



Part 15C

TEST REPORT

Product Name	Tablet PC
Model	R8
FCC ID	NV8-R8
Client	Estone Technology Inc

TA Technology (Shanghai) Co., Ltd.

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

Report No.: RXC1209-0833RF02R3

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GENERAL SUMMARY

Product Name	Tablet PC	Model	R8
FCC ID	NV8-R8	Report No.	RXC1209-0833RF02R3
Client	Estone Technology Inc		
Manufacturer	Shenzhenshi ChuangZhiCheng Technology Co., Ltd Manufacturing Center		
Reference Standard(s)	FCC CFR47 Part 15C (2012-12) Radio Frequency Devices 15.205 Restricted bands of operation; 15.207 Conducted limits; 15.209 Radiated emission limits; general requirements; 15.247 Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850MHz. ANSI C63.4 Methods of Measurement of Radio-Noise Emission from Low-Voltage Electrical and Electronic Equipment in the Range of 9 KHz to 40GHz. (2009) KDB 558074 D01 DTS Meas Guidance v02 Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247		
Conclusion	This portable wireless equipment has been measured in all cases requested by the relevant standards. Test results in Chapter 2 of this test report are below limits specified in the relevant standards. General Judgment: Pass  (Stamp) Date of issue: December 21st, 2012		
Comment	The test result only responds to the measured sample.		

Approved by 杨伟中
Director

Revised by 徐凯
RF Manager

Performed by 王峰
RF Engineer

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1. General Information

1.1. Notes of the test report

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

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

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

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

1.2. Testing laboratory

Company:	TA Technology (Shanghai) Co., Ltd.
Registration Number:	428261
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

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1.3. Applicant Information

Company: Estone Technology Inc
Address: 3324 secor road #8, Toledo, OH 43606
City: Toledo
Postal Code: /
Country: America

1.4. Manufacturer Information

Company: Shenzhenshi ChuangZhiCheng Technology Co., Ltd Manufacturing Center
Address: 3F, Block A2, A3, Beida Funder Hi-tech park, Songbai Road, ShiyangStreet, Baoan District, Shenzhen
City: Shenzhen
Postal Code: 518000
Country: China

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1.5. Information of EUT

General information

Name of EUT:	Tablet PC
IMEI:	CZC1270024570006
Hardware Version:	VerD
Software Version:	R802R007
Antenna Type:	Internal Antenna
Device Operating Configurations:	
Network Standards:	802.11b, 802.11g, 802.11n(HT20/HT40); (tested)
Test Modulation:	(802.11b)DSSS; (802.11g)OFDM
Power Supply:	Battery or Adapter
Max Conducted Power	16.57 dBm
Operating Frequency Range(s)	2400MHz~ 2483.5 MHz

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Auxiliary Equipment Details

AE2: Adapter

Model:	HKA03619021-6C
Manufacturer:	/
S/N:	A36B4211C000451

Equipment Under Test (EUT) is Tablet PC. The detail about these is in chapter 1.5 in this report. The EUT supports WiFi.

The sample under test was selected by the Client.

Components list please refer to documents of the manufacturer.

1.6. Test Date

The test is performed from October 26, 2012 to November 15, 2012.

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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

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2.2. Peak Power Output –Conducted

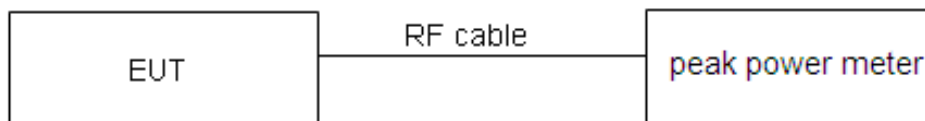
Ambient condition

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)
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Measurement Uncertainty

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

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Test Results: Pass

Network Standards	Data Rate	Peak Output Power (dBm)		
		CH 1	CH 6	CH 11
802.11b	1 Mbps	11.72	11.96	12.58
	2 Mbps	11.86	11.99	12.57
	5.5 Mbps	11.83	11.98	12.62
	11 Mbps	11.87	12.03	12.68
802.11g	6 Mbps	15.78	15.88	16.57
	9 Mbps	15.77	15.86	16.55
	12 Mbps	15.65	15.86	16.55
	18 Mbps	14.77	15.00	15.70
	24 Mbps	14.68	14.87	15.48
	36 Mbps	13.64	13.91	14.51
	48 Mbps	13.61	13.87	14.46
	54 Mbps	12.79	13.04	13.73
802.11n HT20	MCS0	14.90	15.22	15.90
	MCS1	14.10	14.45	15.03
	MCS2	14.17	14.80	15.12
	MCS3	12.33	13.01	13.33
	MCS4	12.29	12.82	13.25
	MCS5	11.32	11.77	12.30
	MCS6	11.36	11.82	12.17
	MCS7	10.46	10.80	11.20
/	Data Rate	CH 3	CH 6	CH 9
802.11n HT40	MCS0	14.61	14.85	15.40
	MCS1	13.78	14.01	14.58
	MCS2	13.66	13.94	14.49
	MCS3	11.75	12.15	12.62
	MCS4	11.91	12.23	12.68
	MCS5	10.95	11.26	11.66
	MCS6	11.00	11.22	11.62
	MCS7	10.01	10.31	10.69

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.

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2.3. Occupied Bandwidth (6dB)

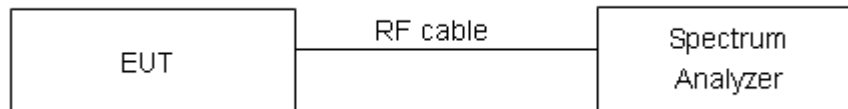
Ambient condition

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

Method of Measurement

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

Test Setup



Limits

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

minimum 6 dB bandwidth	≥ 500 kHz
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Measurement Uncertainty

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

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Test Results:

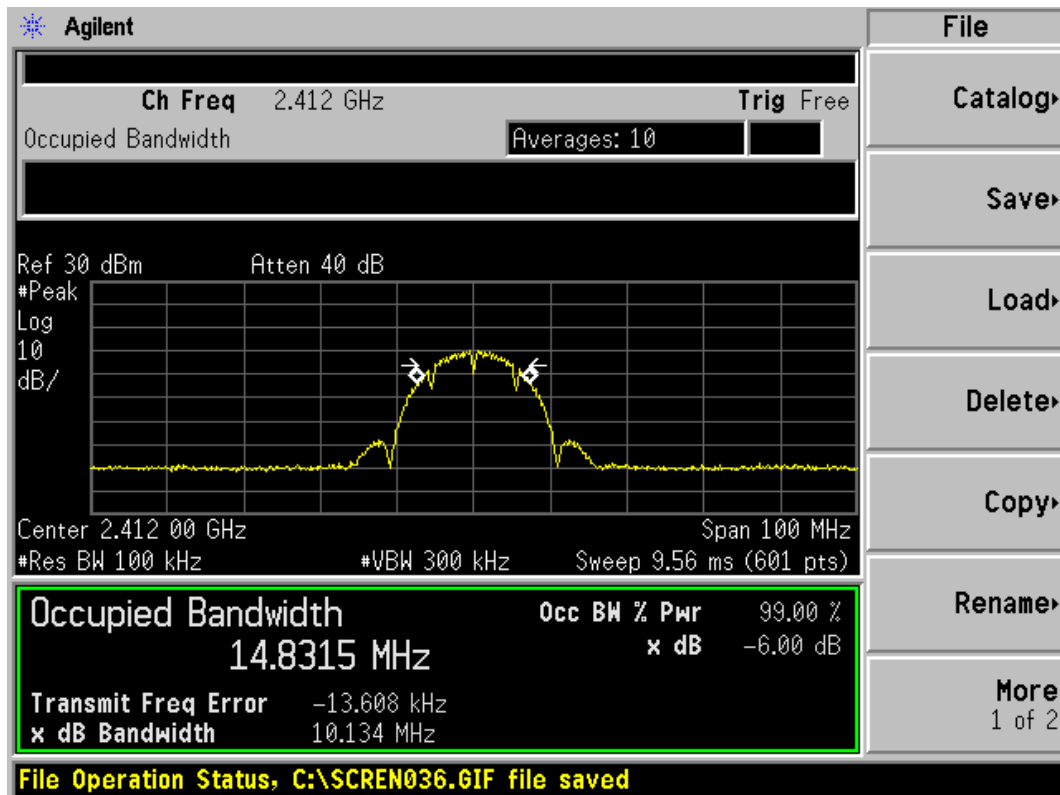
Network Standards	Carrier frequency (MHz)	Minimum 6 dB bandwidth (MHz)	Conclusion
802.11b	2412	10.134	PASS
	2437	10.126	PASS
	2462	10.138	PASS
802.11g	2412	16.665	PASS
	2437	16.648	PASS
	2462	16.682	PASS
802.11n HT20	2412	17.897	PASS
	2437	17.871	PASS
	2462	17.907	PASS
802.11n HT40	2422	36.555	PASS
	2437	36.538	PASS
	2452	36.536	PASS

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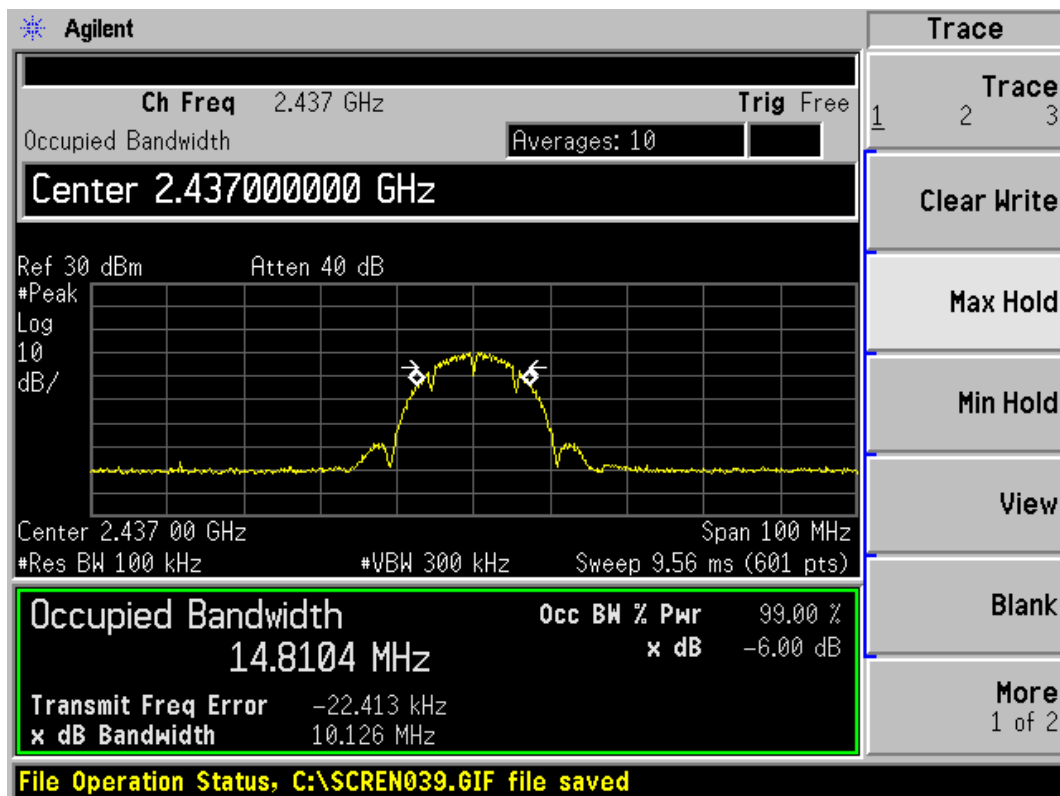
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802.11b



802.11b, Carrier frequency (MHz): 2412

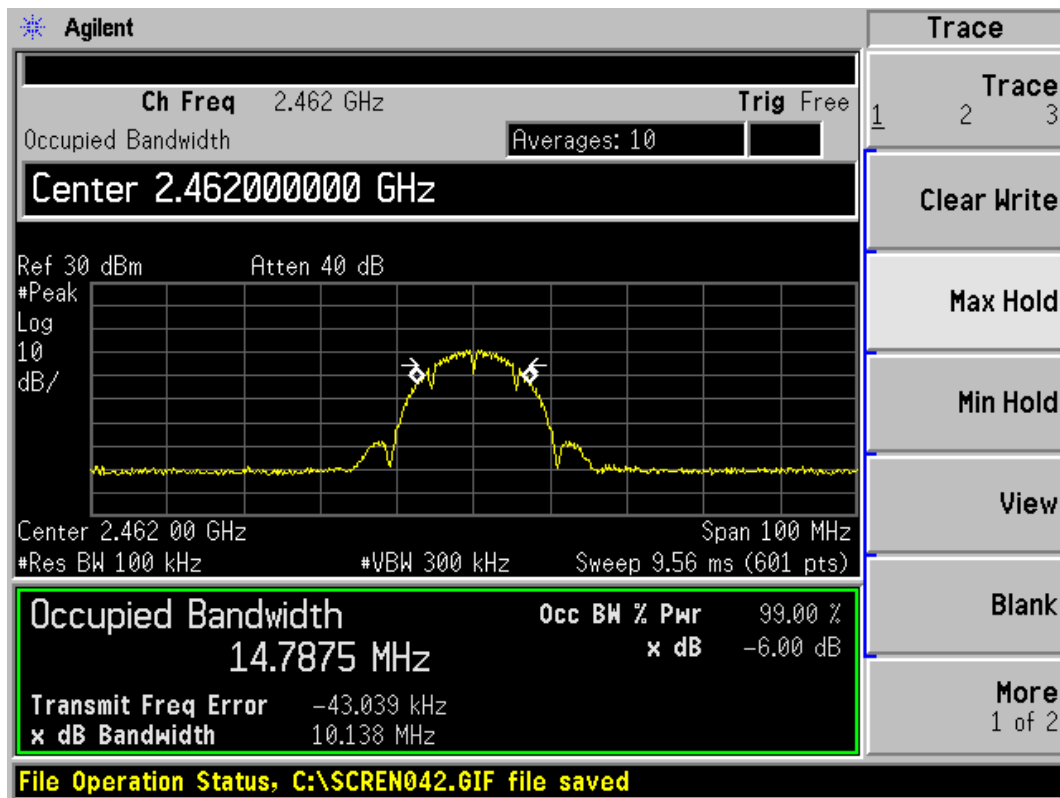


802.11b, Carrier frequency (MHz): 2437

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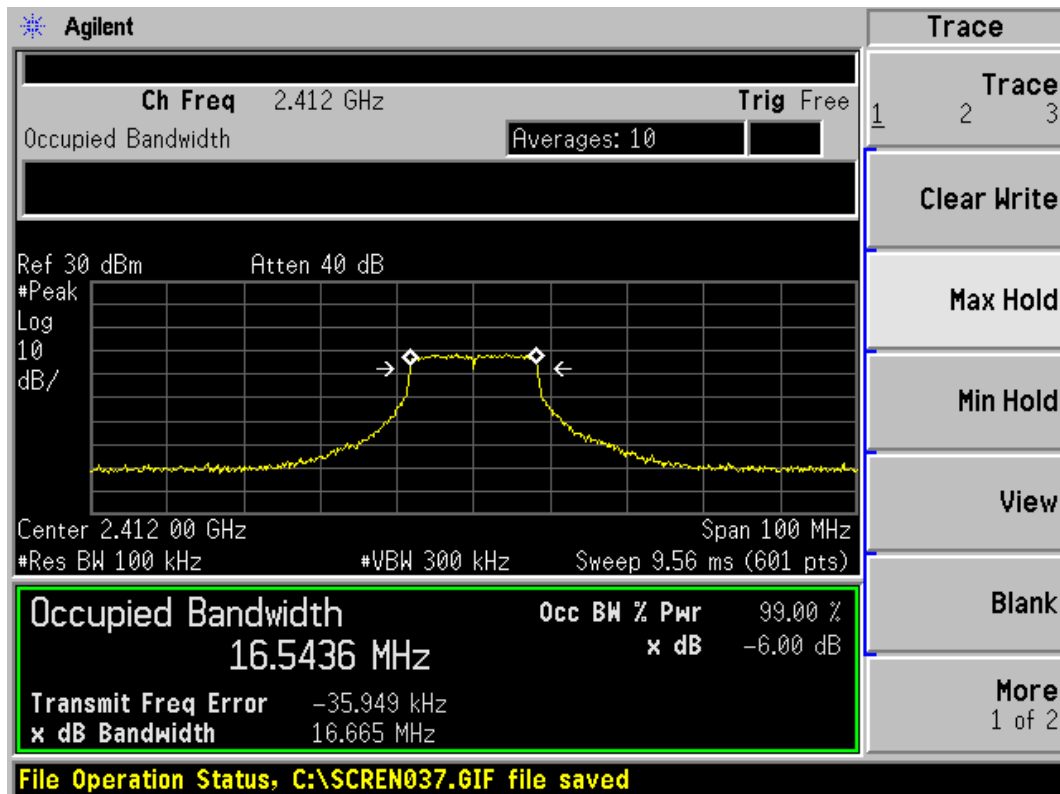
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802.11b, Carrier frequency (MHz):2462

802.11g

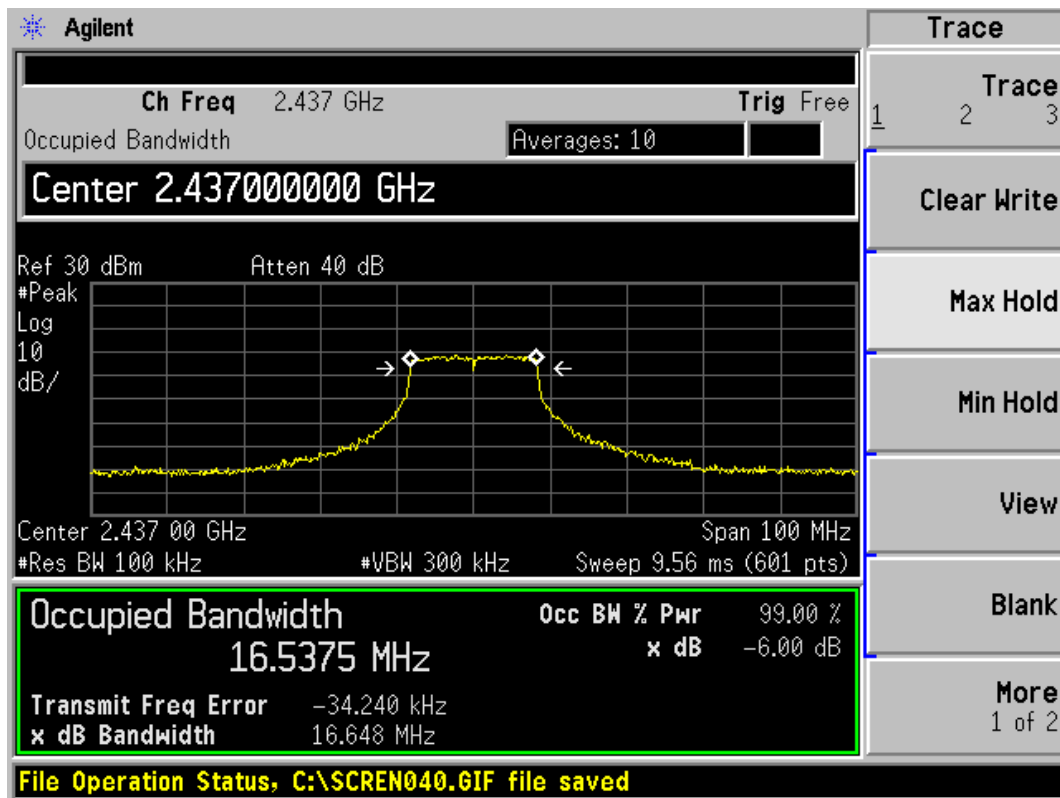


802.11g, Carrier frequency (MHz): 2412

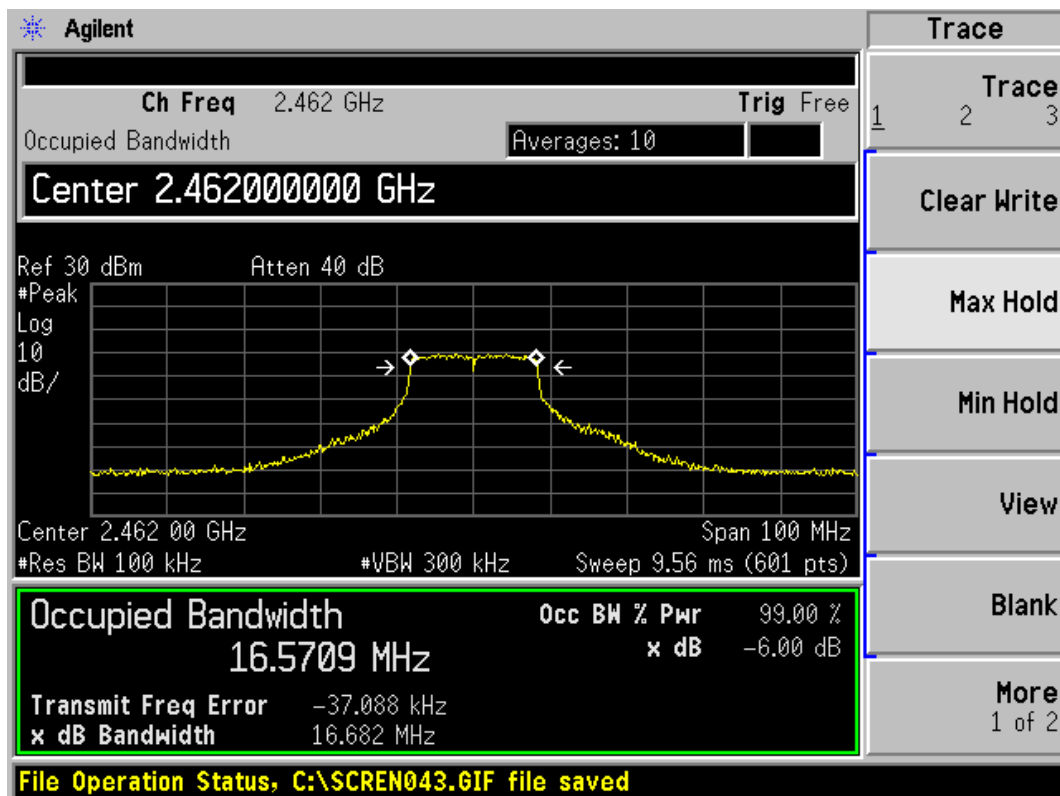
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802.11g, Carrier frequency (MHz): 2437



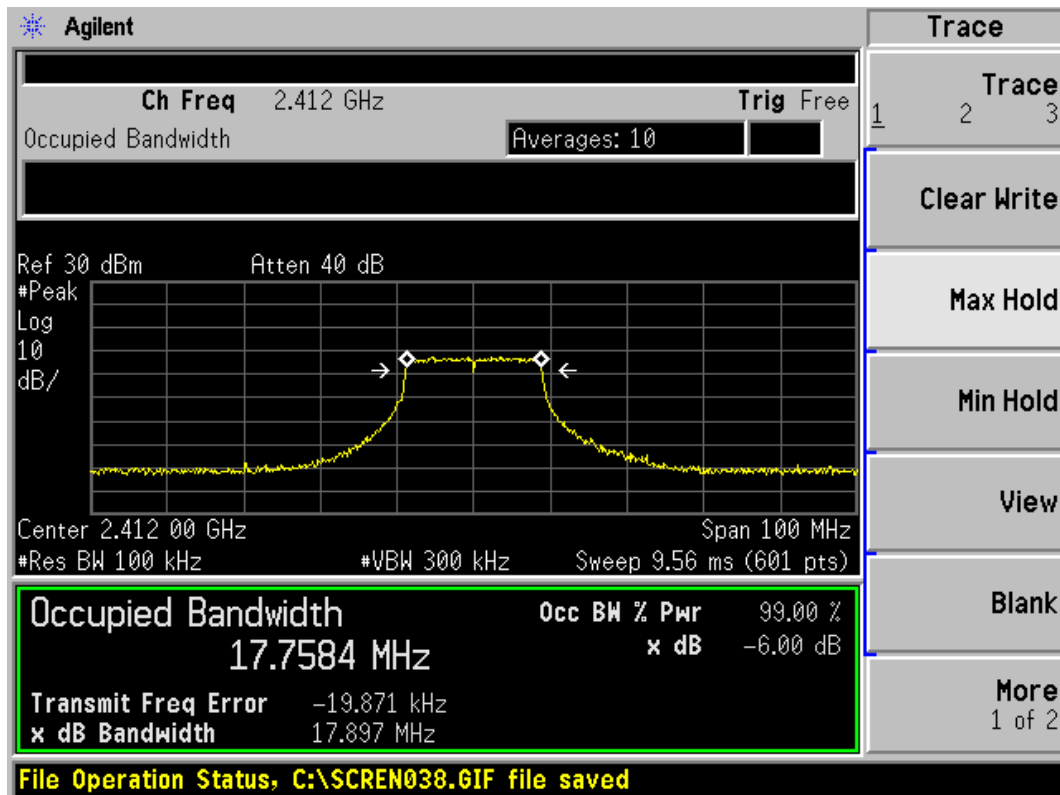
802.11g, Carrier frequency (MHz): 2462

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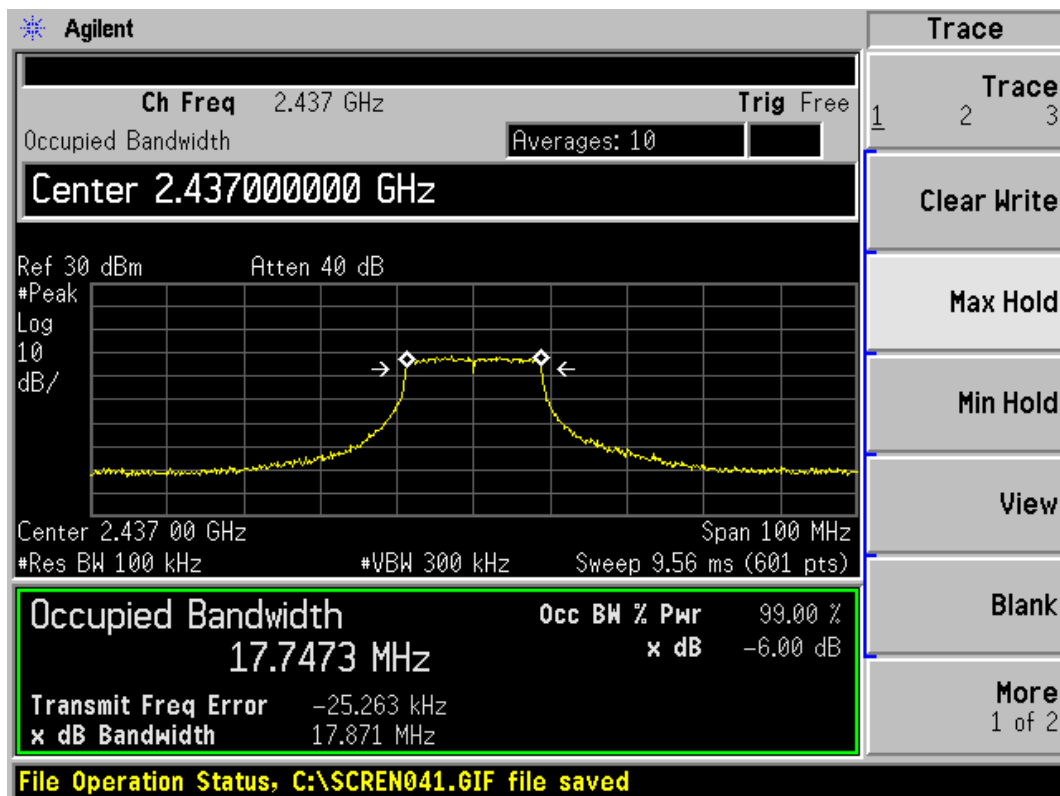
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802.11n(HT20)



802.11n, Carrier frequency (MHz): 2412

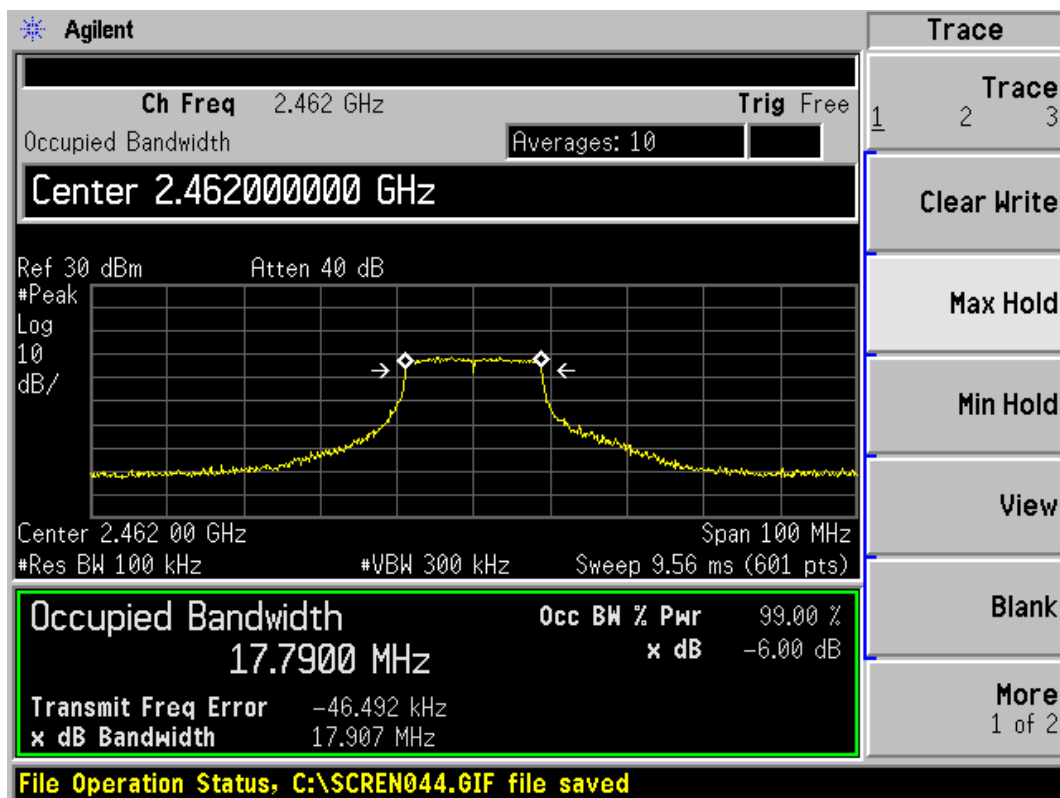


802.11n, Carrier frequency (MHz): 2437

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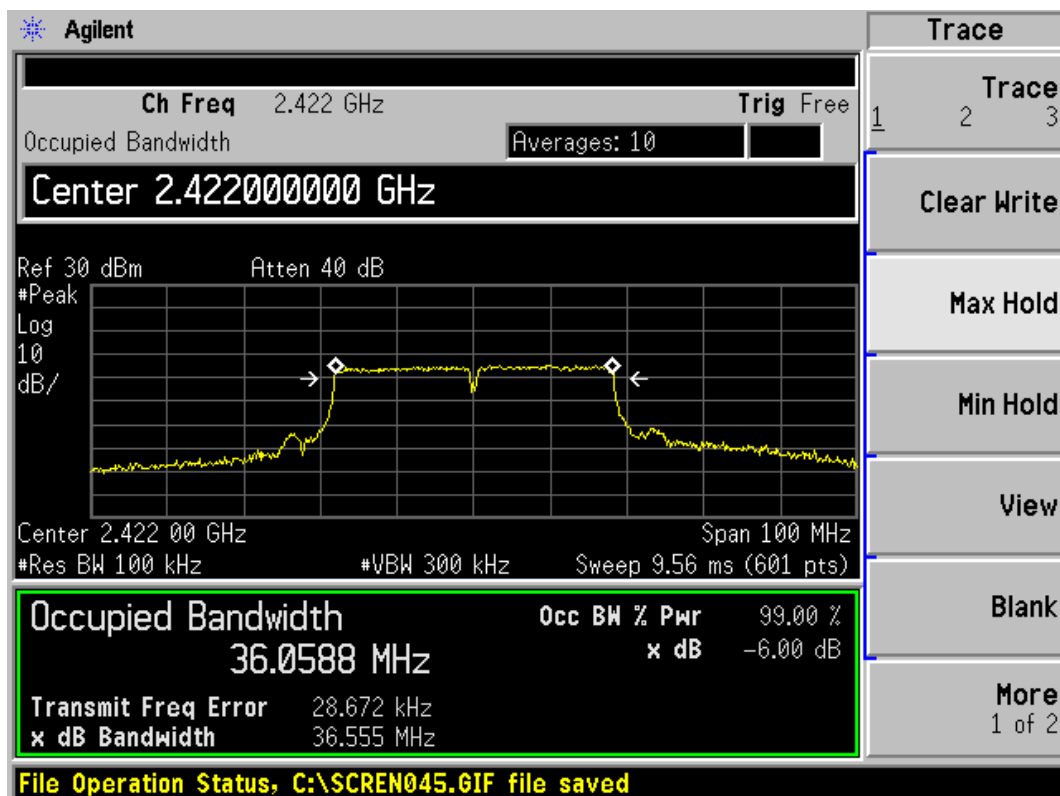
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802.11n, Carrier frequency (MHz):2462

802.11n(HT40)

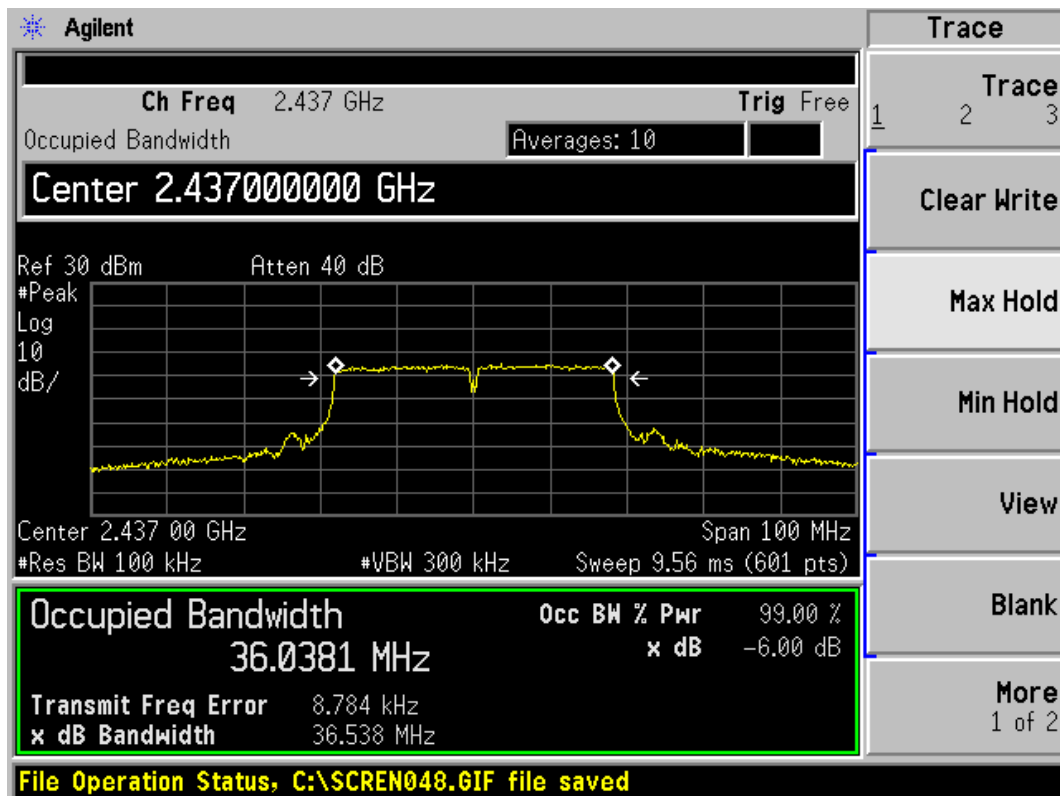


802.11n, Carrier frequency (MHz): 2422

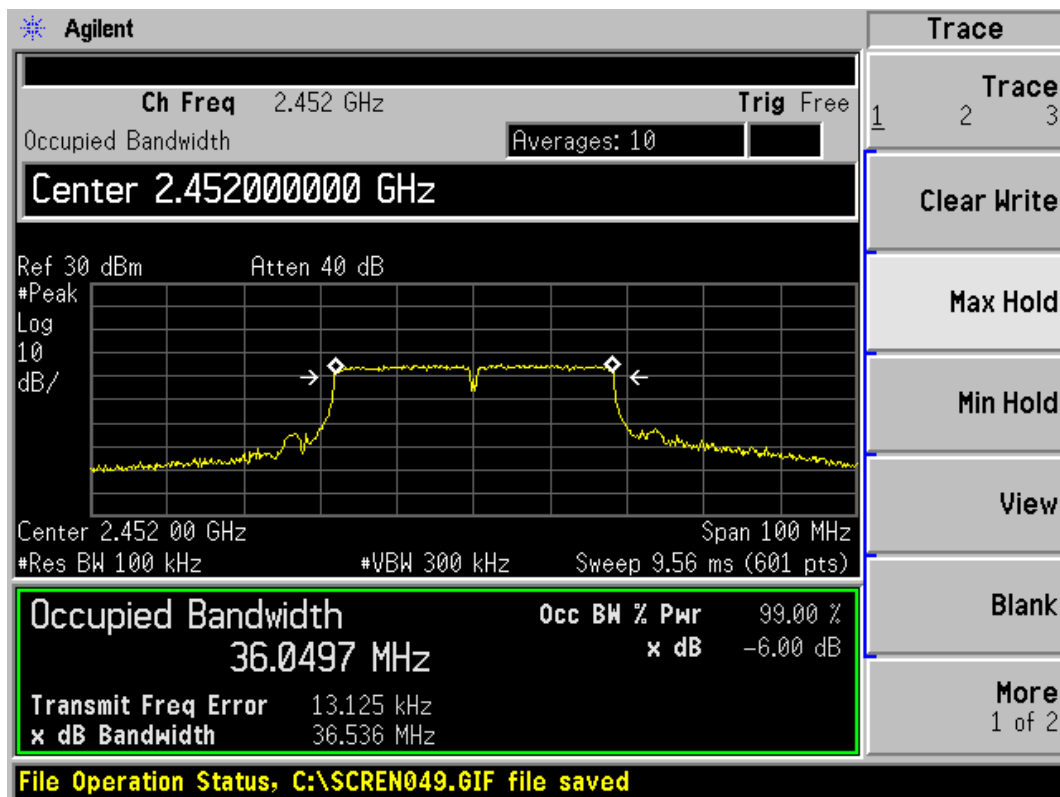
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802.11n, Carrier frequency (MHz): 2437



802.11n, Carrier frequency (MHz): 2452

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2.4. Band Edge Compliance

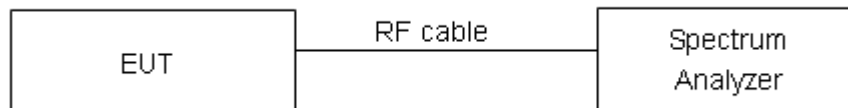
Ambient condition

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

Method of Measurement

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

Test Setup



Limits

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

Limit	≥20 dB
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Measurement Uncertainty

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

Frequency	Uncertainty
2GHz-3GHz	1.407 dB

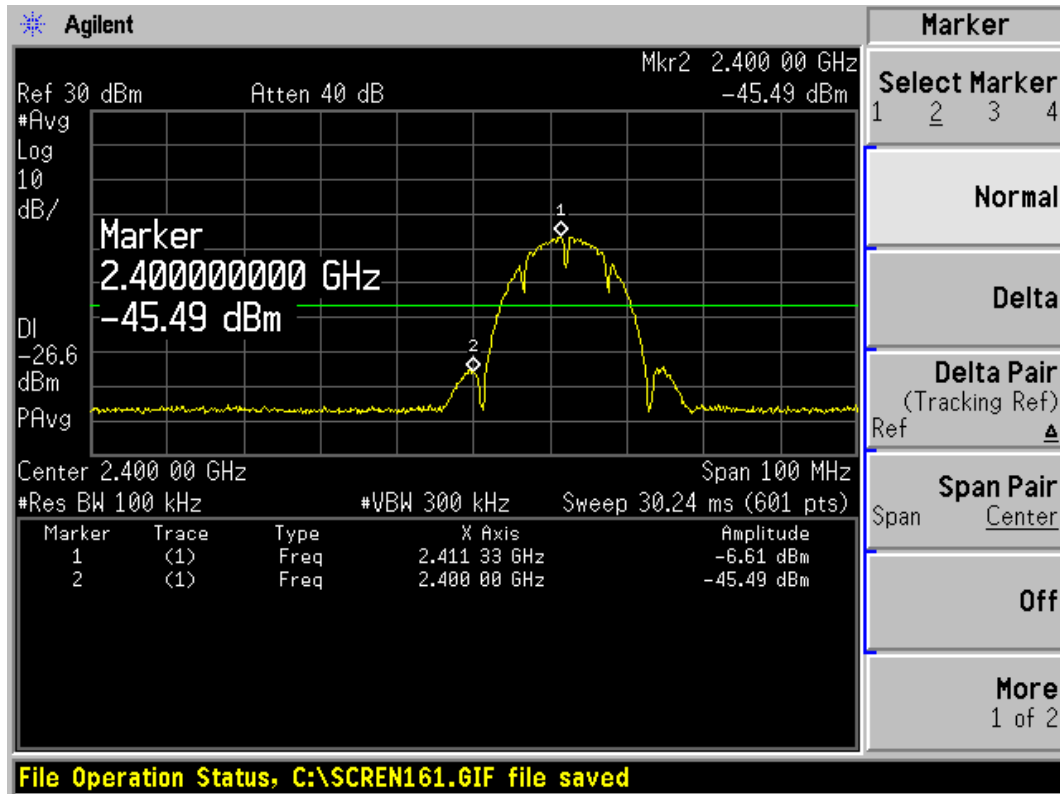
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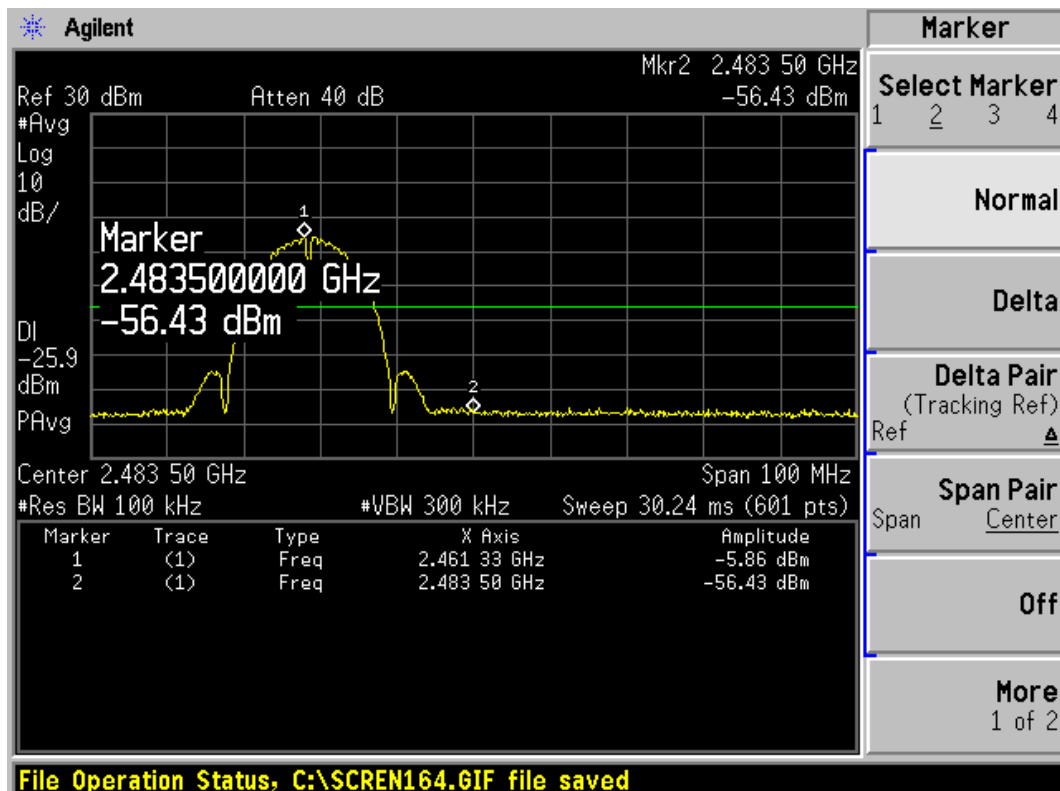
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Test Results: PASS

802.11b



802.11b, Channel No.: 1



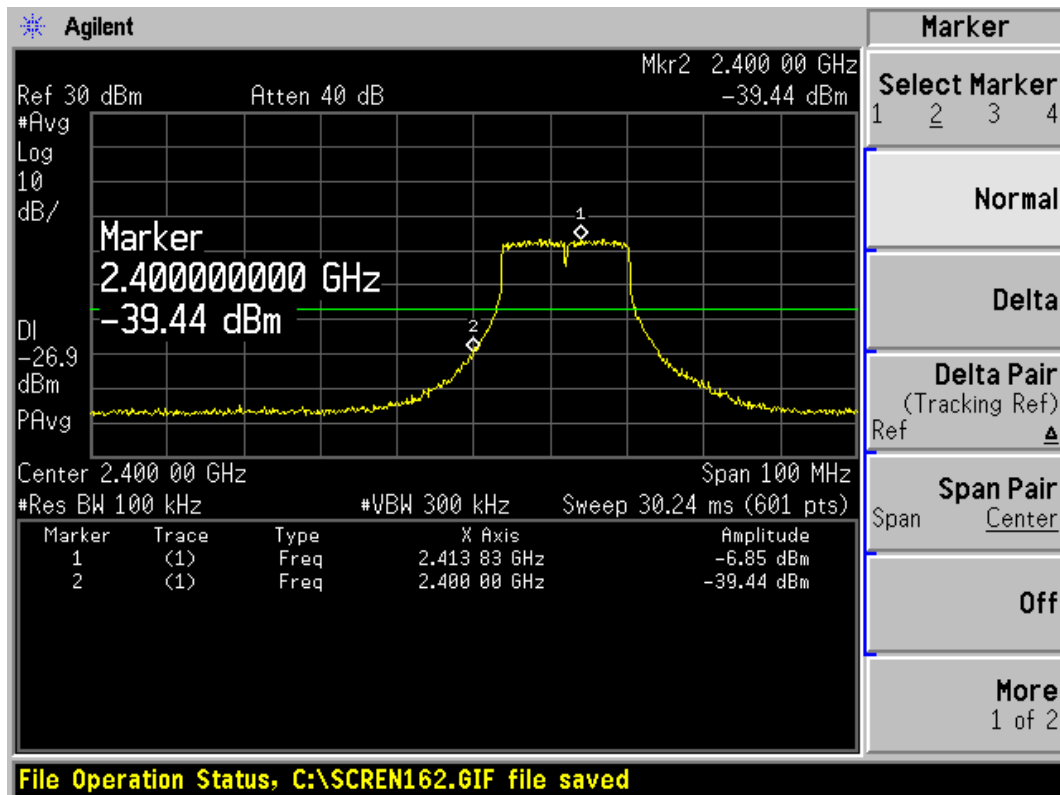
802.11b, Channel No.: 11

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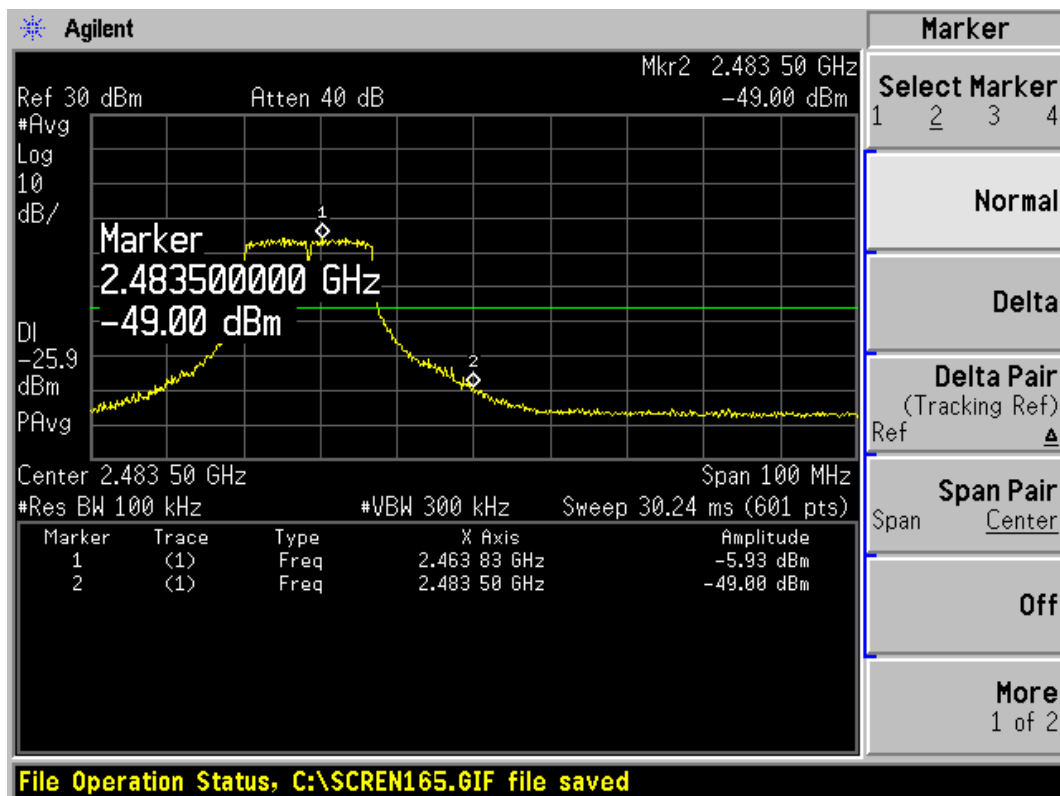
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802.11g



802.11g, Channel No.: 1



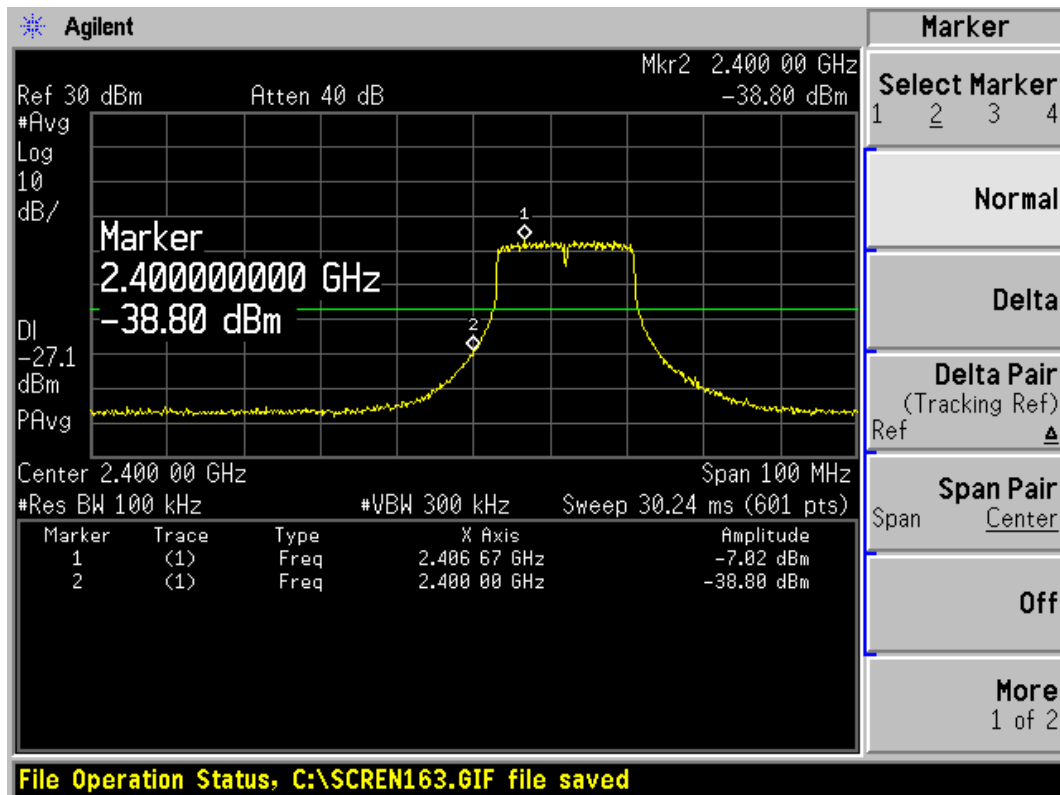
802.11g, Channel No.: 11

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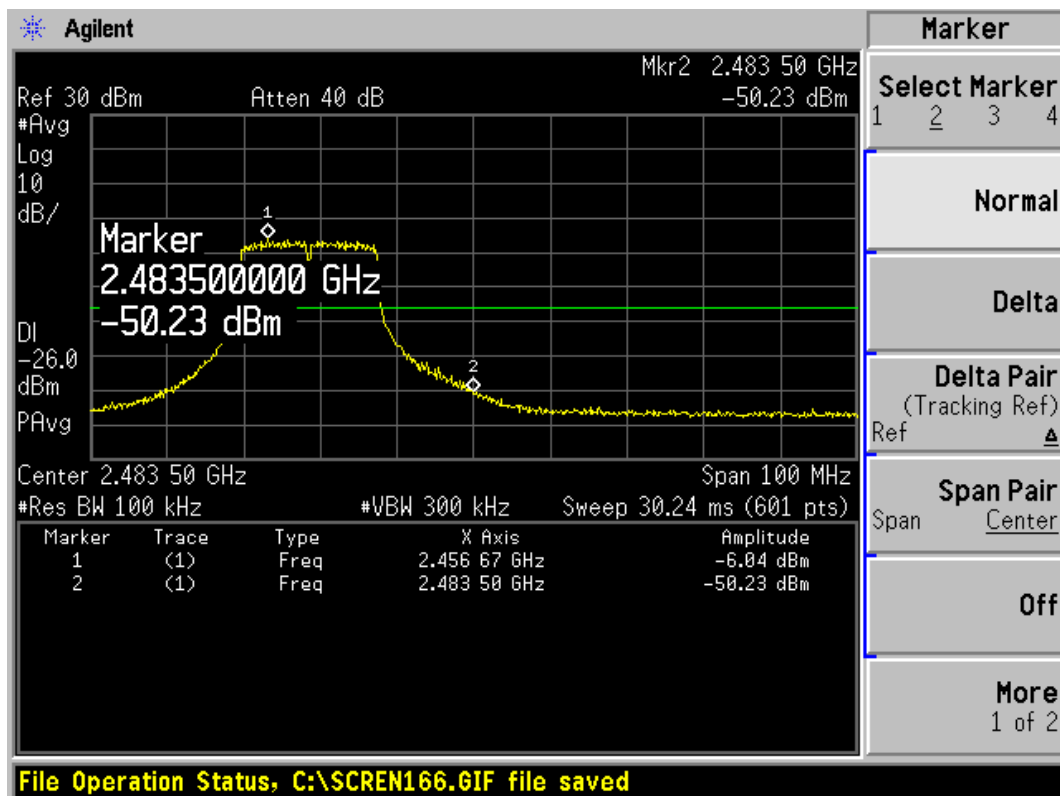
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802.11n(HT20)



802.11n, Channel No.: 1



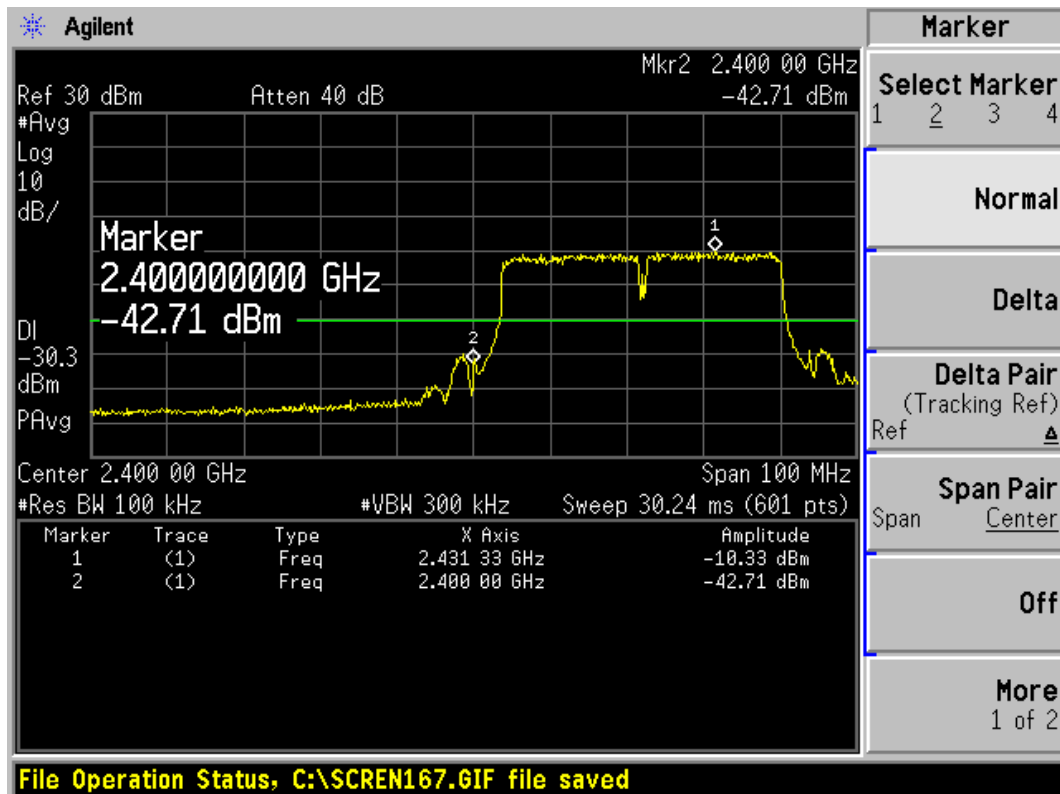
802.11n, Channel No.: 11

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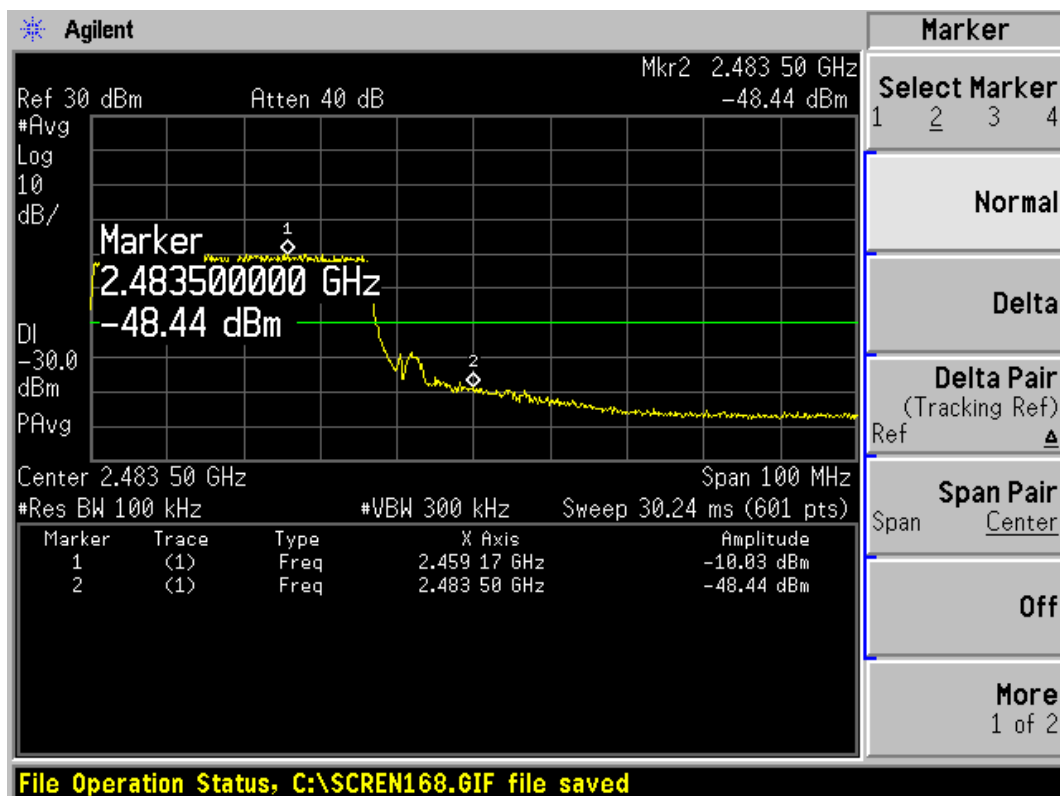
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802.11n(HT40)



802.11n, Channel No.: 3



802.11n, Channel No.: 9

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:

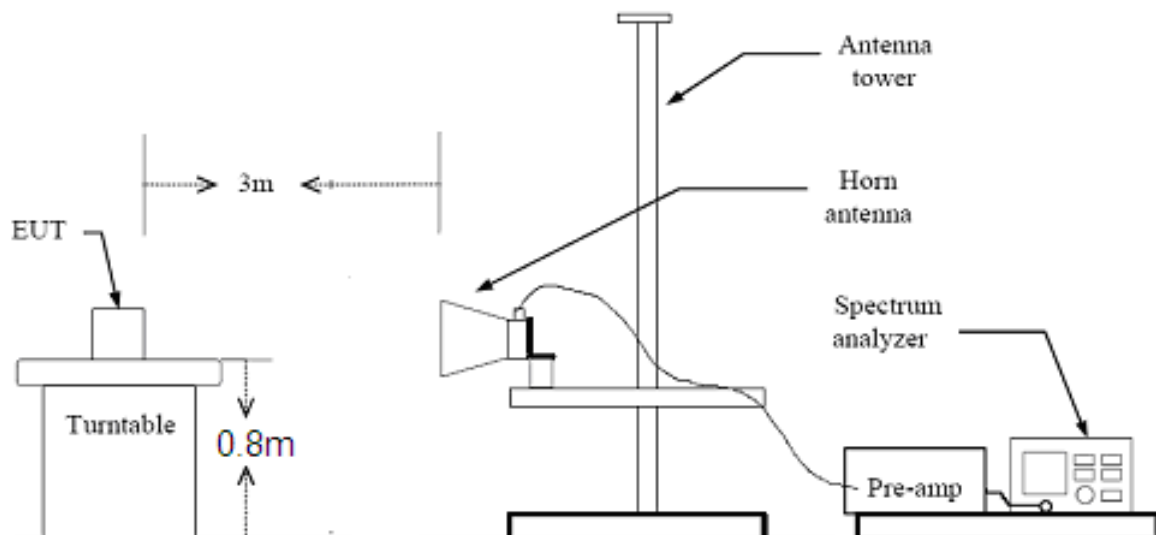
- (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
- (b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO

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



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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.

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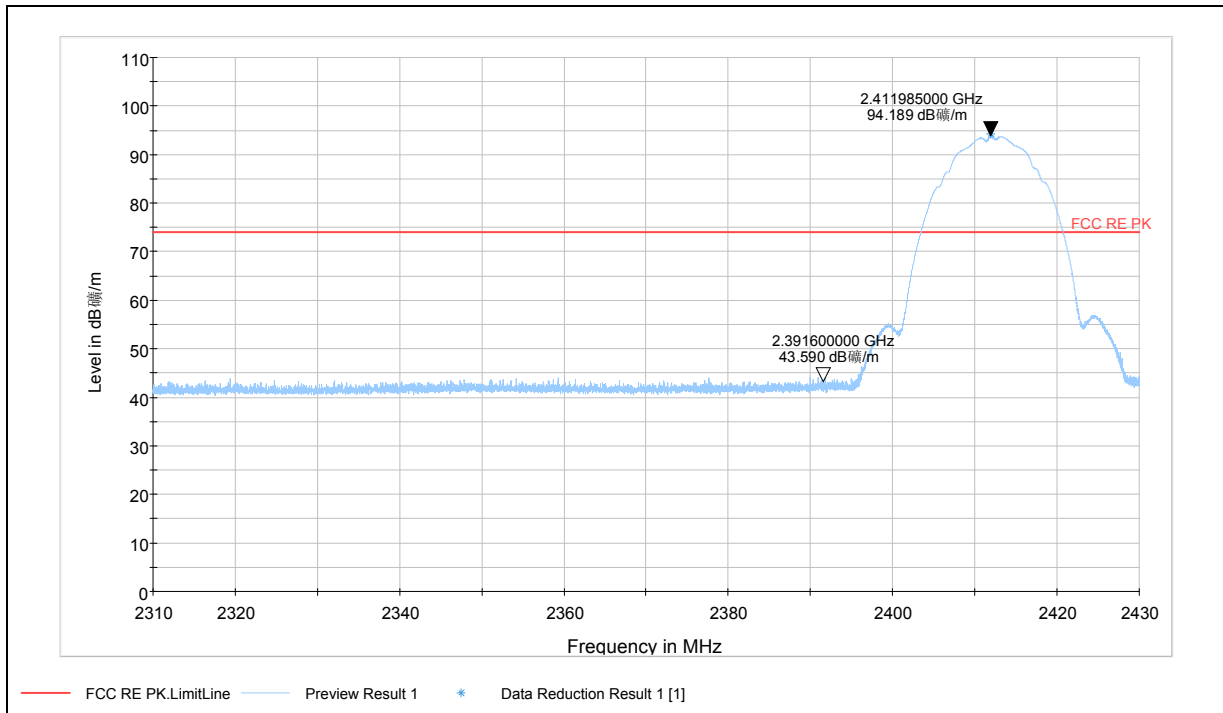
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Test Results: PASS

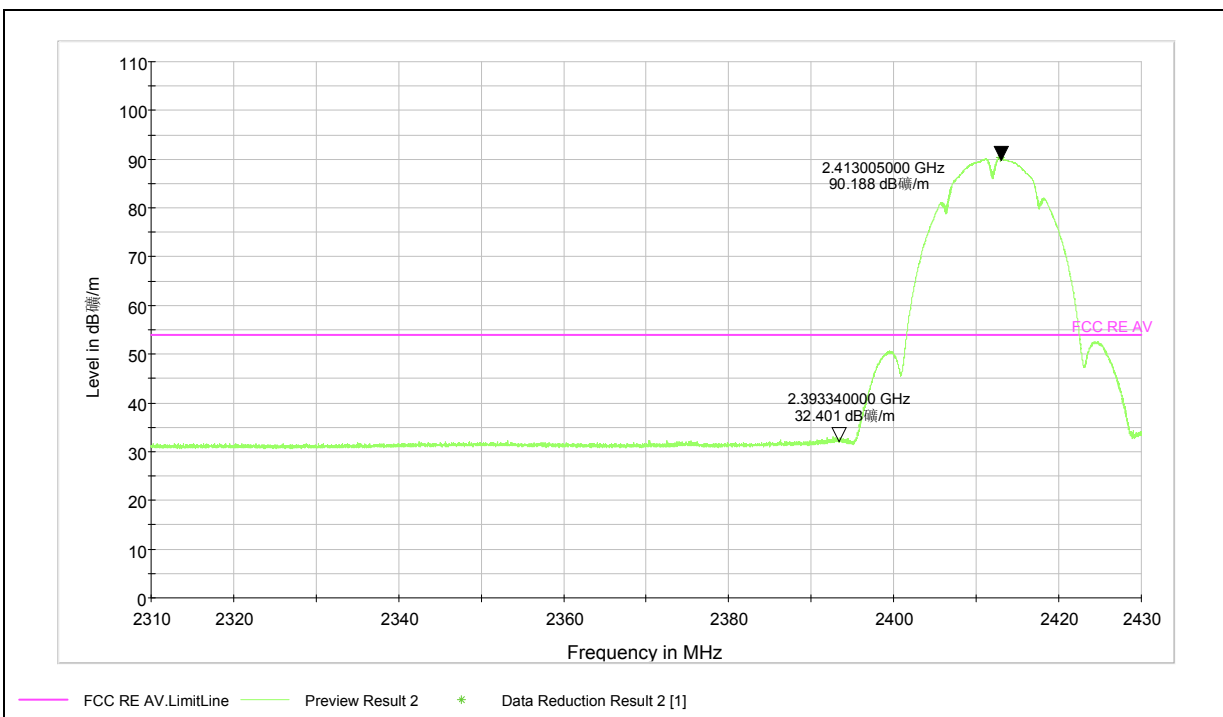
802.11b-Channel 1:

Peak



Note: The signal beyond the limit is carrier
Channel 1

Average



Note: The signal beyond the limit is carrier
Channel 1

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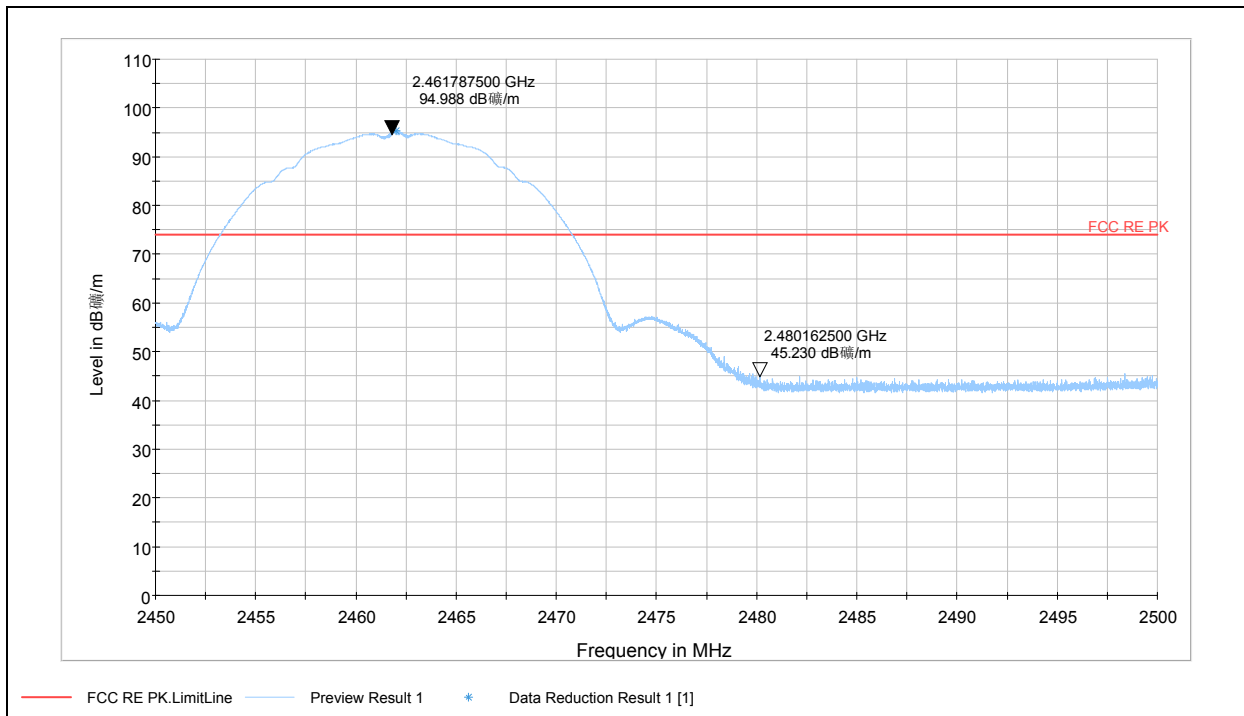
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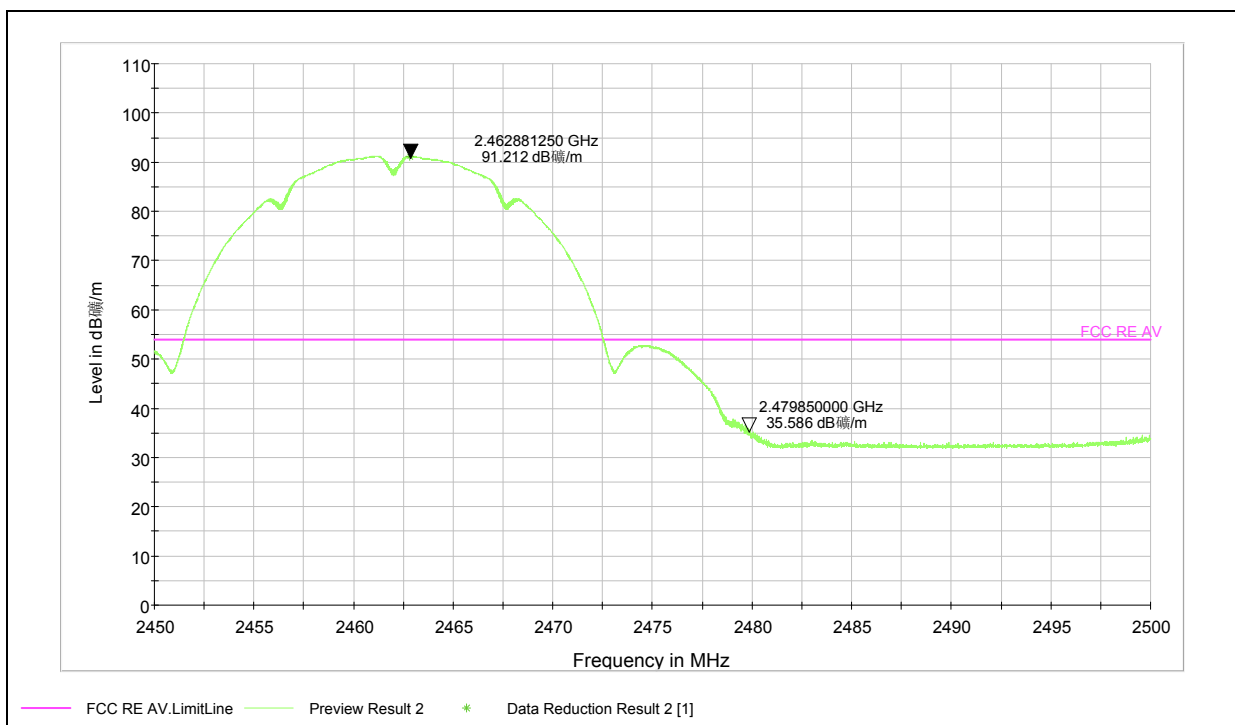
802.11b-Channel 11:

Peak



Note: The signal beyond the limit is carrier
Channel 11

Average



Note: The signal beyond the limit is carrier
Channel 11

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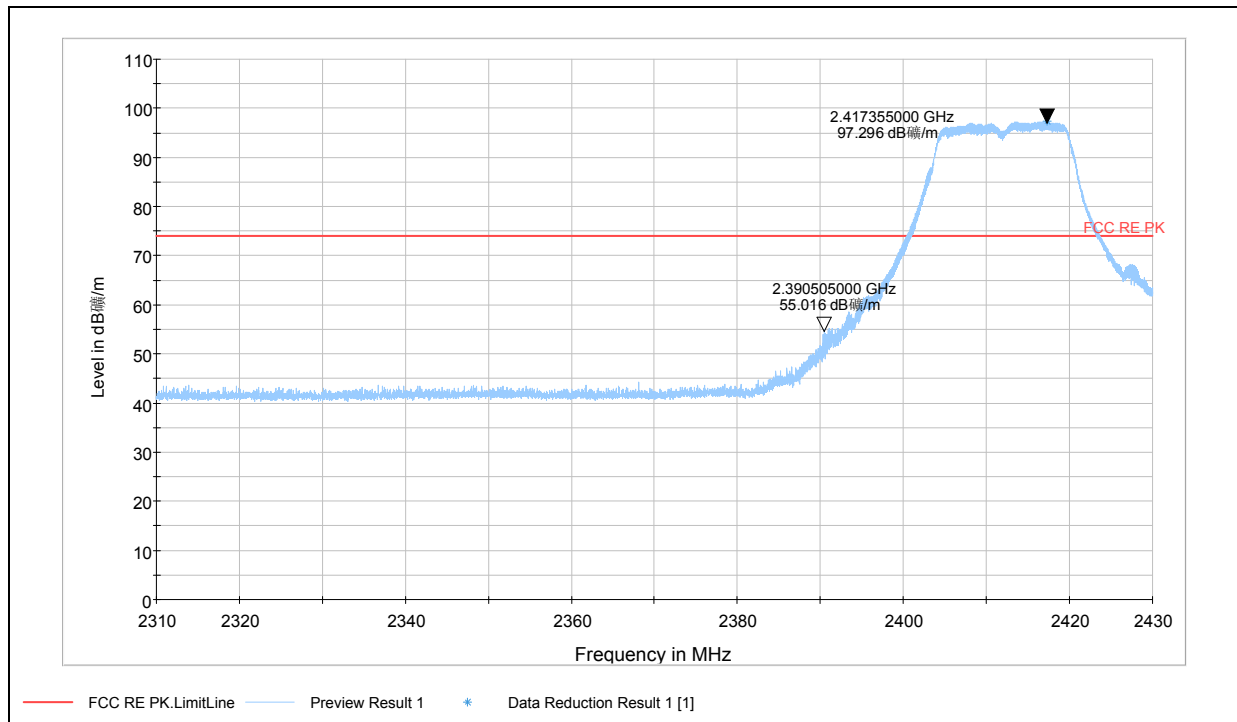
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802.11g-Channel 1:

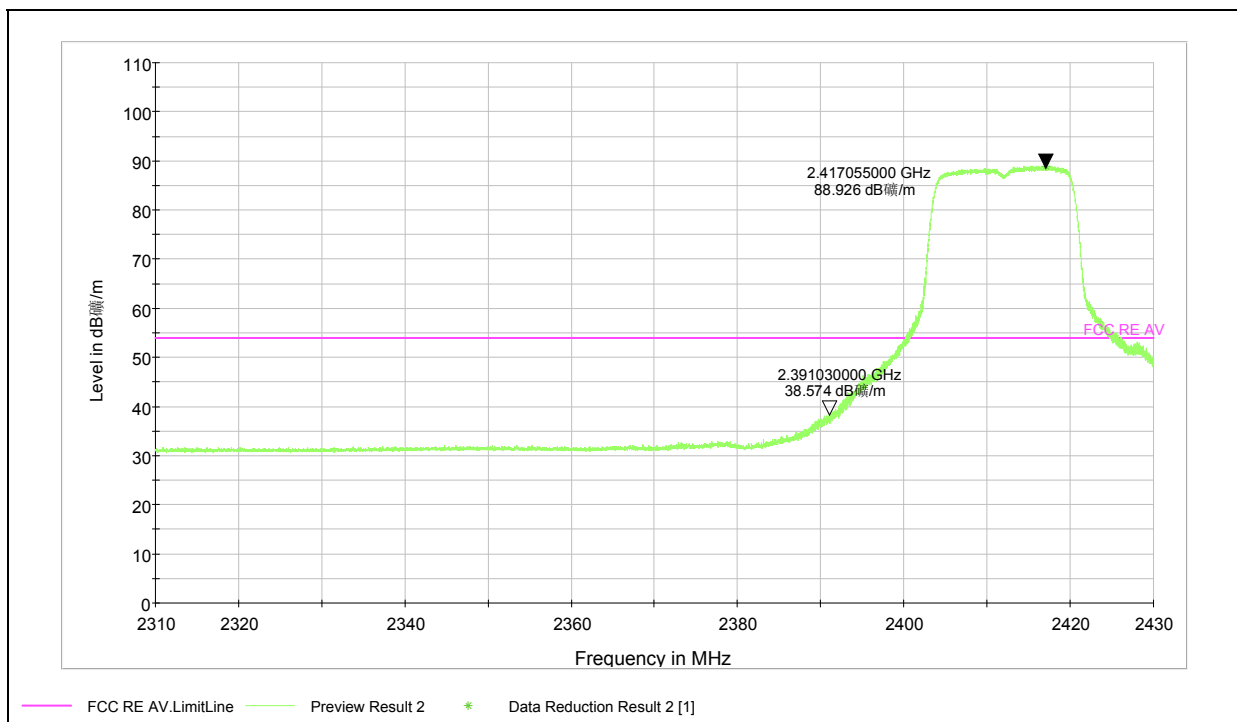
Peak



Note: The signal beyond the limit is carrier

Channel 1

Average



Note: The signal beyond the limit is carrier

Channel 1

TA Technology (Shanghai) Co., Ltd.

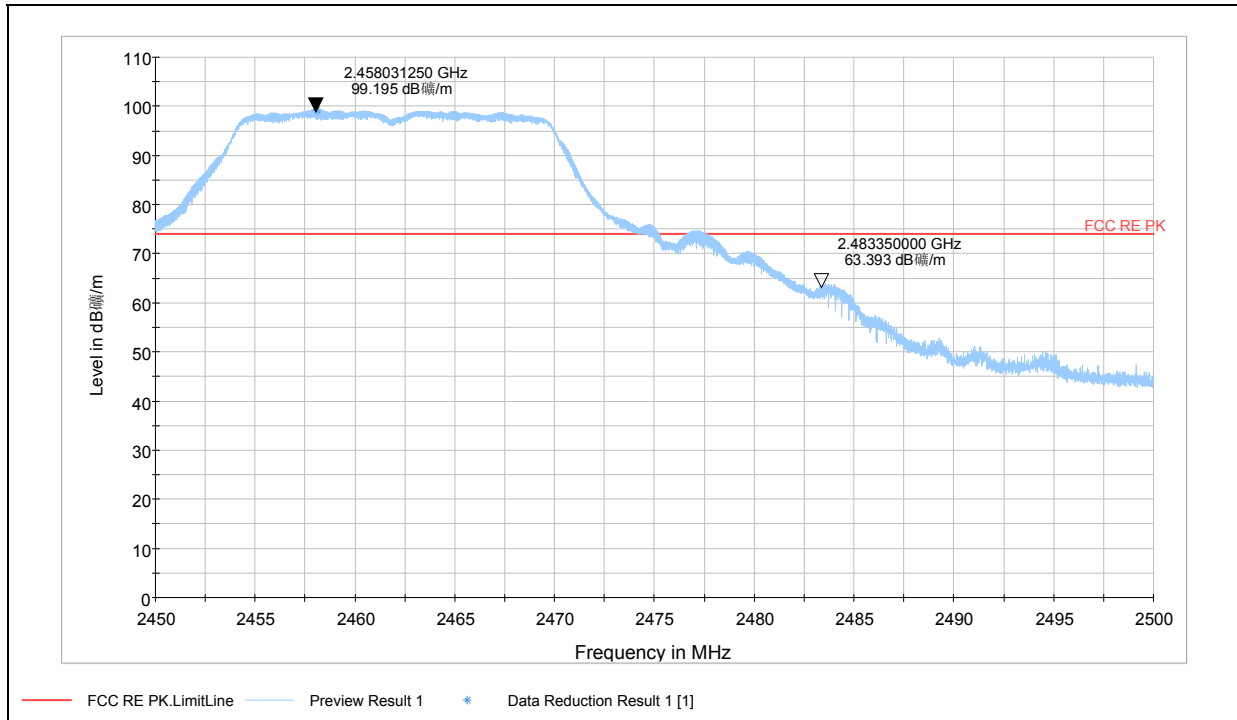
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802.11g-Channel 11:

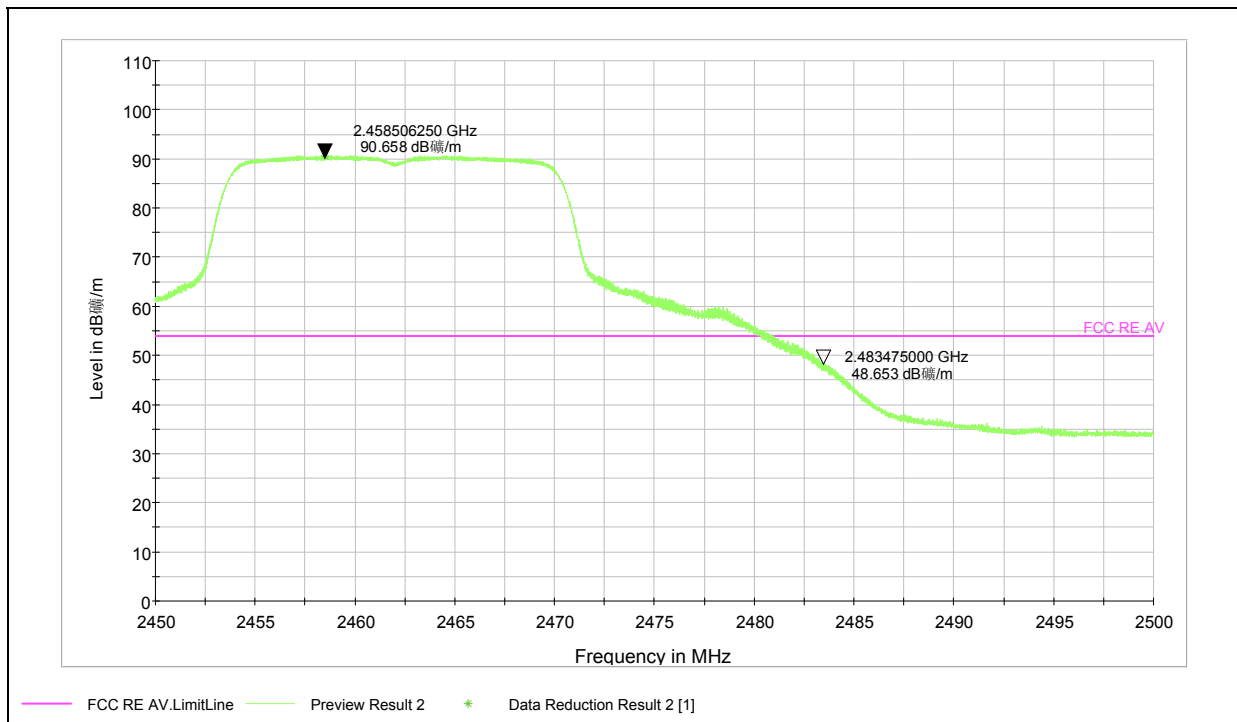
Peak



Note: The signal beyond the limit is carrier

Channel 11

Average



Note: The signal beyond the limit is carrier

Channel 11

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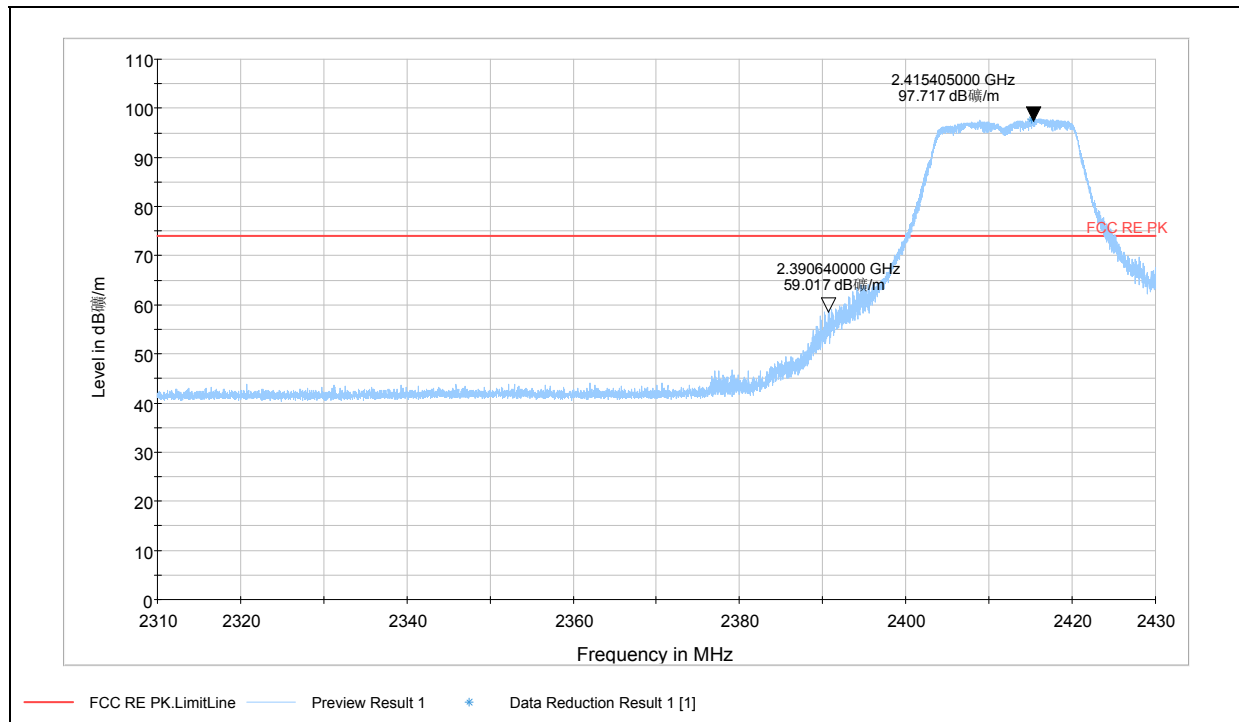
Test Report

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802.11n-Channel 1(HT20):

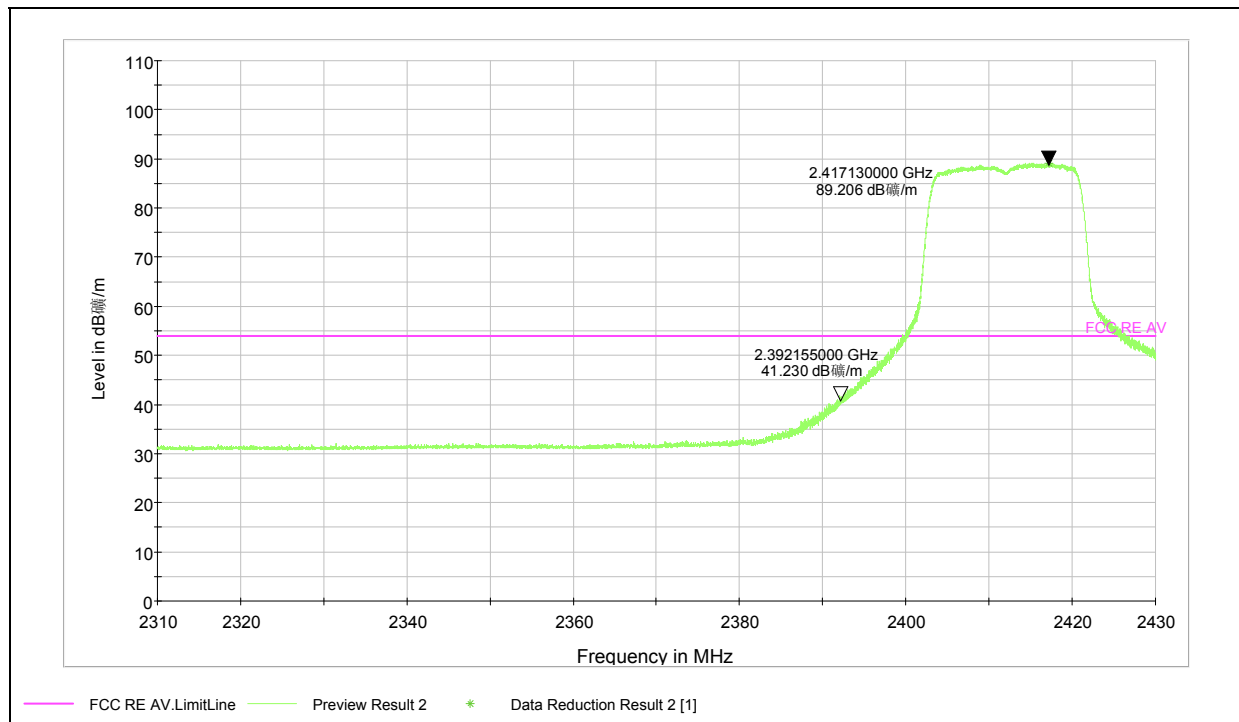
Peak



Note: The signal beyond the limit is carrier

Channel 1

Average



Note: The signal beyond the limit is carrier

Channel 1

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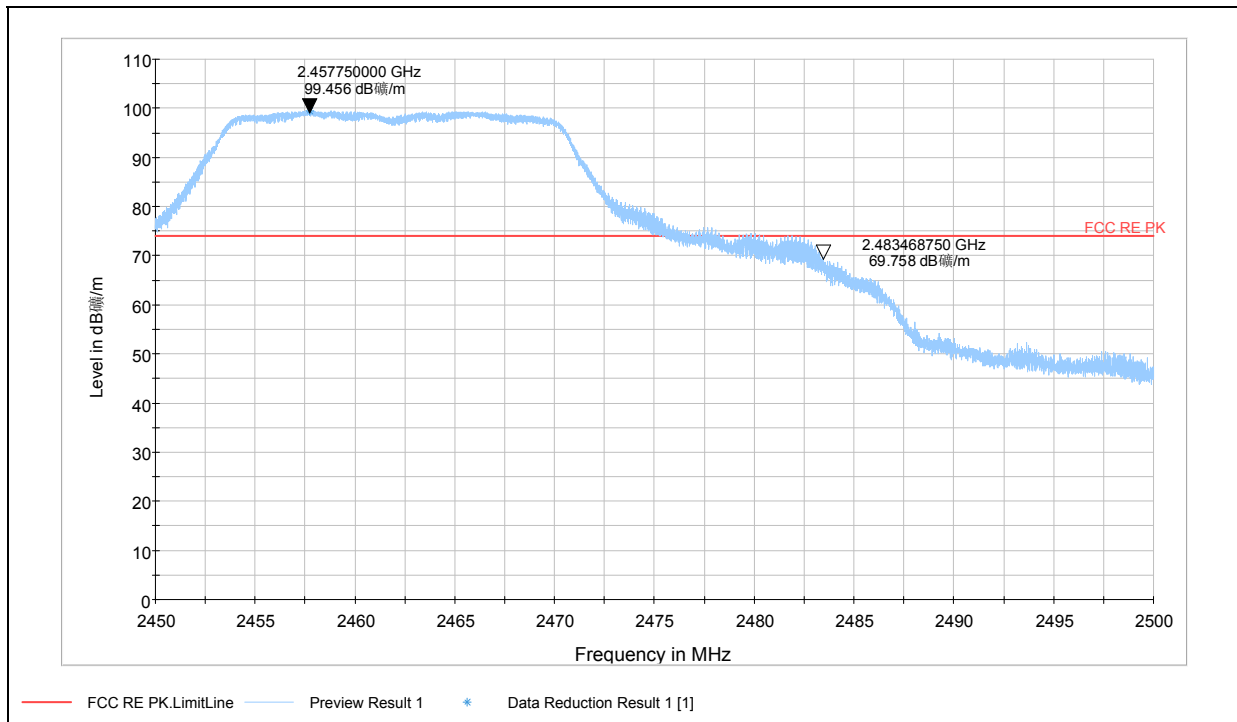
Test Report

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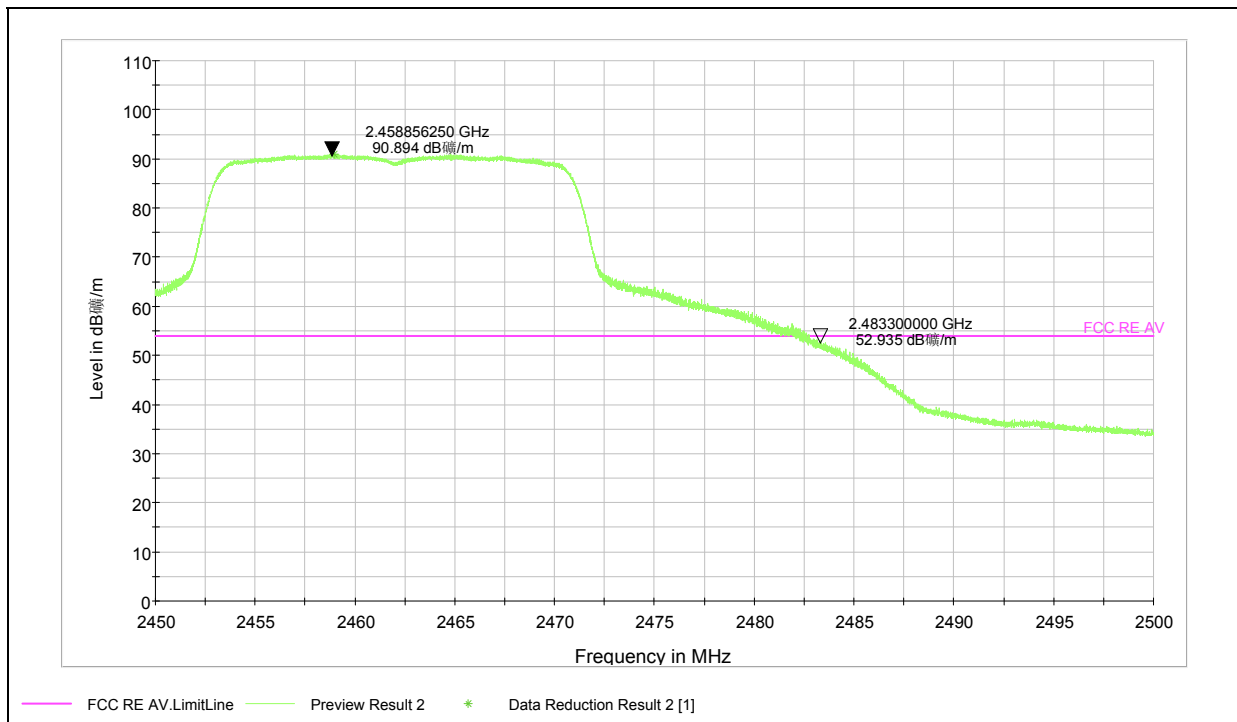
802.11n-Channel 11(HT20):

Peak



Note: The signal beyond the limit is carrier
Channel 11

Average



Note: The signal beyond the limit is carrier
Channel 11

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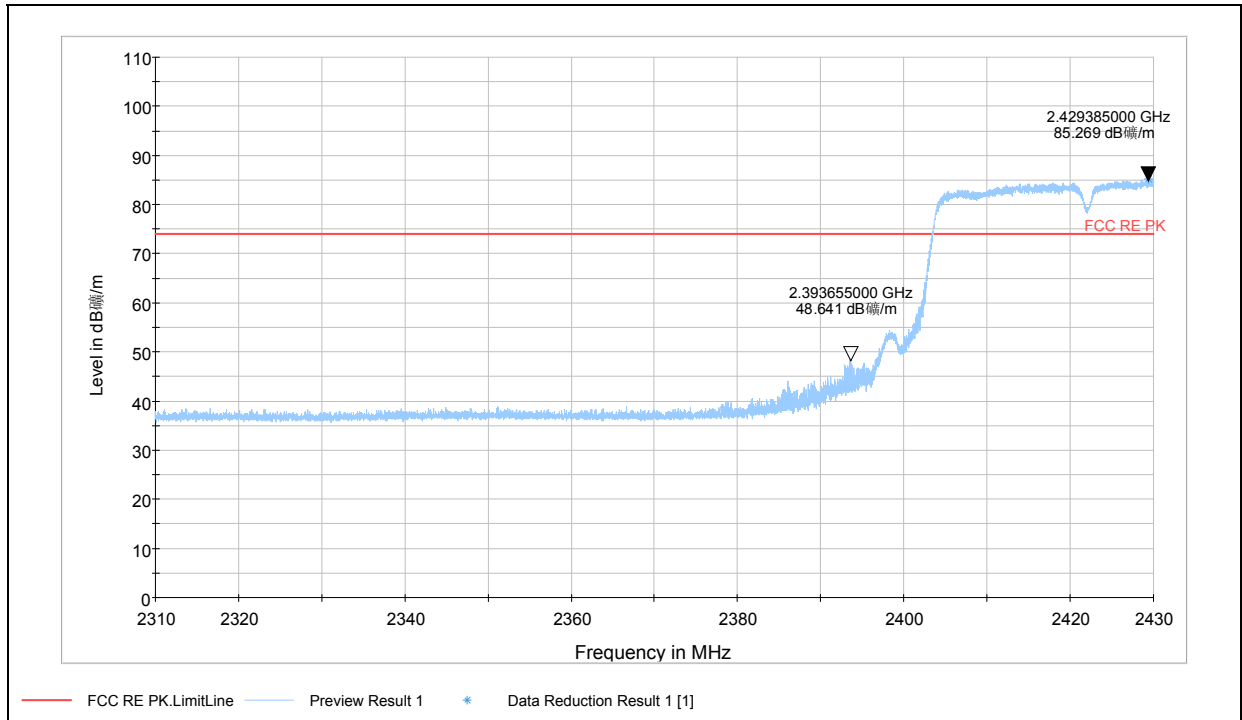
Test Report

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802.11n-Channel 3(HT40):

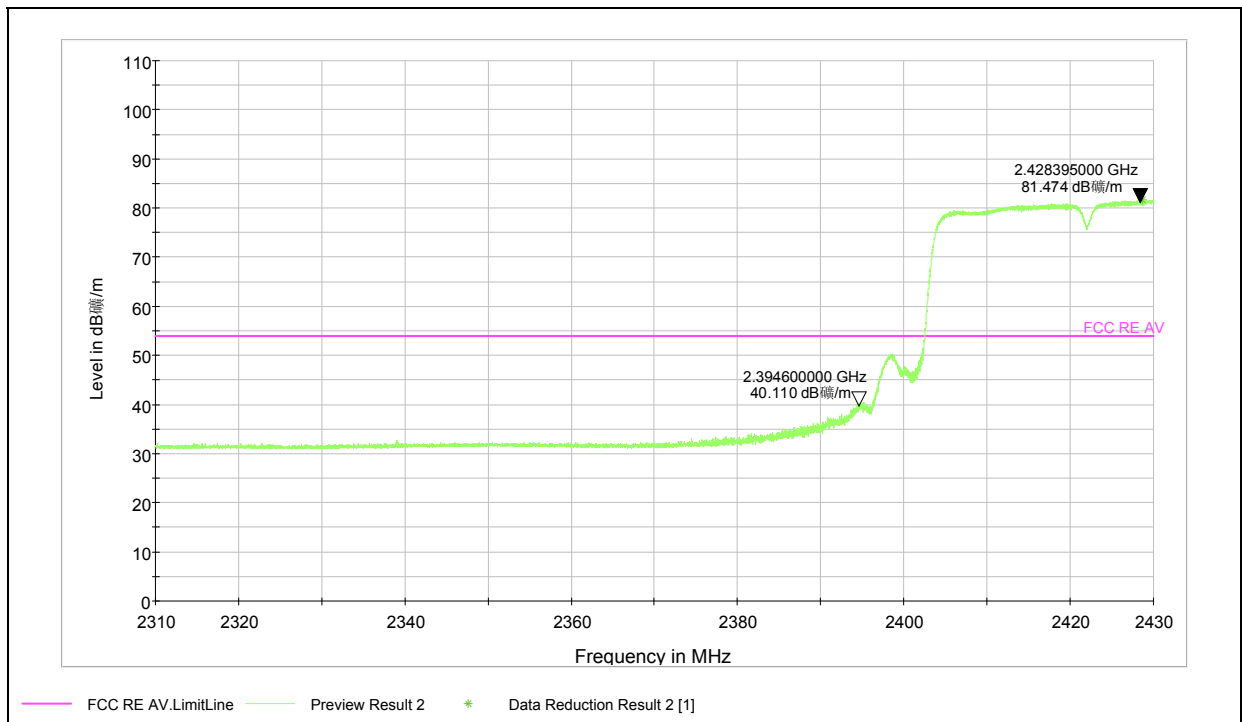
Peak



Note: The signal beyond the limit is carrier

Channel 3

Average



Note: The signal beyond the limit is carrier

Channel 3

TA Technology (Shanghai) Co., Ltd.

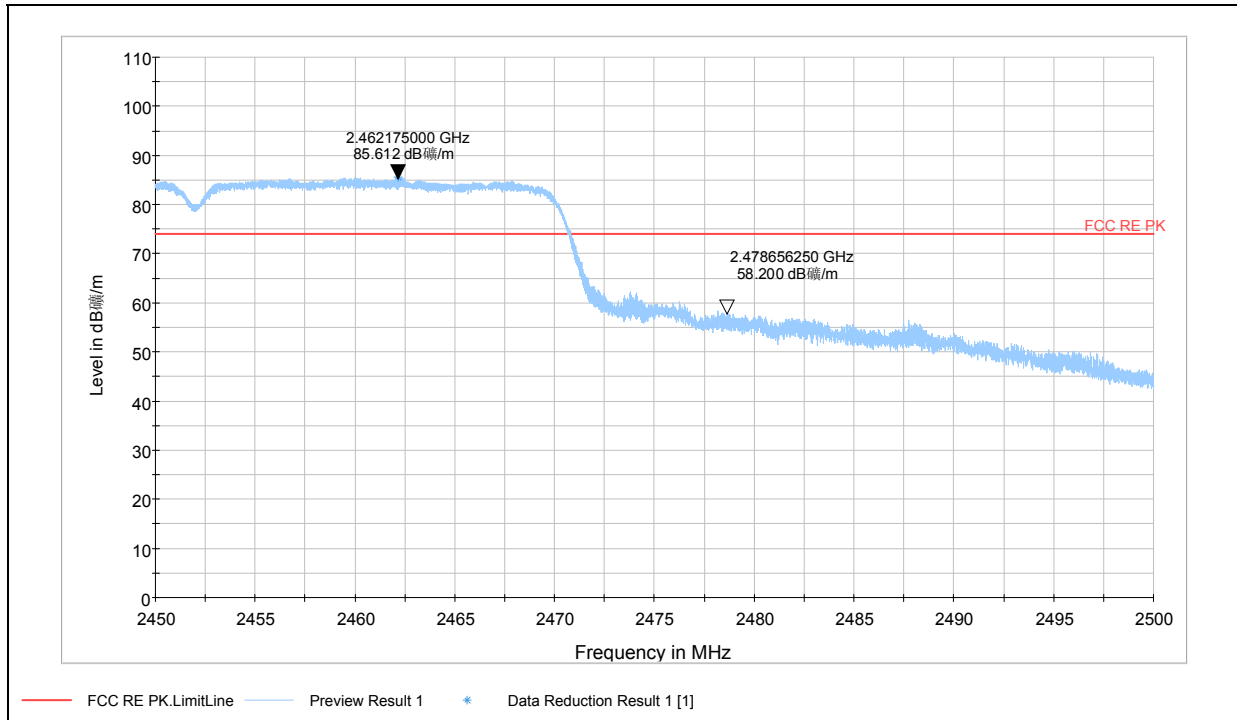
Test Report

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802.11n-Channel 9(HT40):

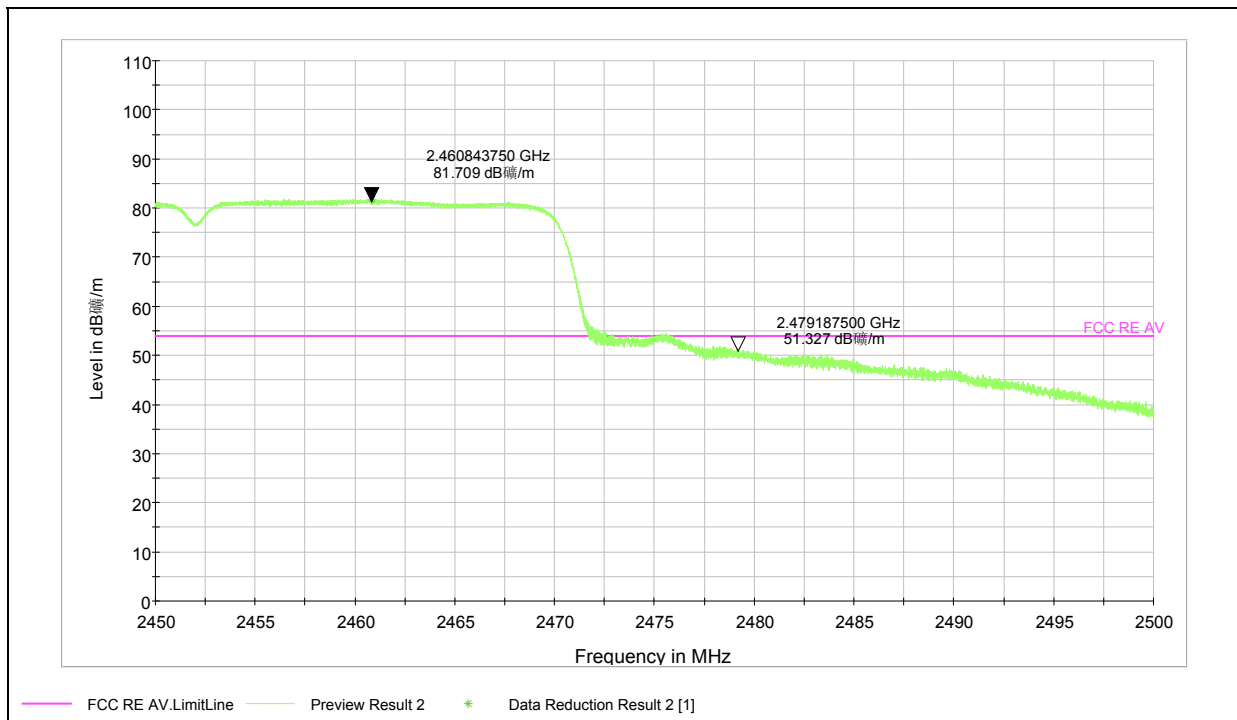
Peak



Note: The signal beyond the limit is carrier

Channel 9

Average



Note: The signal beyond the limit is carrier

Channel 9

2.6. Power Spectral Density

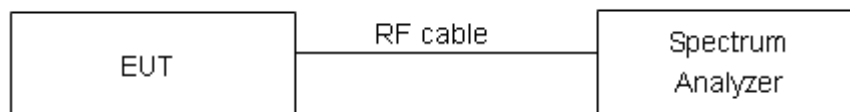
Ambient condition

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 to at least 1.5 times the DTS channel bandwidth 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 $k = 2$, $U = 0.75\text{ dB}$.

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Test Results:

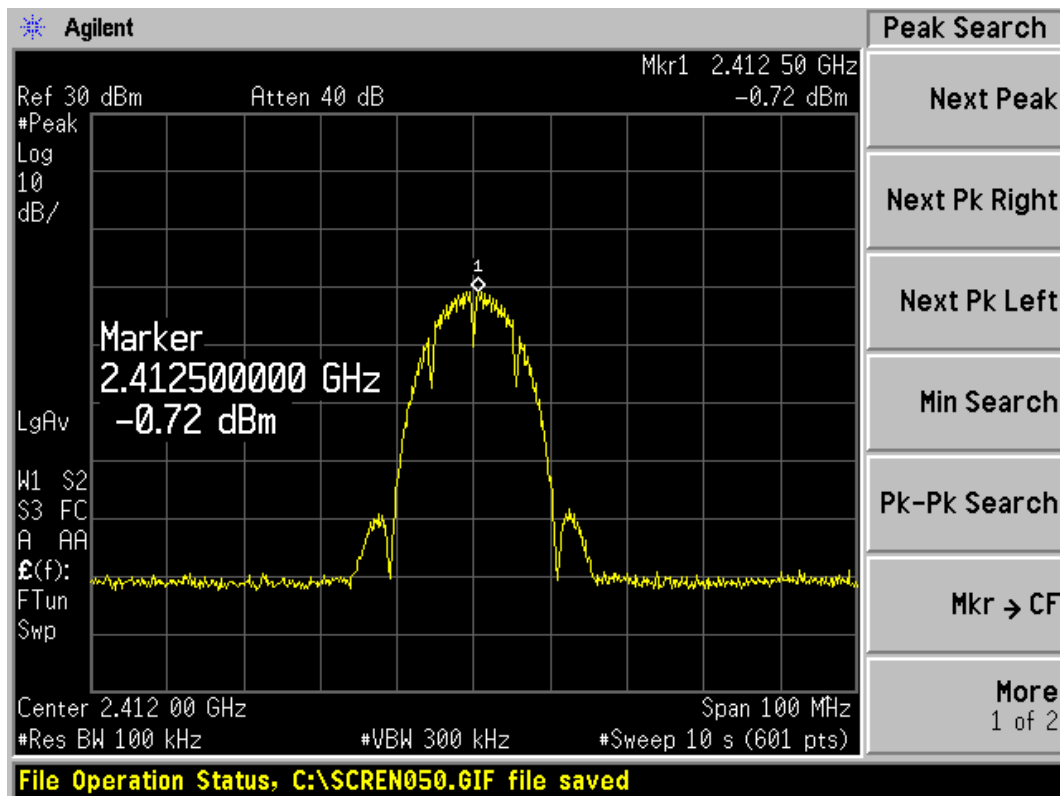
Network Standards	Channel Number	Power Spectral Density dBm / 3kHz	Conclusion
802.11b	1	-15.92	PASS
	6	-15.77	PASS
	11	-14.94	PASS
802.11g	1	-16.81	PASS
	6	-15.77	PASS
	11	-15.54	PASS
802.11n HT20	1	-17.21	PASS
	6	-16.82	PASS
	11	-16.29	PASS
802.11n HT40	3	-20.81	PASS
	6	-20.55	PASS
	9	-19.96	PASS

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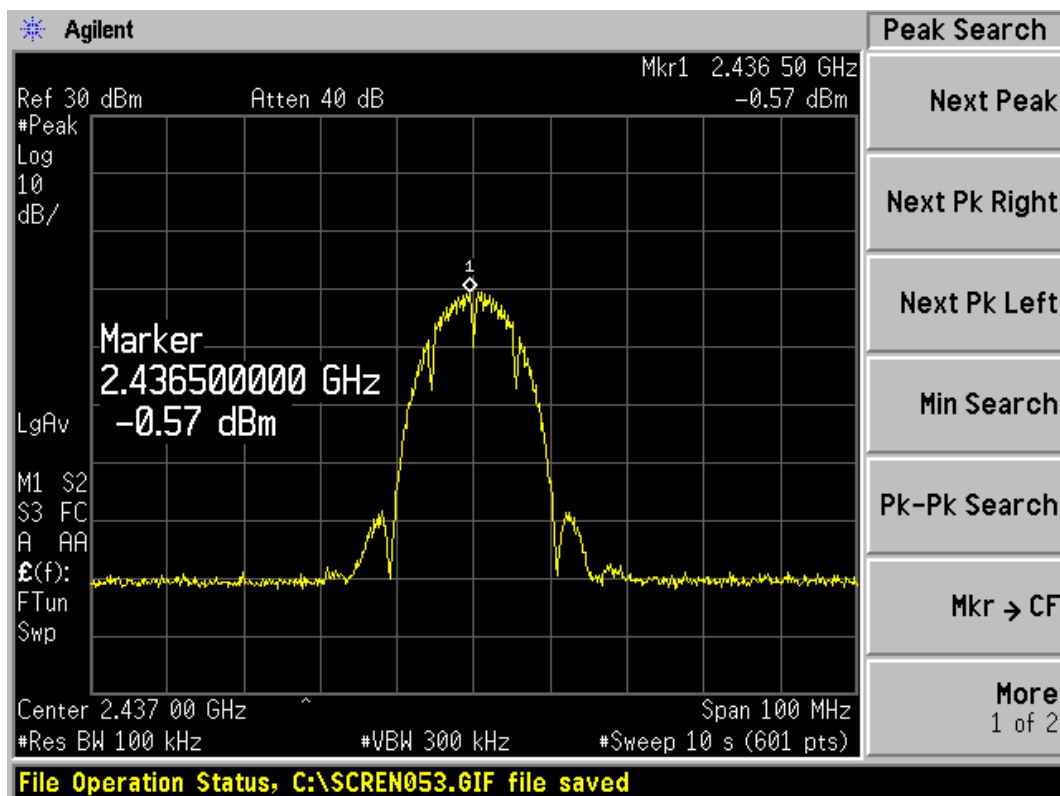
Report No.: RXC1209-0833RF02R3

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802.11b



802.11b, Channel No.: 1

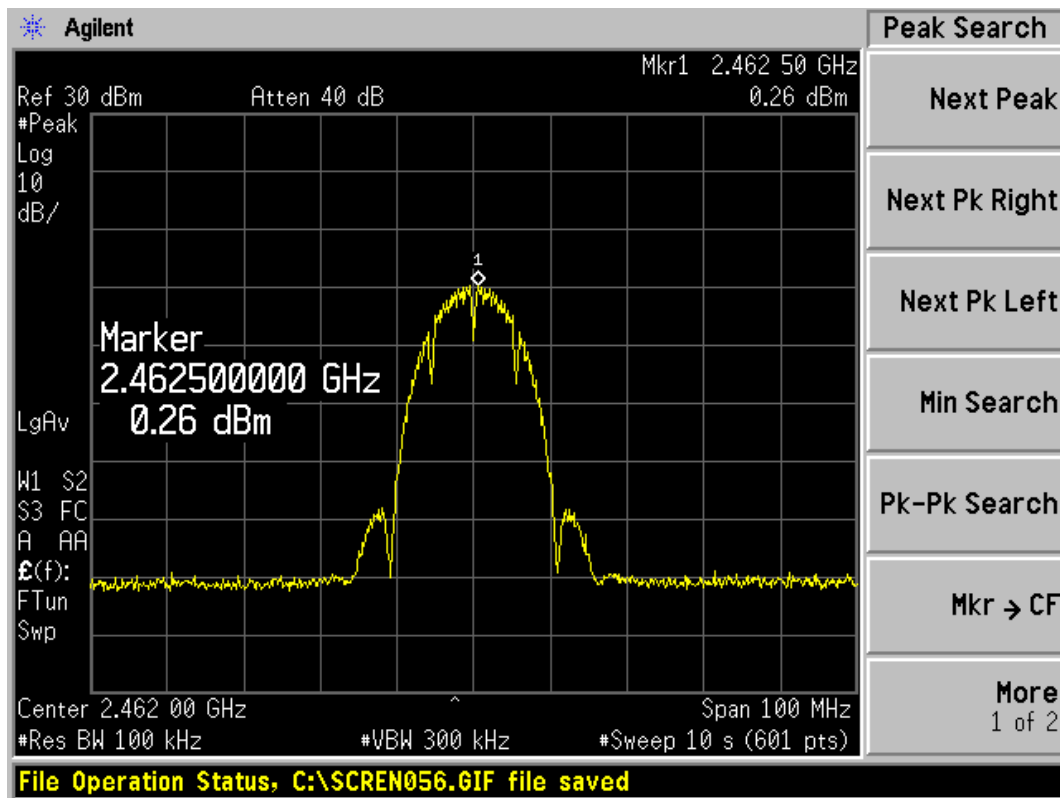


802.11b, Channel No.: 6

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

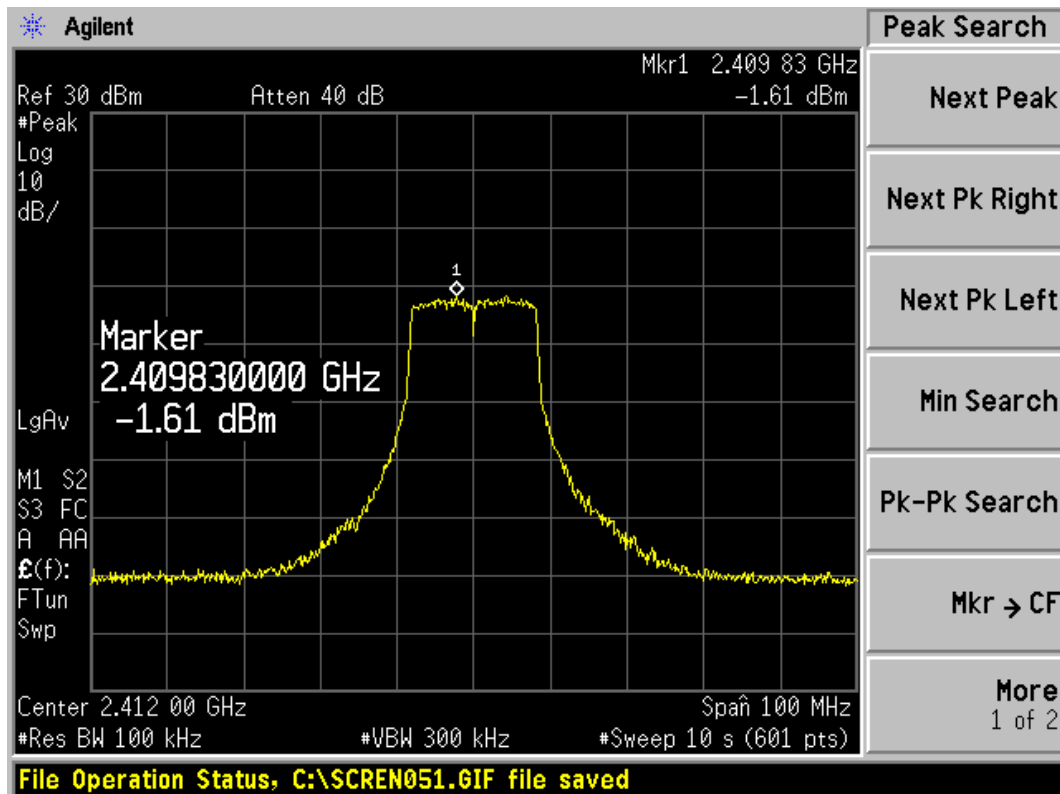
Report No.: RXC1209-0833RF02R3

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802.11b, Channel No.: 11

802.11g

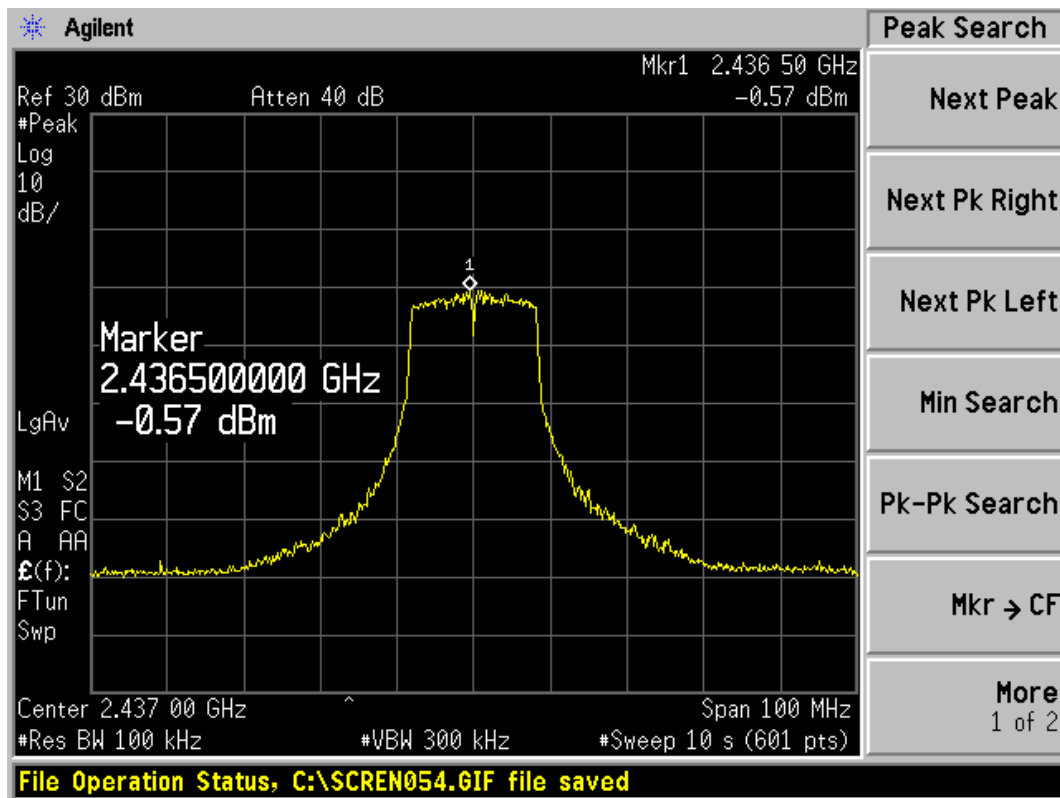


802.11g, Channel No.: 1

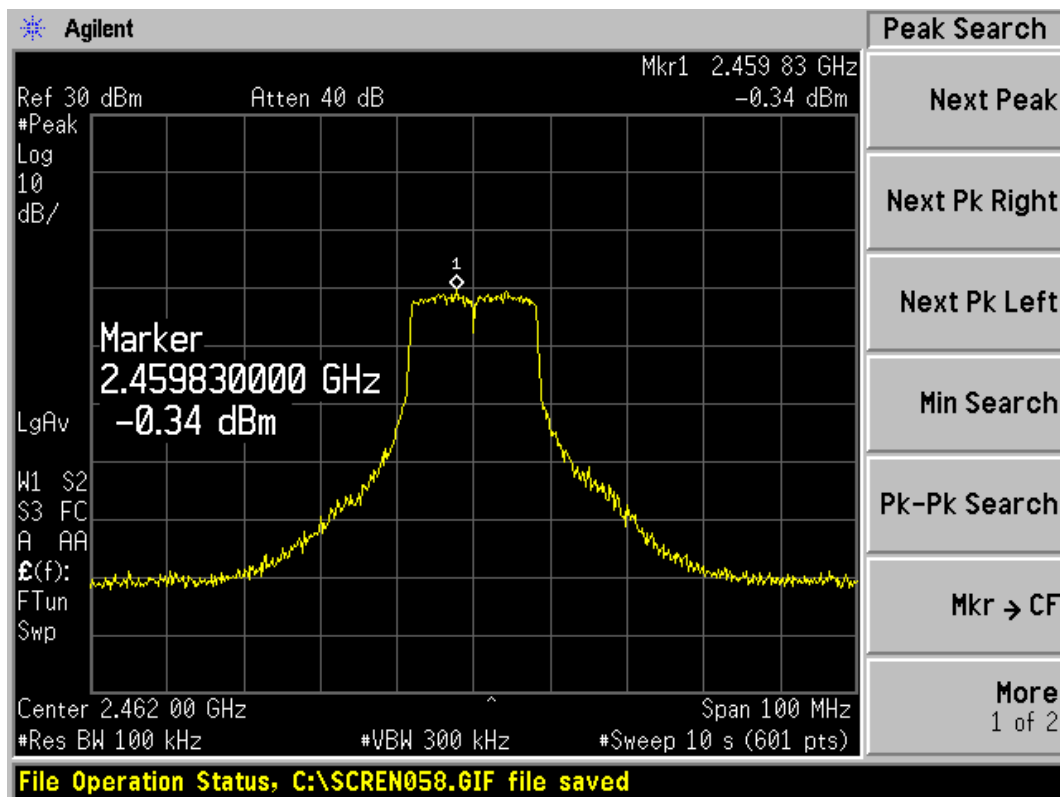
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802.11g, Channel No.: 6



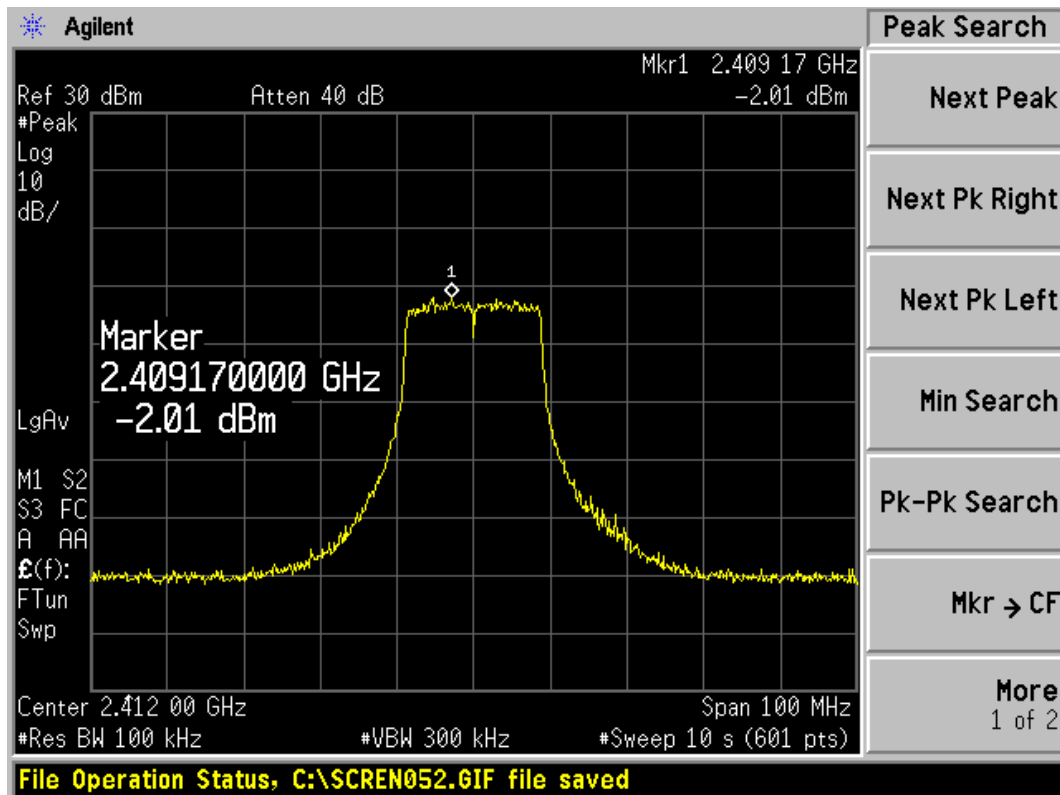
802.11g, Channel No.: 11

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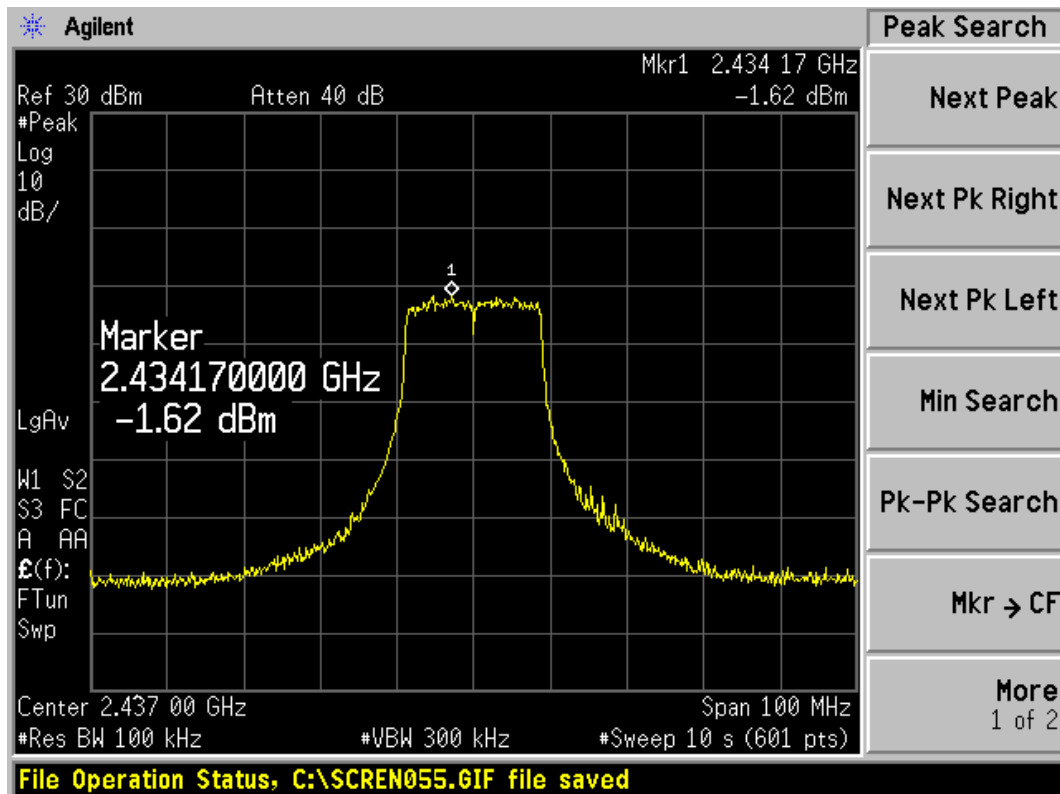
Report No.: RXC1209-0833RF02R3

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802.11n(HT20)



802.11n, Channel No.: 1

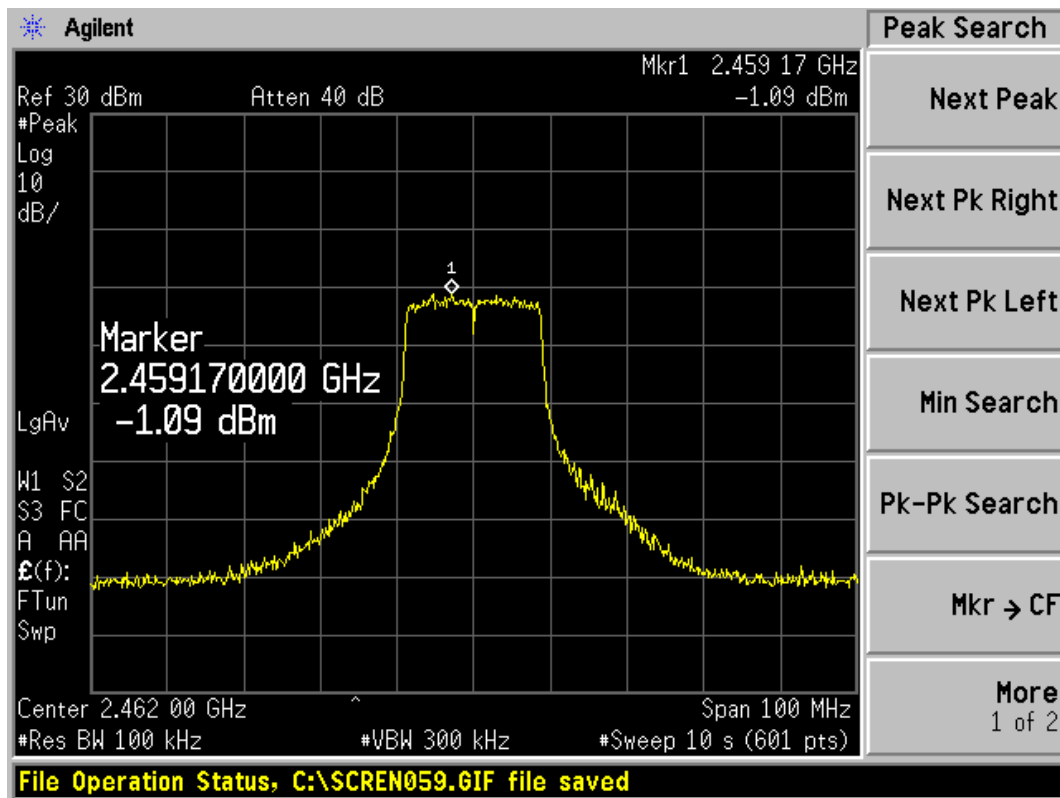


802.11n, Channel No.: 6

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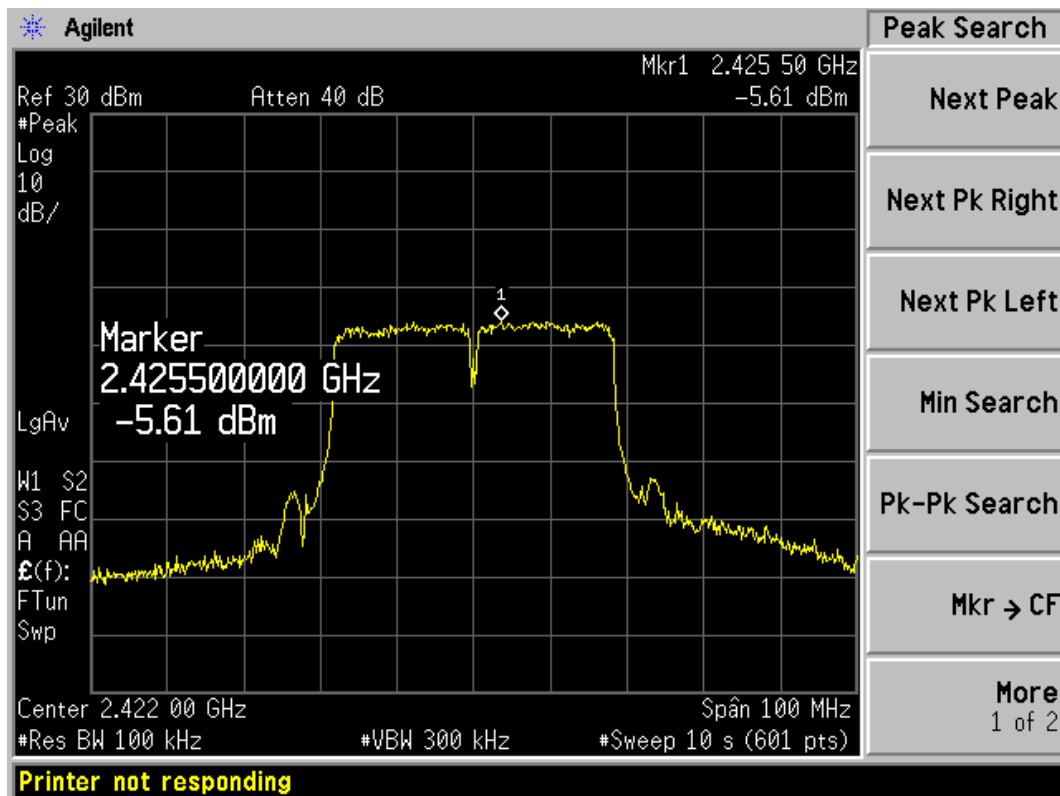
Report No.: RXC1209-0833RF02R3

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802.11n, Channel No.: 11

802.11n(HT40)

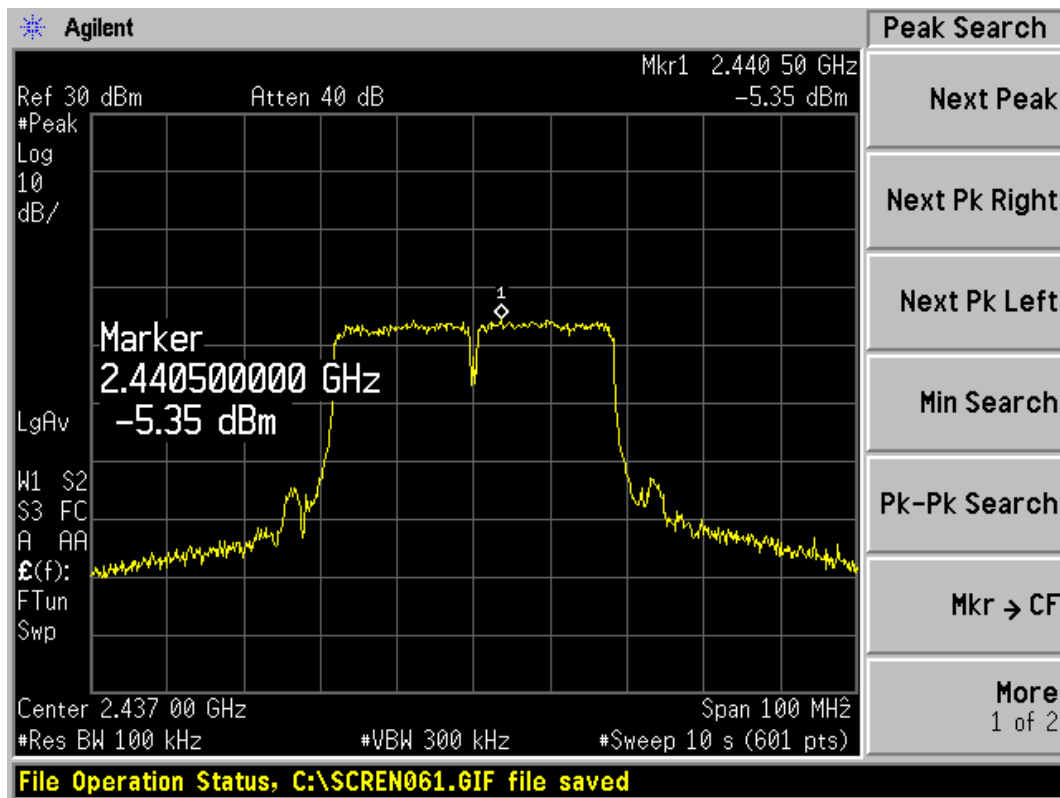


802.11n, Channel No.: 3

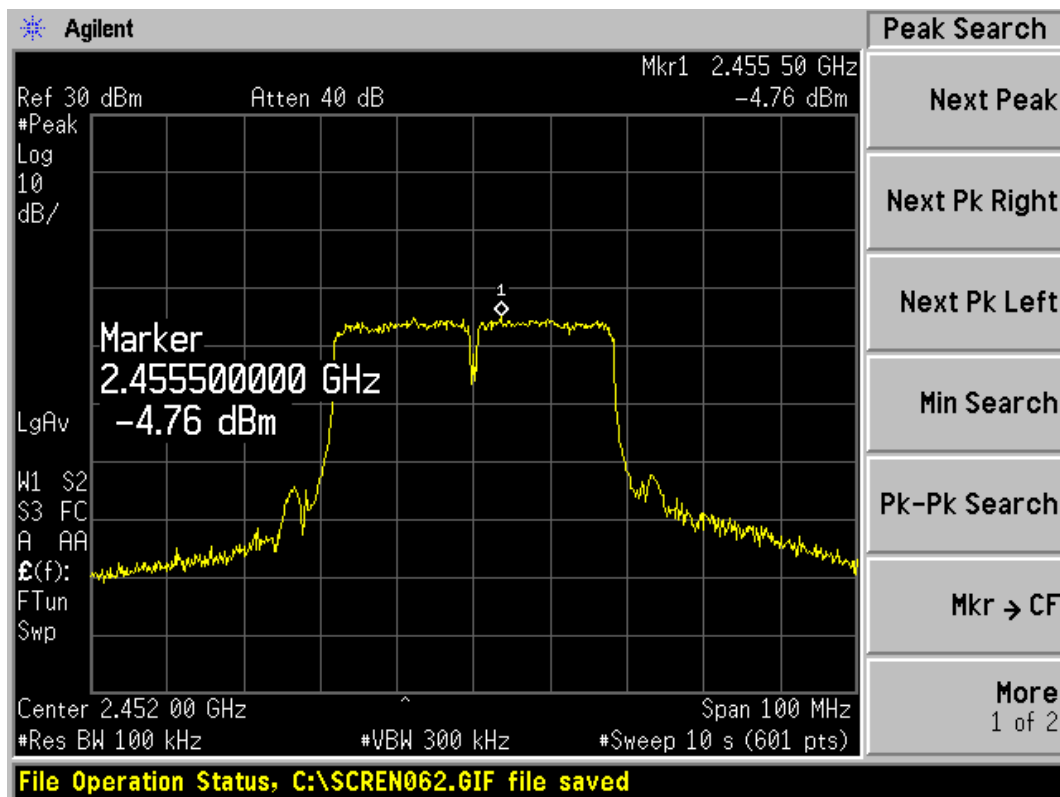
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802.11n, Channel No.: 6



802.11n, Channel No.: 9

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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	-16.75	≤ -36.75
	2437	-16.75	≤ -36.75
	2462	-15.73	≤ -35.73
802.11g	2412	-16.93	≤ -36.93
	2437	-16.46	≤ -36.46
	2462	-16.75	≤ -36.75
802.11n HT20	2412	-17.71	≤ -37.71
	2437	-16.29	≤ -36.29
	2462	-15.33	≤ -35.33

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802.11n HT40	2422	-16.81	-36.81
	2437	-16.39	-36.39
	2452	-16.49	-36.49

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

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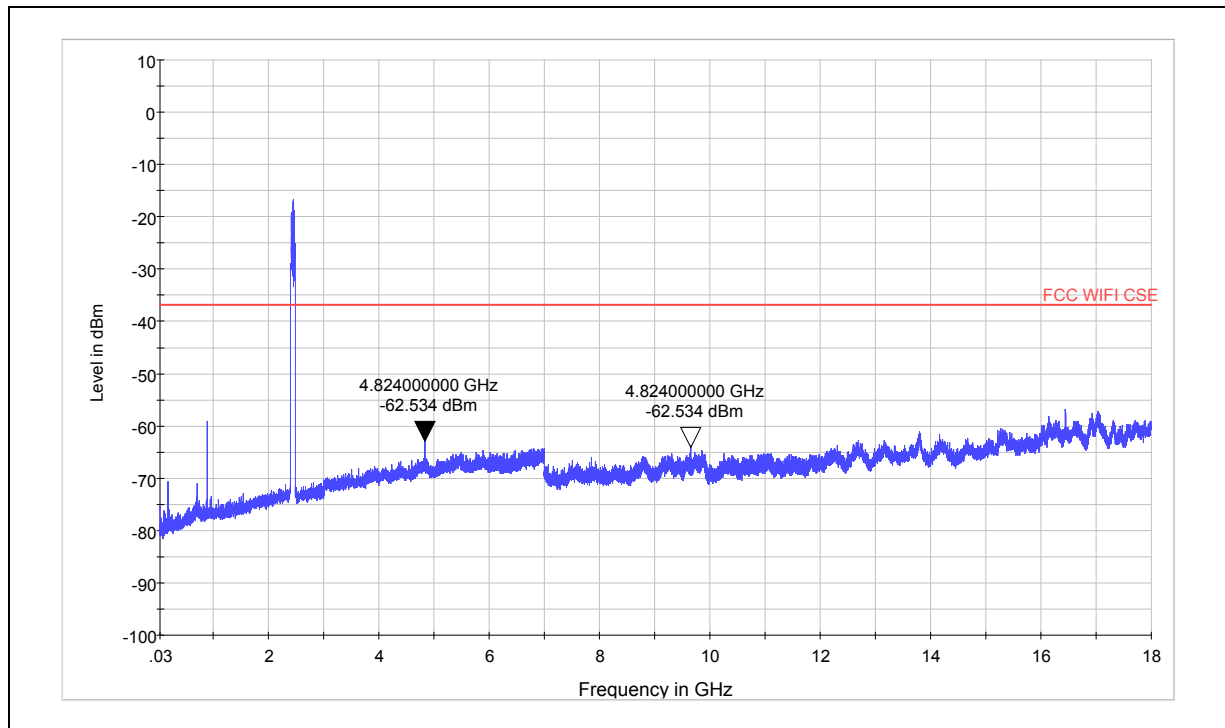
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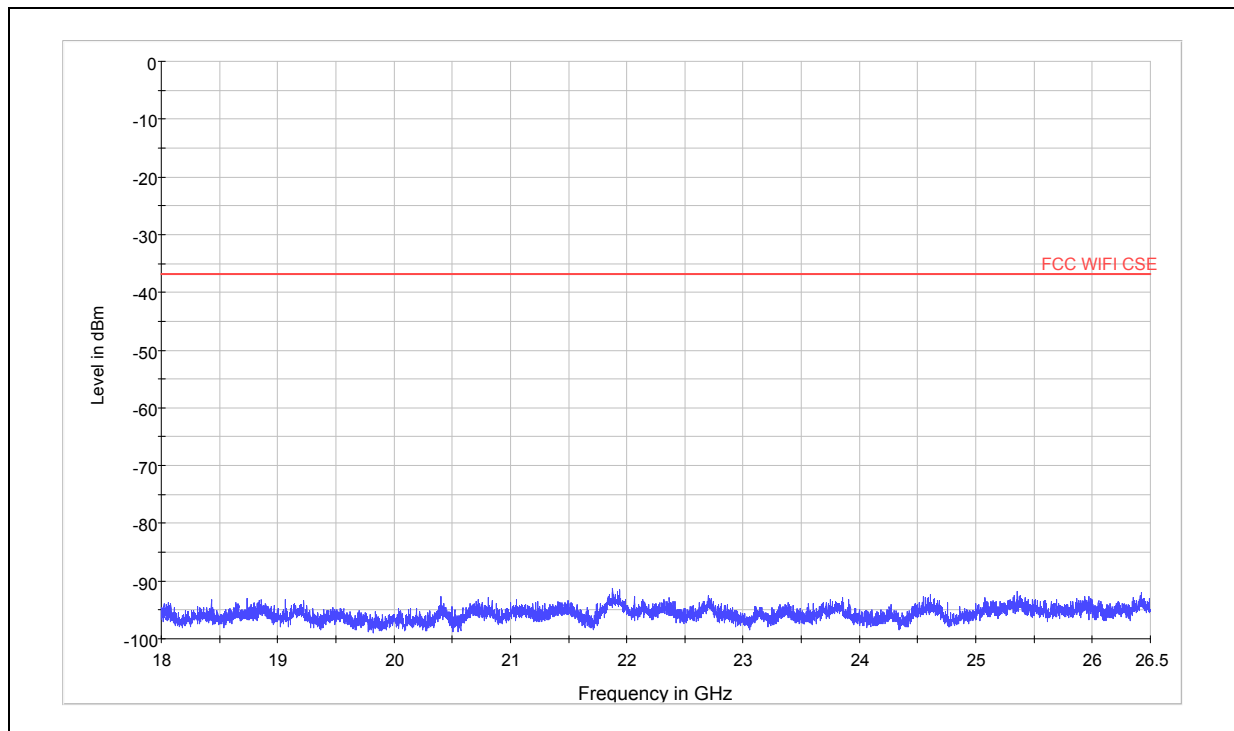
Test Results:

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

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Harmonic	TX ch.1 Frequency (MHz)	Level (dBm)	Limit (dBm)
2	4824	-62.53	-36.75
3	7236	Nf	-36.75
4	9648	-63.62	-36.75
5	12060	Nf	-36.75
6	14472	Nf	-36.75
7	16884	Nf	-36.75
8	19296	Nf	-36.75
9	21708	Nf	-36.75
10	24120	Nf	-36.75

Nf: noise floor

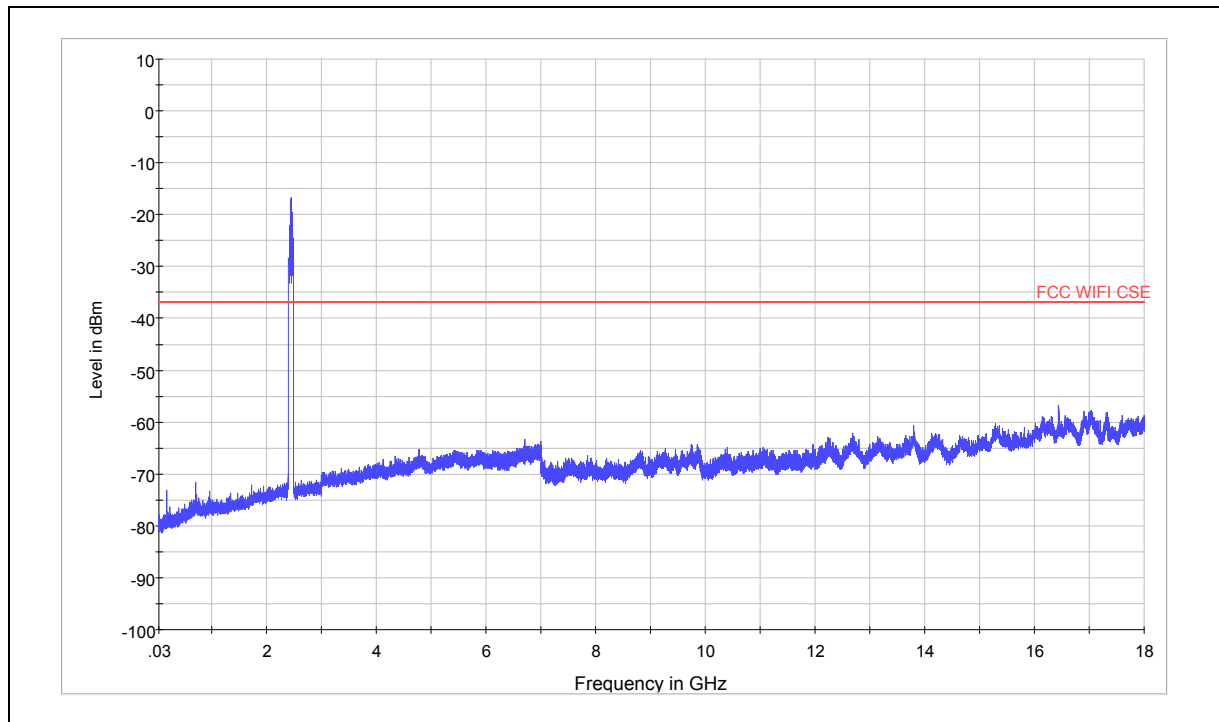
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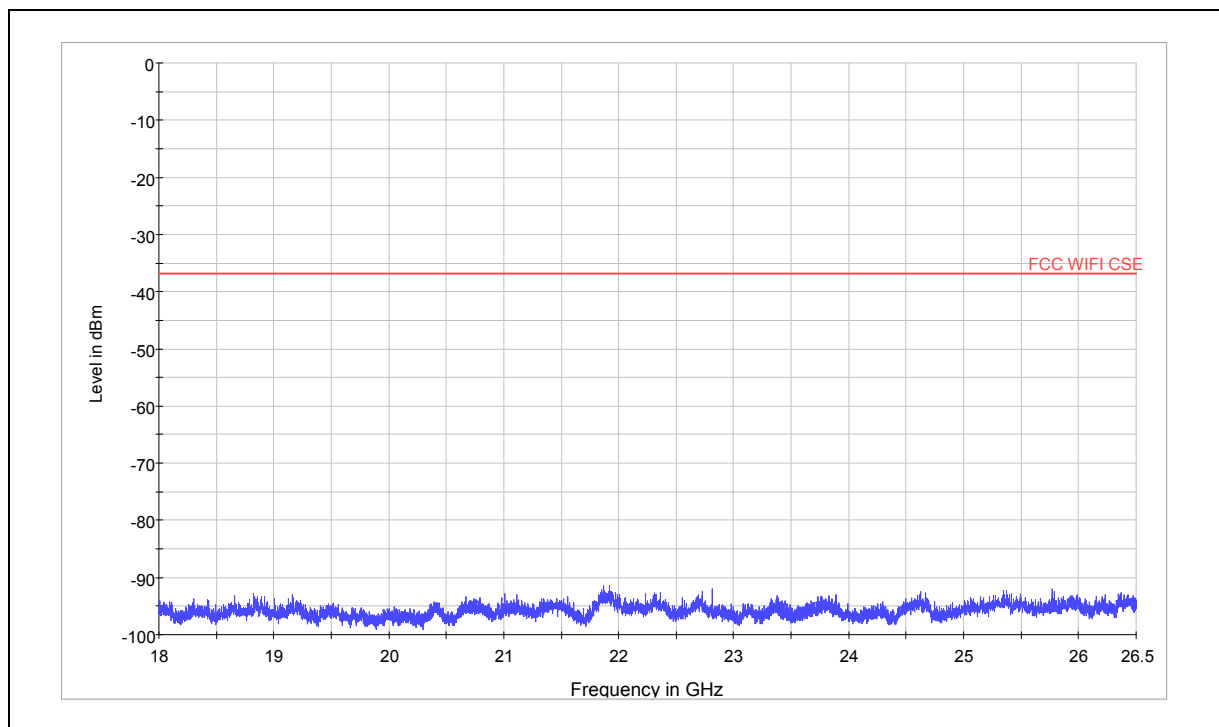
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802.11b CH6



Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

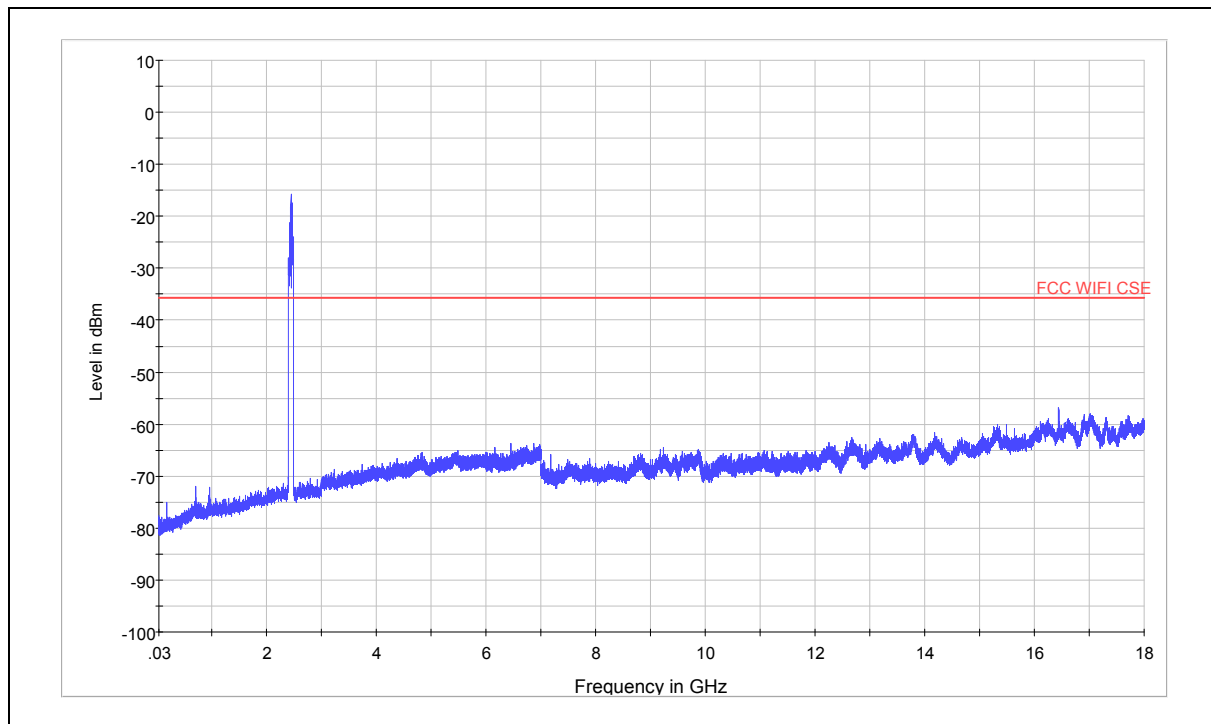
TA Technology (Shanghai) Co., Ltd.

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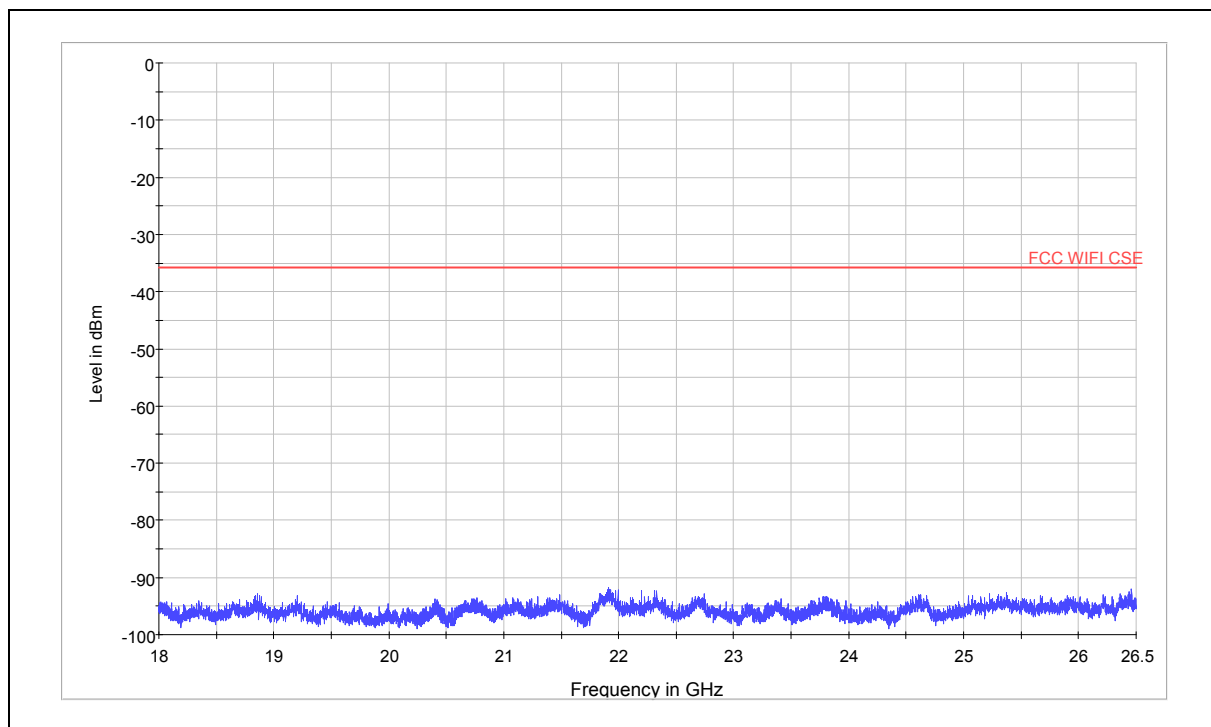
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802.11b CH11



Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

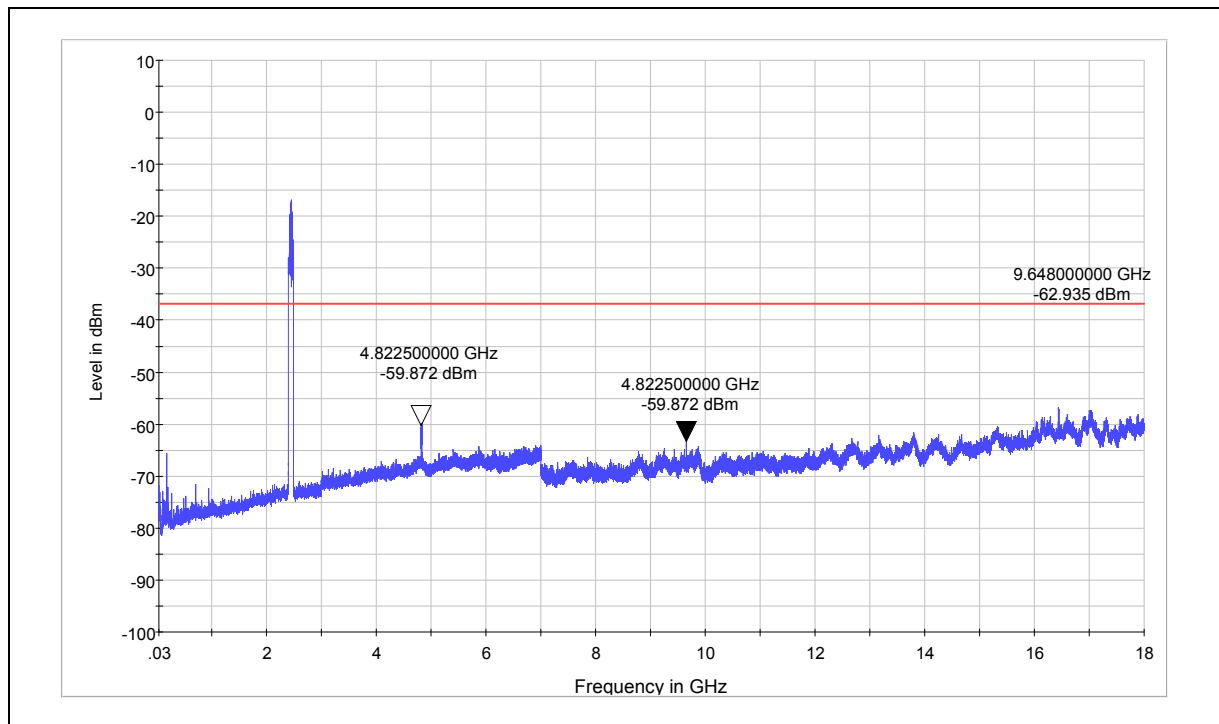
TA Technology (Shanghai) Co., Ltd.

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Report No.: RXC1209-0833RF02R3

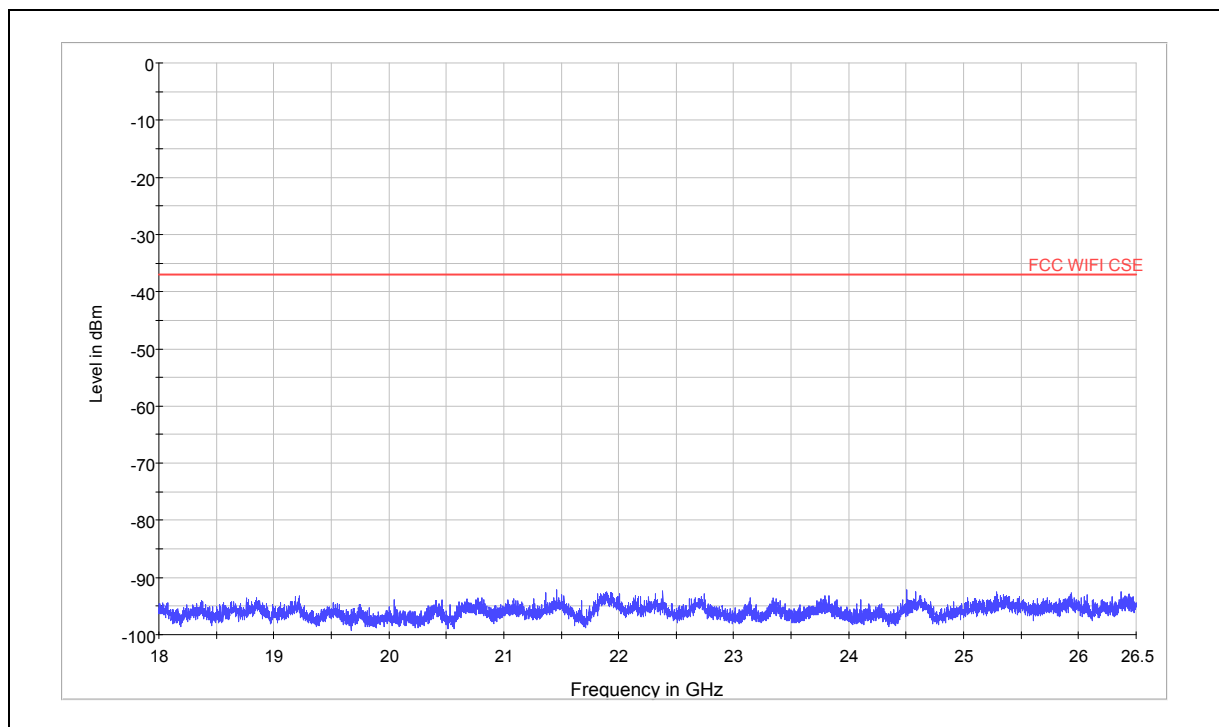
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802.11g CH1



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

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Harmonic	TX ch.1 Frequency (MHz)	Level (dBm)	Limit (dBm)
2	4823	-59.87	-36.46
3	7236	Nf	-36.46
4	9648	-62.64	-36.46
5	12060	Nf	-36.46
6	14472	Nf	-36.46
7	16884	Nf	-36.46
8	19296	Nf	-36.46
9	21708	Nf	-36.46
10	24120	Nf	-36.46
Nf: noise floor			

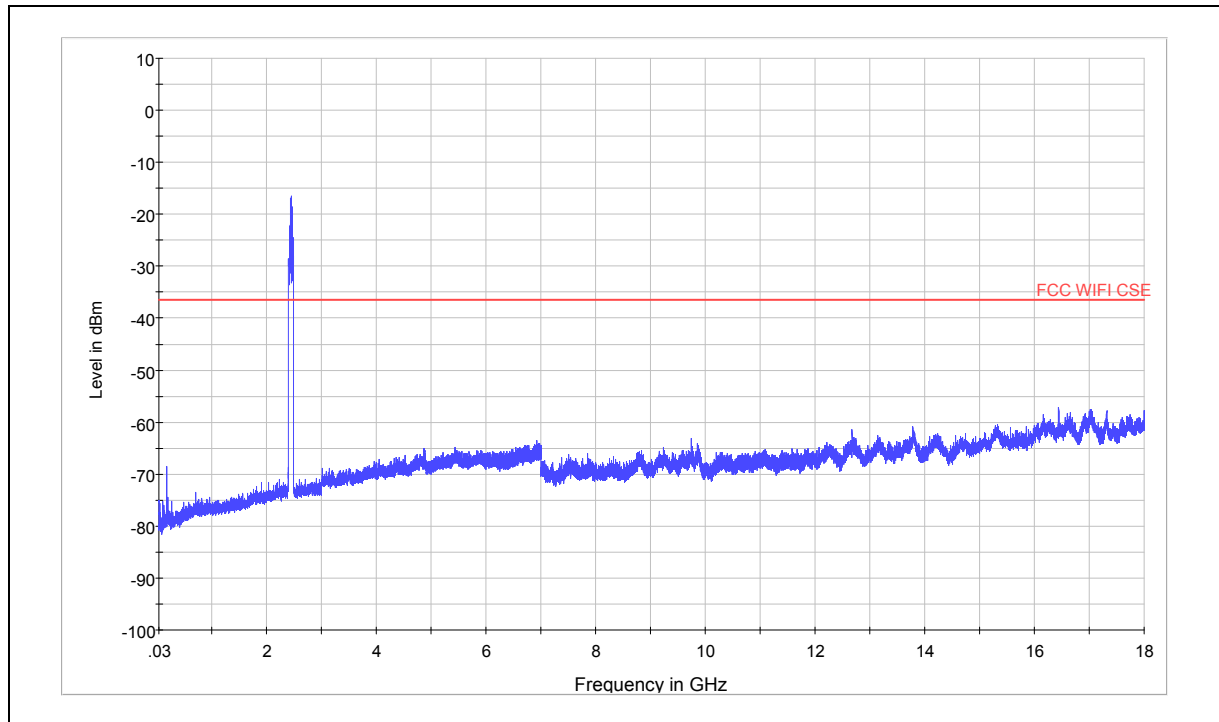
TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.: RXC1209-0833RF02R3

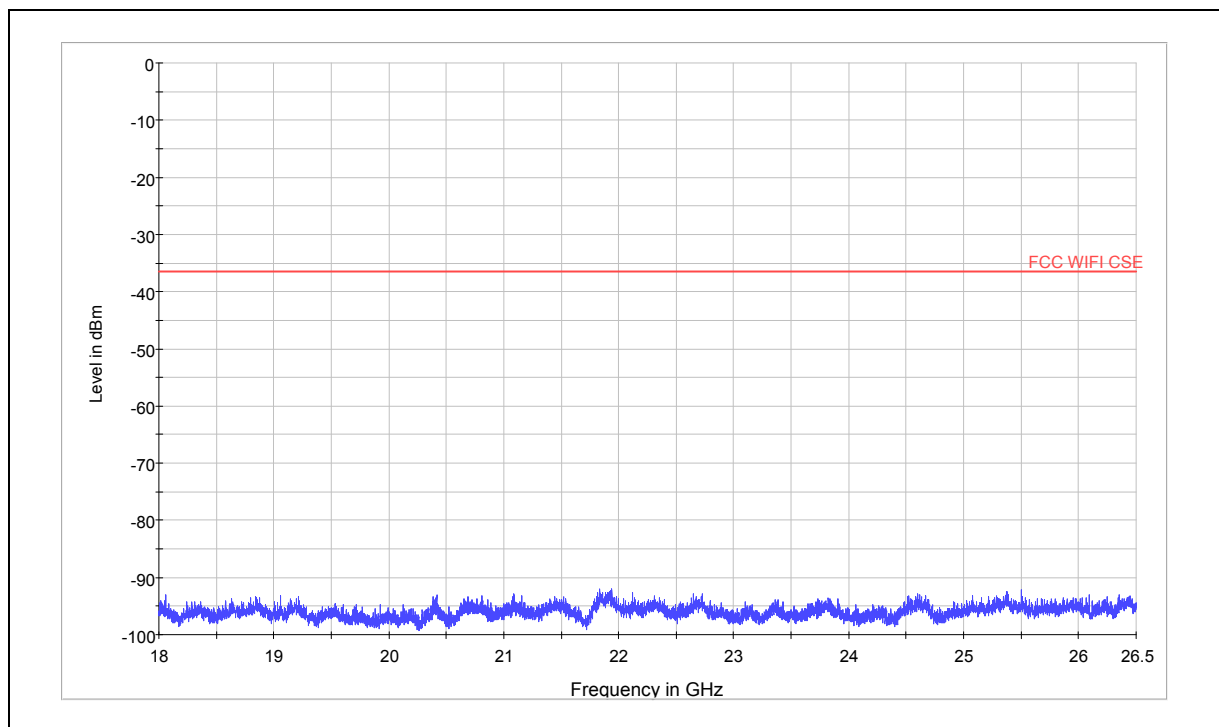
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802.11g CH6



Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



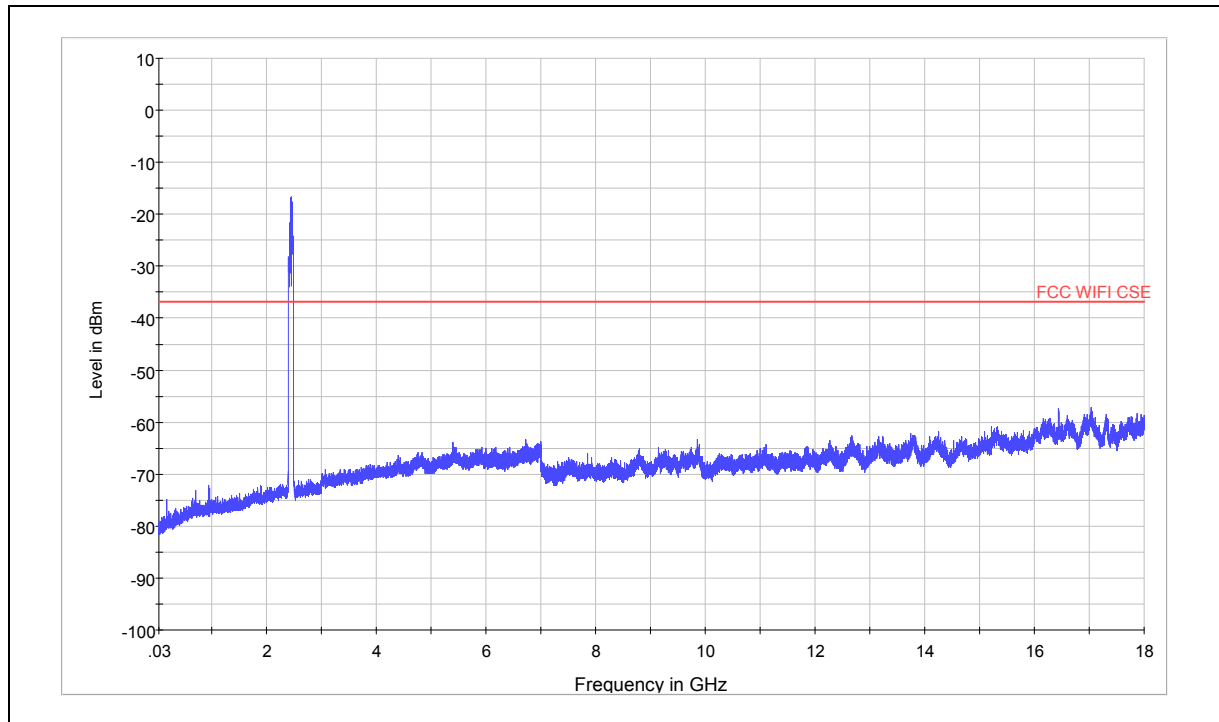
Spurious RF conducted emissions from 18GHz to 26.5GHz

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Report No.: RXC1209-0833RF02R3

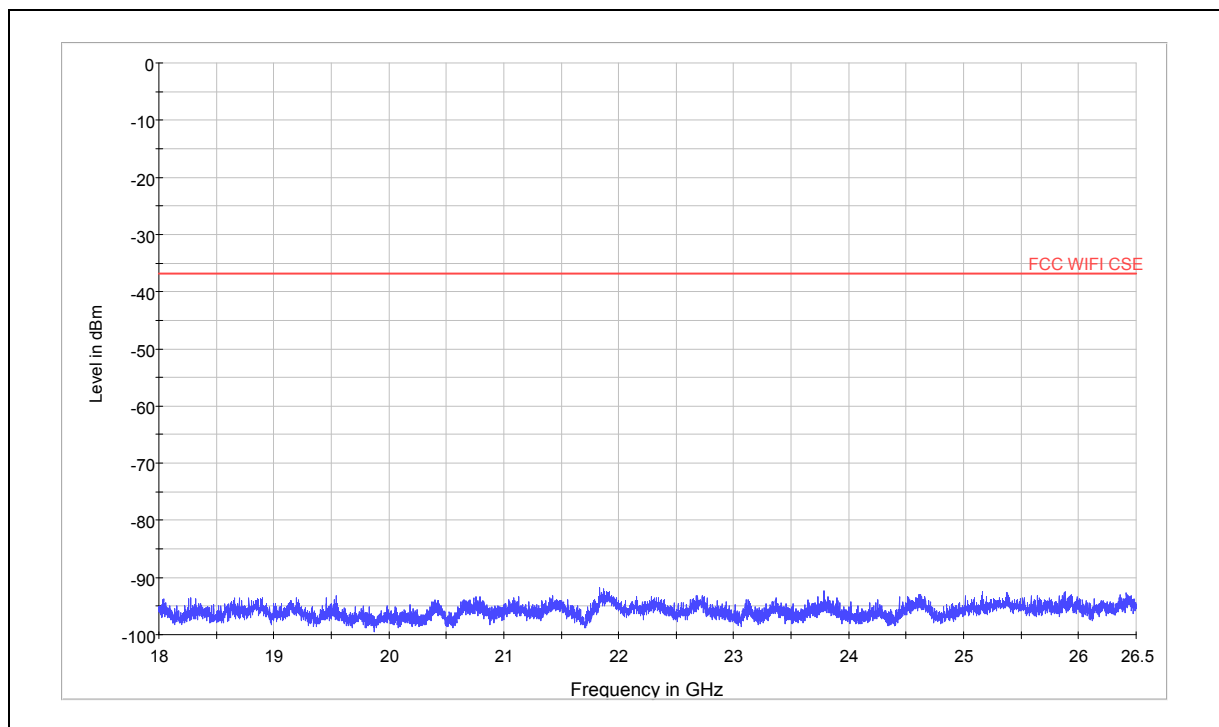
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802.11g CH11



Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

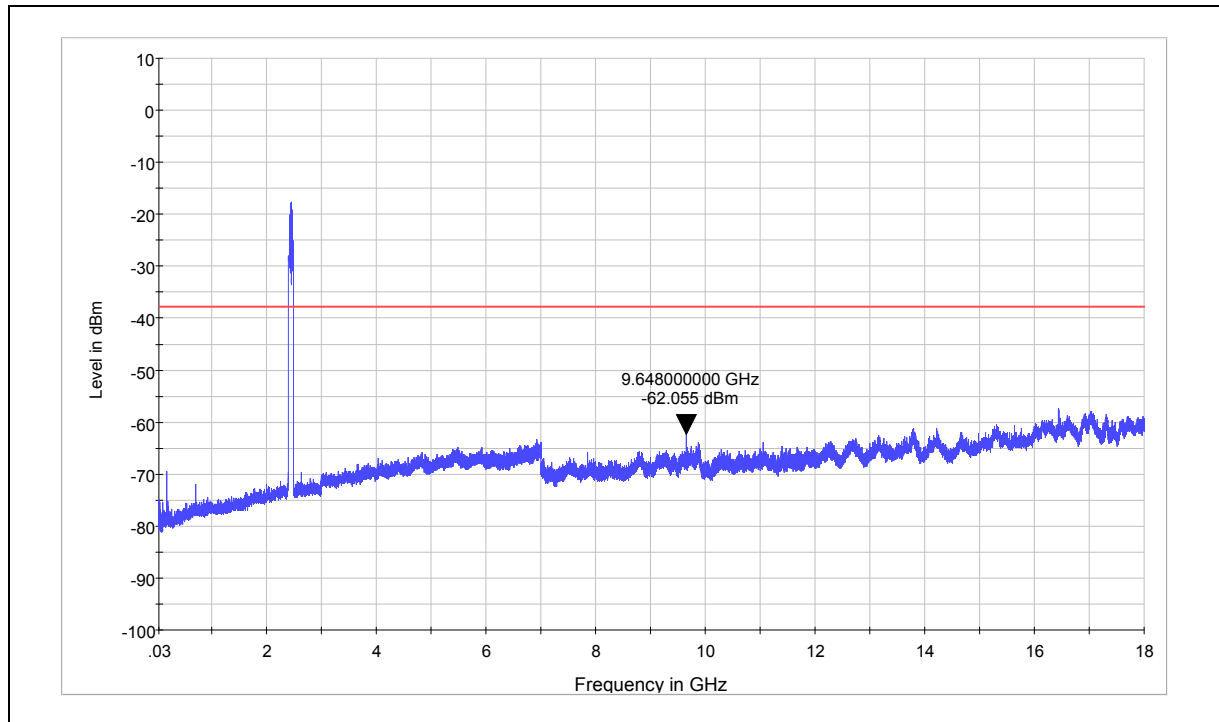
TA Technology (Shanghai) Co., Ltd.

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Report No.: RXC1209-0833RF02R3

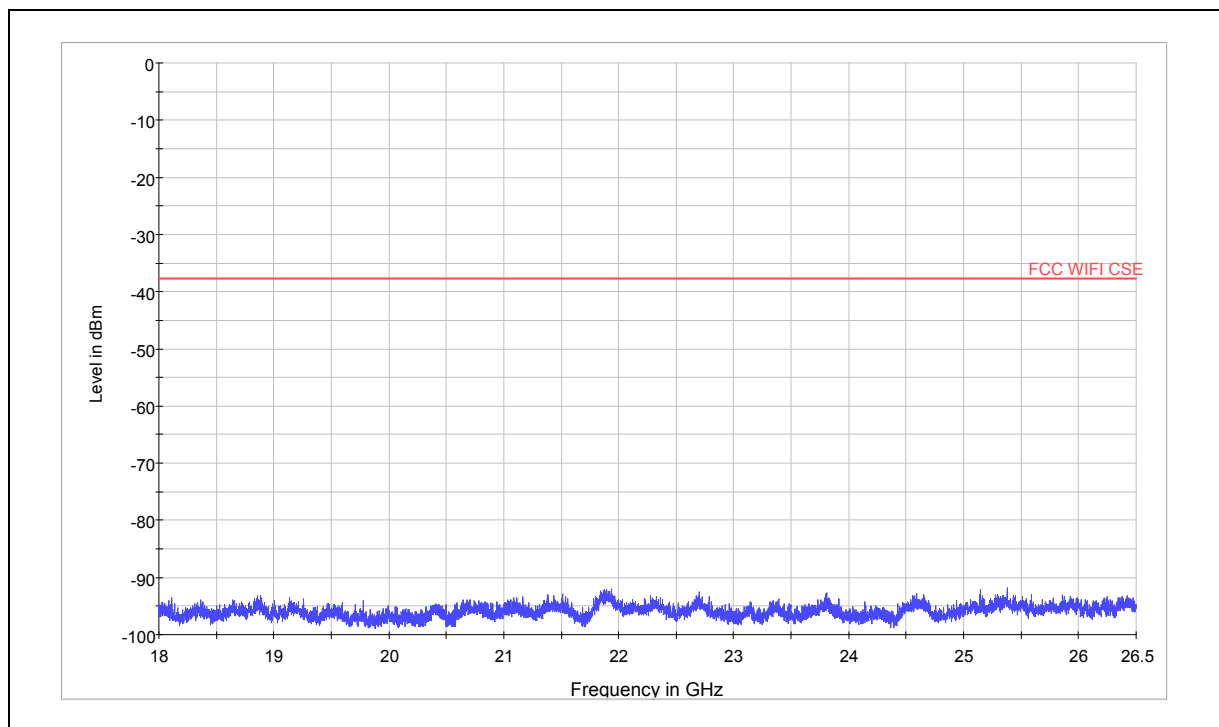
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802.11n(HT20) CH1



Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

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Harmonic	TX ch.1 Frequency (MHz)	Level (dBm)	Limit (dBm)
2	4824	Nf	-37.71
3	7236	Nf	-37.71
4	9648	-62.06	-37.71
5	12060	Nf	-37.71
6	14472	Nf	-37.71
7	16884	Nf	-37.71
8	19296	Nf	-37.71
9	21708	Nf	-37.71
10	24120	Nf	-37.71
Nf: noise floor			

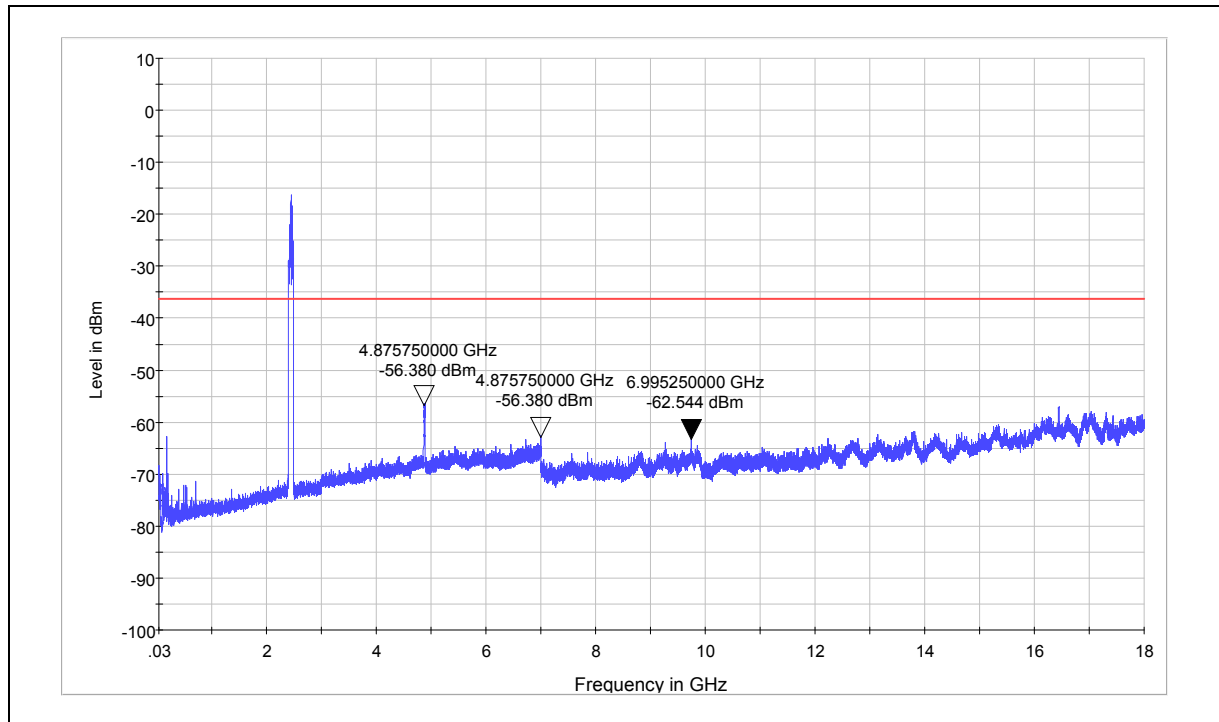
TA Technology (Shanghai) Co., Ltd.

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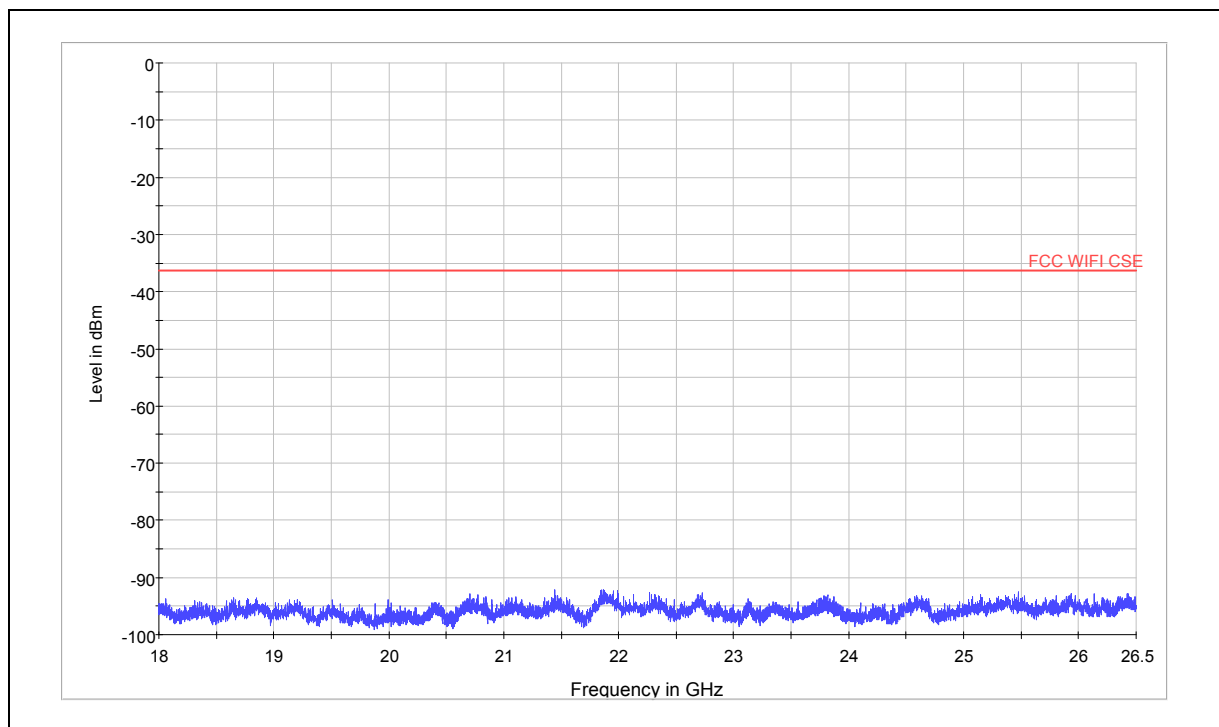
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802.11n(HT20) CH6



Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

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Harmonic	TX ch.1 Frequency (MHz)	Level (dBm)	Limit (dBm)
2	4876	-56.38	-36.29
3	6995	-62.54	-36.29
4	9748	-62.94	-36.29
5	12185	Nf	-36.29
6	14622	Nf	-36.29
7	17059	Nf	-36.29
8	19496	Nf	-36.29
9	21933	Nf	-36.29
10	24370	Nf	-36.29

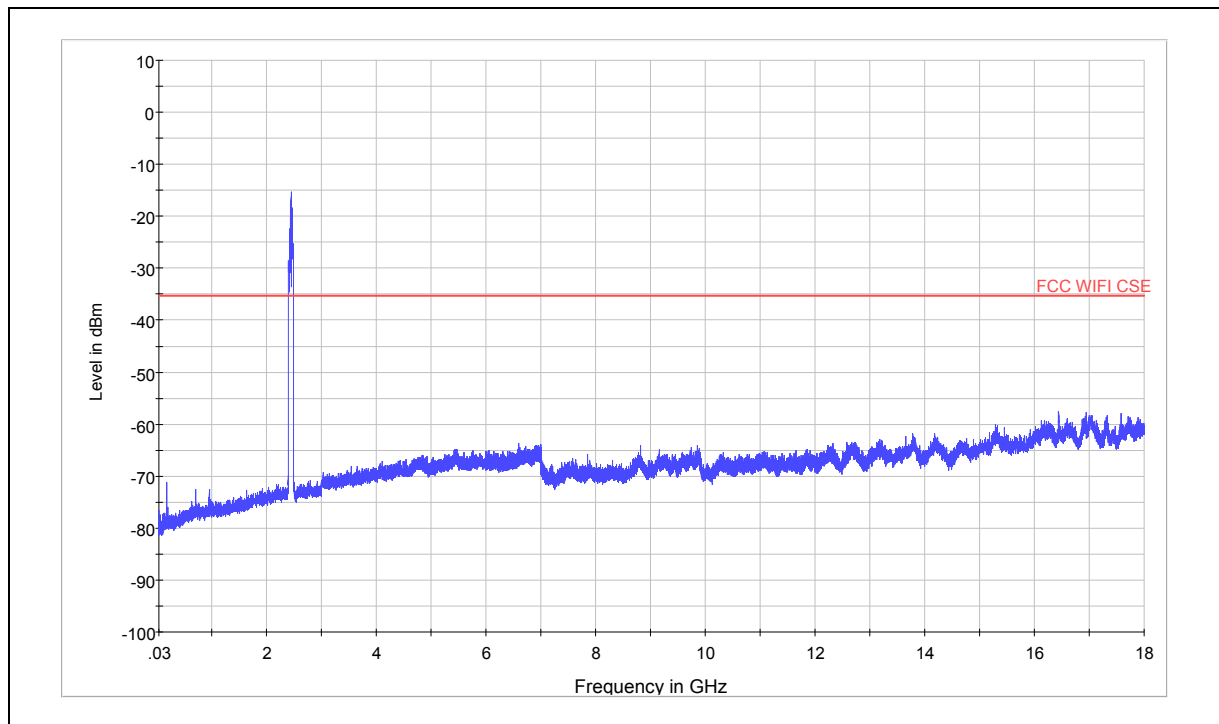
Nf: noise floor

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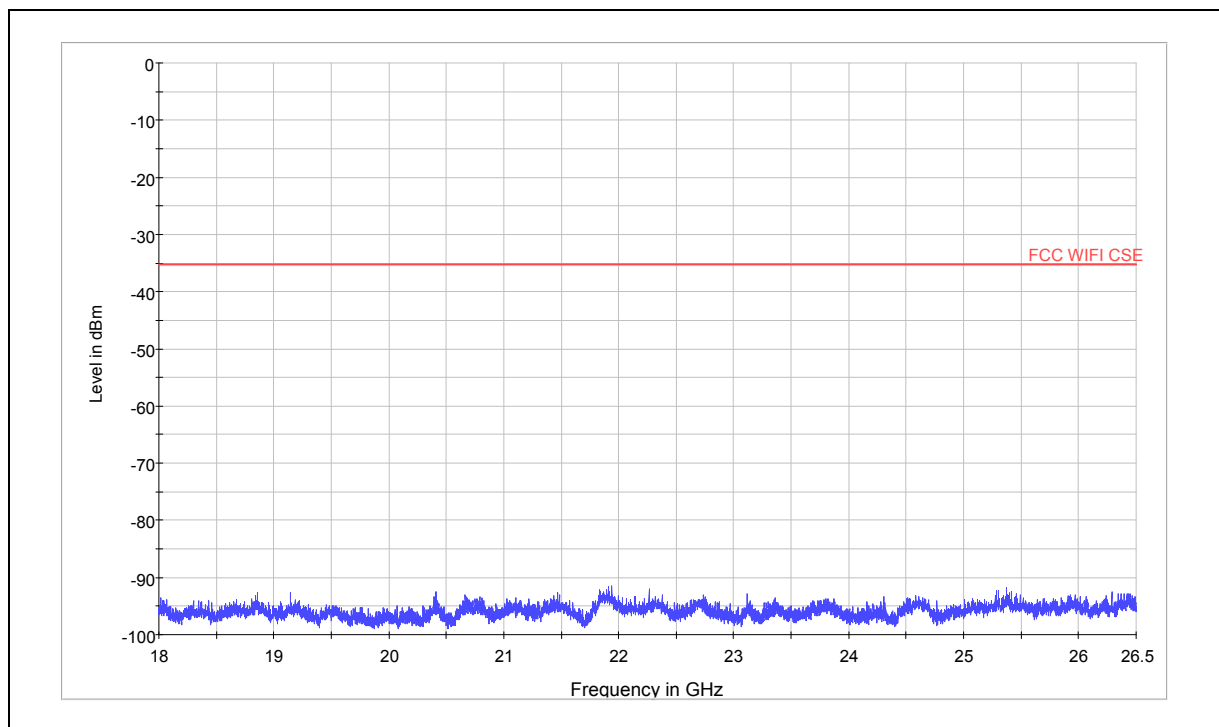
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802.11n(HT20) CH11



Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

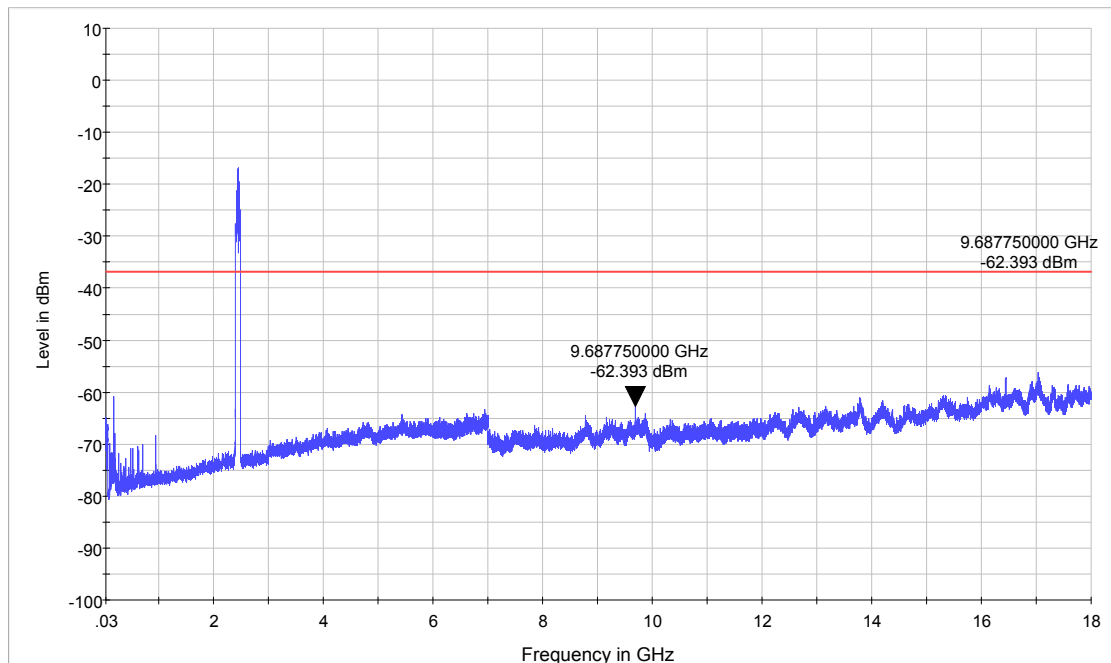
TA Technology (Shanghai) Co., Ltd.

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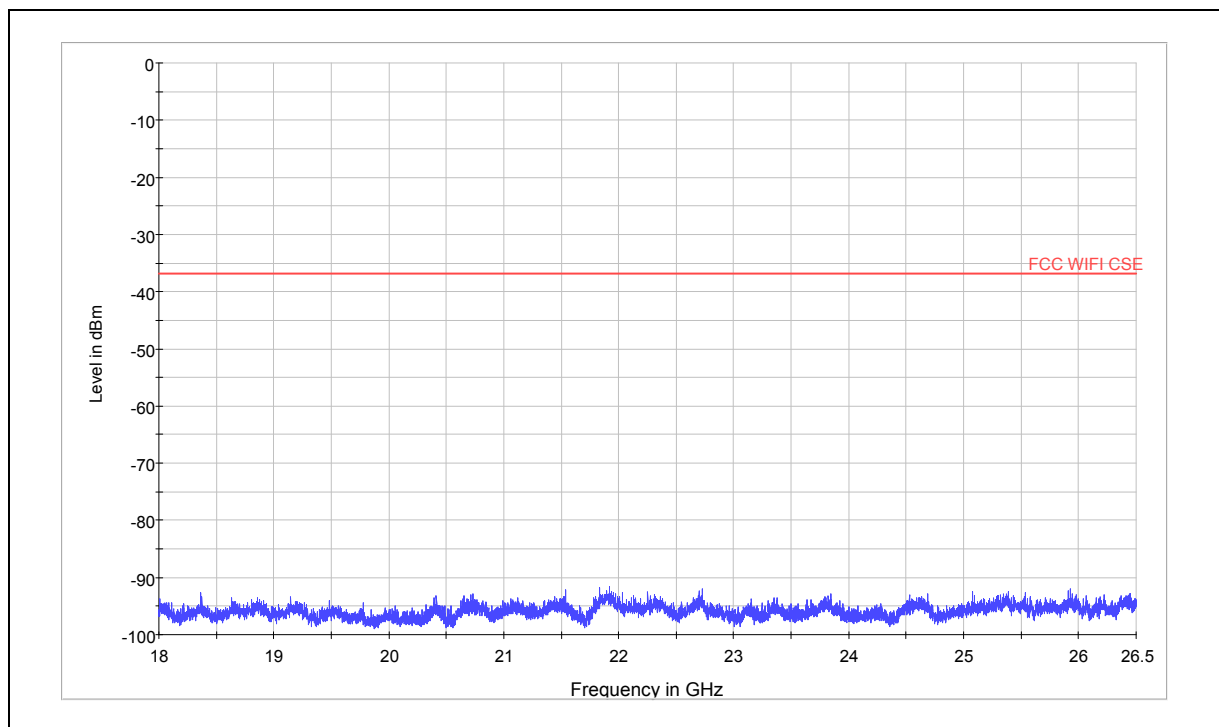
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802.11n(HT40) CH1



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

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Harmonic	TX ch.1 Frequency (MHz)	Level (dBm)	Limit (dBm)
2	4824	Nf	-36.81
3	7236	Nf	-36.81
4	9688	-62.39	-36.81
5	12060	Nf	-36.81
6	14472	Nf	-36.81
7	16884	Nf	-36.81
8	19296	Nf	-36.81
9	21708	Nf	-36.81
10	24120	Nf	-36.81
Nf: noise floor			

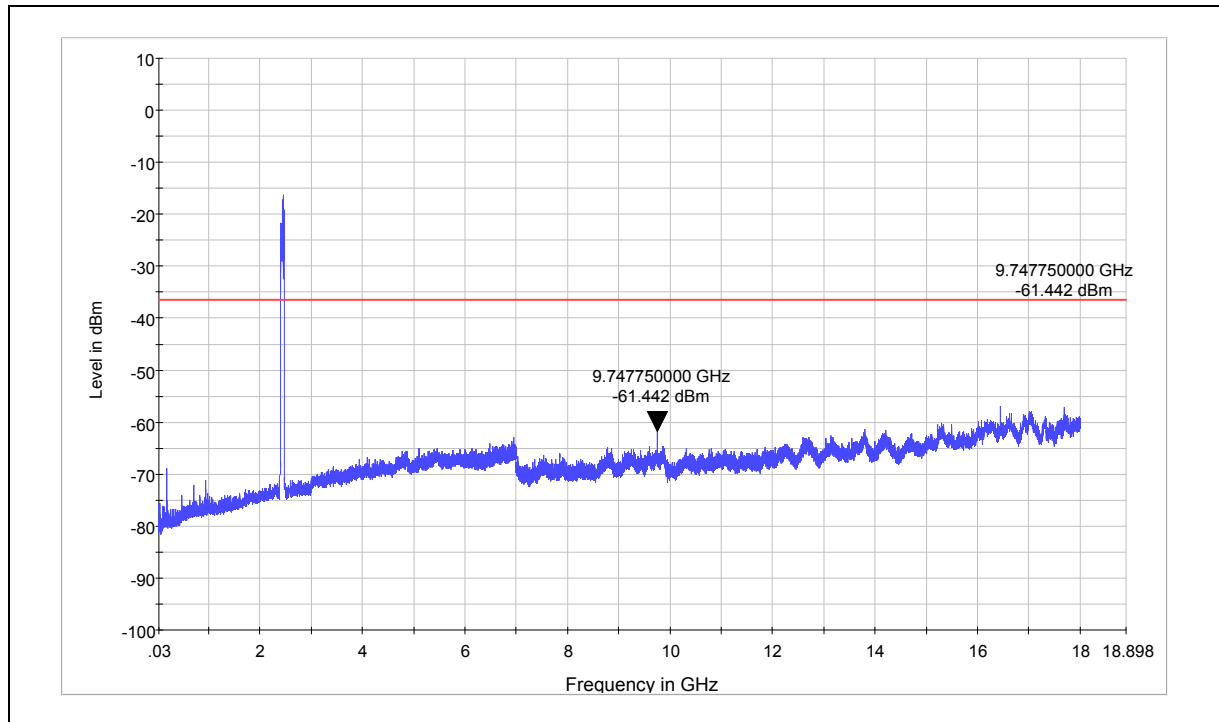
TA Technology (Shanghai) Co., Ltd.

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Report No.: RXC1209-0833RF02R3

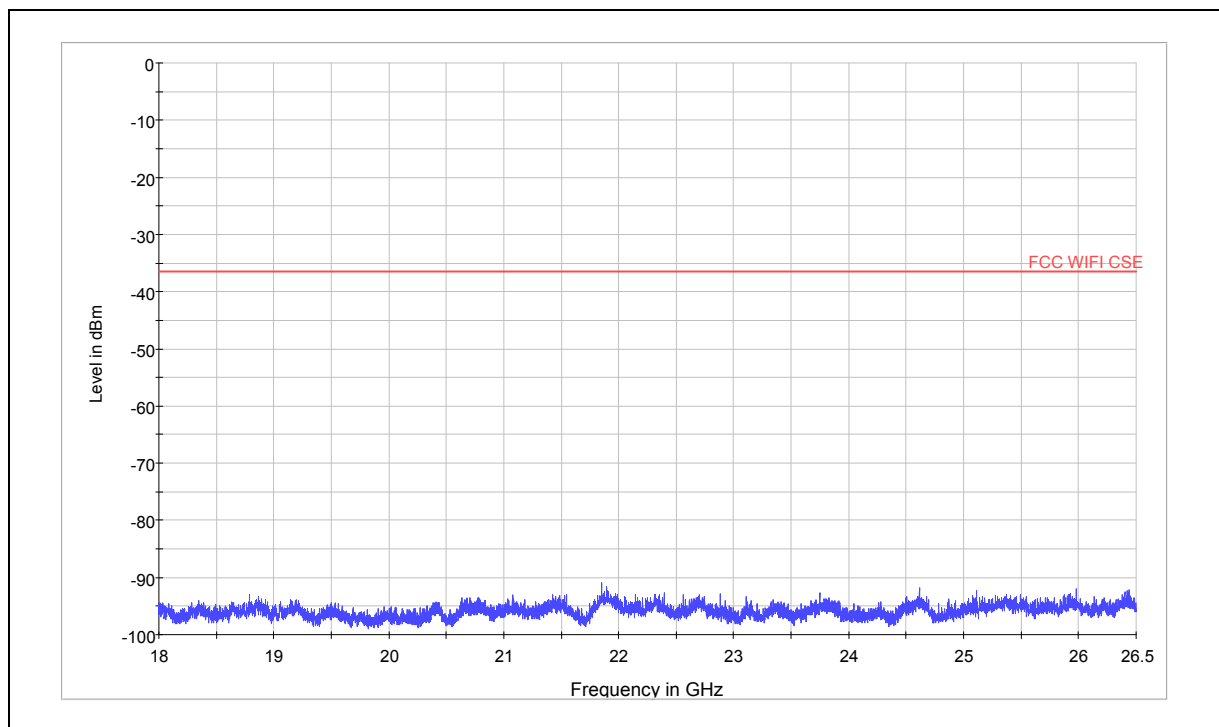
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802.11n(HT40) CH6



Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

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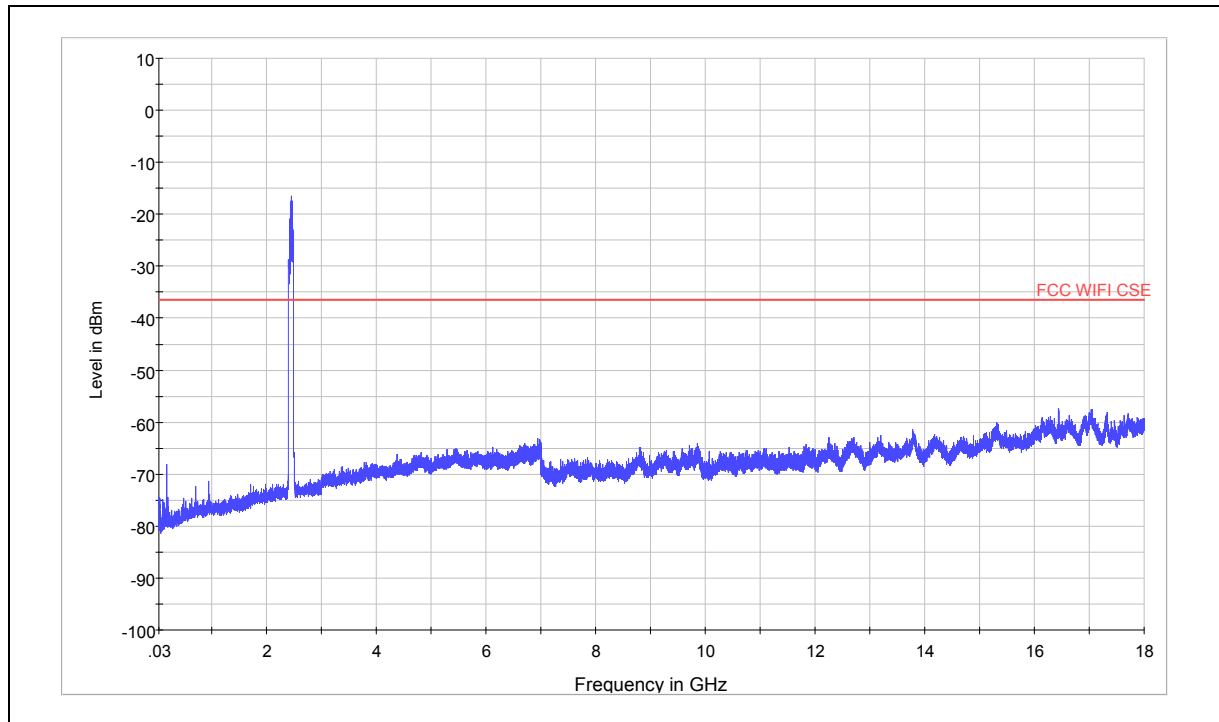
Harmonic	TX ch.1 Frequency (MHz)	Level (dBm)	Limit (dBm)
2	4876	Nf	-36.39
3	6995	Nf	-36.39
4	9748	-61.44	-36.39
5	12185	Nf	-36.39
6	14622	Nf	-36.39
7	17059	Nf	-36.39
8	19496	Nf	-36.39
9	21933	Nf	-36.39
10	24370	Nf	-36.39
Nf: noise floor			

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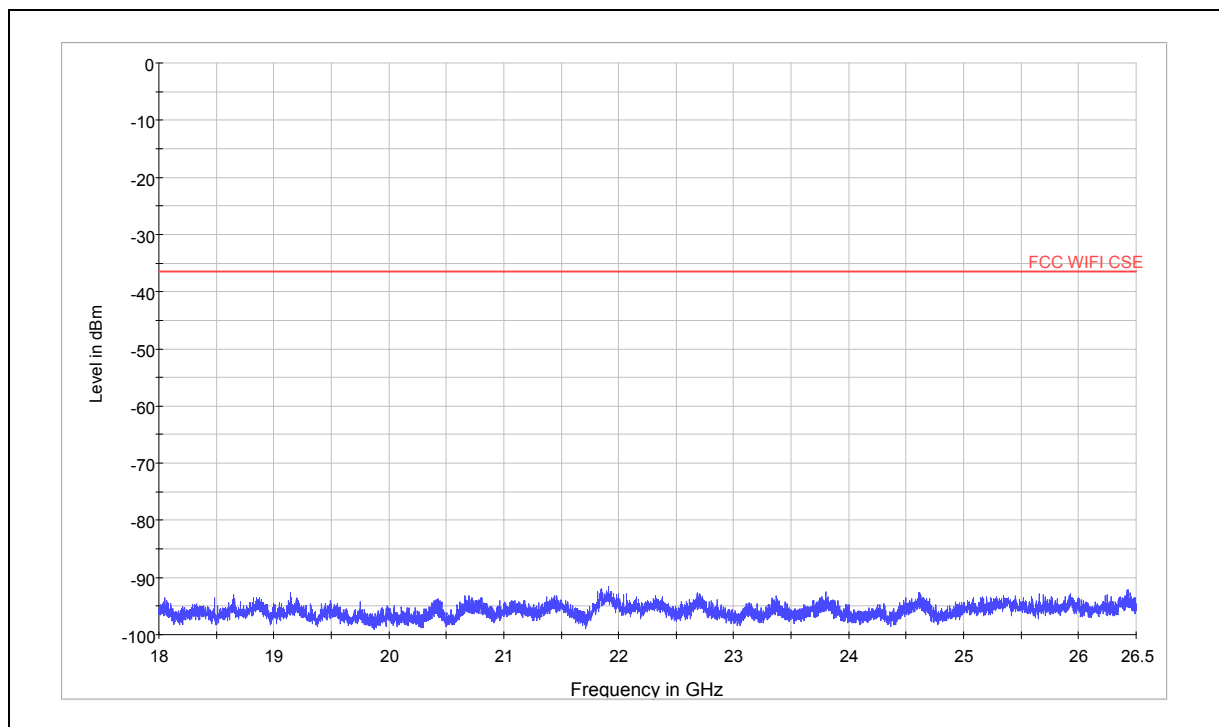
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Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

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2.8. Radiates Emission

Ambient condition

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

Method of Measurement

The test set-up was made in accordance to the general provisions of ANSI C63.4-2009. The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The radiated emissions measurements were made in a typical installation configuration. Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, and the emissions less than 20 dB below the permissible value are reported.

During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.

Set the spectrum analyzer in the following:

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

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

Above 1GHz(detector: Peak):

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

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

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

The test is in transmit mode.

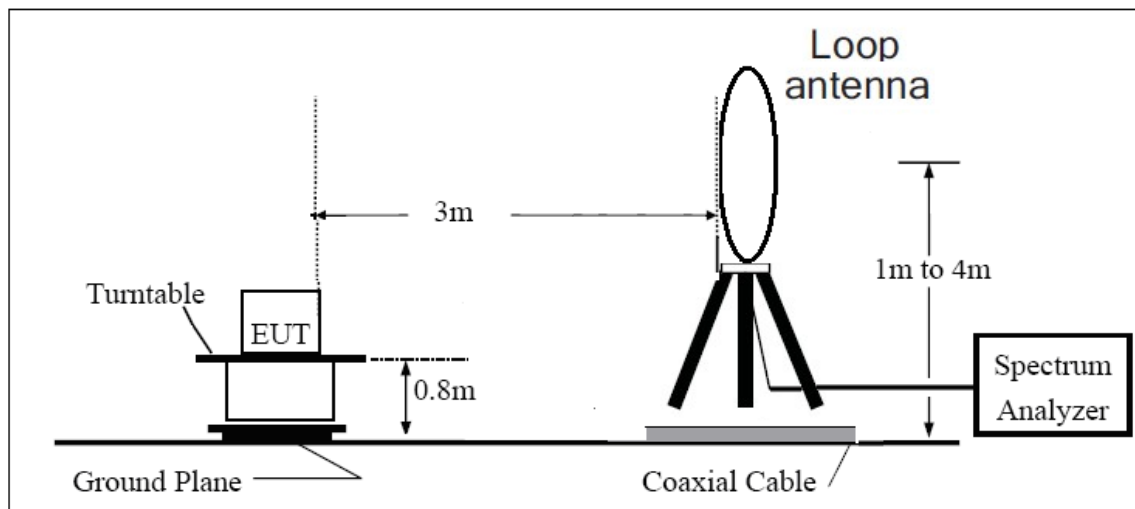
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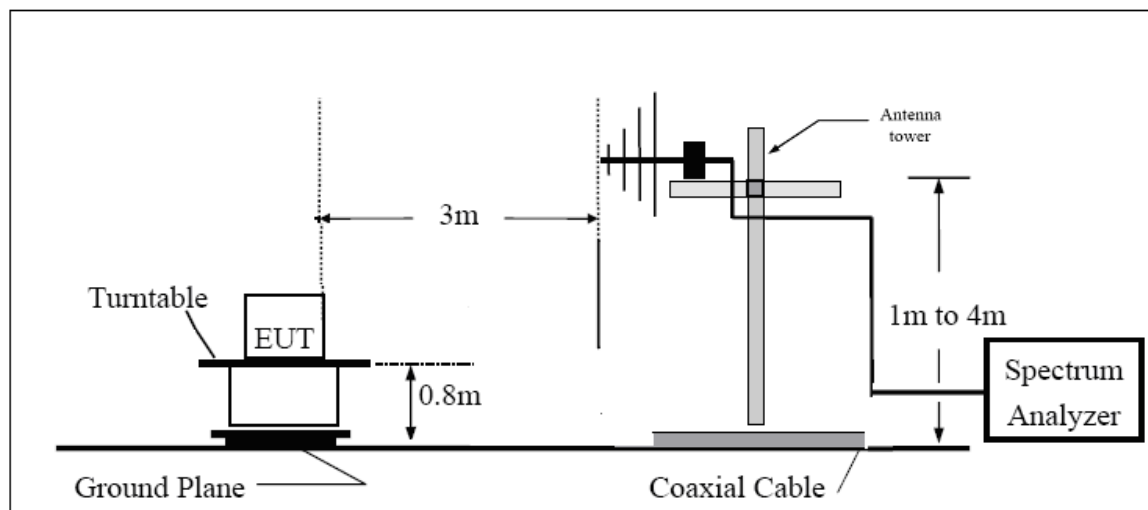
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Test setup

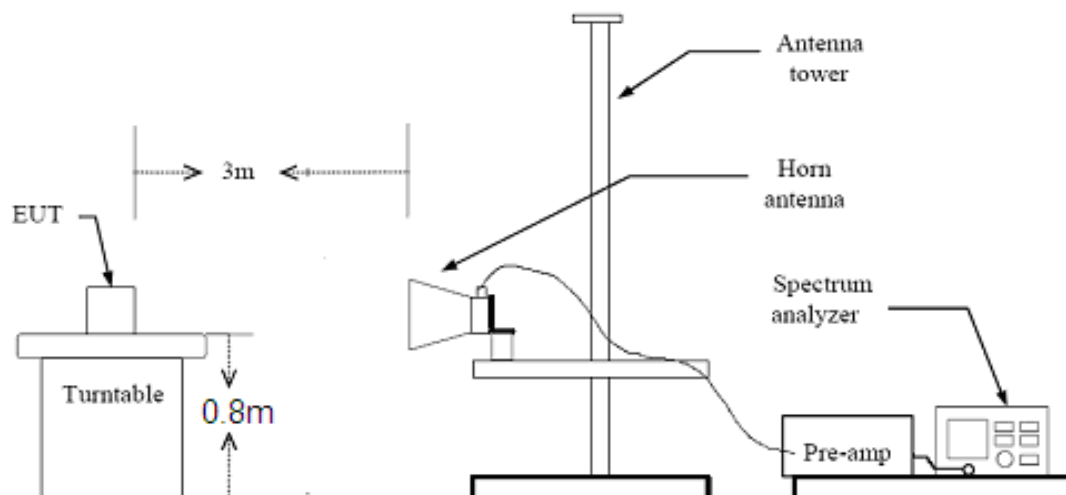
9KHz~~~ 30MHz



30MHz~~~ 1GHz



Above 1GHz



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Limits

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

Limit in restricted band

Frequency of emission (MHz)	Field strength(uV/m)	Field strength(dBuV/m)
0.009–0.490	2400/F(kHz)	/
0.490–1.705	24000/F(kHz)	/
1.705–30.0	30	/
30–88	100	40
88–216	150	43.5
216–960	200	46
Above 960	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

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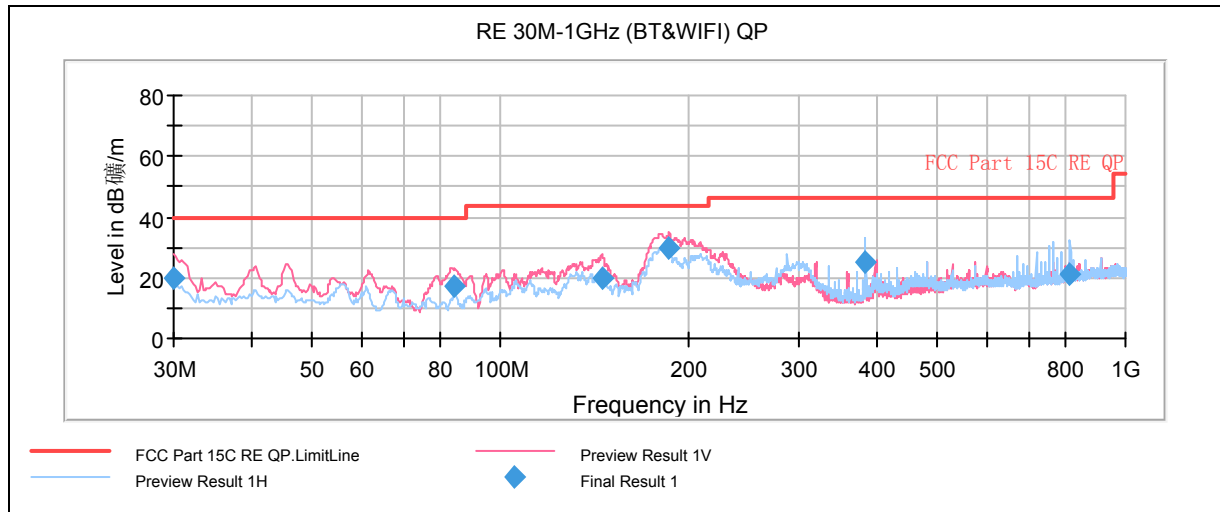
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Test result

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

Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
30.000000	19.5	100.0	V	173.0	43.1	-23.6	20.5	40.0
84.402500	17.2	125.0	V	207.0	47.8	-30.6	22.8	40.0
146.030000	20.0	100.0	V	202.0	52.6	-32.6	23.5	43.5
186.167500	30.1	100.0	V	79.0	60.9	-30.8	13.4	43.5
383.970000	25.2	100.0	H	62.0	50.2	-25.0	20.8	46.0
816.065000	21.4	100.0	H	146.0	38.8	-17.4	24.6	46.0

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

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

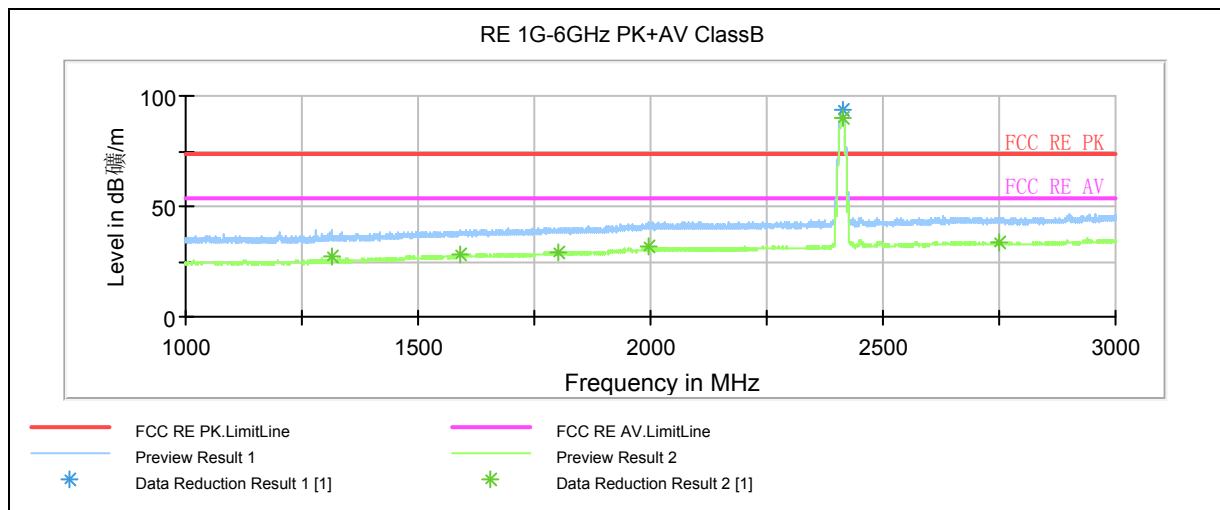
3. Margin = Limit – Quasi-Peak

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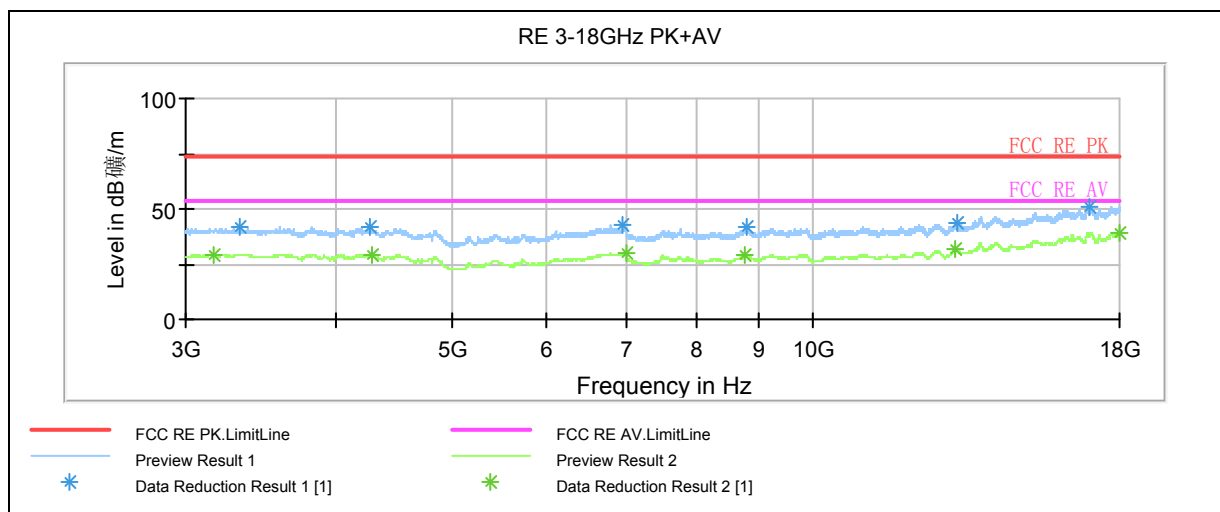
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Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

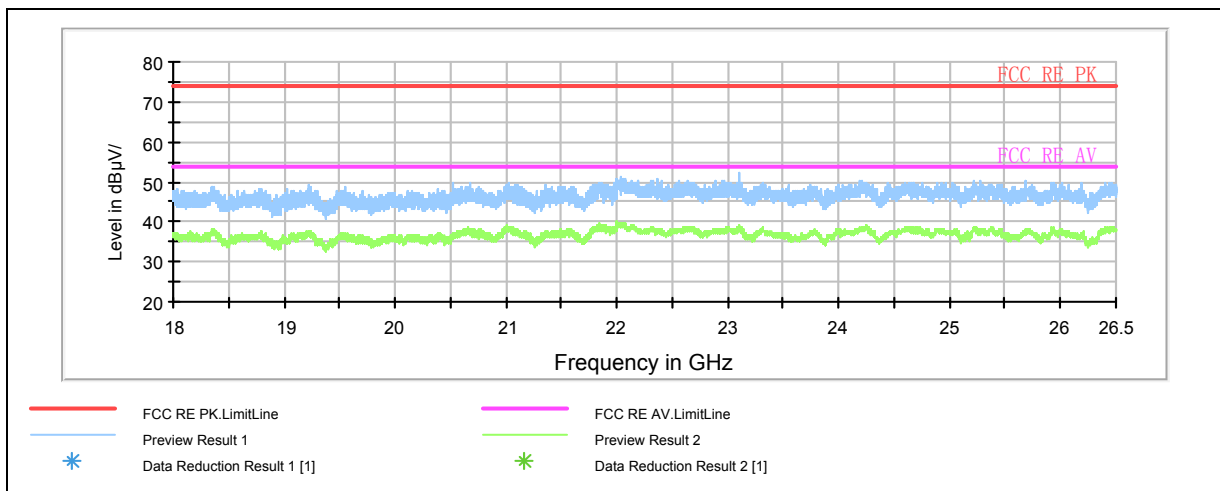
Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz



Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

Radiates Emission from 3GHz to 18GHz



Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

Radiates Emission from 18GHz to 26.5GHz

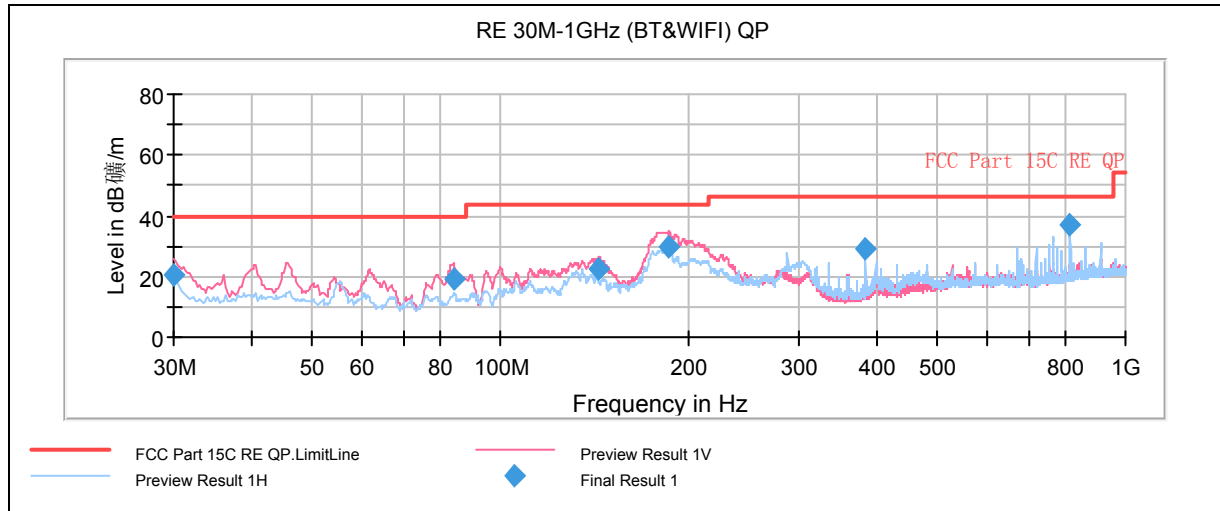
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Note: a font (Level in dB 电/m)in the test plot =(level in dbuv/m)

Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
30.000000	20.6	100.0	V	185.0	44.2	-23.6	19.4	40.0
84.520000	19.2	125.0	V	223.0	49.7	-30.5	20.8	40.0
144.015000	22.6	100.0	V	92.0	55.2	-32.6	20.9	43.5
186.092500	29.6	100.0	V	62.0	60.4	-30.8	13.9	43.5
384.090000	29.3	100.0	H	36.0	54.3	-25.0	16.7	46.0
815.985000	36.8	100.0	H	112.0	54.2	-17.4	9.2	46.0

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

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

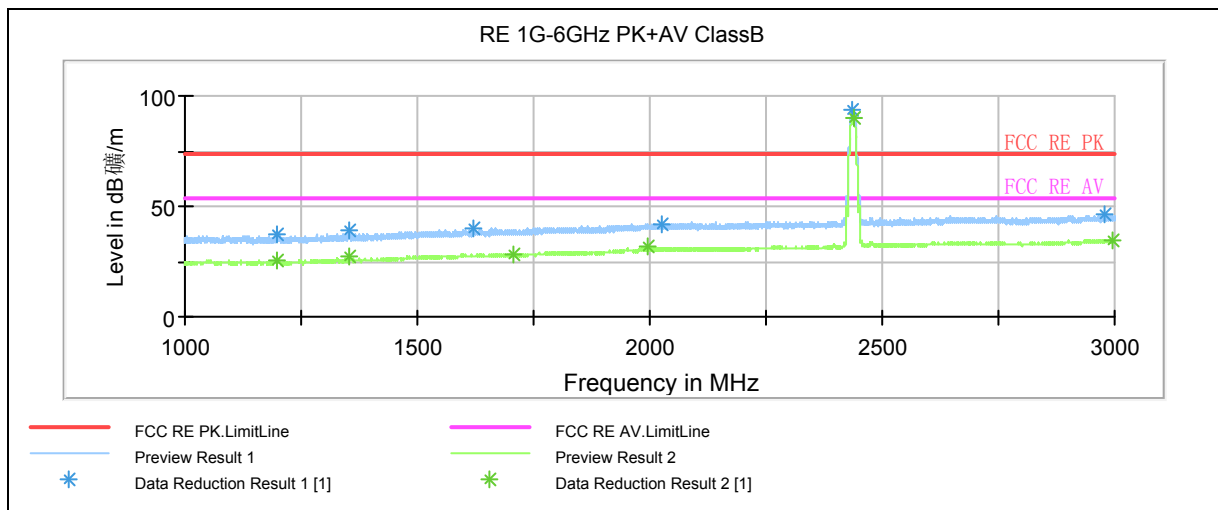
3. Margin = Limit – Quasi-Peak

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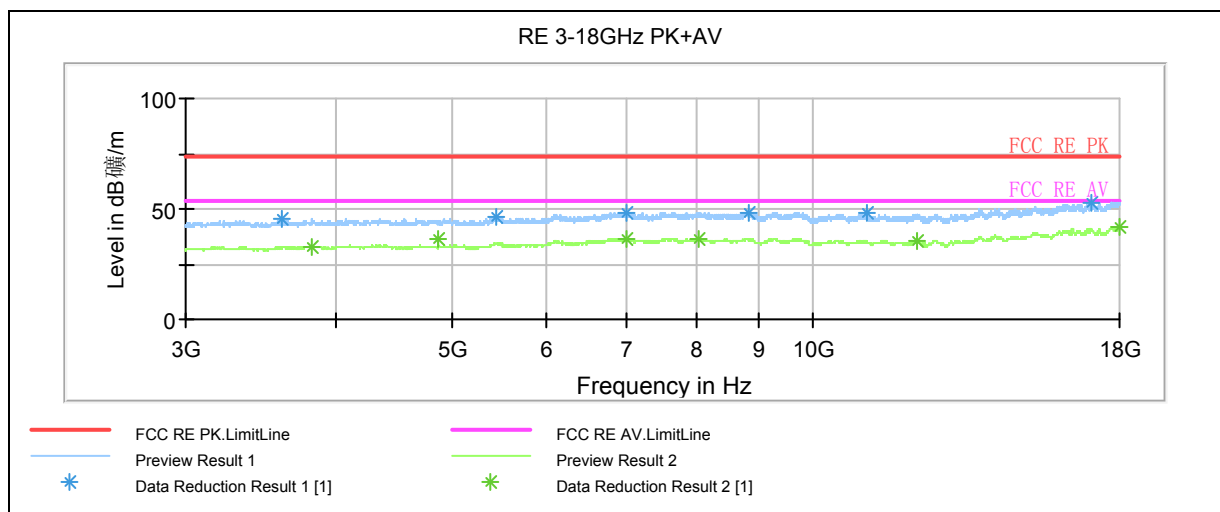
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Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

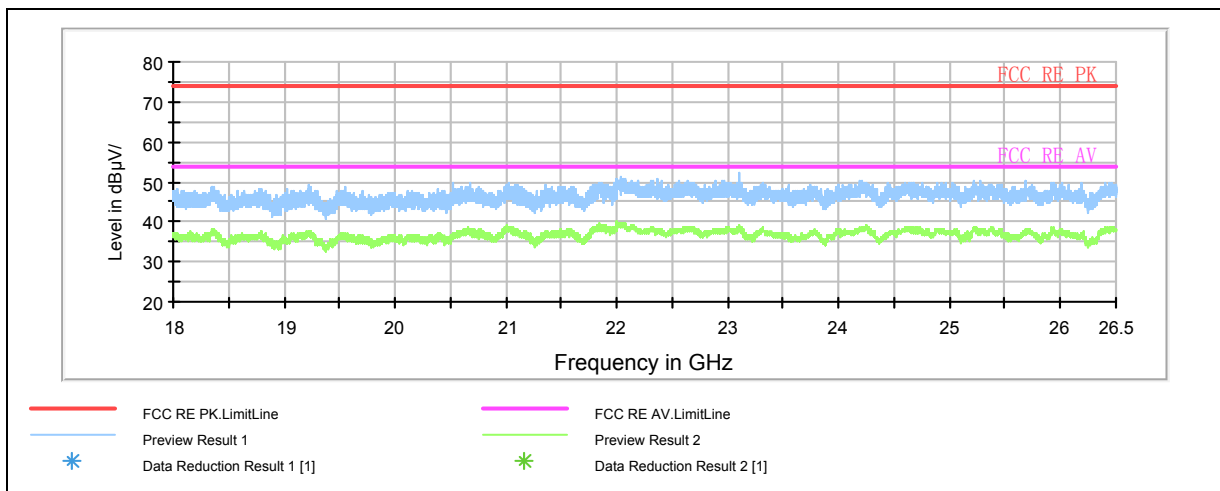
Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz



Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

Radiates Emission from 3GHz to 18GHz



Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

Radiates Emission from 18GHz to 26.5GHz

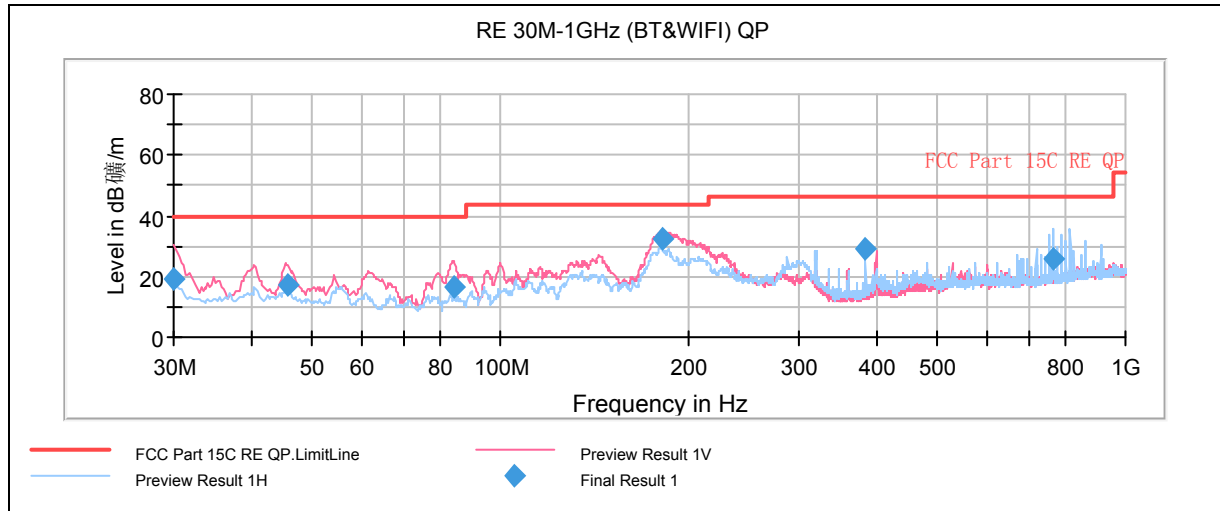
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Note: a font (Level in dB 电/m)in the test plot =(level in dbuv/m)
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
30.000000	19.3	100.0	V	162.0	42.9	-23.6	20.7	40.0
45.717500	16.9	120.0	V	234.0	41.6	-24.7	23.1	40.0
84.037500	16.8	125.0	V	209.0	47.5	-30.7	23.2	40.0
181.397500	32.1	100.0	V	75.0	63.1	-31.0	11.4	43.5
383.970000	29.2	100.0	H	129.0	54.2	-25.0	16.8	46.0
767.890000	25.6	100.0	H	138.0	43.8	-18.2	20.4	46.0

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

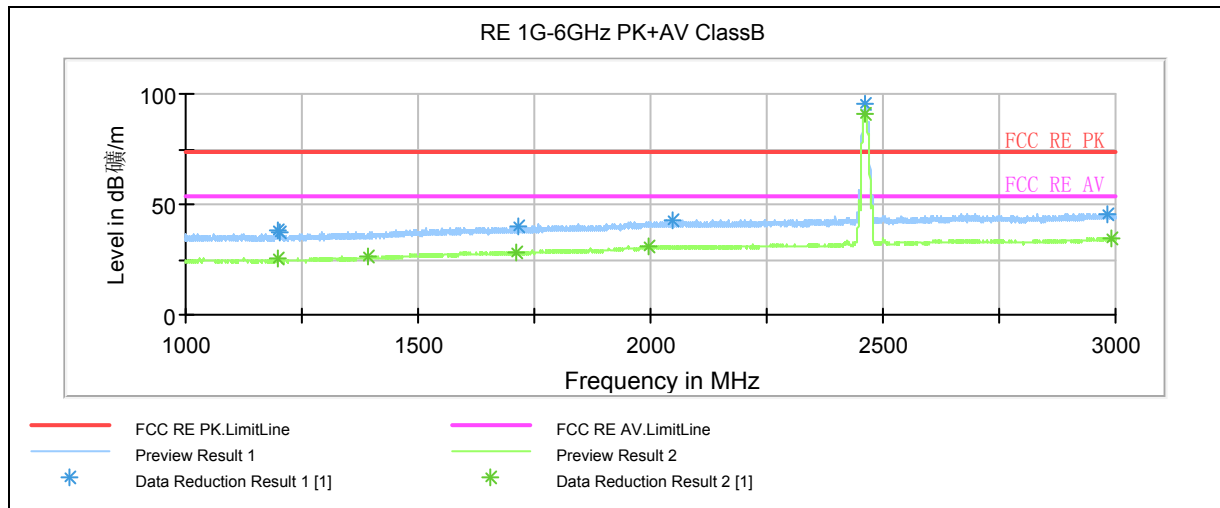
2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)

3. Margin = Limit – Quasi-Peak

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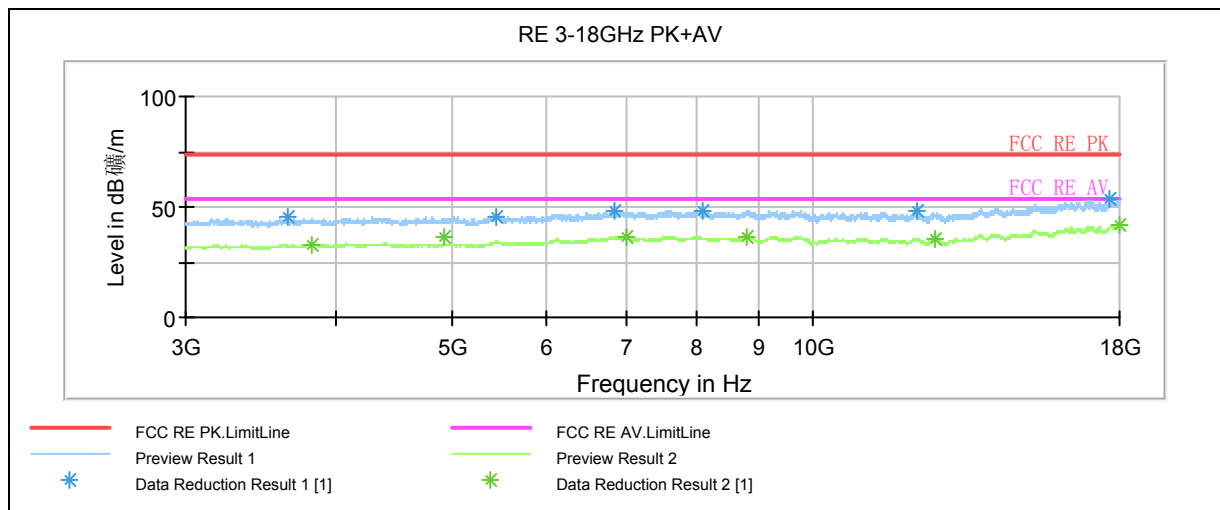
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Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

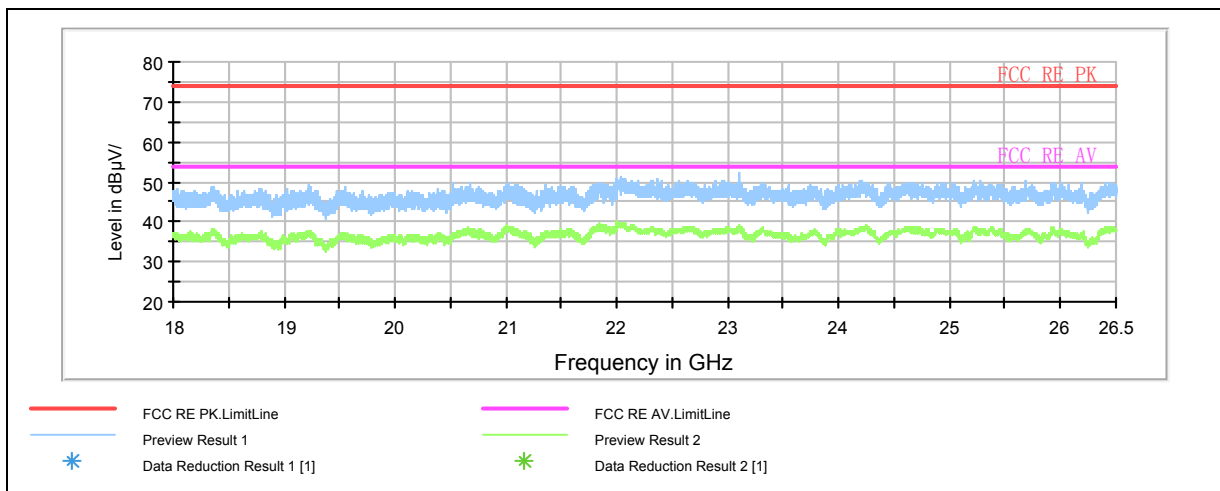
Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz



Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

Radiates Emission from 3GHz to 18GHz



Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

Radiates Emission from 18GHz to 26.5GHz

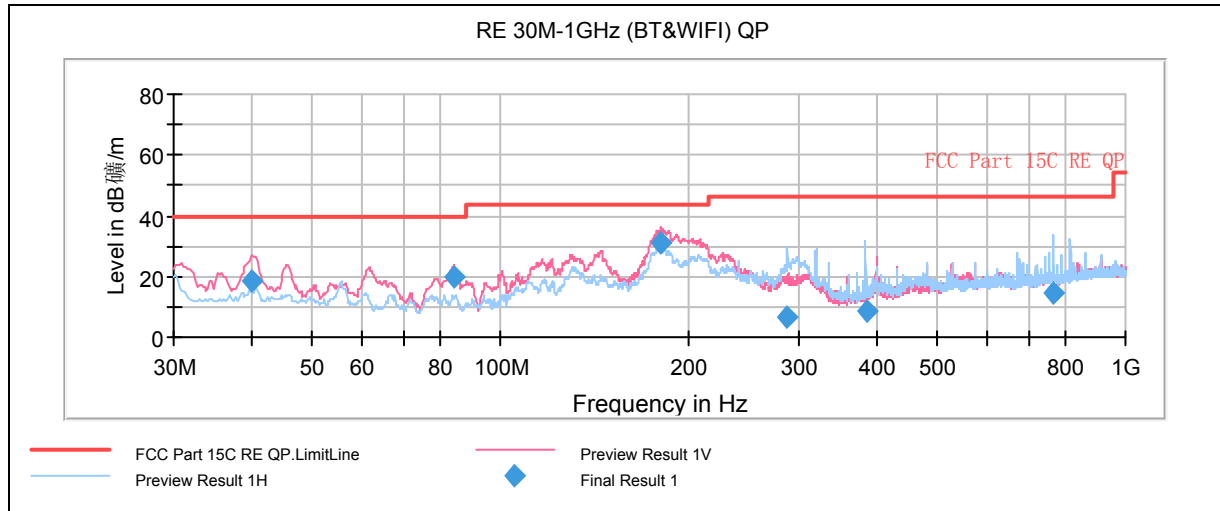
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Note: a font (Level in dB 电/m) in the test plot =(level in dbuv/m)
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
39.942500	18.6	120.0	V	189.0	42.5	-23.9	21.4	40.0
84.280000	19.7	120.0	V	217.0	50.3	-30.6	20.3	40.0
180.395000	31.0	100.0	V	78.0	62.1	-31.1	12.5	43.5
287.980000	6.9	125.0	H	85.0	34.4	-27.5	39.1	46.0
384.450000	8.4	100.0	H	111.0	33.4	-25.0	37.6	46.0
768.730000	14.5	100.0	H	231.0	32.7	-18.2	31.5	46.0

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

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

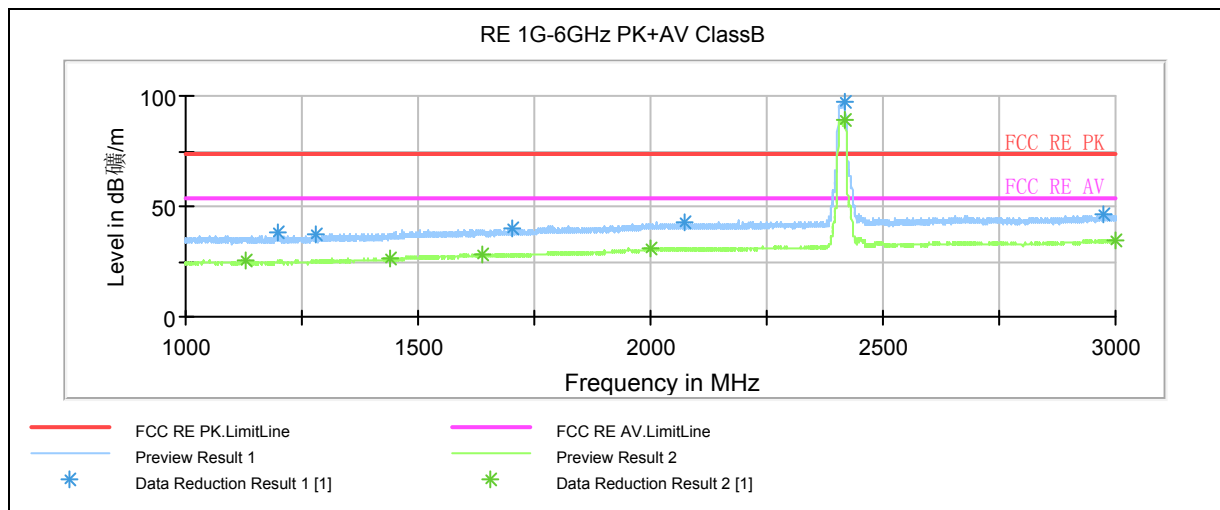
3. Margin = Limit – Quasi-Peak

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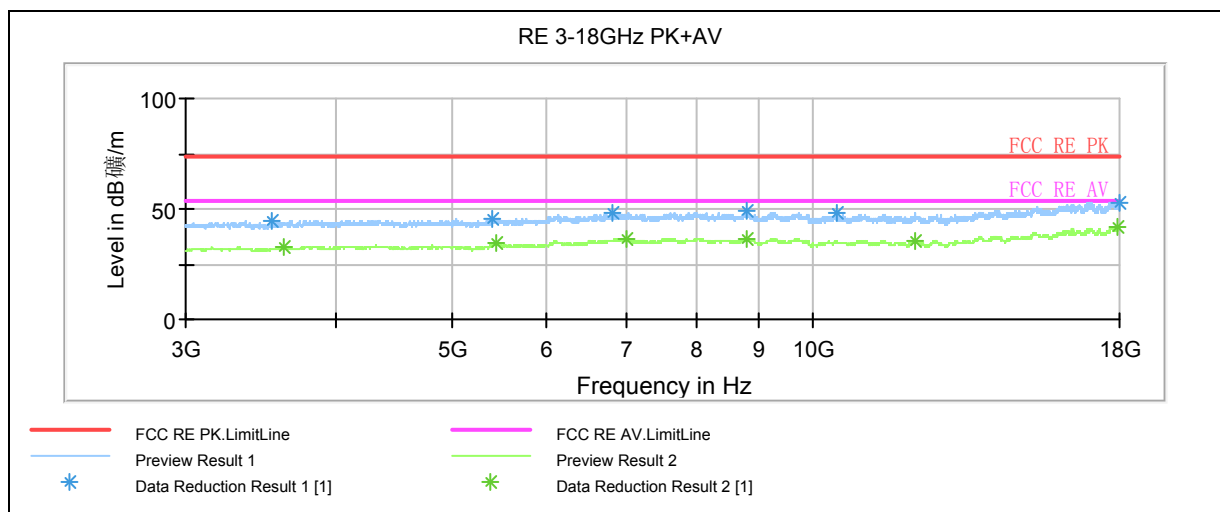
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Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

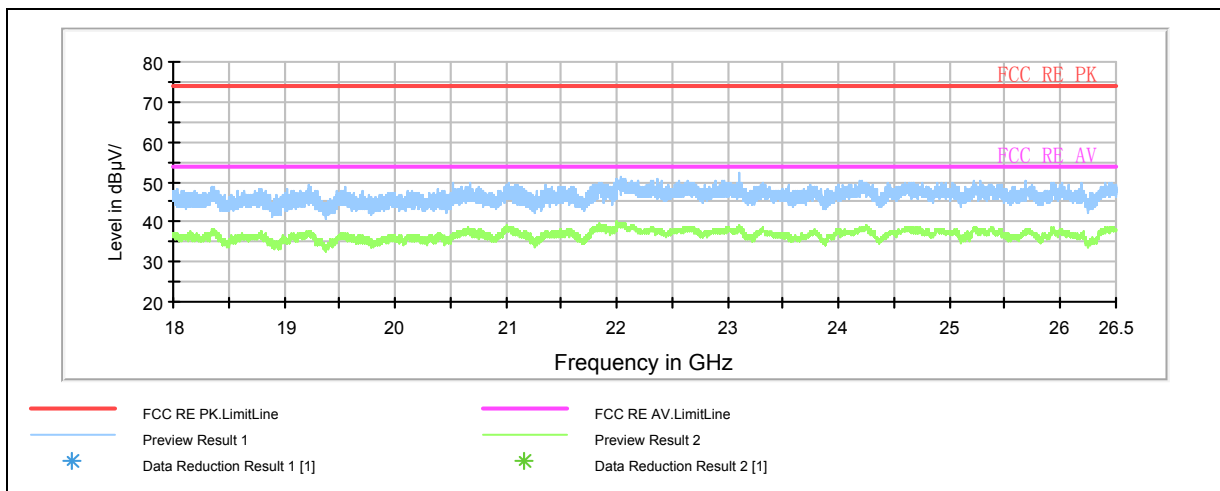
Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz



Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

Radiates Emission from 3GHz to 18GHz



Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

Radiates Emission from 18GHz to 26.5GHz

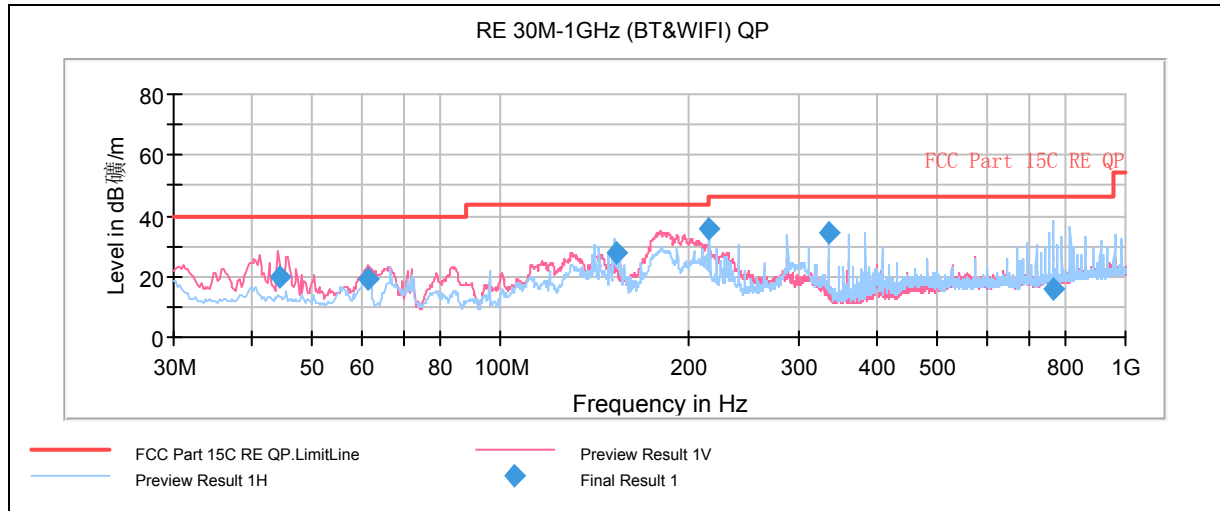
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Note: a font (Level in dB 电/m) in the test plot =(level in dbuv/m)
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
44.305000	19.8	100.0	V	198.0	44.3	-24.5	20.2	40.0
61.442500	18.9	100.0	V	142.0	46.5	-27.6	21.1	40.0
152.982500	27.7	225.0	H	103.0	60.1	-32.4	15.8	43.5
216.077500	35.9	121.0	H	206.0	65.4	-29.5	10.1	46.0
336.115000	34.4	100.0	H	53.0	60.6	-26.2	11.6	46.0
768.047500	15.9	125.0	H	166.0	34.1	-18.2	30.1	46.0

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

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

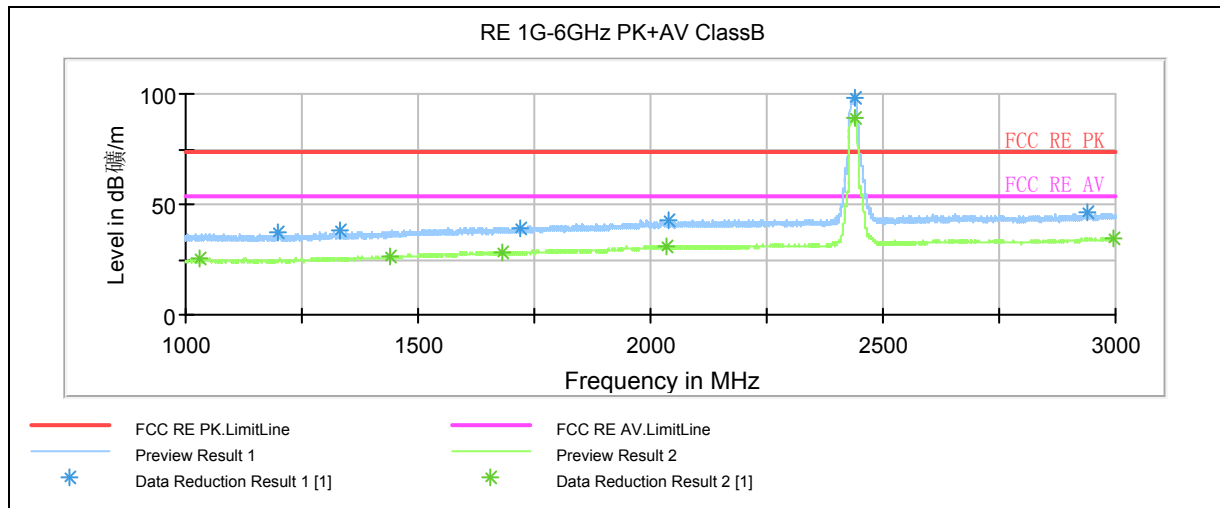
3. Margin = Limit – Quasi-Peak

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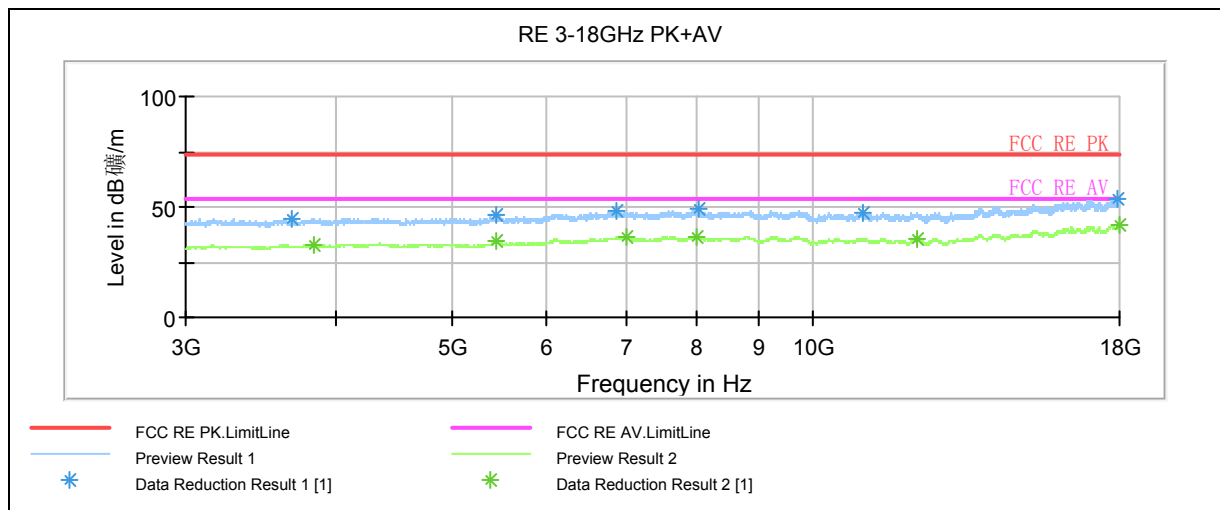
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Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

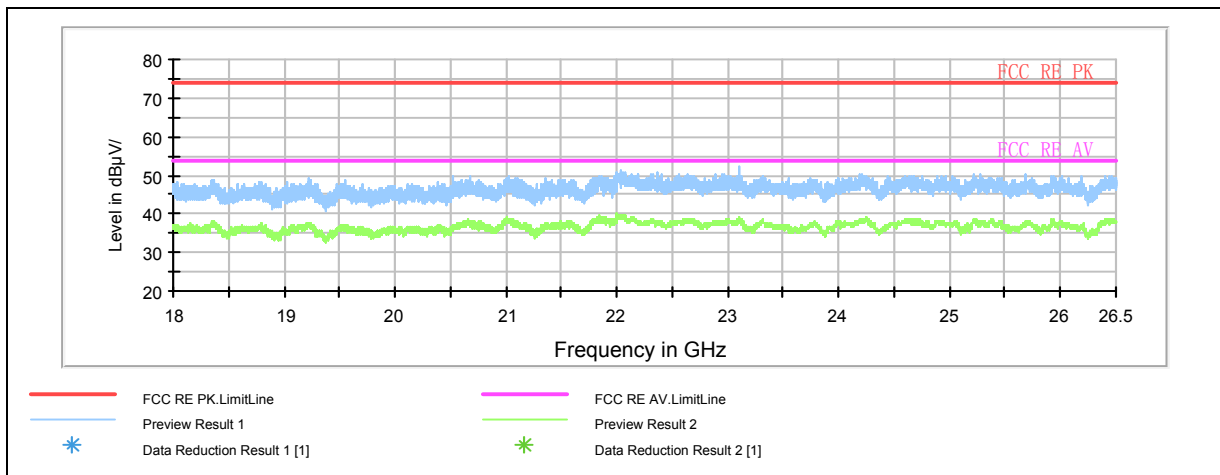
Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz



Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

Radiates Emission from 3GHz to 18GHz



Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

Radiates Emission from 18GHz to 26.5GHz

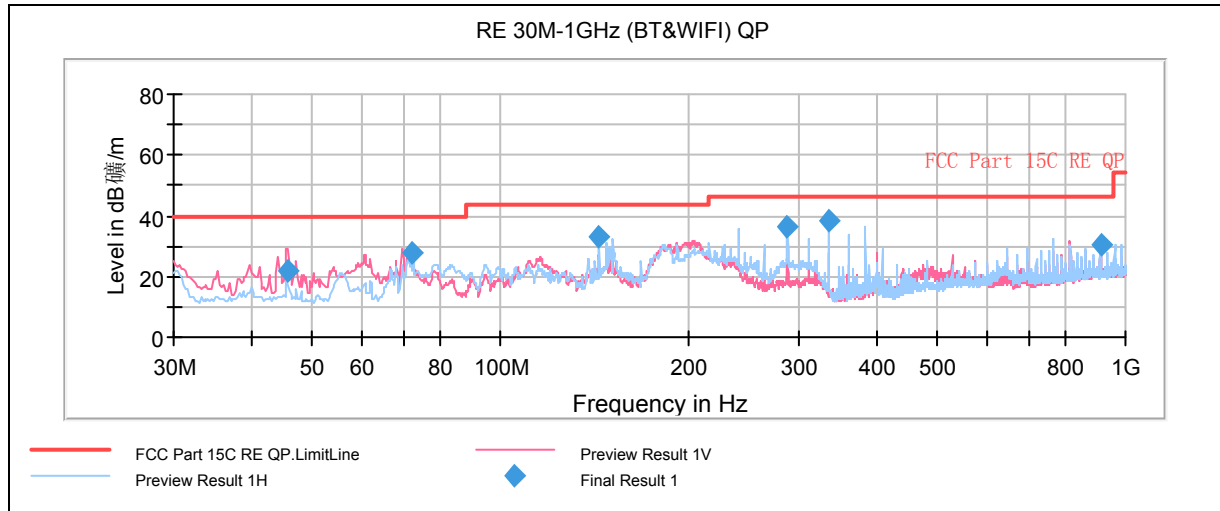
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Note: a font (Level in dB 电/m)in the test plot =(level in dbuv/m)
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
45.842500	21.5	100.0	V	133.0	46.3	-24.8	18.5	40.0
72.032500	27.5	225.0	V	135.0	59.2	-31.7	12.5	40.0
144.015000	32.7	200.0	H	262.0	65.3	-32.6	10.8	43.5
288.060000	36.1	121.0	H	151.0	63.6	-27.5	9.9	46.0
336.075000	38.6	100.0	H	135.0	64.8	-26.2	7.4	46.0
912.015000	30.6	200.0	H	316.0	46.9	-16.3	15.4	46.0

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

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

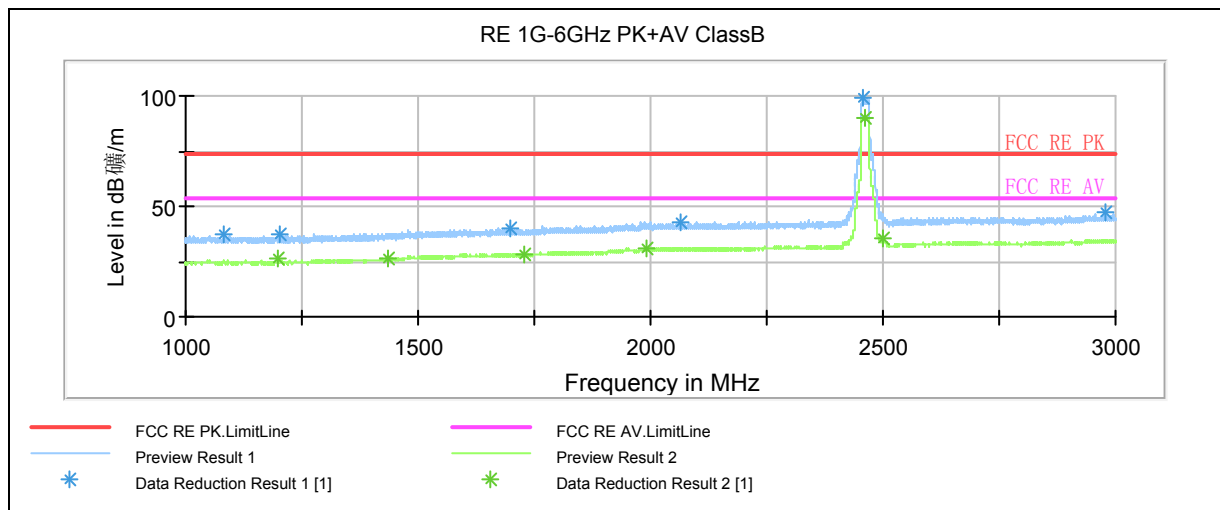
3. Margin = Limit – Quasi-Peak

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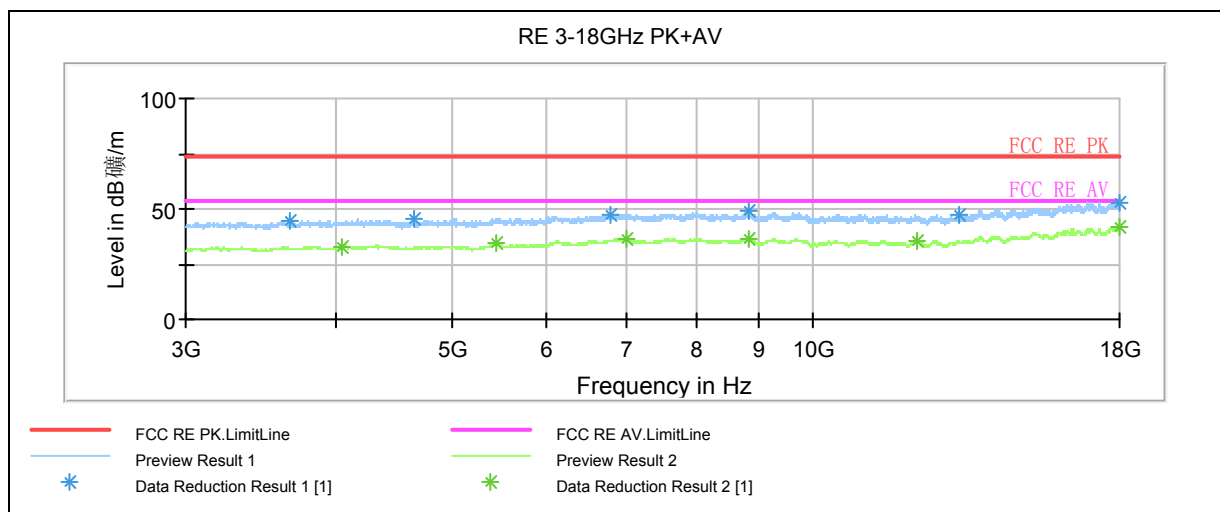
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Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

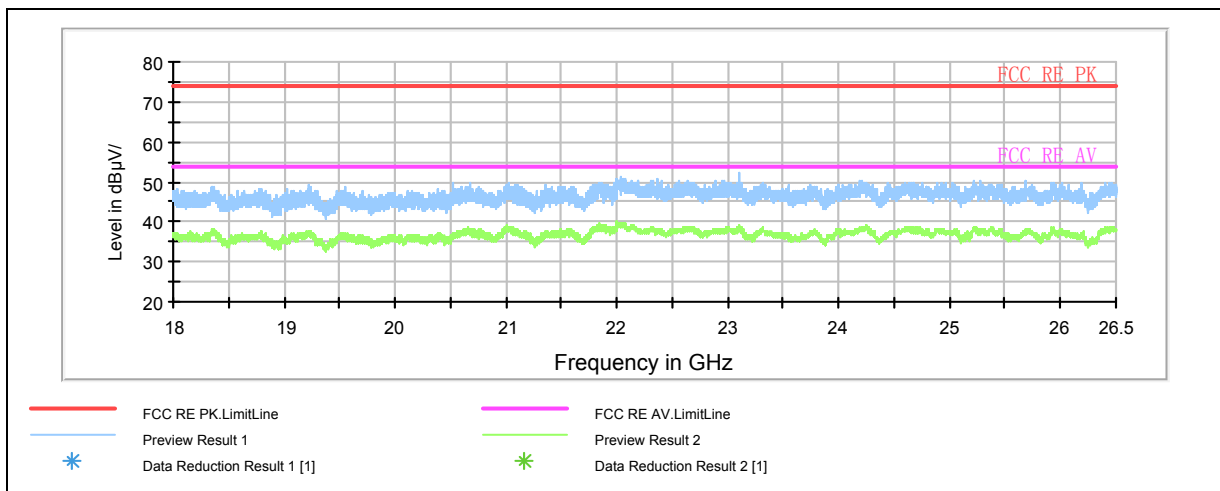
Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz



Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

Radiates Emission from 3GHz to 18GHz



Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

Radiates Emission from 18GHz to 26.5GHz

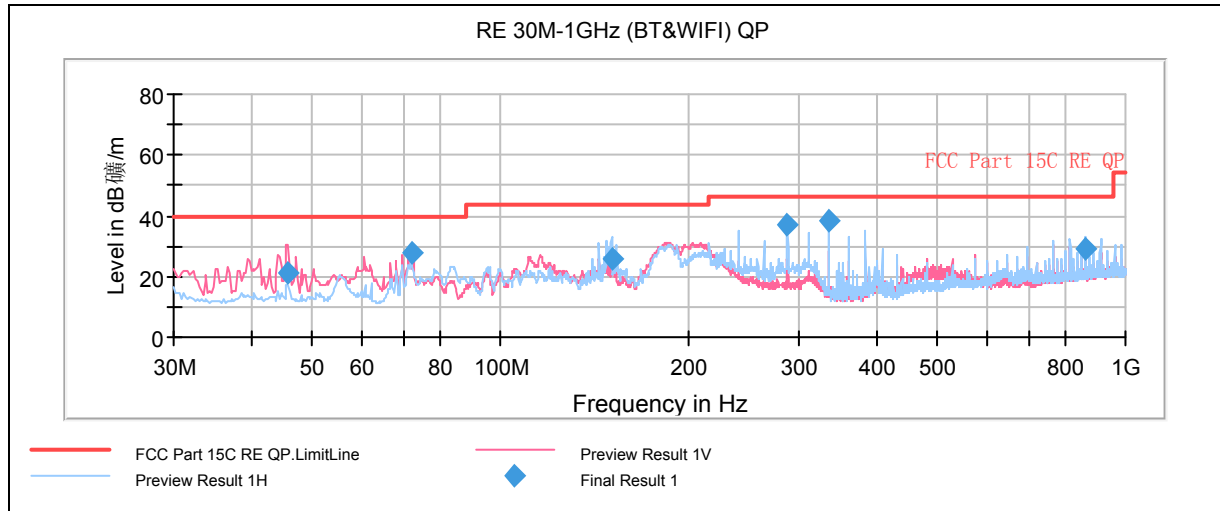
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Note: a font (Level in dB 电/m) in the test plot =(level in dbuv/m)
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
45.842500	21.4	121.0	V	101.0	46.2	-24.8	18.6	40.0
72.032500	27.9	221.0	V	126.0	59.6	-31.7	12.1	40.0
150.885000	25.8	125.0	H	278.0	58.3	-32.5	17.7	43.5
288.060000	37.0	100.0	H	153.0	64.5	-27.5	9.0	46.0
336.075000	38.2	100.0	H	133.0	64.4	-26.2	7.8	46.0
863.880000	28.8	200.0	H	202.0	45.6	-16.8	17.2	46.0

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

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

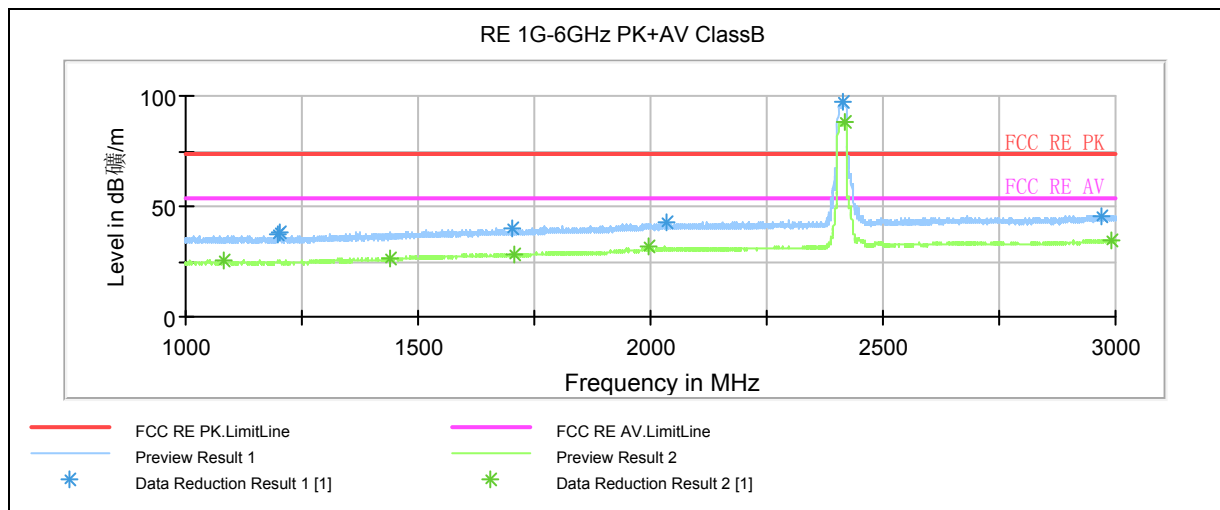
3. Margin = Limit – Quasi-Peak

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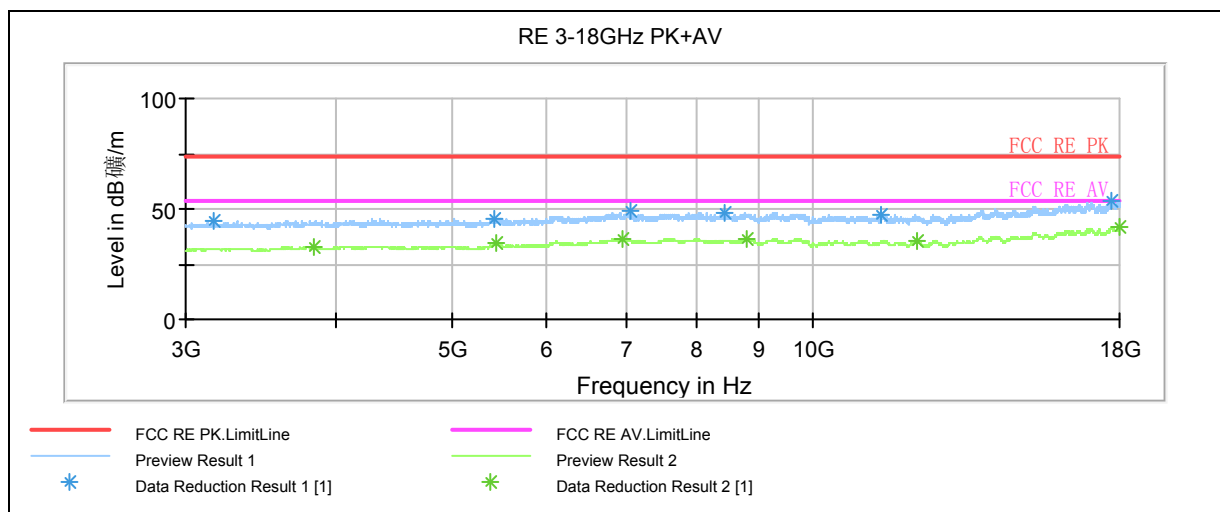
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Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

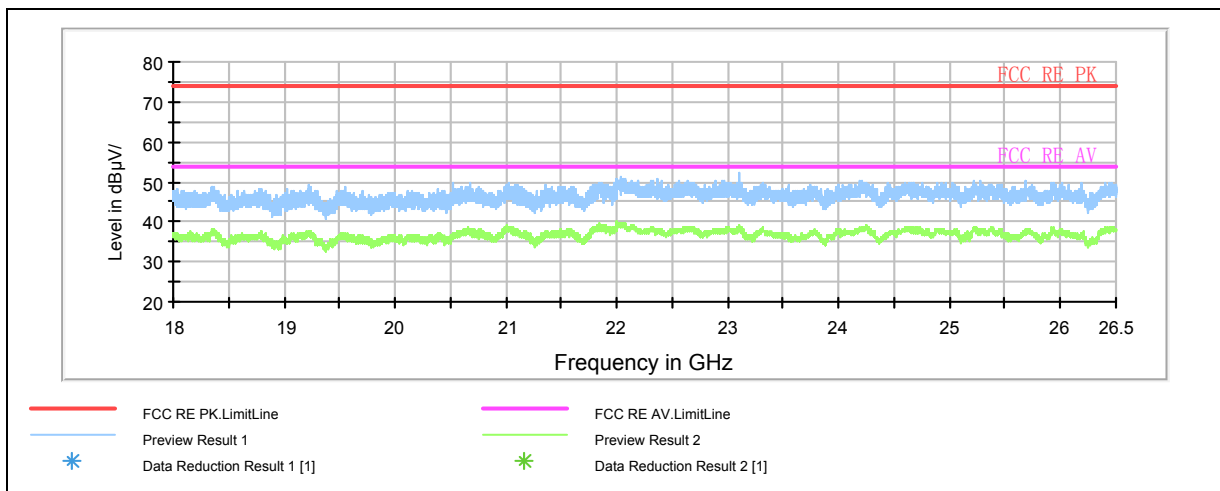
Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz



Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

Radiates Emission from 3GHz to 18GHz



Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

Radiates Emission from 18GHz to 26.5GHz

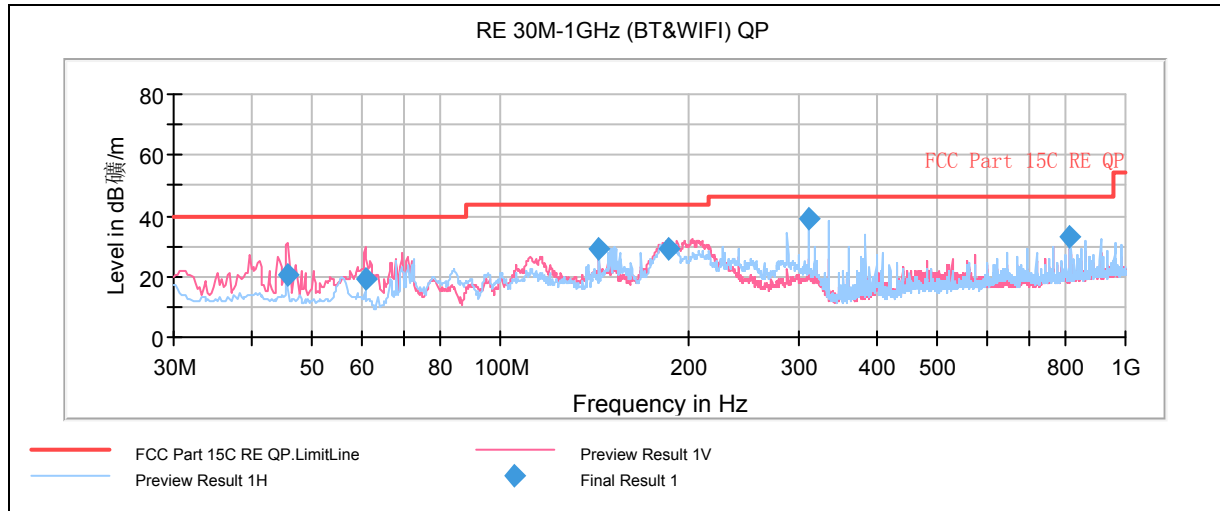
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802.11n(HT20) CH6



Note: a font (Level in dB μ V/m) in the test plot =(level in dbuv/m)
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
45.842500	20.5	100.0	V	0.0	45.3	-24.8	19.5	40.0
60.837500	19.0	100.0	V	190.0	46.3	-27.3	21.0	40.0
144.015000	28.9	175.0	H	242.0	61.5	-32.6	14.6	43.5
185.965000	29.1	100.0	V	242.0	59.9	-30.8	14.4	43.5
312.107500	38.8	100.0	H	308.0	65.1	-26.3	7.2	46.0
815.985000	32.9	225.0	H	222.0	50.3	-17.4	13.1	46.0

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

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

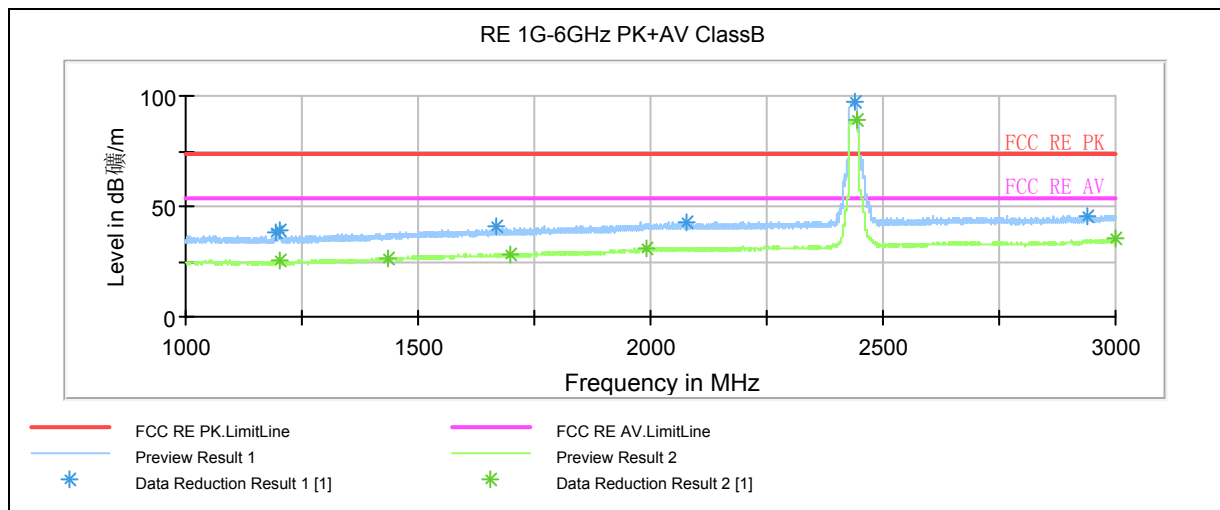
3. Margin = Limit – Quasi-Peak

TA Technology (Shanghai) Co., Ltd.

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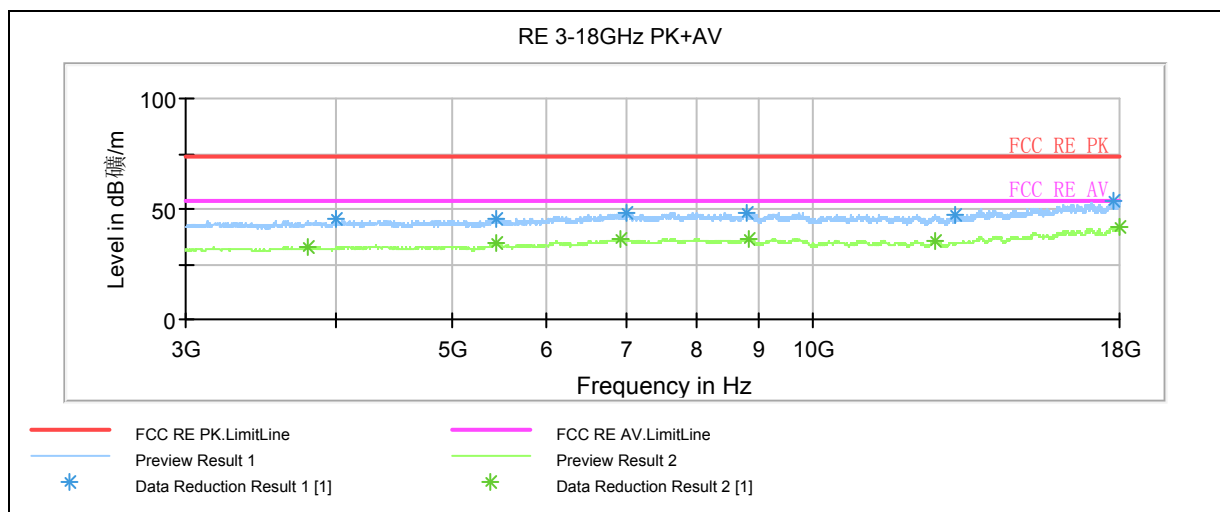
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Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

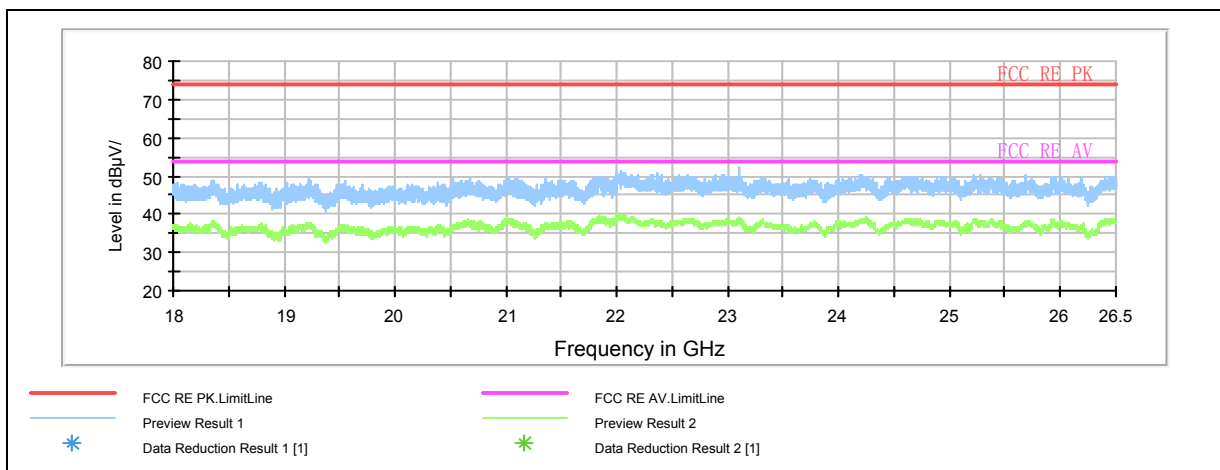
Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz



Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

Radiates Emission from 3GHz to 18GHz



Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

Radiates Emission from 18GHz to 26.5GHz

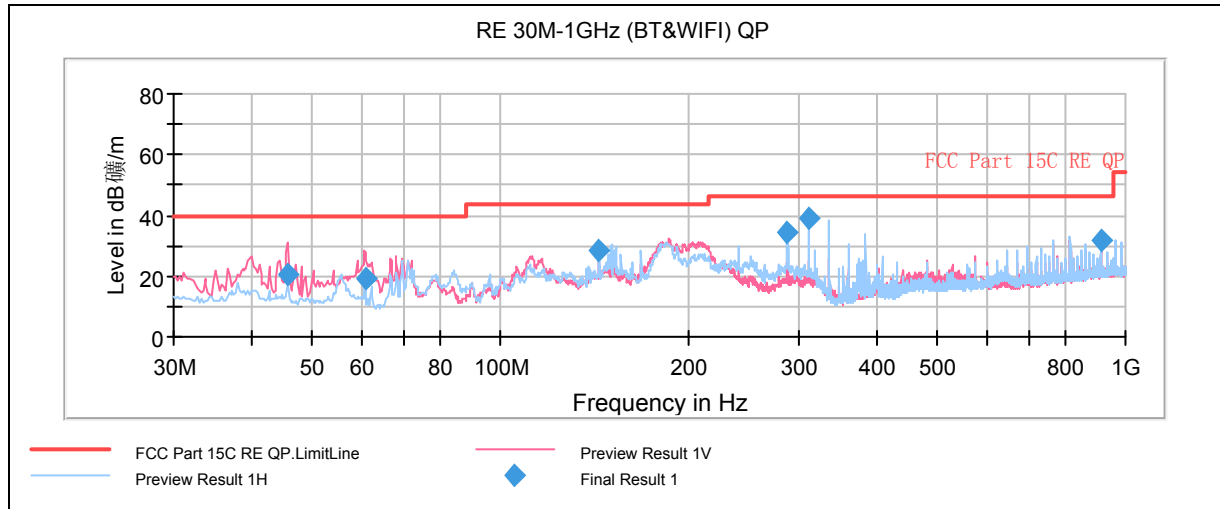
TA Technology (Shanghai) Co., Ltd.

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802.11n(HT20) CH11



Note: a font (Level in dBμV/m) in the test plot =(level in dbuv/m)
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
45.842500	20.2	100.0	V	141.0	45.0	-24.8	19.8	40.0
60.835000	19.0	100.0	V	165.0	46.3	-27.3	21.0	40.0
144.015000	28.5	195.0	H	232.0	61.1	-32.6	15.0	43.5
288.100000	34.4	100.0	H	124.0	61.9	-27.5	11.6	46.0
312.107500	39.2	100.0	H	312.0	65.5	-26.3	6.8	46.0
912.015000	31.6	196.0	H	224.0	47.9	-16.3	14.4	46.0

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

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

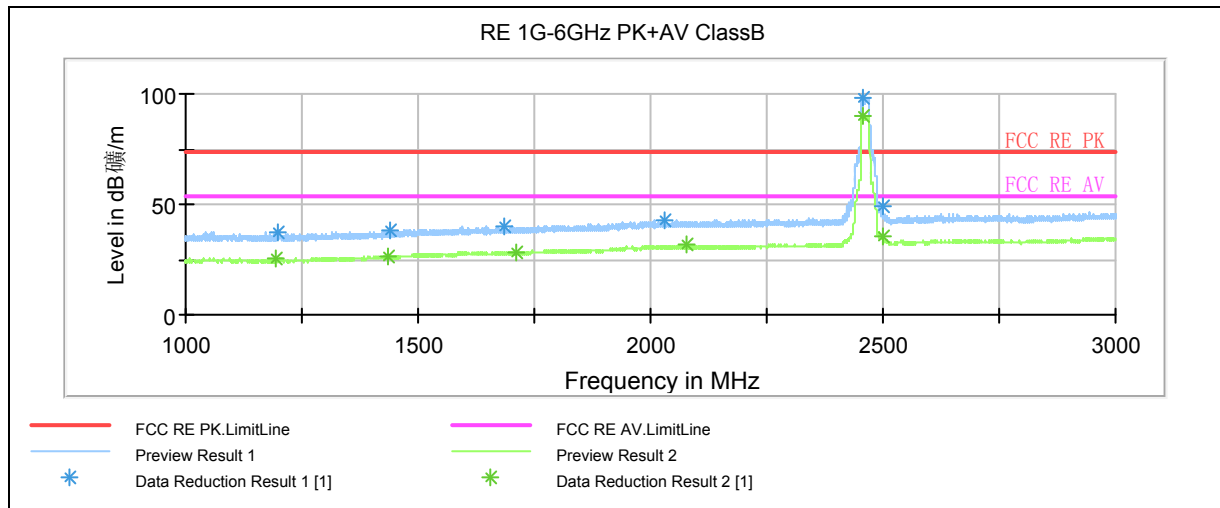
3. Margin = Limit – Quasi-Peak

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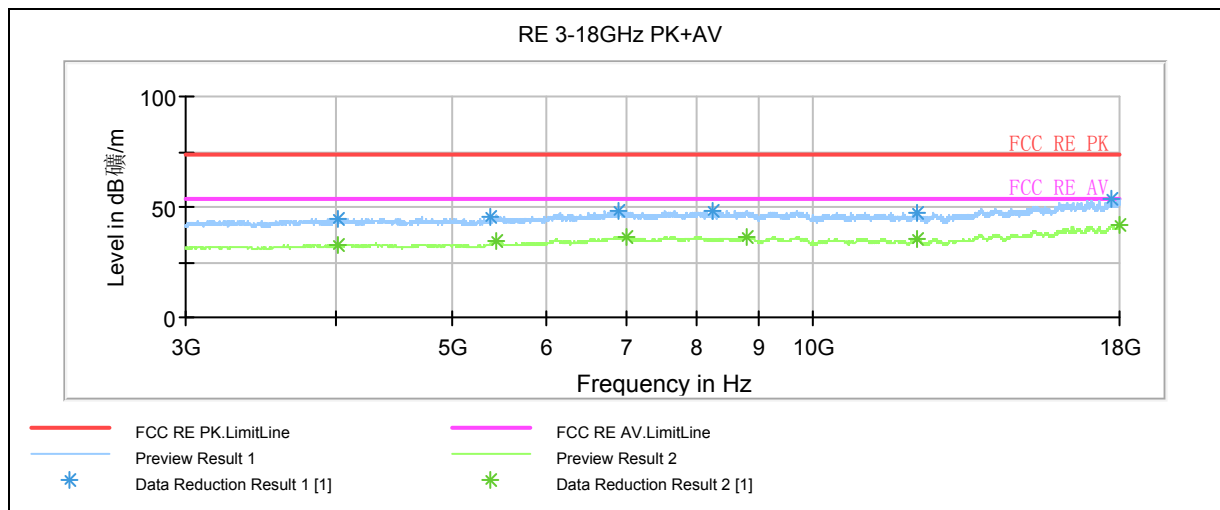
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Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

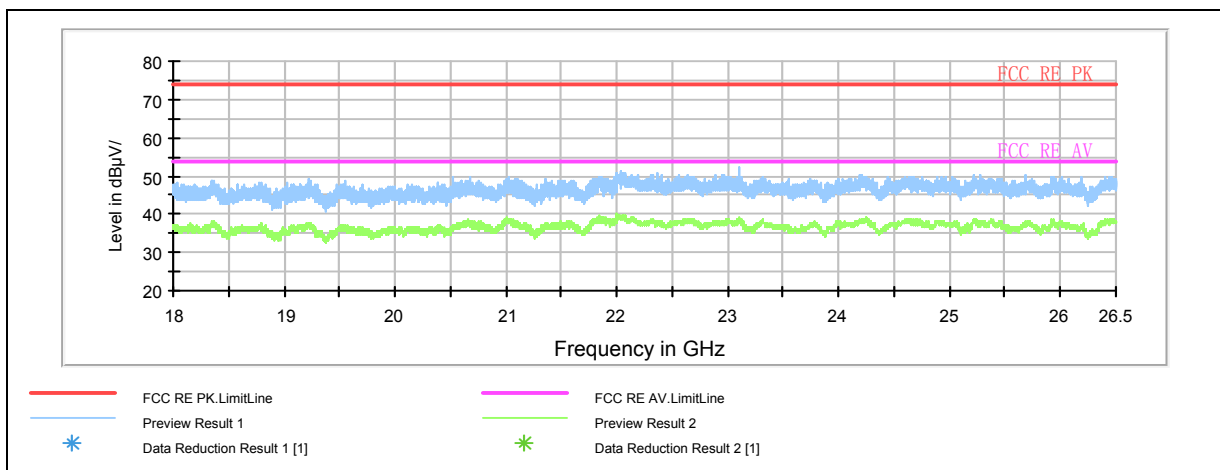
Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz



Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

Radiates Emission from 3GHz to 18GHz



Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

Radiates Emission from 18GHz to 26.5GHz

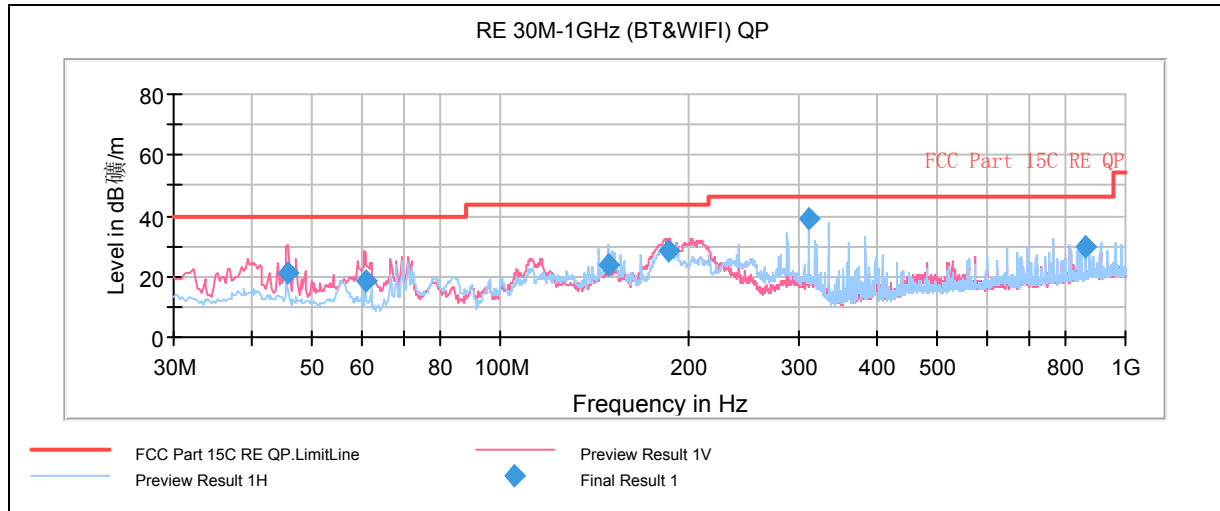
TA Technology (Shanghai) Co., Ltd.

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802.11n(HT40) CH3



Note: a font (Level in dB μ V/m)in the test plot =(level in dbuv/m)
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
45.842500	21.2	100.0	V	75.0	46.0	-24.8	18.8	40.0
60.835000	18.6	100.0	V	189.0	45.9	-27.3	21.4	40.0
148.507500	23.7	225.0	H	245.0	56.3	-32.6	19.8	43.5
186.055000	28.3	100.0	V	238.0	59.1	-30.8	15.2	43.5
312.107500	39.3	100.0	H	303.0	65.6	-26.3	6.7	46.0
864.000000	29.9	200.0	H	216.0	46.7	-16.8	16.1	46.0

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

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

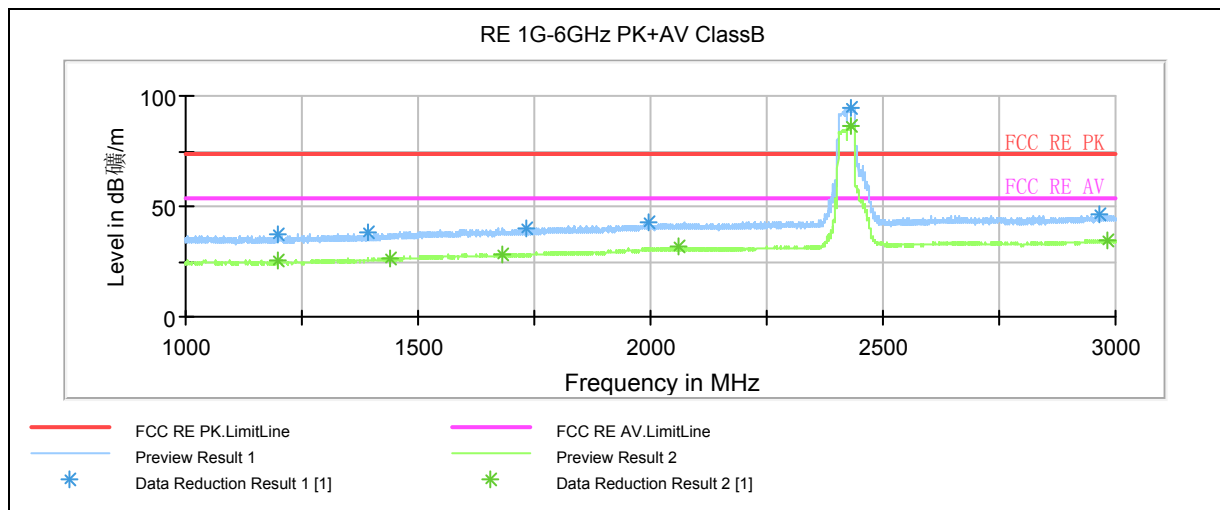
3. Margin = Limit – Quasi-Peak

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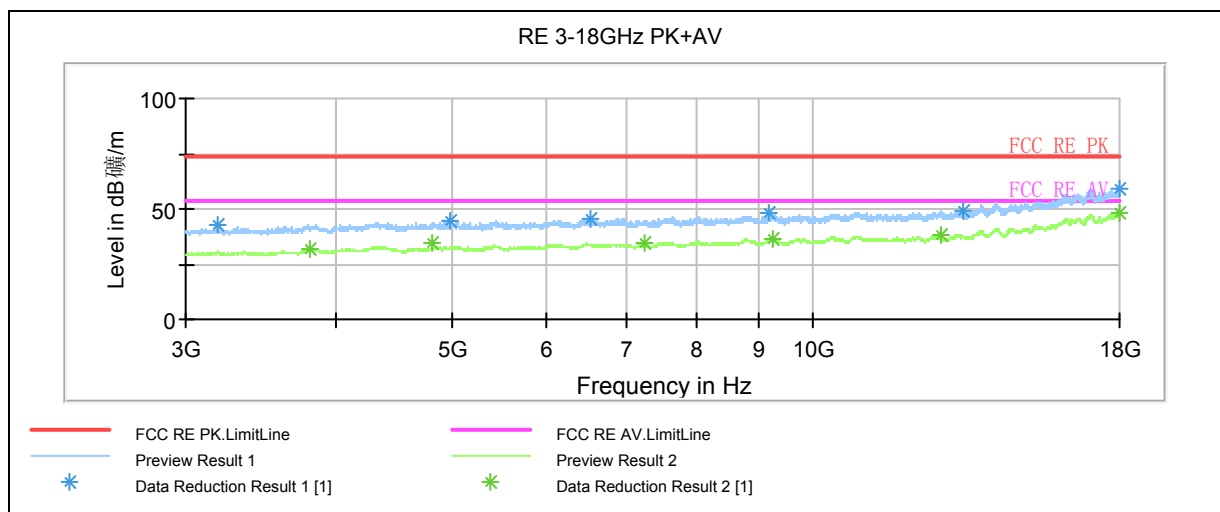
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Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

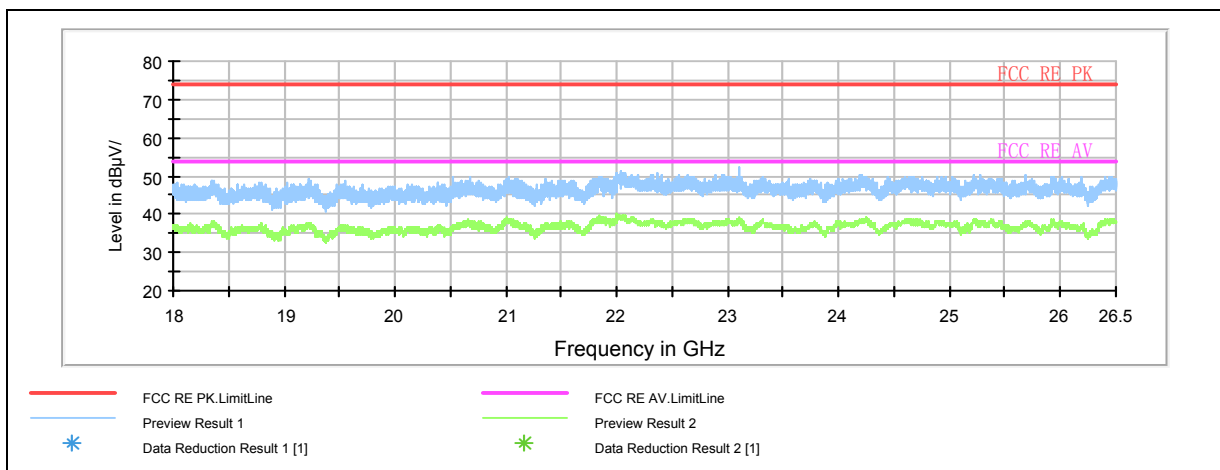
Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz



Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

Radiates Emission from 3GHz to 18GHz



Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

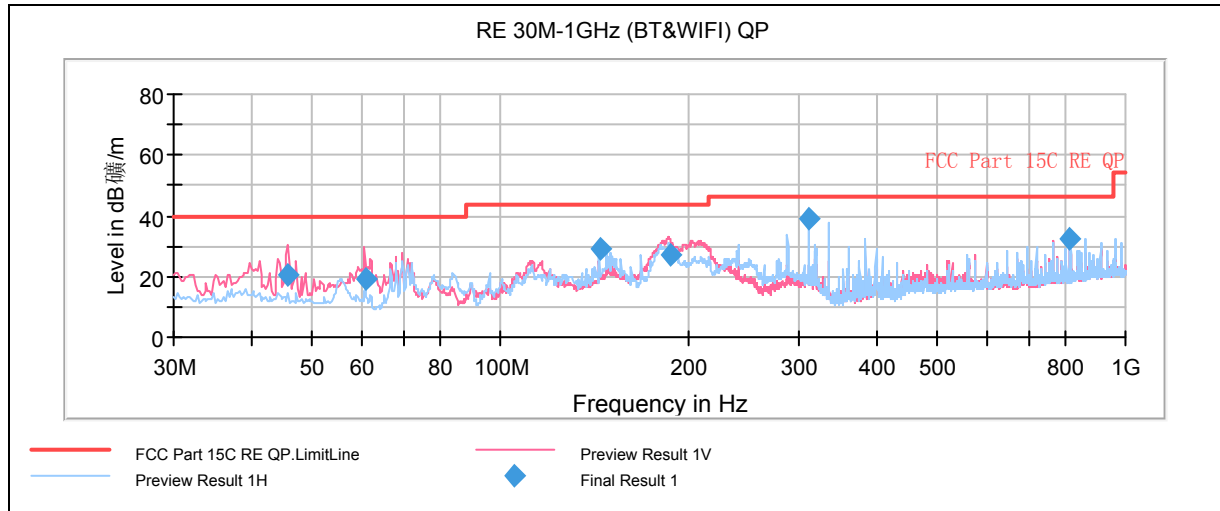
Radiates Emission from 18GHz to 26.5GHz

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802.11n(HT40) CH6



Note: a font (Level in dB 电/m)in the test plot =(level in dbuv/m)
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
45.842500	20.4	100.0	V	50.0	45.2	-24.8	19.6	40.0
60.835000	19.0	125.0	V	200.0	46.3	-27.3	21.0	40.0
144.055000	28.8	195.0	H	236.0	61.4	-32.6	14.7	43.5
186.610000	27.2	100.0	V	244.0	57.9	-30.7	16.3	43.5
312.107500	38.9	100.0	H	306.0	65.2	-26.3	7.1	46.0
816.025000	32.4	225.0	H	216.0	49.8	-17.4	13.6	46.0

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

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

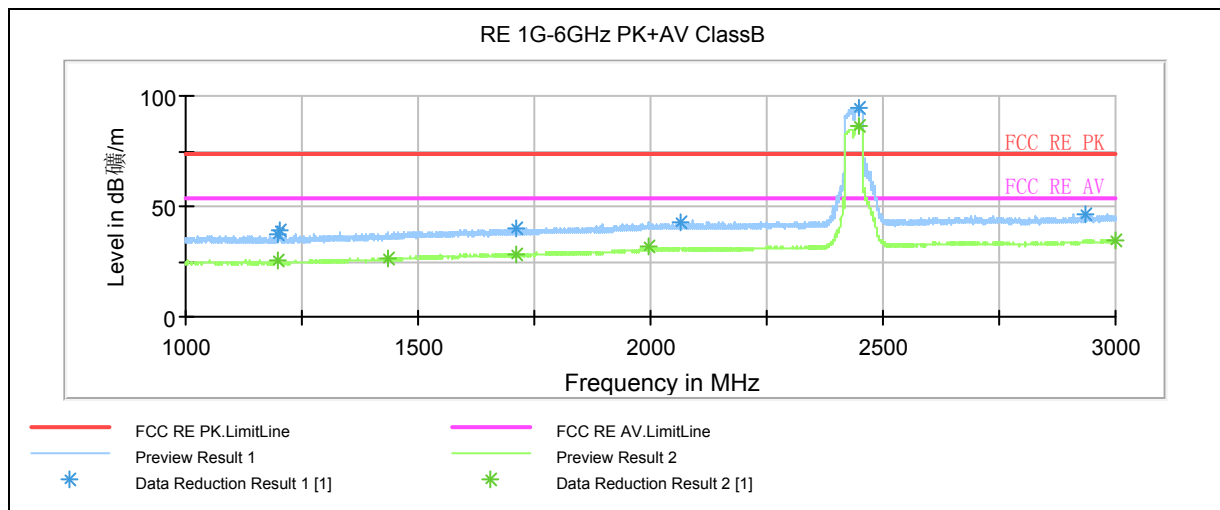
3. Margin = Limit – Quasi-Peak

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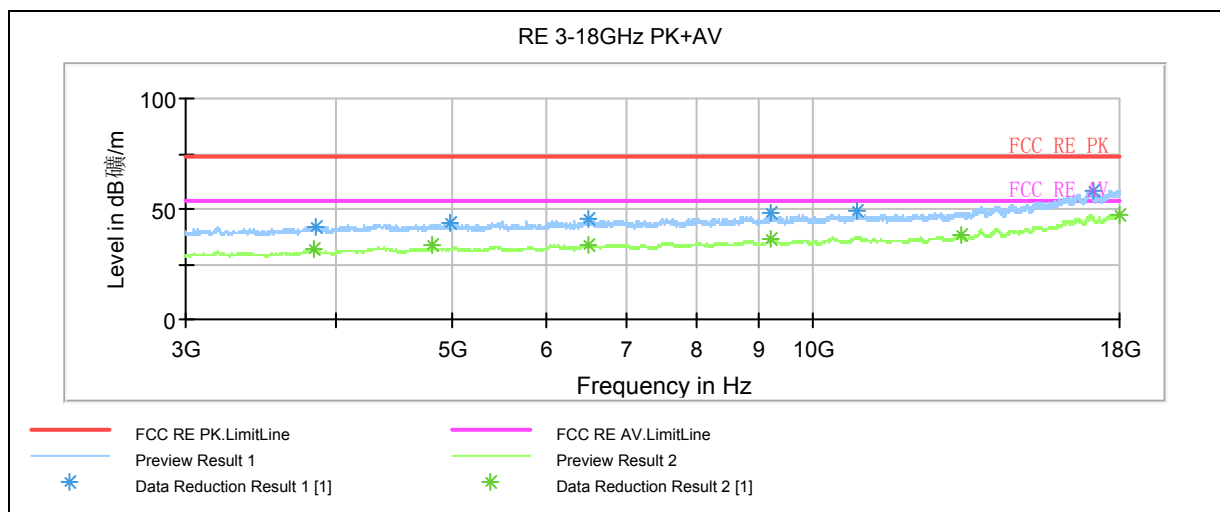
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Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

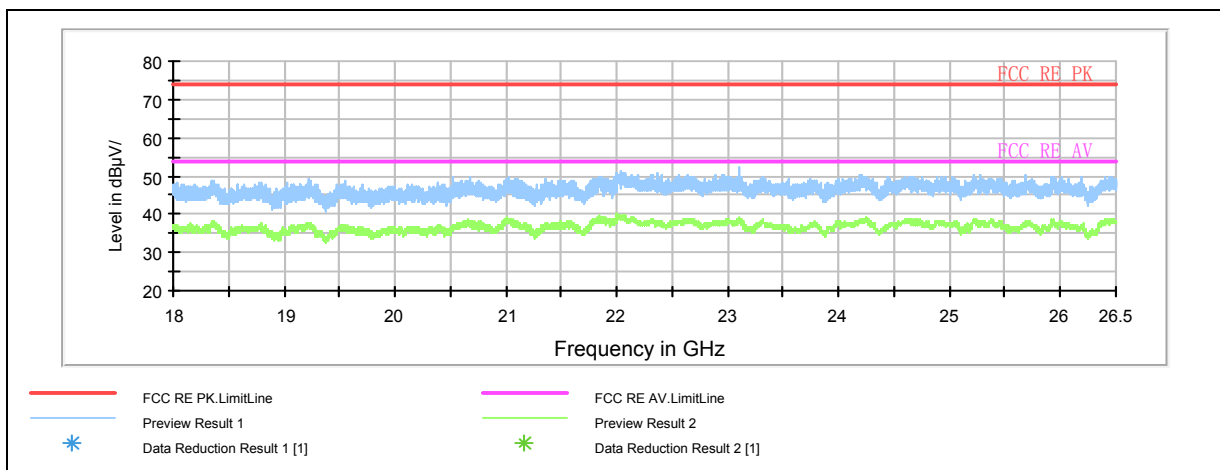
Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz



Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

Radiates Emission from 3GHz to 18GHz



Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

Radiates Emission from 18GHz to 26.5GHz

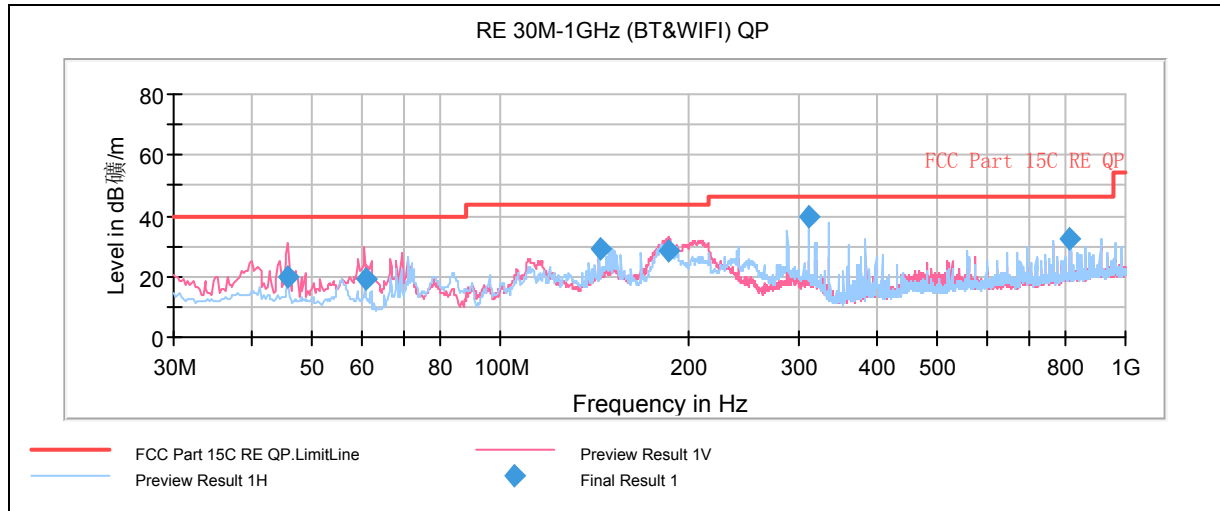
TA Technology (Shanghai) Co., Ltd.

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802.11n(HT40) CH9



Note: a font (Level in dB 电/m)in the test plot =(level in dbuv/m)
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
45.842500	19.9	100.0	V	0.0	44.7	-24.8	20.1	40.0
60.835000	19.2	121.0	V	192.0	46.5	-27.3	20.8	40.0
144.055000	28.8	195.0	H	238.0	61.4	-32.6	14.7	43.5
185.602500	28.2	100.0	V	239.0	59	-30.8	15.3	43.5
312.107500	39.5	100.0	H	307.0	65.8	-26.3	6.5	46.0
816.025000	32.7	225.0	H	216.0	50.1	-17.4	13.3	46.0

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

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

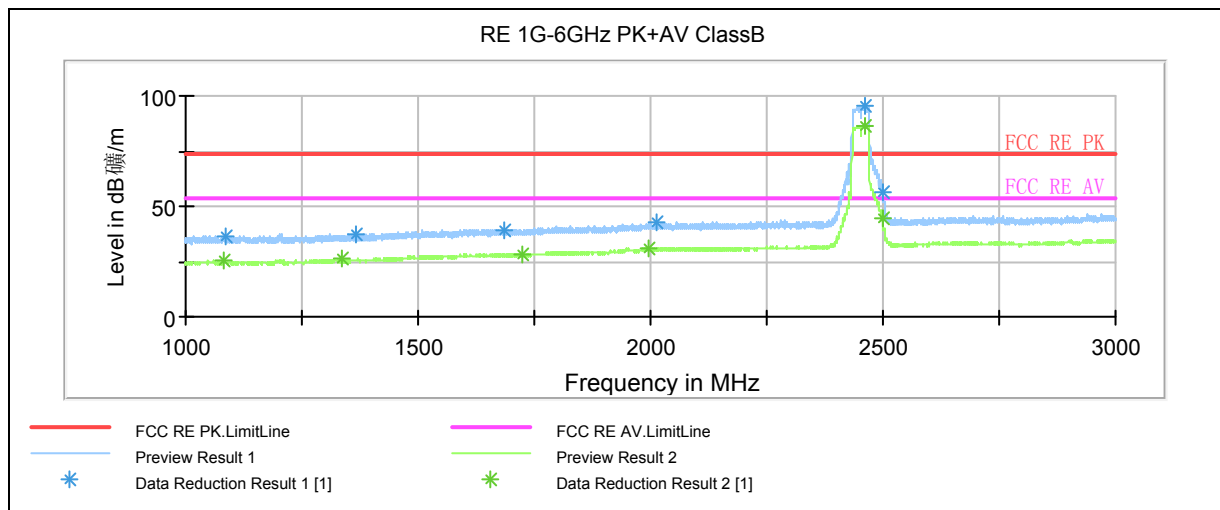
3. Margin = Limit – Quasi-Peak

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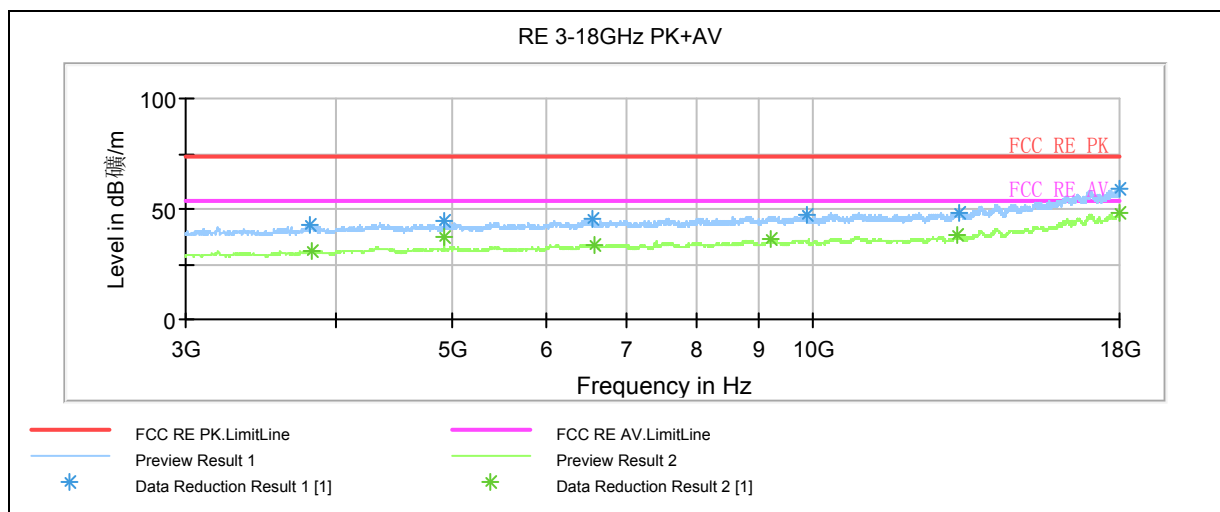
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Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

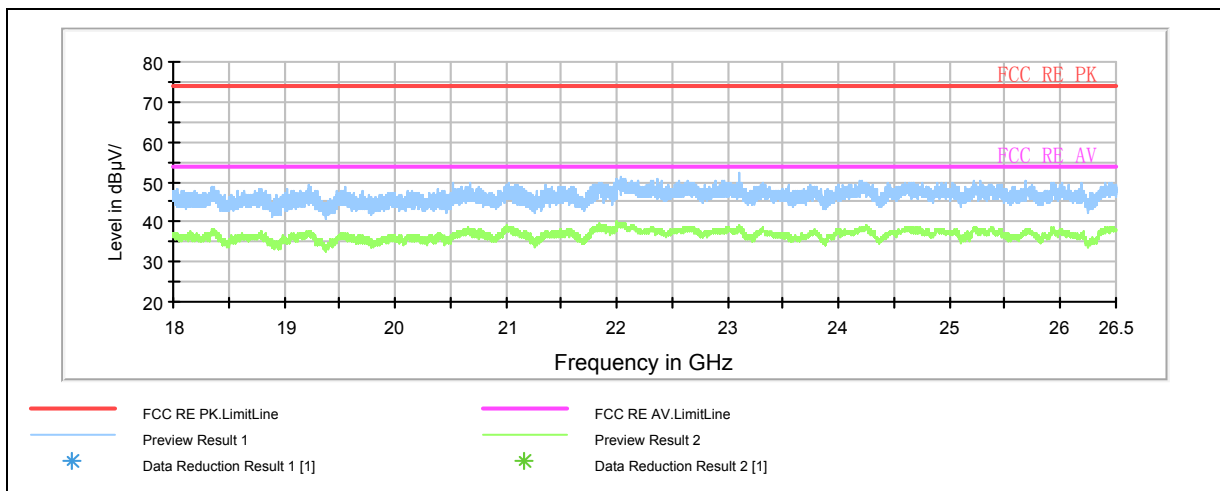
Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz



Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

Radiates Emission from 3GHz to 18GHz



Note: a font (Level in dB 磁/m)in the test plot =(level in dbuv/m)

Radiates Emission from 18GHz to 26.5GHz

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2.9. Conducted Emissions

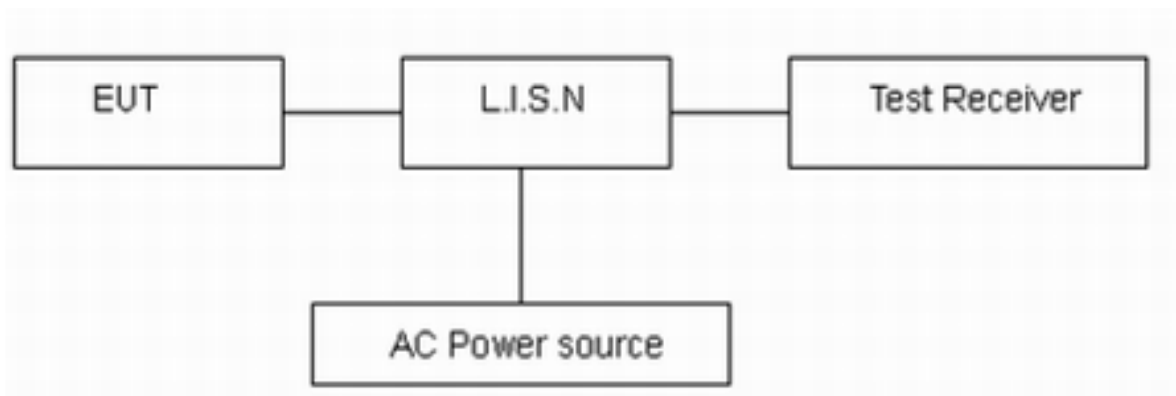
Ambient condition

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

Method of Measurement

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

Test setup



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

Limits

Frequency (MHz)	Conducted Limits(dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56 *	56 to 46 *
0.5 - 5	56	46
5 - 30	60	50
*: Decreases with the logarithm of the frequency.		

Measurement Uncertainty

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

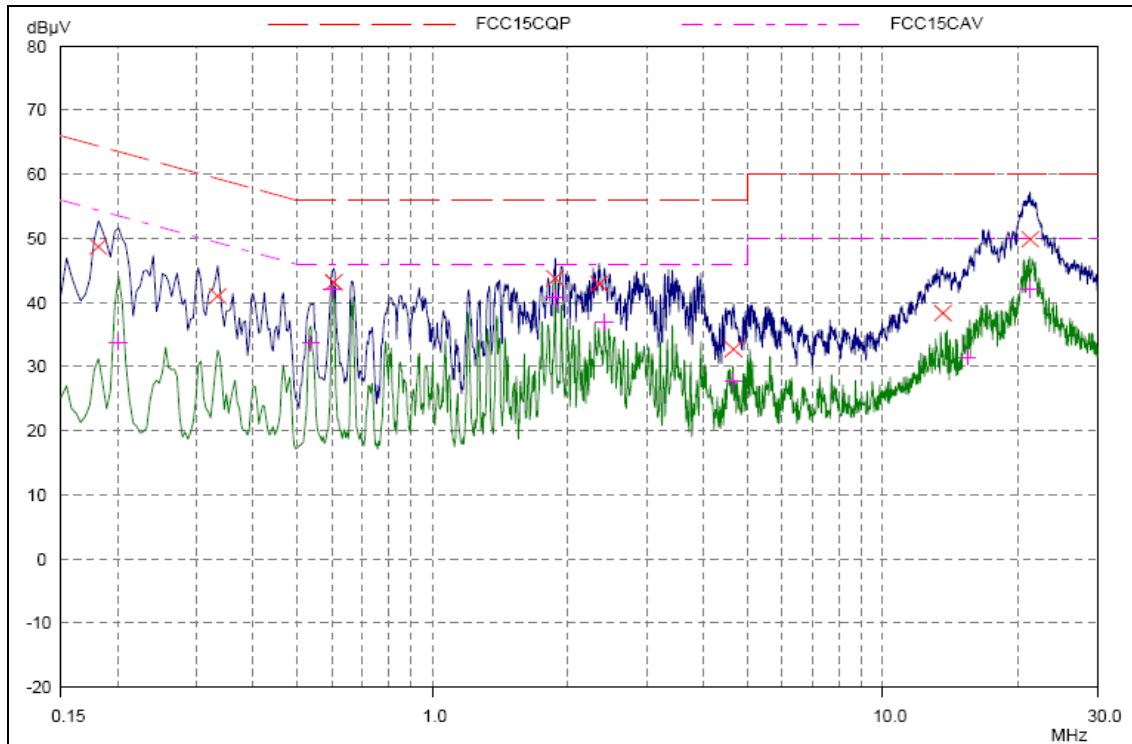
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Test Results:

802.11b CH6



L Line

Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -
0.18125	48.70	64.43	15.73	L1
0.33359	41.03	59.36	18.33	L1
0.60312	43.18	56.00	12.82	L1
1.87656	43.74	56.00	12.26	L1
2.34531	42.90	56.00	13.10	L1
4.66953	32.73	56.00	23.27	L1
13.58359	38.35	60.00	21.65	L1
21.26328	49.89	60.00	10.11	L1

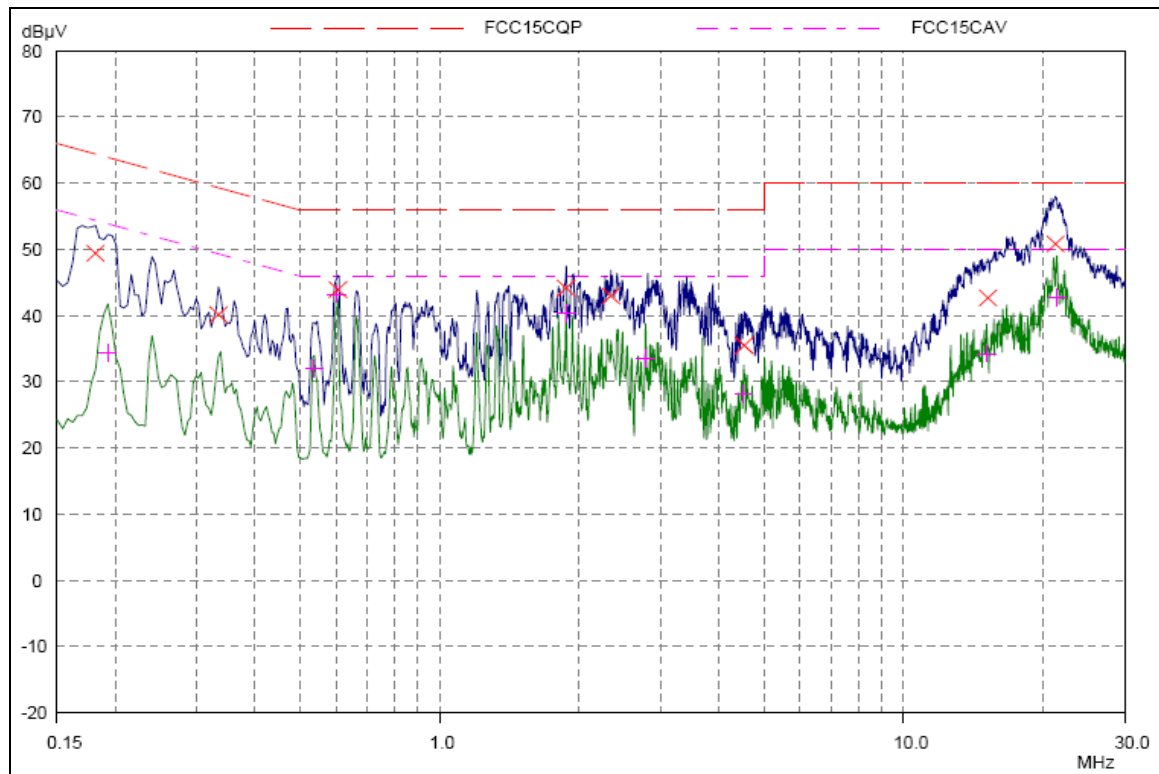
Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -
0.20078	33.81	53.58	19.77	L1
0.53671	33.68	46.00	12.32	L1
0.59921	42.04	46.00	3.96	L1
1.87265	40.72	46.00	5.28	L1
2.41171	36.89	46.00	9.11	L1
4.6539	27.64	46.00	18.36	L1
15.40781	31.52	50.00	18.48	L1
21.19296	42.01	50.00	7.99	L1

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N Line

Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -
0.18125	49.41	64.43	15.02	N
0.33359	40.17	59.36	19.19	N
0.60312	43.94	56.00	12.06	N
1.87656	44.18	56.00	11.82	N
2.3414	43.00	56.00	13.00	N
4.53281	35.49	56.00	20.51	N
15.18515	42.66	60.00	17.34	N
21.26718	50.82	60.00	9.18	N

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -
0.19296	34.38	53.91	19.53	N
0.53671	31.97	46.00	14.03	N
0.59921	43.24	46.00	2.76	N
1.87265	40.42	46.00	5.58	N
2.78281	33.48	46.00	12.52	N
4.525	28.14	46.00	17.86	N
15.13046	34.27	50.00	15.73	N
21.39609	42.73	50.00	7.27	N

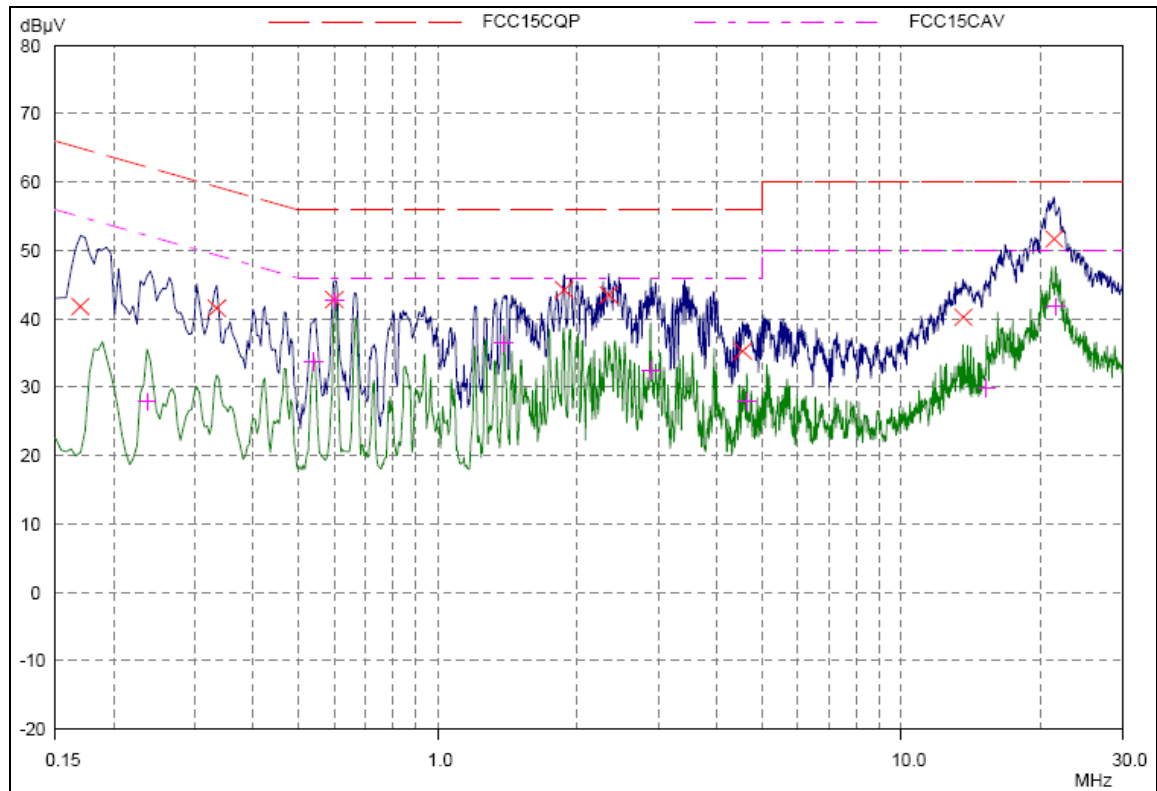
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802.11g CH6



L Line

Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -
0.16953	41.83	64.98	23.15	L1
0.33359	41.59	59.36	17.77	L1
0.59921	42.82	56.00	13.18	L1
1.87265	44.24	56.00	11.76	L1
2.3414	43.50	56.00	12.50	L1
4.54843	35.28	56.00	20.72	L1
13.5914	40.25	60.00	19.75	L1
21.38828	51.68	60.00	8.32	L1

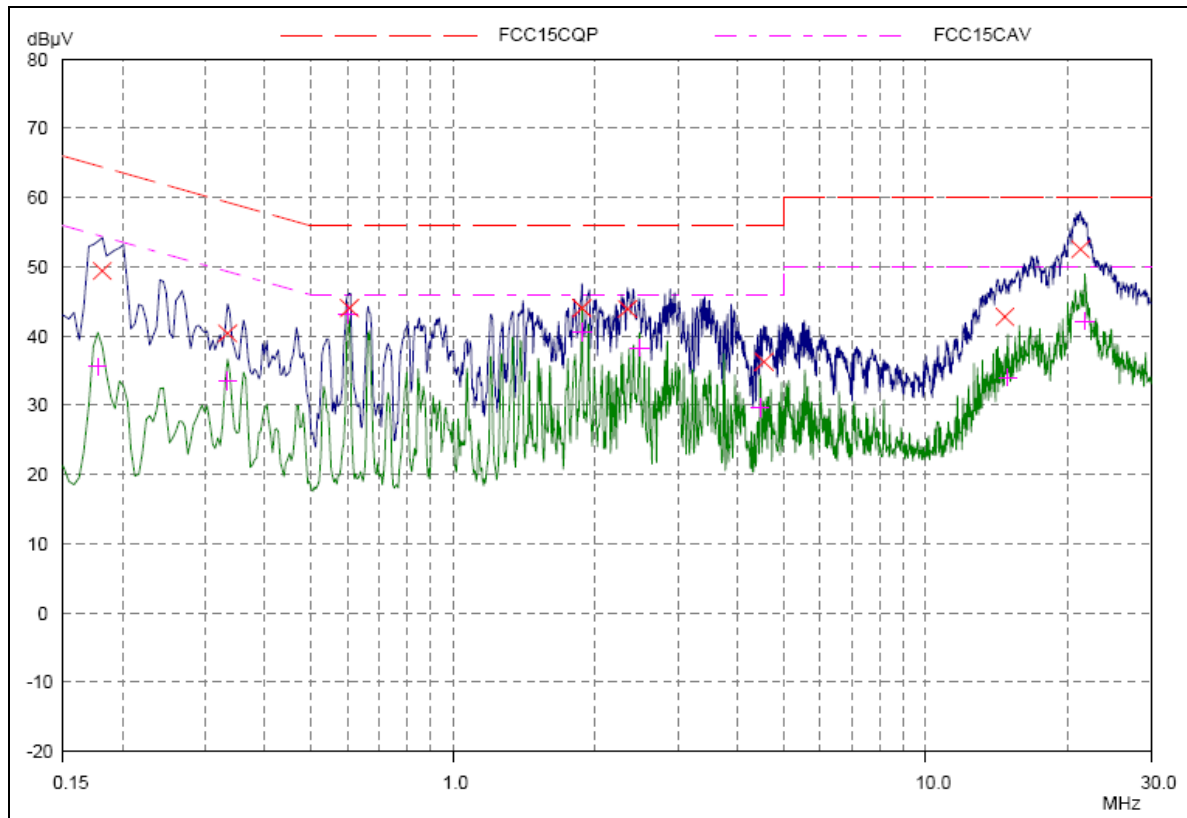
Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -
0.23593	27.92	52.24	24.32	L1
0.54062	33.75	46.00	12.25	L1
0.59921	42.66	46.00	3.34	L1
1.38828	36.47	46.00	9.53	L1
2.88046	32.44	46.00	13.56	L1
4.64609	27.90	46.00	18.10	L1
15.28671	29.88	50.00	20.12	L1
21.55234	41.81	50.00	8.19	L1

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N Line

Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -
0.18125	49.39	64.43	15.04	N
0.33359	40.39	59.36	18.97	N
0.60312	44.04	56.00	11.96	N
1.87656	44.04	56.00	11.96	N
2.3414	43.92	56.00	12.08	N
4.55234	36.27	56.00	19.73	N
14.7125	42.77	60.00	17.23	N
21.27109	52.57	60.00	7.43	N

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -
0.17734	35.58	54.61	19.03	N
0.33359	33.53	49.36	15.83	N
0.59921	43.15	46.00	2.85	N
1.87265	40.54	46.00	5.46	N
2.47812	38.26	46.00	7.74	N
4.47031	29.63	46.00	16.37	N
14.93515	34.04	50.00	15.96	N
21.7125	42.17	50.00	7.83	N

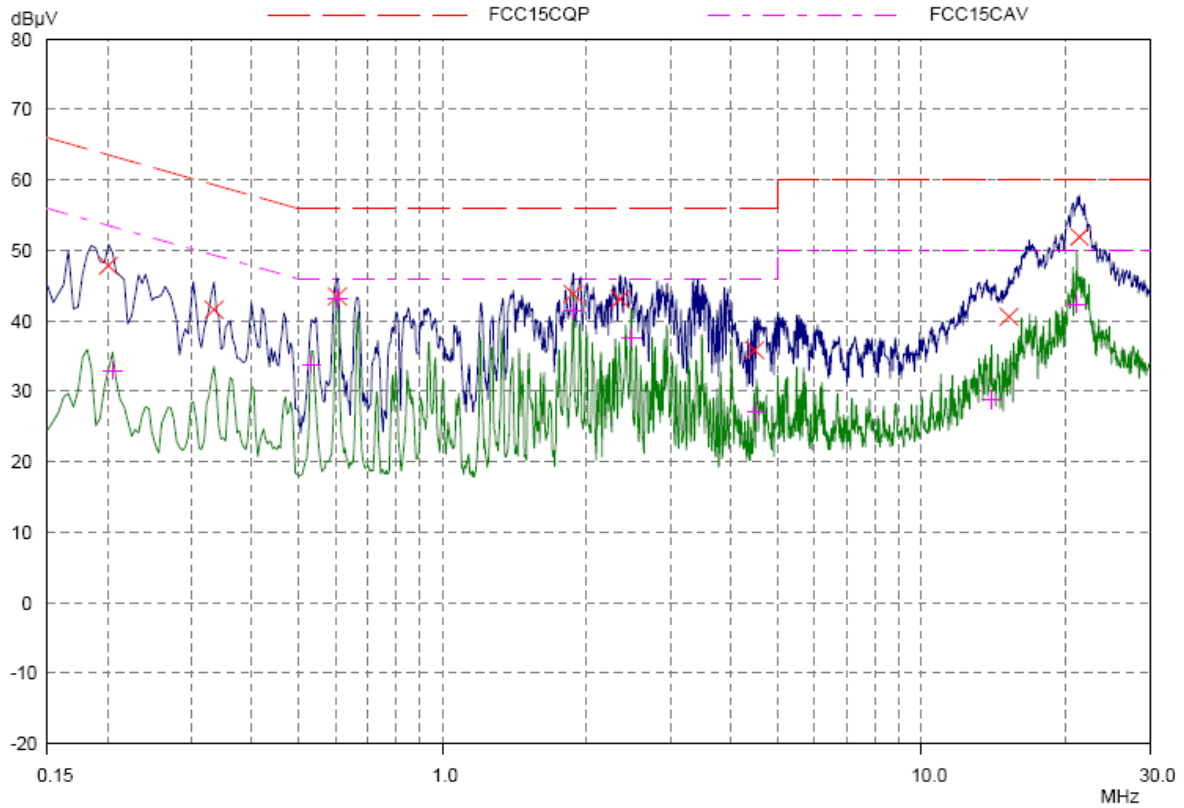
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L Line

Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -
0.20078	47.86	63.58	15.72	L1
0.33359	41.61	59.36	17.75	L1
0.60312	43.50	56.00	12.50	L1
1.87656	43.88	56.00	12.12	L1
2.34531	43.10	56.00	12.90	L1
4.48593	35.83	56.00	20.17	L1
15.23984	40.59	60.00	19.41	L1
21.39218	51.91	60.00	8.09	L1

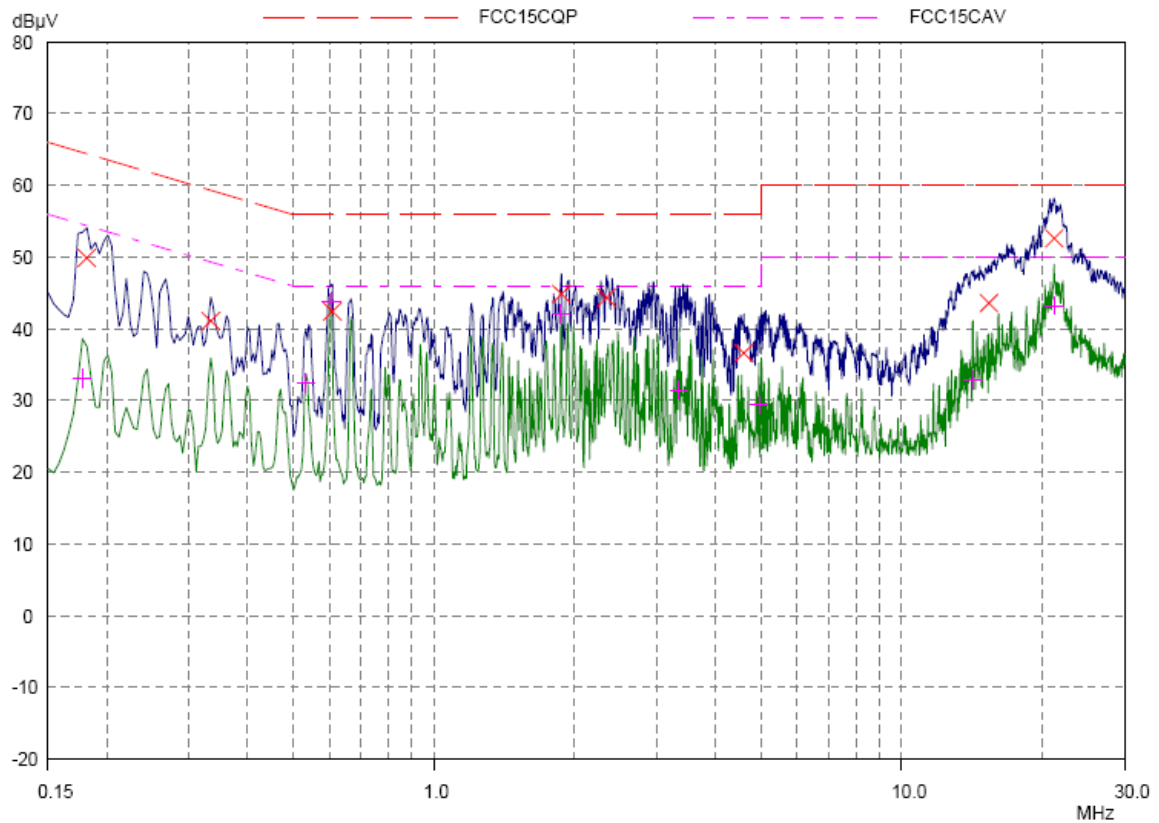
Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -
0.20468	32.98	53.42	20.44	L1
0.53281	33.87	46.00	12.13	L1
0.60312	43.15	46.00	2.85	L1
1.87265	41.56	46.00	4.44	L1
2.47812	37.67	46.00	8.33	L1
4.525	27.10	46.00	18.90	L1
14.01718	28.81	50.00	21.19	L1
21.14609	42.40	50.00	7.60	L1

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N Line

Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -
0.18125	49.91	64.43	14.52	N
0.33359	41.11	59.36	18.25	N
0.60703	42.42	56.00	13.58	N
1.87265	44.84	56.00	11.16	N
2.3414	44.34	56.00	11.66	N
4.60312	36.63	56.00	19.37	N
15.37656	43.59	60.00	16.41	N
21.20468	52.61	60.00	7.39	N

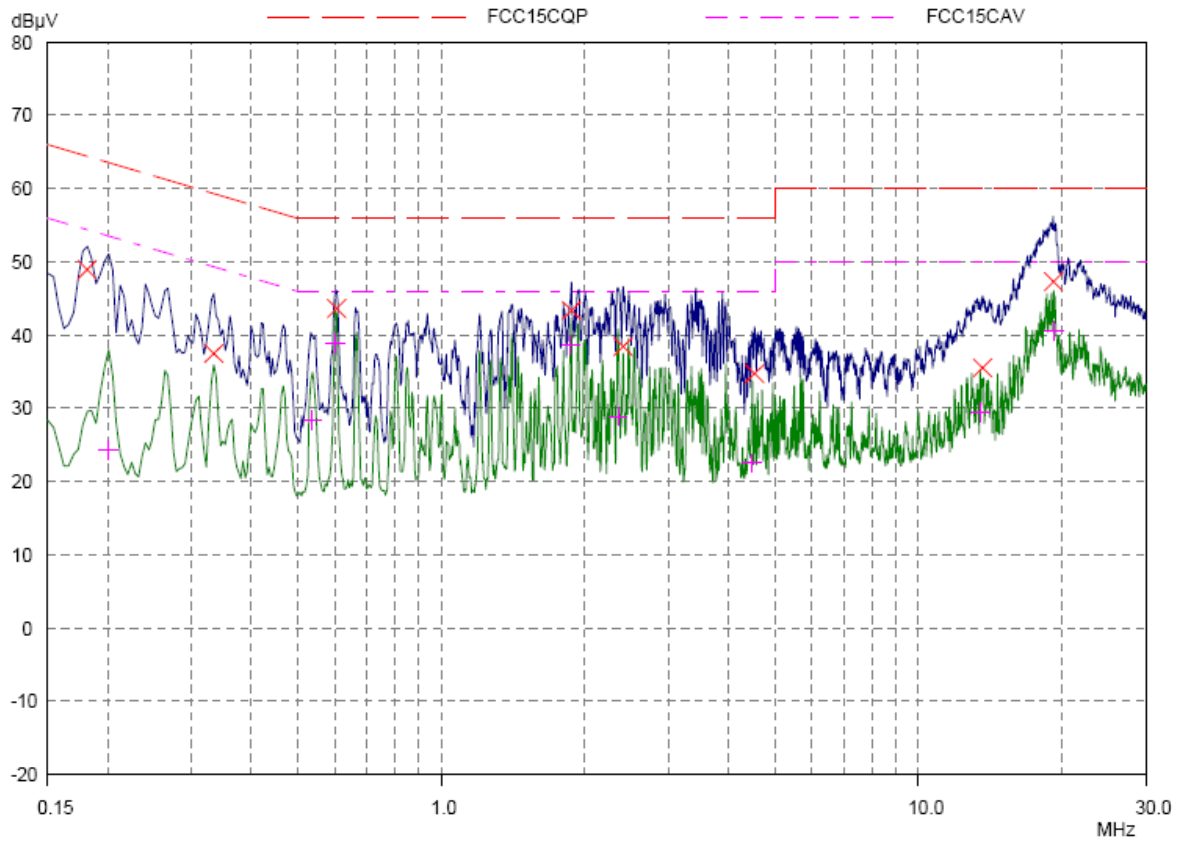
Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -
0.17734	33.05	54.61	21.56	N
0.53281	32.44	46.00	13.56	N
0.60312	43.90	46.00	2.10	N
1.86875	42.13	46.00	3.87	N
3.34921	31.50	46.00	14.50	N
4.95859	29.43	46.00	16.57	N
14.19687	32.90	50.00	17.10	N
21.2125	43.28	50.00	6.72	N

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L Line

Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -
0.18125	48.92	64.43	15.51	L1
0.33359	37.46	59.36	21.90	L1
0.60312	43.64	56.00	12.36	L1
1.87656	43.38	56.00	12.62	L1
2.40781	38.43	56.00	17.57	L1
4.54062	34.72	56.00	21.28	L1
13.6539	35.56	60.00	24.44	L1
19.19296	47.32	60.00	12.68	L1

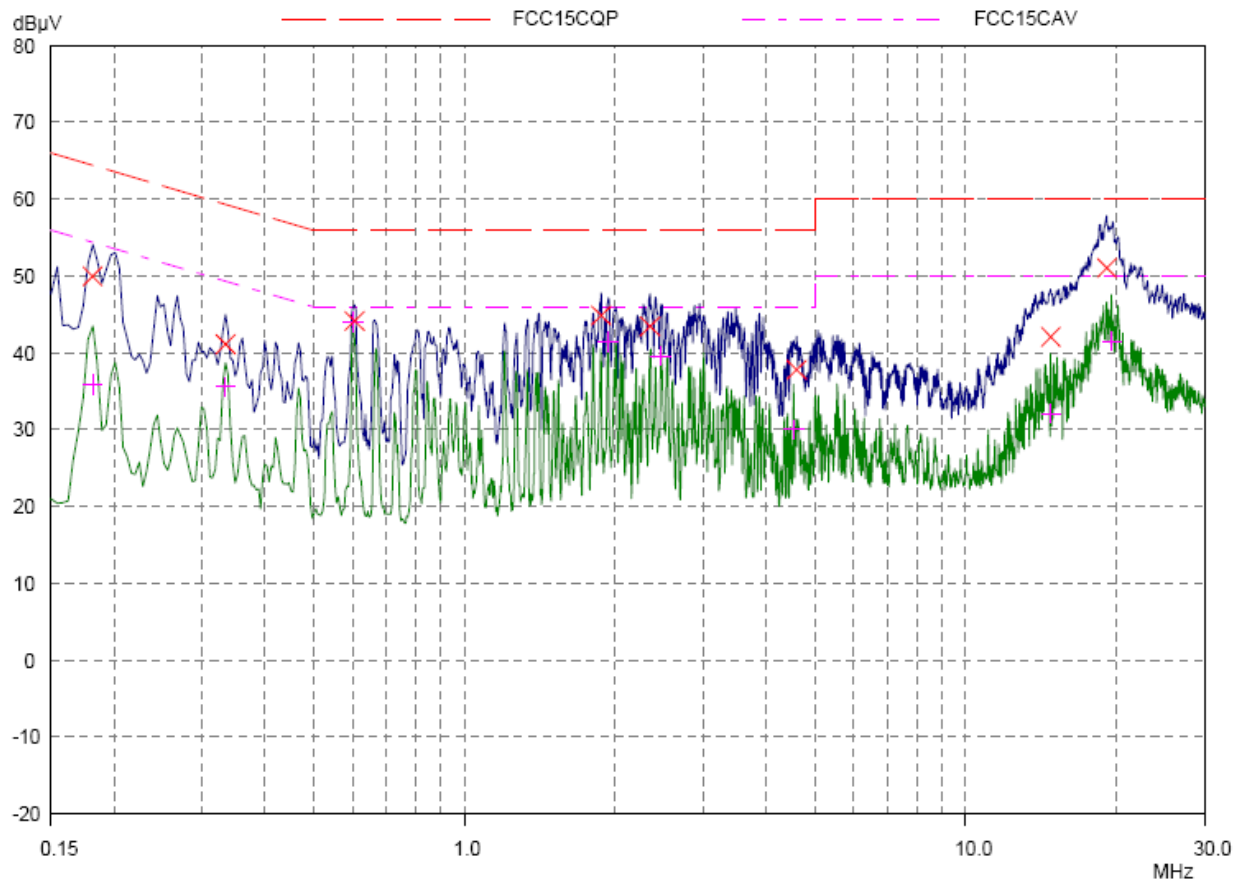
Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -
0.20078	24.34	53.58	29.24	L1
0.53671	28.42	46.00	17.58	L1
0.59921	38.90	46.00	7.10	L1
1.86875	38.62	46.00	7.38	L1
2.34531	28.93	46.00	17.07	L1
4.48984	22.51	46.00	23.49	L1
13.47421	29.47	50.00	20.53	L1
19.23984	40.50	50.00	9.50	L1

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N Line

Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -
0.18125	49.93	64.43	14.50	N
0.33359	41.15	59.36	18.21	N
0.60312	44.16	56.00	11.84	N
1.87265	44.84	56.00	11.16	N
2.34531	43.46	56.00	12.54	N
4.59921	37.78	56.00	18.22	N
14.775	42.08	60.00	17.92	N
19.11875	51.05	60.00	8.95	N

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -
0.18125	35.82	54.43	18.61	N
0.33359	35.60	49.36	13.76	N
0.59921	43.98	46.00	2.02	N
1.93515	41.46	46.00	4.54	N
2.47031	39.59	46.00	6.41	N
4.53281	29.98	46.00	16.02	N
14.775	32.13	50.00	17.87	N
19.54453	41.50	50.00	8.50	N

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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	Loop Antenna	FMZB1516	SCHWARZBECK	237	2012-06-30	Two years
03	TRILOG Broadband Antenna	VULB 9163	Schwarzbeck	9163-201	2010-06-20	Three years
04	Double Ridged Waveguide Horn Antenna	HF907	R&S	100126	2012-07-02	Three years
05	EMI Test Receiver	ESCS30	R&S	100138	2012-01-16	One year
06	LISN	ENV216	R&S	101171	2010-04-16	Three years
07	PSG Analog Signal Generator	E8257D	Agilent	MY49281101	2012-06-30	One year
08	ESG Vector Signal Generator	E4438C	Agilent	MY49070900	2012-06-30	One year
09	Spectrum Analyzer	E4445A	Agilent	MY46181146	2012-06-30	One year
10	Power Splitter	SHX-GF2-2-13	Hua Xiang	10120101	NA	NA
11	MOB COMMS DC SUPPLY	66319D	Agilent	MY43004105	2012-06-30	One year
12	Power Sensor	E9304A	Agilent	MY50220022	2012-06-30	One year
13	Power Meter	E4418B	Agilent	MY50000623	2012-06-30	One year
14	Vibration table	ESS-050-120	dongling	D1007126	2010-08-23	Three years
15	Universal Radio Communication Tester	E5515C	Agilent	MY48367192	2012-06-30	One year

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

ANNEX A: EUT Appearance and Test Setup

A.1 EUT Appearance



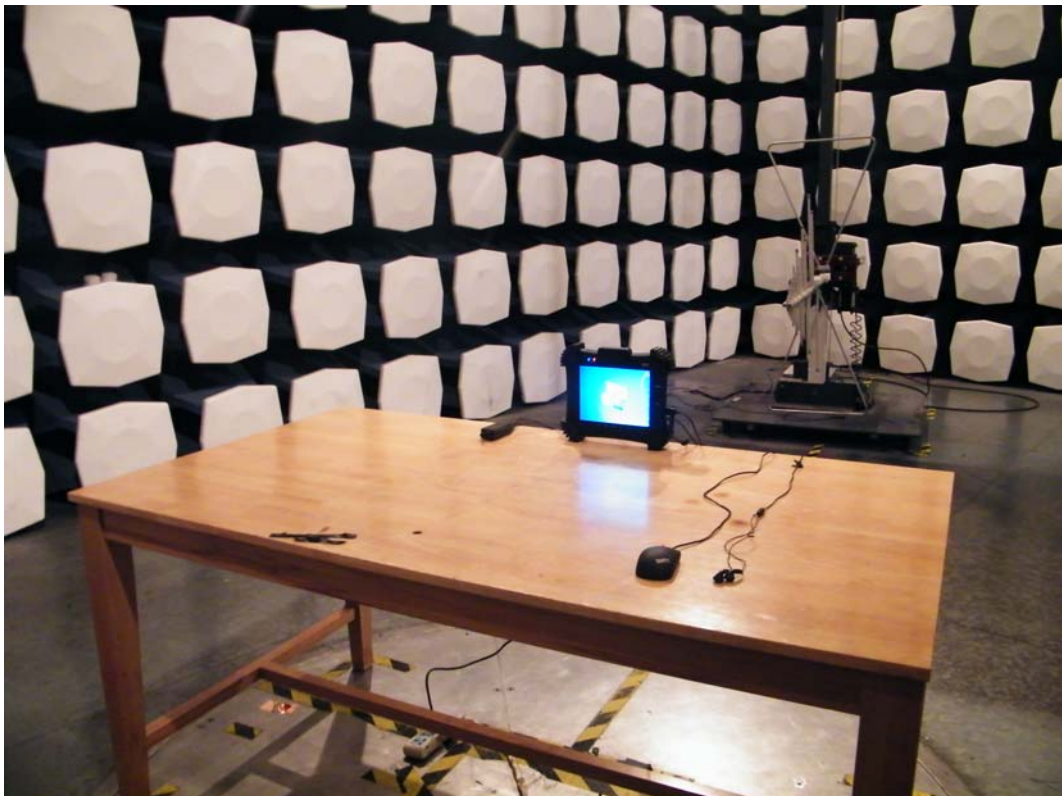
a: EUT

Picture 1 Constituents of EUT

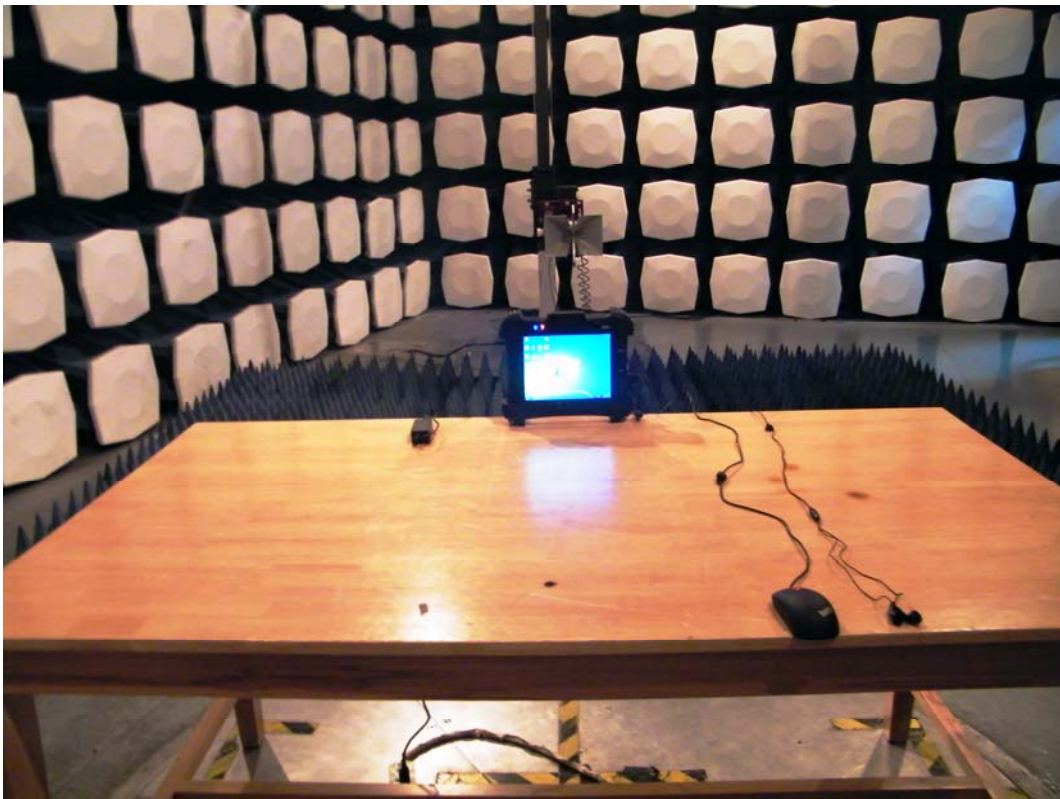
A.2 Test Setup



9KHz-30MHz

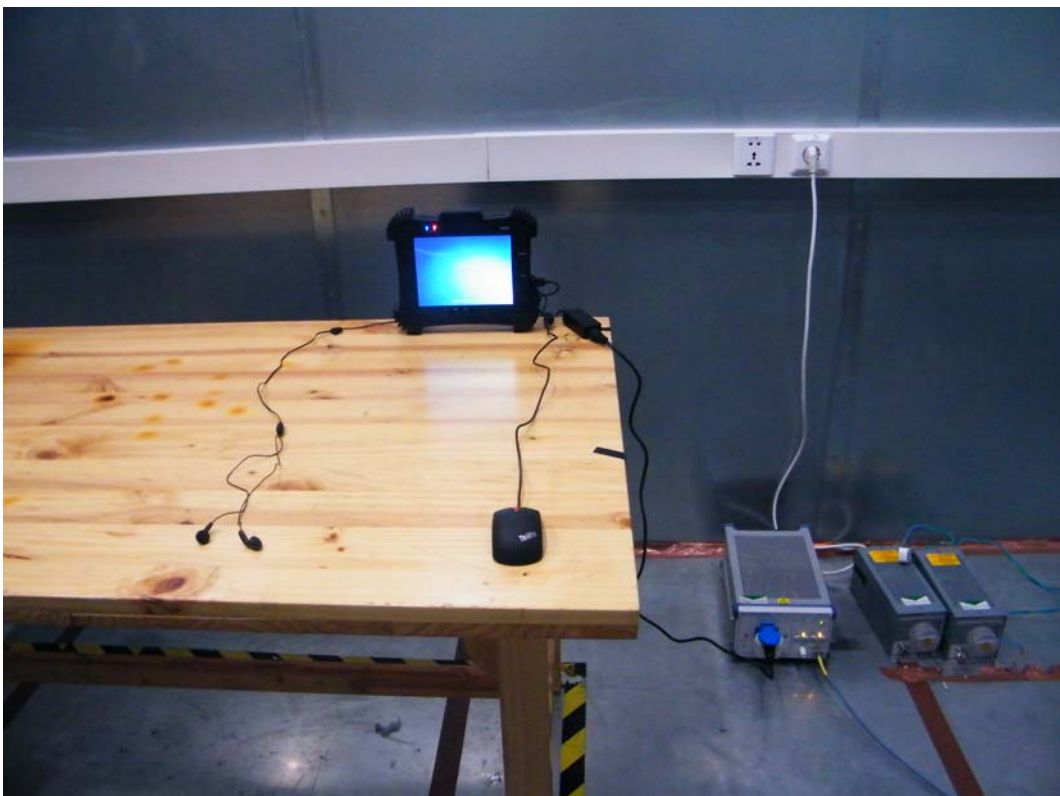


30M Hz-1GHz



Above 1GHz

Picture 2 Radiated Emission Test Setup



Picture 3 Conducted Emission Test Setup