REPORT No.: SZ17050109W04

FCC RF TEST REPORT

APPLICANT	:	AOC
PRODUCT NAME	:	Tablet PC
MODEL NAME	:	A110, A110-E
TRADE NAME	:	N/A
BRAND NAME	:	AOC
FCC ID	:	2AEB5-A110
STANDARD(S)	:	47 CFR Part 15 Subpart E
ISSUE DATE	:	2017-06-11

SHENZHEN MORLAB COMMUNICATIONS TECHNOLOGY Co., Ltd.

MORLAB GROUP
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.com
Fax: 86-755-36698525 E-mail: service@morlab.cn

DIRECTORY

Change History		
Issue	Date	Reason for change
1.0	2017-06-01	First edition

TEST REPORT DECLARATION

Applicant	AOC
Applicant Address	14F-5, No. 258, Liancheng Rd., Zhonghe Dist., New Taipei City, Taiwan
Manufacturer	AOC
Manufacturer Address	14F-5, No. 258, Liancheng Rd., Zhonghe Dist., New Taipei City, Taiwan
Product Name	Tablet PC
Model Name	A110, A110-E
Brand Name	AOC
HW Version	EM-T8811A
SW Version	A110-E
Test Standards	47 CFR Part 15 Subpart E
Test Date	2017-05-25 to 2017-06-15
Test Result	PASS

Tested by : Li Jingzong

Li Jingzong (Test Engineer)

Approved by : Qiu Xiaojun

Qiu Xiaojun (Supervisor)

1. GENERAL INFORMATION

1.1 EUT Description

Product Name.....:	Tablet PC
Serial No. .....:	(n.a, marked #1 by test site)
Hardware Version.....:	EM_T8811A_V6.0 MO
Software Version.....:	Android 6.0
Applicant.....:	AOC 14F-5, No. 258, Liancheng Rd., Zhonghe Dist., New Taipei City, Taiwan
Manufacturer .....:	AOC 14F-5, No. 258, Liancheng Rd., Zhonghe Dist., New Taipei City, Taiwan
Frequency Range.....:	802.11b/g/n: 2.400GHz - 2.4835GHz 802.11a/n: 5.150GHz- 5.250GHz 5.25 GHz -5.35 GHz 5.47 GHz -5.725 GHz 5.725GHz- 5.850GHz
Channel Number .....:	Refer Note(2)
Modulation Type.....:	DSSS, OFDM
Antenna Type.....:	PIFA Antenna
Antenna Gain.....:	2 dBi

Note 1: The U-NII band is applicable to this report, another bands of operation (2.4GHz) is documented in a separate report.

Note 2 : The following tables are the channel number and frequency of the EUT, the black bold channels were selected for test.

20MHz Bandwidth:

Frequency Range	5150~5250MHz				5250~5350MHz			
Channel Number	**36**	40	**44**	**48**	**52**	56	**60**	**64**
Frequency (MHz)	**5180**	5200	**5220**	**5240**	**5260**	5280	**5300**	**5320**

Frequency Range	5470~5725MHz										
Channel Number	**100**	105	108	112	116	**120**	124	128	132	136	**140**
Frequency (MHz)	**5500**	5520	5540	5560	5580	**5600**	5620	5640	5660	5680	**5700**

Frequency Range	5725~5850MHz				
Channel Number	**149**	153	**157**	161	**165**
Frequency (MHz)	**5745**	5765	**5785**	5805	**5825**

40MHz Bandwidth:

Frequency Range	5150~5250 MHz		5250~5350 MHz	
Channel Number	**38**	**46**	**54**	**62**
Frequency (MHz)	**5190**	**5230**	**5270**	**5310**

Frequency Range	5470~5725MHz					
Channel Number	**102**	110	118	**126**	**134**	142
Frequency (MHz)	**5510**	5550	5590	**5630**	**5670**	5710

Frequency Range	5725~5850 MHz	
Channel Number	**151**	**159**
Frequency (MHz)	**5755**	**5795**

Note 3: During test, the duty cycle of the EUT was setting to 100%.

Note 4: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

Note 5: The antenna connector of EUT is designed with permanent attachment and no consideration of replacement.

1.2 Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 15 Subpart E (UNII band) for the EUT FCC ID Certification:

No.	Identity	Document Title
1	47 CFR Part 15 (5-1-14 Edition)	Radio Frequency Devices

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

No.	Section	Description	Result
1	15.203	Antenna Requirement	**PASS**
2	15.407(a) (e)	Emission Bandwidth	**PASS**
3	15.407(a)	Maximum conducted output Power	**PASS**
4	15.407(a)	Peak Power spectral density	**PASS**
5	15.407(b)	Restricted Frequency Bands	**PASS**
6	15.407(g)	Frequency Stability	**PASS**
7	15.207	Conducted Emission	**PASS**
8	15.407(b)	Radiated Emission	**PASS**
9	15.407(f)	RF exposure evaluation	**PASS**

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

These RF tests were performed according to the method of measurements prescribed in KDB789033 D02 v01r04 (05/02/2017) and KDB644545 D03 v01 (08/14/2014).

1.3 Test Environment Conditions

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

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

2. 47 CFR PART 15E 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.

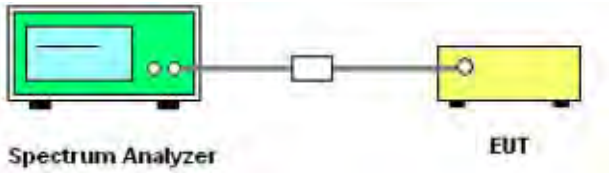
2.2 Emission Bandwidth

2.2.1 Requirement

For purposes of this subpart the emission bandwidth shall be determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that are 26 dB down relative to the maximum level of the modulated carrier. Determination of the emissions bandwidth is based on the use of measurement instrumentation employing a peak detector function with an instrument resolution bandwidth approximately equal to 1.0 percent of the emission bandwidth of the device under measurement. Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

2.2.2 Test Description

A. Test Set:



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

B. Test Procedure

1. KDB 789033 Section C) 1) Emission Bandwidth was used in order to prove compliance

1) Set RBW = approximately 1% of the emission bandwidth.

2) Set the VBW > RBW.

3) Detector = Peak.

4) Trace mode = max hold.

5) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

2. KDB 789033 Section C) 2) minimum emission bandwidth for the band 5.725-5.85GHz was used in order to prove compliance.

Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for the band 5.715-5.85 GHz. The following procedure shall be used for measuring this bandwidth:

a) Set RBW = 100 kHz.

b) Set the video bandwidth (VBW) ≥ 3 × RBW.

c) Detector = Peak.

d) Trace mode = max hold.

e) Sweep = auto couple.

f) Allow the trace to stabilize.

g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

2.2.3 Test Result

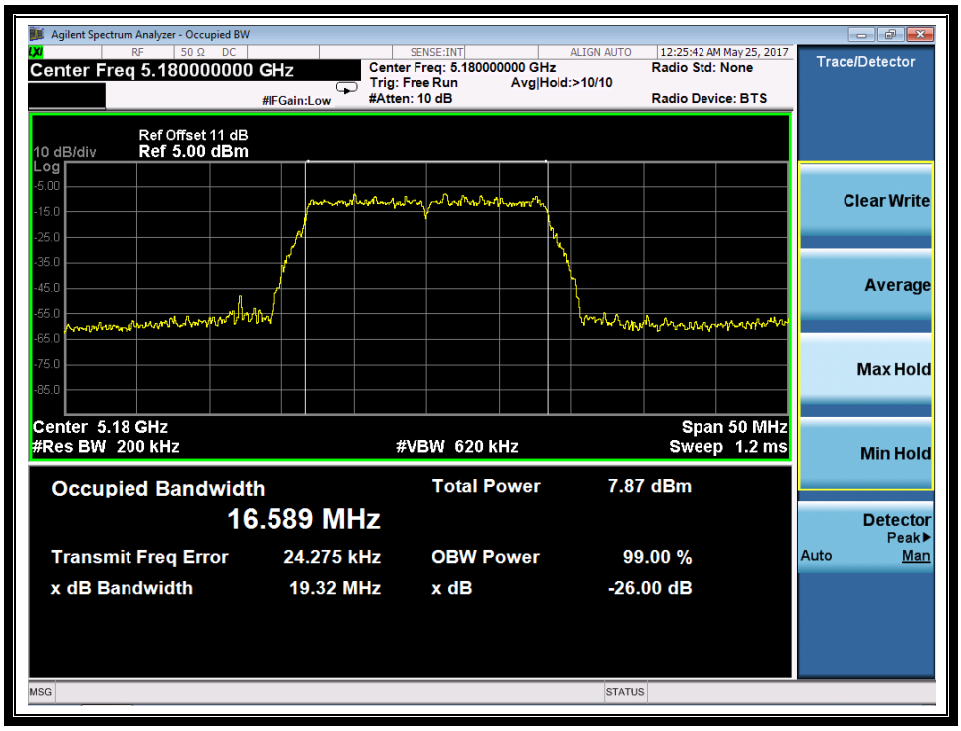
The lowest, middle and highest channels are selected to perform testing to record the 26 dB bandwidth of the Module.

2.2.3.1 802.11a-20MHz Test mode

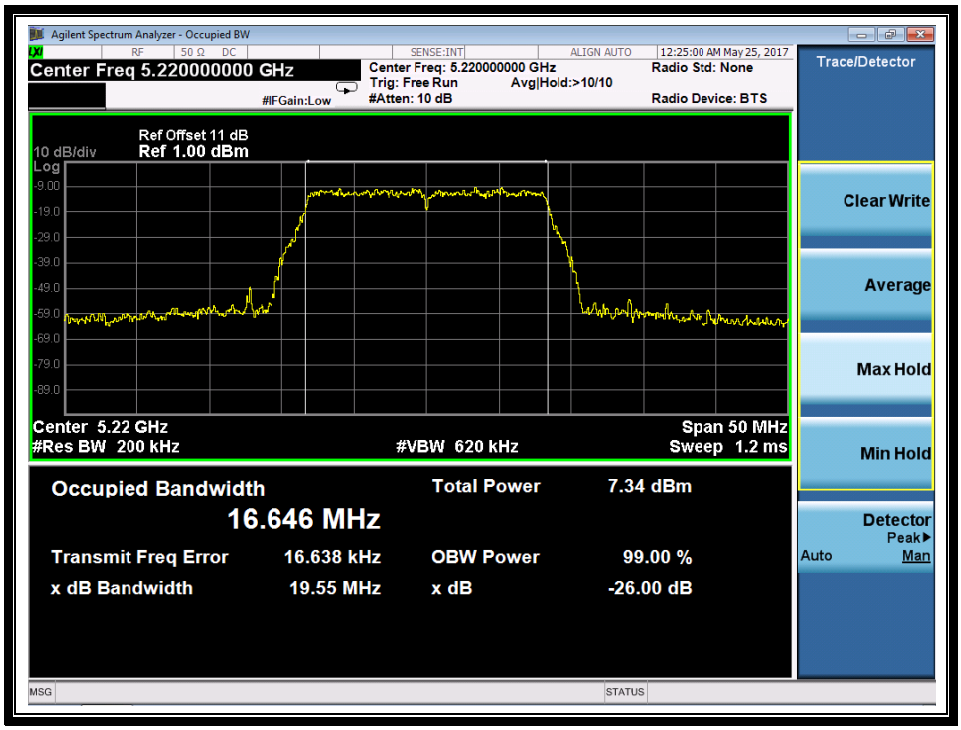
A. Test Verdict:

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
36	5180	19.32
44	5220	19.55
48	5240	19.38
52	5260	19.52
60	5300	19.59
64	5320	19.64
100	5500	19.42
120	5600	19.21
140	5700	19.28
Channel	Frequency (MHz)	6dB Bandwidth (MHz)
149	5745	16.40
157	5785	16.41
165	5825	16.36

B. Test Plots

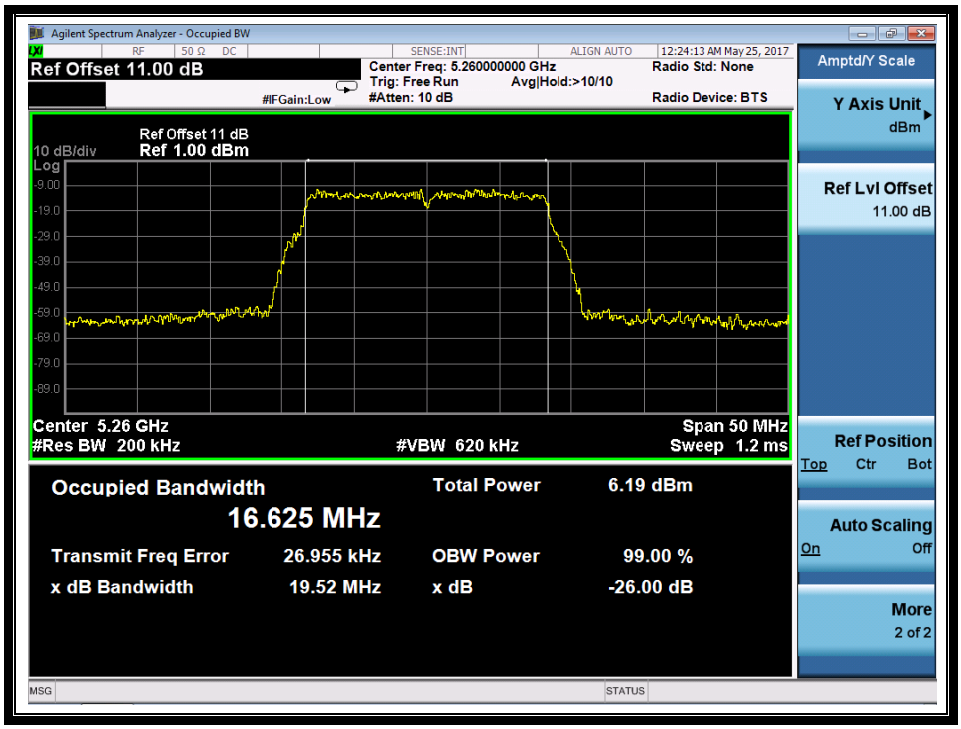


(Channel 36: 5180MHz @ 802.11a)



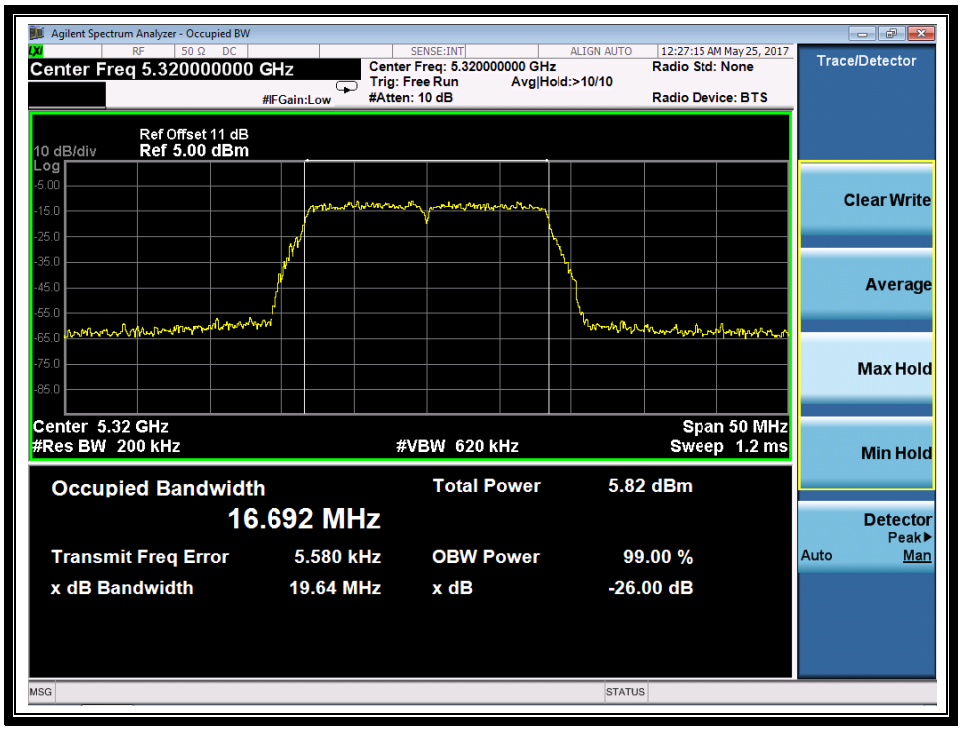
(Channel 44: 5220 MHz @ 802.11a)

(Channel 48: 5240MHz @ 802.11a)



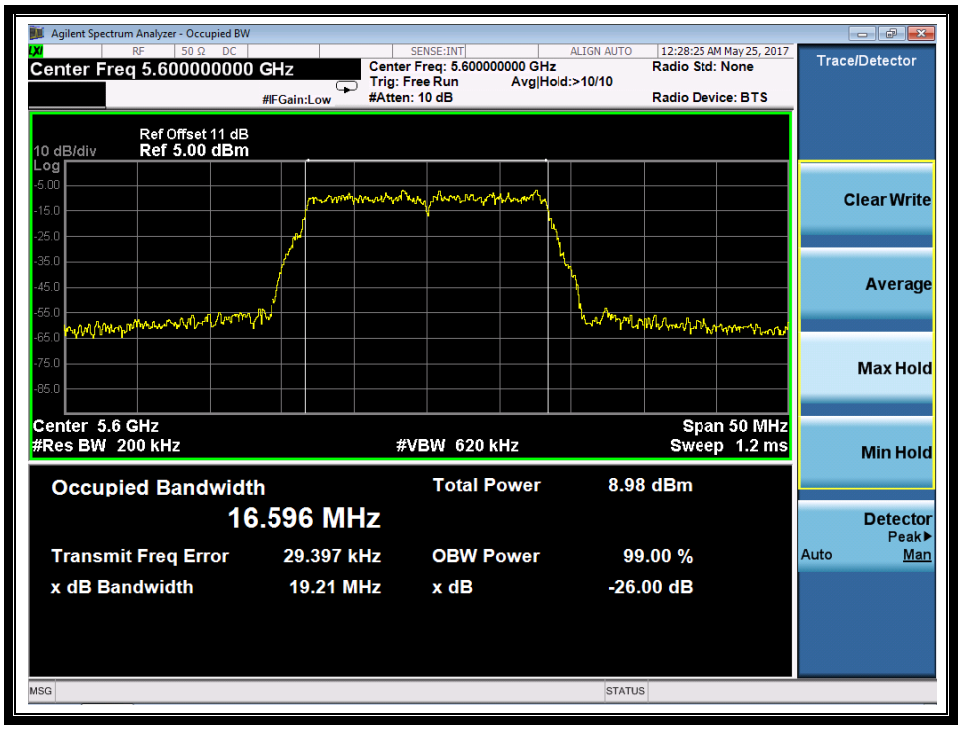
(Channel 52: 5260MHz @ 802.11a)

(Channel 60: 5300MHz @ 802.11a)

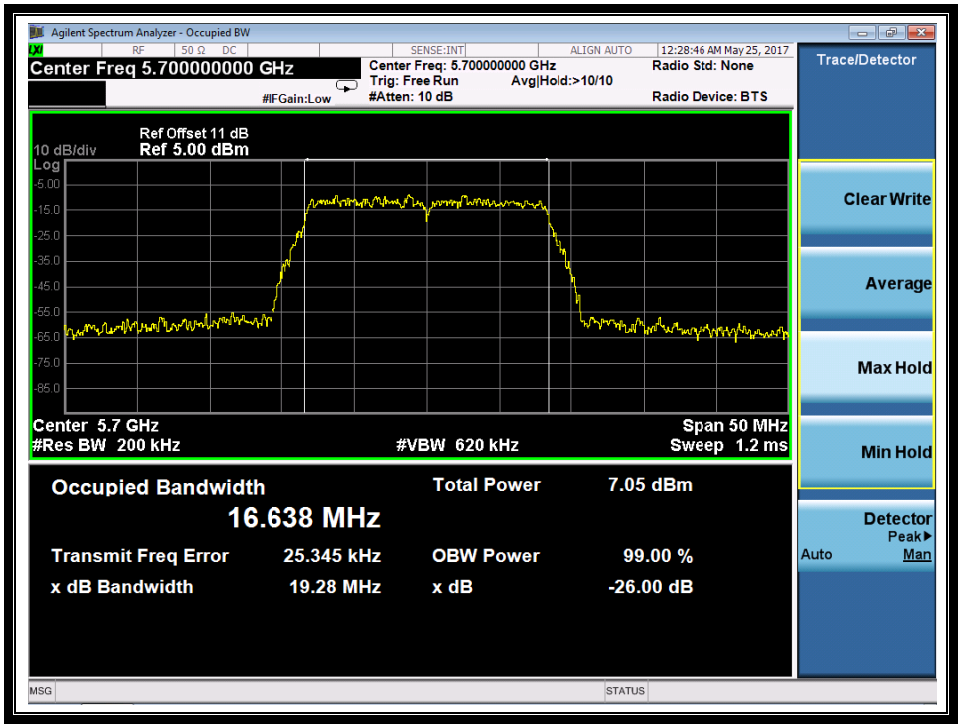


(Channel 64: 5320MHz @ 802.11a)

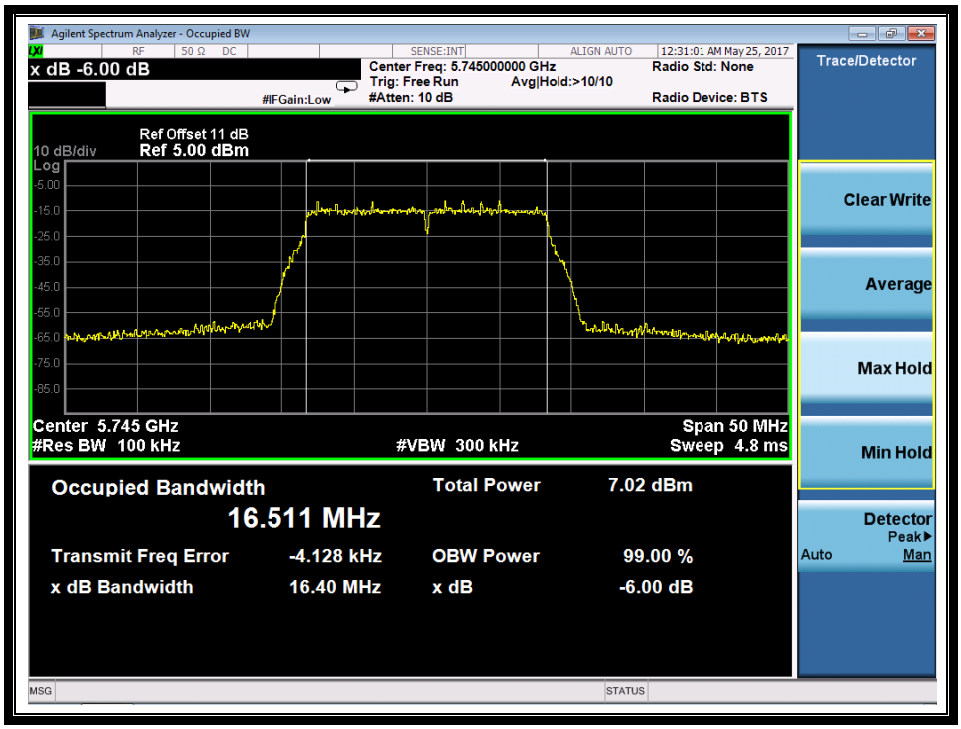
(Channel 100: 5500MHz @ 802.11a)



(Channel 120: 5600MHz @ 802.11a)

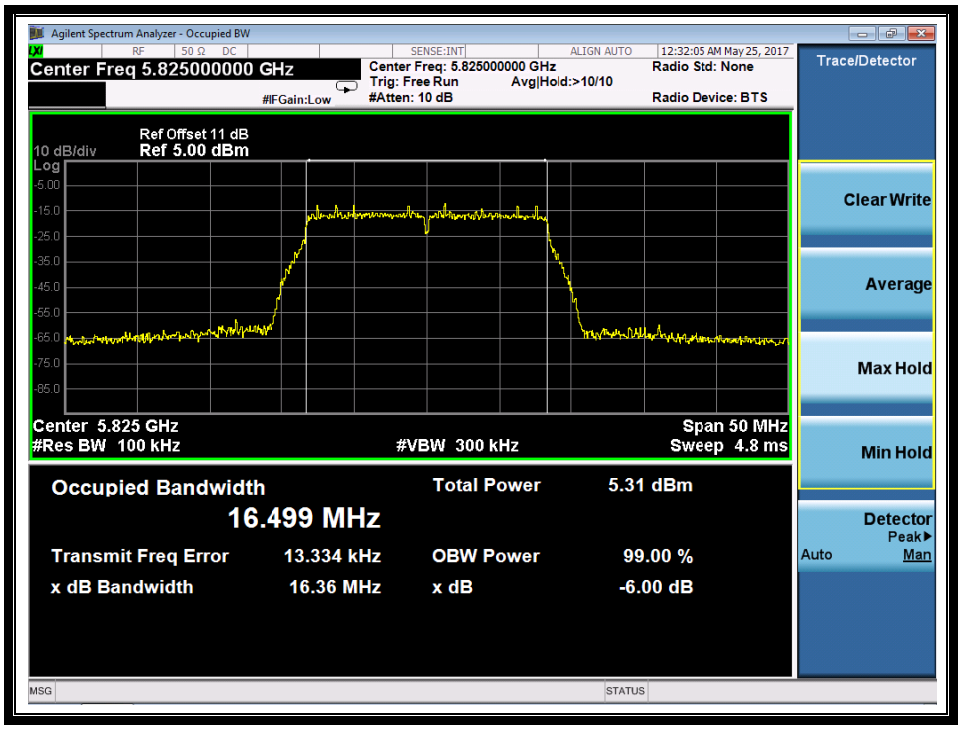


(Channel 140: 5700MHz @ 802.11a)



(Channel 149: 5745MHz @ 802.11a)

(Channel 157: 5785MHz @802.11a)



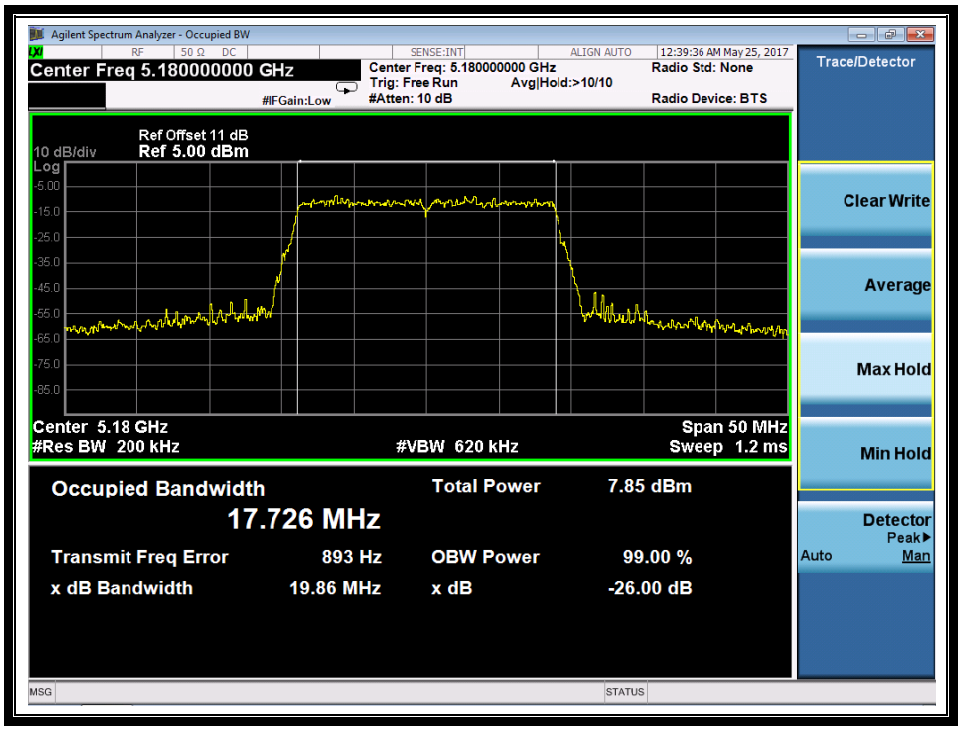
(Channel 165: 5825MHz @ 802.11a)

2.2.3.2 802.11n-20MHz Test mode

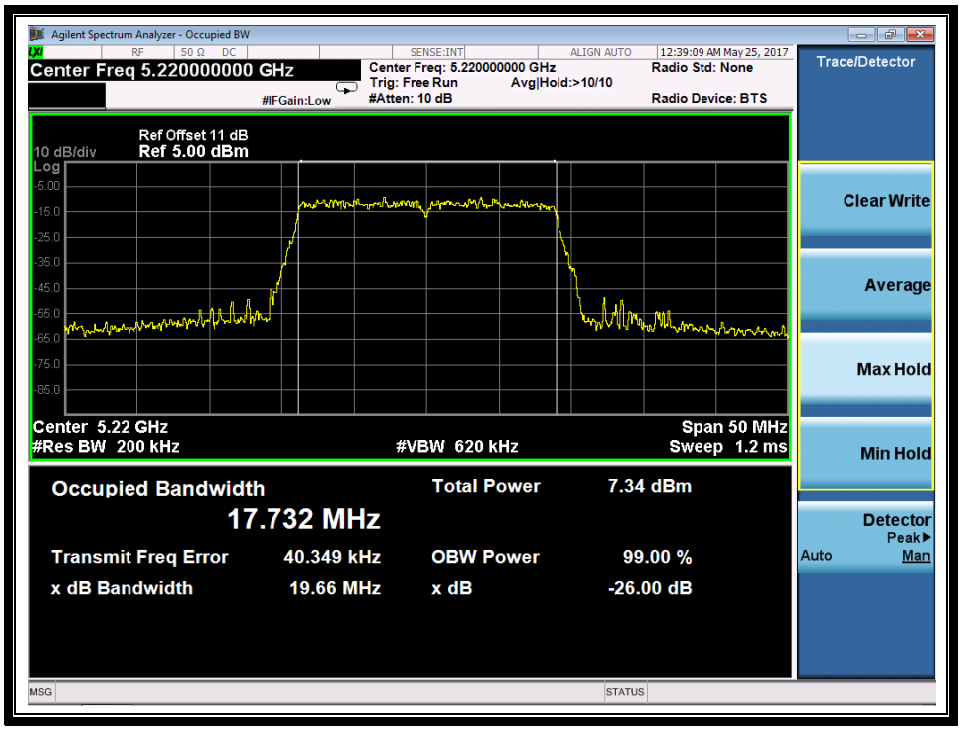
C. Test Verdict:

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
36	5180	19.86
44	5220	19.66
48	5240	19.84
52	5260	19.62
60	5300	19.86
64	5320	19.90
100	5500	19.77
120	5600	19.80
140	5700	19.64
Channel	Frequency (MHz)	6dB Bandwidth (MHz)
149	5745	17.66
157	5785	17.65
165	5825	17.61

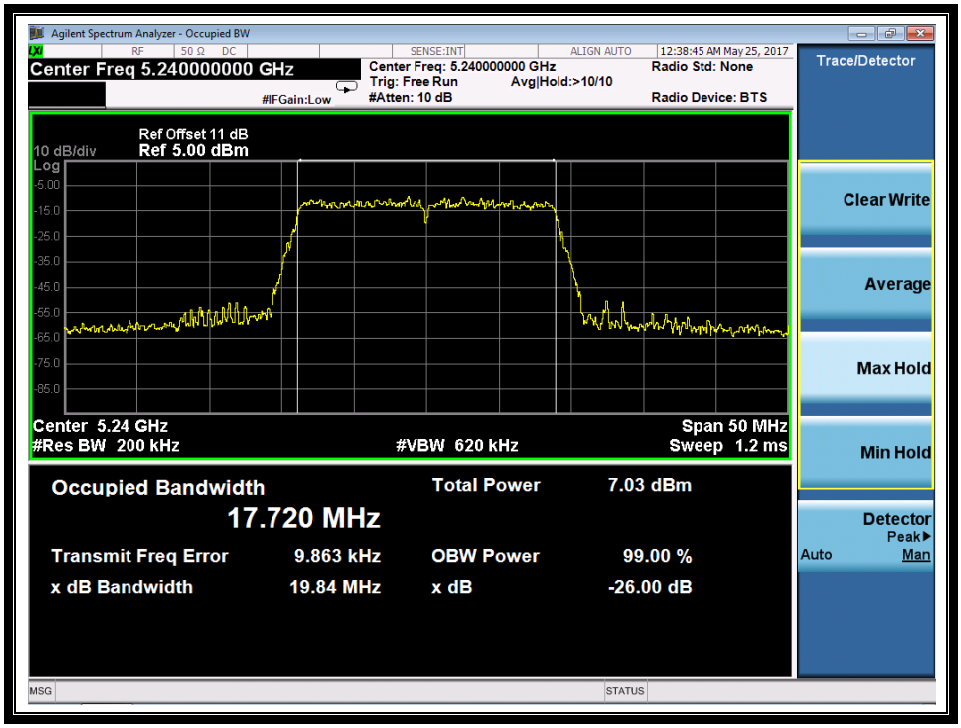
D. Test Plots



(Channel 36: 5180MHz @ 802.11n-20MHz)

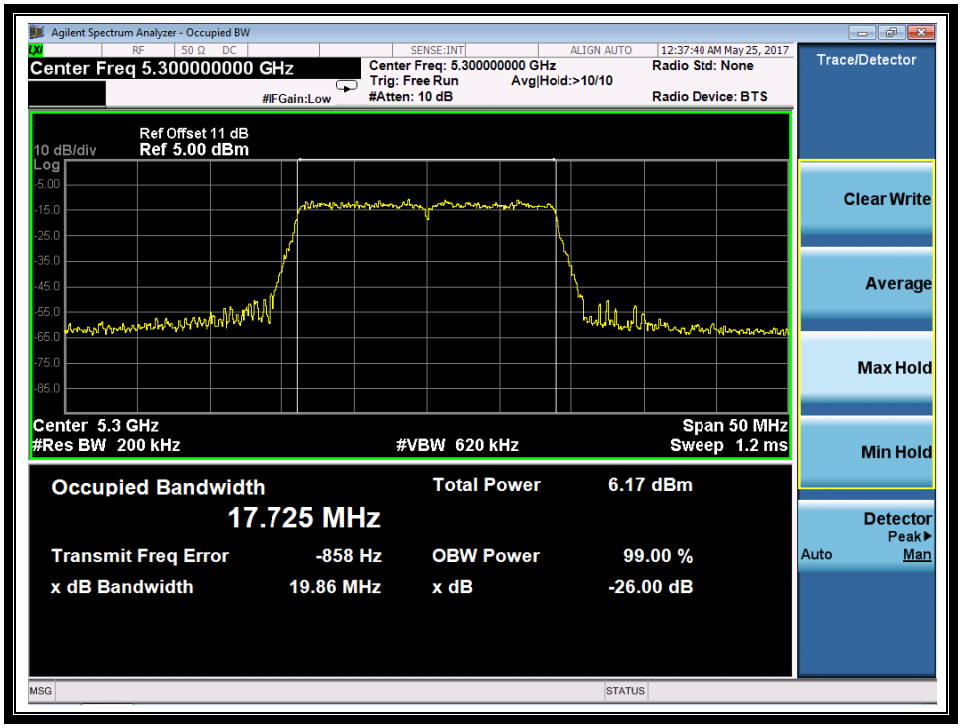


(Channel 44: 5220 MHz @ 802.11n-20MHz)

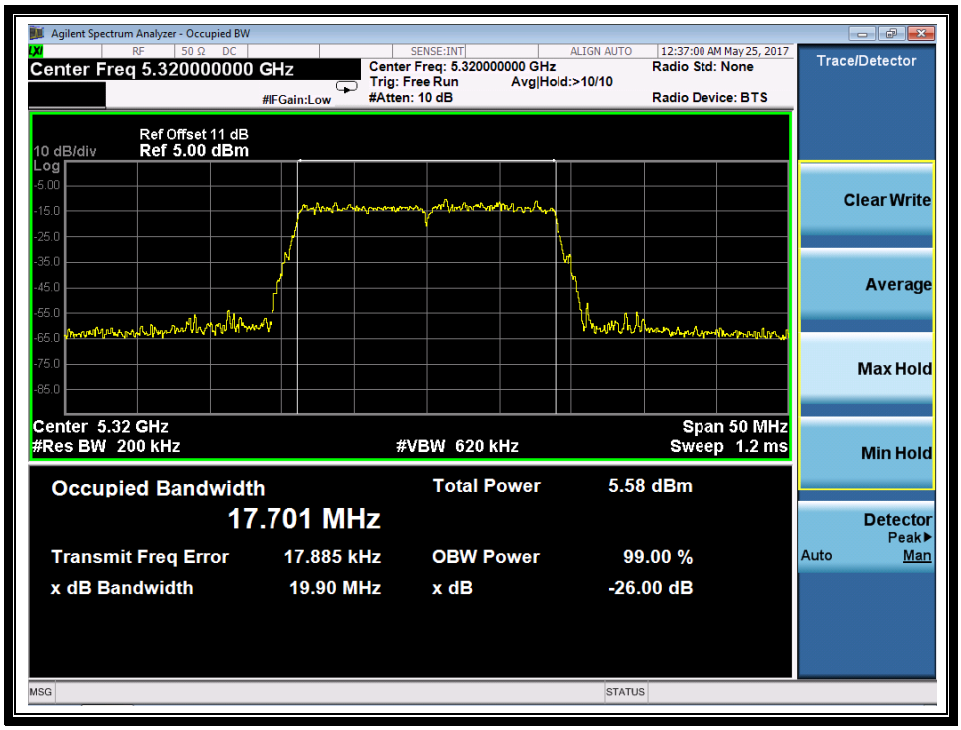


(Channel 48: 5240MHz @ 802.11n-20MHz)

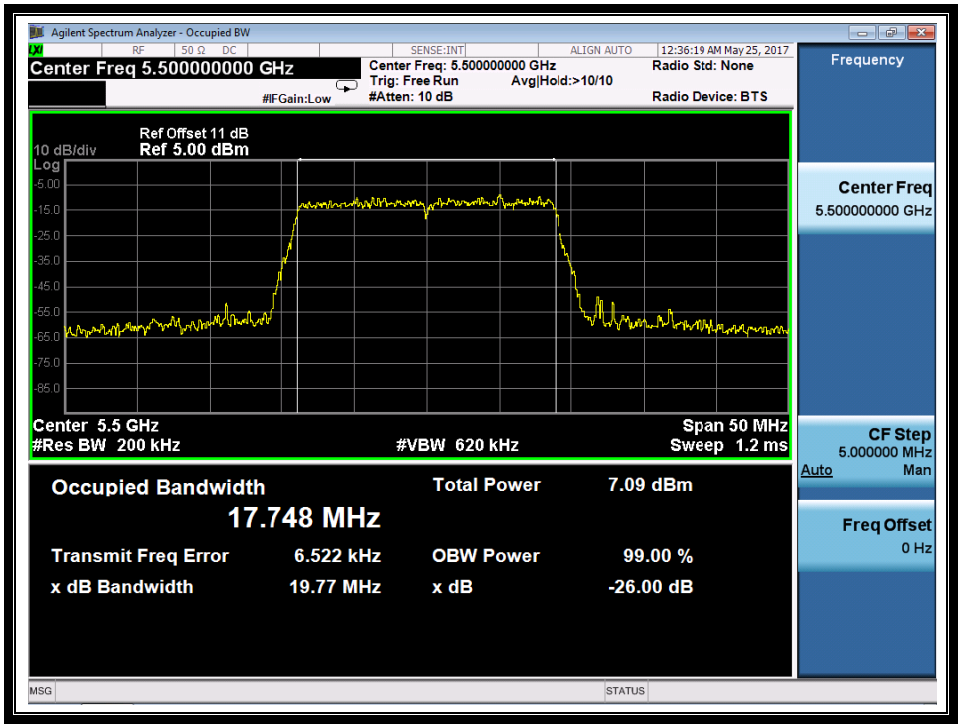
(Channel 52: 5260MHz @ 802.11n-20MHz)



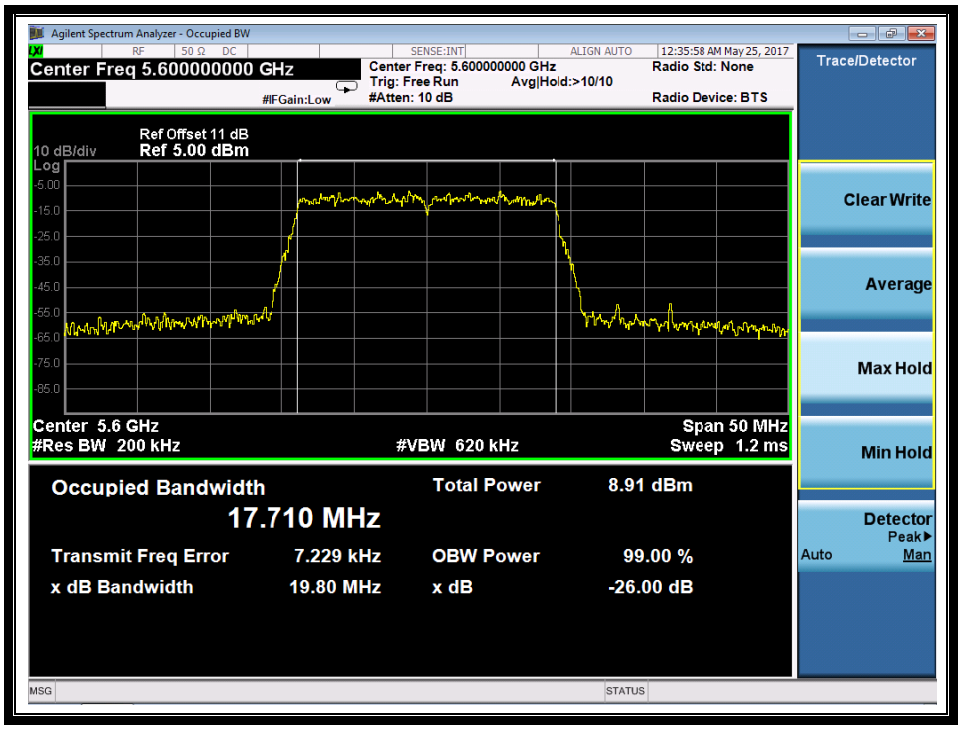
(Channel 60: 5300MHz @ 802.11n-20MHz)



(Channel 64: 5320MHz @ 802.11n-20MHz)



(Channel 100: 5500MHz @ 802.11n-20MHz)

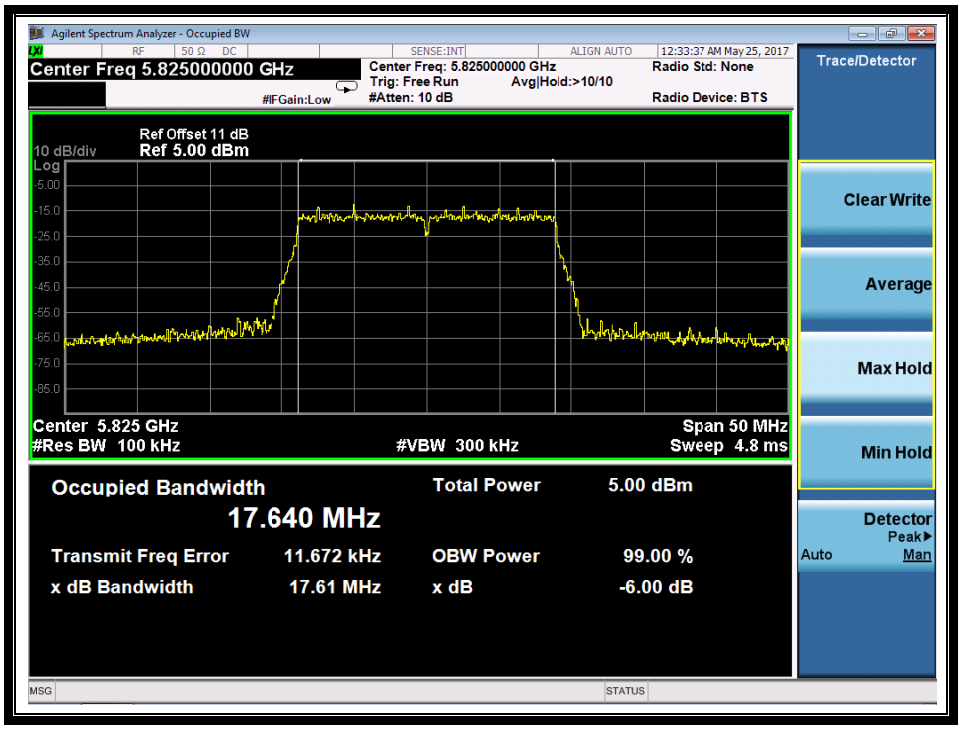


(Channel 120: 5600MHz @ 802.11n-20MHz)

(Channel 140: 5700MHz @ 802.11n-20MHz)

(Channel 149: 5745MHz @ 802.11n-20MHz)

(Channel 157: 5785MHz @802.11n-20MHz)



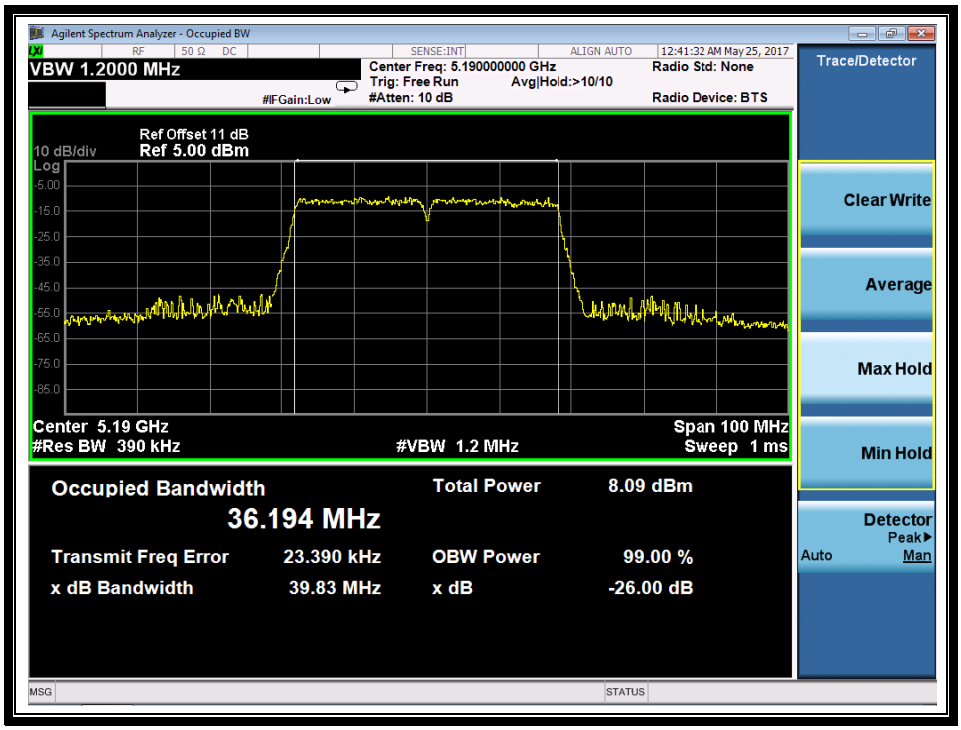
(Channel 165: 5825MHz @ 802.11n-20MHz)

2.2.3.3 802.11n-40MHz Test mode

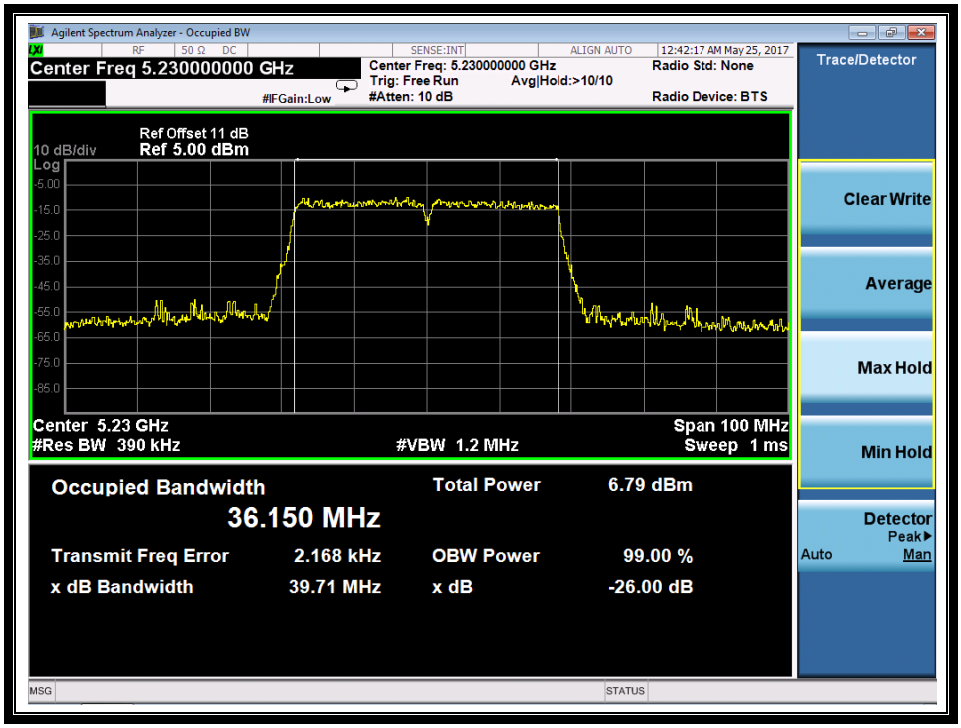
A. Test Verdict:

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
38	5190	39.83
46	5230	39.71
54	5270	39.68
62	5310	39.44
102	5510	39.45
126	5630	39.40
142	5670	39.97
Channel	Frequency (MHz)	6dB Bandwidth (MHz)
151	5755	36.05
159	5795	35.87

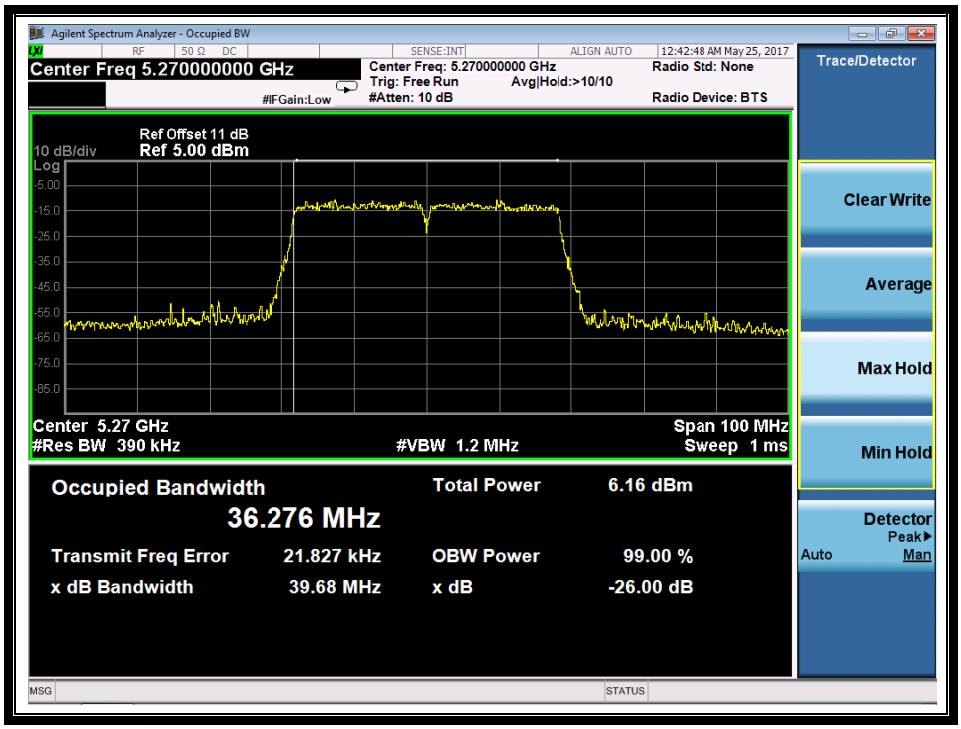
B. Test Plots



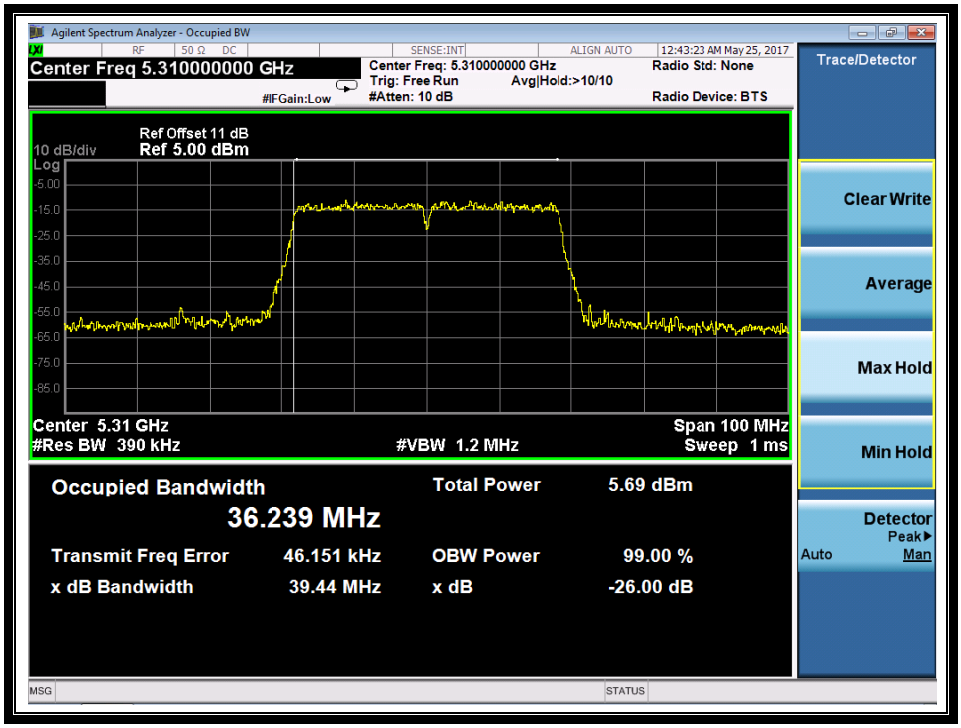
(Channel 38: 5190MHz @ 802.11n-40MHz)



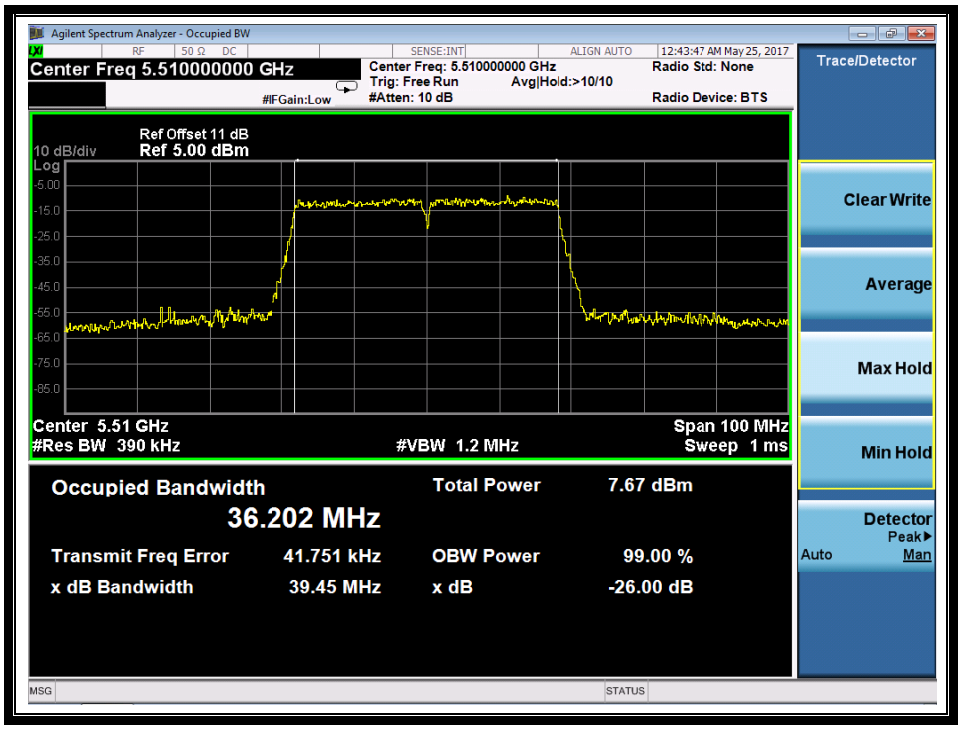
(Channel 46: 5230 MHz @ 802.11n-40MHz)



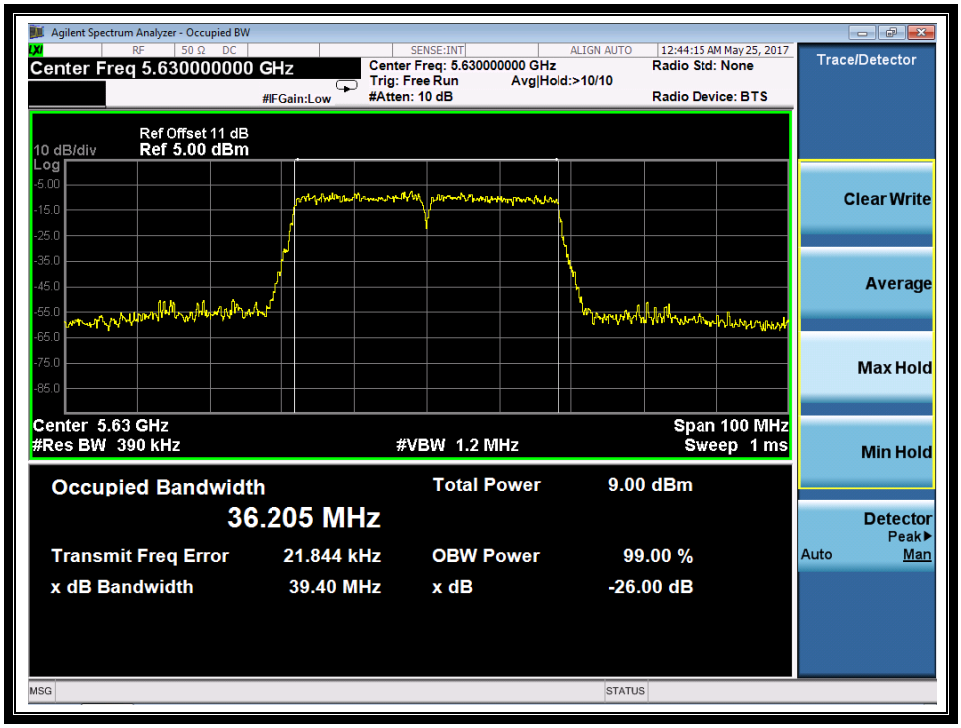
(Channel 54: 5270MHz @802.11n-40MHz)



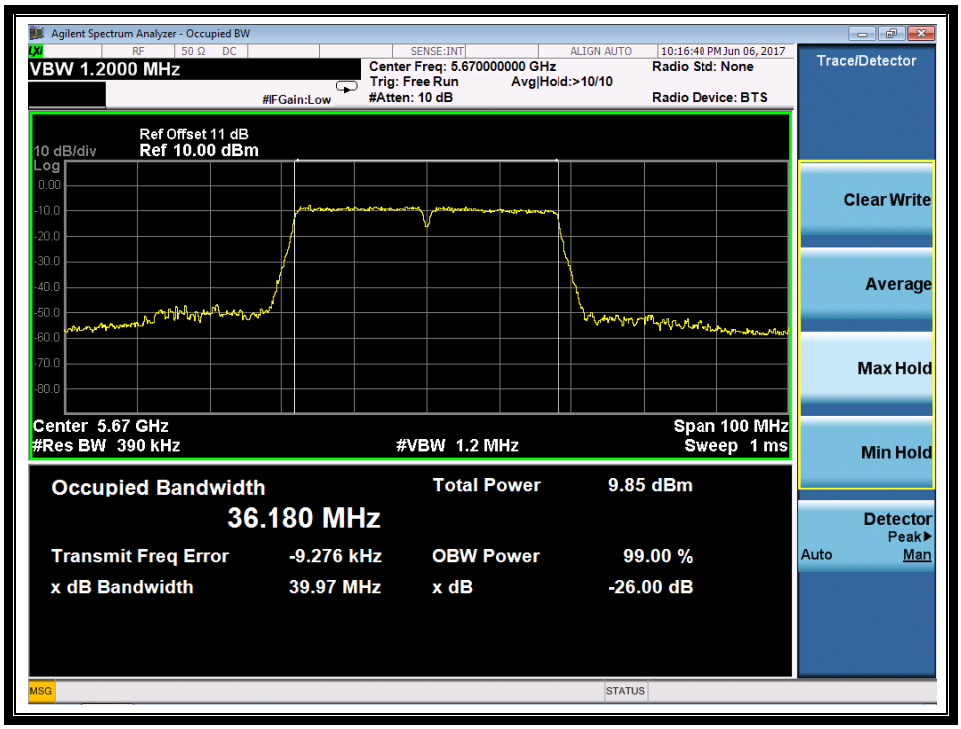
(Channel 62: 5310MHz @ 802.11n-40MHz)



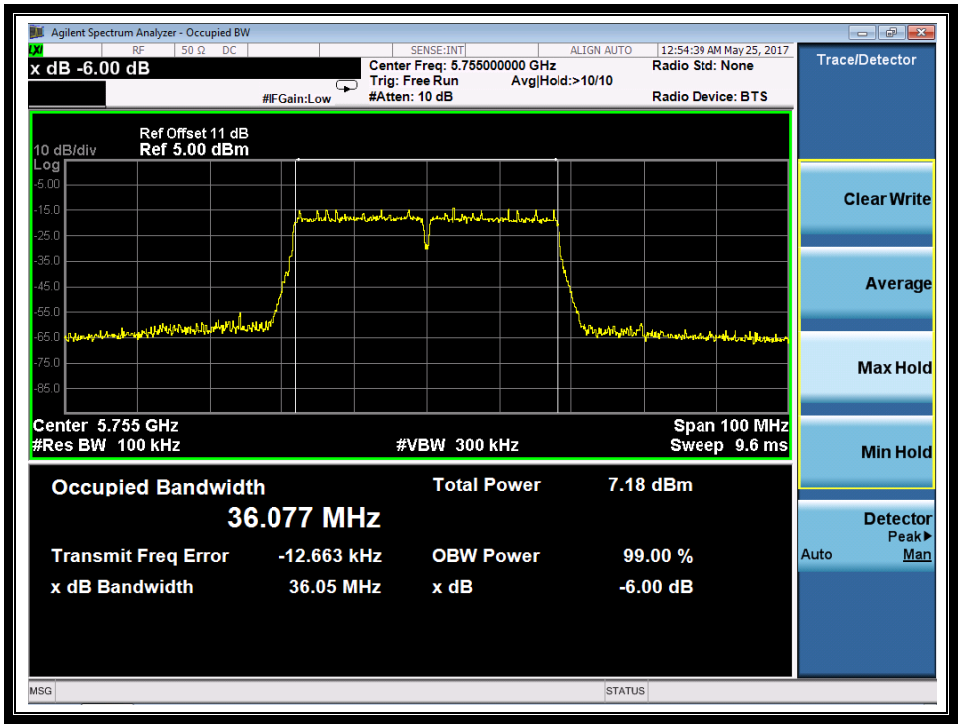
(Channel 102: 5510MHz @802.11n-40MHz)



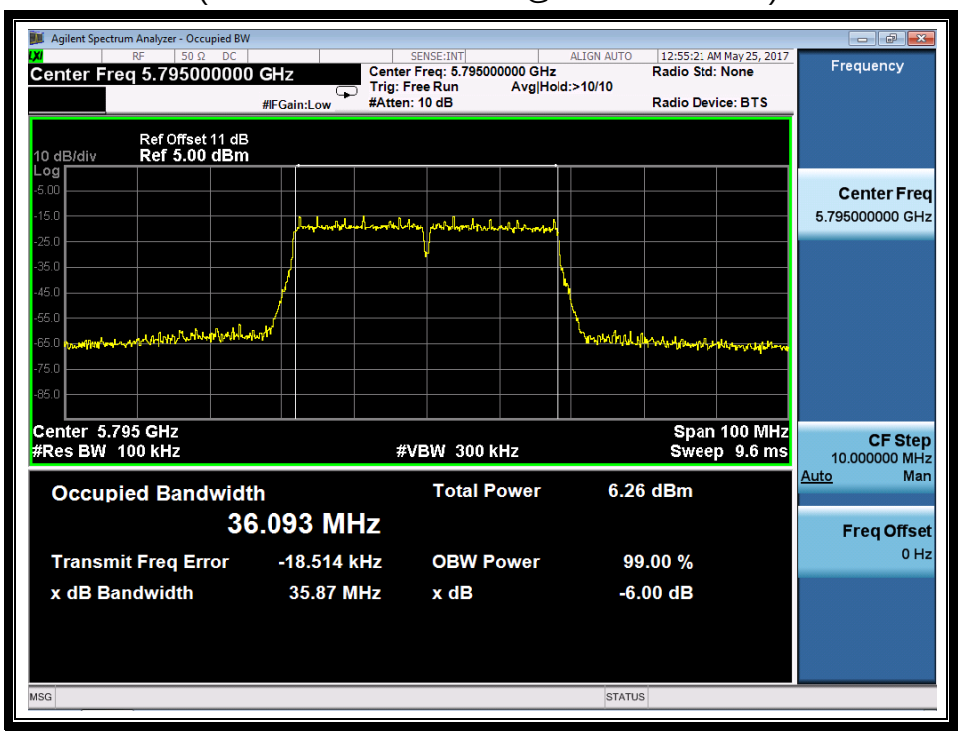
(Channel 126: 5630MHz @ 802.11n-40MHz)



(Channel 142: 5670MHz @ 802.11n-40MHz)



(Channel 151: 5755MHz @ 802.11n-40MHz)



(Channel 159: 5795MHz @802.11n-40MHz)

2.3 Maximum conducted output power

2.3.1 Requirement

(1) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi.

(2) For the 5.25–5.35 GHz and 5.47–5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250mW or 11dBm + 10log B, where B is the 26 dB emission bandwidth in megahertz.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

According FCC KDB644545 D03 D)1)b)3) requirement:

a) The maximum conducted output power within each band of operation shall comply with the limits for that band.

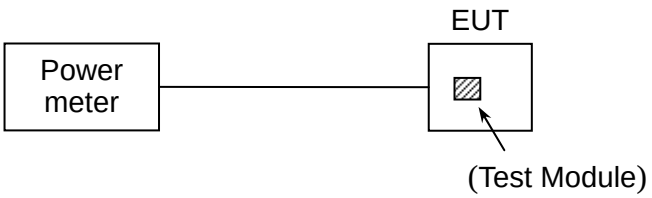
b) The limit on maximum conducted output power in each U-NII band is computed based on the portion of the emission bandwidth contained within that band

If transmitting antennas of directional gain greater than 6dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

2.3.2 Test Description

Section E) 3) of KDB 789033 defines a methodology using an RF average power meter.

A. Test Setup:



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

2.3.3 Test Result

2.3.3.1 802.11a-20MHz Test mode

Channel	Frequency (MHz)	Measured Output Power(dBm)	Limit (dBm)	Verdict
36	5180	9.30	24	PASS
44	5220	9.27		
48	5240	8.77		
52	5260	8.71		
60	5300	8.20		
64	5320	7.73		
100	5500	9.79		
116	5600	10.62		
140	5700	8.53		
149	5745	7.51	30	
157	5785	7.01		
165	5825	6.67		

2.3.3.2 802.11n-20MHz Test mode

Channel	Frequency (MHz)	Measured Output Power(dBm)	Limit (dBm)	Verdict
36	5180	9.47	24	PASS
44	5220	9.15		
48	5240	8.72		
52	5260	8.45		
60	5300	7.82		
64	5320	7.90		
100	5500	9.70		
120	5600	11.08		
140	5700	8.37		
149	5745	7.71	30	
157	5785	7.07		
165	5825	6.94		

2.3.3.3 802.11n-40MHz Test mode

Channel	Frequency (MHz)	Measured Output Power(dBm)	Limit (dBm)	Verdict
38	5190	9.78	24	PASS
46	5230	9.29		
54	5270	8.78		
62	5310	8.42		
102	5510	10.35		
126	5630	10.88		
142	5670	10.94	U-NII-2C:24 & U-NII-3:30	
151	5755	8.07	30	
159	5795	7.41		

2.4 Peak Power spectral density

2.4.1 Requirement

(1) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.

(2) For the 5.25–5.35 GHz and 5.47–5.725GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.

(3) For the band 5.725-5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500KHz band.

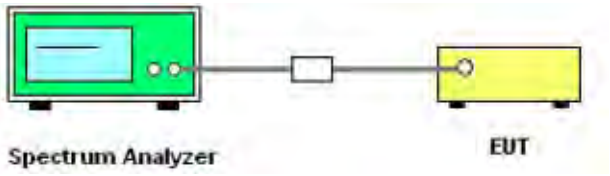
According FCC KDB644545 D03 D)1)b)2) requirement:

Emissions in each band shall comply with the PSD limits applicable to that band under the appropriate rule section.

If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

2.4.2 Test Description

A. Test Set:



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

B. Test Procedure

KDB 789033 Section F) Maximum Power Spectral Density (PSD) Method SA-1 was used in order to prove compliance

1) Set span to encompass the entire 26-dB emission bandwidth

2) Set RBW = 1 MHz. Set VBW ≥ 3 MHz.

3) Number of points in sweep ≥ 2 Span / RBW. Sweep time = auto.

4) Detector = RMS (i.e., power averaging)

5) Trace average at least 100 traces in power averaging (i.e., RMS) mode

6) Record the max value

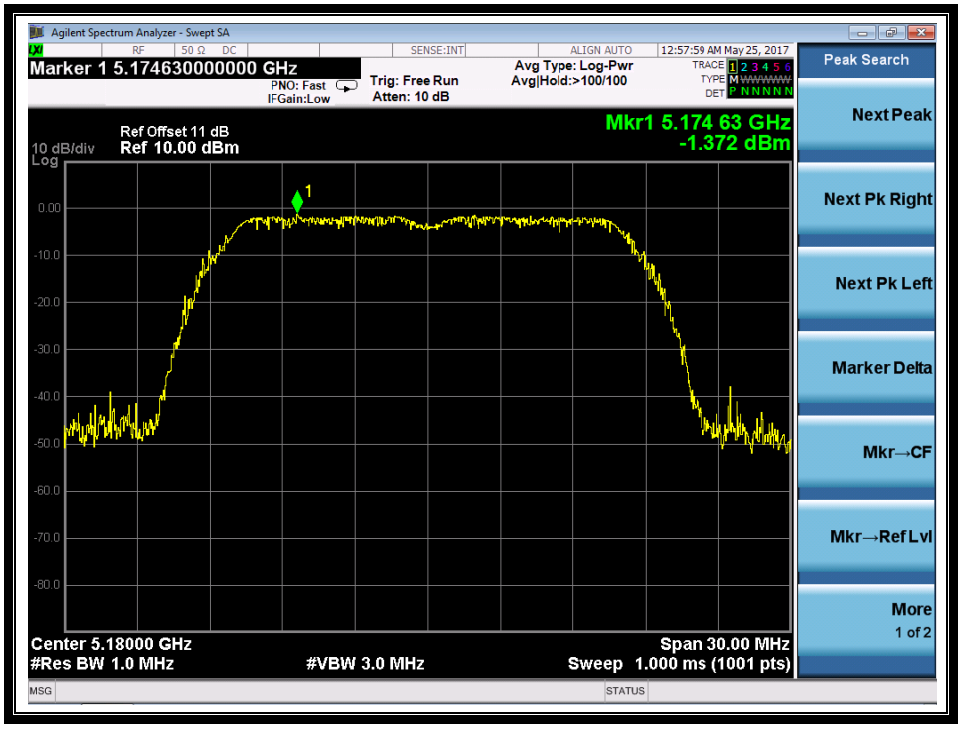
2.4.3 Test Result

2.4.3.1 802.11a-20MHz Test mode

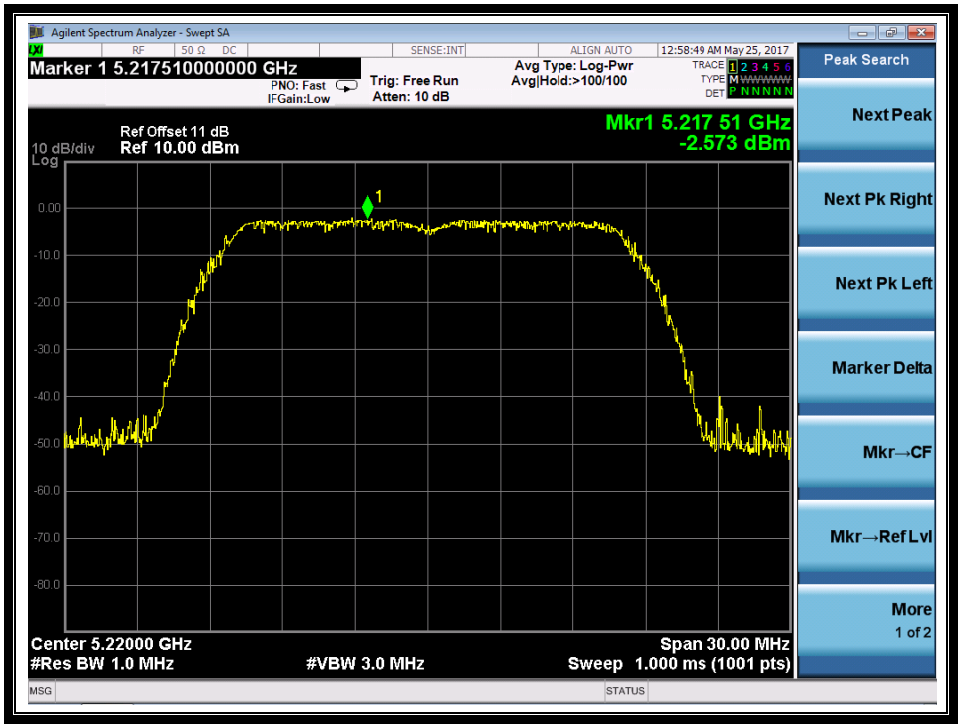
A. Test Verdict:

Channel	Frequency (MHz)	Measured PPSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
36	5180	-1.37	11	PASS
44	5220	-2.57		
48	5240	-1.93		
52	5260	-2.68		
60	5300	-3.74		
64	5320	-3.96		
100	5500	-1.73		
120	5600	-0.42		
140	5700	-2.09		
Channel	Frequency (MHz)	Measured PPSD (dBm/500KHz)	Limit (dBm/500KHz)	Verdict
149	5745	-6.38	30	PASS
157	5785	-7.79		
165	5825	-7.07		

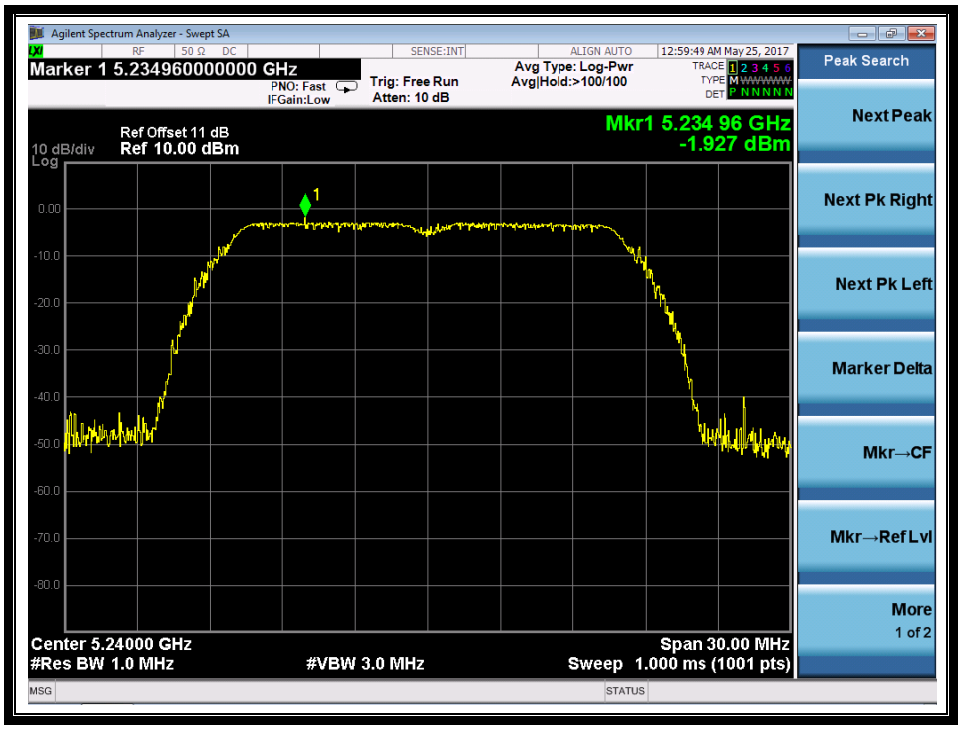
B. Test Plots



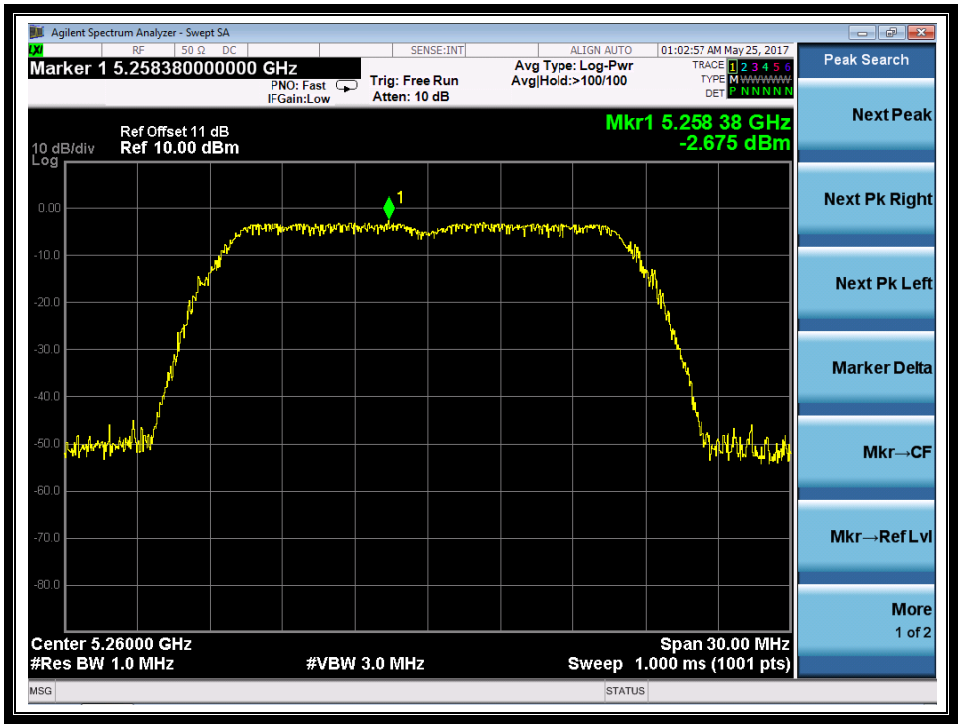
(Channel 36: 5180MHz @ 802.11a)



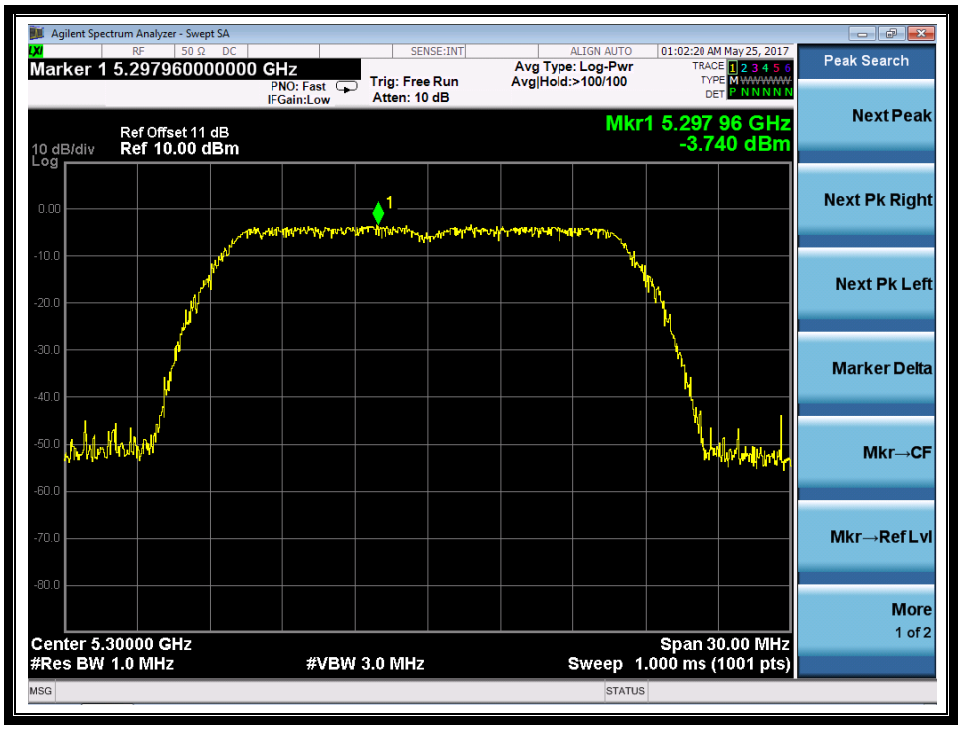
(Channel 44: 5220 MHz @ 802.11a)



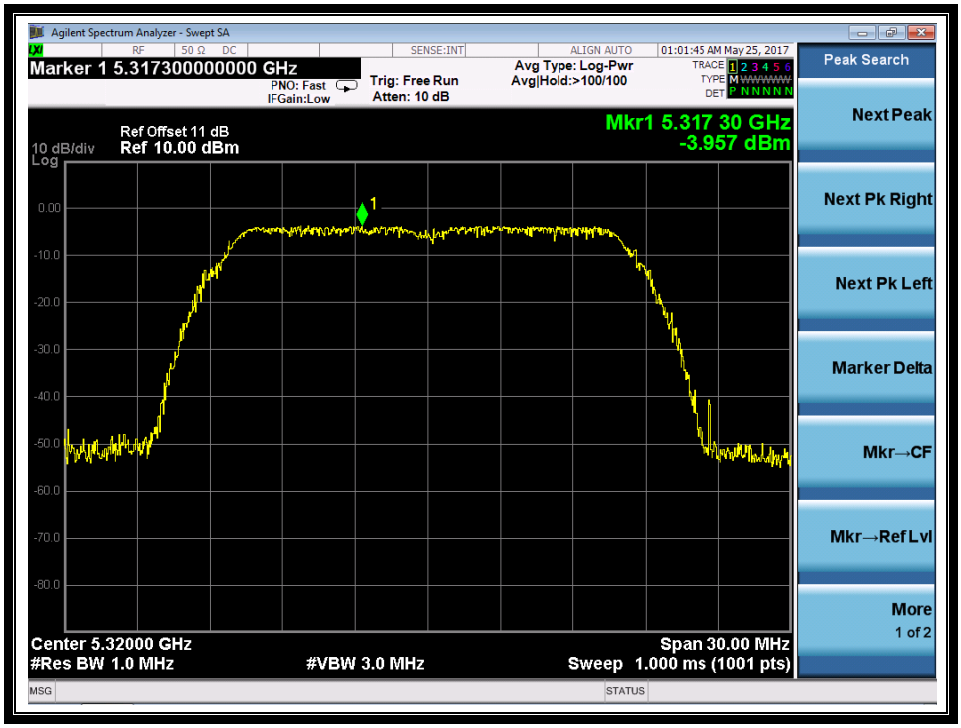
(Channel 48: 5240MHz @ 802.11a)



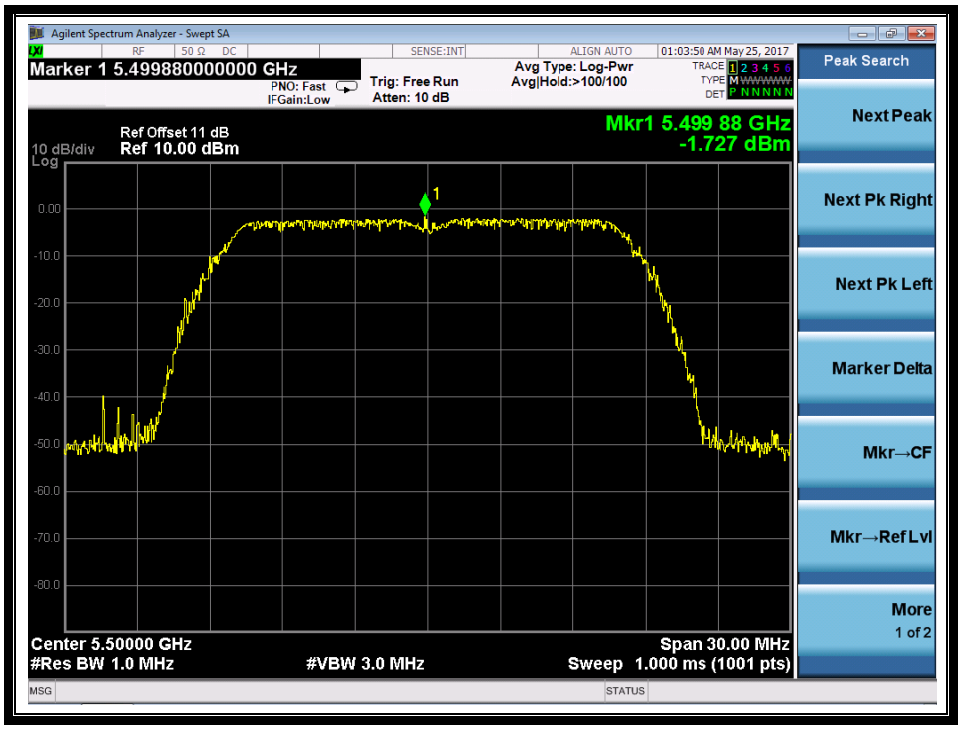
(Channel 52: 5260MHz @ 802.11a)



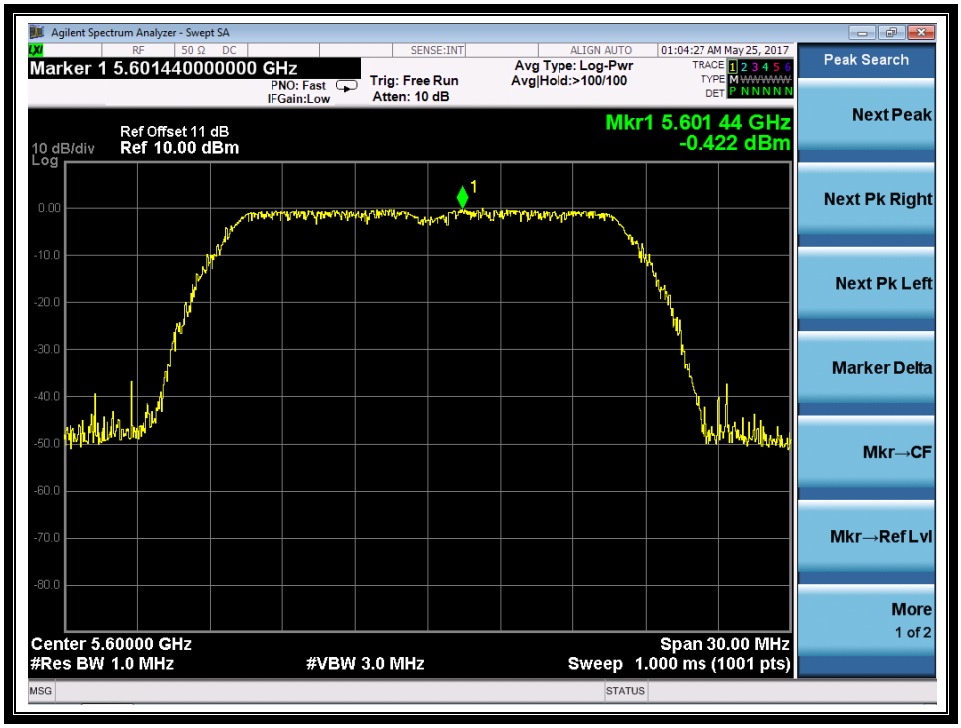
(Channel 60: 5300MHz @ 802.11a)



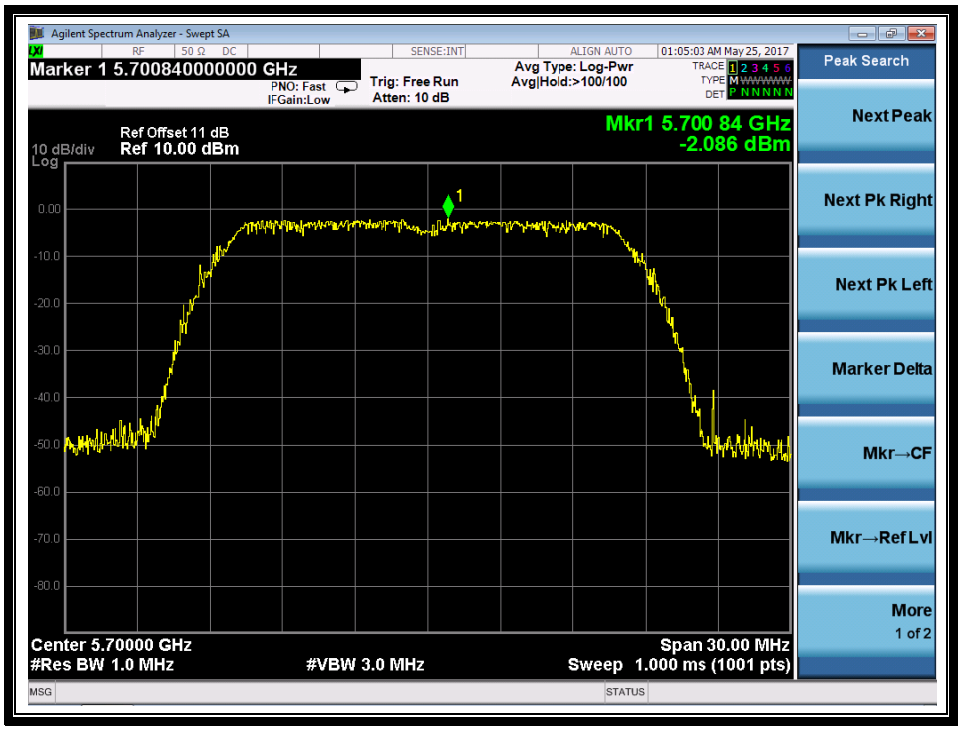
(Channel 64: 5320MHz @ 802.11a)



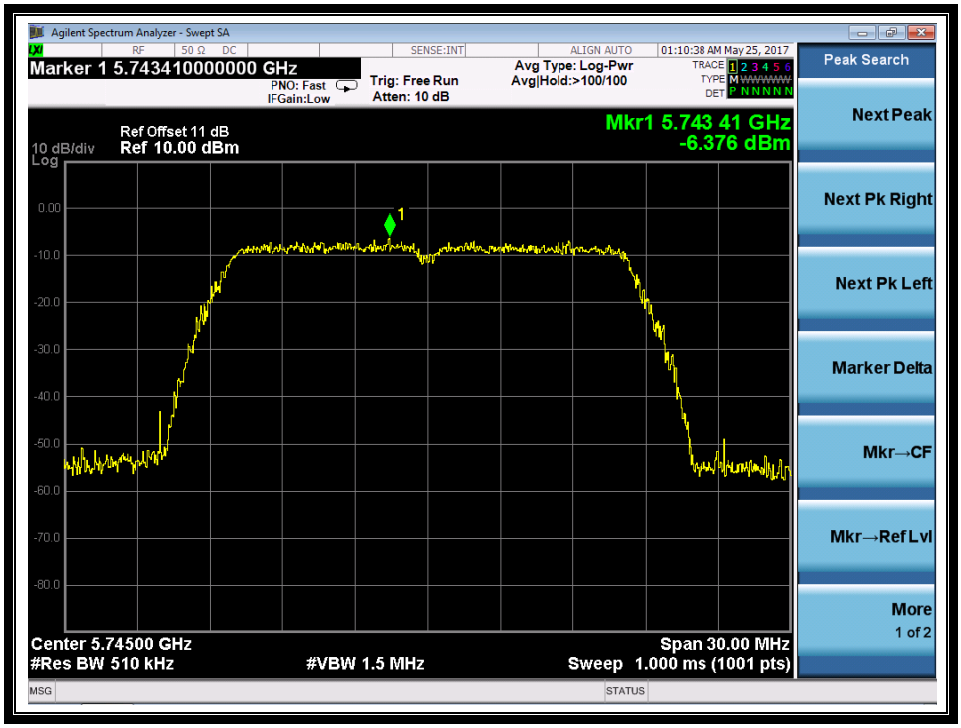
(Channel 100: 5500MHz @ 802.11a)



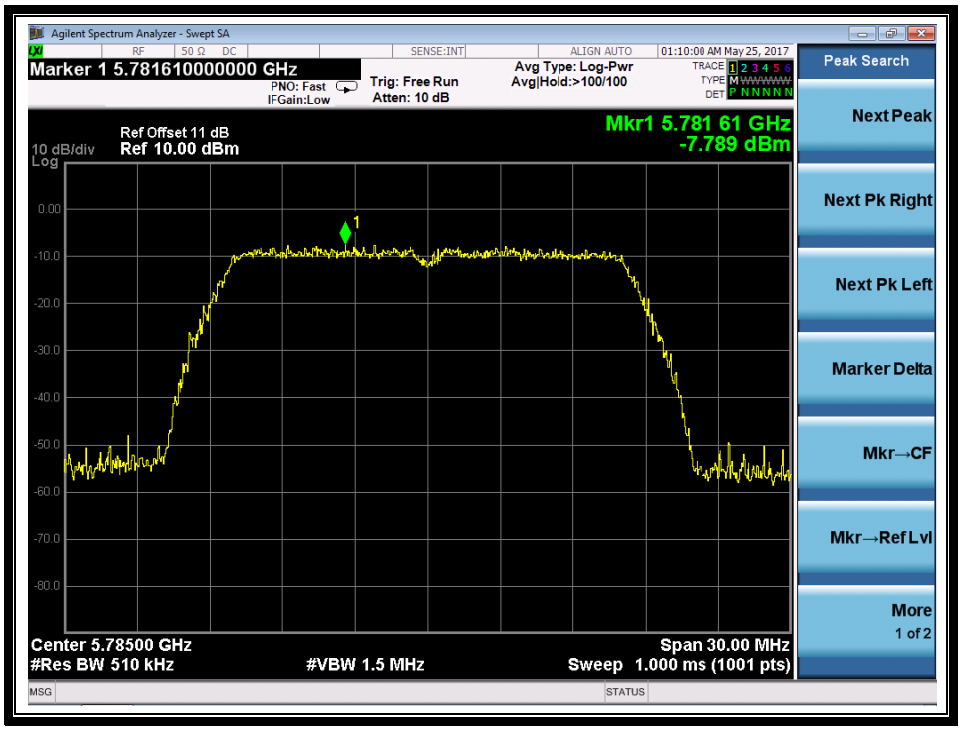
(Channel 120: 5600MHz @ 802.11a)



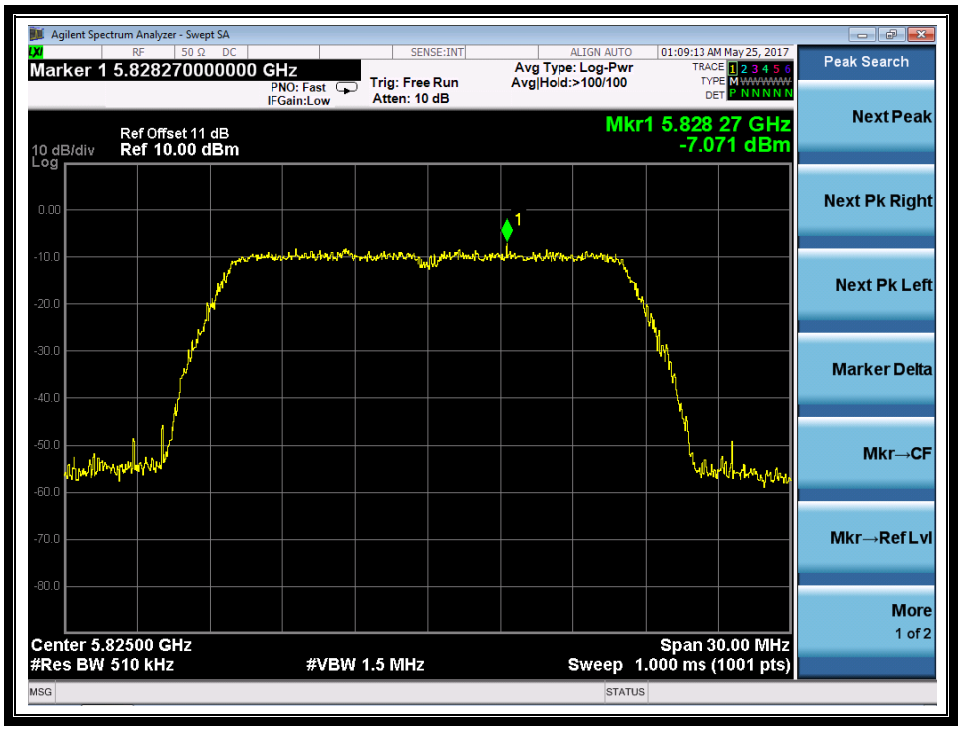
(Channel 140: 5700MHz @ 802.11a)



(Channel 149: 5745MHz @ 802.11a)



(Channel 157: 5785MHz @ 802.11a)



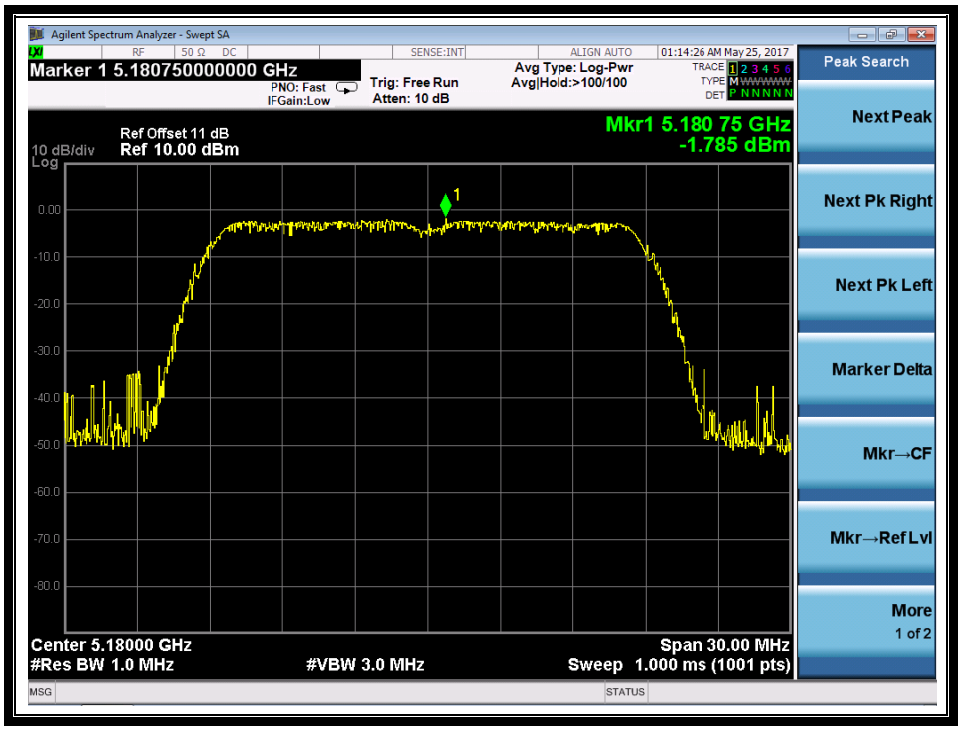
(Channel 165: 5825MHz @ 802.11a)

2.4.3.2 802.11n-20MHz Test mode

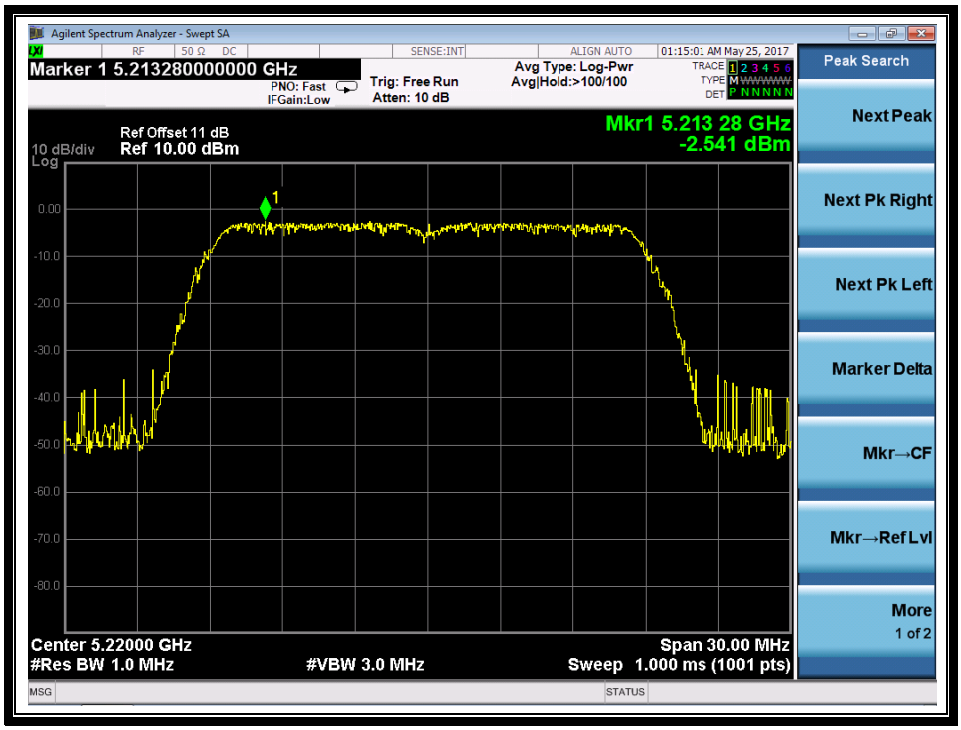
A. Test Verdict:

Channel	Frequency (MHz)	Measured PPSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
36	5180	-1.79	11	PASS
44	5220	-2.54		
48	5240	-2.39		
52	5260	-3.40		
60	5300	-3.28		
64	5320	-3.62		
100	5500	-2.74		
120	5600	-0.61		
140	5700	-2.73		
Channel	Frequency (MHz)	Measured PPSD (dBm/500KHz)	Limit (dBm/500KHz)	Verdict
149	5745	-6.61	30	PASS
157	5785	-7.96		
165	5825	-8.78		

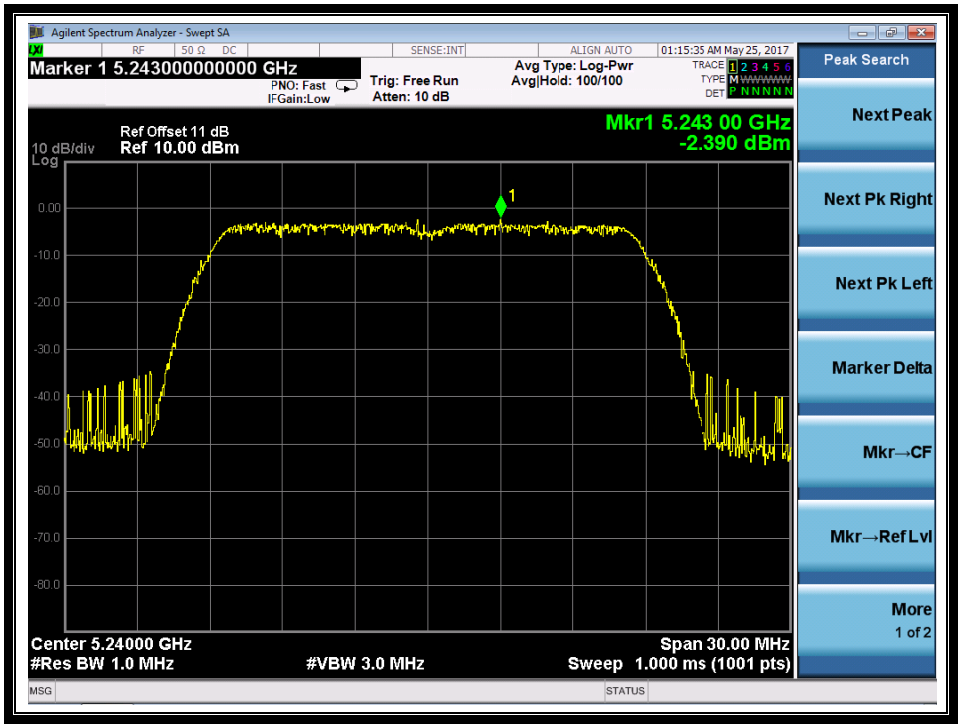
B. Test Plots



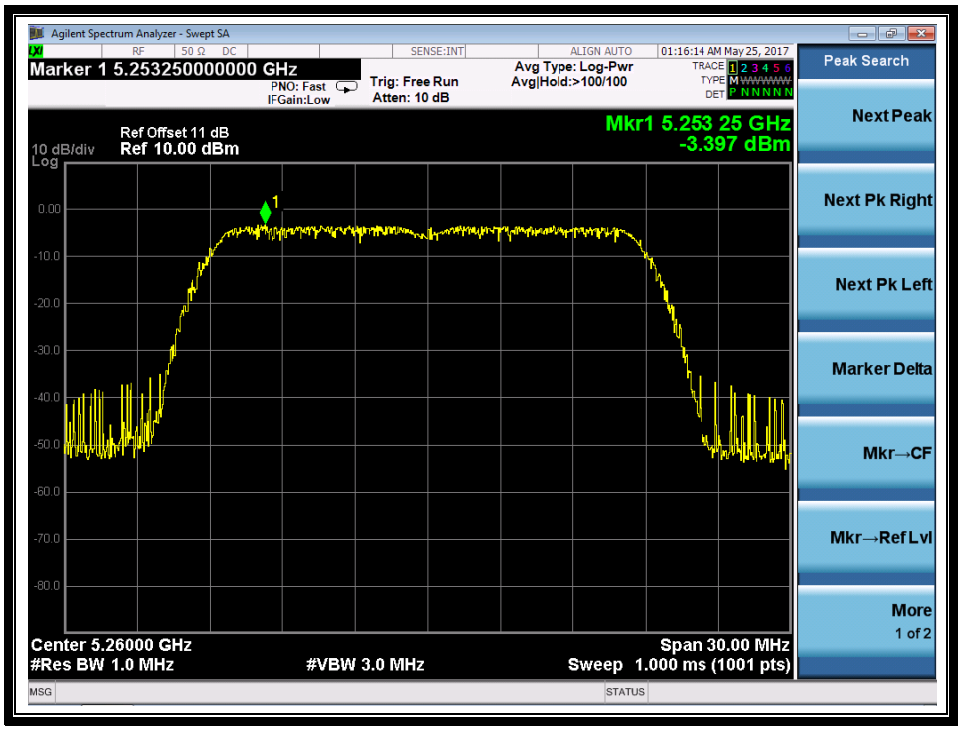
(Channel 36: 5180MHz @ 802.11n-20MHz)



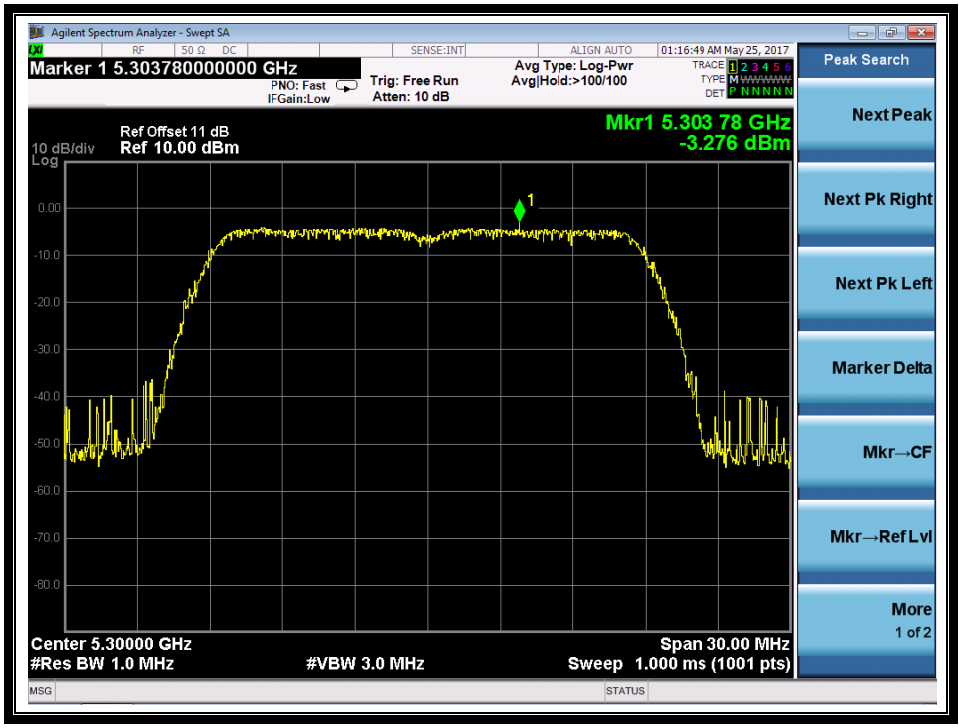
(Channel 44: 5220 MHz @ 802.11n-20MHz)



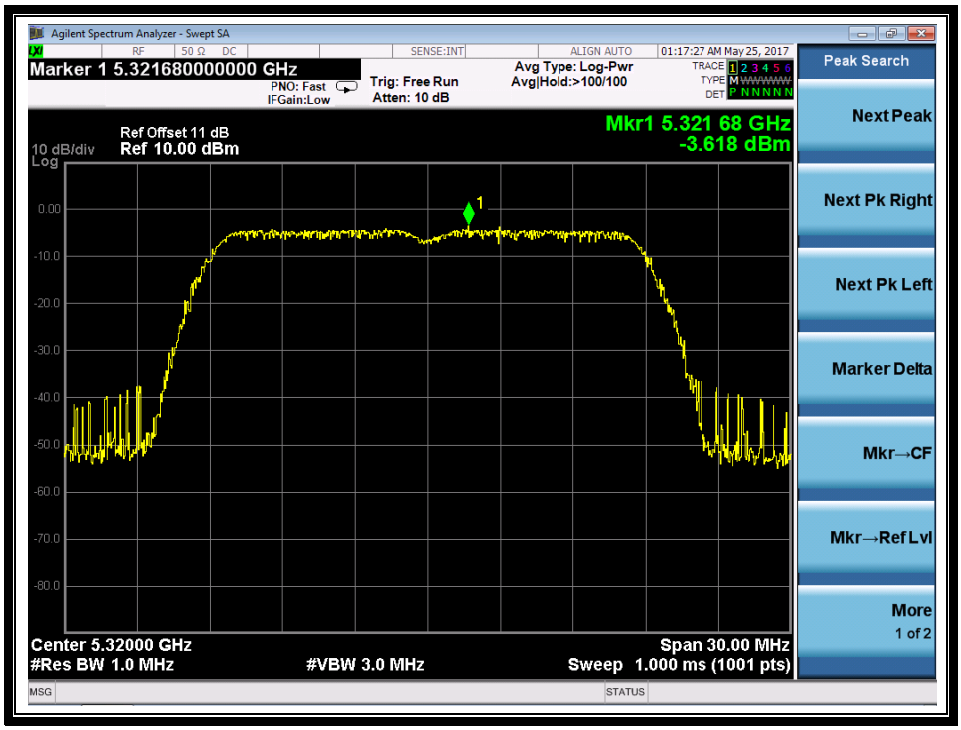
(Channel 48: 5240MHz @ 802.11n-20MHz)



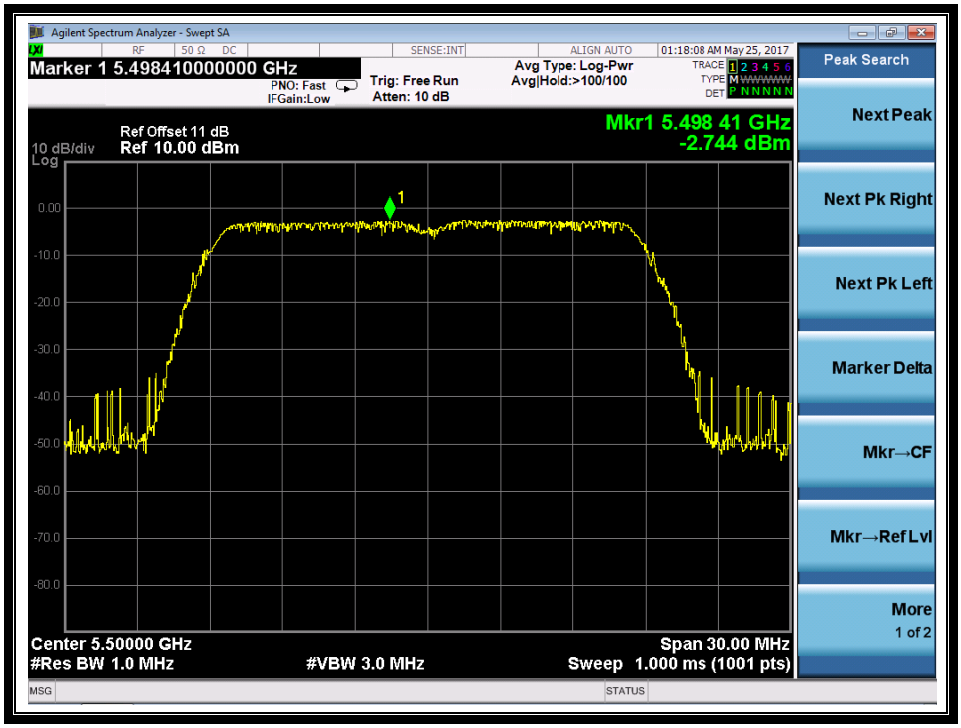
(Channel 52: 5260MHz @ 802.11n-20MHz)



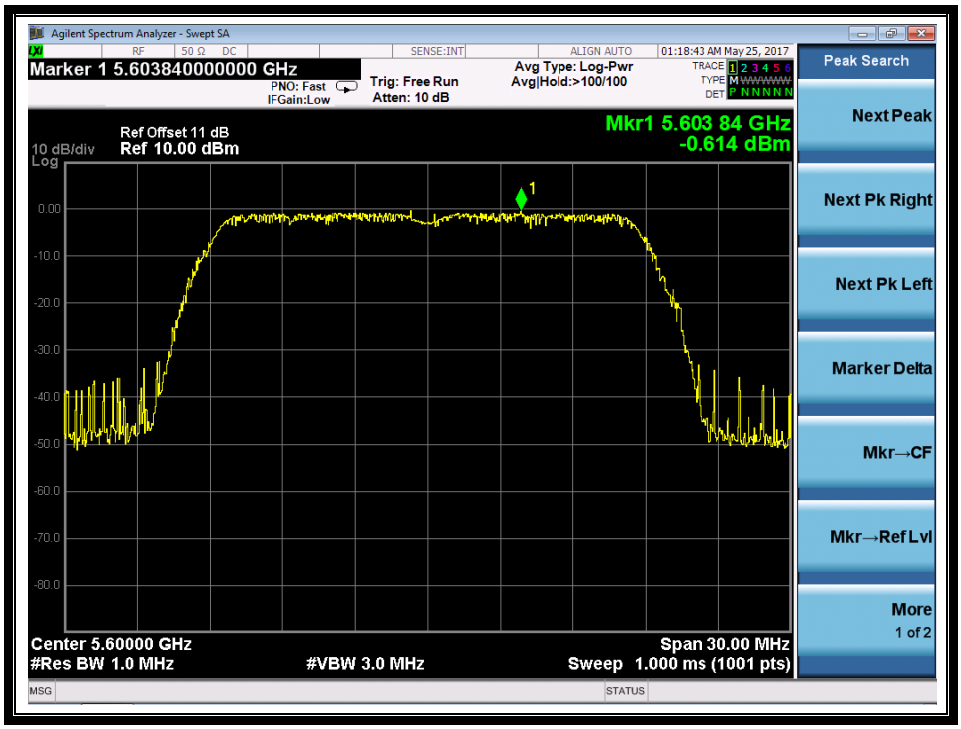
(Channel 60: 5300MHz @ 802.11n-20MHz)



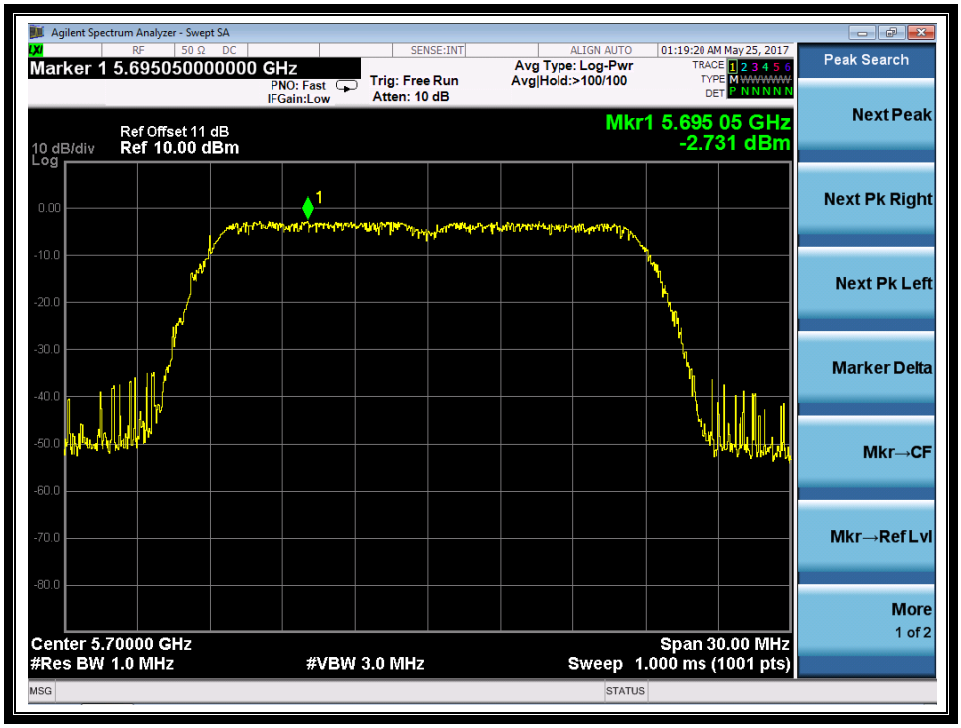
(Channel 64: 5320MHz @ 802.11n-20MHz)



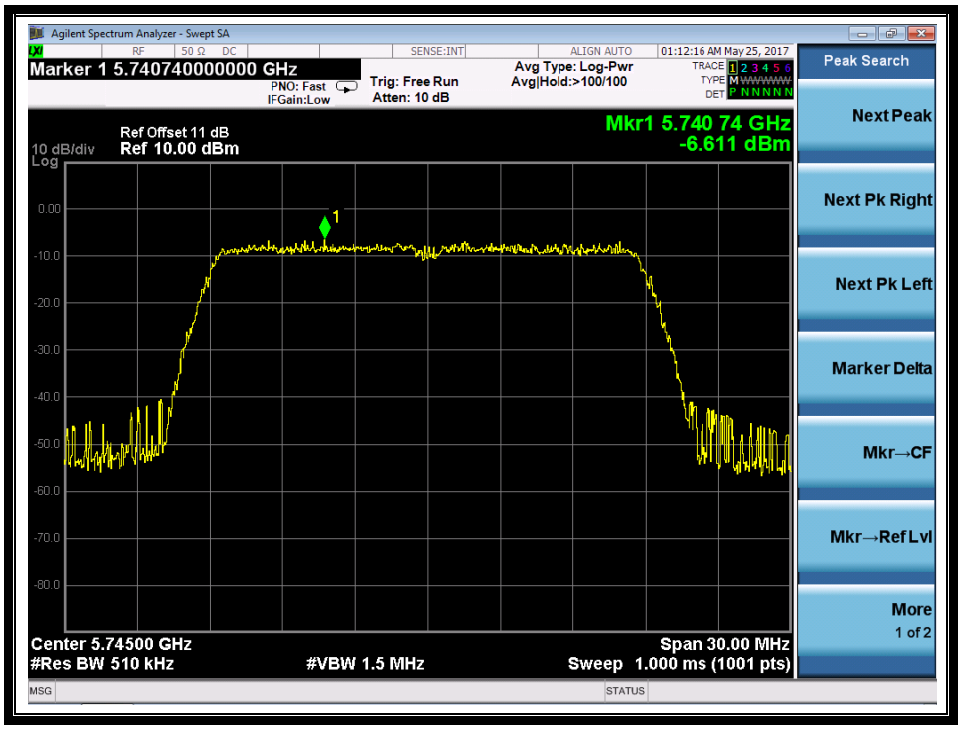
(Channel 100: 5500MHz @ 802.11n-20MHz)



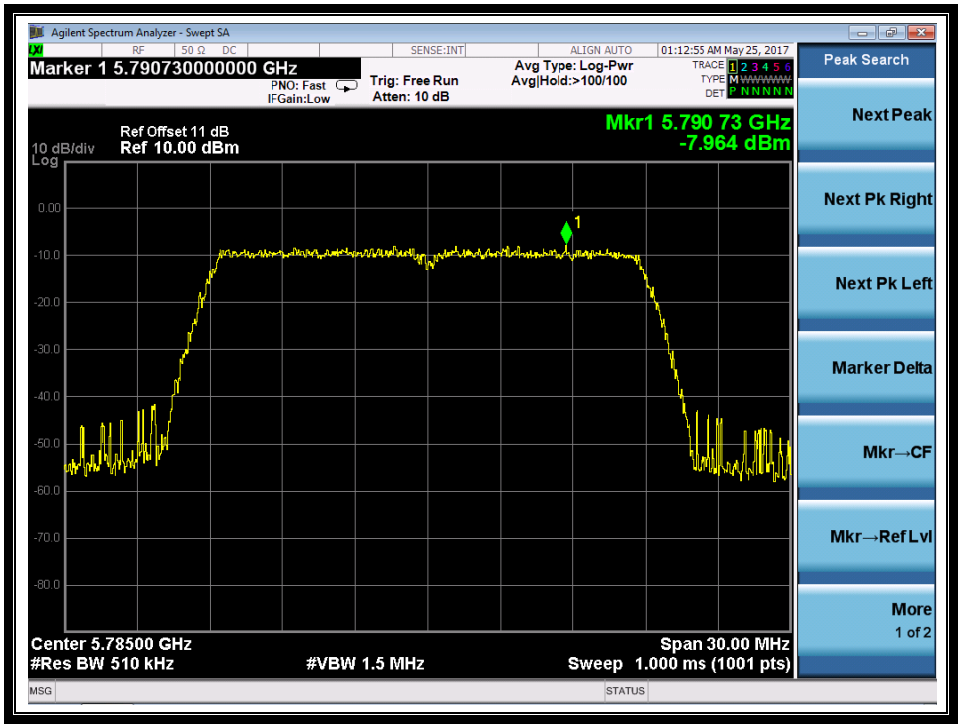
(Channel 120: 5600MHz @ 802.11n-20MHz)



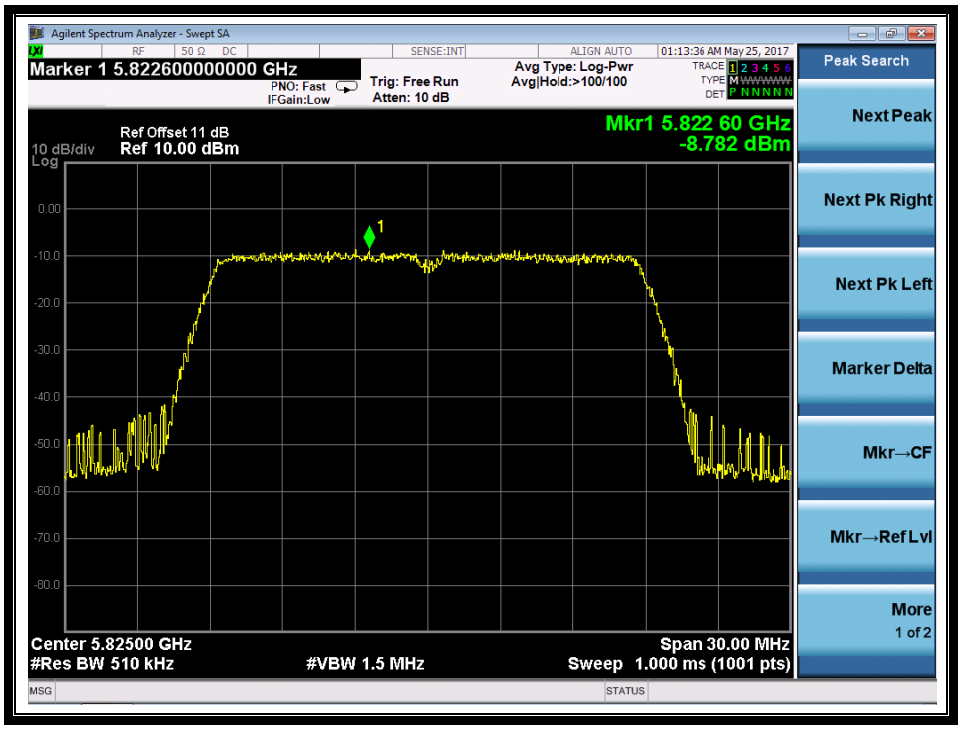
(Channel 140: 5700MHz @ 802.11n-20MHz)



(Channel 149: 5745MHz @ 802.11n-20MHz)



(Channel 157: 5785MHz @802.11n-20MHz)



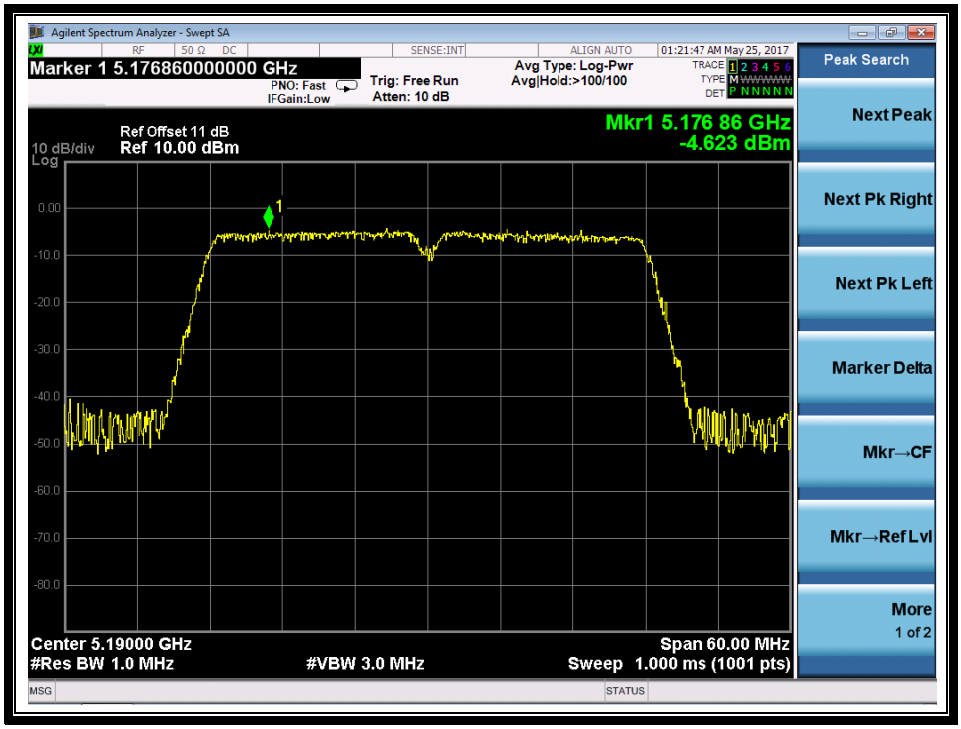
(Channel 165: 5825MHz @ 802.11n-20MHz)

2.4.3.3 802.11n-40MHz Test mode

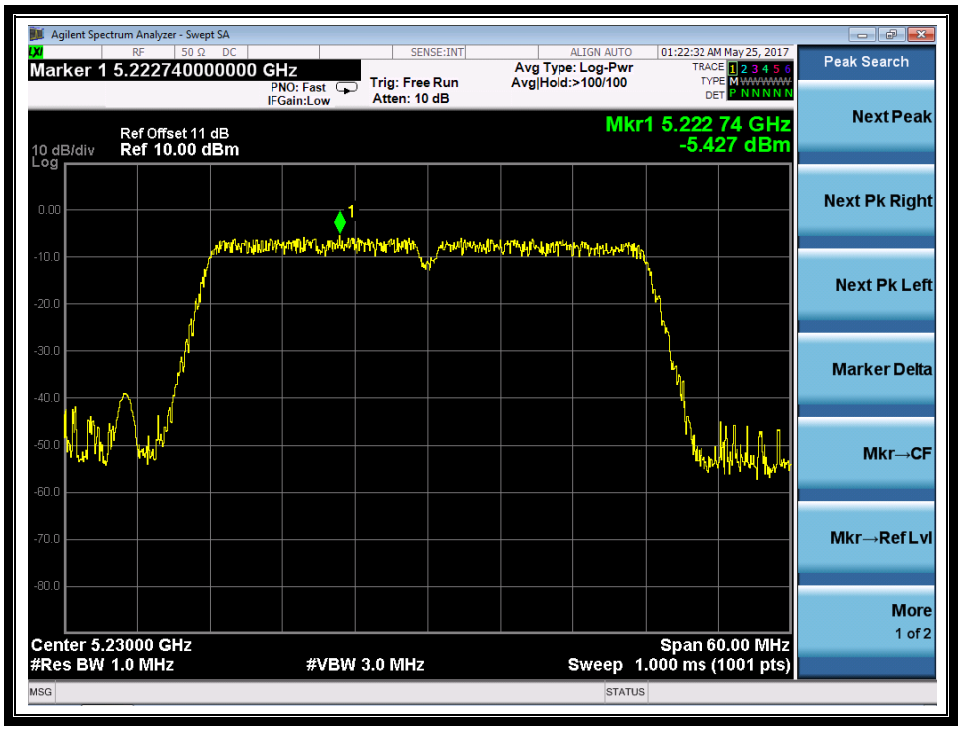
A. Test Verdict:

Channel	Frequency (MHz)	Measured PPSD (dBm/MHz)	Limit (dBm/MHz))	Verdict
38	5190	-4.62	11	PASS
46	5230	-5.43		
54	5270	-6.10		
62	5310	-6.81		
102	5510	-3.56		
126	5630	-2.77		
142	5670	-3.18	U-NII-2C:11dBm/MHz U-NII-3:30dBm/500KHz	
Channel	Frequency (MHz)	Measured PPSD (dBm/500KHz)	Limit (dBm/500KHz)	Verdict
151	5755	-9.26	30	PASS
159	5795	-10.70		

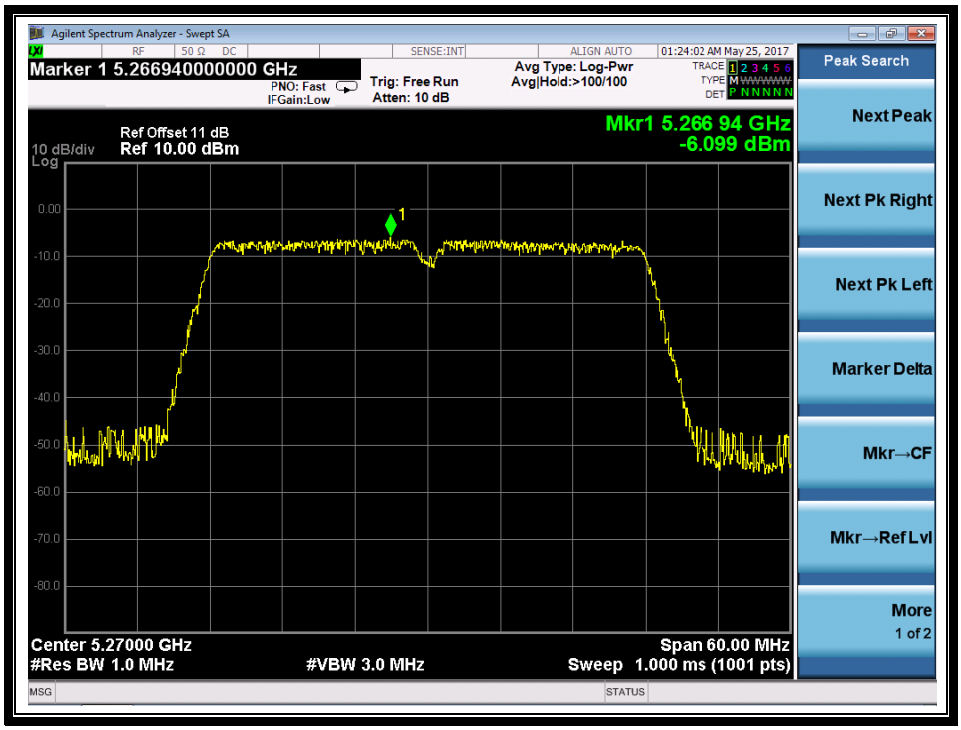
B. Test Plots



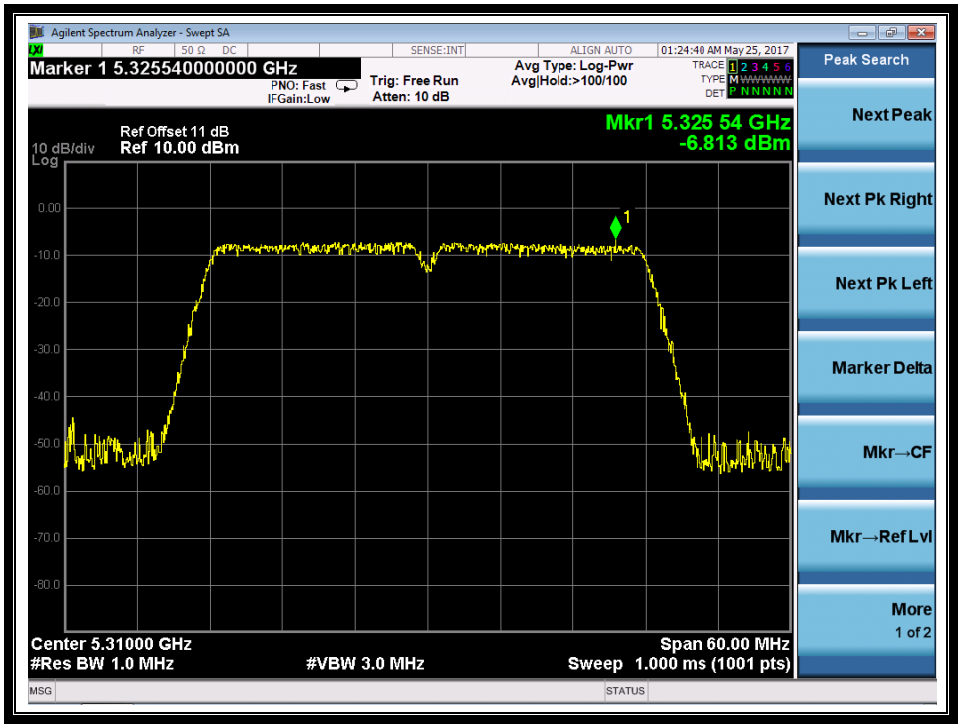
(Channel 38: 5190MHz @ 802.11n-40MHz)



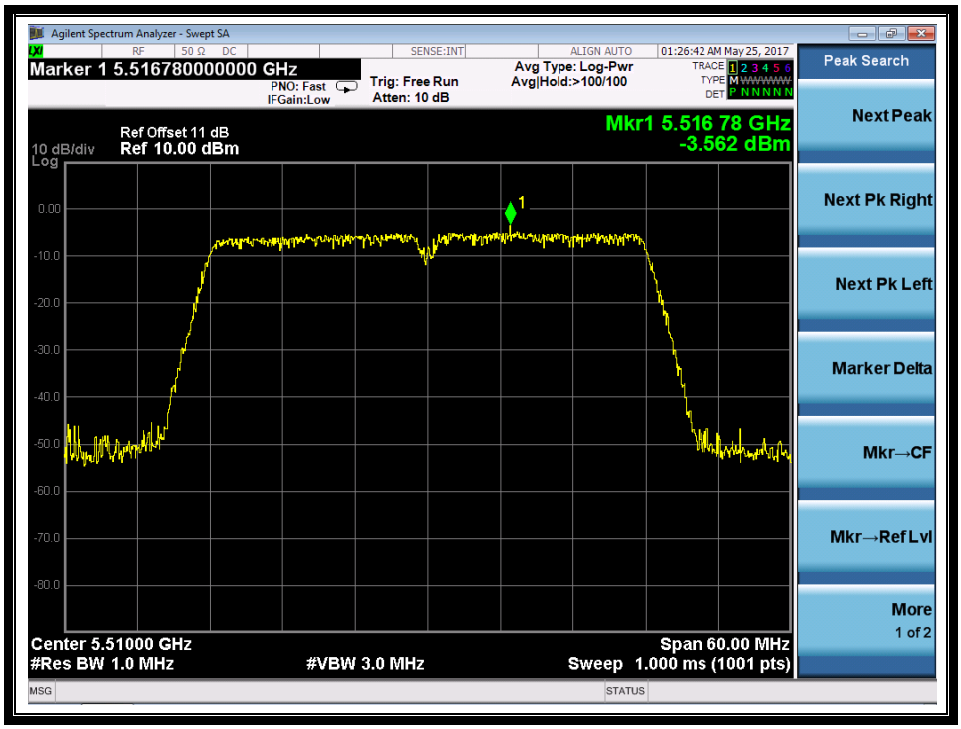
(Channel 46: 5230 MHz @ 802.11n-40MHz)



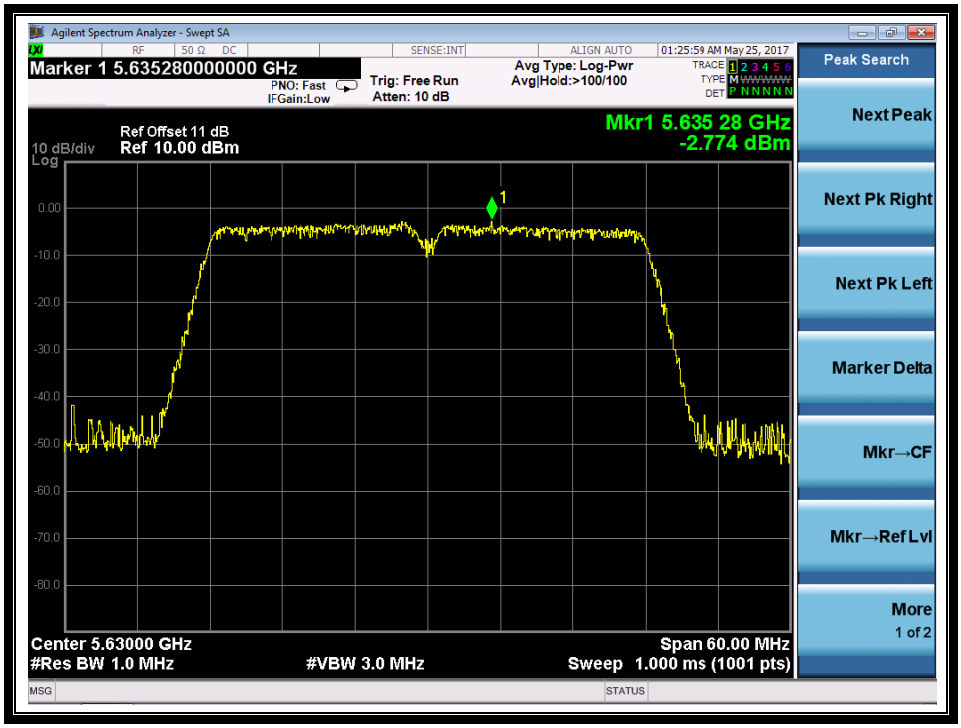
(Channel 54: 5270MHz @802.11n-40MHz)



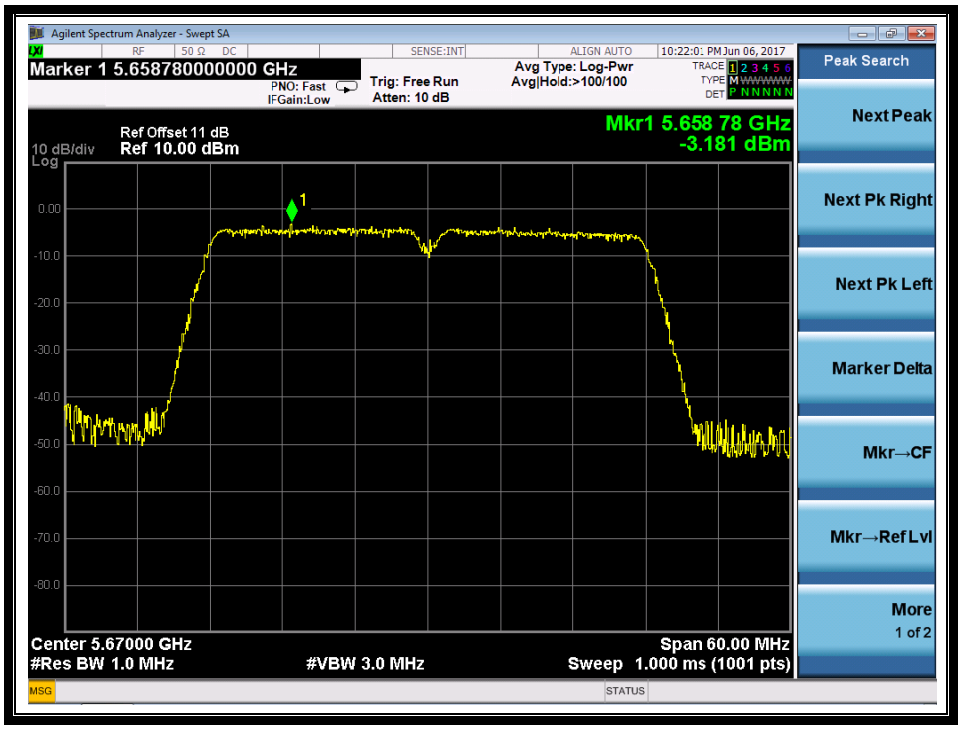
(Channel 62: 5310MHz @ 802.11n-40MHz)



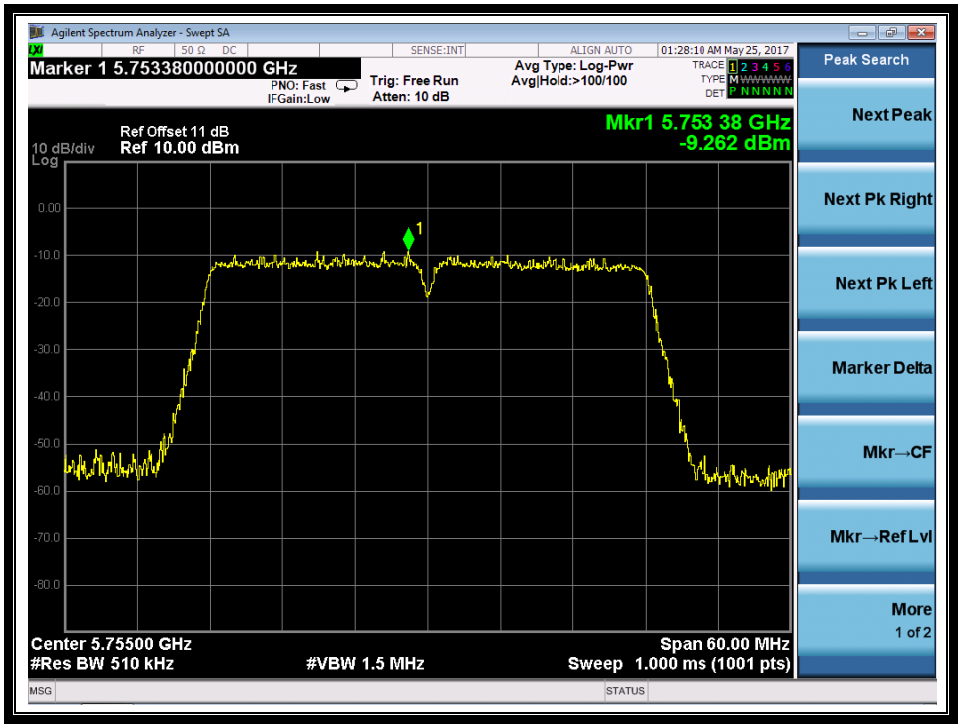
(Channel 102: 5510MHz @802.11n-40MHz)



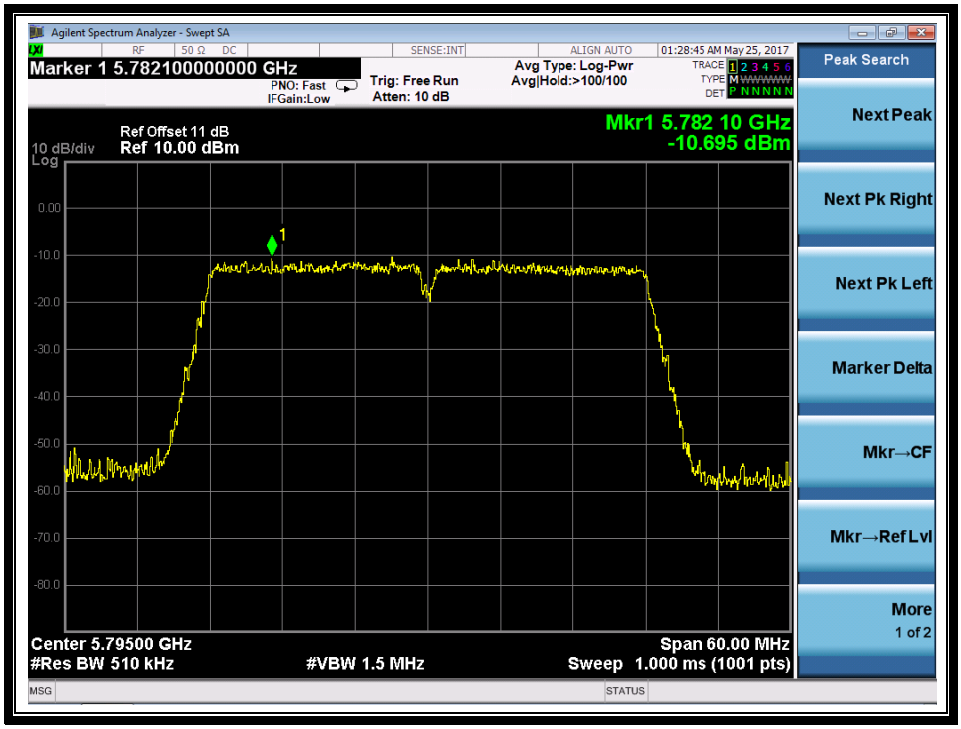
(Channel 126: 5630MHz @ 802.11n-40MHz)



(Channel 142: 5670MHz @ 802.11n-40MHz)



(Channel 151: 5755MHz @ 802.11n-40MHz)



(Channel 159: 5795MHz @802.11n-40MHz)

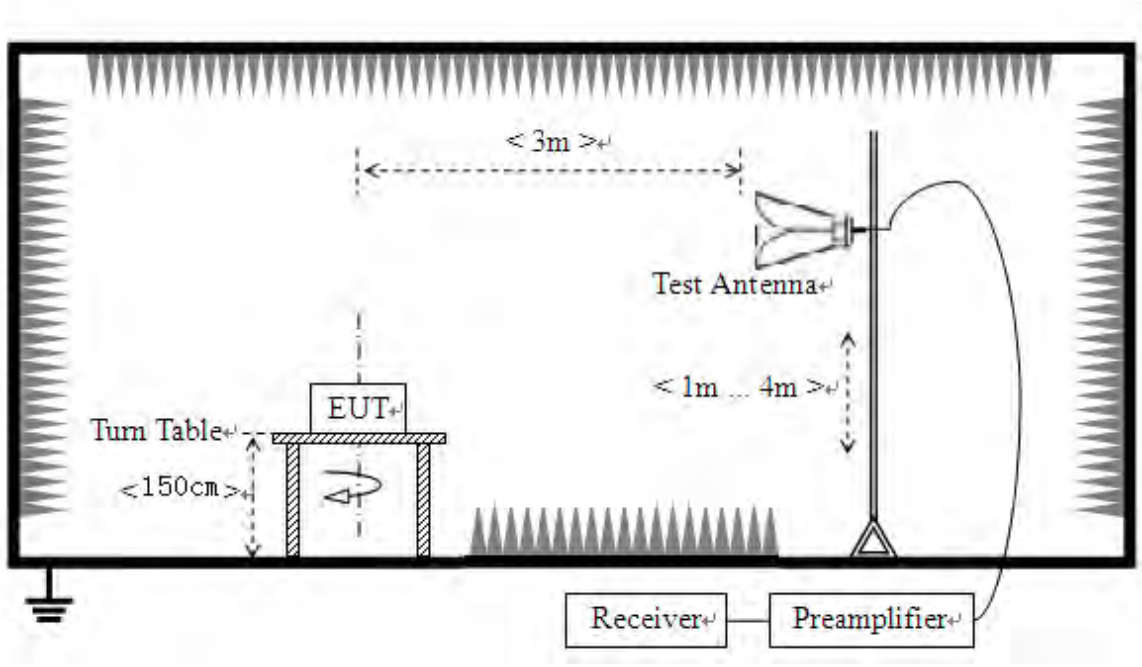
2.5 Restricted Frequency Bands

2.5.1 Requirement

According to FCC section 15.407(b)(7), 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).

2.5.2 Test Description

A. Test Setup



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

KDB 789033 Section H) 3)5)6(d)) was used in order to prove compliance

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.

2.5.3 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.

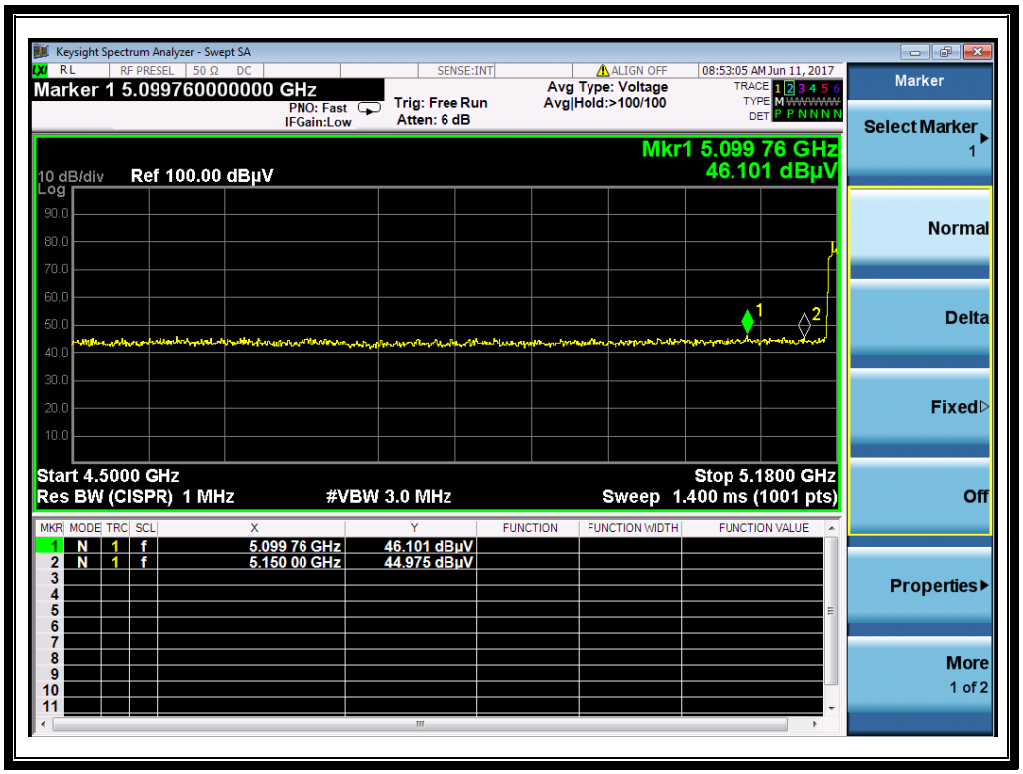
2.5.3.1 802.11a-20MHz Test mode

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

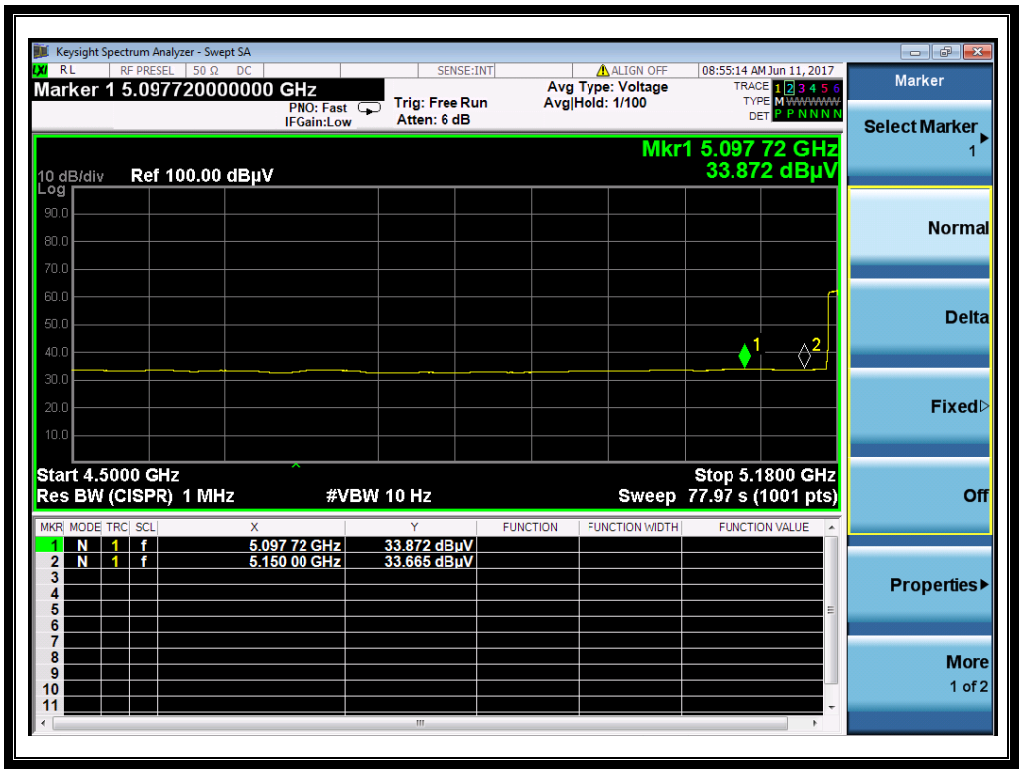
A. Test Verdict:

Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dBuV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
		PK/ AV						
36	5099.76	PK	46.10	-50.65	32.11	27.56	74	Pass
36	5097.72	AV	33.87	-50.65	32.11	15.33	54	Pass
64	5353.88	PK	43.76	-50.65	32.11	25.22	74	Pass
64	5353.46	AV	32.43	-50.65	32.11	13.89	54	Pass
100	5383.50	PK	45.05	-50.65	32.11	26.51	74	Pass
100	5097.50	AV	33.91	-50.65	32.11	15.37	54	Pass
140	5759.70	PK	45.94	-50.65	32.11	27.40	74	Pass
140	5735.10	AV	34.12	-50.65	32.11	15.58	54	Pass

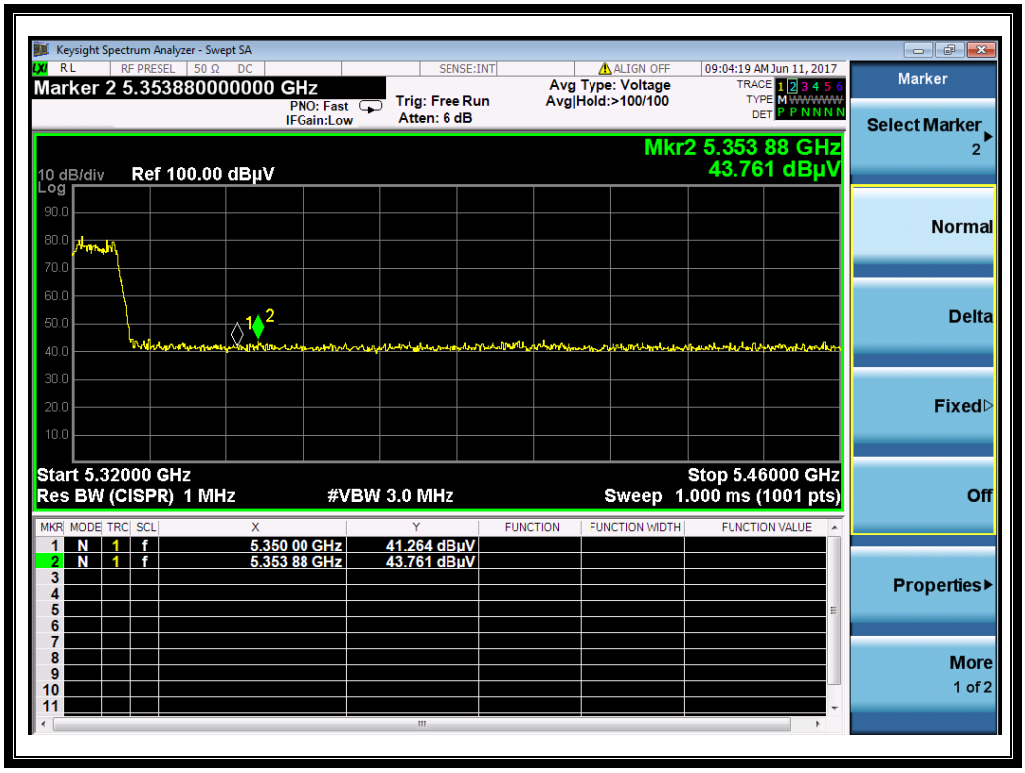
B. Test Plots:



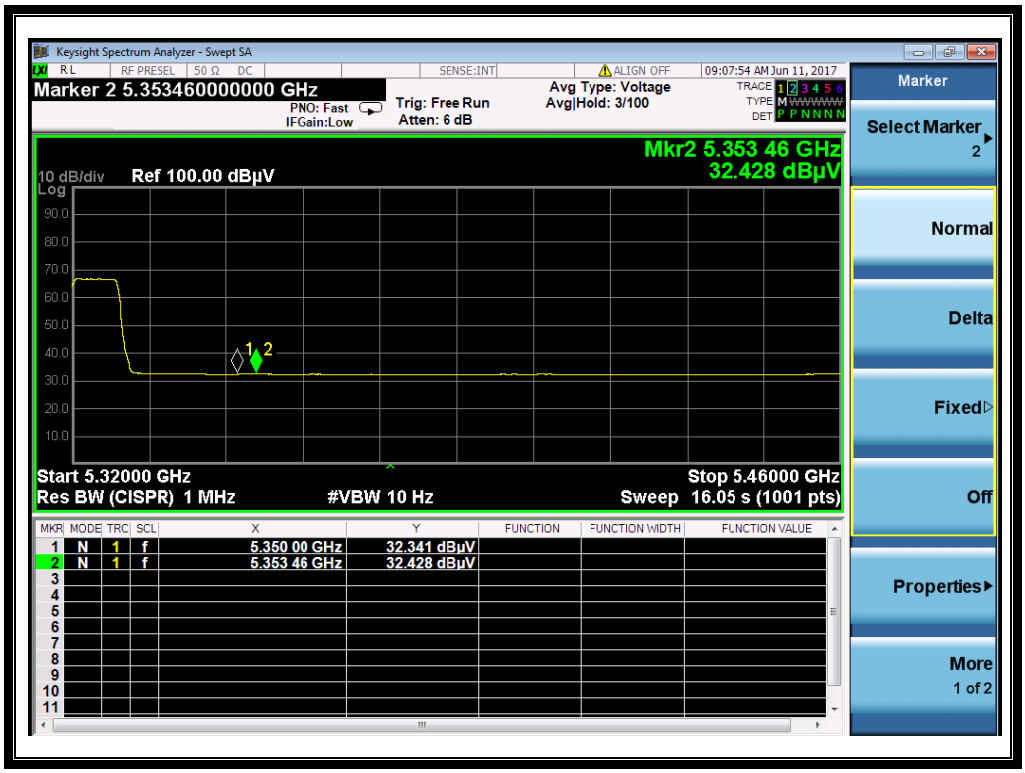
(Channel = 36 PEAK @ 802.11a)



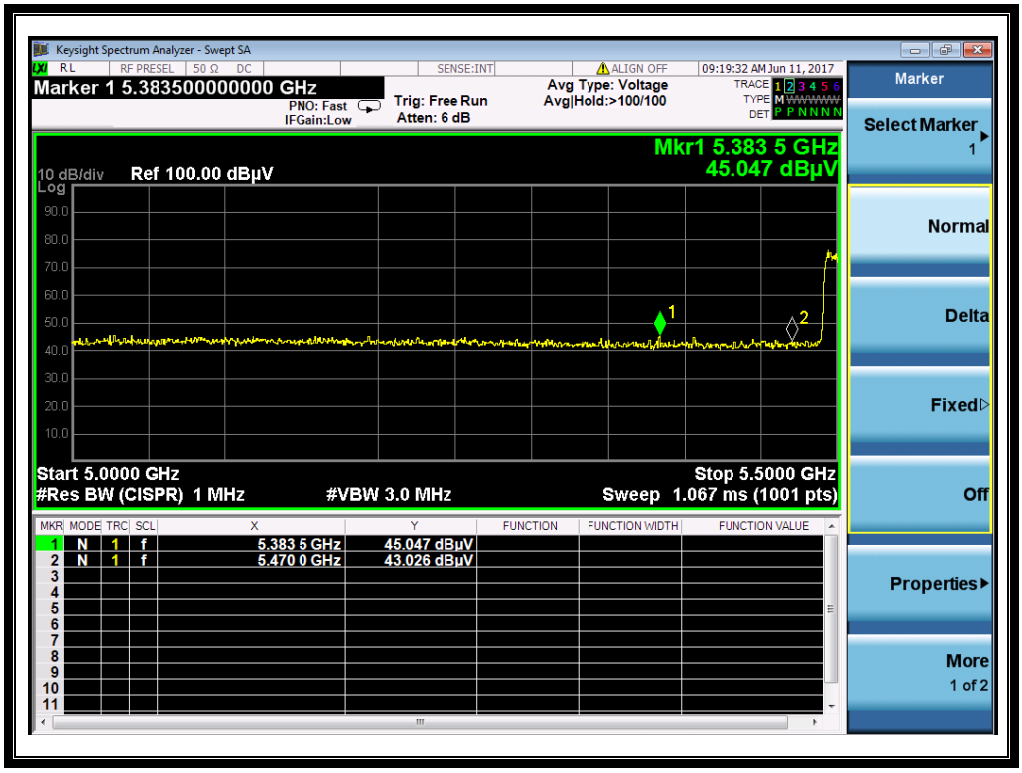
(Channel = 36 AVG @ 802.11a)



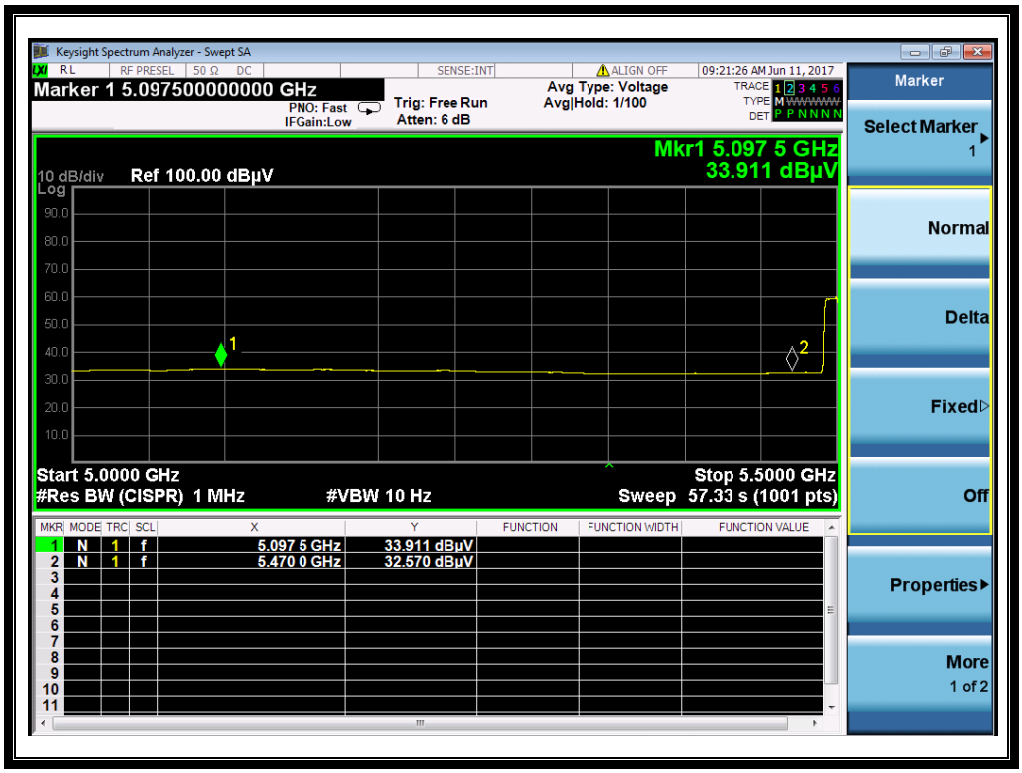
(Channel = 64 PEAK @ 802.11a)



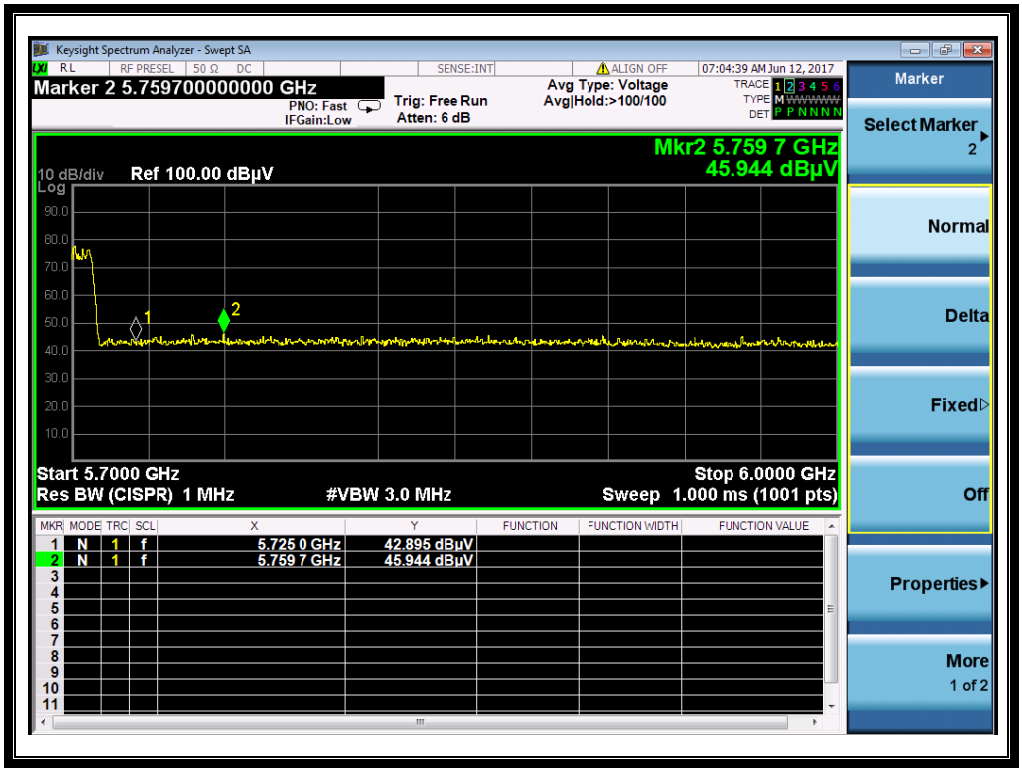
(Channel = 64 AVG @ 802.11a)



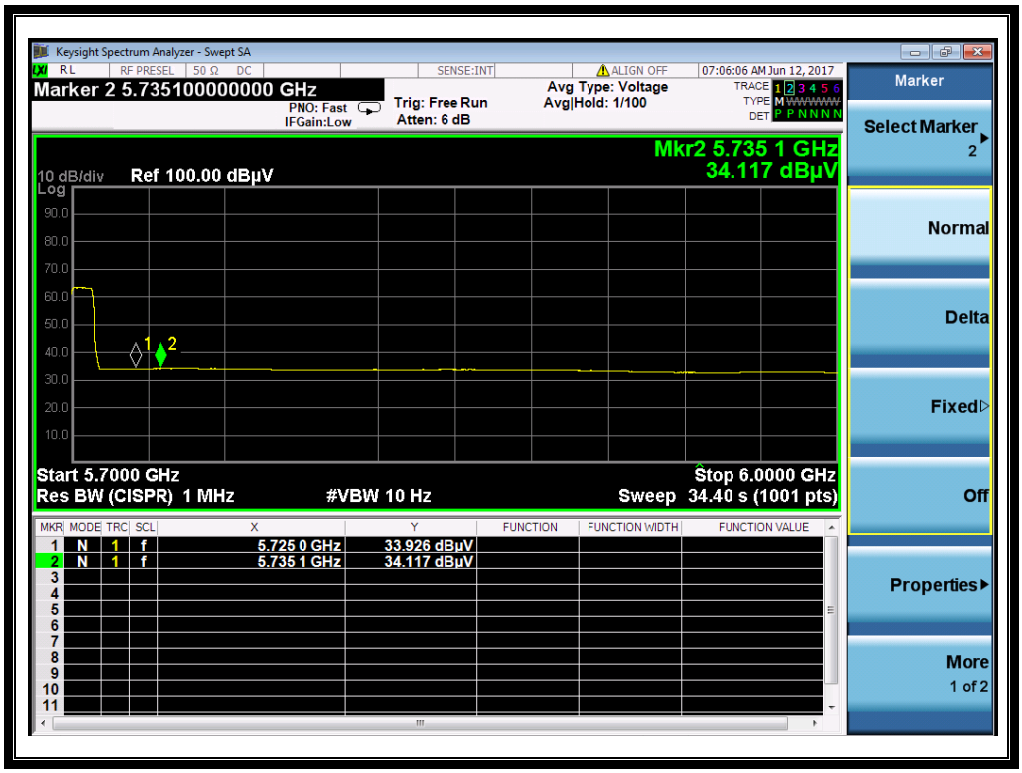
(Channel = 100 PEAK @ 802.11a)



(Channel =100 AVG @ 802.11a)



(Channel = 140 PEAK @ 802.11a)



(Channel = 140 AVG @ 802.11a)

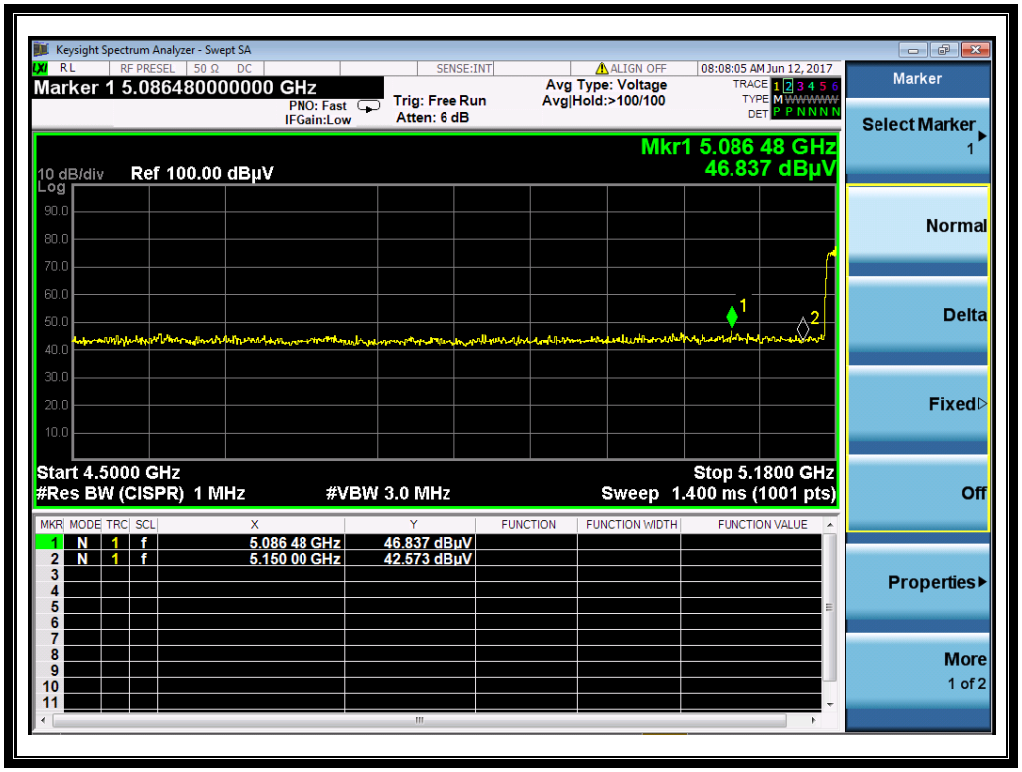
2.5.3.2 802.11n-20MHz Test mode

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

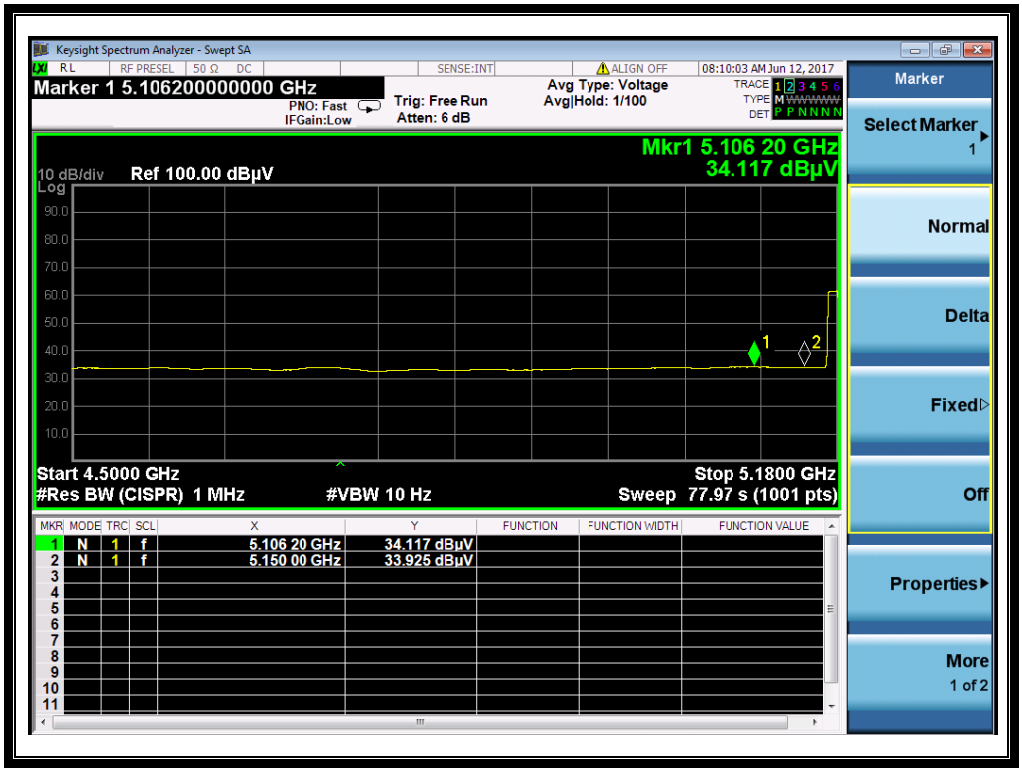
A. Test Verdict:

Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dBuV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
		PK/ AV						
36	5086.48	PK	46.84	-50.65	32.11	28.30	74	Pass
36	5106.20	AV	34.12	-50.65	32.11	15.58	54	Pass
64	5374.32	PK	43.98	-50.65	32.11	25.44	74	Pass
64	5353.74	AV	32.73	-50.65	32.11	14.19	54	Pass
100	5035.00	PK	46.56	-50.65	32.11	28.02	74	Pass
100	5095.00	AV	34.20	-50.65	32.11	15.66	54	Pass
140	5803.70	PK	45.48	-50.65	32.11	26.94	74	Pass
140	5744.60	AV	34.00	-50.65	32.11	15.46	54	Pass

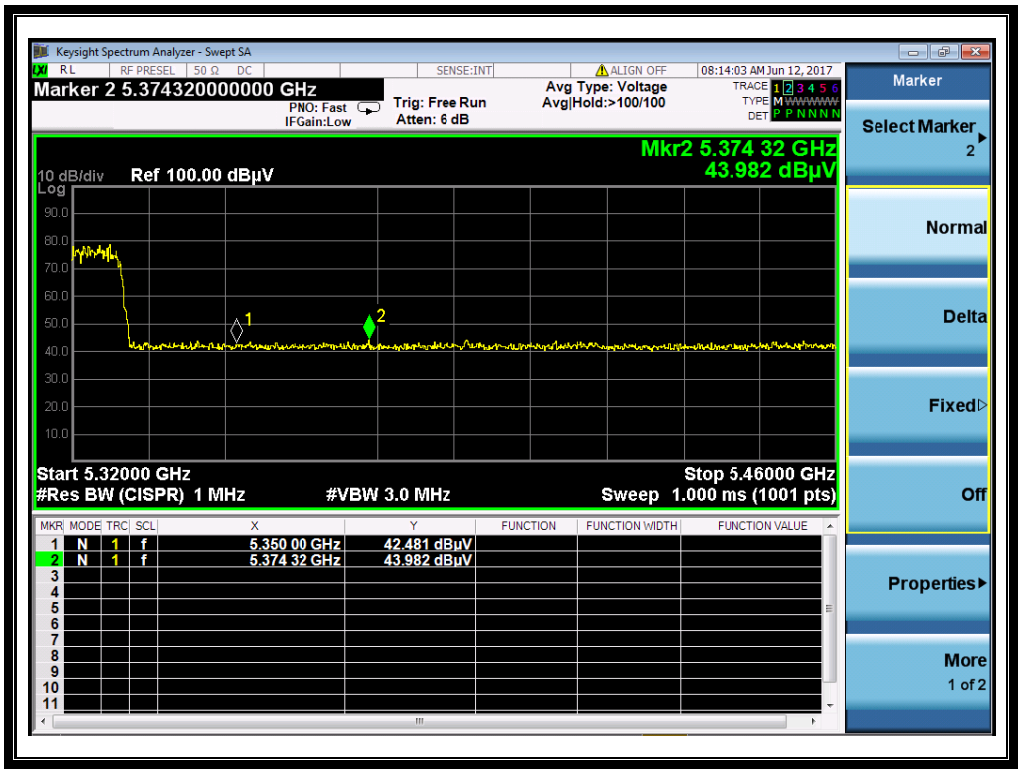
B. Test Plots:



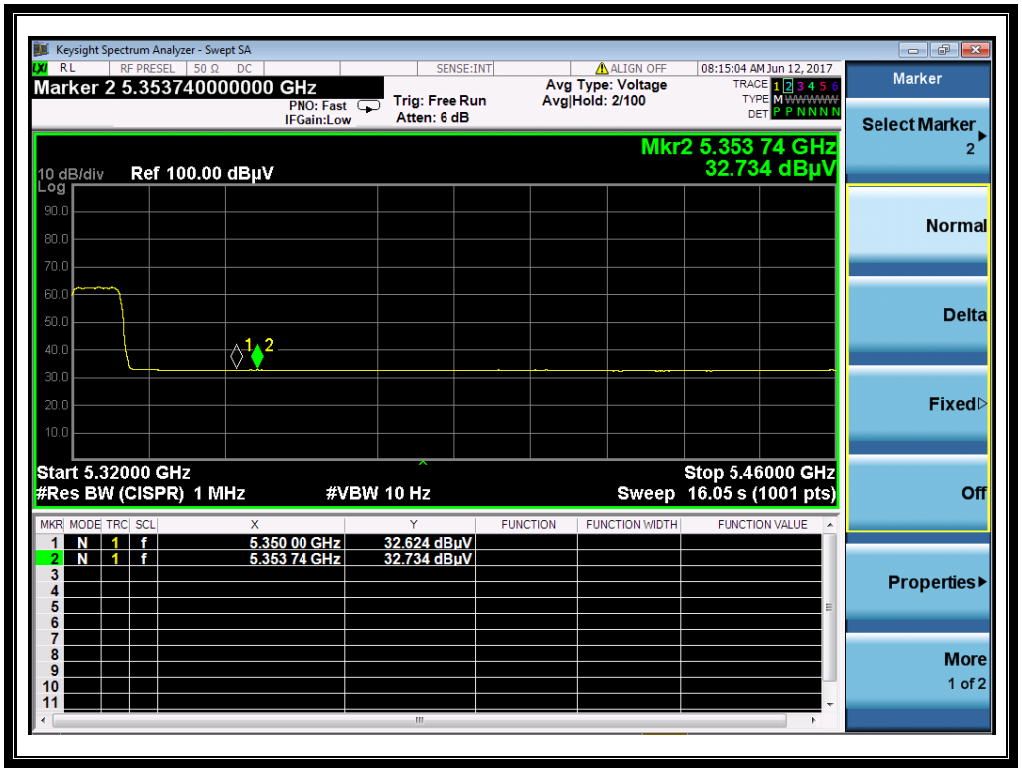
(Channel = 36 PEAK @ 802.11n 20MHz)



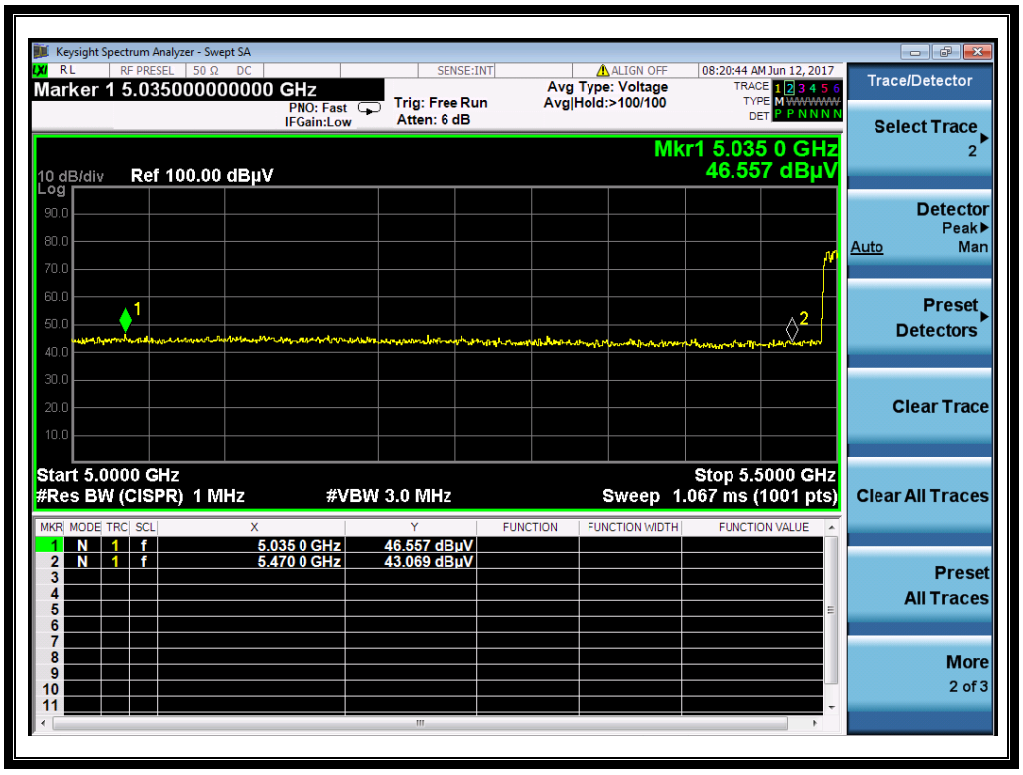
(Channel = 36 AVG @ 802.11n 20MHz)



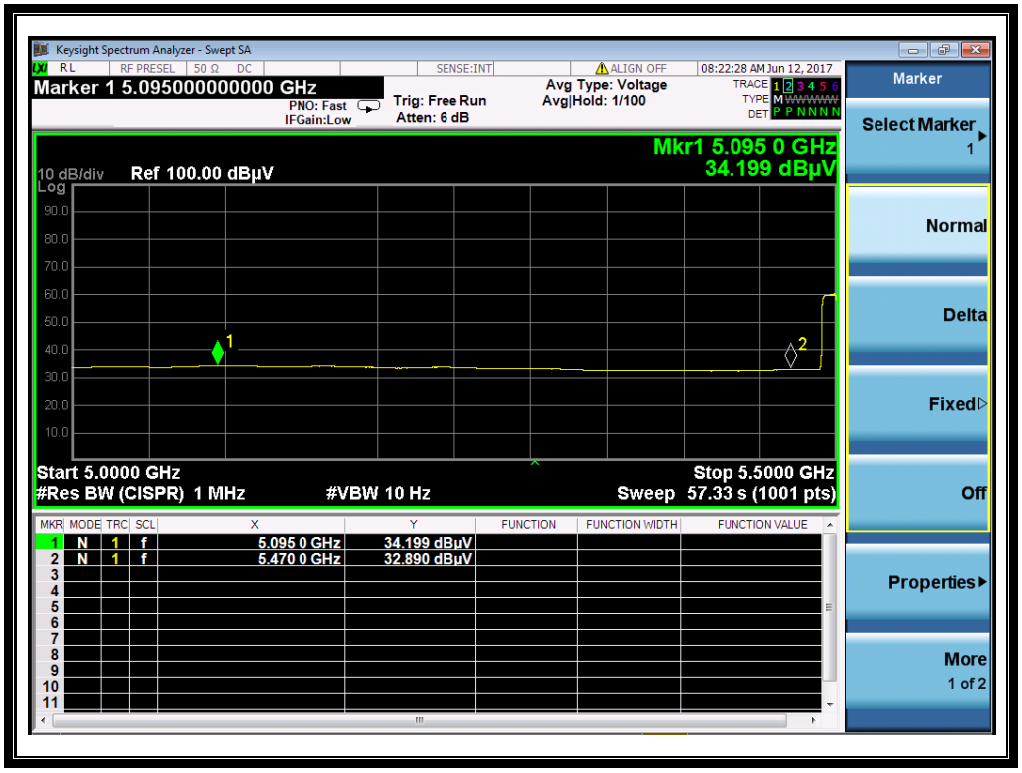
(Channel = 64 PEAK @ 802.11n 20MHz)



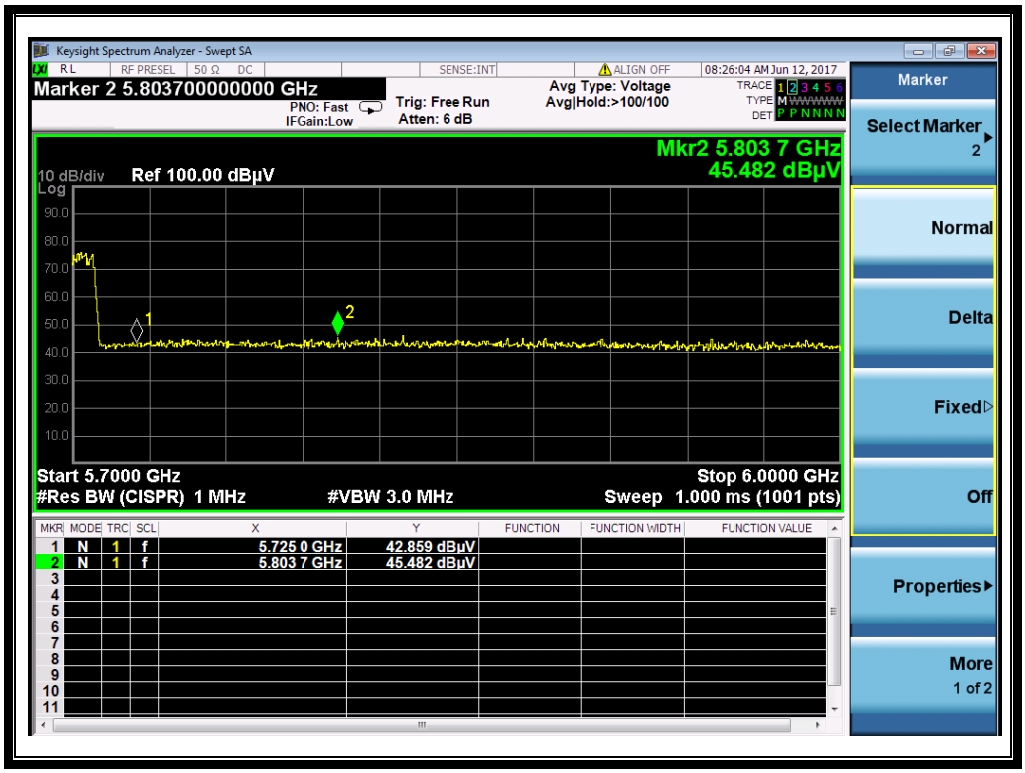
(Channel = 64 AVG @ 802.11n 20MHz)



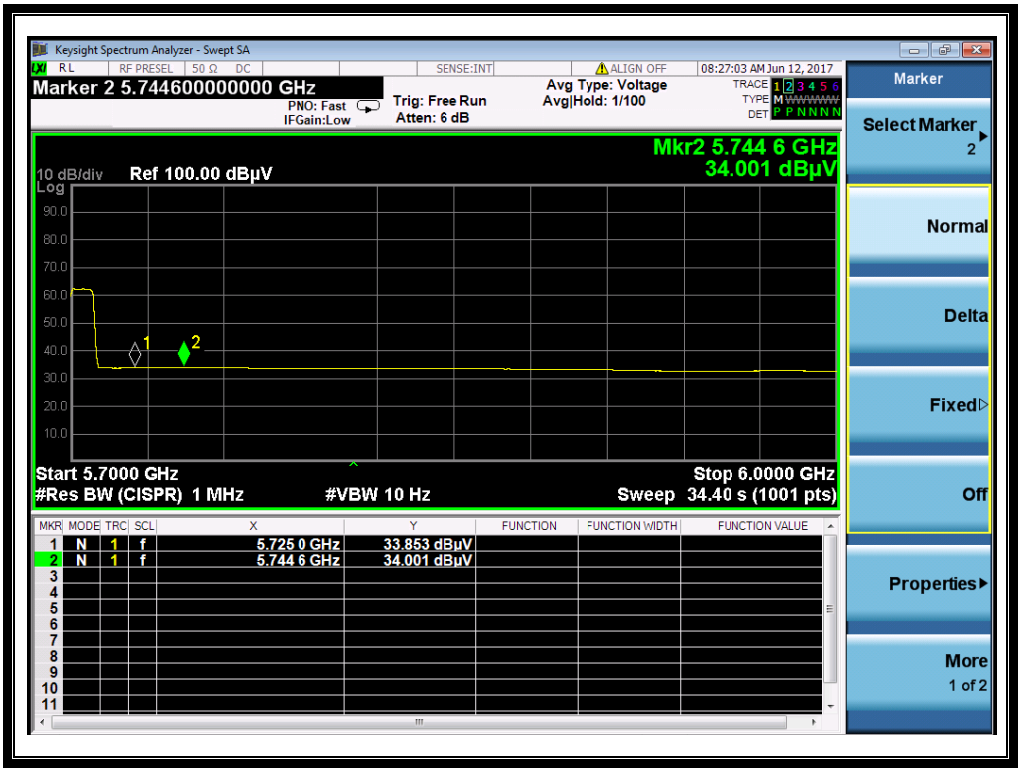
(Channel = 100 PEAK @ 802.11n 20MHz)



(Channel =100 AVG @802.11n 20MHz)



(Channel = 140 PEAK @802.11n 20MHz)



(Channel = 140 AVG @ 802.11n 20MHz)

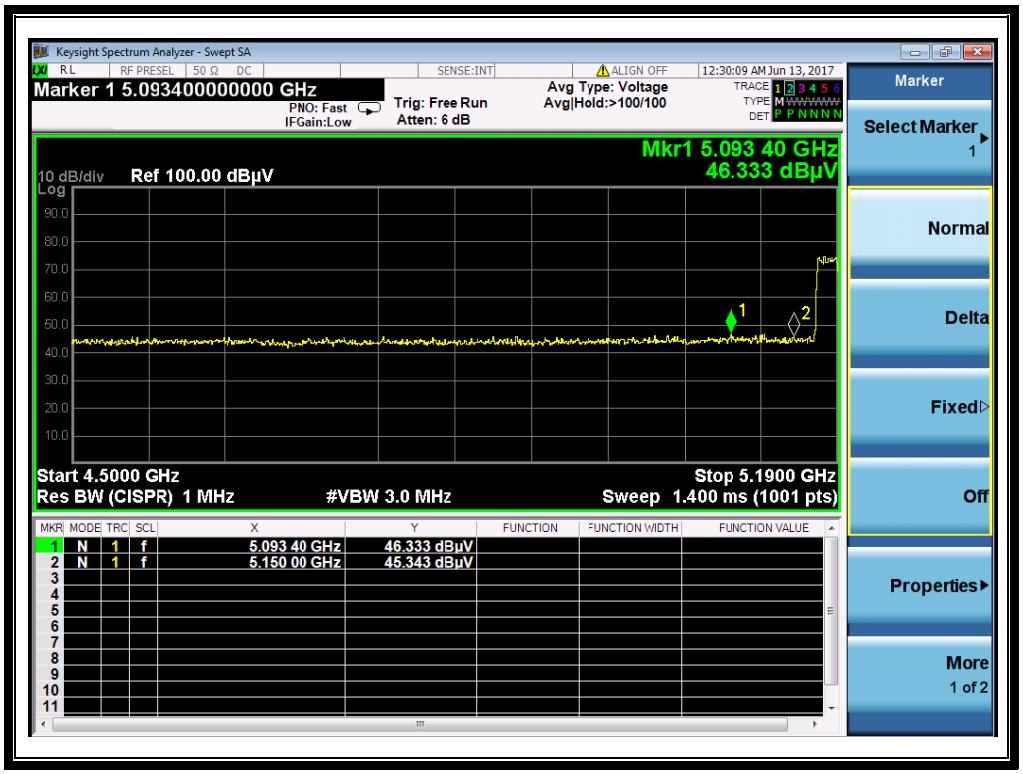
2.5.3.3 802.11n-40MHz Test mode

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

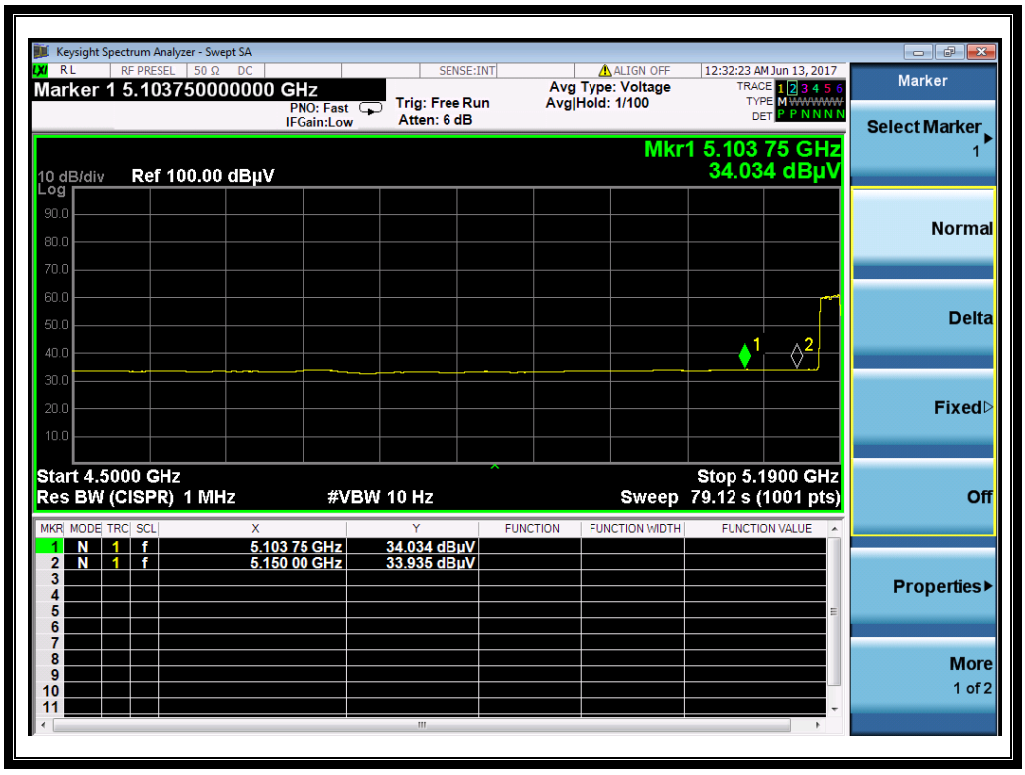
A. Test Verdict:

Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dBuV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBµV/m)	Limit (dBµV/m)	Verdict
		PK/ AV						
38	5093.40	PK	46.33	-50.65	32.11	27.79	74	Pass
38	5103.75	AV	34.03	-50.65	32.11	15.49	54	Pass
62	5366.40	PK	43.32	-50.65	32.11	24.78	74	Pass
62	5354.85	AV	32.69	-50.65	32.11	14.15	54	Pass
102	5182.58	PK	46.14	-50.65	32.11	27.60	74	Pass
102	5116.28	AV	34.38	-50.65	32.11	15.84	54	Pass
134	5809.59	PK	48.82	-50.65	32.11	30.28	74	Pass
134	5763.72	AV	36.05	-50.65	32.11	17.51	54	Pass

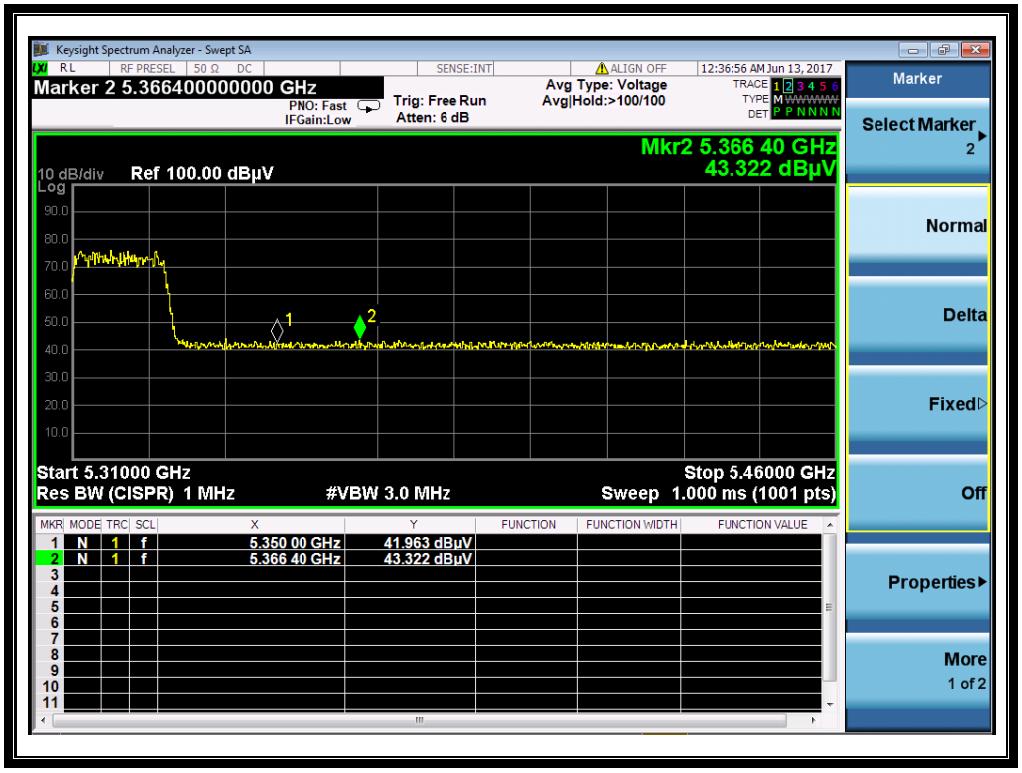
B. Test Plots:



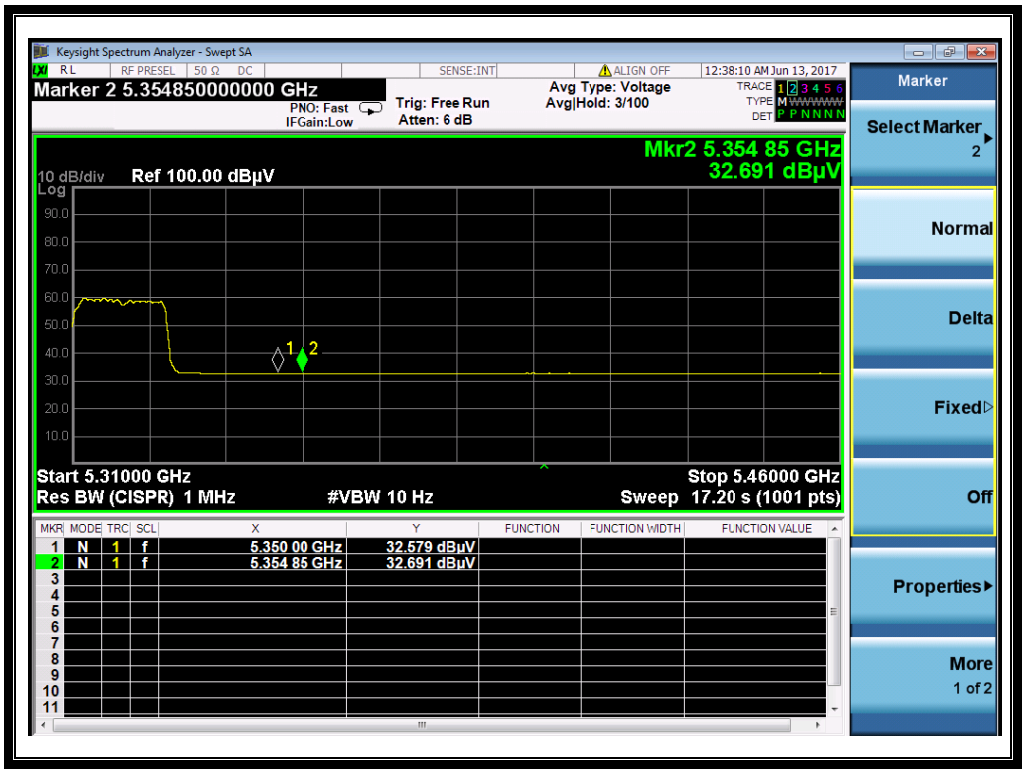
(Channel = 38 PEAK @ 802.11n 40MHz)



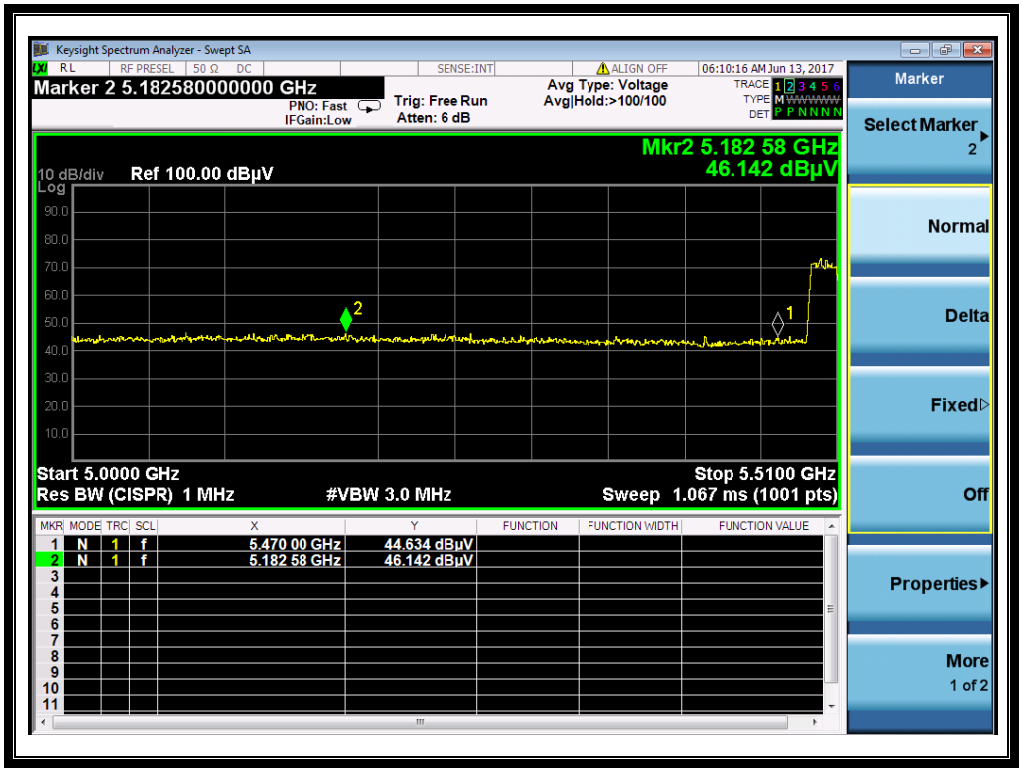
(Channel = 38 AVG @ 802.11n 40MHz)



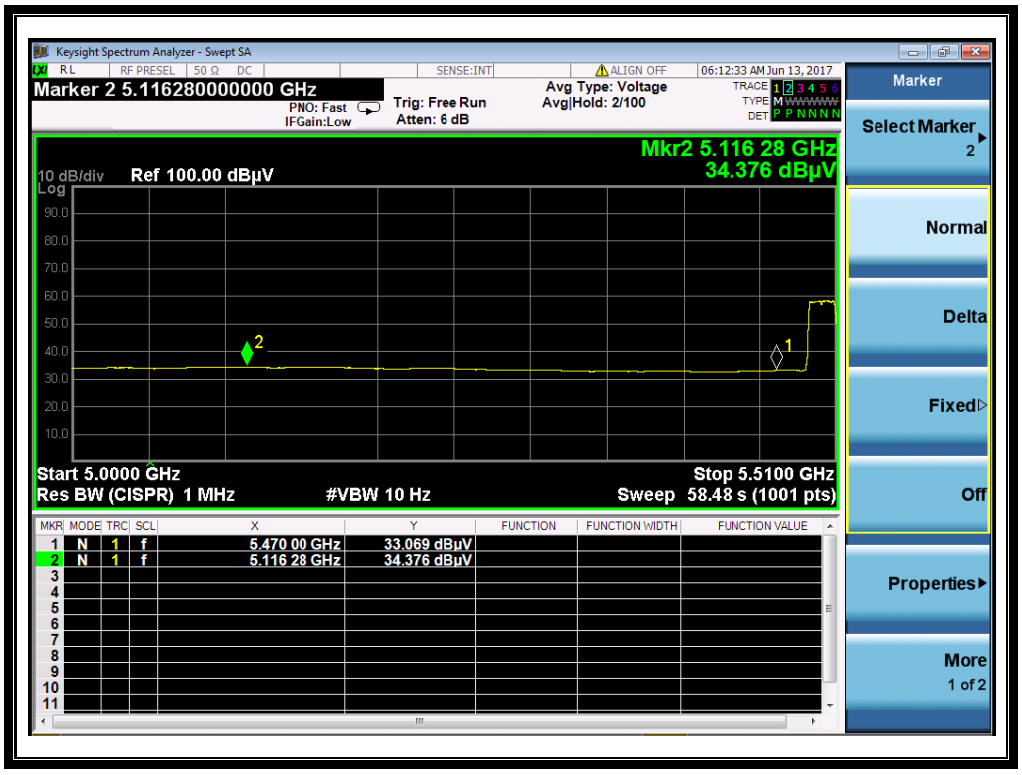
(Channel = 62 PEAK @ 802.11n 40MHz)



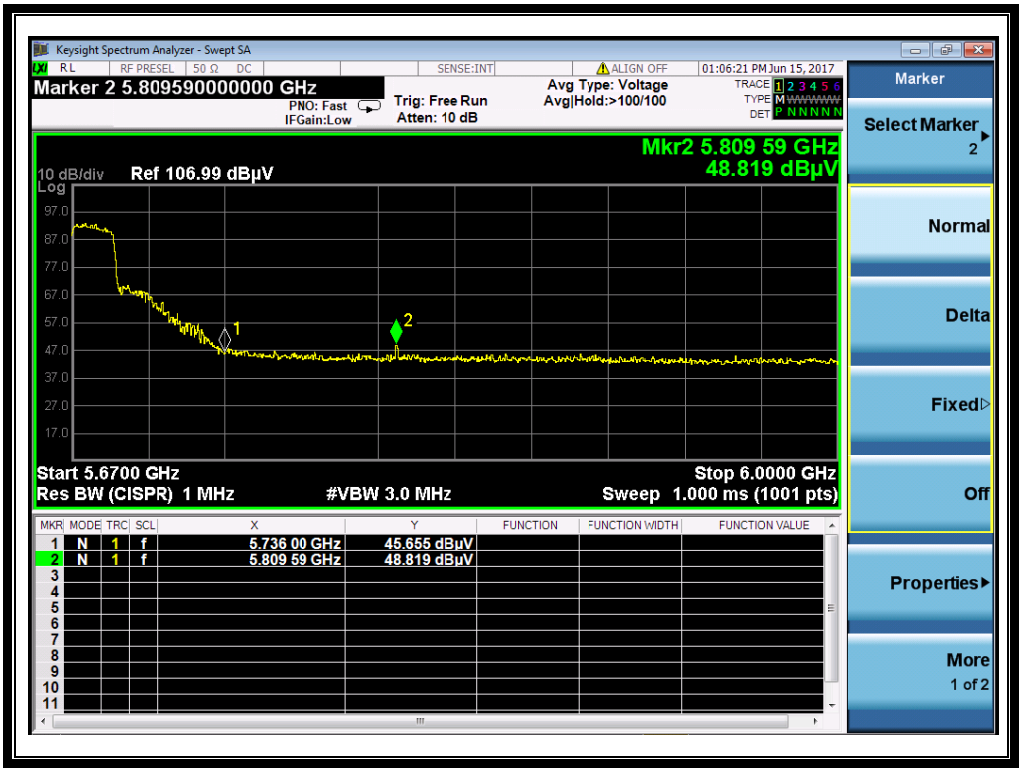
(Channel = 62 AVG @ 802.11n 40MHz)



(Channel =102 PEAK @ 802.11n 40MHz)



(Channel = 102AVG @ 802.11n 40MHz)



(Channel = 134 PEAK @ 802.11n 40MHz)

(Channel = 134 AVG @ 802.11n 40MHz)

2.6 Frequency Stability

2.6.1 Requirement

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

2.6.2 Test Procedure

The EUT was placed inside of an environmental chamber as the temperature in the chamber was varied between -30°C and +50°C. The temperature was incremented by 10^{o} intervals and the unit was allowed to stabilize at each temperature before each measurement. The center frequency of the transmitting channel was evaluated at each temperature and the frequency deviation from the channel's center frequency was recorded. Data for the worst case channel is shown below.

2.6.3 Test Result

Frequency Stability Measurements for UNII Band 1 (Ch. 36)

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq Dev. (Hz)	Deviation (%)
100%	3.7	+20(Ref)	5,179,999,989	11	0.00000021
100%		-30	5,180,000,021	21	0.00000041
100%		-20	5,180,000,002	2	0.00000004
100%		-10	5,179,999,987	13	0.00000025
100%		0	5,179,999,975	25	0.00000048
100%		+10	5,180,000,021	21	0.00000041
100%		+20	5,179,999,994	6	0.00000012
100%		+30	5,179,999,989	11	0.00000021
100%		+40	5,180,000,024	24	0.00000046
100%		+50	5,180,000,011	11	0.00000021
85%	3.55	+20	5,180,000,017	17	0.00000033
115%	4.35	+20	5,179,999,994	6	0.00000012

Frequency Stability Measurements for UNII Band 2A (Ch. 52)

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq Dev. (Hz)	Deviation (%)
100%	3.7	+20(Ref)	5,259,999,996	4	0.00000008
100%		-30	5,260,000,024	24	0.00000046
100%		-20	5,260,000,021	21	0.00000040
100%		-10	5,259,999,988	12	0.00000023
100%		0	5,259,999,999	1	0.00000002
100%		+10	5,260,000,006	6	0.00000011
100%		+20	5,260,000,021	21	0.00000040
100%		+30	5,259,999,979	21	0.00000040
100%		+40	5,259,999,997	3	0.00000006
100%		+50	5,260,000,085	85	0.00000162
85%	3.55	+20	5,260,000,022	22	0.00000042
115%	4.35	+20	5,259,999,994	6	0.00000011

Frequency Stability Measurements for UNII Band 2C (Ch. 100)

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq Dev. (Hz)	Deviation (%)
100%	3.7	+20(Ref)	5,500,000,041	41	0.00000075
100%		-30	5,499,999,987	13	0.00000024
100%		-20	5,500,000,034	34	0.00000062
100%		-10	5,499,999,981	19	0.00000035
100%		0	5,500,000,016	16	0.00000029
100%		+10	5,499,999,976	24	0.00000044
100%		+20	5,500,000,026	26	0.00000047
100%		+30	5,500,000,018	18	0.00000033
100%		+40	5,500,000,016	16	0.00000029
100%		+50	5,499,999,992	8	0.00000015
85%	3.55	+20	5,500,000,025	25	0.00000045
115%	4.35	+20	5,499,999,986	14	0.00000025

Frequency Stability Measurements for UNII Band 3 (Ch. 149)

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq Dev. (Hz)	Deviation (%)
100%	3.7	+20(Ref)	5,745,000,018	18	0.00000031
100%		-30	5,744,999,985	15	0.00000026
100%		-20	5,745,000,021	21	0.00000037
100%		-10	5,744,999,997	3	0.00000005
100%		0	5,745,000,011	11	0.00000019
100%		+10	5,745,000,027	27	0.00000047
100%		+20	5,745,000,008	8	0.00000014
100%		+30	5,745,000,012	12	0.00000021
100%		+40	5,744,999,986	14	0.00000024
100%		+50	5,745,000,001	1	0.00000002
85%	3.55	+20	5,745,000,027	27	0.00000047
115%	4.35	+20	5,744,999,987	13	0.00000023

Note: Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

2.7 Conducted Emission

2.7.1 Requirement

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

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

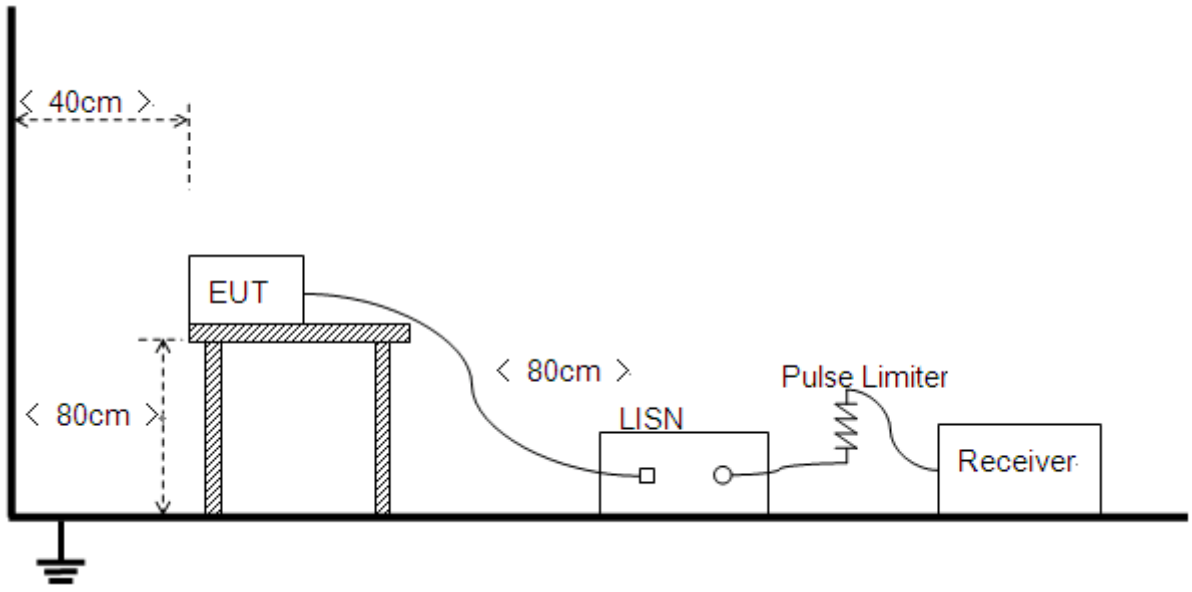
NOTE:

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

(b) The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50MHz.

2.7.2 Test Description

A. Test Setup:



The Table-top EUT was placed upon a non-metallic table 0.8m above the horizontal metal reference ground plane. EUT was connected to LISN and LISN was connected to reference Ground Plane. EUT was 80cm from LISN. The set-up and test methods were according to ANSI C63.10: 2013.

The EUT is powered by the Battery charged with the AC Adapter which is powered by 120V, 60Hz AC mains supply. The factors of the site are calibrated to correct the reading. During the

measurement, the EUT is activated and controlled by the Wi-Fi Service Supplier (SS) via a Common Antenna.

2.7.3 Test Result

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

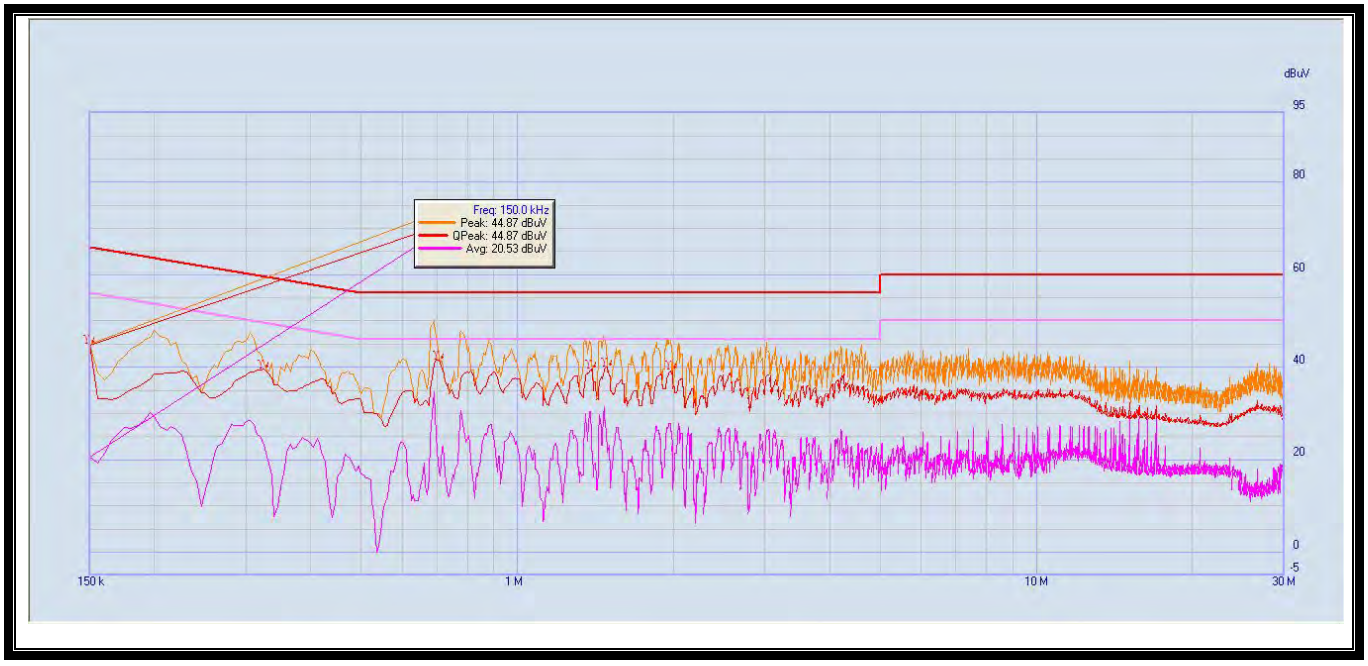
Note: All test modes are performed, only the worst case is recorded in this report.

A. Test setup:

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

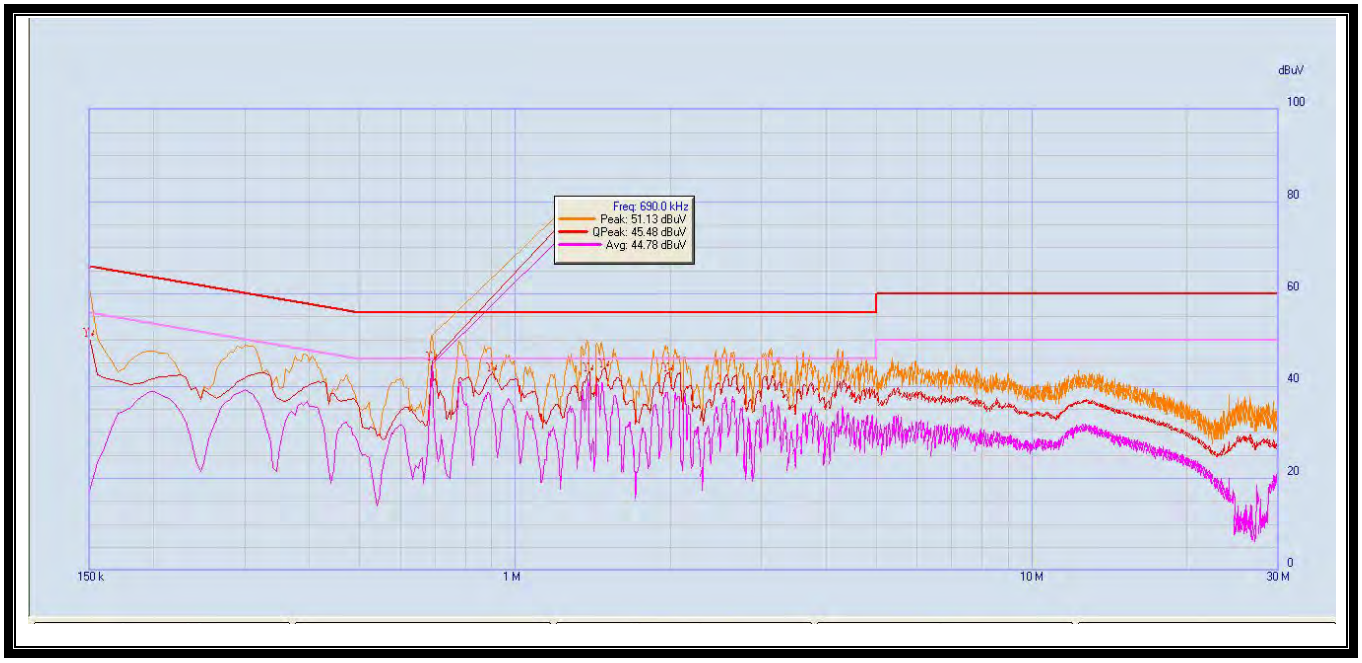
Note: The test voltage is AC 120V/60Hz.

B. Test Plots:



(Plot A: L Phase)

NO.	Fre. (MHz)	Emission Level (dBμV)		Limit (dBμV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.15	44.87	20.53	66	56	Line	PASS
2	0.325	39.55	23.21	61.00	51.00		PASS
3	0.705	41.54	17.66	56	46		PASS
4	1.385	39.18	25.35	56	46		PASS
5	1.485	40.11	22.57	56	46		PASS
6	1.98	39.11	24.16	56	46		PASS



(Plot B: N Phase)

NO.	Fre. (MHz)	Emission Level (dBμV)		Limit (dBμV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.15	50.55	17.15	66	56	Neutral	PASS
2	0.69	45.48	44.78	56	46		PASS
3	0.905	43.05	34.87	56	46		PASS
4	1.385	42.97	40.05	56	46		PASS
5	1.485	43.95	34.25	56	46		PASS
6	1.975	43.15	37.06	56	46		PASS

2.8 Radiated Emission

2.8.1 Requirement

The peak emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15–5.25 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of -27dBm/MHz.

(2) For transmitters operating in the 5.25–5.35 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of -27dBm/MHz.

(3) For transmitters operating in the 5.47–5.725 GHz band: all emissions outside of the 5.47–5.725 GHz band shall not exceed an EIRP of -27dBm/MHz.

(4) For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of −17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of −27 dBm/MHz.

The following formula is used to convert the equipment isotropic radiated power(eirp) to field strength (dBμV/m);

$$E = 1000000 \times \sqrt{30P} / 3 \ \mu V/m$$

where P is the EIRP in Watts

Therefore: -27 dBm/MHz = 68.23 dBuV/m

Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209. 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:

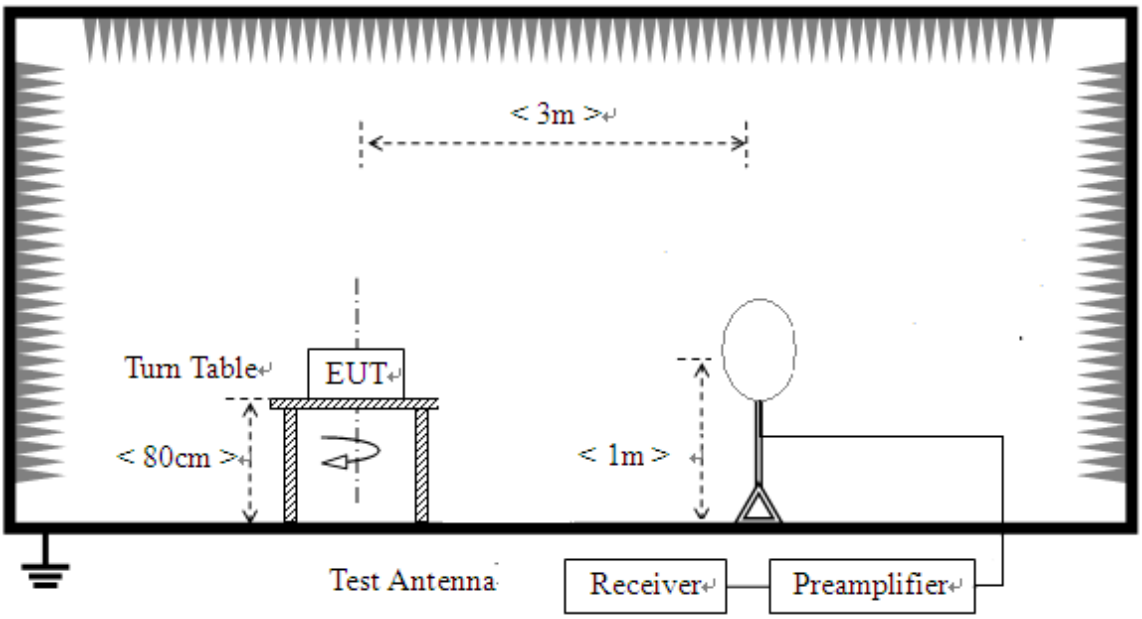
For Above 1000MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit.

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

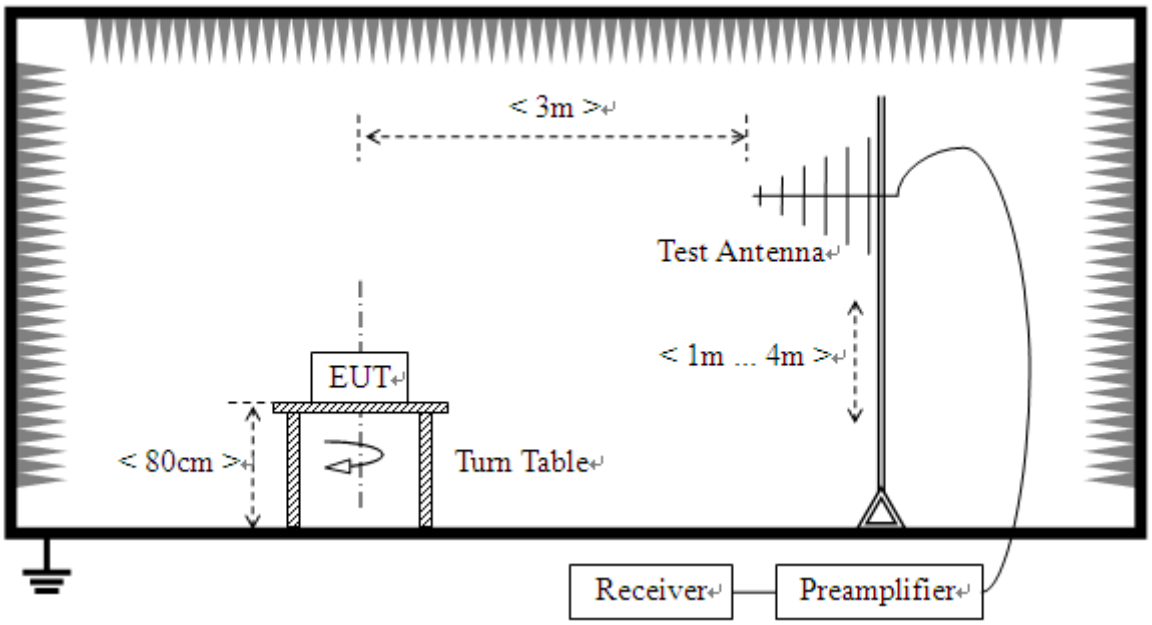
2.8.2 Test Description

A. Test Setup:

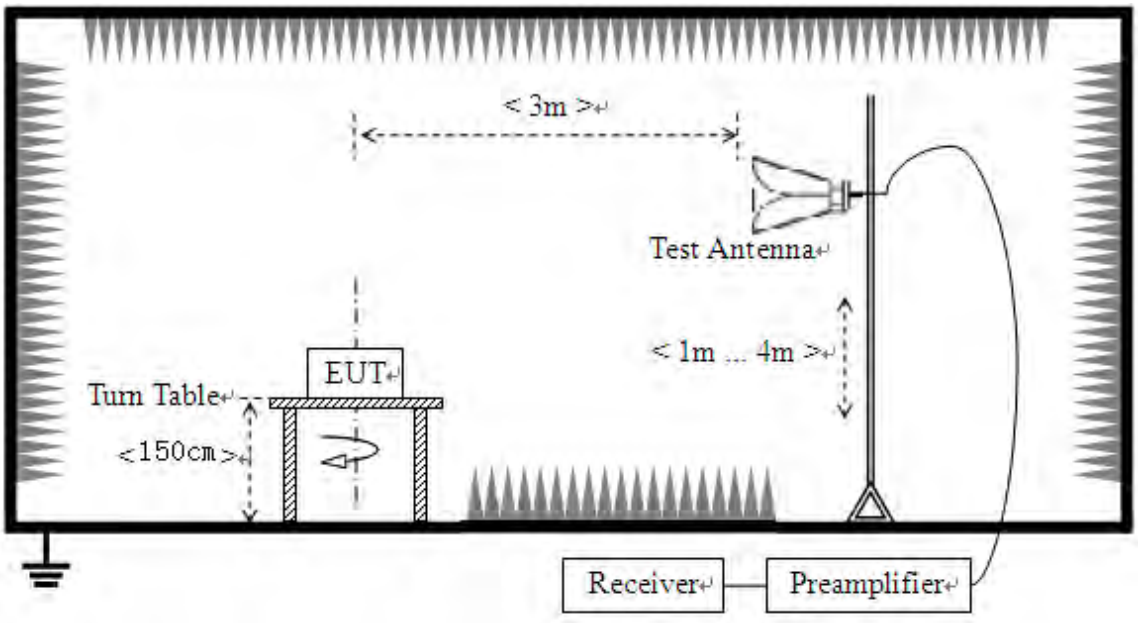
1) For radiated emissions from 9kHz to 30MHz



2) For radiated emissions from 30MHz to1GHz



3) For radiated emissions above 1GHz



The 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.

2.8.3 Test Result

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

The measurement results are obtained as below:

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

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.

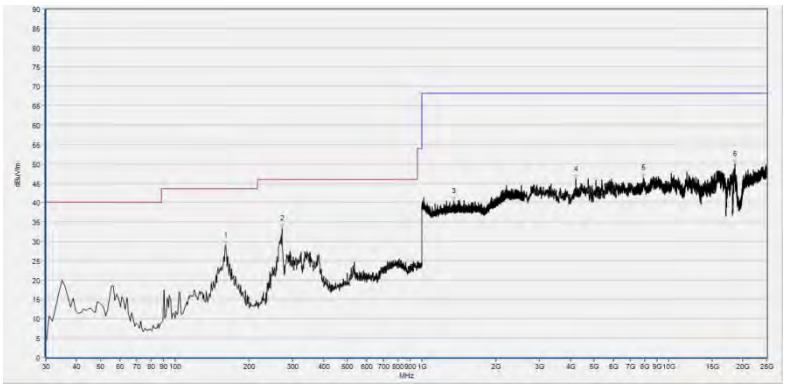
Note2: The low frequency, which started from 9KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

For the frequency, which started from 25G to 40G, was pre-scanned and the result which was 10dB lower than the limit.

2.8.3.1 802.11a-20MHz Test mode

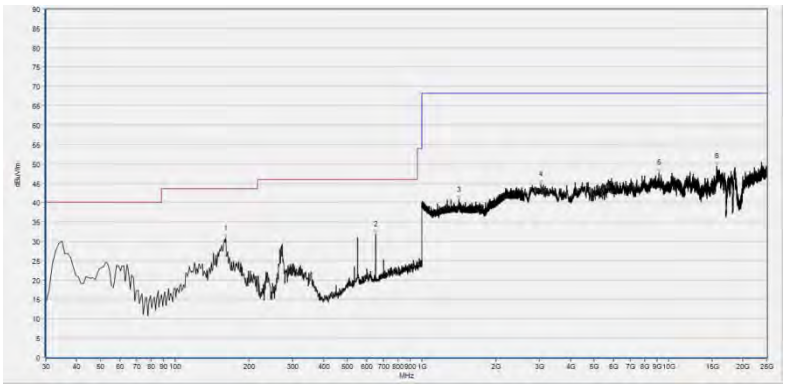
A. Test Plots for the Whole Measurement Frequency Range:

Plots for Channel = 36



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
161.081	29.06	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
271.772	33.29	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1347.316	40.34	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
4208.642	46.08	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
7923.305	46.48	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
18569.914	49.92	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

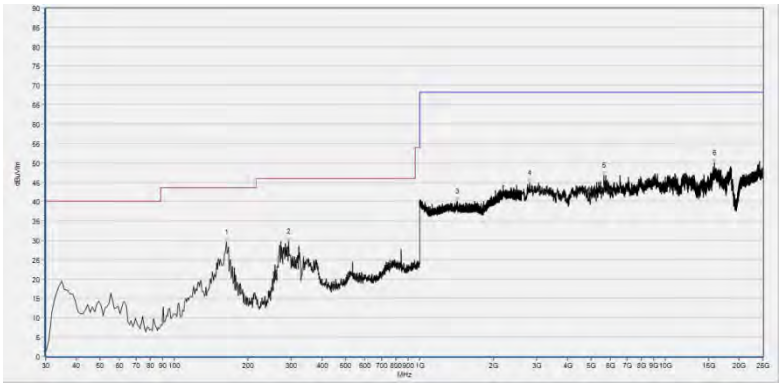
(Antenna Horizontal, 30MHz to 40GHz)



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
161.081	30.92	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
650.450	31.92	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
1416.672	40.76	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
3043.609	44.82	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
9124.185	47.70	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
15666.293	49.41	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

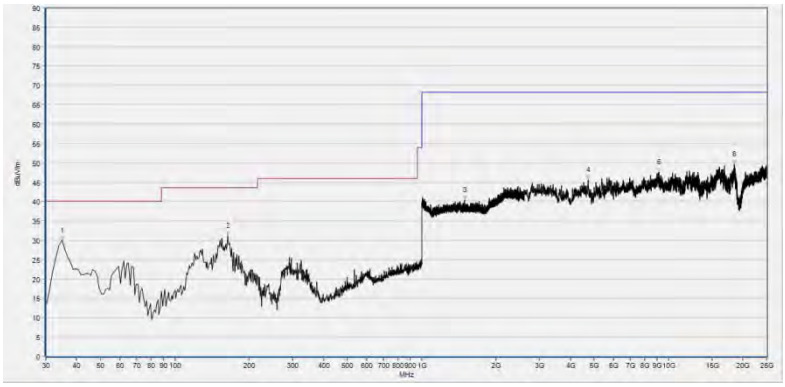
(Antenna Vertical, 30MHz to 40GHz)

Plot for Channel = 44



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
163.994	29.48	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
293.133	29.72	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1420.407	40.13	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
2797.159	44.68	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
5633.567	46.76	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
15827.606	49.98	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

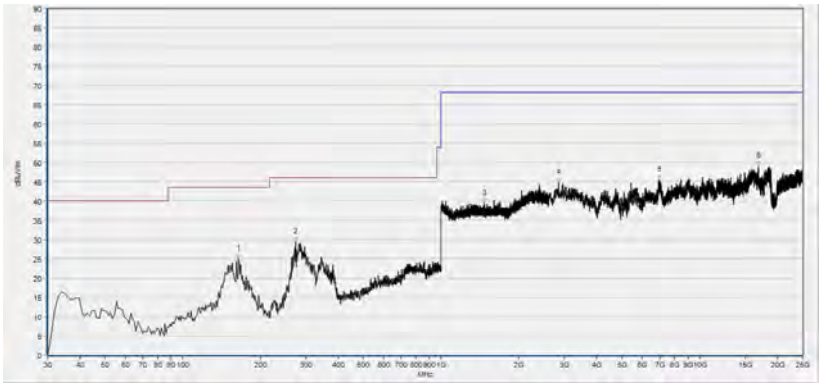
(Antenna Horizontal, 30MHz to 25GHz)



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
34.855	30.08	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
163.994	31.13	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
1489.763	40.43	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
4719.464	45.55	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
9142.108	47.51	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
18507.181	49.57	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

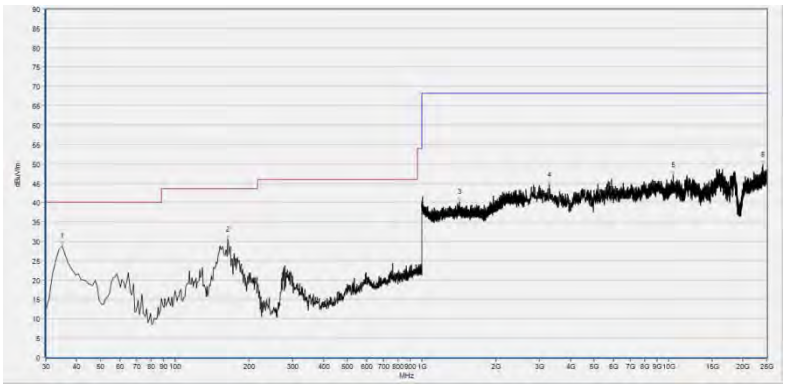
(Antenna Vertical, 30MHz to 40GHz)

Plot for Channel = 48



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
163.994	25.06	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
272.743	29.39	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1465.755	39.50	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
2841.968	44.77	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
6995.759	45.52	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
16889.578	49.11	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

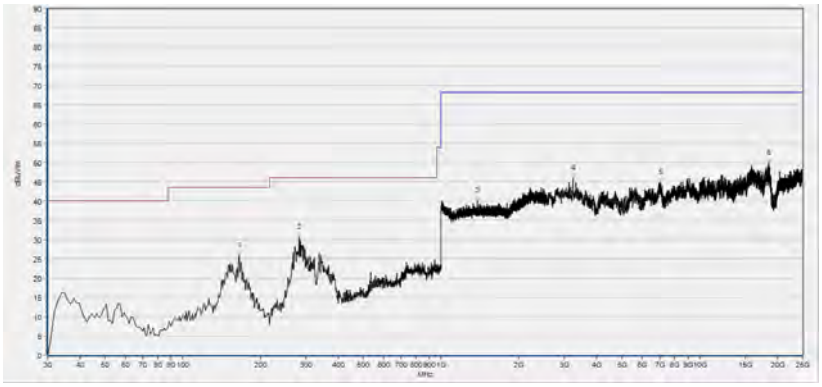
(Antenna Horizontal, 30MHz to 40GHz)



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
34.855	28.81	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
163.994	30.50	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
1419.340	40.19	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
3290.058	44.54	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
10428.126	47.10	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
24072.454	49.76	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

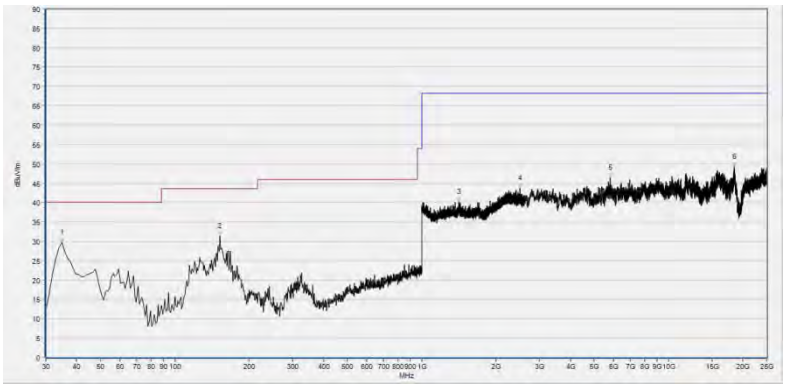
(Antenna Vertical, 30MHz to 40GHz)

Plots for Channel = 52



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
164.965	25.92	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
282.452	30.58	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1377.192	39.98	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
3236.287	45.86	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
7045.049	44.77	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
18484.777	49.87	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

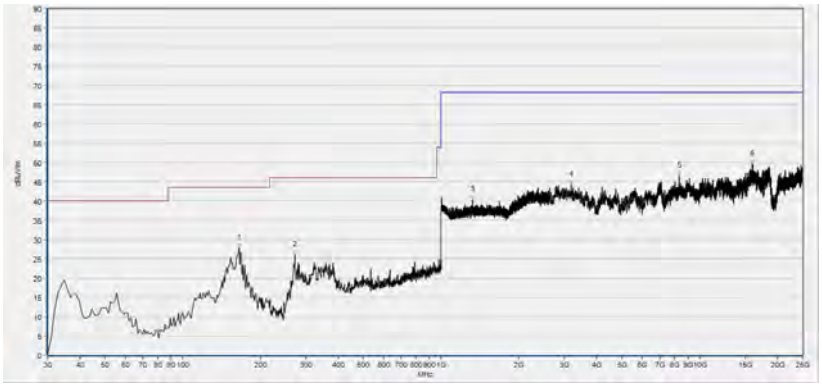
(Antenna Horizontal, 30MHz to 40GHz)



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
34.855	29.60	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
152.342	31.34	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
1416.672	40.17	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
2499.166	43.81	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
5794.879	46.36	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
18507.181	49.22	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

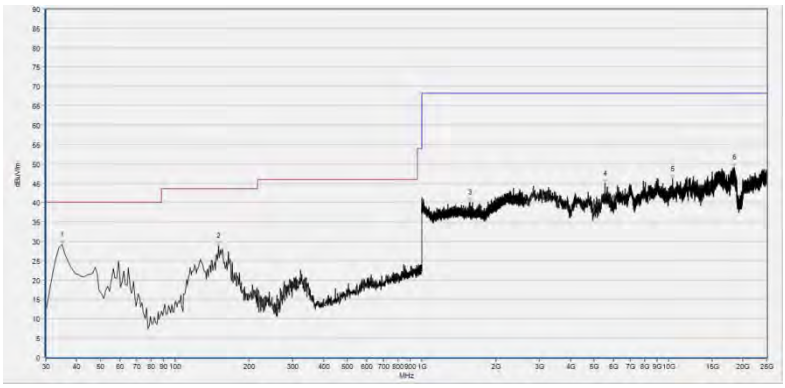
(Antenna Vertical, 30MHz to 40GHz)

Plot for Channel = 60



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
164.965	27.85	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
270.801	25.99	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1324.908	40.28	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
3186.997	44.20	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
8313.143	46.56	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
15935.147	49.56	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

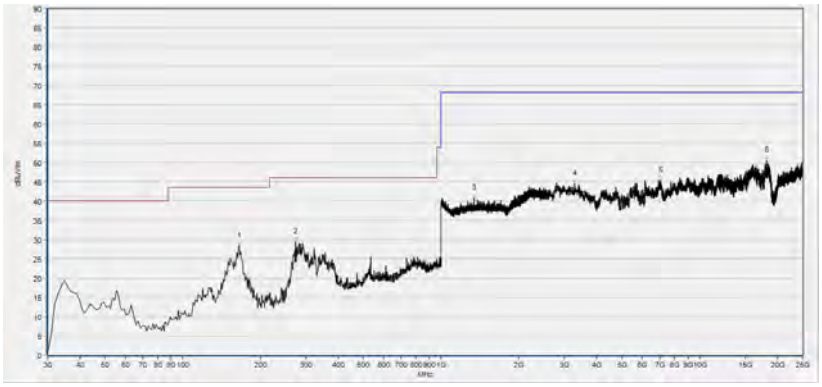
(Antenna Horizontal, 30MHz to 25GHz)



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
34.855	29.11	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
150.400	28.84	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
1565.522	40.00	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
5534.987	44.85	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
10392.278	46.10	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
18480.296	49.07	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

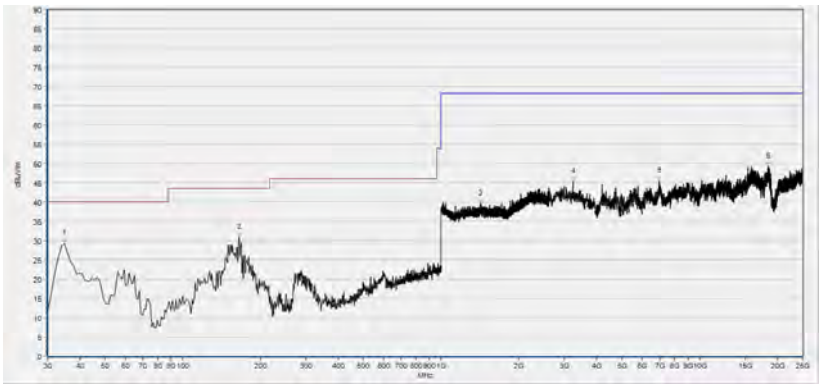
(Antenna Vertical, 30MHz to 40GHz)

Plot for Channel = 64



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
164.965	28.33	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
272.743	29.54	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1341.447	40.66	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
3272.134	44.39	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
7062.973	45.31	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
18144.229	50.50	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

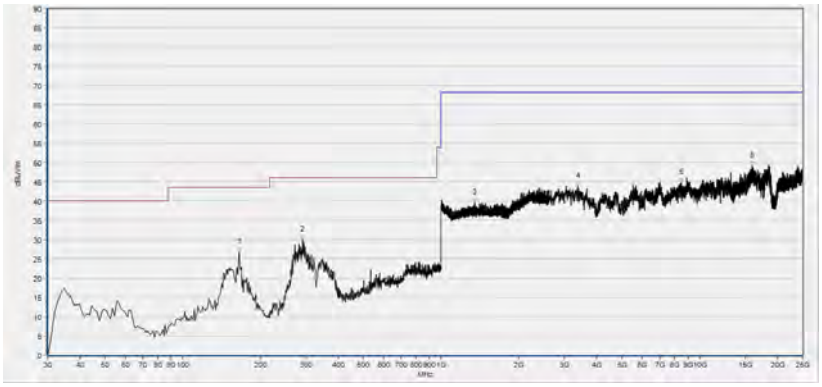
(Antenna Horizontal, 30MHz to 40GHz)



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
34.855	29.31	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
164.965	30.86	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
1418.806	39.71	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
3231.806	45.31	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
6977.836	45.56	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
18431.006	49.26	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

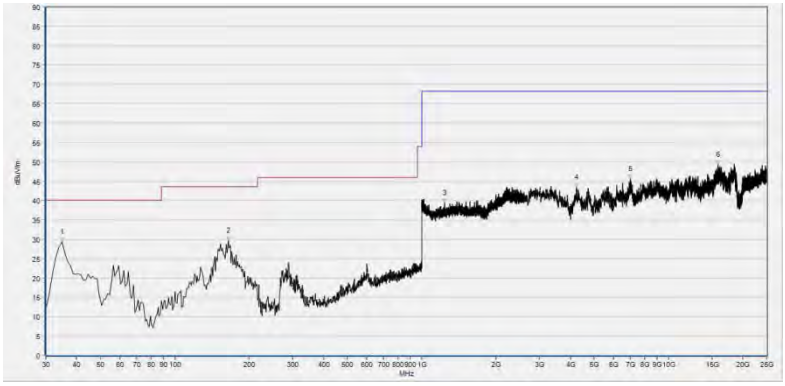
(Antenna Vertical, 30MHz to 40GHz)

Plots for Channel = 100



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
164.965	26.75	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
291.191	30.05	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1348.916	39.71	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
3375.195	44.00	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
8514.783	44.89	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
15988.918	49.15	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

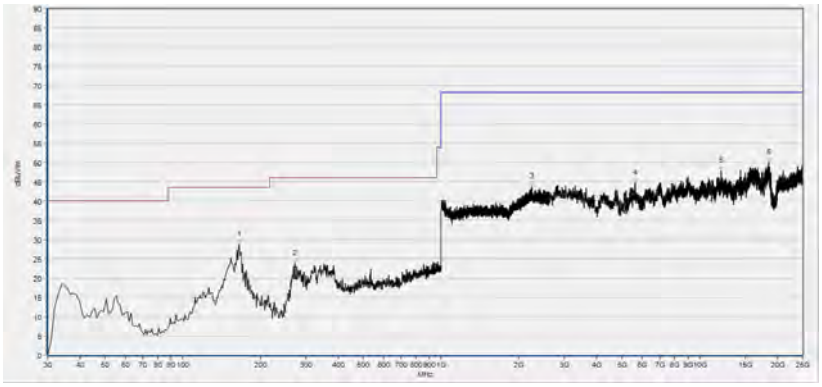
(Antenna Horizontal, 30MHz to 40GHz)



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
34.855	29.31	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
164.965	29.73	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
1235.278	39.41	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
4231.046	43.46	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
7004.721	45.65	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
15841.048	49.21	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

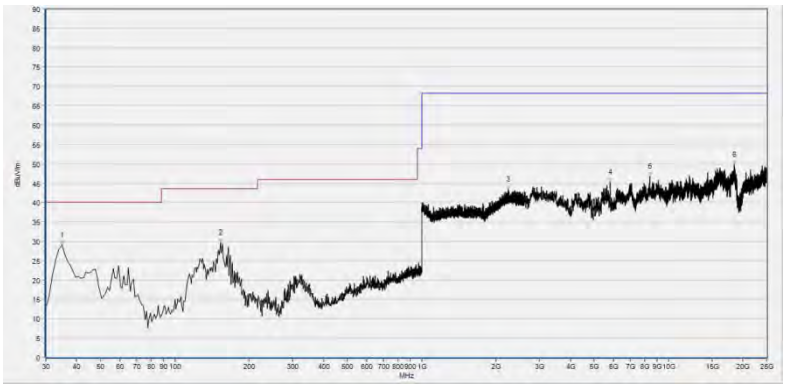
(Antenna Vertical, 30MHz to 40GHz)

Plot for Channel = 120



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
164.965	28.80	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
270.801	23.76	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
2235.612	43.83	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
5633.567	44.72	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
12117.423	47.84	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
18560.952	49.94	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

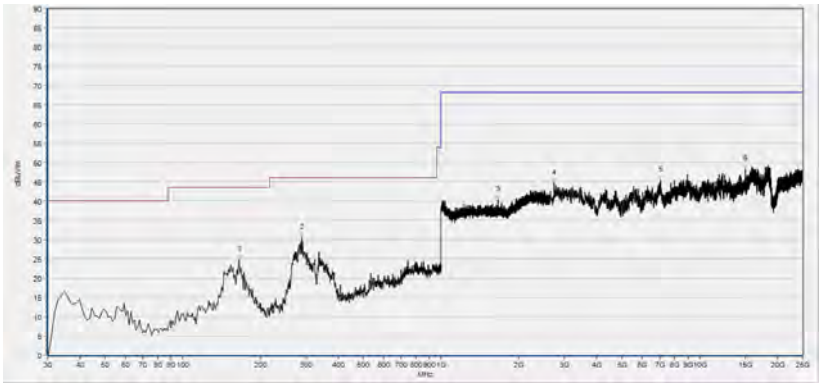
(Antenna Horizontal, 30MHz to 25GHz)



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
34.855	29.06	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
153.313	29.59	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
2243.615	43.36	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
5799.360	45.23	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
8375.875	46.69	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
18426.525	49.83	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

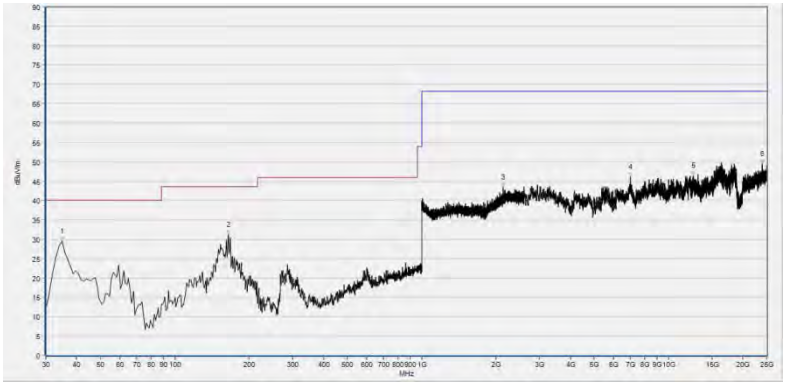
(Antenna Vertical, 30MHz to 40GHz)

Plot for Channel = 140



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
164.965	24.85	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
288.278	30.59	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1657.286	40.39	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
2734.427	44.67	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
7049.530	45.60	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
15021.044	48.48	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 40GHz)

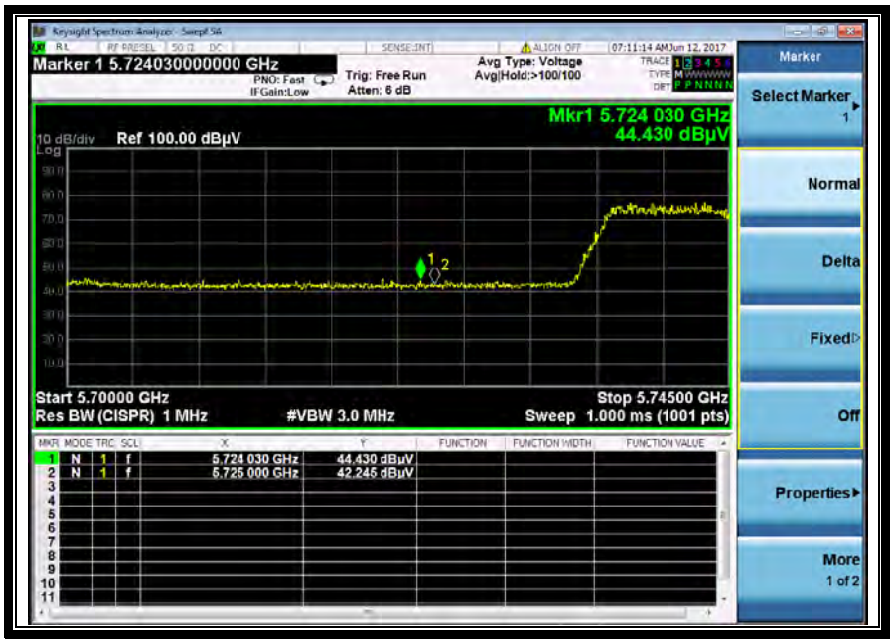


Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
34.855	29.42	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
164.965	31.13	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
2135.312	43.35	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
7022.645	46.08	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
12623.765	46.35	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
23978.356	49.38	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

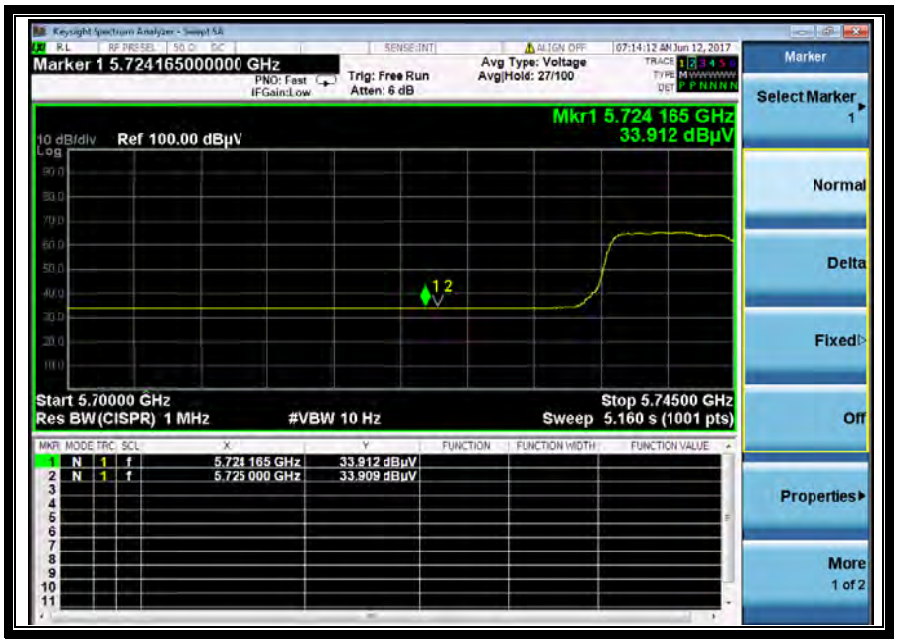
(Antenna Vertical, 30MHz to 40GHz)

Plots for Channel = 149

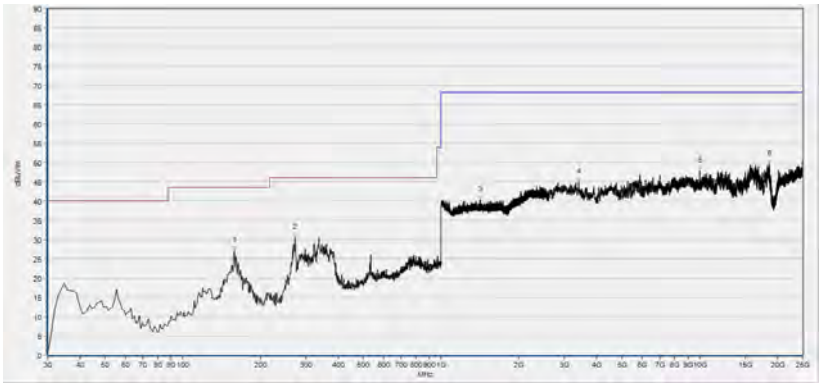
Channel	Frequency (MHz)	Antenna Horiz./ Vert.	Receiver Reading U_R (dBuV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
149	5724.03	Horizontal	44.43	-50.65	32.11	25.89	78.2	Pass
149	5724.17	Vertical	33.91	-50.65	32.11	15.37	78.2	Pass



(Channel = 149 Horizontal @ 802.11ac)

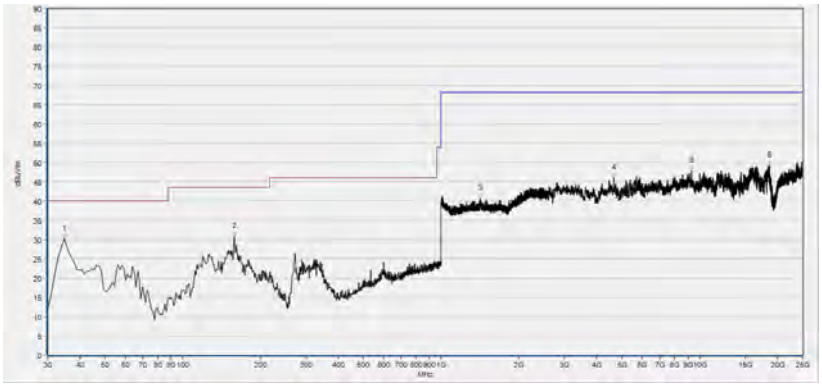


(Channel = 149 Vertical @ 802.11ac)



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
158.168	27.14	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
271.772	30.59	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1410.804	40.31	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
3397.600	44.99	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
9993.479	47.91	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
18587.838	49.70	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

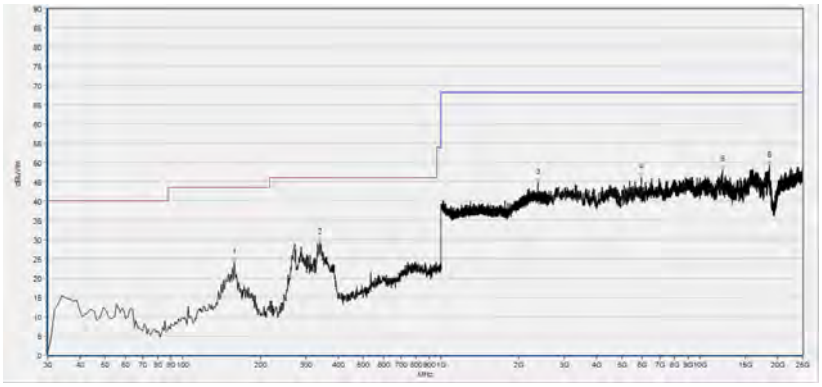
(Antenna Horizontal, 30MHz to 40GHz)



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
34.855	30.11	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
158.168	30.95	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
1418.806	40.64	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
4638.808	46.04	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
9330.306	47.87	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
18574.395	49.20	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

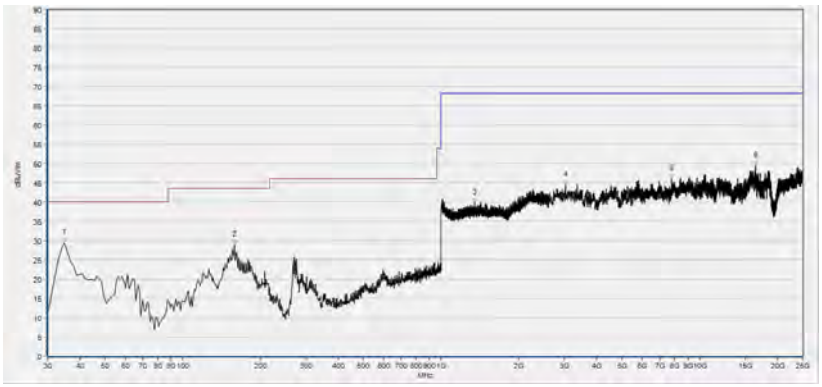
(Antenna Vertical, 30MHz to 40GHz)

Plot for Channel = 157



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
158.168	24.14	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
337.798	29.27	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
2362.054	44.80	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
5947.229	46.31	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
12233.927	48.28	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
18583.357	49.22	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

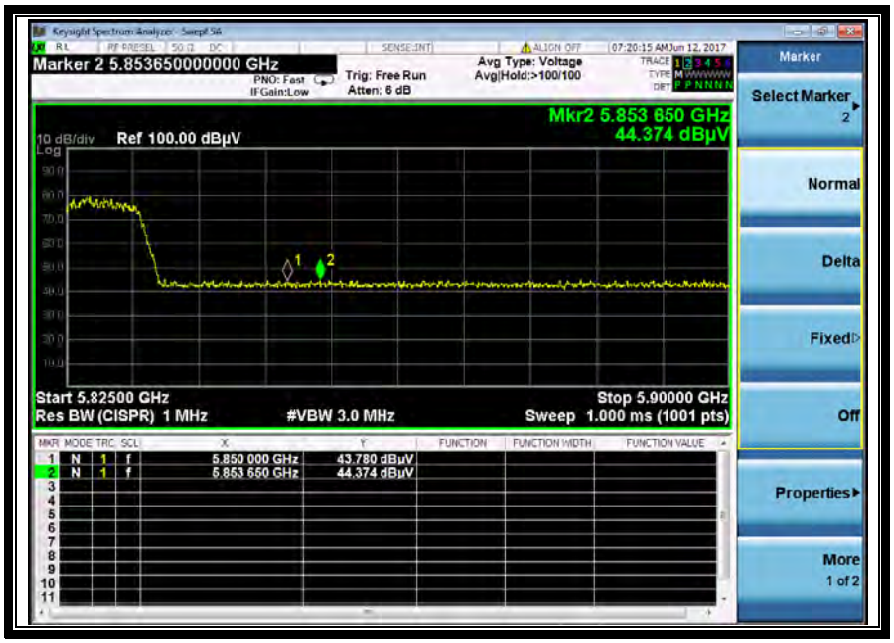


Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
34.855	29.47	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
158.168	28.84	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
1348.916	39.75	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
3025.685	44.48	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
7784.397	46.03	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
16423.565	49.43	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

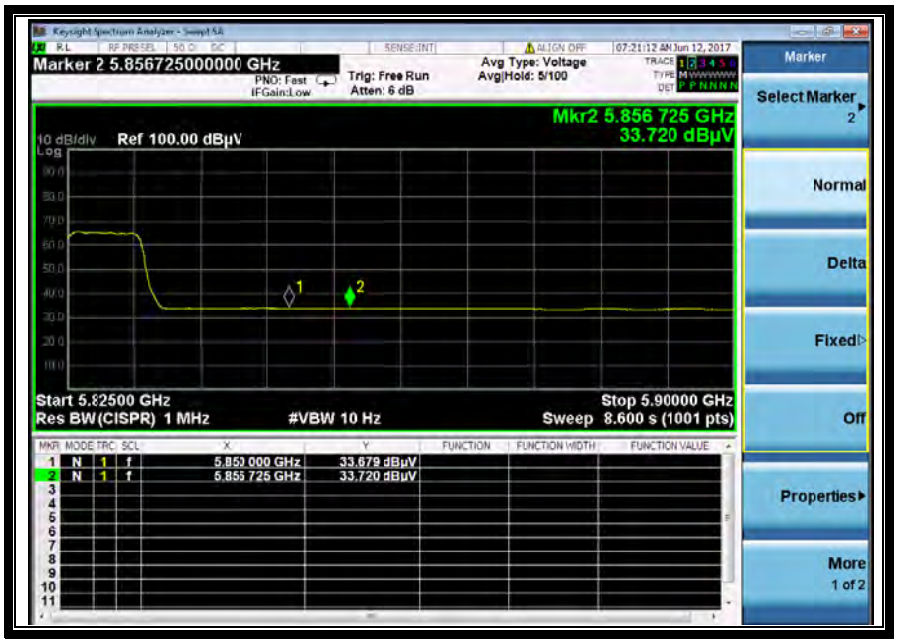
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 165

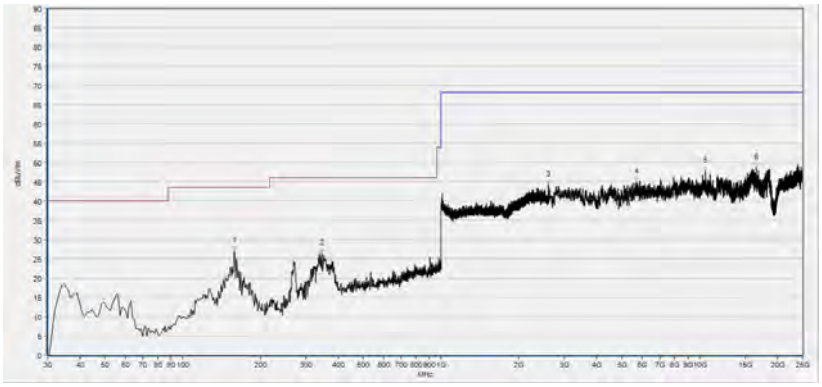
Channel	Frequency (MHz)	Antenna Horiz./ Vert.	Receiver Reading U_R (dBuV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
165	5853.65	Horizontal	44.37	-50.65	32.11	25.83	78.2	Pass
165	5856.73	Vertical	33.72	-50.65	32.11	15.18	78.2	Pass



(Channel = 165 Horizontal @ 802.11ac)

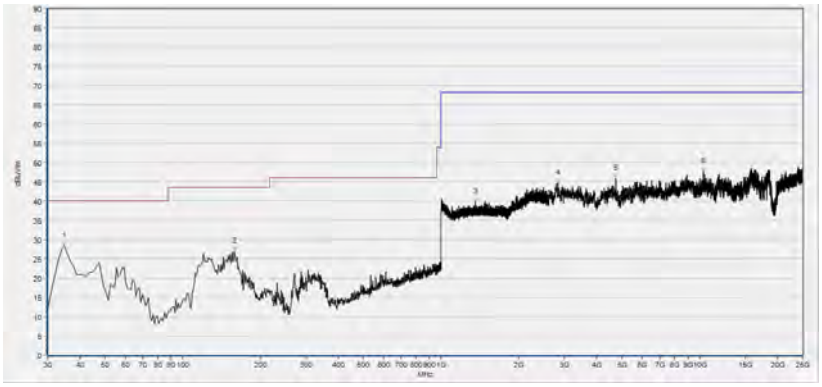


(Channel = 165 Vertical @ 802.11ac)



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
158.168	27.14	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
345.566	26.36	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
2600.000	44.36	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
5714.223	44.94	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
10504.301	47.91	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
16553.511	48.79	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 40GHz)



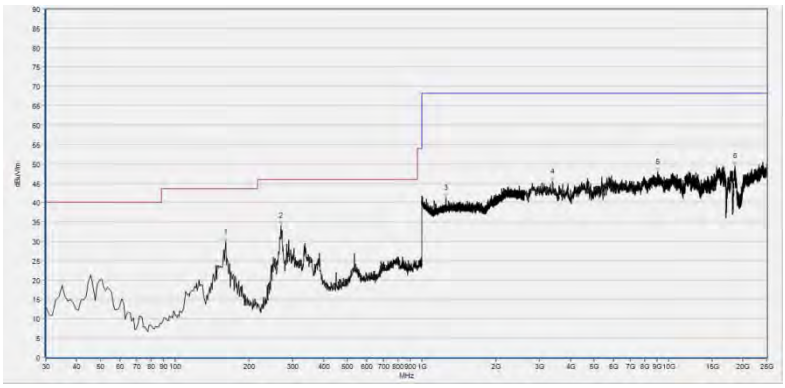
Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
34.855	28.39	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
158.168	26.91	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
1358.520	39.84	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
2824.045	44.71	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
4732.907	45.87	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
10351.950	47.66	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 40GHz)

2.8.3.2 802.11n-20MHz Test mode

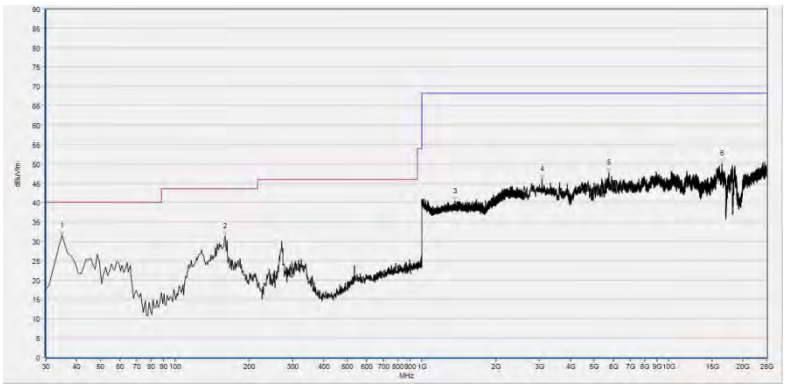
A. Test Plots for the Whole Measurement Frequency Range:

Plots for Channel = 36



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
161.081	29.90	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
268.859	34.05	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1253.951	41.25	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
3393.119	45.49	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
9012.162	47.94	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
18569.914	49.39	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

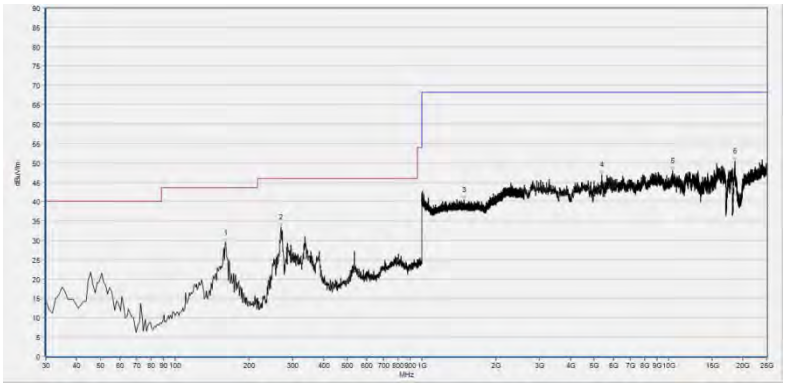
(Antenna Horizontal, 30MHz to 25GHz)



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
34.855	31.46	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
160.110	31.27	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
1362.254	40.40	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
3070.494	46.03	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
5723.185	47.75	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
16437.007	50.15	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

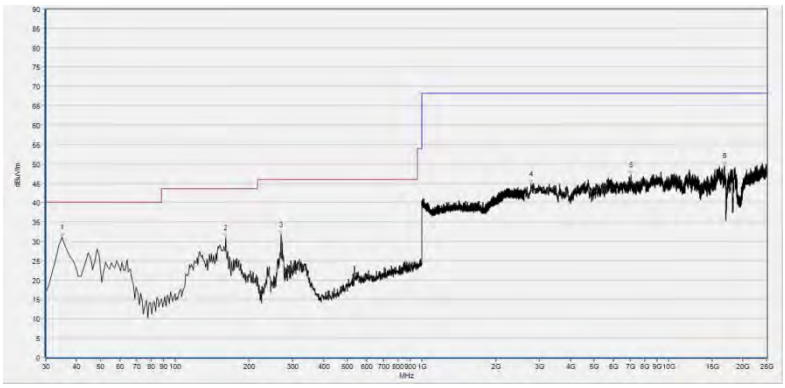
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 44



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
161.081	29.34	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
268.859	33.35	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1481.227	40.36	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
5364.713	46.95	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
10396.759	47.87	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
18565.433	50.44	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

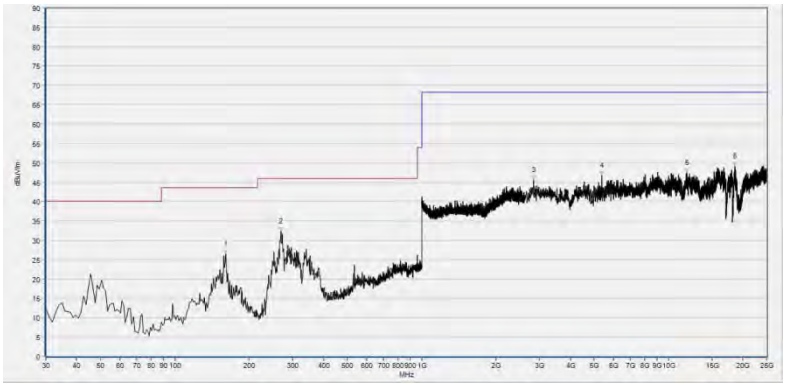
(Antenna Horizontal, 30MHz to 25GHz)



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
34.855	31.04	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
161.081	30.76	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
268.859	31.72	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
2765.793	44.79	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
7058.492	47.01	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
16889.578	49.36	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

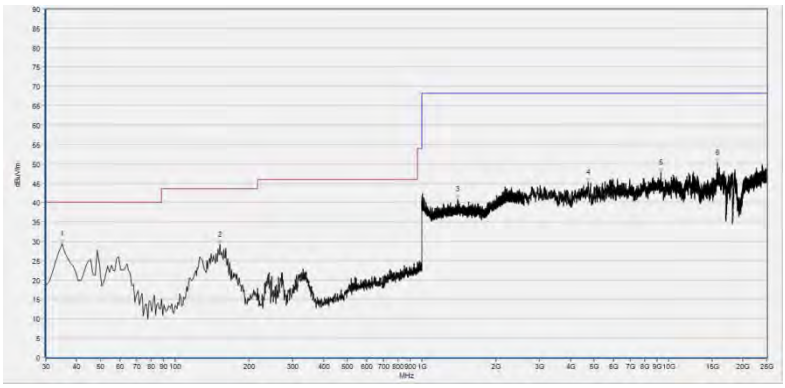
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 48



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
161.081	26.54	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
268.859	32.35	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
2833.007	45.58	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
5369.194	46.70	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
11835.127	47.45	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
18565.433	49.07	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

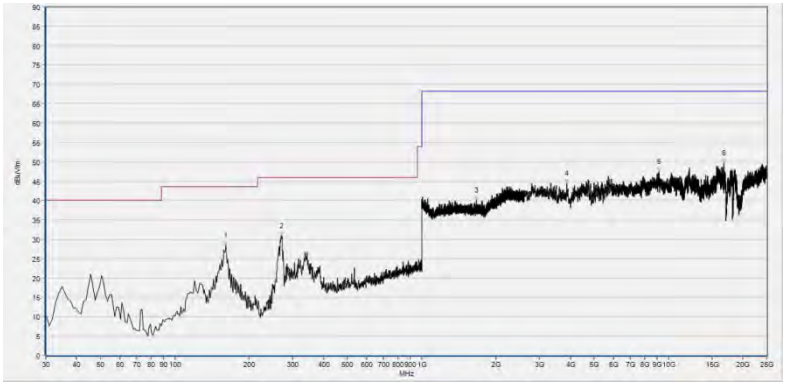
(Antenna Horizontal, 30MHz to 25GHz)



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
34.855	29.34	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
152.342	29.16	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
1397.999	40.94	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
4732.907	45.25	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
9330.306	47.72	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
15751.430	50.27	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

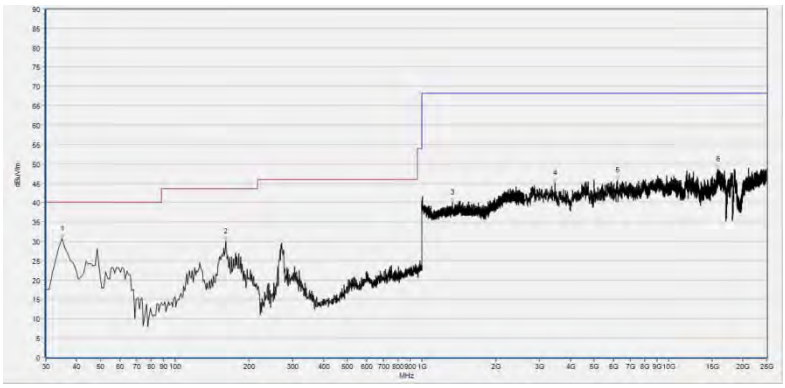
(Antenna Vertical, 30MHz to 25GHz)

Plots for Channel = 52



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
161.081	28.26	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
269.830	30.82	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1664.755	40.11	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
3863.613	44.42	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
9142.108	47.47	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
16750.670	49.59	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

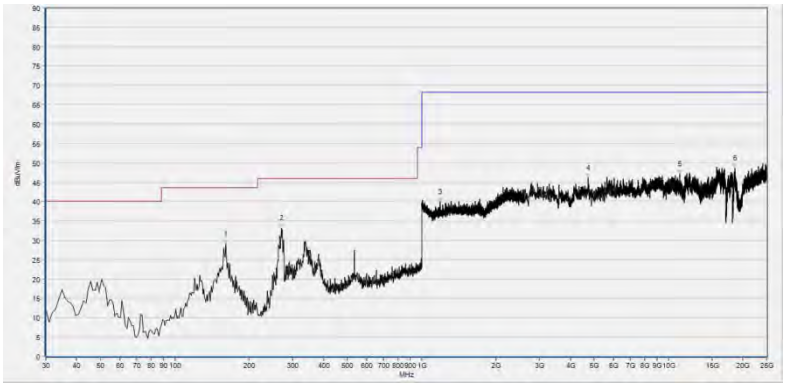
(Antenna Horizontal, 30MHz to 25GHz)



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
34.855	30.66	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
161.081	30.01	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
1333.444	40.00	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
3460.332	45.08	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
6216.083	45.75	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
15854.491	48.63	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

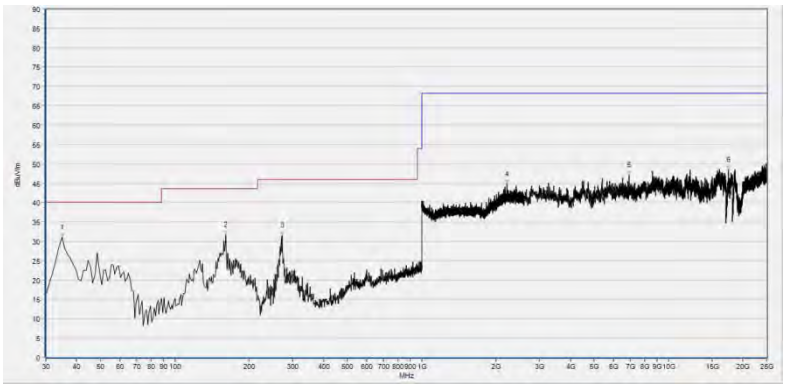
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 60



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
161.081	28.93	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
269.830	33.24	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1189.396	39.91	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
4732.907	46.14	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
11100.260	47.18	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
18587.838	48.63	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

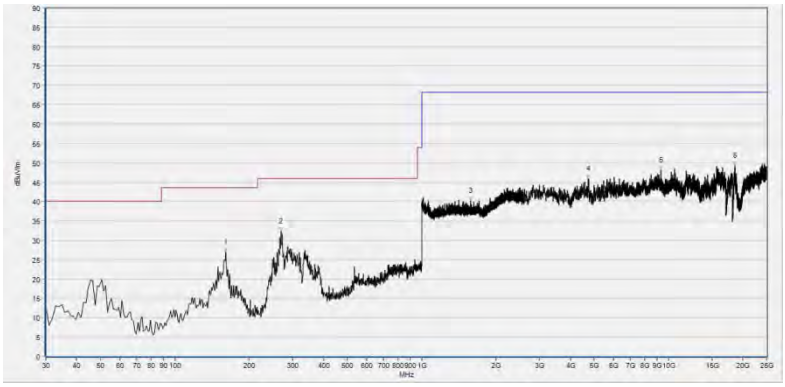
(Antenna Horizontal, 30MHz to 25GHz)



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
34.855	31.00	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
161.081	31.60	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
271.772	31.48	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
2213.204	44.74	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
6924.065	47.16	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
17463.133	48.47	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

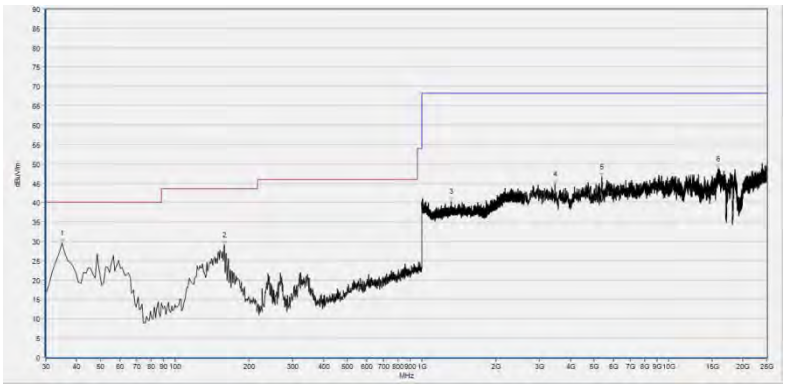
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 64



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
161.081	27.01	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
268.859	32.34	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1575.125	40.30	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
4728.426	45.93	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
9330.306	48.14	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
18560.952	49.26	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

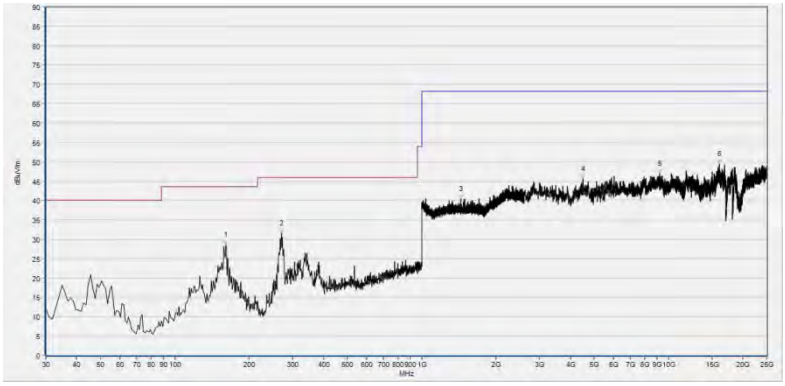
(Antenna Horizontal, 30MHz to 25GHz)



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
34.855	29.42	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
159.139	28.92	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
1313.705	40.25	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
3473.775	44.80	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
5369.194	46.56	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
15912.743	48.64	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

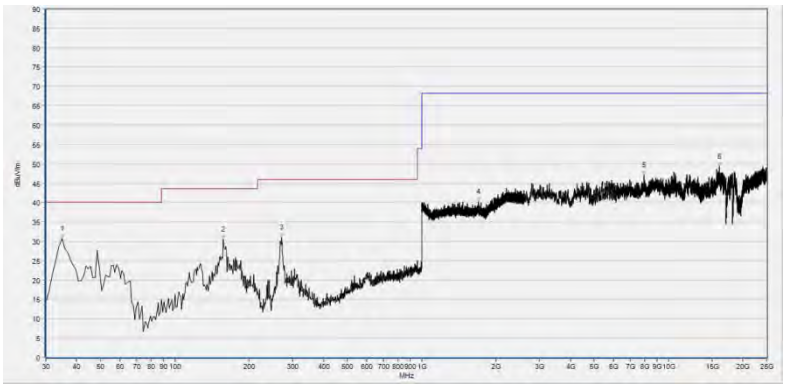
(Antenna Vertical, 30MHz to 25GHz)

Plots for Channel = 100



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
161.081	28.51	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
269.830	31.44	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1436.412	40.31	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
4513.343	45.50	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
9218.284	46.85	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
16029.246	49.43	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

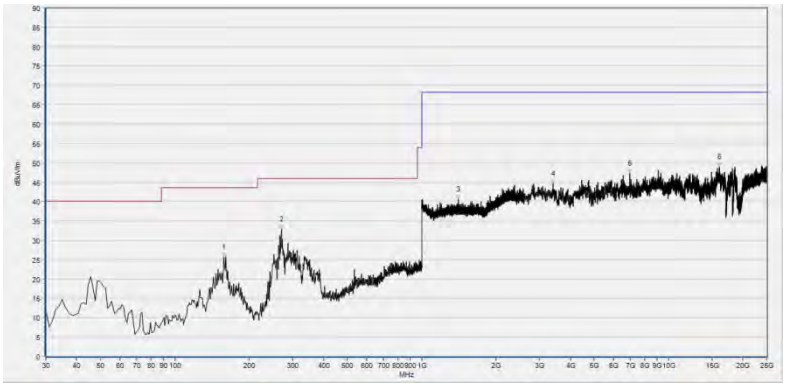
(Antenna Horizontal, 30MHz to 25GHz)



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
34.855	30.68	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
157.197	30.53	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
269.830	31.02	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
1692.497	40.17	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
7932.266	47.14	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
16015.803	49.26	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

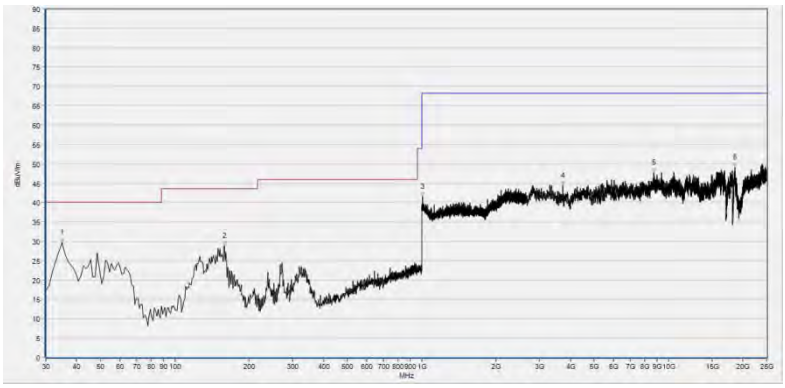
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 120



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
158.168	25.61	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
269.830	32.83	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1407.069	40.52	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
3397.600	44.50	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
6946.469	47.30	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
16091.978	48.92	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

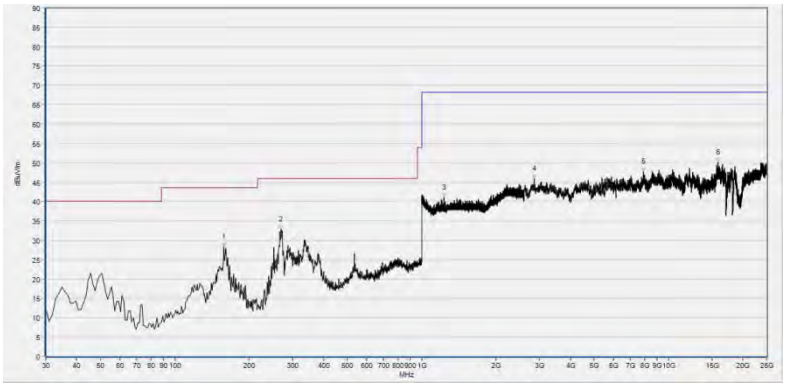
(Antenna Horizontal, 30MHz to 25GHz)



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
34.855	29.68	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
159.139	28.78	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
1006.402	41.53	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
3729.186	44.44	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
8720.904	47.82	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
18601.280	49.03	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

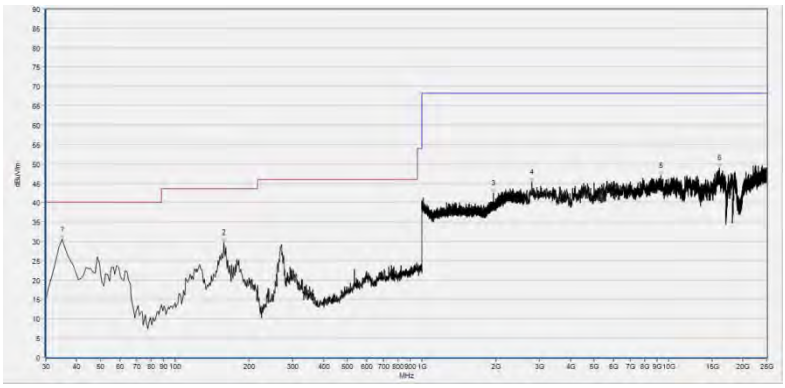
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 140



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
158.168	28.37	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
268.859	32.79	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1233.678	41.03	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
2850.930	45.98	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
7927.786	47.70	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
15845.529	50.04	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

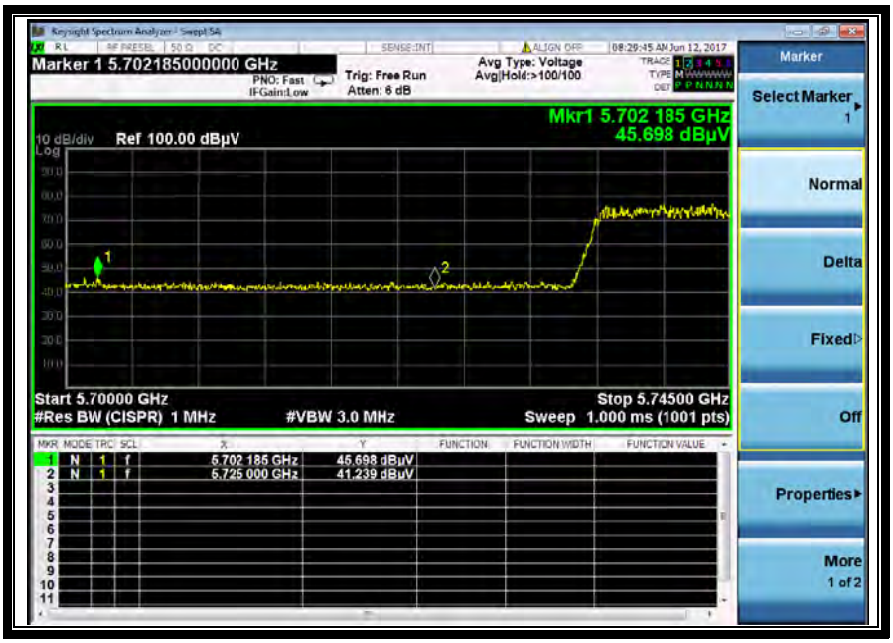


Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
34.855	30.53	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
158.168	29.71	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
1956.052	42.49	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
2792.679	45.31	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
9330.306	46.96	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
16038.208	48.99	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

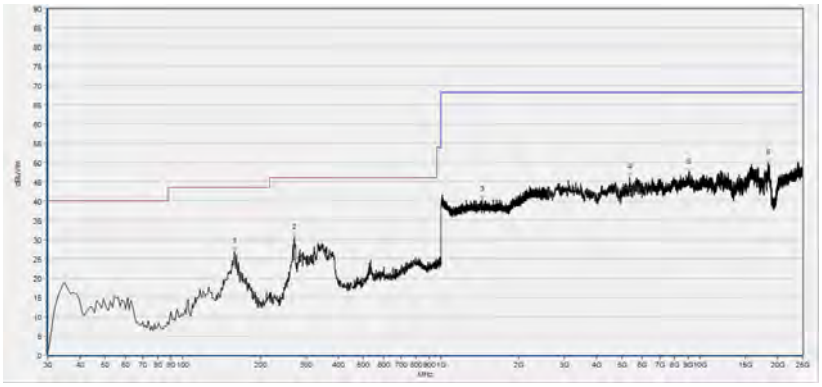
Plots for Channel = 149

Channel	Frequency (MHz)	Antenna Horiz./ Vert.	Receiver Reading U_R (dBuV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
149	5702.19	Horizontal	45.70	-50.65	32.11	27.16	78.2	Pass
149	5723.07	Vertical	33.86	-50.65	32.11	15.32	78.2	Pass



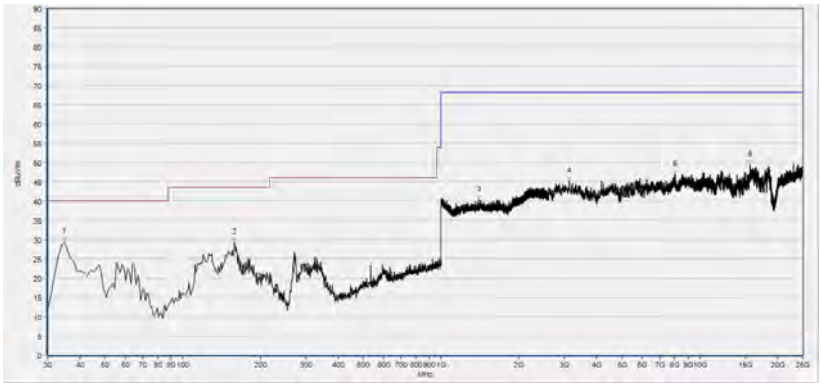
(Channel = 149 Horizontal @ 802.11n)

(Channel = 149 Vertical @ 802.11n)



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
158.168	27.04	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
269.830	30.58	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1436.946	40.28	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
5364.713	46.18	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
9092.819	47.50	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
18408.602	49.99	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

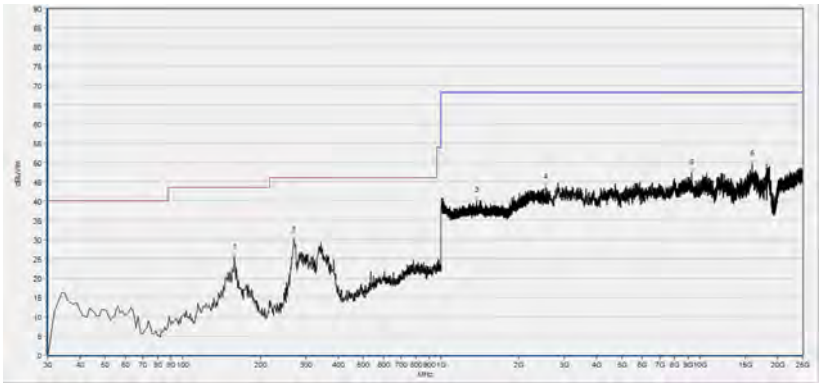
(Antenna Horizontal, 30MHz to 25GHz)



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
34.855	29.49	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
158.168	29.24	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
1396.932	40.27	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
3128.746	45.25	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
8012.923	47.04	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
15670.774	49.41	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

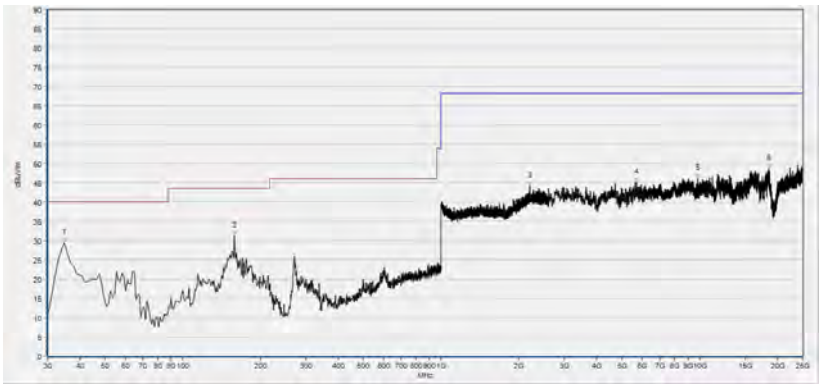
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 157



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
158.168	25.32	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
268.859	29.76	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1372.391	40.21	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
2534.912	43.55	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
9325.825	47.34	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
15997.880	49.57	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

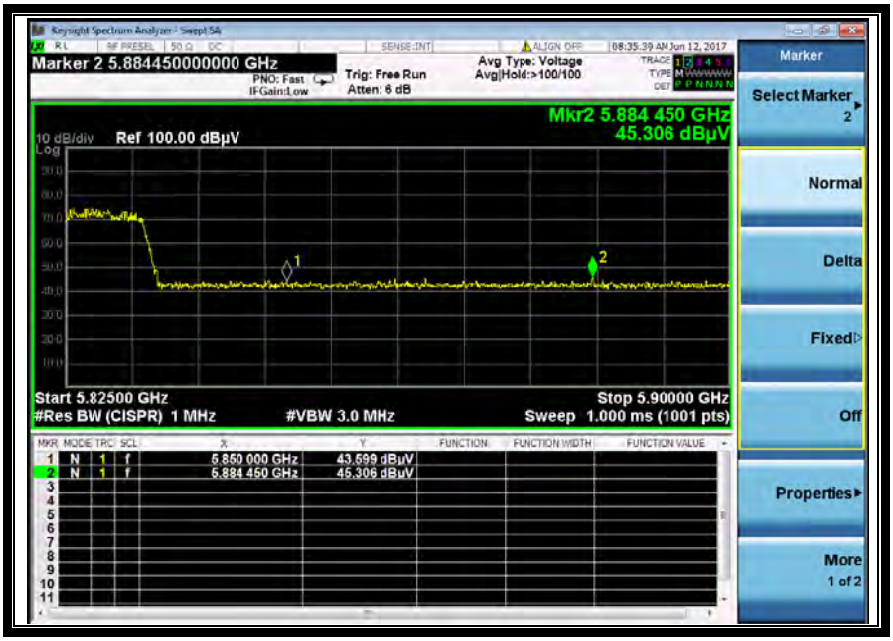


Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
34.855	29.55	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
158.168	31.17	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
2200.934	44.31	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
5714.223	45.09	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
9850.090	46.25	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
18498.220	48.76	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

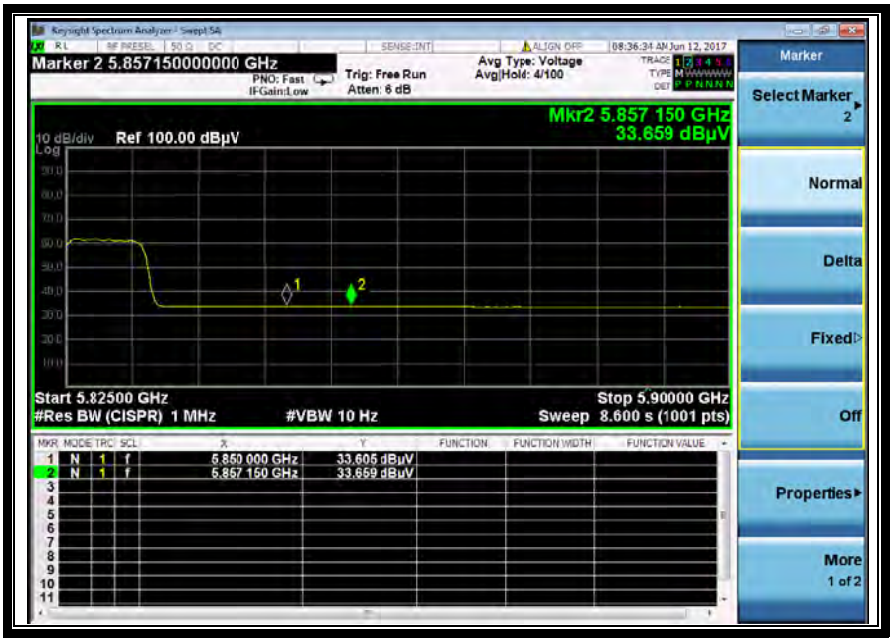
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 165

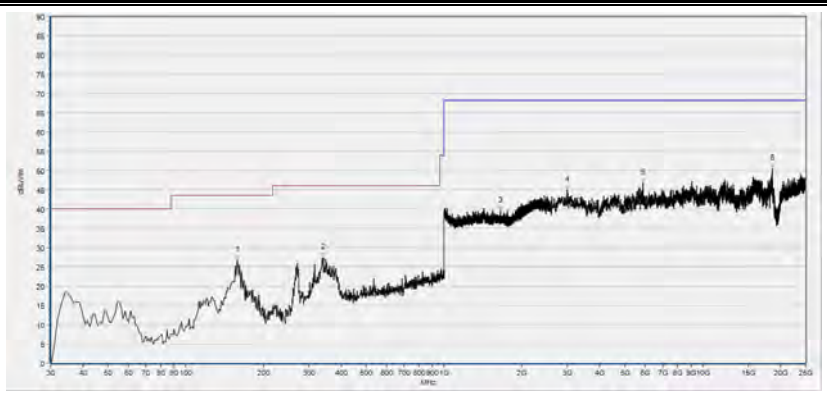
Channel	Frequency (MHz)	Antenna Horiz./ Vert.	Receiver Reading U_R (dBuV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
165	5884.45	Horizontal	45.31	-50.65	32.11	26.77	78.2	Pass
165	5857.15	Vertical	33.66	-50.65	32.11	15.12	78.2	Pass



(Channel = 165 Horizontal @ 802.11n)

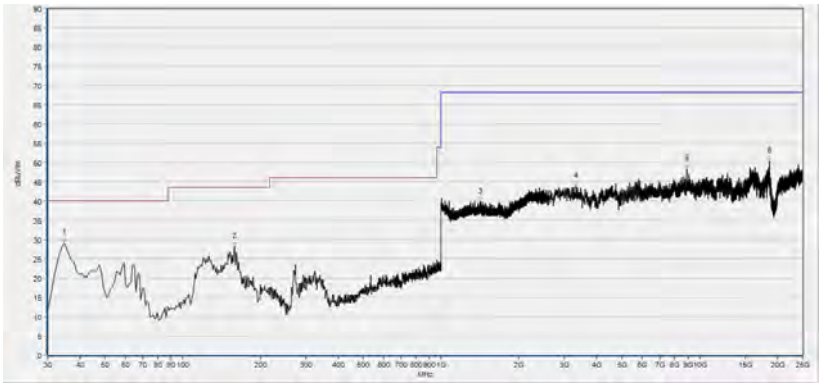


(Channel = 165 Vertical @ 802.11n)



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
158.168	26.77	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
339.740	27.59	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1645.549	39.67	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
2985.357	45.05	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
5875.535	46.84	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
18565.433	50.48	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)



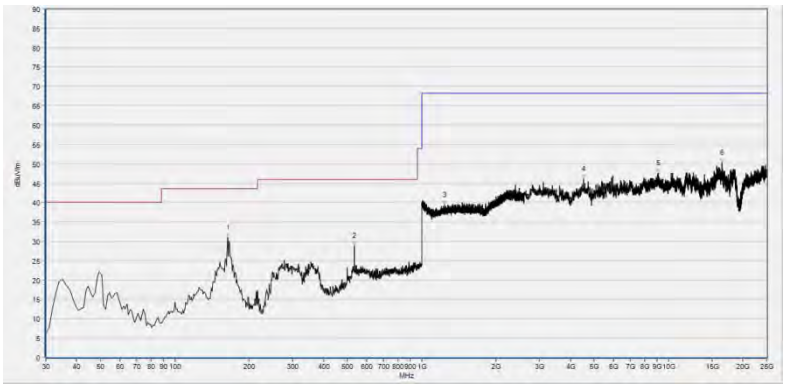
Fre. (MHz)	Pk (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
34.855	29.12	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
158.168	28.28	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
1414.538	39.76	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
3321.424	43.92	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
8922.545	48.35	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
18587.838	50.36	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

2.8.3.3 802.11n-40MHz Test mode

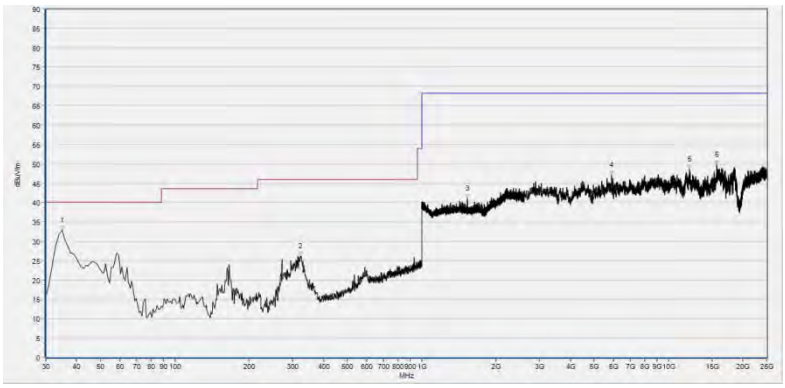
A. Test Plots for the Whole Measurement Frequency Range:

Plots for Channel = 38



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
163.994	30.95	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
532.963	28.91	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1241.147	39.46	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
4535.747	46.09	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
9110.742	47.58	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
16432.527	50.34	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

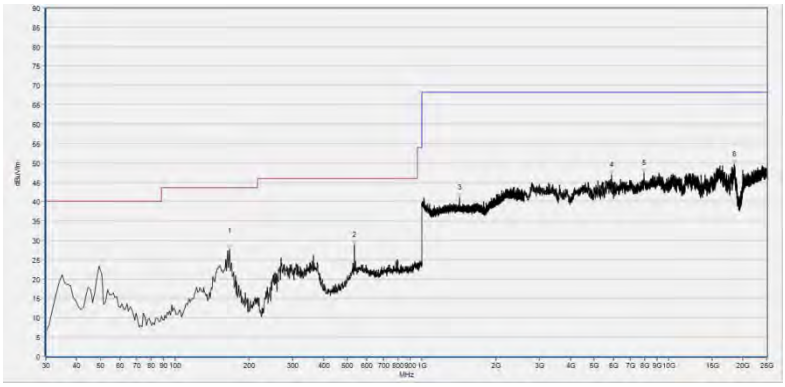
(Antenna Horizontal, 30MHz to 25GHz)



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
34.855	32.82	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
323.233	26.21	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
1529.243	41.09	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
5884.497	47.08	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
12157.752	48.62	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
15661.812	49.82	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

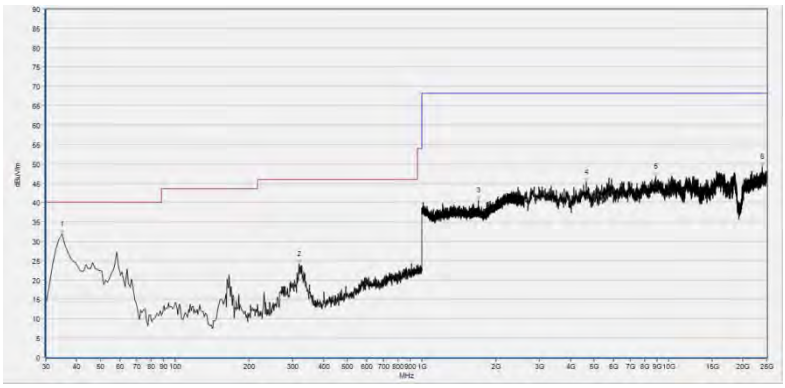
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 46



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
166.907	27.61	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
532.963	28.85	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1419.873	41.14	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
5875.535	46.94	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
7941.228	47.38	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
18511.662	49.61	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

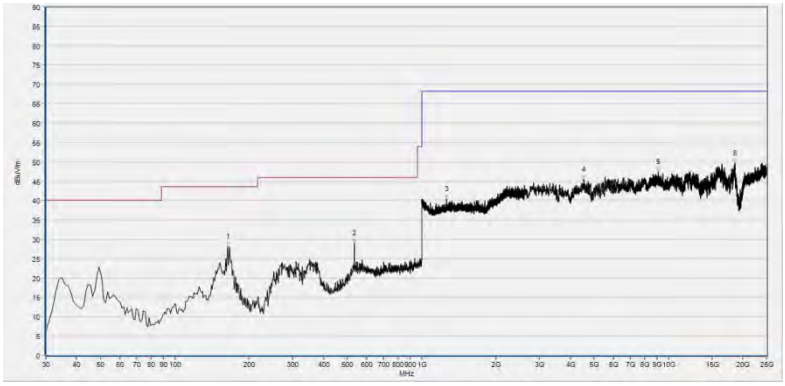
(Antenna Horizontal, 30MHz to 25GHz)



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
34.855	31.80	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
318.378	24.19	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
1691.964	40.48	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
4647.770	45.30	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
8873.255	46.73	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
23897.700	49.34	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

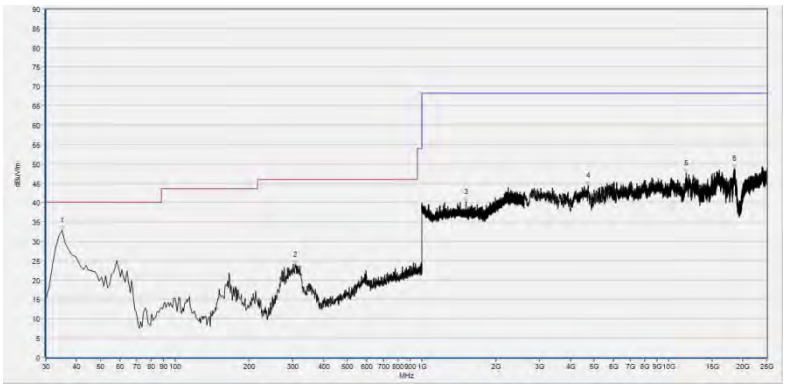
(Antenna Vertical, 30MHz to 25GHz)

Plots for Channel = 54



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
163.994	28.14	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
532.963	28.96	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1261.420	40.33	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
4535.747	45.36	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
9115.223	47.37	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
18574.395	49.60	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

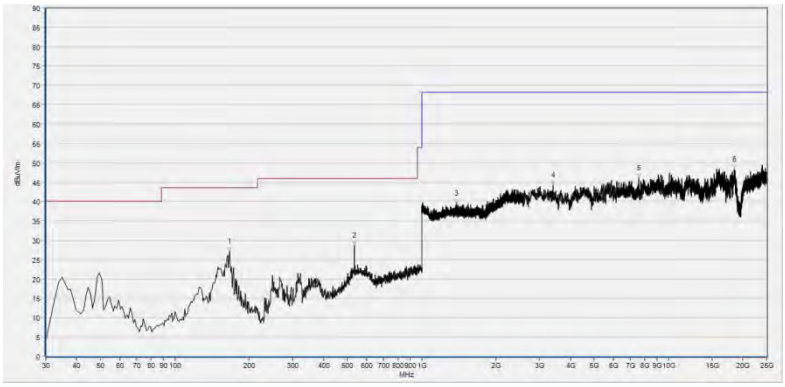
(Antenna Horizontal, 30MHz to 25GHz)



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
34.855	32.91	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
306.727	23.90	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
1511.637	40.21	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
4728.426	44.41	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
11799.280	47.60	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
18498.220	48.85	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

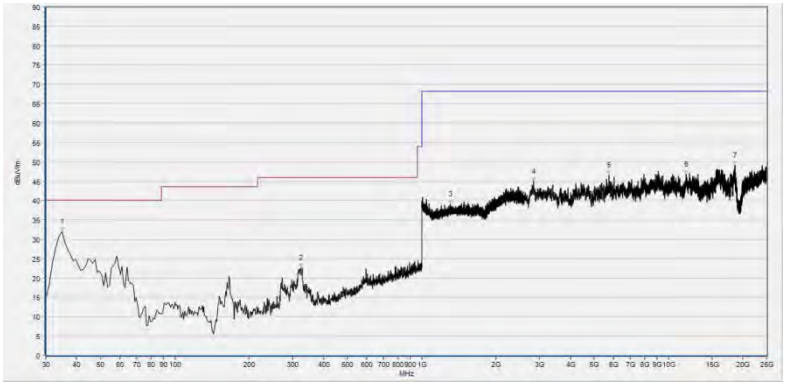
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 62



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
166.907	27.09	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
532.963	28.72	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1383.595	39.54	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
3402.080	44.21	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
7555.871	46.03	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
18431.006	48.20	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

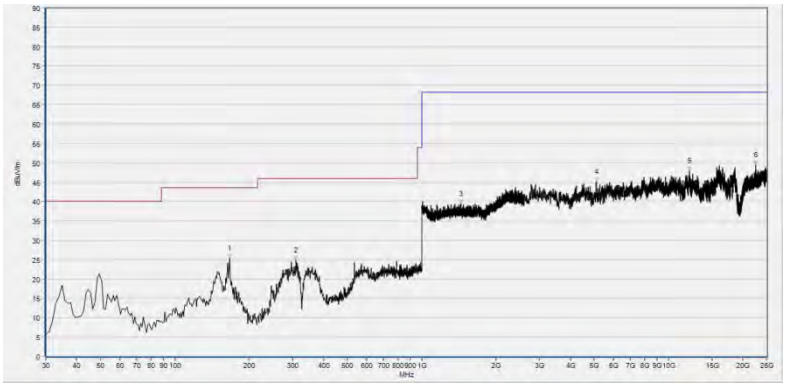
(Antenna Horizontal, 30MHz to 25GHz)



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
34.855	32.04	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
324.204	22.66	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
1307.302	39.08	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
2837.487	44.85	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
5727.666	46.53	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
11821.684	46.72	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

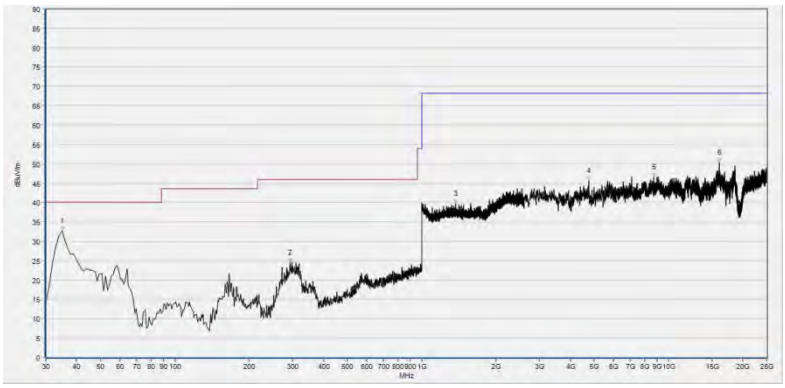
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 102



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
166.907	25.35	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
309.640	24.86	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1441.747	39.40	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
5095.859	45.07	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
12139.828	47.86	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
22607.201	49.43	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

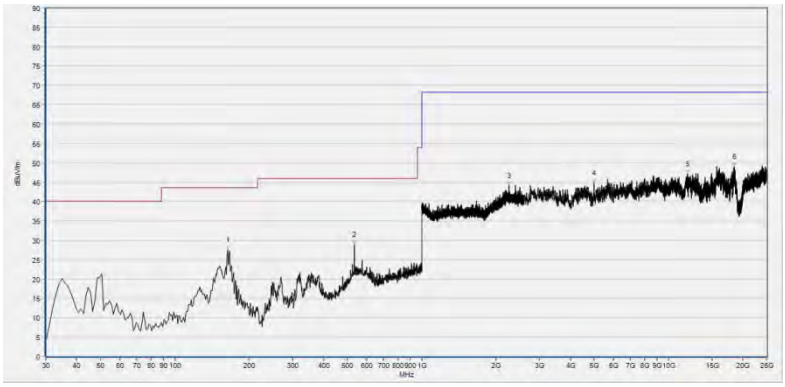
(Antenna Horizontal, 30MHz to 25GHz)



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
34.855	32.65	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
292.162	24.39	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
1370.790	39.64	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
4746.349	45.52	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
8729.866	46.56	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
16083.017	50.21	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

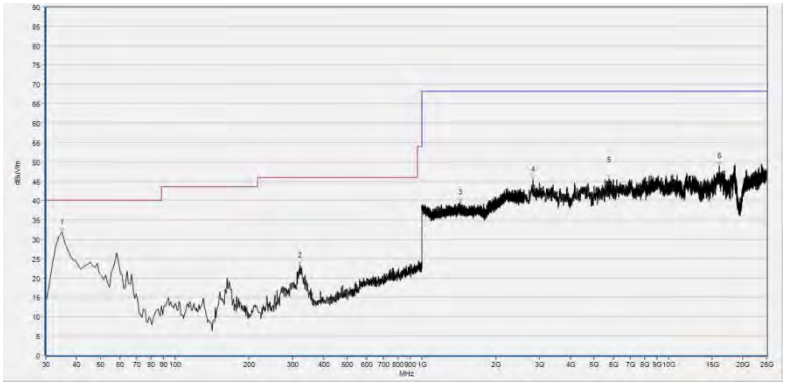
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 126



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
163.994	27.43	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
532.963	28.85	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
2260.687	44.10	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
4979.356	44.76	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
11911.302	47.10	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
18507.181	48.99	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

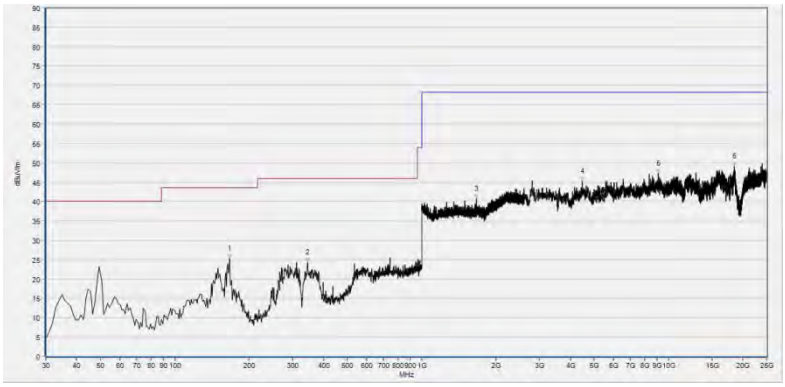
(Antenna Horizontal, 30MHz to 25GHz)



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
34.855	31.83	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
321.291	23.37	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
1434.812	39.61	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
2819.564	45.47	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
5741.108	45.57	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
16015.803	48.86	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

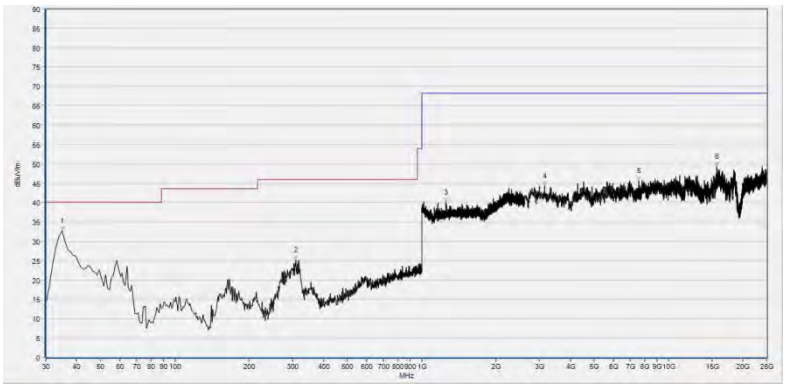
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 134



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
166.907	25.23	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
345.566	24.37	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1666.355	40.80	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
4477.495	45.24	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
9106.261	47.26	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
18471.334	49.08	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

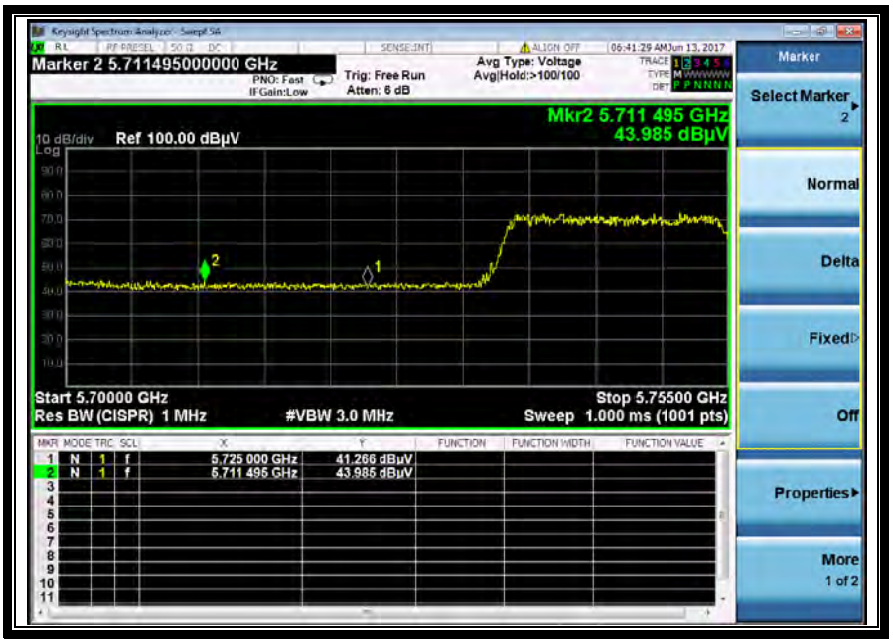


Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
34.855	32.67	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
308.669	25.12	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
1255.552	40.02	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
3142.188	44.26	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
7569.314	45.55	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
15661.812	49.31	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

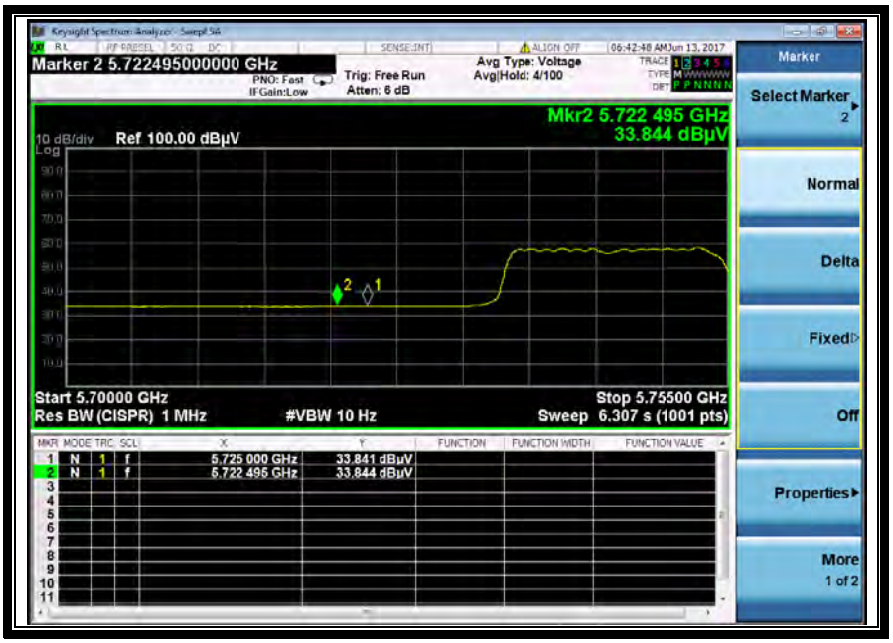
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 151

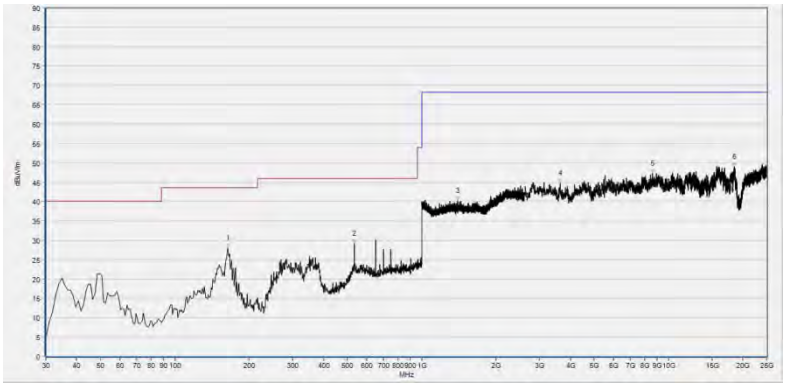
Channel	Frequency (MHz)	Antenna Horiz./ Vert.	Receiver Reading U_R (dBuV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
151	5711.50	Horizontal	43.99	-50.65	32.11	25.45	78.2	Pass
151	5722.50	Vertical	33.84	-50.65	32.11	15.30	78.2	Pass



(Channel = 151 Horizontal @ 802.11n)

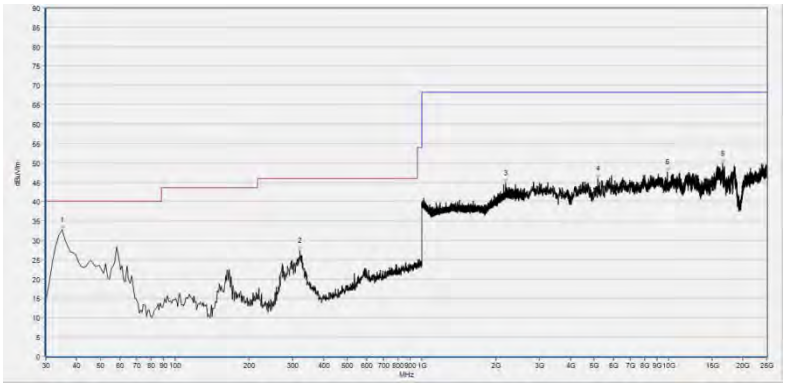


(Channel = 151 Vertical @ 802.11n)



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
163.994	28.06	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
532.963	29.14	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1401.734	40.27	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
3635.087	44.81	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
8586.477	47.30	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
18413.083	48.91	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

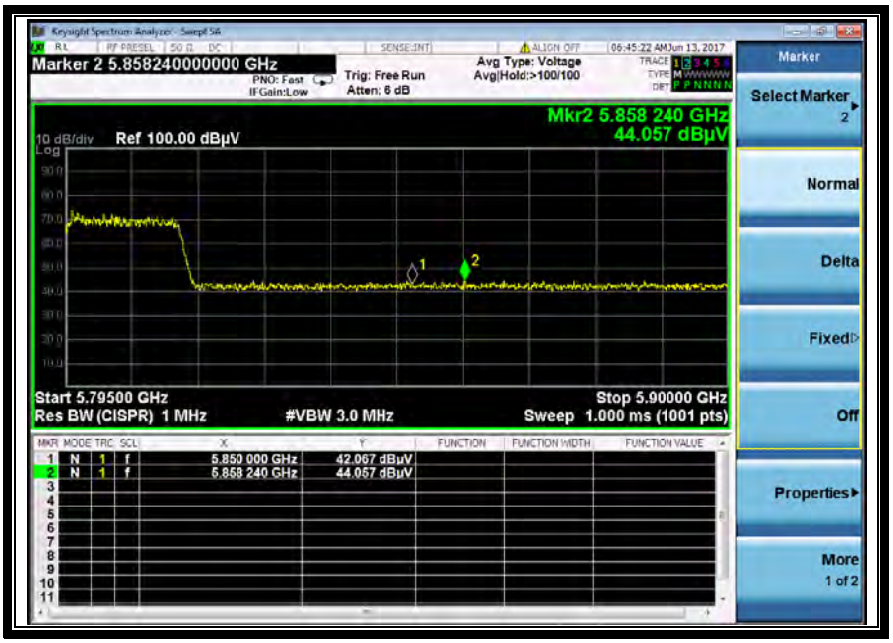


Fre. (MHz)	Pk (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
34.855	32.67	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
321.291	27.24	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
2191.330	44.79	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
5172.034	45.90	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
9903.861	47.66	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
16557.992	49.73	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

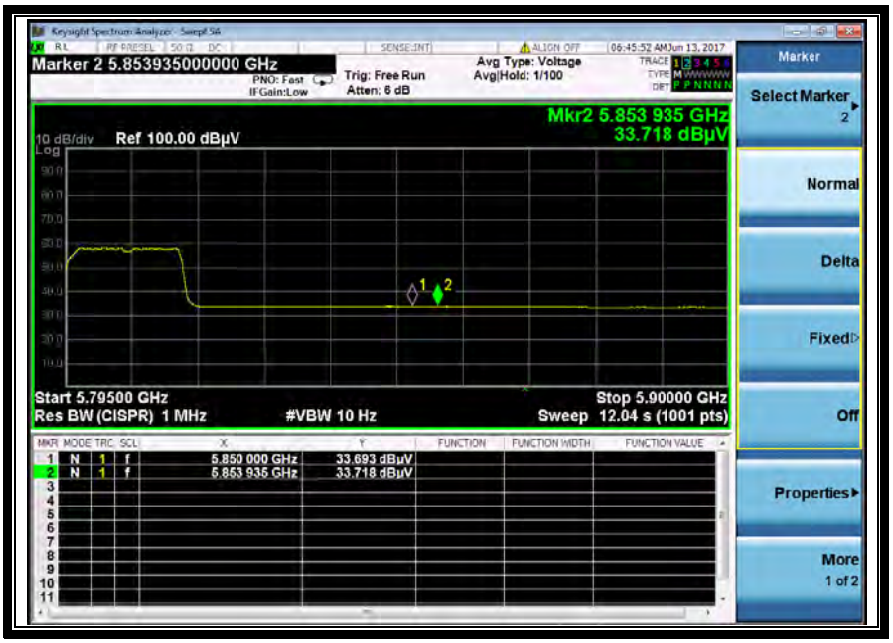
(Antenna Vertical, 30MHz to 25GHz)

Plots for Channel = 159

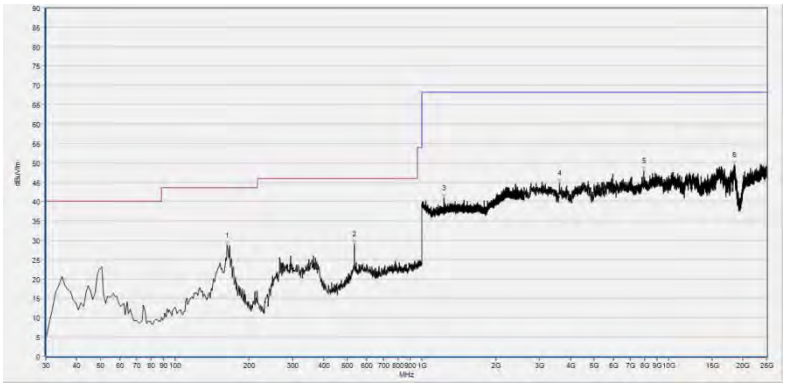
Channel	Frequency (MHz)	Antenna Horiz./ Vert.	Receiver Reading U_R (dBuV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
159	5858.24	Horizontal	44.06	-50.65	32.11	25.52	78.2	Pass
159	5853.94	Vertical	33.72	-50.65	32.11	15.18	78.2	Pass



(Channel = 159 Horizontal @ 802.11n)

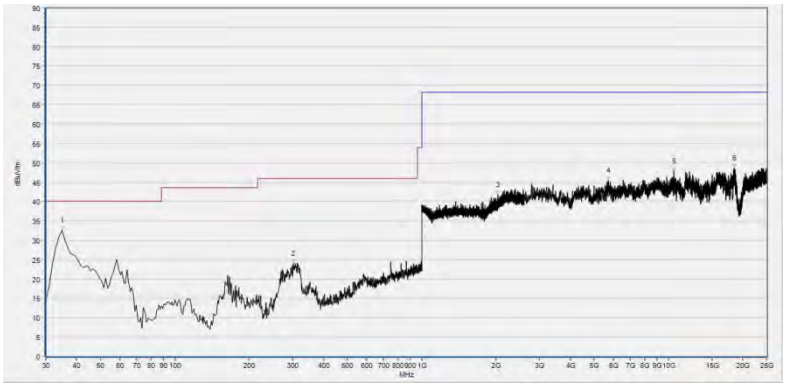


(Channel = 159 Vertical @ 802.11n)



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
163.023	28.73	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
532.963	28.99	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1230.477	40.90	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
3608.202	44.71	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
7932.266	47.86	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
18444.449	49.43	N.A	N.A	68.23	N.A	N.A	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
34.855	32.51	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
300.901	23.99	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
2038.746	41.65	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
5714.223	45.38	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
10513.263	47.72	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
18480.296	48.67	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

2.9 RF exposure evaluation

2.9.1 Requirement

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

2.9.2 Result

Please refer to SAR report.

ANNEX A GENERAL INFORMATION

1.1 Identification of the Responsible Testing Laboratory

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

1.2 Identification of the Responsible Testing Location

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

1.3 Facilities and Accreditations

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

All measurement facilities used to collect the measurement data are located at FL.1, Building A, FeiYang Science Park, Block 67, BaoAn District, Shenzhen, 518101 P. R. China. The test site is constructed in conformance with the requirements of ANSI C63.10 2013 and CISPR Publication 22; the FCC registration number is 695796.

1.4 Maximum measurement uncertainty

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

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

1.5 Test Equipments Utilized

1.5.1 Conducted Test Equipments

Conducted Test Equipment						
No.	**Equipment Name**	**Serial No.**	**Type**	**Manufacturer**	**Cal. Date**	**Cal. Due**
1	Spectrum Analyzer	MY45101810	E4407B	Agilent	2017.05.23	2018.05.22
2	Power Splitter	NW521	1506A	Weinschel	2017.05.23	2018.05.22
3	Attenuator 1	(N/A.)	10dB	Resnet	2017.05.23	2018.05.22
4	Attenuator 2	(N/A.)	3dB	Resnet	2017.05.23	2018.05.22
5	EXA Signal Analzyer	MY53470836	N9010A	Agilent	2016.12.07	2017.12.06
6	RF cable (30MHz-26GHz)	CB01	RF01	Morlab	N/A	N/A
7	Coaxial cable	CB02	RF02	Morlab	N/A	N/A
8	SMA connector	CN01	RF03	HUBER-SUHNER	N/A	N/A

1.5.2 Conducted Emission Test Equipments

Conducted Emission Test Equipments						
No.	**Equipment Name**	**Serial No.**	**Type**	**Manufacturer**	**Cal. Date**	**Cal. Due**
1	Receiver	US44210471	E7405A	Agilent	2017.05.23	2018.05.22
2	LISN	812744	NSLK 8127	Schwarzbeck	2017.05.23	2018.05.22
3	Service Supplier	100448	CMU200	R&S	2017.05.23	2018.05.22
4	Pulse Limiter (20dB)	9391	VTSD 9561-D	Schwarzbeck	2017.05.23	2018.05.22
5	Coaxial cable(BNC) (30MHz-26GHz)	CB01	EMC01	Morlab	N/A	N/A

1.5.3 Auxiliary Test Equipment

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

1.5.4 Radiated Test Equipments

Radiated Test Equipments						
No.	**Equipment Name**	**Serial No.**	**Type**	**Manufacturer**	**Cal. Date**	**Cal.Due Date**
1	System Simulator	GB45360846	8960-E5515C	Agilent	2017.05.17	2018.05.16
2	Receiver	MY54130016	N9038A	Agilent	2017.05.17	2018.05.16
3	Test Antenna - Bi-Log	N/A	VULB9163	Schwarzbeck	2016.12.09	2017.12.08
4	Test Antenna - Horn	9170C-531	BBHA9170	Schwarzbeck	2016.07.05	2017.07.04
5	Test Antenna - Loop	1519-022	FMZB1519	Schwarzbeck	2016.07.05	2017.07.04
6	Test Antenna - Horn	71688	BBHA 9120D	Schwarzbeck	2016.07.05	2017.07.04
7	Coaxial cable (N male) (9KHz-30MHz)	CB04	EMC04	Morlab	N/A	N/A
8	Coaxial cable (N male) (30MHz-26GHz)	CB02	EMC02	Morlab	N/A	N/A
9	Coaxial cable(N male) (30MHz-26GHz)	CB03	EMC03	Morlab	N/A	N/A
10	1-18GHz pre-Amplifier	MA02	TS-PR18	Rohde& Schwarz	2017.05.17	2018.05.16
11	18-26.5GHz pre-Amplifier	MA03	TS-PR18	Rohde& Schwarz	2017.05.17	2018.05.16

1.5.5 Climate Chamber

Climate Chamber						
No.	**Equipment Name**	**Serial No.**	**Type**	**Manufacturer**	**Cal.Date**	**Cal.Due Date**
1	Climate Chamber	2004012	HL4003T	Yinhe	2017.01.11	2018.01.10

1.5.6 Vibration Table

Vibration Table						
No.	**Equipment Name**	**Serial No.**	**Type**	**Manufacturer**	**Cal.Date**	**Cal.Due Date**
1	Vibration Table	N/A	ACT2000-S015L	CMI-COM	2017.01.11	2018.01.10

1.5.7 Anechoic Chamber

Anechoic Chamber						
No.	**Equipment Name**	**Serial No.**	**Type**	**Manufacturer**	**Cal.Date**	**Cal.Due Date**
1	Anechoic Chamber	N/A	9m*6m*6m	Changning	2017.01.11	2018.01.10

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