



REPORT No.: SZ18060336W01

TEST REPORT

APPLICANT : Pillo, Inc.

PRODUCT NAME : Pillo Digital Health Assistant

MODEL NAME : S-EM010

BRAND NAME : Pillo

FCC ID : 2AQK6S-EM010

STANDARD(S) : 47 CFR Part 15 Subpart C

TEST DATE : 2018-07-14 to 2018-07-19

ISSUE DATE : 2018-07-25

Tested by:

Wang Meng
Wang Meng (Test Engineer)

Approved by:

Peng Huarui
Peng Huarui (Supervisor)

NOTE: This document is issued by MORLAB, the test report shall not be reproduced except in full without prior written permission of the company. The test results apply only to the particular sample(s) tested and to the specific tests carried out which is available on request for validation and information confirmed at our website.

MORLAB

SHENZHEN MORLAB COMMUNICATIONS TECHNOLOGY Co., Ltd.
FL1-3, Building A, FeiYang Science Park, No.8 LongChang Road,
Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China

Tel: 86-755-36698555

Http://www.morlab.cn

Fax: 86-755-36698525

E-mail: service@morlab.cn





DIRECTORY

1. Technical Information	4
1.1. Applicant and Manufacturer Information	4
1.2. Equipment Under Test (EUT) Description	4
1.3. Test Standards and Results	5
1.4. Environmental Conditions	5
2. 47 CFR Part 15C Requirements	6
2.1. Antenna requirement	6
2.2. Peak Output Power	6
2.3. Bandwidth	9
2.4. Conducted Spurious Emissions and Band Edge	16
2.5. Power spectral density (PSD)	26
2.6. Conducted Emission	33
2.7. Restricted Frequency Bands	36
2.8. Radiated Emission	45
Annex A Test Uncertainty	58
Annex B Testing Laboratory Information	59



REPORT No.: SZ18060336W01

Change History		
Issue	Date	Reason for change
1.0	2018-07-25	First edition



1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Pillo, Inc.
Applicant Address:	51 Melcher St 6th Floor Boston, Massachusetts 02210, United States
Manufacturer:	In-Tech Electronics Ltd
Manufacturer Address:	3&4 floor of Building F, TCL International E City NO. 1001 Zhong Shan Yuan Road, Xili, Nanshan District, Shenzhen

1.2. Equipment Under Test (EUT) Description

Product Name:	Pillo Digital Health Assistant
Serial No:	(N/A, marked #1 by test site)
Hardware Version:	S-EM010
Software Version:	test-em-5000
Modulation Type:	DSSS, OFDM
Operating Frequency Range:	802.11b/g/n-20: 2.412GHz - 2.462GHz
Channel Number:	802.11b/g/n-20: 11
Antenna Type:	Dipole Antenna
Antenna Gain:	1.98 dBi

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

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

Note 2: The EUT connected to the serial port of the computer with a serial communication cable, we use the dedicated software to control the EUT continuous transmission.

Note 3: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.



1.3. Test Standards and Results

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

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

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

No.	Section	Description	Test Date	Test Engineer	Result
1	15.203	Antenna Requirement	N/A	N/A	PASS
2	15.247(b)	Peak Output Power	Jul 14, 2018	Wang Meng	PASS
3	15.247(a)	Bandwidth	Jul 14, 2018	Wang Meng	PASS
4	15.247(d)	Conducted Spurious Emission and Band Edge	Jul 14, 2018	Wang Meng	PASS
5	15.247(e)	Power spectral density (PSD)	Jul 14, 2018	Wang Meng	PASS
6	15.207	Conducted Emission	Jul 19, 2018	Ya Xinhou	PASS
6	15.247(d)	Restricted Frequency Bands	Jul 17, 2018	Ya Xinhou	PASS
9	15.209, 15.247(d)	Radiated Emission	Jul 17, 2018	Ya Xinhou	PASS

Note1: The tests of Conducted Emission and Radiated Emission were performed according to the method of measurements prescribed in ANSI C63.10 2013 and KDB558074 D01 v04 (04/05/2017).

1.4. Environmental Conditions

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

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

2. 47 CFR Part 15C Requirements

2.1. Antenna requirement

2.1.1. Applicable Standard

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

2.1.2. Result: Compliant

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

2.2. Peak Output Power

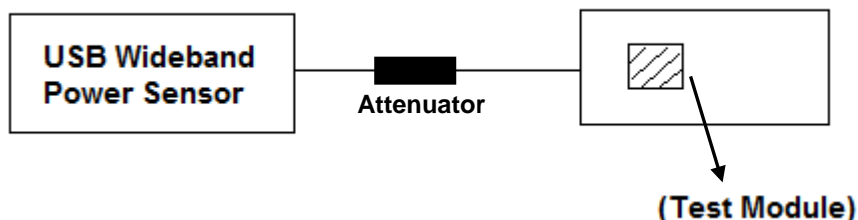
2.2.1. Requirement

According to FCC section 15.247(b)(3), For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: The maximum peak conducted output power of the intentional radiator shall not exceed 1 Watt.

2.2.2. Test Description

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

A. Test Setup:





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

B. Equipments List:

Please refer ANNEX A(1.5).

2.2.3. Test Result

2.2.3.1 802.11b Test Mode

Channel	Frequency (MHz)	Measured Output Peak Power		Limit		Verdict
		dBm	W	dBm	W	
1	2412	23.75	0.2371	30	1	PASS
6	2437	20.73	0.1183			PASS
11	2462	20.37	0.1089			PASS

Channel	Frequency (MHz)	Measured Output Average Power		Limit		Verdict
		dBm	W	dBm	W	
1	2412	20.98	0.1253	30	1	PASS
6	2437	16.99	0.0500			PASS
11	2462	17.08	0.0511			PASS

2.2.3.2 802.11g Test mode

Channel	Frequency (MHz)	Measured Output Peak Power		Limit		Verdict
		dBm	W	dBm	W	
1	2412	23.24	0.2109	30	1	PASS
6	2437	21.76	0.1500			PASS
11	2462	20.37	0.1089			PASS

Channel	Frequency (MHz)	Measured Output Average Power		Limit		Verdict
		dBm	W	dBm	W	
1	2412	15.44	0.0350	30	1	PASS
6	2437	12.45	0.0176			PASS
11	2462	11.83	0.0152			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	23.15	0.2065	30	1	PASS
6	2437	21.20	0.1318			PASS
11	2462	20.59	0.1146			PASS

Channel	Frequency (MHz)	Measured Output Average Power		Limit		Verdict
		dBm	W	dBm	W	
1	2412	15.54	0.0358	30	1	PASS
6	2437	11.61	0.0145			PASS
11	2462	11.42	0.0139			PASS

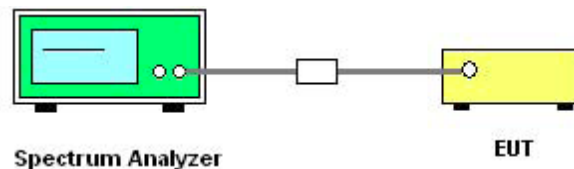
2.3. Bandwidth

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.

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

B. Equipments List:

Please refer ANNEX A(1.5).



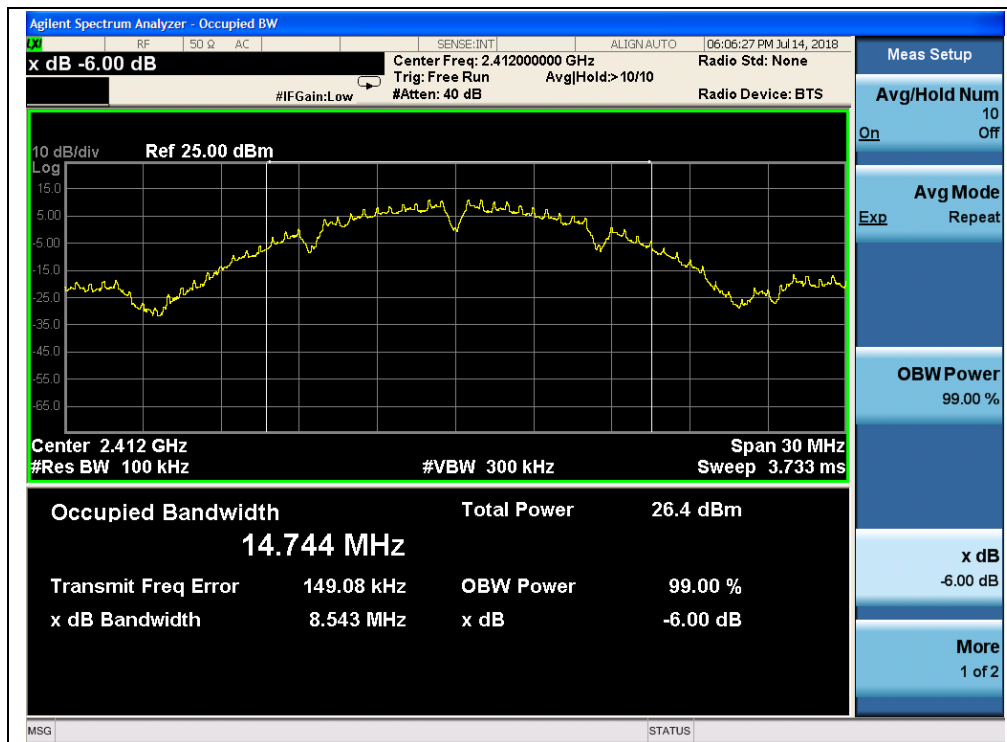
2.3.3. Test Result

2.3.3.1 802.11b Test mode

A. Test Verdict:

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limits(kHz)	Result
1	2412	8.543	≥500	PASS
6	2437	7.550	≥500	PASS
11	2462	8.040	≥500	PASS

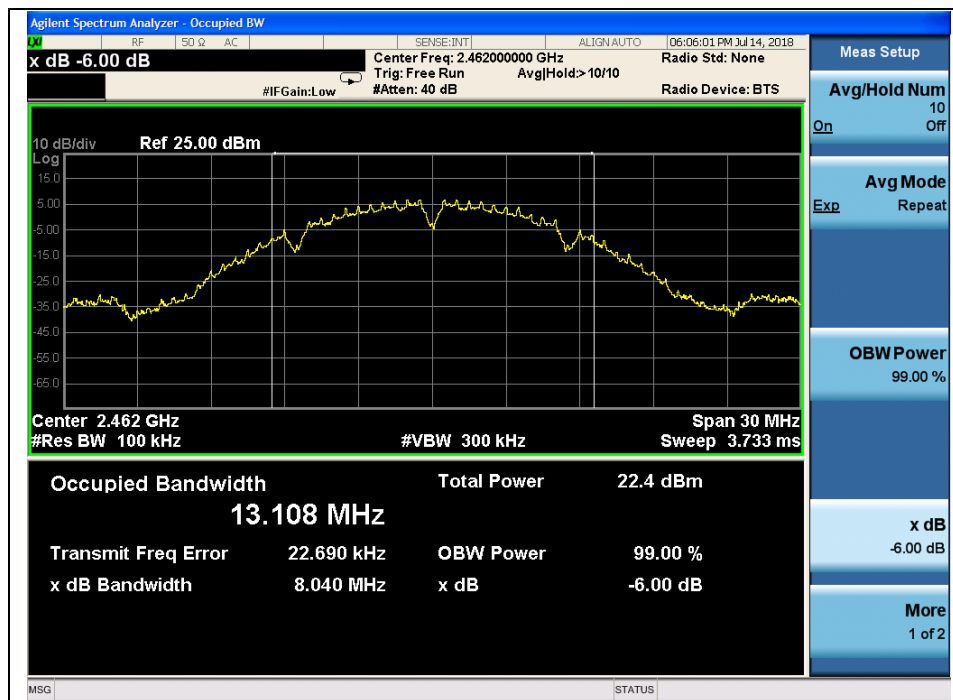
B. Test Plots



(Channel 1, 2412MHz, 802.11b)



(Channel 6, 2437 MHz, 802.11b)



(Channel 11, 2462MHz, 802.11b)

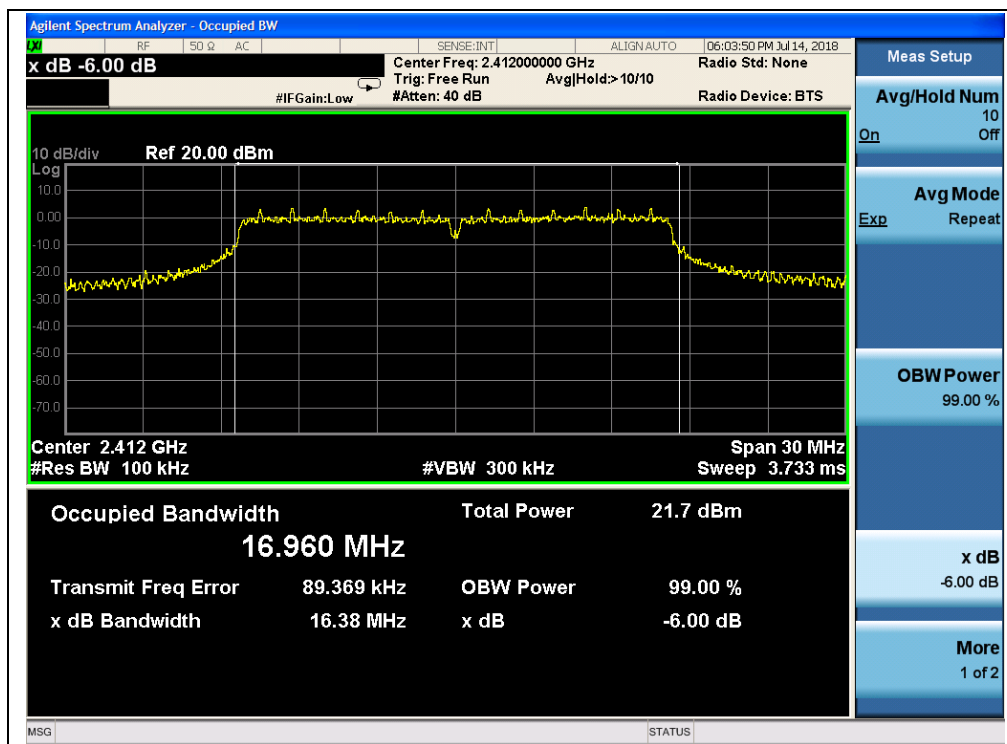


2.3.3.2 802.11g Test mode

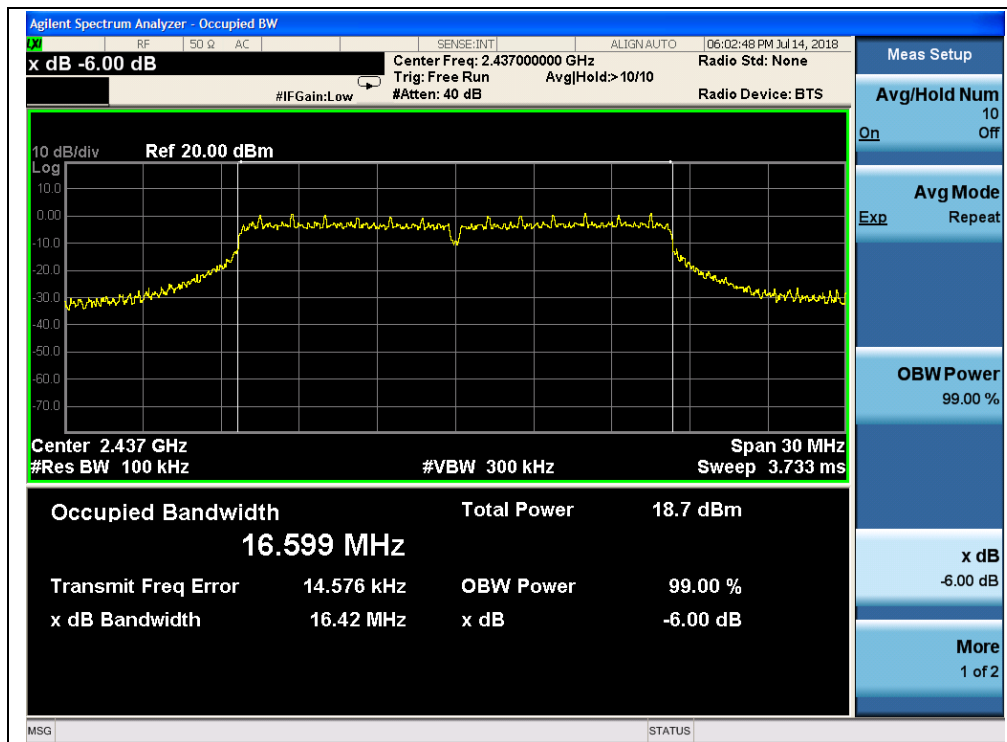
A. Test Verdict:

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limits(kHz)	Result
1	2412	16.38	≥500	PASS
6	2437	16.42	≥500	PASS
11	2462	16.41	≥500	PASS

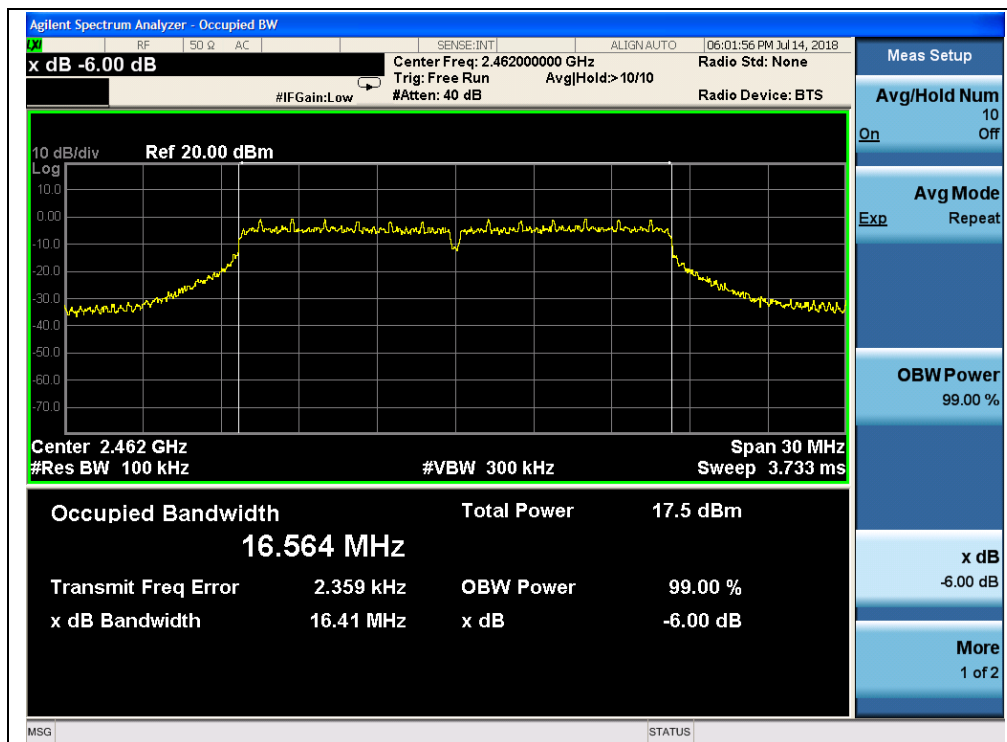
B. Test Plots:



(Channel 1, 2412MHz, 802.11g)



(Channel 6, 2437MHz, 802.11g)



(Channel 11, 2462MHz, 802.11g)

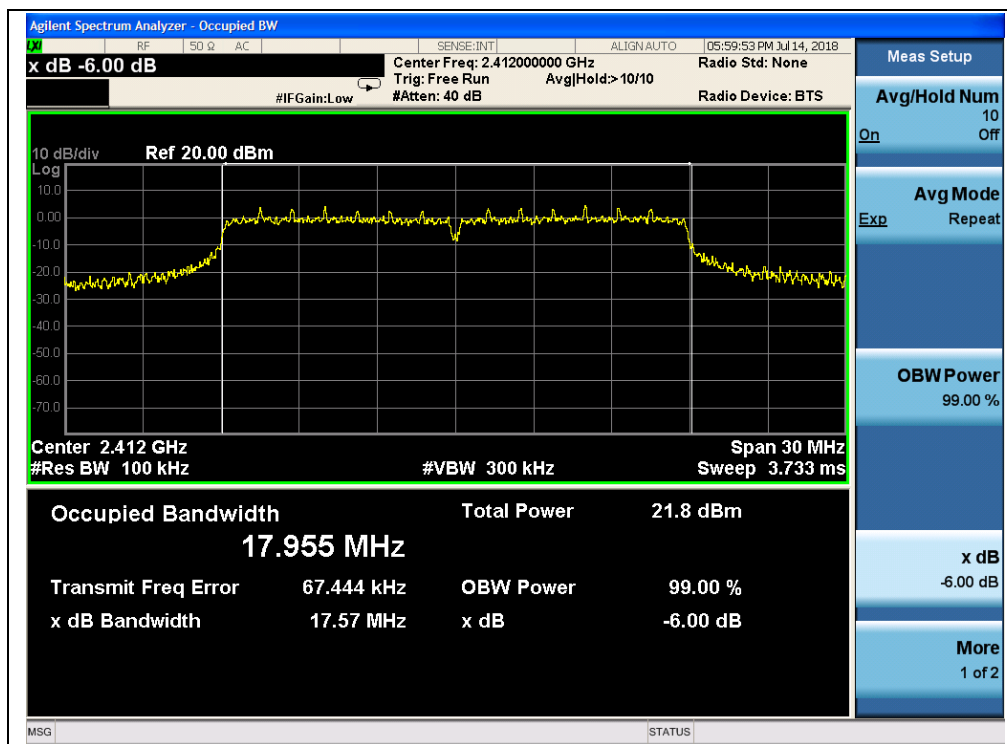


2.3.3.3 802.11n-20 Test mode

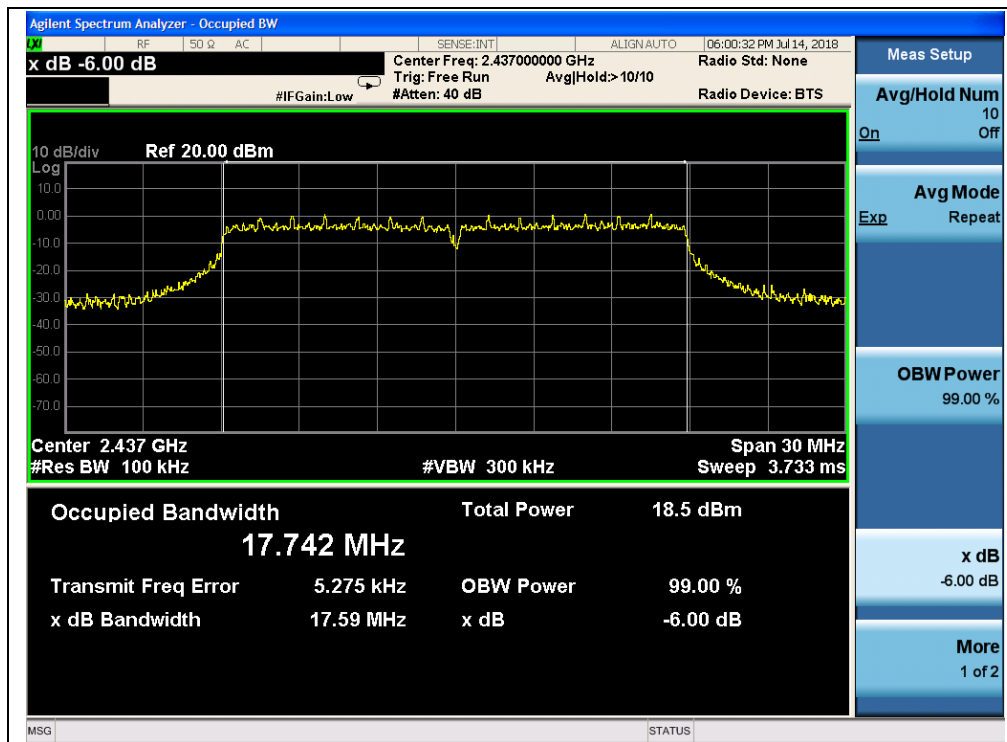
A. Test Verdict:

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limits(kHz)	Result
1	2412	17.57	≥500	PASS
6	2437	17.59	≥500	PASS
11	2462	17.62	≥500	PASS

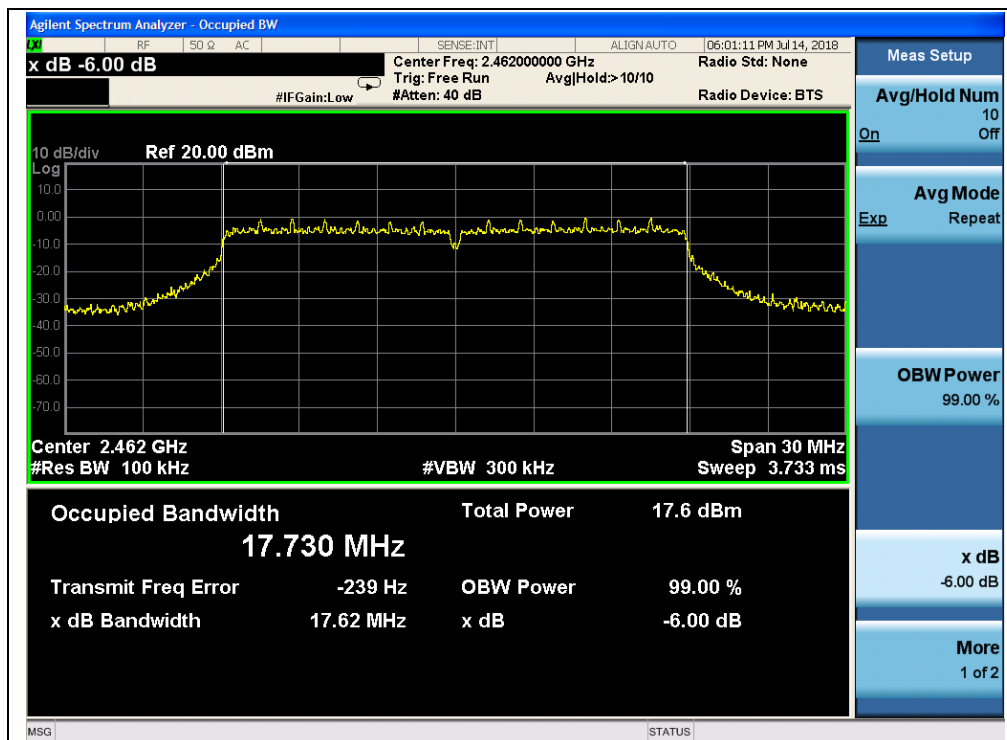
B. Test Plots:



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



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



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

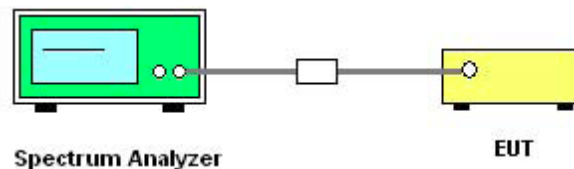
2.4. Conducted Spurious Emissions and Band Edge

2.4.1. Requirement

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

2.4.2. Test Description

A. Test Set:



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

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

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

B. Equipments List:

Please refer ANNEX A(1.5).



2.4.3. Test Result

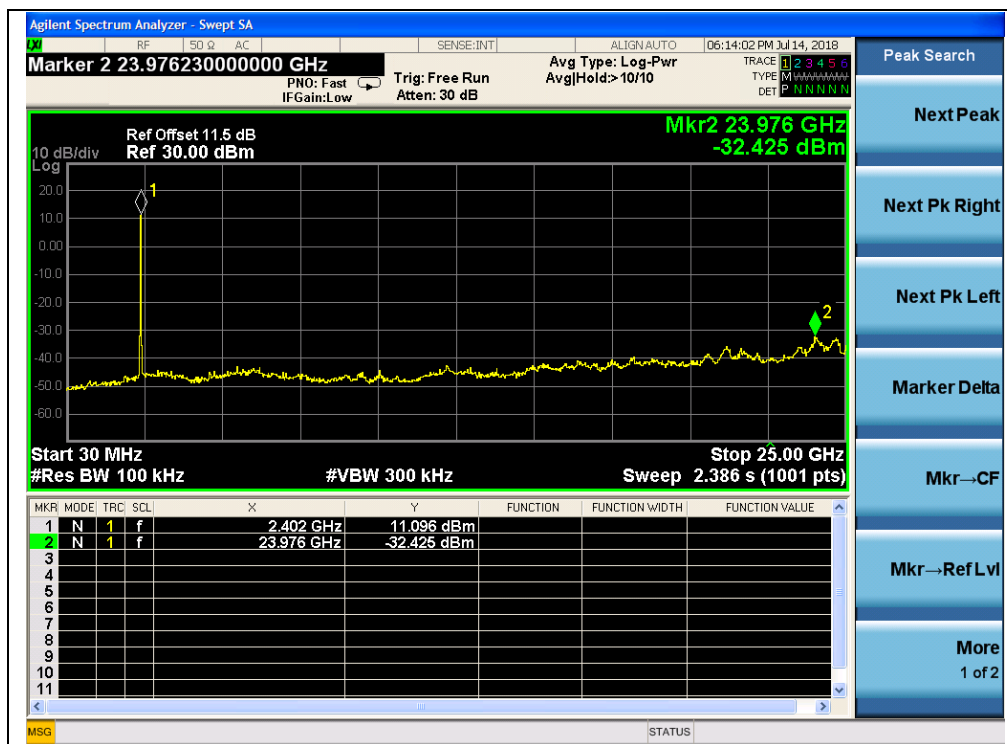
2.4.3.1 802.11b Test mode

A. Test Verdict:

Channel	Frequency (MHz)	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
			Carrier Level	Calculated -20dBc Limit	
1	2412	-32.43	11.10	-8.90	PASS
6	2437	-32.51	8.14	-11.86	PASS
11	2462	-33.25	7.27	-12.73	PASS

B. Test Plots:

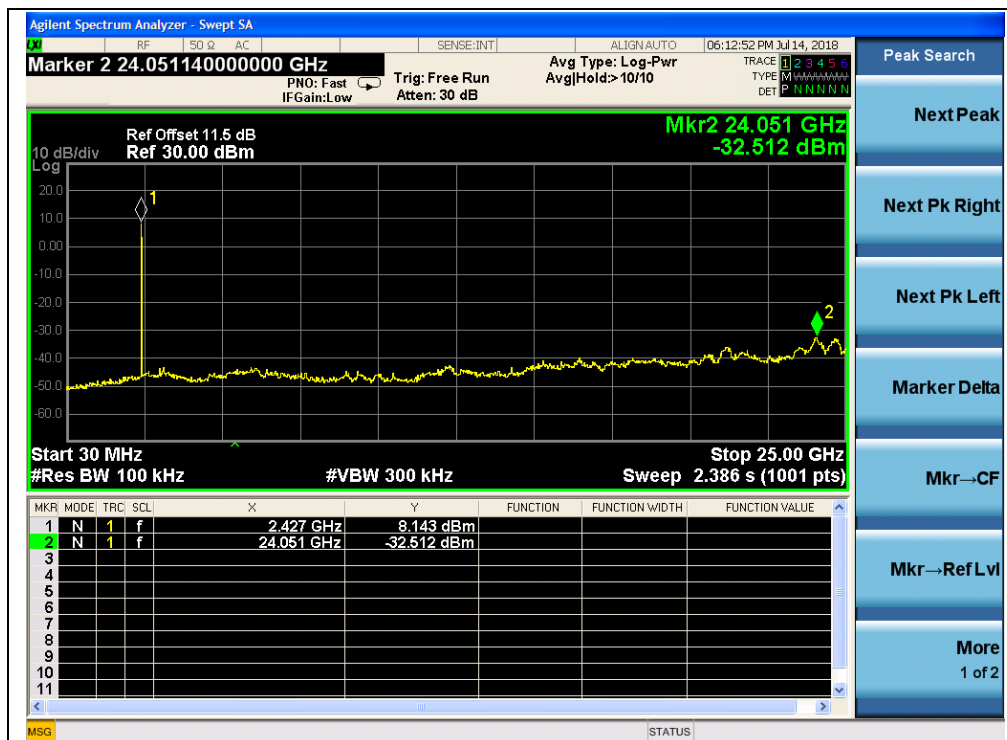
Note: The power of the Module transmitting frequency should be ignored.



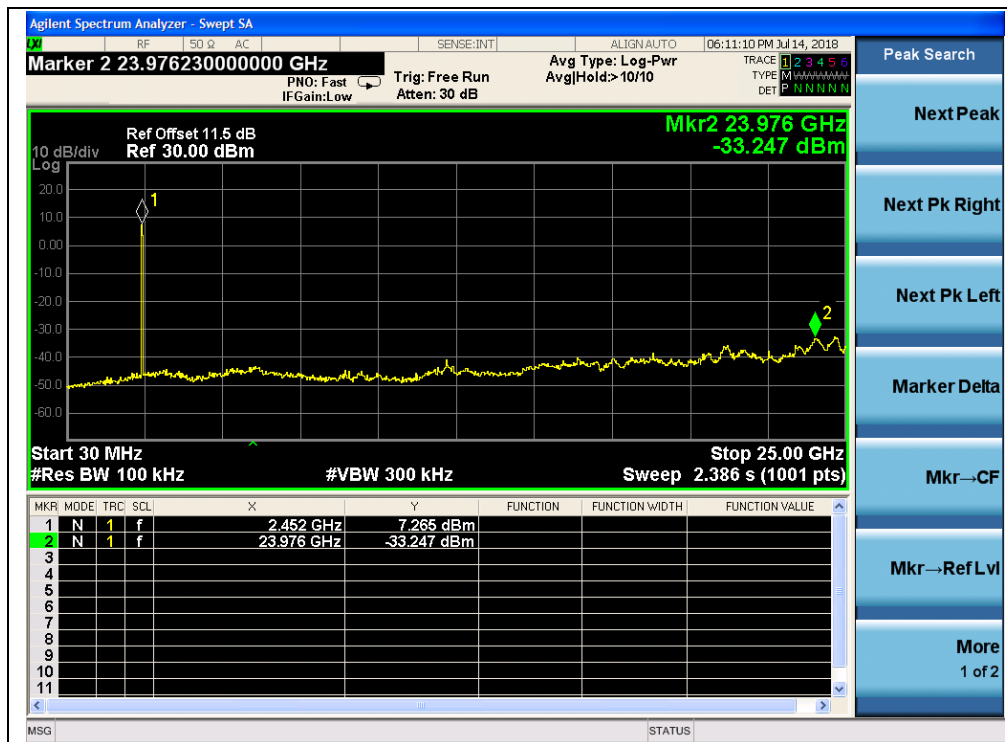
(Channel = 1, 30MHz to 25GHz)



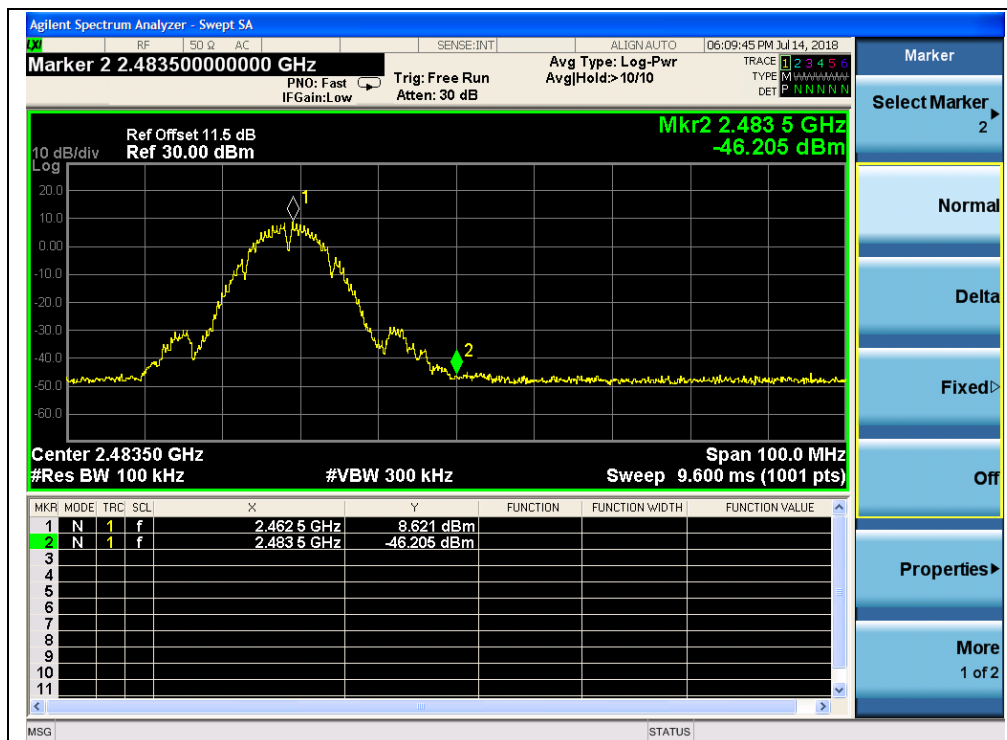
(Band Edge, Channel = 1)



(Channel = 6, 30MHz to 25GHz)



(Channel = 11, 30MHz to 25GHz)



(Band Edge, Channel = 11)



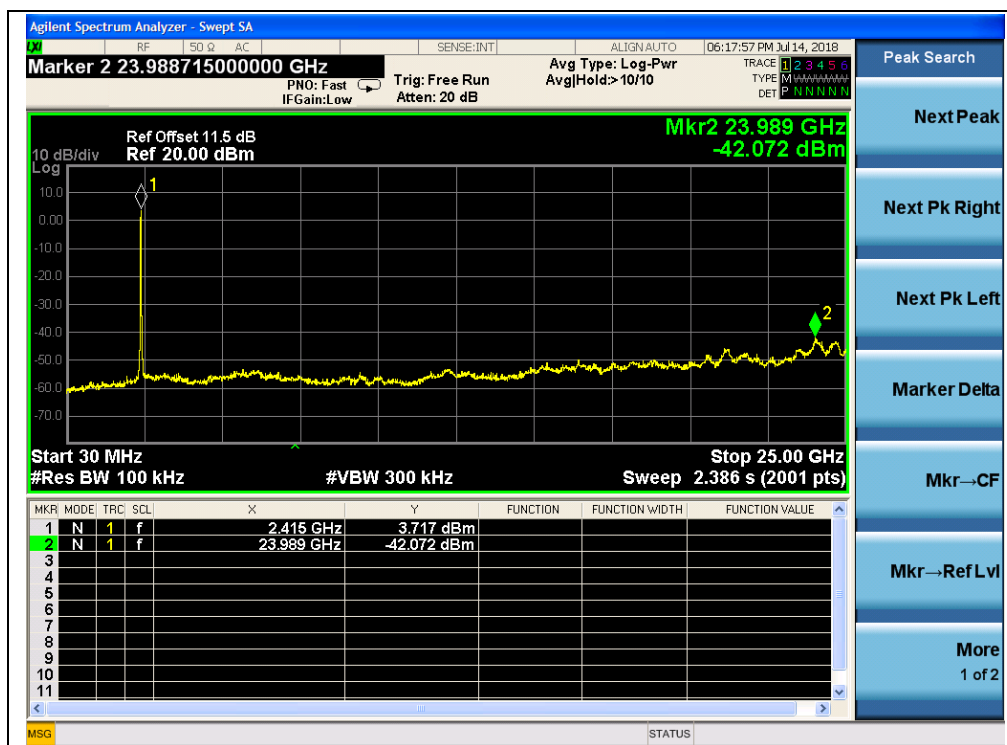
2.4.3.2 802.11g Test mode

A. Test Verdict:

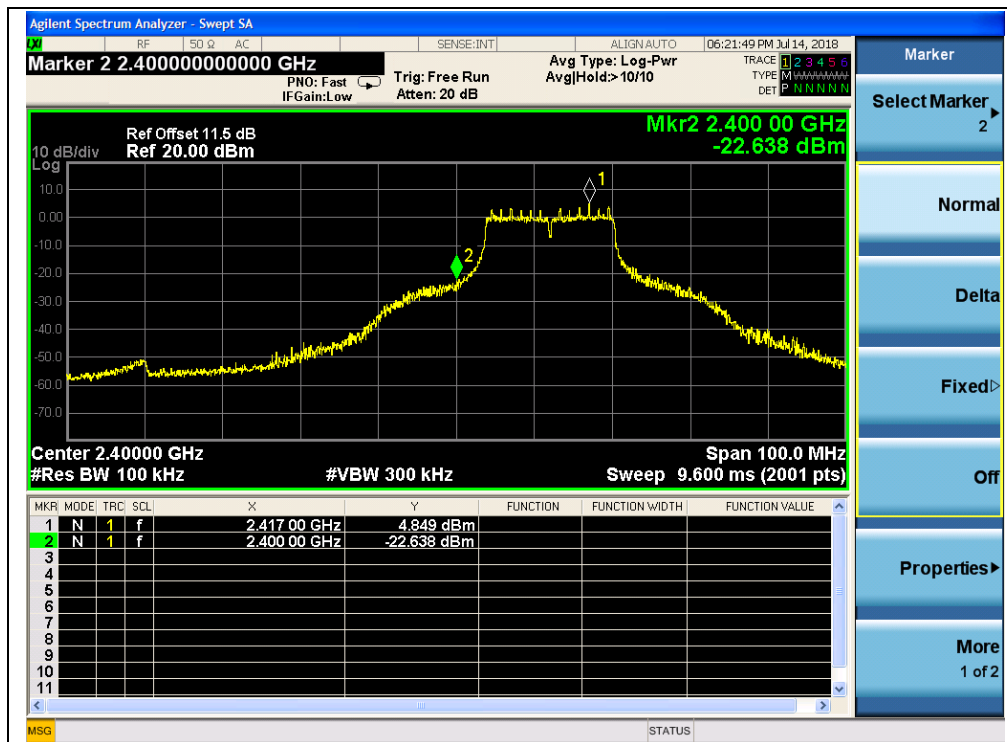
Channel	Frequency (MHz)	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
			Carrier Level	Calculated -20dBc Limit	
1	2412	-42.07	3.72	-16.28	PASS
6	2437	-42.56	-0.05	-20.05	PASS
11	2462	-42.61	-0.12	-20.12	PASS

B. Test Plots:

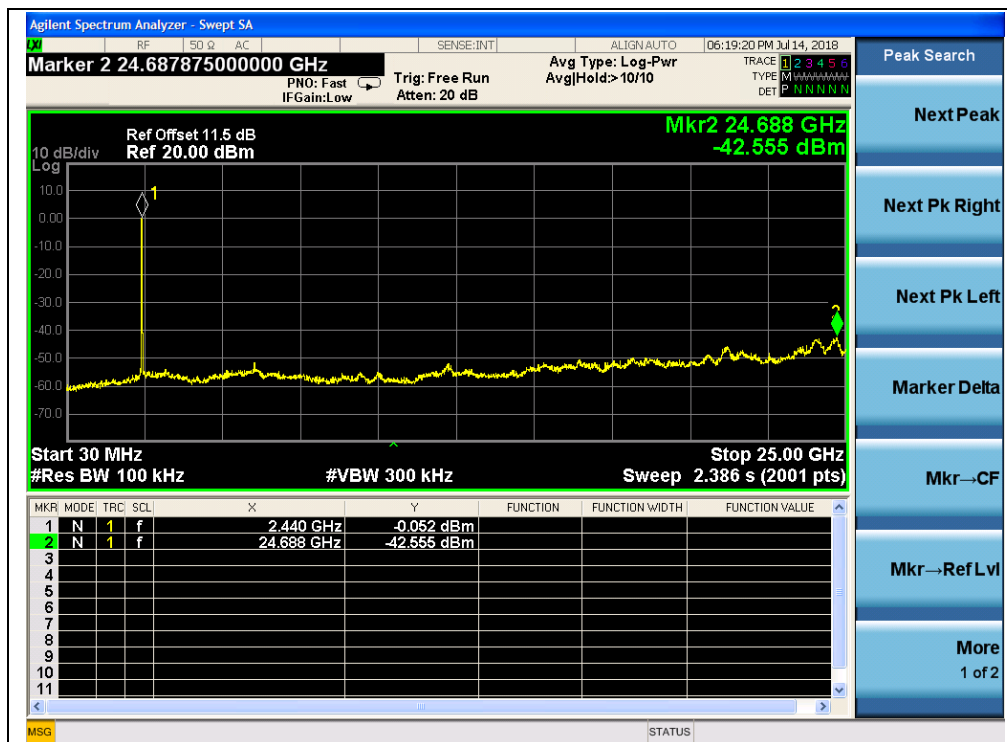
Note: The power of the Module transmitting frequency should be ignored.



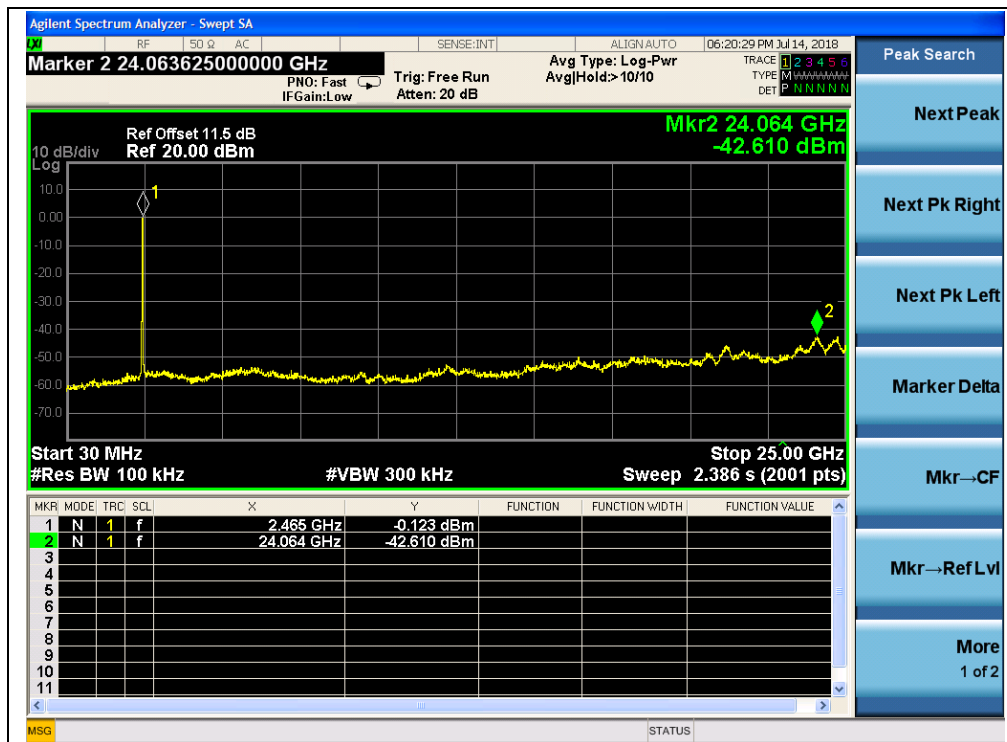
(Channel = 1, 30MHz to 25GHz)



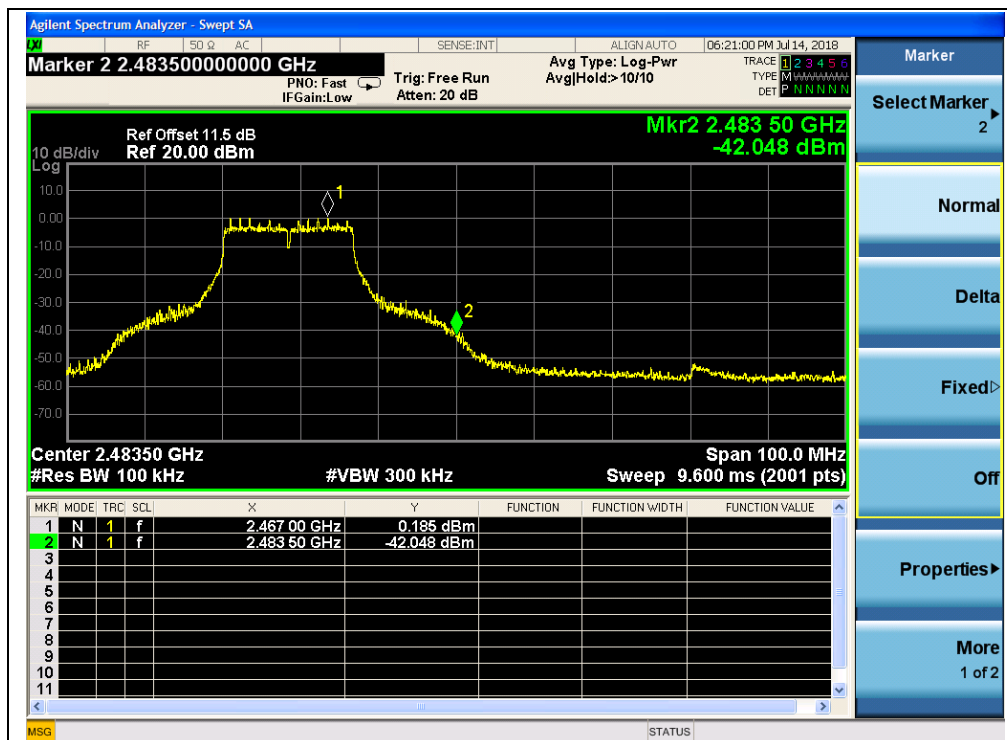
(Band Edge, Channel = 1)



(Channel = 6, 30MHz to 25GHz)



(Channel = 11, 30MHz to 25GHz)



(Band Edge, Channel = 11)



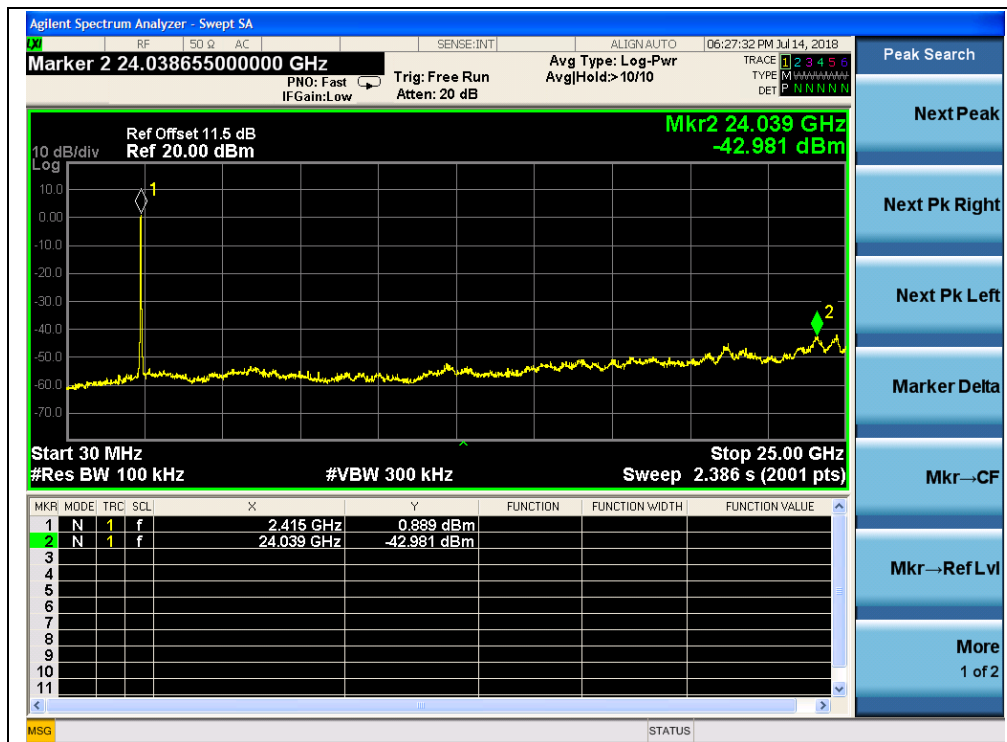
2.4.3.3 802.11n -20MHz Test mode

A. Test Verdict:

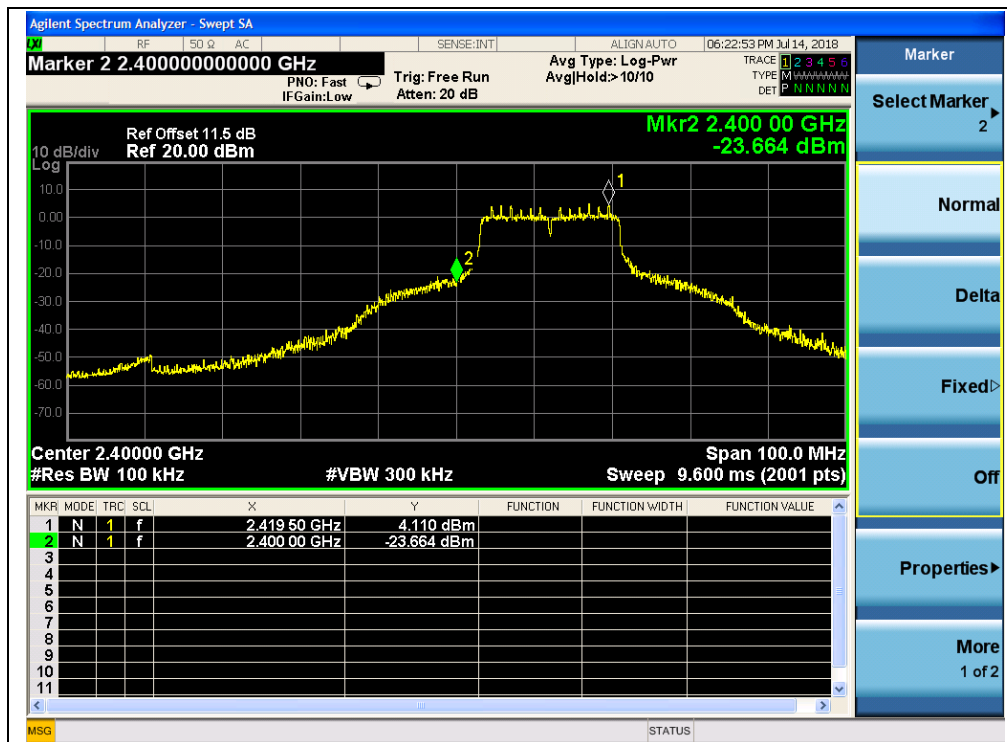
Channel	Frequency (MHz)	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
			Carrier Level	Calculated -20dBc Limit	
1	2412	-42.98	0.89	-19.11	PASS
6	2437	-42.47	0.61	-19.39	PASS
11	2462	-43.09	-0.40	-20.40	PASS

B. Test Plots:

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



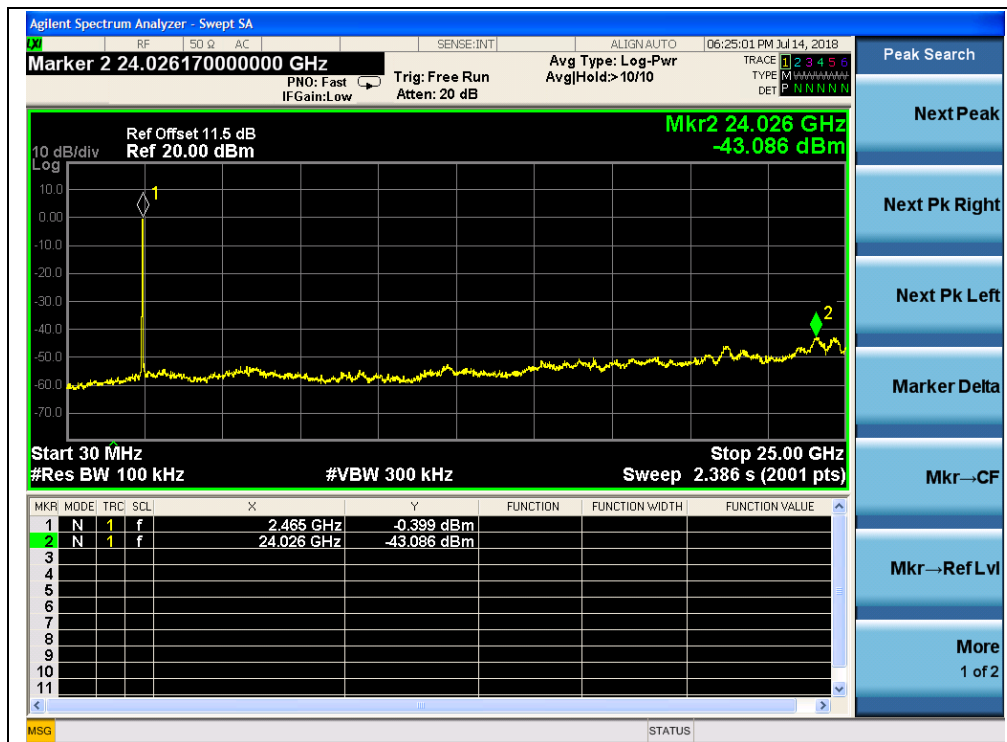
(Channel = 1, 30MHz to 25GHz)



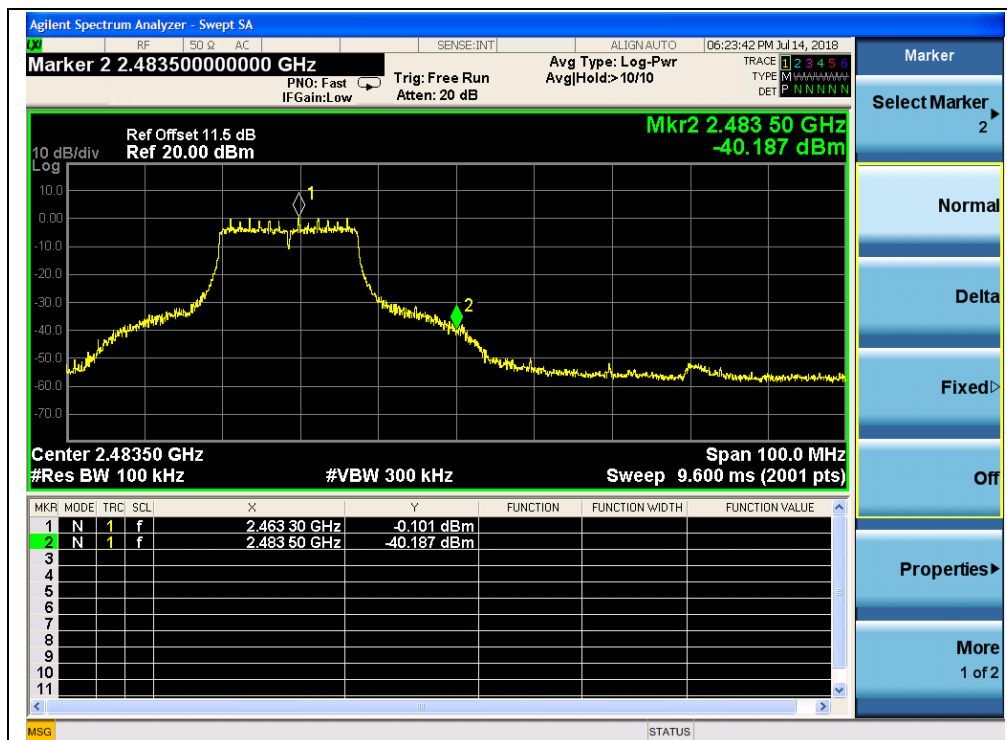
(Band Edge, Channel = 1)



(Channel = 6, 30MHz to 25GHz)



(Channel = 11, 30MHz to 25GHz)



(Band Edge, Channel = 11)

2.5. 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.

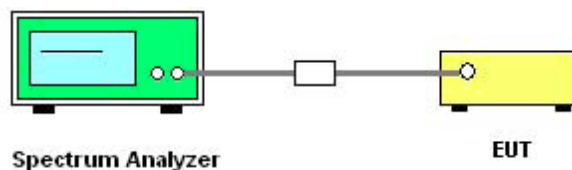
2.5.2. Test Description

A. Test procedure

The measured power spectral density was calculated by the reading of the spectrum analyzer and calibration. Following is the test procedure for PSD test:

- a) Set analyzer center frequency to channel center frequency.
- b) Set the span to 1.5 times DTS
- c) Set the RBW to 3 kHz
- d) Set the VBW to 10 kHz
- e) Detector = peak.
- f) Sweep time = auto couple.
- g) Trace mode = max hold.
- h) Allow trace to fully stabilize.
- i) Use the peak marker function to determine the maximum amplitude level within the RBW.

B. 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.

C. Equipments List:

Please refer ANNEX A(1.5).



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	-2.21	8	PASS
6	2437	-5.79	8	PASS
11	2462	-6.23	8	PASS
Measurement uncertainty: ± 1.3 dB				

B. Test Plots:



(Channel = 1, 802.11b)



(Channel = 6, 802.11b)



(Channel = 11, 802.11b)

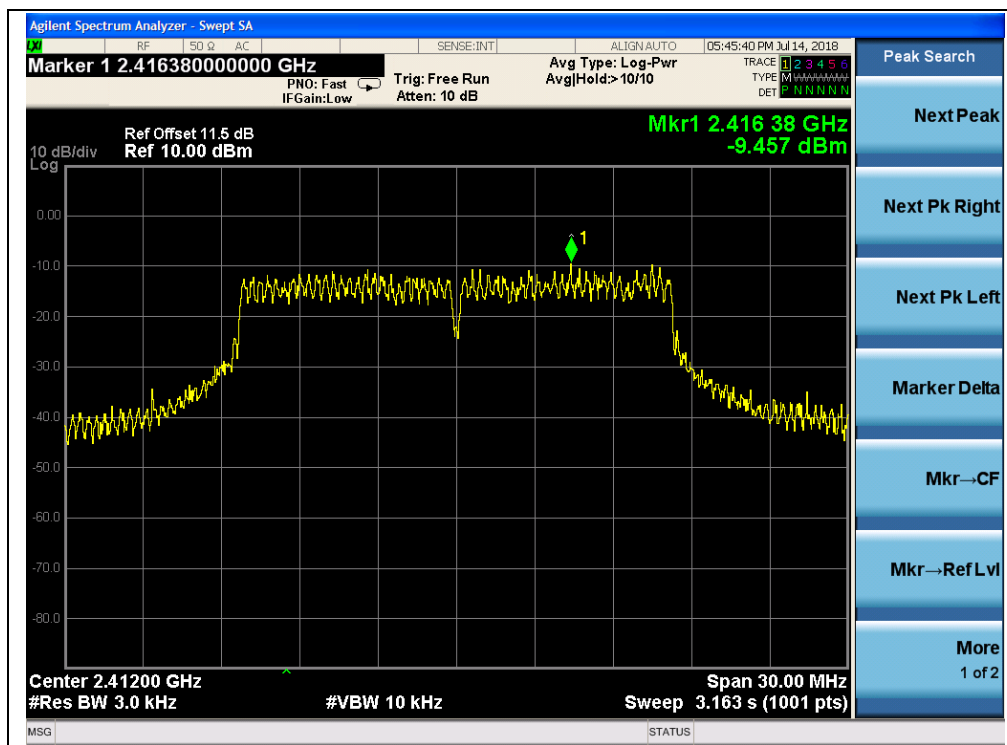


2.5.3.2 802.11g Test mode

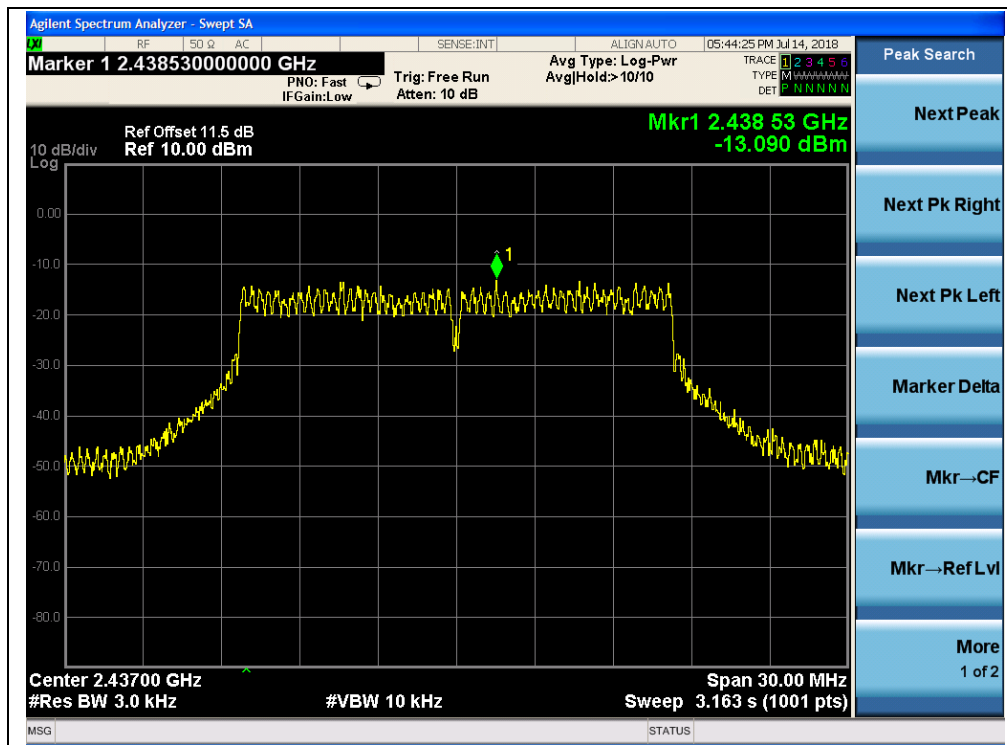
A. Test Verdict:

Spectral power density (dBm/3kHz)				
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
1	2412	-9.46	8	PASS
6	2437	-13.09	8	PASS
11	2462	-12.47	8	PASS
Measurement uncertainty: ± 1.3 dB				

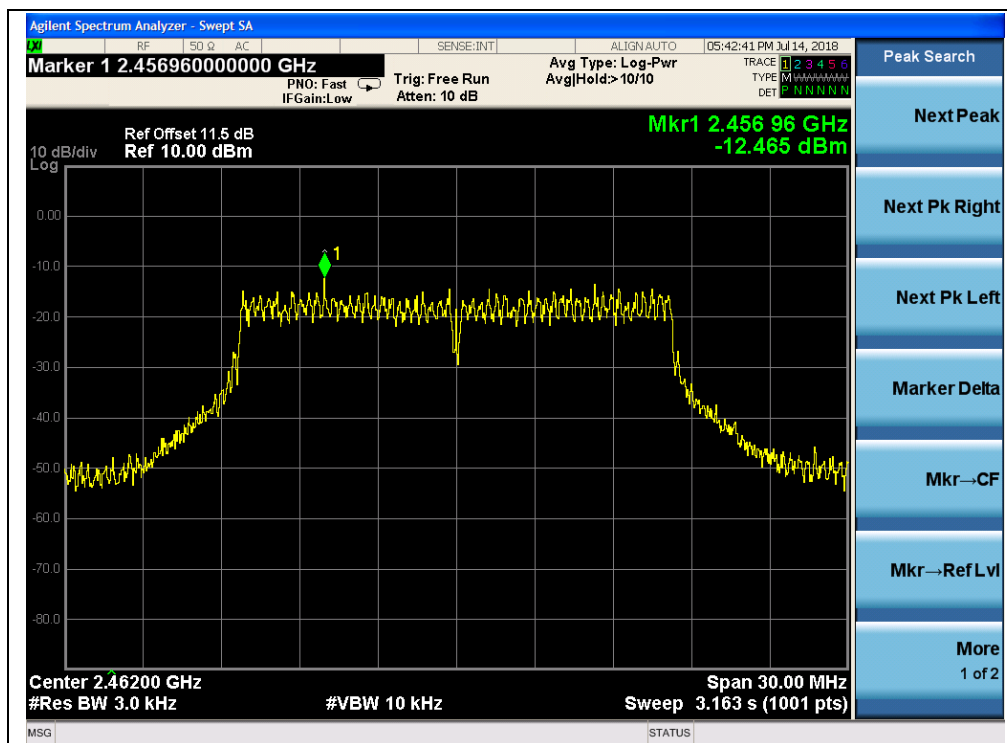
B. Test Plots:



(Channel = 1, 802.11g)



(Channel = 6, 802.11g)



(Channel = 11, 802.11g)

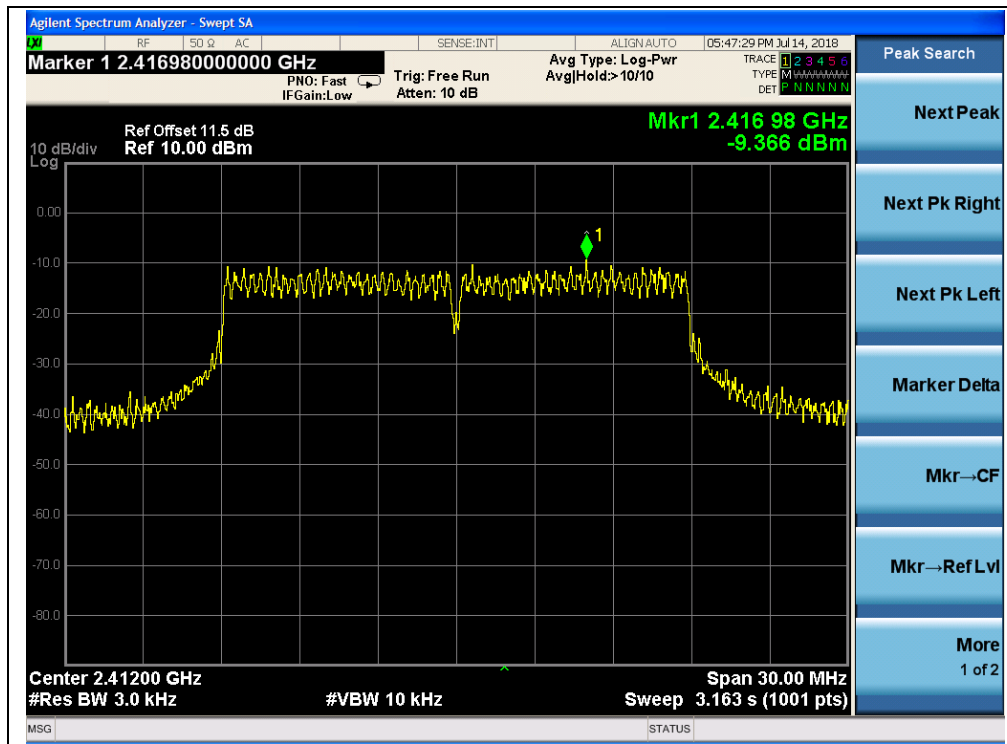


2.5.3.3 802.11n-20MHz Test mode

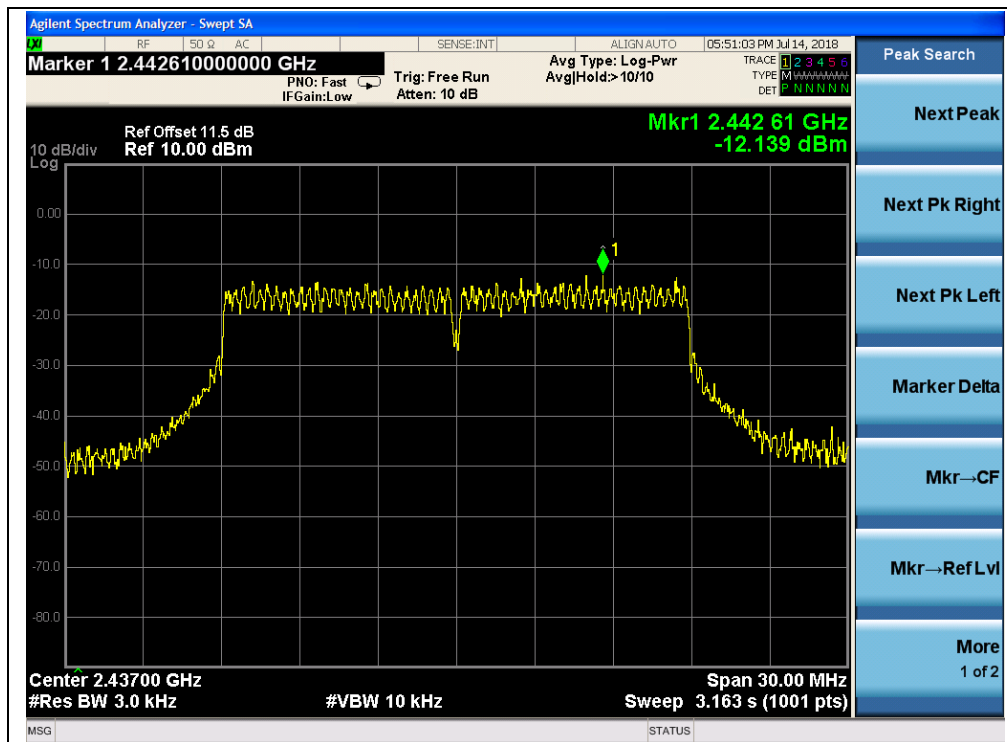
A. Test Verdict:

Spectral power density (dBm/3kHz)				
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
1	2412	-9.37	8	PASS
6	2437	-12.14	8	PASS
11	2462	-13.31	8	PASS
Measurement uncertainty: ± 1.3 dB				

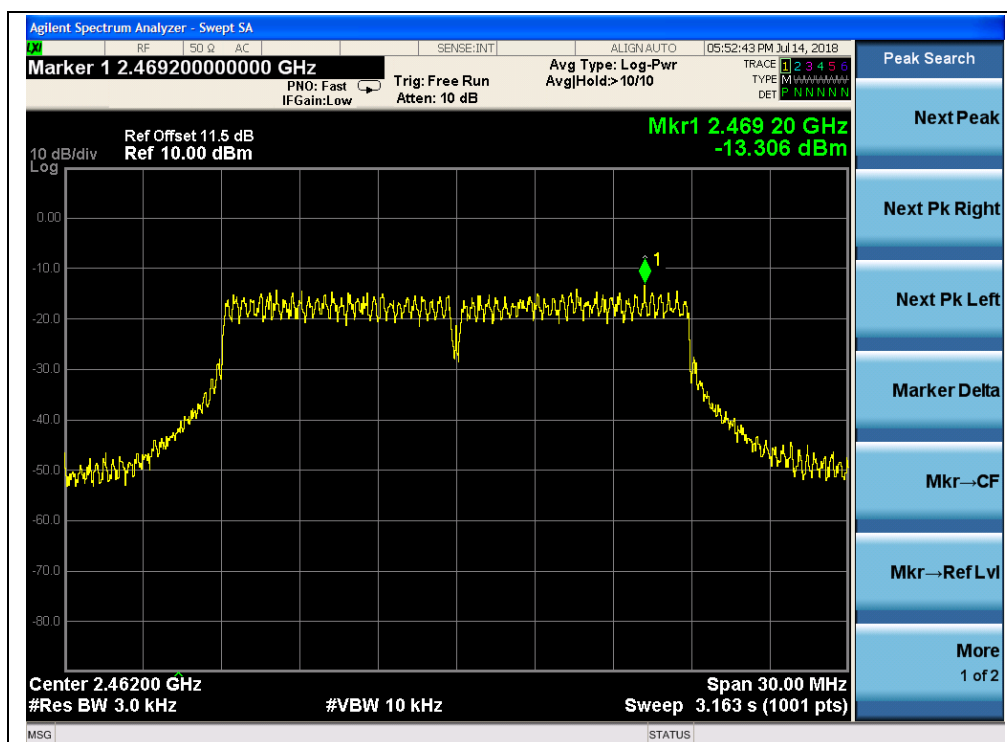
B. Test Plots:



(Channel = 1, 802.11n-20MHz)



(Channel = 6, 802.11n-20MHz)



(Channel = 11, 802.11n-20MHz)

2.6. Conducted Emission

2.6.1. Requirement

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

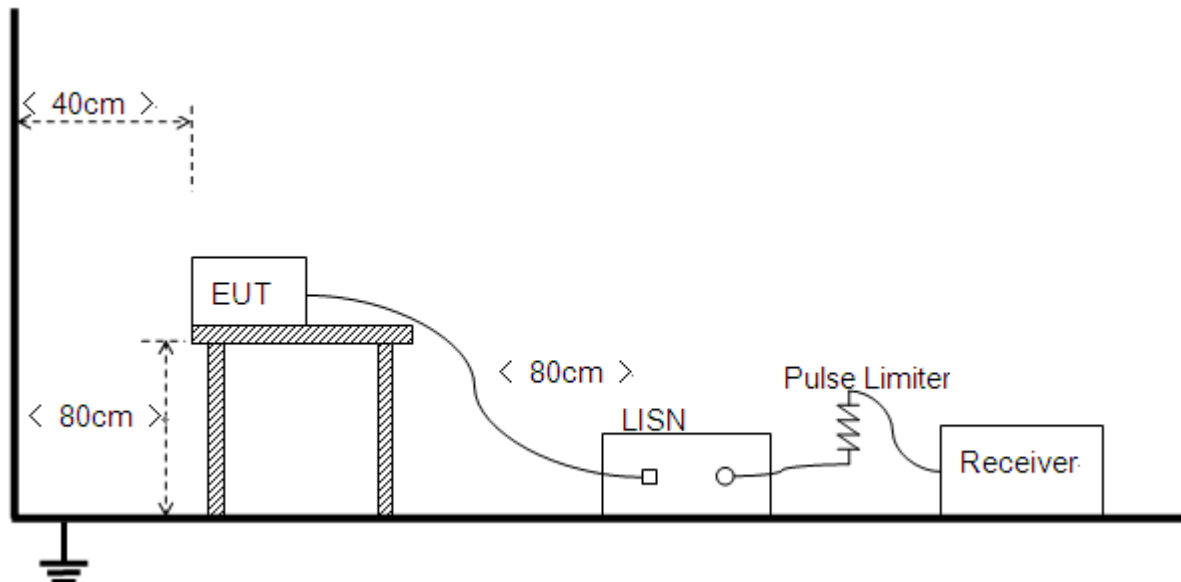
Frequency range (MHz)	Conducted Limit (dB μ V)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

NOTE:

- (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.

2.6.2. 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 C63.10 2013.

**B. Equipments List:**

Please refer ANNEX A(1.5).

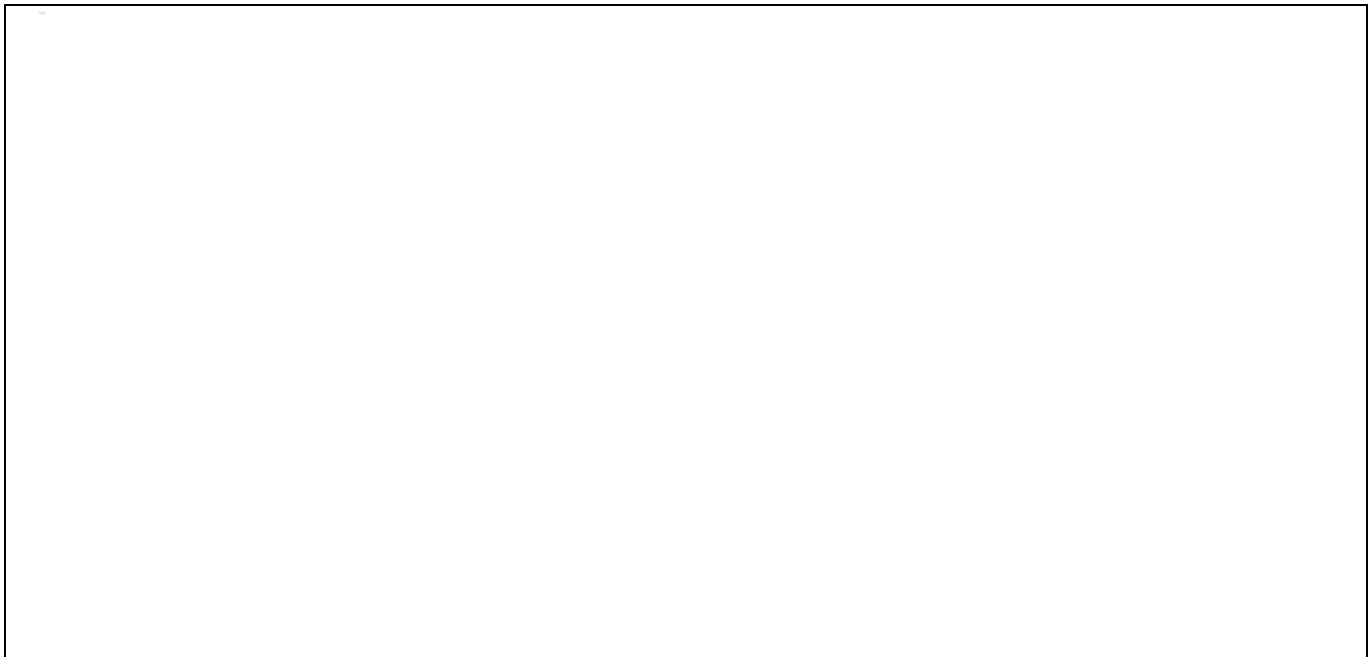
2.6.3. Test Result

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

A. Test setup:

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

Note: The test voltage is AC 120V/60Hz.

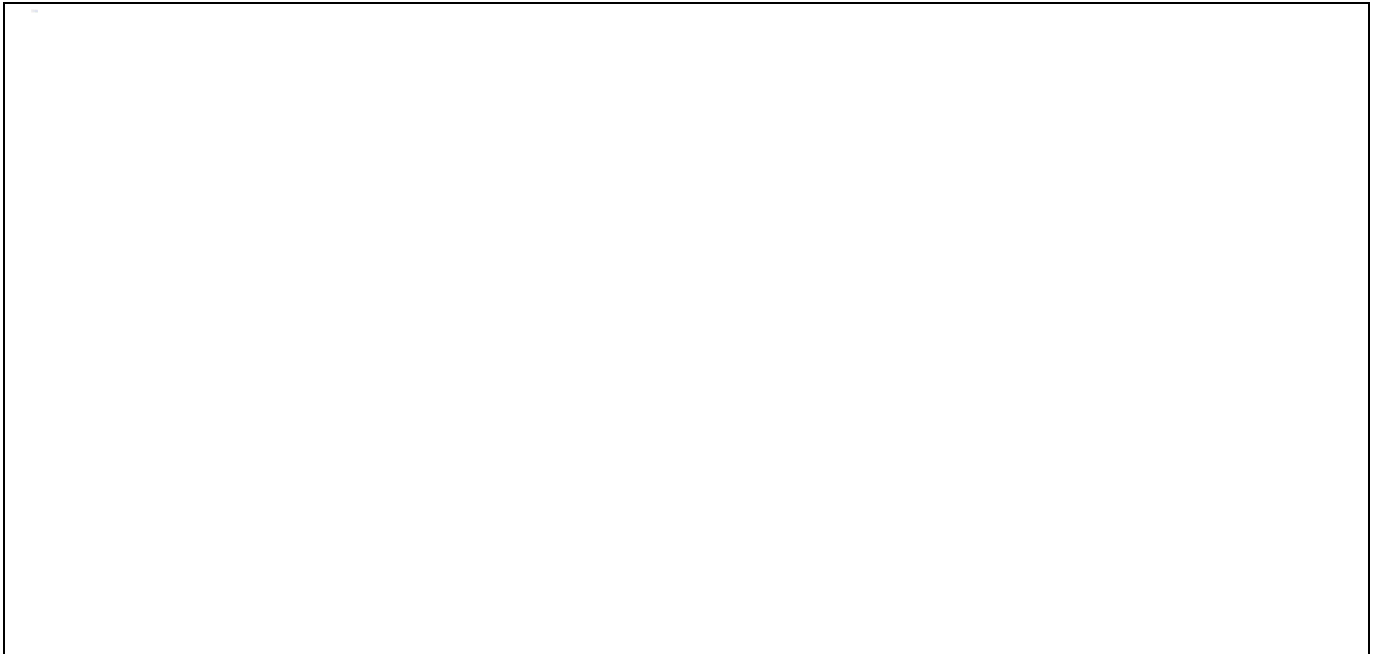
B. Test Plots:

(L Phase)

NO.	Fre. (MHz)	Emission Level (dBμV)		Limit (dBμV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.1859	53.45	38.63	64.22	54.22	Line	PASS
2	0.2671	46.47	33.23	61.21	51.21		PASS
3	0.9114	31.69	23.82	56.00	46.00		PASS
4	4.7891	24.84	13.43	56.00	46.00		PASS
5	10.4426	28.72	19.01	60.00	50.00		PASS
6	19.3662	33.44	23.47	60.00	50.00		PASS



REPORT No.: SZ18060336W01



(N Phase)

NO.	Fre. (MHz)	Emission Level (dBμV)		Limit (dBμV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.1637	55.12	38.33	65.28	55.28	Neutral	PASS
2	0.2173	41.36	27.08	62.92	52.92		PASS
3	0.4248	39.72	32.77	57.35	47.35		PASS
4	0.8380	30.11	22.21	56.00	46.00		PASS
5	3.6895	22.19	13.17	56.00	46.00		PASS
6	19.0168	30.33	20.06	60.00	50.00		PASS

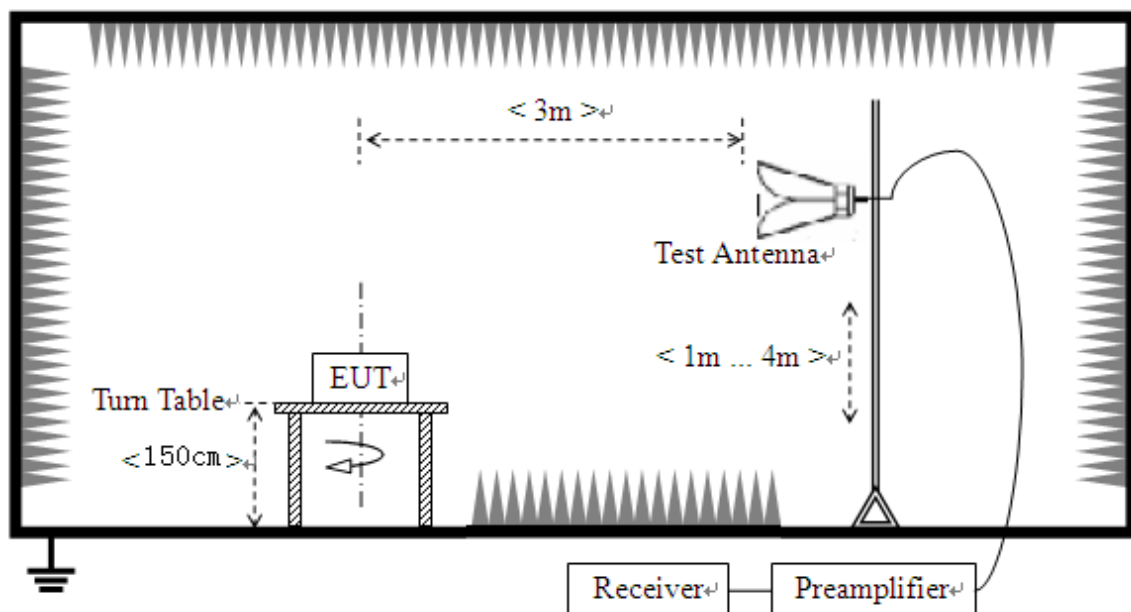
2.7. Restricted Frequency Bands

2.7.1. 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).

2.7.2. Test Description

A. Test Setup



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

For the Test Antenna:

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

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

**B. Equipments List:**

Please refer ANNEX A(1.5).

2.7.3. Test Result

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

The measurement results are obtained as below:

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

A_T : Total correction Factor except Antenna

U_R : Receiver Reading

G_{preamp} : Preamplifier Gain

A_{Factor} : Antenna Factor at 3m

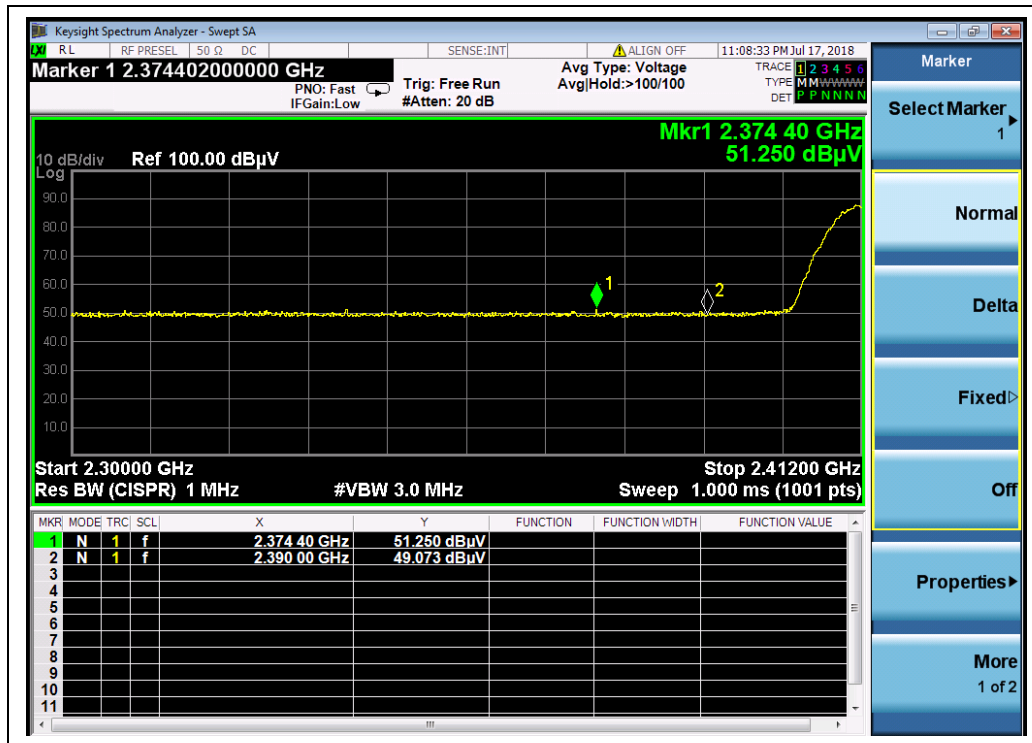
Note: Restricted Frequency Bands were performed when antenna was at vertical and horizontal polarity, and only the worse test condition (vertical) was recorded in this test report.

2.6.3.1 802.11b Test mode**A. Test Verdict:**

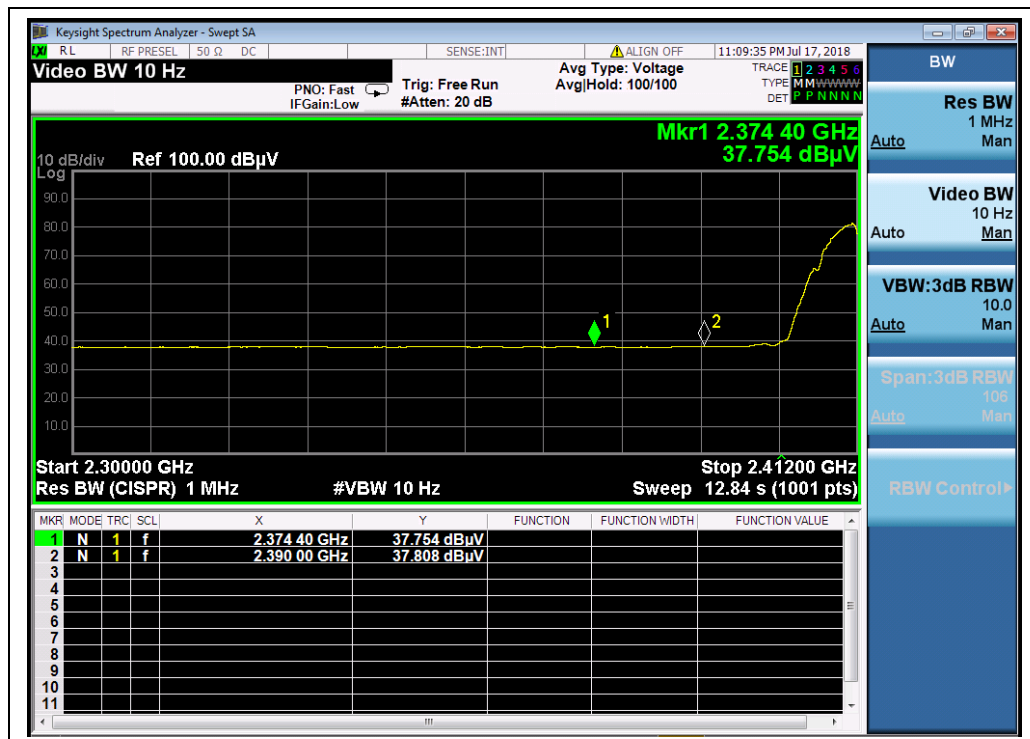
Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dBuV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
		PK/ AV						
1	2374.40	PK	51.25	-33.63	32.56	50.18	74	Pass
1	2374.40	AV	37.75	-33.63	32.56	36.68	54	Pass
11	2484.33	PK	50.16	-33.18	32.50	49.48	74	Pass
11	2484.44	AV	38.08	-33.18	32.50	37.40	54	Pass



B. Test Plots:



(Channel = 1 PEAK, 802.11b)



(Channel = 1 AVG, 802.11b)



(Channel = 11 PEAK, 802.11b)



(Channel = 11 AVG, 802.11b)

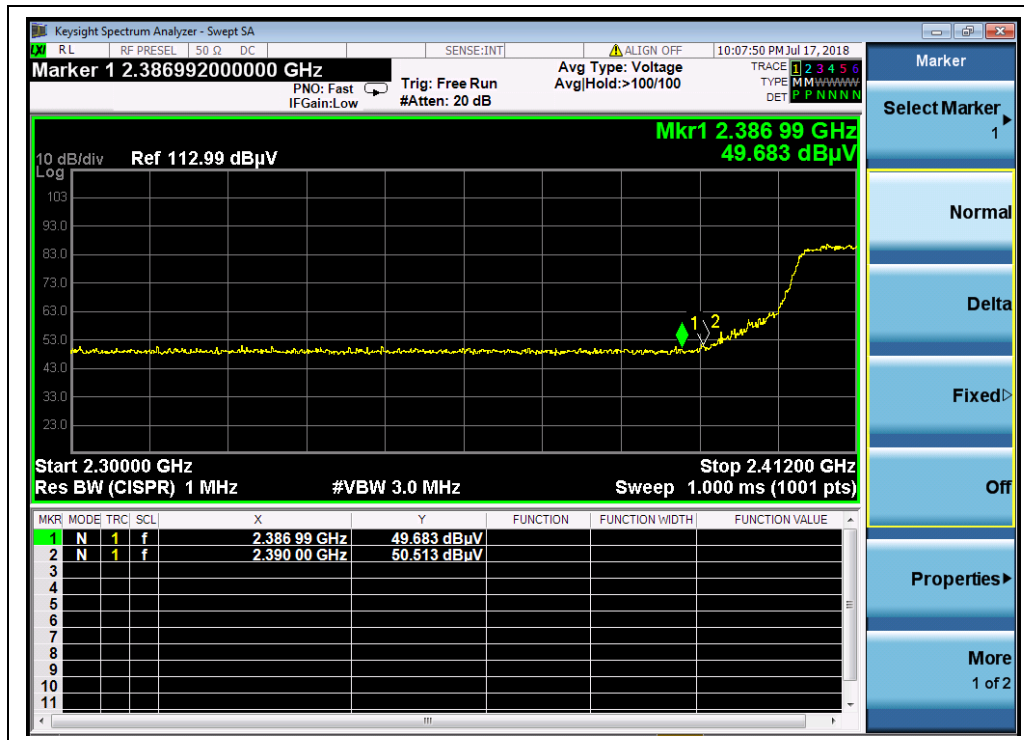


2.6.3.2 802.11g Test mode

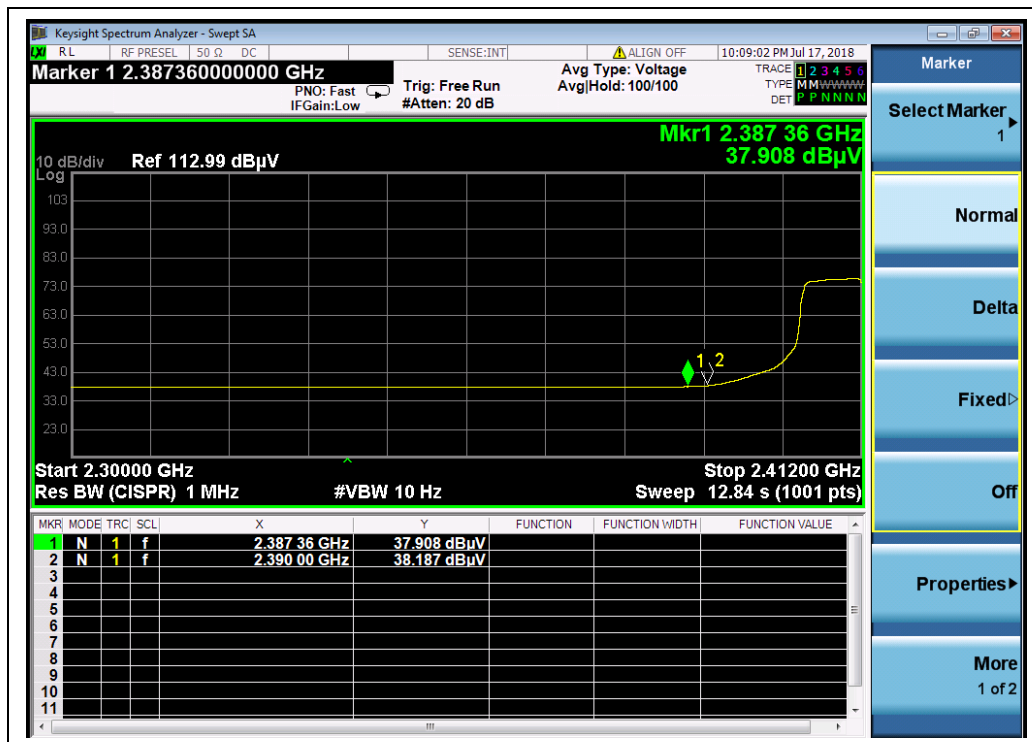
A. Test Verdict:

Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dBuV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBuV/m)	Limit (dBuV/m)	Verdict
		PK/ AV						
1	2386.99	PK	49.68	-33.63	32.56	48.61	74	Pass
1	2387.36	AV	37.91	-33.63	32.56	36.84	54	Pass
11	2485.24	PK	65.32	-33.18	32.50	64.64	74	Pass
11	2484.71	AV	45.26	-33.18	32.50	44.58	54	Pass

B. Test Plots:



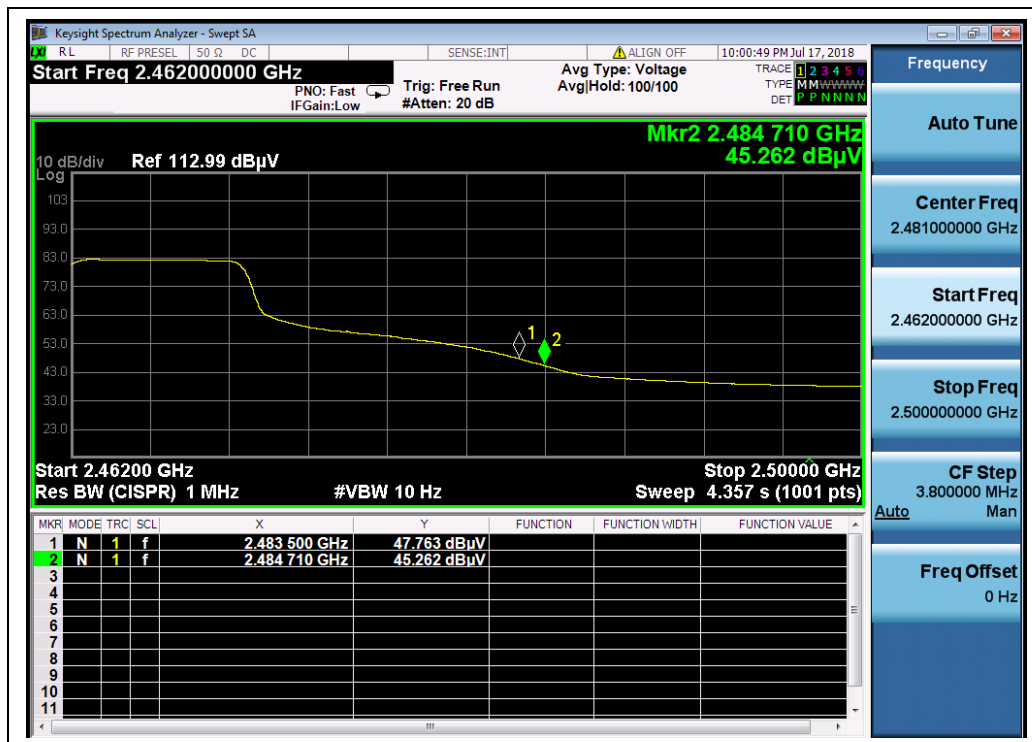
(Channel = 1 PEAK, 802.11g)



(Channel = 1 AVG, 802.11g)



(Channel = 11 PEAK, 802.11g)



(Channel = 11 AVG, 802.11g)

2.6.3.3 802.11n-20MHz Test mode

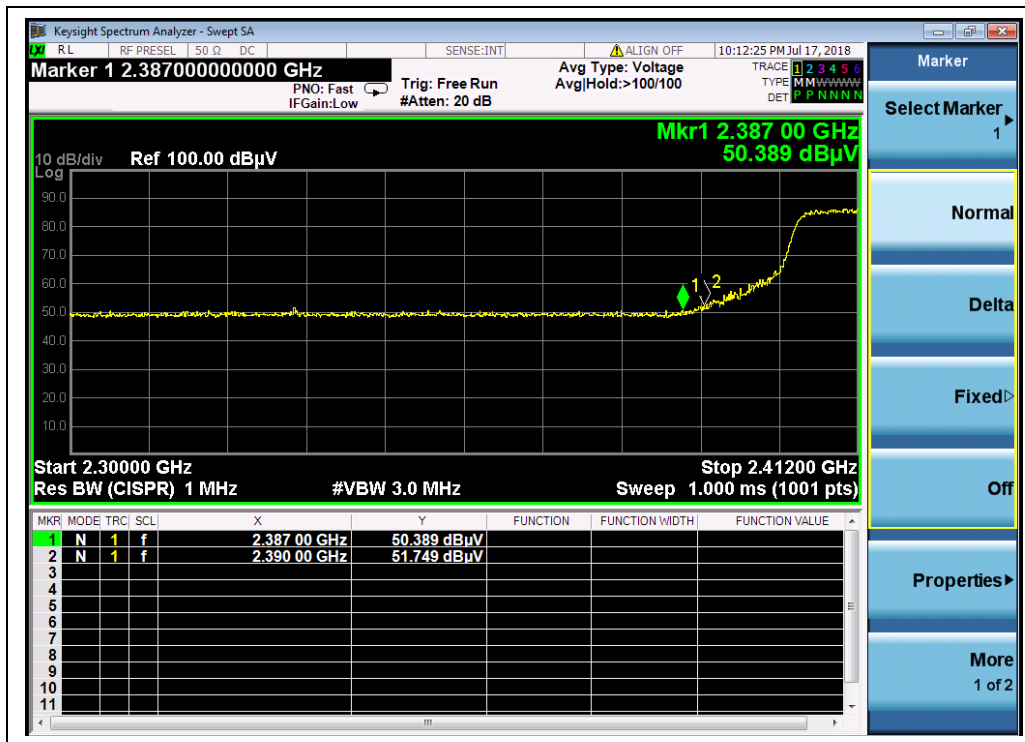
The lowest and highest channels are tested to verify the band edge emissions.

A. Test Verdict:

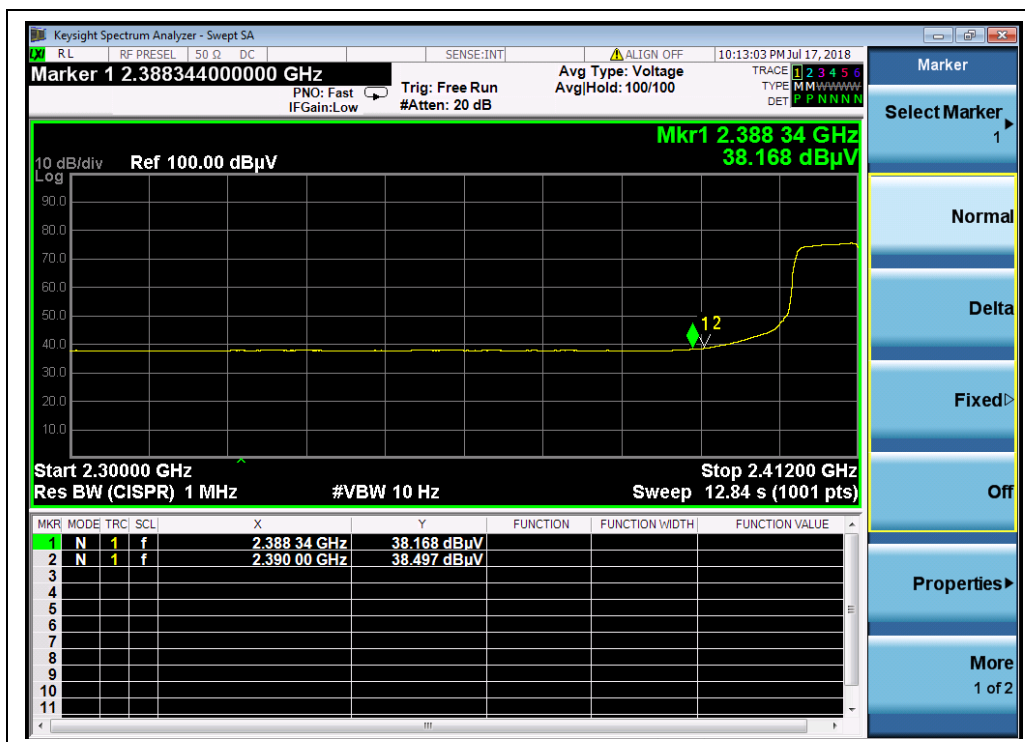
Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dBμV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
		PK/ AV						
1	2387.00	PK	50.39	-33.63	32.56	49.32	74	Pass
1	2388.34	AV	38.17	-33.63	32.56	37.10	54	Pass
11	2484.29	PK	63.74	-33.18	32.50	63.06	74	Pass
11	2484.36	AV	44.66	-33.18	32.50	43.98	54	Pass



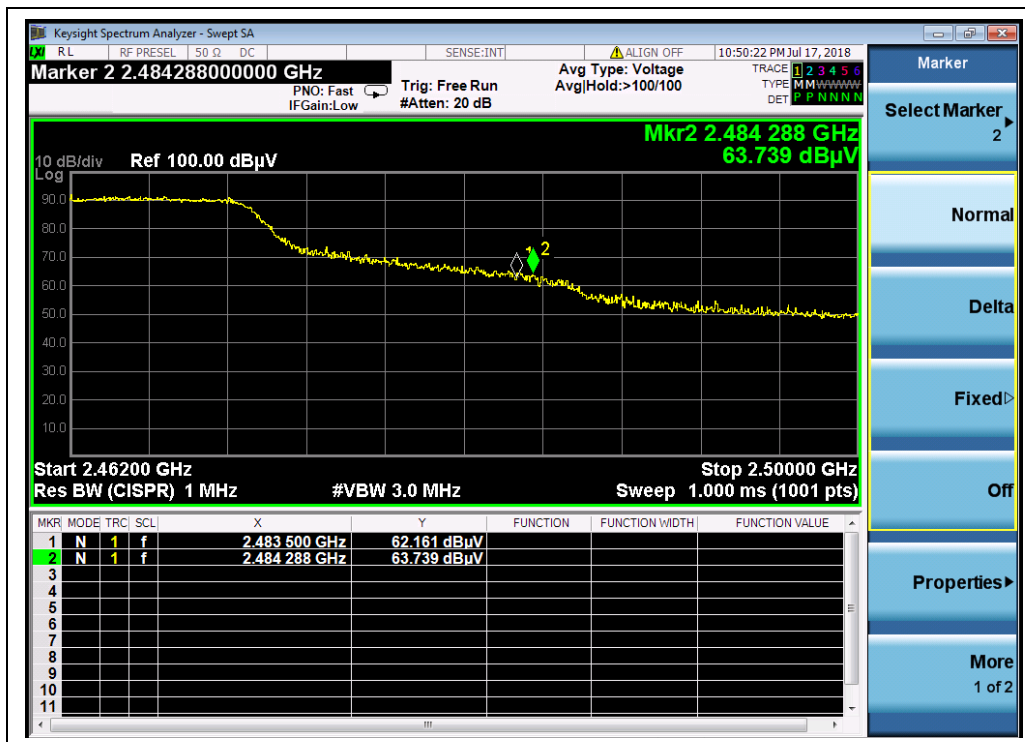
B. Test Plots:



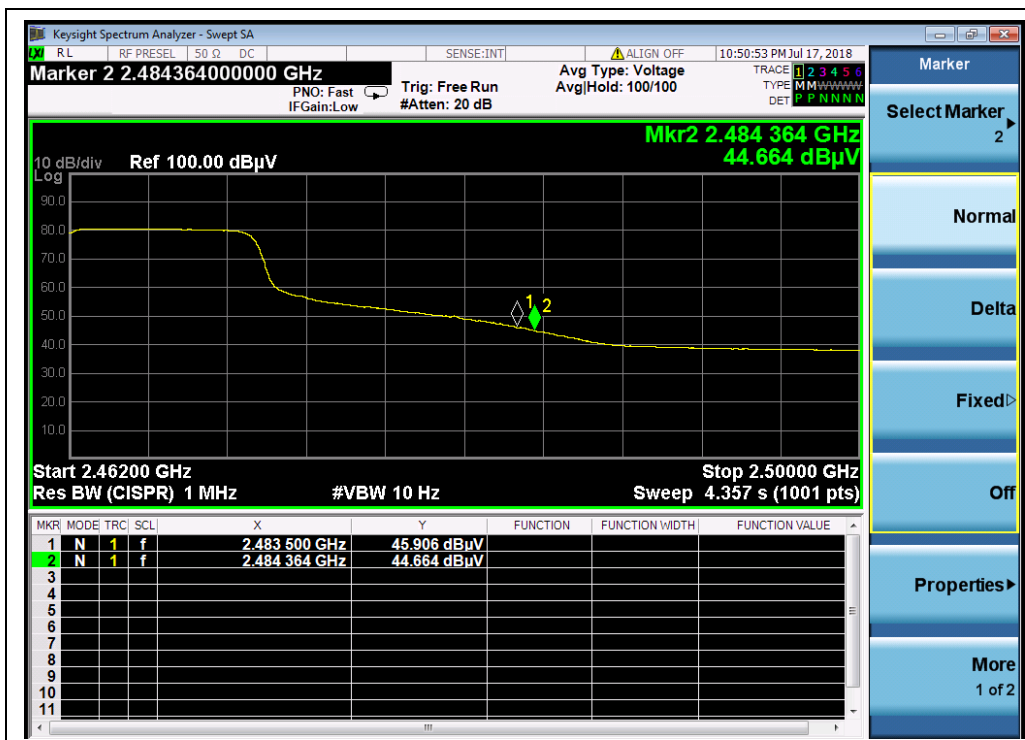
(Channel = 1 PEAK, 802.11n-20)



(Channel = 1 AVG, 802.11n-20)



(Channel = 11 PEAK, 802.11n-20)



(Channel = 11 AVG, 802.11n-20)



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 ($\mu\text{V/m}$)	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.

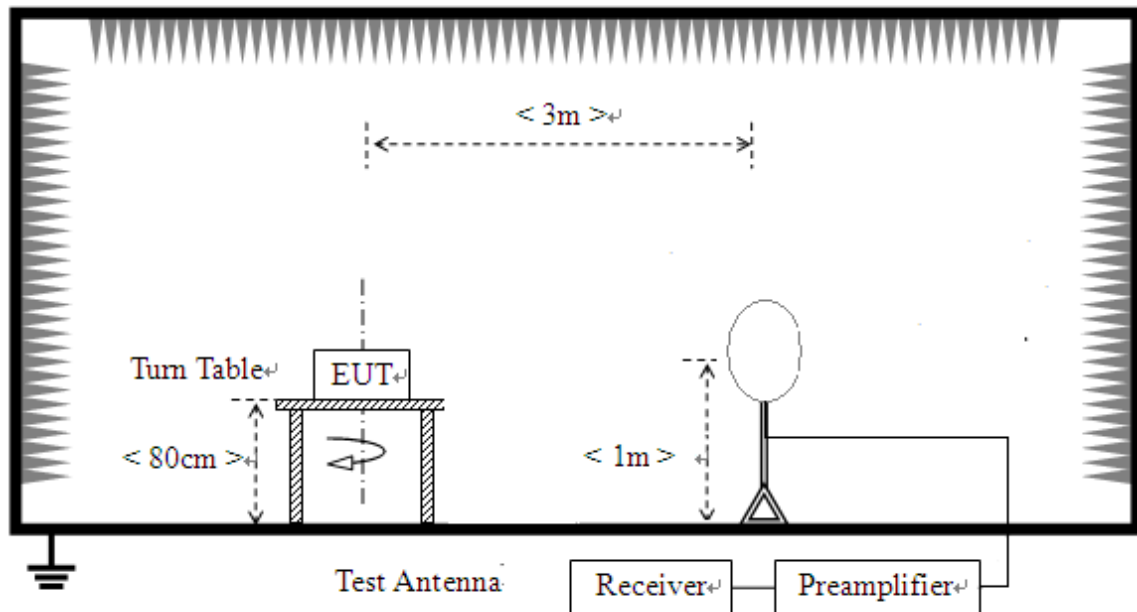
For above 1000MHz, limit field strength of harmonics: 54dBuV/m@3m (AV) and 74dBuV/m@3m (PK)

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)

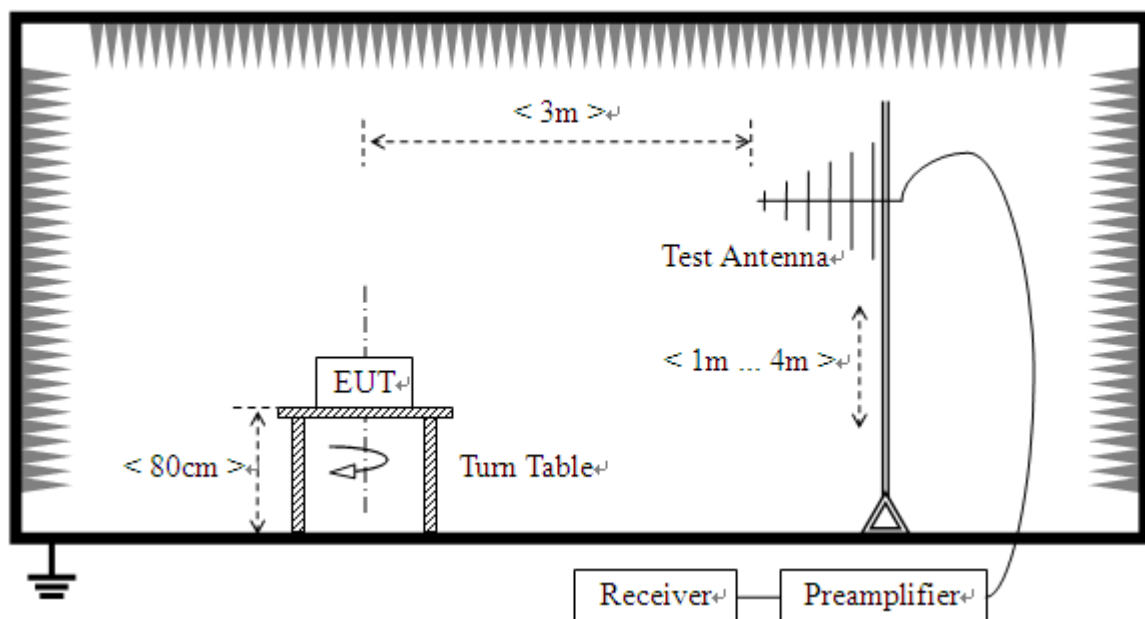
2.8.2. Test Description

A. Test Setup:

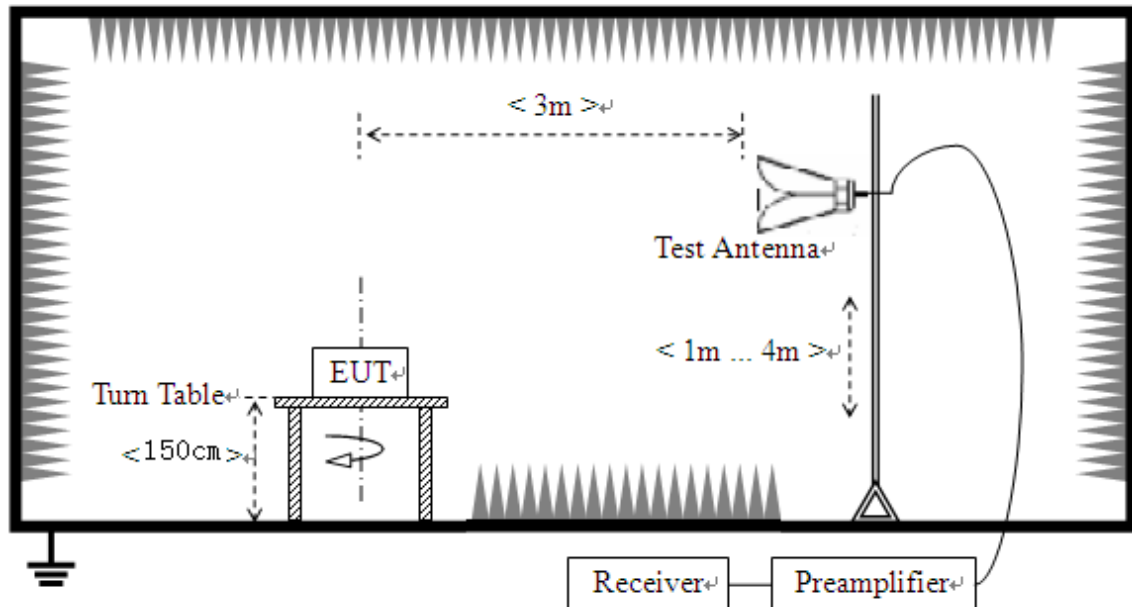
- 1) For radiated emissions from 9kHz to 30MHz



- 2) For radiated emissions from 30MHz to 1GHz



3) For radiated emissions above 1GHz



The RF absorbing material used on the reference ground plane and on the turntable have a maximum height (thickness) of 30 cm (12 in) and have a minimum-rated attenuation of 20 dB at all frequencies from 1 GHz to 18 GHz. Test site have a minimum area of the ground plane covered with RF absorbing material as specified in Figure 6 of ANSI C63.4: 2014.

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

For the radiated emission test above 1GHz:

Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane. 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. Place the test antenna at 3m away from area of the EUT, while keeping the test antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The test antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final test antenna elevation shall be that which maximizes the emissions. The test antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane. The emission levels at both horizontal and vertical polarizations should be tested.

A. Equipments List:

Please refer ANNEX A(1.5).

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:

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

A_T : Total correction Factor except Antenna

U_R : Receiver Reading

G_{preamp} : Preamplifier Gain

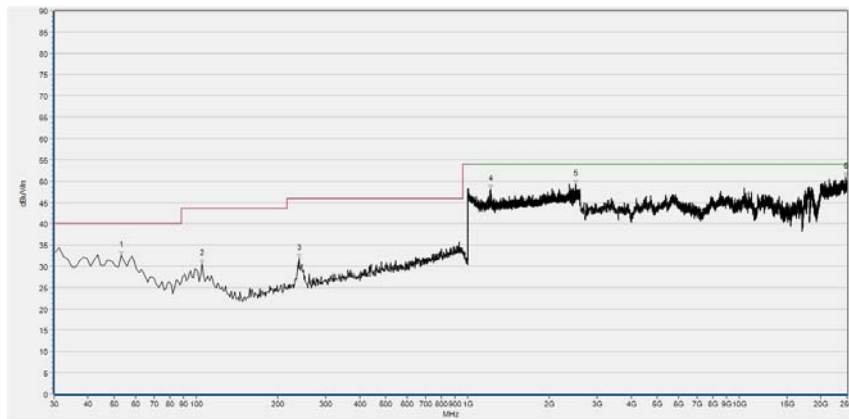
A_{Factor} : Antenna Factor at 3m

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

Note1: 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.

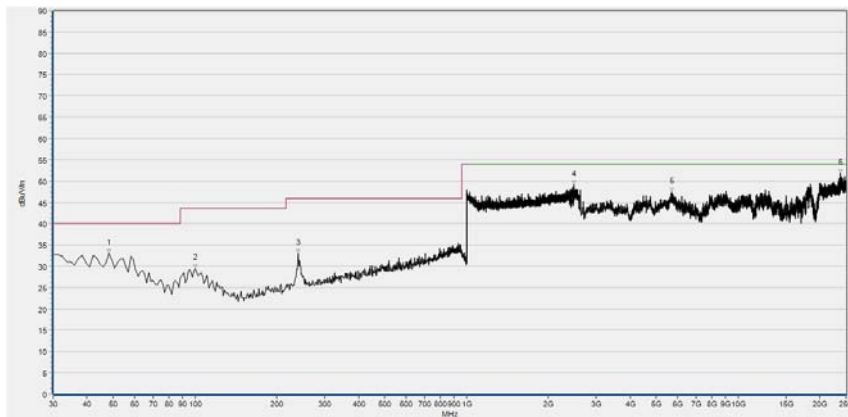
Note2: For the frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

Note3: For the frequency, which started from 25GHz to 40GHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

**2.8.3.1 802.11b Test mode****Plots for Channel = 1**

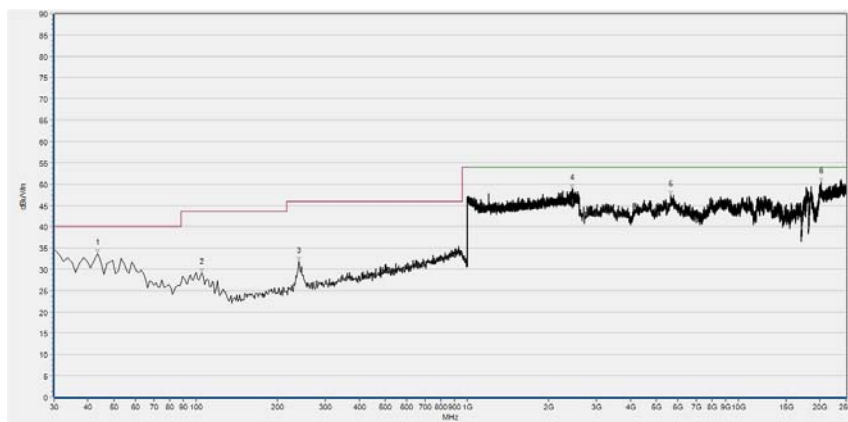
Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
53.066	32.51	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
105.269	30.47	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
240.025	31.83	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1218.968	48.11	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2493.717	49.30	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
24625.241	50.87	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)



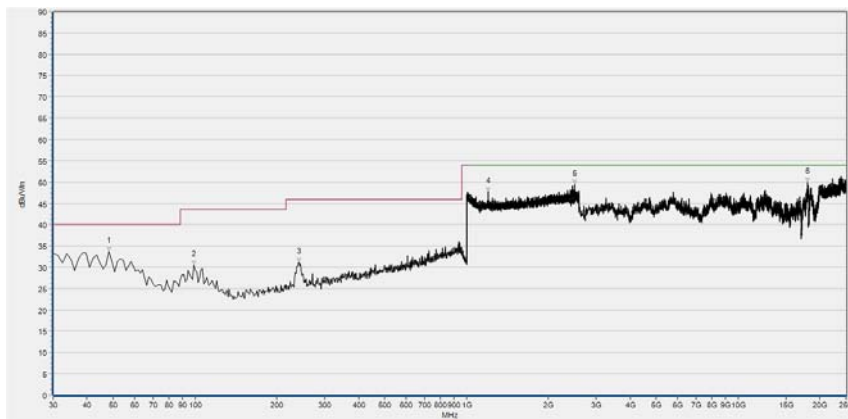
Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
48.210	33.02	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
100.413	29.55	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
240.025	33.02	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2489.236	49.17	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5703.983	47.45	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
23818.694	51.72	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 6

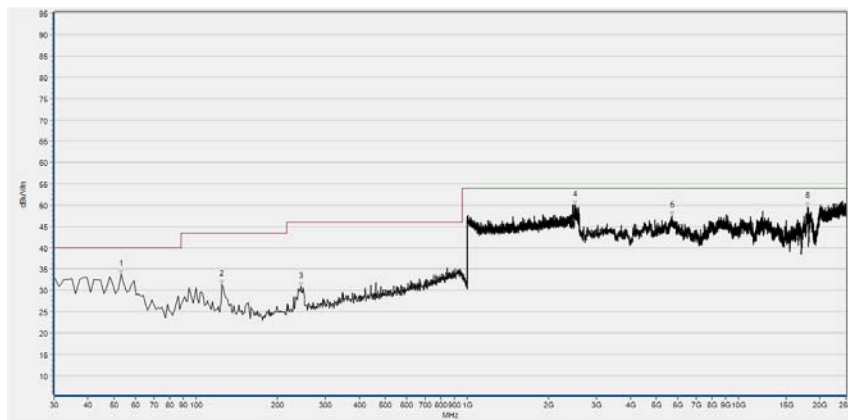
Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
43.354	33.70	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
105.269	29.18	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
240.025	31.78	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2446.339	48.86	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5642.881	47.47	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
20177.014	50.37	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)



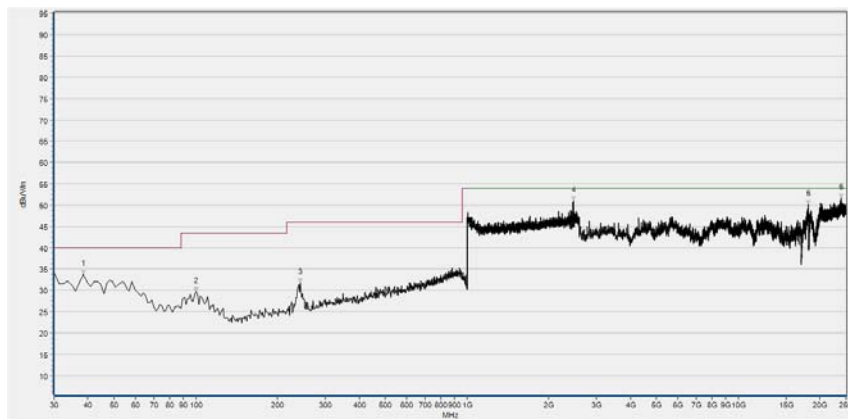
Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
48.210	33.76	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
99.199	30.43	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
241.239	31.21	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1199.760	47.74	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2496.279	49.37	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
17985.488	49.90	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 11

Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
53.066	33.67	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
124.693	31.33	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
243.667	30.81	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2503.321	49.95	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5683.615	47.54	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
18001.782	49.70	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

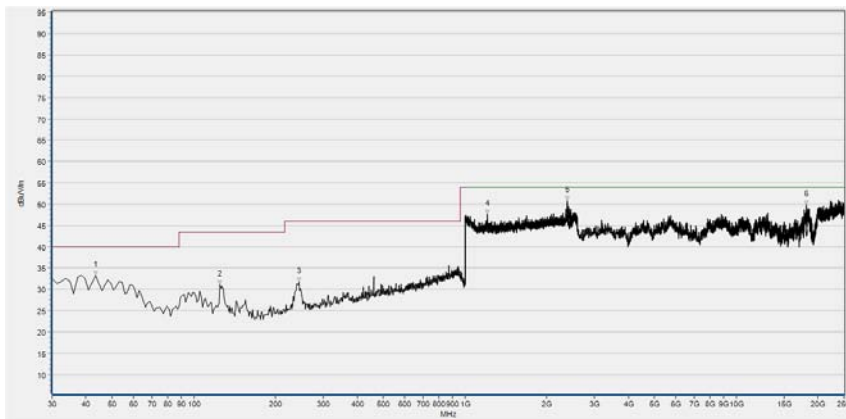


Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
38.498	33.75	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
100.413	29.78	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
242.453	31.63	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2464.906	51.01	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
18136.207	50.23	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
24026.441	51.64	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

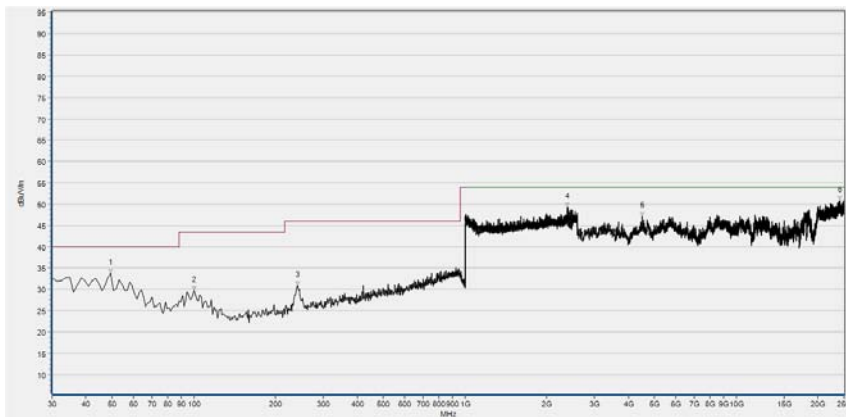
**2.8.3.2 802.11g Test mode**

Plots for Channel = 1



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
43.354	33.14	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
124.693	30.98	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
243.667	31.71	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1210.644	47.71	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2381.673	50.88	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
18164.721	49.77	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

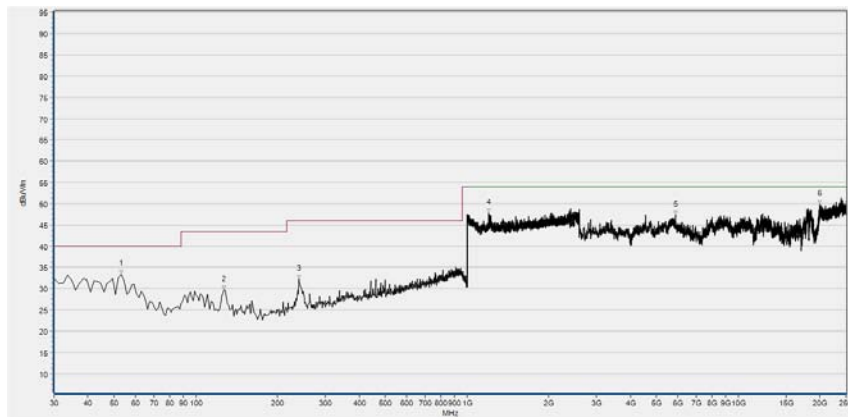


Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
49.424	33.77	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
100.413	29.78	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
241.239	30.84	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2389.356	49.38	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
4490.089	47.16	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
24083.470	50.84	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

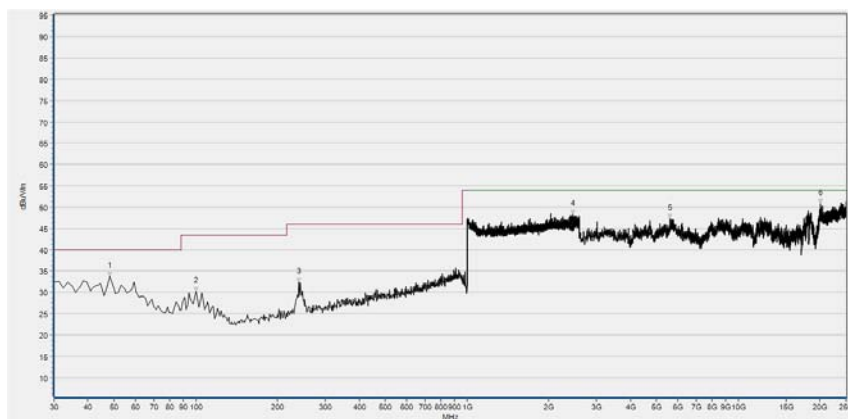


Plot for Channel = 6



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
53.066	33.36	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
127.121	29.70	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
240.025	32.16	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1201.040	47.85	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5858.774	47.25	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
19977.414	49.81	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

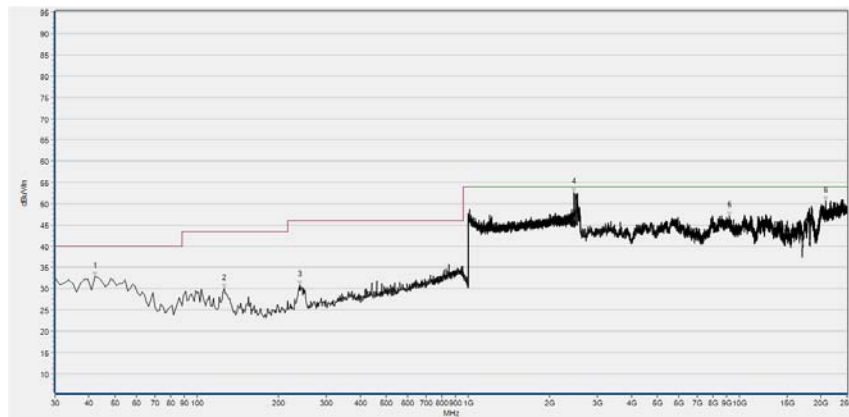
(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
48.210	33.66	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
100.413	30.15	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
240.025	32.35	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2457.863	48.24	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5602.146	47.24	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
20095.545	50.83	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

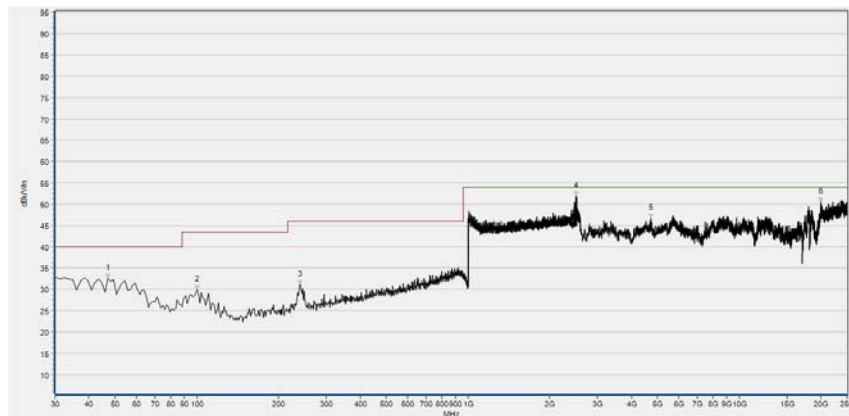
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 11



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
42.140	32.83	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
125.907	30.01	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
240.025	30.82	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2462.345	52.66	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
9174.577	47.18	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
20906.165	50.70	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

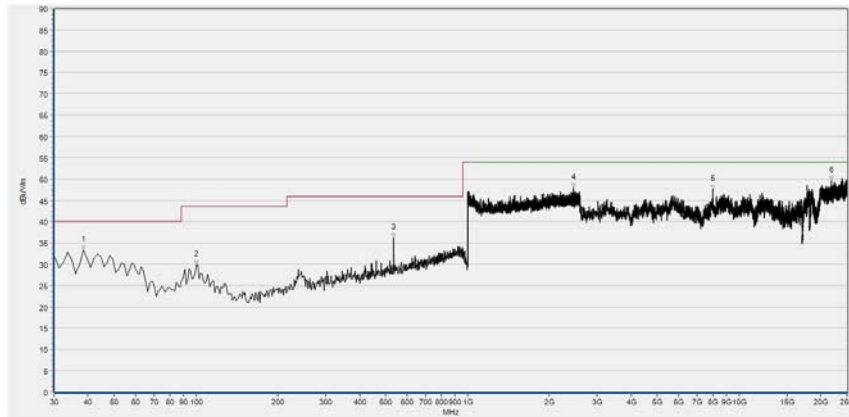


Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
46.996	32.59	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
100.413	29.88	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
240.025	30.98	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2507.803	51.78	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
4722.277	46.66	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
19977.414	50.52	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

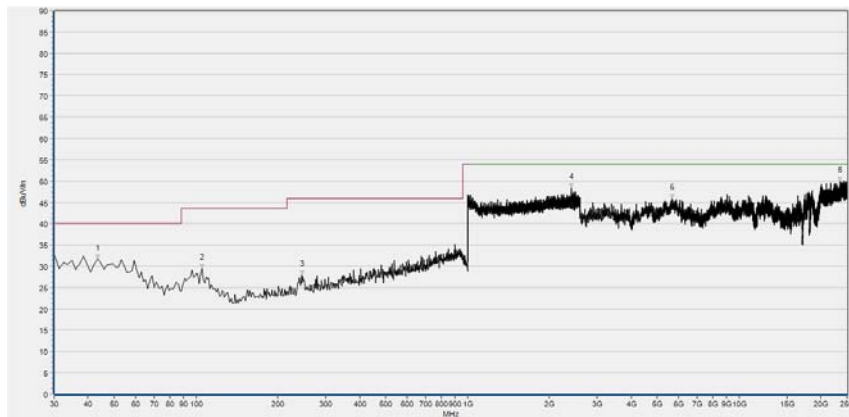
**2.8.3.3 802.11n-20MHz Test mode**

Plots for Channel = 1



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
38.498	33.28	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
100.413	29.80	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
533.817	36.13	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2455.302	47.88	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
7985.125	47.61	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
21879.724	49.61	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

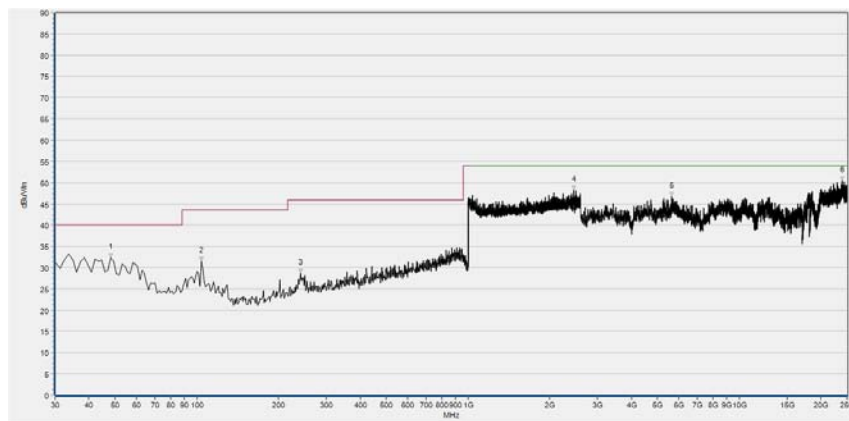
(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
43.354	31.66	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
105.269	29.43	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
244.881	27.92	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2404.082	48.50	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5655.101	45.96	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
23533.552	49.88	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

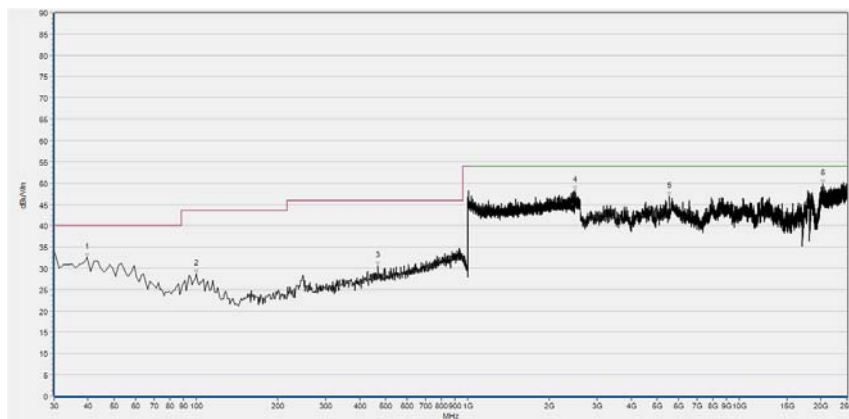
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 6



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
48.210	32.28	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
104.055	31.59	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
241.239	28.73	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2453.381	48.23	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5642.881	46.71	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
23985.706	50.48	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

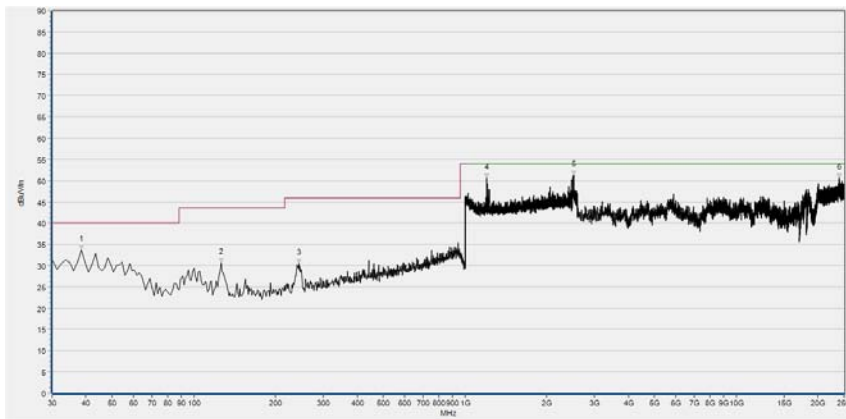
(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
39.712	32.59	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
100.413	28.71	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
467.046	30.43	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
2489.236	48.30	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5541.044	46.94	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
20360.320	49.81	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

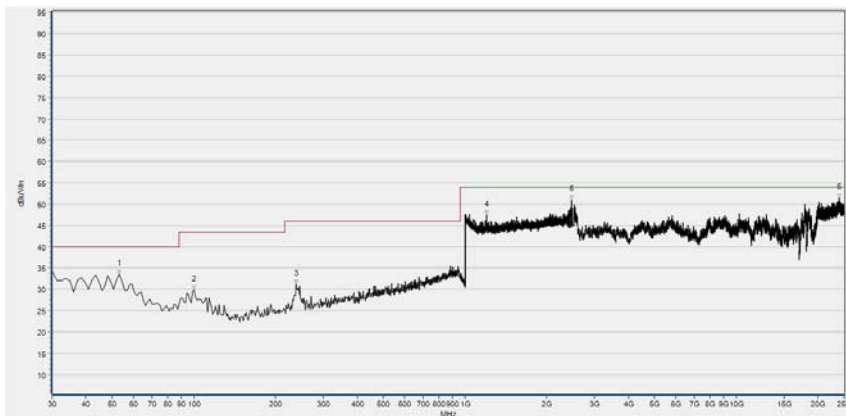
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 11



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
38.498	33.69	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
125.907	30.71	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
243.667	30.44	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1199.760	50.56	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2509.084	51.22	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
23928.678	50.54	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
53.066	33.60	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
100.413	29.87	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
237.597	31.16	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1199.120	47.51	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2464.266	50.97	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
23896.090	51.42	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

Annex A Test Uncertainty

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

Test items	Uncertainty
Peak Output Power	$\pm 2.22\text{dB}$
Power spectral density (PSD)	$\pm 2.22\text{dB}$
Bandwidth	$\pm 5\%$
Conducted Spurious Emission	$\pm 2.77\text{ dB}$
Restricted Frequency Bands	$\pm 5\%$
Radiated Emission	$\pm 2.95\text{dB}$
Conducted Emission	$\pm 2.44\text{dB}$

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



Annex B Testing Laboratory Information

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

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

3. Facilities and Accreditations

All measurement facilities used to collect the measurement data are located at FL.3, 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 designation number is CN1192, the test firm registration number is 226174.



4. Test Equipments Utilized

4.1 Conducted Test Equipments

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Cal. Due
Power Splitter	NW521	1506A	Weinschel	2018.04.17	2019.04.16
Attenuator 1	(N/A.)	10dB	Resnet	2018.04.17	2019.04.16
Attenuator 2	(N/A.)	3dB	Resnet	2018.04.17	2019.04.16
EXA Signal Analyzer	MY53470836	N9010A	Agilent	2017.12.03	2018.12.02
USB Wideband Power Sensor	MY54210011	U2021XA	Agilent	2018.04.17	2019.04.16
RF cable (30MHz-26GHz)	CB01	RF01	Morlab	N/A	N/A
Coaxial cable	CB02	RF02	Morlab	N/A	N/A
SMA connector	CN01	RF03	HUBER-SUHNER	N/A	N/A

4.2 Conducted Emission Test Equipments

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Cal. Due
Receiver	MY56400093	N9038A	KEYSIGHT	2018.05.08	2019.05.07
LISN	812744	NSLK 8127	Schwarzbeck	2018.05.08	2019.05.07
Pulse Limiter (20dB)	9391	VTSD 9561-D	Schwarzbeck	2018.05.08	2019.05.07
Coaxial cable(BNC) (30MHz-26GHz)	CB01	EMC01	Morlab	N/A	N/A

4.3 Auxiliary Test Equipment

Equipment Name	Model No.	Brand Name	Manufacturer	Cal.Date	Cal.Due Date
Computer	T430i	Think Pad	Lenovo	N/A	N/A

4.4 List of Software Used

Description	Manufacturer	Software Version
Test system	Tonscend	V2.6
Power Panel	Agilent	V3.8
MORLAB EMCR V1.2	MORLAB	V 1.0

**4.5 Radiated Test Equipments**

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Cal.Due Date
Receiver	MY54130016	N9038A	Agilent	2018.05.08	2019.05.07
Test Antenna - Bi-Log	9163-519	VULB 9163	Schwarzbeck	2018.05.08	2019.05.07
Test Antenna - Horn	9170C-531	BBHA9170	Schwarzbeck	2017.09.13	2018.09.12
Test Antenna - Loop	1519-022	FMZB1519	Schwarzbeck	2018.03.03	2019.03.02
Test Antenna - Horn	01774	BBHA 9120D	Schwarzbeck	2017.09.13	2018.09.12
Coaxial cable (N male) (9KHz-30MHz)	CB04	EMC04	Morlab	N/A	N/A
Coaxial cable (N male) (30MHz-26GHz)	CB02	EMC02	Morlab	N/A	N/A
Coaxial cable(N male) (30MHz-26GHz)	CB03	EMC03	Morlab	N/A	N/A
1-18GHz pre-Amplifier	MA02	TS-PR18	Rohde& Schwarz	2018.05.08	2019.05.07
18-26.5GHz pre-Amplifier	MA03	TS-PR18	Rohde& Schwarz	2018.05.08	2019.05.07
Anechoic Chamber	N/A	9m*6m*6m	CRT	2017.11.19	2020.11.18

_____ END OF REPORT _____