



FCC Part 15C TEST REPORT

Issued to

Corporativo Lanix S.A. de C.V.

For

Smartphone

Model Name: Ilium S700
 Trade Name: Lanix
 Brand Name: Lanix
 FCC ID: ZC4S700
 Standard: 47 CFR Part 15 Subpart C
 Test date: 2013-9-26 to 2013-10-15
 Issue date: 2013-10-21

By

Shenzhen MORLAB Communication Technology Co., Ltd.

Tested by Nie Quan
 Nie Quan
 (Test Engineer)

Date 2013.10.21

Approved by



Date

Review by

Peng Huarui
 Peng Huarui
 (Project Manager)

Date 2013.10.21



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Change History		
Issue	Date	Reason for change
1.0	October 21, 2013	First edition

1. General Information

1.1. EUT Description

EUT Type: Smartphone
Serial No.....: (n.a, marked #1 by test site)
Hardware Version: v0.3
Software Version: N/A
Applicant: Corporativo Lanix S.A. de C.V.
Carretera Internacional Hermosillo-Nogales Km 8.5,Hermosillo
Sonora, Mexico
Manufacturer: Tinno Mobile Technology Corp.
4/F.,H-3 Building,OCT Eastern Industrial Park. NO.1 XiangShan
East Road.,Nan Shan District,Shenzhen,P.R.China.
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
Modulation Type: DSSS (802.11b), OFDM (802.11g/n)
Antenna Type.....: PIFA Antenna
Antenna Gain.....: -2.0dBi

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

Note 2: For 802.11b/g/n-20MHz, the frequencies allocated is $F \text{ (MHz)} = 2412 + 5 * (n - 1)$ ($1 \leq n \leq 11$). 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 $F \text{ (MHz)} = 2412 + 5 * (n - 1)$ ($3 \leq n \leq 9$). 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 3: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

Note 4: The antenna connector of EUT is designed with permanent attachment and no consideration of replacement.

1.2. Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 15 Subpart C (Wi-Fi, 2.4GHz ISM band radiators) for the EUT FCC ID Certification:

No.	Identity	Document Title
1	47 CFR Part 15 (10-1-12 Edition)	Radio Frequency Devices

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

No.	Section	Description	Result
1	15.203	Antenna Requirement	PASS
2	15.247(b)	Peak Output Power	PASS
3	15.247(a)	Bandwidth	PASS
4	15.247(d)	Conducted Spurious Emission	PASS
5	15.247(d)	Restricted Frequency Bands	PASS
6	15.207	Conducted Emission	PASS
7	15.209 ,15.247(d)	Radiated Emission	PASS
8	15.247(e)	Power spectral density (PSD)	PASS
9	15.247(i), 1.1307&2.1093	RF exposure evaluation	PASS

The tests of Conducted Emission and Radiated Emission were performed according to the method of measurements prescribed in ANSI C63.4 2009.

These RF tests were performed according to the method of measurements prescribed in KDB558074 D01 V03 (04/09/2013).

1.3. Facilities and Accreditations

1.3.1. Facilities

Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L3572.

All measurement facilities used to collect the measurement data are located at FL.1, Building A, FeiYang Science Park, Block 67, BaoAn District, Shenzhen, 518101 P. R. China. The test site is constructed in conformance with the requirements of ANSI C63.10 2009, ANSI C63.4 2009 and CISPR Publication 22; the FCC registration number is 695796.

1.3.2. Test Environment 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. Peak Output Power

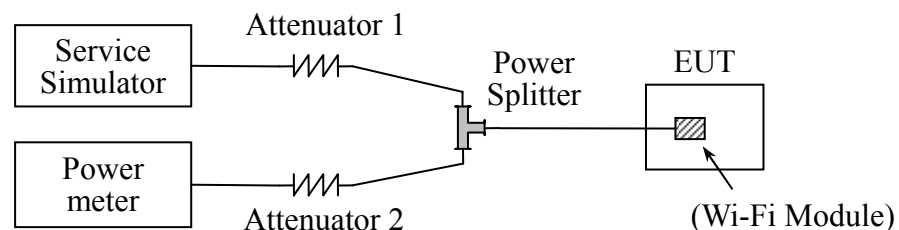
2.2.1. Requirement

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 exceed 1 Watt.

2.2.2. Test Description

The measured output power was calculated by the reading of the Power Meter and calibration.

A. Test Setup:



The EUT (Equipment under the test) which is powered by the Battery is coupled to the Power Meter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading, all test result in power meter.

B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
EPM Series Power Meter	Agilent	E4418B	GB43318055	2013.05.12	2014.05.11
Power Sensor	Agilent	8482A	MY41091706	2013.05.12	2014.05.11

2.2.3. Test Result

The lowest, middle and highest channels are selected to perform testing to verify the conducted RF output peak power of the Module.

2.2.3.1. 802.11b Test mode

Channel	Frequency (MHz)	Measured Output Peak Power		Limit		Verdict
		dBm	W	dBm	W	
1	2412	11.60	0.014454	30	1	PASS
6	2437	12.38	0.017298			PASS
11	2462	13.45	0.022131			PASS

2.2.3.2. 802.11g Test mode

Channel	Frequency (MHz)	Measured Output Peak Power		Limit		Verdict
		dBm	W	dBm	W	
1	2412	12.02	0.015922	30	1	PASS
6	2437	12.84	0.019231			PASS
11	2462	13.62	0.023014			PASS

2.2.3.3. 802.11n-20MHz Test mode

Channel	Frequency (MHz)	Measured Output Peak Power		Limit		Verdict
		dBm	W	dBm	W	
1	2412	12.06	0.016069	30	1	PASS
6	2437	12.82	0.019143			PASS
11	2462	13.35	0.021627			PASS

2.2.3.4. 802.11n-40MHz Test mode

Channel	Frequency (MHz)	Measured Output Peak Power		Limit		Verdict
		dBm	W	dBm	W	
3	2422	12.06	0.016069	30	1	PASS
6	2437	12.81	0.019099			PASS
9	2452	13.27	0.021232			PASS

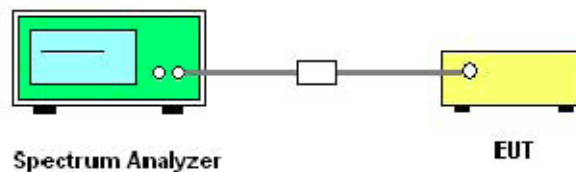
2.3. Bandwidth

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 which is powered by the Battery, 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.

B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Receiver	Agilent	E7405A	US44210471	2013.05.12	2014.05.11

2.3.3. Test Result

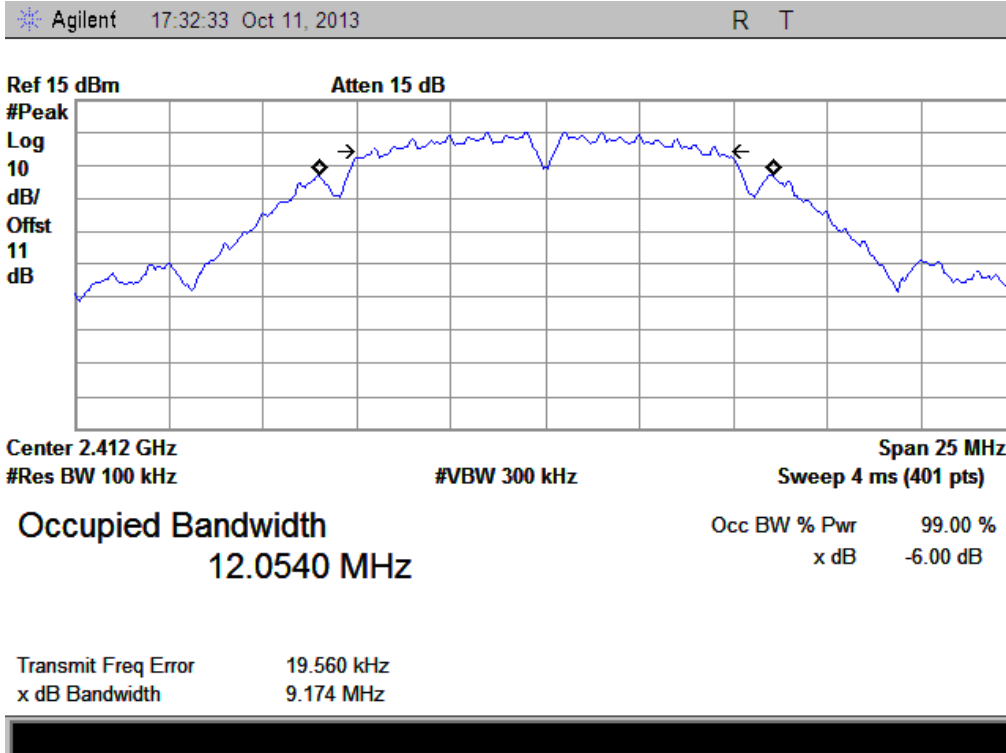
The lowest, middle and highest channels are selected to perform testing to record the 6 dB bandwidth of the Module.

2.3.3.1. 802.11b Test mode

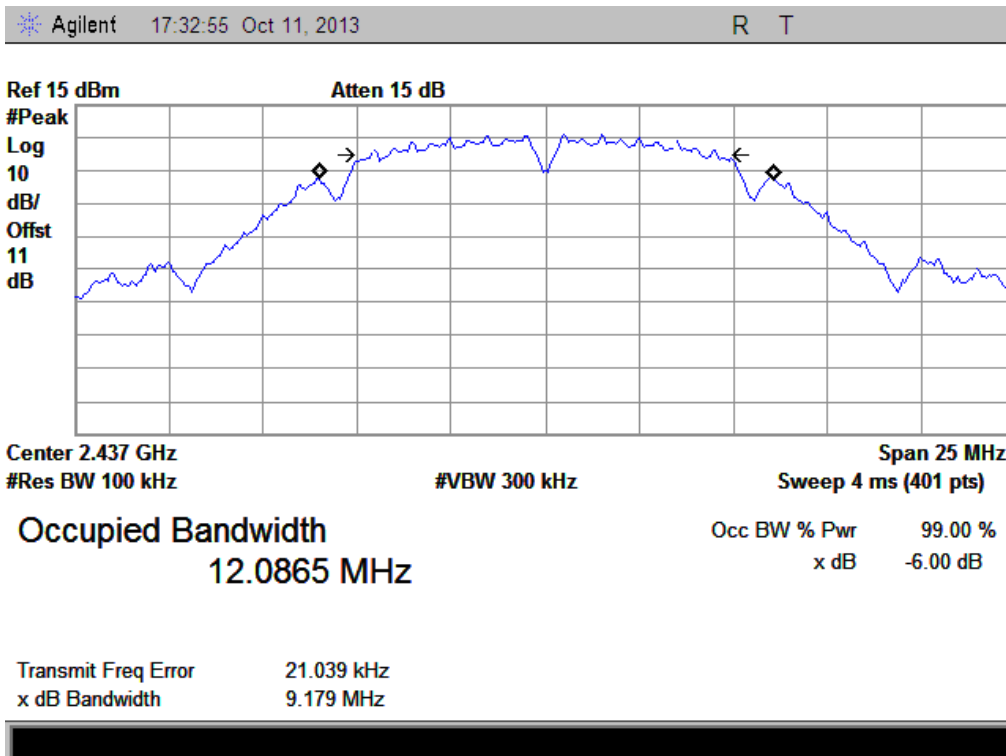
A. Test Verdict:

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Refer to Plot	Limits(kHz)	Result
1	2412	9.174	Plot A	≥ 500	PASS
6	2437	9.179	Plot B	≥ 500	PASS
11	2462	9.178	Plot C	≥ 500	PASS

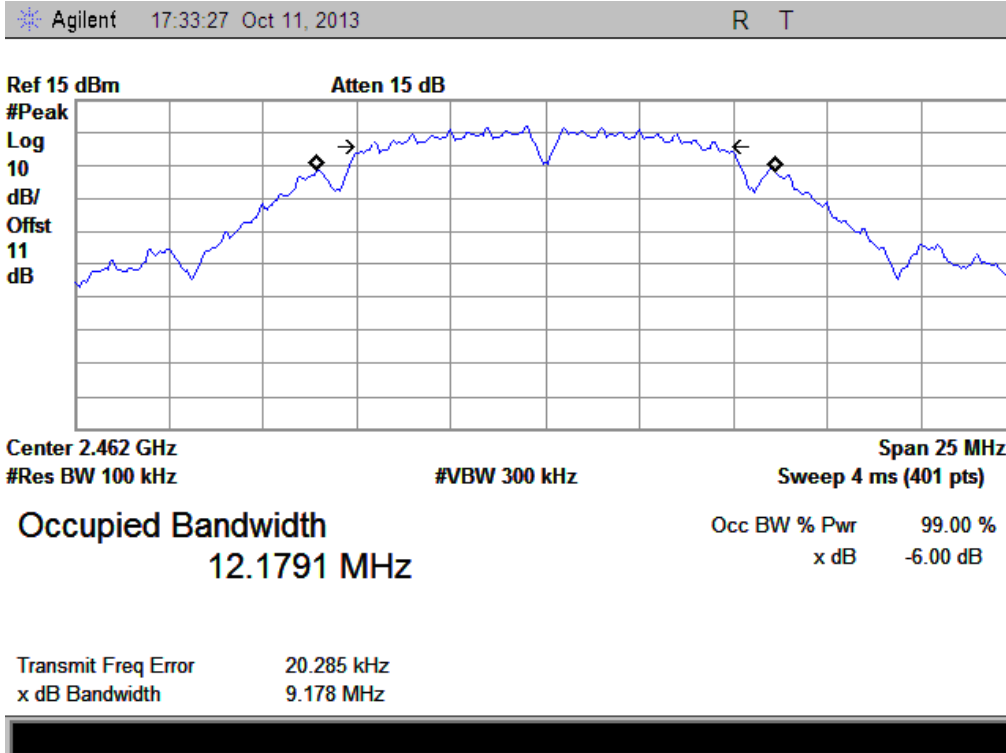
B. Test Plots



(Plot A: Channel 1: 2412MHz @ 802.11b)



(Plot B: Channel 6: 2437 MHz @ 802.11b)



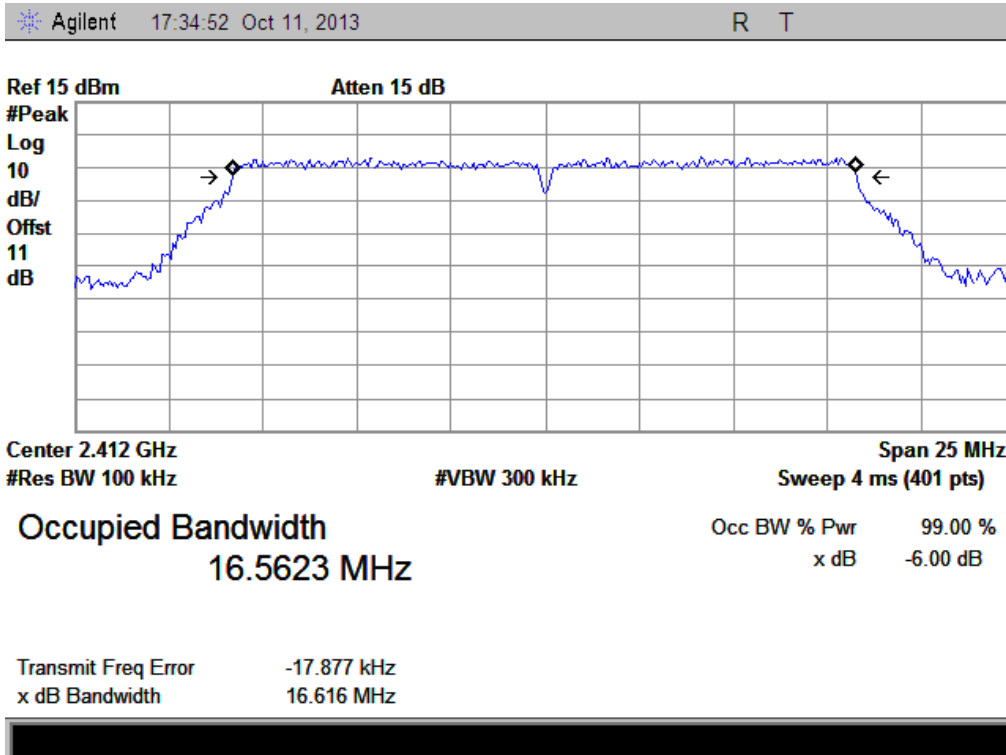
(Plot C: Channel 11: 2462MHz @ 802.11b)

2.3.3.2. 802.11g Test mode

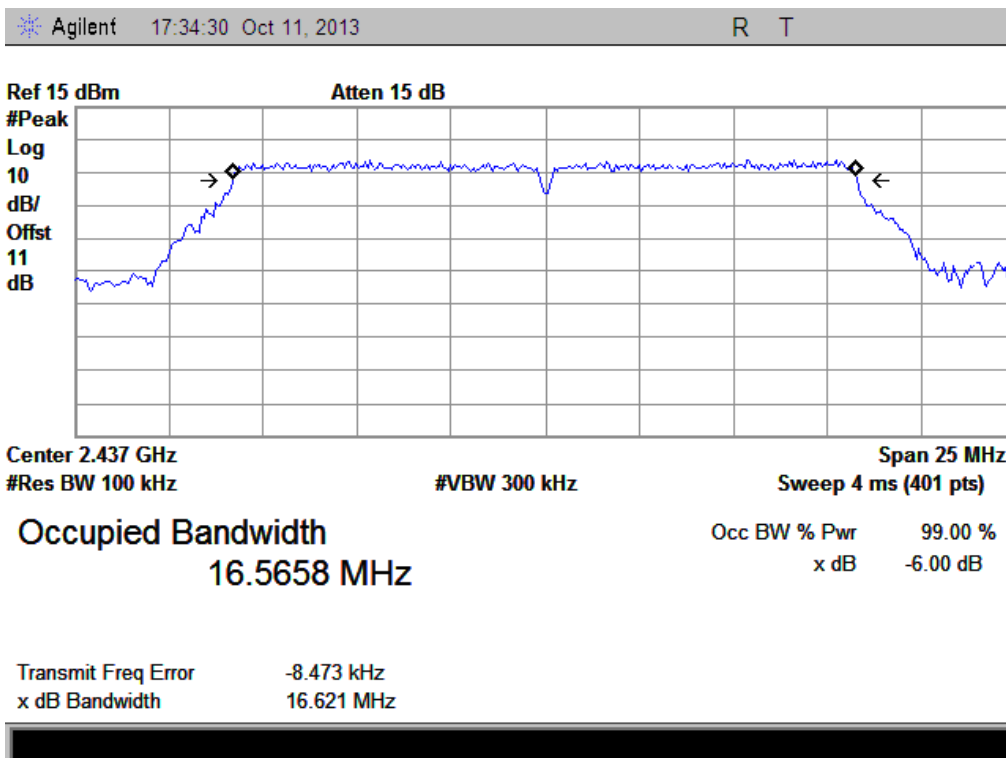
A. Test Verdict:

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Refer to Plot	Limits (kHz)	Result
1	2412	16.616	Plot D	≥ 500	PASS
6	2437	16.621	Plot E	≥ 500	PASS
11	2462	16.628	Plot F	≥ 500	PASS

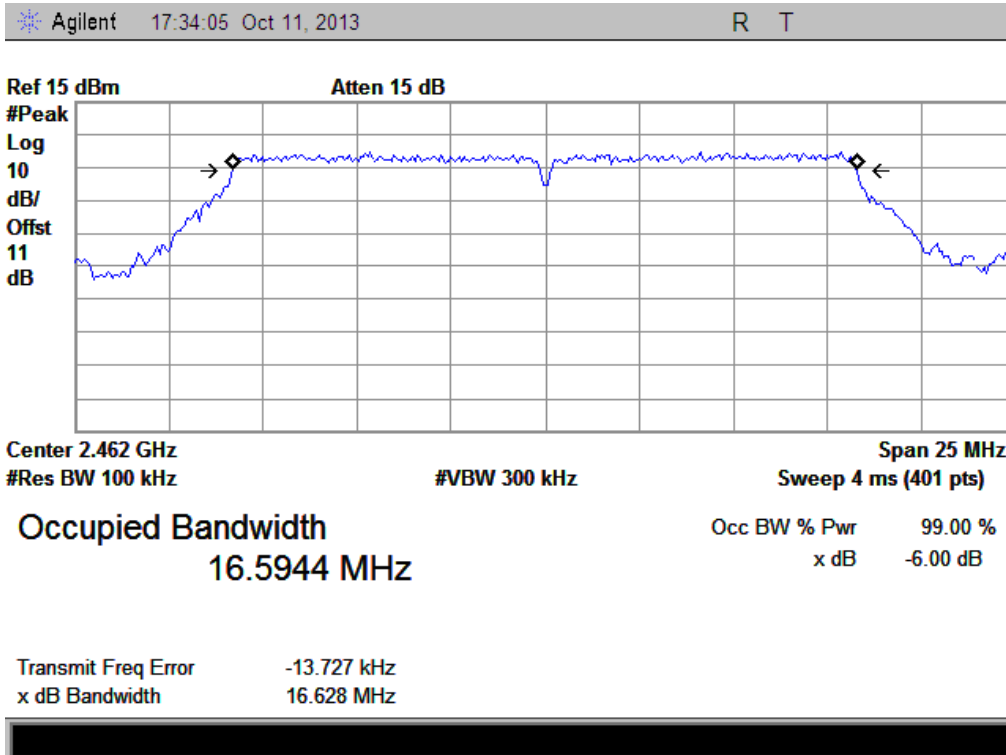
B. Test Plots:



(Plot D: Channel 1: 2412MHz @ 802.11g)



(Plot E: Channel 6: 2437MHz @ 802.11g)



(Plot F: Channel 11: 2462MHz @ 802.11g)

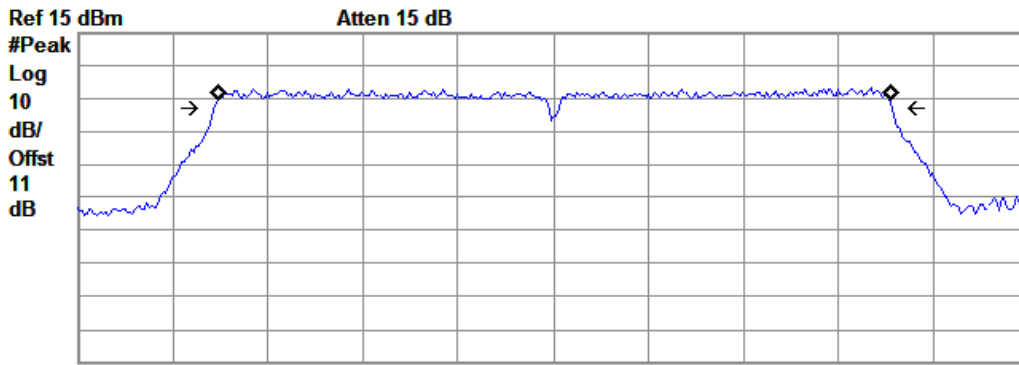
2.3.3.3. 802.11n-20 Test mode

A. Test Verdict:

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Refer to Plot	Limits (kHz)	Result
1	2412	17.847	Plot G	≥ 500	PASS
6	2437	17.846	Plot H	≥ 500	PASS
11	2462	17.871	Plot I	≥ 500	PASS

B. Test Plots:

Agilent 17:35:49 Oct 11, 2013 R T



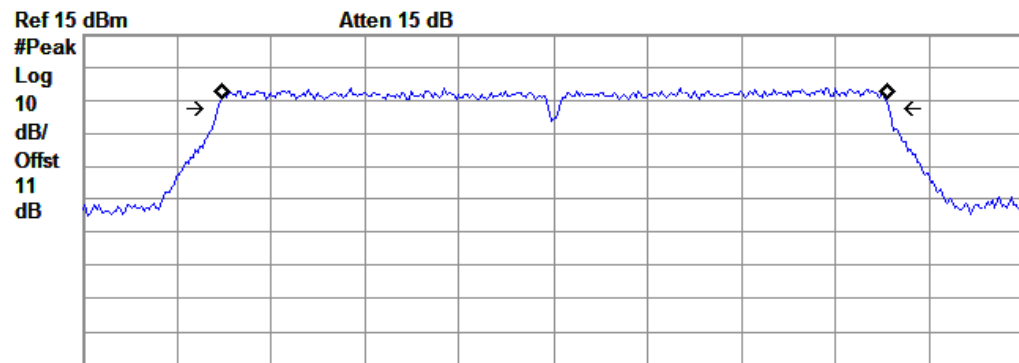
Center 2.412 GHz Span 25 MHz
 #Res BW 100 kHz #VBW 300 kHz Sweep 4 ms (401 pts)

Occupied Bandwidth Occ BW % Pwr 99.00 %
 17.6652 MHz x dB -6.00 dB

Transmit Freq Error 14.701 kHz
 x dB Bandwidth 17.847 MHz

(Plot G: Channel 1: 2412MHz @ 802.11n-20)

Agilent 17:36:11 Oct 11, 2013 R T

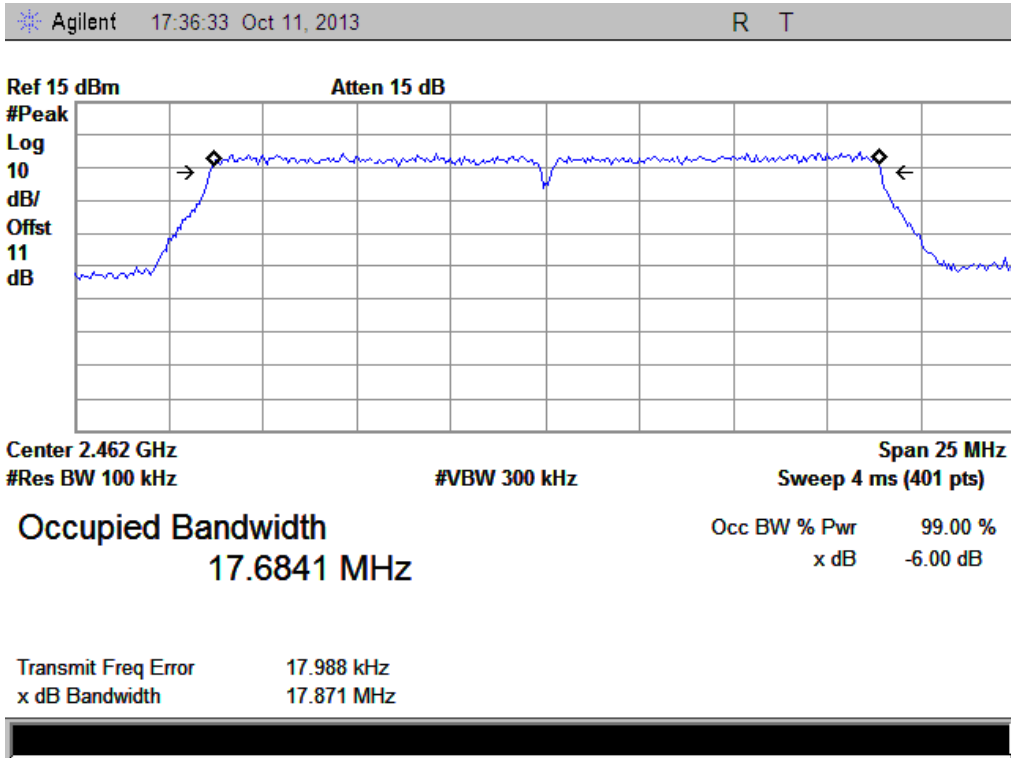


Center 2.437 GHz Span 25 MHz
 #Res BW 100 kHz #VBW 300 kHz Sweep 4 ms (401 pts)

Occupied Bandwidth Occ BW % Pwr 99.00 %
 17.6611 MHz x dB -6.00 dB

Transmit Freq Error 16.354 kHz
 x dB Bandwidth 17.846 MHz

(Plot H: Channel 6: 2437MHz @ 802.11n-20)



(Plot I: Channel 11: 2462MHz @ 802.11n-20)

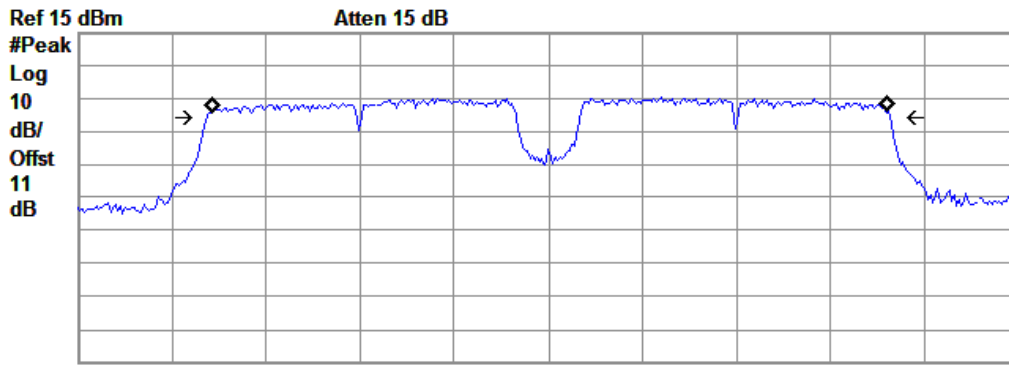
2.3.3.4. 802.11n-40 Test mode

A. Test Verdict:

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Refer to Plot	Limits (kHz)	Result
3	2422	36.348	Plot G	≥ 500	PASS
6	2437	36.321	Plot H	≥ 500	PASS
9	2452	36.252	Plot I	≥ 500	PASS

B. Test Plots:

Agilent 17:28:25 Oct 11, 2013 R T



Center 2.422 GHz Span 50 MHz
 #Res BW 100 kHz #VBW 300 kHz Sweep 5.18 ms (401 pts)

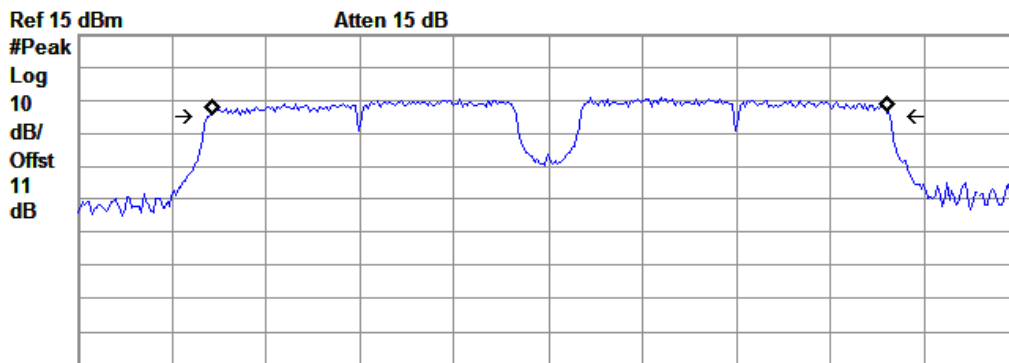
Occupied Bandwidth
 35.9032 MHz

Occ BW % Pwr 99.00 %
 x dB -6.00 dB

Transmit Freq Error 24.631 kHz
 x dB Bandwidth 36.348 MHz

(Plot G: Channel 1: 2422MHz @ 802.11n-40)

Agilent 17:27:49 Oct 11, 2013 R T



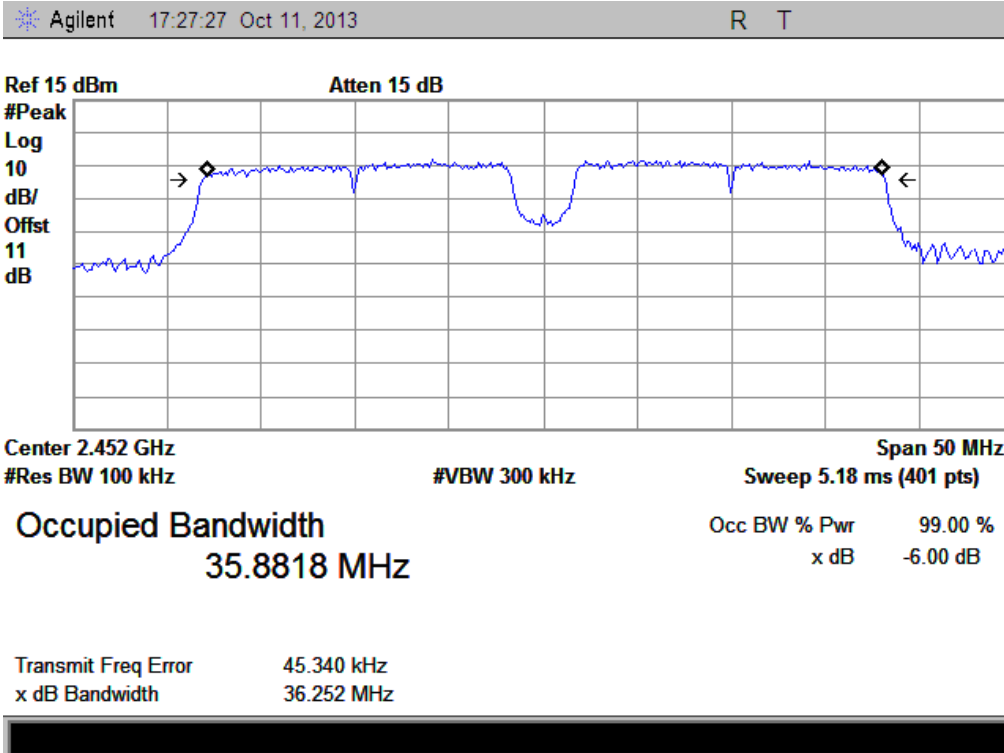
Center 2.437 GHz Span 50 MHz
 #Res BW 100 kHz #VBW 300 kHz Sweep 5.18 ms (401 pts)

Occupied Bandwidth
 35.8976 MHz

Occ BW % Pwr 99.00 %
 x dB -6.00 dB

Transmit Freq Error 43.814 kHz
 x dB Bandwidth 36.321 MHz

(Plot H: Channel 6: 2437MHz @ 802.11n-40)



(Plot I: Channel 11: 2452MHz @ 802.11n-40)

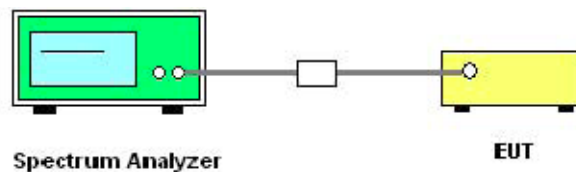
2.4. Conducted Spurious Emissions

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 which is powered by the Battery, 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.

B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Receiver	Agilent	E7405A	US44210471	2013.05.12	2014.05.11

2.4.3. Test Result

The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the spurious emissions.

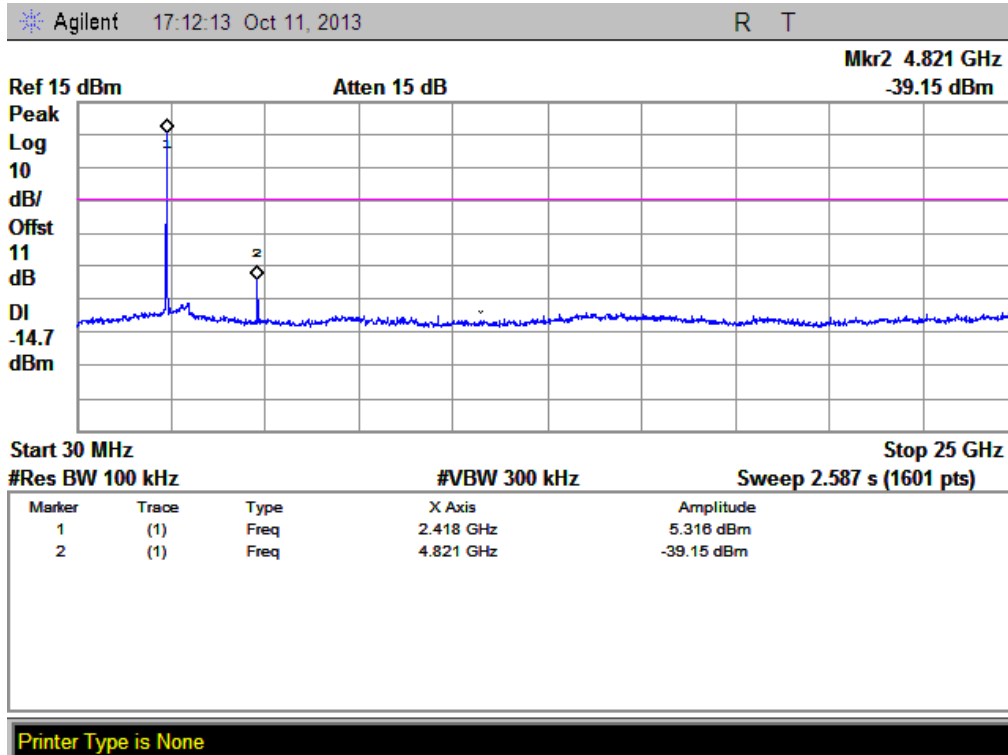
2.4.3.1. 802.11b Test mode

A. Test Verdict:

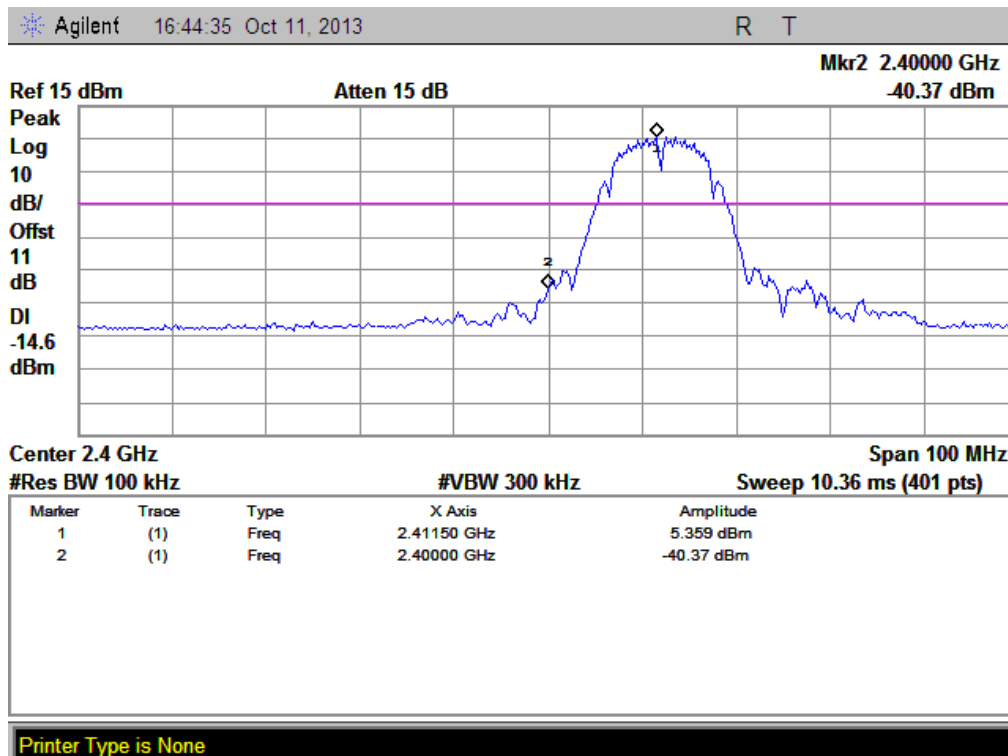
Channel	Frequency (MHz)	Measured Max. Out of Band Emission (dBm)	Refer to Plot	Limit (dBm)		Verdict
				Carrier Level	Calculated -20dBc Limit	
1	2412	-39.15	Plot A.1	5.316	-14.7	PASS
6	2437	-39.82	Plot B.1	6.226	-13.2	PASS
11	2462	-39.49	Plot C.1	6.903	-13.1	PASS

B. Test Plots:

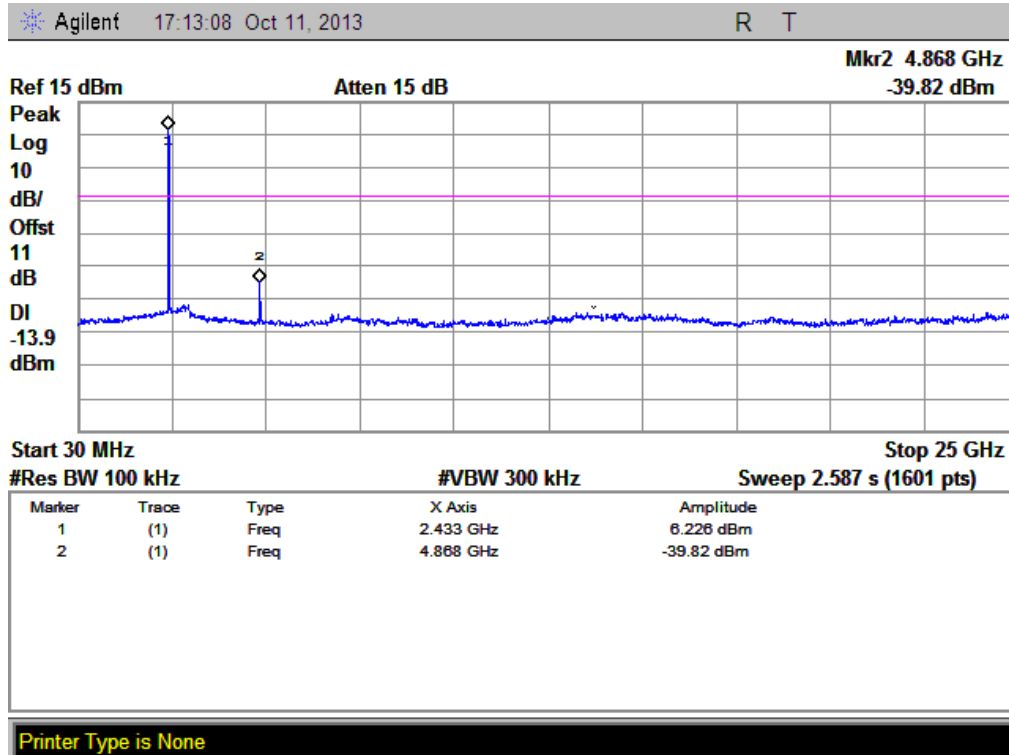
Note: the power of the Module transmitting frequency should be ignored.



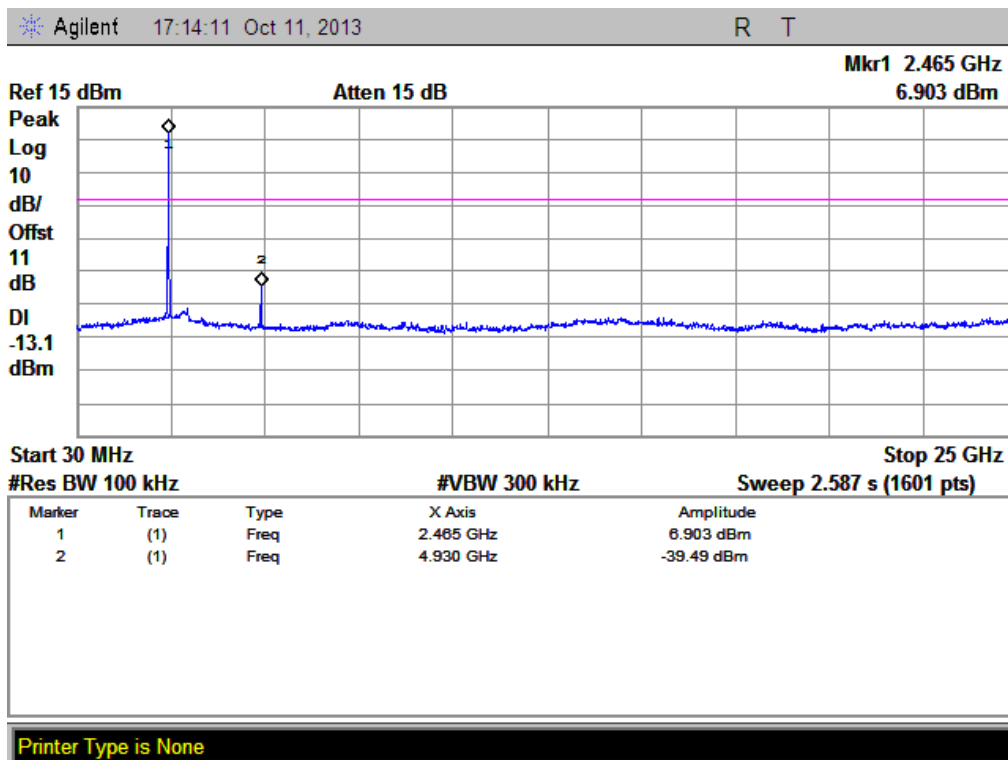
(Plot A.1: Channel = 1, 30MHz to 25GHz)



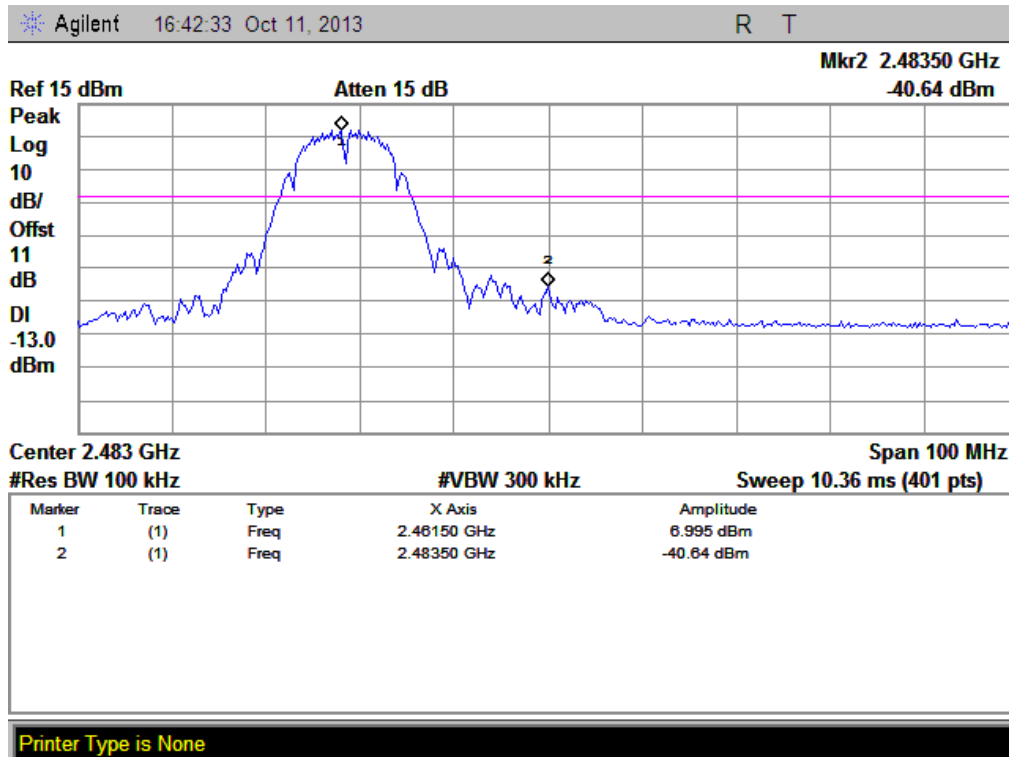
(Band Edge @ Channel = 1)



(Plot B.1: Channel = 6, 30MHz to 25GHz)



(Plot C.1: Channel = 11, 30MHz to 25GHz)



(Band Edge @ Channel = 11)

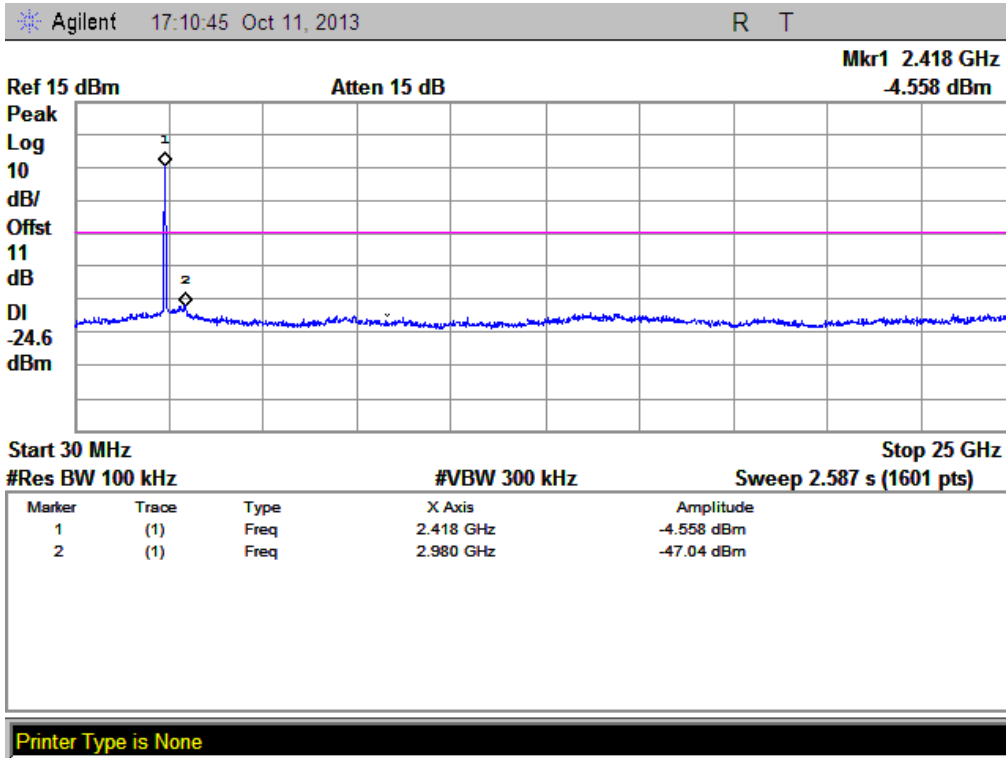
2.4.3.2. 802.11g Test mode

A. Test Verdict:

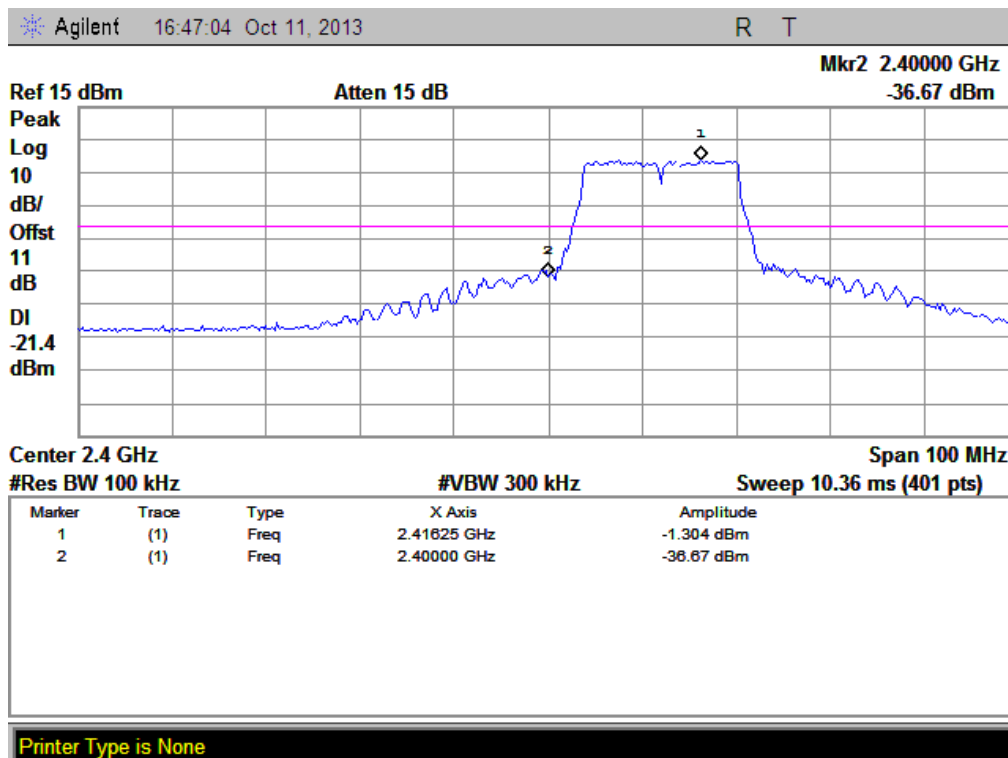
Channel	Frequency (MHz)	Measured Out of Band Emission (dBm)	Max. of Band Refer to Plot	Limit (dBm)		Verdict
				Carrier Level	Calculated -20dBc Limit	
1	2412	-47.04	Plot D.1	-4.558	-24.6	PASS
6	2437	-46.24	Plot E.1	-4.275	-24.3	PASS
11	2462	-46.67	Plot F.1	-3.789	-23.8	PASS

B. Test Plots:

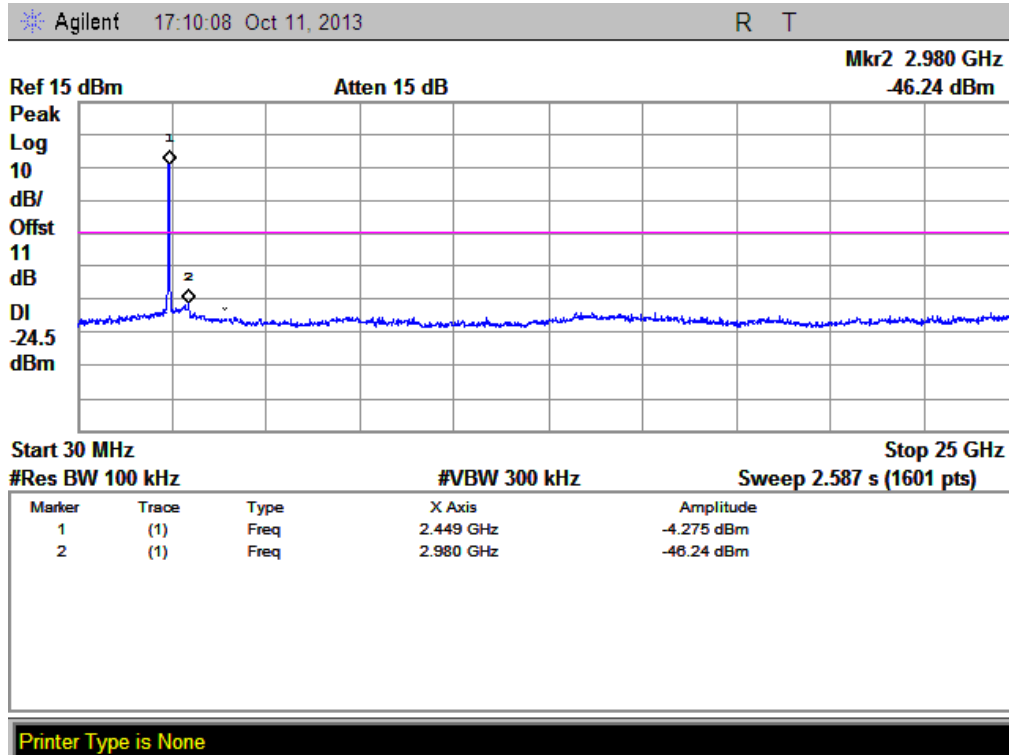
Note: the power of the Module transmitting frequency should be ignored.



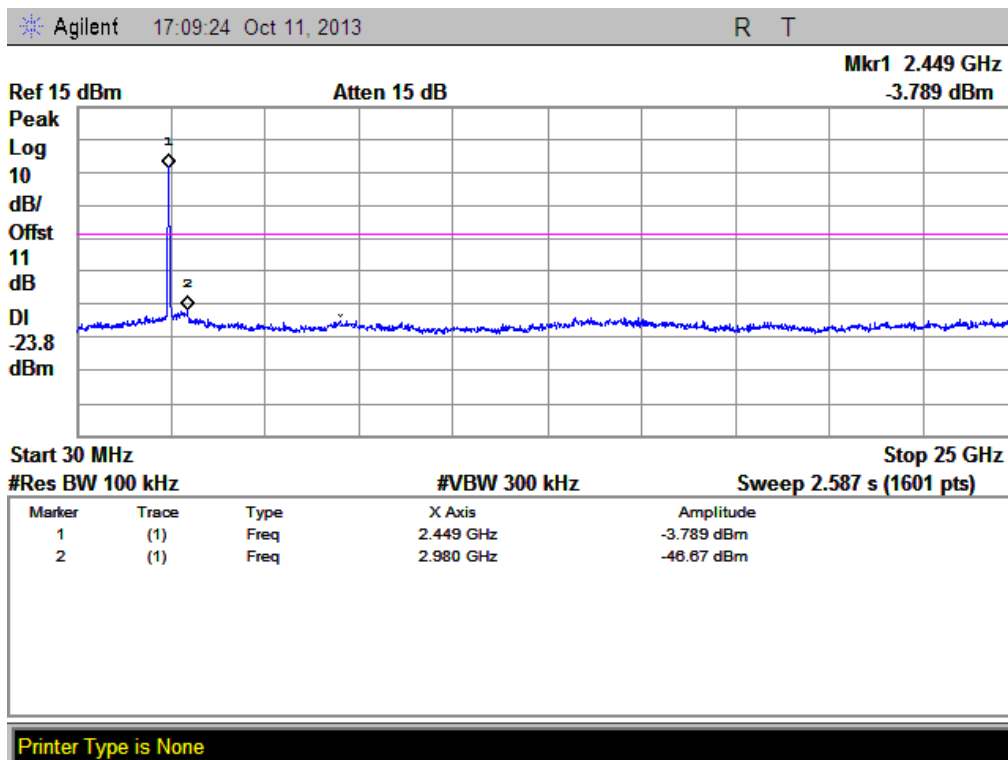
(Plot D.1: Channel = 1, 30MHz to 25GHz)



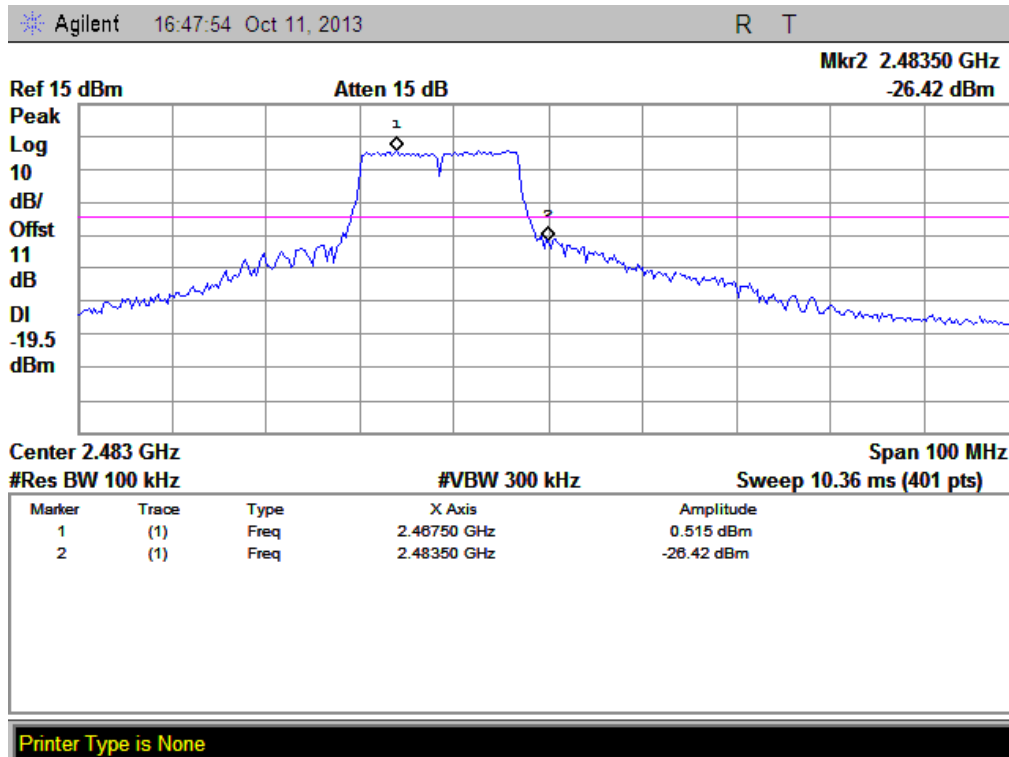
(Band Edge @ Channel = 1)



(Plot E.1: Channel = 6, 30MHz to 25GHz)



(Plot F.1: Channel = 11, 30MHz to 25GHz)



(Band Edge @ Channel = 11)

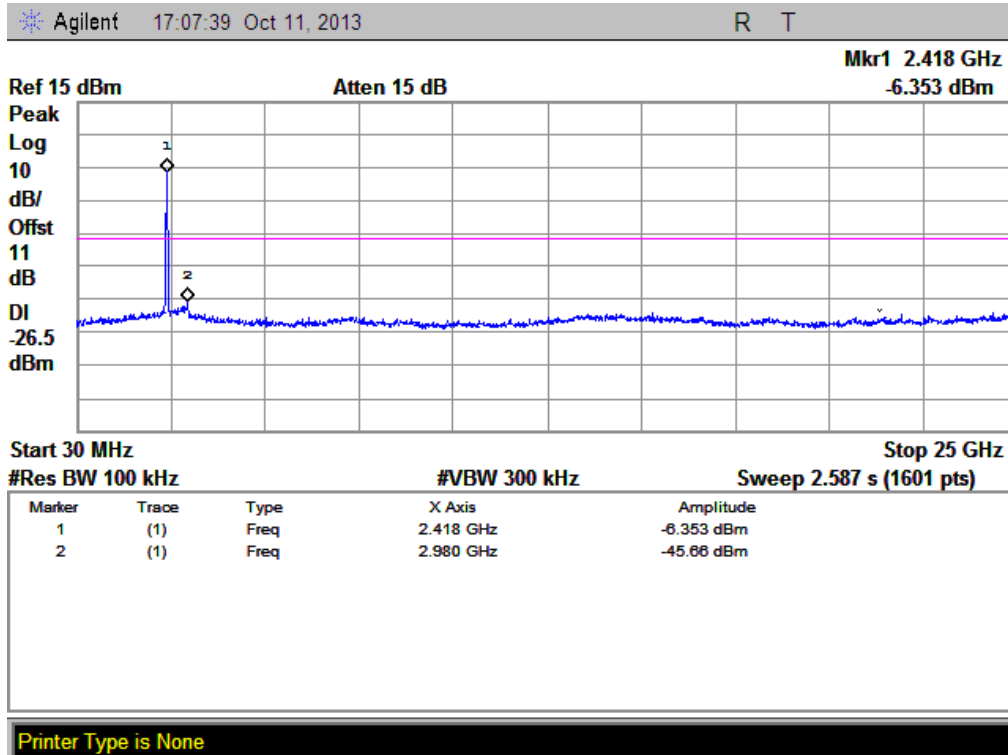
2.4.3.3. 802.11n -20MHz Test mode

A. Test Verdict:

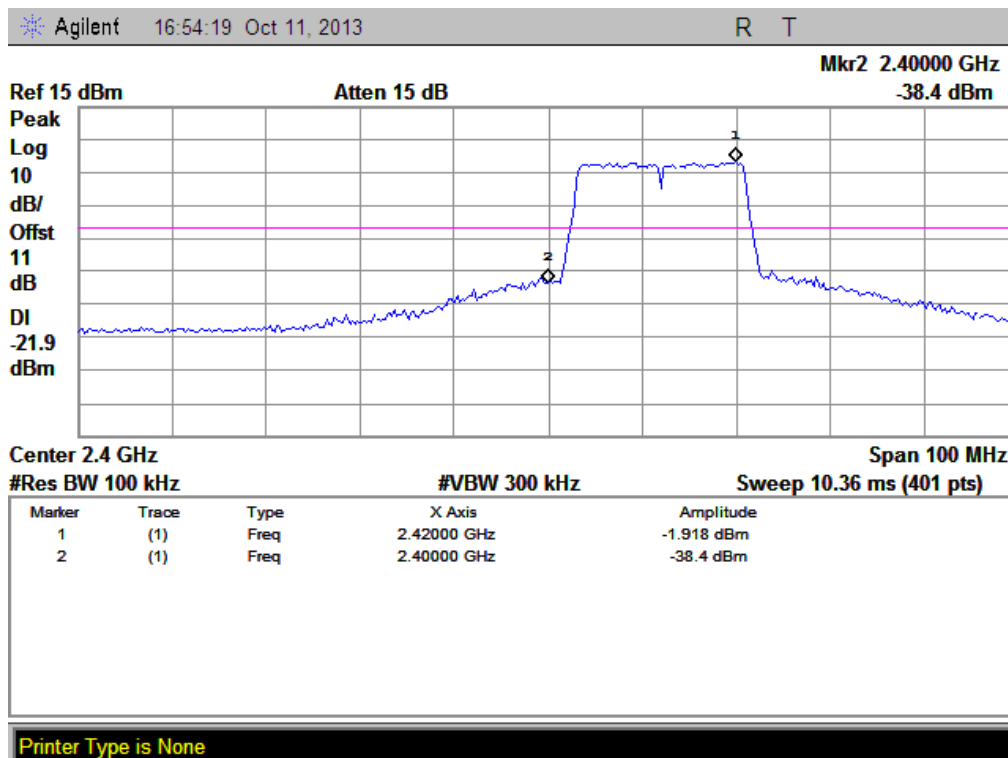
Channel	Frequency (MHz)	Measured Max. Out of Band Emission (dBm)	Refer to Plot	Limit (dBm)		Verdict
				Carrier Level	Calculated -20dBc Limit	
1	2412	-45.66	Plot G.1	-6.353	-26.4	PASS
6	2437	-46.61	Plot H.1	-4.646	-24.6	PASS
11	2462	-46.37	Plot I.1	-5.321	-25.3	PASS

B. Test Plots:

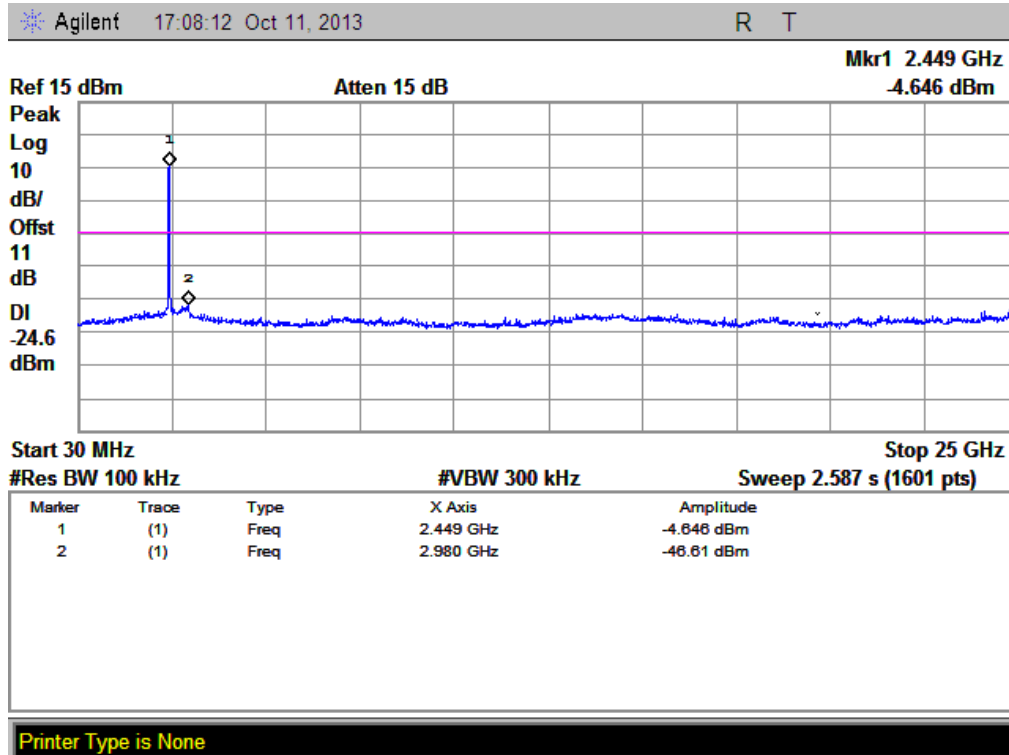
Note: the power of the Module transmitting frequency should be ignored.



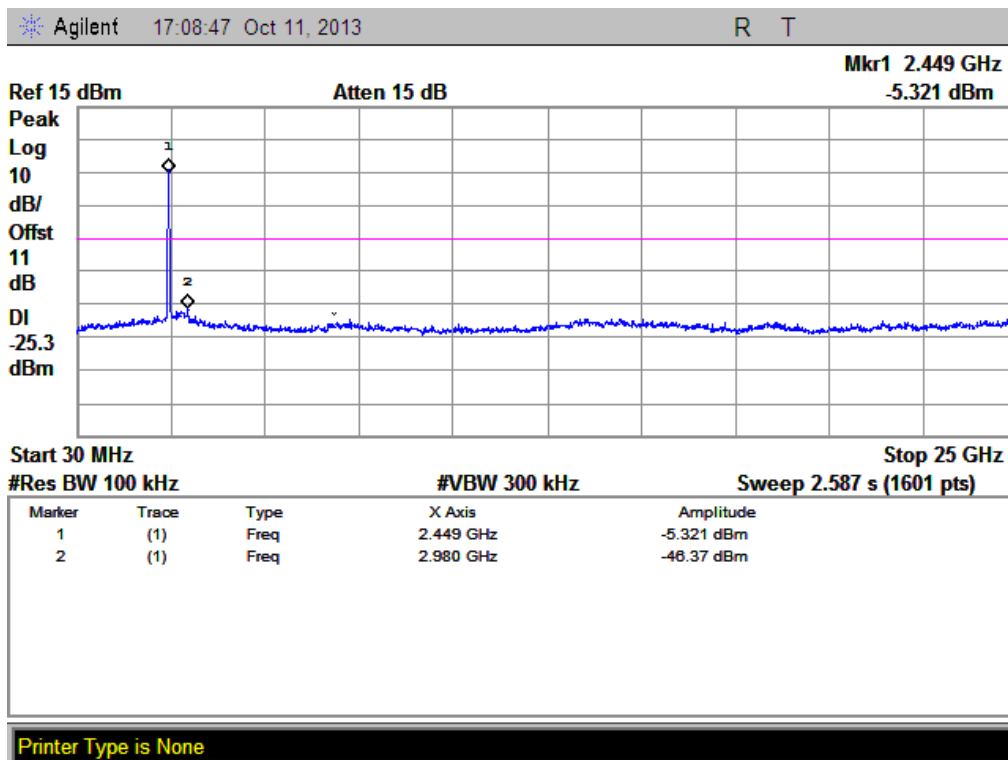
(Plot G.1: Channel = 1, 30MHz to 25GHz)



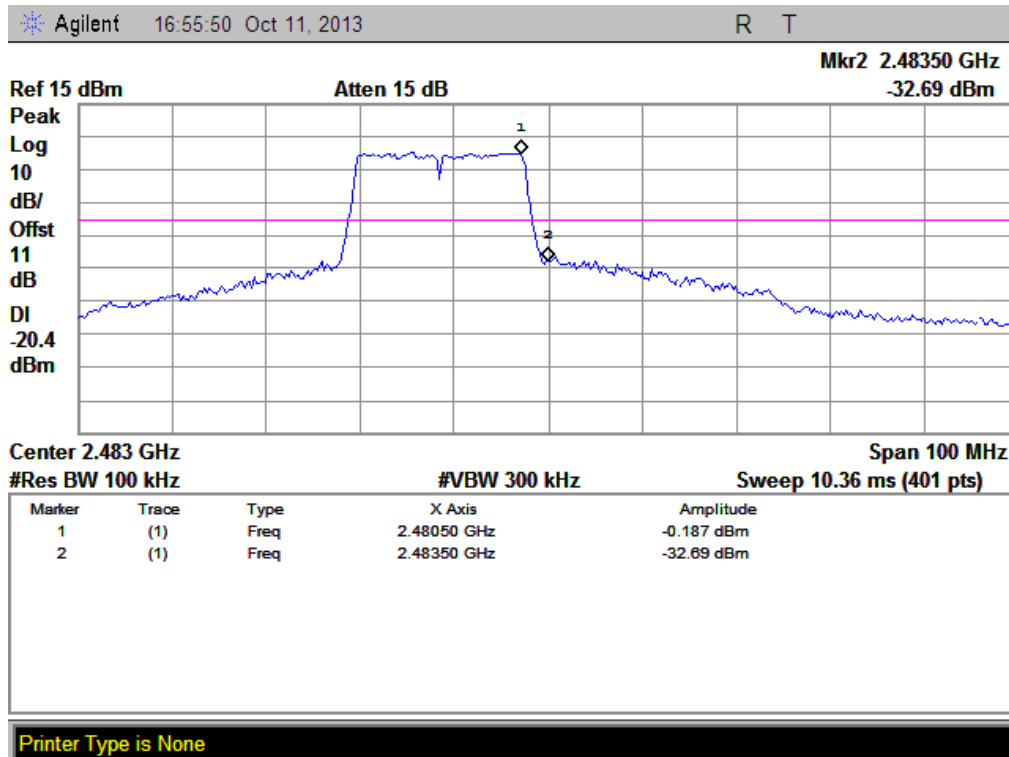
(Band Edge @ Channel = 1)



(Plot H.1: Channel = 6, 30MHz to 25GHz)



(Plot I.1: Channel = 11, 30MHz to 25GHz)



(Band Edge @ Channel = 11)

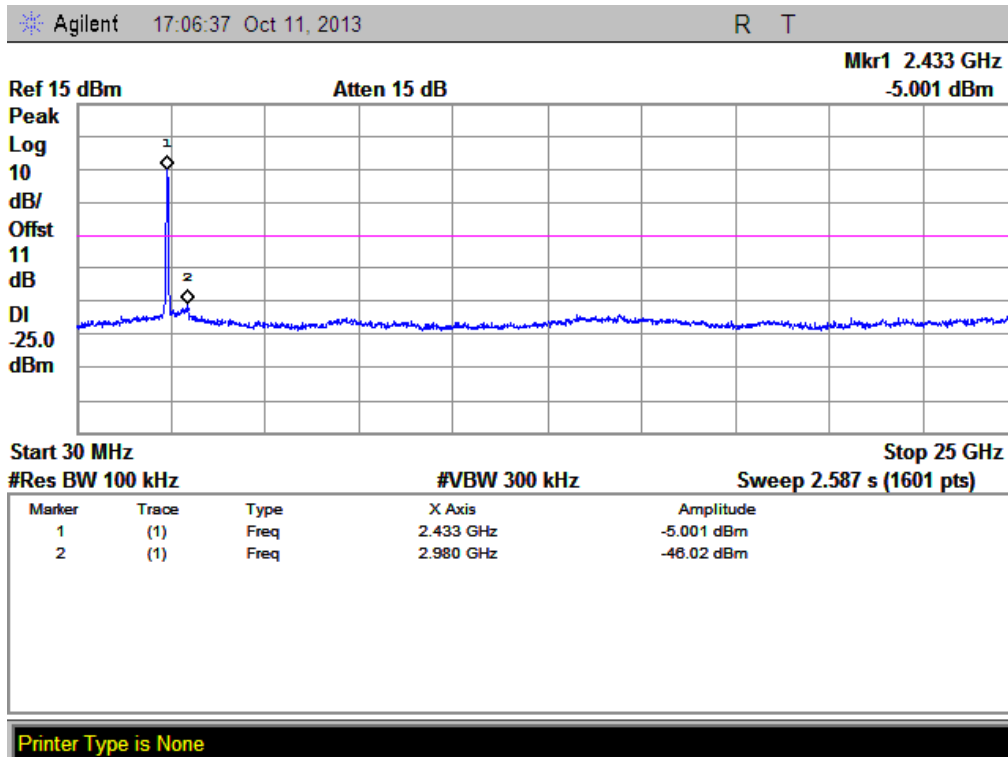
2.4.3.4. 802.11n -40MHz Test mode

A. Test Verdict:

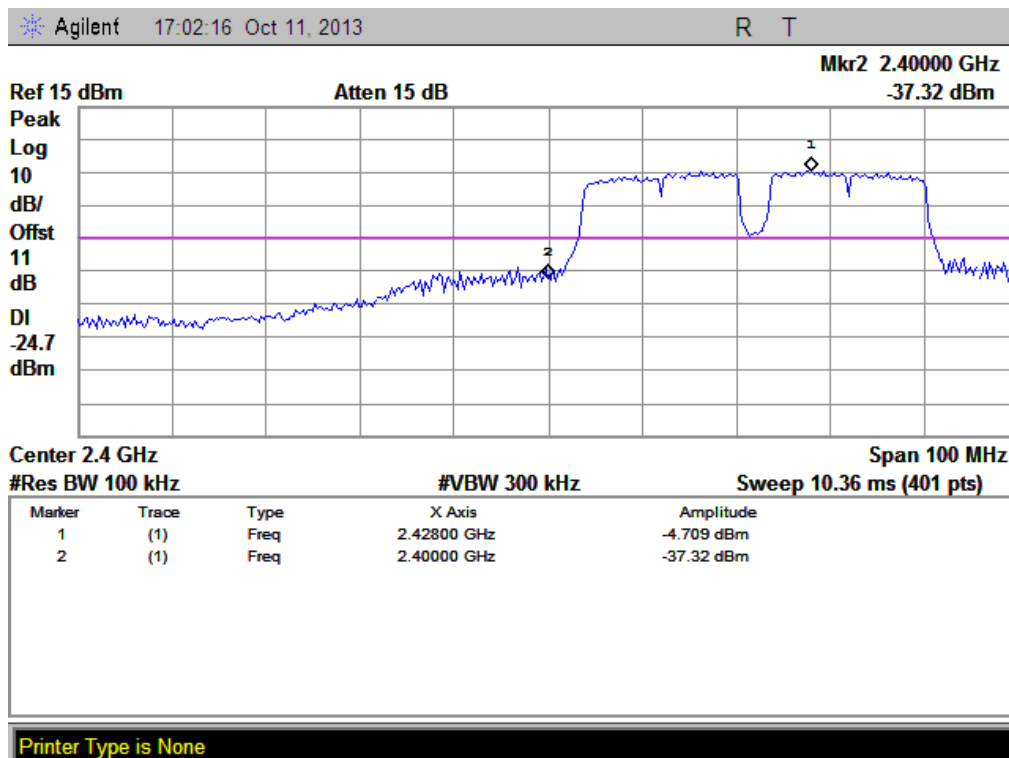
Channel	Frequency (MHz)	Measured Out of Band Emission (dBm)	Max. Band Refer to Plot	Limit (dBm)		Verdict
				Carrier Level	Calculated -20dBc Limit	
3	2422	-46.02	Plot G.1	-5.001	-25.0	PASS
6	2437	-46.76	Plot H.1	-3.986	-24.0	PASS
9	2452	-46.06	Plot I.1	-4.229	-24.2	PASS

B. Test Plots:

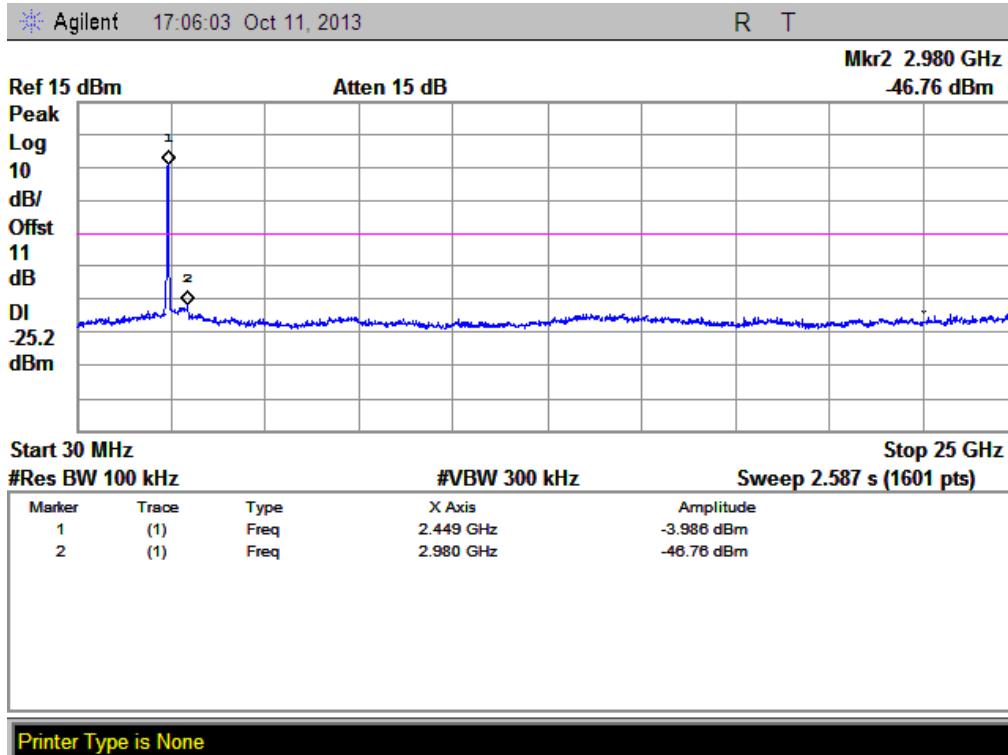
Note: the power of the Module transmitting frequency should be ignored.



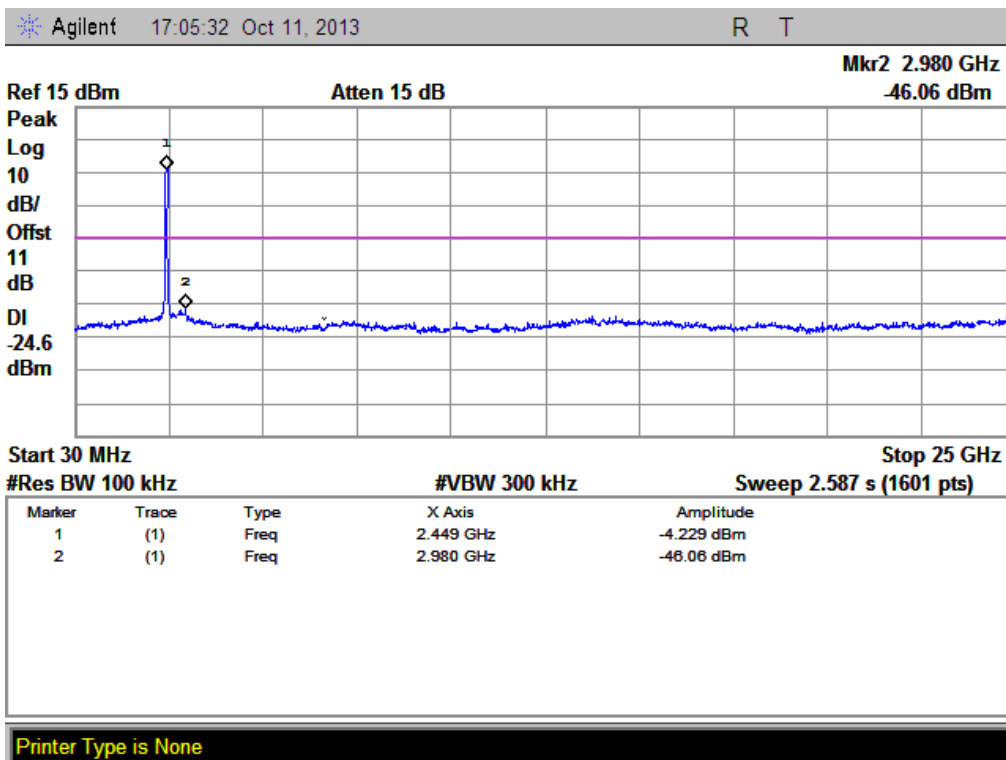
(Plot G.1: Channel = 3, 30MHz to 25GHz)



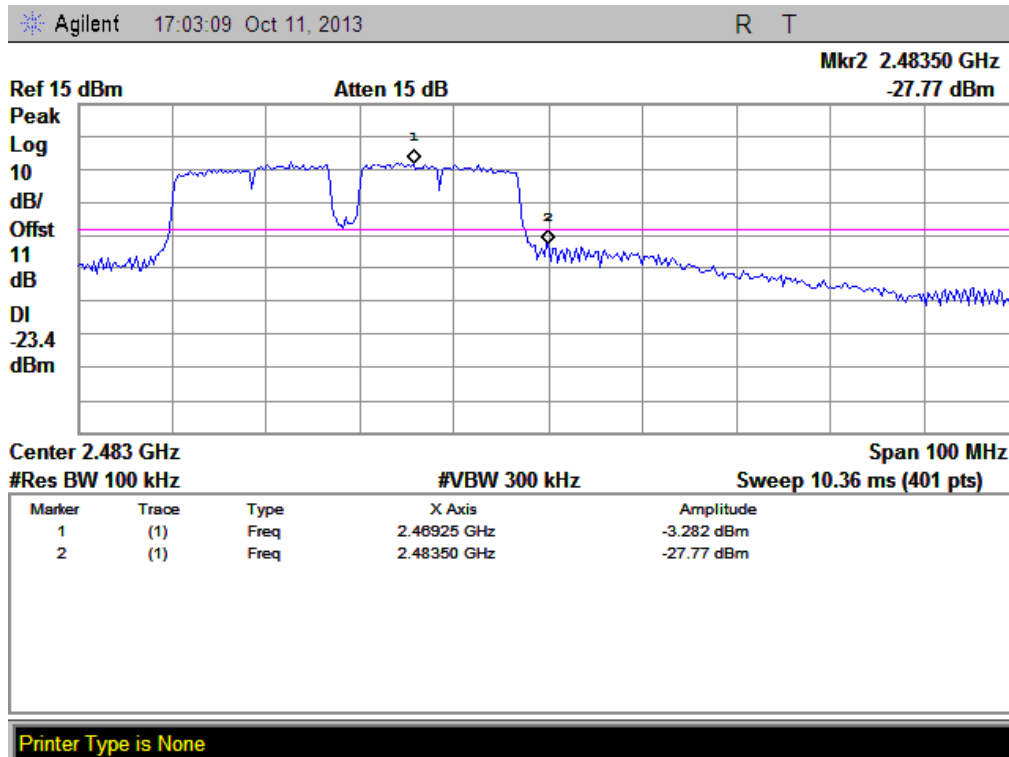
(Band Edge @ Channel = 3)



(Plot H.1: Channel = 6, 30MHz to 25GHz)



(Plot I.1: Channel = 9, 30MHz to 25GHz)



(Band Edge @ Channel = 9)

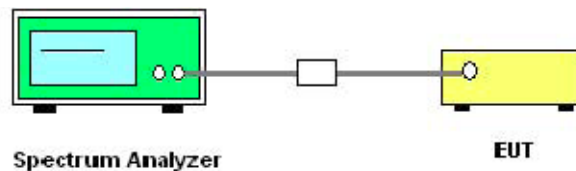
2.5. Power spectral density (PSD)

2.5.1. Requirement

According to FCC section 15.247(e), the same method of determining the conducted output power shall be used to determine the power spectral density. If a peak output power is measured, then a peak power spectral density measurement is required. If an average output power is measured, then an average power spectral density measurement should be used.

2.5.2. Test Description

A. Test Set:



The EUT which is powered by the Battery, 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.

B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Receiver	Agilent	E7405A	US44210471	2013.05.12	2014.05.11

2.5.3. Test Result

The lowest, middle and highest channels are tested to verify the band edge emissions.

2.5.3.1. 802.11b Test mode

A. Test Verdict:

Spectral power density (dBm/3kHz)					
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)	Refer to Plot	Limit (dBm/3kHz)	Verdict
1	2412	-13.24	Plot A	8	PASS
6	2437	-12.38	Plot B	8	PASS
11	2462	-11.68	Plot C	8	PASS
Measurement uncertainty: ± 1.3 dB					

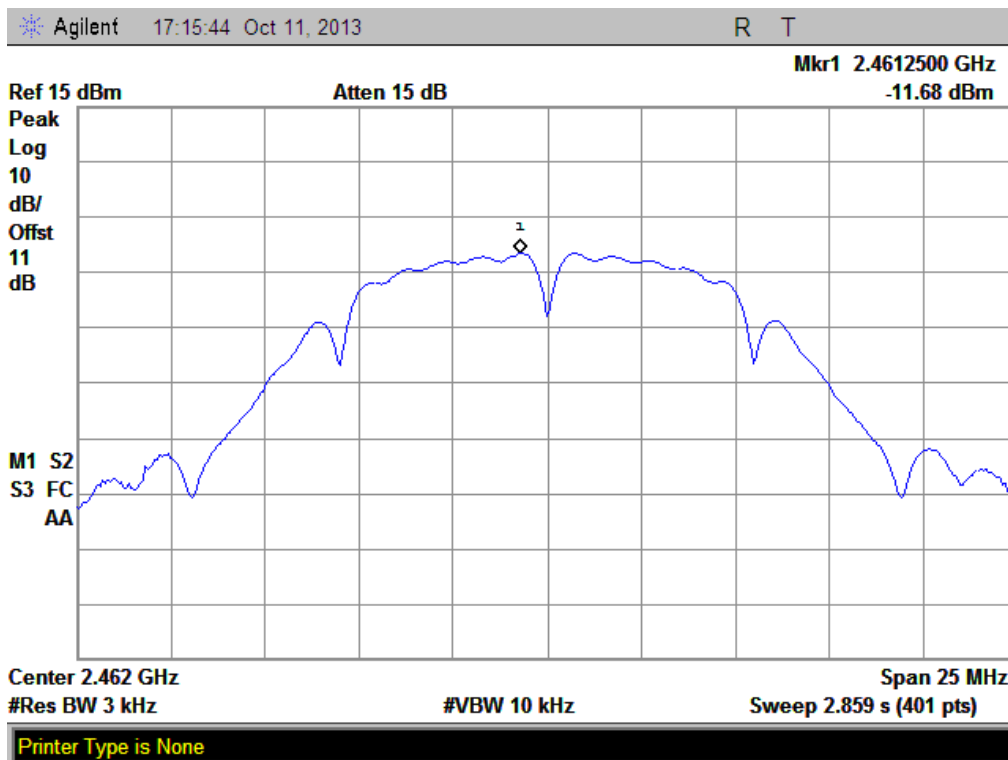
B. Test Plots:



(Plot A: Channel = 1 @ 802.11b)



(Plot B: Channel = 6 @ 802.11b)



(Plot C: Channel = 11 @ 802.11b)

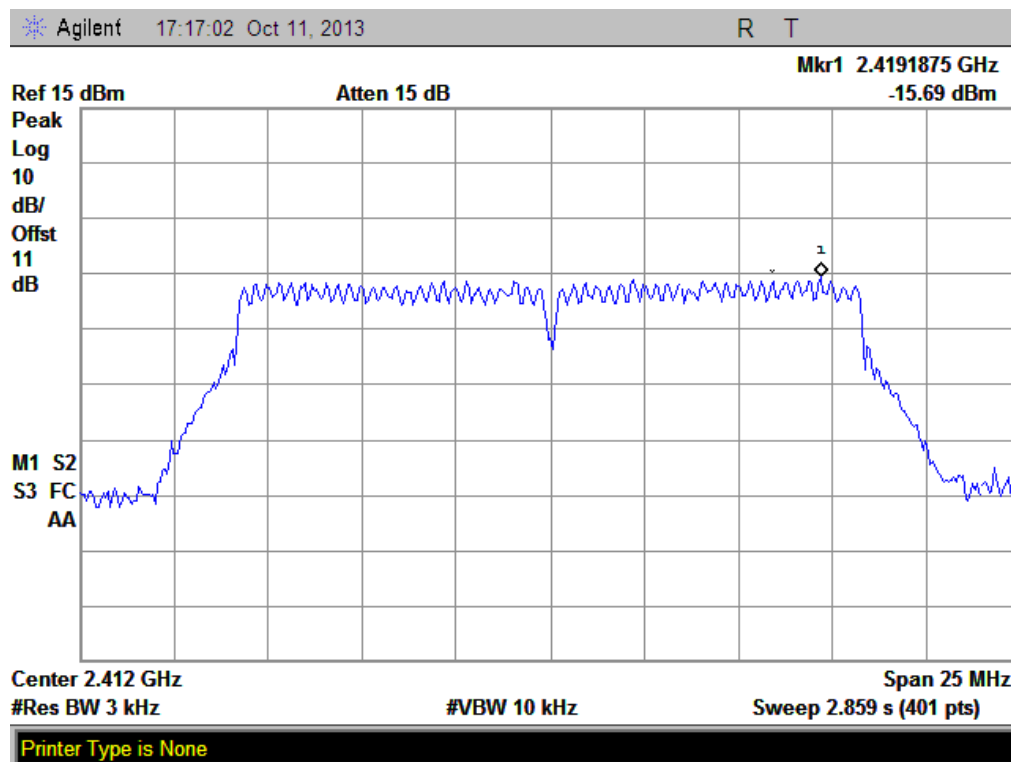
2.5.3.2. 802.11g Test mode

A. Test Verdict:

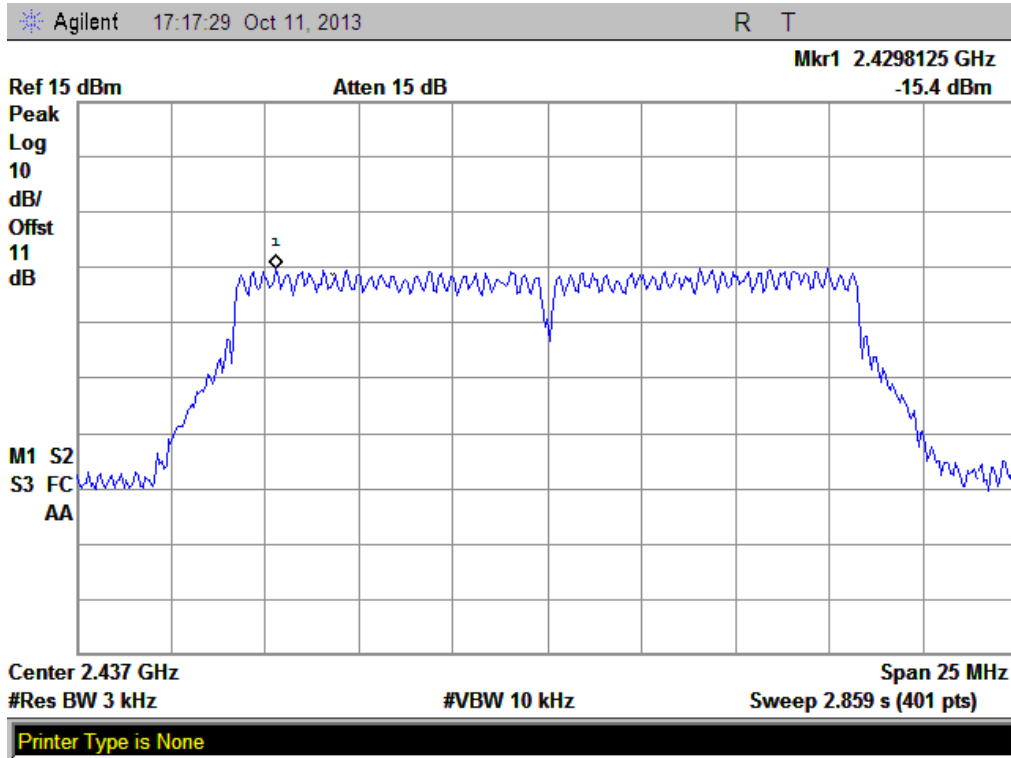
Spectral power density (dBm/3kHz)					
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)	Refer to Plot	Limit (dBm/3kHz)	Verdict
1	2412	-15.69	Plot A	8	PASS
6	2437	-15.40	Plot B	8	PASS
11	2462	-14.32	Plot C	8	PASS

Measurement uncertainty: ± 1.3 dB

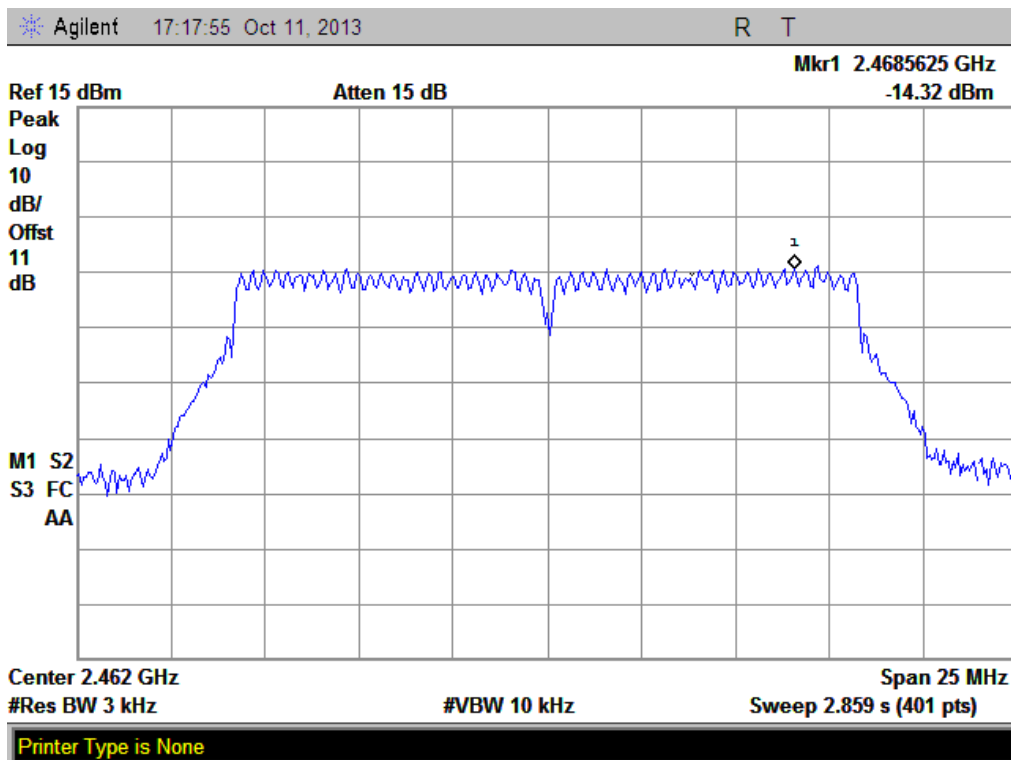
B. Test Plots:



(Plot D: Channel = 1 @ 802.11g)



(Plot E: Channel = 6 @ 802.11g)



(Plot F: Channel = 11 @ 802.11g)

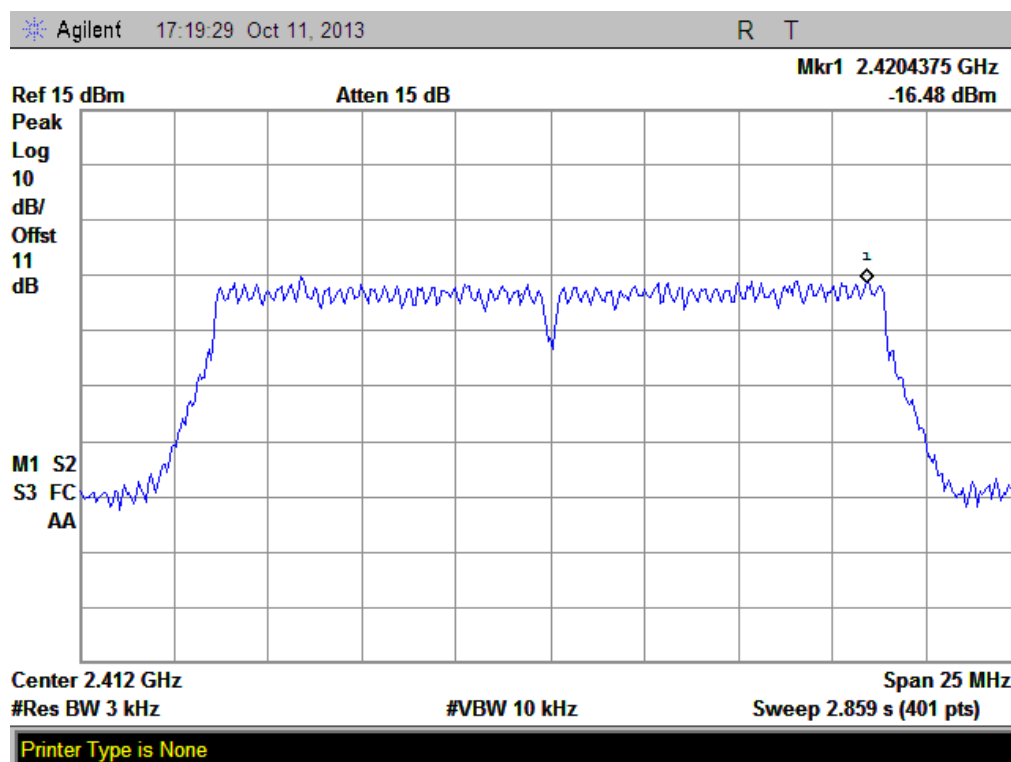
2.5.3.3. 802.11n-20MHz Test mode

A. Test Verdict:

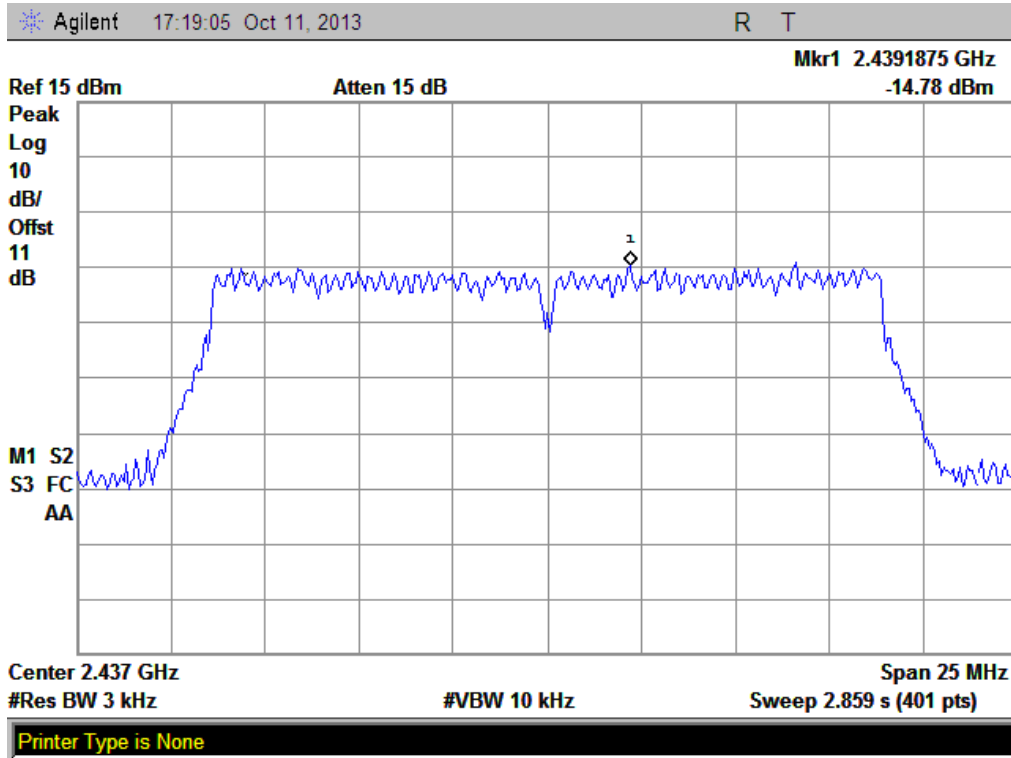
Spectral power density (dBm/3kHz)					
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)	Refer to Plot	Limit (dBm/3kHz)	Verdict
1	2412	-16.48	Plot A	8	PASS
6	2437	-14.78	Plot B	8	PASS
11	2462	-13.69	Plot C	8	PASS

Measurement uncertainty: ± 1.3 dB

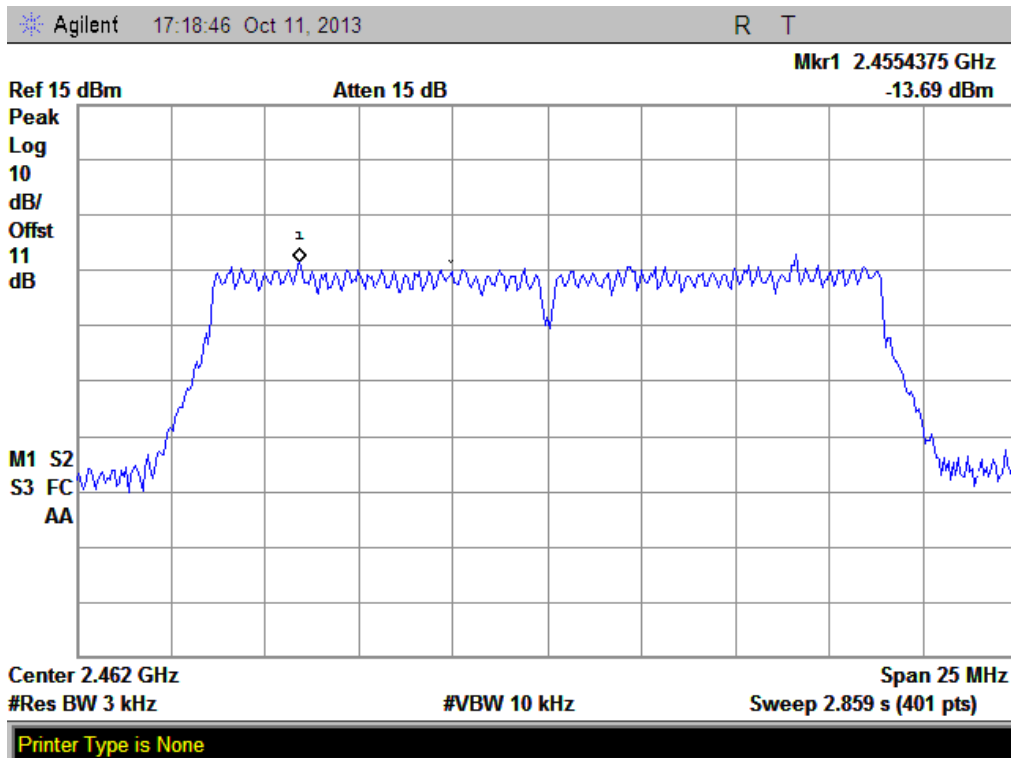
Test Plots:



(Plot G: Channel = 1 @ 802.11n-20MHz)



(Plot H: Channel = 6 @ 802.11n-20MHz)



(Plot I: Channel = 11 @ 802.11n-20MHz)

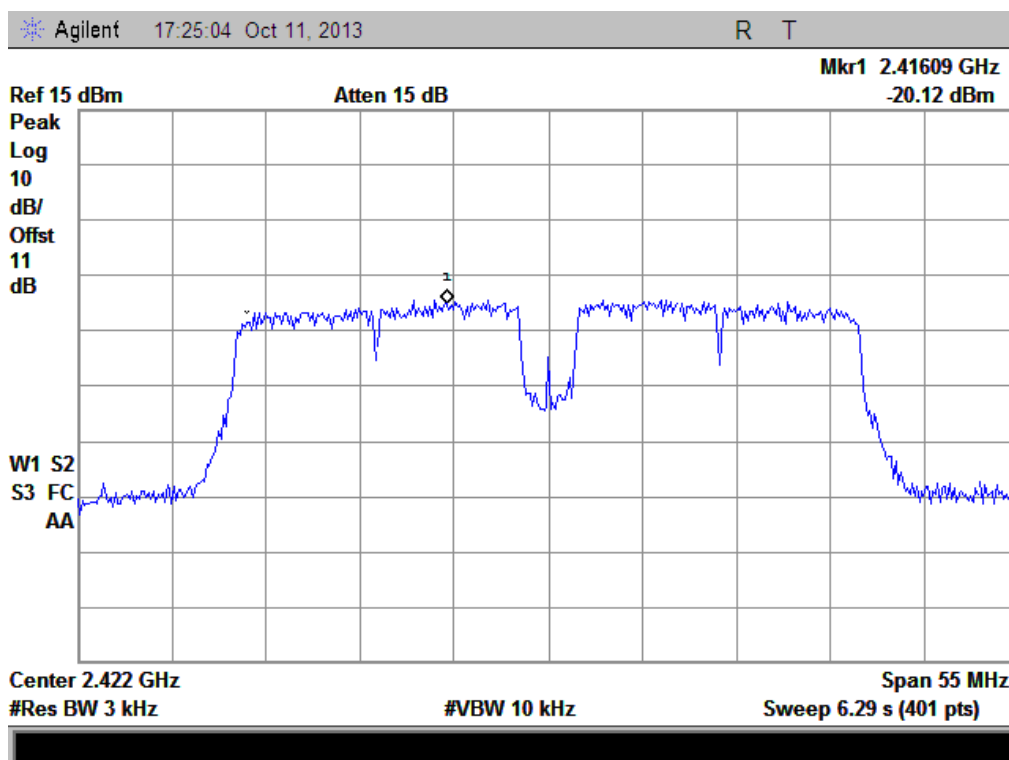
2.5.3.4. 802.11n-40MHz Test mode

A. Test Verdict:

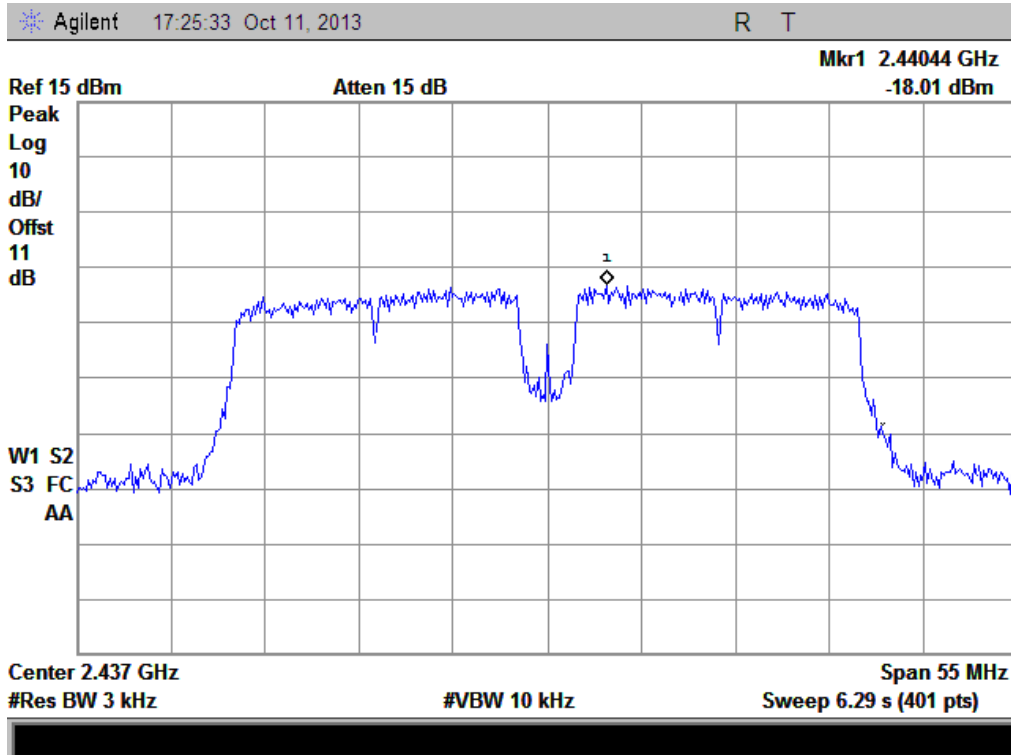
Spectral power density (dBm/3kHz)					
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)	Refer to Plot	Limit (dBm/3kHz)	Verdict
3	2412	-20.12	Plot A	8	PASS
6	2437	-18.01	Plot B	8	PASS
9	2462	-18.63	Plot C	8	PASS

Measurement uncertainty: ± 1.3 dB

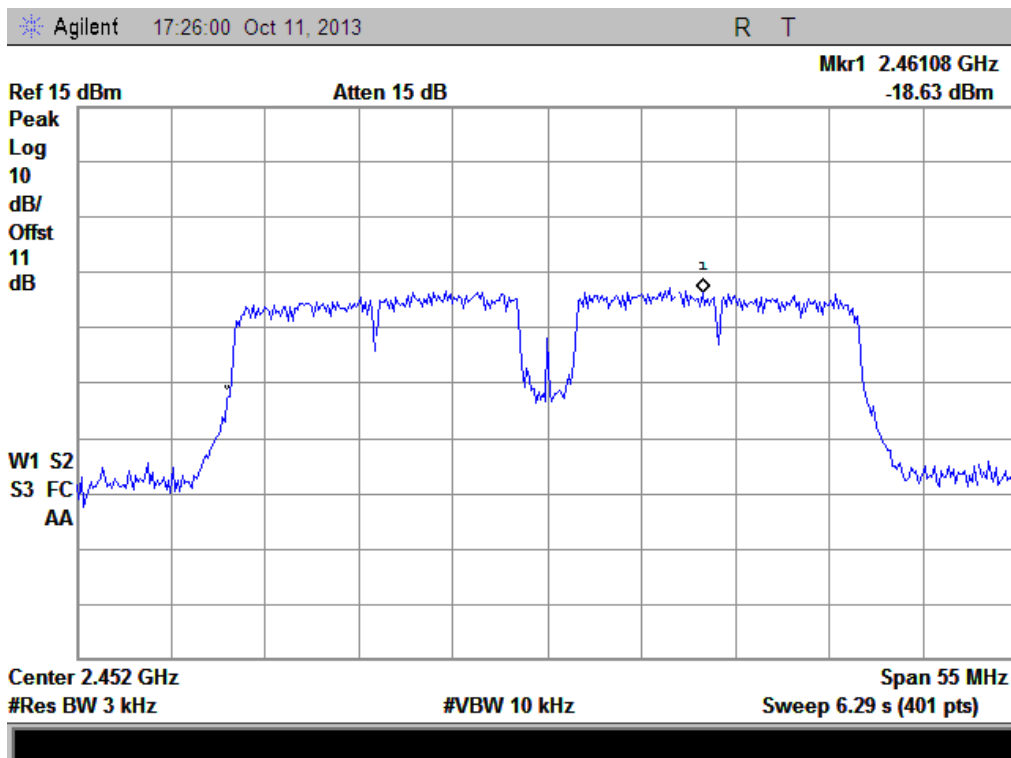
B. Test Plots:



(Plot G: Channel = 3 @ 802.11n-40MHz)



(Plot H: Channel = 6 @ 802.11n-40MHz)



(Plot I: Channel = 9 @ 802.11n-40MHz)

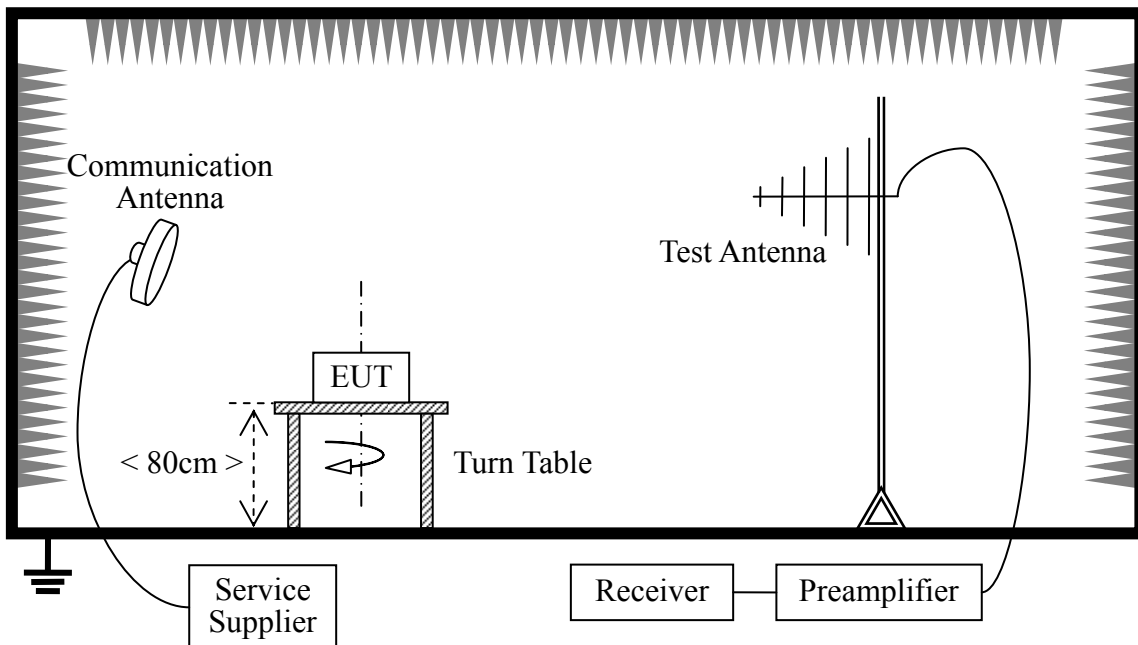
2.6. Restricted Frequency Bands

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 Module 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.

B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Receiver	Agilent	E7405A	US44210471	2013.05.12	2014.05.11
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2012.05.12	2014.05.11
Test Antenna	Schwarzbeck	BBHA 9120C	9120C-384	2013.05.12	2014.05.11

2.6.3. Test Result

The lowest and highest channels are tested to verify Restricted Frequency Bands.

The measurement results are obtained as below:

$$E \text{ [dB}\mu\text{V/m]} = U_R + A_T + A_{\text{Factor}} \text{ [dB]}; A_T = L_{\text{Cable loss}} \text{ [dB]} - G_{\text{preamp}} \text{ [dB]}$$

A_T : Total correction Factor except Antenna

U_R : Receiver Reading

G_{preamp} : Preamplifier Gain

A_{Factor} : Antenna Factor at 3m

Note: Restricted Frequency Bands were performed when antenna was at vertical and horizontal polarity, and only the worse test condition (vertical) was recorded in this test report.

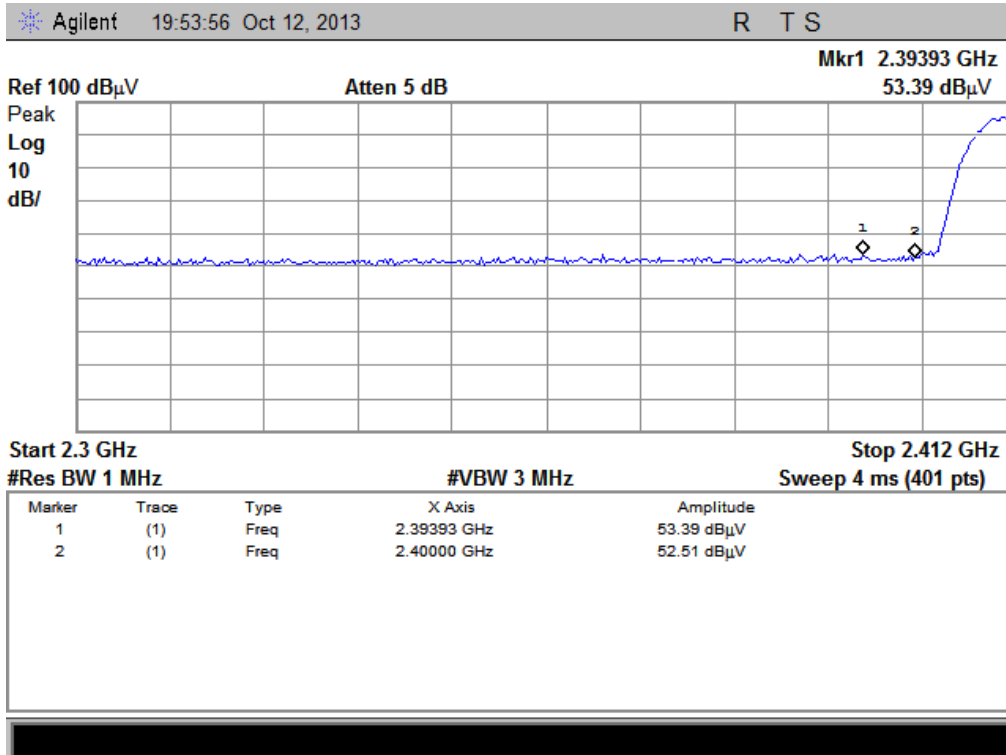
2.6.3.1. 802.11b Test mode

The lowest and highest channels are tested to verify the band edge emissions.

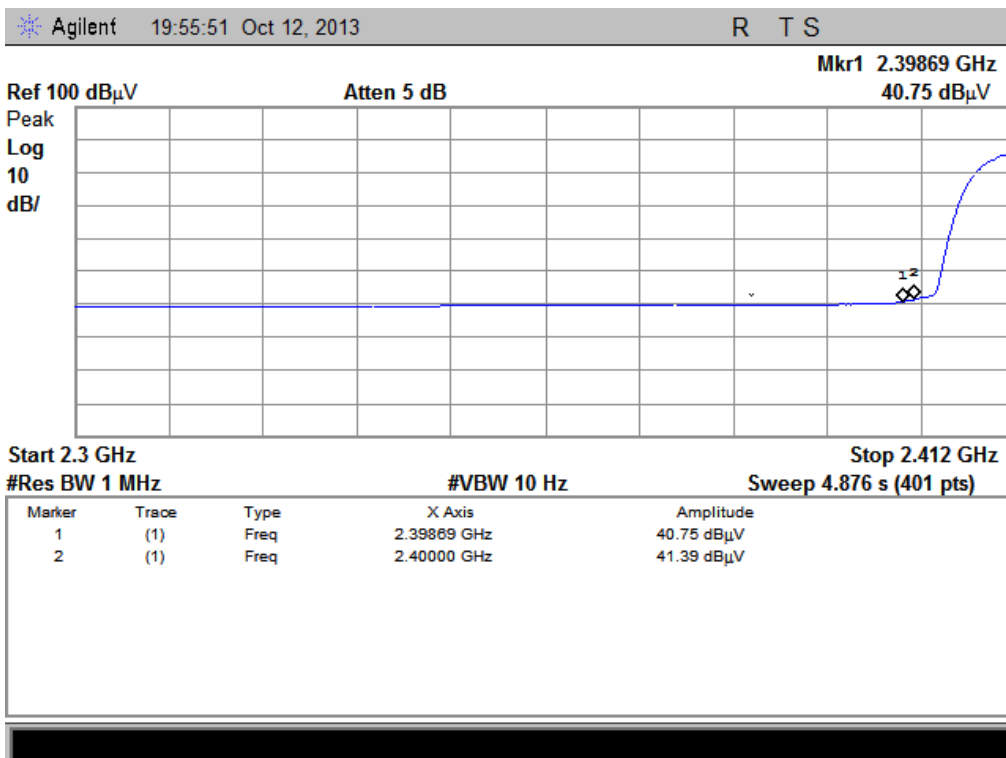
A. Test Verdict:

Channel	Frequency (MHz)	Detector	Receiver Reading UR (dBuV)	AT (dB)	AFactor (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
		PK/ AV						
1	2393.93	PK	53.39	-30.93	32.56	55.02	74	Pass
1	2398.69	AV	40.75	-30.93	32.56	42.38	54	Pass
11	2485.18	PK	48.88	-29.05	32.50	52.33	74	Pass
11	2486.89	AV	36.42	-29.05	32.50	39.87	54	Pass

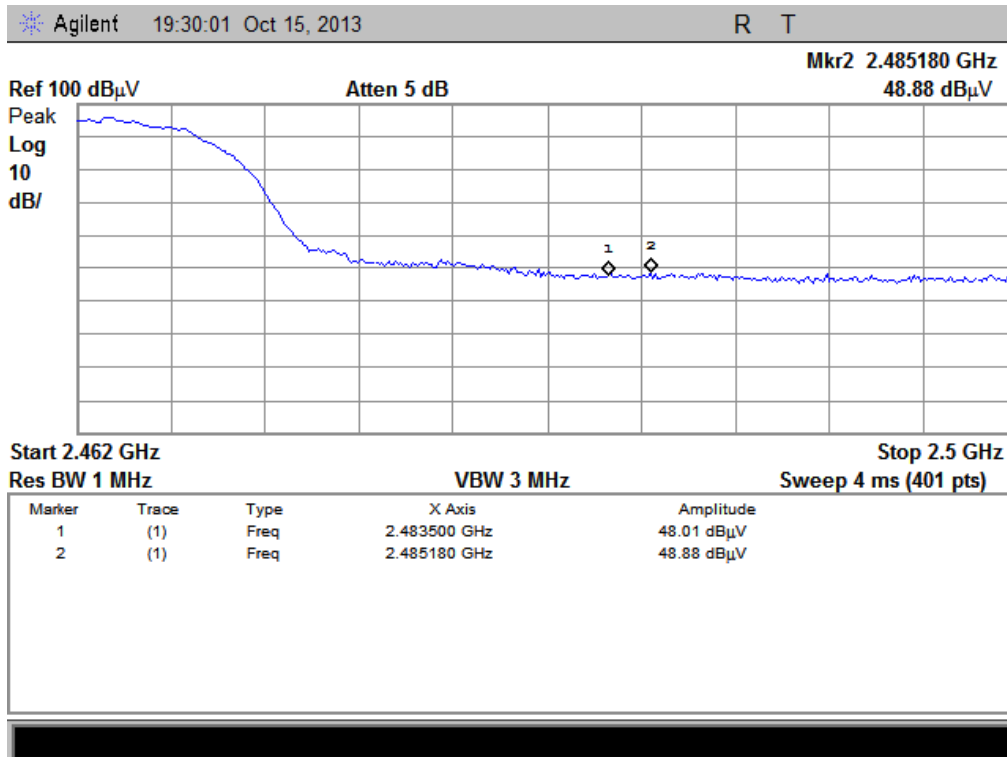
B. Test Plots:



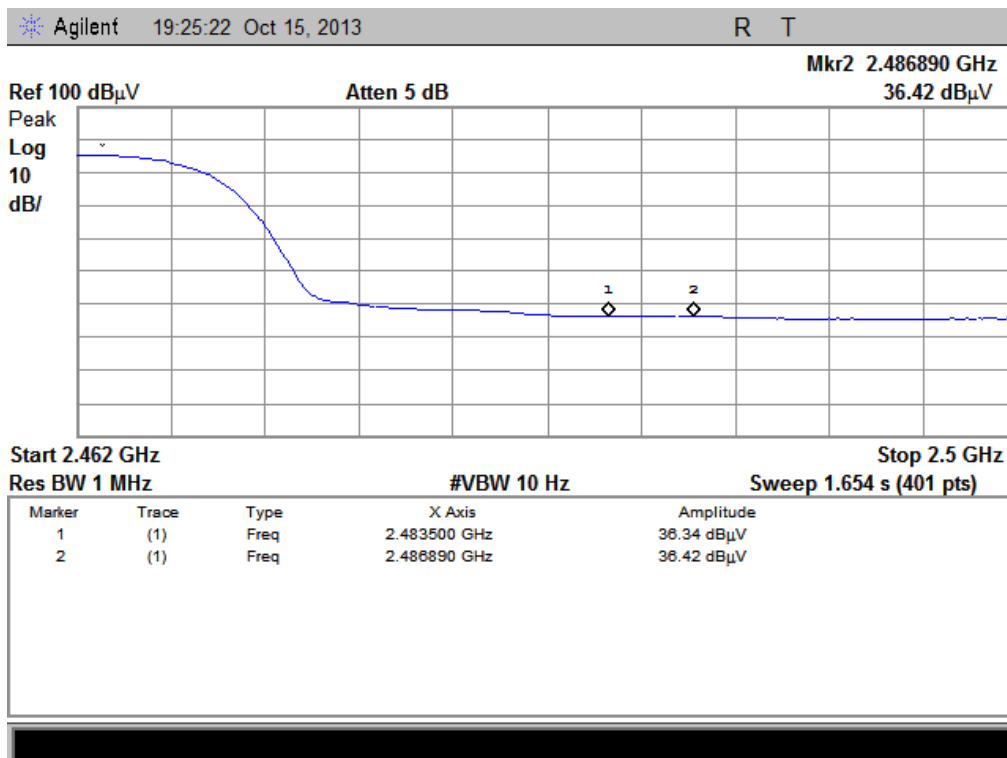
(Plot A1: Channel = 1 PEAK @ 802.11b)



(Plot A2: Channel = 1 AVG @ 802.11b)



(Plot B1: Channel = 11 PEAK @ 802.11b)



(Plot B2: Channel = 11 AVG @ 802.11b)

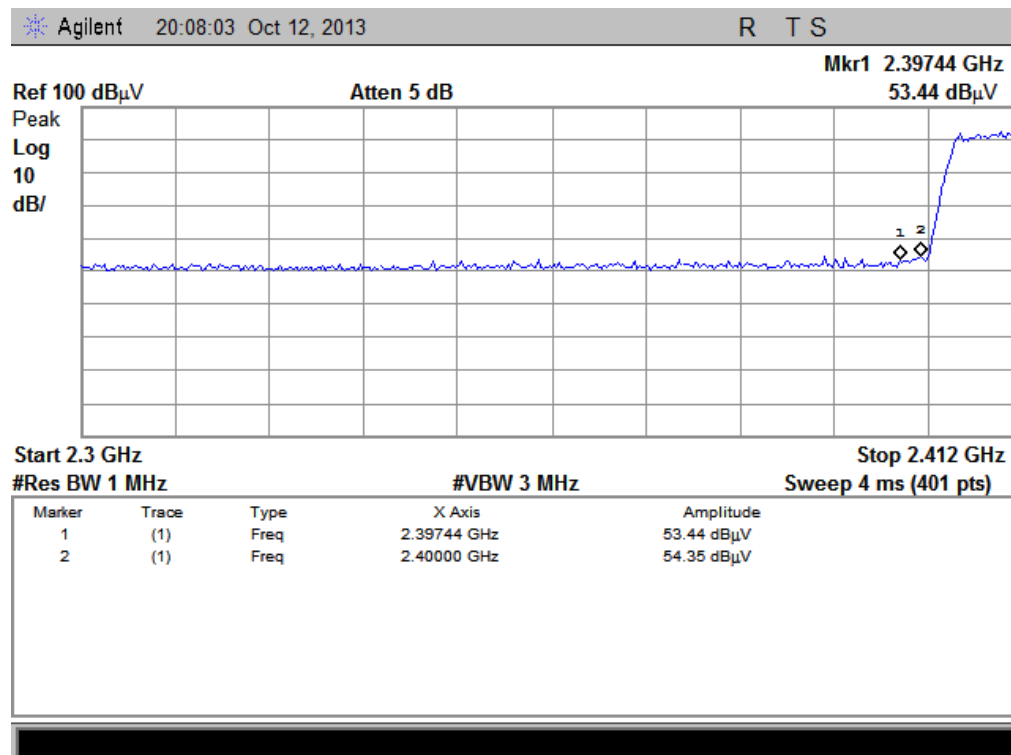
2.6.3.2. 802.11g Test mode

The lowest and highest channels are tested to verify the band edge emissions.

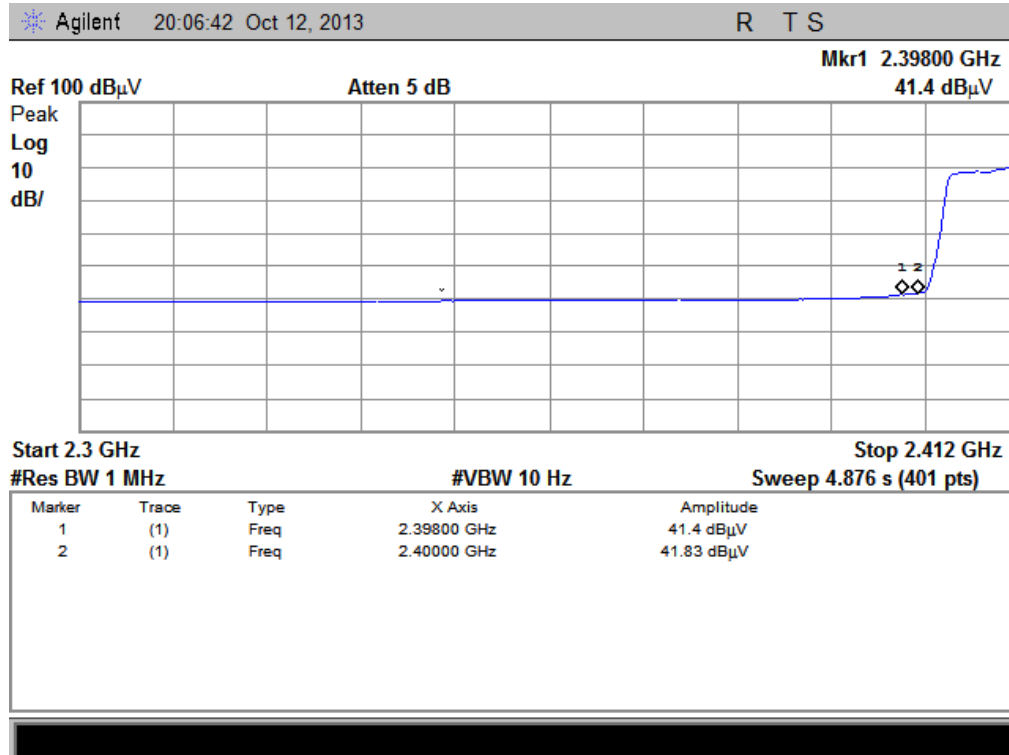
A. Test Verdict:

Channel	Frequency (MHz)	Detector	Receiver Reading UR (dBuV)	AT (dB)	AFactor (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
		PK/ AV						
1	2397.44	PK	53.44	-30.93	32.56	55.07	74	Pass
1	2398.00	AV	41.40	-30.93	32.56	43.03	54	Pass
11	2483.95	PK	52.31	-29.05	32.50	55.76	74	Pass
11	2483.50	AV	38.17	-29.05	32.50	41.62	54	Pass

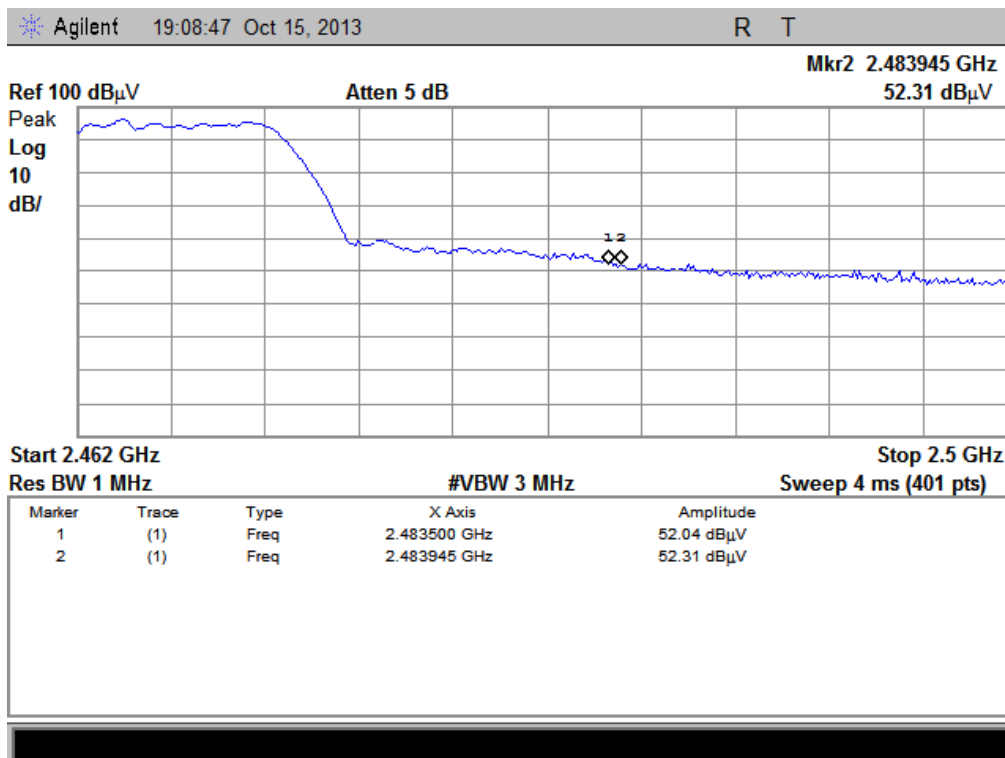
B. Test Plots:



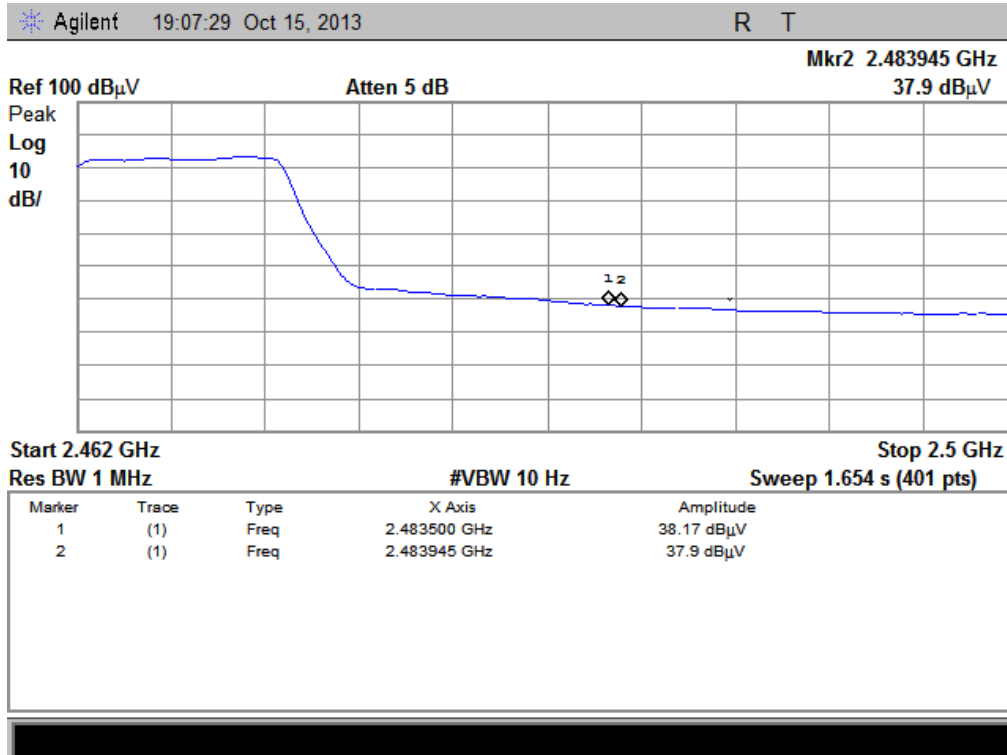
(Plot C1: Channel = 1 PEAK @ 802.11g)



(Plot C2: Channel = 1 AVG @ 802.11g)



(Plot D1: Channel = 11 PEAK @ 802.11g)



(Plot D2: Channel = 11 AVG @ 802.11g)

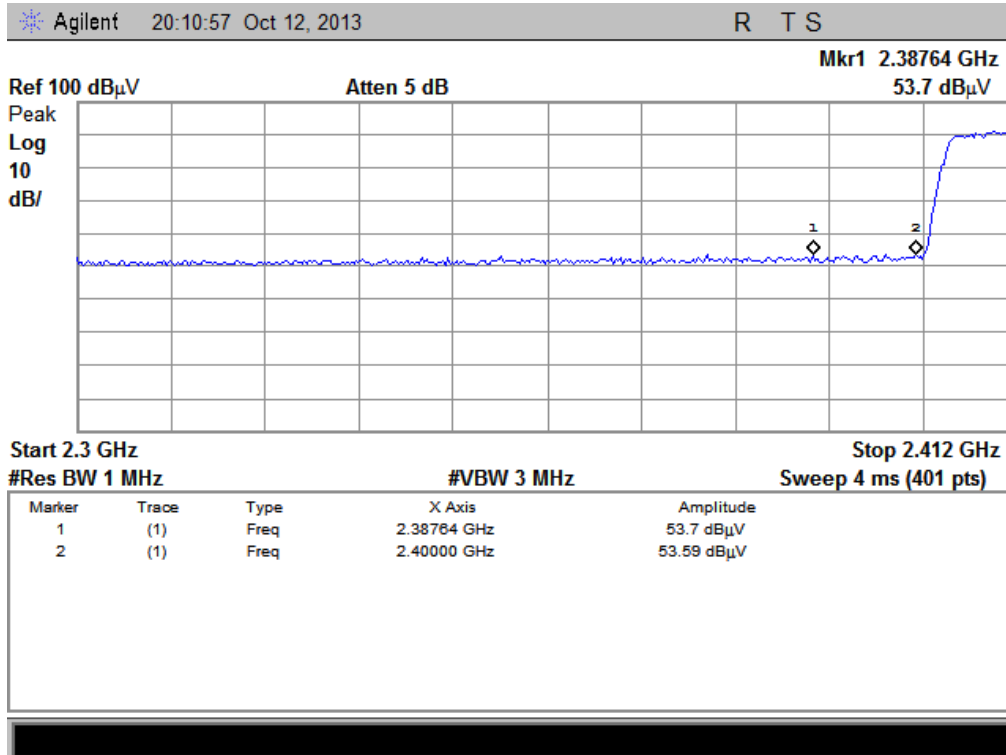
2.6.3.3. 802.11n-20MHz Test mode

The lowest and highest channels are tested to verify the band edge emissions.

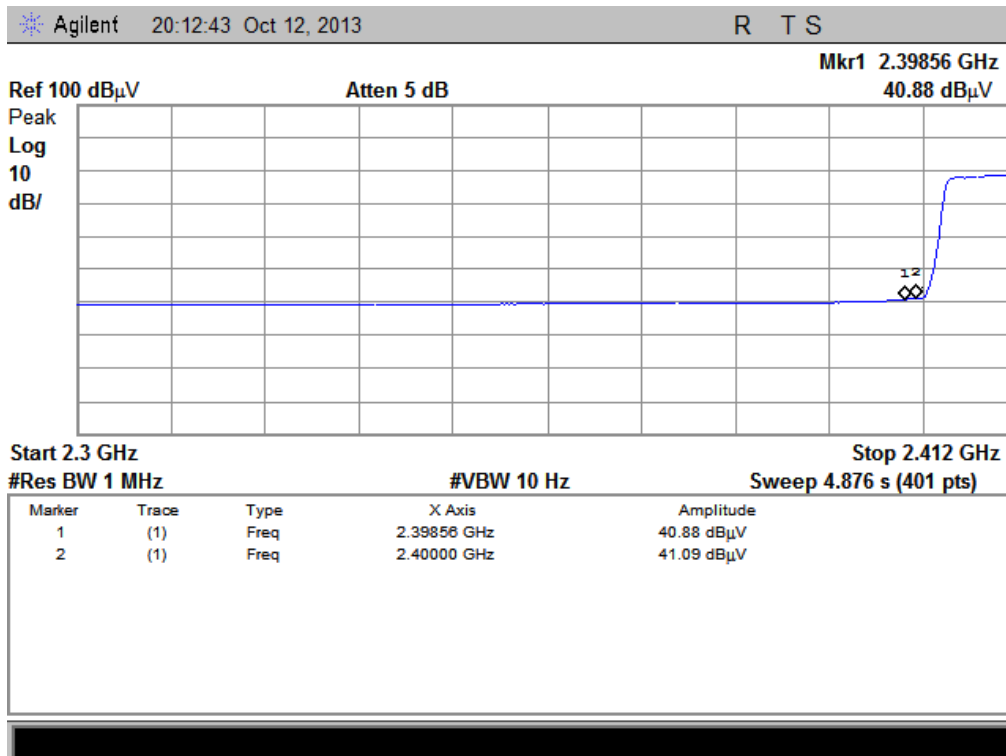
A. Test Verdict:

Channel	Frequency (MHz)	Detector	Receiver Reading UR (dB μ V)	AT (dB)	AFactor (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
		PK/ AV						
1	2387.64	PK	53.70	-30.93	32.56	55.33	74	Pass
1	2398.56	AV	40.88	-30.93	32.56	42.51	54	Pass
11	2483.50	PK	54.66	-29.05	32.50	58.11	74	Pass
11	2483.50	AV	38.09	-29.05	32.50	51.54	54	Pass

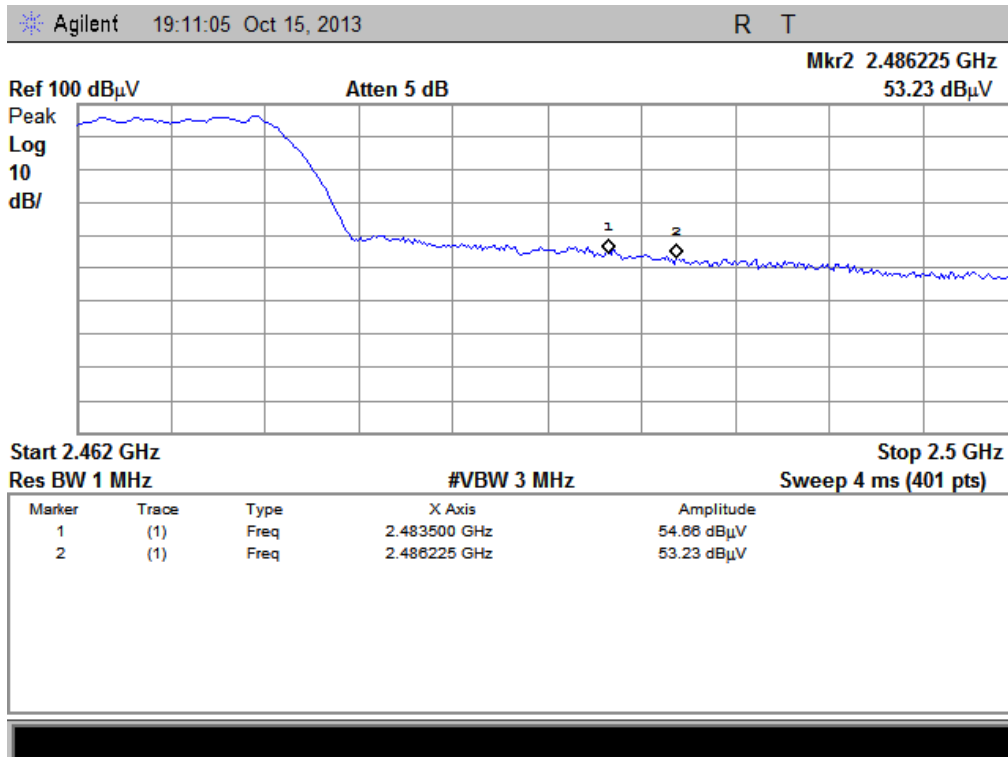
B. Test Plots:



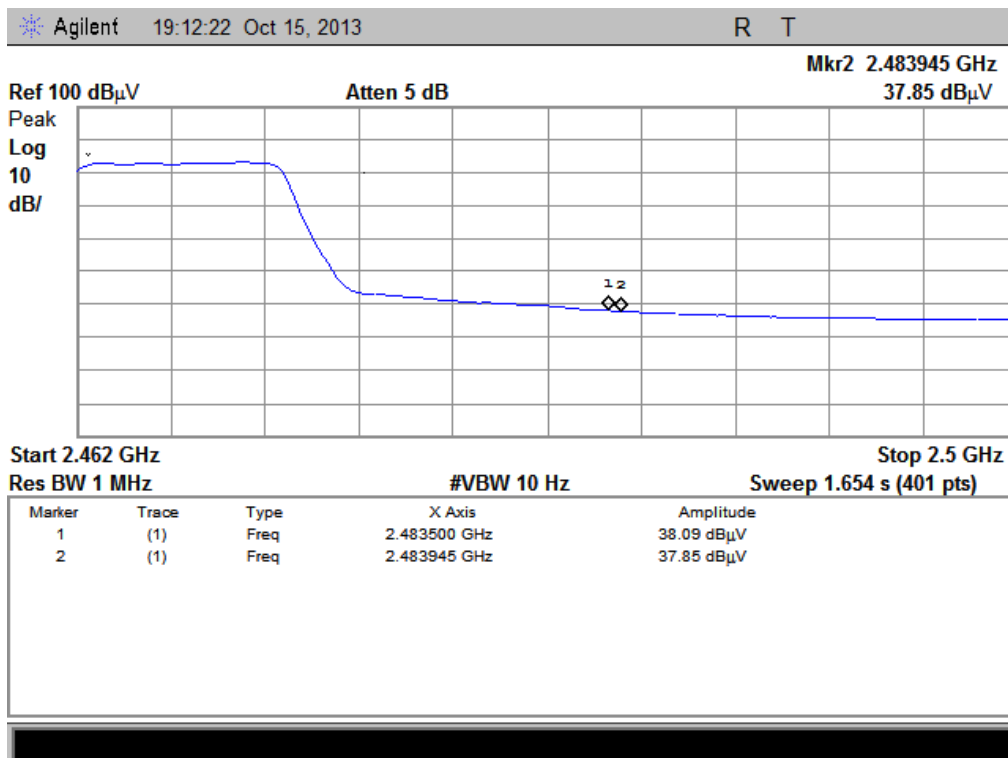
(Plot E1: Channel = 1 PEAK @ 802.11n-20)



(Plot E2: Channel = 1 AVG @ 802.11n-20)



(Plot F1: Channel = 11 PEAK @ 802.11n-20)



(Plot F2: Channel = 11 AVG @ 802.11n-20)

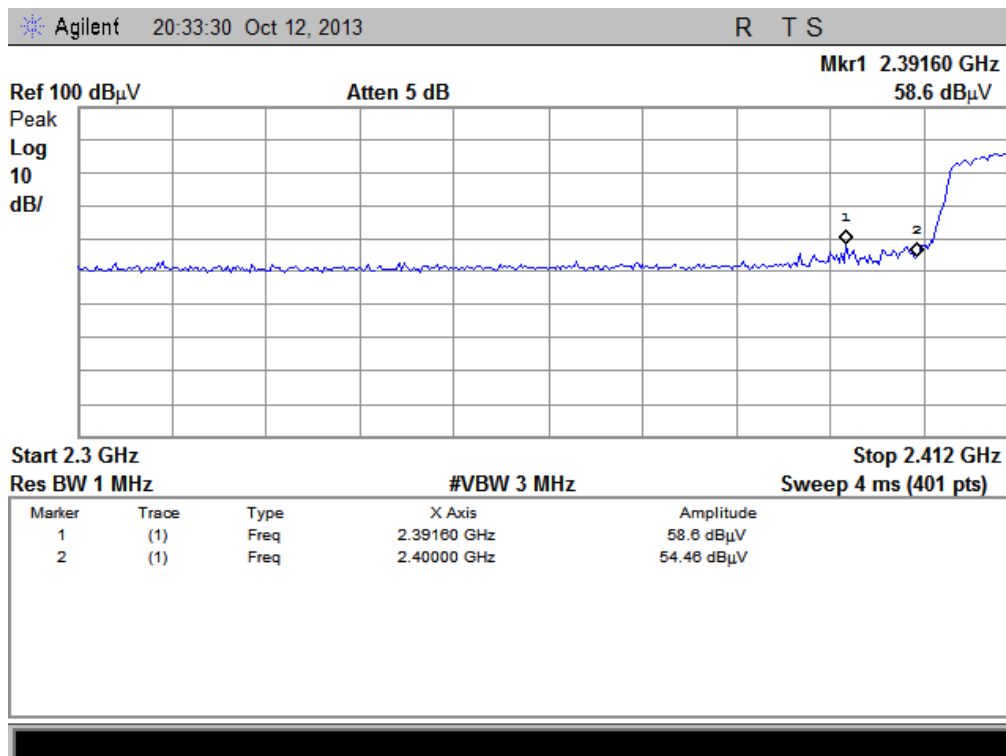
2.6.3.4. 802.11n-40MHz Test mode

The lowest and highest channels are tested to verify the band edge emissions.

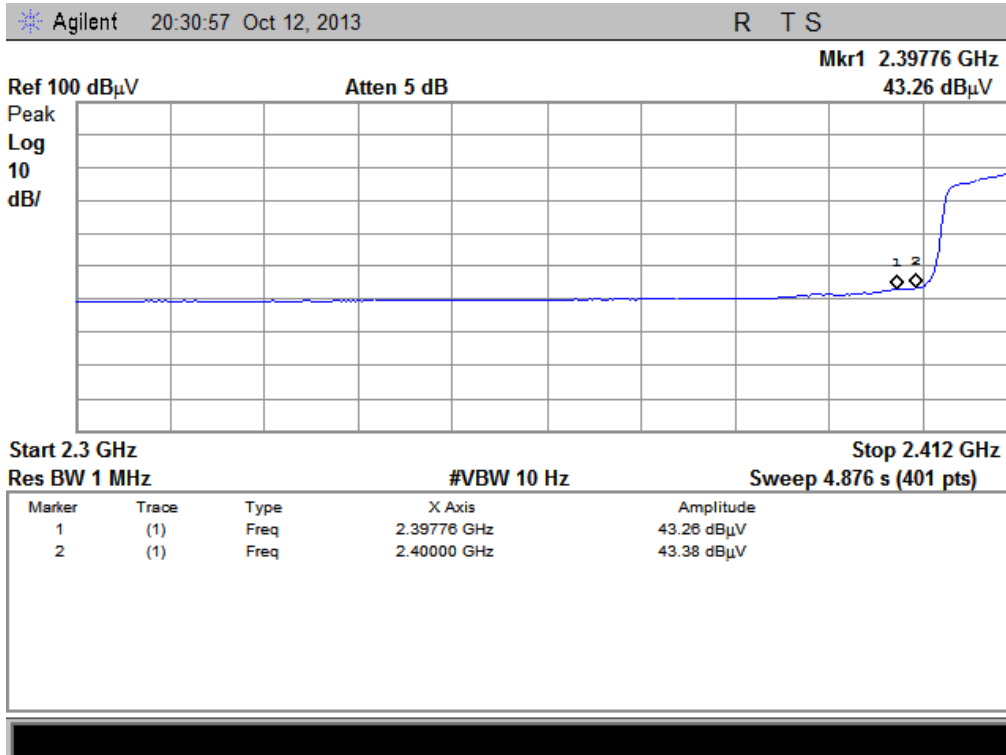
A. Test Verdict:

Channel	Frequency (MHz)	Detector	Receiver Reading UR (dBuV)	AT (dB)	AFactor (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
		PK/ AV						
3	2391.60	PK	58.60	-30.93	32.56	60.23	74	Pass
3	2397.76	AV	43.26	-30.93	32.56	44.89	54	Pass
9	2486.51	PK	67.49	-29.05	32.50	70.94	74	Pass
9	2493.92	AV	45.39	-29.05	32.50	48.84	54	Pass

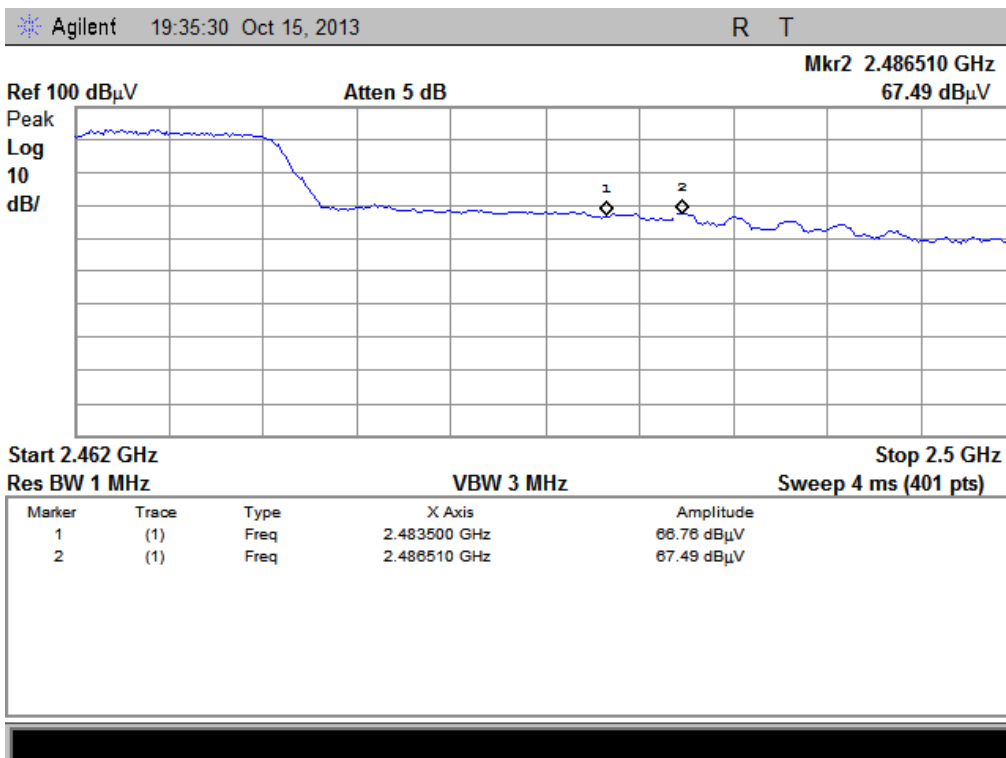
B. Test Plots:



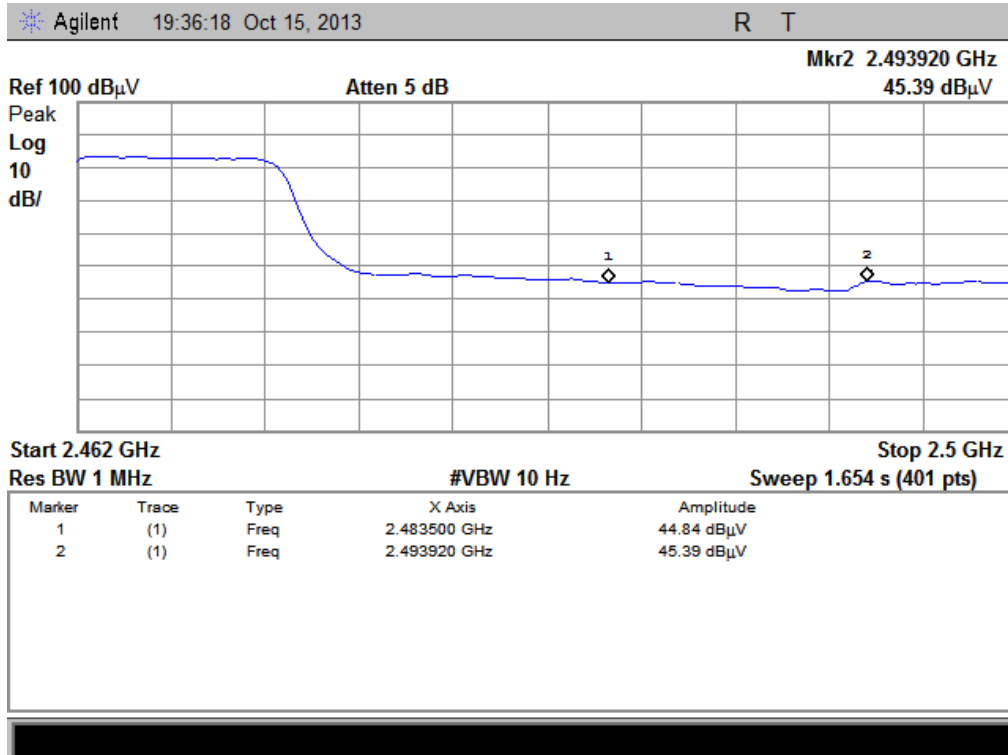
(Plot E1: Channel = 3 PEAK @ 802.11n-40)



(Plot E2: Channel = 3 AVG @ 802.11n-40)



(Plot F1: Channel = 9 PEAK @ 802.11n-40)



(Plot F2: Channel = 9 AVG @ 802.11n-40)

2.7. Conducted Emission

2.7.1. Requirement

According to FCC section 15.207, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150kHz to 30MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 Ω line impedance stabilization network (LISN).

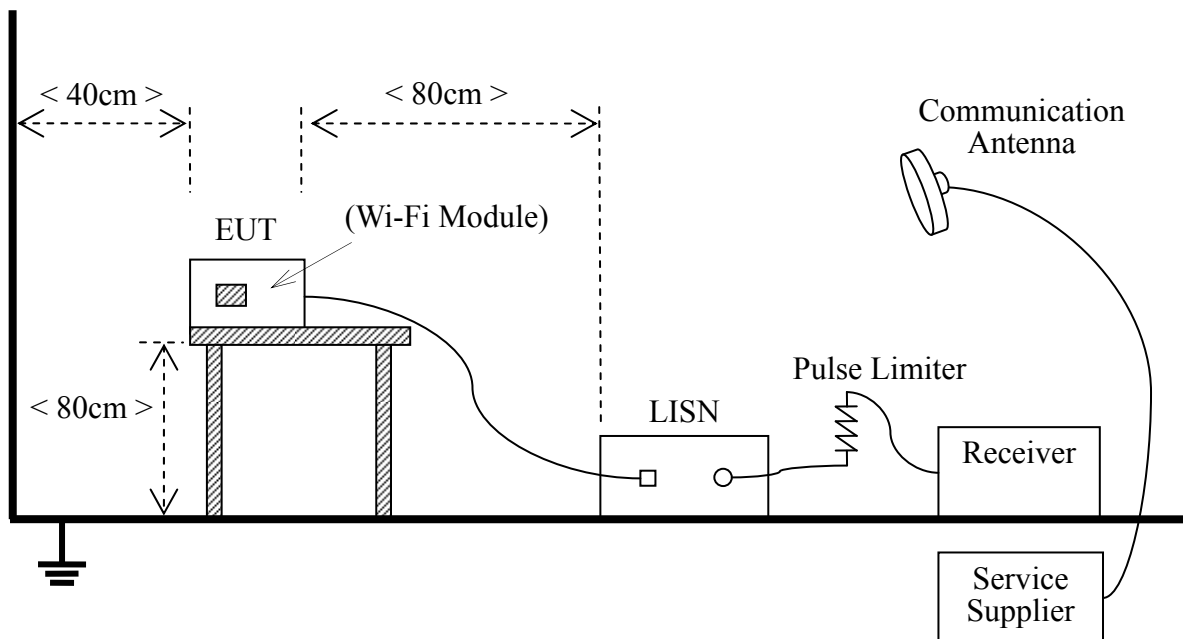
Frequency range (MHz)	Conducted Limit (dB μ V)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

NOTE:

- The lower limit shall apply at the band edges.
- The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50MHz.

2.7.2. Test Description

A. Test Setup:



The Table-top EUT was placed upon a non-metallic table 0.8m above the horizontal metal reference ground plane. EUT was connected to LISN and LISN was connected to reference Ground Plane. EUT was 80cm from LISN. The set-up and test methods were according to ANSI C63.4:2009

The EUT is powered by the Battery charged with the AC Adapter which is powered by 120V, 60Hz AC mains supply. The factors of the site are calibrated to correct the reading. During the measurement, the EUT is activated and controlled by the Wi-Fi Service Supplier (SS) via a Common Antenna.

B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Receiver	Agilent	E7405A	US44210471	2013.05.12	2014.05.11
LISN	Schwarzbeck	NSLK 8127	812744	2013.05.12	2014.05.11
Service Supplier	R&S	CMU200	100448	2013.05.12	2014.05.11
Pulse Limiter (20dB)	Schwarzbeck	VTSD 9561-D	9391	(n.a.)	(n.a.)

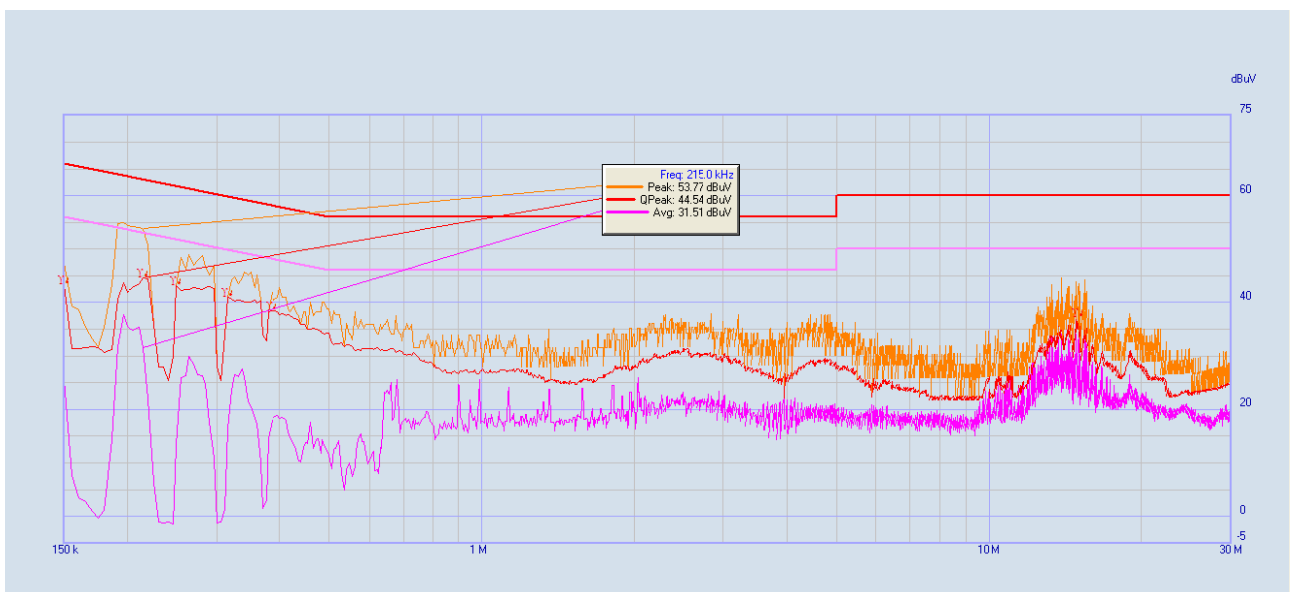
2.7.3. Test Result

The maximum conducted interference is searched using Peak (PK), if the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. Refer to recorded points and plots below.

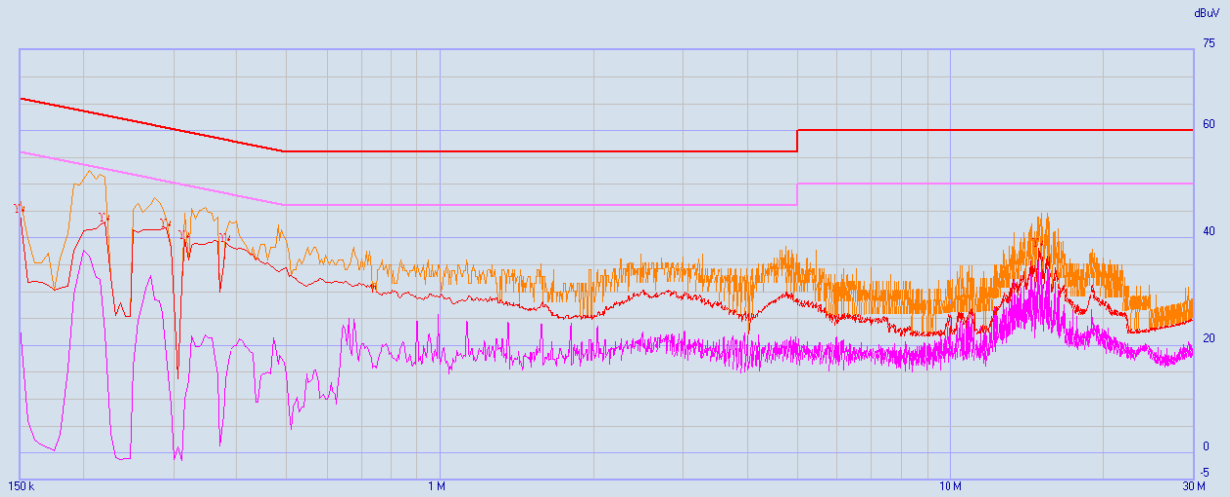
A. Test setup:

The EUT configuration of the emission tests is EUT + Link.

B. Test Plots:



(Plot A: L Phase)



(Plot B: N Phase)

2.8. Radiated Emission

2.8.1. Requirement

According to FCC section 15.247(d), radiated emission outside the frequency band attenuation below the general limits specified in FCC section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in FCC section 15.205(a), must also comply with the radiated emission limits specified in FCC section 15.209(a).

According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength ($\mu\text{V}/\text{m}$)	Measurement Distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

Note:

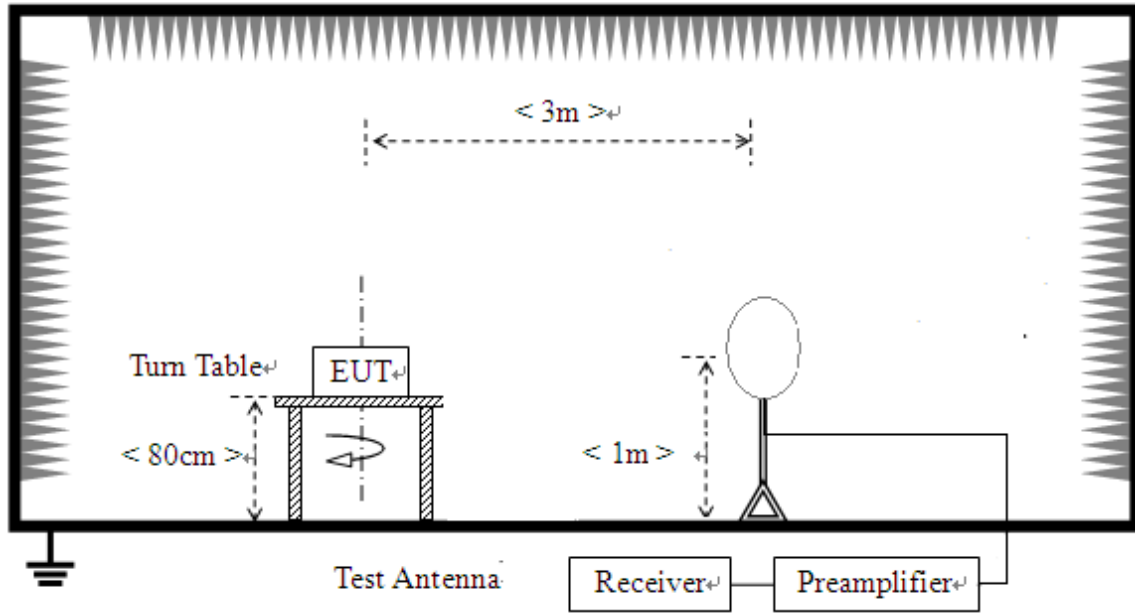
1. For Above 1000MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit.
2. For above 1000MHz, limit field strength of harmonics: 54dBuV/m@3m (AV) and 74dBuV/m@3m (PK)

In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), also should comply with the radiated emission limits specified in Section 15.209(a)(above table)

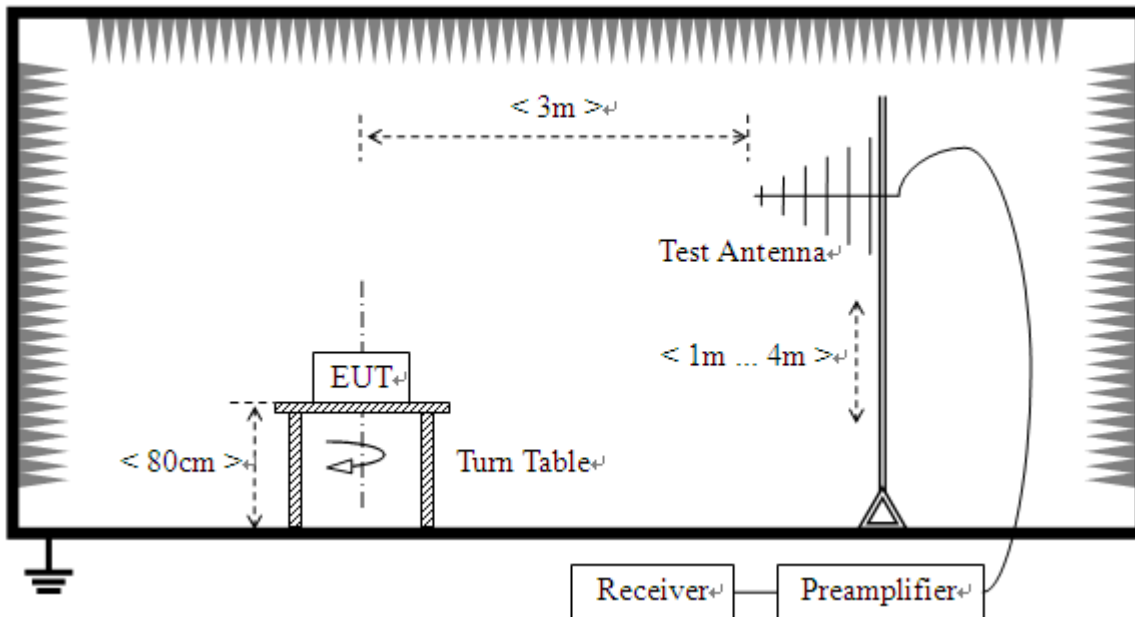
2.8.2. Test Description

A. Test Setup:

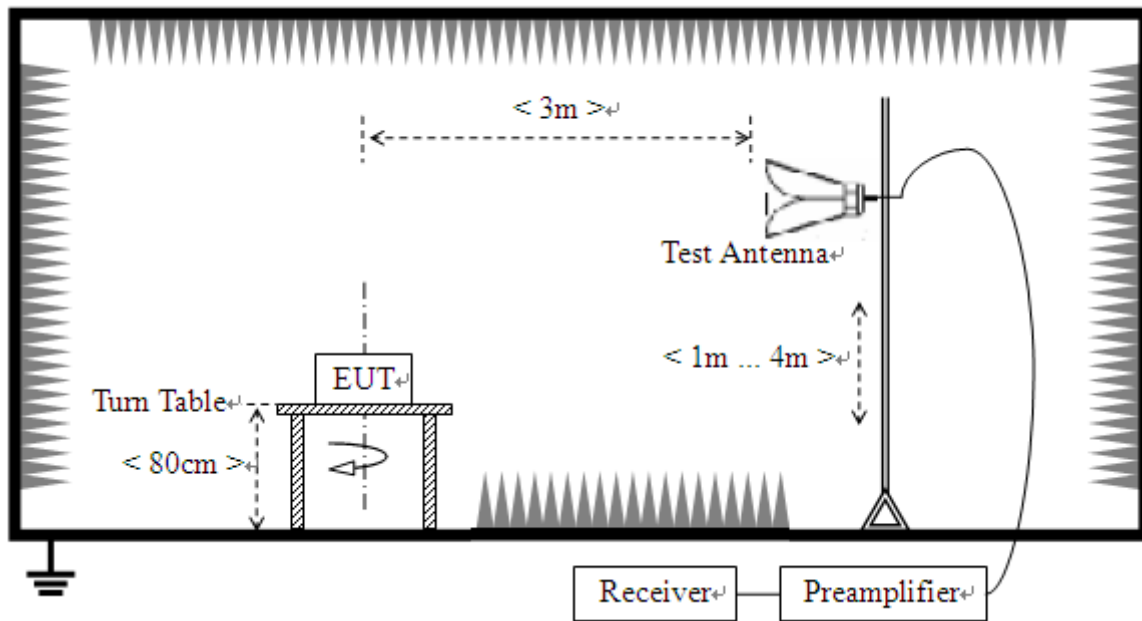
- 1) For radiated emissions from 9kHz to 30MHz



2) For radiated emissions from 30MHz to 1GHz



3) For radiated emissions above 1GHz



The test site semi-anechoic chamber has met the requirement of NSA tolerance 4dB according to the standards: ANSI C63.4 (2009). The EUT was set-up on insulator 80cm above the Ground Plane. The set-up and test methods were according to ANSI C63.4.

The EUT of the EUT is powered by the Battery charged with the AC Adapter which is powered by 120V, 60Hz AC mains supply. The Module 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. During the measurement, the EUT is activated and controlled by the Wireless Router via a Common Antenna, and is set to operate under hopping-on test mode.

For the Test Antenna:

- (a) In the frequency range of 9kHz to 30MHz, magnetic field is measured with Loop Test Antenna. The Test Antenna is positioned with its plane vertical at 1m distance from the EUT. The center of the Loop Test Antenna is 1m above the ground. During the measurement the Loop Test Antenna rotates about its vertical axis for maximum response at each azimuth about the EUT.
- (b) In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 2GHz) and Horn Test Antenna (above 2GHz) are used. 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. The emission levels at both horizontal and vertical polarizations should be tested.

B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
System Simulator	R&S	CMU200	100448	2013.05.12	2014.05.11
Receiver	Agilent	E7405A	US44210471	2013.05.12	2014.05.11
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2012.05.12	2014.05.11
Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	9163-274	2013.05.12	2014.05.11

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Test Antenna - Horn	Schwarzbeck	BBHA 9120D	9120C-963	2013.05.12	2014.05.11
Test Antenna - Horn	R&S	HL050S7	71688	2013.05.12	2014.05.11
Test Antenna -Loop	Schwarzbeck	FMZB 1519	1519-022	2013.05.12	2014.05.11

2.8.3. Test Result

According to ANSI C63.4 selection 4.2.2, because of peak detection will yield amplitudes equal to or greater than amplitudes measured with the quasi-peak (or average) detector, the measurement data from a spectrum analyzer peak detector will represent the worst-case results, if the peak measured value complies with the quasi-peak limit, it is unnecessary to perform an quasi-peak measurement.

The measurement results are obtained as below:

$$E \text{ [dB}\mu\text{V/m]} = U_R + A_T + A_{\text{Factor}} \text{ [dB]}; A_T = L_{\text{Cable loss}} \text{ [dB]} - G_{\text{preamp}} \text{ [dB]}$$

A_T : Total correction Factor except Antenna

U_R : Receiver Reading

G_{preamp} : Preamplifier Gain

A_{Factor} : Antenna Factor at 3m

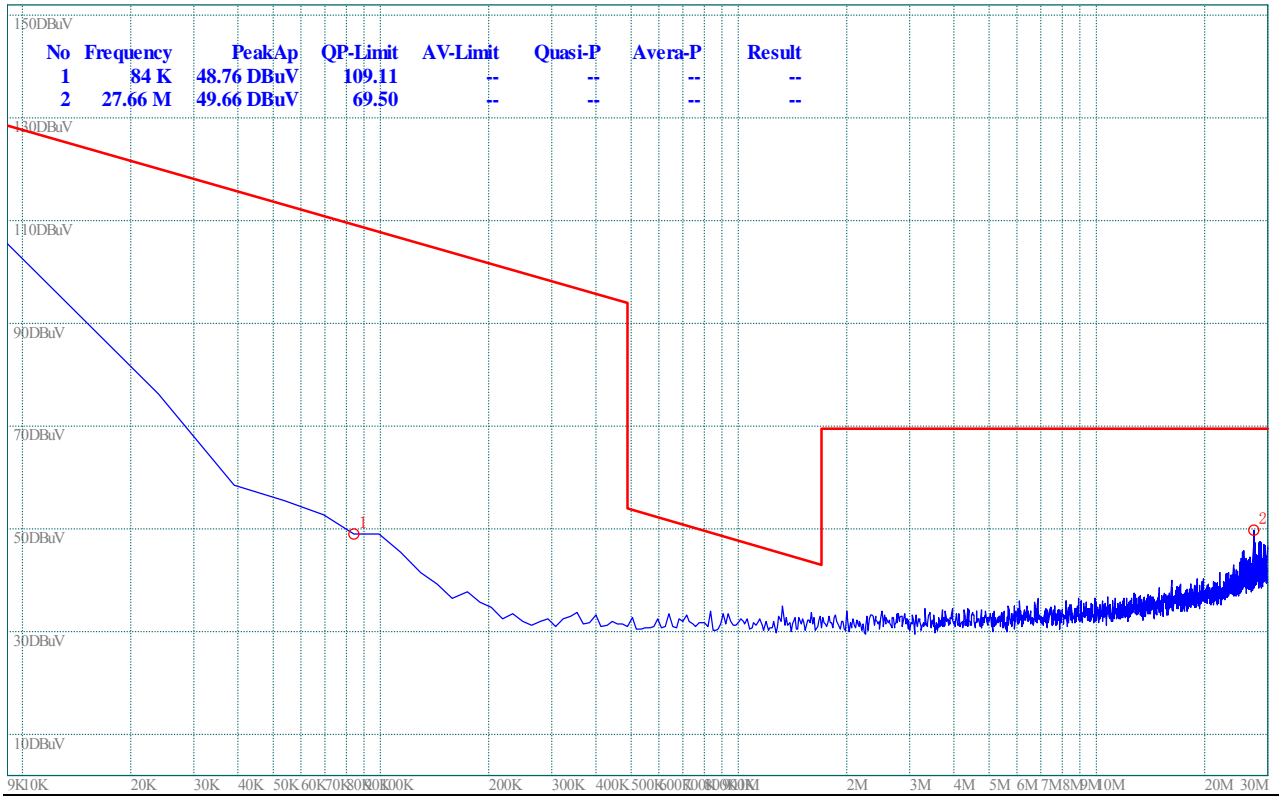
During the test, the total correction Factor A_T and A_{Factor} were built in test software.

Note: All radiated emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

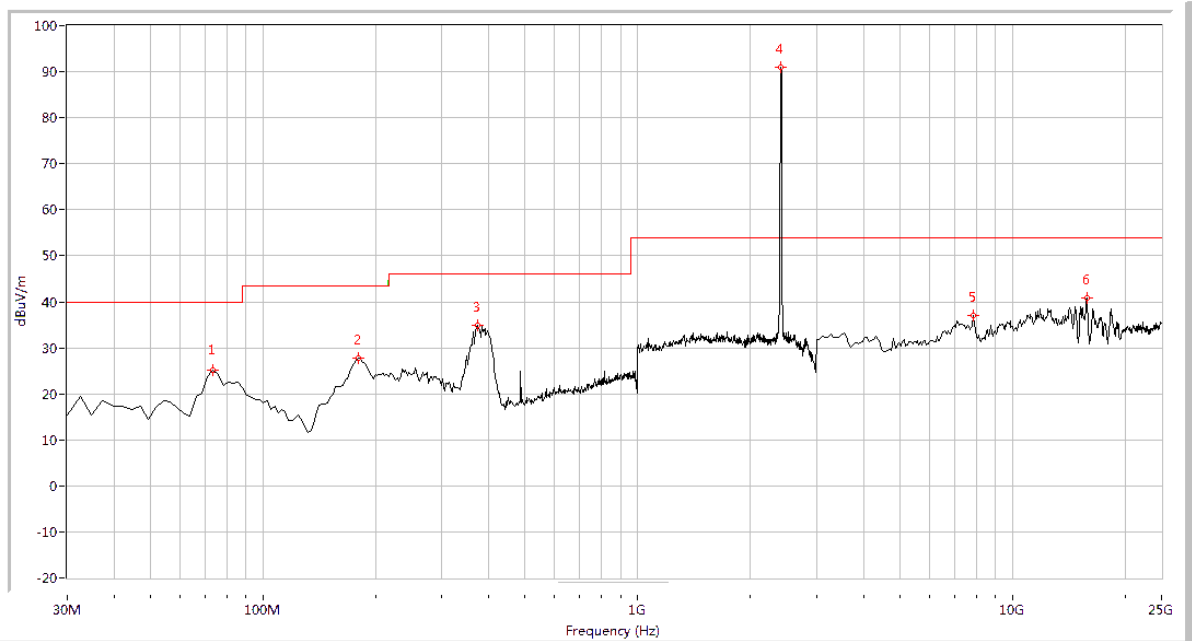
2.8.3.1. 802.11b Test mode

A. Test Plots for the Whole Measurement Frequency Range:

Plots for Channel = 1

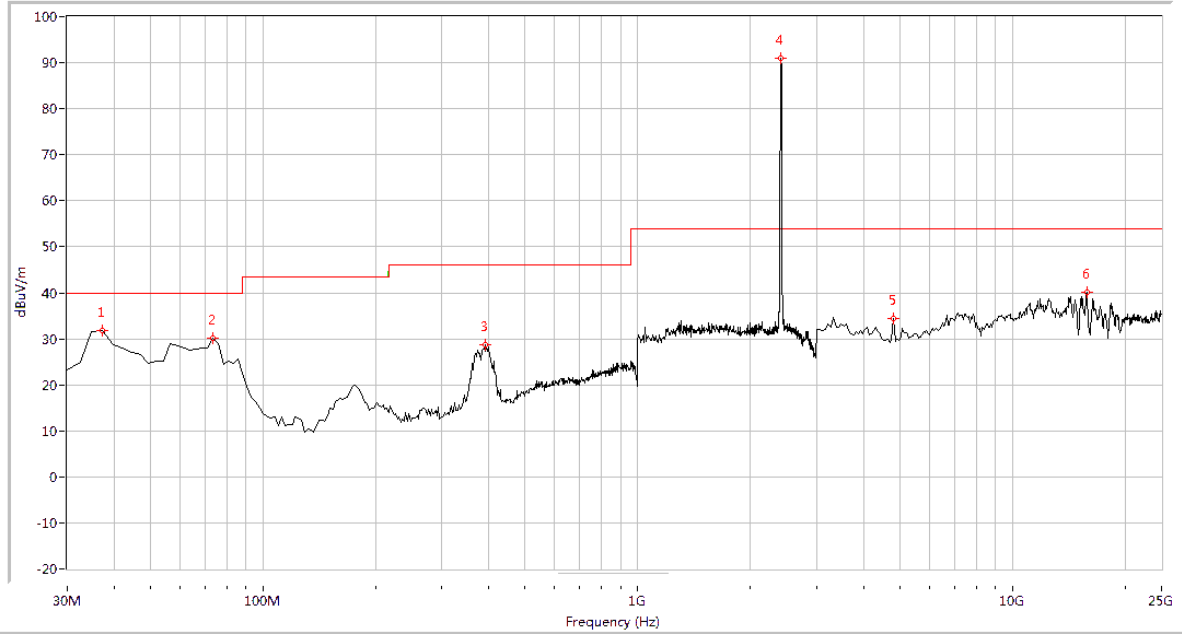


(Plot A.1: 9kHz to 30MHz)



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
73.541	25.14	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
179.975	27.69	N.A	N.A	N.A	43.5	N.A	Horizontal	PASS
373.491	34.89	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
2412.00	91.06	N.A	N.A	N.A	N.A	N.A	Horizontal	N.A
7882.793	37.05	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS
15783.042	40.92	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS

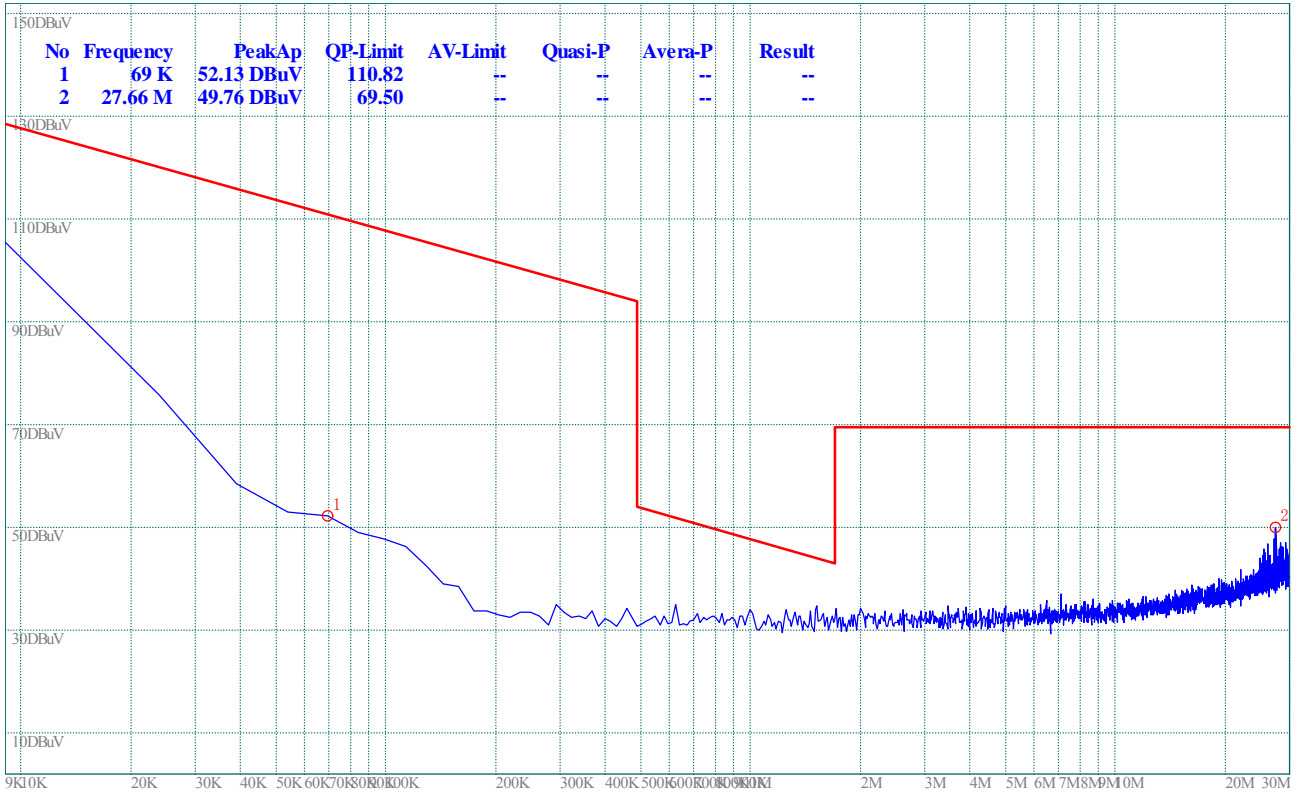
(Plot A.2: Antenna Horizontal, 30MHz to 25GHz)



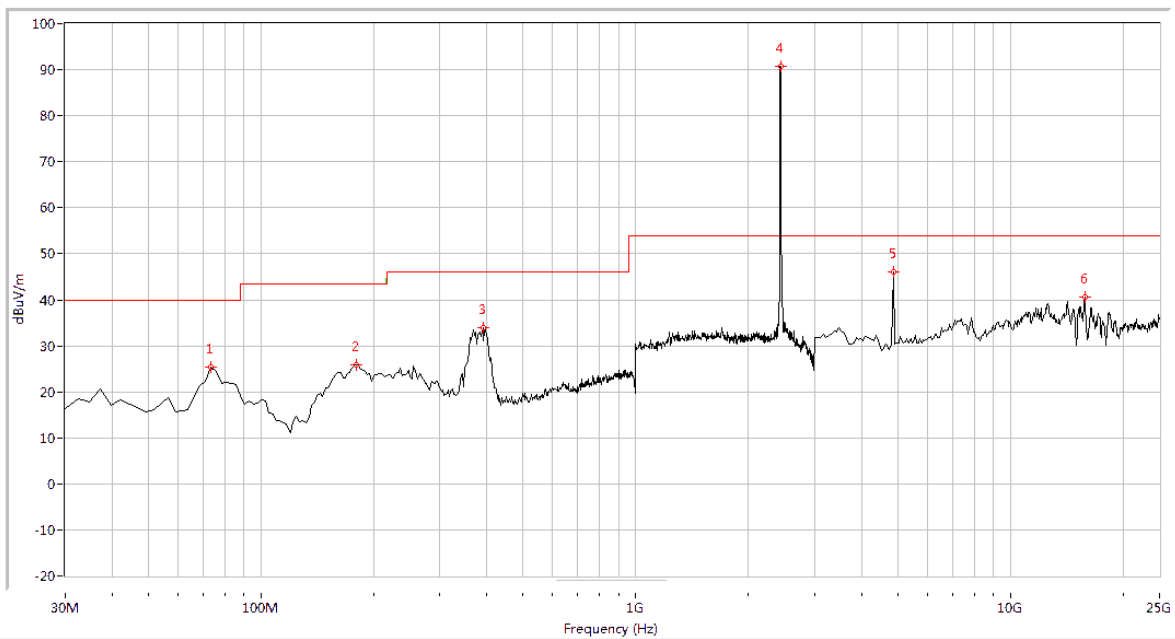
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
37.257	31.91	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
73.541	30.20	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
392.843	28.72	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
2412.000	91.02	N.A	N.A	N.A	N.A	N.A	Vertical	N.A
4810.474	34.49	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
15783.042	40.18	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

(Plot A.3: Antenna Vertical, 30MHz to 25GHz)

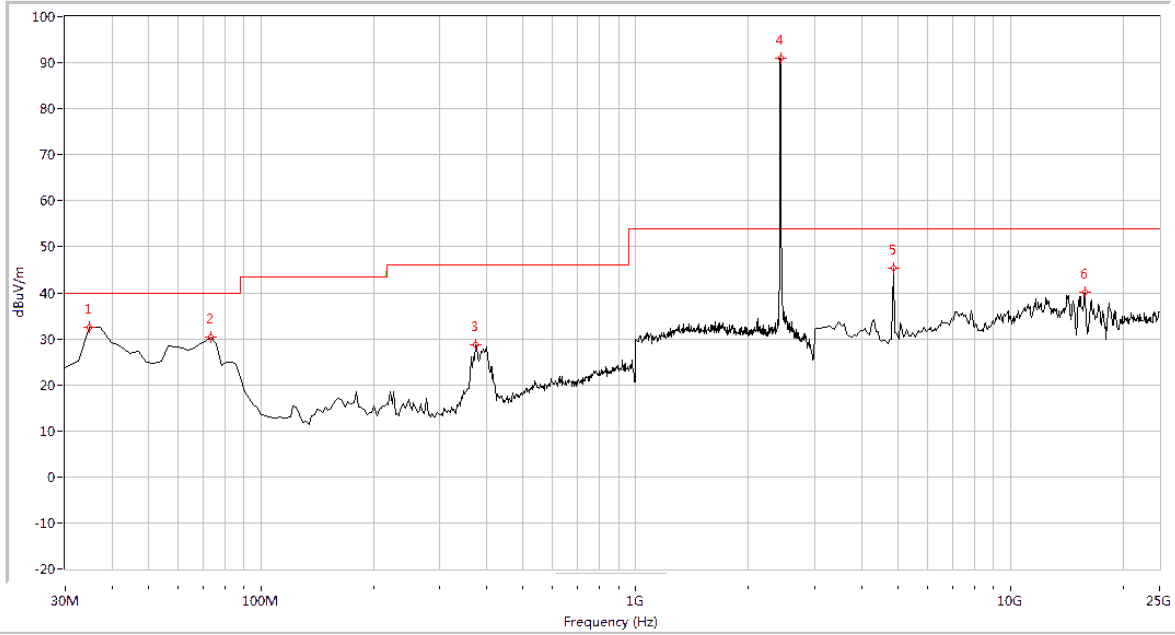
Plot for Channel = 6



(Plot B.1: 9kHz to 30MHz)



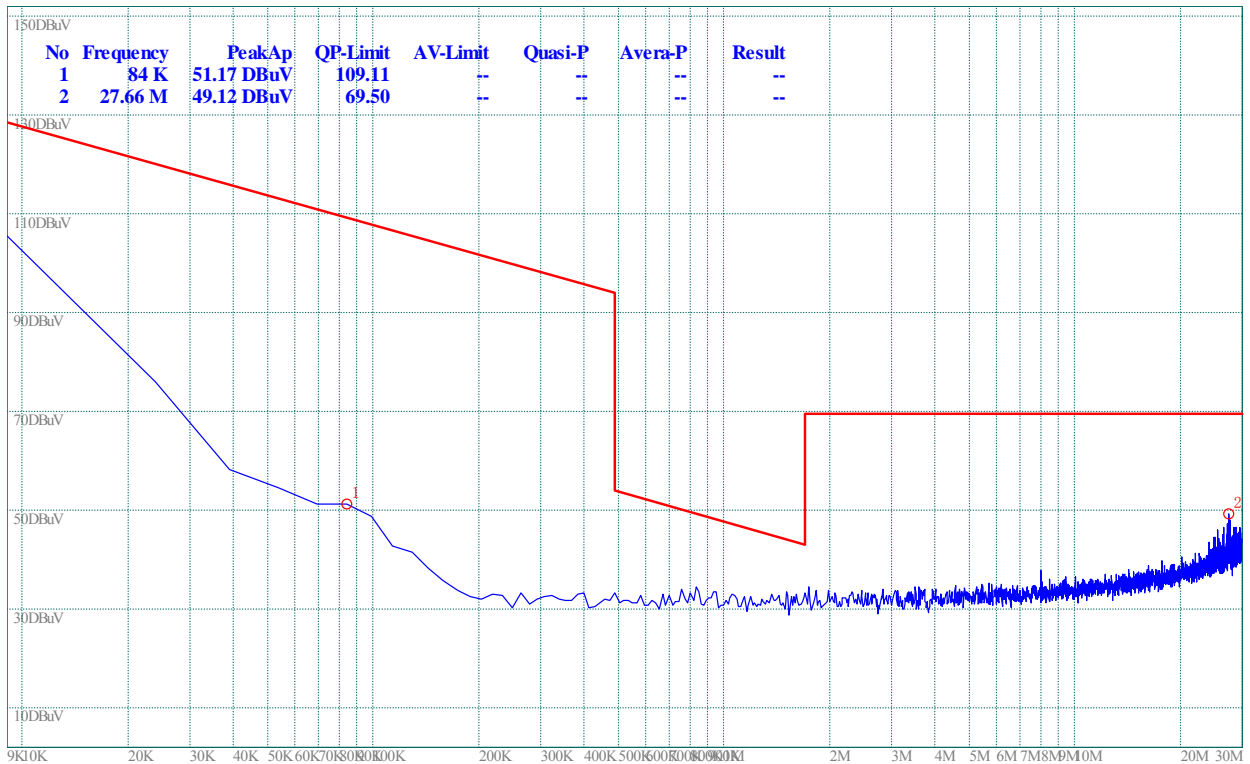
(Plot B.2: Antenna Horizontal, 30MHz to 25GHz)



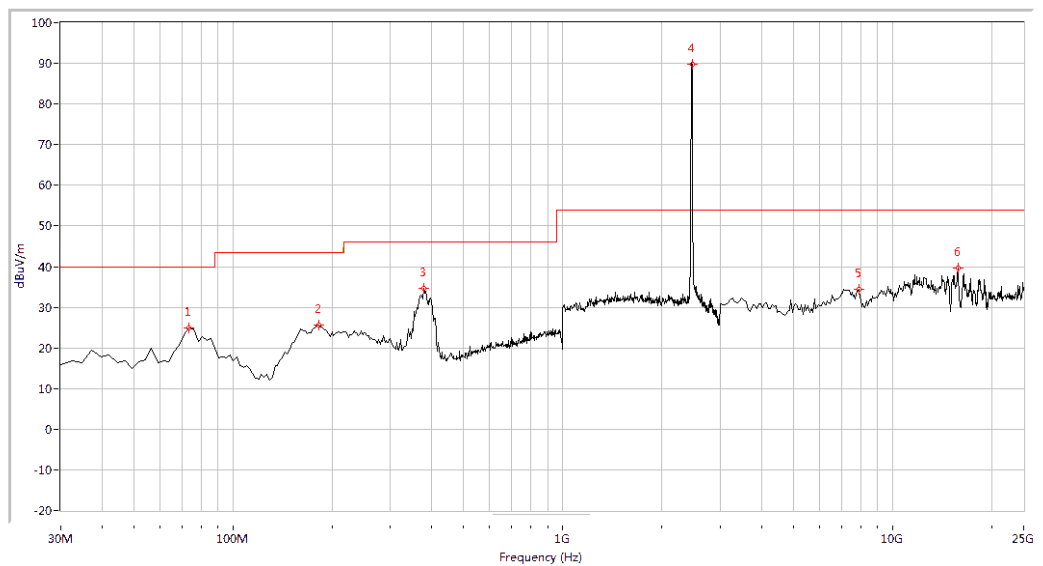
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
34.838	32.46	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
73.541	30.36	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
373.491	28.64	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
2437.000	90.85	N.A	N.A	N.A	N.A	N.A	Vertical	N.A
4865.337	45.45	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
15783.042	40.18	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

(Plot B.3: Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 11

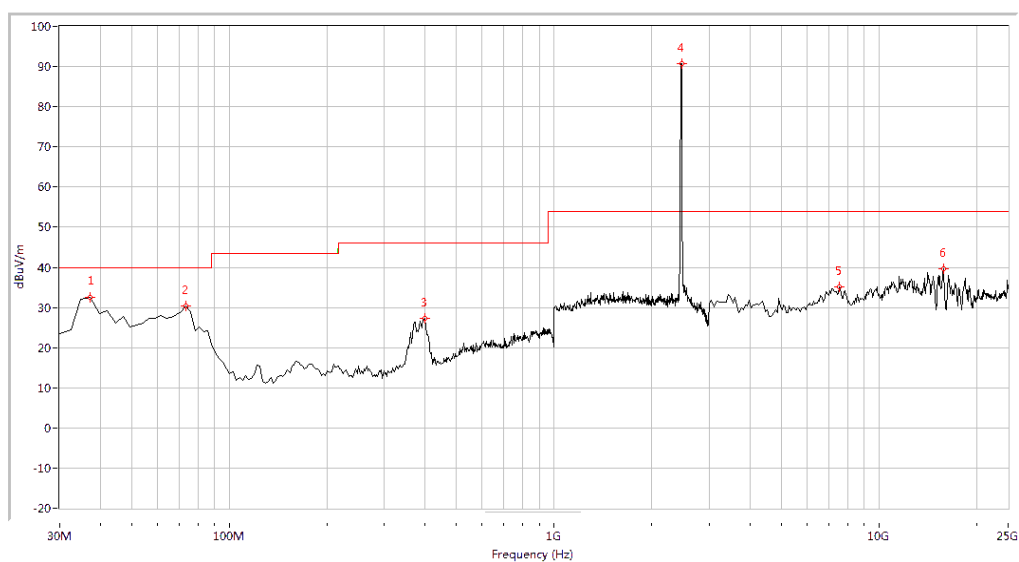


(Plot C.1: 9kHz to 30MHz)



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
73.541	24.92	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
182.394	25.51	N.A	N.A	N.A	43.5	N.A	Horizontal	PASS
378.329	34.60	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
2462.000	89.83	N.A	N.A	N.A	N.A	N.A	Horizontal	N.A
7937.656	34.49	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS
15783.042	39.61	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS

(Plot C.2: Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
37.257	32.53	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
73.541	30.49	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
400.100	27.18	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
2462.000	90.77	N.A	N.A	N.A	N.A	N.A	Vertical	N.A
7553.616	35.21	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
15783.042	39.59	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

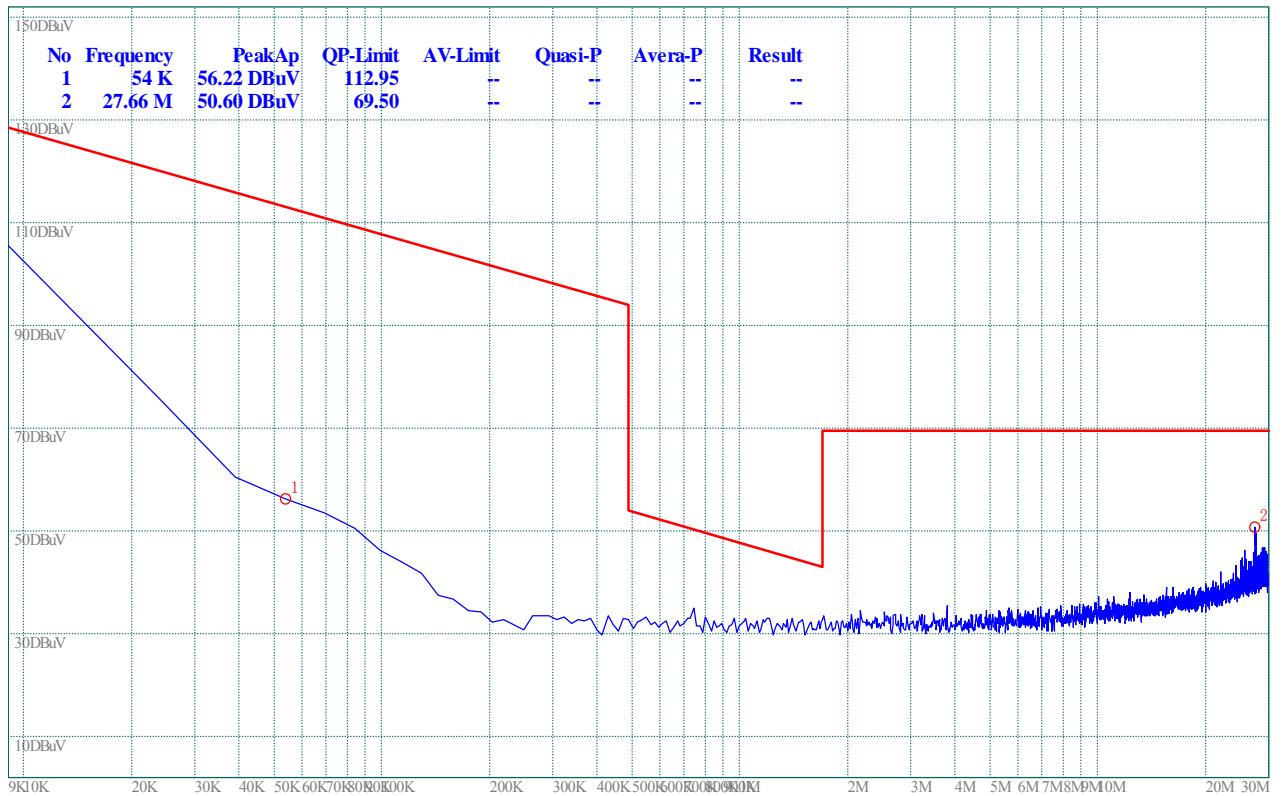
(Plot C.3: Antenna Vertical, 30MHz to 25GHz)

2.8.3.2. 802.11g Test mode

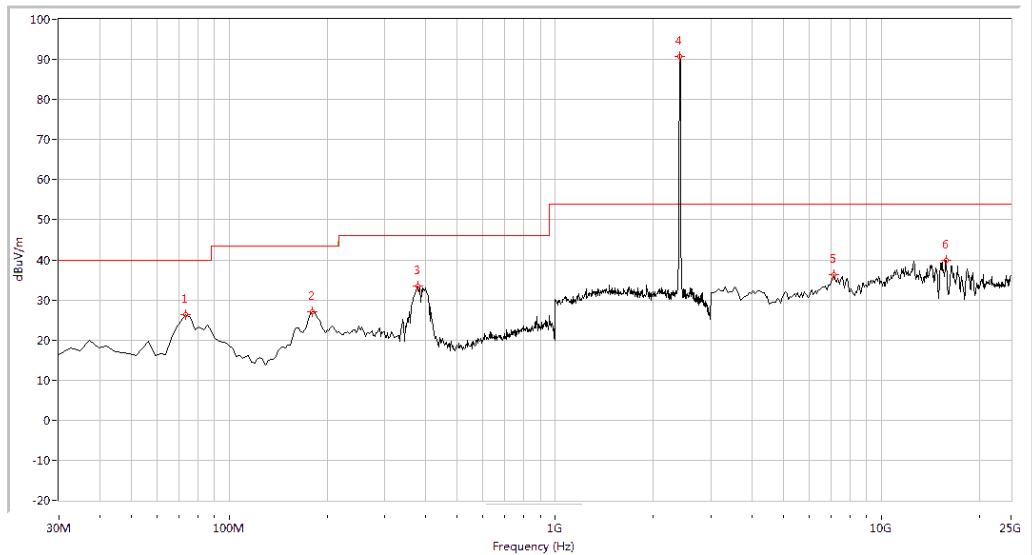
Also refer to following plots for the emissions falling in the restricted bands.

A. Test Plots for the Whole Measurement Frequency Range:

Plots for Channel = 1

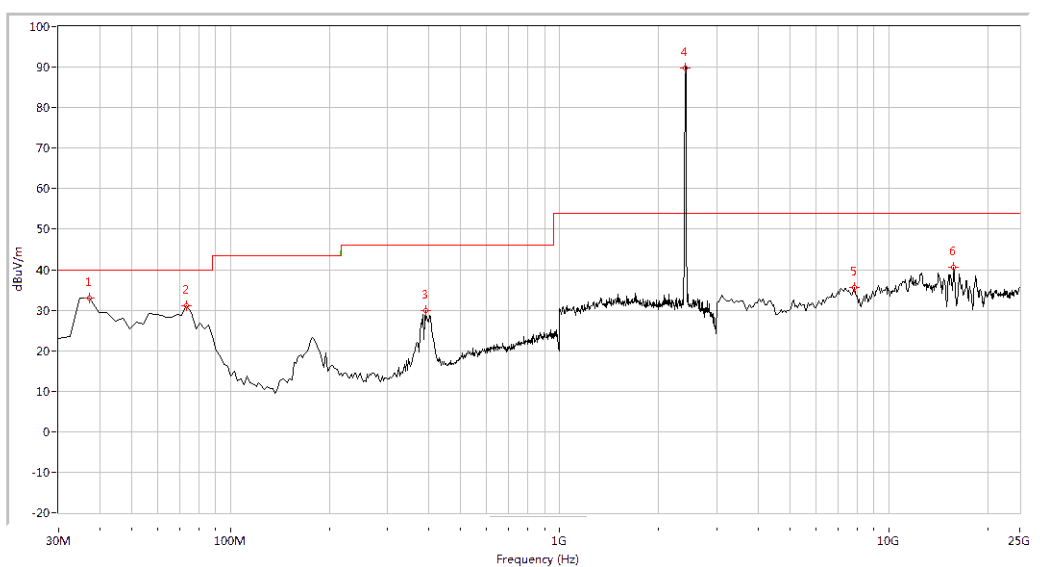


(Plot D.1: 9kHz to 30MHz)



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
73.541	26.38	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
179.975	27.15	N.A	N.A	N.A	43.5	N.A	Horizontal	PASS
378.329	33.57	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
2412.000	90.76	N.A	N.A	N.A	N.A	N.A	Horizontal	N.A
7169.576	36.25	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS
15783.042	39.93	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS

(Plot D.2: Antenna Horizontal, 30MHz to 25GHz)

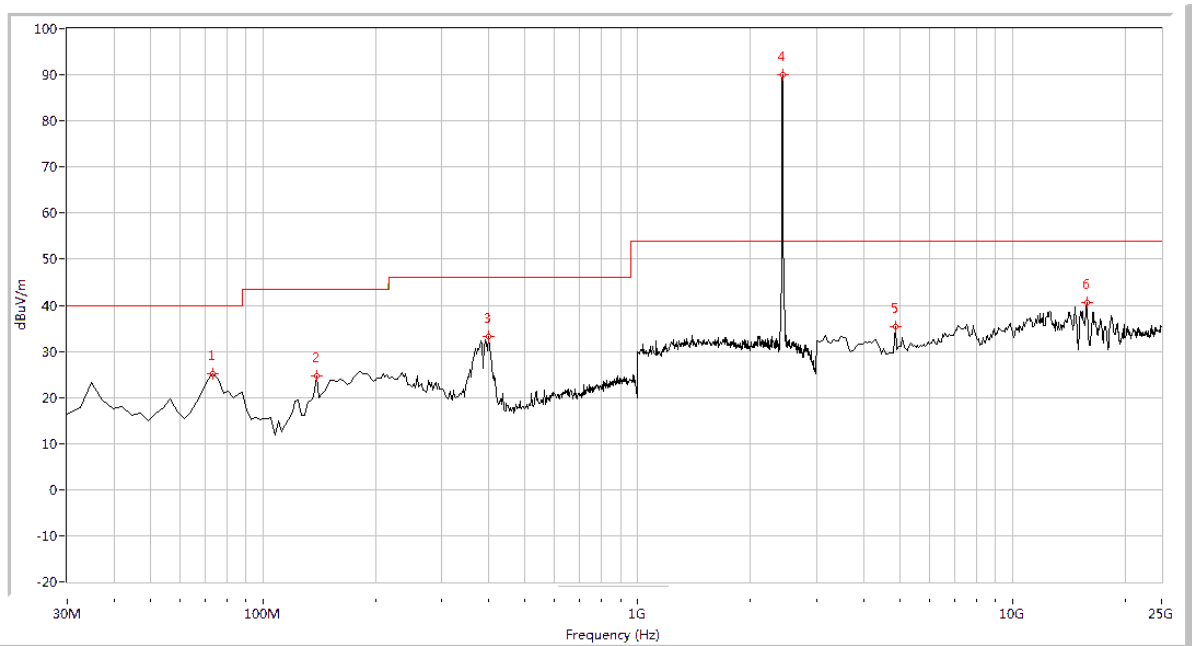


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
37.257	33.10	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
73.541	31.05	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
390.424	29.84	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
2412.000	89.72	N.A	N.A	N.A	N.A	N.A	Vertical	N.A
7882.793	35.66	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
15728.180	40.57	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

(Plot D.3: Antenna Vertical, 30MHz to 25GHz)

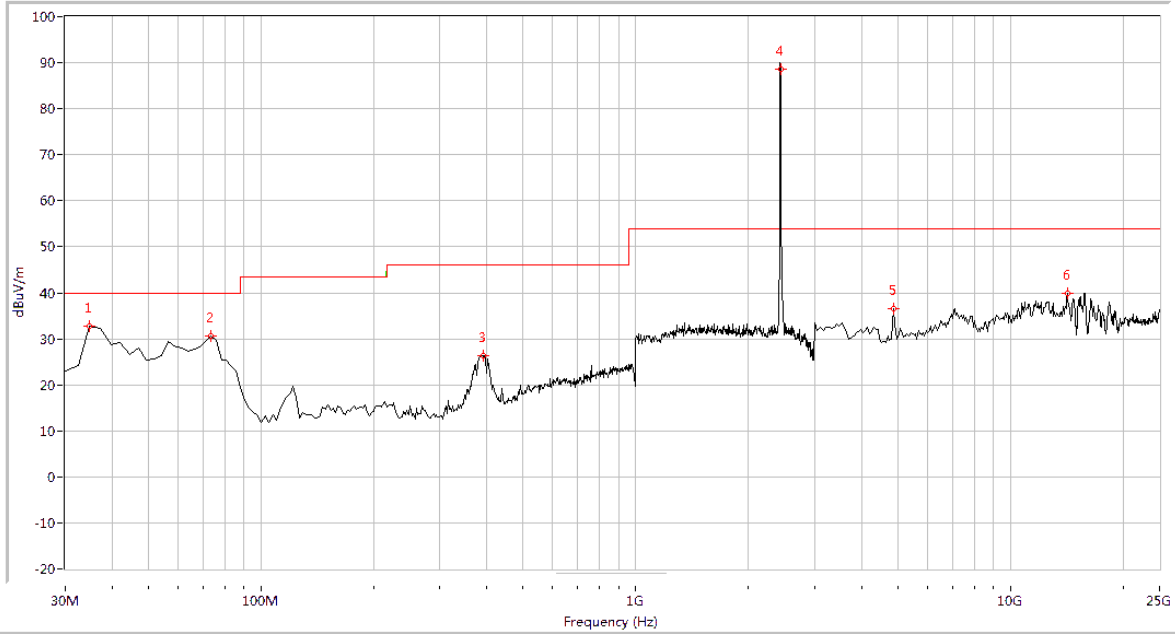
Plot for Channel = 6


(Plot E.1: 9kHz to 30MHz)



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
73.541	25.21	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
138.853	24.74	N.A	N.A	N.A	43.5	N.A	Horizontal	PASS
400.100	33.14	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
2437.000	90.07	N.A	N.A	N.A	N.A	N.A	Horizontal	N.A
4865.337	35.37	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS
15783.042	40.48	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS

(Plot E.2: Antenna Horizontal, 30MHz to 25GHz)



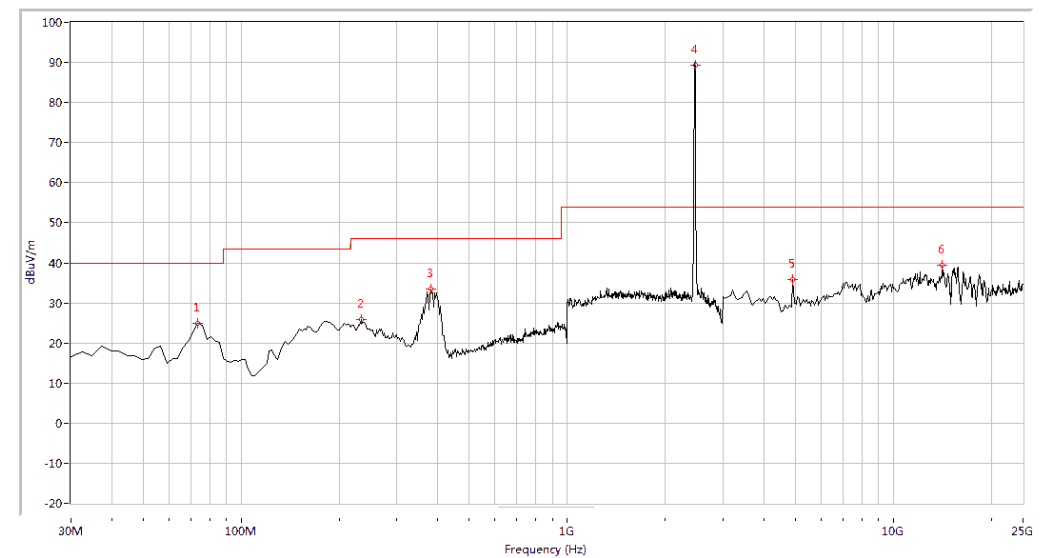
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
34.838	32.84	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
73.541	30.73	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
392.843	26.44	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
2437.000	88.57	N.A	N.A	N.A	N.A	N.A	Vertical	N.A
4865.337	36.51	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
14192.020	39.79	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

(Plot E.3: Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 11

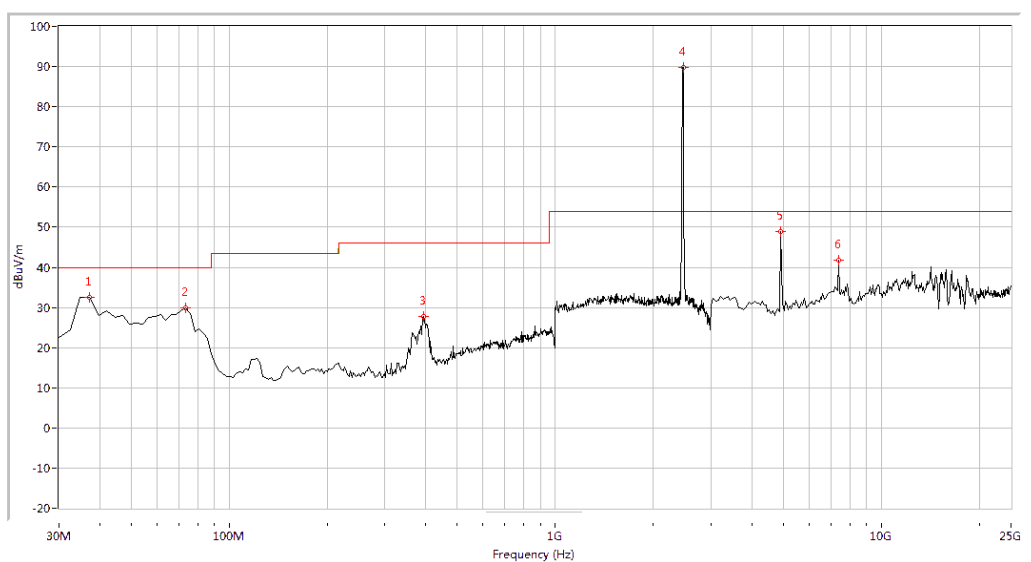


(Plot F.1: 9kHz to 30MHz)



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
73.541	24.97	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
233.192	25.81	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
380.748	33.54	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
2462.000	89.35	N.A	N.A	N.A	N.A	N.A	Horizontal	N.A
4920.200	35.84	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS
14137.157	39.38	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS

(Plot F.2: Antenna Horizontal, 30MHz to 25GHz)



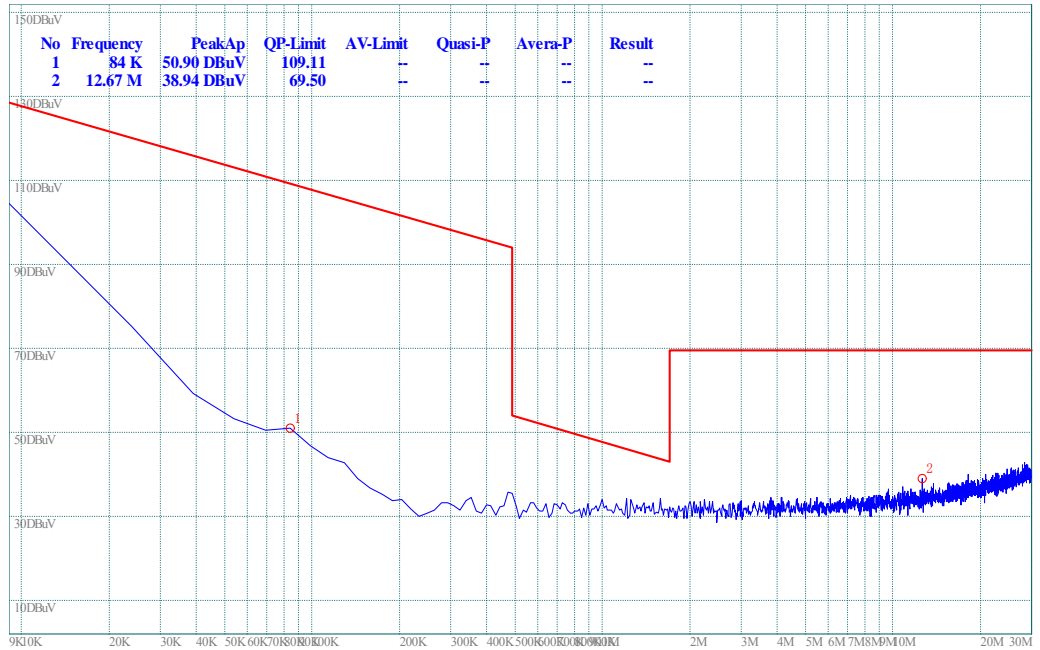
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
37.257	32.60	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
73.541	29.87	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
395.262	27.65	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
2462.000	89.85	N.A	N.A	N.A	N.A	N.A	Vertical	N.A
4920.200	48.86	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
7389.027	41.74	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

(Plot F.3: Antenna Vertical, 30MHz to 25GHz)

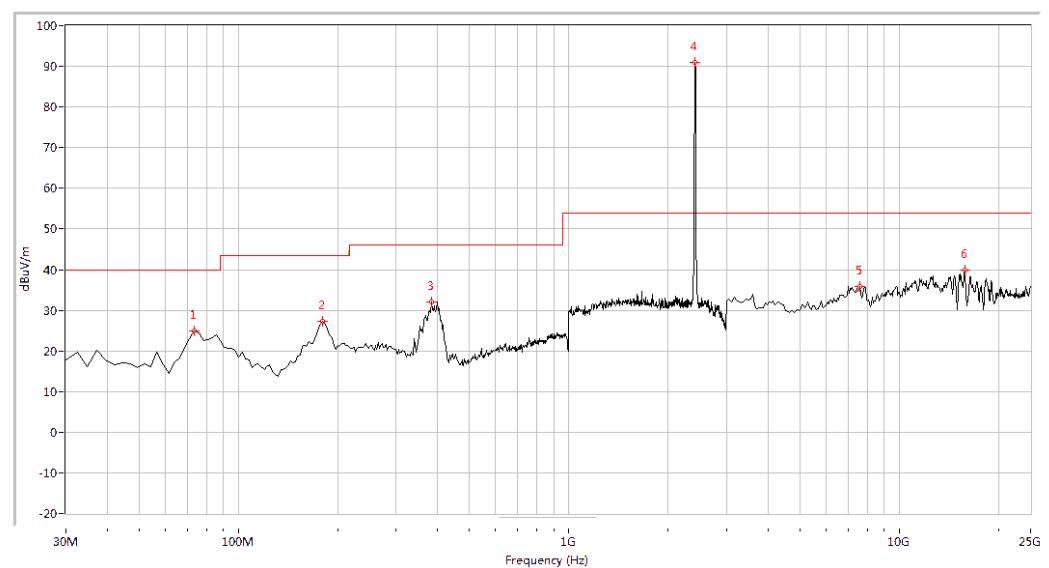
2.8.3.3. 802.11n-20MHz Test mode

B. Test Plots for the Whole Measurement Frequency Range:

Plots for Channel = 1

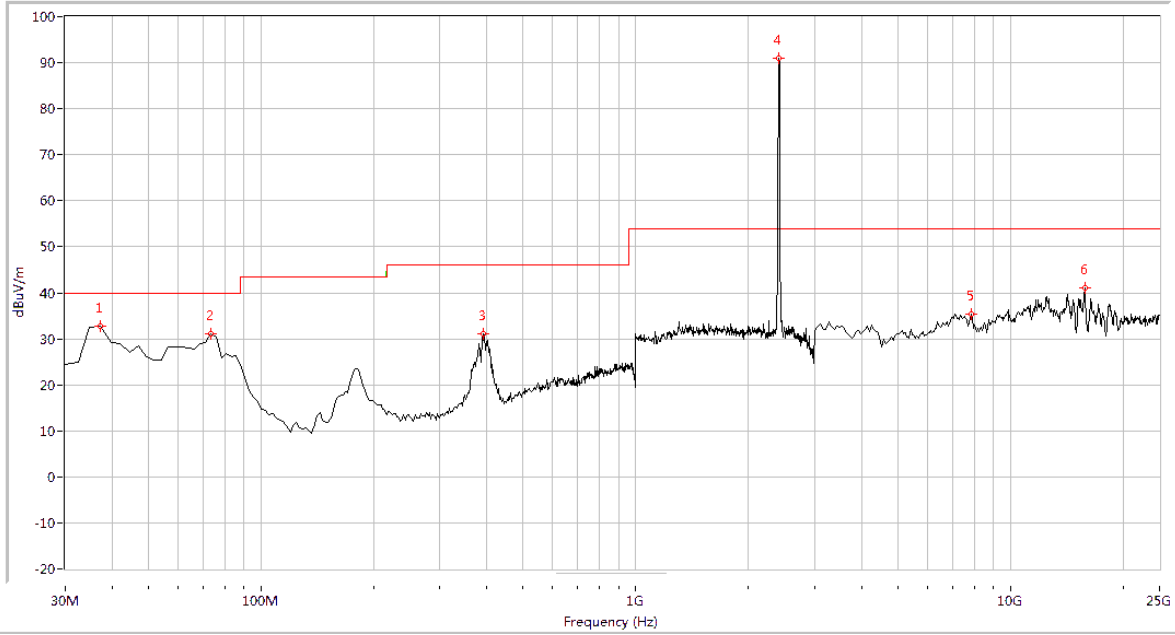


(Plot G.1: 9kHz to 30MHz)



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
73.541	24.93	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
179.975	27.33	N.A	N.A	N.A	43.5	N.A	Horizontal	PASS
383.167	31.94	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
2412.000	91.08	N.A	N.A	N.A	N.A	N.A	Horizontal	N.A
7608.479	35.75	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS
15783.042	39.88	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS

(Plot G.2: Antenna Horizontal, 30MHz to 25GHz)



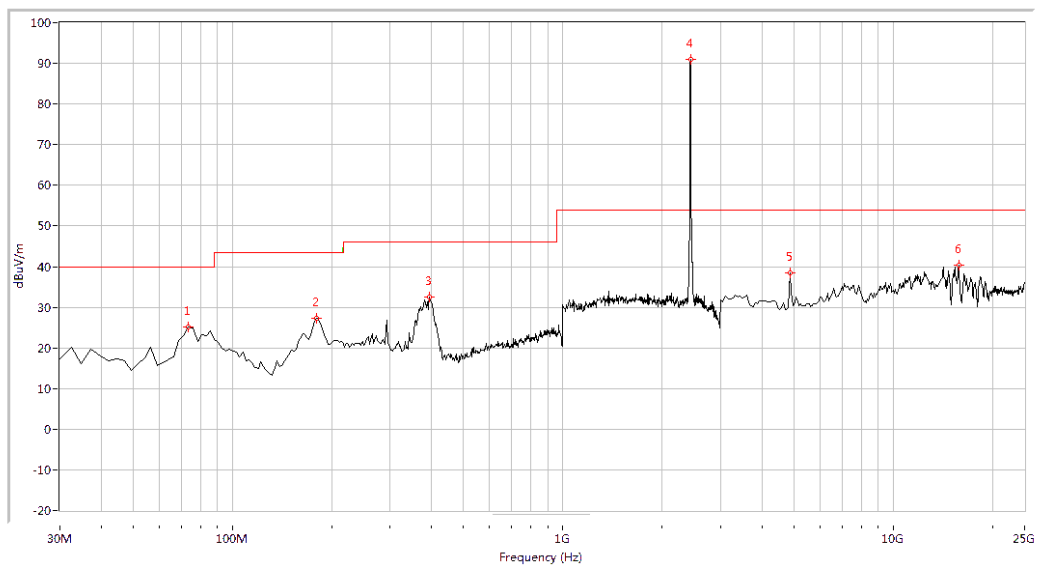
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
37.257	32.71	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
73.541	30.99	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
392.843	31.06	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
2412.000	91.05	N.A	N.A	N.A	N.A	N.A	Vertical	N.A
7882.793	35.31	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
15783.042	40.99	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

(Plot G.3: Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 6

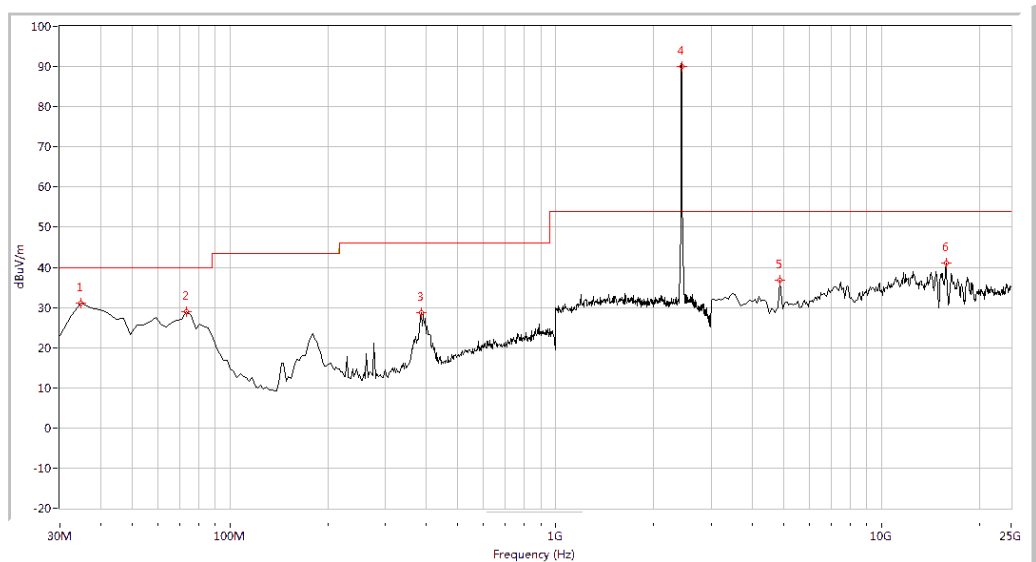


(Plot H.1: 9kHz to 30MHz)



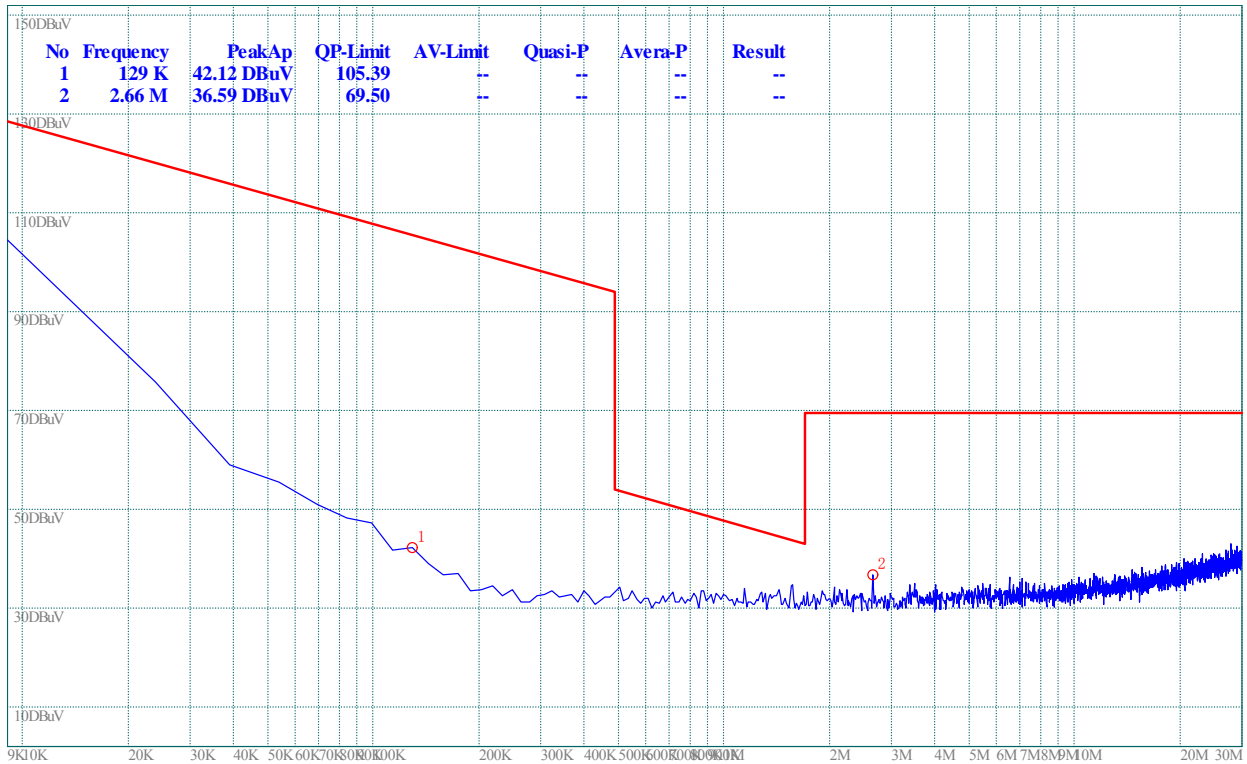
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Degree	Verdict
73.541	25.06	N.A	N.A	N.A	40.0	N.A	4.4	PASS
179.975	27.22	N.A	N.A	N.A	43.5	N.A	304.1	PASS
395.262	32.45	N.A	N.A	N.A	46.0	N.A	127.3	PASS
2437.000	90.90	N.A	N.A	N.A	N.A	N.A	297.4	N.A
4865.337	38.34	N.A	N.A	74.0	N.A	54.0	291.4	PASS
15783.042	40.46	N.A	N.A	74.0	N.A	54.0	342.0	PASS

(Plot H.2: Antenna Horizontal, 30MHz to 25GHz)

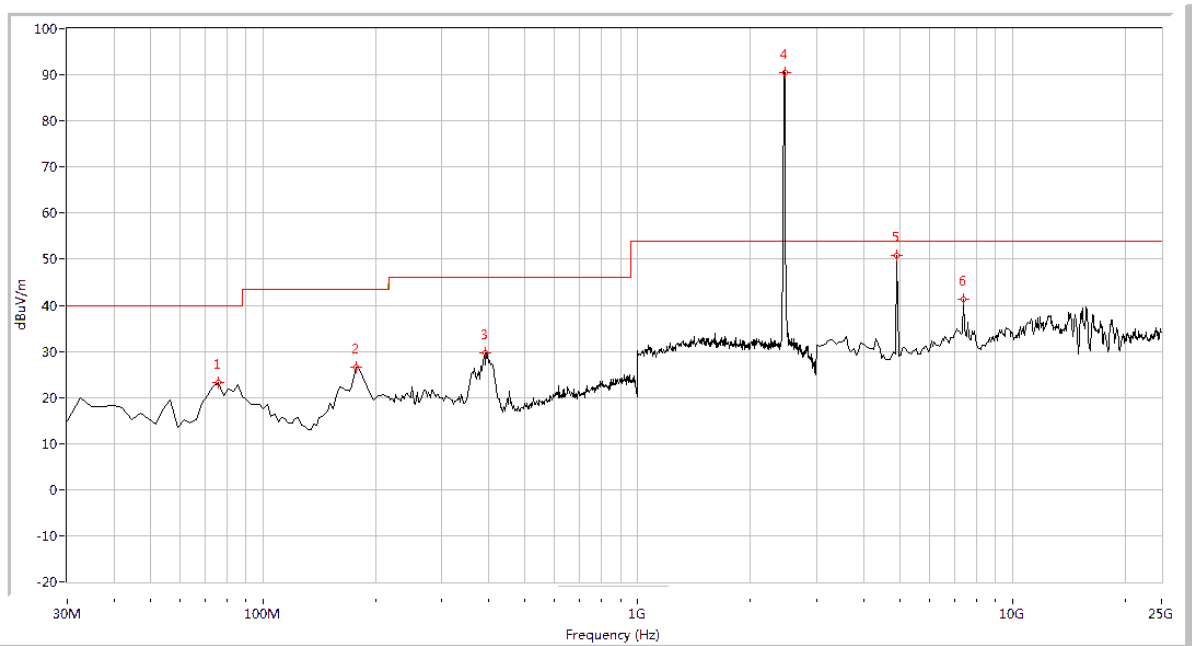


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
34.838	31.17	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
73.541	29.05	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
385.586	28.65	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
2437.000	90.10	N.A	N.A	N.A	N.A	N.A	Vertical	N.A
4865.337	36.84	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
15783.042	41.02	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

(Plot H.3: Antenna Vertical, 30MHz to 25GHz)

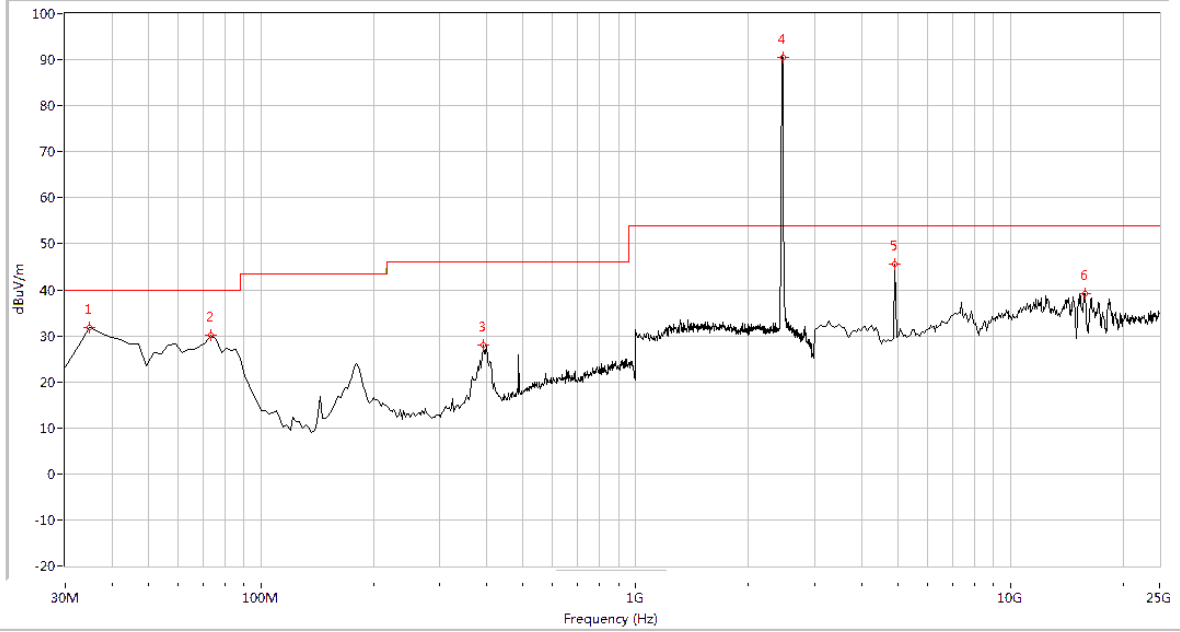
Plot for Channel = 11


(Plot I.1: 9kHz to 30MHz)



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
75.960	23.13	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
177.556	26.57	N.A	N.A	N.A	43.5	N.A	Horizontal	PASS
390.424	29.63	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
2462.000	90.46	N.A	N.A	N.A	N.A	N.A	Horizontal	N.A
4920.200	50.83	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS
7389.027	41.40	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS

(Plot I.2: Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
34.838	31.82	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
73.541	30.07	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
392.843	28.05	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
2462.000	90.46	N.A	N.A	N.A	N.A	N.A	Vertical	N.A
4920.200	45.55	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
15783.042	39.28	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

(Plot I.3: Antenna Vertical, 30MHz to 25GHz)

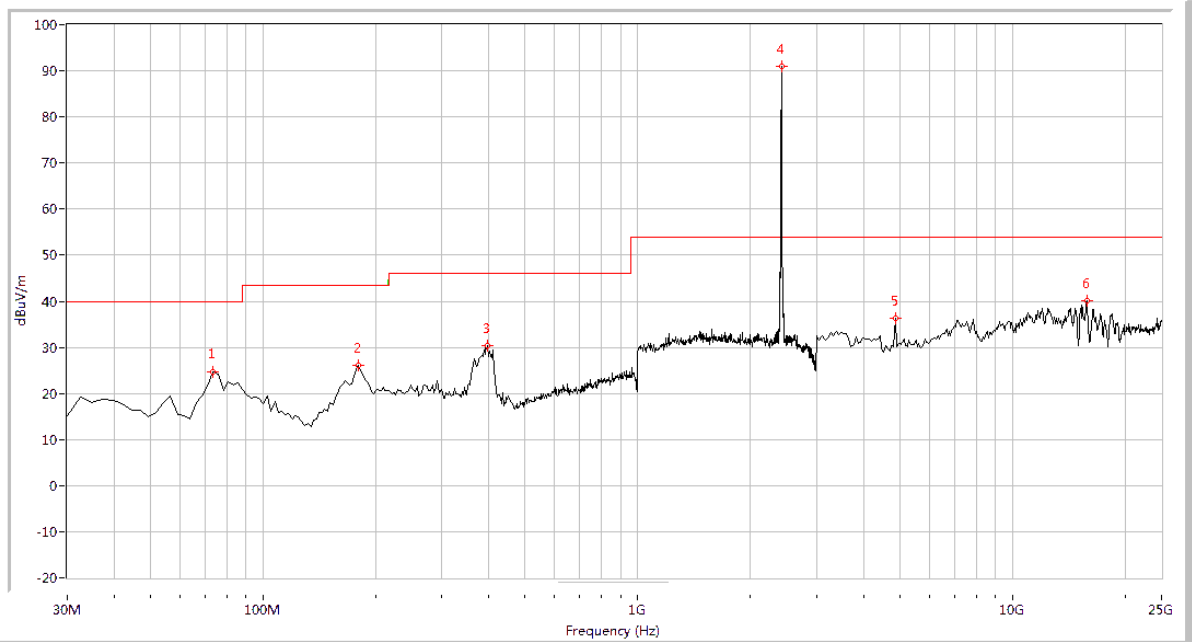
2.8.3.4. 802.11n-40MHz Test mode

A. Test Plots for the Whole Measurement Frequency Range:

Plots for Channel = 3

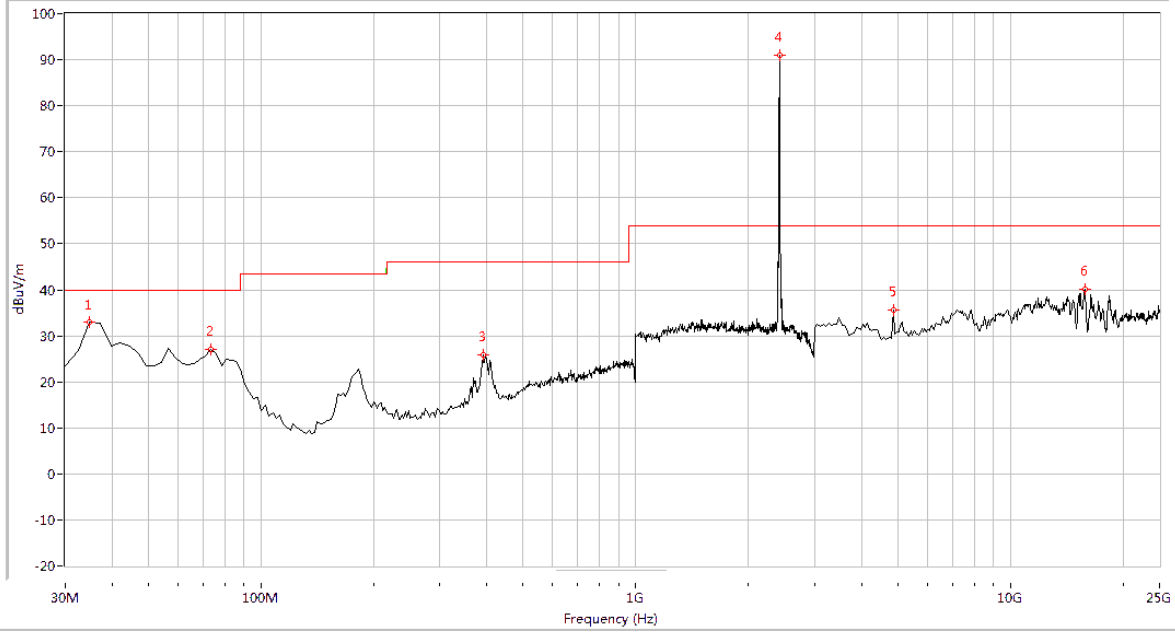


(Plot J.1: 9kHz to 30MHz)



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
73.541	24.78	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
179.975	26.09	N.A	N.A	N.A	43.5	N.A	Horizontal	PASS
397.681	30.35	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
2422.000	91.00	N.A	N.A	N.A	N.A	N.A	Horizontal	N.A
4865.337	36.37	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS
15783.042	40.10	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS

(Plot J.2: Antenna Horizontal, 30MHz to 25GHz)



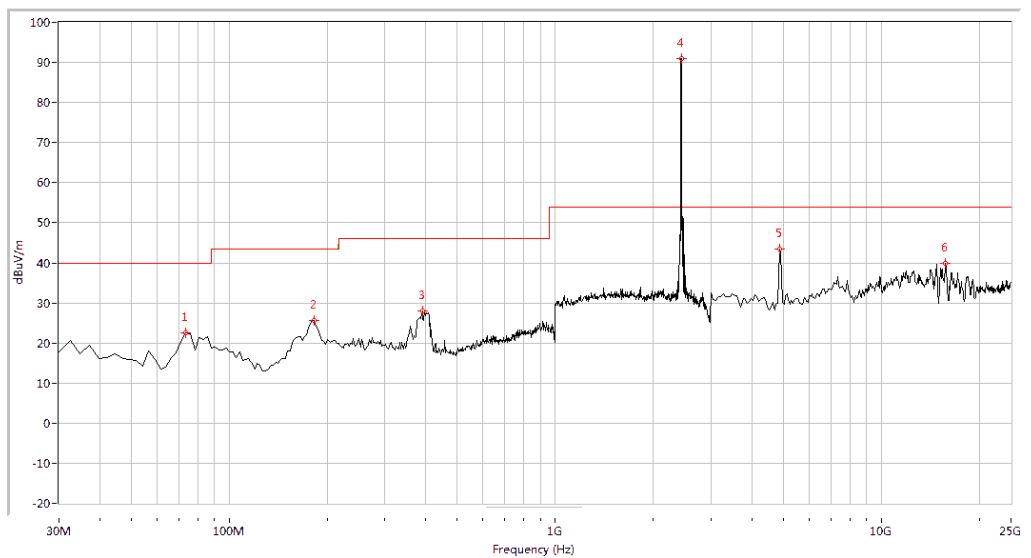
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
34.838	33.06	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
73.541	27.02	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
390.424	25.74	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
2422.000	91.01	N.A	N.A	N.A	N.A	N.A	Vertical	N.A
4865.337	35.51	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
15783.042	40.06	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

(Plot J.3: Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 6

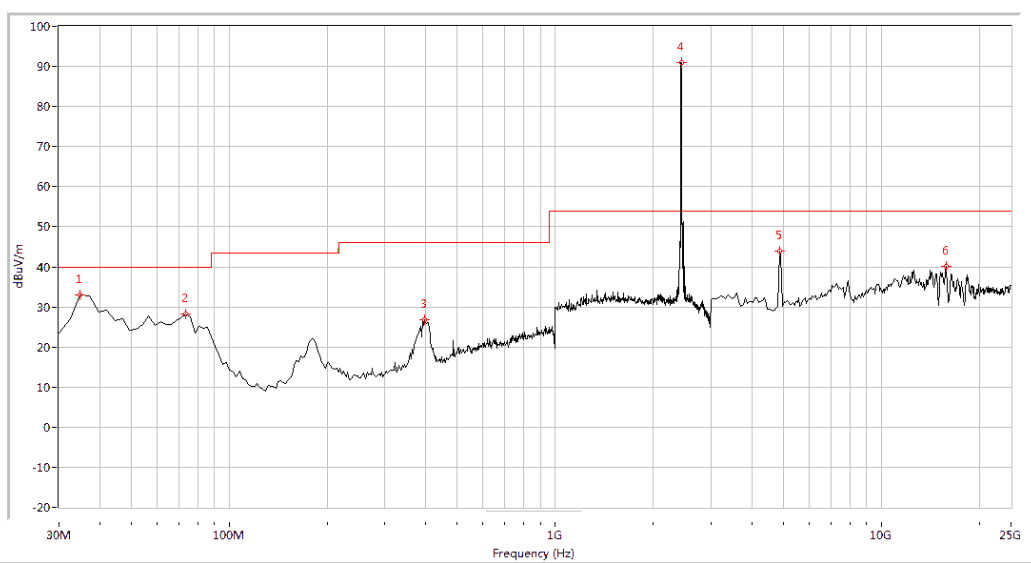


(Plot K.1: 9kHz to 30MHz)



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
73.541	22.42	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
182.394	25.63	N.A	N.A	N.A	43.5	N.A	Horizontal	PASS
390.424	27.92	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
2437.000	90.92	N.A	N.A	N.A	N.A	N.A	Horizontal	N.A
4865.337	43.53	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS
15728.180	39.78	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS

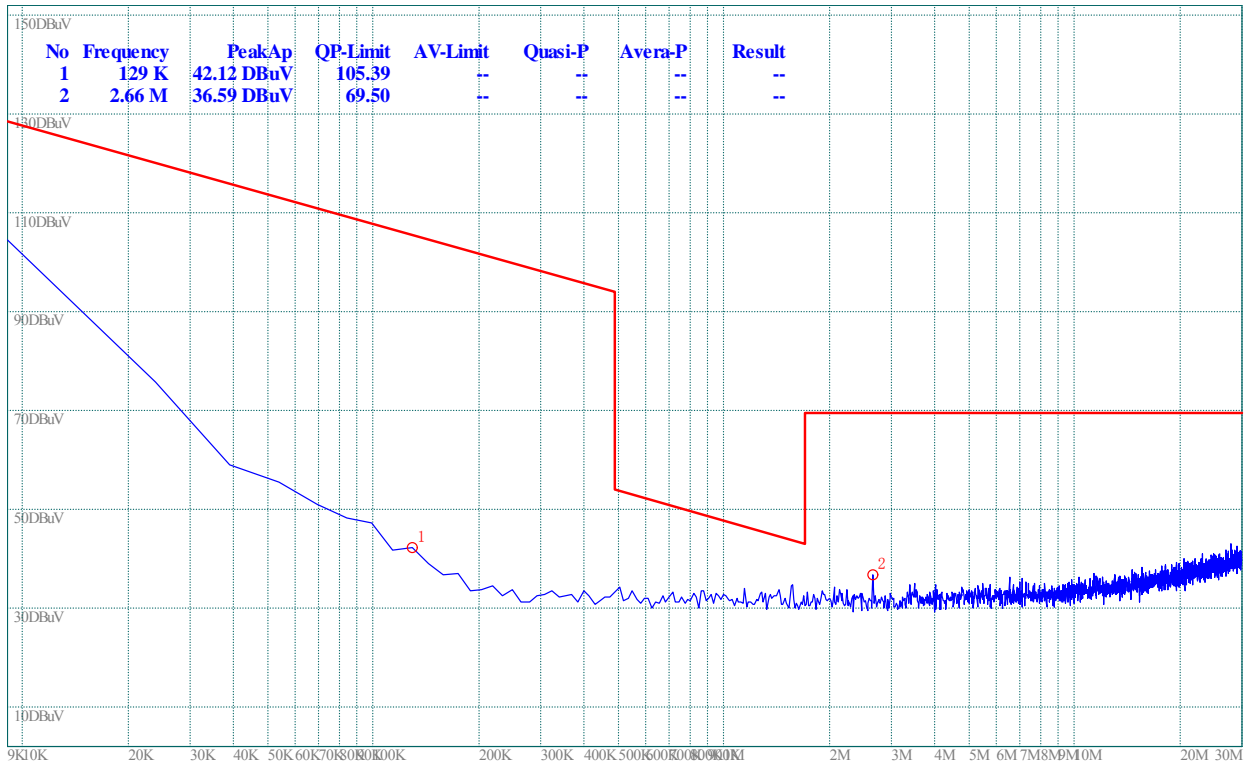
(Plot K.2: Antenna Horizontal, 30MHz to 25GHz)



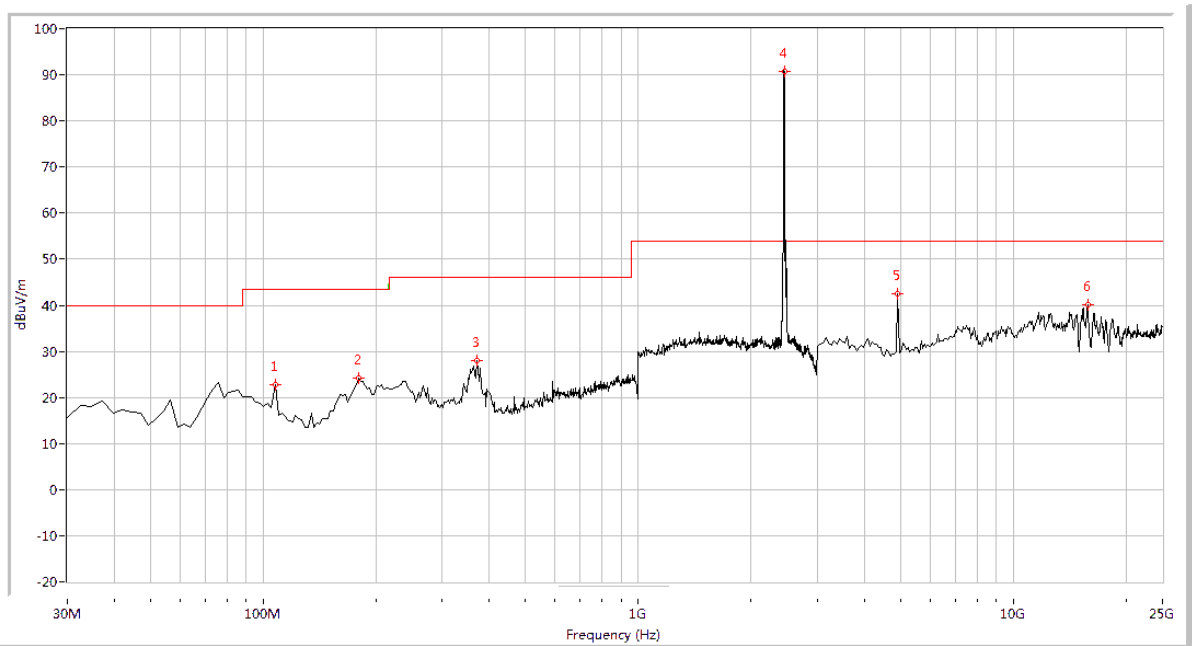
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
34.838	32.94	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
73.541	28.33	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
397.681	26.92	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
2437.000	90.91	N.A	N.A	N.A	N.A	N.A	Vertical	N.A
4865.337	43.84	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
15783.042	40.19	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

(Plot K.3: Antenna Vertical, 30MHz to 25GHz)

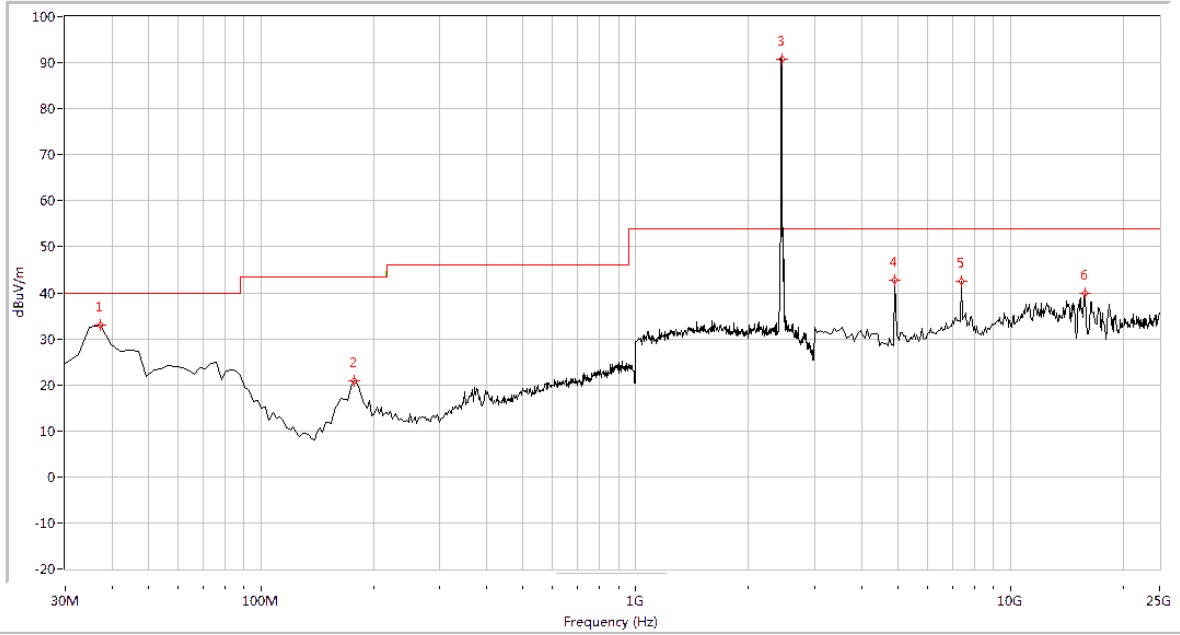
Plot for Channel = 9



(Plot L.1: 9kHz to 30MHz)



(Plot L.2: Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
37.257	32.98	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
177.556	20.91	N.A	N.A	N.A	43.5	N.A	Vertical	PASS
2452.000	90.83	N.A	N.A	N.A	N.A	N.A	Vertical	N.A
4920.200	42.73	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
7389.027	42.51	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
15783.042	39.87	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

(Plot L.3: Antenna Vertical, 30MHz to 25GHz)

2.9. RF exposure evaluation

2.9.1. Requirement

According to § 1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of Commission's guideline.

2.9.2. Result:

Please refer to SAR report.

**** END OF REPORT ****