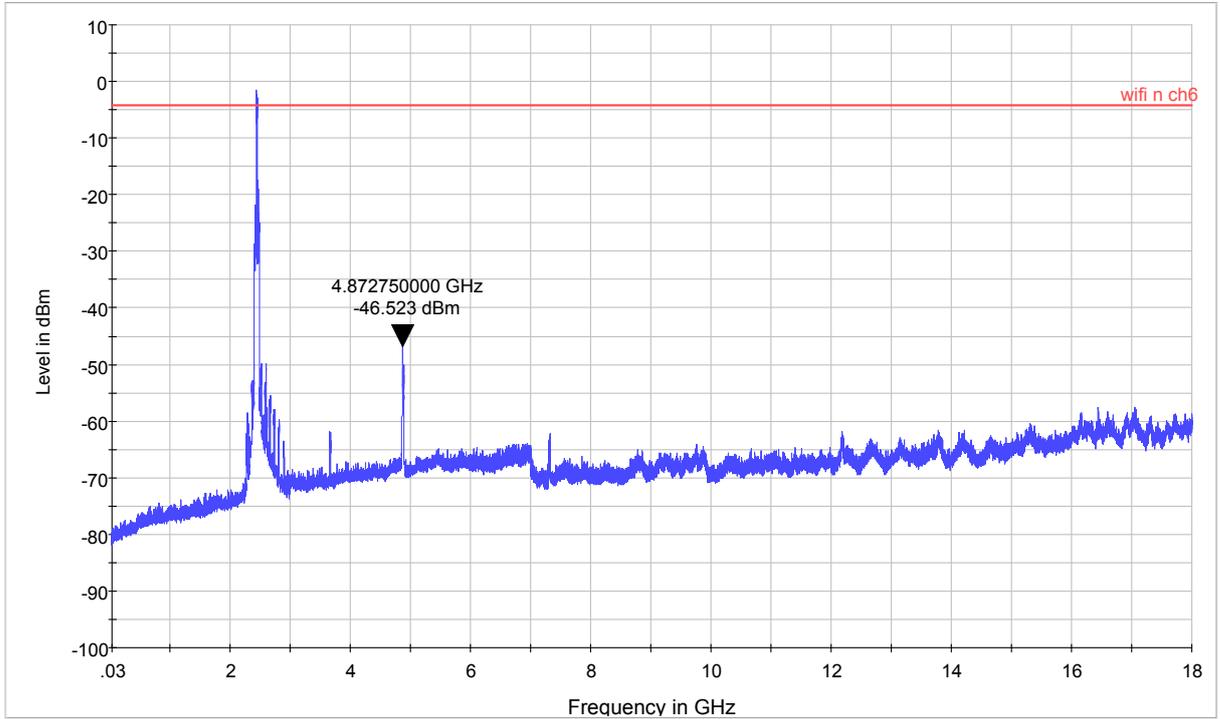
Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

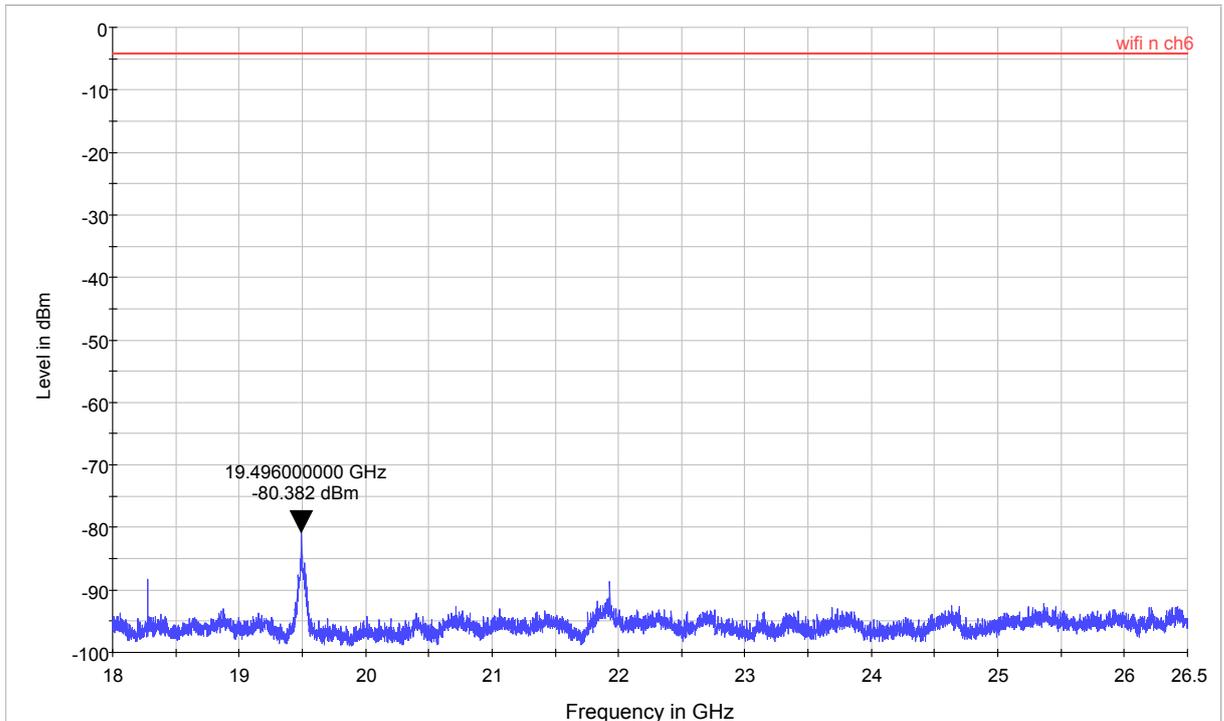
TA Technology (Shanghai) Co., Ltd. Test Report

802.11n CH6



Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



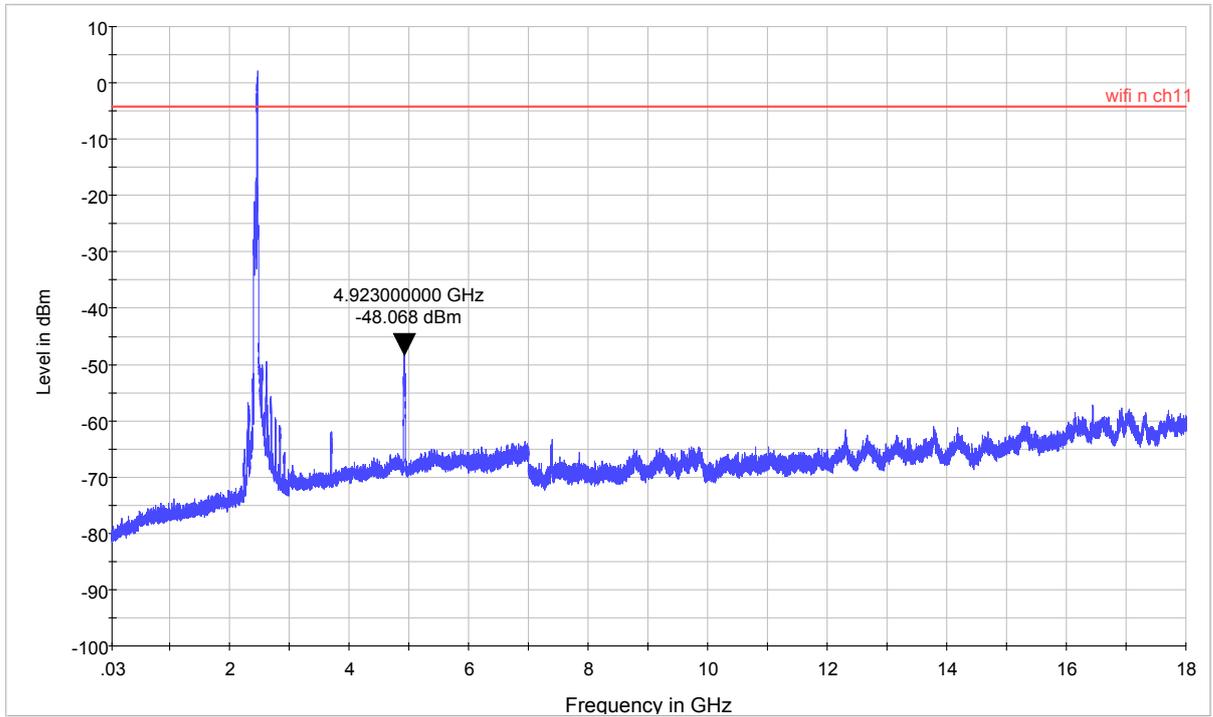
Spurious RF conducted emissions from 18GHz to 26.5GHz

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

Report No.: RHA1209-0083RF05R2

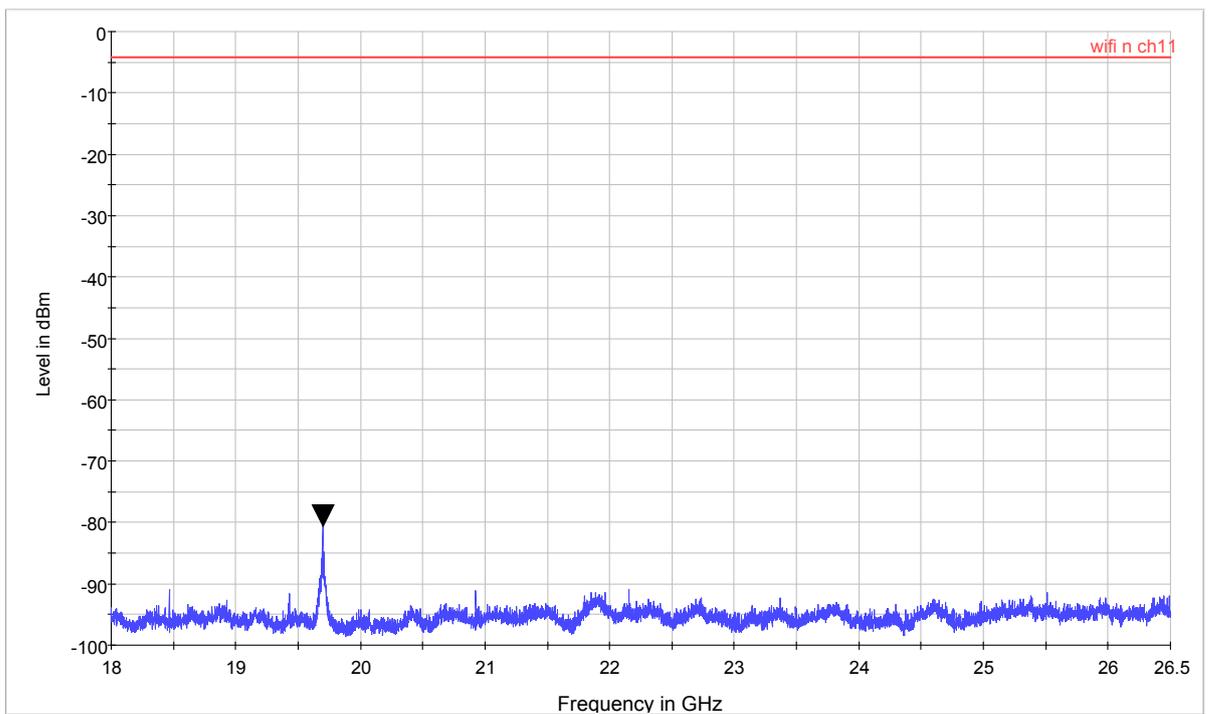
Page 46 of 145

802.11n CH11



Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

2.8. Radiates Emission

Ambient condition

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

Method of Measurement

The test set-up was made in accordance to the general provisions of ANSI C63.4-2009. The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The radiated emissions measurements were made in a typical installation configuration. Sweep the whole frequency band through the range from 30MHz to the 10th harmonic of the carrier. During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.

Set the spectrum analyzer in the following:

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

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

Above 1GHz(detector: Peak):

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

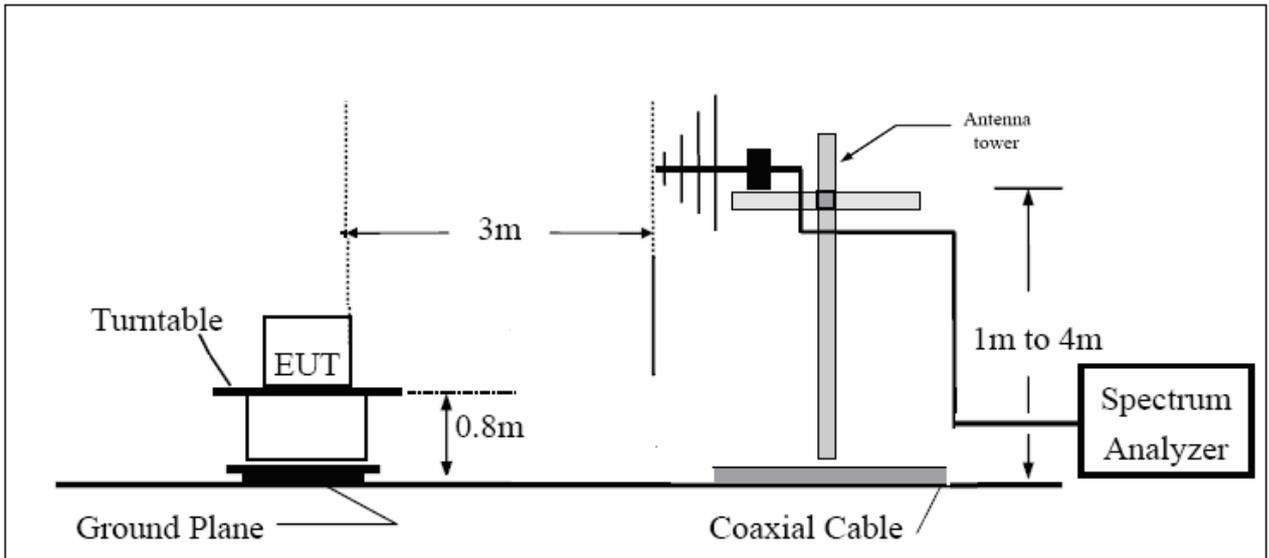
(b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO

The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (X axis) and the worst case was recorded.

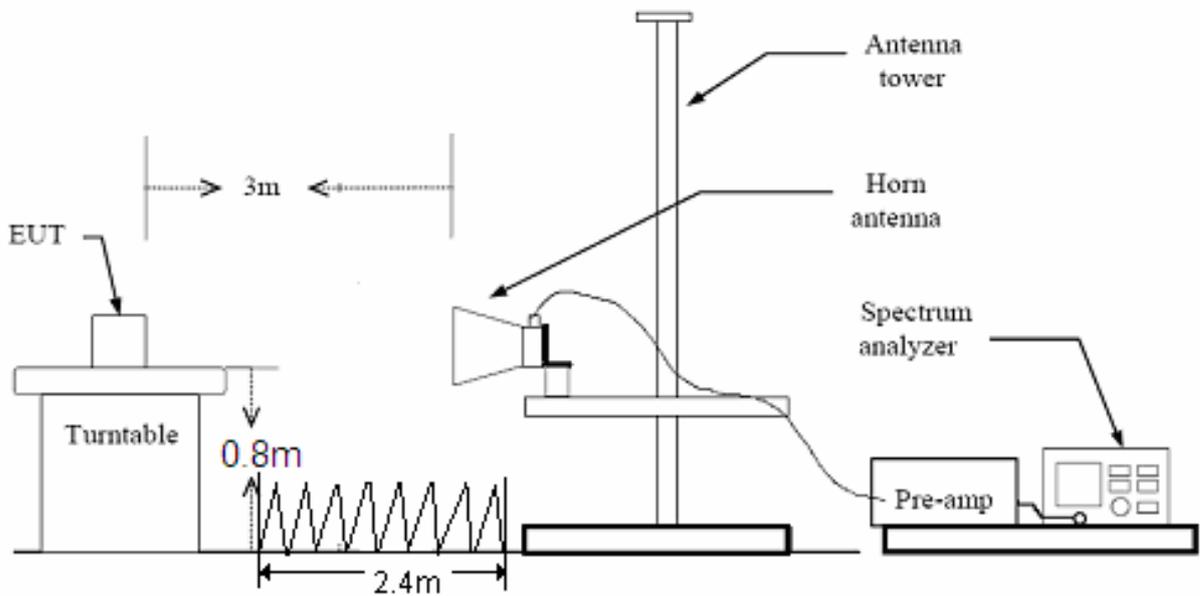
The test is in transmit mode.

Test setup

Below 1GHz



Above 1GHz



Note: Area side: 2.4mX3.6m

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

Limits

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

Limit in restricted band

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

Measurement Uncertainty

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

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

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

Report No.: RHA1209-0083RF05R2

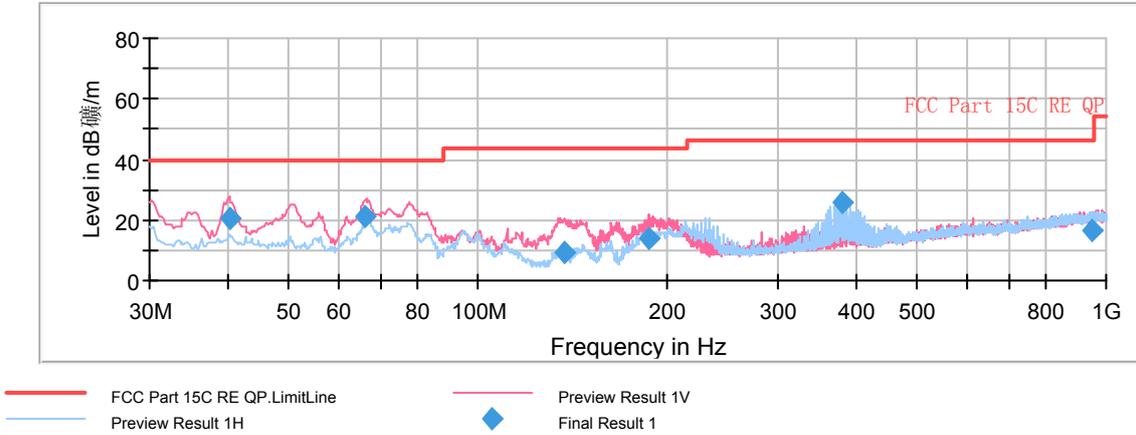
Page 50 of 145

Test result

Adapter(HKAB829B329)

802.11b CH1

RE 30M-1GHz (BT&WIFI) QP



Radiates Emission from 30MHz to 1GHz

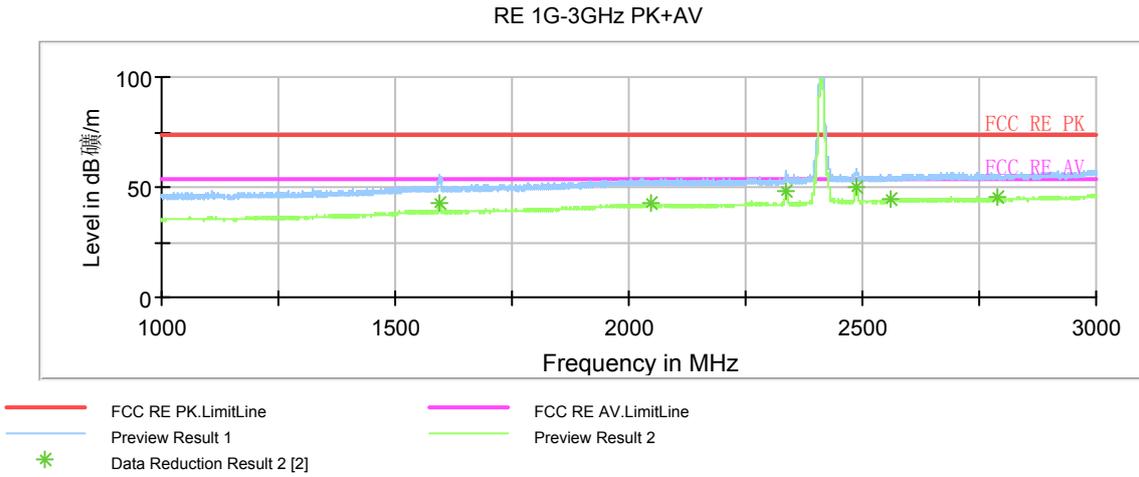
Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
66.375000	27.4	100.0	V	46.0	51.3	-23.9	12.1	40.0
137.427500	20.3	100.0	V	140.0	50.3	-30.0	12.6	40.0
187.140000	21.9	100.0	V	359.0	54.4	-32.5	23.2	43.5
380.897500	26.9	100.0	V	122.0	57.6	-30.7	21.6	43.5
948.105000	22.7	200.0	H	336.0	47.9	-25.2	19.1	46.0
66.375000	27.4	100.0	V	73.0	43.3	-15.9	23.3	46.0

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

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

3. Margin = Limit – Quasi-Peak

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



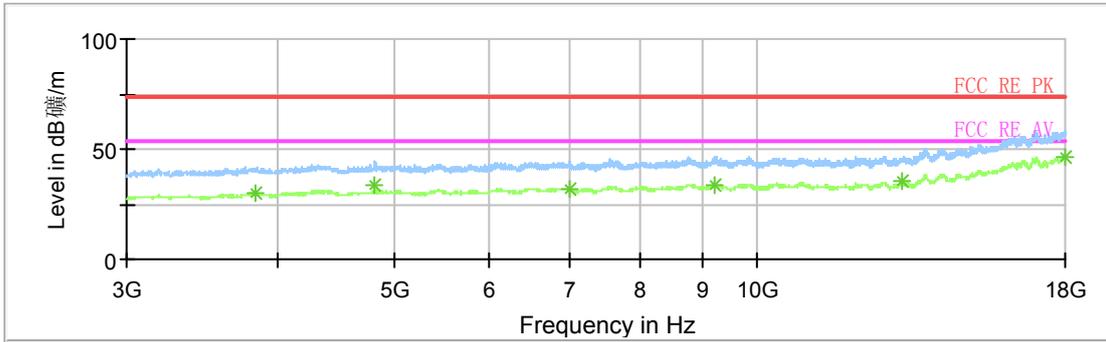
Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1596.250000	55.1	43.0	100.0	V	62.0	0.9
2045.750000	51.8	42.8	100.0	H	80.0	3.6
2338.250000	55.3	48.2	100.0	V	248.0	4.6
2487.250000	57.0	50.0	100.0	V	248.0	5.6
2561.250000	53.8	44.8	100.0	V	298.0	6.0
2786.750000	54.6	45.6	100.0	V	241.0	6.1

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

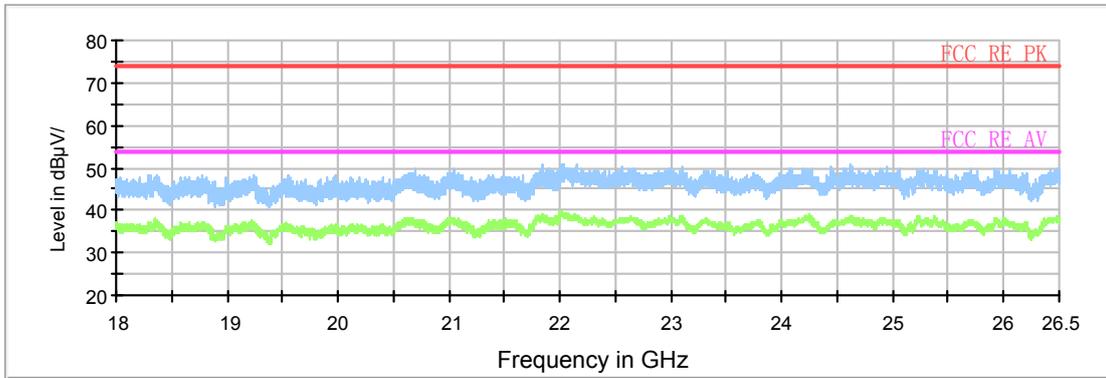
TA Technology (Shanghai) Co., Ltd. Test Report

RE 3-18GHz PK+AV



- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Preview Result 1
- Preview Result 2
- * Data Reduction Result 2 [1]

Radiates Emission from 3GHz to 18GHz



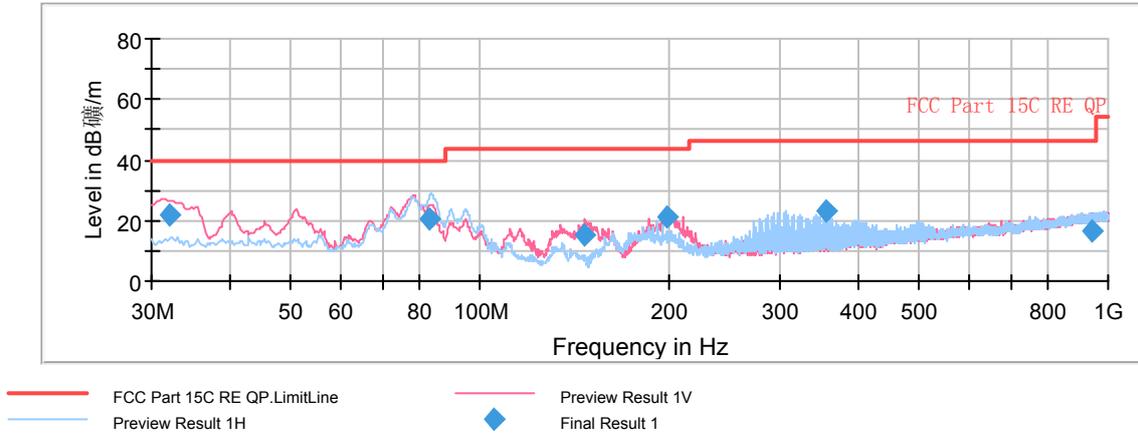
- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Preview Result 1
- Preview Result 2
- * Data Reduction Result 1 [1]
- * Data Reduction Result 2 [1]

Radiates Emission from 18GHz to 26.5GHz

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

802.11b CH6

RE 30M-1GHz (BT&WIFI) QP

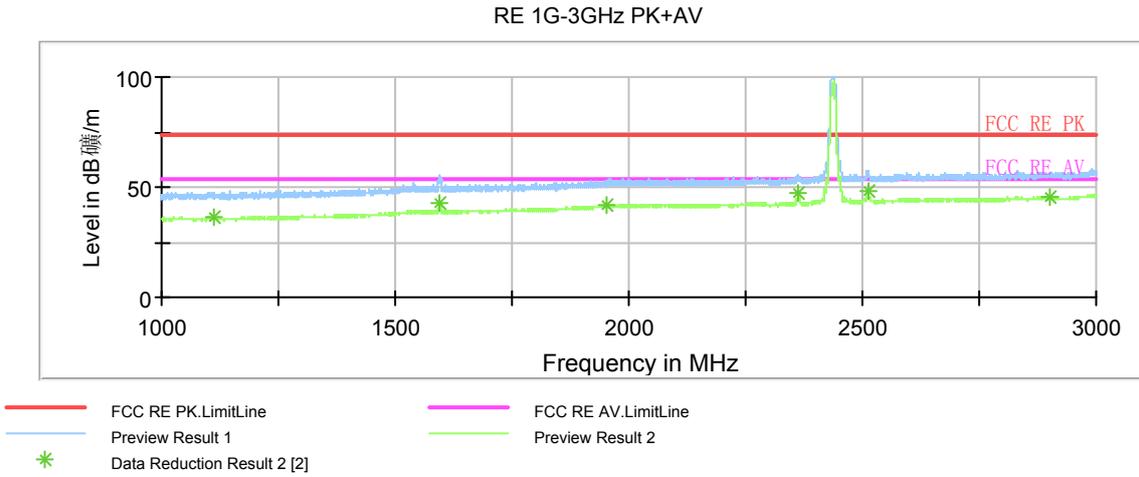


Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
32.015000	21.7	120.0	V	102.0	45.6	-23.9	18.3	40.0
83.192500	20.2	225.0	H	284.0	51.2	-31.0	19.8	40.0
147.167500	15.0	100.0	V	5.0	47.6	-32.6	28.5	43.5
198.415000	21.3	100.0	V	263.0	51.5	-30.2	22.2	43.5
355.192500	23.1	120.0	H	343.0	48.9	-25.8	22.9	46.0
945.602500	16.3	200.0	V	267.0	32.2	-15.9	29.7	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



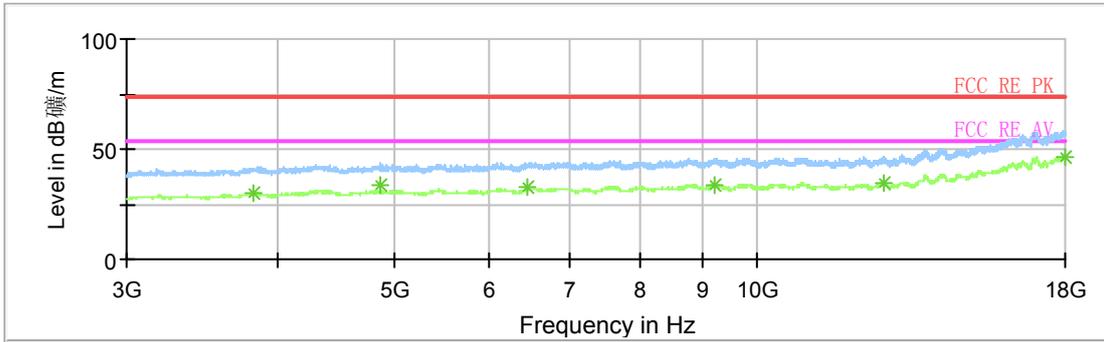
Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1112.000000	45.6	36.0	100.0	V	170.0	-2.3
1596.500000	52.8	42.9	100.0	V	92.0	0.9
1953.250000	50.7	42.1	100.0	V	109.0	3.1
2362.000000	55.8	47.2	100.0	V	259.0	4.5
2511.250000	56.7	48.6	100.0	V	241.0	5.8
2899.750000	56.1	45.5	100.0	H	158.0	7.7

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

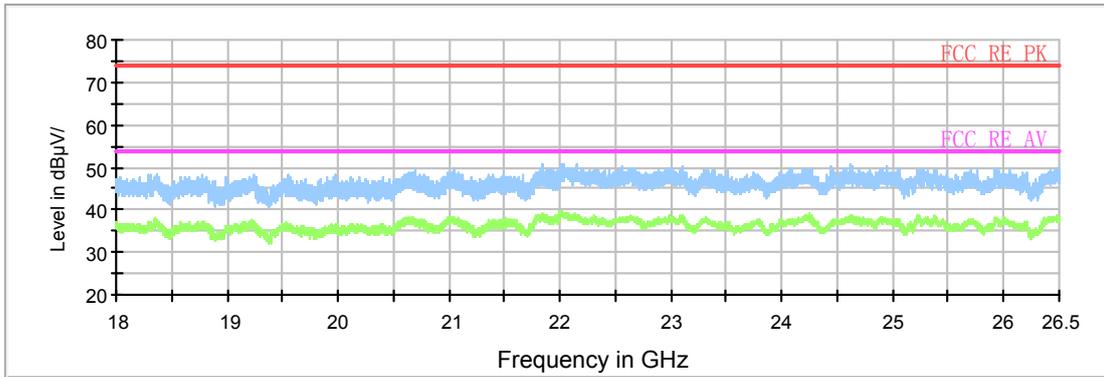
TA Technology (Shanghai) Co., Ltd. Test Report

RE 3-18GHz PK+AV



- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Preview Result 1
- Preview Result 2
- * Data Reduction Result 2 [1]

Radiates Emission from 3GHz to 18GHz



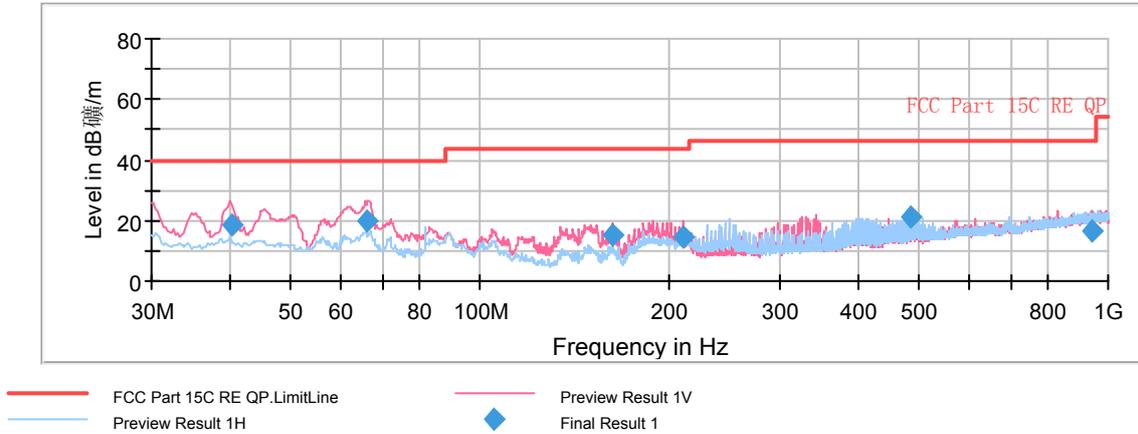
- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- * Data Reduction Result 1 [1]
- * Data Reduction Result 2 [1]

Radiates Emission from 18GHz to 26.5GHz

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

802.11b CH11

RE 30M-1GHz (BT&WIFI) QP

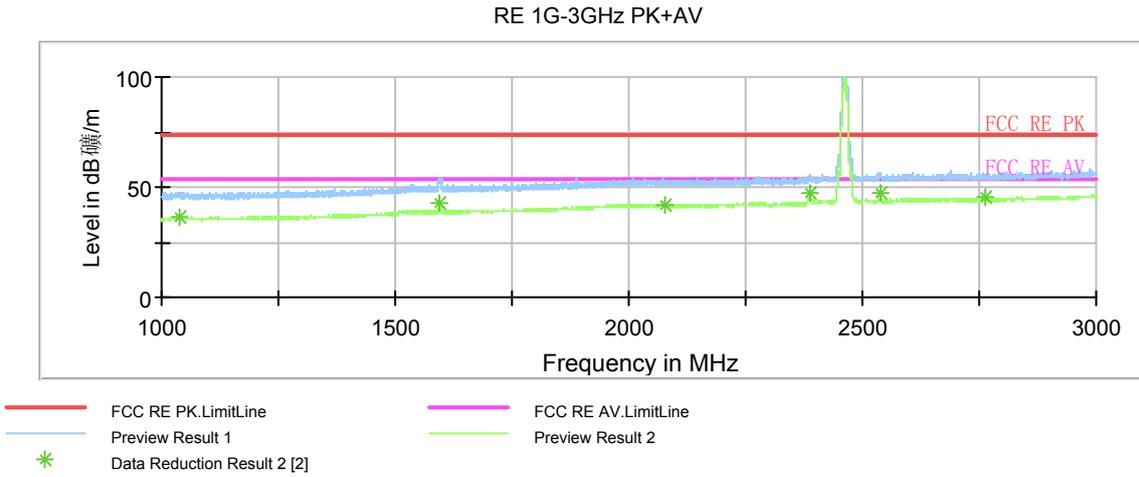


Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
39.942500	26.3	100.0	V	16.0	50.2	-23.9	13.7	40.0
66.132500	26.7	100.0	V	104.0	56.6	-29.9	13.3	40.0
163.132500	18.9	100.0	V	0.0	50.7	-31.8	24.6	43.5
211.147500	19.9	100.0	V	359.0	49.5	-29.6	23.6	43.5
486.385000	22.1	100.0	H	173.0	45	-22.9	23.9	46.0
943.012500	23.3	200.0	V	119.0	39.3	-16.0	22.7	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



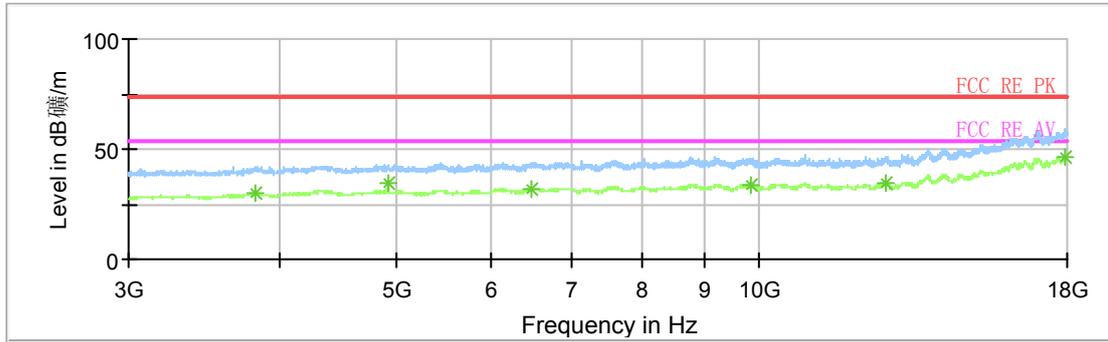
Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1040.750000	46.1	36.2	100.0	V	272.0	-2.2
1594.750000	53.2	43.0	100.0	V	92.0	0.8
2078.750000	52.1	42.1	100.0	H	198.0	3.9
2387.250000	54.9	47.1	100.0	V	243.0	4.7
2537.250000	56.0	47.0	100.0	V	315.0	5.8
2763.000000	54.1	45.7	100.0	V	349.0	6.5

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

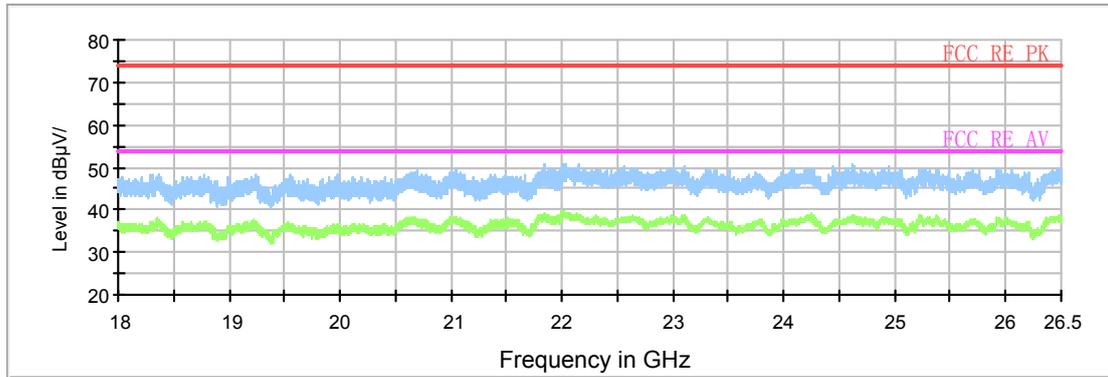
TA Technology (Shanghai) Co., Ltd. Test Report

RE 3-18GHz PK+AV



- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Preview Result 1
- Preview Result 2
- * Data Reduction Result 2 [1]

Radiates Emission from 3GHz to 18GHz



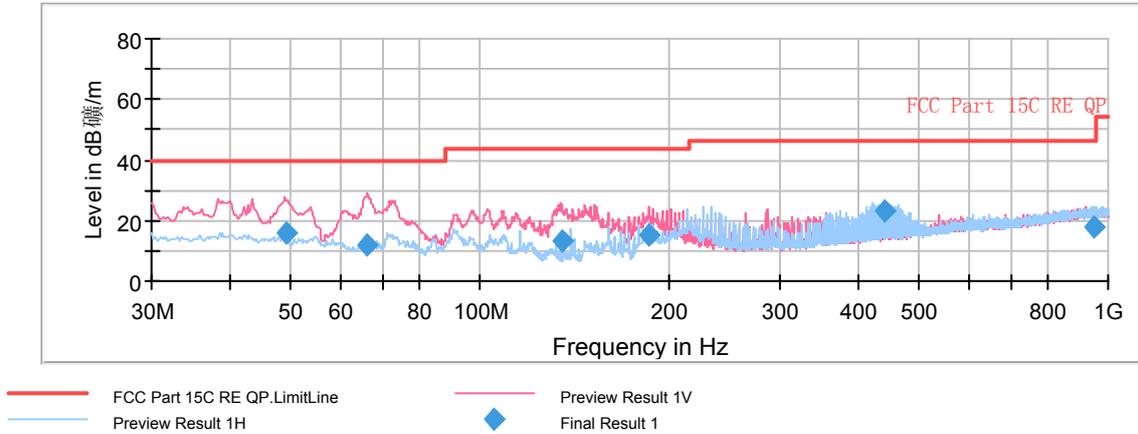
- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Data Reduction Result 1 [1]
- Preview Result 2
- * Data Reduction Result 2 [1]

Radiates Emission from 18GHz to 26.5GHz

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

802.11g CH1

RE 30M-1GHz QP

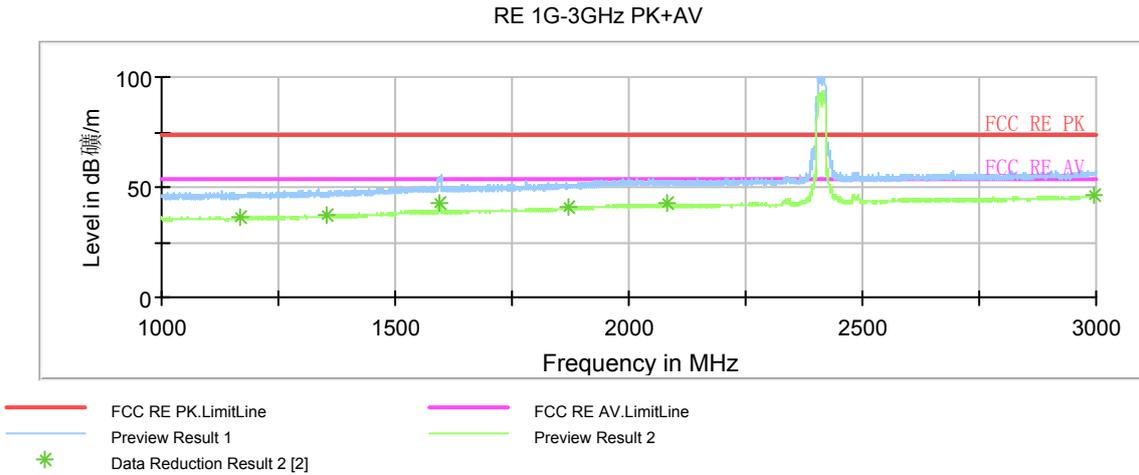


Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
49.032712	15.6	100.0	V	329.0	39.2	-23.6	24.4	40.0
66.087169	12.1	100.0	V	206.0	40.0	-27.9	27.9	40.0
134.853794	13.0	100.0	V	0.0	43.8	-30.8	30.5	43.5
185.578894	15.0	100.0	V	28.0	44.2	-29.2	28.5	43.5
441.620500	22.9	100.0	H	167.0	45.0	-22.1	23.1	46.0
950.235500	17.9	175.0	H	37.0	32.3	-14.4	28.1	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



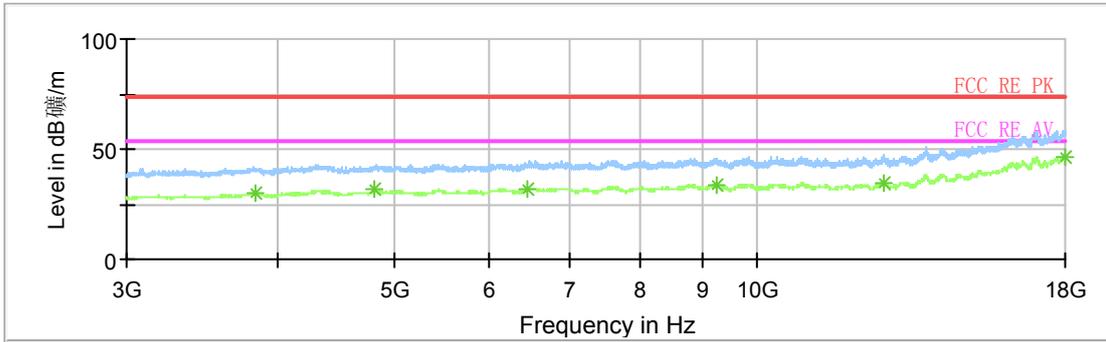
Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1169.250000	46.3	36.2	100.0	H	0.0	-2.1
1353.500000	46.1	36.9	100.0	H	111.0	-1.5
1596.000000	53.8	42.9	100.0	V	94.0	0.9
1870.500000	50.5	40.7	100.0	V	334.0	2.3
2082.000000	50.7	42.3	100.0	H	25.0	3.9
2996.750000	55.9	46.2	100.0	V	164.0	8.2

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

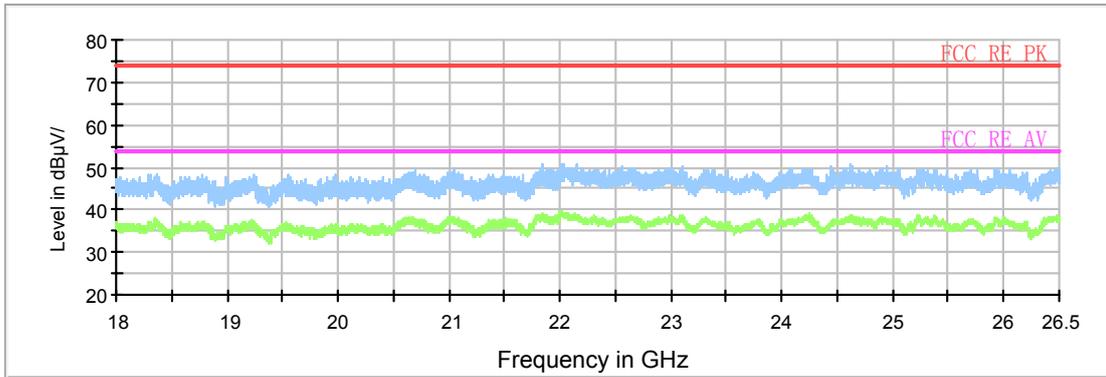
TA Technology (Shanghai) Co., Ltd. Test Report

RE 3-18GHz PK+AV



- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Preview Result 1
- Preview Result 2
- * Data Reduction Result 2 [1]

Radiates Emission from 3GHz to 18GHz



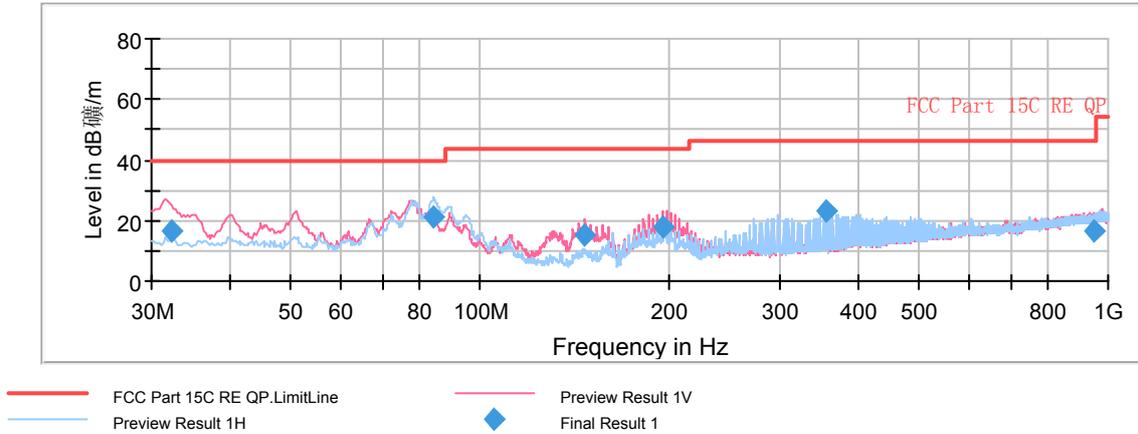
- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Data Reduction Result 1 [1]
- Preview Result 2
- * Data Reduction Result 2 [1]

Radiates Emission from 18GHz to 26.5GHz

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

802.11g CH6

RE 30M-1GHz (BT&WIFI) QP

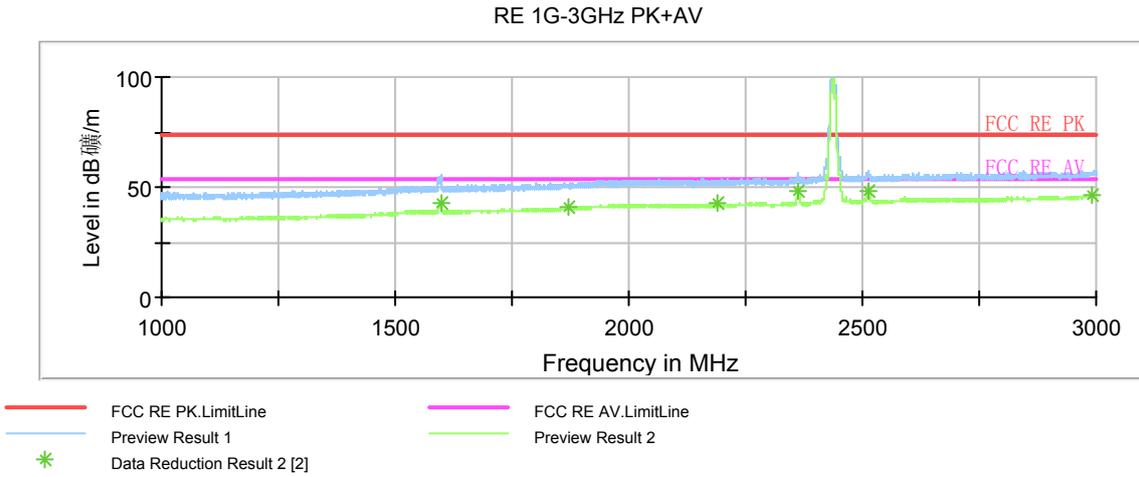


Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
32.297500	16.6	175.0	V	45.0	40.6	-24.0	23.4	40.0
84.322500	21.1	200.0	H	301.0	51.7	-30.6	18.9	40.0
147.207500	15.2	121.0	V	50.0	47.8	-32.6	28.3	43.5
195.182500	18.1	100.0	V	6.0	48.4	-30.3	25.4	43.5
355.192500	23.1	125.0	H	334.0	48.9	-25.8	22.9	46.0
949.485000	16.3	175.0	V	304.0	32.2	-15.9	29.7	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



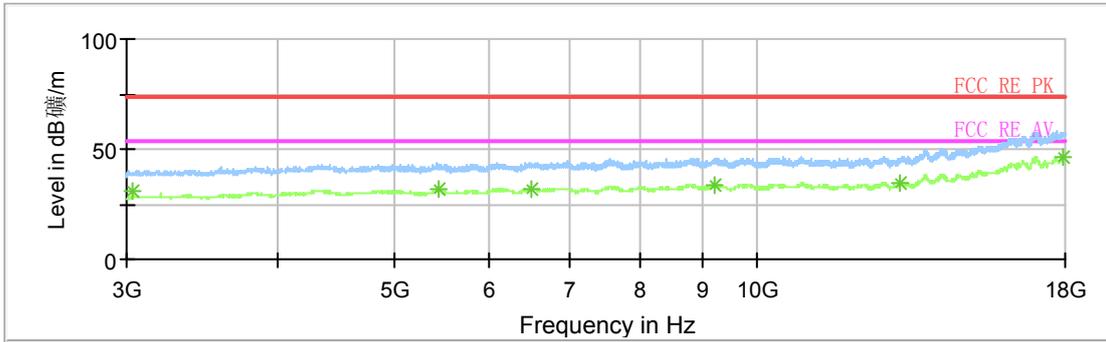
Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1598.250000	54.6	43.1	100.0	V	60.0	1.0
1870.500000	51.1	40.8	100.0	H	147.0	2.3
2191.250000	51.2	42.3	100.0	V	27.0	3.8
2362.000000	54.7	47.7	100.0	V	248.0	4.5
2512.000000	55.4	48.6	100.0	V	256.0	5.8
2991.500000	55.8	46.2	100.0	V	241.0	8.2

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

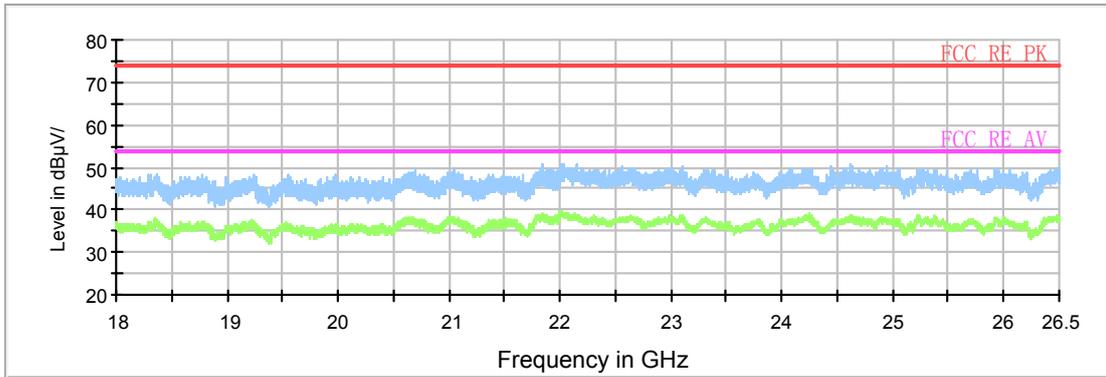
TA Technology (Shanghai) Co., Ltd. Test Report

RE 3-18GHz PK+AV



- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Preview Result 1
- Preview Result 2
- * Data Reduction Result 2 [1]

Radiates Emission from 3GHz to 18GHz

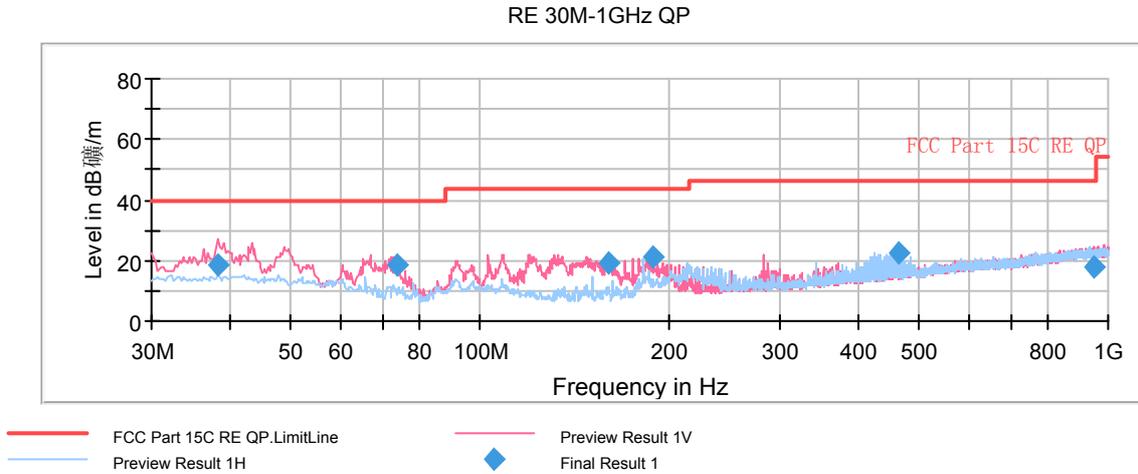


- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Preview Result 1
- Preview Result 2
- * Data Reduction Result 1 [1]
- * Data Reduction Result 2 [1]

Radiates Emission from 18GHz to 26.5GHz

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

802.11g CH11

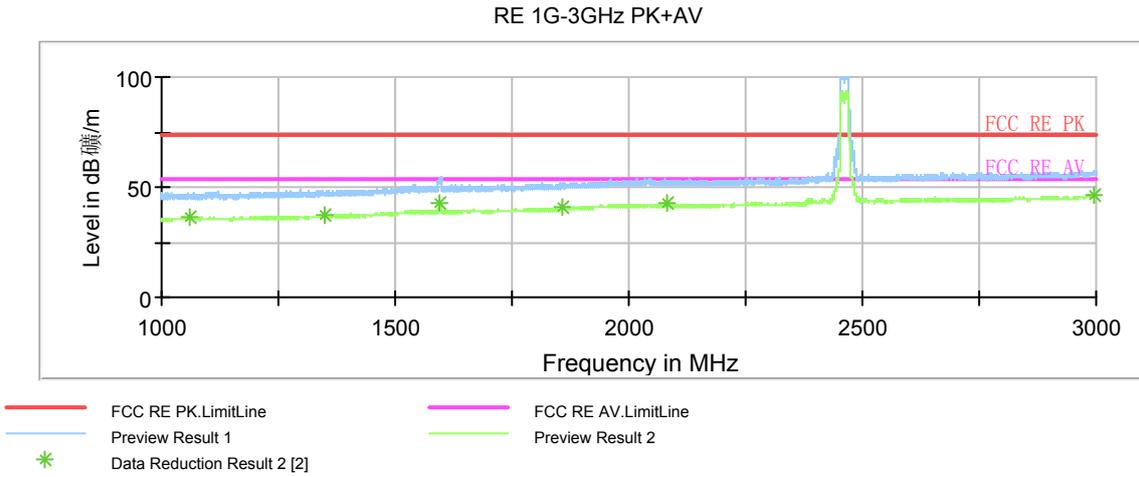


Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
38.340613	18.3	100.0	V	0.0	40.7	-22.4	21.7	40.0
73.585875	18.7	222.0	V	231.0	48.4	-29.7	21.3	40.0
160.020050	19.0	100.0	V	53.0	49.5	-30.5	24.5	43.5
188.805406	20.9	121.0	V	30.0	50.0	-29.1	22.6	43.5
463.995000	22.4	195.0	H	5.0	44.3	-21.9	23.6	46.0
950.005000	17.8	125.0	V	243.0	32.2	-14.4	28.2	46.0

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

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



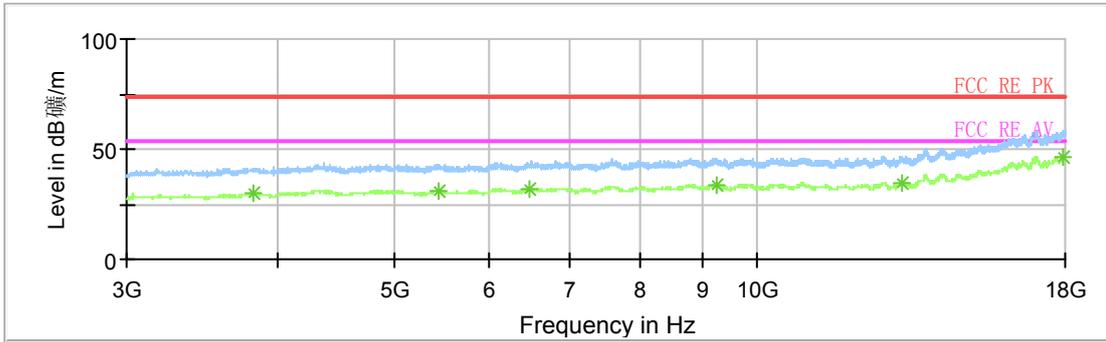
Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1060.000000	45.9	36.1	100.0	V	358.0	-2.2
1349.250000	46.0	37.0	100.0	H	176.0	-1.6
1594.500000	52.6	43.0	100.0	V	92.0	0.8
1858.500000	50.7	40.5	100.0	V	311.0	2.2
2082.750000	51.1	42.3	100.0	V	219.0	3.9
2997.500000	56.2	46.5	100.0	H	244.0	8.2

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

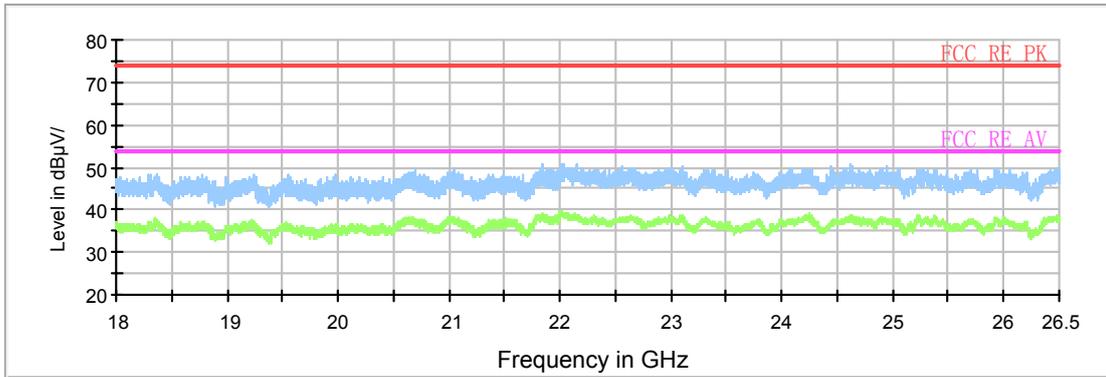
TA Technology (Shanghai) Co., Ltd. Test Report

RE 3-18GHz PK+AV



- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Preview Result 1
- Preview Result 2
- * Data Reduction Result 2 [1]

Radiates Emission from 3GHz to 18GHz

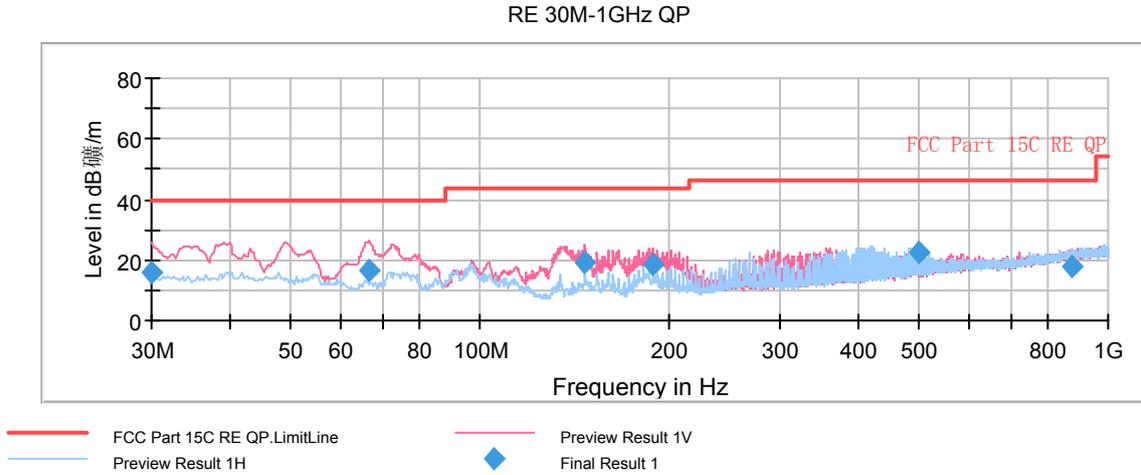


- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Data Reduction Result 1 [1]
- Preview Result 2
- * Data Reduction Result 2 [1]

Radiates Emission from 18GHz to 26.5GHz

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

802.11n CH1

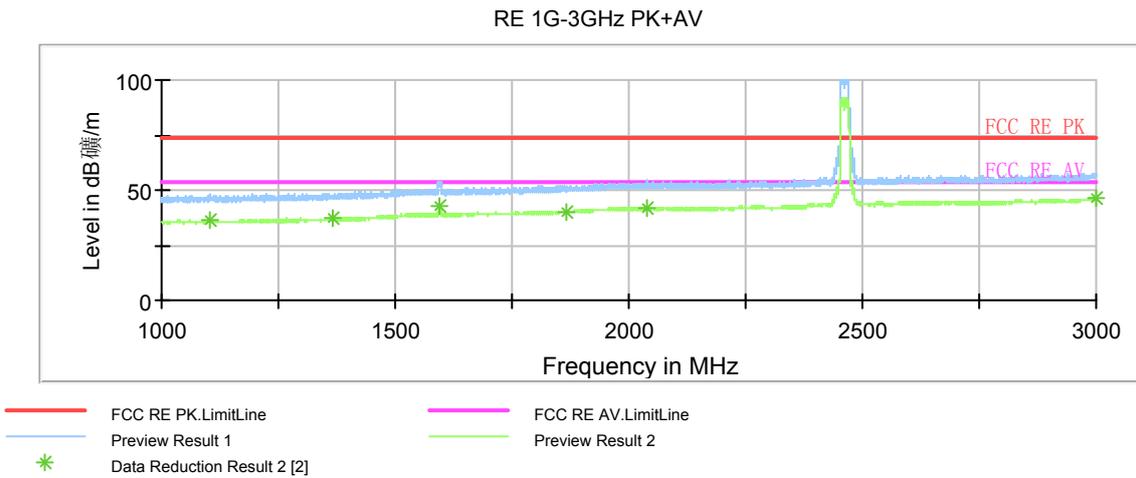


Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
30.075000	16.2	100.0	V	357.0	37.9	-21.7	23.8	40.0
66.770956	16.7	120.0	V	78.0	44.9	-28.2	23.3	40.0
147.199681	18.9	100.0	V	50.0	50.0	-31.1	24.6	43.5
188.805406	18.2	100.0	V	316.0	47.3	-29.1	25.3	43.5
499.189500	22.5	100.0	H	0.0	43.5	-21.0	23.5	46.0
876.793000	17.6	221.0	H	235.0	32.6	-15.0	28.4	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



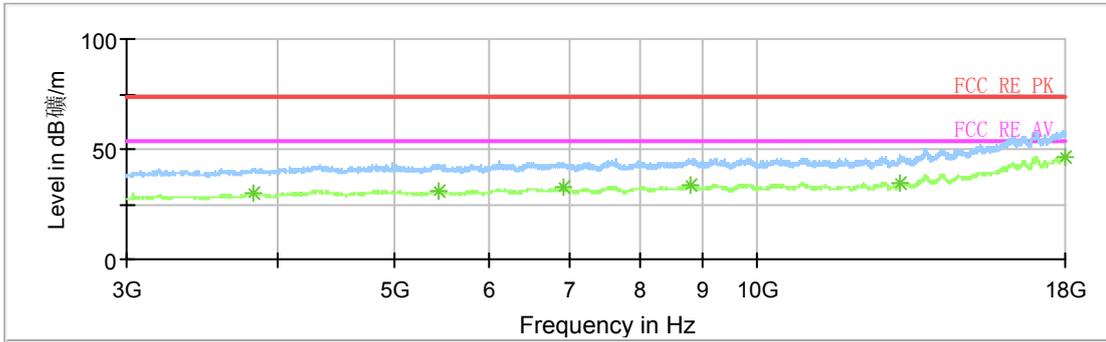
Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1105.500000	45.9	36.2	100.0	V	147.0	-2.4
1367.000000	46.9	37.0	100.0	H	0.0	-1.4
1595.500000	52.1	42.4	100.0	V	100.0	0.9
1866.500000	50.0	40.4	100.0	V	0.0	2.3
2039.750000	51.0	42.2	100.0	V	45.0	3.7
2998.750000	56.0	46.4	100.0	V	170.0	8.2

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

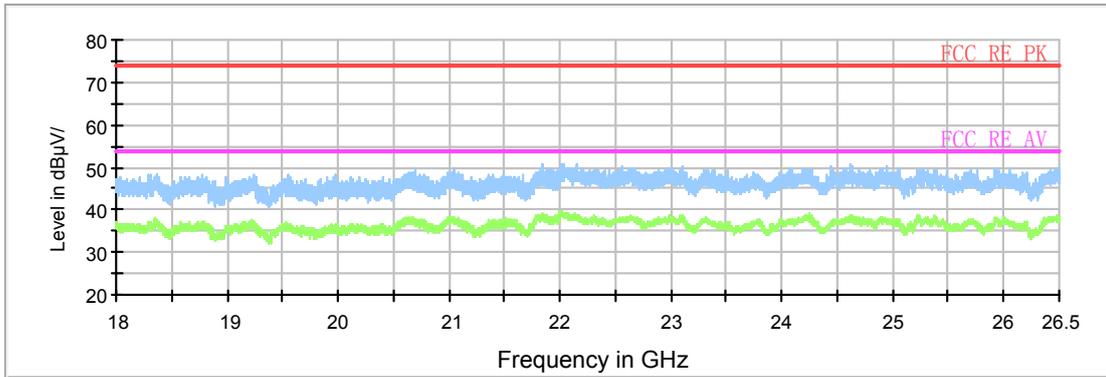
TA Technology (Shanghai) Co., Ltd. Test Report

RE 3-18GHz PK+AV



- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Preview Result 1
- Preview Result 2
- * Data Reduction Result 2 [1]

Radiates Emission from 3GHz to 18GHz



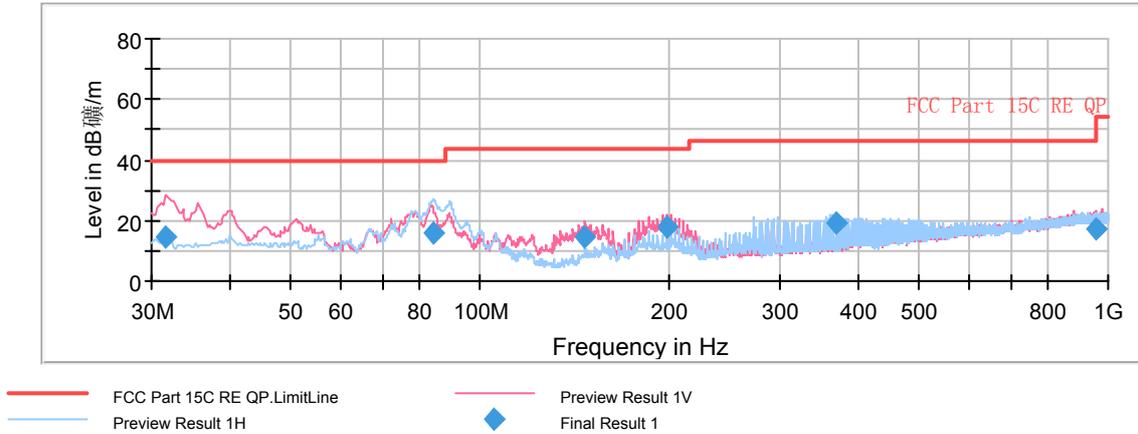
- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Data Reduction Result 1 [1]
- Preview Result 2
- * Data Reduction Result 2 [1]

Radiates Emission from 18GHz to 26.5GHz

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

802.11n CH6

RE 30M-1GHz (BT&WIFI) QP

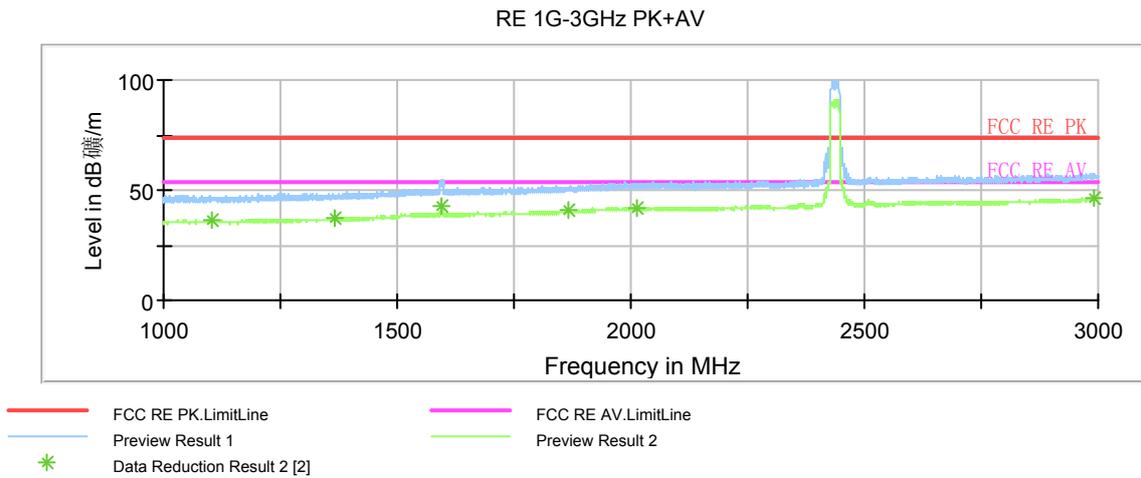


Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
31.697500	14.5	120.0	V	262.0	38.4	-23.9	25.5	40.0
84.240000	16.1	220.0	H	271.0	46.7	-30.6	23.9	40.0
147.207500	14.4	100.0	V	271.0	47.0	-32.6	29.1	43.5
198.415000	17.6	100.0	V	242.0	47.8	-30.2	25.9	43.5
368.005000	19.2	120.0	H	144.0	44.8	-25.6	26.8	46.0
956.790000	17.0	100.0	V	34.0	32.7	-15.7	29.0	46.0

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

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



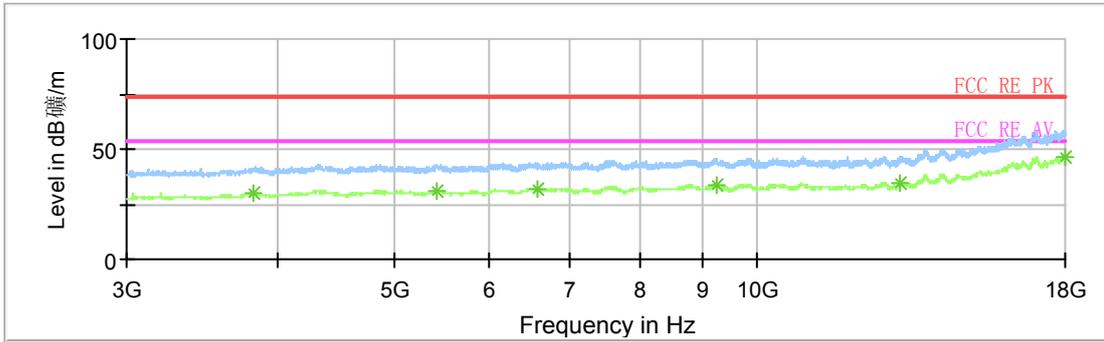
Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1103.250000	45.6	36.1	100.0	H	147.0	-2.4
1368.000000	47.6	36.9	100.0	V	106.0	-1.4
1594.750000	53.0	42.9	100.0	V	91.0	0.8
1866.500000	50.2	40.6	100.0	H	191.0	2.3
2014.500000	50.9	42.1	100.0	V	150.0	3.6
2993.000000	56.1	46.6	100.0	V	150.0	8.2

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

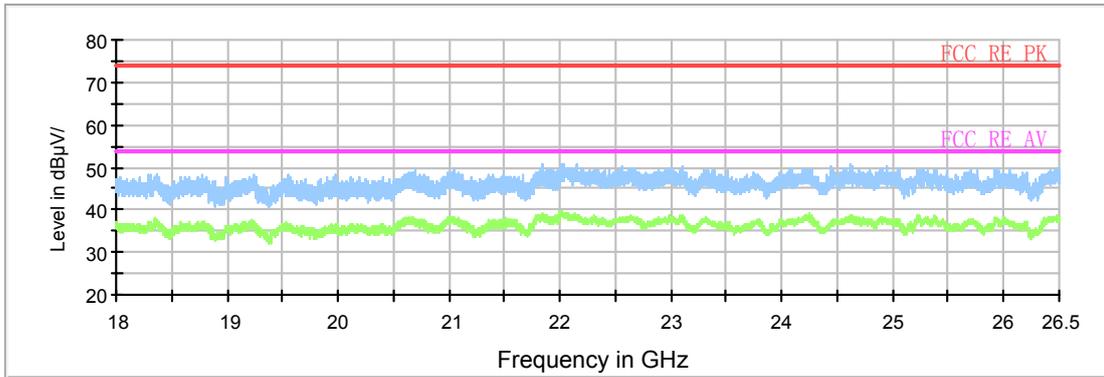
TA Technology (Shanghai) Co., Ltd. Test Report

RE 3-18GHz PK+AV



- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Preview Result 1
- Preview Result 2
- * Data Reduction Result 2 [1]

Radiates Emission from 3GHz to 18GHz



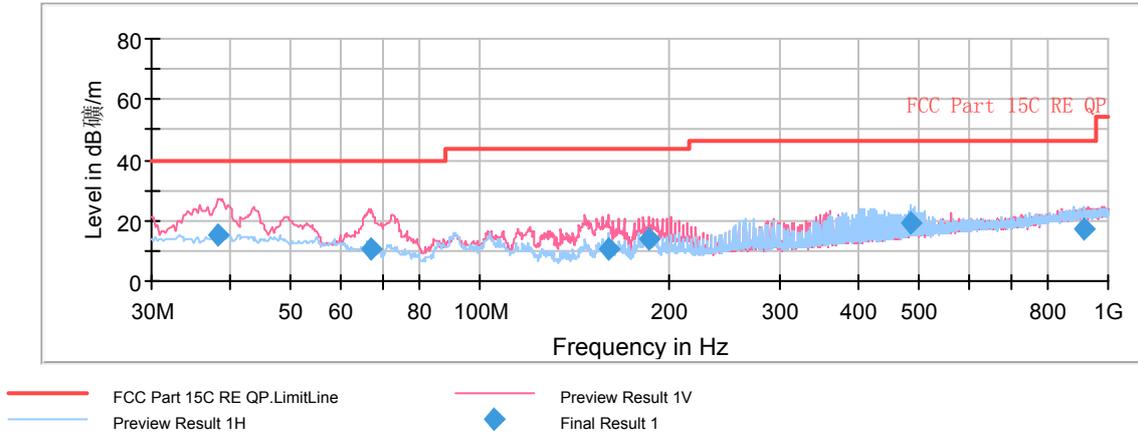
- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Preview Result 1
- Preview Result 2
- * Data Reduction Result 1 [1]
- * Data Reduction Result 2 [1]

Radiates Emission from 18GHz to 26.5GHz

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

802.11n CH11

RE 30M-1GHz QP

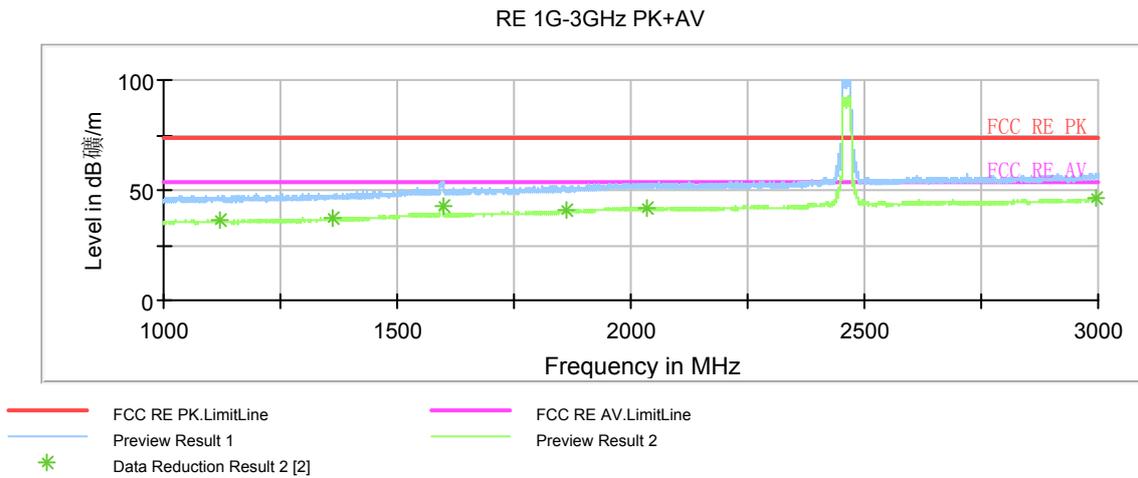


Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
38.340613	15.1	121.0	V	5.0	37.5	-22.4	24.9	40.0
66.934744	10.3	100.0	V	20.0	38.5	-28.2	29.7	40.0
160.379950	10.5	100.0	V	317.0	40.9	-30.4	33.0	43.5
185.618894	14.1	100.0	V	135.0	43.3	-29.2	29.4	43.5
486.409000	19.0	100.0	H	355.0	40.2	-21.2	27.0	46.0
911.980000	17.5	195.0	H	123.0	32.3	-14.8	28.5	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



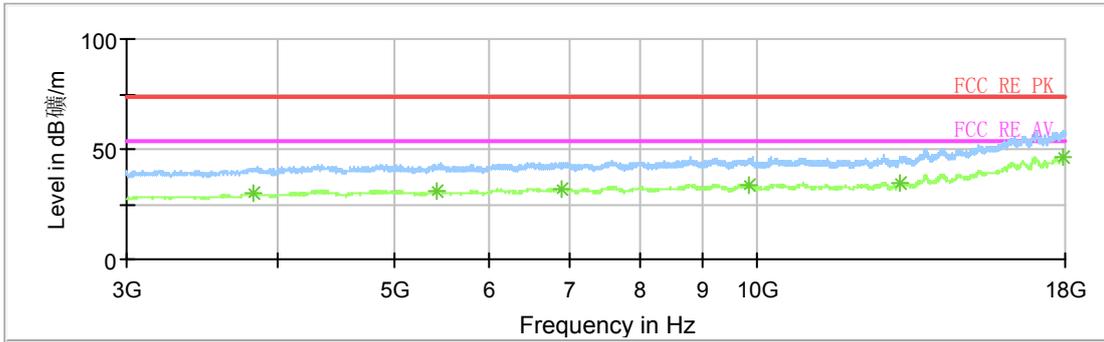
Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1121.000000	46.2	36.2	100.0	V	209.0	-2.2
1362.500000	47.1	37.0	100.0	V	0.0	-1.4
1598.500000	52.3	42.4	100.0	V	159.0	1.0
1862.500000	49.7	40.6	100.0	H	119.0	2.3
2035.250000	51.1	42.1	100.0	H	36.0	3.7
2994.750000	55.4	46.4	100.0	H	98.0	8.2

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

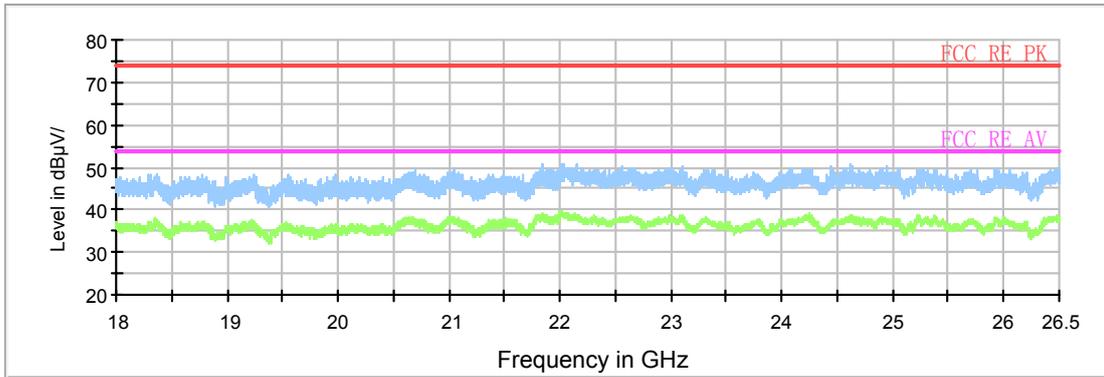
TA Technology (Shanghai) Co., Ltd. Test Report

RE 3-18GHz PK+AV



- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Preview Result 1
- Preview Result 2
- * Data Reduction Result 2 [1]

Radiates Emission from 3GHz to 18GHz



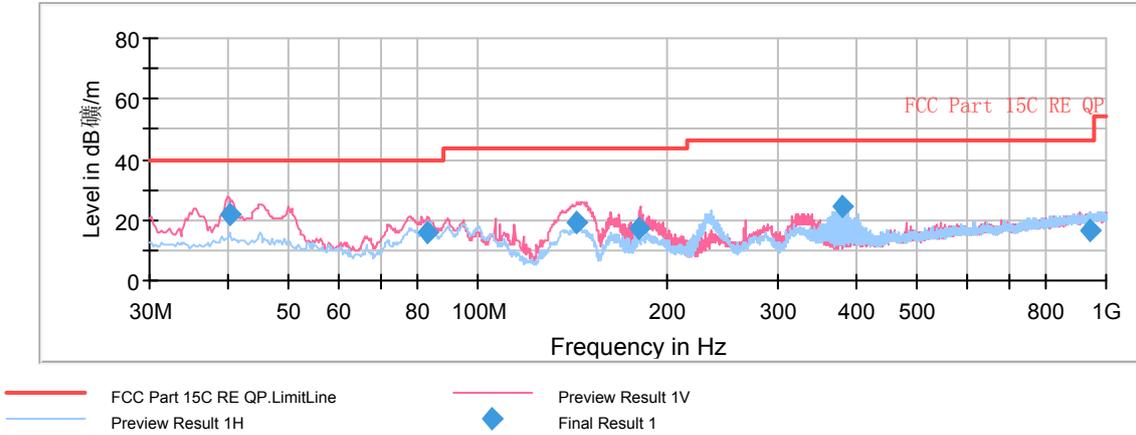
- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Data Reduction Result 1 [1]
- Preview Result 2
- * Data Reduction Result 2 [1]

Radiates Emission from 18GHz to 26.5GHz

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

**Adapter(TPAC41985003)
802.11b CH1**

RE 30M-1GHz (BT&WIFI) QP

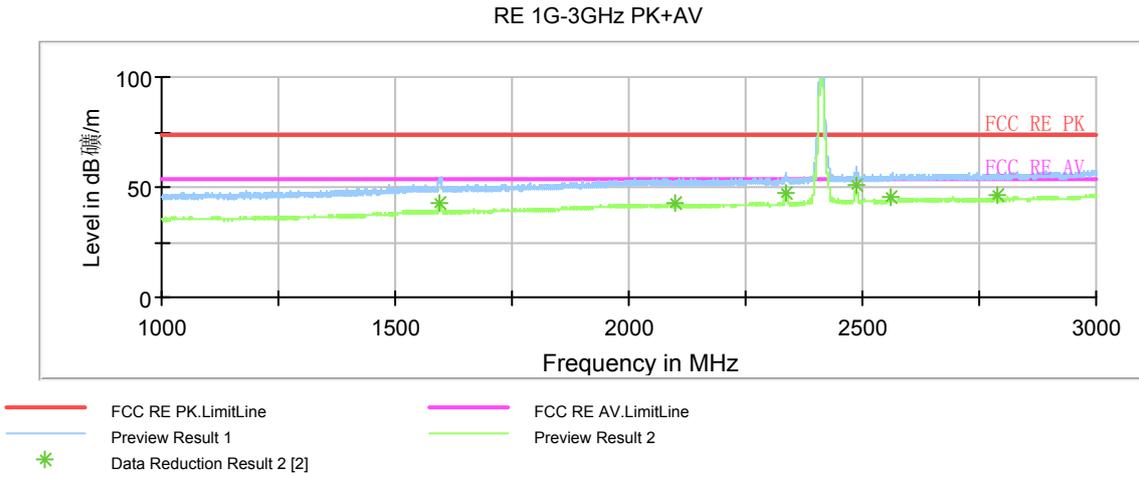


Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
39.942500	27.7	100.0	V	55.0	51.6	-23.9	12.3	40.0
83.107500	21.1	100.0	V	35.0	52.1	-31.0	18.9	40.0
143.975000	26.1	100.0	V	25.0	58.7	-32.6	17.4	43.5
181.077500	24.3	100.0	V	150.0	55.3	-31.0	19.2	43.5
379.200000	24.9	200.0	H	337.0	50.2	-25.3	21.1	46.0
943.012500	22.4	100.0	V	225.0	38.4	-16.0	23.6	46.0

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

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



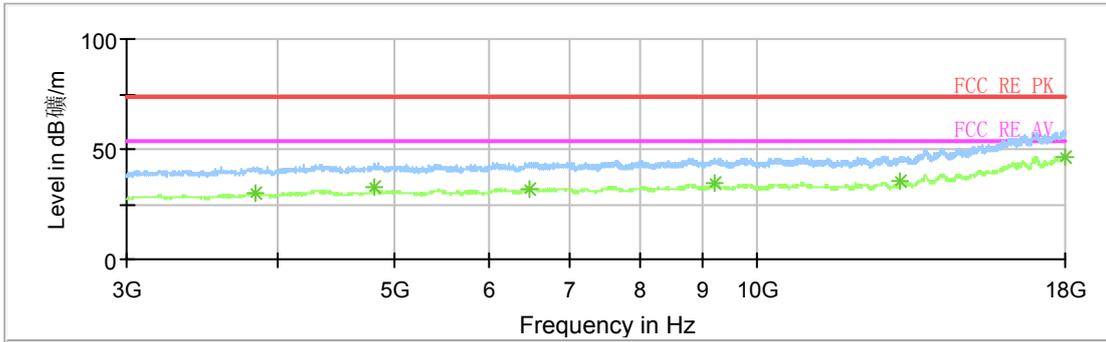
Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1594.000000	53.8	42.3	100.0	V	92.0	0.8
2098.000000	51.1	42.4	100.0	V	309.0	3.6
2338.250000	54.7	47.7	100.0	V	245.0	4.6
2486.500000	59.2	50.9	100.0	V	245.0	5.6
2561.750000	53.4	45.4	100.0	V	245.0	6.0
2787.250000	54.7	46.0	100.0	V	209.0	6.1

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

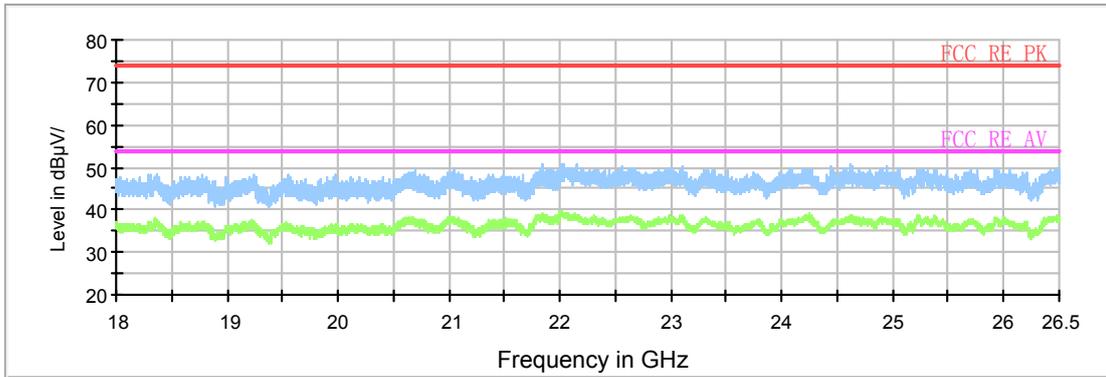
TA Technology (Shanghai) Co., Ltd. Test Report

RE 3-18GHz PK+AV



- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Preview Result 1
- Preview Result 2
- * Data Reduction Result 2 [1]

Radiates Emission from 3GHz to 18GHz



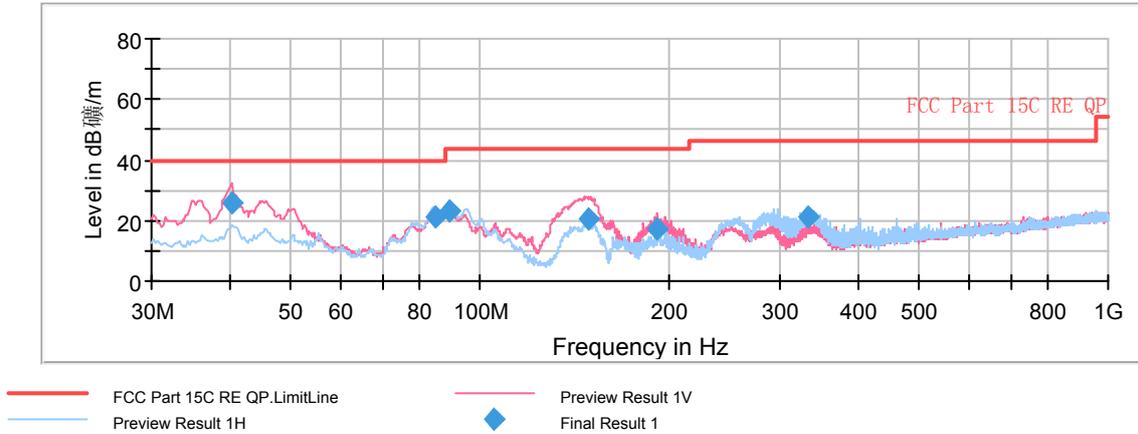
- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Data Reduction Result 1 [1]
- Preview Result 2
- * Data Reduction Result 2 [1]

Radiates Emission from 18GHz to 26.5GHz

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

802.11b CH6

RE 30M-1GHz (BT&WIFI) QP

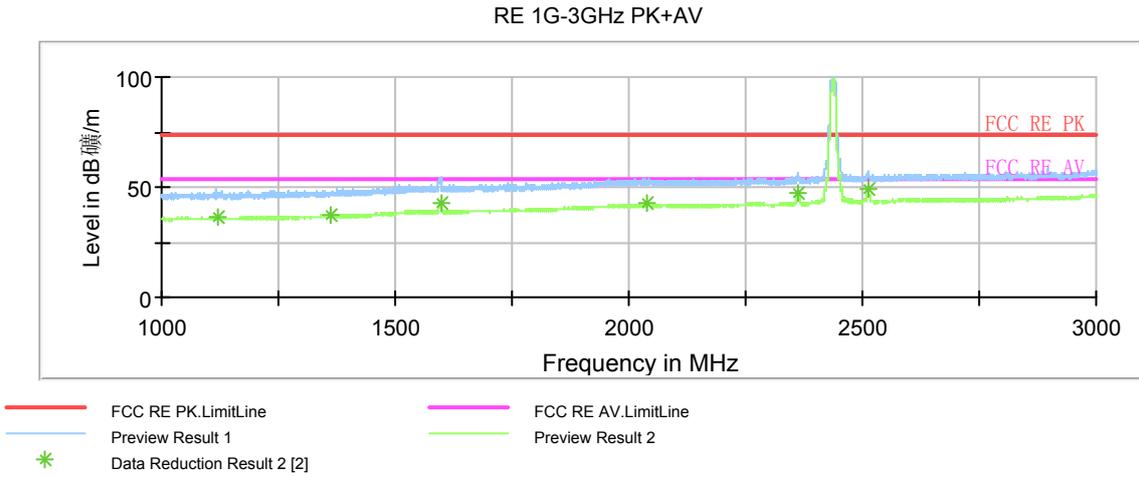


Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
40.225000	26.0	125.0	V	200.0	49.9	-23.9	14.0	40.0
84.800000	20.9	220.0	H	279.0	51.4	-30.5	19.1	40.0
89.612500	23.0	225.0	H	270.0	51.9	-28.9	20.5	43.5
148.785000	20.6	100.0	V	315.0	53.2	-32.6	22.9	43.5
191.990000	17.1	100.0	V	260.0	47.6	-30.5	26.4	43.5
332.802500	21.0	120.0	H	43.0	47.2	-26.2	25.0	46.0

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

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



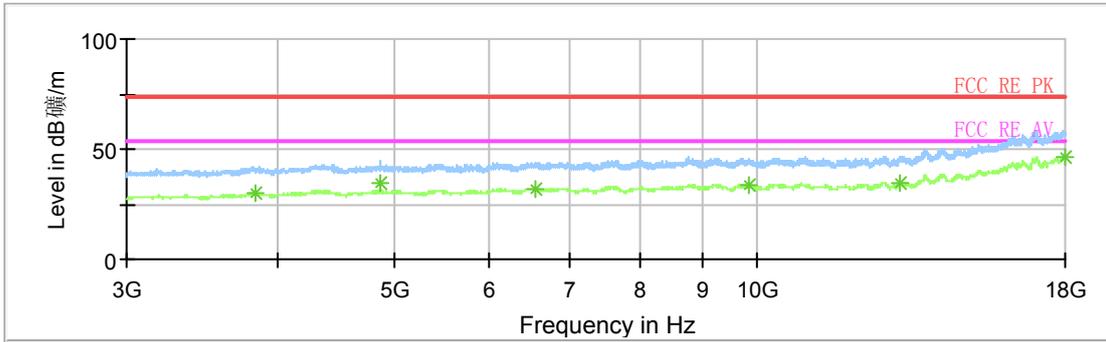
Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1119.750000	45.8	36.2	100.0	V	220.0	-2.2
1363.000000	47.0	36.9	100.0	V	0.0	-1.4
1597.000000	54.0	42.9	100.0	V	161.0	0.9
2040.750000	51.9	42.5	100.0	V	154.0	3.7
2361.500000	55.7	47.2	100.0	V	244.0	4.5
2511.250000	56.5	48.8	100.0	V	244.0	5.8

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

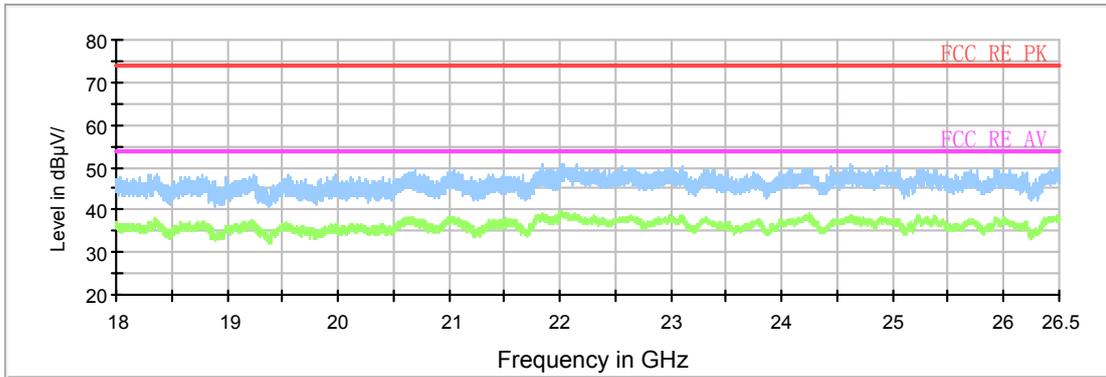
TA Technology (Shanghai) Co., Ltd. Test Report

RE 3-18GHz PK+AV



- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Preview Result 1
- Preview Result 2
- * Data Reduction Result 2 [1]

Radiates Emission from 3GHz to 18GHz



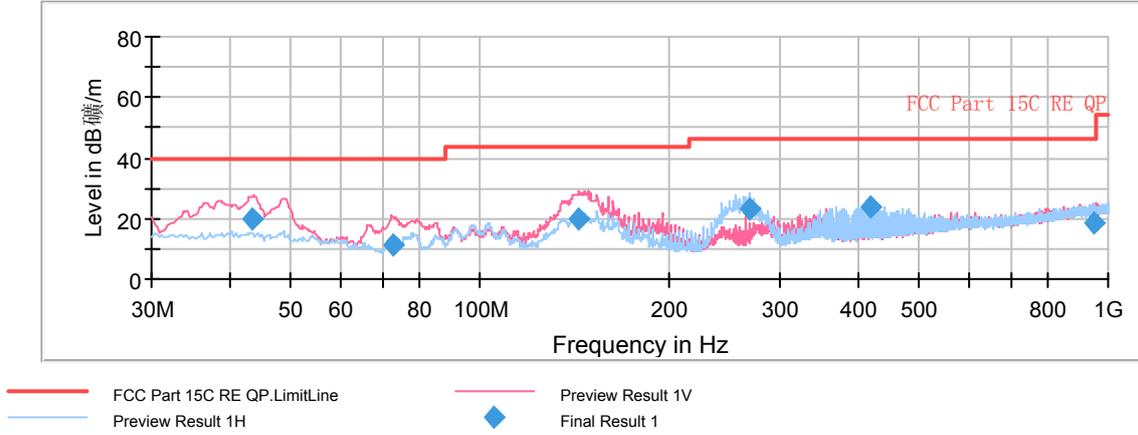
- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Data Reduction Result 1 [1]
- Data Reduction Result 2 [1]
- * Data Reduction Result 2 [1]

Radiates Emission from 18GHz to 26.5GHz

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

802.11b CH11

RE 30M-1GHz QP

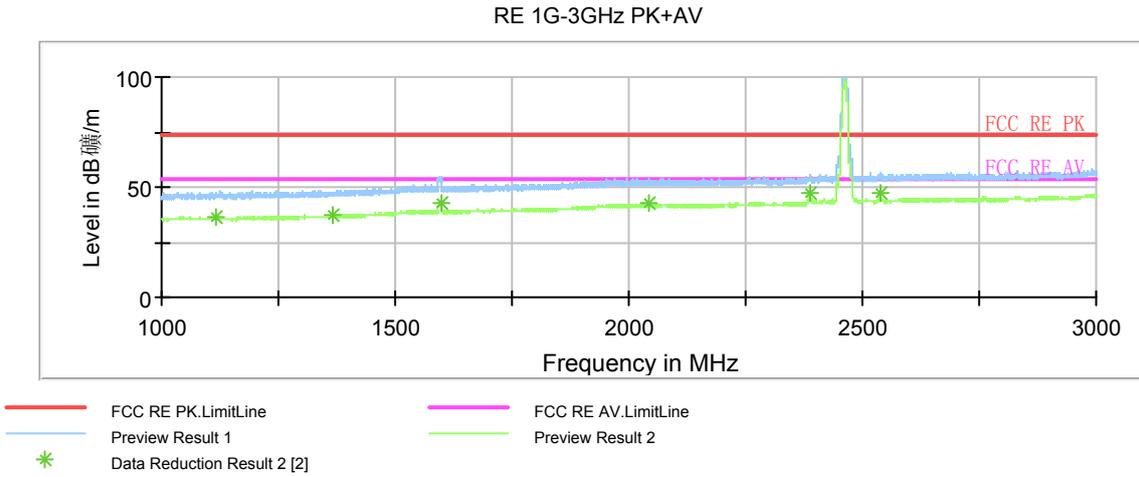


Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
43.511050	19.8	121.0	V	26.0	42.6	-22.8	20.2	40.0
72.616406	11.1	100.0	V	348.0	40.8	-29.7	28.9	40.0
144.015062	19.5	100.0	V	34.0	50.6	-31.1	24.0	43.5
268.790500	23.2	120.0	H	68.0	49.4	-26.2	22.8	46.0
419.204500	24.0	100.0	H	147.0	46.7	-22.7	22.0	46.0
950.382500	18.8	125.0	H	22.0	33.2	-14.4	27.2	46.0

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

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



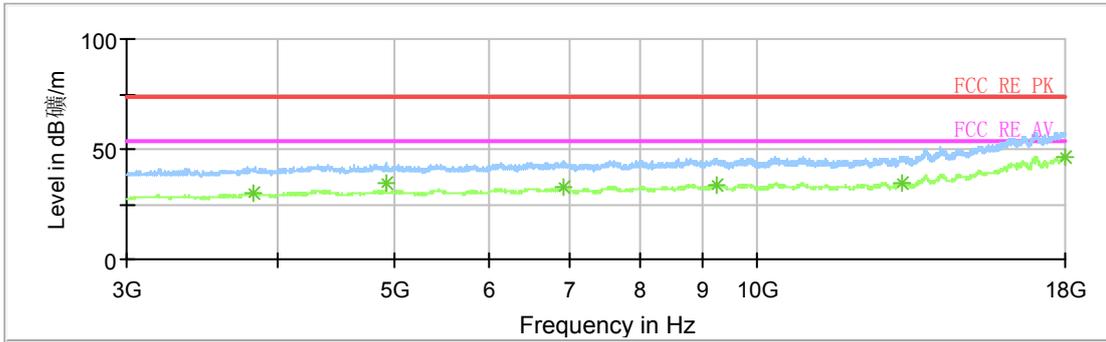
Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1117.000000	46.4	36.2	100.0	V	332.0	-2.2
1365.500000	46.4	36.9	100.0	H	185.0	-1.4
1597.250000	53.3	43.0	100.0	V	92.0	0.9
2043.750000	52.8	42.3	100.0	V	8.0	3.6
2387.500000	55.2	46.9	100.0	V	249.0	4.7
2536.750000	54.9	47.2	100.0	V	311.0	5.8

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

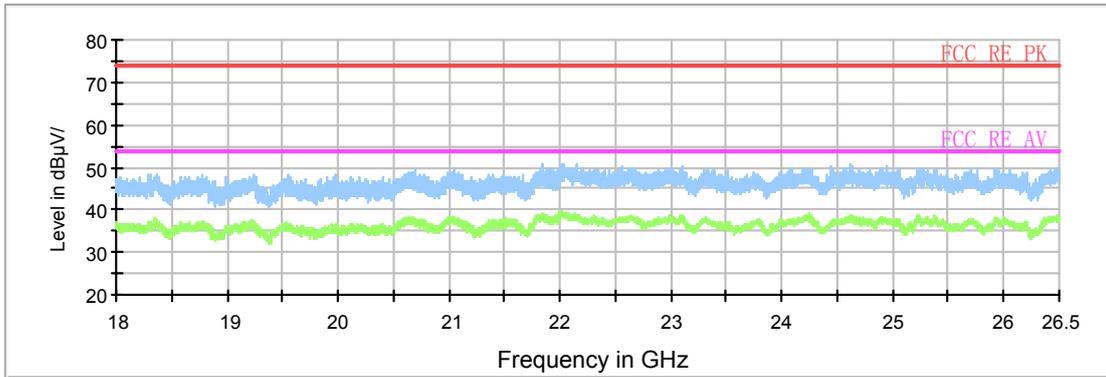
TA Technology (Shanghai) Co., Ltd. Test Report

RE 3-18GHz PK+AV



- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Preview Result 1
- Preview Result 2
- * Data Reduction Result 2 [1]

Radiates Emission from 3GHz to 18GHz



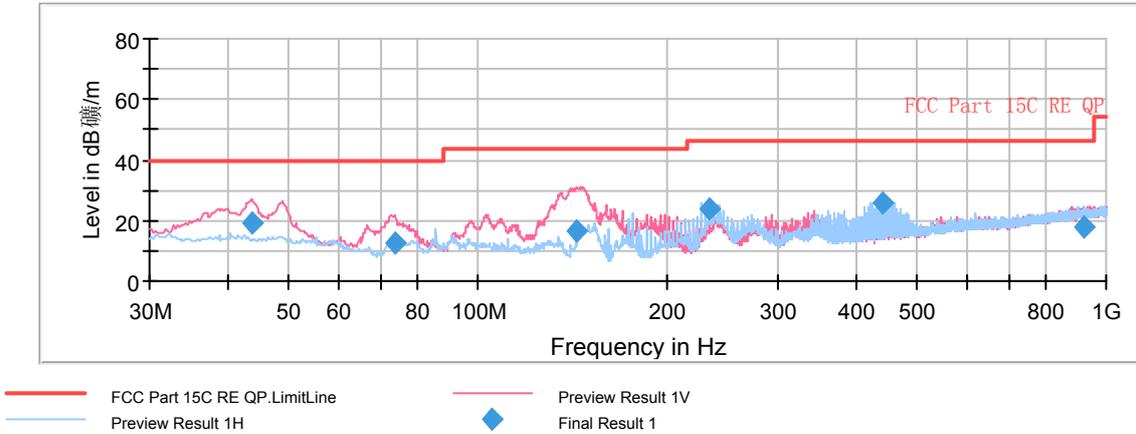
- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Data Reduction Result 1 [1]
- Preview Result 2
- * Data Reduction Result 2 [1]

Radiates Emission from 18GHz to 26.5GHz

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

802.11g CH1

RE 30M-1GHz QP

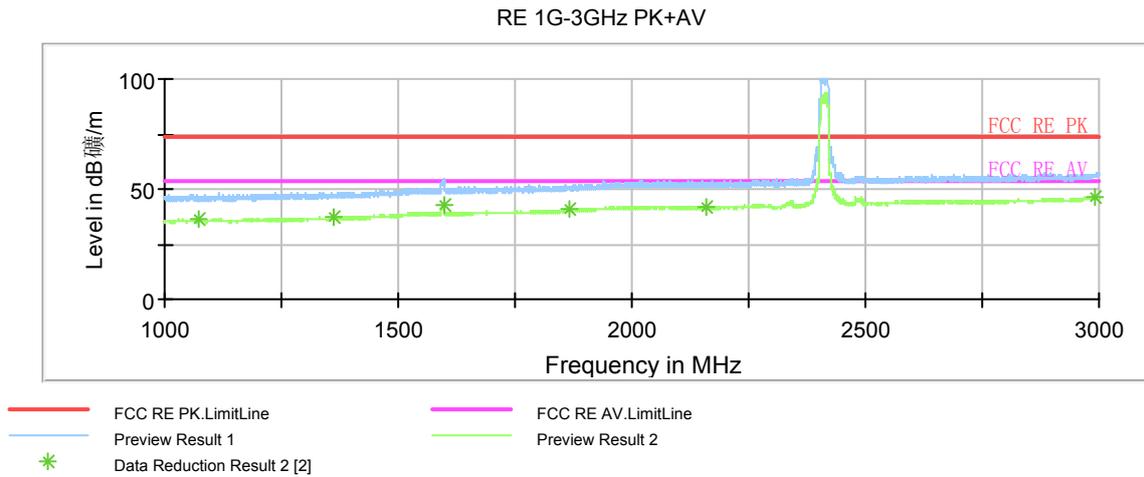


Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
43.671050	19.3	121.0	V	60.0	42.2	-22.9	20.7	40.0
73.665875	12.9	200.0	V	250.0	42.6	-29.7	27.1	40.0
144.015062	16.6	121.0	V	41.0	47.7	-31.1	26.9	43.5
233.594000	24.0	125.0	H	162.0	51.1	-27.1	22.0	46.0
441.620500	26.0	100.0	H	147.0	48.1	-22.1	20.0	46.0
920.399000	17.8	200.0	H	119.0	32.4	-14.6	28.2	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



N

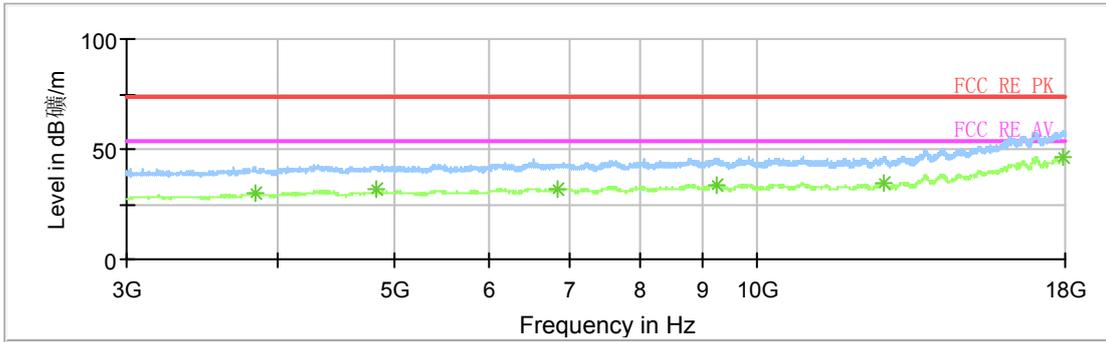
ote: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1073.500000	44.8	36.1	100.0	V	228.0	-2.4
1360.000000	46.2	36.9	100.0	V	168.0	-1.3
1598.000000	52.3	42.5	100.0	V	59.0	0.9
1867.000000	49.7	40.6	100.0	H	246.0	2.3
2159.250000	51.8	42.1	100.0	V	183.0	3.6
2991.500000	55.2	46.5	100.0	V	168.0	8.2

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

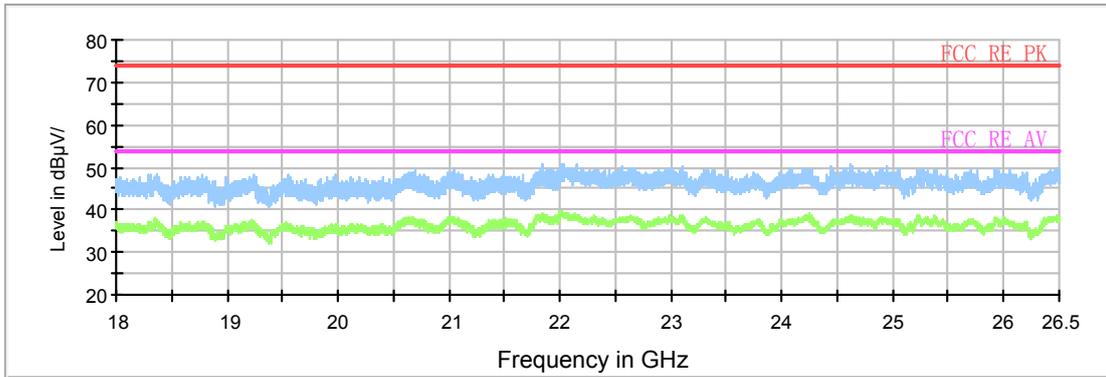
TA Technology (Shanghai) Co., Ltd. Test Report

RE 3-18GHz PK+AV



- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Preview Result 1
- Preview Result 2
- * Data Reduction Result 2 [1]

Radiates Emission from 3GHz to 18GHz



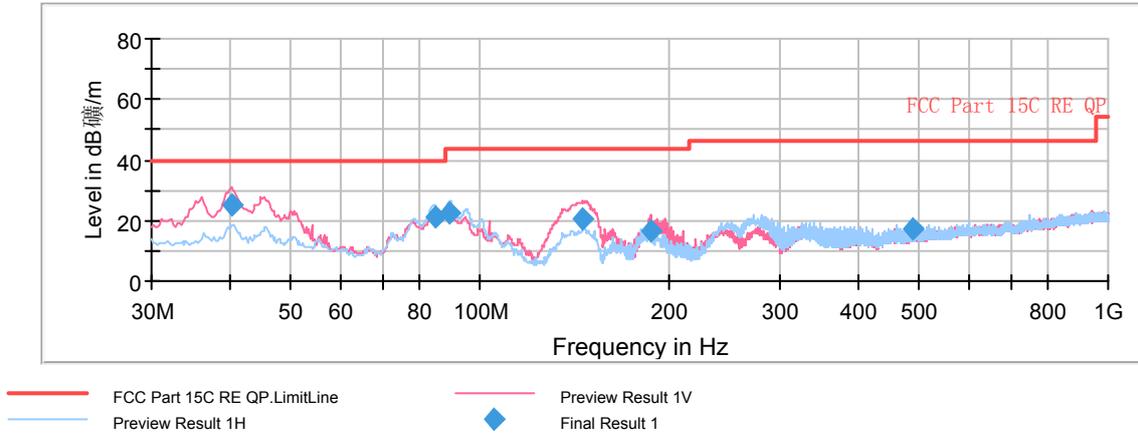
- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Data Reduction Result 1 [1]
- Data Reduction Result 2 [1]
- * Data Reduction Result 2 [1]

Radiates Emission from 18GHz to 26.5GHz

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

802.11g CH6

RE 30M-1GHz (BT&WIFI) QP

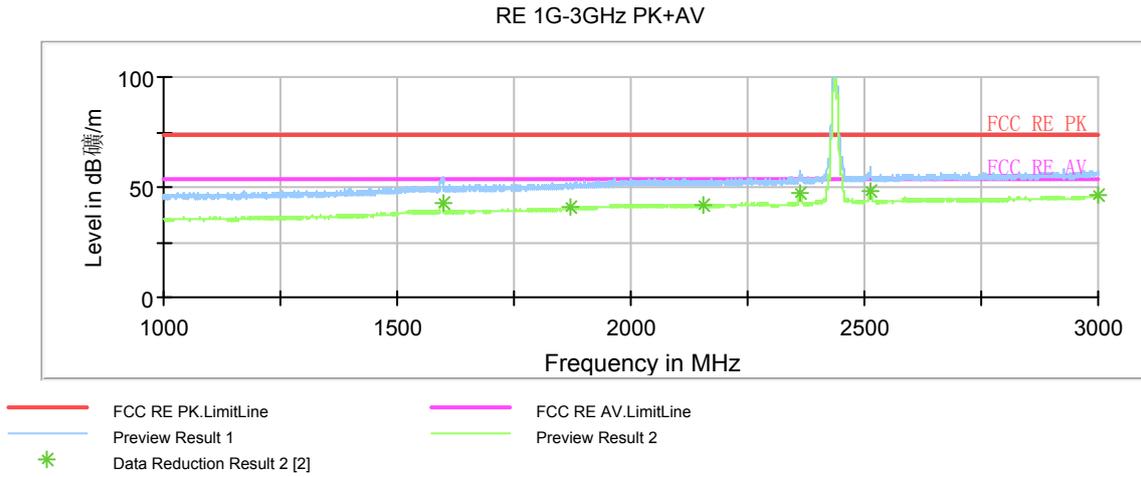


Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
40.345000	25.1	120.0	V	238.0	49.0	-23.9	14.9	40.0
84.800000	21.0	200.0	H	280.0	51.5	-30.5	19.0	40.0
89.615000	22.4	225.0	H	280.0	51.3	-28.9	21.1	43.5
145.590000	20.6	120.0	V	325.0	53.2	-32.6	22.9	43.5
187.220000	16.8	100.0	V	265.0	47.5	-30.7	26.7	43.5
488.002500	17.0	100.0	H	317.0	39.9	-22.9	29.0	46.0

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

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



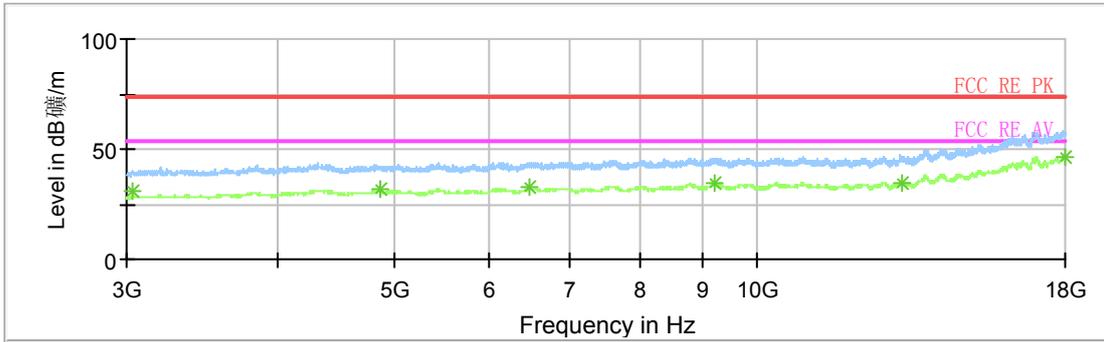
Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1597.500000	52.8	42.9	100.0	V	162.0	0.9
1871.500000	49.4	40.7	100.0	H	316.0	2.3
2154.000000	52.4	42.0	100.0	V	0.0	3.5
2362.250000	55.9	47.5	100.0	V	243.0	4.5
2511.250000	55.6	48.6	100.0	V	316.0	5.8
2999.250000	55.6	46.4	100.0	H	0.0	8.2

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

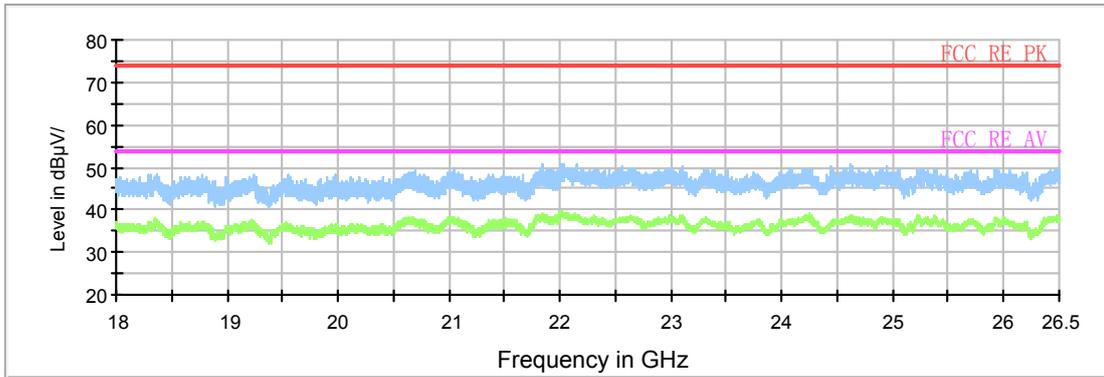
TA Technology (Shanghai) Co., Ltd. Test Report

RE 3-18GHz PK+AV



- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Preview Result 1
- Preview Result 2
- * Data Reduction Result 2 [1]

Radiates Emission from 3GHz to 18GHz



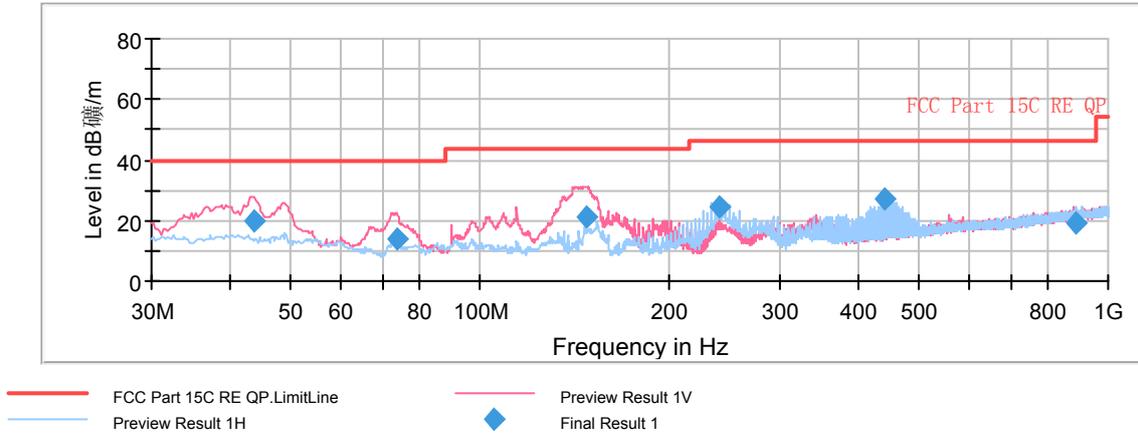
- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Preview Result 1
- Preview Result 2
- * Data Reduction Result 1 [1]
- * Data Reduction Result 2 [1]

Radiates Emission from 18GHz to 26.5GHz

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

802.11g CH11

RE 30M-1GHz QP

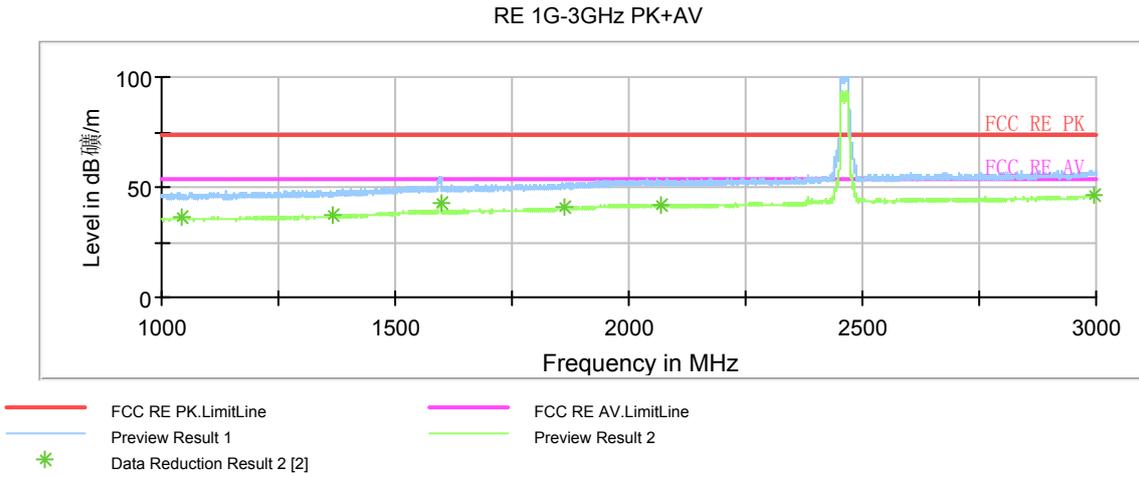


Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
43.688950	19.7	100.0	V	352.0	42.6	-22.9	20.3	40.0
73.591019	13.6	221.0	V	210.0	43.3	-29.7	26.4	40.0
147.401575	20.9	100.0	V	45.0	52.0	-31.1	22.6	43.5
240.005000	24.6	125.0	H	0.0	51.5	-26.9	21.4	46.0
441.620500	26.8	100.0	H	163.0	48.9	-22.1	19.2	46.0
889.587000	18.9	121.0	H	276.0	33.9	-15.0	27.1	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



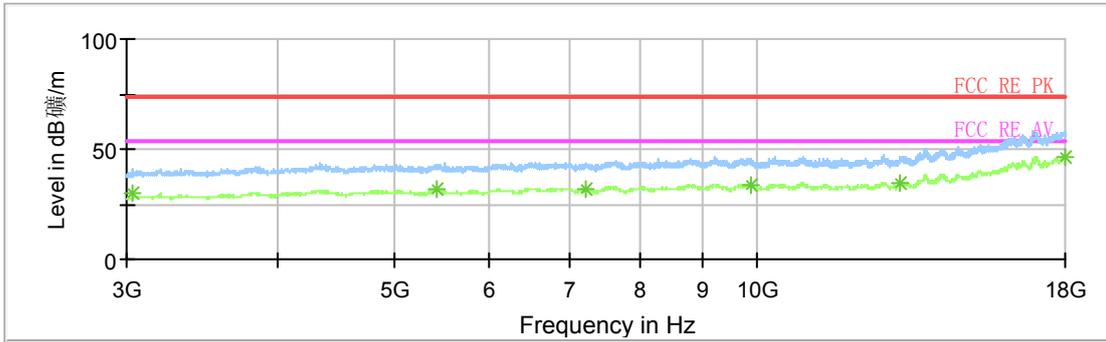
Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1043.250000	45.7	36.2	100.0	V	351.0	-2.2
1365.250000	46.1	37.1	100.0	H	0.0	-1.4
1597.500000	54.3	42.9	100.0	V	161.0	0.9
1860.000000	50.6	40.6	100.0	H	24.0	2.2
2069.750000	52.8	42.2	100.0	H	9.0	3.7
2994.250000	55.4	46.3	100.0	H	178.0	8.2

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

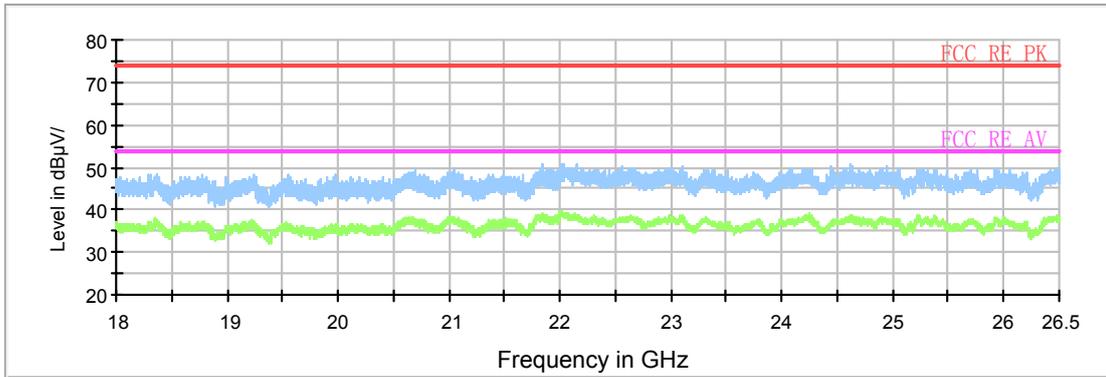
TA Technology (Shanghai) Co., Ltd. Test Report

RE 3-18GHz PK+AV



- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Preview Result 1
- Preview Result 2
- * Data Reduction Result 2 [1]

Radiates Emission from 3GHz to 18GHz

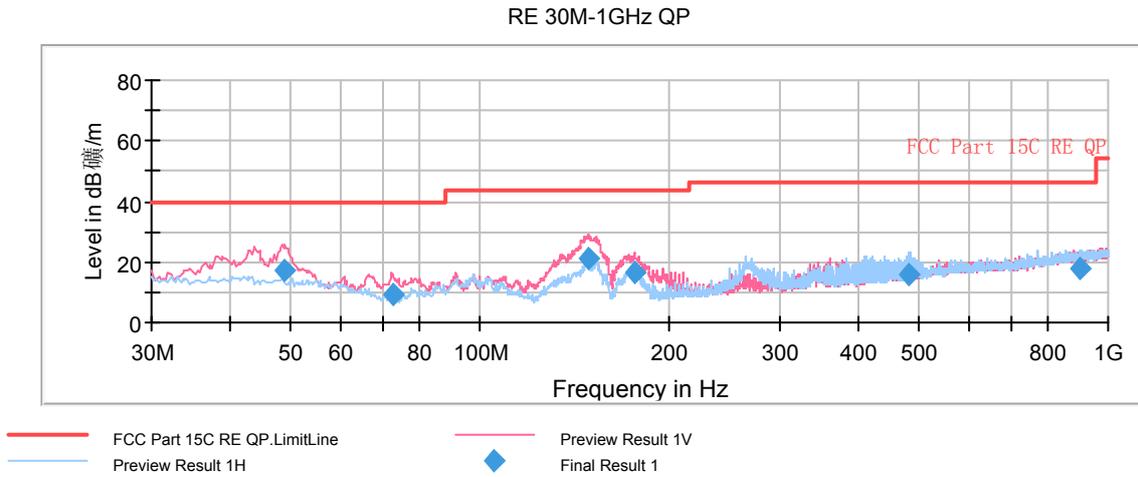


- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Preview Result 1
- Preview Result 2
- * Data Reduction Result 1 [1]
- * Data Reduction Result 2 [1]

Radiates Emission from 18GHz to 26.5GHz

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

802.11n CH1



Radiates Emission from 30MHz to 1GHz

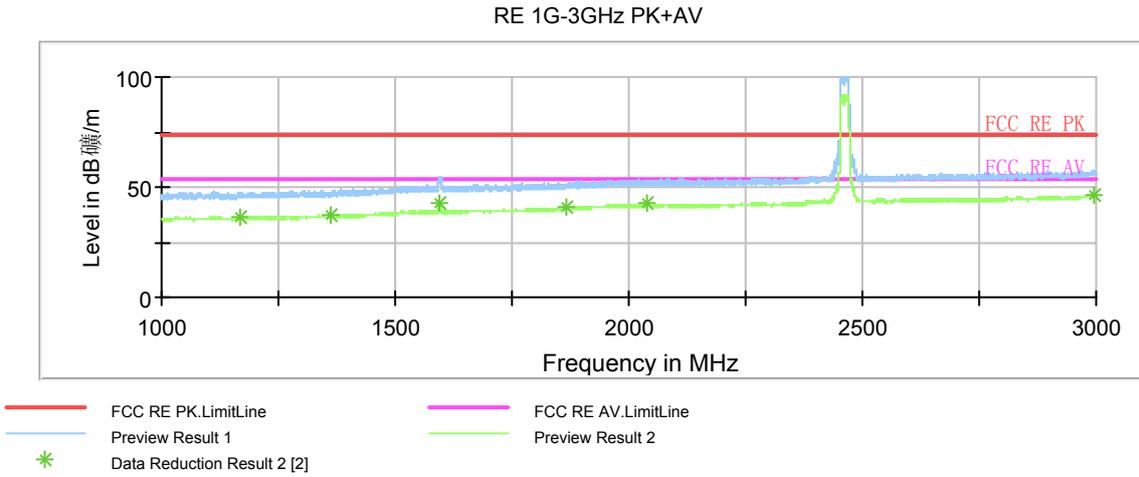
Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
48.912712	17.1	100.0	V	113.0	40.6	-23.5	22.9	40.0
72.618594	9.2	120.0	V	94.0	38.9	-29.7	30.8	40.0
148.694831	21.0	100.0	V	51.0	52.1	-31.1	22.5	43.5
175.985038	16.6	100.0	V	94.0	46.2	-29.6	26.9	43.5
479.960000	16.0	195.0	H	136.0	37.4	-21.4	30.0	46.0
902.409000	17.7	196.0	H	60.0	32.3	-14.6	28.3	46.0

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

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

3. Margin = Limit – Quasi-Peak

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



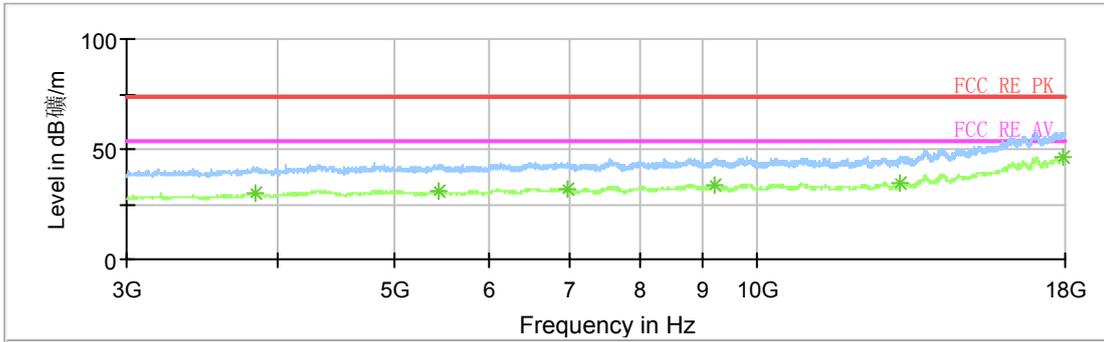
Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1166.500000	47.1	36.1	100.0	V	285.0	-2.2
1363.750000	46.4	37.0	100.0	H	255.0	-1.4
1594.500000	53.1	42.5	100.0	V	62.0	0.8
1866.500000	50.2	40.7	100.0	H	0.0	2.3
2038.750000	51.1	42.3	100.0	H	263.0	3.7
2996.000000	55.3	46.3	100.0	H	6.0	8.2

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

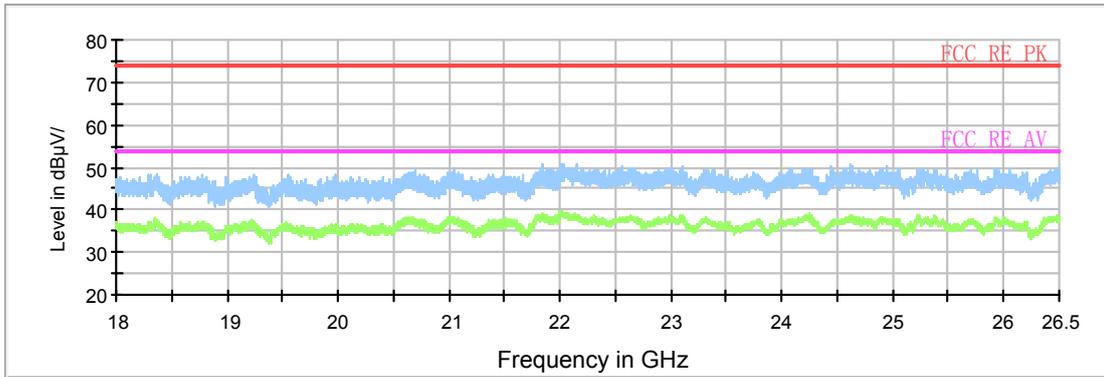
TA Technology (Shanghai) Co., Ltd. Test Report

RE 3-18GHz PK+AV



- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Preview Result 1
- Preview Result 2
- * Data Reduction Result 2 [1]

Radiates Emission from 3GHz to 18GHz



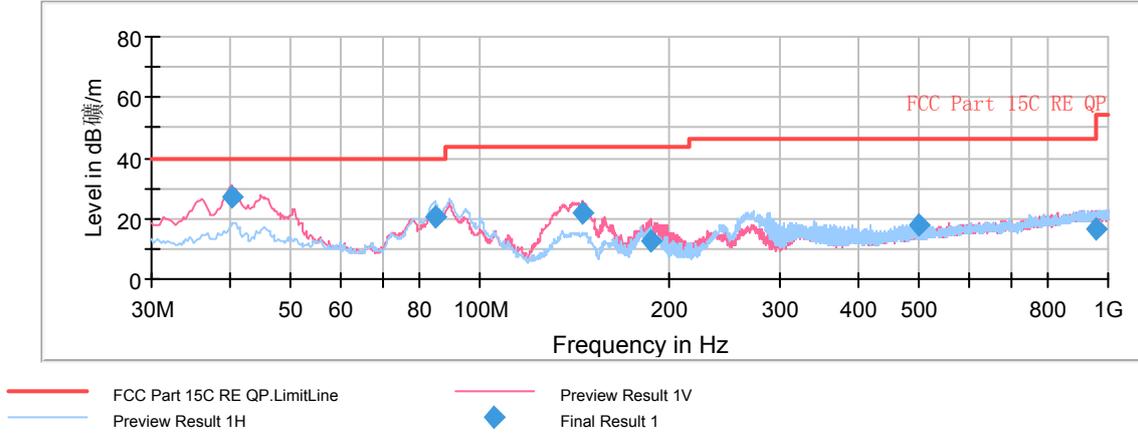
- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Data Reduction Result 1 [1]
- Data Reduction Result 2 [1]
- *
- *

Radiates Emission from 18GHz to 26.5GHz

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

802.11n CH6

RE 30M-1GHz (BT&WIFI) QP

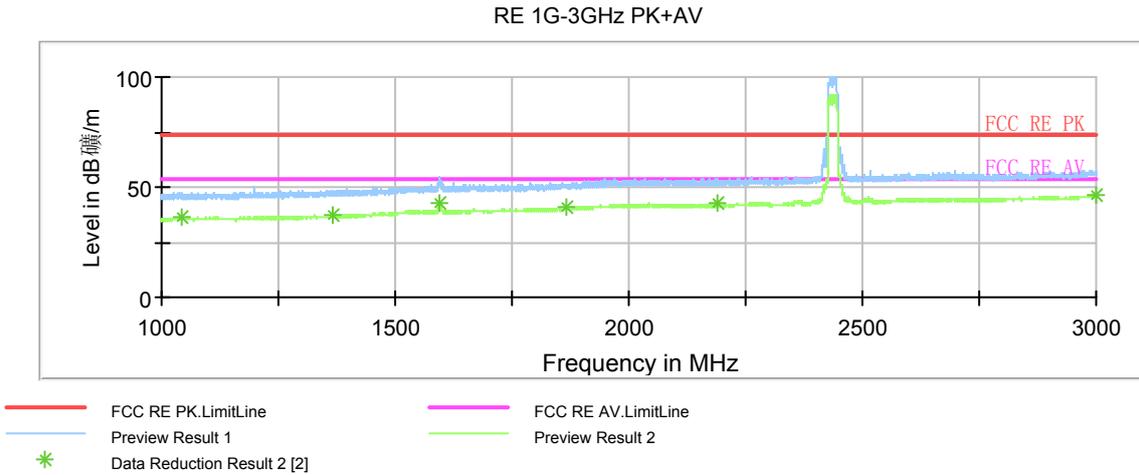


Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
40.345000	27.3	100.0	V	196.0	51.2	-23.9	12.7	40.0
84.805000	20.3	221.0	H	288.0	50.8	-30.5	19.7	40.0
145.592500	21.7	100.0	V	50.0	54.3	-32.6	21.8	43.5
186.820000	12.3	100.0	V	265.0	43.0	-30.7	31.2	43.5
499.197500	17.5	100.0	H	320.0	40.2	-22.7	28.5	46.0
956.472500	16.4	225.0	V	145.0	32.1	-15.7	29.6	46.0

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

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



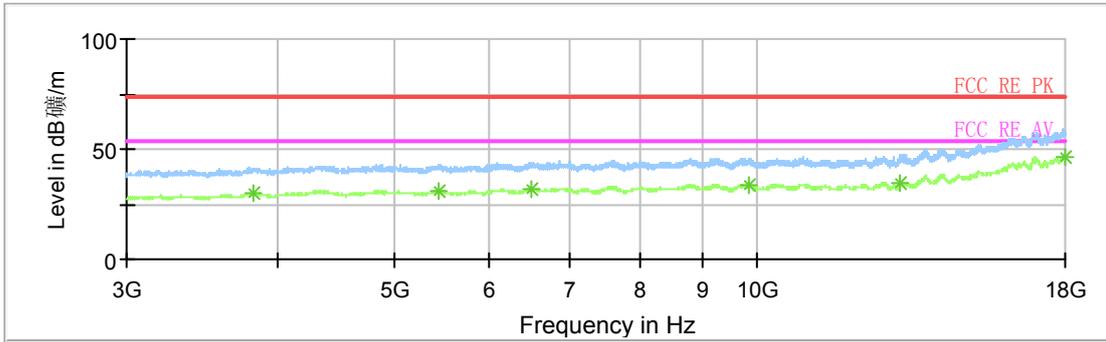
Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1041.500000	44.6	36.4	100.0	V	341.0	-2.2
1368.000000	47.2	37.3	100.0	V	355.0	-1.4
1594.750000	53.2	43.1	100.0	V	93.0	0.8
1866.000000	49.9	40.7	100.0	H	50.0	2.3
2191.750000	51.0	42.4	100.0	H	130.0	3.8
2998.750000	56.3	46.3	100.0	H	57.0	8.2

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

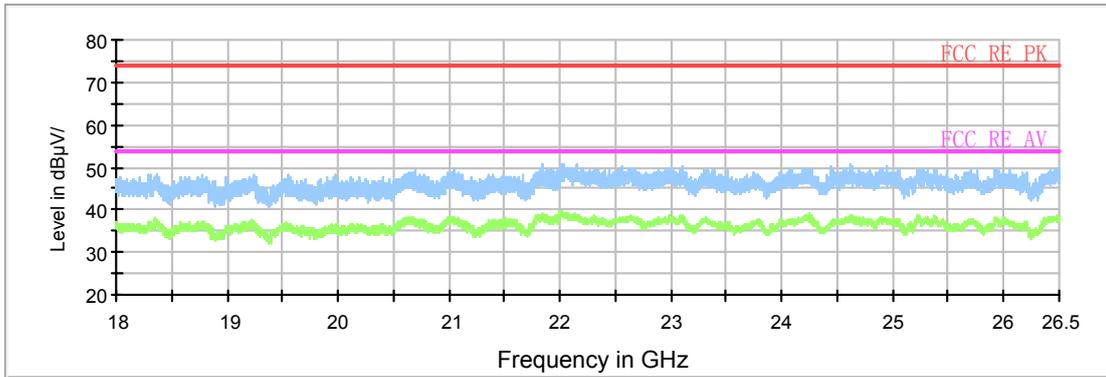
TA Technology (Shanghai) Co., Ltd. Test Report

RE 3-18GHz PK+AV



- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Preview Result 1
- Preview Result 2
- * Data Reduction Result 2 [1]

Radiates Emission from 3GHz to 18GHz



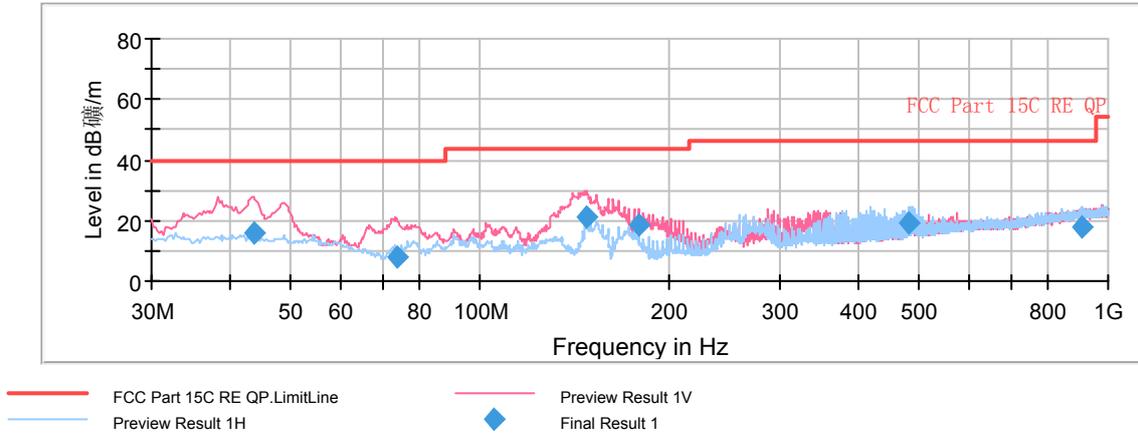
- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Preview Result 1
- Preview Result 2
- * Data Reduction Result 1 [1]
- * Data Reduction Result 2 [1]

Radiates Emission from 18GHz to 26.5GHz

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

802.11n CH11

RE 30M-1GHz QP

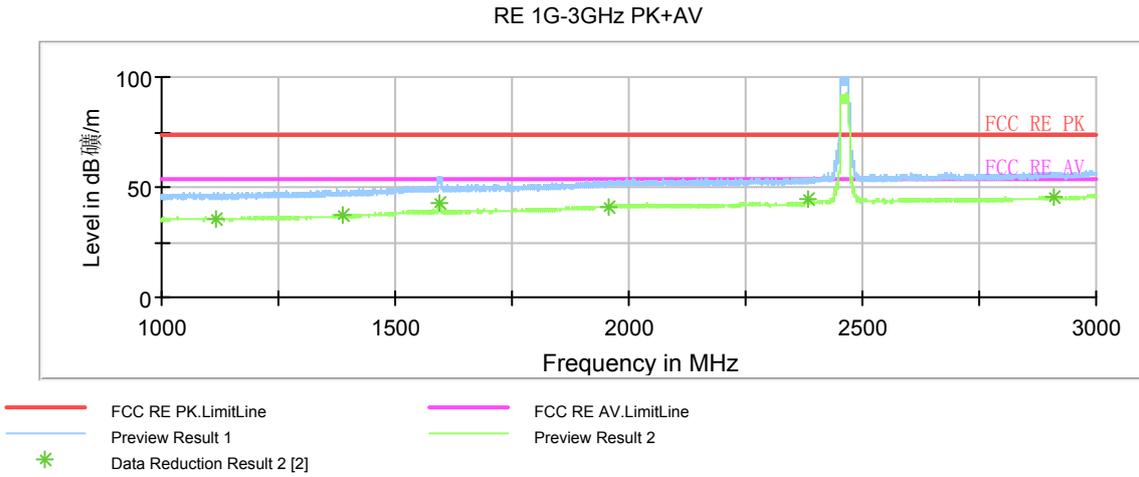


Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
43.688950	16.0	100.0	V	49.0	38.9	-22.9	24.0	40.0
73.583981	7.7	100.0	V	69.0	37.4	-29.7	32.3	40.0
147.563469	20.9	100.0	V	38.0	52.0	-31.1	22.6	43.5
179.209656	18.8	125.0	V	311.0	48.3	-29.5	24.7	43.5
483.184500	19.2	100.0	H	340.0	40.5	-21.3	26.8	46.0
907.641500	17.8	225.0	H	156.0	32.4	-14.6	28.2	46.0

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

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



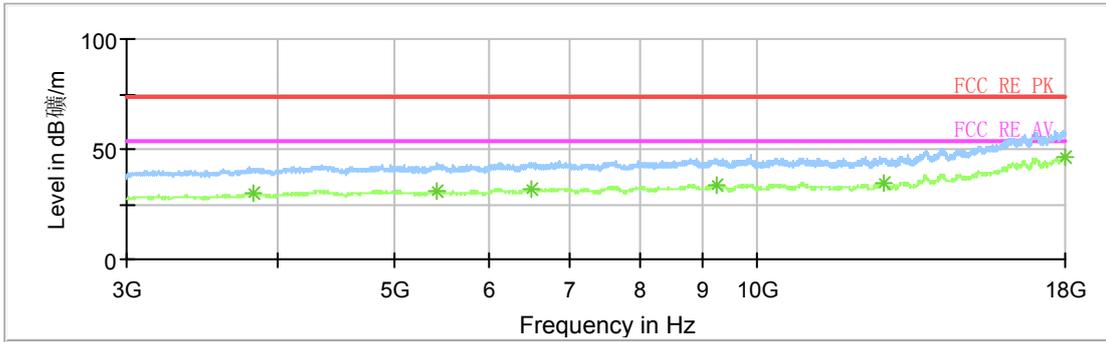
Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1117.000000	45.0	35.9	100.0	V	193.0	-2.2
1388.000000	47.0	37.2	100.0	V	357.0	-1.1
1595.750000	54.4	42.8	100.0	V	61.0	0.9
1955.250000	51.2	41.2	100.0	V	282.0	3.2
2383.500000	52.1	44.2	100.0	V	245.0	4.6
2908.500000	54.9	45.6	100.0	H	135.0	7.6

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

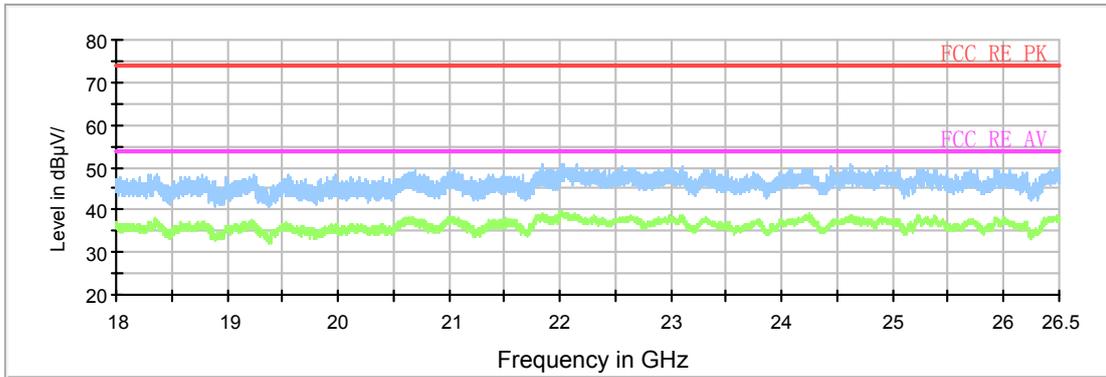
TA Technology (Shanghai) Co., Ltd. Test Report

RE 3-18GHz PK+AV



- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Preview Result 1
- Preview Result 2
- * Data Reduction Result 2 [1]

Radiates Emission from 3GHz to 18GHz



- FCC RE PK.LimitLine
- FCC RE AV.LimitLine
- Preview Result 1
- Preview Result 2
- * Data Reduction Result 1 [1]
- * Data Reduction Result 2 [1]

Radiates Emission from 18GHz to 26.5GHz

2.9. Conducted Emissions

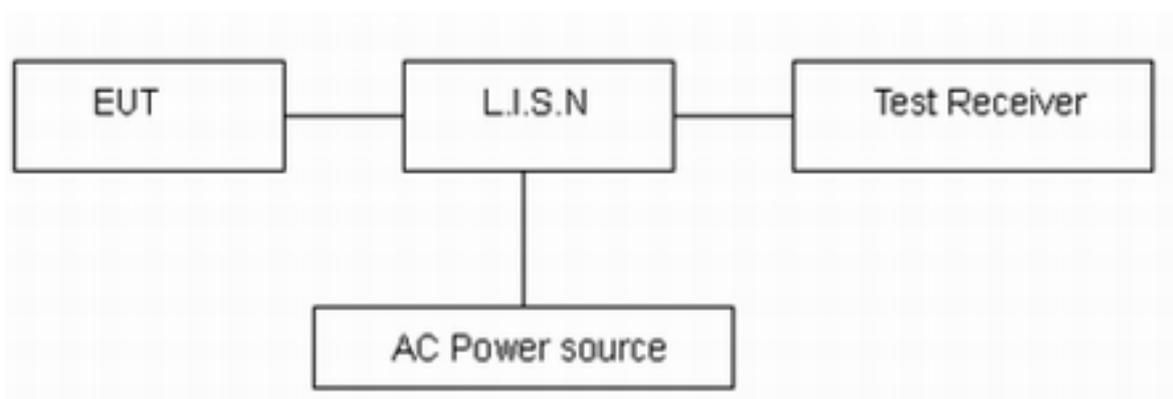
Ambient condition

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

Method of Measurement

The EUT IS placed on a non-metallic table of 80cm height above the horizontal metal reference ground plane. During the test, the EUT was operating in its typical mode. The test method is according to ANSIC63.4-2009. Connect the AC power line of the EUT to the LISN Use EMI receiver to detect the average and Quasi-peak value. RBW is set to 9kHz,VBW is set to 30kHz The measurement result should include both L line and N line. The test is in transmit mode.

Test setup



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

Limits

Frequency (MHz)	Conducted Limits(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

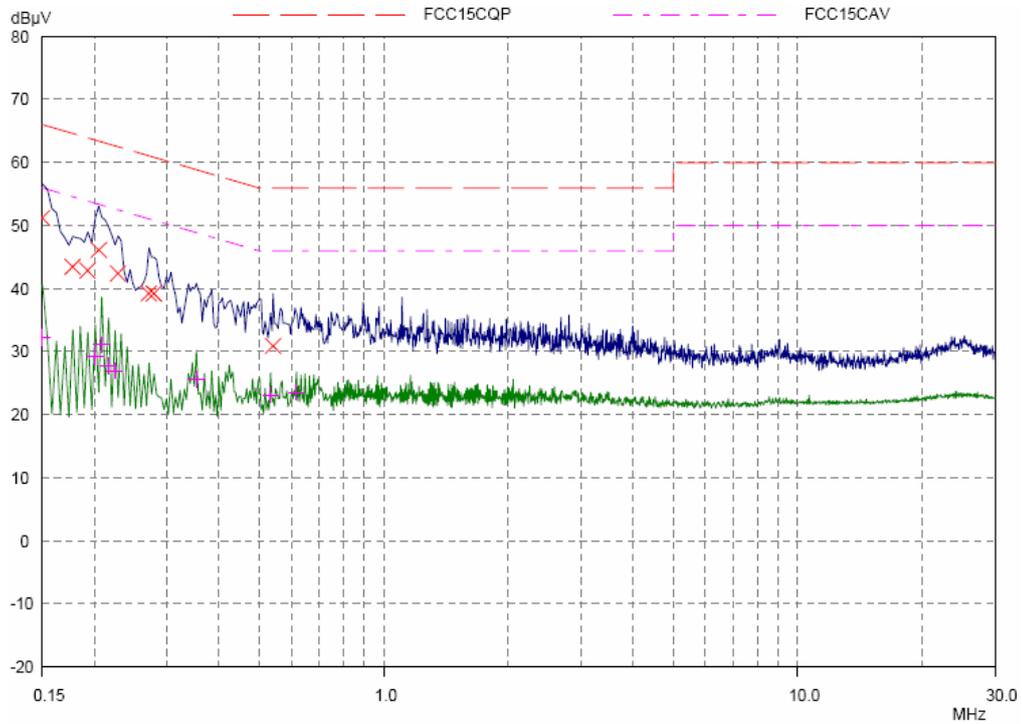
Report No.: RHA1209-0083RF05R2

Page 105of 145

Test Results:

Adapter (HKAB829B329)

802.11b CH1



L Line

Final Measurement Results

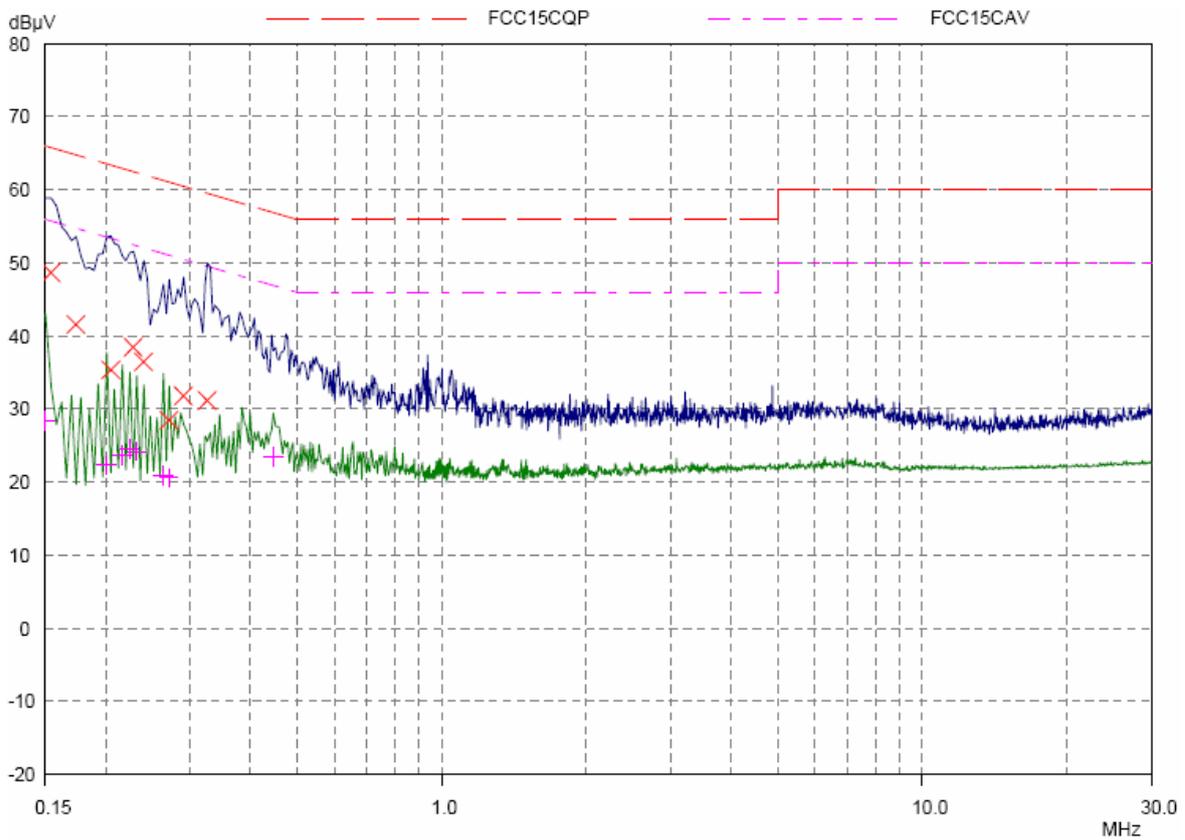
Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.15	51.22	66.00	14.78	L1
0.17734	43.46	64.61	21.15	L1
0.19296	42.86	63.91	21.05	L1
0.20468	46.10	63.42	17.32	L1
0.22812	42.41	62.52	20.11	L1
0.27109	39.23	61.08	21.85	L1
0.2789	39.22	60.85	21.63	L1
0.54062	30.93	56.00	25.07	L1

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.15	32.21	56.00	23.79	L1
0.20078	29.28	53.58	24.30	L1
0.20859	31.06	53.26	22.20	L1
0.2164	27.76	52.96	25.20	L1
0.22421	26.96	52.66	25.70	L1
0.35312	25.63	48.89	23.26	L1
0.53281	23.13	46.00	22.87	L1
0.61484	23.56	46.00	22.44	L1

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

Report No.: RHA1209-0083RF05R2

Page 106 of 145



N Line

Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.1539	48.66	65.79	17.13	N
0.17343	41.56	64.79	23.23	N
0.20468	35.36	63.42	28.06	N
0.22812	38.47	62.52	24.05	N
0.23984	36.46	62.10	25.64	N
0.27109	28.49	61.08	32.59	N
0.29062	31.79	60.51	28.72	N
0.32578	31.17	59.56	28.39	N

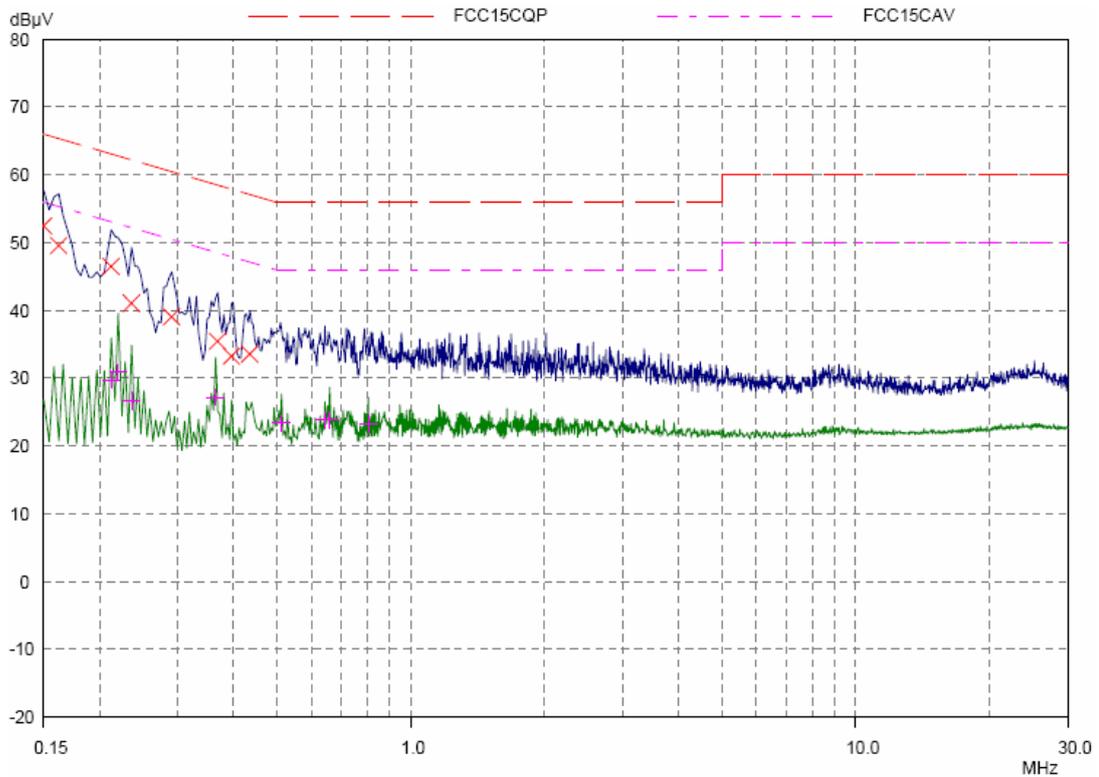
Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.15	28.42	56.00	27.58	N
0.20078	22.32	53.58	31.26	N
0.2164	23.70	52.96	29.26	N
0.22421	24.57	52.66	28.09	N
0.23203	24.24	52.38	28.14	N
0.26328	20.95	51.33	30.38	N
0.27109	20.63	51.08	30.45	N
0.44687	23.45	46.93	23.48	N

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

Report No.: RHA1209-0083RF05R2

Page 107of 145

802.11b CH6



L Line

Final Measurement Results

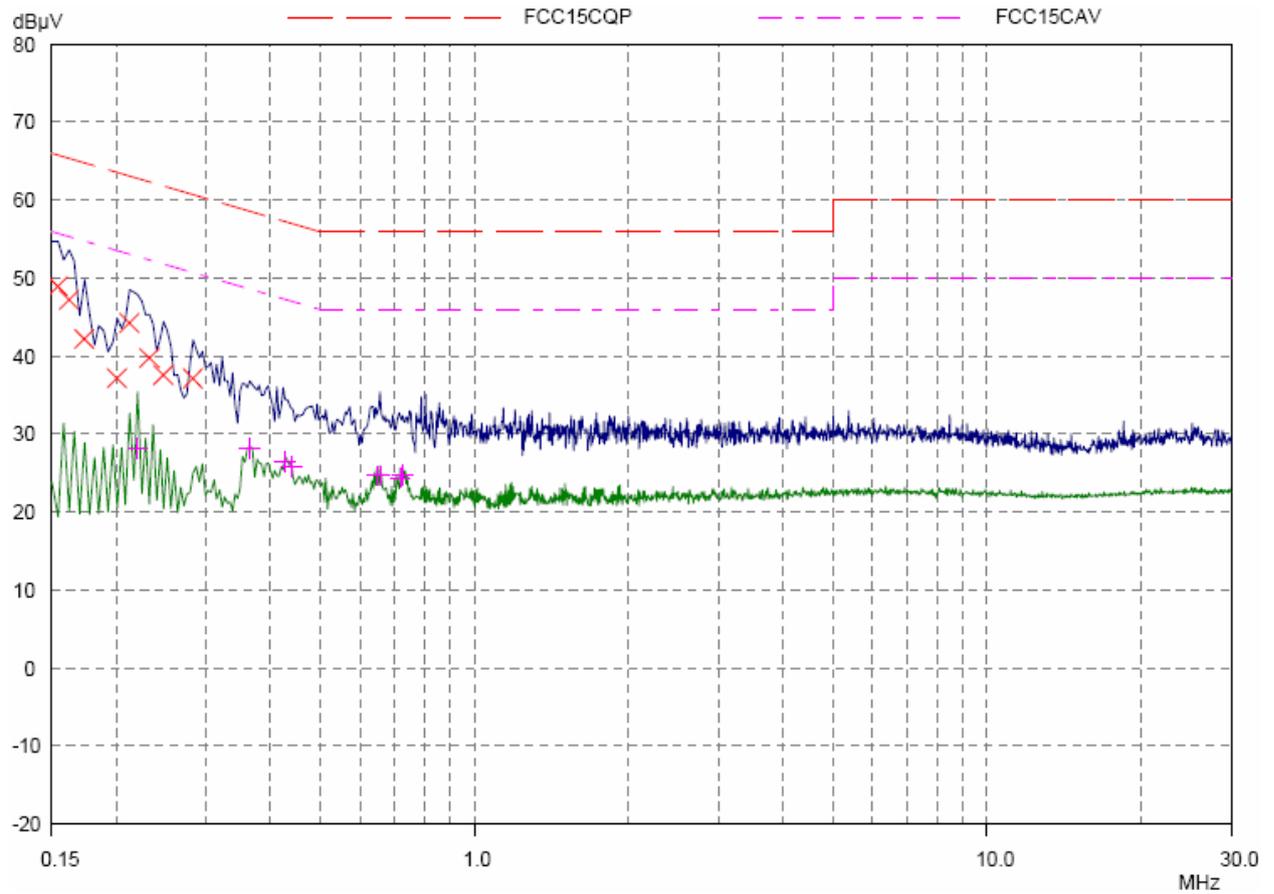
Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.15	52.48	66.00	13.52	L1
0.16171	49.56	65.38	15.82	L1
0.2125	46.50	63.11	16.61	L1
0.23593	41.07	62.24	21.17	L1
0.29062	39.03	60.51	21.48	L1
0.36875	35.42	58.53	23.11	L1
0.39609	33.28	57.93	24.65	L1
0.43515	33.54	57.15	23.61	L1

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.2125	29.71	53.11	23.40	L1
0.22031	30.92	52.81	21.89	L1
0.23593	26.72	52.24	25.52	L1
0.36484	27.20	48.62	21.42	L1
0.51327	23.38	46.00	22.62	L1
0.64218	23.77	46.00	22.23	L1
0.65781	23.78	46.00	22.22	L1
0.80234	23.32	46.00	22.68	L1

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

Report No.: RHA1209-0083RF05R2

Page 108 of 145



N Line

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.1539	48.96	65.79	16.83	N
0.16171	47.20	65.38	18.18	N
0.17343	42.20	64.79	22.59	N
0.20078	37.20	63.58	26.38	N
0.2125	44.26	63.11	18.85	N
0.23203	39.76	62.38	22.62	N
0.24765	37.57	61.84	24.27	N
0.28281	37.14	60.73	23.59	N

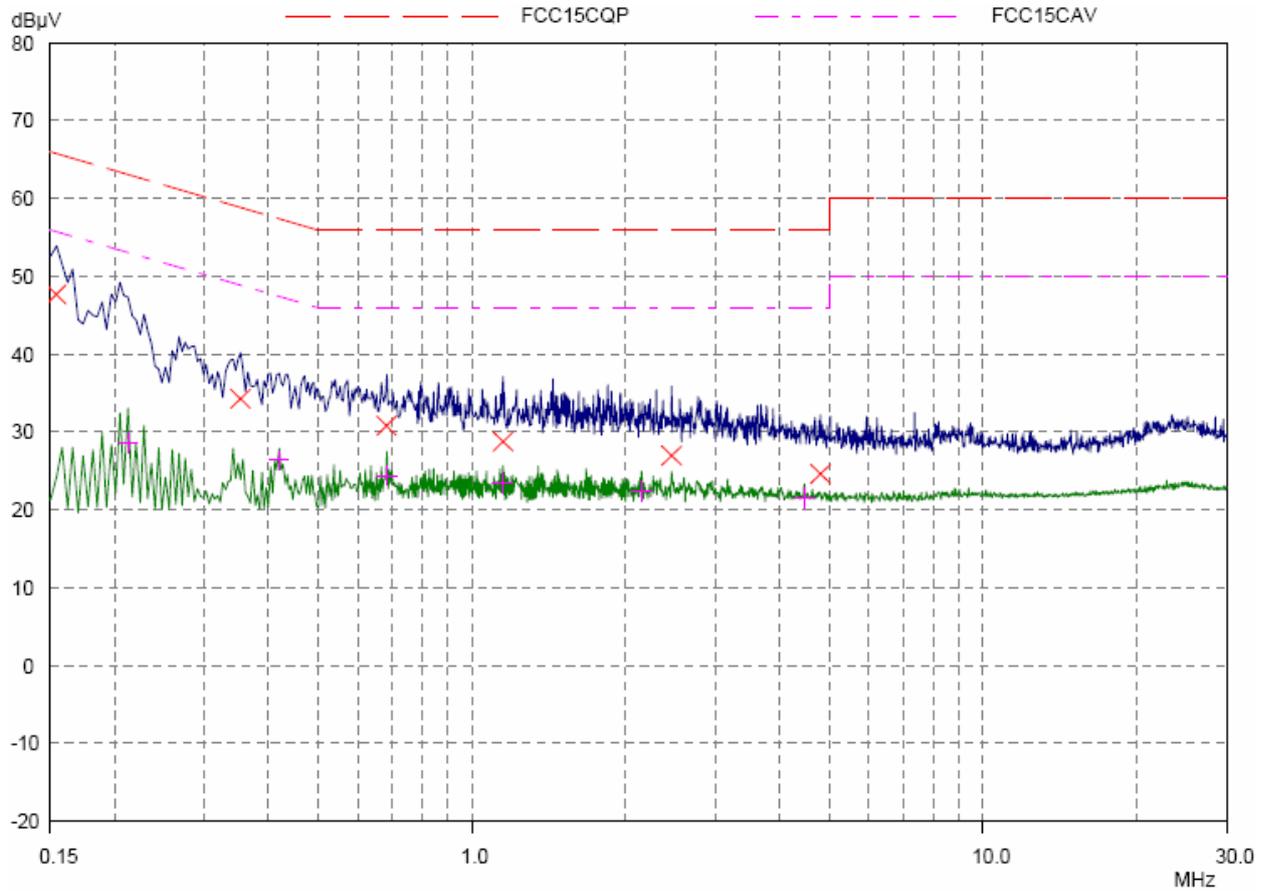
Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.22031	28.12	52.81	24.69	N
0.36484	28.12	48.62	20.50	N
0.42734	26.43	47.30	20.87	N
0.43906	25.76	47.08	21.32	N
0.64609	24.69	46.00	21.31	N
0.6539	24.66	46.00	21.34	N
0.7164	24.41	46.00	21.59	N
0.72421	24.81	46.00	21.19	N

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

Report No.: RHA1209-0083RF05R2

Page 109 of 145

802.11b CH11



L Line

Final Measurement Results

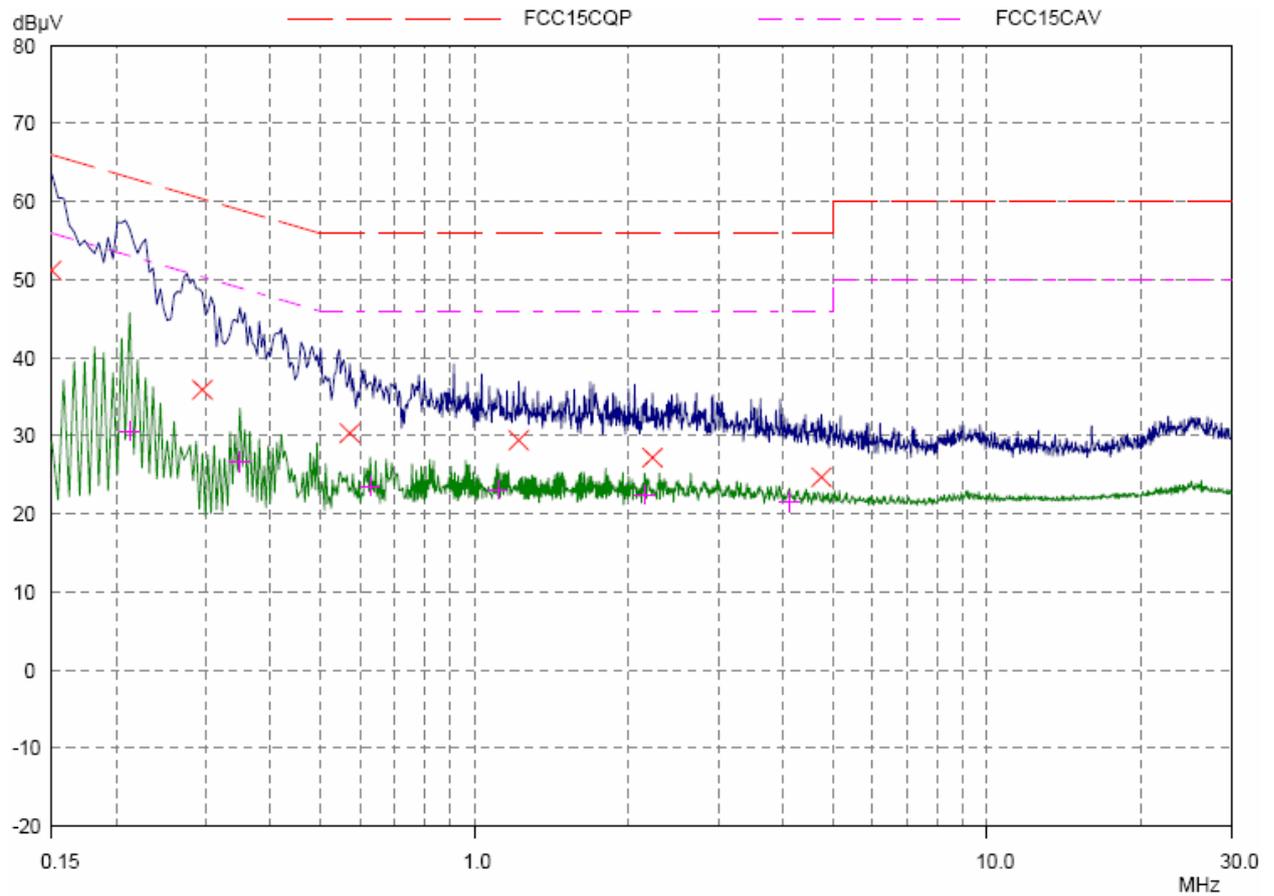
Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.1539	47.70	65.79	18.09	L1
0.35312	34.29	58.89	24.60	L1
0.68125	30.84	56.00	25.16	L1
1.15	28.77	56.00	27.23	L1
2.45859	26.98	56.00	29.02	L1
4.80625	24.65	56.00	31.35	L1

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.2125	28.65	53.11	24.46	L1
0.41953	26.35	47.46	21.11	L1
0.68125	24.45	46.00	21.55	L1
1.15	23.45	46.00	22.55	L1
2.14609	22.42	46.00	23.58	L1
4.48203	21.54	46.00	24.46	L1

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

Report No.: RHA1209-0083RF05R2

Page 110 of 145



N Line

Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.15	51.24	66.00	14.76	N
0.29453	35.92	60.40	24.48	N
0.57187	30.34	56.00	25.66	N
1.22031	29.46	56.00	26.54	N
2.22421	27.22	56.00	28.78	N
4.75937	24.72	56.00	31.28	N

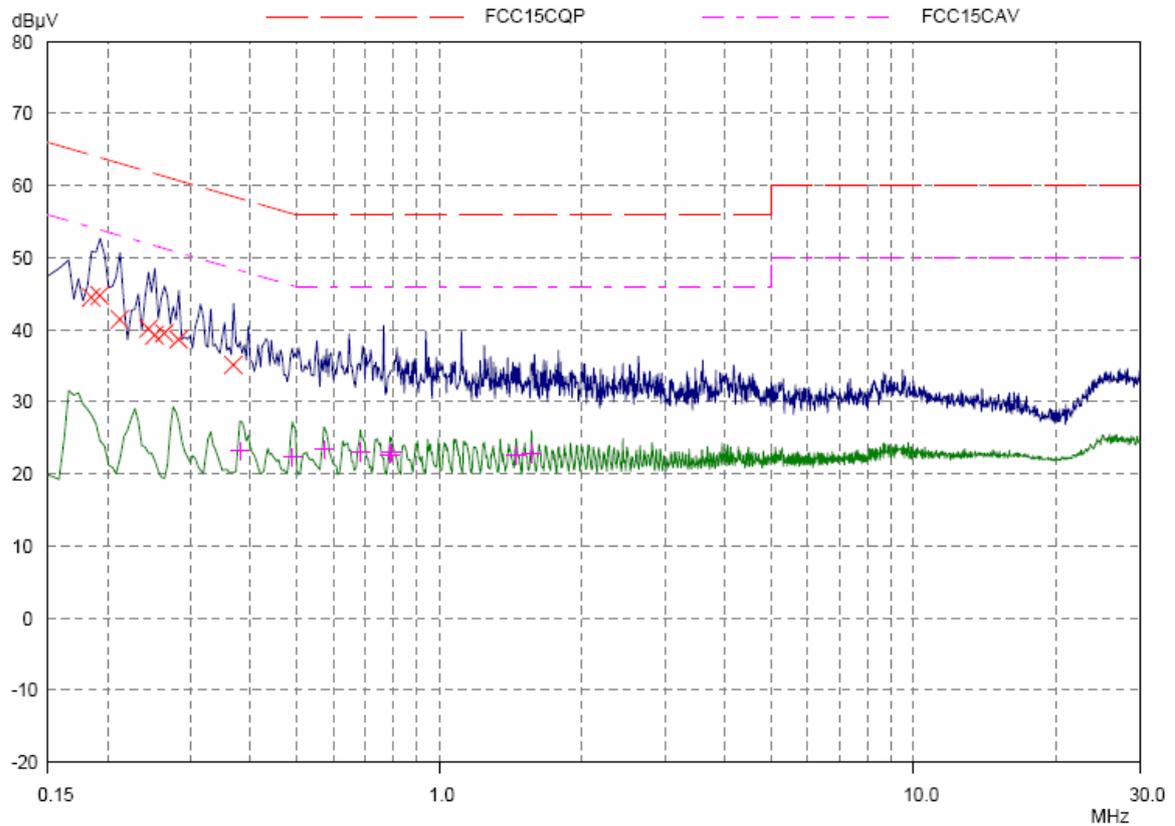
Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.2125	30.65	53.11	22.46	N
0.34921	26.66	48.98	22.32	N
0.62656	23.57	46.00	22.43	N
1.11093	23.12	46.00	22.88	N
2.14609	22.48	46.00	23.52	N
4.11875	21.61	46.00	24.39	N

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

Report No.: RHA1209-0083RF05R2

Page 111 of 145

802.11g CH1



L Line

Final Measurement Results

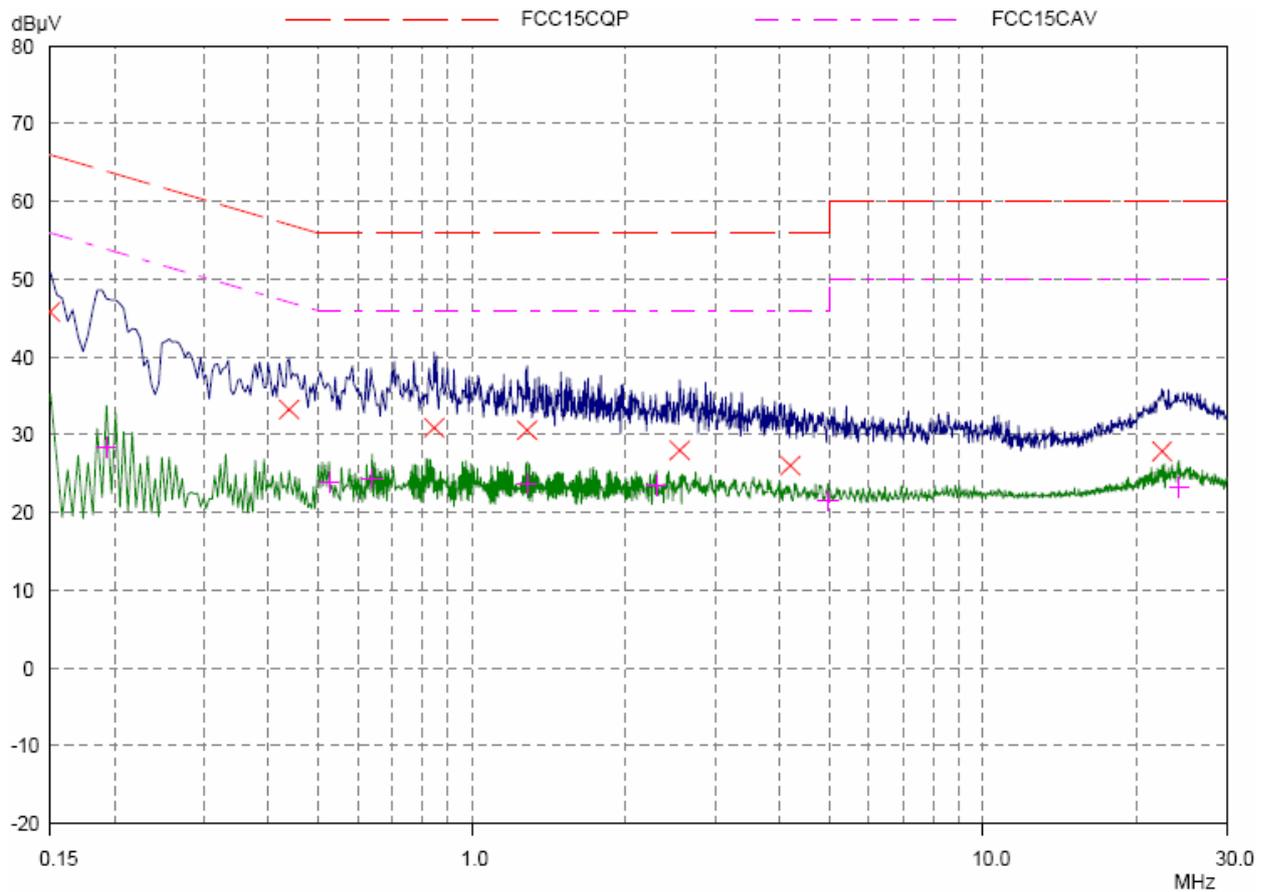
Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.18515	44.51	64.25	19.74	L1
0.19296	44.74	63.91	19.17	L1
0.2125	41.46	63.11	21.65	L1
0.24375	40.14	61.97	21.83	L1
0.25156	39.26	61.71	22.45	L1
0.26328	39.54	61.33	21.79	L1
0.28281	38.68	60.73	22.05	L1
0.36875	35.14	58.53	23.39	L1

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.38046	23.21	48.27	25.06	L1
0.48984	22.29	46.17	23.88	L1
0.57187	23.40	46.00	22.60	L1
0.68125	23.02	46.00	22.98	L1
0.78671	22.72	46.00	23.28	L1
0.79453	22.95	46.00	23.05	L1
1.45468	22.52	46.00	23.48	L1
1.56406	22.77	46.00	23.23	L1

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

Report No.: RHA1209-0083RF05R2

Page 112 of 145



N Line

Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.15	45.84	66.00	20.16	L1
0.43906	33.26	57.08	23.82	L1
0.84531	30.90	56.00	25.10	L1
1.28281	30.57	56.00	25.43	L1
2.54843	28.02	56.00	27.98	L1
4.20078	26.07	56.00	29.93	L1
22.41171	27.87	60.00	32.13	L1

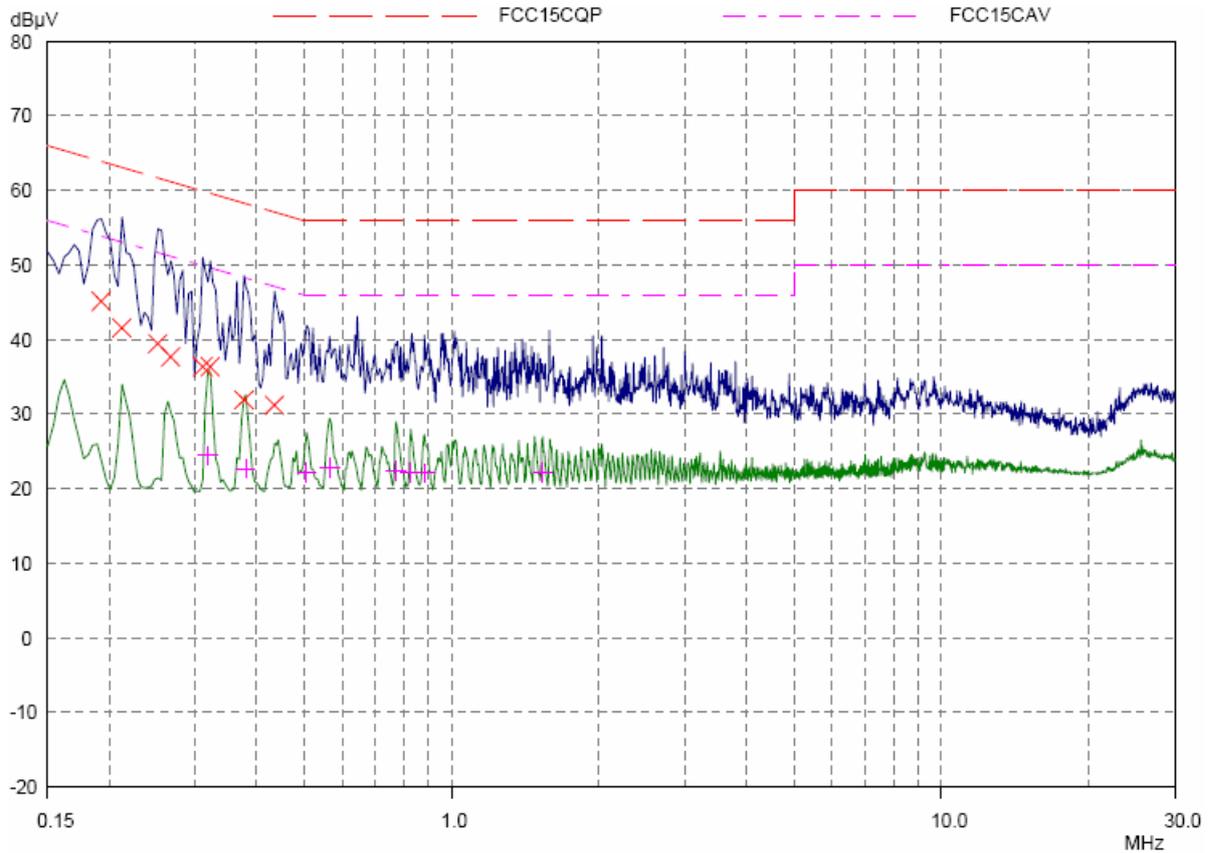
Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.19296	28.37	53.91	25.54	L1
0.525	23.92	46.00	22.08	L1
0.63828	24.38	46.00	21.62	L1
1.28281	23.67	46.00	22.33	L1
2.29453	23.49	46.00	22.51	L1
4.97421	21.55	46.00	24.45	L1
24.18906	23.25	50.00	26.75	L1

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

Report No.: RHA1209-0083RF05R2

Page 113of 145

802.11g CH6



L Line

Final Measurement Results

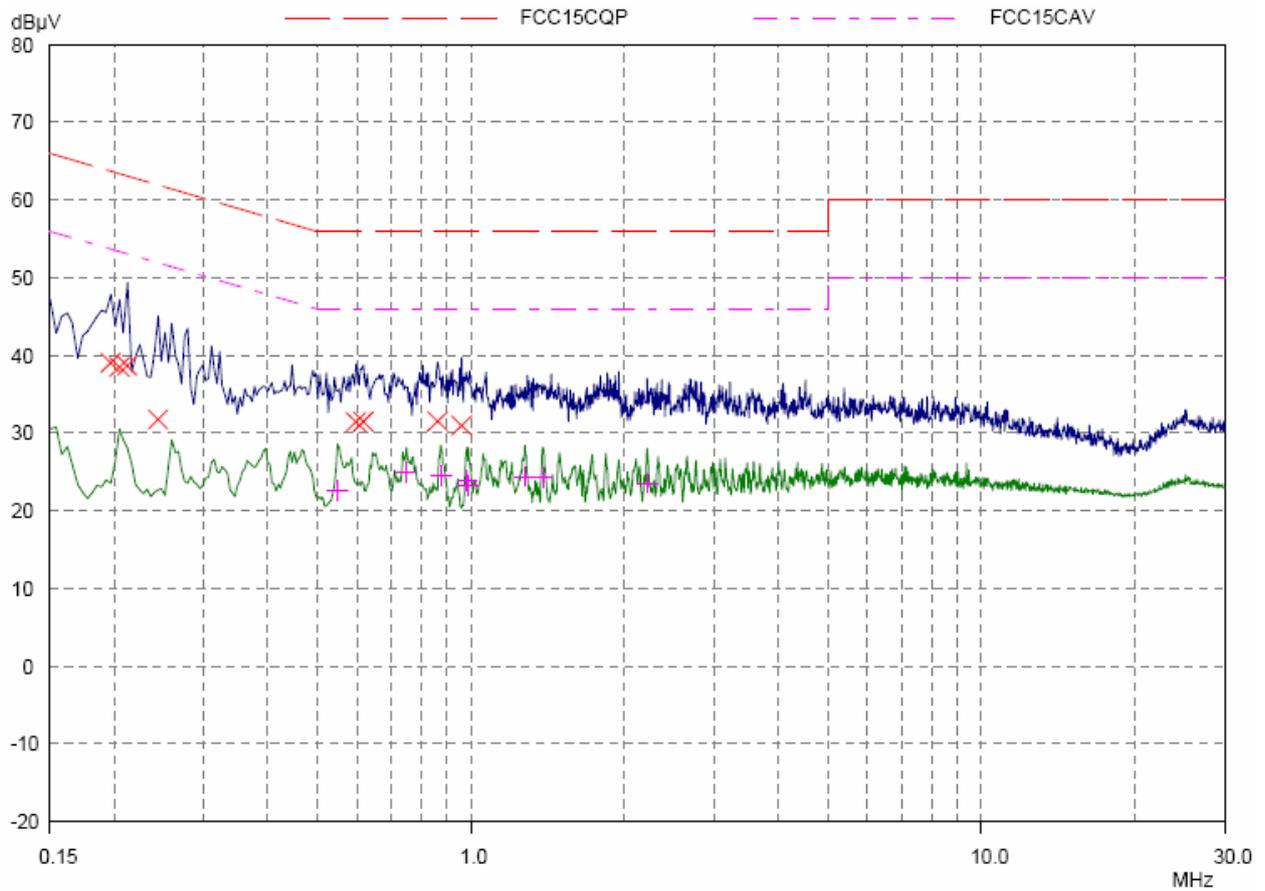
Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.19296	45.14	63.91	18.77	L1
0.2125	41.56	63.11	21.55	L1
0.25156	39.44	61.71	22.27	L1
0.26718	37.70	61.21	23.51	L1
0.31015	36.35	59.97	23.62	L1
0.32187	36.36	59.66	23.30	L1
0.37656	31.95	58.35	26.40	L1
0.43515	31.24	57.15	25.91	L1

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.31796	24.49	49.76	25.27	L1
0.38046	22.73	48.27	25.54	L1
0.50546	22.17	46.00	23.83	L1
0.56406	22.77	46.00	23.23	L1
0.77109	22.44	46.00	23.56	L1
0.82578	22.22	46.00	23.78	L1
0.88046	22.12	46.00	23.88	L1
1.53671	22.19	46.00	23.81	L1

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

Report No.: RHA1209-0083RF05R2

Page 114 of 145



N Line

Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.19687	39.09	63.74	24.65	N
0.20468	38.50	63.42	24.92	N
0.2125	38.70	63.11	24.41	N
0.24375	31.76	61.97	30.21	N
0.59531	31.43	56.00	24.57	N
0.61484	31.49	56.00	24.51	N
0.86093	31.50	56.00	24.50	N
0.95859	30.96	56.00	25.04	N

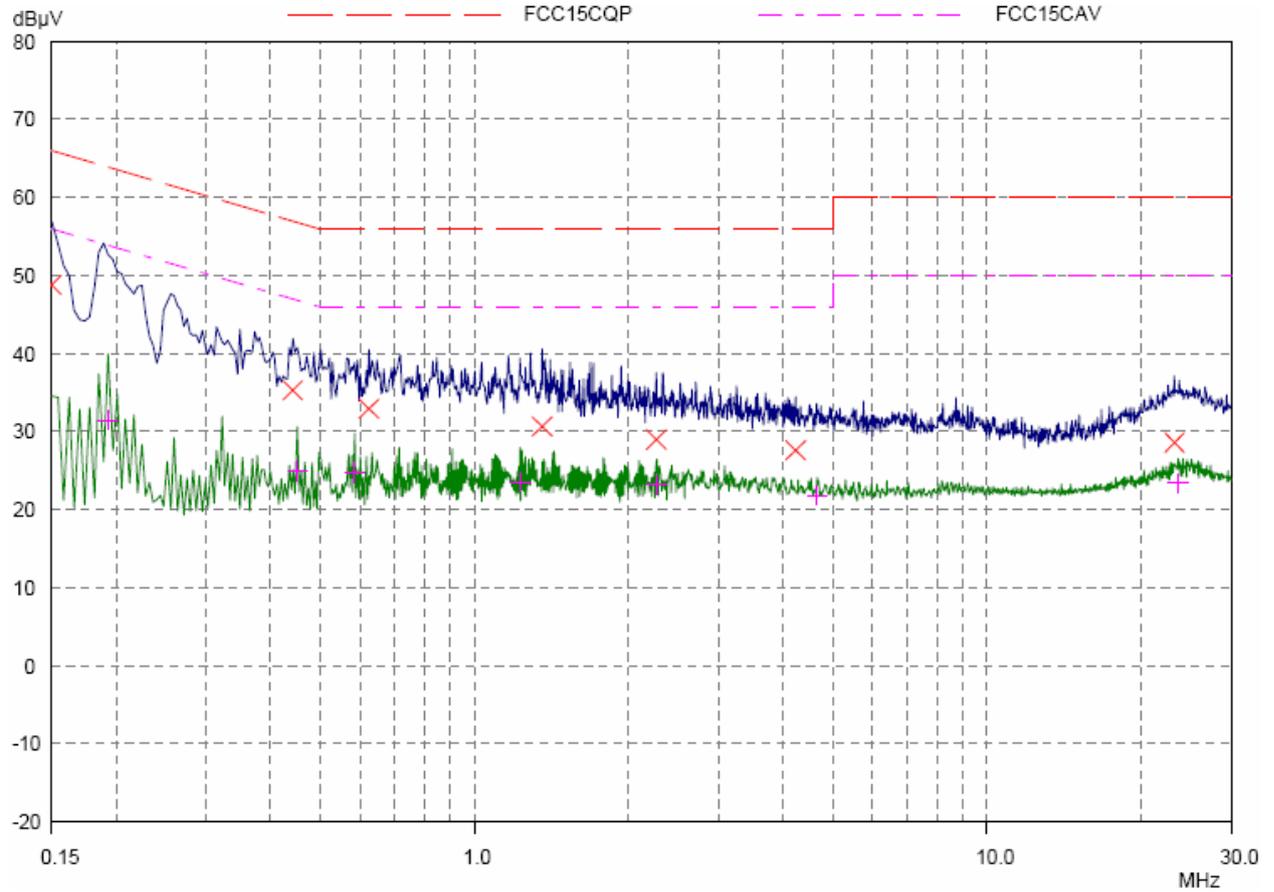
Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.54843	22.59	46.00	23.41	N
0.74765	24.90	46.00	21.10	N
0.87265	24.59	46.00	21.41	N
0.98203	23.96	46.00	22.04	N
0.98984	23.30	46.00	22.70	N
1.275	24.39	46.00	21.61	N
1.38437	24.37	46.00	21.63	N
2.2164	23.53	46.00	22.47	N

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

Report No.: RHA1209-0083RF05R2

Page 115 of 145

802.11g CH11



L Line

Final Measurement Results

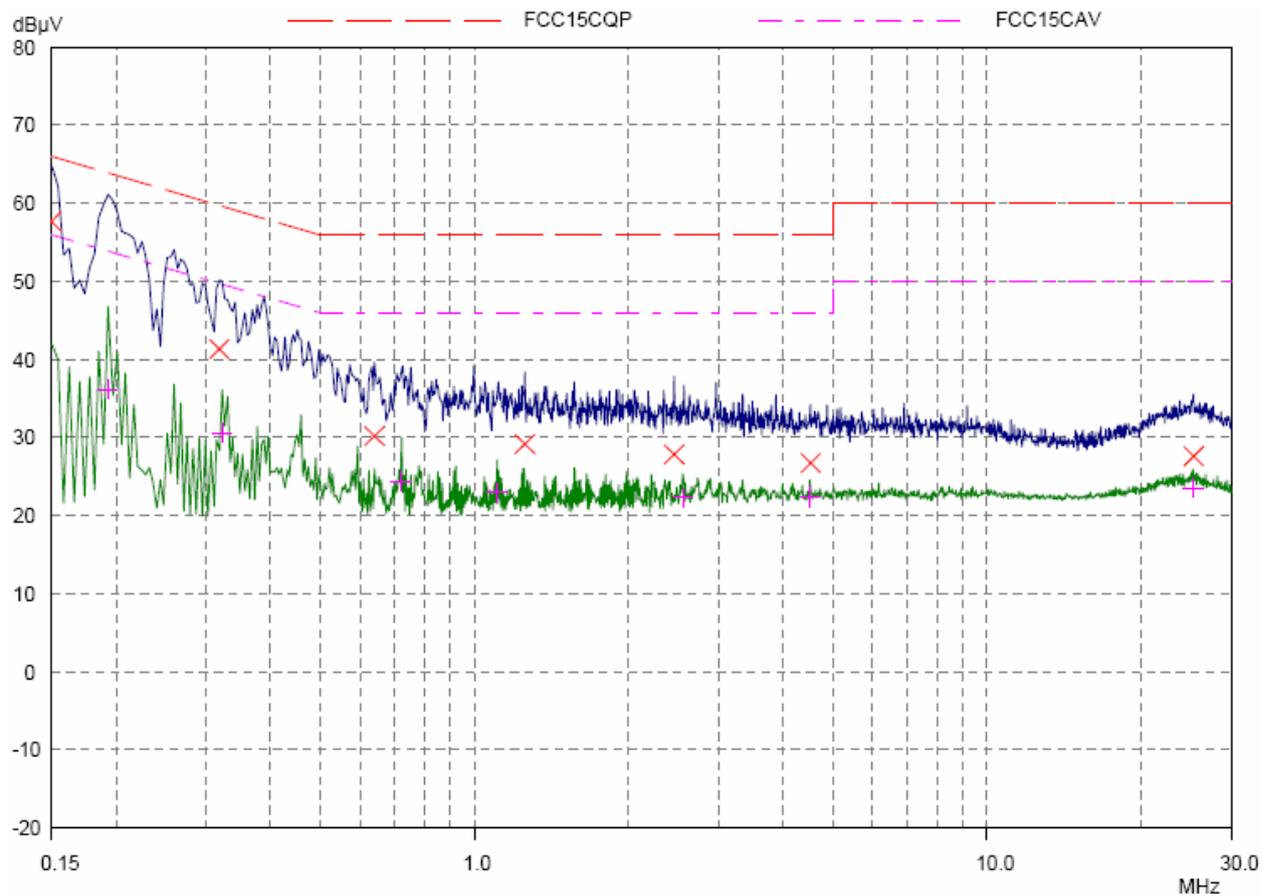
Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.15	48.78	66.00	17.22	L1
0.44296	35.29	57.01	21.72	L1
0.62265	32.96	56.00	23.04	L1
1.35703	30.65	56.00	25.35	L1
2.26718	28.99	56.00	27.01	L1
4.23593	27.60	56.00	28.40	L1
23.18906	28.60	60.00	31.40	L1

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.19296	31.48	53.91	22.43	L1
0.45078	24.97	46.86	21.89	L1
0.58359	24.76	46.00	21.24	L1
1.22812	23.56	46.00	22.44	L1
2.27109	23.23	46.00	22.77	L1
4.66562	21.84	46.00	24.16	L1
23.63046	23.38	50.00	26.62	L1

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

Report No.: RHA1209-0083RF05R2

Page 116of 145



Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.15	57.70	66.00	8.30	N
0.31796	41.32	59.76	18.44	N
0.63828	30.18	56.00	25.82	N
1.25546	29.19	56.00	26.81	N
2.45078	27.84	56.00	28.16	N
4.525	26.74	56.00	29.26	N
25.31796	27.58	60.00	32.42	N

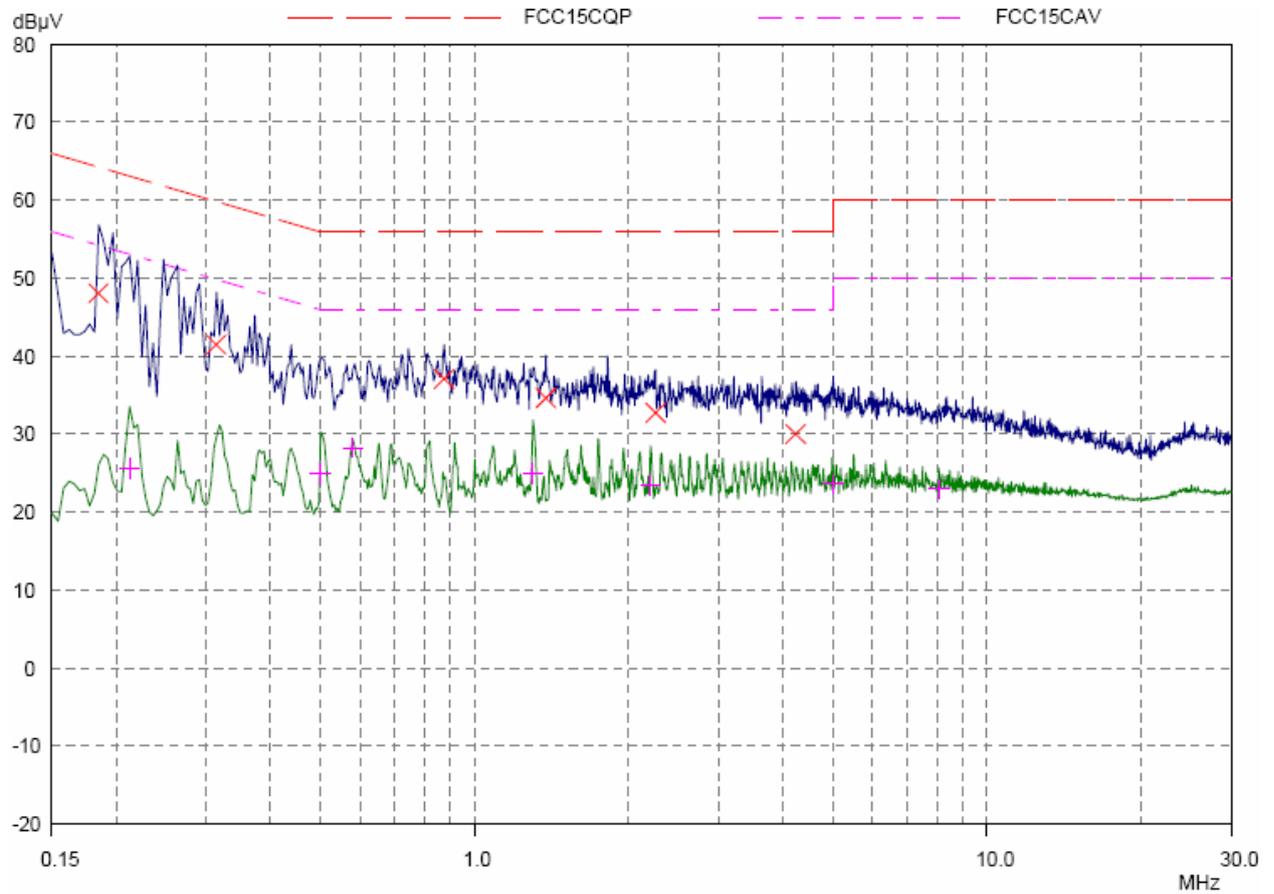
Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.19296	36.22	53.91	17.69	N
0.32187	30.64	49.66	19.02	N
0.72031	24.41	46.00	21.59	N
1.10703	22.91	46.00	23.09	N
2.55234	22.37	46.00	23.63	N
4.50937	22.38	46.00	23.62	N
25.24765	23.53	50.00	26.47	N

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

Report No.: RHA1209-0083RF05R2

Page 117 of 145

802.11n CH1



L Line

Final Measurement Results

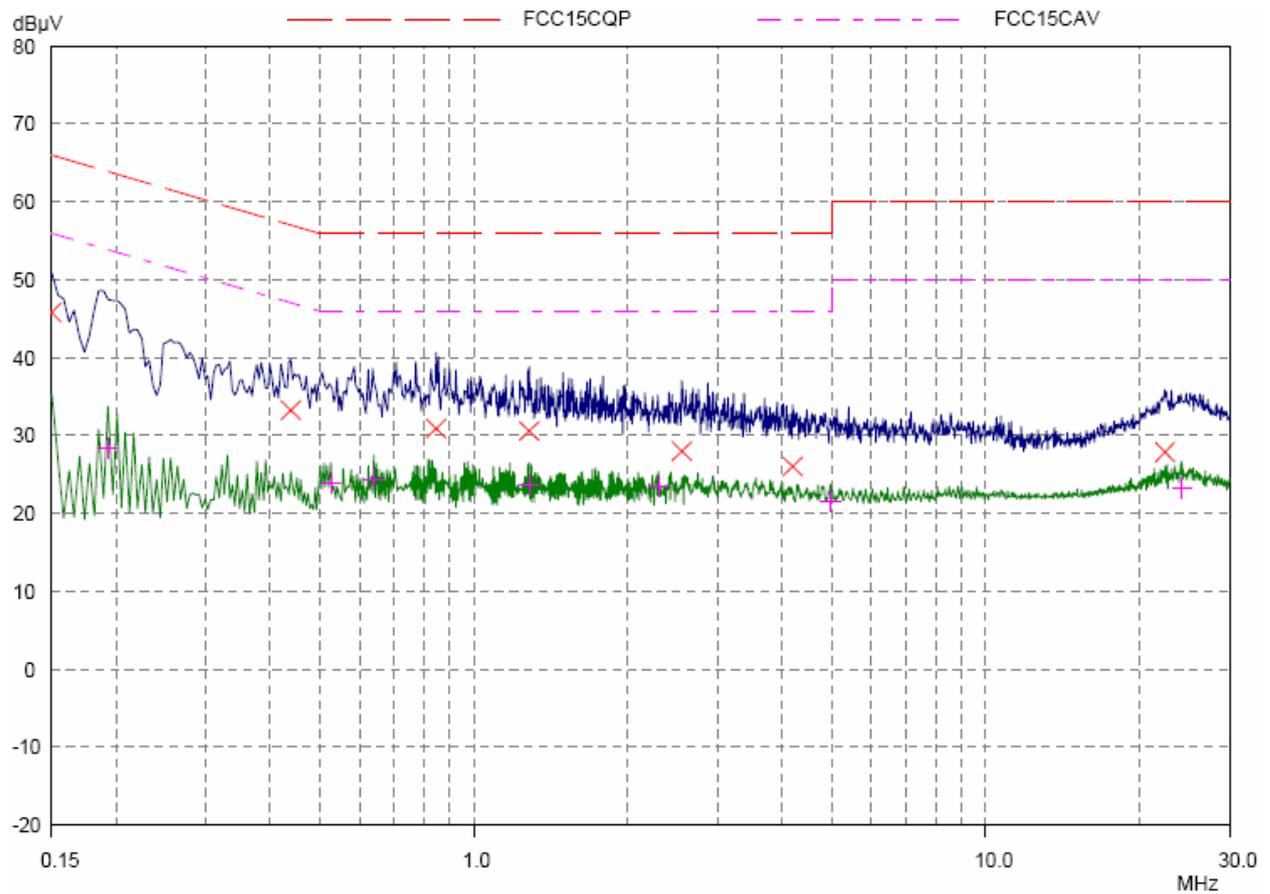
Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.18515	48.09	64.25	16.16	L1
0.31406	41.48	59.86	18.38	L1
0.87265	37.13	56.00	18.87	L1
1.38046	34.63	56.00	21.37	L1
2.25546	32.75	56.00	23.25	L1
4.23593	30.04	56.00	25.96	L1

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.2125	25.67	53.11	27.44	L1
0.50156	24.99	46.00	21.01	L1
0.57968	28.28	46.00	17.72	L1
1.30234	24.94	46.00	21.06	L1
2.20859	23.48	46.00	22.52	L1
4.99765	23.62	46.00	22.38	L1
8.06015	22.96	50.00	27.04	L1

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

Report No.: RHA1209-0083RF05R2

Page 118 of 145



N Line

Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.15	45.84	66.00	20.16	L1
0.43906	33.26	57.08	23.82	L1
0.84531	30.90	56.00	25.10	L1
1.28281	30.57	56.00	25.43	L1
2.54843	28.02	56.00	27.98	L1
4.20078	26.07	56.00	29.93	L1
22.41171	27.87	60.00	32.13	L1

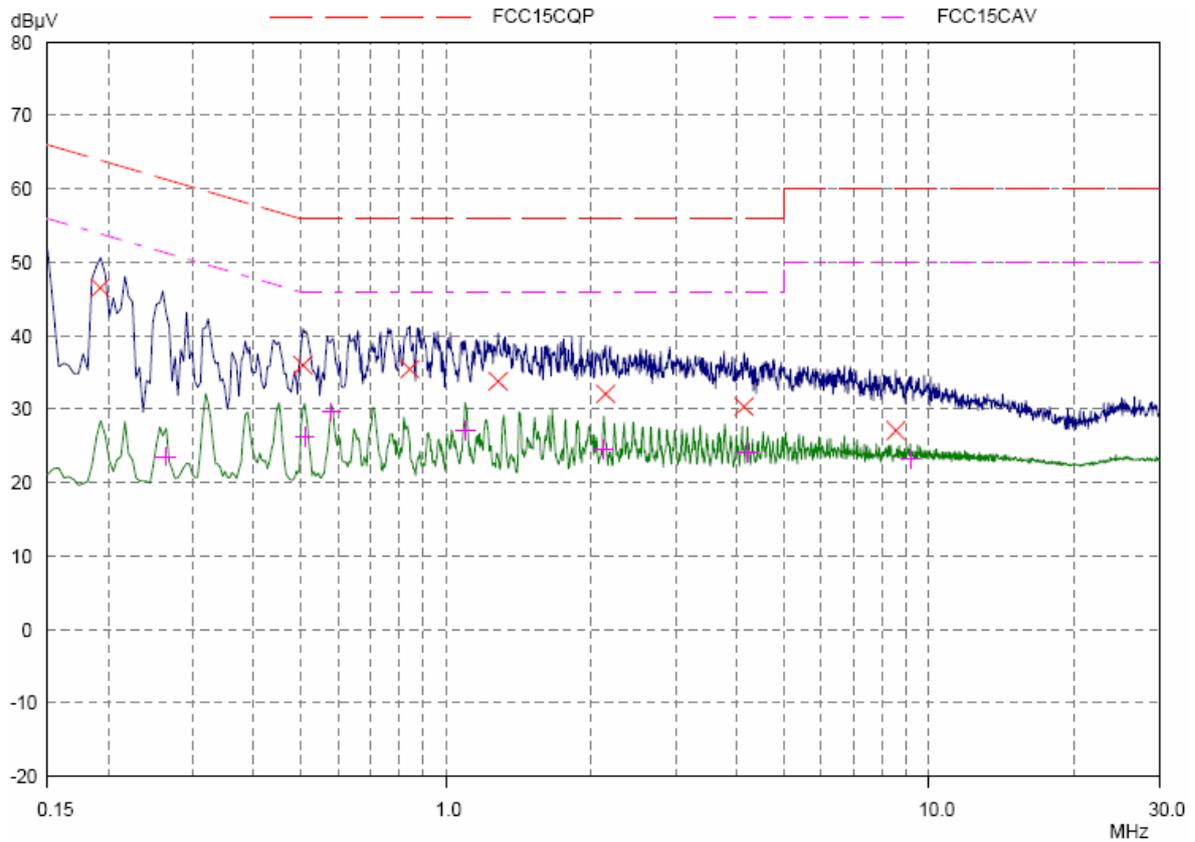
Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.19296	28.37	53.91	25.54	L1
0.525	23.92	46.00	22.08	L1
0.63828	24.38	46.00	21.62	L1
1.28281	23.67	46.00	22.33	L1
2.29453	23.49	46.00	22.51	L1
4.97421	21.55	46.00	24.45	L1
24.18906	23.25	50.00	26.75	L1

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

Report No.: RHA1209-0083RF05R2

Page 119of 145

802.11n CH6



L Line

Final Measurement Results

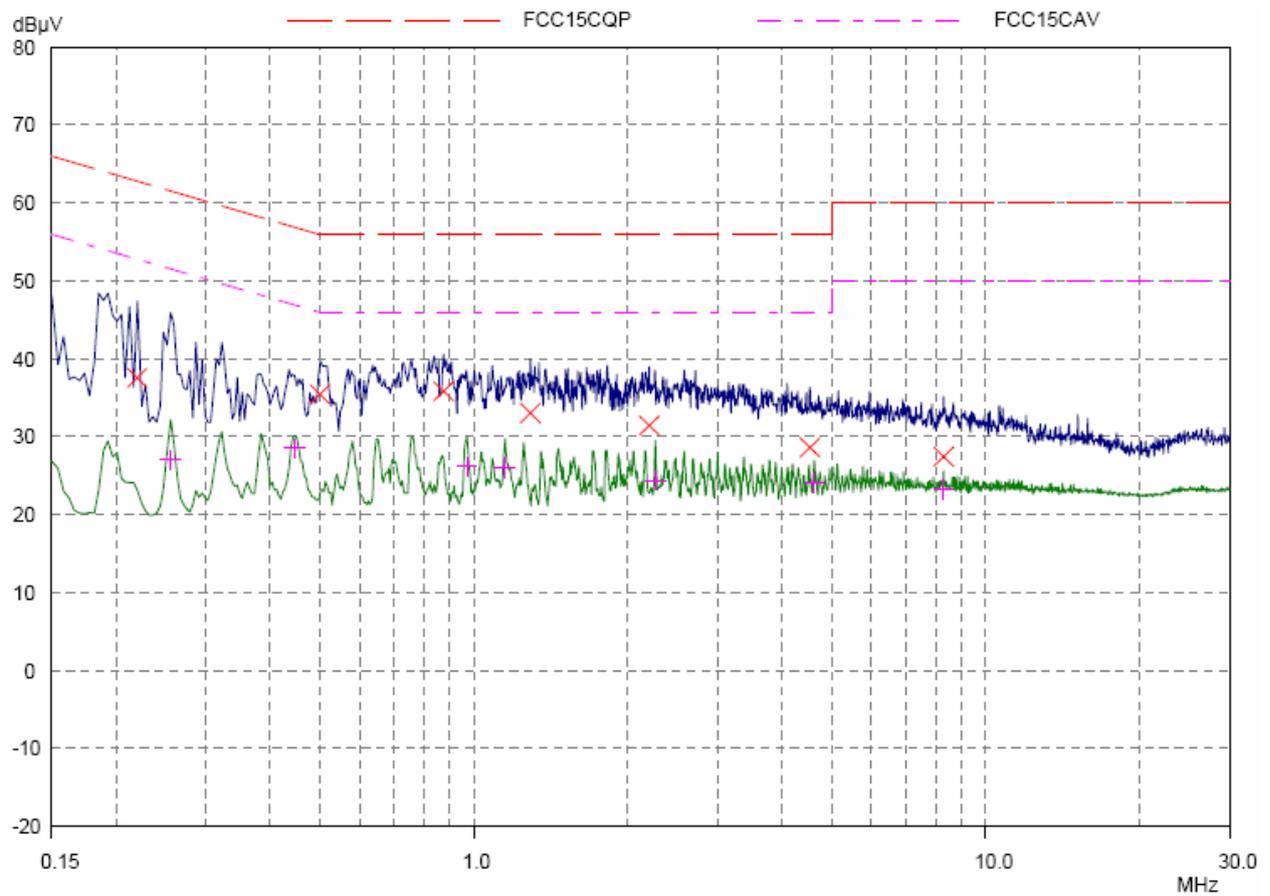
Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.19296	46.50	63.91	17.41	L1
0.50546	36.01	56.00	19.99	L1
0.8414	35.48	56.00	20.52	L1
1.28281	33.83	56.00	22.17	L1
2.14218	32.11	56.00	23.89	L1
4.13828	30.32	56.00	25.68	L1
8.54453	27.10	60.00	32.90	L1

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.26328	23.60	51.33	27.73	L1
0.50937	26.32	46.00	19.68	L1
0.57968	29.57	46.00	16.43	L1
1.09531	27.10	46.00	18.90	L1
2.12656	24.54	46.00	21.46	L1
4.2125	24.12	46.00	21.88	L1
9.1539	23.20	50.00	26.80	L1

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

Report No.: RHA1209-0083RF05R2

Page 120 of 145



N Line

Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.22031	37.58	62.81	25.23	N
0.50156	35.43	56.00	20.57	N
0.87265	35.83	56.00	20.17	N
1.29062	33.05	56.00	22.95	N
2.20468	31.46	56.00	24.54	N
4.53281	28.63	56.00	27.37	N
8.27108	27.43	60.00	32.57	N

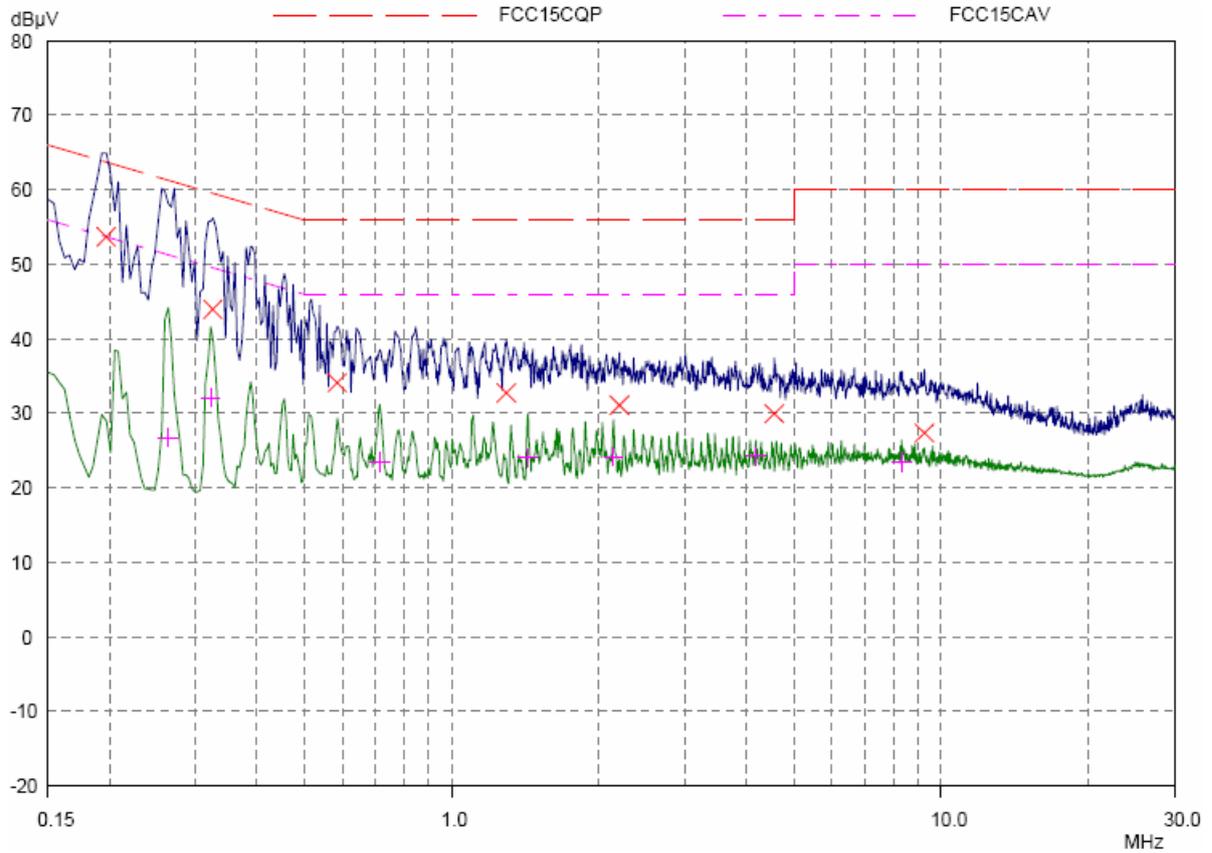
Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.25546	27.02	51.58	24.56	N
0.44687	28.57	46.93	18.36	N
0.97031	26.16	46.00	19.84	N
1.15	26.05	46.00	19.95	N
2.26328	24.43	46.00	21.57	N
4.62265	24.09	46.00	21.91	N
8.29062	23.31	50.00	26.69	N

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

Report No.: RHA1209-0083RF05R2

Page 121 of 145

802.11n CH11



L Line

Final Measurement Results

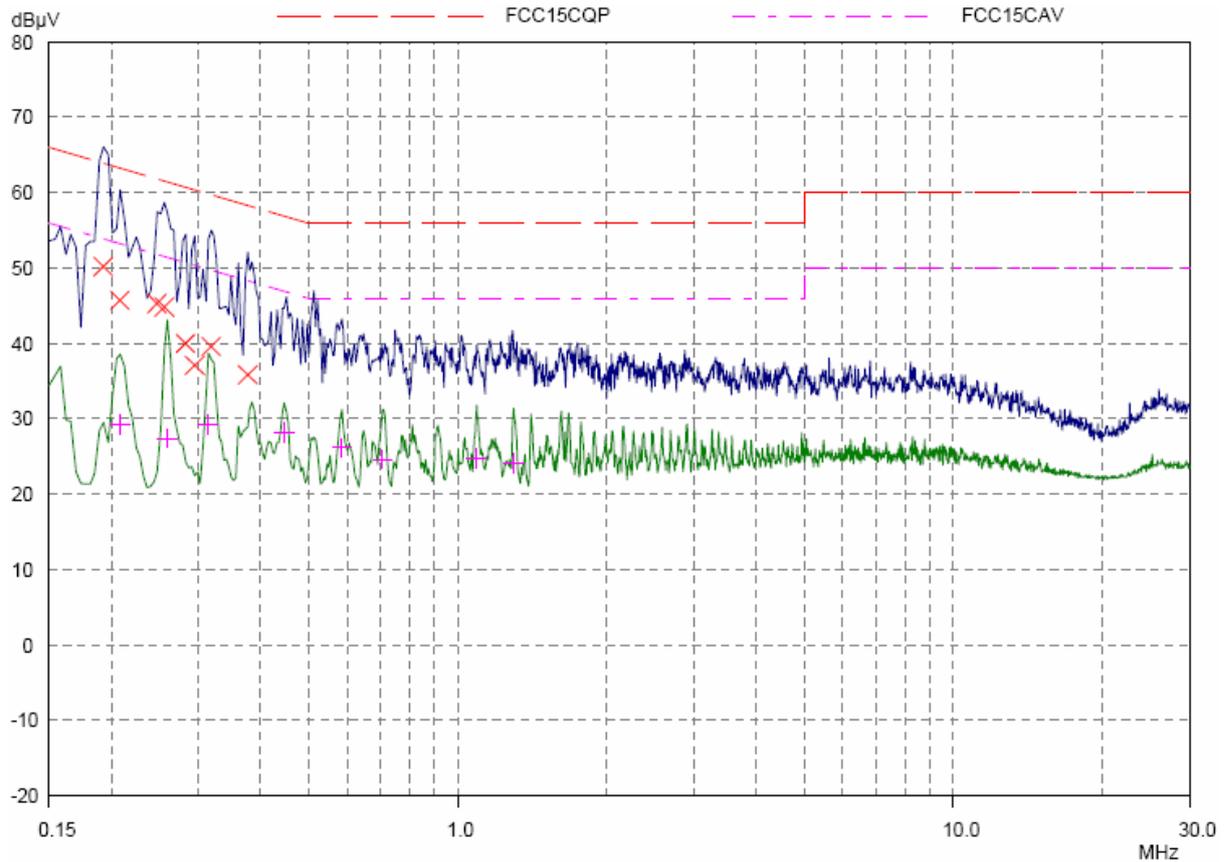
Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -
0.19687	53.69	63.74	10.05	L1
0.32578	43.95	59.56	15.61	L1
0.58359	34.12	56.00	21.88	L1
1.29453	32.75	56.00	23.25	L1
2.20078	31.10	56.00	24.90	L1
4.56406	29.97	56.00	26.03	L1
9.24375	27.39	60.00	32.61	L1

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -
0.26328	26.77	51.33	24.56	L1
0.32187	32.15	49.66	17.51	L1
0.7125	23.44	46.00	22.56	L1
1.43125	24.00	46.00	22.00	L1
2.14218	24.13	46.00	21.87	L1
4.18515	24.27	46.00	21.73	L1
8.30625	23.43	50.00	26.57	L1

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

Report No.: RHA1209-0083RF05R2

Page 122 of 145



N Line

Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.19296	50.22	63.91	13.69	N
0.20859	45.75	63.26	17.51	N
0.24765	45.29	61.84	16.55	N
0.25546	44.82	61.58	16.76	N
0.28281	39.98	60.73	20.75	N
0.29453	37.12	60.40	23.28	N
0.31796	39.60	59.76	20.16	N
0.37656	35.83	58.35	22.52	N

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.20859	29.26	53.26	24.00	N
0.25937	27.35	51.45	24.10	N
0.31406	29.23	49.86	20.63	N
0.44687	28.12	46.93	18.81	N
0.58359	26.20	46.00	19.80	N
0.70468	24.63	46.00	21.37	N
1.0914	24.76	46.00	21.24	N
1.29843	24.11	46.00	21.89	N

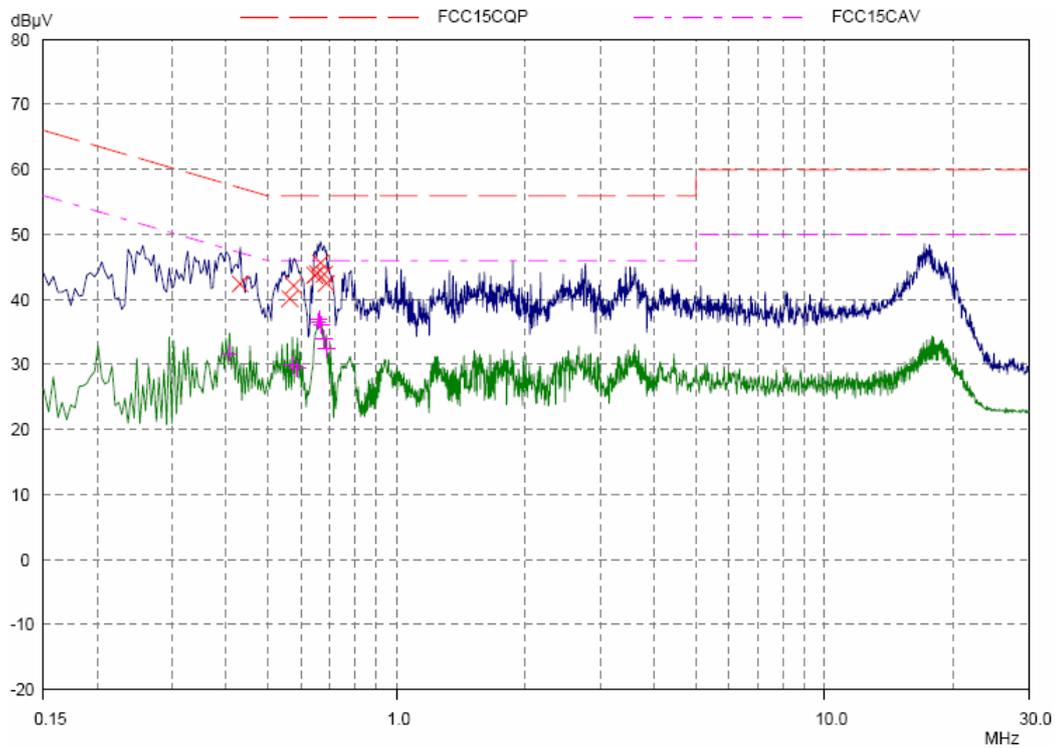
TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RHA1209-0083RF05R2

Page 123of 145

Adapter (TPAC41985003)

802.11b CH1



L Line

Final Measurement Results

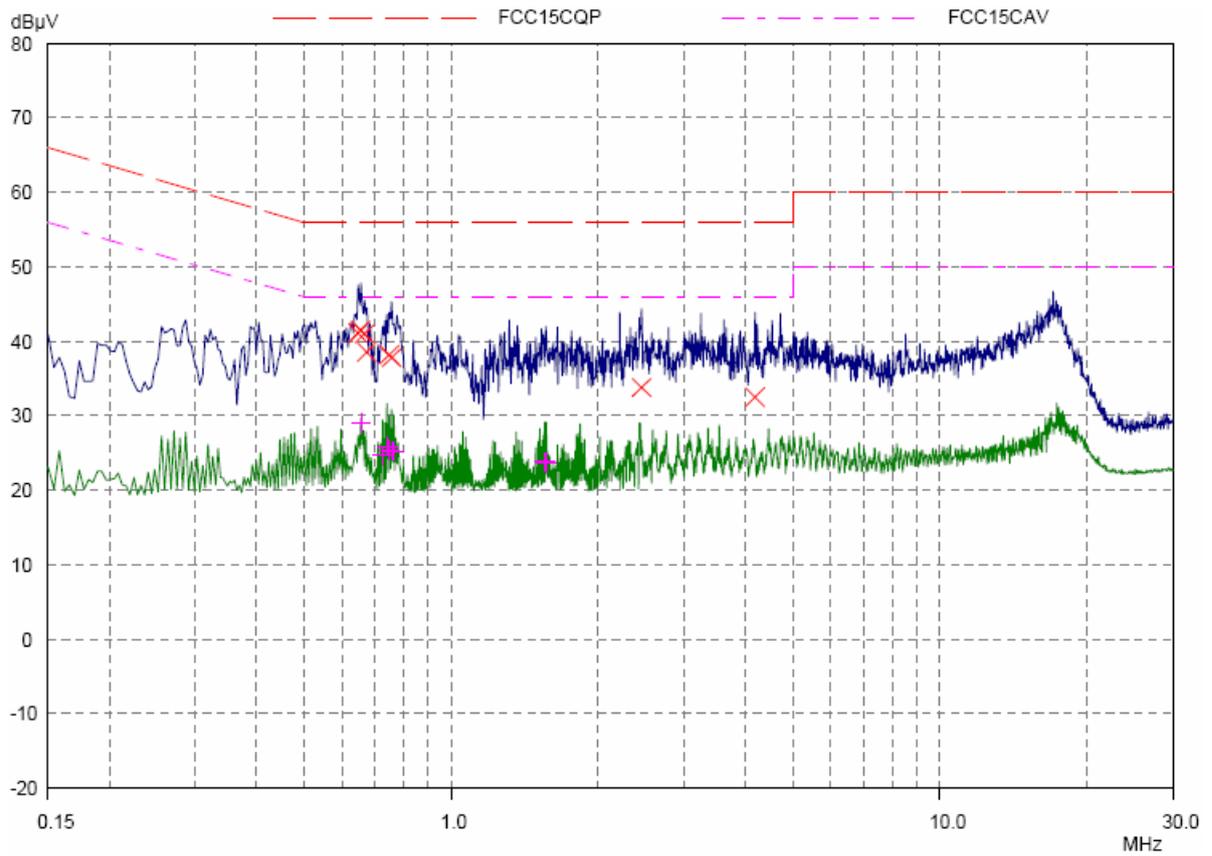
Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.43125	42.38	57.23	14.85	L1
0.56406	40.12	56.00	15.88	L1
0.57578	42.10	56.00	13.90	L1
0.64609	43.72	56.00	12.28	L1
0.6539	44.01	56.00	11.99	L1
0.66562	45.67	56.00	10.33	L1
0.67734	43.89	56.00	12.11	L1
0.68515	42.46	56.00	13.54	L1

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.40781	31.69	47.69	16.00	L1
0.57187	29.87	46.00	16.13	L1
0.5875	29.43	46.00	16.57	L1
0.6539	36.61	46.00	9.39	L1
0.66171	36.92	46.00	9.08	L1
0.66953	36.11	46.00	9.89	L1
0.67734	33.98	46.00	12.02	L1
0.68515	32.48	46.00	13.52	L1

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

Report No.: RHA1209-0083RF05R2

Page 124 of 145



N Line

Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -
0.64609	41.14	56.00	14.86	N
0.6539	41.45	56.00	14.55	N
0.66562	40.99	56.00	15.01	N
0.67343	38.55	56.00	17.45	N
0.74765	38.21	56.00	17.79	N
0.75546	37.78	56.00	18.22	N
2.45468	33.82	56.00	22.18	N
4.19296	32.51	56.00	23.49	N

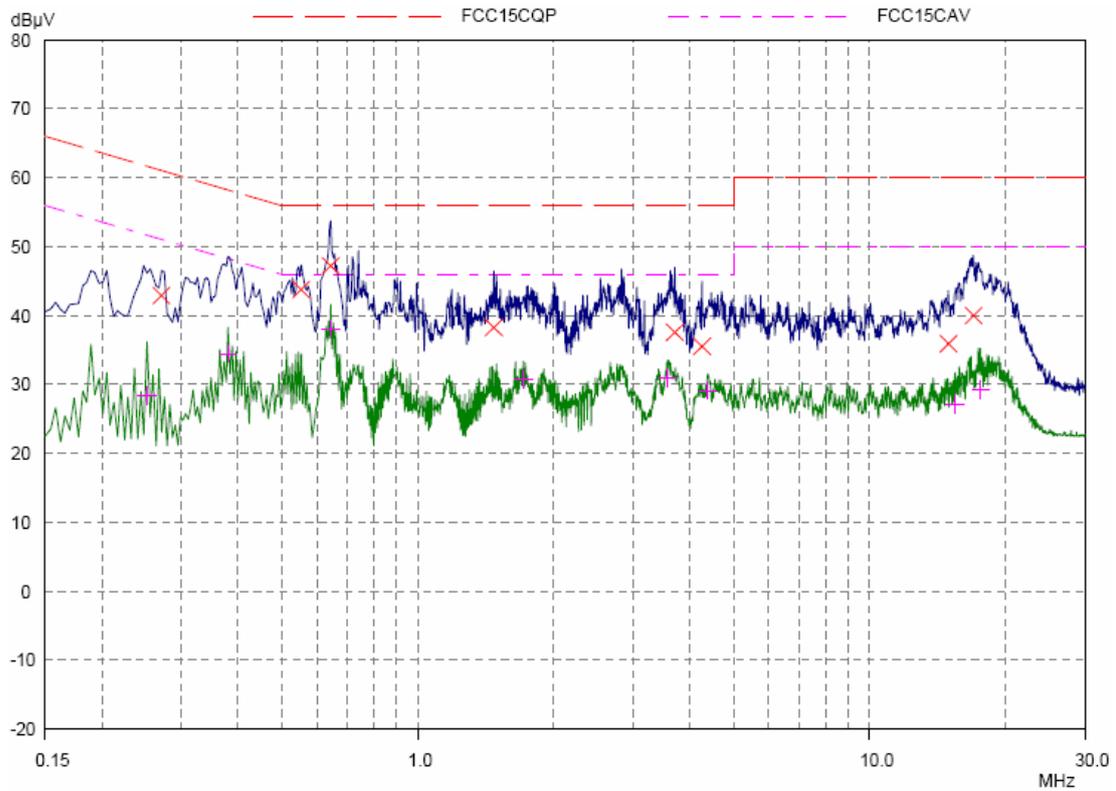
Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -
0.6539	29.03	46.00	16.97	N
0.72421	24.68	46.00	21.32	N
0.73984	25.95	46.00	20.05	N
0.74765	25.40	46.00	20.60	N
0.75546	25.24	46.00	20.76	N
0.76328	25.24	46.00	20.76	N
1.55234	23.87	46.00	22.13	N
1.56796	23.73	46.00	22.27	N

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

Report No.: RHA1209-0083RF05R2

Page 125of 145

802.11b CH6



L Line

Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.27109	42.91	61.08	18.17	L1
0.55234	43.79	56.00	12.21	L1
0.64218	47.22	56.00	8.78	L1
1.47421	38.25	56.00	17.75	L1
3.70859	37.57	56.00	18.43	L1
4.26328	35.52	56.00	20.48	L1
14.95078	35.90	60.00	24.10	L1
16.9664	40.02	60.00	19.98	L1

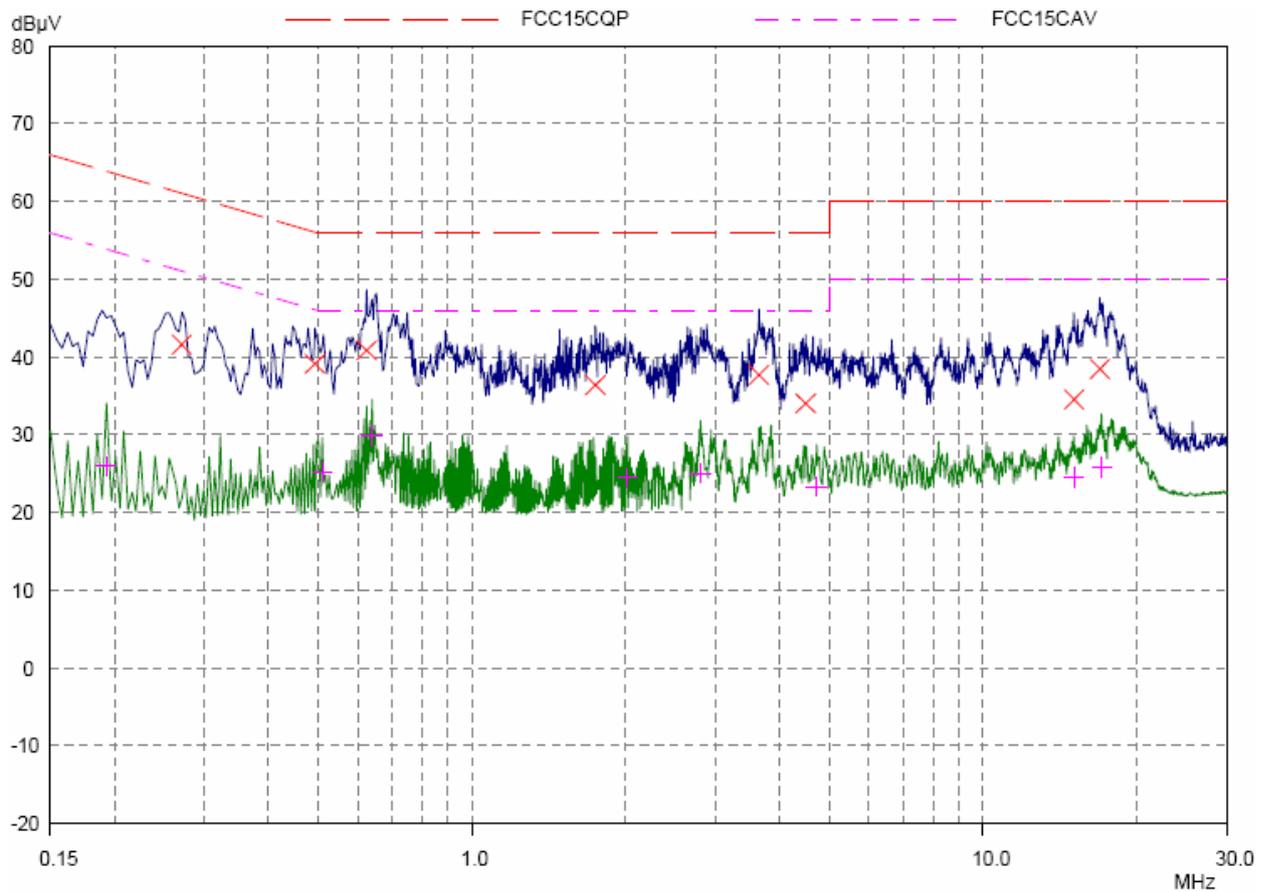
Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.25156	28.35	51.71	23.36	L1
0.38046	34.44	48.27	13.83	L1
0.64218	38.11	46.00	7.89	L1
1.7125	30.72	46.00	15.28	L1
3.57187	31.00	46.00	15.00	L1
4.39218	29.10	46.00	16.90	L1
15.45468	27.18	50.00	22.82	L1
17.61093	29.27	50.00	20.73	L1

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.: RHA1209-0083RF05R2

Page 126 of 145



N Line

Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.27109	41.61	61.08	19.47	N
0.49375	39.17	56.10	16.93	N
0.62265	40.88	56.00	15.12	N
1.74375	36.42	56.00	19.58	N
3.65	37.70	56.00	18.30	N
4.50156	34.04	56.00	21.96	N
15.06015	34.54	60.00	25.46	N
16.91562	38.48	60.00	21.52	N

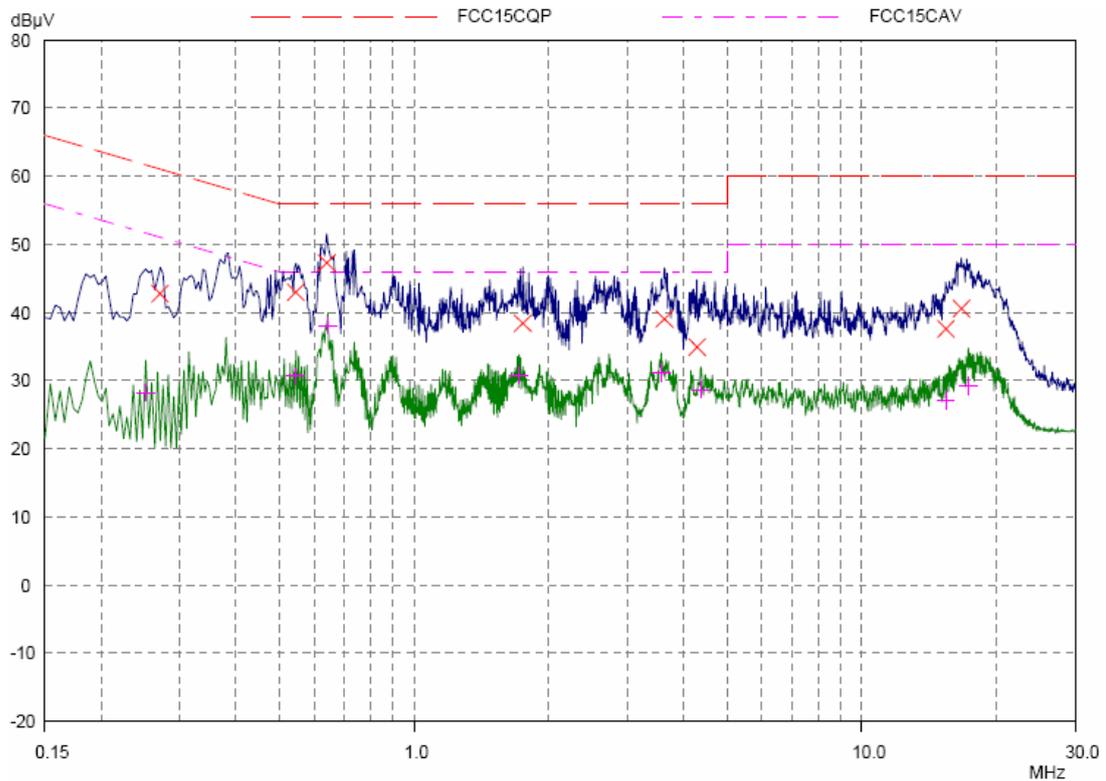
Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.19296	25.98	53.91	27.93	N
0.50937	25.25	46.00	20.75	N
0.63828	29.84	46.00	16.16	N
2.01718	24.49	46.00	21.51	N
2.80625	25.07	46.00	20.93	N
4.73593	23.36	46.00	22.64	N
15.08359	24.55	50.00	25.45	N
17.07187	25.84	50.00	24.16	N

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

Report No.: RHA1209-0083RF05R2

Page 127of 145

802.11b CH11



L Line

Final Measurement Results

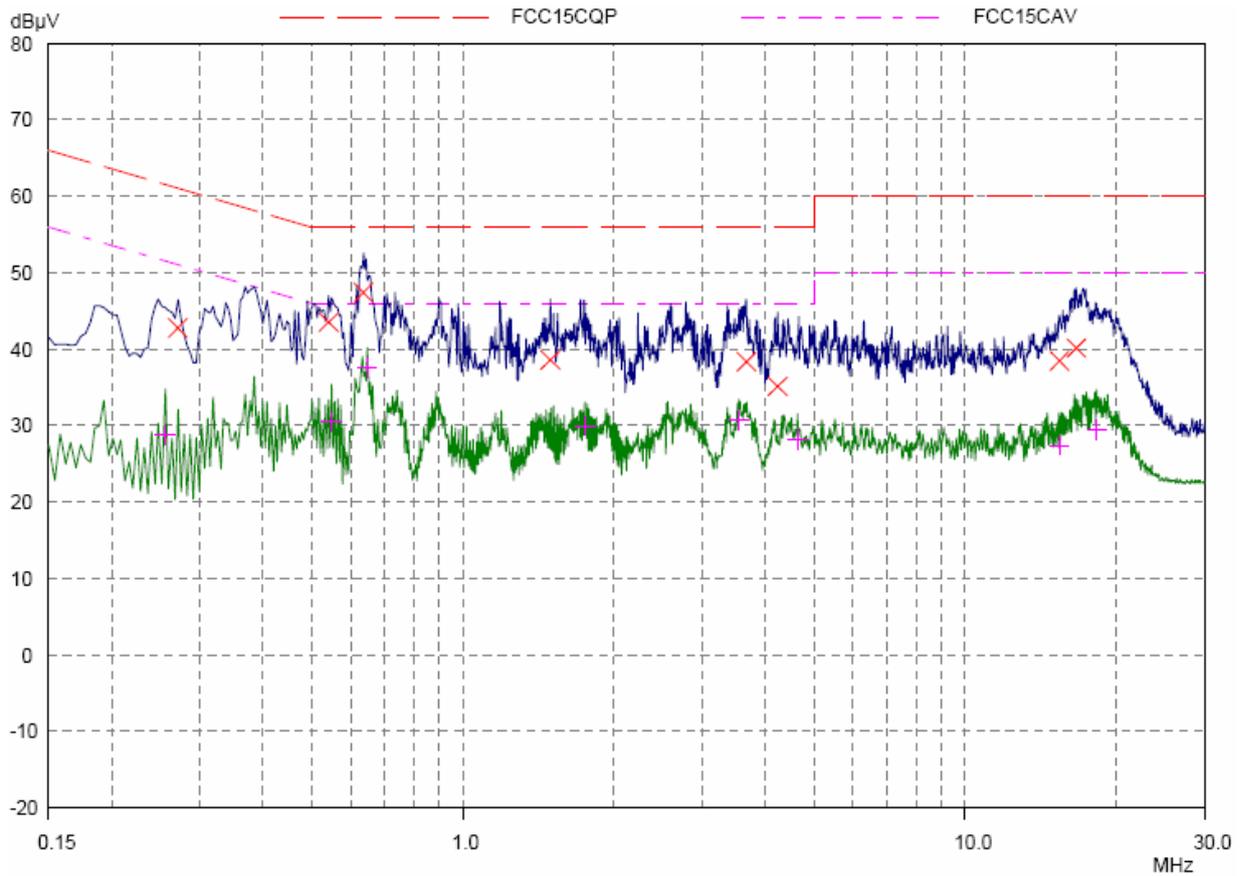
Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -
0.27109	42.77	61.08	18.31	L1
0.54453	42.95	56.00	13.05	L1
0.63828	47.28	56.00	8.72	L1
1.74765	38.44	56.00	17.56	L1
3.62265	39.04	56.00	16.96	L1
4.28671	34.95	56.00	21.05	L1
15.38828	37.62	60.00	22.38	L1
16.69687	40.59	60.00	19.41	L1

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -
0.25156	28.29	51.71	23.42	L1
0.54453	30.68	46.00	15.32	L1
0.64218	38.11	46.00	7.89	L1
1.7164	30.81	46.00	15.19	L1
3.56406	31.09	46.00	14.91	L1
4.36484	28.69	46.00	17.31	L1
15.38828	27.10	50.00	22.90	L1
17.29062	29.26	50.00	20.74	L1

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

Report No.: RHA1209-0083RF05R2

Page 128 of 145



N Line

Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.27109	42.79	61.08	18.29	N
0.54062	43.55	56.00	12.45	N
0.63437	47.42	56.00	8.58	N
1.49375	38.61	56.00	17.39	N
3.66562	38.34	56.00	17.66	N
4.23203	35.14	56.00	20.86	N
15.42343	38.48	60.00	21.52	N
16.62656	40.17	60.00	19.83	N

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.25546	28.73	51.58	22.85	N
0.54843	30.46	46.00	15.54	N
0.64609	37.57	46.00	8.43	N
1.75156	29.93	46.00	16.07	N
3.54453	30.76	46.00	15.24	N
4.64609	28.17	46.00	17.83	N
15.40781	27.35	50.00	22.65	N
18.28281	29.48	50.00	20.52	N

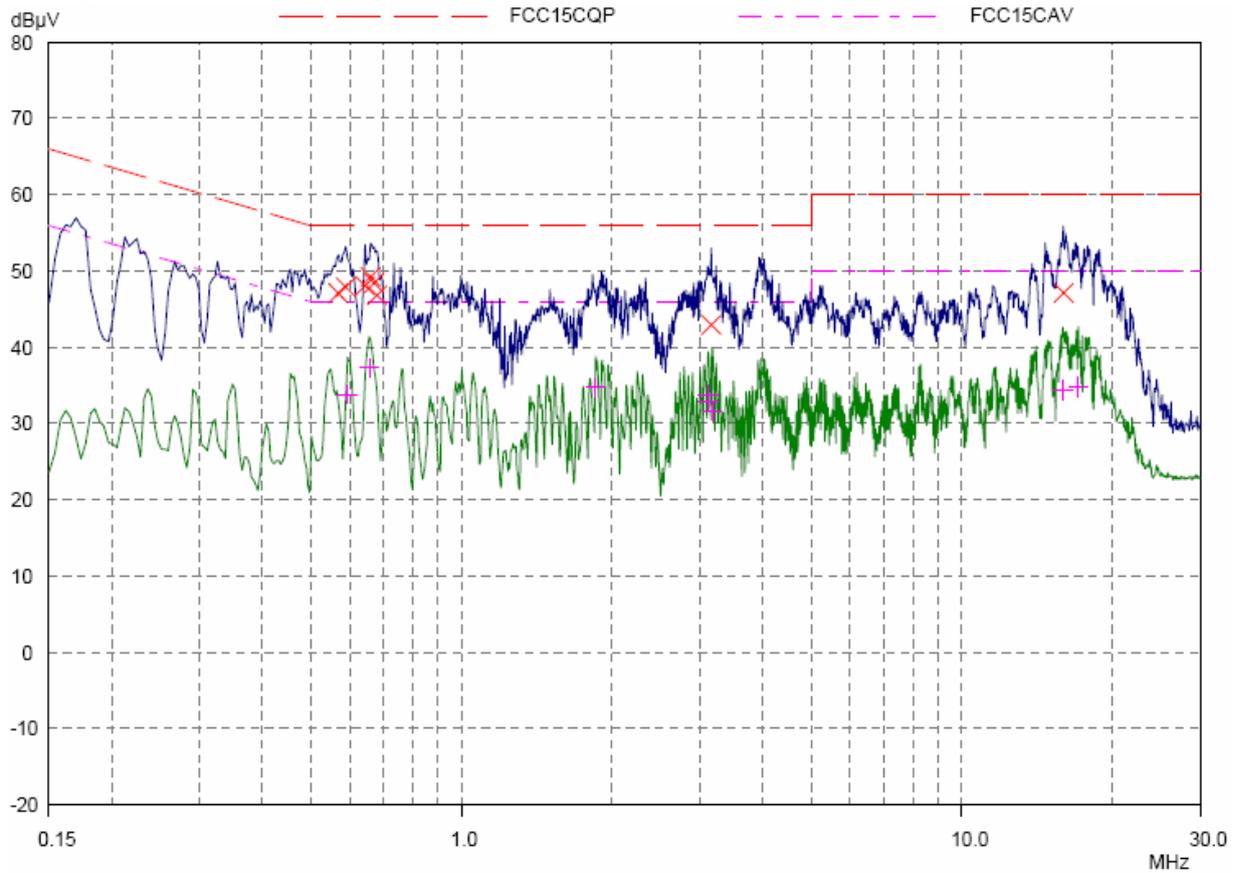
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.: RHA1209-0083RF05R2

Page 129of 145

802.11g CH1



L Line

Final Measurement Results

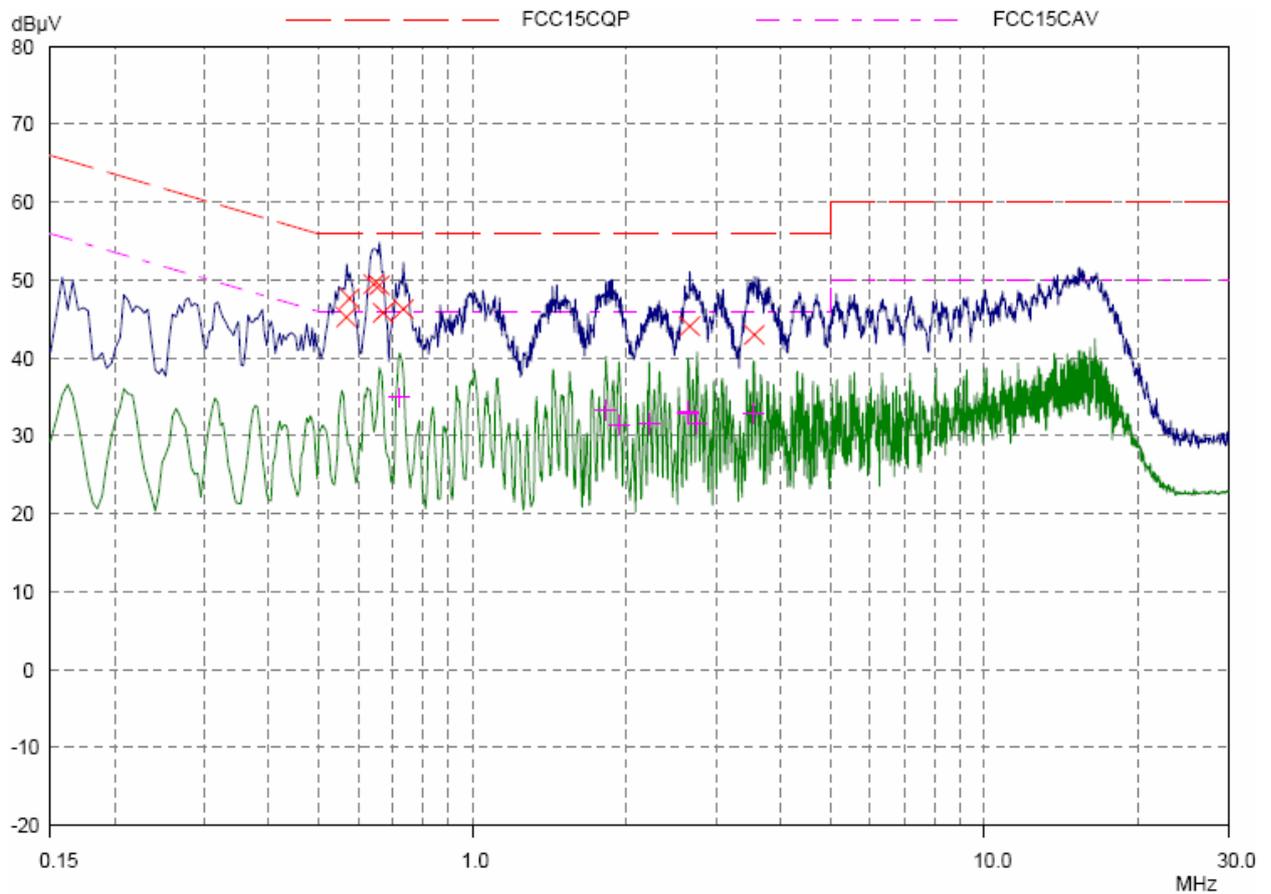
Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -
0.56796	47.10	56.00	8.90	L1
0.5875	47.87	56.00	8.13	L1
0.64218	48.06	56.00	7.94	L1
0.65781	49.27	56.00	6.73	L1
0.66953	48.43	56.00	7.57	L1
0.67734	46.85	56.00	9.15	L1
3.15781	42.94	56.00	13.06	L1
15.98203	47.16	60.00	12.84	L1

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -
0.5914	33.84	46.00	12.16	L1
0.6539	37.34	46.00	8.66	L1
1.85703	34.75	46.00	11.25	L1
3.11484	33.81	46.00	12.19	L1
3.12265	33.00	46.00	13.00	L1
3.17343	31.62	46.00	14.38	L1
15.92343	34.39	50.00	15.61	L1
17.09921	34.79	50.00	15.21	L1

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

Report No.: RHA1209-0083RF05R2

Page 130 of 145



N Line

Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.56796	45.28	56.00	10.72	N
0.57578	47.64	56.00	8.36	N
0.64218	49.48	56.00	6.52	N
0.65781	49.33	56.00	6.67	N
0.66953	45.79	56.00	10.21	N
0.73203	46.27	56.00	9.73	N
2.66171	44.06	56.00	11.94	N
3.55625	42.97	56.00	13.03	N

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.72031	34.97	46.00	11.03	N
1.82578	33.33	46.00	12.67	N
1.93125	31.49	46.00	14.51	N
2.2125	31.63	46.00	14.37	N
2.63828	33.13	46.00	12.87	N
2.64609	32.99	46.00	13.01	N
2.75156	31.63	46.00	14.37	N
3.54453	32.85	46.00	13.15	N

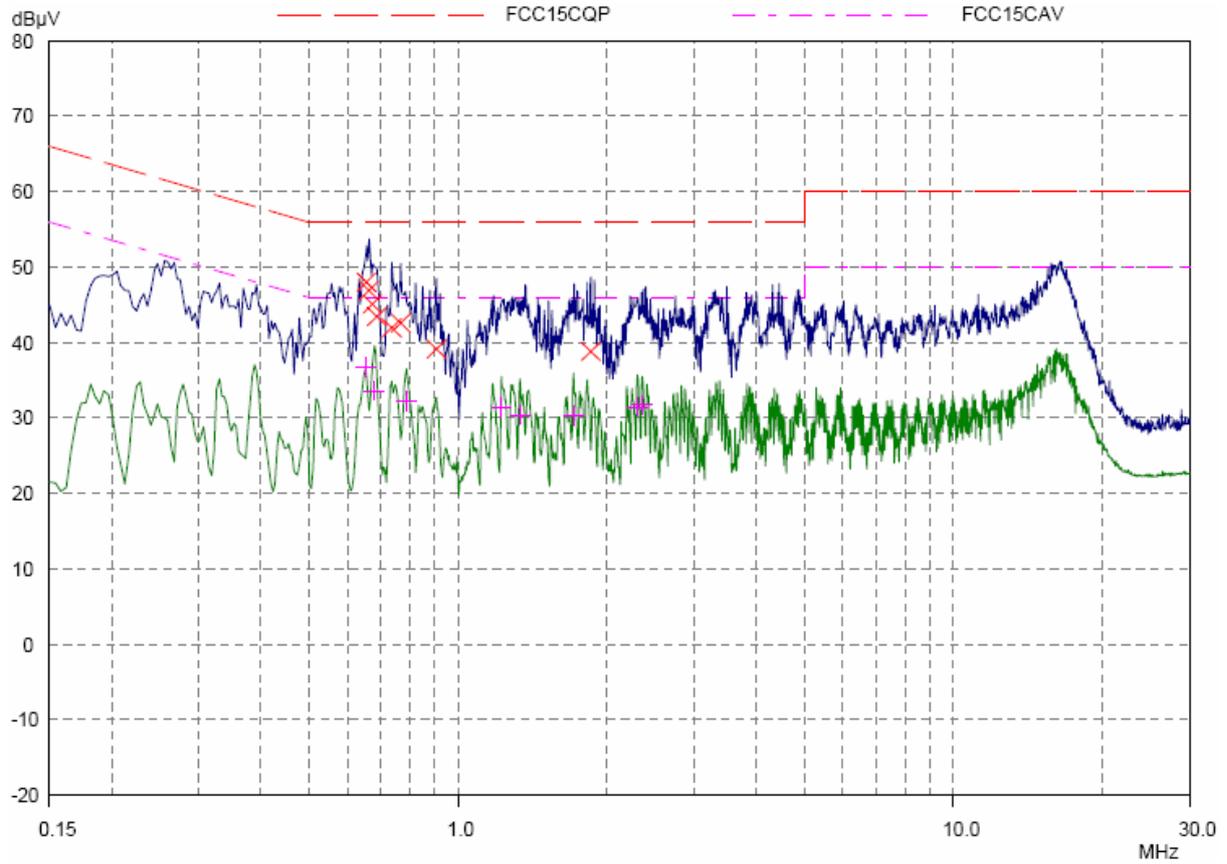
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.: RHA1209-0083RF05R2

Page 131 of 145

802.11g CH6



L Line

Final Measurement Results

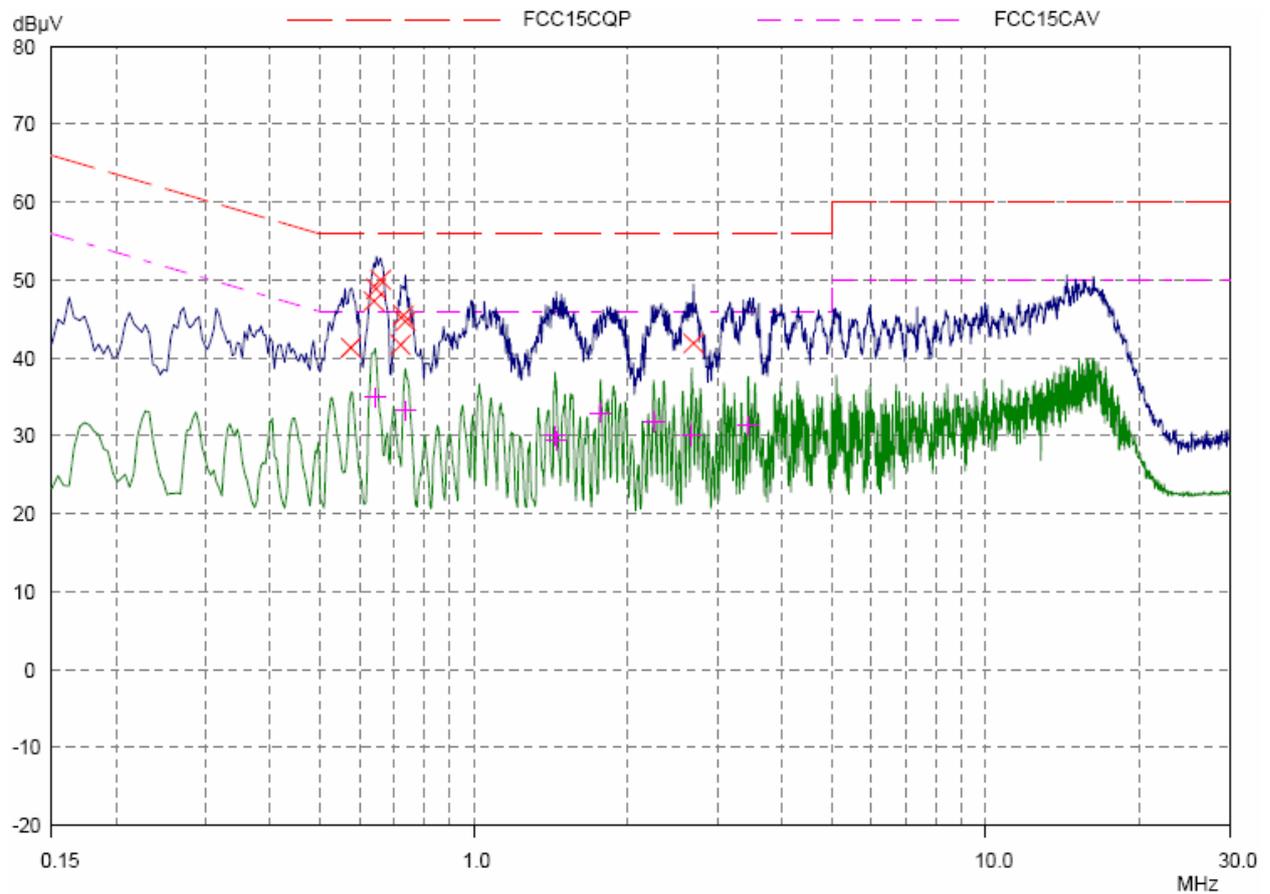
Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -
0.6539	47.97	56.00	8.03	L1
0.66171	46.91	56.00	9.09	L1
0.67343	45.09	56.00	10.91	L1
0.68515	43.48	56.00	12.52	L1
0.73593	41.97	56.00	14.03	L1
0.76718	42.62	56.00	13.38	L1
0.9039	39.11	56.00	16.89	L1
1.85703	38.82	56.00	17.18	L1

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -
0.65	36.66	46.00	9.34	L1
0.67734	33.54	46.00	12.46	L1
0.78671	32.20	46.00	13.80	L1
1.22421	31.36	46.00	14.64	L1
1.33359	30.42	46.00	15.58	L1
1.7125	30.31	46.00	15.69	L1
2.30234	31.47	46.00	14.53	L1
2.35312	31.73	46.00	14.27	L1

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

Report No.: RHA1209-0083RF05R2

Page 132 of 145



N Line

Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.57578	41.32	56.00	14.68	N
0.63828	47.32	56.00	8.68	N
0.64609	48.90	56.00	7.10	N
0.65781	50.05	56.00	5.95	N
0.72031	41.69	56.00	14.31	N
0.72812	45.47	56.00	10.53	N
0.73593	44.69	56.00	11.31	N
2.68906	41.86	56.00	14.14	N

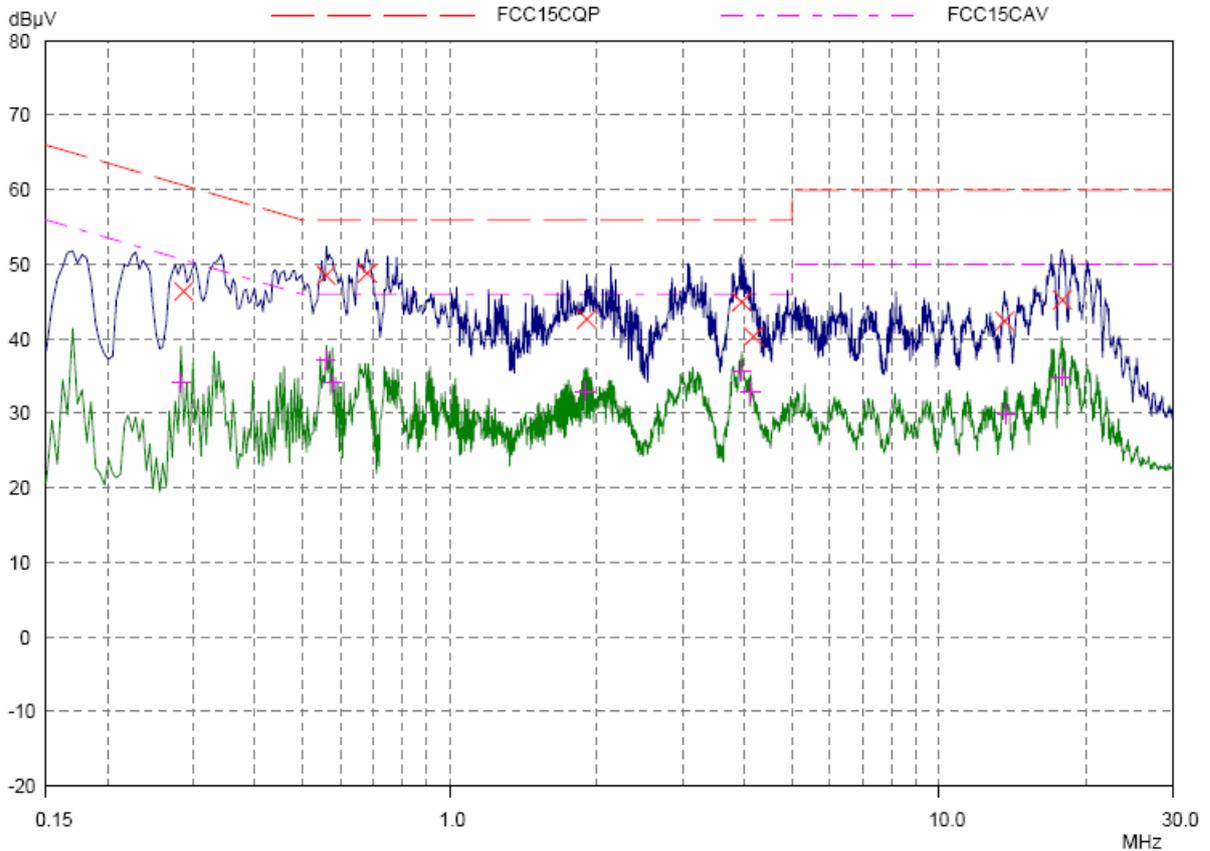
Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.64218	34.94	46.00	11.06	N
0.73593	33.18	46.00	12.82	N
1.44296	29.97	46.00	16.03	N
1.45078	29.36	46.00	16.64	N
1.77109	32.98	46.00	13.02	N
2.24765	31.80	46.00	14.20	N
2.66562	30.14	46.00	15.86	N
3.43906	31.33	46.00	14.67	N

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

Report No.: RHA1209-0083RF05R2

Page 133of 145

802.11g CH11



L Line

Final Measurement Results

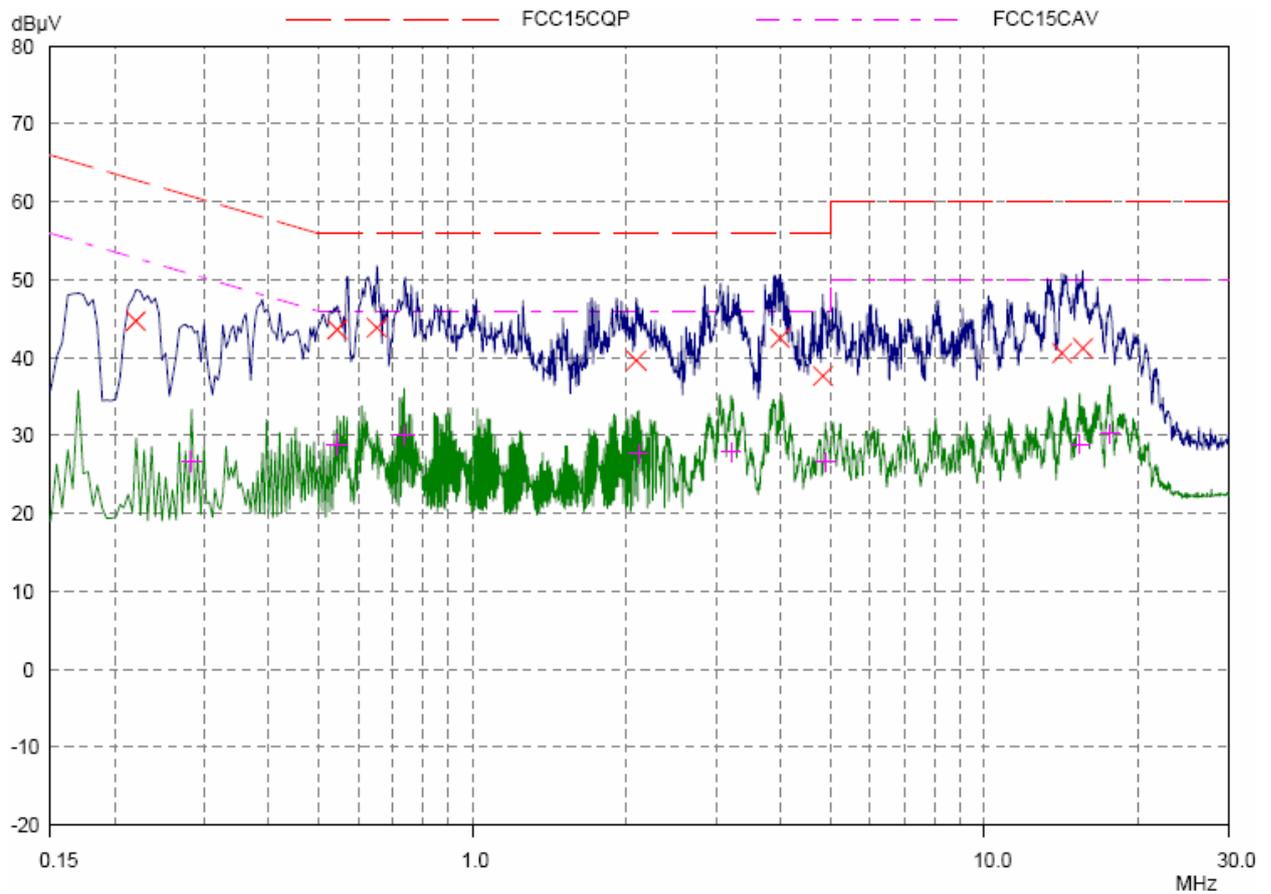
Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.28671	46.35	60.62	14.27	L1
0.56015	48.52	56.00	7.48	L1
0.67734	48.77	56.00	7.23	L1
1.90781	42.63	56.00	13.37	L1
3.94687	44.97	56.00	11.03	L1
4.17342	40.29	56.00	15.71	L1
13.60312	42.38	60.00	17.62	L1
17.86093	45.21	60.00	14.79	L1

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.28281	34.24	50.73	16.49	L1
0.56015	37.14	46.00	8.86	L1
0.57578	34.13	46.00	11.87	L1
1.89609	32.93	46.00	13.07	L1
3.95468	35.65	46.00	10.35	L1
4.11484	32.88	46.00	13.12	L1
13.76718	29.86	50.00	20.14	L1
17.79062	34.89	50.00	15.11	L1

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

Report No.: RHA1209-0083RF05R2

Page 134 of 145



N Line

Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.22031	44.72	62.81	18.09	N
0.54453	43.63	56.00	12.37	N
0.65	43.87	56.00	12.13	N
2.0914	39.64	56.00	16.36	N
3.98593	42.54	56.00	13.46	N
4.8375	37.64	56.00	18.36	N
14.17734	40.59	60.00	19.41	N
15.55625	41.22	60.00	18.78	N

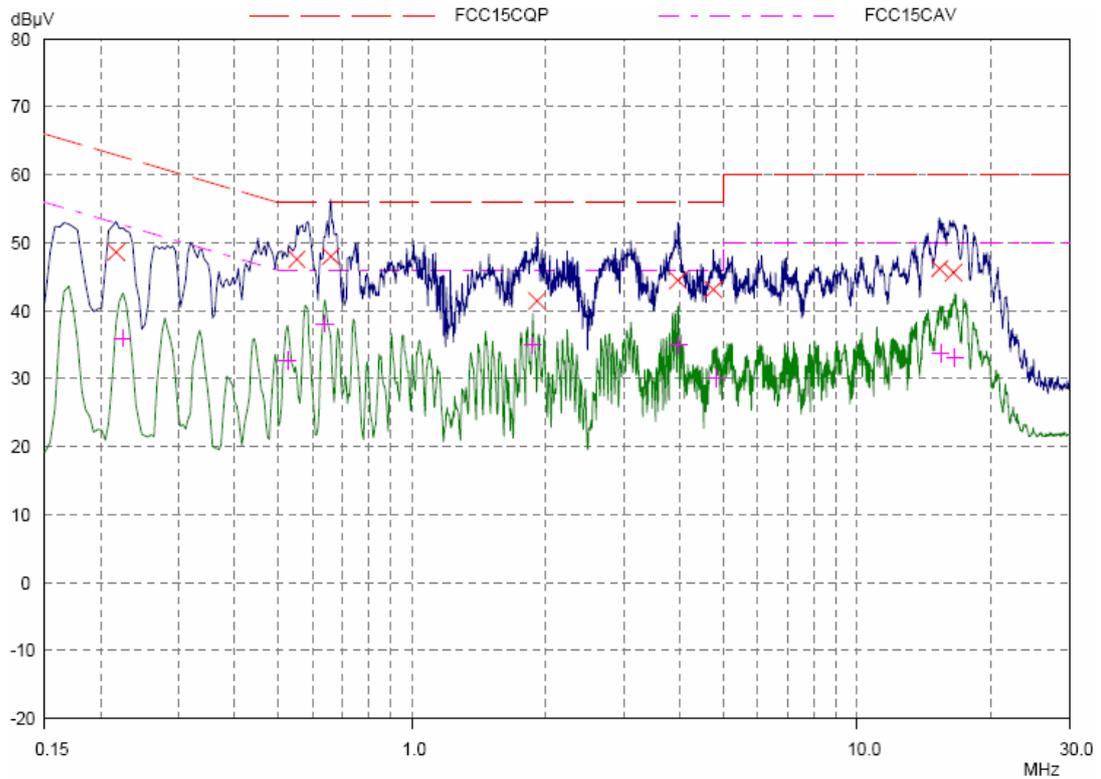
Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.28281	26.66	50.73	24.07	N
0.54453	28.83	46.00	17.17	N
0.73593	30.01	46.00	15.99	N
2.11093	27.62	46.00	18.38	N
3.19687	27.94	46.00	18.06	N
4.89218	26.60	46.00	19.40	N
15.35703	28.91	50.00	21.09	N
17.59531	30.27	50.00	19.73	N

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

Report No.: RHA1209-0083RF05R2

Page 135of 145

802.11n CH1



L Line

Final Measurement Results

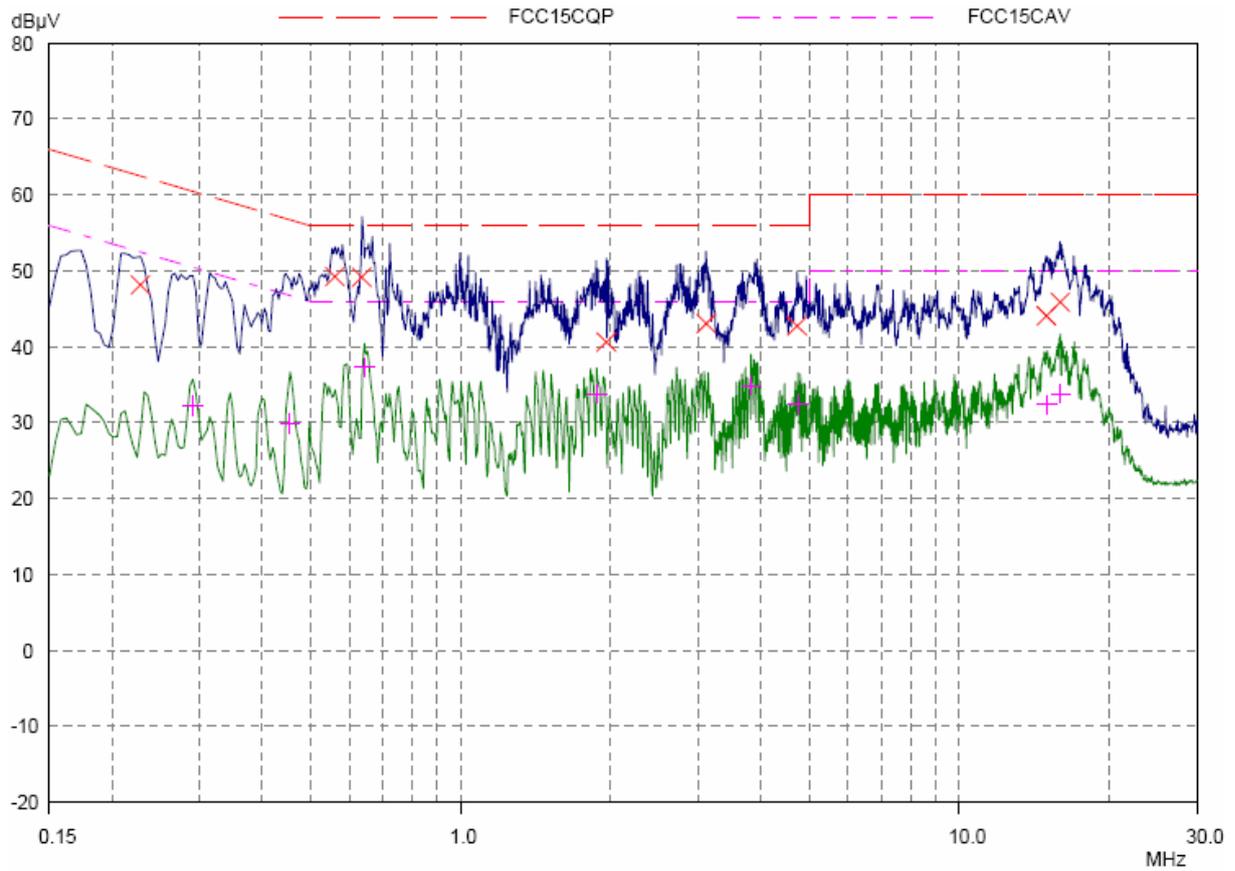
Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -
0.2164	48.63	62.96	14.33	L1
0.55234	47.57	56.00	8.43	L1
0.65781	48.03	56.00	7.97	L1
1.91171	41.45	56.00	14.55	L1
3.9625	44.47	56.00	11.53	L1
4.75156	43.14	56.00	12.86	L1
15.31406	46.19	60.00	13.81	L1
16.47421	45.60	60.00	14.40	L1

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -
0.22421	35.98	52.66	16.68	L1
0.525	32.70	46.00	13.30	L1
0.63828	38.11	46.00	7.89	L1
1.86875	34.92	46.00	11.08	L1
3.9625	34.93	46.00	11.07	L1
4.8375	30.15	46.00	15.85	L1
15.41562	33.69	50.00	16.31	L1
16.58359	33.07	50.00	16.93	L1

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

Report No.: RHA1209-0083RF05R2

Page 136 of 145



N Line

Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.22812	48.19	62.52	14.33	N
0.56015	49.28	56.00	6.72	N
0.63437	49.18	56.00	6.82	N
1.95859	40.60	56.00	15.40	N
3.10703	43.05	56.00	12.95	N
4.73593	42.74	56.00	13.26	N
14.94687	44.10	60.00	15.90	N
15.93515	45.90	60.00	14.10	N

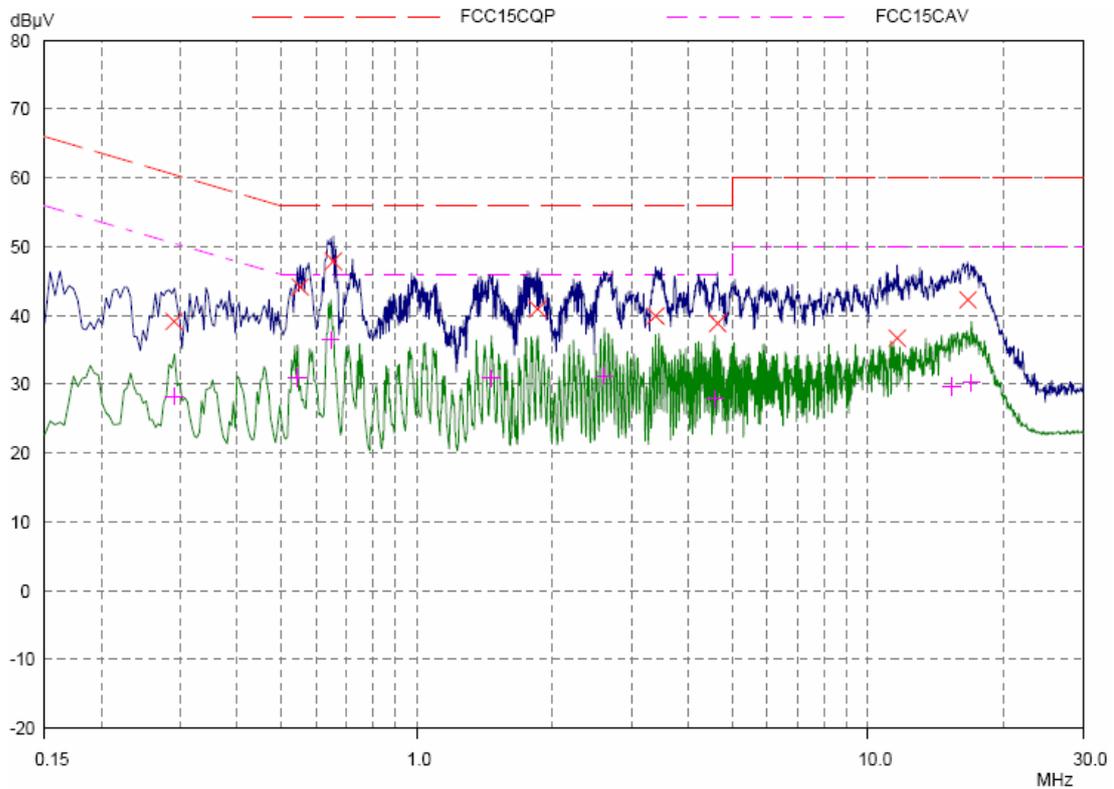
Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.29062	32.19	50.51	18.32	N
0.45468	29.91	46.79	16.88	N
0.64218	37.33	46.00	8.67	N
1.87656	33.79	46.00	12.21	N
3.82578	34.91	46.00	11.09	N
4.74375	32.45	46.00	13.55	N
15.03671	32.35	50.00	17.65	N
15.98593	33.86	50.00	16.14	N

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

Report No.: RHA1209-0083RF05R2

Page 137of 145

802.11n CH6



L Line

Final Measurement Results

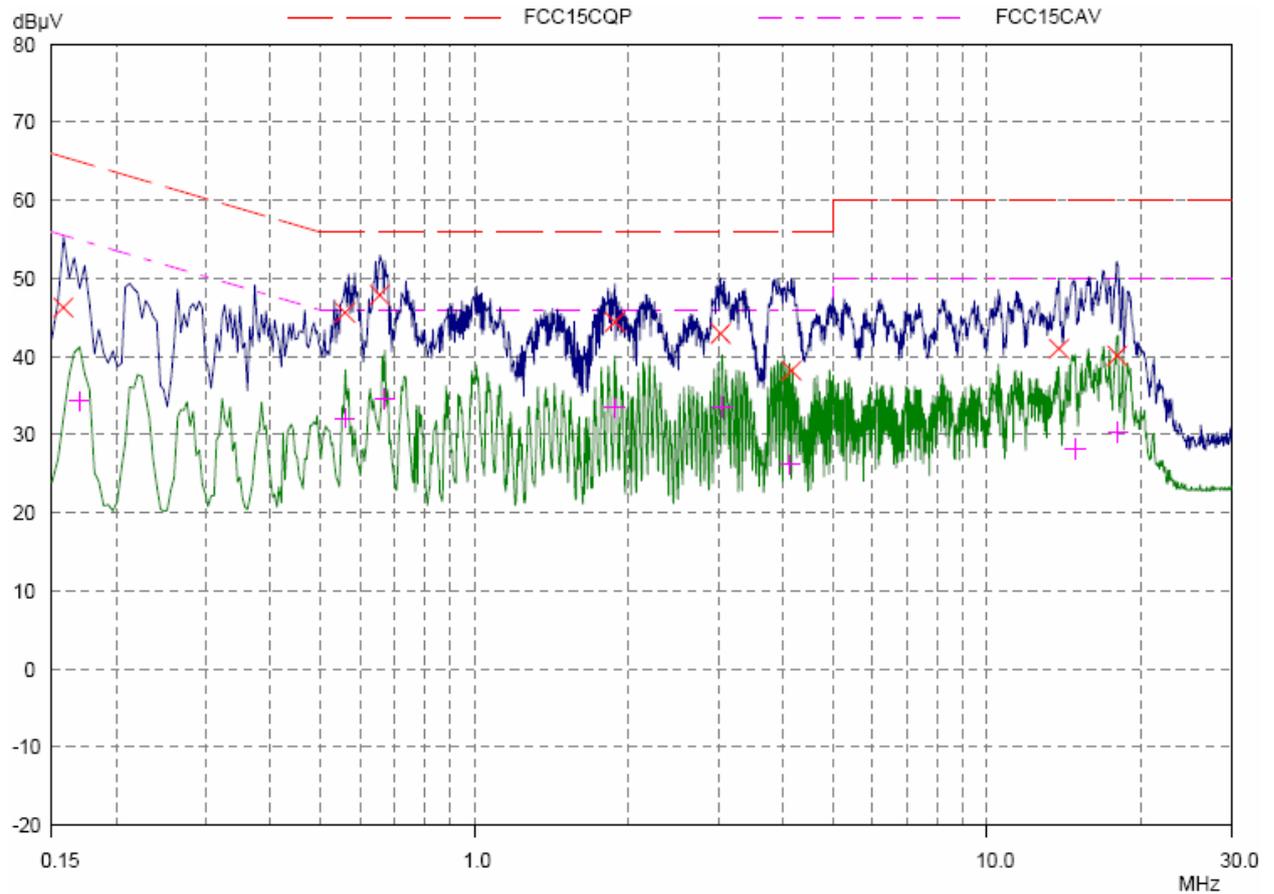
Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -
0.29062	39.15	60.51	21.36	L1
0.55234	44.19	56.00	11.81	L1
0.6539	47.87	56.00	8.13	L1
1.85703	40.96	56.00	15.04	L1
3.38828	39.94	56.00	16.06	L1
4.64609	38.86	56.00	17.14	L1
11.61093	36.68	60.00	23.32	L1
16.63046	42.31	60.00	17.69	L1

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -
0.29062	28.23	50.51	22.28	L1
0.54453	31.03	46.00	14.97	L1
0.64609	36.47	46.00	9.53	L1
1.4664	30.90	46.00	15.10	L1
2.60703	31.28	46.00	14.72	L1
4.5875	27.90	46.00	18.10	L1
15.32187	29.63	50.00	20.37	L1
16.97031	30.25	50.00	19.75	L1

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

Report No.: RHA1209-0083RF05R2

Page 138of 145



N Line

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.15781	46.29	65.58	19.29	N
0.56015	45.66	56.00	10.34	N
0.6539	47.89	56.00	8.11	N
1.88046	44.42	56.00	11.58	N
3.02109	42.94	56.00	13.06	N
4.1539	38.22	56.00	17.78	N
13.8375	41.01	60.00	18.99	N
17.9664	40.11	60.00	19.89	N

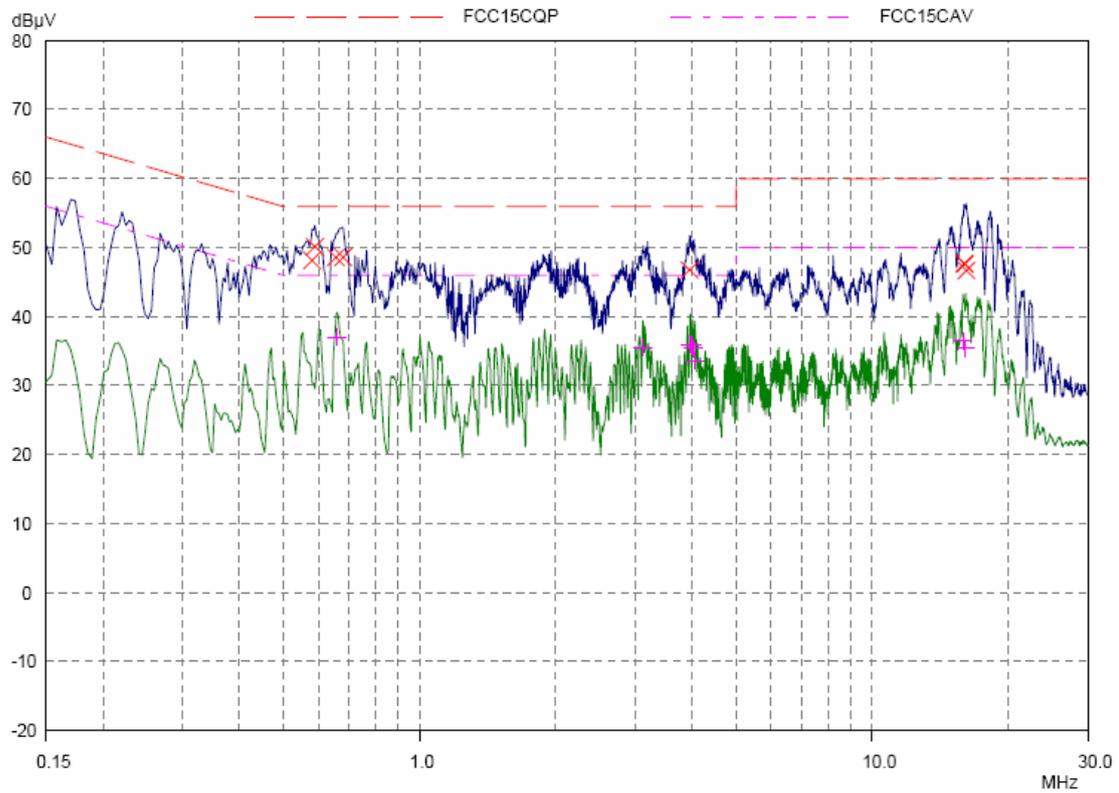
Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.16953	34.29	54.98	20.69	N
0.56015	32.14	46.00	13.86	N
0.66953	34.62	46.00	11.38	N
1.88046	33.41	46.00	12.59	N
3.04843	33.47	46.00	12.53	N
4.12265	26.17	46.00	19.83	N
14.87656	28.17	50.00	21.83	N
18.0289	30.34	50.00	19.66	N

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

Report No.: RHA1209-0083RF05R2

Page 139of 145

802.11n CH11



L Line

Final Measurement Results

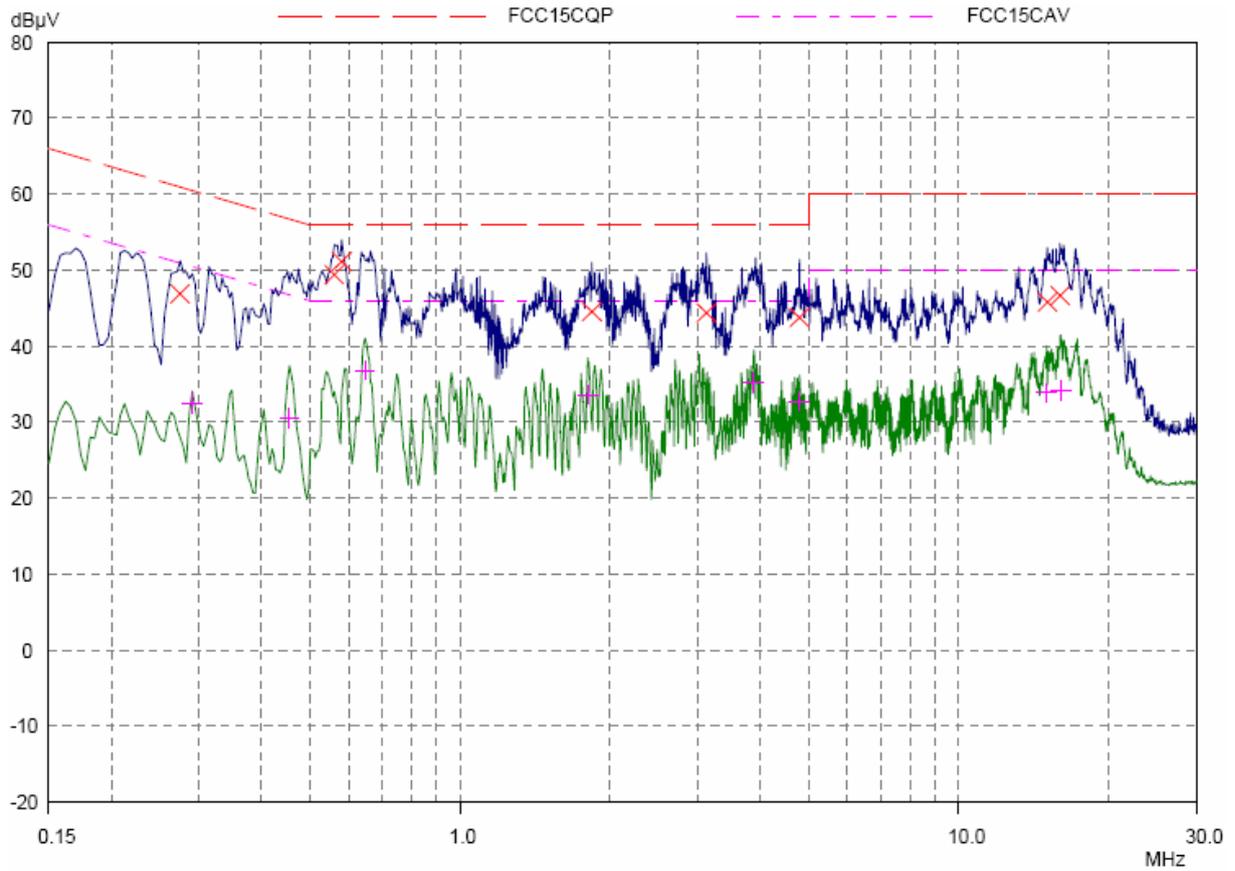
Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -
0.57968	48.12	56.00	7.88	L1
0.5875	50.13	56.00	5.87	L1
0.6539	48.57	56.00	7.43	L1
0.67734	48.59	56.00	7.41	L1
3.95078	46.77	56.00	9.23	L1
15.95859	47.68	60.00	12.32	L1
16.03281	47.60	60.00	12.40	L1
16.15781	46.65	60.00	13.35	L1

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -
0.65781	37.00	46.00	9.00	L1
3.11484	35.51	46.00	10.49	L1
3.95859	35.92	46.00	10.08	L1
4.00936	35.87	46.00	10.13	L1
4.02109	35.39	46.00	10.61	L1
4.06405	33.64	46.00	12.36	L1
15.87265	36.46	50.00	13.54	L1
16.0914	35.37	50.00	14.63	L1

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

Report No.: RHA1209-0083RF05R2

Page 140 of 145



N Line

Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.275	46.93	60.97	14.04	N
0.56015	49.42	56.00	6.58	N
0.57968	51.12	56.00	4.88	N
1.8414	44.55	56.00	11.45	N
3.12265	44.39	56.00	11.61	N
4.79453	43.75	56.00	12.25	N
15.06406	45.80	60.00	14.20	N
15.98984	46.68	60.00	13.32	N

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.29062	32.48	50.51	18.03	N
0.45468	30.47	46.79	16.32	N
0.64609	36.82	46.00	9.18	N
1.80625	33.59	46.00	12.41	N
3.88828	35.21	46.00	10.79	N
4.80234	32.76	46.00	13.24	N
15.03671	33.90	50.00	16.10	N
16.02109	34.24	50.00	15.76	N

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

Report No.: RHA1209-0083RF05R2

Page 141 of 145

2. Main Test Instruments

No.	Name	Type	Manufacturer	Serial Number	Calibration Date	Valid Period
01	EMI Test Receiver	ESCI	R&S	100948	2012-06-30	One year
02	TRILOG Broadband Antenna	VULB 9163	Schwarzbeck	9163-201	2010-06-20	Three years
03	Double Ridged Waveguide Horn Antenna	HF907	R&S	100126	2012-07-02	Three years
04	EMI Test Receiver	ESCS30	R&S	100138	2012-01-16	One year
05	LISN	ENV216	R&S	101171	2010-04-16	Three years
06	PSG Analog Signal Generator	E8257D	Agilent	MY49281101	2012-06-30	One year
07	ESG Vector Signal Generator	E4438C	Agilent	MY49070900	2012-06-30	One year
08	Spectrum Analyzer	E4445A	Agilent	MY46181146	2012-06-30	One year
09	Power Splitter	SHX-GF2-2-13	Hua Xiang	10120101	NA	NA
10	MOB COMMS DC SUPPLY	66319D	Agilent	MY43004105	2012-06-30	One year
11	Peak Power Analyzer	8990B	Agilent	51000109	2012-06-01	One year
12	Wideband Power Sensors	N1923A	Agilent	MY51220004	2012-06-01	One year
13	Universal Radio Communication Tester	E5515C	Agilent	MY48367192	2012-06-30	One year

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