TESTING
No. L2264

Part 15C

TEST REPORT

Product Name	WCDMA/GSM Dual band mobile phone
Model Name	W716S
Brand Name	Haier
FCC ID	SG71408W716S
Client	Haier Telecom (Qingdao) Co., Ltd.
Manufacturer	Haier Telecom (Qingdao) Co., Ltd.
Date of issue	August 14, 2014

TA Technology (Shanghai) Co., Ltd.

GENERAL SUMMARY

Reference Standard(s)	**FCC CFR47 Part 15C (2013)** Radio Frequency Devices **15.205** Restricted bands of operation; **15.207** Conducted limits; **15.209** Radiated emission limits; general requirements; **15.247** Operation within the bands 902-928 MHz,2400-2483.5 MHz, and 5725-5850MHz. **ANSI C63.4** Methods of Measurement of Radio-Noise Emission from Low-Voltage Electrical and Electronic Equipment in the Range of 9 KHz to 40GHz. (2009) **KDB 558074 D01 DTS Meas Guidance v03r01** Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247
Conclusion	This 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**
Comment	The test result only responds to the measured sample.

Approved by Weizhong Yang
Weizhong Yang
Director

Revised by Lingling Kang
Lingling Kang
RF Manager

Performed by Yu Wang
Yu Wang
RF Engineer

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1. General Information

1.1. Notes of the test report

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

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

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

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

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

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

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

1.2. Testing laboratory

Company:	TA Technology (Shanghai) Co., Ltd.
Address:	No.145, Jintang Rd, Tangzhen Industry Park, Pudong
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1.3. Applicant Information

Company:	Haier Telecom (Qingdao) Co., Ltd.
Address:	No1. Haier Road , Hi-tech Zone, Qingdao/China

1.4. Manufacturer Information

Company:	Haier Telecom (Qingdao) Co., Ltd.
Address:	No1. Haier Road , Hi-tech Zone, Qingdao/China

1.5. Information of EUT

General information

IMEI:	862295021475693
Hardware Version:	H01
Software Version:	HW-W716S-H01-S001-VE
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; 802.11n(HT20/HT40) OFDM
Power Supply:	Battery or Adapter
Max Conducted Power	19.67 dBm
Operating Frequency Range(s)	2412MHz~ 2462MHz (HT20)
	2422MHz~ 2452MHz (HT40)
Tested Frequency Range(s)	2400MHz~ 2483.5 MHz

Auxiliary Equipment Details

Name	Model	Manufacturer	Capacity	S/N
Battery	H11277	Zhongshan TIANMAO Battery Co.,Ltd	1400mAh	EB094300000E0000315T

Name	Model	Manufacturer	S/N
Adapter	LSD-D05I055	LISHUNDA Electronics CO.LTD	/
Earphone 1	MY-M6295	ZheJiang MEEYON technology Co.,Ltd	/
Earphone 2	PY-1353001-01KB42	HETONG	/

1.6. Test Date

The test is performed from August 6, 2014 to August 12, 2014.

2. Test Information

2.1. Test Mode

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

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

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

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

	Test items	Modes	Data Rate	Test channel
Conducted Test cases	Peak Power Output –Conducted	802.11b	5.5 Mbps	1/6/11
		802.11g	54 Mbps	1/6/11
		802.11n HT20	MCS4 Mbps	1/6/11
		802.11n HT40	MCS6 Mbps	3/6/9
	Minimum 6dB bandwidth	802.11b	5.5 Mbps	1/6/11
		802.11g	54 Mbps	1/6/11
		802.11n HT20	MCS4 Mbps	1/6/11
		802.11n HT40	MCS6 Mbps	3/6/9
	Band Edges compliance	802.11b	5.5 Mbps	1/11
		802.11g	54 Mbps	1/11
		802.11n HT20	MCS4 Mbps	1/6/11
		802.11n HT40	MCS6 Mbps	3/6/9
	Power spectral Density	802.11b	5.5 Mbps	1/6/11
		802.11g	54 Mbps	1/6/11
		802.11n HT20	MCS4 Mbps	1/6/11
		802.11n HT40	MCS6 Mbps	3/6/9
	Conducted Spurious Emission	802.11b	5.5 Mbps	1/6/11
		802.11g	54 Mbps	1/6/11
		802.11n HT20	MCS4 Mbps	1/6/11
		802.11n HT40	MCS6 Mbps	3/6/9
	Conducted Emissions	802.11b	5.5 Mbps	6
		802.11g	54 Mbps	6
		802.11n HT20	MCS4 Mbps	6
		802.11n HT40	MCS6 Mbps	6

Radiated Test cases	Spurious Radiated Emissions in the restricted band	802.11b	5.5 Mbps	1/11
		802.11g	54 Mbps	1/11
		802.11n HT20	MCS4 Mbps	1/11
		802.11n HT40	MCS6 Mbps	3/9
	Radiates Emission	802.11b	5.5 Mbps	1/6/11
		802.11g	54 Mbps	1/6/11
		802.11n HT20	MCS4 Mbps	1/6/11
		802.11n HT40	MCS6 Mbps	3/6/9

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

2.2. Summary of test results

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

2.3. Peak Power Output –Conducted

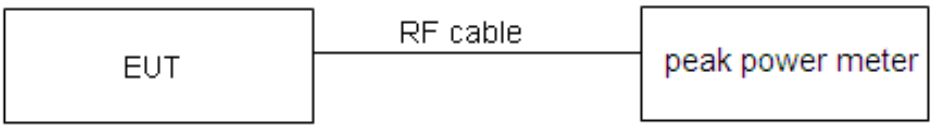
Ambient condition

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

Methods of Measurement

During the process of the testing, The EUT was connected to the peak power meter through an external attenuator and a known loss cable. The EUT is max power transmission with proper modulation. We use 5.2.1 Maximum Peak Conducted Output Power Level Method in KDB 558074 D01 for this test.

Test Setup



Limits

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

Peak Output Power	≤ 1W (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.

Test Results：

Network Standards	Carrier frequency (MHz)	Peak Output Power (dBm)	Conclusion
802.11b	2412	19.67	PASS
	2437	19.28	PASS
	2462	19.42	PASS
802.11g	2412	15.74	PASS
	2437	15.19	PASS
	2462	16.01	PASS
802.11n HT20	2412	16.13	PASS
	2437	15.62	PASS
	2462	16.19	PASS
802.11n HT40	2422	16.62	PASS
	2437	16.18	PASS
	2452	15.61	PASS

2.4. Occupied Bandwidth (6dB)

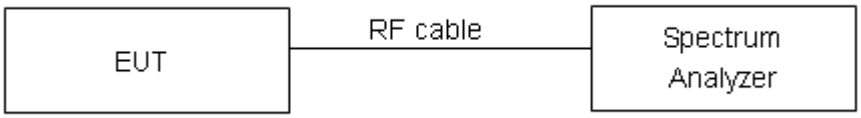
Ambient condition

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

Method of Measurement

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

Test Setup



Limits

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

minimum 6 dB bandwidth	≥ 500 kHz

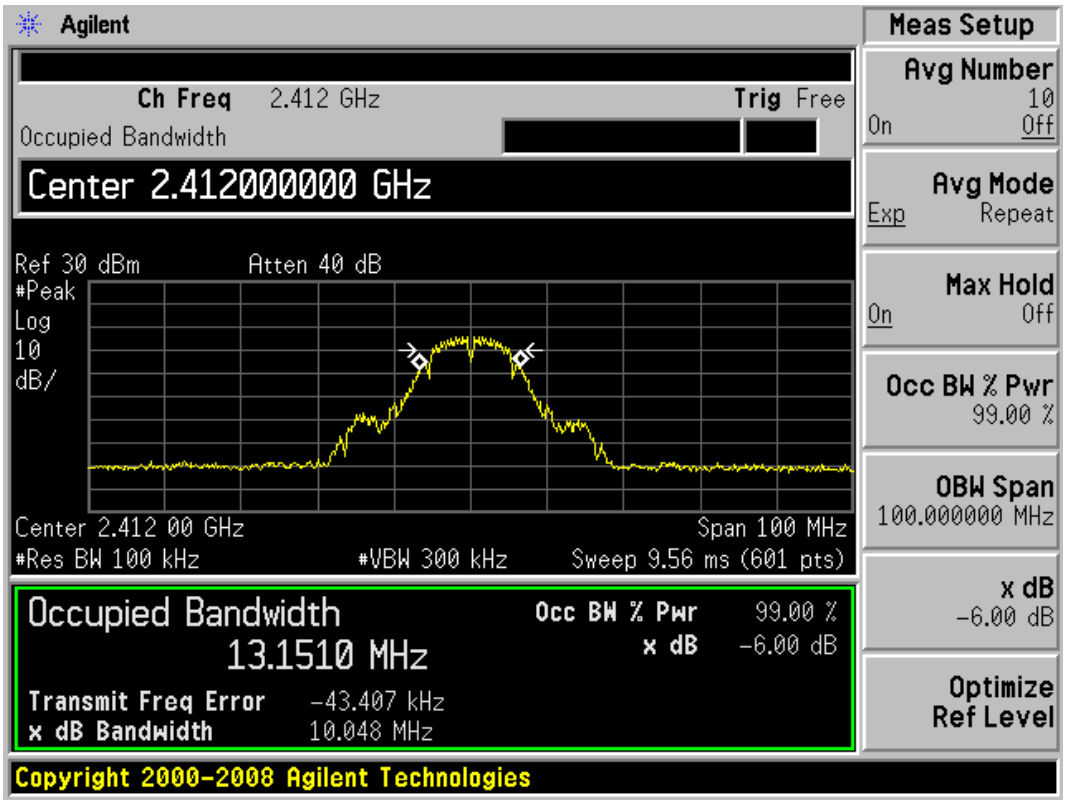
Measurement Uncertainty

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

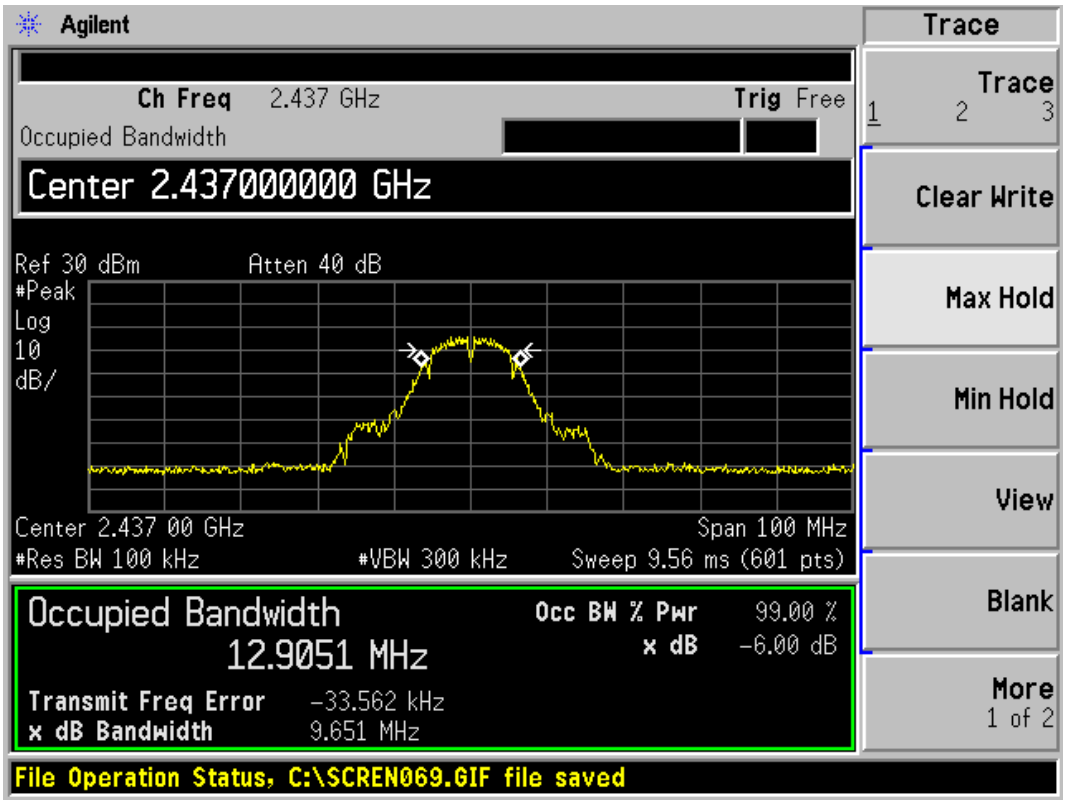
Test Results:

Network Standards	Carrier frequency (MHz)	Minimum 6 dB bandwidth (MHz)	Conclusion
802.11b	2412	10.048	PASS
	2437	9.651	PASS
	2462	10.078	PASS
802.11g	2412	15.223	PASS
	2437	14.117	PASS
	2462	15.634	PASS
802.11n HT20	2412	15.160	PASS
	2437	17.736	PASS
	2462	15.107	PASS
802.11n HT40	2422	35.267	PASS
	2437	35.079	PASS
	2452	35.428	PASS

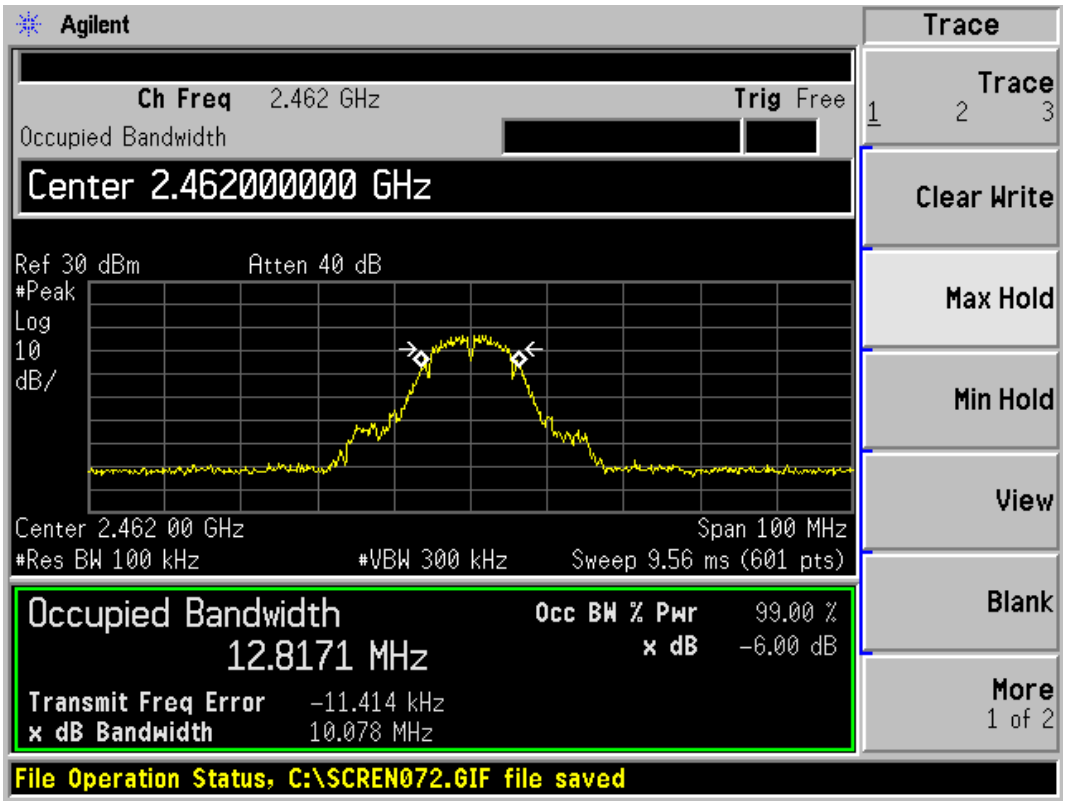
802.11b



802.11b, Carrier frequency (MHz): 2412

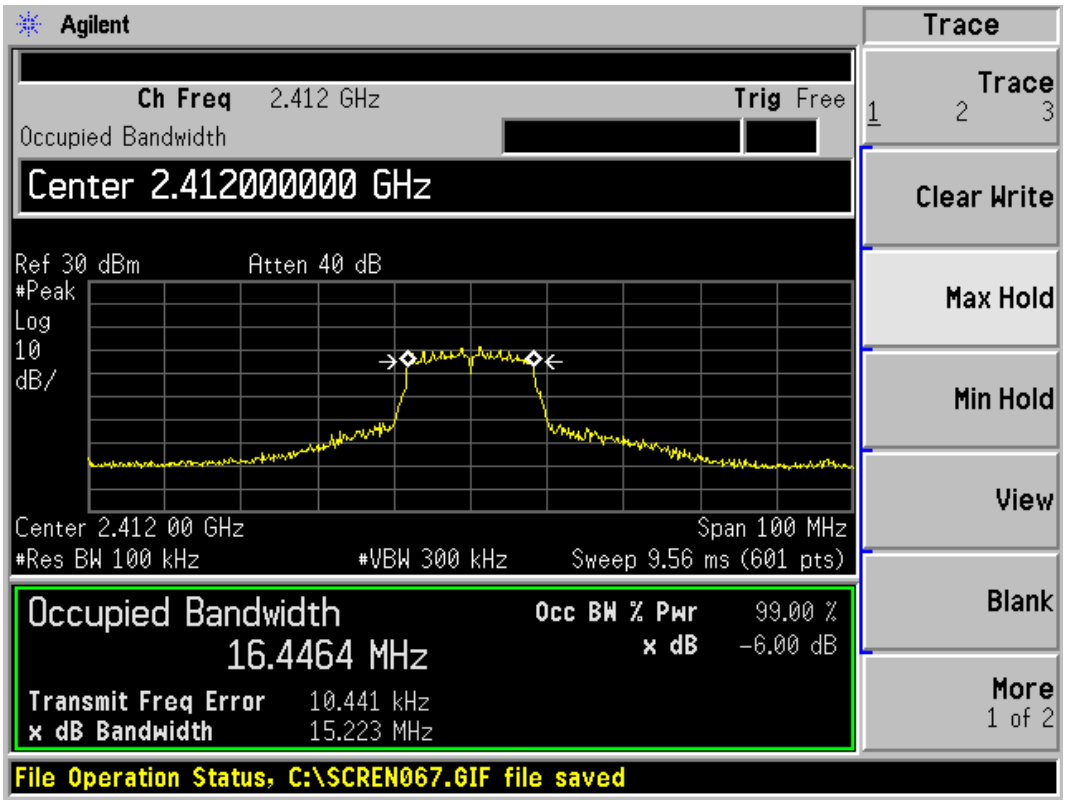


802.11b, Carrier frequency (MHz): 2437

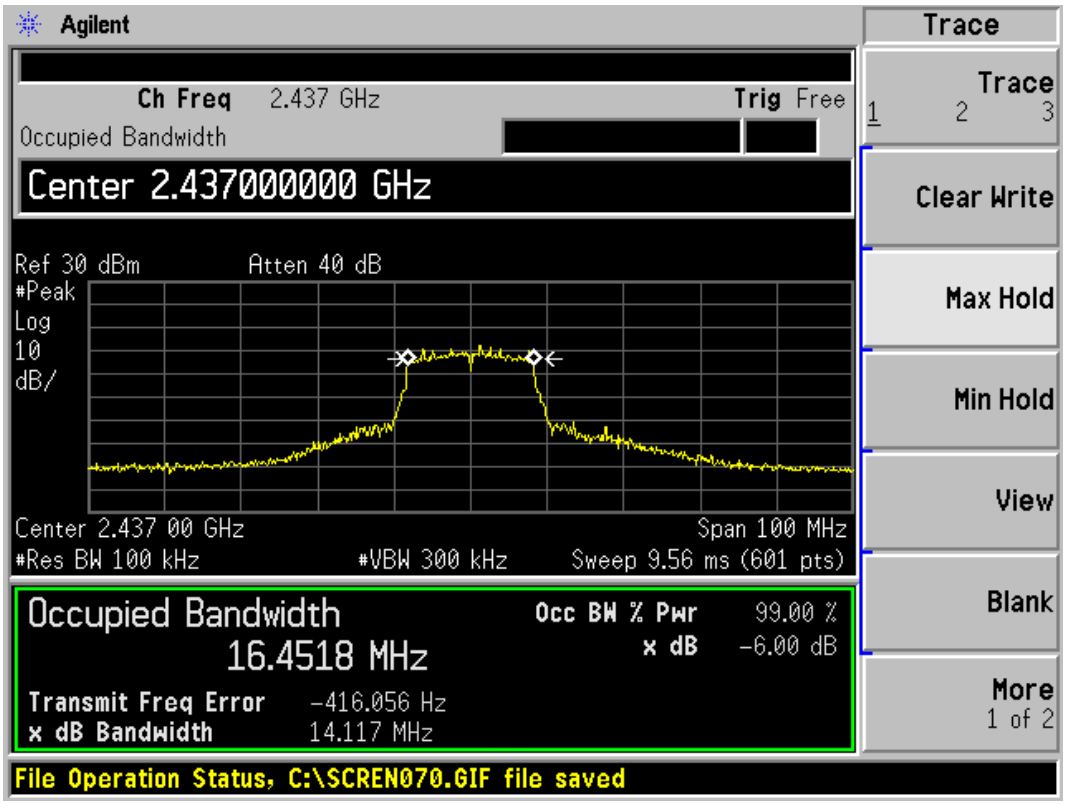


802.11b, Carrier frequency (MHz):2462

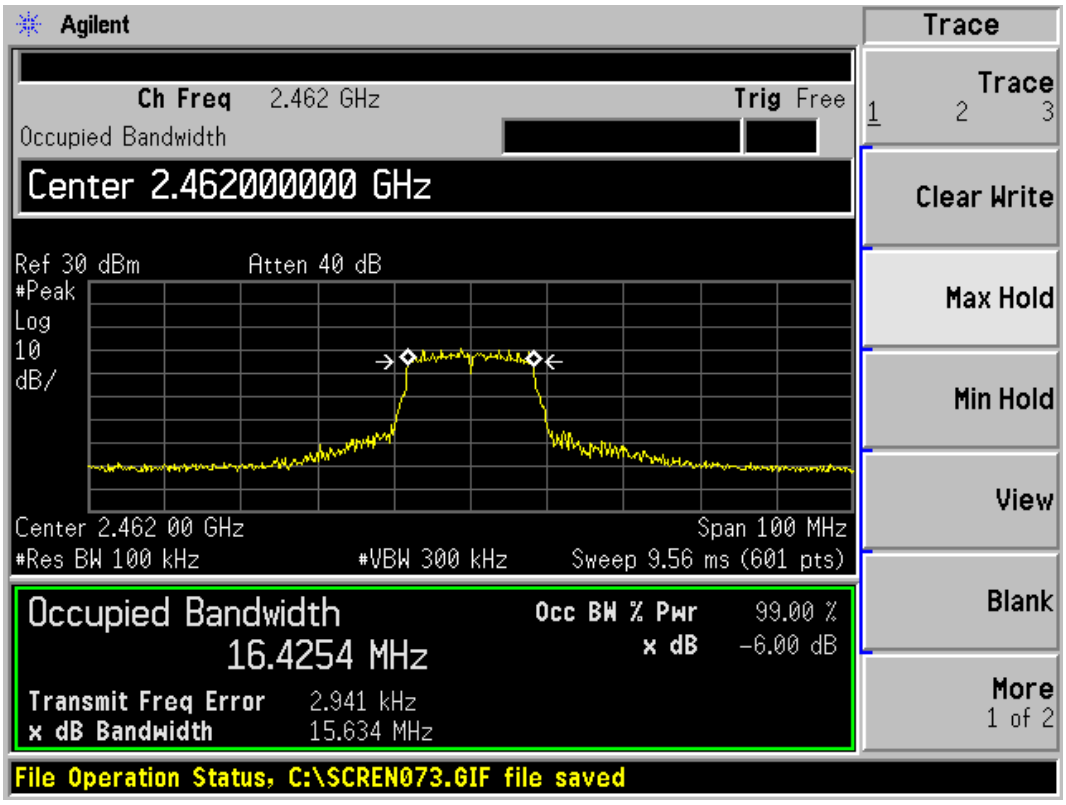
802.11g



802.11g, Carrier frequency (MHz): 2412

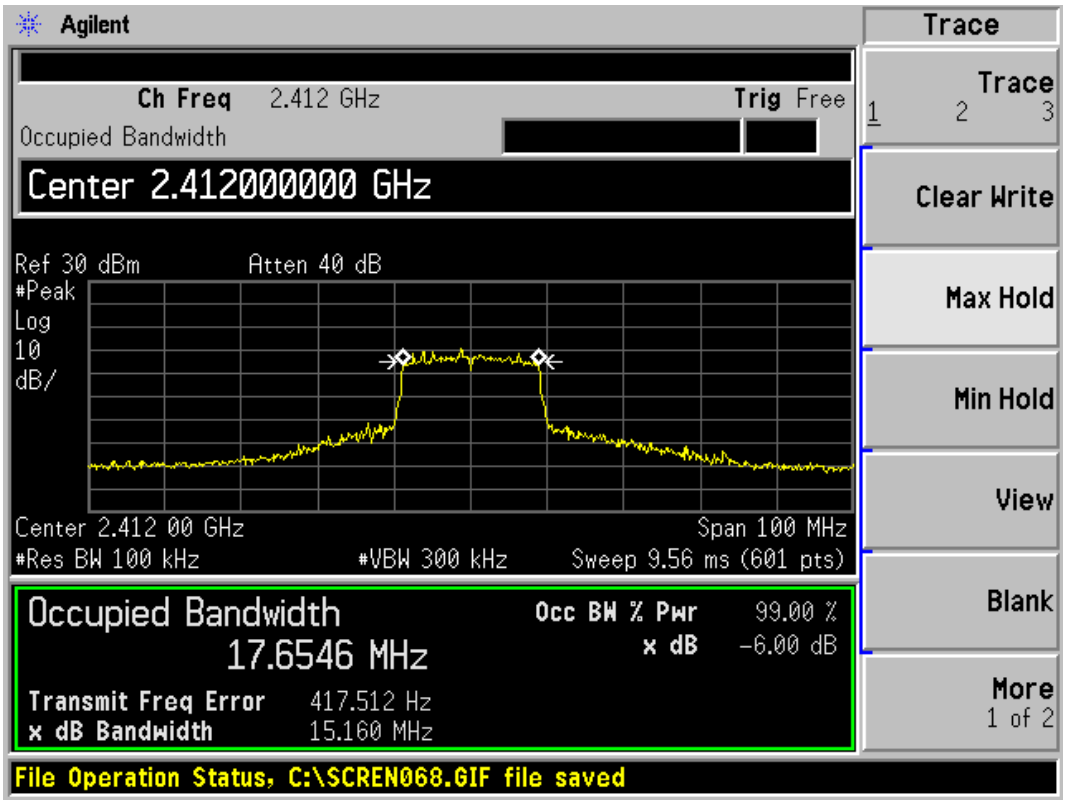


802.11g, Carrier frequency (MHz): 2437

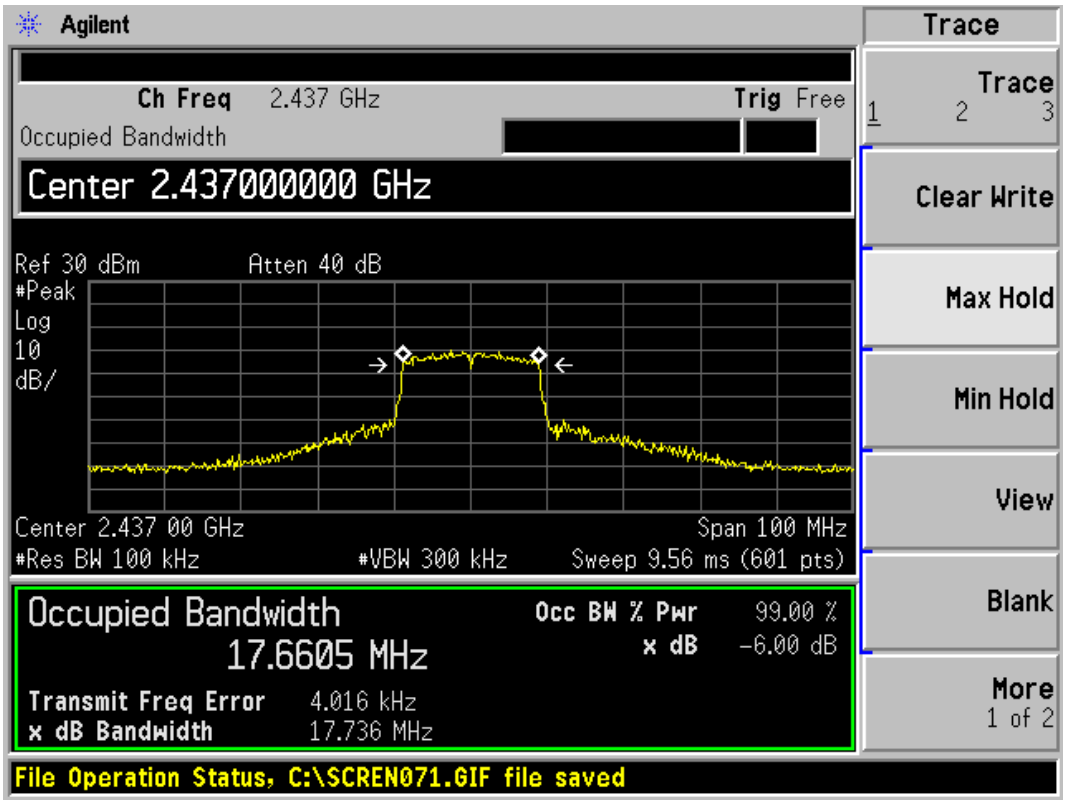


802.11g, Carrier frequency (MHz):2462

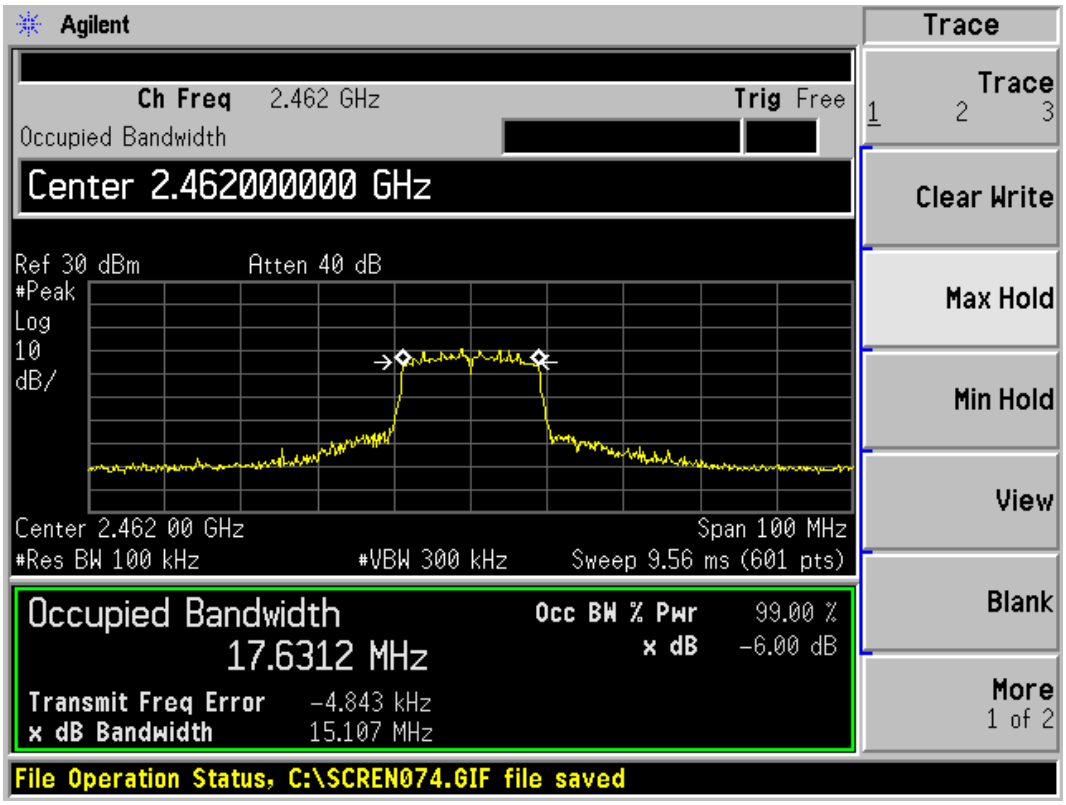
802.11n(HT20)



802.11n, Carrier frequency (MHz): 2412

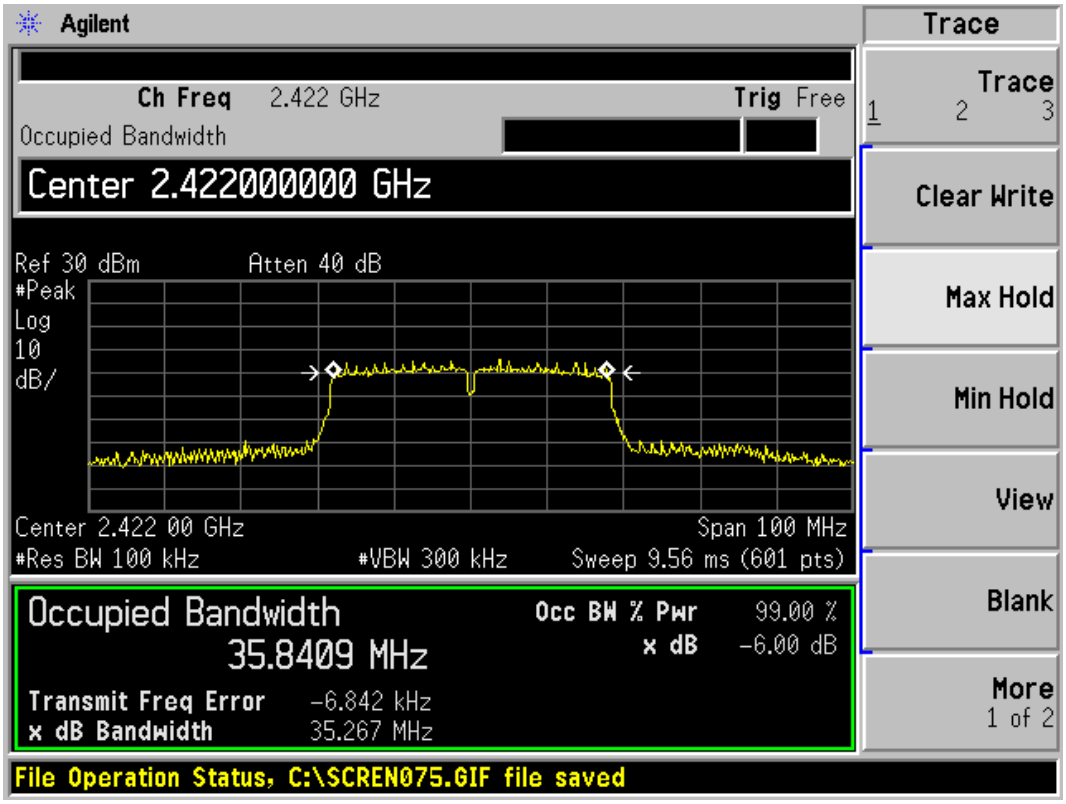


802.11n, Carrier frequency (MHz): 2437

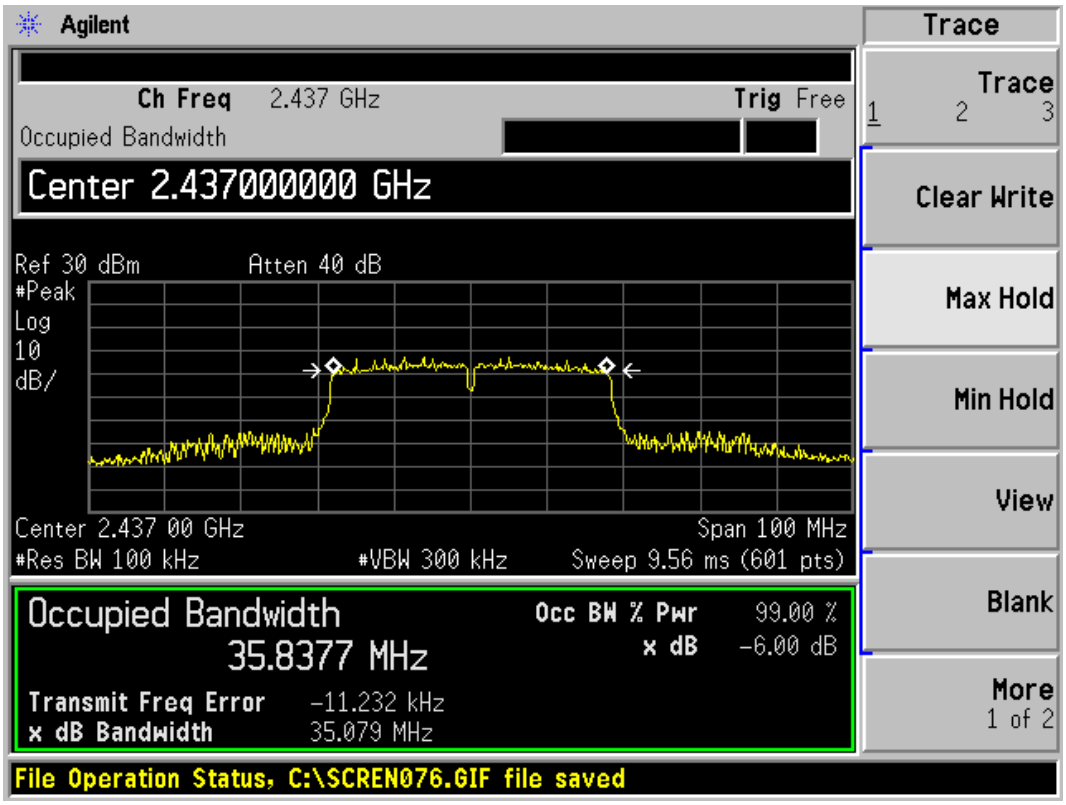


802.11n, Carrier frequency (MHz):2462

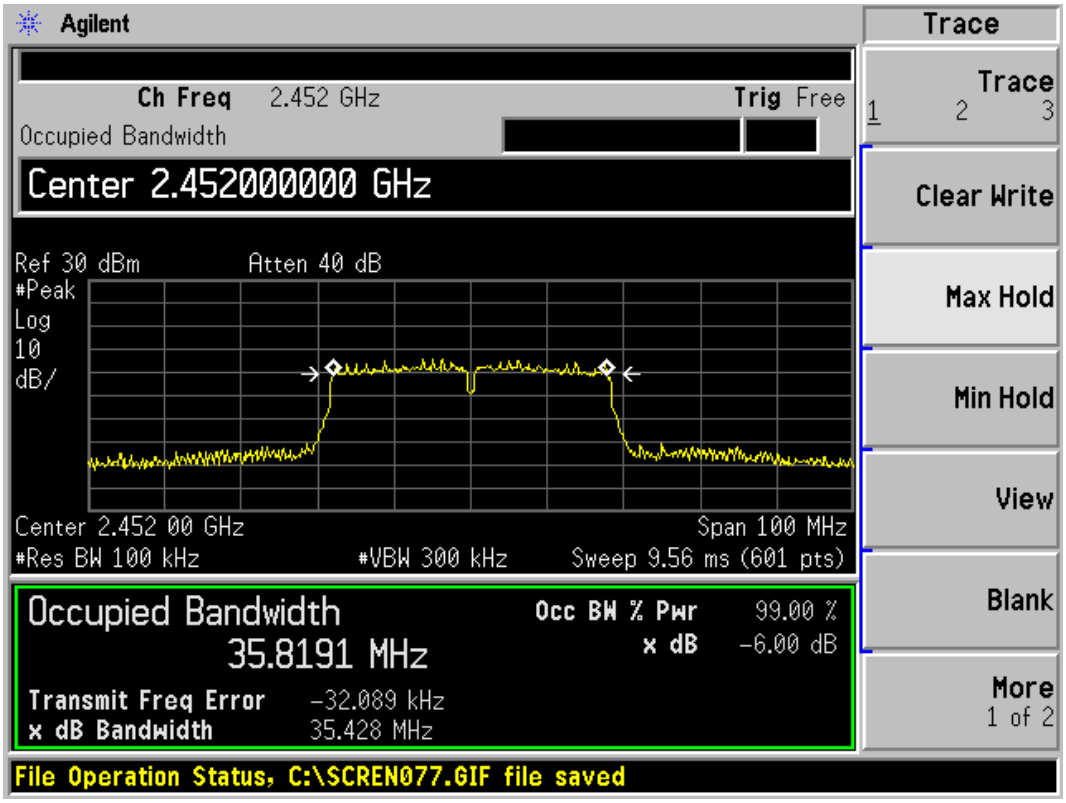
802.11n(HT40)



802.11n, Carrier frequency (MHz): 2422



802.11n, Carrier frequency (MHz): 2437



802.11n, Carrier frequency (MHz):2452

2.5. Band Edge Compliance

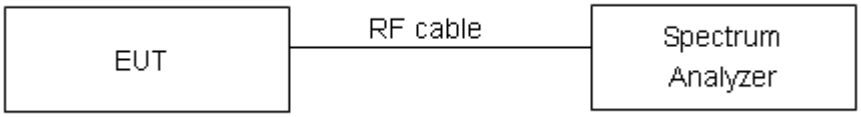
Ambient condition

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

Method of Measurement

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

Test Setup



Limits

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

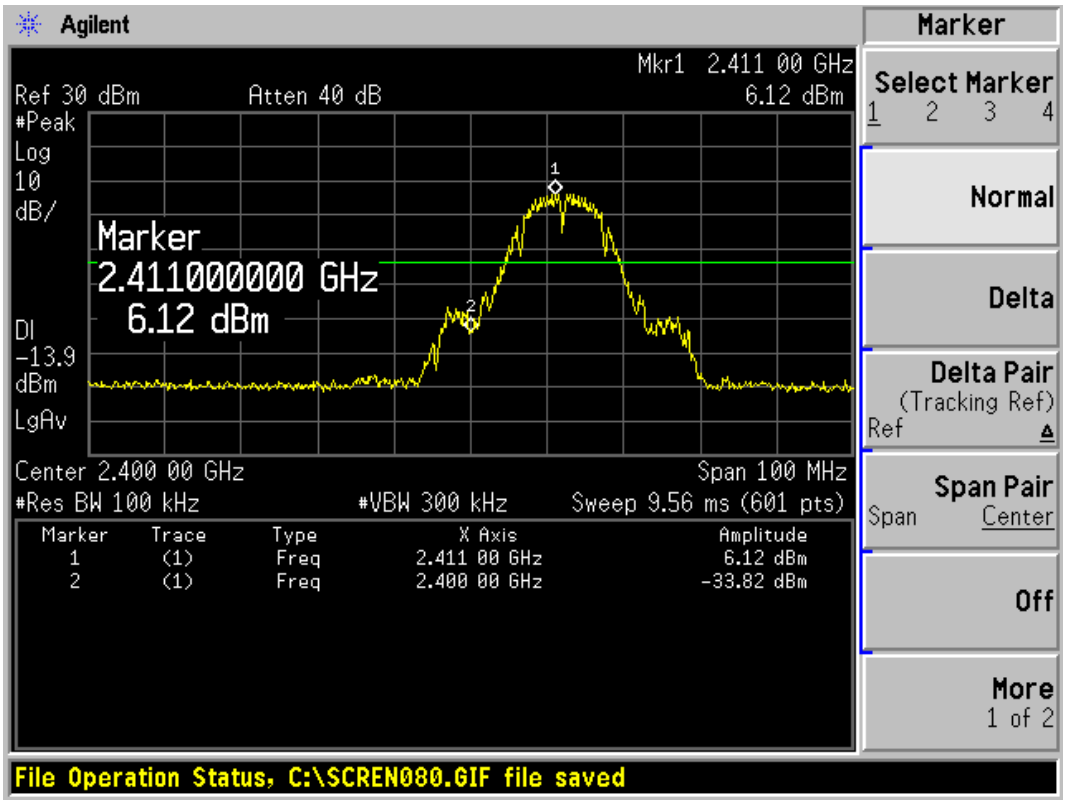
Measurement Uncertainty

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

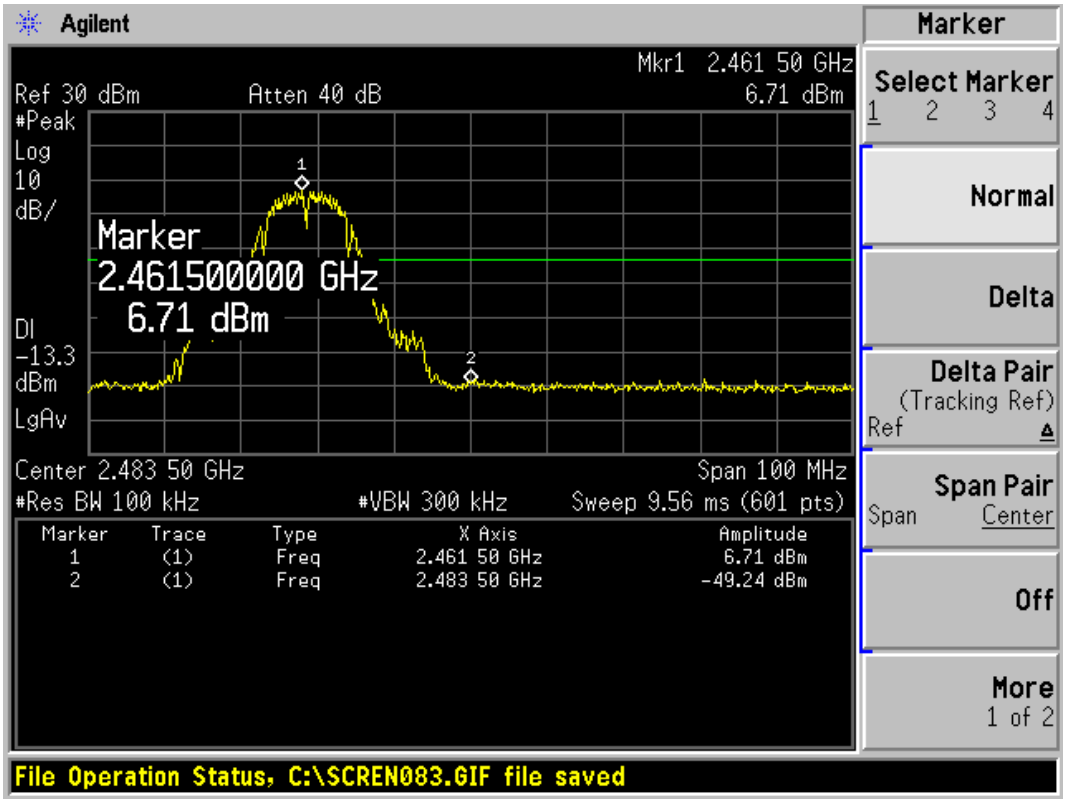
Frequency	Uncertainty
2GHz-3GHz	1.407 dB

Test Results: PASS

802.11b

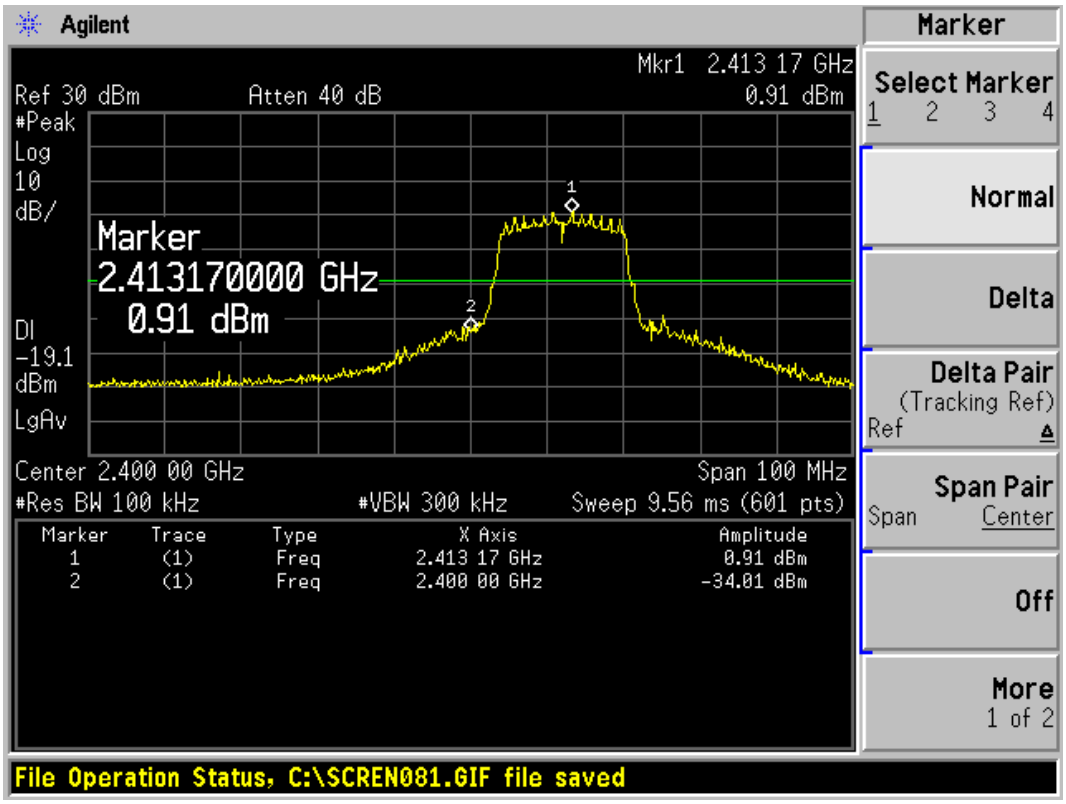


802.11b, Channel No.: 1

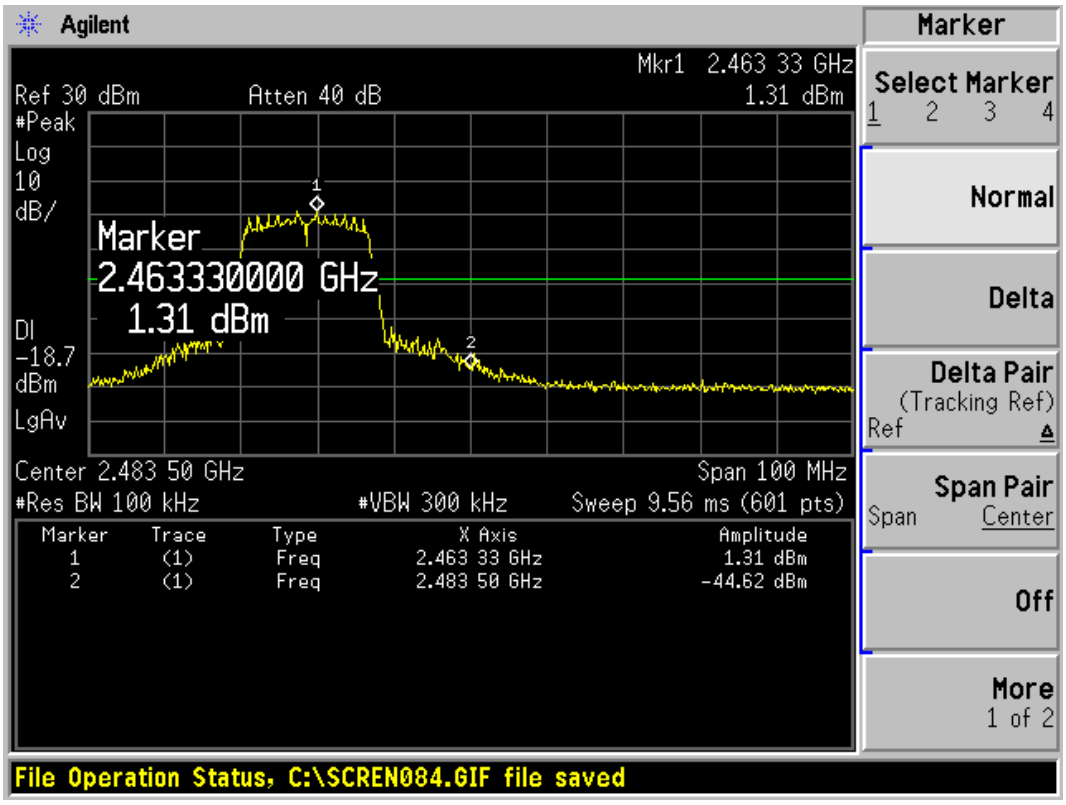


802.11b, Channel No.: 11

802.11g

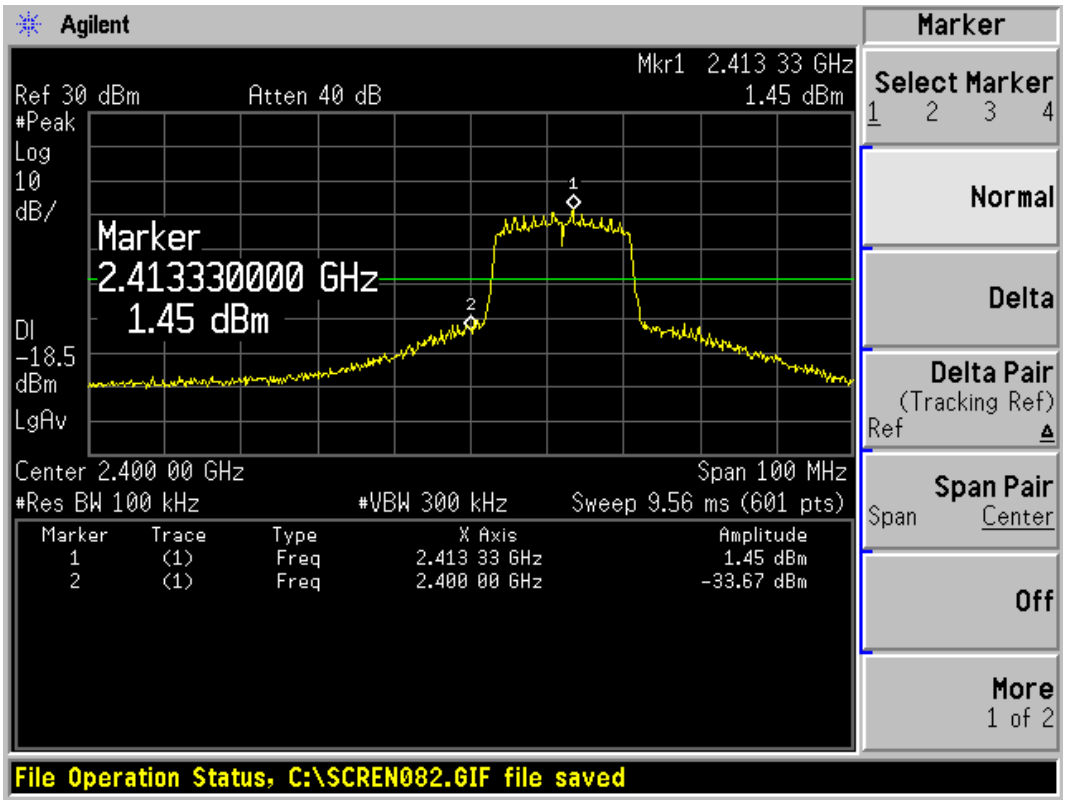


802.11g, Channel No.: 1

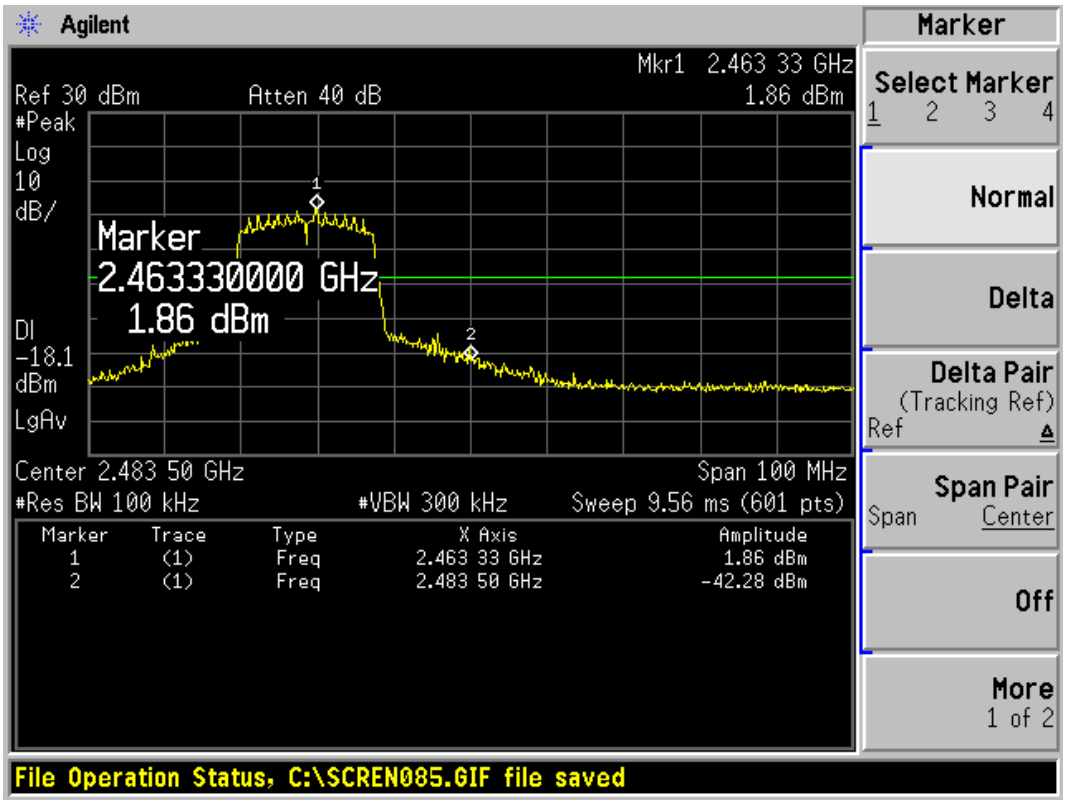


802.11g, Channel No.: 11

802.11n(HT20)

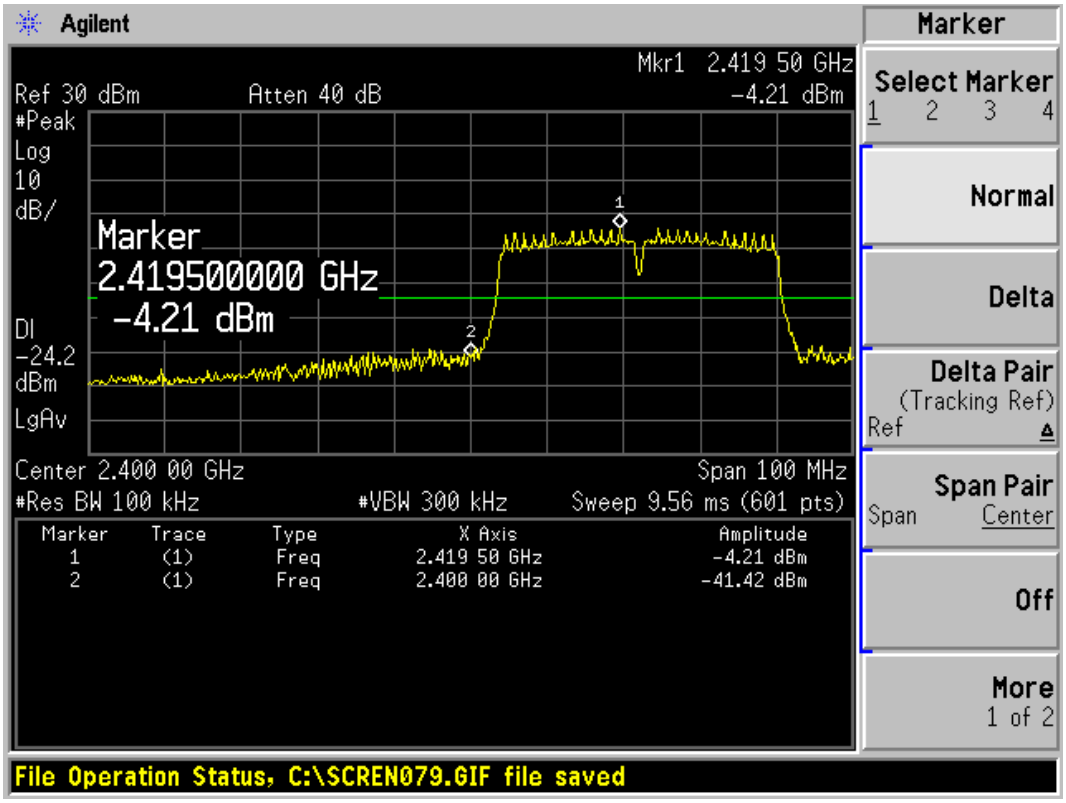


802.11n, Channel No.: 1

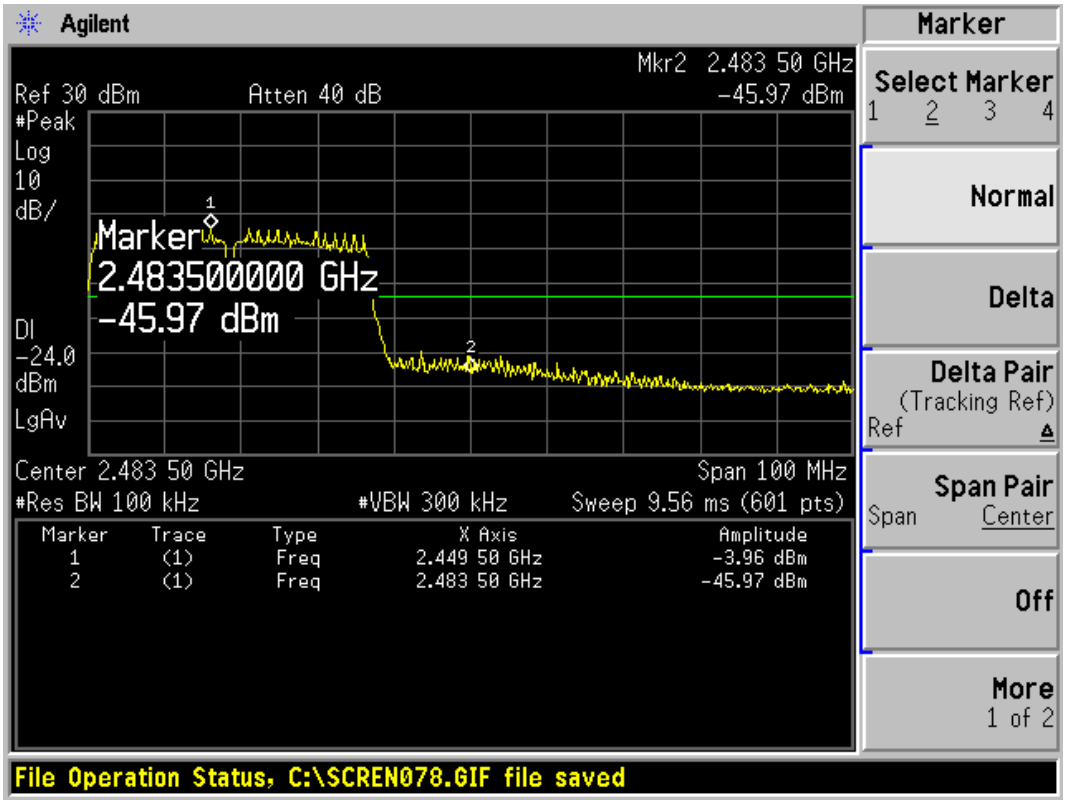


802.11n, Channel No.: 11

802.11n(HT40)



802.11n, Channel No.: 3



802.11n, Channel No.: 9

2.6. Spurious Radiated Emissions in the restricted band

Ambient condition

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

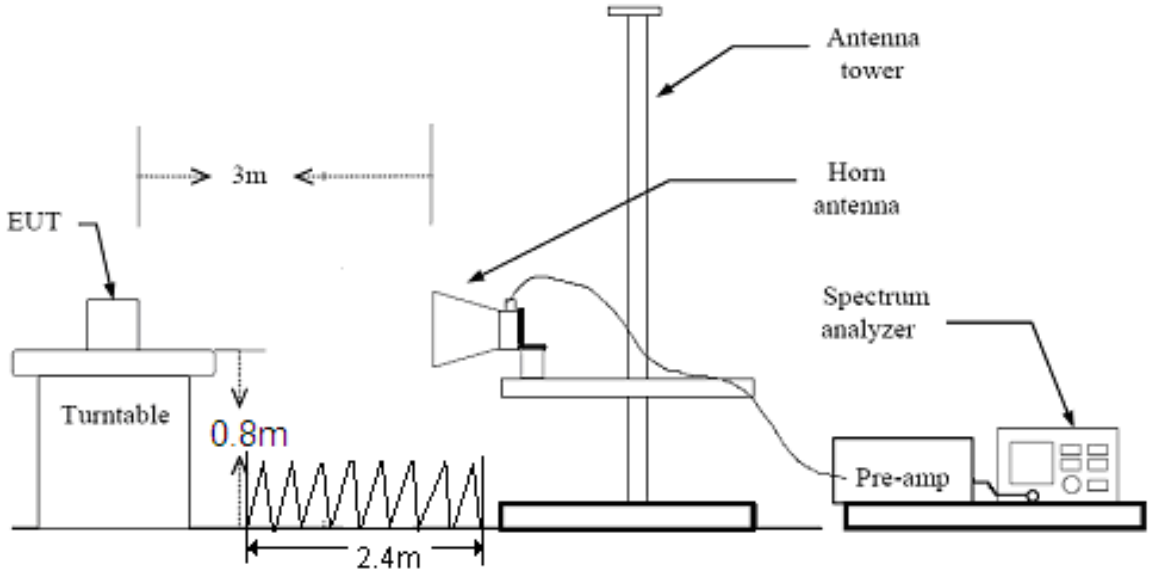
The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. RBW is set to 100kHz.The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing. Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, and the emissions less than 20 dB below the permissible value are reported.

Set the spectrum analyzer in the following:
(a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
(b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO
This setting method can refer to **KDB 558074.**

The field strength of spurious emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Y axis) and the antenna is vertical.

The test is in transmitting mode.

Test setup



Note: Area side:2.4mX3.6m

Limits

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

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

Limit in restricted band

Frequency of emission (MHz)	Field strength(uV/m)	Field strength(dBuV/m)
0.009–0.490	2400/F(kHz)	/
0.490–1.705	24000/F(kHz)	/

1.705–30.0	30	/
30-88	100	40
88-216	150	43.5
216-960	200	46
Above960	500	54

§15.35(b)
There is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.
Peak Limit=74 dBuV/m
Average Limit=54 dBuV/m

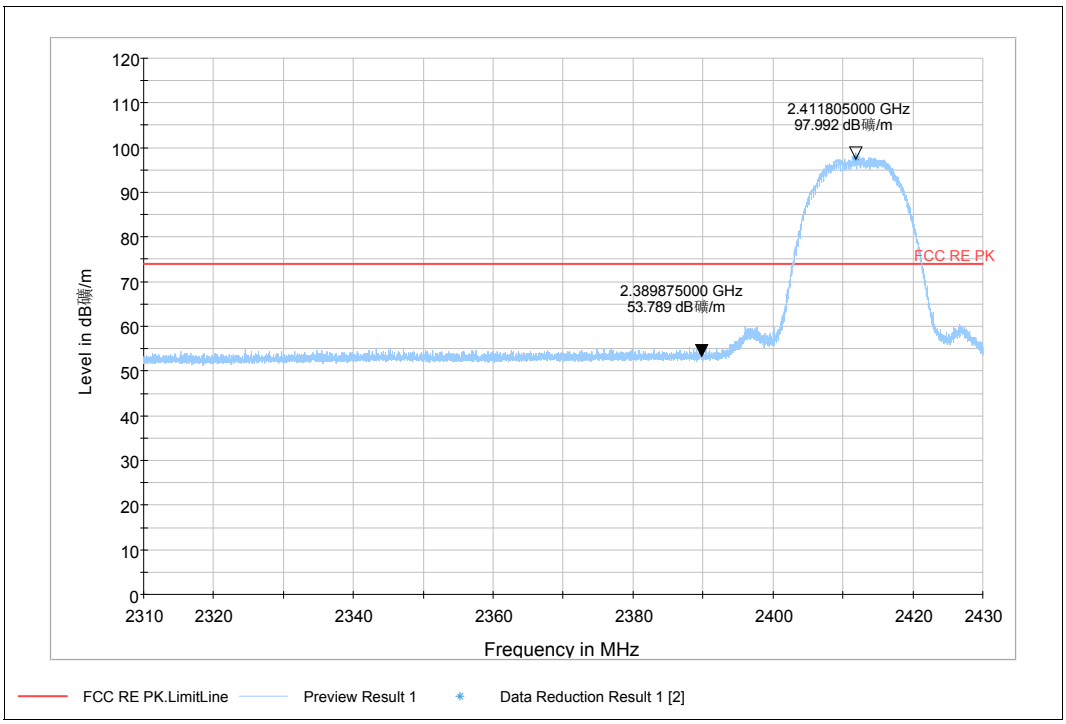
Measurement Uncertainty

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

Test Results:PASS

802.11b-Channel 1:

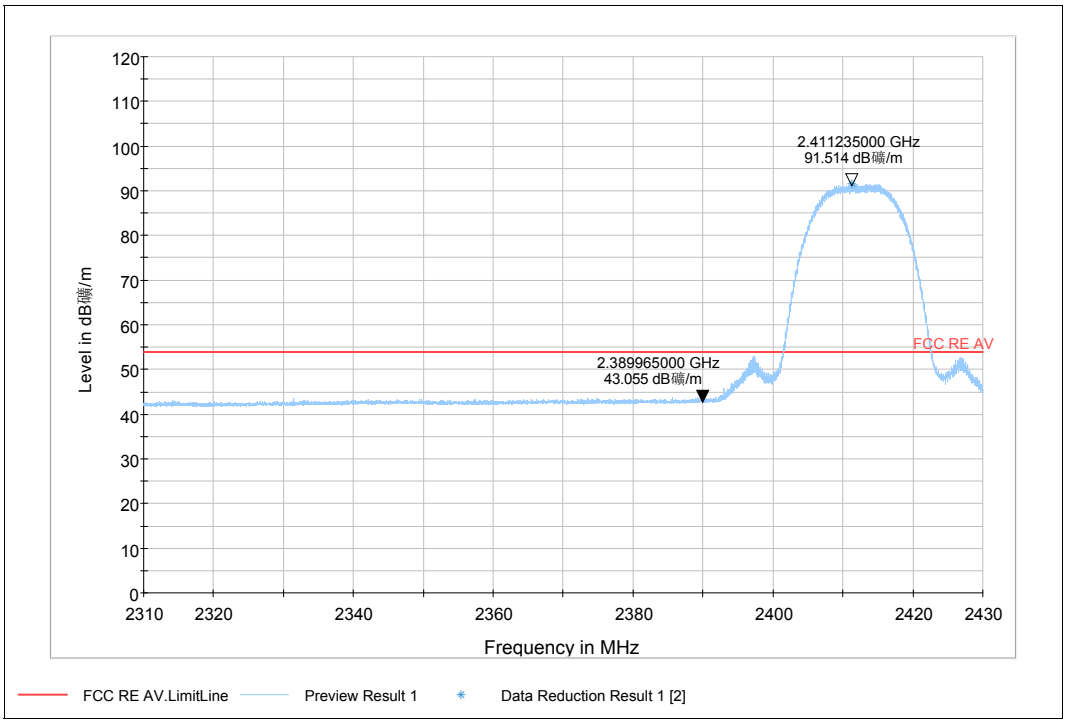
Peak



Note: The signal beyond the limit is carrier

Channel 1

Average

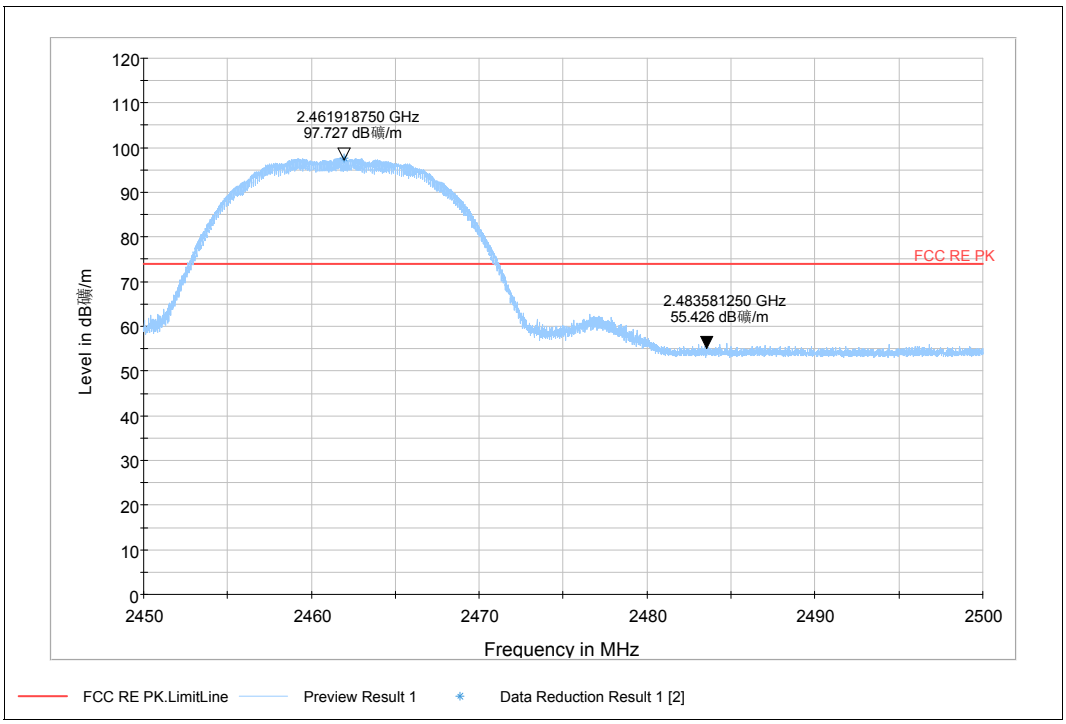


Note: The signal beyond the limit is carrier

Channel 1

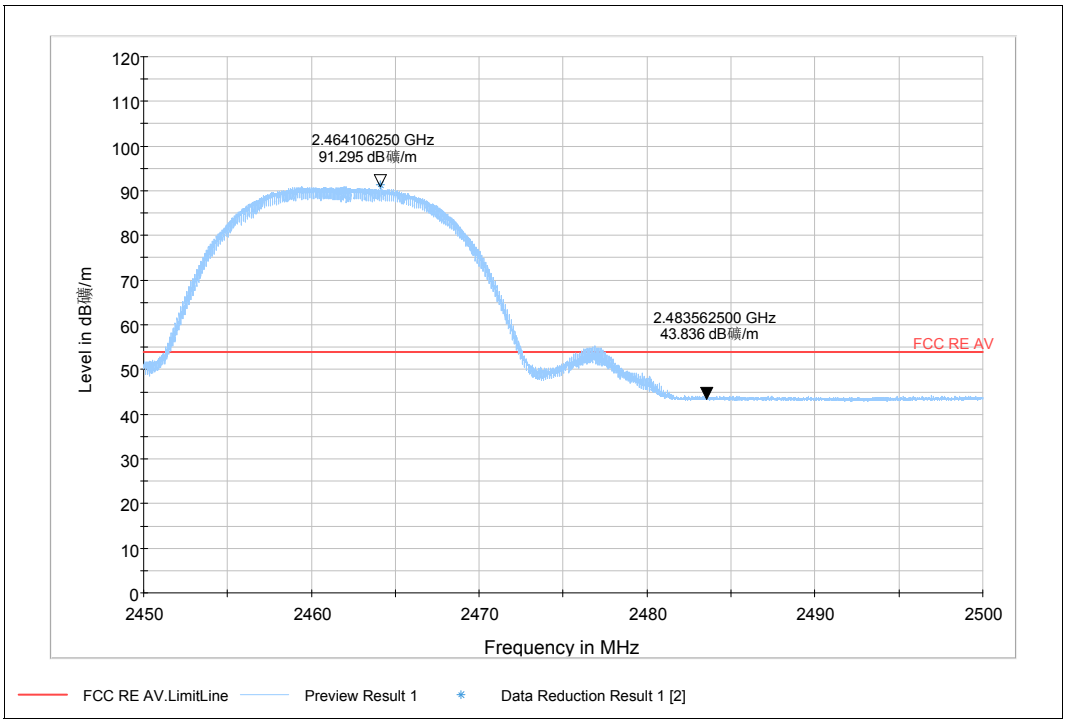
802.11b-Channel 11:

Peak



Note: The signal beyond the limit is carrier
Channel 11

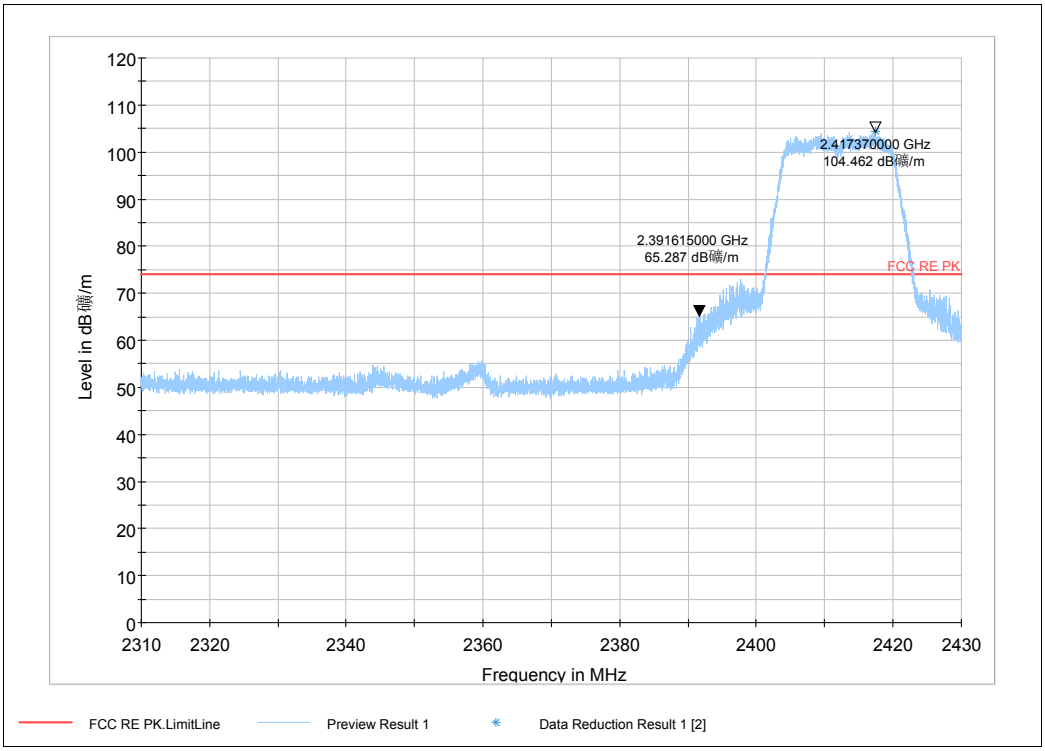
Average



Note: The signal beyond the limit is carrier
Channel 11

802.11g-Channel 1:

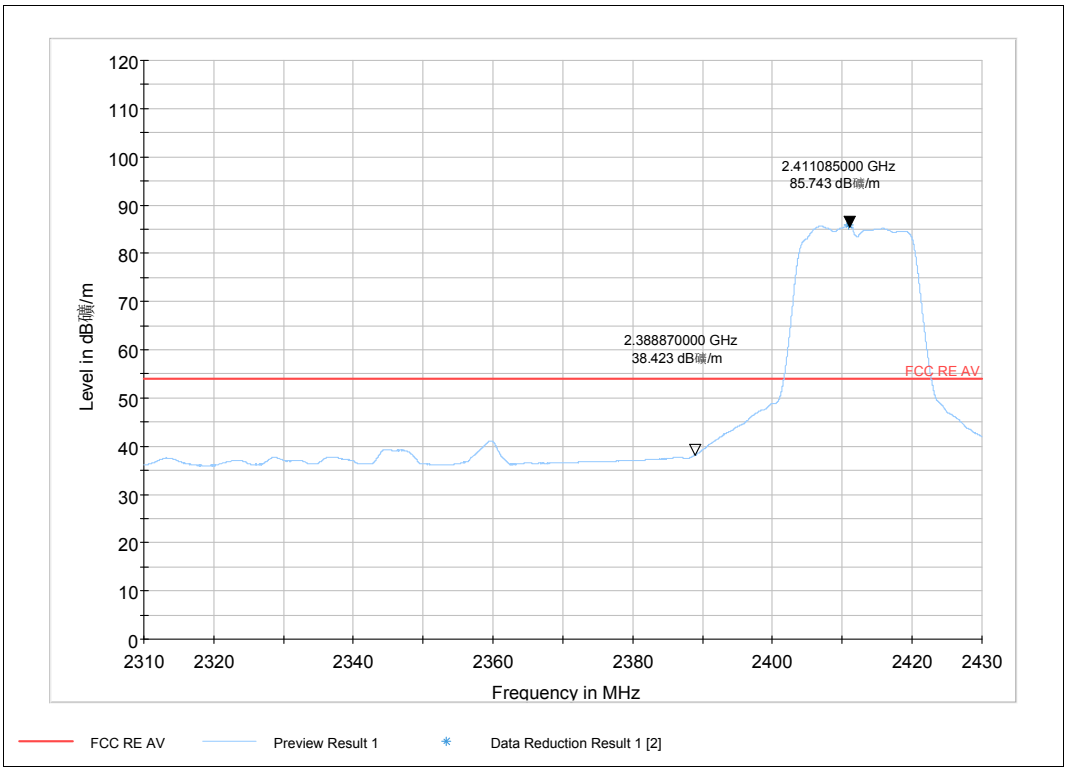
Peak



Note: The signal beyond the limit is carrier

Channel 1

Average

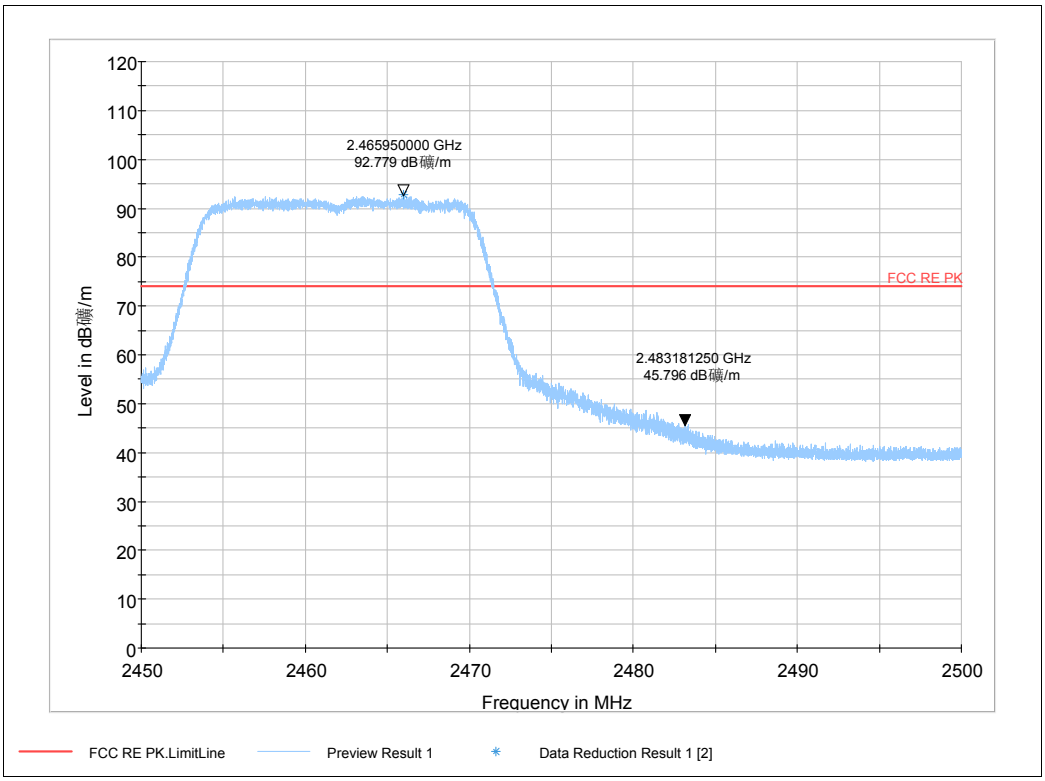


Note: The signal beyond the limit is carrier

Channel 1

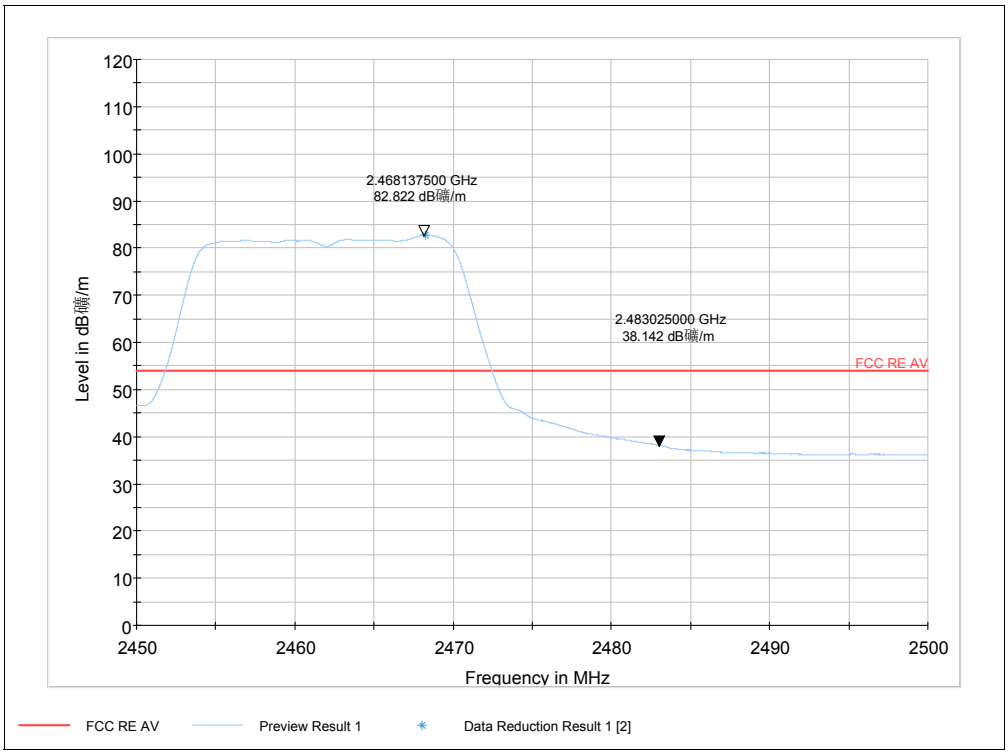
802.11g-Channel 11:

Peak



Note: The signal beyond the limit is carrier
Channel 11

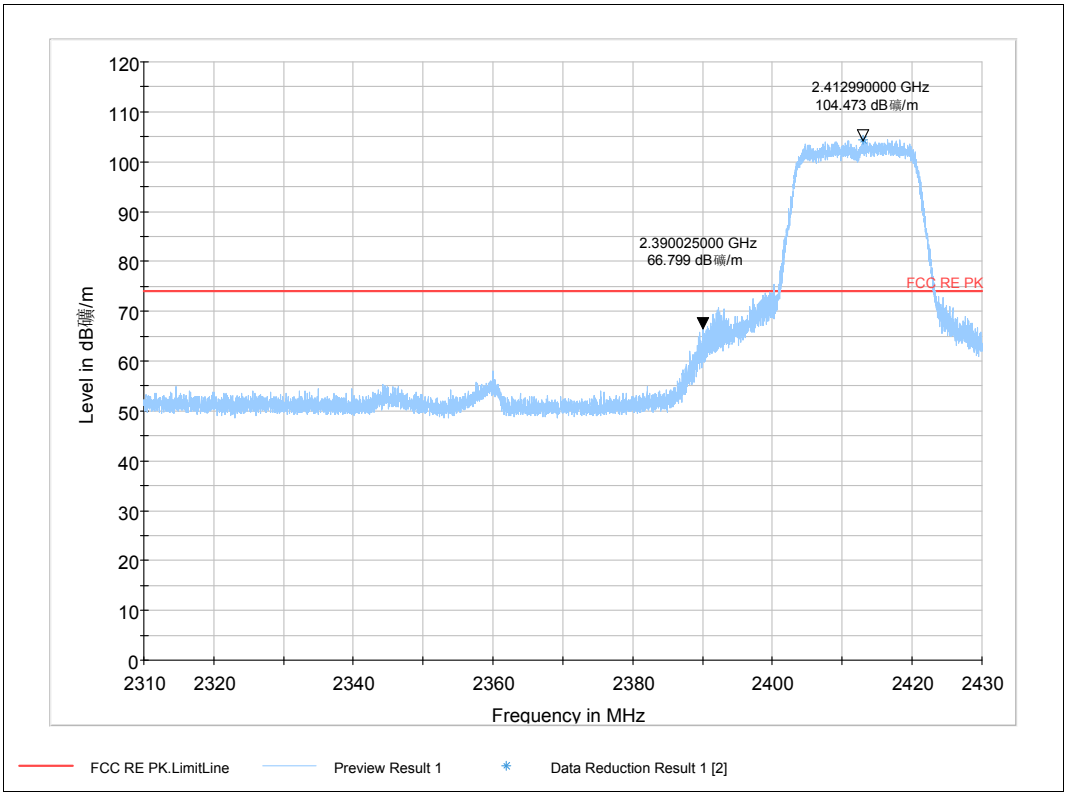
Average



Note: The signal beyond the limit is carrier
Channel 11

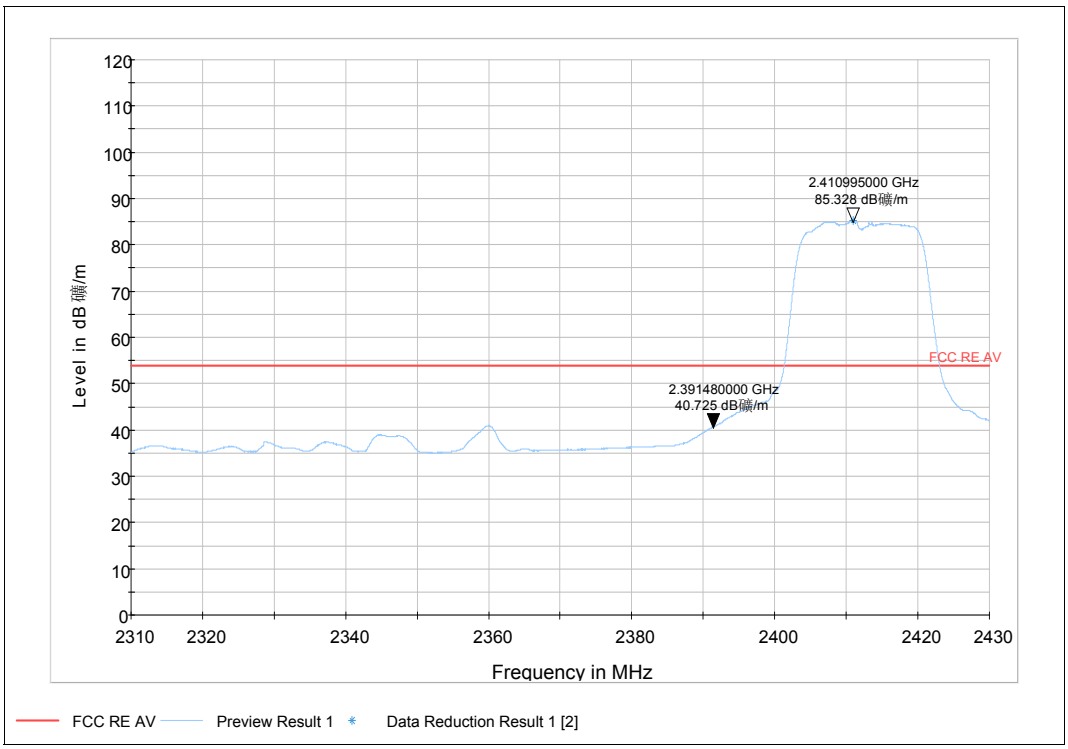
802.11n-Channel 1(HT20):

Peak



Note: The signal beyond the limit is carrier Channel 1

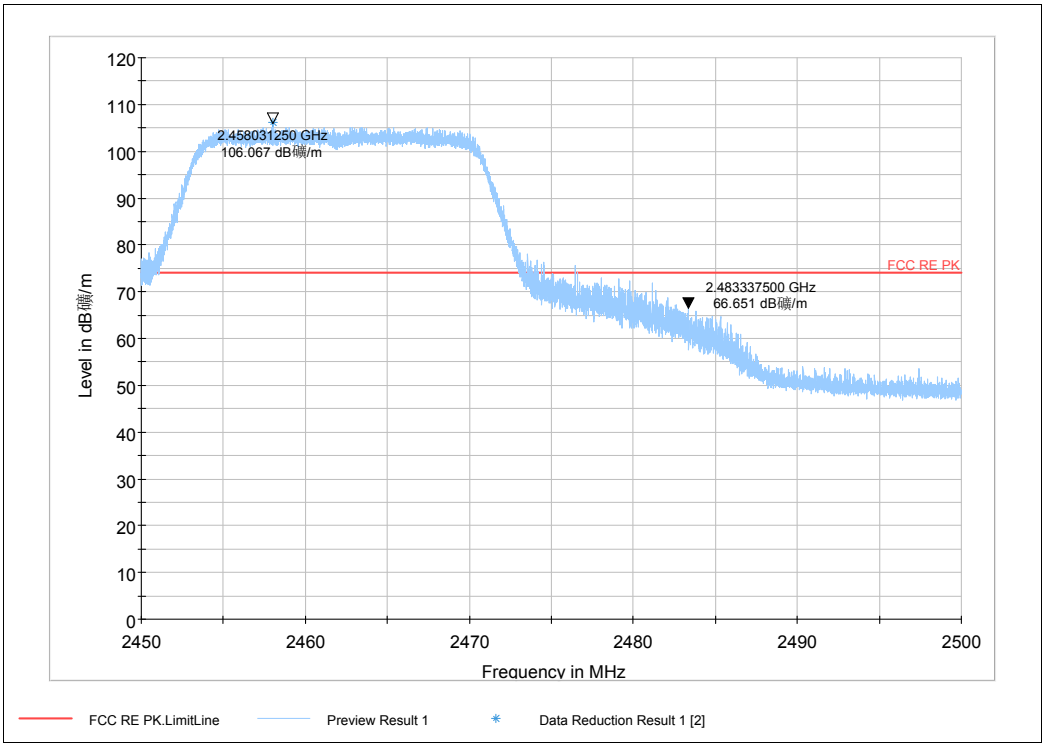
Average



Note: The signal beyond the limit is carrier Channel 1

802.11n-Channel 11(HT20):

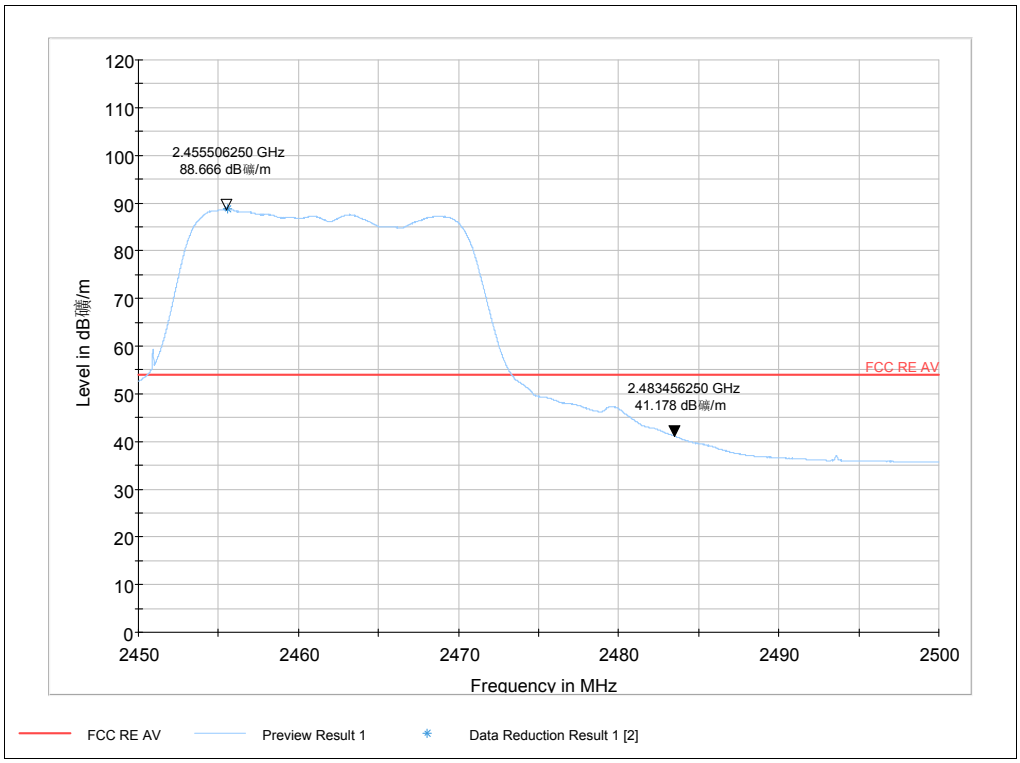
Peak



Note: The signal beyond the limit is carrier

Channel 11

Average

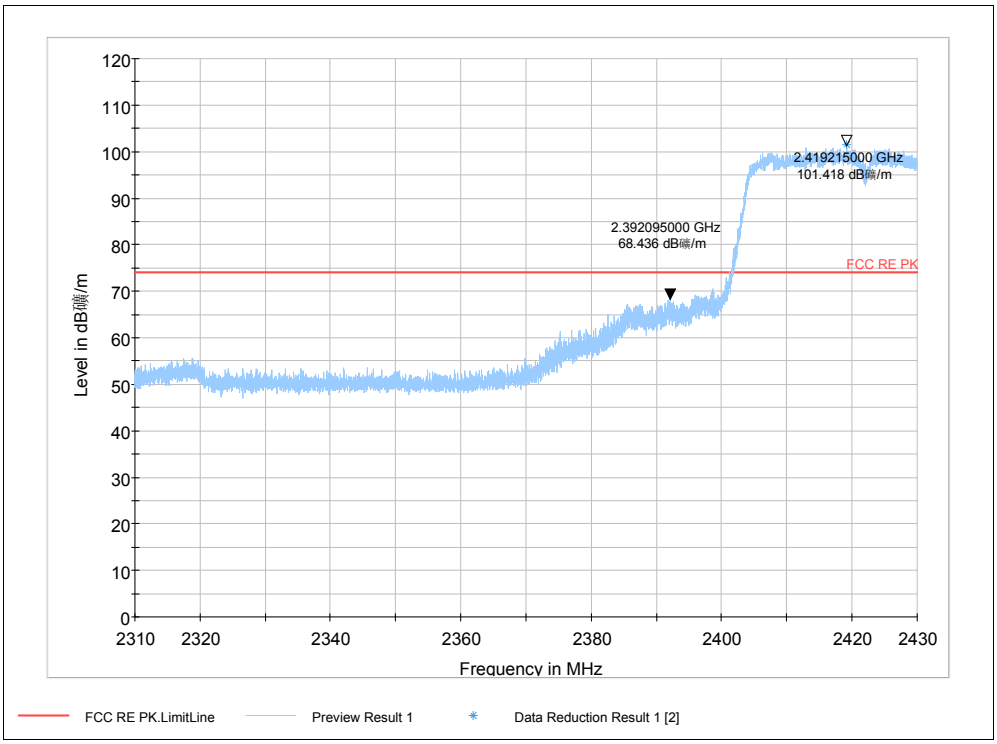


Note: The signal beyond the limit is carrier

Channel 11

802.11n-Channel 3(HT40):

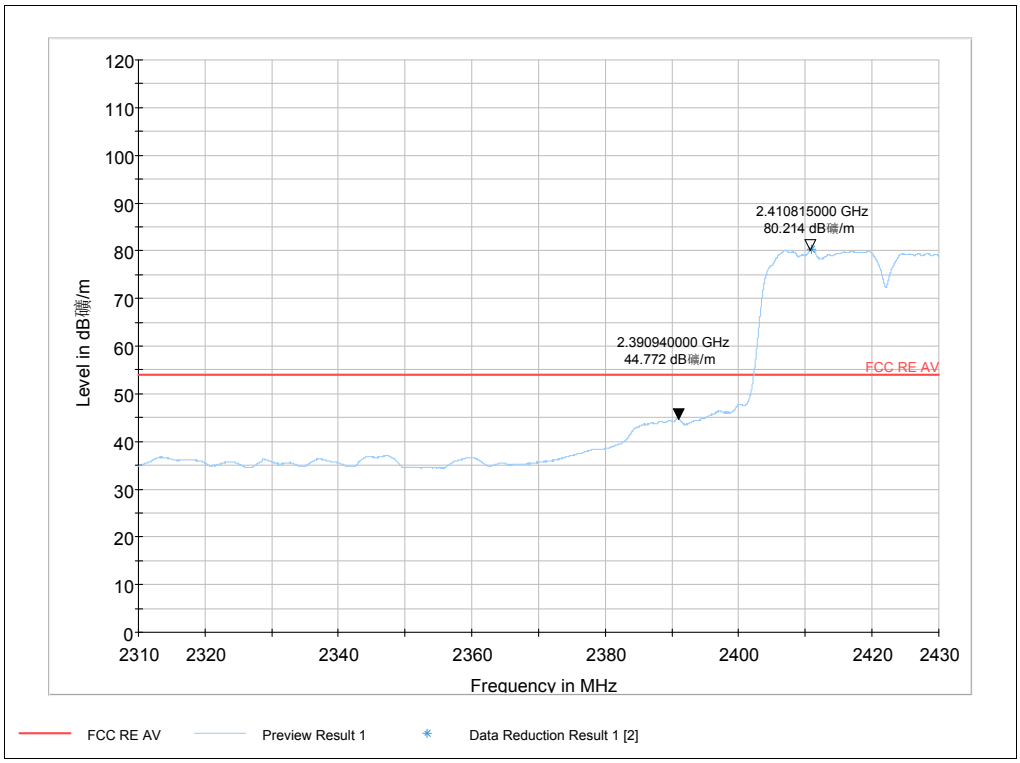
Peak



Note: The signal beyond the limit is carrier

Channel 3

Average

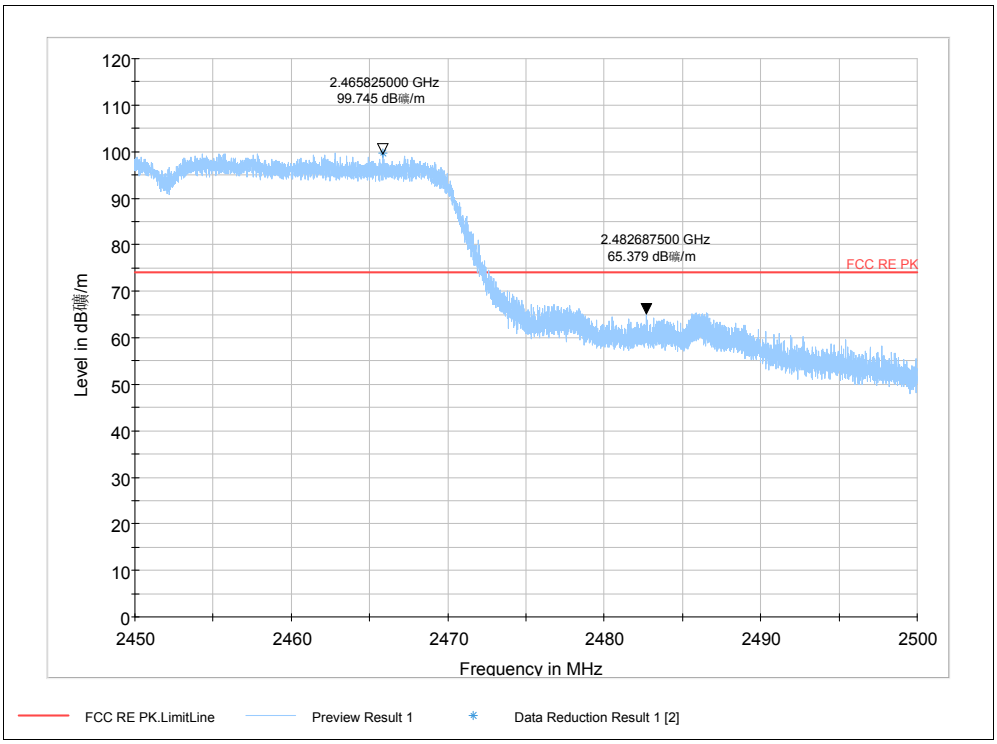


Note: The signal beyond the limit is carrier

Channel 3

802.11n-Channel 9(HT40):

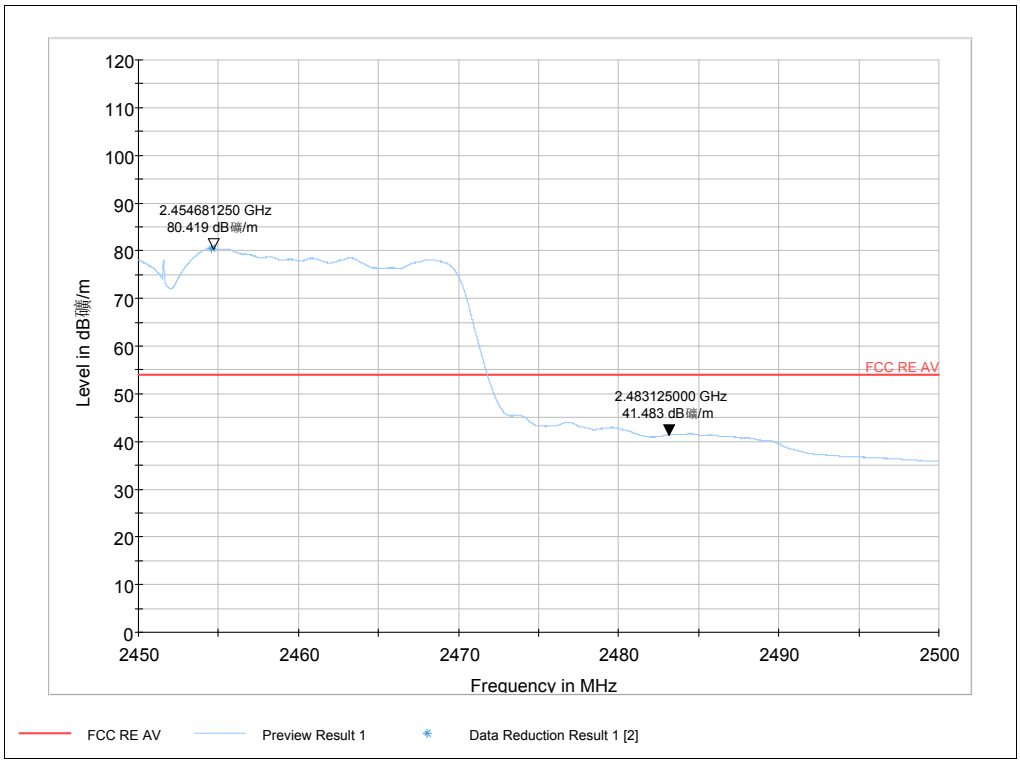
Peak



Note: The signal beyond the limit is carrier

Channel 9

Average



Note: The signal beyond the limit is carrier

Channel 9

2.7. Power Spectral Density

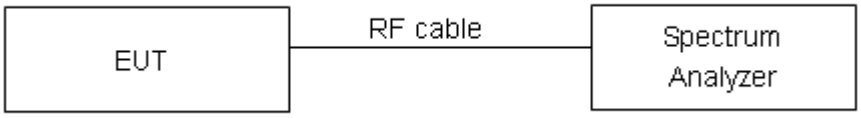
Ambient condition

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

Method of Measurement

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable. RBW is set to 3 kHz and VBW is set to 10 kHz on spectrum analyzer. Set the span to at least 1.5 times the DTS channel bandwidth. Sweep time = auto couple. Trace mode = max hold. The peak power spectral density is recorded.

Test setup



Limits

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

Limits	≤ 8 dBm / 3kHz

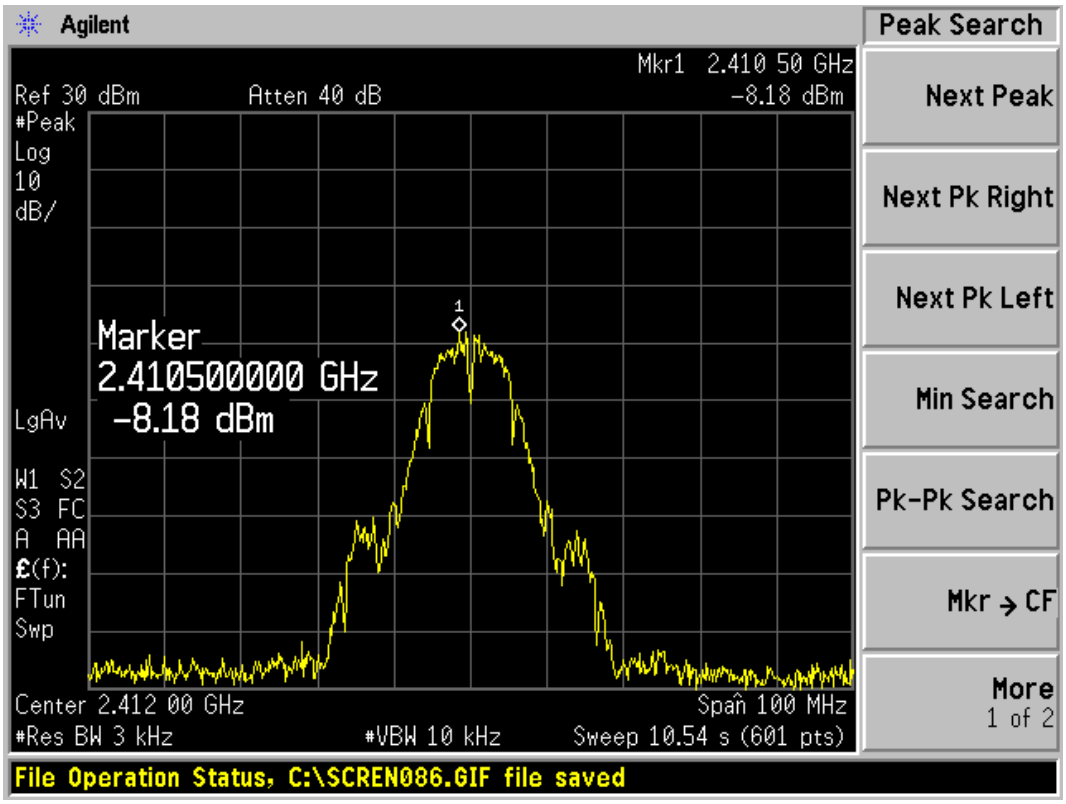
Measurement Uncertainty

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

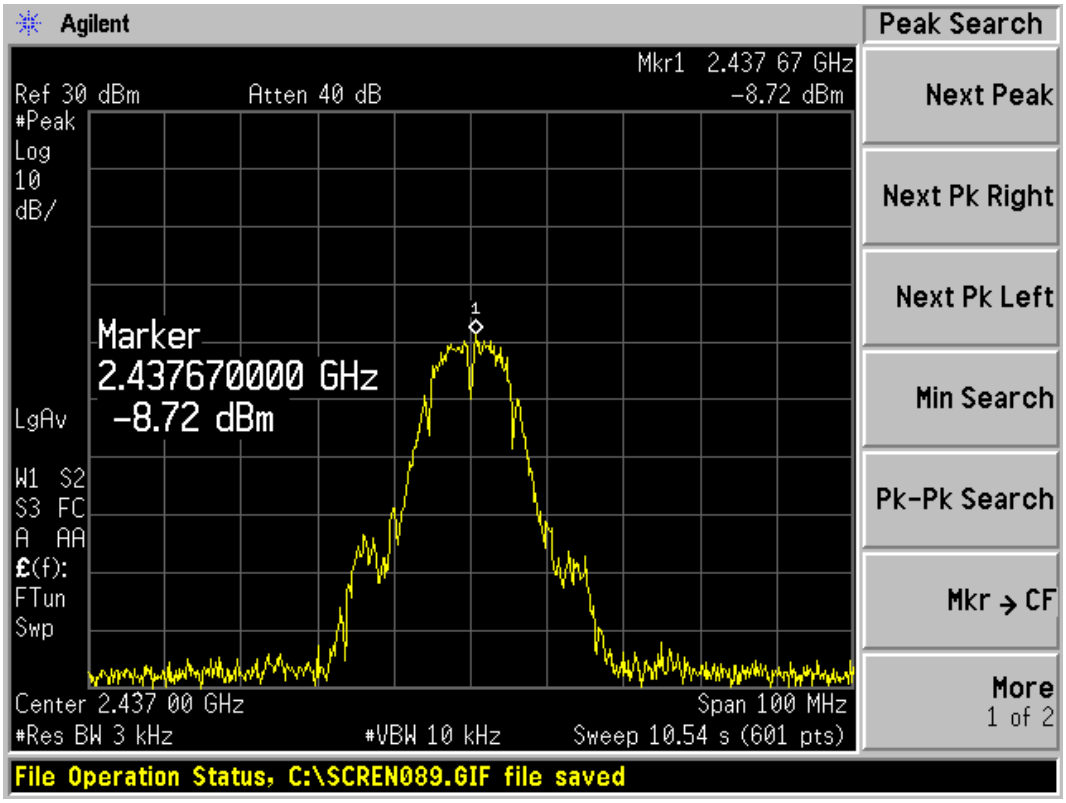
Test Results:

Network Standards	Channel Number	Power Spectral Density dBm / 3kHz	Conclusion
802.11b	1	-8.18	PASS
	6	-8.72	PASS
	11	-7.79	PASS
802.11g	1	-13.38	PASS
	6	-12.73	PASS
	11	-14.06	PASS
802.11n HT20	1	-14.48	PASS
	6	-12.85	PASS
	11	-13.55	PASS
802.11n HT40	3	-20.32	PASS
	6	-17.85	PASS
	9	-18.11	PASS

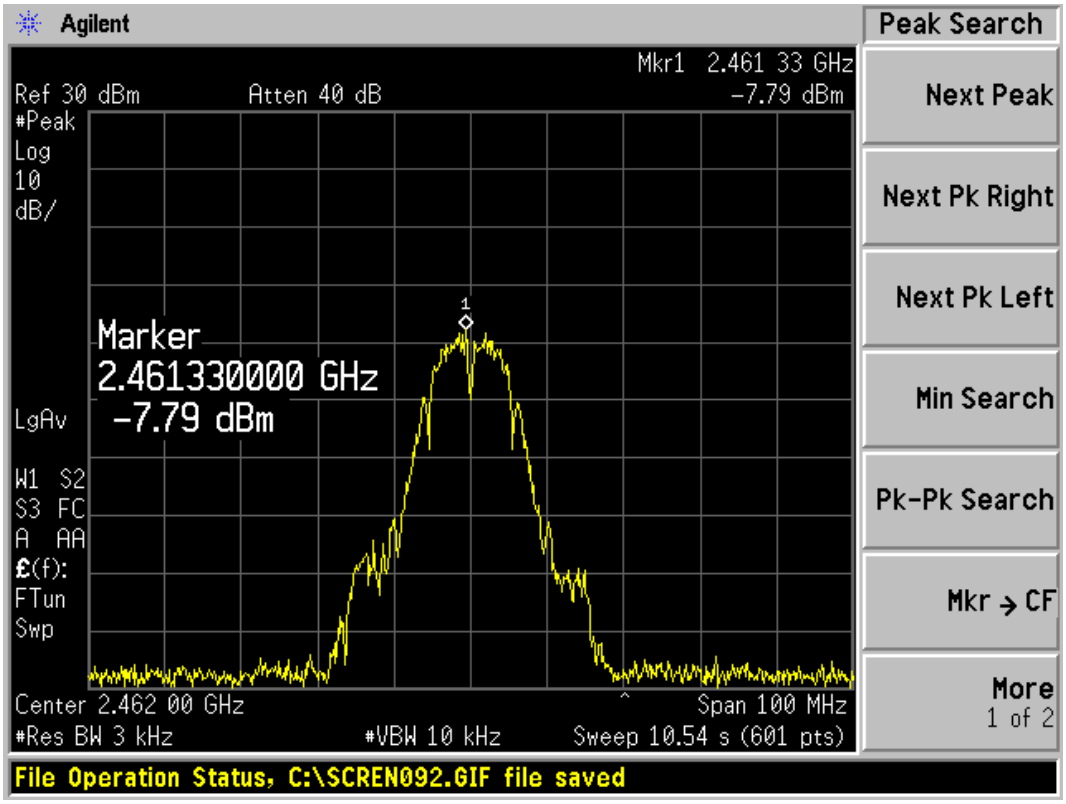
802.11b



802.11b, Channel No.: 1

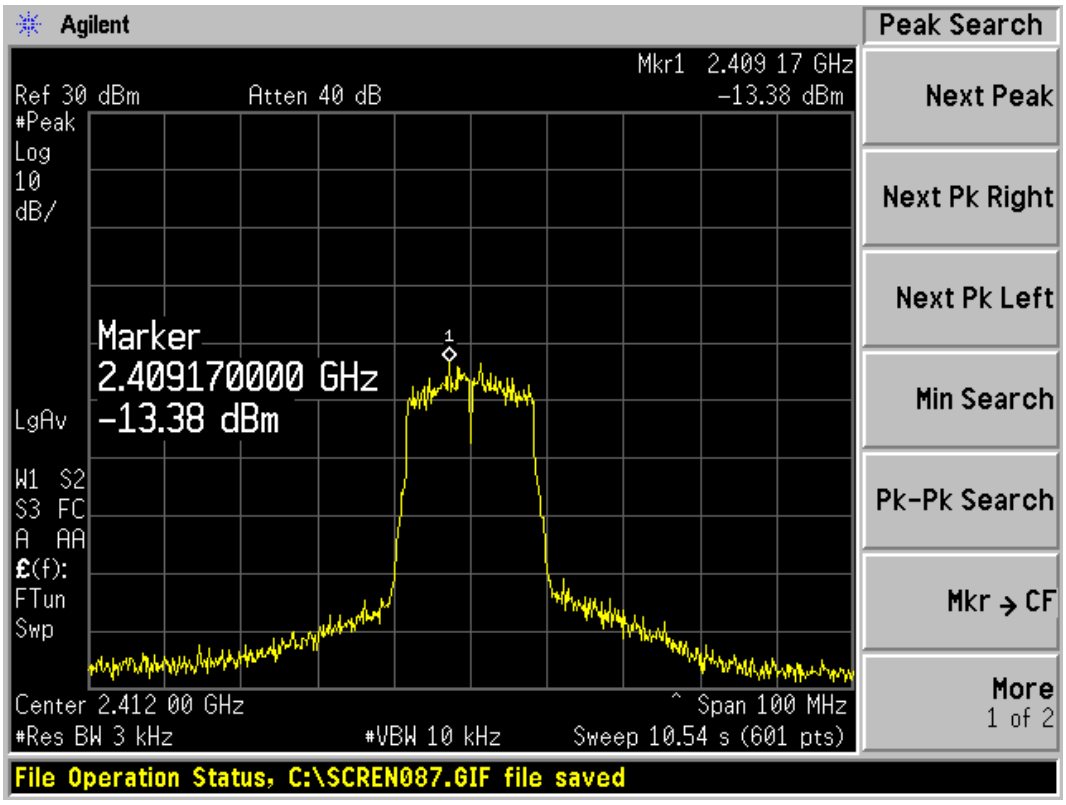


802.11b, Channel No.: 6

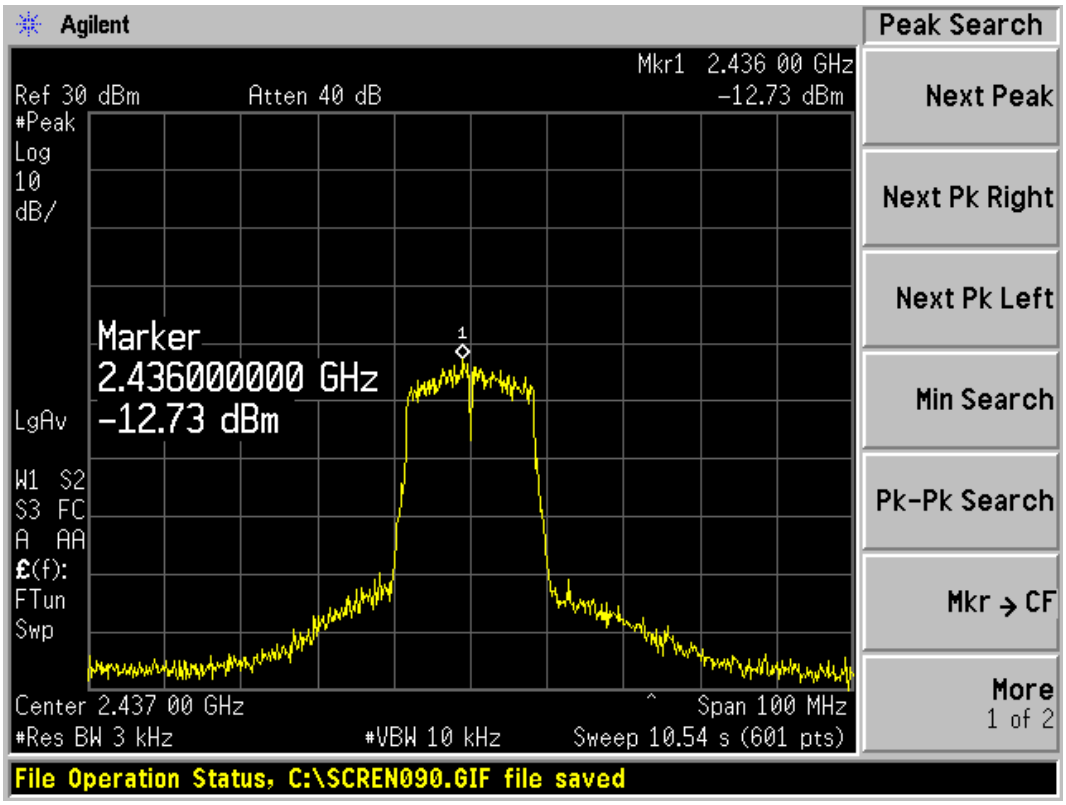


802.11b, Channel No.: 11

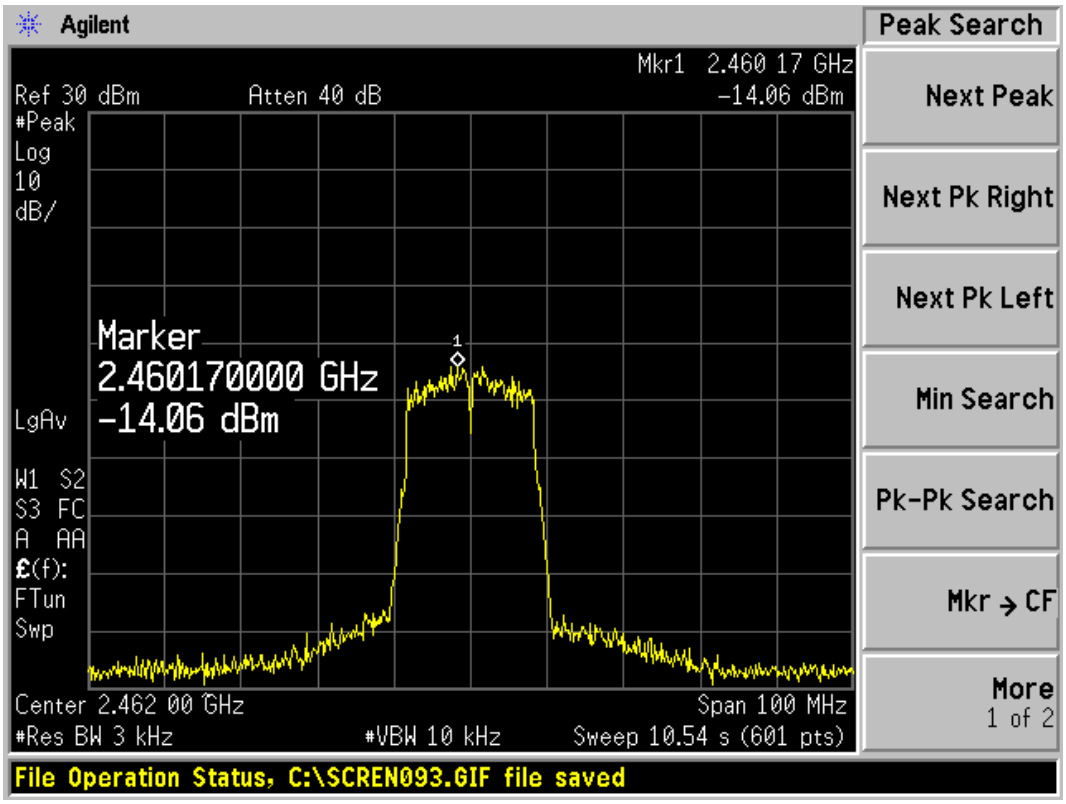
802.11g



802.11g, Channel No.: 1

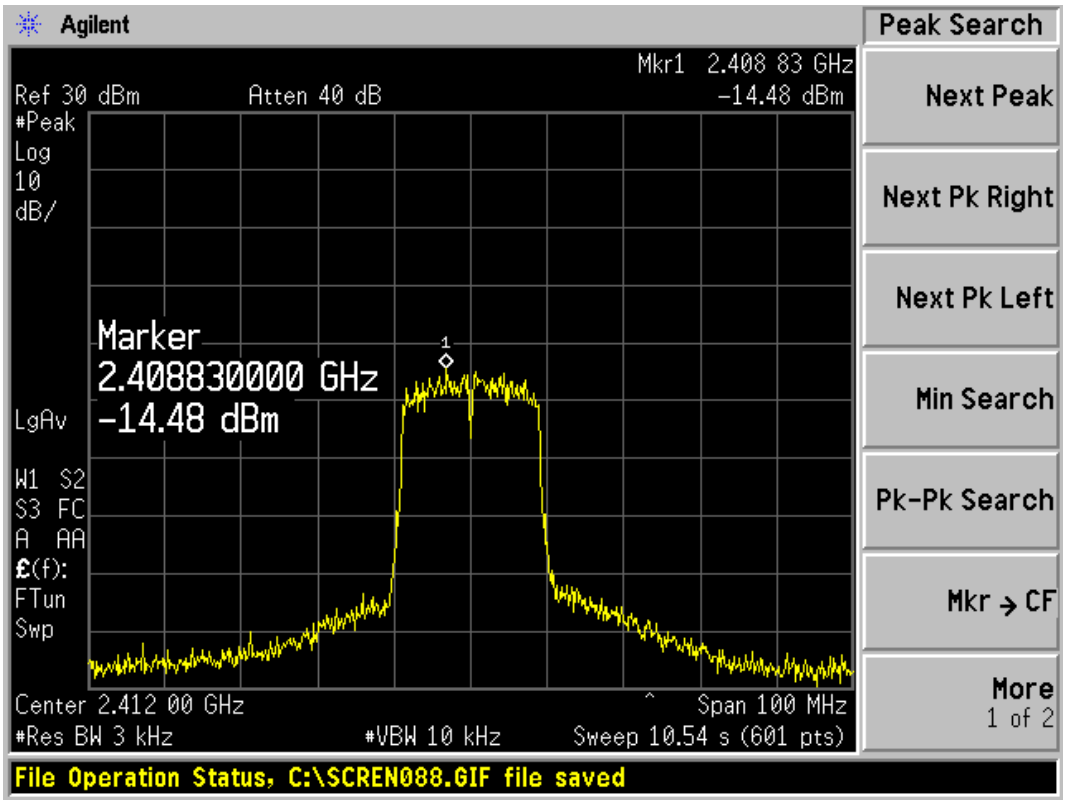


802.11g, Channel No.: 6

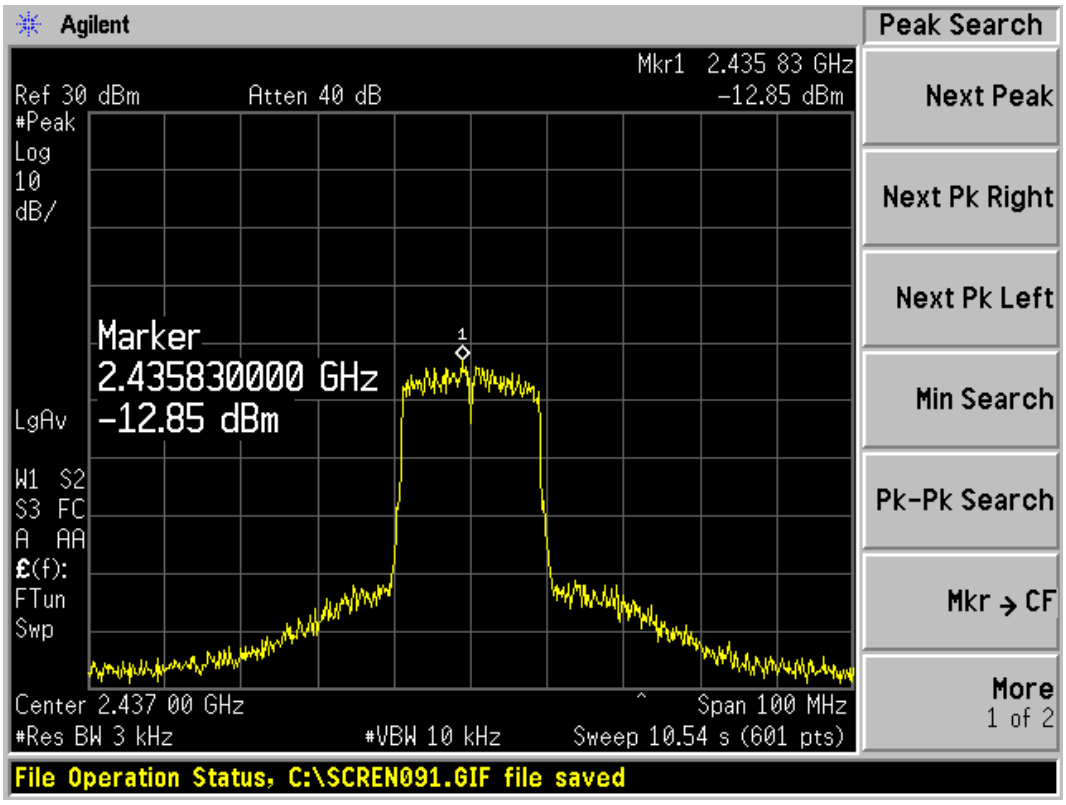


802.11g, Channel No.: 11

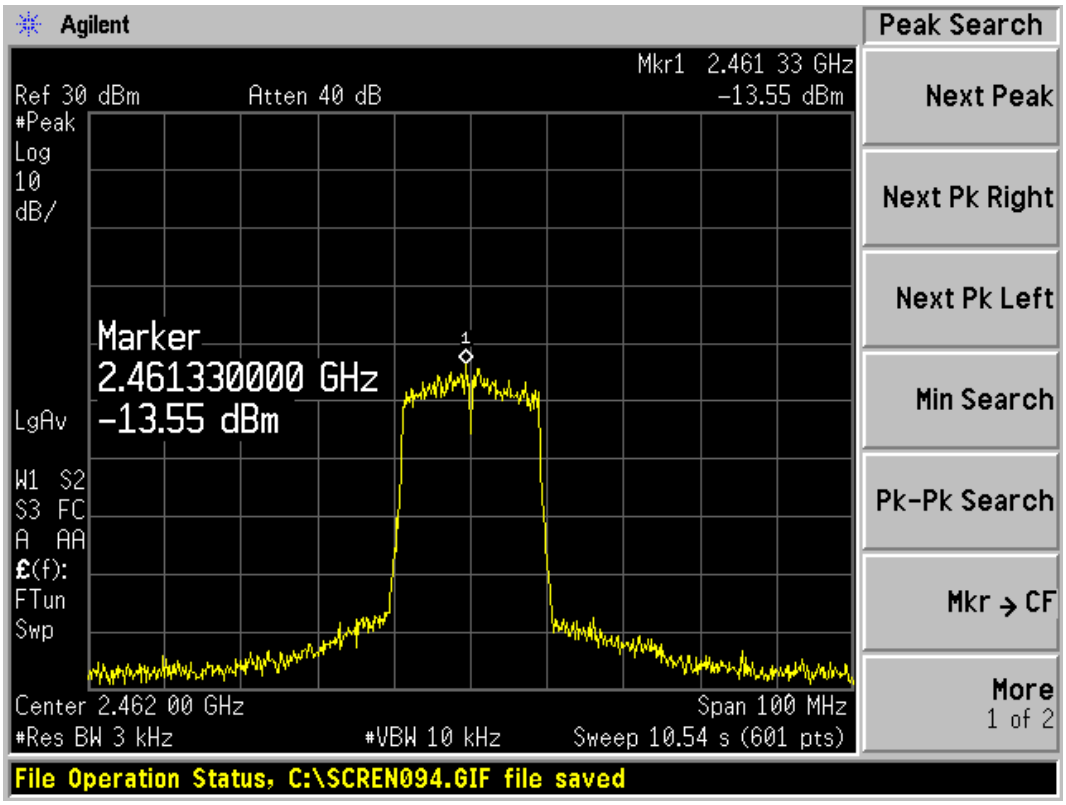
802.11n(HT20)



802.11n, Channel No.: 1

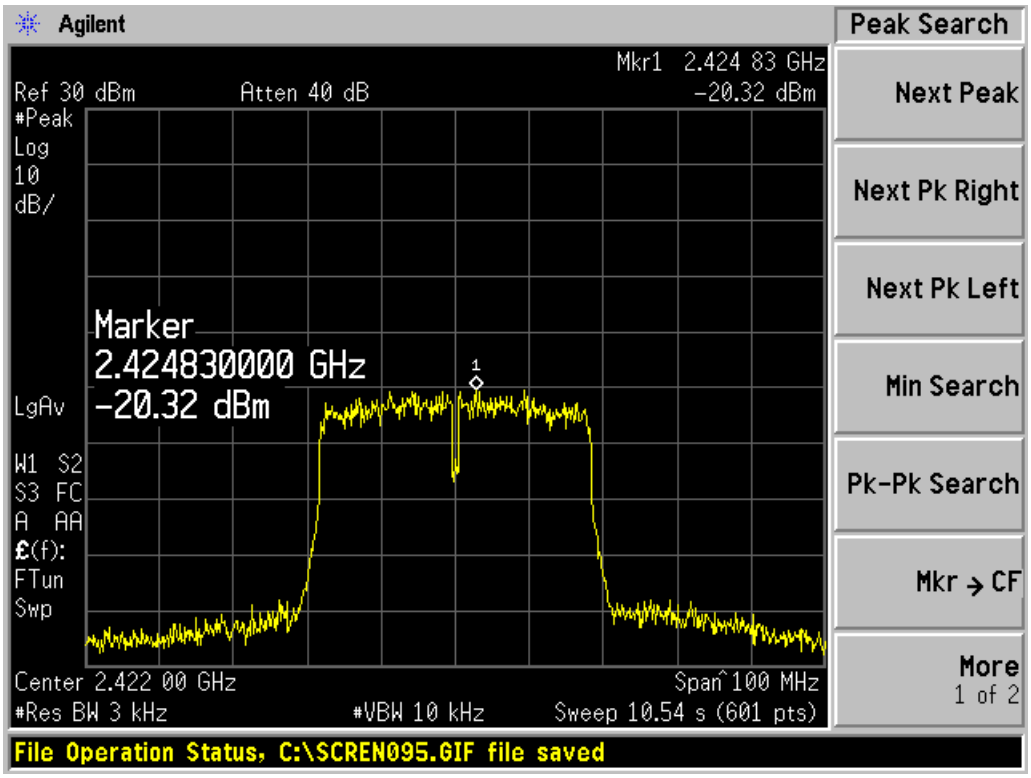


802.11n, Channel No.: 6

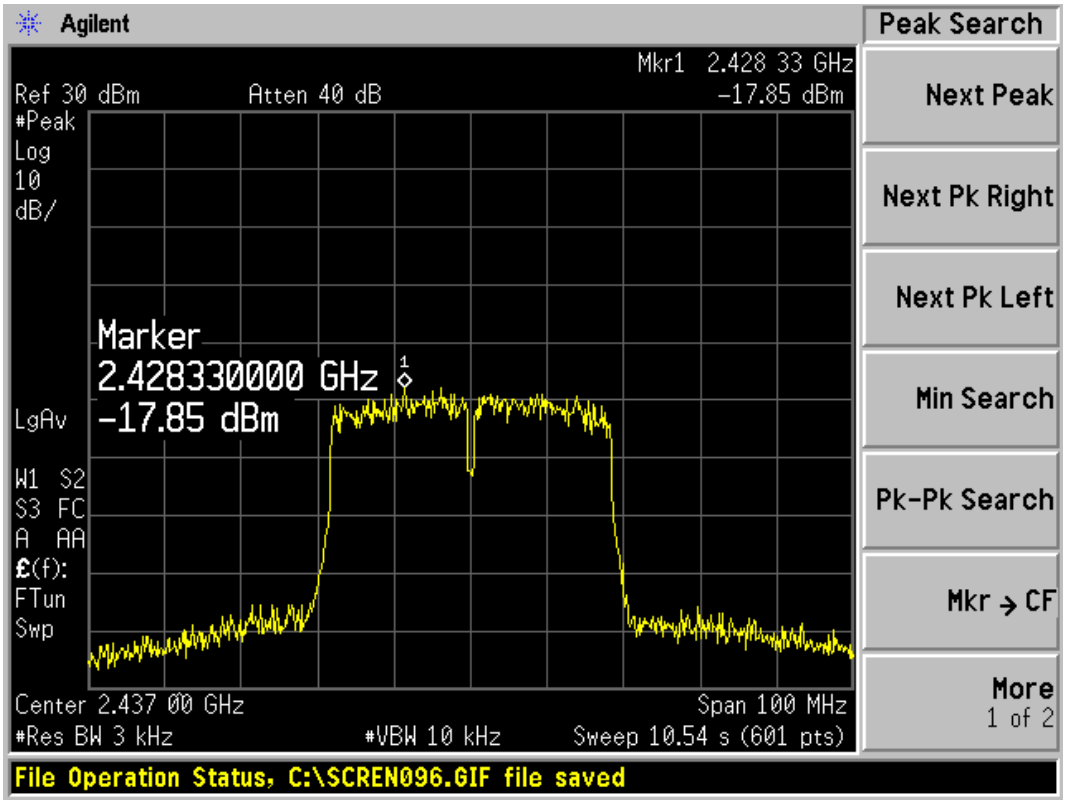


802.11n, Channel No.: 11

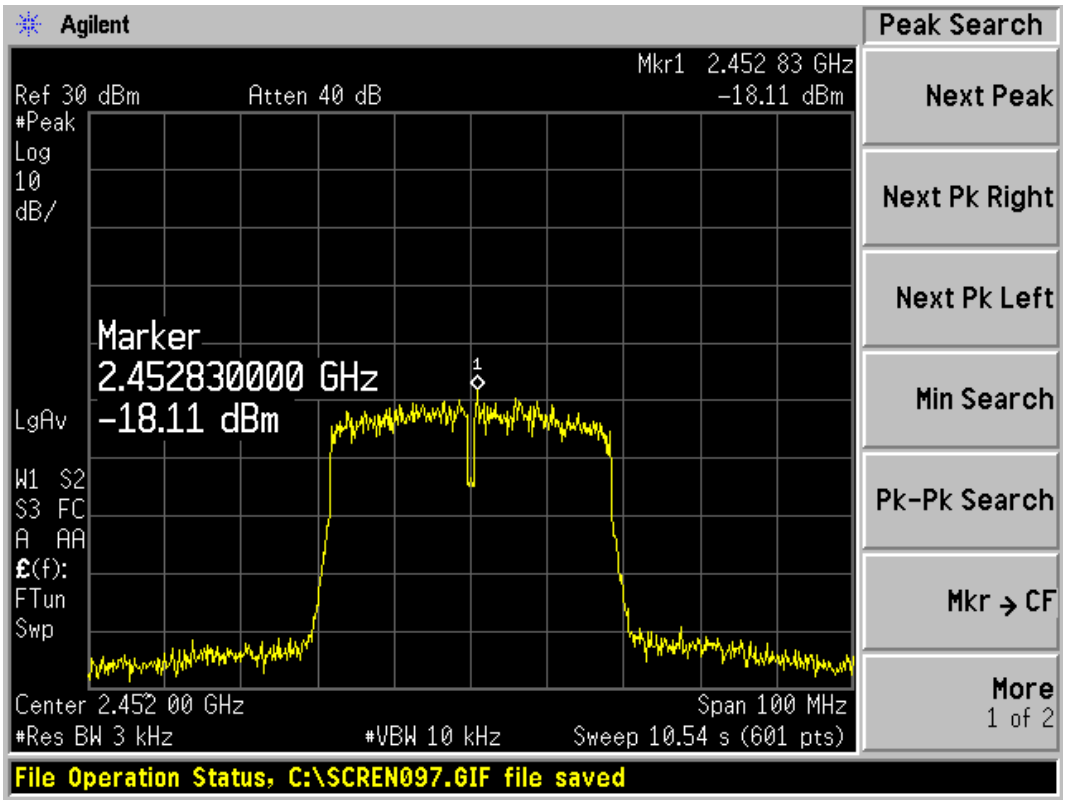
802.11n(HT40)



802.11n, Channel No.: 3



802.11n, Channel No.: 6



802.11n, Channel No.: 9

2.8. Spurious RF Conducted Emissions

Ambient condition

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

Method of Measurement

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

Test setup

Limits

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

Network Standards	Carrier frequency (MHz)	Reference value (dBm)	Limit
802.11b	2412	19.67	≤-0.33
	2437	19.28	≤-0.72
	2462	19.42	≤-0.58
802.11g	2412	15.74	≤-4.26
	2437	15.19	≤-4.81
	2462	16.01	≤-3.99
802.11n HT20	2412	16.13	≤-3.87
	2437	15.62	≤-4.38
	2462	16.19	≤-3.81

802.11n HT40	2422	16.62	≤-3.38
	2437	16.18	≤-3.82
	2452	15.61	≤-4.39

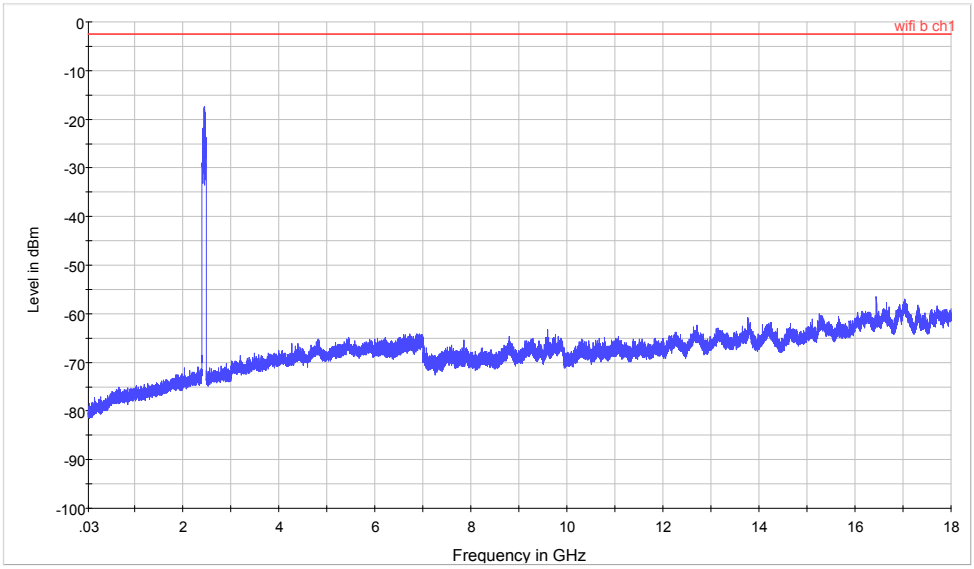
Measurement Uncertainty

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

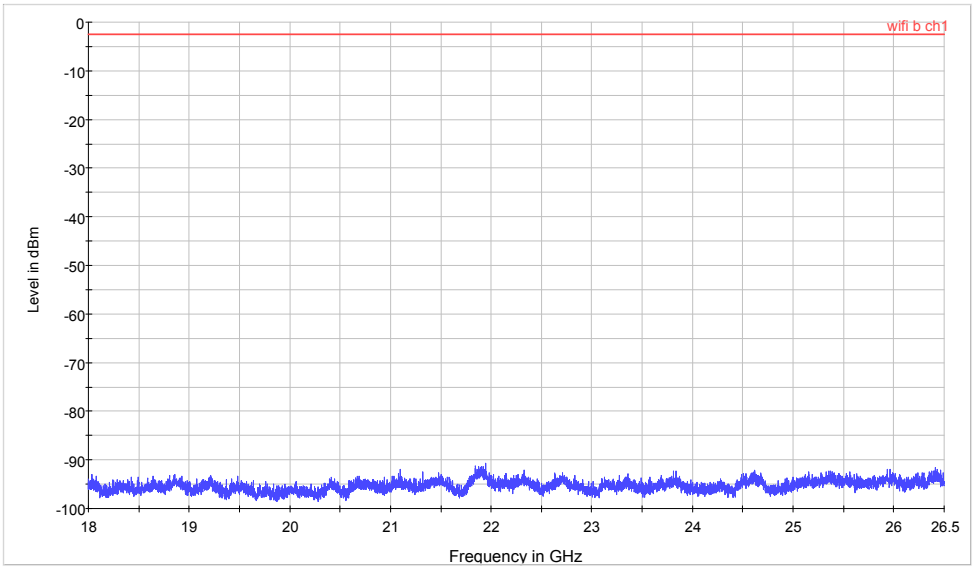
Test Results:

802.11b CH1



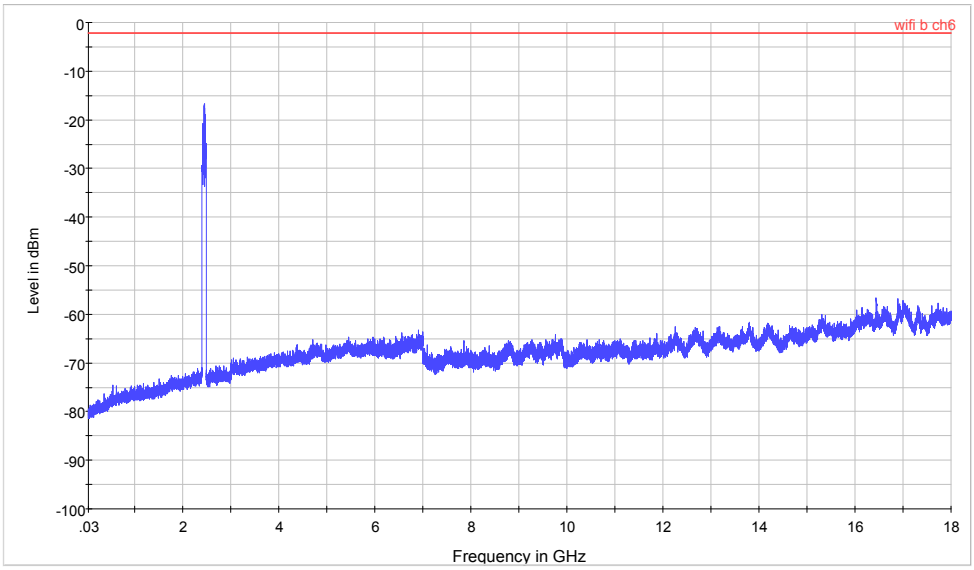
Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



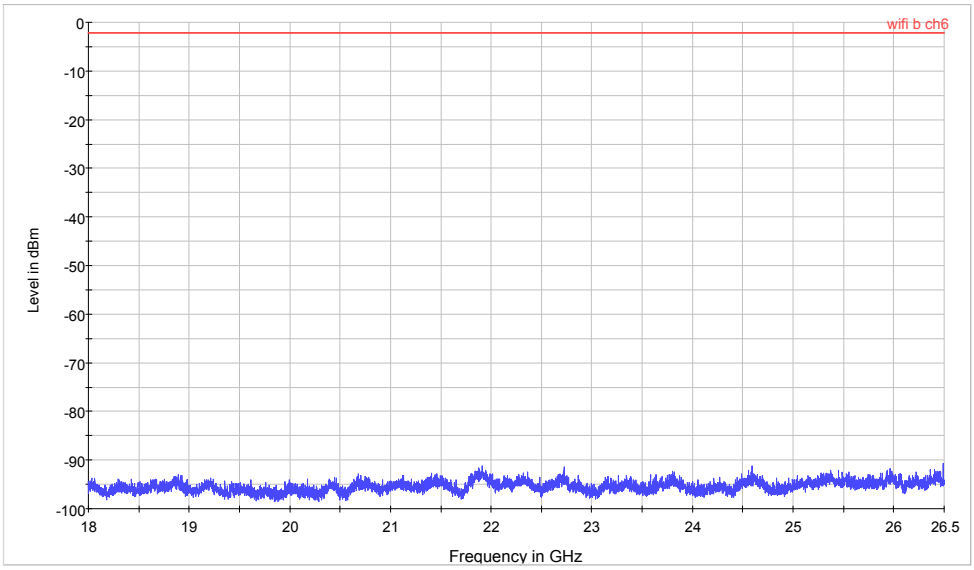
Spurious RF conducted emissions from 18GHz to 26.5GHz

802.11b CH6



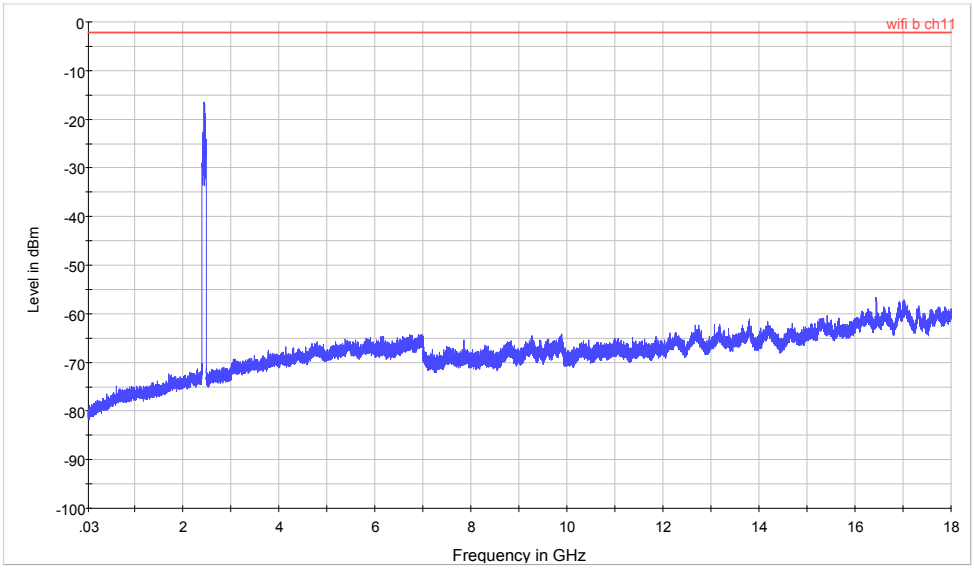
Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



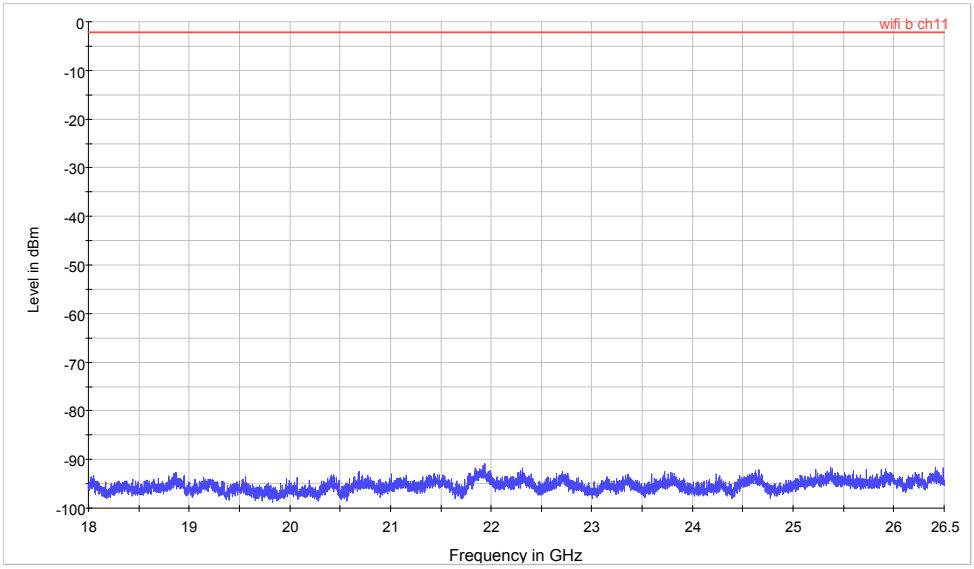
Spurious RF conducted emissions from 18GHz to 26.5GHz

802.11b CH11



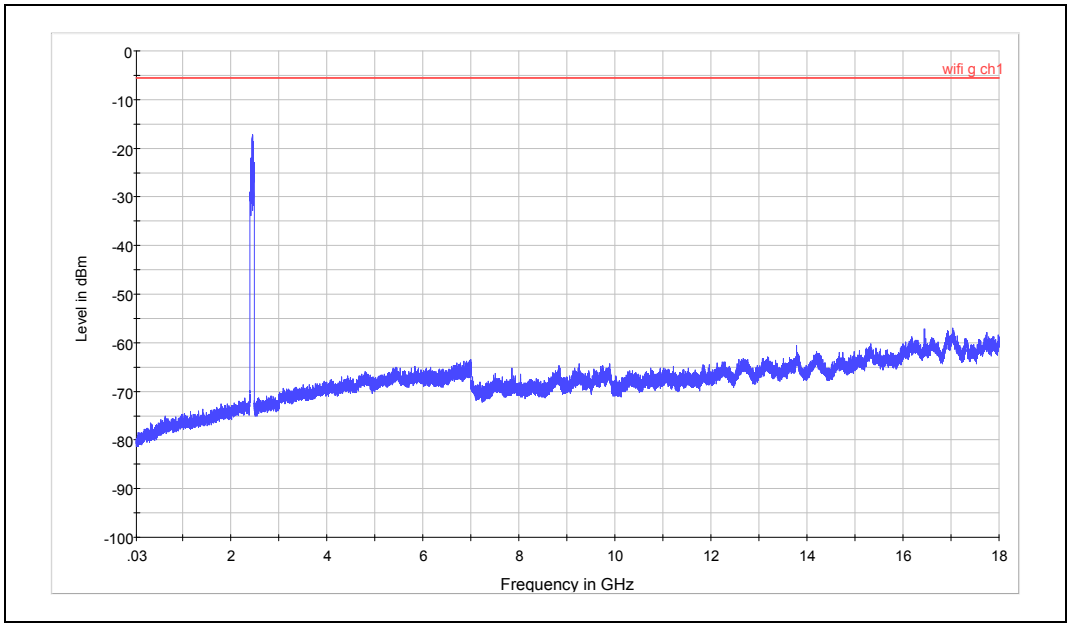
Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



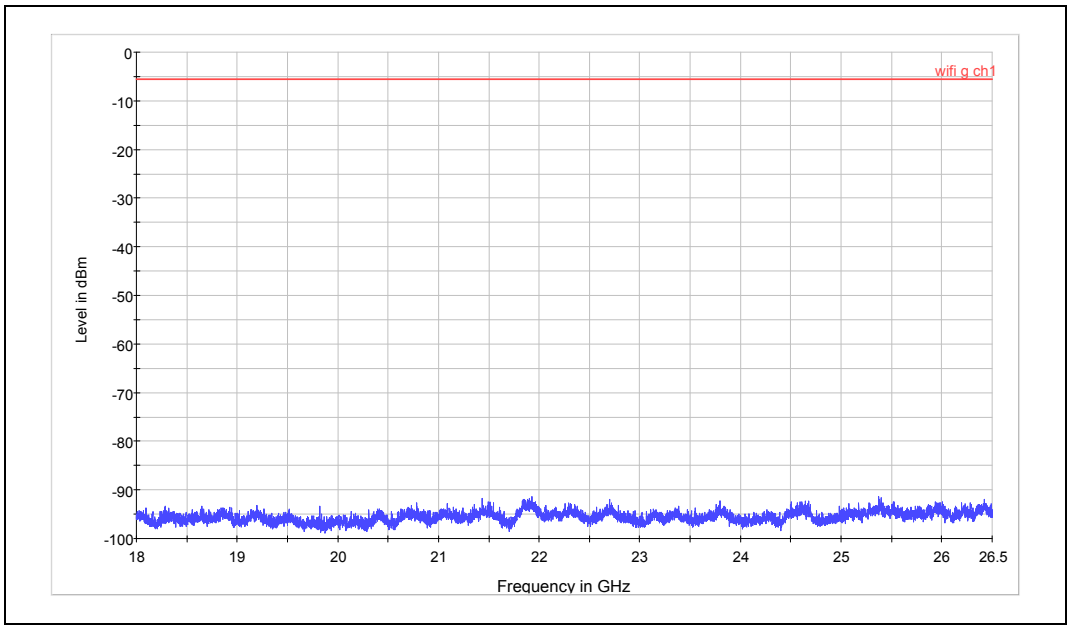
Spurious RF conducted emissions from 18GHz to 26.5GHz

802.11g CH1



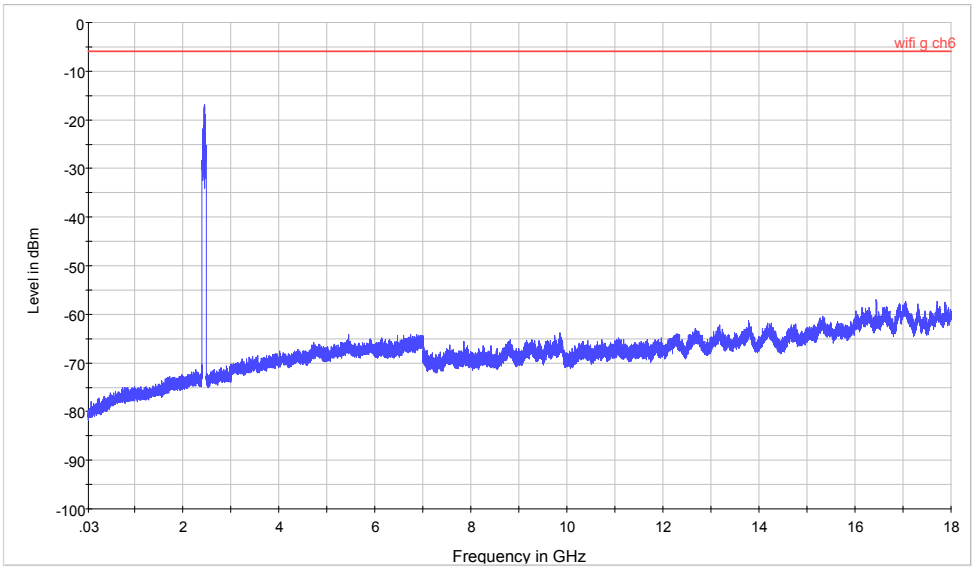
Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



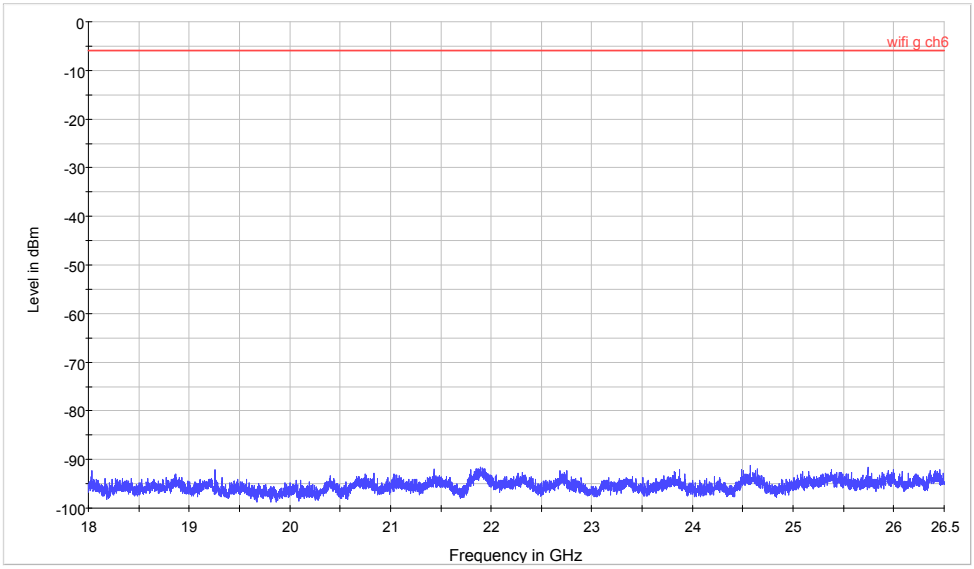
Spurious RF conducted emissions from 18GHz to 26.5GHz

802.11g CH6



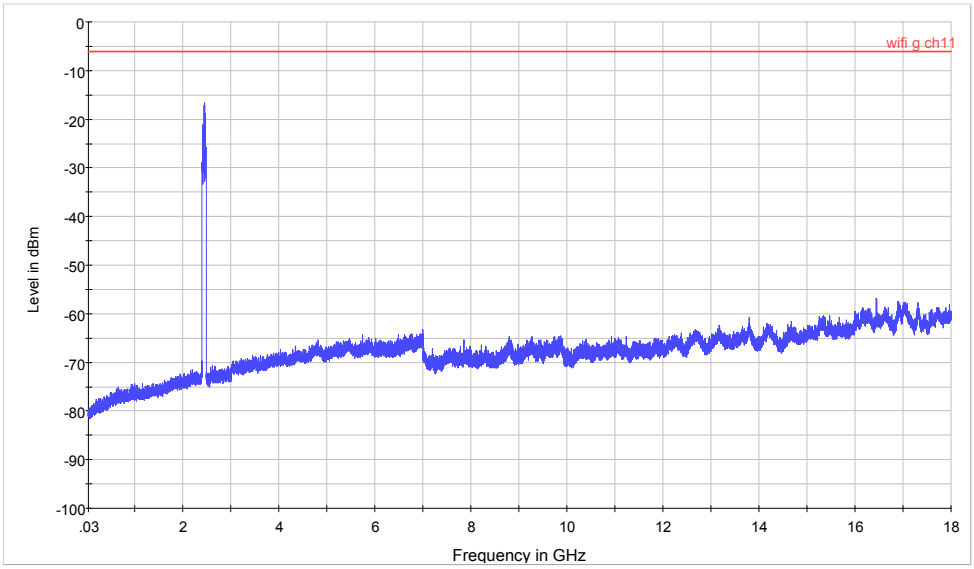
Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



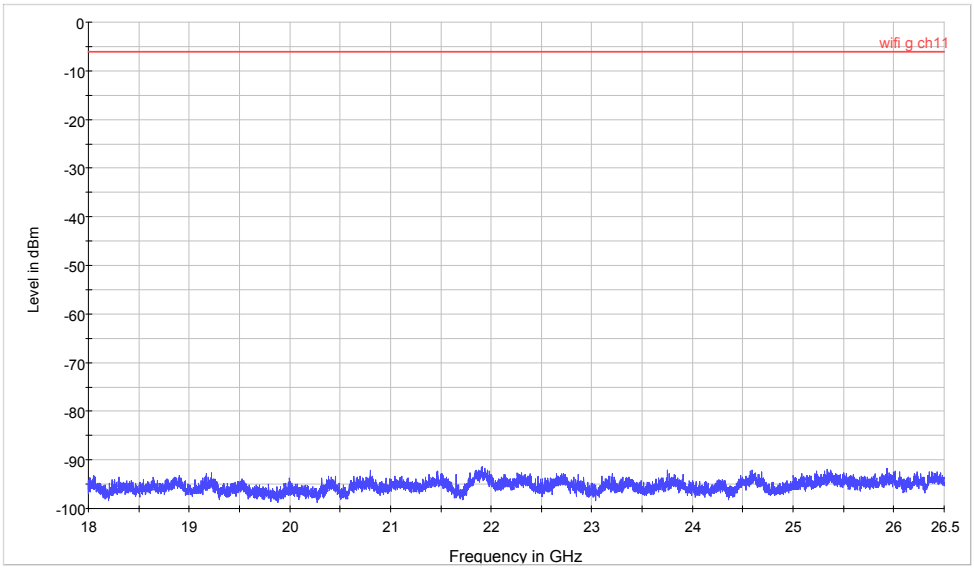
Spurious RF conducted emissions from 18GHz to 26.5GHz

802.11g CH11



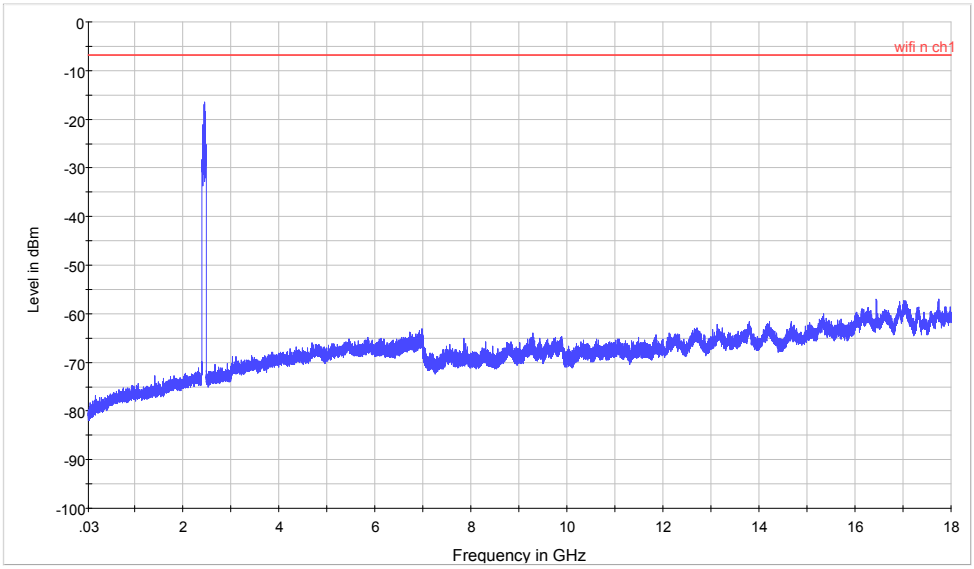
Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



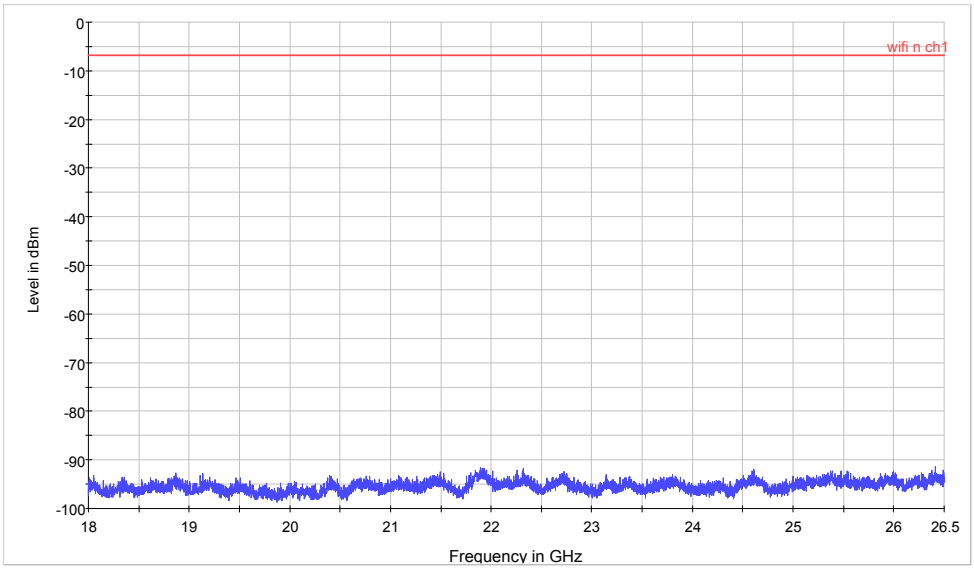
Spurious RF conducted emissions from 18GHz to 26.5GHz

802.11n(HT20) CH1



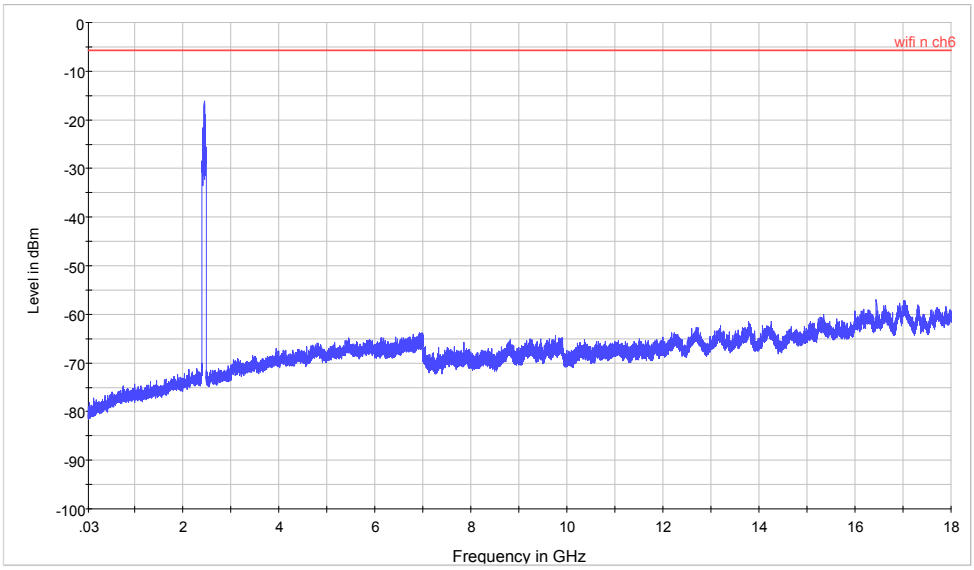
Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



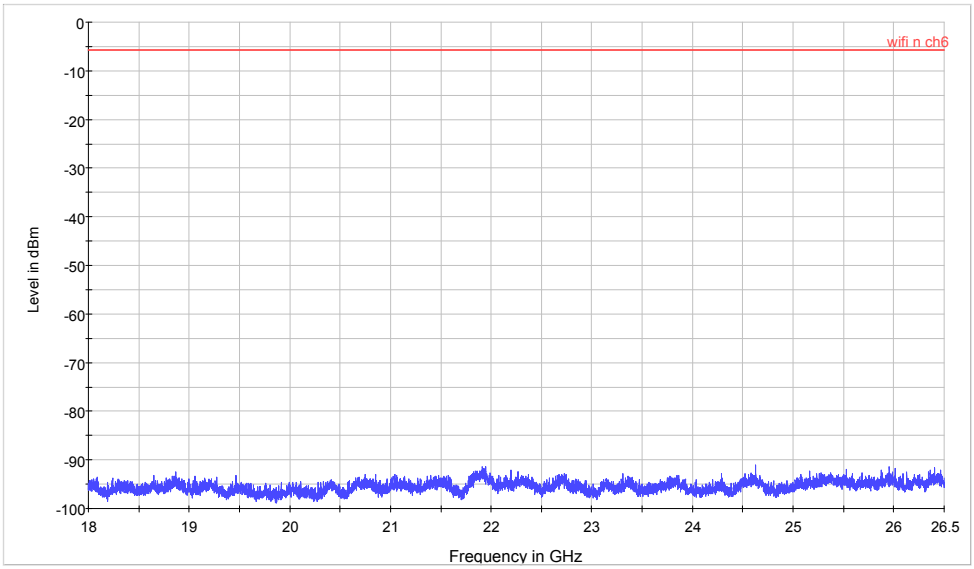
Spurious RF conducted emissions from 18GHz to 26.5GHz

802.11n(HT20) CH6



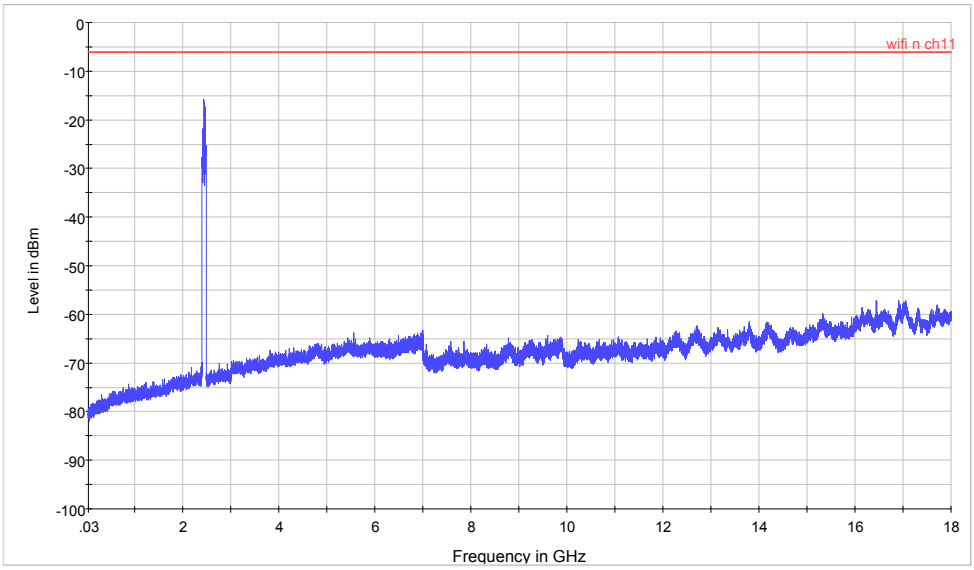
Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



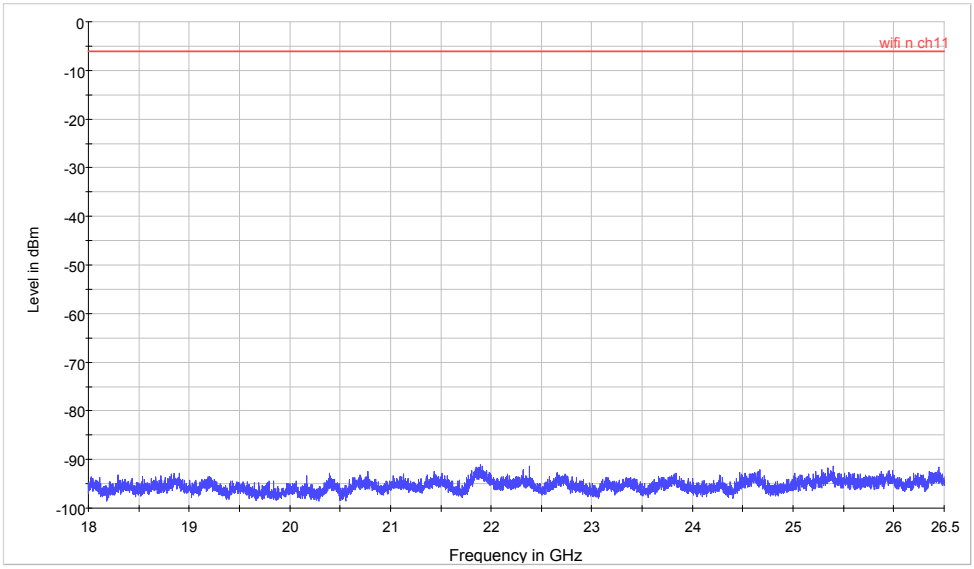
Spurious RF conducted emissions from 18GHz to 26.5GHz

802.11n(HT20) CH11



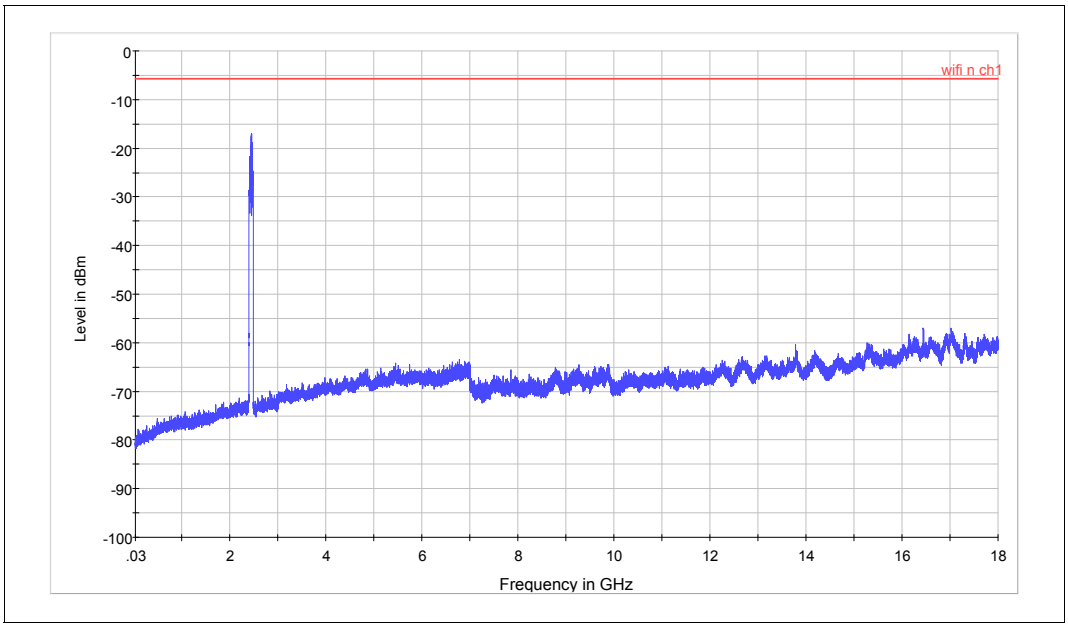
Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



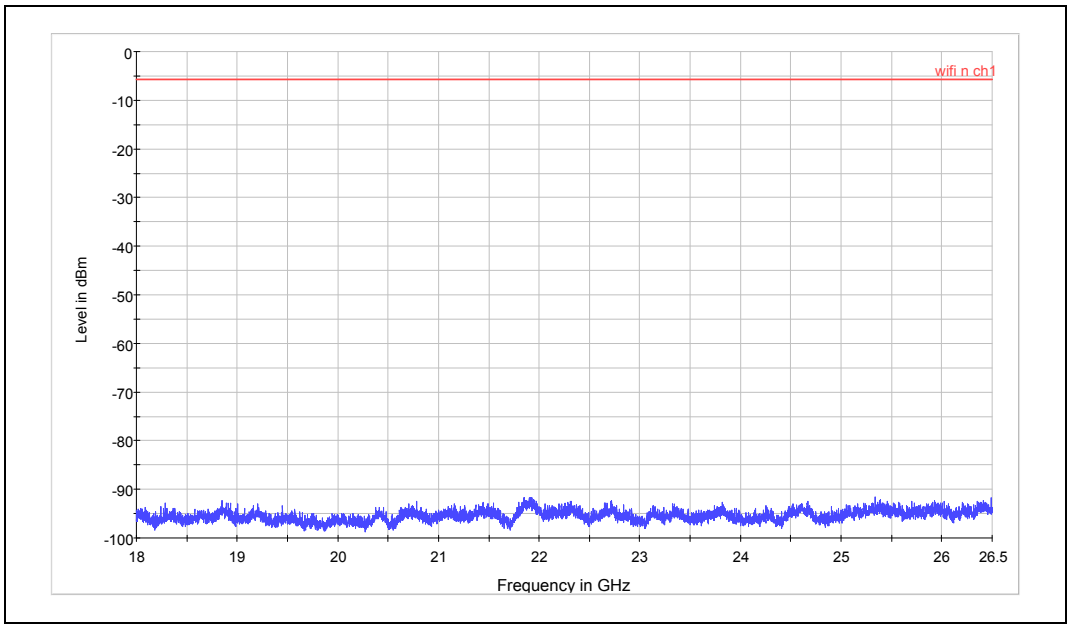
Spurious RF conducted emissions from 18GHz to 26.5GHz

802.11n(HT40) CH3



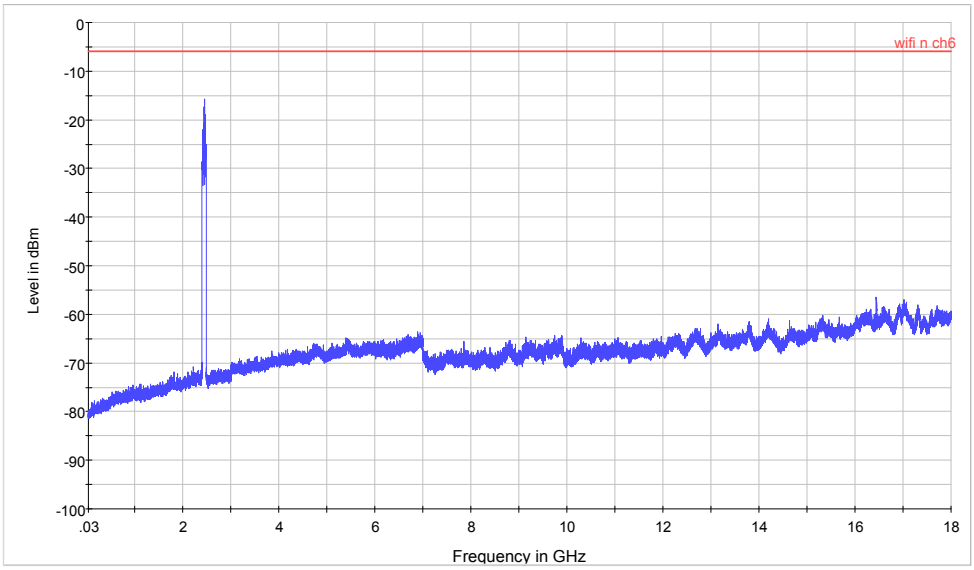
Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



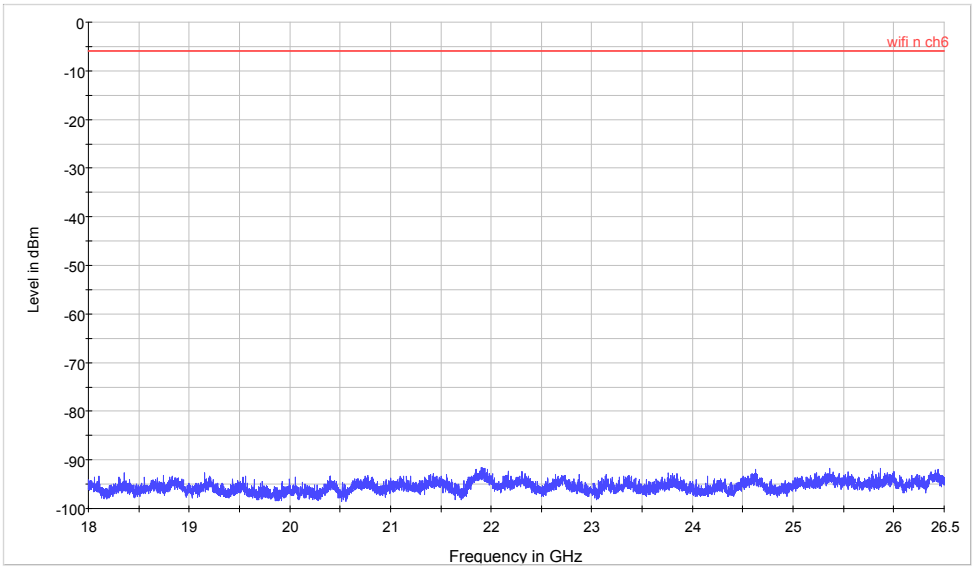
Spurious RF conducted emissions from 18GHz to 26.5GHz

802.11n(HT40) CH6



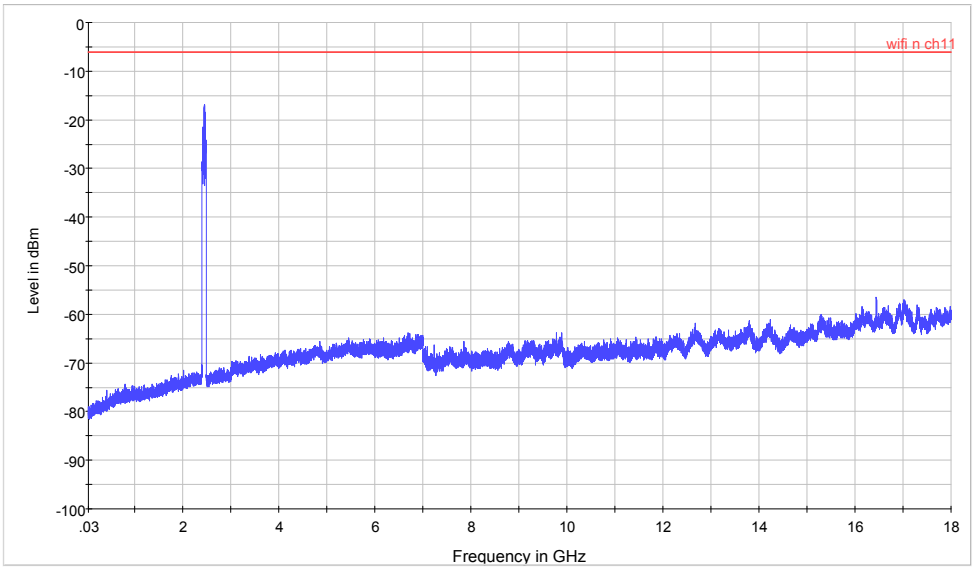
Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



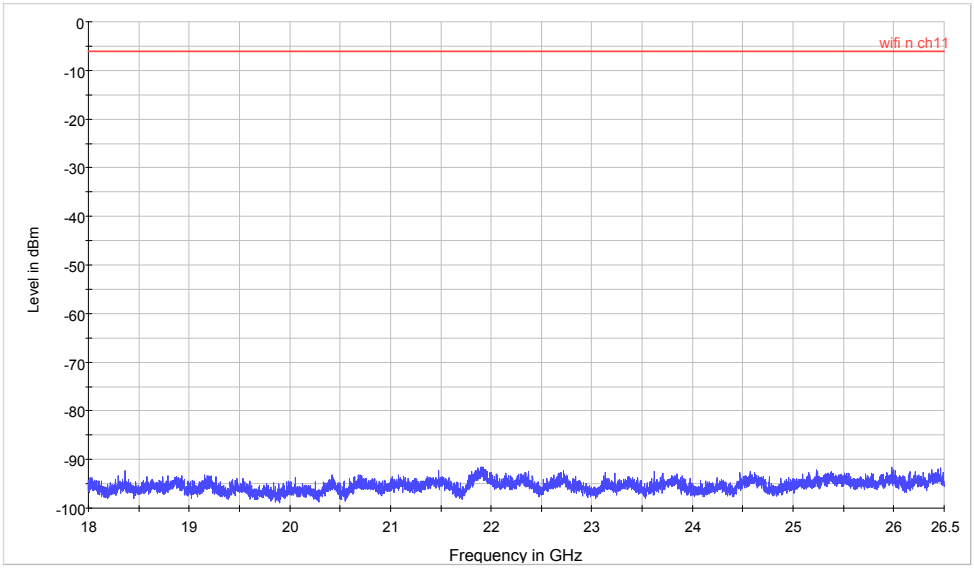
Spurious RF conducted emissions from 18GHz to 26.5GHz

802.11n(HT40) CH9



Note: The signal beyond the limit is carrier

Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

2.9. Radiates Emission

Ambient condition

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

Method of Measurement

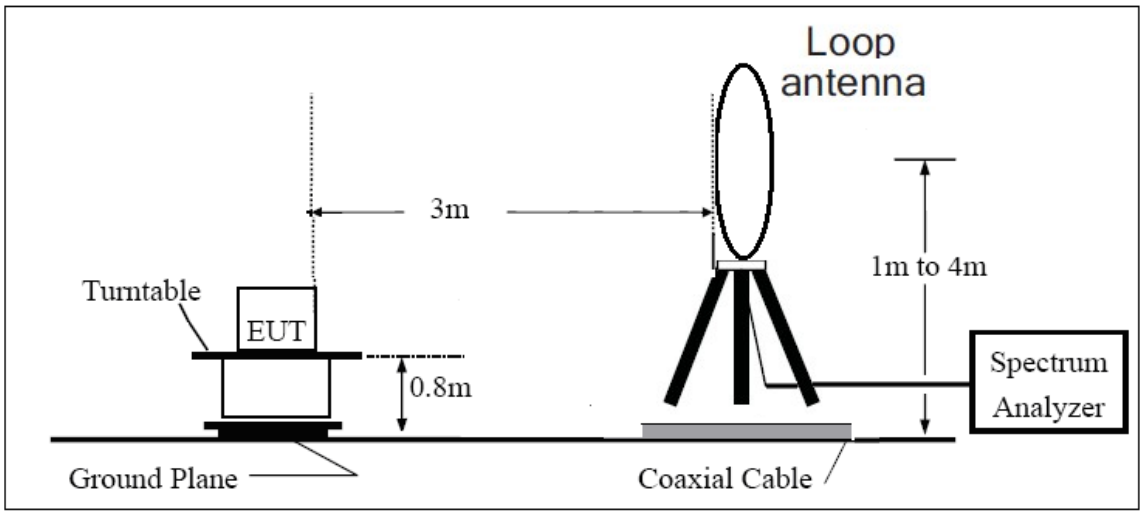
The test set-up was made in accordance to the general provisions of ANSI C63.4-2009. The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The radiated emissions measurements were made in a typical installation configuration. Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, and the emissions less than 20 dB below the permissible value are reported.
During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.
Set the spectrum analyzer in the following:
Below 1GHz (detector: Peak and Quasi-Peak)
RBW=100kHz / VBW=300kHz / Sweep=AUTO
Above 1GHz(detector: Peak):
(a) PEAK: RBW=1MHz VBW=3MHz/ Sweep=AUTO
(b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO

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

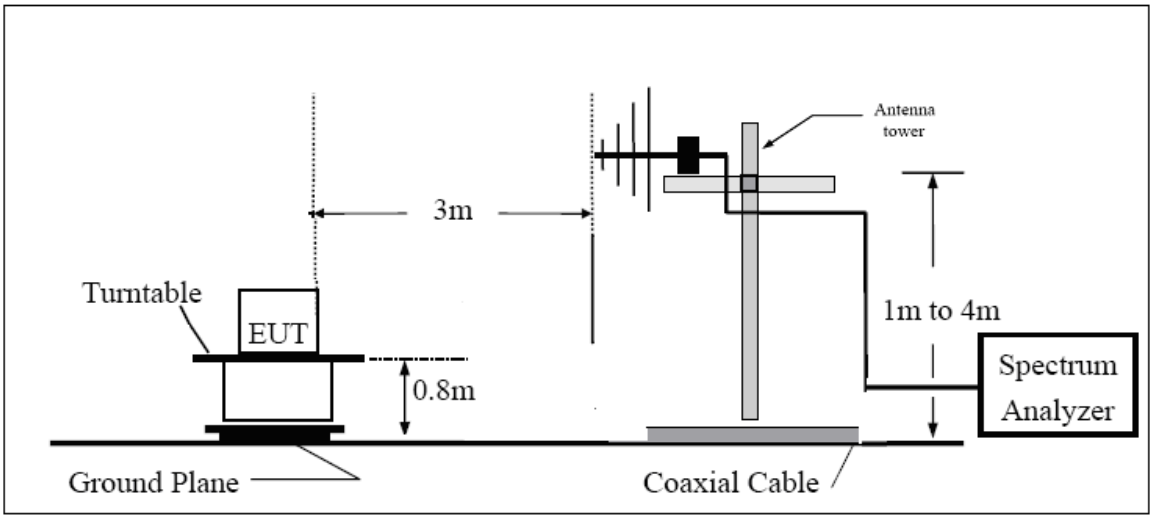
The test is in transmitting mode.

Test setup

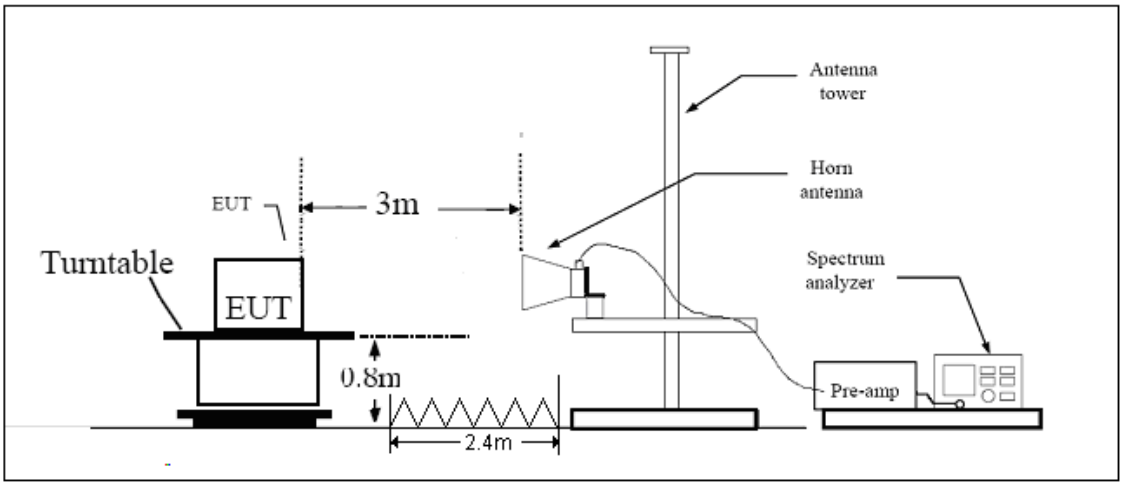
9KHz~~~ 30MHz



30MHz~~~ 1GHz



Above 1GHz



Note: Area side:2.4mX3.6m

Limits

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

Limit in restricted band

Frequency of emission (MHz)	Field strength(uV/m)	Field strength(dBuV/m)
0.009–0.490	2400/F(kHz)	/
0.490–1.705	24000/F(kHz)	/
1.705–30.0	30	/
30-88	100	40
88-216	150	43.5
216-960	200	46
Above960	500	54

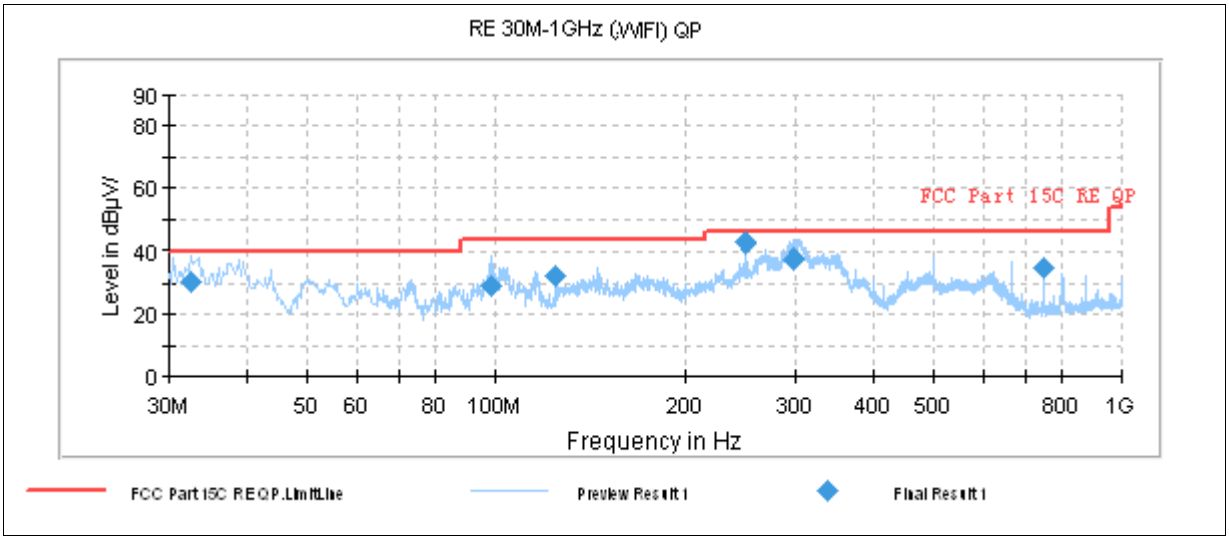
Measurement Uncertainty

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

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

Test result

802.11b CH1



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

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

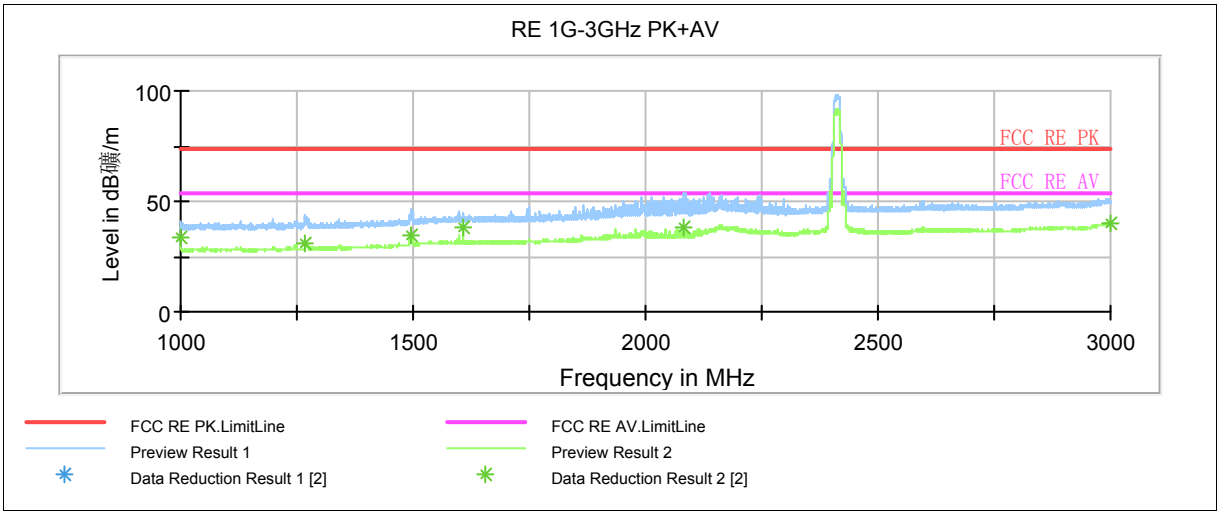
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
32.585000	30.8	100.0	V	124.0	55.0	-24.2	9.2	40.0
98.385000	29.4	225.0	H	198.0	57.4	-28.0	14.1	43.5
124.980000	32.4	100.0	V	289.0	63.9	-31.5	11.1	43.5
249.987500	43.0	100.0	H	92.0	71.1	-28.1	3.0	46.0
296.997500	37.6	100.0	H	13.0	64.9	-27.3	8.4	46.0
750.022500	34.8	100.0	H	312.0	53.7	-18.9	11.2	46.0

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

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

3. Margin = Limit – Quasi-Peak



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

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

Note: The signal beyond the limit is carrier.

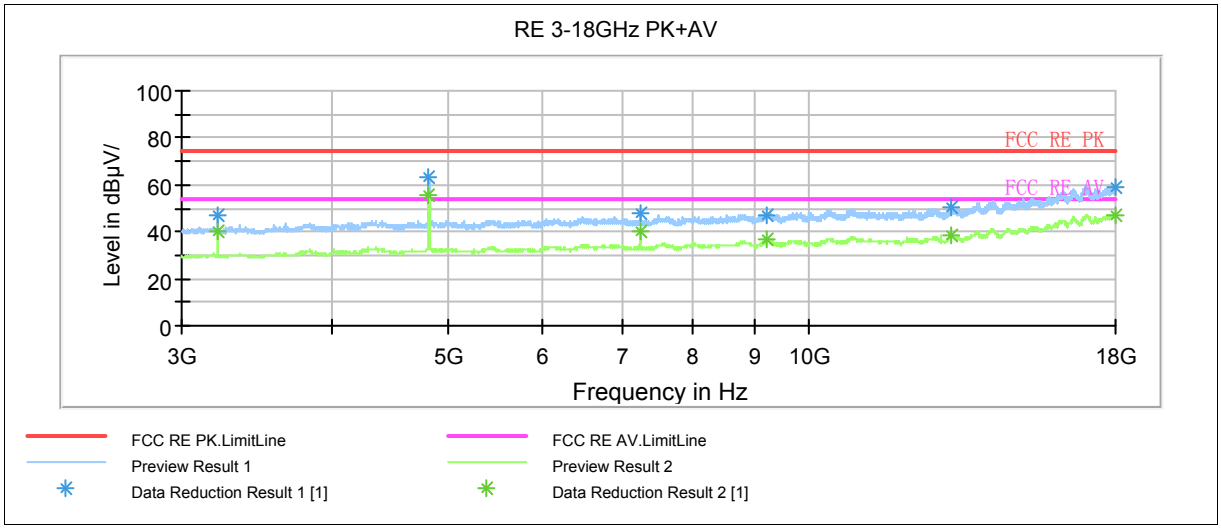
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	41.1	100.0	H	19.0	53.7	-12.6	32.9	74
1268.000000	43.7	200.0	V	184.0	55.7	-12.0	30.3	74
1494.000000	46.0	100.0	V	103.0	56.2	-10.2	28.0	74
1608.000000	44.6	100.0	V	254.0	53.7	-9.1	29.4	74
2079.750000	46.7	100.0	V	0.0	52.7	-6.0	27.3	74
3000.000000	49.5	100.0	H	168.0	51.3	-1.8	24.5	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	33.9	100.0	H	19.0	46.5	-12.6	20.1	54
1268.000000	31.2	200.0	V	184.0	43.2	-12.0	22.8	54
1494.000000	34.4	100.0	V	103.0	44.6	-10.2	19.6	54
1608.000000	38.2	100.0	V	254.0	47.3	-9.1	15.8	54
2079.750000	37.9	100.0	V	0.0	43.9	-6.0	16.1	54
3000.000000	40.0	100.0	H	168.0	41.8	-1.8	14.1	54

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



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

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

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

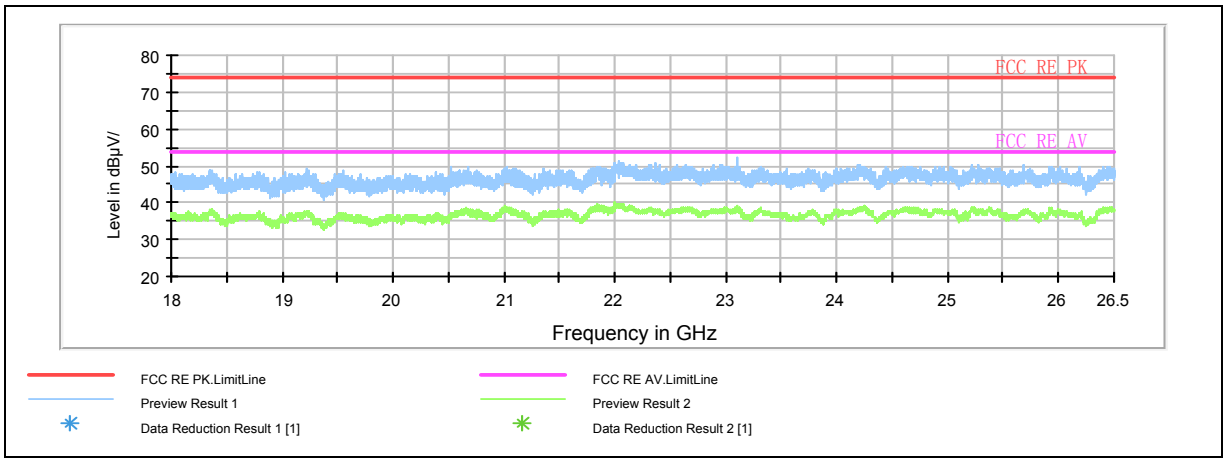
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3215.625000	47.2	99.0	V	0.0	49.9	-2.7	26.8	74
4822.500000	63.1	99.0	V	0.0	65.0	-1.9	10.9	74
7237.500000	48.3	99.0	V	181.0	54.4	-6.1	25.7	74
9230.625000	47.4	99.0	V	336.0	56.2	-8.8	26.6	74
13151.250000	50.2	99.0	V	77.0	62.9	-12.7	23.8	74
17973.750000	59.3	99.0	H	235.0	82.7	-23.4	14.7	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3215.625000	40.2	99.0	V	0.0	42.9	-2.7	13.8	54
7237.500000	40.3	99.0	V	181.0	46.4	-6.1	13.7	54
9232.500000	36.3	99.0	H	0.0	45.1	-8.8	17.7	54
13149.375000	38.2	99.0	V	254.0	50.9	-12.7	15.8	54
17994.375000	47.3	99.0	V	0.0	70.8	-23.5	6.7	54

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

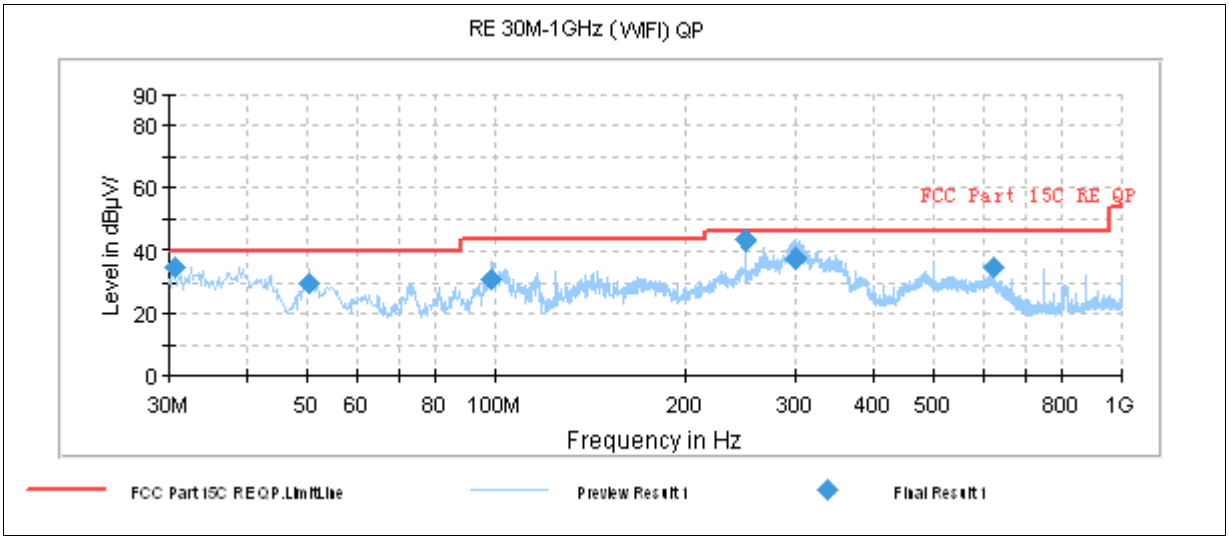


Note: This graph displays the maximum values of horizontal and vertical by software

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

Radiates Emission from 18GHz to 26.5GHz

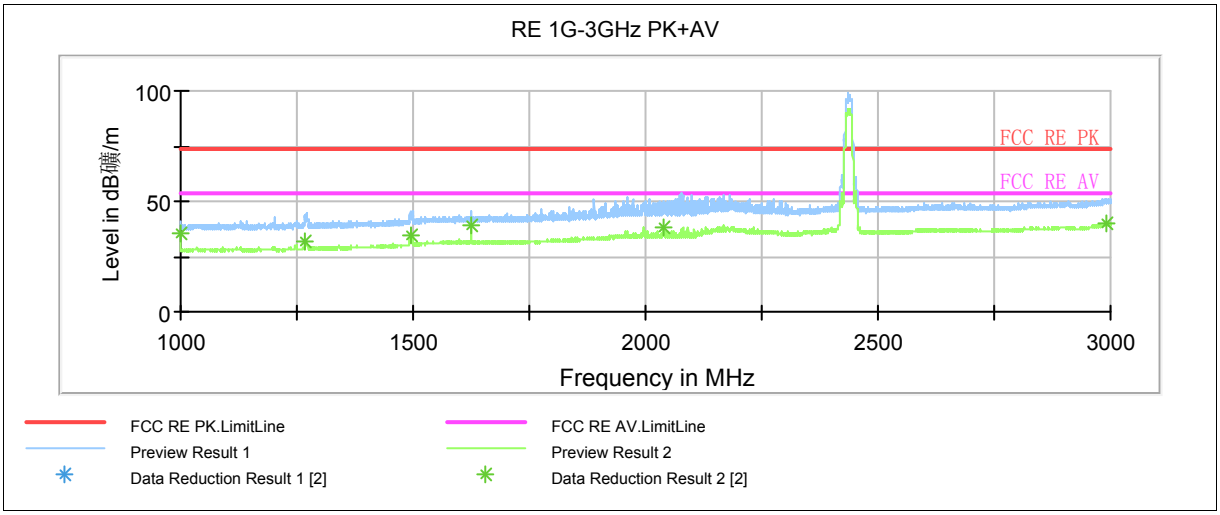
802.11b CH6



Note: This graph displays the maximum values of horizontal and vertical by software
Note: a font (Level in dBµV/m)in the test plot =(level in dBuv/m)
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
30.640000	35.0	125.0	V	84.0	58.9	-23.9	5.0	40.0
50.410000	29.9	100.0	V	121.0	55.5	-25.6	10.1	40.0
98.425000	31.1	220.0	H	34.0	59.1	-28.0	12.4	43.5
249.987500	43.1	100.0	H	90.0	71.2	-28.1	2.9	46.0
299.582500	37.7	100.0	H	0.0	64.8	-27.1	8.3	46.0
625.015000	35.1	100.0	V	23.0	55.6	-20.5	10.9	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



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

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

Note: The signal beyond the limit is carrier.

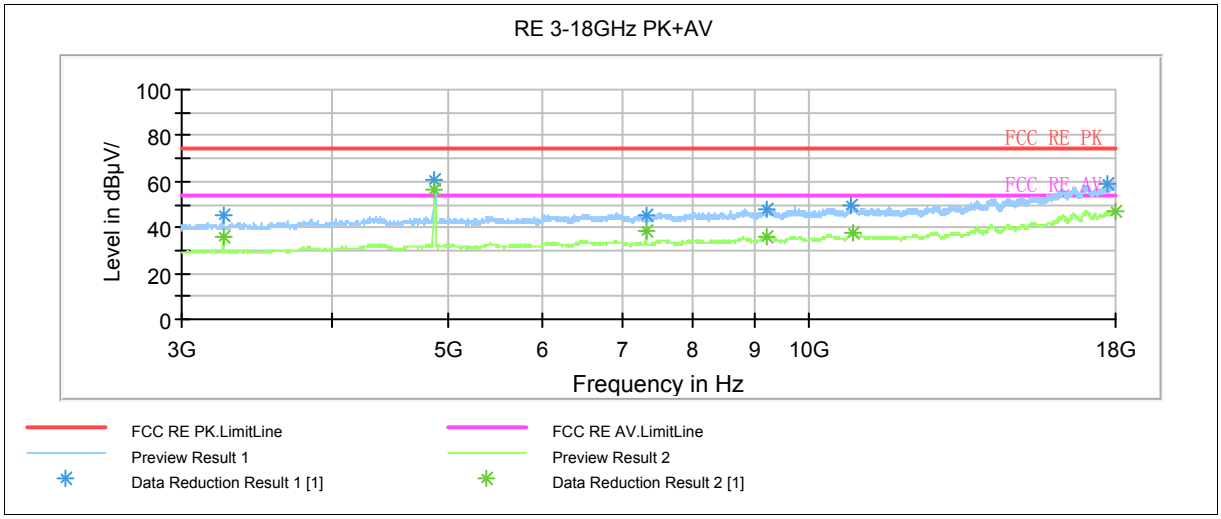
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	40.6	98.0	H	13.0	53.2	-12.6	33.4	74
1268.500000	43.1	200.0	V	190.0	55.1	-12.0	30.9	74
1494.000000	44.9	100.0	V	103.0	55.1	-10.2	29.1	74
1624.750000	45.2	200.0	V	99.0	54.4	-9.2	28.8	74
2038.750000	47.4	100.0	V	211.0	53.7	-6.3	26.6	74
2993.000000	49.6	98.0	H	13.0	51.4	-1.8	24.4	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	35.2	98.0	H	13.0	47.8	-12.6	18.8	54
1268.500000	31.7	200.0	V	190.0	43.7	-12.0	22.3	54
1494.000000	34.4	100.0	V	103.0	44.6	-10.2	19.6	54
1624.750000	39.4	200.0	V	99.0	48.6	-9.20	14.6	54
2038.750000	38.0	100.0	V	211.0	44.3	-6.30	16.0	54
2993.000000	40.0	98.0	H	13.0	41.8	-1.80	14.0	54

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



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

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

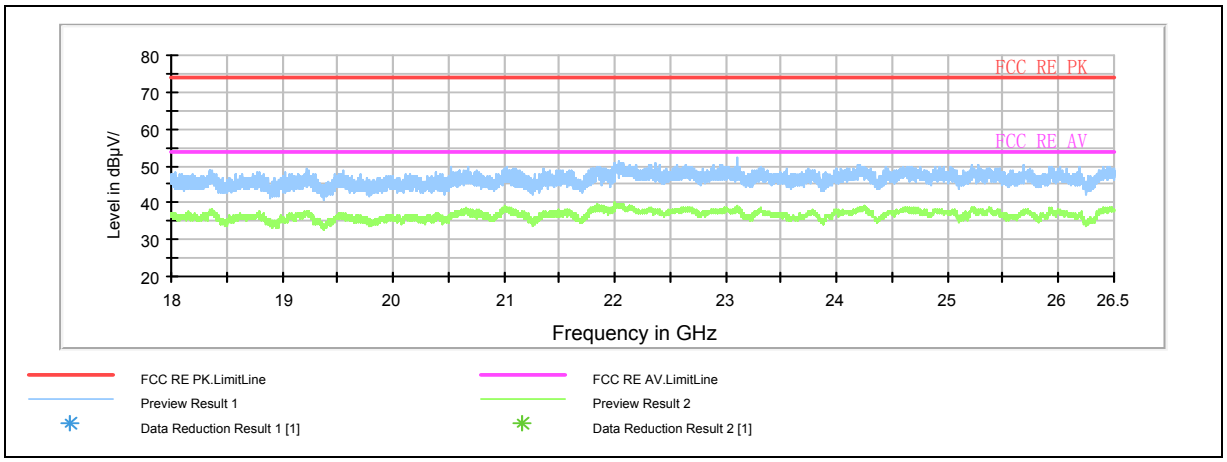
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3247.500000	45.6	99.0	V	0.0	47.9	-2.3	28.4	74
4878.750000	60.7	99.0	V	272.0	62.6	-1.9	13.3	74
7312.500000	45.5	99.0	V	24.0	51.2	-5.7	28.5	74
9234.375000	48.1	99.0	V	0.0	56.9	-8.8	25.9	74
10852.500000	49.5	99.0	V	0.0	61.2	-11.7	24.5	74
17707.500000	58.7	99.0	H	158.0	81.3	-22.6	15.3	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3247.500000	35.8	99.0	V	0.0	38.1	-2.3	18.2	54
7312.500000	38.6	99.0	V	24.0	44.3	-5.7	15.4	54
9223.125000	35.9	99.0	H	252.0	44.8	-8.9	18.1	54
10878.750000	37.7	99.0	V	0.0	49.2	-11.5	16.3	54
17998.125000	47.2	99.0	V	156.0	70.7	-23.5	6.8	54

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

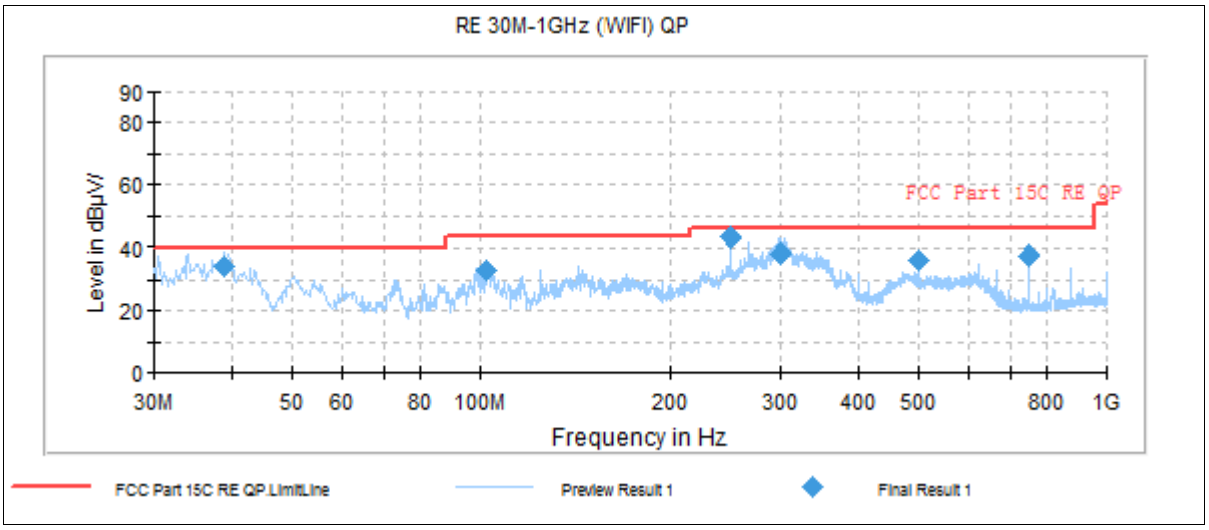


Note: This graph displays the maximum values of horizontal and vertical by software

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

Radiates Emission from 18GHz to 26.5GHz

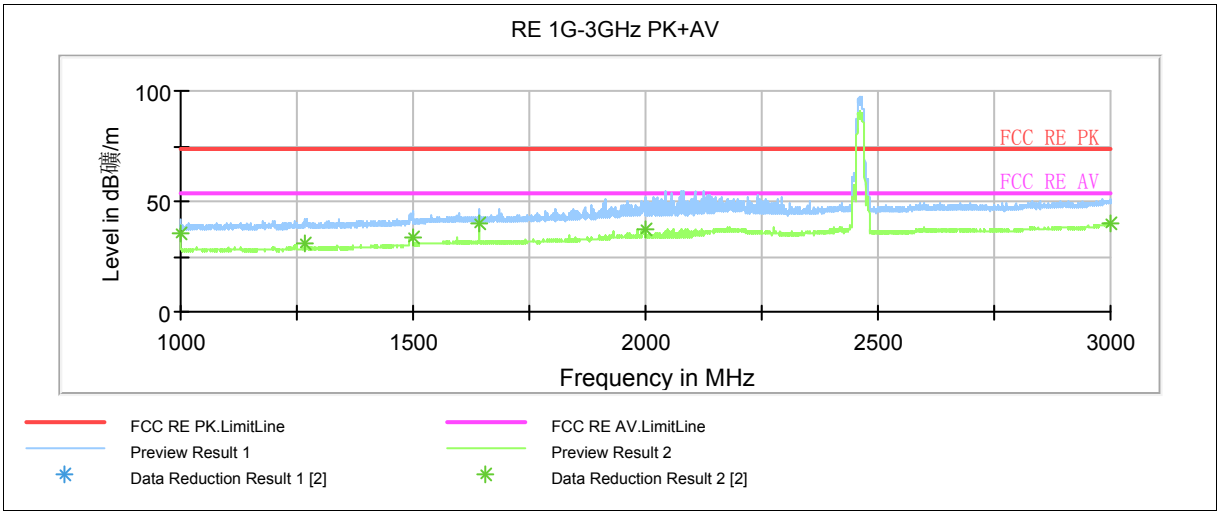
802.11b CH11



Note: This graph displays the maximum values of horizontal and vertical by software
Note: a font (Level in dB碼/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)
38.972500	34.1	121.0	V	152.0	58.2	-24.1	5.9	40.0
101.860000	32.9	100.0	V	145.0	60.8	-27.9	10.6	43.5
249.987500	43.5	100.0	H	83.0	71.6	-28.1	2.5	46.0
299.702500	38.1	100.0	H	0.0	65.2	-27.1	7.9	46.0
500.005000	36.2	175.0	H	53.0	59.3	-23.1	9.8	46.0
750.022500	37.5	100.0	H	328.0	56.4	-18.9	8.5	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



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

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

Note: The signal beyond the limit is carrier.

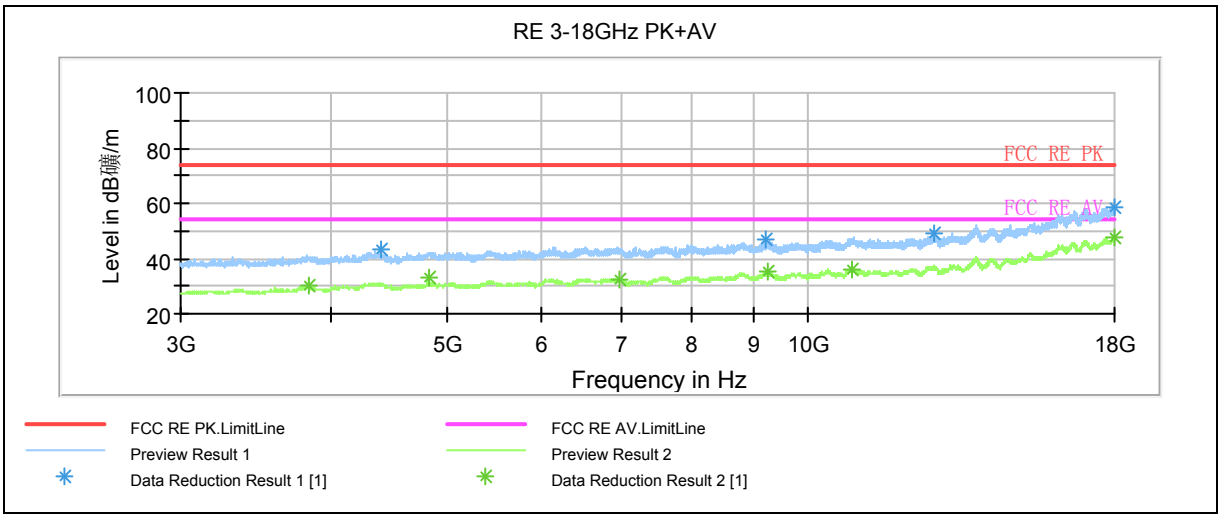
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	41.4	100.0	H	10.0	54.0	-12.6	32.6	74
1268.500000	41.7	200.0	V	194.0	53.7	-12.0	32.3	74
1498.000000	41.6	101.0	V	105.0	51.7	-10.1	32.4	74
1641.500000	44.2	101.0	V	105.0	53.4	-9.2	29.8	74
1999.500000	47.6	101.0	V	113.0	54.0	-6.4	26.4	74
2998.750000	48.9	200.0	H	0.0	50.7	-1.8	25.1	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	35.6	100.0	H	10.0	48.2	-12.6	18.4	54
1268.500000	30.7	200.0	V	194.0	42.7	-12.0	23.3	54
1498.000000	33.9	101.0	V	105.0	44.0	-10.1	20.1	54
1641.500000	39.6	101.0	V	105.0	48.8	-9.2	14.4	54
1999.500000	37.6	101.0	V	113.0	44.0	-6.4	16.4	54
2998.750000	40.0	200.0	H	0.0	41.8	-1.8	14.0	54

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



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

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

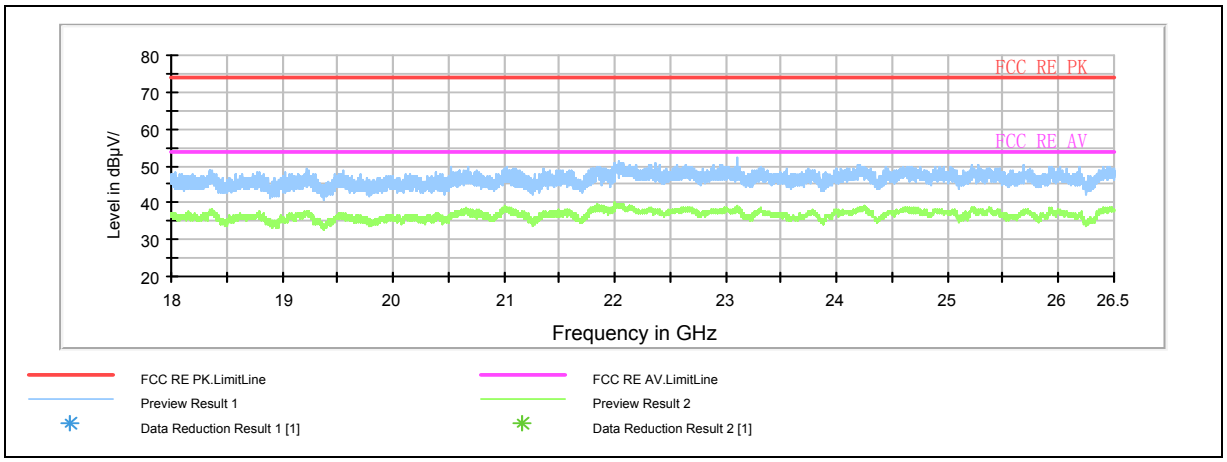
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
4404.375000	43.1	100.0	V	0.0	44.3	-1.2	30.9	74
9202.500000	46.7	100.0	V	215.0	55.7	-9	27.3	74
12744.375000	49.2	100.0	V	260.0	61.8	-12.6	24.8	74
17983.125000	58.8	100.0	H	138.0	82.2	-23.4	15.2	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3830.625000	30.1	100.0	H	14.0	30.2	-0.1	23.9	54
4824.375000	32.9	100.0	H	0.0	34.8	-1.9	21.1	54
6975.000000	32.7	100.0	V	0.0	37.6	-4.9	21.3	54
9241.875000	35.0	100.0	H	200.0	43.8	-8.8	19.0	54
10891.875000	36.3	100.0	H	14.0	47.7	-11.4	17.7	54
17998.125000	47.4	100.0	H	40.0	70.9	-23.5	6.6	54

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

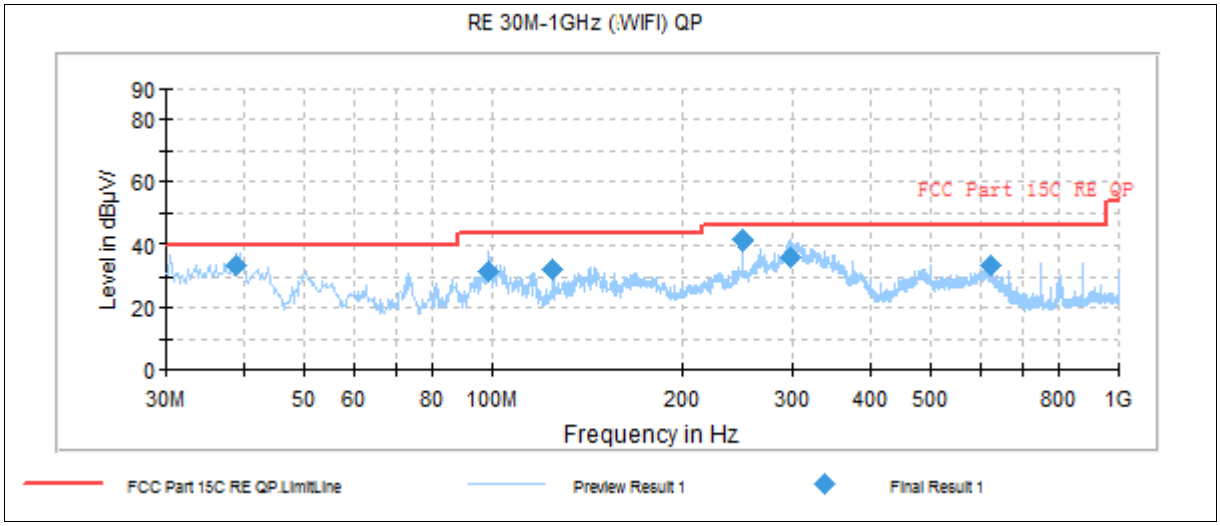


Note: This graph displays the maximum values of horizontal and vertical by software

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

Radiates Emission from 18GHz to 26.5GHz

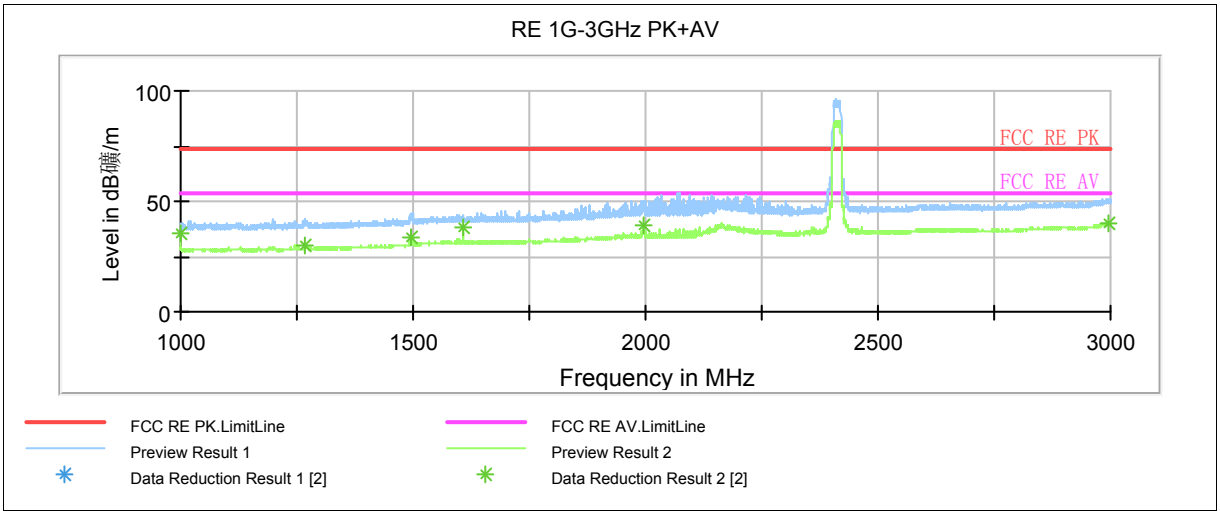
802.11g CH1



Note: This graph displays the maximum values of horizontal and vertical by software
Note: a font (Level in dB碼/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)
38.937500	33.7	125.0	V	107.0	57.8	-24.1	6.3	40.0
98.425000	31.9	225.0	H	195.0	59.9	-28.0	11.6	43.5
125.020000	32.4	100.0	V	280.0	63.9	-31.5	11.1	43.5
249.987500	41.4	125.0	H	86.0	69.5	-28.1	4.6	46.0
298.487500	36.2	120.0	H	5.0	63.4	-27.2	9.8	46.0
625.015000	33.4	100.0	V	352.0	53.9	-20.5	12.6	46.0

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



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

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

Note: The signal beyond the limit is carrier.

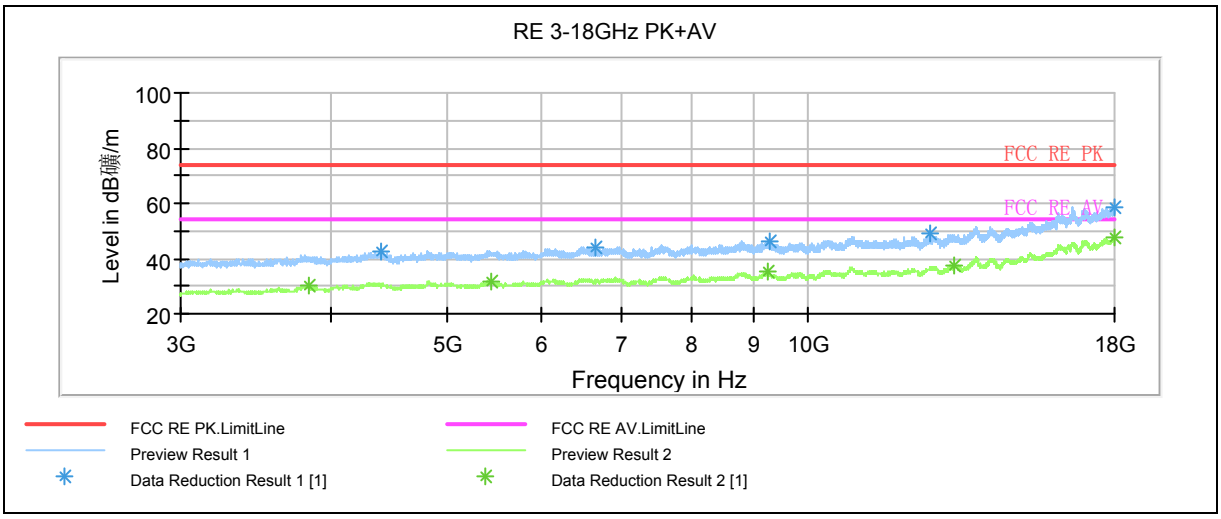
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	40.2	100.0	H	14.0	52.8	-12.6	33.8	74
1266.750000	41.6	200.0	V	173.0	53.6	-12.0	32.4	74
1495.000000	43.7	100.0	V	105.0	53.8	-10.1	30.3	74
1608.000000	43.2	100.0	V	252.0	52.3	-9.1	30.8	74
1996.250000	50.0	100.0	V	97.0	56.4	-6.4	24.0	74
2996.750000	48.7	100.0	H	58.0	50.5	-1.8	25.3	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	35.2	100.0	H	14.0	47.8	-12.6	18.8	54
1266.750000	30.4	200.0	V	173.0	42.4	-12.0	23.6	54
1495.000000	33.7	100.0	V	105.0	43.8	-10.1	20.3	54
1608.000000	38.2	100.0	V	252.0	47.3	-9.1	15.8	54
1996.250000	38.7	100.0	V	97.0	45.1	-6.4	15.3	54
2996.750000	39.9	100.0	H	58.0	41.7	-1.8	14.1	54

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



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

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

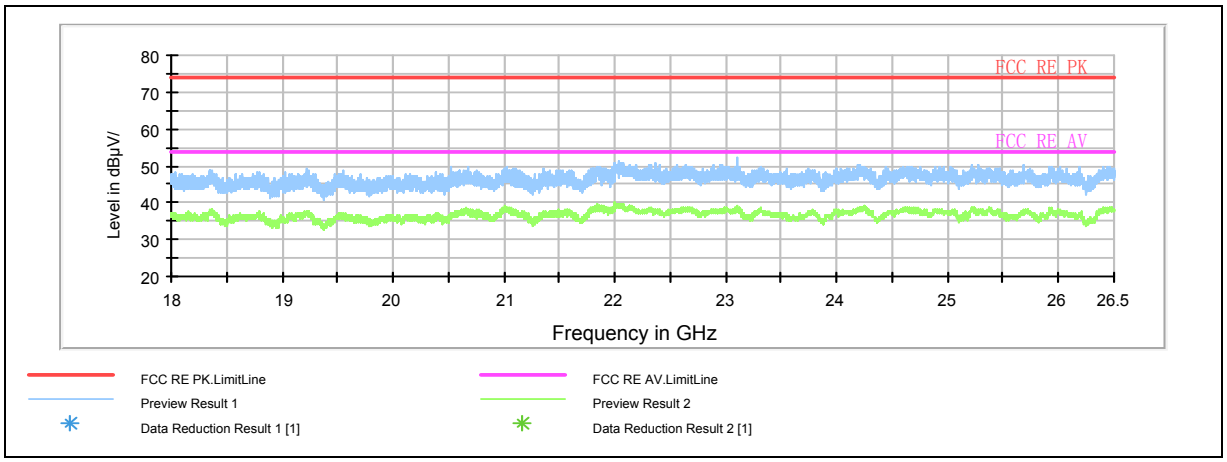
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
4402.500000	42.6	100.0	H	104.0	43.8	-1.2	31.4	74
6660.000000	43.8	100.0	H	8.0	48.2	-4.4	30.2	74
9273.750000	46.2	100.0	V	322.0	54.8	-8.6	27.8	74
12645.000000	49.0	100.0	H	51.0	60.4	-11.4	25.0	74
17971.875000	58.6	100.0	V	0.0	82.0	-23.4	15.4	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3832.500000	30.0	100.0	V	357.0	30.1	-0.1	24.0	54
5452.500000	31.6	100.0	H	173.0	34.4	-2.8	22.4	54
9249.375000	35.1	100.0	H	17.0	43.8	-8.7	18.9	54
13248.750000	37.4	100.0	H	0.0	50.1	-12.7	16.6	54
17983.125000	47.4	100.0	V	0.0	70.8	-23.4	6.6	54

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

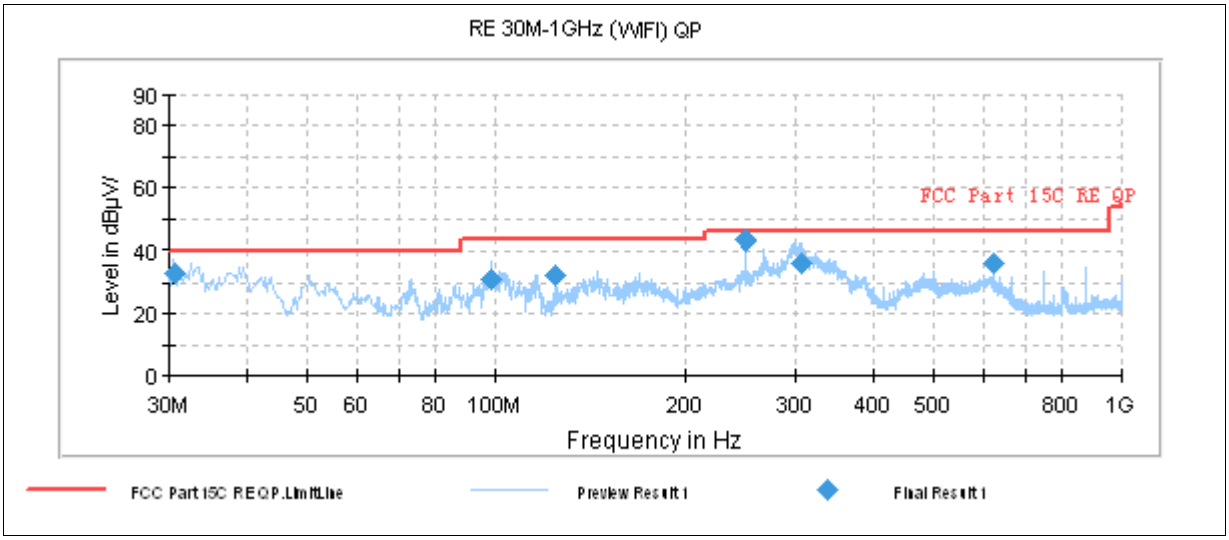


Note: This graph displays the maximum values of horizontal and vertical by software

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

Radiates Emission from 18GHz to 26.5GHz

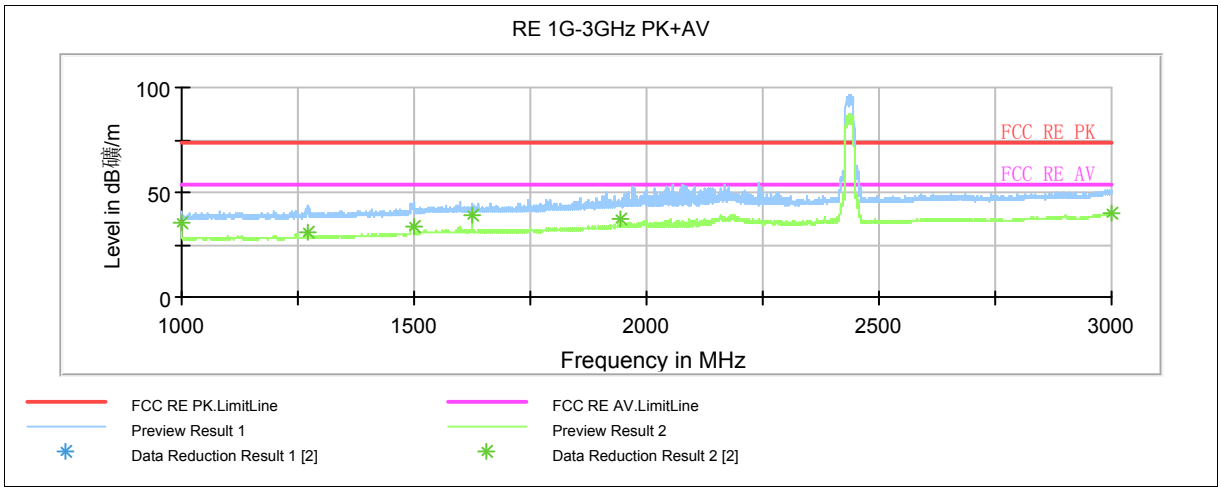
802.11g CH6



Note: This graph displays the maximum values of horizontal and vertical by software
Note: a font (Level in dB碼/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)
30.600000	33.1	100.0	V	135.0	57	-23.9	6.9	40.0
98.465000	30.9	225.0	H	235.0	58.9	-28.0	12.6	43.5
125.020000	32.4	100.0	V	278.0	63.9	-31.5	11.1	43.5
249.987500	43.1	100.0	H	84.0	71.2	-28.1	2.9	46.0
306.292500	36.5	125.0	H	0.0	63.3	-26.8	9.5	46.0
625.015000	36.4	100.0	V	23.0	56.9	-20.5	9.6	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



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

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

Note: The signal beyond the limit is carrier.

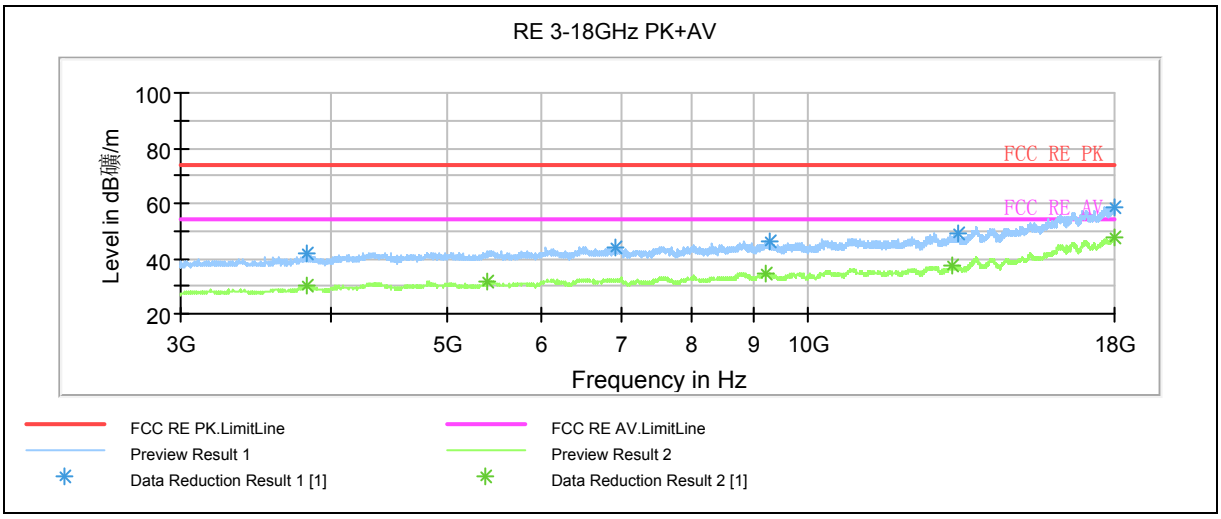
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	41.1	101.0	H	12.0	53.7	-12.6	32.9	74
1271.000000	41.3	200.0	V	181.0	53.2	-11.9	32.7	74
1499.250000	43.8	100.0	V	263.0	53.9	-10.1	30.2	74
1624.750000	44.6	200.0	V	81.0	53.8	-9.2	29.4	74
1946.000000	45.4	100.0	V	192.0	52.3	-6.9	28.6	74
2998.750000	49.7	100.0	V	286.0	51.5	-1.8	24.3	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	35.4	101.0	H	12.0	48.0	-12.6	18.6	54
1271.000000	31.3	200.0	V	181.0	43.2	-11.9	22.7	54
1499.250000	33.7	100.0	V	263.0	43.8	-10.1	20.3	54
1624.750000	38.7	200.0	V	81.0	47.9	-9.2	15.3	54
1946.000000	36.9	100.0	V	192.0	43.8	-6.9	17.1	54
2998.750000	40.0	100.0	V	286.0	41.8	-1.8	14.0	54

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



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

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

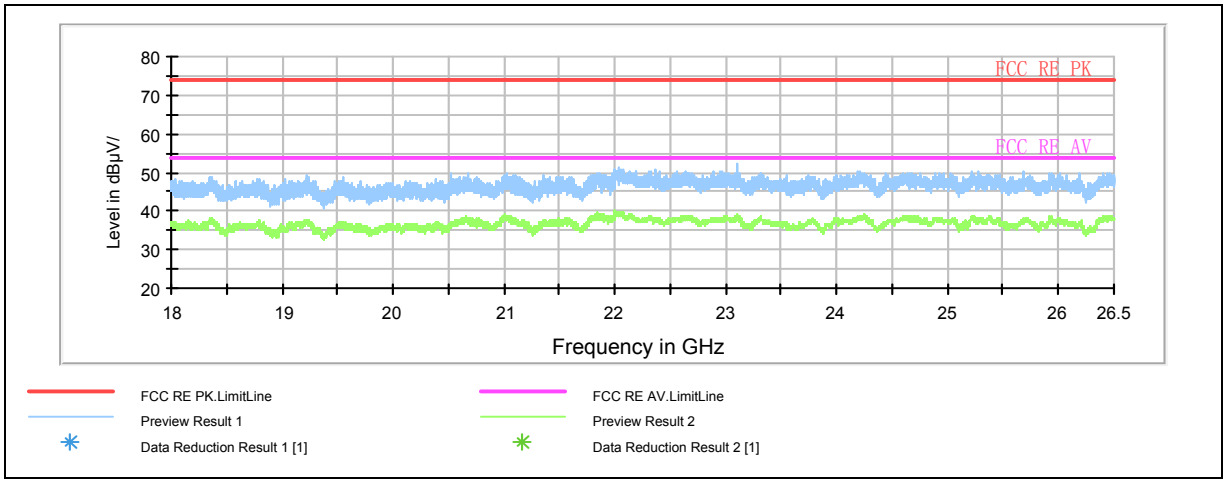
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3825.000000	41.7	100.0	H	0.0	41.8	-0.1	32.3	74
6901.875000	44.2	100.0	H	255.0	48.8	-4.6	29.8	74
9294.375000	46.4	100.0	H	211.0	54.9	-8.5	27.6	74
13344.375000	48.7	100.0	V	0.0	61.2	-12.5	25.3	74
17968.125000	58.9	100.0	V	0.0	82.3	-23.4	15.1	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3817.500000	30.0	100.0	H	228.0	30.2	-0.2	24.0	54
5409.375000	31.7	100.0	V	221.0	34.3	-2.6	22.3	54
9230.625000	34.9	100.0	H	113.0	43.7	-8.8	19.1	54
13192.500000	37.3	100.0	H	202.0	50.0	-12.7	16.7	54
17998.125000	47.3	100.0	V	0.0	70.8	-23.5	6.7	54

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

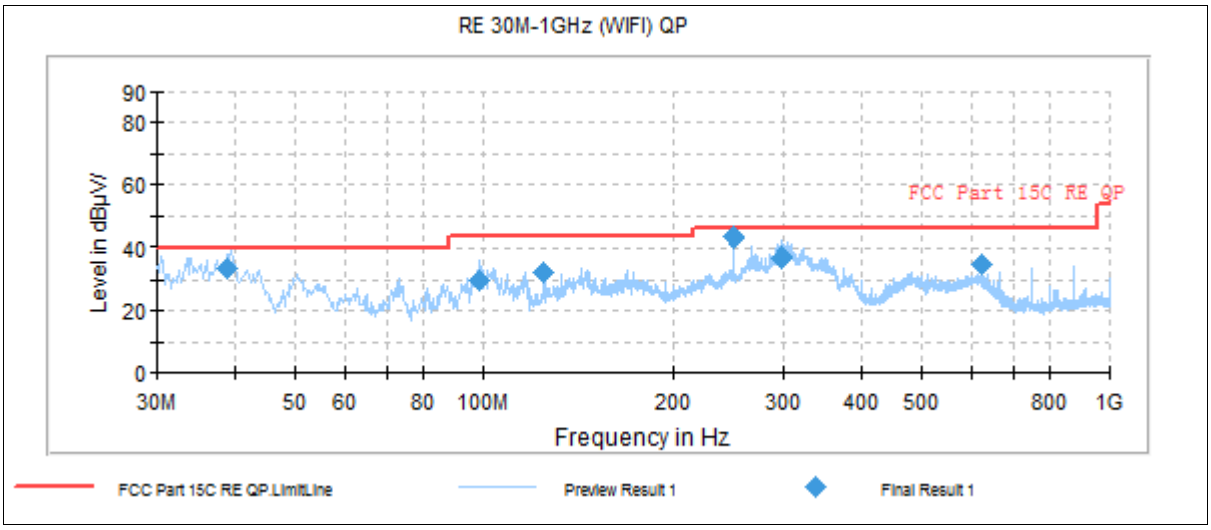


Note: This graph displays the maximum values of horizontal and vertical by software

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

Radiates Emission from 18GHz to 26.5GHz

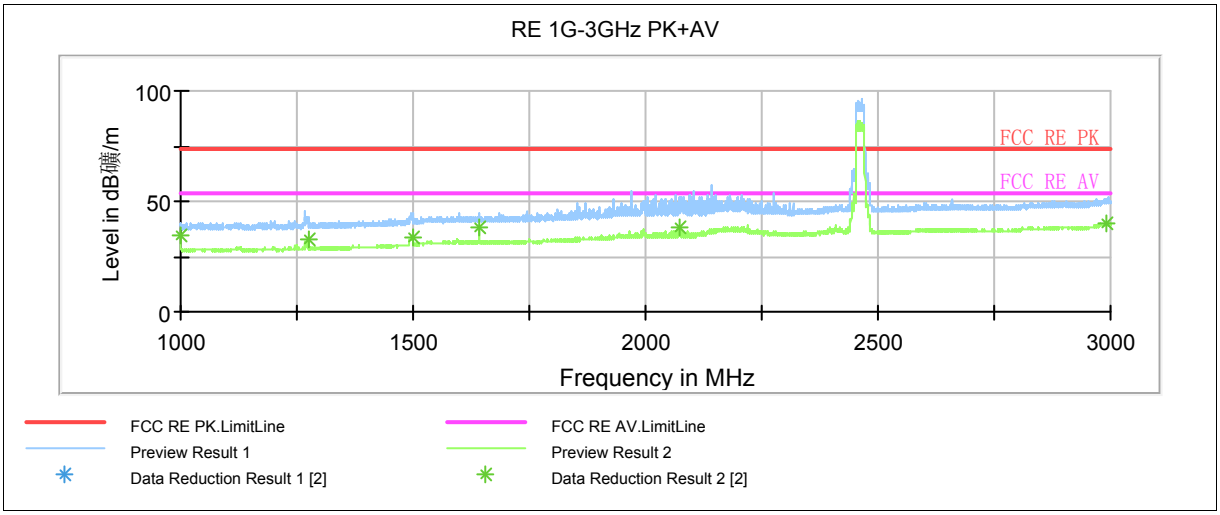
802.11g CH11



Note: This graph displays the maximum values of horizontal and vertical by software
Note: a font (Level in dBµV/m)in the test plot =(level in dBuv/m)
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
38.937500	33.5	100.0	V	77.0	57.6	-24.1	6.5	40.0
98.385000	29.5	200.0	H	55.0	57.5	-28.0	14.0	43.5
125.020000	32.3	100.0	V	290.0	63.8	-31.5	11.2	43.5
249.987500	43.3	100.0	H	84.0	71.4	-28.1	2.7	46.0
298.482500	36.7	100.0	H	13.0	63.9	-27.2	9.3	46.0
625.015000	34.8	100.0	V	34.0	55.3	-20.5	11.2	46.0

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



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

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

Note: The signal beyond the limit is carrier.

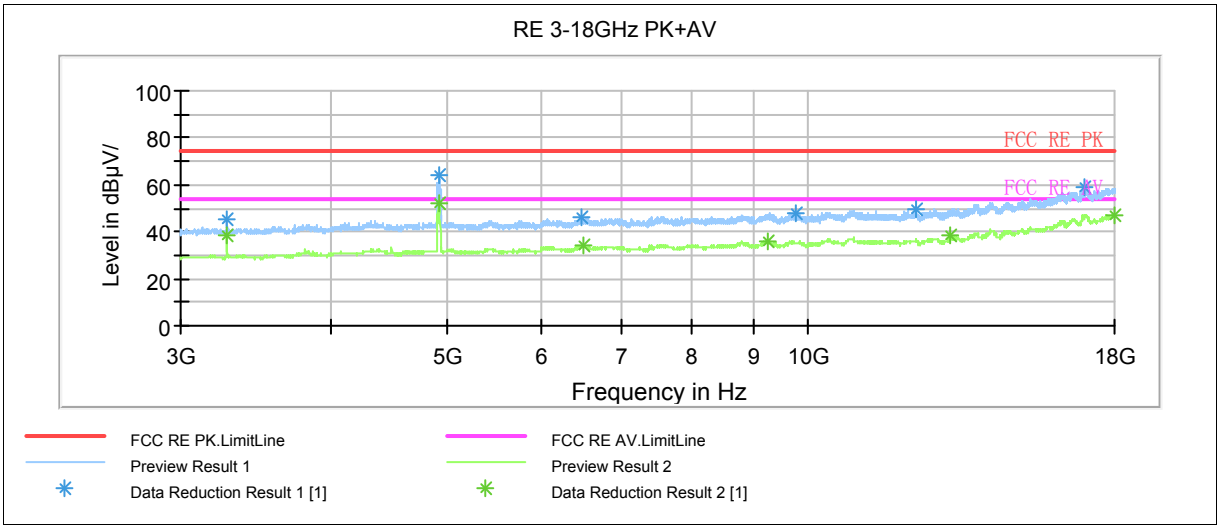
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	39.6	101.0	H	12.0	52.2	-12.6	34.4	74
1275.500000	38.9	101.0	V	144.0	50.7	-11.8	35.1	74
1498.750000	43.9	101.0	V	104.0	54.0	-10.1	30.1	74
1641.250000	44.5	200.0	V	8.0	53.7	-9.2	29.5	74
2072.500000	50.7	101.0	V	0.0	56.9	-6.2	23.3	74
2990.500000	49.1	200.0	H	123.0	50.9	-1.8	24.9	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	34.6	101.0	H	12.0	47.2	-12.6	19.4	54
1275.500000	32.5	101.0	V	144.0	44.3	-11.8	21.5	54
1498.750000	34.0	101.0	V	104.0	44.1	-10.1	20.0	54
1641.250000	38.6	200.0	V	8.0	47.8	-9.2	15.4	54
2072.500000	38.5	101.0	V	0.0	44.7	-6.2	15.5	54
2990.500000	40.1	200.0	H	123.0	41.9	-1.8	13.9	54

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



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

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

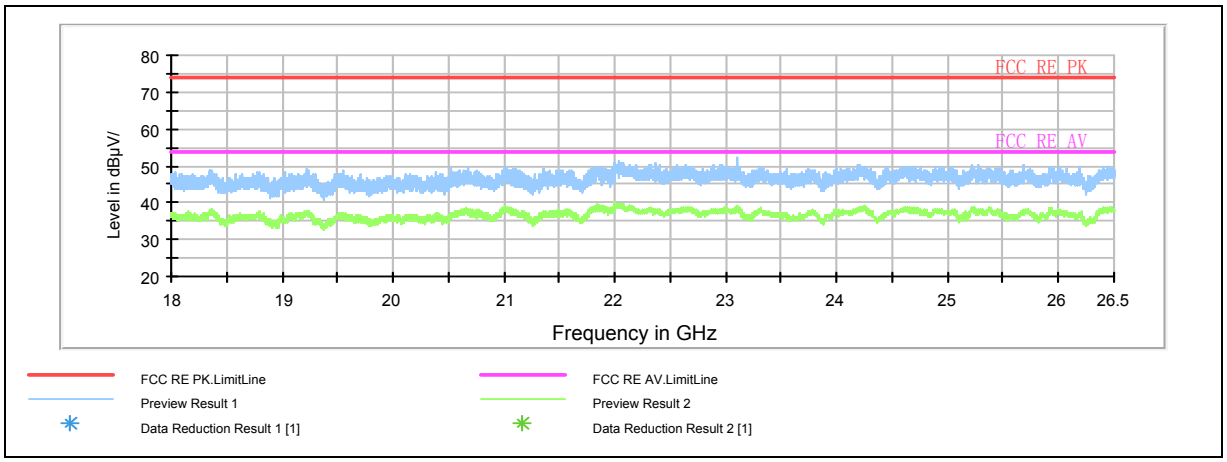
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3281.250000	44.9	99.0	V	160.0	47.2	-2.3	29.1	74
4925.625000	64.1	99.0	V	0.0	66.0	-1.9	9.9	74
6472.500000	45.9	99.0	V	0.0	50.6	-4.7	28.1	74
9766.875000	47.6	99.0	V	0.0	56.5	-8.9	26.4	74
12303.750000	49.9	99.0	V	347.0	61.4	-11.5	24.1	74
17015.625000	58.8	99.0	H	190.0	80.6	-21.8	15.2	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3281.250000	38.1	99.0	V	160.0	40.4	-2.3	15.9	54
4923.750000	52.0	99.0	V	253.0	53.9	-1.9	2.0	54
6502.500000	33.8	99.0	H	0.0	38.4	-4.6	20.2	54
9255.000000	36.0	99.0	H	225.0	44.7	-8.7	18.0	54
13130.625000	38.1	99.0	V	277.0	50.9	-12.8	15.9	54
18000.000000	47.1	99.0	H	0.0	70.6	-23.5	6.9	54

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

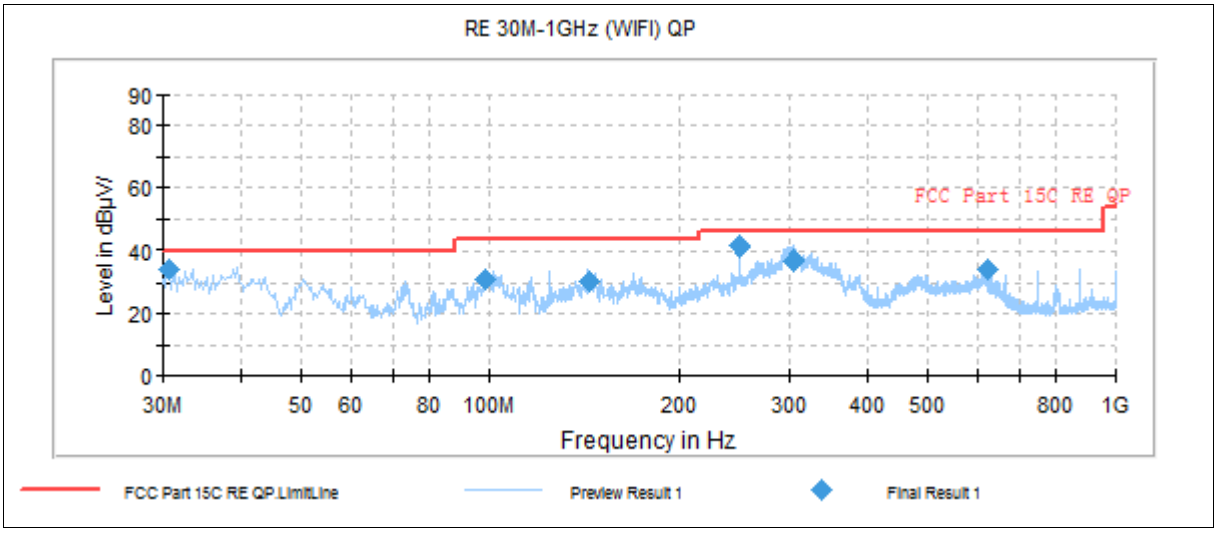


Note: This graph displays the maximum values of horizontal and vertical by software

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

Radiates Emission from 18GHz to 26.5GHz

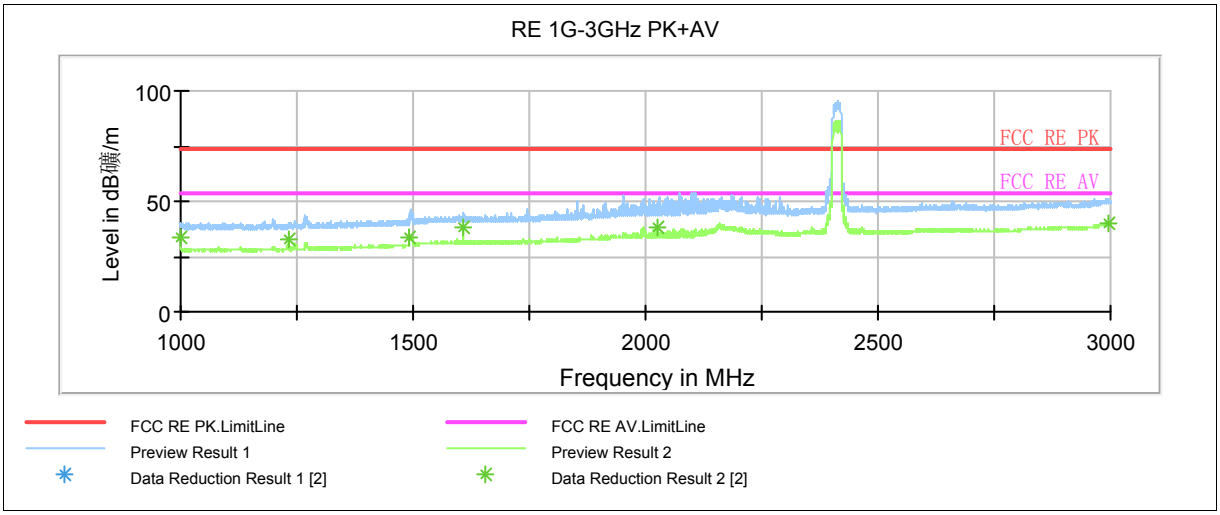
802.11n(HT20) CH1



Note: This graph displays the maximum values of horizontal and vertical by software
Note: a font (Level in dBµV/m)in the test plot =(level in dBuv/m)
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
30.600000	34.6	100.0	V	52.0	58.5	-23.9	5.4	40.0
98.505000	31.2	200.0	H	213.0	59.1	-27.9	12.3	43.5
143.247500	30.3	100.0	V	23.0	63.1	-32.8	13.2	43.5
249.987500	41.4	121.0	H	84.0	69.5	-28.1	4.6	46.0
305.157500	36.7	100.0	H	0.0	63.6	-26.9	9.3	46.0
625.015000	34.2	100.0	V	0.0	54.7	-20.5	11.8	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



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

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

Note: The signal beyond the limit is carrier.

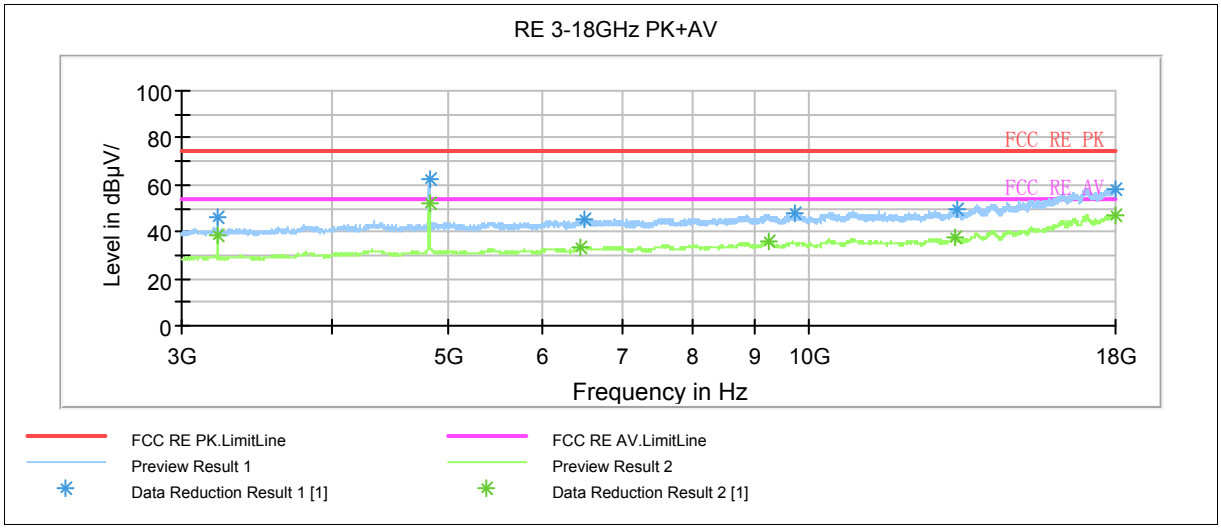
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1000.250000	40.1	100.0	H	8.0	52.7	-12.6	33.9	74
1231.000000	38.5	100.0	H	98.0	50.5	-12.0	35.5	74
1493.500000	43.8	101.0	V	264.0	54.0	-10.2	30.2	74
1607.750000	44.0	200.0	V	88.0	53.1	-9.1	30.0	74
2025.000000	48.3	101.0	V	120.0	54.7	-6.4	25.7	74
2996.000000	48.7	200.0	H	121.0	50.5	-1.8	25.3	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1000.250000	34.0	100.0	H	8.0	46.6	-12.6	20.0	54
1231.000000	32.7	100.0	H	98.0	44.7	-12.0	21.3	54
1493.500000	34.0	101.0	V	264.0	44.2	-10.2	20.0	54
1607.750000	38.0	200.0	V	88.0	47.1	-9.1	16.0	54
2025.000000	38.4	101.0	V	120.0	44.8	-6.4	15.6	54
2996.000000	39.8	200.0	H	121.0	41.6	-1.8	14.2	54

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



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

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

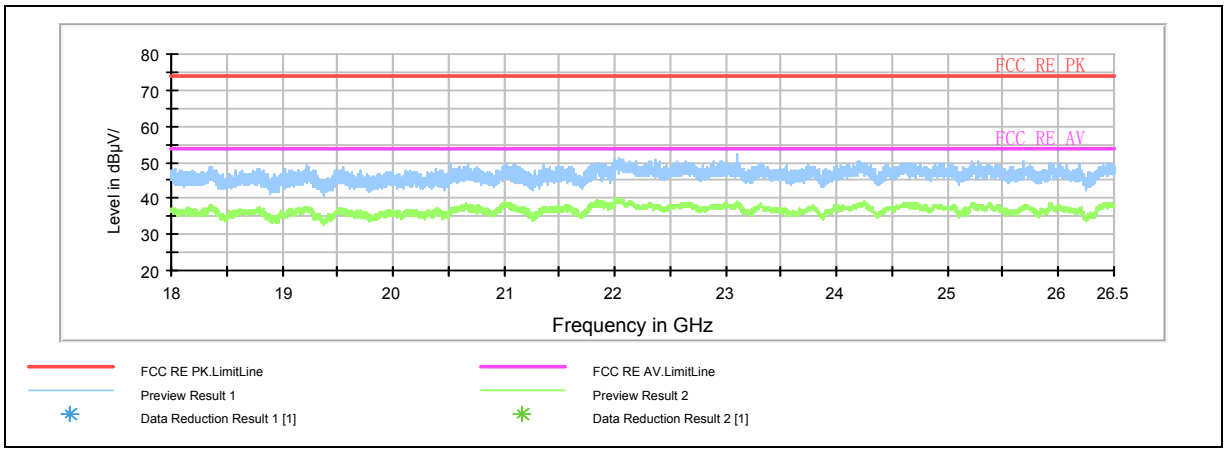
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3215.625000	45.7	100.0	V	0.0	48.4	-2.7	28.3	74
4824.375000	62.5	100.0	V	273.0	64.4	-1.9	11.5	74
6504.375000	45.1	100.0	H	189.0	49.7	-4.6	28.9	74
9729.375000	47.5	100.0	V	38.0	56.2	-8.7	26.5	74
13291.875000	49.4	100.0	V	0.0	62.1	-12.7	24.6	74
17986.875000	58.4	100.0	V	250.0	81.9	-23.5	15.6	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3215.625000	38.6	100.0	V	0.0	41.3	-2.7	15.4	54
4824.375000	52.5	100.0	V	273.0	54.4	-1.9	1.5	54
6446.250000	33.6	100.0	V	0.0	38.1	-4.5	20.4	54
9240.000000	35.6	100.0	H	348.0	44.4	-8.8	18.4	54
13222.500000	37.3	100.0	H	108.0	50.0	-12.7	16.7	54
17998.125000	47.0	100.0	H	62.0	70.5	-23.5	7.0	54

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

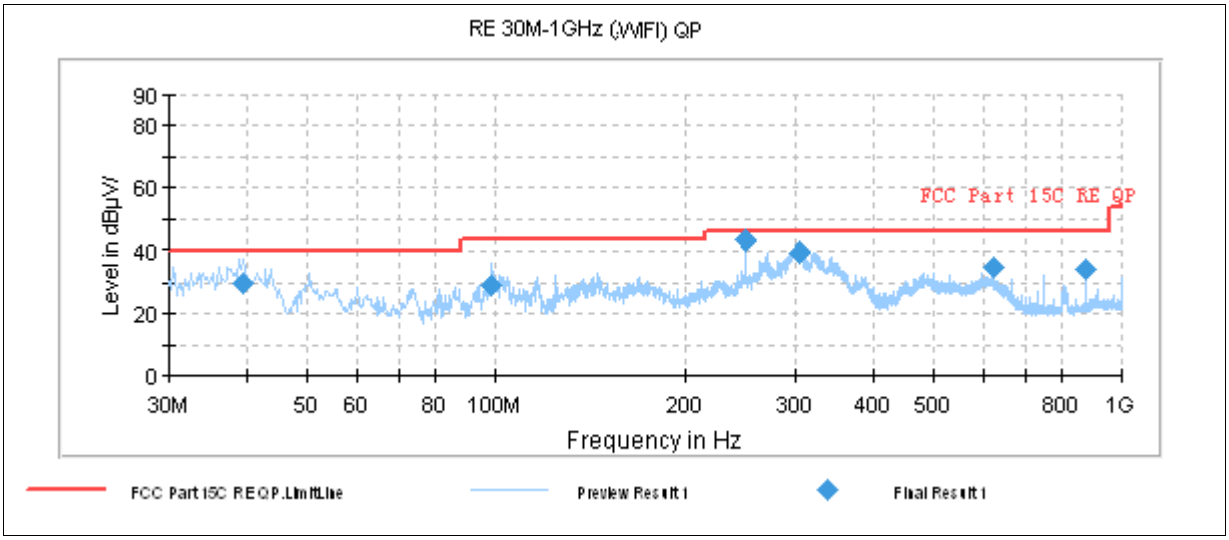


Note: This graph displays the maximum values of horizontal and vertical by software

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

Radiates Emission from 18GHz to 26.5GHz

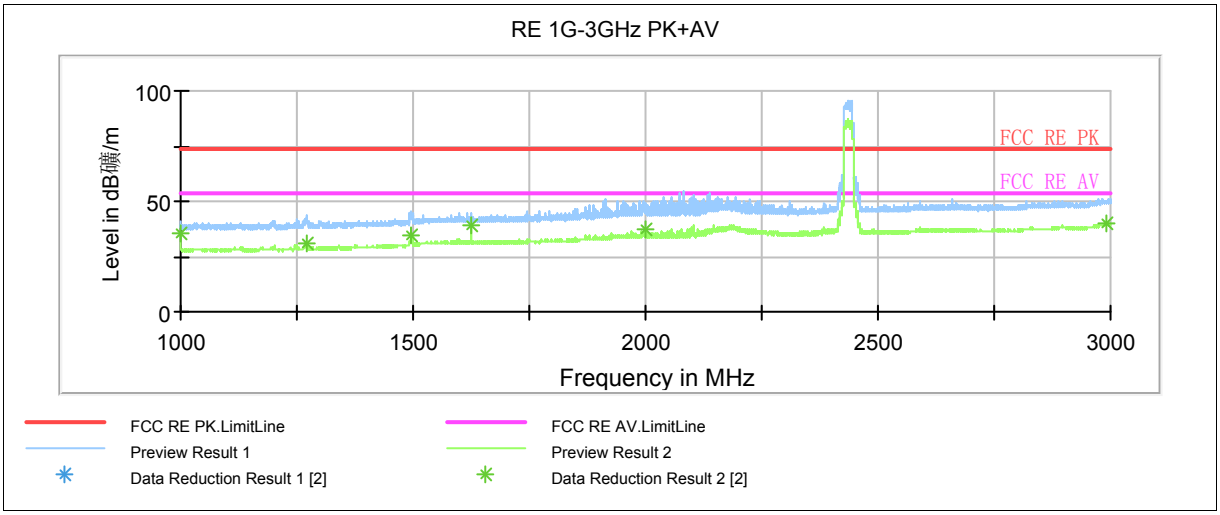
802.11n(HT20) CH6



Note: This graph displays the maximum values of horizontal and vertical by software
Note: a font (Level in dB碼/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)
39.457500	29.9	125.0	V	146.0	54.0	-24.1	10.1	40.0
98.505000	29.0	220.0	H	194.0	56.9	-27.9	14.5	43.5
249.987500	43.7	100.0	H	80.0	71.8	-28.1	2.3	46.0
305.117500	39.2	120.0	H	355.0	66.1	-26.9	6.8	46.0
625.015000	35.1	100.0	V	22.0	55.6	-20.5	10.9	46.0
874.992500	34.4	100.0	H	48.0	51.4	-17.0	11.6	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



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

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

Note: The signal beyond the limit is carrier.

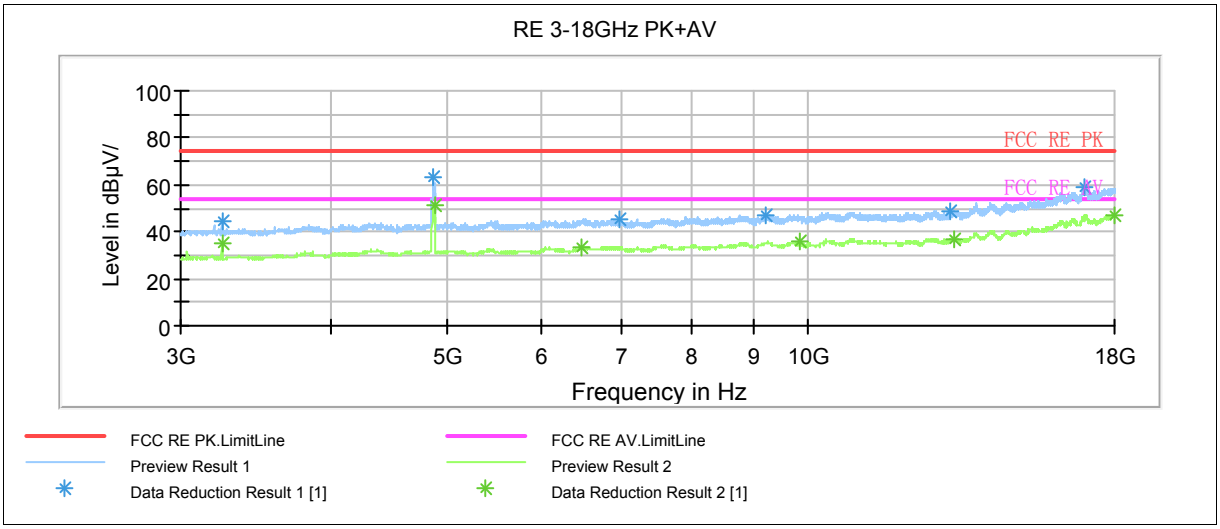
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1000.250000	41.1	100.0	H	18.0	53.7	-12.6	32.9	74
1270.500000	41.7	200.0	V	183.0	53.6	-11.9	32.3	74
1494.750000	43.0	100.0	V	102.0	53.1	-10.1	31.0	74
1624.750000	44.1	200.0	V	84.0	53.3	-9.2	29.9	74
2000.500000	47.9	100.0	V	94.0	54.3	-6.4	26.1	74
2992.750000	48.9	100.0	H	86.0	50.7	-1.8	25.1	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1000.250000	35.4	100.0	H	18.0	48.0	-12.6	18.6	54
1270.500000	31.1	200.0	V	183.0	43.0	-11.9	22.9	54
1494.750000	34.1	100.0	V	102.0	44.2	-10.1	19.9	54
1624.750000	38.8	200.0	V	84.0	48.0	-9.2	15.2	54
2000.500000	37.3	100.0	V	94.0	43.7	-6.4	16.7	54
2992.750000	39.9	100.0	H	86.0	41.7	-1.8	14.1	54

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



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

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

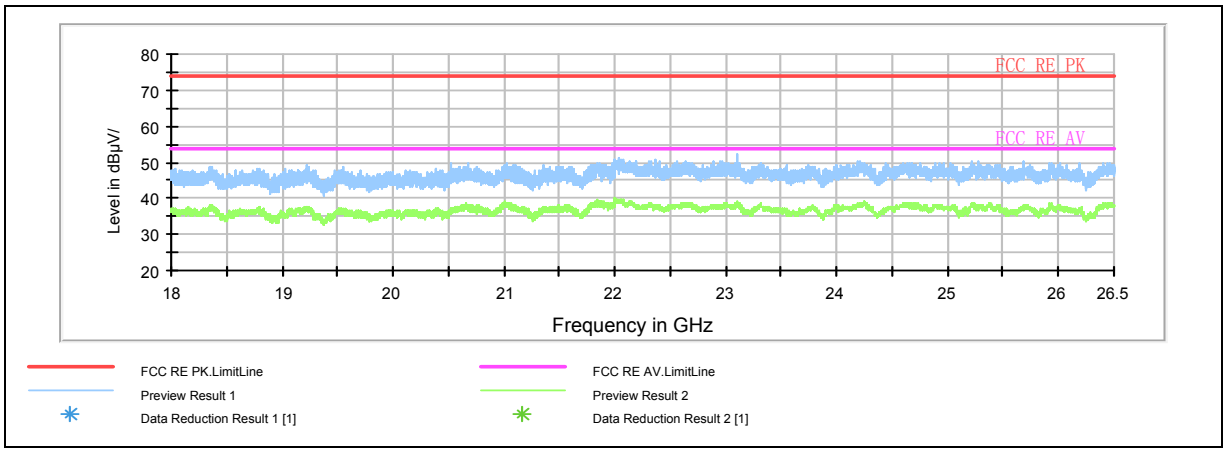
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3247.500000	44.7	100.0	V	24.0	47.1	-2.4	29.3	74
4869.375000	63.2	100.0	V	275.0	65.1	-1.9	10.8	74
6960.000000	45.5	100.0	V	86.0	50.2	-4.7	28.5	74
9215.625000	47.1	100.0	V	0.0	56.9	-9.8	26.9	74
13156.875000	48.8	100.0	H	0.0	61.5	-12.7	25.2	74
17002.500000	58.6	100.0	V	321.0	82.1	-23.5	15.4	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3247.500000	35.0	100.0	V	24.0	37.4	-2.4	19.0	54
4869.375000	51.1	100.0	V	275.0	53.0	-1.9	2.9	54
6960.000000	33.5	100.0	V	86.0	38.2	-4.7	20.5	54
9215.625000	35.7	100.0	V	0.0	45.5	-9.8	18.3	54
13156.875000	37.0	100.0	H	0.0	49.7	-12.7	17.0	54
17002.500000	47.0	100.0	V	321.0	70.5	-23.5	7.0	54

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

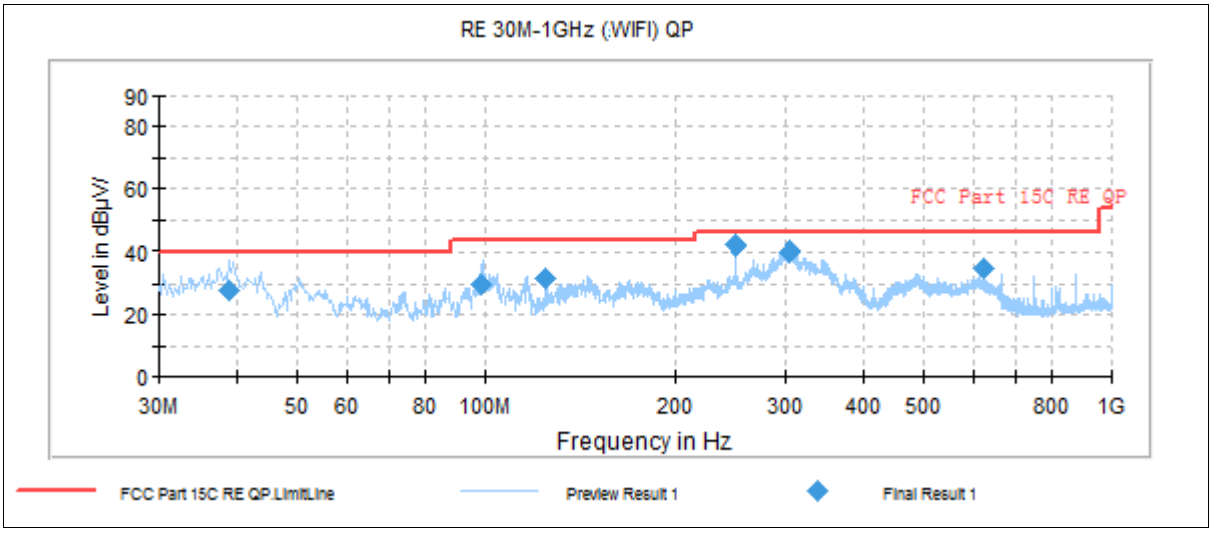


Note: This graph displays the maximum values of horizontal and vertical by software

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

Radiates Emission from 18GHz to 26.5GHz

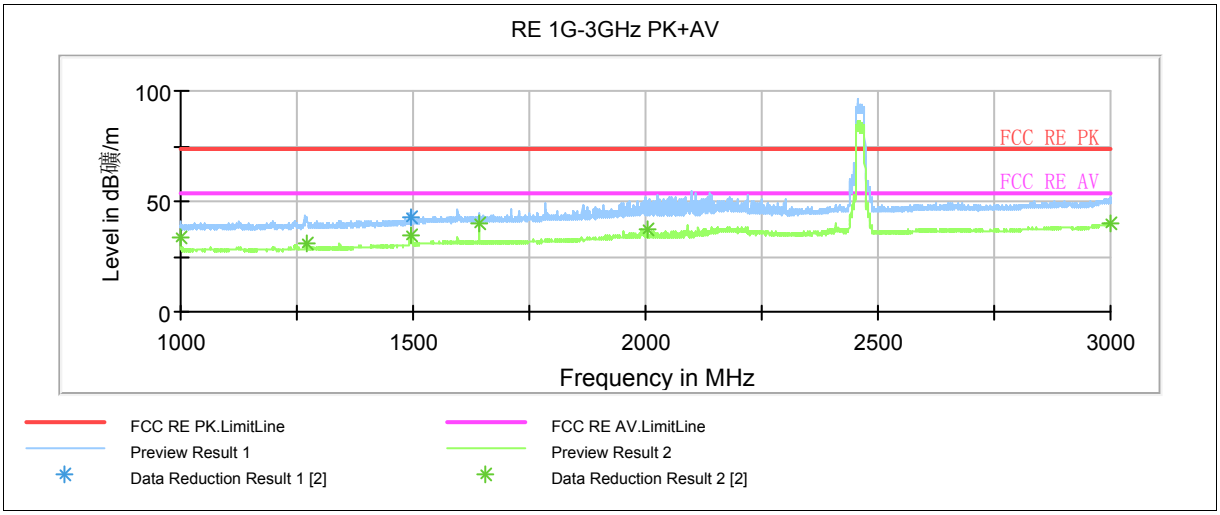
802.11n(HT20) CH11



Note: This graph displays the maximum values of horizontal and vertical by software
Note: a font (Level in dBµV/m)in the test plot =(level in dBuv/m)
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
38.970000	27.6	125.0	V	76.0	51.7	-24.1	12.4	40.0
98.510000	29.6	225.0	H	230.0	57.5	-27.9	13.9	43.5
125.020000	31.9	100.0	V	298.0	63.4	-31.5	11.6	43.5
249.987500	42.1	121.0	H	89.0	70.2	-28.1	3.9	46.0
305.197500	39.8	120.0	H	347.0	66.7	-26.9	6.2	46.0
625.015000	35.1	120.0	V	191.0	55.6	-20.5	10.9	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



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

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

Note: The signal beyond the limit is carrier.

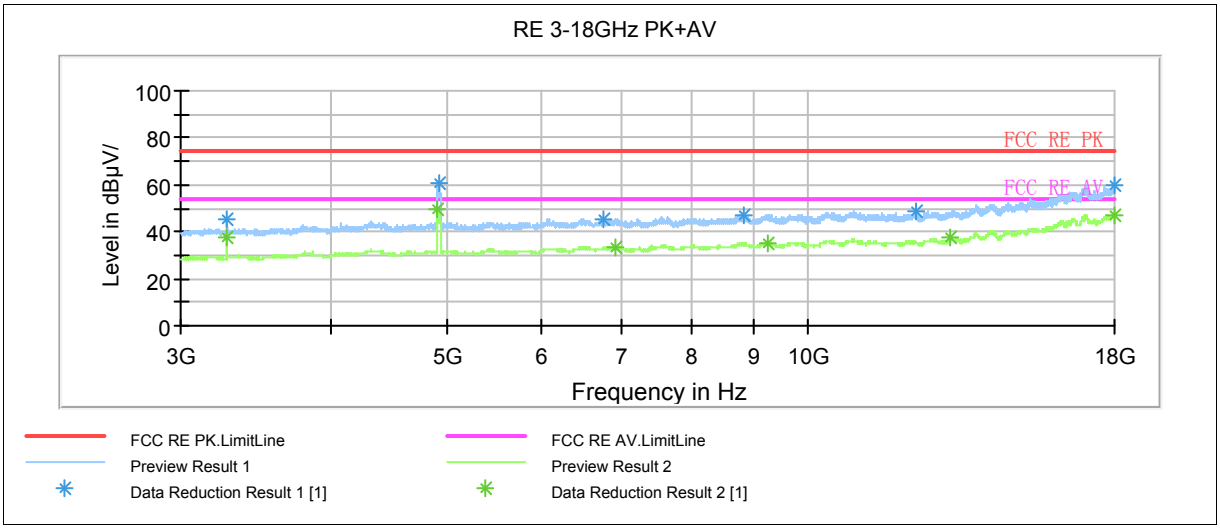
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	40.5	97.0	H	16.0	53.1	-12.6	33.5	74
1270.000000	40.7	200.0	V	155.0	52.6	-11.9	33.3	74
1496.500000	42.5	100.0	V	264.0	52.6	-10.1	31.5	74
1641.250000	44.6	200.0	V	95.0	53.8	-9.2	29.4	74
2002.750000	46.4	100.0	V	94.0	52.8	-6.4	27.6	74
2999.250000	49.3	200.0	H	261.0	51.1	-1.8	24.7	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	34.0	97.0	H	16.0	46.6	-12.6	20.0	54
1270.000000	31.3	200.0	V	155.0	43.2	-11.9	22.7	54
1496.500000	34.3	100.0	V	264.0	44.4	-10.1	19.7	54
1641.250000	39.6	200.0	V	95.0	48.8	-9.2	14.4	54
2002.750000	37.0	100.0	V	94.0	43.4	-6.4	17.0	54
2999.250000	39.9	200.0	H	261.0	41.7	-1.8	14.1	54

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



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

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

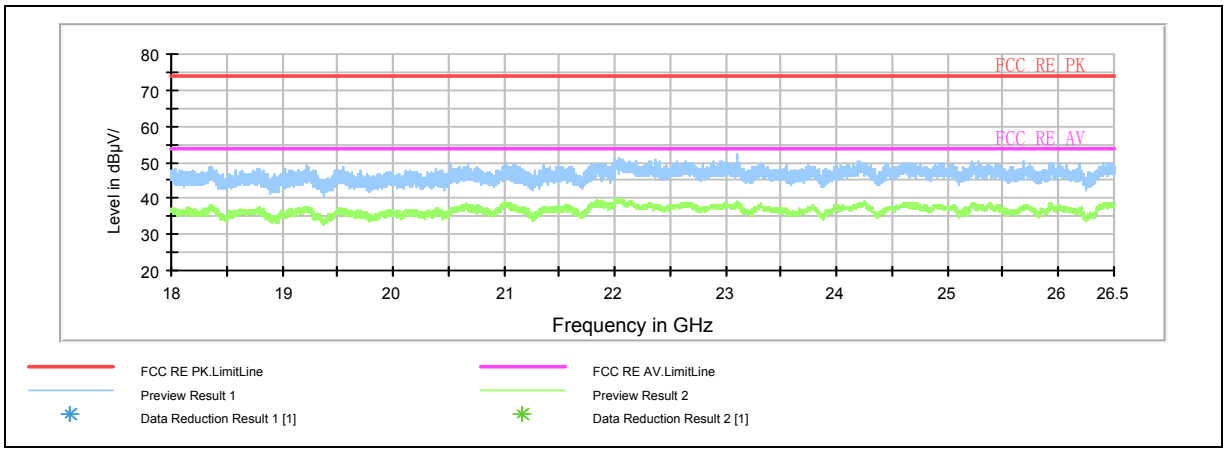
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3281.250000	45.0	100.0	V	0.0	47.3	-2.3	29.0	74
4920.000000	61.1	100.0	V	264.0	63.0	-1.9	12.9	74
6740.625000	45.3	100.0	V	322.0	49.7	-4.4	28.7	74
8838.750000	47.1	100.0	H	0.0	55.2	-8.1	26.9	74
12311.250000	48.8	100.0	V	345.0	60.2	-11.4	25.2	74
17992.500000	59.5	100.0	H	122.0	83.0	-23.5	14.5	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3281.250000	37.5	100.0	V	0.0	39.8	-2.3	16.5	54
4916.250000	49.5	100.0	V	264.0	51.4	-1.9	4.5	54
6913.125000	33.5	100.0	V	195.0	37.9	-4.4	20.5	54
9249.375000	35.4	100.0	H	180.0	43.5	-8.1	18.6	54
13130.625000	37.6	100.0	V	334.0	49.0	-11.4	16.4	54
17981.250000	47.4	100.0	V	0.0	70.9	-23.5	6.6	54

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

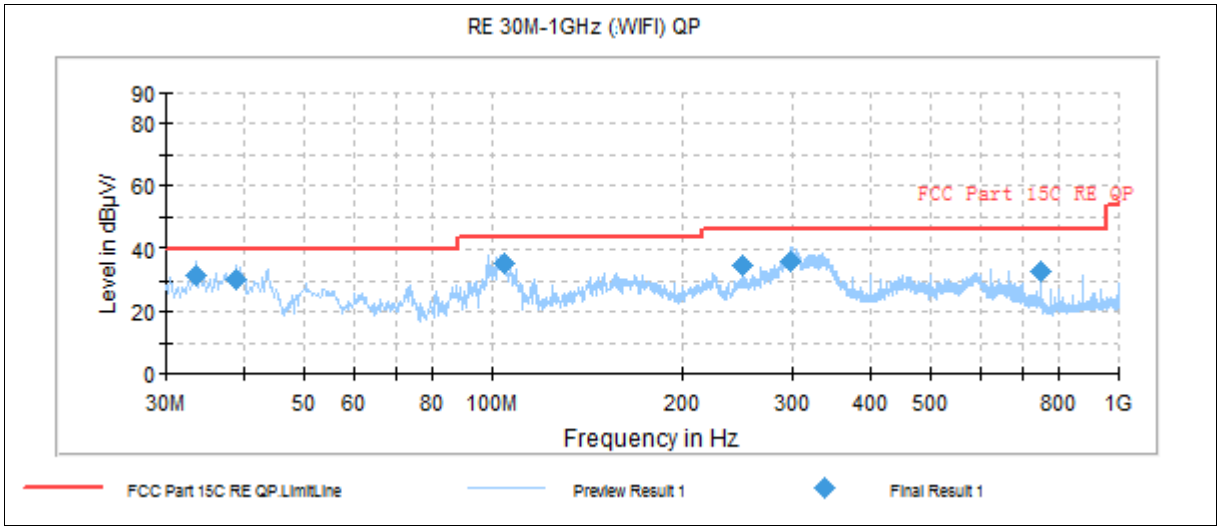


Note: This graph displays the maximum values of horizontal and vertical by software

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

Radiates Emission from 18GHz to 26.5GHz

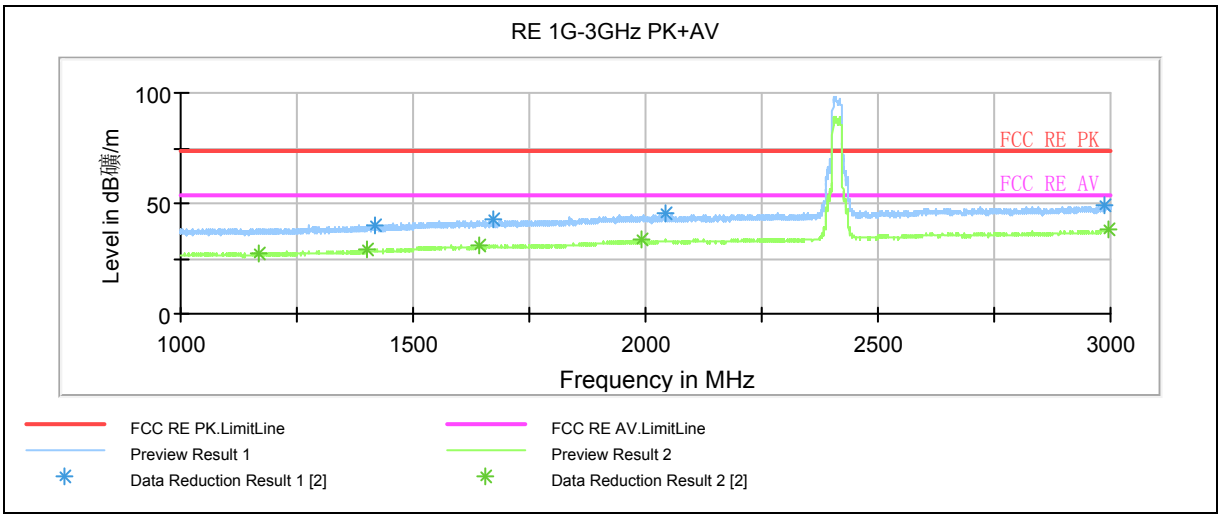
802.11n(HT40) CH3



Note: This graph displays the maximum values of horizontal and vertical by software
Note: a font (Level in dBµV/m)in the test plot =(level in dBuv/m)
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
33.435000	31.9	100.0	V	48.0	56.2	-24.3	8.1	40.0
38.930000	30.7	209.0	V	45.0	54.8	-24.1	9.3	40.0
104.730000	35.7	225.0	H	235.0	64.0	-28.3	7.8	43.5
249.987500	34.8	100.0	H	356.0	62.9	-28.1	11.2	46.0
298.447500	36.0	120.0	H	315.0	63.2	-27.2	10.0	46.0
750.022500	33.2	195.0	H	283.0	52.1	-18.9	12.8	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



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

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

Note: The signal beyond the limit is carrier.

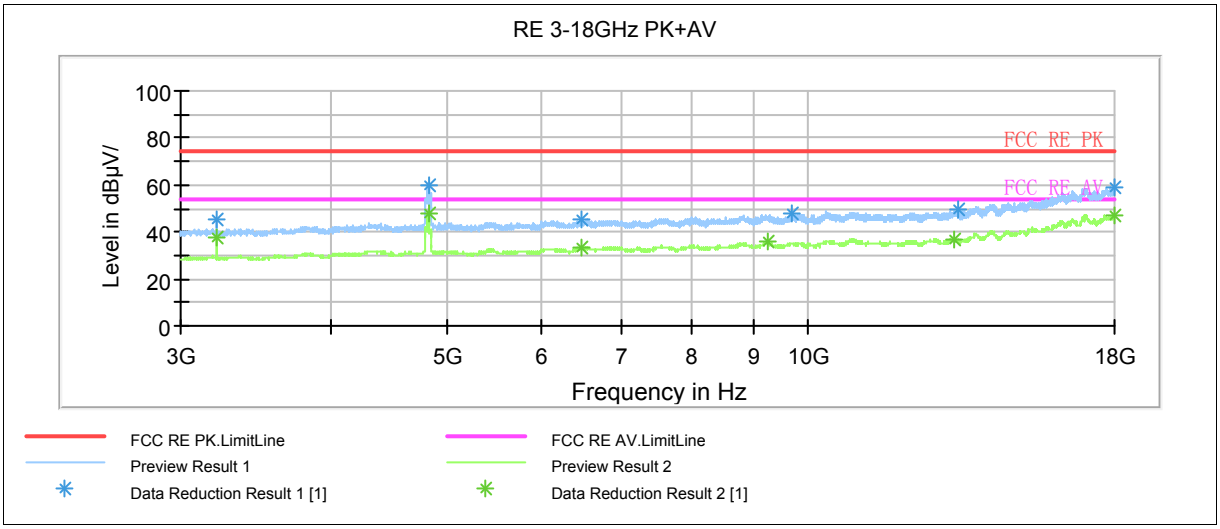
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1417.750000	40.0	100.0	V	82.0	48.2	-8.2	34.0	74
1674.500000	42.5	100.0	V	158.0	48.1	-5.6	31.5	74
2043.250000	45.4	100.0	V	247.0	48.4	-3	28.6	74
2989.000000	49.3	100.0	H	222.0	50.7	-1.4	24.7	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1168.750000	27.3	100.0	H	17.0	36.8	-9.5	26.7	54
1399.000000	28.9	100.0	V	263.0	37.3	-8.4	25.1	54
1644.250000	30.8	100.0	H	143.0	36.1	-5.3	23.2	54
1990.750000	33.4	100.0	H	0.0	36.4	-3	20.6	54
2994.250000	37.8	100.0	V	120.0	39.2	-1.4	16.2	54

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



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

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

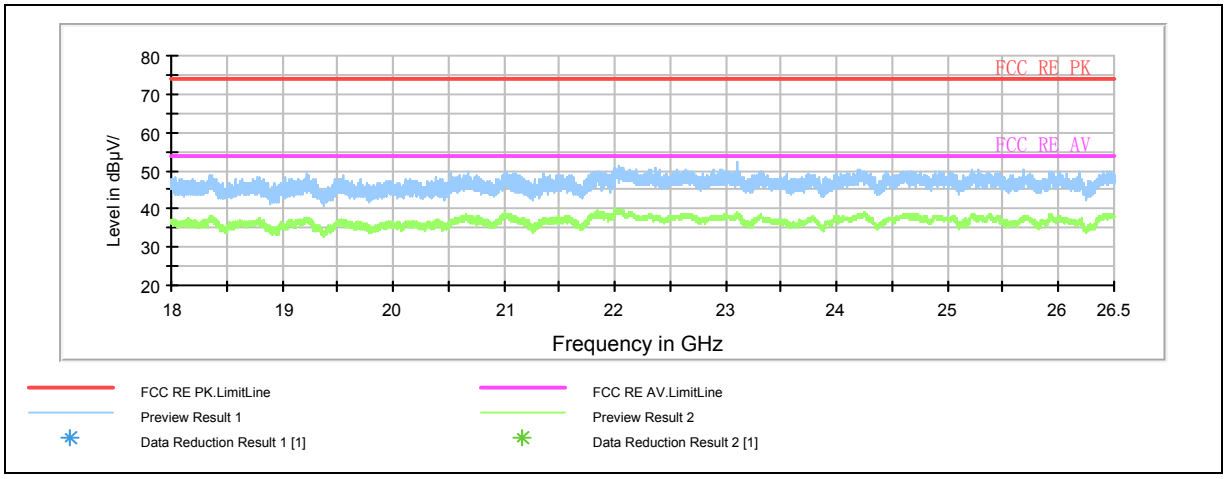
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3215.625000	45.5	100.0	V	0.0	48.2	-2.7	28.5	74
4826.250000	60.2	100.0	V	277.0	62.1	-1.9	13.8	74
6466.875000	45.1	100.0	V	63.0	49.8	-4.7	28.9	74
9697.500000	47.7	100.0	V	0.0	56.4	-8.7	26.3	74
13335.000000	49.2	100.0	H	180.0	61.9	-12.7	24.8	74
17968.125000	58.9	100.0	H	132.0	82.4	-23.5	15.1	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3215.625000	37.9	100.0	V	0.0	40.6	-2.7	16.1	54
4826.250000	48.1	100.0	V	277.0	50.0	-1.9	5.9	54
6466.875000	33.3	100.0	V	63.0	38.0	-4.7	20.7	54
9697.500000	35.5	100.0	V	0.0	44.2	-8.7	18.5	54
13335.000000	37.1	100.0	H	180.0	49.8	-12.7	16.9	54
17968.125000	47.1	100.0	H	132.0	70.6	-23.5	6.9	54

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



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

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

Radiates Emission from 18GHz to 26.5GHz

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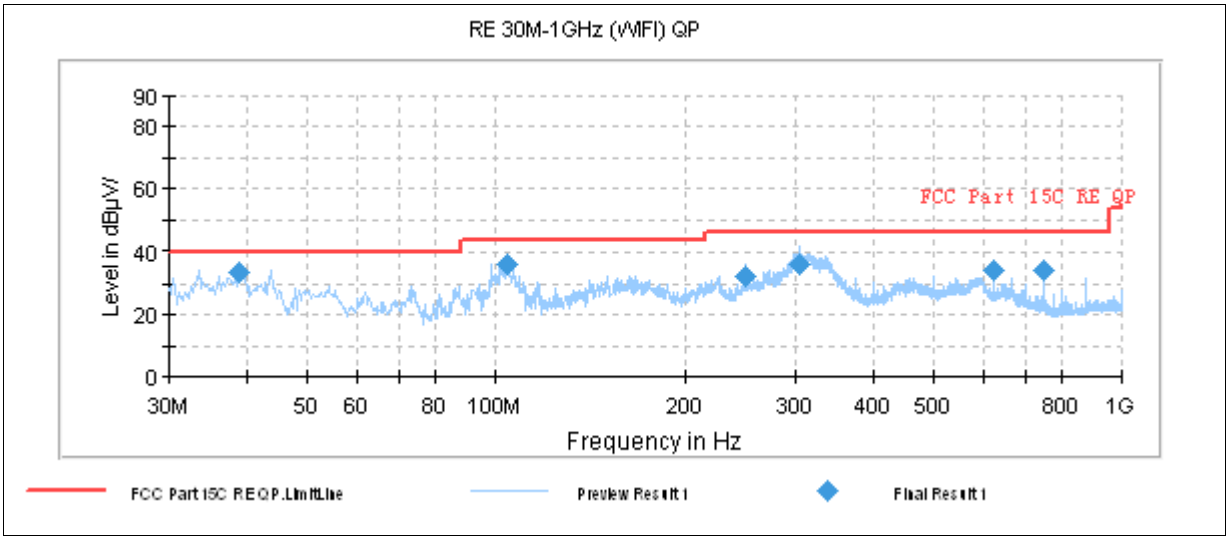


Note: This graph displays the maximum values of horizontal and vertical by software

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

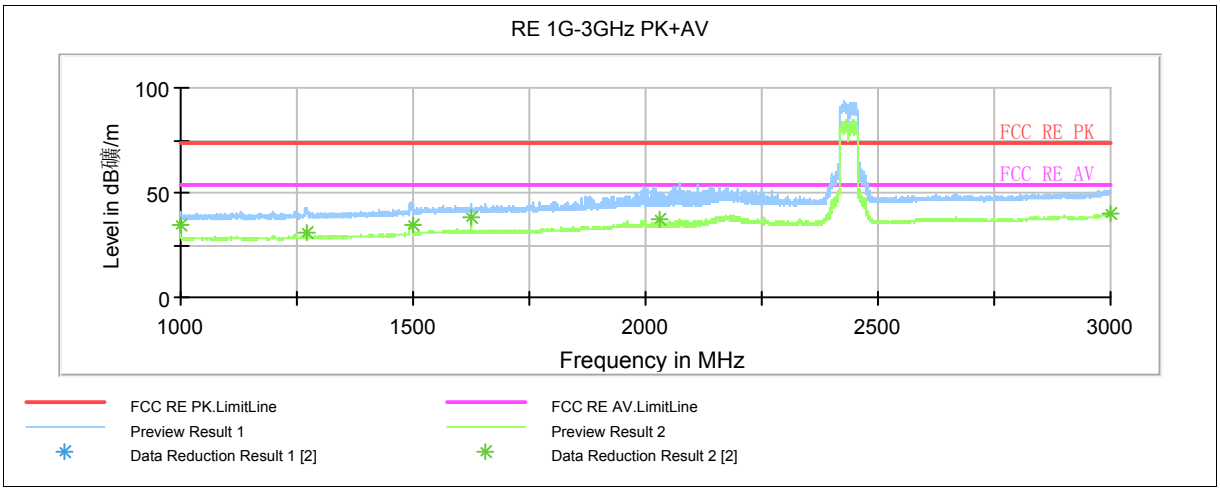
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
38.930000	33.4	100.0	V	75.0	57.5	-24.1	6.6	40.0
104.730000	36.5	225.0	H	221.0	64.8	-28.3	7.0	43.5
249.987500	32.6	100.0	H	0.0	60.7	-28.1	13.4	46.0
305.475000	36.1	100.0	H	338.0	63	-26.9	9.9	46.0
625.015000	34.2	100.0	V	190.0	54.7	-20.5	11.8	46.0
750.022500	34.5	209.0	H	281.0	53.4	-18.9	11.5	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



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

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

Note: The signal beyond the limit is carrier.

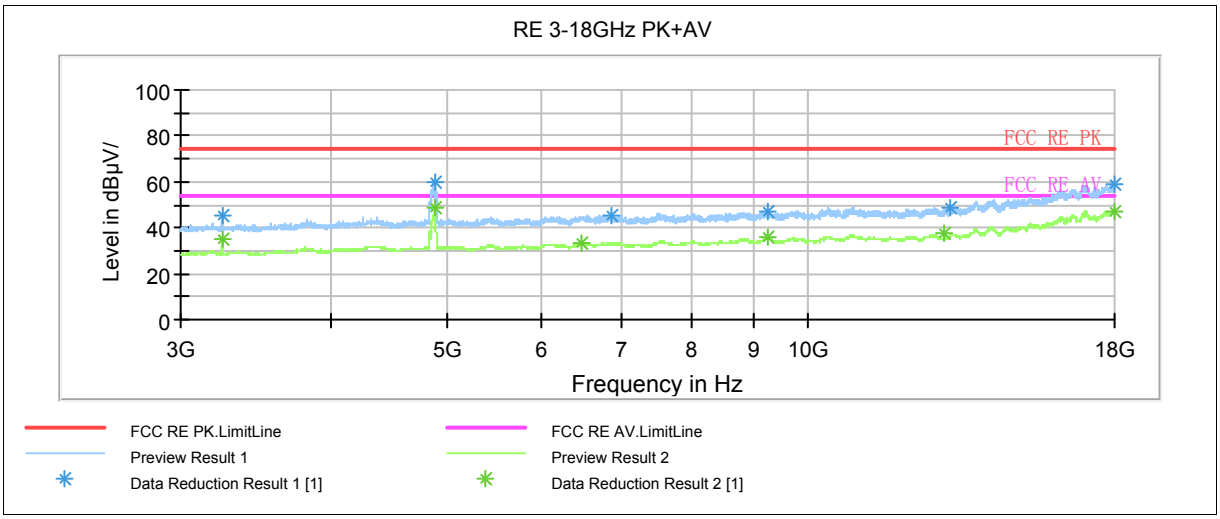
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	41.0	101.0	H	5.0	53.6	-12.6	33.0	74
1270.500000	41.8	200.0	V	177.0	53.7	-11.9	32.2	74
1498.500000	42.3	101.0	V	259.0	52.4	-10.1	31.7	74
1624.750000	44.6	200.0	V	240.0	53.8	-9.2	29.4	74
2029.250000	47.0	101.0	V	212.0	53.4	-6.4	27.0	74
3000.000000	48.9	101.0	H	79.0	50.7	-1.8	25.1	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	35.0	101.0	H	5.0	47.6	-12.6	19.0	54
1270.500000	30.9	200.0	V	177.0	42.8	-11.9	23.1	54
1498.500000	34.1	101.0	V	259.0	44.2	-10.1	19.9	54
1624.750000	38.5	200.0	V	240.0	47.7	-9.2	15.5	54
2029.250000	37.7	101.0	V	212.0	44.1	-6.4	16.3	54
3000.000000	39.9	101.0	H	79.0	41.7	-1.8	14.1	54

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



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

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

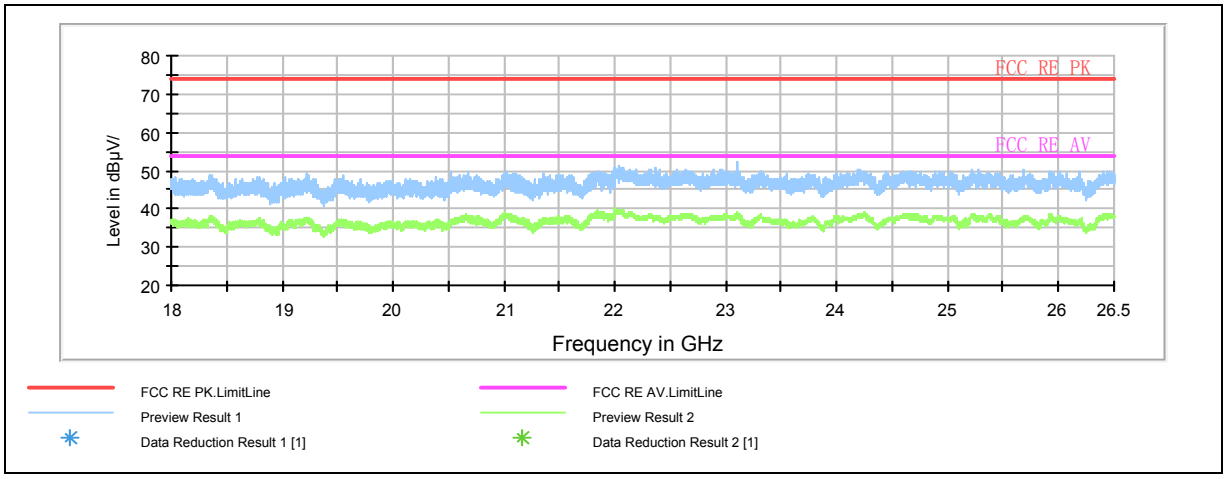
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3247.500000	45.0	100.0	V	0.0	47.3	-2.3	29.0	74
4880.625000	59.6	100.0	V	274.0	61.5	-1.9	14.4	74
6849.375000	45.1	100.0	V	0.0	49.6	-4.5	28.9	74
9255.000000	46.9	100.0	V	240.0	55.6	-8.7	27.1	74
13151.250000	49.1	100.0	H	17.0	61.8	-12.7	24.9	74
17994.375000	58.8	100.0	V	308.0	82.3	-23.5	15.2	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3247.500000	34.8	100.0	V	0.0	37.1	-2.3	19.2	54
4880.625000	48.8	100.0	V	274.0	50.7	-1.9	5.2	54
6849.375000	33.4	100.0	H	63.0	38.1	-4.7	20.6	54
9255.000000	35.6	100.0	H	336.0	44.4	-8.8	18.4	54
13151.250000	37.3	100.0	V	251.0	49.0	-11.7	16.7	54
17994.375000	47.1	100.0	V	240.0	70.6	-23.5	6.9	54

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



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

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

Radiates Emission from 18GHz to 26.5GHz

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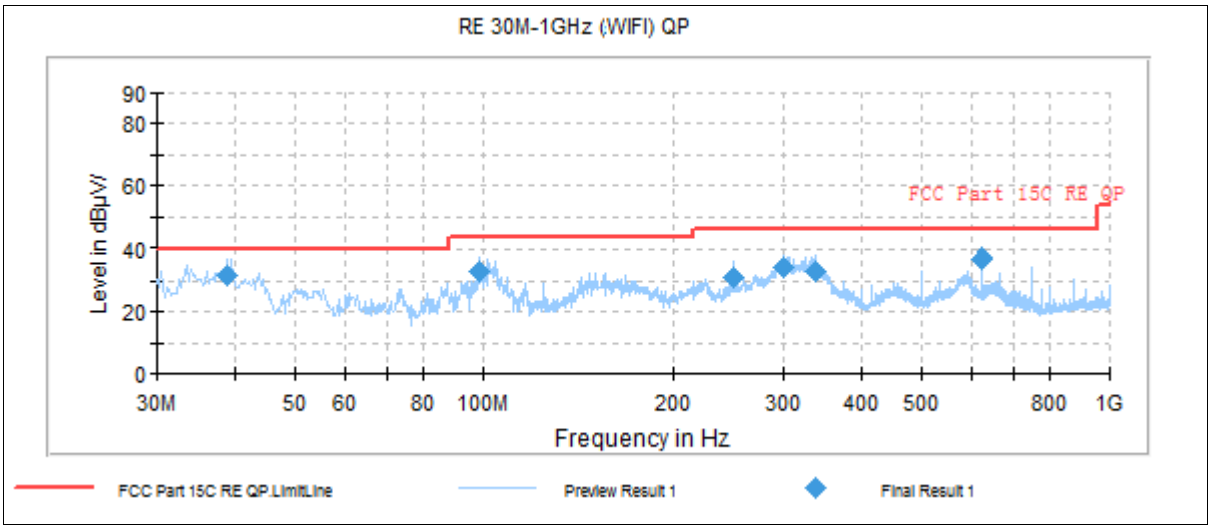
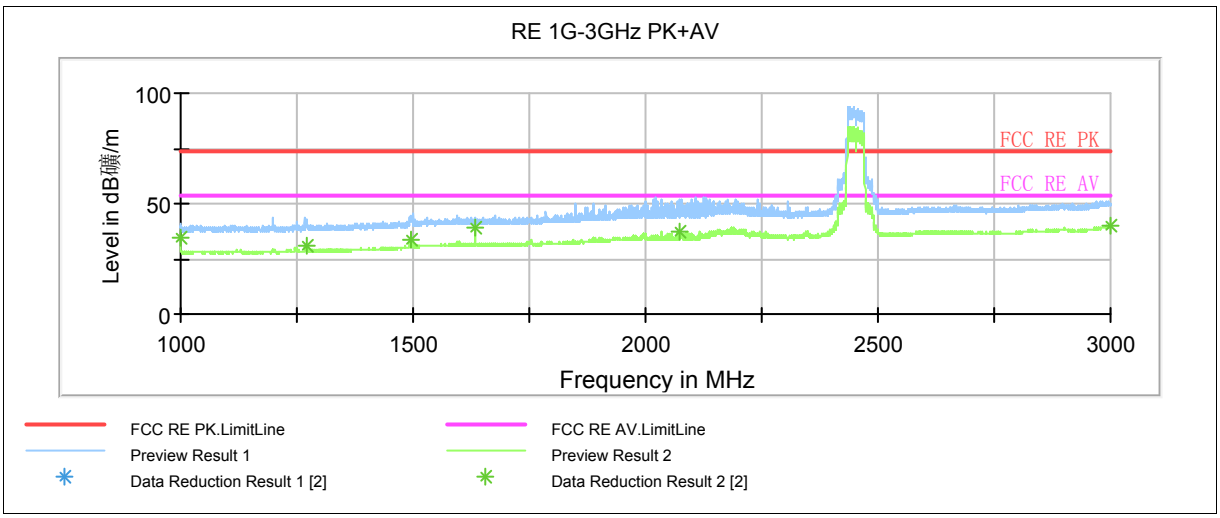


Note: This graph displays the maximum values of horizontal and vertical by software
Note: a font (Level in dBµV/m)in the test plot =(level in dBuv/m)
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
38.937500	31.8	125.0	V	127.0	55.9	-24.1	8.2	40.0
98.425000	33.3	200.0	H	46.0	61.3	-28.0	10.2	43.5
249.987500	31.3	120.0	H	5.0	59.4	-28.1	14.7	46.0
299.980000	34.6	100.0	H	334.0	61.7	-27.1	11.4	46.0
337.612500	33.1	100.0	H	328.0	59.6	-26.5	12.9	46.0
625.015000	37.1	100.0	V	192.0	57.6	-20.5	8.9	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



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

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

Note: The signal beyond the limit is carrier.

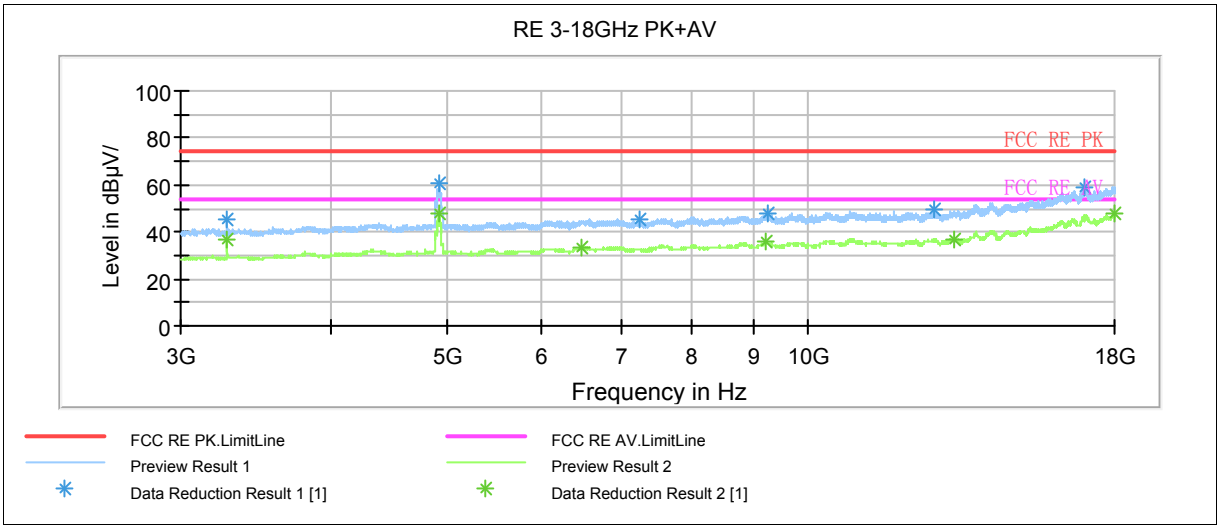
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	40.9	101.0	H	12.0	53.5	-12.6	33.1	74
1269.500000	42.7	200.0	V	176.0	54.7	-12.0	31.3	74
1497.250000	43.0	101.0	V	103.0	53.1	-10.1	31.0	74
1634.750000	43.9	101.0	V	0.0	53.1	-9.2	30.1	74
2071.750000	48.0	101.0	V	103.0	54.2	-6.2	26.0	74
2998.750000	50.3	101.0	V	190.0	52.1	-1.8	23.7	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1000.000000	34.4	101.0	H	12.0	47.0	-12.6	19.6	54
1269.500000	31.3	200.0	V	176.0	43.3	-12.0	22.7	54
1497.250000	33.9	101.0	V	103.0	44.0	-10.1	20.1	54
1634.750000	38.8	101.0	V	0.0	48.0	-9.2	15.2	54
2071.750000	37.4	101.0	V	103.0	43.6	-6.2	16.6	54
2998.750000	39.9	101.0	V	190.0	41.7	-1.8	14.1	54

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



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

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

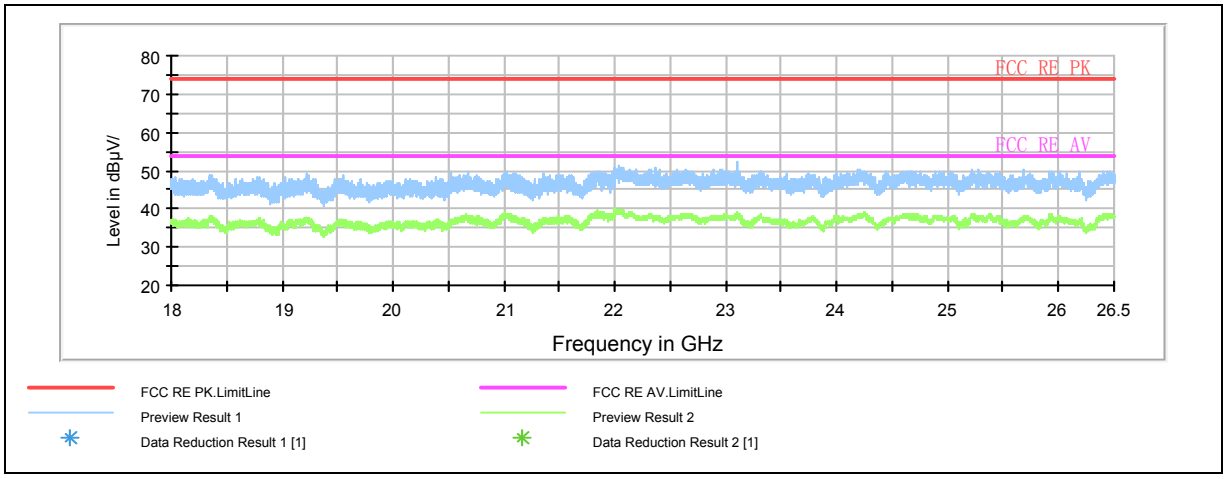
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3281.250000	45.5	100.0	V	0.0	47.8	-2.3	28.5	74
4921.875000	60.8	100.0	V	273.0	62.7	-1.9	13.2	74
7243.125000	44.9	100.0	V	249.0	51.0	-6.1	29.1	74
9268.125000	47.5	100.0	H	6.0	56.1	-8.6	26.5	74
12757.500000	49.3	100.0	V	353.0	61.9	-12.6	24.7	74
17011.875000	59.3	100.0	H	29.0	81.2	-21.9	14.7	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3281.250000	36.8	100.0	V	0.0	39.1	-2.3	17.2	54
4921.875000	48.1	100.0	V	273.0	50.0	-1.9	5.9	54
6481.875000	33.5	100.0	V	110.0	38.2	-4.7	20.5	54
9236.250000	35.5	100.0	V	0.0	44.3	-8.8	18.5	54
13228.125000	37.1	100.0	H	133.0	49.8	-12.7	16.9	54
18000.000000	47.5	100.0	H	0.0	71.0	-23.5	6.5	54

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



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

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

Radiates Emission from 18GHz to 26.5GHz

2.10. Conducted Emissions

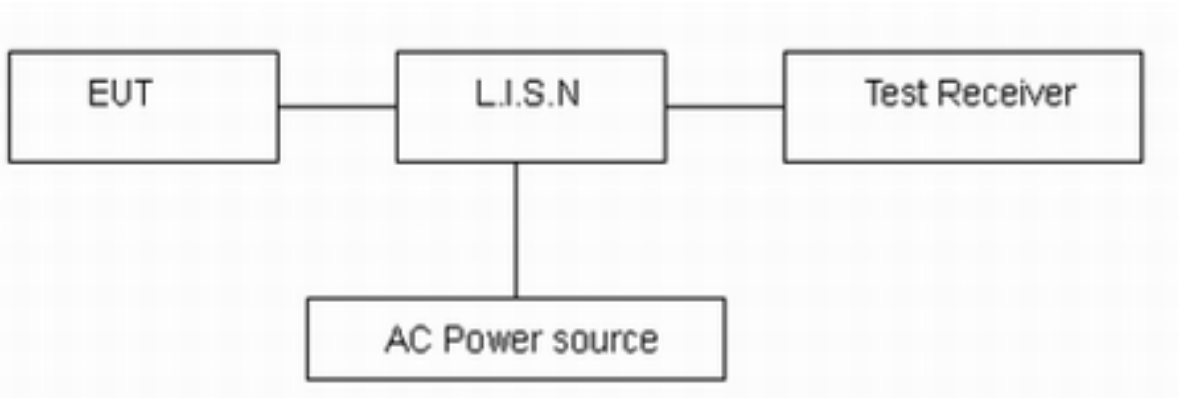
Ambient condition

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

Method of Measurement

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

Test setup



Note: AC Power source is used to change the voltage 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.		

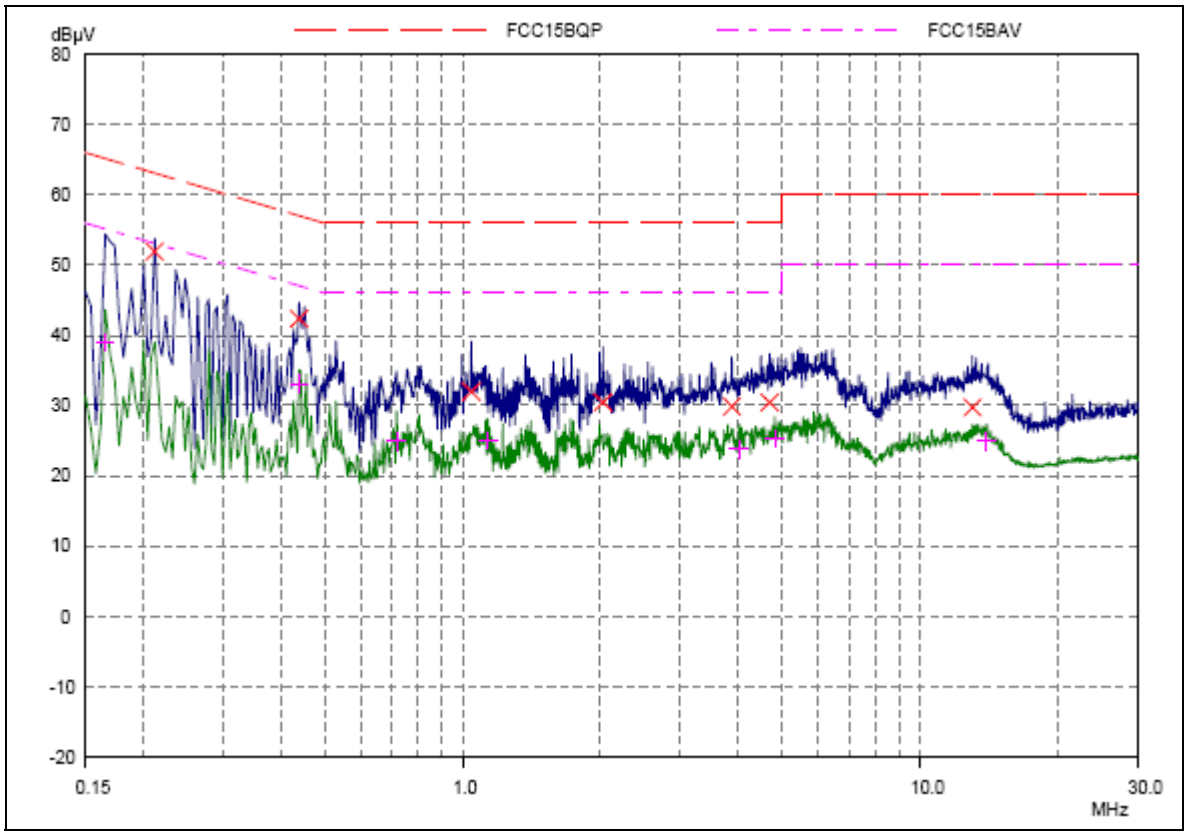
Measurement Uncertainty

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.

Test Results:

802.11b CH6

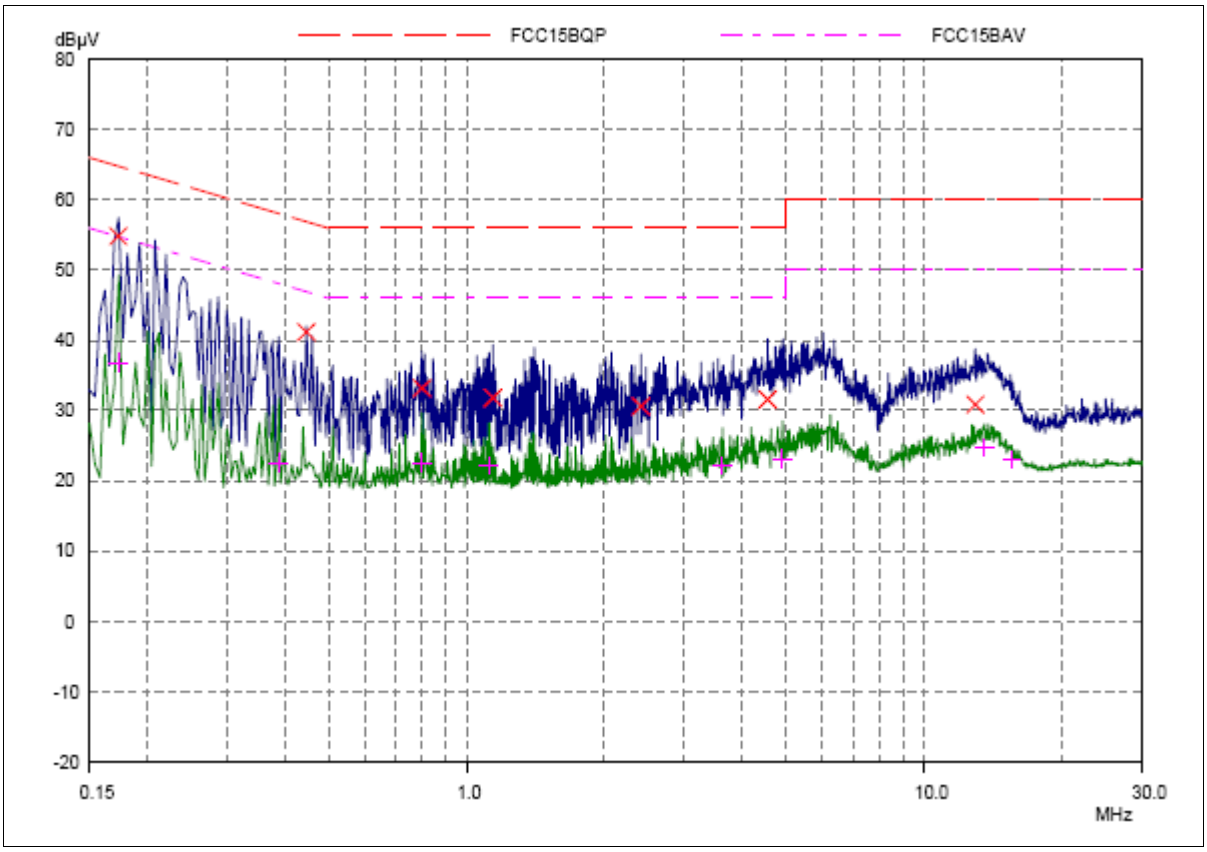


Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -	PE -
0.2125	51.90	63.11	11.21	L1	gnd
0.43906	42.36	57.08	14.72	L1	gnd
1.04453	31.96	56.00	24.04	L1	gnd
2.025	30.41	56.00	25.59	L1	gnd
3.87265	29.84	56.00	26.16	L1	gnd
4.69687	30.45	56.00	25.55	L1	gnd
13.00937	29.72	60.00	30.28	L1	gnd

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -	PE -
0.16562	38.99	55.18	16.19	L1	gnd
0.43906	33.07	47.08	14.01	L1	gnd
0.7164	24.90	46.00	21.10	L1	gnd
1.13437	24.99	46.00	21.01	L1	gnd
4.02109	23.78	46.00	22.22	L1	gnd
4.81015	25.27	46.00	20.73	L1	gnd
13.97421	24.88	50.00	25.12	L1	gnd

L Line



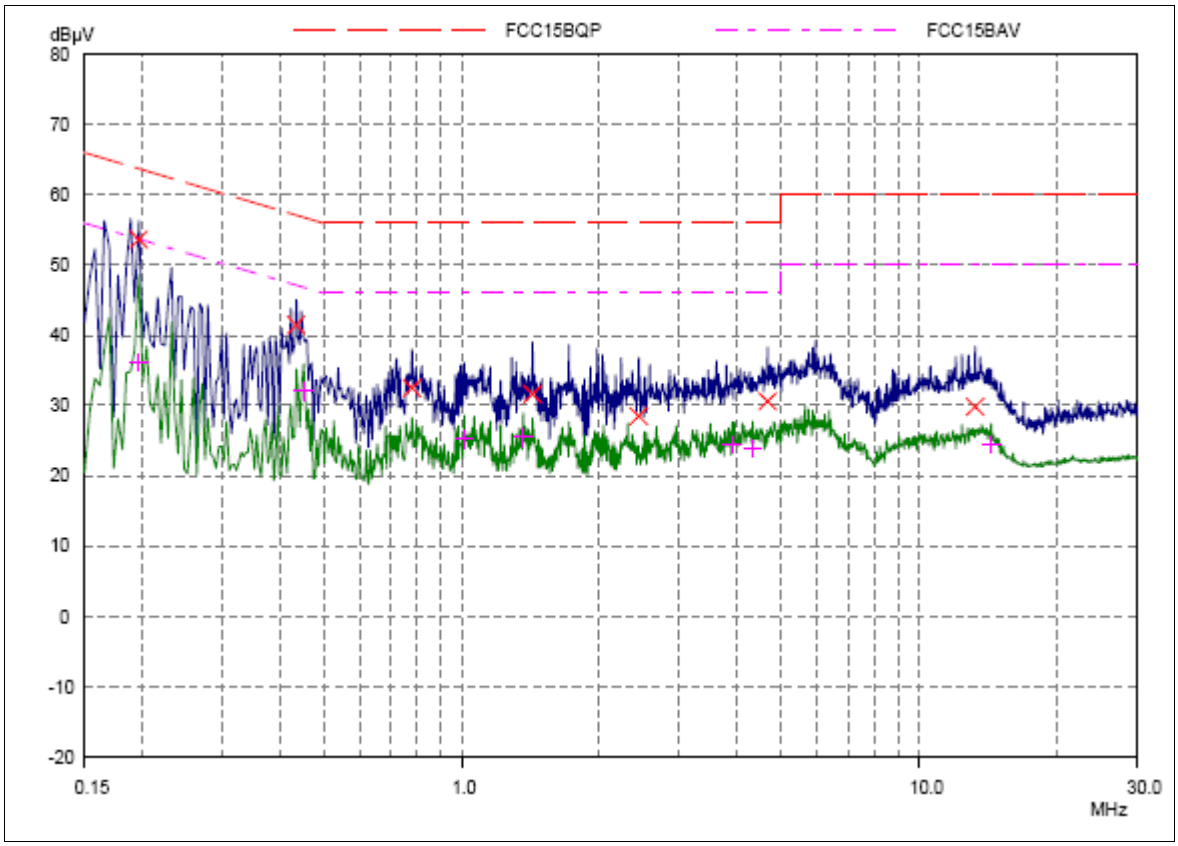
Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -	PE -
0.17343	54.86	64.79	9.93	N	gnd
0.44687	41.19	56.93	15.74	N	gnd
0.79843	33.19	56.00	22.81	N	gnd
1.14218	31.82	56.00	24.18	N	gnd
2.4039	30.61	56.00	25.39	N	gnd
4.55234	31.57	56.00	24.43	N	gnd
12.92734	30.81	60.00	29.19	N	gnd

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -	PE -
0.17343	36.87	54.79	17.92	N	gnd
0.38828	22.57	48.10	25.53	N	gnd
0.79843	22.56	46.00	23.44	N	gnd
1.11875	22.17	46.00	23.83	N	gnd
3.63046	22.12	46.00	23.88	N	gnd
4.90781	23.11	46.00	22.89	N	gnd
13.55625	24.80	50.00	25.20	N	gnd
15.53281	23.03	50.00	26.97	N	gnd

N Line

802.11g CH6

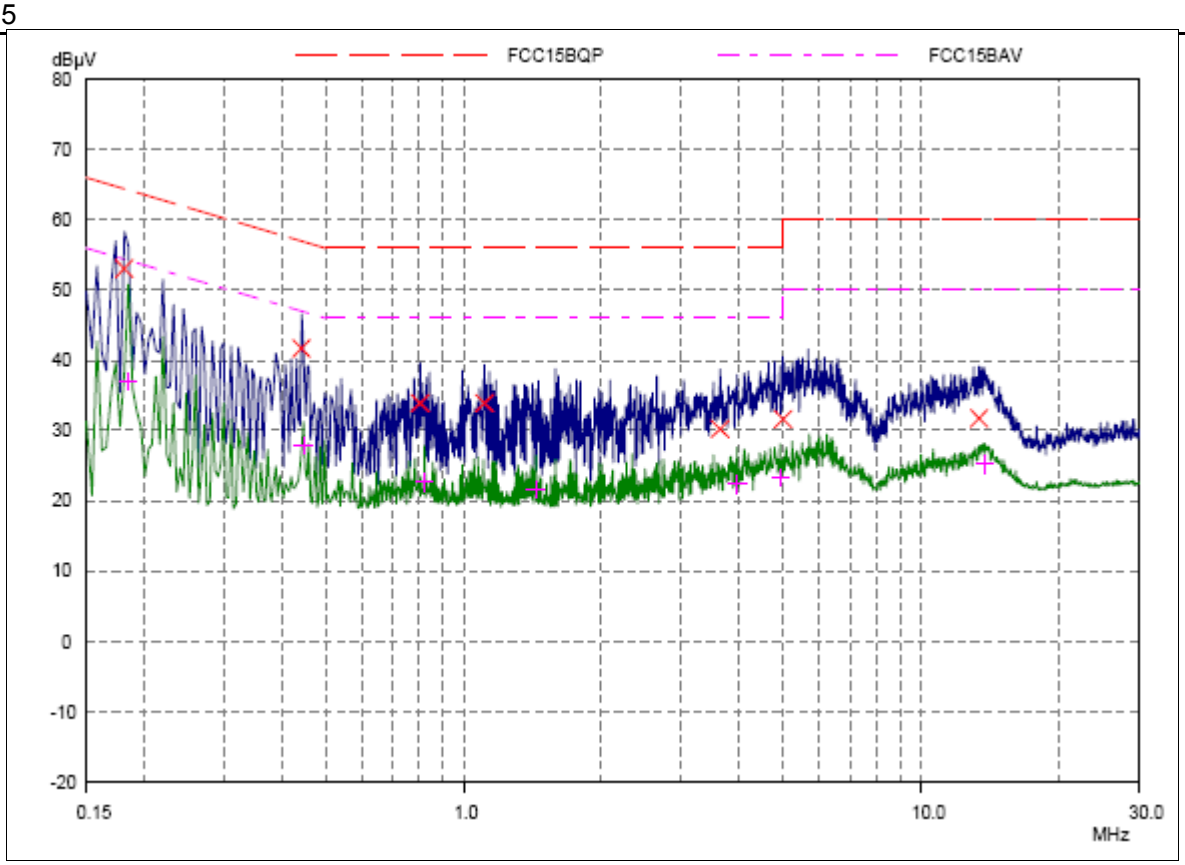


Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -	PE -
0.19687	53.65	63.74	10.09	L1	gnd
0.43515	41.46	57.15	15.69	L1	gnd
0.7789	32.50	56.00	23.50	L1	gnd
1.42734	31.62	56.00	24.38	L1	gnd
2.44296	28.50	56.00	27.50	L1	gnd
4.66562	30.57	56.00	25.43	L1	gnd
13.24765	29.80	60.00	30.20	L1	gnd

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -	PE -
0.19687	36.10	53.74	17.64	L1	gnd
0.45078	32.02	46.86	14.84	L1	gnd
1.01328	25.22	46.00	20.78	L1	gnd
1.36484	25.54	46.00	20.46	L1	gnd
3.9039	24.42	46.00	21.58	L1	gnd
4.32968	23.94	46.00	22.06	L1	gnd
14.35703	24.45	50.00	25.55	L1	gnd

L Line



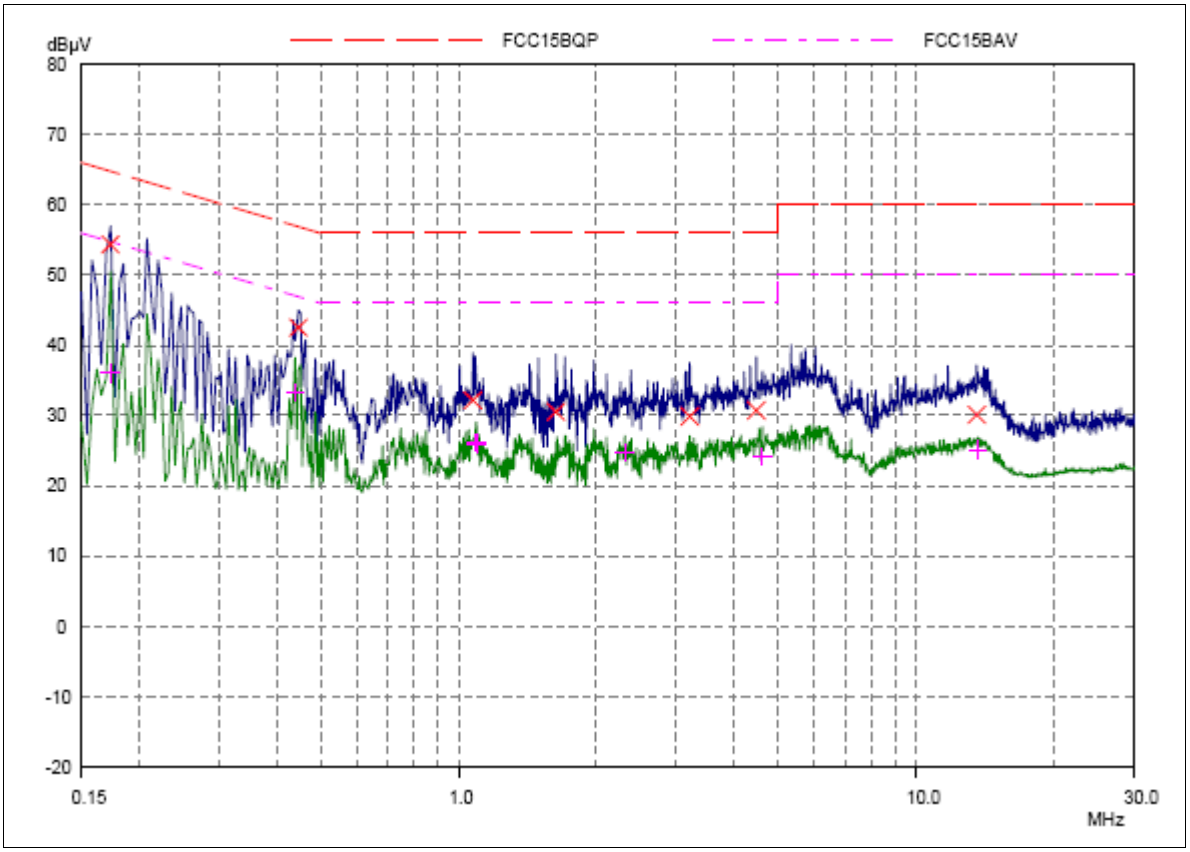
Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -	PE -
0.18125	53.05	64.43	11.38	N	gnd
0.44296	41.69	57.01	15.32	N	gnd
0.80234	33.87	56.00	22.13	N	gnd
1.11093	33.88	56.00	22.12	N	gnd
3.63828	30.20	56.00	25.80	N	gnd
4.99375	31.64	56.00	24.36	N	gnd
13.37265	31.73	60.00	28.27	N	gnd

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -	PE -
0.18515	37.00	54.25	17.25	N	gnd
0.44687	27.94	46.93	18.99	N	gnd
0.82187	22.62	46.00	23.38	N	gnd
1.43906	21.67	46.00	24.33	N	gnd
3.9664	22.35	46.00	23.65	N	gnd
4.92343	23.28	46.00	22.72	N	gnd
13.775	25.18	50.00	24.82	N	gnd

N Line

802.11n(HT20) CH6

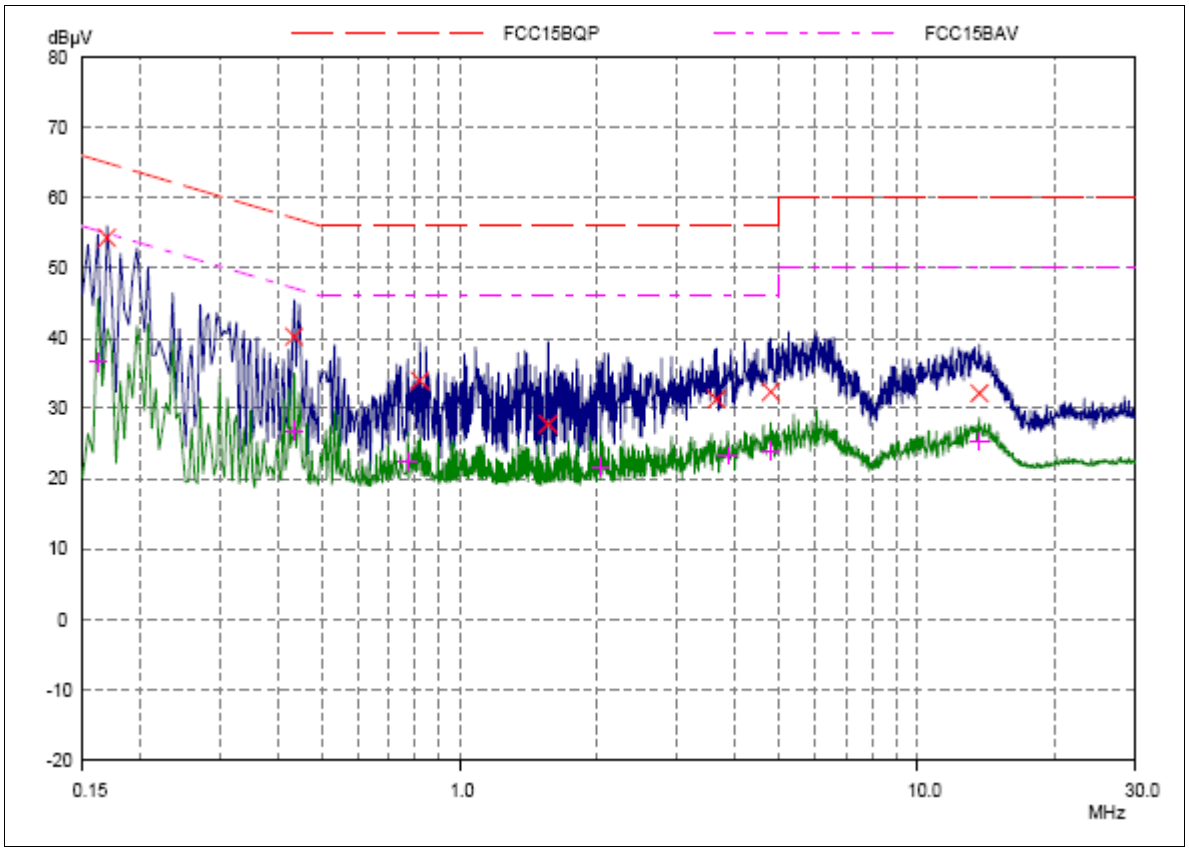


Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -	PE -
0.17343	54.36	64.79	10.43	L1	gnd
0.44687	42.51	56.93	14.42	L1	gnd
1.07578	32.17	56.00	23.83	L1	gnd
1.63046	30.54	56.00	25.46	L1	gnd
3.20078	29.83	56.00	26.17	L1	gnd
4.48203	30.70	56.00	25.30	L1	gnd
13.56796	30.10	60.00	29.90	L1	gnd

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -	PE -
0.17343	36.05	54.79	18.74	L1	gnd
0.43906	33.33	47.08	13.75	L1	gnd
1.0914	26.18	46.00	19.82	L1	gnd
1.09531	26.03	46.00	19.97	L1	gnd
2.31015	24.77	46.00	21.23	L1	gnd
4.61875	24.19	46.00	21.81	L1	gnd
13.63046	25.12	50.00	24.88	L1	gnd

L Line



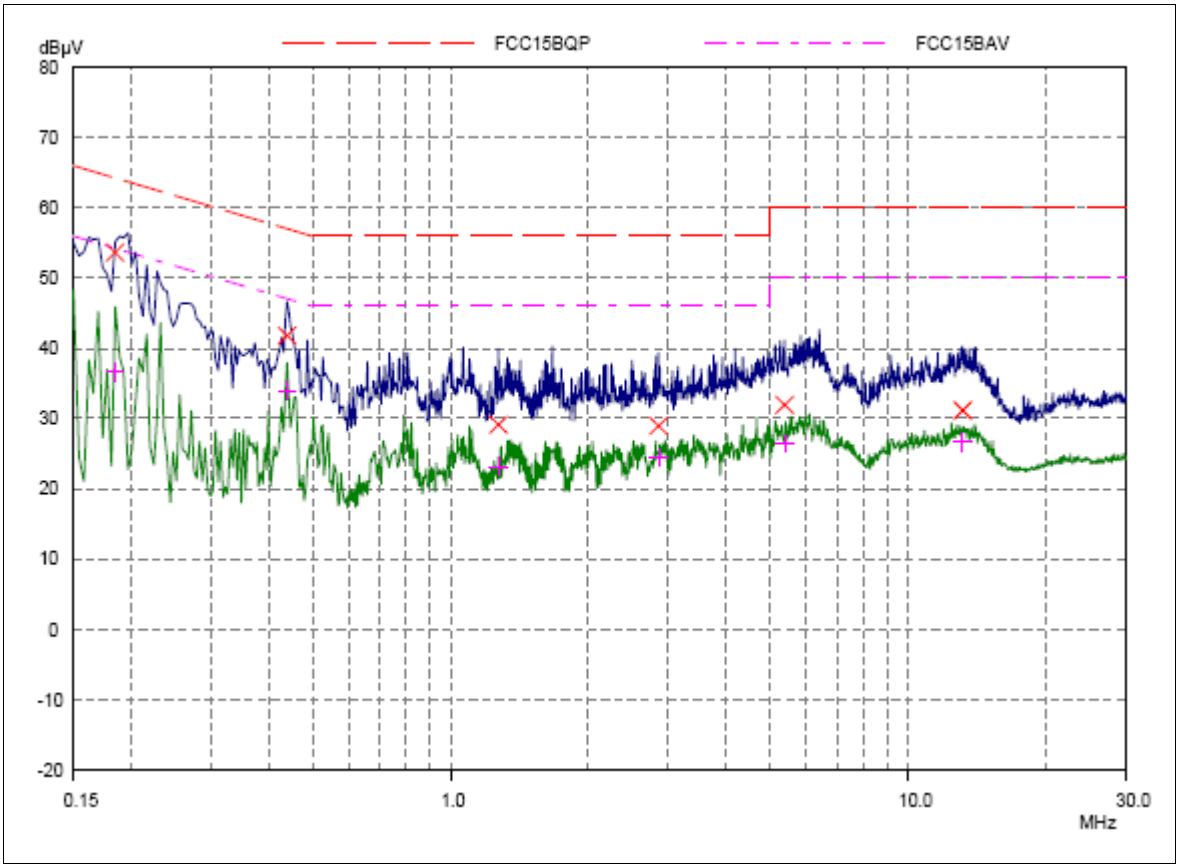
Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -	PE -
0.16953	54.32	64.98	10.66	N	gnd
0.43515	40.24	57.15	16.91	N	gnd
0.81796	33.97	56.00	22.03	N	gnd
1.56015	27.78	56.00	28.22	N	gnd
3.65	31.32	56.00	24.68	N	gnd
4.79062	32.35	56.00	23.65	N	gnd
13.66562	32.18	60.00	27.82	N	gnd

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -	PE -
0.16171	36.64	55.38	18.74	N	gnd
0.43515	26.78	47.15	20.37	N	gnd
0.77109	22.44	46.00	23.56	N	gnd
2.03281	21.72	46.00	24.28	N	gnd
3.85312	23.32	46.00	22.68	N	gnd
4.79062	23.96	46.00	22.04	N	gnd
13.67734	25.23	50.00	24.77	N	gnd

N Line

802.11n(HT40) CH6

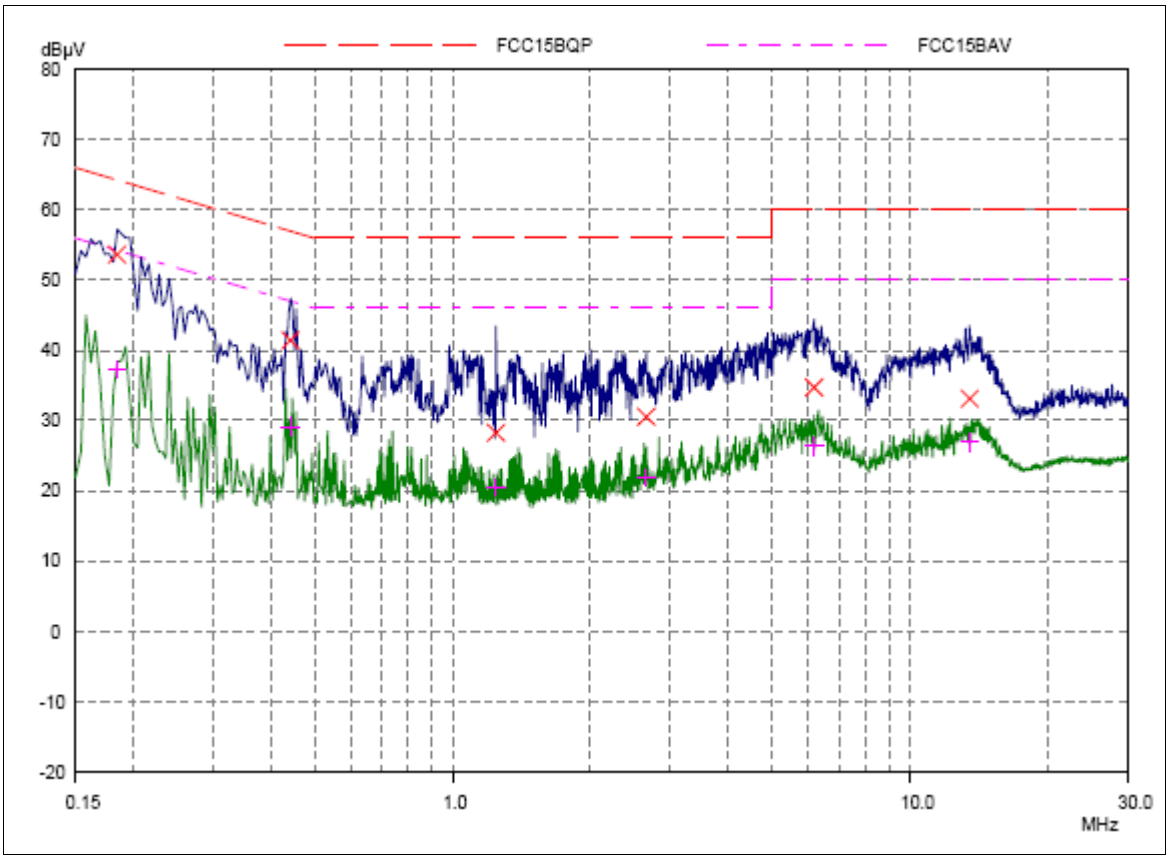


Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -	PE -
0.18515	53.66	64.25	10.59	L1	gnd
0.43906	41.81	57.08	15.27	L1	gnd
1.27109	29.08	56.00	26.92	L1	gnd
2.84921	28.95	56.00	27.05	L1	gnd
5.37656	31.90	60.00	28.10	L1	gnd
13.13828	31.16	60.00	28.84	L1	gnd

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -	PE -
0.18515	36.62	54.25	17.63	L1	gnd
0.43906	33.92	47.08	13.16	L1	gnd
1.27109	23.12	46.00	22.88	L1	gnd
2.84921	24.44	46.00	21.56	L1	gnd
5.37656	26.41	50.00	23.59	L1	gnd
13.13828	26.61	50.00	23.39	L1	gnd

L Line



Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -	PE -
0.18515	53.62	64.25	10.63	N	gnd
0.44296	41.39	57.01	15.62	N	gnd
1.24375	28.24	56.00	27.76	N	gnd
2.6539	30.50	56.00	25.50	N	gnd
6.16562	34.70	60.00	25.30	N	gnd
13.50546	33.07	60.00	26.93	N	gnd

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -	PE -
0.18515	37.32	54.25	16.93	N	gnd
0.44296	29.16	47.01	17.85	N	gnd
1.24375	20.48	46.00	25.52	N	gnd
2.6539	21.82	46.00	24.18	N	gnd
6.16562	26.38	50.00	23.62	N	gnd
13.50546	26.84	50.00	23.16	N	gnd

N Line

2. Main Test Instruments

No.	Name	Type	Manufacturer	Serial Number	Calibration Date	Valid Period
01	EMI Test Receiver	ESCI	R&S	100948	2014-05-26	One year
02	Loop Antenna	FMZB1516	SCHWARZBECK	237	2014-05-26	Two years
03	TRILOG Broadband Antenna	VULB 9163	Schwarzbeck	9163-201	2013-06-19	Three years
04	Double Ridged Waveguide Horn Antenna	HF907	R&S	100126	2012-07-02	Three years
05	Standard Gain Horn	3160-09	ETS-Lindgren	00102644	2012-05-20	Three years
06	EMI Test Receiver	ESCS30	R&S	100138	2014-01-14	One year
07	LISN	ENV216	R&S	101171	2014-04-11	One year
08	Spectrum Analyzer	E4445A	Agilent	MY46181146	2014-05-26	One year
09	MOB COMMS DC SUPPLY	66319D	Agilent	MY43004105	2014-05-26	One year
10	Peak Power Meter	8990B	Agilent	51000109	2014-05-26	One year
11	Wideband Power Sensors	N1923A	Agilent	MY51220004	2014-05-26	One year
12	Spectrum Analyzer	FSV30	R&S	100815	2014-05-26	One year

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

ANNEX A: EUT Appearance and Test Setup

A.1 EUT Appearance

a: EUT

b: Battery

c: Adapter

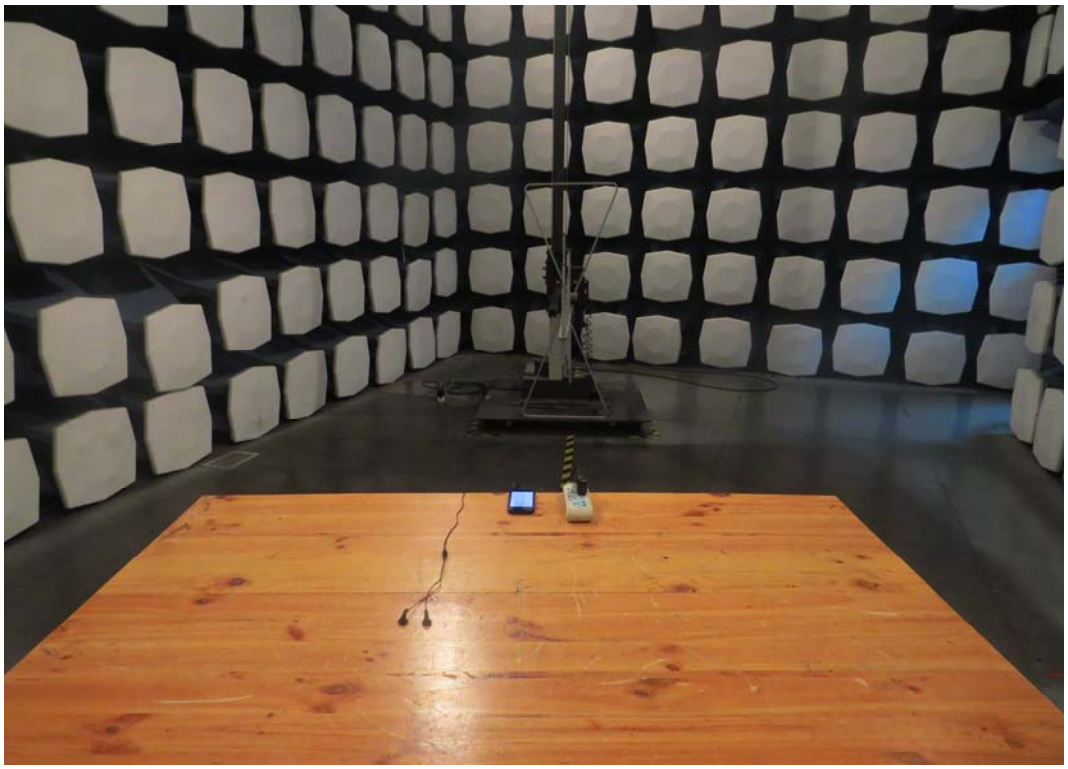
Earphone 1

Earphone 2

d.Earphone

Picture 1 Constituents of EUT

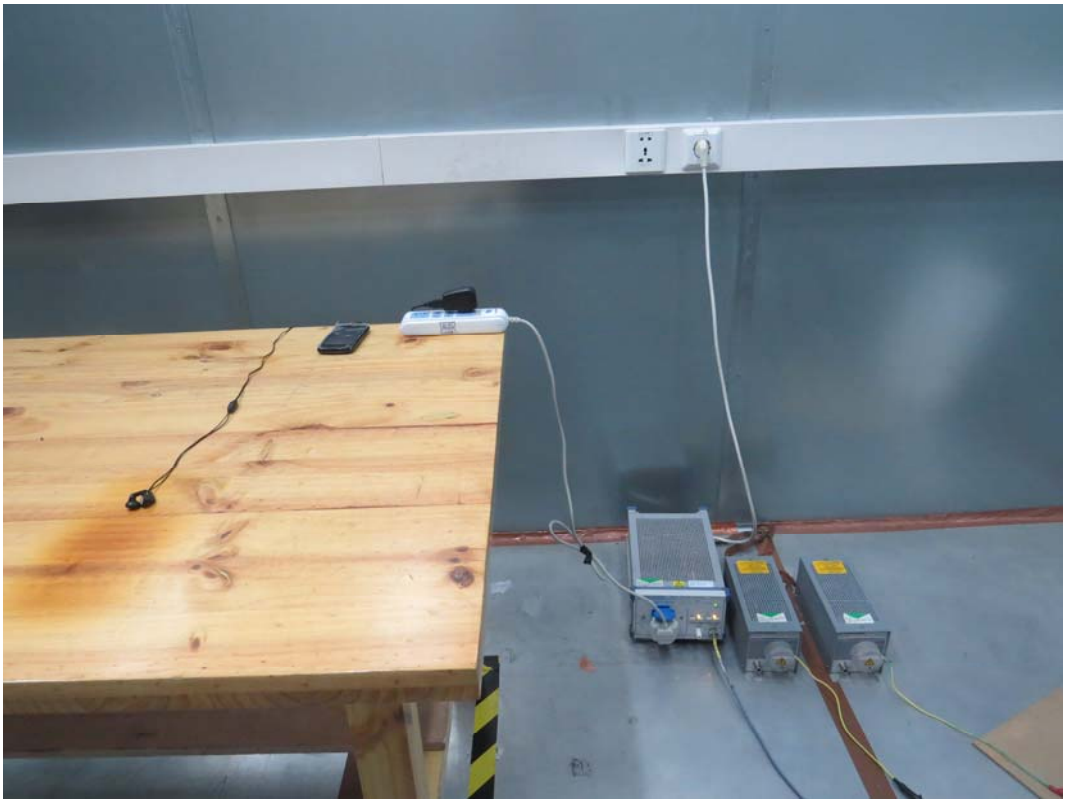
A.2 Test Setup



Below 1GHz

Above 1GHz

Picture 2 Radiated Emission Test Setup



Picture 3 Conducted Emission Test Setup