TEST REPORT

Report Number: 102241369MPK-013A
Project Number: G102241369
January 28, 2016

Testing performed on the
WiFi/BT Module Card
Model Number: 576253
FCC ID: 2AHLA-576253
IC: 4811A-576253

to
FCC Part 15, Subpart E
RSS-247 Issue 1

For

Bosch Automotive Service Solutions LLC

Test Performed by:	Test Authorized by:
Intertek	Bosch Automotive Service Solutions LLC
1365 Adams Court	655 Eisenhower Dr.
Menlo Park, CA 94025 USA	Owatonna, MN 55060 USA

Prepared by: _____ **Date:** January 28, 2016
Anderson Soungpanya

Reviewed by: _____ **Date:** January 28, 2016
Krishna K Vemuri

VERIFICATION OF COMPLIANCE
Report No. 102241369MPK-013A

Verification is hereby issued to the named APPLICANT and is VALID ONLY for the equipment identified hereon for use under the rules and regulations listed below.

Equipment Under Test:	WiFi/BT Module Card
Trade Name:	Bosch Automotive Service Solutions LLC
Model No.:	576253
Serial No.:	MPK1511100953-001
Applicant:	Bosch Automotive Service Solutions LLC
Contact:	Eric Vande Zande
Address:	655 Eisenhower Dr. Owatonna, MN 55060
Country	USA
Tel. Number:	(507) 455-4437
Email:	eric.vandezande@us.bosch.com
Applicable Regulation:	FCC Part 15, Subpart E RSS-247 Issue 1
Date of Test:	November 03, 2015 to January 13, 2016

We attest to the accuracy of this report:

Anderson Soungpanya
EMC Project Engineer

Krishna K Vemuri
EMC Senior Staff Engineer

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1.0 Introduction

1.1 Summary of Tests

Test	Reference FCC	Reference RSS-247	Result
26 dB Emission Band width and 99% Occupied Bandwidth	15.407(a)(1)(2)(3)	RSS-247, 6.2.1	Complies
Conducted Output Power	15.407(a)(1)(2)(3)	RSS-247, 6.2.1	Complies
Peak Power Spectral Density	15.407(a)(1)(2)(3)	RSS-247, 6.2.1	Complies
Undesirable Emissions	15.407(b)(1-8)	RSS-247, 6.2.1	Complies
Transmitter Radiated Emissions	15.407(b)(1-8) 15.209, 15.205	RSS-247, 6.2.1	Complies
Frequency stability	15.407(g)	RSS-Gen	Complies
Antenna Requirement	15.203	RSS-Gen	Complies. The EUT uses internal antenna and a unique connector

EUT receive date: October 19, 2015
EUT receive condition: The pre-production version of the EUT was received in good condition with no apparent damage. As declared by the Applicant, it is identical to the production units.
Test start date: November 03, 2015
Test completion date: January 13, 2016
The test results in this report pertain only to the item tested.

2.0 General Description

2.1 Product Description

Bosch Automotive Service Solutions LLC supplied the following description of the EUT:

This WiFi/BT Card is utilized in various automotive diagnostic equipment. One main function is for WiFi connections of the diagnostic equipment to WiFi Access Points. It may also be used to connect two diagnostic devices together in WiFi Direct mode. The BT is used to pair with Multi-Media equipment in vehicles for diagnostic purposes. It may also be used to pair with other BT devices as required.

The information about the 5GHz radio, installed in the model 576253, is presented below.

Applicant	Bosch Automotive Service Solutions LLC
Model No.	576253
FCC ID	2AHLA-576253
IC	4811A-576253
Use of Product	WIFI Module
Rated RF Output	15.27 dBm for 5180~5240 MHz
Frequency Range	U-NII 1: 5150 – 5250 MHz
Type of modulation	OFDM
Antenna(s) & Gain	YAGEO - ANTX150P111B24553; Internal Antenna, 3.4 dBi peak gain Taoglas Antenna Solution - FXP.840.07.0055B; Internal Antenna, 2.5 dBi peak gain
Manufacturer Name & Address	Bosch Automotive Service Solutions LLC 655 Eisenhower Dr. Owatonna, MN 55060 USA

The EUT supports the following configurations:

Channels in 5150 – 5250 MHz band							
Number	Frequency, MHz	802.11a/n/ac 20MHz Channels		802.11n/ac 40MHz Channels		802.11ac 80MHz Channels	
36	5180	√	X				
38	5190			√	X		
40	5200	√	X				
42	5210					√	X
44	5220	√					
46	5230			√	X		
48	5240	√	X				

List of channels:
√ - available
X - tested

2.2 Related Submittal(s) Grants

None.

2.3 Test Methodology

Antenna conducted measurements were performed according to the FCC documents “Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E” (789033 D02 General U-NII Test Procedures New Rules v01r01).

Both AC mains line-conducted and radiated emissions measurements were performed according to the procedures in ANSI C63.4. Radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the **"Data Sheet"** of this Application.

All other measurements were made in accordance with the procedures in part 2 of CFR 47.

2.4 Test Facility

The test site used to collect the radiated data is site 1 (10-m semi-anechoic chamber). This test facility and site measurement data have been fully placed on file with the FCC, IC and A2LA accredited.

2.5 Measurement Uncertainty

Compliance with the limits was based on the results of the measurements and doesn’t take into account the measurement uncertainty.

Estimated Measurement Uncertainty

Measurement	Expanded Uncertainty (k=2)		
	0.15 MHz – 1 GHz	1 GHz – 6 GHz	> 6 GHz
RF Power and Power Density – antenna conducted	1.1 dB	1.5 dB	–
Unwanted emissions - antenna conducted	1.2 dB	1.7 dB	2.0 dB
Bandwidth – antenna conducted	50 Hz	100 Hz	–
Radiated emissions	4.2 dB	5.4 dB	
AC mains conducted emissions	2.4 dB	-	-

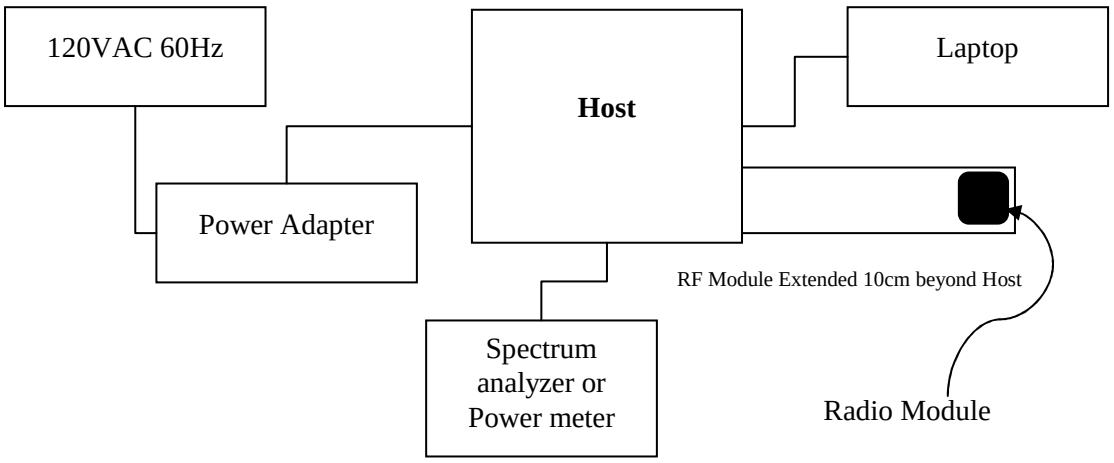
3.0 System Test Configuration

3.1 Support Equipment

Description	Manufacturer	Model No./ Part No.
Power Adapter	I.T.E Power Supply	PW172KB1500B02
Laptop	Acer	Aspire E1-571-6811

3.2 Block Diagram of Test Setup

Antenna was removed and co-axial connector with a cable was installed for Conducted Measurements. 50Ohm Load was used for Radiated Measurements.



S = Shielded **U** = Unshielded	**F** = With Ferrite **m** = Meter

3.3 Justification

Preliminary testing was performed for all modulation/data rate modes. The following modes, in which the highest power was detected, were selected for final measurements:

OFDM, 6MB/s – for 802.11a
OFDM, MCS0 – for 802.11n/ac 20MHz
OFDM, MCS0 – for 802.11n/ac 40MHz
OFDM, MCS0 – for 802.11ac 80MHz

3.4 Mode of Operation During Test

During transmitter testing, the transmitter was setup to transmit continuously using the RF power setting below. Their corresponding output power in dBm can be found in section 4.2 of this report.

Ch.	Freq.	802.11a	802.11n 20	802.11n 40	802.11ac 80
	MHz	Settings	Settings	Settings	Settings
36	5180	17	16	--	---
38	5190	--	--	15	---
40	5200	17	17	---	----
42	5210	---	----	----	15
46	5230	--	--	15	---
48	5240	17	17	---	---

3.5 Modifications required for Compliance

Intertek installed no modifications during compliance testing in order to bring the product into compliance.

3.6 Additions, deviations and exclusions from standards

No additions, deviations or exclusion have been made from standard.

4.0 Measurement Results

4.1 Emission Bandwidth and 99% Occupied Bandwidth

15.407(a)(1)(2)

4.1.1 Procedure

The Procedure, described in the FCC Publication 789033 D02 General U-NII Test Procedures New Rules v01r01, was used. Specifically Section C for Emission Bandwidth and Minimum Emission Bandwidth for the band 5.725-5.850 GHz. Section D was used for 99% Occupied Bandwidth.

The antenna port of the EUT was connected to the input of a spectrum analyzer (SA). For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier.

The Occupied bandwidth was measured using the build-in spectrum analyzer facility for 99% power bandwidth measurement.

Tested By:	Anderson Soungpanya
Test Date:	November 9, 2015

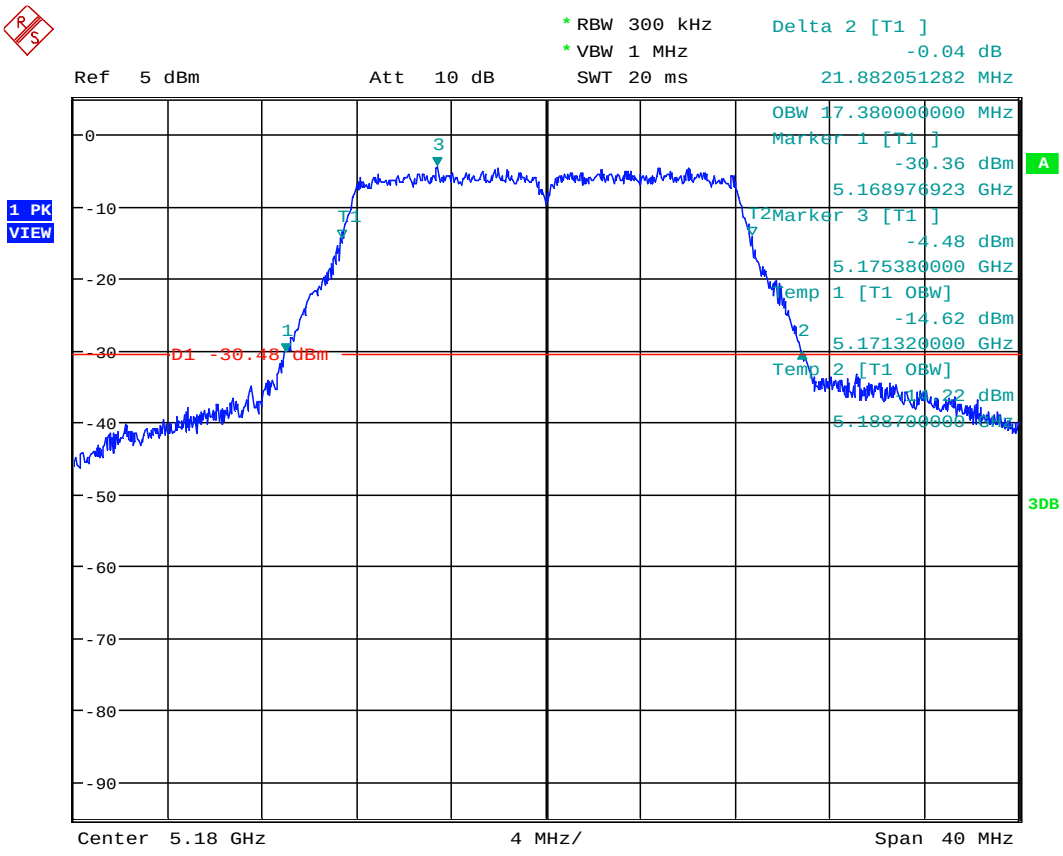
4.1.2 Test Result

Refer to the following plots for the test result:

Mode	Channel	Frequency, MHz	26-dB Bandwidth, MHz	Occupied Bandwidth, MHz	Plot #
802.11a	36	5180	21.882	17.380	1.1
	40	5200	22.013	17.440	1.2
	48	5240	22.308	17.460	1.3
802.11n 20MHz	36	5180	22.183	18.400	1.4
	40	5200	22.115	18.370	1.5
	48	5240	22.197	18.380	1.6
802.11n 40MHz	38	5190	40.609	36.575	1.7
	46	5230	40.772	36.575	1.8
802.11ac 80MHz	42	5210	82.313	75.810	1.9

Plot 1. 1

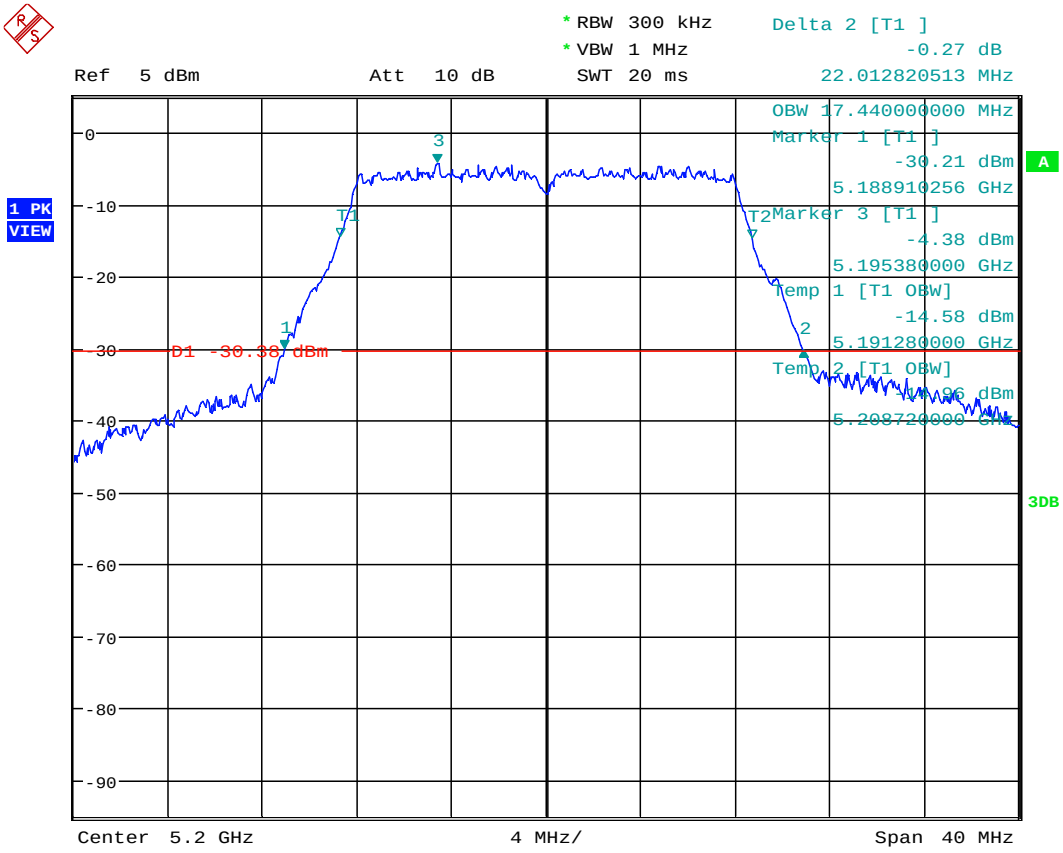
802.11a 5180MHz



Date: 9.NOV.2015 10:10:49

Plot 1. 2

802.11a 5200MHz



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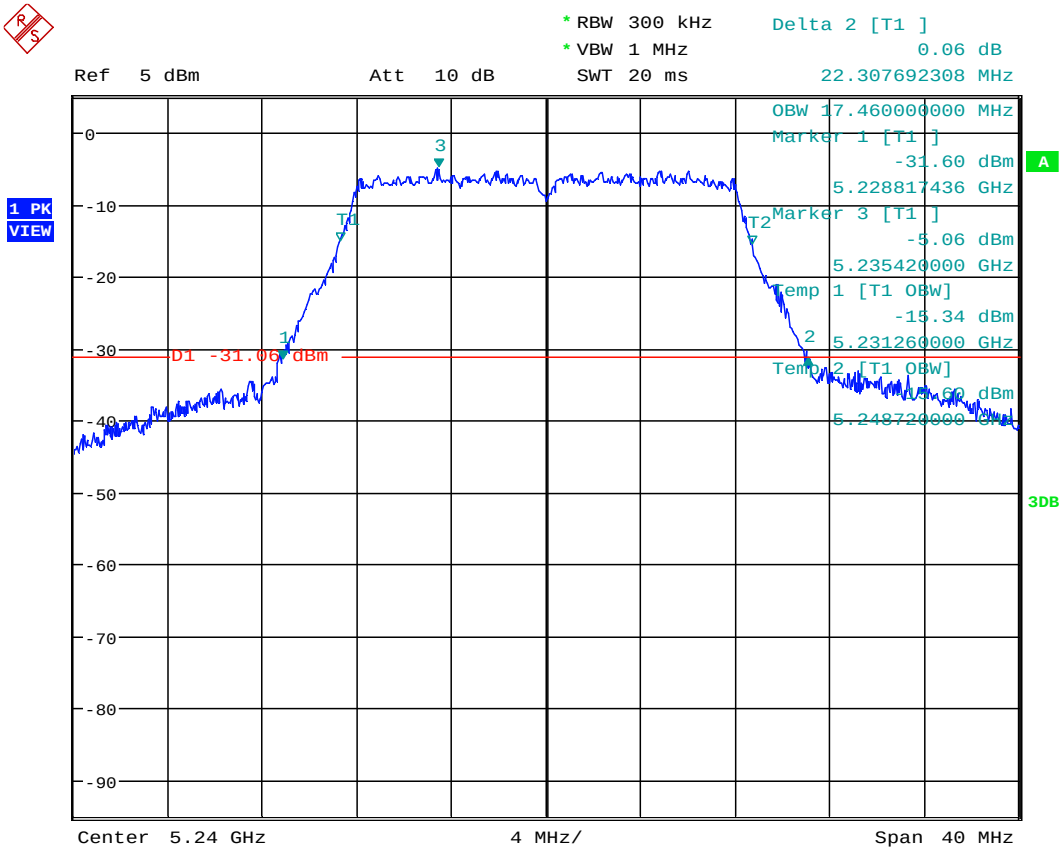
Plot 1. 3

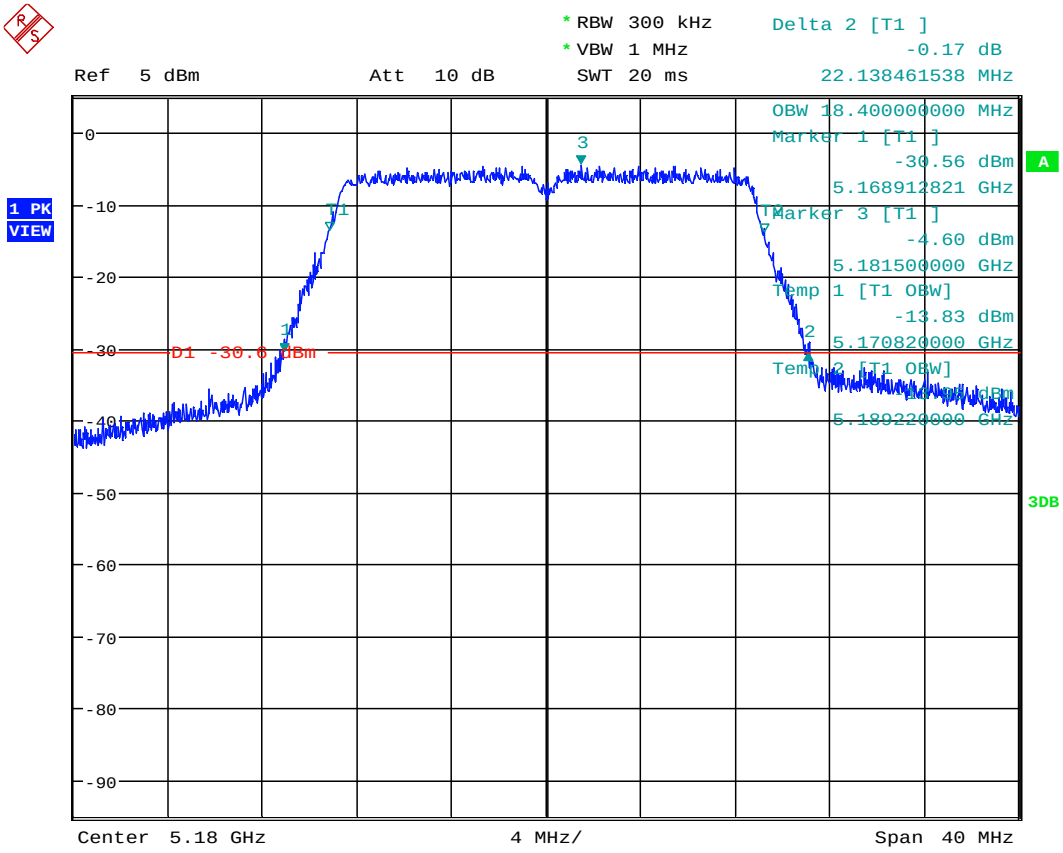
802.11a 5240MHz



Date: 9.NOV.2015 10:15:20

Plot 1. 4

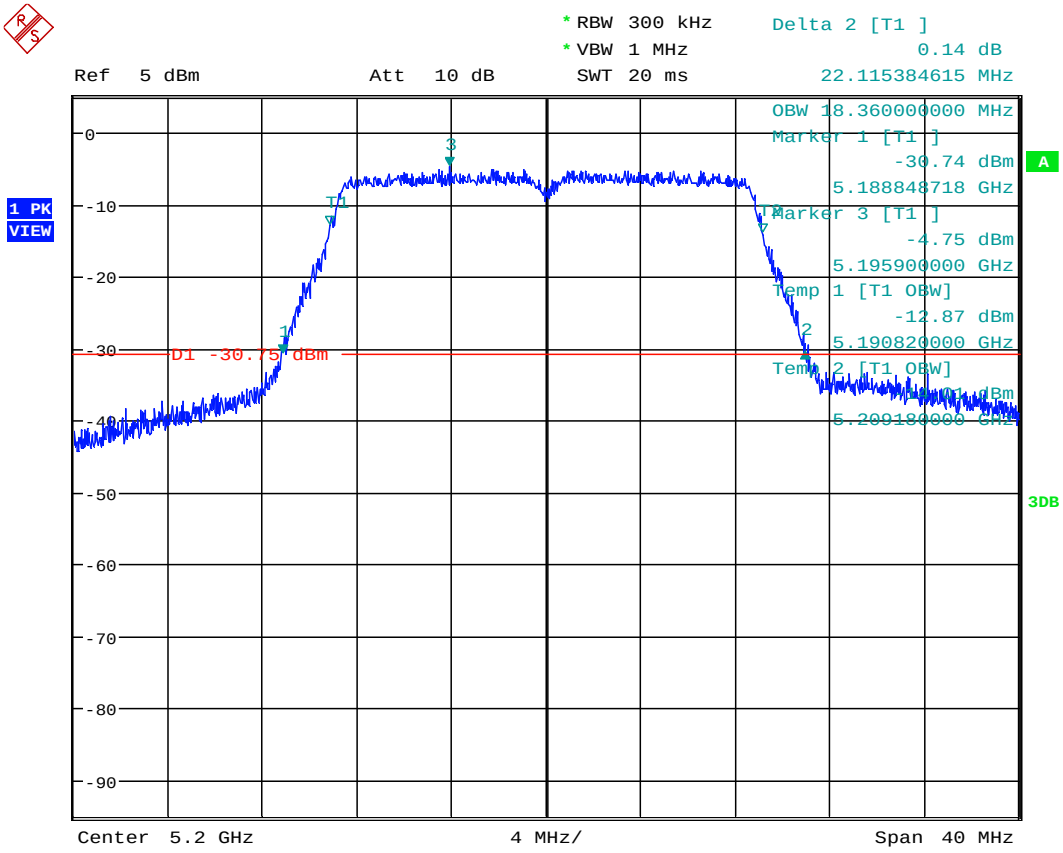
802.11n 20MHz, 5180MHz



Date: 9.NOV.2015 10:09:35

Plot 1. 5

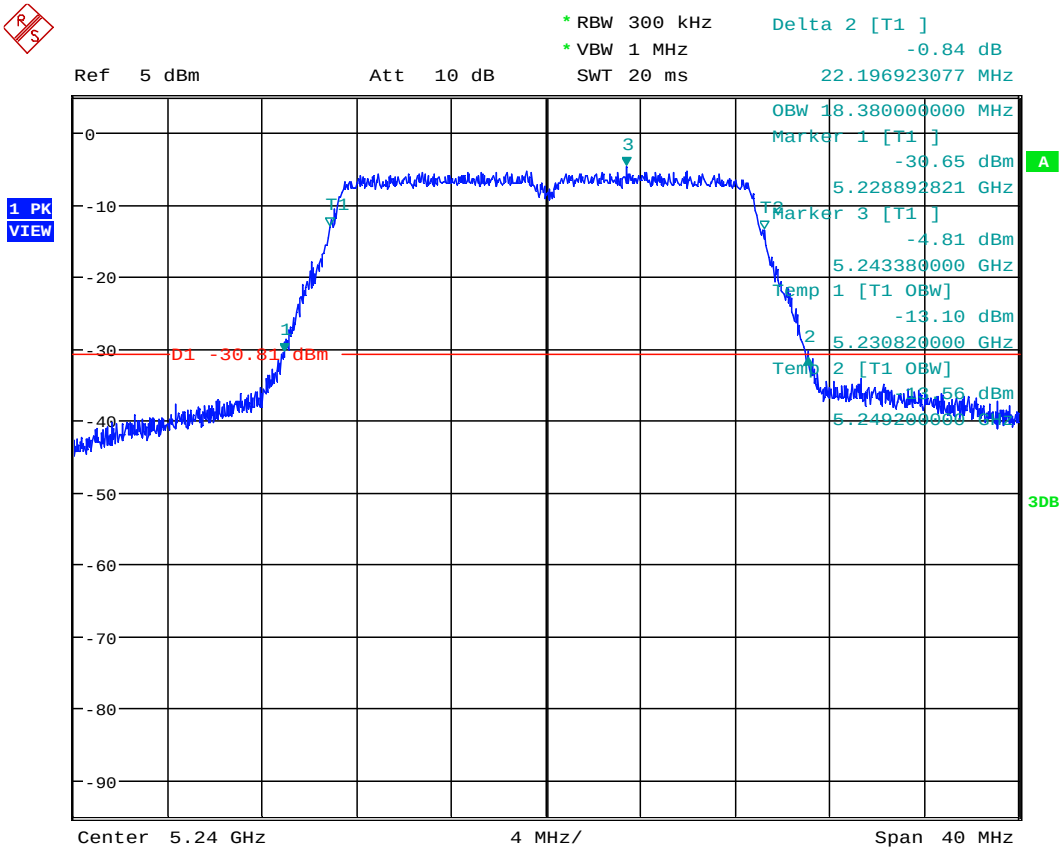
802.11n 20MHz, 5200MHz



Date: 9.NOV.2015 10:08:04

Plot 1. 6

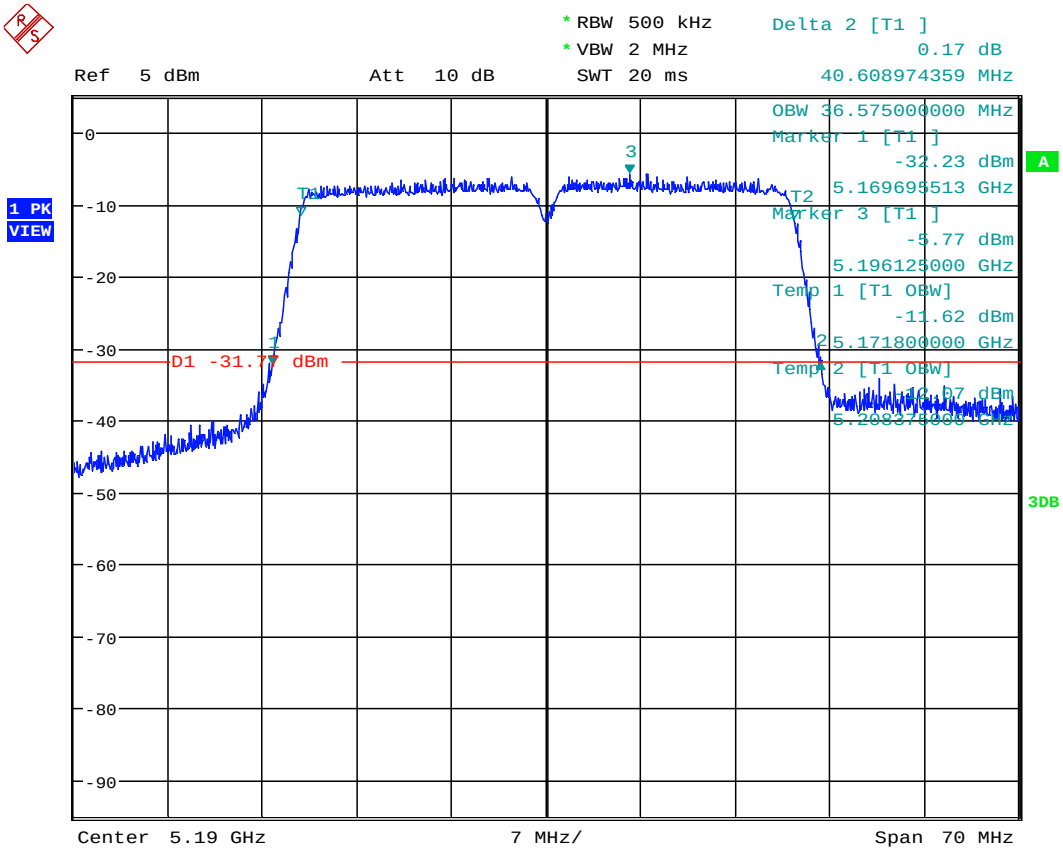
802.11n 20MHz, 5240MHz



Date: 9.NOV.2015 10:06:36

Plot 1. 7

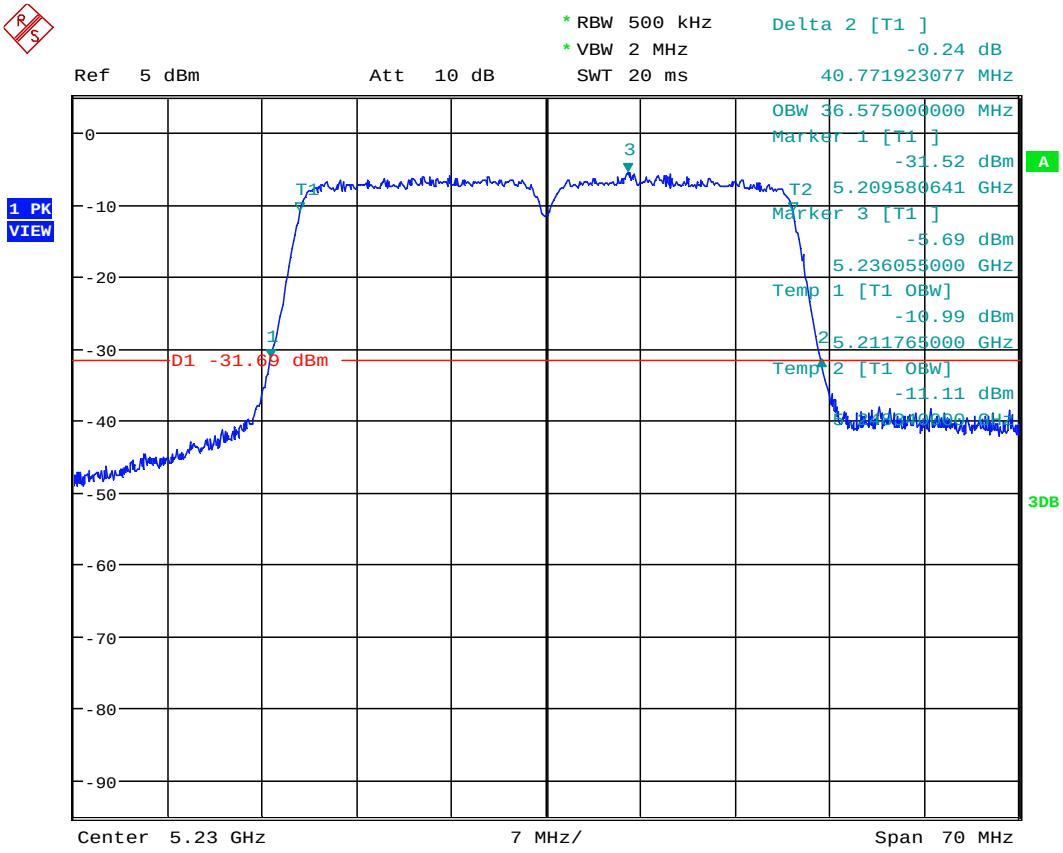
802.11n 40MHz, 5190MHz



Date: 9.NOV.2015 12:29:17

Plot 1. 8

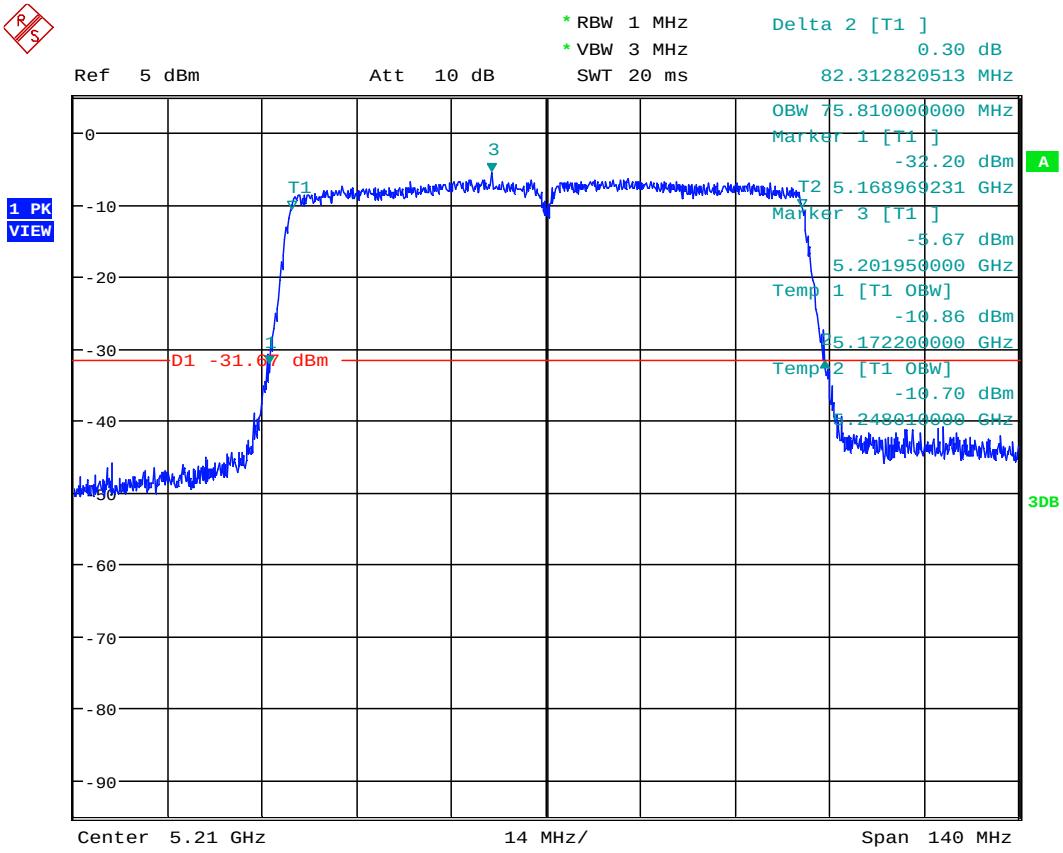
802.11n 40MHz, 5230MHz



Date: 9.NOV.2015 12:44:40

Plot 1. 9

802.11ac 80MHz, 5210MHz



Date: 9.NOV.2015 13:13:57

4.2 Maximum Conducted Output Power
FCC Rule 15.407(a)(1)(iv)

4.2.1 Requirement

For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

4.2.2 Procedure

The Procedure, described in the FCC Publication 789033 D02 General U-NII Test Procedures New Rules v01r01, was used. Specifically Section E (2) (c) Method SA-1 Alternative for Maximum Conducted Output Power

The antenna port output of the EUT was connected to the input of a spectrum analyzer to measure the Maximum Conducted Transmitter Output Power.

Tested By:	Anderson Soungpanya
Test Date:	December 4-7, 2015

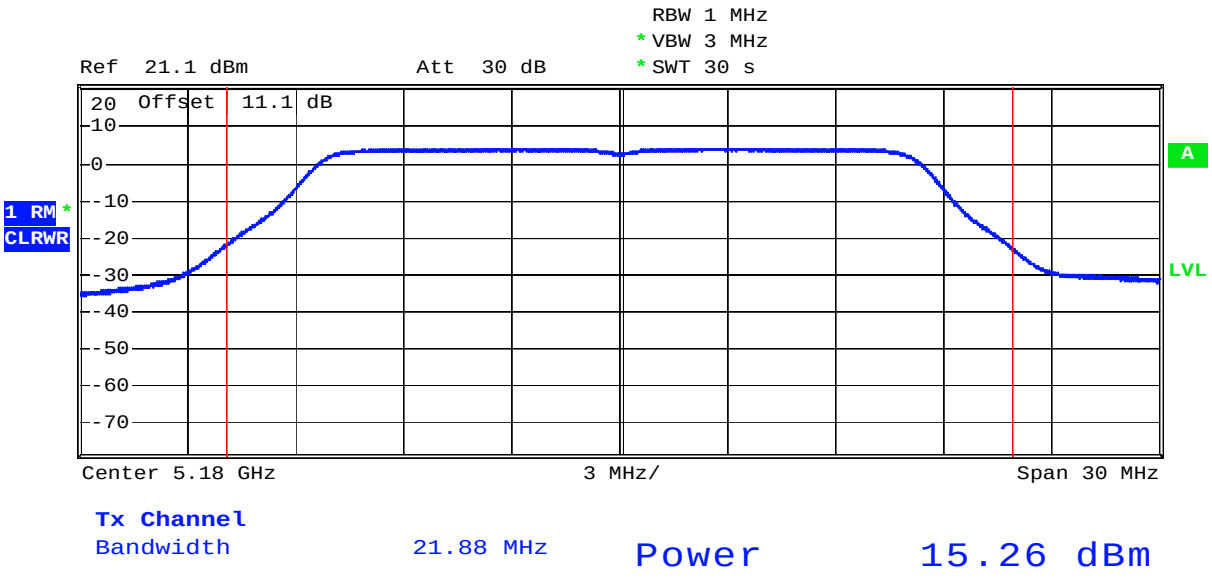
4.2.3 Test Results

Refer to the following plots for the test result:

Mode	Channel	Frequency, MHz	Conducted power (average) dBm	Conducted power Limit dBm	Plot #
802.11a	36	5180	15.26	24	2.1
	40	5200	15.27	24	2.2
	48	5240	15.19	24	2.3
802.11n 20MHz	36	5180	14.21	24	2.4
	40	5200	15.08	24	2.5
	48	5240	15.09	24	2.6
802.11n 40MHz	38	5190	13.07	24	2.7
	46	5230	13.11	24	2.8
802.11ac 80MHz	42	5210	12.14	24	2.9

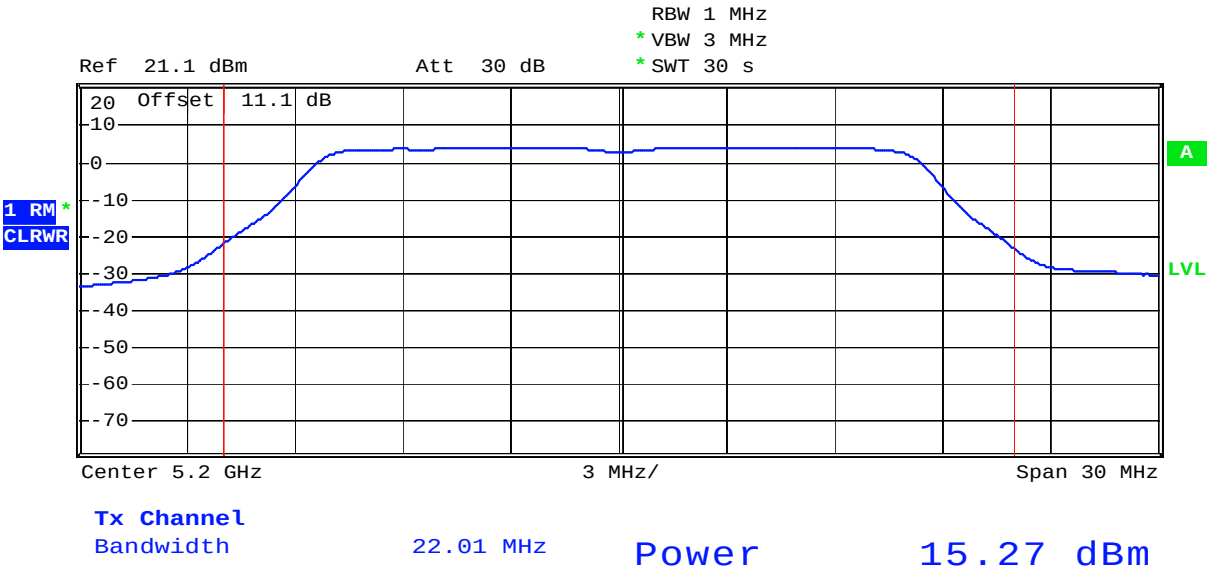
Plot 2. 1

802.11a, 5180MHz



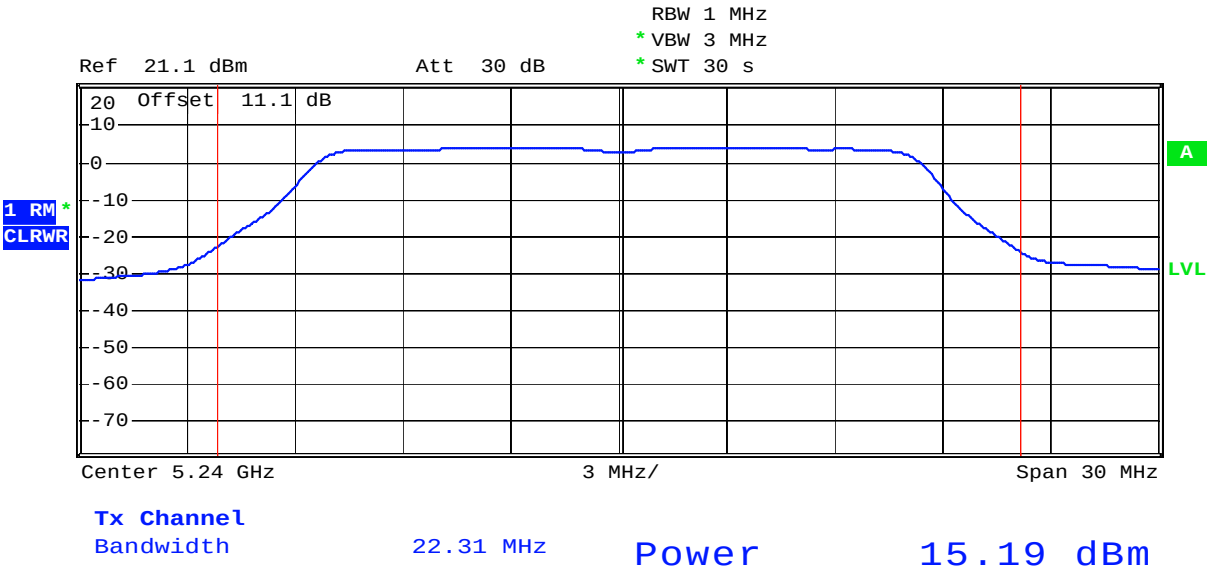
Plot 2. 2

802.11a, 5200MHz



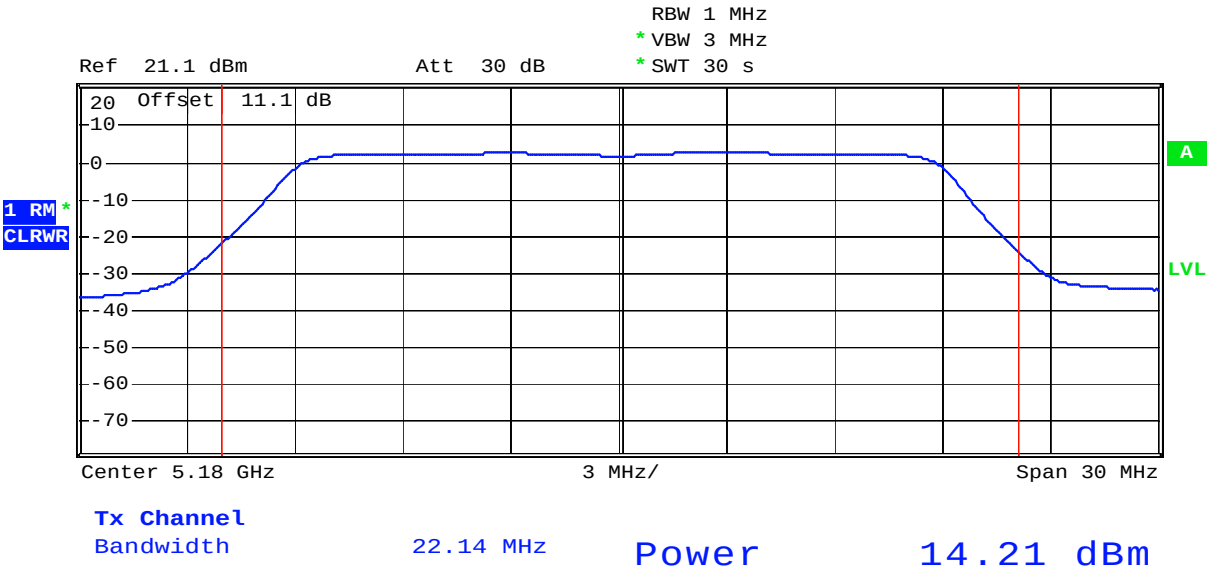
Plot 2. 3

802.11a, 5240MHz



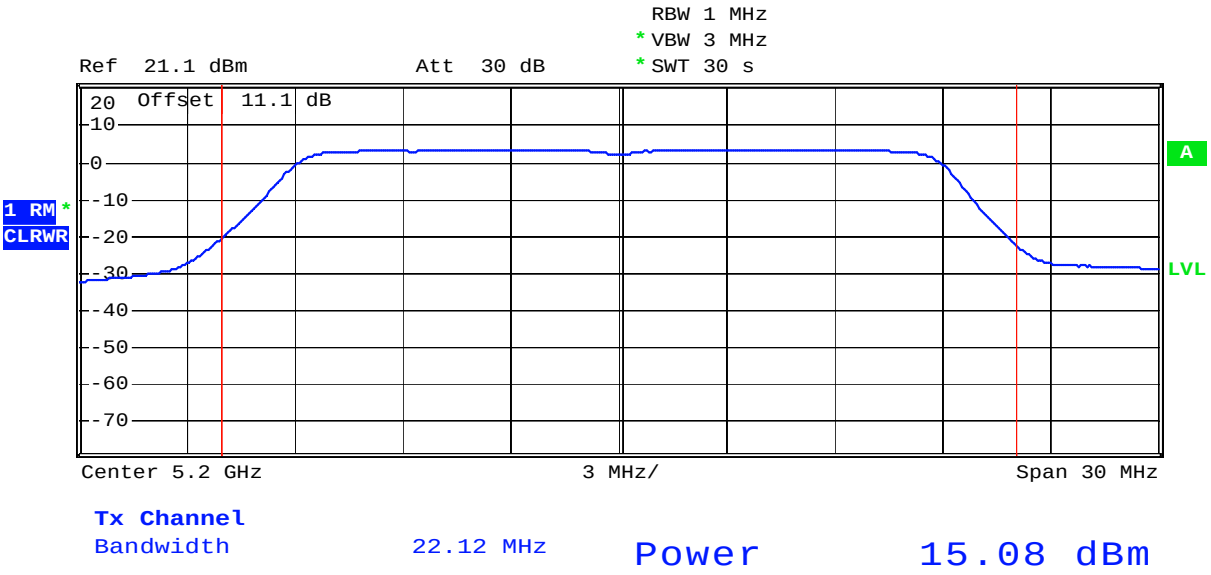
Plot 2. 4

802.11n 20MHz, 5180MHz



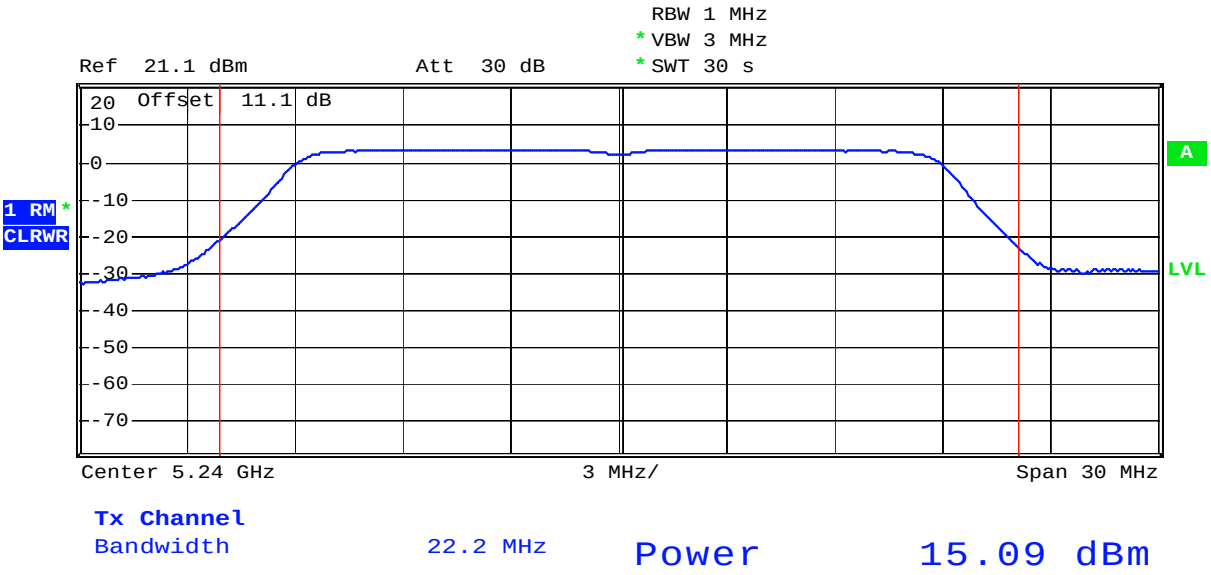
Plot 2. 5

H802.11n 20MHz, 5200MHz



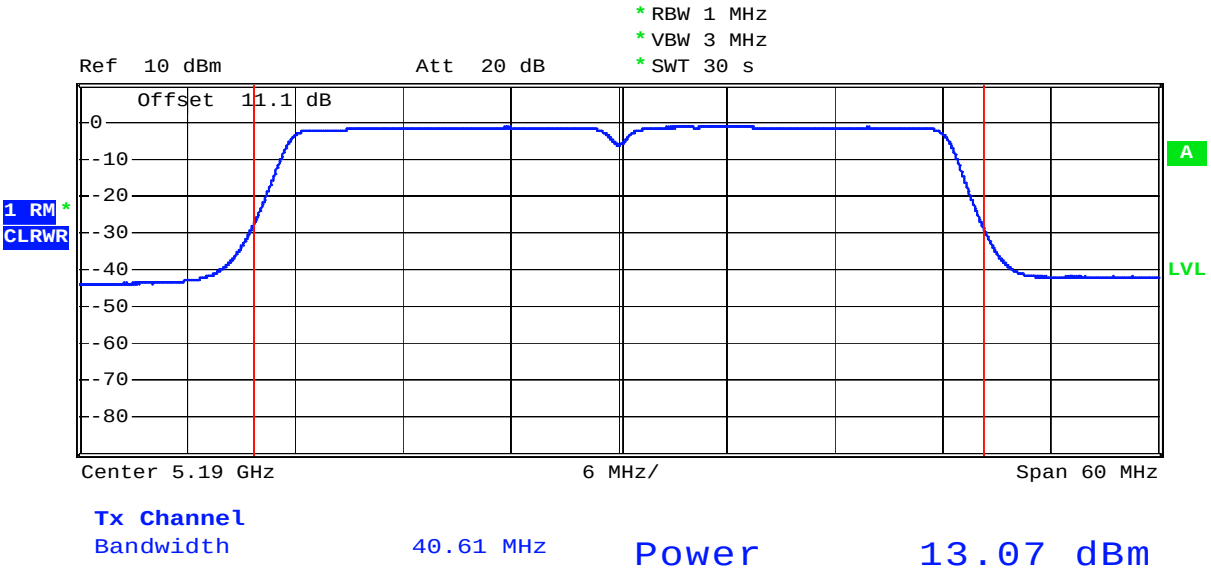
Plot 2. 6

802.11n 20MHz, 5240MHz



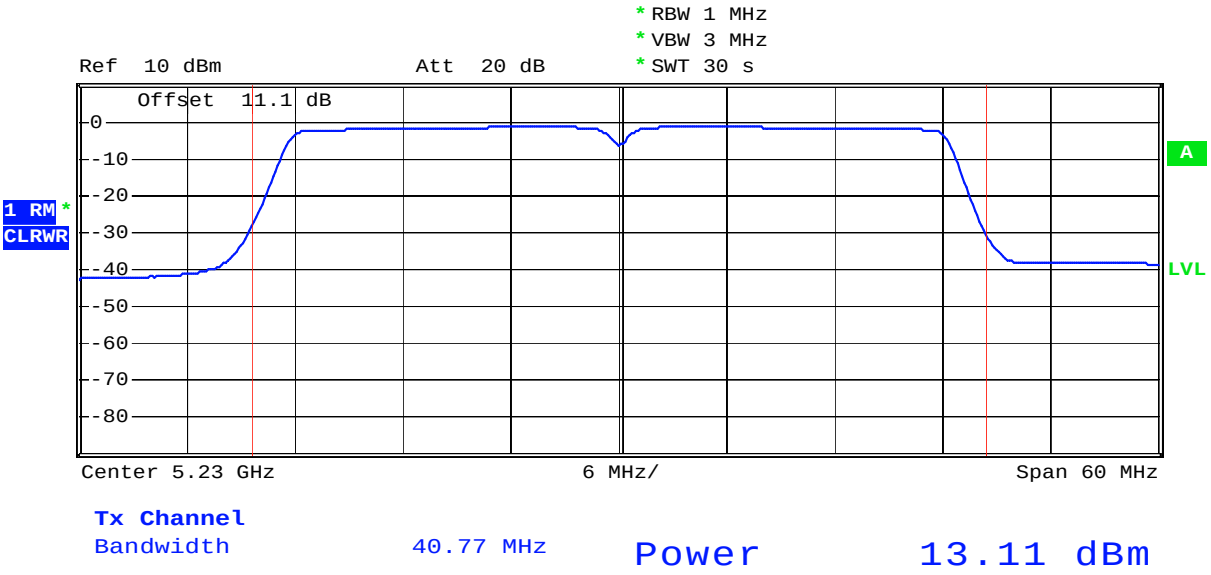
Plot 2. 7

802.11n 40MHz, 5190MHz



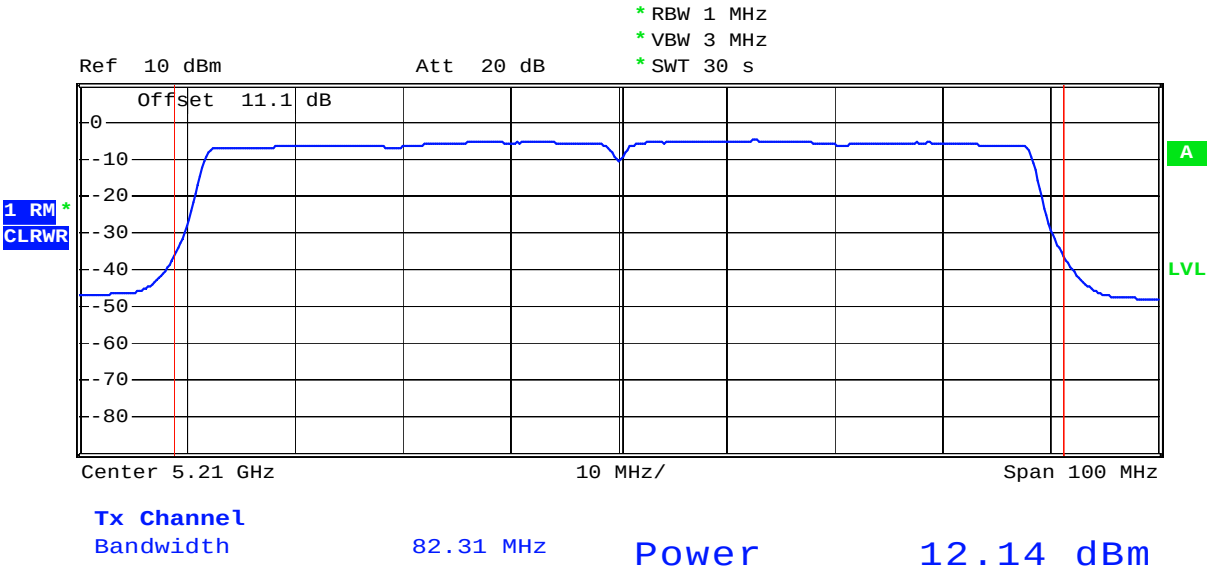
Plot 2. 8

802.11n 40MHz, 5230MHz



Plot 2. 9

H802.11ac 80MHz, 5210MHz



4.3 Peak Power Spectral Density
FCC Rule 15.407(a)(1)(iv)

4.3.1 Requirement

For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

4.3.2 Procedure

Each antenna port of the EUT was connected to the input of a spectrum analyzer to measure the Peak Power Spectral Density (PPSD) and recorded.

The Procedure, described in the FCC Publication 789033 D02 General U-NII Test Procedures New Rules v01r01, was used. Specifically procedure from Section F was utilized for Maximum Power Spectral Density (PSD).

Tested By:	Anderson Soungpanya
Test Date:	December 7, 2015

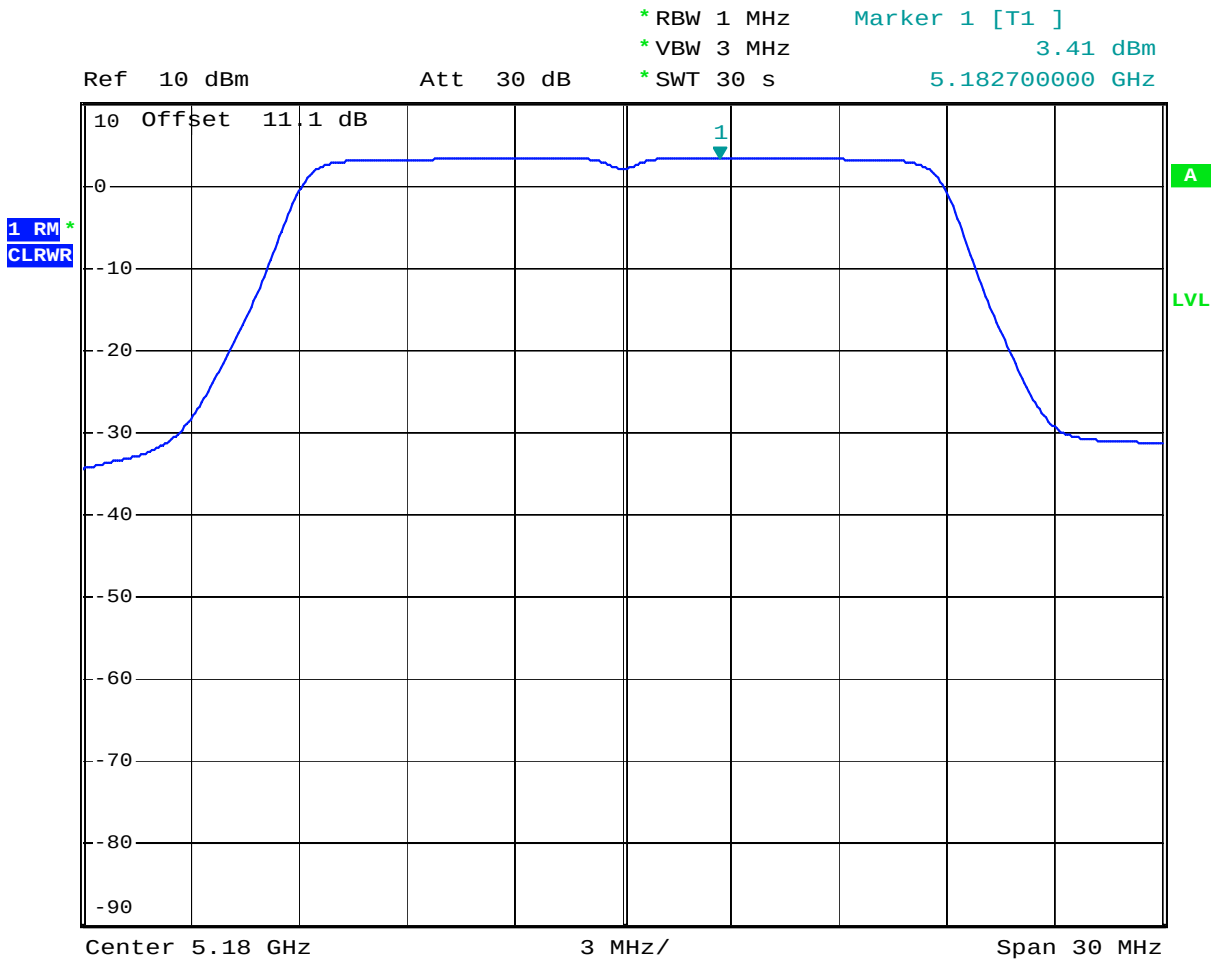
4.3.3 Test Result

Refer to the following plots for the test result:

Mode	Channel	Frequency, MHz	PSD(Peak) dBm	PSD Limit dBm	Plot #
802.11a	36	5180	3.41	11	3.1
	40	5200	3.16	11	3.2
	48	5240	3.05	11	3.3
802.11n 20MHz	36	5180	3.52	11	3.4
	40	5200	3.14	11	3.5
	48	5240	3.04	11	3.6
802.11n 40MHz	38	5190	-1.74	11	3.7
	46	5230	-1.65	11	3.8
802.11ac 80MHz	42	5210	-5.25	11	3.9

Plot 3. 10

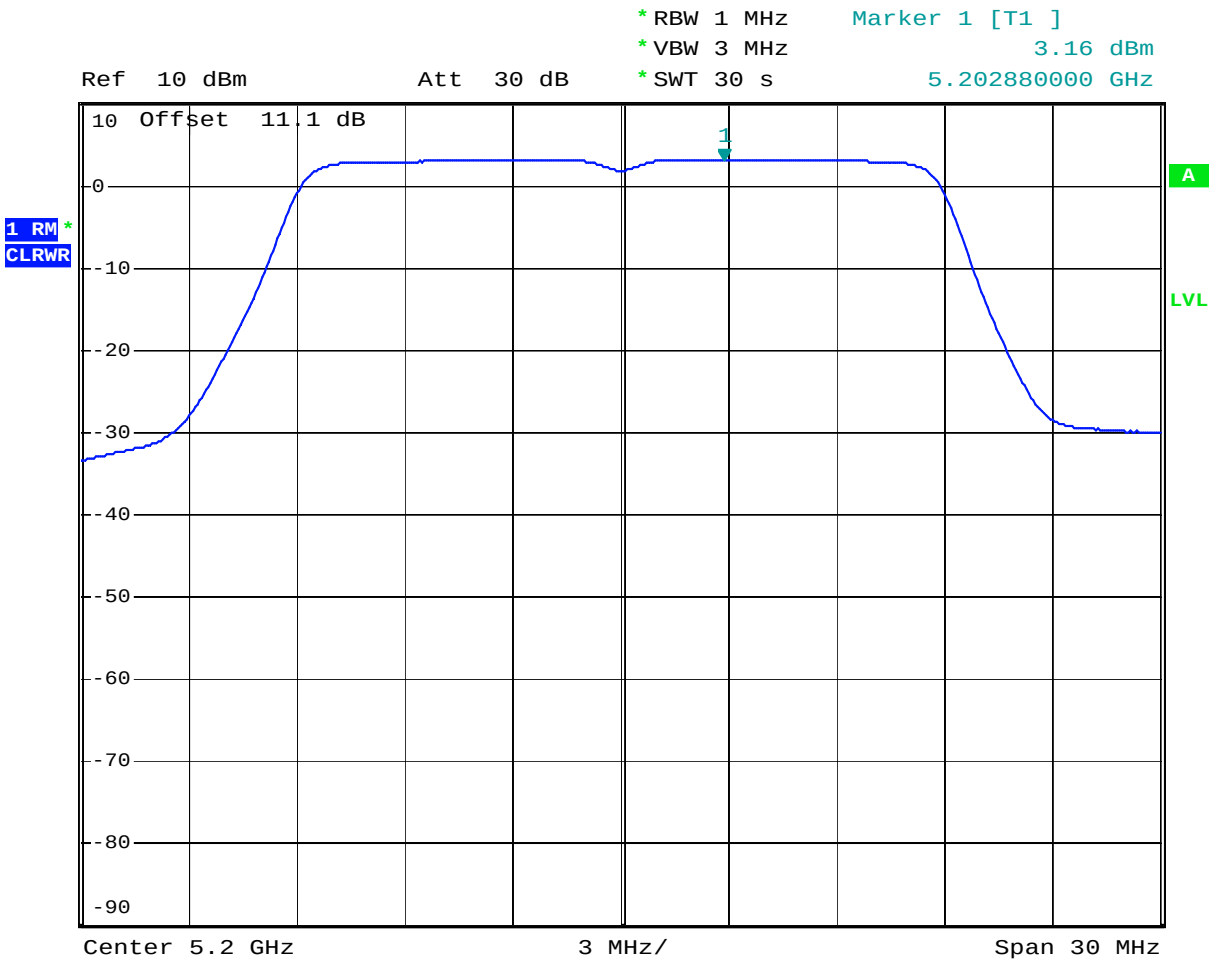
802.11a, 5180MHz



Date: 7.DEC.2015 14:13:59

Plot 3. 11

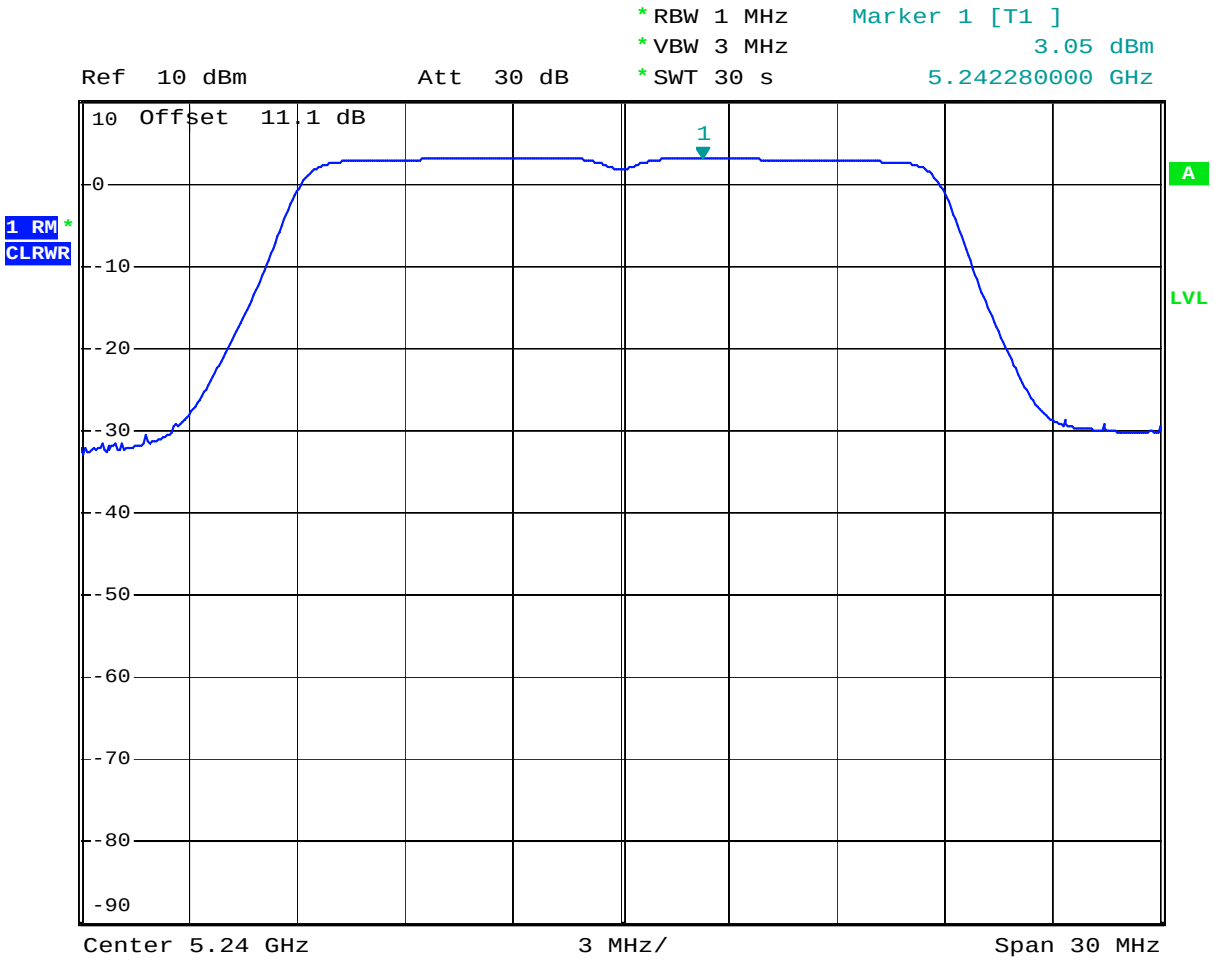
802.11a, 5200MHz



Date: 7.DEC.2015 14:23:18

Plot 3. 12

802.11a, 5240MHz



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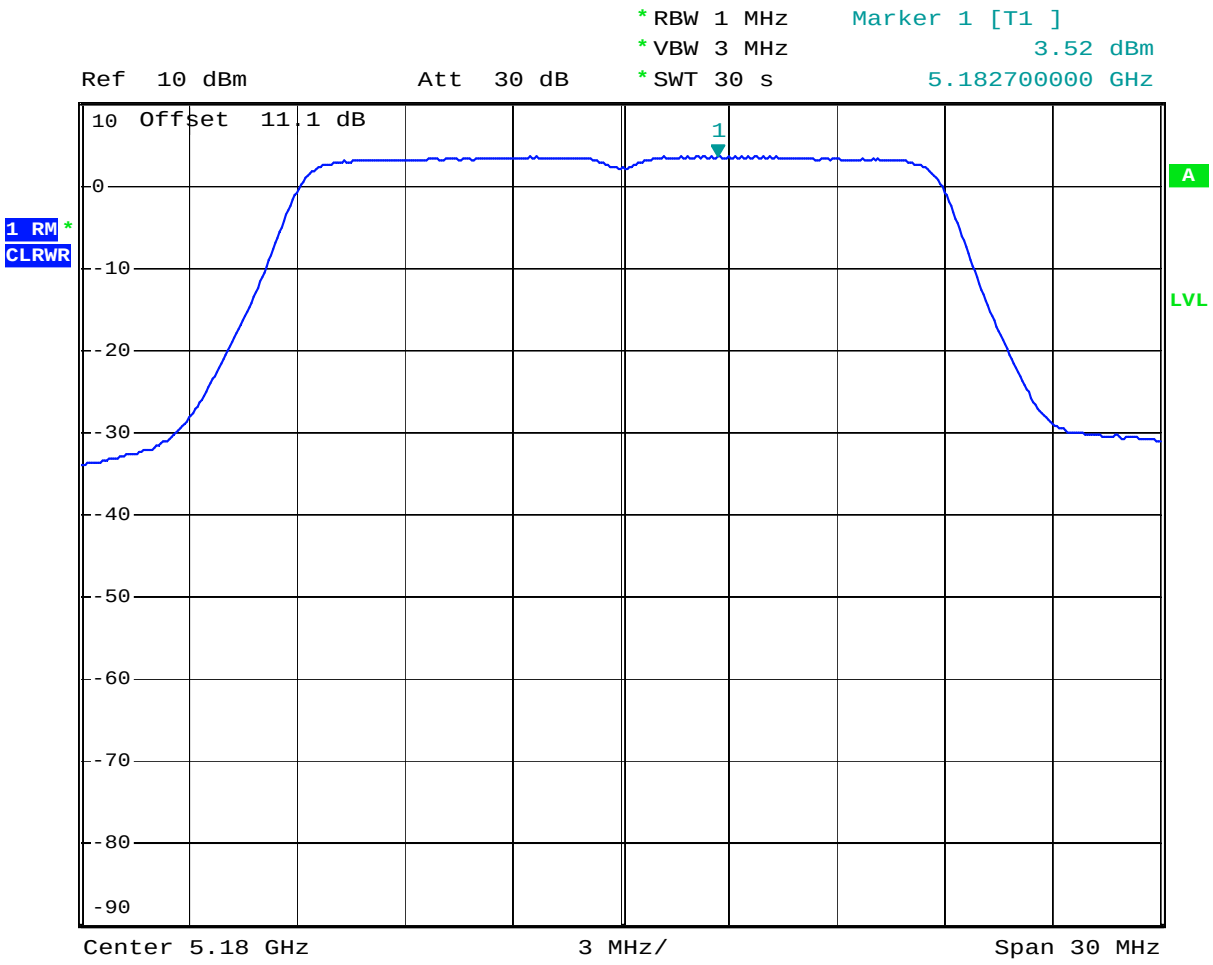
Plot 3. 13

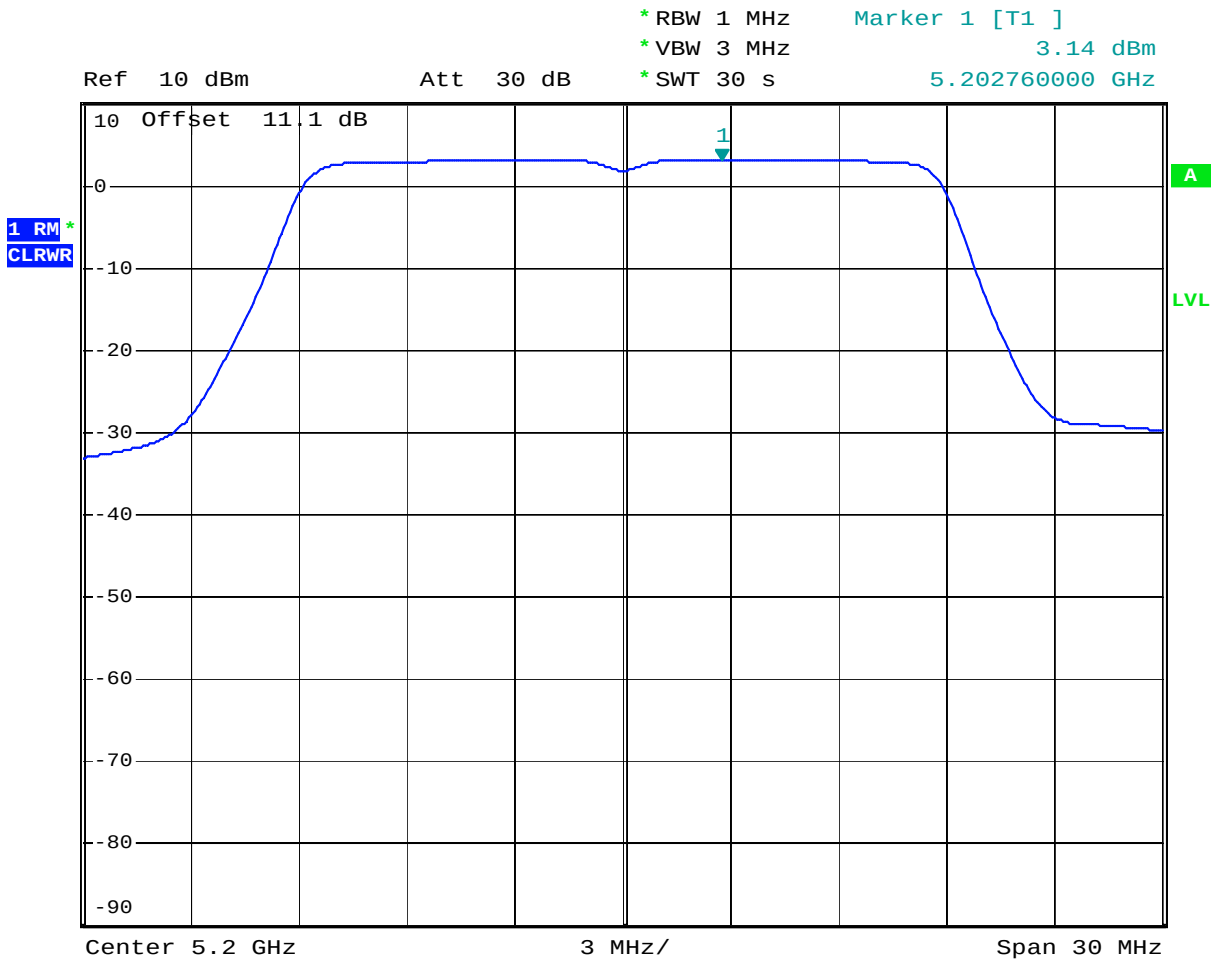
802.11n 20MHz, 5180MHz



Date: 7.DEC.2015 14:49:49

Plot 3. 14

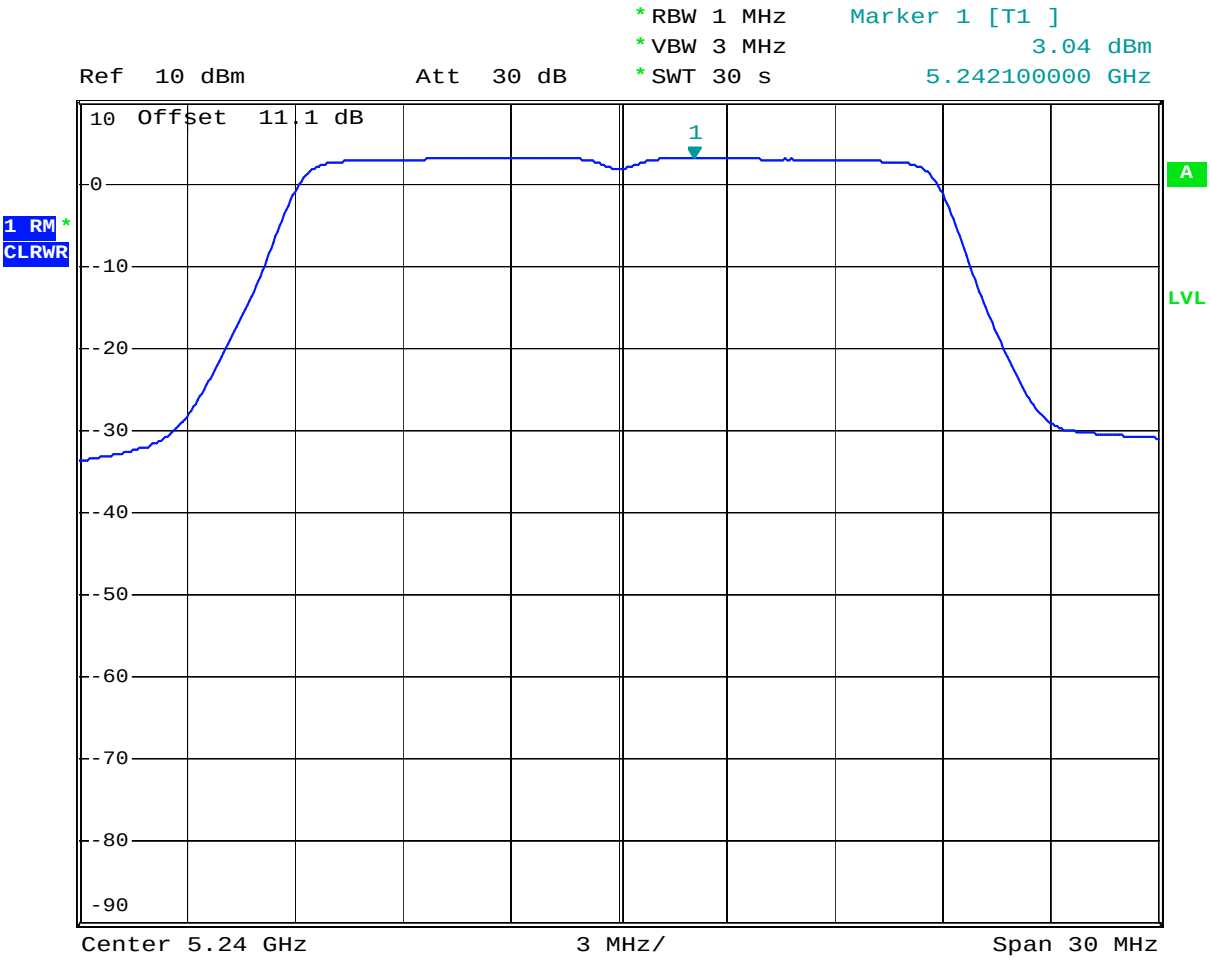
H802.11n 20MHz, 5200MHz



Date: 7.DEC.2015 14:52:18

Plot 3. 15

802.11n 20MHz, 5240MHz



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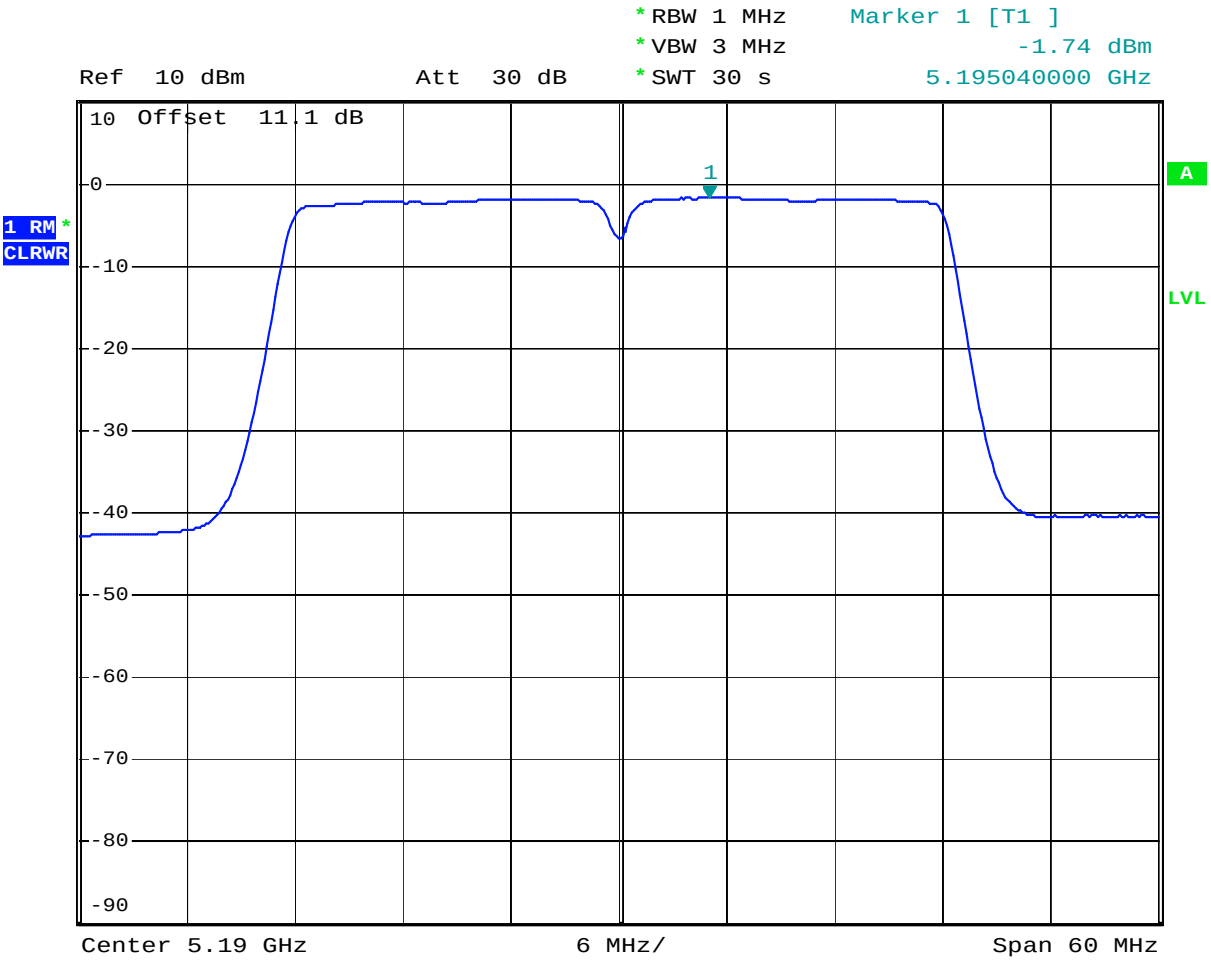
Plot 3. 16

802.11n 40MHz, 5190MHz



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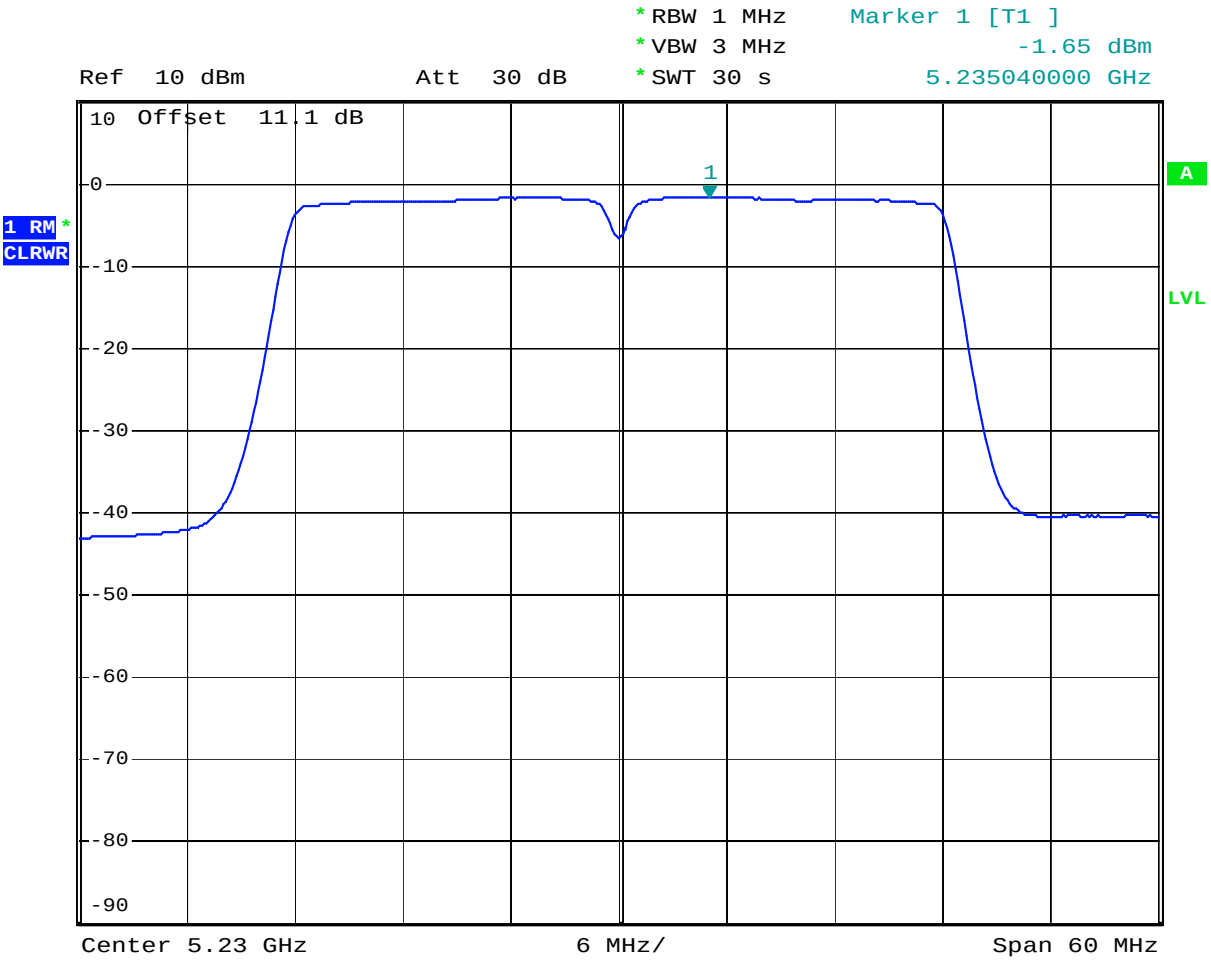
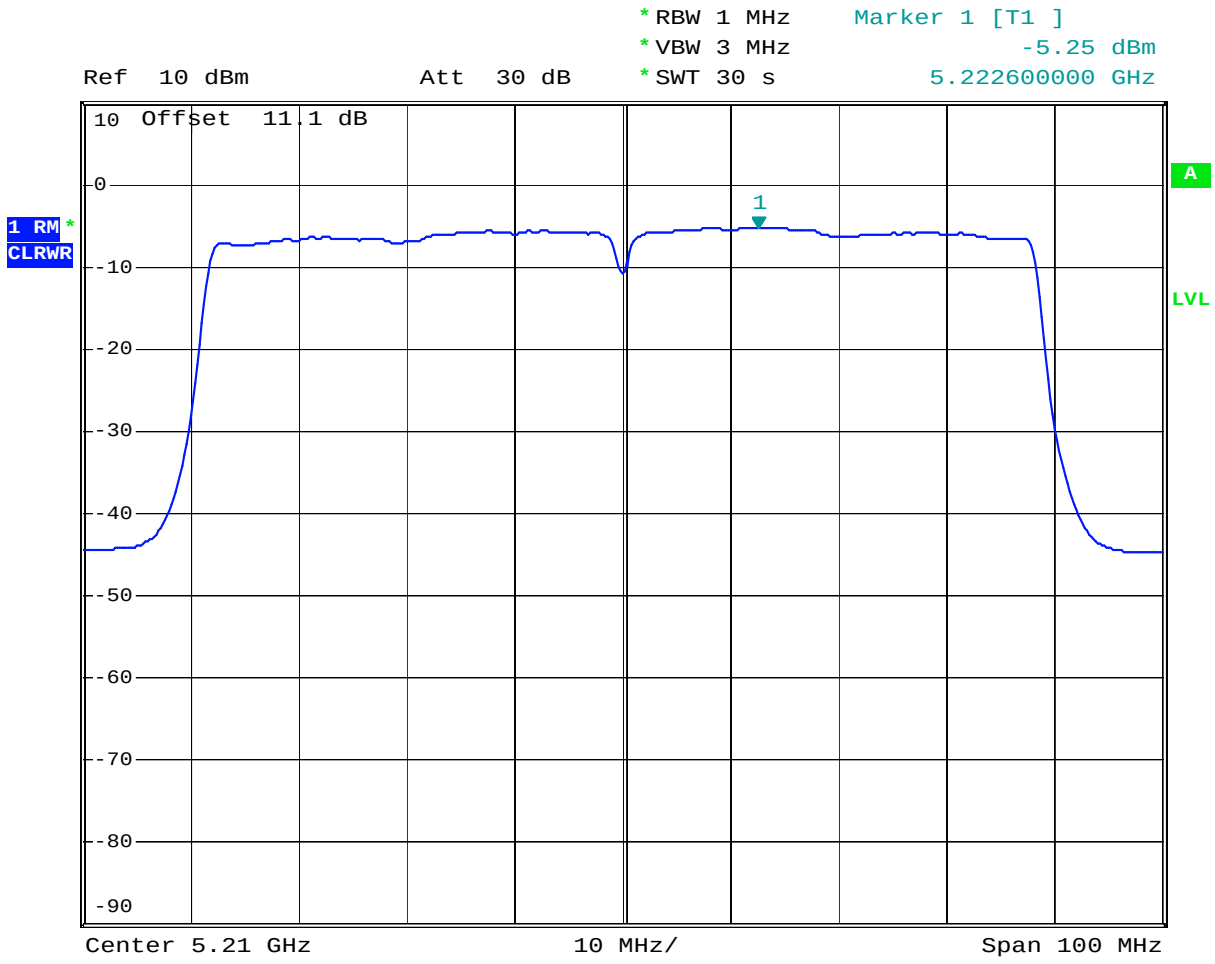
Plot 3. 17

802.11n 40MHz, 5230MHz



Plot 3. 18

H802.11ac 80MHz, 5210MHz



Date: 7.DEC.2015 14:09:37

4.4 Frequency stability
FCC 15.407(g)

4.4.1 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.

4.4.2 Procedure

The EUT was placed in a temperature chamber and setup to transmit. Procedures for frequency stability in ANSIC63.10:2013 section 6.8 was utilized.

The carrier frequency was measured with the spectrum analyzer with resolution bandwidth of 1 kHz. The temperature was varied from 0^0C to 50^0C, as stated in the user manual.

The radio module in this report is powered by 5.0VDC which was varied to 85% and 115% for testing. Testing was performed at a temperature of 20^0 C.

After the temperature stabilized for approximately 20 minutes, the transmitting frequency was measured.

Tested By:	Anderson Soungpanya
Test Date:	December 29, 2015

4.4.3 Result

Temperature, ^{0}C	Frequency at nominal voltage, (GHz)	Maximum deviation from frequency at 20°C, ppm
Nominal Frequency: 5180 MHz		
50	5180.009373	1.149
40	5180.008440	0.969
30	5180.007899	0.864
20	5180.003421	0.000
10	5180.001130	0.442
0	5180.000744	0.517
Voltage at 20^{0}C	**Frequency at nominal voltage, (GHz)**	**Maximum deviation from frequency at 20°C, ppm**
5V – 15%	5180.002242	0.228
5V + 15%	5180.002252	0.226

Temperature, ^{0}C	Frequency at nominal voltage, (GHz)	Maximum deviation from frequency at 20°C, ppm
Nominal Frequency: 5240 MHz		
50	5240.003244	0.348
40	5240.002342	0.176
30	5240.001131	0.055
20	5240.001421	0.000
10	5239.999131	0.437
0	5239.999429	0.380
Voltage at 20^{0}C	**Frequency at nominal voltage, (GHz)**	**Maximum deviation from frequency at 20°C, ppm**
5V – 15%	5240.002122	0.134
5V + 15%	5240.002142	0.138

4.5 Transmitter Radiated Emissions
FCC Rule 15.407(b) (1-8) 15.209, 15.205

4.5.1 Requirement

(b) Undesirable emission limits. Except as shown in paragraph (b) (7) of this section, the maximum 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 e.i.r.p. of −27 dBm/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 e.i.r.p. of −27 dBm/MHz.

(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

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

(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

(6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.

(7) The provisions of §15.205 apply to intentional radiators operating under this section.

(8) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits.

Emissions which fall in the restricted bands, as defined in §15.205(a), must comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

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 –27 dBm/MHz.

Note: This corresponds to the field strength level of 68.3 dB(μV/m) at 3 m distance when measure with 1 MHz resolution bandwidth.

4.5.2 Procedure

Radiated emission measurements were performed from 30 MHz to 40 GHz according to the procedure described in ANSI C64.10. Spectrum Analyzer Resolution Bandwidth is 100 kHz or greater for frequencies 30 MHz to 1000 MHz, 1 MHz for frequencies above 1000 MHz. Above 1000 MHz Peak and Average measurements were performed.

The EUT is placed on a plastic turntable that is 80 cm in height for below 1000MHz and 1.5m in height for above 1GHz. If the EUT attaches to peripherals, they are connected and operational (as typical as possible). During testing, all cables were manipulated to produce worst-case emissions. The signal is maximized through rotation. The antenna height and polarization are varied during the search for maximum signal level. The antenna height is varied from 1 to 4 meters.

Radiated emissions are taken at 3 meters for frequencies above 1 GHz and at 10 meters for frequencies below 1 GHz.

Measurements made from 30 MHz to 40 GHz were measured with 50 ohm terminator on the output of the EUT RF port. A preamp was used from 30MHz to 40GHz.

All measurements were made with a Peak Detector and compared to QP limits for 30MHz – 1GHz and Average limits for 1GHz – 40 GHz.

Data is included of the worst-case configuration (the configuration which resulted in the highest emission levels).

4.5.3 Field Strength Calculation

Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CF – AG; if measurement is performed at a distance other than specified in the rule, a Distance Correction Factor (DCF) shall be added.

Where FS = Field Strength in dB(μV/m)
RA = Receiver Amplitude (including preamplifier) in dB(μV); AF = Antenna Factor in dB(1/m)
CF = Cable Attenuation Factor in dB; AG = Amplifier Gain in dB

Assume a receiver reading of 52.0 dB(μV) is obtained. The antennas factor of 7.4 dB(1/m) and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted, giving field strength of 32 dB(μV/m). This value in dB(μV/m) was converted to its corresponding level in μV/m.
RA = 52.0 dB(μV)
AF = 7.4 dB(1/m)
CF = 1.6 dB
AG = 29.0 dB
FS = 52.0+7.4+1.6-29.0 = 32 dB(μV/m).
Level in μV/m = Common Antilogarithm [(32 dBμV/m)/20] = 39.8 μV/m.

4.5.4 Antenna-port conducted measurements

Antenna-port conducted measurements may also be used as an alternative to radiated measurements for demonstrating compliance in the restricted frequency bands. If conducted measurements are performed, then proper impedance matching must be ensured and an additional radiated test for cabinet/case spurious emissions is required.

4.5.6 General Procedure for conducted measurements in restricted bands

a) Measure the conducted output power (in dBm) using the detector specified for determining quasi-peak, peak, and average conducted output power, respectively.

b) Add the maximum transmit antenna gain (in dBi) to the measured output power level to determine the EIRP level (see 12.2.5 for guidance on determining the applicable antenna gain)

c) Add the appropriate maximum ground reflection factor to the EIRP level (6 dB for frequencies ≤ 30 MHz, 4.7 dB for frequencies between 30 MHz and 1000 MHz, inclusive and 0 dB for frequencies > 1000 MHz).

d) For devices with multiple antenna-ports, measure the power of each individual chain and sum the EIRP of all chains in linear terms (*e.g.*, Watts, mW).

e) Convert the resultant EIRP level to an equivalent electric field strength using the following relationship:
$E = EIRP - 20\log D + 104.8$
where:
E = electric field strength in dBµV/m,
EIRP = equivalent isotropic radiated power in dBm
D = specified measurement distance in meters.
f) Compare the resultant electric field strength level to the applicable limit.
g) Perform radiated spurious emission test

4.5.7 Test Results

The data on the following pages list the significant emission frequencies, the limit and the margin of compliance where emissions are within 3dB of the limit.

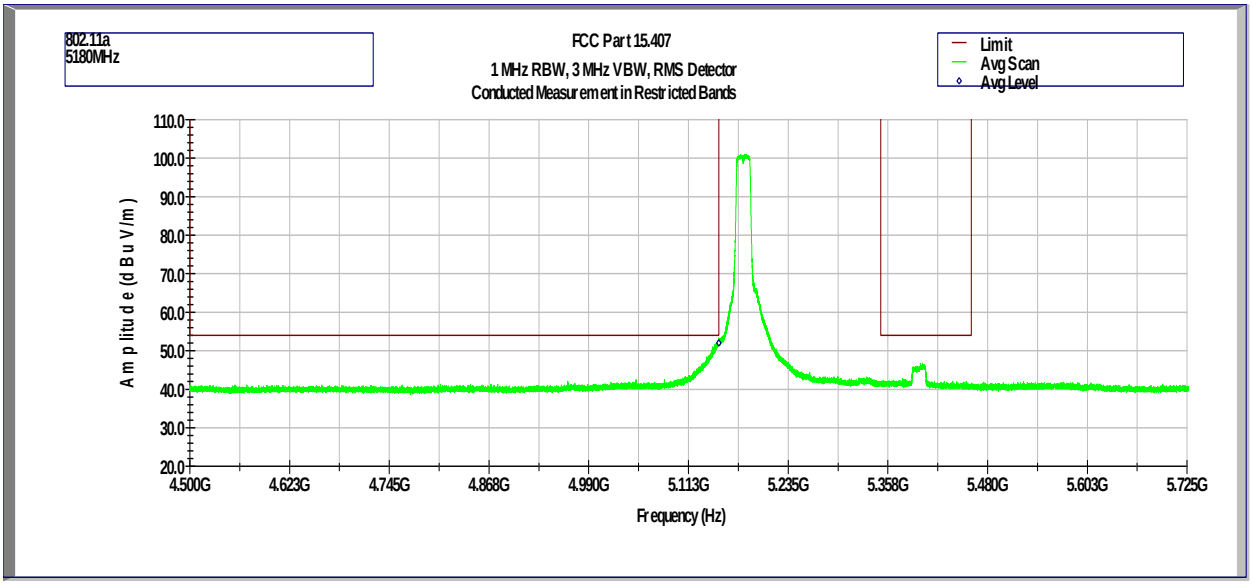
All conducted antenna port plots are corrected with the consideration of a 3.4 dBi Antenna Gain.

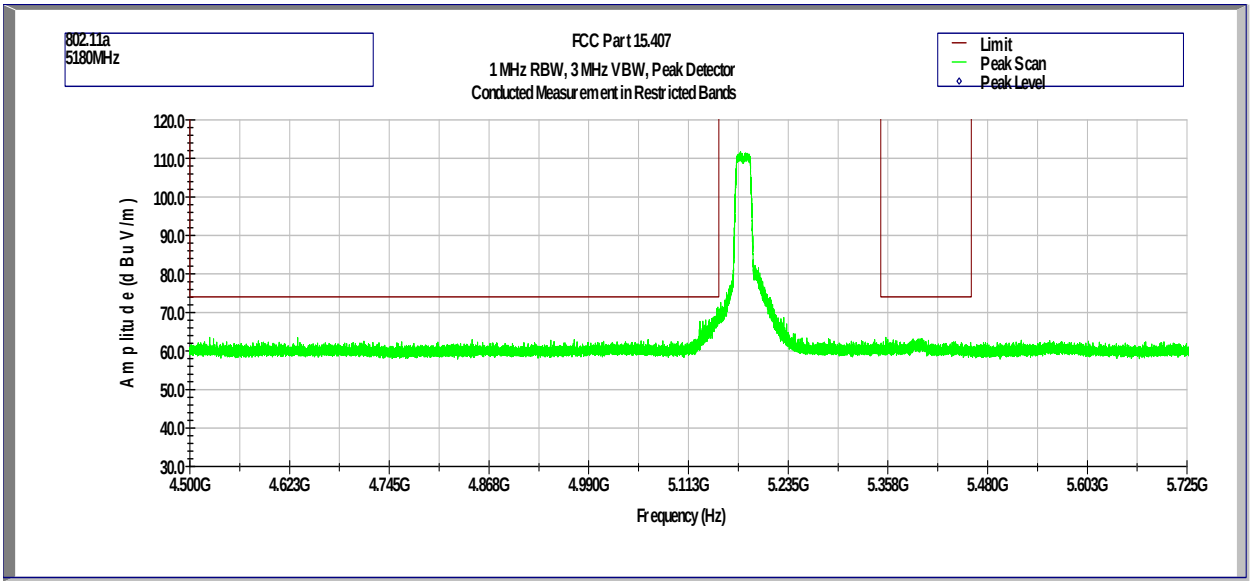
Radiated emission measurements were performed up to 40GHz. No Emissions were identified when scanned from 18-40 GHz.

Test Results: 15.209/15.205 Restricted Band Emissions at Antenna Port

Tested By:	Anderson Soungpanya
Test Date:	December 1-3, 2015

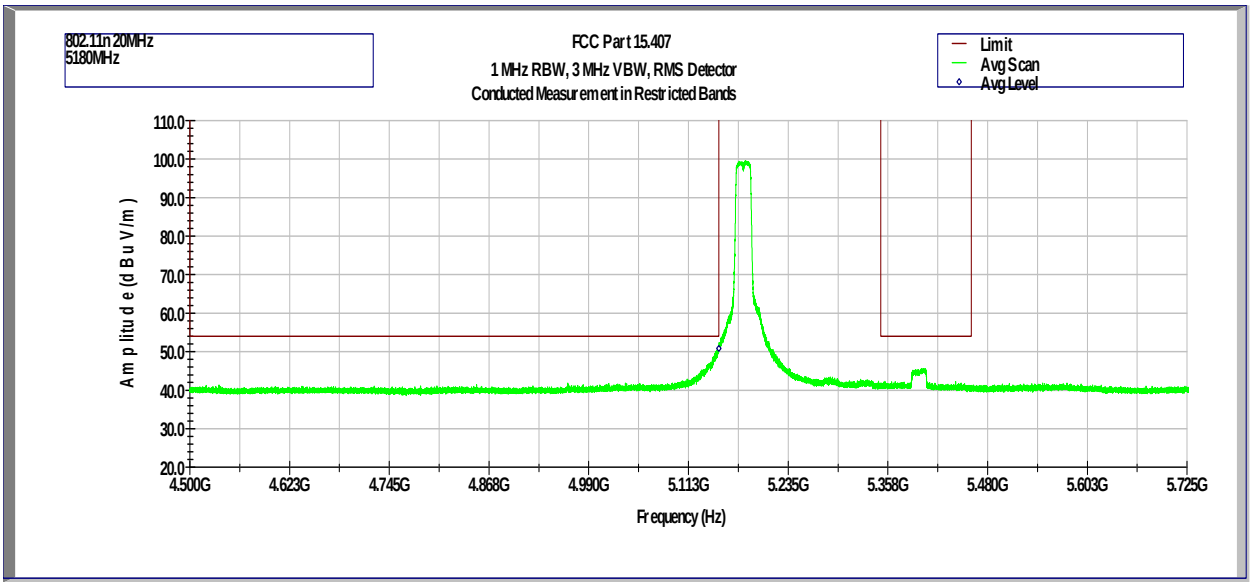
Out-of-Band Spurious Emissions at the Band Edge - 802.11a, 5180 MHz

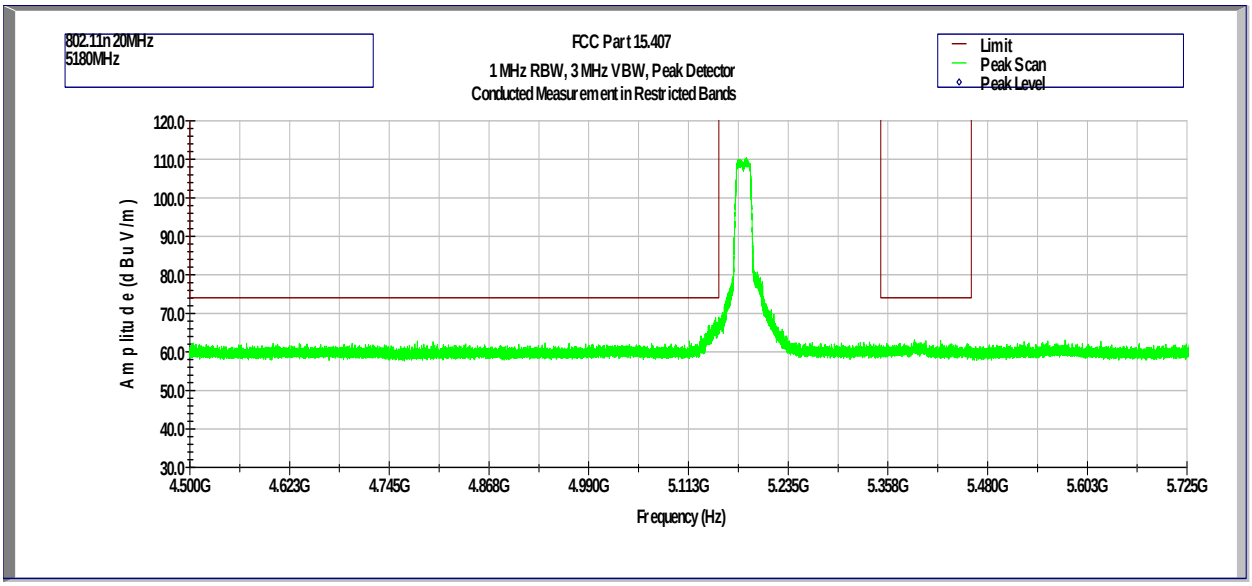




Frequency	Corrected Amplitude	Limit	Margin	Detector	Results
GHz	dBµV/m	dBµV/m	dB		
5.150	52.00	54	-2.0	Avg	Pass

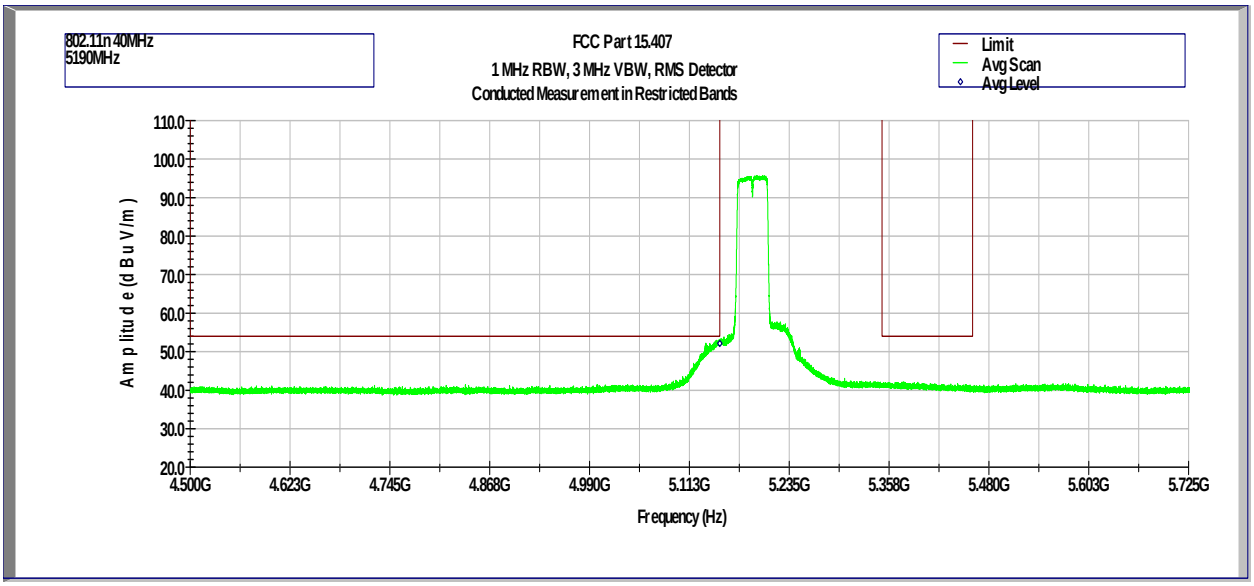
Out-of-Band Spurious Emissions at the Band Edge - 802.11 n 20MHz, 5180 MHz

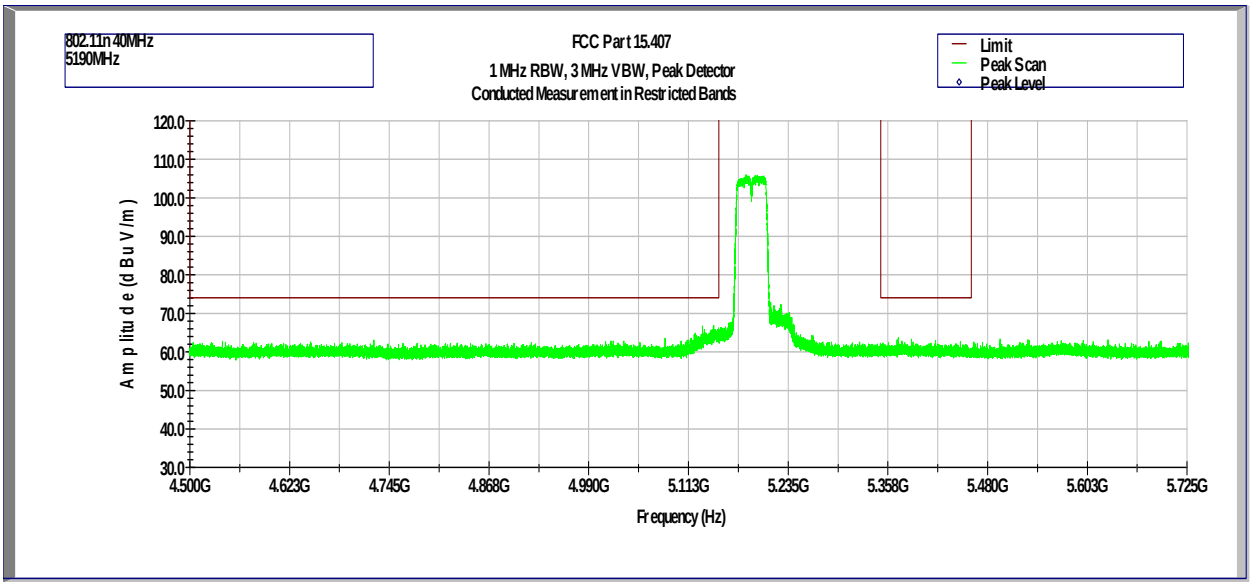




Frequency	Corrected Amplitude	Limit	Margin	Detector	Results
GHz	dBµV/m	dBµV/m	dB		
5.150	50.8	54	-3.2	Avg	Pass

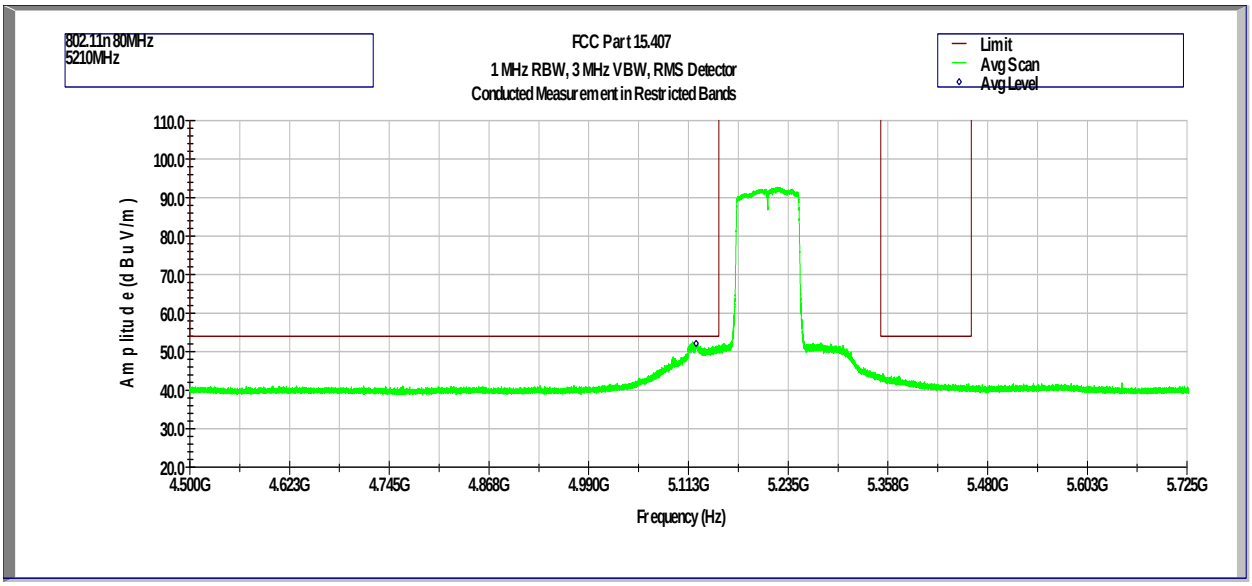
Out-of-Band Spurious Emissions at the Band Edge - 802.11n 40MHz, 5190 MHz

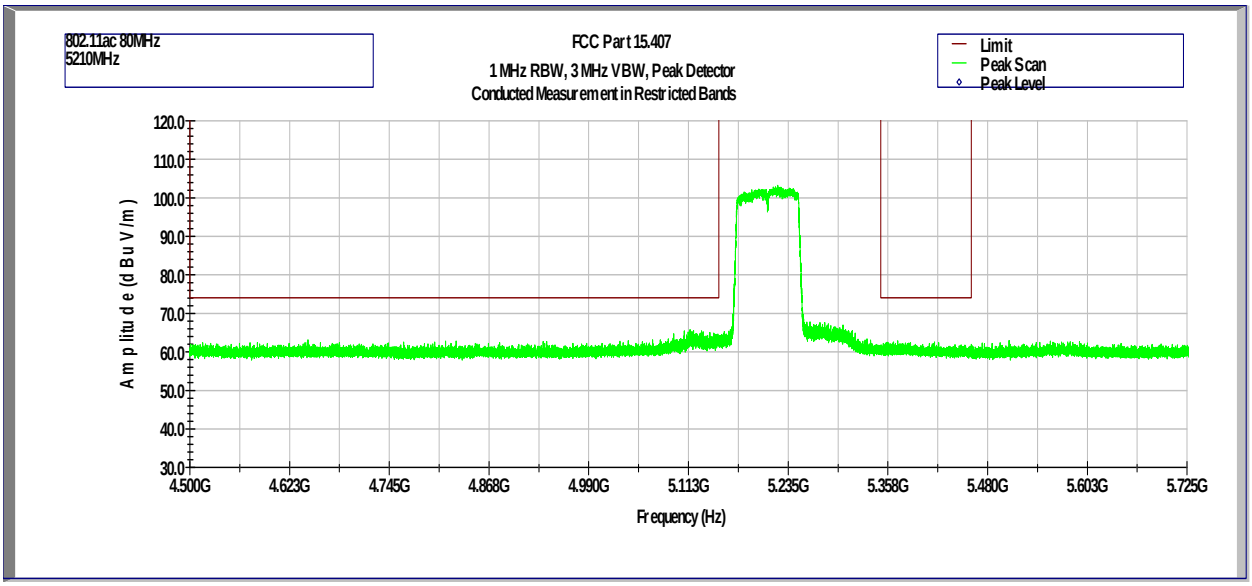




Frequency	Corrected Amplitude	Limit	Margin	Detector	Results
GHz	dBµV/m	dBµV/m	dB		
5.150	52.1	54	-1.9	Avg	Pass

Out-of-Band Spurious Emissions at the Band Edge - 802.11ac 80MHz, 5210 MHz



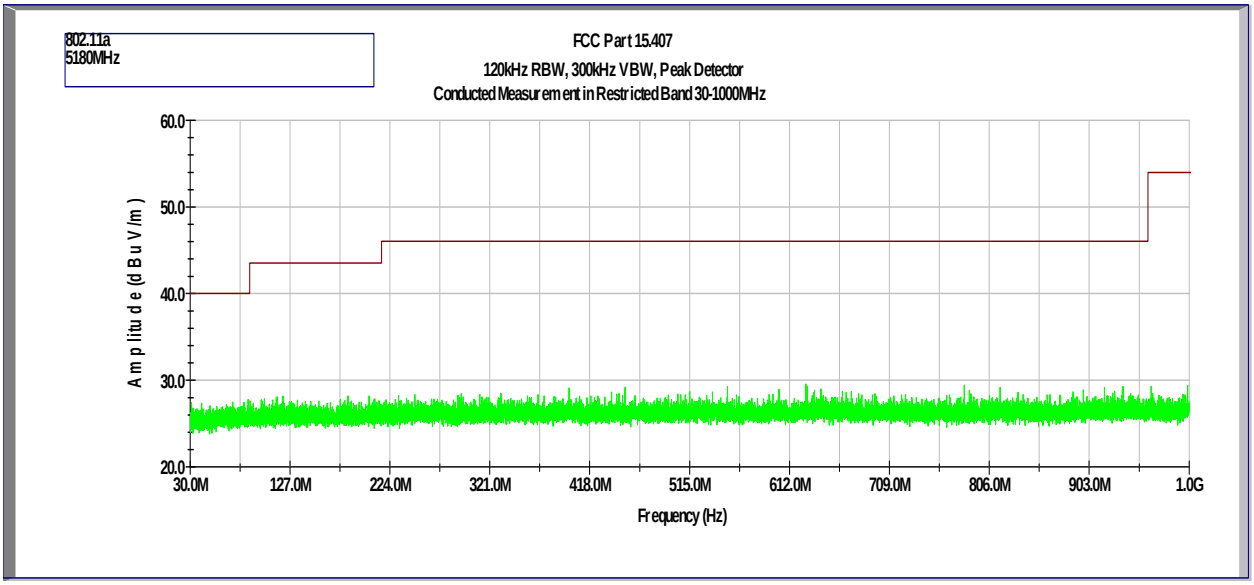


Frequency	Corrected Amplitude	Limit	Margin	Detector	Results
GHz	dBµV/m	dBµV/m	dB		
5.122	52.1	54	-1.9	Avg	Pass

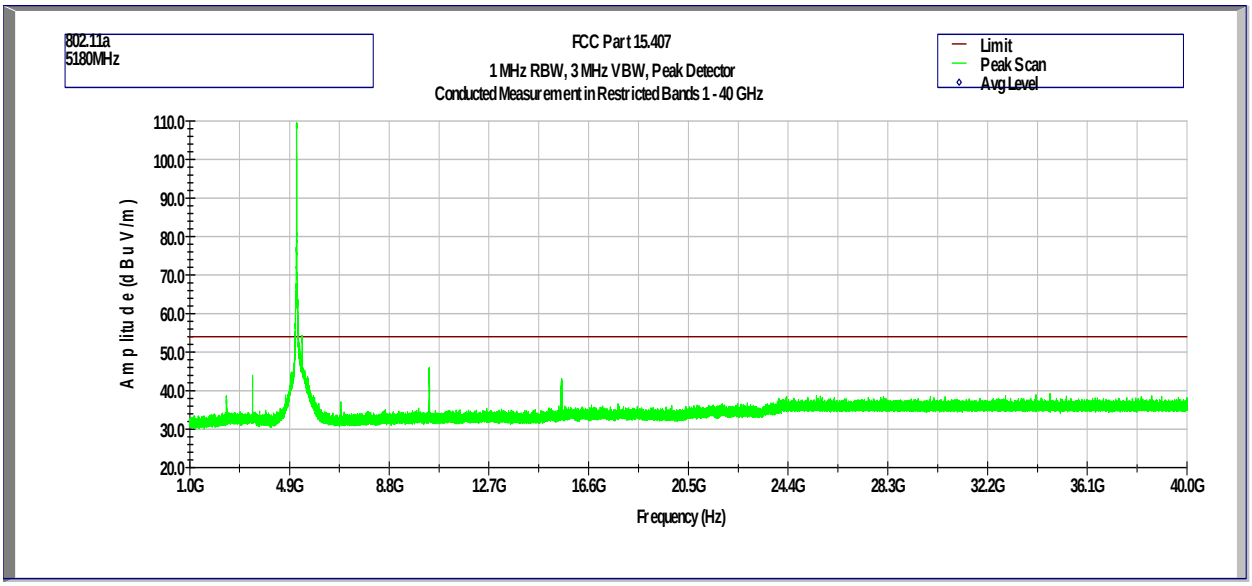
Out-of-Band Conducted Spurious Emissions (at Antenna Port)

Tx @ 5180MHz 802.11a

Out-of-Band Spurious Emissions at Antenna Port - 30 MHz to 1 GHz

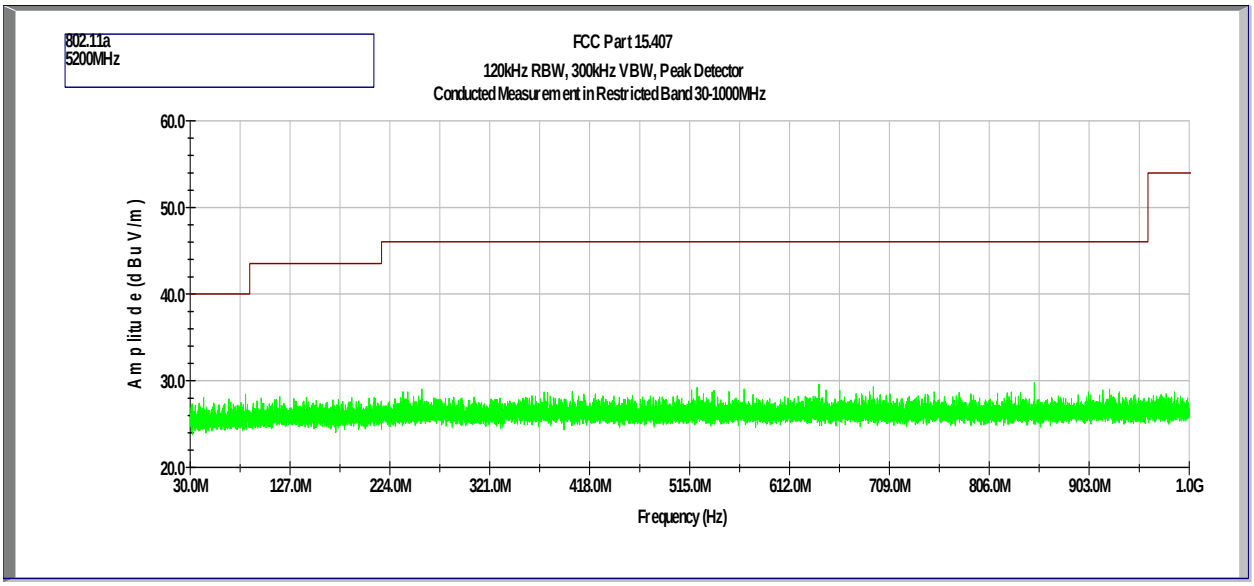


Out-of-Band Spurious Emissions at Antenna Port - 1 GHz to 40 GHz

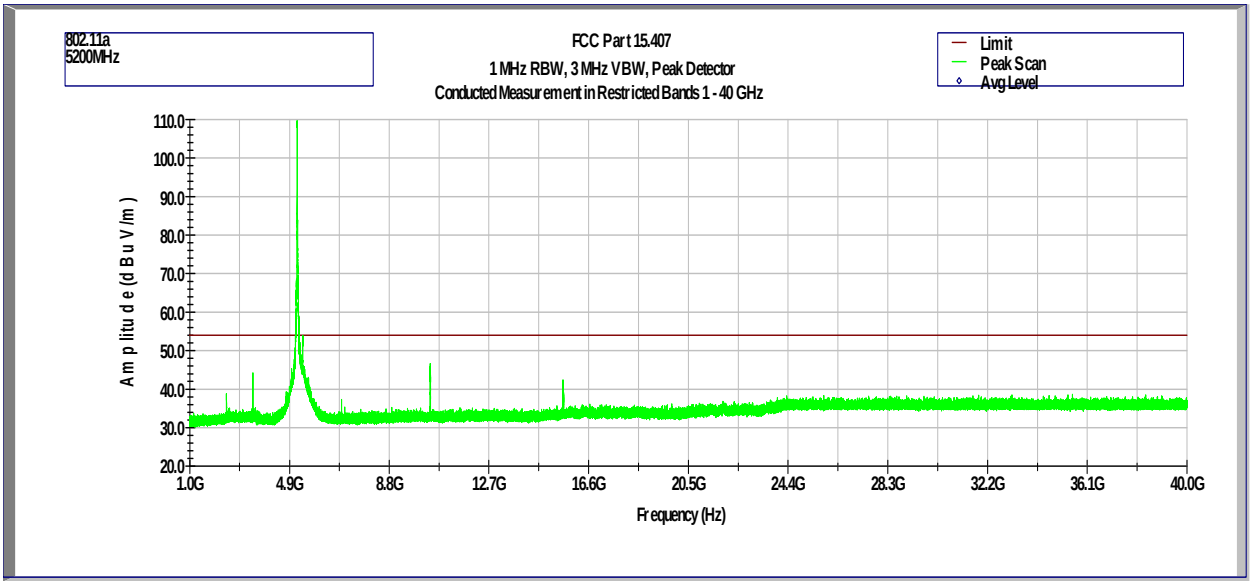


Tx @ 5200MHz 802.11a

Out-of-Band Spurious Emissions at Antenna Port - 30 MHz to 1 GHz

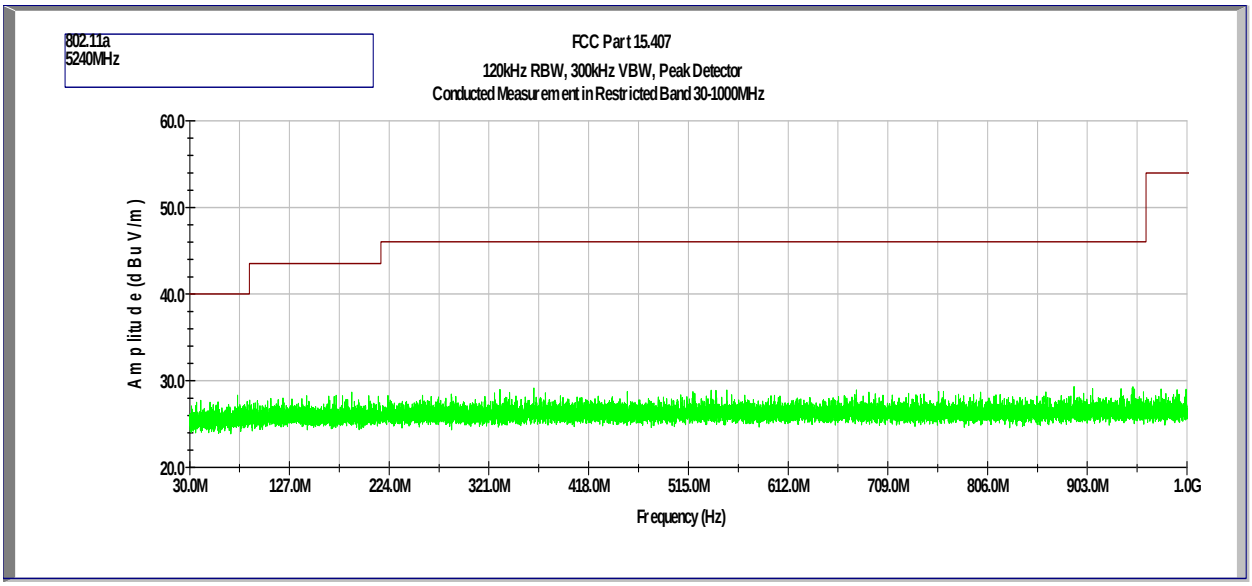


Out-of-Band Spurious Emissions at Antenna Port - 1 GHz to 40 GHz

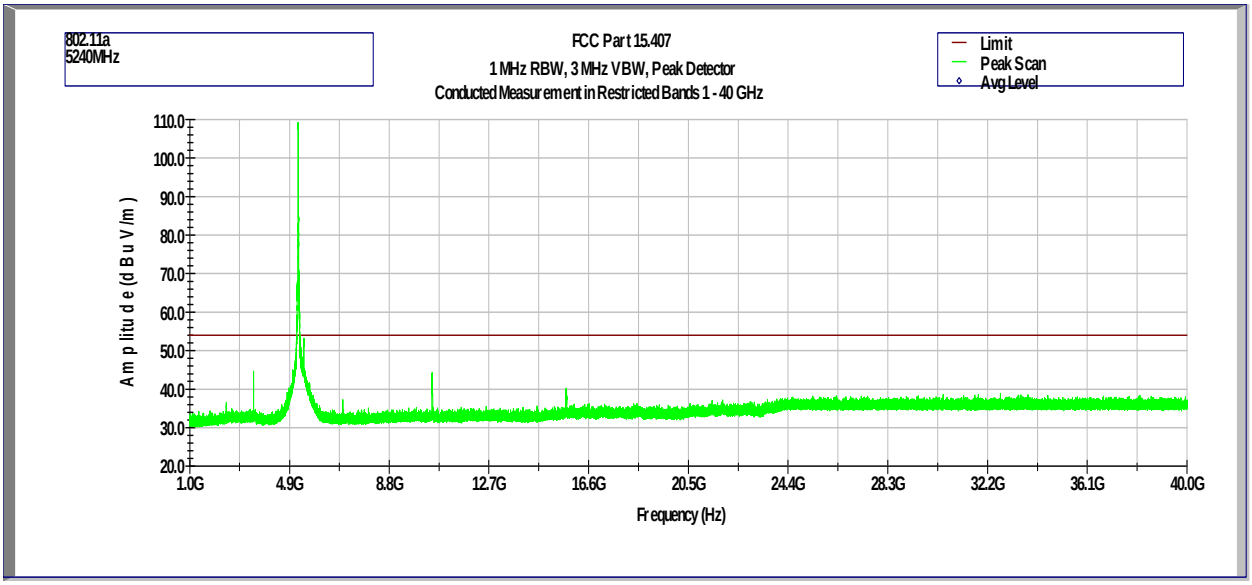


Tx @ 5240MHz 802.11a

Out-of-Band Spurious Emissions at Antenna Port - 30 MHz to 1 GHz

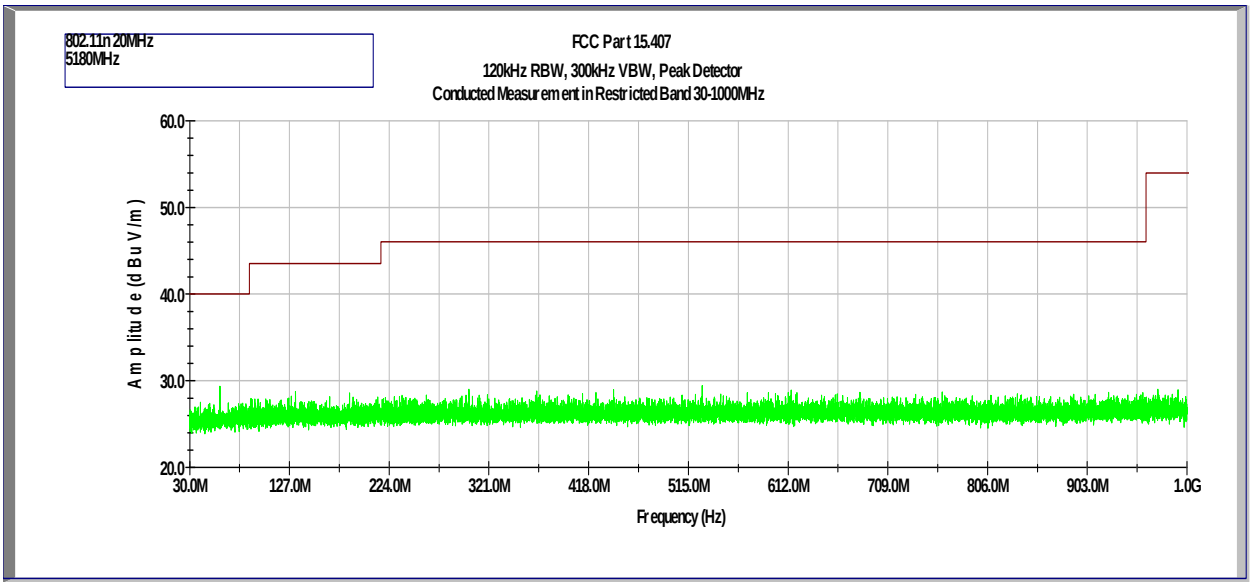


Out-of-Band Spurious Emissions at Antenna Port - 1 GHz to 40 GHz

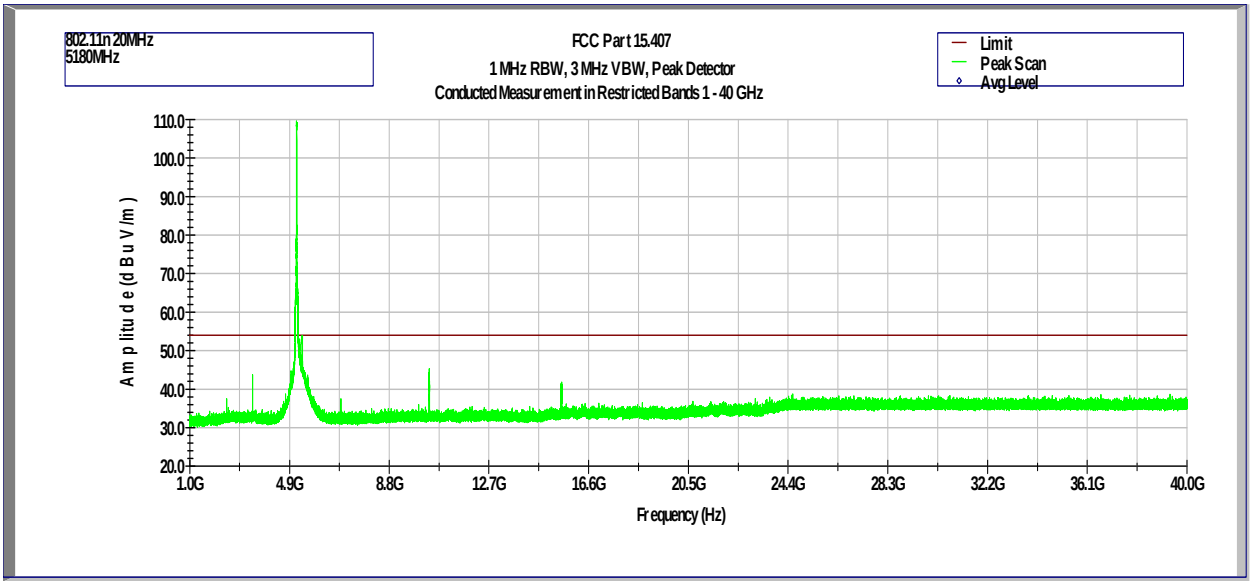


Tx @ 5180MHz 802.11n 20MHz

Out-of-Band Spurious Emissions at Antenna Port - 30 MHz to 1 GHz

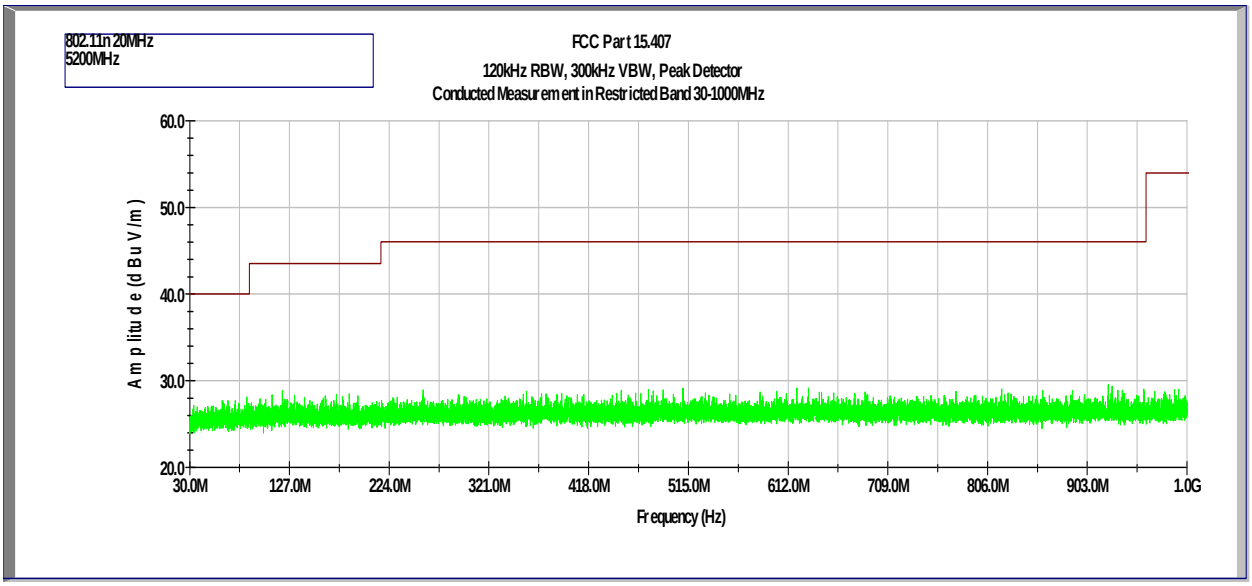


Out-of-Band Spurious Emissions at Antenna Port - 1 GHz to 40 GHz

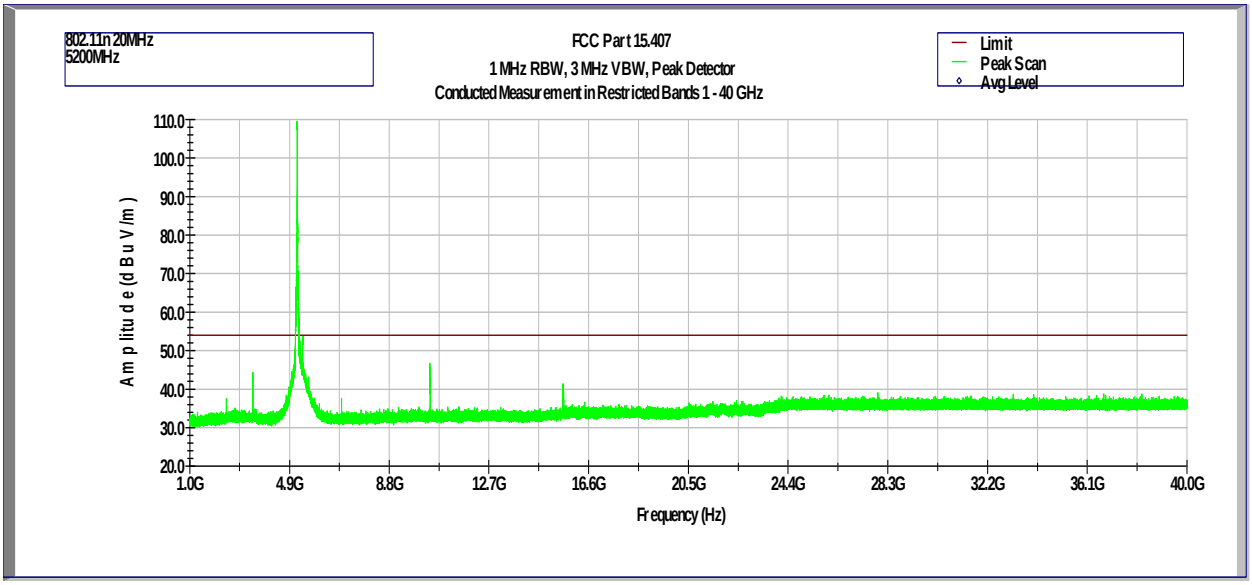


Tx @ 5200MHz 802.11n 20MHz

Out-of-Band Spurious Emissions at Antenna Port - 30 MHz to 1 GHz

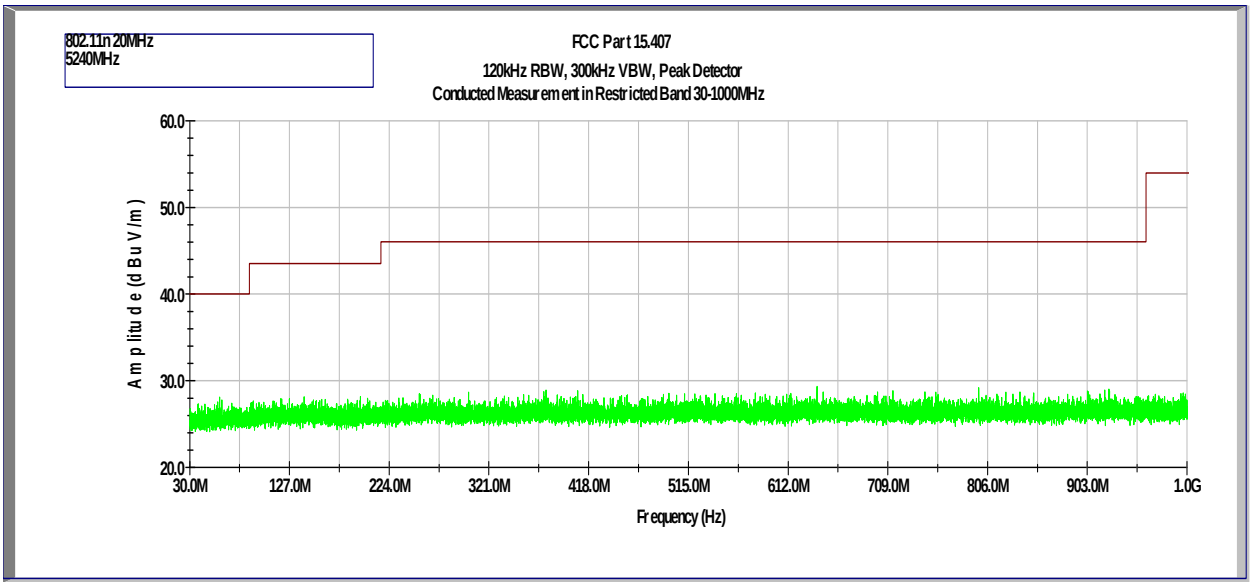


Out-of-Band Spurious Emissions at Antenna Port - 1 GHz to 40 GHz

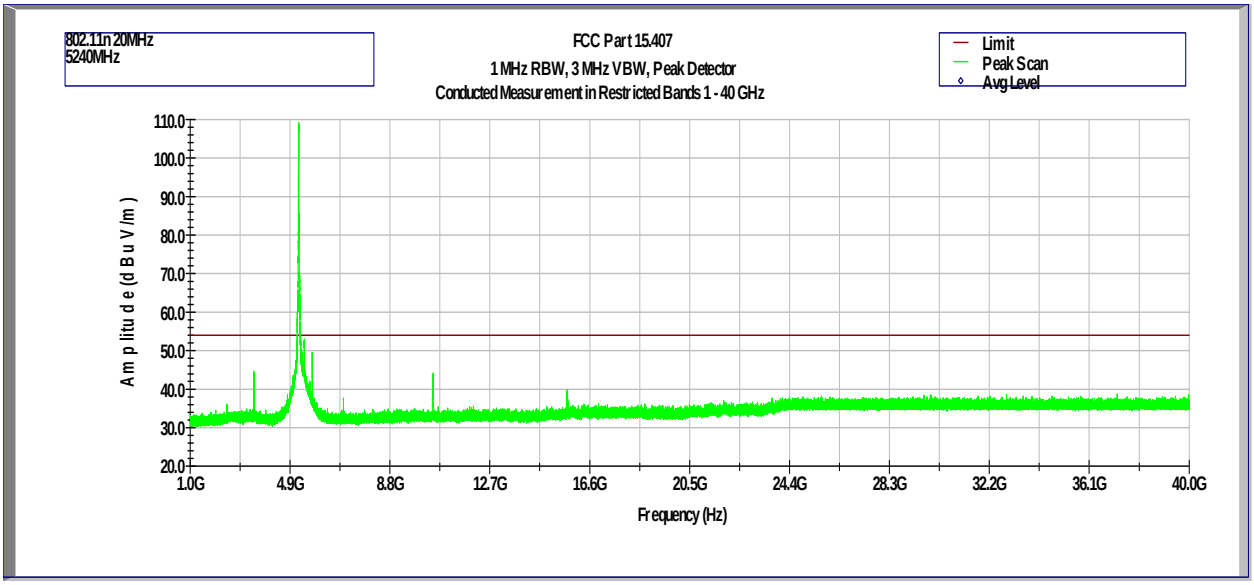


Tx @ 5240MHz 802.11n 20MHz

Out-of-Band Spurious Emissions at Antenna Port - 30 MHz to 1 GHz

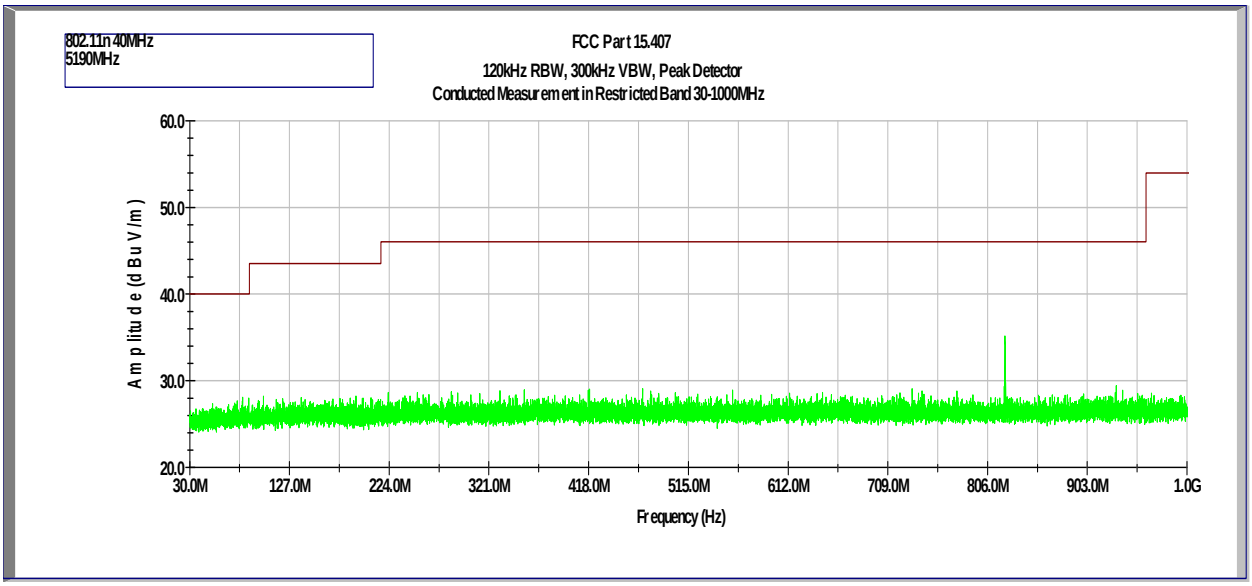


Out-of-Band Spurious Emissions at Antenna Port - 1 GHz to 40 GHz

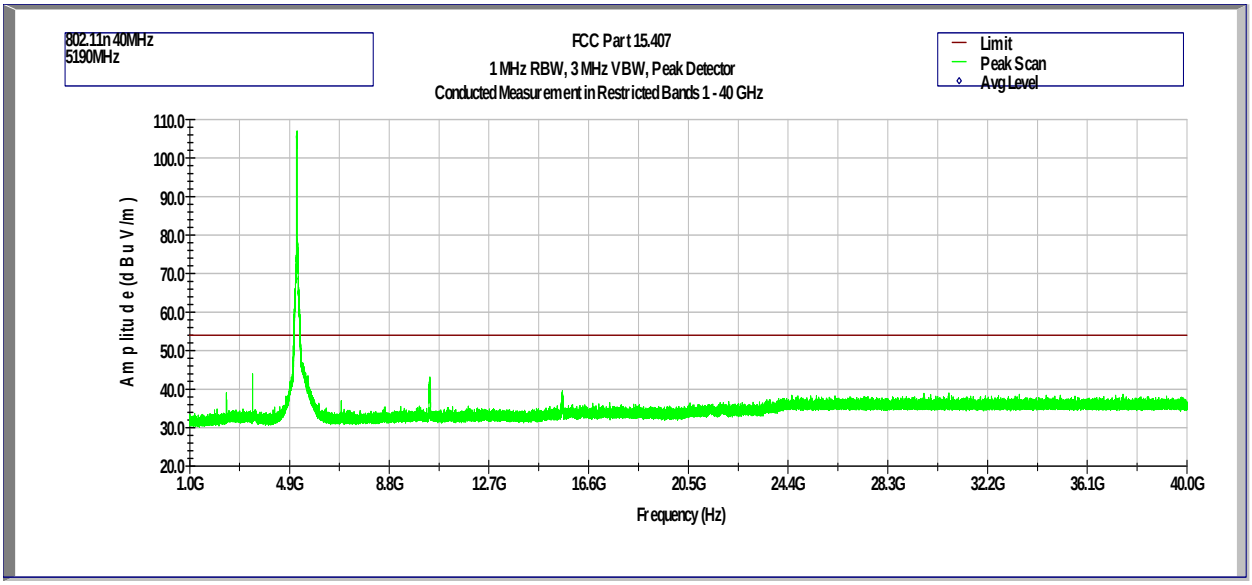


Tx @ 5190MHz 802.11n 40MHz

Out-of-Band Spurious Emissions at Antenna Port - 30 MHz to 1 GHz

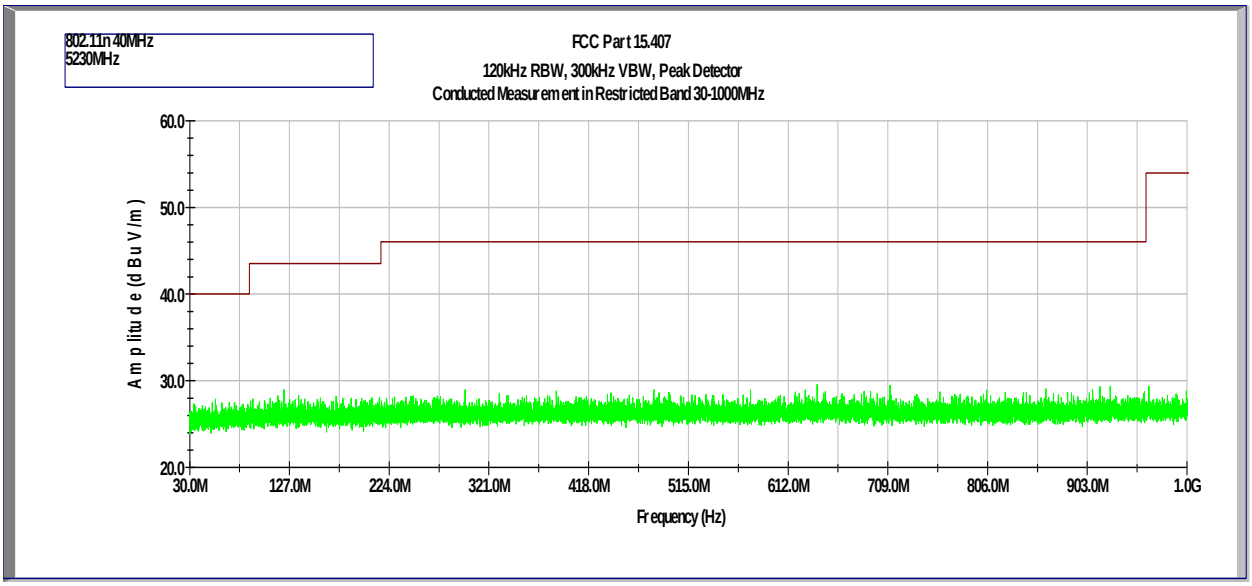


Out-of-Band Spurious Emissions at Antenna Port - 1 GHz to 40 GHz

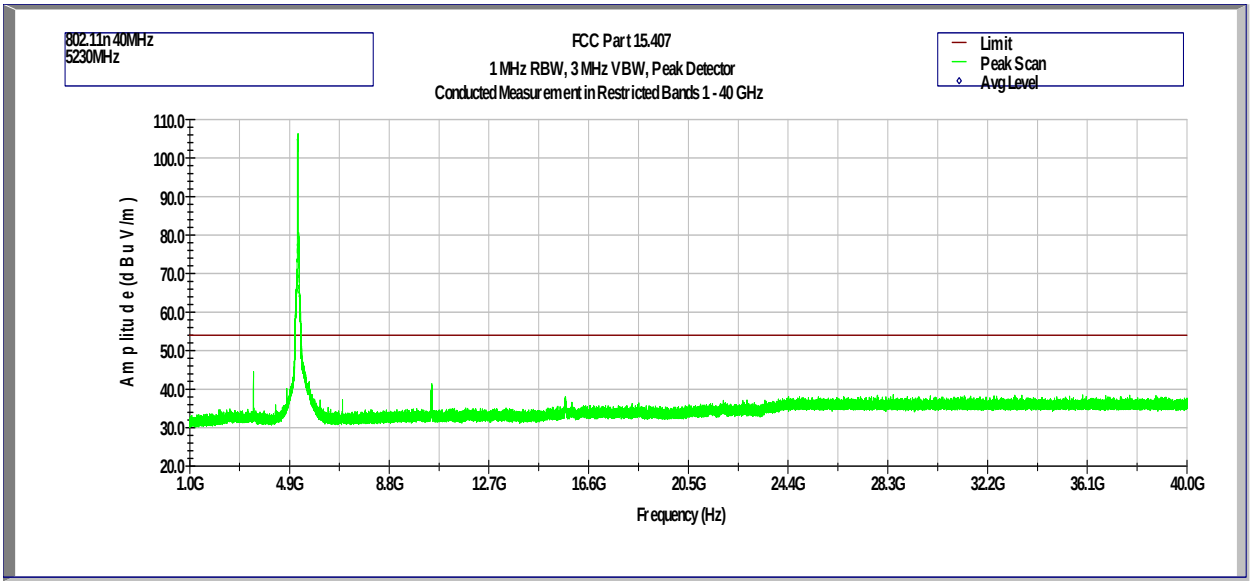


Tx @ 5230MHz 802.11n 40MHz

Out-of-Band Spurious Emissions at Antenna Port - 30 MHz to 1 GHz

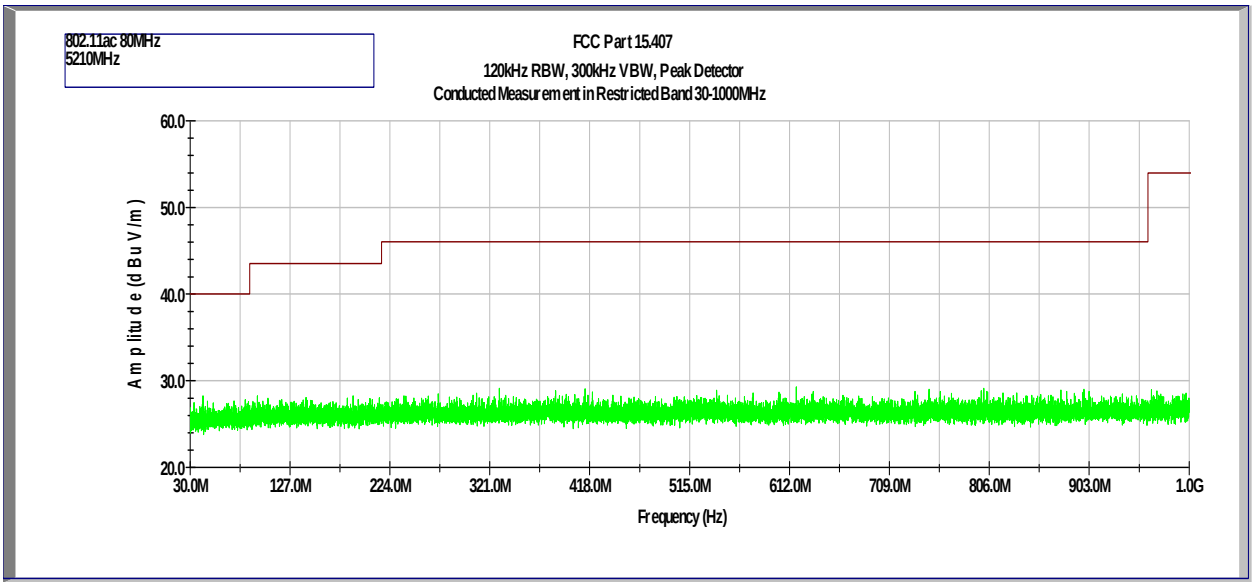


Out-of-Band Spurious Emissions at Antenna Port - 1 GHz to 40 GHz

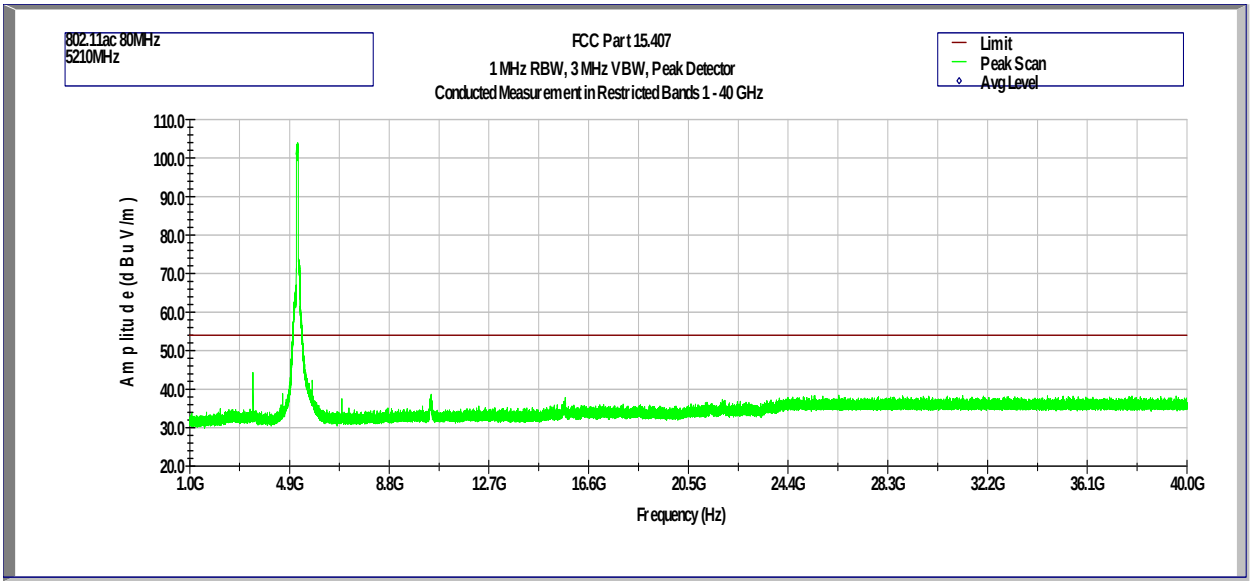


Tx @ 5210MHz 802.11ac 80MHz

Out-of-Band Spurious Emissions at Antenna Port - 30 MHz to 1 GHz



Out-of-Band Spurious Emissions at Antenna Port - 1 GHz to 40 GHz



Out-of-Band Radiated Spurious Emissions (Cabinet Radiation)

Tested By:	Anderson Soungpanya
Test Date:	December 8-18, 2015

Test Results: 15.209 Radiated Spurious Emissions Low Channel, Tx at 802.11a 5180MHz

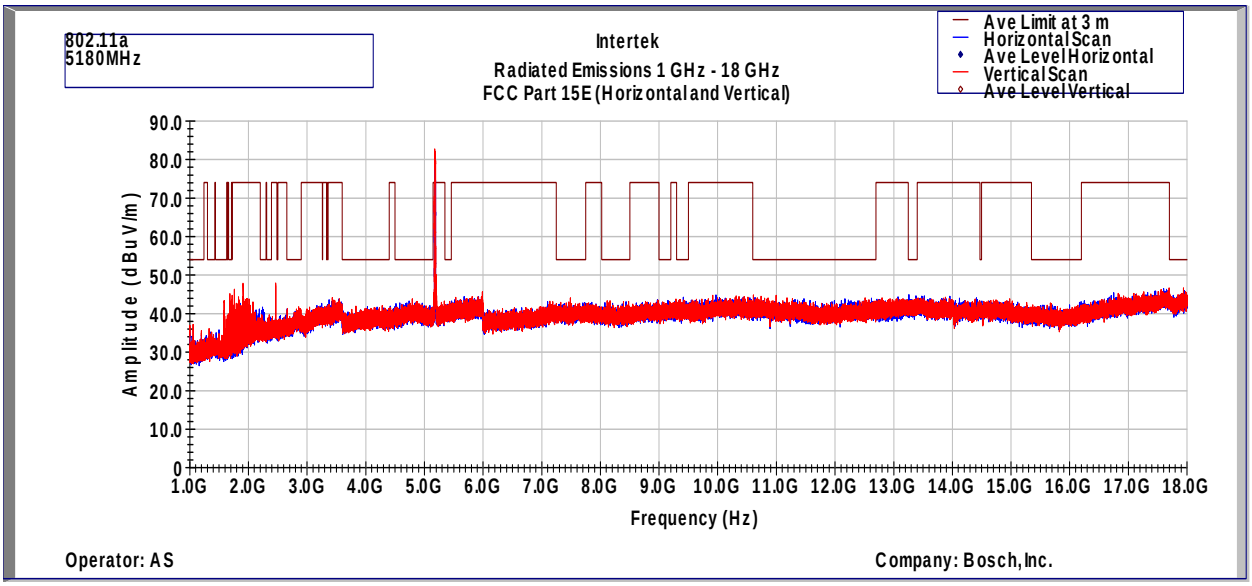
Radiated Spurious Emissions 30 MHz - 1000 MHz (Horizontal)

Frequency	Peak FS	Limit@3m	Margin	RA	CF	AG	DCF	AF
MHz	dB(uV/m)	dB(uV/m)	dB	dB(uV)	dB	dB	dB	dB(1/m)
181.449	36.1	43.5	-7.4	47.0	1.5	32.0	10.5	9.2
192.022	35.7	43.5	-7.8	46.2	1.5	32.0	10.5	9.5
193.930	35.7	43.5	-7.8	46.2	1.5	32.0	10.5	9.5
216.014	38.9	46.0	-7.1	48.2	1.7	32.0	10.5	10.6
263.996	34.2	46.0	-11.8	40.8	2.0	32.0	10.5	12.8
300.016	37.3	46.0	-8.7	43.1	2.3	32.0	10.5	13.3
312.011	37.3	46.0	-8.7	42.8	2.3	32.0	10.5	13.6
323.296	36.9	46.0	-9.1	42.1	2.4	32.0	10.5	13.9
359.994	34.6	46.0	-11.4	38.9	2.5	32.0	10.5	14.7
389.967	34.5	46.0	-11.5	37.9	2.5	32.0	10.5	15.5
394.009	36.2	46.0	-9.8	39.5	2.6	32.0	10.5	15.7
420.005	36.5	46.0	-9.5	38.9	2.6	32.0	10.5	16.5
452.564	34.2	46.0	-11.8	36.0	2.7	32.0	10.5	17.0
479.983	37.2	46.0	-8.8	39.0	2.8	32.1	10.5	16.9
527.998	40.7	46.0	-5.3	41.3	3.0	32.1	10.5	18.0
539.994	38.6	46.0	-7.4	39.4	3.0	32.1	10.5	17.9
550.017	35.1	46.0	-10.9	36.1	3.0	32.1	10.5	17.7
600.004	39.0	46.0	-7.0	39.4	3.1	32.2	10.5	18.3
606.018	35.1	46.0	-10.9	35.3	3.1	32.2	10.5	18.4
623.996	34.9	46.0	-11.1	34.5	3.2	32.2	10.5	18.9
644.010	36.7	46.0	-9.3	35.8	3.3	32.2	10.5	19.3
648.019	37.1	46.0	-8.9	36.3	3.3	32.3	10.5	19.3
659.983	34.4	46.0	-11.6	33.5	3.4	32.3	10.5	19.3
672.011	35.3	46.0	-10.7	34.5	3.4	32.3	10.5	19.2
711.199	36.9	46.0	-9.1	35.0	3.6	32.3	10.5	20.1
731.019	36.0	46.0	-10.0	33.9	3.7	32.2	10.5	20.2
743.985	34.4	46.0	-11.6	32.3	3.7	32.2	10.5	20.1
769.011	36.1	46.0	-9.9	33.7	3.8	32.2	10.5	20.3
780.004	34.9	46.0	-11.1	32.2	3.8	32.1	10.5	20.5
801.926	35.5	46.0	-10.5	32.2	3.8	32.1	10.5	21.1
1000	43.6	54.0	-10.4	36.9	4.2	30.8	10.5	22.8

Radiated Spurious Emissions 30 MHz - 1000 MHz (Vertical)

Frequency	Peak FS	Limit@3m	Margin	RA	CF	AG	DCF	AF
MHz	dB(uV/m)	dB(uV/m)	dB	dB(uV)	dB	dB	dB	dB(1/m)
123.831	34.0	43.5	-9.5	42.5	1.2	32.0	10.5	11.9
124.995	37.5	43.5	-6.0	46.0	1.2	32.0	10.5	11.8
125.513	34.2	43.5	-9.3	42.8	1.2	32.0	10.5	11.8
162.987	34.0	43.5	-9.5	45.7	1.4	32.0	10.5	8.5
164.798	35.3	43.5	-8.2	46.7	1.4	32.0	10.5	8.7
167.772	37.0	43.5	-6.5	47.9	1.4	32.0	10.5	9.1
170.715	37.1	43.5	-6.4	47.8	1.4	32.0	10.5	9.4
184.974	38.3	43.5	-5.2	49.0	1.5	32.0	10.5	9.3
192.022	37.8	43.5	-5.7	48.3	1.5	32.0	10.5	9.5
193.995	35.7	43.5	-7.8	46.2	1.5	32.0	10.5	9.5
204.503	35.5	43.5	-8.0	45.6	1.6	32.0	10.5	9.8
205.796	34.6	43.5	-8.9	44.6	1.6	32.0	10.5	9.9
206.960	34.5	43.5	-9.0	44.4	1.6	32.0	10.5	10.0
209.547	35.6	43.5	-7.9	45.3	1.6	32.0	10.5	10.2
210.840	34.9	43.5	-8.6	44.5	1.7	32.0	10.5	10.2
212.198	35.6	43.5	-7.9	45.1	1.7	32.0	10.5	10.3
213.427	34.6	43.5	-8.9	44.0	1.7	32.0	10.5	10.4
214.623	35.6	43.5	-7.9	44.9	1.7	32.0	10.5	10.5
217.307	35.1	46.0	-10.9	44.2	1.7	32.0	10.5	10.7
219.764	34.9	46.0	-11.1	43.8	1.7	32.0	10.5	10.8
221.058	34.2	46.0	-11.8	43.1	1.7	32.0	10.5	10.9
222.351	35.0	46.0	-11.0	43.7	1.7	32.0	10.5	11.1
223.677	35.6	46.0	-10.4	44.2	1.7	32.0	10.5	11.2
224.938	34.9	46.0	-11.1	43.4	1.8	32.0	10.5	11.3
226.296	34.0	46.0	-12.0	42.3	1.8	32.0	10.5	11.5
227.46	34.8	46.0	-11.2	43.0	1.8	32.0	10.5	11.6
230.014	34.9	46.0	-11.1	42.7	1.8	32.0	10.5	11.8
240.005	39.1	46.0	-6.9	46.7	1.9	32.0	10.5	12.0
528.030	35.9	46.0	-10.1	36.6	3.0	32.1	10.5	18.0
551.989	35.8	46.0	-10.2	36.7	3.0	32.1	10.5	17.8
625.030	38.1	46.0	-7.9	37.8	3.2	32.2	10.5	18.9
749.999	36.7	46.0	-9.3	34.9	3.7	32.2	10.5	19.8
801.926	37.2	46.0	-8.8	33.9	3.8	32.1	10.5	21.1
967.052	37.5	54.0	-16.5	31.5	4.1	31.1	10.5	22.5

Out-of-Band Radiated Spurious Emissions (Cabinet Radiation) - 1 GHz to 18 GHz



Note: Radiated emission measurements were performed up to 40GHz. No Emissions were identified when scanned from 18-40 GHz

Note: FS@3m = RA + AF + CF - Preamp, (Peak)

Corrected Peak Scans are under the Average Limit of 54.

Test Results: 15.209 Radiated Spurious Emissions Low Channel, Tx at 802.11a 5200MHz

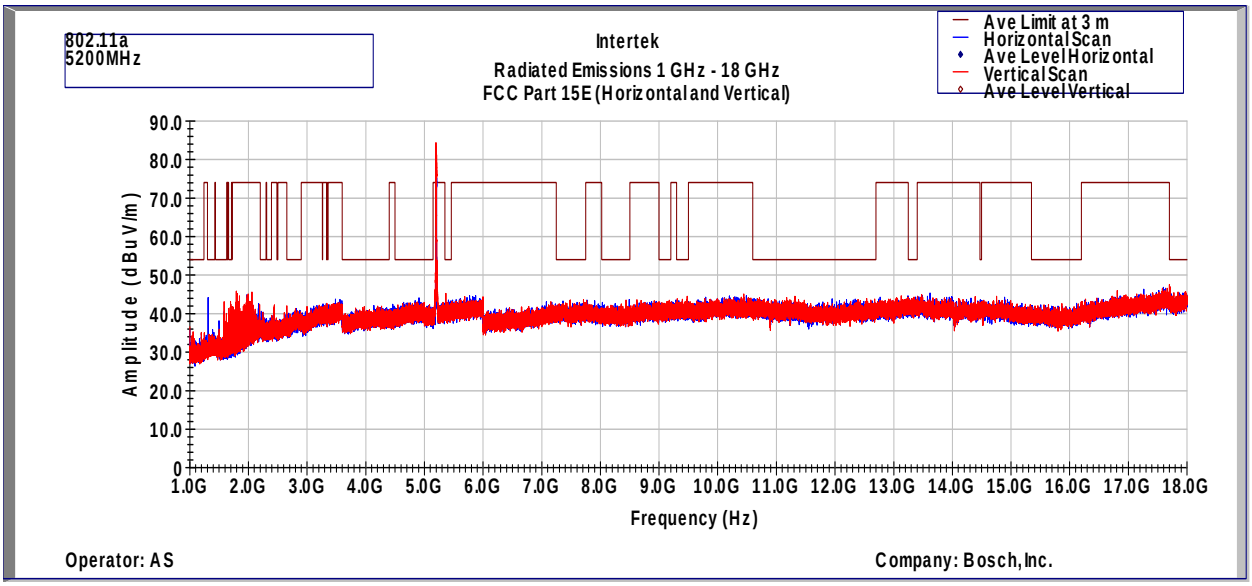
Radiated Spurious Emissions 30 MHz - 1000 MHz (Horizontal)

Frequency	Peak FS	Limit@3m	Margin	RA	CF	AG	DCF	AF
MHz	dB(uV/m)	dB(uV/m)	dB	dB(uV)	dB	dB	dB	dB(1/m)
167.999	35.8	43.5	-7.7	46.8	1.4	32.0	10.5	9.2
172.525	36.6	43.5	-6.9	47.3	1.4	32.0	10.5	9.4
191.990	36.0	43.5	-7.5	46.5	1.5	32.0	10.5	9.5
193.962	35.3	43.5	-8.2	45.8	1.5	32.0	10.5	9.5
206.96	34.2	43.5	-9.3	44.1	1.6	32.0	10.5	10.0
250.028	40.8	46.0	-5.2	48.5	1.9	32.0	10.5	11.8
299.983	36.3	46.0	-9.7	42.1	2.3	32.0	10.5	13.3
312.011	37.5	46.0	-8.5	43.1	2.3	32.0	10.5	13.6
323.263	38.6	46.0	-7.4	43.7	2.4	32.0	10.5	13.9
359.994	34.6	46.0	-11.4	38.9	2.5	32.0	10.5	14.7
383.985	34.0	46.0	-12.0	37.5	2.5	32.0	10.5	15.5
419.972	35.5	46.0	-10.5	37.9	2.6	32.0	10.5	16.5
452.564	35.3	46.0	-10.7	37.1	2.7	32.0	10.5	17.0
479.983	36.0	46.0	-10.0	37.8	2.8	32.1	10.5	16.9
527.998	40.0	46.0	-6.0	40.6	3.0	32.1	10.5	18.0
540.026	38.2	46.0	-7.8	39.0	3.0	32.1	10.5	17.8
550.017	35.4	46.0	-10.6	36.3	3.0	32.1	10.5	17.7
600.004	39.2	46.0	-6.8	39.5	3.1	32.2	10.5	18.3
606.018	34.6	46.0	-11.4	34.8	3.1	32.2	10.5	18.4
644.010	36.8	46.0	-9.2	35.9	3.3	32.2	10.5	19.3
648.019	35.6	46.0	-10.4	34.8	3.3	32.3	10.5	19.3
672.011	34.1	46.0	-11.9	33.3	3.4	32.3	10.5	19.2
711.166	37.7	46.0	-8.3	35.8	3.6	32.3	10.5	20.1
719.993	35.2	46.0	-10.8	33.1	3.6	32.3	10.5	20.2
731.019	36.4	46.0	-9.6	34.2	3.7	32.2	10.5	20.2
743.985	35.2	46.0	-10.8	33.1	3.7	32.2	10.5	20.1
769.011	37.2	46.0	-8.8	34.8	3.8	32.2	10.5	20.3
775.833	38.8	46.0	-7.2	36.3	3.8	32.2	10.5	20.4
801.894	35.7	46.0	-10.3	32.4	3.8	32.1	10.5	21.1
859.221	35.6	46.0	-10.4	31.8	3.9	31.8	10.5	21.2
981.053	38.7	54.0	-15.3	32.2	4.1	31	10.5	22.8
1000	44.2	54.0	-9.8	37.5	4.2	30.8	10.5	22.8

Radiated Spurious Emissions 30 MHz - 1000 MHz (Vertical)

Frequency	Peak FS	Limit@3m	Margin	RA	CF	AG	DCF	AF
MHz	dB(uV/m)	dB(uV/m)	dB	dB(uV)	dB	dB	dB	dB(1/m)
124.995	38.3	43.5	-5.2	46.8	1.2	32.0	10.5	11.8
125.771	35.2	43.5	-8.3	43.8	1.2	32.0	10.5	11.8
126.838	34.6	43.5	-8.9	43.2	1.2	32.0	10.5	11.7
134.631	34.8	43.5	-8.7	44.7	1.3	32.0	10.5	10.4
167.708	35.4	43.5	-8.1	46.4	1.4	32.0	10.5	9.1
168.710	36.1	43.5	-7.4	46.9	1.4	32.0	10.5	9.3
169.680	37.2	43.5	-6.3	47.9	1.4	32.0	10.5	9.4
186.105	38.2	43.5	-5.3	48.9	1.5	32.0	10.5	9.3
192.022	37.2	43.5	-6.3	47.7	1.5	32.0	10.5	9.5
204.503	35.4	43.5	-8.1	45.5	1.6	32.0	10.5	9.8
205.732	34.5	43.5	-9.0	44.5	1.6	32.0	10.5	9.9
206.960	35.8	43.5	-7.7	45.7	1.6	32.0	10.5	10.0
209.644	36.4	43.5	-7.1	46.1	1.6	32.0	10.5	10.2
210.873	34.6	43.5	-8.9	44.2	1.7	32.0	10.5	10.2
212.069	35.2	43.5	-8.3	44.7	1.7	32.0	10.5	10.3
213.492	34.8	43.5	-8.7	44.2	1.7	32.0	10.5	10.4
214.785	35.3	43.5	-8.2	44.6	1.7	32.0	10.5	10.5
217.275	35.3	46.0	-10.7	44.4	1.7	32.0	10.5	10.7
219.764	34.5	46.0	-11.5	43.5	1.7	32.0	10.5	10.8
224.938	35.0	46.0	-11.0	43.5	1.8	32.0	10.5	11.3
226.199	34.8	46.0	-11.2	43.1	1.8	32.0	10.5	11.4
227.460	34.3	46.0	-11.7	42.4	1.8	32.0	10.5	11.6
230.014	34.9	46.0	-11.1	42.7	1.8	32.0	10.5	11.8
240.005	39.0	46.0	-7.0	46.6	1.9	32.0	10.5	12.0
258.144	35.3	46.0	-10.7	42.1	2.0	32.0	10.5	12.6
499.997	36.9	46.0	-9.1	38.3	2.9	32.1	10.5	17.3
527.998	36.2	46.0	-9.8	36.8	3.0	32.1	10.5	18.0
539.994	34.3	46.0	-11.7	35.1	3.0	32.1	10.5	17.9
551.989	35.4	46.0	-10.6	36.3	3.0	32.1	10.5	17.8
624.998	38.3	46.0	-7.7	37.9	3.2	32.2	10.5	18.9
801.926	37.0	46.0	-9.0	33.6	3.8	32.1	10.5	21.1
908.788	37.1	46.0	-8.9	31.9	4.0	31.5	10.5	22.3
996.282	37.3	54.0	-16.7	30.6	4.2	30.8	10.5	22.8

Out-of-Band Radiated Spurious Emissions (Cabinet Radiation) - 1 GHz to 18 GHz



Note: Radiated emission measurements were performed up to 40GHz. No Emissions were identified when scanned from 18-40 GHz

Note: FS@3m = RA + AF + CF - Preamp, (Peak)

Corrected Peak Scans are under the Average Limit of 54.

Test Results: 15.209 Radiated Spurious Emissions Low Channel, Tx at 802.11a 5240MHz

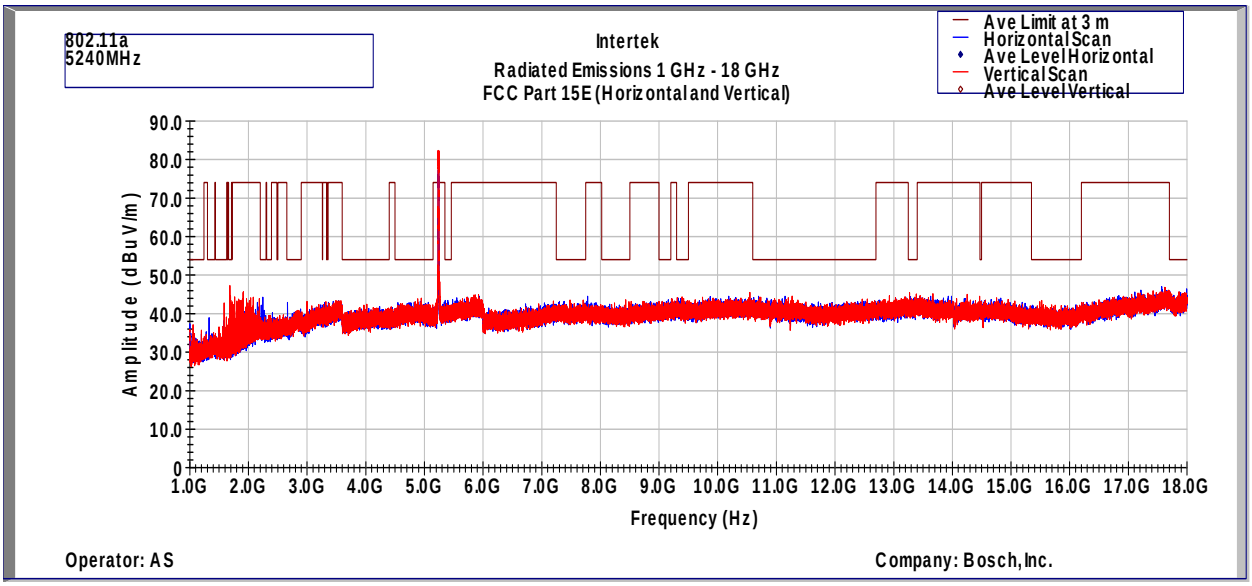
Radiated Spurious Emissions 30 MHz - 1000 MHz (Horizontal)

Frequency	Peak FS	Limit@3m	Margin	RA	CF	AG	DCF	AF
MHz	dB(uV/m)	dB(uV/m)	dB	dB(uV)	dB	dB	dB	dB(1/m)
168.031	36.6	43.5	-6.9	47.5	1.4	32.0	10.5	9.2
172.655	35.8	43.5	-7.7	46.5	1.4	32.0	10.5	9.4
191.990	35.9	43.5	-7.6	46.4	1.5	32.0	10.5	9.5
193.930	35.9	43.5	-7.6	46.4	1.5	32.0	10.5	9.5
250.028	41.0	46.0	-5.0	48.7	1.9	32.0	10.5	11.8
300.016	36.6	46.0	-9.4	42.4	2.3	32.0	10.5	13.3
312.011	36.3	46.0	-9.7	41.9	2.3	32.0	10.5	13.6
323.296	37.2	46.0	-8.8	42.4	2.4	32.0	10.5	13.9
384.018	34.6	46.0	-11.4	38.1	2.5	32.0	10.5	15.5
387.930	35.4	46.0	-10.6	38.8	2.5	32.0	10.5	15.5
389.999	34.8	46.0	-11.2	38.2	2.5	32.0	10.5	15.5
420.005	37.2	46.0	-8.8	39.6	2.6	32.0	10.5	16.5
452.564	35.3	46.0	-10.7	37.1	2.7	32.0	10.5	17.0
479.983	36.3	46.0	-9.7	38.1	2.8	32.1	10.5	16.9
527.998	40.2	46.0	-5.8	40.9	3.0	32.1	10.5	18.0
539.994	38.8	46.0	-7.2	39.6	3.0	32.1	10.5	17.9
550.017	35.6	46.0	-10.4	36.6	3.0	32.1	10.5	17.7
600.004	39.5	46.0	-6.5	39.9	3.1	32.2	10.5	18.3
606.018	35.1	46.0	-10.9	35.3	3.1	32.2	10.5	18.4
624.028	36.2	46.0	-9.8	35.9	3.2	32.2	10.5	18.9
644.042	36.2	46.0	-9.8	35.3	3.3	32.2	10.5	19.3
646.564	34.8	46.0	-11.2	33.9	3.3	32.3	10.5	19.3
648.019	35.4	46.0	-10.6	34.6	3.3	32.3	10.5	19.3
672.011	35.3	46.0	-10.7	34.4	3.4	32.3	10.5	19.2
711.166	36.4	46.0	-9.6	34.5	3.6	32.3	10.5	20.1
719.929	34.4	46.0	-11.6	32.3	3.6	32.3	10.5	20.2
730.987	38.5	46.0	-7.5	36.4	3.7	32.2	10.5	20.2
769.011	37.7	46.0	-8.3	35.3	3.8	32.2	10.5	20.3
775.833	39.1	46.0	-6.9	36.6	3.8	32.2	10.5	20.4
801.926	36.4	46.0	-9.6	33.1	3.8	32.1	10.5	21.1
981.020	38.6	54.0	-15.4	32.1	4.1	31.0	10.5	22.8
1000	41.5	54.0	-12.5	34.8	4.2	30.8	10.5	22.8

Radiated Spurious Emissions 30 MHz - 1000 MHz (Vertical)

Frequency	Peak FS	Limit@3m	Margin	RA	CF	AG	DCF	AF
MHz	dB(uV/m)	dB(uV/m)	dB	dB(uV)	dB	dB	dB	dB(1/m)
122.894	34.5	43.5	-9.0	43.0	1.2	32.0	10.5	11.9
124.995	37.4	43.5	-6.1	45.9	1.2	32.0	10.5	11.8
164.862	35.0	43.5	-8.5	46.4	1.4	32.0	10.5	8.7
167.772	35.6	43.5	-7.9	46.5	1.4	32.0	10.5	9.1
168.775	36.2	43.5	-7.3	47.1	1.4	32.0	10.5	9.3
201.949	34.5	43.5	-9.0	44.8	1.6	32.0	10.5	9.6
205.764	35.4	43.5	-8.1	45.4	1.6	32.0	10.5	9.9
207.025	35.9	43.5	-7.6	45.8	1.6	32.0	10.5	10.0
209.612	34.8	43.5	-8.7	44.5	1.6	32.0	10.5	10.2
210.840	35.1	43.5	-8.4	44.7	1.7	32.0	10.5	10.2
212.166	36.1	43.5	-7.4	45.6	1.7	32.0	10.5	10.3
213.427	35.0	43.5	-8.5	44.4	1.7	32.0	10.5	10.4
214.688	35.9	43.5	-7.6	45.2	1.7	32.0	10.5	10.5
217.242	36.0	46.0	-10.0	45.1	1.7	32.0	10.5	10.7
219.764	34.4	46.0	-11.6	43.3	1.7	32.0	10.5	10.8
222.351	35.7	46.0	-10.3	44.4	1.7	32.0	10.5	11.1
224.970	34.5	46.0	-11.5	42.9	1.8	32.0	10.5	11.3
227.427	34.8	46.0	-11.2	43.0	1.8	32.0	10.5	11.6
230.079	34.6	46.0	-11.4	42.5	1.8	32.0	10.5	11.8
232.568	34.5	46.0	-11.5	42.3	1.8	32.0	10.5	11.9
237.742	34.3	46.0	-11.7	41.9	1.8	32.0	10.5	12.0
240.037	39.3	46.0	-6.7	46.9	1.9	32.0	10.5	12.0
242.850	34.5	46.0	-11.5	42.1	1.9	32.0	10.5	12.0
499.997	36.2	46.0	-9.8	37.5	2.9	32.1	10.5	17.3
527.998	36.3	46.0	-9.7	37.0	3.0	32.1	10.5	18.0
551.989	36.6	46.0	-9.4	37.5	3.0	32.1	10.5	17.8
720.187	34.6	46.0	-11.4	32.5	3.6	32.3	10.5	20.2
801.926	36.6	46.0	-9.4	33.2	3.8	32.1	10.5	21.1
839.788	35.7	46.0	-10.3	32.3	3.9	31.9	10.5	21
904.132	37.2	46.0	-8.8	32.2	4	31.6	10.5	22.1
998.060	38.3	54.0	-15.7	31.6	4.2	30.8	10.5	22.8

Out-of-Band Radiated Spurious Emissions (Cabinet Radiation) - 1 GHz to 18 GHz



Note: Radiated emission measurements were performed up to 40GHz. No Emissions were identified when scanned from 18-40 GHz

Note: FS@3m = RA + AF + CF - Preamp, (Peak)

Corrected Peak Scans are under the Average Limit of 54.

Test Results: 15.209 Radiated Spurious Emissions Low Channel, Tx at 802.11n 20MHz 5180MHz

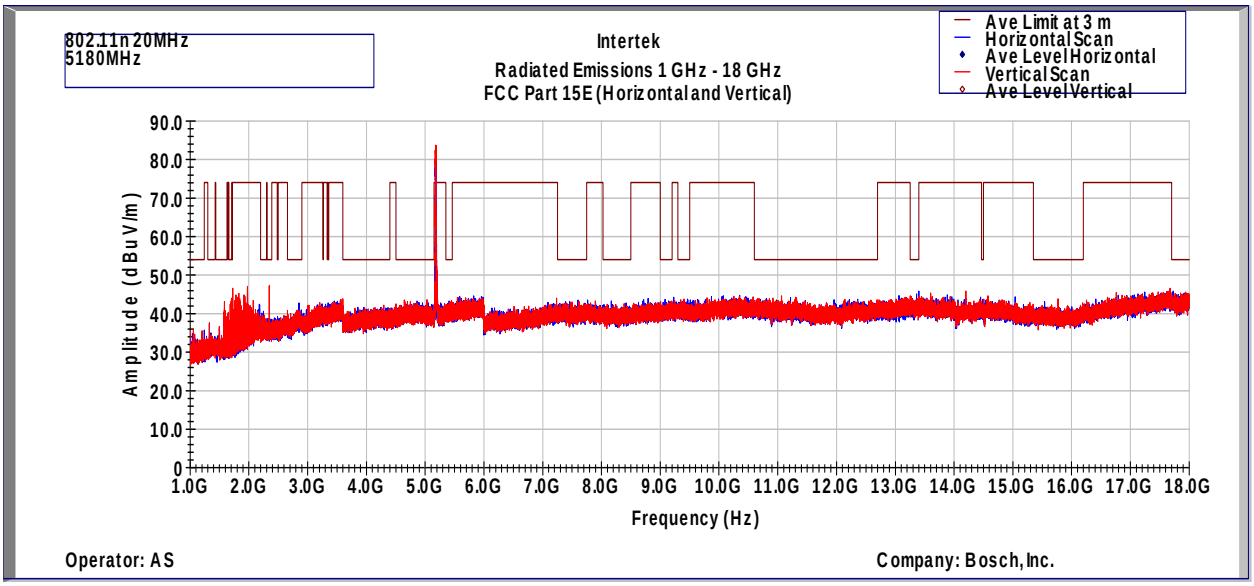
Radiated Spurious Emissions 30 MHz - 1000 MHz (Horizontal)

Frequency	Peak FS	Limit@3m	Margin	RA	CF	AG	DCF	AF
MHz	dB(uV/m)	dB(uV/m)	dB	dB(uV)	dB	dB	dB	dB(1/m)
167.999	36.0	43.5	-7.5	46.9	1.4	32.0	10.5	9.2
168.742	36.9	43.5	-6.6	47.7	1.4	32.0	10.5	9.3
172.525	36.6	43.5	-6.9	47.3	1.4	32.0	10.5	9.4
192.022	35.8	43.5	-7.7	46.3	1.5	32.0	10.5	9.5
193.995	35.1	43.5	-8.4	45.6	1.5	32.0	10.5	9.5
216.014	39.7	46.0	-6.3	48.9	1.7	32.0	10.5	10.6
249.996	41.0	46.0	-5.0	48.7	1.9	32.0	10.5	11.8
300.016	36.0	46.0	-10.0	41.8	2.3	32.0	10.5	13.3
312.011	37.4	46.0	-8.6	43.0	2.3	32.0	10.5	13.6
323.296	37.1	46.0	-8.9	42.3	2.4	32.0	10.5	13.9
338.040	34.6	46.0	-11.4	39.3	2.4	32.0	10.5	14.4
387.898	34.6	46.0	-11.4	38.1	2.5	32.0	10.5	15.5
389.967	34.3	46.0	-11.7	37.7	2.5	32.0	10.5	15.5
420.005	35.8	46.0	-10.2	38.3	2.6	32.0	10.5	16.5
452.564	35.1	46.0	-10.9	36.9	2.7	32.0	10.5	17.0
480.015	36.3	46.0	-9.7	38.1	2.8	32.1	10.5	16.9
527.998	40.2	46.0	-5.8	40.9	3.0	32.1	10.5	18.0
539.994	38.5	46.0	-7.5	39.3	3.0	32.1	10.5	17.9
550.049	35.3	46.0	-10.7	36.3	3.0	32.1	10.5	17.7
600.004	40.3	46.0	-5.7	40.6	3.1	32.2	10.5	18.3
606.018	34.8	46.0	-11.2	35.0	3.1	32.2	10.5	18.4
623.996	35.8	46.0	-10.2	35.4	3.2	32.2	10.5	18.9
644.010	36.2	46.0	-9.8	35.3	3.3	32.2	10.5	19.3
648.019	36.3	46.0	-9.7	35.4	3.3	32.3	10.5	19.3
660.015	35.1	46.0	-10.9	34.1	3.4	32.3	10.5	19.3
672.011	34.4	46.0	-11.6	33.6	3.4	32.3	10.5	19.2
711.166	36.9	46.0	-9.1	35.0	3.6	32.3	10.5	20.1
719.993	35.1	46.0	-10.9	33.0	3.6	32.3	10.5	20.2
730.987	38.0	46.0	-8.0	35.9	3.7	32.2	10.5	20.2
768.978	36.5	46.0	-9.5	34.1	3.8	32.2	10.5	20.3
775.833	39.8	46.0	-6.2	37.2	3.8	32.2	10.5	20.4
801.926	35.9	46.0	-10.1	32.6	3.8	32.1	10.5	21.1
1000	43.2	54.0	-10.8	36.6	4.2	30.8	10.5	22.8

Radiated Spurious Emissions 30 MHz - 1000 MHz (Vertical)

Frequency	Peak FS	Limit@3m	Margin	RA	CF	AG	DCF	AF
MHz	dB(uV/m)	dB(uV/m)	dB	dB(uV)	dB	dB	dB	dB(1/m)
122.894	35.5	43.5	-8.0	43.9	1.2	32.0	10.5	11.9
123.831	34.8	43.5	-8.7	43.3	1.2	32.0	10.5	11.9
124.995	38.3	43.5	-5.2	46.8	1.2	32.0	10.5	11.8
125.868	34.7	43.5	-8.8	43.2	1.2	32.0	10.5	11.8
163.925	34.4	43.5	-9.1	46.0	1.4	32.0	10.5	8.6
166.802	35.4	43.5	-8.1	46.5	1.4	32.0	10.5	9.0
169.777	36.6	43.5	-6.9	47.2	1.4	32.0	10.5	9.4
172.525	35.9	43.5	-7.6	46.6	1.4	32.0	10.5	9.4
180.188	38.2	43.5	-5.3	49.1	1.5	32.0	10.5	9.1
191.990	37.0	43.5	-6.5	47.5	1.5	32.0	10.5	9.5
193.962	36.3	43.5	-7.2	46.8	1.5	32.0	10.5	9.5
203.177	34.7	43.5	-8.8	44.9	1.6	32.0	10.5	9.7
204.503	34.8	43.5	-8.7	44.9	1.6	32.0	10.5	9.8
205.764	34.1	43.5	-9.4	44.1	1.6	32.0	10.5	9.9
206.993	34.8	43.5	-8.7	44.7	1.6	32.0	10.5	10.0
209.644	34.9	43.5	-8.6	44.6	1.6	32.0	10.5	10.2
210.873	34.2	43.5	-9.3	43.8	1.7	32.0	10.5	10.2
212.134	34.8	43.5	-8.7	44.3	1.7	32.0	10.5	10.3
213.427	34.7	43.5	-8.8	44.1	1.7	32.0	10.5	10.4
214.720	34.5	43.5	-9.0	43.9	1.7	32.0	10.5	10.5
217.275	35.0	46.0	-11.0	44.2	1.7	32.0	10.5	10.7
222.319	35.4	46.0	-10.6	44.0	1.7	32.0	10.5	11.1
224.970	34.7	46.0	-11.3	43.1	1.8	32.0	10.5	11.3
226.231	35.1	46.0	-10.9	43.4	1.8	32.0	10.5	11.5
228.818	34.4	46.0	-11.6	42.4	1.8	32.0	10.5	11.7
240.037	39.0	46.0	-7.0	46.6	1.9	32.0	10.5	12.0
256.818	34.4	46.0	-11.6	41.5	2.0	32.0	10.5	12.5
527.998	35.5	46.0	-10.5	36.2	3.0	32.1	10.5	18.0
552.022	35.7	46.0	-10.3	36.5	3.0	32.1	10.5	17.8
801.926	37.3	46.0	-8.7	34.0	3.8	32.1	10.5	21.1
928.123	37.5	46.0	-8.5	31.7	4.0	31.4	10.5	22.6
996.411	37.7	54.0	-16.3	31.0	4.2	30.8	10.5	22.8

Out-of-Band Radiated Spurious Emissions (Cabinet Radiation) - 1 GHz to 18 GHz



Note: Radiated emission measurements were performed up to 40GHz. No Emissions were identified when scanned from 18-40 GHz

Note: FS@3m = RA + AF + CF - Preamp, (Peak)

Corrected Peak Scans are under the Average Limit of 54.

Test Results: 15.209 Radiated Spurious Emissions Low Channel, Tx at 802.11n 20MHz 5200MHz

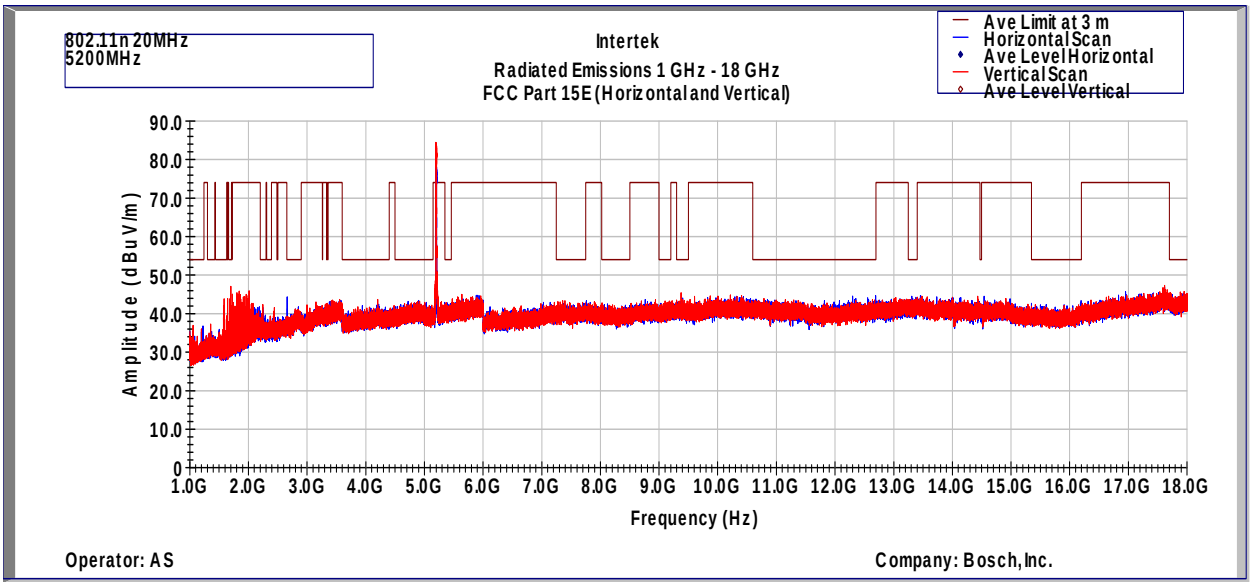
Radiated Spurious Emissions 30 MHz - 1000 MHz (Horizontal)

Frequency	Peak FS	Limit@3m	Margin	RA	CF	AG	DCF	AF
MHz	dB(uV/m)	dB(uV/m)	dB	dB(uV)	dB	dB	dB	dB(1/m)
167.999	36.2	43.5	-7.3	47.1	1.4	32.0	10.5	9.2
191.990	35.2	43.5	-8.3	45.7	1.5	32.0	10.5	9.5
193.962	34.8	43.5	-8.7	45.3	1.5	32.0	10.5	9.5
201.884	33.8	43.5	-9.7	44.1	1.6	32.0	10.5	9.6
204.503	34.2	43.5	-9.3	44.3	1.6	32.0	10.5	9.8
216.014	39.7	46.0	-6.3	48.9	1.7	32.0	10.5	10.6
249.996	40.5	46.0	-5.5	48.2	1.9	32.0	10.5	11.8
258.079	33.8	46.0	-12.2	40.7	2.0	32.0	10.5	12.6
300.016	35.5	46.0	-10.5	41.4	2.3	32.0	10.5	13.3
312.011	36.5	46.0	-9.5	42.0	2.3	32.0	10.5	13.6
323.296	37.1	46.0	-8.9	42.3	2.4	32.0	10.5	13.9
387.898	34.2	46.0	-11.8	37.7	2.5	32.0	10.5	15.5
389.999	34.5	46.0	-11.5	37.9	2.5	32.0	10.5	15.5
419.972	36.0	46.0	-10.0	38.5	2.6	32.0	10.5	16.5
452.597	34.8	46.0	-11.2	36.6	2.7	32.0	10.5	17.0
480.015	36.2	46.0	-9.8	38.0	2.8	32.1	10.5	16.9
527.998	40.4	46.0	-5.6	41.1	3.0	32.1	10.5	18.0
539.994	38.8	46.0	-7.2	39.6	3.0	32.1	10.5	17.9
549.985	35.7	46.0	-10.3	36.6	3.0	32.1	10.5	17.7
600.004	38.8	46.0	-7.2	39.1	3.1	32.2	10.5	18.3
605.986	35.5	46.0	-10.5	35.7	3.1	32.2	10.5	18.4
624.028	34.3	46.0	-11.7	34.0	3.2	32.2	10.5	18.9
644.010	36.1	46.0	-9.9	35.2	3.3	32.2	10.5	19.3
648.019	35.5	46.0	-10.5	34.7	3.3	32.3	10.5	19.3
672.011	34.1	46.0	-11.9	33.2	3.4	32.3	10.5	19.2
711.166	36.8	46.0	-9.2	34.9	3.6	32.3	10.5	20.1
719.993	34.5	46.0	-11.5	32.4	3.6	32.3	10.5	20.2
731.019	37.2	46.0	-8.8	35.1	3.7	32.2	10.5	20.2
768.978	36.9	46.0	-9.1	34.6	3.8	32.2	10.5	20.3
780.069	34.7	46.0	-11.3	32.1	3.8	32.1	10.5	20.5
801.926	35.2	46.0	-10.8	31.9	3.8	32.1	10.5	21.1
1000	39.8	54.0	-14.2	33.1	4.2	30.8	10.5	22.8

Radiated Spurious Emissions 30 MHz - 1000 MHz (Vertical)

Frequency	Peak FS	Limit@3m	Margin	RA	CF	AG	DCF	AF
MHz	dB(uV/m)	dB(uV/m)	dB	dB(uV)	dB	dB	dB	dB(1/m)
123.896	35.6	43.5	-7.9	44.1	1.2	32.0	10.5	11.9
124.995	37.9	43.5	-5.6	46.5	1.2	32.0	10.5	11.8
164.927	34.4	43.5	-9.1	45.7	1.4	32.0	10.5	8.7
167.966	34.9	43.5	-8.6	45.8	1.4	32.0	10.5	9.2
168.678	36.7	43.5	-6.8	47.5	1.4	32.0	10.5	9.3
171.652	36.3	43.5	-7.2	46.9	1.4	32.0	10.5	9.4
186.558	38.4	43.5	-5.1	49.1	1.5	32.0	10.5	9.3
191.99	37.1	43.5	-6.4	47.6	1.5	32.0	10.5	9.5
203.242	34.0	43.5	-9.5	44.2	1.6	32.0	10.5	9.7
204.503	35.5	43.5	-8.0	45.6	1.6	32.0	10.5	9.8
205.796	33.8	43.5	-9.7	43.8	1.6	32.0	10.5	9.9
207.057	34.2	43.5	-9.3	44.1	1.6	32.0	10.5	10.0
208.383	34.0	43.5	-9.5	43.8	1.6	32.0	10.5	10.1
209.579	35.9	43.5	-7.6	45.6	1.6	32.0	10.5	10.2
210.937	34.2	43.5	-9.3	43.8	1.7	32.0	10.5	10.2
212.166	35.3	43.5	-8.2	44.8	1.7	32.0	10.5	10.3
213.395	34.9	43.5	-8.6	44.3	1.7	32.0	10.5	10.4
214.753	35.1	43.5	-8.4	44.4	1.7	32.0	10.5	10.5
217.242	34.6	46.0	-11.4	43.7	1.7	32.0	10.5	10.7
219.861	34.6	46.0	-11.4	43.6	1.7	32.0	10.5	10.8
222.286	35.8	46.0	-10.2	44.5	1.7	32.0	10.5	11.1
223.612	34.2	46.0	-11.8	42.8	1.7	32.0	10.5	11.2
224.938	35.1	46.0	-10.9	43.5	1.8	32.0	10.5	11.3
226.231	35.5	46.0	-10.5	43.8	1.8	32.0	10.5	11.5
230.143	34.1	46.0	-11.9	42.0	1.8	32.0	10.5	11.8
232.601	34.6	46.0	-11.4	42.4	1.8	32.0	10.5	11.9
240.005	38.8	46.0	-7.2	46.4	1.9	32.0	10.5	12.0
527.998	35.8	46.0	-10.2	36.4	3.0	32.1	10.5	18.0
552.022	36.2	46.0	-9.8	37.1	3.0	32.1	10.5	17.8
801.926	37.0	46.0	-9.0	33.7	3.8	32.1	10.5	21.1
913.282	37.3	46.0	-8.7	32.0	4.0	31.5	10.5	22.3
983.381	37.8	54.0	-16.2	31.3	4.1	30.9	10.5	22.8

Out-of-Band Radiated Spurious Emissions (Cabinet Radiation) - 1 GHz to 18 GHz



Note: Radiated emission measurements were performed up to 40GHz. No Emissions were identified when scanned from 18-40 GHz

Note: FS@3m = RA + AF + CF - Preamp, (Peak)

Corrected Peak Scans are under the Average Limit of 54.

Test Results: 15.209 Radiated Spurious Emissions Low Channel, Tx at 802.11n 20MHz 5240MHz

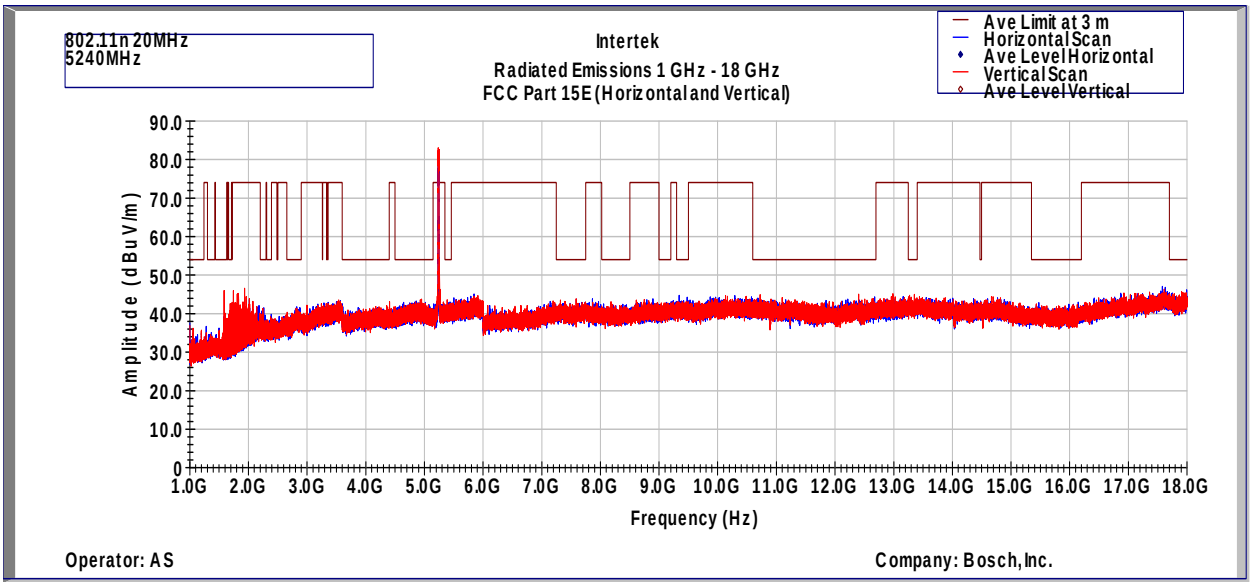
Radiated Spurious Emissions 30 MHz - 1000 MHz (Horizontal)

Frequency	Peak FS	Limit@3m	Margin	RA	CF	AG	DCF	AF
MHz	dB(uV/m)	dB(uV/m)	dB	dB(uV)	dB	dB	dB	dB(1/m)
172.687	35.7	43.5	-7.8	46.4	1.4	32.0	10.5	9.4
192.022	36.6	43.5	-6.9	47.1	1.5	32.0	10.5	9.5
193.962	35.5	43.5	-8.0	46.0	1.5	32.0	10.5	9.5
203.242	36.0	43.5	-7.5	46.2	1.6	32.0	10.5	9.7
216.014	40.1	46.0	-5.9	49.3	1.7	32.0	10.5	10.6
250.028	40.7	46.0	-5.3	48.4	1.9	32.0	10.5	11.8
264.029	34.2	46.0	-11.8	40.9	2.0	32.0	10.5	12.8
299.983	35.6	46.0	-10.4	41.4	2.3	32.0	10.5	13.3
312.011	36.8	46.0	-9.2	42.3	2.3	32.0	10.5	13.6
323.296	37.9	46.0	-8.1	43.1	2.4	32.0	10.5	13.9
389.999	35.1	46.0	-10.9	38.6	2.5	32.0	10.5	15.5
420.005	35.3	46.0	-10.7	37.7	2.6	32.0	10.5	16.5
452.564	33.9	46.0	-12.1	35.7	2.7	32.0	10.5	17.0
479.983	37.5	46.0	-8.5	39.3	2.8	32.1	10.5	16.9
527.998	39.5	46.0	-6.5	40.1	3.0	32.1	10.5	18.0
539.994	38.2	46.0	-7.8	39.0	3.0	32.1	10.5	17.9
550.017	35.9	46.0	-10.1	36.8	3.0	32.1	10.5	17.7
600.004	39.0	46.0	-7.0	39.3	3.1	32.2	10.5	18.3
606.051	34.3	46.0	-11.7	34.5	3.1	32.2	10.5	18.4
624.028	34.9	46.0	-11.1	34.5	3.2	32.2	10.5	18.9
644.010	36.1	46.0	-9.9	35.3	3.3	32.2	10.5	19.3
648.019	35.4	46.0	-10.6	34.5	3.3	32.3	10.5	19.3
660.015	34.2	46.0	-11.8	33.2	3.4	32.3	10.5	19.3
672.011	34.3	46.0	-11.7	33.4	3.4	32.3	10.5	19.2
711.199	36.7	46.0	-9.3	34.8	3.6	32.3	10.5	20.1
719.993	35.3	46.0	-10.7	33.2	3.6	32.3	10.5	20.2
731.019	37.2	46.0	-8.8	35.1	3.7	32.2	10.5	20.2
743.985	34.6	46.0	-11.4	32.5	3.7	32.2	10.5	20.1
769.011	36.7	46.0	-9.3	34.3	3.8	32.2	10.5	20.3
801.926	35.7	46.0	-10.3	32.3	3.8	32.1	10.5	21.1
844.347	36.4	46.0	-9.6	32.9	3.9	31.9	10.5	21.0
1000	41.6	54.0	-12.4	34.9	4.2	30.8	10.5	22.8

Radiated Spurious Emissions 30 MHz - 1000 MHz (Vertical)

Frequency	Peak FS	Limit@3m	Margin	RA	CF	AG	DCF	AF
MHz	dB(uV/m)	dB(uV/m)	dB	dB(uV)	dB	dB	dB	dB(1/m)
124.995	38.1	43.5	-5.4	46.6	1.2	32.0	10.5	11.8
129.296	35.8	43.5	-7.7	44.5	1.2	32.0	10.5	11.6
164.798	34.6	43.5	-8.9	46.0	1.4	32.0	10.5	8.7
166.770	35.9	43.5	-7.6	47.0	1.4	32.0	10.5	9.0
168.710	36.3	43.5	-7.2	47.2	1.4	32.0	10.5	9.3
169.615	37.1	43.5	-6.4	47.8	1.4	32.0	10.5	9.4
204.471	34.8	43.5	-8.7	45.0	1.6	32.0	10.5	9.8
205.764	35.2	43.5	-8.3	45.2	1.6	32.0	10.5	9.9
207.090	34.6	43.5	-8.9	44.5	1.6	32.0	10.5	10.0
209.547	35.2	43.5	-8.3	44.9	1.6	32.0	10.5	10.2
210.937	36.2	43.5	-7.3	45.8	1.7	32.0	10.5	10.2
212.166	36.5	43.5	-7.0	46.0	1.7	32.0	10.5	10.3
213.459	34.9	43.5	-8.6	44.3	1.7	32.0	10.5	10.4
214.720	35.3	43.5	-8.2	44.6	1.7	32.0	10.5	10.5
217.242	35.4	46.0	-10.6	44.6	1.7	32.0	10.5	10.7
218.503	34.1	46.0	-11.9	43.1	1.7	32.0	10.5	10.7
219.732	34.4	46.0	-11.6	43.3	1.7	32.0	10.5	10.8
221.122	33.9	46.0	-12.1	42.8	1.7	32.0	10.5	10.9
222.351	35.5	46.0	-10.5	44.2	1.7	32.0	10.5	11.1
224.938	34.2	46.0	-11.8	42.6	1.8	32.0	10.5	11.3
226.231	34.4	46.0	-11.6	42.6	1.8	32.0	10.5	11.5
227.427	35.0	46.0	-11.0	43.2	1.8	32.0	10.5	11.6
228.850	34.4	46.0	-11.6	42.4	1.8	32.0	10.5	11.7
230.079	34.6	46.0	-11.4	42.4	1.8	32.0	10.5	11.8
231.275	33.8	46.0	-12.2	41.7	1.8	32.0	10.5	11.9
240.005	38.7	46.0	-7.3	46.3	1.9	32.0	10.5	12.0
499.997	36.6	46.0	-9.4	37.9	2.9	32.1	10.5	17.3
527.998	35.2	46.0	-10.8	35.8	3.0	32.1	10.5	18.0
552.022	36.8	46.0	-9.2	37.6	3.0	32.1	10.5	17.8
801.926	36.7	46.0	-9.3	33.4	3.8	32.1	10.5	21.1
959.325	37.5	46.0	-8.5	31.7	4.1	31.1	10.5	22.4

Out-of-Band Radiated Spurious Emissions (Cabinet Radiation) - 1 GHz to 18 GHz



Note: Radiated emission measurements were performed up to 40GHz. No Emissions were identified when scanned from 18-40 GHz

Note: FS@3m = RA + AF + CF - Preamp, (Peak)

Corrected Peak Scans are under the Average Limit of 54.

Test Results: 15.209 Radiated Spurious Emissions Low Channel, Tx at 802.11n 40MHz 5190MHz

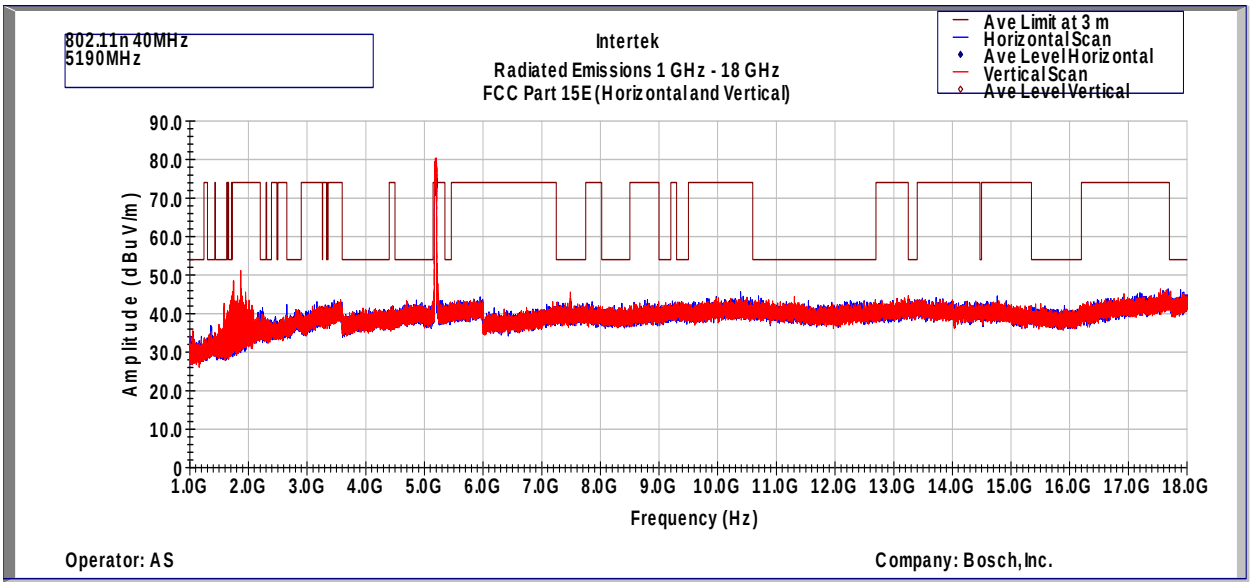
Radiated Spurious Emissions 30 MHz - 1000 MHz (Horizontal)

Frequency	Peak FS	Limit@3m	Margin	RA	CF	AG	DCF	AF
MHz	dB(uV/m)	dB(uV/m)	dB	dB(uV)	dB	dB	dB	dB(1/m)
168.775	36.2	43.5	-7.3	47.0	1.4	32.0	10.5	9.3
172.493	35.9	43.5	-7.6	46.6	1.4	32.0	10.5	9.4
191.990	35.0	43.5	-8.5	45.5	1.5	32.0	10.5	9.5
193.962	35.1	43.5	-8.4	45.6	1.5	32.0	10.5	9.5
216.014	39.6	46.0	-6.4	48.9	1.7	32.0	10.5	10.6
249.996	40.7	46.0	-5.3	48.5	1.9	32.0	10.5	11.8
300.016	36.3	46.0	-9.7	42.2	2.3	32.0	10.5	13.3
312.011	37.2	46.0	-8.8	42.8	2.3	32.0	10.5	13.6
323.296	37.8	46.0	-8.2	43.0	2.4	32.0	10.5	13.9
338.007	34.2	46.0	-11.8	38.9	2.4	32.0	10.5	14.4
387.930	34.7	46.0	-11.3	38.1	2.5	32.0	10.5	15.5
389.999	35.1	46.0	-10.9	38.6	2.5	32.0	10.5	15.5
419.972	36.4	46.0	-9.6	38.8	2.6	32.0	10.5	16.5
452.564	33.8	46.0	-12.2	35.6	2.7	32.0	10.5	17.0
480.015	36.4	46.0	-9.6	38.2	2.8	32.1	10.5	16.9
527.998	39.4	46.0	-6.6	40.0	3.0	32.1	10.5	18.0
540.026	38.8	46.0	-7.2	39.6	3.0	32.1	10.5	17.8
550.017	35.5	46.0	-10.5	36.4	3.0	32.1	10.5	17.7
600.004	38.9	46.0	-7.1	39.3	3.1	32.2	10.5	18.3
606.018	34.9	46.0	-11.1	35.1	3.1	32.2	10.5	18.4
624.028	35.1	46.0	-10.9	34.8	3.2	32.2	10.5	18.9
644.010	35.9	46.0	-10.1	35.0	3.3	32.2	10.5	19.3
648.019	36.3	46.0	-9.7	35.4	3.3	32.3	10.5	19.3
660.015	34.5	46.0	-11.5	33.5	3.4	32.3	10.5	19.3
672.011	36.2	46.0	-9.8	35.4	3.4	32.3	10.5	19.2
711.199	36.1	46.0	-9.9	34.2	3.6	32.3	10.5	20.1
726.007	34.4	46.0	-11.6	32.3	3.6	32.3	10.5	20.2
731.019	36.3	46.0	-9.7	34.1	3.7	32.2	10.5	20.2
743.985	35.3	46.0	-10.7	33.2	3.7	32.2	10.5	20.1
769.011	36.9	46.0	-9.1	34.5	3.8	32.2	10.5	20.3
801.926	35.3	46.0	-10.7	32.0	3.8	32.1	10.5	21.1
1000	41.1	54.0	-12.9	34.4	4.2	30.8	10.5	22.8

Radiated Spurious Emissions 30 MHz - 1000 MHz (Vertical)

Frequency	Peak FS	Limit@3m	Margin	RA	CF	AG	DCF	AF
MHz	dB(uV/m)	dB(uV/m)	dB	dB(uV)	dB	dB	dB	dB(1/m)
124.995	38.1	43.5	-5.4	46.6	1.2	32.0	10.5	11.8
125.804	35.8	43.5	-7.7	44.4	1.2	32.0	10.5	11.8
126.774	34.9	43.5	-8.6	43.5	1.2	32.0	10.5	11.7
164.830	34.4	43.5	-9.1	45.7	1.4	32.0	10.5	8.7
166.802	36.0	43.5	-7.5	47.1	1.4	32.0	10.5	9.0
167.805	36.8	43.5	-6.7	47.8	1.4	32.0	10.5	9.1
169.745	36.9	43.5	-6.6	47.5	1.4	32.0	10.5	9.4
170.715	37.0	43.5	-6.5	47.6	1.4	32.0	10.5	9.4
185.329	38.4	43.5	-5.1	49.1	1.5	32.0	10.5	9.3
191.990	36.6	43.5	-6.9	47.1	1.5	32.0	10.5	9.5
204.503	34.8	43.5	-8.7	44.9	1.6	32.0	10.5	9.8
205.732	34.3	43.5	-9.2	44.3	1.6	32.0	10.5	9.9
207.025	35.5	43.5	-8.0	45.4	1.6	32.0	10.5	10.0
209.612	35.4	43.5	-8.1	45.1	1.6	32.0	10.5	10.2
212.069	34.9	43.5	-8.6	44.4	1.7	32.0	10.5	10.3
213.459	35.0	43.5	-8.5	44.4	1.7	32.0	10.5	10.4
214.720	35.2	43.5	-8.3	44.5	1.7	32.0	10.5	10.5
217.307	35.4	46.0	-10.6	44.5	1.7	32.0	10.5	10.7
221.058	35.3	46.0	-10.7	44.2	1.7	32.0	10.5	10.9
222.383	35.7	46.0	-10.3	44.4	1.7	32.0	10.5	11.1
224.905	35.1	46.0	-10.9	43.5	1.8	32.0	10.5	11.3
226.231	35.1	46.0	-10.9	43.4	1.8	32.0	10.5	11.5
227.557	34.8	46.0	-11.2	42.9	1.8	32.0	10.5	11.6
240.005	39.3	46.0	-6.7	46.8	1.9	32.0	10.5	12.0
499.997	35.5	46.0	-10.5	36.8	2.9	32.1	10.5	17.3
527.998	35.8	46.0	-10.2	36.4	3.0	32.1	10.5	18.0
551.989	35.2	46.0	-10.8	36.1	3.0	32.1	10.5	17.8
801.926	36.9	46.0	-9.1	33.6	3.8	32.1	10.5	21.1
913.088	37.0	46.0	-9.0	31.7	4.0	31.5	10.5	22.3
943.093	37.7	46.0	-8.3	31.9	4.1	31.3	10.5	22.5
991.367	37.3	54.0	-16.7	30.7	4.1	30.9	10.5	22.9

Out-of-Band Radiated Spurious Emissions (Cabinet Radiation) - 1 GHz to 18 GHz



Note: Radiated emission measurements were performed up to 40GHz. No Emissions were identified when scanned from 18-40 GHz

Note: FS@3m = RA + AF + CF - Preamp, (Peak)

Corrected Peak Scans are under the Average Limit of 54.

Test Results: 15.209 Radiated Spurious Emissions Low Channel, Tx at 802.11n 40MHz 5230MHz

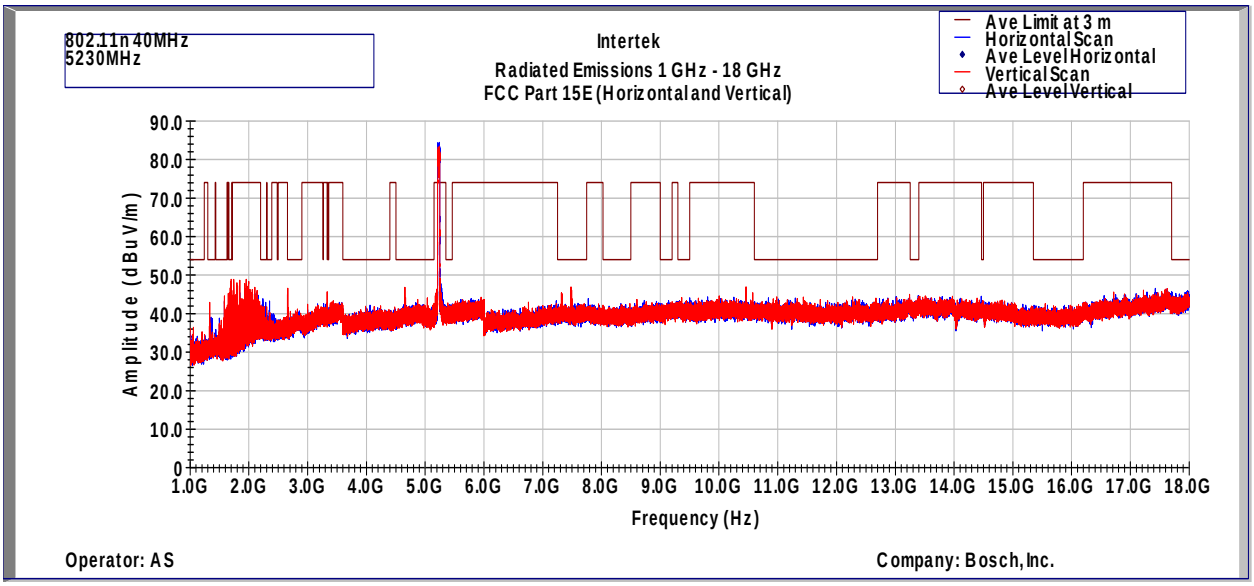
Radiated Spurious Emissions 30 MHz - 1000 MHz (Horizontal)

Frequency	Peak FS	Limit@3m	Margin	RA	CF	AG	DCF	AF
MHz	dB(uV/m)	dB(uV/m)	dB	dB(uV)	dB	dB	dB	dB(1/m)
175.694	35.6	43.5	-7.9	46.4	1.5	32.0	10.5	9.3
191.990	35.3	43.5	-8.2	45.8	1.5	32.0	10.5	9.5
193.930	33.9	43.5	-9.6	44.4	1.5	32.0	10.5	9.5
196.743	33.3	43.5	-10.2	43.8	1.6	32.0	10.5	9.4
204.406	33.3	43.5	-10.2	43.4	1.6	32.0	10.5	9.8
299.951	34.9	46.0	-11.1	40.7	2.3	32.0	10.5	13.3
305.383	33.3	46.0	-12.7	39.0	2.3	32.0	10.5	13.5
311.979	37.3	46.0	-8.7	42.8	2.3	32.0	10.5	13.6
323.231	36.6	46.0	-9.4	41.8	2.4	32.0	10.5	13.9
337.975	33.5	46.0	-12.5	38.1	2.4	32.0	10.5	14.4
387.930	34.3	46.0	-11.7	37.8	2.5	32.0	10.5	15.5
389.967	33.2	46.0	-12.8	36.7	2.5	32.0	10.5	15.5
394.041	35.0	46.0	-11.0	38.3	2.6	32.0	10.5	15.7
420.037	36.3	46.0	-9.7	38.7	2.6	32.0	10.5	16.5
452.532	33.9	46.0	-12.1	35.7	2.7	32.0	10.5	17.0
479.983	37.0	46.0	-9.0	38.8	2.8	32.1	10.5	16.9
527.998	40.0	46.0	-6.0	40.6	3.0	32.1	10.5	18.0
540.026	37.8	46.0	-8.2	38.6	3.0	32.1	10.5	17.8
550.017	35.4	46.0	-10.6	36.3	3.0	32.1	10.5	17.7
576.013	33.2	46.0	-12.8	33.2	3.0	32.2	10.5	18.6
600.069	39.1	46.0	-6.9	39.5	3.1	32.2	10.5	18.3
605.986	34.8	46.0	-11.2	35.0	3.1	32.2	10.5	18.4
624.028	34.1	46.0	-11.9	33.8	3.2	32.2	10.5	18.9
644.010	35.9	46.0	-10.1	35.0	3.3	32.2	10.5	19.3
647.987	35.6	46.0	-10.4	34.8	3.3	32.3	10.5	19.3
672.043	35.4	46.0	-10.6	34.6	3.4	32.3	10.5	19.2
711.231	35.2	46.0	-10.8	33.3	3.6	32.3	10.5	20.1
731.019	36.3	46.0	-9.7	34.2	3.7	32.2	10.5	20.2
769.043	35.3	46.0	-10.7	32.9	3.8	32.2	10.5	20.3
1000	41.1	54.0	-12.9	34.5	4.2	30.8	10.5	22.8

Radiated Spurious Emissions 30 MHz - 1000 MHz (Vertical)

Frequency	Peak FS	Limit@3m	Margin	RA	CF	AG	DCF	AF
MHz	dB(uV/m)	dB(uV/m)	dB	dB(uV)	dB	dB	dB	dB(1/m)
122.829	33.6	43.5	-9.9	42.0	1.2	32.0	10.5	11.9
126.806	35.2	43.5	-8.3	43.8	1.2	32.0	10.5	11.7
129.328	34.1	43.5	-9.4	42.8	1.2	32.0	10.5	11.6
165.800	35.0	43.5	-8.5	46.2	1.4	32.0	10.5	8.9
168.807	36.6	43.5	-6.9	47.4	1.4	32.0	10.5	9.3
184.036	37.3	43.5	-6.2	48.1	1.5	32.0	10.5	9.3
191.990	37.7	43.5	-5.8	48.2	1.5	32.0	10.5	9.5
204.503	35.2	43.5	-8.3	45.3	1.6	32.0	10.5	9.8
205.764	33.9	43.5	-9.6	43.9	1.6	32.0	10.5	9.9
206.928	34.5	43.5	-9.0	44.4	1.6	32.0	10.5	10.0
209.547	34.2	43.5	-9.3	43.9	1.6	32.0	10.5	10.2
210.905	34.4	43.5	-9.1	44.0	1.7	32.0	10.5	10.2
212.069	35.0	43.5	-8.5	44.5	1.7	32.0	10.5	10.3
213.427	34.4	43.5	-9.1	43.8	1.7	32.0	10.5	10.4
214.688	35.1	43.5	-8.4	44.5	1.7	32.0	10.5	10.5
217.210	33.9	46.0	-12.1	43.0	1.7	32.0	10.5	10.7
219.829	33.9	46.0	-12.1	42.9	1.7	32.0	10.5	10.8
220.993	34.0	46.0	-12.0	42.9	1.7	32.0	10.5	10.9
222.448	35.7	46.0	-10.3	44.4	1.7	32.0	10.5	11.1
224.776	34.6	46.0	-11.4	43.0	1.8	32.0	10.5	11.3
226.231	33.5	46.0	-12.5	41.8	1.8	32.0	10.5	11.5
227.492	34.3	46.0	-11.7	42.5	1.8	32.0	10.5	11.6
228.753	33.7	46.0	-12.3	41.7	1.8	32.0	10.5	11.7
230.014	34.1	46.0	-11.9	42.0	1.8	32.0	10.5	11.8
233.700	34.1	46.0	-11.9	41.8	1.8	32.0	10.5	11.9
236.416	33.8	46.0	-12.2	41.5	1.8	32.0	10.5	12.0
240.005	39.1	46.0	-6.9	46.6	1.9	32.0	10.5	12.0
527.998	35.5	46.0	-10.5	36.1	3.0	32.1	10.5	18.0
551.957	35.8	46.0	-10.2	36.7	3.0	32.1	10.5	17.8
713.462	37.7	46.0	-8.3	35.7	3.6	32.3	10.5	20.1
750.031	37.8	46.0	-8.2	36.0	3.7	32.2	10.5	19.8
802.023	36.4	46.0	-9.6	33.0	3.8	32.1	10.5	21.1

Out-of-Band Radiated Spurious Emissions (Cabinet Radiation) - 1 GHz to 18 GHz



Note: Radiated emission measurements were performed up to 40GHz. No Emissions were identified when scanned from 18-40 GHz

Note: FS@3m = RA + AF + CF - Preamp, (Peak)

Corrected Peak Scans are under the Average Limit of 54.

Test Results: 15.209 Radiated Spurious Emissions Low Channel, Tx at 802.11ac 80MHz 5210MHz

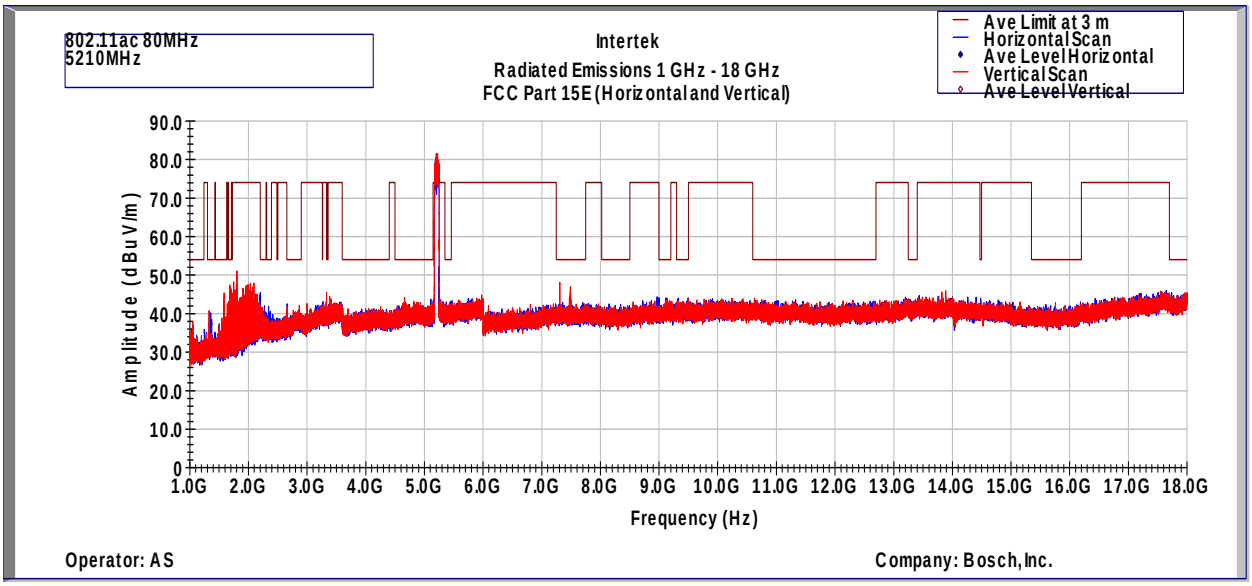
Radiated Spurious Emissions 30 MHz - 1000 MHz (Horizontal)

Frequency	Peak FS	Limit@3m	Margin	RA	CF	AG	DCF	AF
MHz	dB(uV/m)	dB(uV/m)	dB	dB(uV)	dB	dB	dB	dB(1/m)
171.717	36.1	43.5	-7.4	46.8	1.4	32.0	10.5	9.4
191.990	35.7	43.5	-7.8	46.2	1.5	32.0	10.5	9.5
193.930	35.3	43.5	-8.2	45.8	1.5	32.0	10.5	9.5
199.265	33.6	43.5	-9.9	44.1	1.6	32.0	10.5	9.4
204.406	33.4	43.5	-10.1	43.5	1.6	32.0	10.5	9.8
249.996	40.4	46.0	-5.6	48.2	1.9	32.0	10.5	11.8
263.964	33.0	46.0	-13.0	39.6	2.0	32.0	10.5	12.8
299.951	35.6	46.0	-10.4	41.5	2.3	32.0	10.5	13.3
311.979	36.4	46.0	-9.6	41.9	2.3	32.0	10.5	13.6
323.231	37.7	46.0	-8.3	42.9	2.4	32.0	10.5	13.9
338.072	34.0	46.0	-12.0	38.7	2.4	32.0	10.5	14.4
387.930	34.2	46.0	-11.8	37.7	2.5	32.0	10.5	15.5
389.967	34.7	46.0	-11.3	38.1	2.5	32.0	10.5	15.5
420.037	35.8	46.0	-10.2	38.2	2.6	32.0	10.5	16.5
452.629	33.8	46.0	-12.2	35.6	2.7	32.0	10.5	17.0
479.983	37.7	46.0	-8.3	39.5	2.8	32.1	10.5	16.9
527.998	39.8	46.0	-6.2	40.5	3.0	32.1	10.5	18.0
540.026	38.7	46.0	-7.3	39.5	3.0	32.1	10.5	17.8
550.017	35.4	46.0	-10.6	36.4	3.0	32.1	10.5	17.7
600.069	39.0	46.0	-7.0	39.4	3.1	32.2	10.5	18.3
605.986	34.4	46.0	-11.6	34.6	3.1	32.2	10.5	18.4
624.028	34.0	46.0	-12.0	33.7	3.2	32.2	10.5	18.9
644.010	36.5	46.0	-9.5	35.6	3.3	32.2	10.5	19.3
647.987	35.4	46.0	-10.6	34.6	3.3	32.3	10.5	19.3
672.043	34.0	46.0	-12.0	33.2	3.4	32.3	10.5	19.2
711.231	36.7	46.0	-9.3	34.8	3.6	32.3	10.5	20.1
731.019	36.7	46.0	-9.3	34.6	3.7	32.2	10.5	20.2
769.043	36.6	46.0	-9.4	34.2	3.8	32.2	10.5	20.3
775.833	38.6	46.0	-7.4	36.0	3.8	32.2	10.5	20.4
780.004	35.5	46.0	-10.5	32.9	3.8	32.1	10.5	20.5
802.023	36.3	46.0	-9.7	33.0	3.8	32.1	10.5	21.1
1000	43.8	54.0	-10.2	37.1	4.2	30.8	10.5	22.8

Radiated Spurious Emissions 30 MHz - 1000 MHz (Vertical)

Frequency	Peak FS	Limit@3m	Margin	RA	CF	AG	DCF	AF
MHz	dB(uV/m)	dB(uV/m)	dB	dB(uV)	dB	dB	dB	dB(1/m)
123.799	35.7	43.5	-7.8	44.1	1.2	32.0	10.5	11.9
124.963	37.4	43.5	-6.1	45.9	1.2	32.0	10.5	11.8
168.807	37.1	43.5	-6.4	48.0	1.4	32.0	10.5	9.3
186.849	38.2	43.5	-5.3	48.9	1.5	32.0	10.5	9.4
204.503	34.0	43.5	-9.5	44.2	1.6	32.0	10.5	9.8
205.861	33.6	43.5	-9.9	43.6	1.6	32.0	10.5	9.9
207.025	33.4	43.5	-10.1	43.3	1.6	32.0	10.5	10.0
208.286	33.9	43.5	-9.6	43.7	1.6	32.0	10.5	10.1
209.644	36.3	43.5	-7.2	46.0	1.6	32.0	10.5	10.2
212.069	34.2	43.5	-9.3	43.7	1.7	32.0	10.5	10.3
213.427	33.8	43.5	-9.7	43.2	1.7	32.0	10.5	10.4
214.688	35.9	43.5	-7.6	45.2	1.7	32.0	10.5	10.5
217.307	34.6	46.0	-11.4	43.8	1.7	32.0	10.5	10.7
219.829	33.8	46.0	-12.2	42.8	1.7	32.0	10.5	10.8
220.993	33.7	46.0	-12.3	42.5	1.7	32.0	10.5	10.9
222.448	34.7	46.0	-11.3	43.3	1.7	32.0	10.5	11.1
223.612	33.9	46.0	-12.1	42.4	1.7	32.0	10.5	11.2
224.873	34.3	46.0	-11.7	42.7	1.8	32.0	10.5	11.3
226.134	34.5	46.0	-11.5	42.8	1.8	32.0	10.5	11.4
227.492	35.1	46.0	-10.9	43.2	1.8	32.0	10.5	11.6
228.753	34.3	46.0	-11.7	42.3	1.8	32.0	10.5	11.7
230.014	34.2	46.0	-11.8	42.1	1.8	32.0	10.5	11.8
231.372	34.0	46.0	-12.0	41.8	1.8	32.0	10.5	11.9
240.005	38.8	46.0	-7.2	46.3	1.9	32.0	10.5	12.0
261.927	34.0	46.0	-12.0	40.6	2.0	32.0	10.5	12.8
499.965	35.5	46.0	-10.5	36.8	2.9	32.1	10.5	17.3
527.998	35.2	46.0	-10.8	35.9	3.0	32.1	10.5	18.0
540.026	33.5	46.0	-12.5	34.3	3.0	32.1	10.5	17.8
552.054	34.6	46.0	-11.4	35.5	3.0	32.1	10.5	17.8
750.031	36.9	46.0	-9.1	35.1	3.7	32.2	10.5	19.8
802.023	37.3	46.0	-8.7	34.0	3.8	32.1	10.5	21.1
996.508	37.0	54.0	-17.0	30.4	4.2	30.8	10.5	22.8

Out-of-Band Radiated Spurious Emissions (Cabinet Radiation) - 1 GHz to 18 GHz



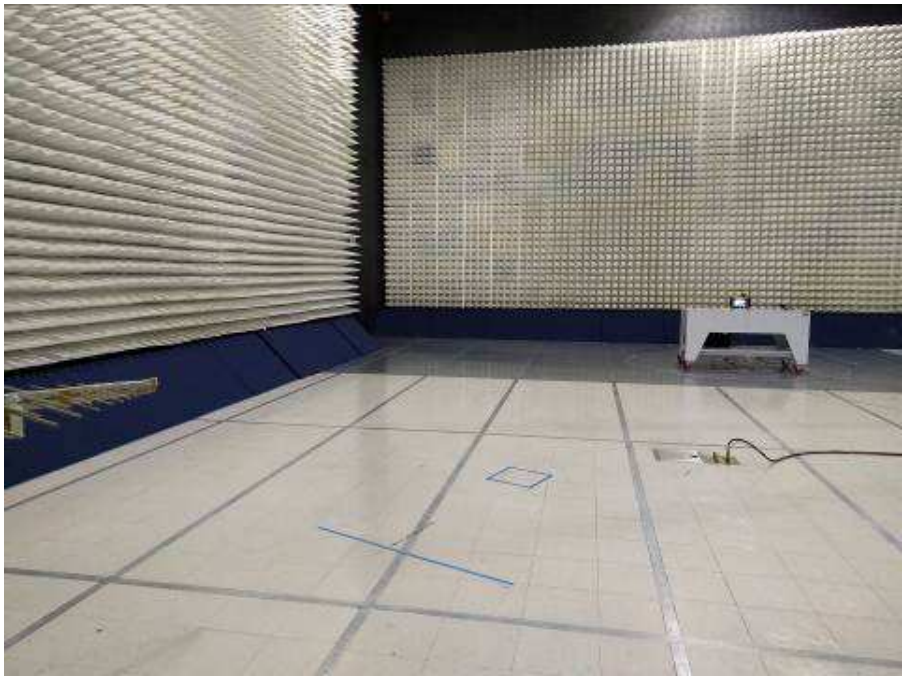
Note: Radiated emission measurements were performed up to 40GHz. No Emissions were identified when scanned from 18-40 GHz

Note: FS@3m = RA + AF + CF - Preamp, (Peak)

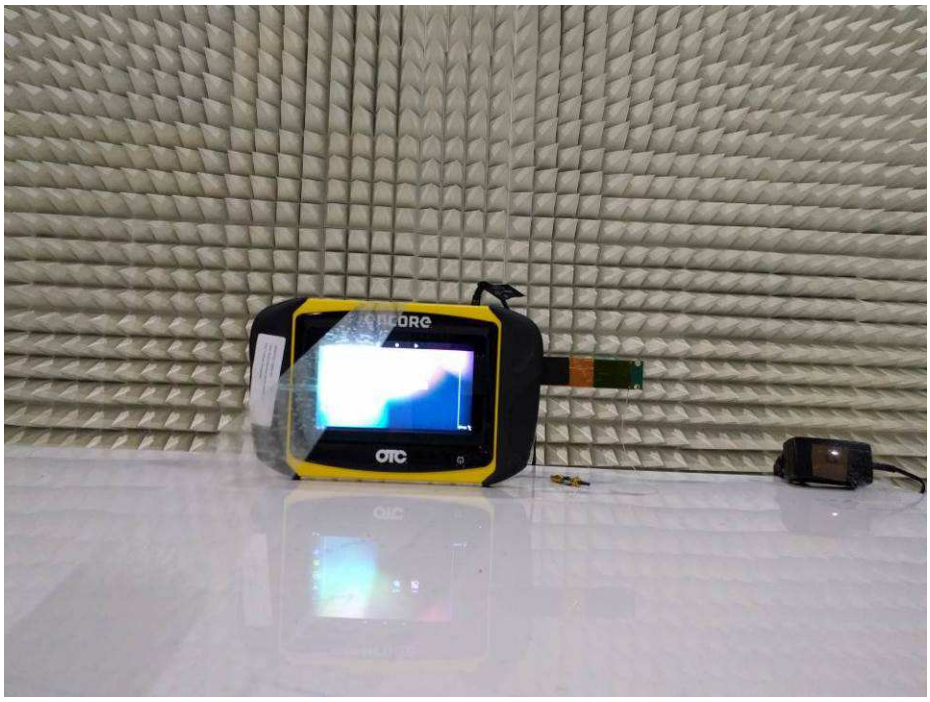
Corrected Peak Scans are under the Average Limit of 54.

4.5.8 Test setup photographs

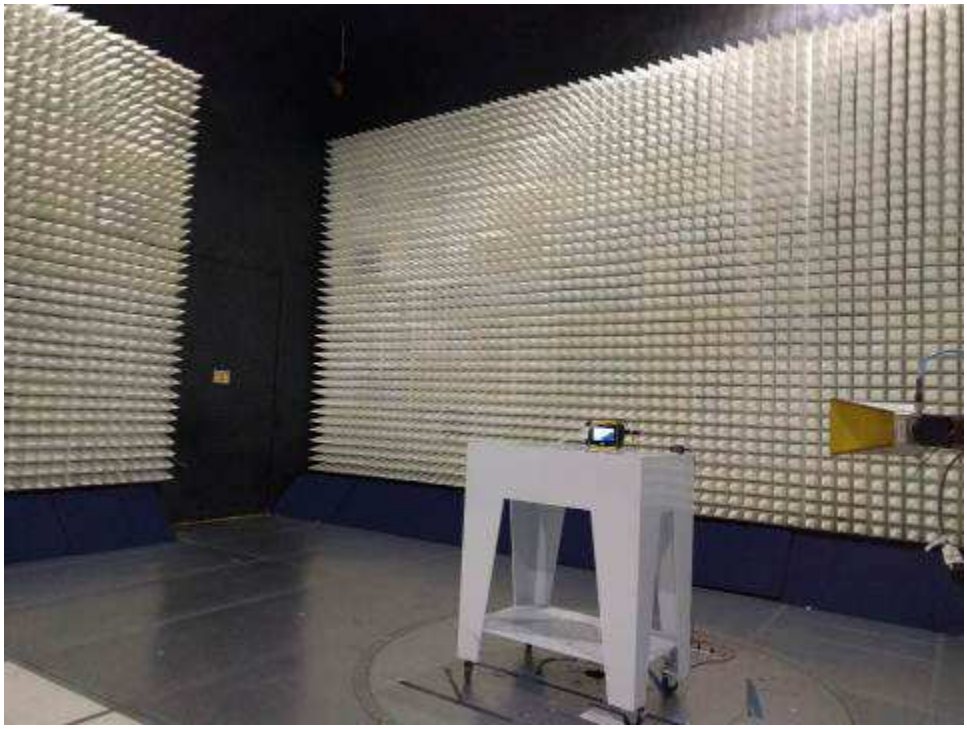
The following photographs show the testing configurations used.



4.5.8 Test Setup Photographs



4.5.8 Test Setup Photographs



5.0 List of Test Equipment

Measurement equipment used for emission compliance testing utilized the equipment on the following list:

Equipment	Manufacturer	Model/Type	Asset #	Cal Int	Cal Due
EMI Receiver	Rohde and Schwarz	ESU	ITS 00961	12	06/02/16
Spectrum Analyzer	Rohde and Schwarz	FSP	ITS 01200	12	02/09/16
BI-Log Antenna	Antenna Research	LPB-2513	ITS 00355	12	08/11/16
Pyramidal Horn Antenna	EMCO	3160-09	ITS 00571	#	#
Pyramidal Horn Antenna	EMCO	3160-10	ITS 00572	#	#
Pre-Amplifier	Sonoma Instrument	310	ITS 00942	12	01/15/16
Pre-Amplifier (1-18GHz)	Miteq	AMF-4D-001180-24-10P	ITS 00526	12	10/06/16
Pre-Amplifier (18-40GHz)	Miteq	JSD44-18004000-305P	ITS 00921	12	06/18/16
Horn Antenna	EMCO	3115	ITS 01595	12	01/14/16

No Calibration required

6.0 Document History

Revision/ Job Number	Writer Initials	Reviewer Initials	Date	Change
1.0 / G102241369	AS	KV	January 28, 2016	Original document