FCC PART 15E TEST REPORT

TESTING
CNAS L3572

Issued to

Group Sense Mobile-Tech Limited

For

WiFi PDA

Model Name:	DT4005
Trade Name:	Group Sense Mobile-Tech Limited
Brand Name:	Xplore
FCC ID:	VRI-B202
Standard:	47 CFR Part 15 Subpart E
Test date:	2014-03-24 to 2014-05-20
Issue date:	2014-05-26

by

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Date	2014.5.26	***Date***	2014.5.26	***Date***	2014.5.26

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Change History		
Issue	Date	Reason for change
1.0	May 26, 2014	First Edition

1. General Information

1.1. EUT Description

EUT Type..... :	WiFi PDA
Serial No. ..... :	(n.a, marked #1 by test site)
Hardware Version..... :	QA1
Software Version..... :	B202-V1.01.0044
Applicant..... :	Group Sense Mobile-Tech Limited 6/F, Enterprise Place, No. 5 Science Park West Avenue, HK Science Park, Shatin, N.T., H K
Manufacturer ..... :	Group Sense Mobile-Tech Limited 6/F, Enterprise Place, No. 5 Science Park West Avenue, HK Science Park, Shatin, N.T., H K
Frequency Range..... :	802.11b/g/n: 2.400GHz - 2.4835GHz 802.11n: 5.150GHz- 5.350GHz 5.470GHz- 5725GHz 5.725GHz- 5.850GHz
Channel Number ..... :	2.4GHz Band: 802.11b/g/n-20MHz: 11 5GHz Band: 802.11a/n-20MHz: 5.725GHz- 5.850GHz: 5 Channels 5.150GHz – 5.350GHz: 8 Channels 5.470GHz – 5.725GHz: 8 Channels
Modulation Type..... :	DSSS, OFDM
Antenna Type ..... :	PCB Antenna
Antenna Gain..... :	2.4GHz band: -5.0dBi 5GHz band: -2.3dBi

Note :

1. The U-NII band is applicable to this report, another bands of operation (2.4GHz and 5.8GHz) is documented in a separate report.
2. For 802.11n-20MHz, the frequencies allocated is F (MHz) =5180+20*(n-1) (1<=n<=8). For 5.150GHz – 5.250GHz,The channel of the EUT used and tested in this report are separately 36 (5180MHz), 44 (5220MHz) and 48 (5240MHz). For 5.250GHz – 5.350GHz,The channel of the EUT used and tested in this report are separately 52 (5260MHz), 60 (5300MHz) and 48 (5240MHz). For 5.470GHz – 5725GHz ,The channel of the EUT used and tested in this report are separately 100(5500MHz), 116 (5580MHz) and 140(5700MHz).
3. The 5600MHz~5650MHz is notched for WiFi operation.
4. For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.
5. During test, the duty cycle of the EUT was setting to 100%.

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 (10-1-13 Edition)	Radio Frequency Devices

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

No.	Section	Description	Result
1	15.203	Antenna Requirement	**PASS**
2	15.407(a)	26dB 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(a)	Peak Excursion	**PASS**
7	15.407(g)	Frequency Stability	**PASS**
8	15.207	Conducted Emission	**PASS**
9	15.407(b)	Radiated Emission	**PASS**
10	15.407(f)	RF exposure evaluation	**PASS**
11	15.407(b)	Conducted Band Edge	**PASS**

The tests of Conducted Emission and Radiated Emission were performed according to the method of measurements prescribed in ANSI C63.4 2009.

These RF tests were performed according to the method of measurements prescribed in KDB789033 D01 v01r03 (04/08/2013).

1.3. Facilities and Accreditations

1.3.1. Facilities

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 2009, ANSI C63.4 2009 and CISPR Publication 22; the FCC registration number is 695796.

1.3.2. 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.

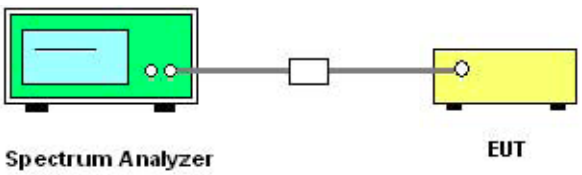
2.2. 26dB Emission Bandwidth

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.

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.

A. Test Procedure

KDB 789033 Section C) 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%.

B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
EXA Signal Analzyer	Agilent	N9010A	MY51440152	2014.02.26	2015.02.25

2.2.3. Test Result

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

2.2.3.1. 802.11a Test mode

A. Test Verdict:

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
36	5180	18.35
44	5220	18.34
48	5240	18.29
52	5260	18.23
60	5300	18.14
64	5320	18.39
100	5500	18.28
116	5580	18.36
140	5700	18.30

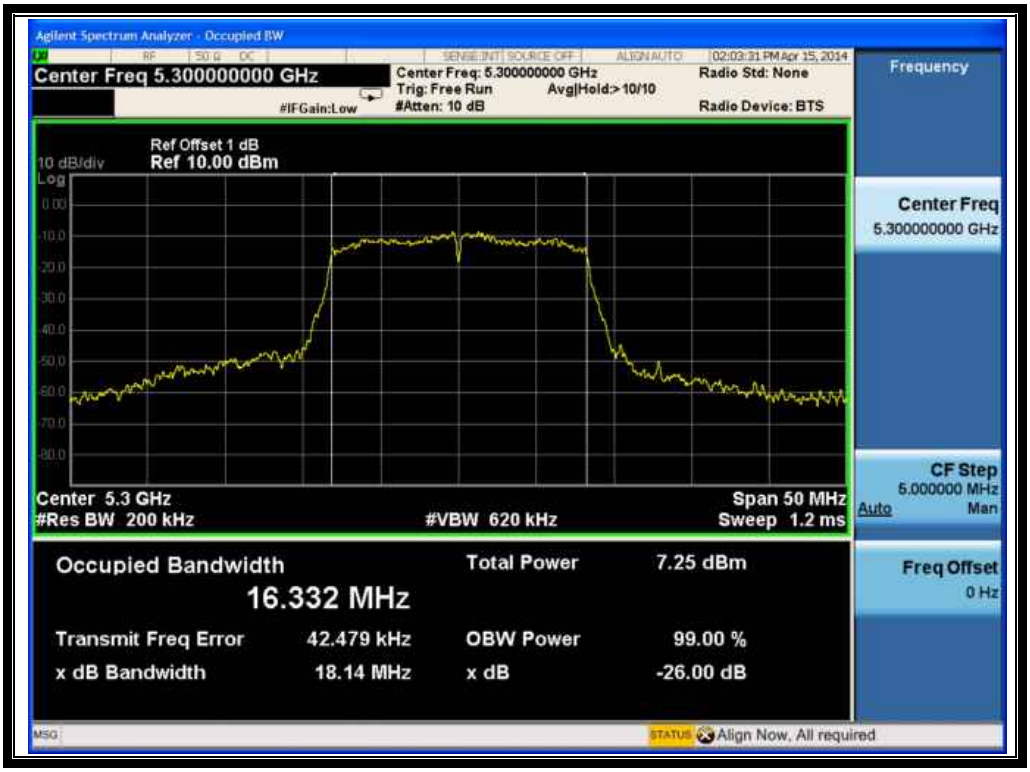
B. Test Plots

(Channel 36: 5180MHz @ 802.11a)

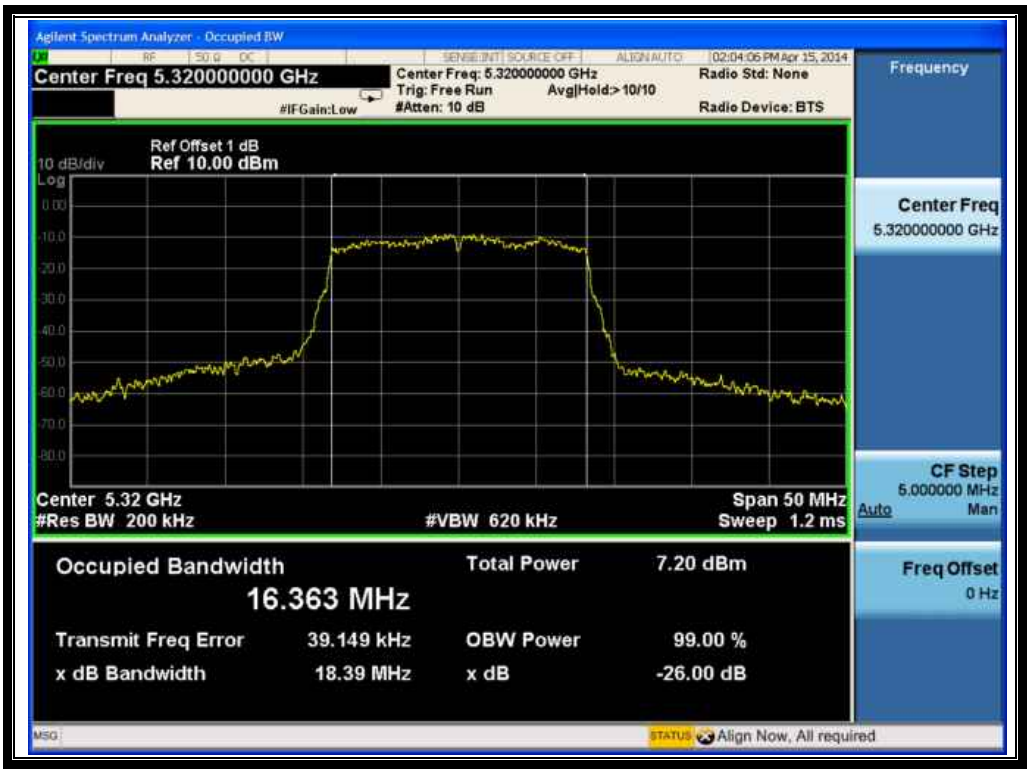
(Channel 44: 5220 MHz @ 802.11a)

(Channel 48: 5240MHz @ 802.11a)

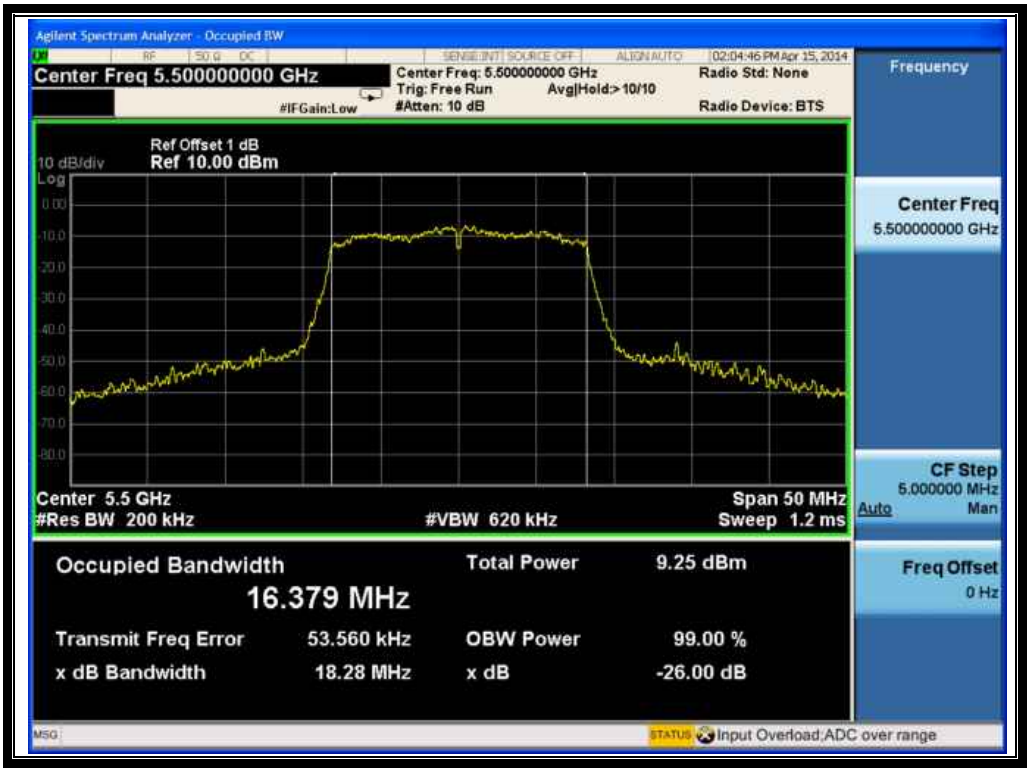
(Channel 52: 5260MHz @ 802.11a)



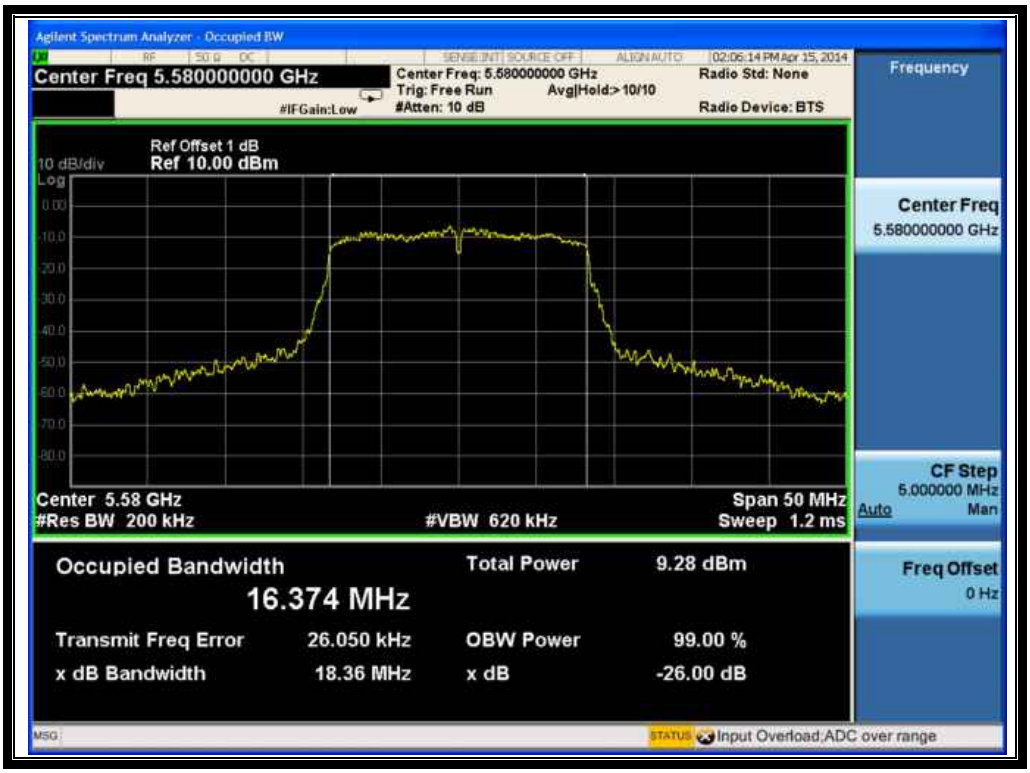
(Channel 60: 5300 MHz @ 802.11a)



(Channel 64: 5320MHz @ 802.11a)



(Channel 100: 5500MHz @ 802.11a)



(Channel 116: 5580 MHz @ 802.11a)

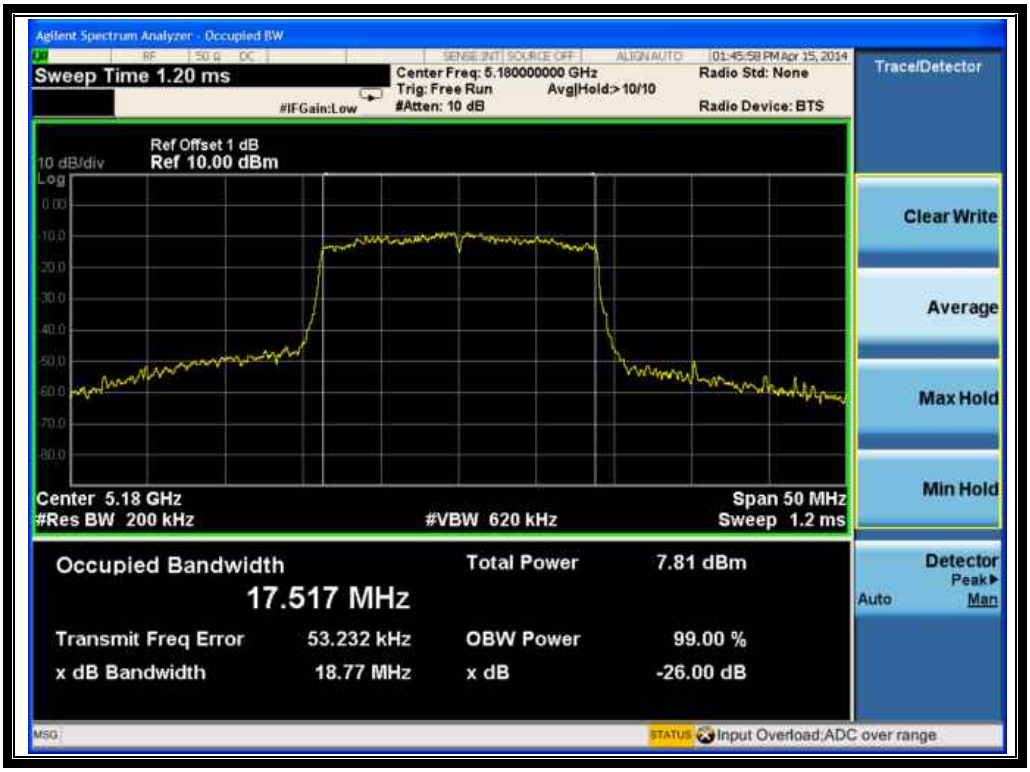
(Channel 140: 5700MHz @ 802.11a)

2.2.3.2. 802.11n-20MHz Test mode

A. Test Verdict:

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
36	5180	18.77
44	5220	18.78
48	5240	18.68
52	5260	18.75
60	5300	18.79
64	5320	18.74
100	5500	18.81
116	5580	18.86
140	5700	18.84

B. Test Plots

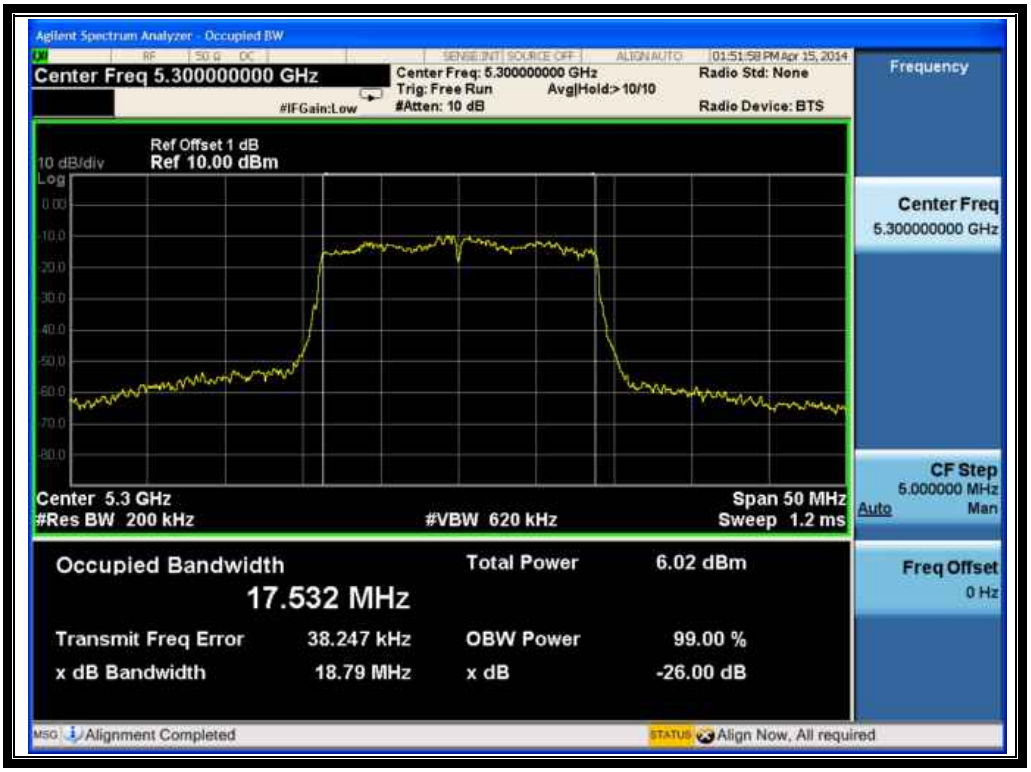


(Channel 36: 5180MHz @ 802.11n-20MHz)

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

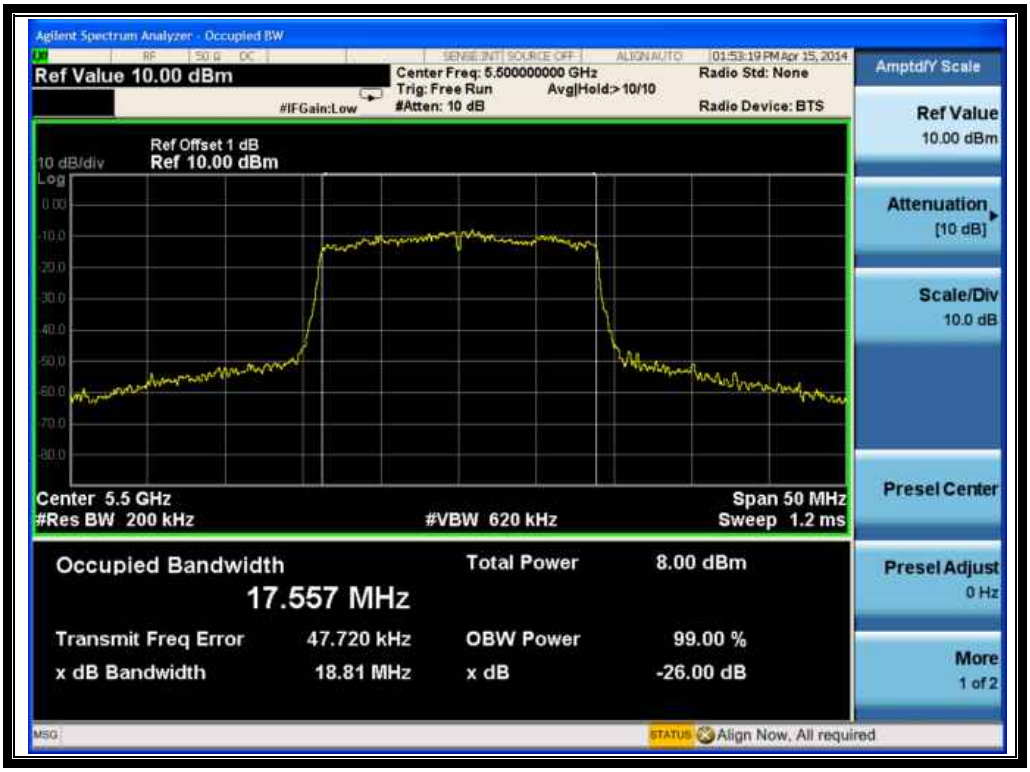
(Channel 48: 5240MHz @ 802.11n-20MHz)

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

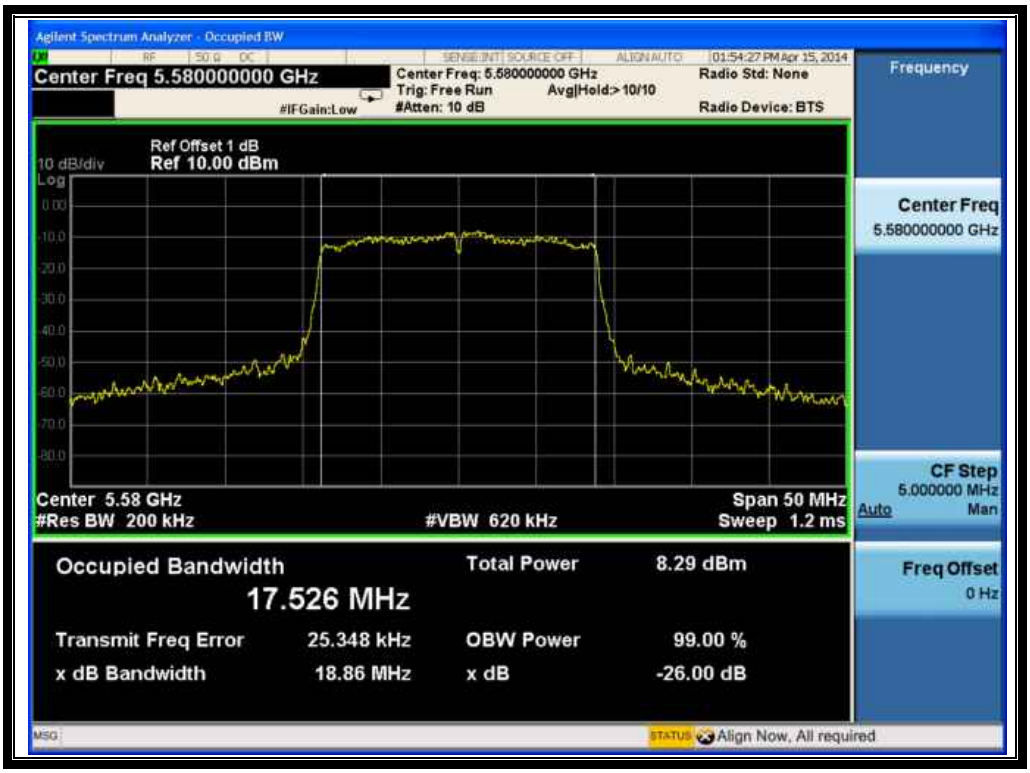


(Channel 60: 5300 MHz @ 802.11n-20MHz)

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



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



(Channel 116: 5580 MHz @ 802.11n-20MHz)

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

2.3. Maximum conducted output Power

2.3.1. Requirement

(1) For the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50mW or 4dBm + 10logB, where B is the 26dB emission bandwidth in MHz.

(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.

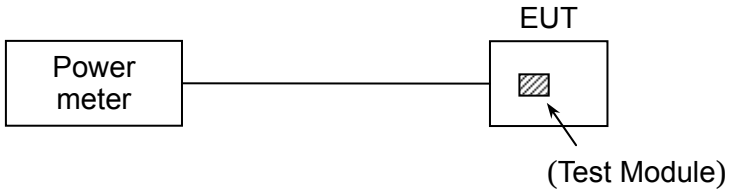
(3) For the band 5.725–5.825 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 1 W or 17dBm+ 10logB, where B is the 26dB emission bandwidth in MHz.
If transmitting antennas of directional gain greater than 6dBi are used, both the maximum conducted 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.

The measured output power was calculated by the reading of the 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.

B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
EPM Series Power Meter	Agilent	E4418B	GB43318055	2014.02.26	2015.02.25
Power Sensor	Agilent	8482A	MY41091706	2014.02.26	2015.02.25

2.3.3. Test Result

2.3.3.1. 802.11a Test mode

Channel	Frequency (MHz)	Measured Output Power without duty factor dBm	Limit dBm	Verdict
36	5180	7.12	17	PASS
44	5220	6.84		
48	5240	6.55		
52	5260	6.18	24	
60	5300	5.63		
64	5320	5.67		
100	5500	8.08		
116	5580	8.14		
140	5700	7.19		

2.3.3.2. 802.11n-20MHz Test mode

Channel	Frequency (MHz)	Measured Output Power without duty factor dBm	Limit dBm	Verdict
36	5180	7.77	17	PASS
44	5220	7.49		
48	5240	7.23		
52	5260	6.78	24	
60	5300	6.28		
64	5320	6.33		
100	5500	8.98		
116	5580	9.07		
140	5700	7.93		

2.4. Peak Power spectral density

2.4.1. Requirement

(1)For the band 5.15–5.25 GHz, the peak power spectral density shall not exceed 4 dBm in any 1–MHz band.

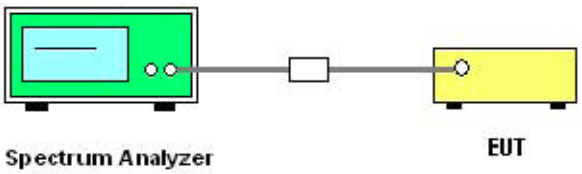
(2) For the 5.25–5.35 GHz and 5.47–5.725GHz bands, the peak power spectral density shall not exceed 11dBm in any 1 megahertz band.

(3) For the band 5.725–5.825 GHz, the peak power spectral density shall not exceed 17dBm in any 1–MHz band.

If transmitting antennas of directional gain greater than 6 dBi 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 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) Peak power spectral density(PPSD) 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

C. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
EXA Signal Analzyer	Agilent	N9010A	MY51440152	2014.02.26	2015.02.25

2.4.3. Test Result

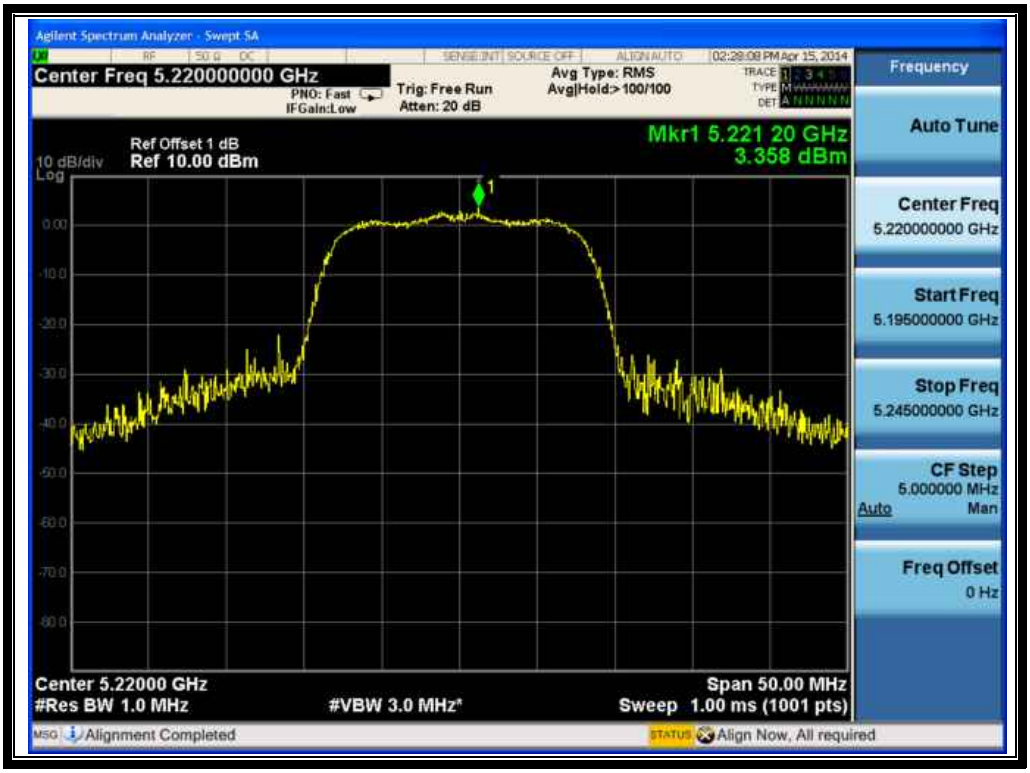
2.4.3.1. 802.11a Test mode

A. Test Verdict:

Channel	Frequency (MHz)	Measured PPSD (dBm)	Limit (dBm)	Verdict
36	5180	3.060	4	PASS
44	5220	3.358		
48	5240	2.562		
52	5260	1.623	11	
60	5300	2.192		
64	5320	1.575		
100	5500	3.724		
116	5580	4.050		
140	5700	5.133		

B. Test Plots:

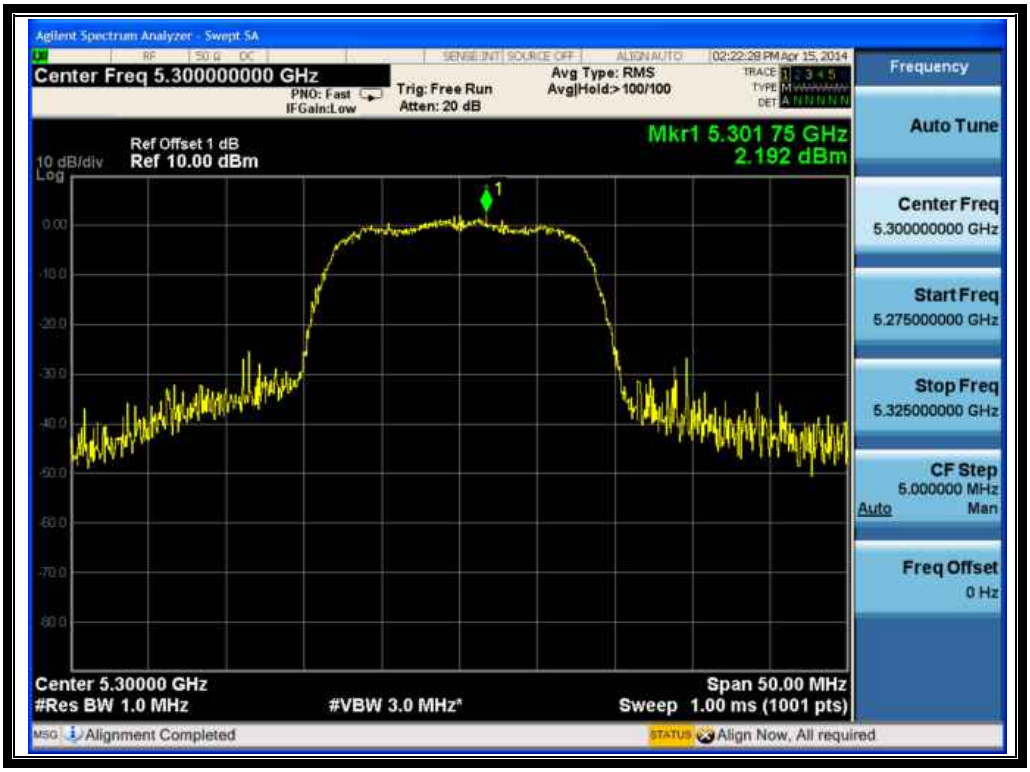
(Channel 36: 5180MHz @ 802.11a)



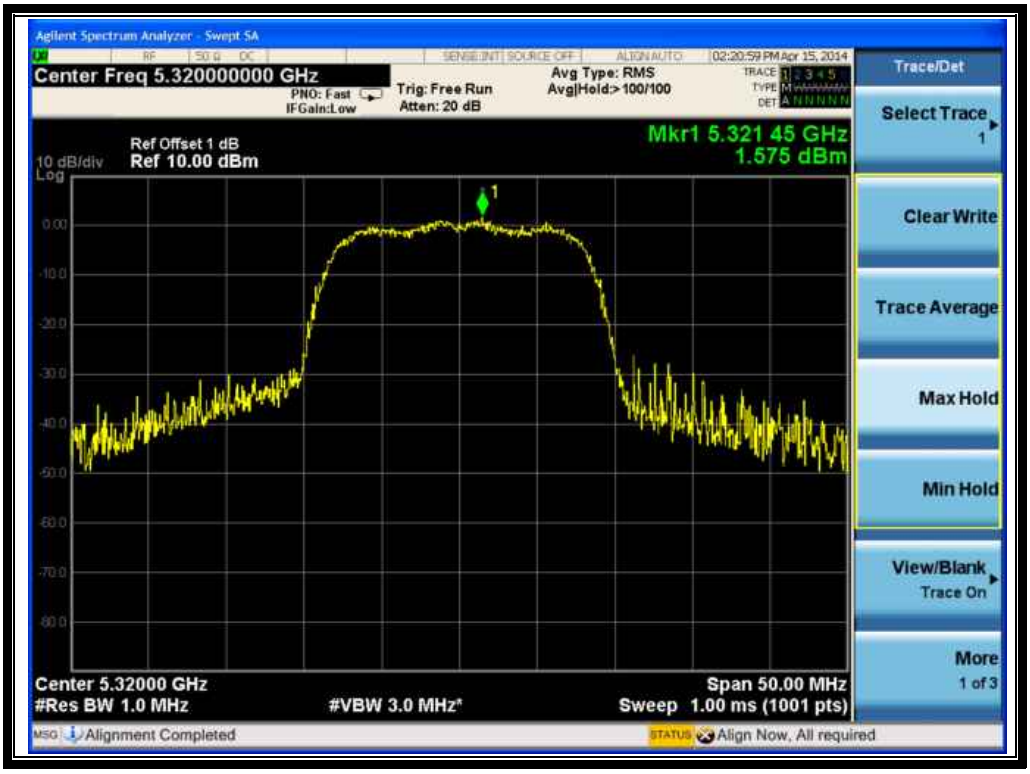
(Channel 44: 5220 MHz @ 802.11a)

(Channel 48: 5240MHz @ 802.11a)

(Channel 52: 5260MHz @ 802.11a)



(Channel 60: 5300 MHz @ 802.11a)



(Channel 64: 5320MHz @ 802.11a)

(Channel 100: 5500MHz @ 802.11a)

(Channel 116: 5580 MHz @ 802.11a)

(Channel 140: 5700MHz @ 802.11a)

2.4.3.2. 802.11n-20MHz Test mode

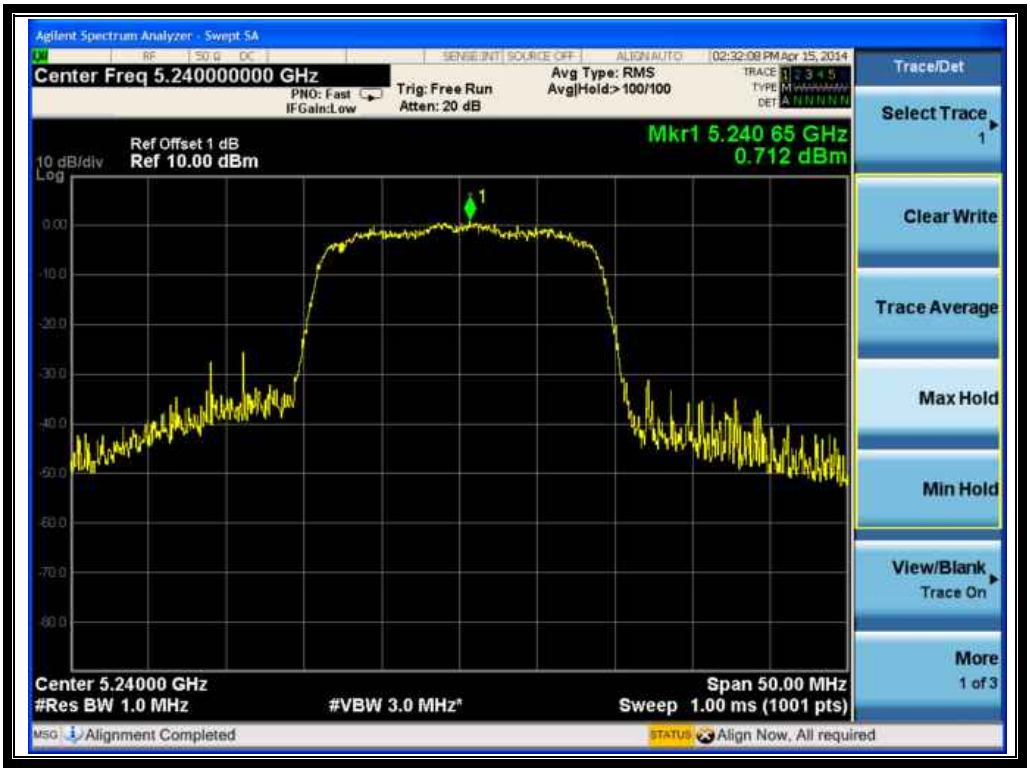
A. Test Verdict:

Channel	Frequency (MHz)	Measured PPSD (dBm)	Limit (dBm)	Verdict
36	5180	2.094	4	PASS
44	5220	1.607		
48	5240	0.712		
52	5260	1.076	11	
60	5300	0.286		
64	5320	0.228		
100	5500	1.632		
116	5580	2.007		
140	5700	2.893		

B. Test Plots:

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

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

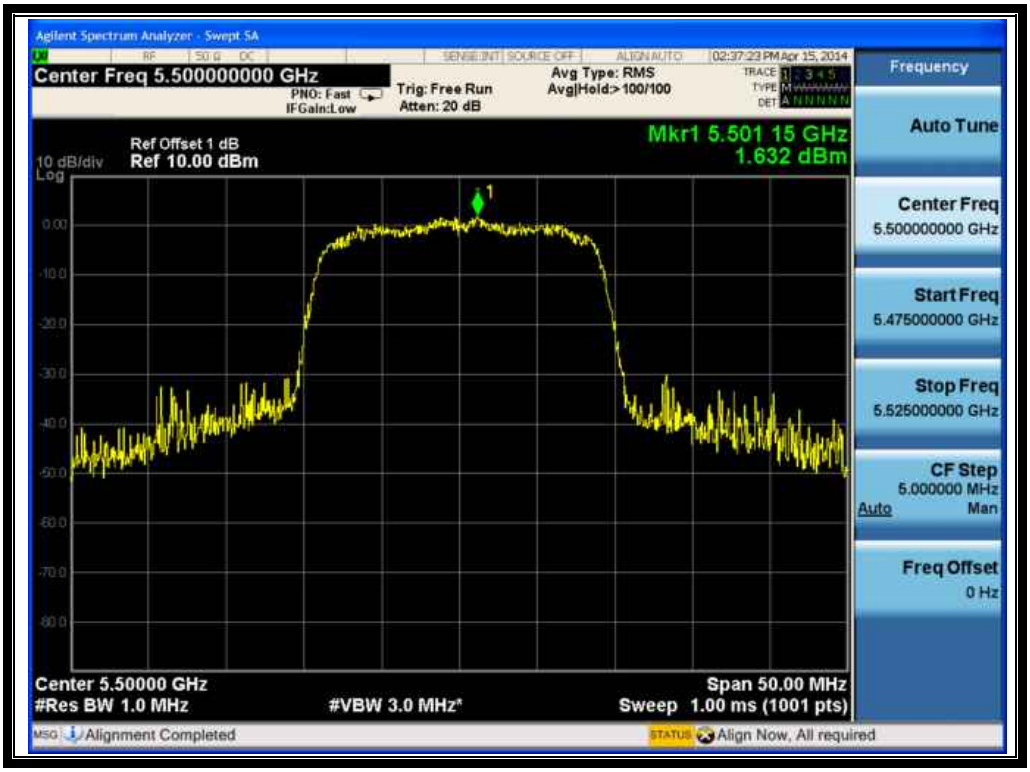


(Channel 48: 5240MHz @ 802.11n-20MHz)

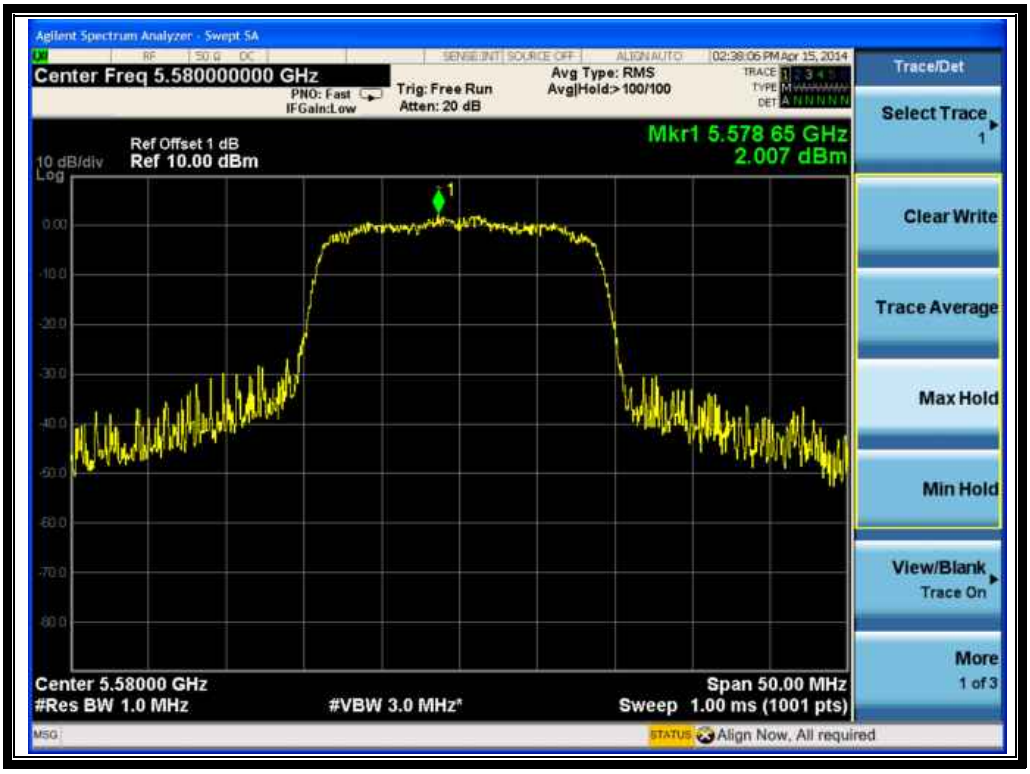
(Channel 52: 5260MHz @ 802.11n-20MHz)

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

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



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



(Channel 116: 5580 MHz @ 802.11n-20MHz)

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

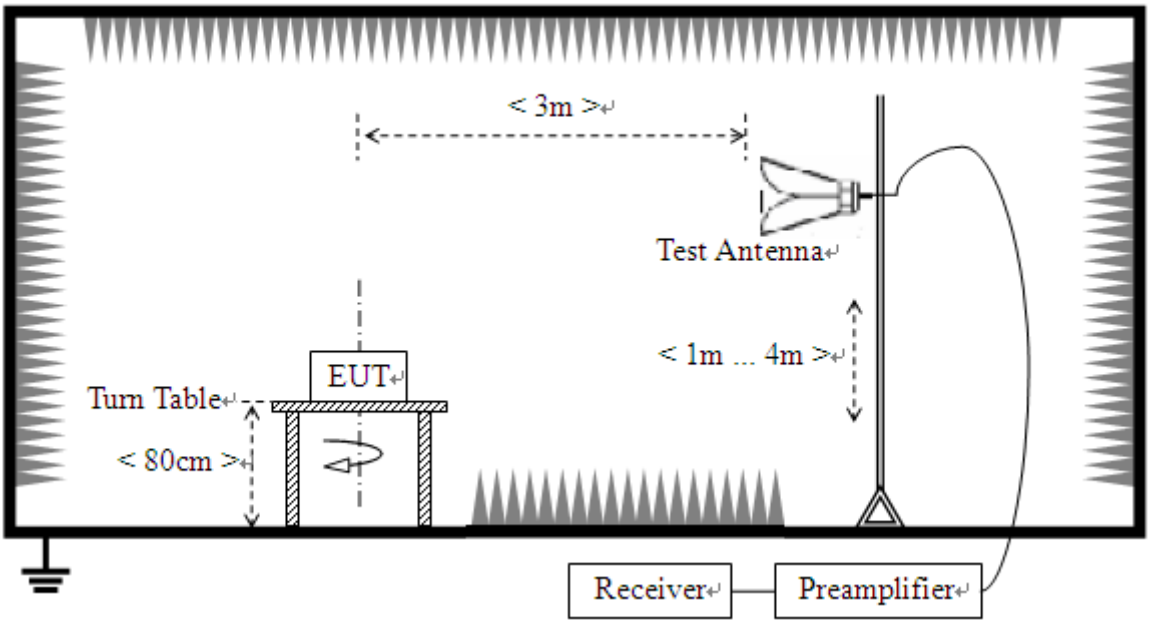
2.5. Restricted Frequency Bands

2.5.1. Requirement

According to FCC section 15.407(b)(7), The provisions of § 15.205 apply to intentional radiators operating under this section. 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.

B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Receiver	Agilent	E7405A	US44210471	2014.02.26	2015.02.25
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2014.02.26	2015.02.25
Test Antenna - Horn	Schwarzbeck	BBHA 9120D	9120D-963	2014.02.26	2015.02.25

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 Test mode

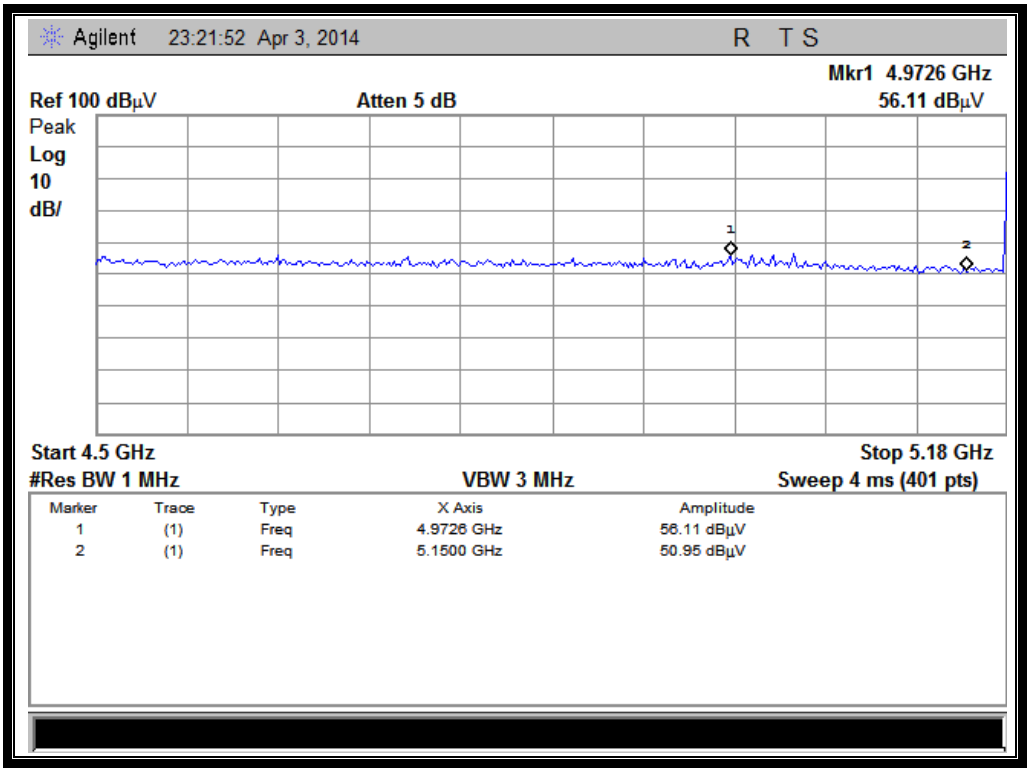
The lowest and highest channels are tested to verify the band edge emissions.

A. Test Verdict:

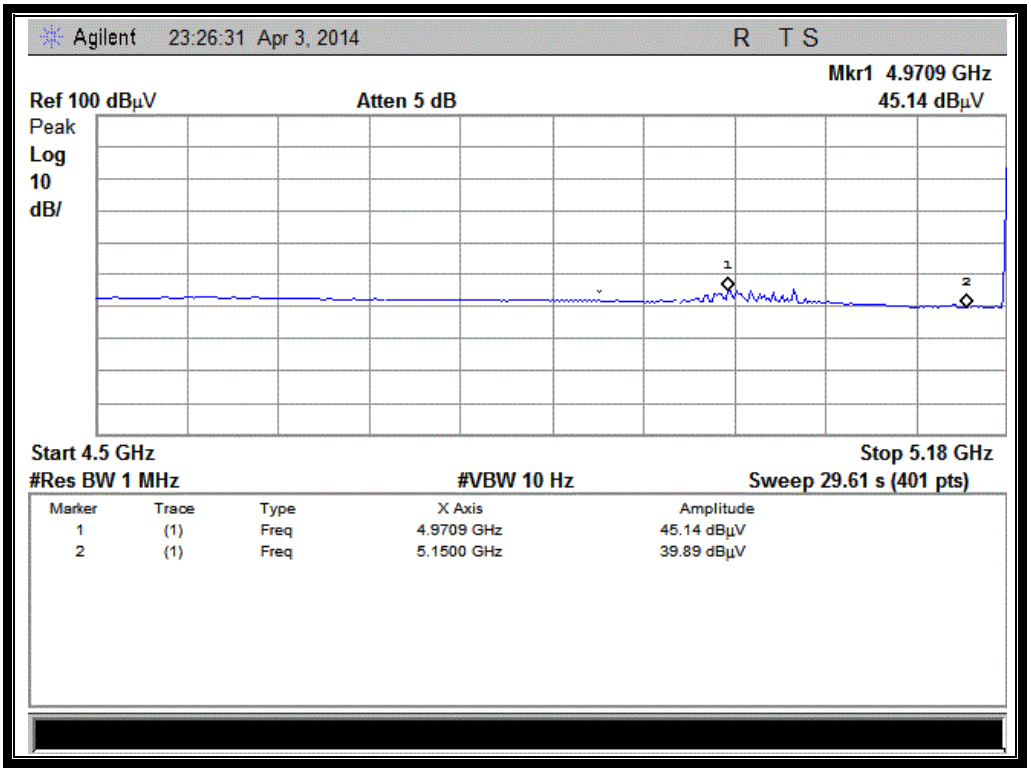
Channel	Frequency (MHz)	Detector	Receiver Reading UR (dBuV)	AT (dB)	AFactor (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
		PK/ AV						
36	4972.60	PK	56.11	-43.13	32.11	45.09	74	Pass
36	4970.90	AV	45.14	-43.13	32.11	34.12	54	Pass
64	5350.45	PK	54.89	-42.79	31.69	43.79	74	Pass
64	5250.00	AV	40.62	-42.79	31.69	29.52	54	Pass
100	5458.38	PK	58.62	-42.79	31.69	47.52	74	Pass

Channel	Frequency (MHz)	Detector	Receiver Reading UR (dBuV)	AT (dB)	AFactor (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
		PK/ AV						
100	5460.00	AV	40.47	-42.79	31.69	29.37	54	Pass
140	5726.30	PK	58.00	-42.79	31.69	46.90	74	Pass
140	5725.00	AV	45.69	-42.79	31.69	34.59	54	Pass

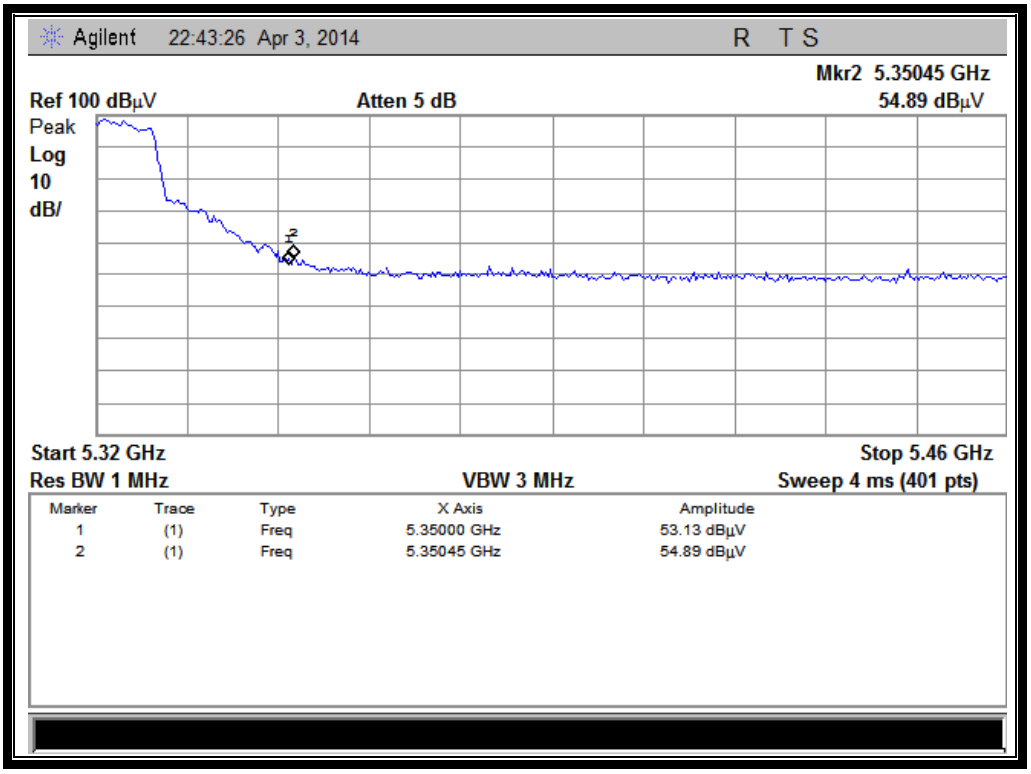
B. Test Plots:



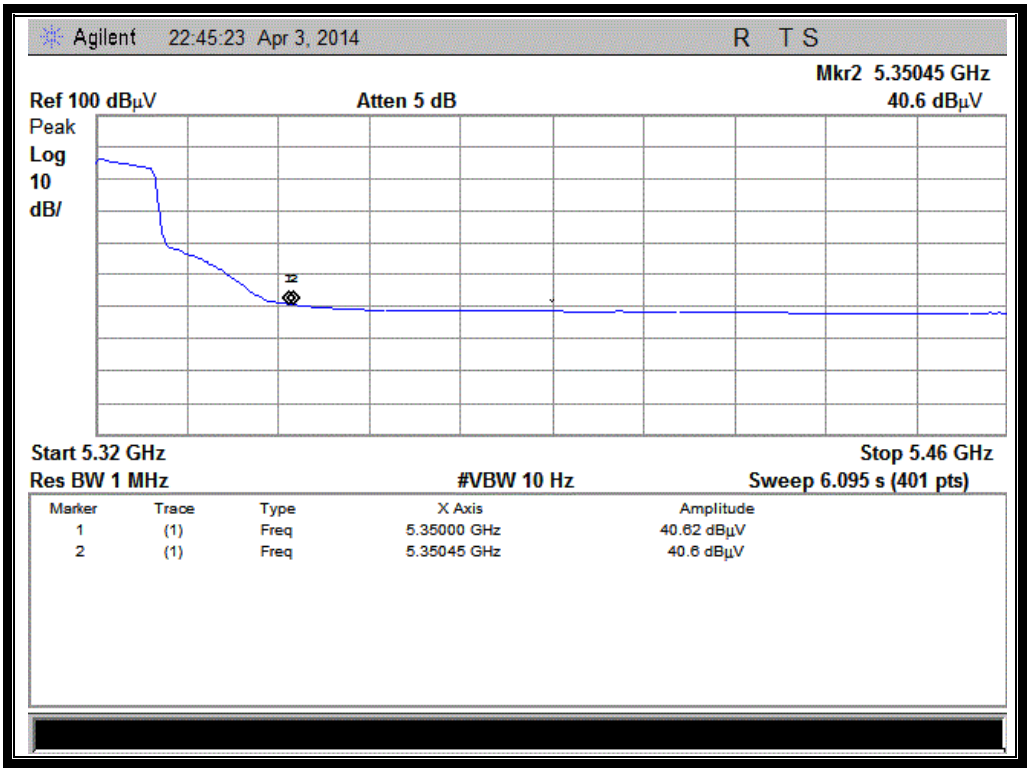
(Channel = 36 PEAK @ 802.11a)



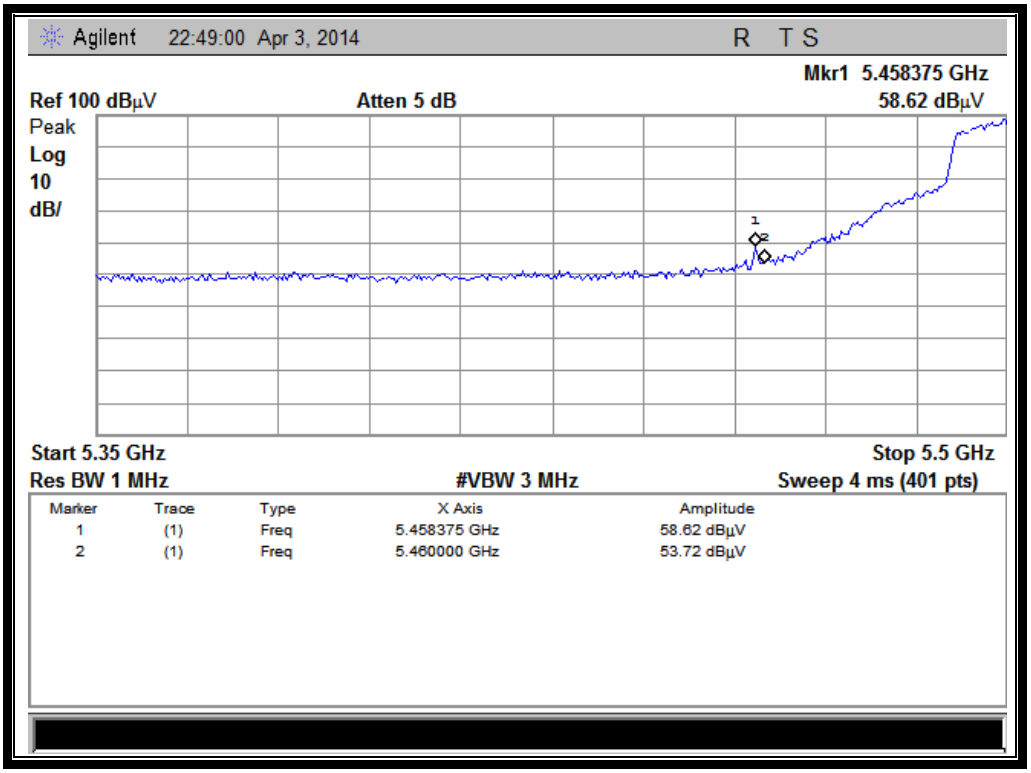
(Channel = 36 AVG @ 802.11a)



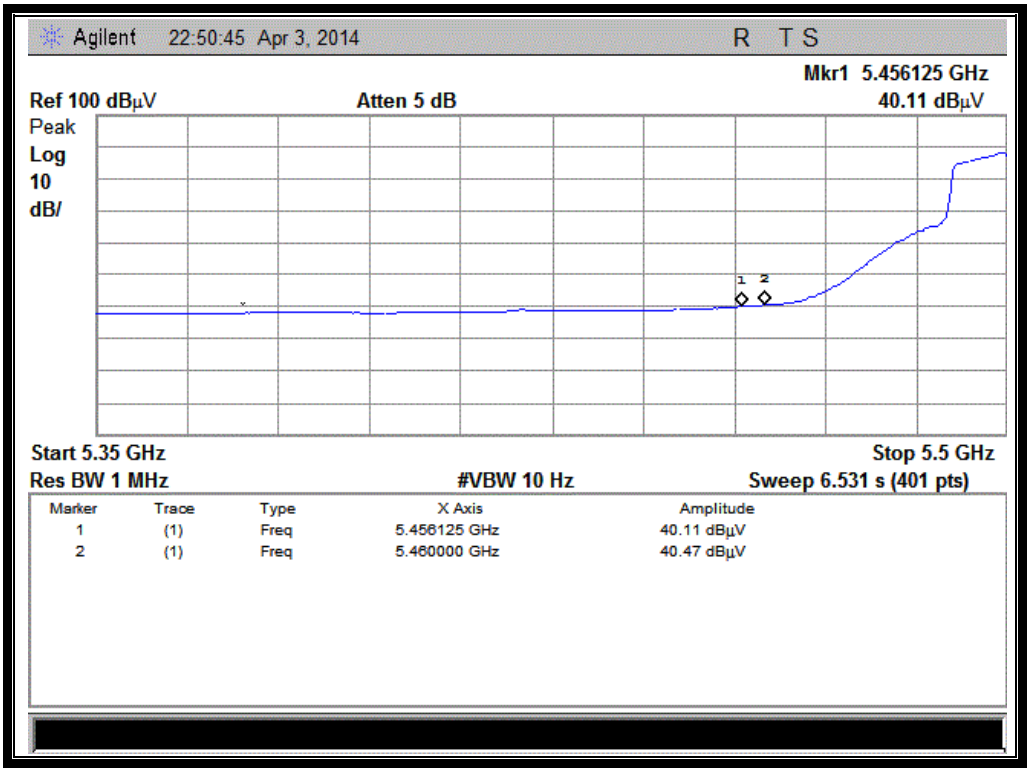
(Channel = 64 PEAK @ 802.11a)



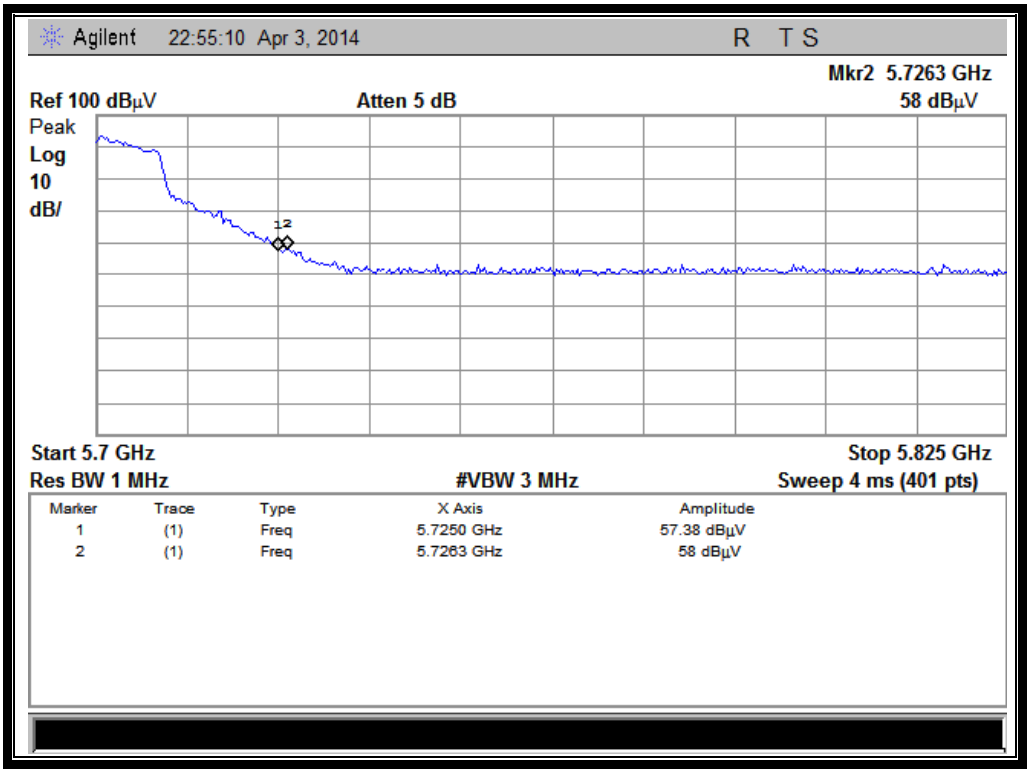
(Channel = 64 AVG @ 802.11a)



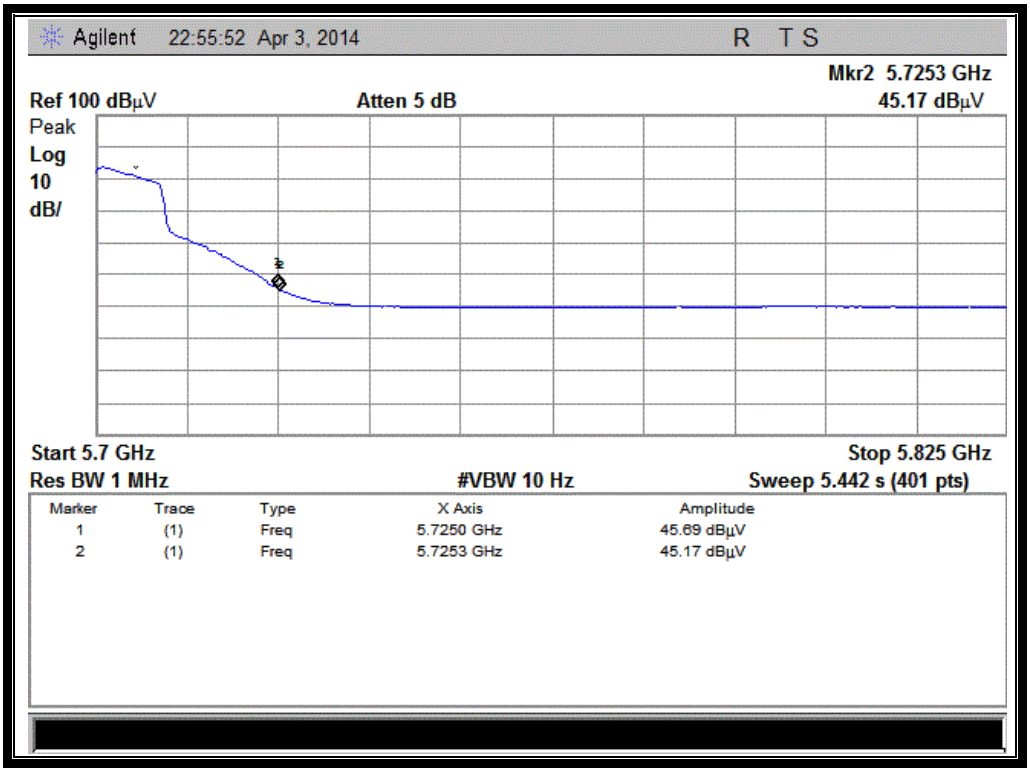
(Channel = 100 PEAK @ 802.11a)



(Channel = 100 AVG @ 802.11a)



(Channel = 140 PEAK @ 802.11a)



(Channel = 140 AVG @ 802.11a)

2.5.3.2. 802.11n-20MHz Test mode

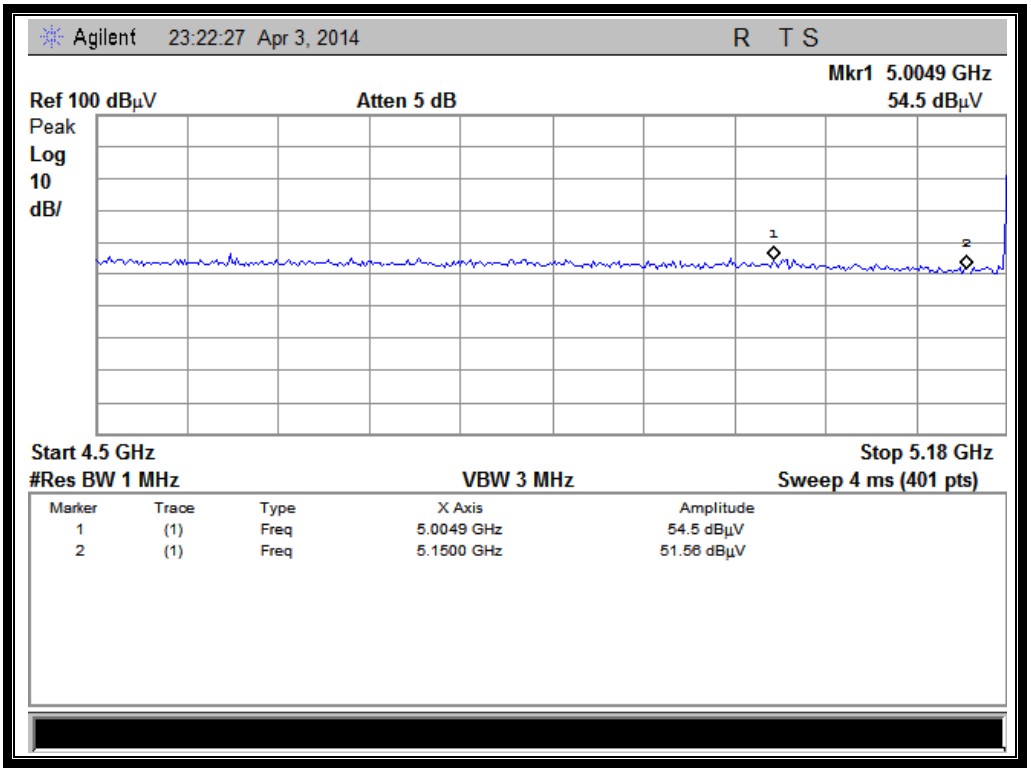
The lowest and highest channels are tested to verify the band edge emissions.

A. Test Verdict:

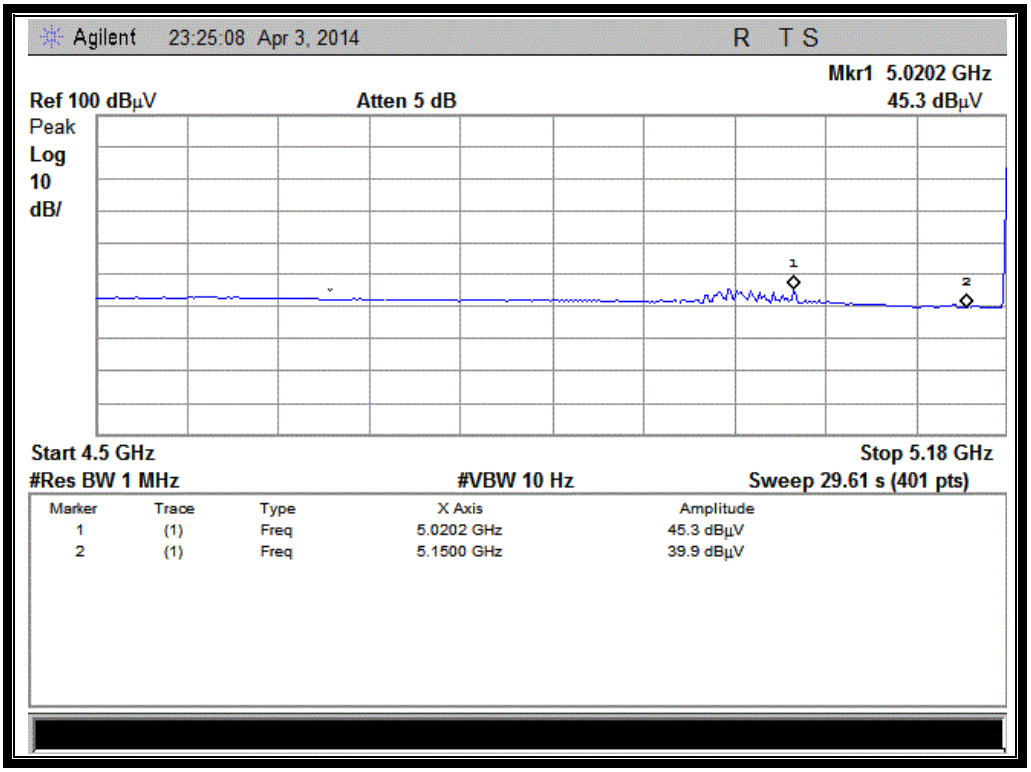
Channel	Frequency (MHz)	Detector	Receiver Reading UR (dBuV)	AT (dB)	AFactor (dB@3m)	Max. Emission E (dBµV/m)	Limit (dBµV/m)	Verdict
		PK/ AV						
36	5004.90	PK	54.50	-43.13	32.11	43.48	74	Pass
36	5020.20	AV	45.30	-43.13	32.11	34.28	54	Pass
64	5350.00	PK	58.15	-42.79	31.69	47.05	74	Pass
64	5350.00	AV	44.59	-42.79	31.69	33.49	54	Pass
100	5460.00	PK	54.98	-42.79	31.69	43.88	74	Pass

Channel	Frequency (MHz)	Detector	Receiver Reading UR (dBuV)	AT (dB)	AFactor (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
		PK/ AV						
100	5460.00	AV	40.47	-42.79	31.69	29.37	54	Pass
140	5725.00	PK	62.79	-42.79	31.69	51.69	74	Pass
140	5725.00	AV	45.55	-42.79	31.69	34.45	54	Pass

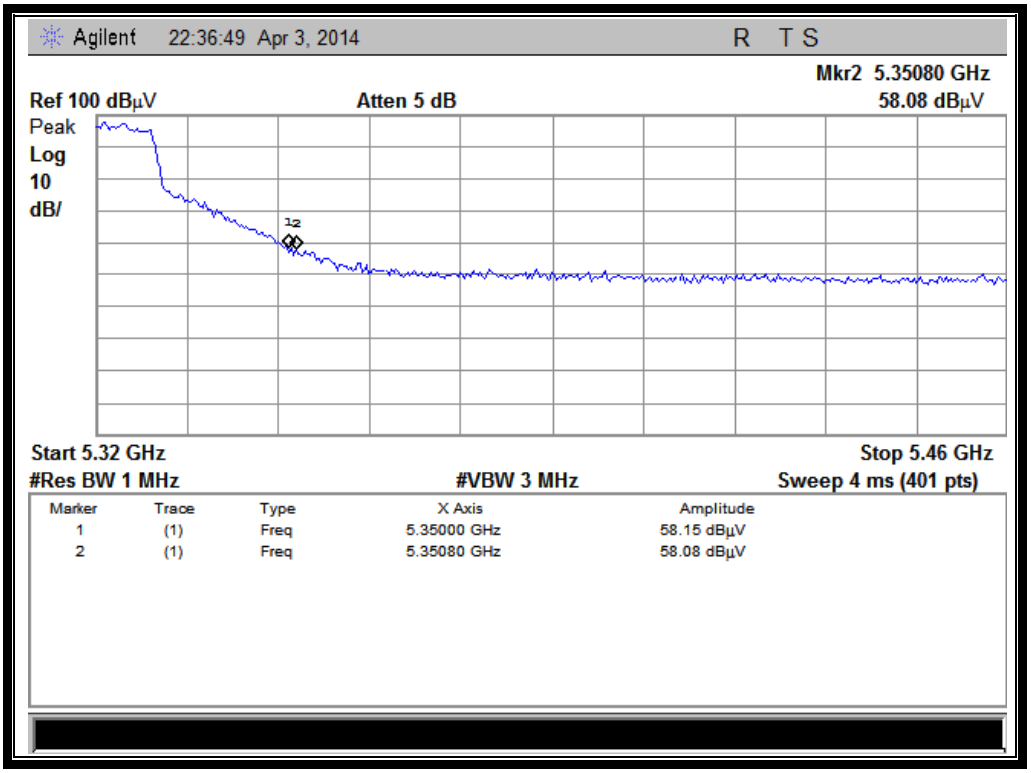
B. Test Plots:



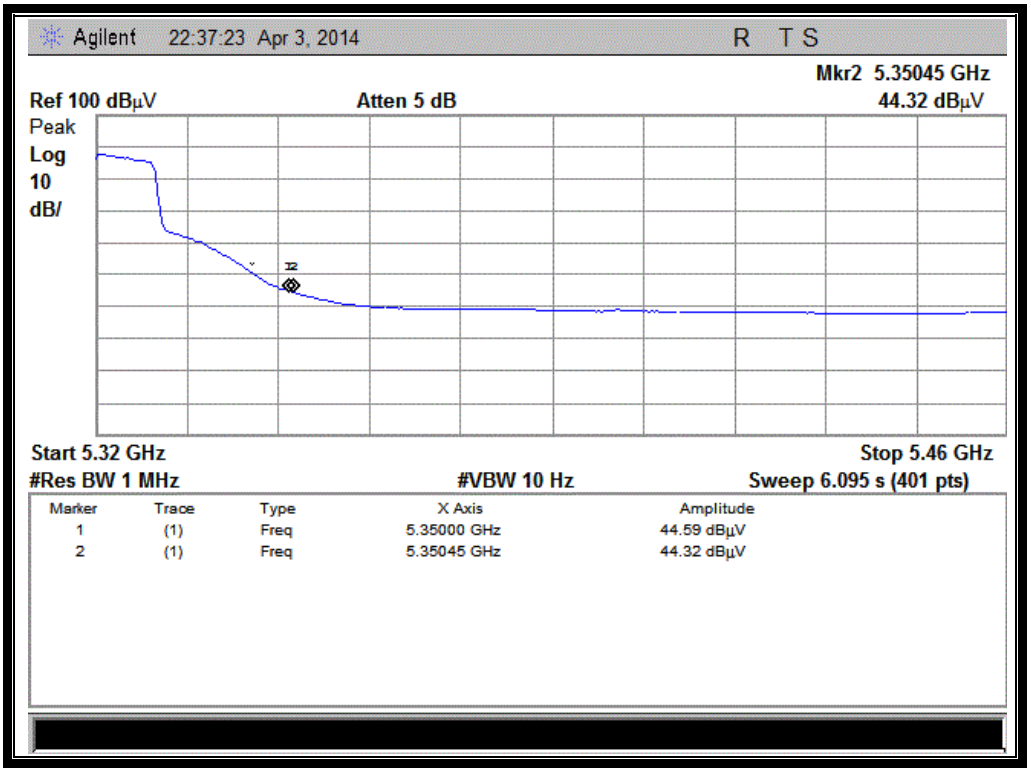
(Channel = 36 PEAK @ 802.11n-20MHz)



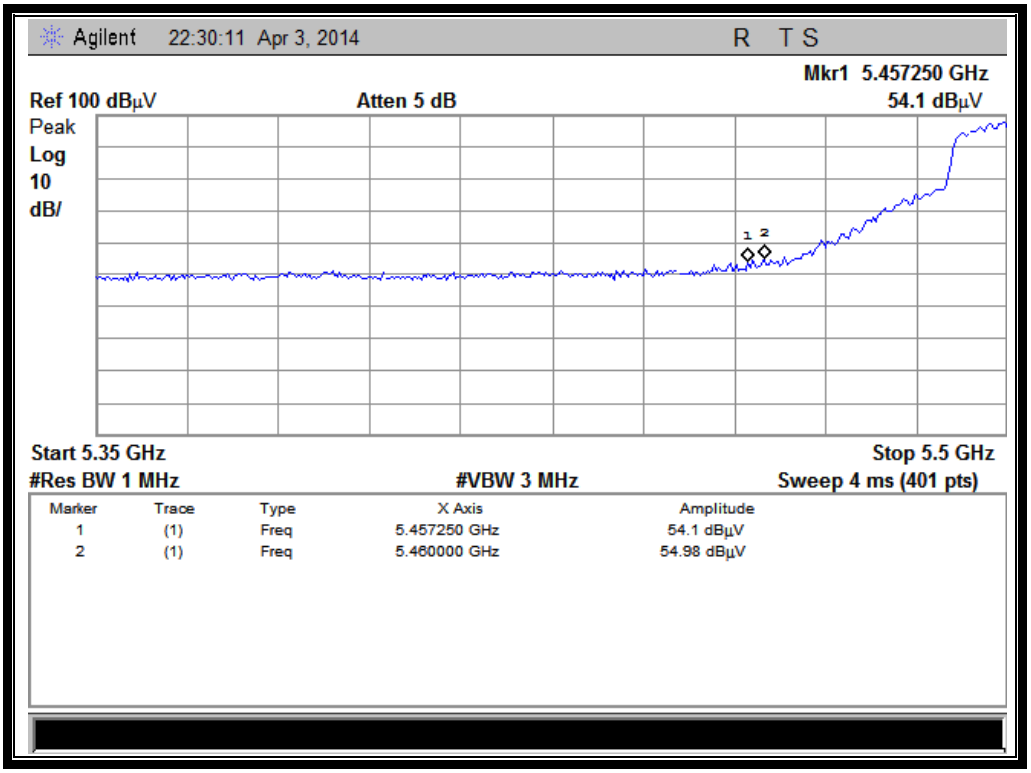
(Channel = 36 AVG @ 802.11n-20MHz)



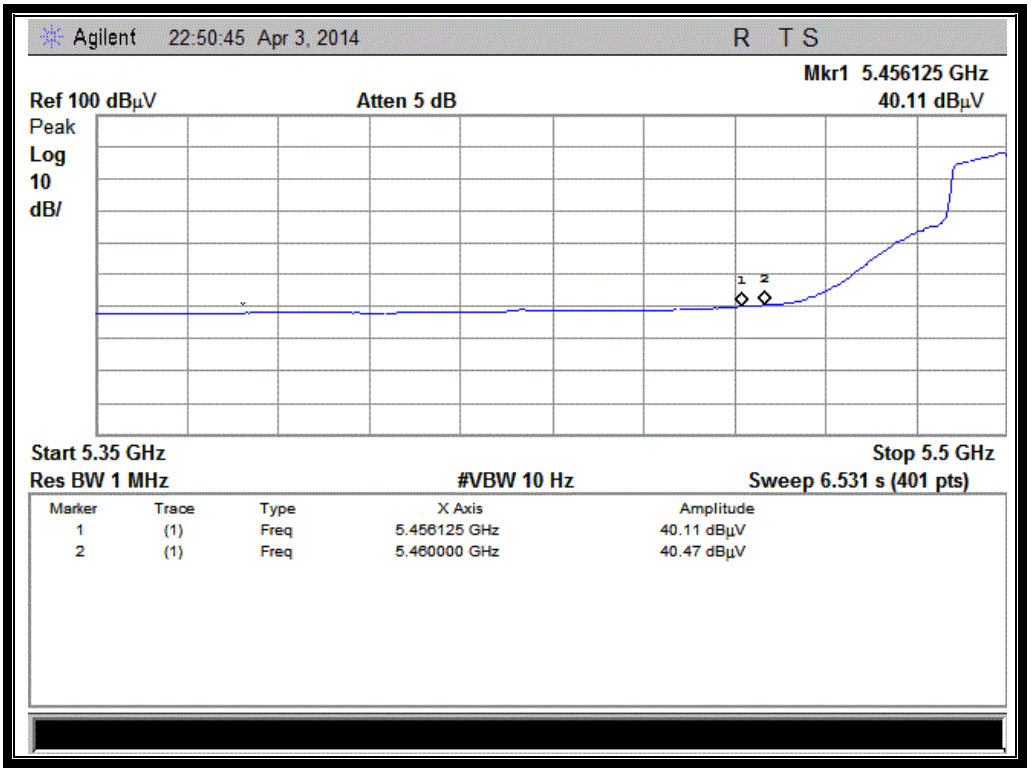
(Channel = 64 PEAK @ 802.11n-20MHz)



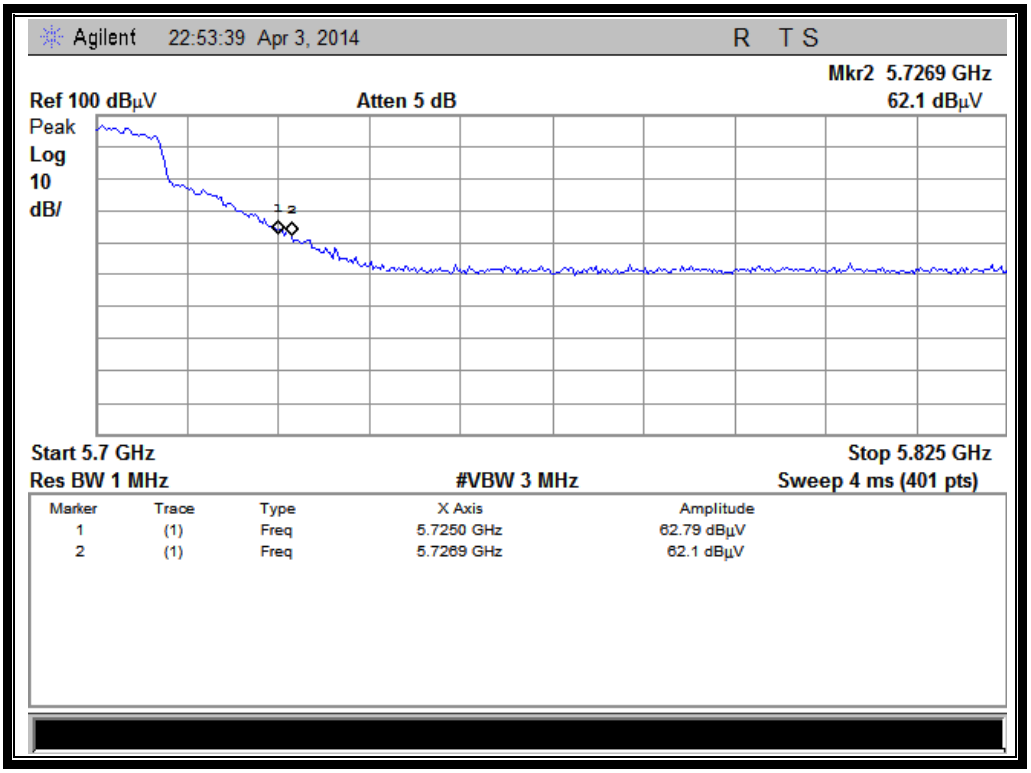
(Channel = 64 AVG @ 802.11n-20MHz)



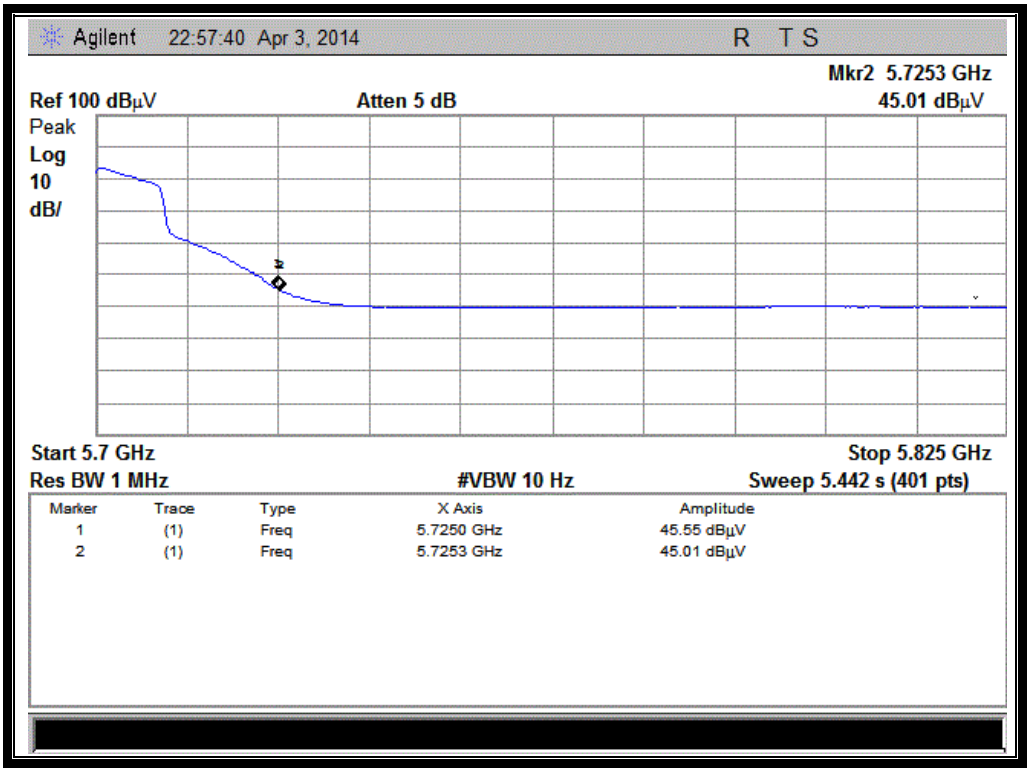
(Channel = 100 PEAK @ 802.11n-20MHz)



(Channel = 100 AVG @ 802.11n-20MHz)



(Channel = 140 PEAK @ 802.11n-20MHz)



(Channel = 140 AVG @ 802.11n-20MHz)

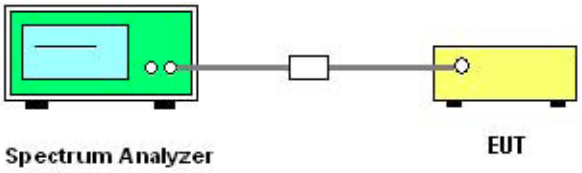
2.6. Peak Excursion

2.6.1. Requirement

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the maximum conducted output power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

2.6.2. Test Description

A. Test Setup:



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

Section G) of KDB 789033 was used in order to prove compliance

(1) Set RBW = 1 MHz. VBW ≥ 3 MHz. Detector = peak.

(2) Trace mode = max-hold. Allow the sweeps to continue until the trace stabilizes.

(3) Use the peak search function to find the peak of the spectrum.

(4) measure the PPSD.

(5) Compute the ratio of the maximum of the peak-max-hold spectrum to the PPSD.

C. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
EXA Signal Analzyer	Agilent	N9010A	MY51440152	2014.02.26	2015.02.25

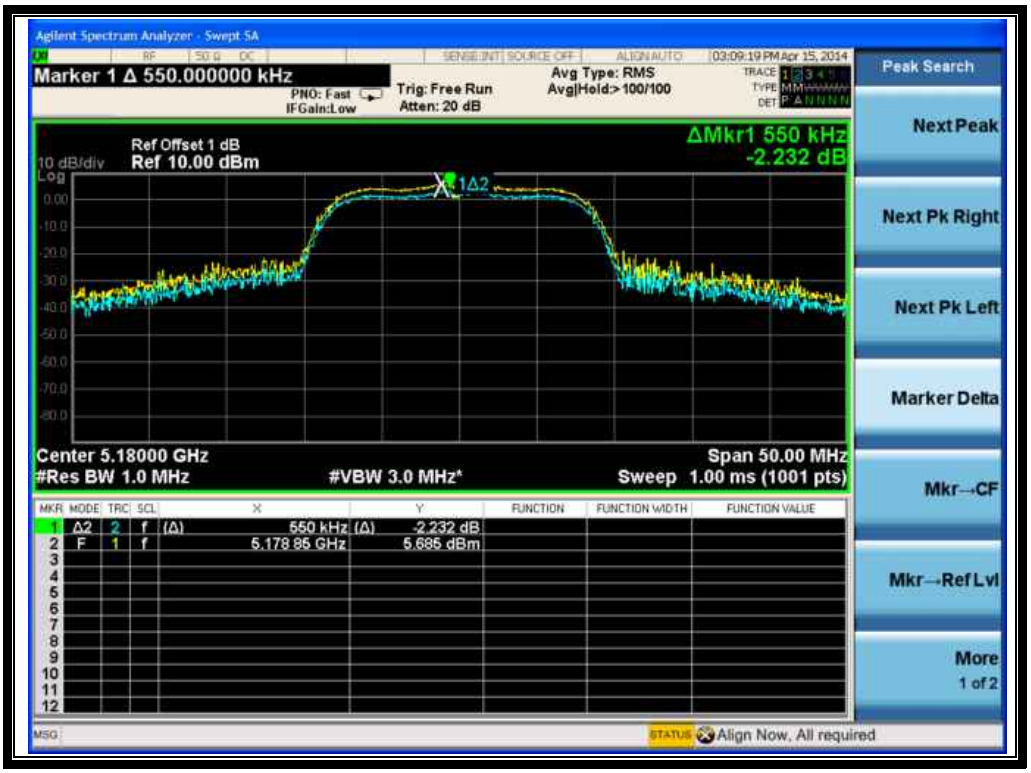
2.6.3. Test Result

2.6.3.1. 802.11a Test mode

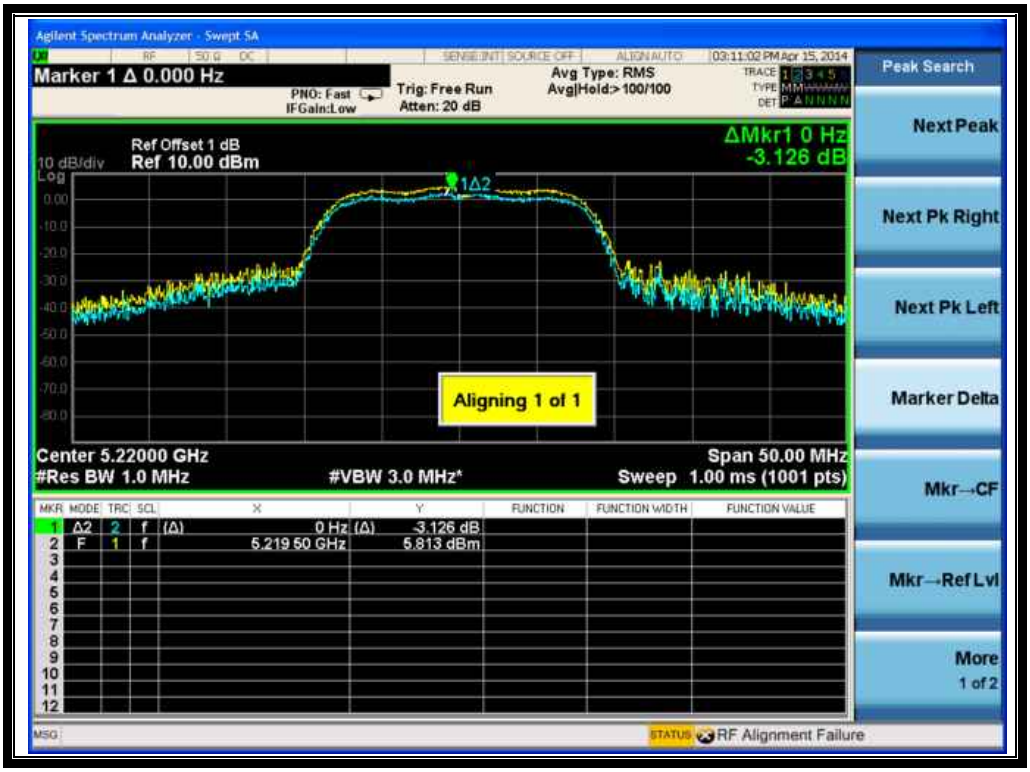
A. Test Verdict:

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Verdict
36	5180	2.232	13	PASS
44	5220	3.126	13	PASS
48	5240	1.070	13	PASS
52	5260	2.524	13	PASS
60	5300	1.854	13	PASS
64	5320	2.253	13	PASS
100	5500	2.227	13	PASS
116	5580	2.080	13	PASS
140	5700	2.905	13	PASS

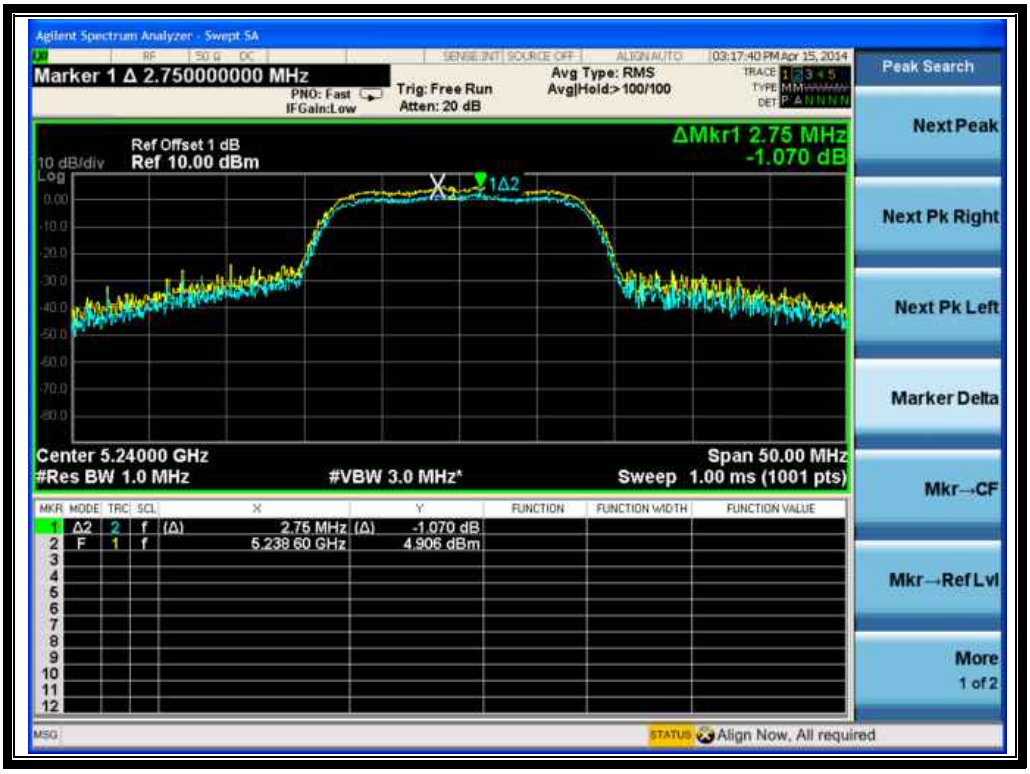
B. Test Plots:



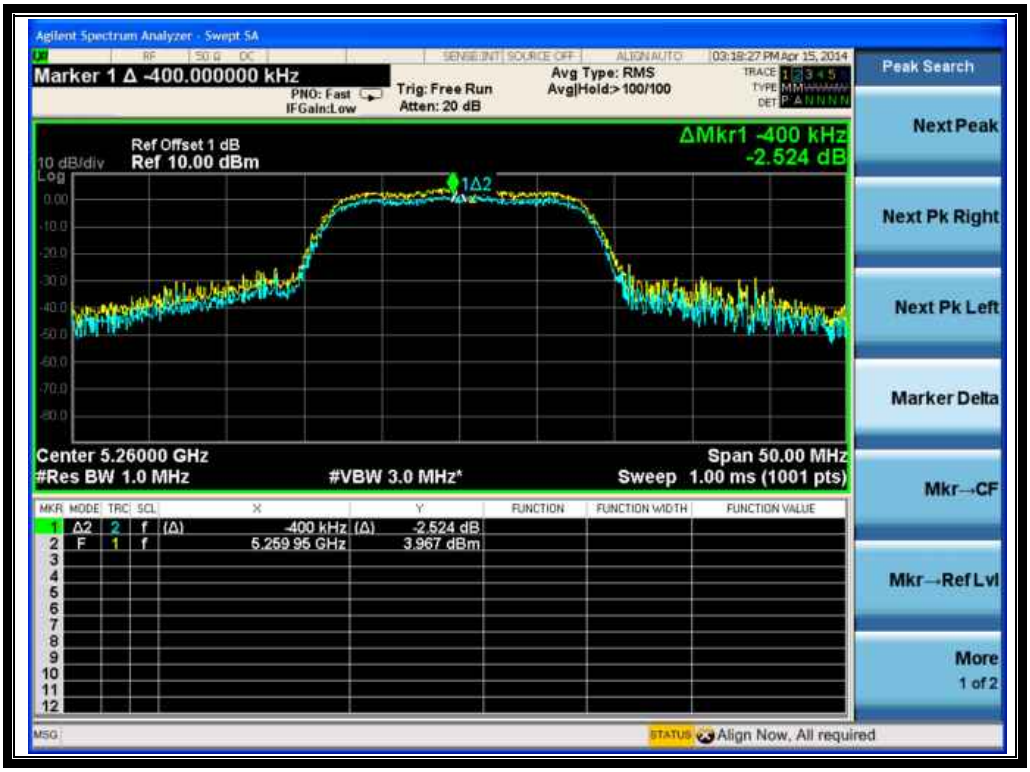
(Channel 36: 5180MHz @ 802.11a)



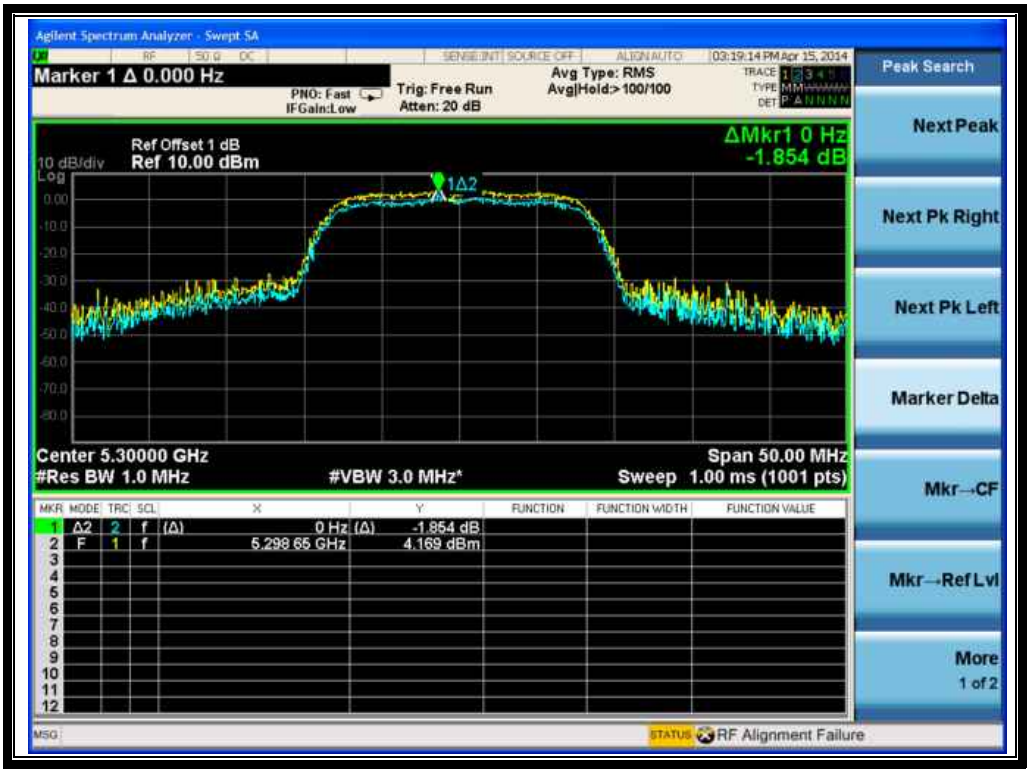
(Channel 44: 5220 MHz @ 802.11a)



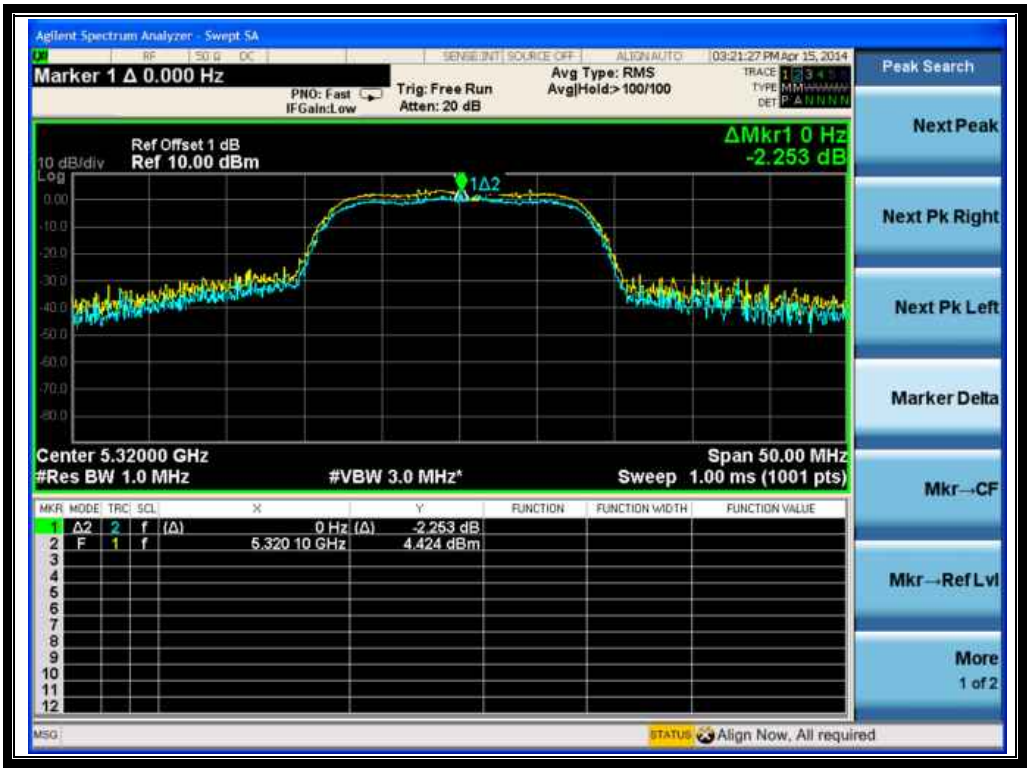
(Channel 48: 5240MHz @ 802.11a)



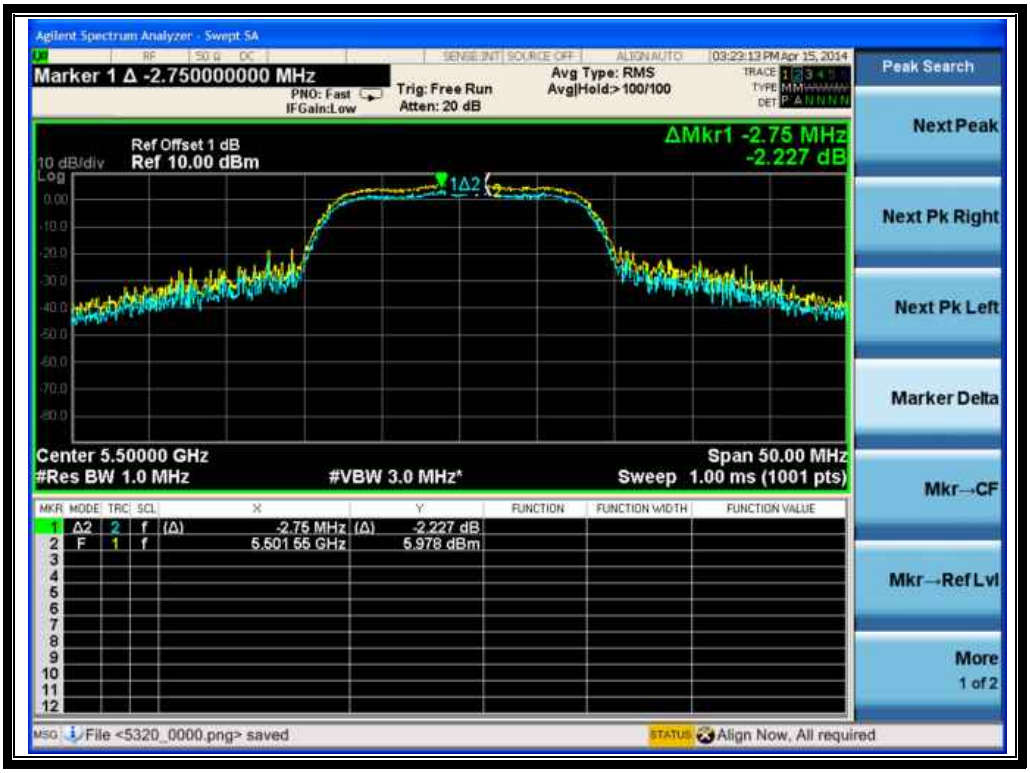
(Channel 52: 5260MHz @ 802.11a)



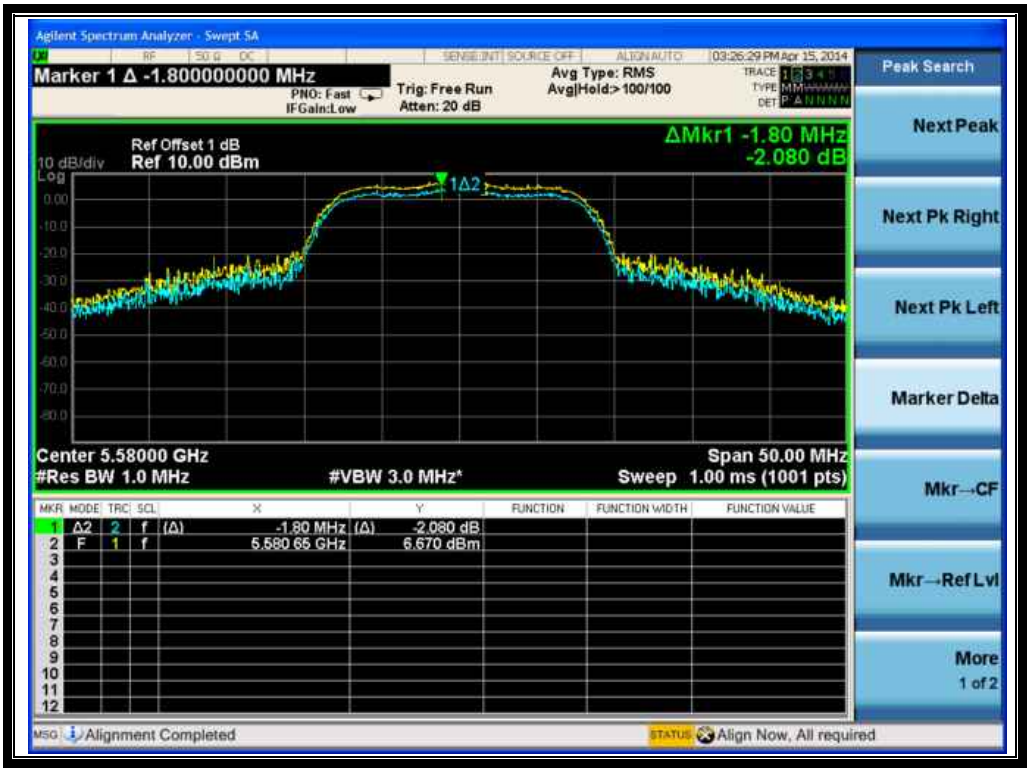
(Channel 60: 5300 MHz @ 802.11a)



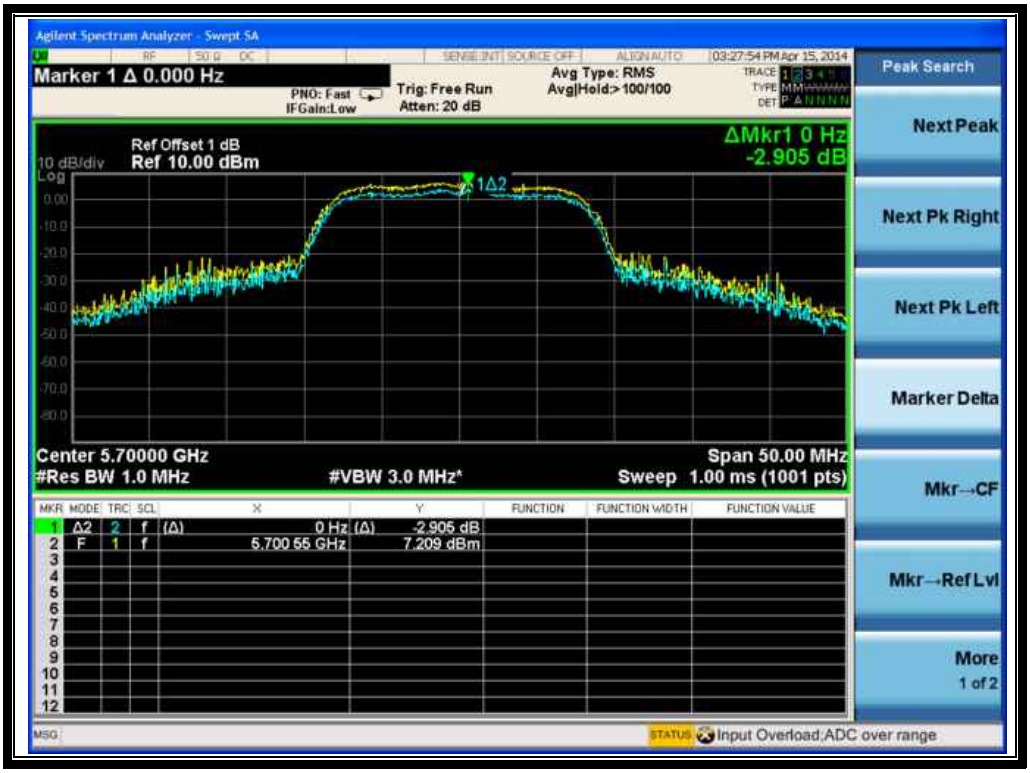
(Channel 64: 5320MHz @ 802.11a)



(Channel 100: 5500MHz @ 802.11a)



(Channel 116: 5580 MHz @ 802.11a)



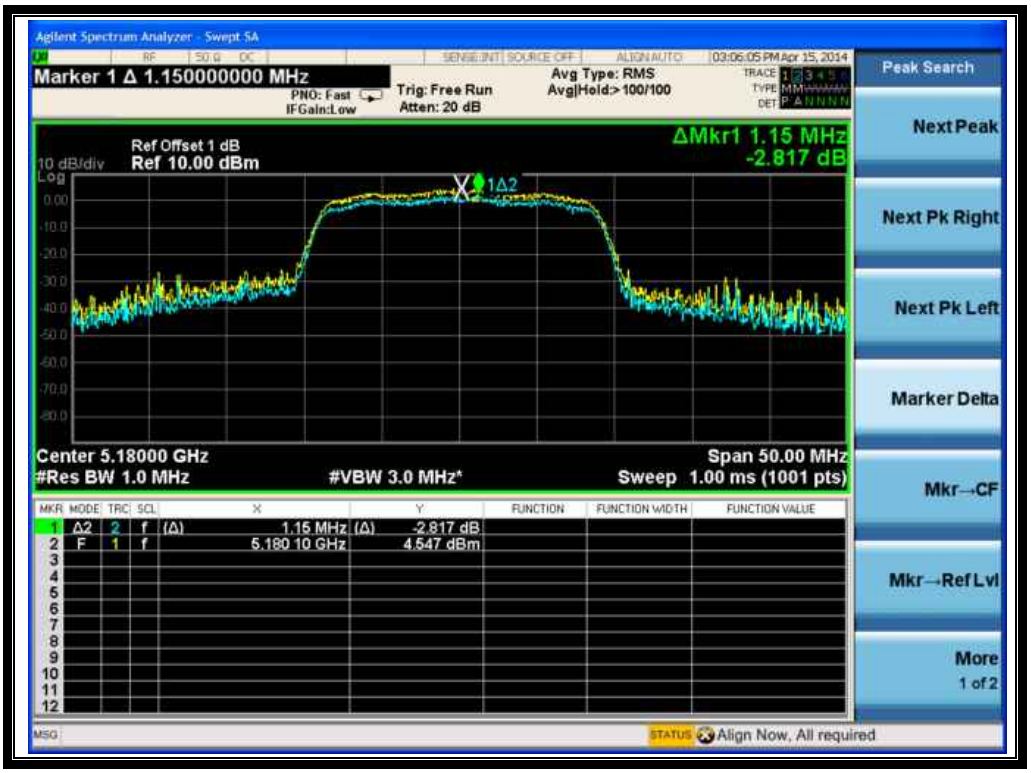
(Channel 140: 5700MHz @ 802.11a)

2.6.3.2. 802.11n-20MHz Test mode

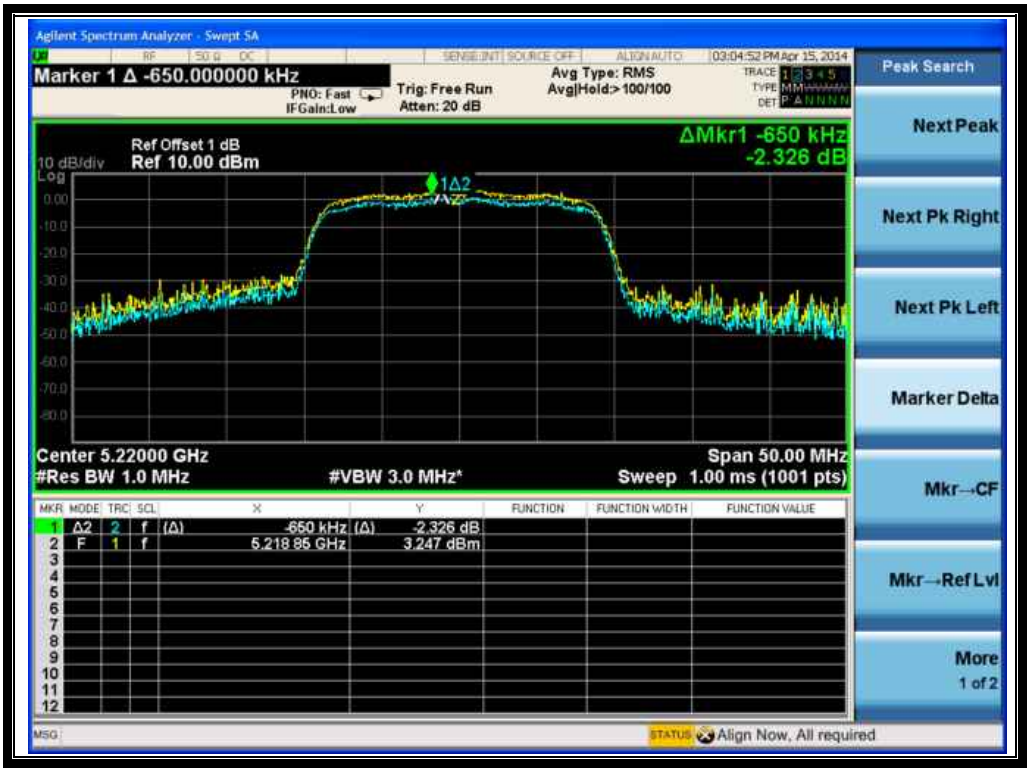
A. Test Verdict:

Channel	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Verdict
36	5180	2.817	13	PASS
44	5220	2.326	13	PASS
48	5240	2.319	13	PASS
52	5260	1.340	13	PASS
60	5300	1.855	13	PASS
64	5320	2.167	13	PASS
100	5500	2.273	13	PASS
116	5580	2.427	13	PASS
140	5700	2.349	13	PASS

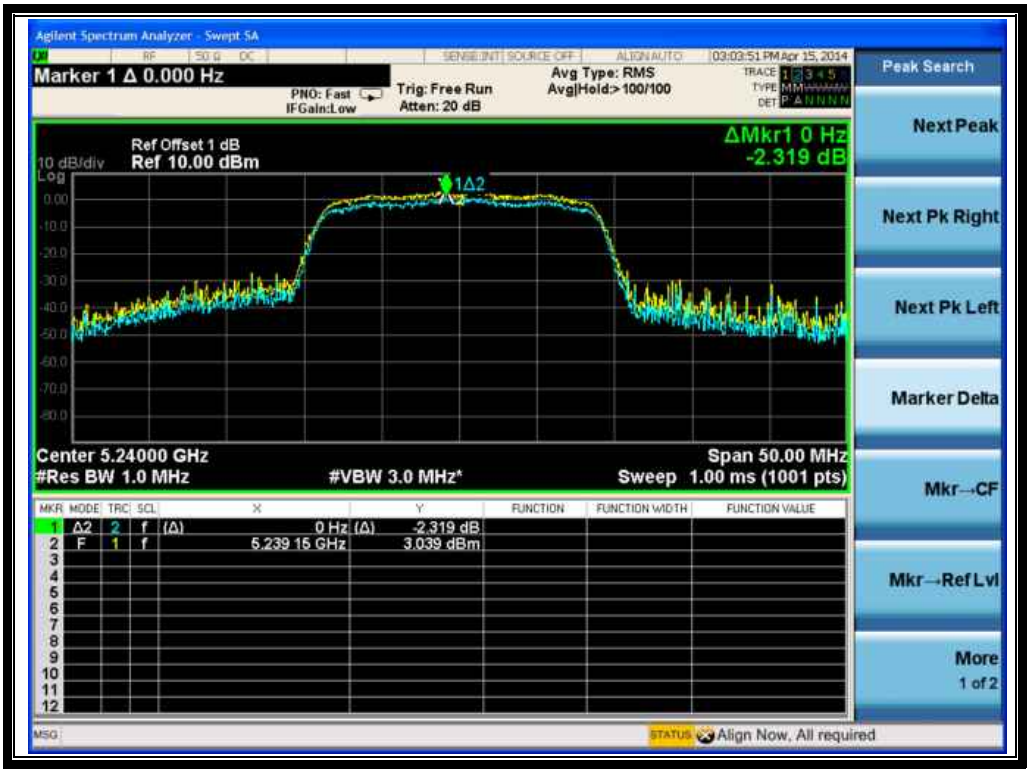
B. Test Plots:



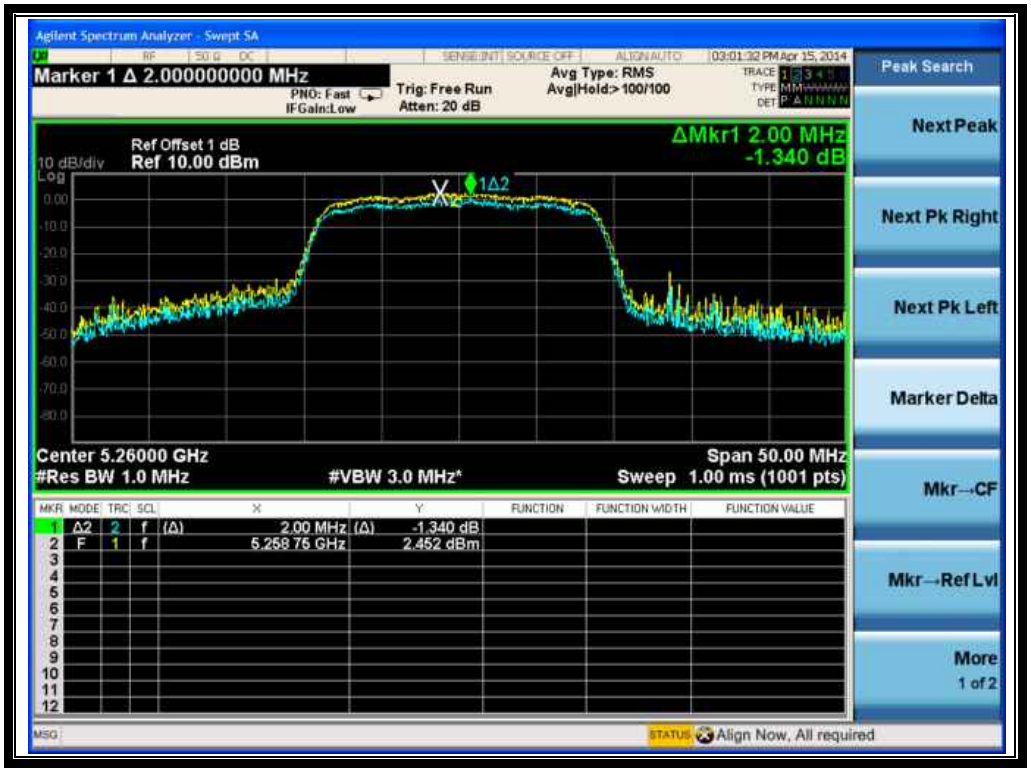
(Channel 36: 5180MHz @ 802.11n-20MHz)



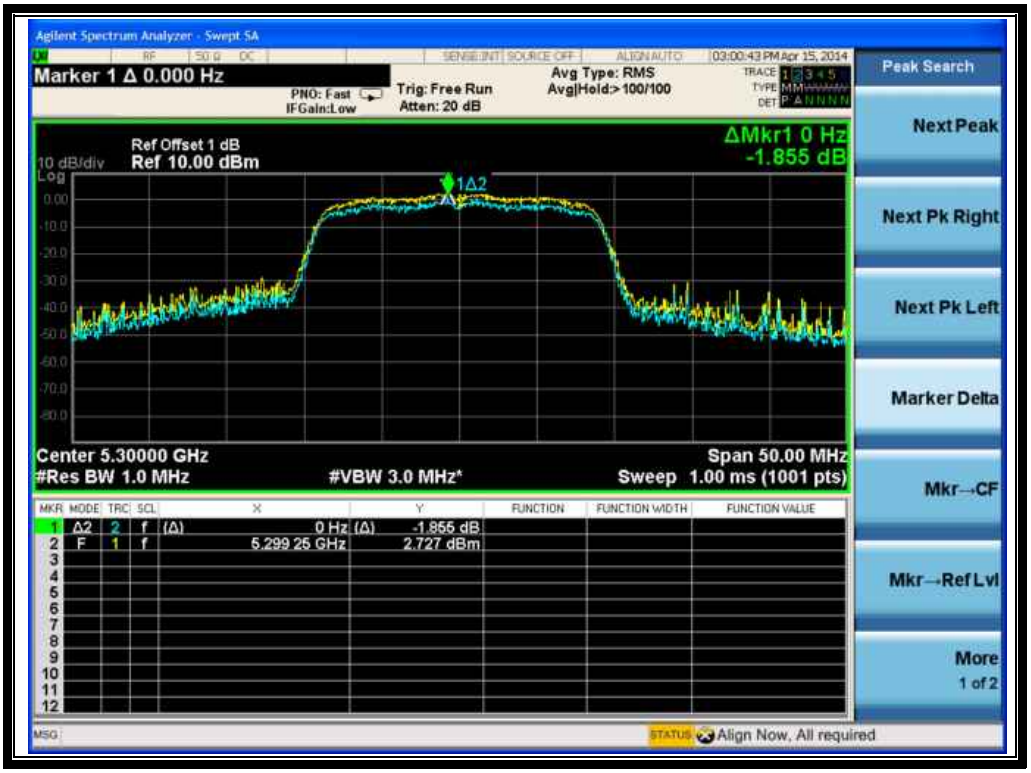
(Channel 44: 5220 MHz @ 802.11n-20MHz)



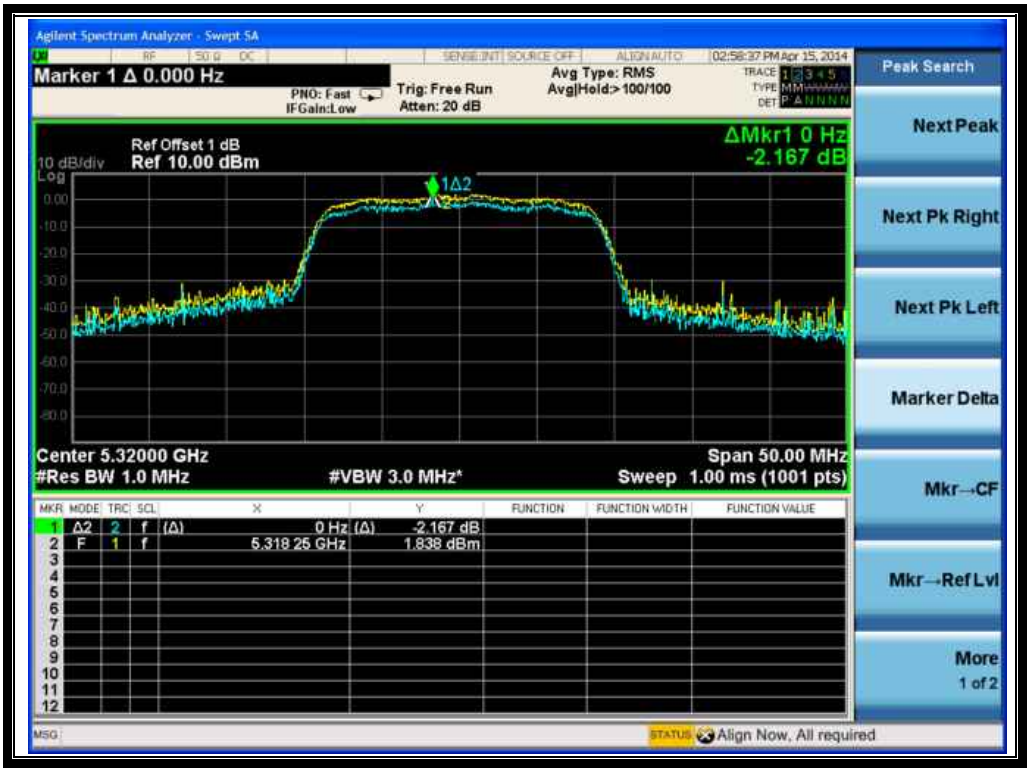
(Channel 48: 5240MHz @ 802.11n-20MHz)



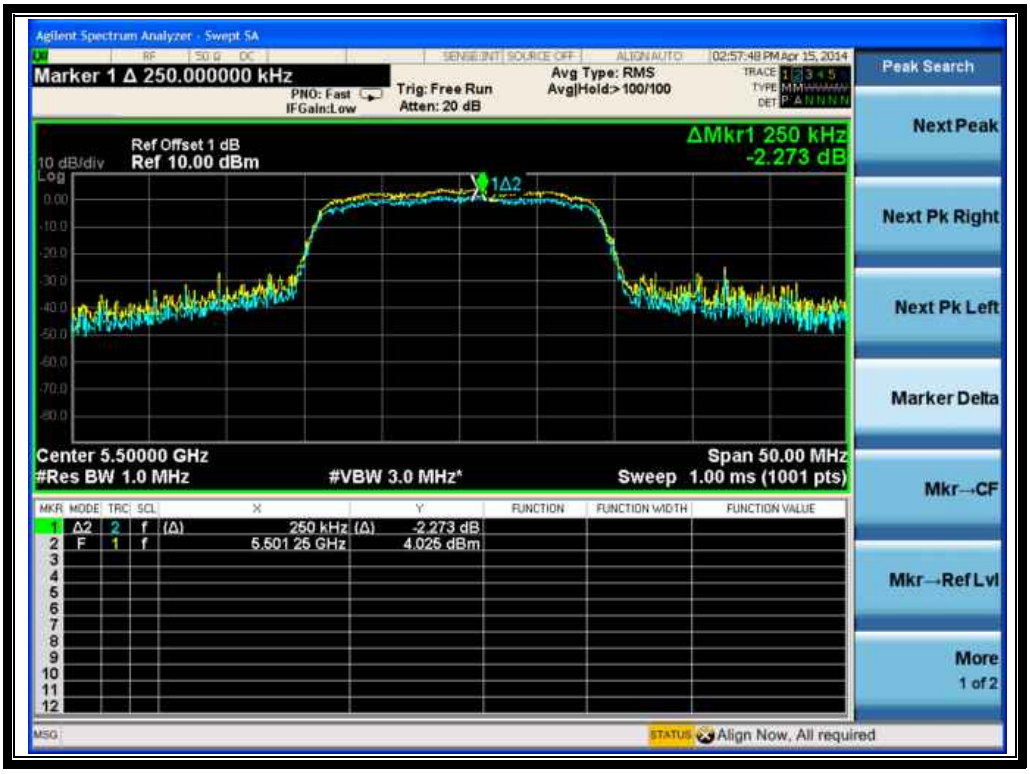
(Channel 52: 5260MHz @ 802.11n-20MHz)



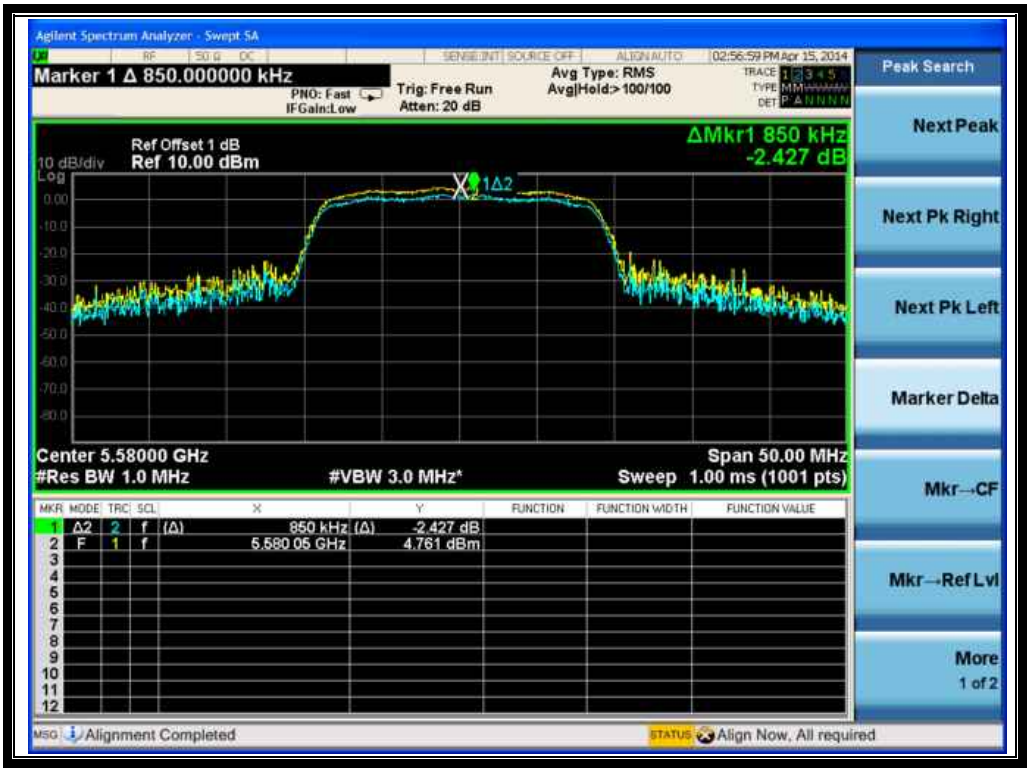
(Channel 60: 5300 MHz @ 802.11n-20MHz)



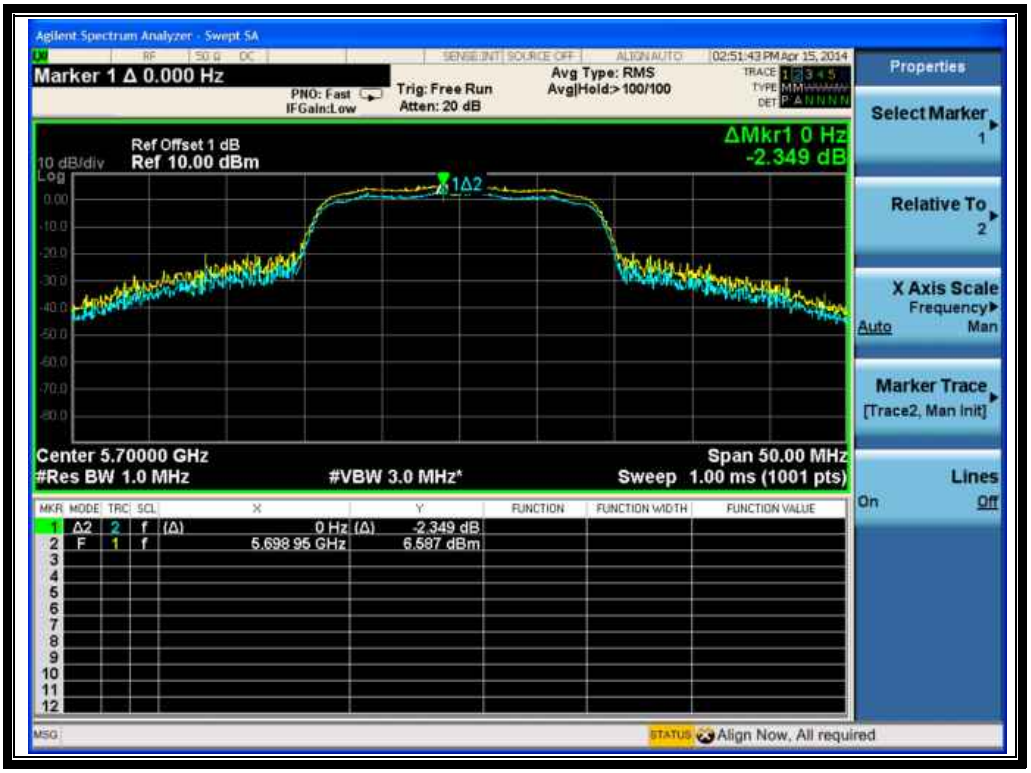
(Channel 64: 5320MHz @ 802.11n-20MHz)



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



(Channel 116: 5580 MHz @ 802.11n-20MHz)



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

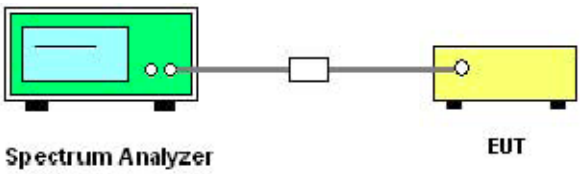
2.7. Conducted Band Edge

2.7.1. Requirement

Put the radio on the highest channel before 5600 MHz and make a conducted band edge measurement to show 20 dBc point. The 20 dBc point should be less than 5600 MHz. Put the radio on the first channel after 5650 MHz and make a conducted band edge measurement on the lower side to show that the 20 dBc point is above 5650 MHz. RBW = 100 kHz and VBW= 300 kHz with peak detector.

2.7.2. Test Description

A. Test Setup:



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

(6) Set RBW = 100 KHz. VBW ≥ 300 KHz. Detector = peak.

(7) Trace mode = max-hold. Allow the sweeps to continue until the trace stabilizes.

(8) Use the peak search function to find the peak of the spectrum.

(9) Record the frequency of 20dBc point

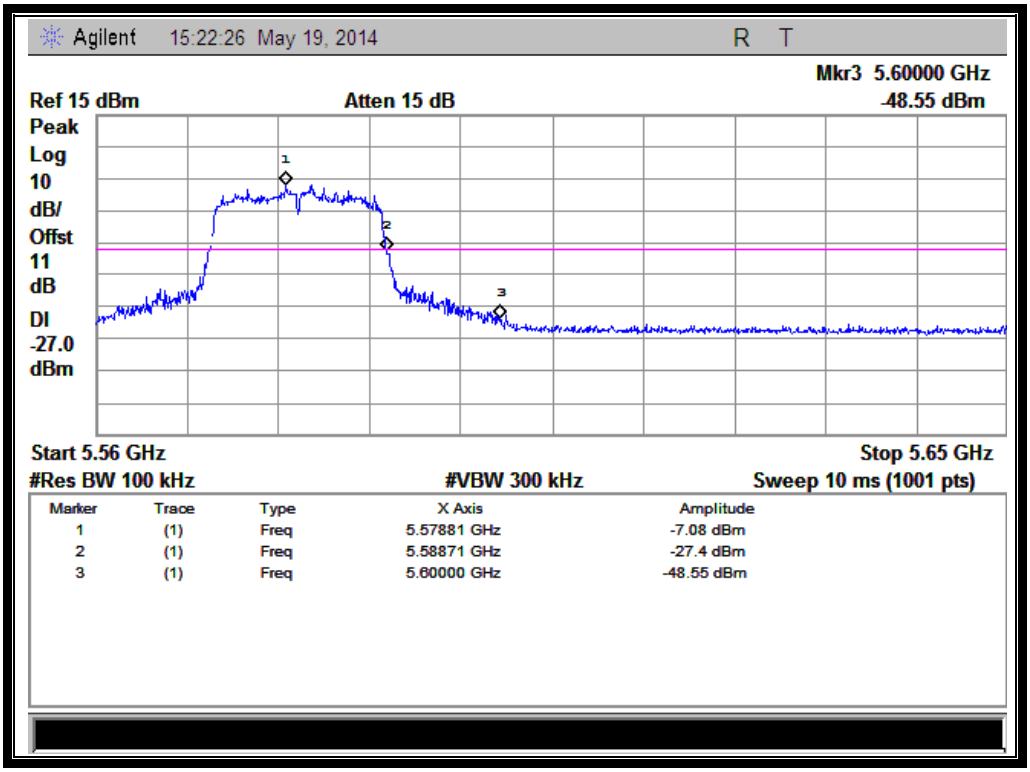
C. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Receiver	Agilent	E7405A	US44210471	2014.02.26	2015.02.25

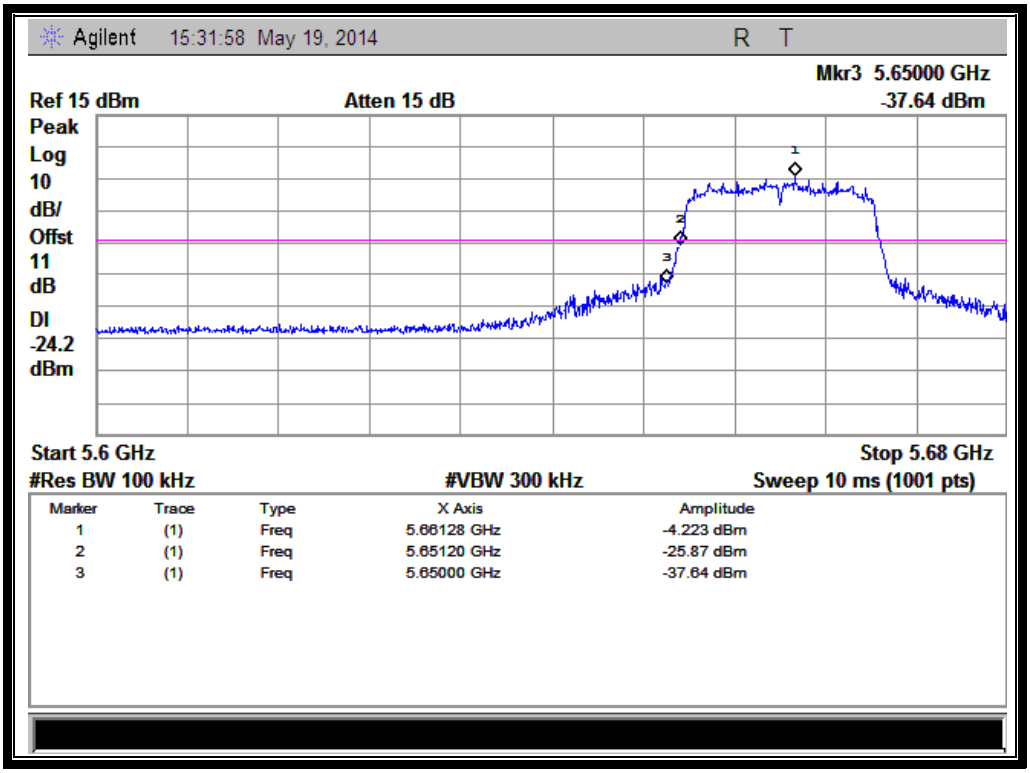
2.7.3. Test Result

2.7.3.1. 802.11a Test mode

A. Test Plots:



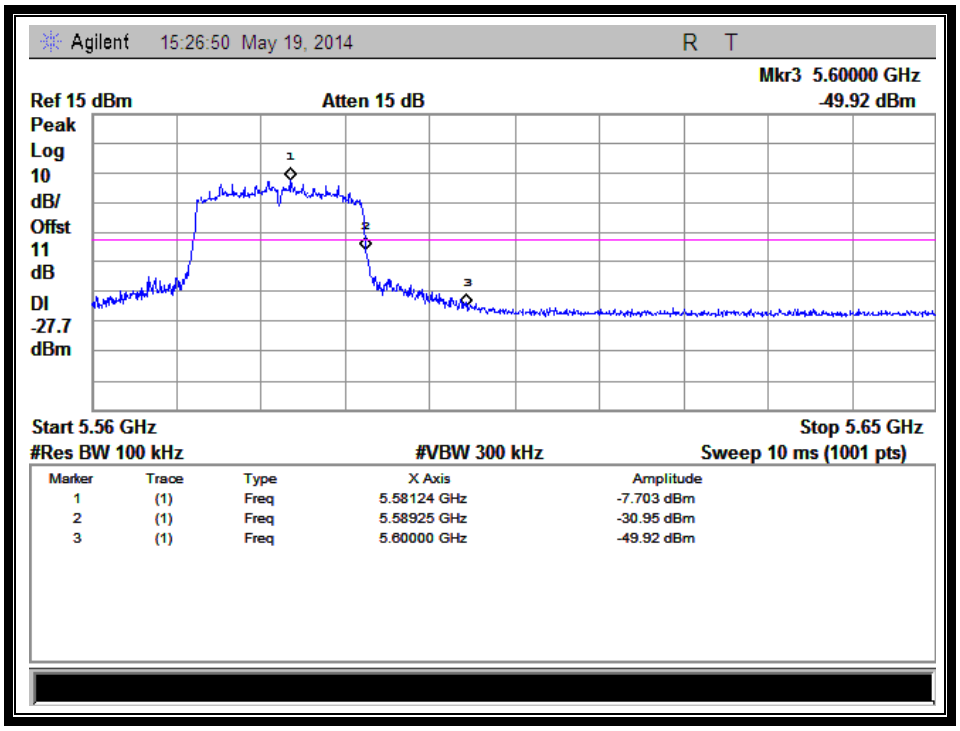
(Channel 116: 5580MHz @ 802.11a)



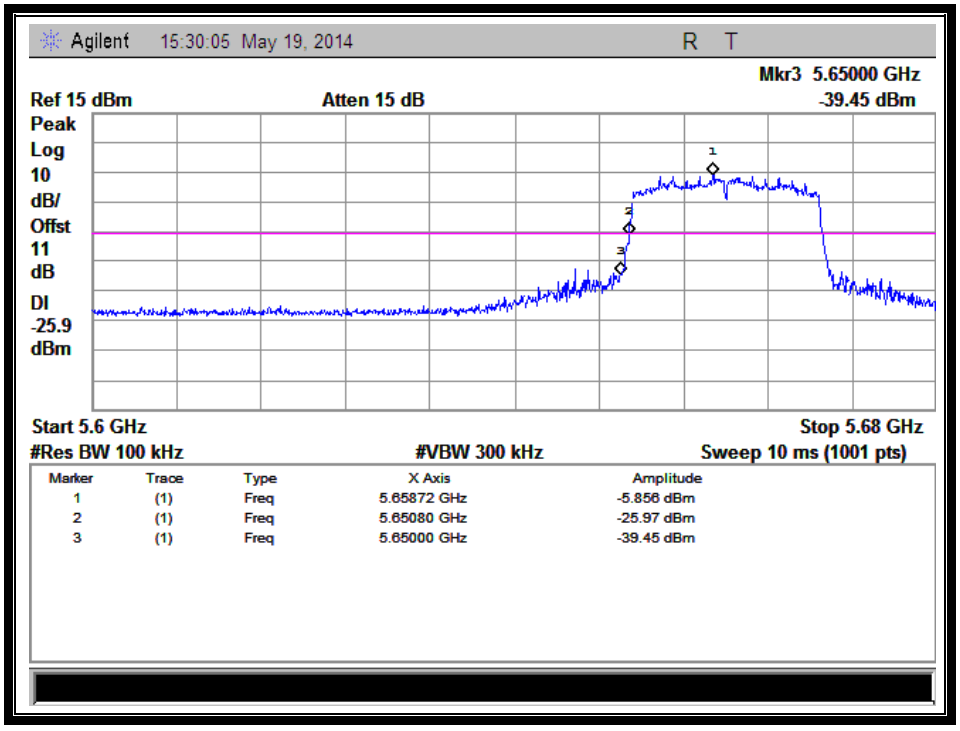
(Channel 132: 5660 MHz @ 802.11a)

2.7.3.2. 802.11n-20MHz Test mode

A. Test Plots:



(Channel 116: 5580MHz @ 802.11n-20MHz)



(Channel 132: 5660 MHz @ 802.11n-20MHz)

2.8. Frequency Stability

2.8.1. 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.

2.8.2. Test Procedure

The EUT was placed inside of an environmental chamber as the temperature in the chamber was varied between -30℃ and +50℃. The temperature was incremented by 10° 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.

A. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
DC Power Supply	Good Will	GPS-3030DD	EF920938	2013.05.13	2014.05.12
Temperature Chamber	YinHe Experimental Equip.	HL4003T	(n.a.)	2013.05.13	2014.05.12

2.8.3. Test Result

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

VOLTAGE (%)	POWER (VDC)	TEMP (℃)	FREQUENCY (Hz)	Freq Dev. (Hz)	Deviation (%)
100%	3.80	+20(Ref)	5,179,999,985	-15	-0.00000029
100%		-30	5,179,999,984	-16	-0.00000031
100%		-20	5,180,000,007	7	0.00000014
100%		-10	5,179,999,985	-15	-0.00000029
100%		0	5,179,999,992	-8	-0.00000015
100%		+10	5,179,999,986	-14	-0.00000027
100%		+20	5,179,999,991	-9	-0.00000017
100%		+30	5,180,000,001	1	0.00000002
100%		+40	5,180,000,009	9	0.00000017
100%		+50	5,179,999,997	-3	-0.00000006
111%	4.20	+20	5,180,000,010	10	0.00000019
BATT.ENDPOINT	3.60	+20	5,179,999,986	-14	-0.00000027

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

VOLTAGE (%)	POWER (VDC)	TEMP (℃)	FREQUENCY (Hz)	Freq Dev. (Hz)	Deviation (%)
100%	3.80	+20(Ref)	5,260,000,003	3	0.00000006
100%		-30	5,260,000,007	7	0.00000013
100%		-20	5,259,999,997	-3	-0.00000006
100%		-10	5,259,999,993	-7	-0.00000013
100%		0	5,260,000,004	4	0.00000008
100%		+10	5,260,000,001	1	0.00000002
100%		+20	5,260,000,004	4	0.00000008
100%		+30	5,260,000,011	11	0.00000021
100%		+40	5,260,000,008	8	0.00000015
100%		+50	5,259,999,988	-12	-0.00000023
111%	4.20	+20	5,260,000,016	16	0.00000030
BATT.ENDPOINT	3.60	+20	5,260,000,007	7	0.00000013

Frequency Stability Measurements for UNII Band 3 (Ch. 100)

VOLTAGE (%)	POWER (VDC)	TEMP (℃)	FREQUENCY (Hz)	Freq Dev. (Hz)	Deviation (%)
100%	3.80	+20(Ref)	5,500,000,009	9	0.00000016
100%		-30	5,499,999,988	-12	-0.00000022
100%		-20	5,500,000,004	4	0.00000007
100%		-10	5,499,999,993	-7	-0.00000013
100%		0	5,500,000,004	4	0.00000007
100%		+10	5,499,999,991	-9	-0.00000016
100%		+20	5,500,000,013	13	0.00000024
100%		+30	5,500,000,007	7	0.00000013
100%		+40	5,499,999,986	-14	-0.00000025
100%		+50	5,500,000,001	1	0.00000002
111%	4.20	+20	5,500,000,003	3	0.00000005
BATT.ENDPOINT	3.60	+20	5,499,999,995	-5	-0.00000009

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.

2.9. Conducted Emission

2.9.1. 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

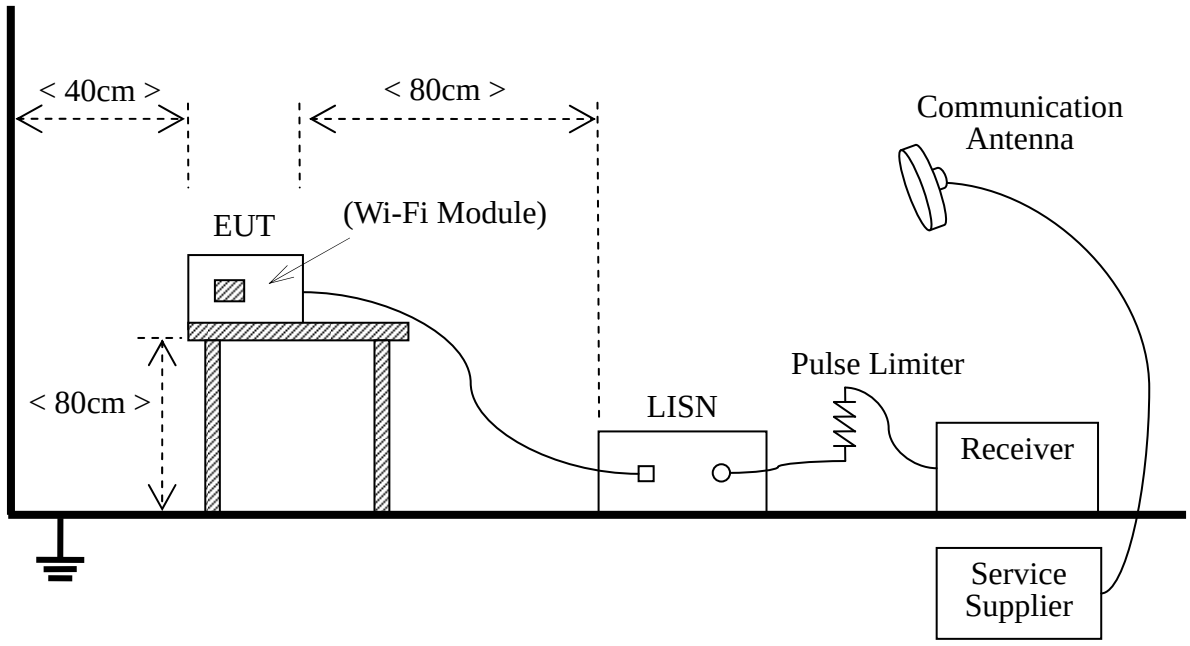
NOTE:

(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.

2.9.2. Test Description

A. Test Setup:



The Table-top EUT was placed upon a non-metallic table 0.8m above the horizontal metal reference ground plane. EUT was connected to LISN and LISN was connected to reference Ground Plane. EUT was 80cm from LISN. The set-up and test methods were according to ANSI C63.4:2009

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.

B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Receiver	Agilent	E7405A	US44210471	2014.02.26	2015.02.25
LISN	Schwarzbeck	NSLK 8127	812744	2014.02.26	2015.02.25
Service Supplier	R&S	CMU200	100448	2014.02.26	2015.02.25
Pulse Limiter (20dB)	Schwarzbeck	VTSD 9561-D	9391	(n.a.)	(n.a.)

2.9.3. Test Result

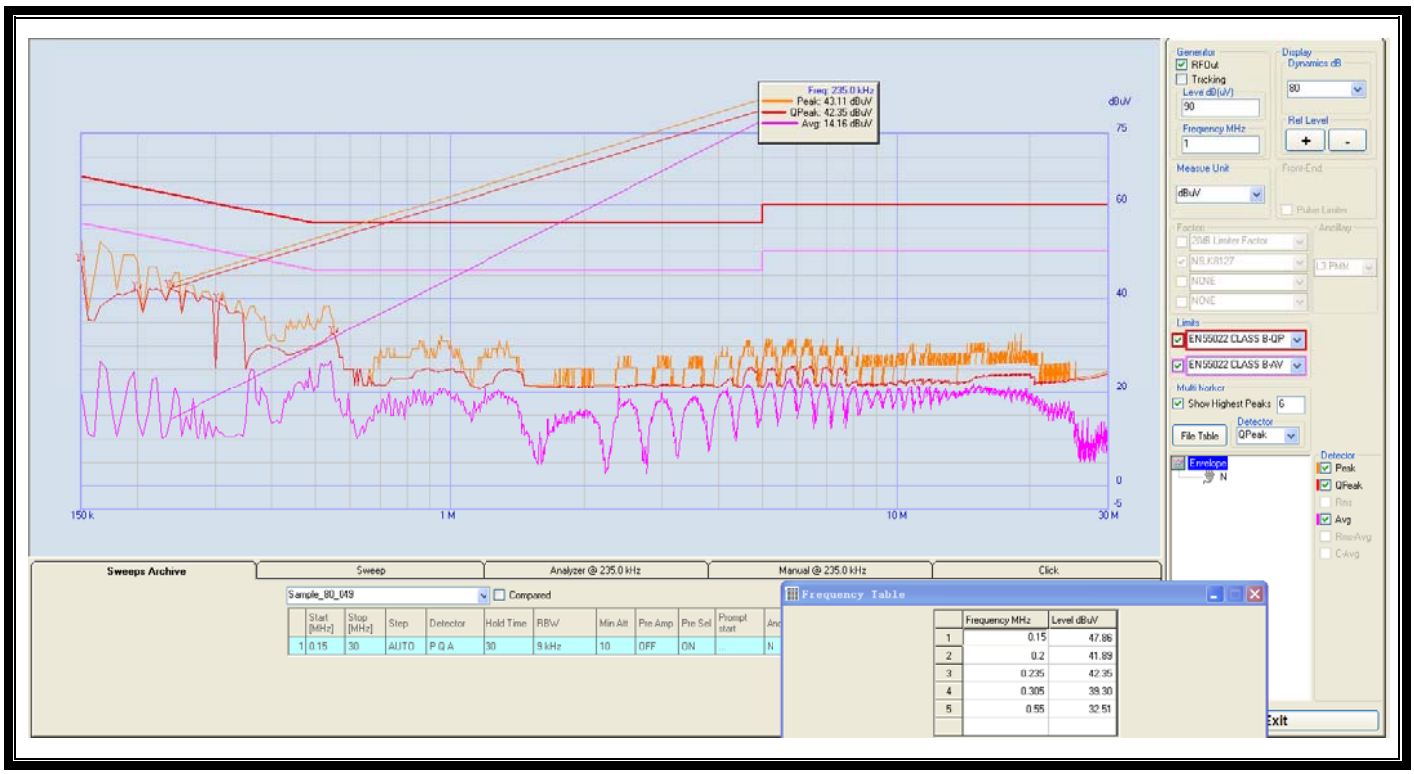
The maximum conducted interference is searched using Peak (PK), if the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT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

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

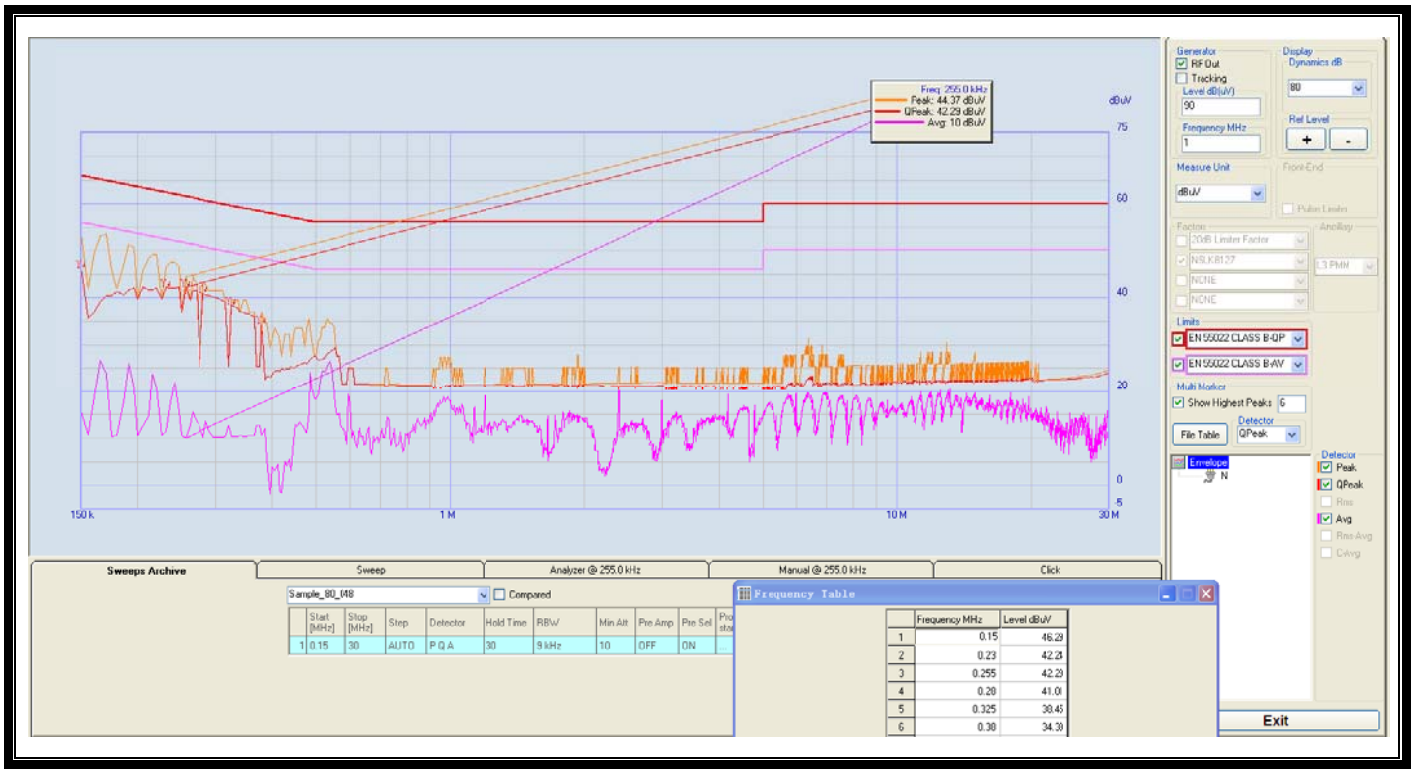
A. Test setup:

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

B. Test Plots:



(Plot A: L Phase)



(Plot B: N Phase)

2.10. Radiated Emission

2.10.1. 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. Devices operating in the 5.25–5.35 GHz band that generate emissions in the 5.15–5.25 GHz band must meet all applicable technical requirements for operation in the 5.15–5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5.15–5.25 GHz band.

(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 5.725–5.825 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 EIRP of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an EIRP 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:

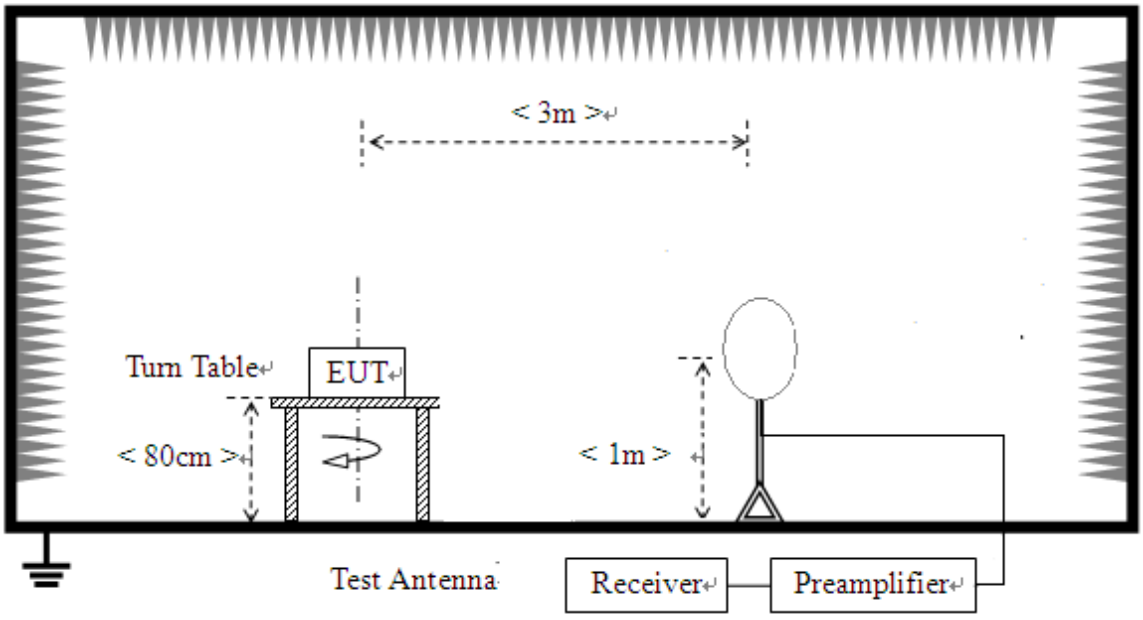
1. For Above 1000MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit.

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)

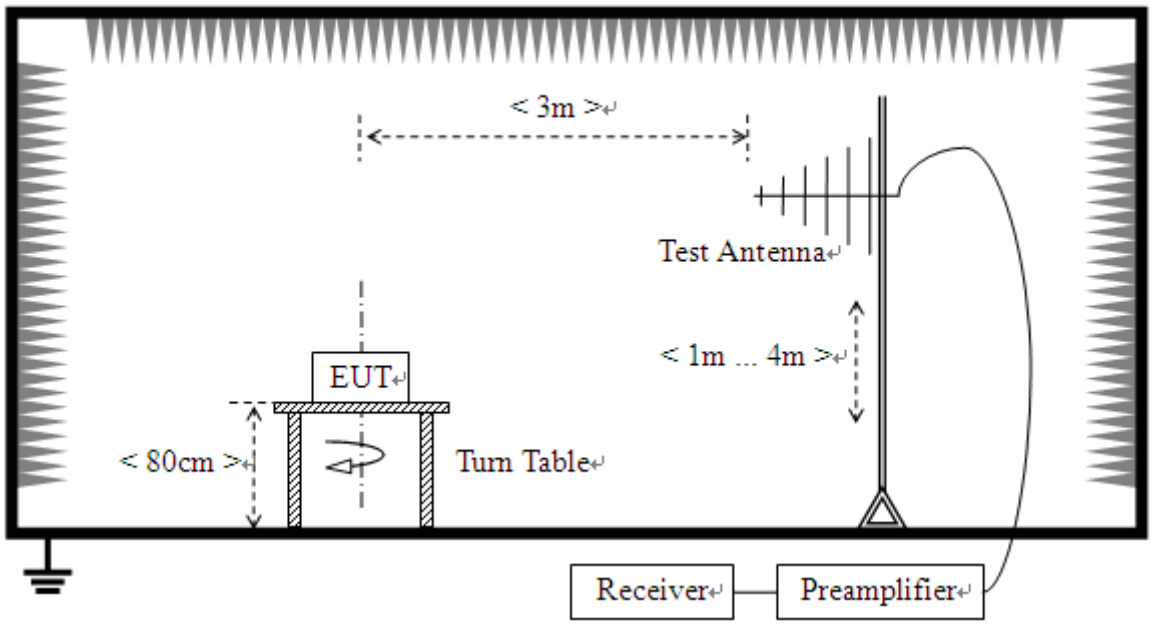
2.10.2. Test Description

A. Test Setup:

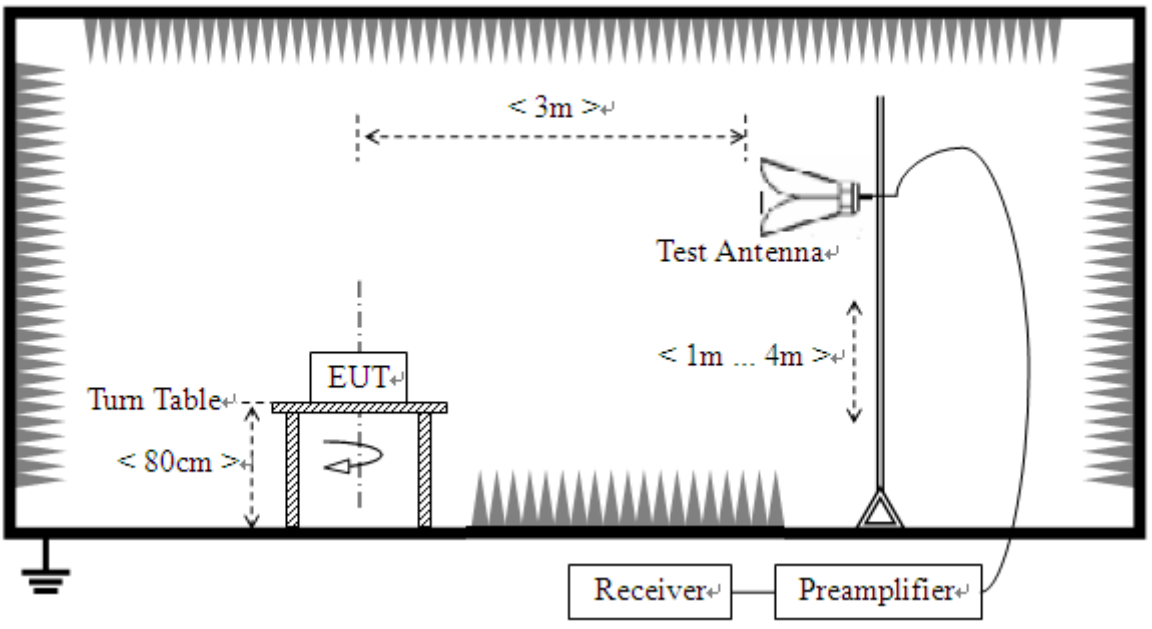
1) For radiated emissions from 9kHz to 30MHz



2) For radiated emissions from 30MHz to1GHz



3) For radiated emissions above 1GHz



The test site semi-anechoic chamber has met the requirement of NSA tolerance 4dB according to the standards: ANSI C63.4 (2009). The EUT was set-up on insulator 80cm above the Ground Plane. The set-up and test methods were according to ANSI C63.4.

The EUT of the EUT is powered by the Battery charged with the AC Adapter which is powered by 120V, 60Hz AC mains supply. 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. During the measurement, the EUT is activated and controlled by the Wireless Router via a Common Antenna, and is set to operate under hopping-on test mode.

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 2GHz) and Horn Test Antenna (above 2GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength. The emission levels at both horizontal and vertical polarizations should be tested.

B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Receiver	Agilent	E7405A	US44210471	2014.02.26	2015.02.25
EXA Signal Analzyer	Agilent	N9010A	MY51440152	2014.02.26	2015.02.25
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2014.02.26	2015.02.25
Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	9163-274	2014.02.26	2015.02.25
Test Antenna - Horn	Schwarzbeck	BBHA 9120D	9120D-963	2014.02.26	2015.02.25
Test Antenna - Horn	Schwarzbeck	BBHA9170	9170-872	2014.02.26	2015.02.25
Test Antenna - Horn	R&S	HL050S7	71688	2014.02.26	2015.02.25
Test Antenna -Loop	Schwarzbeck	FMZB 1519	1519-022	2014.02.26	2015.02.25

2.10.3. 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.

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

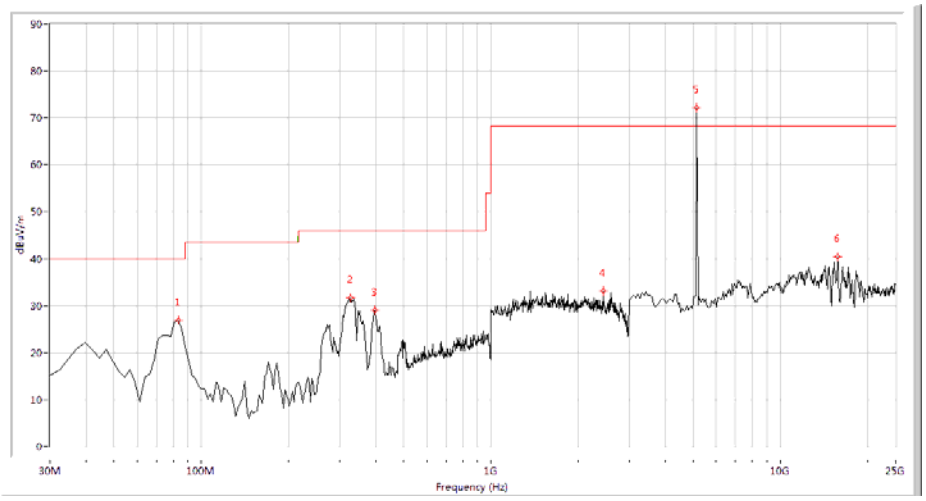
condition was recorded in this test report.

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

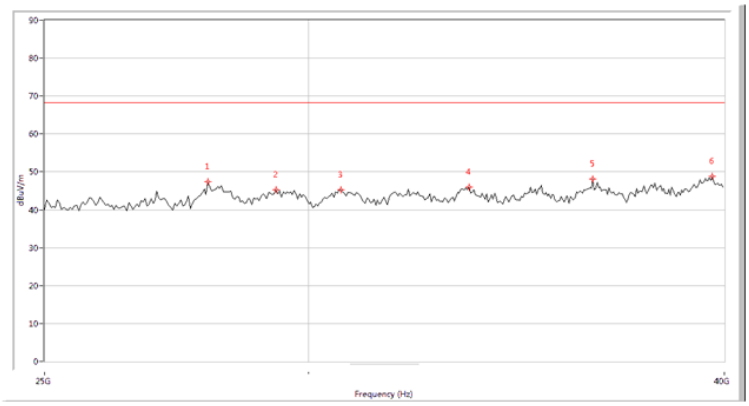
2.10.3.1. 802.11a Test mode

A. Test Plots for the Whole Measurement Frequency Range:

Plots for Channel = 36

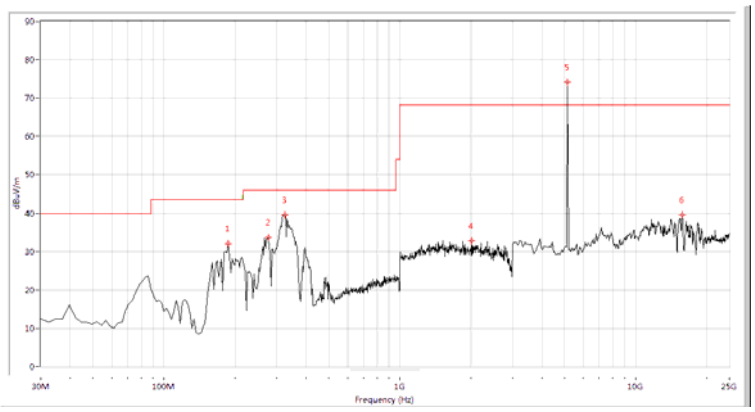


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
83.217	26.99	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
327.531	31.65	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
397.681	28.98	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
2446.384	33.17	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
5180.000	72.15	N.A	N.A	68.2	N.A	N.A	Horizontal	N.A
15783.042	40.45	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

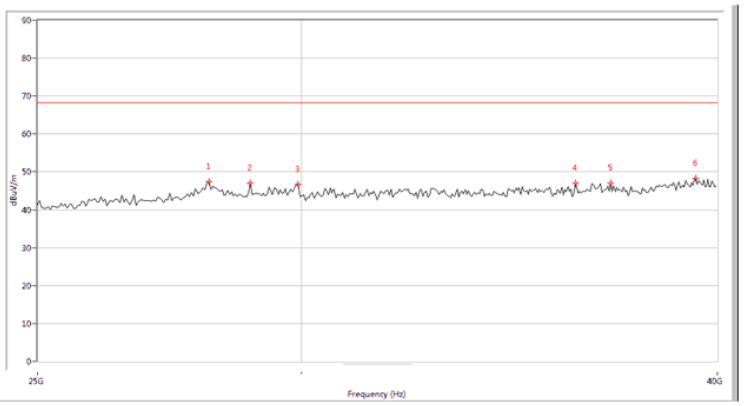


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
27992.52	47.36	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
29339.15	45.21	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
30685.79	45.33	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
33528.68	45.98	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
36521.20	48.12	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
39663.34	48.92	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 40GHz)



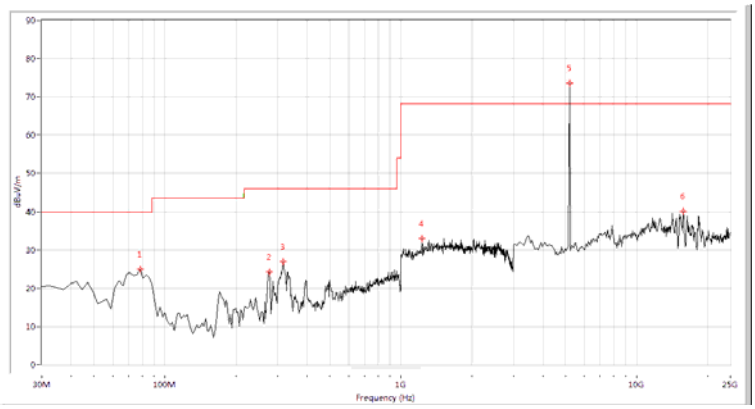
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
187.232	32.12	N.A	N.A	N.A	43.5	N.A	Vertical	PASS
276.733	33.74	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
325.112	39.55	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
2017.456	32.82	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
5180.000	74.21	N.A	N.A	68.2	N.A	N.A	Vertical	N.A
15728.180	39.55	N.A	N.A	68.2	N.A	N.A	Vertical	PASS



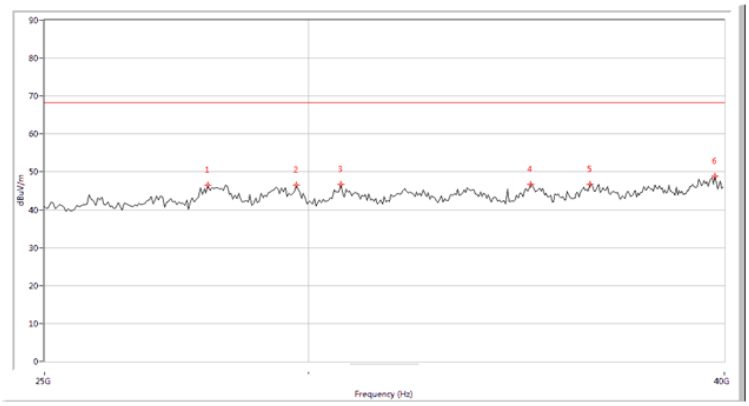
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
28142.14	47.35	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
28965.09	47.13	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
29937.66	46.78	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
36259.35	46.98	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
37157.11	46.97	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
39401.50	48.38	N.A	N.A	68.2	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 40GHz)

Plot for Channel = 44

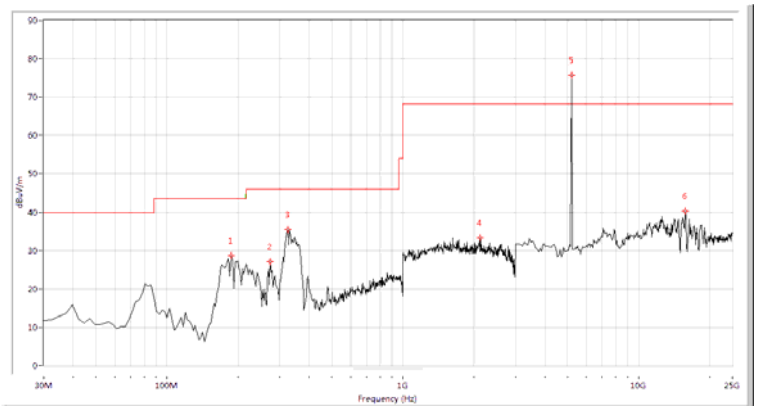


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
78.379	24.87	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
276.733	24.23	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
317.855	26.86	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
1229.426	32.93	N.A	N.A	68.2	N.A	68.2	Horizontal	PASS
5220.000	73.57	N.A	N.A	68.2	N.A	68.2	Horizontal	N.A
15783.042	40.10	N.A	N.A	68.2	N.A	68.2	Horizontal	PASS

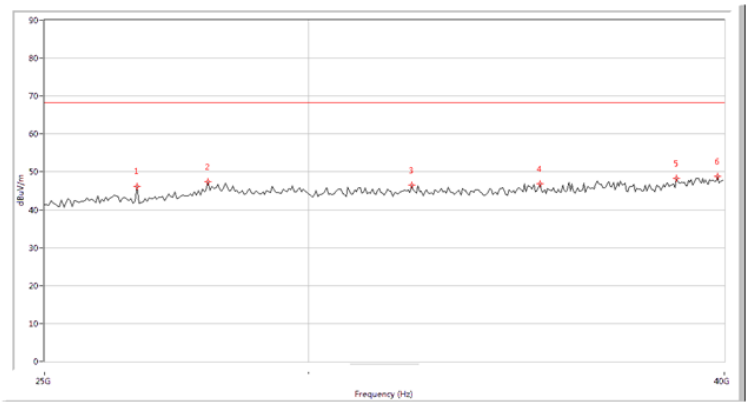


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
27992.52	46.52	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
29750.62	46.49	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
30685.79	46.70	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
34987.53	46.64	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
36446.38	46.68	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
39738.15	48.85	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 40GHz)



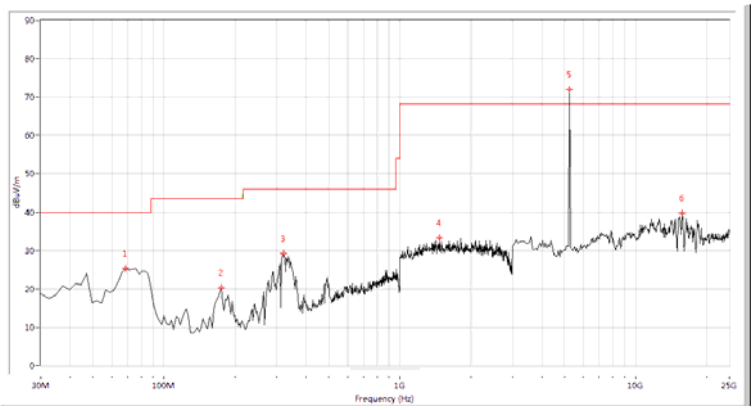
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
187.232	28.63	N.A	N.A	N.A	43.5	N.A	Vertical	PASS
274.314	27.10	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
325.112	35.40	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
2132.170	33.35	N.A	N.A	68.2	N.A	68.2	Vertical	PASS
5220.000	75.67	N.A	N.A	68.2	N.A	68.2	Vertical	N.A
15783.042	40.34	N.A	N.A	68.2	N.A	68.2	Vertical	PASS



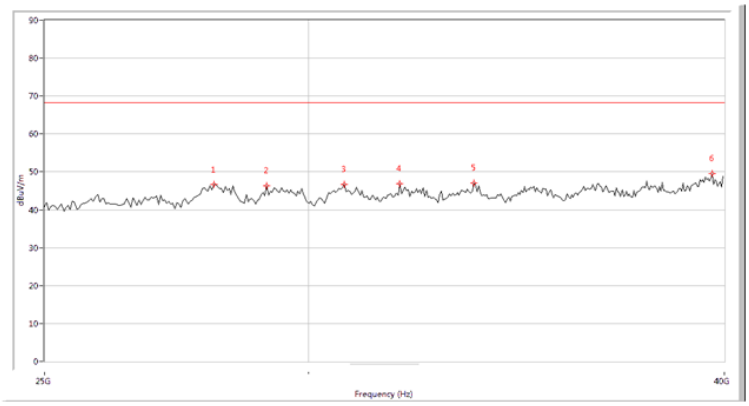
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
26645.89	46.12	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
27992.52	47.35	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
32219.45	46.57	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
35211.97	46.93	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
38690.77	48.23	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
39812.97	48.84	N.A	N.A	68.2	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 40GHz)

Plot for Channel = 48

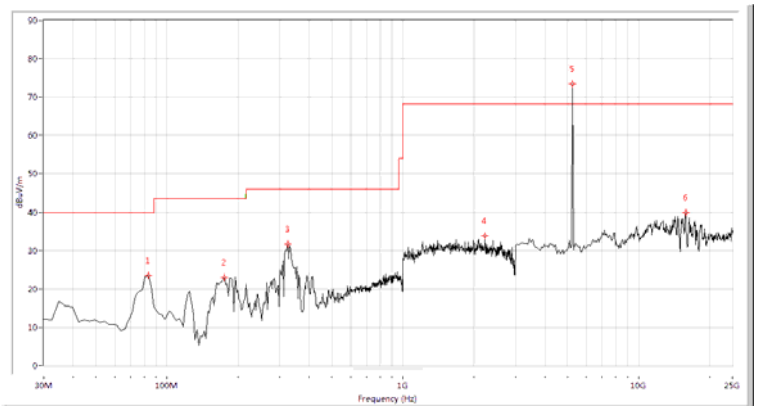


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
68.703	25.25	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
175.137	20.38	N.A	N.A	N.A	43.5	N.A	Horizontal	PASS
320.274	29.25	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
1473.815	33.39	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
5240.000	72.06	N.A	N.A	68.2	N.A	N.A	Horizontal	N.A
15783.042	39.70	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

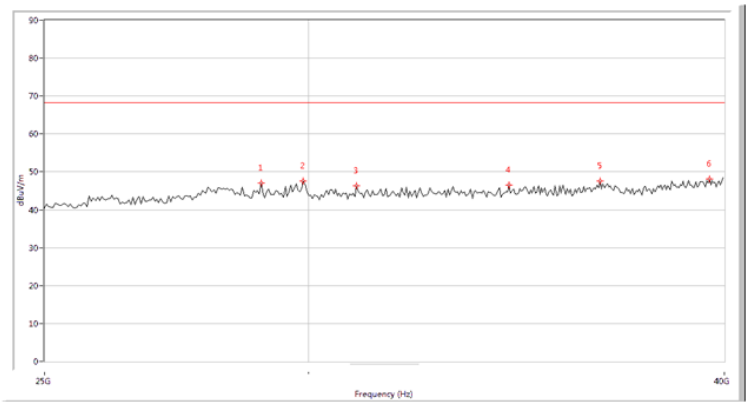


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
28104.74	46.63	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
29152.12	46.28	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
30760.60	46.72	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
31957.61	46.85	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
33640.90	46.98	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
39663.34	49.60	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 40GHz)



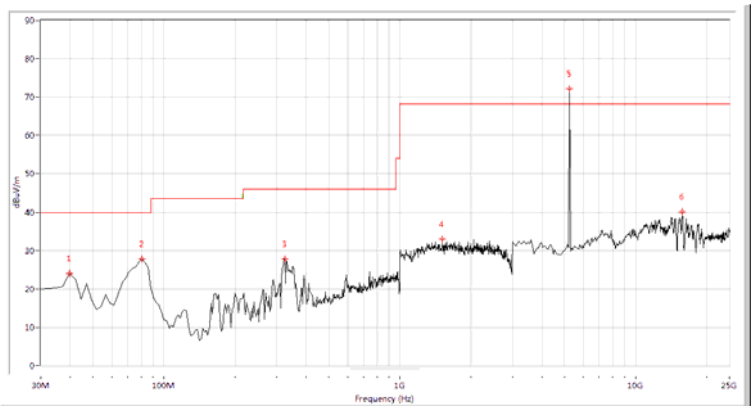
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
83.217	23.46	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
175.137	22.97	N.A	N.A	N.A	43.5	N.A	Vertical	PASS
325.112	31.69	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
2231.920	33.86	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
5240.000	73.49	N.A	N.A	68.2	N.A	N.A	Vertical	N.A
15837.905	39.92	N.A	N.A	68.2	N.A	N.A	Vertical	PASS



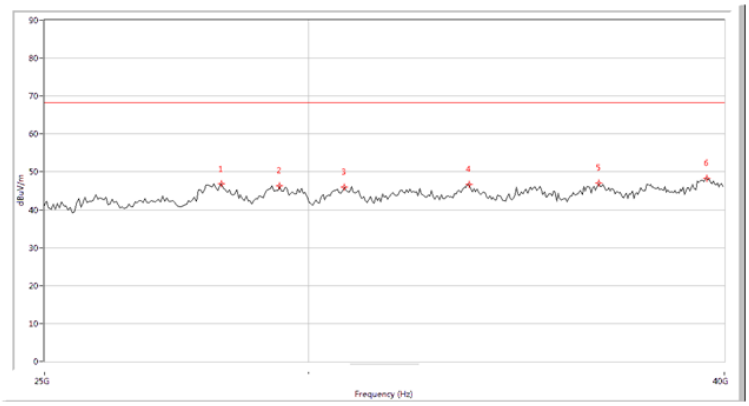
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
29039.90	47.04	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
29900.25	47.54	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
31022.44	46.40	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
34463.84	46.54	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
36708.23	47.50	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
39588.53	48.08	N.A	N.A	68.2	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 40GHz)

Plots for Channel = 52

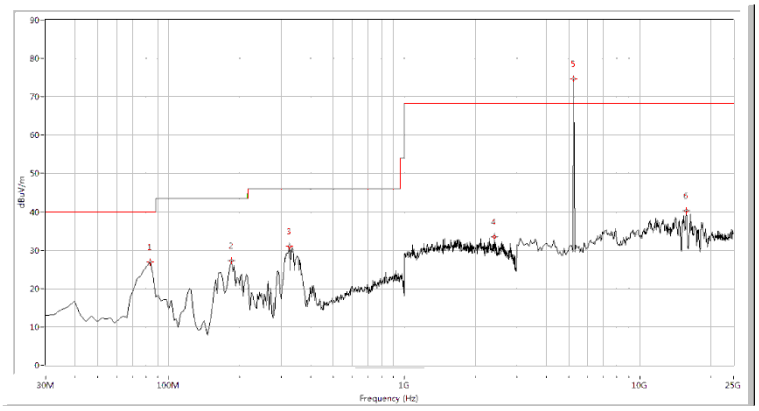


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
39.676	24.09	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
80.798	27.80	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
325.112	27.79	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
1513.716	32.92	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
5260.000	72.10	N.A	N.A	68.2	N.A	N.A	Horizontal	N.A
15783.042	40.04	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

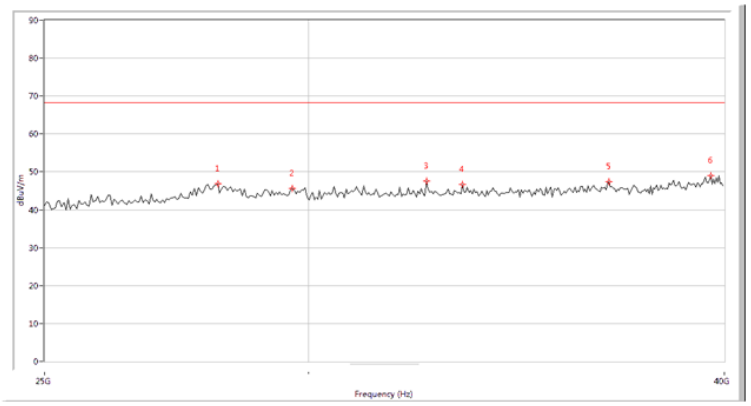


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
28254.36	46.81	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
29413.97	46.26	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
30760.60	45.94	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
33528.68	46.70	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
36670.82	47.11	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
39513.72	48.22	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 40GHz)



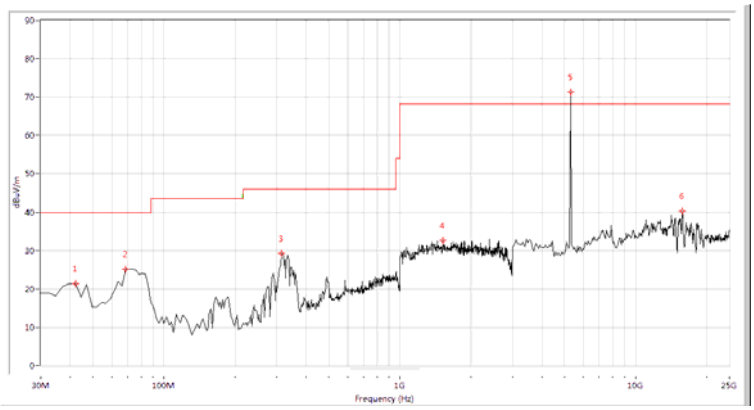
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
83.217	26.87	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
184.813	27.32	N.A	N.A	N.A	43.5	N.A	Vertical	PASS
325.112	30.96	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
2421.446	33.43	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
5260.000	74.67	N.A	N.A	68.2	N.A	N.A	Vertical	N.A
15783.042	40.23	N.A	N.A	68.2	N.A	N.A	Vertical	PASS



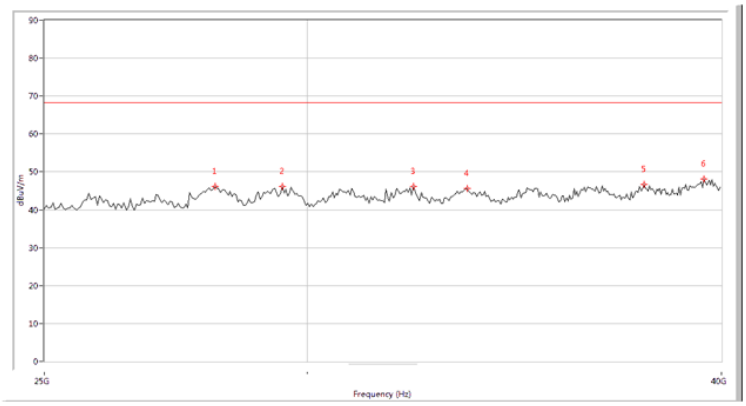
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
28179.55	46.95	N.A	N.A	68.2	N.A	68.2	Vertical	PASS
29675.81	45.62	N.A	N.A	68.2	N.A	68.2	Vertical	PASS
32556.11	47.60	N.A	N.A	68.2	N.A	68.2	Vertical	PASS
33379.05	46.71	N.A	N.A	68.2	N.A	68.2	Vertical	PASS
36932.67	47.47	N.A	N.A	68.2	N.A	68.2	Vertical	PASS
39625.94	49.09	N.A	N.A	68.2	N.A	68.2	Vertical	PASS

(Antenna Vertical, 30MHz to 40GHz)

Plot for Channel = 60

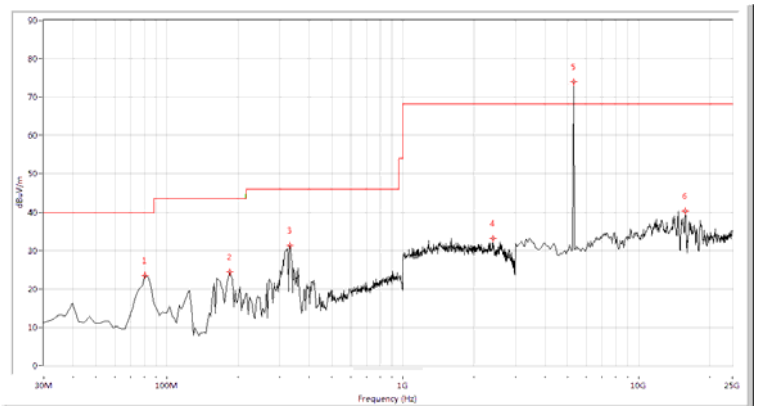


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
42.095	21.40	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
68.703	25.10	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
315.436	29.14	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
1518.703	32.62	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
5300.000	71.36	N.A	N.A	68.2	N.A	N.A	Horizontal	N.A
15783.042	40.28	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

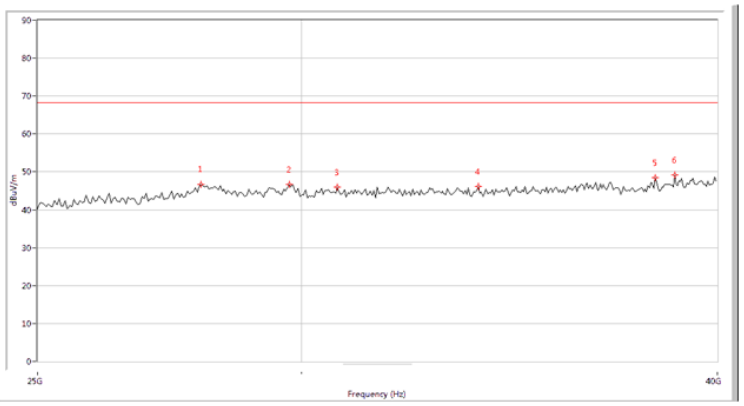


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
28142.14	46.16	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
29488.78	46.09	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
32294.26	46.20	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
33528.68	45.71	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
37905.24	46.71	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
39513.72	48.12	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 40GHz)



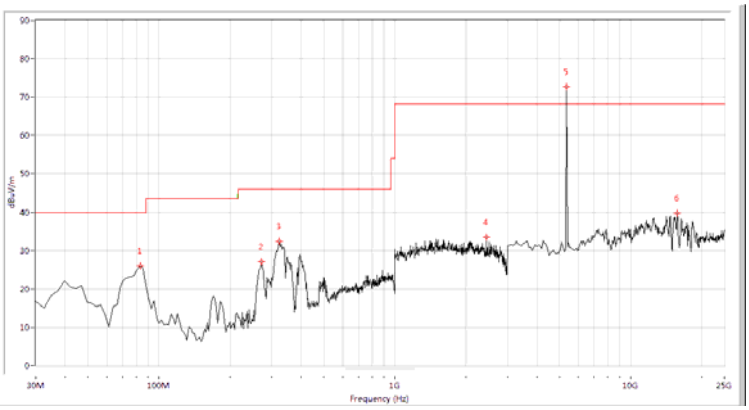
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
80.798	23.44	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
184.813	24.49	N.A	N.A	N.A	43.5	N.A	Vertical	PASS
332.369	31.35	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
2411.471	33.16	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
5300.000	73.94	N.A	N.A	68.2	N.A	N.A	Vertical	N.A
15783.042	40.32	N.A	N.A	68.2	N.A	N.A	Vertical	PASS



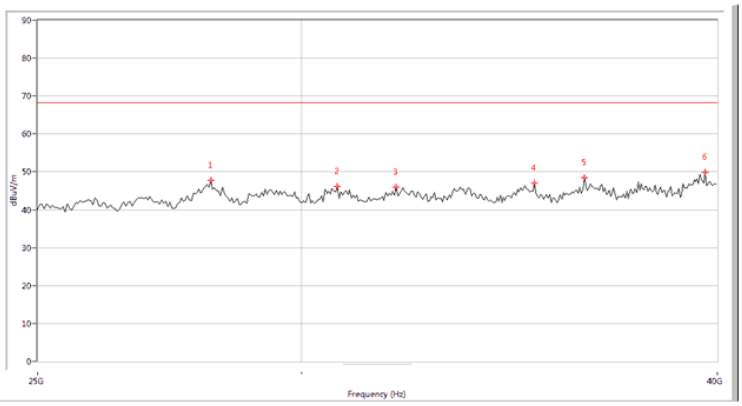
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
27992.52	46.74	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
29750.62	46.69	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
30760.60	45.90	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
33902.74	46.17	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
38316.71	48.44	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
38840.40	49.16	N.A	N.A	68.2	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 40GHz)

Plot for Channel = 64

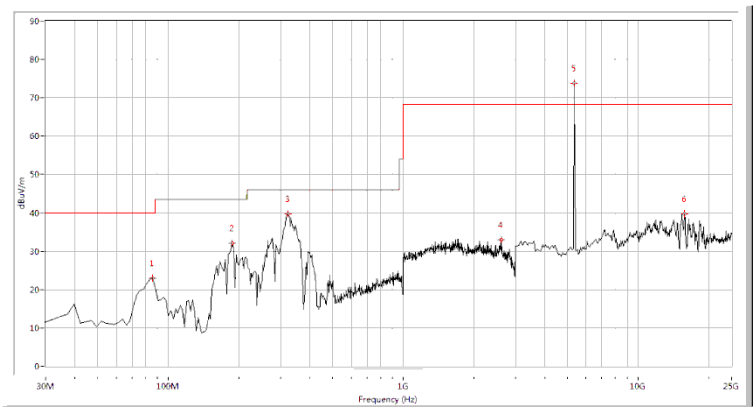


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
83.217	25.98	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
271.895	27.02	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
322.693	32.42	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
2446.384	33.56	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
5320.000	72.76	N.A	N.A	68.2	N.A	N.A	Horizontal	N.A
15783.042	39.76	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

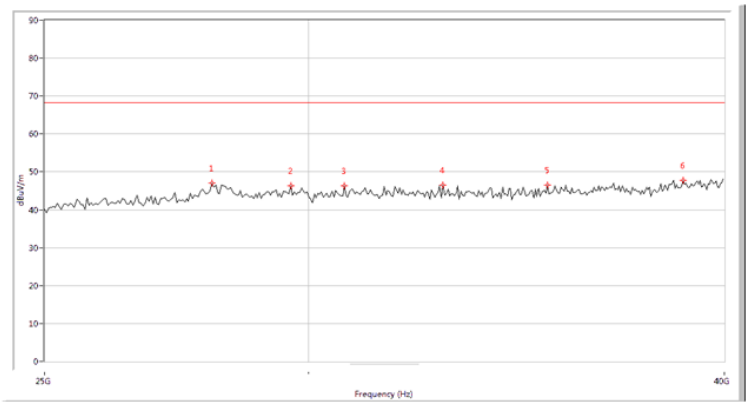


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
28179.55	47.84	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
30760.60	46.14	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
32032.42	45.90	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
35249.38	46.99	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
36483.79	48.40	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
39663.34	49.91	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 40GHz)



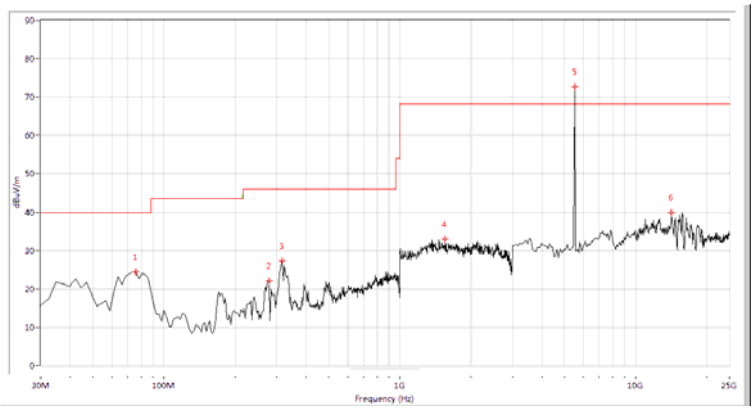
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
85.636	22.96	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
187.232	32.02	N.A	N.A	N.A	43.5	N.A	Vertical	PASS
322.693	39.76	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
2615.960	33.01	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
5320.000	73.81	N.A	N.A	68.2	N.A	N.A	Vertical	N.A
15783.042	39.75	N.A	N.A	68.2	N.A	N.A	Vertical	PASS



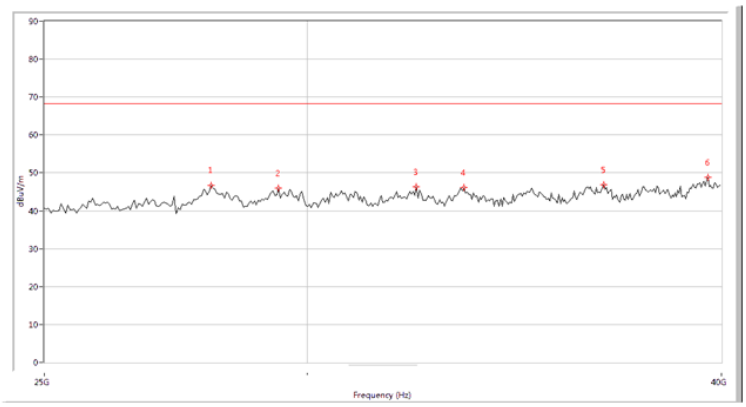
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
28067.33	47.03	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
29638.40	46.30	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
30760.60	46.29	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
32930.17	46.58	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
35399.00	46.48	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
38877.81	47.71	N.A	N.A	68.2	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 40GHz)

Plots for Channel = 100

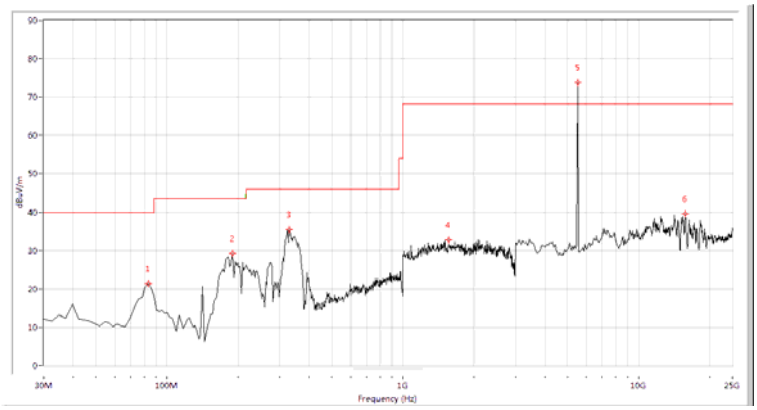


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
75.960	24.45	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
279.152	22.07	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
317.855	27.34	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
1558.603	32.89	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
5500.000	72.78	N.A	N.A	68.2	N.A	N.A	Horizontal	N.A
14192.020	39.97	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

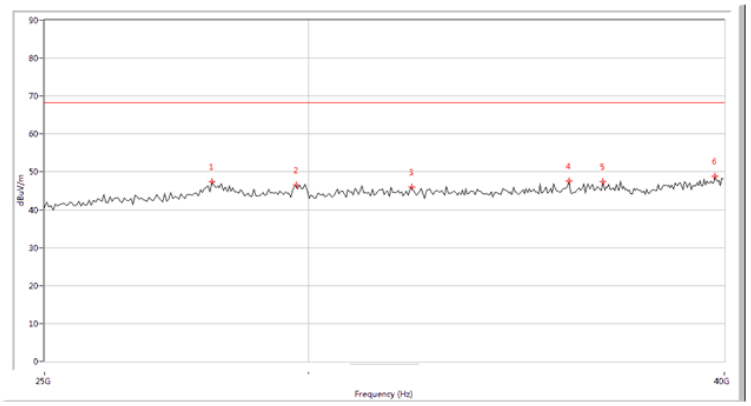


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
28067.33	46.66	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
29413.97	46.06	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
32369.08	46.37	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
33453.87	46.09	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
36857.86	46.80	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
39625.94	48.84	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 40GHz)



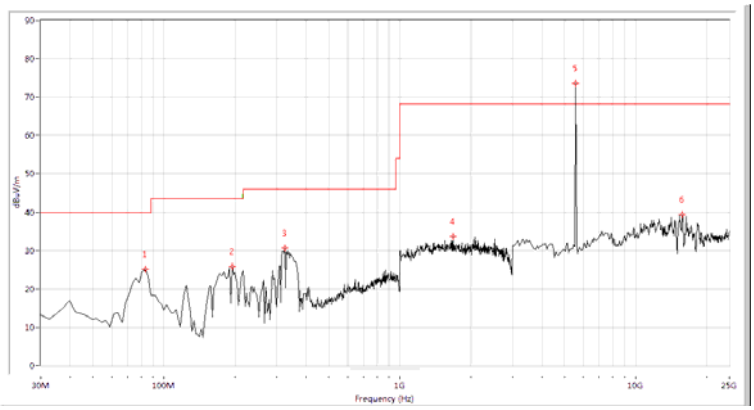
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
83.217	21.38	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
189.651	29.15	N.A	N.A	N.A	43.5	N.A	Vertical	PASS
329.950	35.43	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
1563.591	32.75	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
5500.000	73.74	N.A	N.A	68.2	N.A	N.A	Vertical	N.A
15728.180	39.58	N.A	N.A	68.2	N.A	N.A	Vertical	PASS



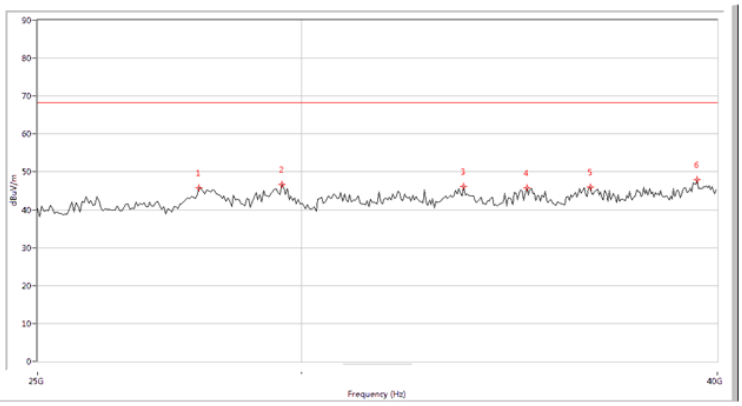
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
28067.33	47.35	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
29750.62	46.49	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
32219.45	46.02	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
35922.69	47.52	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
36783.04	47.40	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
39738.15	48.91	N.A	N.A	68.2	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 40GHz)

Plot for Channel = 116

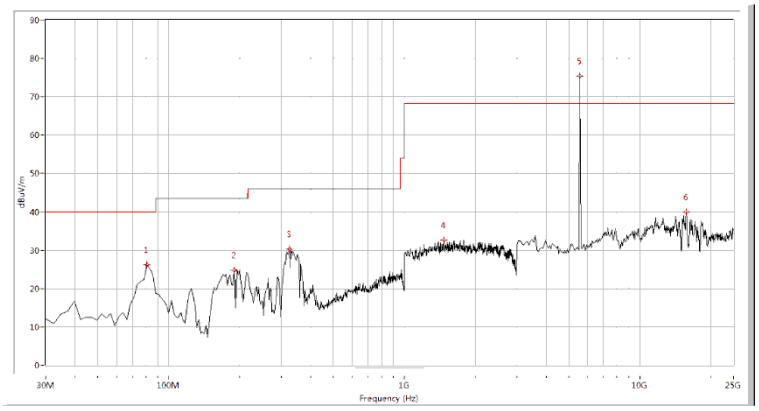


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
83.217	25.21	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
194.489	25.76	N.A	N.A	N.A	43.5	N.A	Vertical	PASS
325.112	30.57	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
1683.292	33.61	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
5580.000	73.58	N.A	N.A	68.2	N.A	N.A	Vertical	N.A
15783.042	39.31	N.A	N.A	68.2	N.A	N.A	Vertical	PASS

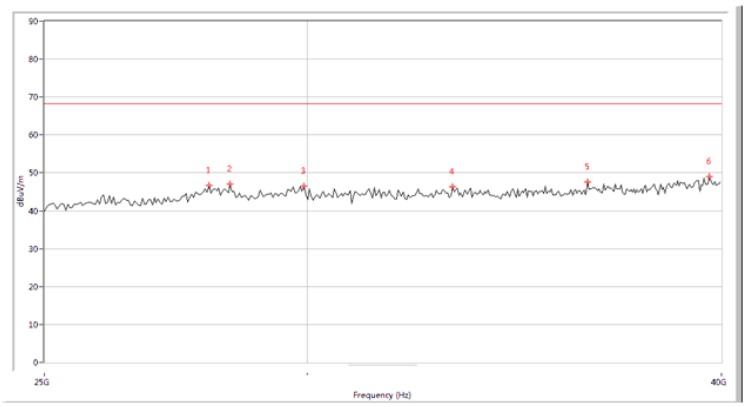


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
27955.11	45.89	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
29601.00	46.74	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
33566.08	46.12	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
35062.34	45.79	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
36633.42	45.97	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
39438.90	47.98	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 40GHz)



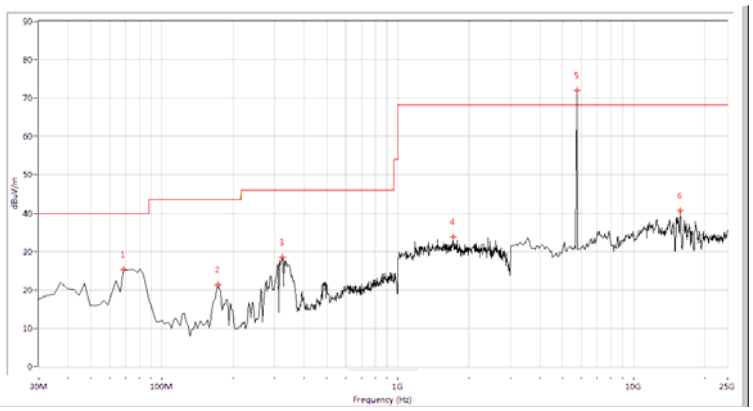
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
80.798	26.28	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
189.651	24.86	N.A	N.A	N.A	43.5	N.A	Vertical	PASS
325.112	30.23	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
1473.815	32.62	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
5580.000	75.30	N.A	N.A	68.2	N.A	N.A	Vertical	N.A
15783.042	39.83	N.A	N.A	68.2	N.A	N.A	Vertical	PASS



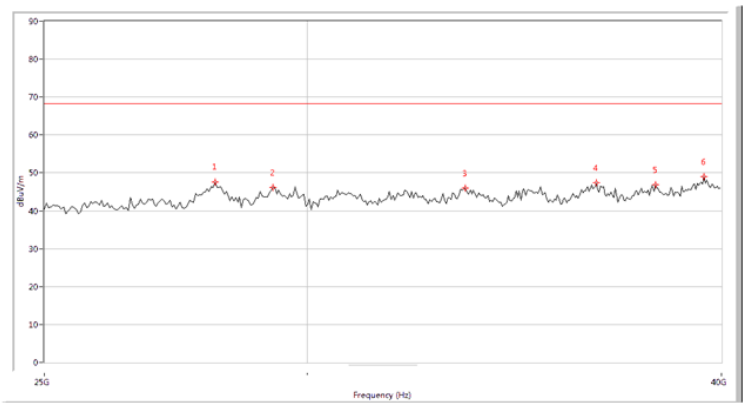
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
28029.93	46.69	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
28441.40	46.99	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
29937.66	46.54	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
33192.02	46.31	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
36446.38	47.54	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
39663.34	49.06	N.A	N.A	68.2	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 40GHz)

Plot for Channel = 140

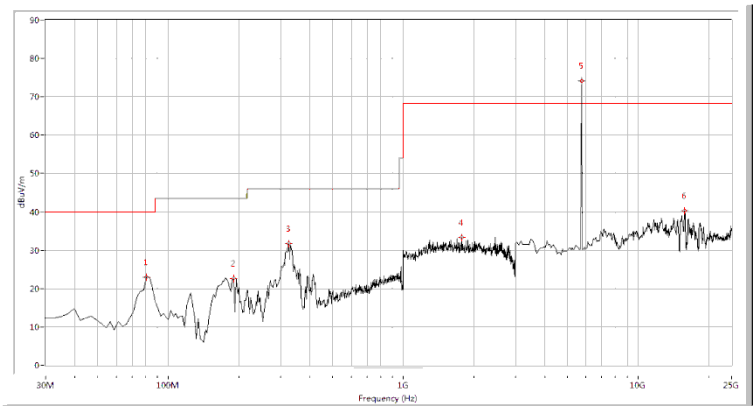


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
68.703	25.26	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
172.718	21.44	N.A	N.A	N.A	43.5	N.A	Horizontal	PASS
322.693	28.59	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
1713.217	33.88	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
5700.000	72.02	N.A	N.A	68.2	N.A	N.A	Horizontal	N.A
15783.042	40.68	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

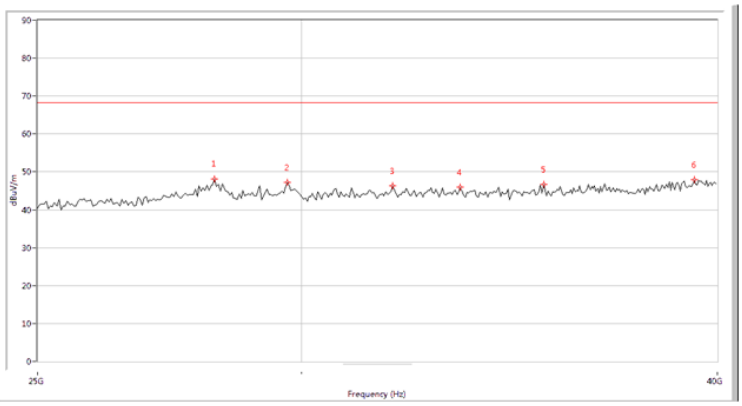


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
28142.14	47.61	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
29301.75	46.13	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
33491.27	45.91	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
36670.82	47.41	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
38204.49	46.85	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
39513.72	49.00	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 40GHz)



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
80.798	23.06	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
189.651	22.66	N.A	N.A	N.A	43.5	N.A	Vertical	PASS
325.112	31.70	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
1778.055	33.32	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
5700.000	74.14	N.A	N.A	68.2	N.A	N.A	Vertical	N.A
15783.042	40.22	N.A	N.A	68.2	N.A	N.A	Vertical	PASS



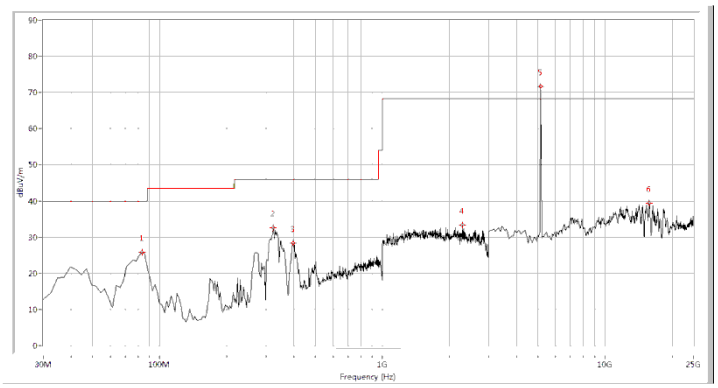
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
28254.36	48.14	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
29713.22	47.21	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
31957.61	46.38	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
33491.27	45.98	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
35473.82	46.65	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
39364.09	47.88	N.A	N.A	68.2	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 40GHz)

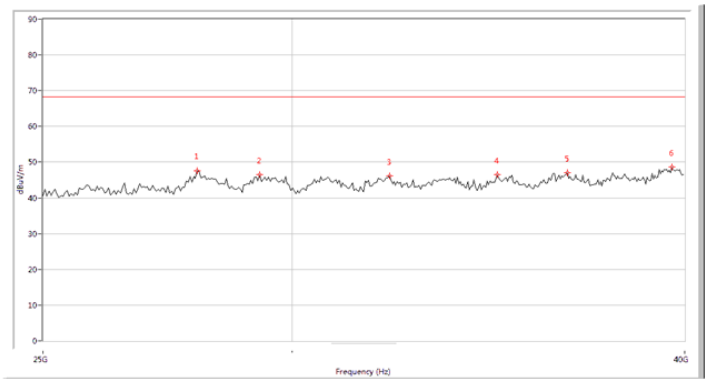
2.10.3.2. 802.11n-20MHz Test mode

A. Test Plots for the Whole Measurement Frequency Range:

Plots for Channel = 36

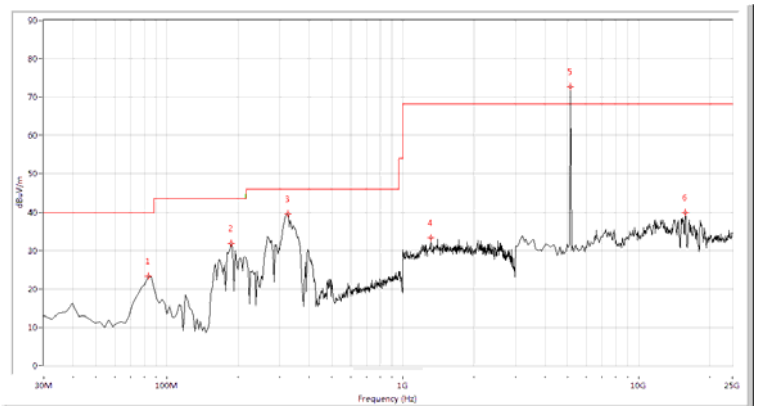


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
83.217	25.82	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
322.693	32.69	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
397.681	28.30	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
2291.771	33.34	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
5180.000	71.66	N.A	N.A	68.2	N.A	N.A	Horizontal	N.A
15783.042	39.45	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

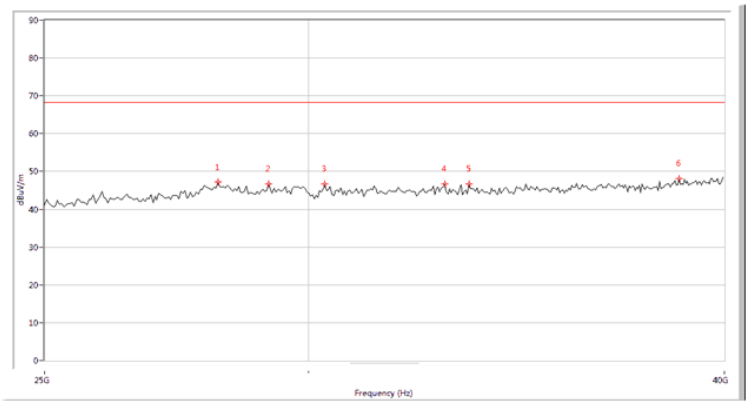


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
27992.52	47.53	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
29301.75	46.52	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
32219.45	46.14	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
34875.31	46.54	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
36708.23	46.96	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
39625.94	48.67	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 40GHz)



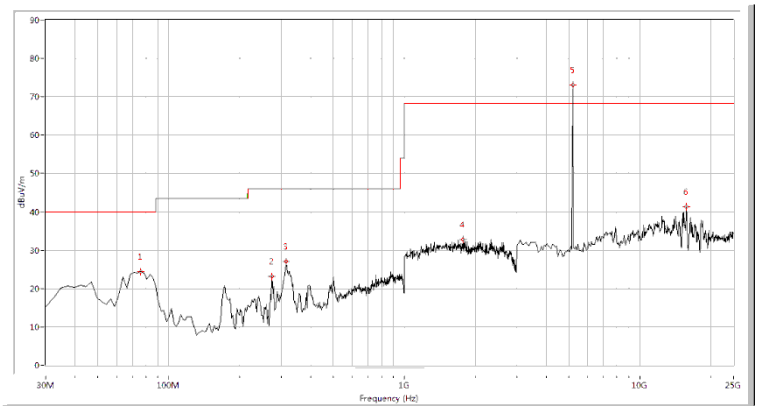
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
83.217	23.32	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
187.232	31.88	N.A	N.A	N.A	43.5	N.A	Vertical	PASS
325.112	39.61	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
1314.214	33.28	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
5180.000	72.74	N.A	N.A	68.2	N.A	N.A	Vertical	N.A
15783.042	39.87	N.A	N.A	68.2	N.A	N.A	Vertical	PASS



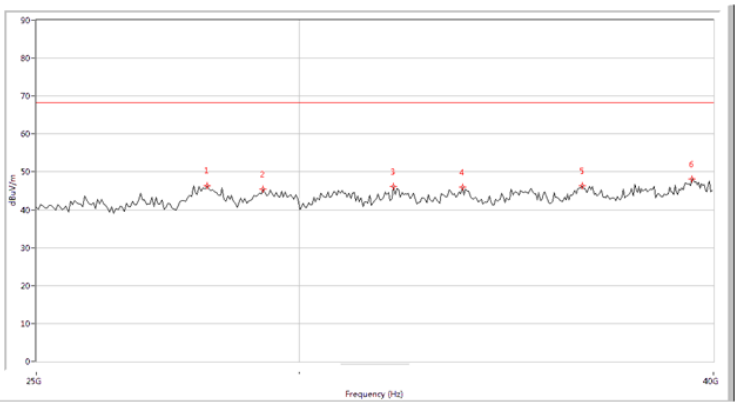
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
28179.55	47.18	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
29189.53	46.61	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
30349.13	46.62	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
32967.58	46.76	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
33528.68	46.69	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
38765.59	48.04	N.A	N.A	68.2	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 40GHz)

Plot for Channel = 44

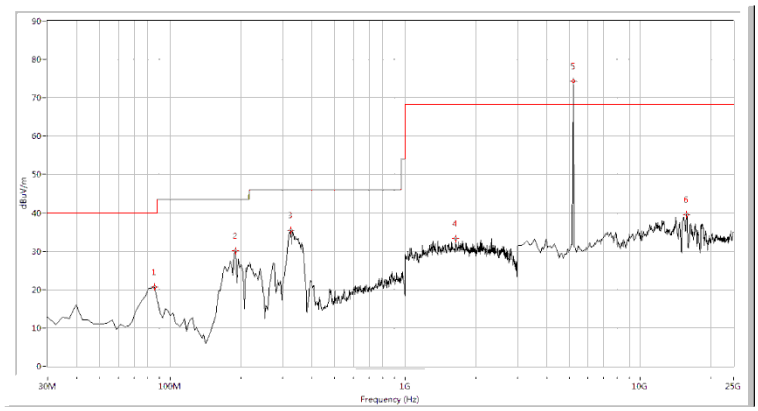


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
75.960	24.34	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
274.314	23.20	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
315.436	27.11	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
1773.067	32.74	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
5220.000	73.10	N.A	N.A	68.2	N.A	N.A	Horizontal	N.A
15783.042	41.28	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

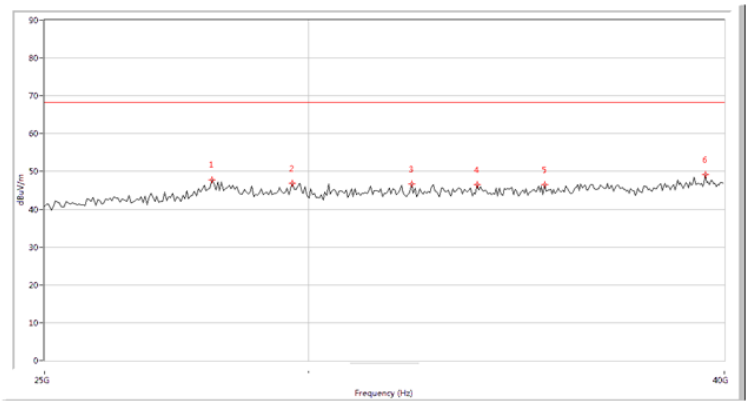


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
28142.14	46.30	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
29264.34	45.50	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
32032.42	46.21	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
33603.49	45.90	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
36521.20	46.29	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
3940.150	48.06	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 40GHz)



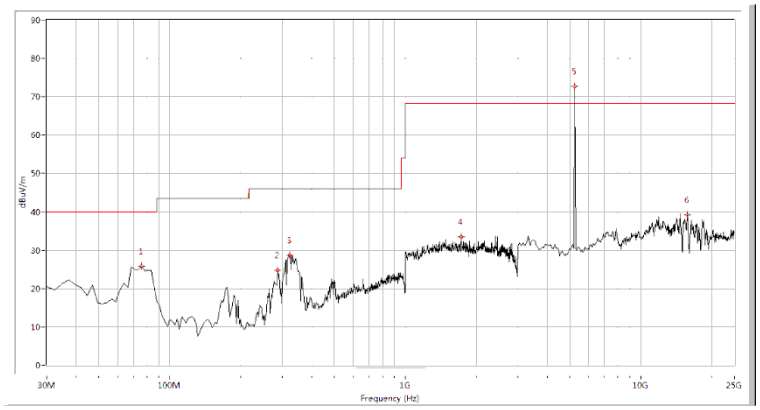
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
85.636	20.76	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
189.651	30.11	N.A	N.A	N.A	43.5	N.A	Vertical	PASS
325.112	35.44	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
1638.404	33.41	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
5220.000	74.28	N.A	N.A	68.2	N.A	N.A	Vertical	N.A
15783.042	39.59	N.A	N.A	68.2	N.A	N.A	Vertical	PASS



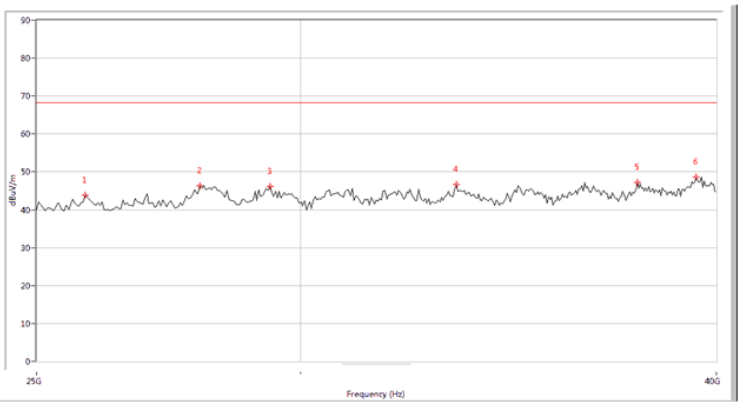
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
28067.33	47.81	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
29675.81	46.95	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
32219.45	46.68	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
33715.71	46.48	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
35324.19	46.55	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
39476.31	49.20	N.A	N.A	68.2	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 40GHz)

Plot for Channel = 48

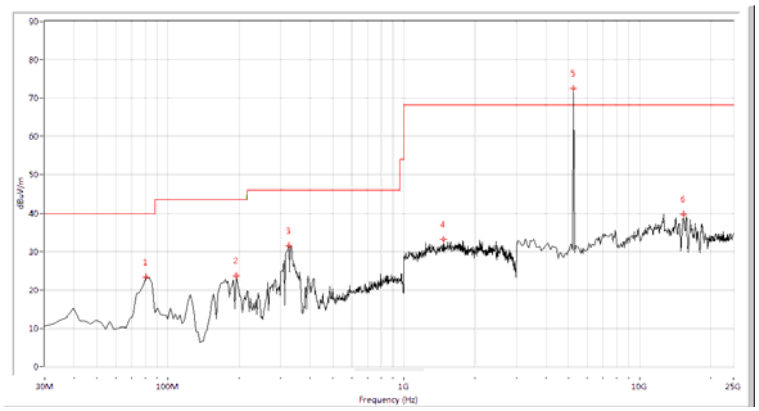


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
75.960	25.90	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
286.409	24.69	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
322.693	28.66	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
1733.167	33.52	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
5240.000	72.68	N.A	N.A	68.2	N.A	N.A	Horizontal	N.A
15783.042	39.22	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

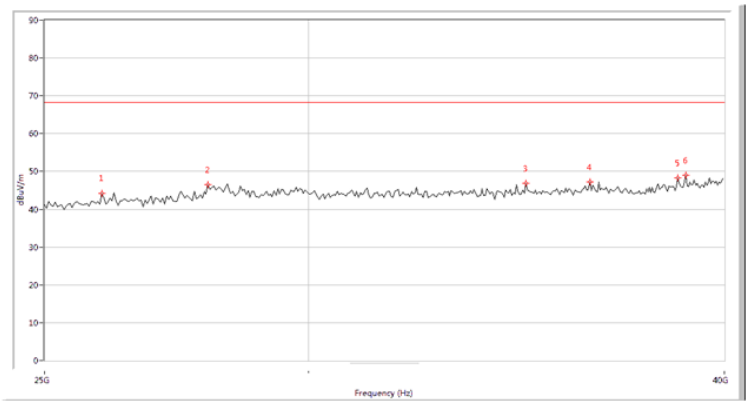


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
25860.35	43.90	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
27992.52	46.32	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
29376.56	46.17	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
33416.46	46.60	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
37867.83	47.20	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
39438.90	48.72	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 40GHz)



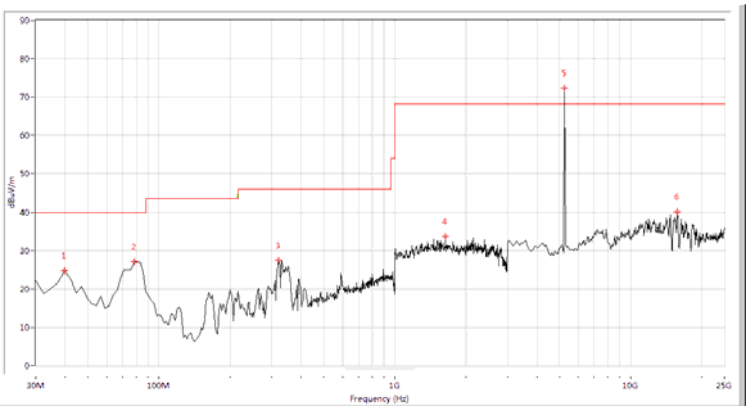
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
80.798	23.38	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
194.489	23.70	N.A	N.A	N.A	43.5	N.A	Vertical	PASS
325.112	31.55	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
1473.815	33.09	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
5240.000	72.61	N.A	N.A	68.2	N.A	N.A	Vertical	N.A
15399.002	39.75	N.A	N.A	68.2	N.A	N.A	Vertical	PASS



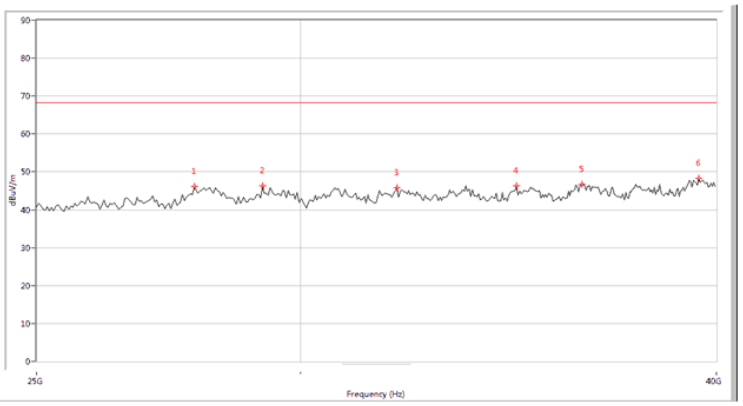
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
26009.98	44.18	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
27992.52	46.44	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
34875.31	46.81	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
36446.38	47.20	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
38728.18	48.26	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
38952.62	48.93	N.A	N.A	68.2	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 40GHz)

Plots for Channel = 52

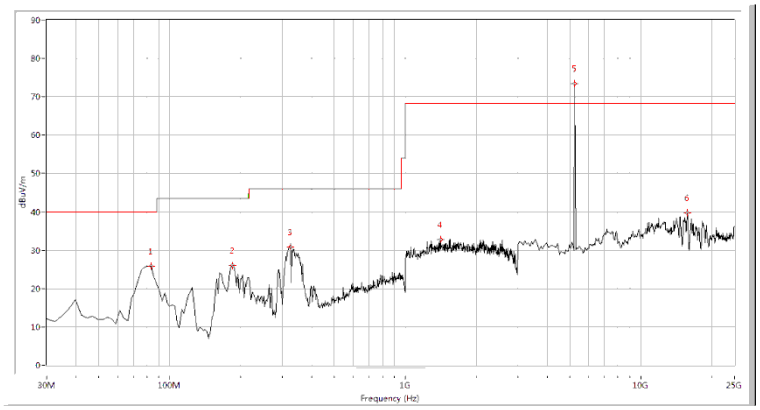


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
39.676	24.72	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
78.379	27.02	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
320.274	27.50	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
1638.404	33.65	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
5260.000	72.36	N.A	N.A	68.2	N.A	N.A	Horizontal	N.A
15783.042	40.04	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

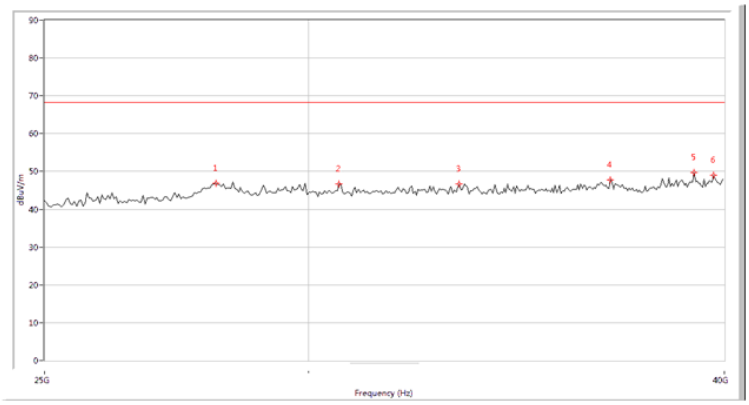


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
27880.30	46.21	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
29226.93	46.38	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
32069.83	45.79	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
34837.91	46.38	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
36446.38	46.76	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
39513.72	48.25	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 40GHz)



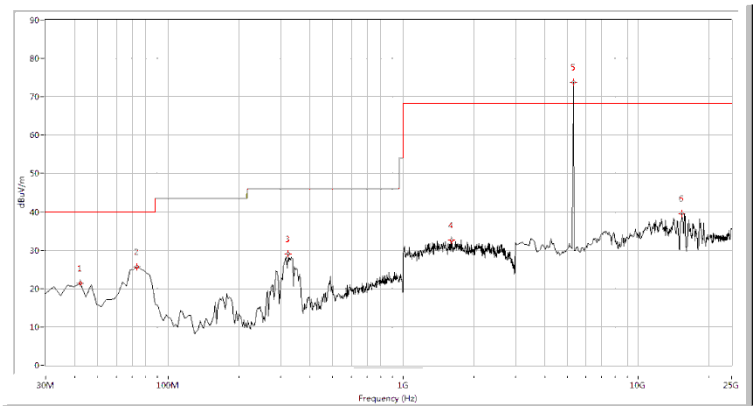
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
83.217	25.91	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
184.813	26.11	N.A	N.A	N.A	43.5	N.A	Vertical	PASS
325.112	30.85	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
1413.965	32.83	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
5260.000	73.51	N.A	N.A	68.2	N.A	N.A	Vertical	N.A
15783.042	39.66	N.A	N.A	68.2	N.A	N.A	Vertical	PASS



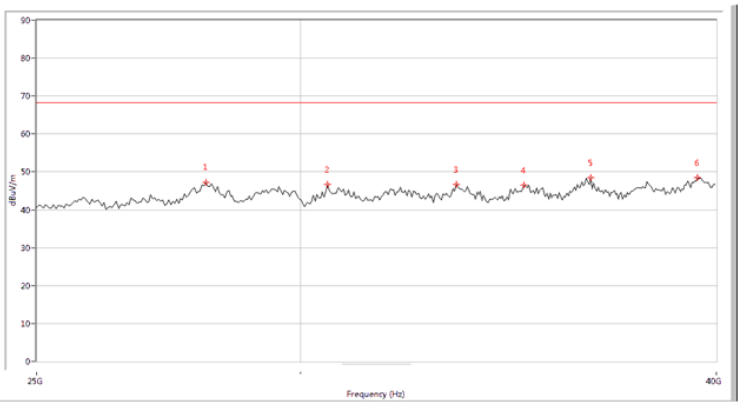
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
28142.14	46.90	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
30648.38	46.72	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
33304.24	46.63	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
36970.07	47.76	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
39177.06	49.66	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
39700.75	49.05	N.A	N.A	68.2	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 40GHz)

Plot for Channel = 60

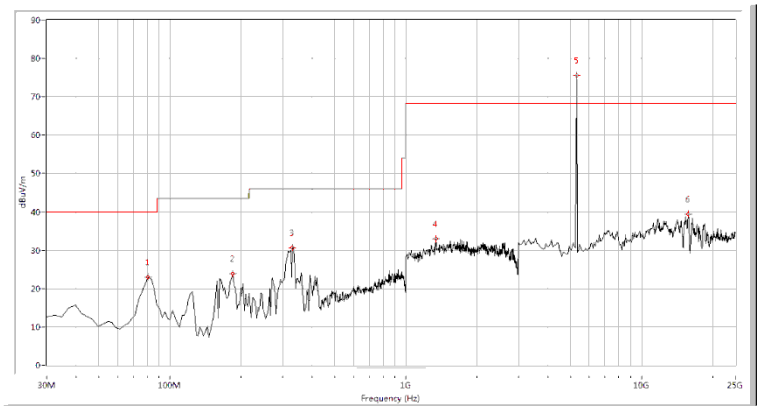


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
42.095	21.37	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
73.541	25.61	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
322.693	28.99	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
1608.479	32.58	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
5300.000	73.81	N.A	N.A	68.2	N.A	N.A	Horizontal	N.A
15399.002	39.55	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

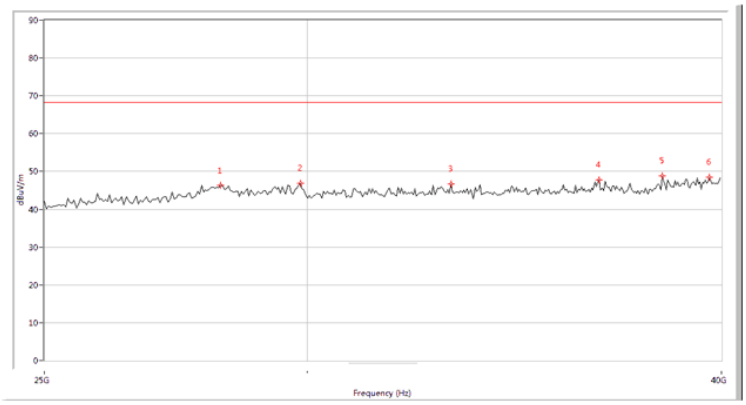


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
28104.74	47.18	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
30573.57	46.77	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
33416.46	46.63	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
35024.94	46.48	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
36670.82	48.51	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
39476.31	48.46	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 40GHz)



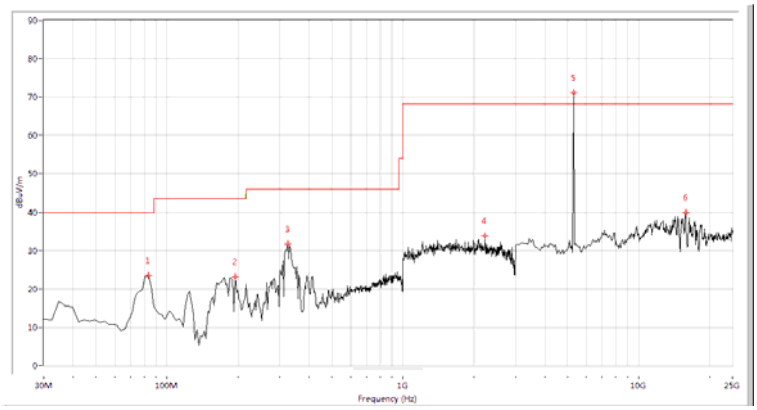
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
80.798	22.90	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
184.813	23.86	N.A	N.A	N.A	43.5	N.A	Vertical	PASS
329.950	30.73	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
1344.140	32.99	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
5300.000	75.55	N.A	N.A	68.2	N.A	N.A	Vertical	N.A
15783.042	39.31	N.A	N.A	68.2	N.A	N.A	Vertical	PASS



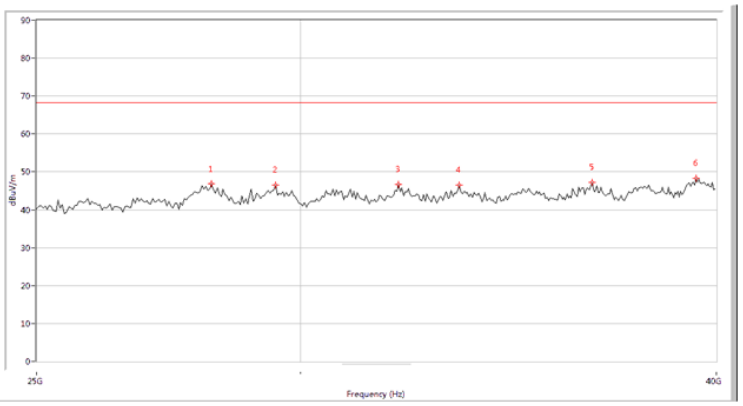
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
28254.36	46.39	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
29862.84	46.79	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
33154.61	46.67	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
36745.64	47.78	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
38391.52	48.81	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
39663.34	48.49	N.A	N.A	68.2	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 40GHz)

Plot for Channel = 64

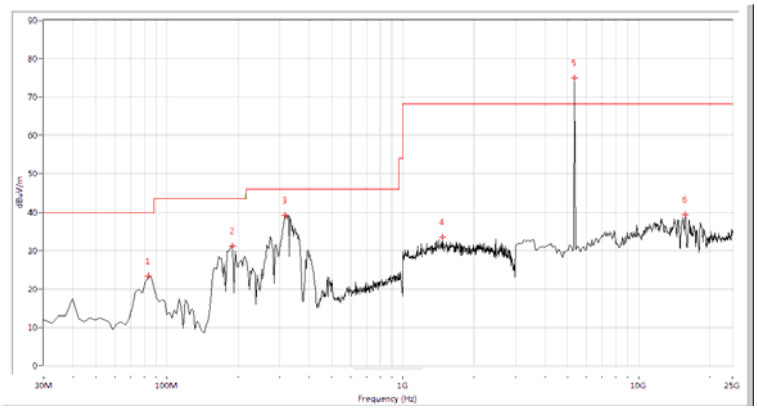


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
83.217	23.46	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
194.489	23.17	N.A	N.A	N.A	43.5	N.A	Horizontal	PASS
325.112	31.69	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
2231.920	33.86	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
5320.000	71.14	N.A	N.A	68.2	N.A	N.A	Horizontal	N.A
15837.905	39.92	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

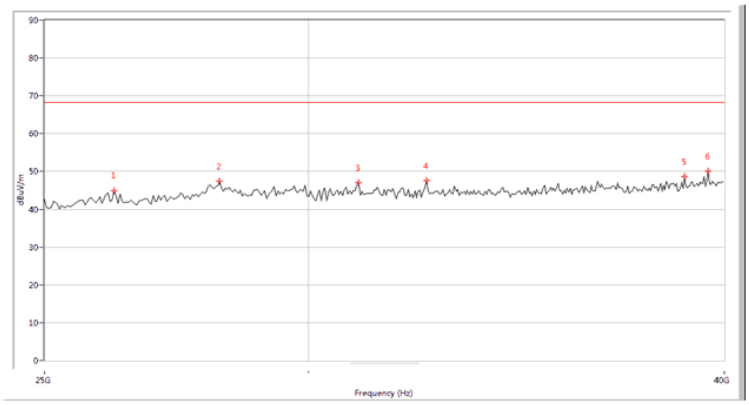


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
28216.96	46.95	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
29488.78	46.48	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
32107.23	46.63	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
33491.27	46.55	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
36708.23	47.19	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
39438.90	48.30	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 40GHz)



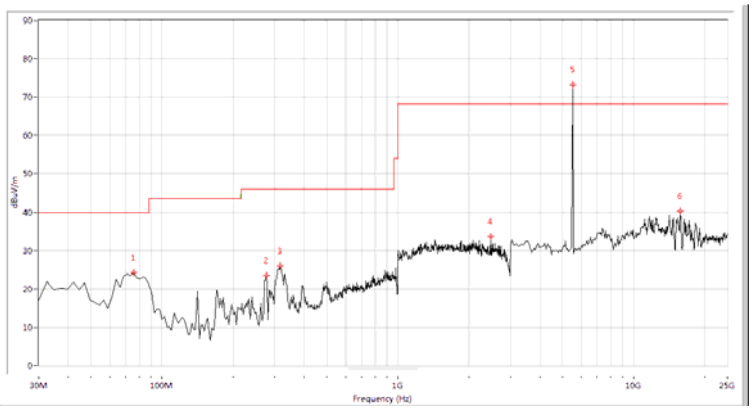
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
83.217	23.30	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
189.651	31.21	N.A	N.A	N.A	43.5	N.A	Vertical	PASS
317.855	39.28	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
1473.815	33.53	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
5320.000	74.97	N.A	N.A	68.2	N.A	N.A	Vertical	N.A
15783.042	39.44	N.A	N.A	68.2	N.A	N.A	Vertical	PASS



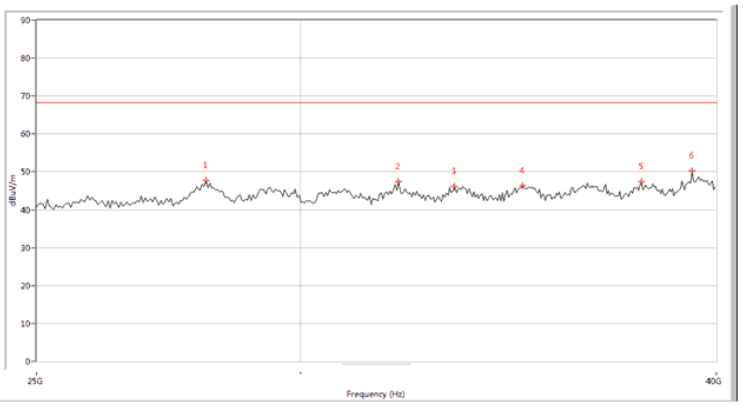
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
26234.41	44.89	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
28216.96	47.43	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
31059.85	47.06	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
32556.11	47.56	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
38915.21	48.73	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
3955.112	50.10	N.A	N.A	68.2	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 40GHz)

Plots for Channel = 100

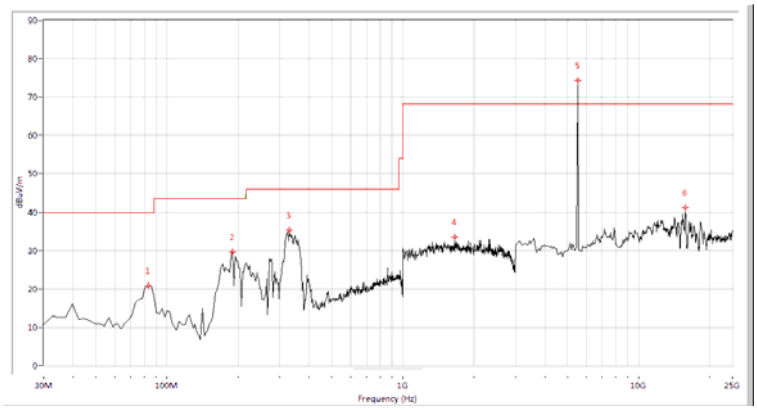


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
75.960	24.23	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
276.733	23.51	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
317.855	26.04	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
2471.322	33.67	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
5500.000	73.28	N.A	N.A	68.2	N.A	N.A	Horizontal	N.A
15783.042	40.25	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

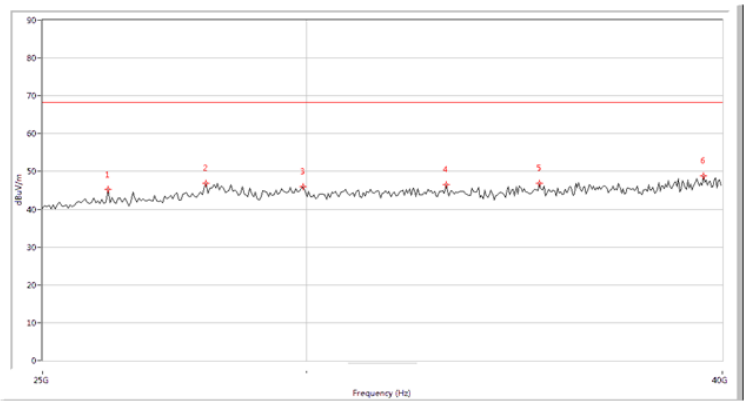


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
28104.74	47.70	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
32107.23	47.36	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
33379.05	46.09	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
34987.53	46.36	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
37980.05	47.40	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
39326.68	50.19	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 40GHz)



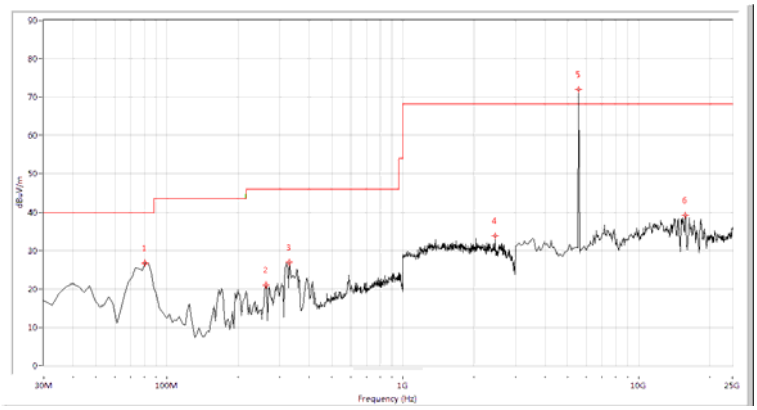
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
83.217	20.92	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
189.651	29.56	N.A	N.A	N.A	43.5	N.A	Vertical	PASS
329.950	35.24	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
1663.342	33.46	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
5500.000	74.25	N.A	N.A	68.2	N.A	N.A	Vertical	N.A
15783.042	41.24	N.A	N.A	68.2	N.A	N.A	Vertical	PASS



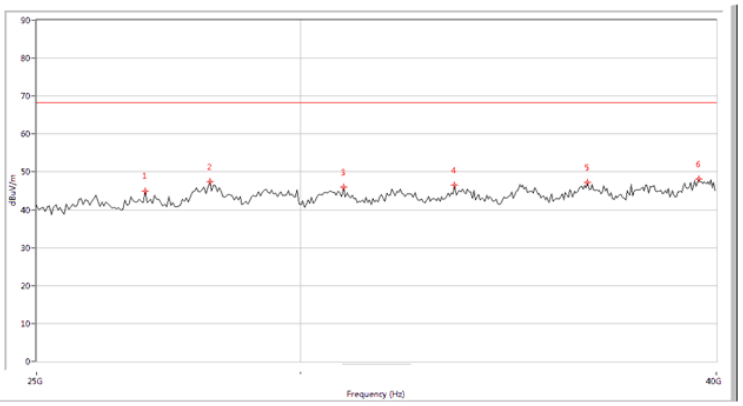
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
26159.60	45.32	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
27992.52	46.88	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
29937.66	46.05	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
33042.39	46.47	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
35249.38	46.93	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
39476.31	48.92	N.A	N.A	68.2	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 40GHz)

Plot for Channel = 116

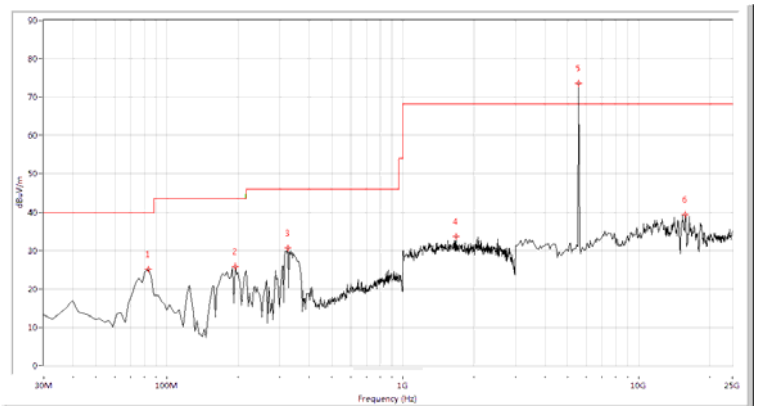


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
80.798	26.82	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
262.219	20.95	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
329.950	26.84	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
2456.359	33.95	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
5580.000	72.05	N.A	N.A	68.2	N.A	N.A	Horizontal	N.A
15783.042	39.24	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

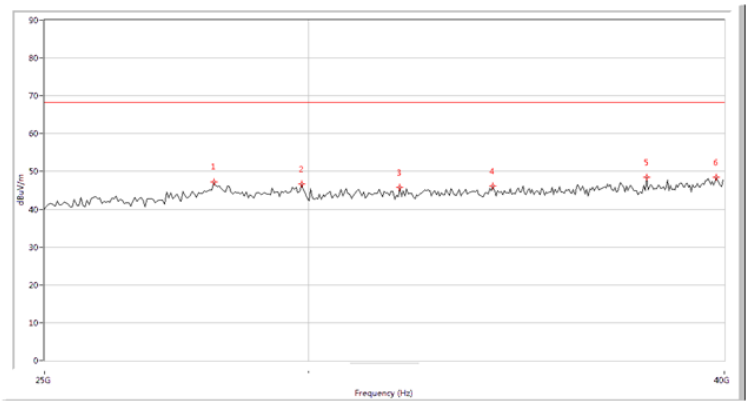


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
26945.14	44.92	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
28179.55	47.35	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
30910.22	45.96	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
33379.05	46.44	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
36596.01	47.16	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
39513.72	48.14	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 40GHz)



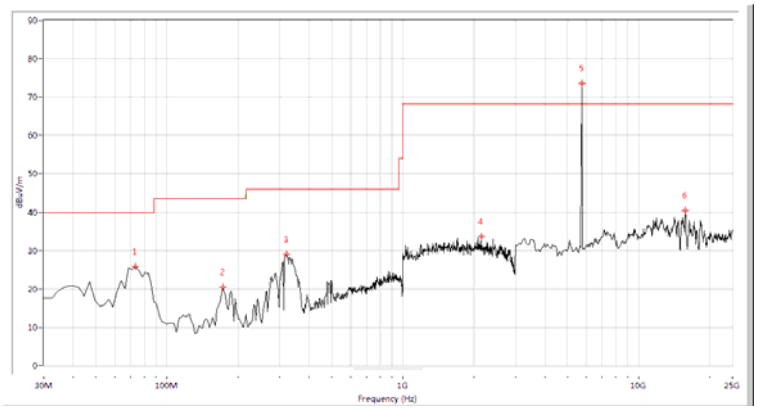
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
83.217	25.21	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
194.489	25.76	N.A	N.A	N.A	43.5	N.A	Vertical	PASS
325.112	30.57	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
1683.292	33.61	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
5580.000	73.58	N.A	N.A	68.2	N.A	N.A	Vertical	N.A
15783.042	39.31	N.A	N.A	68.2	N.A	N.A	Vertical	PASS



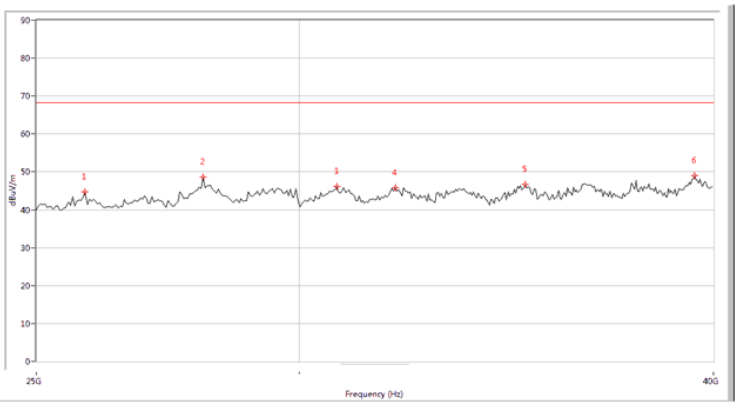
Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
28104.74	47.17	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
29862.84	46.62	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
31957.61	45.78	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
34089.78	46.18	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
37905.24	48.48	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
39775.56	48.44	N.A	N.A	68.2	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 40GHz)

Plot for Channel = 140

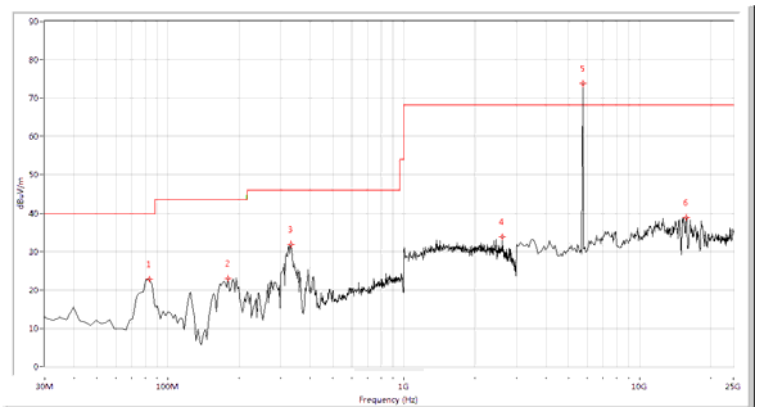


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
73.541	25.79	N.A	N.A	N.A	40.0	N.A	Horizontal	PASS
172.718	20.55	N.A	N.A	N.A	43.5	N.A	Horizontal	PASS
320.274	28.97	N.A	N.A	N.A	46.0	N.A	Horizontal	PASS
2157.107	33.68	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
5700.000	73.60	N.A	N.A	68.2	N.A	N.A	Horizontal	N.A
15783.042	40.44	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

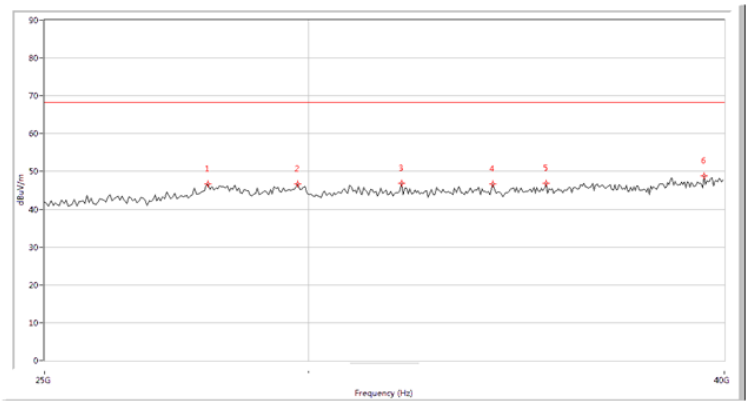


Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
25860.35	44.74	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
28067.33	48.66	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
30798.00	46.23	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
32069.83	45.84	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
35099.75	46.62	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS
39476.31	48.97	N.A	N.A	68.2	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 40GHz)



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
83.217	22.74	N.A	N.A	N.A	40.0	N.A	Vertical	PASS
179.975	23.07	N.A	N.A	N.A	43.5	N.A	Vertical	PASS
332.369	31.98	N.A	N.A	N.A	46.0	N.A	Vertical	PASS
2615.960	33.82	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
5700.000	73.84	N.A	N.A	68.2	N.A	N.A	Vertical	N.A
15783.042	38.92	N.A	N.A	68.2	N.A	N.A	Vertical	PASS



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
27992.52	46.61	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
29788.03	46.70	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
31995.01	46.79	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
34089.78	46.67	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
35361.60	46.84	N.A	N.A	68.2	N.A	N.A	Vertical	PASS
39438.90	48.80	N.A	N.A	68.2	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 40GHz)

2.11. RF exposure evaluation

2.11.1. 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.

2.11.2. Result

Please refer to SAR report.

** END OF REPORT **