



REPORT No. : SZ15020045W07

# FCC RF TEST REPORT

**APPLICANT** : ZTE Corporation  
**PRODUCT NAME** : LTE Digital Mobile Handset  
**MODEL NAME** : ZTE Blade V320/BGH Joy Smart  
AXS II/BGH Joy Smart AXS II D  
**TRADE NAME** : ZTE  
**BRAND NAME** : ZTE  
**FCC ID** : SRQ- V320  
**STANDARD(S)** : 47 CFR Part 15 Subpart C  
**ISSUE DATE** : 2015-03-09



**SHENZHEN MORLAB COMMUNICATIONS TECHNOLOGY Co., Ltd.**

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**Change History**

Issue	Date	Reason for change
1.0	2015-03-09	First edition



### Test Report Declaration

Applicant	ZTE Corporation
Applicant Address	ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, P.R. China
Manufacturer	ZTE Corporation
Manufacturer Address	ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, P.R. China
Product Name	LTE Digital Mobile Handset
Model Name	ZTE Blade V320/BGH Joy Smart AXS II/BGH Joy Smart AXS II D
Brand Name	ZTE
HW Version	NE502JPAMB_B
SW Version	V320_Z34_ES_JSXPH1ID00H102
Test Standards	47 CFR Part 15 Subpart C
Test Date	2015-02-11 to 2015-03-09
Test Result	PASS

Tested by : Shen Senping  
Shen Senping

Reviewed by : Qiu Xiaojun  
Qiu Xiaojun

Approved by : Zeng Dexin  
Zeng Dexin



# 1. Technical Information

Note: Provide by applicant.

## 1.1. Equipment under Test (EUT) Description

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, OFDM
Antenna Type:	PIFA Antenna
Antenna Gain:	1.5dBi

### NOTE:

The EUT is a LTE Digital Mobile Handset, it contains WIFI Module 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  $F \text{ (MHz)} = 2412 + 5 * (n - 1)$  ( $1 \leq n \leq 11$ ). 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).

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

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 (Bluetooth, 2.4GHz ISM band radiators) for the EUT FCC ID Certification:

No.	Identity	Document Title
1	47 CFR Part 15 (10-1-13 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	<b><u>PASS</u></b>
2	15.247(b)	Peak Output Power	<b><u>PASS</u></b>
3	15.247(a)	Bandwidth	<b><u>PASS</u></b>
4	15.247(d)	Conducted Spurious Emission and Band Edge	<b><u>PASS</u></b>
5	15.247(d)	Restricted Frequency Bands	<b><u>PASS</u></b>
6	15.207	Conducted Emission	<b><u>PASS</u></b>
7	15.209 ,15.247(d)	Radiated Emission	<b><u>PASS</u></b>
8	15.247(e)	Power spectral density (PSD)	<b><u>PASS</u></b>
9	15.247(i),1.1307& 2.1093	RF exposure evaluation	<b><u>PASS</u></b>

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 v03r02 (05/06/2014).

### 1.2.1. 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

KDB 558074 Section 9.1.3 was used in order to prove compliance.

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 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:

Please reference ANNEX A(1.4).



## 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	12.89	0.019454	30	1	PASS
6	2437	12.18	0.01652			PASS
11	2462	12.96	0.01977			PASS

### 2.2.3.2. 802.11g Test mode

Channel	Frequency (MHz)	Measured Output Peak Power		Limit		Verdict
		dBm	W	dBm	W	
1	2412	12.90	0.019498	30	1	PASS
6	2437	11.99	0.015812			PASS
11	2462	13.34	0.021577			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	12.93	0.019634	30	1	PASS
6	2437	12.72	0.018707			PASS
11	2462	13.24	0.02109			PASS

### 2.2.3.4. 802.11n-40MHz Test mode

Channel	Frequency (MHz)	Measured Output Peak Power		Limit		Verdict
		dBm	W	dBm	W	
1	2422	12.24	0.016749	30	1	PASS
6	2437	12.64	0.018365			PASS
11	2452	12.86	0.01932			PASS

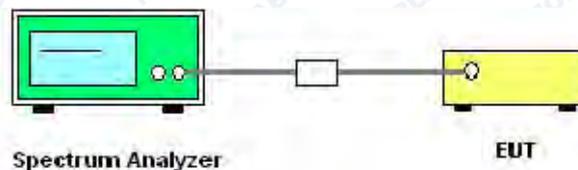
## 2.3. Bandwidth

### 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 is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50 $\Omega$ ; 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 reference ANNEX A(1.4).

### 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.

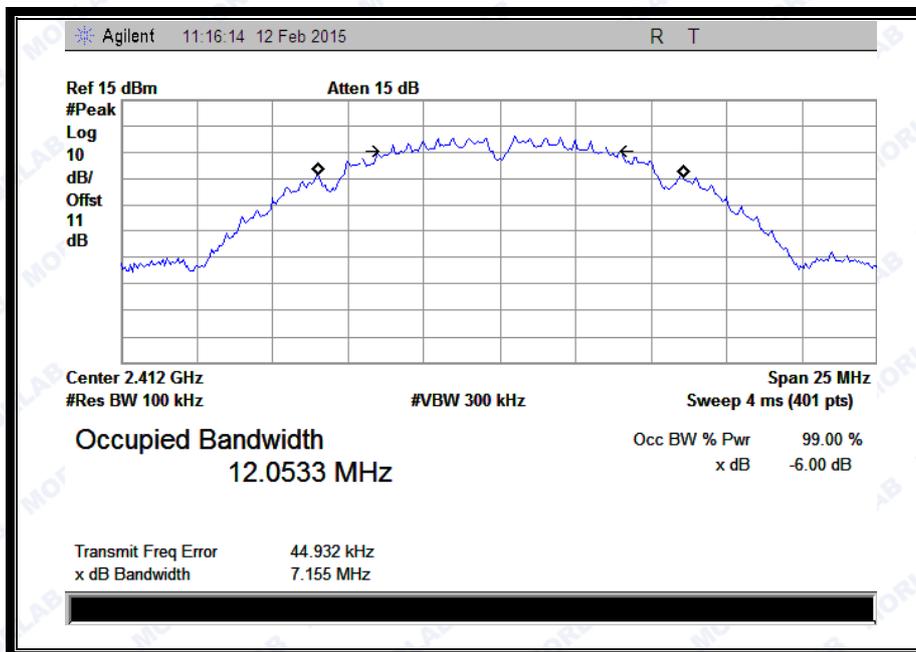


2.3.3.1. 802.11b Test mode

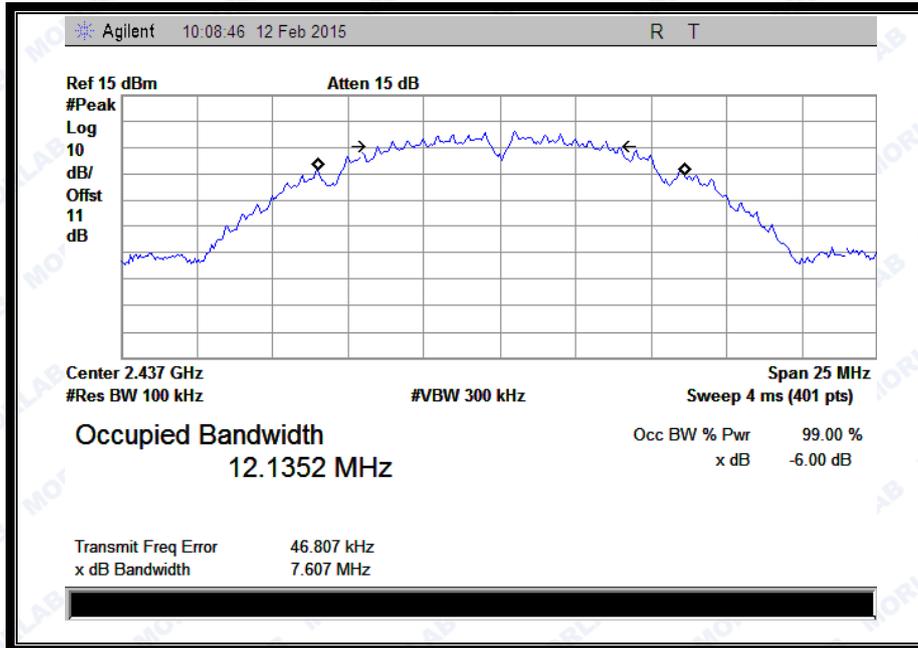
A. Test Verdict:

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limits(kHz)	Result
1	2412	7.155	≥500	PASS
6	2437	7.607	≥500	PASS
11	2462	7.640	≥500	PASS

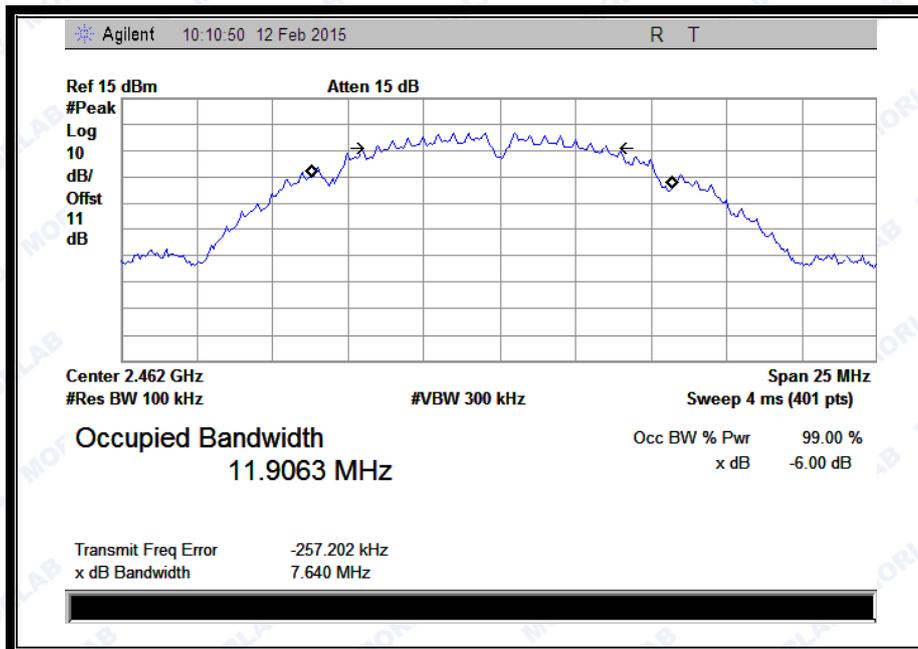
B. Test Plots



(Channel 1: 2412MHz @ 802.11b)



(Channel 6: 2437 MHz @ 802.11b)



(Channel 11: 2462MHz @ 802.11b)

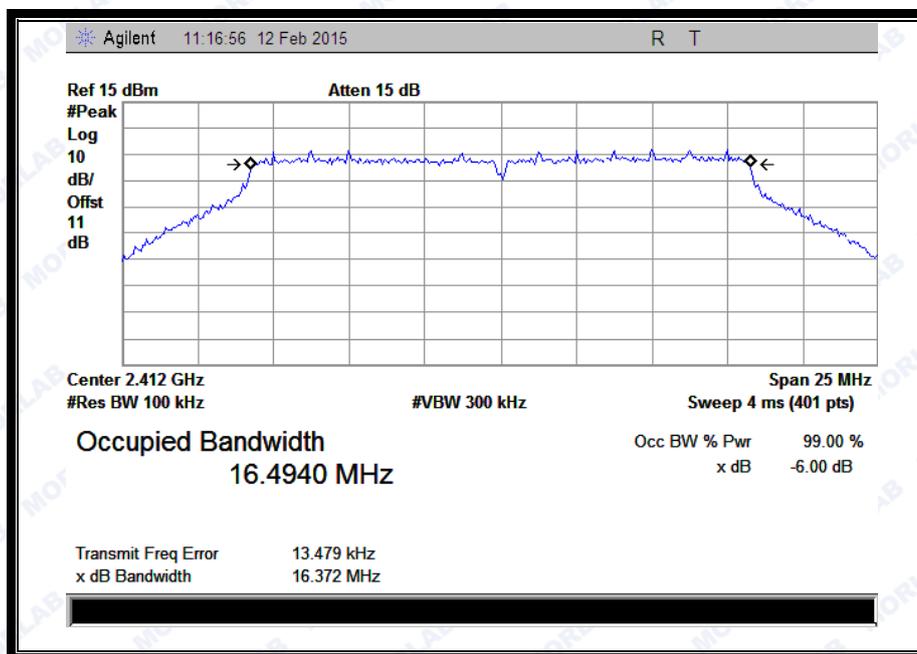


### 2.3.3.2. 802.11g Test mode

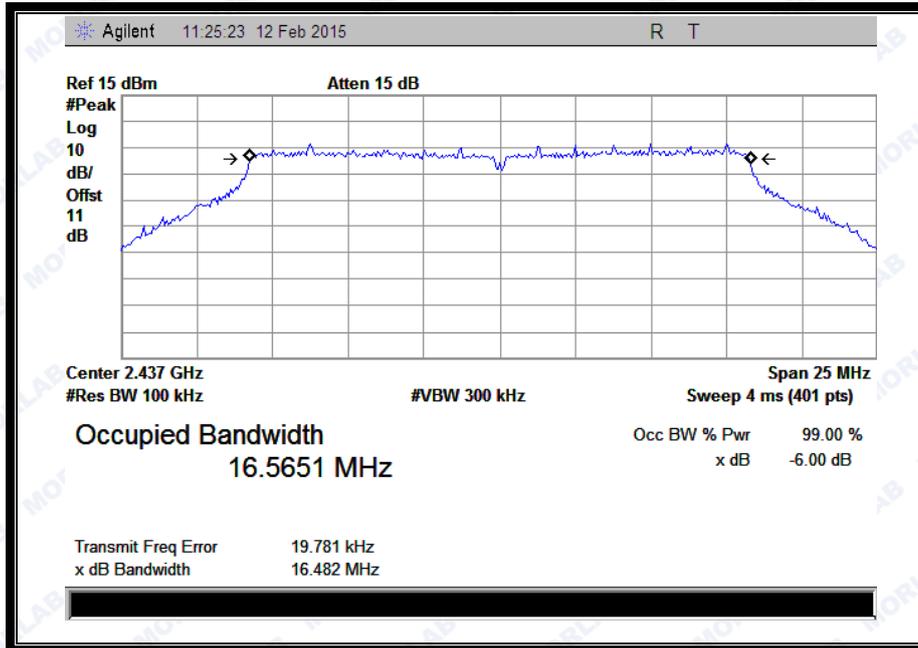
#### A. Test Verdict:

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limits (kHz)	Result
1	2412	16.372	≥500	PASS
6	2437	16.482	≥500	PASS
11	2462	16.162	≥500	PASS

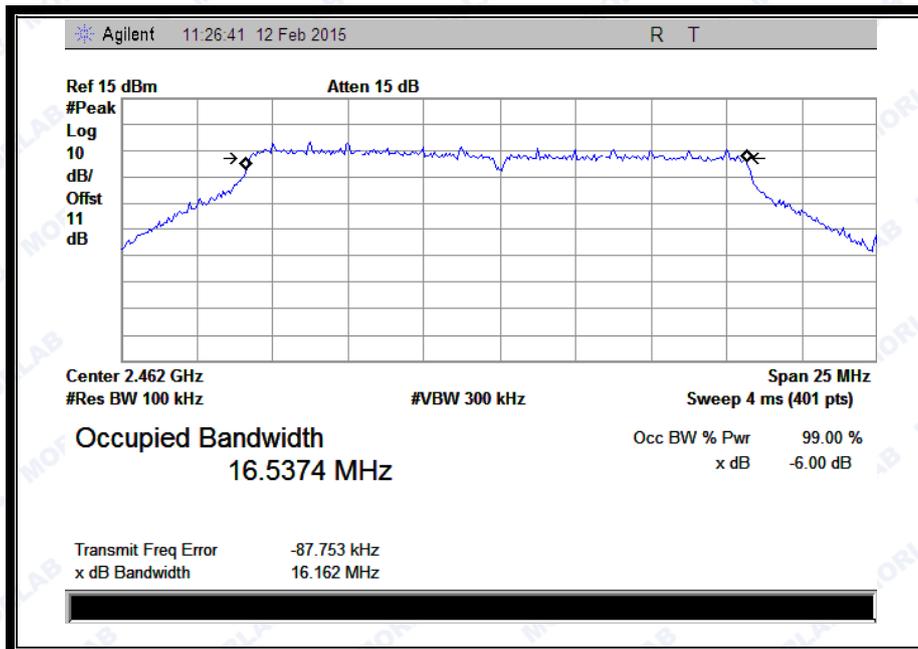
#### B. Test Plots:



(Channel 1: 2412MHz @ 802.11g)



(Channel 6: 2437MHz @ 802.11g)



(Channel 11: 2462MHz @ 802.11g)

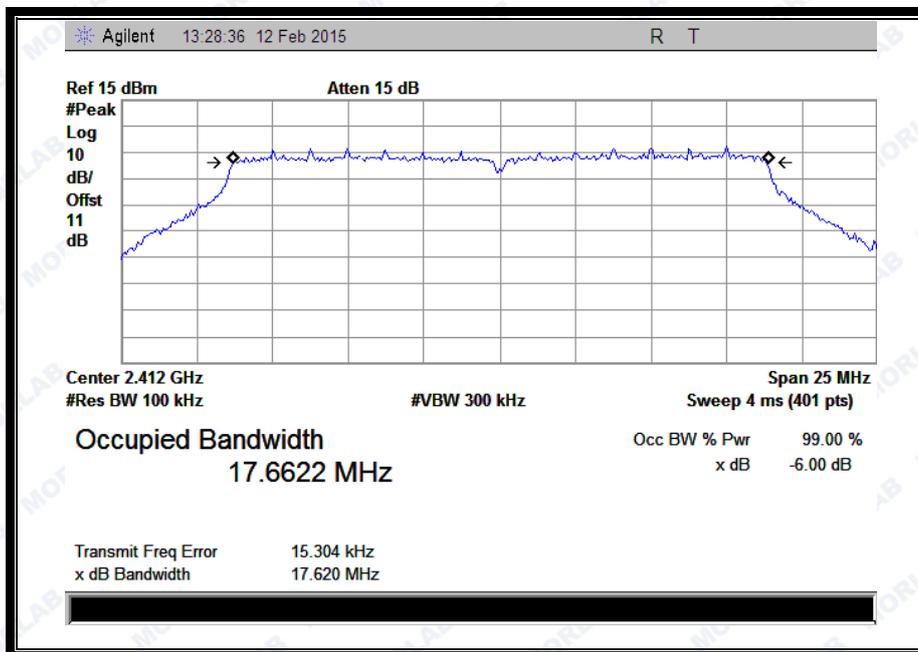


2.3.3.3. 802.11n-20 Test mode

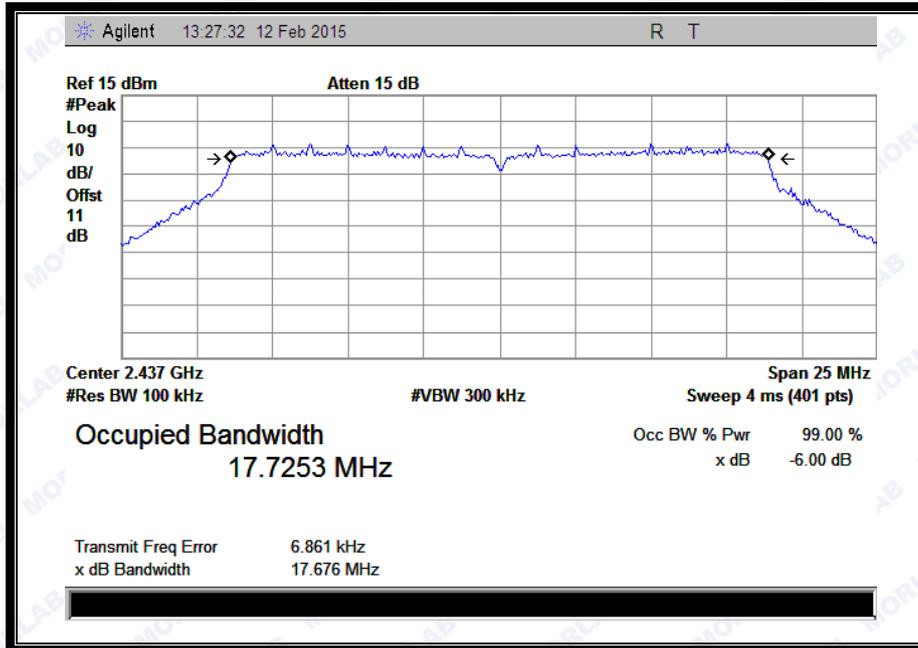
A. Test Verdict:

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limits (kHz)	Result
1	2412	17.620	≥500	PASS
6	2437	17.676	≥500	PASS
11	2462	16.424	≥500	PASS

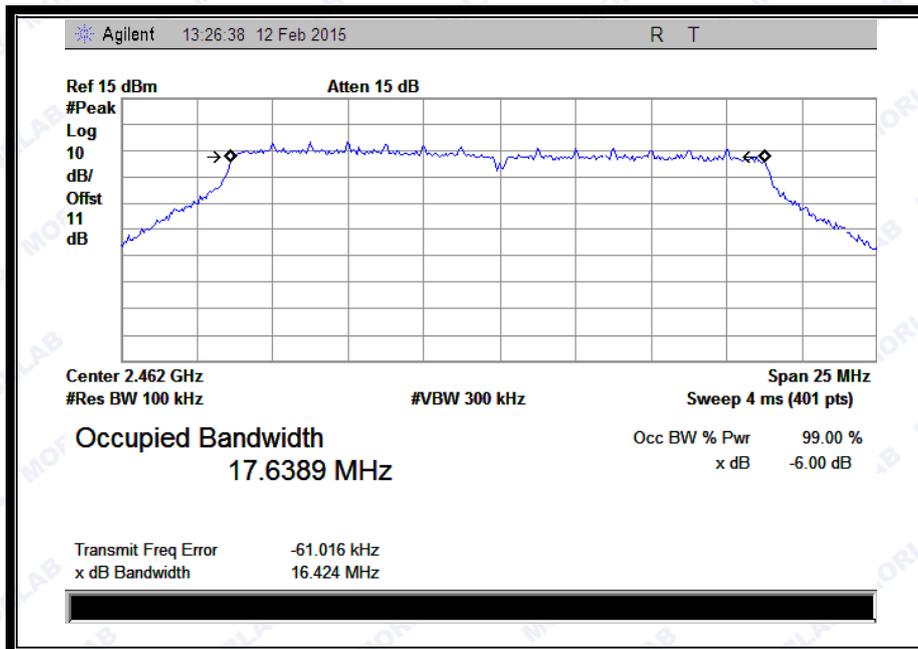
B. Test Plots:



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



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



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

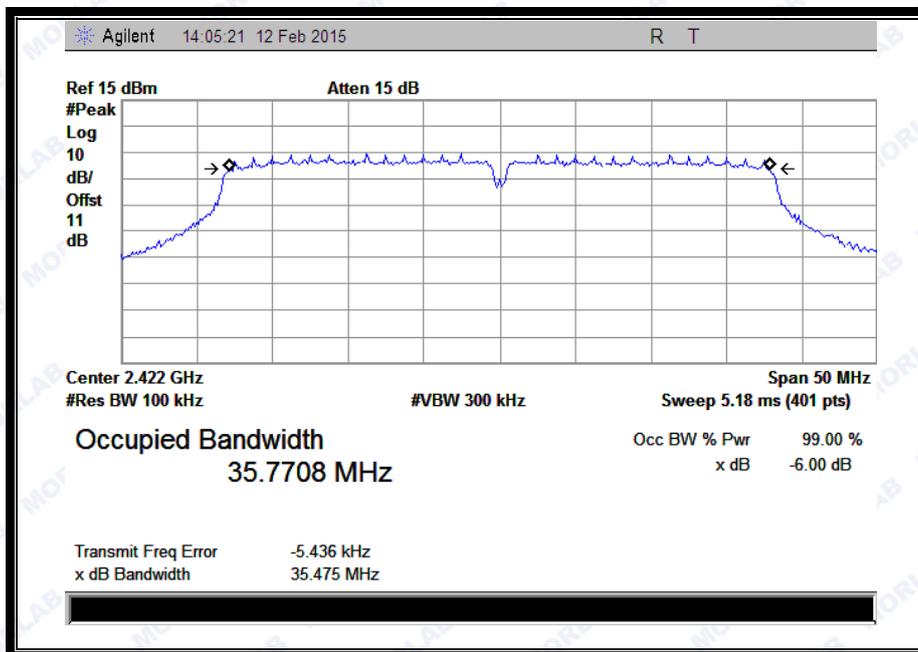


2.3.3.4. 802.11n-40 Test mode

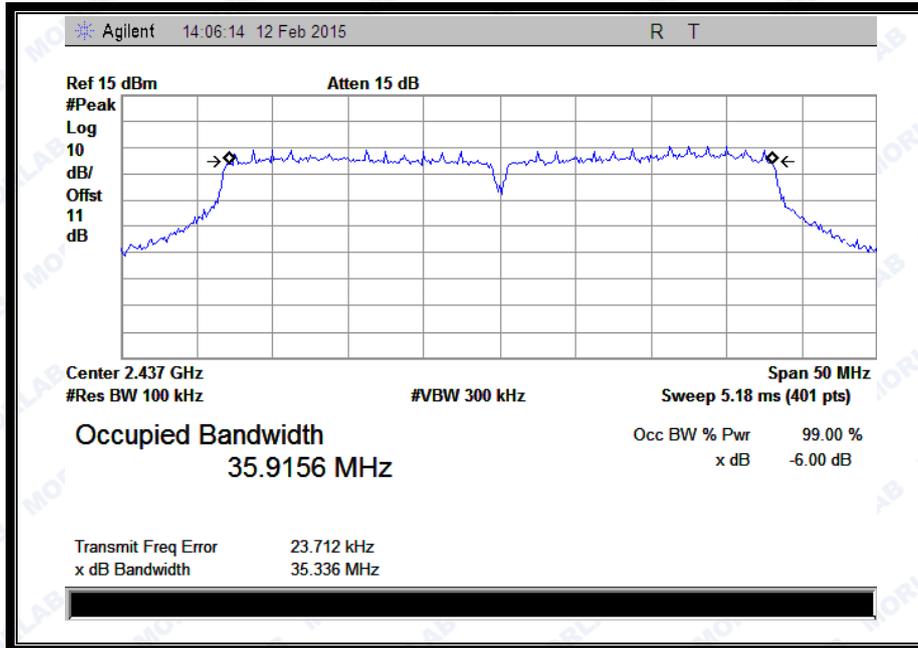
C. Test Verdict:

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limits (kHz)	Result
1	2422	35.475	≥500	PASS
6	2437	35.336	≥500	PASS
11	2452	35.127	≥500	PASS

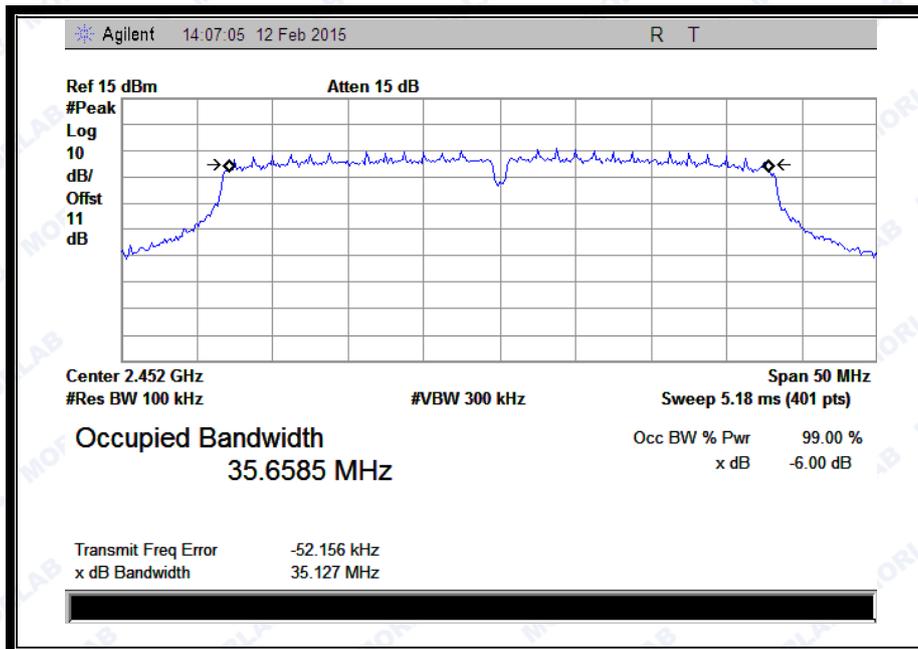
D. Test Plots:



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



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



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

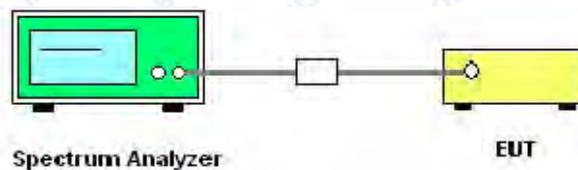
## 2.4. Conducted Spurious Emissions and Band Edge

### 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 reference ANNEX A(1.4).

### 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.



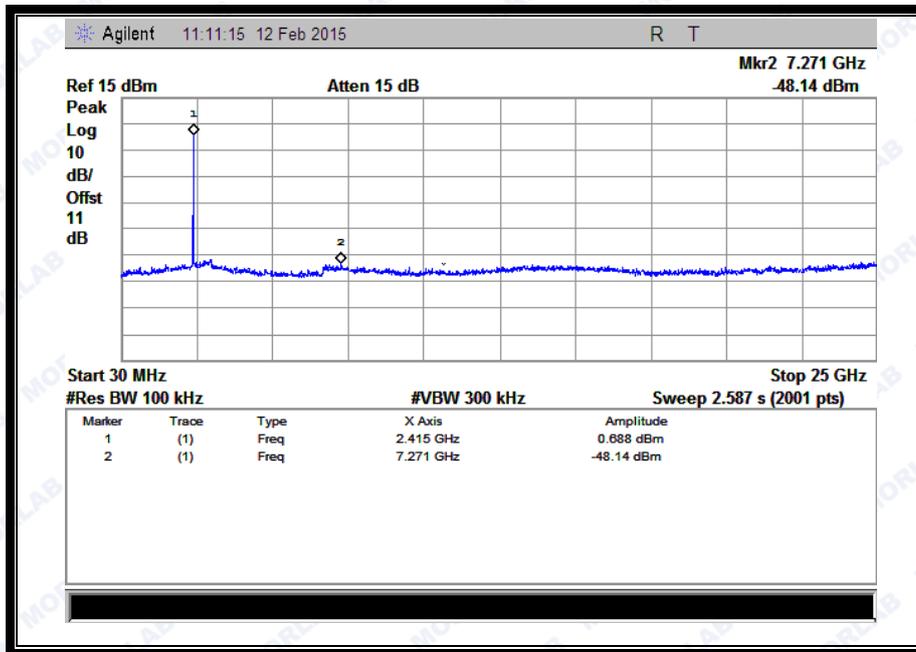
2.4.3.1. 802.11b Test mode

A. Test Verdict:

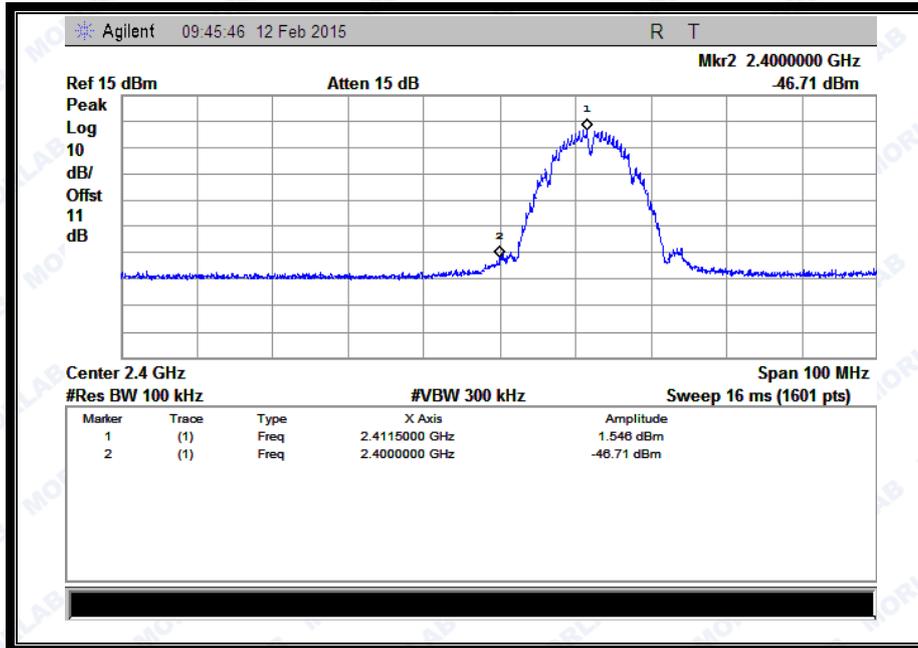
Channel	Frequency (MHz)	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
			Carrier Level	Calculated -20dBc Limit	
1	2412	-48.14	0.688	-19.312	PASS
6	2437	-48.87	0.454	-19.546	PASS
11	2462	-49.36	0.223	-19.777	PASS

B. Test Plots:

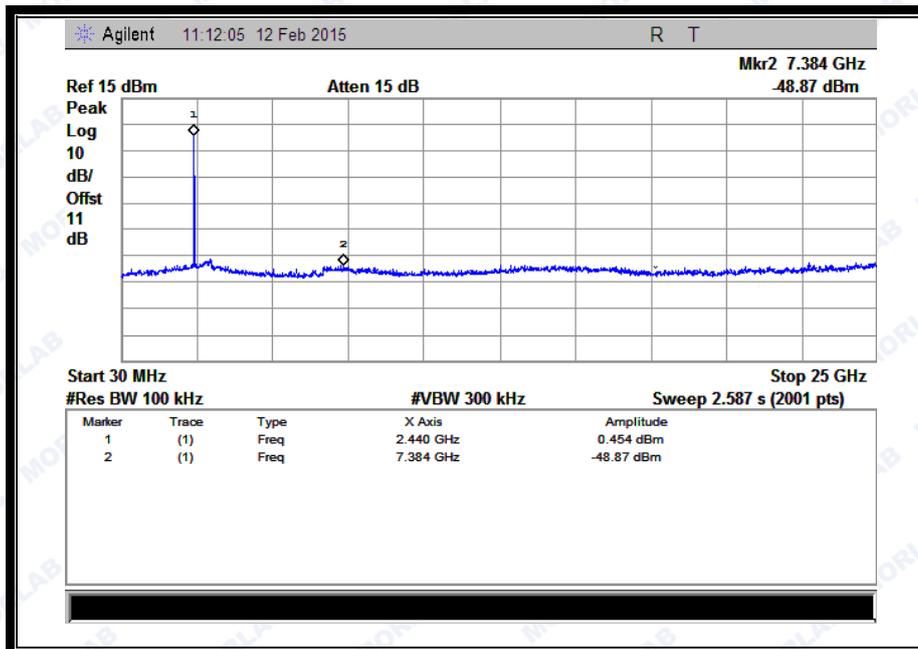
Note: the power of the Module transmitting frequency should be ignored.



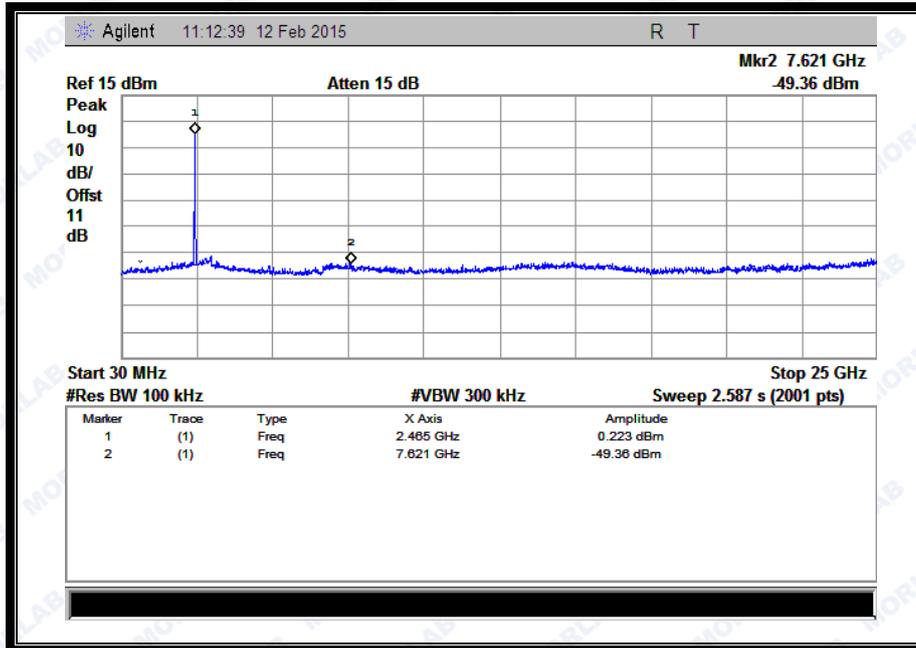
(Channel = 1, 30MHz to 25GHz)



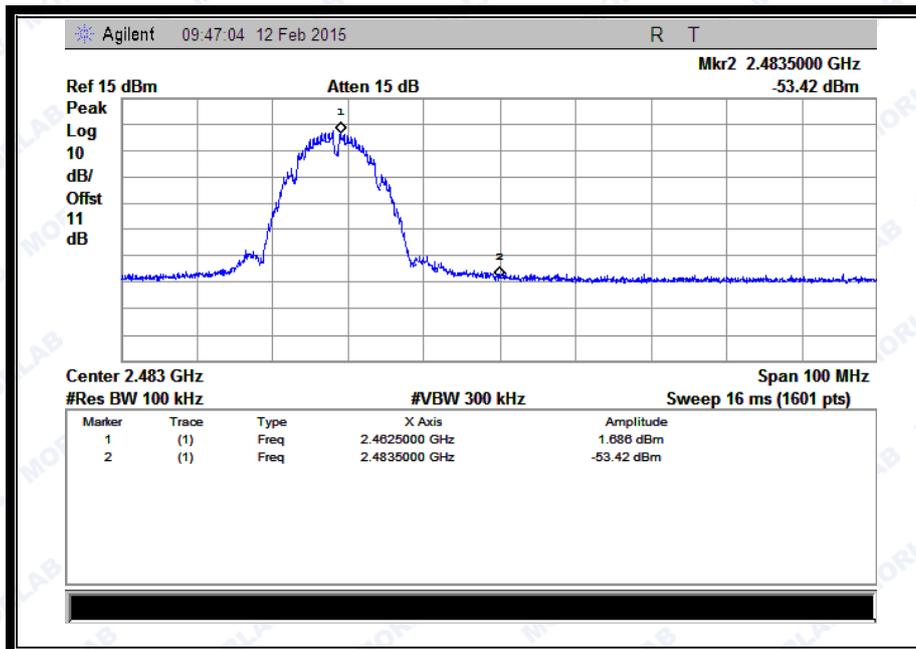
(Band Edge @ Channel = 1)



(Channel = 6, 30MHz to 25GHz)



(Channel = 11, 30MHz to 25GHz)



(Band Edge @ Channel = 11)



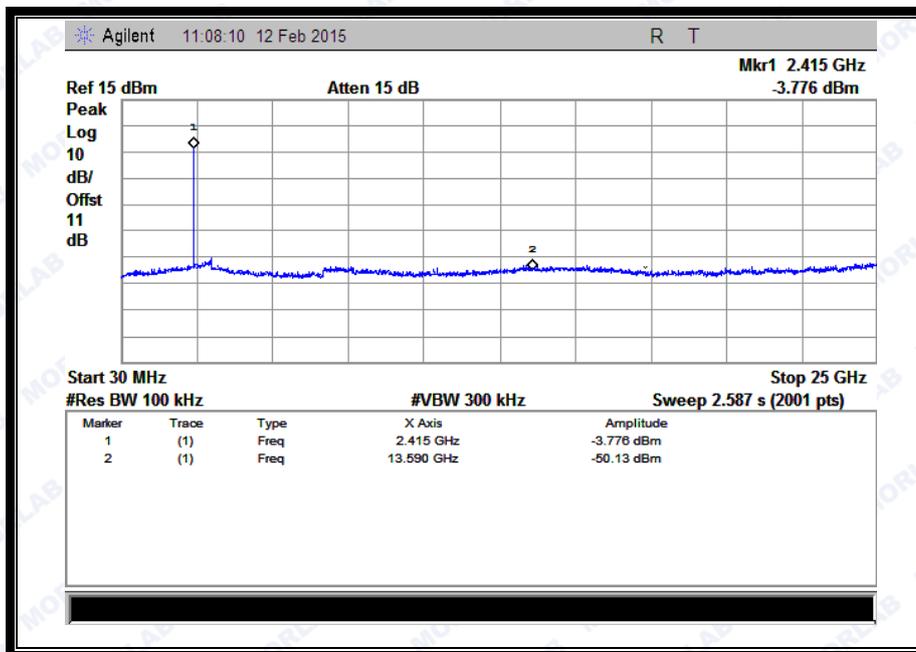
2.4.3.2. 802.11g Test mode

A. Test Verdict:

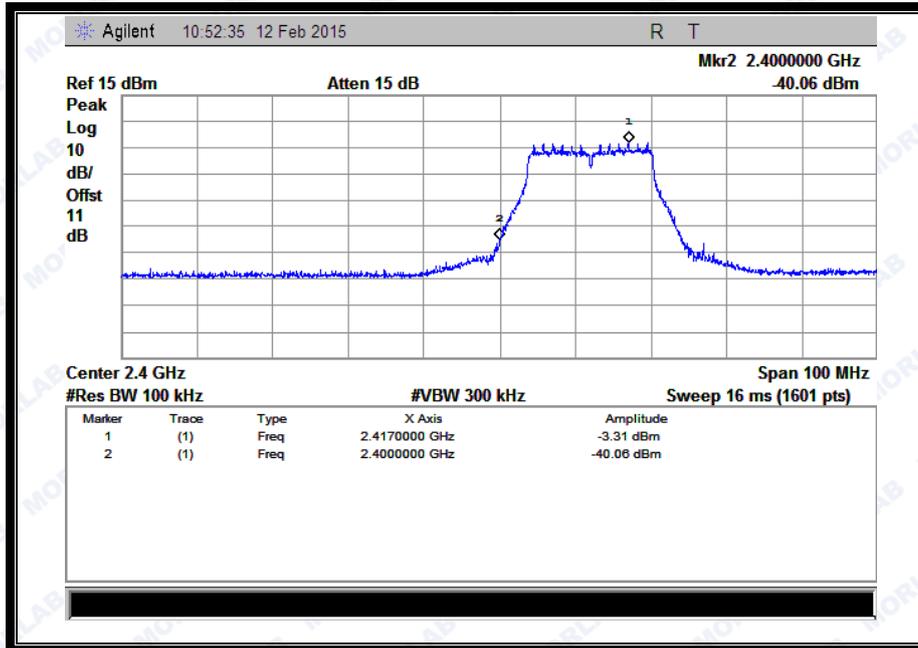
Channel	Frequency (MHz)	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
			Carrier Level	Calculated -20dBc Limit	
1	2412	-50.13	-3.776	-23.776	PASS
6	2437	-48.76	-3.589	-23.589	PASS
11	2462	-45.97	-4.316	-24.316	PASS

B. Test Plots:

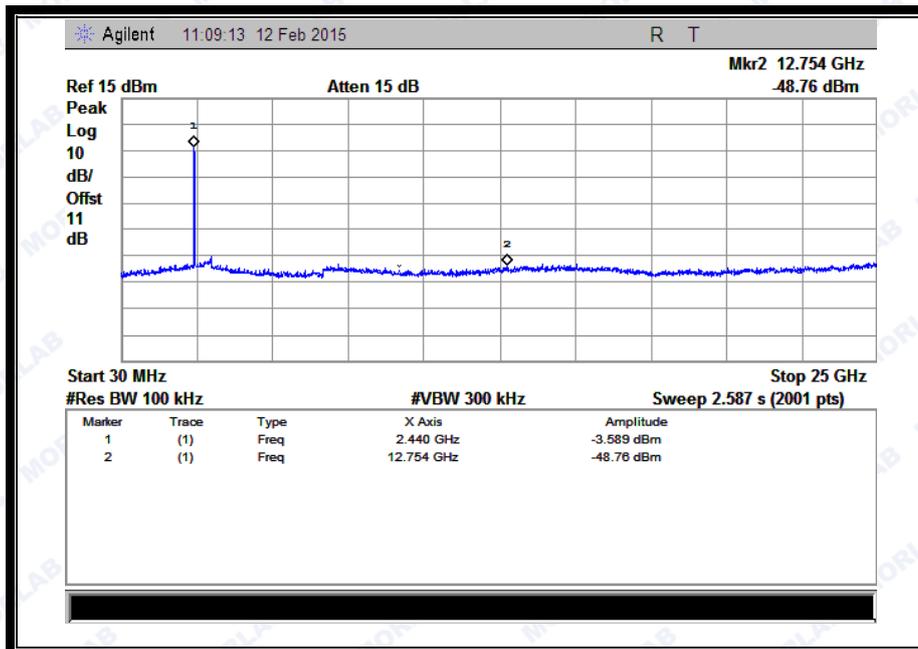
Note: the power of the Module transmitting frequency should be ignored.



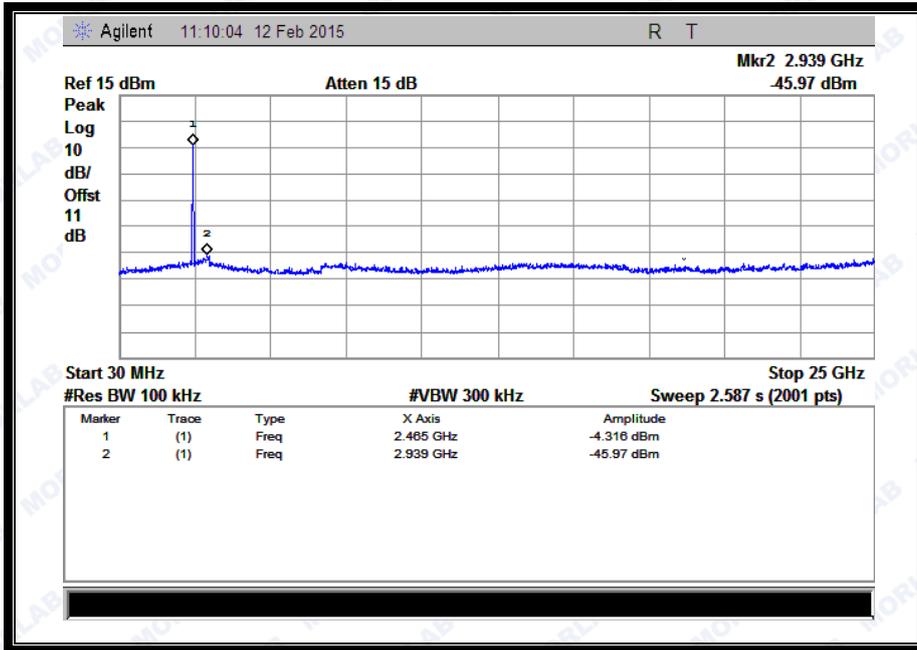
(Channel = 1, 30MHz to 25GHz)



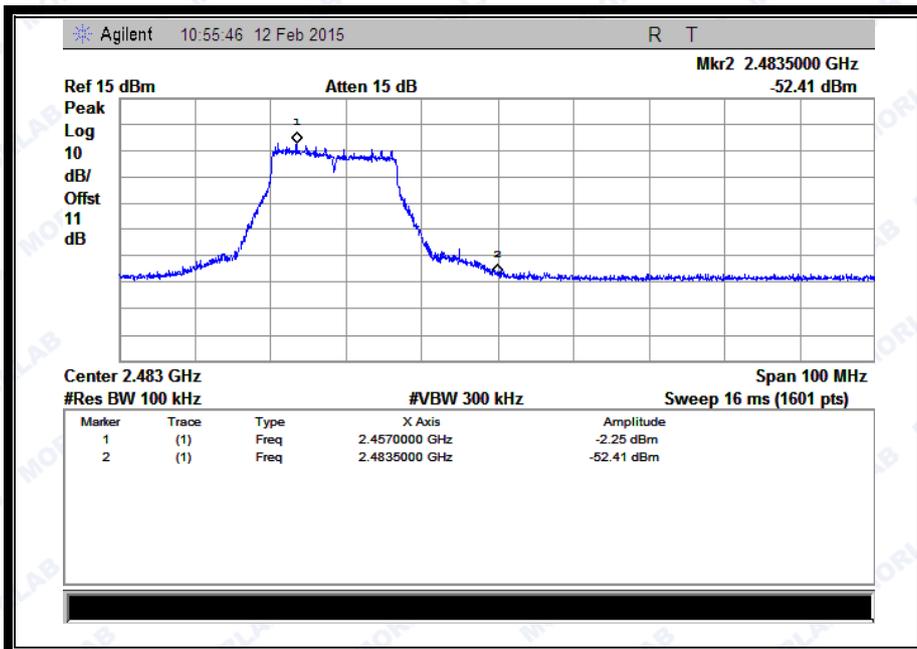
(Band Edge @ Channel = 1)



(Channel = 6, 30MHz to 25GHz)



(Channel = 11, 30MHz to 25GHz)



(Band Edge @ Channel = 11)



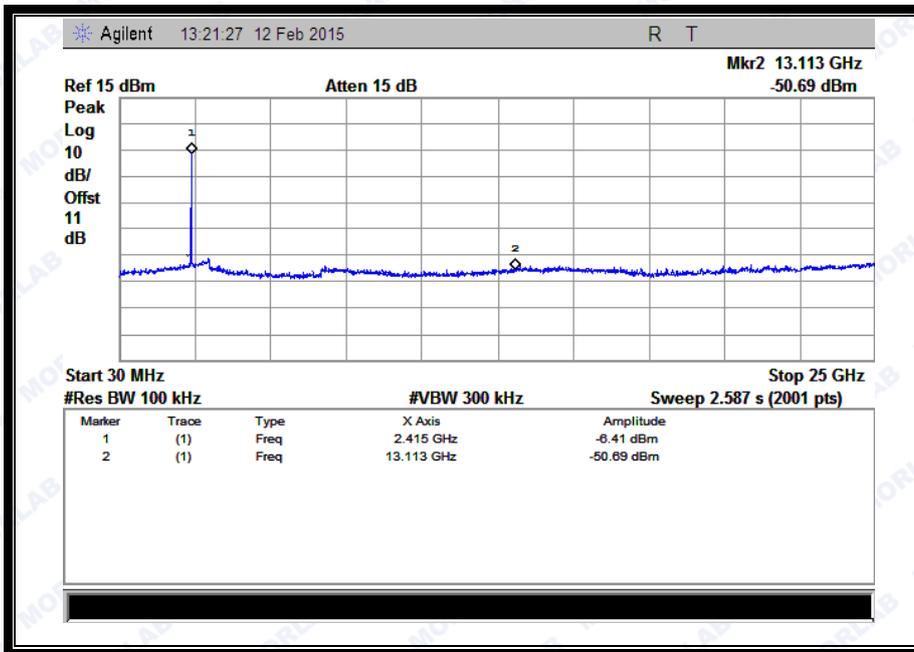
2.4.3.3. 802.11n -20MHz Test mode

A. Test Verdict:

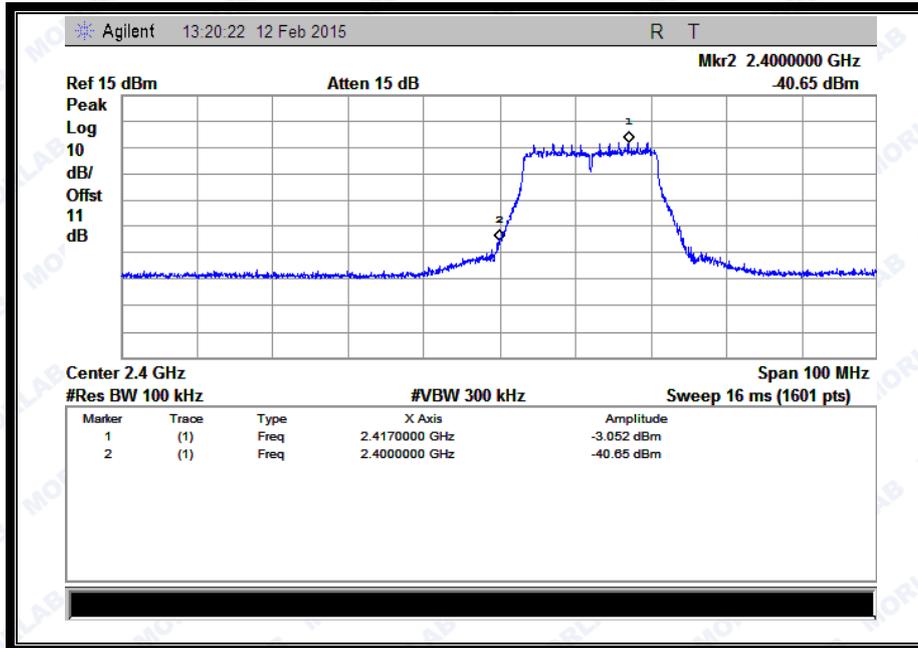
Channel	Frequency (MHz)	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
			Carrier Level	Calculated -20dBc Limit	
1	2412	-50.69	-6.41	-26.41	PASS
6	2437	-50.21	-5.208	-25.208	PASS
11	2462	-50.41	-4.51	-24.51	PASS

B. Test Plots:

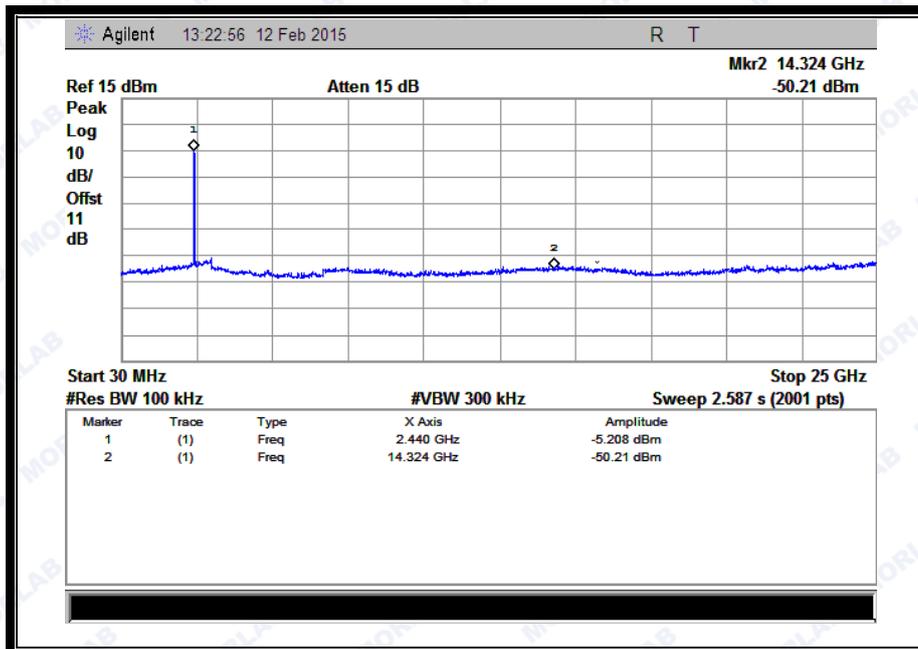
Note: the power of the Module transmitting frequency should be ignored.



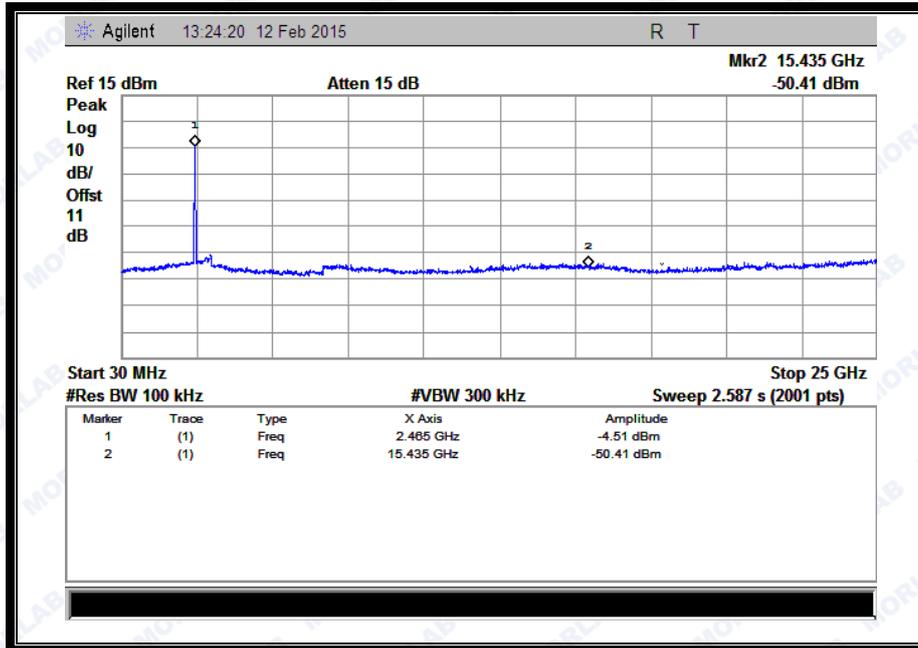
(Channel = 1, 30MHz to 25GHz)



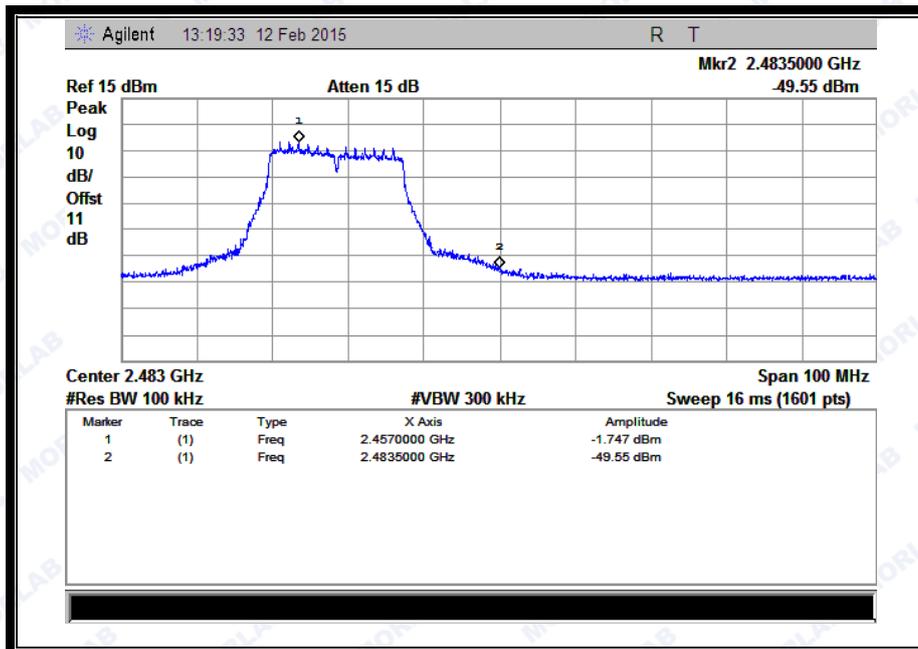
(Band Edge @ Channel = 1)



(Channel = 6, 30MHz to 25GHz)



(Channel = 11, 30MHz to 25GHz)



(Band Edge @ Channel = 11)



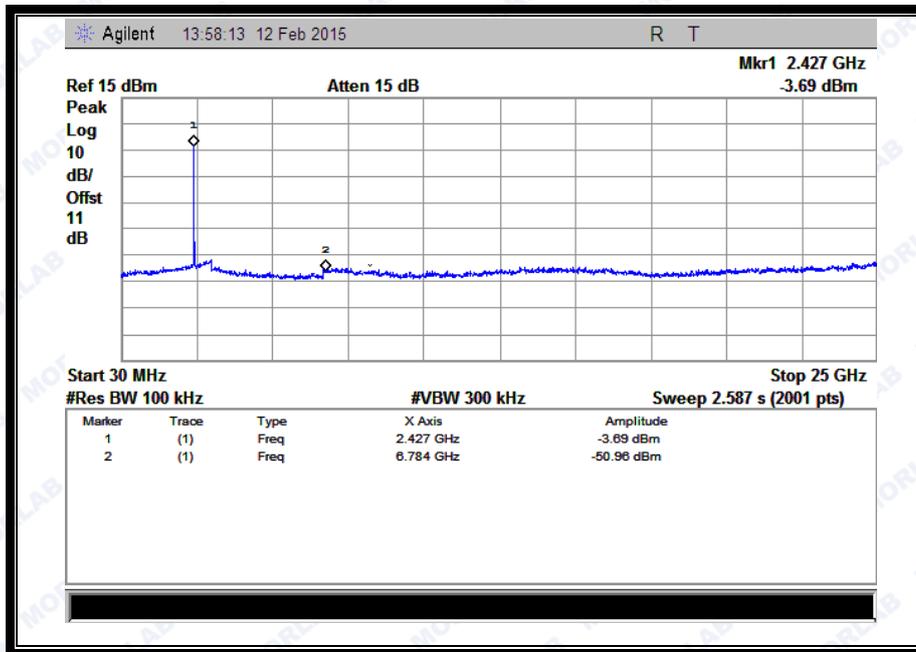
2.4.3.4. 802.11n -40MHz Test mode

C. Test Verdict:

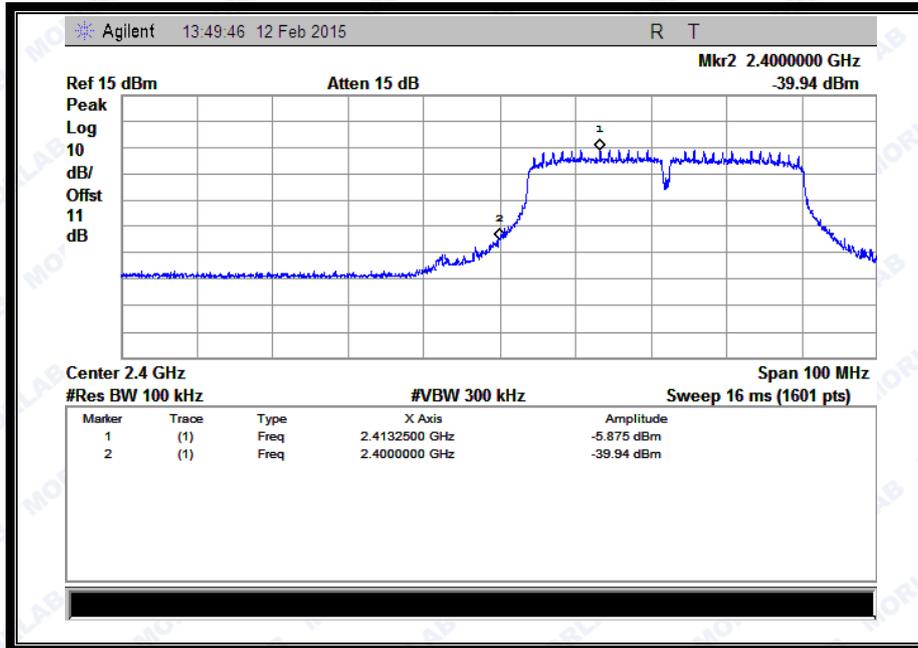
Channel	Frequency (MHz)	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
			Carrier Level	Calculated -20dBc Limit	
1	2422	-50.96	-3.690	-23.690	PASS
6	2437	-50.22	-6.576	-26.576	PASS
11	2452	-49.26	-2.634	-22.634	PASS

D. Test Plots:

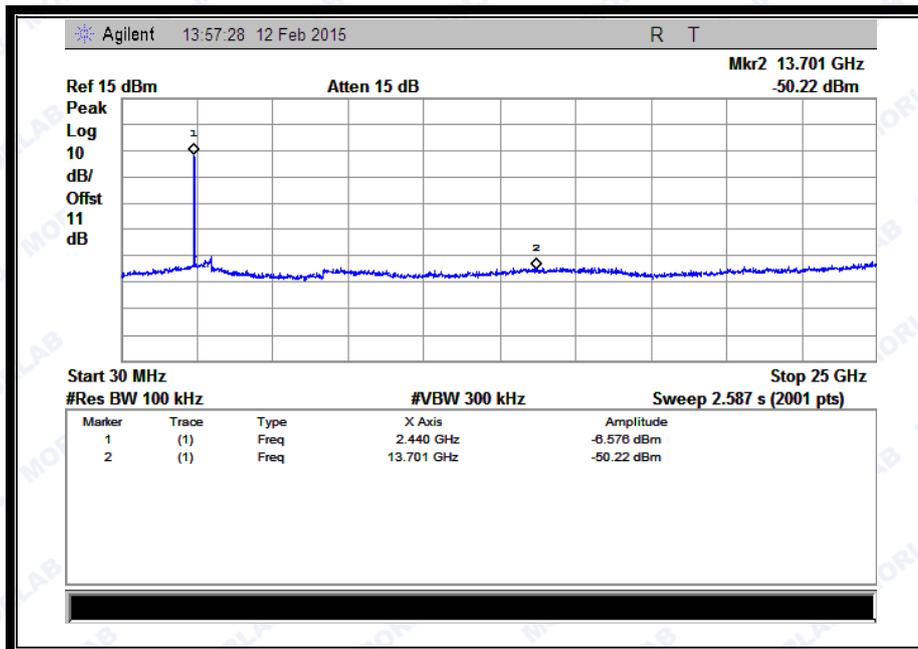
Note: the power of the Module transmitting frequency should be ignored.



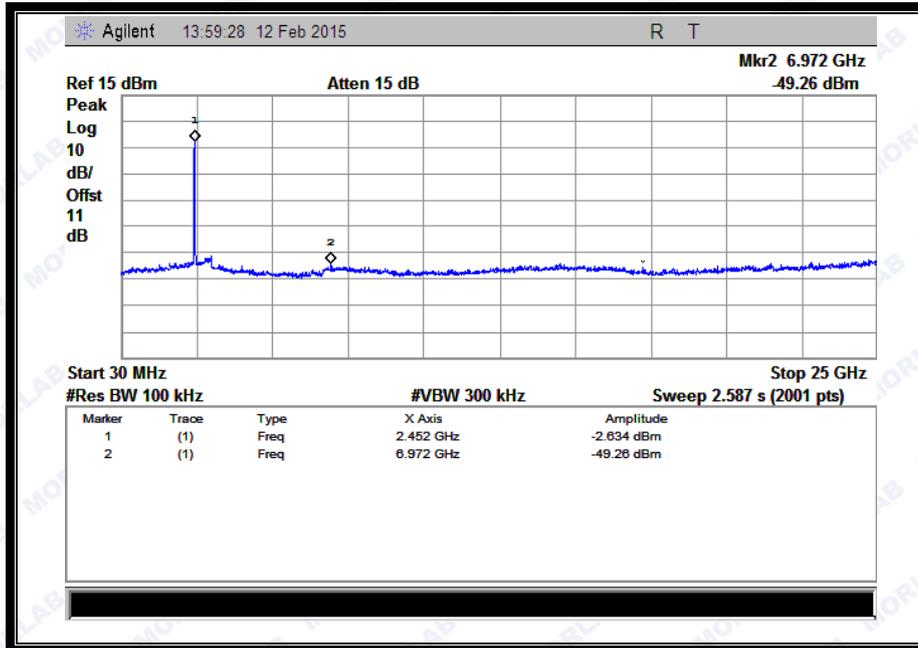
(Channel = 3, 30MHz to 25GHz)



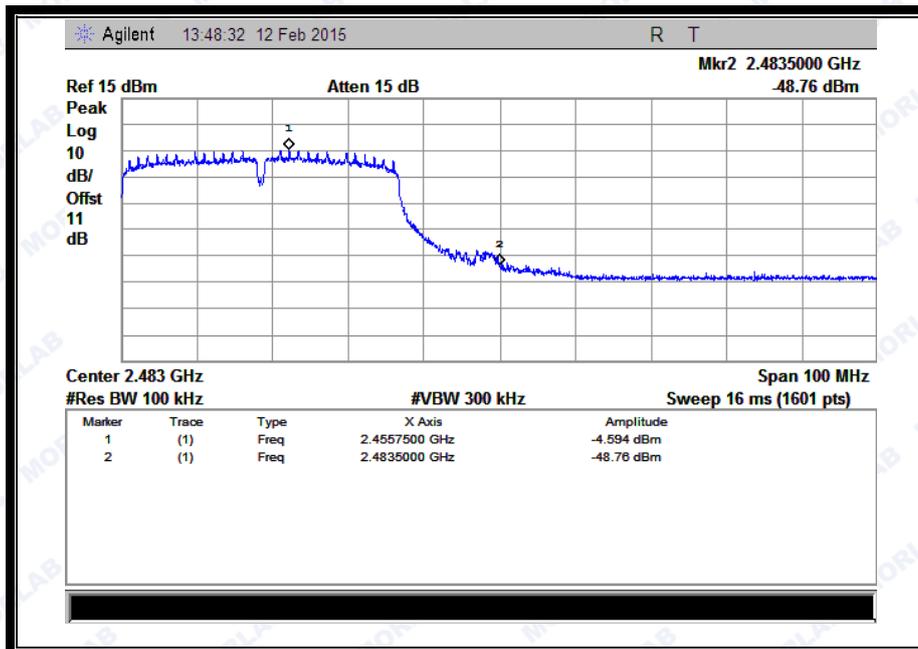
(Band Edge @ Channel = 3)



(Channel = 6, 30MHz to 25GHz)



(Channel = 9, 30MHz to 25GHz)



(Band Edge @ Channel = 9)

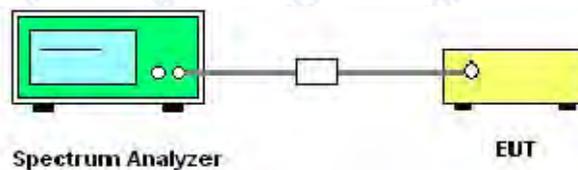
## 2.5. Power spectral density (PSD)

### 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 reference ANNEX A(1.4).



### 2.5.3. Test Result

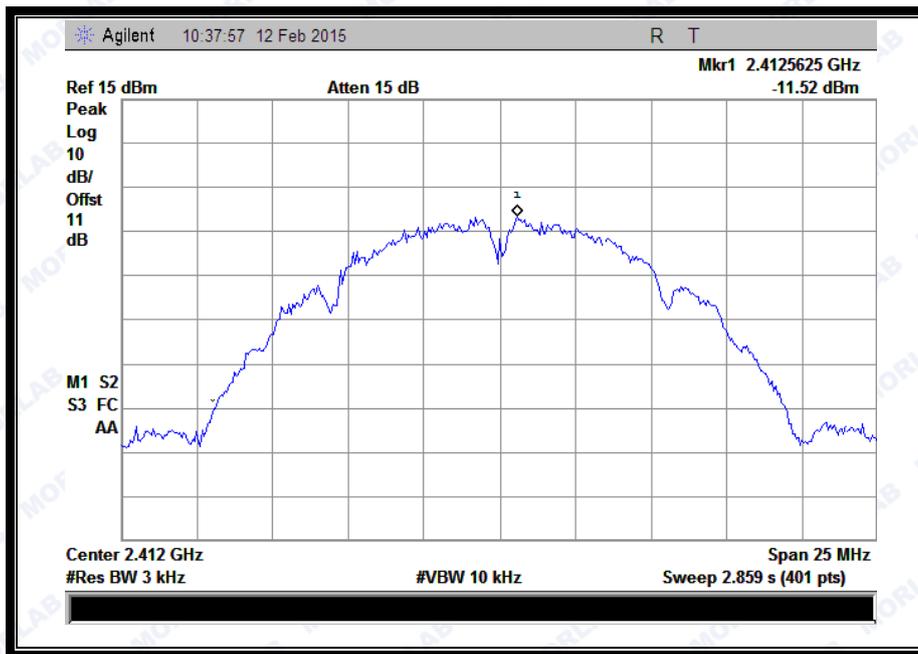
#### 2.5.3.1. 802.11b Test mode

##### A. Test Verdict:

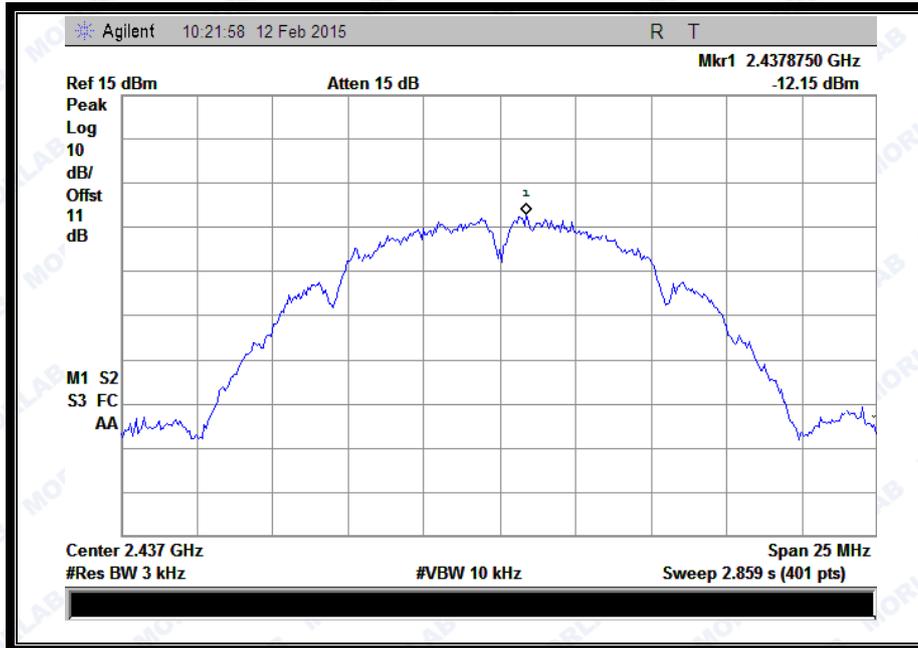
Spectral power density (dBm/3kHz)				
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
1	2412	-11.52	8	PASS
6	2437	-12.15	8	PASS
11	2462	-11.72	8	PASS

Measurement uncertainty:  $\pm 1.3$ dB

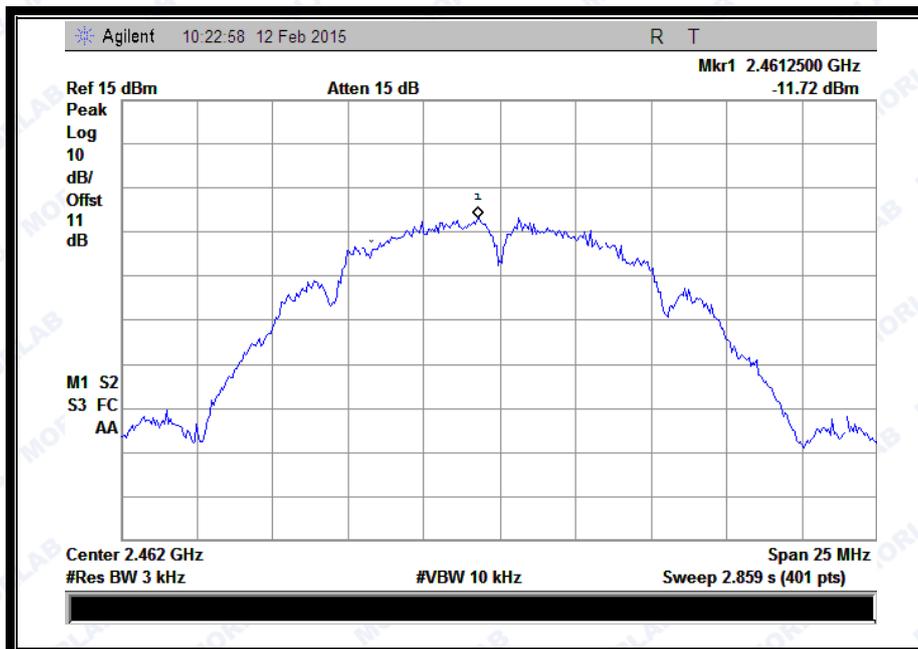
##### B. Test Plots:



(Channel = 1 @ 802.11b)



(Channel = 6 @ 802.11b)



(Channel = 11 @ 802.11b)



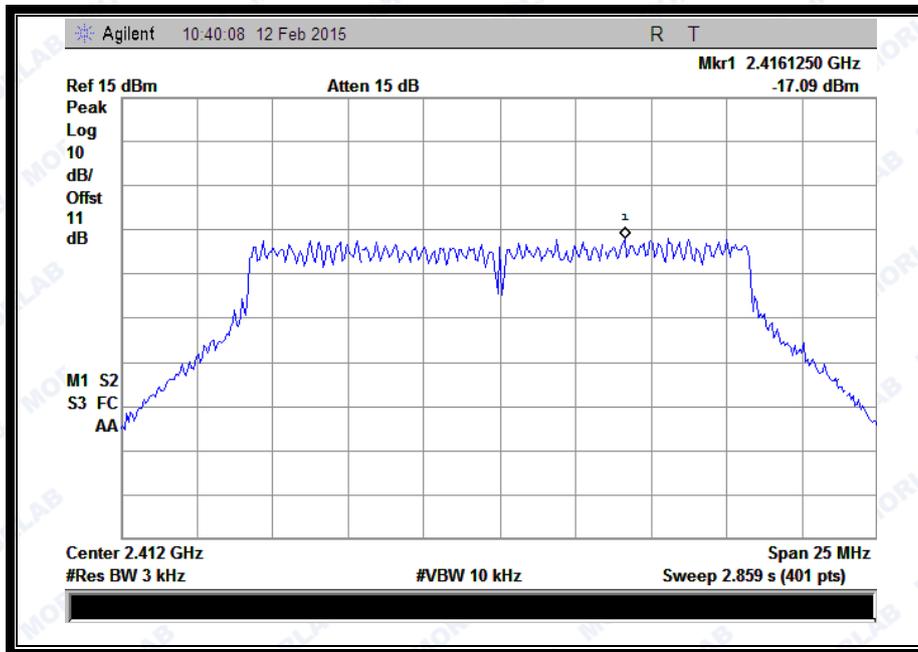
2.5.3.2. 802.11g Test mode

A. Test Verdict:

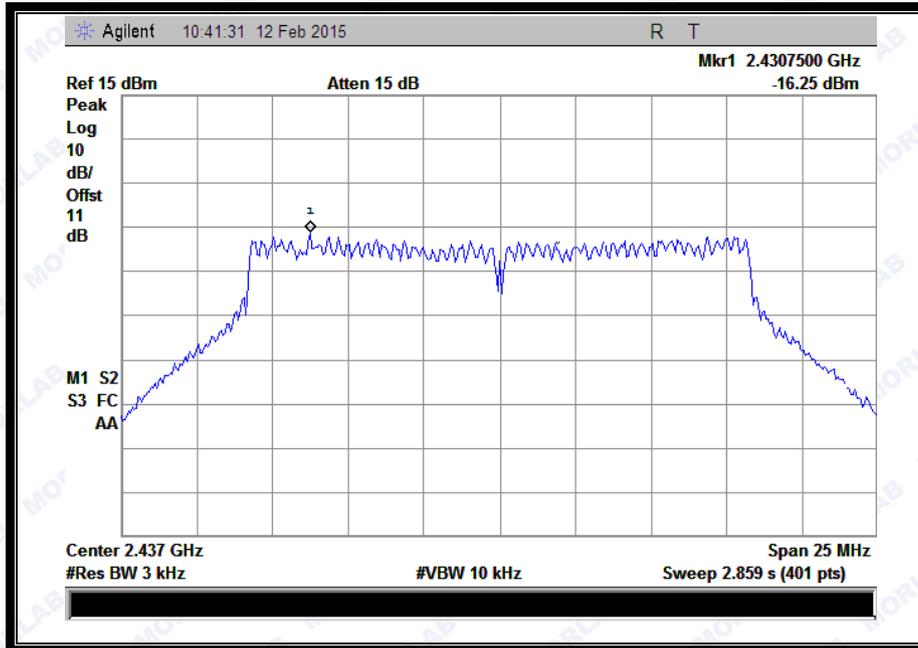
Spectral power density (dBm/3kHz)				
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
1	2412	-17.09	8	PASS
6	2437	-16.25	8	PASS
11	2462	-15.56	8	PASS

Measurement uncertainty: ±1.3dB

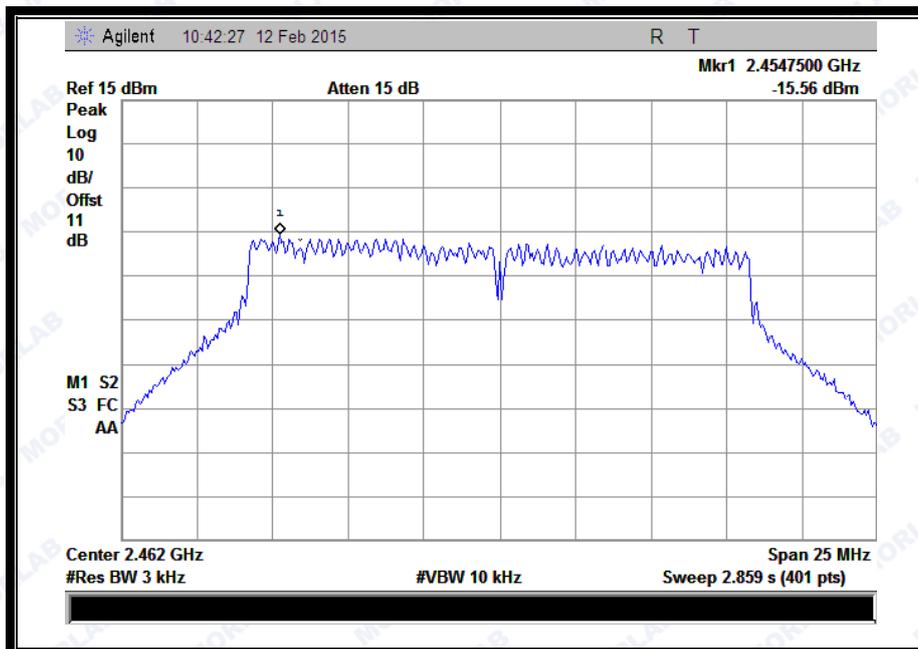
B. Test Plots:



(Channel = 1 @ 802.11g)



(Channel = 6 @ 802.11g)



(Channel = 11 @ 802.11g)



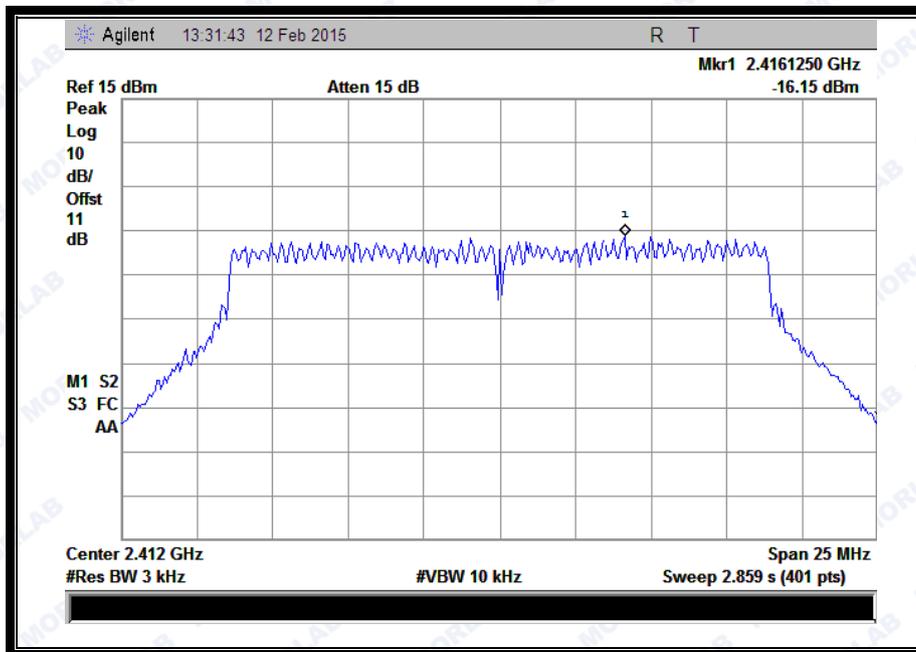
2.5.3.3. 802.11n-20MHz Test mode

A. Test Verdict:

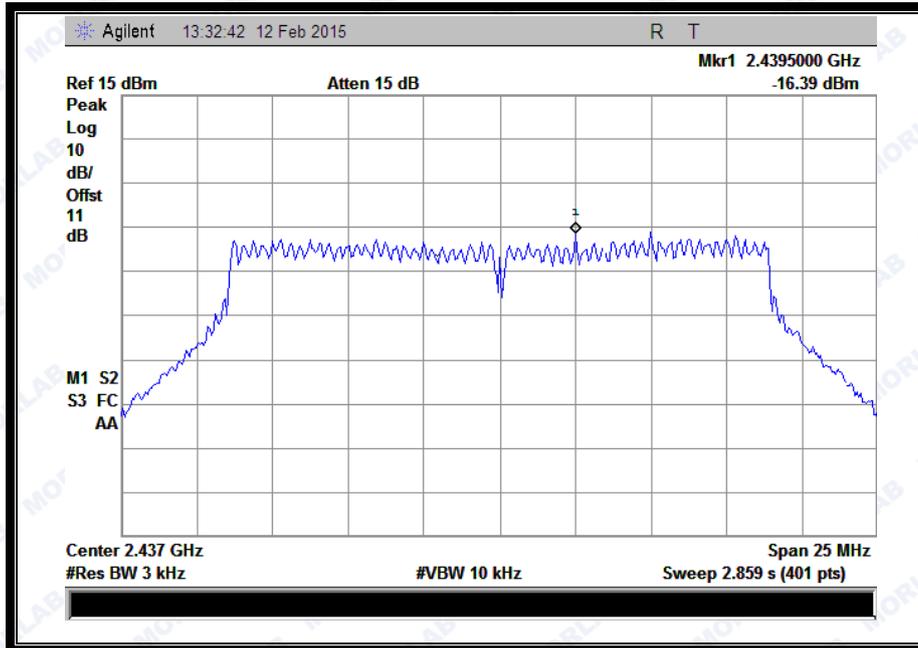
Spectral power density (dBm/3kHz)				
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
1	2412	-16.15	8	PASS
6	2437	-16.39	8	PASS
11	2462	-15.40	8	PASS

Measurement uncertainty: ±1.3dB

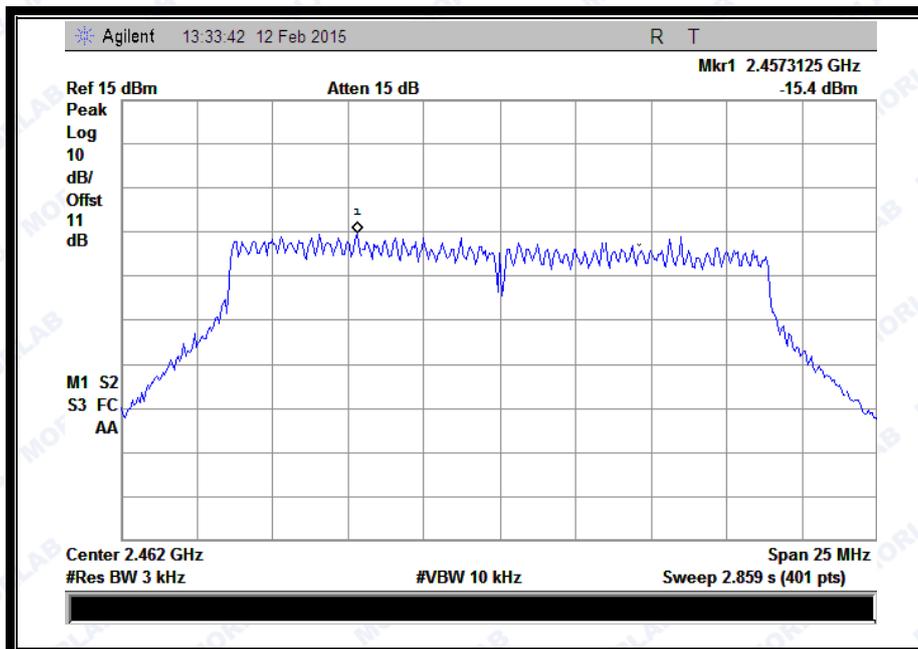
B. Test Plots:



(Channel = 1 @ 802.11n-20MHz)



(Channel = 6 @ 802.11n-20MHz)



(Channel = 11 @ 802.11n-20MHz)



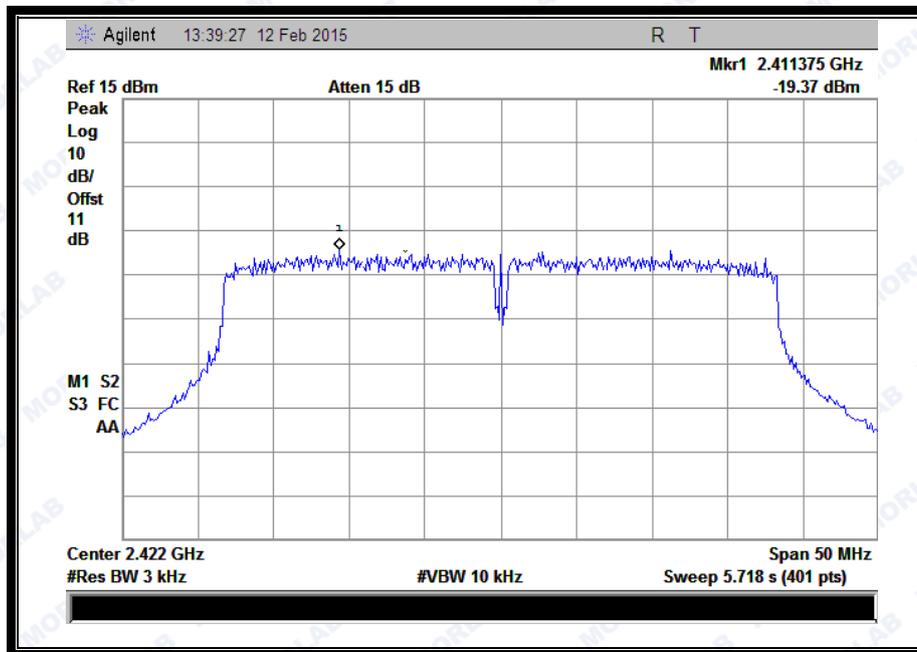
2.5.3.4. 802.11n-40MHz Test mode

C. Test Verdict:

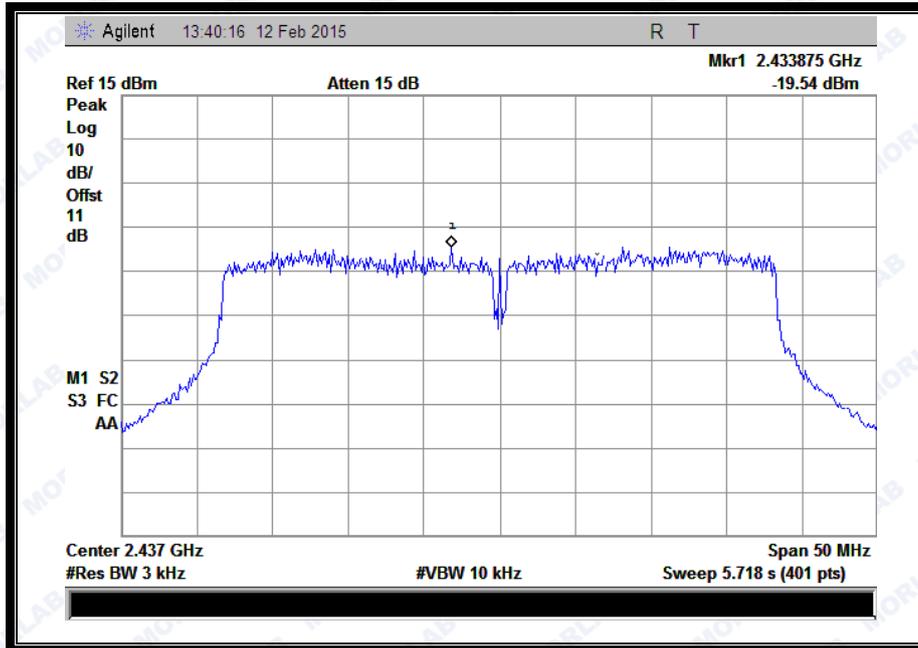
Spectral power density (dBm/3kHz)				
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
1	2422	-19.37	8	PASS
6	2437	-19.54	8	PASS
11	2452	-18.75	8	PASS

Measurement uncertainty:  $\pm 1.3$ dB

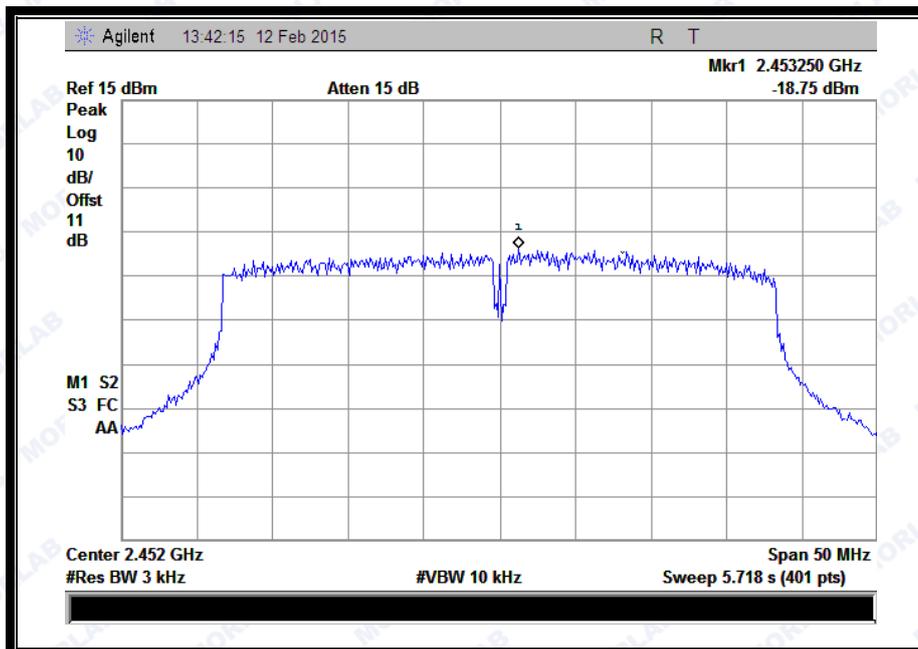
D. Test Plots:



(Channel = 3 @ 802.11n-40MHz)



(Channel = 6 @ 802.11n-40MHz)



(Channel = 9 @ 802.11n-40MHz)

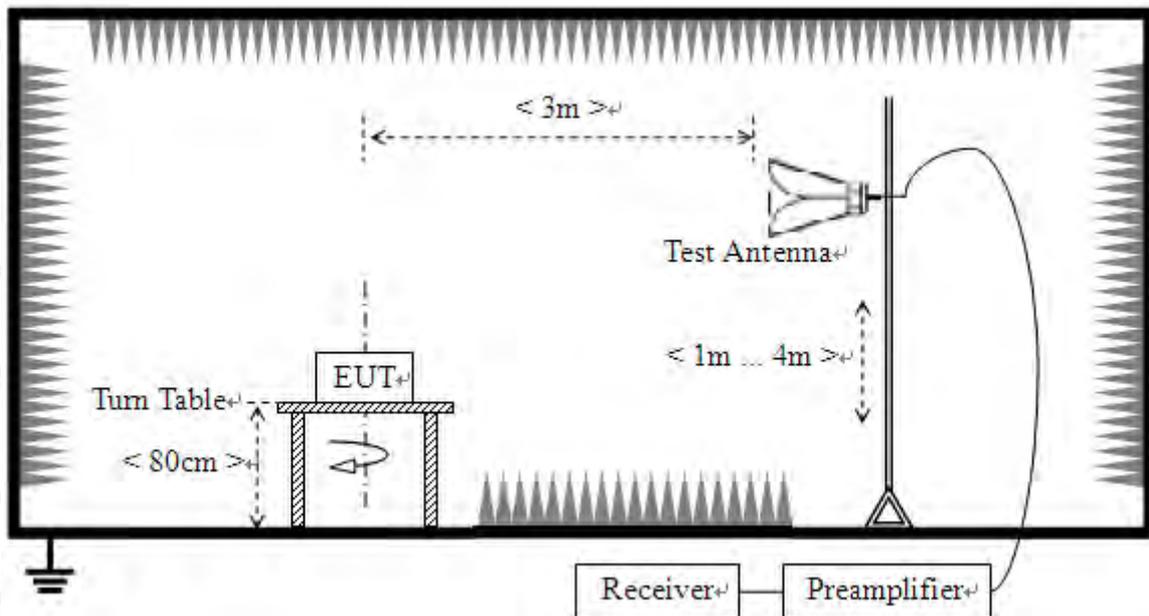
## 2.6. Restricted Frequency Bands

### 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.

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

## B. Equipments List:

Please reference ANNEX A(1.4).

## 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

$G_{\text{preamp}}$ : Pre-amplifier Gain

$A_{\text{Factor}}$ : 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

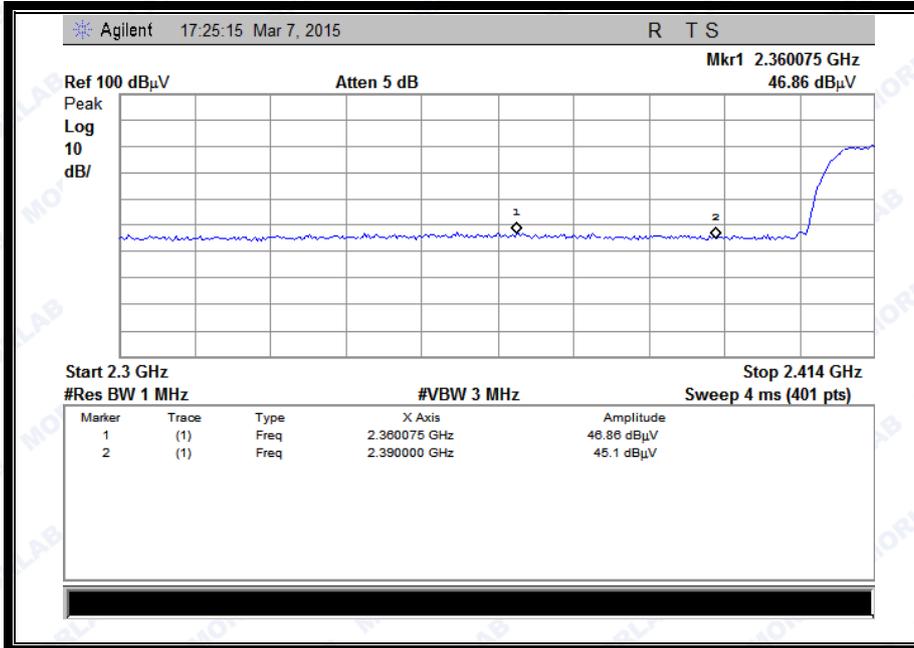
The lowest and highest channels are tested to verify the band edge emissions.

#### A. Test Verdict:

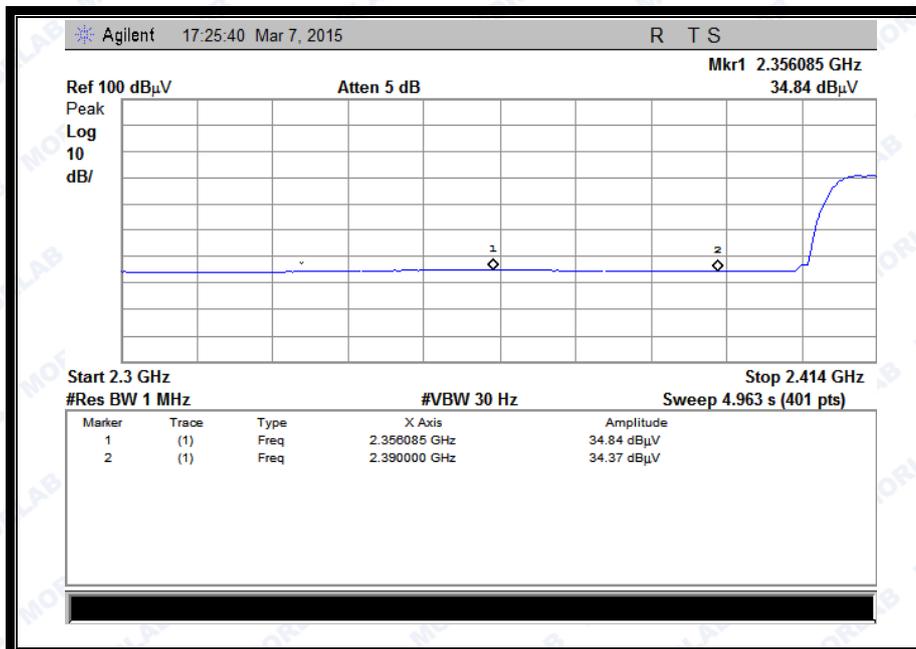
Channel	Frequency (MHz)	Detector	Receiver Reading UR (dBuV)	AT (dB)	AFactor (dB@3m)	Max. Emission E (dBuV/m)	Limit (dBuV/m)	Verdict
		PK/ AV						
1	2360.08	PK	46.86	-33.63	32.56	45.79	74	Pass
1	2356.09	AV	34.84	-33.63	32.56	33.77	54	Pass
11	2486.11	PK	46.28	-33.18	32.5	45.6	74	Pass
11	2484.21	AV	34.45	-33.18	32.5	33.77	54	Pass



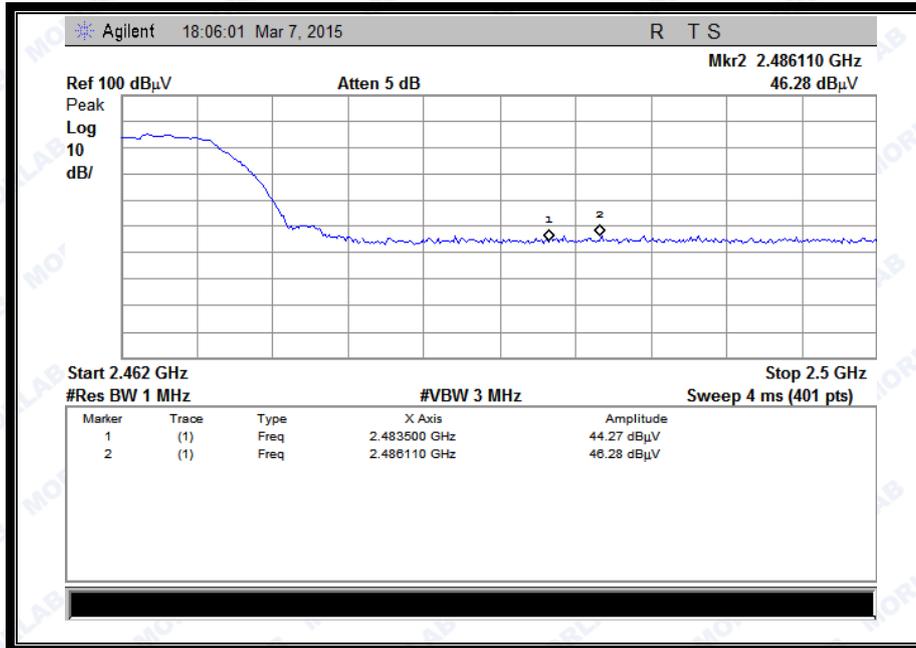
**B. Test Plots:**



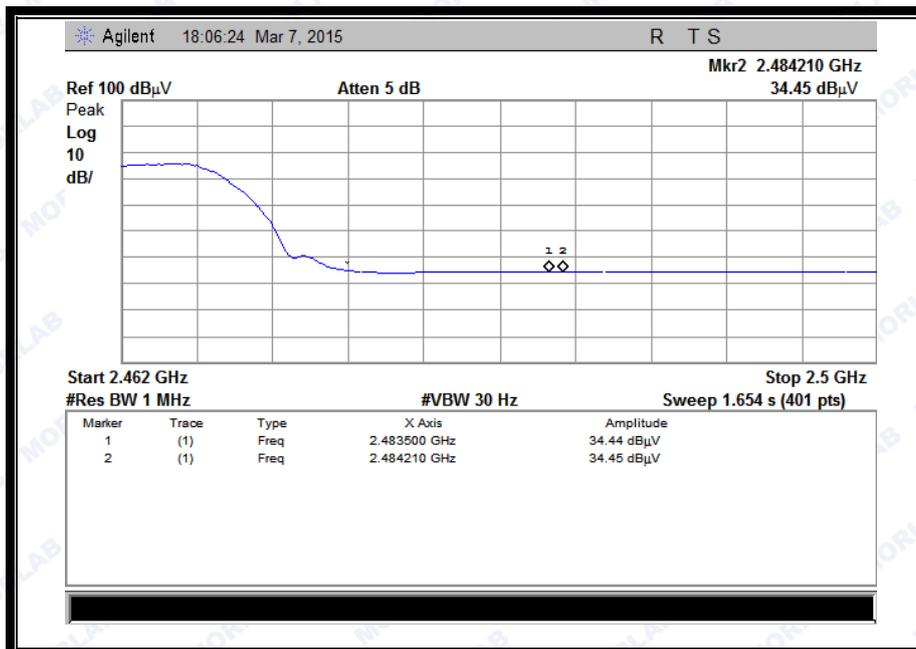
(Plot A1: Channel = 1 PEAK @ 802.11b)



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



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



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



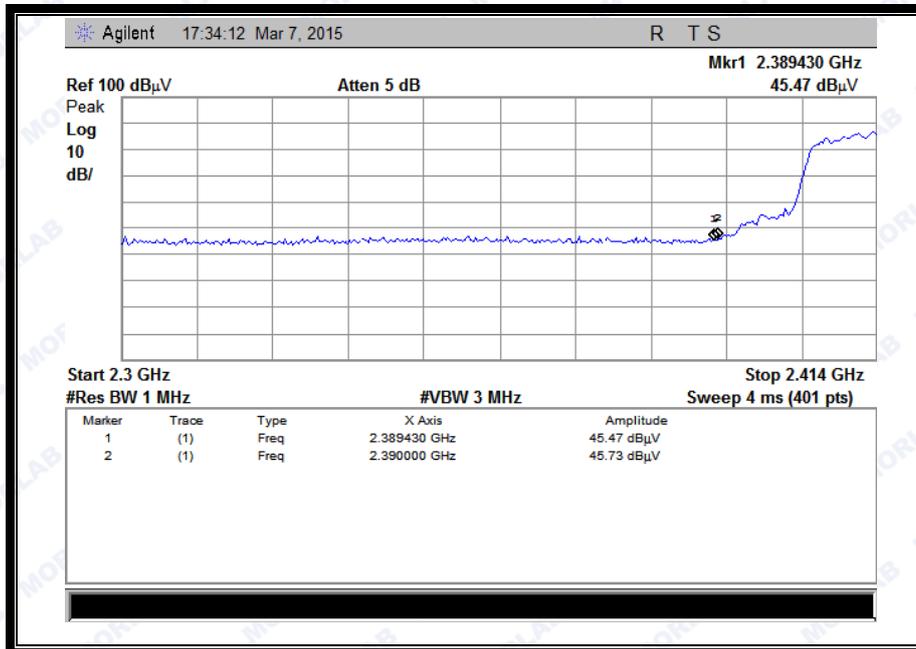
**2.6.3.2. 802.11g Test mode**

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

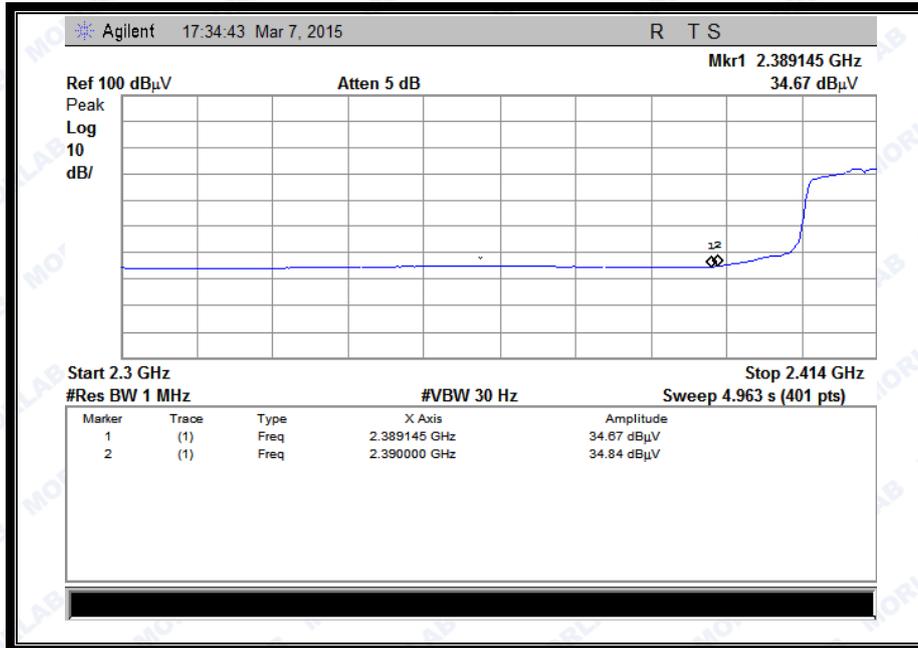
**A. Test Verdict:**

Channel	Frequency (MHz)	Detector	Receiver Reading UR (dBuV)	AT (dB)	AFactor (dB@3m)	Max. Emission E (dBuV/m)	Limit (dBuV/m)	Verdict
		PK/ AV						
1	2390.00	PK	45.73	-33.63	32.56	44.66	74	Pass
1	2390.00	AV	34.84	-33.63	32.56	33.77	54	Pass
11	2484.52	PK	46.01	-33.18	32.5	45.33	74	Pass
11	2483.50	AV	34.82	-33.18	32.5	34.14	54	Pass

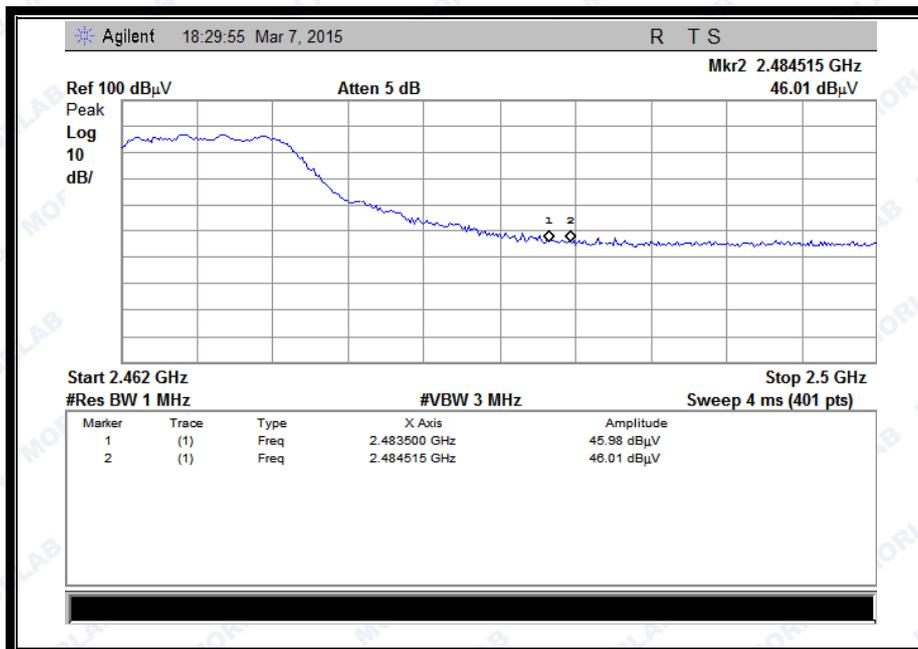
**B. Test Plots:**



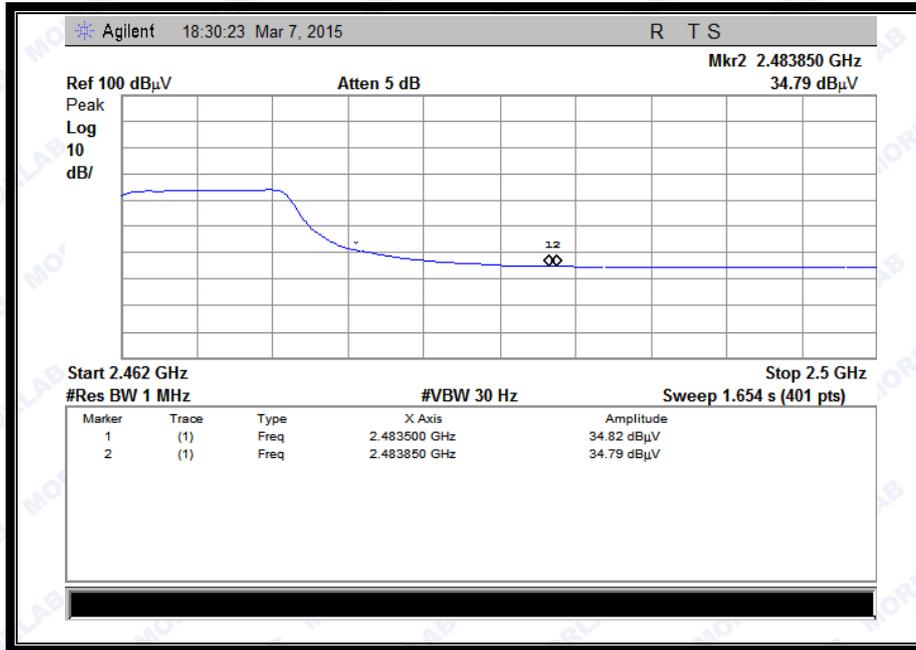
(Plot C1: Channel = 1 PEAK @ 802.11g)



(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

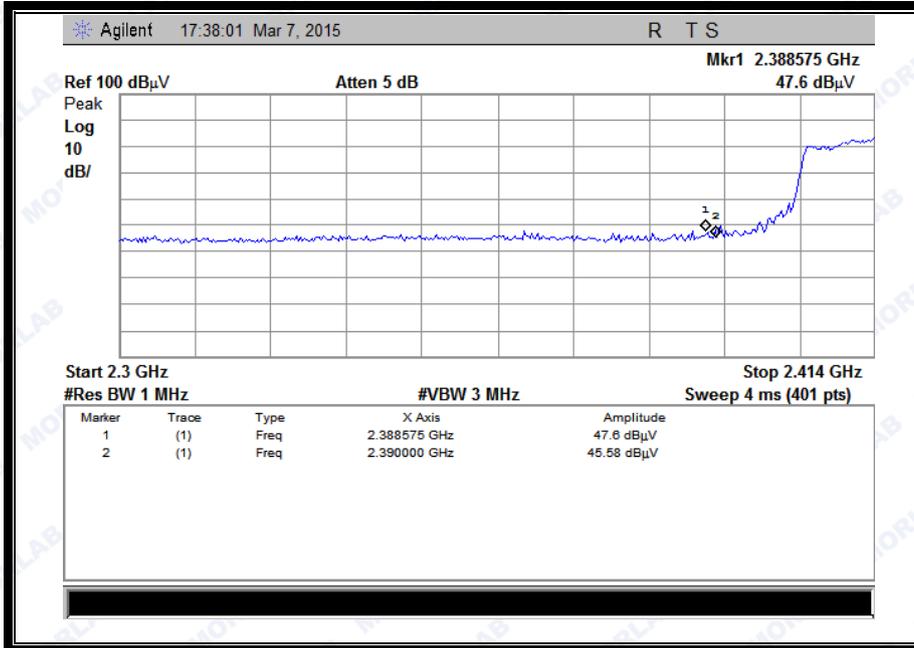
The lowest and highest channels are tested to verify the band edge emissions.

#### A. Test Verdict:

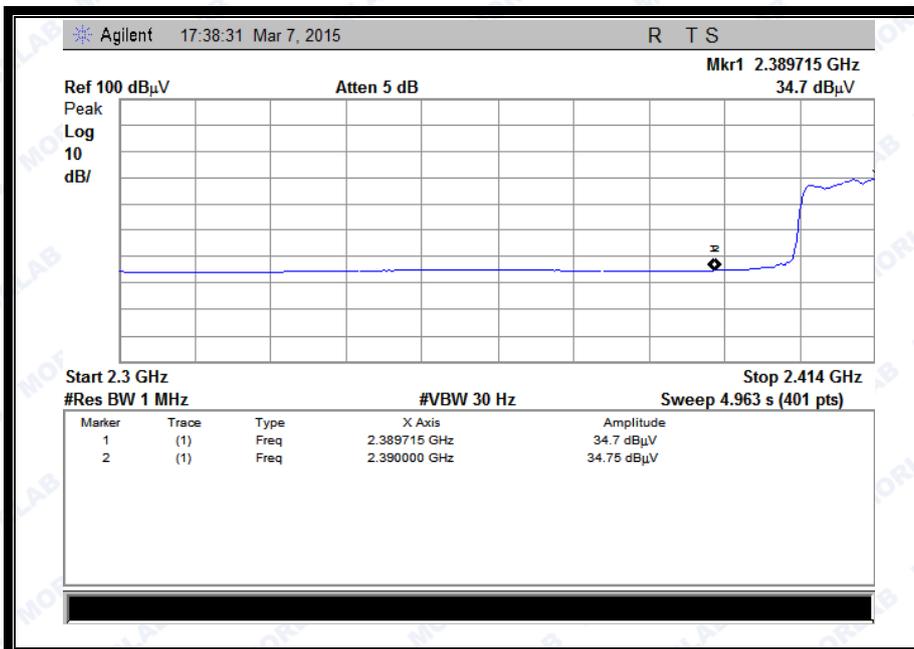
Channel	Frequency (MHz)	Detector	Receiver Reading UR (dBuV)	AT (dB)	AFactor (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
		PK/ AV						
1	2388.58	PK	47.60	-33.63	32.56	46.53	74	Pass
1	2390.00	AV	34.75	-33.63	32.56	33.68	54	Pass
11	2484.33	PK	48.14	-33.18	32.5	47.46	74	Pass
11	2484.04	AV	34.97	-33.18	32.5	34.29	54	Pass



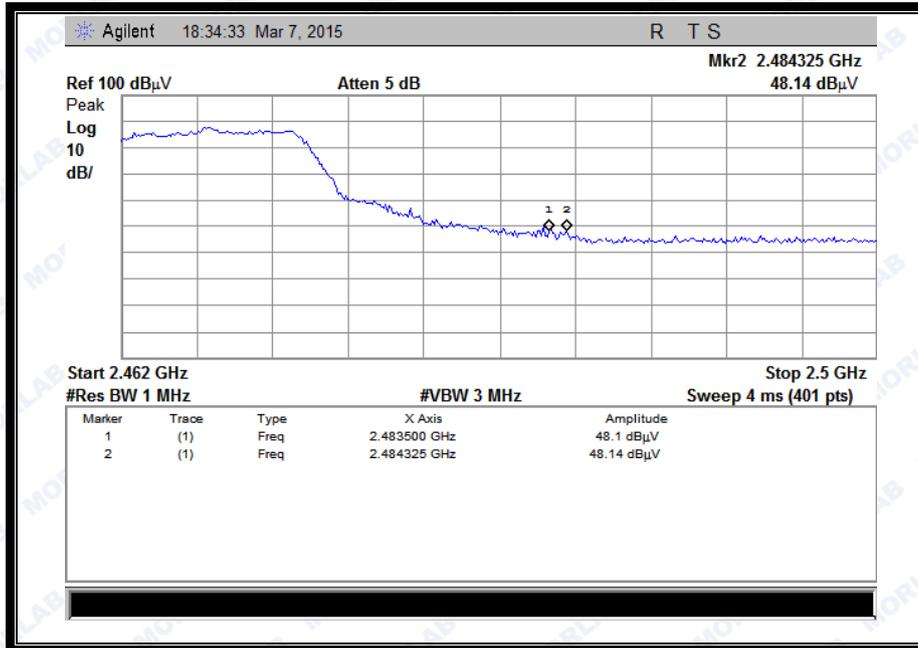
B. Test Plots:



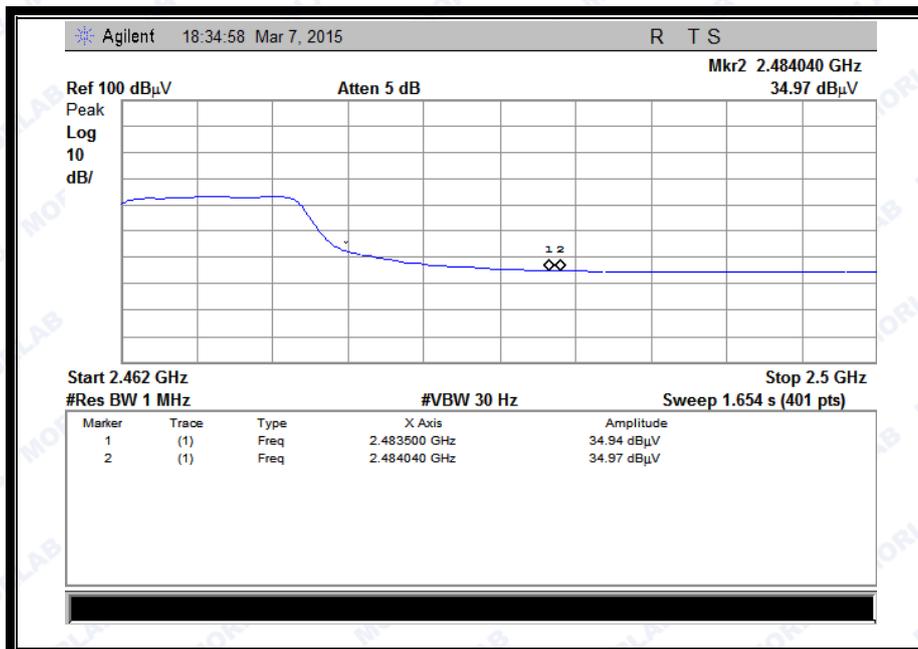
(Plot E1: Channel = 1 PEAK @ 802.11n-20)



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



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



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



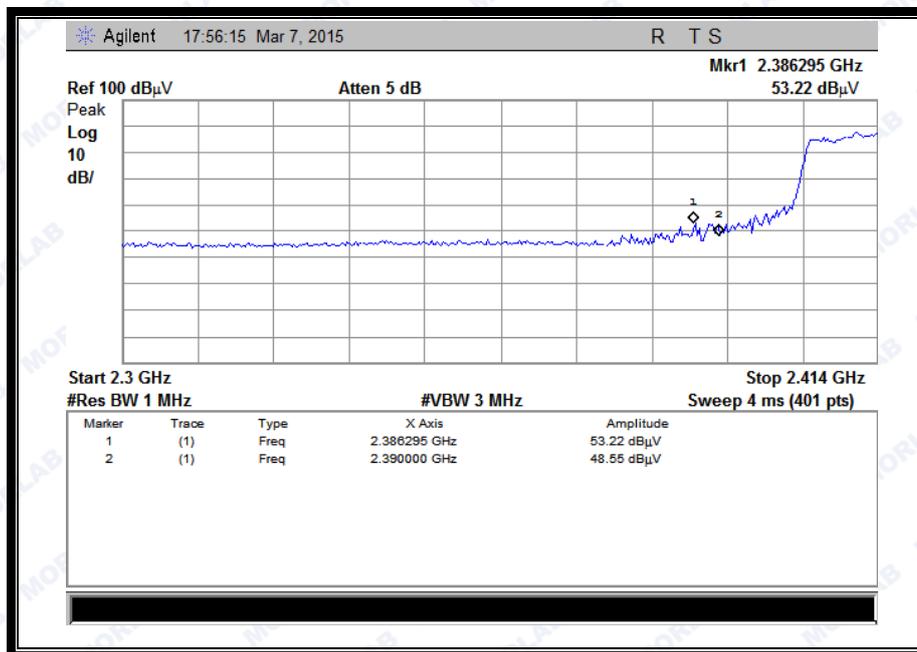
**2.6.3.4. 802.11n-40MHz Test mode**

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

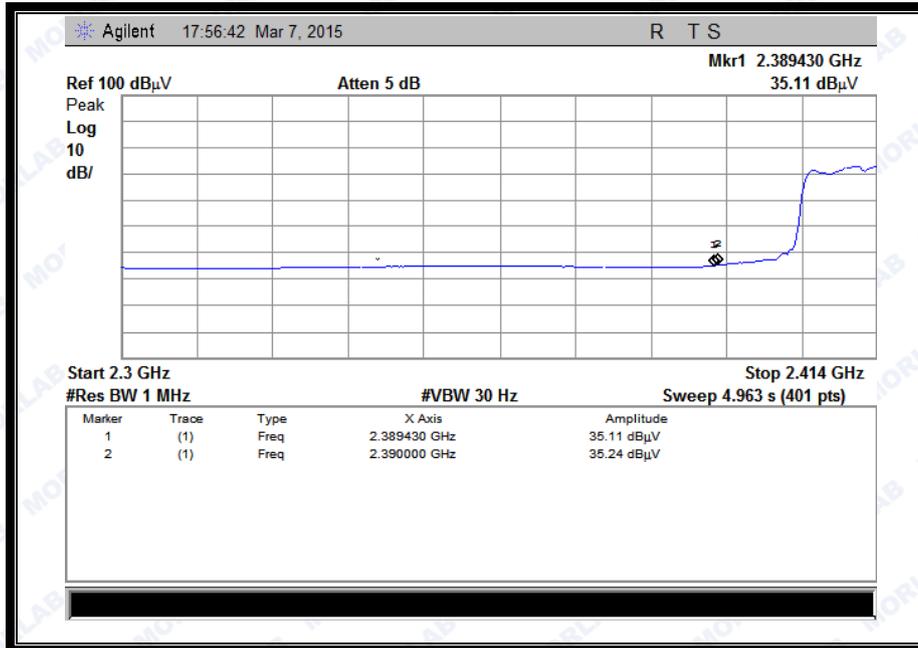
**C. Test Verdict:**

Channel	Frequency (MHz)	Detector	Receiver Reading UR (dBuV)	AT (dB)	AFactor (dB@3m)	Max. Emission E (dBuV/m)	Limit (dBuV/m)	Verdict
		PK/ AV						
1	2386.30	PK	53.22	-33.63	32.56	52.15	74	Pass
1	2390.00	AV	35.24	-33.63	32.56	34.17	54	Pass
11	2484.14	PK	51.22	-33.18	32.5	50.54	74	Pass
11	2484.71	AV	35.91	-33.18	32.5	35.23	54	Pass

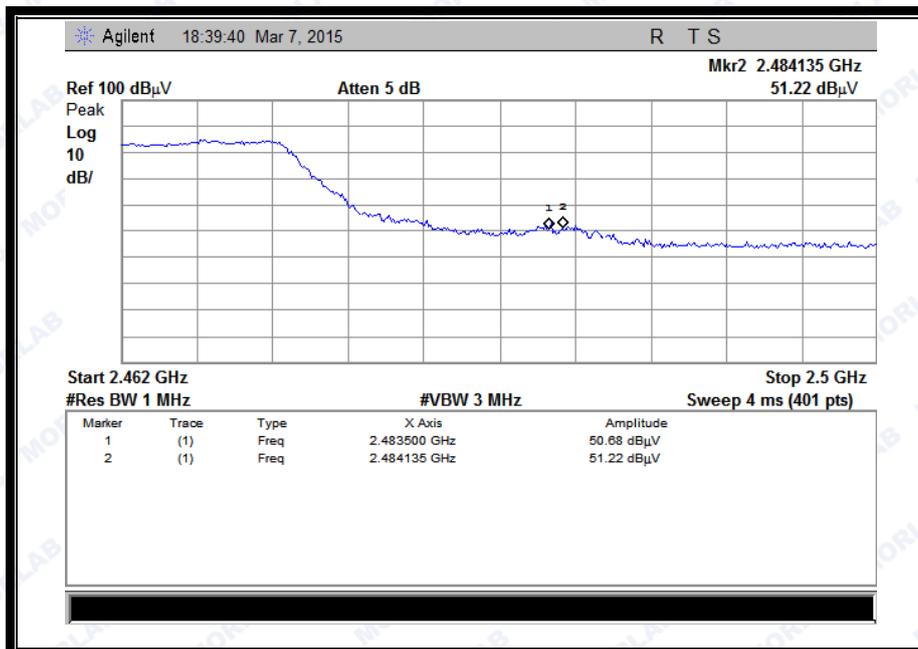
**D. Test Plots:**



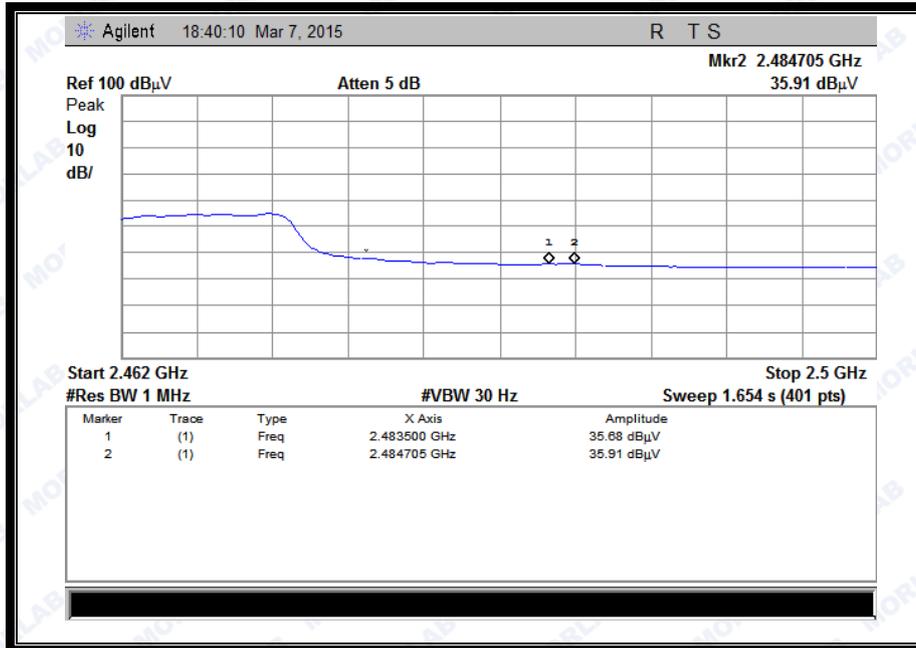
(Plot E1: Channel = 3 PEAK @ 802.11n-40)



(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 50μH/50Ω line impedance stabilization network (LISN).

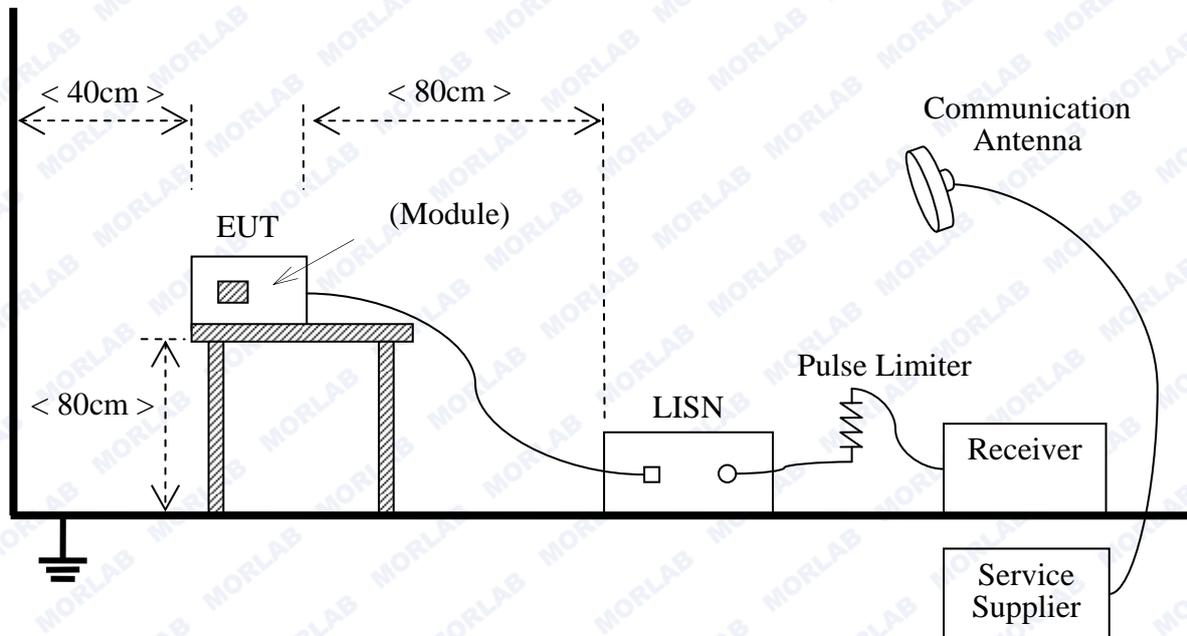
Frequency range (MHz)	Conducted Limit (dBμV)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

**NOTE:**

- (a) The lower limit shall apply at the band edges.
- (b) 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

### B. Equipments List:

Please reference ANNEX A(1.4).

## 2.7.3. Test Result

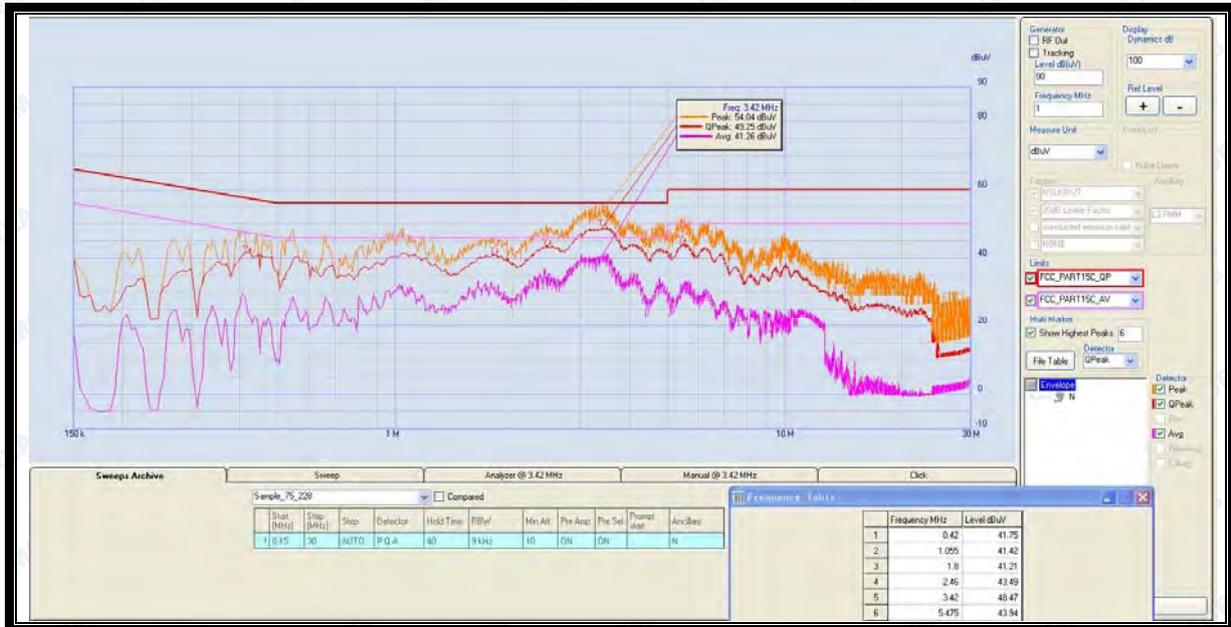
The maximum conducted interference is searched using Peak (PK), if the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT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

Note: All test modes are performed, only the worst case is recorded in this report.

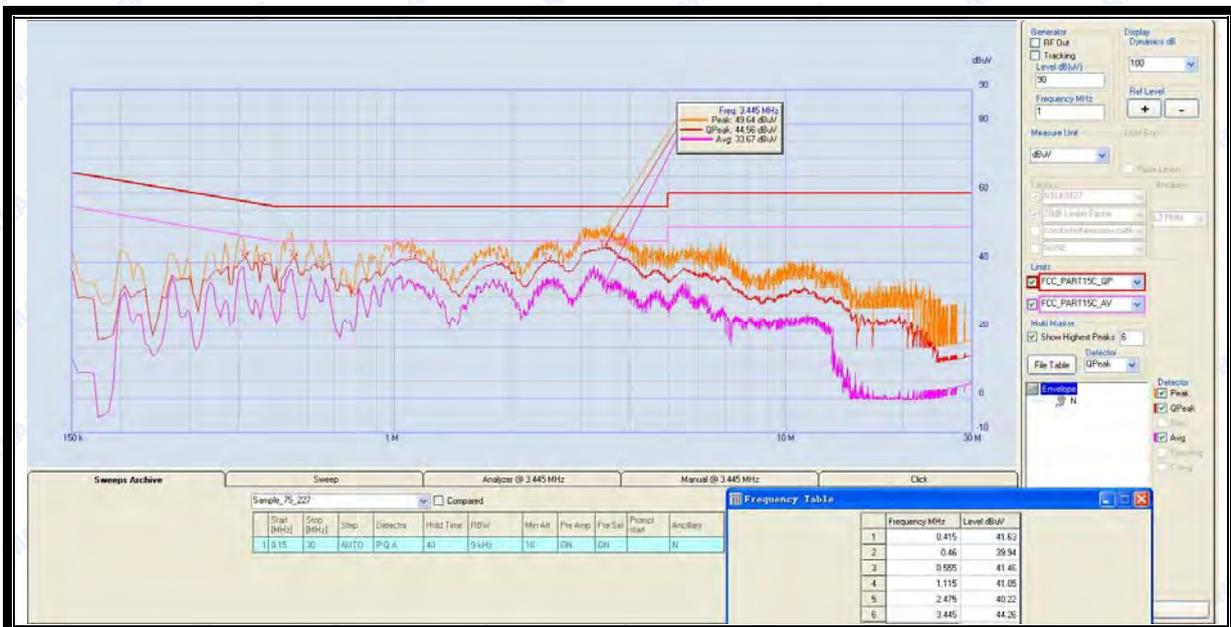
**A. Test setup:**

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:

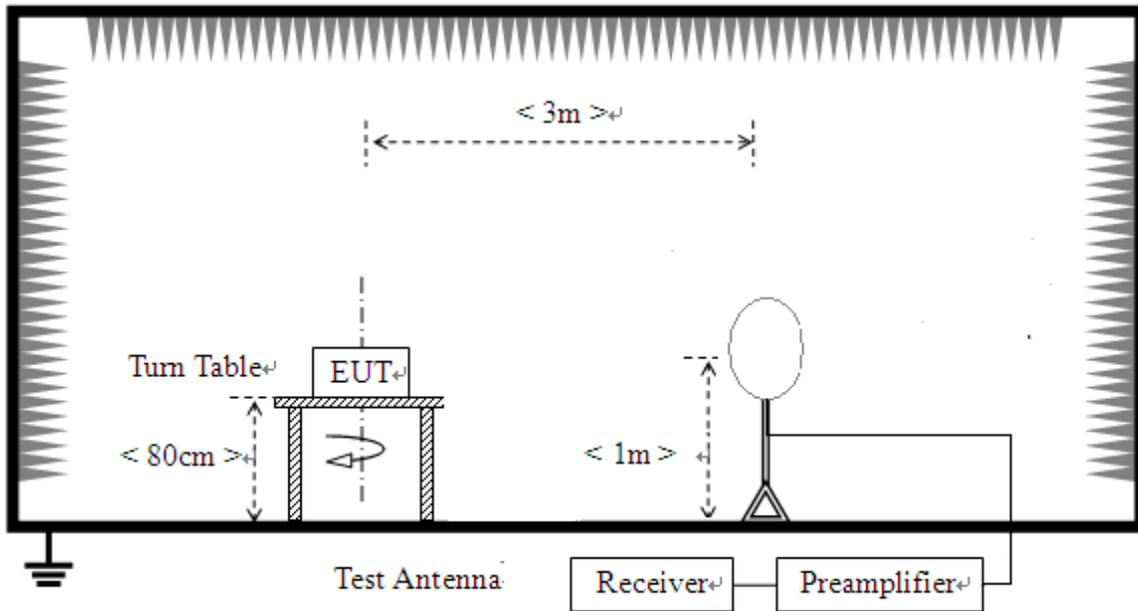
1. For Above 1000MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit.
2. For above 1000MHz, limit field strength 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)

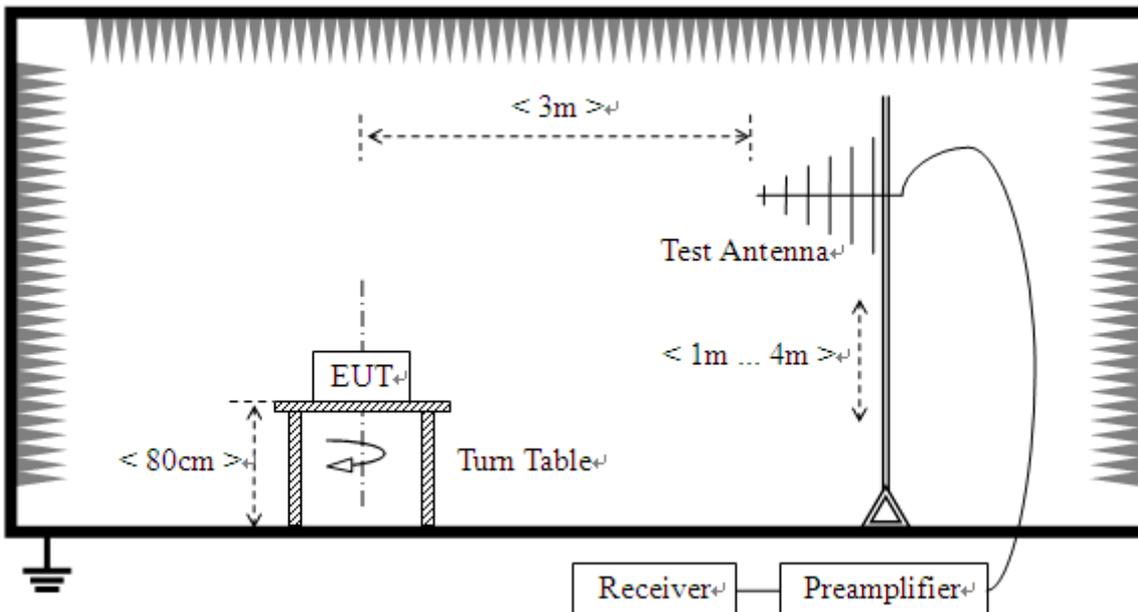
### 2.8.2. Test Description

#### A. Test Setup:

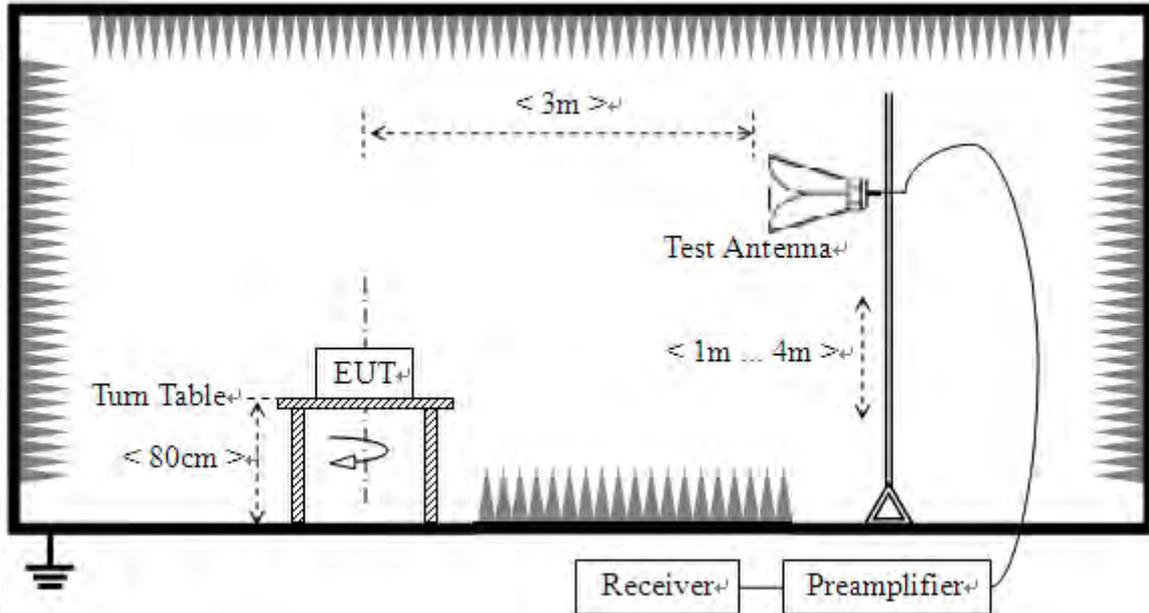
- 1) For radiated emissions from 9kHz to 30MHz



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 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:

- 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.
- In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz) 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:

Please reference ANNEX A(1.4).



### 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

$G_{\text{preamp}}$ : Preamplifier Gain

$A_{\text{Factor}}$ : Antenna Factor at 3m

During the test, the total correction Factor  $A_T$  and  $A_{\text{Factor}}$  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.

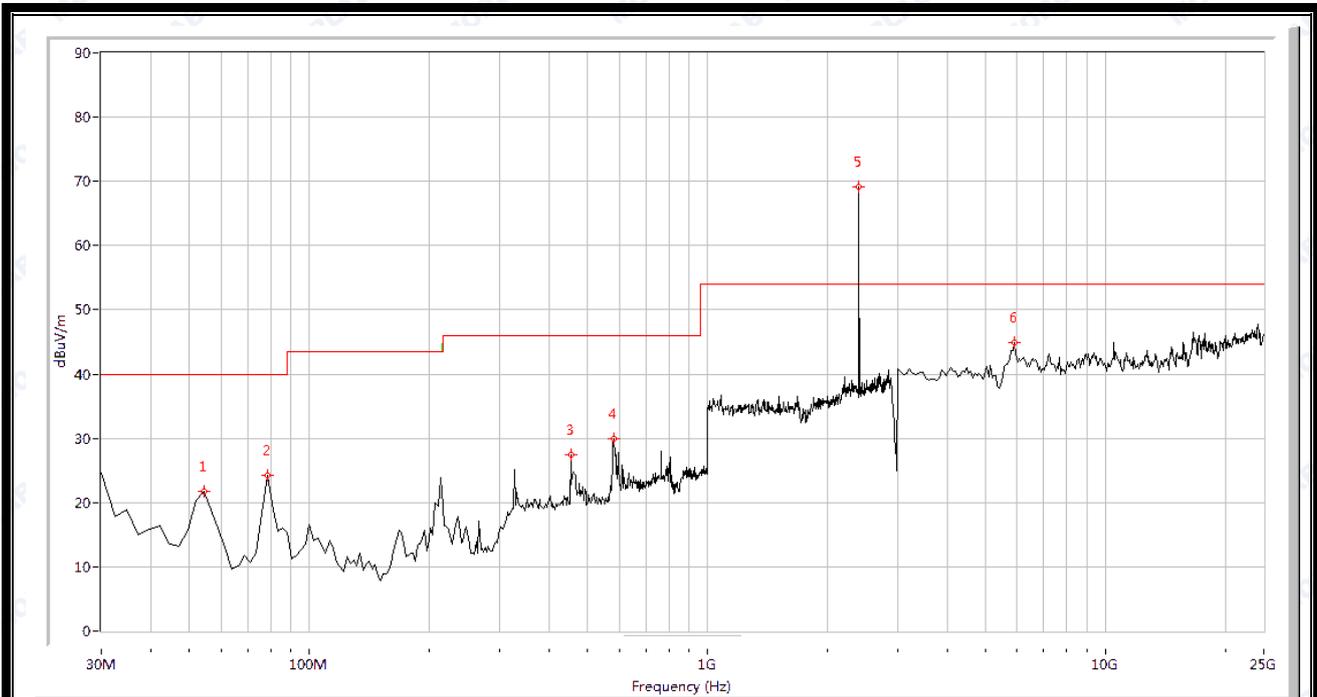
The low frequency, which started from 9KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

#### 2.8.3.1. 802.11b Test mode

##### A. Test Plots for the Whole Measurement Frequency Range:

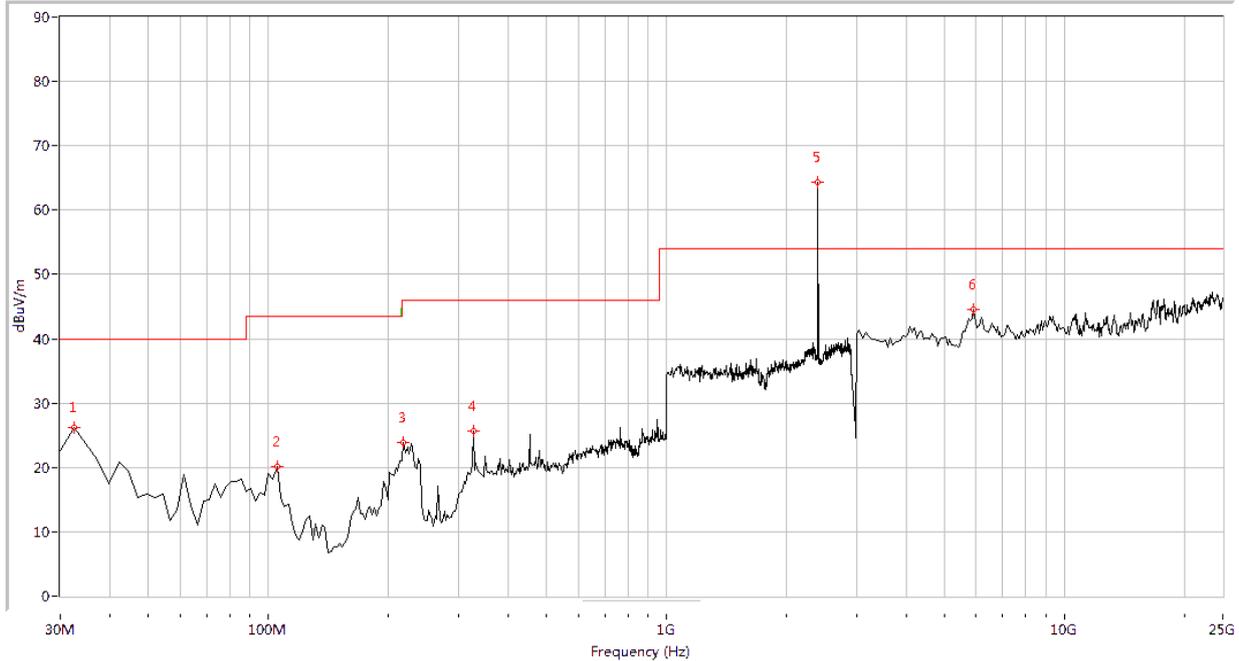


Plots for Channel = 1



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
54.190	21.81	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
78.379	24.25	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
453.317	27.52	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
581.521	29.87	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
2412.000	69.08	N.A	N.A	N.A	N.A	N.A	Horizontal	N.A
5907.731	44.92	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

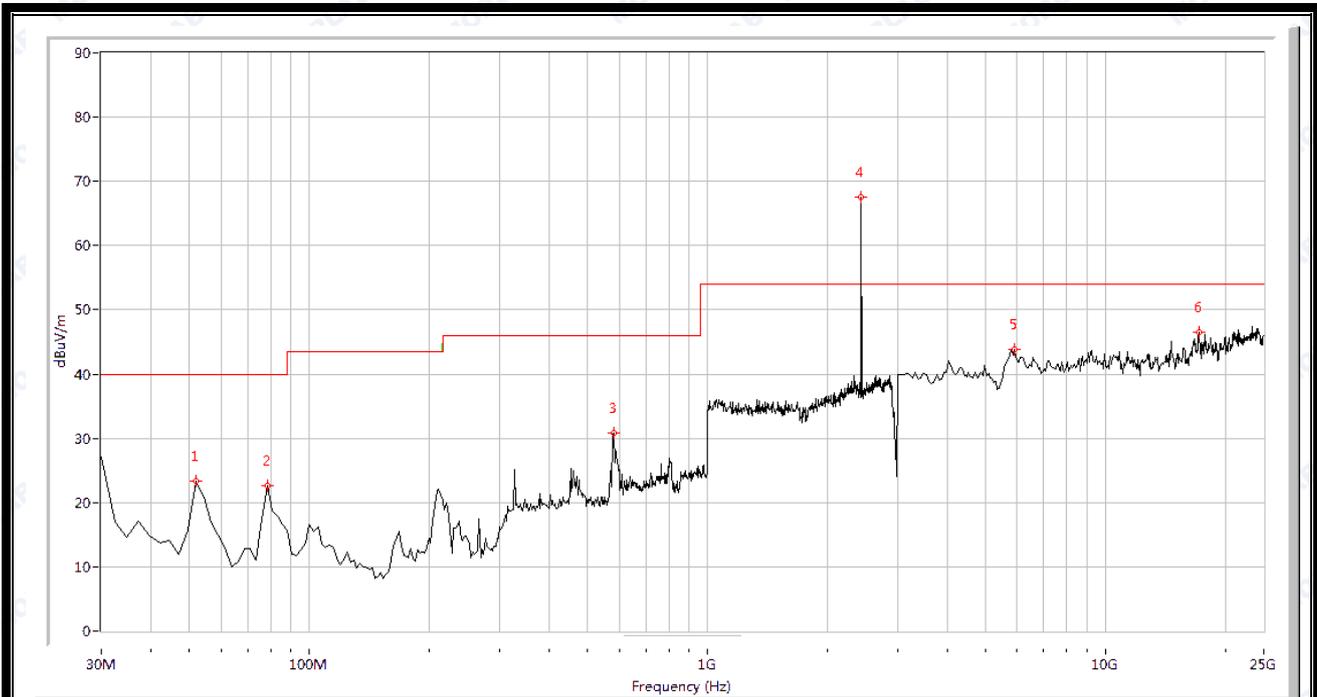


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
32.419	26.25	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
104.988	20.05	N.A	N.A	N.A	43.5	N.A	Vertical	PASS
218.678	23.81	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
327.531	25.66	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
2412.000	64.36	N.A	N.A	N.A	N.A	N.A	Vertical	N.A
5907.731	44.59	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

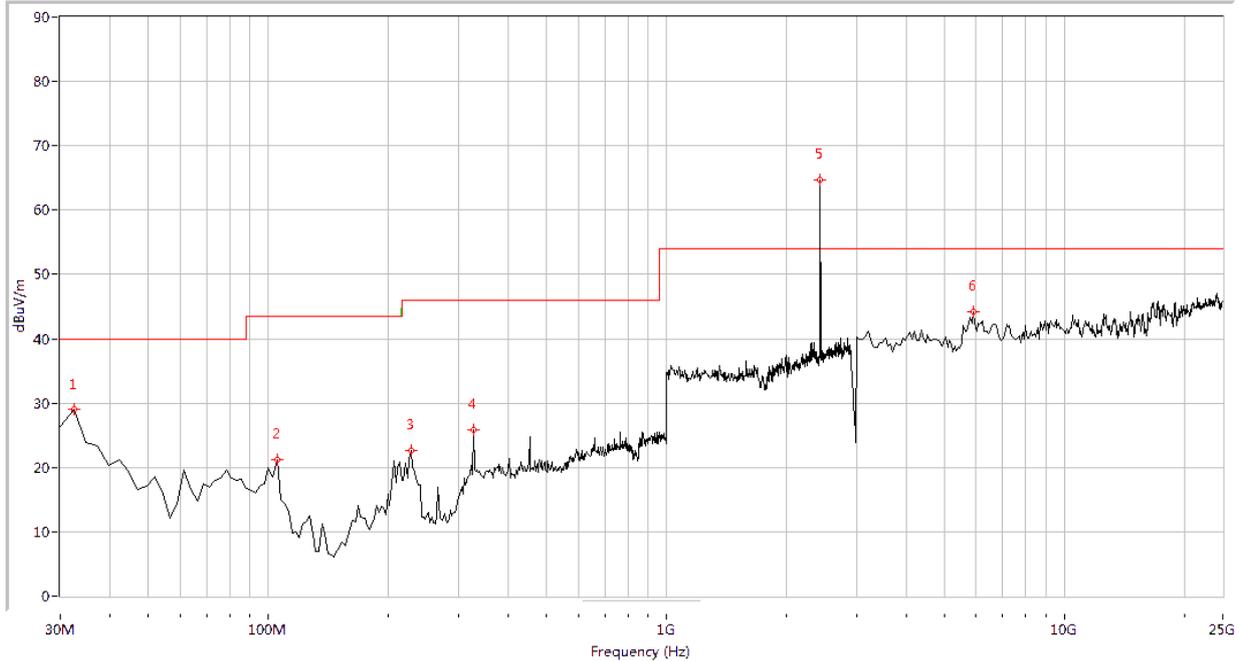


Plot for Channel = 6



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
51.771	23.29	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
78.379	22.58	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
581.521	30.83	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
2437.000	67.50	N.A	N.A	N.A	N.A	N.A	Horizontal	N.A
5907.731	43.90	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS
17154.613	46.50	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

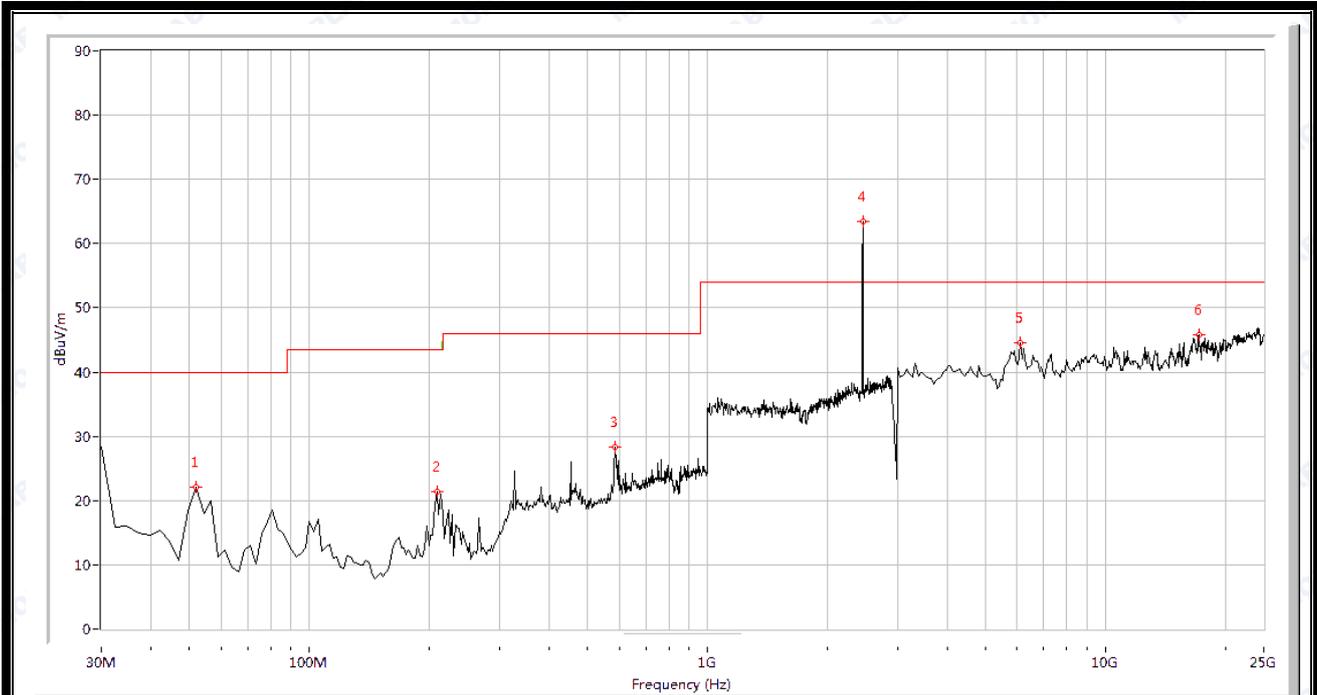


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
32.419	28.98	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
104.988	21.20	N.A	N.A	N.A	43.5	N.A	Vertical	PASS
228.354	22.63	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
327.531	25.77	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
2437.000	64.68	N.A	N.A	N.A	N.A	N.A	Vertical	N.A
5907.731	44.11	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

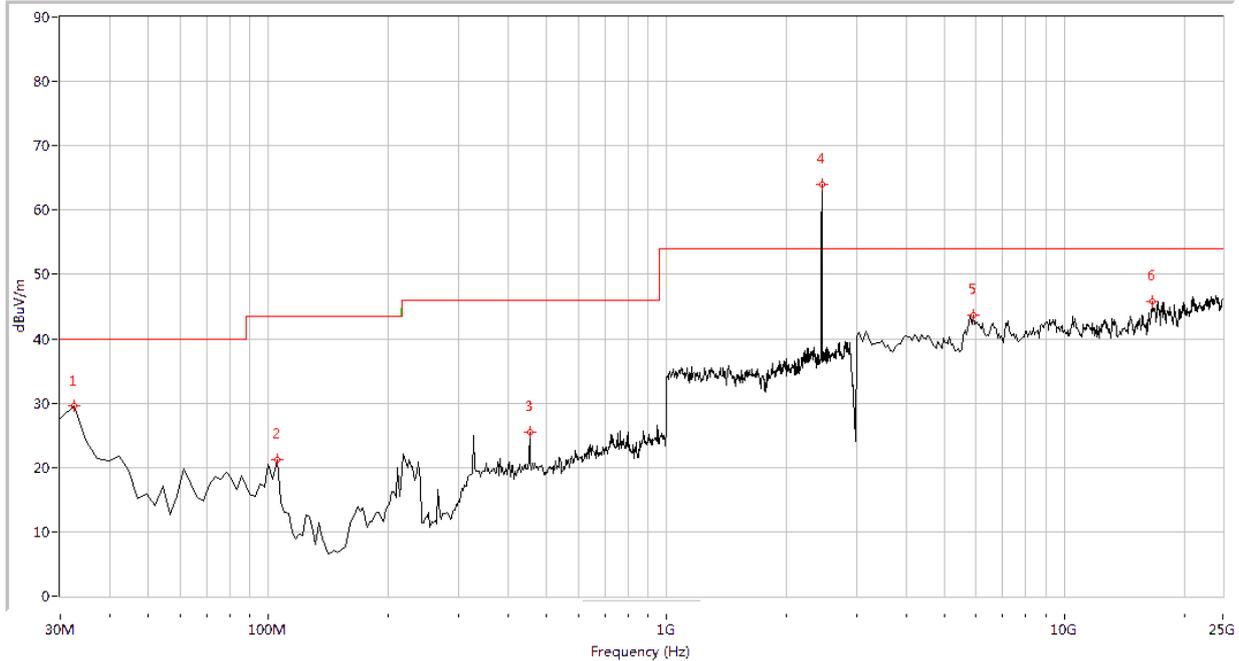


Plot for Channel = 11



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
51.771	22.13	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
209.002	21.43	N.A	N.A	N.A	43.5	N.A	Horizontal	PASS
586.359	28.37	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
2462.000	63.40	N.A	N.A	N.A	N.A	N.A	Horizontal	N.A
6127.182	44.62	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS
17154.613	45.73	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
32.419	29.57	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
104.988	21.17	N.A	N.A	N.A	43.5	N.A	Vertical	PASS
453.317	25.52	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
2462.000	64.06	N.A	N.A	N.A	N.A	N.A	Vertical	N.A
5907.731	43.64	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
16605.985	45.74	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

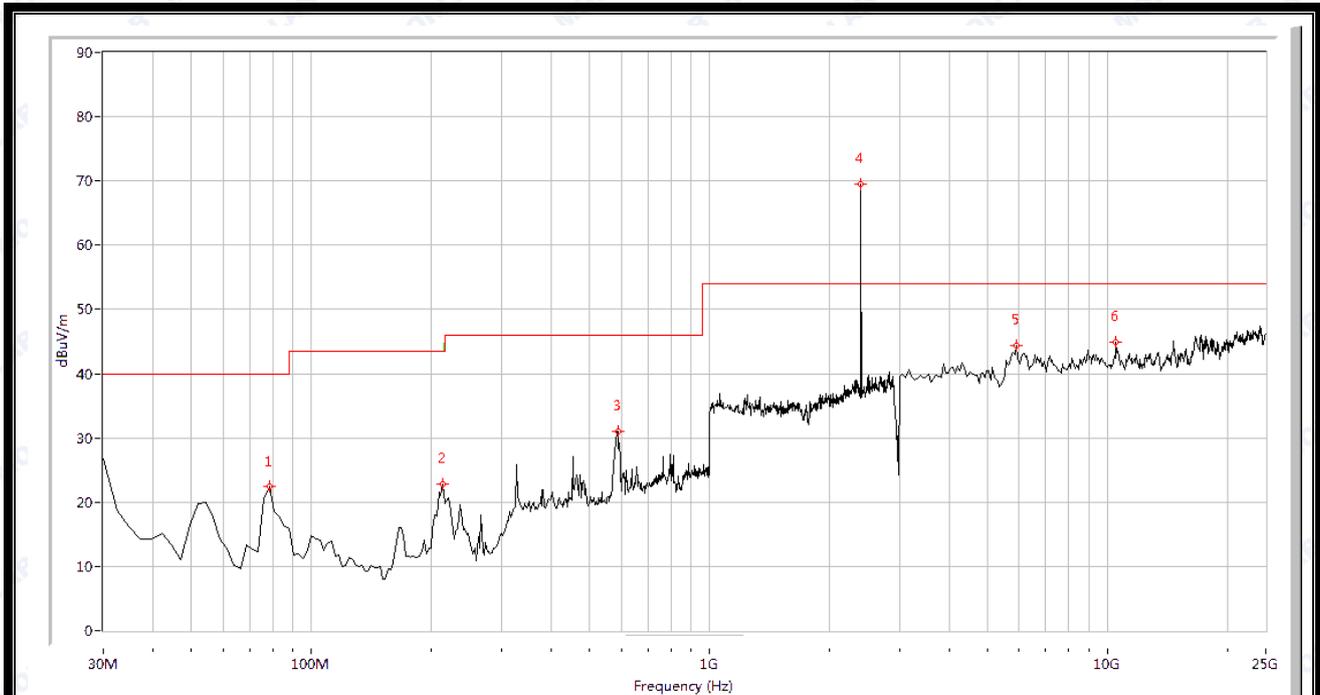
(Antenna Vertical, 30MHz to 25GHz)



2.8.3.2. 802.11g Test mode

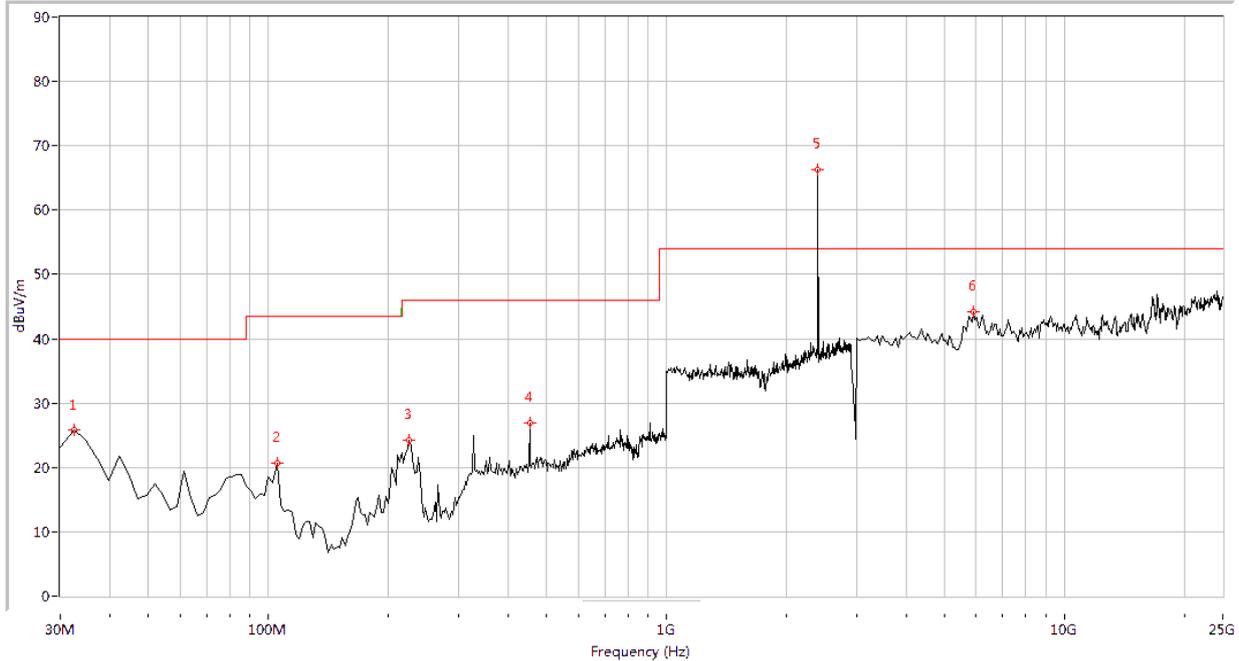
A. Test Plots for the Whole Measurement Frequency Range:

Plots for Channel = 1



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
78.379	22.37	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
213.840	22.73	N.A	N.A	N.A	43.5	N.A	Horizontal	PASS
588.778	30.96	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
2412.000	69.51	N.A	N.A	N.A	N.A	N.A	Horizontal	N.A
5907.731	44.46	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS
10516.209	44.85	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

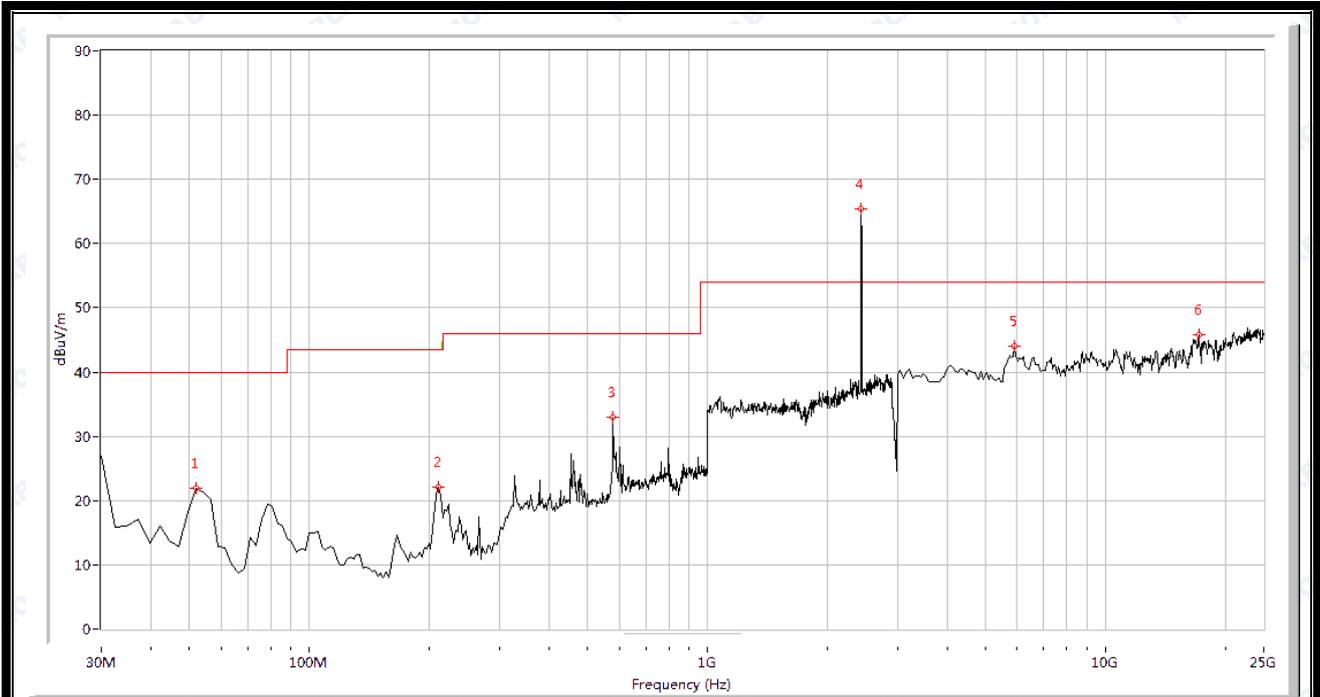


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
32.419	25.79	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
104.988	20.65	N.A	N.A	N.A	43.5	N.A	Vertical	PASS
225.935	24.21	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
453.317	26.99	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
2412.000	66.22	N.A	N.A	N.A	N.A	N.A	Vertical	N.A
5907.731	44.14	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

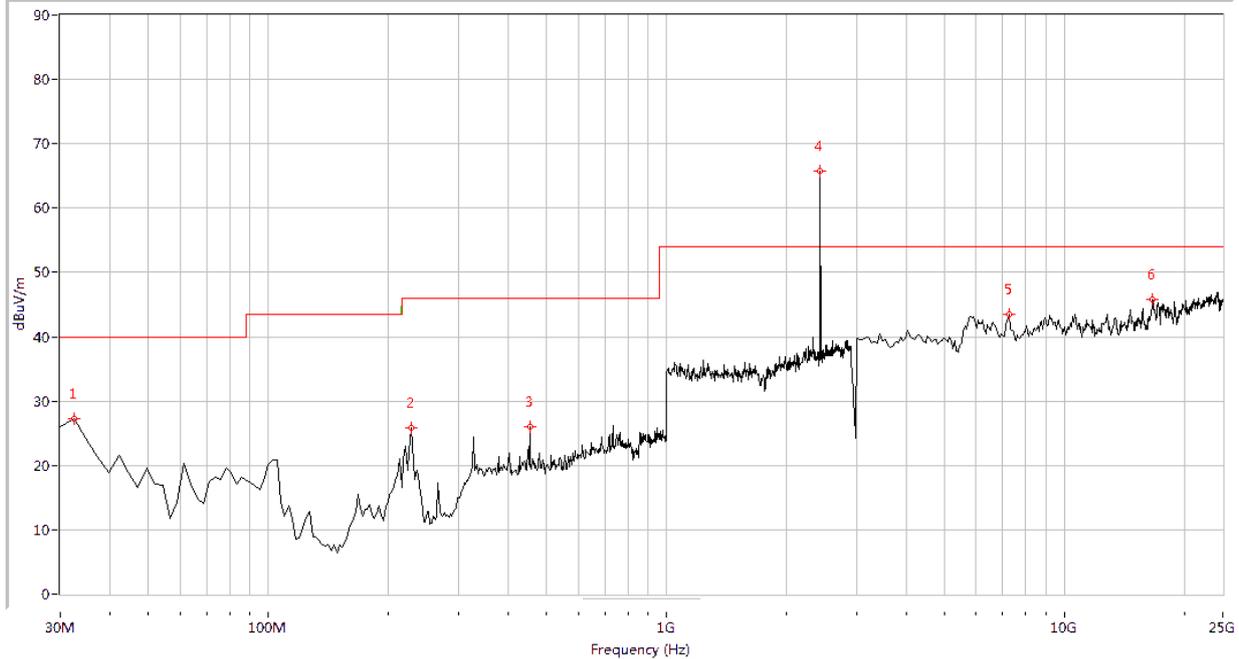


Plot for Channel = 6



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
51.771	21.93	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
211.421	22.14	N.A	N.A	N.A	43.5	N.A	Horizontal	PASS
579.102	32.90	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
2437.000	65.32	N.A	N.A	N.A	N.A	N.A	Horizontal	N.A
5907.731	43.94	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS
17154.613	45.72	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

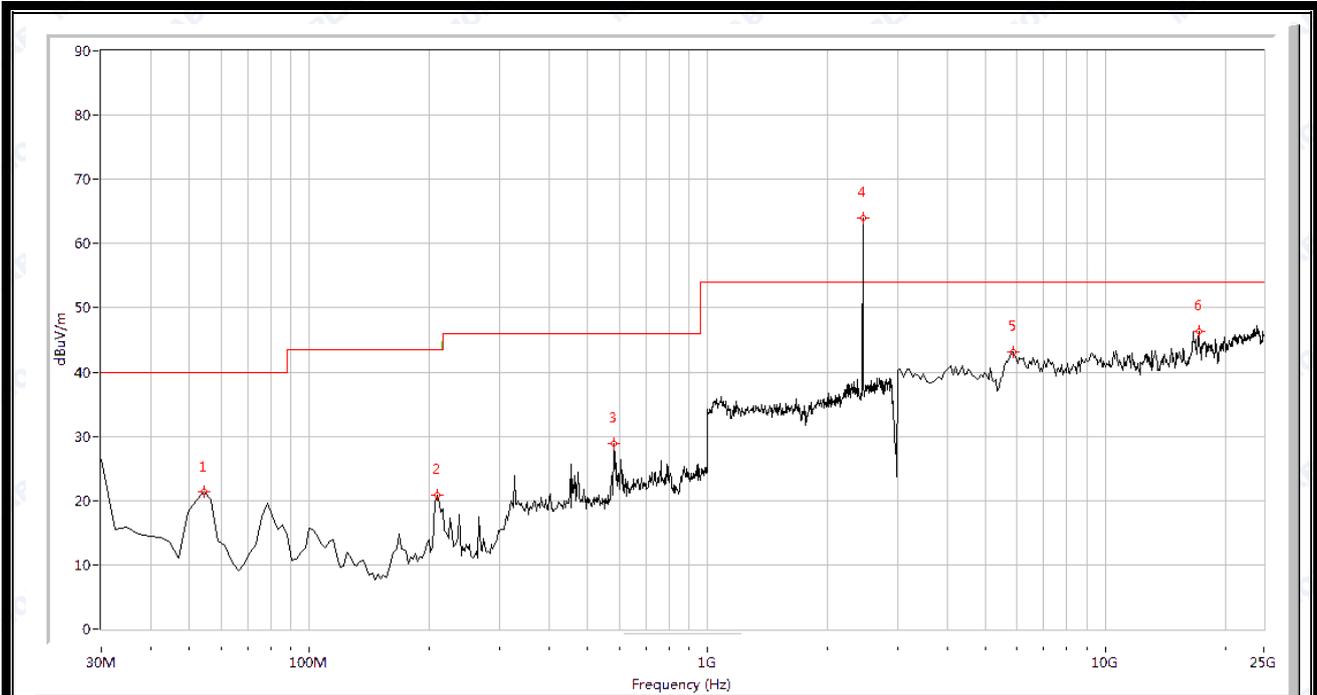


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
32.419	27.33	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
228.354	25.82	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
453.317	26.07	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
2437.000	65.70	N.A	N.A	N.A	N.A	N.A	Vertical	N.A
7279.302	43.51	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
16660.848	45.72	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

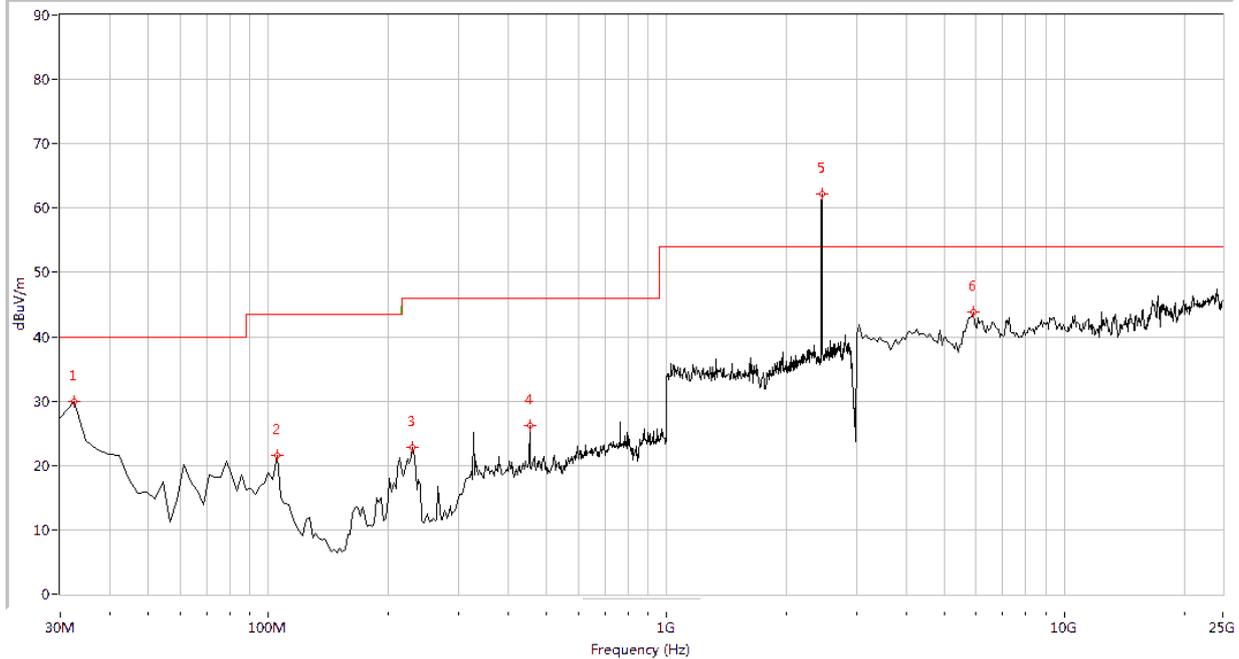


Plot for Channel = 11



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
54.190	21.37	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
209.002	20.91	N.A	N.A	N.A	43.5	N.A	Horizontal	PASS
583.940	28.85	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
2462.000	64.06	N.A	N.A	N.A	N.A	N.A	Horizontal	N.A
5852.868	43.15	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS
17154.613	46.30	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
32.419	29.93	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
104.988	21.59	N.A	N.A	N.A	43.5	N.A	Vertical	PASS
230.773	22.80	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
453.317	26.14	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
2462.000	62.29	N.A	N.A	N.A	N.A	N.A	Vertical	N.A
5907.731	43.76	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

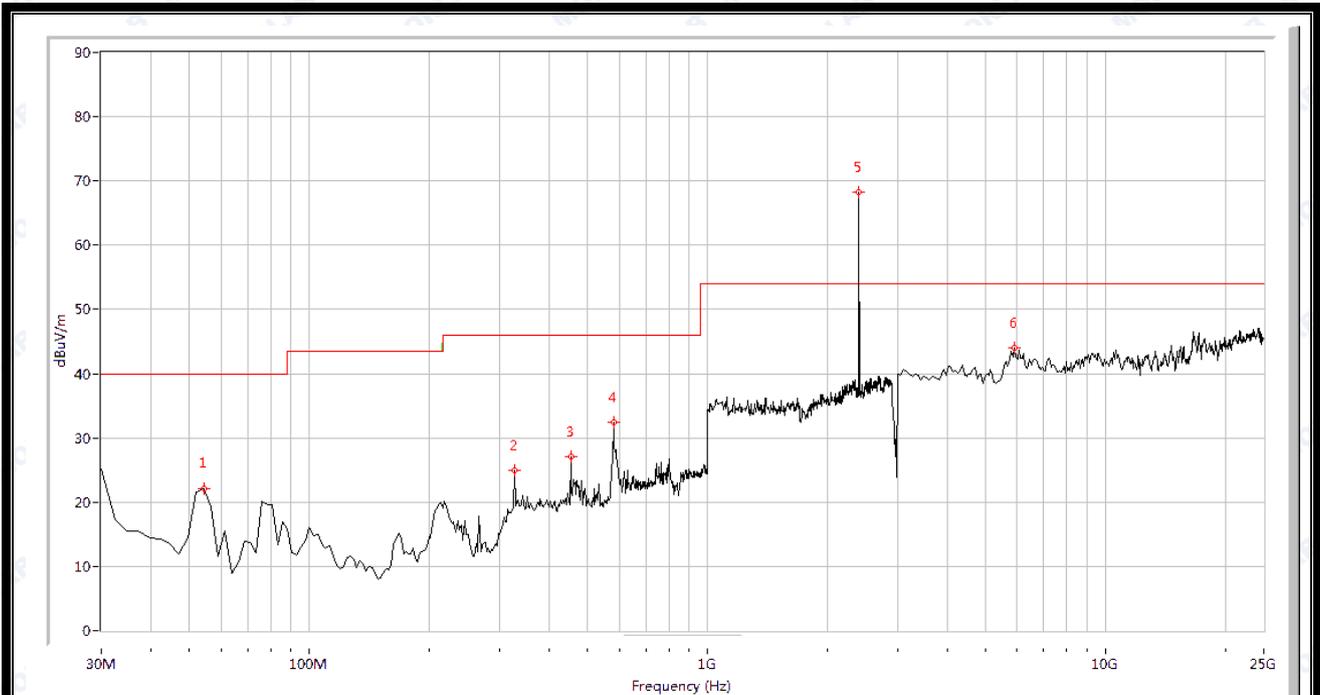
(Antenna Vertical, 30MHz to 25GHz)



2.8.3.3. 802.11n-20MHz Test mode

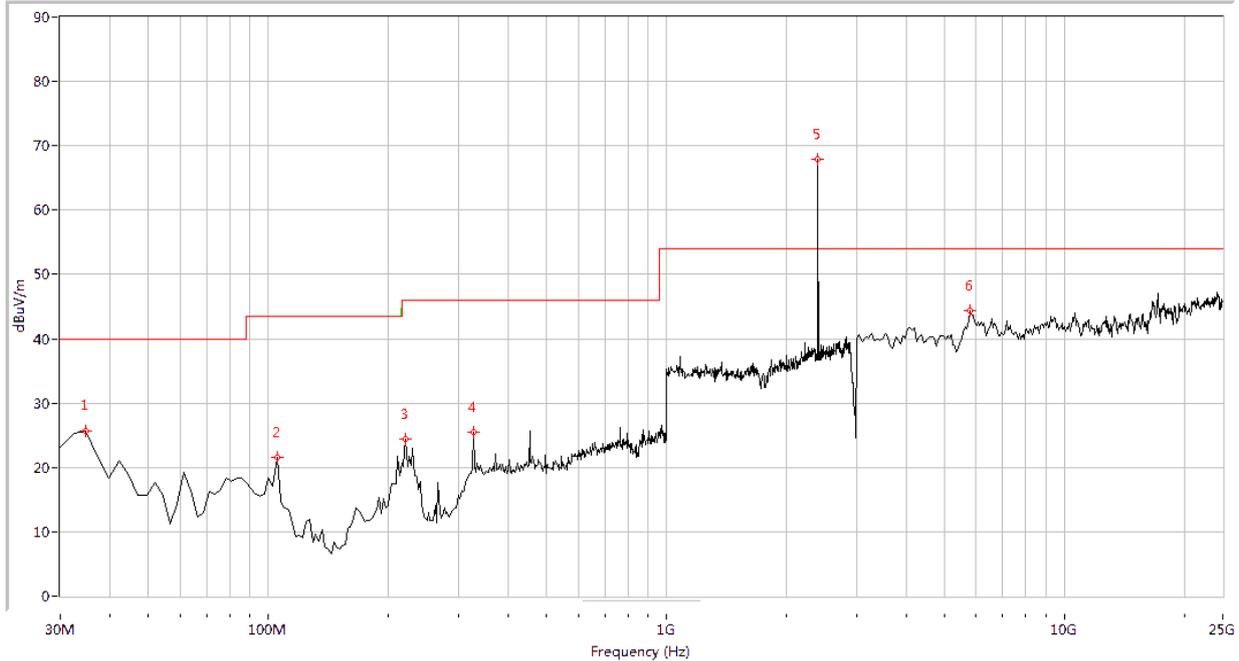
A. Test Plots for the Whole Measurement Frequency Range:

Plots for Channel = 1



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
54.190	22.09	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
327.531	24.96	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
453.317	27.01	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
581.521	32.38	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
2412.000	68.24	N.A	N.A	N.A	N.A	N.A	Horizontal	N.A
5907.731	44.07	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

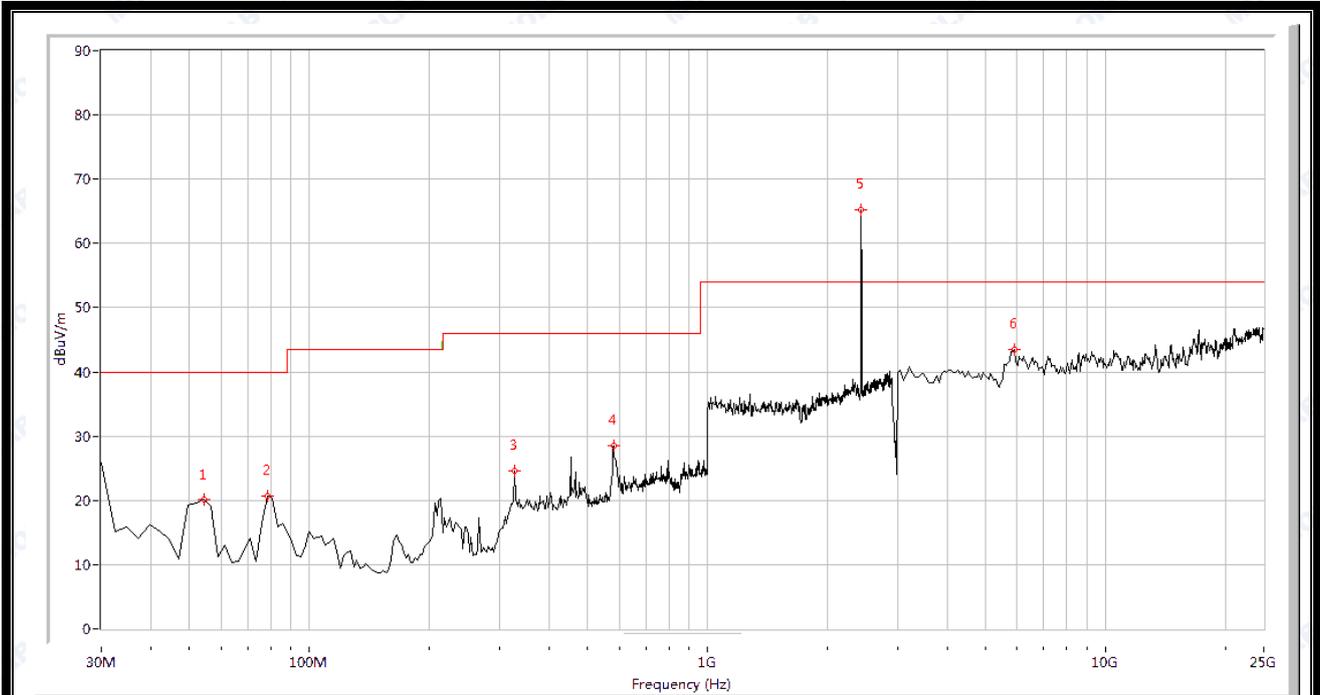


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
34.838	25.61	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
104.988	21.50	N.A	N.A	N.A	43.5	N.A	Vertical	PASS
221.097	24.36	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
327.531	25.41	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
2412.000	67.95	N.A	N.A	N.A	N.A	N.A	Vertical	N.A
5798.005	44.35	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

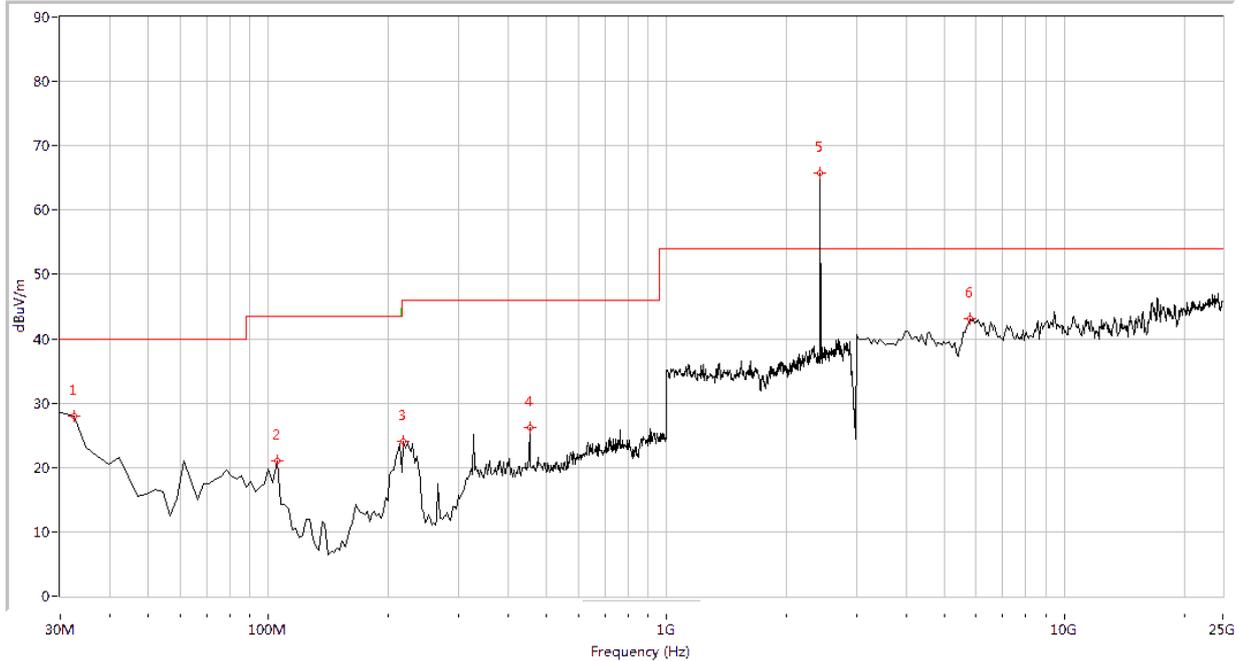


Plot for Channel = 6



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
54.190	20.14	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
78.379	20.75	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
327.531	24.56	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
581.521	28.54	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
2437.000	65.18	N.A	N.A	N.A	N.A	N.A	Horizontal	N.A
5907.731	43.42	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

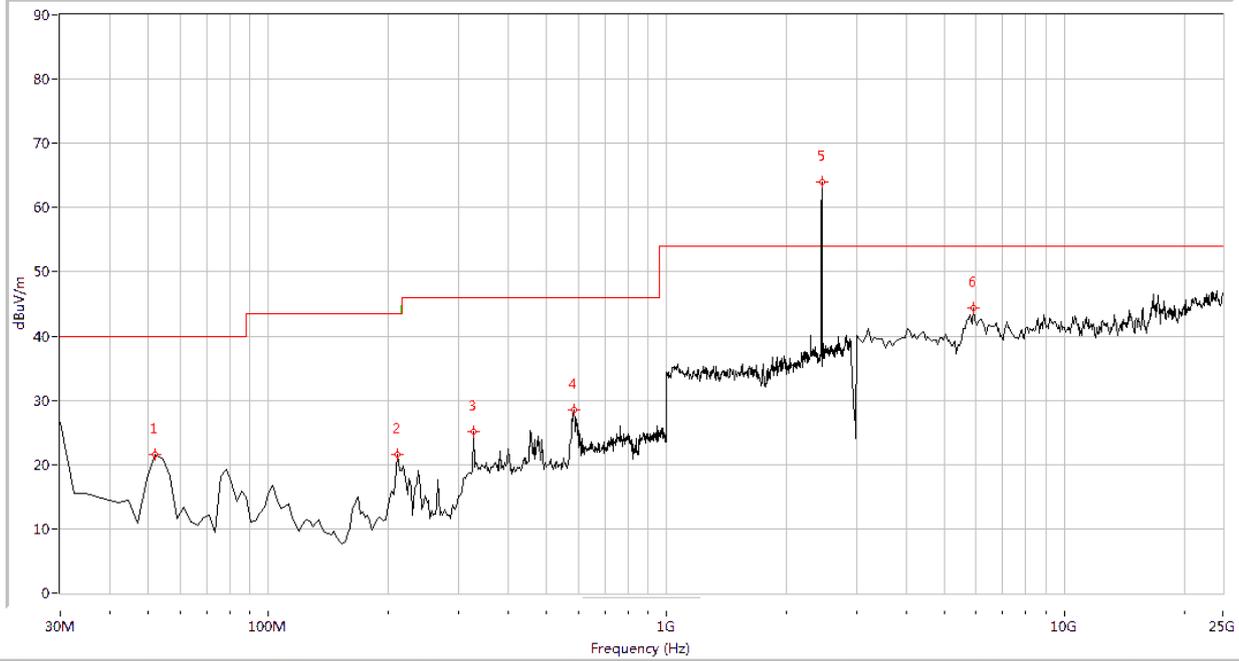


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
32.419	28.02	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
104.988	20.98	N.A	N.A	N.A	43.5	N.A	Vertical	PASS
218.678	24.08	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
453.317	26.14	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
2437.000	65.73	N.A	N.A	N.A	N.A	N.A	Vertical	N.A
5798.005	43.10	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

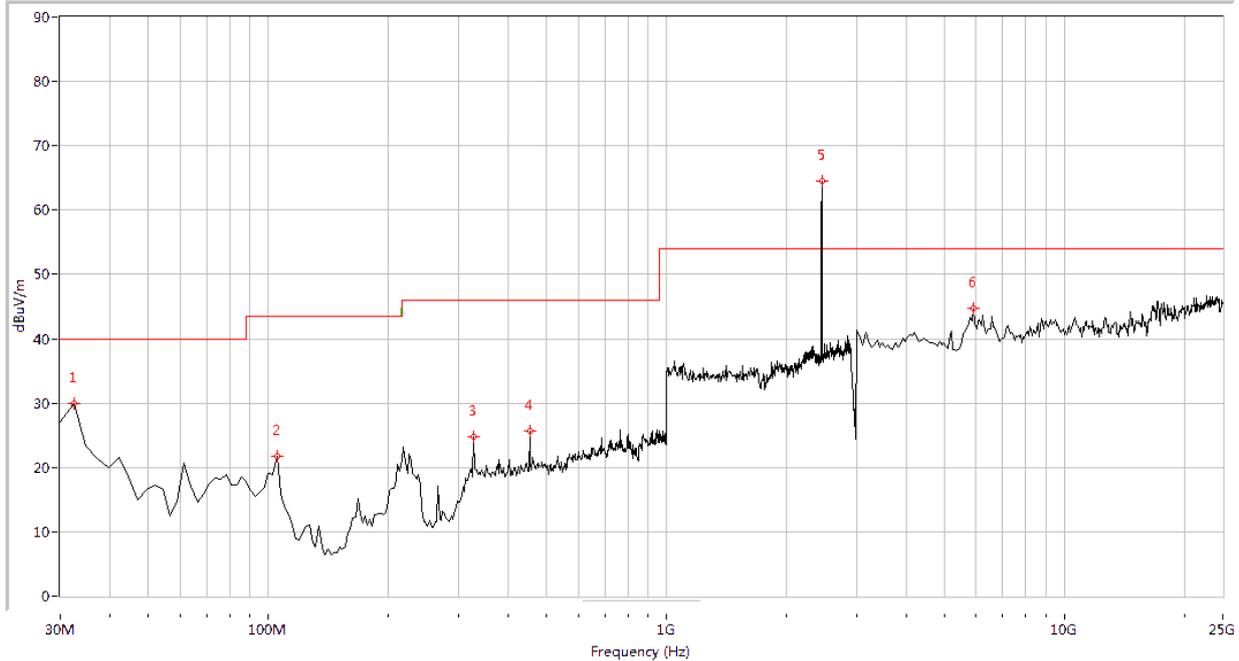


Plot for Channel = 11



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
51.771	21.60	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
211.421	21.50	N.A	N.A	N.A	43.5	N.A	Horizontal	PASS
327.531	25.15	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
586.359	28.49	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
2462.000	64.03	N.A	N.A	N.A	N.A	N.A	Horizontal	N.A
5907.731	44.37	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
32.419	29.91	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
104.988	21.70	N.A	N.A	N.A	43.5	N.A	Vertical	PASS
327.531	24.77	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
453.317	25.59	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
2462.000	64.55	N.A	N.A	N.A	N.A	N.A	Vertical	N.A
5907.731	44.72	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

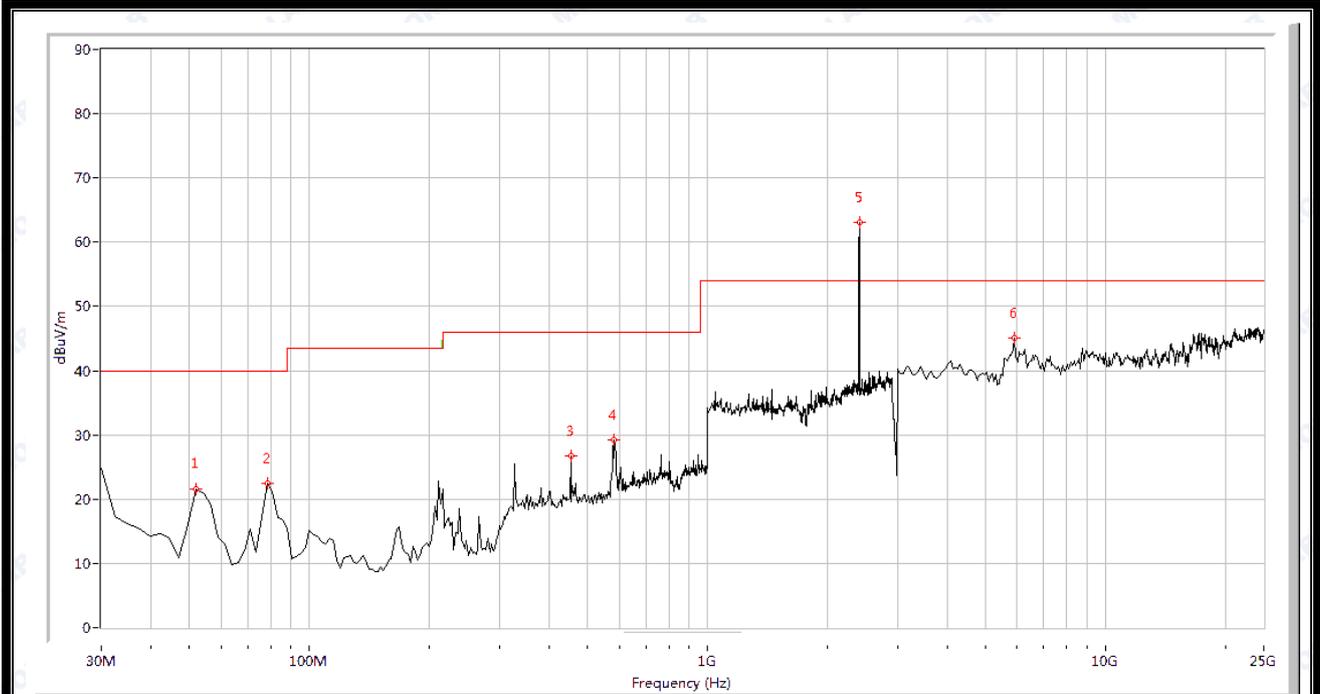
(Antenna Vertical, 30MHz to 25GHz)



2.8.3.4. 802.11n-40MHz Test mode

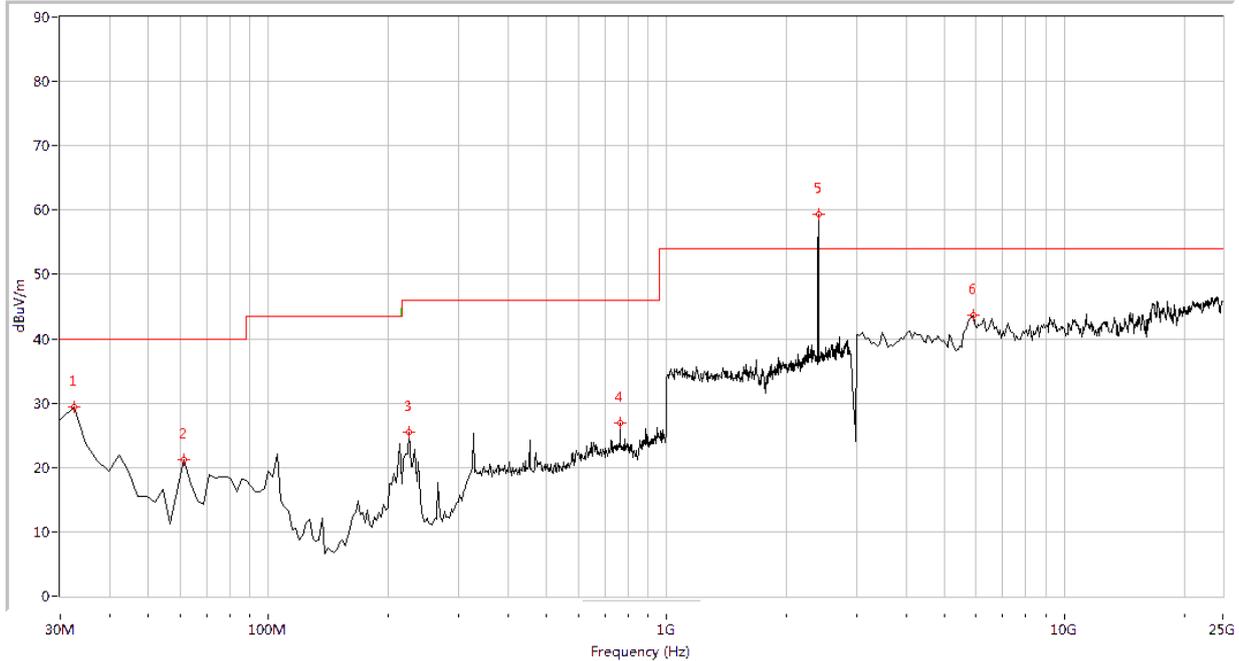
B. Test Plots for the Whole Measurement Frequency Range:

Plots for Channel = 3



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
51.771	21.63	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
78.379	22.53	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
453.317	26.73	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
583.940	29.22	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
2422.000	63.02	N.A	N.A	N.A	N.A	N.A	Horizontal	N.A
5907.731	45.03	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

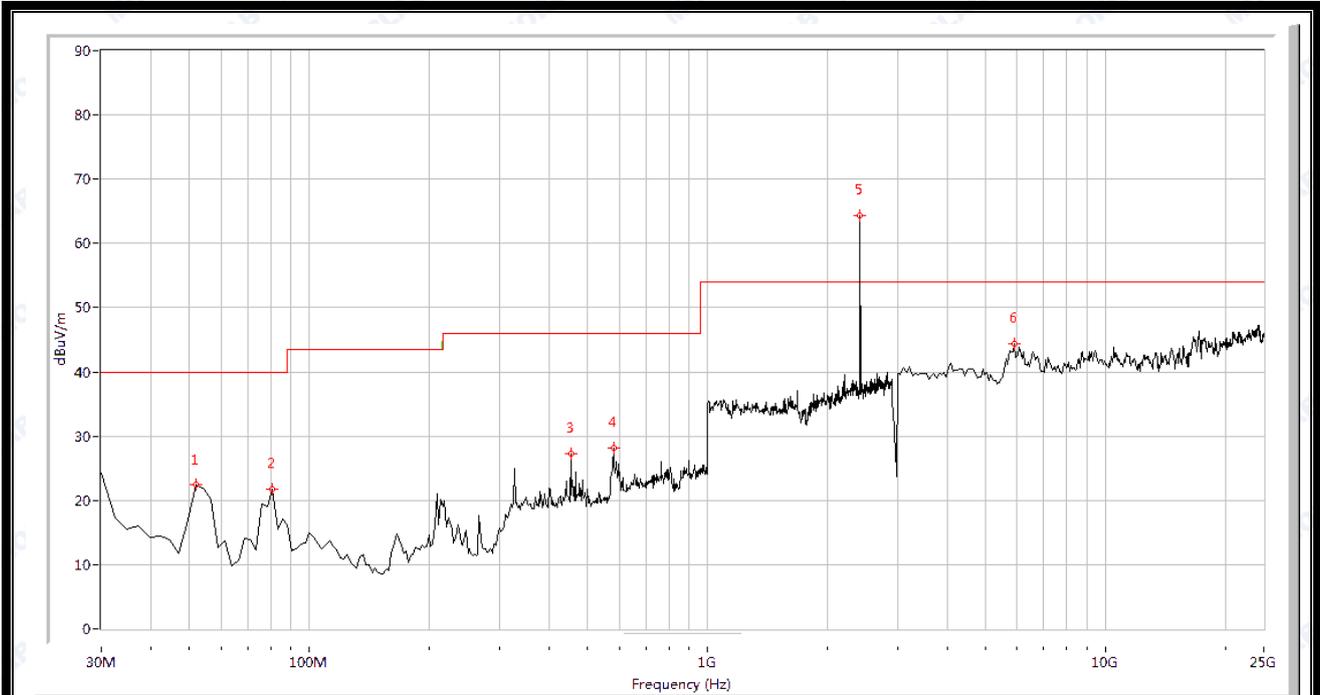


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
32.419	29.34	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
61.446	21.12	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
225.935	25.46	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
765.362	26.82	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
2422.000	59.41	N.A	N.A	N.A	N.A	N.A	Vertical	N.A
5907.731	43.61	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

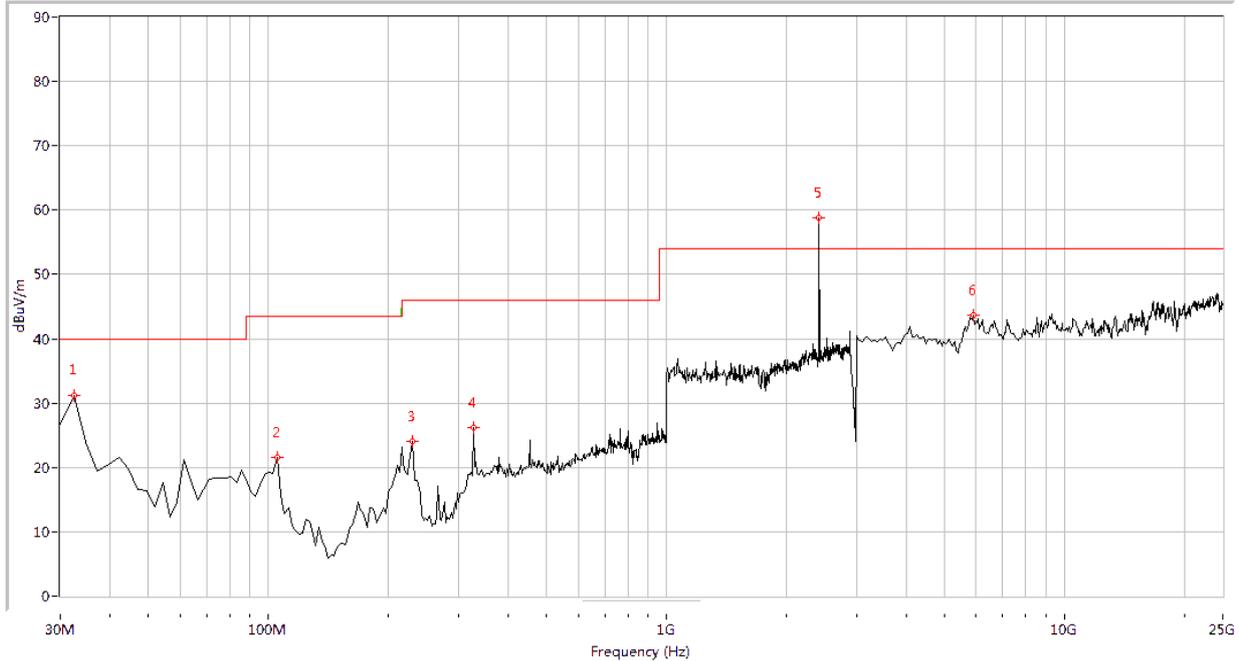


Plot for Channel = 6



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
51.771	22.53	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
80.798	21.80	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
453.317	27.25	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
581.521	28.18	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
2437.000	64.31	N.A	N.A	N.A	N.A	N.A	Horizontal	N.A
5907.731	44.36	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

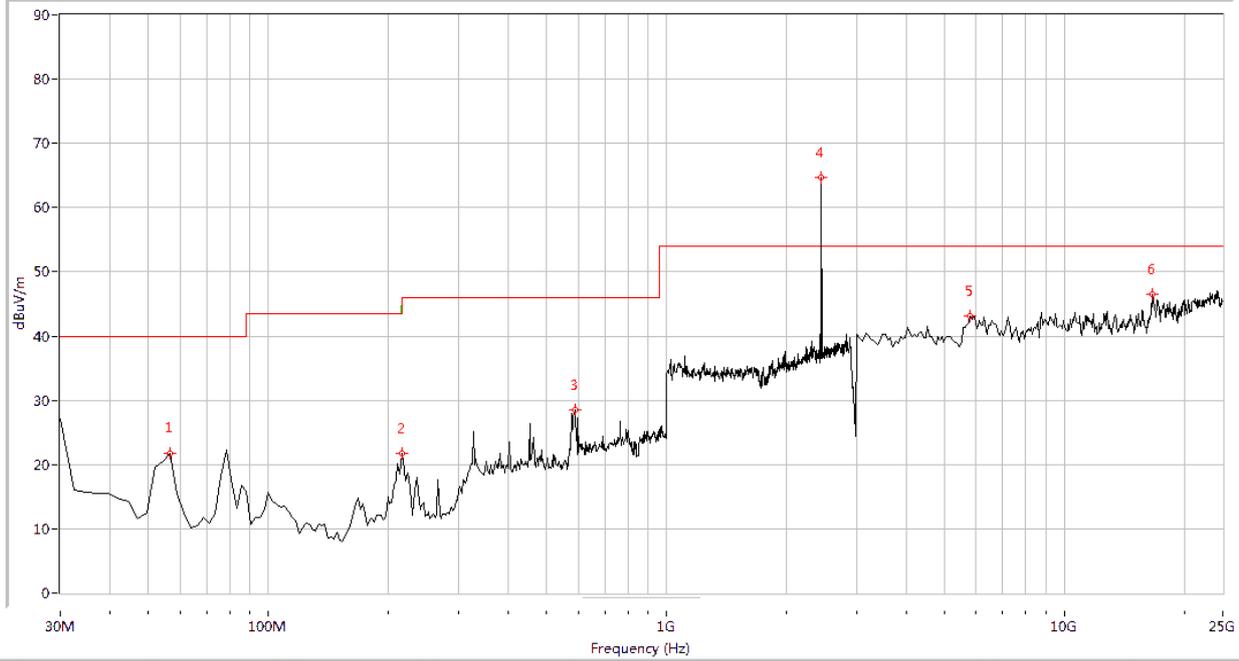


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
32.419	31.14	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
104.988	21.62	N.A	N.A	N.A	43.5	N.A	Vertical	PASS
230.773	23.98	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
327.531	26.24	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
2437.000	58.84	N.A	N.A	N.A	N.A	N.A	Vertical	N.A
5907.731	43.75	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

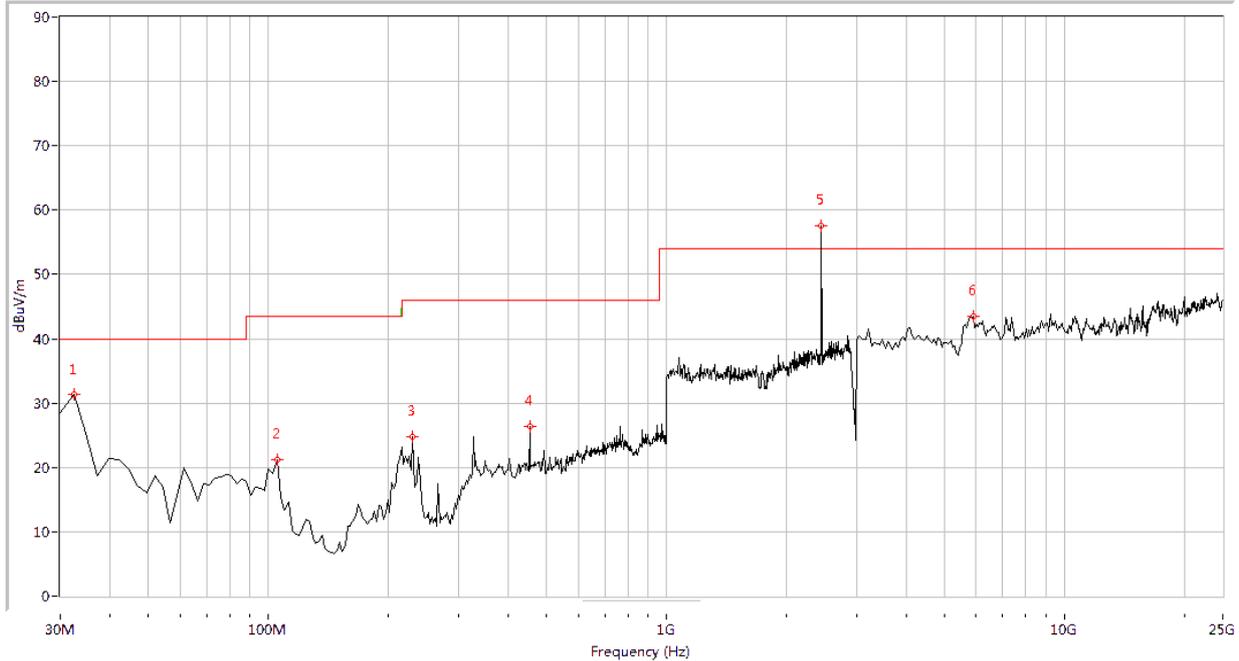


Plot for Channel = 9



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
56.608	21.75	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
216.259	21.81	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
588.778	28.55	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
2452.000	64.61	N.A	N.A	N.A	N.A	N.A	Horizontal	N.A
5798.005	43.06	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS
16605.985	46.49	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
32.419	31.33	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
104.988	21.21	N.A	N.A	N.A	43.5	N.A	Vertical	PASS
230.773	24.70	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
453.317	26.43	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
2452.000	57.56	N.A	N.A	N.A	N.A	N.A	Vertical	N.A
5907.731	43.45	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

(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.



## Annex A General Information

### 1.1 Identification of the Responsible Testing Laboratory

Company Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Department:	Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Responsible Test Lab Manager:	Mr. Su Feng
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

### 1.2 Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

### 1.3 Facilities and Accreditations

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.

The IC registration number is 7183A-2.



## 1.4 Test Equipments Utilized

### 1.4.1 Conducted Test Equipments

Conducted Test Equipment						
No.	Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Cal. Due
1	Spectrum Analyzer	MY45101810	E4407B	Agilent	2015.02.26	2016.02.25
2	Power Splitter	NW521	1506A	Weinschel	2015.02.26	2016.02.25
3	Attenuator 1	(n.a.)	10dB	Resnet	2015.02.26	2016.02.25
4	Attenuator 2	(n.a.)	3dB	Resnet	2015.02.26	2016.02.25
5	USB Wideband Power Sensor	MY52280010	U2021XA	Agilent	2015.02.26	2016.02.25
6	EXA Signal Analyzer	MY51440152	N9010A	Agilent	2015.02.26	2016.02.25
7	RF cable	CB01	RF01	Morlab	N/A	N/A
8	Coaxial cable	CB02	RF02	Morlab	N/A	N/A
9	SMA connector	CN01	RF03	HUBER-SUHNER	N/A	N/A

### 1.4.2 Conducted Emission Test Equipments

Conducted Emission Test Equipments						
No.	Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Cal. Due
1	Receiver	US4421047 1	E7405A	Agilent	2015.02.26	2016.02.25
2	LISN	812744	NSLK 8127	Schwarzbeck	2015.02.26	2016.02.25
3	Service Supplier	100448	CMU200	R&S	2015.02.26	2016.02.25
4	Pulse Limiter (20dB)	9391	VTSD 9561-D	Schwarzbeck	2015.02.26	2016.02.25
5	Coaxial cable(BNC)	CB01	EMC01	Morlab	N/A	N/A

### 1.4.3 Radiated Test Equipments

Radiated Test Equipments						
No.	Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Cal. Due Date
1	System Simulator	100448	CMU200	R&S	2015.02.26	2016.02.25



2	Receiver	US44210471	E7405A	Agilent	2015.02.26	2016.02.25
3	Test Antenna - Bi-Log	9163-274	9m*6m*6m	Albatross	2015.02.26	2016.02.25
4	Test Antenna - Horn	9120D-963	VULB 9163	Schwarzbeck	2015.02.26	2016.02.25
5	Test Antenna - Horn	71688	BBHA 9120D	Schwarzbeck	2015.02.26	2016.02.25
6	Test Antenna - Loop	1519-022	HL050S7	R&S	2015.02.26	2016.02.25
7	Reject Filter	(n.a.)	BRM50702	Micro-Tronics	2015.02.26	2016.02.25
8	Coaxial cable (N male)	CB02	EMC02	Morlab	N/A	N/A
9	Coaxial cable (N male)	CB03	EMC03	Morlab	N/A	N/A

### 1.4.4 Climate Chamber

#### Climate Chamber

No.	Equipment Name	Serial No.	Type	Manufacturer	Cal.Date	Cal.Due Date
1	Climate Chamber	2004012	HL4003T	Yinhe	2015.02.26	2016.02.25

### 1.4.5 Vibration Table

#### Vibration Table

No.	Equipment Name	Serial No.	Type	Manufacturer	Cal.Date	Cal.Due Date
1	Vibration Table	N/A	ACT2000- S015L	CMI-COM	2015.02.26	2016.02.25

### 1.4.6 Anechoic Chamber

#### Anechoic Chamber

No.	Equipment Name	Serial No.	Type	Manufacturer	Cal.Date	Cal.Due Date
1	Anechoic Chamber	N/A	9m*6m*6m	Albatross	2015.02.26	2016.02.25

\*\*\*\*\* END OF REPORT \*\*\*\*\*