REPORT No.: SZ15120186W01

FCC RF TEST REPORT

APPLICANT	:	RM Acquisition, LLC
PRODUCT NAME	:	Wirelesss reversing camera
MODEL NAME	:	RMWBC100
TRADE NAME	:	RAND MCNALLY
BRAND NAME	:	RAND MCNALLY
FCC ID	:	A4C91000A
STANDARD(S)	:	47 CFR Part 15 Subpart C
ISSUE DATE	:	2016-02-26

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DIRECTORY

Change History		
Issue	Date	Reason for change
1.0	2016-02-26	First edition

TEST REPORT DECLARATION

Applicant	RM Acquisition, LLC
Applicant Address	9855 Woods Drive, Skokie, Illinois 60077, USA
Manufacturer	Donggan Antai Electronic Co.,Ltd.
Manufacturer Address	Building E,No.22, Yuhua Street, 138 Industrial Park Tangxia Town,Dongguan 523710,China
Product Name	Wirelesss reversing camera
Model Name	RMWBC100
Brand Name	RAND MCNALLY
HW Version	V0.3
SW Version	SNCC60_SDK_5524_PC3089_20151113_Test_2
Test Standards	47 CFR Part 15 Subpart C
Test Date	2016-01-06 to 2016-01-20
Test Result	PASS

Tested by : Zou Jian

Zou Jian

Reviewed by : Qiu Xiaojun

Qiu Xiaojun

Approved by : Peng Huarui

Peng Huarui

1. TECHNICAL INFORMATION

Note: Provide by applicant.

1.1 Applicant Information

Company:	RM Acquisition, LLC
Address:	9855 Woods Drive, Skokie, Illinois 60077, USA

1.2 Equipment under Test (EUT) Description

Brand Name:	RAND MCNALLY
Trade Name:	RAND MCNALLY
Model Name:	RMWBC100
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:	FPC Antenna
Antenna Gain:	1.5 dBi

NOTE:

The EUT is a Wirelesss reversing camera, it contains WIFI EUT operating at 2.4GHz ISM; it supports 802.11b, 802.11g, 802.11n and they are all tested in this report.

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

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

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.

1.2.1 Identification of all used EUTs

The EUT identity consists of numerical and letter characters, the letter character indicates the test sample, and the following two numerical characters indicate the software version of the test sample.

EUT Identity	Hardware Version	Software Version
A01	V0.3	SNCC60_SDK_5524_PC3089_20151113_Test_2

1.3 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	Test Date	Result
1	15.203	Antenna Requirement	N.A	**PASS**
2	15.247(b)	Peak Output Power	Jan 06, 2016	**PASS**
3	15.247(a)	Bandwidth	Jan 06, 2016	**PASS**
4	15.247(d)	Conducted Spurious Emission and Band Edge	Jan 06, 2016& Jan 07, 2016	**PASS**
5	15.247(d)	Restricted Frequency Bands	Jan 19, 2016	**PASS**
6	15.209 ,15.247(d)	Radiated Emission	Jan 20, 2016	**PASS**
7	15.247(e)	Power spectral density (PSD)	Jan 06, 2016	**PASS**
8	15.207	Conducted Emission	N.A	**N.A**
Note: Measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines.				

The tests of Conducted Emission and Radiated Emission were performed according to the method of measurements prescribed in ANSI C63.10 2013.

1.3.1 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 exceed1 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 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 EUT.

2.2.3.1 802.11b Test Mode

Channel	Frequency (MHz)	Measured Output Peak Power		Limit		Verdict
		dBm	W	dBm	W	
1	2412	20.08	0.10186	30	1	PASS
6	2437	20.38	0.10914			PASS
11	2462	20.49	0.11194			PASS

Channel	Frequency (MHz)	Measured Output Average Power		Limit		Verdict
		dBm	W	dBm	W	
1	2412	16.55	0.04519	30	1	PASS
6	2437	16.81	0.04797			PASS
11	2462	16.93	0.04932			PASS

2.2.3.2 802.11g Test mode

Channel	Frequency (MHz)	Measured Output Peak Power		Limit		Verdict
		dBm	W	dBm	W	
1	2412	25.19	0.33037	30	1	PASS
6	2437	25.43	0.34914			PASS
11	2462	25.75	0.37584			PASS

Channel	Frequency (MHz)	Measured Output Average Power		Limit		Verdict
		dBm	W	dBm	W	
1	2412	15.73	0.03741	30	1	PASS
6	2437	15.95	0.03936			PASS
11	2462	16.15	0.04121			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	25.07	0.32137	30	1	PASS
6	2437	25.28	0.33729			PASS
11	2462	25.53	0.35727			PASS

Channel	Frequency (MHz)	Measured Output Average Power		Limit		Verdict
		dBm	W	dBm	W	
1	2412	15.67	0.03690	30	1	PASS
6	2437	15.88	0.03873			PASS
11	2462	16.02	0.03999			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	23.63	0.23067	30	1	PASS
6	2437	23.98	0.25003			PASS
9	2452	23.86	0.24322			PASS

Channel	Frequency (MHz)	Measured Output Average Power		Limit		Verdict
		dBm	W	dBm	W	
1	2412	14.80	0.03020	30	1	PASS
6	2437	14.96	0.03133			PASS
11	2462	15.01	0.03170			PASS

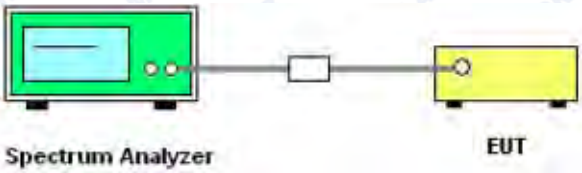
2.3 Bandwidth

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 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:

Please reference ANNEX A(1.4).

2.3.3 Test Result

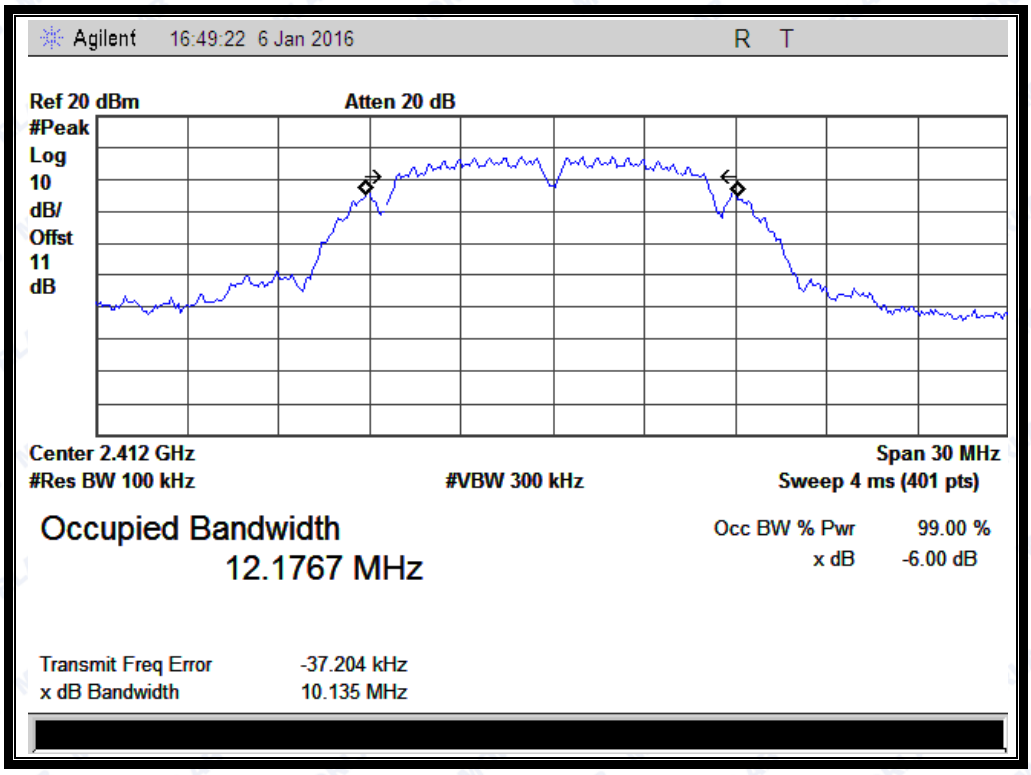
The lowest, middle and highest channels are selected to perform testing to record the 6 dB bandwidth of the EUT.

2.3.3.1 802.11b Test mode

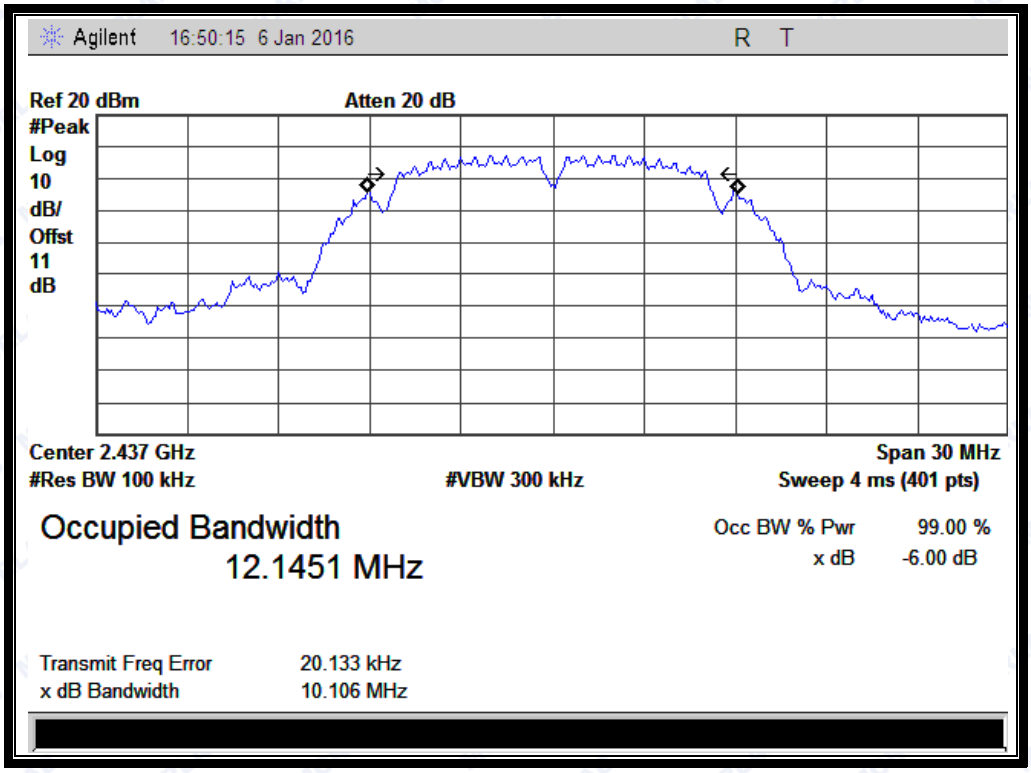
A. Test Verdict:

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limits(kHz)	Result
1	2412	10.14	≥500	PASS
6	2437	10.11	≥500	PASS
11	2462	10.11	≥500	PASS

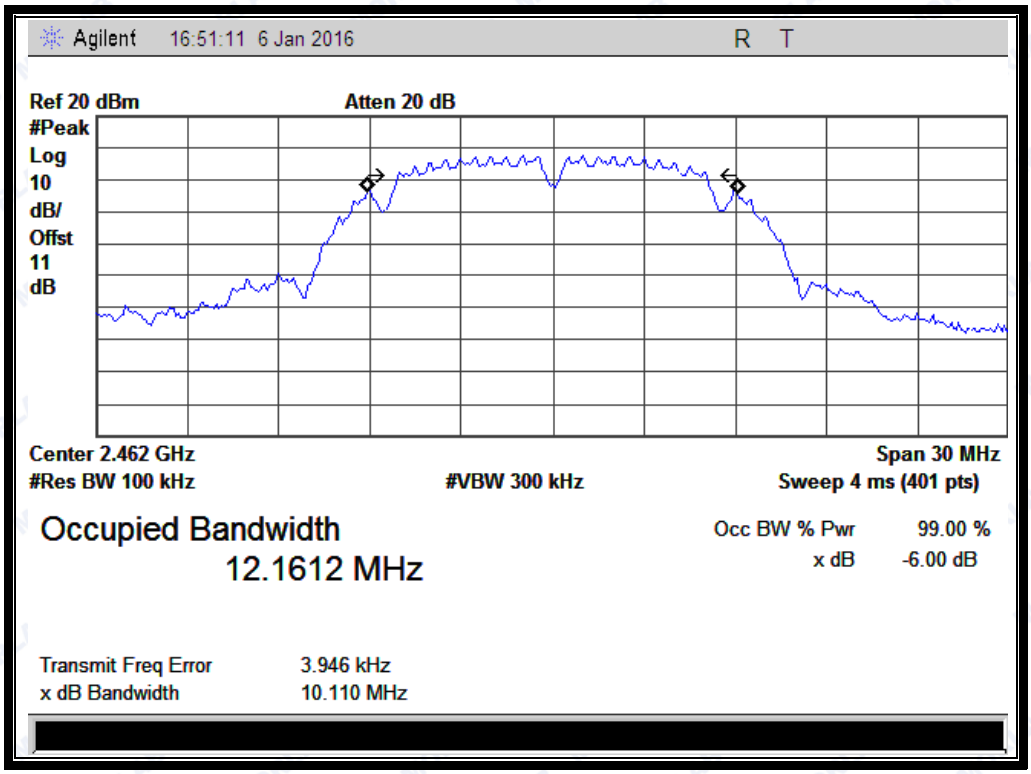
B. Test Plots



(Channel 1: 2412MHz @ 802.11b)



(Channel 6: 2437 MHz @ 802.11b)



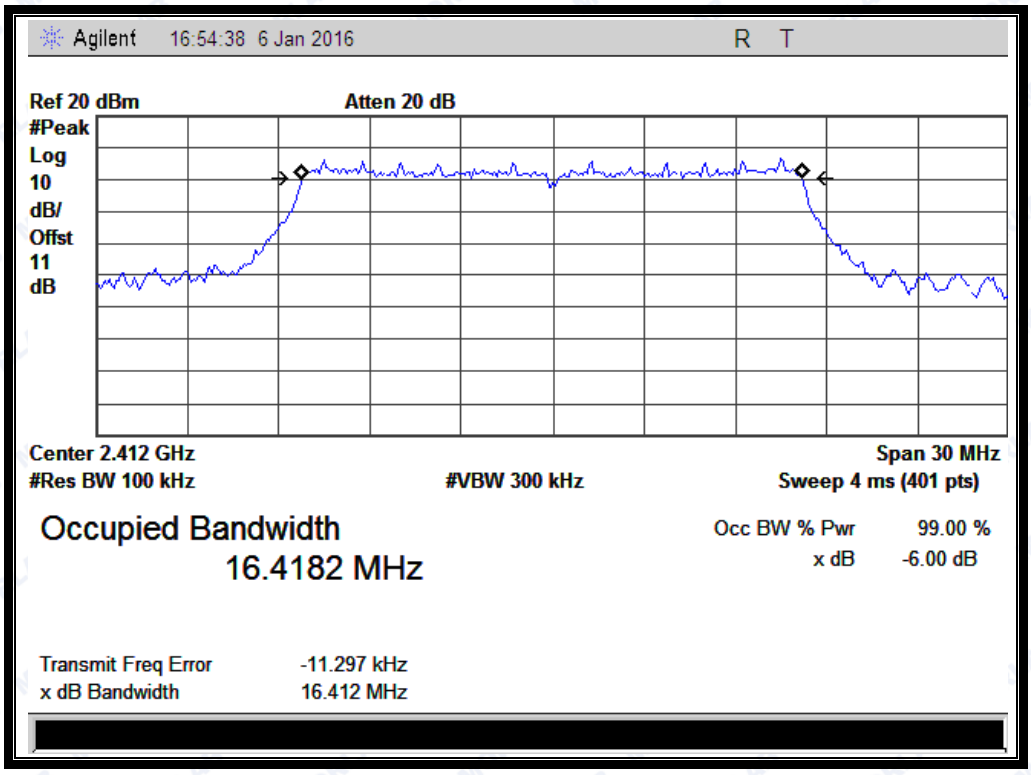
(Channel 11: 2462MHz @ 802.11b)

2.3.3.2 802.11g Test mode

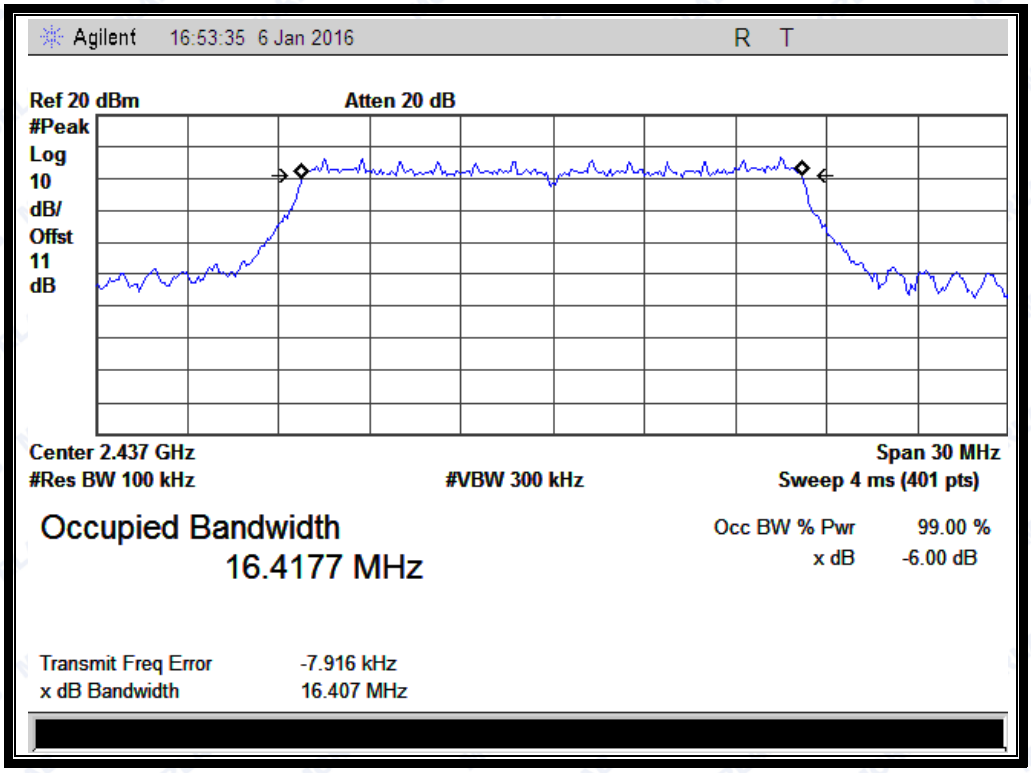
A. Test Verdict:

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limits (kHz)	Result
1	2412	16.41	≥500	PASS
6	2437	16.41	≥500	PASS
11	2462	16.41	≥500	PASS

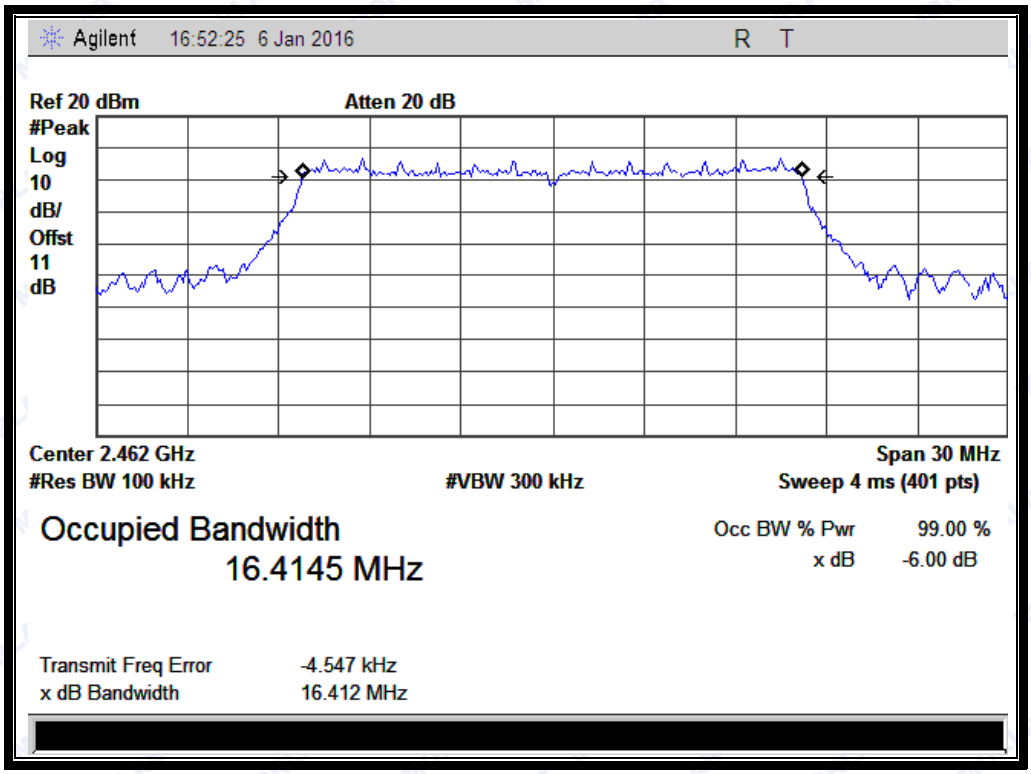
B. Test Plots:



(Channel 1: 2412MHz @ 802.11g)



(Channel 6: 2437MHz @ 802.11g)



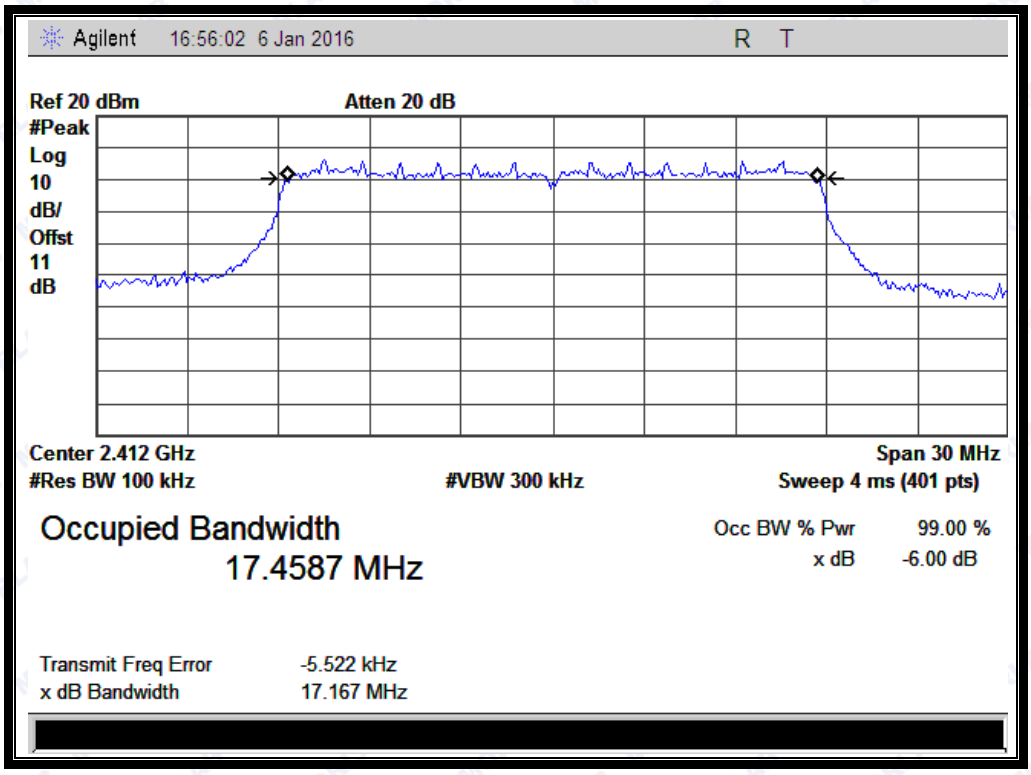
(Channel 11: 2462MHz @ 802.11g)

2.3.3.3 802.11n-20 Test mode

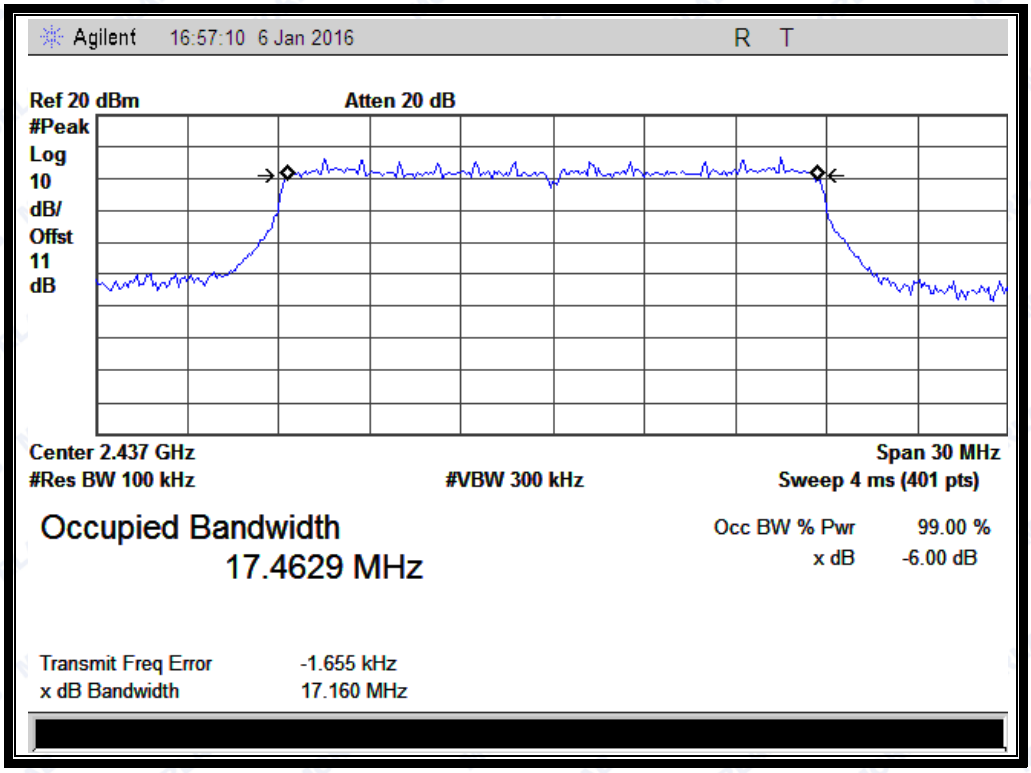
A. Test Verdict:

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limits (kHz)	Result
1	2412	17.17	≥500	PASS
6	2437	17.16	≥500	PASS
11	2462	17.19	≥500	PASS

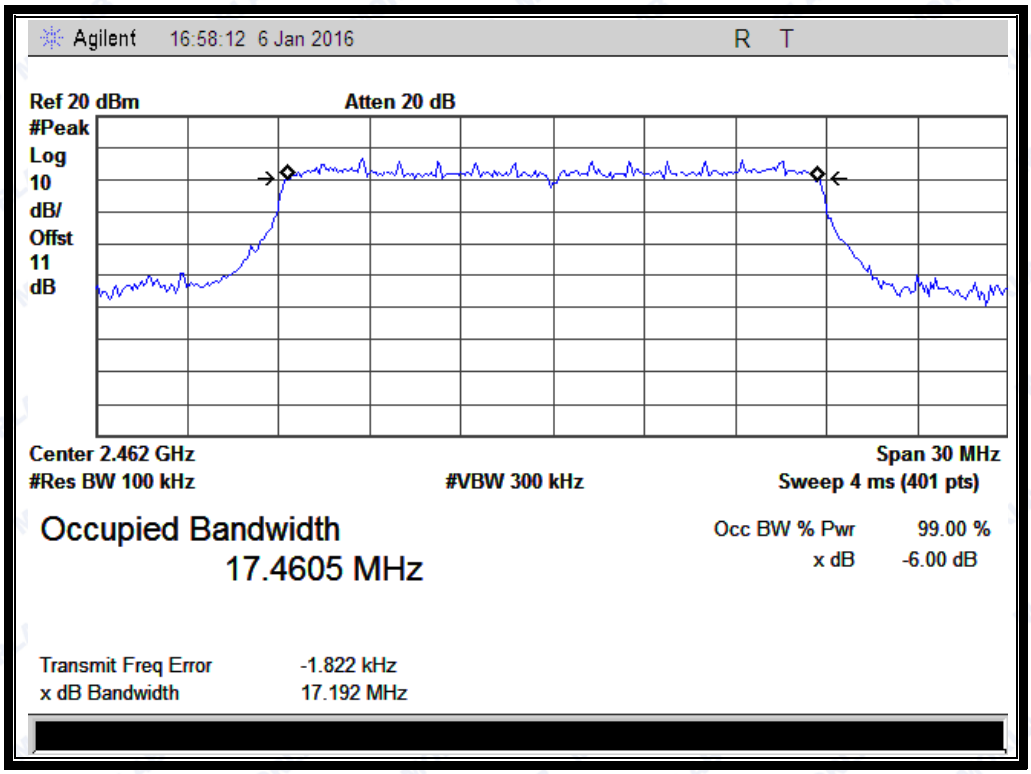
B. Test Plots:



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



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



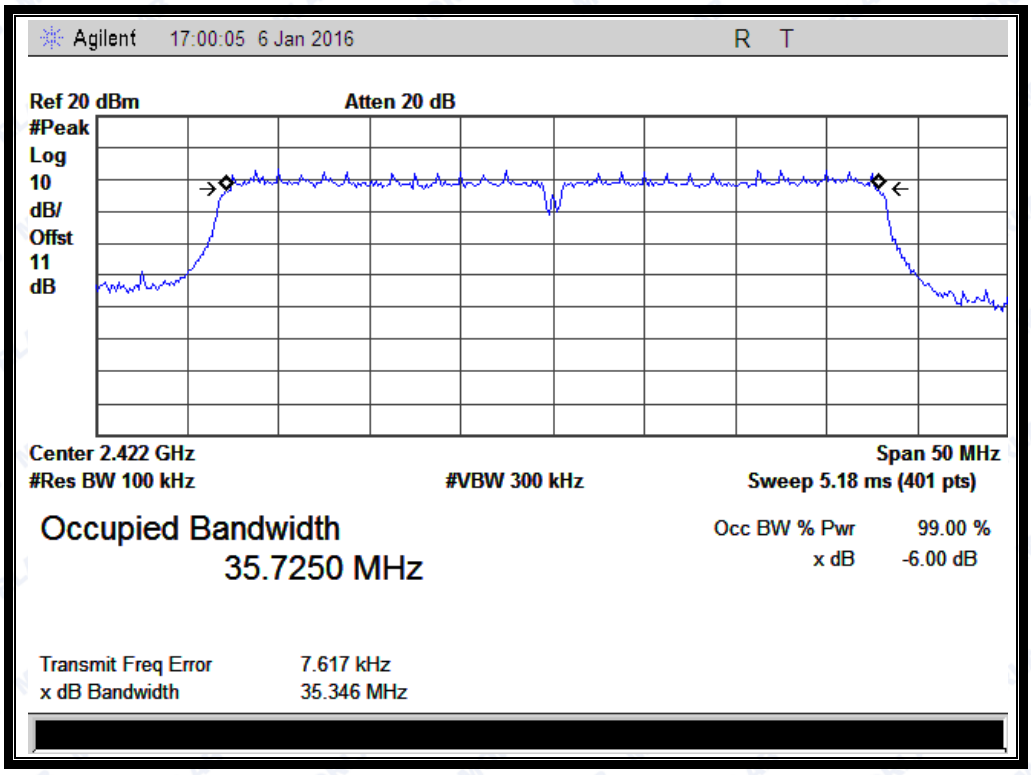
(Channel 11: 2462MHz @ 802.11n-20)

2.3.3.4 802.11n-40 Test mode

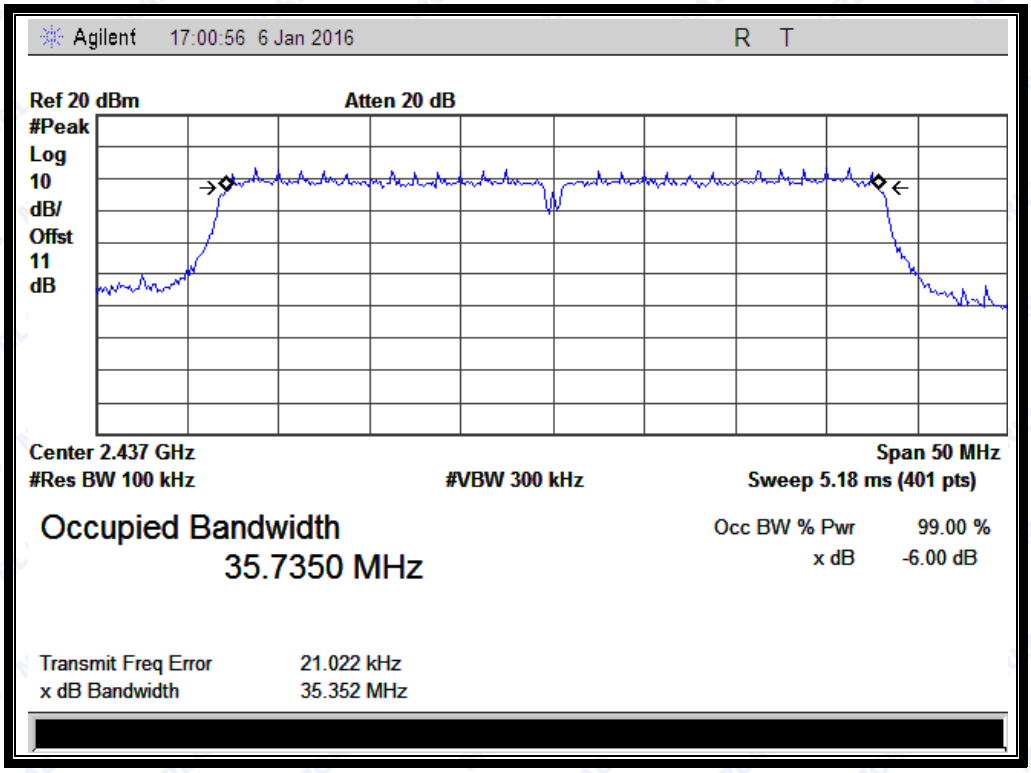
A. Test Verdict:

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limits (kHz)	Result
3	2422	35.35	≥500	PASS
6	2437	35.35	≥500	PASS
9	2452	35.37	≥500	PASS

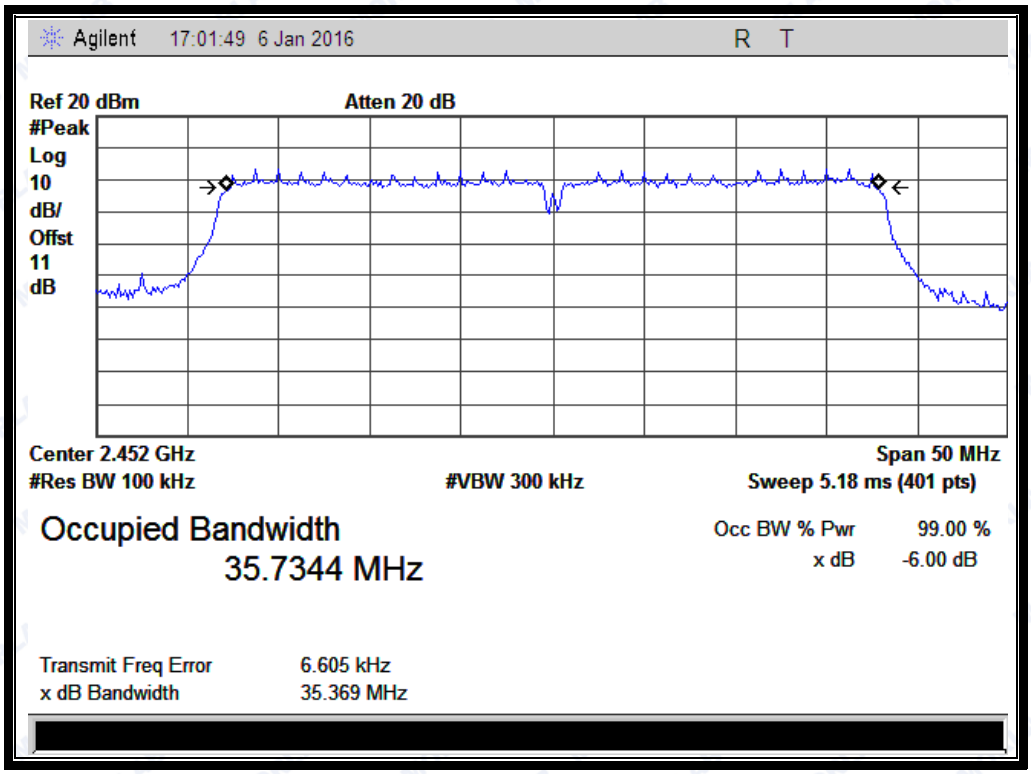
B. Test Plots:



(Channel 3: 2422MHz @ 802.11n-40)



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



(Channel 9: 2452MHz @ 802.11n-40)

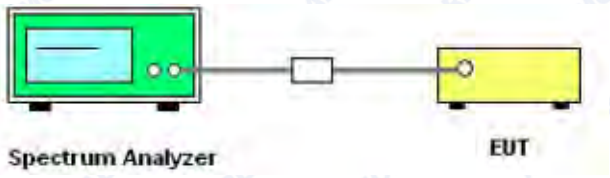
2.4 Conducted Spurious Emissions and Band Edge

2.4.1 Requirement

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

2.4.2 Test Description

A. Test Set:



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

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

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.

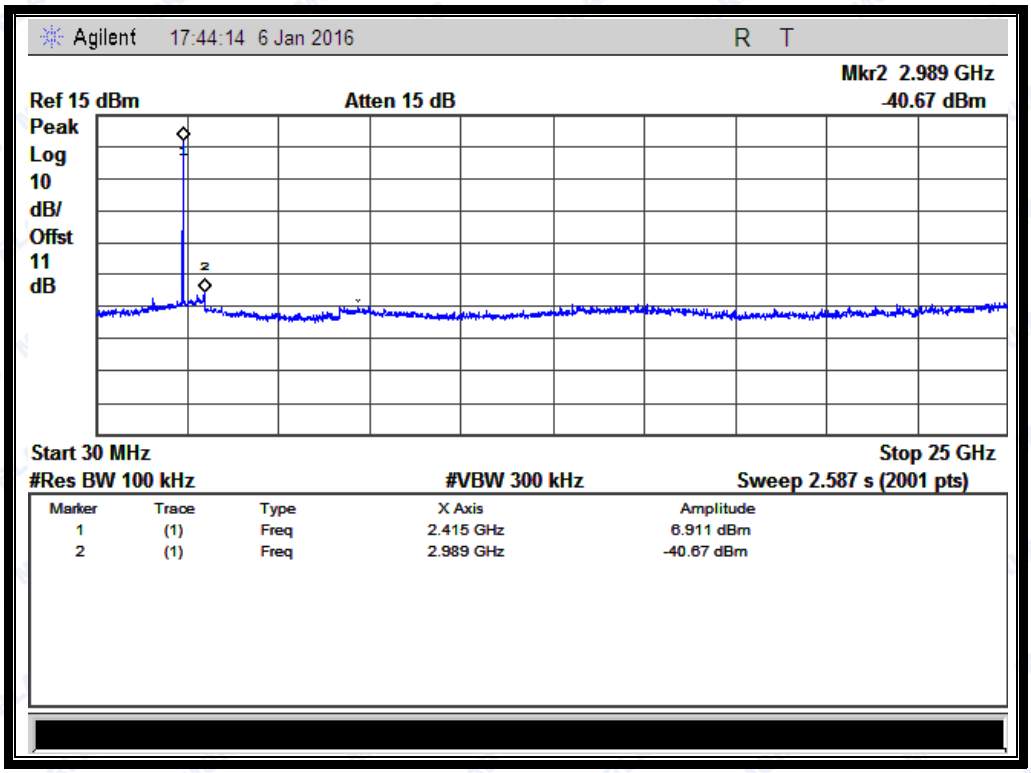
2.4.3.1 802.11b Test mode

A. Test Verdict:

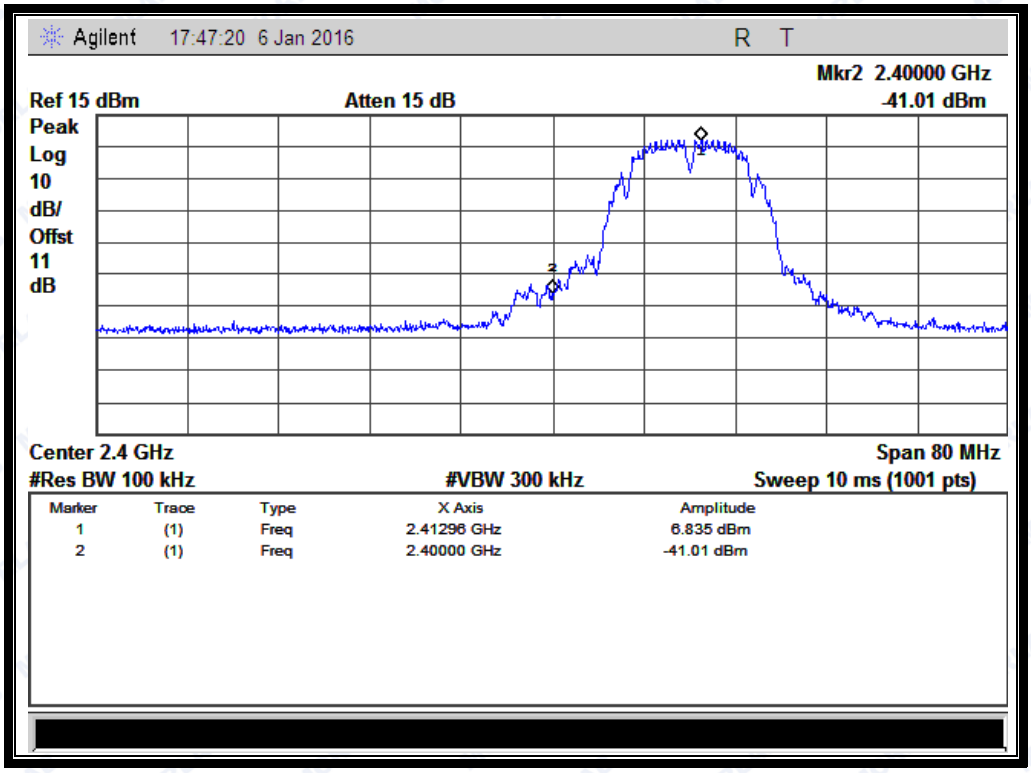
Channel	Frequency (MHz)	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
			Carrier Level	Calculated -20dBc Limit	
1	2412	-40.67	6.91	-13.09	PASS
6	2437	-46.21	6.85	-13.15	PASS
11	2462	-46.67	7.16	-12.84	PASS

B. Test Plots:

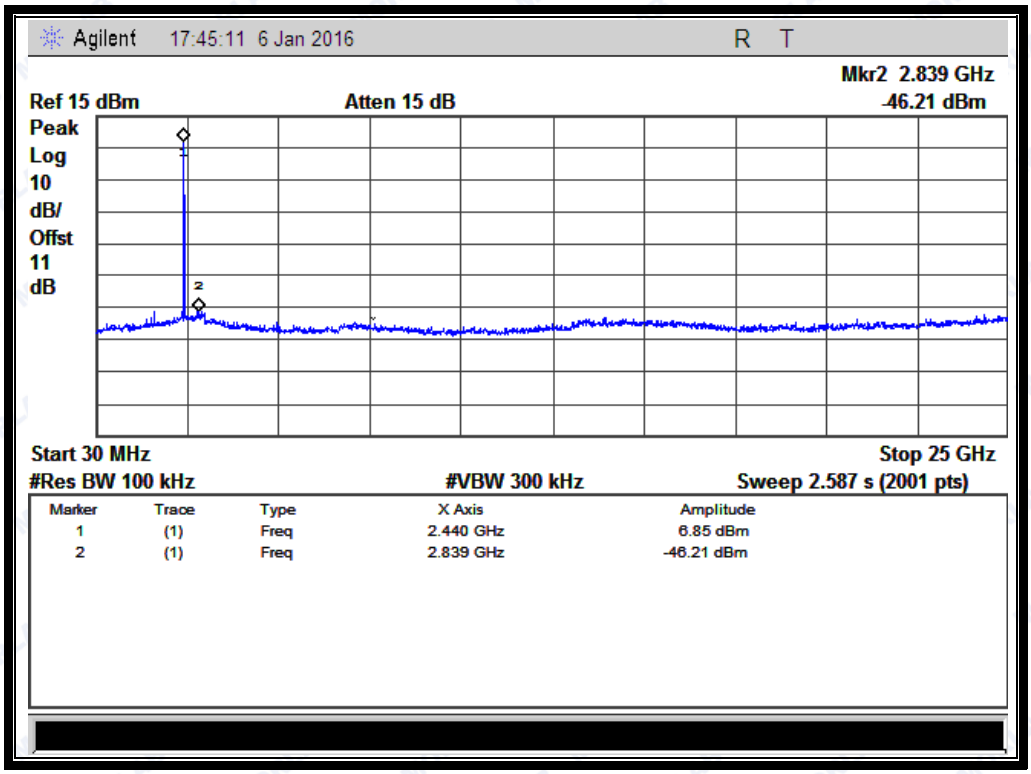
Note: the power of the EUT transmitting frequency should be ignored.



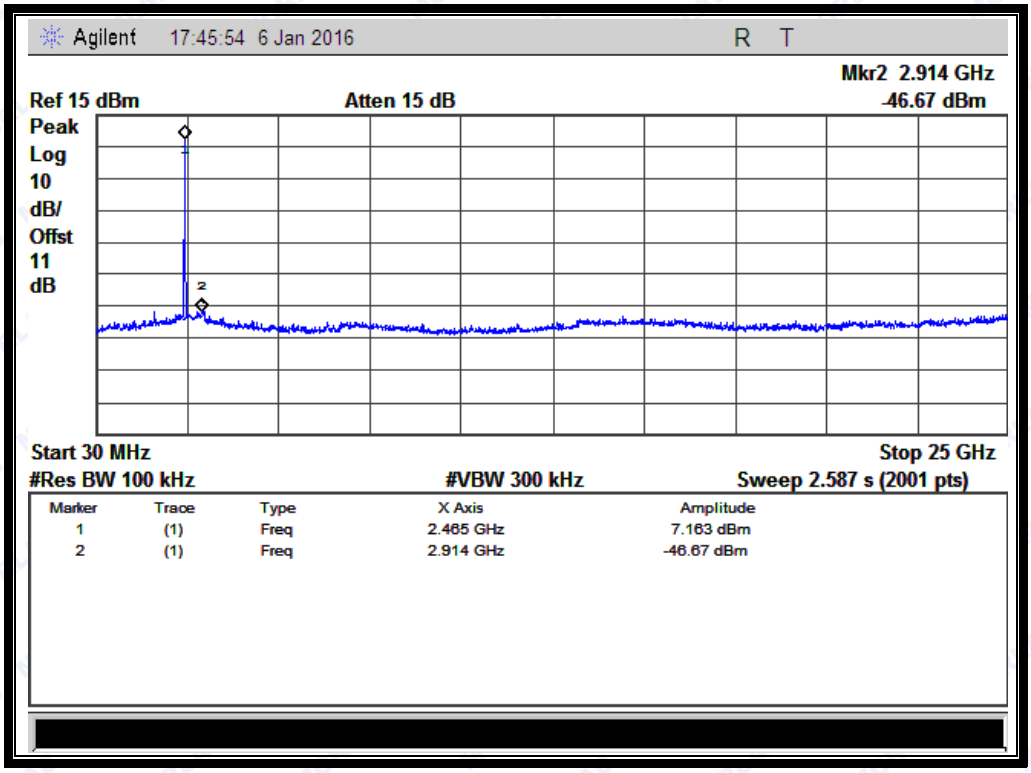
(Channel = 1, 30MHz to 25GHz)



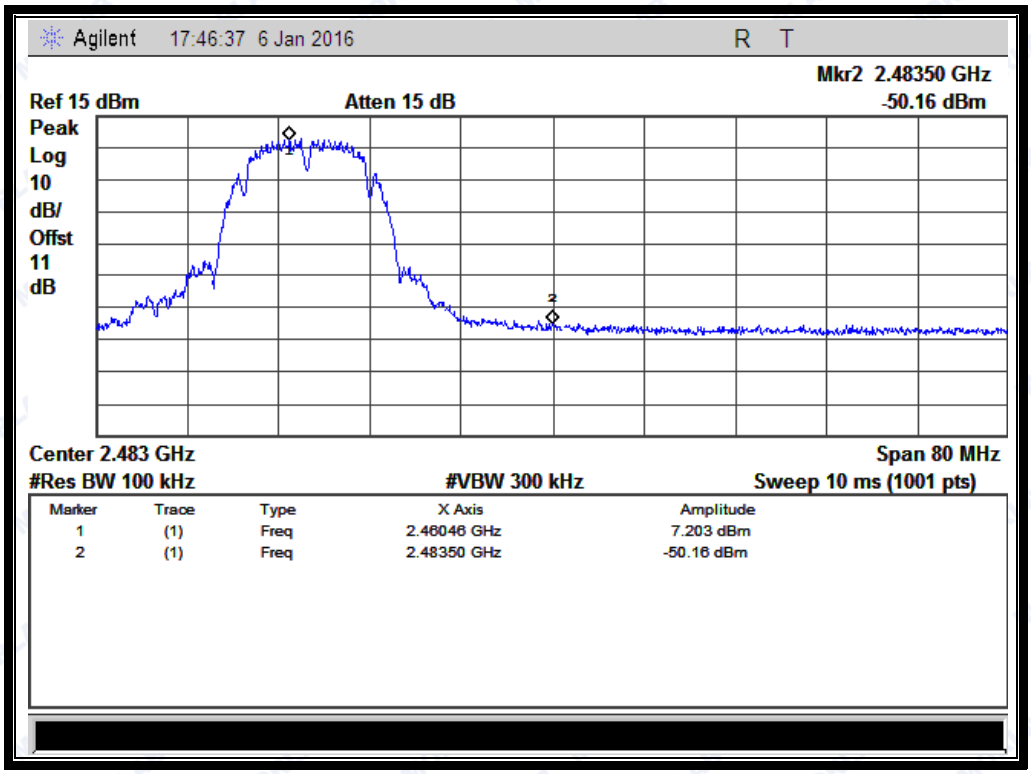
(Band Edge @ Channel = 1)



(Channel = 6, 30MHz to 25GHz)



(Channel = 11, 30MHz to 25GHz)



(Band Edge @ Channel = 11)

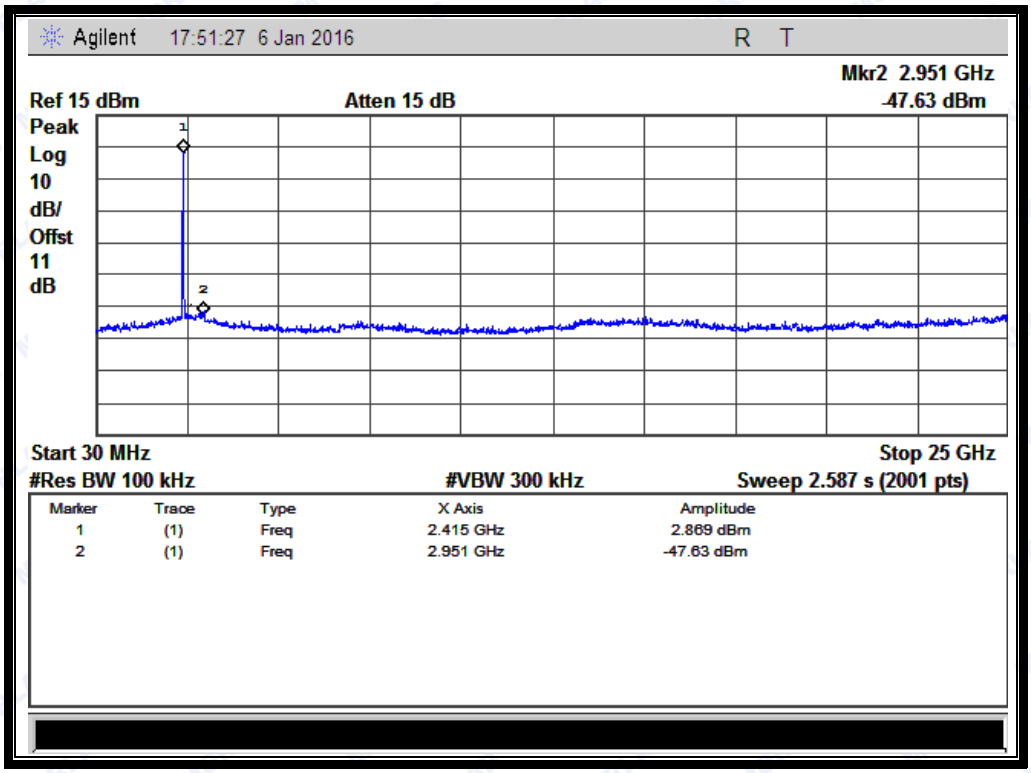
2.4.3.2 802.11g Test mode

A. Test Verdict:

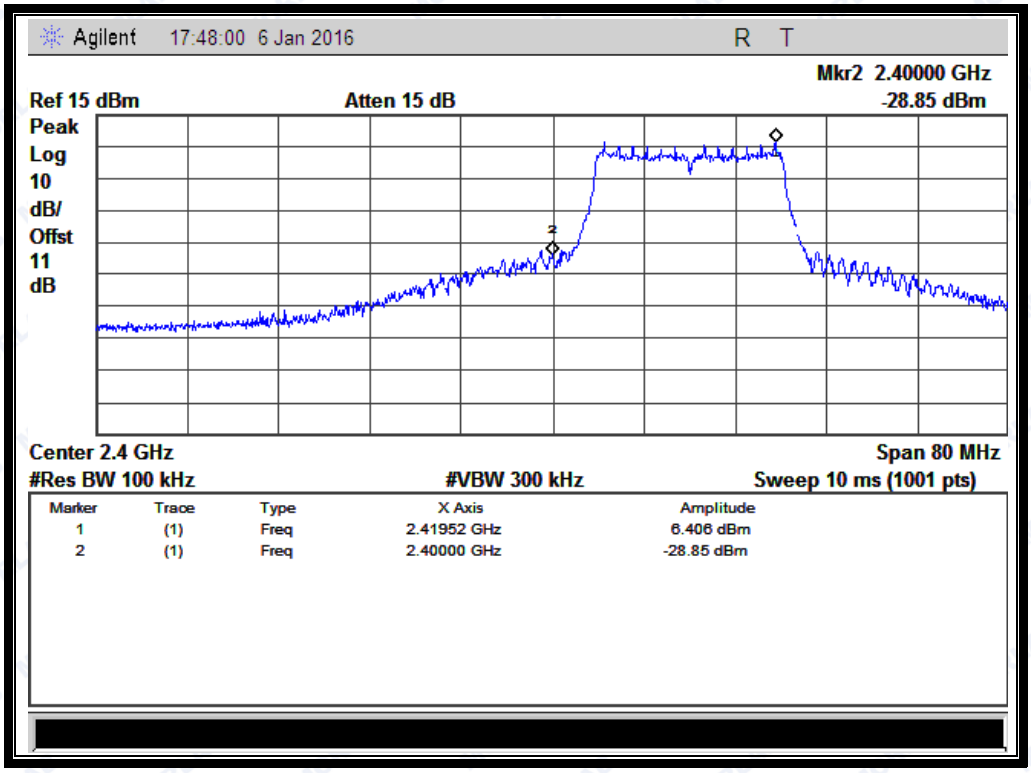
Channel	Frequency (MHz)	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
			Carrier Level	Calculated -20dBc Limit	
1	2412	-47.63	2.87	-17.13	PASS
6	2437	-46.82	4.29	-15.71	PASS
11	2462	-46.43	6.32	-13.68	PASS

B. Test Plots:

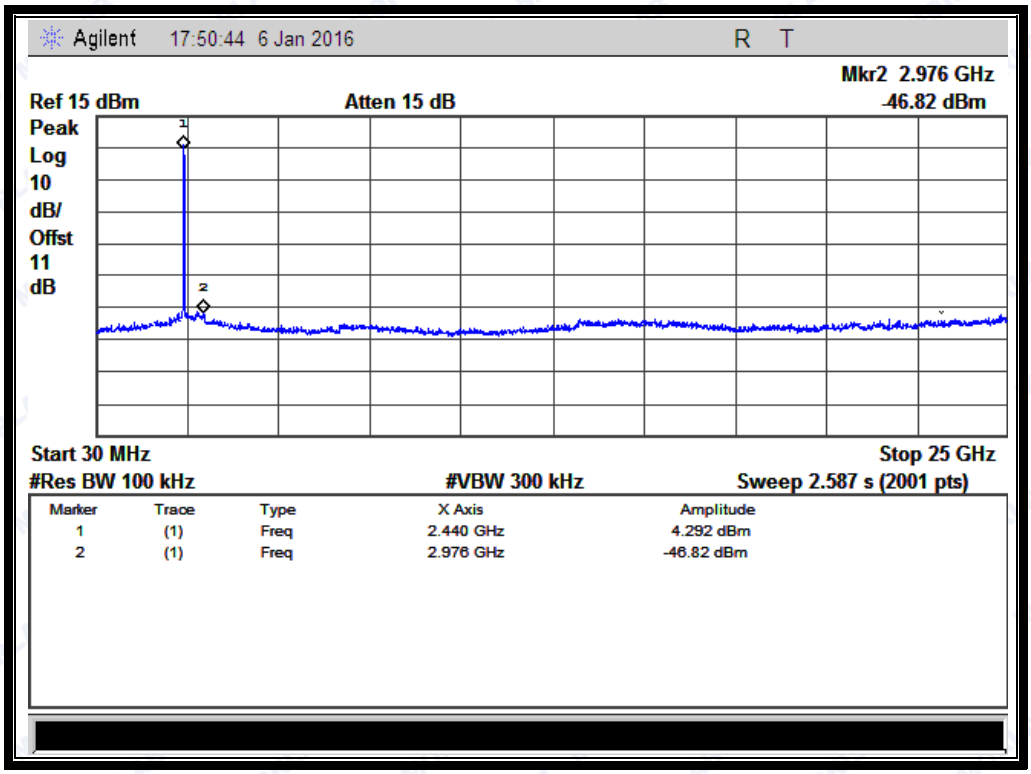
Note: the power of the EUT transmitting frequency should be ignored.



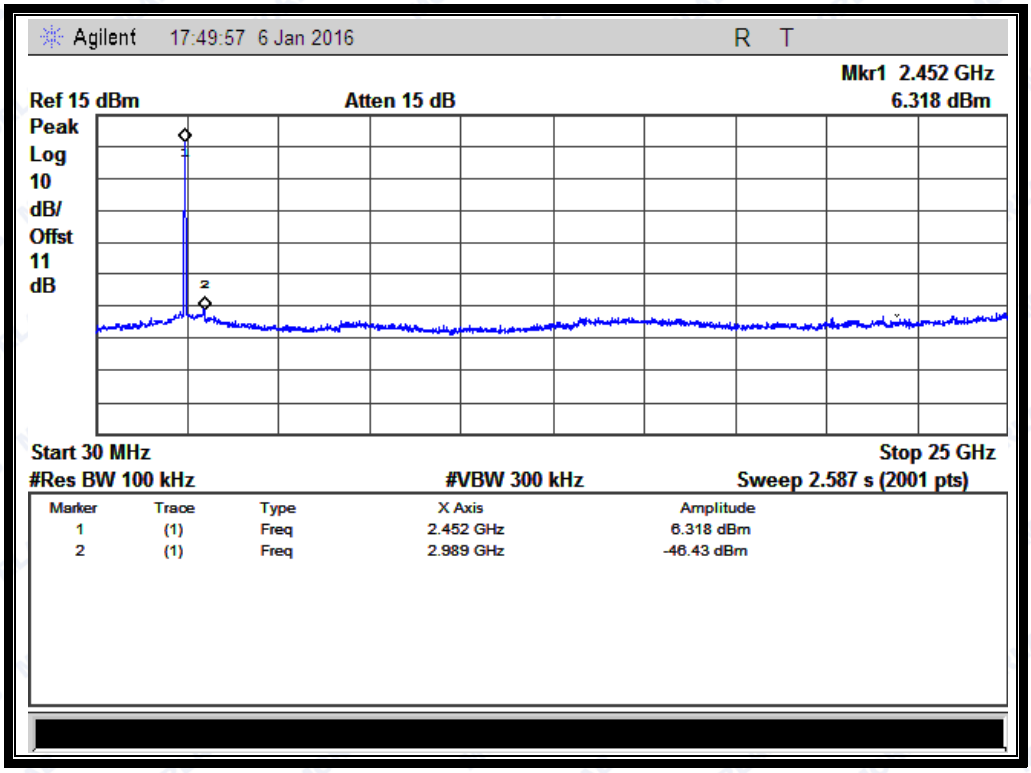
(Channel = 1, 30MHz to 25GHz)



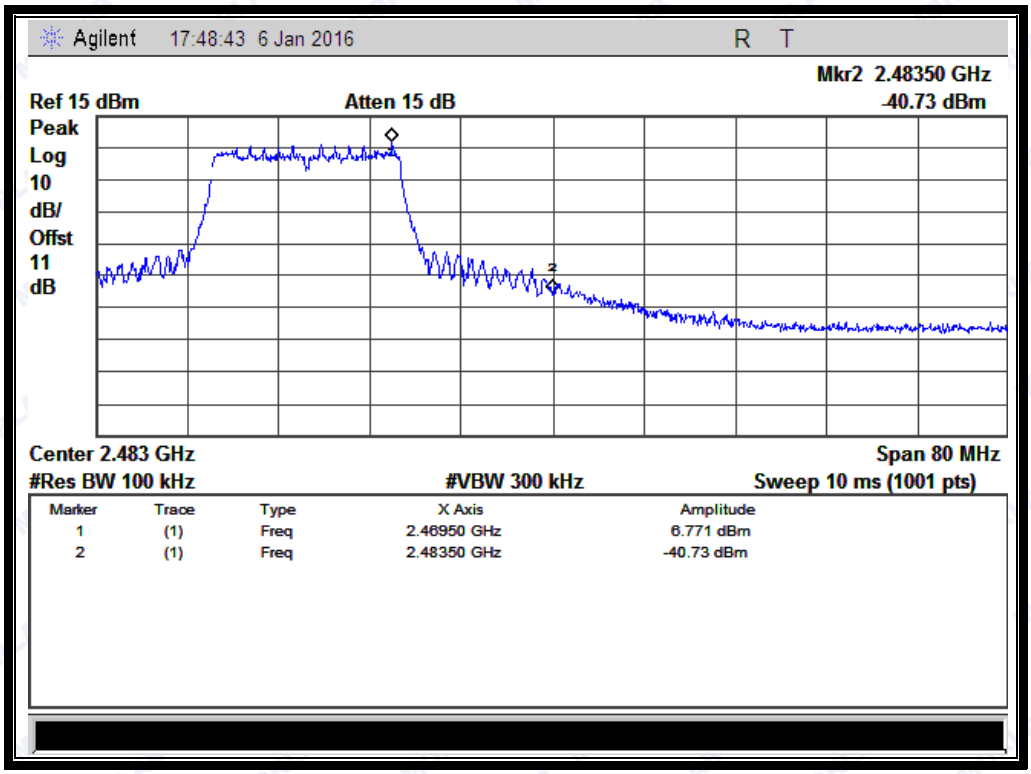
(Band Edge @ Channel = 1)



(Channel = 6, 30MHz to 25GHz)



(Channel = 11, 30MHz to 25GHz)



(Band Edge @ Channel = 11)

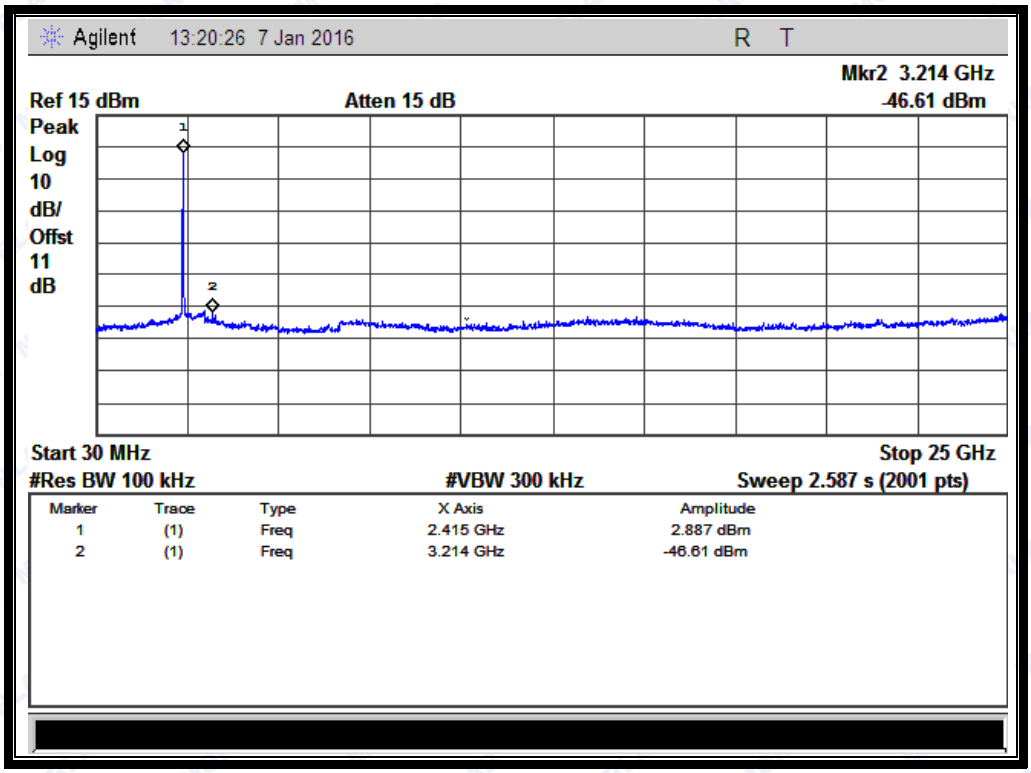
2.4.3.3 802.11n -20MHz Test mode

A. Test Verdict:

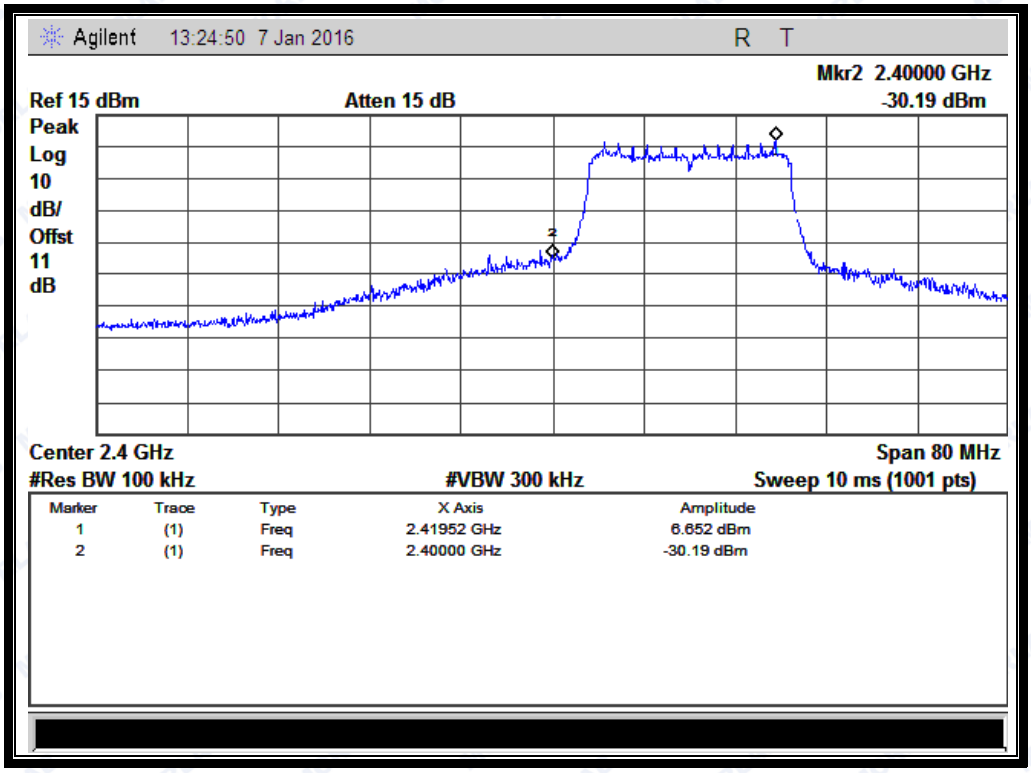
Channel	Frequency (MHz)	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
			Carrier Level	Calculated -20dBc Limit	
1	2412	-46.61	2.89	-17.11	PASS
6	2437	-45.79	5.87	-14.13	PASS
11	2462	-46.81	5.70	-14.30	PASS

B. Test Plots:

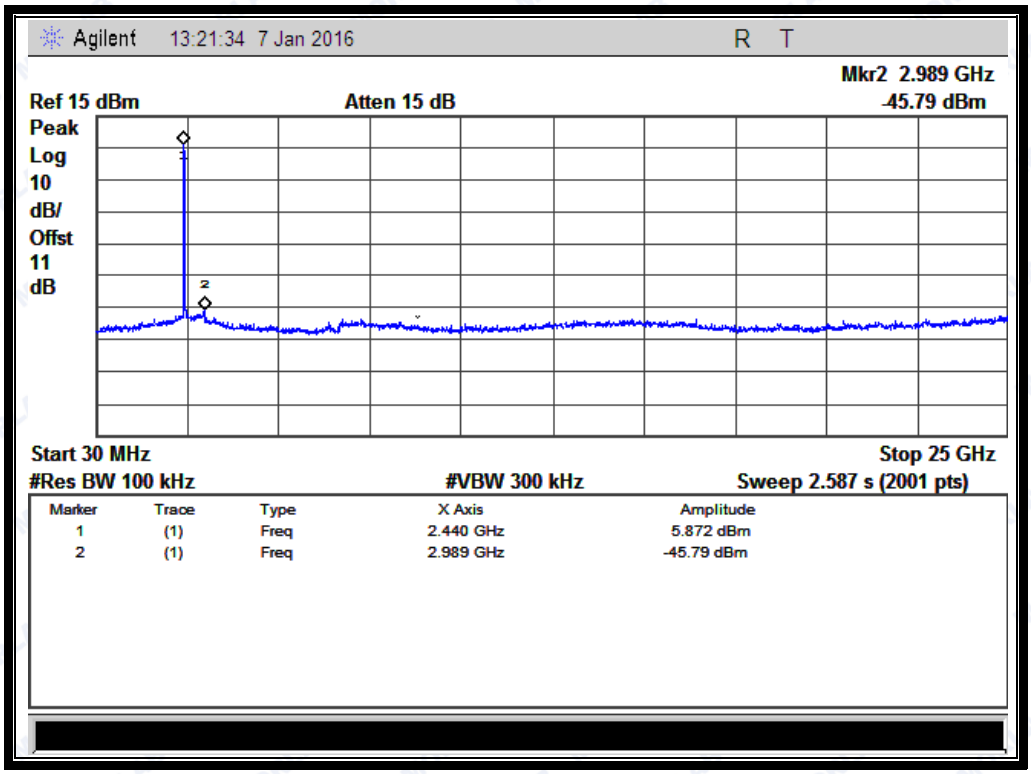
Note: the power of the EUT transmitting frequency should be ignored.



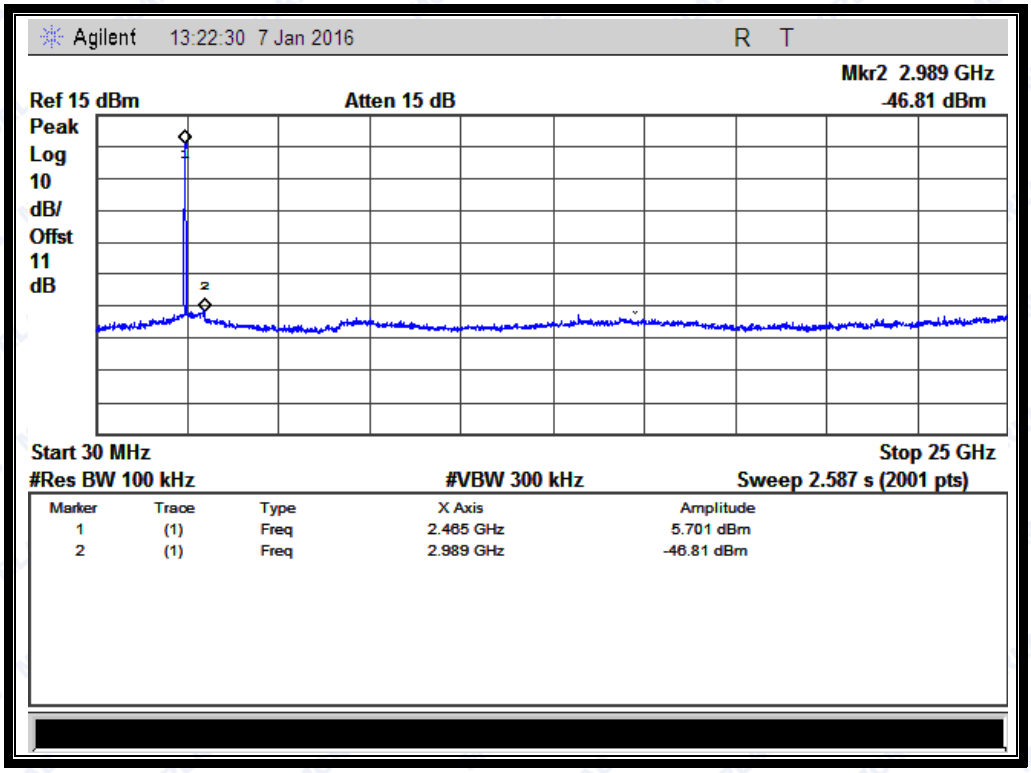
(Channel = 1, 30MHz to 25GHz)



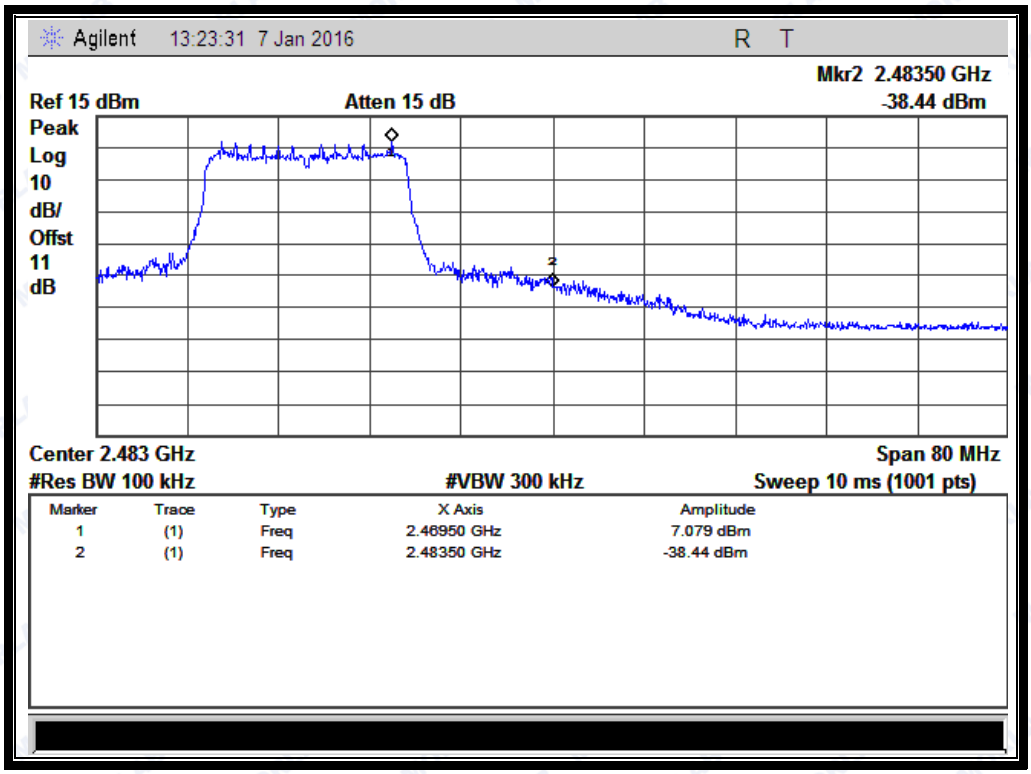
(Band Edge @ Channel = 1)



(Channel = 6, 30MHz to 25GHz)



(Channel = 11, 30MHz to 25GHz)



(Band Edge @ Channel = 11)

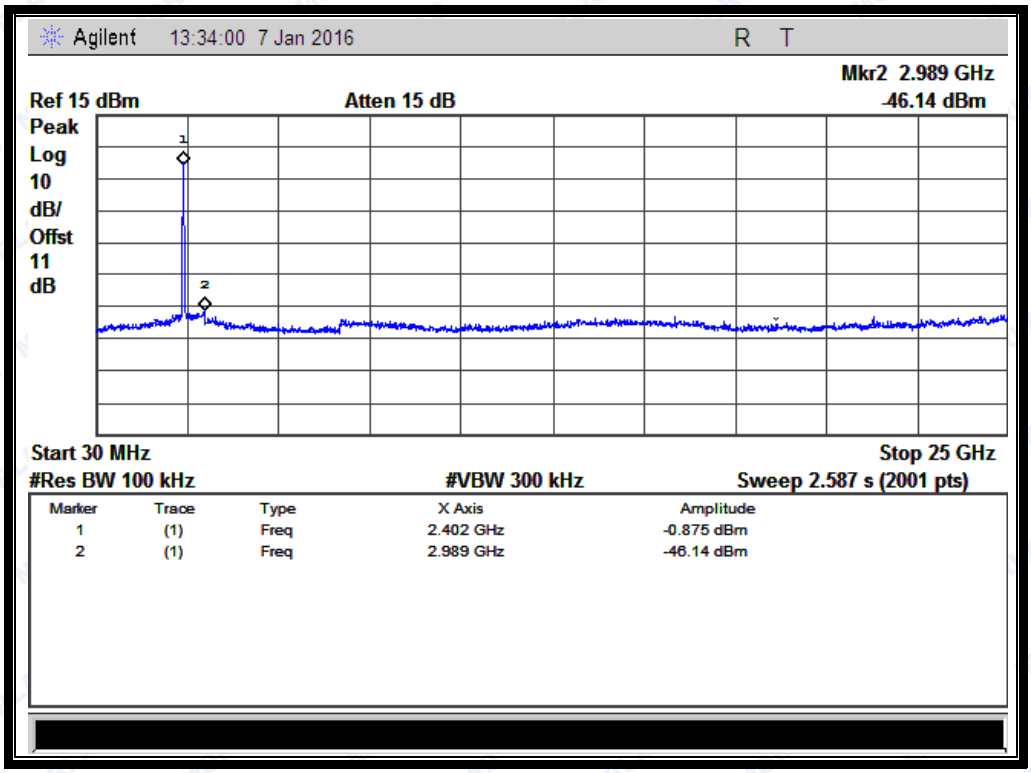
2.4.3.4 802.11n -40MHz Test mode

A. Test Verdict:

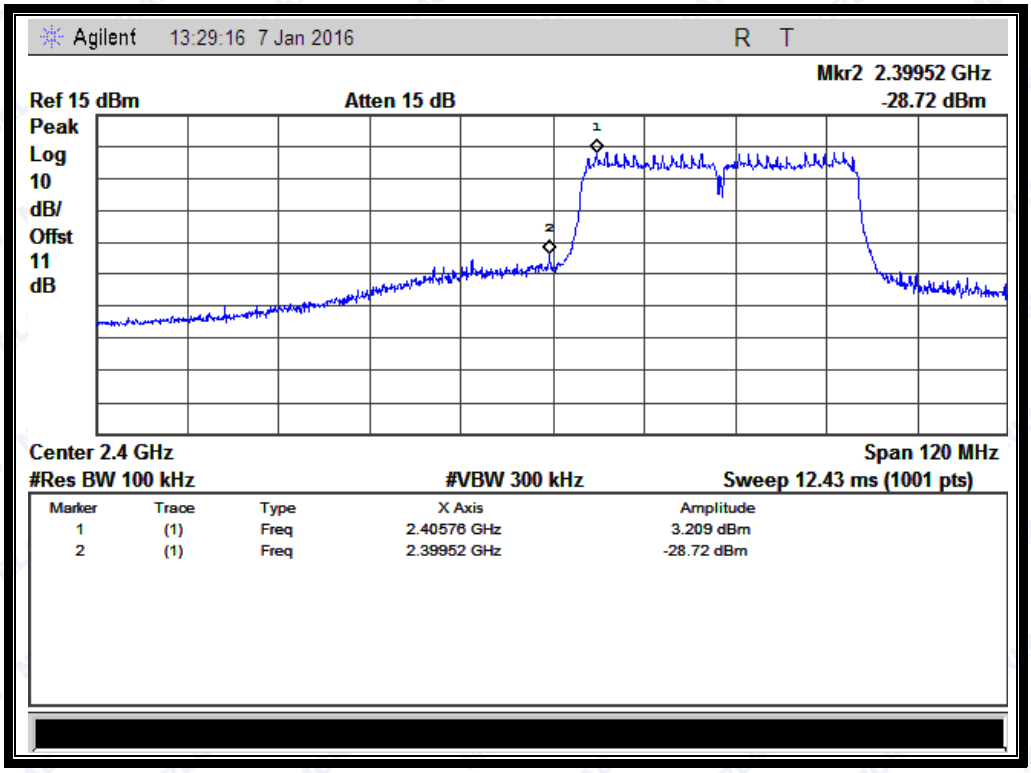
Channel	Frequency (MHz)	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
			Carrier Level	Calculated -20dBc Limit	
3	2422	-46.14	-0.88	-20.88	PASS
6	2437	-45.23	2.17	-17.83	PASS
9	2452	-47.28	2.20	-17.80	PASS

B. Test Plots:

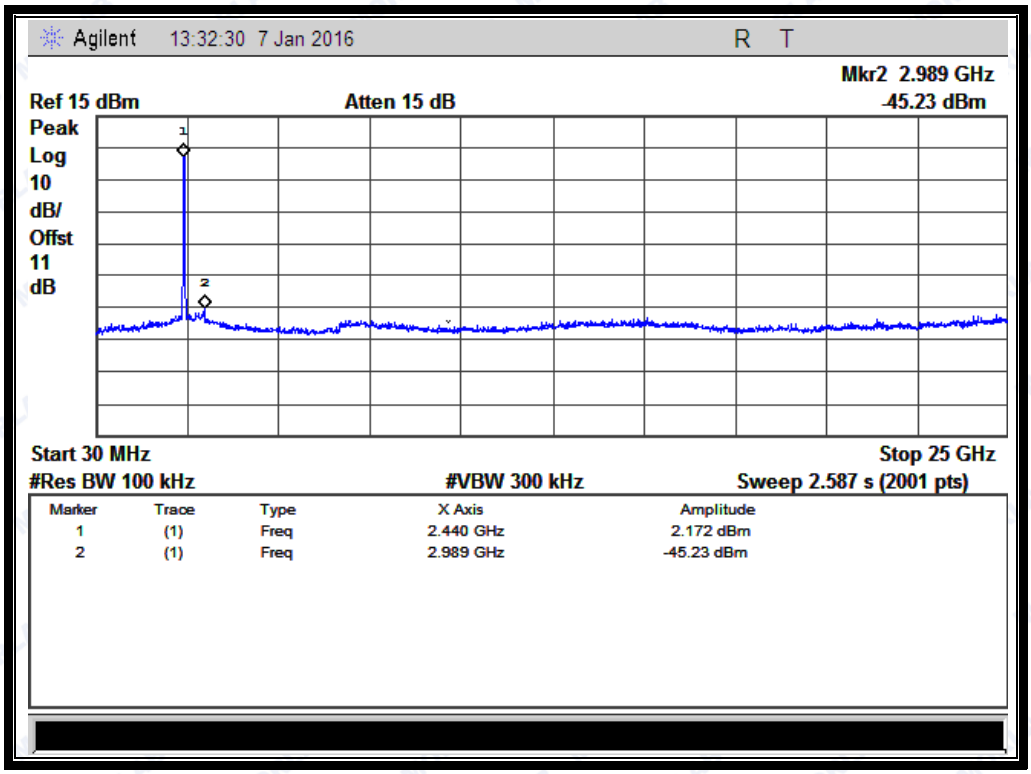
Note: the power of the EUT transmitting frequency should be ignored.



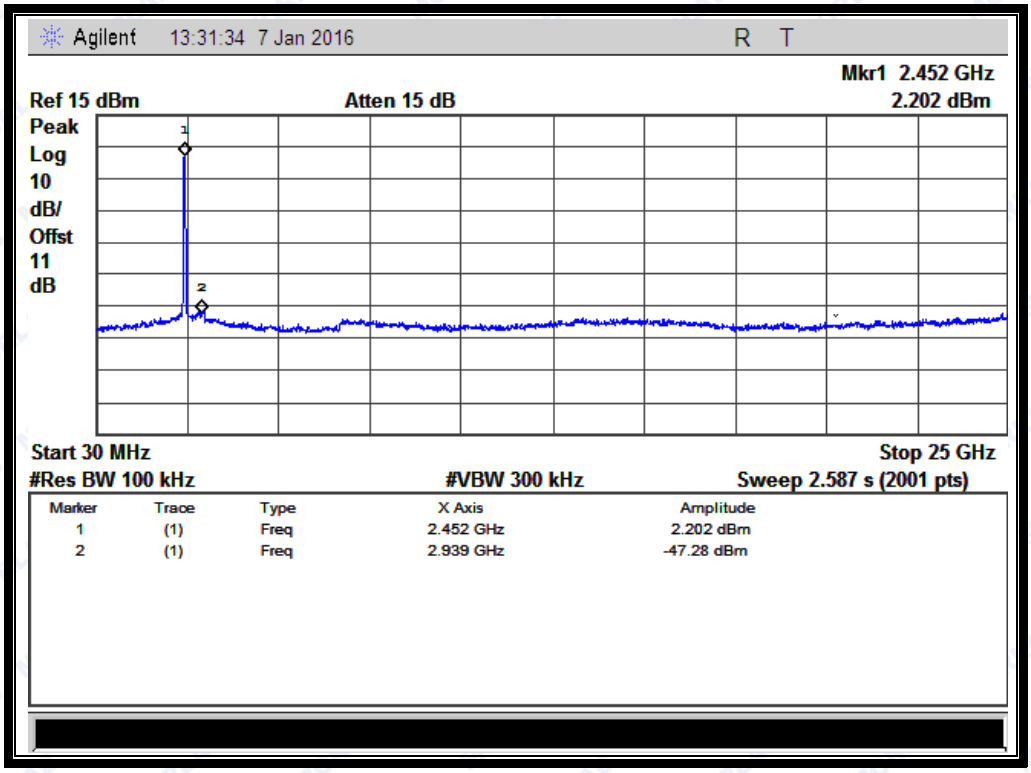
(Channel = 3, 30MHz to 25GHz)



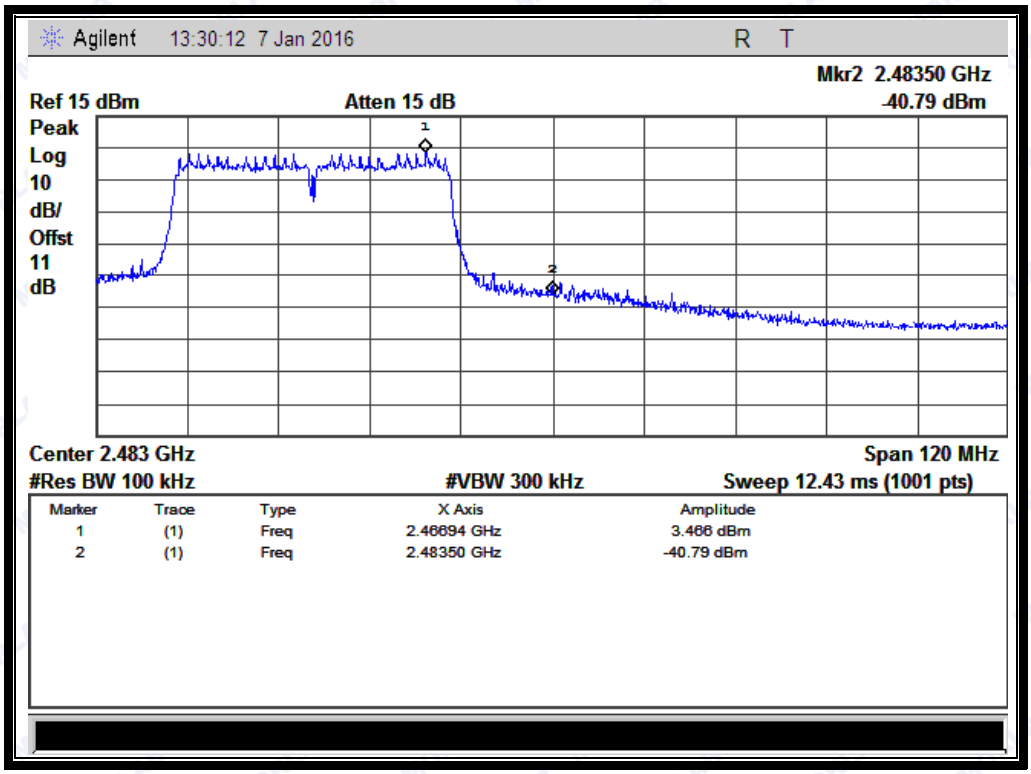
(Band Edge @ Channel = 3)



(Channel = 6, 30MHz to 25GHz)



(Channel = 9, 30MHz to 25GHz)



(Band Edge @ Channel = 9)

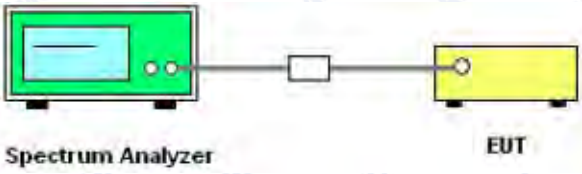
2.5 Power spectral density (PSD)

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.

B. Equipments List:

Please reference ANNEX A(1.4).

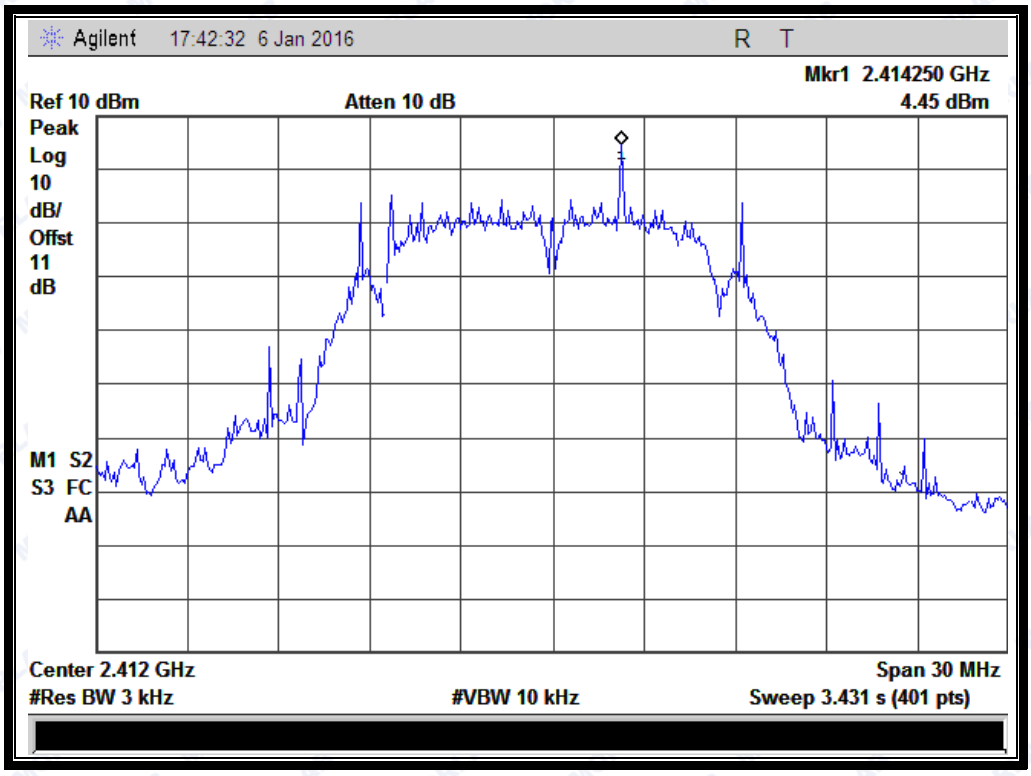
2.5.3 Test Result

2.5.3.1 802.11b Test mode

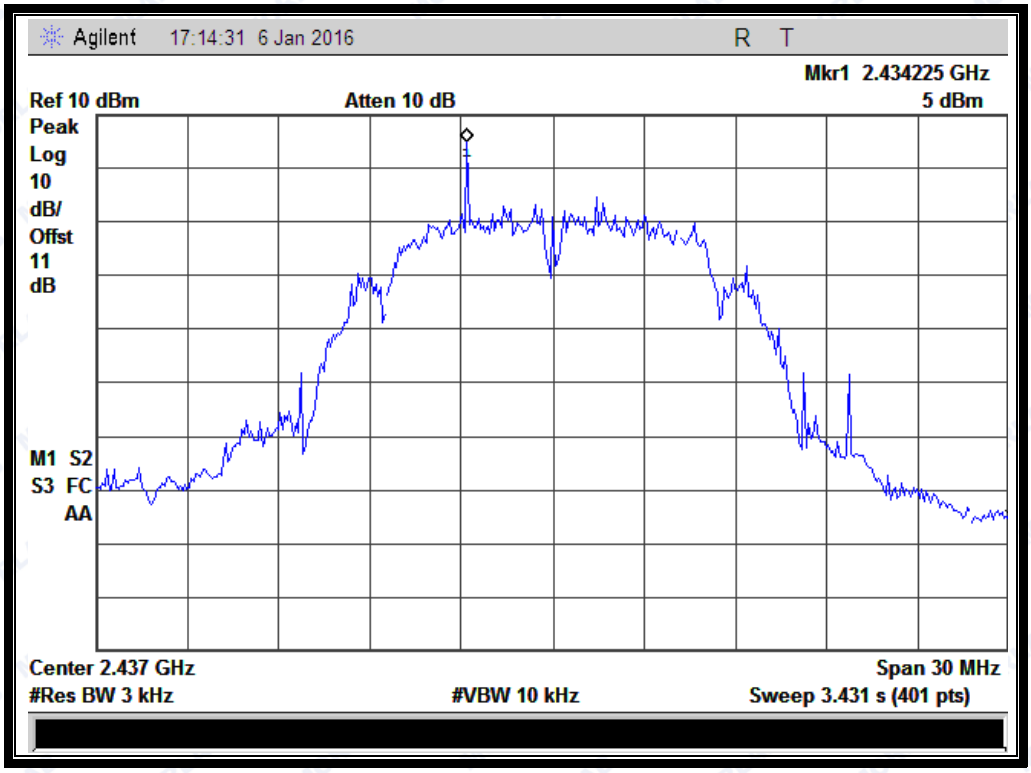
A. Test Verdict:

Spectral power density (dBm/3kHz)				
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
1	2412	4.45	8	PASS
6	2437	5.00	8	PASS
11	2462	-5.62	8	PASS
Measurement uncertainty: ±1.3dB				

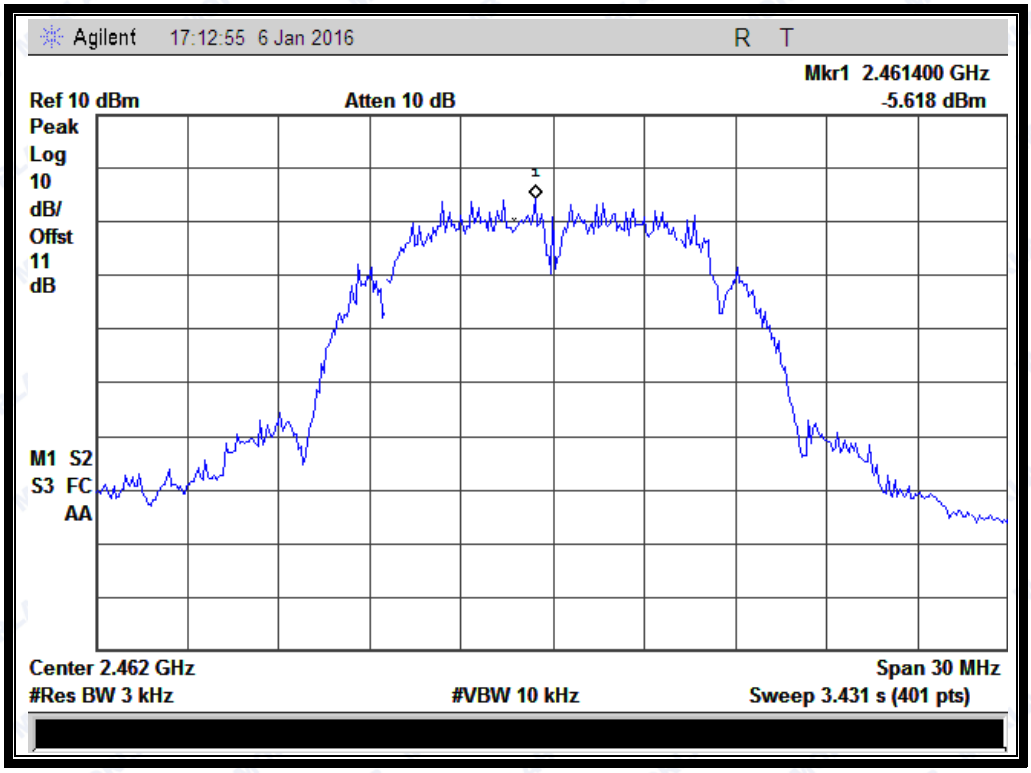
B. Test Plots:



(Channel = 1 @ 802.11b)



(Channel = 6 @ 802.11b)



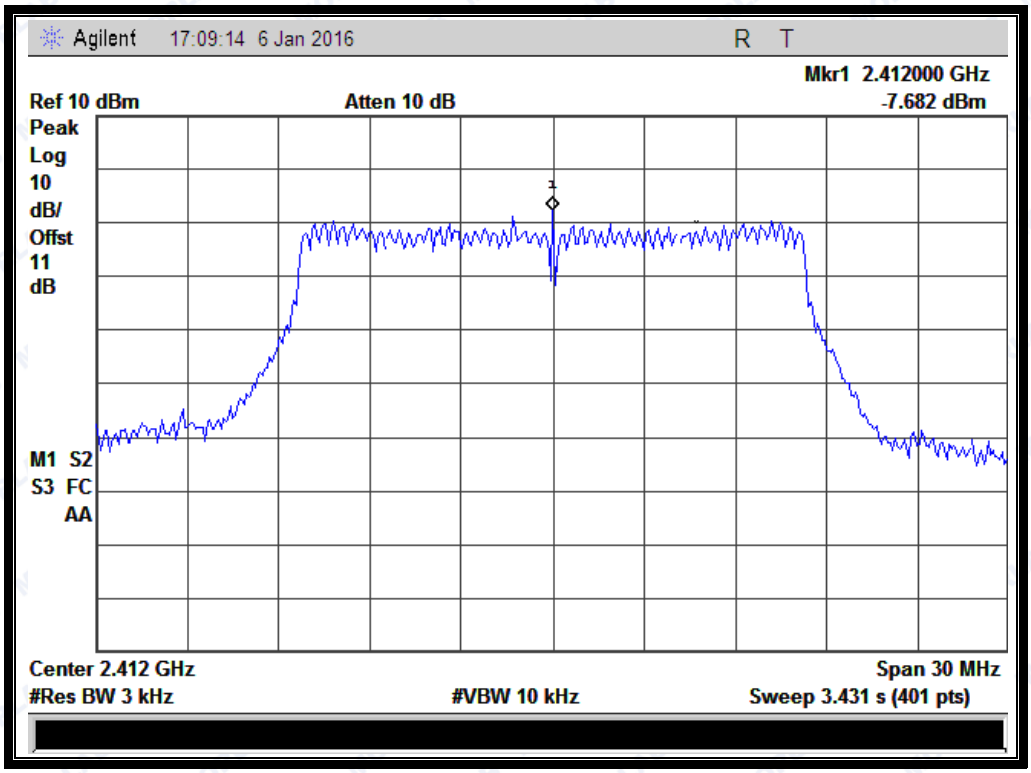
(Channel = 11 @ 802.11b)

2.5.3.2 802.11g Test mode

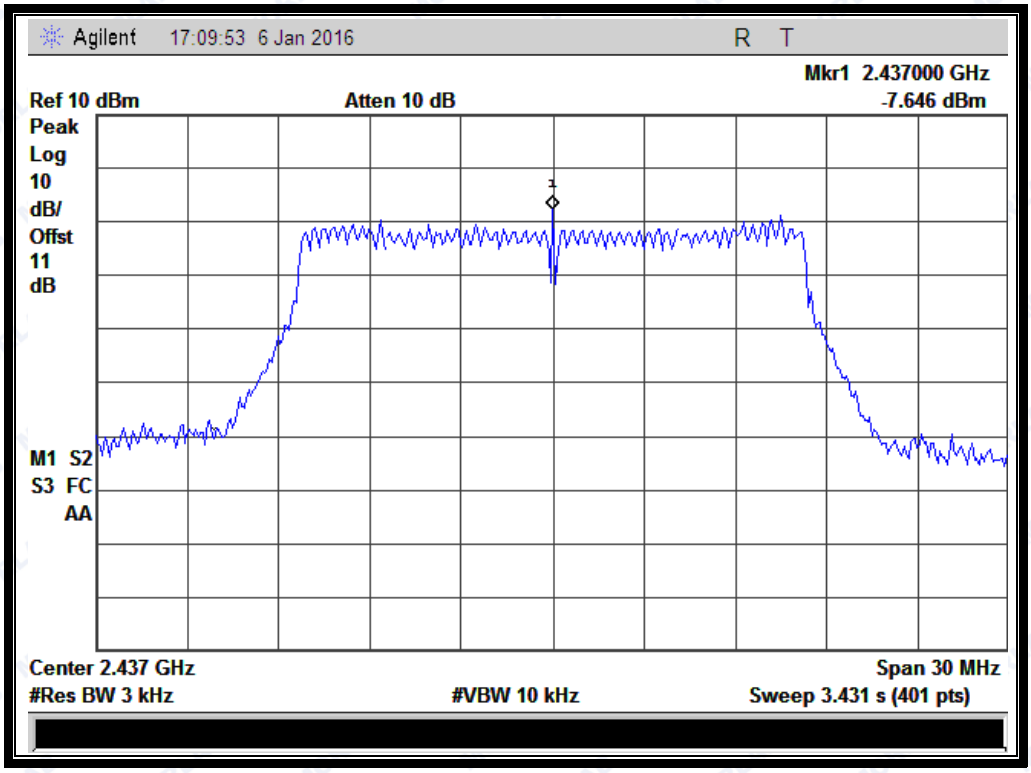
A. Test Verdict:

Spectral power density (dBm/3kHz)				
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
1	2412	-7.68	8	PASS
6	2437	-7.65	8	PASS
11	2462	-7.26	8	PASS
Measurement uncertainty: ±1.3dB				

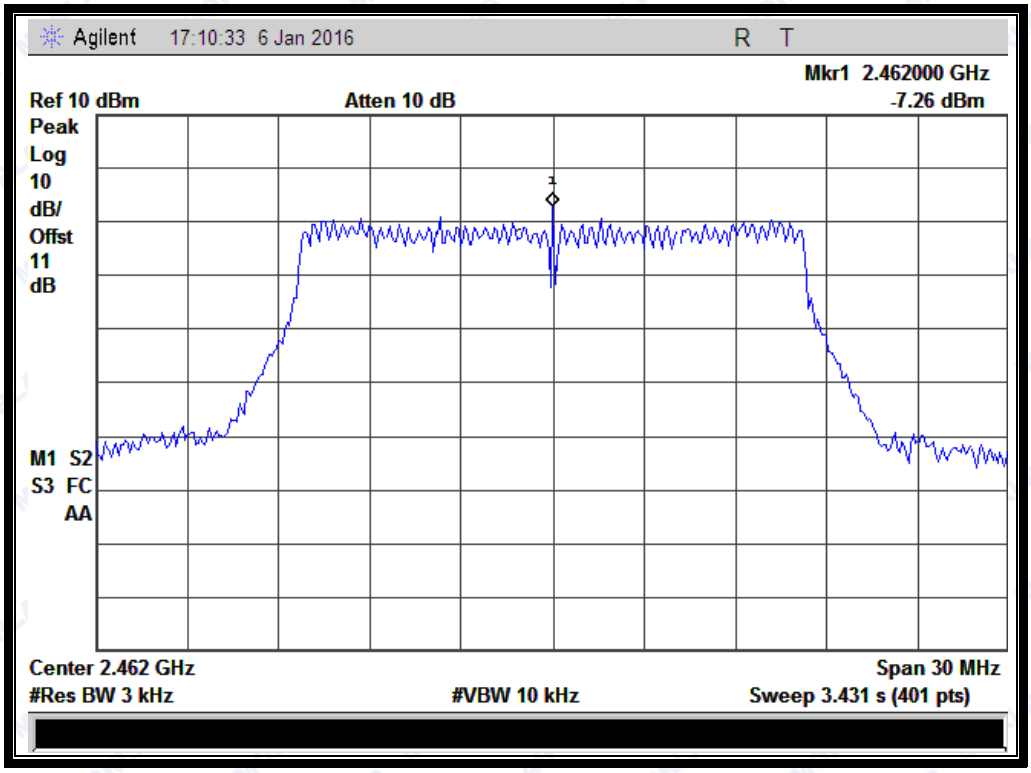
B. Test Plots:



(Channel = 1 @ 802.11g)



(Channel = 6 @ 802.11g)



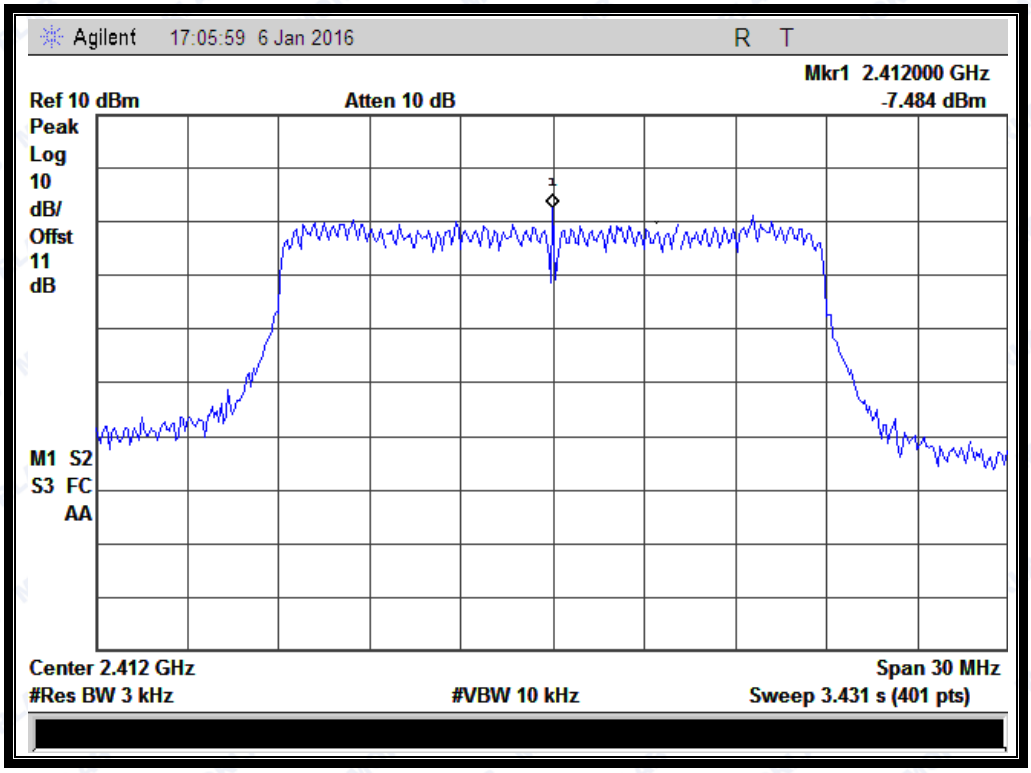
(Channel = 11 @ 802.11g)

2.5.3.3 802.11n-20MHz Test mode

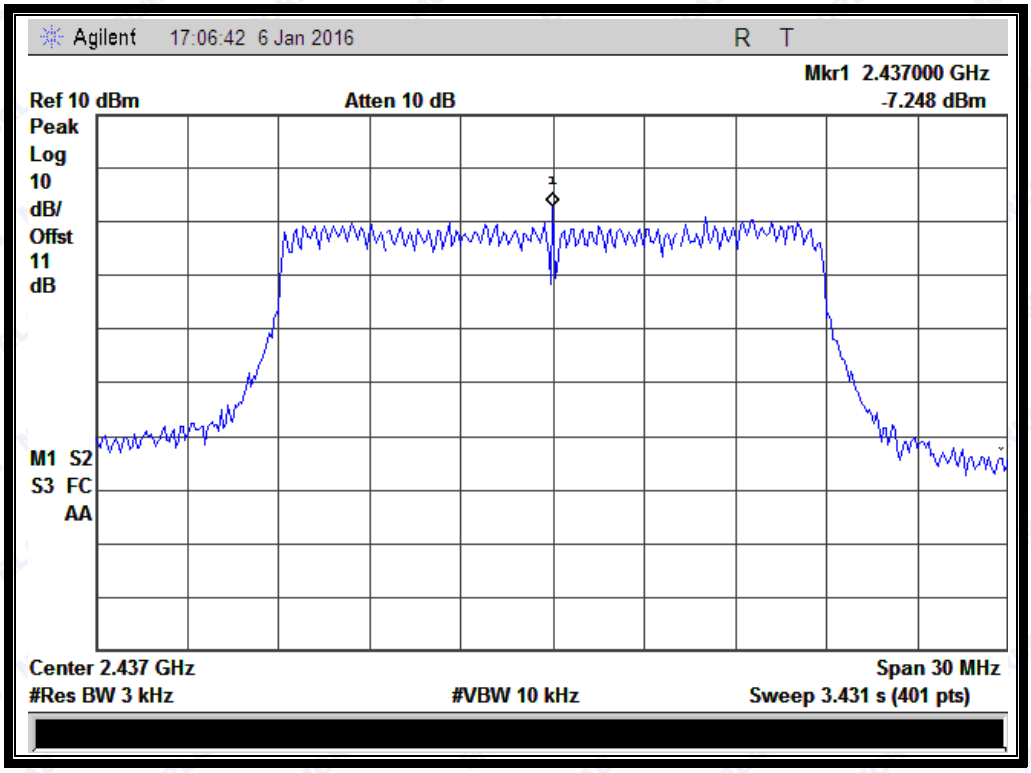
A. Test Verdict:

Spectral power density (dBm/3kHz)				
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
1	2412	-7.48	8	PASS
6	2437	-7.25	8	PASS
11	2462	-6.95	8	PASS
Measurement uncertainty: ±1.3dB				

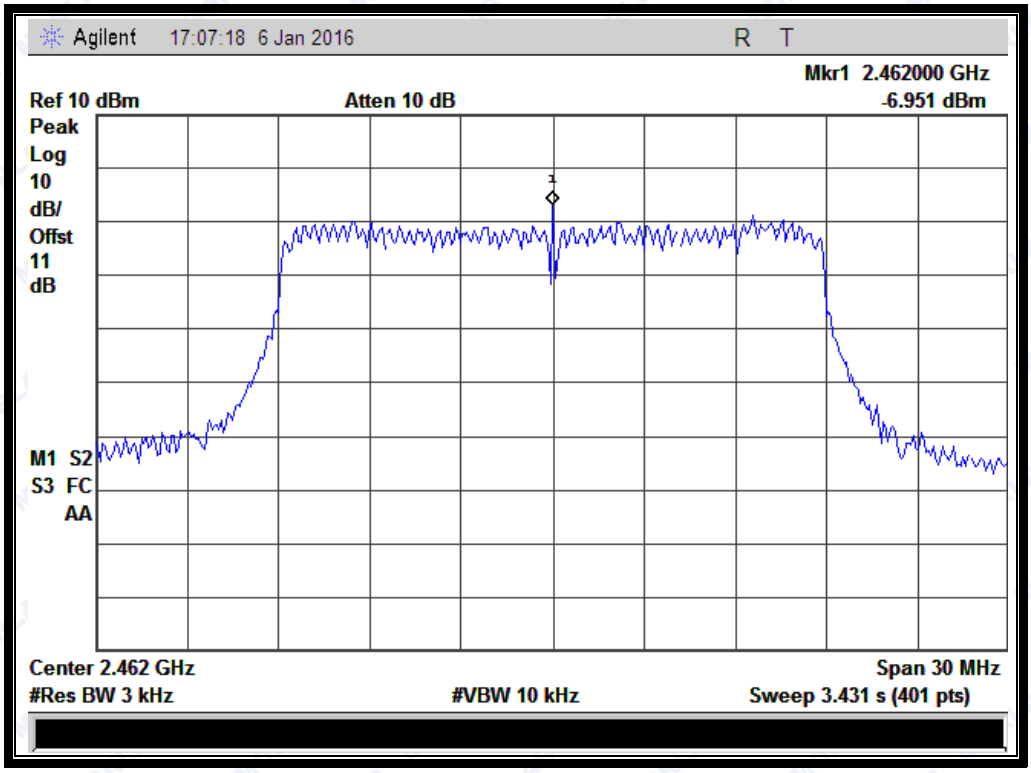
B. Test Plots:



(Channel = 1 @ 802.11n-20MHz)



(Channel = 6 @ 802.11n-20MHz)



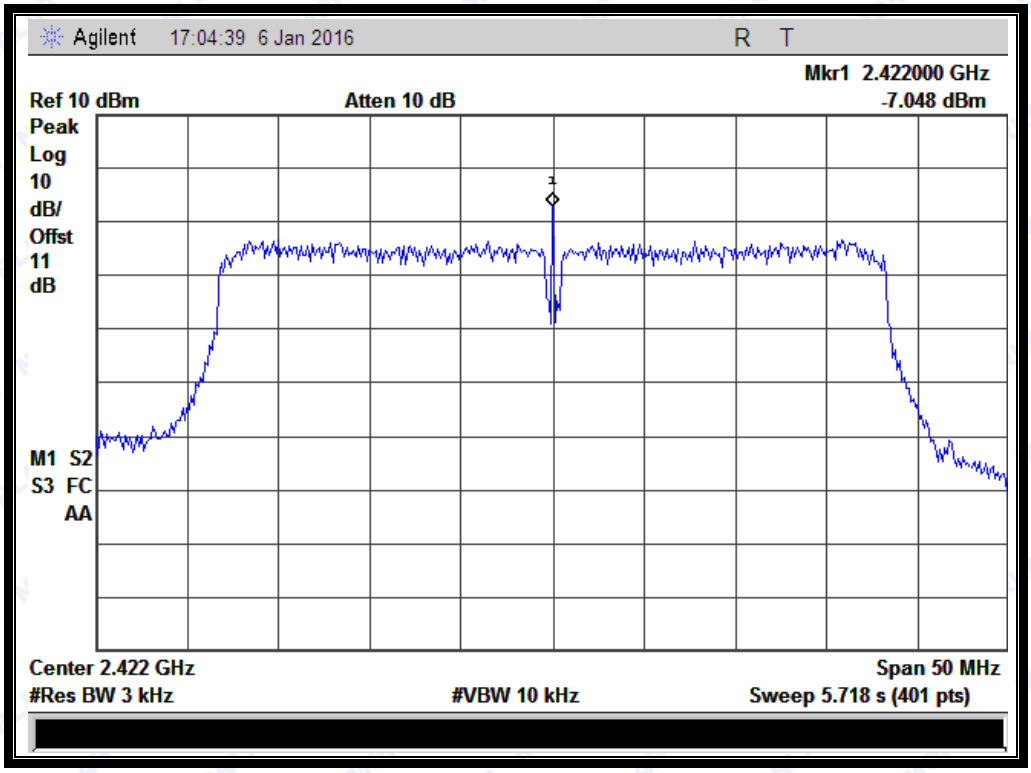
(Channel = 11 @ 802.11n-20MHz)

2.5.3.4 802.11n-40MHz Test mode

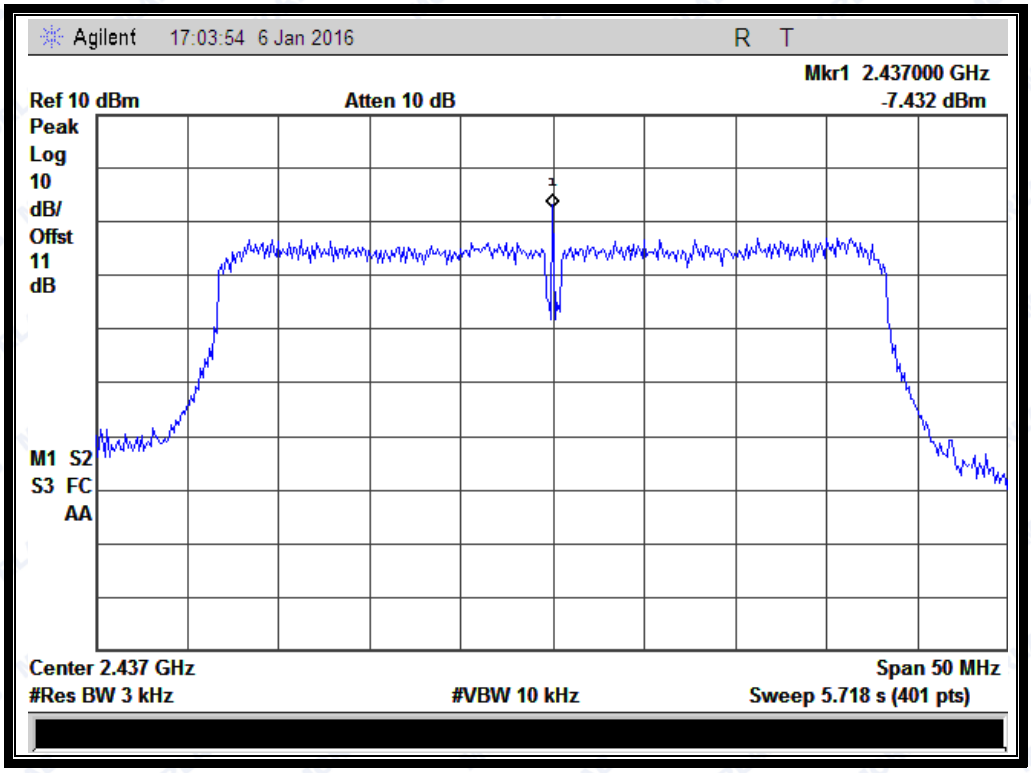
A. Test Verdict:

Spectral power density (dBm/3kHz)				
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
3	2422	-7.05	8	PASS
6	2437	-7.43	8	PASS
9	2452	-6.87	8	PASS
Measurement uncertainty: ±1.3dB				

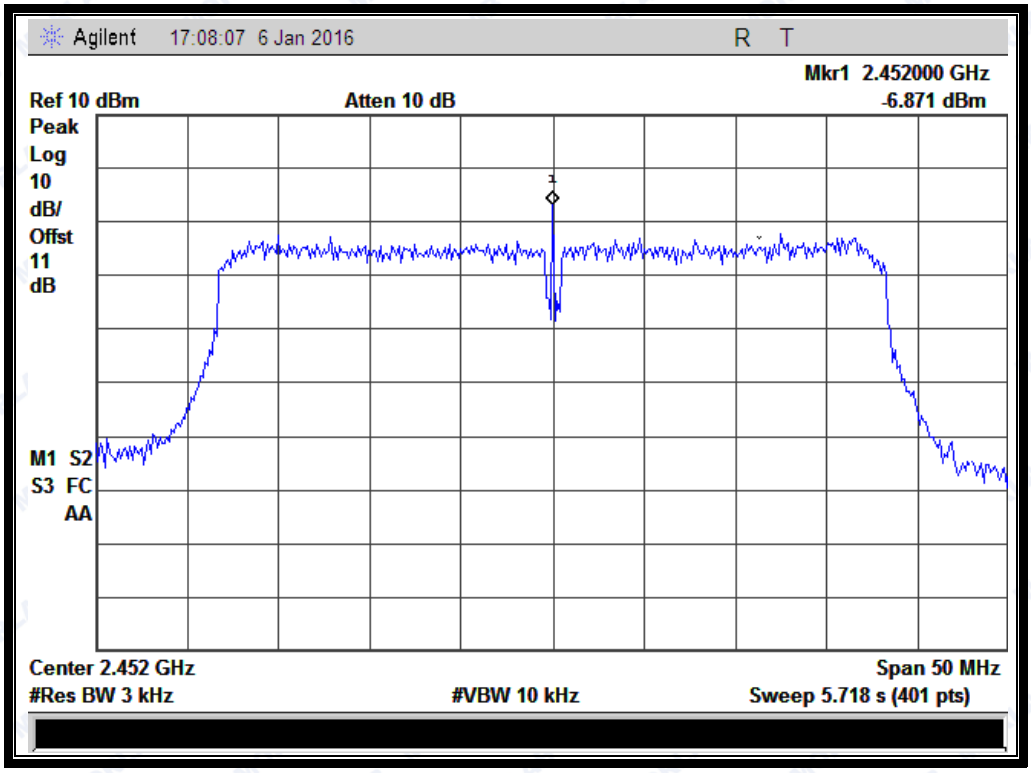
B. Test Plots:



(Channel = 3 @ 802.11n-40MHz)



(Channel = 6 @ 802.11n-40MHz)



(Channel = 9 @ 802.11n-40MHz)

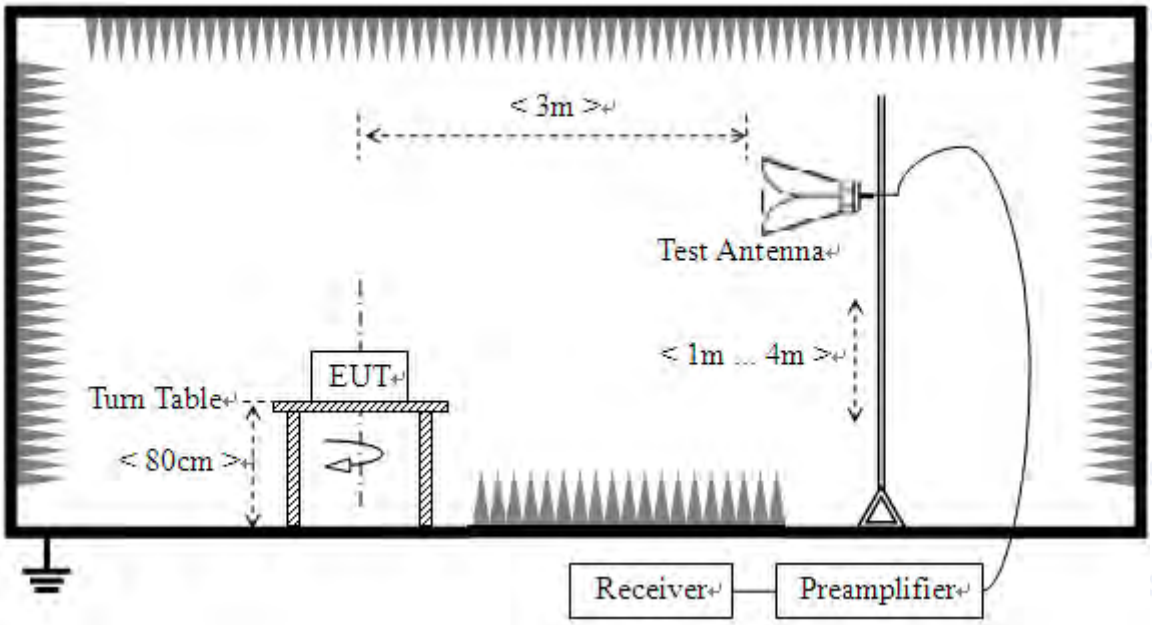
2.6 Restricted Frequency Bands

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

For the Test Antenna:

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

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

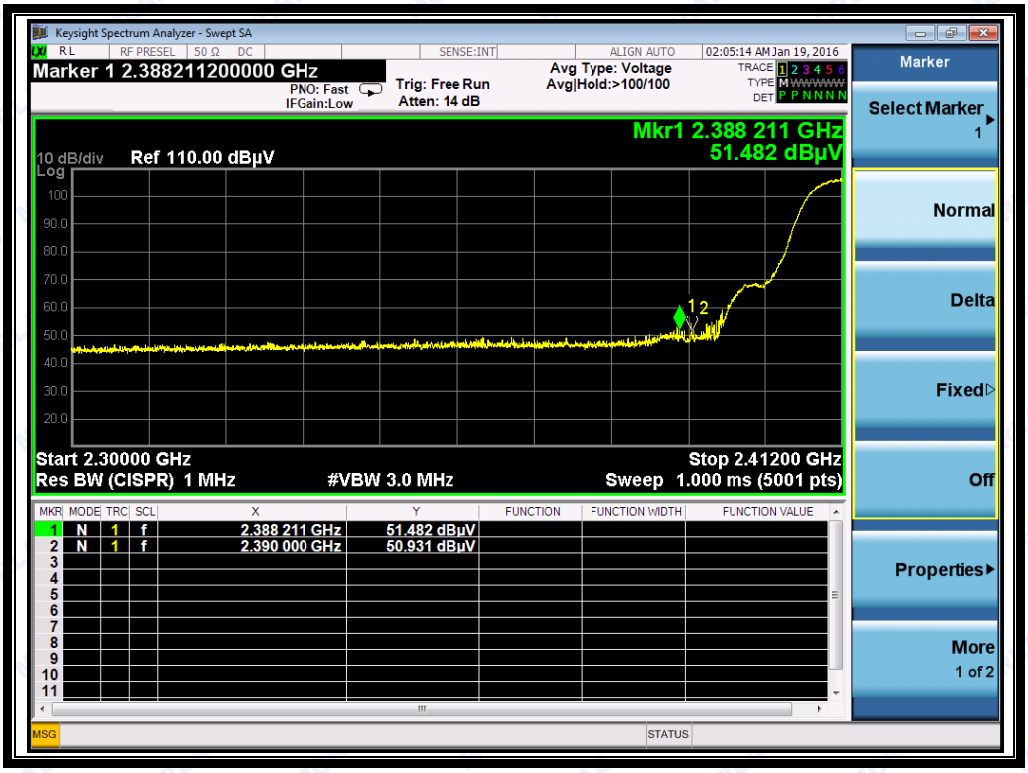
2.6.3.1 802.11b Test mode

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

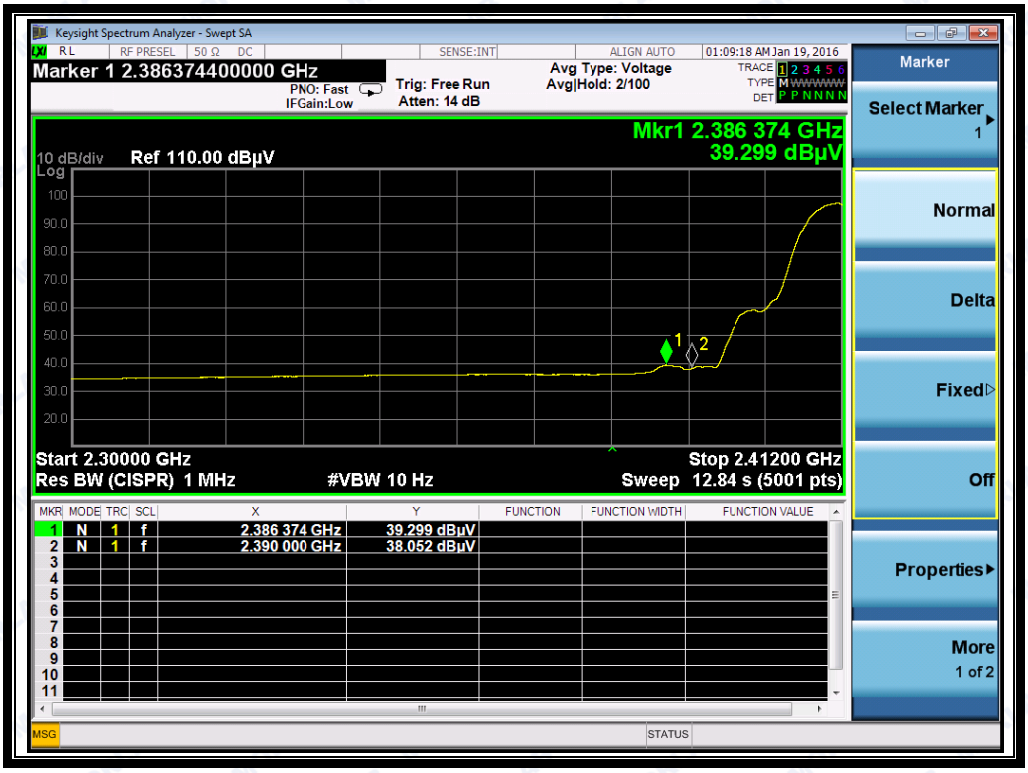
A. Test Verdict:

Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dBuV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
		PK/ AV						
1	2388.21	PK	51.48	-33.63	32.56	50.41	74	Pass
1	2386.37	AV	39.30	-33.63	32.56	38.23	54	Pass
11	2485.74	PK	57.64	-33.18	32.5	56.96	74	Pass
11	2487.21	AV	40.36	-33.18	32.5	39.68	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

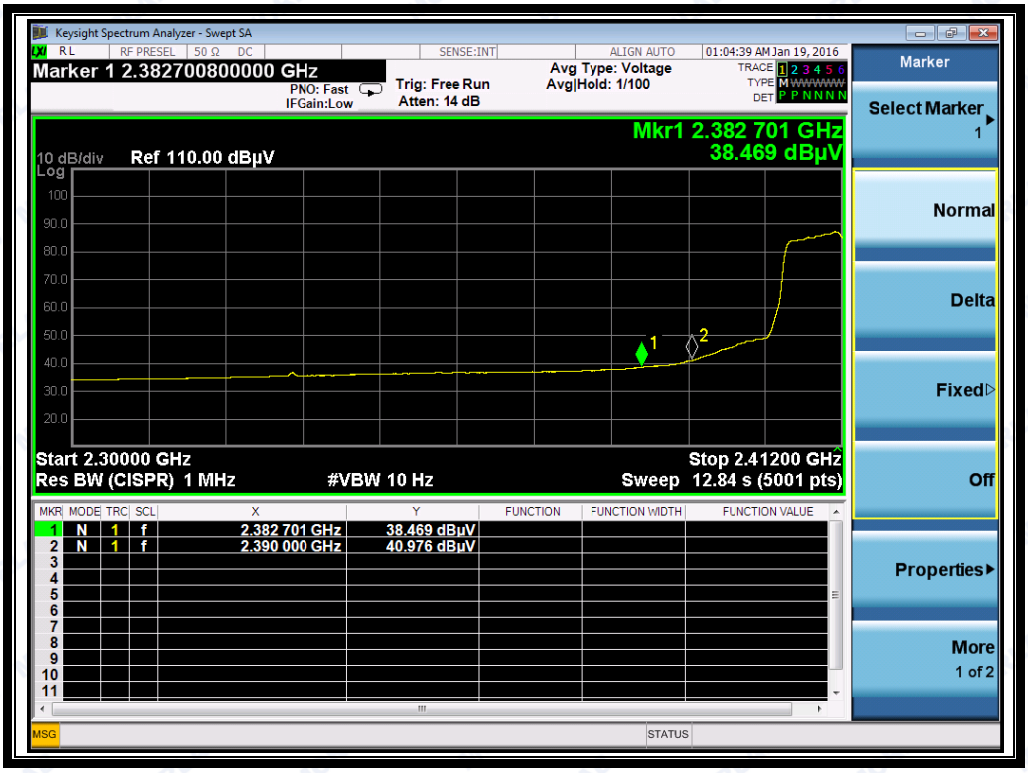
The lowest and highest channels are tested to verify the band edge emissions.

A. Test Verdict:

Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dBuV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
		PK/ AV						
1	2384.61	PK	59.59	-33.63	32.56	58.52	74	Pass
1	2382.70	AV	38.47	-33.63	32.56	37.40	54	Pass
11	2485.41	PK	60.58	-33.18	32.5	59.90	74	Pass
11	2484.43	AV	40.07	-33.18	32.5	39.39	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

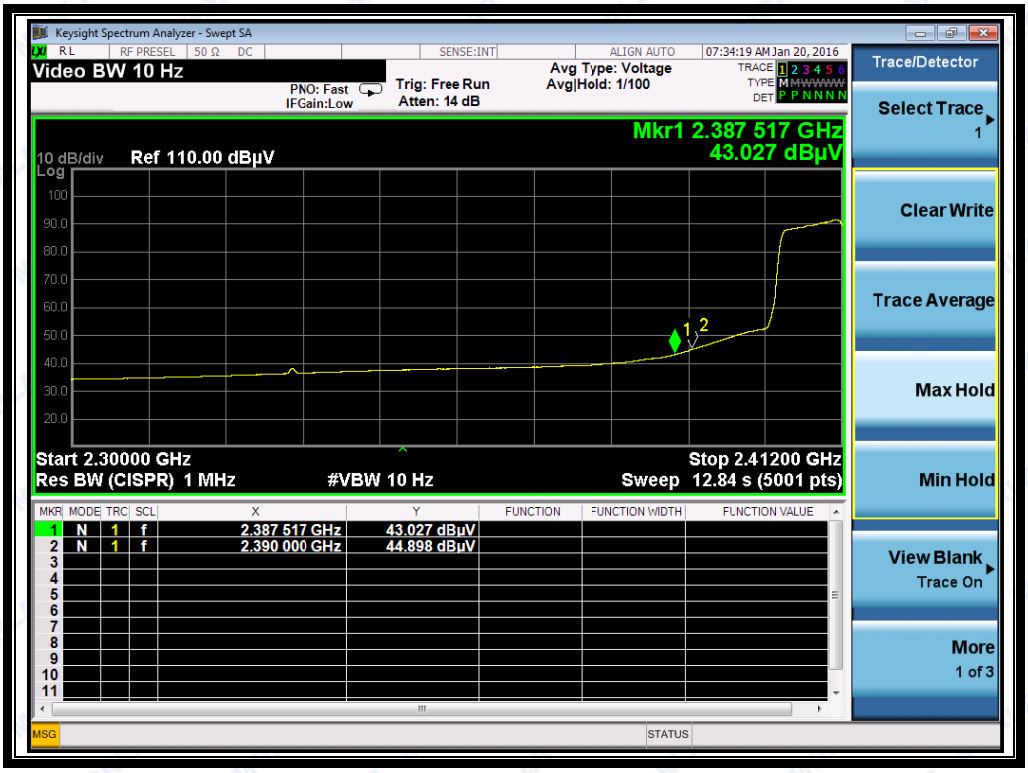
The lowest and highest channels are tested to verify the band edge emissions.

A. Test Verdict:

Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dBuV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBµV/m)	Limit (dBµV/m)	Verdict
		PK/ AV						
1	2389.13	PK	65.77	-33.63	32.56	64.70	74	Pass
1	2387.52	AV	43.03	-33.63	32.56	41.96	54	Pass
11	2485.03	PK	68.84	-33.18	32.5	68.16	74	Pass
11	2485.56	AV	44.06	-33.18	32.5	43.38	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)

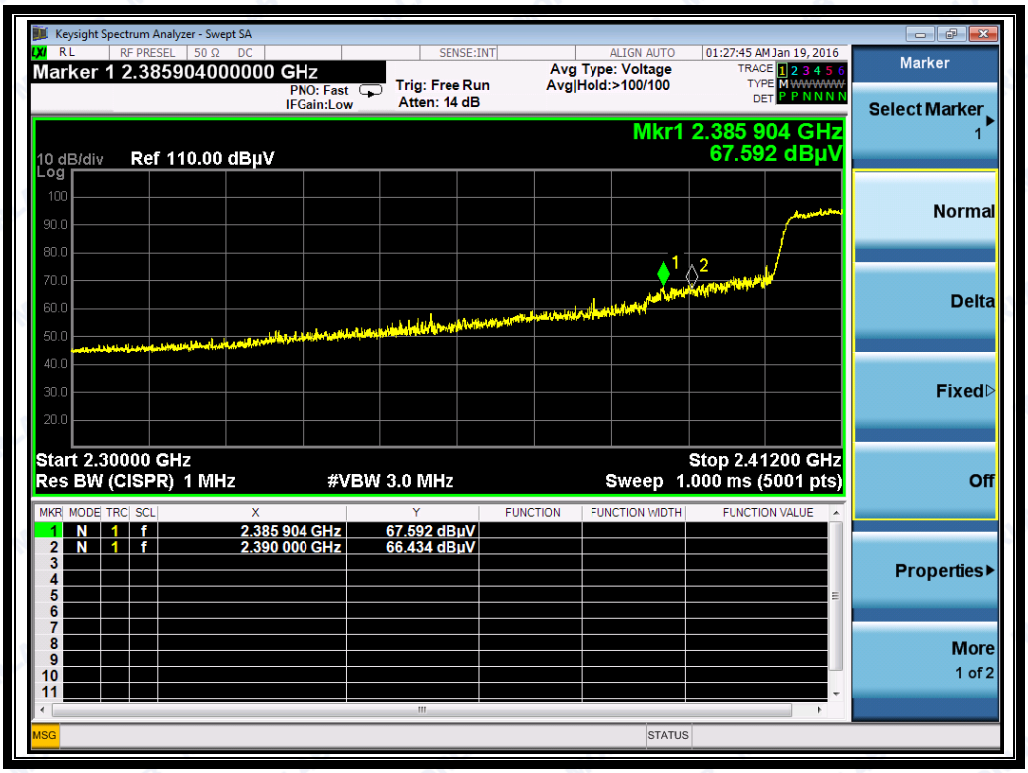
2.6.3.4 802.11n-40MHz Test mode

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

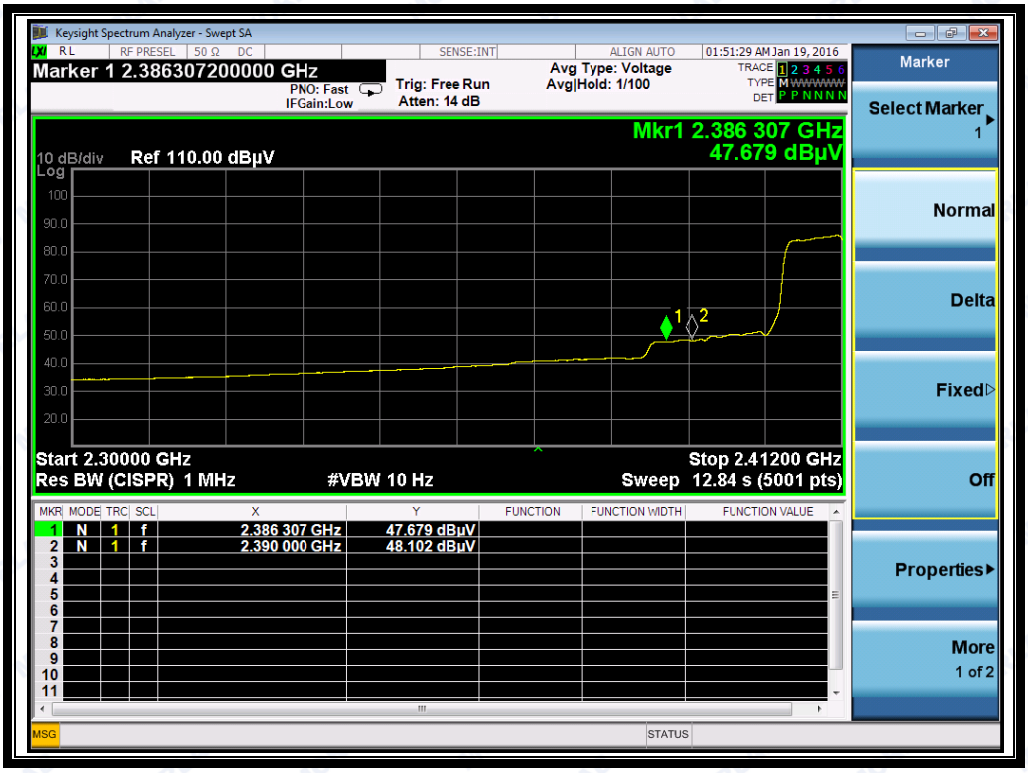
A. Test Verdict:

Channel	Frequency (MHz)	Detector PK/ AV	Receiver Reading U_R (dBuV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
3	2385.90	PK	67.59	-33.63	32.56	66.52	74	Pass
3	2386.31	AV	47.68	-33.63	32.56	46.61	54	Pass
9	2483.99	PK	70.23	-33.18	32.5	69.55	74	Pass
9	2484.83	AV	44.61	-33.18	32.5	43.93	54	Pass

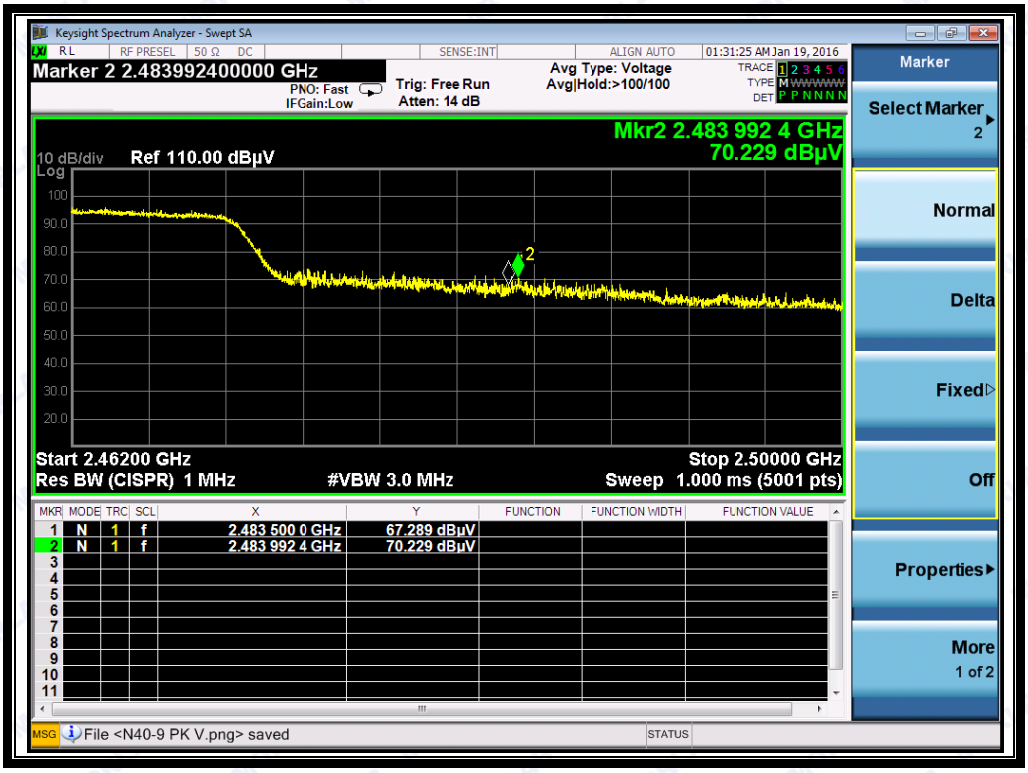
B. Test Plots:



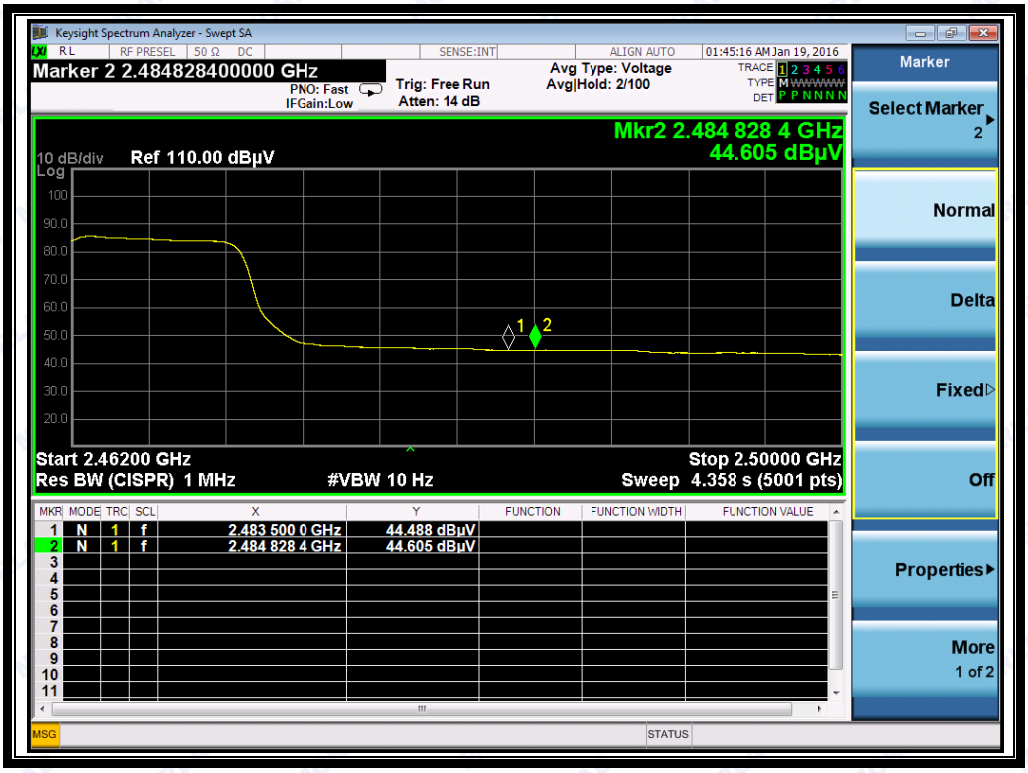
(Plot E1: Channel = 3 PEAK @ 802.11n-40)



(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 RSS-GEN section 8.8, 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

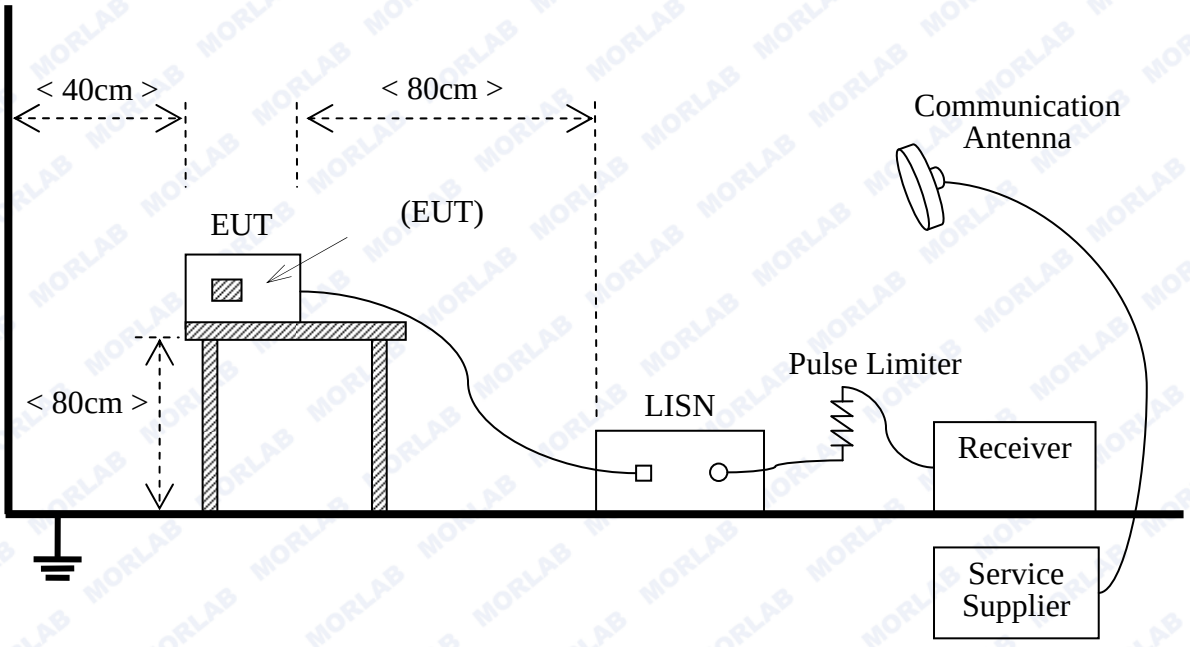
NOTE:

(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 C63.4:2014

The factors of the site are calibrated to correct the reading. During the measurement, the Bluetooth EUT is activated and controlled by the Bluetooth Service Supplier (SS) via a Common Antenna, and is set to operate under hopping-on test mode transmitting 339 bytes DH5 packages at maximum power.

B. Equipments List:

Please reference ANNEX A(1.4).

2.7.3 Test Result

Note: Measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines.

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 (μV/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:

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.

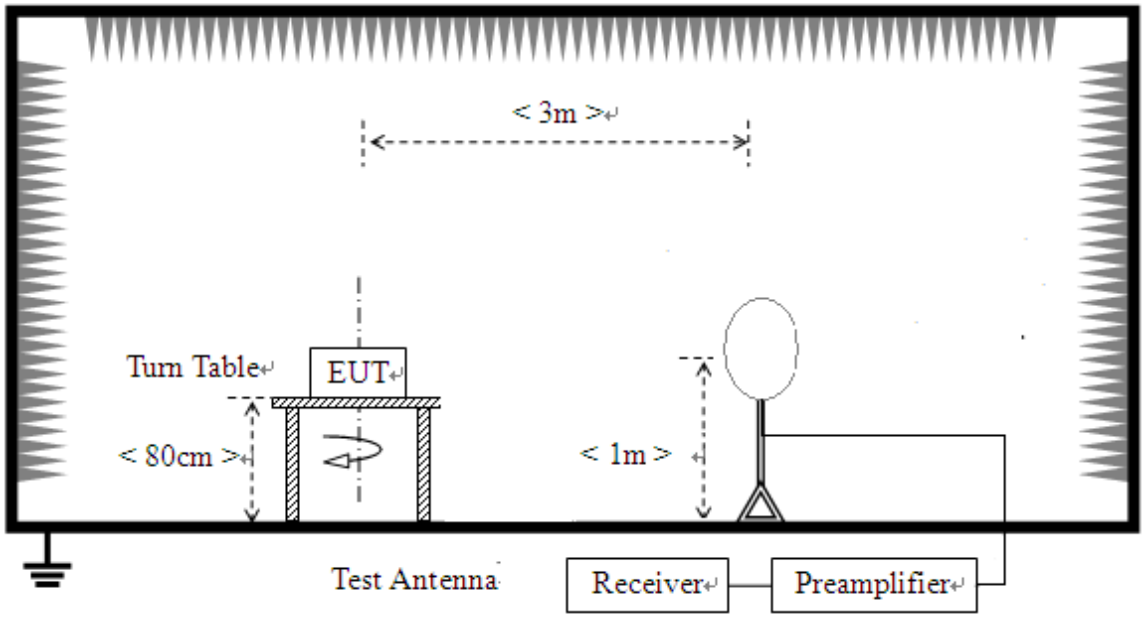
For above 1000MHz, limit field strength of harmonics: 54dBuV/m@3m (AV) and 74dBuV/m@3m (PK)

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)

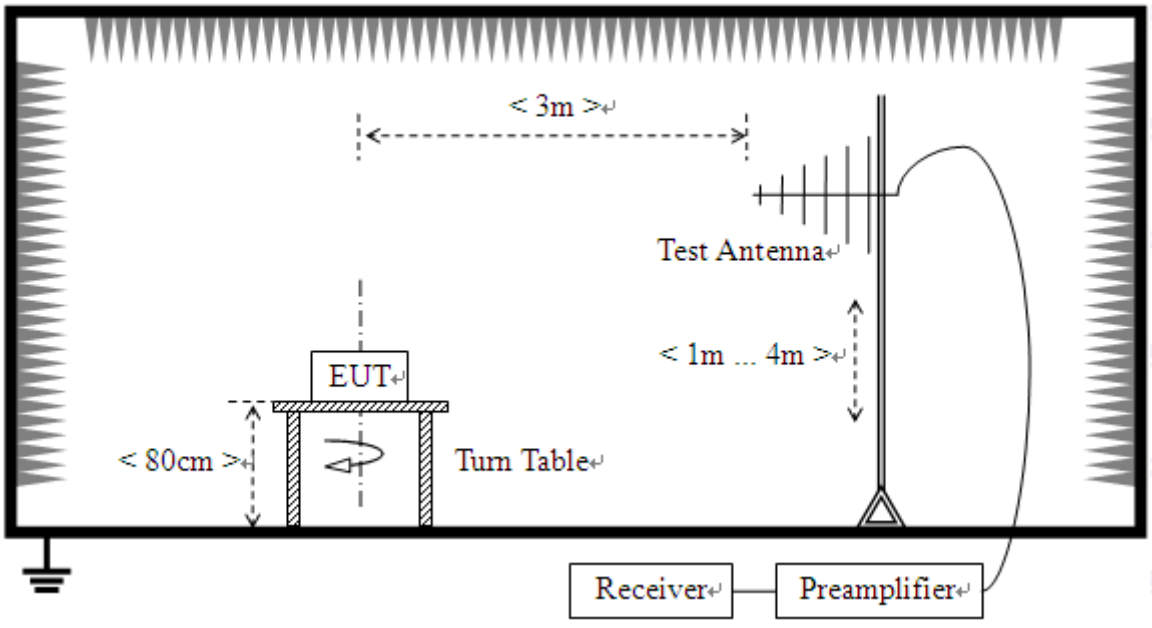
2.8.2 Test Description

A. Test Setup:

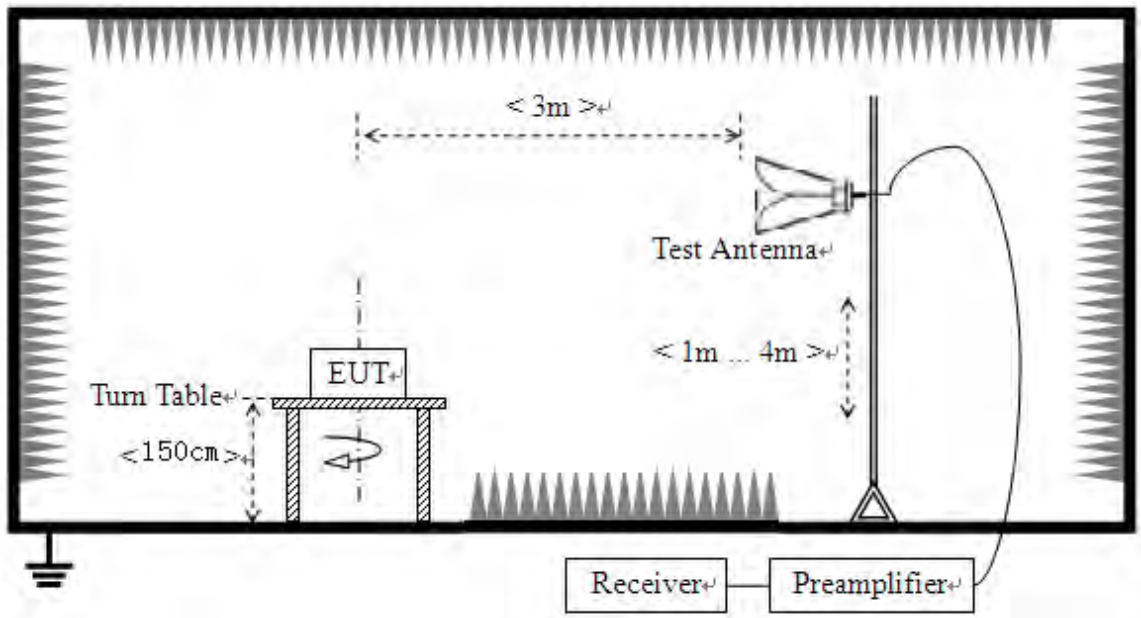
1) For radiated emissions from 9kHz to 30MHz



2) For radiated emissions from 30MHz to1GHz



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 C63.10 (2013). For radiated emissions below or equal to 1GHz,The EUT was set-up on insulator 80cm above the Ground Plane, For radiated emissions above 1GHz, The EUT was set-up on insulator 150cm above the Ground Plane. The set-up and test methods were according to ANSI C63.10.

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:

(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 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 C63.10, 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:

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

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.

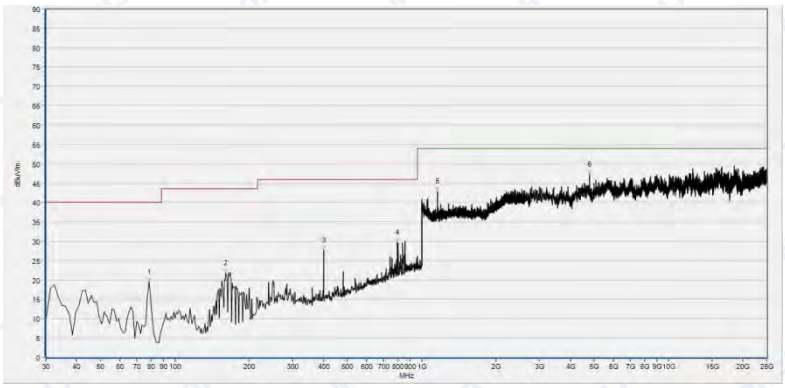
Note: All radiated emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

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

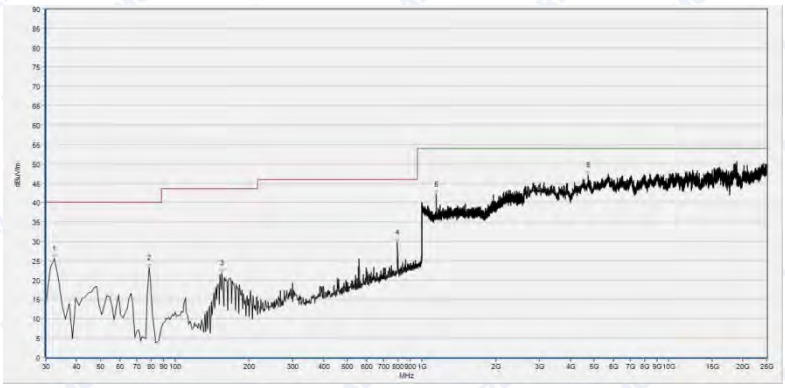
A. Test Plots for the Whole Measurement Frequency Range:

Plots for Channel = 1



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
78.561	19.46	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
161.114	21.72	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
400.275	27.71	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
797.259	29.65	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1155.582	42.96	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS
4787.452	47.20	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS

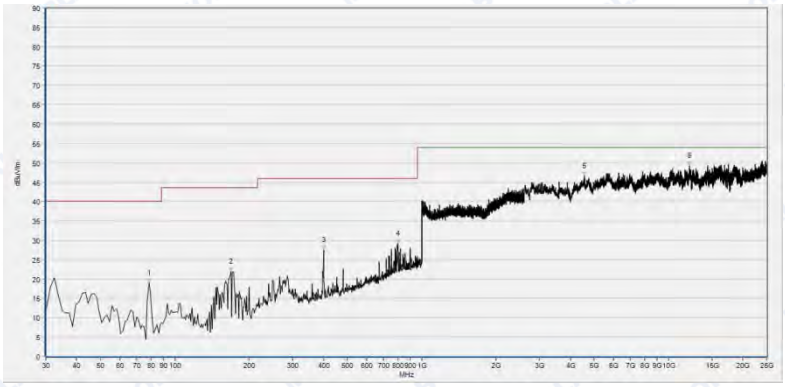
(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
32.428	25.54	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
78.561	23.16	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
155.044	21.82	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
796.045	29.62	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
1147.259	42.00	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
4722.277	47.16	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

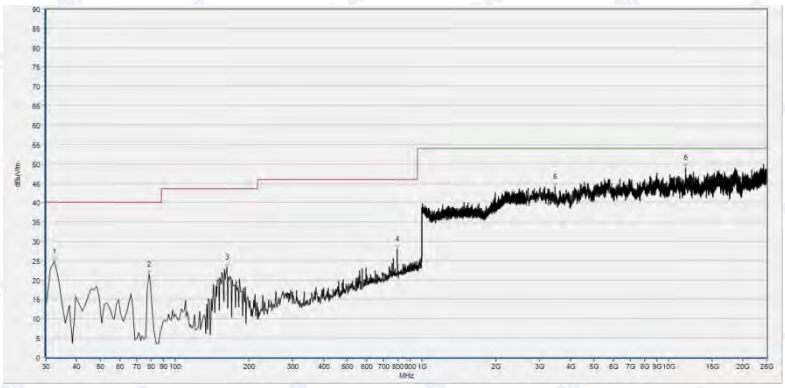
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 6



Fre.(MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
78.561	19.01	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
168.398	21.99	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
400.275	27.46	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
800.901	29.14	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
4559.338	46.62	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS
12148.209	49.36	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS

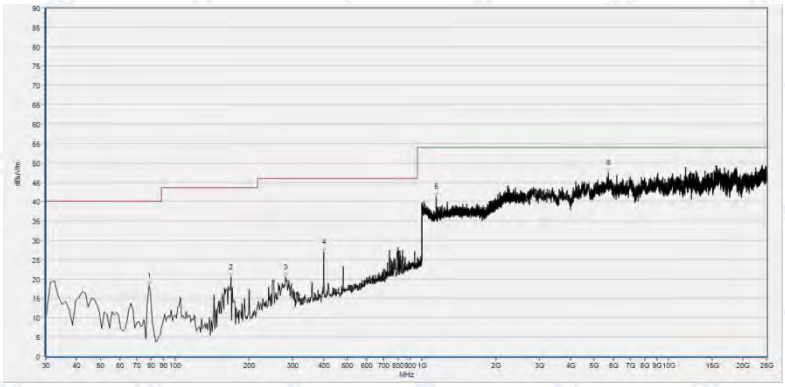
(Antenna Horizontal, 30MHz to 25GHz)



Fre.(MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
32.428	24.87	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
78.561	21.38	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
162.328	23.32	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
796.045	27.94	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
3475.796	44.01	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
11740.862	48.88	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

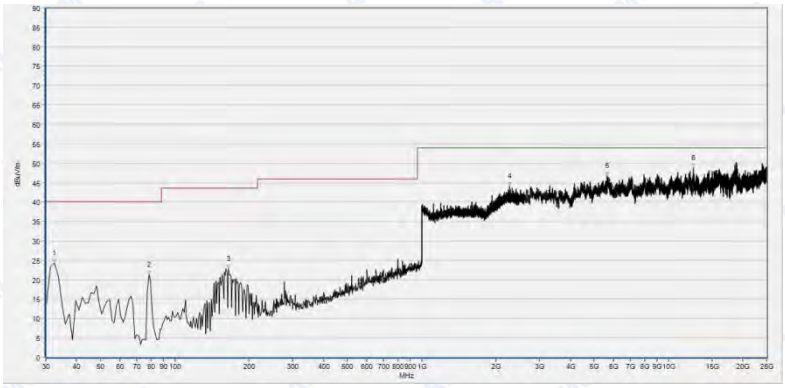
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 11



Fre.(MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
78.561	18.35	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
168.398	20.45	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
281.302	20.39	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
400.275	27.06	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1144.698	41.31	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS
5683.615	47.41	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)



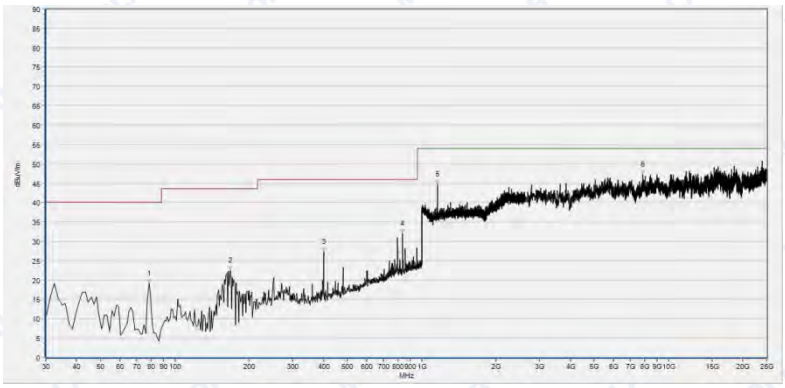
Fre.(MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
32.428	24.34	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
78.561	21.27	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
164.756	22.79	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
2276.030	44.16	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
5646.954	46.76	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
12592.217	48.74	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

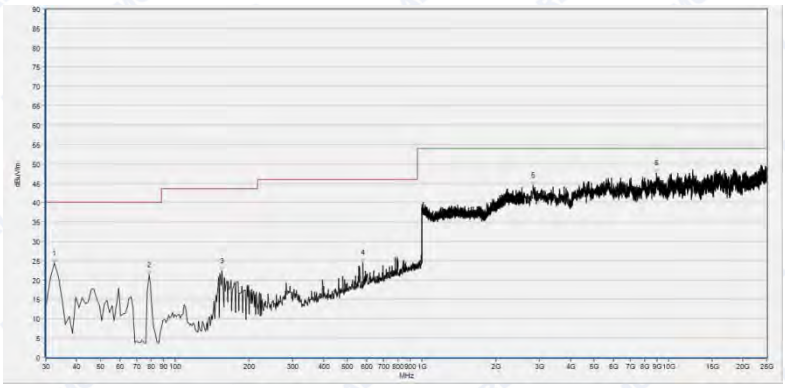
A. Test Plots for the Whole Measurement Frequency Range:

Plots for Channel = 1



Fre.(MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
78.561	19.10	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
167.184	22.39	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
400.275	27.26	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
836.108	31.93	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1157.503	44.73	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS
7875.141	47.23	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)



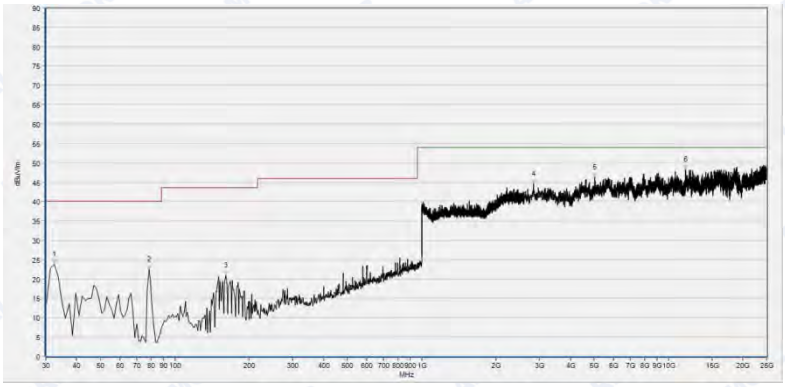
Fre.(MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
32.428	24.25	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
78.561	21.26	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
155.044	22.29	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
578.736	24.47	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
2828.114	44.45	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
8950.536	47.63	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
78.561	18.76	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
164.756	21.59	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
400.275	27.48	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
799.687	31.42	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
2986.979	46.00	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS
8453.573	48.05	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS

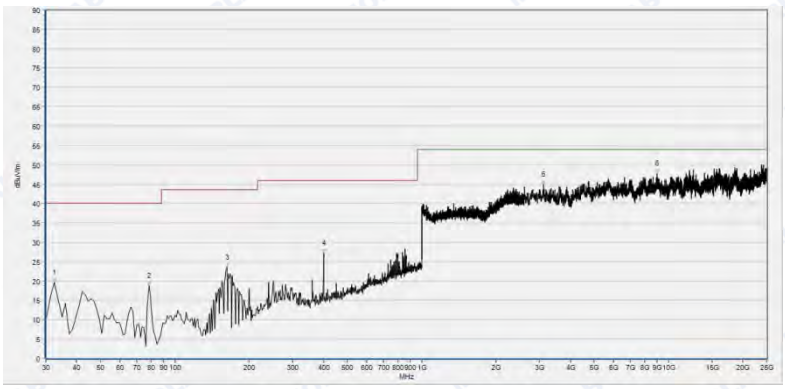
(Antenna Horizontal, 30MHz to 25GHz)



Fre.(MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
32.428	23.75	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
78.561	22.45	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
161.114	20.95	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
2832.188	44.53	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
5023.713	46.18	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
11736.789	48.32	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

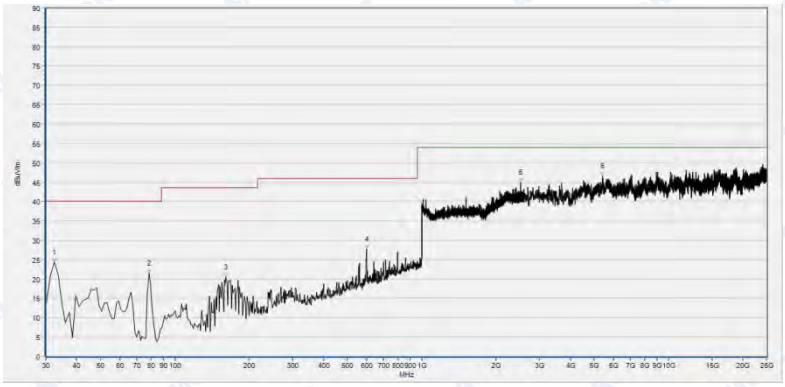
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 11



Fre.(MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
32.428	19.57	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
78.561	18.75	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
162.328	23.49	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
400.275	27.14	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
3117.330	44.93	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS
8999.418	47.74	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)



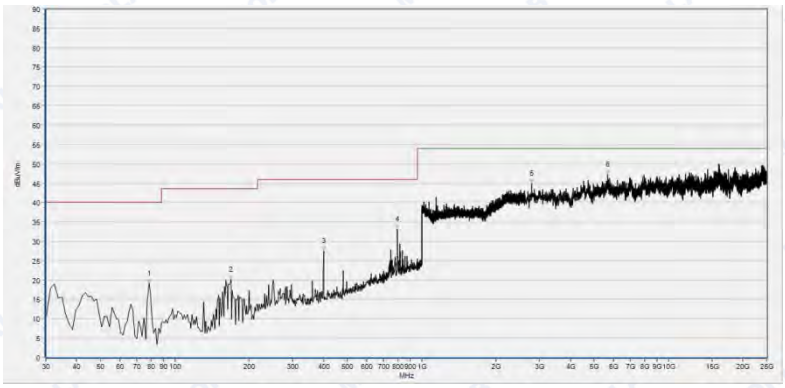
Fre.(MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
32.428	24.33	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
78.561	21.45	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
161.114	20.50	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
596.946	27.60	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
2516.126	45.00	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
5406.619	46.56	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

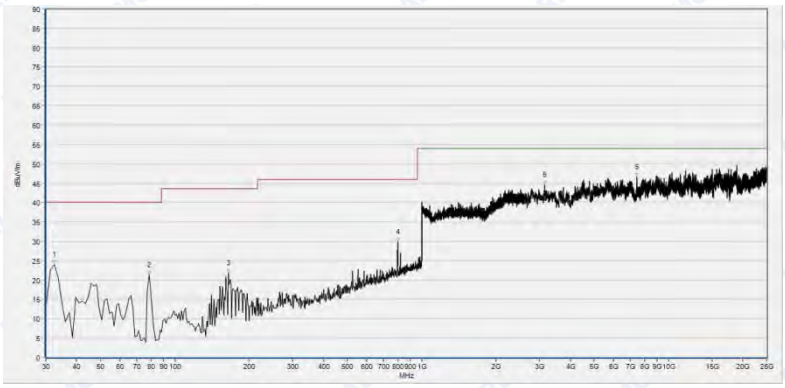
A. Test Plots for the Whole Measurement Frequency Range:

Plots for Channel = 1



Fre.(MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
78.561	19.08	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
168.398	20.15	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
400.275	27.40	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
797.259	33.20	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
2787.380	44.93	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS
5655.101	47.21	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS

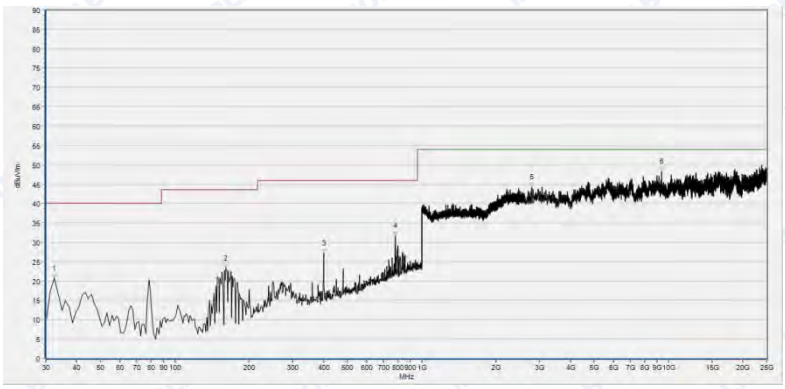
(Antenna Horizontal, 30MHz to 25GHz)



Fre.(MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
32.428	23.93	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
78.561	21.35	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
164.756	21.78	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
799.687	29.83	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
3149.918	44.51	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
7451.500	46.64	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

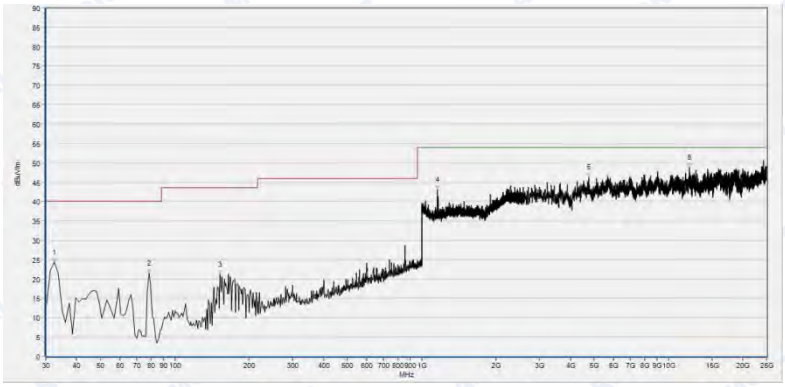
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 6



Fre.(MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
32.428	20.66	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
161.114	23.27	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
400.275	27.15	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
781.477	31.72	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
2787.380	44.29	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS
9370.104	48.27	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS

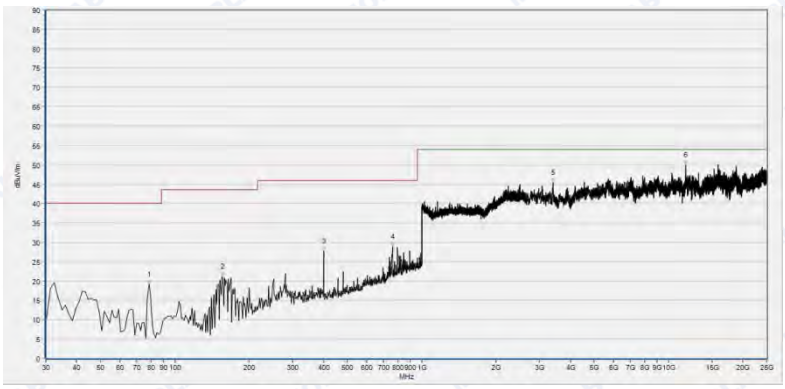
(Antenna Horizontal, 30MHz to 25GHz)



Fre.(MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
32.428	24.35	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
78.561	21.53	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
152.616	21.15	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
1154.942	43.02	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
4758.938	46.30	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
12168.576	48.78	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

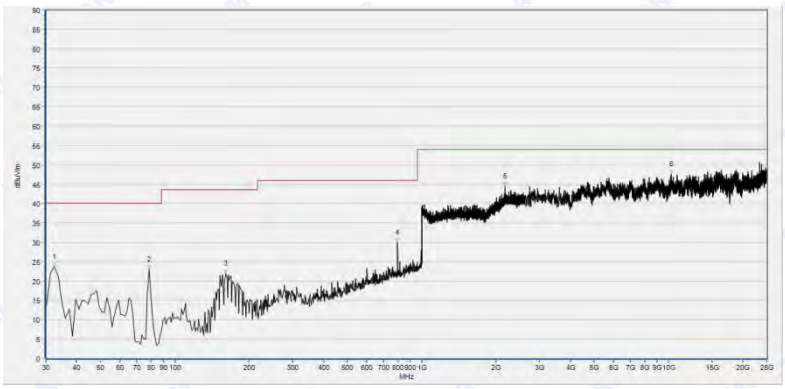
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 11



Fre.(MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
78.561	19.06	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
156.258	21.07	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
400.275	27.67	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
760.839	28.91	N.A	N.A	74.0	46.00	54.0	Horizontal	PASS
3410.620	45.35	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS
11757.156	49.86	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)



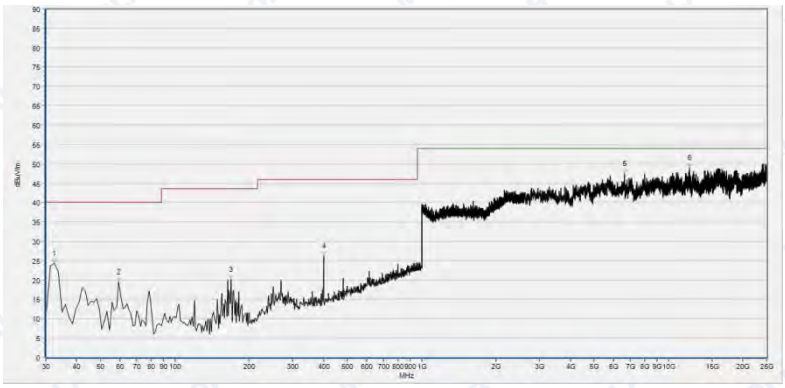
Fre.(MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
32.428	23.60	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
78.561	22.95	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
161.114	21.89	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
797.259	29.98	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
2177.431	44.38	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
10274.414	47.58	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

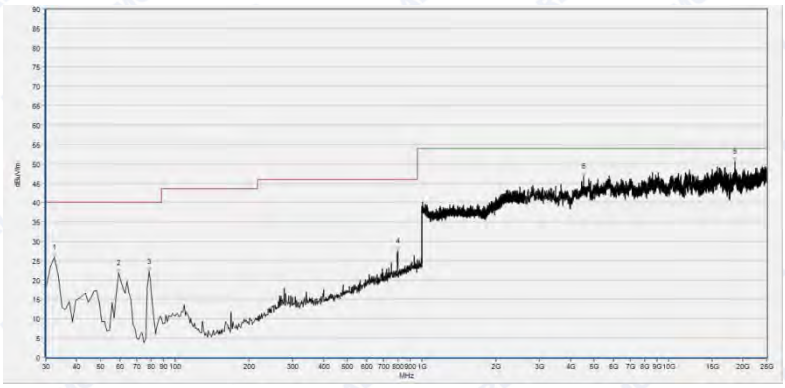
A. Test Plots for the Whole Measurement Frequency Range:

Plots for Channel = 3



Fre.(MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
32.428	24.32	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
59.136	19.47	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
168.398	20.19	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
400.275	26.08	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
6612.366	47.41	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS
12148.209	49.02	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS

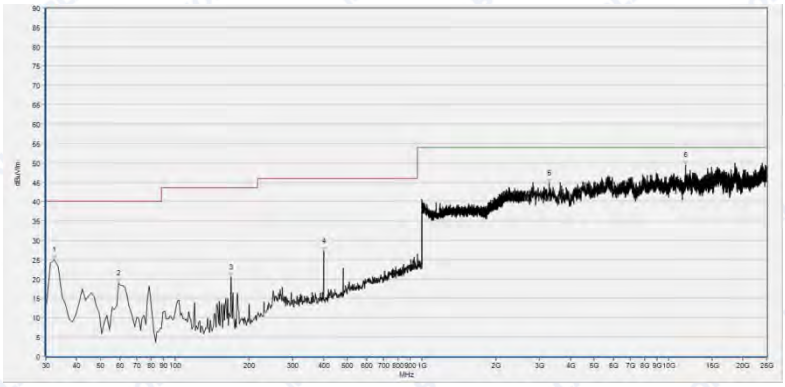
(Plot A.2: Antenna Horizontal, 30MHz to 25GHz)



Fre.(MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
32.428	33.88	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
59.136	21.75	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
78.561	22.13	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
799.687	27.54	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
4522.677	46.81	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
18563.921	50.58	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

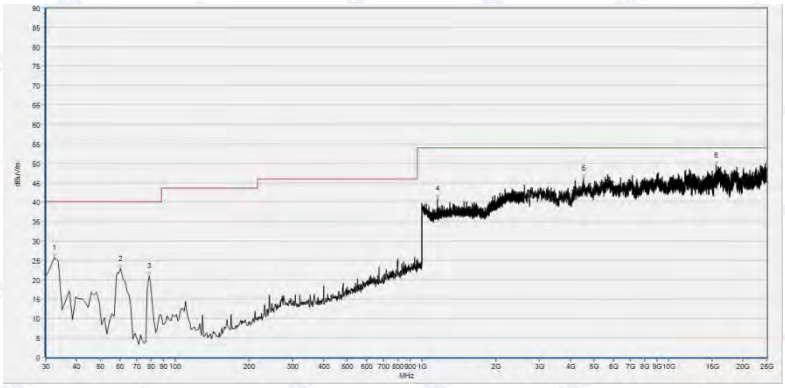
(Plot A.3: Antenna Vertical, 30MHz to 25GHz)

Plots for Channel = 6



Fre.(MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
32.428	24.97	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
59.136	18.89	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
168.398	20.42	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
400.275	27.19	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
3280.269	44.83	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS
11736.789	49.49	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS

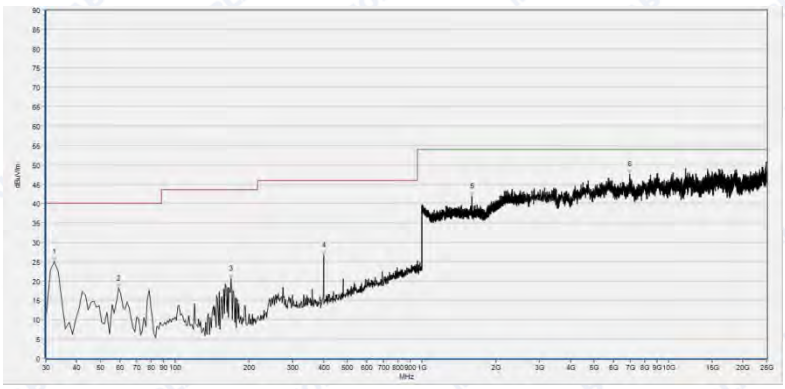
(Plot B.2: Antenna Horizontal, 30MHz to 25GHz)



Fre.(MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
32.428	35.61	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
60.350	22.73	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
78.561	20.99	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
1159.424	40.82	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
4514.530	46.13	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
15598.436	49.49	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

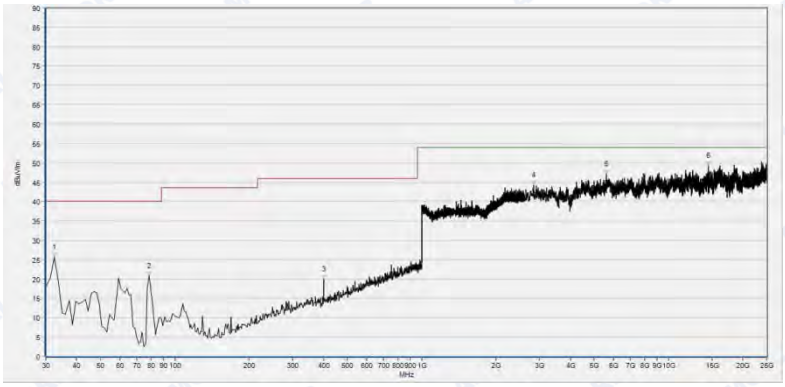
(Plot B.3: Antenna Vertical, 30MHz to 25GHz)

Plots for Channel = 9



Fre.(MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
32.428	25.05	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
59.136	18.10	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
168.398	20.69	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
400.275	26.58	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1599.920	41.88	N.A	N.A	74.0	N.A	54.0	Horizontal	PASS
6942.317	47.64	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
32.428	32.60	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
78.561	20.73	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
400.275	19.90	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
2844.408	44.21	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
5606.219	47.10	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
14453.792	49.28	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

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

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

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 2013 and CISPR Publication 22; the FCC registration number is 695796.

1.4 Maximum measurement uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for test performed on the EUT as specified in CISPR 16-1-2:

Measurements	**Frequency**	**Uncertainty**
Conducted emissions	9KHz~30MHz	2.44dB
Radiated emissions	30MHz~200MHz	2.93
	200MHz~1000MHz	2.95
	1GHz~18GHz	2.26
	18GHz~40GHz	1.94

This uncertainty represent an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2

1.5 Test Equipments Utilized

1.5.1 Conducted Test Equipments

Conducted Test Equipment						
No.	**Equipment Name**	**Serial No.**	**Type**	**Manufacturer**	**Cal. Date**	**Cal. Due**
1	Spectrum Analyzer	MY45101810	E4407B	Agilent	2015.03.28	2016.03.27
2	USB Wideband Power Sensor	MY54210011	U2021XA	Agilent	2015.03.28	2016.03.27
3	EXA Signal Analzyer	MY53470838	N9010A	Agilent	2015.08.26	2016.08.25
4	RF cable	CB01	RF01	Morlab	N/A	N/A
5	Attenuator	(n.a.)	10dB	Resnet	N/A	N/A
6	SMA connector	CN01	RF03	HUBER-SUHNER	N/A	N/A

1.5.2 Conducted Emission Test Equipments

Conducted Emission Test Equipments						
No.	**Equipment Name**	**Serial No.**	**Type**	**Manufacturer**	**Cal. Date**	**Cal. Due**
1	Receiver	595WX11007	PMM9010	Narda S.T.S/PMM	2015.05.07	2016.05.06
2	LISN	812744	NSLK 8127	Schwarzbeck	2015.06.18	2016.06.17
3	Pulse Limiter (20dB)	9391	VTSD 9561-D	Schwarzbeck	2015.05.07	2016.05.06
4	Coaxial cable(BNC)	CB01	EMC01	Morlab	N/A	N/A

1.5.3 Auxiliary Test Equipment

Auxiliary Test Equipment						
No.	**Equipment Name**	**Serial No.**	**Type**	**Manufacturer**	**Cal.Date**	**Cal.Due Date**
1	Computer	N.A	N.A	Asus	N.A	N.A

1.5.4 Radiated Test Equipments

Radiated Test Equipments						
No.	**Equipment Name**	**Serial No.**	**Type**	**Manufacturer**	**Cal. Date**	**Cal.Due Date**
1	System Simulator	GB45360846	8960-E5515C	Agilent	2015.05.07	2016.05.06
2	Receiver	MY54130016	N9038A	Agilent	2015.05.07	2016.05.06
3	Test Antenna - Bi-Log	N/A	VULB9163	Schwarzbeck	2015.05.14	2016.05.13
4	Test Antenna - Horn	9170C-531	BBHA9170	Schwarzbeck	2015.03.31	2016.03.30
5	Test Antenna - Loop	1519-022	FMZB1519	Schwarzbeck	2015.02.26	2016.02.25
6	Test Antenna - Horn	71688	BBHA 9120D	Schwarzbeck	2015.02.26	2016.02.25
7	Coaxial cable(N male)	CB02	EMC02	Morlab	N/A	N/A
8	Coaxial cable(N male)	CB03	EMC03	Morlab	N/A	N/A
9	1-18GHz pre-Amplifier	MA02	TS-PR18	Rohde&Schwarz	2015.02.26	2016.02.25
10	18-26.5GHz pre-Amplifier	MA03	TS-PR18	Rohde&Schwarz	2015.02.26	2016.02.25

1.5.5 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

1.5.6 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

1.5.7 Anechoic Chamber

Anechoic Chamber						
No.	**Equipment Name**	**Serial No.**	**Type**	**Manufacturer**	**Cal.Date**	**Cal.Due Date**
1	Anechoic Chamber	N/A	9m*6m*6m	Changning	2015.05.14	2016.05.13

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