TESTING
No. L2264

Part 15C

TEST REPORT

Product Name	Smartisan T1
Model Name	SM701
FCC ID	2AEUYSM701
Client	Smartisan Technology Co., Ltd
Manufacturer	Smartisan Technology Co., Ltd
Date of issue	July 22, 2015

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 v03r03** Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247
Conclusion	This wireless equipment has been measured in all cases requested by the relevant standards. Test results in Chapter 2 of this test report are below limits specified in the relevant standards. General Judgment: **Pass**
Comment	The test result only responds to the measured sample.

Approved by Kai Xu
Kai Xu
Director

Revised by Lingling Kang
Lingling Kang
RF Manager

Performed by Changxu Wan
Changxu Wan
RF Engineer

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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.

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

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

1.2. Testing laboratory

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

1.3. Applicant Information

Company:	Smartisan Technology Co., Ltd
Address:	7th Floor, Motorola Building, 1 East Wangjing Road, Chaoyang District, Beijing, 100102, P.R. China

1.4. Manufacturer Information

Company:	Smartisan Technology Co., Ltd
Address:	7th Floor, Motorola Building, 1 East Wangjing Road, Chaoyang District, Beijing, 100102, P.R. China

1.5. Information of EUT

General information

Model Name	SM701
IMEI:	864516020009106
Hardware Version:	MMR500003C
Software Version:	V1.5.0
Antenna Type:	Internal Antenna
Device Operating Configurations:	
Network Standards:	802.11b, 802.11g, 802.11n(HT20); (tested)
Test Modulation:	(802.11b)DSSS; (802.11g)OFDM; 802.11n(HT20) OFDM
Power Supply:	Battery or Charger (AC adaptor)
Max Conducted Power	15.33 dBm
Operating Frequency Range(s)	2412MHz~ 2462MHz (802.11b/g/n HT20)
Tested Frequency Range(s)	2400MHz~ 2483.5 MHz

Auxiliary Equipment Details

AE1: Battery

Model:	DC701
Capacity:	2570mAh
Manufacture:	Desay Battery Co., Ltd.

AE1: Charger

Name:	Adapter
Model:	CD701
Manufacture:	Xiamen Salom Electronic Co., Ltd.

1.6. Test Date

The test performed from June 20, 2015 to June 29, 2015

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

	Test items	Modes	Data Rate	Test channel
Conducted Test cases	Peak Power Output –Conducted	802.11b	1 Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
		802.11n(HT20)	MCS0	1/6/11
	Minimum 6dB bandwidth	802.11b	1Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
		802.11n(HT20)	MCS0	1/6/11
	Band Edges compliance	802.11b	1Mbps	1/11
		802.11g	6 Mbps	1/11
		802.11n(HT20)	MCS0	1/11
	Power spectral Density	802.11b	1 Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
		802.11n(HT20)	MCS0	1/6/11
	Conducted Spurious Emission	802.11b	1 Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
		802.11n(HT20)	MCS0	1/6/11
	Conducted Emissions	802.11b	1 Mbps	6
		802.11g	6 Mbps	6
		802.11n(HT20)	MCS0	6
Radiated Test cases	Spurious Radiated Emissions in the restricted band	802.11b	1 Mbps	1/11
		802.11g	6 Mbps	1/11
		802.11n(HT20)	MCS0	1/11
	Radiates Emission	802.11b	1 Mbps	1/6/11
		802.11g	6 Mbps	1/6/11
		802.11n(HT20)	MCS0	1/6/11

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

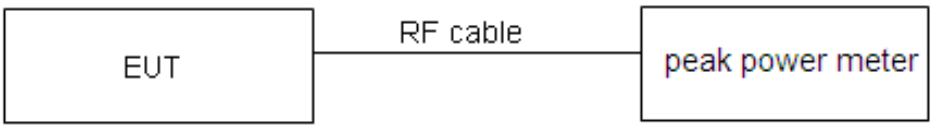
Ambient condition

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	14.62	PASS
	2437	15.07	PASS
	2462	15.29	PASS
802.11g	2412	14.32	PASS
	2437	15.02	PASS
	2462	15.33	PASS
802.11n HT20	2412	14.37	PASS
	2437	14.81	PASS
	2462	15.02	PASS

2.4. Occupied Bandwidth (6dB)

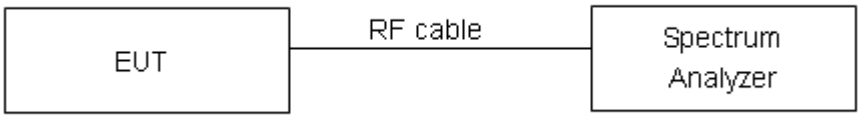
Ambient condition

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

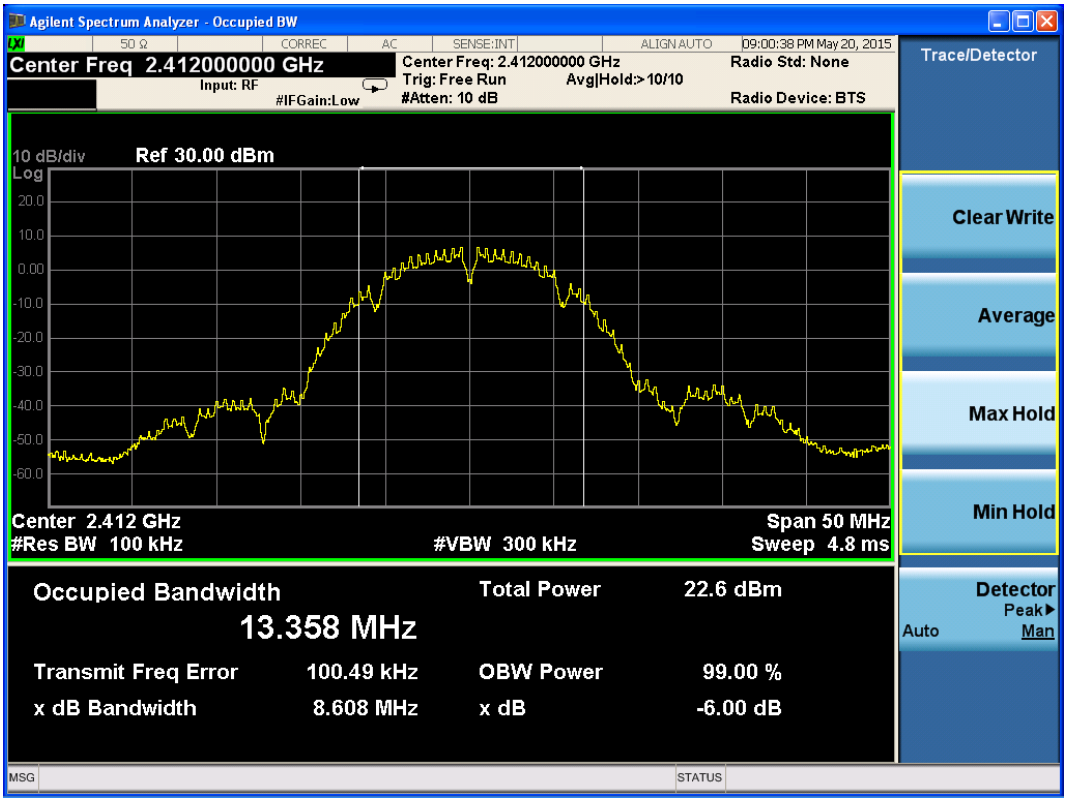
Measurement Uncertainty

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

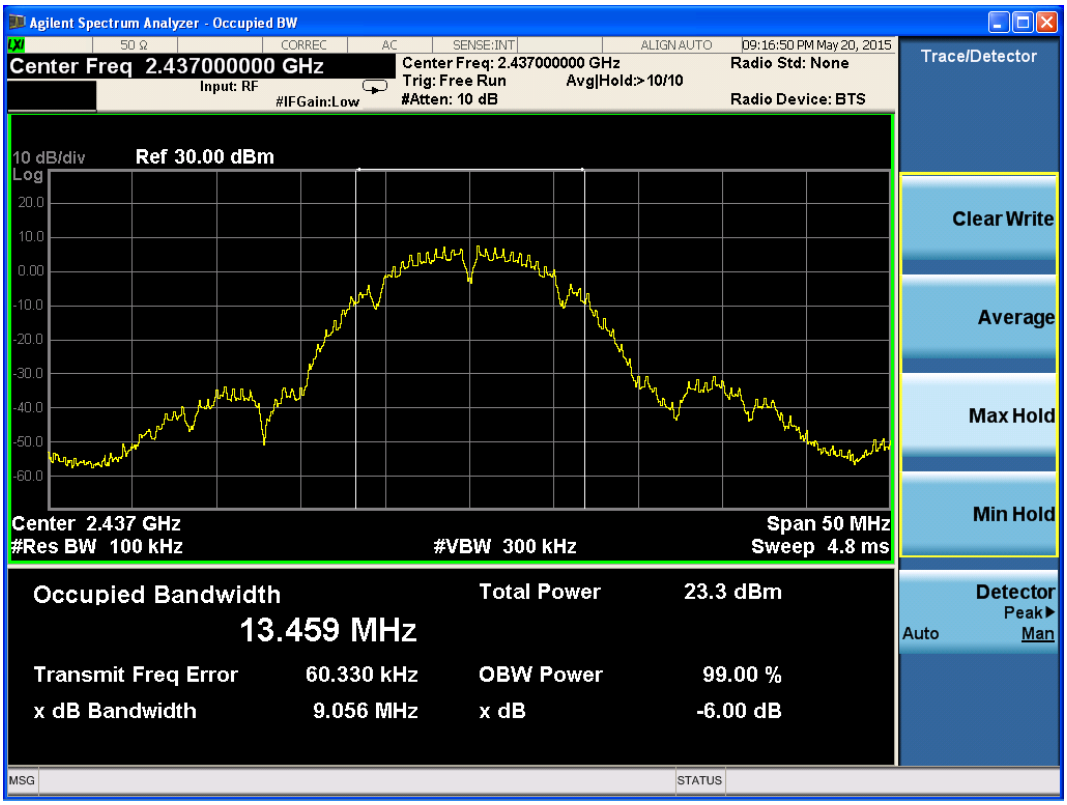
Test Results:

Network Standards	Carrier frequency (MHz)	Minimum 6 dB bandwidth (MHz)	Conclusion
802.11b	2412	8.608	PASS
	2437	9.056	PASS
	2462	8.594	PASS
802.11g	2412	16.44	PASS
	2437	16.43	PASS
	2462	16.41	PASS
802.11n HT20	2412	17.61	PASS
	2437	17.61	PASS
	2462	17.59	PASS

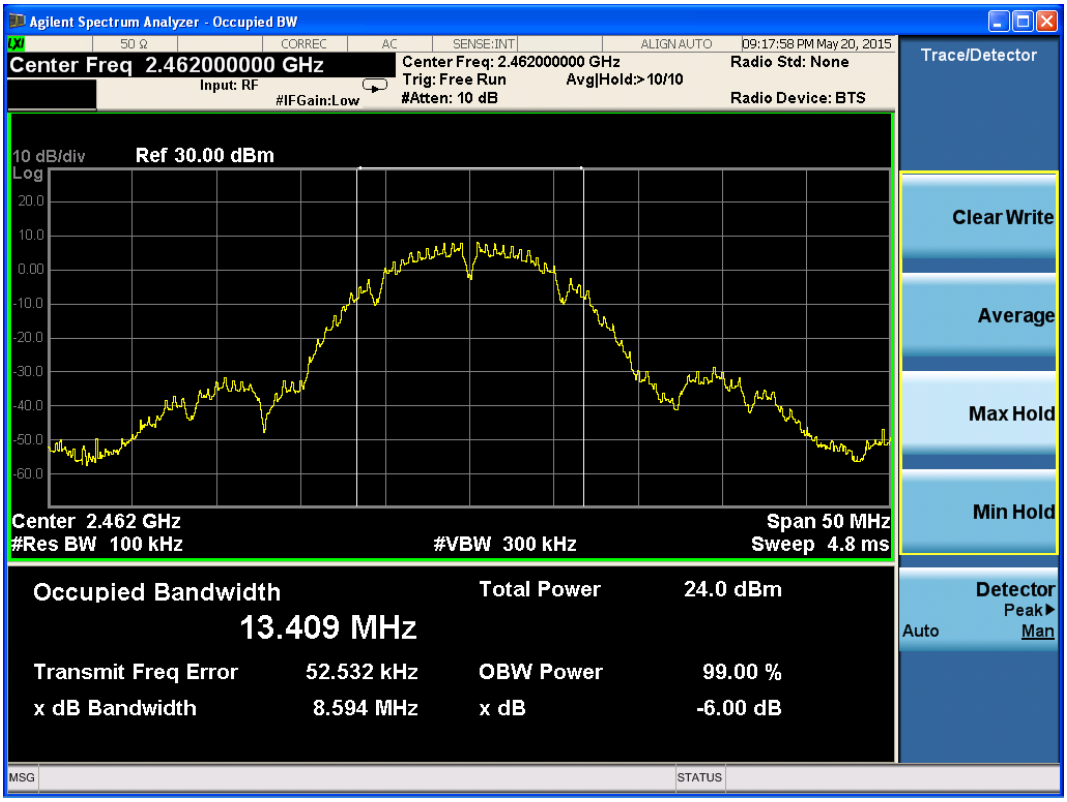
802.11b



802.11b, Carrier frequency (MHz): 2412

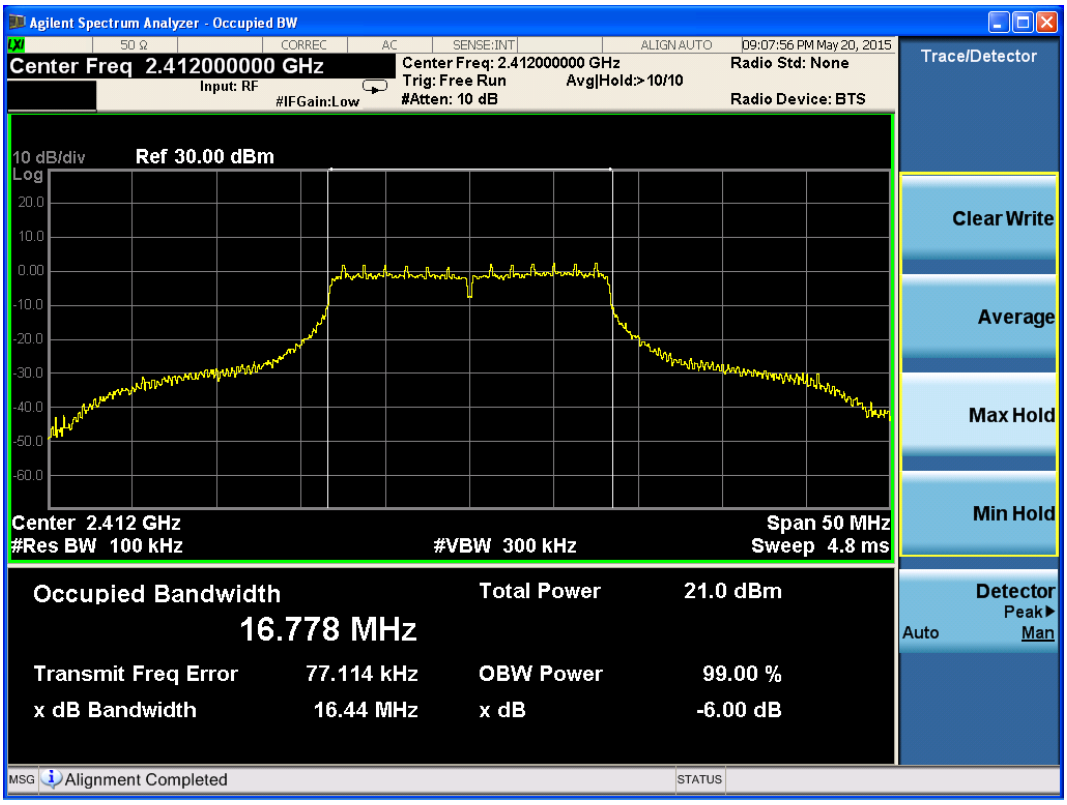


802.11b, Carrier frequency (MHz): 2437

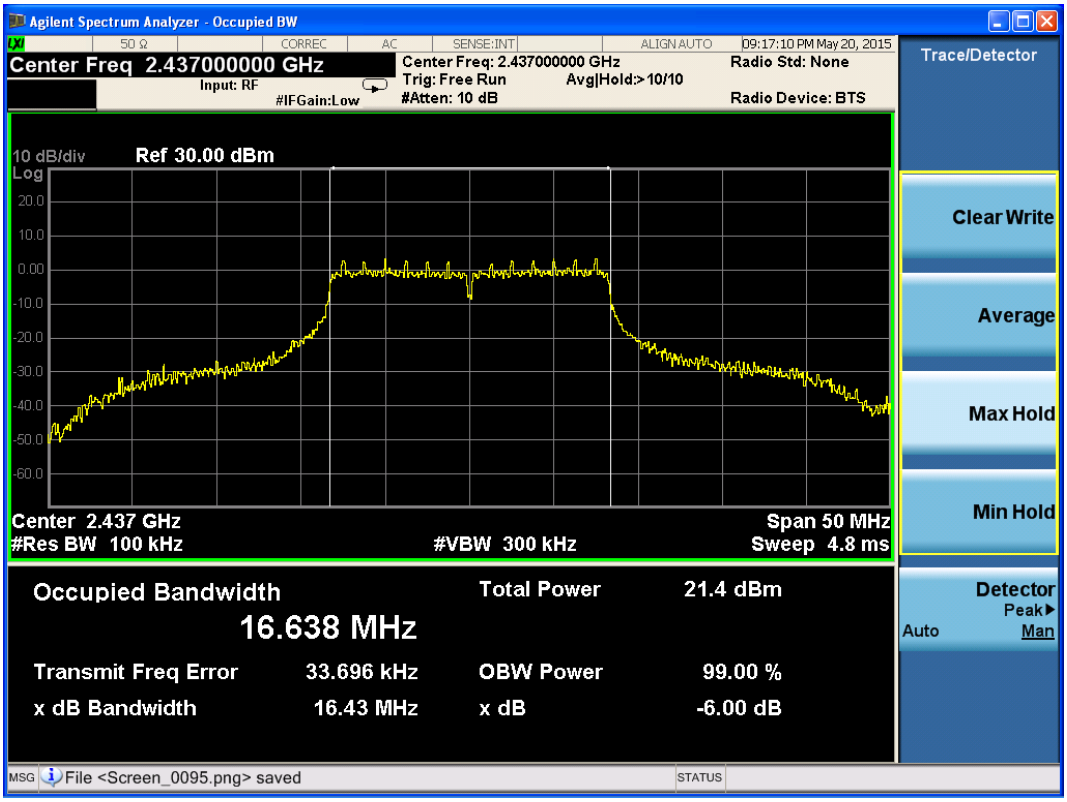


802.11b, Carrier frequency (MHz):2462

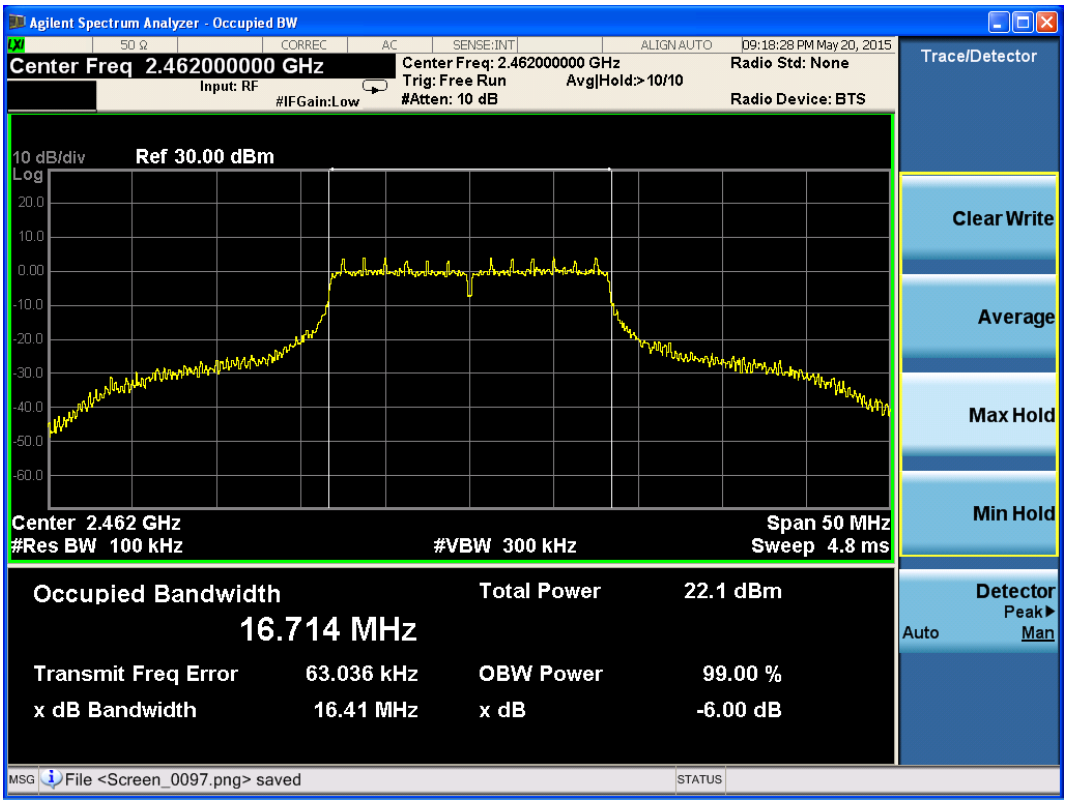
802.11g



802.11g, Carrier frequency (MHz): 2412

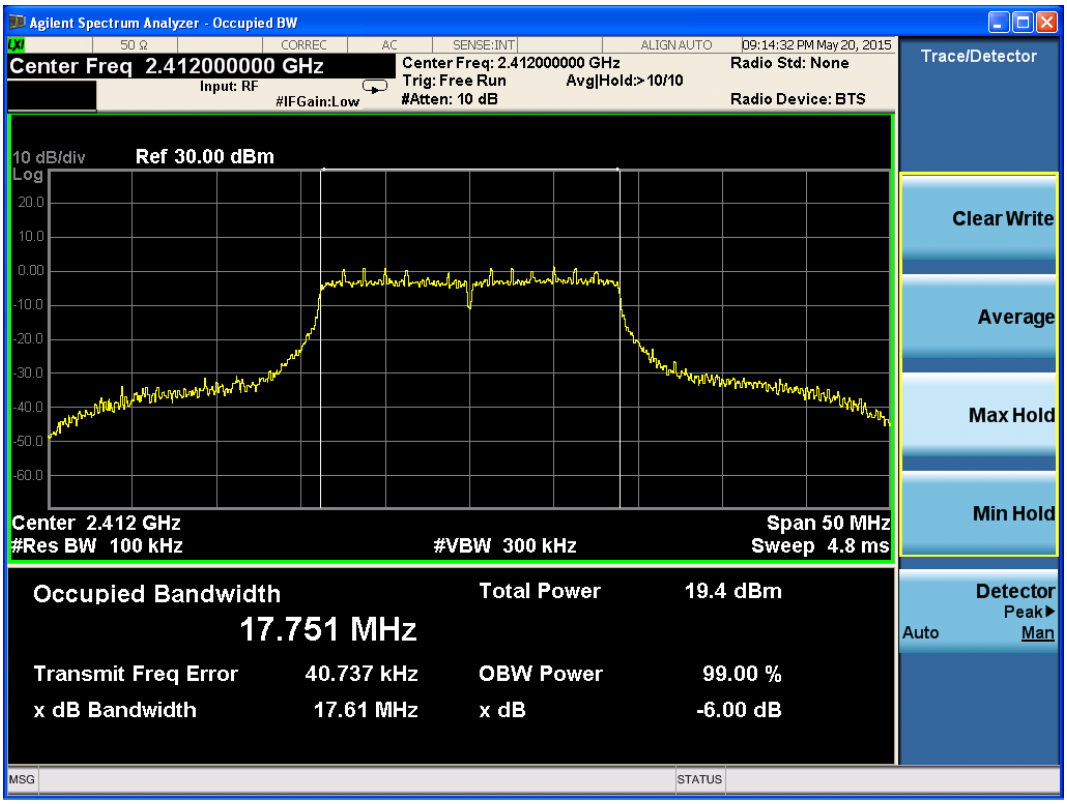


802.11g, Carrier frequency (MHz): 2437

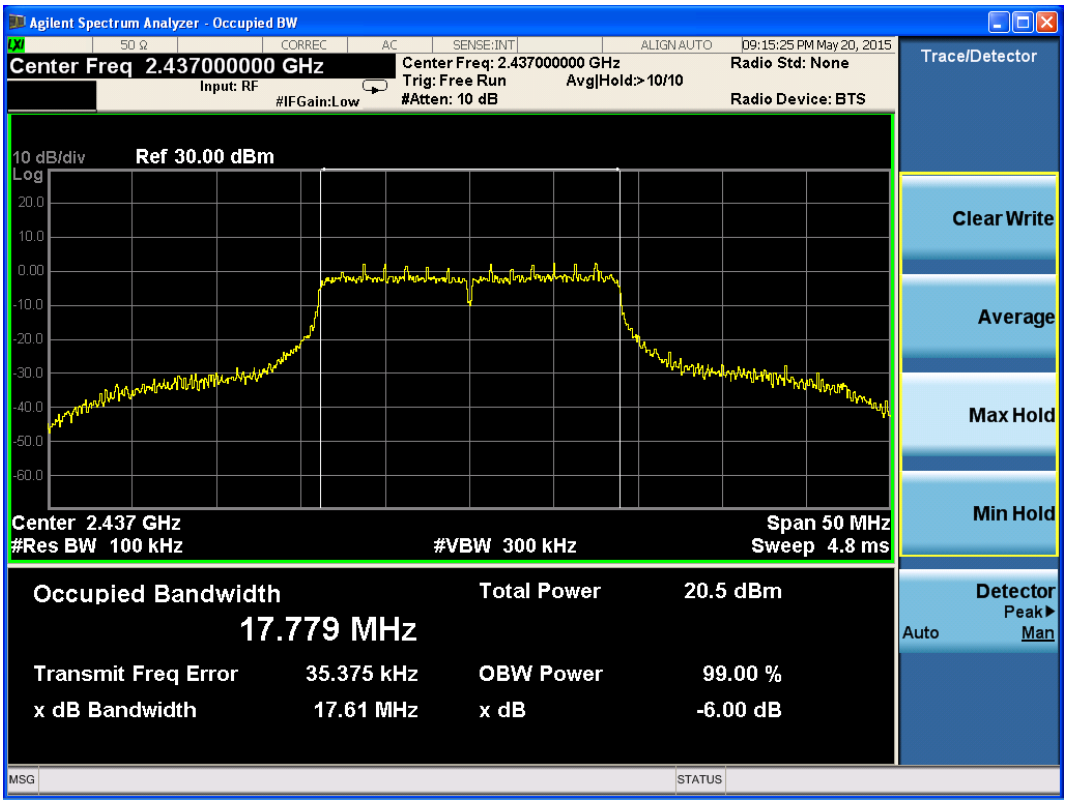


802.11g, Carrier frequency (MHz):2462

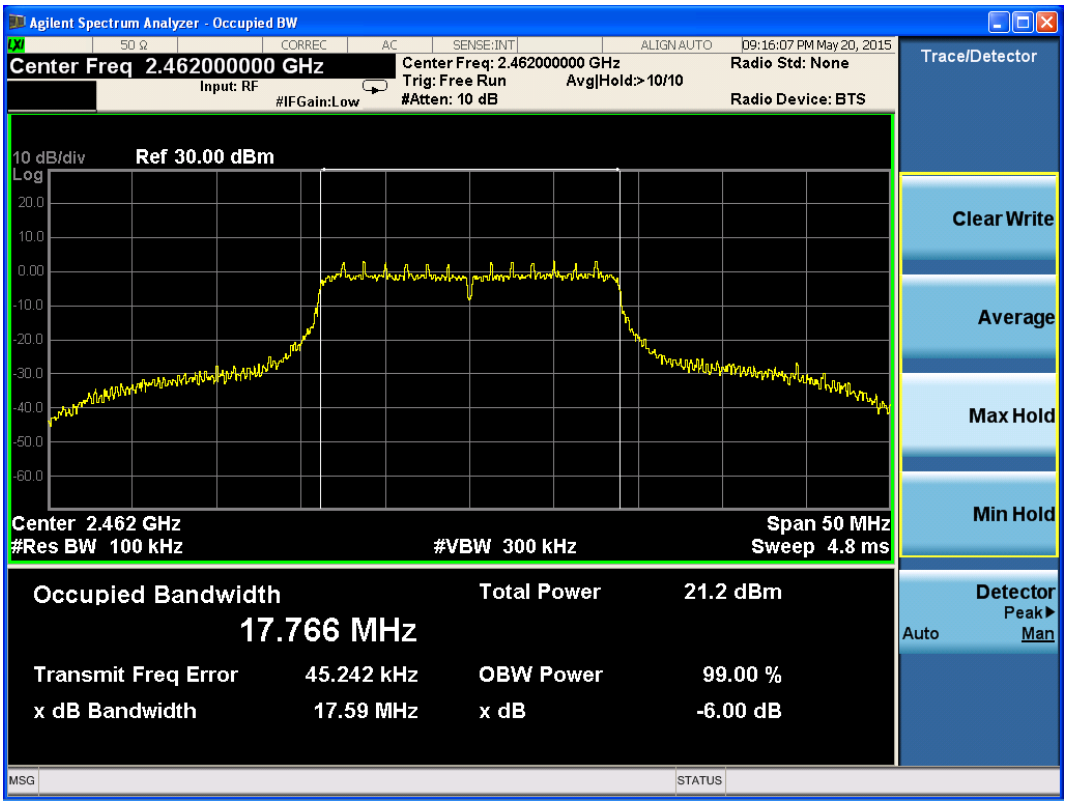
802.11n (HT20)



802.11n, Carrier frequency (MHz): 2412



802.11n, Carrier frequency (MHz): 2437



802.11n, Carrier frequency (MHz):2462

2.5. Band Edge Compliance

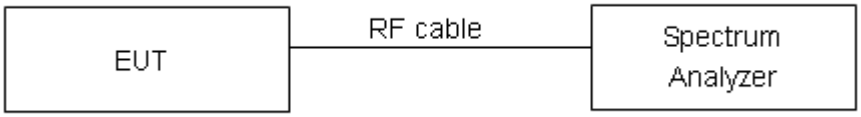
Ambient condition

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.”

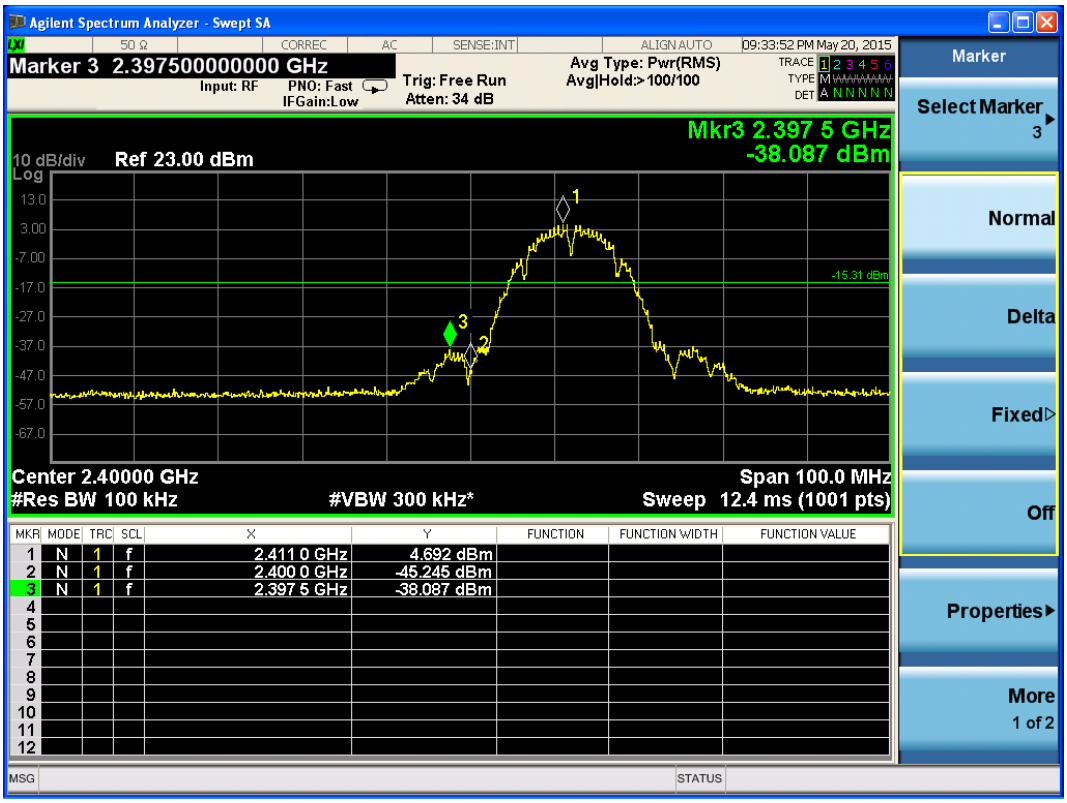
Measurement Uncertainty

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

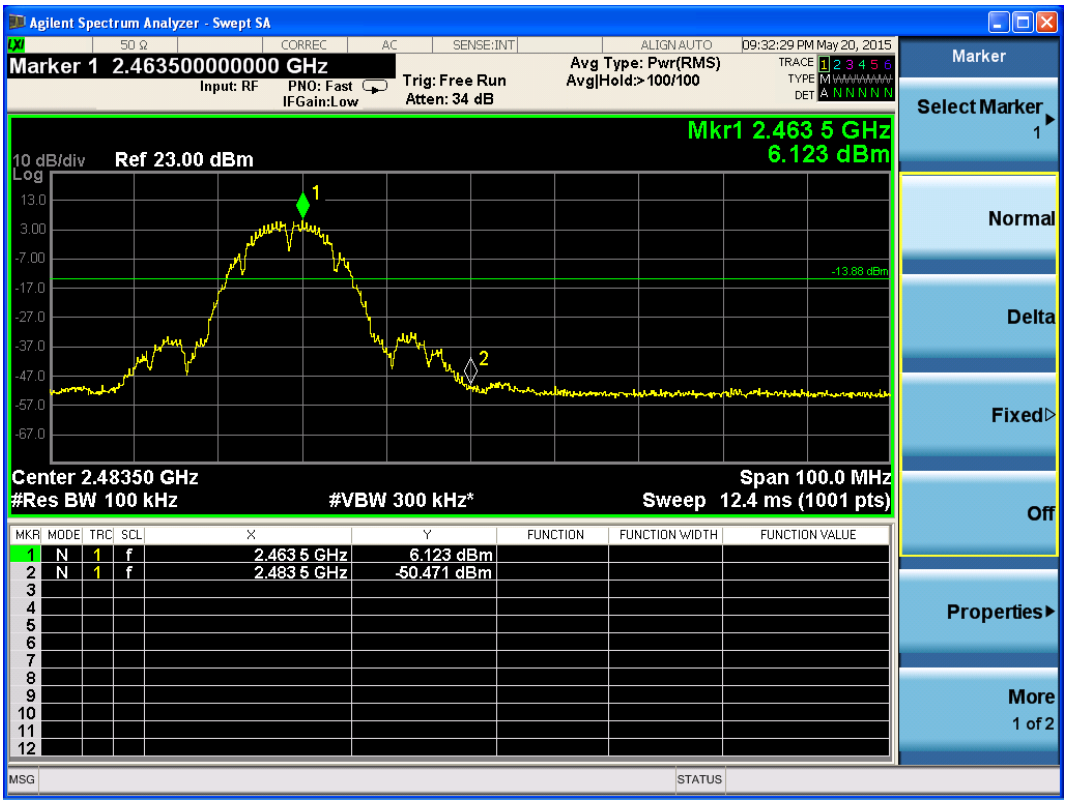
Frequency	Uncertainty
2GHz-3GHz	1.407 dB

Test Results: PASS

802.11b

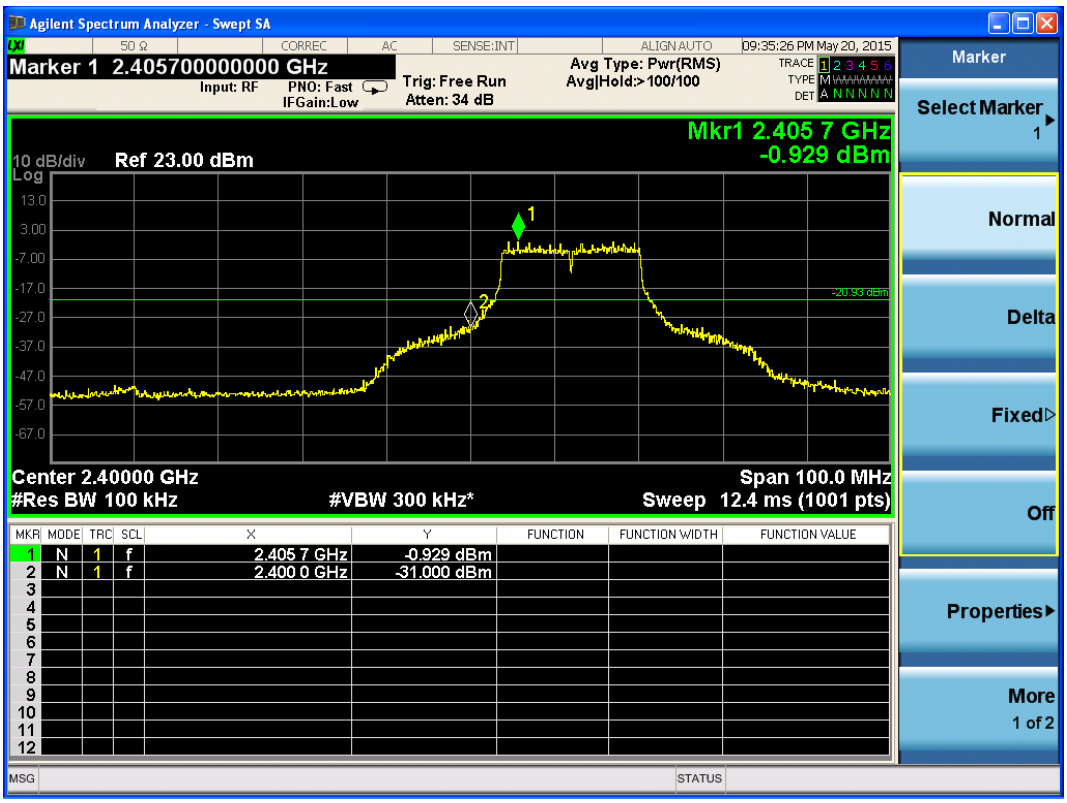


802.11b, Channel No.1

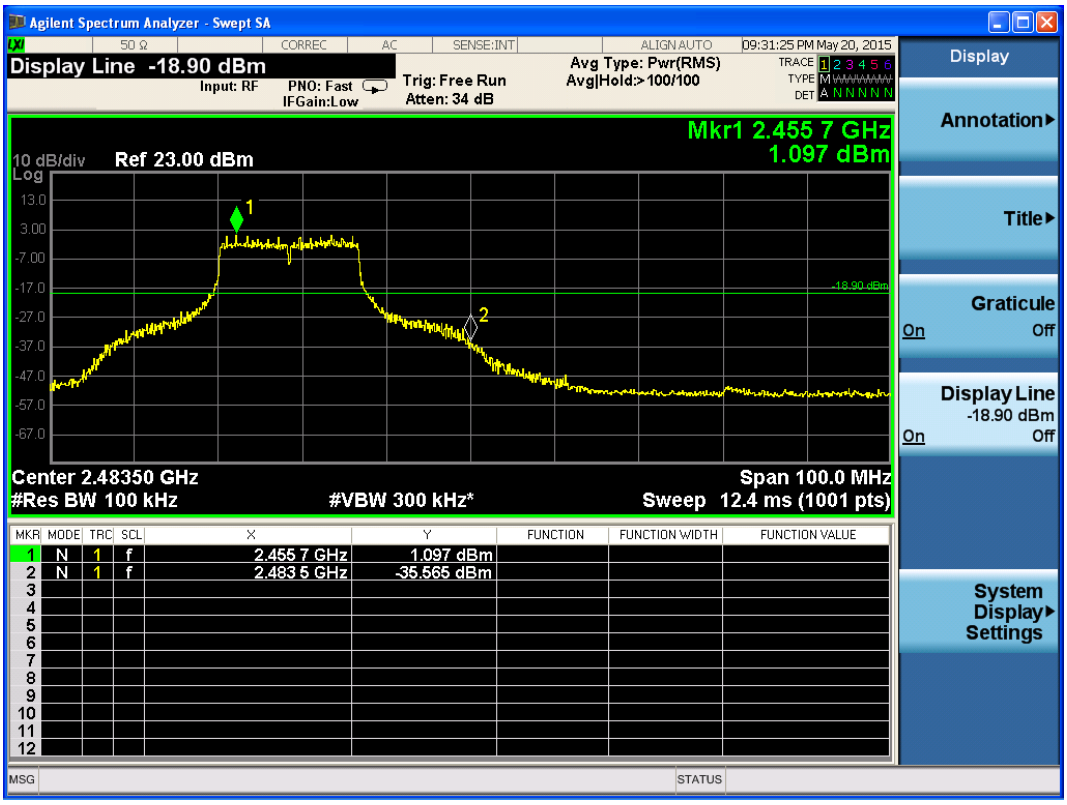


802.11b, Channel No. 11

802.11g

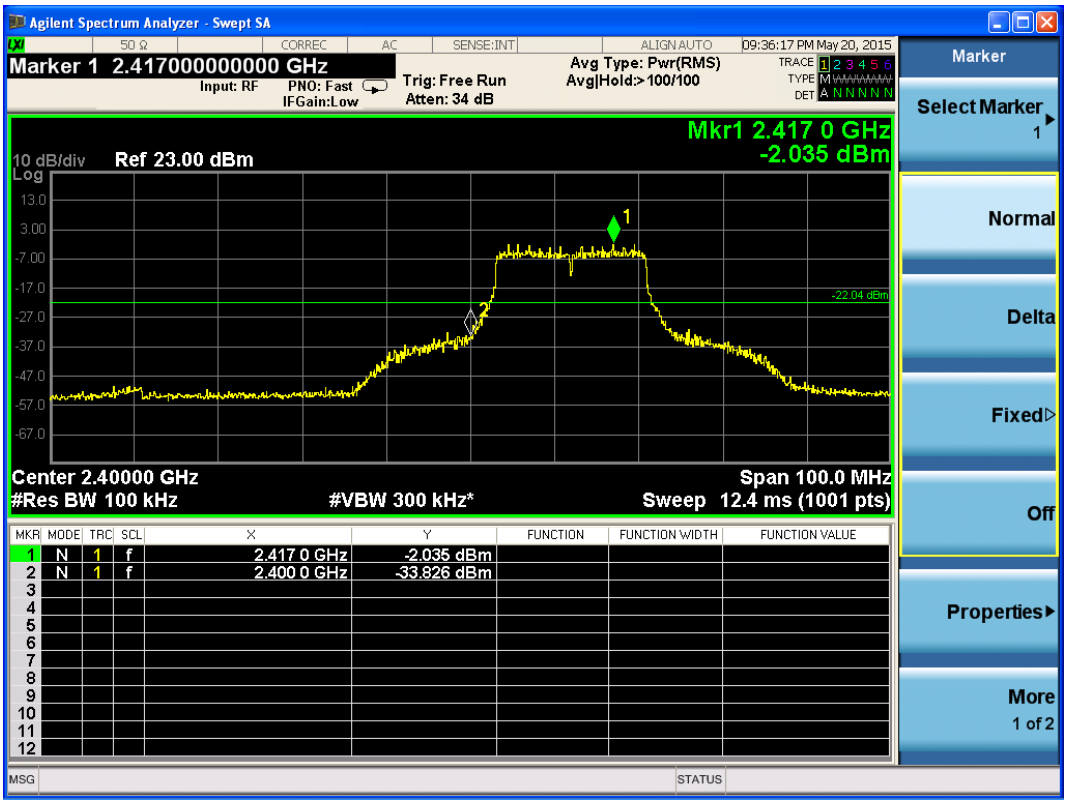


802.11g, Channel No.1

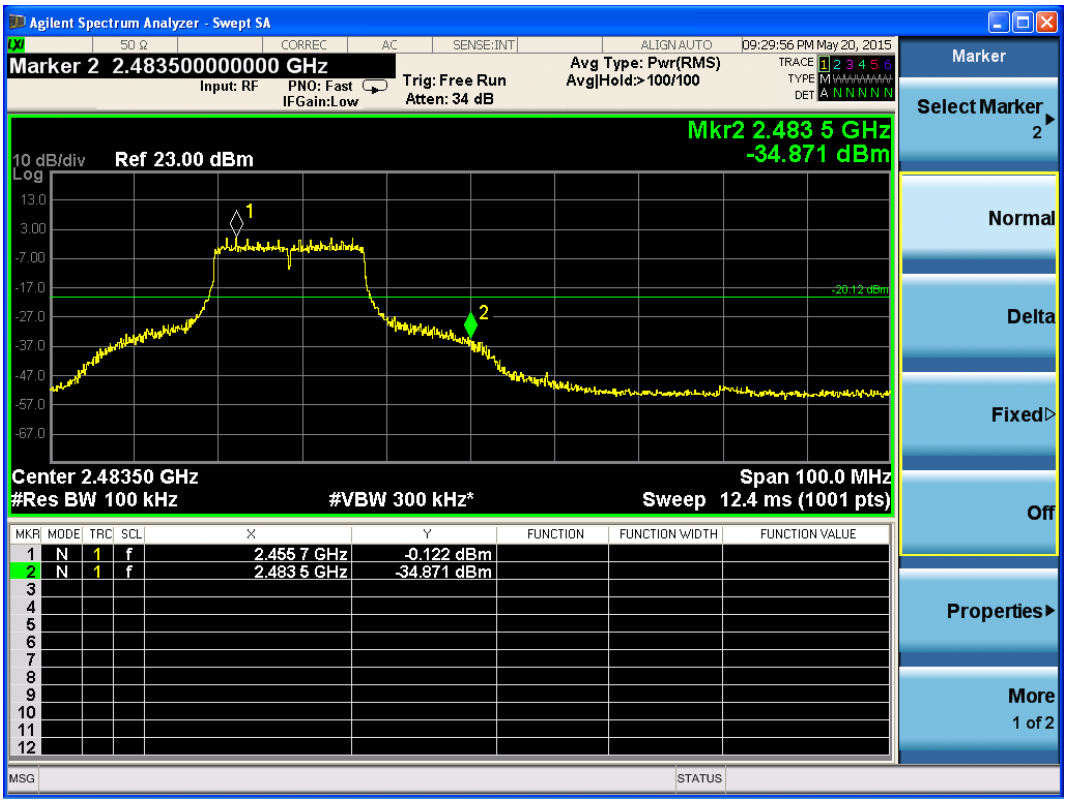


802.11g, Channel No. 11

802.11n (HT20)



802.11n, Channel No.1



802.11n, Channel No. 11

2.6. Spurious Radiated Emissions in the restricted band

Ambient condition

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

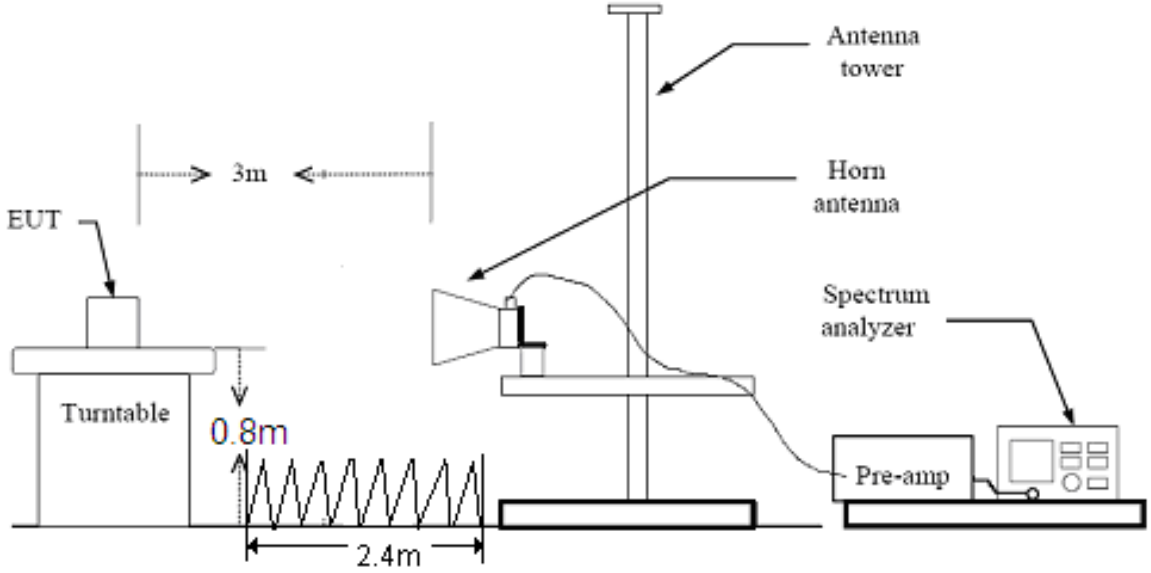
The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. 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

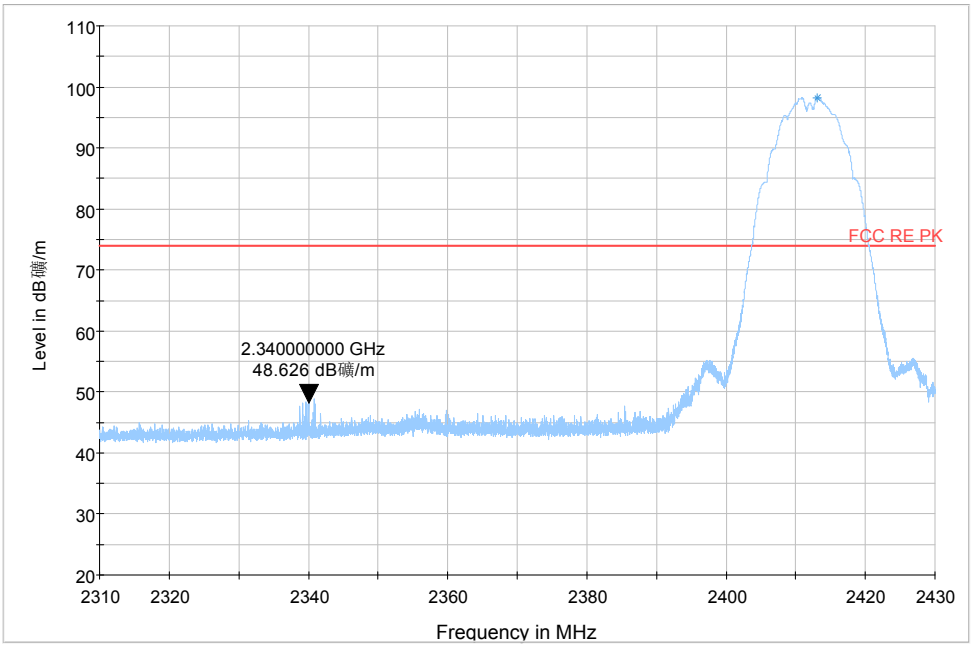
Measurement Uncertainty

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

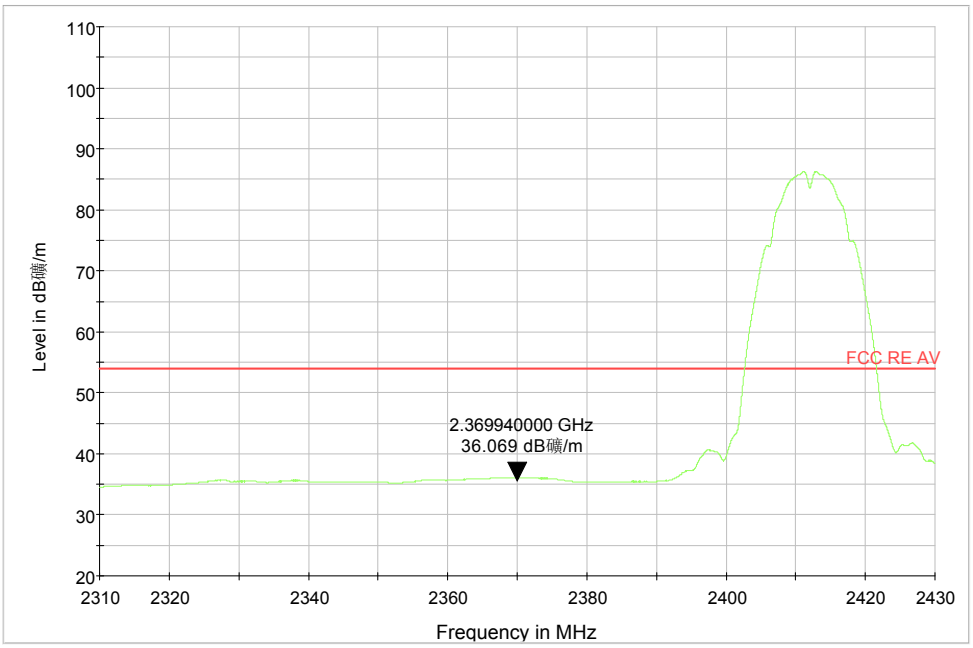


FCC RE PK Preview Result 1-PK+ * Data Reduction Result 1 [2]-PK+

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

Note: A font (Level in dB礦/m)in the test plot =(level in dBuv/m).The signal beyond the limit is carrier

Average



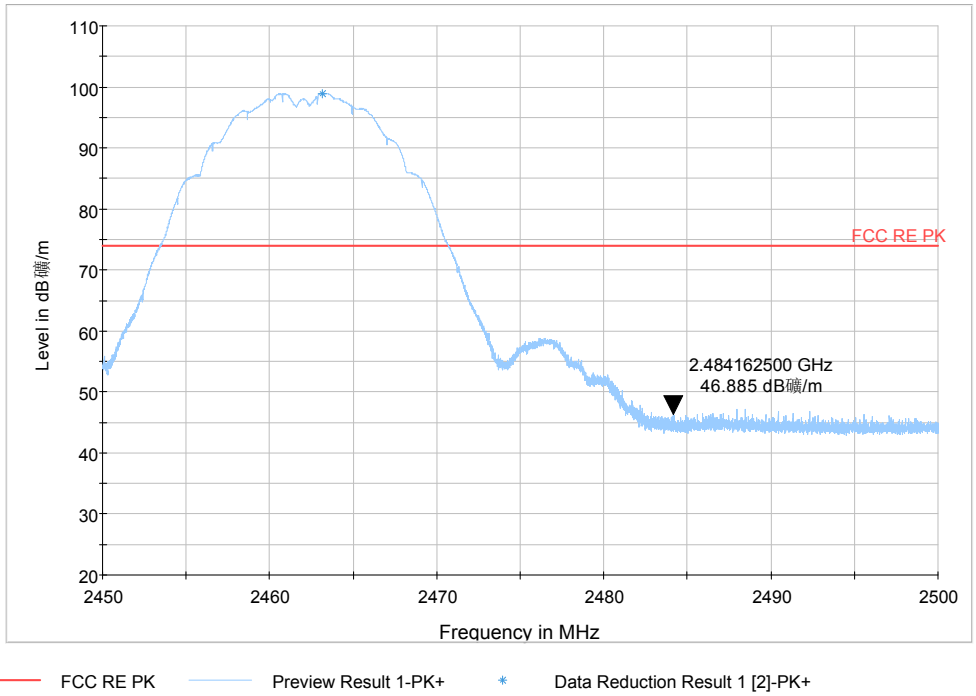
FCC RE AV Preview Result 2-AVG * Data Reduction Result 2 [2]-AVG

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

Note: A font (Level in dB礦/m)in the test plot =(level in dBuv/m).The signal beyond the limit is carrier

802.11b-Channel 11:

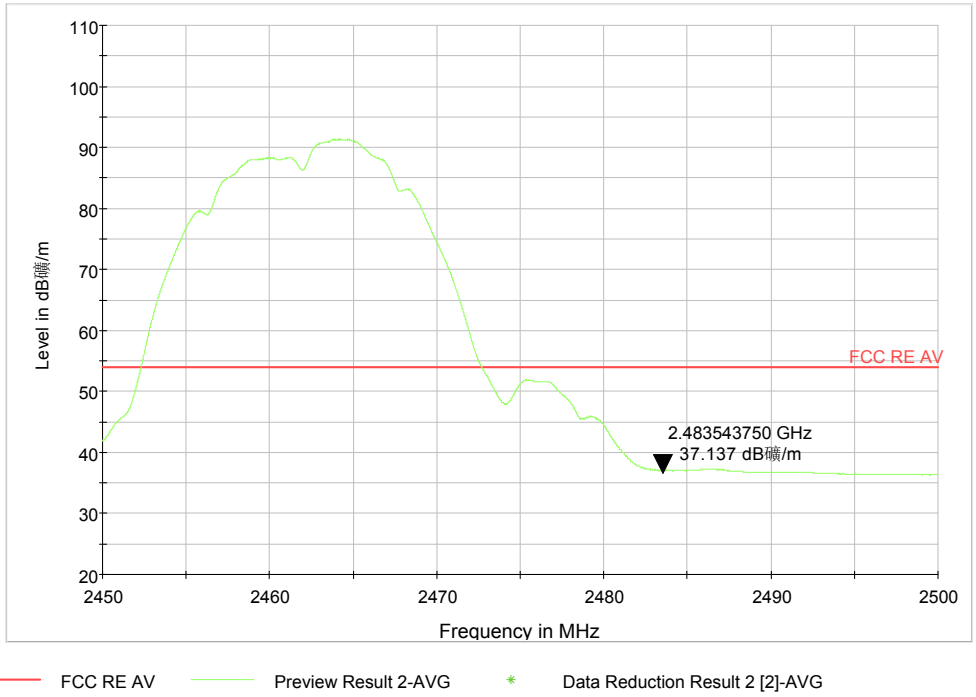
Peak



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

Note: A font (Level in dB礦/m)in the test plot =(level in dBuv/m).The signal beyond the limit is carrier

Average

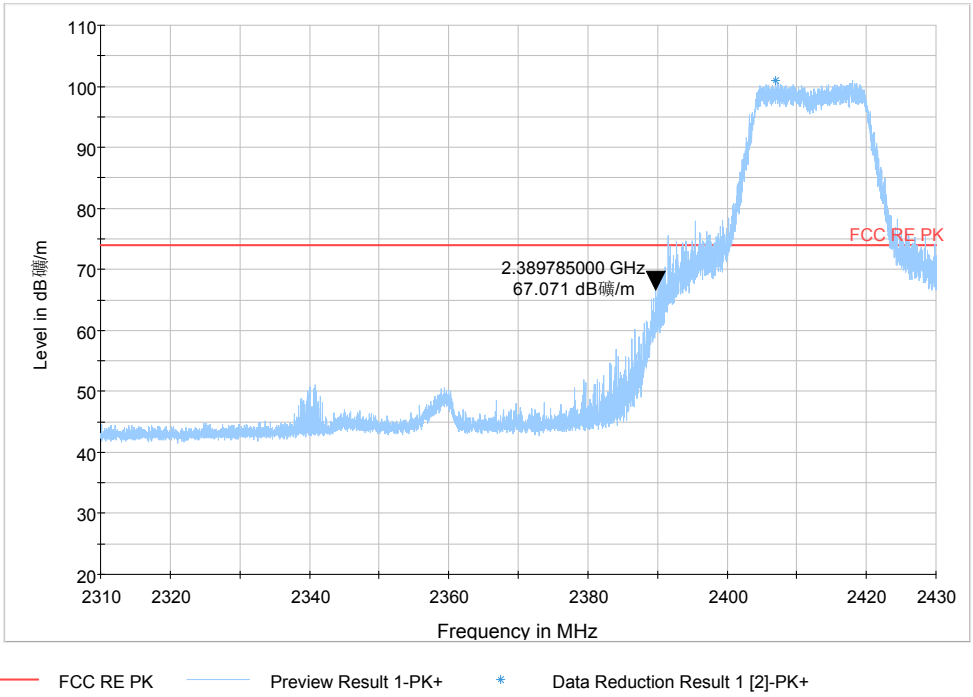


Note: This graph displays the maximum values of horizontal and vertical by software

Note: A font (Level in dB礦/m)in the test plot =(level in dBuv/m).The signal beyond the limit is carrier

802.11g-Channel 1:

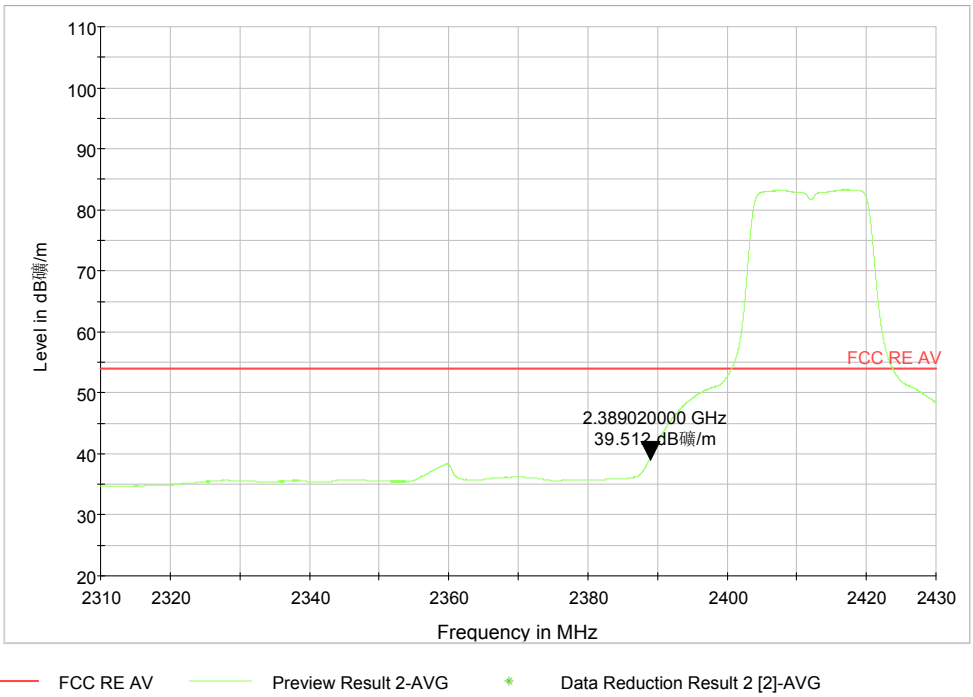
Peak



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

Note: A font (Level in dB礦/m)in the test plot =(level in dBuv/m).The signal beyond the limit is carrier

Average

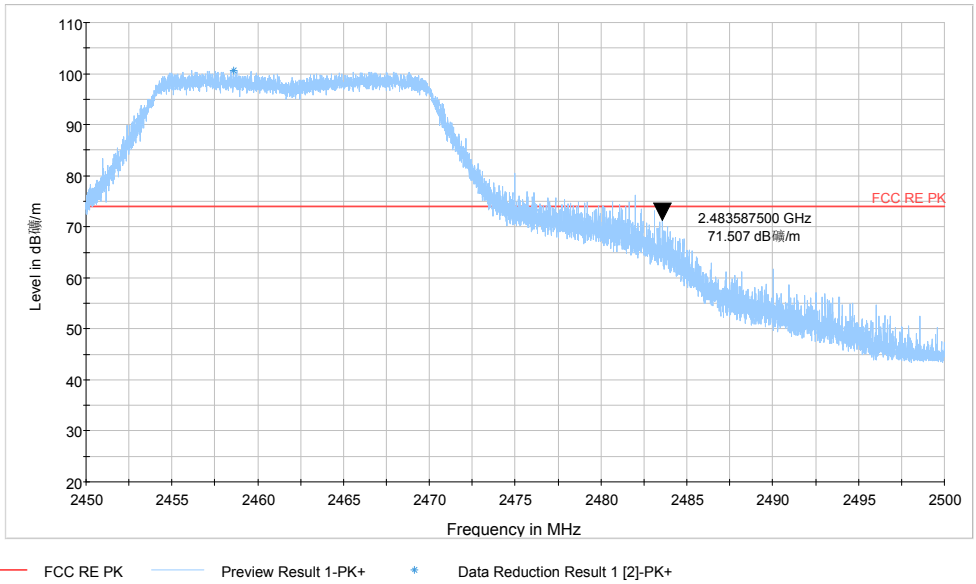


Note: This graph displays the maximum values of horizontal and vertical by software

Note: A font (Level in dB礦/m)in the test plot =(level in dBuv/m).The signal beyond the limit is carrier

802.11g-Channel 11:

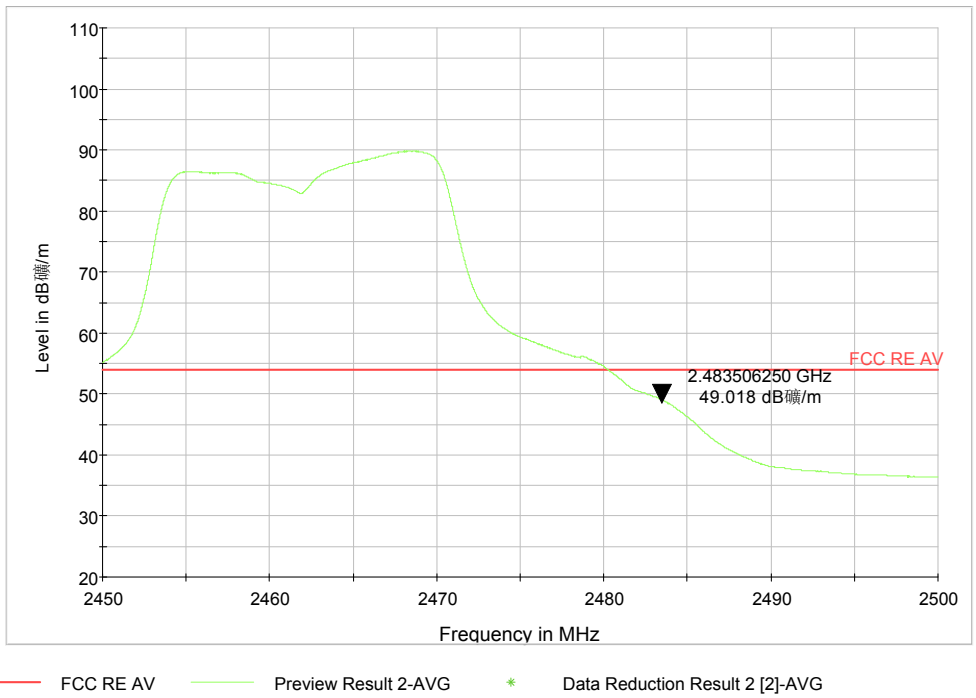
Peak



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

Note: A font (Level in dB礦/m)in the test plot =(level in dBuv/m).The signal beyond the limit is carrier

Average

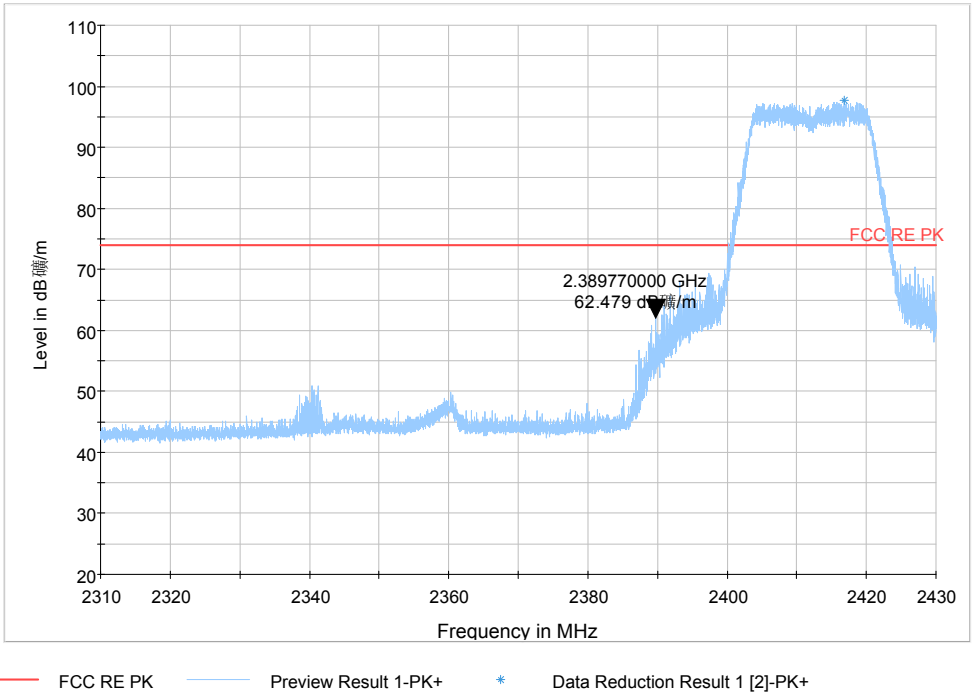


Note: This graph displays the maximum values of horizontal and vertical by software

Note: A font (Level in dB礦/m)in the test plot =(level in dBuv/m).The signal beyond the limit is carrier

802.11n-Channel 1(HT20):

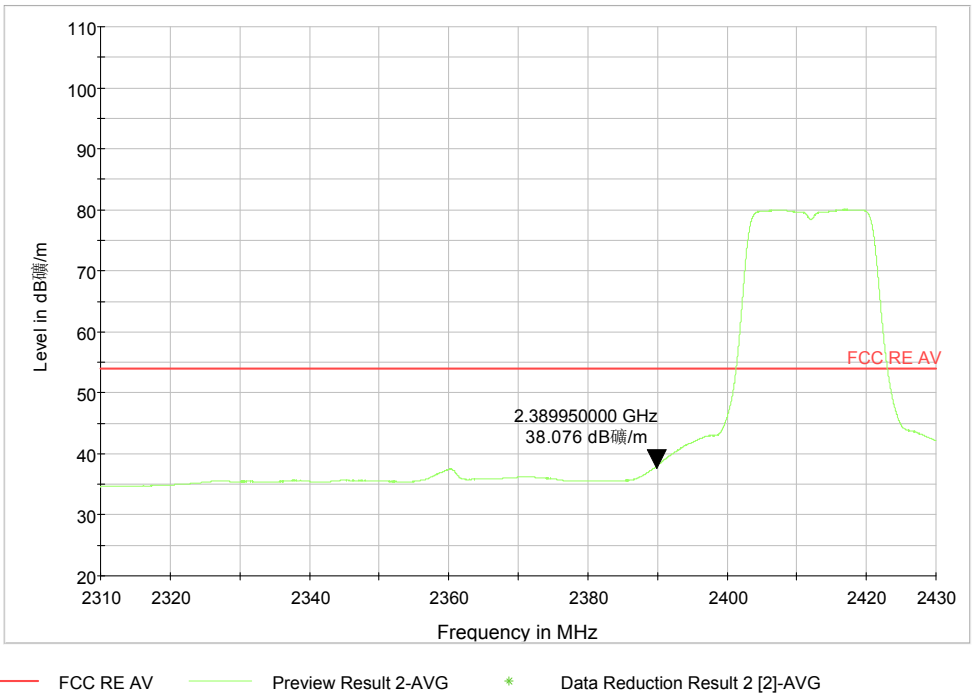
Peak



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

Note: A font (Level in dB礦/m)in the test plot =(level in dBuv/m).The signal beyond the limit is carrier

Average

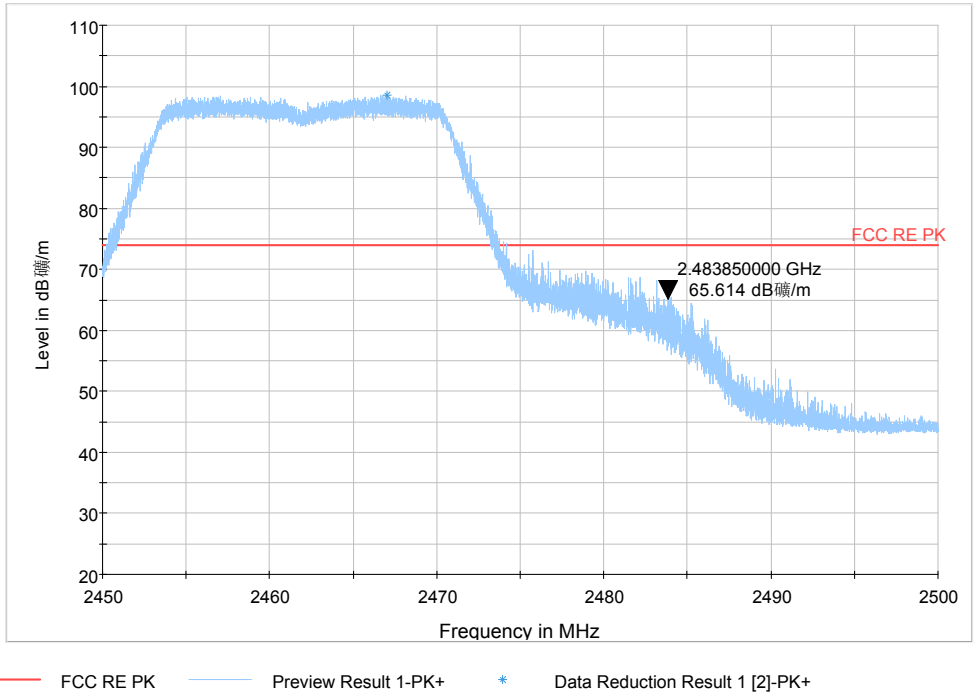


Note: This graph displays the maximum values of horizontal and vertical by software

Note: A font (Level in dB礦/m)in the test plot =(level in dBuv/m).The signal beyond the limit is carrier

802.11n-Channel 11(HT20):

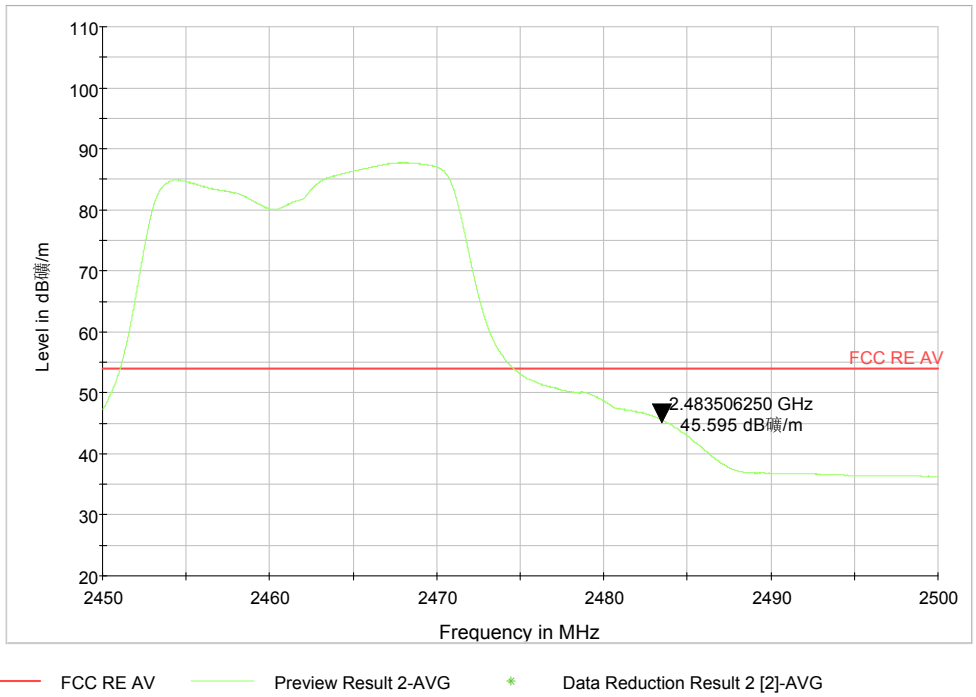
Peak



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

Note: A font (Level in dB礦/m)in the test plot =(level in dBuv/m).The signal beyond the limit is carrier

Average



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

Note: A font (Level in dB礦/m)in the test plot =(level in dBuv/m).The signal beyond the limit is carrier

2.7. Power Spectral Density

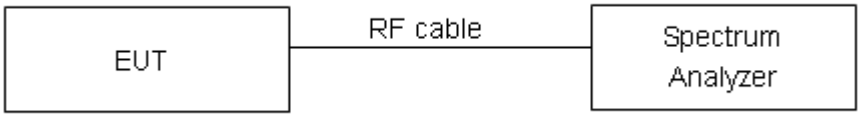
Ambient condition

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

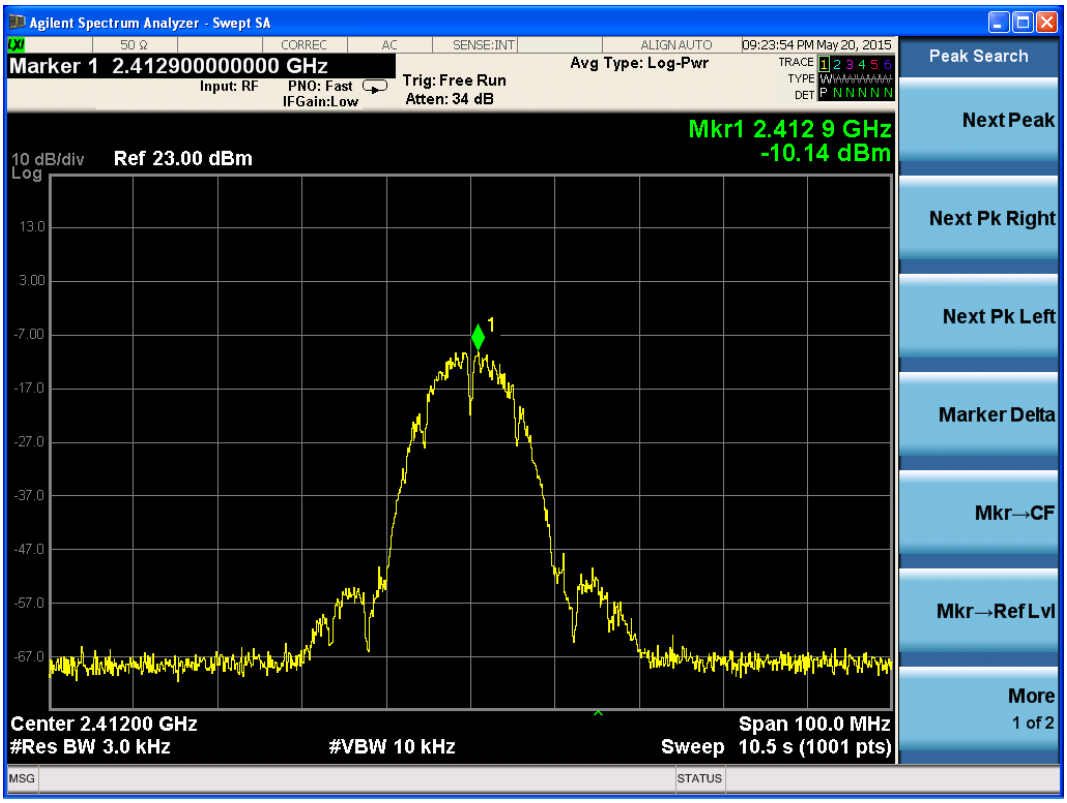
Measurement Uncertainty

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

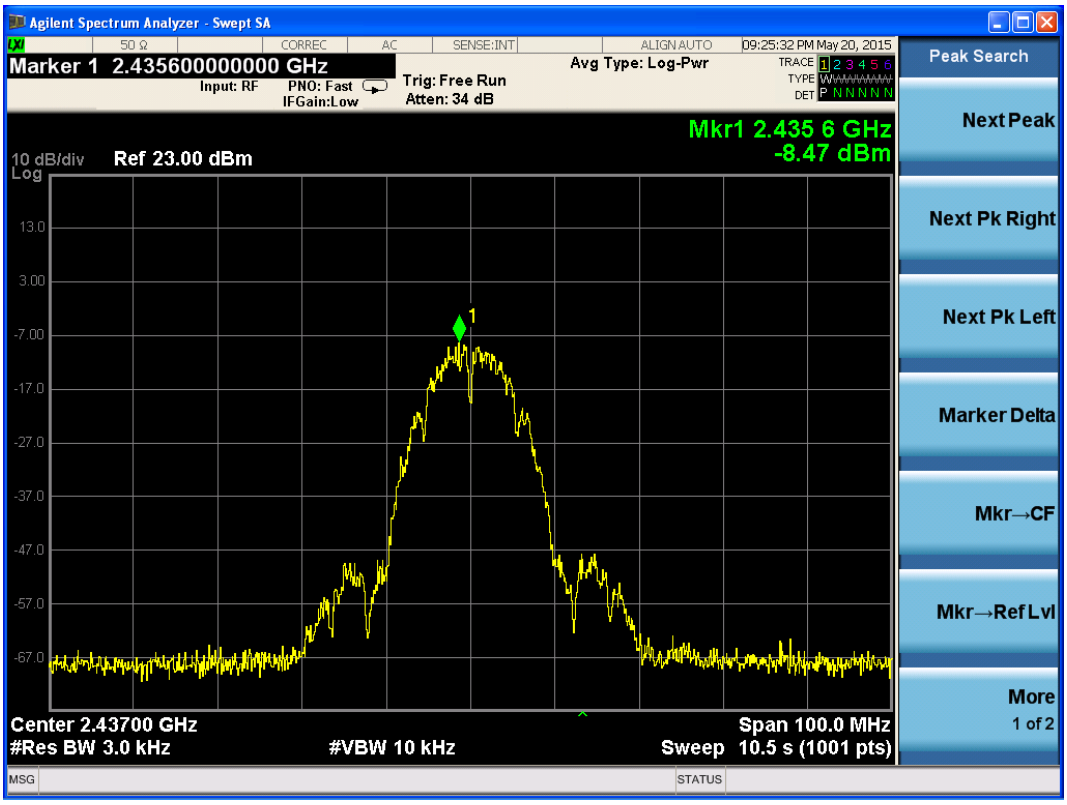
Test Results:

Network Standards	Channel Number	Power Spectral Density dBm / 3kHz	Conclusion
802.11b	1	-10.14	PASS
	6	-8.47	PASS
	11	-6.75	PASS
802.11g	1	-13.18	PASS
	6	-12.03	PASS
	11	-2.26	PASS
802.11n HT20	1	-14.58	PASS
	6	-13.65	PASS
	11	-13.41	PASS

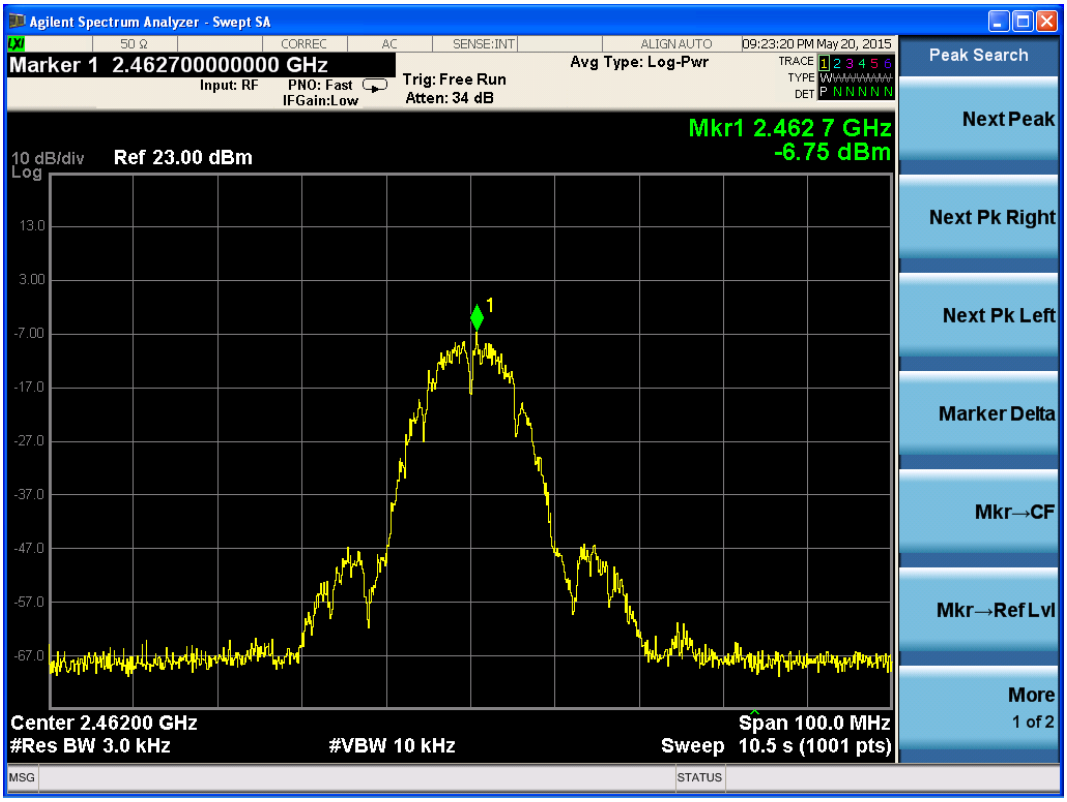
802.11b



802.11b, Channel No. 1

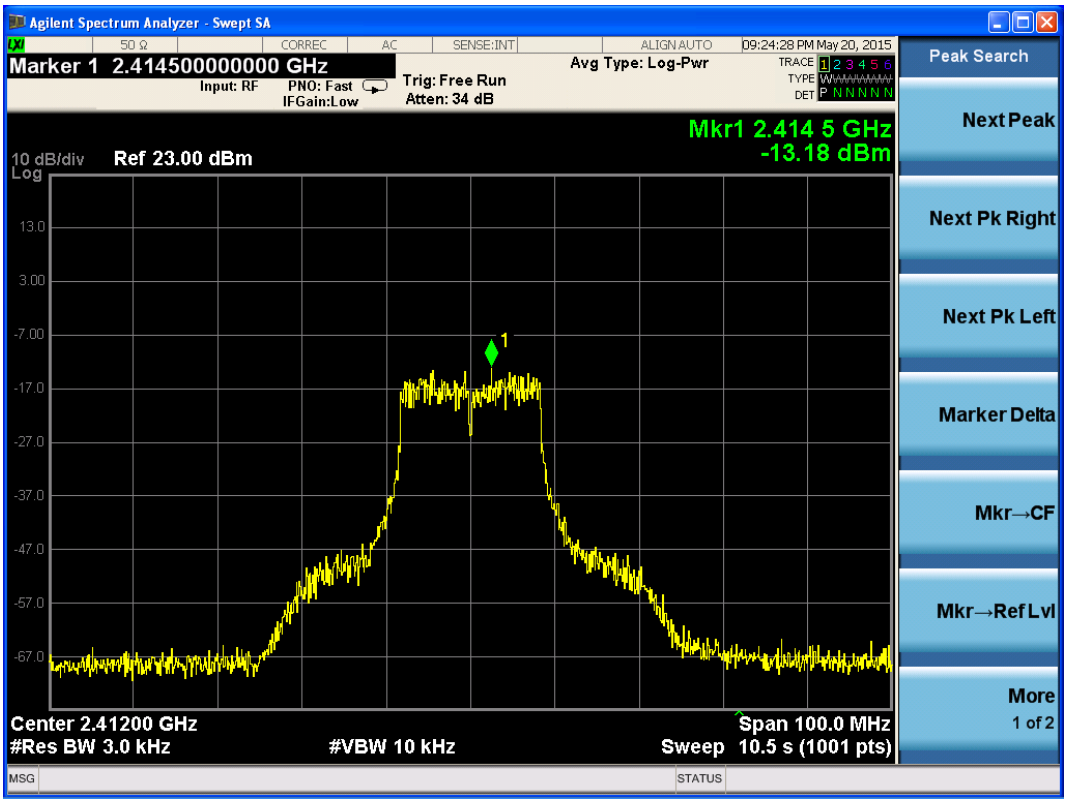


802.11b, Channel No. 6

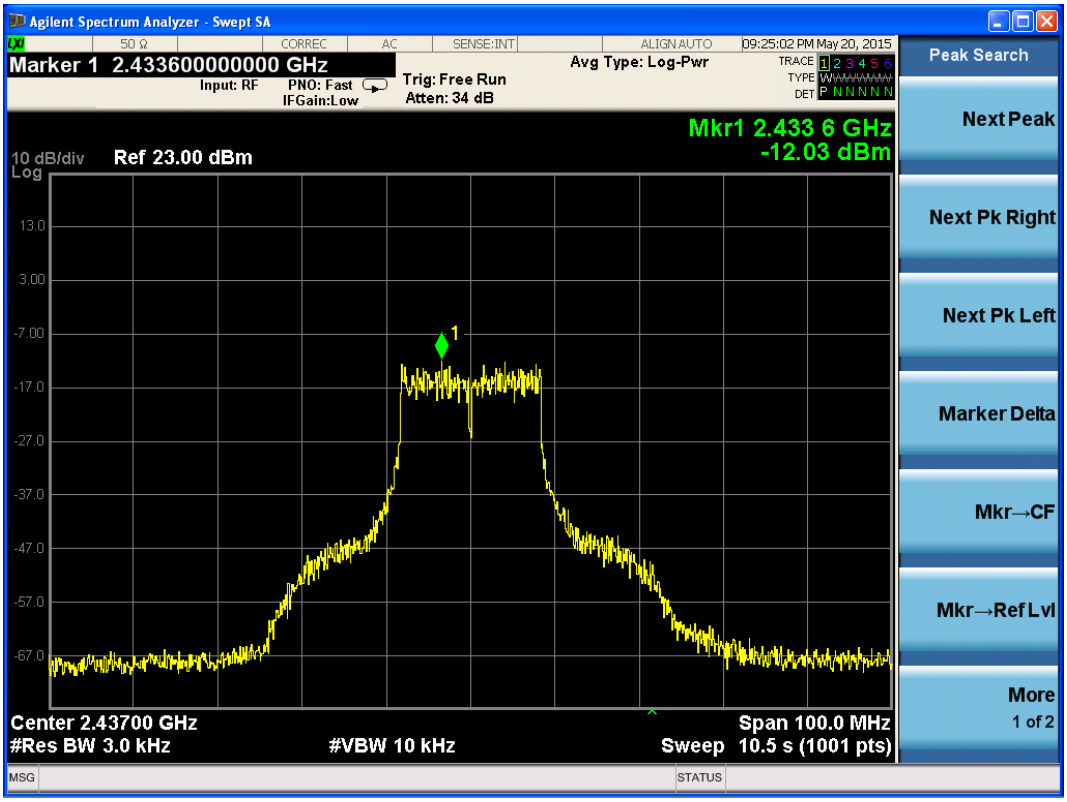


802.11b, Channel No. 11

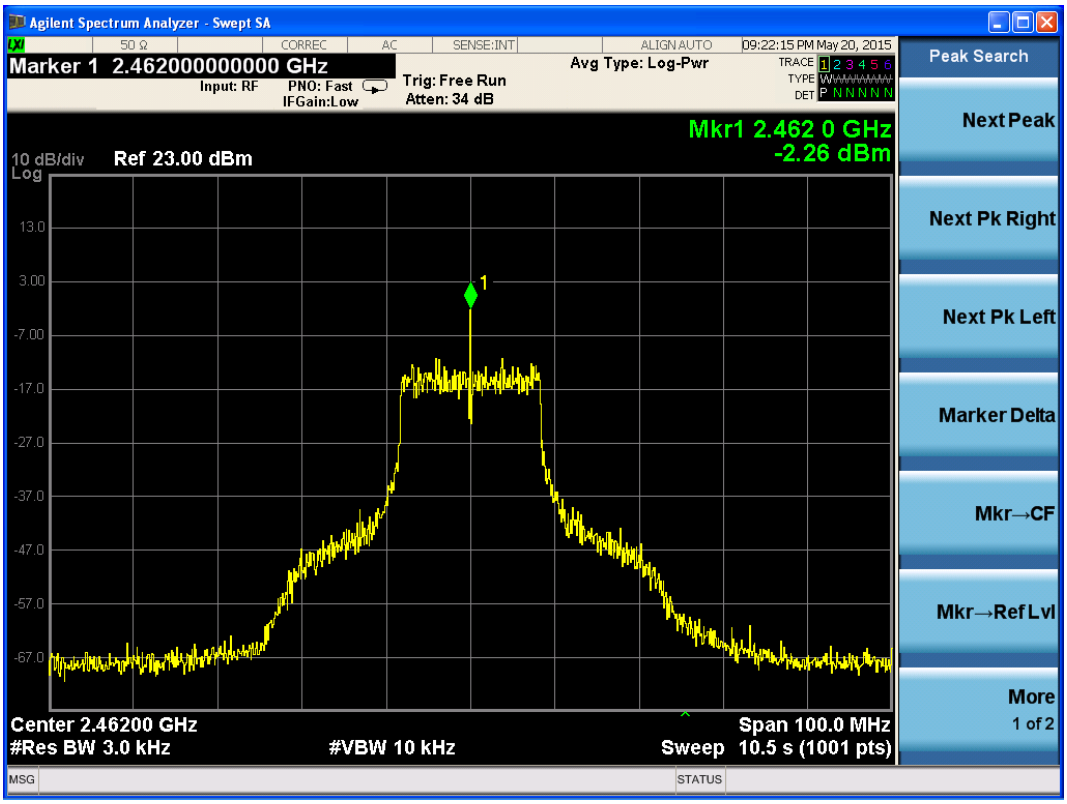
802.11g



802.11g, Channel No. 1

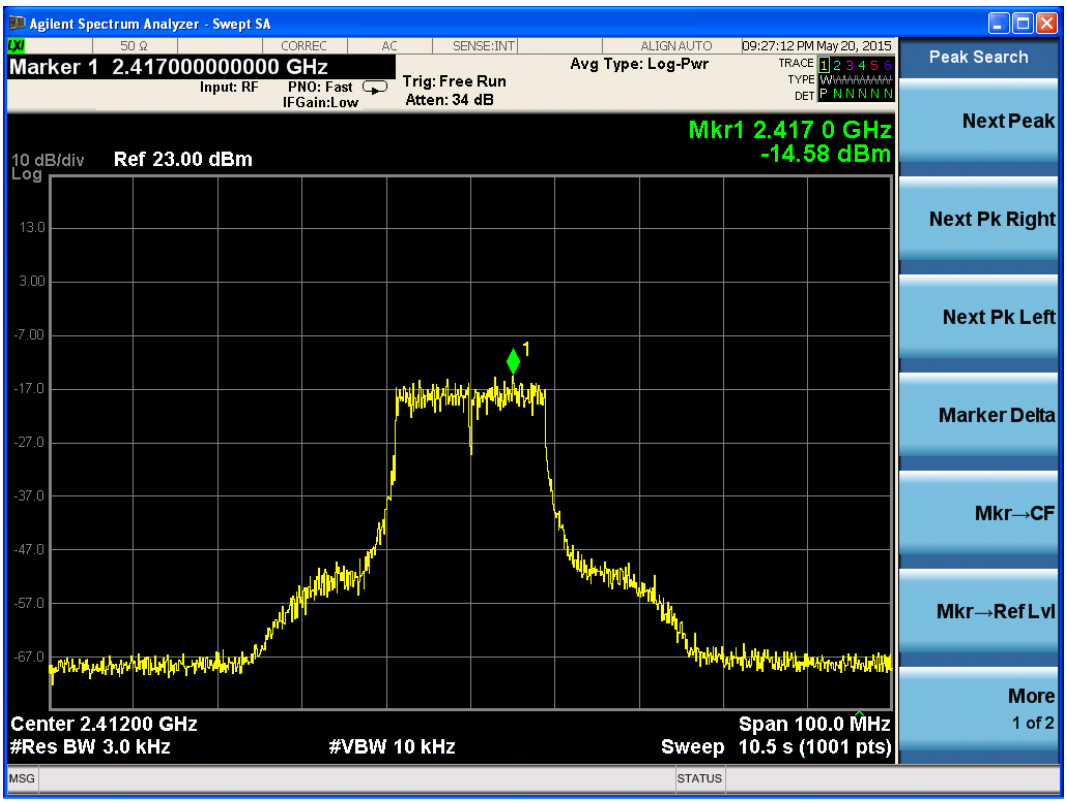


802.11g, Channel No. 6

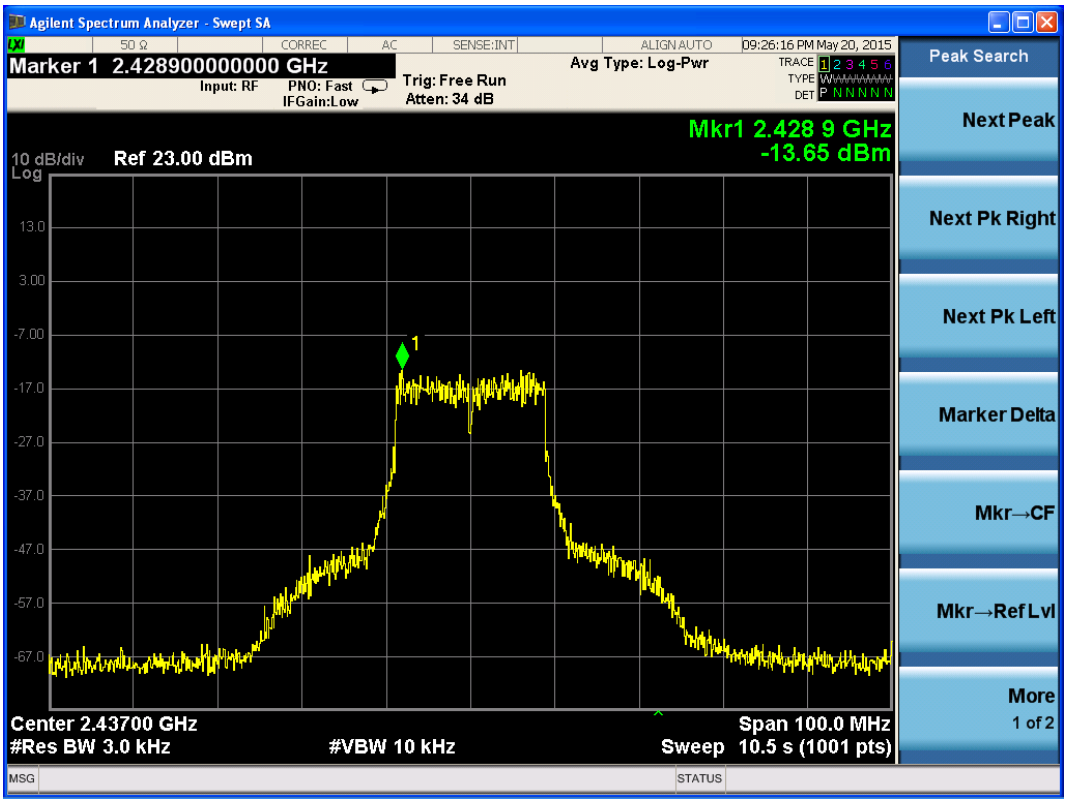


802.11g, Channel No. 11

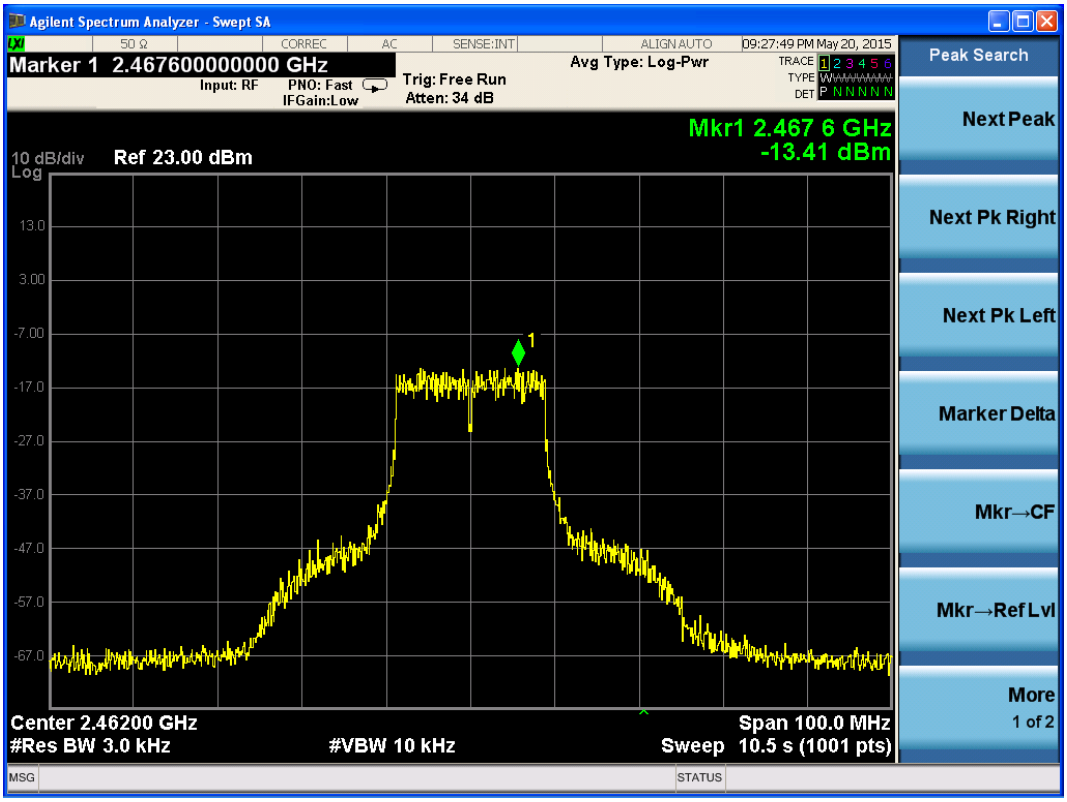
802.11n (HT20)



802.11n, Channel No. 1



802.11n, Channel No. 6



802.11n, Channel No. 11

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	14.62	≤-5.38
	2437	15.07	≤-4.93
	2462	15.29	≤-4.71
802.11g	2412	14.32	≤-5.68
	2437	15.02	≤-4.98
	2462	15.33	≤-4.67
802.11n HT20	2412	14.37	≤-5.63
	2437	14.81	≤-5.19
	2462	15.02	≤-4.98

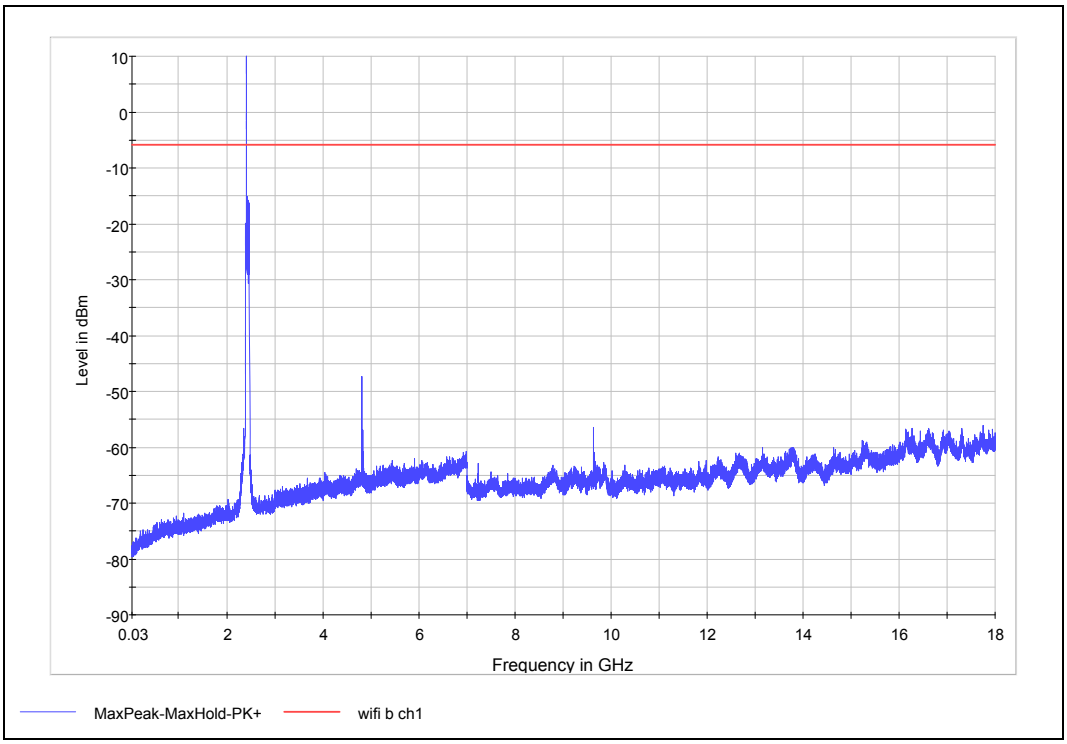
Measurement Uncertainty

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:

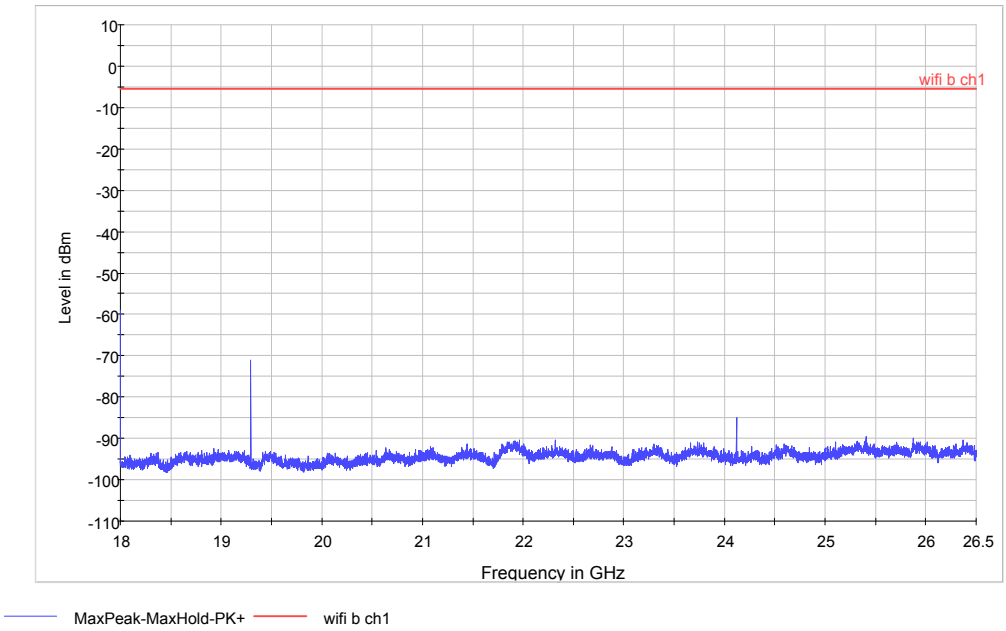
802.11b CH1



Note: The signal beyond the limit is carrier.

Spurious RF conducted emissions from 30MHz to 18GHz

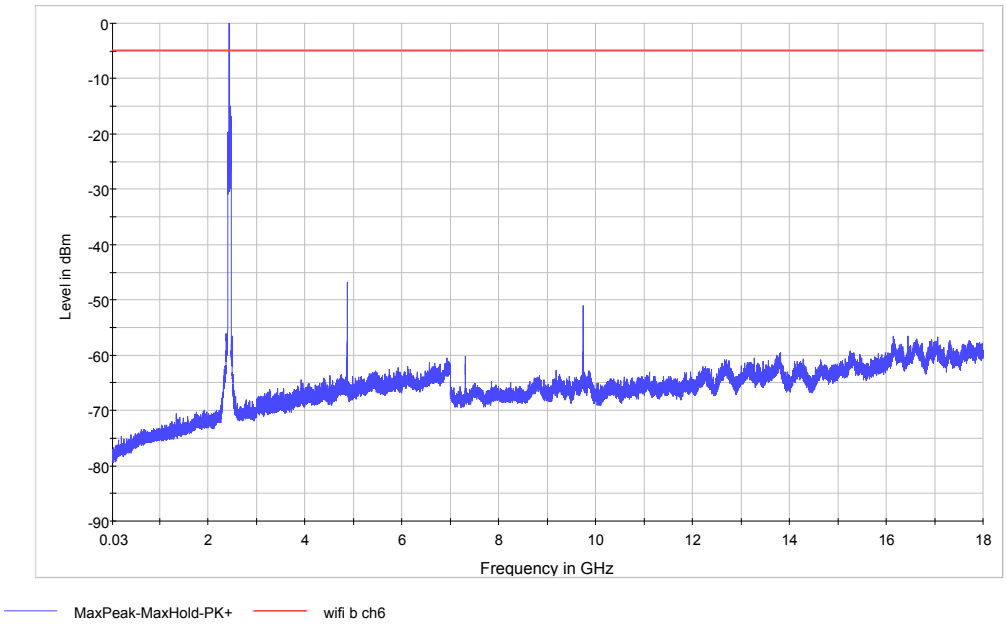
Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
2	4824.00	-47.31	-5.38	41.93
4	9648.00	-56.49	-5.38	51.11



Spurious RF conducted emissions from 18GHz to 26.5GHz

Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
8	19295.25	-71.03	-5.38	65.65
16	24120.00	-84.86	-5.38	79.48

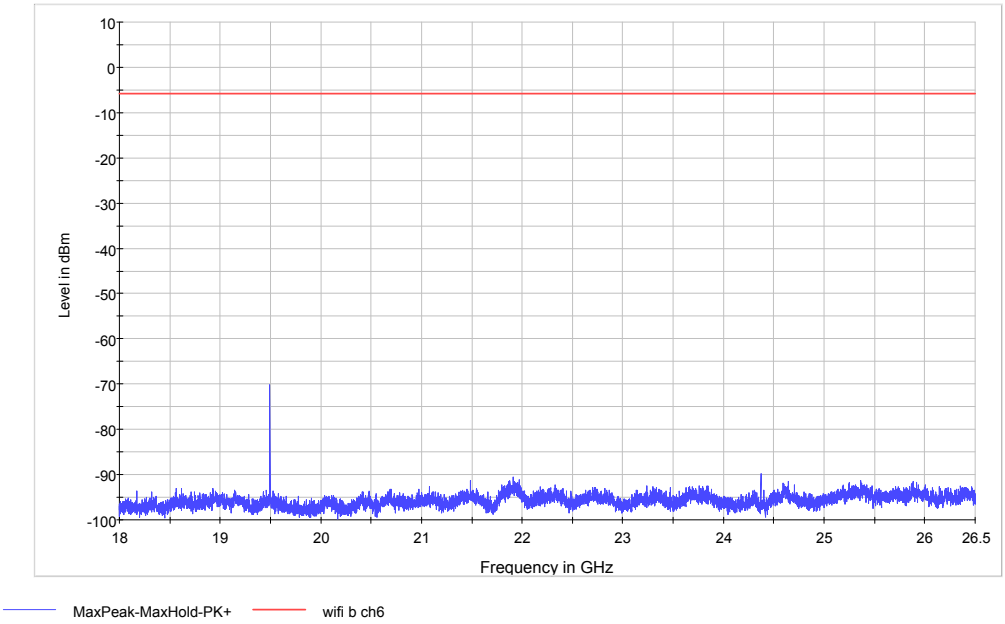
802.11b CH6



Note: The signal beyond the limit is carrier.

Spurious RF conducted emissions from 30MHz to 18GHz

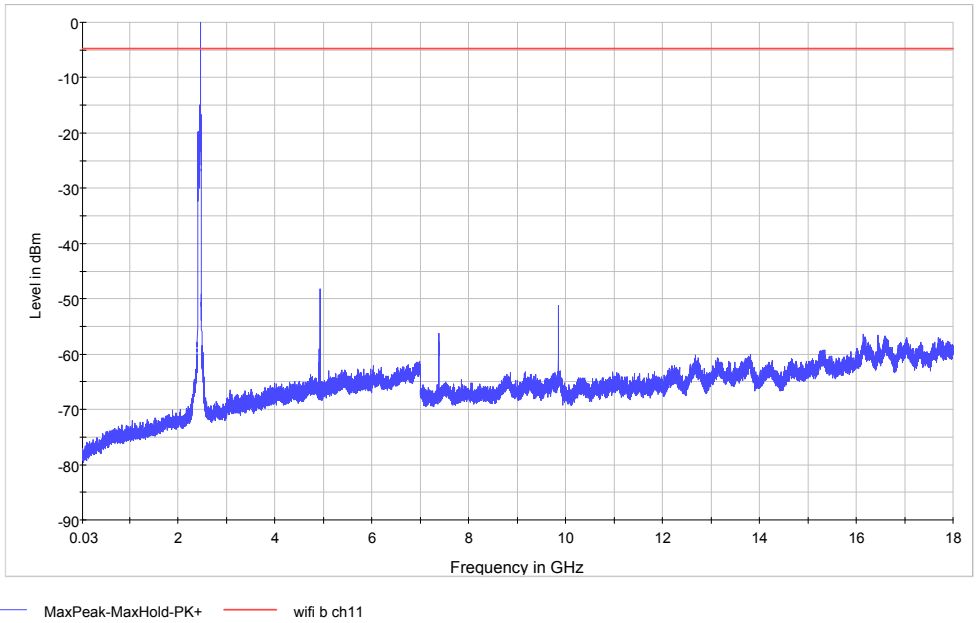
Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
2	4874.25	-46.87	-4.93	41.94
3	7311.75	-60.19	-4.93	55.26
4	9748.00	-51.07	-4.93	46.14



Spurious RF conducted emissions from 18GHz to 26.5GHz

Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
8	19496.00	-70.12	-4.93	65.19
16	24380.75	-89.80	-4.93	84.87

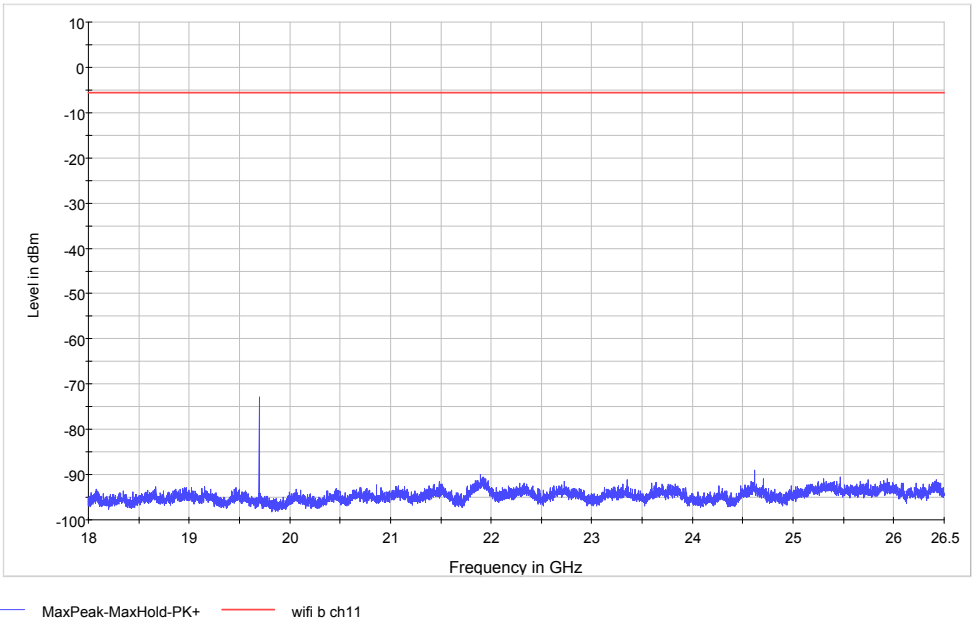
802.11b CH11



Note: The signal beyond the limit is carrier.

Spurious RF conducted emissions from 30MHz to 18GHz

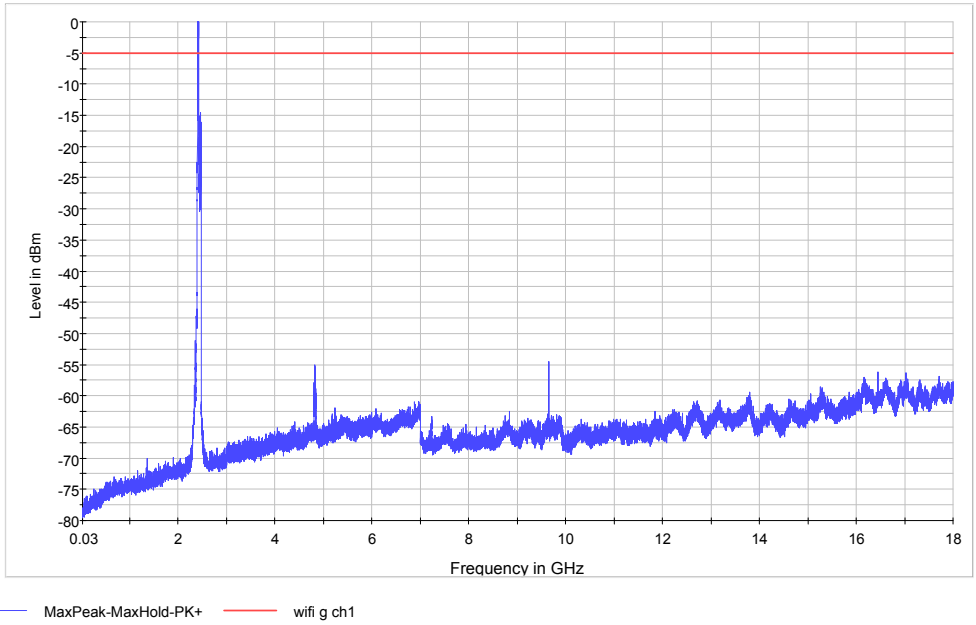
Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
2	4924.13	-48.29	-4.71	43.58
3	7386.75	-56.25	-4.71	51.54
4	9848.00	-51.20	-4.71	46.49



Spurious RF conducted emissions from 18GHz to 26.5GHz

Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
8	19695.75	-72.81	-4.71	68.10
16	24620.43	-89.06	-4.71	84.35

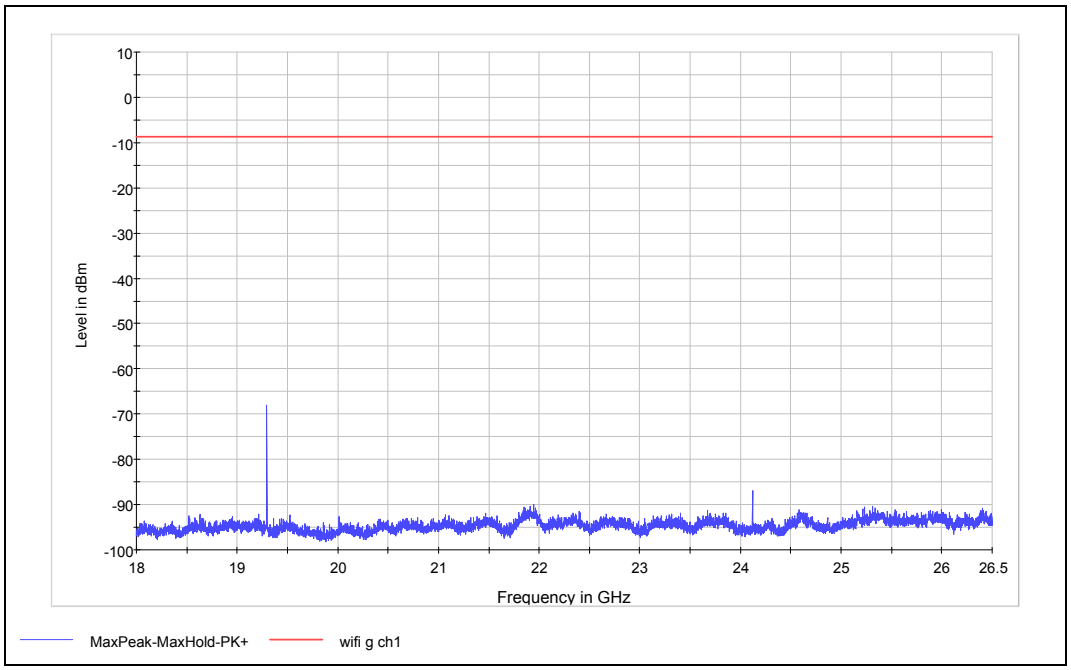
802.11g CH1



Note: The signal beyond the limit is carrier.

Spurious RF conducted emissions from 30MHz to 18GHz

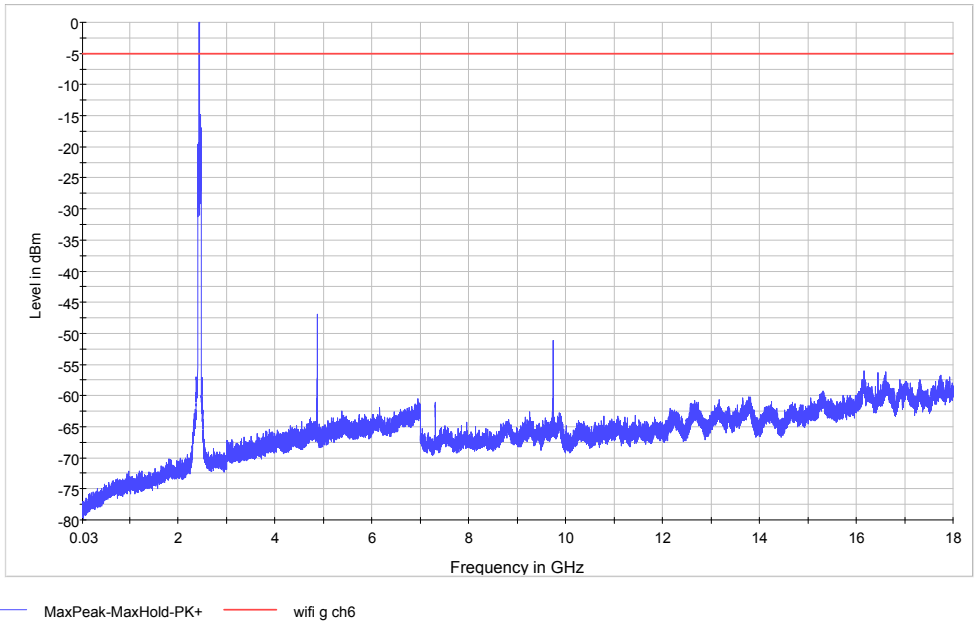
Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
2	4822.87	-55.13	-5.68	49.45
4	9648.00	-54.50	-5.68	48.82



Spurious RF conducted emissions from 18GHz to 26.5GHz

Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
8	19296.25	-68.05	-5.68	62.37
16	24120.00	-86.91	-5.68	81.23

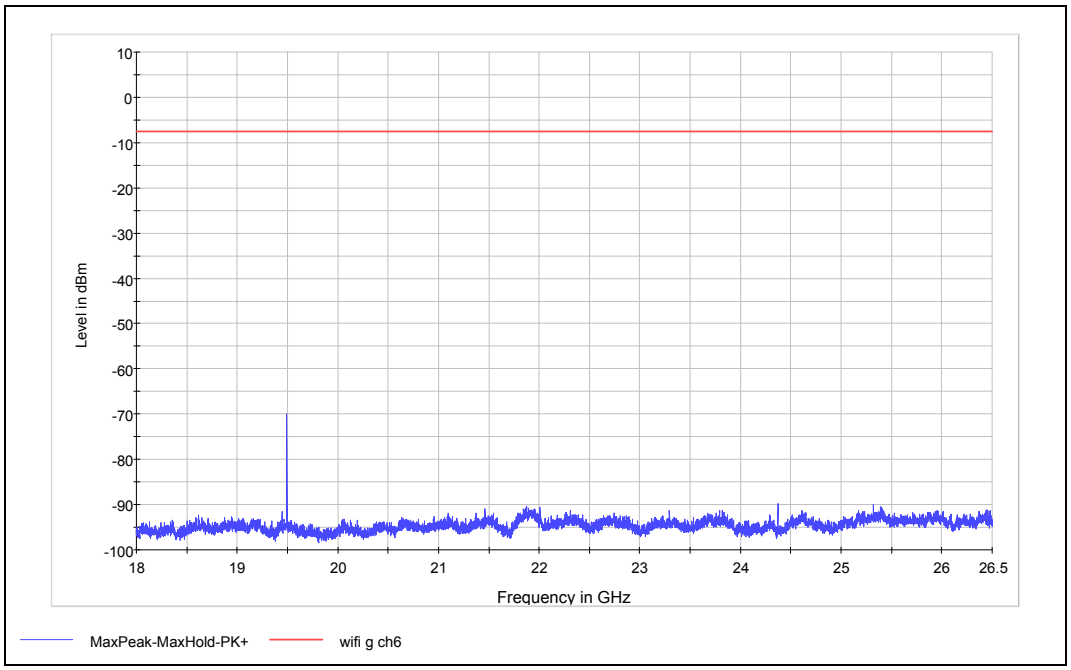
802.11g CH6



Note: The signal beyond the limit is carrier.

Spurious RF conducted emissions from 30MHz to 18GHz

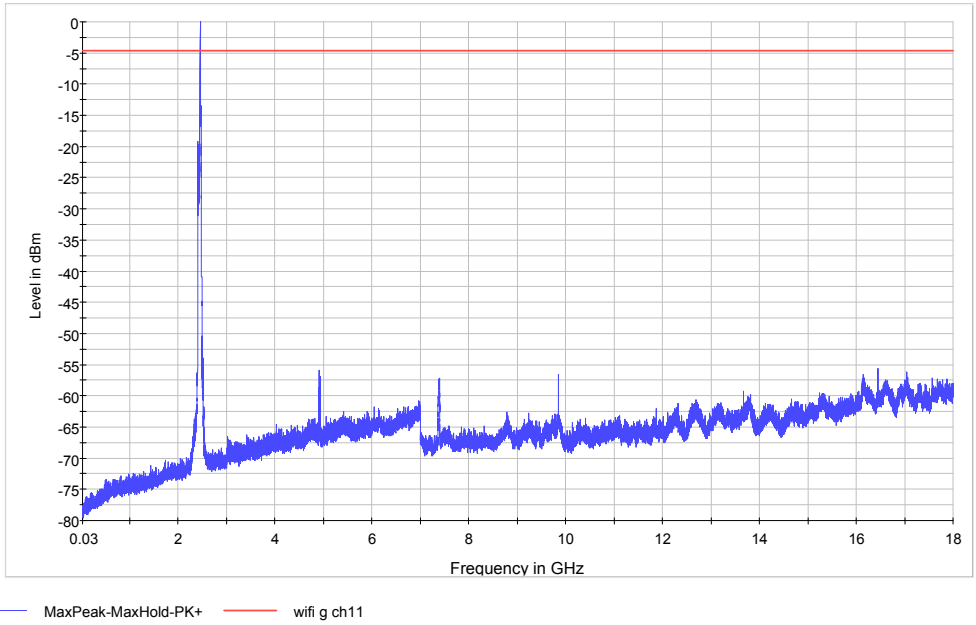
Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
2	4874.25	-46.95	-4.98	41.97
3	7311.75	-61.23	-4.98	56.25
4	9748.00	-51.18	-4.98	46.2



Spurious RF conducted emissions from 18GHz to 26.5GHz

Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
8	19496.00	-70.02	-4.98	65.04
16	24370.75	-89.88	-4.98	84.9

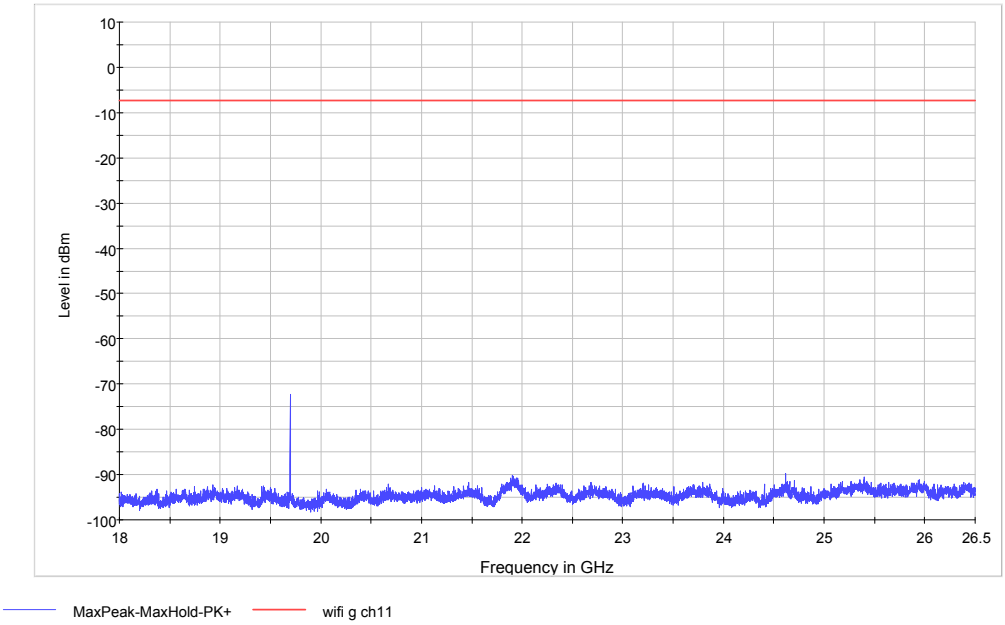
802.11g CH11



Note: The signal beyond the limit is carrier.

Spurious RF conducted emissions from 30MHz to 18GHz

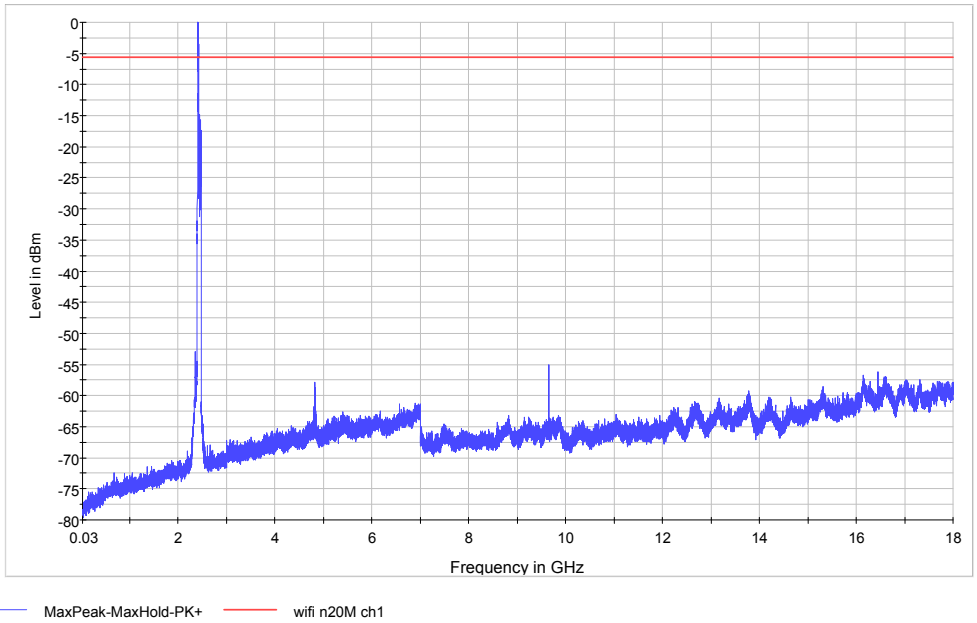
Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
2	4923.00	-55.85	-4.67	51.18
3	7393.50	-57.17	-4.67	52.50
4	9848.00	-56.62	-4.67	51.95



Spurious RF conducted emissions from 18GHz to 26.5GHz

Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
8	19695.75	-72.35	-4.67	67.68
16	24620.44	-89.77	-4.67	85.10

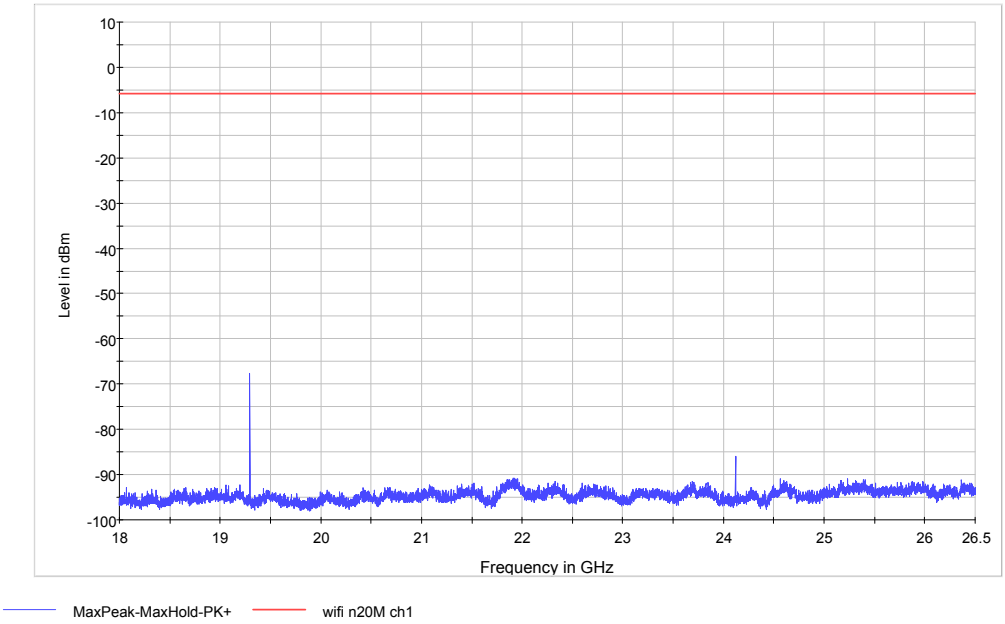
802.11n(HT20) CH1



Note: The signal beyond the limit is carrier.

Spurious RF conducted emissions from 30MHz to 18GHz

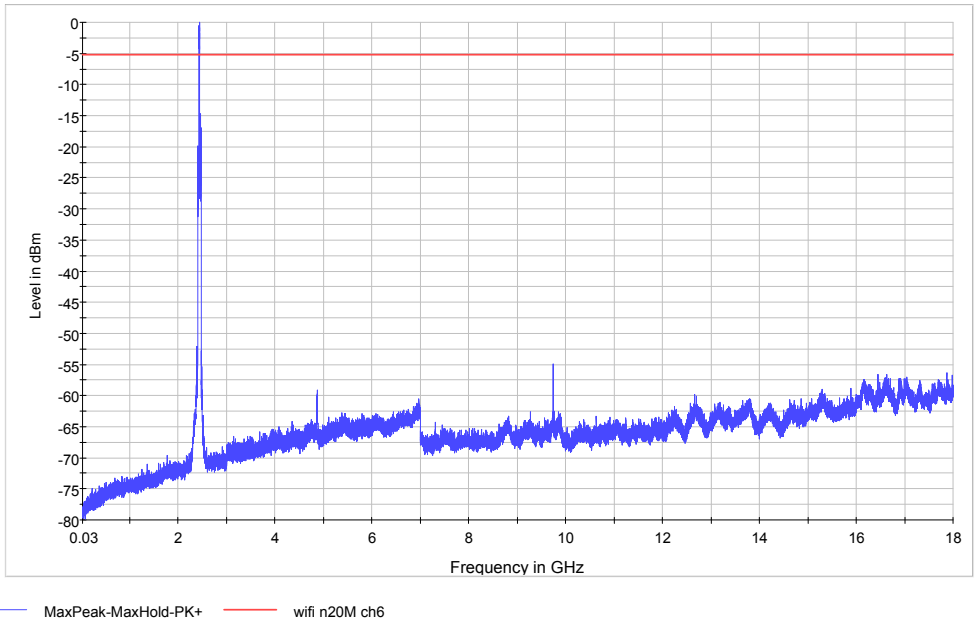
Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
2	4825.50	-57.93	-5.63	52.30
4	9648.00	-55.04	-5.63	49.41



Spurious RF conducted emissions from 18GHz to 26.5GHz

Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
8	19296.25	-67.66	-5.63	62.03
16	24120.00	-85.59	-5.63	79.96

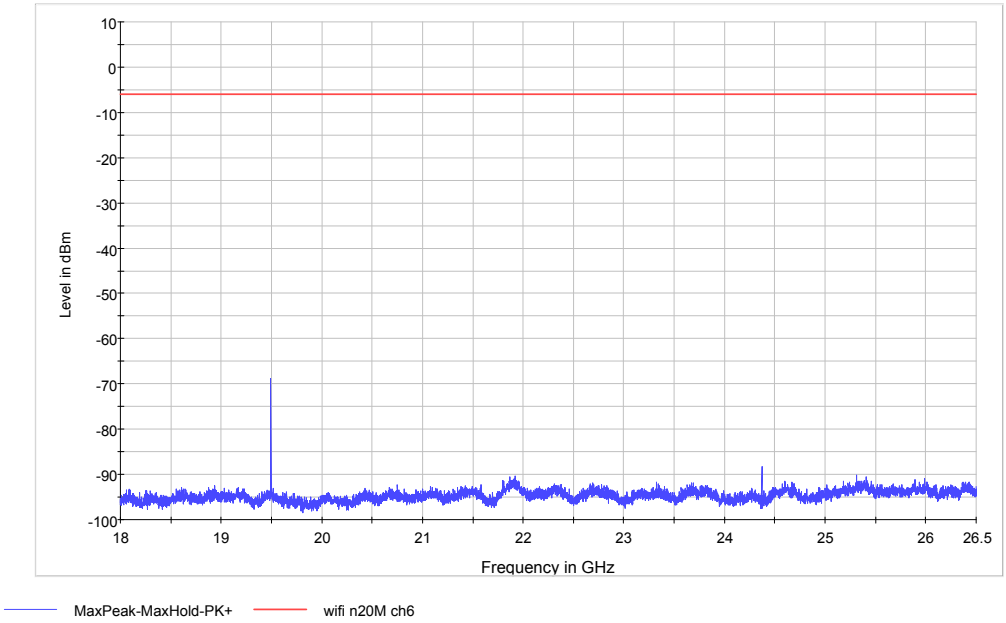
802.11n(HT20) CH6



Note: The signal beyond the limit is carrier.

Spurious RF conducted emissions from 30MHz to 18GHz

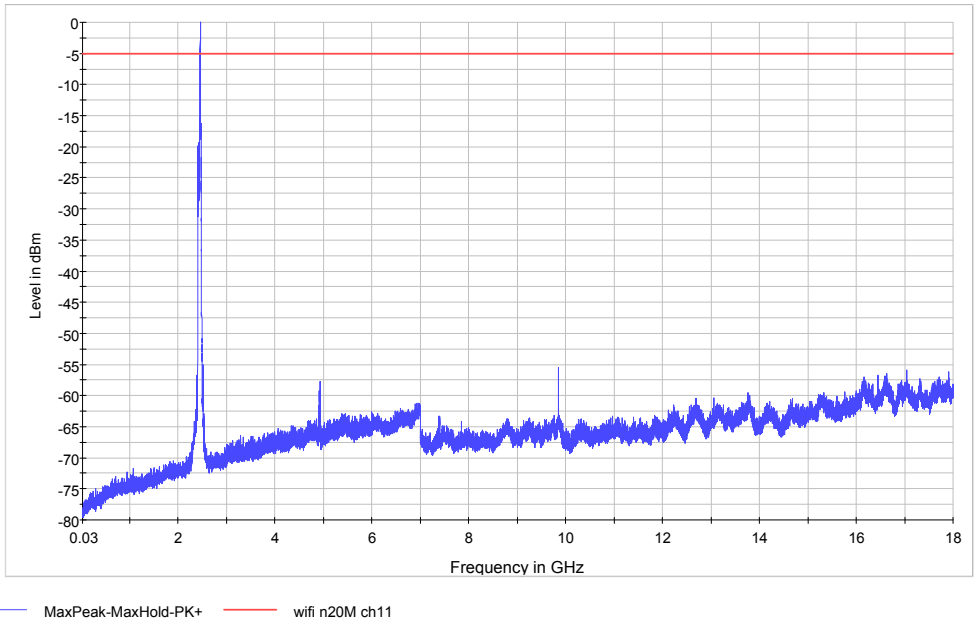
Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
2	4876.87	-59.14	-5.19	53.95
4	9748.00	-84.49	-5.19	79.30



Spurious RF conducted emissions from 18GHz to 26.5GHz

Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
8	19496.00	-68.88	-5.19	63.69
16	24370.75	-88.18	-5.19	62.99

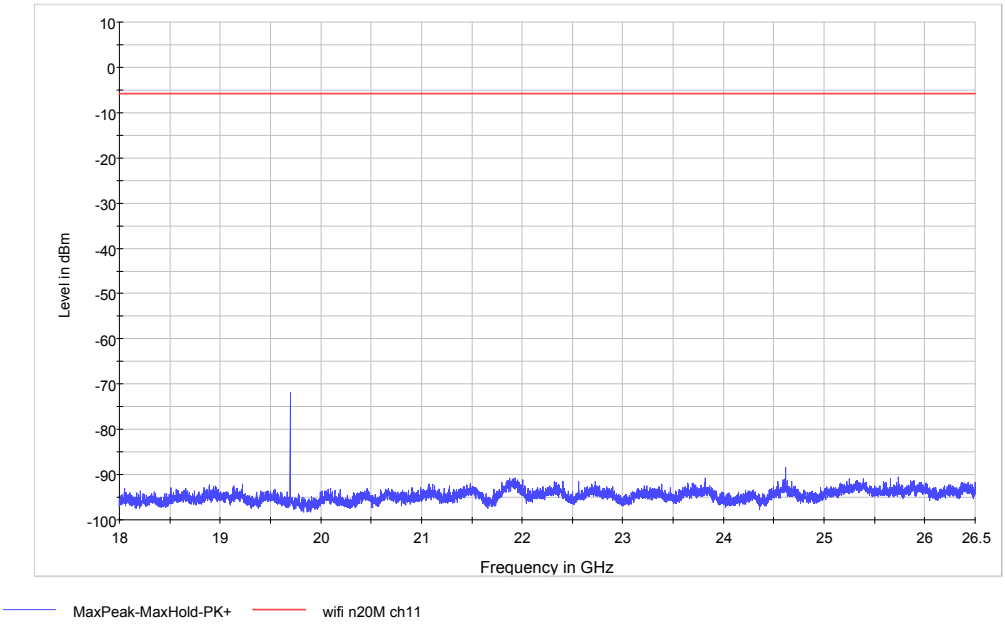
802.11n(HT20) CH11



Note: The signal beyond the limit is carrier.

Spurious RF conducted emissions from 30MHz to 18GHz

Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
2	4925.25	-57.67	-4.98	52.69
4	9848.00	-55.42	-4.98	50.44



Spurious RF conducted emissions from 18GHz to 26.5GHz

Harmonic	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
8	19695.75	-71.93	-4.98	66.95
16	24620.44	-88.37	-4.98	83.39

2.9. Radiates Emission

Ambient condition

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

Method of Measurement

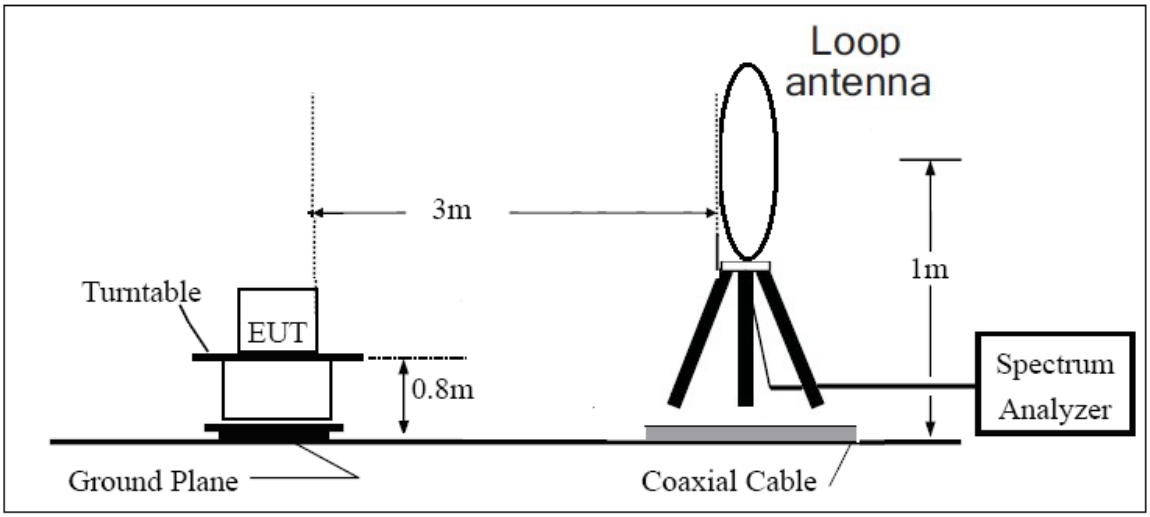
The test set-up was made in accordance to the general provisions of ANSI C63.4-2009. The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The radiated emissions measurements were made in a typical installation configuration. Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, and the emissions less than 20 dB below the permissible value are reported.
During the test, below 30MHz, the center of the loop shall be 1 meters; above 30MHz, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.
Set the spectrum analyzer in the following:
Below 1GHz (detector: Peak and Quasi-Peak)
RBW=100kHz / VBW=300kHz / Sweep=AUTO
Above 1GHz(detector: Peak):
(a) PEAK: RBW=1MHz VBW=3MHz/ Sweep=AUTO
(b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO

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

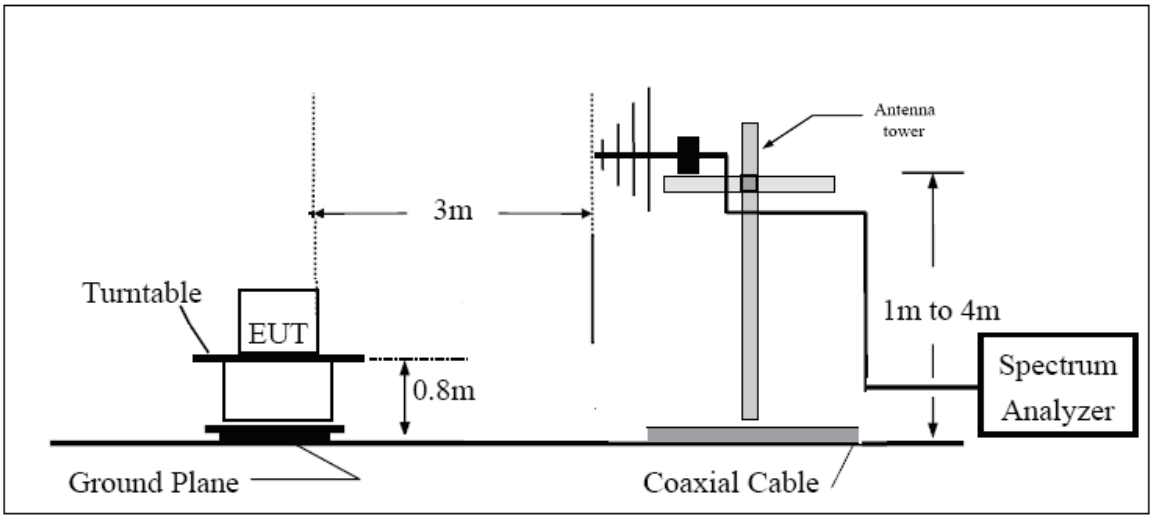
The test is in transmitting mode.

Test setup

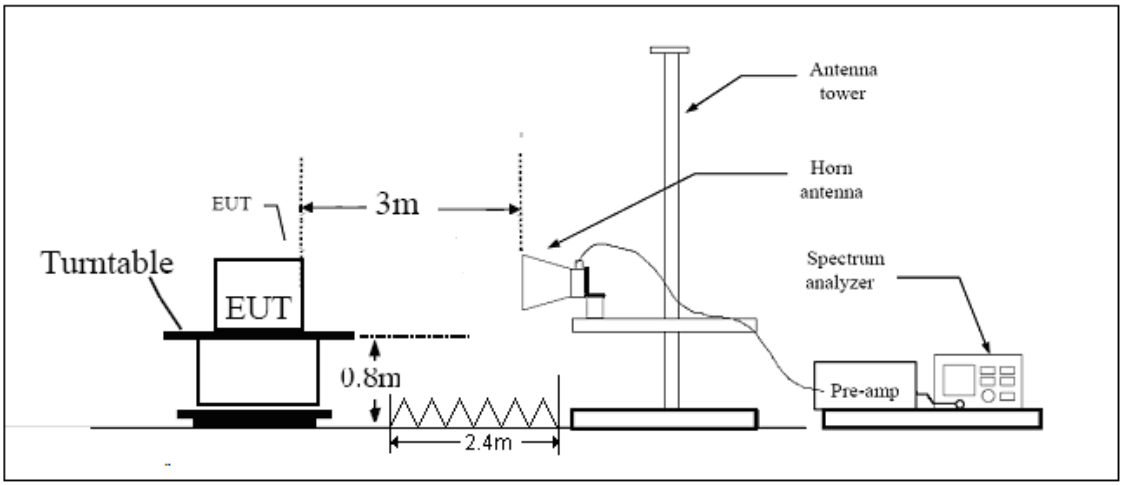
9KHz~~~ 30MHz



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

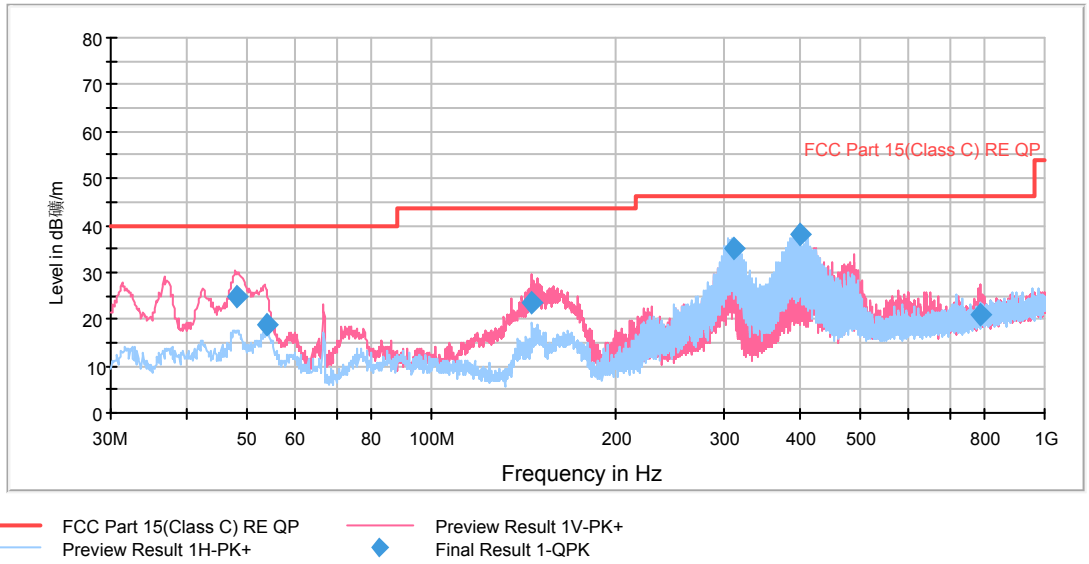
The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor *k* = 1.96.

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

RE 30M-1GHz QP



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

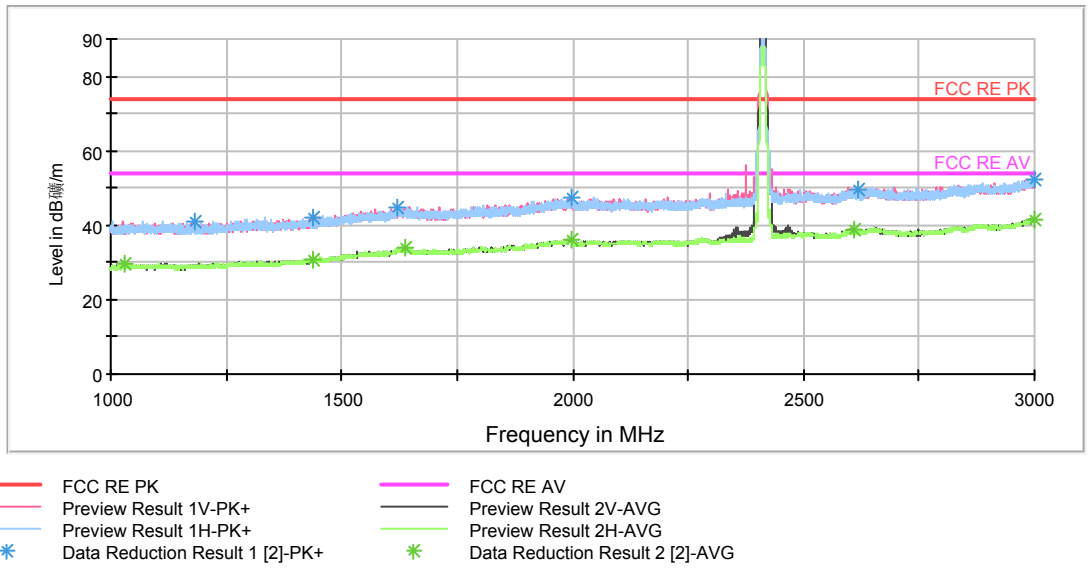
Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
48.064863	25.0	100.0	V	112.0	3.4	-21.6	15.0	40.0
53.872481	19.0	100.0	V	45.0	-3.3	-22.3	21.0	40.0
145.587372	23.6	122.0	V	22.0	-5.8	-29.4	19.9	43.5
310.354000	34.9	100.0	H	73.0	11.9	-23.0	11.1	46.0
398.926250	38.1	100.0	H	248.0	17.2	-20.9	7.9	46.0
783.973750	21.1	119.0	V	5.0	6.4	-14.7	24.9	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

RE 1G-3GHz PK+AV



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

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

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

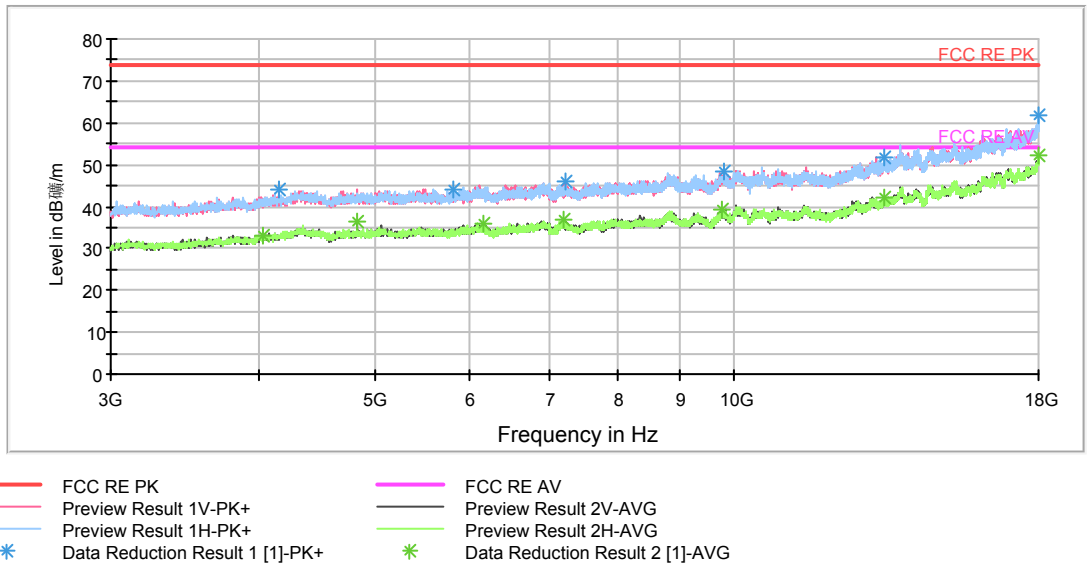
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1030.000000	38.2	100.0	V	142.0	28.2	-10.0	35.8	74
1438.250000	39.9	100.0	H	30.0	31.9	-8.0	34.1	74
1639.750000	43.4	100.0	V	217.0	38.3	-5.1	30.6	74
1998.500000	46.0	100.0	H	356.0	43.0	-3.0	28.0	74
2609.750000	48.5	100.0	V	190.0	48.2	-0.3	25.5	74
2998.250000	50.3	100.0	V	287.0	48.9	-1.4	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)
1030.000000	29.6	100.0	V	142.0	19.6	-10.0	24.4	54
1438.250000	31.0	100.0	H	30.0	23.0	-8.0	23.0	54
1639.750000	33.9	100.0	V	217.0	28.8	-5.1	20.1	54
1998.500000	36.2	100.0	H	356.0	33.2	-3.0	17.8	54
2609.750000	38.7	100.0	V	190.0	38.4	-0.3	15.3	54
2998.250000	41.6	100.0	V	287.0	40.2	-1.4	12.4	54

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

RE 3-18GHz PK+AV



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

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

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

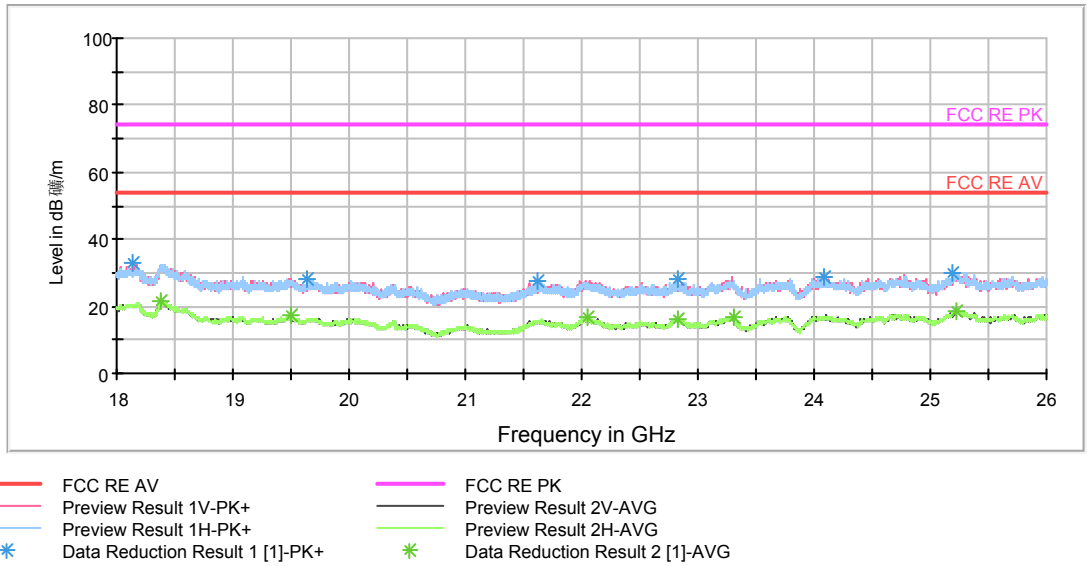
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
4153.125000	44.1	101.0	V	61.0	42.3	1.8	29.9	74
5806.875000	44.2	101.0	H	18.0	40.8	3.4	29.8	74
7230.000000	45.8	101.0	V	350.0	38.1	7.7	28.2	74
9796.875000	48.2	101.0	H	132.0	36.9	11.3	25.8	74
13344.375000	51.7	203.0	H	289.0	37.2	14.5	22.3	74
17979.375000	61.6	101.0	H	45.0	37.2	24.4	12.4	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)
4153.125000	32.6	101.0	V	61.0	30.8	1.8	21.4	54
5806.875000	32.9	101.0	H	18.0	29.5	3.4	21.1	54
7230.000000	35.1	101.0	V	350.0	27.4	7.7	18.9	54
9796.875000	37.3	101.0	H	132.0	26.0	11.3	16.7	54
13344.375000	40.6	203.0	H	289.0	26.1	14.5	13.4	54
17979.375000	50.8	101.0	H	45.0	26.4	24.4	3.2	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磺/m)in the test plot =(level in dBuv/m)

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

Radiates Emission from 18GHz to 26GHz

Frequency (MHz)	Peak (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18385.000000	31.3	V	253.0	27.0	-4.3	42.7	74
19501.000000	26.1	V	321.0	19.6	-6.5	47.9	74
22045.000000	26.4	V	131.0	19.0	-7.4	47.6	74
22833.000000	25.2	V	0.0	18.5	-6.7	48.8	74
23309.000000	25.7	V	307.0	19.4	-6.3	48.3	74
25227.000000	28.4	H	0.0	23.1	-5.3	45.6	74

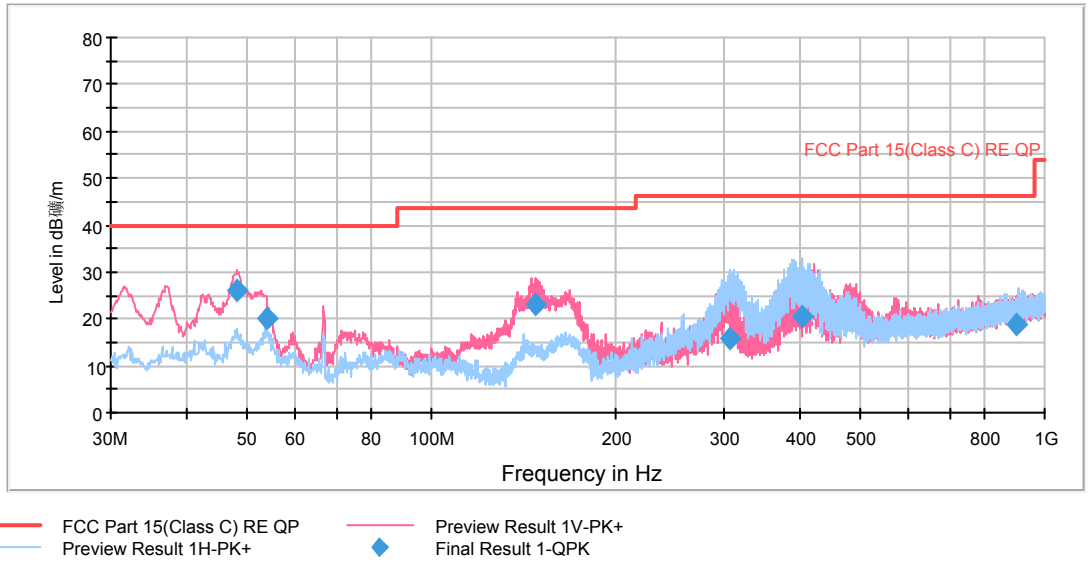
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18385.000000	21.3	V	253.0	17.0	-4.3	32.7	54
19501.000000	17.3	V	321.0	10.8	-6.5	36.7	54
22045.000000	16.5	V	131.0	9.1	-7.4	37.5	54
22833.000000	16.1	V	0.0	9.4	-6.7	37.9	54
23309.000000	16.5	V	307.0	10.2	-6.3	37.5	54
25227.000000	18.8	H	0.0	13.5	-5.3	35.2	54

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

802.11b CH6

RE 30M-1GHz QP



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

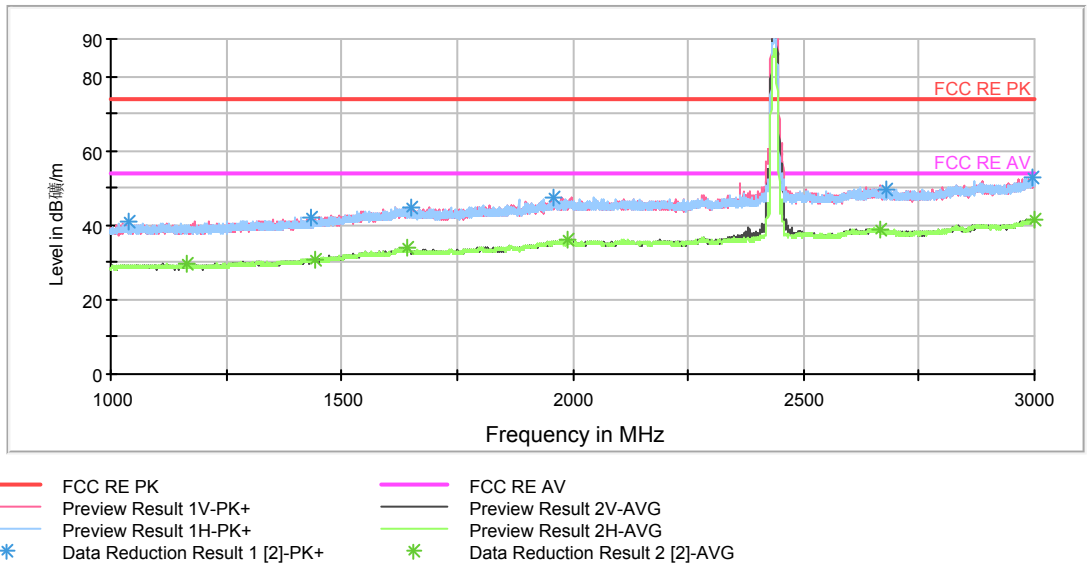
Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
48.307969	26.0	100.0	V	297.0	4.4	-21.6	14.0	40.0
53.791534	20.0	100.0	V	179.0	-2.3	-22.3	20.0	40.0
147.845362	23.0	100.0	V	261.0	-6.4	-29.4	20.5	43.5
307.213500	16.0	100.0	H	90.0	-7.1	-23.1	30.0	46.0
403.724250	20.6	100.0	H	248.0	-0.2	-20.8	25.4	46.0
902.394750	19.0	204.0	H	292.0	6.5	-12.5	27.0	46.0

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

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

3. Margin = Limit – Quasi-Peak

RE 1G-3GHz PK+AV



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

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

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

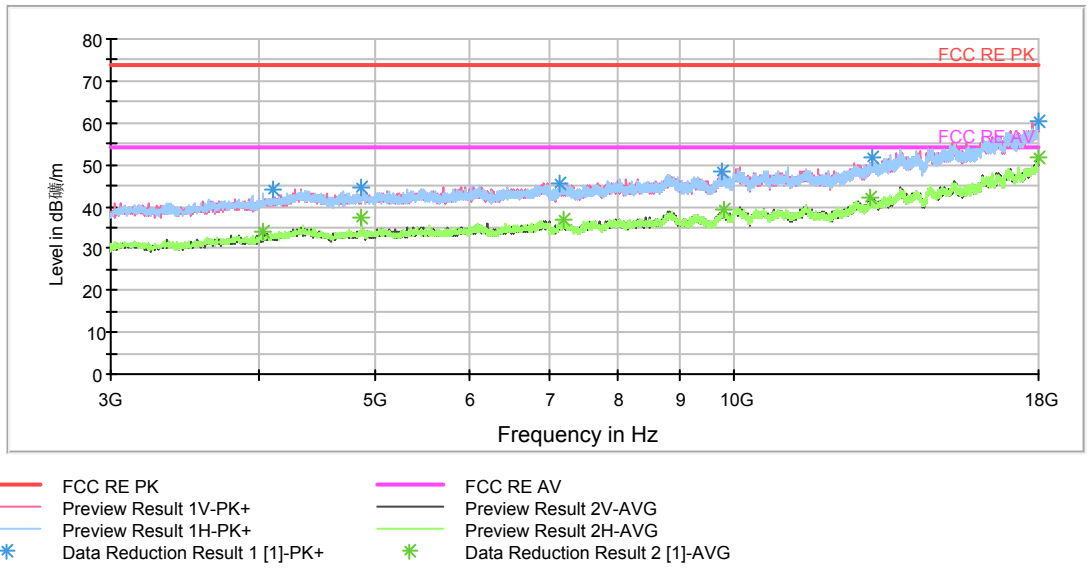
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1162.750000	38.3	100.0	V	268.0	28.7	-9.6	35.7	74
1441.500000	40.4	100.0	V	290.0	32.5	-7.9	33.6	74
1640.250000	43.3	100.0	H	7.0	38.2	-5.1	30.7	74
1991.250000	45.4	100.0	H	124.0	42.4	-3.0	28.6	74
2666.500000	48.3	100.0	V	309.0	48.0	-0.3	25.7	74
2998.750000	51.0	100.0	H	192.0	49.6	1.4	23.0	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1162.750000	29.8	100.0	V	268.0	20.2	-9.6	24.2	54
1441.500000	30.7	100.0	V	290.0	22.8	-7.9	23.3	54
1640.250000	34.2	100.0	H	7.0	29.1	-5.1	19.8	54
1991.250000	36.0	100.0	H	124.0	33.0	-3.0	18.0	54
2666.500000	38.7	100.0	V	309.0	38.4	-0.3	15.3	54
2998.750000	41.7	100.0	H	192.0	40.3	1.4	12.3	54

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

RE 3-18GHz PK+AV



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

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

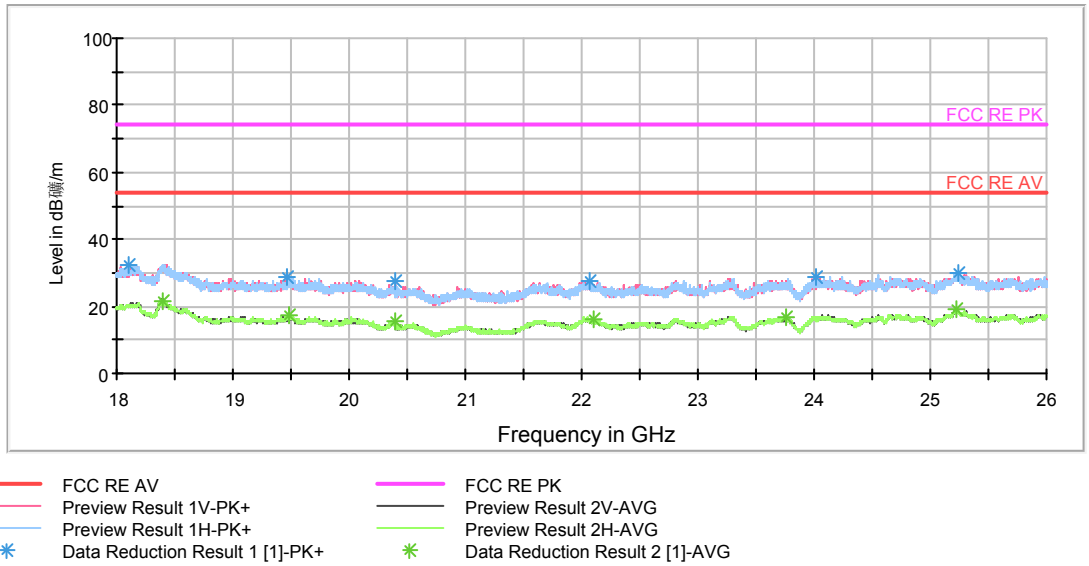
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
4098.750000	43.9	101.0	H	156.0	42.7	1.2	30.1	74
4873.125000	44.7	203.0	V	0.0	41.8	2.9	29.3	74
7151.250000	45.6	203.0	V	0.0	38.2	7.4	28.4	74
9776.250000	48.4	101.0	H	205.0	37.4	11.0	25.6	74
13053.750000	51.8	101.0	V	53.0	37.4	14.4	22.2	74
17986.875000	60.6	203.0	H	0.0	36.1	24.5	13.4	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)
4098.750000	32.6	101.0	H	156.0	31.4	1.2	21.4	54
4873.125000	37.2	203.0	V	0.0	34.3	2.9	16.8	54
7151.250000	36.0	203.0	V	0.0	28.6	7.4	18.0	54
9776.250000	38.6	101.0	H	205.0	27.6	11.0	15.4	54
13053.750000	40.8	101.0	V	53.0	26.4	14.4	13.2	54
17986.875000	50.3	203.0	H	0.0	25.8	24.5	3.7	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)

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

Radiates Emission from 18GHz to 26GHz

Frequency (MHz)	Peak (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18403.000000	30.3	H	257.0	25.9	-4.4	43.7	74
19485.000000	26.9	H	116.0	20.2	-6.7	47.1	74
20397.000000	25.2	V	350.0	17.9	-7.3	48.8	74
22109.000000	25.6	H	0.0	17.7	-7.9	48.4	74
23755.000000	25.9	V	284.0	19.0	-6.9	48.1	74
25230.000000	28.5	V	169.0	23.2	-5.3	45.5	74

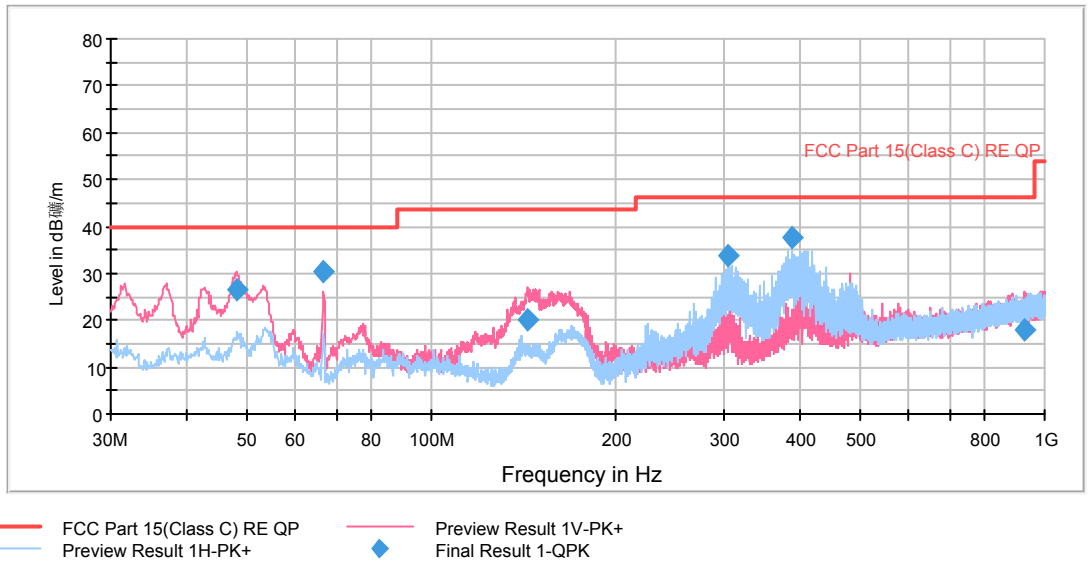
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18403.000000	21.3	H	257.0	16.9	-4.4	32.7	54
19485.000000	17.3	H	116.0	10.6	-6.7	36.7	54
20397.000000	15.8	V	350.0	8.5	-7.3	38.2	54
22109.000000	16.1	H	0.0	8.2	-7.9	37.9	54
23755.000000	16.5	V	284.0	9.6	-6.9	37.5	54
25230.000000	19.2	V	169.0	13.9	-5.3	34.8	54

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

802.11b CH11

RE 30M-1GHz QP

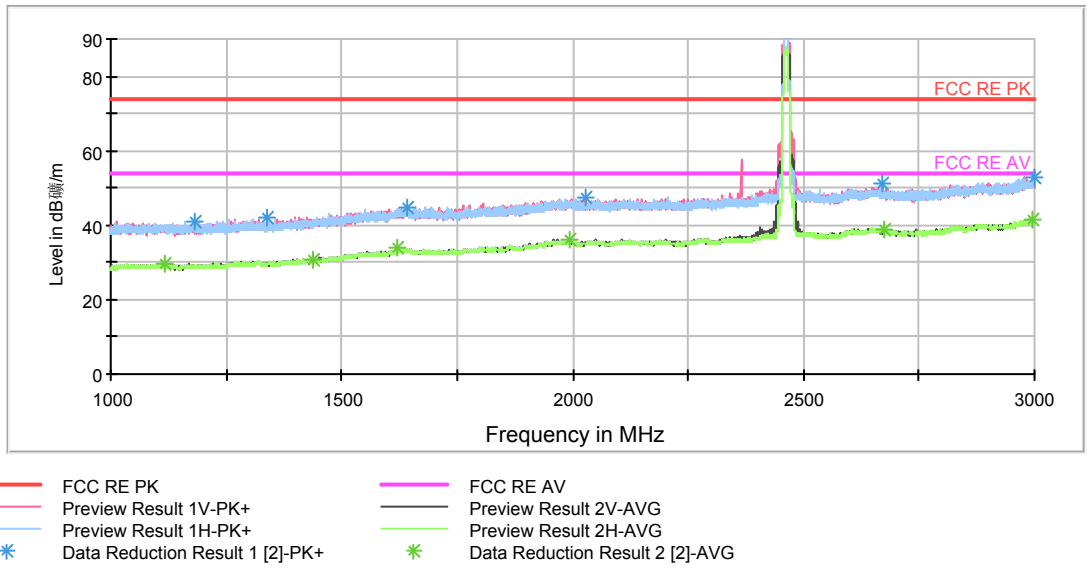


Note: This graph displays the maximum values of horizontal and vertical by software
Note: a font (Level in dBµV/m)in the test plot =(level in dBuv/m)
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
48.186416	26.5	100.0	V	157.0	4.9	-21.6	13.5	40.0
66.570010	30.3	177.0	V	315.0	3.9	-26.4	9.7	40.0
144.013169	20.0	100.0	V	292.0	-9.4	-29.4	23.5	43.5
303.985000	33.9	119.0	H	13.0	10.7	-23.2	12.1	46.0
388.806750	37.8	100.0	H	67.0	16.7	-21.1	8.2	46.0
928.170750	18.2	130.0	V	157.0	5.7	-12.5	27.8	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

RE 1G-3GHz PK+AV



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

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

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

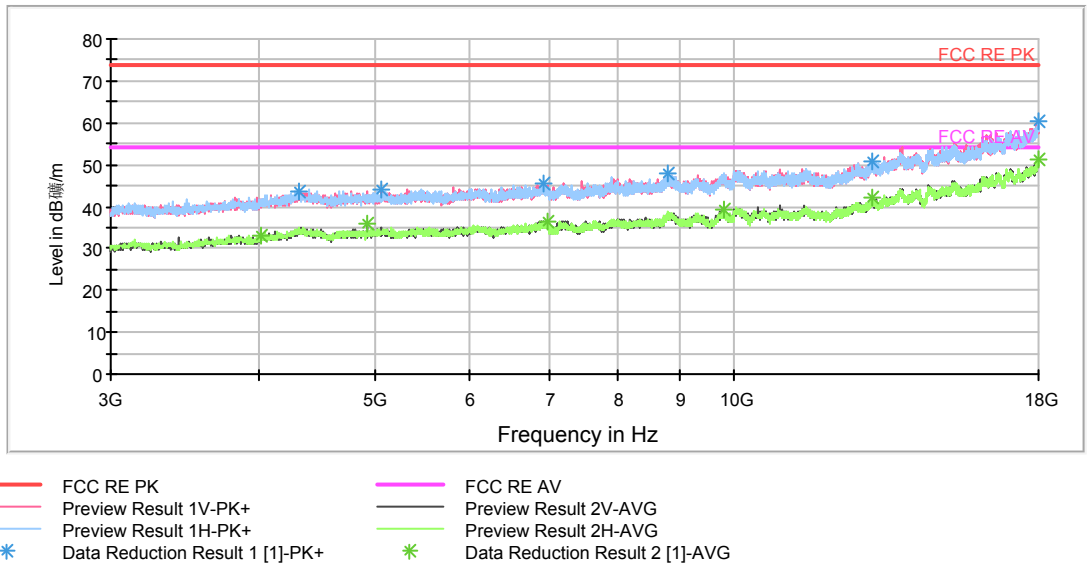
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1117.500000	39.5	100.0	V	309.0	29.8	-9.7	34.5	74
1438.250000	40.0	100.0	H	0.0	32.0	-8.0	34.0	74
1622.000000	43.1	100.0	V	346.0	38.0	-5.1	30.9	74
1995.000000	46.4	100.0	V	218.0	43.5	-2.9	27.6	74
2673.250000	48.0	100.0	V	0.0	47.6	-0.4	26.0	74
2996.750000	51.8	100.0	H	0.0	50.4	1.4	22.2	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)
1117.500000	29.6	100.0	V	309.0	19.9	-9.7	24.4	54
1438.250000	30.7	100.0	H	0.0	22.7	-8.0	23.3	54
1622.000000	33.8	100.0	V	346.0	28.7	-5.1	20.2	54
1995.000000	36.2	100.0	V	218.0	33.3	-2.9	17.8	54
2673.250000	38.7	100.0	V	0.0	38.3	-0.4	15.3	54
2996.750000	41.7	100.0	H	0.0	40.3	1.4	12.3	54

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

RE 3-18GHz PK+AV



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

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

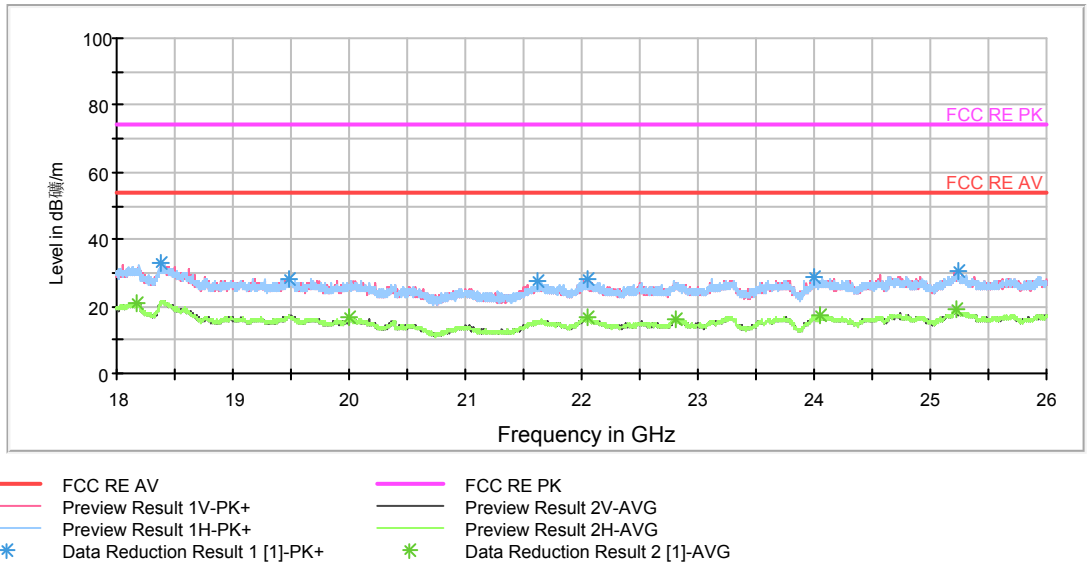
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
4318.125000	43.8	101.0	H	109.0	40.9	2.9	30.2	74
5056.875000	44.1	203.0	V	359.0	41.2	2.9	29.9	74
6915.000000	45.7	203.0	V	170.0	40.0	5.7	28.3	74
8803.125000	47.7	101.0	H	219.0	38.6	9.1	26.3	74
13055.625000	50.7	101.0	V	189.0	36.3	14.4	23.3	74
17988.750000	60.2	101.0	V	358.0	35.7	24.5	13.8	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)
4318.125000	33.8	101.0	H	109.0	30.9	2.9	20.2	54
5056.875000	34.8	203.0	V	359.0	31.9	2.9	19.2	54
6915.000000	36.0	203.0	V	170.0	30.3	5.7	18.0	54
8803.125000	37.8	101.0	H	219.0	28.7	9.1	16.2	54
13055.625000	40.9	101.0	V	189.0	26.5	14.4	13.1	54
17988.750000	50.6	101.0	V	358.0	26.1	24.5	3.4	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)

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

Radiates Emission from 18GHz to 26GHz

Frequency (MHz)	Peak (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18180.000000	29.9	V	258.0	25.6	-4.3	44.1	74
20002.000000	26.3	V	298.0	19.3	-7.0	47.7	74
22053.000000	26.7	H	0.0	19.2	-7.5	47.3	74
22804.000000	25.6	V	237.0	19.0	-6.6	48.4	74
24059.000000	27.0	V	298.0	20.2	-6.8	47.0	74
25229.000000	28.7	V	198.0	23.4	-5.3	45.3	74

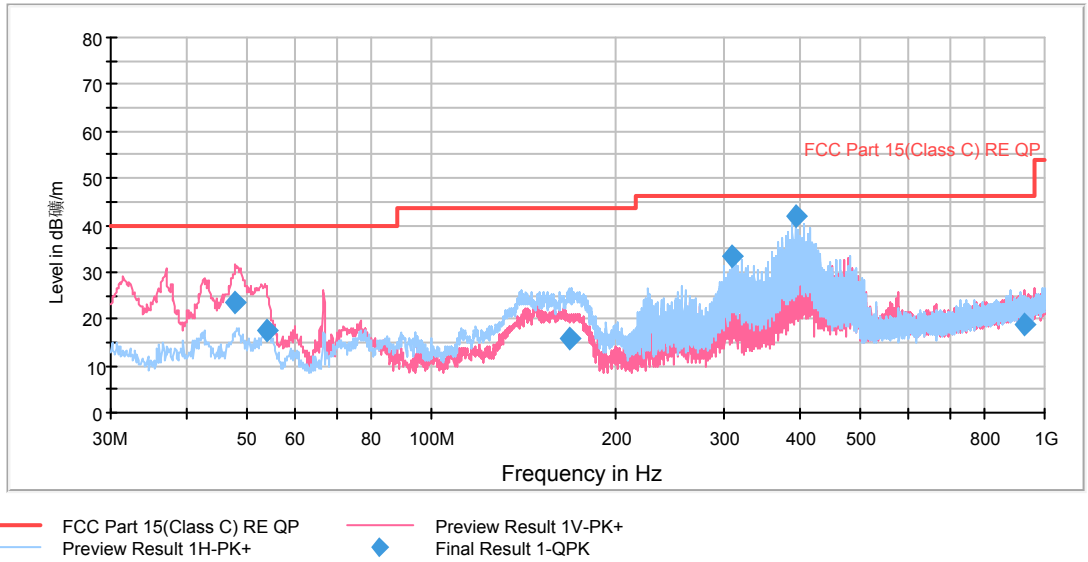
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18180.000000	20.9	V	258.0	16.6	-4.3	33.1	54
20002.000000	16.5	V	298.0	9.5	-7.0	37.5	54
22053.000000	16.5	H	0.0	9.0	-7.5	37.5	54
22804.000000	16.3	V	237.0	9.7	-6.6	37.7	54
24059.000000	17.1	V	298.0	10.3	-6.8	36.9	54
25229.000000	19.1	V	198.0	13.8	-5.3	34.9	54

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

802.11g CH1

RE 30M-1GHz QP



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

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

Radiates Emission from 30MHz to 1GHz

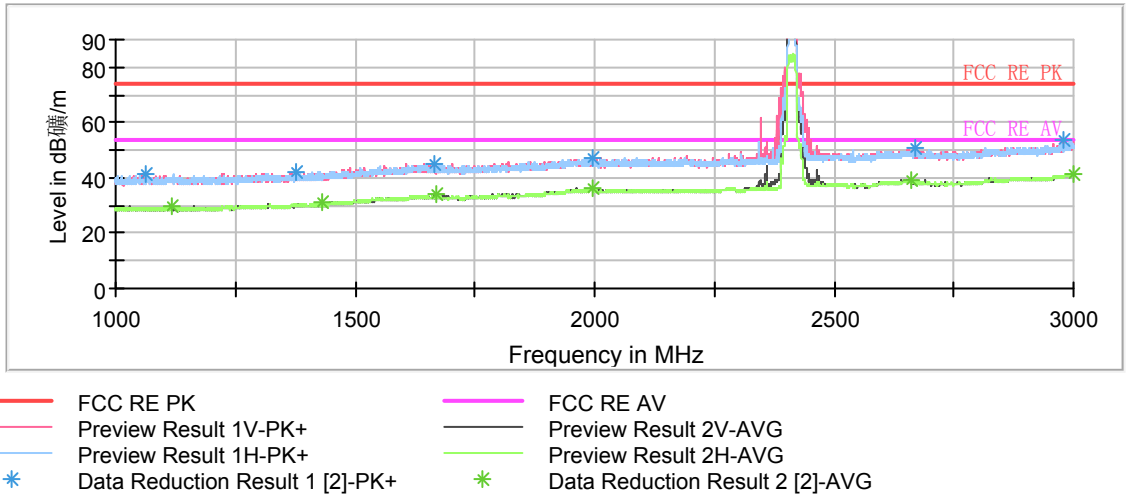
Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
47.985138	23.5	100.0	V	22.0	1.9	-21.6	16.5	40.0
53.872481	17.4	100.0	V	247.0	-4.9	-22.3	22.6	40.0
167.916244	15.9	177.0	H	81.0	-12.5	-28.4	27.6	43.5
308.781750	33.3	100.0	H	277.0	10.2	-23.1	12.7	46.0
391.991250	42.0	100.0	H	133.0	21.0	-21.0	4.0	46.0
928.009250	18.6	209.0	V	112.0	6.1	-12.5	27.4	46.0

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

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

3. Margin = Limit – Quasi-Peak

RE 1G-3GHz PK+AV



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

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

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

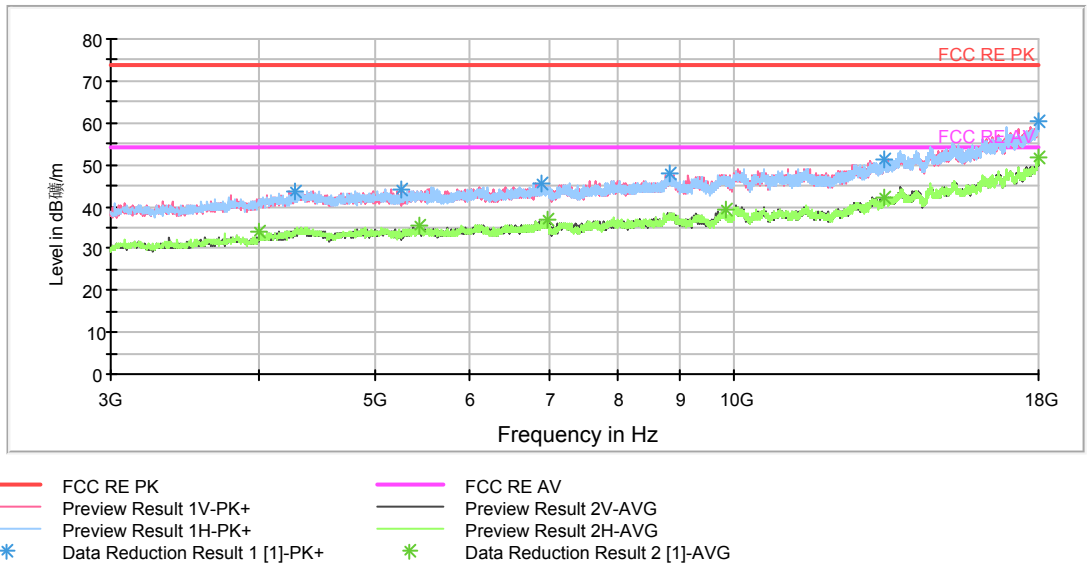
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1118.250000	39.0	100.0	V	225.0	29.3	-9.7	35.0	74
1431.500000	41.5	100.0	H	0.0	33.4	-8.1	32.5	74
1671.500000	42.7	100.0	H	285.0	37.1	-5.6	31.3	74
1994.250000	47.3	100.0	V	348.0	44.4	-2.9	26.7	74
2660.250000	48.8	100.0	V	247.0	48.6	-0.2	25.2	74
2999.250000	50.8	100.0	H	92.0	49.4	-1.4	23.2	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)
1118.250000	29.5	100.0	V	225.0	19.8	-9.7	24.5	54
1431.500000	30.9	100.0	H	0.0	22.8	-8.1	23.1	54
1671.500000	34.1	100.0	H	285.0	28.5	-5.6	19.9	54
1994.250000	36.1	100.0	V	348.0	33.2	-2.9	17.9	54
2660.250000	38.9	100.0	V	247.0	38.7	-0.2	15.1	54
2999.250000	41.6	100.0	H	92.0	40.2	-1.4	12.4	54

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

RE 3-18GHz PK+AV



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

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

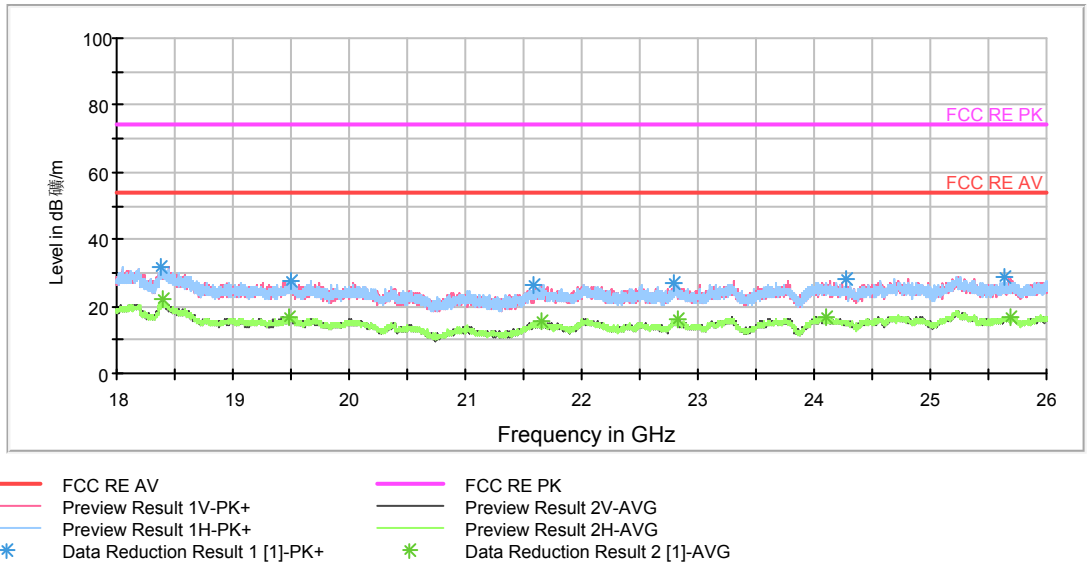
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
4275.000000	43.7	203.0	H	68.0	40.8	2.9	30.3	74
5261.250000	44.2	203.0	V	98.0	41.4	2.8	29.8	74
6900.000000	45.7	203.0	H	332.0	39.9	5.8	28.3	74
8842.500000	48.0	203.0	H	228.0	38.5	9.5	26.0	74
13350.000000	51.2	203.0	V	36.0	36.7	14.5	22.8	74
17998.125000	60.3	203.0	V	50.0	35.6	24.7	13.7	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)
4275.000000	33.1	203.0	H	68.0	30.2	2.9	20.9	54
5261.250000	33.1	203.0	V	98.0	30.3	2.8	20.9	54
6900.000000	36.3	203.0	H	332.0	30.5	5.8	17.7	54
8842.500000	37.8	203.0	H	228.0	28.3	9.5	16.2	54
13350.000000	41.0	203.0	V	36.0	26.5	14.5	13.0	54
17998.125000	51.3	203.0	V	50.0	26.6	24.7	2.7	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磺/m)in the test plot =(level in dBuv/m)

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

Radiates Emission from 18GHz to 26GHz

Frequency (MHz)	Peak (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18393.000000	30.3	V	0.0	26.0	-4.3	43.7	74
19485.000000	25.4	V	0.0	18.7	-6.7	48.6	74
21656.000000	24.2	V	0.0	16.0	-8.2	49.8	74
22836.000000	26.3	H	0.0	19.6	-6.7	47.7	74
24106.000000	25.9	V	0.0	19.1	-6.8	48.1	74
25688.000000	26.9	H	0.0	20.3	-6.6	47.1	74

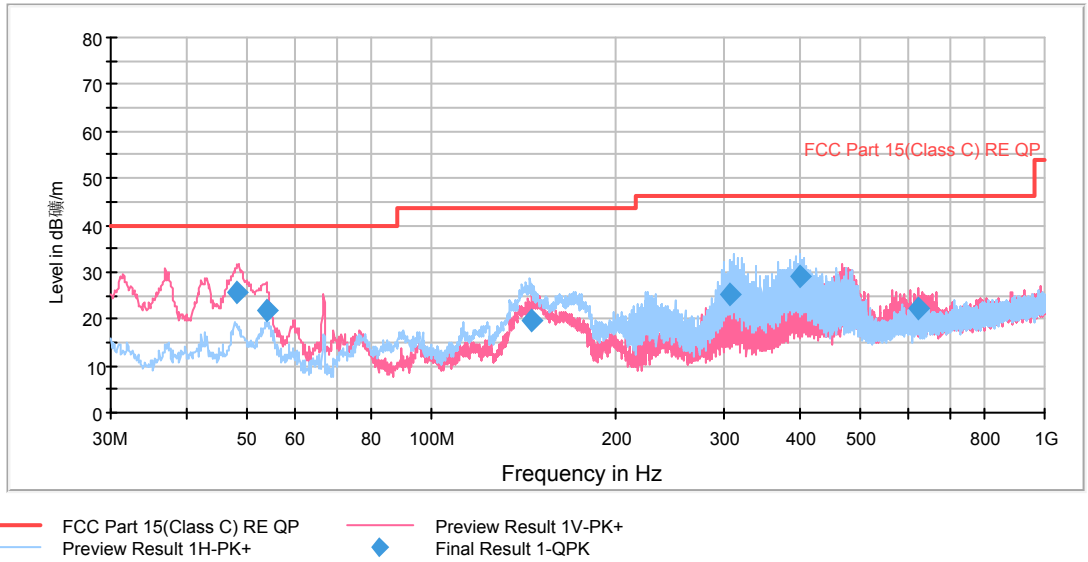
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18393.000000	22.0	V	0.0	17.7	-4.3	32.0	54
19485.000000	16.7	V	0.0	10.0	-6.7	37.3	54
21656.000000	15.3	V	0.0	7.1	-8.2	38.7	54
22836.000000	16.0	H	0.0	9.3	-6.7	38.0	54
24106.000000	16.8	V	0.0	10.0	-6.8	37.2	54
25688.000000	16.8	H	0.0	10.2	-6.6	37.2	54

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

802.11g CH6

RE 30M-1GHz QP



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

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

Radiates Emission from 30MHz to 1GHz

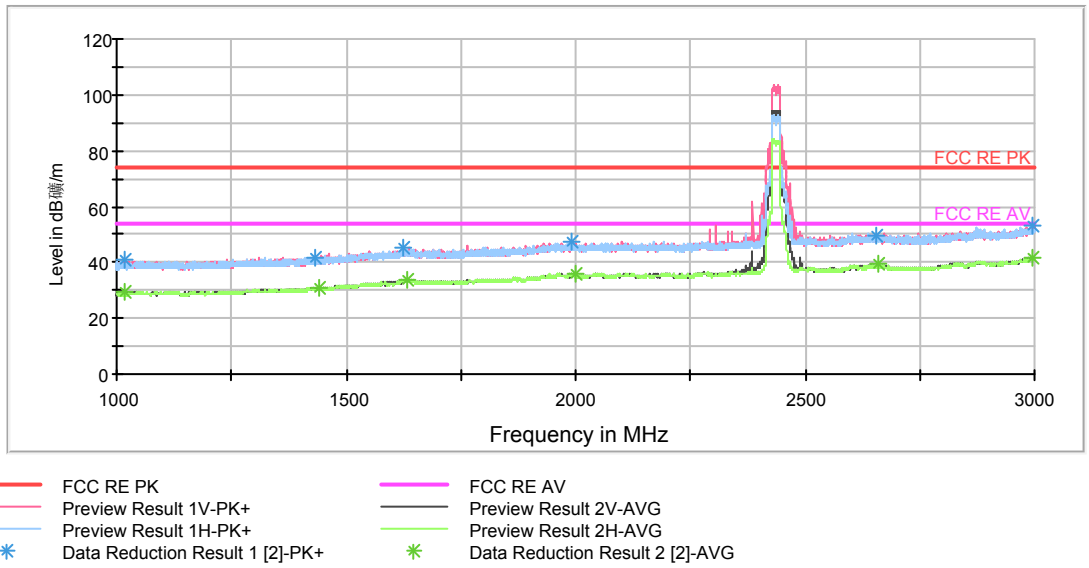
Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
48.147031	25.7	100.0	V	270.0	4.1	-21.6	14.3	40.0
53.751534	21.7	100.0	V	247.0	-0.6	-22.3	18.3	40.0
145.263584	19.7	204.0	H	81.0	-9.7	-29.4	23.8	43.5
306.402750	25.2	100.0	H	269.0	2.1	-23.1	20.8	46.0
400.015000	29.3	100.0	H	214.0	8.5	-20.8	16.7	46.0
624.003750	22.4	100.0	V	225.0	5.8	-16.6	23.6	46.0

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

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

3. Margin = Limit – Quasi-Peak

RE 1G-3GHz PK+AV



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

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

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

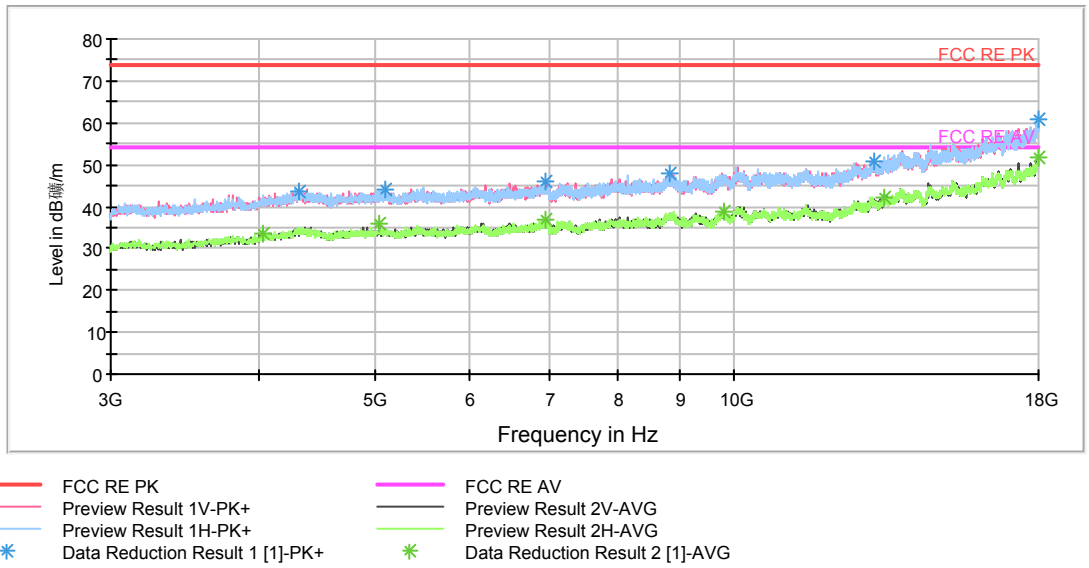
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1015.500000	38.8	100.0	H	74.0	28.7	-10.1	35.2	74
1442.000000	40.5	100.0	V	122.0	32.6	-7.9	33.5	74
1632.000000	43.0	100.0	H	263.0	37.9	-5.1	31.0	74
1998.250000	46.3	100.0	H	106.0	43.3	-3.0	27.7	74
2660.250000	49.0	100.0	V	0.0	48.8	-0.2	25.0	74
2994.750000	51.8	100.0	H	101.0	50.4	-1.4	22.2	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)
1015.500000	29.6	100.0	H	74.0	19.5	-10.1	24.4	54
1442.000000	31.0	100.0	V	122.0	23.1	-7.9	23.0	54
1632.000000	33.9	100.0	H	263.0	28.8	-5.1	20.1	54
1998.250000	36.1	100.0	H	106.0	33.1	-3.0	17.9	54
2660.250000	39.2	100.0	V	0.0	39.0	-0.2	14.8	54
2994.750000	41.5	100.0	H	101.0	40.1	-1.4	12.5	54

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

RE 3-18GHz PK+AV



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

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

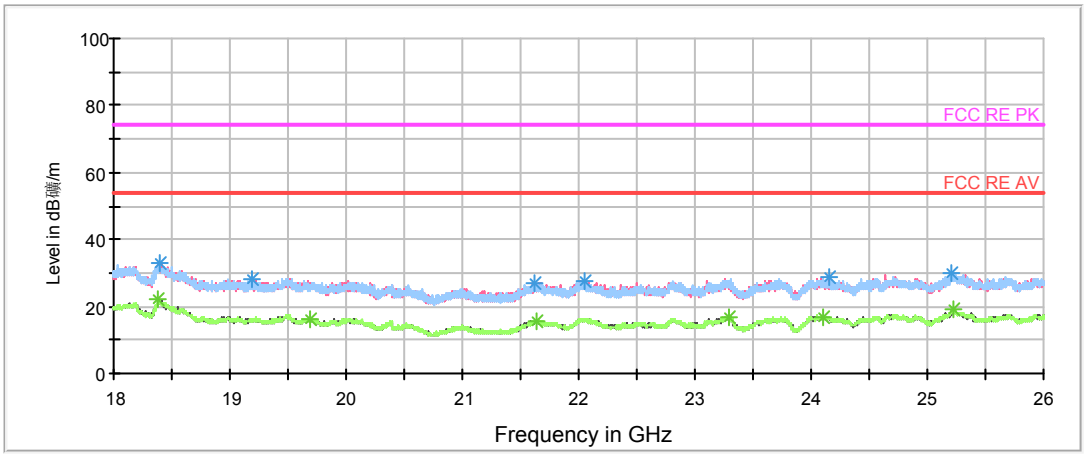
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
4314.375000	43.8	101.0	H	7.0	40.9	-2.9	30.2	74
5098.125000	44.2	101.0	H	242.0	41.2	-3.0	29.8	74
6943.125000	46.0	101.0	V	338.0	40.4	-5.6	28.0	74
8825.625000	48.0	203.0	H	184.0	38.7	-9.3	26.0	74
13117.500000	50.9	203.0	V	83.0	36.6	-14.3	23.1	74
17994.375000	60.6	101.0	H	193.0	36.0	-24.6	13.4	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)
4314.375000	34.2	101.0	H	7.0	31.3	-2.9	19.8	54
5098.125000	33.9	101.0	H	242.0	30.9	-3.0	20.1	54
6943.125000	35.9	101.0	V	338.0	30.3	-5.6	18.1	54
8825.625000	37.2	203.0	H	184.0	27.9	-9.3	16.8	54
13117.500000	40.5	203.0	V	83.0	26.2	-14.3	13.5	54
17994.375000	50.8	101.0	H	193.0	26.2	-24.6	3.2	54

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



FCC RE AV
Preview Result 1V-PK+
Preview Result 1H-PK+
Data Reduction Result 1 [1]-PK+
FCC RE PK
Preview Result 2V-AVG
Preview Result 2H-AVG
Data Reduction Result 2 [1]-AVG

Note: This graph displays the maximum values of horizontal and vertical by software
Note: a font (Level in dBµV/m)in the test plot =(level in dBuv/m)
Note: The signal beyond the limit is harmonic of carrier.
Radiates Emission from 18GHz to 26GHz

Frequency (MHz)	Peak (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18387.000000	31.2	V	315.0	26.9	-4.3	42.8	74
19692.000000	25.7	H	107.0	18.9	-6.8	48.3	74
21638.000000	25.0	V	49.0	16.9	-8.1	49.0	74
23289.000000	27.3	V	269.0	21.1	-6.2	46.7	74
24110.000000	26.3	V	186.0	19.5	-6.8	47.7	74
25230.000000	28.8	H	326.0	23.5	-5.3	45.2	74

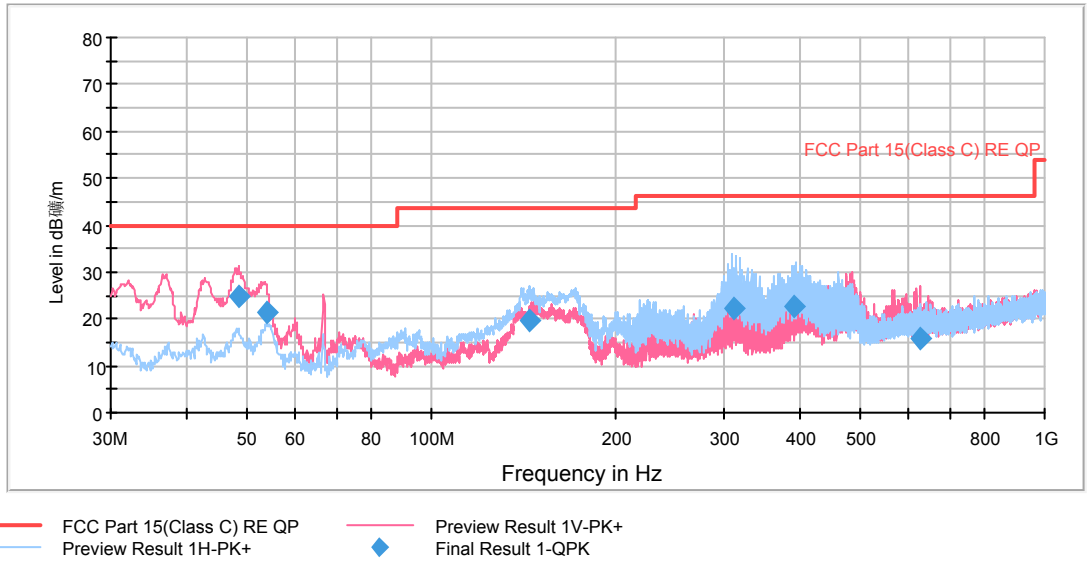
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18387.000000	21.9	V	315.0	17.6	-4.3	32.1	54
19692.000000	16.4	H	107.0	9.6	-6.8	37.6	54
21638.000000	15.5	V	49.0	7.4	-8.1	38.5	54
23289.000000	17.0	V	269.0	10.8	-6.2	37.0	54
24110.000000	16.8	V	186.0	10.0	-6.8	37.2	54
25230.000000	19.2	H	326.0	13.9	-5.3	34.8	54

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

802.11g CH11

RE 30M-1GHz QP



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

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

Radiates Emission from 30MHz to 1GHz

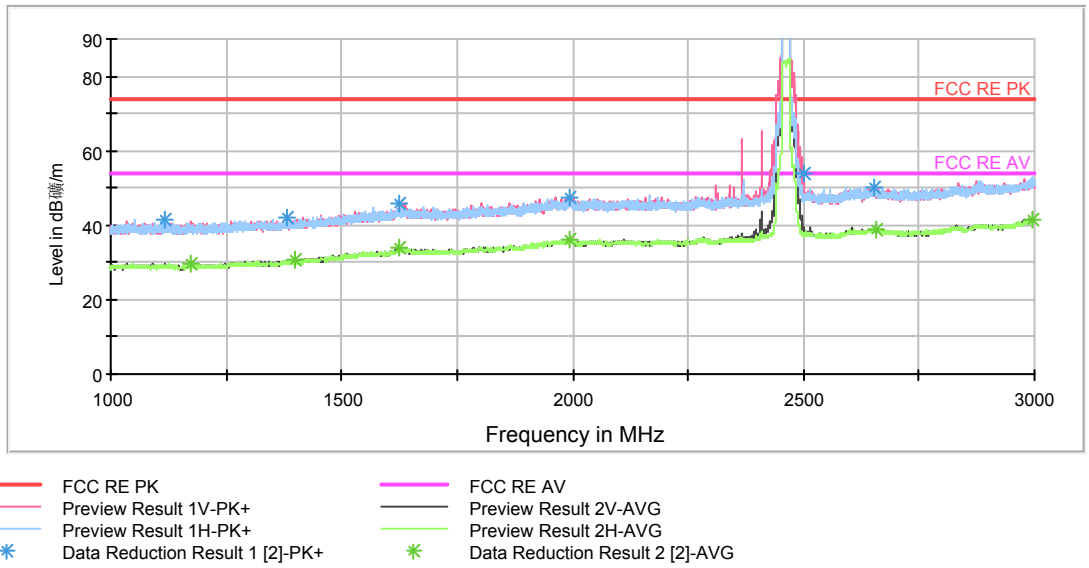
Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
48.629872	24.8	100.0	V	247.0	3.2	-21.6	15.2	40.0
53.751534	21.4	100.0	V	247.0	-0.9	-22.3	18.6	40.0
144.379797	19.6	206.0	H	67.0	-9.8	-29.4	23.9	43.5
310.376500	22.5	100.0	H	269.0	-0.5	-23.0	23.5	46.0
391.031250	22.6	100.0	H	215.0	1.6	-21.0	23.4	46.0
627.189500	15.9	100.0	V	225.0	-0.7	-16.6	30.1	46.0

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

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

3. Margin = Limit – Quasi-Peak

RE 1G-3GHz PK+AV



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

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

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

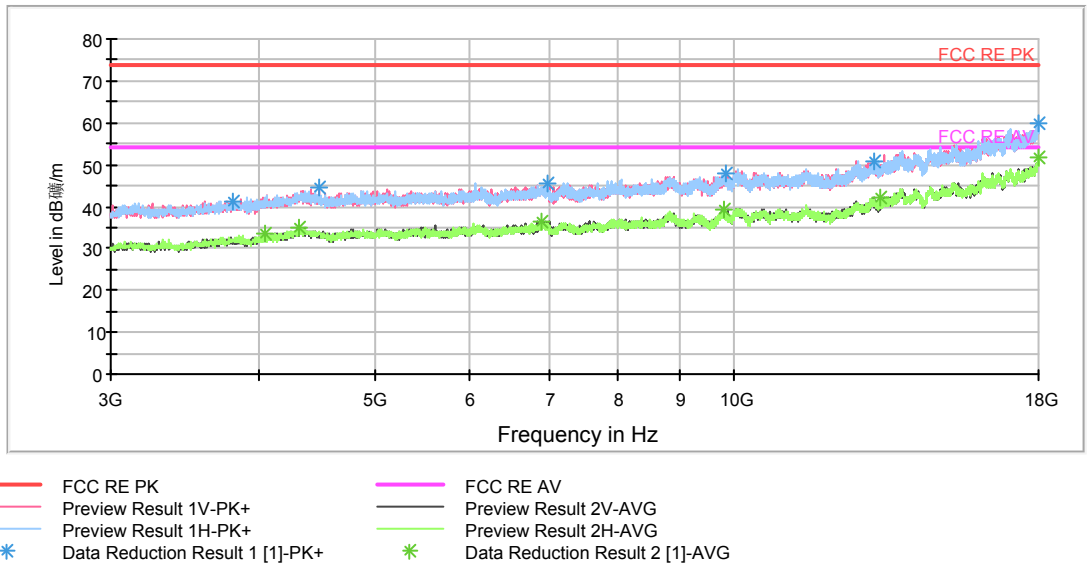
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1171.500000	38.9	100.0	H	186.0	29.4	-9.5	35.1	74
1401.250000	39.9	100.0	H	78.0	31.5	-8.4	34.1	74
1626.750000	43.7	100.0	V	358.0	38.6	-5.1	30.3	74
1995.250000	46.3	100.0	H	137.0	43.4	-2.9	27.7	74
2658.500000	49.2	100.0	H	0.0	49.0	-0.2	24.8	74
2995.250000	51.8	100.0	H	19.0	50.4	-1.4	22.2	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)
1171.500000	29.5	100.0	H	186.0	20.0	-9.5	24.5	54
1401.250000	30.8	100.0	H	78.0	22.4	-8.4	23.2	54
1626.750000	33.7	100.0	V	358.0	28.6	-5.1	20.3	54
1995.250000	36.1	100.0	H	137.0	33.2	-2.9	17.9	54
2658.500000	38.9	100.0	H	0.0	38.7	-0.2	15.1	54
2995.250000	41.7	100.0	H	19.0	40.3	-1.4	12.3	54

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

RE 3-18GHz PK+AV



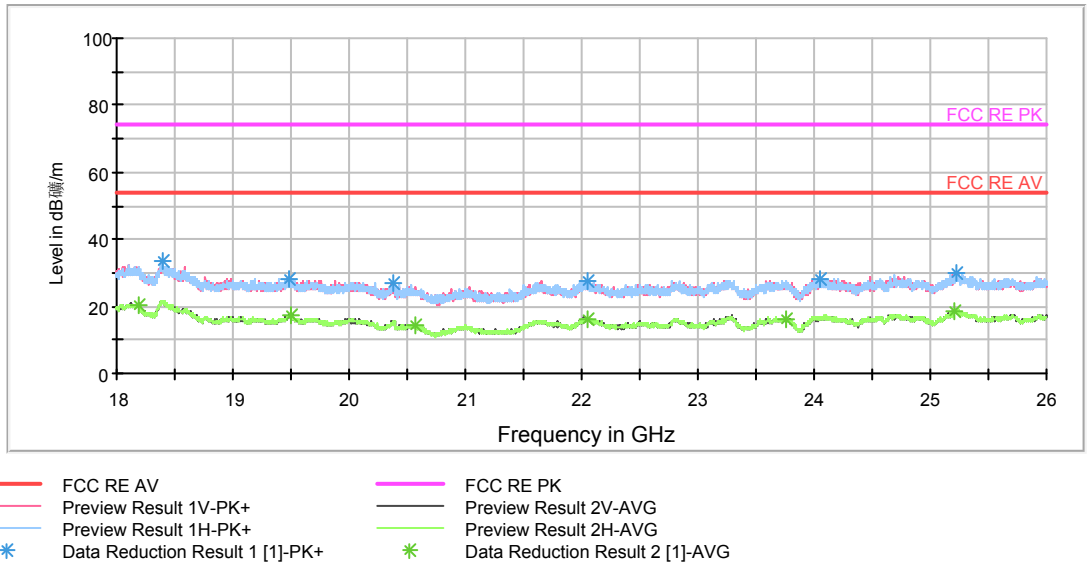
Note: This graph displays the maximum values of horizontal and vertical by software
Note: a font (Level in dBµV/m)in the test plot =(level in dBuv/m)
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3802.500000	41.2	101.0	V	359.0	41.1	0.1	32.8	74
4490.625000	44.6	101.0	V	270.0	41.9	2.7	29.4	74
6976.875000	45.7	101.0	H	118.0	40.3	5.4	28.3	74
9853.125000	48.1	101.0	V	304.0	37.2	10.9	25.9	74
13111.875000	50.8	101.0	H	2.0	36.5	14.3	23.2	74
17986.875000	60.0	101.0	V	201.0	35.5	24.5	14.0	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3802.500000	31.1	101.0	V	359.0	31.0	0.1	22.9	54
4490.625000	33.5	101.0	V	270.0	30.8	2.7	20.5	54
6976.875000	35.0	101.0	H	118.0	29.6	5.4	19.0	54
9853.125000	38.3	101.0	V	304.0	27.4	10.9	15.7	54
13111.875000	41.6	101.0	H	2.0	27.3	14.3	12.4	54
17986.875000	50.4	101.0	V	201.0	25.9	24.5	3.6	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)

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

Radiates Emission from 18GHz to 26GHz

Frequency (MHz)	Peak (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18196.000000	29.6	H	73.0	25.2	-4.4	44.4	74
19505.000000	26.7	V	4.0	20.2	-6.5	47.3	74
20567.000000	24.7	V	317.0	17.2	-7.5	49.3	74
22060.000000	26.8	V	170.0	19.3	-7.5	47.2	74
23760.000000	26.6	H	18.0	19.7	-6.9	47.4	74
25214.000000	28.5	V	0.0	22.9	-5.6	45.5	74

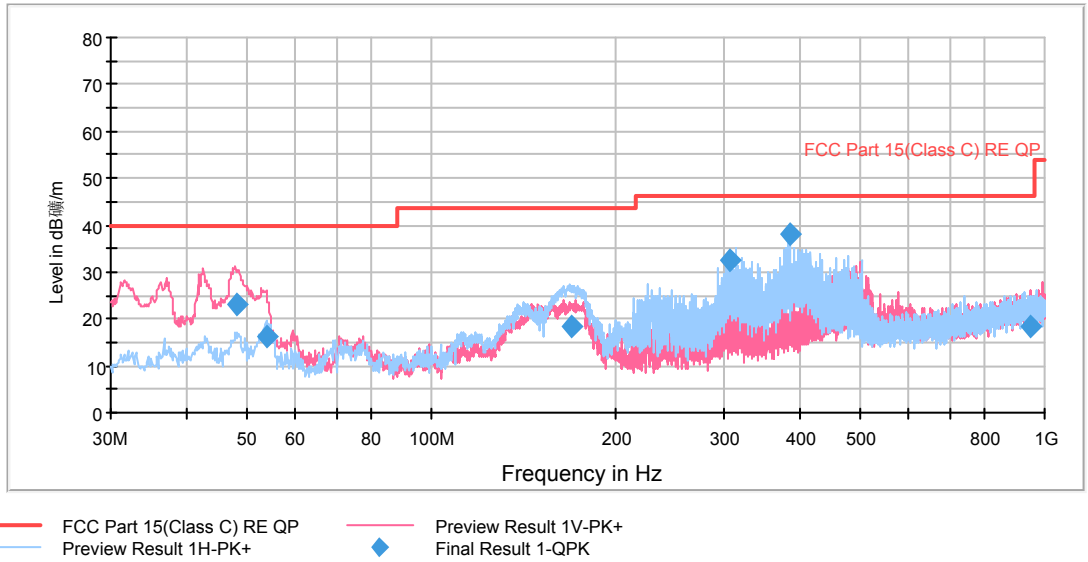
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18196.000000	20.6	H	73.0	16.2	-4.4	33.4	54
19505.000000	17.3	V	4.0	10.8	-6.5	36.7	54
20567.000000	14.4	V	317.0	6.9	-7.5	39.6	54
22060.000000	16.3	V	170.0	8.8	-7.5	37.7	54
23760.000000	16.3	H	18.0	9.4	-6.9	37.7	54
25214.000000	18.7	V	0.0	13.1	-5.6	35.3	54

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

802.11n(HT20) CH1

RE 30M-1GHz QP



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

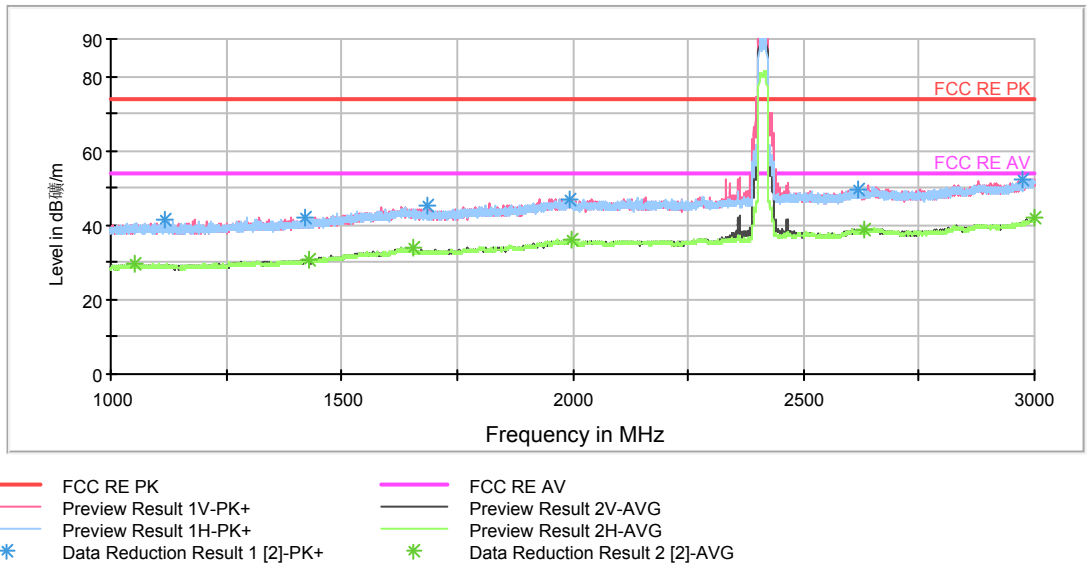
Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
48.025138	22.9	100.0	V	239.0	1.3	-21.6	17.1	40.0
53.751534	16.4	100.0	V	22.0	-5.9	-22.3	23.6	40.0
168.927278	18.5	129.0	H	81.0	-9.9	-28.4	25.0	43.5
307.209500	32.6	100.0	H	181.0	9.5	-23.1	13.4	46.0
385.582250	37.9	100.0	H	125.0	16.7	-21.2	8.1	46.0
945.687000	18.5	129.0	V	292.0	6.2	-12.3	27.5	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

RE 1G-3GHz PK+AV



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

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

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

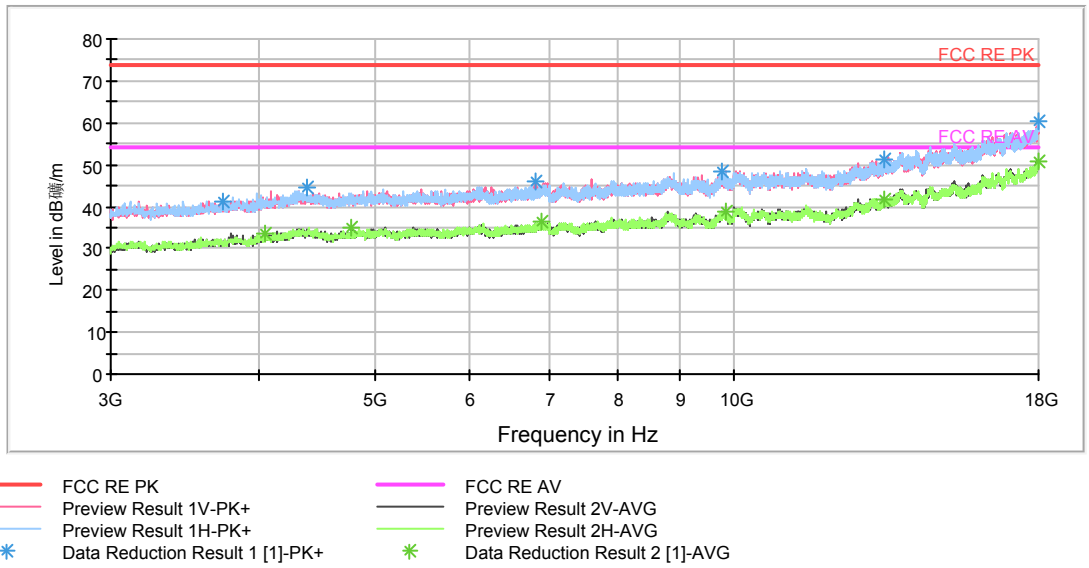
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1050.750000	38.5	100.0	H	200.0	28.6	-9.9	35.5	74
1431.000000	40.5	100.0	V	104.0	32.4	-8.1	33.5	74
1654.250000	42.8	100.0	V	326.0	37.2	-5.6	31.2	74
1996.750000	45.3	100.0	V	240.0	42.3	-3.0	28.7	74
2632.000000	48.8	100.0	V	284.0	48.3	-0.5	25.2	74
2999.250000	51.1	100.0	V	357.0	49.7	-1.4	22.9	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)
1050.750000	29.4	100.0	H	200.0	19.5	-9.9	24.6	54
1431.000000	30.8	100.0	V	104.0	22.7	-8.1	23.2	54
1654.250000	33.8	100.0	V	326.0	28.2	-5.6	20.2	54
1996.750000	36.2	100.0	V	240.0	33.2	-3.0	17.8	54
2632.000000	38.6	100.0	V	284.0	38.1	-0.5	15.4	54
2999.250000	41.8	100.0	V	357.0	40.4	-1.4	12.2	54

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

RE 3-18GHz PK+AV



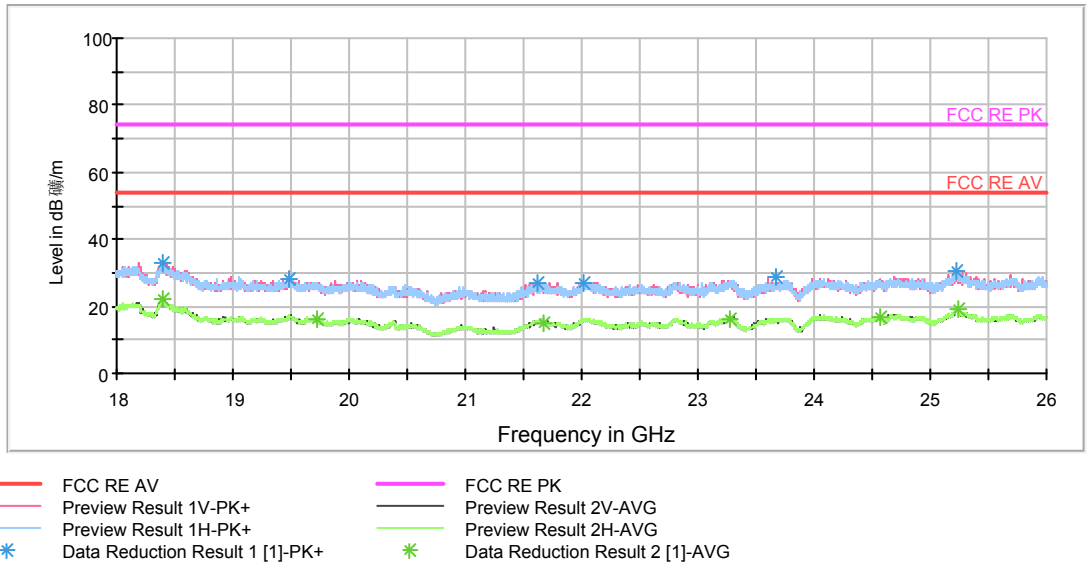
Note: This graph displays the maximum values of horizontal and vertical by software
Note: a font (Level in dBV/m)in the test plot =(level in dBuv/m)
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3729.375000	41.0	101.0	V	289.0	40.9	0.1	33.0	74
4380.000000	44.4	101.0	H	47.0	41.8	2.6	29.6	74
6811.875000	45.9	101.0	V	192.0	40.7	5.2	28.1	74
9750.000000	48.3	101.0	H	26.0	37.7	10.6	25.7	74
13342.500000	51.2	101.0	H	82.0	36.8	14.4	22.8	74
18000.000000	60.5	101.0	V	199.0	35.8	24.7	13.5	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3729.375000	31.6	101.0	V	289.0	31.5	0.1	22.4	54
4380.000000	33.6	101.0	H	47.0	31.0	2.6	20.4	54
6811.875000	35.9	101.0	V	192.0	30.7	5.2	18.1	54
9750.000000	37.2	101.0	H	26.0	26.6	10.6	16.8	54
13342.500000	41.1	101.0	H	82.0	26.7	14.4	12.9	54
18000.000000	50.8	101.0	V	199.0	26.1	24.7	3.2	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磺/m)in the test plot =(level in dBuv/m)

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

Radiates Emission from 18GHz to 26GHz

Frequency (MHz)	Peak (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18392.000000	30.7	H	0.0	26.4	-4.3	43.3	74
19721.000000	25.8	V	0.0	19.3	-6.5	48.2	74
21680.000000	25.3	V	310.0	16.9	-8.4	48.7	74
23268.000000	26.2	V	125.0	19.8	-6.4	47.8	74
24568.000000	27.1	V	357.0	20.3	-6.8	46.9	74
25239.000000	29.7	V	337.0	24.1	-5.6	44.3	74

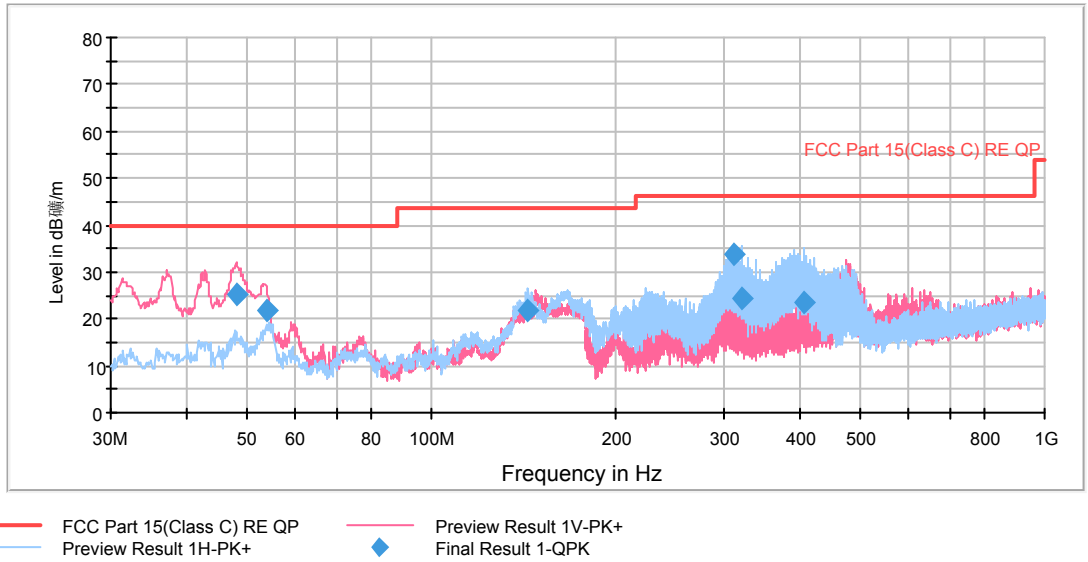
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18392.000000	22.2	H	0.0	17.9	-4.3	31.8	54
19721.000000	16.3	V	0.0	9.8	-6.5	37.7	54
21680.000000	15.1	V	310.0	6.7	-8.4	38.9	54
23268.000000	16.0	V	125.0	9.6	-6.4	38.0	54
24568.000000	16.9	V	357.0	10.1	-6.8	37.1	54
25239.000000	18.9	V	337.0	13.3	-5.6	35.1	54

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

802.11n(HT20) CH6

RE 30M-1GHz QP



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

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

Radiates Emission from 30MHz to 1GHz

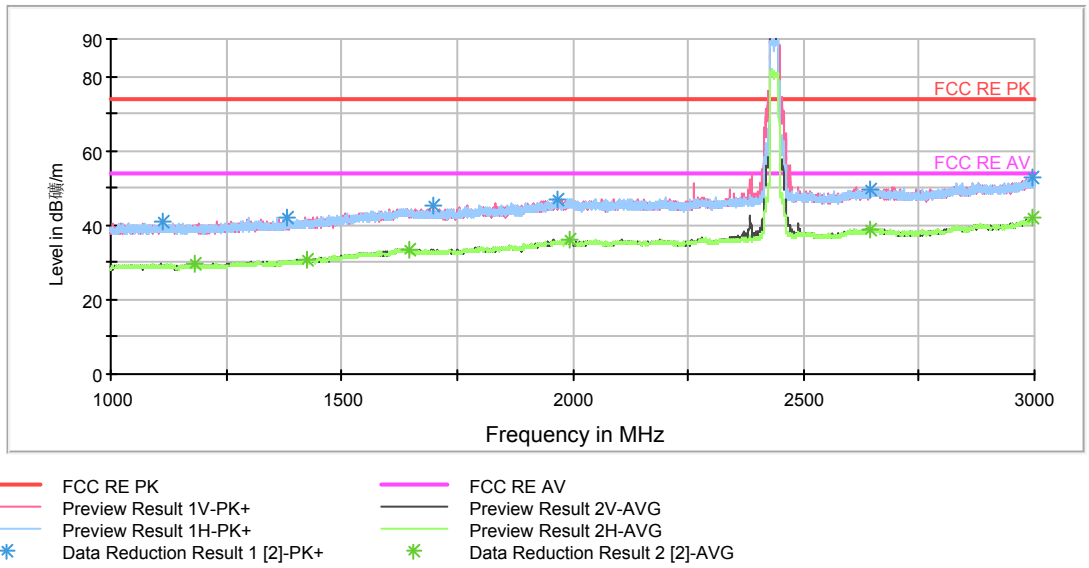
Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
48.186084	25.1	100.0	V	270.0	3.5	-21.6	14.9	40.0
53.751534	21.7	100.0	V	297.0	-0.6	-22.3	18.3	40.0
144.015062	21.8	127.0	H	68.0	-7.6	-29.4	21.7	43.5
310.395250	33.7	100.0	H	278.0	10.7	-23.0	12.3	46.0
321.077500	24.4	100.0	H	292.0	1.6	-22.8	21.6	46.0
404.248250	23.6	100.0	H	231.0	2.8	-20.8	22.4	46.0

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

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

3. Margin = Limit – Quasi-Peak

RE 1G-3GHz PK+AV



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

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

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

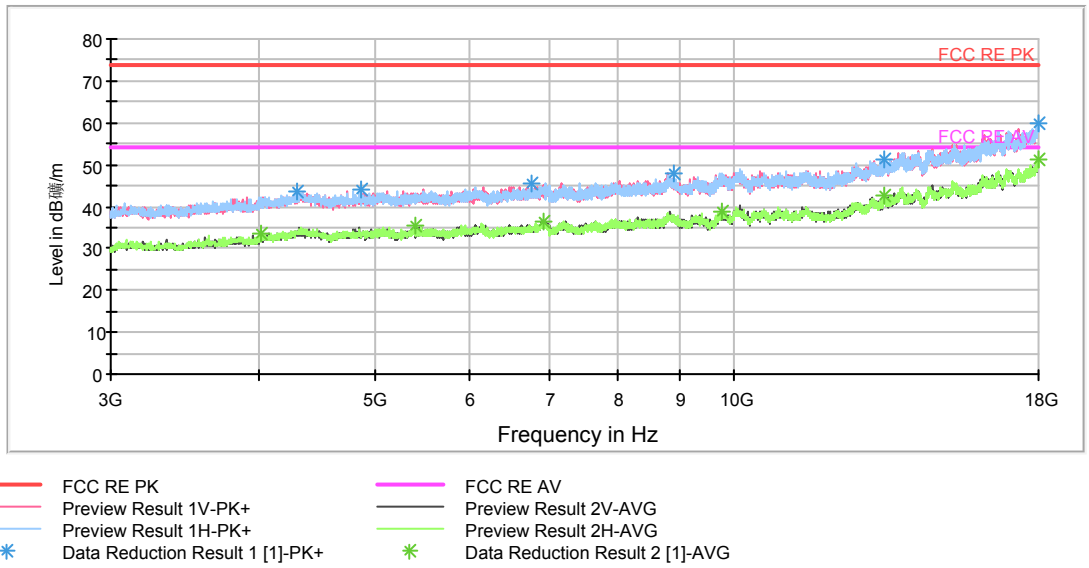
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1180.750000	39.1	100.0	H	43.0	29.7	-9.4	34.9	74
1426.000000	40.3	100.0	H	106.0	32.2	-8.1	33.7	74
1644.750000	43.1	100.0	H	187.0	37.8	-5.3	30.9	74
1991.750000	45.1	100.0	H	37.0	42.1	-3.0	28.9	74
2646.250000	49.5	100.0	V	299.0	49.3	-0.2	24.5	74
2995.750000	50.7	100.0	V	72.0	49.3	1.4	23.3	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1180.750000	29.6	100.0	H	43.0	20.2	-9.4	24.4	54
1426.000000	30.8	100.0	H	106.0	22.7	-8.1	23.2	54
1644.750000	33.5	100.0	H	187.0	28.2	-5.3	20.5	54
1991.750000	36.4	100.0	H	37.0	33.4	-3.0	17.6	54
2646.250000	38.7	100.0	V	299.0	38.5	-0.2	15.3	54
2995.750000	41.8	100.0	V	72.0	40.4	1.4	12.2	54

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

RE 3-18GHz PK+AV



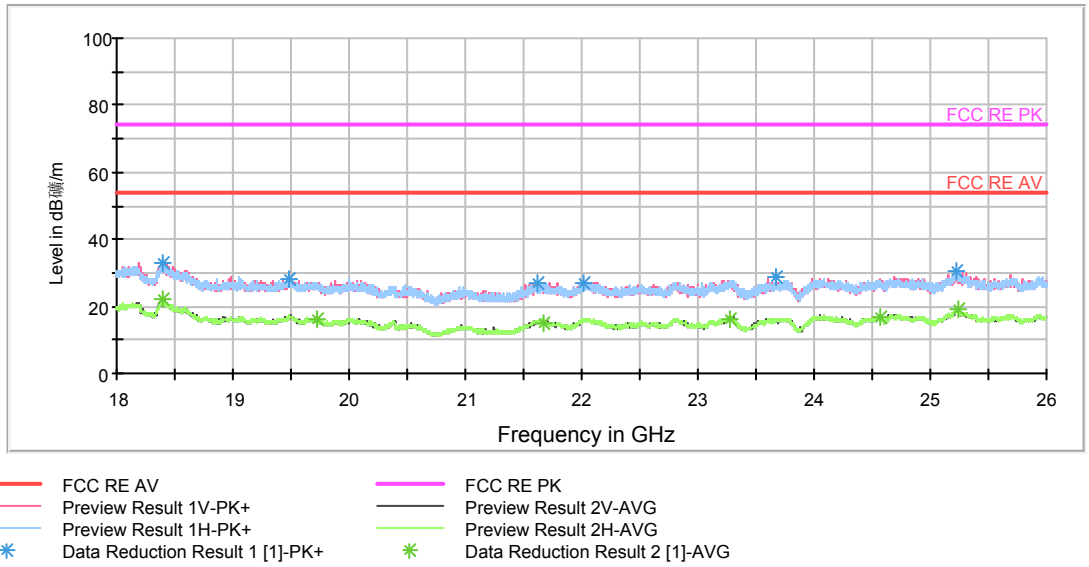
Note: This graph displays the maximum values of horizontal and vertical by software
Note: a font (Level in dBuV/m)in the test plot =(level in dBuv/m)
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
4291.875000	43.7	101.0	H	279.0	40.8	2.9	30.3	74
4873.125000	44.1	101.0	H	99.0	41.2	2.9	29.9	74
6770.625000	45.5	101.0	H	3.0	40.3	5.2	28.5	74
8900.625000	47.9	101.0	H	85.0	37.8	10.1	26.1	74
13342.500000	51.2	101.0	H	126.0	36.8	14.4	22.8	74
17994.375000	60.1	101.0	H	85.0	35.5	24.6	13.9	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)
4291.875000	34.0	101.0	H	279.0	31.1	2.9	20.0	54
4873.125000	33.2	101.0	H	99.0	30.3	2.9	20.8	54
6770.625000	35.0	101.0	H	3.0	29.8	5.2	19.0	54
8900.625000	37.0	101.0	H	85.0	26.9	10.1	17.0	54
13342.500000	41.6	101.0	H	126.0	27.2	14.4	12.4	54
17994.375000	50.5	101.0	H	85.0	25.9	24.6	3.5	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)

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

Radiates Emission from 18GHz to 26GHz

Frequency (MHz)	Peak (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18392.000000	30.7	H	0.0	26.4	-4.3	43.3	74
19721.000000	25.8	V	0.0	19.3	-6.5	48.2	74
21680.000000	25.3	V	310.0	16.9	-8.4	48.7	74
23268.000000	26.2	V	125.0	19.8	-6.4	47.8	74
24568.000000	27.1	V	357.0	20.3	-6.8	46.9	74
25239.000000	29.7	V	337.0	24.1	-5.6	44.3	74

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

Frequency (MHz)	Average (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18392.000000	22.2	H	0.0	17.9	-4.3	31.8	54
19721.000000	16.3	V	0.0	9.8	-6.5	37.7	54
21680.000000	15.1	V	310.0	6.7	-8.4	38.9	54
23268.000000	16.0	V	125.0	9.6	-6.4	38.0	54
24568.000000	16.9	V	357.0	10.1	-6.8	37.1	54
25239.000000	18.9	V	337.0	13.3	-5.6	35.1	54

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

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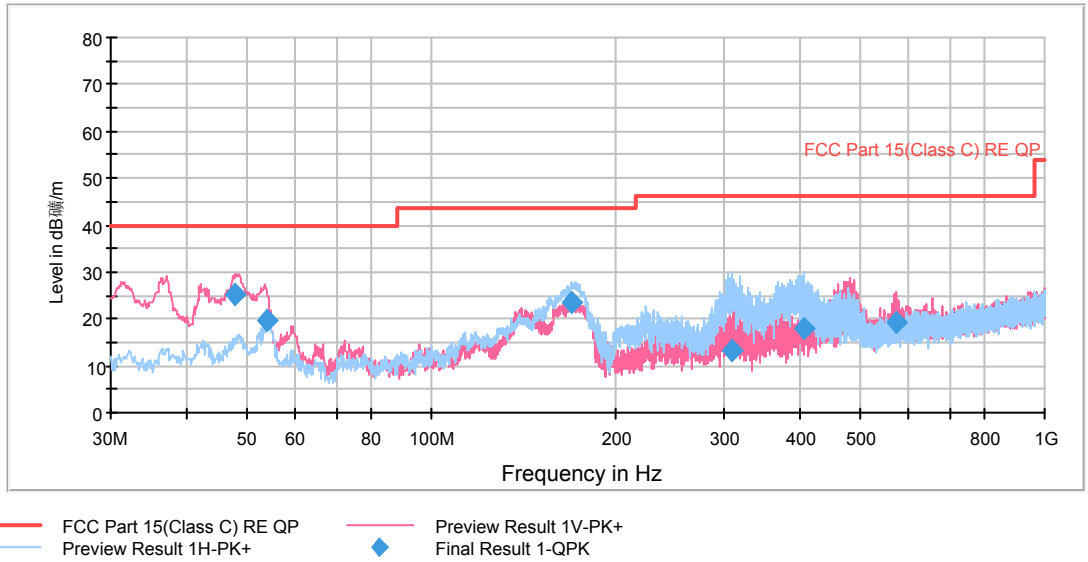
RE 30M-1GHz QP



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

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

Radiates Emission from 30MHz to 1GHz

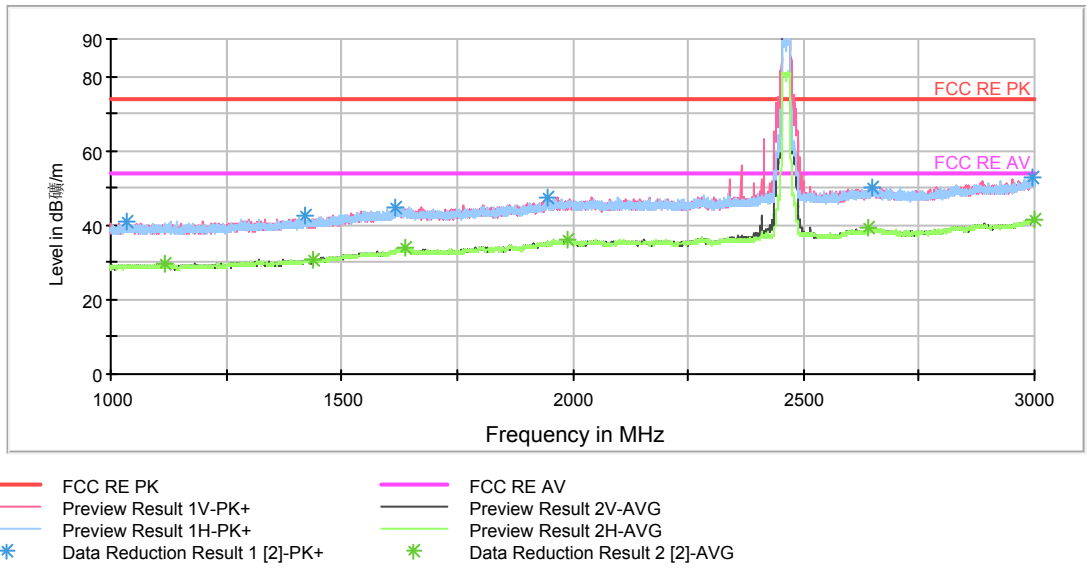
Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
47.986084	25.4	100.0	V	67.0	3.8	-21.6	14.6	40.0
53.911534	19.8	100.0	V	292.0	-2.5	-22.3	20.2	40.0
169.614853	23.6	129.0	H	82.0	-4.7	-28.3	19.9	43.5
308.101000	13.3	103.0	H	292.0	-9.8	-23.1	32.7	46.0
405.860500	17.8	100.0	H	141.0	-3.0	-20.8	28.2	46.0
572.804250	19.4	100.0	V	231.0	2.2	-17.2	26.6	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

RE 1G-3GHz PK+AV



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

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

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

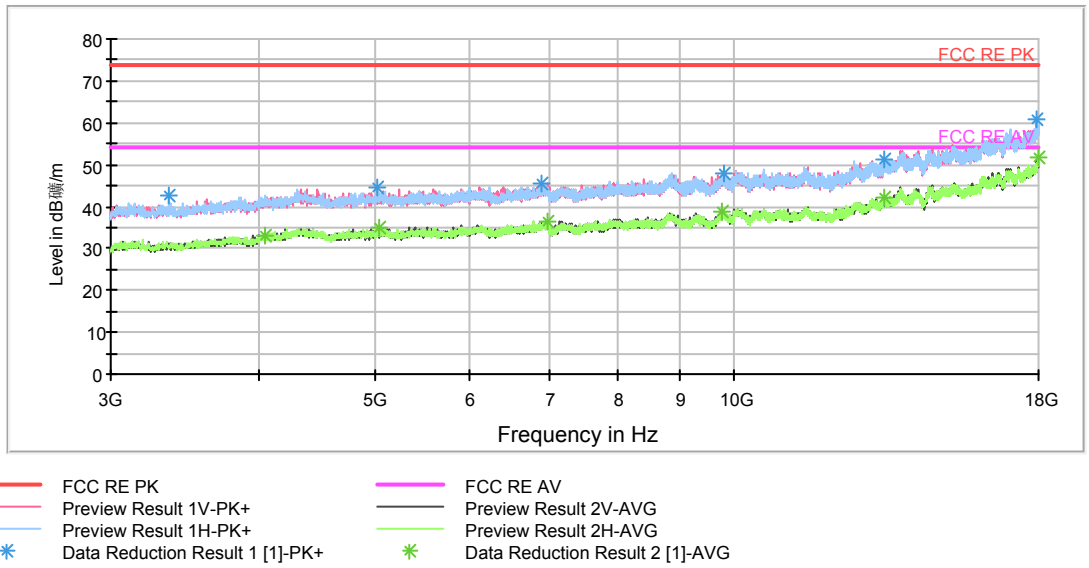
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1115.750000	39.5	100.0	V	318.0	29.7	-9.8	34.5	74
1439.750000	41.4	100.0	V	329.0	33.4	-8.0	32.6	74
1637.250000	43.0	100.0	H	110.0	37.9	-5.1	31.0	74
1990.250000	45.5	100.0	V	345.0	42.4	-3.1	28.5	74
2640.000000	49.0	100.0	H	224.0	48.7	-0.3	25.0	74
2999.000000	51.4	100.0	V	205.0	50.0	-1.4	22.6	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)
1115.750000	29.5	100.0	V	318.0	19.7	-9.8	24.5	54
1439.750000	30.8	100.0	V	329.0	22.8	-8.0	23.2	54
1637.250000	34.0	100.0	H	110.0	28.9	-5.1	20.0	54
1990.250000	36.2	100.0	V	345.0	33.1	-3.1	17.8	54
2640.000000	39.3	100.0	H	224.0	39.0	-0.3	14.7	54
2999.000000	41.6	100.0	V	205.0	40.2	-1.4	12.4	54

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

RE 3-18GHz PK+AV



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)

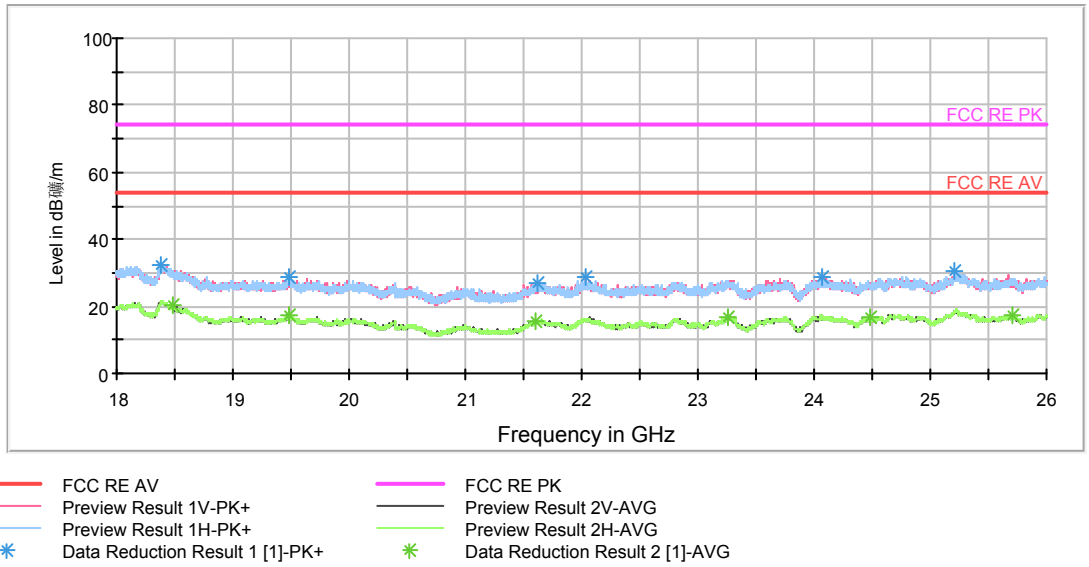
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3358.125000	42.5	101.0	H	216.0	41.1	-1.4	31.5	74
5026.875000	44.5	101.0	H	230.0	41.7	2.8	29.5	74
6885.000000	45.5	101.0	V	337.0	39.8	5.7	28.5	74
9802.500000	48.1	101.0	H	354.0	36.8	11.3	25.9	74
13350.000000	51.1	101.0	V	337.0	36.6	14.5	22.9	74
17958.750000	60.6	101.0	V	309.0	36.6	24.0	13.4	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)
3358.125000	30.1	101.0	H	216.0	28.7	-1.4	23.9	54
5026.875000	33.9	101.0	H	230.0	31.1	2.8	20.1	54
6885.000000	35.3	101.0	V	337.0	29.6	5.7	18.7	54
9802.500000	38.7	101.0	H	354.0	27.4	11.3	15.3	54
13350.000000	41.3	101.0	V	337.0	26.8	14.5	12.7	54
17958.750000	49.3	101.0	V	309.0	25.3	24.0	4.7	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)

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

Radiates Emission from 18GHz to 26.5GHz

Frequency (MHz)	Peak (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18482.000000	29.6	V	240.0	24.4	-5.2	44.4	74
19475.000000	26.4	H	81.0	19.5	-6.9	47.6	74
21612.000000	24.9	V	327.0	17.1	-7.8	49.1	74
23263.000000	26.0	V	246.0	19.5	-6.5	48.0	74
24475.000000	26.0	V	299.0	19.3	-6.7	48.0	74
25700.000000	26.0	V	314.0	19.6	-6.4	48.0	74

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

Frequency (MHz)	Average (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18482.000000	20.1	V	240.0	14.9	-5.2	33.9	54
19475.000000	17.4	H	81.0	10.5	-6.9	36.6	54
21612.000000	15.8	V	327.0	8.0	-7.8	38.2	54
23263.000000	16.6	V	246.0	10.1	-6.5	37.4	54
24475.000000	16.6	V	299.0	9.9	-6.7	37.4	54
25700.000000	17.6	V	314.0	11.2	-6.4	36.4	54

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

2.10. Conducted Emissions

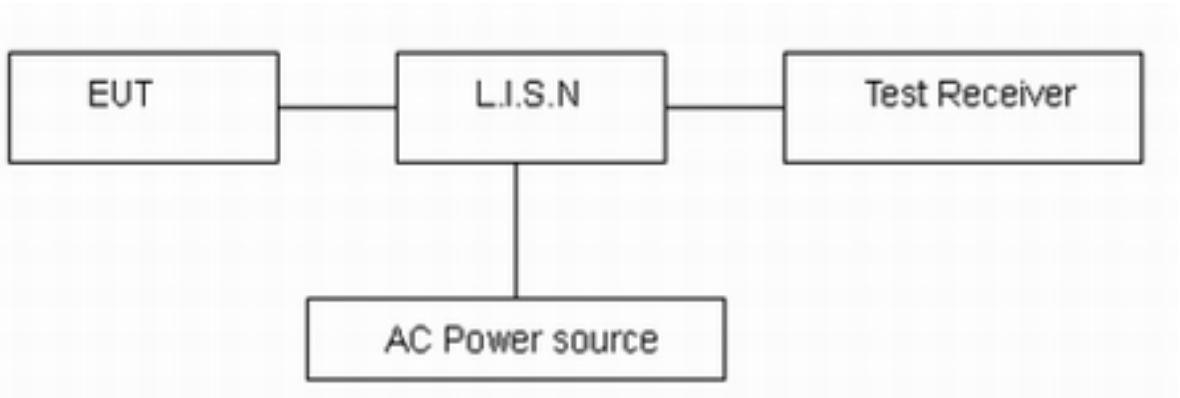
Ambient condition

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

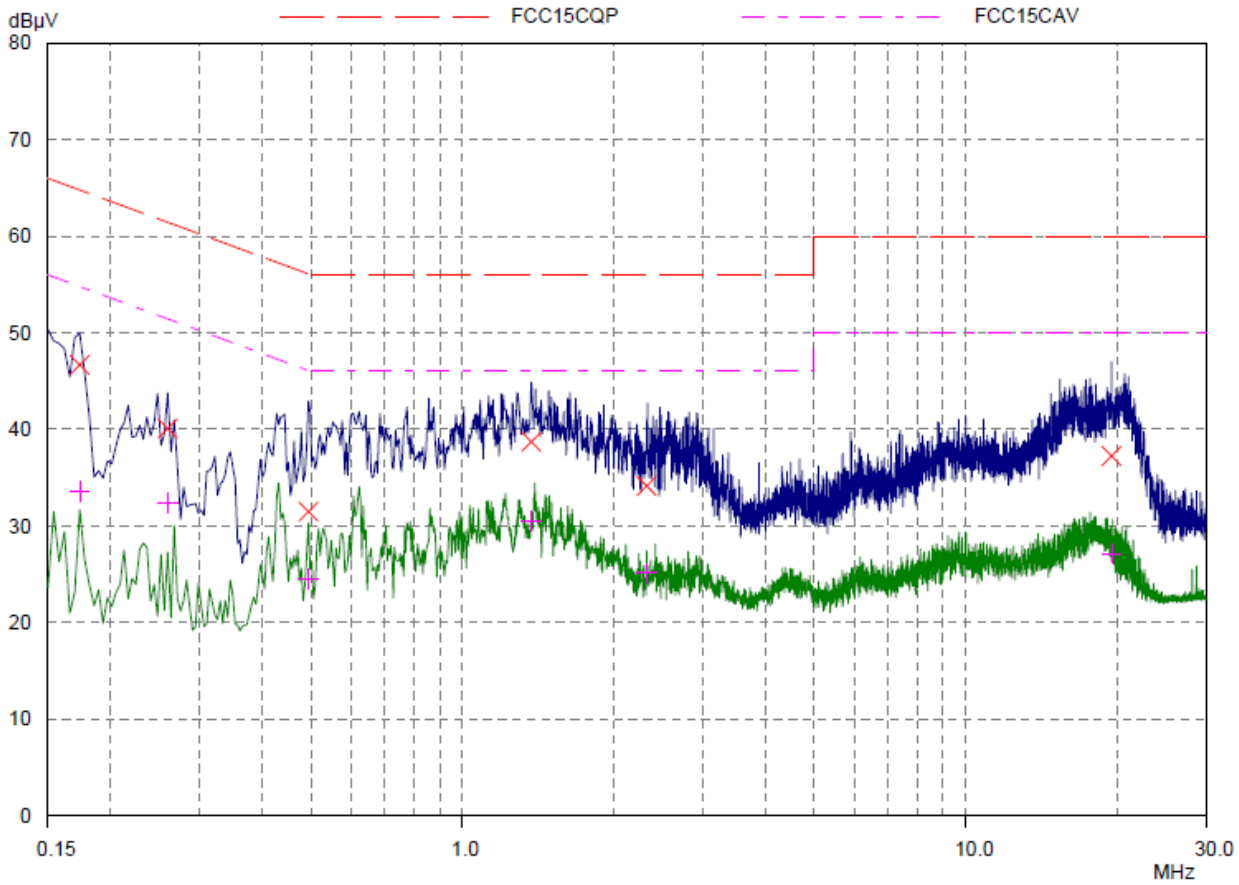
Frequency (MHz)	Conducted Limits(dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56 *	56 to 46*
0.5 - 5	56	46
5 - 30	60	50
*: Decreases with the logarithm of the frequency.		

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

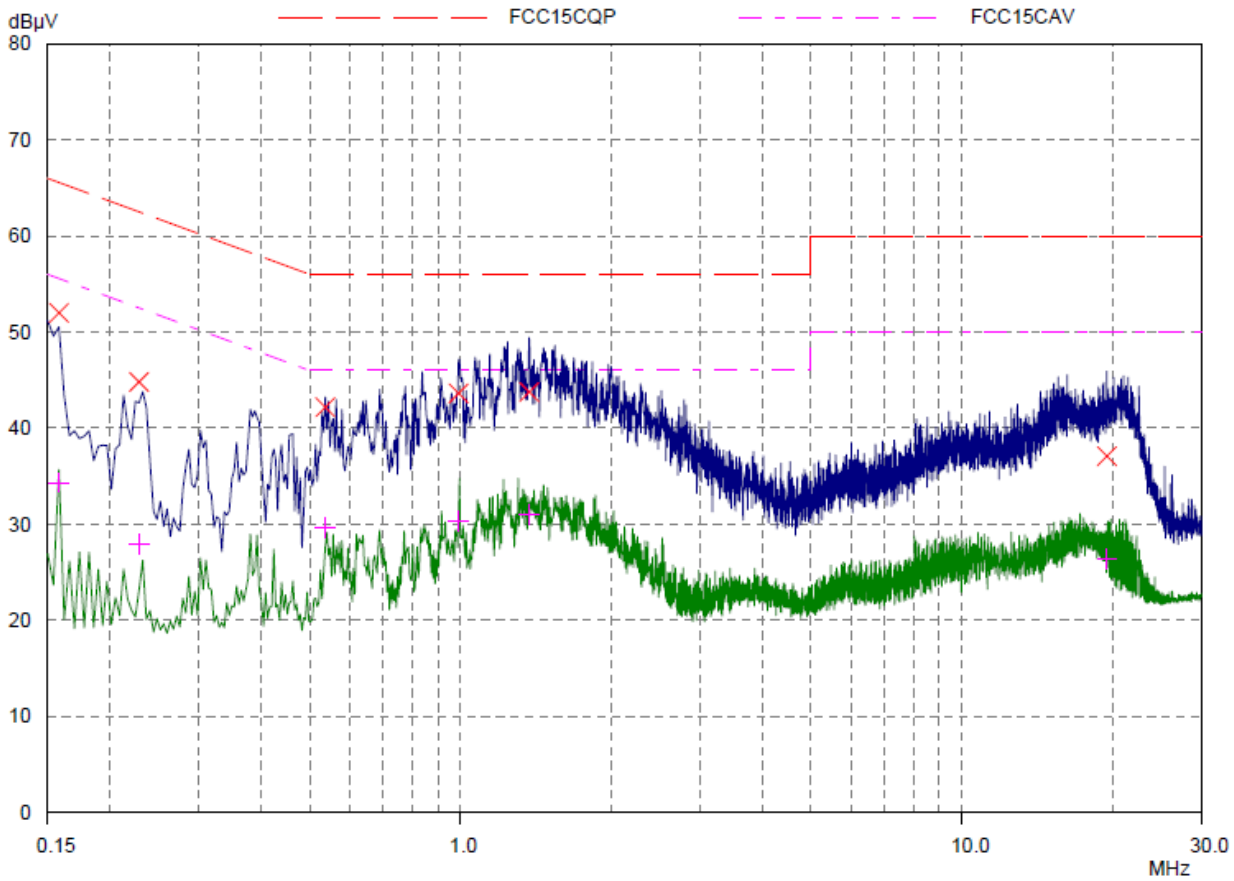


Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -	PE -
0.17343	46.68	64.79	18.11	L1	gnd
0.25937	40.09	61.45	21.36	L1	gnd
0.49375	31.49	56.10	24.61	L1	gnd
1.36875	38.71	56.00	17.29	L1	gnd
2.32187	34.14	56.00	21.86	L1	gnd
19.47421	37.23	60.00	22.77	L1	gnd

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -	PE -
0.17343	33.57	54.79	21.22	L1	gnd
0.25937	32.37	51.45	19.08	L1	gnd
0.49375	24.51	46.10	21.59	L1	gnd
1.36875	30.48	46.00	15.52	L1	gnd
2.32187	25.12	46.00	20.88	L1	gnd
19.47421	27.14	50.00	22.86	L1	gnd

L Line



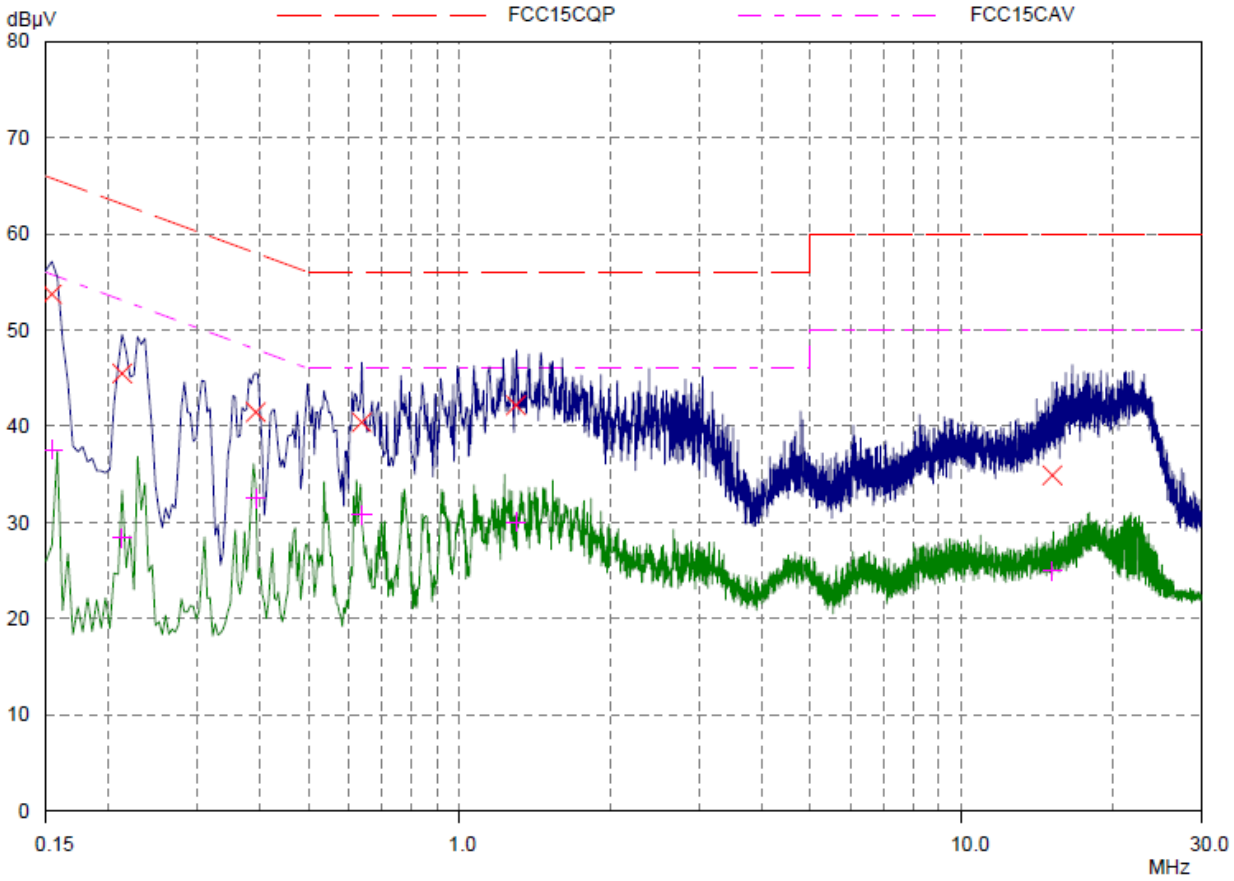
Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -	PE -
0.15781	51.99	65.58	13.59	N	gnd
0.22812	44.81	62.52	17.71	N	gnd
0.53671	42.19	56.00	13.81	N	gnd
0.98984	43.63	56.00	12.37	N	gnd
1.36875	43.77	56.00	12.23	N	gnd
19.45078	37.07	60.00	22.93	N	gnd

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -	PE -
0.15781	34.33	55.58	21.25	N	gnd
0.22812	27.90	52.52	24.62	N	gnd
0.53671	29.61	46.00	16.39	N	gnd
0.98984	30.35	46.00	15.65	N	gnd
1.36875	31.06	46.00	14.94	N	gnd
19.45078	26.43	50.00	23.57	N	gnd

N Line

802.11g CH6

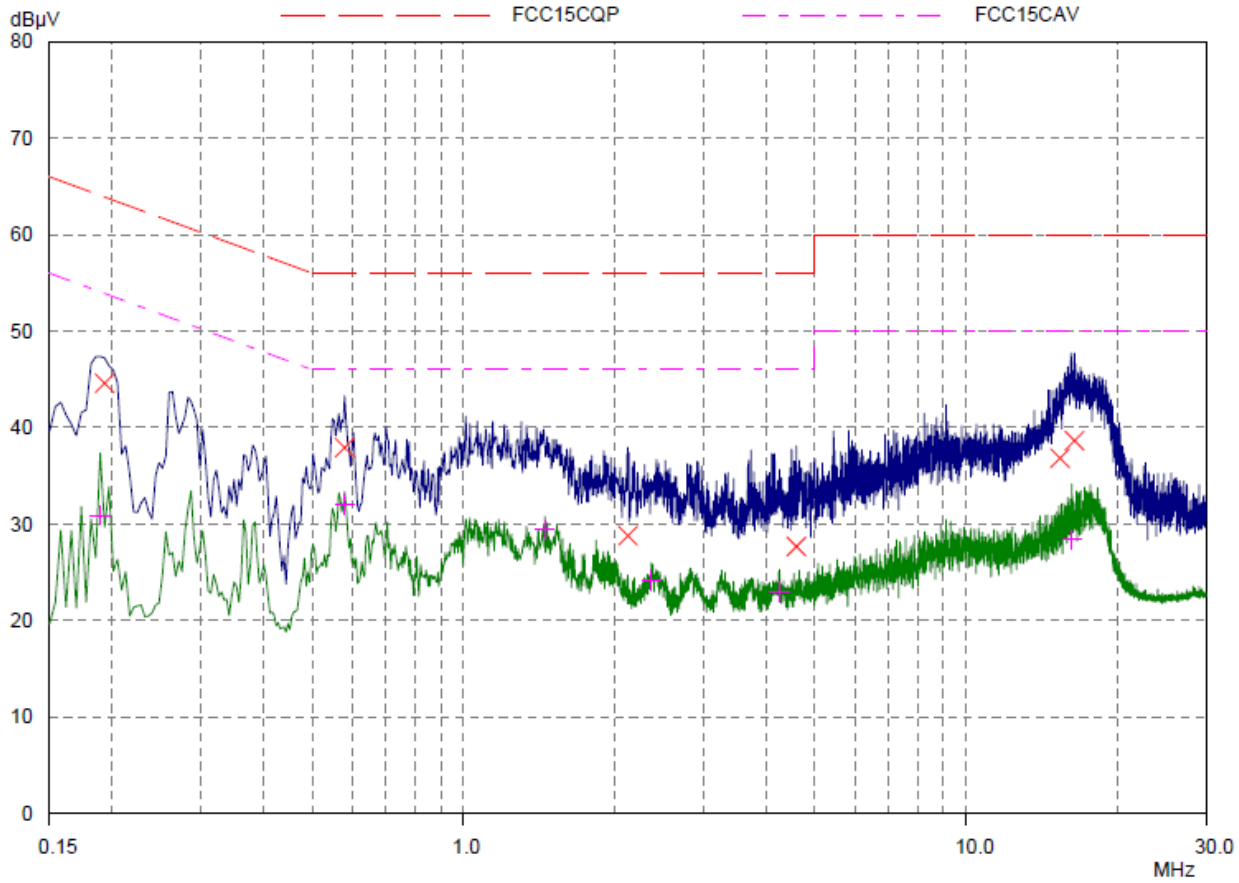


Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -	PE -
0.1539	53.74	65.79	12.05	L1	gnd
0.2125	45.50	63.11	17.61	L1	gnd
0.39218	41.46	58.02	16.56	L1	gnd
0.63828	40.42	56.00	15.58	L1	gnd
1.29453	42.17	56.00	13.83	L1	gnd
15.17343	34.89	60.00	25.11	L1	gnd

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -	PE -
0.1539	37.60	55.79	18.19	L1	gnd
0.2125	28.38	53.11	24.73	L1	gnd
0.39218	32.50	48.02	15.52	L1	gnd
0.63828	30.80	46.00	15.20	L1	gnd
1.29453	30.04	46.00	15.96	L1	gnd
15.17343	24.95	50.00	25.05	L1	gnd

L Line



Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -	PE -
0.1539	52.54	65.79	13.25	N	gnd
0.23203	44.78	62.38	17.60	N	gnd
0.31015	37.81	59.97	22.16	N	gnd
0.39609	38.66	57.93	19.27	N	gnd
1.43515	43.14	56.00	12.86	N	gnd
1.60312	46.41	56.00	9.59	N	gnd

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -	PE -
0.1539	35.75	55.79	20.04	N	gnd
0.23203	29.06	52.38	23.32	N	gnd
0.31015	28.47	49.97	21.50	N	gnd
0.39609	25.74	47.93	22.19	N	gnd
1.43515	30.58	46.00	15.42	N	gnd
1.60312	31.35	46.00	14.65	N	gnd

N Line

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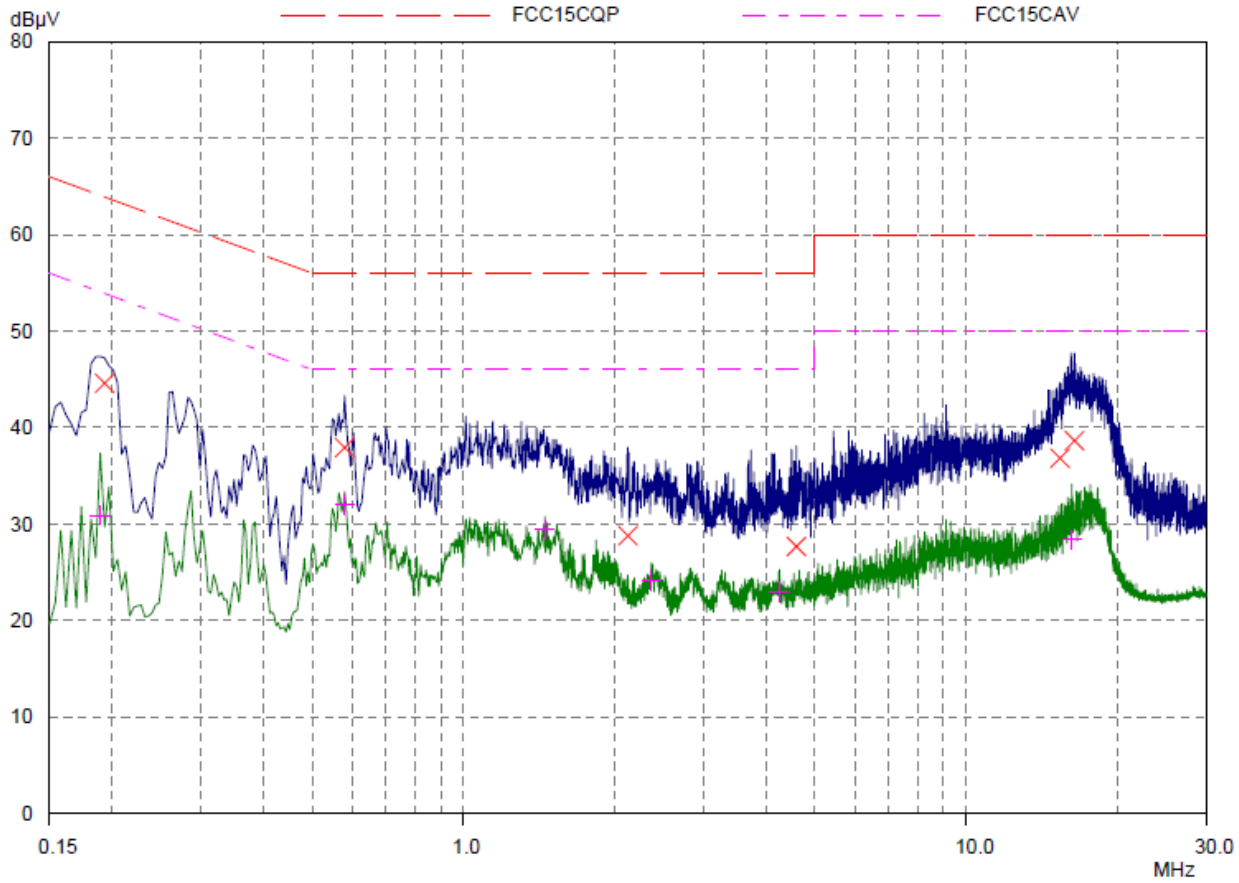
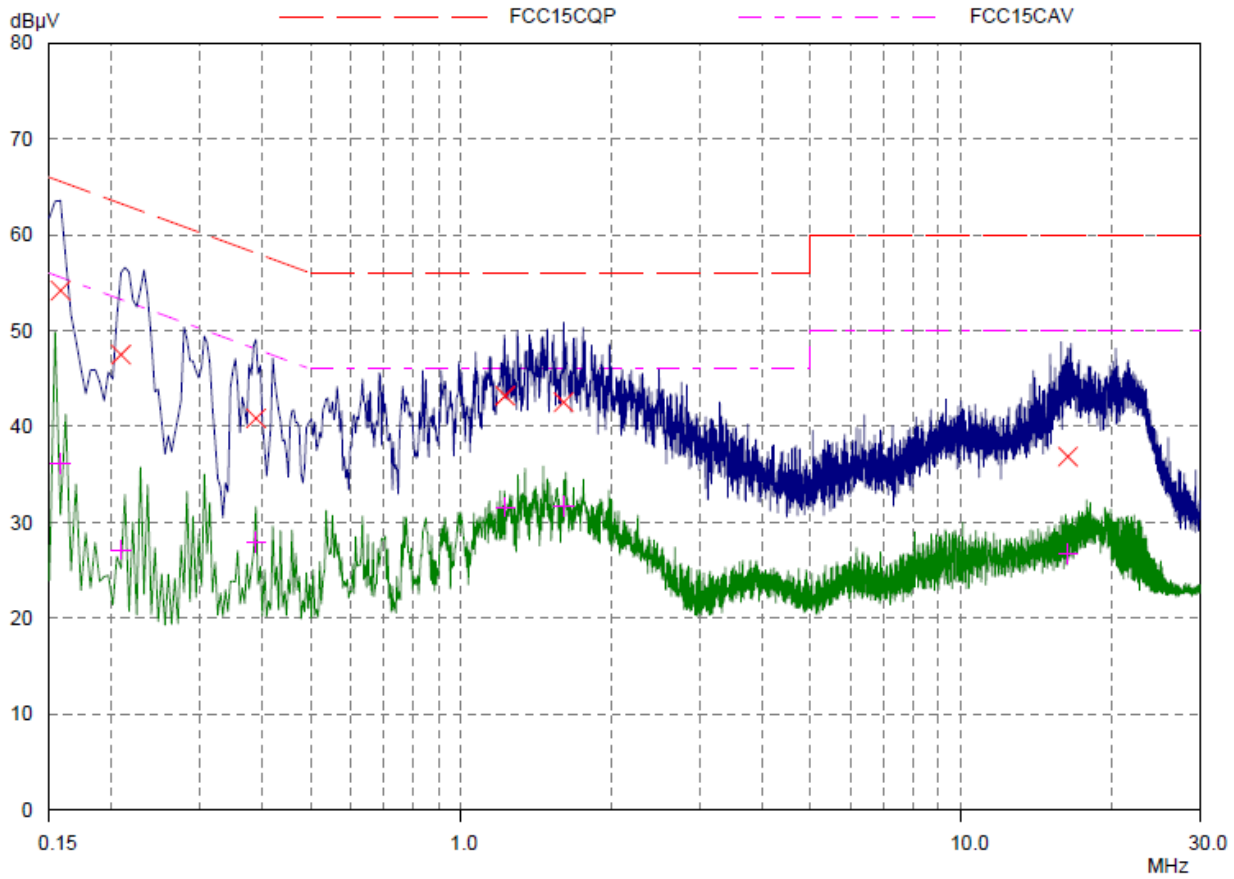


Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -	PE -
0.19296	44.60	63.91	19.31	L1	gnd
0.57968	37.92	56.00	18.08	L1	gnd
2.12265	28.80	56.00	27.20	L1	gnd
4.5914	27.68	56.00	28.32	L1	gnd
15.36093	36.83	60.00	23.17	L1	gnd
16.41562	38.64	60.00	21.36	L1	gnd

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -	PE -
0.18906	30.91	54.08	23.17	L1	gnd
0.57968	32.07	46.00	13.93	L1	gnd
1.45078	29.41	46.00	16.59	L1	gnd
2.36093	24.16	46.00	21.84	L1	gnd
4.25156	23.00	46.00	23.00	L1	gnd
16.22031	28.38	50.00	21.62	L1	gnd

L Line



Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -	PE -
0.15781	54.19	65.58	11.39	N	gnd
0.20859	47.49	63.26	15.77	N	gnd
0.38828	40.85	58.10	17.25	N	gnd
1.22421	43.22	56.00	12.78	N	gnd
1.60312	42.53	56.00	13.47	N	gnd
16.3414	36.88	60.00	23.12	N	gnd

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -	PE -
0.15781	36.14	55.58	19.44	N	gnd
0.20859	27.12	53.26	26.14	N	gnd
0.38828	27.96	48.10	20.14	N	gnd
1.22421	31.61	46.00	14.39	N	gnd
1.60312	31.68	46.00	14.32	N	gnd
16.3414	26.71	50.00	23.29	N	gnd

N Line

2. Main Test Instruments

No.	Name	Type	Manufacturer	Serial Number	Calibration Date	Expiration Time	Valid Period
01	EMI Test Receiver	ESCI	R&S	100948	2015-05-25	2016-05-24	1 year
02	Loop Antenna	FMZB1516	SCHWARZBECK	237	2014-06-29	2017-06-28	3 years
03	TRILOG Broadband Antenna	VULB 9163	Schwarzbeck	9163-201	2013-11-25	2016-11-24	3 years
04	Double Ridged Waveguide Horn Antenna	HF907	R&S	100126	2012-07-02	2015-07-01	3 years
05	Standard Gain Horn	3160-09	ETS-Lindgren	00102644	2015-05-19	2018-05-18	3 years
06	EMI Test Receiver	ESCS30	R&S	100138	2014-12-17	2015-12-16	1 year
07	LISN	ENV216	R&S	101171	2014-12-17	2015-12-16	1 year
08	Spectrum Analyzer	E4445A	Agilent	MY46181146	2015-06-25	2016-06-26	1 year
09	MOB COMMS DC SUPPLY	66319D	Agilent	MY43004105	2015-05-25	2016-05-24	1 year
10	Peak Power Meter	8990B	Agilent	51000109	2015-05-29	2016-05-26	1 year
11	Wideband Power Sensors	N1923A	Agilent	MY51220004	2015-05-29	2016-05-28	1 year
12	Spectrum Analyzer	FSV30	R&S	100815	2014-12-17	2015-12-16	1 year

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

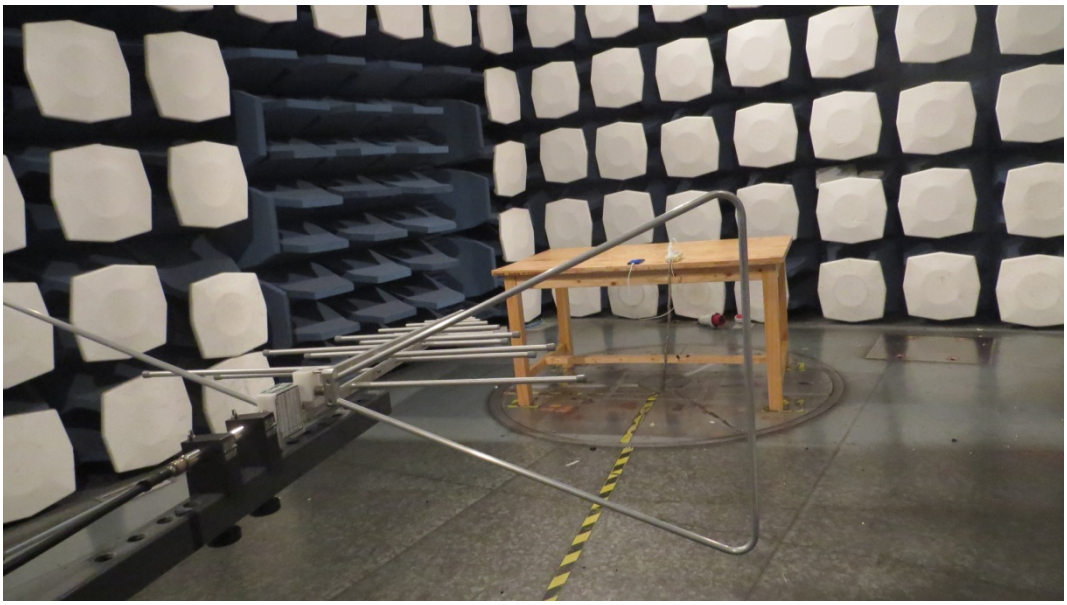
ANNEX A: EUT Appearance and Test Setup

A.1 EUT Appearance

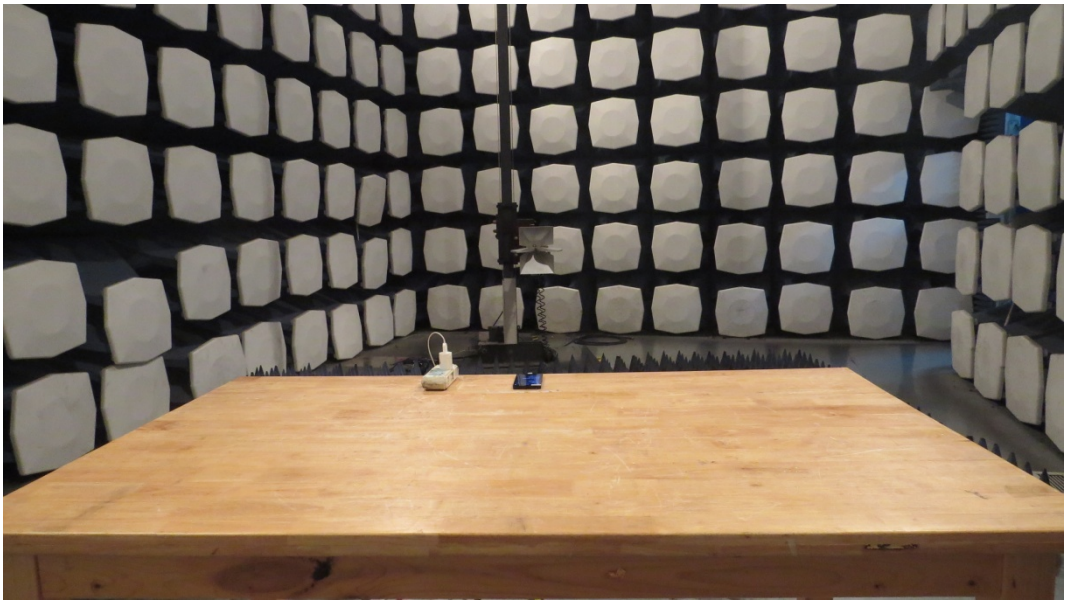
EUT

Picture 1 Constituents of EUT

A.2 Test Setup



a: Below 1GHz



b: Above 1GHz

Picture 2 Radiated Emission Test Setup

Picture 3 Conducted Emission Test Setup