REPORT No. : XM19090099W01

TEST REPORT

APPLICANT	:	Nanjing Juplink Intelligent Technologies Co., Ltd.
PRODUCT NAME	:	Dual-band Gigabit Repeater
MODEL NAME	:	EC4-1200
BRAND NAME	:	JupLink
FCC ID	:	2AT9Z-EC4-1200
STANDARD(S)	:	47 CFR Part 15 Subpart C
RECEIPT DATE	:	2019-08-06
TEST DATE	:	2019-10-07 to 2019-10-22
ISSUE DATE	:	2019-11-14

Prepared by: Lai Huihuang (Test Engineer)

Approved by: Anne Liu(Supervisor)

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Change History		
Version	Date	Reason for change
1.0	2019-11-14	First edition

1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Nanjing Juplink Intelligent Technologies Co., Ltd.
Applicant Address:	No. 757, Dixiu Road, Binjiang Economic Development Zone, Jiangning District, Nanjing
Manufacturer:	YICHEN(SHENZHEN)TECHNOLOGYCO.,LTDLONGGONGBRANCH
Manufacturer Address:	1-4F,No.6,YasenIndustrialFactory,No.8ChenxinRoad,BaolongIndustrialCity,BaolongCommunity，BaolongStreet,LonggangDistrict,Shenzhen,China

1.2. Equipment Under Test (EUT) Description

Product Name:	Dual-band Gigabit Repeater
Serial No:	(N/A, marked #1 by test site)
Hardware Version:	Z-V1.4
Software Version:	616.10.1.394
Modulation Type:	DSSS, OFDM
Operating Frequency Range:	802.11b/g/n-20MHz: 2.412GHz - 2.462GHz 802.11n-40MHz: 2.422GHz - 2.452GHz
Channel Number:	802.11b/g/n-20MHz: 11 802.11n-40MHz: 7
Antenna Type:	Undetachable antennas
Antenna Gain:	Ant 0:3 dBi;Ant1:3dBi

Note 1: The EUT is operating at 2.4GHz ISM; it supports 802.11b, 802.11g, 802.11n and they are all tested in this report.

For 802.11b/g/n-20MHz (2.4GHz band), the frequencies allocated is F (MHz) =2412+5*(n-1) (1<=n<=11). The lowest, middle, highest channel numbers of the EUT used and tested in this report are separately 1 (2412MHz), 6 (2437MHz) and 11 (2462MHz).

For 802.11n-40MHz, the frequencies allocated is F (MHz) =2412+5*(n-1) (3<=n<=9). The lowest, middle, highest channel numbers of the EUT used and tested in this report are separately 3 (2422MHz), 6 (2437MHz) and 9 (2452MHz).

Note 2: During test, the duty cycle of the EUT was setting to 100%.

Note 3: The EUT has two antennas and supports a MIMO function.

Modulation Mode:	TX Function
802.11b	1TX
802.11g	1TX
802.11n20	2TX
802.11n40	2TX

Note 4: The EUT connected to the serial port of the computer with a serial communication cable, we use the dedicated software to control the EUT continuous transmission.

Note 5: For conducted test item Maximum conducted output Power and Peak Power spectral density of each modulation mode, we recorded the test result of two antennas separately, for other conducted test items both of the two antennas were tested separately, we only recorded the worst test result(Ant 0) in this report.

Note 6: All radiation test items for 802.11n modulation mode operate at MIMO mode during the test. Other modulation mode operate at SISO mode, both of the two antennas were tested separately, we only recorded the worst test result(ANT0) in this report.

Note 7: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

1.3. Modulation Type and Data Rate of EUT

Modulation technology	Modulation Type	Data Rate (Mbps) Note1
DSSS (802.11b)	DBPSK	**1**
	DQPSK	2
	CCK	5.5/ 11
OFDM (802.11g)	BPSK	**6** / 9
	QPSK	12 / 18
	16QAM	24 / 36
	64QAM	48 / 54
OFDM (802.11n-20/40MHz)	BPSK	**6.5**
	QPSK	13/19.5
	16QAM	26/39
	64QAM	52/58.5/65

Note1: The worst-case mode (bold face) in all data rates has been determined during the pre-scan, only the test data of the worst-case were recorded in this report.

1.4. Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 15 Subpart C for the EUT FCC ID Certification:

No	Identity	Document Title
1	47 CFR Part 15	Radio Frequency Devices

Test detailed items/section required by FCC rules and results are as below:

No.	Section	Description	Test Date	Test Engineer	Result
1	15.203	Antenna Requirement	N/A	N/A	PASS
2	15.247(b)	Output Power	Oct 07, 2019 Oct 18, 2019	Lai Huihuang	**PASS**
3	15.247(a)	Bandwidth	Oct 07, 2019 Oct 18, 2019	Lai Huihuang	**PASS**
4	15.247(d)	Conducted Spurious Emission and Band Edge	Oct 07, 2019 Oct 18, 2019	Lai Huihuang	**PASS**
5	15.247(e)	Power spectral density (PSD)	Oct 07, 2019 Oct 18, 2019	Lai Huihuang	**PASS**
6	15.247(d)	Restricted Frequency Bands	Oct 21, 2019	Wang Hao	**PASS**
7	15.207	Conducted Emission	Oct 20, 2019	Yi You Zhong	**PASS**
8	15.209, 15.247(d)	Radiated Emission	Oct 13, 2019 Oct 22, 2019	Wang Hao	**PASS**
Note: The tests of Conducted Emission and Radiated Emission were performed according to the method of measurements prescribed in ANSI C63.10 2013 and KDB558074 D01 v04.					

1.5. Environmental Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	15 - 35
Relative Humidity (%):	30 -60
Atmospheric Pressure (kPa):	86-106

2. 47 CFR Part 15C Requirements

2.1. Antenna requirement

2.1.1. Applicable Standard

According to FCC 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

2.1.2. Result: Compliant

The EUT has a permanently and irreplaceable attached antenna. Please refer to the EUT internal photos.

2.2. Output Power

2.2.1. Requirement

According to FCC section 15.247(b)(3), For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: The maximum peak conducted output power of the intentional radiator shall not exceed1 Watt.

2.2.2. Test Description

The measured output power was calculated by the reading of the USB Wideband Power Sensor and calibration.

A. Test Setup:

The EUT (Equipment under the test) which is coupled to the USB Wideband Power Sensor; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading.

B. Equipments List:

Please refer ANNEX B(4).

2.2.3. Test Result

Duty Cycle Factor

Mode	Channel	Frequency (MHz)	T_{on} (ms)	$T_{(on+off)}$ (ms)	Duty Cycle (%)	Duty Cycle Factor
802.11b	6	2437	100	100	100	0
802.11g	6	2437	100	100	100	0
802.11n-20MHz	6	2437	100	100	100	0
802.11n-40MHz	6	2437	100	100	100	0

Output Average Power ANT0

Mode	Channel	Frequency (MHz)	Output Average Power		Limit		Verdict
			dBm	W	dBm	W	
802.11 b	1	2412	19.33	0.086	30	1	**PASS**
	6	2437	19.14	0.082			**PASS**
	11	2462	19.22	0.084			**PASS**
802.11 g	1	2412	19.51	0.089			**PASS**
	6	2437	19.34	0.086			**PASS**
	11	2462	19.07	0.081			**PASS**
802.11 HT20	1	2412	19.61	0.091			**PASS**
	6	2437	19.36	0.086			**PASS**
	11	2462	19.20	0.083			**PASS**
802.11 HT40	3	2422	19.53	0.090			**PASS**
	6	2437	19.94	0.099			**PASS**
	9	2452	19.84	0.096			**PASS**

Output Average Power ANT1

Mode	Channel	Frequency (MHz)	Output Average Power		Limit		Verdict
			dBm	W	dBm	W	
802.11 b	1	2412	19.39	0.087	30	1	**PASS**
	6	2437	19.22	0.084			**PASS**
	11	2462	19.41	0.087			**PASS**
802.11 g	1	2412	19.48	0.089			**PASS**
	6	2437	19.31	0.085			**PASS**
	11	2462	19.11	0.081			**PASS**
802.11 HT20	1	2412	19.68	0.093			**PASS**
	6	2437	19.29	0.085			**PASS**
	11	2462	19.21	0.083			**PASS**
802.11 HT40	3	2422	19.58	0.091			**PASS**
	6	2437	19.93	0.098			**PASS**
	9	2452	19.89	0.097			**PASS**

Total Average Power (ANT0+ANT1)

Mode	Channel	Frequency (MHz)	Output Average Power		Limit		Verdict
			dBm	W	dBm	W	
802.11 HT20	1	2412	20.54	0.113	30	1	**PASS**
	6	2437	20.18	0.104			**PASS**
	11	2462	20.25	0.106			**PASS**
802.11 HT40	3	2422	20.46	0.111			**PASS**
	6	2437	20.36	0.109			**PASS**
	9	2452	20.28	0.107			**PASS**

Output Peak Power ANT0

Mode	Channel	Frequency (MHz)	Output Peak Power		Limit		Verdict
			dBm	W	dBm	W	
802.11 b	1	2412	19.39	0.087	30	1	**PASS**
	6	2437	19.22	0.084			**PASS**
	11	2462	19.41	0.087			**PASS**
802.11 g	1	2412	19.72	0.094			**PASS**
	6	2437	19.75	0.094			**PASS**
	11	2462	19.11	0.081			**PASS**
802.11 HT20	1	2412	19.68	0.093			**PASS**
	6	2437	19.58	0.091			**PASS**
	11	2462	19.21	0.083			**PASS**
802.11 HT40	3	2422	19.58	0.091			**PASS**
	6	2437	19.99	0.100			**PASS**
	9	2452	19.89	0.097			**PASS**

Output Peak Power ANT1

Mode	Channel	Frequency (MHz)	Output Peak Power		Limit		Verdict
			dBm	W	dBm	W	
802.11 b	1	2412	19.79	0.095	30	1	**PASS**
	6	2437	19.27	0.085			**PASS**
	11	2462	19.81	0.096			**PASS**
802.11 g	1	2412	19.58	0.091			**PASS**
	6	2437	19.98	0.100			**PASS**
	11	2462	19.62	0.092			**PASS**
802.11 HT20	1	2412	19.70	0.093			**PASS**
	6	2437	19.36	0.086			**PASS**
	11	2462	19.65	0.092			**PASS**
802.11 HT40	3	2422	19.62	0.092			**PASS**
	6	2437	19.99	0.100			**PASS**
	9	2452	20.06	0.101			**PASS**

Total Peak Power (ANT0+ANT1)

Mode	Channel	Frequency (MHz)	Output Peak Power		Limit		Verdict
			dBm	W	dBm	W	
802.11 HT20	1	2412	21.17	0.131	30	1	**PASS**
	6	2437	21.02	0.126			**PASS**
	11	2462	21.14	0.130			**PASS**
802.11 HT40	3	2422	21.13	0.130			**PASS**
	6	2437	21.14	0.130			**PASS**
	9	2452	21.29	0.135			**PASS**

Note: The duty cycle factor has been compensated into the test result

2.3. Bandwidth

2.3.1. Requirement

According to FCC section 15.247(a) (2), 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.

2.3.2. Test Description

A. Test Set:

The EUT is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading.

Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW.

KDB 558074 Section 8.1 Option 1 was used in order to prove compliance.

B. Equipments List:

Please refer ANNEX B(4).

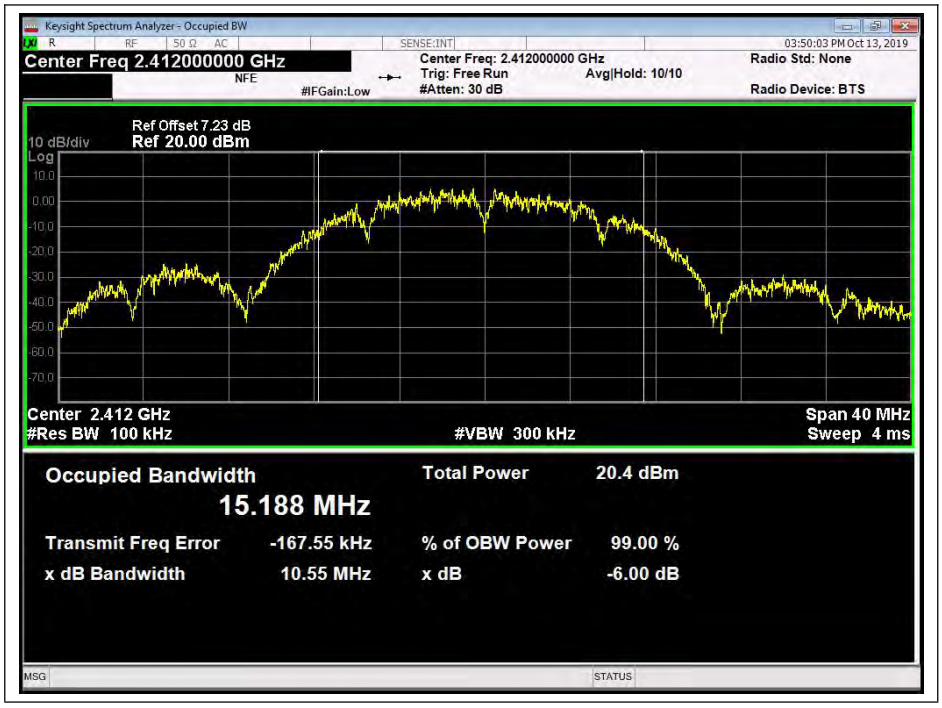
2.3.3. Test Result

802.11b Test mode

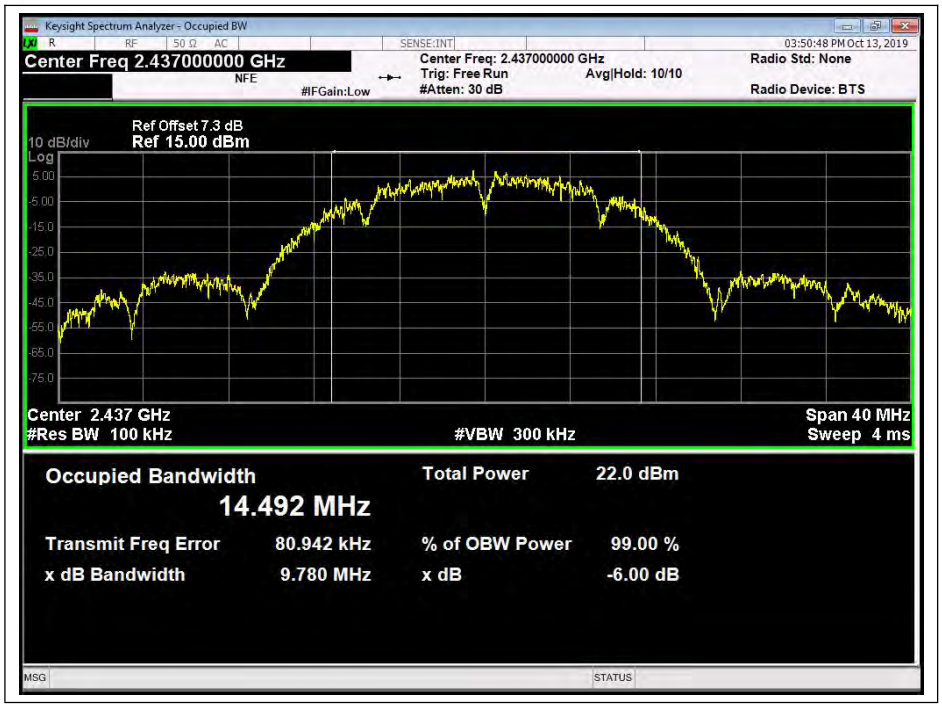
A. Test Verdict:

Channel	Frequency (MHz)	ANT0 6 dB Bandwidth (MHz)	Limits(kHz)	Result
1	2412	10.55	≥500	**PASS**
6	2437	9.78	≥500	**PASS**
11	2462	9.60	≥500	**PASS**

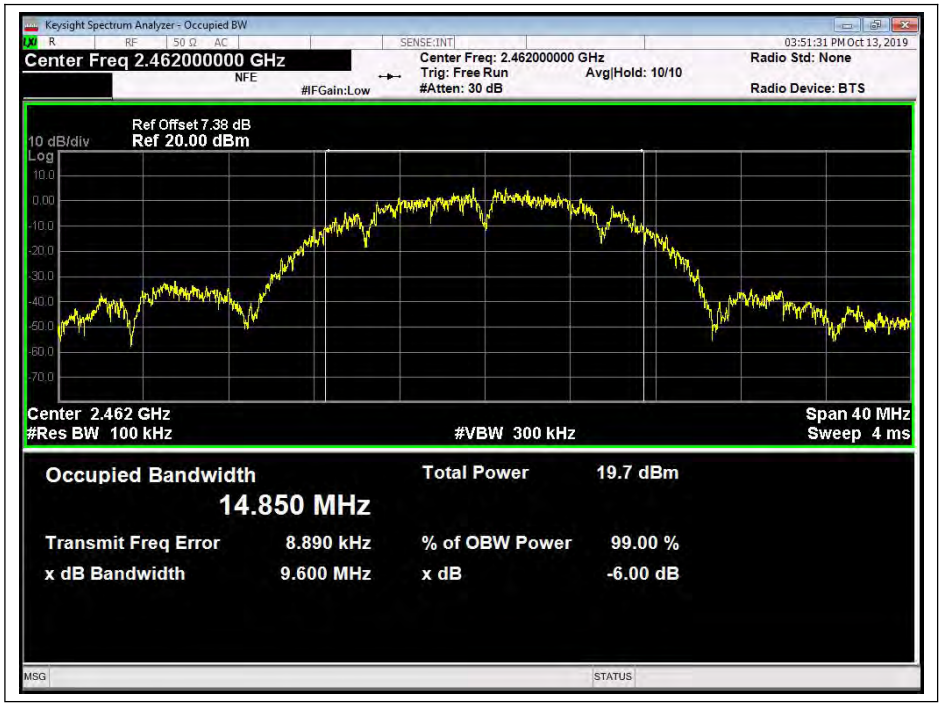
B. Test Plots



(Channel 1, 2412MHz, 802.11b)



(Channel 6, 2437 MHz, 802.11b)



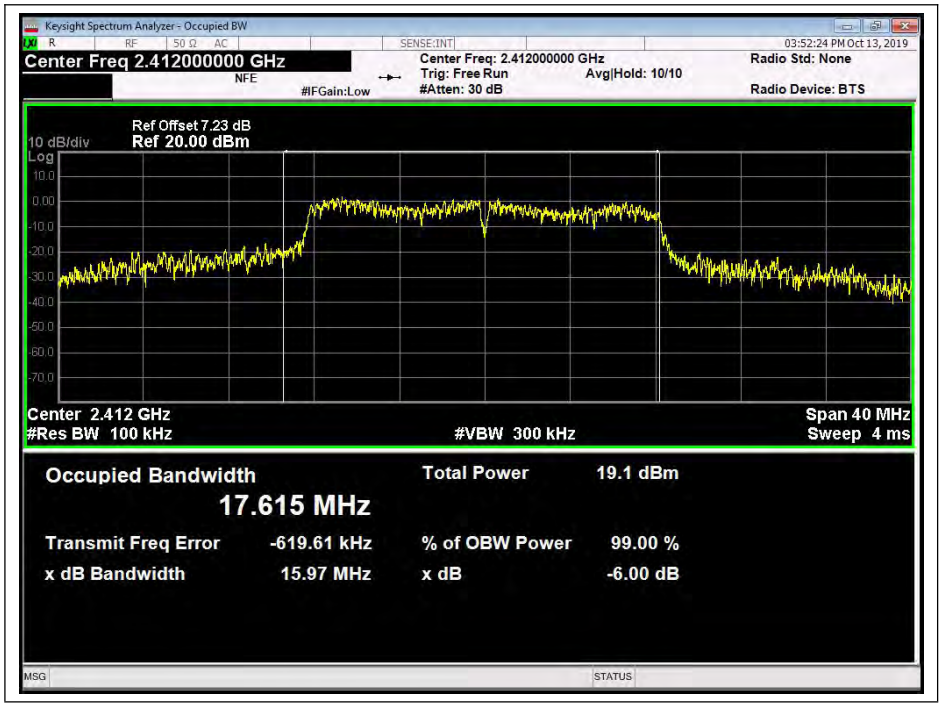
(Channel 11, 2462MHz, 802.11b)

802.11g Test mode

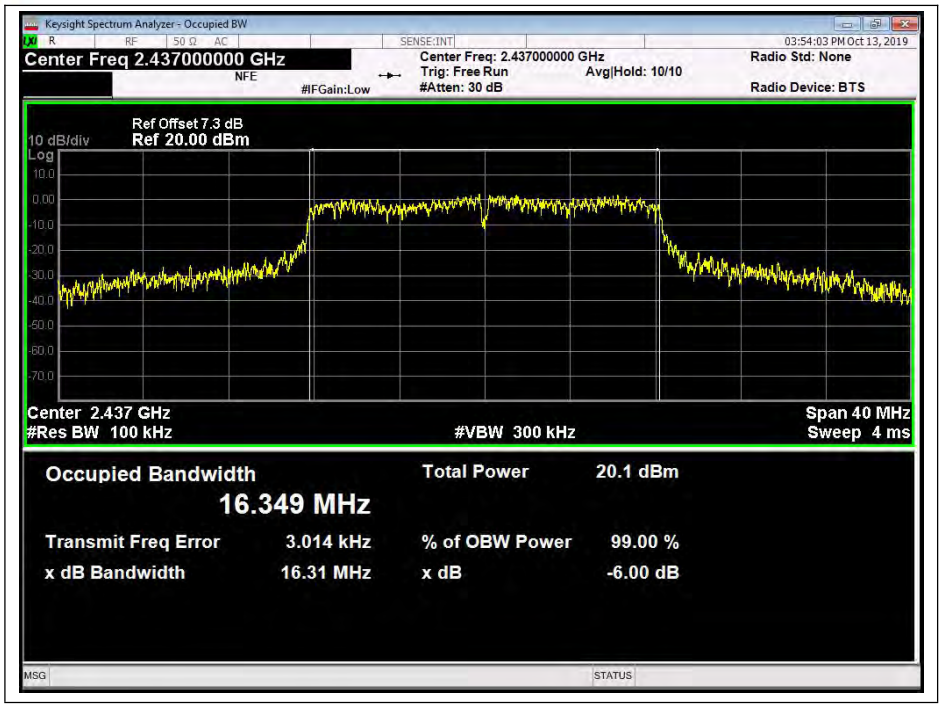
A. Test Verdict:

Channel	Frequency (MHz)	ANT0 6 dB Bandwidth (MHz)	Limits (kHz)	Result
1	2412	15.97	≥500	**PASS**
6	2437	16.31	≥500	**PASS**
11	2462	16.36	≥500	**PASS**

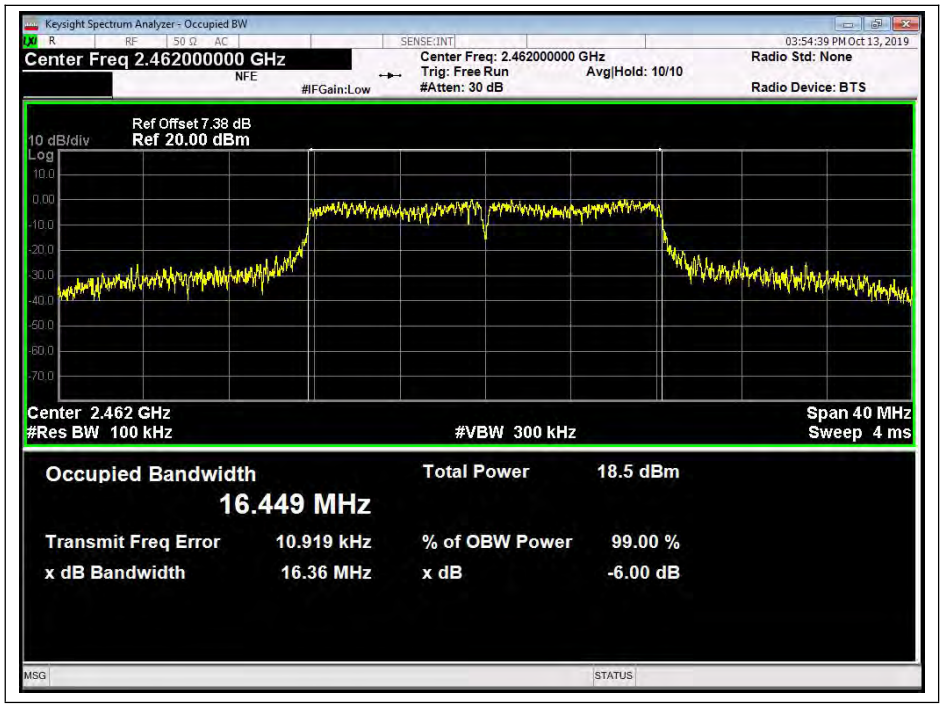
B. Test Plots:



(Channel 1, 2412MHz, 802.11g)



(Channel 6, 2437MHz, 802.11g)



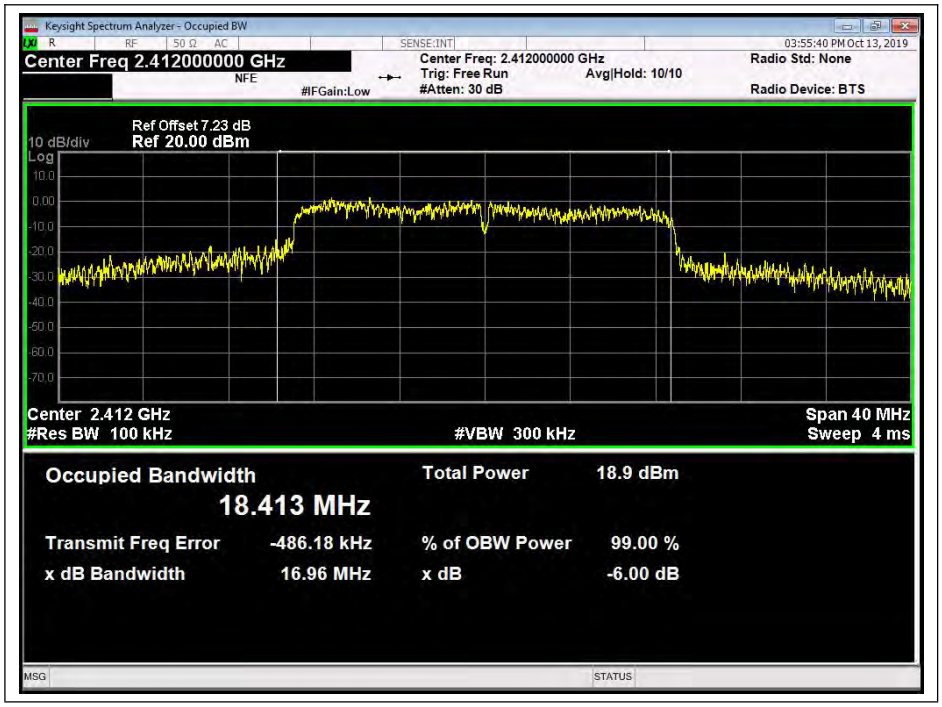
(Channel 11, 2462MHz, 802.11g)

802.11n-20 Test mode

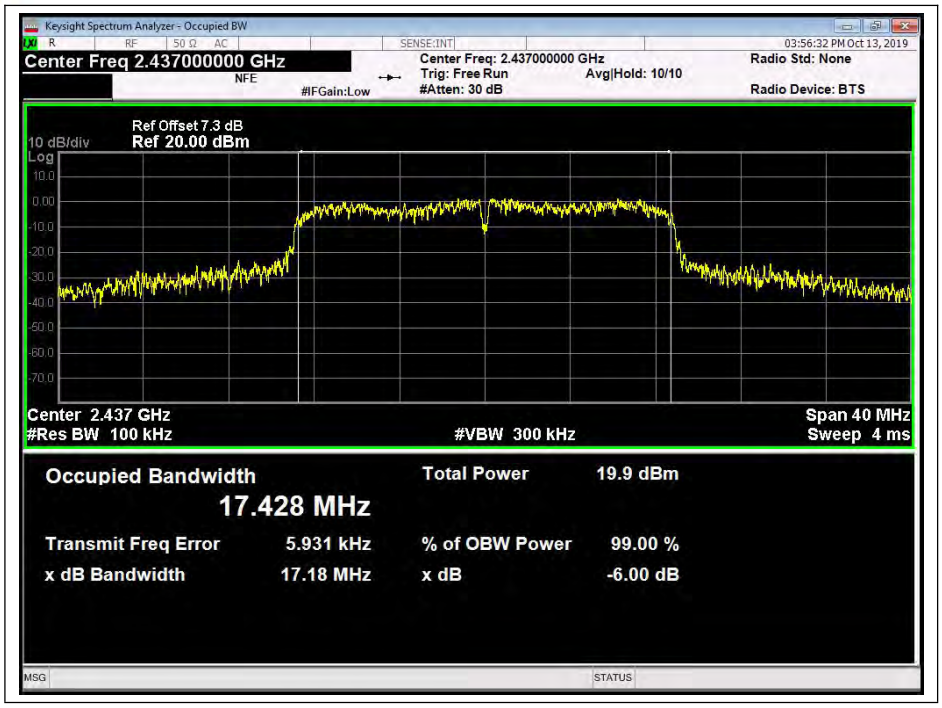
A. Test Verdict:

Channel	Frequency (MHz)	ANT0 6 dB Bandwidth (MHz)	Limits (kHz)	Result
1	2412	16.96	≥500	**PASS**
6	2437	17.18	≥500	**PASS**
11	2462	17.23	≥500	**PASS**

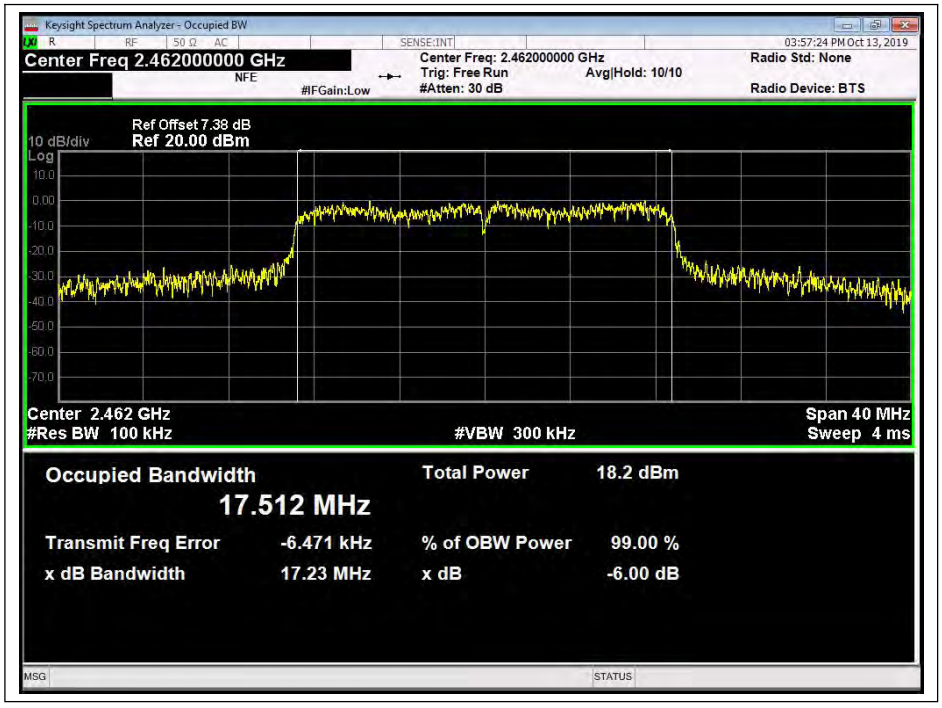
B. Test Plots:



(Channel 1, 2412MHz, 802.11n-20)



(Channel 6, 2437MHz, 802.11n-20)



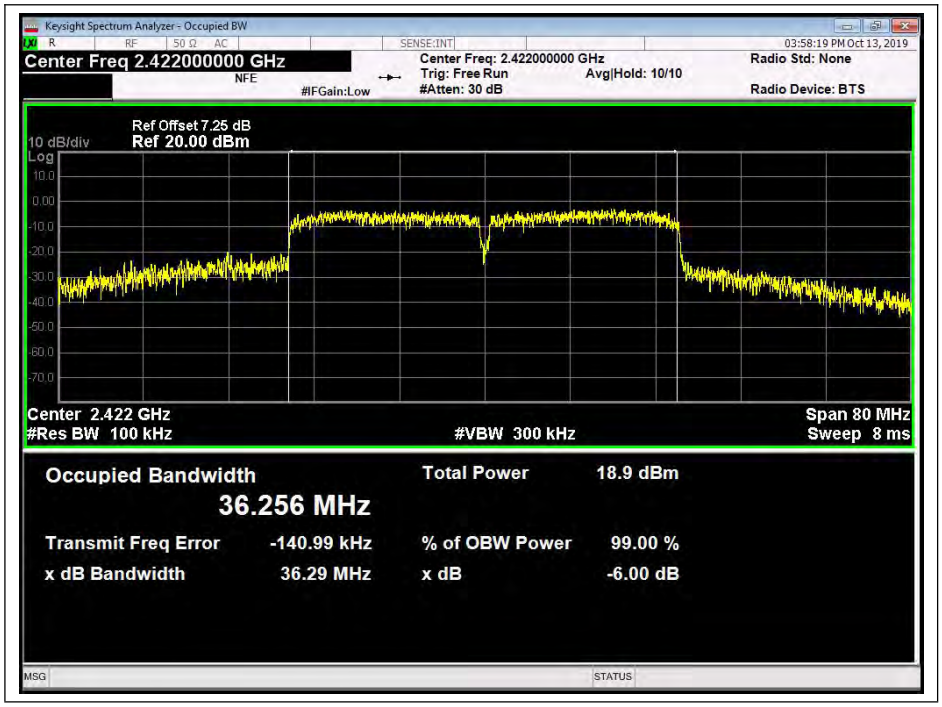
(Channel 11, 2462MHz, 802.11n-20)

802.11n-40 Test mode

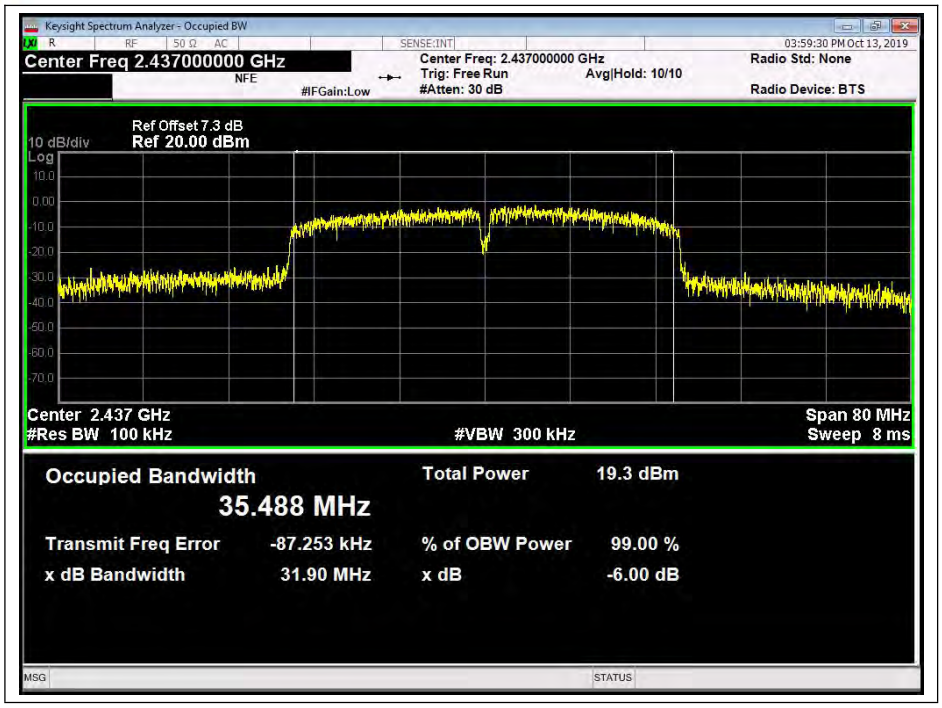
A. Test Verdict:

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limits (kHz)	Result
3	2422	36.29	≥500	**PASS**
6	2437	31.90	≥500	**PASS**
9	2452	36.26	≥500	**PASS**

B. Test Plots:



(Channel 3, 2422Mz, 802.11n-40)



(Channel 6, 2437MHz, 802.11n-40)

(Channel 9, 2452MHz, 802.11n-40)

2.4. Conducted Spurious Emissions and Band Edge

2.4.1. Requirement

According to FCC section 15.247(c), in any 100kHz 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 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

2.4.2. Test Description

A. Test Set:

The EUT is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading.

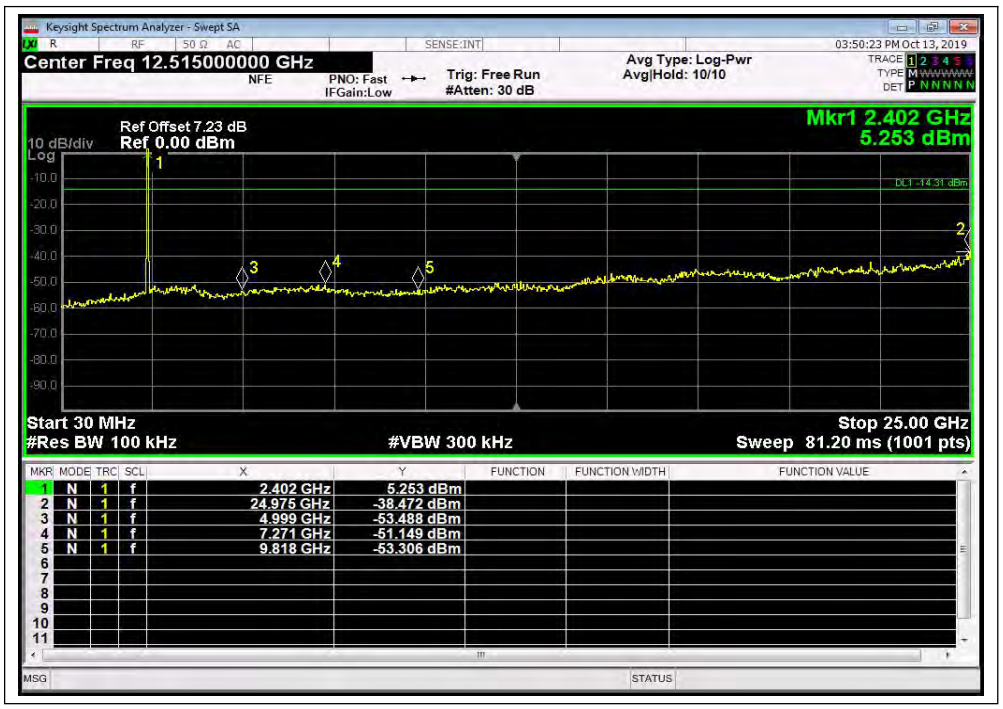
Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW.

KDB 558074 Section 11.0 was used in order to prove compliance.

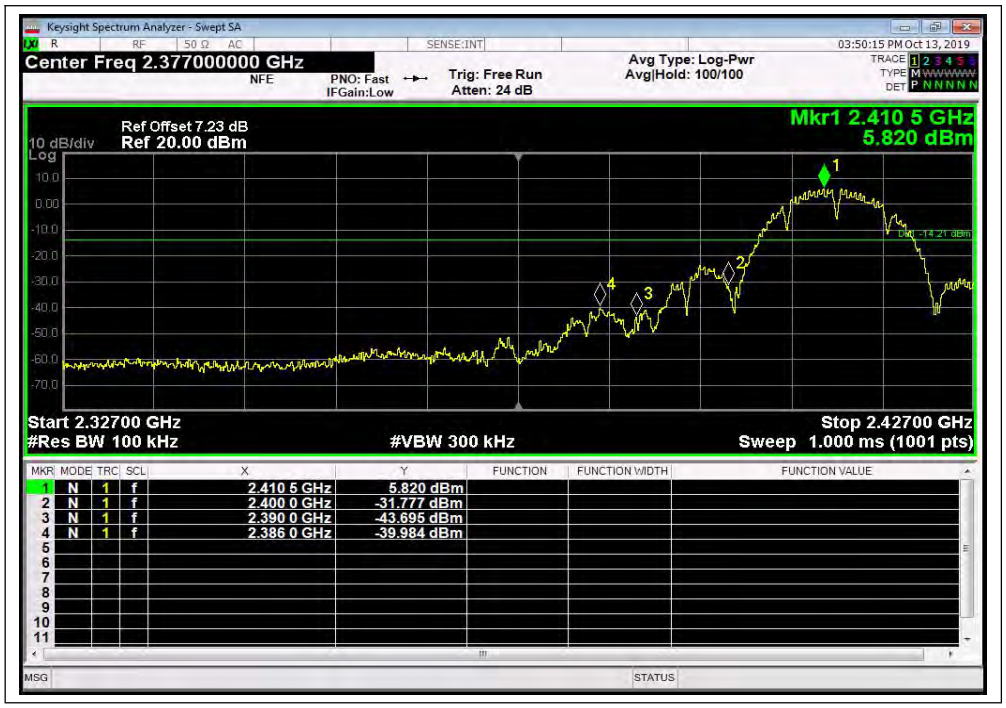
B. Equipments List:

Please refer ANNEX B(4).

2.4.3. Test Result

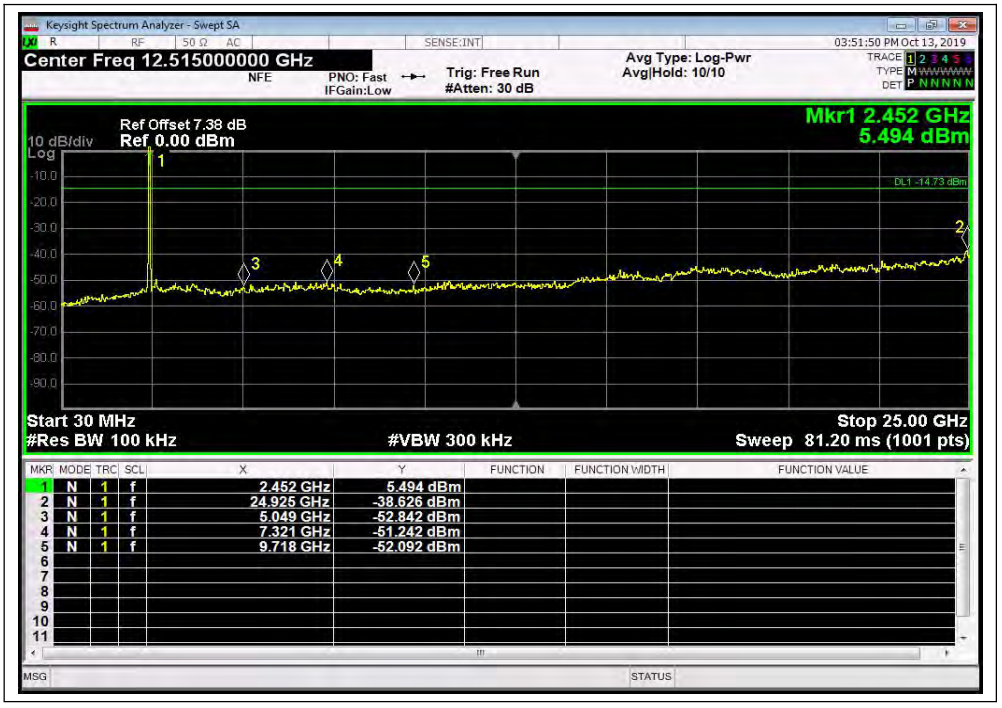


(802.11 b, Channel = 1, 30MHz to 25GHz)



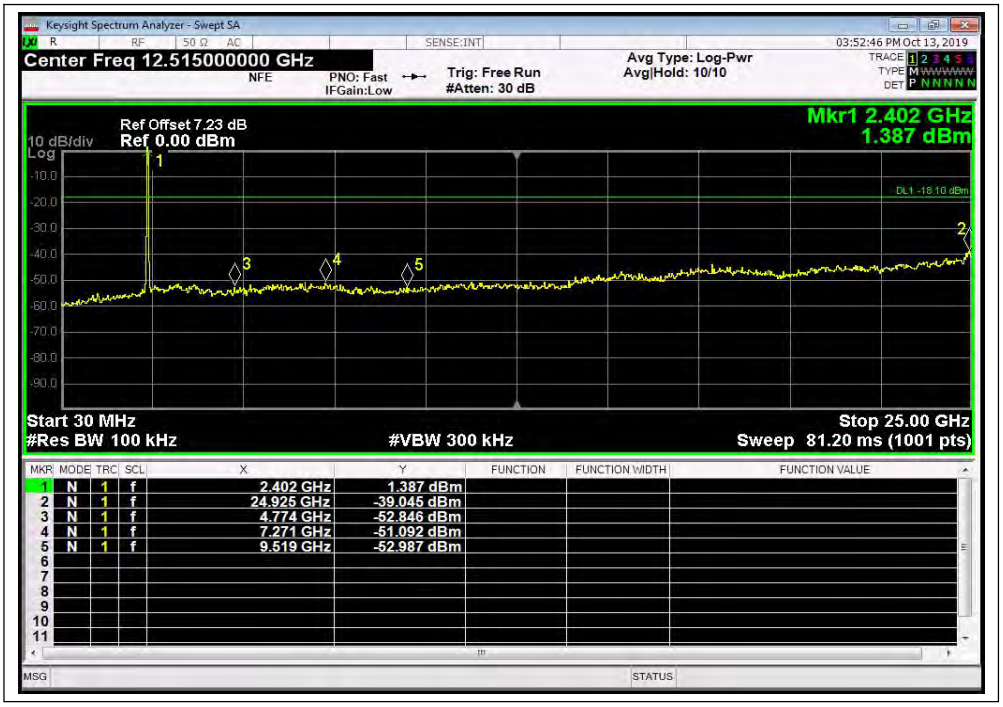
(802.11 b, Band Edge @ Channel = 1)

(802.11 b, Channel = 6, 30MHz to 25GHz)



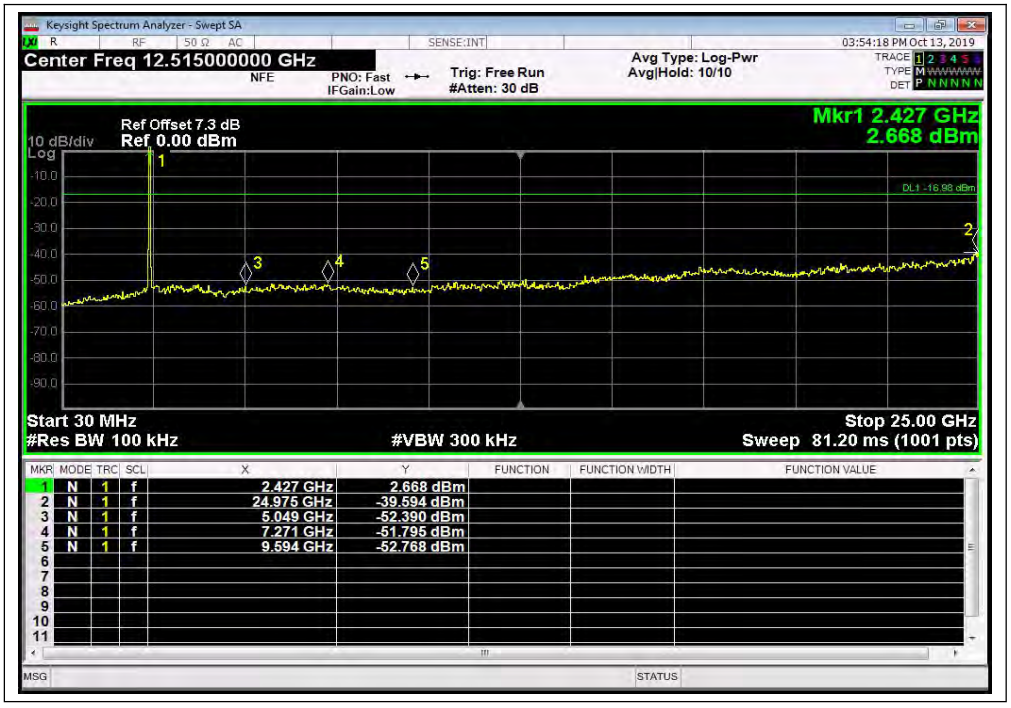
(802.11 b, Channel = 11, 30MHz to 25GHz)

(802.11 b, Band Edge @ Channel = 11)



(802.11 g, Channel = 1, 30MHz to 25GHz)

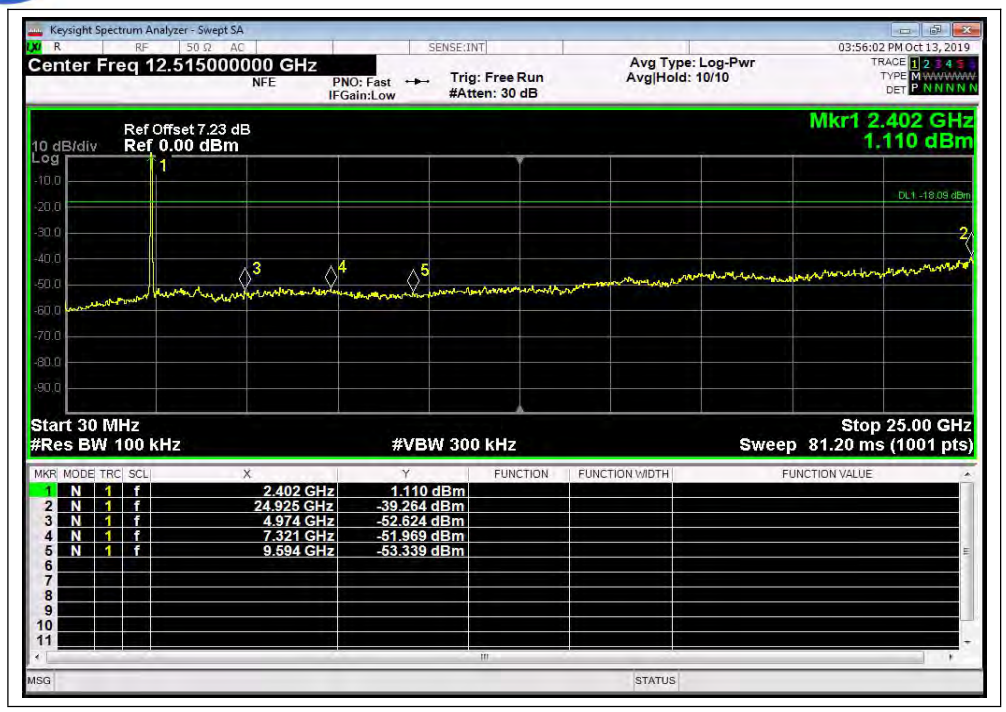
(802.11 g, Band Edge @ Channel = 1)



(802.11 g, Channel = 6, 30MHz to 25GHz)

(802.11 g, Channel = 11, 30MHz to 25GHz)

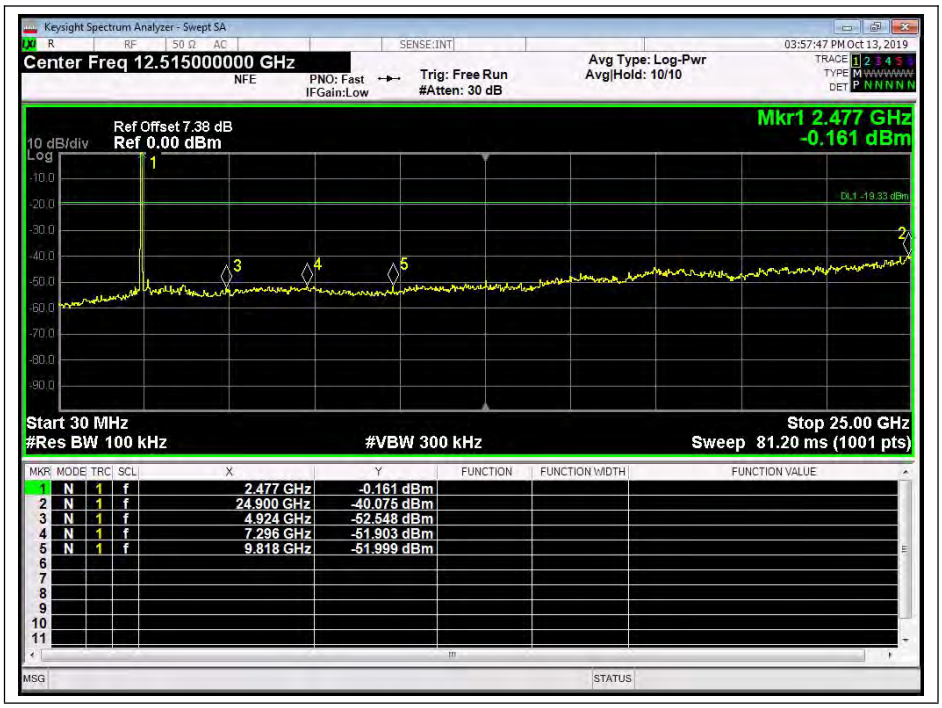
(802.11 g, Band Edge @ Channel = 11)



(802.11 HT20, Channel = 1, 30MHz to 25GHz)

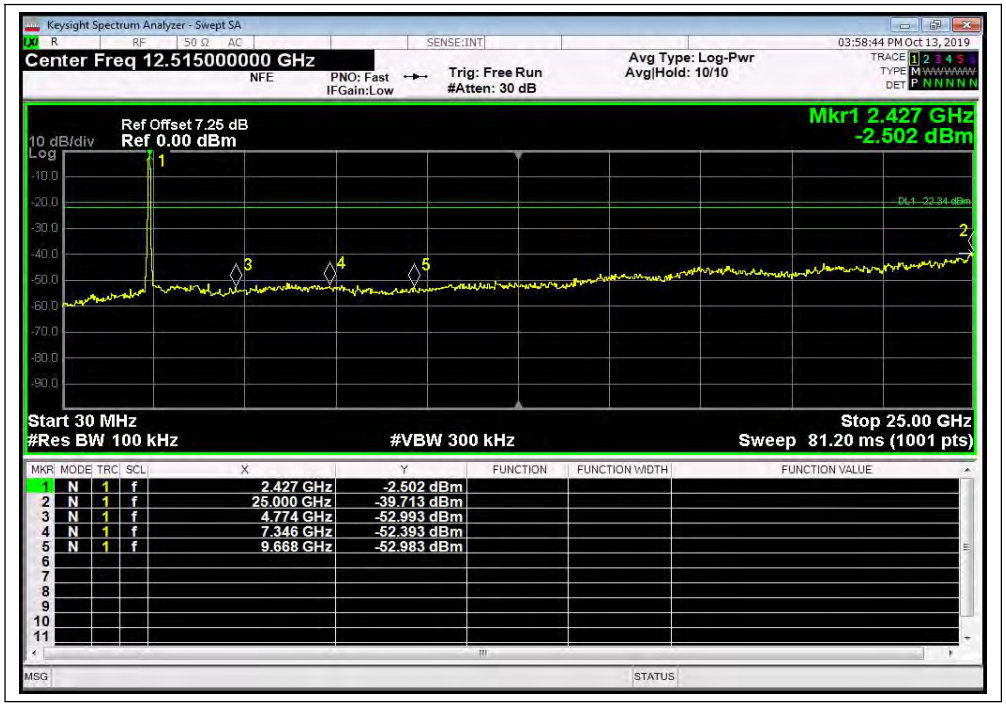
(802.11 HT20, Band Edge @ Channel = 1)

(802.11 HT20, Channel = 6, 30MHz to 25GHz)



(802.11 HT20, Channel = 11, 30MHz to 25GHz)

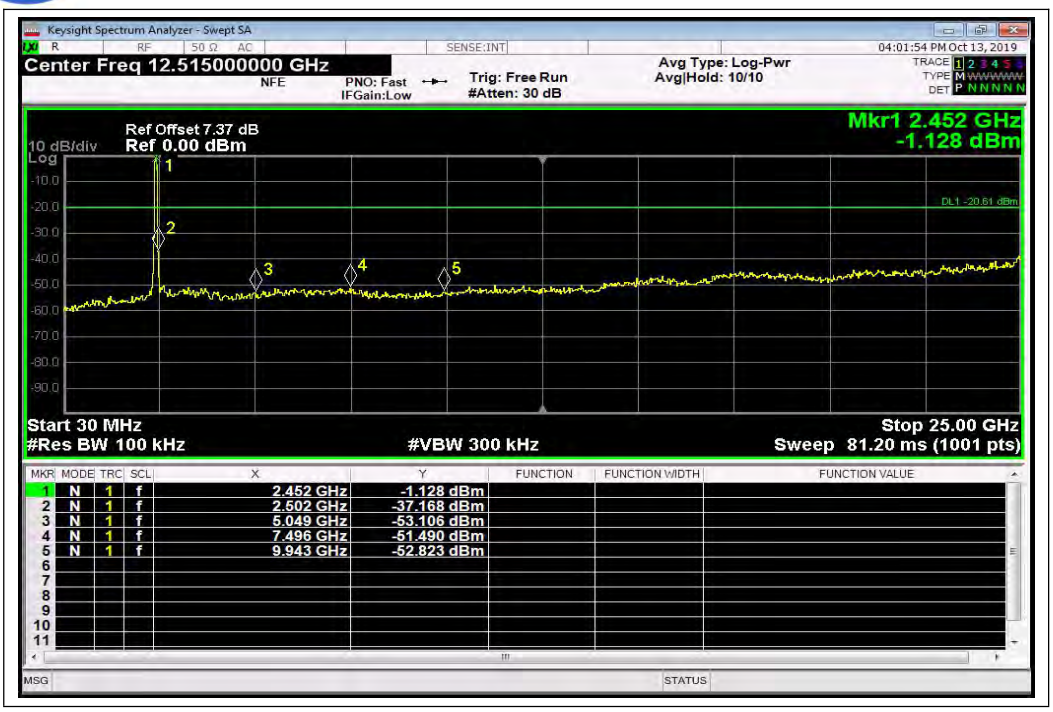
(802.11 HT20, Band Edge @ Channel = 11)



(802.11 HT40, Channel = 3, 30MHz to 25GHz)

(802.11 HT40, Band Edge @ Channel = 3)

802.11 HT40, Channel = 6, 30MHz to 25GHz)



(802.11 HT40, Channel = 9, 30MHz to 25GHz)

(802.11 HT40, Band Edge @ Channel = 9)

2.5. Power spectral density (PSD)

2.5.1. Requirement

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

2.5.2. Test Description

A. Test Set:

The EUT is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading.

KDB 558074 Section 10.2 was used in order to prove compliance.

B. Equipments List:

Please refer ANNEX B(4).

2.5.3. Test Result

802.11b Test mode

A. Test Verdict:

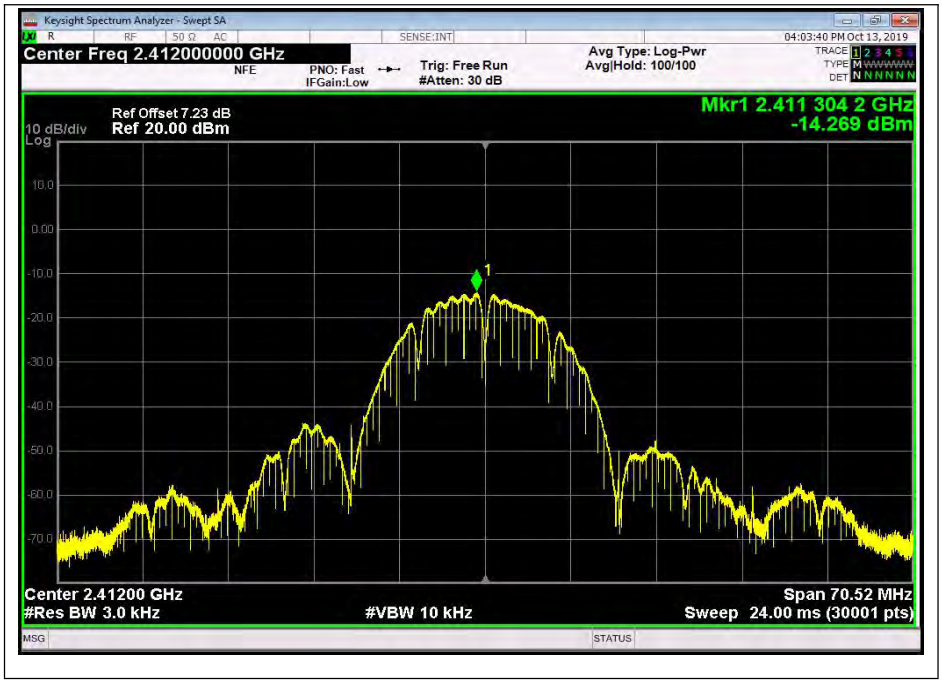
ANT 0

Spectral power density (dBm/3kHz)				
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
1	2412	-14.269	8	**PASS**
6	2437	-12.485	8	**PASS**
11	2462	-14.824	8	**PASS**

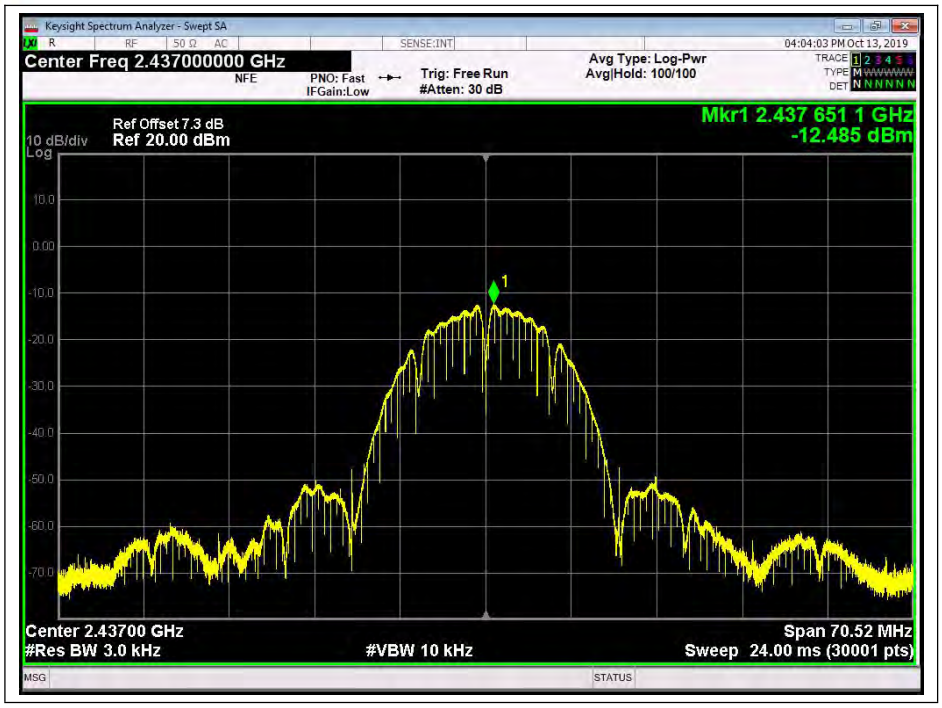
ANT 1

Spectral power density (dBm/3kHz)				
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
1	2412	-14.899	8	**PASS**
6	2437	-13.698	8	**PASS**
11	2462	-14.140	8	**PASS**

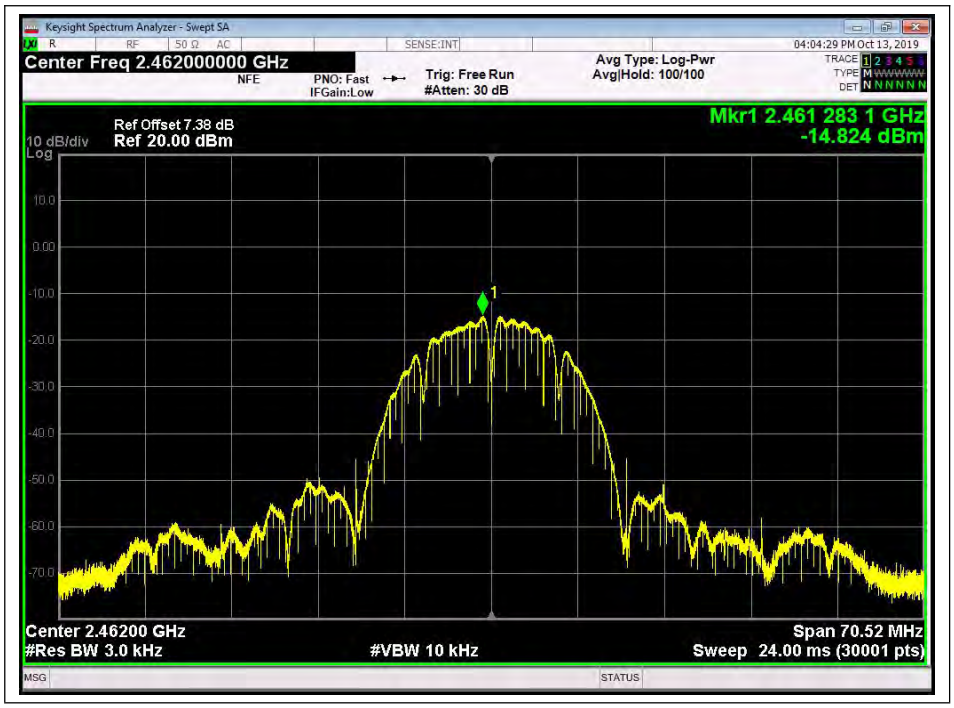
B. Test Plots:



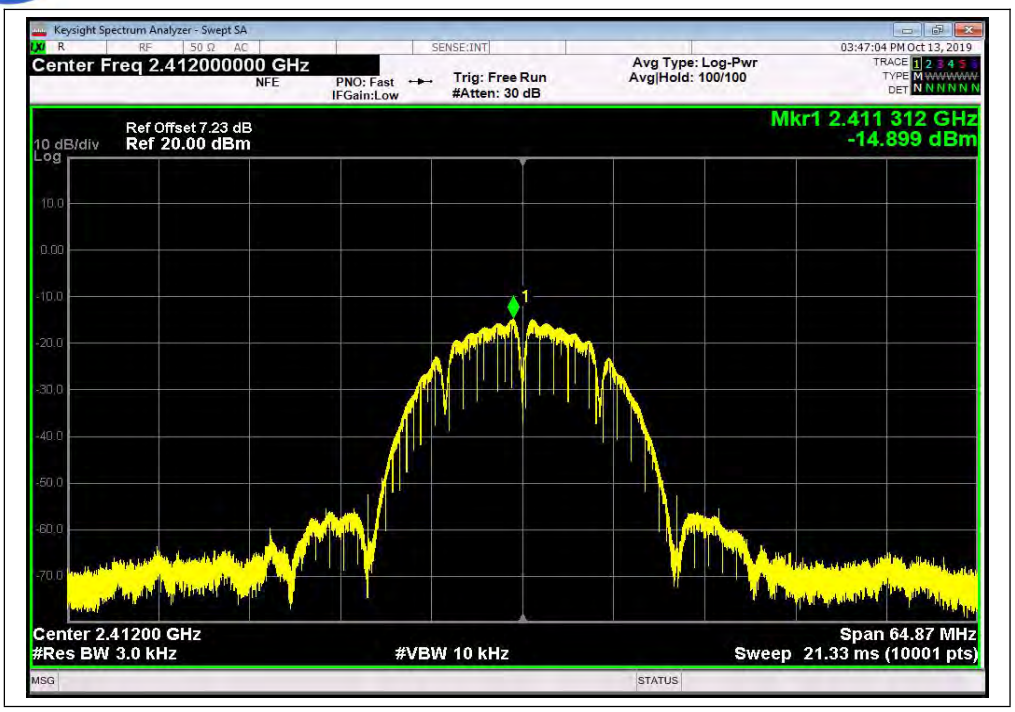
(Channel = 1, 802.11b;ANT0)



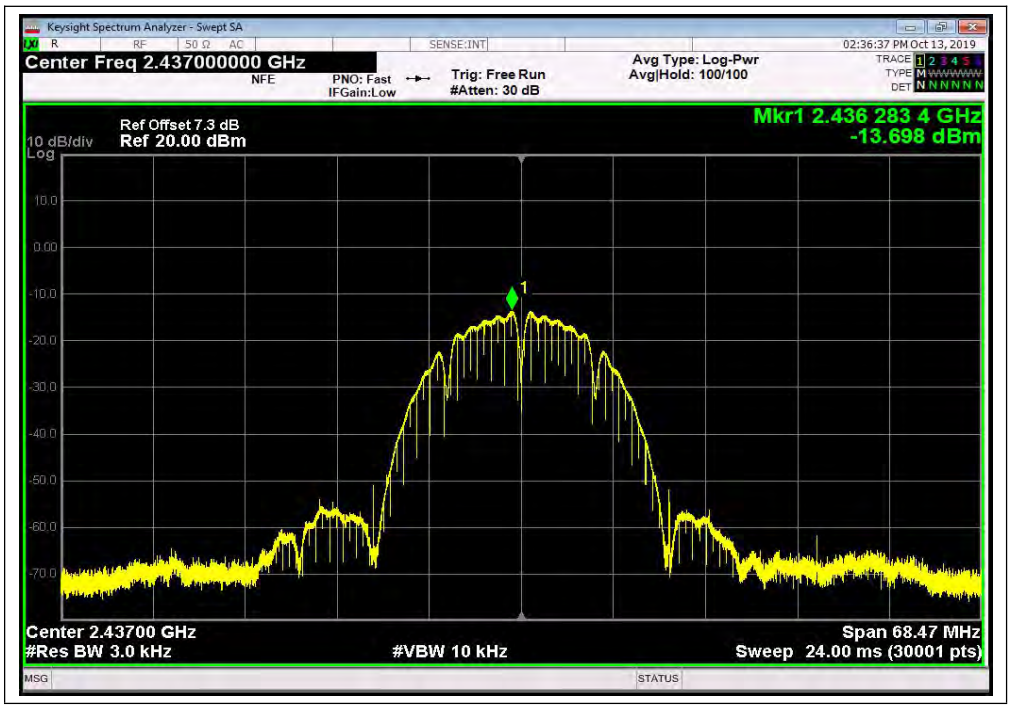
(Channel = 6, 802.11b;ANT0)



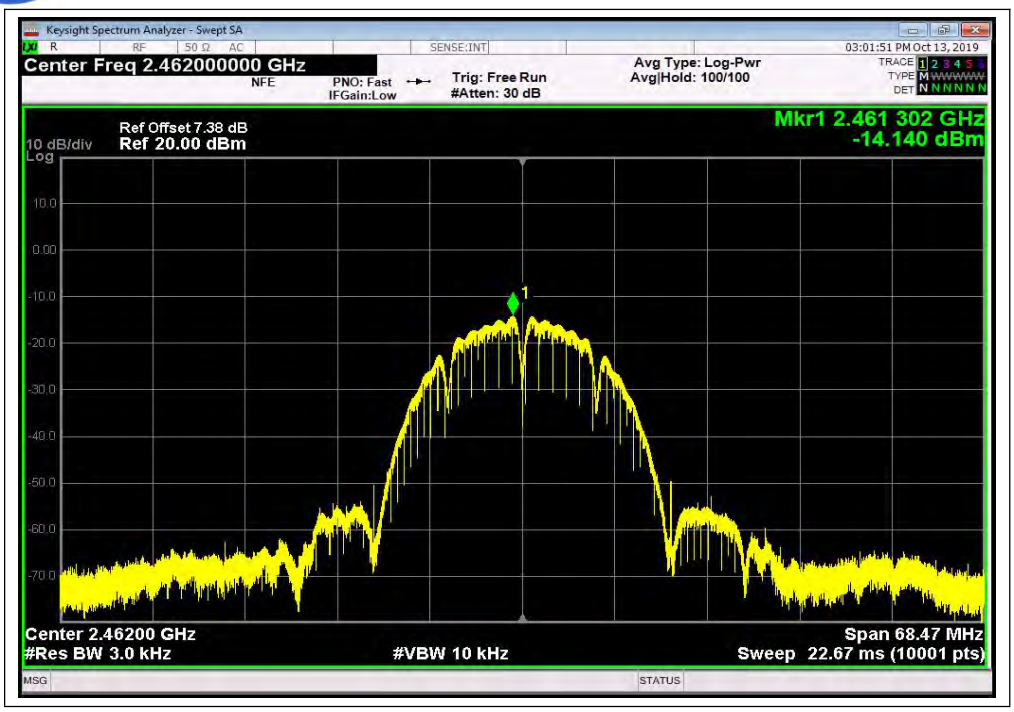
(Channel = 11, 802.11b;ANT0)



(Channel = 1, 802.11b;ANT1)



(Channel = 6, 802.11b;ANT1)



(Channel = 11, 802.11b;ANT1)

802.11g Test mode

A. Test Verdict:

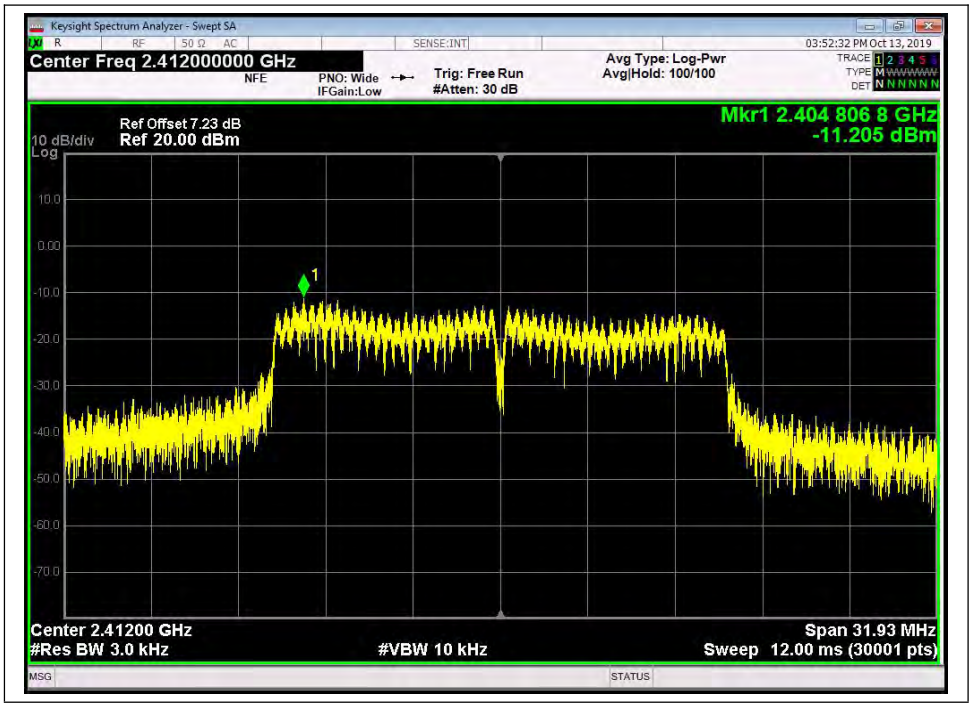
ANT 0

Spectral power density (dBm/3kHz)				
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
1	2412	-11.205	8	**PASS**
6	2437	-11.248	8	**PASS**
11	2462	-13.254	8	**PASS**

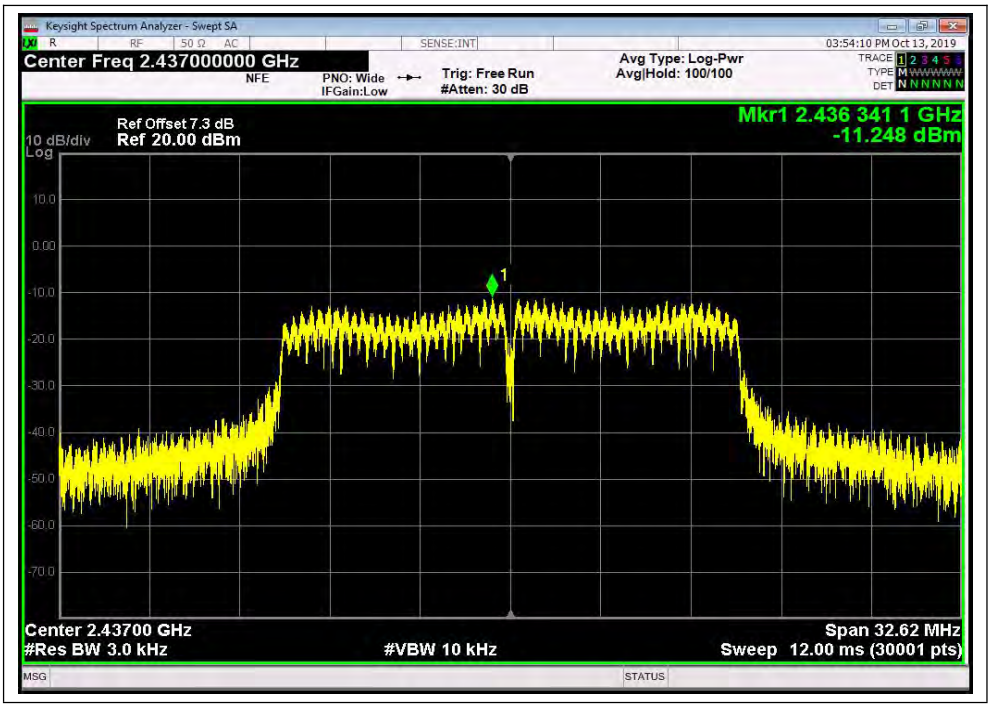
ANT 1

Spectral power density (dBm/3kHz)				
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
1	2412	-13.534	8	**PASS**
6	2437	-12.503	8	**PASS**
11	2462	-12.842	8	**PASS**

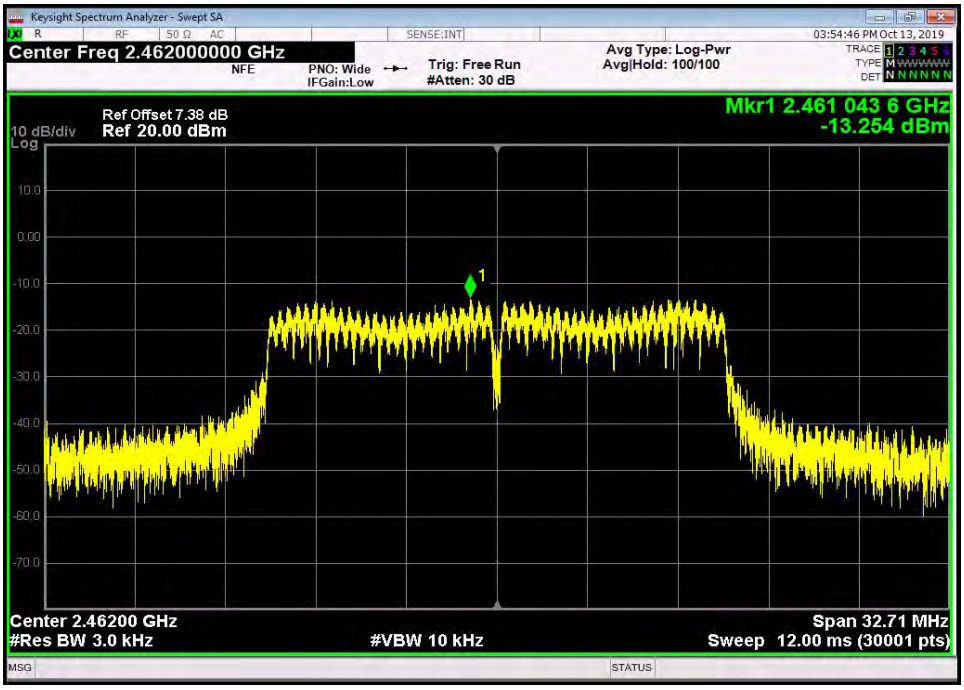
B. Test Plots:



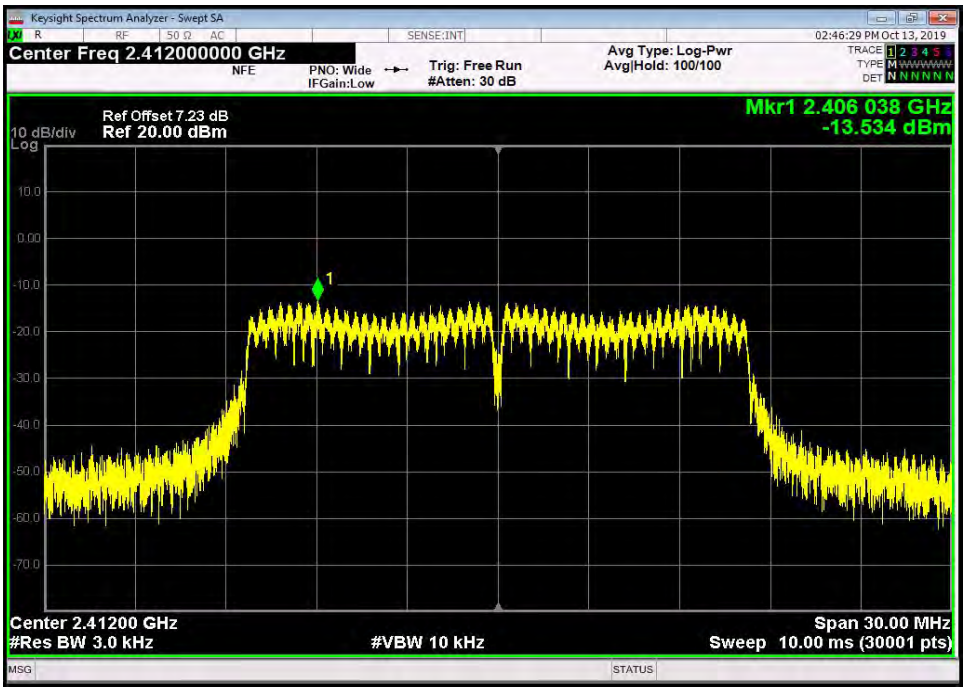
(Channel = 1, 802.11g;ANT0)



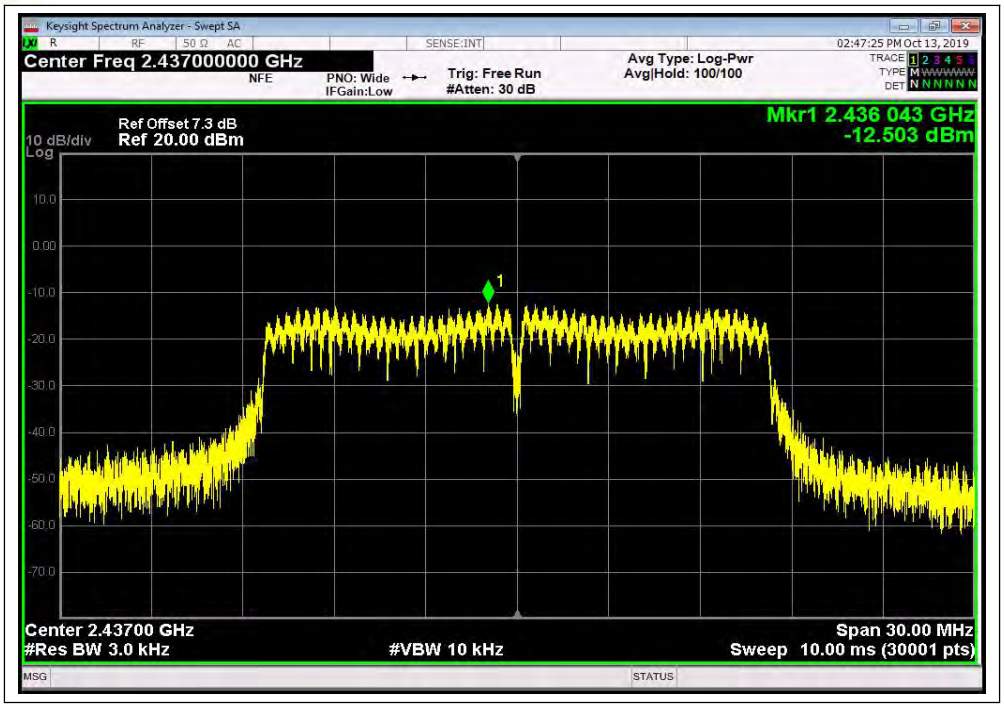
(Channel = 6, 802.11g;ANT0)



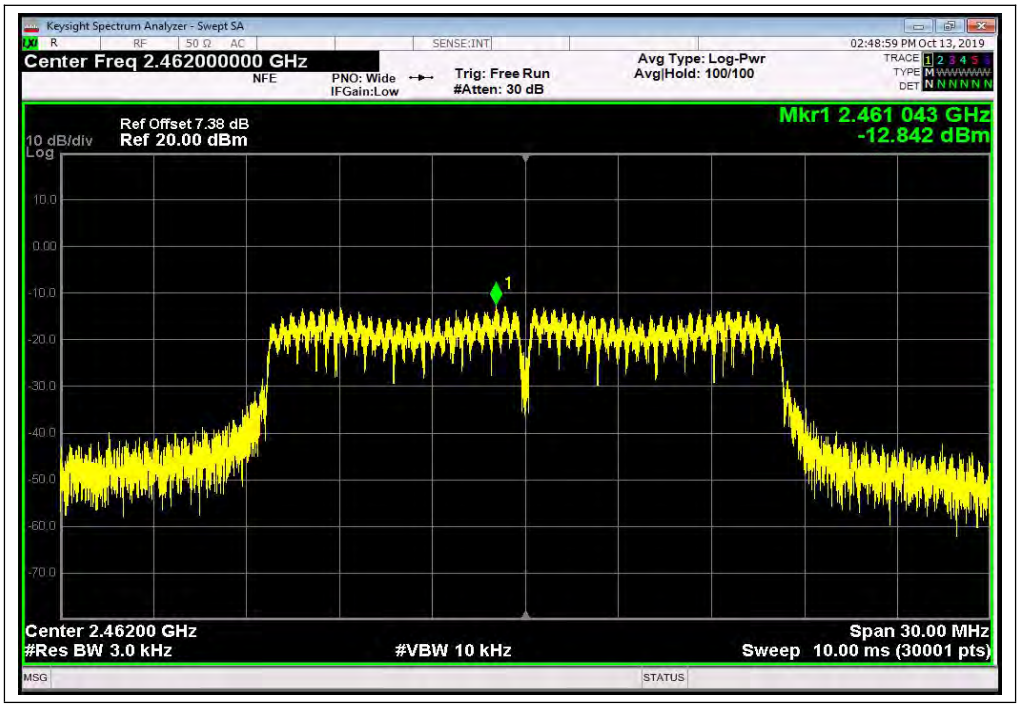
(Channel = 11, 802.11g;ANT0)



(Channel = 1, 802.11g;ANT1)



(Channel = 6, 802.11g;ANT1)



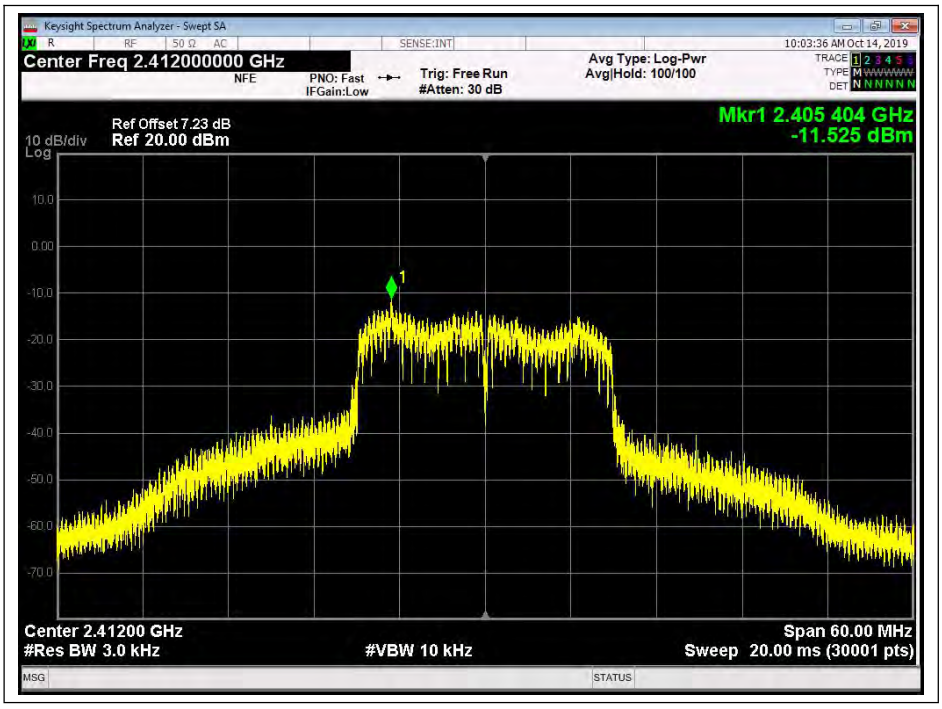
(Channel = 11, 802.11g;ANT1)

802.11n-20MHz Test mode

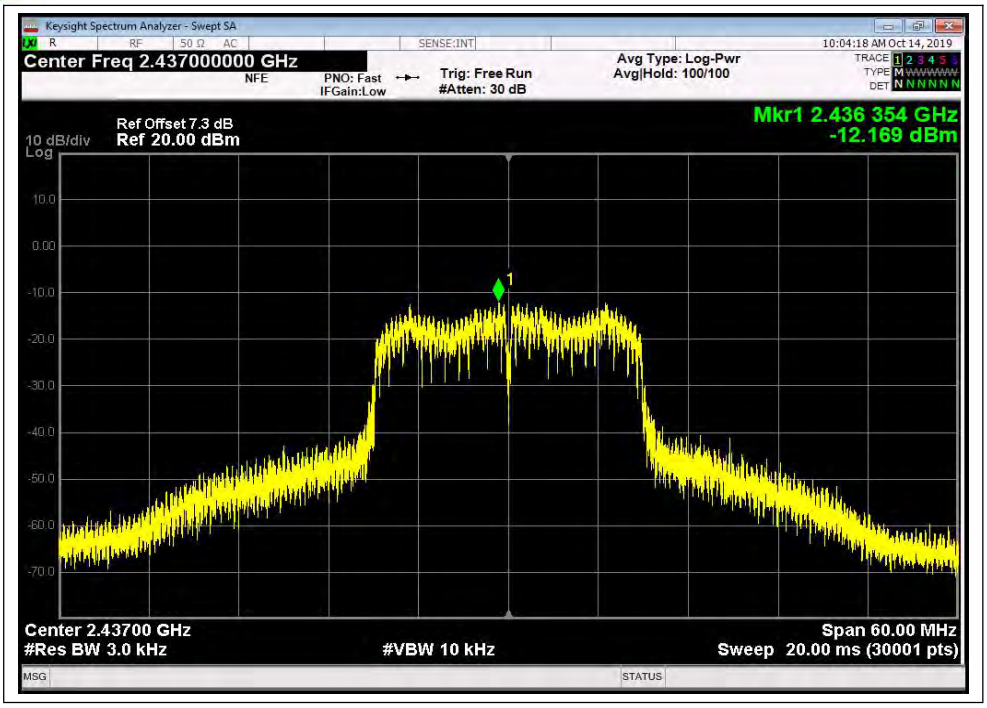
A. Test Verdict:

Spectral power density (dBm/3kHz)						
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)			Limit (dBm/3kHz)	Verdict
		ANT 0	ANT 1	Total		
1	2412	-11.525	-13.474	-9.381	8	**PASS**
6	2437	-12.169	-13.575	-9.805	8	**PASS**
11	2462	-13.414	-13.701	-10.545	8	**PASS**

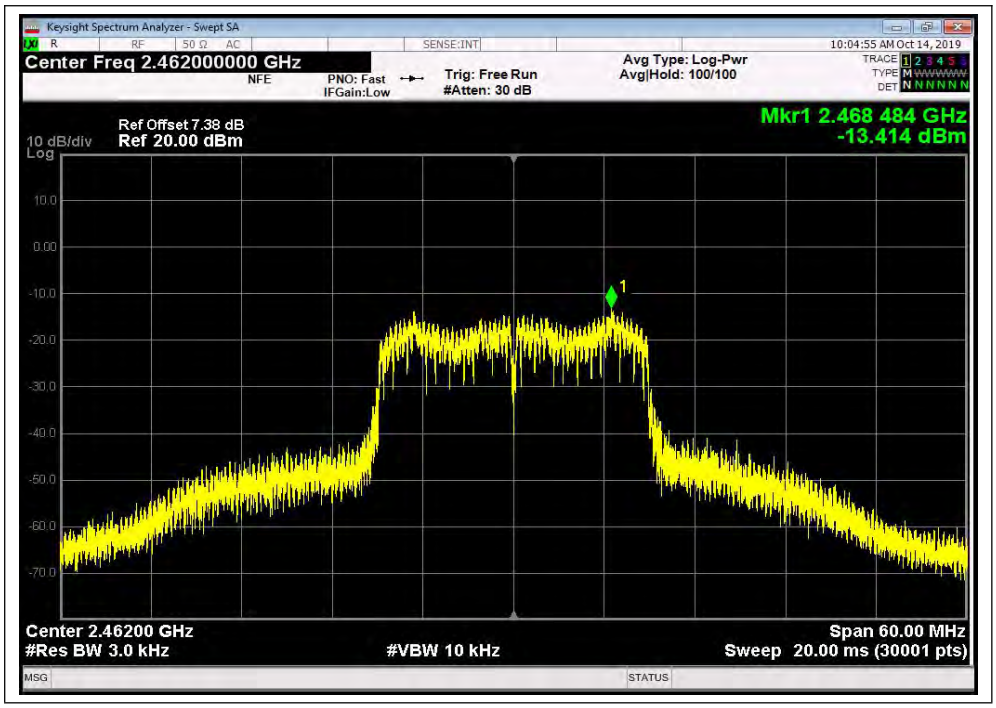
B. Test Plots:



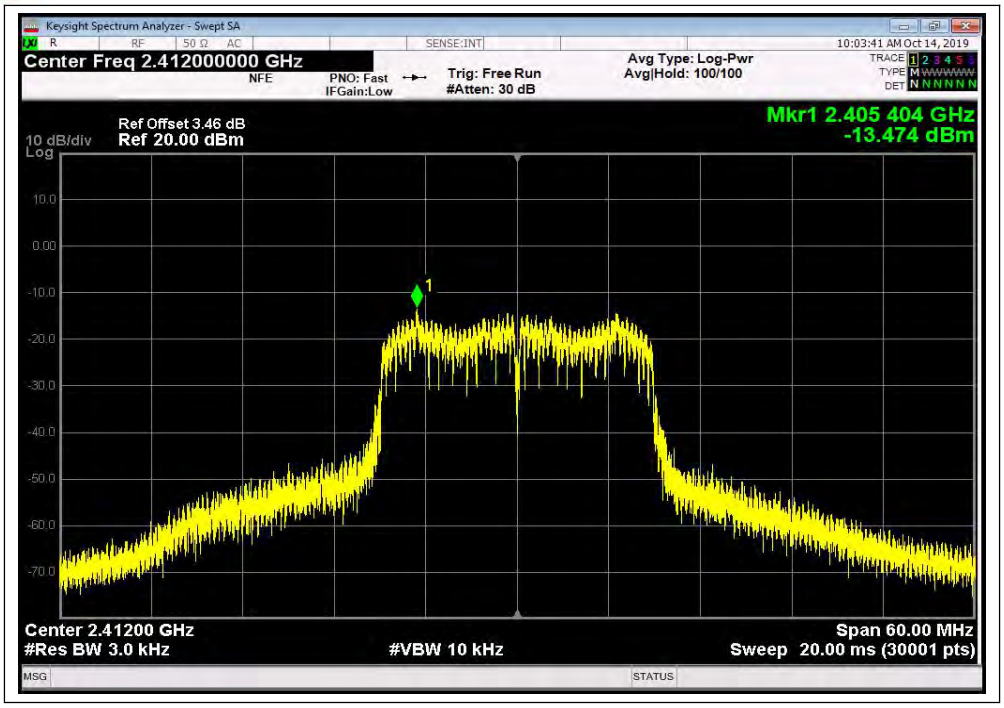
(Channel = 1, 802.11n-20MHz;ANT0)



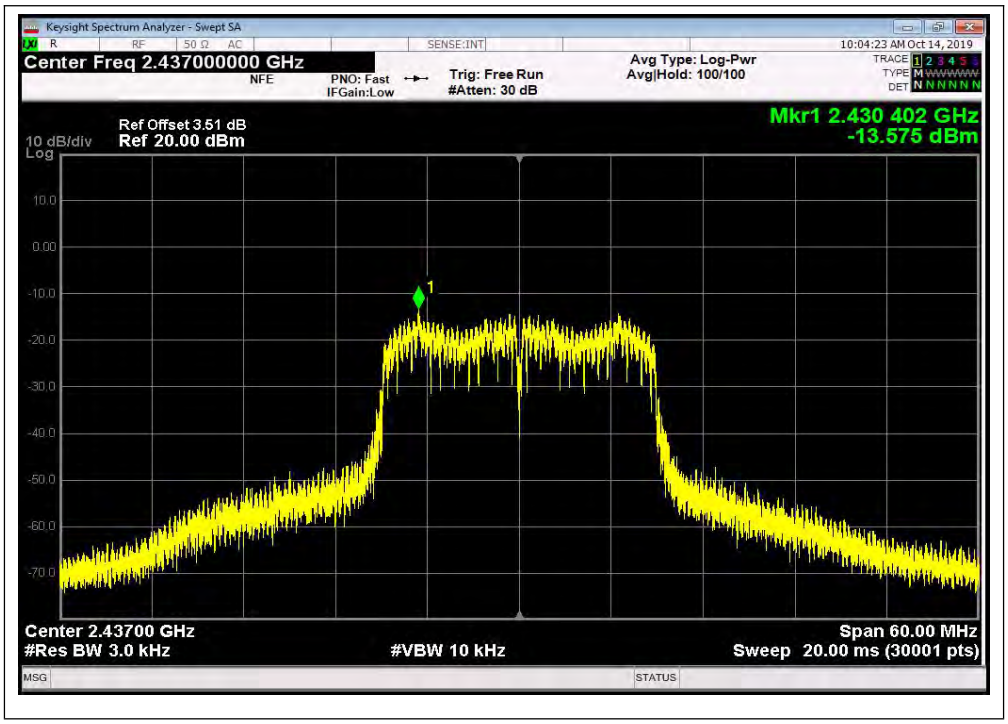
(Channel = 6, 802.11n-20MHz;ANT0)



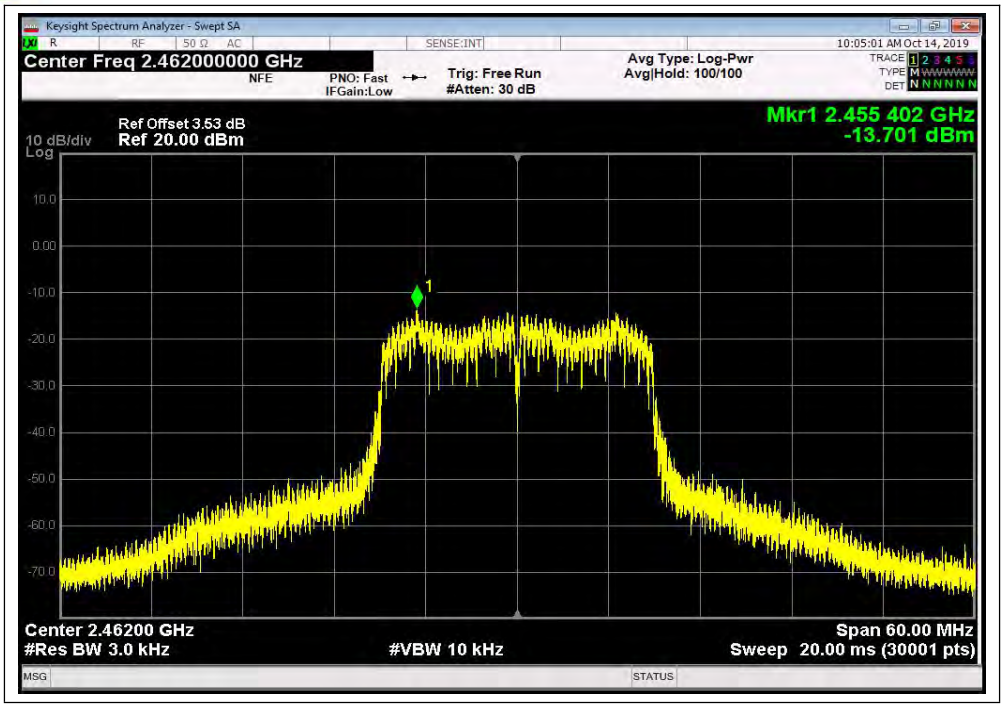
(Channel = 11, 802.11n-20MHz;ANT0)



(Channel = 1, 802.11n-20MHz;ANT1)



(Channel = 6, 802.11n-20MHz;ANT1)



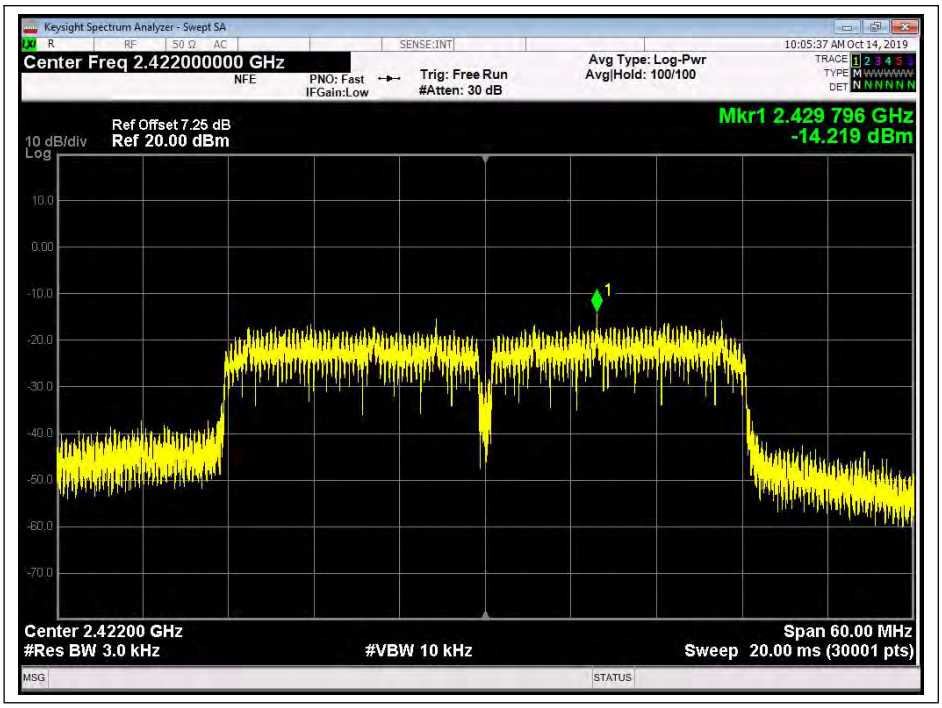
(Channel = 11, 802.11n-20MHz;ANT1)

802.11n-40MHz Test mode

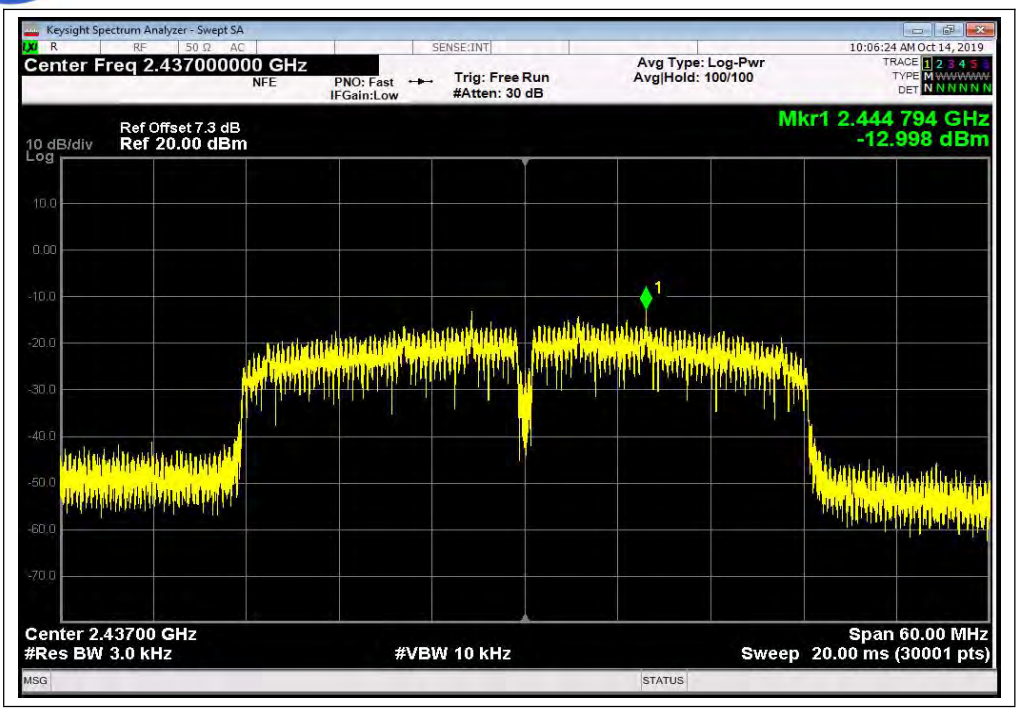
A. Test Verdict:

Spectral power density (dBm/3kHz)						
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)			Limit (dBm/3kHz)	Verdict
		ANT 0	ANT 1	Total		
3	2422	-14.219	-15.276	-11.705	8	**PASS**
6	2437	-12.998	-14.865	-10.822	8	**PASS**
9	2452	-13.665	-14.666	-11.126	8	**PASS**

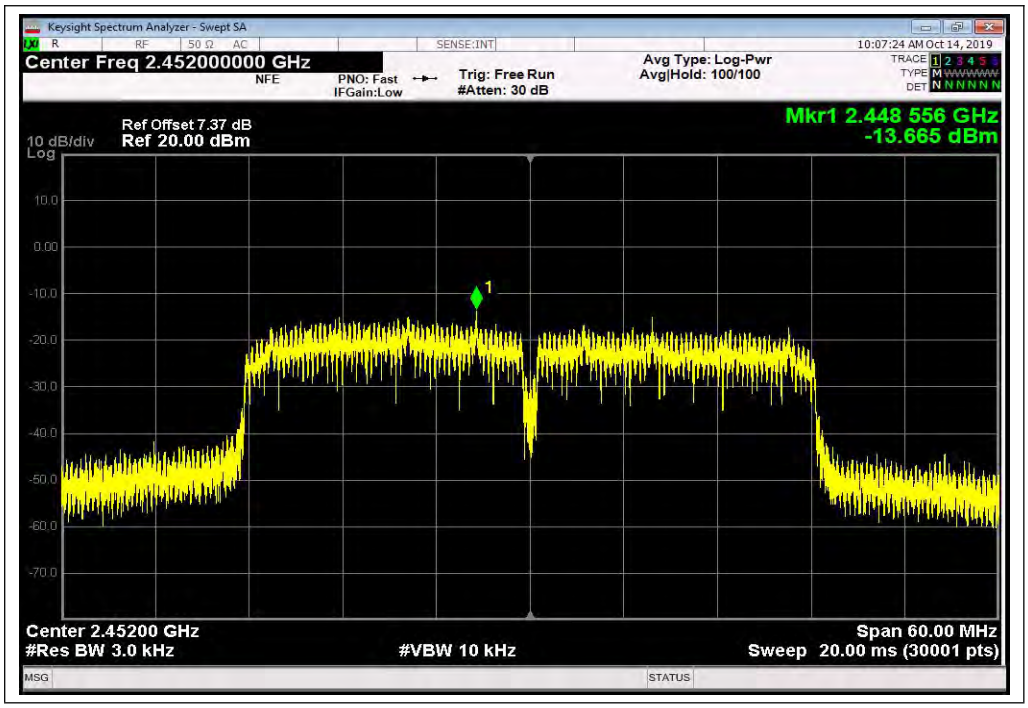
B. Test Plots:



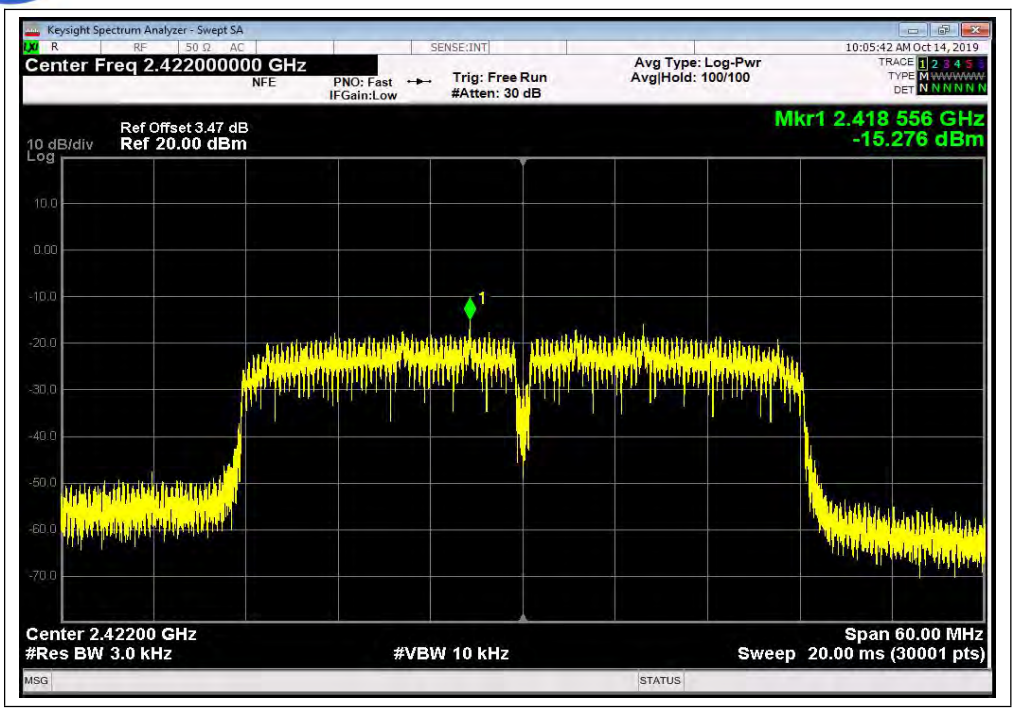
(Channel = 3, 802.11n-40MHz;ANT0)



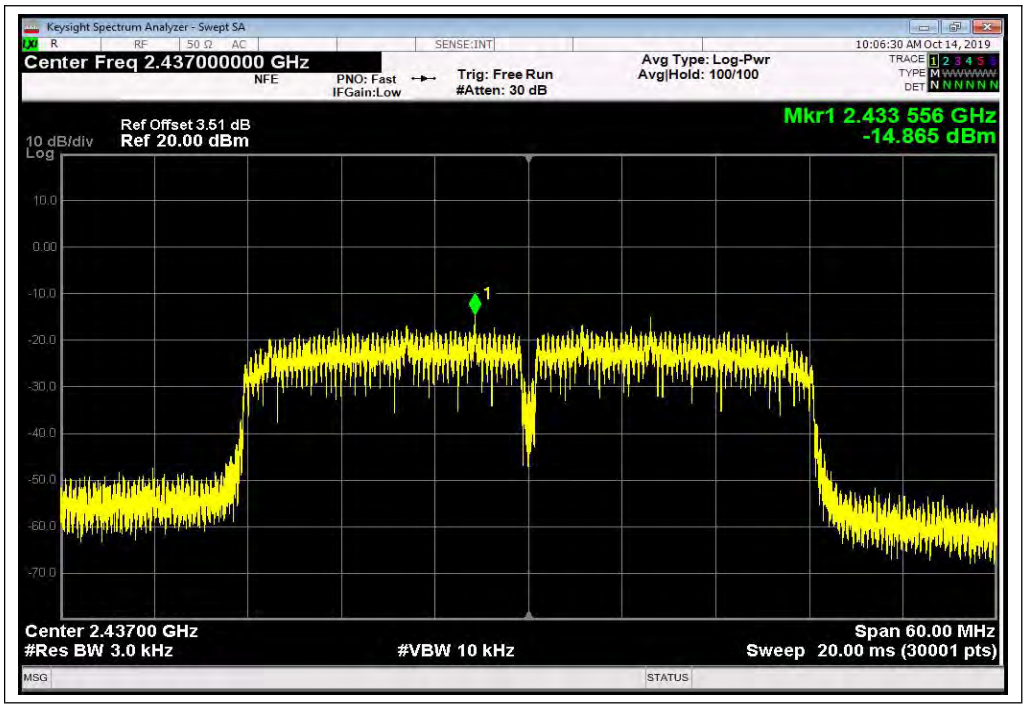
(Channel = 6, 802.11n-40MHz;ANT0)



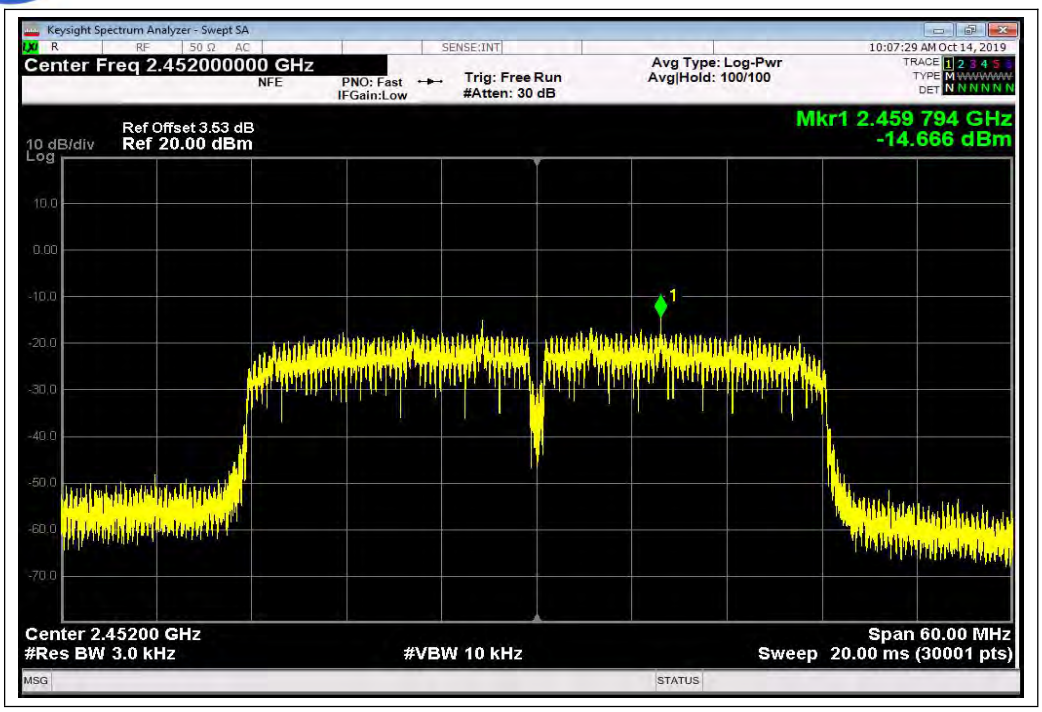
(Channel = 9, 802.11n-40MHz;ANT0)



(Channel = 3, 802.11n-40MHz;ANT1)



(Channel = 6, 802.11n-40MHz;ANT1)



(Channel = 9, 802.11n-40MHz;ANT1)

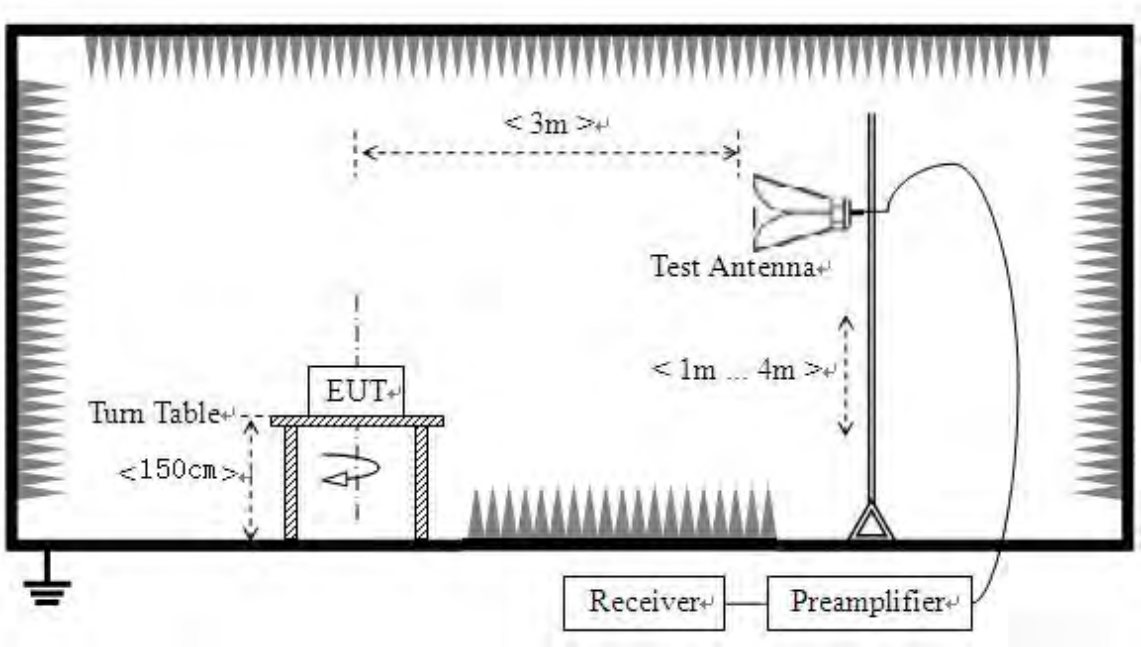
2.6. Restricted Frequency Bands

2.6.1. Requirement

According to FCC section 15.247(d), in any 100kHz 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 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, 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).

2.6.2. Test Description

A. Test Setup



The EUT is located in a 3m Semi-Anechoic Chamber; the antenna factors, cable loss and so on of the site as factors are calculated to correct the reading.

For the Test Antenna:

Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength.

KDB 558074 Section 12.1 was used in order to prove compliance.

For Radiated emission above 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasipeak detection (QP) at frequency below 1GHz.

2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.

3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98%) or 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz.

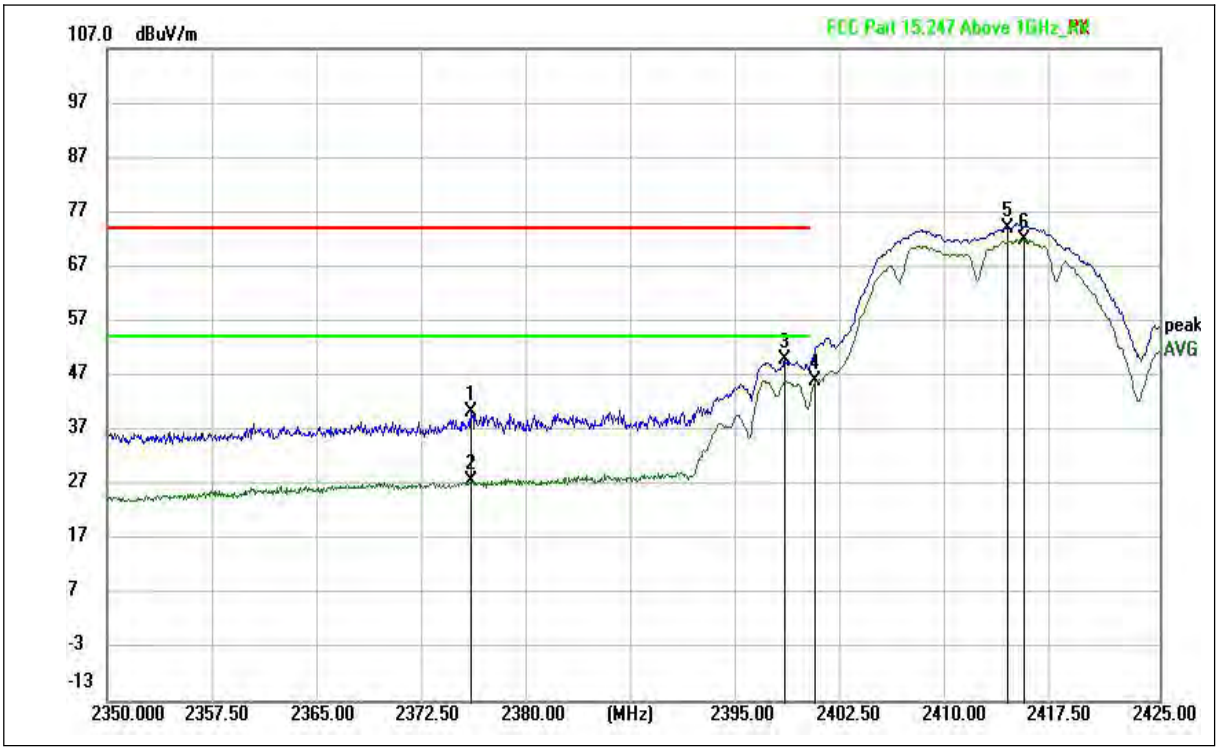
4. All modes of operation were investigated and the worst-case emissions are reported.

B. Equipments List:

Please refer ANNEX B(4).

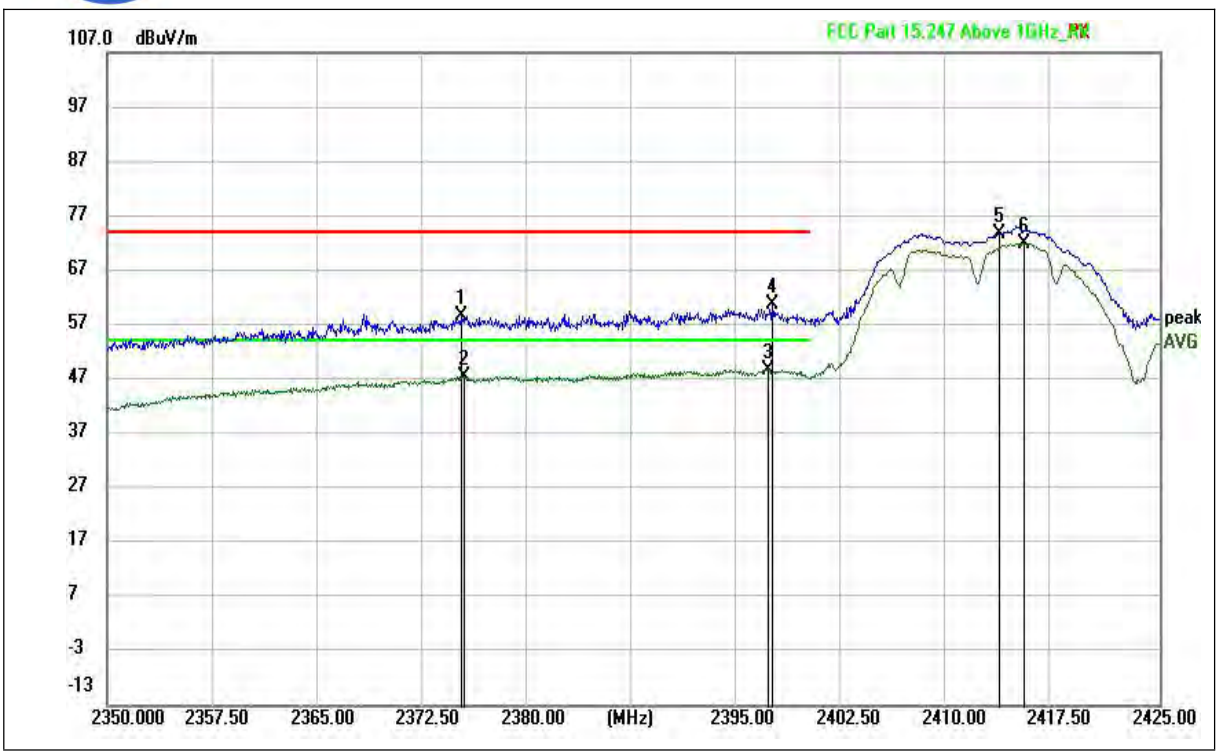
2.6.3. Test Result

802.11b Test mode



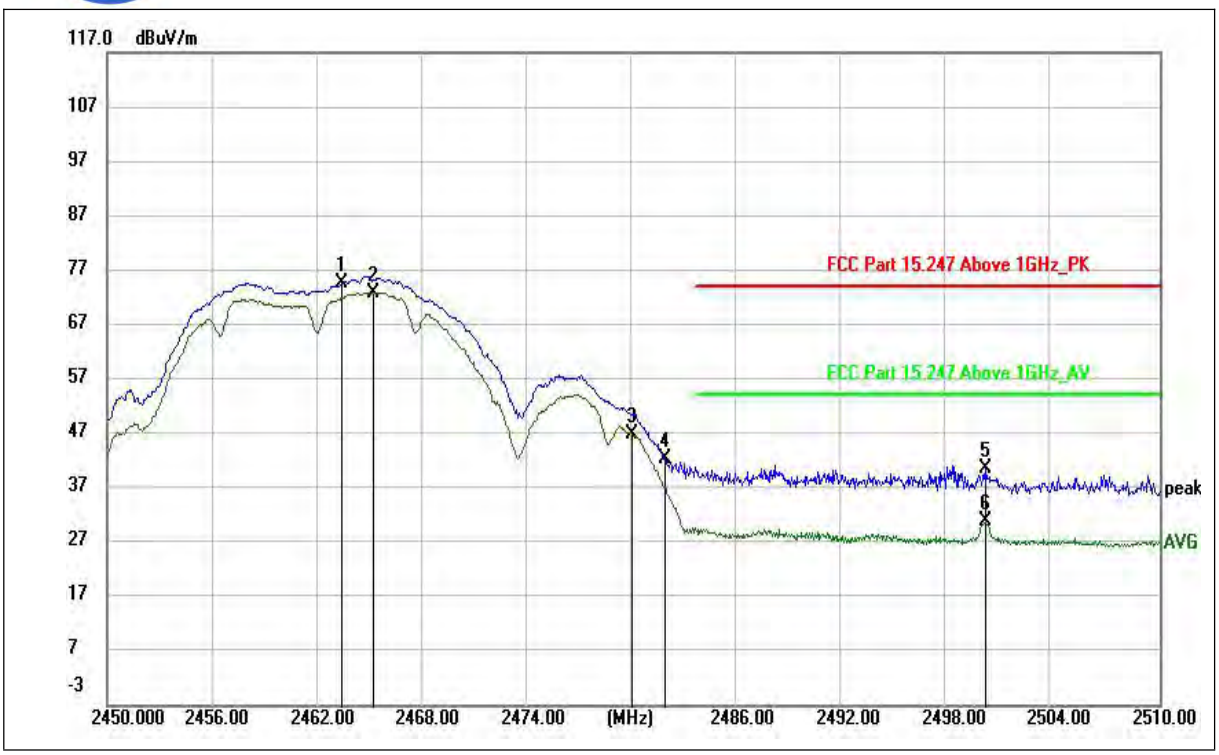
(802.11b _2412MHz, Antenna Horizontal)

Frequency (MHz)	QuasiPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
2375.950	40.16	---	74.00	33.84	H	-12.09
2375.950	---	27.54	54.00	26.46	H	-12.09
2398.300	49.72	---	74.00	24.28	H	-12.20
2400.475	---	46.01	---	---	H	-12.21
2414.125	74.04	---	---	---	H	-12.15
2415.325	---	71.78	---	---	H	-12.16



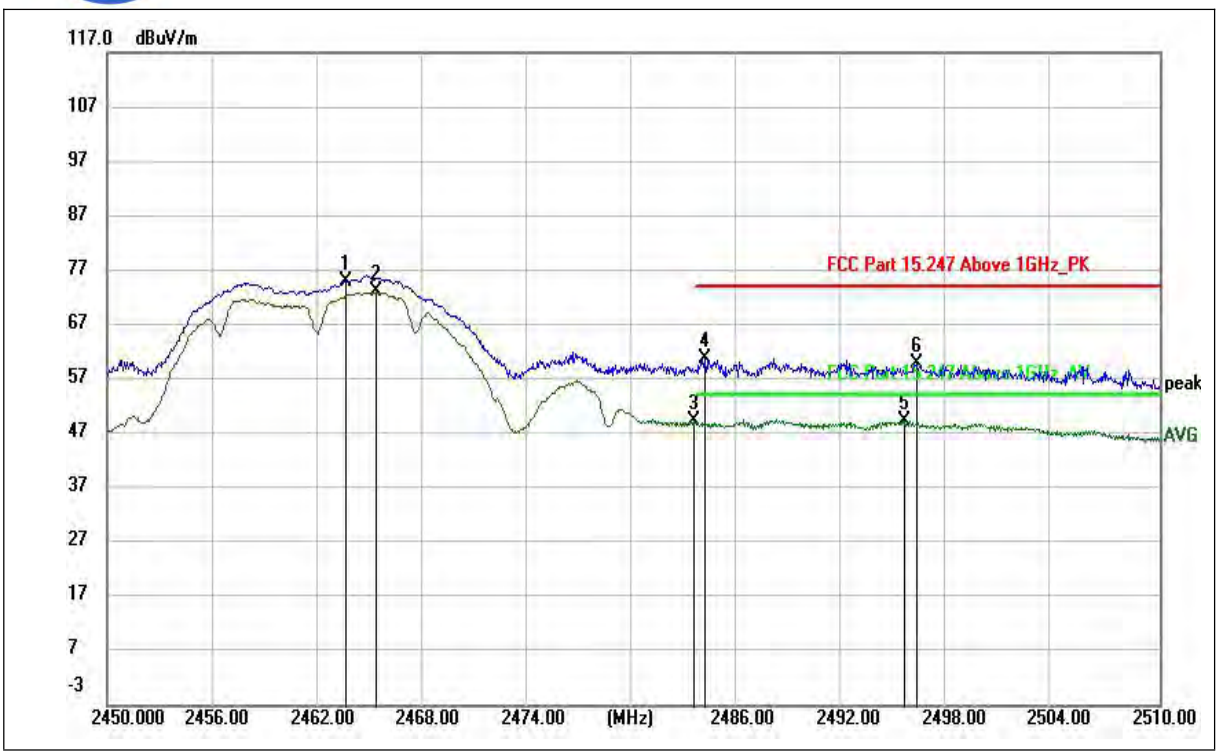
(802.11b _2412MHz, Antenna Vertical)

Frequency (MHz)	QuasiPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Corr. (dB/m)
2375.200	58.64	---	74.00	15.36	V	-12.08
2375.425	---	47.46	54.00	6.54	V	-12.08
2397.100	---	48.69	54.00	5.31	V	-12.20
2397.400	60.70	---	74.00	13.30	V	-12.20
2413.600	73.83	---	---	---	V	-12.15
2415.325	---	71.92	---	---	V	-12.16



(802.11b _2462MHz, Antenna Horizontal)

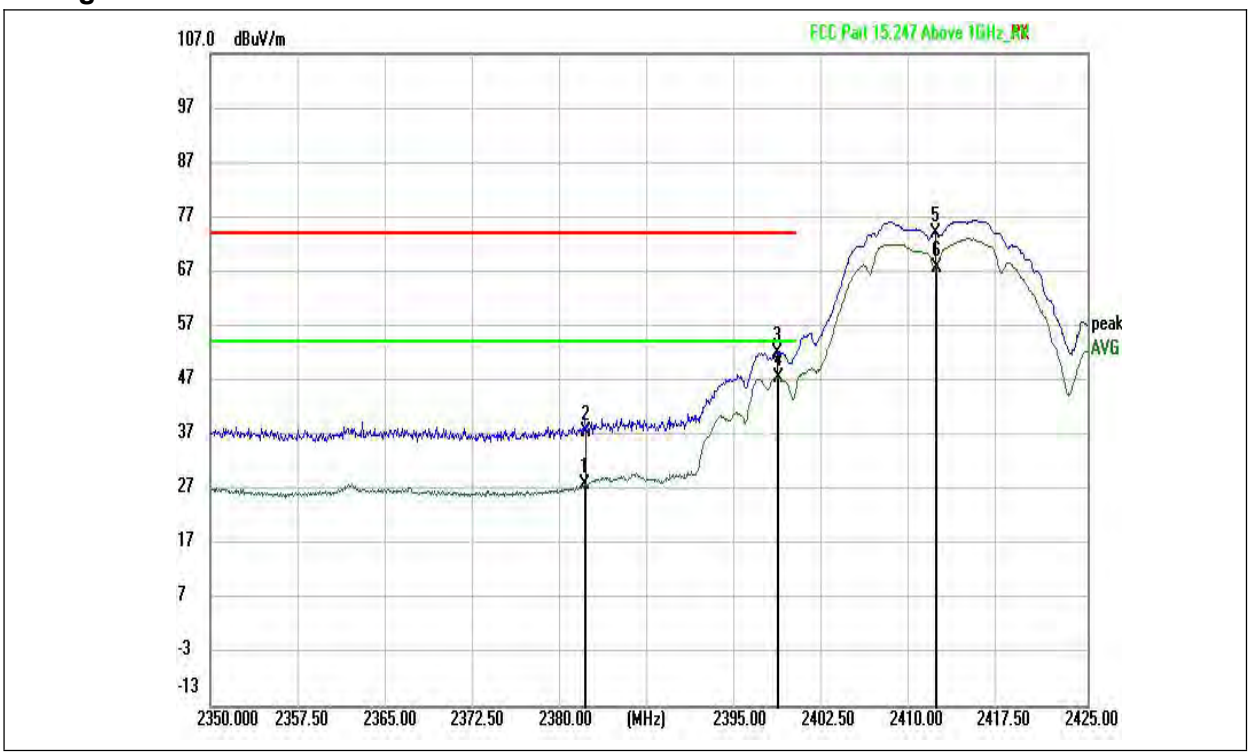
Frequency (MHz)	QuasiPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
2463.380	74.59	---	---	---	H	-11.53
2465.180	---	72.93	---	---	H	-11.49
2479.940	---	46.75	---	---	H	-11.21
2481.800	42.50	---	---	---	H	-11.21
2500.100	40.51	---	74.00	33.49	H	-12.20
2500.100	---	30.79	54.00	23.21	H	-12.20



(802.11b _2462MHz, Antenna Vertical)

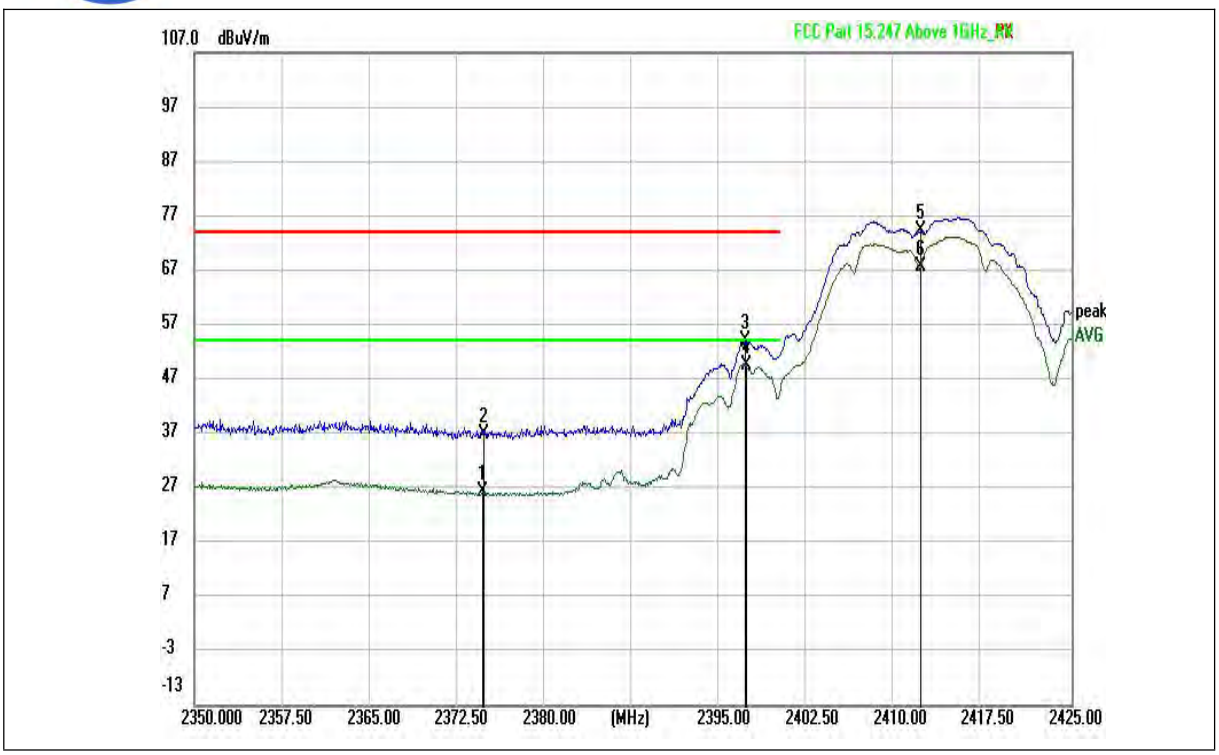
Frequency (MHz)	QuasiPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
2463.620	74.88	---	---	---	V	-11.53
2465.300	---	72.98	---	---	V	-11.49
2483.420	---	49.30	---	---	V	-11.21
2484.080	60.84	---	74.00	13.16	V	-11.21
2495.480	---	49.37	54.00	4.63	V	-10.61
2496.140	59.87	---	74.00	14.13	V	-10.53

802.11g Test mode



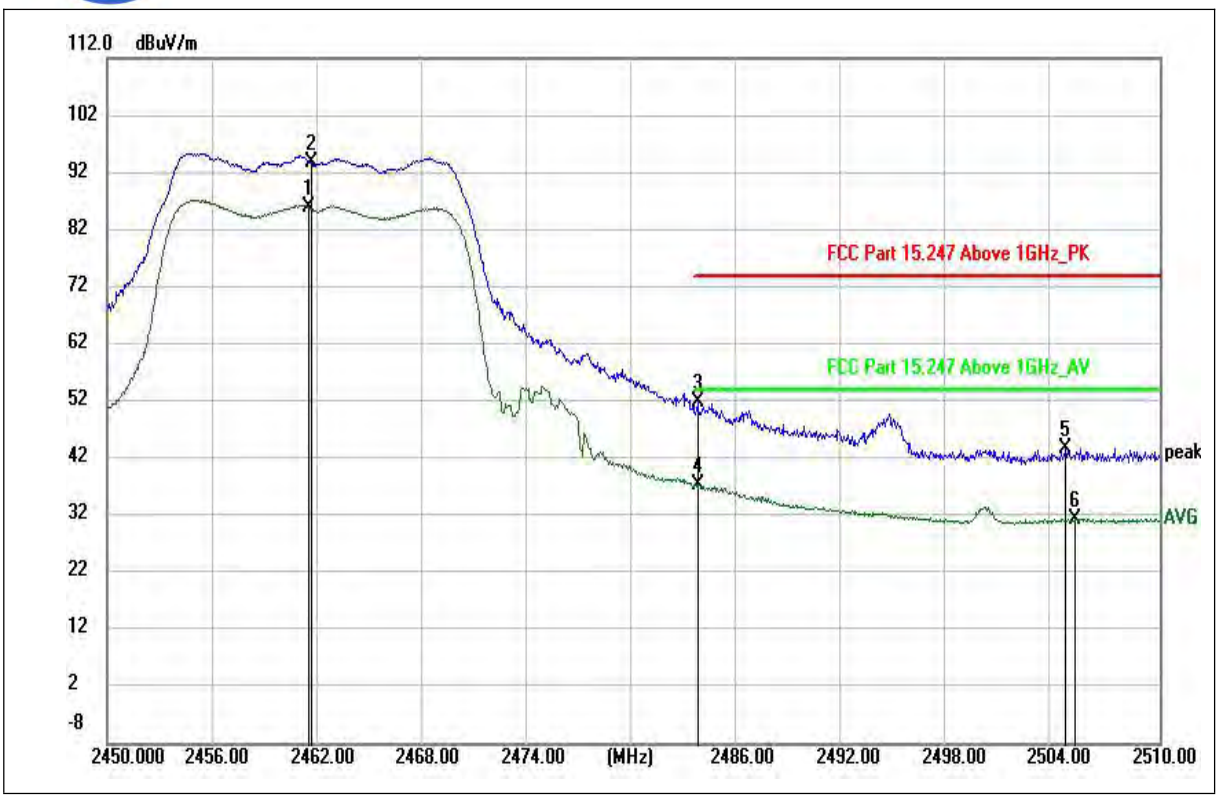
(802.11g _2412MHz, Antenna Horizontal)

Frequency (MHz)	QuasiPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
2382.025	---	27.79	54.00	26.21	H	-12.15
2382.100	37.55	---	74.00	36.45	H	-12.15
2398.450	52.01	---	74.00	21.99	H	-12.21
2398.600	---	47.39	54.00	6.61	H	-12.21
2412.025	74.04	---	---	---	H	-12.15
2412.100	---	67.56	---	---	H	-12.15



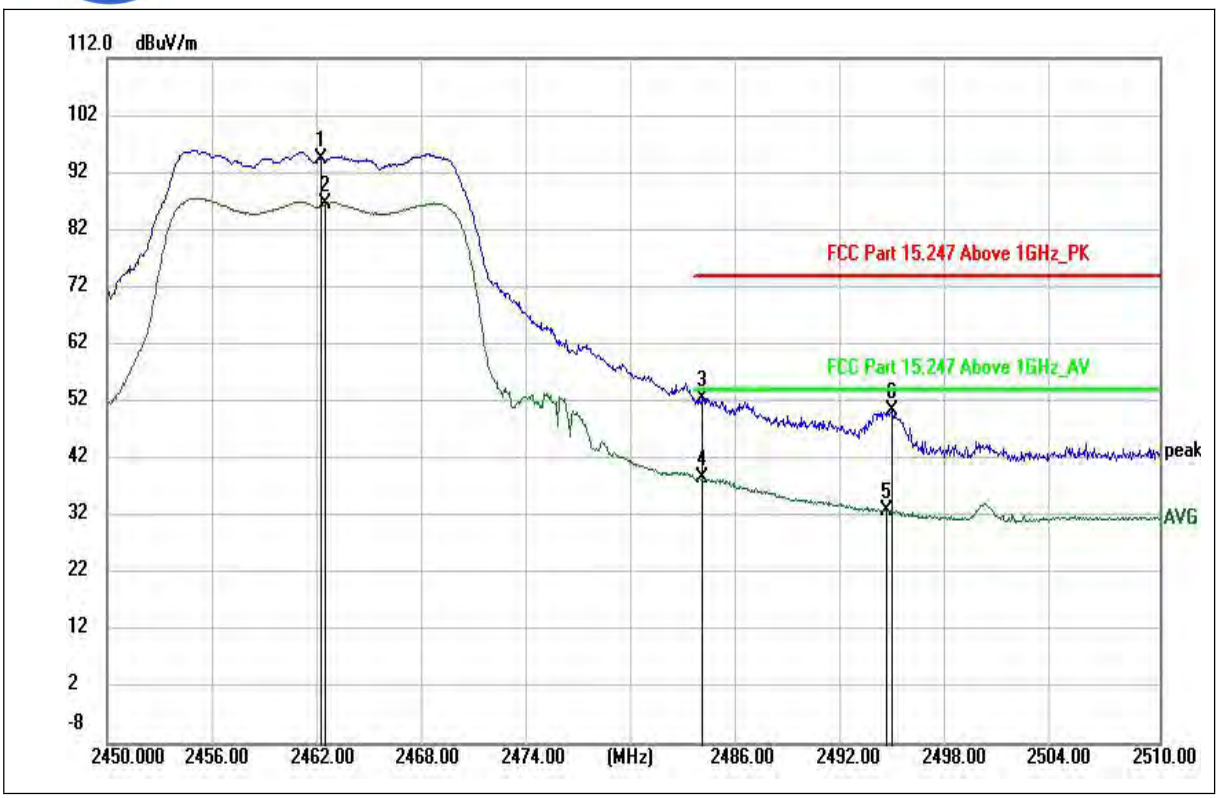
(802.11g _2412MHz, Antenna Vertical)

Frequency (MHz)	QuasiPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Corr. (dB/m)
2374.675	---	26.21	54.00	27.79	V	-12.06
2374.750	36.96	---	74.00	37.04	V	-12.06
2397.100	54.15	---	74.00	19.85	V	-12.20
2397.175	---	49.42	54.00	4.58	V	-12.20
2412.100	74.17	---	---	---	V	-12.15
2412.100	---	67.67	---	---	V	-12.15



(802.11g _2462MHz, Antenna Horizontal)

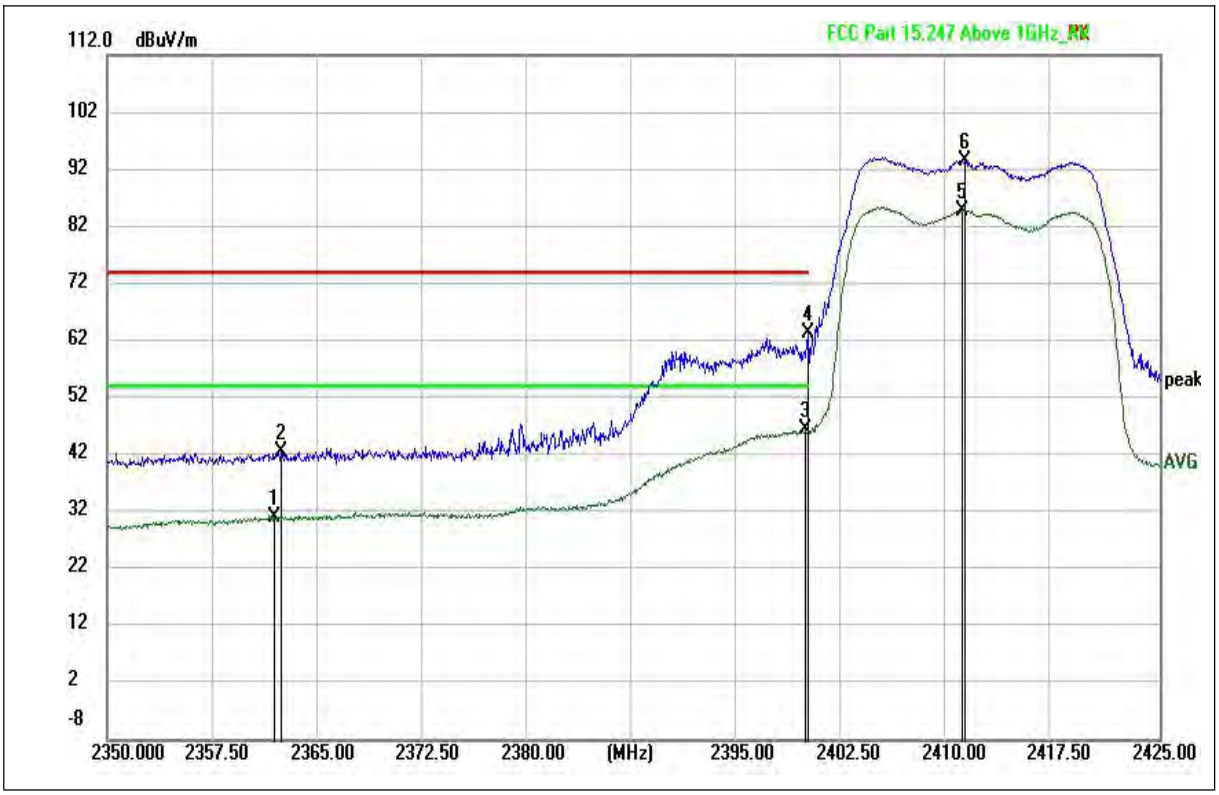
Frequency (MHz)	QuasiPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
2461.460	---	85.93	---	---	H	7.88
2461.640	93.67	---	---	---	H	7.88
2483.660	51.77	---	74.00	22.23	H	8.37
2483.720	---	37.50	54.00	16.50	H	8.37
2504.660	43.70	---	74.00	30.30	H	8.31
2505.140	---	31.41	54.00	22.59	H	8.31



(802.11g _2462MHz, Antenna Vertical)

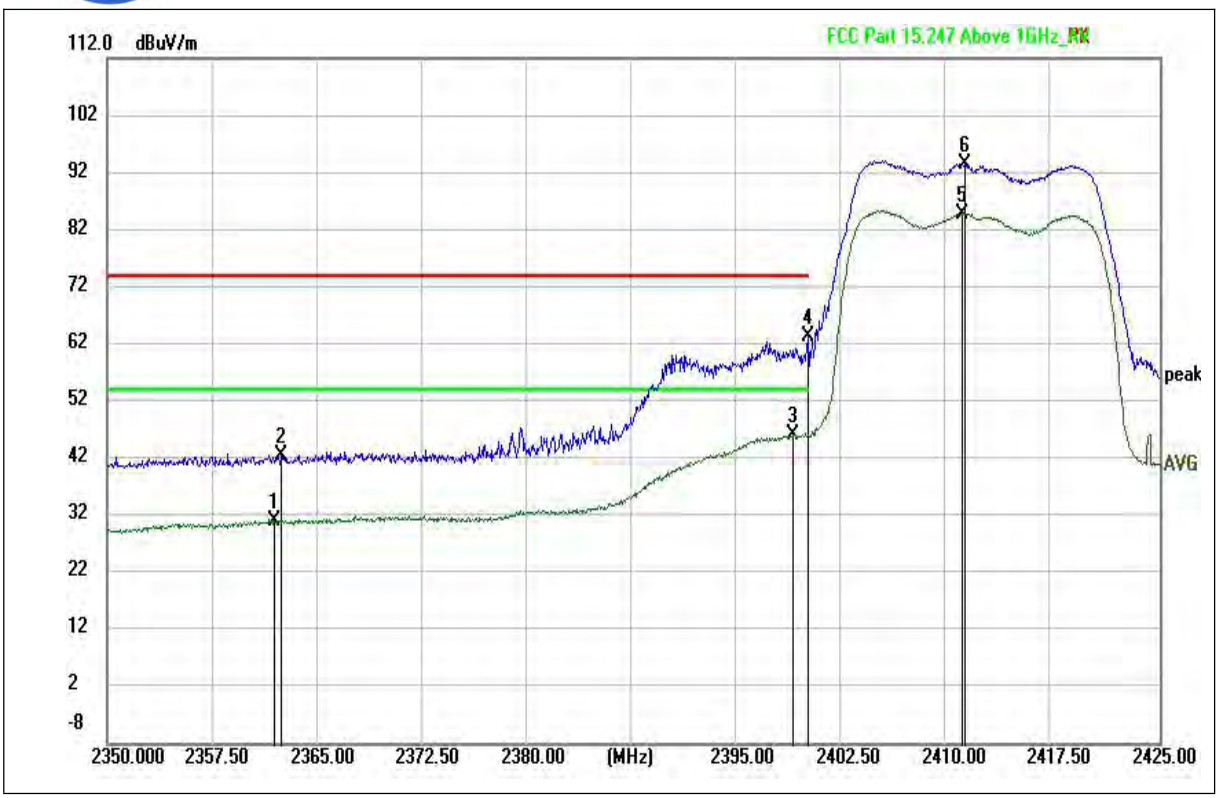
Frequency (MHz)	QuasiPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
2462.180	94.41	---	---	---	V	7.89
2462.420	---	86.48	---	---	V	7.89
2483.900	52.49	---	74.00	21.51	V	8.37
2483.960	---	38.49	54.00	15.51	V	8.37
2494.460	---	32.98	54.00	21.02	V	8.34
2494.760	50.35	---	74.00	23.65	V	8.34

802.11n-20MHz Test mode



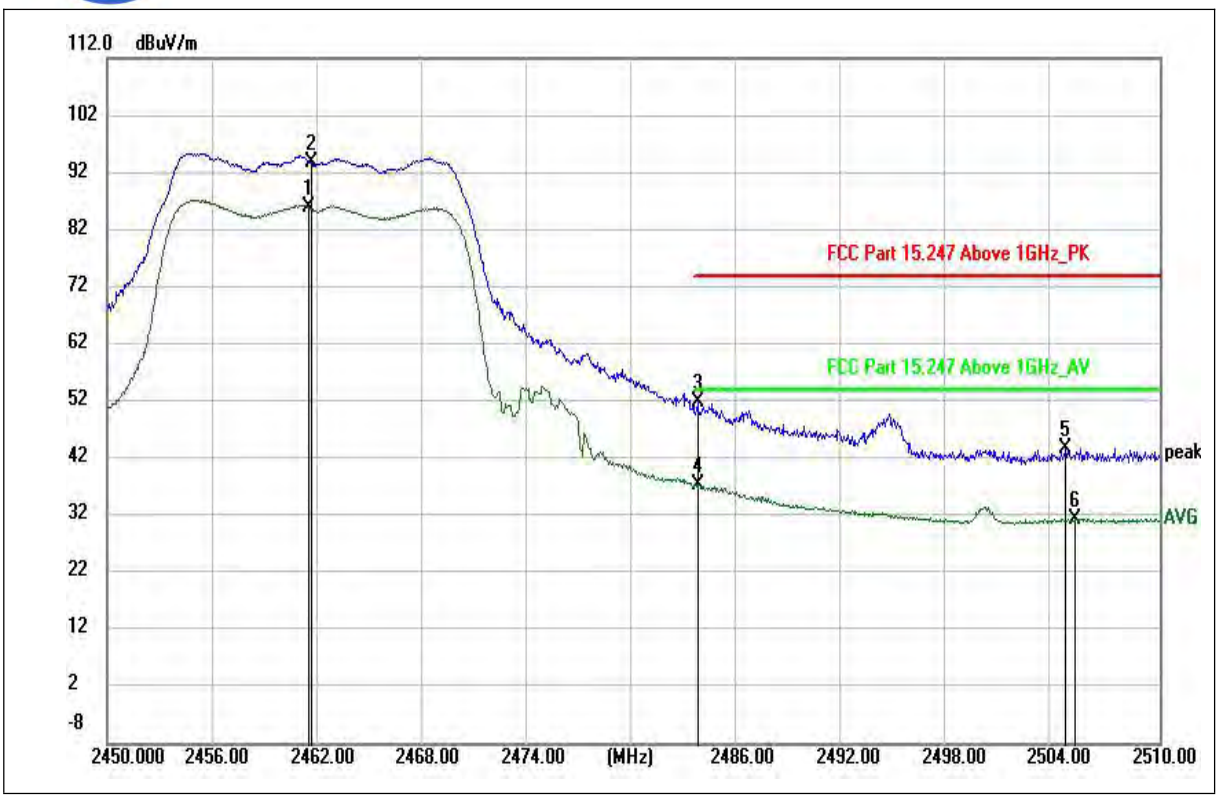
(802.11n_20M _2412MHz, Antenna Horizontal)

Frequency (MHz)	QuasiPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Corr. (dB/m)
2361.925	---	31.17	54.00	22.83	H	7.50
2362.375	42.57	---	74.00	31.43	H	7.49
2399.800	---	46.40	54.00	7.60	H	8.69
2399.950	63.21	---	74.00	10.79	H	8.70
2410.900	---	84.81	---	---	H	8.65
2411.125	93.53	---	---	---	H	8.65



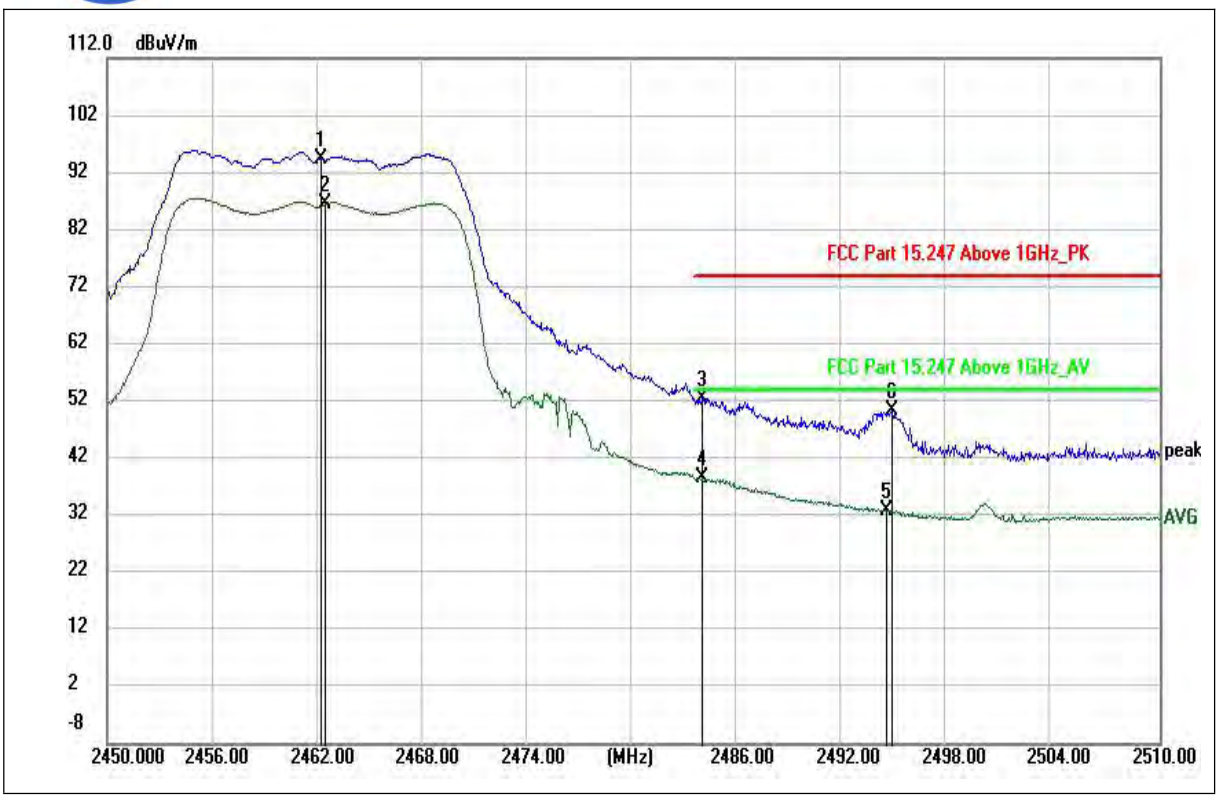
(802.11n_20M _2412MHz, Antenna Vertical)

Frequency (MHz)	QuasiPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
2361.925	---	31.17	54.00	22.83	V	7.50
2362.375	42.57	---	74.00	31.43	V	7.49
2398.825	---	46.22	54.00	7.78	V	8.61
2399.950	63.21	---	74.00	10.79	V	8.70
2410.900	---	84.81	---	---	V	8.65
2411.125	93.53	---	---	---	V	8.65



(802.11n_20M _2462MHz, Antenna Horizontal)

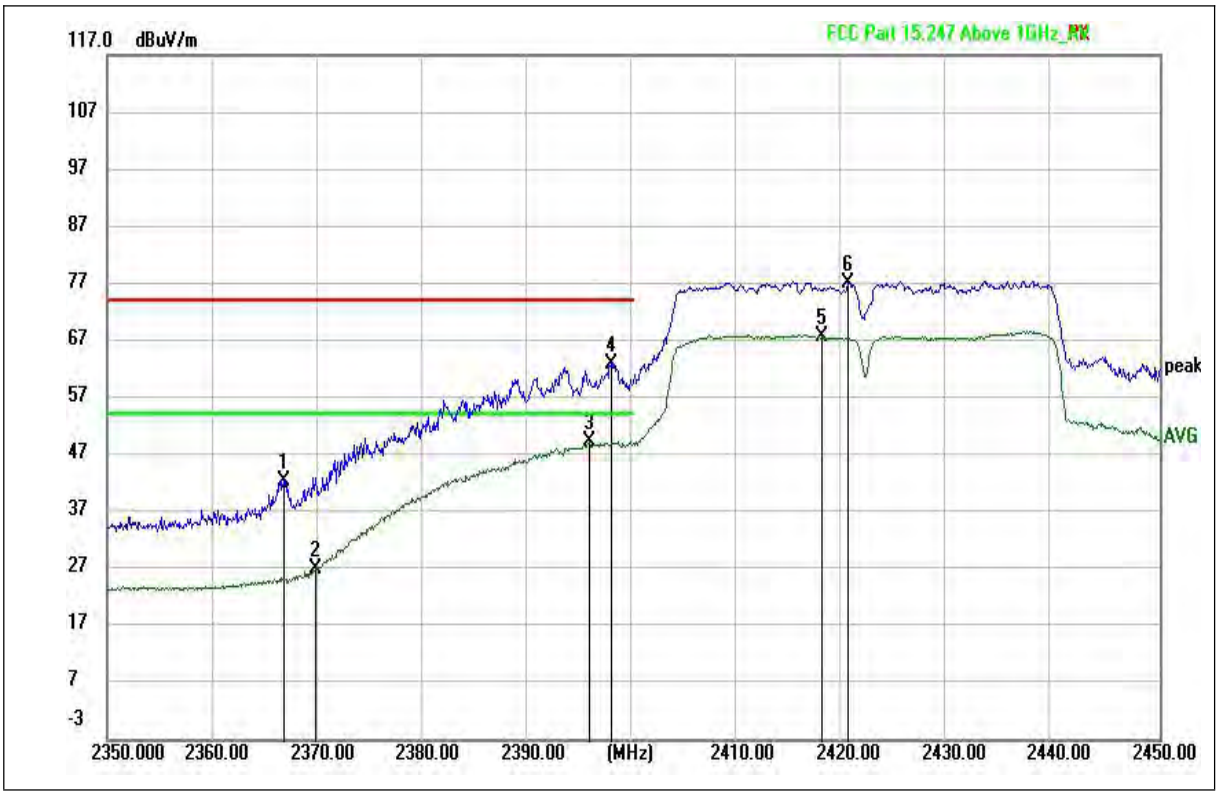
Frequency (MHz)	QuasiPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
2461.460	---	85.93	---	---	H	7.88
2461.640	93.67	---	---	---	H	7.88
2483.660	51.77	---	74.00	22.23	H	8.37
2483.720	---	37.50	54.00	16.50	H	8.37
2504.660	43.70	---	74.00	30.30	H	8.31
2505.140	---	31.41	54.00	22.59	H	8.31



(802.11n_20M _2462MHz, Antenna Vertical)

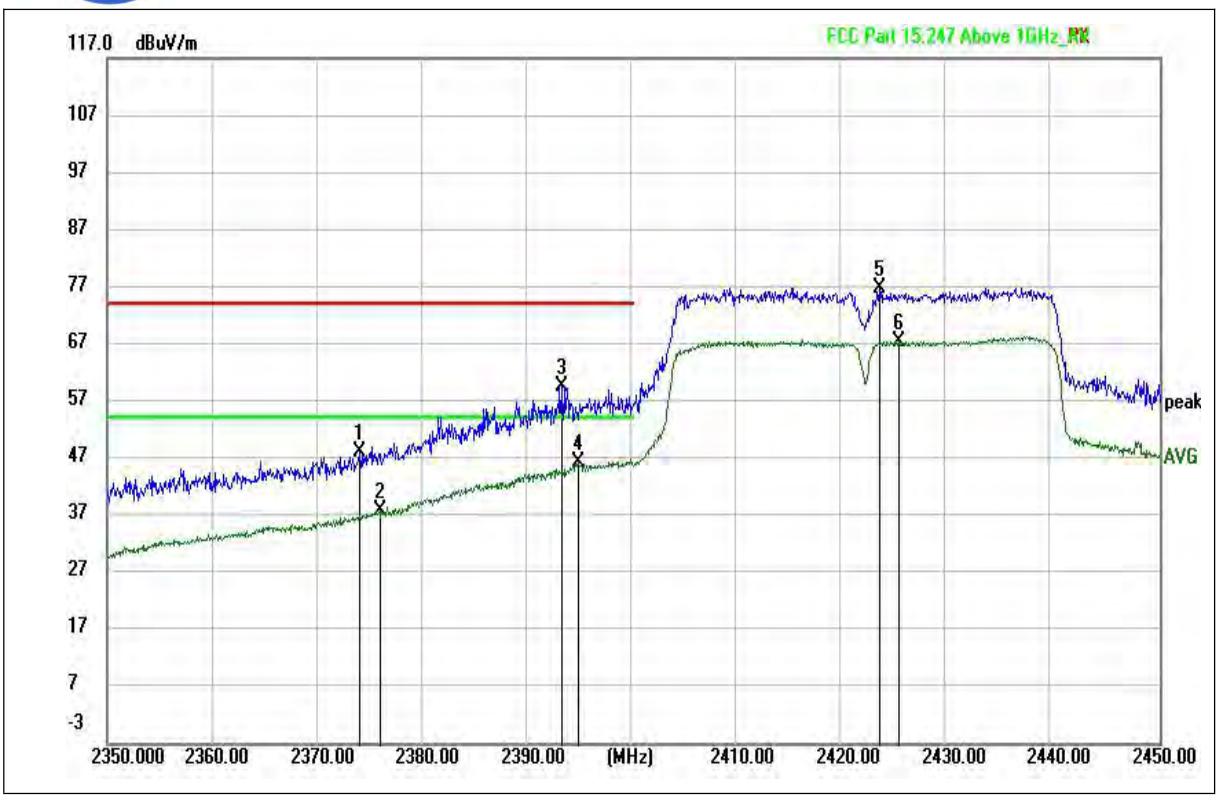
Frequency (MHz)	QuasiPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
2462.180	94.41	---	---	---	V	7.89
2462.420	---	86.48	---	---	V	7.89
2483.900	52.49	---	74.00	21.51	V	8.37
2483.960	---	38.49	54.00	15.51	V	8.37
2494.460	---	32.98	54.00	21.02	V	8.34
2494.760	50.35	---	74.00	23.65	V	8.34

802.11n-40MHz Test mode



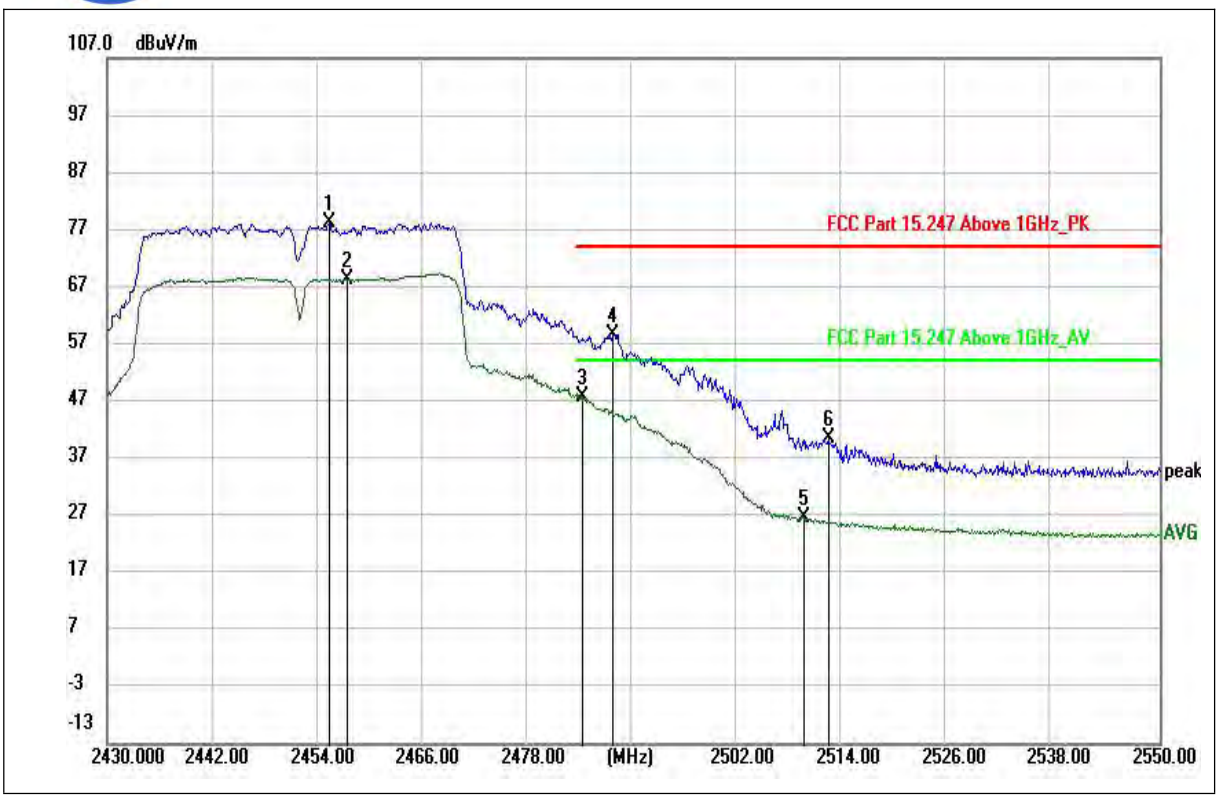
(802.11n_40M _2422MHz, Antenna Horizontal)

Frequency (MHz)	QuasiPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
2366.800	42.52	---	74.00	31.48	H	-11.91
2369.800	---	27.04	54.00	26.96	H	-11.97
2395.800	---	49.35	54.00	4.65	H	-12.20
2397.900	62.95	---	74.00	11.05	H	-12.20
2417.900	---	67.67	---	---	H	-12.16
2420.400	77.05	---	---	---	H	-12.16



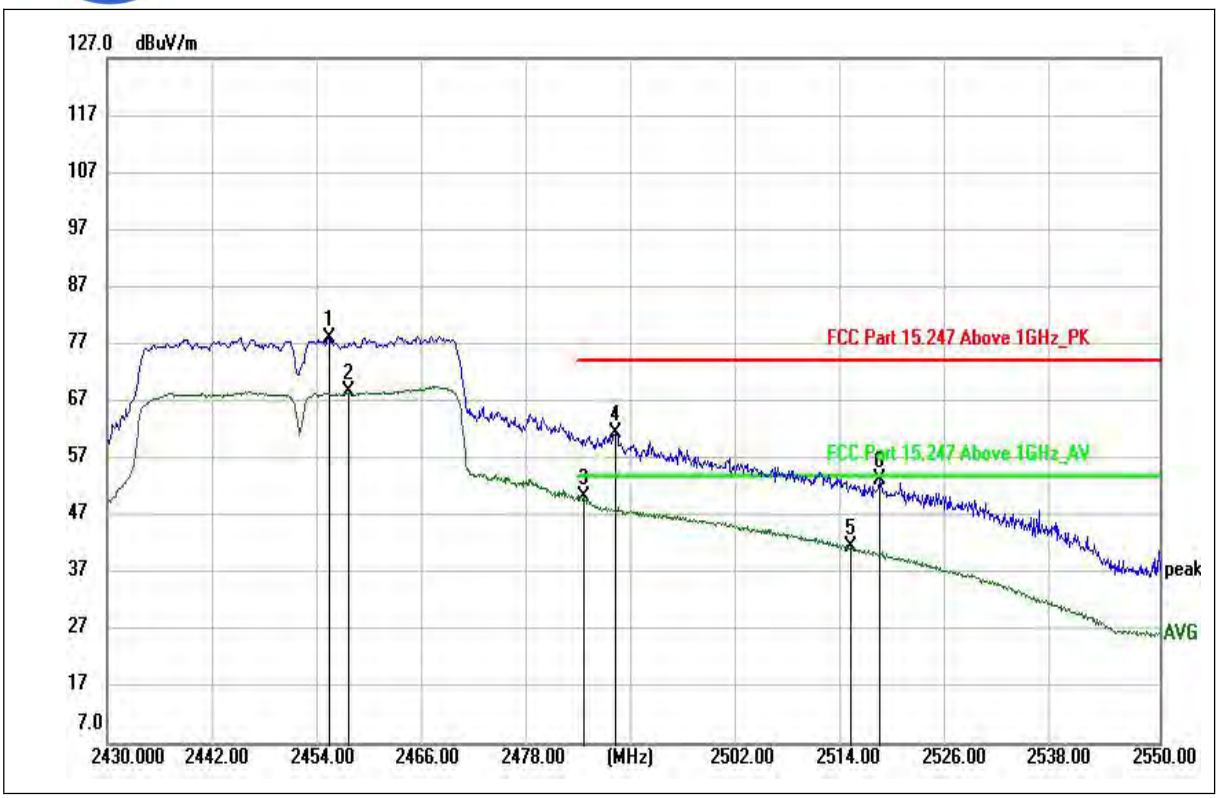
(802.11n_40M _2422MHz, Antenna Vertical)

Frequency (MHz)	QuasiPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
2374.000	48.25	---	74.00	25.75	V	-12.05
2375.900	---	37.88	54.00	16.12	V	-12.09
2393.200	59.70	---	74.00	14.30	V	-12.19
2394.800	---	46.16	54.00	7.84	V	-12.20
2423.400	76.62	---	---	---	V	-12.11
2425.200	---	67.50	---	---	V	-12.09



(802.11n_40M _2452MHz, Antenna Horizontal)

Frequency (MHz)	QuasiPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
2455.320	78.16	---	---	---	H	-11.67
2457.360	---	68.40	---	---	H	-11.64
2484.240	---	47.66	54.00	6.34	H	-11.21
2487.720	58.69	---	74.00	15.31	H	-11.22
2509.440	---	26.67	54.00	27.33	H	-11.30
2512.200	40.47	---	74.00	33.53	H	-11.23



(802.11n_40M _2452MHz, Antenna Vertical)

Frequency (MHz)	QuasiPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)
2455.320	78.14	---	---	---	V	-11.67
2457.600	---	68.53	---	---	V	-11.64
2484.360	---	50.13	54.00	3.87	V	-11.22
2487.960	61.41	---	74.00	12.59	V	-11.22
2514.720	---	41.41	54.00	12.59	V	-11.22
2518.080	53.37	---	74.00	20.63	V	-11.20