REPORT No. : SZ19070441W03

TEST REPORT

APPLICANT	:	Anker Innovations Limited
PRODUCT NAME	:	HomeBase 2
MODEL NAME	:	T8010
BRAND NAME	:	eufy SECURITY
FCC ID	:	2AOKB-T8010
STANDARD(S)	:	47 CFR Part 15 Subpart C
RECEIPT DATE	:	2019-08-16
TEST DATE	:	2019-08-28 to 2019-09-08
ISSUE DATE	:	2019-09-18

Edited by: Peng Mi

Peng Mi(Rapporteur)

Approved by:

Peng Huarui (Supervisor)

MORLAB

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DIRECTORY

Change History		
Version	**Date**	**Reason for change**
1.0 2019-09-18		First edition

1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Anker Innovations Limited
Applicant Address:	Room 1318-19, Hollywood Plaza,610 Nathan Road, Mongkok, Kowloon, Hong Kong
Manufacturer:	Anker Innovations Limited
Manufacturer Address:	Room 1318-19, Hollywood Plaza,610 Nathan Road, Mongkok, Kowloon, Hong Kong

1.2. Equipment Under Test (EUT) Description

Product Name:	HomeBase 2	
Serial No:	(N/A, marked #1 by test site)	
Hardware Version:	V3	
Software Version:	V3.0.0.3	
Equipment type:	WLAN2.4G	
Modulation Type:	DSSS, OFDM	
Operating Frequency Range:	802.11b/g/ n(HT20): 2.412GHz - 2.462GHz	
Antenna Type:	PCB Antenna	
Antenna Gain:	Ant 0: 0 dBi; Ant 1: 0 dBi	
Directional Gain:	3.01 dBi Note 3	
Accessory Information:	AC Adapter	
	Brand Name:	N/A
	Model No.:	ASSA67A-120200
	Serial No.:	(N/A, marked #1 by test site)
	Rated Voltage:	12V⎓2A
	Charge Limit:	100-240V ～50/60Hz 0.8A

Note 1: We use the dedicated software to control the EUT continuous transmission.

Note 2: The EUT has two antennas, all modulation modes support SISO function.

Modulation Mode:	TX Function	Relationship between the two output signals
802.11b 1TX		Uncorrelated
802.11g 1TX		Uncorrelated
802.11n 1TX		Uncorrelated

Note 3: According to KDB 662911 D01, the directional gain = G_{ANT} + 10log(N_{ANT}) dBi, where G_{ANT} is the maximum antenna gain in dBi, N_{ANT} is the number of outputs.

Note 4: For conducted test item Peak Power and Power spectral density of each modulation mode, we recorded the test result of two antennas separately, for other conducted test items both of the two antennas were tested separately, we only recorded the worst test result(Ant 0) in this report.

Note 5: All radiation test items for all modulation modes operate at SISO mode, both of the two antennas were tested separately, we only recorded the worst test result (Ant 0) in this report.

Note 6: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

1.3. The channel number and frequency

Test Mode	Channel	Frequency (MHz)	Channel	Frequency (MHz)
802.11b/g/ n(HT20)	**1**	**2412**	8 2447	
	2 2417		9	2452
	3 2422		10	2457
	4 2427		**11**	**2462**
	5 2432			
	6	**2437**		
	7 2442			

Note1: The Lowest Channel (1), Middle Channel (6) and Highest Channel (11) was selected test for 802.11b/g/n(HT20) mode;

1.4. Test Standards and Results

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

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

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

No.	Section	Description	Test Date	Test Engineer	Result	Method determination /Remark
1	15.203	Antenna Requirement	N/A N	/A	PASS	No deviation
2	N/A	Duty Cycle Of Test Signal	Aug 28, 2019	Zhou Chuang	PASS	No deviation
3	15.247(b)	Maximum Peak and Average Conducted Output Power	Aug 28, 2019	Zhou Chuang	PASS	No deviation
4	15.247(a)	Bandwidth	Aug 28, 2019	Zhou Chuang	PASS	No deviation
5	15.247(d)	Conducted Spurious Emission and Band Edge	Aug 28, 2019	Zhou Chuang	PASS	No deviation
6	15.247(e)	Power spectral density (PSD)	Aug 28, 2019	Zhou Chuang	PASS	No deviation
7	15.207	Conducted Emission	Aug 29, 2019	Lin Jiayong	PASS	No deviation
8	15.247(d)	Restricted Frequency Bands	Sep 11, 2019	Gao Jianrou	PASS	No deviation
9	15.209, 15.247(d)	Radiated Emission	Sep 11, 2019	Gao Jianrou	PASS	No deviation

Note1: The tests were performed according to the method of measurements prescribed in ANSIC63.10-2013, KDB558074 D01 v05r02 and KDB662911 D01 v02r01.

Note2: The path loss during the RF test is calibrated to correct the results by the offset setting in the test equipments. The ref offset 12dB contains two parts that cable loss 2dB and Attenuator 10dB.

Note 3: Additions to, deviation, or exclusions from the method should be judged in the "method

determination" column of add, deviate or exclude from the specific method should be explained in the "Remark" of the above table.

1.5. Environmental Conditions

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

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

2. 47 CFR Part 15C Requirements

2.1. Antenna requirement

2.1.1. Applicable Standard

According to FCC 15.203, an intentional radiator shall be designed to ensure that no antenna other than that f urnished by the respo nsible party shall be u sed with th e device. The use of a permanently attached a ntenna or o f an antenn a that uses a unique coupling to t he intention al 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.

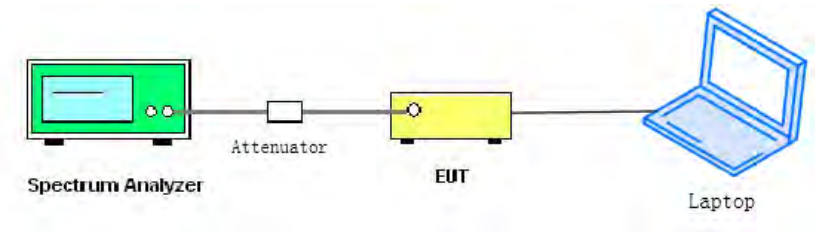
2.2. Duty Cycle Of Test Signal

2.2.1. Requirement

Preferably, all measurements of maximum conducted (average) output power will be performed with the EUT transmitting continuously (i.e., with a duty cycle of greater than or equal to 98%). When continuous operation cannot be realized, then the use of sweep triggering/signal gating techniques can be used to ensure that measurements are made only during transmissions at the maximum power control level. Such sweep triggering/signal gating techniques will require knowledge of the minimum transmission duration (T) over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation. Sweep triggering/signal gating techniques can then be used if the measurement/sweep time of the analyzer can be set such that it does not exceed T at any time that data are being acquired (i.e., no transmitter OFF-time is to be considered).
When continuous transmission cannot be achieved and sweep triggering/signal gating cannot be implemented, alternative procedures are provided that can be used to measure the average power; however, they will require an additional measurement of the transmitter duty cycle (D). Within this subclause, the duty cycle refers to the fraction of time over which the transmitter is ON and is transmitting at its maximum power control level. The duty cycle is considered to be constant if variations are less than ±2%; otherwise, the duty cycle is considered to be nonconstant.

2.2.2. Test Description

A. Test Set:



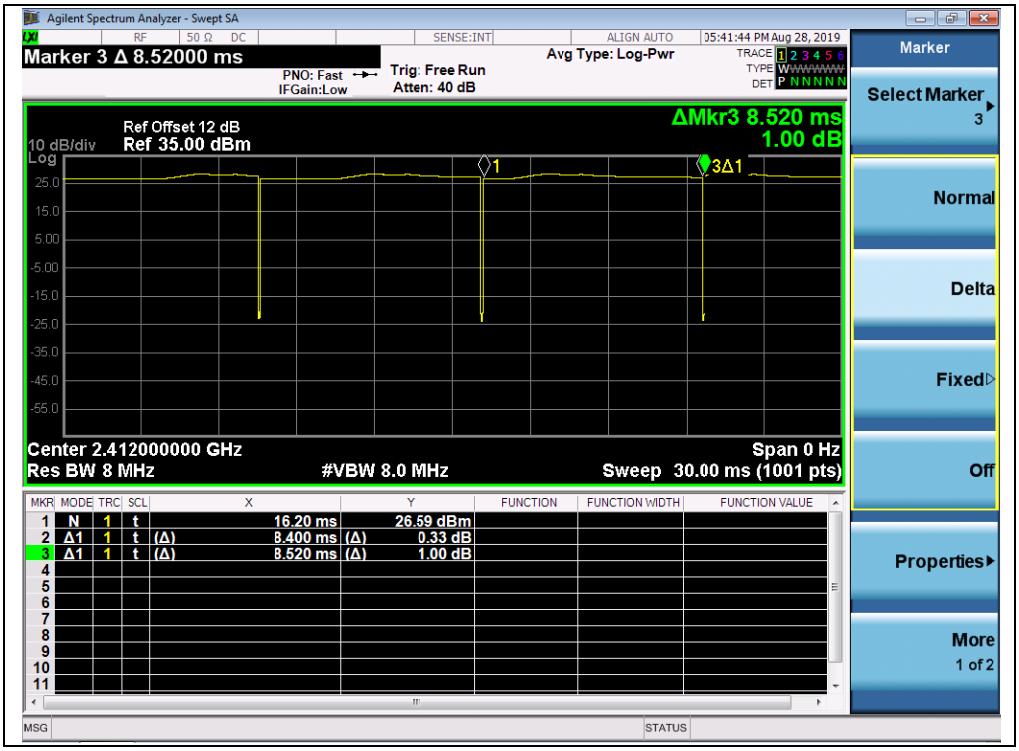
ANSI C63.10 2013 Clause 11.6 was used in order to prove compliance.

2.2.3. Test Result

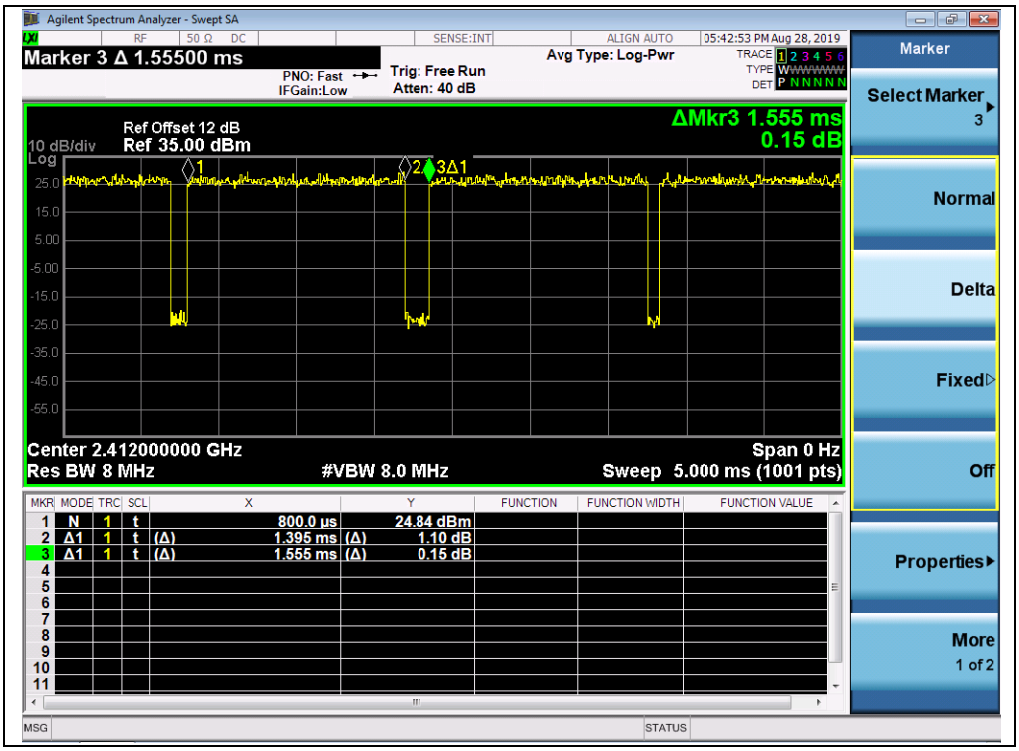
A. Test Verdict:

Test Mode	Duty Cycle (%) (D)	Duty Factor (10*lg[1/D])
802.11b	98.59	0.06
802.11g	89.71	0.47
802.11n(HT20) 97.39		0.11

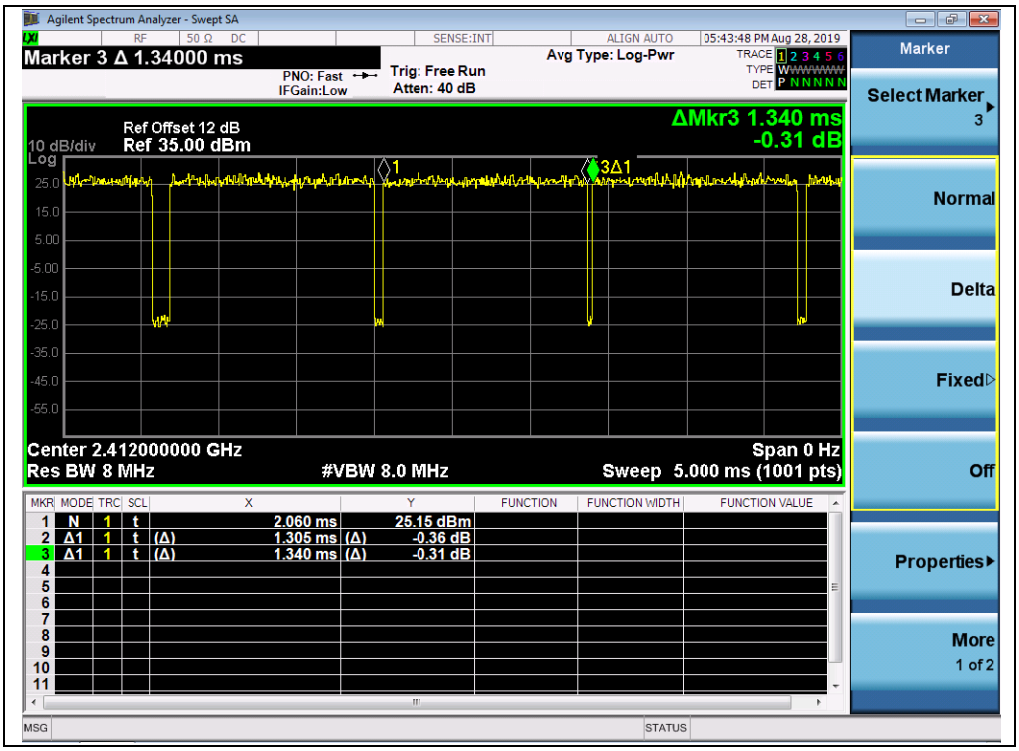
B. Test Plots



(Channel 1, 2412MHz, 802.11b)



(Channel 1, 2412MHz, 802.11g)



(Channel 1, 2412MHz, 802.11 n(HT20))

2.3. Maximum Peak and Average Conducted Output Power

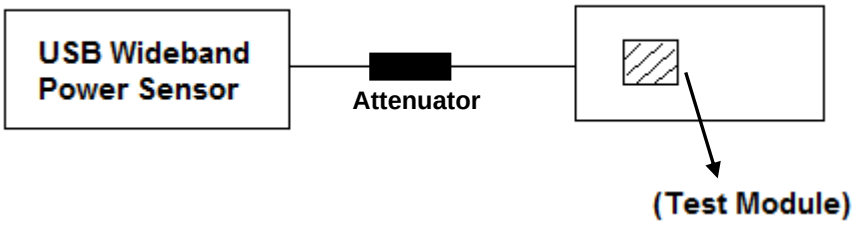
2.3.1. Requirement

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.

2.3.2. Test Description

The measured output power was calculated by the reading of the USB Wideband Power Sens or 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.

2.3.3. Test Result

Maximum Peak Conducted Output Power

802.11b Test Mode

Channel	Frequency (MHz)	Measured Peak Power				Limit (dBm)		Verdict
		ANT 0		ANT 1				
		dBm W		dBm	W	dBm	W	
1	2412	21.95	0.157	19.08	0.081			PASS
6	2437	22.28	0.169	19.35	0.086	30 1		PASS
11	2462	21.77	0.150	19.83	0.096			PASS

802.11g Test mode

Channel	Frequency (MHz)	Measured Peak Power				Limit (dBm)		Verdict
		ANT 0		ANT 1				
		dBm W		dBm	W	dBm	W	
1	2412	28.47	0.703	28.12	0.649			PASS
6	2437	27.41	0.551	28.19	0.659	30 1		PASS
11	2462	27.62	0.578	**28.64**	**0.731**			PASS

802.11n(HT20) Test mode

Channel	Frequency (MHz)	Measured Peak Power				Limit (dBm)		Verdict
		ANT 0		ANT 1				
		dBm W		dBm	W	dBm	W	
1 2412		**28.86**	**0.769**	28.54	0.714			PASS
6	2437	28.65	0.733	28.56	0.718	30 1		PASS
11	2462	28.52	0.711	28.27	0.671			PASS

Maximum Average Conducted Output Power

802.11b Test Mode

Frequency (MHz)	Average Power							Limit		Verdict
	Measured Duty		Factor	Duty factor Calculated						
	ANT0	ANT1		ANT0		ANT1				
	dBm	dBm		dBm	W	dBm	W	dBm	W	
2402	20.02	17.12	0.06	**20.08**	**0.102**	17.18	0.052	30	1	PASS
2440	19.93	17.45		19.99	0.100	17.51	0.056			PASS
2480	19.59	17.78		19.65	0.092	17.84	0.061			PASS

802.11g Test Mode

Frequency (MHz)	Average Power							Limit		Verdict
	Measured Duty		Factor	Duty factor Calculated						
	ANT0	ANT1		ANT0		ANT1				
	dBm	dBm		dBm	W	dBm	W	dBm	W	
2402	17.97	18.03	0.47	18.44	0.070	18.50	0.071	30	1	PASS
2440	17.62	17.96		18.09	0.064	18.43	0.070			PASS
2480	16.44	18.55		16.91	0.049	19.02	0.080			PASS

802.11 n(HT20) Test Mode

Frequency (MHz)	Average Power							Limit		Verdict
	Measured Duty		Factor	Duty factor Calculated						
	ANT0	ANT1		ANT0		ANT1				
	dBm	dBm		dBm	W	dBm	W	dBm	W	
2402	18.09	18.11	0.11	18.20	0.066	18.22	18.22	30	1	PASS
2440	17.47	18.19		17.58	0.057	18.30	18.30			PASS
2480	17.06	18.60		17.17	0.052	**18.71**	**18.71**			PASS

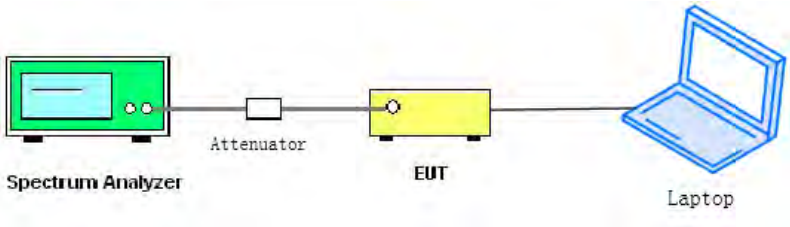
2.4. Bandwidth

2.4.1. 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.

2.4.2. 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.

2.4.3. Test procedure

KDB 558074 Section 8.2 was used in order to prove compliance.

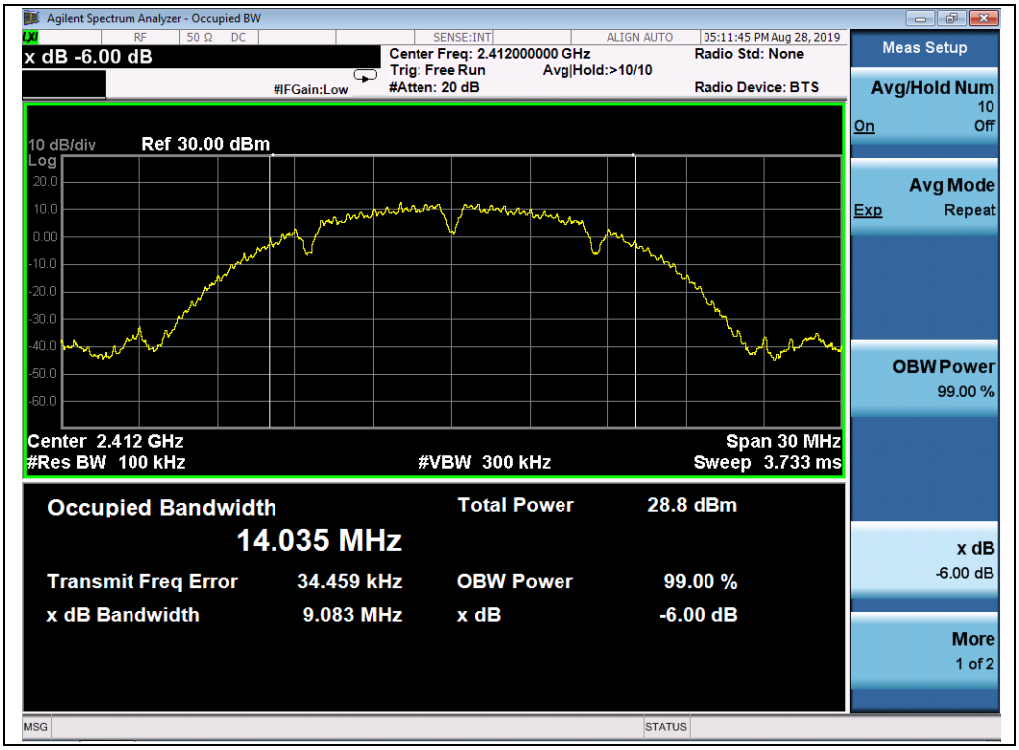
2.4.4. Test Result

802.11b Test mode

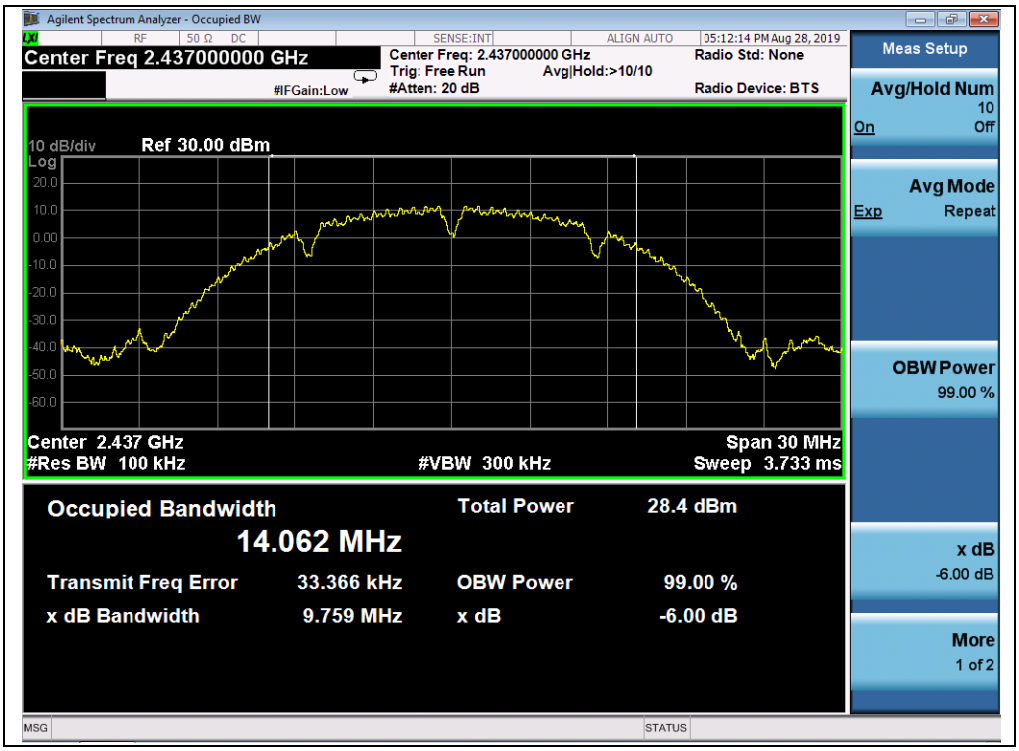
A. Test Verdict:

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limits(kHz)	Result
1	2412	9.083	≥500	PASS
6	2437	9.759	≥500	PASS
11	2462	9.759	≥500	PASS

B. Test Plots



(C hannel 1, 802.11b)



(Channel 6, 802.11b)

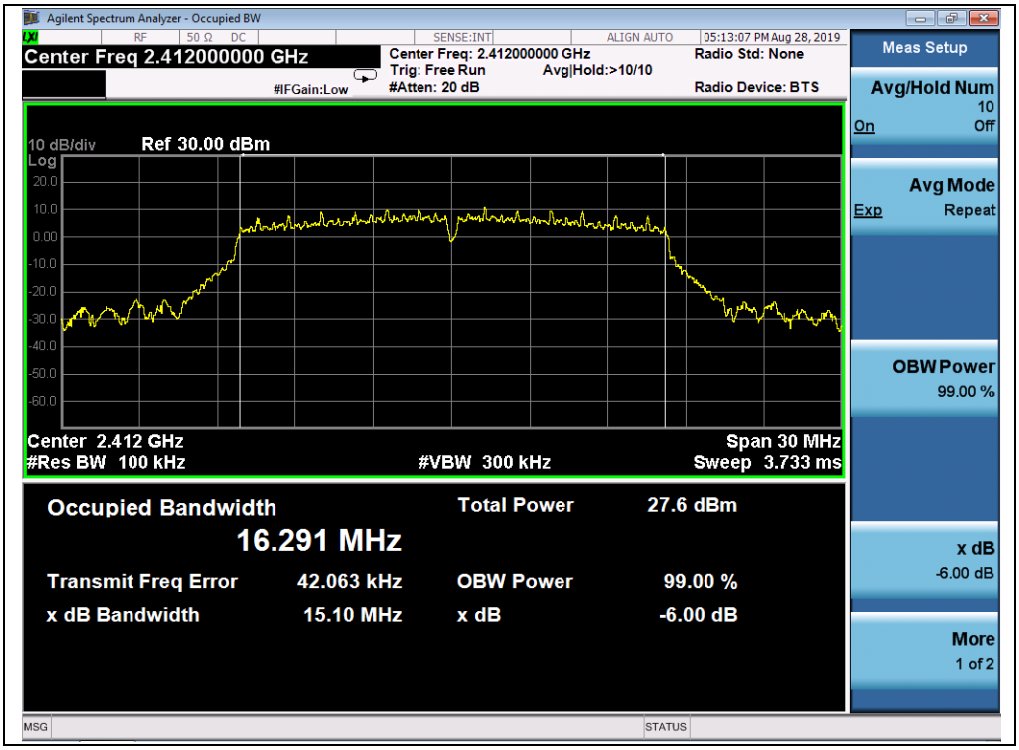
(Channel 11, 802.11b)

802.11g Test mode

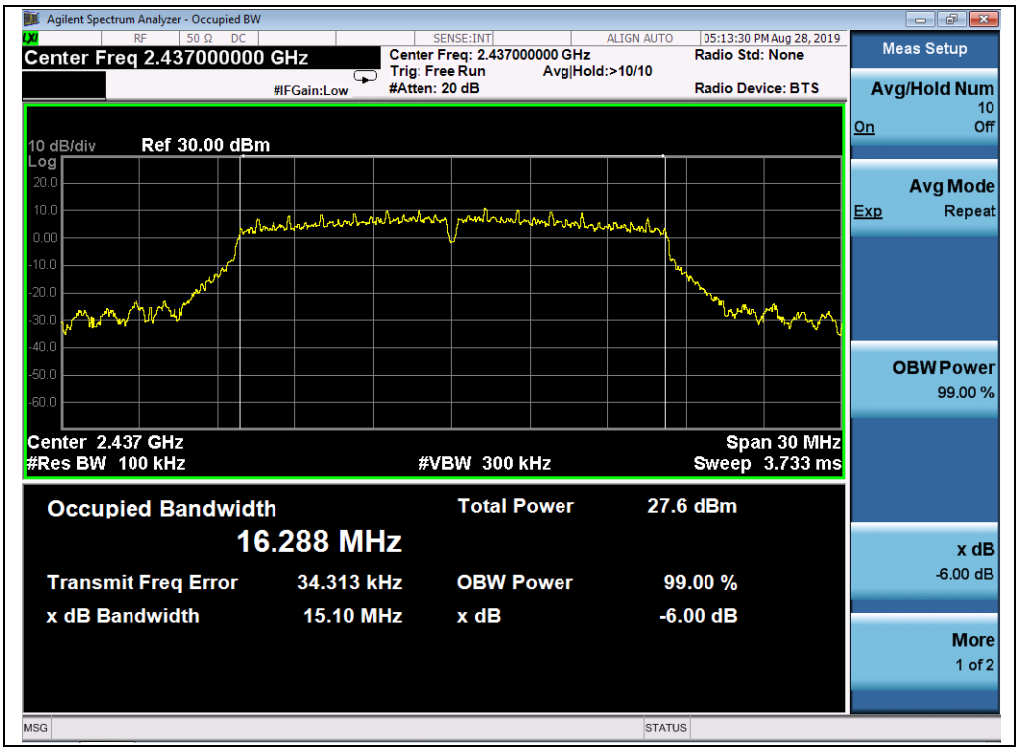
A. Test Verdict:

Channel Freq uency (MHz) 6		dB Bandwidth (MHz)	Limits (kHz)	Result
1	2412	15.10	≥500	PASS
6	2437	15.10	≥500	PASS
11	2462	15.10	≥500	PASS

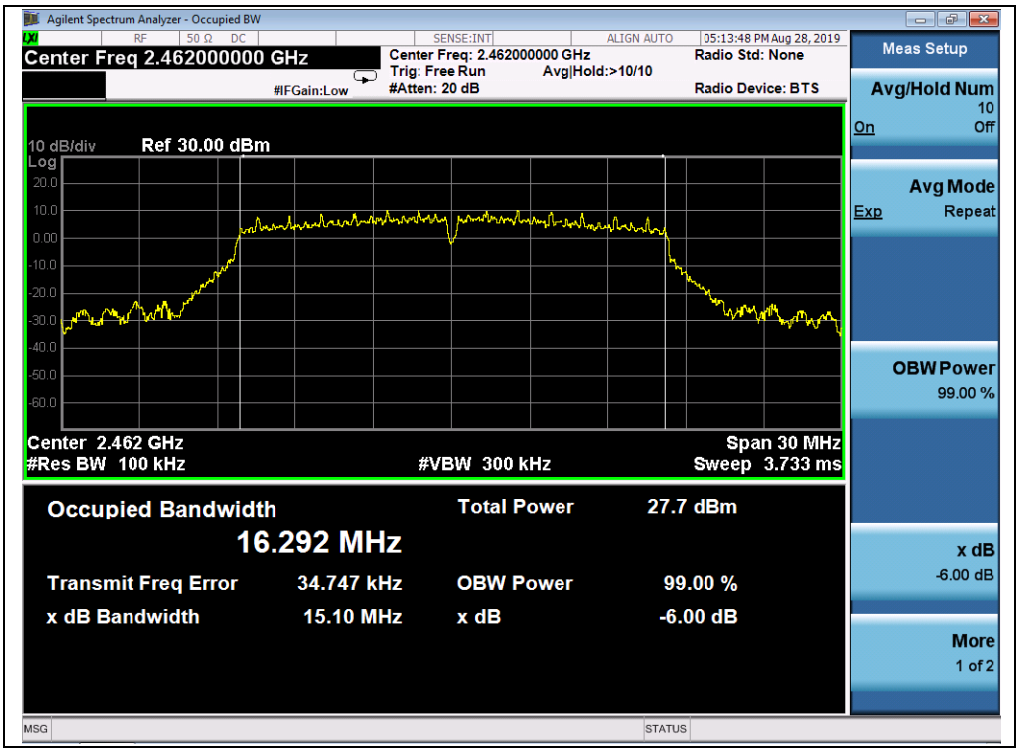
B. Test Plots:



(Channel 1, 802.11g)



(Channel 6, 802.11g)



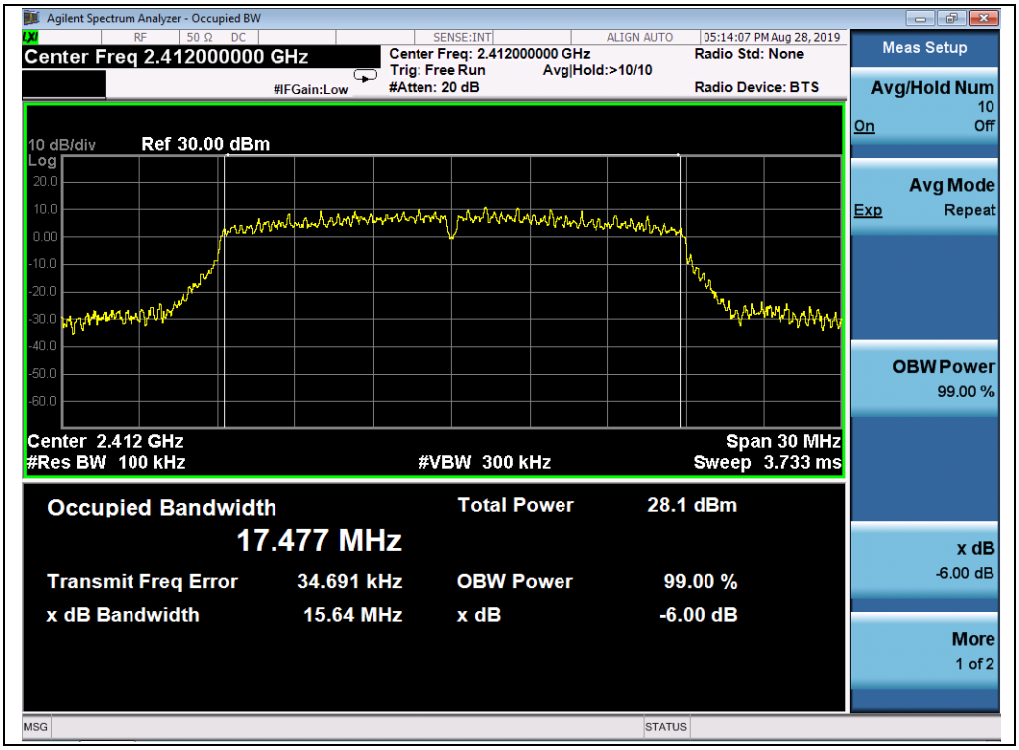
(Channel 11, 802.11g)

802.11n(HT20) Test mode

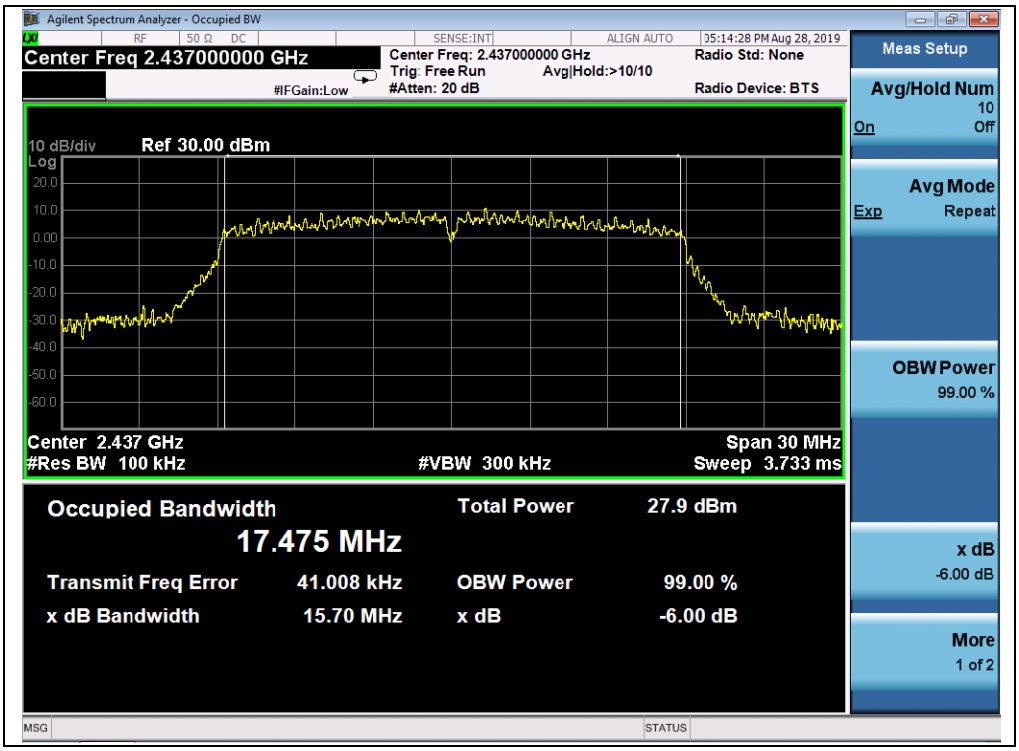
A. Test Verdict:

Channel Fre	quency (MHz)	6 dB Bandwidth (MHz)	Limits (kHz)	Result
1	2412	15.64	≥500	PASS
6	2437	15.70	≥500	PASS
11	2462	16.29	≥500	PASS

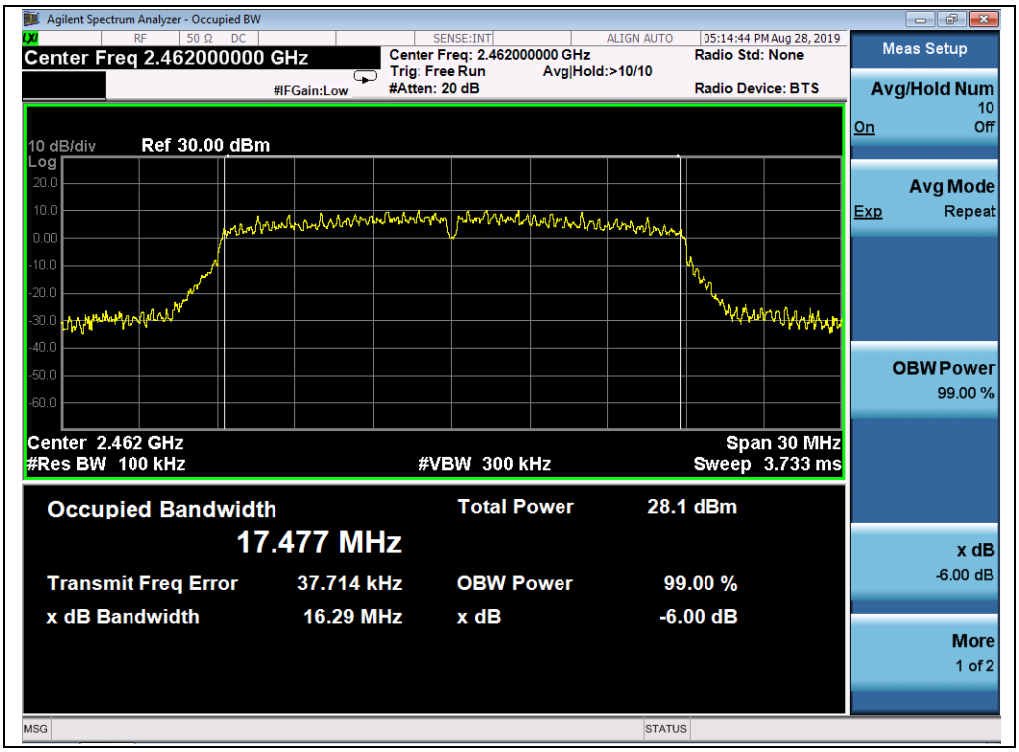
B. Test Plots:



(Channel 1, 802.11n(HT20))



(Channel 6, 802.11n(HT20))



(Channel 11, 802.11n(HT20))

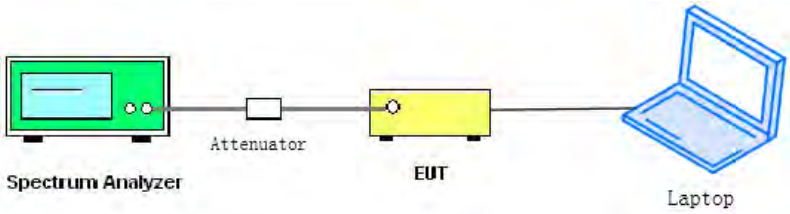
2.5. Conducted Spurious Emissions and Band Edge

2.5.1. Requirement

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

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.

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.

2.5.3. Test procedure

KDB 558074 Section 8.5 and 8.7 was used in order to prove compliance.

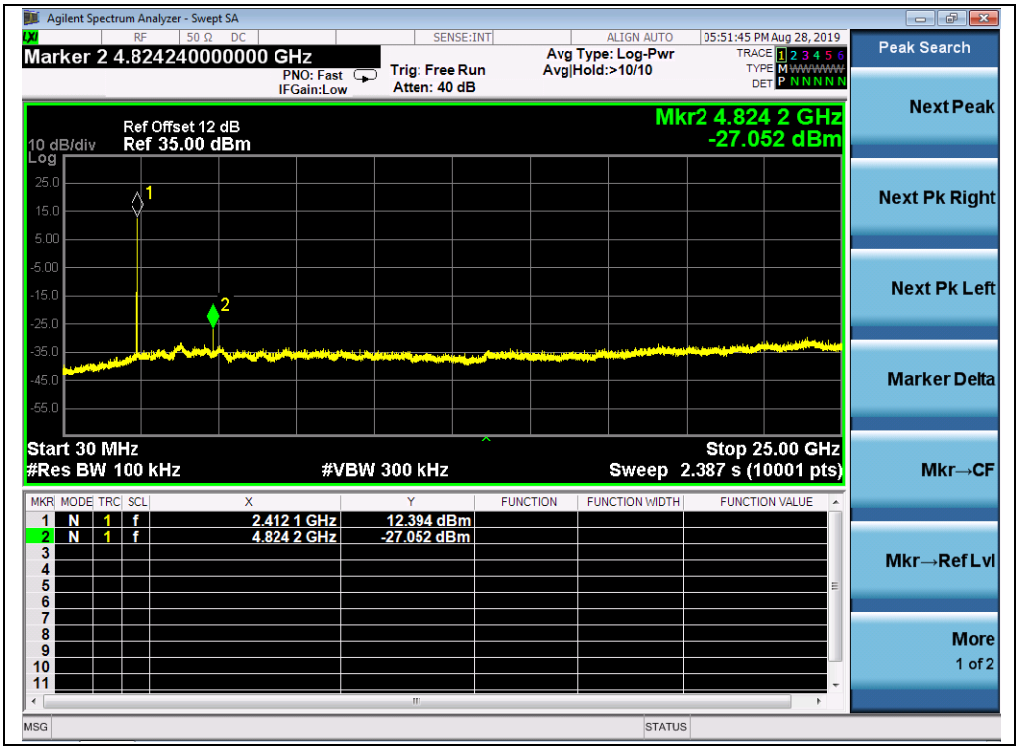
2.5.4. Test Result

802.11b Test mode

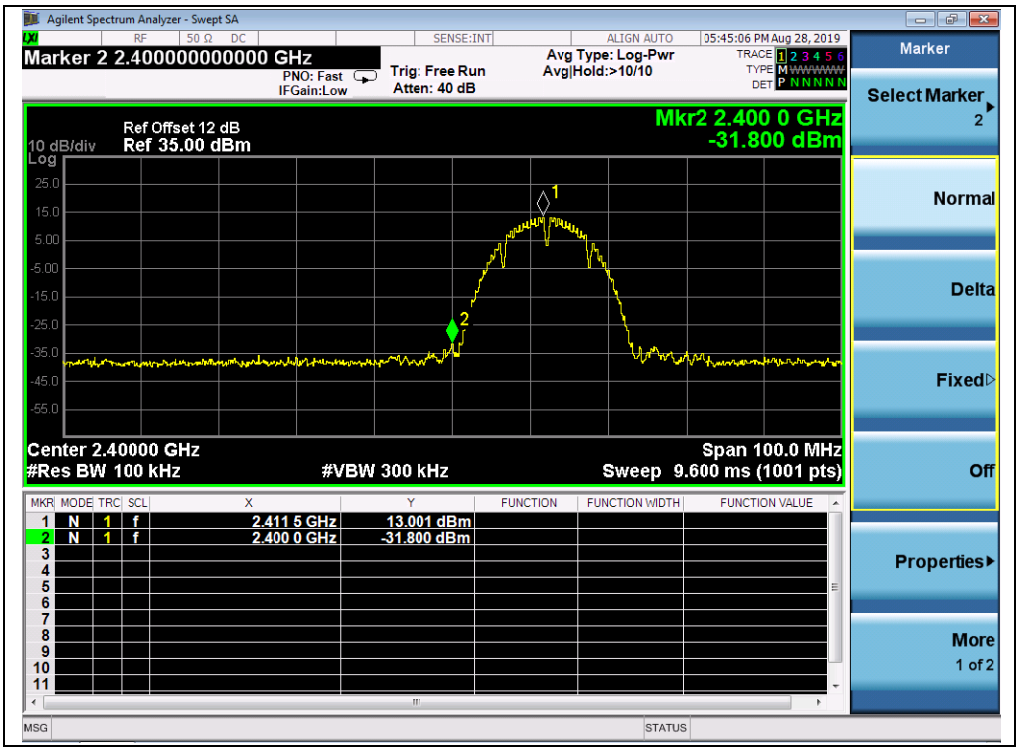
A. Test Verdict:

Channel Fre	quency (MHz)	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
			Carrier Level	Calculated -20dBc Limit	
1	2412	-27.05	12.39	-7.61	PASS
6	2437	-27.55	12.24	-7.76	PASS
11	2462	-25.40	12.46	-7.54	PASS

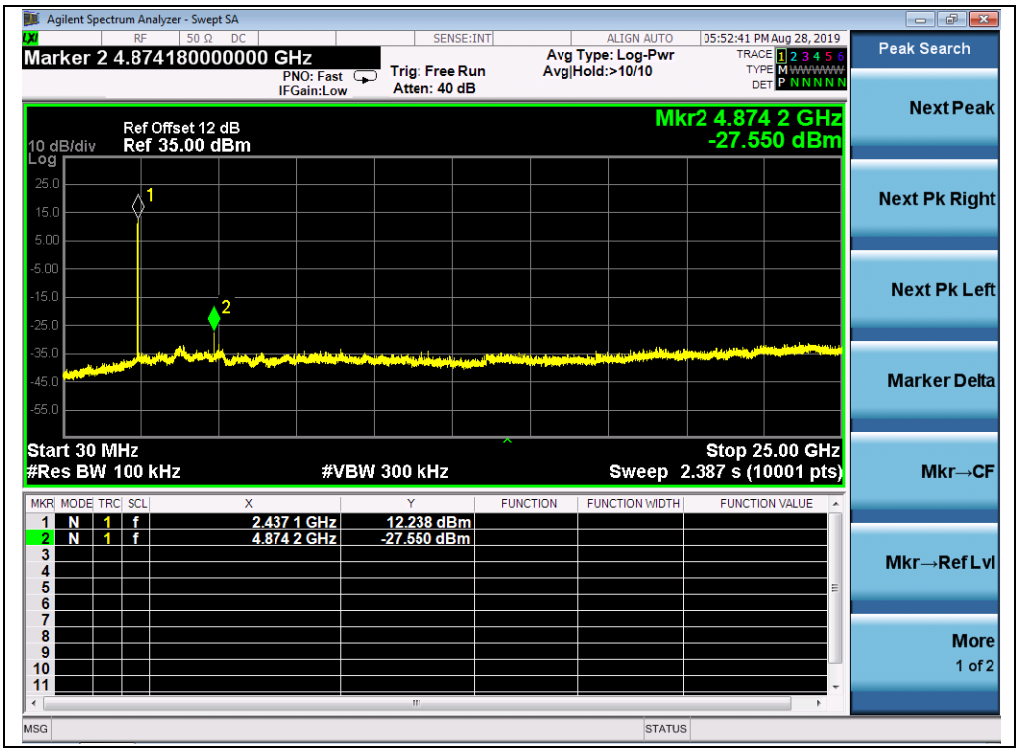
B. Test Plots:



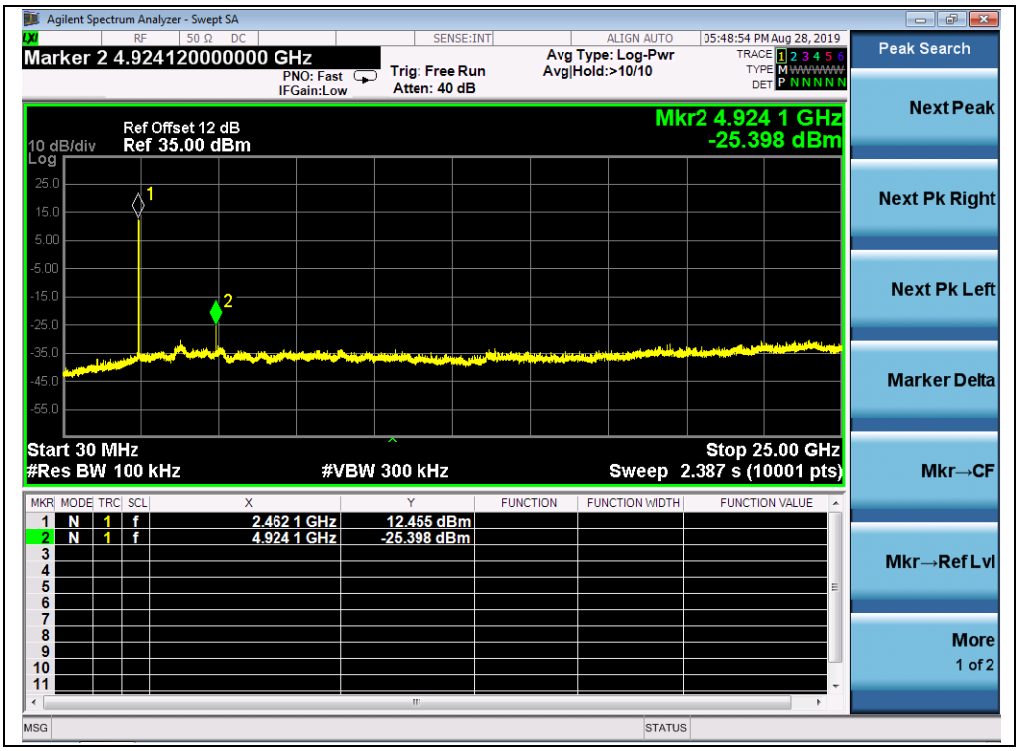
(Channel = 1, 30MHz to 25GHz)



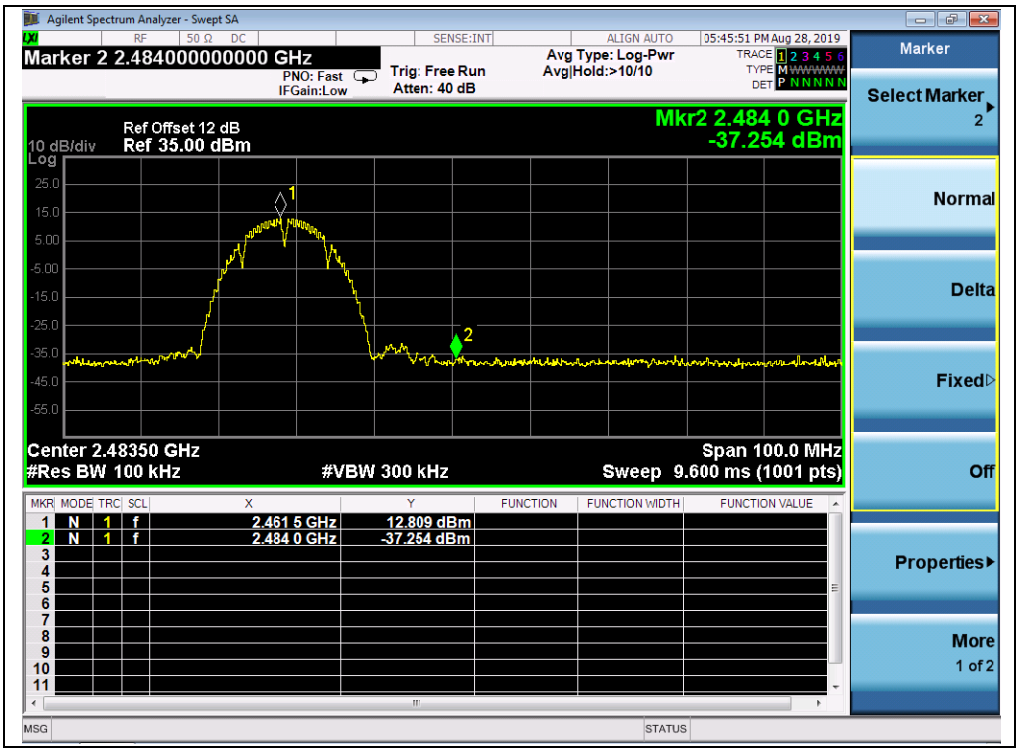
(Band Edge, Channel = 1)



(Channel = 6, 30MHz to 25GHz)



(Channel = 11, 30MHz to 25GHz)



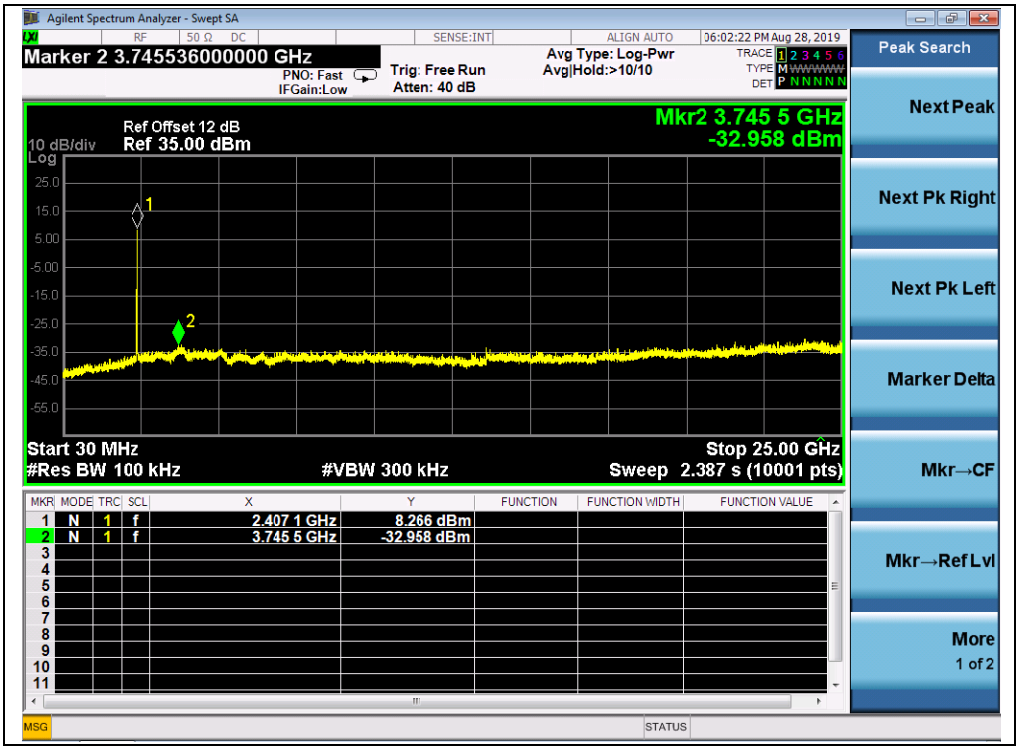
(Band Edge, Channel = 11)

802.11g Test mode

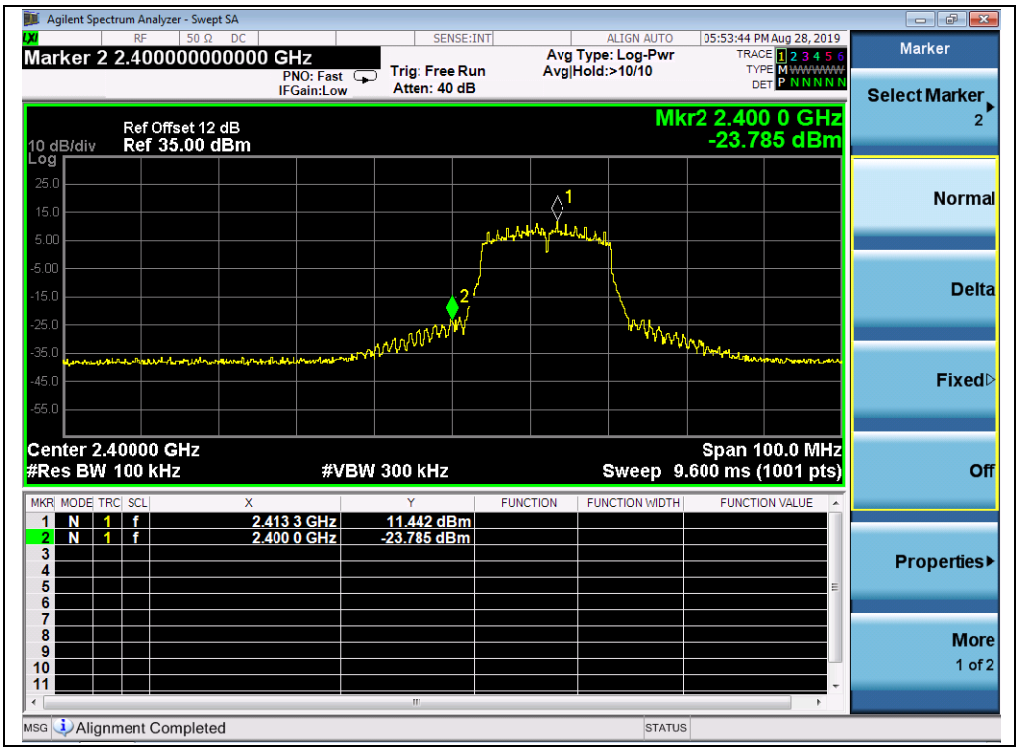
A. Test Verdict:

Channel Fre	quency (MHz)	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
			Carrier Level	Calculated -20dBc Limit	
1	2412	-32.96	8.27	-11.73	PASS
6	2437	-30.12	10.85	-9.15	PASS
11	2462	-31.70	10.11	-9.89	PASS

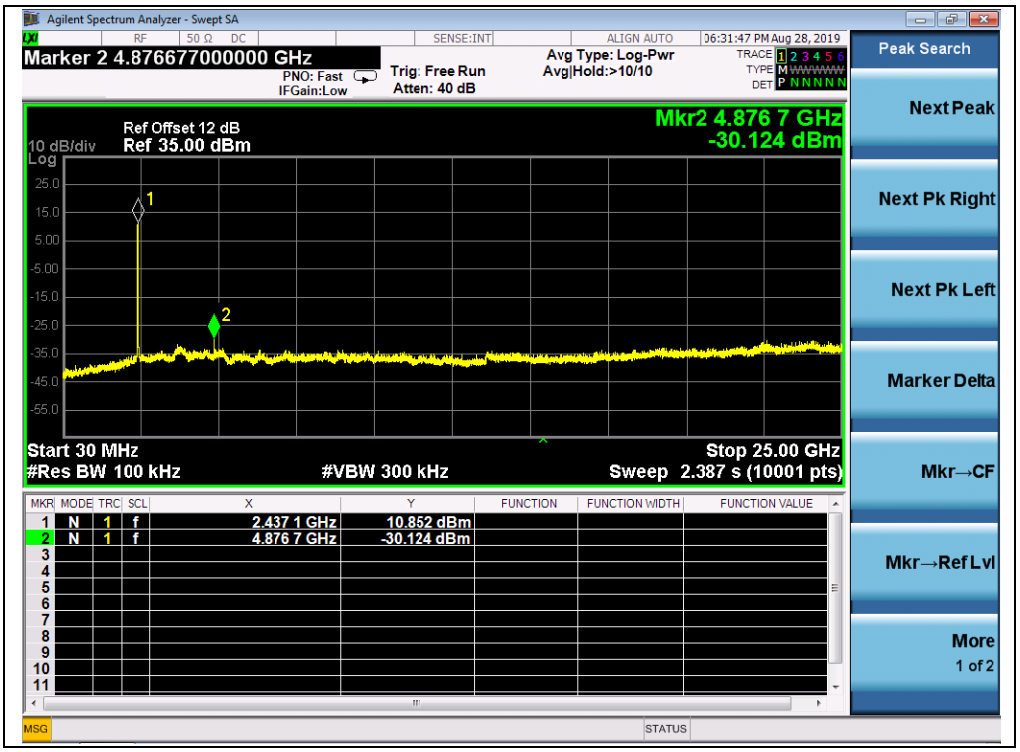
B. Test Plots:



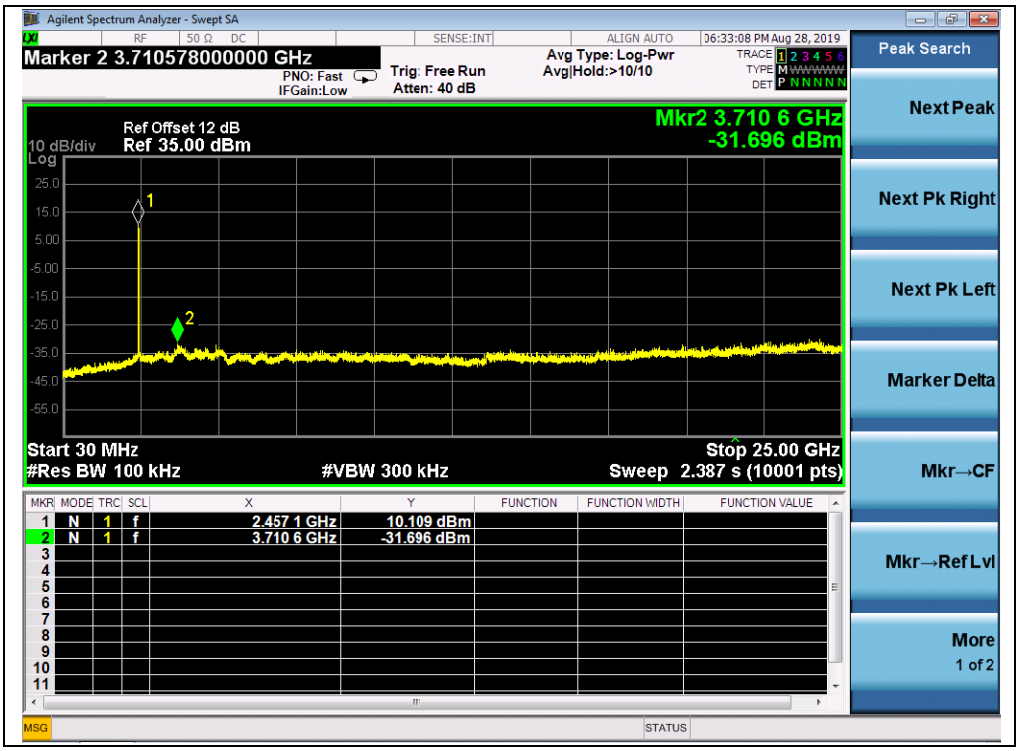
(Channel = 1, 30MHz to 25GHz)



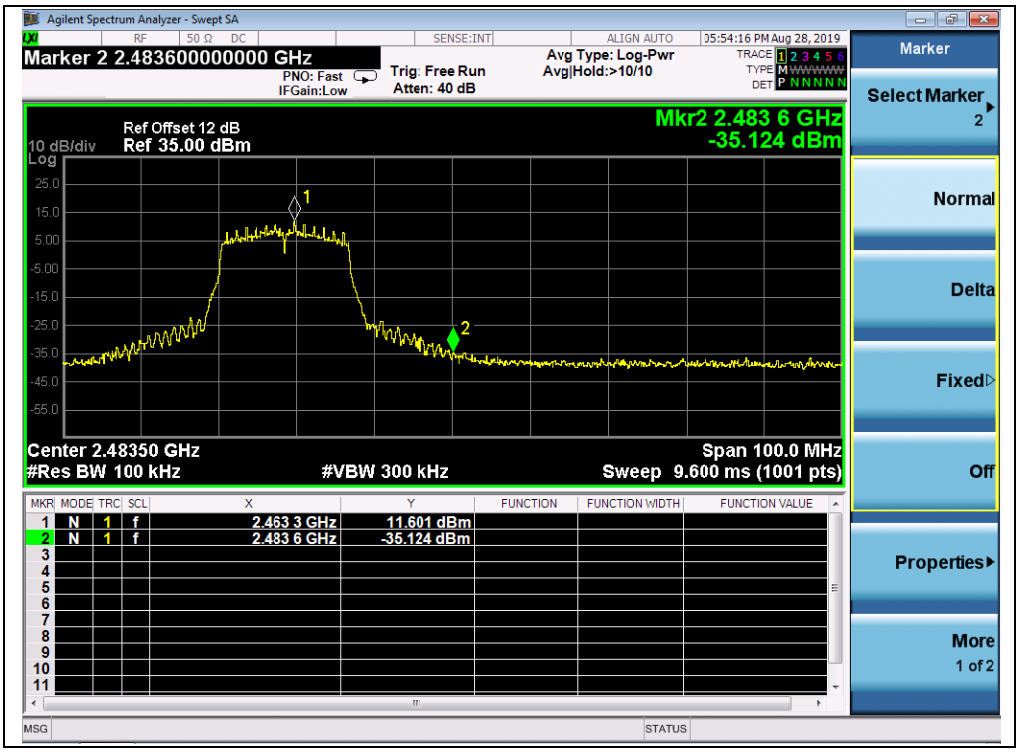
(Band Edge, Channel = 1)



(Channel = 6, 30MHz to 25GHz)



(Channel = 11, 30MHz to 25GHz)



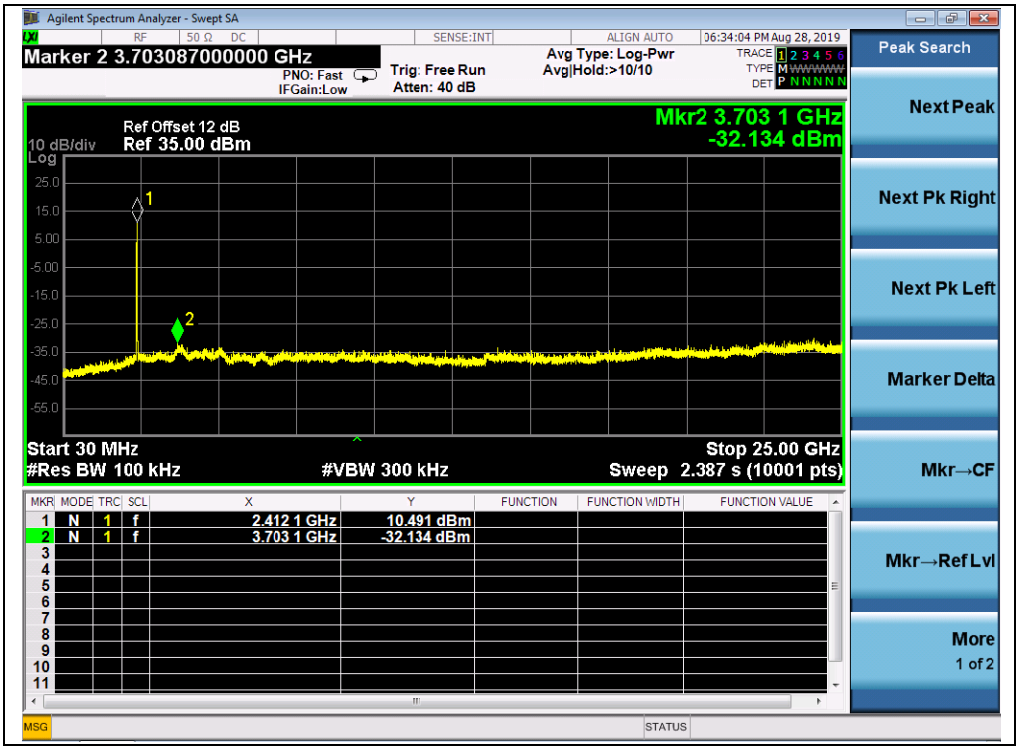
(Band Edge, Channel = 11)

802.11n(HT20) Test mode

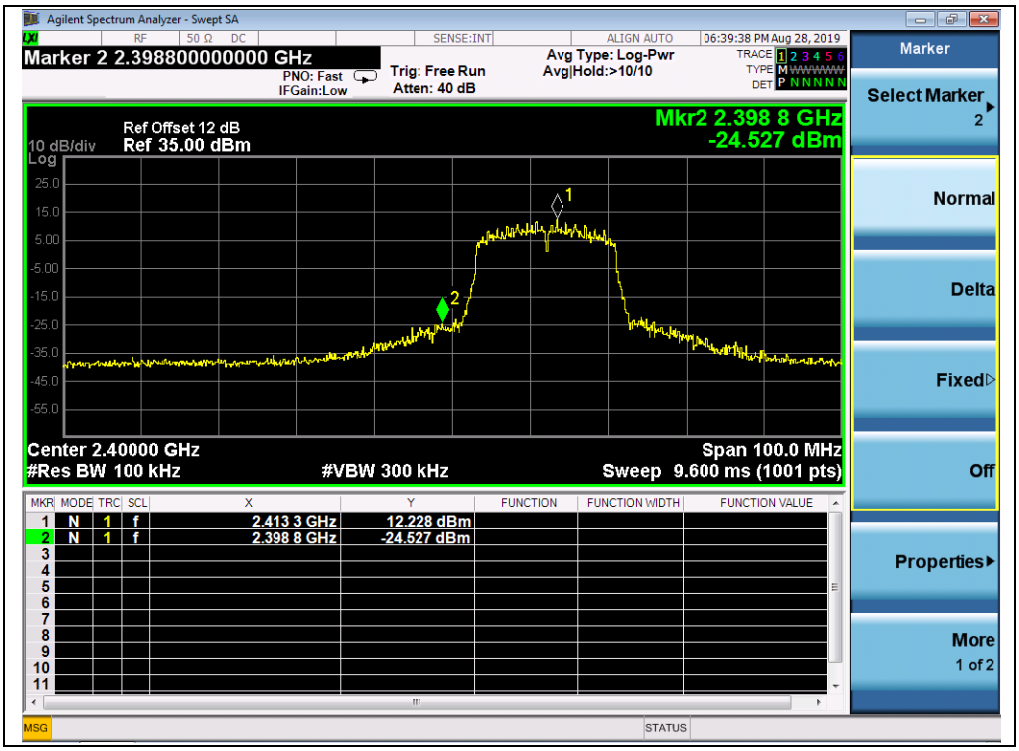
A. Test Verdict:

Channel Fre	quency (MHz)	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
			Carrier Level	Calculated -20dBc Limit	
1	2412	-32.13	10.49	-9.51	PASS
6	2437	-31.72	11.29	-8.71	PASS
11	2462	-30.16	11.87	-8.13	PASS

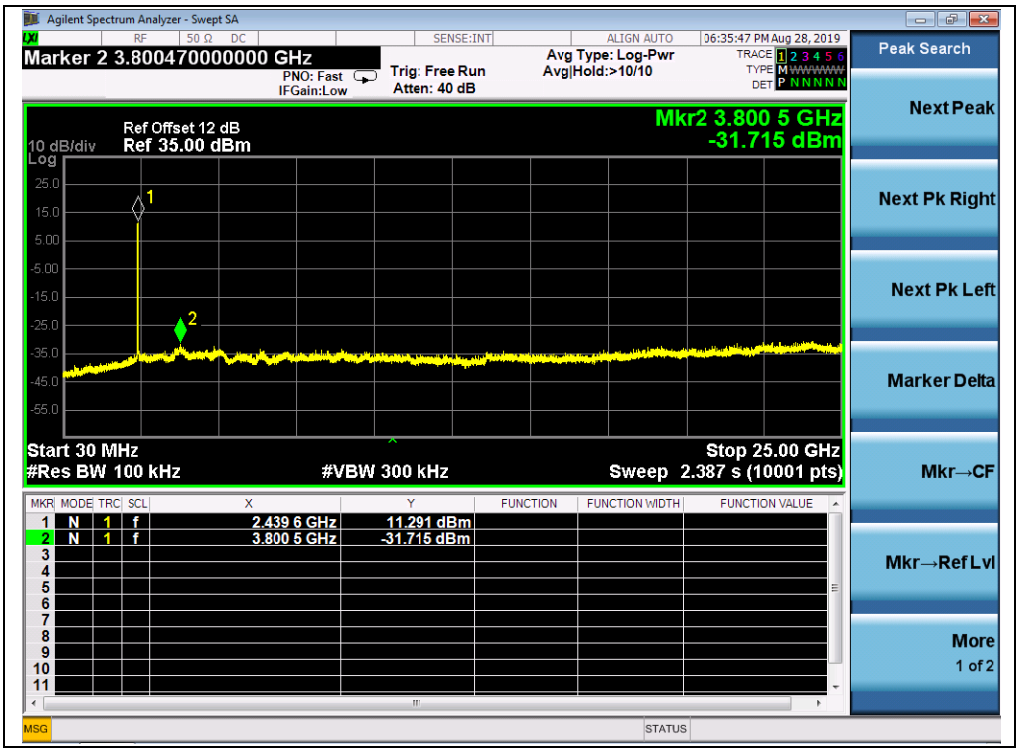
B. Test Plots:



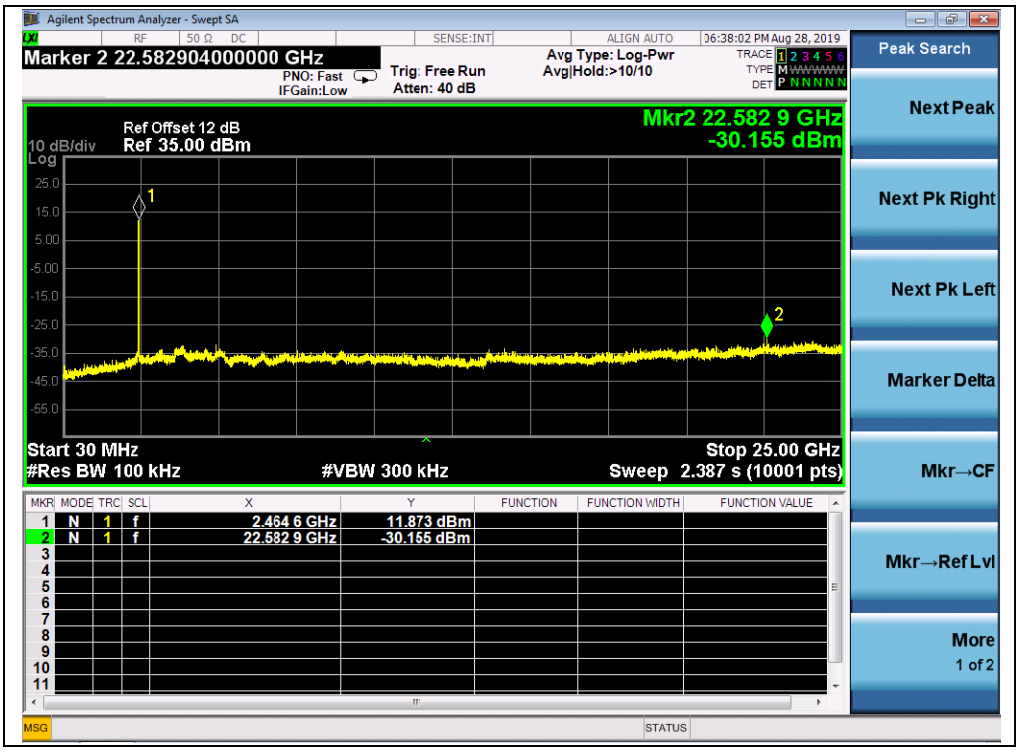
(Channel = 1, 30MHz to 25GHz)



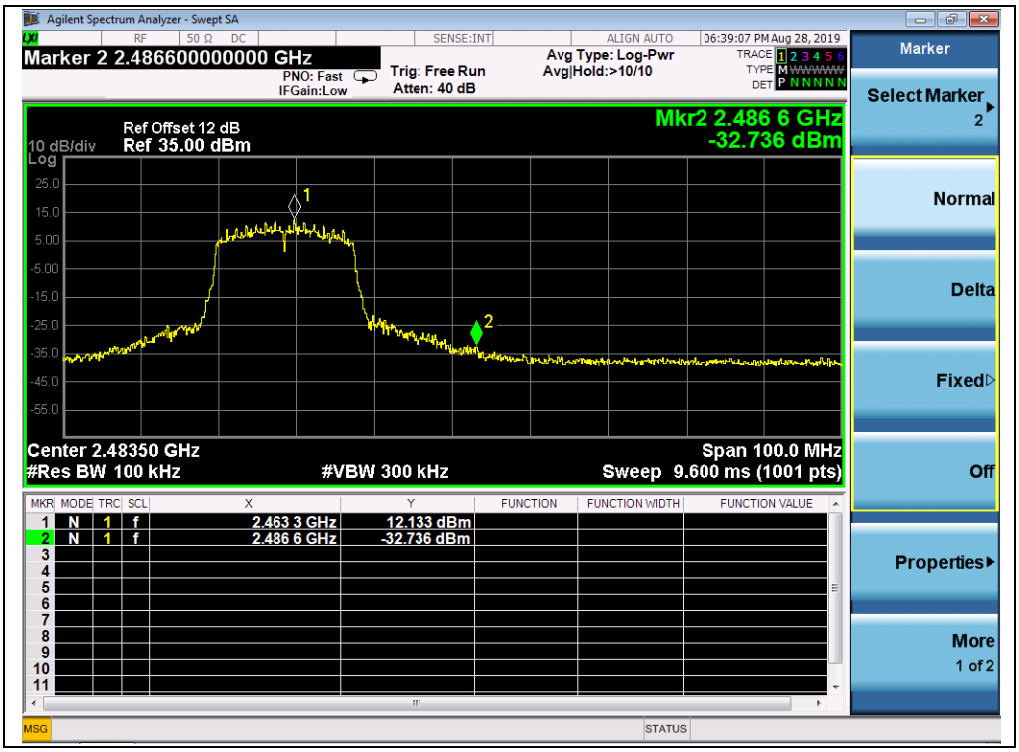
(Band Edge, Channel = 1)



(Channel = 6, 30MHz to 25GHz)



(Channel = 11, 30MHz to 25GHz)



(Band Edge, Channel = 11)

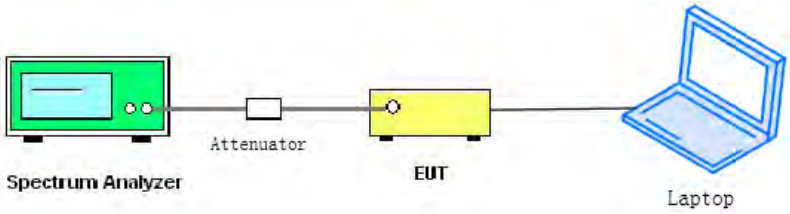
2.6. Power spectral density (PSD)

2.6.1. Requirement

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall n ot be greater than 8dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral de nsity shall b e determined in accorda nce 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.

2.6.2. 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.

2.6.3. Test procedure

KDB 558074 Section 8.4 was used in order to prove compliance.

2.6.4. Test Result

802.11b Test mode

A. Test Verdict:

Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)		Limit (dBm/3kHz)	Verdict
		ANT 0	ANT 1		
1	2412	1.69	5.57	8	PASS
6	2437	-7.75	6.60	8	PASS
11	2462	5.06	3.89	8	PASS

B. Test Plots:

(Channel = 1, 802.11b, ANT 0)

(Chann el = 6, 802.11b, ANT 0)

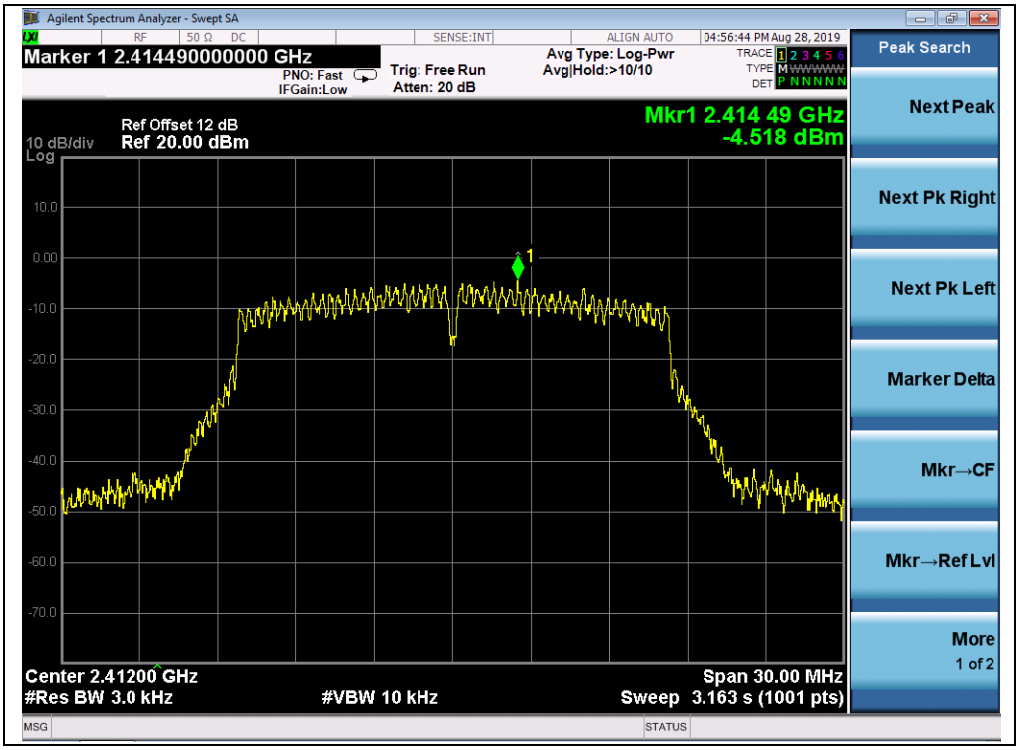
(Channel = 11, 802.11b, ANT 0)

802.11g Test mode

A. Test Verdict:

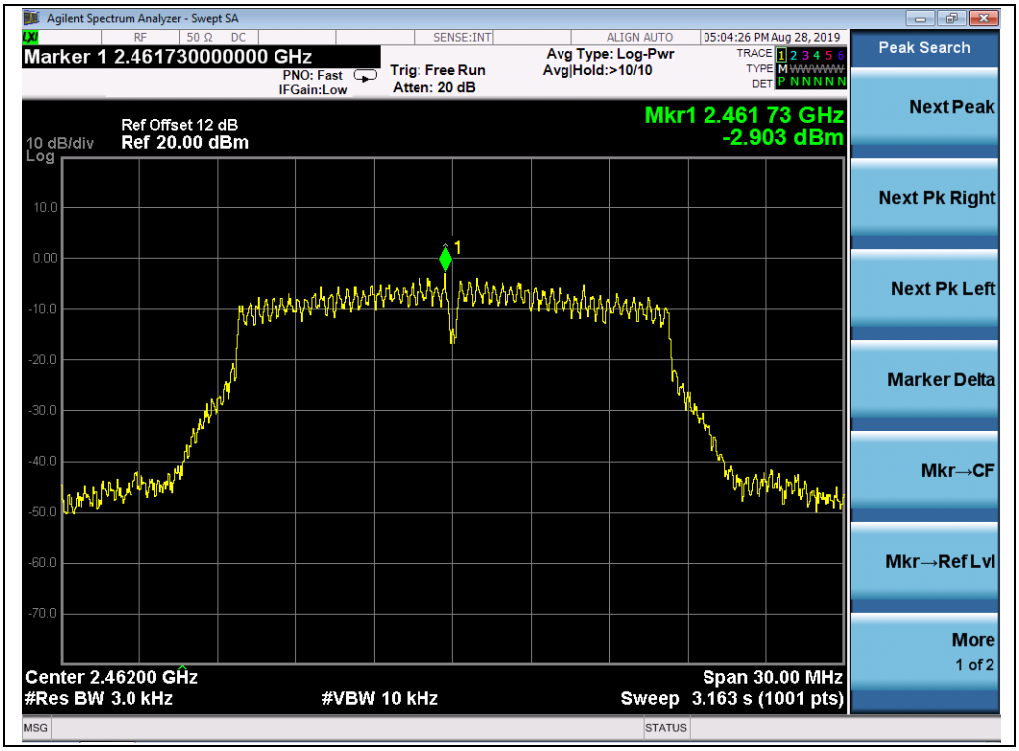
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)		Limit (dBm/3kHz)	Verdict
		ANT 0	ANT 1		
1	2412	-4.52	-8.49	8	PASS
6	2437	-4.78	-9.54	8	PASS
11	2462	-2.90	-8.37	8	PASS

B. Test Plots:



(Channel = 1, 802.11g, ANT 0)

(Chann el = 6, 802.11g, ANT 0)



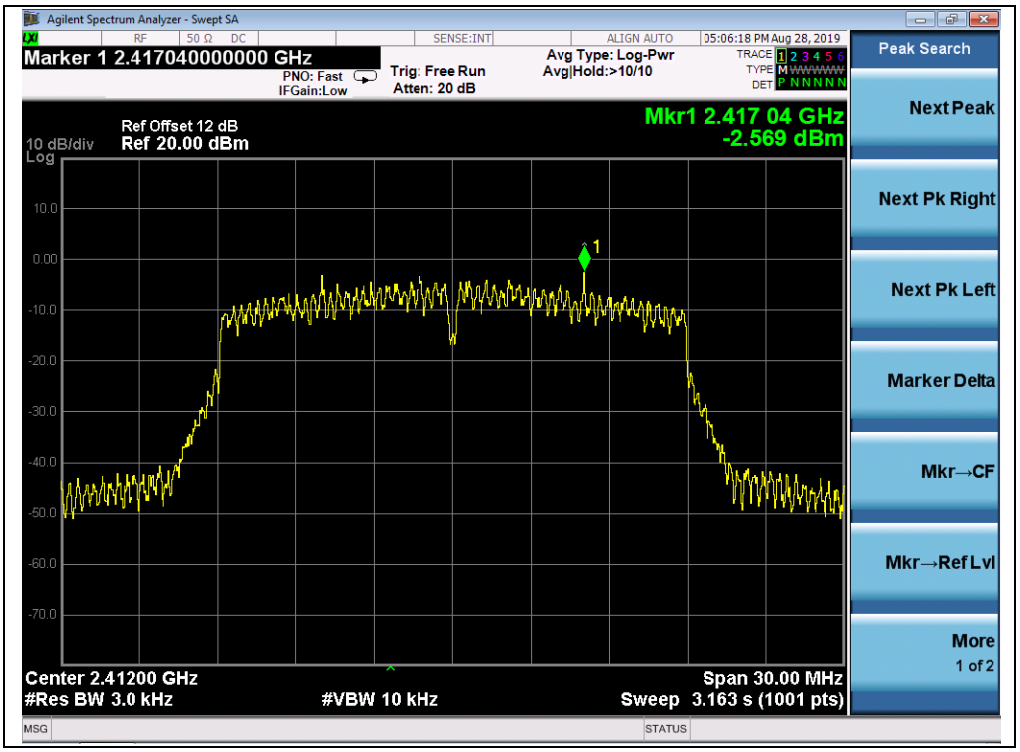
(Channel = 11, 802.11g, ANT 0)

802.11n (HT20) Test mode

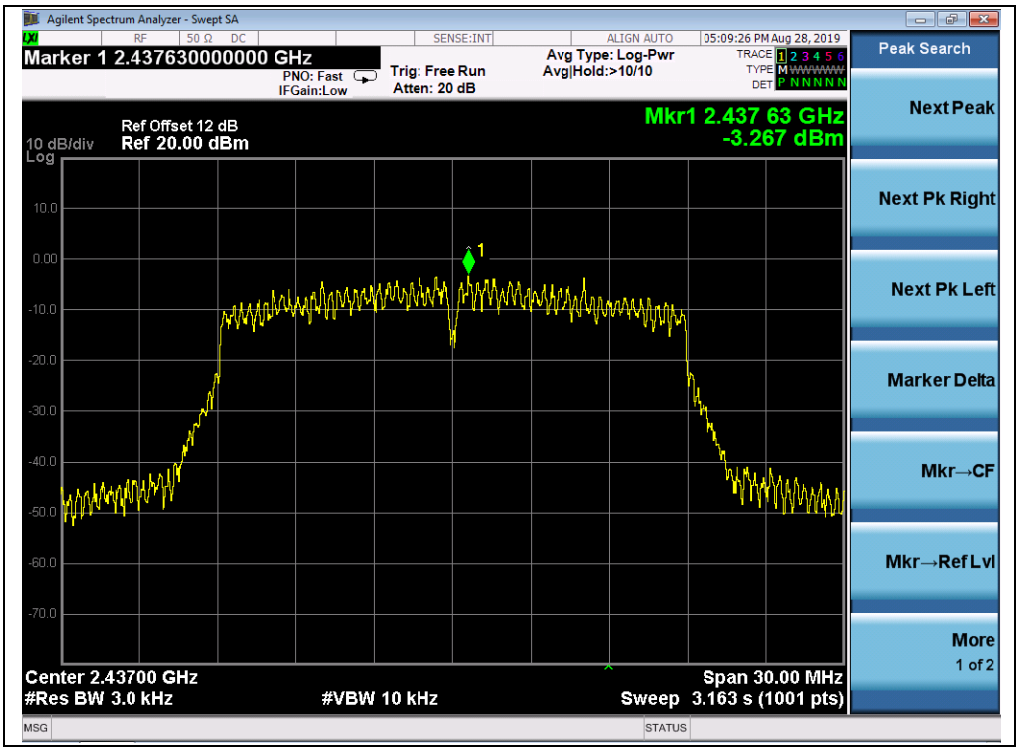
A. Test Verdict:

Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)		Limit (dBm/3kHz)	Verdict
		ANT 0	ANT 1		
1	2412	-2.57	-8.85	8	PASS
6	2437	-3.27	-8.77	8	PASS
11	2462	-3.33	-7.62	8	PASS

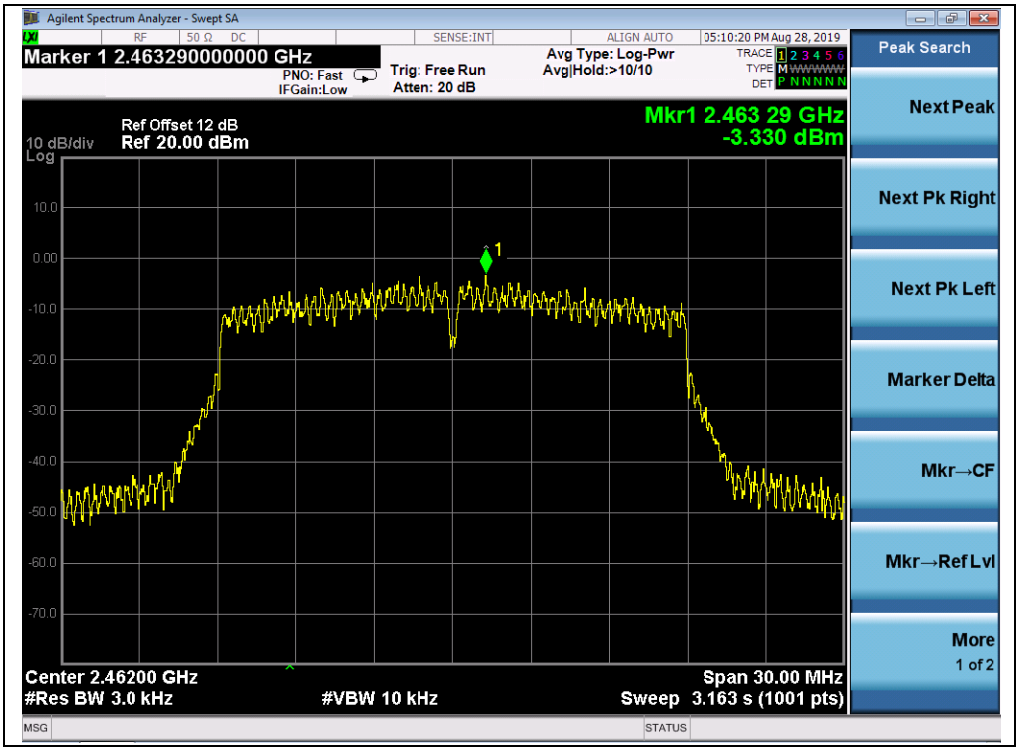
B. Test Plots:



(Channel = 1, 802.11n(HT20), ANT0)



(Channel = 6, 802.11n(HT20), ANT0)



(Channel = 11, 802.11n(HT20), ANT0)

2.7. Conducted Emission

2.7.1. Requirement

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

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

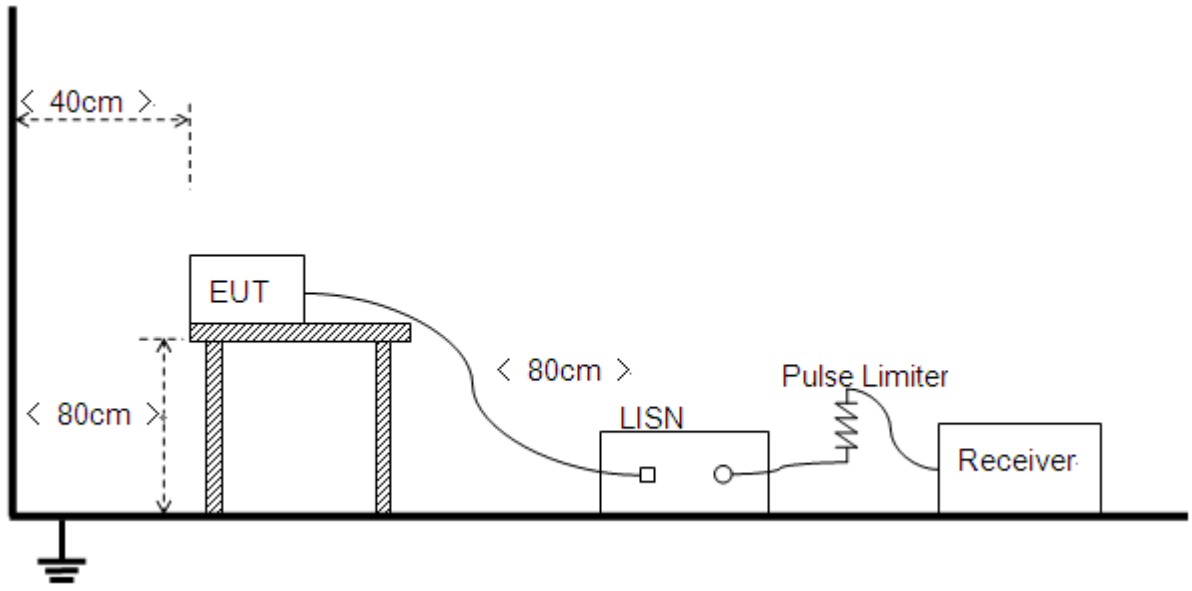
NOTE:

(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-t op EUT wa s placed upon a non- metallic tabl e 0.8m above the horizontal metal reference g round plane . EUT was connected t o LISN and LISN was connected t o reference Ground Plane. EUT wa s 80cm from LISN. Th e set-up an d test methods were according to A NSI C63.10 2013.

2.7.3. Test Result

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

Note: Both of the test voltage AC 120V/60Hz and AC 230V/50Hz were considered and tested respectively, only the results of the worst case AC 120V/60Hz were recorded in this report.

A. Test setup:

Test Mode: EUT + WIFI TX

Test Voltage: AC 120V/60Hz

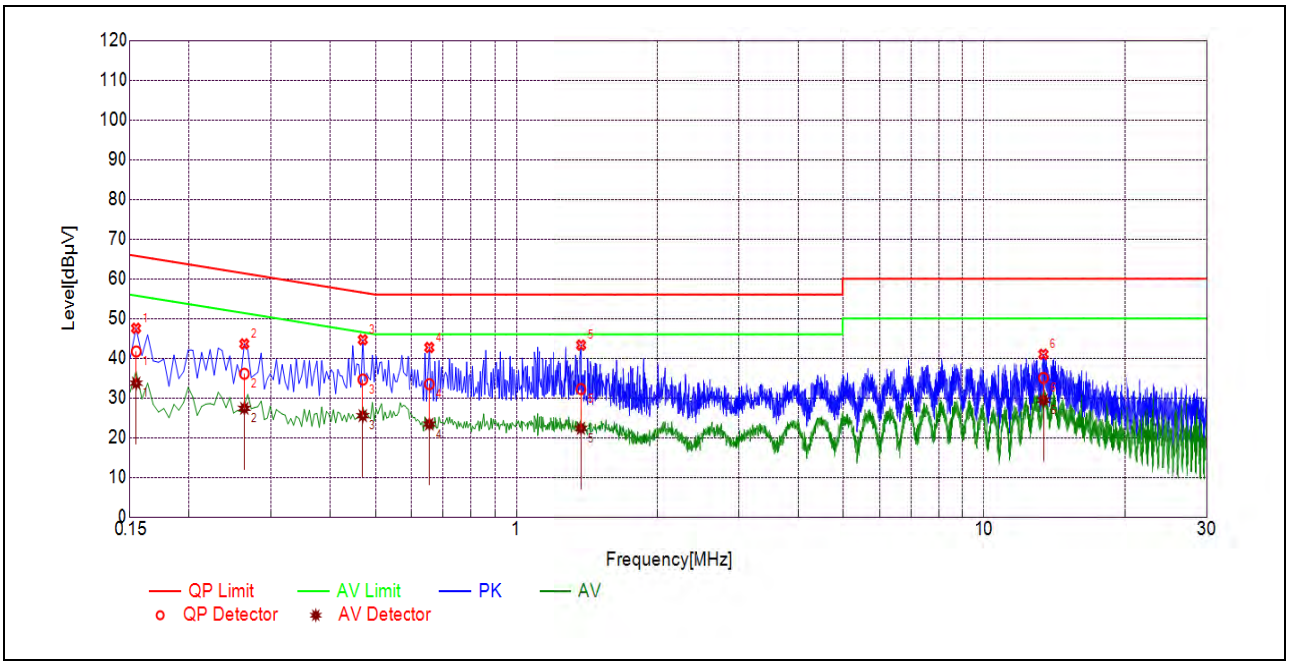
The measurement results are obtained as below:

$E\ [dB\mu V] = U_R + L_{Cable\ loss}\ [dB] + A_{Factor}$

U_R: Receiver Reading

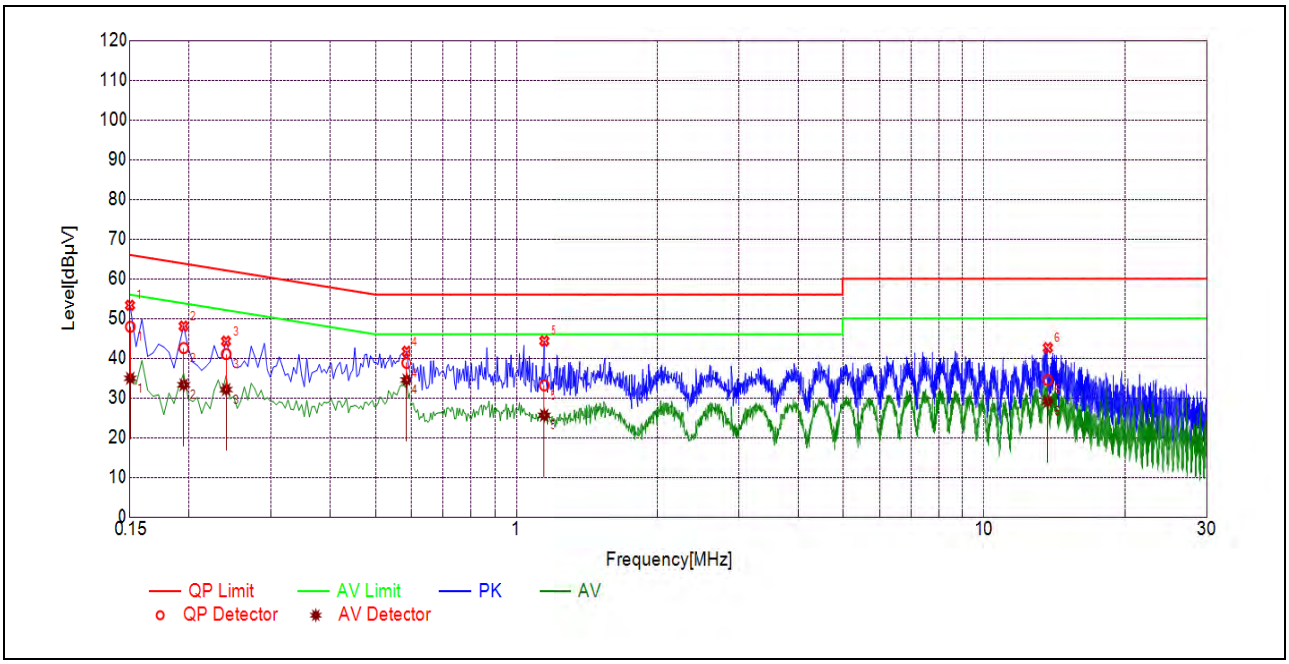
A_{Factor}: Voltage division factor of LISN

B. Test Plots:



(L Phase)

NO.	Fre. (MHz)	Emission Level (dBµV)		Limit (dBµV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.1546	41.70	33.71	65.75	55.75	Line	PASS
2	0.2625	36.08	27.38	61.35	51.35		PASS
3	0.4695	34.61	25.53	56.52	46.52		PASS
4	0.6540	33.46	23.40	56.00	46.00		PASS
5	1.3778	32.23	22.32	56.00	46.00		PASS
6 1	3.4217	35.01	29.46	60.00	50.00		PASS



(N Phase)

NO.	Fre. (MHz)	Emission Level (dBµV)		Limit (dBµV)		Power-line	Verdict
		Quai-peak	Average	Quai -peak	Average		
1	0.1502	47.91	34.94	65.99	55.99	Neutral	PASS
2	0.1951	42.56	33.30	63.82	53.82		PASS
3	0.2402	41.05	32.11	62.09	52.09		PASS
4	0.5821	38.80	34.51	56.00	46.00		PASS
5	1.1440	33.16	25.63	56.00	46.00		PASS
6	13.7104	34.50	29.09	60.00	50.00		PASS

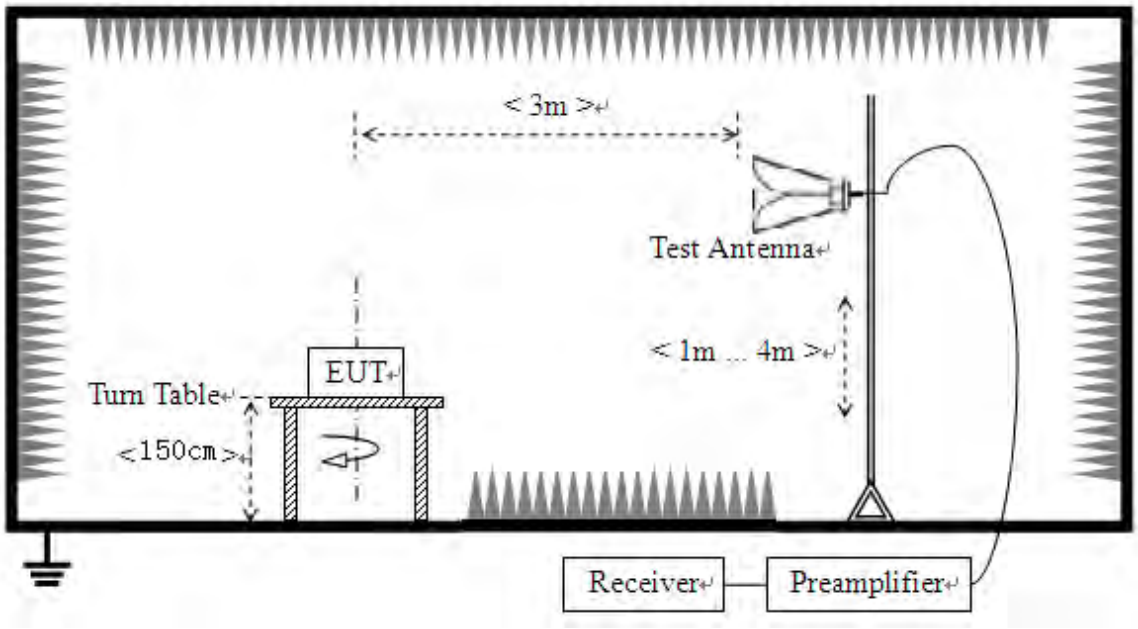
2.8. Restricted Frequency Bands

2.8.1. 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).

2.8.2. 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 1 m to 4m above the ground to determine the maximum value of the field strength.

2.8.3. Test procedure

KDB 558074 Section 8.6 and 8.7 was used in order to prove compliance.

2.8.4. Test Result

The lowest and highest channels are tested to verify Restricted Frequency Bands.
The measurement results are obtained as below:
E [dBμV/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

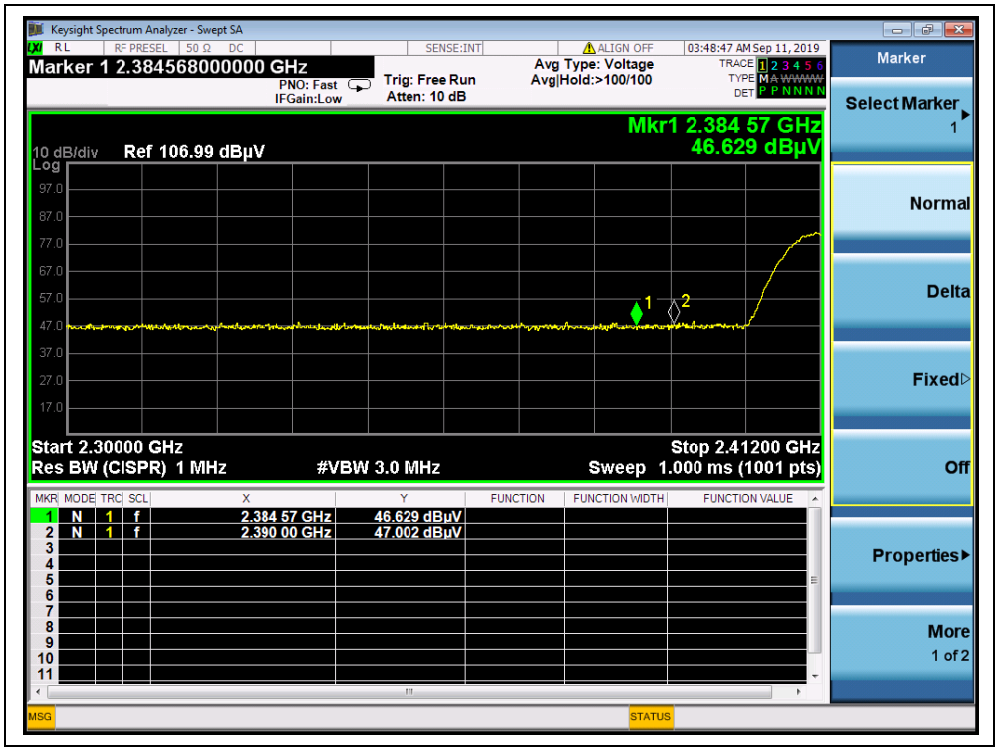
Note: Restricted Frequency Bands were performed when antenna was at vertical and horizontal polarity, and only the worse test condition (vertical) was recorded in this test report.

802.11b Test mode

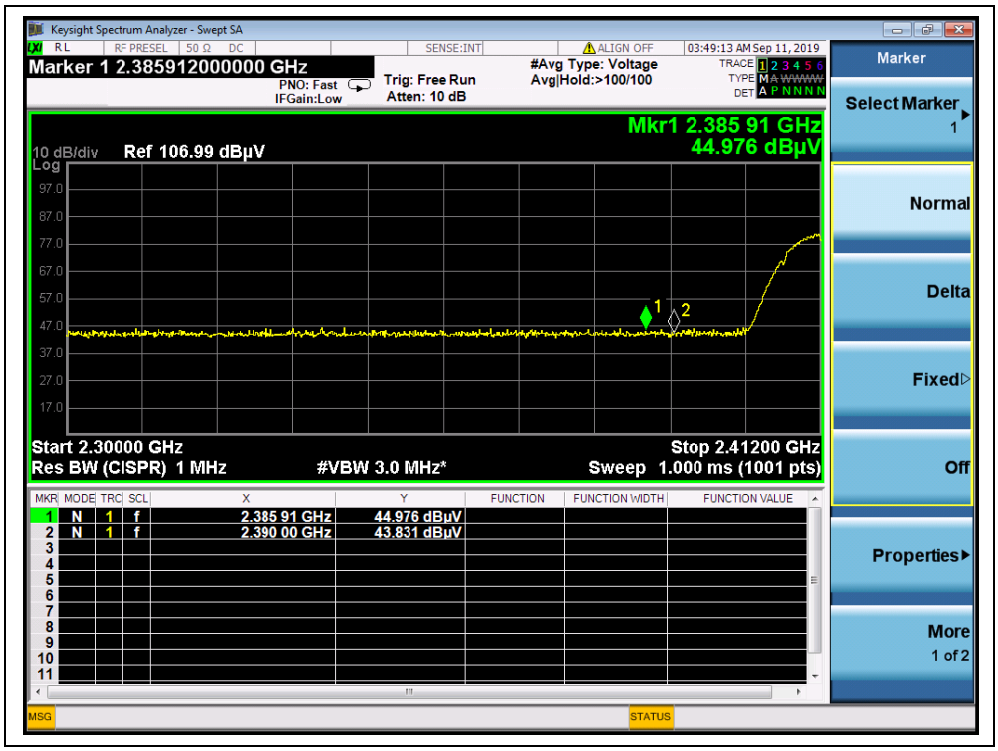
A. Test Verdict:

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
1	2390.00	PK	47.00	-29.67	32.56	49.89	74	PASS
1	2385.91	AV	44.98	-29.67	32.56	47.87	54	PASS
11	2486.13	PK	48.41	-29.67	32.56	51.30	74	PASS
11	2486.77	AV	45.32	-29.67	32.56	48.21	54	PASS

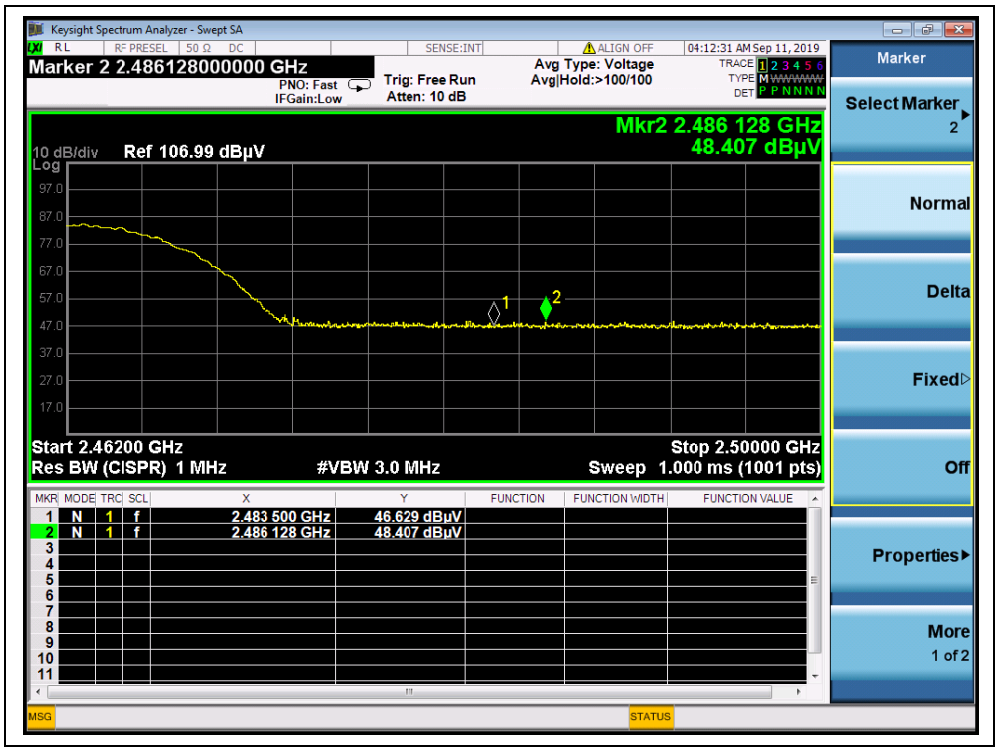
B. Test Plots:



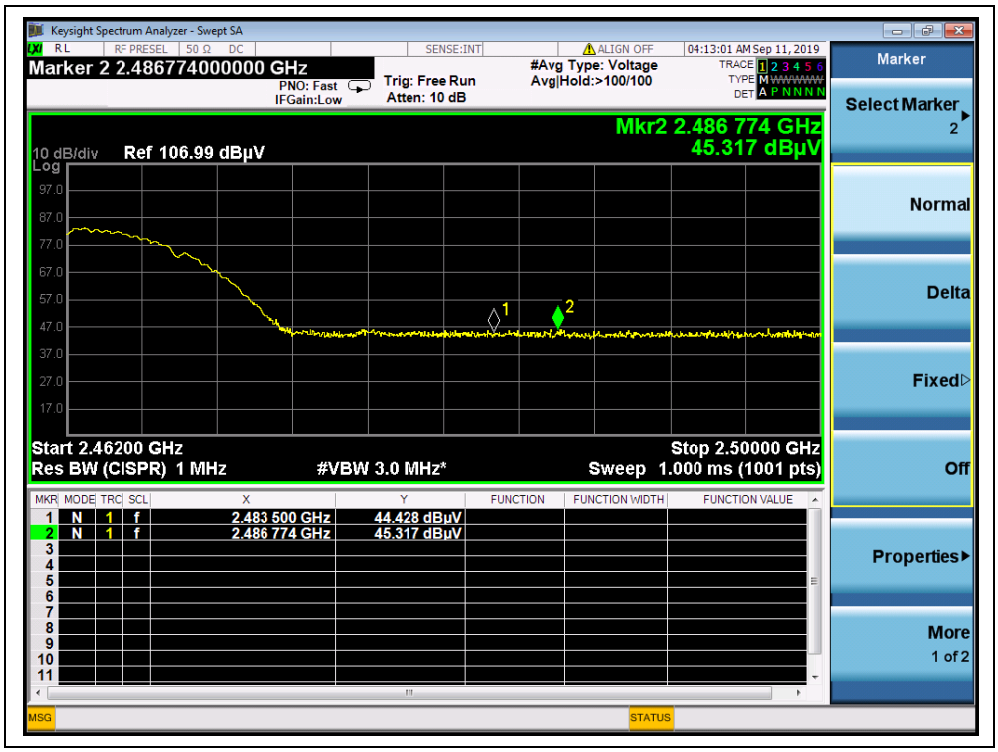
(Channel = 1 PEAK, 802.11b)



(Channel = 1 AVG, 802.11b)



(Channel = 11 PEAK, 802.11b)



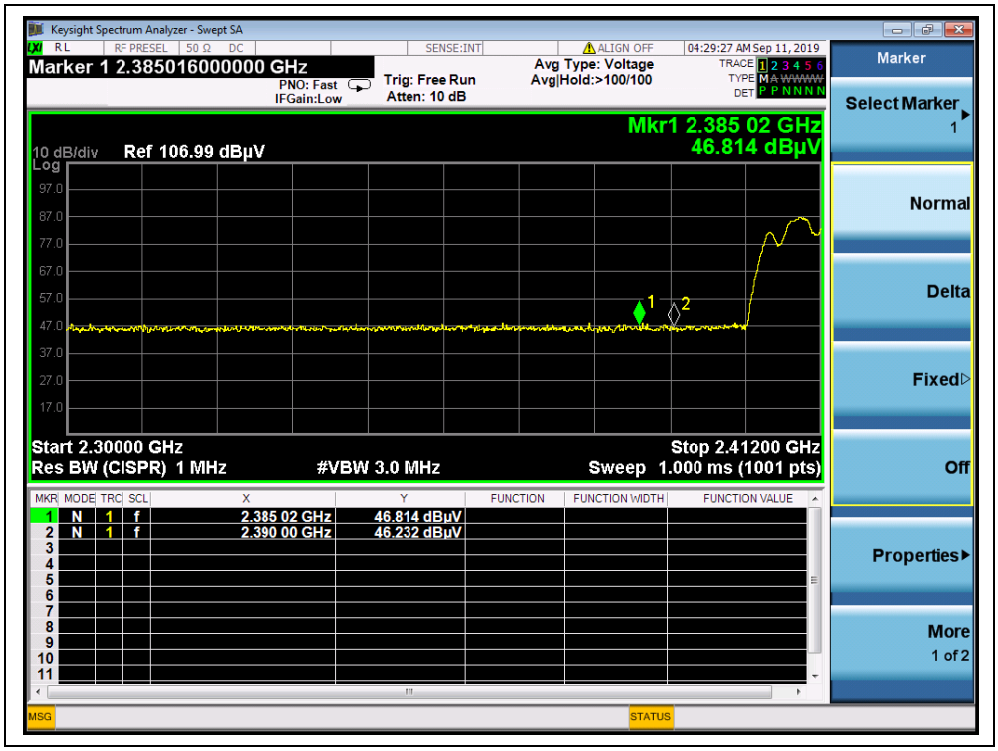
(Channel = 11 AVG, 802.11b)

802.11g Test mode

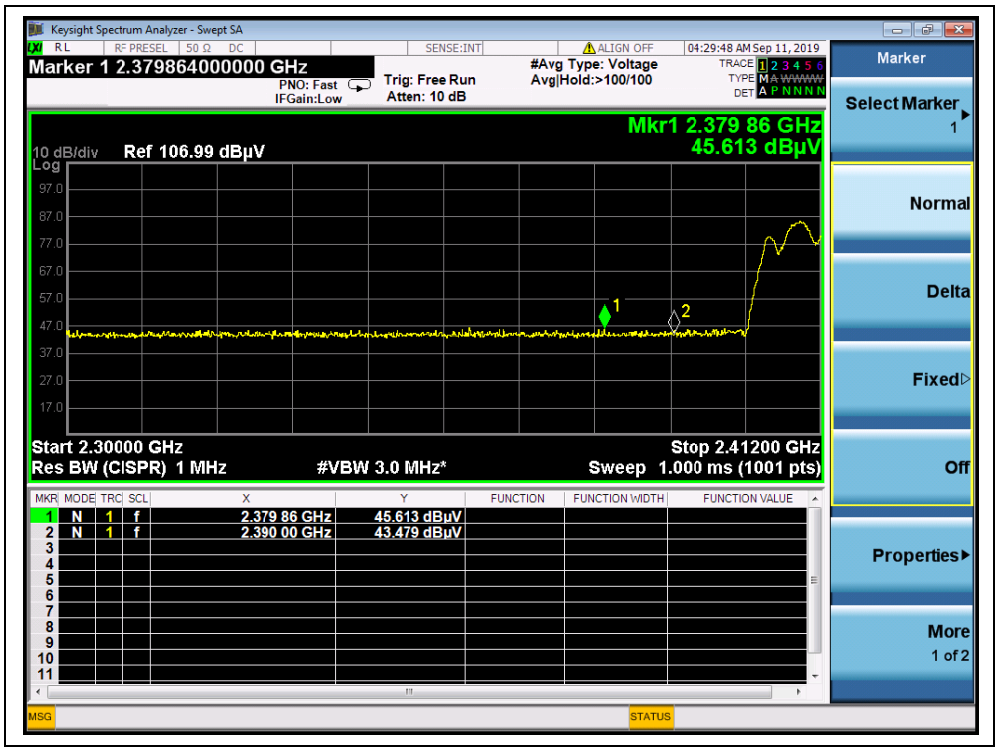
A. Test Verdict:

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
1	2385.02	PK	46.81	-29.67	32.56	49.70	74	PASS
1	2379.86	AV	45.61	-29.67	32.56	48.50	54	PASS
11	2484.00	PK	46.51	-29.67	32.56	49.40	74	PASS
11	2483.50	AV	44.67	-29.67	32.56	47.56	54	PASS

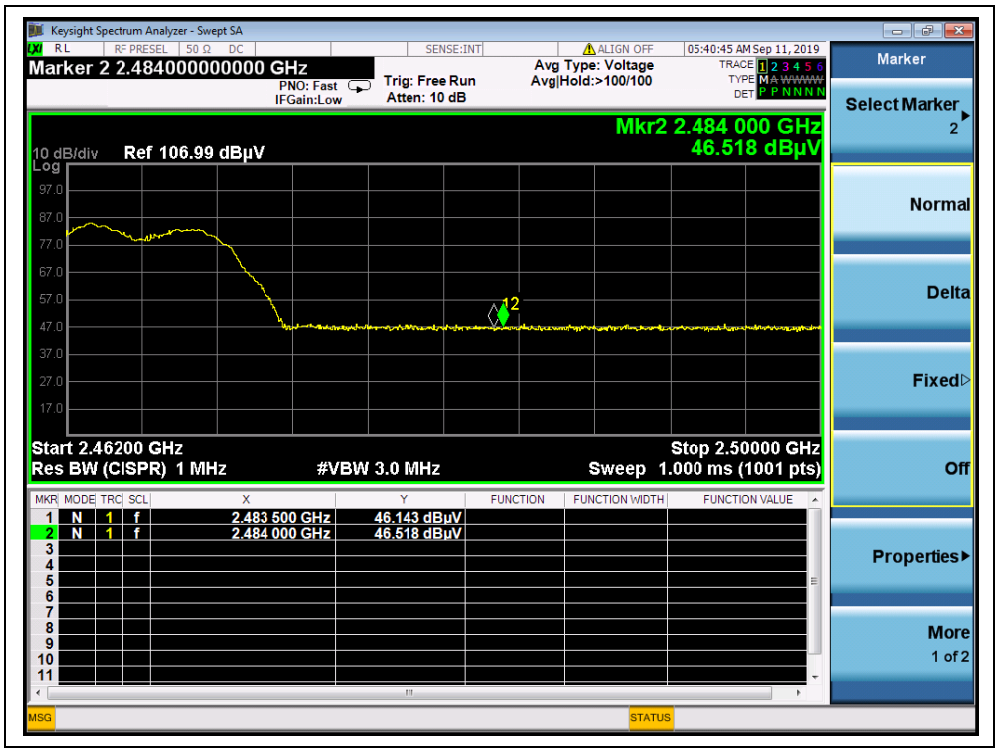
B. Test Plots:



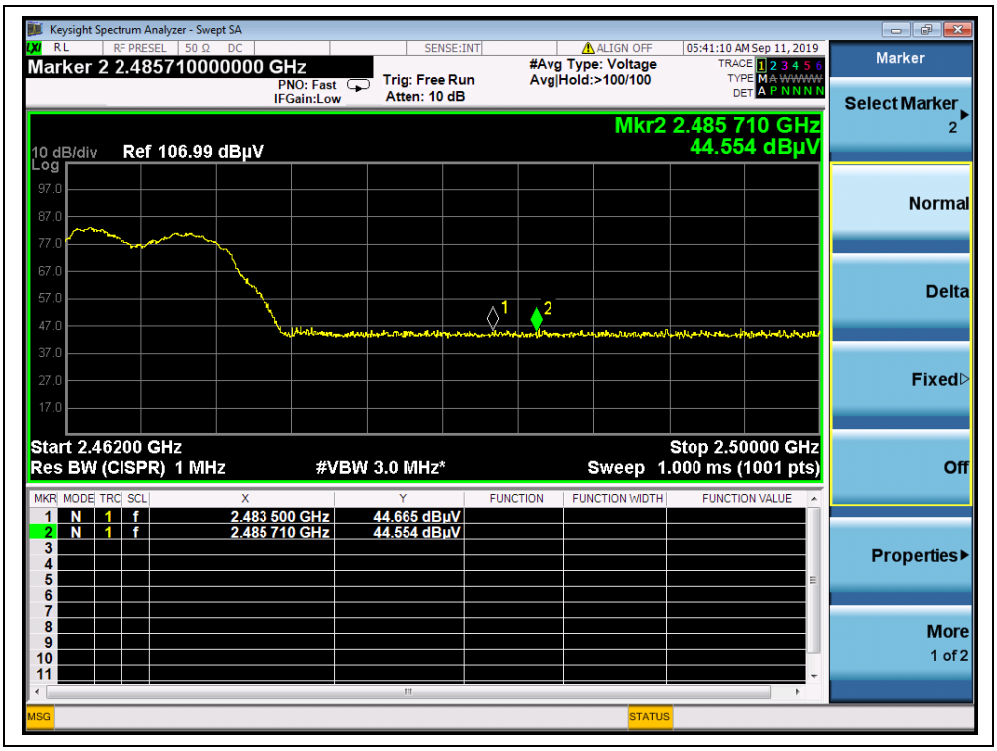
(Channel = 1 PEAK, 802.11g)



(Channel = 1 AVG, 802.11g)



(Channel = 11 PEAK, 802.11g)



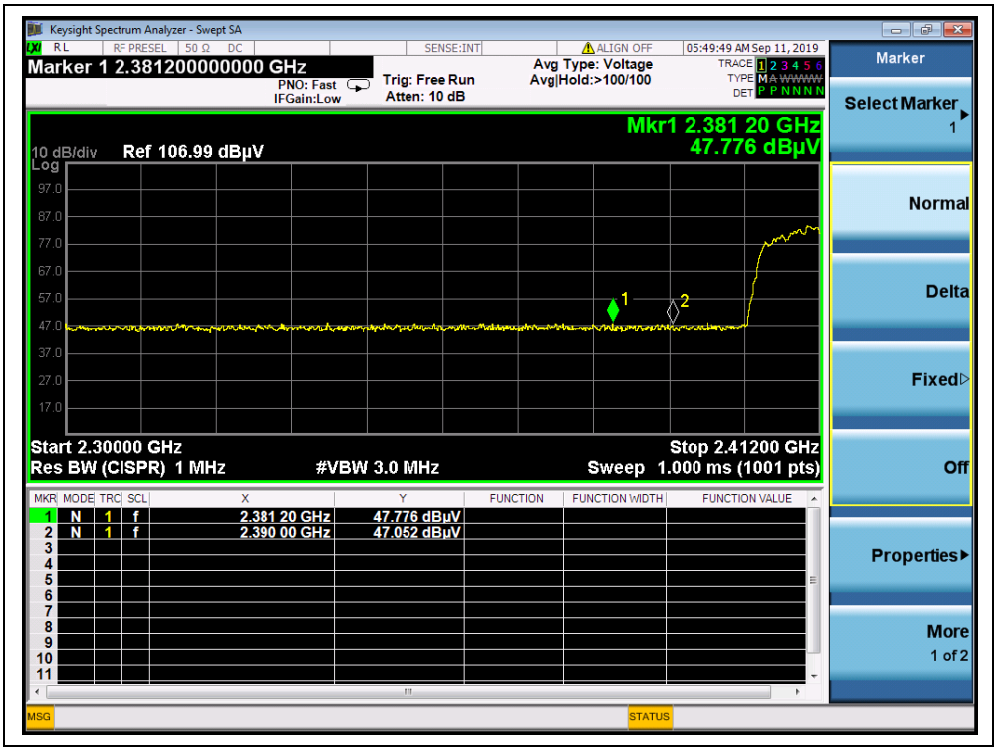
(Channel = 11 AVG, 802.11g)

802.11 n(HT20) Test mode

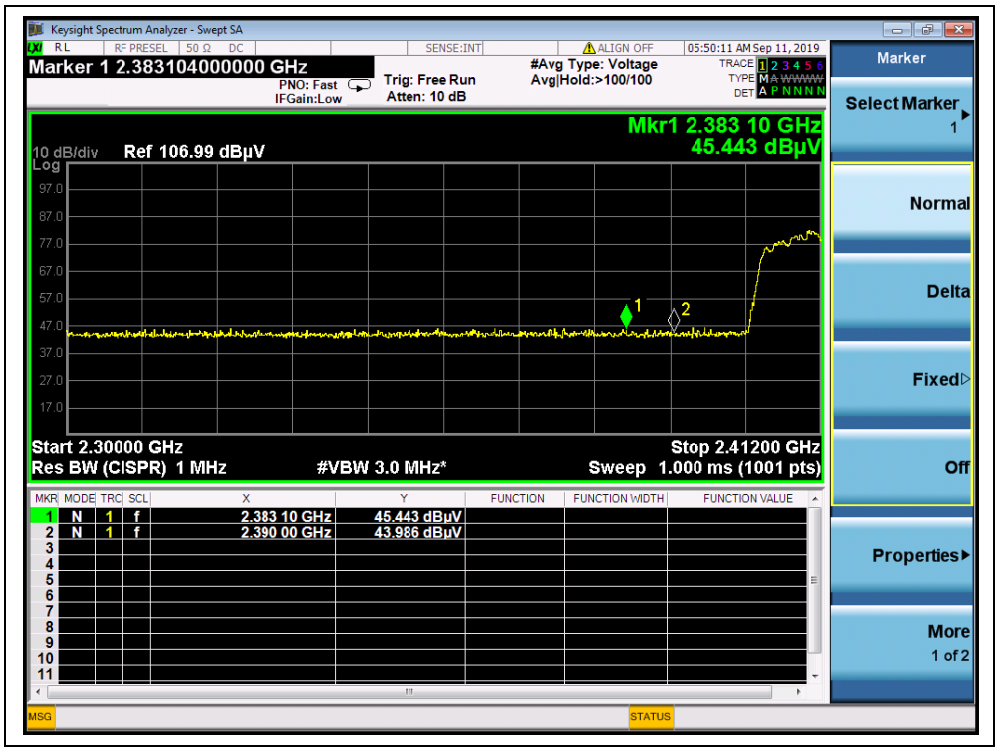
A. Test Verdict:

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
1	2381.20	PK	47.78	-29.67	32.56	50.67	74	PASS
1	2383.10	AV	45.44	-29.67	32.56	48.33	54	PASS
11	2485.79	PK	47.74	-29.67	32.56	50.63	74	PASS
11	2487.84	AV	44.82	-29.67	32.56	47.71	54	PASS

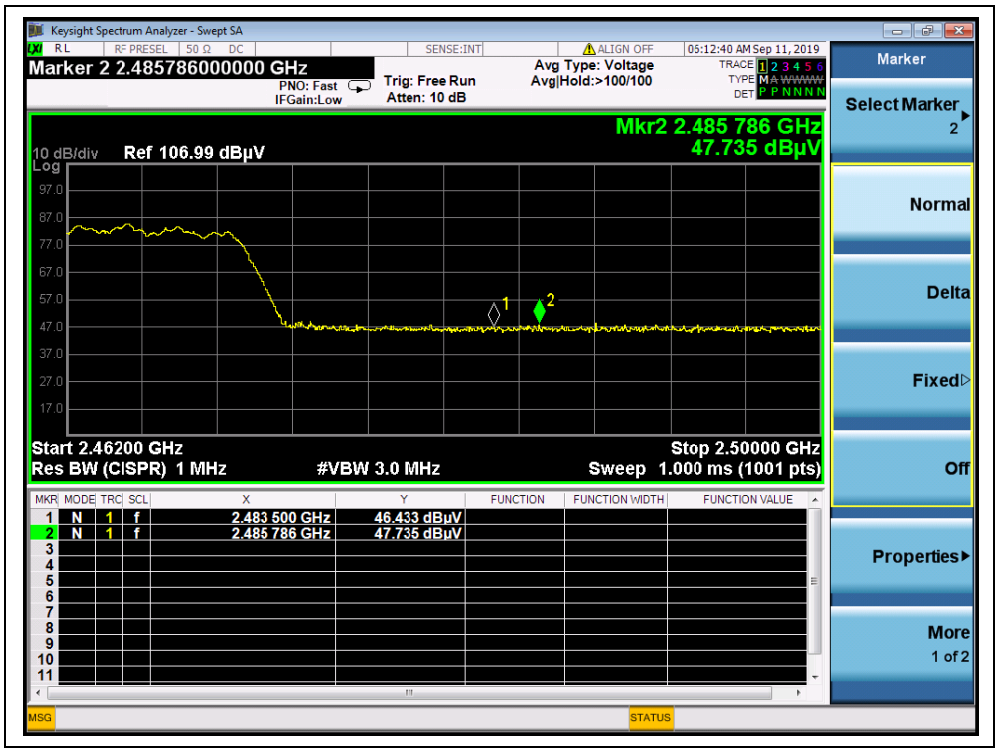
B. Test Plots:



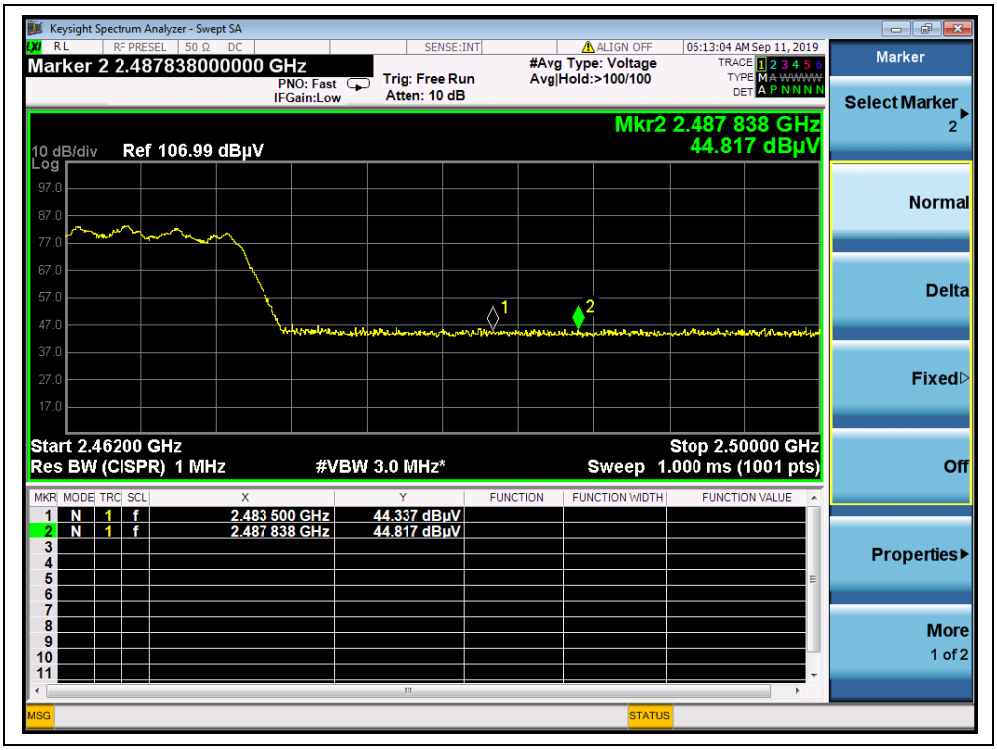
(Channel = 1 PEAK, 802.11n(HT20))



(Channel = 1 AVG, 802.11n(HT20))



(Channel = 11 PEAK, 802.11n(HT20))



(Channel = 11 AVG, 802.11n(HT20))

2.9. Radiated Emission

2.9.1. 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.

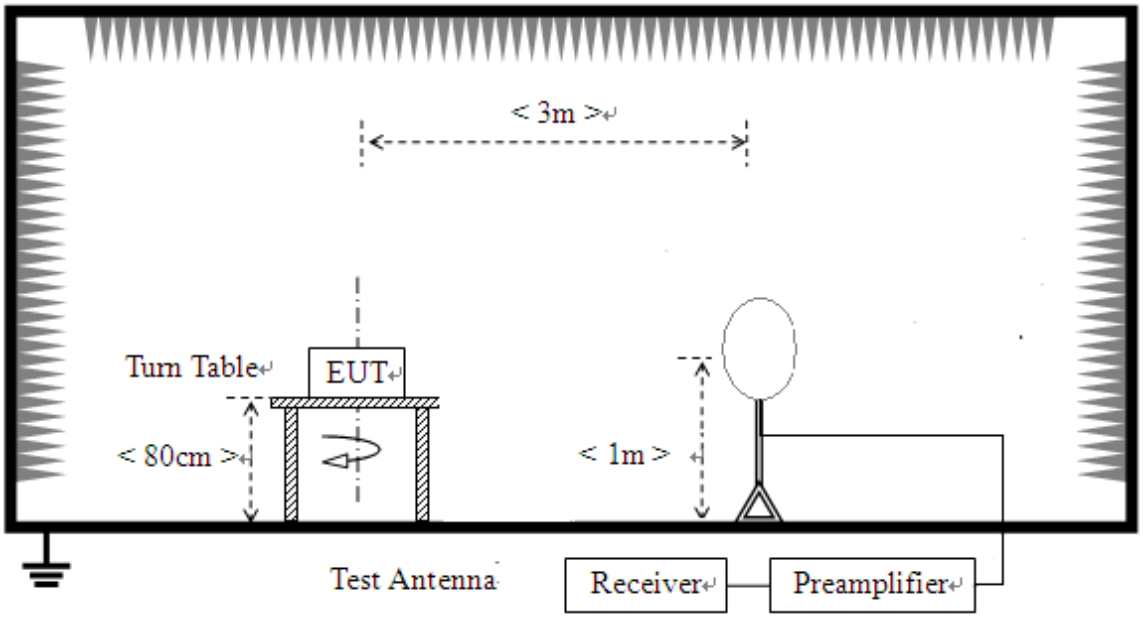
For above 1000MHz, limit field strength of harmonics: 54dBuV/m@3m (AV) and 74dBuV/m@3m (PK)

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)

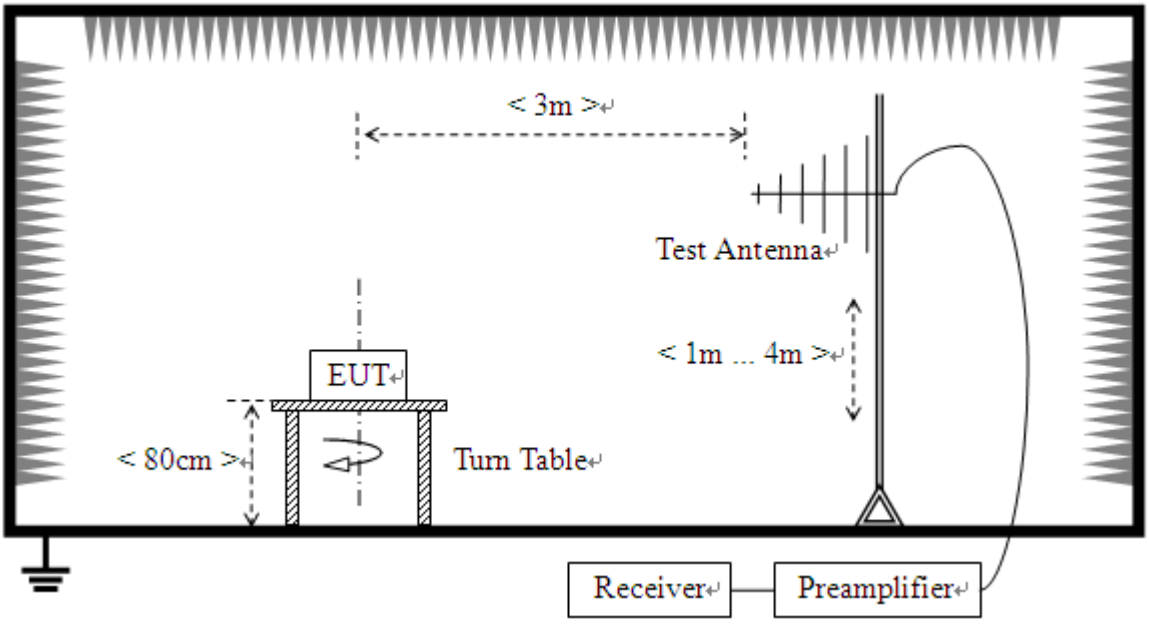
2.9.2. Test Description

A. Test Setup:

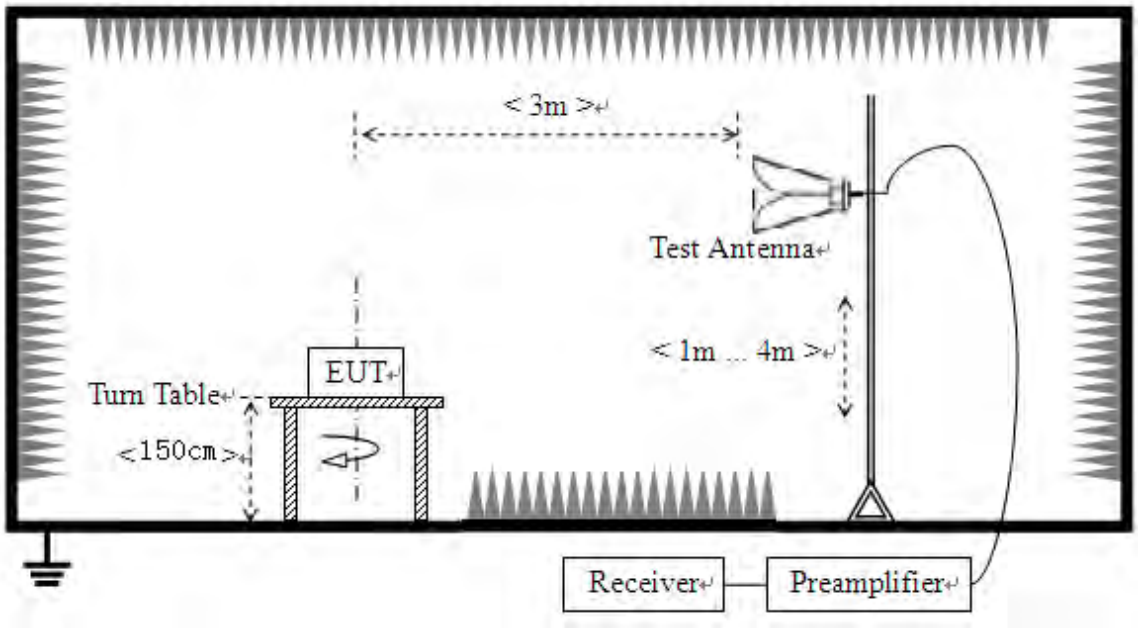
1) For radiated emissions from 9kHz to 30MHz



2) For radiated emissions from 30MHz to1GHz



3) For radiated emissions above 1GHz



The 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.

2.9.3. Test Result

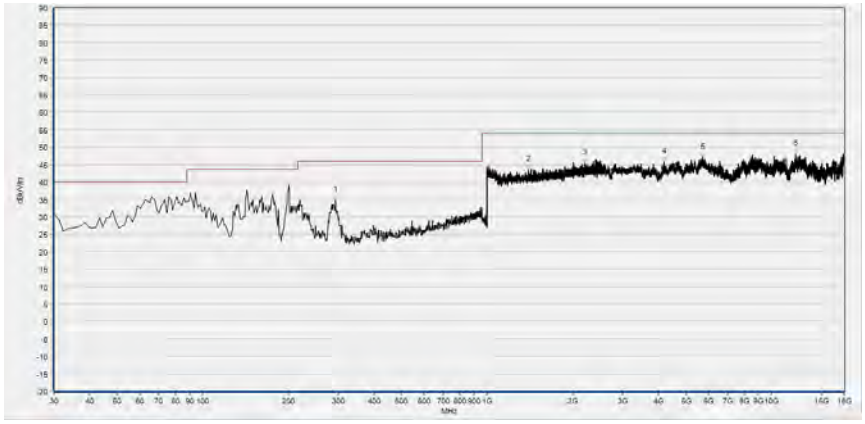
According to ANSI C63.10, because of peak detection will yield amplitudes equal to or greater than amplitudes measured with the quasi-peak (or average) detector, the measurement data from a spectrum analyzer peak detector will represent the worst-case results, if the peak measured value complies with 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.

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.

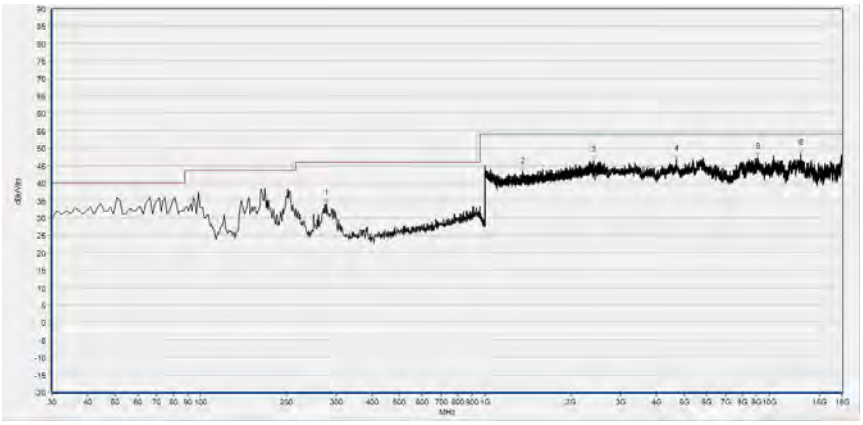
802.11b Test mode

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 V	erdict
293.442	34.66	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1397.599	43.52	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2210.724	45.41	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
4190.689	45.82	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5739.371	46.91	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12144.135	48.06	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

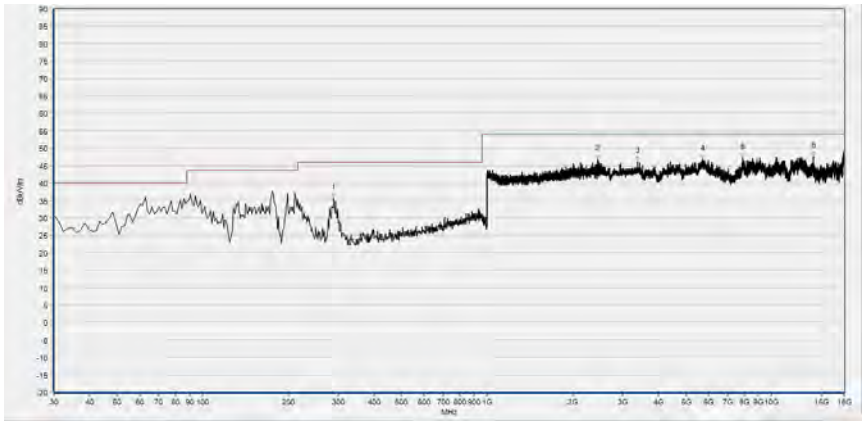
(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna V	erdict
276.446	34.02	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1356.623	43.06	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2411.765	46.36	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
4708.783	46.68	N/A	47.50	74.00	N/A	54.00	Vertical	PASS
9088.780	47.35	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12869.467	48.44	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

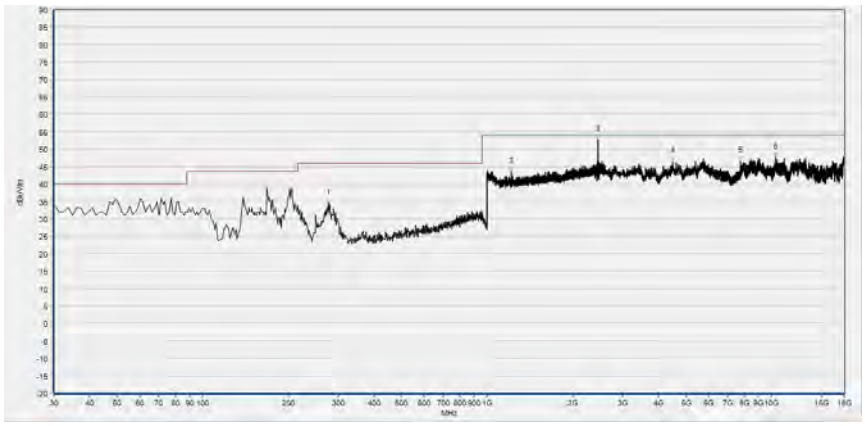
(Antenna Vertical, 30MHz to 25GHz)

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 V	erdict
288.586	35.68	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2450.180	46.79	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
3381.342	46.16	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5728.169	46.75	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
7909.765	47.23	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
14059.684	47.55	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

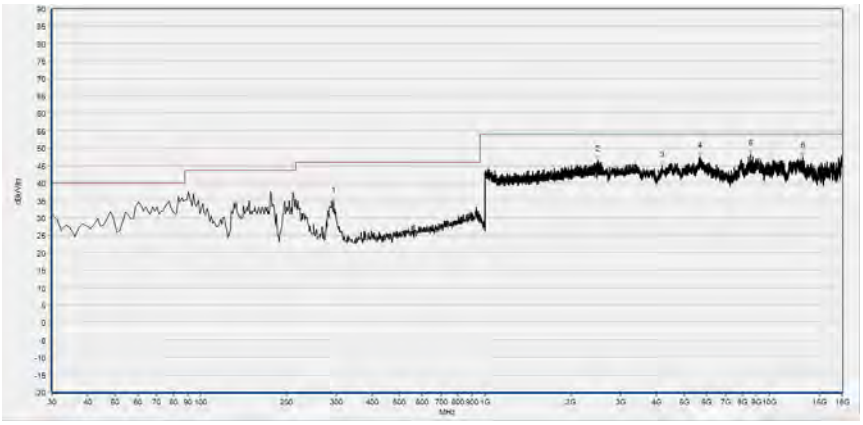
(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna V	erdict
276.446	34.49	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1217.687	43.53	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2454.200	46.68	N/A	34.04	74.00	N/A	54.00	Vertical	PASS
4495.945	46.36	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
7786.543	46.56	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
10357.410	47.64	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

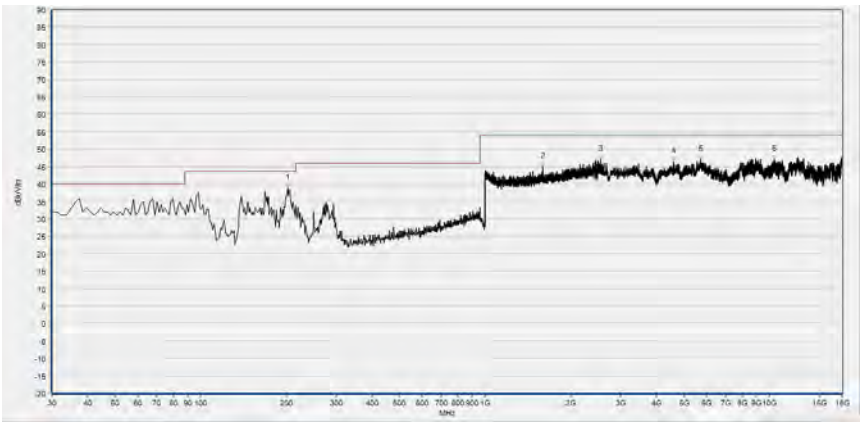
(Antenna Vertical, 30MHz to 25GHz)

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 V	erdict
293.442	34.67	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2485.394	46.49	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
4190.689	44.91	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5686.161	47.64	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8562.284	48.20	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
13076.705	47.56	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

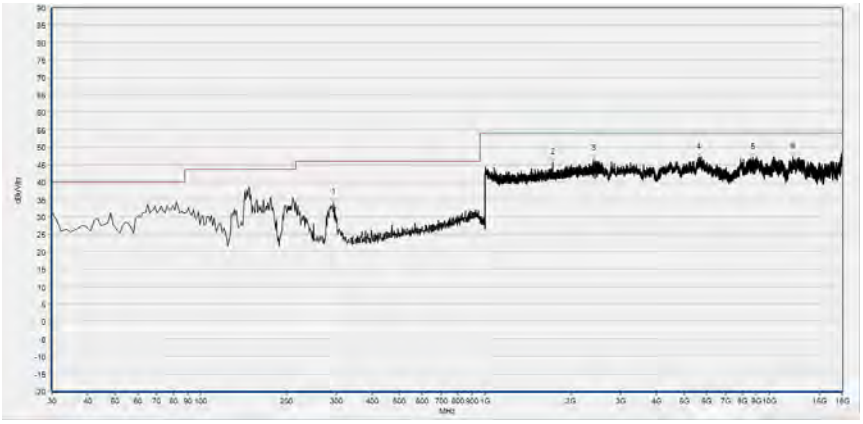


Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna V	erdict
202.390	38.72	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1598.639	44.85	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2546.859	46.91	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
4593.963	46.29	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5730.969	47.06	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
10368.612	47.05	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

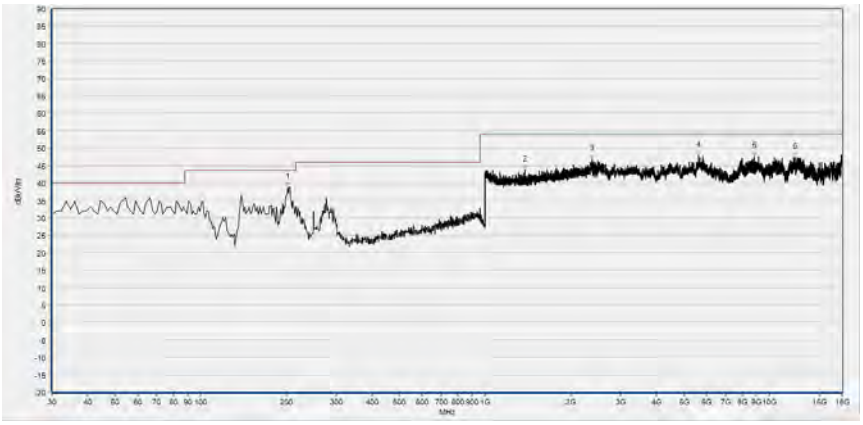
802.11g Test mode

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 V	erdict
293.442	33.98	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1727.331	45.55	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2406.643	46.57	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5616.148	46.89	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8738.716	47.02	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12057.320	47.09	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

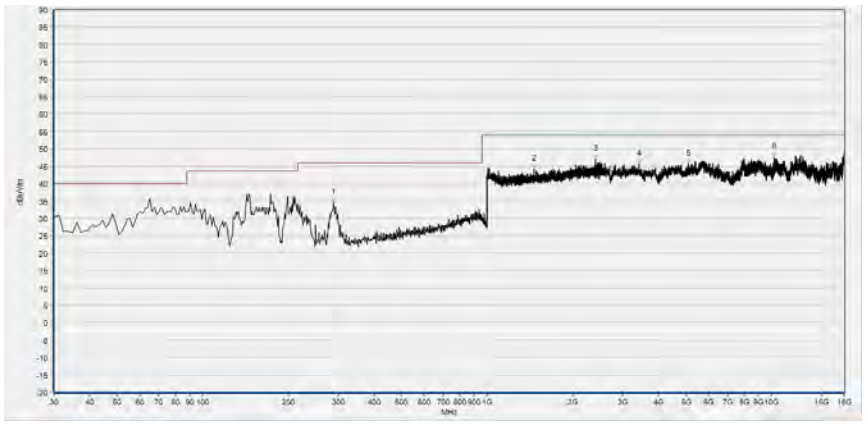
(Antenna Horizontal, 30MHz to 25GHz)



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
202.390	38.81	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1378.391	43.73	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2371.429	46.79	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5618.949	47.88	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8845.135	47.62	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12270.158	47.37	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

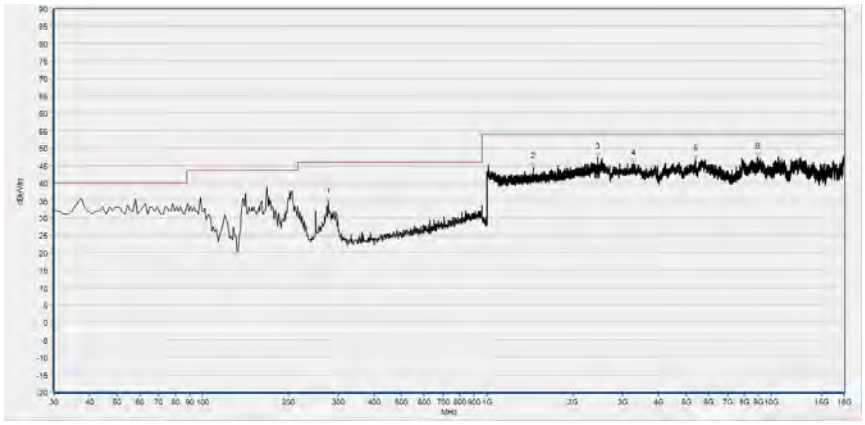
(Antenna Vertical, 30MHz to 25GHz)

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 V	erdict
288.586	34.59	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1462.905	44.10	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2407.923	46.89	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
3426.150	45.47	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5098.054	45.51	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
10231.388	47.61	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

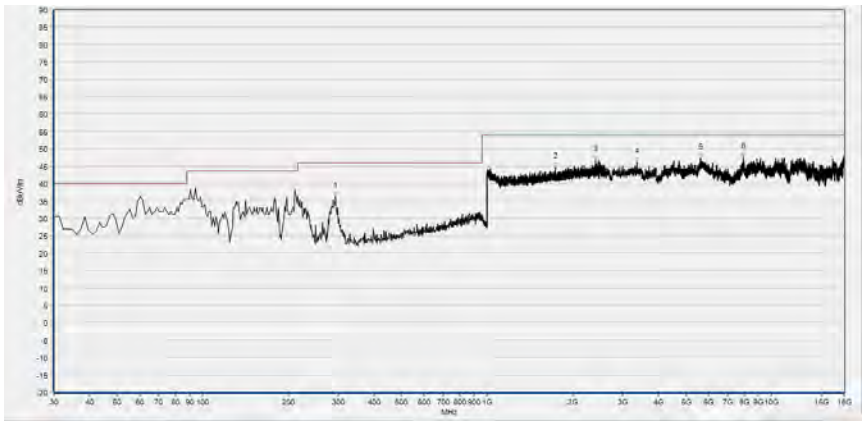
(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna V	erdict
276.446	34.42	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1455.862	44.49	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2452.741	47.33	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
3263.721	45.63	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5403.310	46.72	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8917.949	47.31	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

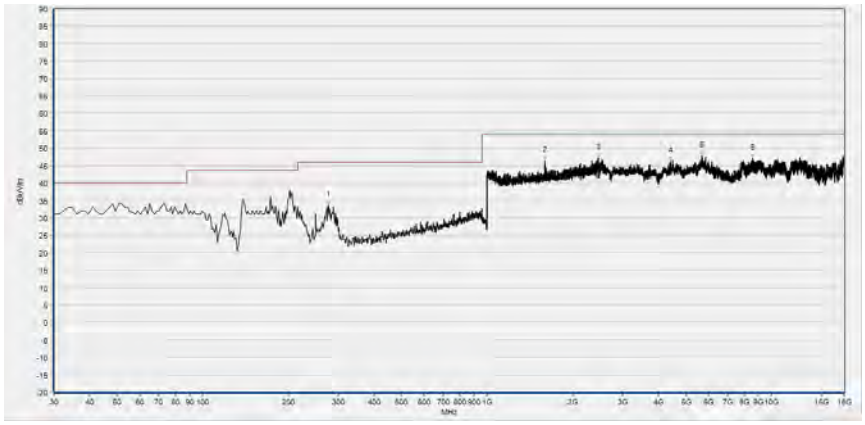
(Antenna Vertical, 30MHz to 25GHz)

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 V	erdict
293.442	36.32	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1738.856	44.65	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2407.283	46.84	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
3361.738	46.09	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5621.749	47.32	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
7982.579	47.64	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

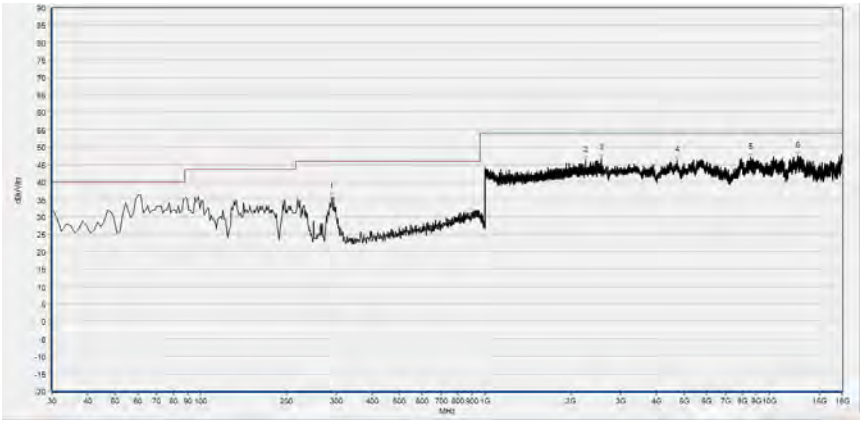


Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna V	erdict
276.446	33.73	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1599.280	46.42	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2460.424	47.09	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
4409.129	46.20	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5677.760	47.78	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8562.284	47.06	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

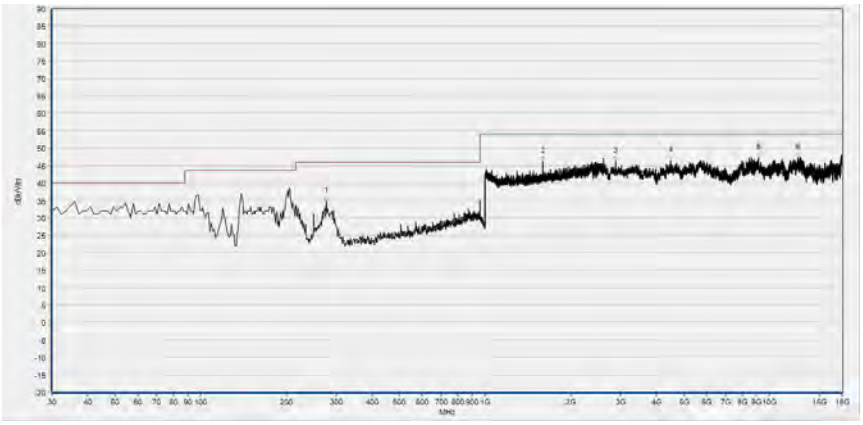
802.11n(HT20) Test mode

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 V	erdict
288.586	35.76	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2260.024	46.09	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2565.426	46.82	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
4725.586	46.07	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8567.885	46.91	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
12586.616	47.49	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

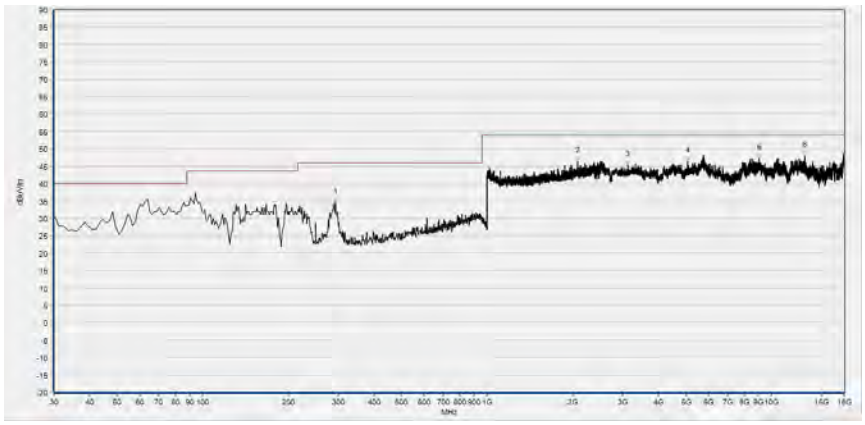
(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna V	erdict
276.446	34.77	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1592.877	46.16	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2874.450	46.16	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
4479.142	46.36	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
9130.787	47.17	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
12597.818	47.18	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

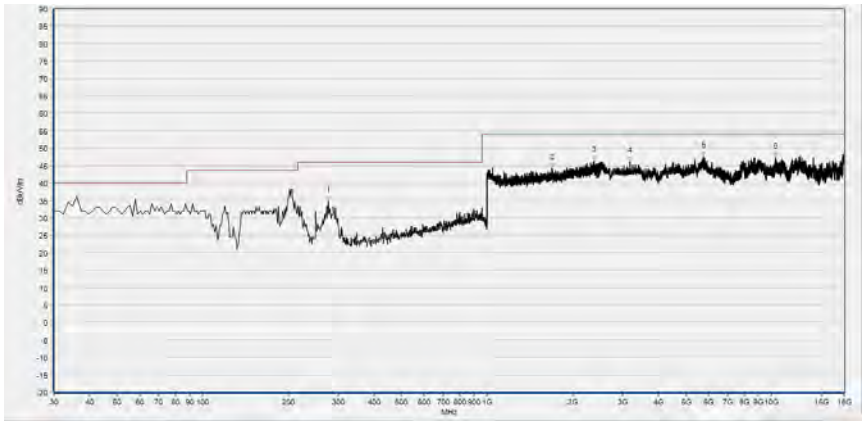
(Antenna Vertical, 30MHz to 25GHz)

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 V	erdict
293.442	34.52	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
2083.954	46.34	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
3126.496	45.24	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5070.049	46.33	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
9024.368	47.11	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
13068.303	47.93	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

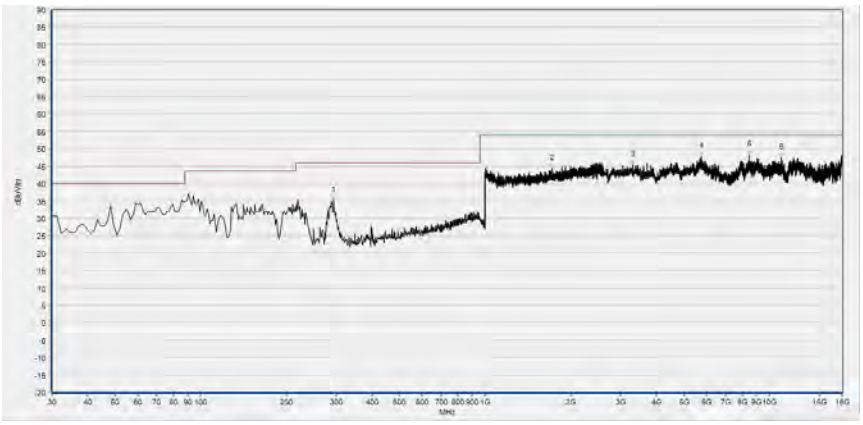
(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna V	erdict
276.446	34.85	N/A	N/A	N/A	46.000	N/A	Vertical	PASS
1688.916	44.30	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2378.471	46.35	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
3182.506	46.23	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5764.575	47.60	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
10349.009	47.36	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

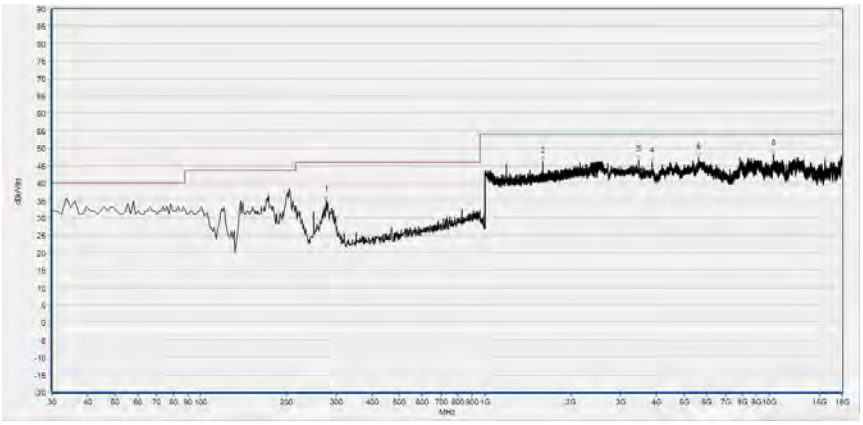
(Antenna Vertical, 30MHz to 25GHz)

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 V	erdict
293.442	35.05	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
1719.008	44.27	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
3300.127	45.38	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5744.972	47.80	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
8495.072	48.26	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
10995.927	47.40	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 V	erdict
276.446	35.10	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
1595.438	46.16	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
3470.958	46.61	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
3874.232	46.21	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5624.550	47.17	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
10357.410	48.30	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

Annex A Test Uncertainty

Where rele vant, the following measurement uncer tainty levels have been estimated for test performed on the EUT as specified in CISPR 16-1-2:

Test items	Uncertainty
Peak Output Power	±2.22dB
Power spectral density (PSD)	±2.22dB
Bandwidth ±5%	
Conducted Spurious Emission	±2.77 dB
Restricted Frequency Bands	±5%
Radiated Emission	±2.95dB
Conducted Emission	±2.44dB

This un certainty represent an expanded un certainty 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

Laboratory Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Laboratory Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
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 faciliti es used to collect the measurement data are located at FL.3, Buildin g A, FeiYang Science Park, Block 67, B aoAn 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
Attenuator 1	(N/A.)	10dB	Resnet	N/A	N/A
EXA Signal Analzyer	MY53470836	N9010A	Agilent	2019.04.09	2020.04.08
USB Wideband Power Sensor	MY54210011	U2021XA	Agilent	2019.04.16	2020.04.15
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
Computer T430i		Think Pad	Lenovo	N/A	N/A

4.2 Conducted Emission Test Equipments

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Cal. Due
Receiver	MY56400093	N9038A	KEYSIGHT	2019.05.08	2020.05.09
LISN 812744		NSLK 8127	Schwarzbeck	2019.05.08	2020.05.09
Pulse Limiter (20dB)	9391	VTSD 9561-D	Schwarzbeck	2019.05.08	2020.05.09
Coaxial cable(BNC) (30MHz-26GHz)	CB01	EMC01	Morlab	N/A	N/A

4.3 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

4.4 Radiated Test Equipments

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Cal. Due
Receiver	MY54130016	N9038A	Agilent	2019.07.26	2020.07.25
Test Antenna - Bi-Log	9163-519	VULB 9163	Schwarzbeck	2019.05.08	2020.05.09
Test Antenna - Loop	1519-022	FMZB1519	Schwarzbeck	2019.02.15	2020.02.14
Test Antenna – Horn	01774	BBHA 9120D	Schwarzbeck	2019.07.26	2020.07.25
Test Antenna – Horn	BBHA9170 #774	BBHA9170	Schwarzbeck	2019.07.26	2020.07.25
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	2019.05.08	2020.05.09
18-26.5GHz pre-Amplifier	MA03	TS-PR18	Rohde& Schwarz	2019.05.08	2020.05.09
Notch Filter	N/A	WRCG-2400-2483.5-60SS	Wainwright	2018.12.01	2019.11.30
Anechoic Chamber	N/A	9m*6m*6m	CRT	2017.11.19	2020.11.18

END OF REPORT